

11/22/2024 8:58:49 AM



# 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.

## 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
- 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

## PROFESSIONAL OF RECORD

### Fusion Architects

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

Contact: Matt Daigrepoint, AIA  
matt@fusionbcb.com

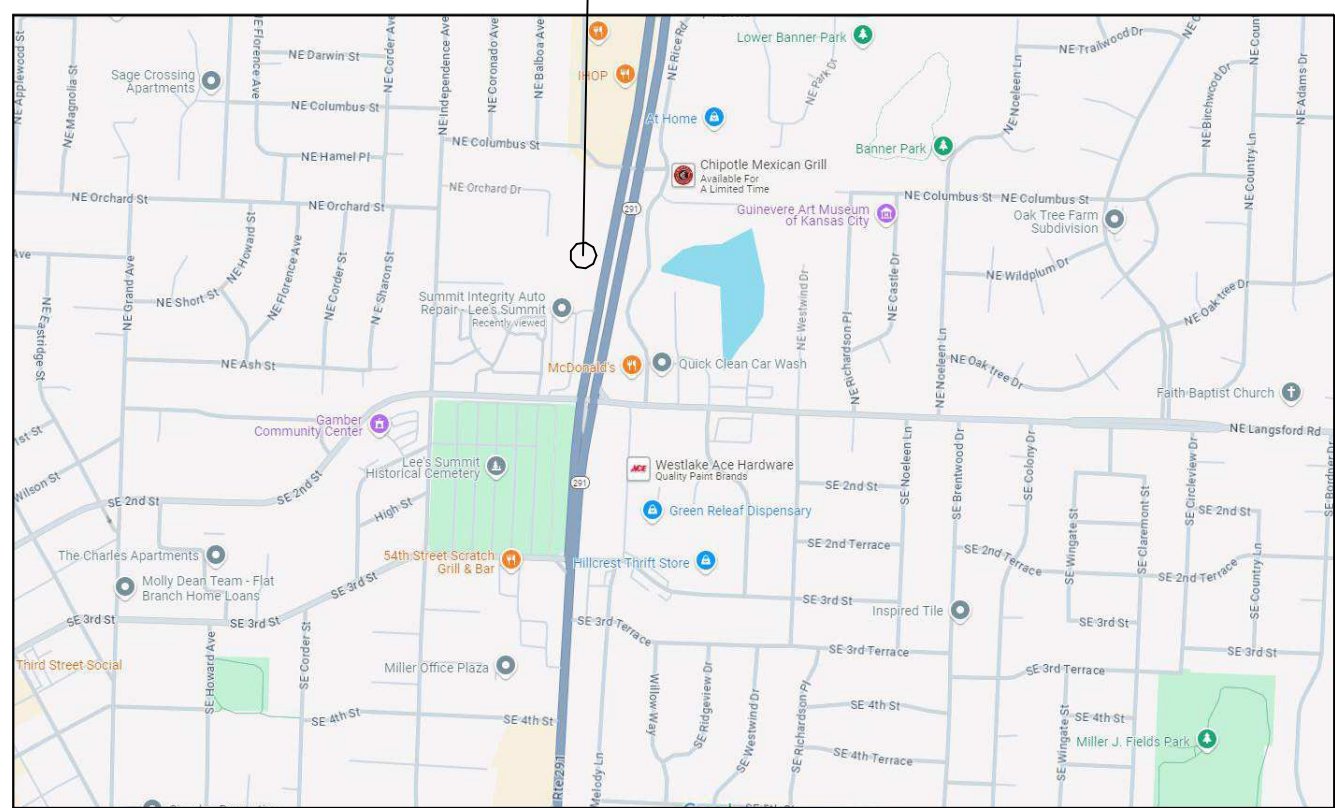
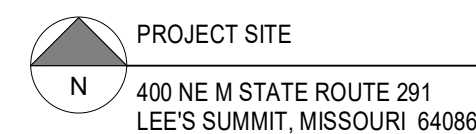
## DEVELOPER / OWNER

### Driven Assets LLC

6335 Markita Avenue  
TX, Dallas 75214

Contact: Hank Hopkins  
hank@drivenassets.com

## VICINITY MAP:



## SYMBOLS LEGEND:

	ROOM NUMBER		DETAIL TAG		KEY NOTE
	DOOR NUMBER		PHOTO TAG		PARTITION TAG
	WINDOW TAG		KEY NOTE		
	COLUMN GRID TAG		KEY NOTE		
	ELEVATION TAG		KEY NOTE		
	SECTION TAG		KEY NOTE		

## CONSULTANTS:

CIVIL	LANDSCAPE	STRUCTURAL	MECHANICAL ELECTRICAL & PLUMBING
<b>High Tide Consultants, LLC</b>	<b>McKnight Landscape Architects</b>	<b>Salas O'Brien</b>	<b>Thompson Luke &amp; Assoc. LLC</b>
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	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	541 Julia St., Suite 200 New Orleans, LA, 70124 P 225.266.0619 salasobrien.com Contact: Brad Carville, PE brad.carville@salasobrien.com	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:

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

NOT FOR  
CONSTRUCTION

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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 Daigrepoint*

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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

## TITLE SHEET

SHEET NO.

**G1.00**

OF

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Take 5 Oil Change Specifications:

SHOP DRAWINGS

Review of Shop Drawings by the Architect will be for general compliance with Contract Documents. No responsibility will be assumed by the Architect for correctness of dimensions, quantities, or details. The contractor shall check and verify all field measurements. The contractor and each separate contractor shall submit with such promptness as to cause no delay in their own work or in that of any other contract, Shop or Setting Drawings and schedules required for the work of the various trades. The Architect's review of such Drawings or schedules shall not relieve the Contractor from responsibility for deviations from Drawings or Specifications, unless he has in writing called the Architect's attention to such deviations at the time of submission, and secured Architect's written approval nor shall it relieve him from responsibility for errors in Shop Drawings or schedules.

CONTRACTOR'S RESPONSIBILITIES

Review Shop Drawings, project data and samples prior to submission. Verify:

- 1. Field measurements
- 2. Field construction criteria
- 3. Catalog numbers and similar data

Coordinate each submittal with requirements of work and of Contract Documents. Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by Architect's review of submittals, unless Architect gives written acceptance of specific deviations. Notify Architect in writing at time of submission of deviations in submittals from requirements of Contract Documents. Do not begin work which requires submittals, until submittals are received with Architect's or his Consulting Engineer's stamp and initials indicating review.

PROJECT/SITE CONDITIONS

- A. Site Information: Data on indicated subsurface conditions are not intended as representations or warranties of accuracy or continuity between soil borings. It is expressly understood that Owner will not be responsible for interpretations or conclusions drawn therefrom by Contractor. Data is made available for convenience of Contractor. Geotechnical Report is available from the owner for this project.
- B. Additional test borings and other exploratory operations may be made by Contractor at no cost to Owner.
- C. Existing Utilities: Locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate means of protection during earthwork operations.
- D. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.
- E. Protection of Persons and Property: Barricade open excavations occurring as part of this work and post with warning lights.
- F. Operate warning lights as recommended by authorities having jurisdiction.
- G. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.
- H. All utilities shall be located and known before the start of construction. The contractor shall hold a meeting with all sub contractors and understand where all electrical lines are located (overhead and underground). No work shall be done in proximity to electrical powerlines without written consent from the local utility company and city. All governing codes shall be understood for work around utility lines.

TERMITE CONTROL

Provide soil treatment for termite control. Provide a written warranty period for 5 years against subterranean termites and Formosan termites. Soil treatment shall be with:

- 1. Chlorpyrifos ("Dursban 1C"); 1.0 percent in water emulsion.
- 2. Permethrin ("Dreghett"); 0.5 percent in water emulsion.

Under slab-on-grade, treat soil before concrete slabs are placed, including all sidewalks, drives, and paving within 30 feet of the building, using the following rates of application:

Apply 4 gallons of chemical solution per 10 lin. ft. to soil in critical areas under slab, including entire inside perimeter inside of foundation walls, along both sides of interior partition walls, around plumbing pipes and electric conduit penetrating slab, and around interior column footers.

Apply one gallon of chemical solution per 10 sq. ft. as an overall treatment under slab and attached slab areas where fill is soil or unwashed gravel. Apply 1-1/2 gallons of chemical solution to areas where fill is washed gravel or other coarse absorbent material.

CULTURED STONE

"Cultured Stone" by Boral Brick. Provide all samples to owner for approval. See building elevations for wainscot. "Limestone – Bucks County" version shown on project. Verify with owner and provide samples of all colors.

- 1. Compressive Strength: Not less than 1800 psi (12.4 MPa) average for 5 specimens and not less than 2100 psi (14.4 MPa) for individual specimen when tested in accordance with ASTM C 39 & ASTM C 192.
- 2. Bond Between Manufactured Masonry Unit, Mortar and Backing: Not less than 50 psi (345 kPa) when tested in accordance with ASTM C 482 using Type S mortar.
- 3. Thermal Resistance: R-value of not less than 0.355 per inch (25.4 mm) of thickness when tested in accordance with ASTM C 177.
- 4. Freeze/Thaw: No disintegration and less than 3 percent weight loss when tested in accordance with ASTM C 67.
- 5. Water Absorption: Tested in accordance with UBC 15-5 9-22% depending on density value.
- 6. Unit Weight: Not more than 15 psf (73 kg/m2) saturated.
- 7. Surface Burning Characteristics: Not more than the following when tested in accordance with UL 723:
  - a. Flamespread: 25.
  - b. Smoke Development: 450.
- 8. UV Stable - Mineral oxide pigments.
- 9. Provide matching corners to fit.
- 10. Strike all joints flushed, standard 1/2" tooled.
- 11. Seal all joints at wall openings and penetrations with a sealant approved for use with masonry products.
- 12. Flashing: coordinate with flashing used on job.

WOOD AND ROUGH CARPENTRY

Lumber conforming to National Forest Products Association "National Design Specification for Stress-grade Lumber and It's Fastenings", 1971. Grades conforming to lumber manufacturing association Stress Grading Rules and Graded and Trade marked by producing mill and grading association.

Softwood plywood shall be identified with the APA grade-trademark of the American Plywood Association and meet the requirements of Product Standard PS 1-74 for Softwood Plywood/Construction and Industrial.

MATERIALS

Roof Blocking: #2SYP – Borate treated Members in contact with moisture or concrete - #2SYP borate treated

Roof Decking: 5/8" OSB plywood fastened with 8d ring shank nails @ 6" o.c. on edges & intermediate supports, 4" o.c. at any gables. Follow all guidelines and engineering requirements by the roof truss manufacturer, which shall supersede these specifications.

Wood studs: 2x6 No. 2 southern yellow pine with no finger joints.

Wall sheathing: Exterior side: 7/16" o.s.b. wall sheathing full blocked, 8d common nails o.c. edge, 12" o.c. field. Interior side: 1/2" cdx plywood with three coats of paint. (B/C grade). Fasten at 12" o.c. field.

Sole plate: 2x6 borate treated, anchored with 5/8" x 14" anchor bolts (galvanized), 3"x3"x1/4" steel washer @ 32" o.c. & 8" from corners. All components to be galvanized.

Garage door openings: Use garage door portal frames by Simpson Strong Tie, each opening shall have Simpson Strong Tie STHD14 with LSTA21 straps at headers. Provide review by Simpson Strong Tie system engineering.

ACCESSORIES

Nails, spikes and staples: Galvanized for exterior locations, high humidity locations and treated wood; plain finish for other interior locations.

Other Framing Members: Install miscellaneous blocking, furring, nailing strips and framing. Install members true, plumb and level. Secure in place. Space miscellaneous framing and furring at 16" o.c., unless shown otherwise. Perform all work to the highest standard of the carpentry trade. All work shall be coordinated with other trades to provide the proper integration and fits between crafts. Provide proper machinery and tools of the trade so that fashioning of lumber and fits between materials shall be of the highest standards of the trade.

INSULATION

Separate all conditioned spaced from non-conditioned spaces with insulation. Use full cavity insulation in all locations shown in plans. Comply with fire-resistance, flammability and insurance ratings indicated, and comply with regulations as interpreted by governing authorities. Provide paper faced insulation by one of the following manufacturer's and use the thickness to match studs widths as shown in plans: Owen's coming, Knauf, and Johns Manville. Poly Iso Board over roofing – see modified bitumen specification.

UNDER SLAB VAPOR BARRIER

Vapor Barrier must be WVTR less than .008 as tested by ASTM E96. ASTM E 1745 Class A (Plastics), .012 perms or lower. Approved Products: Stego (15 mil), WR Meadows (15 mil) At service pits (depressions in slab more than 12", use bentonite geotextile waterproofing by Volclay, Miraclay, or paraseal. All barriers shall be taped and seams overlapped by the manufacturers installation recommendations.

FLASHING AND SHEET METAL

Parapet and Copings: 24 ga pre coated galvalume metal with continuous 30 mil nevestral under parapet. Minimum lengths of parapets shall be 8 feet. Seams are to be standing lock and flat lock type, except corners. Fabricate corners minimum 18" x 18", mitered, soldered, or welded, and sealed as one piece. Hem exposed edges of flashing on udersides by 1/2". Follow all guidelines of SMACNA for sheet metal detailing. Provide samples from the manufacturer's full range of colors. Sheet metal by Berridge. All STO flashing and masonry shall have 16 oz. copper, separate from other metals with nevestral. All openings shall be coated with Tyvek's fluid applied water barrier system.

SBS ROOFING

System: Soprema (basis of design) or Johns Manville complete system with 20 ndl warranty.

Base Layer: 5/8" osb plwood with ring shank nail attachment, see wood and rough carpentry section. Place 40 mil ice and water shield over osb plywood and turn up full length on parapets.

Insulation: Place rigid polycycyanurate foam board with an aged R value of 5.6 per inch. Provide a minimum of 3 inches with ASTM E84 for flame spread. Maintain positive drainage throughout. Provide a cover board by the SBS manufacturer, not less than 1/4".

Base sheet: Modified Sopra G 28 lb glass base sheet

Base Ply: elastophene sanded

Top Ply: Elastophene Granules FR

Base Ply flashing: Sopralene Flam 180

Asphalt Primer: Elastocool 500

Meet all wind uplift requirements to meet local and state codes in the area. Clean roof of all debris and have inspections approved by manufacturer's representatives for acceptance and warranty.

EIFS System

The system shall be based upon Dryvit's Outsulation MD System and finish system. All expansion joints shall be no more than 20' o.c. and locations determined in the shop drawing phase. Prior to applying Dryvit Outsulation Plus MD System, wall opening shall be treated with Dryvit Aquaflash system, baskstop flash & fill and flashing tape. The outsulation shall be held back from adjoining materials around openings and penetrations such as windows, doors, and mechanical equipment by a minimum of 1/4" for sealant application. The dryvit system shall be a minimum of 8" above finished grade.

Vapor retarders: Use Tyvek's system applicable for installation with Dryvit. The contractor shall receive written approval for the correct vapor retarder system and follow Dryvit Publication DS153. All flashing, screeds, and joint material shall be zinc coated.

Base coat: Primus DM or Genesis DM

Reinforcing mesh: glass fiber fabric treated for compatibility with other system materials. Mesh must meet ASTM E 2098.

Finish: smooth finish with Hydrophobic (HDP): 100% acrylic coating with integral color and texture: "Sandblast HDP" product. Provide coating to prevent algae growth and water staining. All EPS shapes and boards shall be coated on site utilizing the same materials. The insulation board shall part of the Dryvit system and manufactured by Dryvit. The EPS shall be separated from the building by a minimum 15-minute thermal barrier. Installation must be by a qualified Dryvit installer with a minimum of 5 years of experience with the product. Dryvit systems shall provide a written moisture drainage and limited material warranty against defective material before substantial completion. Follow all installation instructions provided by the manufacturer. Equal qualified manufacturer: STO Systems

STEEL DOORS AND FRAMES

Doors and frames by Ceco Doors, Steelcraft, or Amweld

Interior doors: cold rolled 18 ga seamless construction – G-90 Galvanized with primer coat.

Exterior doors: cold rolled 16 ga seamless construction – G-90 Galvanized with primer coat.

Include door silencers, reinforcing in frames, jamb anchors, and stainless steel hinges. Hinge & pivot reinforcements – 7 gauge, 1.25"X10" minimum. Reinforcements for flush bolts, closers, surface mounted hardware, hold open arms, surface panics devices - all 12 guage. Provide door sweeps and weatherstripping at all exterior doors. Provide drip edge at head of exterior door frames. All door hardware by Assa Abloy. Provide keying cores as required by owner with a master and grand master. See plans for garage doors by Clopay.

PAINTING

All metal primer: Kem kromik Universal metal primer

All finish coat on metal: Sherwin Williams industrial enamel B-54 series (2 coats).

Interior finish coats: Sherwin Williams ProMar 200 interior latex, semi gloss.

Concrete sealer: H&C concrete sealer

INTERIOR SIGNAGE

(Designed based on Best HC300 ADA system) Size: 6" x 8" Pictogram 5/8" copy raised 1/32", 3/8" wide raised border and 1/2" radius corners, 1/8" thick plate, screw mounting, color selected from standard selections. Graphic ADA and sex symbol Raised Lettering for each room (follow room names in plans), include braille lettering

TOILET AND BATH ACCESSORIES

Insert manufacturer's product designation and manufacturer's name for each product that complies with requirements. Retain one of five subparagraphs below or insert requirements to suit project. As shown in plans. Grab Bars: 36"x42" stainless steel, 6806 Bobrick or model #612 bradley. Provide blocking in wall for grab bar mounting. Mirror Unit: one per lavatory: 18"x36" Brady 780 series, stainless steel angle framed mirror. Toilet Paper Dispenser: Stainless steel Bobrick model # 2888 Soap dispensers and waste dispensers by owner.

MISCELLANEOUS ACCESSORIES

Three wall hung fire extinguishers See plans for sign package

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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: [Signature]

FUSION ARCHITECTS 3488 BRENTWOOD DRIVE BATON ROUGE, LA 70809 P. 225.766.4048 F. 225.766.4724 fusionapc.com

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: 04/13/21 PROJ. ARCHITECT: Designer

ARCH SPECIFICATIONS SHEET NO. G1.20 OF



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. Concrete Testing Services: Engage a qualified independent testing agency to perform material evaluation tests 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 AS or M for concrete exposed to frequent wetting. Retain last option if damage caused by concrete expansion from alkali silica or alkali carbonate reactions 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.

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 be in 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 water 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); Eucoabar.  
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. Unitek; 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 is required. Although the EPA mandates maximum VOC emissions of 350 g/L for curing compounds, verify VOC emission limits of authorities having jurisdiction. If slow breakdown of curing membrane could interfere with bonding of floor coverings, retain removal subparagraph in "Concrete Protecting and Curing" Article in Part 3.

- Retain paragraph and subparagraphs below if a nondissipating-type, waterborne, membrane-forming curing compound with minimal solids content is required. 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. Unitek; 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 spliced 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) as 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 and ACI 318 (ACI 318M).

- 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. Relighten 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

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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:  
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-preservative 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-preservative-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, Rafter, 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 in either paragraph.  
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 subparagraph 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

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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 Seibert*

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

CARPENTRY  
SPECIFICATIONS  
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Structural Spec Sheathing:

SECTION 06 16 10  
WOOD SHEATHING  
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 01 Specification Sections, apply to this Section.  
1.2 SUMMARY  
A. This Section includes the following:  
Adjust list below to suit Project.  
1. Wall sheathing.  
2. Floor sheathing.  
3. Roof sheathing.  
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.  
1. Division 01 Section "Sustainable Design Requirements" for additional LEED requirements.  
2. Division 06 Section "Rough Carpentry" for plywood backing panels.  
1.3 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-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements. Indicate type of preservative used and net amount of preservative retained.  
Delete subparagraph below if fire-retardant-treated plywood is not required.  
2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements. Include physical properties of treated materials.  
Delete first subparagraph below if not applicable.  
3. For fire-retardant treatments specified to be High-Temperature (HT) type, include physical properties of treated plywood both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D 5516.  
4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.  
5. Include copies of warranties from chemical treatment manufacturers for each type of treatment.  
Retain subparagraph below if applicable.  
6. For building wrap, include data on air-/moisture-infiltration protection based on testing according to referenced standards.  
B. LEED Submittals:  
Retain subparagraph below if low-emitting materials are required for LEED Credit EQ 4.1; coordinate with requirements selected in Part 2 for construction adhesive.  
1. Credit EQ 4.1: Manufacturers' product data for construction adhesive, including printed statement of VOC content.  
Retain subparagraph below if low-emitting materials are required for LEED Credit EQ 4.4.  
2. Credit EQ 4.4: Composite wood material manufacturer's product data for each composite wood product used on the interior of building indicating that bonding agent used contains no urea formaldehyde.  
Retain subparagraph below and "Forest Certification" Paragraph in "Quality Assurance" Article if wood products are required to be certified for LEED Credit MR 7, which requires that a minimum of 50 percent of wood-based materials be certified.  
3. Credit MR 7: Certificates of chain-of-custody signed by manufacturers certifying that products specified to be made from certified wood were made from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC 1.2, "Principles and Criteria." Include evidence that mill is certified for chain-of-custody by an FSC-accredited certification body.  
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. Preservative-treated plywood.  
2. Fire-retardant-treated plywood.  
3. Foam-plastic sheathing.  
4. Building wrap.  
1.4 QUALITY ASSURANCE  
Retain paragraph and subparagraph below for fire-rated assemblies.  
A. Fire-Test-Response Characteristics: For assemblies with fire-resistance ratings, provide materials and construction identical to those of assemblies tested for fire resistance per ASTM E 119 by a testing and inspecting agency acceptable to authorities having jurisdiction.  
Indicate design designations of specific assemblies on Drawings.  
Paragraph and subparagraphs below may be retained to specify 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 01 Section "Sustainable Design 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. Plywood.  
2. Oriented strand board.  
3. Fiberboard wall sheathing.  
4. Particleboard underlayment.  
5. Hardboard underlayment.  
1.5 DELIVERY, STORAGE, AND HANDLING  
A. Stack plywood and other panels 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 PANEL PRODUCTS, GENERAL  
Select one of two options in paragraph below; usually the second. DOC PS 2 is a performance-based standard that does not include requirements for grades of veneers. Second option includes phrase "unless otherwise indicated" to allow for underlayment that is specified to comply with DOC PS 1 because a minimum face veneer grade is required; delete if phrase is not needed.  
A. Plywood: Either DOC PS 1 or DOC PS 2, unless otherwise indicated.  
Delete paragraph below if oriented strand board is not used.  
B. Oriented Strand Board: DOC PS 2.  
Retain first paragraph below if a minimum thickness is shown on Drawings.  
C. Thickness: As needed to comply with requirements specified, but not less than thickness indicated.  
D. Factory mark panels to indicate compliance with applicable standard.  
2.2 PRESERVATIVE-TREATED PLYWOOD  
Delete this Article if not applicable. See Evaluations for discussion of formulations.  
A. Preservative Treatment by Pressure Process: AWPA C9.  
See Evaluations for information about treatment chemicals.  
B. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.  
Select first option in paragraph below and delete others if total treatment is required; otherwise, select second option with or without third option.  
C. Application: Treat all plywood, in contact with masonry or concrete or used with roofing, flashing, vapor barriers, and waterproofing.  
2.3 FIRE-RETARDANT-TREATED PLYWOOD  
Delete this Article if not applicable.  
A. General: Comply with performance requirements in AWPA C27.  
1. Use treatment that does not promote corrosion of metal fasteners.  
Exterior type is suitable for both exterior and interior applications. Interior type is suitable for interior applications only. See Evaluations.  
2. Use Exterior type for exterior locations and where indicated.  
Delete first subparagraph below if not applicable. Revise description of locations to suit Project.  
3. Use Interior Type A, High Temperature (HT) for roof sheathing and where indicated.  
4. Use Interior Type A, unless otherwise indicated.  
B. Kiln-dry material after treatment to a maximum moisture content of 15 percent. Do not use material that is warped or does not comply with requirements for untreated material.  
C. Identify fire-retardant-treated plywood with appropriate classification marking of UL, U.S. Testing, Timber Products Inspection, or another testing and inspecting agency acceptable to authorities having jurisdiction.  
Select first option in paragraph below and delete subparagraphs if all wood is required to be fire-retardant treated; otherwise, select second option and applicable subparagraphs.  
D. Application: Treat plywood indicated on Drawings, and the following:  
Edit list below to suit local code and Project.  
1. Roof and wall sheathing within 48 inches of fire party walls.  
2. Roof sheathing.  
3. Subflooring and underlayment for raised platforms.  
2.4 WALL SHEATHING  
If retaining paragraph below, select one of four options. Structural I provides increased racking resistance. See Evaluations for information about durability classifications of plywood.  
A. Plywood Wall Sheathing: Exposure 1, Structural I sheathing.  
Select one of four options in subparagraph below.  
1. Span Rating: Not less than 16/0.  
If retaining subparagraph below, usually select first option for studs 16 inches (406 mm) o.c., second option for studs 24 inches (610 mm) o.c. Select third option for more stringent requirement.  
2. Nominal Thickness: Not less than 1/2 inch.  
If retaining paragraph below, select one of two options. Structural I provides increased racking resistance. See Evaluations for information about durability classifications of oriented strand board.  
B. Oriented-Strand-Board Wall Sheathing: Exposure 1, Structural I sheathing.  
Select one of five options in subparagraph below.  
1. Span Rating: Not less than 16/0.  
If retaining subparagraph below, usually select first option for studs 16 inches (406 mm) o.c., second option for studs 24 inches (610 mm) o.c. Select third option for more stringent requirement.  
2. Nominal Thickness: Not less than 1/2 inch.

C. Paper-Surfaced Gypsum Wall Sheathing: ASTM C 79/C 79M or ASTM C 1396/C 1396M, gypsum sheathing; with water-resistant-treated core and with water-repellent paper bonded to core's face, back, and long edges.  
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 01 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. American Gypsum.  
b. LaFarge North America Inc.  
c. G-P Gypsum Corporation.  
d. National Gypsum Company.  
e. Temple-Inland Forest Products Corporation.  
f. United States Gypsum Co.  
3. Type and Thickness: Regular, thickness per the Drawings.  
Tongue-and-groove edge is only available for regular, 24-by-96-inch (610-by-2438-mm) boards. Verify availability of SI (metric) module with manufacturers selected.  
4. Edge and End Configuration: Square ends; Square.  
24-by-96-inch (610-by-2438-mm) size is only available for regular boards with tongue-and-groove long edges. Special-order lengths are available from some manufacturers but only in large quantities. SI (metric) module dimensions are not readily obtainable; verify availability by special order with manufacturers selected.  
Boards 48 inches (1219 mm) or 1200 mm wide can be installed horizontally but are usually installed vertically; horizontal square edges must be protected by a weather-resistant barrier or must be sealed.  
5. Size: 24 by 96 inches for horizontal; 48 by 96 inches for vertical installation.  
Only G-P Gypsum produces glass-mat gypsum sheathing board.  
2.5 ROOF SHEATHING  
If retaining paragraph below, select one of four options. Structural I provides increased racking resistance. See Evaluations for information about durability classifications of plywood.  
A. Plywood Roof Sheathing: Exterior, Structural I sheathing.  
1. Span Rating: Not less than 32/16.  
2. Nominal Thickness: Not less than 15/32 inch (11.9 mm).  
If retaining paragraph below, select one of two options. Structural I provides increased racking resistance. See Evaluations for information about durability classifications of oriented strand board.  
B. Oriented-Strand-Board Roof Sheathing: Exposure 1, Structural I sheathing.  
1. Span Rating: Not less than 32/16.  
If retaining subparagraph below, usually select first option for spans of 16 inches (406 mm), second option for spans of 24 inches (610 mm). Select third option for more stringent requirement.  
2. Nominal Thickness: Not less than 15/32 inch.  
2.6 FLOORING  
For resilient flooring, APA recommends separate subflooring and underlayment rather than single-layer floor. See Evaluations for information about durability classifications of plywood.  
For resilient flooring, APA recommends separate subflooring and underlayment rather than single-layer floor. See Evaluations for information about durability classifications of oriented strand board.  
If retaining paragraph below, select one of four options. Structural I provides increased racking resistance. For resilient flooring, APA recommends separate subflooring and underlayment rather than single-layer floor. See Evaluations for information about durability classifications of plywood.  
A. Plywood Subflooring: Exterior, Structural I single-floor panels or sheathing.  
Select one of first five options and possibly one of last three options in subparagraph below.  
1. Span Rating: Not less than 24" o.c.  
If retaining subparagraph below, usually select first option for spans of 16 inches (406 mm); second option for spans of 24 inches (610 mm). For more stringent requirement, select second option for spans of 16 inches (406 mm) or third option for spans of 24 inches (610 mm).  
2. Nominal Thickness: Not less than 23/32 inch.  
If retaining paragraph below, select one of two options. Structural I provides increased racking resistance. For resilient flooring, APA recommends separate subflooring and underlayment rather than single-layer floor. See Evaluations for information about durability classifications of oriented strand board.  
B. Oriented-Strand-Board Subflooring: Exposure 1, Structural I sheathing single-floor panels or sheathing.  
Select one of first five options and one of last four options in subparagraph below.  
1. Span Rating: Not less than 24" o.c.  
If retaining subparagraph below, usually select first option for spans of 16 inches (406 mm); second option for spans of 24 inches (610 mm). For more stringent requirement, select second option for spans of 16 inches (406 mm) or third option for spans of 24 inches (610 mm).  
2. Nominal Thickness: Not less than 23/32 inch.  
If retaining paragraph below, verify acceptability with floor covering manufacturers. Select second option if low-emitting materials are required for LEED Credit EQ 4.4, which prohibits composite wood products containing urea formaldehyde.  
2.7 FASTENERS  
A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.  
1. For roof and wall sheathing, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.  
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 B18.8.1.  
2.8 MISCELLANEOUS MATERIALS  
According to APA, only certain solvent-based glues are suitable for nonveneer panels with sealed surfaces and ends.  
A. Adhesives for Field Gluing Panels to Framing: Formulation complying with APA AFG-01 that is approved for use with type of construction panel indicated by manufacturers of both adhesives and panels.  
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 or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).  
PART 3 - EXECUTION  
3.1 INSTALLATION, GENERAL  
A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement.  
B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction, unless otherwise indicated.  
C. Securely attach to substrate by fastening as indicated, complying with the following:  
1. NES NER-272 for power-driven fasteners.  
Retain one of six subparagraphs below, with or without subparagraph above, to comply with requirements of Project and local codes.  
2. Table 2304.9.1, "Fastening Schedule," in ICC's "International Building Code."  
3. Table 23-1-B-1, "Nailing Schedule," and Table 23-II-B-2, "Wood Structural Panel Roof Sheathing Nailing Schedule," in ICBO's "Uniform Building Code."  
4. Table 2305.2, "Fastening Schedule," in BOCA's "BOCA National Building Code."  
5. Table 2306.1, "Fastening Schedule," in SBCCI's "Standard Building Code."  
6. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's "International Residential Code for One- and Two-Family Dwellings."  
7. Table 602.3(1), "Fastener Schedule for Structural Members," and Table 602.3(2), "Alternate Attachments," in ICC's "International One- and Two-Family Dwelling Code."  
Retain first paragraph below if wood framing is used. Revise to indicate other kinds of nails if required.  
D. 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. Install fasteners without splitting wood.  
E. Coordinate wall and roof sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.  
F. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.  
G. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.  
3.2 WOOD STRUCTURAL PANEL INSTALLATION  
A. General: Comply with applicable recommendations in APA Form No. E30S, "Engineered Wood Construction Guide," for types of structural-use panels and applications indicated.  
B. Fastening Methods: Fasten panels as indicated below:  
Delete fastening methods not required. Coordinate with building code requirements.  
1. Flooring:  
a. Glue and nail to wood framing.  
b. Screw to cold-formed metal framing.  
c. Space panels 1/8 inch apart at edges and ends.  
2. Wall and Roof Sheathing:  
a. Nail to wood framing.  
b. Screw to cold-formed metal framing.  
c. Space panels 1/8 inch apart at edges and ends.  
3.3 GYPSUM SHEATHING INSTALLATION  
A. Comply with GA-253 and with manufacturer's written instructions.  
Retain applicable subparagraph(s) below or insert requirements to suit Project.  
1. Fasten gypsum sheathing to wood framing with nails or screws.  
2. Fasten gypsum sheathing to cold-formed metal framing with screws.  
3. Install boards with a 3/8-inch gap where non-load-bearing construction abuts structural elements.  
4. Install boards with a 1/4-inch gap where they abut masonry or similar materials that might retain moisture, to prevent wicking.  
B. Apply fasteners so heads bear tightly against face of sheathing boards but do not cut into facing.  
Revise first paragraph below if horizontally installed boards do not have tongue-and-groove edges.  
C. Horizontal installation: Install sheathing with V-grooved edge down and tongue edge up. Interlock tongue with groove to bring long edges in contact with edges of adjacent boards without forcing. Abut ends of boards over centers of studs, and stagger end joints of adjacent boards not less than one stud spacing. Attach boards at perimeter and within field of board to each steel stud.  
1. Space fasteners per Drawings and set back a minimum of 3/8 inch from edges and ends of boards.  
Retain subparagraph above or below. Delete below if not applicable or not permitted.  
2. For sheathing under stucco cladding, boards may be initially tacked in place with screws if overlying self-furring metal lath is screw-attached through sheathing to studs immediately after sheathing is installed.  
D. Vertical installation: Install board vertical edges centered over studs. Abut ends and edges of each board with those of adjacent boards. Attach boards at perimeter and within field of board to each stud.  
1. Space fasteners per Drawings and set back a minimum of 3/8 inch from edges and ends of boards.  
Retain subparagraph above or below. Delete below if not applicable or not permitted.  
2. For sheathing under stucco cladding, boards may be initially tacked in place with screws if overlying self-furring metal lath is screw-attached through sheathing to studs immediately after sheathing is installed.  
3.4 PROTECTION  
A. Paper-Surfaced Gypsum Sheathing: Protect sheathing by covering exposed exterior surface of sheathing with weather-resistant sheathing paper securely fastened to framing. Apply covering immediately after sheathing is installed.  
Insert requirements for removing protection if it does not become part of final assembly. Paragraph above assumes that weather-resistant sheathing paper will be installed to comply with requirements for incorporating it into final assembly.  
END OF SECTION

NOT FOR CONSTRUCTION

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

SHEATHING  
SPECIFICATIONS  
SHEET NO.  
**G1.23**  
OF

No. REVISION DATE



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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."  
6. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.  
Retain paragraph and subparagraph below and "Forest Certification" Paragraph in "Quality Assurance" Article 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. Retain paragraph below if certificates are required by authorities having jurisdiction.  
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.  
1. 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 B18.6.1.  
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

NOT FOR CONSTRUCTION

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. Will generally administer construction.  
By: *Matthew Sangant*

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: 04/13/21  
PROJ. ARCHITECT: Designer  
WOOD TRUSS SPECIFICATIONS  
SHEET NO.  
G1.24  
OF



C:\Users\djensen\Documents\33-Lee's Summit, MO (24) Central Model.dwg 6/5/24 7/29/2024 12:03:59 PM

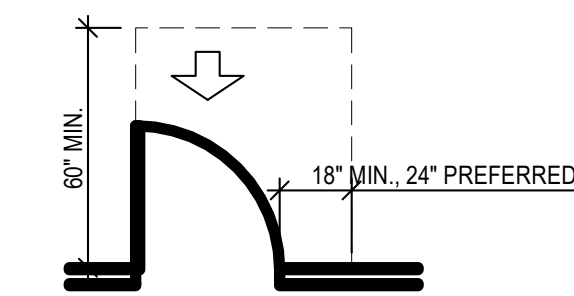
GENERAL NOTES:

- DETAILS AND NOTES ON THIS SHEET SHALL GOVERN STANDARD DIMENSIONS, CLEARANCES AND MOUNTING LOCATIONS. CONTRACTOR SHALL IMMEDIATELY BRING TO ARCHITECT'S ATTENTION ANY DISCREPANCIES BETWEEN INFORMATION ON THIS SHEET AND ANY OTHER INFORMATION IN PLANS.
- ALL NOTES, ABBREVIATIONS AND DETAILS MAY NOT APPLY.

ABBREVIATIONS:

A	AMPERES	F.F.	FINISH FLOOR	OH	OVER HEAD
A.B.	ANCHOR BOLT	F.F.E.	FINISH FLOOR ELEVATION	OPNG	OPENING
A.F.F.	ABOVE FINISHED FLOOR	F.N.	FIELD NAILING	OPPO	OPPOSITE
A.F.G.	ABOVE FINISHED GRADE	F.O.	FACE OF	P.C.	PRECAST CONCRETE
A/C	AIR CONDITIONING	F.S.	FLOOR SINK	P.L. or P	PROPERTY LINE
ABC	AGGREGATE BASE COURSE	FIG	FIBERGLASS	P.LAM	PLASTIC LAMINATE
ABS	ACRYLONITRILE-BUTADIENE-STYRENE	FAB.	FABRICATE	P.O.C.	POINT OF CONNECTION
ABV	ABOVE	FACP	FIRE ALARM CONTROL PANEL	PERF	PERFORATED
ACB	ASBESTOS-CEMENT BOARD	FDC	FIRE DEPARTMENT CONNECTION	PERP. or J	PERPENDICULAR
ACOU.	ACOUSTIC	FDN.	FOUNDATION	PH or Ø	PHASE
ACT	ACOUSTICAL CEILING TILE	FHC	FIRE HOSE CABINET	PL	PLASTER
ADD	ADDITION or ADDENDUM	FIN.	FINISH	PL or P	PLATE
AG	ABOVE GRADE	FL	FLOOR	PLAS.	PLASTIC
AHU	AIR HANDLING UNIT	FLG.	FLOORING	PLUMB.	PLUMBING
AL or ALUM	ALUMINUM	FLUOR.	FLUORESCENT	PLYWD.	PLYWOOD
ALT.	ALTERNATE	FP	FIRE PROOF	PORC.	PORCELAIN
ANL	ANNEALED	FRP	FIBER REINFORCED PLASTIC	PREFAB.	PREFABRICATED
ASPH.	ASPHALT	FTG.	FOOTING	PSF	POUNDS PER SQUARE FOOT
AVG	AVERAGE	FURN.	FURNISH	PSI	POUNDS PER SQUARE INCH
AWG	AMERICAN WIRE GAUGE	G.I.	GALVANIZED IRON	PTN.	PARTITION
▲	ANGLE	GA.	GAUGE	PVC	POLYVINYLCHLORIDE
B.M.	BENCH MARK	GALV.	GALVANIZED	PWR.	POWER
B.N.	BOUNDARY NAILING	GAR	GROUND FAULT CIRCUIT INTERRUPTER	Q.T.	QUARRY TILE
B.O.	BOTTOM OF	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	QTY.	QUANTITY
B.O.F.	BOTTOM OF FOOTING	GFI	GROUND FAULT INTERRUPTER	R	RADIUS
B.U.	BUILT UP	GL	GLASS	RCP	REINFORCED CONCRETE PIPE
B.C.	BACK OF CURB	GLB	GLUE LAMINATED BEAM	R.D.L.	ROOF DRAIN LEADER
BD.	BOARD	GM	GRADE MARK	R.D.O.	ROOF DRAIN OVERFLOW
BLDG.	BUILDING	GV	GATE VALVE	R.O.	ROUGH OPENING
BLK.	BLOCK	GRC	GALVANIZED RIGID TUBING	R.O.W. or	RIGHT OF WAY
BLKG.	BLOCKING	GYP.	GYPSPUM	REF	REFRIGERATOR
BM.	BEAM	GYP. BD.	GYPSPUM BOARD	RE	REFERENCE
BR	BRASS	H.B.	HOSE BIBB	REINF.	REINFORCED
BRG.	BEARING	H.C.	HOLLOW CORE	REO'D.	REQUIRED
BRZ.	BRONZE	H.M.	HOLLOW METAL	RET.	RETURN
C.A.P.	CONCRETE ASBESTOS PIPE	HIC	HANDICAPPED	REV.	REVISION
C.D.	CONSTRUCTION DOCUMENTS	HDBD.	HARDBOARD	RM	ROOM
C.I.P.	CAST IN PLACE	HDW.	HARDWARE	RMV.	REMOVE
C.J.	CONTROL JOINT	HGT.	HEIGHT	S.C.	SOLID CORE
C.O.	CLEAN OUT	HOR.	HORIZONTAL	S.D.	SMOKE DETECTOR
C.T.	CERAMIC TILE	HTR.	HEATER	S.O.V.	SHUT OFF VALVE
CAB	CABINET	HVAC	HEATING, VENTILATING & AIR CONDITIONING	S/L	SKYLIGHT
CAM.	CAMBER	HW	HOT WATER	S/S	STAINLESS STEEL
CCTV	CLOSED CIRCUIT TELEVISION	HYD.	HYDRAULIC	SC	SELF CLOSING
CEM.	CEMENT	I.C.	INTERCOM OUTLET	SECT.	SECTION
CER	CERAMIC	ID.	INSIDE DIAMETER	SES	SERVICE ENTRANCE SECTION
CFM	CUBIC FEET PER MINUTE	I.F.	INSIDE FACE	SH	SHEET
CH or C	CHANNEL	ID	IDENTIFICATION	SHTG	SHEDTING
CKT. BKR.	CIRCUIT BREAKER	IG	IMPREGNATED GROUNDING	SIM.	SIMILAR
CL or CL	CENTERLINE	IMC	IMPREGNATED METAL CLIC COND.	SPA	SPACE
CLG.	CEILING	IMP.G.	IMPREGNATED	SPECS	SPECIFICATIONS
CLKG.	CAULKING	INCL.	"INCLUDE, INCLUSIVE"	SPKR	SPEAKER
CLO.	CLOSET	INSUL.	INSULATION	SQ. FT. or SF	SQUARE FEET
CLR.	CLEAR	INT.	INTERIOR	SQ. IN.	SQUARE INCHES
CMP.	CORRUGATED METAL PIPE	J-BOX	JUNCTION BOX	STC	SOUND TRANSMISSION CLASS
CMU	CONCRETE MASONRY UNIT	JCT.	JUNCTION	STD.	STANDARD
CNTRD.	CENTERED	JST.	JOIST	STL.	STEEL
COL.	COLUMN	JT.	JOINT	SUSP.	SUSPENDED
COMB.	COMBINATION	K-D	KNOCK DOWN	SW	SWITCH
CONC.	CONCRETE	KD	KILN DRIED	SYM	SYMMETRICAL
CONST.	CONSTRUCTION	KO	KNOCK OUT	SYS.	SYSTEM
CONT.	CONTINUOUS	L.E.D.	LIGHT EMITTING DIODE	T & G	TONGUE AND GROOVE
CONTR.	CONTRACTOR	L.F.T.	LINEAR FEET	T.B.	THROUGH BOLT
CU	COPPER	LAM	LAMINATE	T.M.B.	TELEPHONE MOUNTING BOARD
d	PENNY	LAT.	LATERAL	T.O.	TOP OF
D.F.	DRINKING FOUNTAIN	LAV	LAVATORY	T.O.B.	TOP OF BEAM
D.G.	DECOMPOSED GRANITE	LD.	LEAD	T.O.C.	TOP OF CURB
D.S.	DOWN SPOUT	LIN.	LINEAR	T.O.F.	TOP OF FOOTING
DW	DISHWASHER	LINO.	LINOLEUM	T.O.J.	TOP OF JOIST
DBL	DOUBLE	LT.	LIGHT	T.O.M.	TOP OF MASONRY
DEMO	DEMOLITION	LTG.	LIGHTING	T.O.S.	TOP OF SLAB or TOP OF STEEL
DIA. or Ø	DIAMETER	LVL	LAMINATED VENEER LUMBER	T.O.W.	TOP OF WALL
DIAG.	DIAGONAL	M.B.	MACHINE BOLT	T.S.	TUBE STEEL
DIM.	DIMENSION	M.H.	MANHOLE	T.V.	TELEVISION OUTLET
DL	DEAD LOAD	M.I.	MALLEABLE IRON	TEL	TELEPHONE
DN.	DOWN	M.O.	MASONRY OPENING	TH.	THRESHOLD
DR	DOOR	MAR.	MARBLE	THD.	THREADED
E.A.	EXPANSION ANCHOR	MAS.	MASONRY	THK.	THICK
E.F.	EXHAUST FAN	MATL.	MATERIAL	THRU	THROUGH
E.J.	EXPANSION JOINT	MAX.	MAXIMUM	TLT.	TOILET
E.N.	END NAILING	MECH.	MECHANICAL	TRANS.	TRANSFORMER
E.W.	EACH WAY	MED.	MEDIUM	TYP.	TYPICAL
EA.	EACH	MPG.	MANUFACTURING	UNF.	UNFINISHED
EL	ELEVATION	MFR.	MANUFACTURER	U.N.O.	UNLESS NOTED OTHERWISE
ELECT.	"ELECTRIC, ELECTRICAL"	MIN.	MINIMUM	UR	URINAL
ELEV.	ELEVATOR	MISC.	MISCELLANEOUS	V.B.	VAPOR BARRIER
EMC	ELECT. METALLIC CONDUIT	MOD	MODULAR	V.I.F.	VERIFY IN FIELD
EMT	ELECT. METALLIC TUBING	MTL.	METAL	VA	VOLT AMPERE
ENT	ELECT. NON-METALLIC TUBING	MUL	MULLION	VCT	VINYL COMPOSITION TILE
EQ.	EQUAL	N.I.C.	NOT IN CONTRACT	VERT.	VERTICAL
EQUIP.	EQUIPMENT	N.T.S.	NOT TO SCALE	V.O.J.	VERIFY ON JOB
EST.	ESTIMATE	NCM	NON-CORROSSIVE METAL	W/C	WATER CLOSET
EVAP.	EVAPORATIVE COOLER	NFC	NOT FOR CONSTRUCTION	WDW	WINDOW
EW	ELECTRIC DRINKING COOLER	NLR.	NAILER	WCT	WAINSCOT
EXC	EXCAVATE	NO.	NUMBER	WP	WEATHER PROOF
EXH.	EXHAUST	NOM.	NOMINAL	WT.	WEIGHT
EXIST.	EXISTING	O.C.	ON CENTER	W/	WITH
EXT.	EXTERIOR	O.D.	OUTSIDE DIAMETER	W/O	WITHOUT
F.A.	FIRE ALARM	O.H.	OVER HANG	WD.	WOOD
F.C.	FAN COIL	O.I.	ORNAMENTAL IRON	W.I.	WROUGHT IRON
F.C.O.	FLOOR CLEAN OUT	O.R.	OUTSIDE RADIUS	YD.	YARD
F.D.	FLOOR DRAIN	OAI	OUTSIDE AIR INTAKE		
F.E.	FIRE EXTINGUISHER				

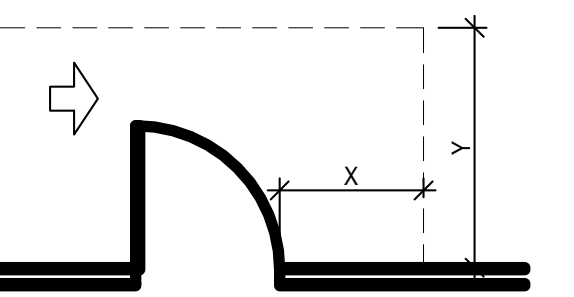
PULL SIDE



NOTE: ALL DOORS IN ALCOVES SHALL COMPLY WITH THE CLEARANCES FOR FRONT APPROACHES.

FRONT APPROACHES - SWINGING DOORS

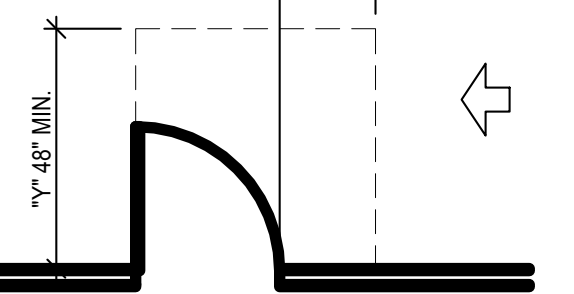
PULL SIDE



NOTE: X = 36IN MINIMUM IF Y = 60IN;  
X = 42IN MINIMUM IF Y = 54IN

HINGE SIDE APPROACHES - SWINGING DOORS

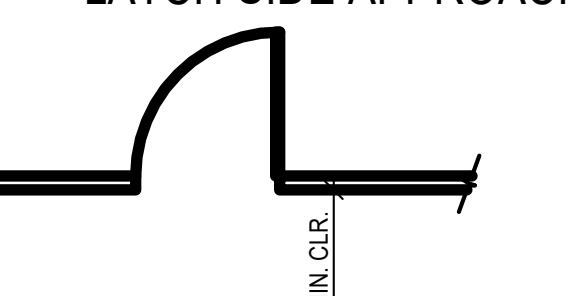
PULL SIDE



NOTE: ALL REQUIRED CLEAR FLOOR AREA SHALL BE LEVEL. EXTERIOR LANDINGS SHALL BE SLOPED NO GREATER THAN 1:50.

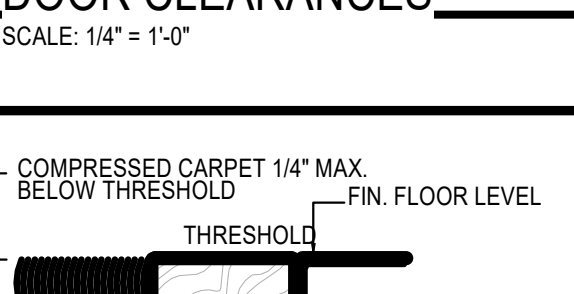
LATCH SIDE APPROACHES - SWINGING DOORS

PULL SIDE

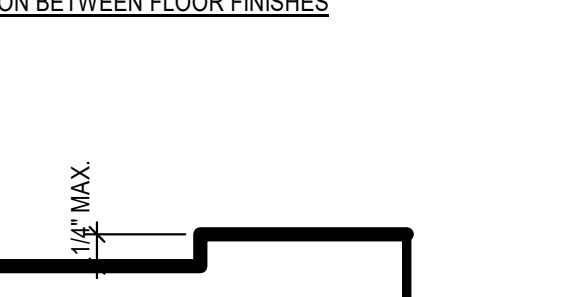


DOORS IN SERIES

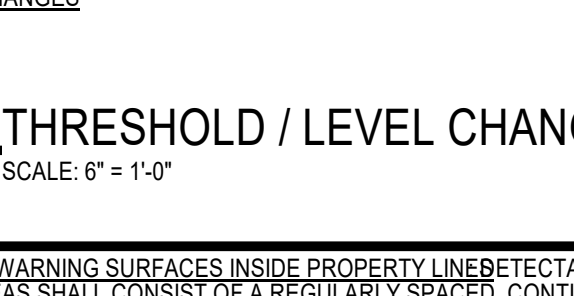
5 DOOR CLEARANCES



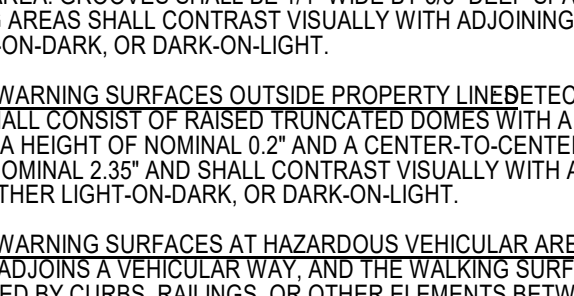
TRANSITION BETWEEN FLOOR FINISHES



LEVEL CHANGES



8 THRESHOLD / LEVEL CHANGES



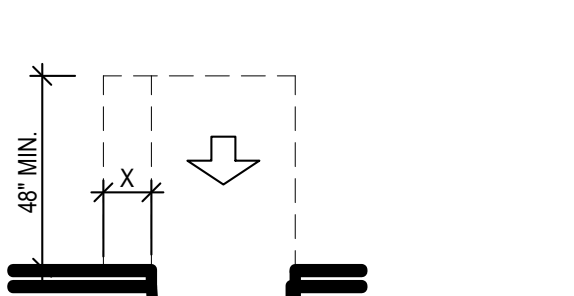
DETECTABLE WARNING SURFACES INSIDE PROPERTY LINES  
WARNING AREAS SHALL CONSIST OF A REGULARLY SPACED, CONTINUOUS PATTERN OF GROOVES RUNNING PERPENDICULAR TO THE RUN OF A CURB RAMP OR PARALLEL TO THE EDGE BETWEEN A CIRCULATION PATH AND A HAZARDOUS AREA. GROOVES SHALL BE 1/4\"/>

DETECTABLE WARNING SURFACES AT HAZARDOUS VEHICULAR AREAS  
A WALK CROSSES OR ADJOINS A VEHICULAR WAY, AND THE WALKING SURFACES ARE NOT SEPARATED BY CURBS, RAILINGS, OR OTHER ELEMENTS BETWEEN THE PEDESTRIAN AREAS AND VEHICULAR AREAS, THE BOUNDARY BETWEEN THE AREAS SHALL BE DEFINED BY A CONTINUOUS DETECTABLE WARNING WHICH IS 36\"/>

10 DETECTABLE WARNING SURFACES

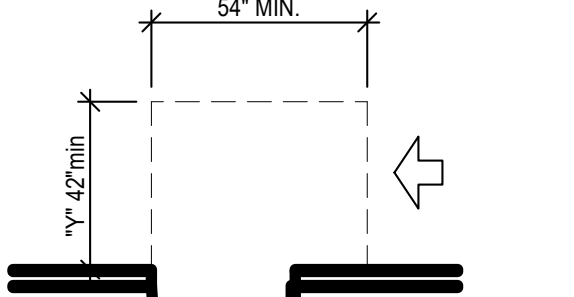


PUSH SIDE



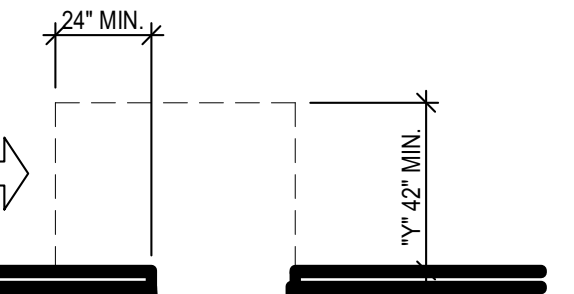
NOTE: X = 12 IN IF DOOR HAS BOTH A LATCH AND CLOSER

PUSH SIDE

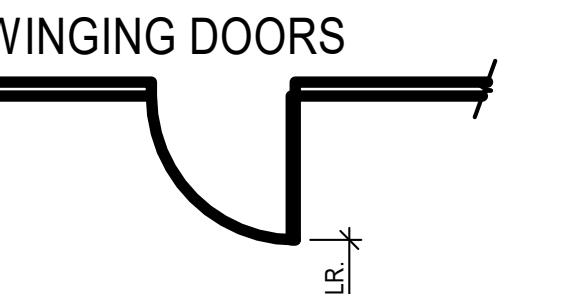


NOTE: Y = 48IN MINIMUM IF DOOR HAS BOTH A LATCH AND CLOSER

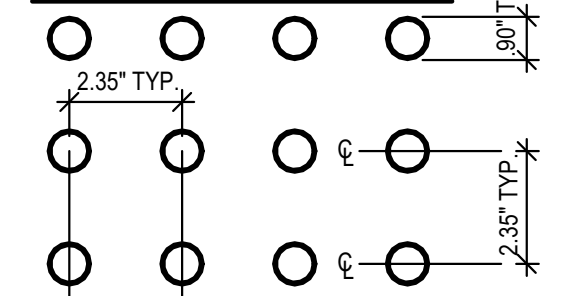
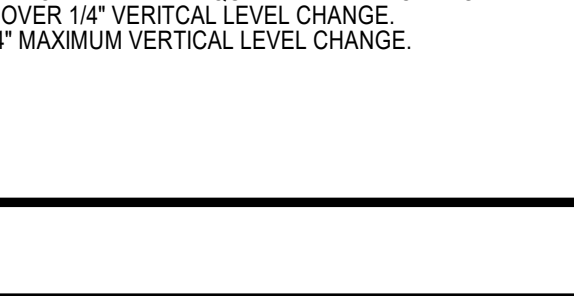
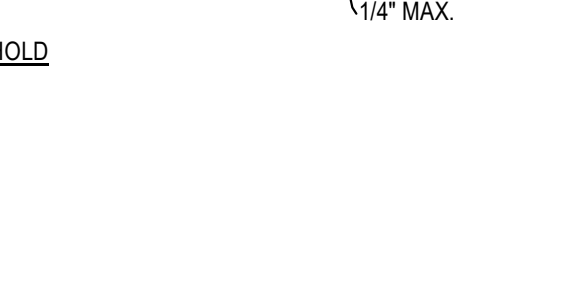
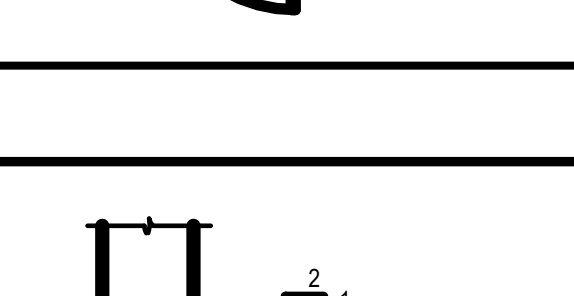
PUSH SIDE



NOTE: Y = 54IN MINIMUM IF DOOR HAS A CLOSER.

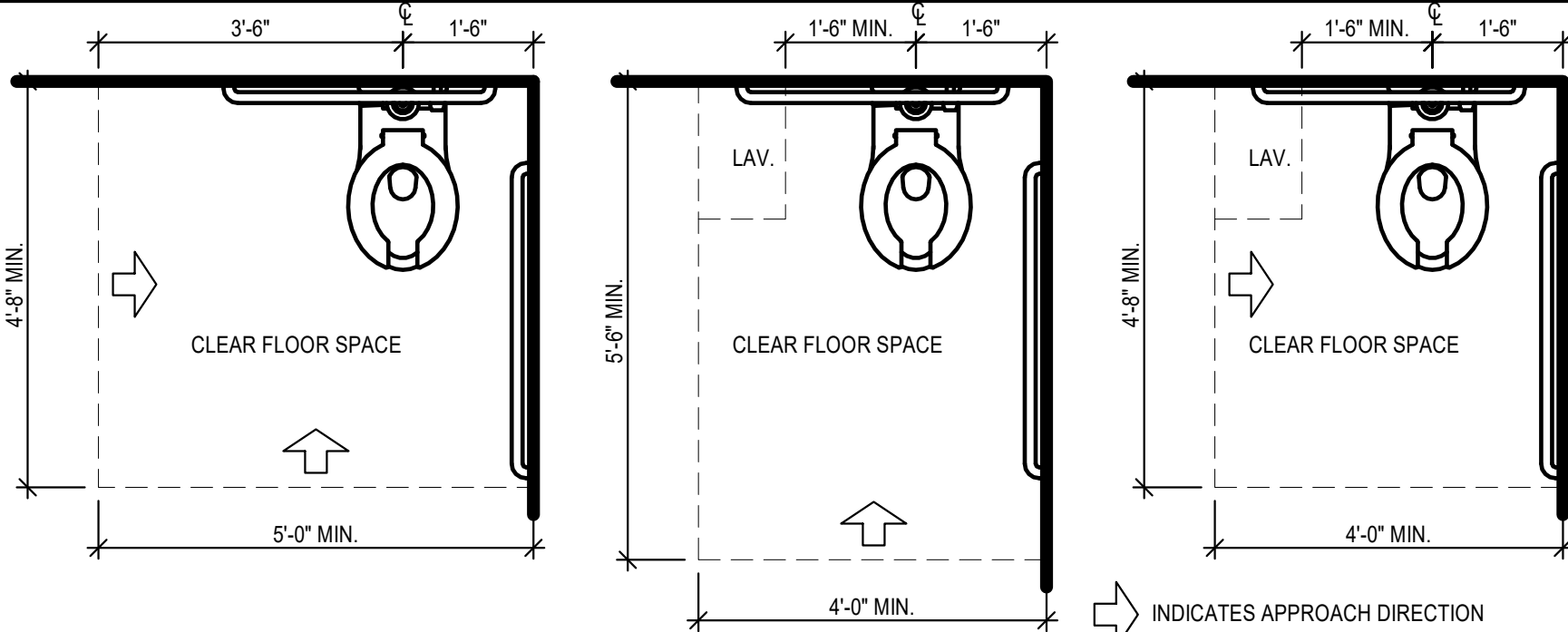
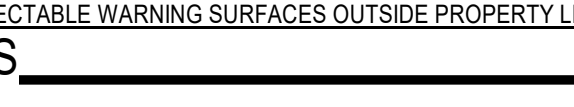


DOORS IN SERIES



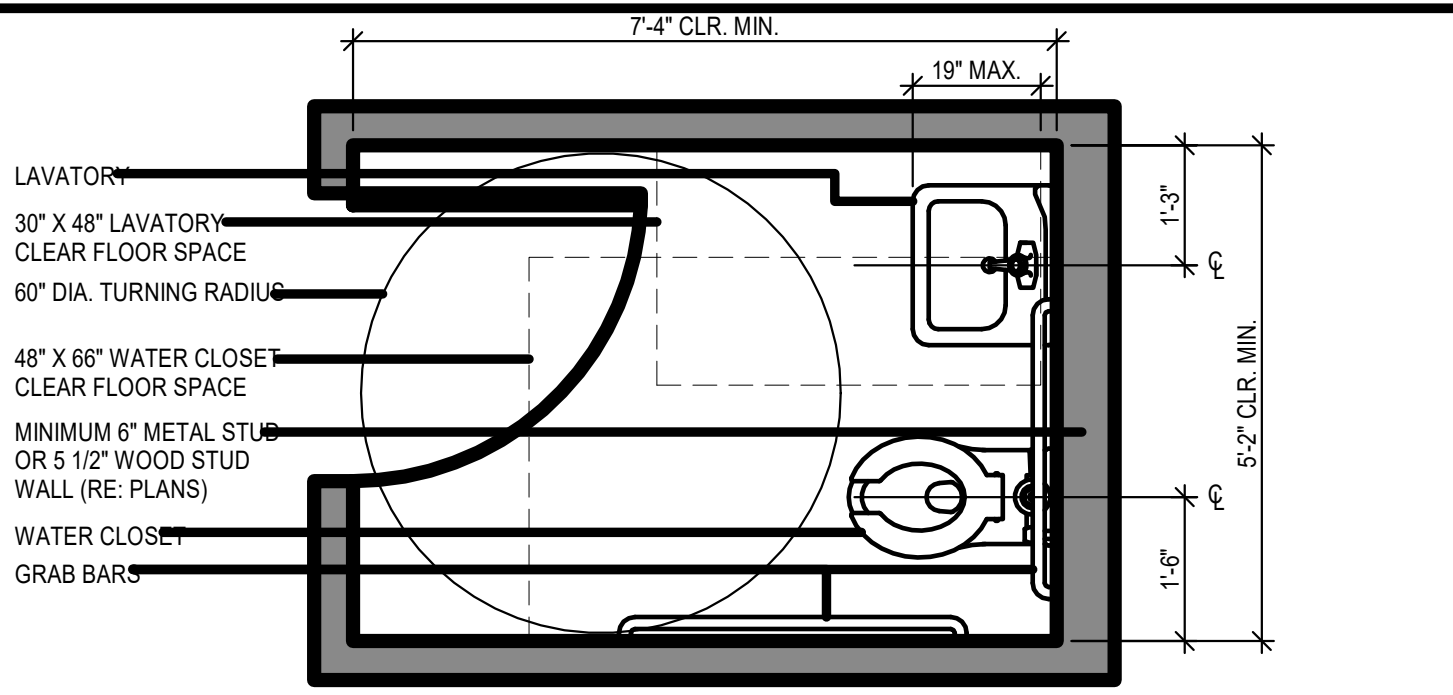
DETECTABLE WARNING SURFACES INSIDE PROPERTY LINES  
WARNING AREAS SHALL CONSIST OF A REGULARLY SPACED, CONTINUOUS PATTERN OF GROOVES RUNNING PERPENDICULAR TO THE RUN OF A CURB RAMP OR PARALLEL TO THE EDGE BETWEEN A CIRCULATION PATH AND A HAZARDOUS AREA. GROOVES SHALL BE 1/4\"/>

DETECTABLE WARNING SURFACES AT HAZARDOUS VEHICULAR AREAS  
A WALK CROSSES OR ADJOINS A VEHICULAR WAY, AND THE WALKING SURFACES ARE NOT SEPARATED BY CURBS, RAILINGS, OR OTHER ELEMENTS BETWEEN THE PEDESTRIAN AREAS AND VEHICULAR AREAS, THE BOUNDARY BETWEEN THE AREAS SHALL BE DEFINED BY A CONTINUOUS DETECTABLE WARNING WHICH IS 36\"/>



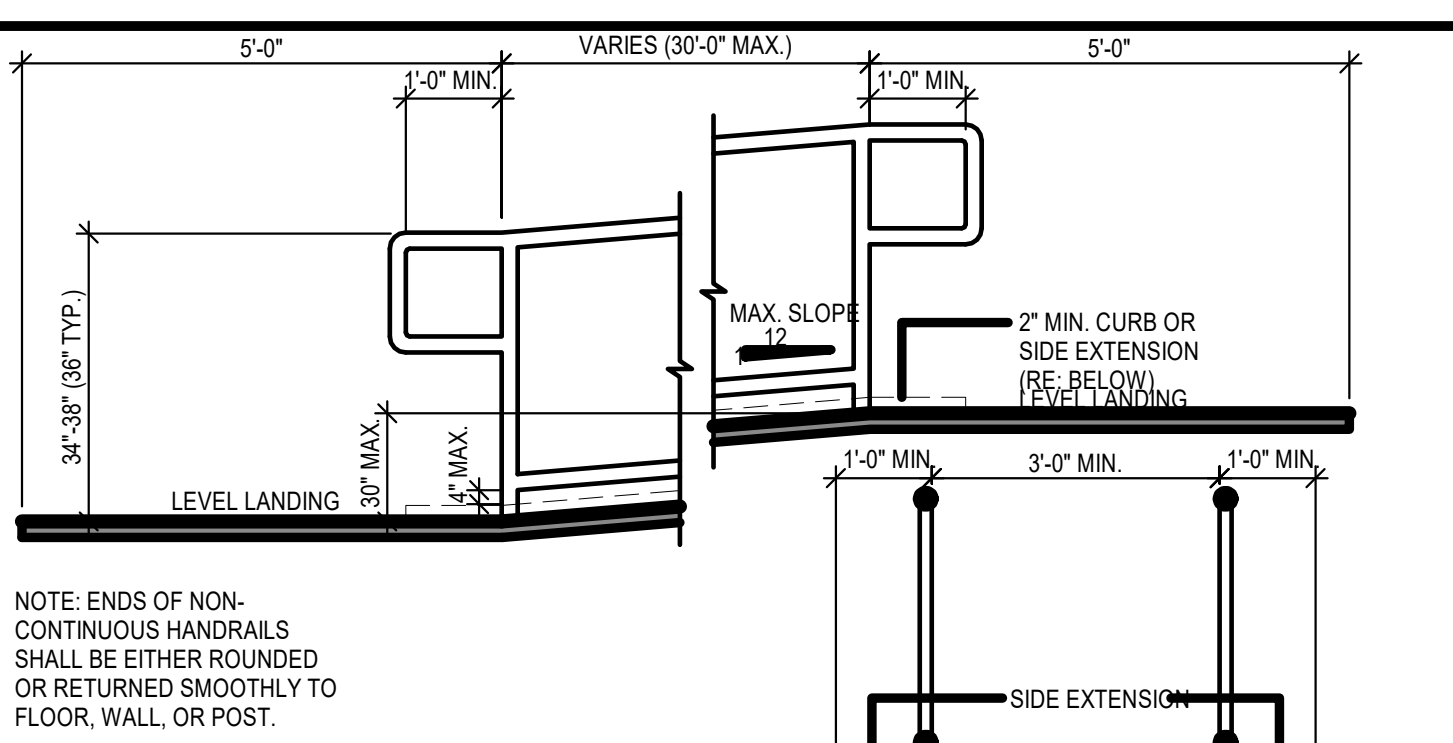
1 CLEAR FLOOR SPACE AT ACCESSIBLE WATER CLOSETS

SCALE: 1/2" = 1'-0"



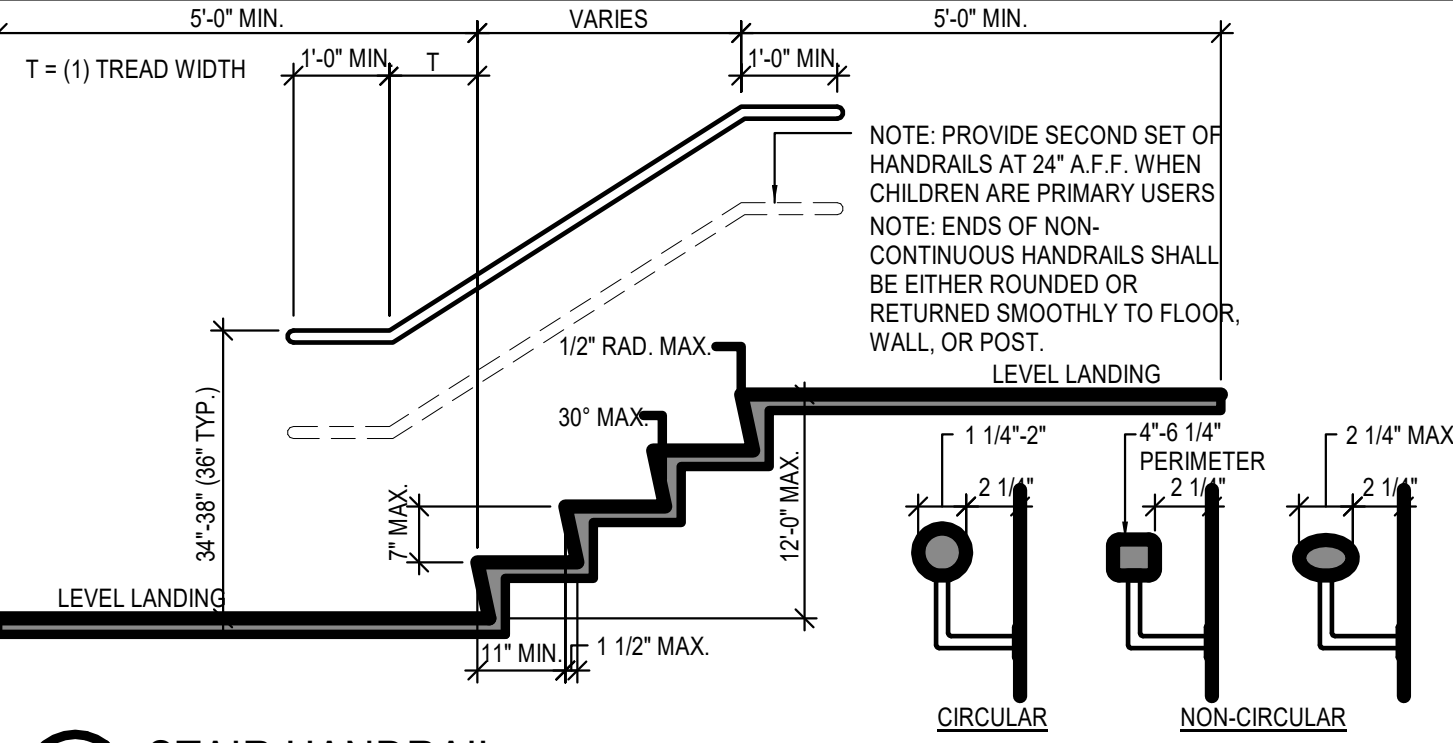
3 STANDARD ACCESSIBLE SINGLE FIXTURE TOILET

SCALE: 1/2" = 1'-0"



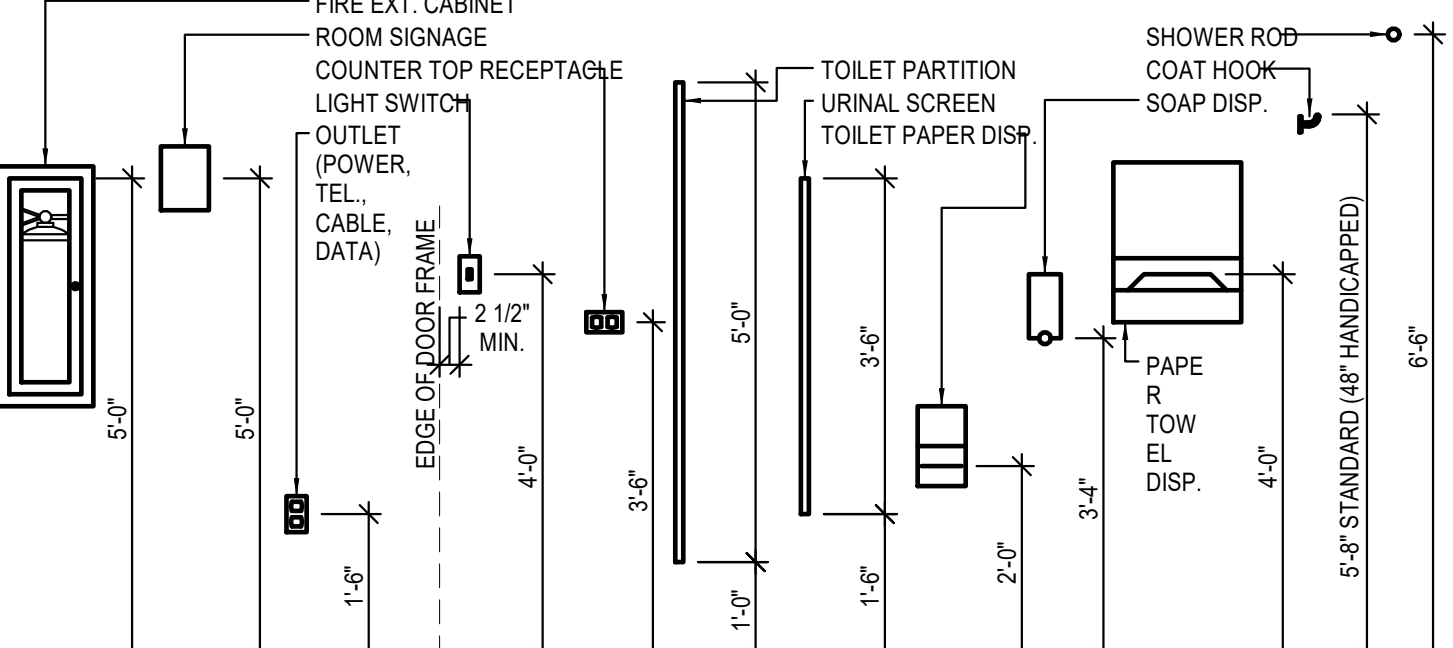
6 RAMP HANDRAIL

SCALE: 1/2" = 1'-0"



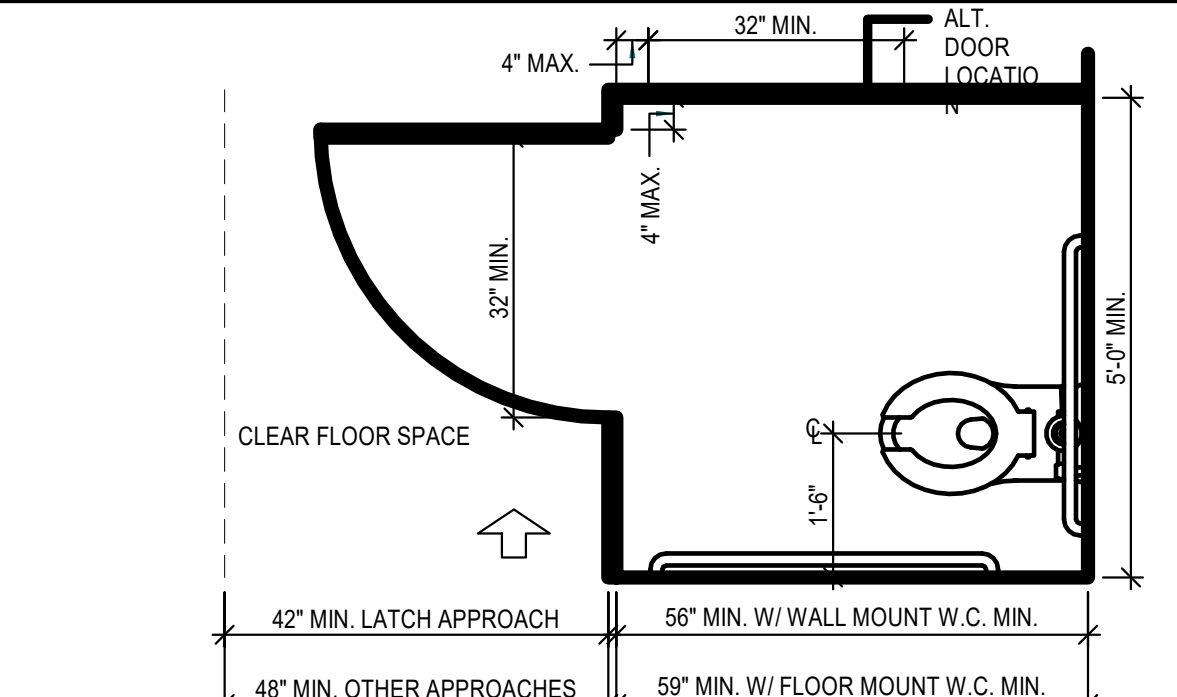
9 STAIR HANDRAIL

SCALE: 1/2" = 1'-0"



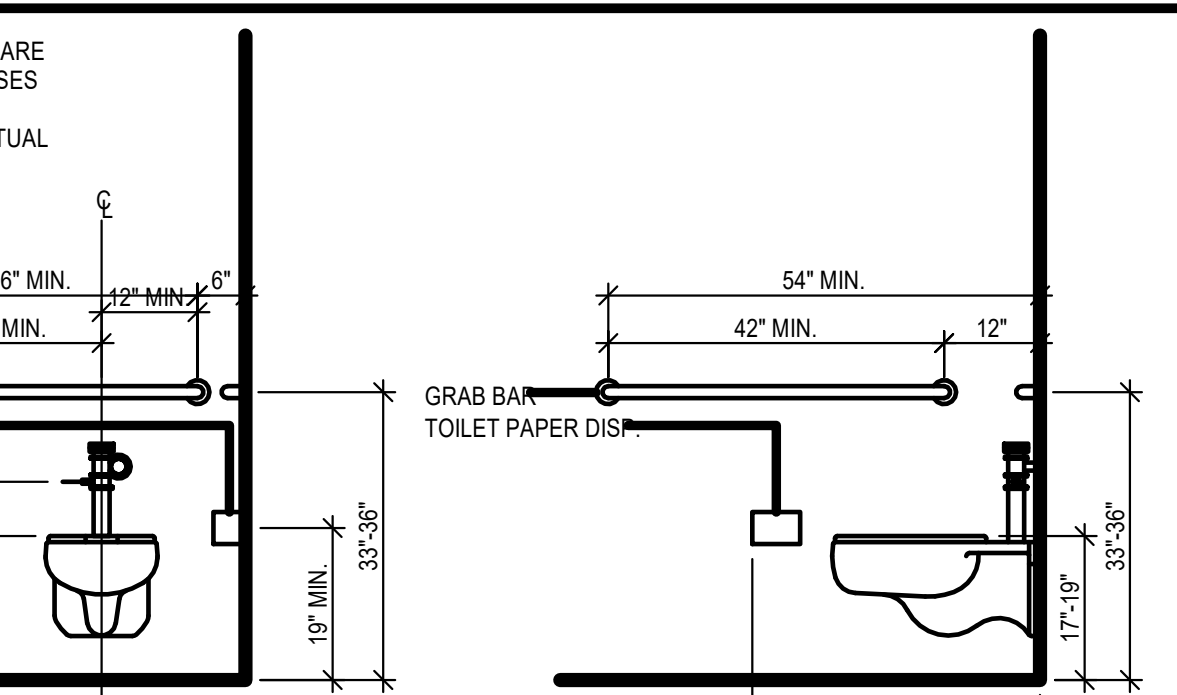
11 STANDARD MOUNTING HEIGHTS

SCALE: 1/2" = 1'-0"



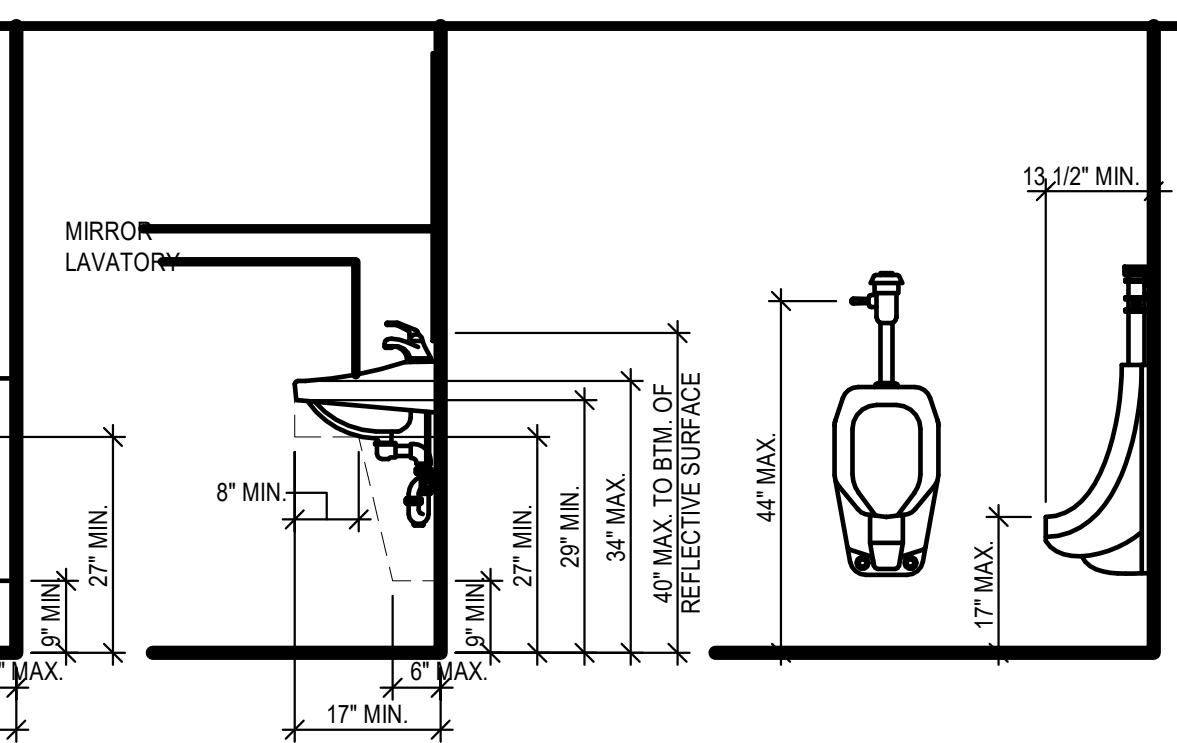
2 ACCESSIBLE TOILET STALL

SCALE: 1/2" = 1'-0"



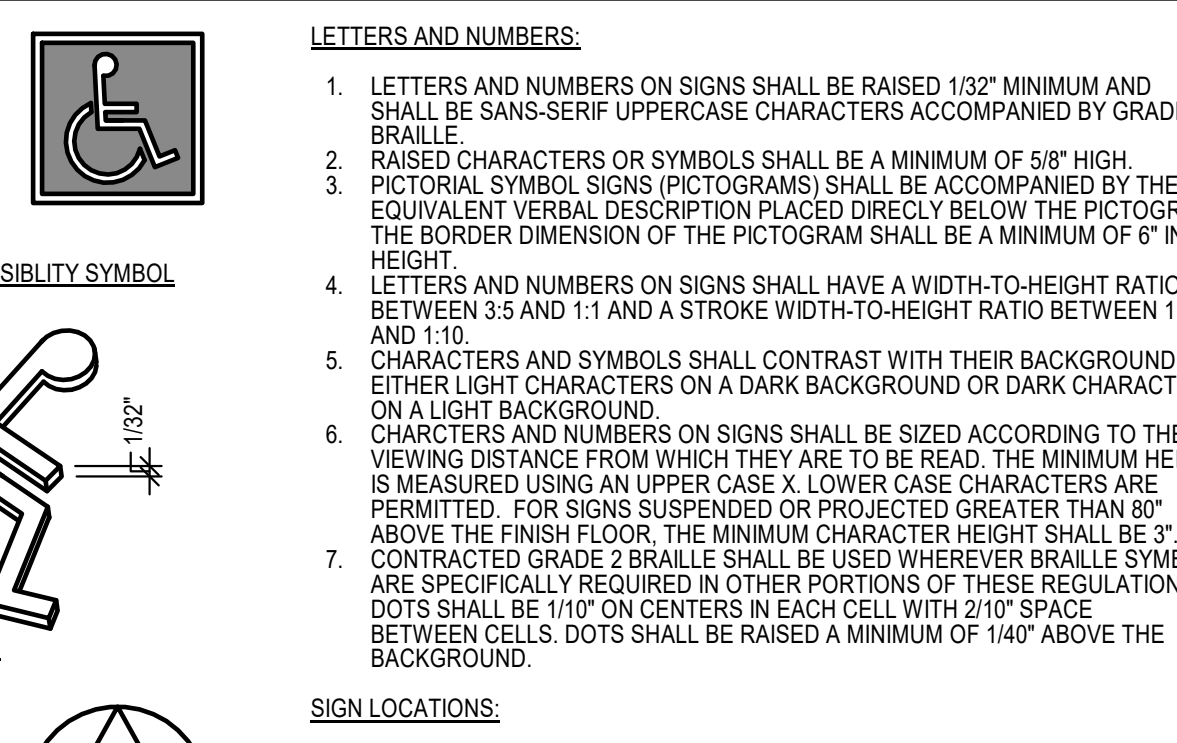
4 MOUNTING HEIGHTS AT ACCESSIBLE WATER CLOSETS

SCALE: 1/2" = 1'-0"



7 ACCESSIBLE E.W.C, LAVATORY AND URINAL

SCALE: 1/2" = 1'-0"



LETTERS AND NUMBERS

- LETTERS AND NUMBERS ON SIGNS SHALL BE RAISED 1/32" MINIMUM AND SHALL BE SANS-SERIF UPPERCASE CHARACTERS ACCOMPANIED BY GRADE 2 BRAILLE.
- RAISED CHARACTERS OR SYMBOLS SHALL BE A MINIMUM OF 5/8" HIGH. PICTORIAL SYMBOL SIGNS (PICTOGRAMS) SHALL BE ACCOMPANIED BY THE EQUIVALENT VERBAL DESCRIPTION PLACED DIRECTLY BELOW THE PICTOGRAM. THE BORDER DIMENSION OF THE PICTOGRAM SHALL BE A MINIMUM OF 6" IN HEIGHT.
- LETTERS AND NUMBERS ON SIGNS SHALL HAVE A WIDTH-TO-HEIGHT RATIO OF BETWEEN 5:5 AND 1:1 AND A STROKE WIDTH-TO-HEIGHT RATIO BETWEEN 1:5 AND 1:10.
- CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND. EITHER LIGHT CHARACTERS ON A DARK BACKGROUND OR DARK CHARACTERS ON A LIGHT BACKGROUND.
- CHARACTERS AND NUMBERS ON SIGNS SHALL BE SIZED ACCORDING TO THE VIEWING DISTANCE FROM WHICH THEY ARE TO BE READ. THE MINIMUM HEIGHT IS MEASURED USING AN UPPER CASE X. LOWER CASE CHARACTERS ARE PERMITTED. FOR SIGNS SUSPENDED OR PROJECTED GREATER THAN 80" ABOVE THE FINISH FLOOR, THE MINIMUM CHARACTER HEIGHT SHALL BE 3". CONTRACTED GRADE 2 BRAILLE SHALL BE USED WHEREVER BRAILLE SYMBOLS ARE SPECIFICALLY REQUIRED IN OTHER PORTIONS OF THESE REGULATIONS. DOTS SHALL BE 1/10" ON CENTERS IN EACH CELL WITH 2/10" SPACE BETWEEN CELLS. DOTS SHALL BE RAISED A MINIMUM OF 1/40" ABOVE THE BACKGROUND.

SIGN LOCATIONS

- ALL BUILDING ENTRANCES THAT ARE ACCESSIBLE TO AND USABLE BY PERSONS WITH DISABILITIES AND AT EVERY MAJOR JUNCTION ALONG OR LEADING TO AN ACCESSIBLE ROUTE OF TRAVEL SHALL BE IDENTIFIED WITH A SIGN DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY AND WITH ADDITIONAL DIRECTIONAL SIGNS, AS REQUIRED, TO BE VISIBLE TO PERSONS ALONG APPROACHING PEDESTRIAN WAYS.
- WHEN PERMANENT IDENTIFICATION IS PROVIDED FOR ROOMS AND SPACES, RAISED LETTERS SHALL BE PROVIDED AND SHALL BE ACCOMPANIED BY BRAILLE. SIGNS SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR, WHERE THERE IS NO WALL SPACE ON THE LATCH SIDE, INCLUDING AT LEAF DOORS, SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL, PREFERABLY ON THE RIGHT. MOUNTING HEIGHT SHALL BE 60" ABOVE THE FINISH FLOOR TO THE CENTERLINE OF THE SIGN. MOUNTING LOCATION SHALL BE DETERMINED SO THAT THE PERSON MAY APPROACH WITHIN 2' OF THE SIGNAGE WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR STANDING WITHIN THE SWING OF A DOOR.
- ADDITIONAL DIRECTIONAL SIGNS ALONG ACCESSIBLE PATH OF TRAVEL ARE REQUIRED.
- BUILDINGS REMODELED TO PROVIDE ACCESSIBLE SANITARY FACILITIES FOR PUBLIC USE SHALL HAVE INFORMATION POSTED IN THE LOBBY AS PART OF THE BUILDING DIRECTORY.

INTERNATIONAL SYMBOL OF ACCESSIBILITY

- STANDARD USED TO IDENTIFY ACCESSIBLE FACILITIES.
- WHITE FIGURE ON BLUE BACKGROUND.
- WHEN ENFORCING AGENCY DETERMINES, IF APPROPRIATE, SPECIAL DESIGNS AND COLORS MAY BE APPROVED.

BRAILLE

- USE CONTRACTED GRADE 2 BRAILLE. DOTS TO BE 0.1 INCH ON CENTER IN EACH CELL.
- 0.2 INCH SPACE BETWEEN CELLS.
- DOTS RAISED MINIMUM 0.025 INCH ABOVE BACKGROUND.

12 ACCESSIBLE SIGNAGE

SCALE: NO SCALE

NOT FOR CONSTRUCTION

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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: *Matthew Sargent*

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

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: 02/17/12  
PROJ. ARCHITECT: Designer

STANDARDS  
SHEET NO.  
**G2.00**  
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.

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4.	ES-2	EROSION CONTROL DETAILS
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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
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12.	C-4.2	SITE DETAILS
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14.	C-4.4	DRAINAGE DETAILS
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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



REVISION	BY
1 10/24/2024 REVISED PER CITY	KRG

HIGH TIDE

CONSULTANTS LLC

434 N. COLUMBIA ST, SUITE 200A

COVINGTON, LA 70433

www.hightidela.com

SIGNATURE

OCTOBER 24, 2024

DATE

STATE OF MISSOURI

B. SHANE GUIN

NUMBER 202100076

ENGINEER

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 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

1. 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.
3. CONTOURS SHOWN HEREON ARE 1 FOOT INTERVALS AND BASED NAVD88.
4. BASIS OF BEARINGS: MISSOURI STATE PLANE, WEST ZONE.
5. CLASS OF SURVEY: URBAN
6. 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."

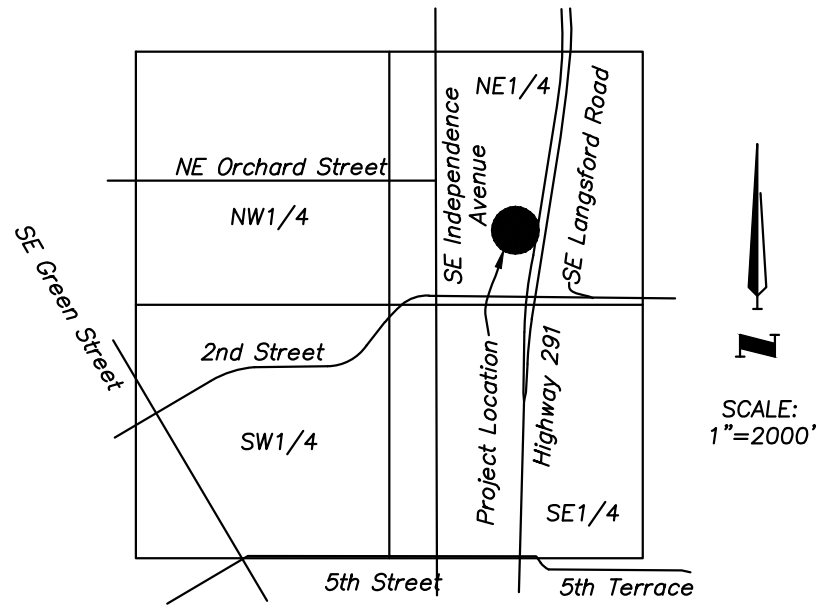
LEGAL DESCRIPTION PER TITLE COMMITMENT

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 15 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
- SC = SECTION CORNER
- SCO = SEWER CLEAN OUT
- W = WATER MARKER
- WV = WATER VALVE
- WS = WOOD SIGN
- B = BOLLARD
- G = GAS METER
- L = 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.

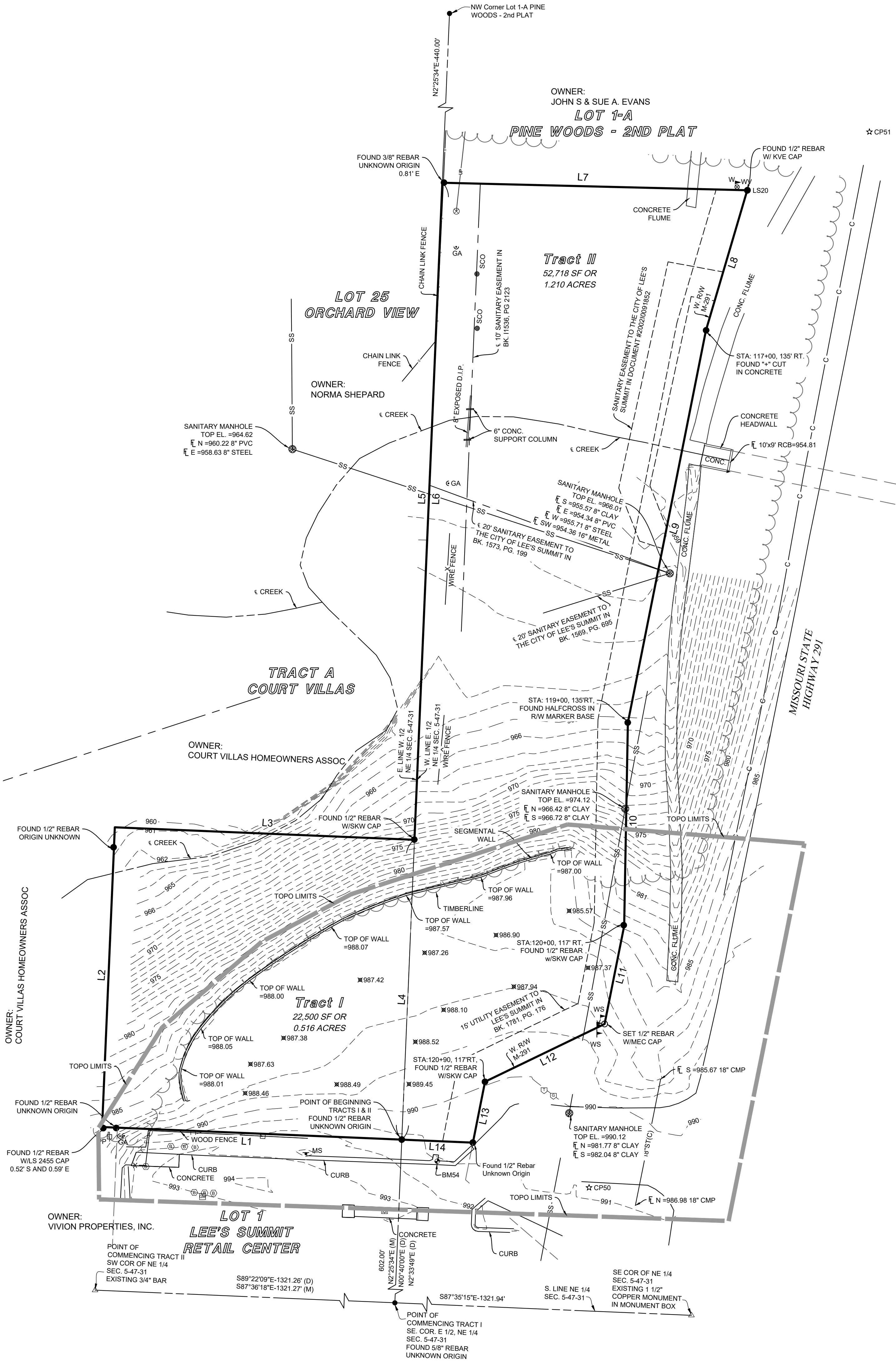
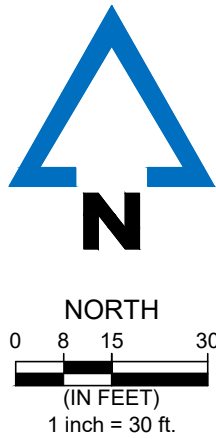
CP 52  
MAG & SHINER IN THE TOP OF A CURB AT THE NORTH END OF YELLOW NO PARKING.  
1. WEST 28.0 FEET TO THE EAST END OF AN ISLAND.  
2. EAST 41.8 FEET TO THE WEST EDGE OF HIGHWAY 291.  
3. SOUTH 36.8 FEET TO A FIRE HYDRANT.

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) S1°03'29"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

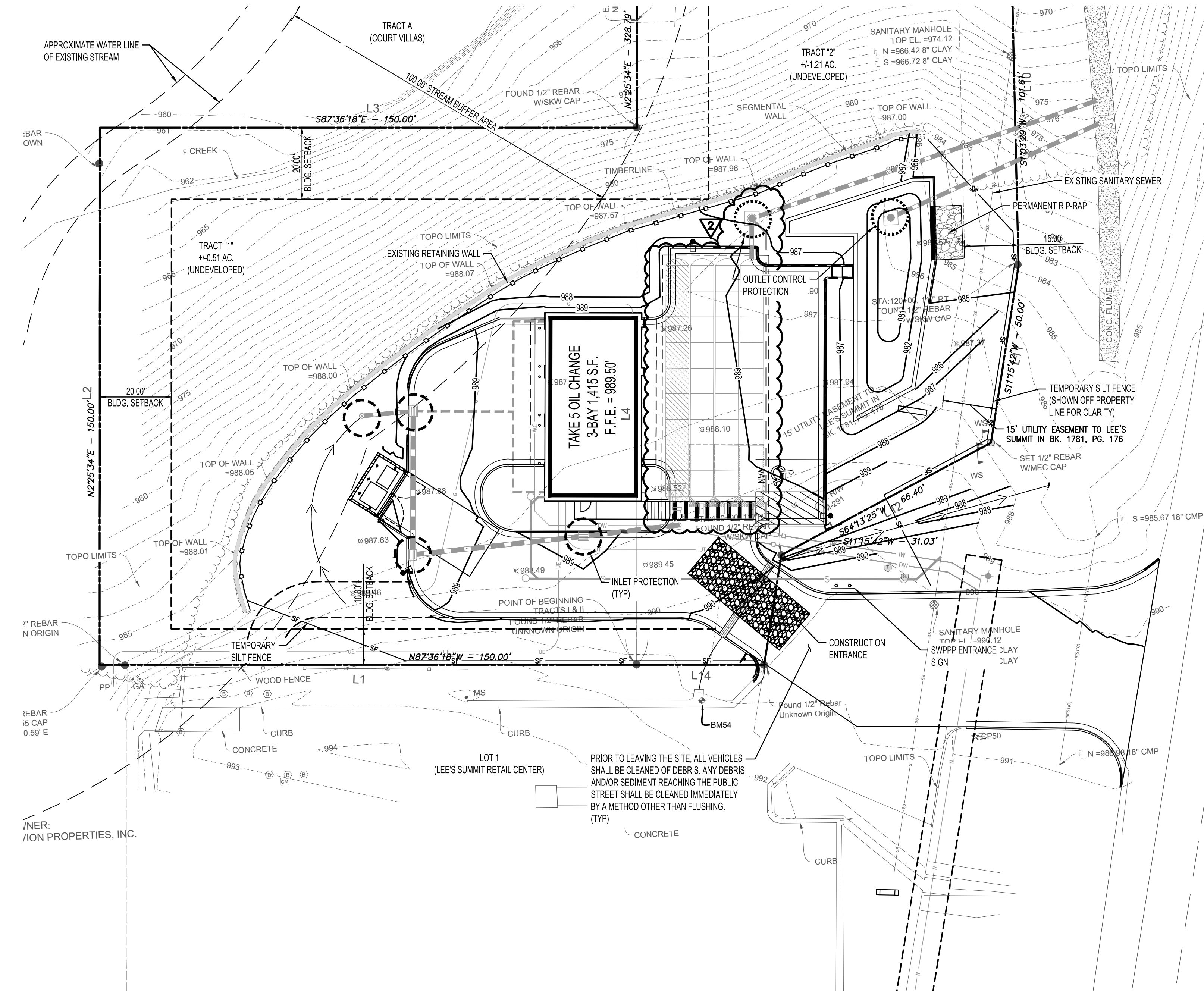
THE UTILITIES DEPICTED ON THIS DOCUMENT HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES OR SUBSURFACE FEATURES SHOWN COMPRISE ALL SUCH ITEMS IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT 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







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

### EROSION CONTROL NOTES:

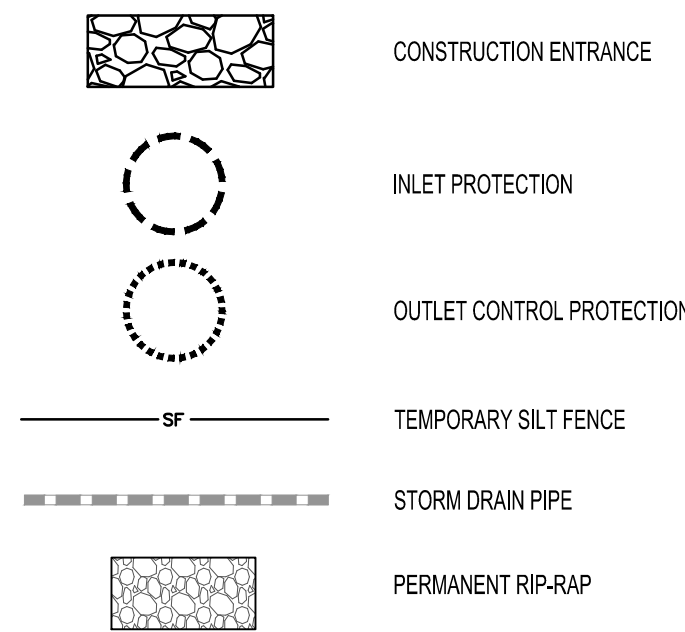
- SEDIMENT AND EROSION CONTROL FACILITIES AND STORM DRAINAGE FACILITIES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN EROSION CONTROL FACILITIES DURING THE ENTIRE CONSTRUCTION PERIOD. FACILITIES ARE NOT TO BE REMOVED UNTIL COMPLETION OF THE PROJECT.
- ADDITIONAL EROSION CONTROL BMP'S MAY BE REQUIRED AS DEEMED NECESSARY BY GOVERNING AUTHORITIES.
- SILT FENCES SHALL BE CLEANED OR REPLACED WHEN SILT BUILDS UP TO  $\frac{1}{2}$  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, & RESEED 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.

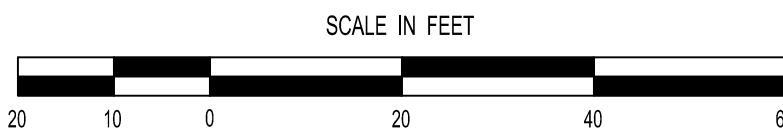
### EROSION CONTROL LEGEND



REFER TO SURVEY SHEETS FOR LEGEND OF EXISTING FEATURES

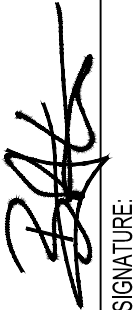


## EROSION CONTROL PLAN



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

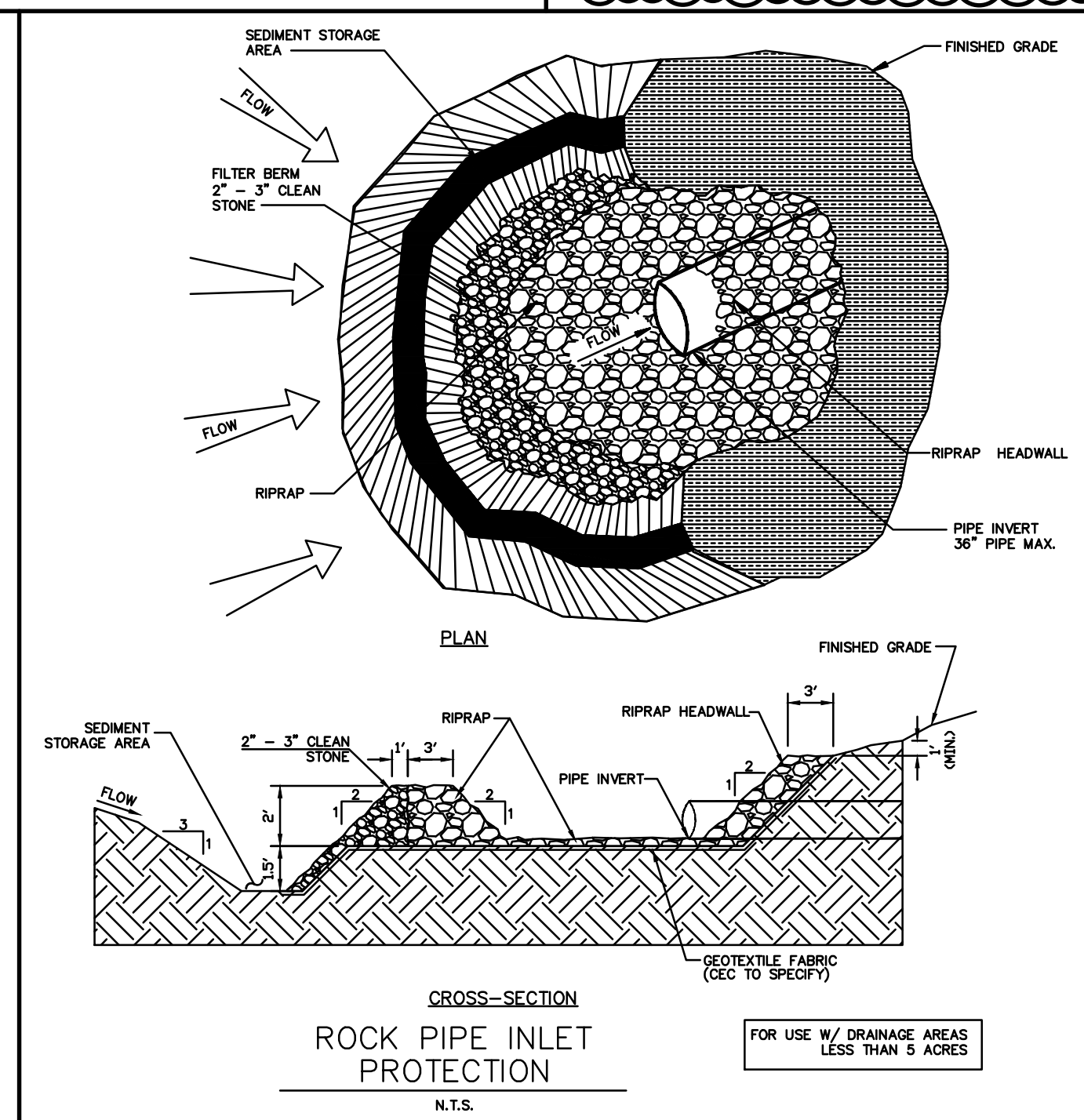
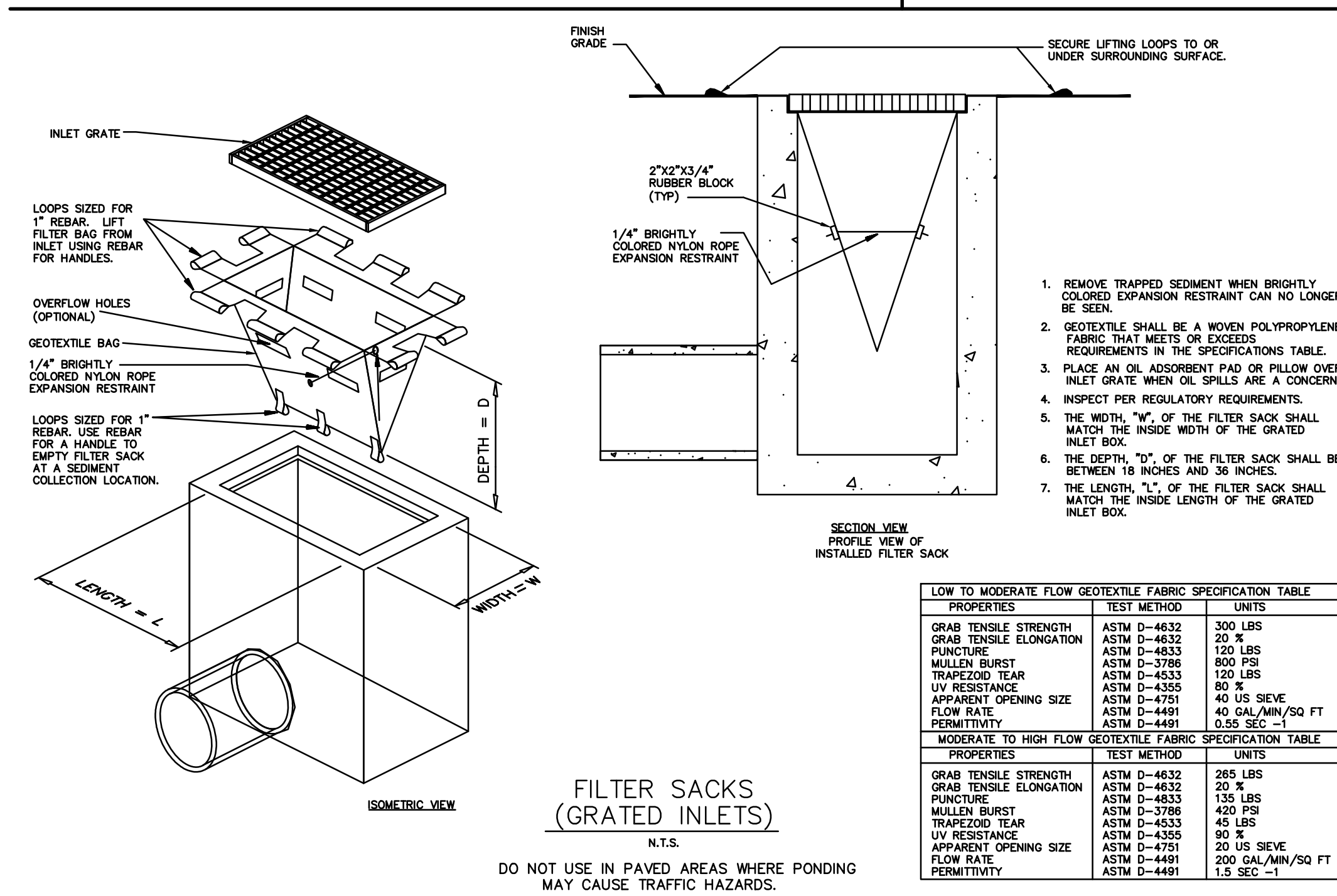
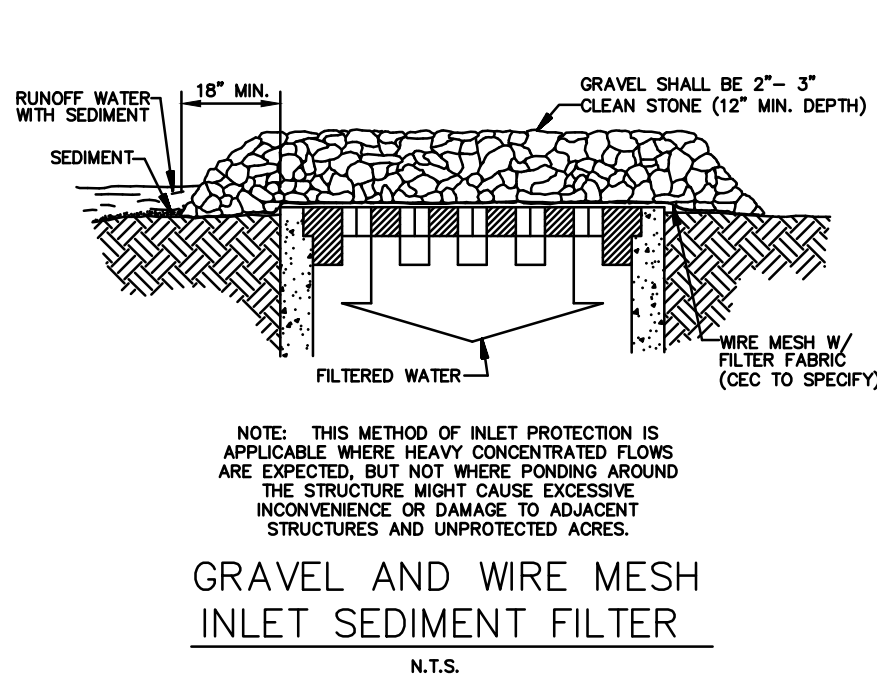
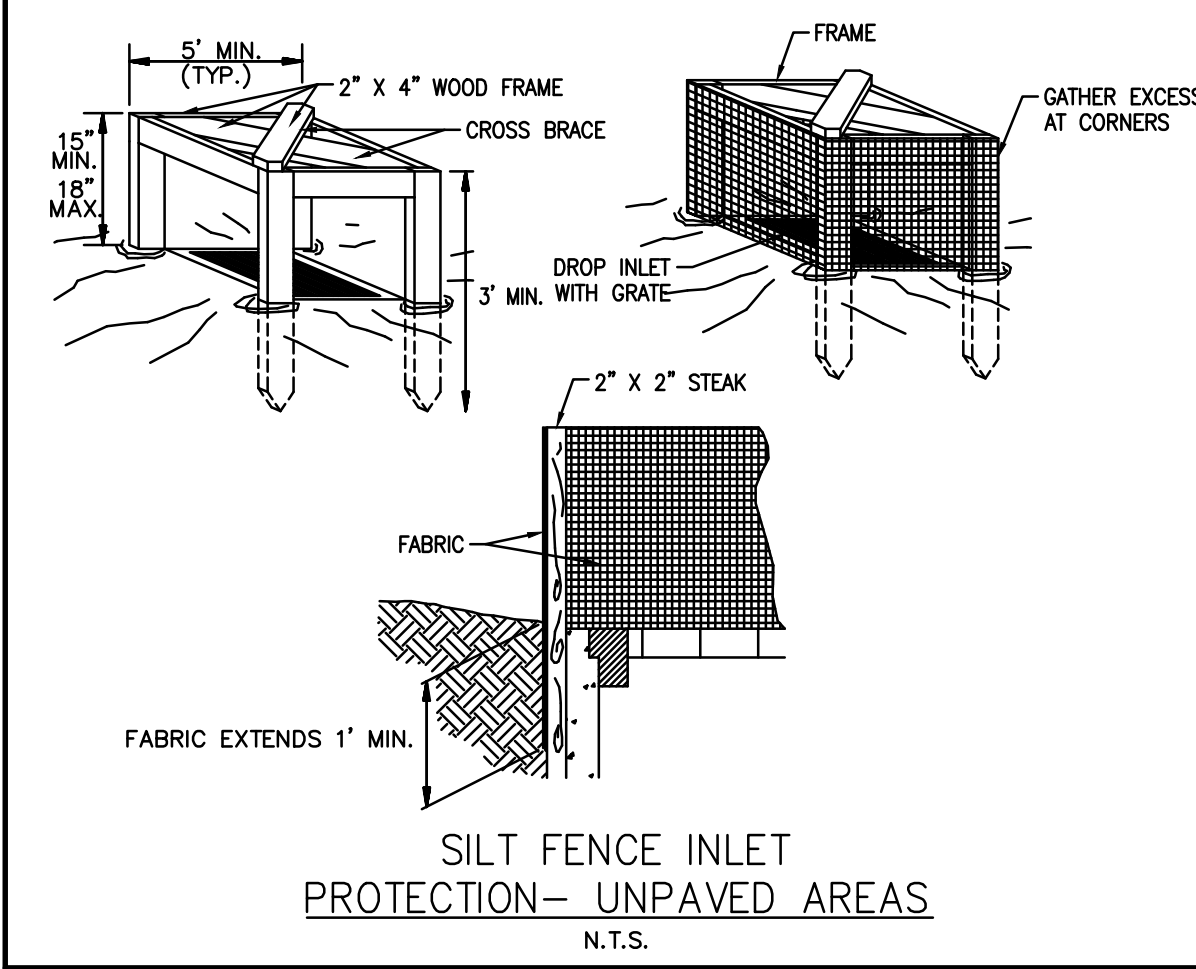
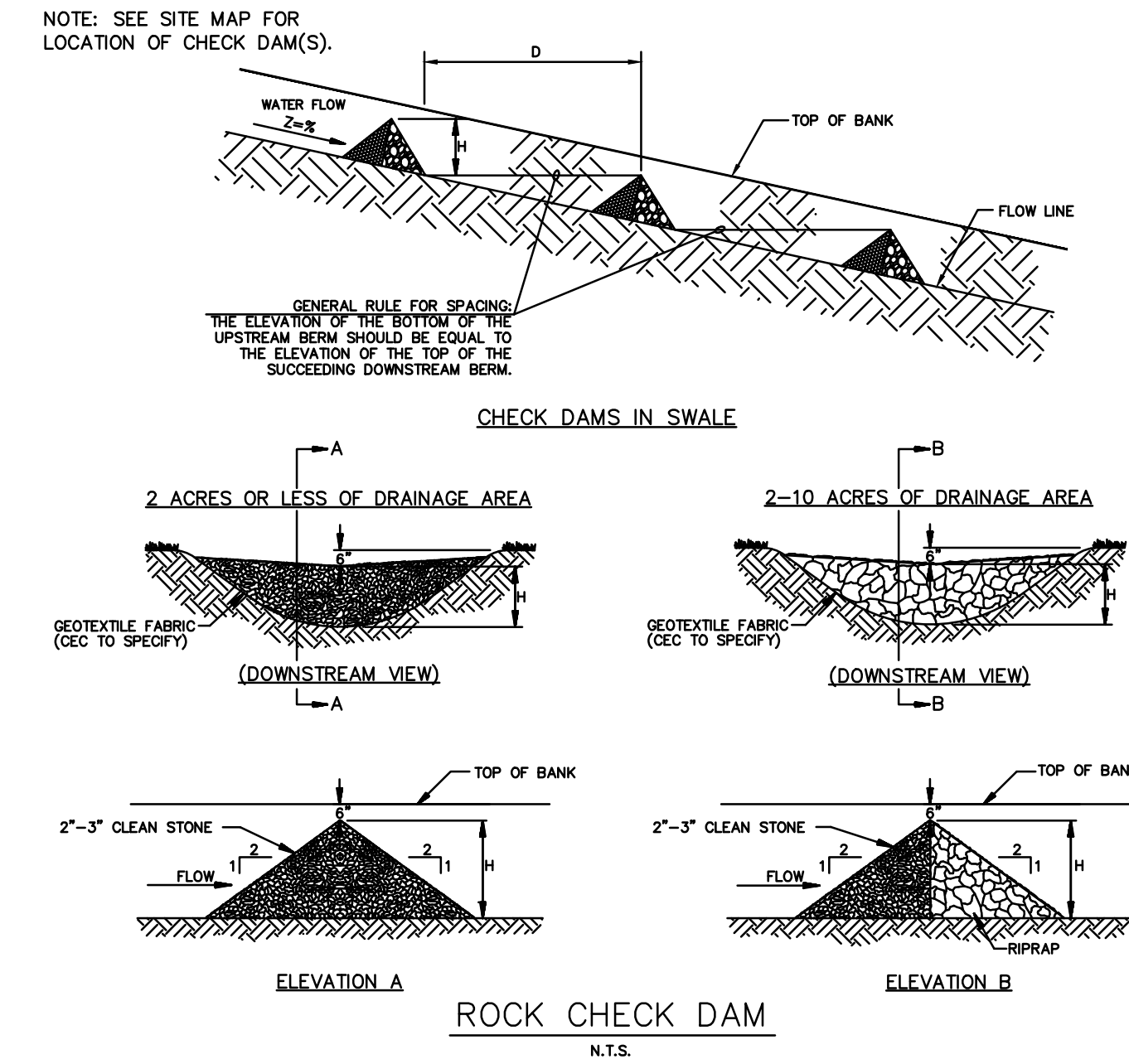
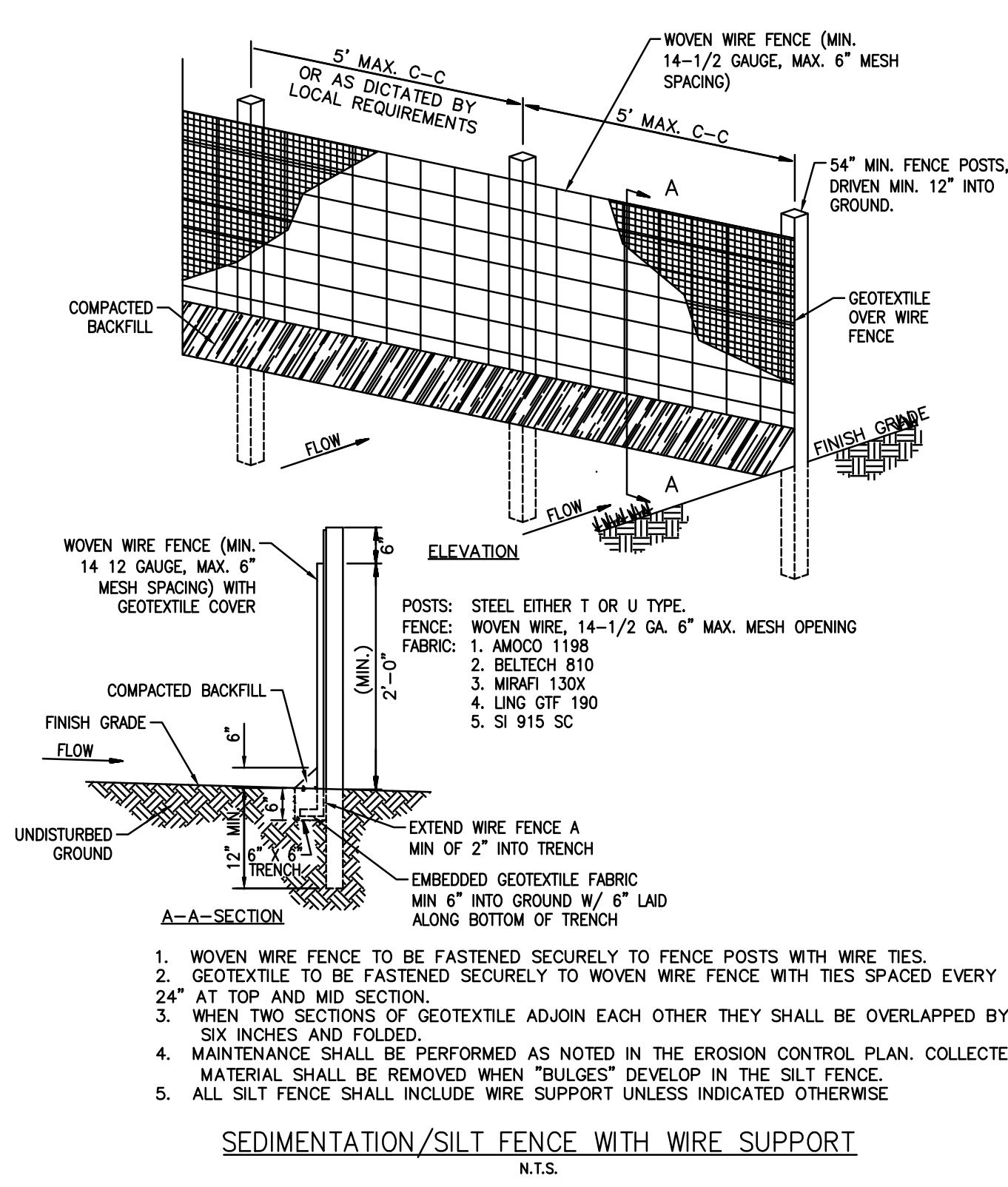
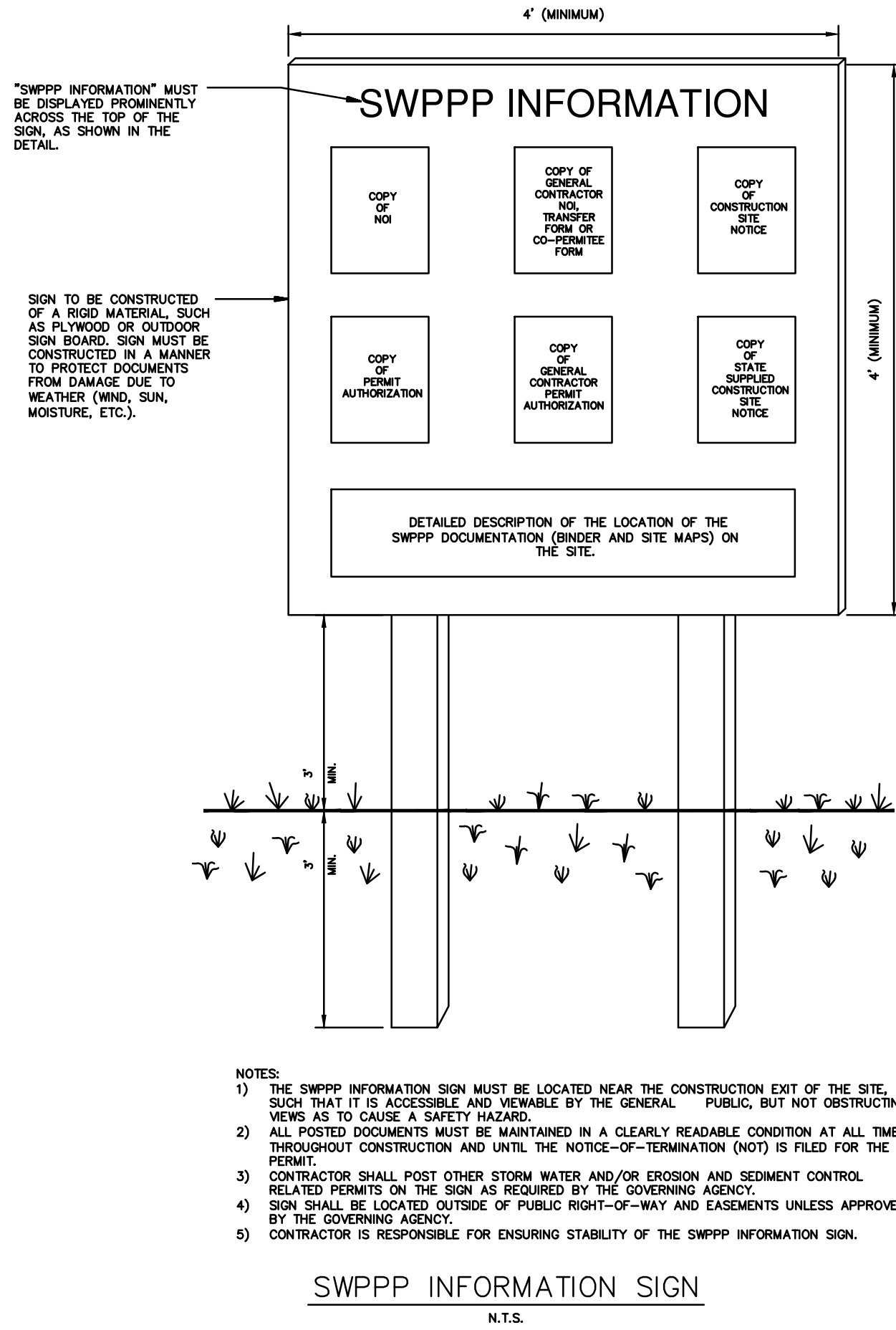
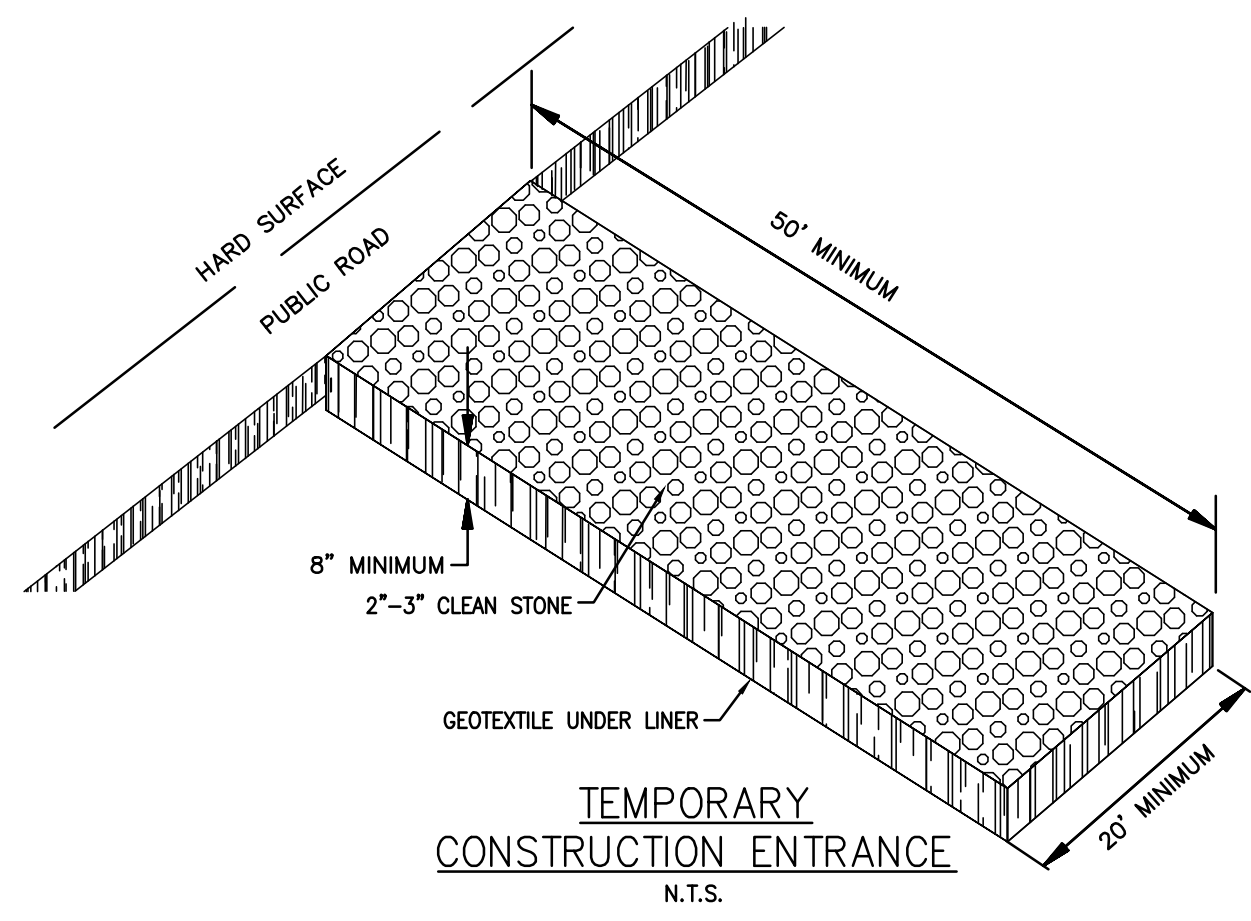
**HIGH TIDE**  
**CONSULTANTS LLC**  
434 N. COLUMBIA ST, SUITE 200A  
COVINGTON, LA 70433  
www.hightidela.com

Signature:   
DATE: DECEMBER 16, 2024  
Professional Engineer Seal: B. SHANE, ENGINEER, MISSOURI, LICENSE 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: 07/30/2024  
ISSUED FOR: PERMITTING  
PROJECT NO.: 22-218  
FILE: 22-218 ES-1 Erosion Control Plan  
SHEET: ES-1





# EROSION CONTROL DETAILS

REVISION	BY
10/24/2024 REVISED PER CITY	KRG

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

**STATE OF MISSOURI**  
B. SHANE GUIN  
ENGINEER  
NUMBER 202100076  
DATE: OCTOBER 24, 2024

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

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





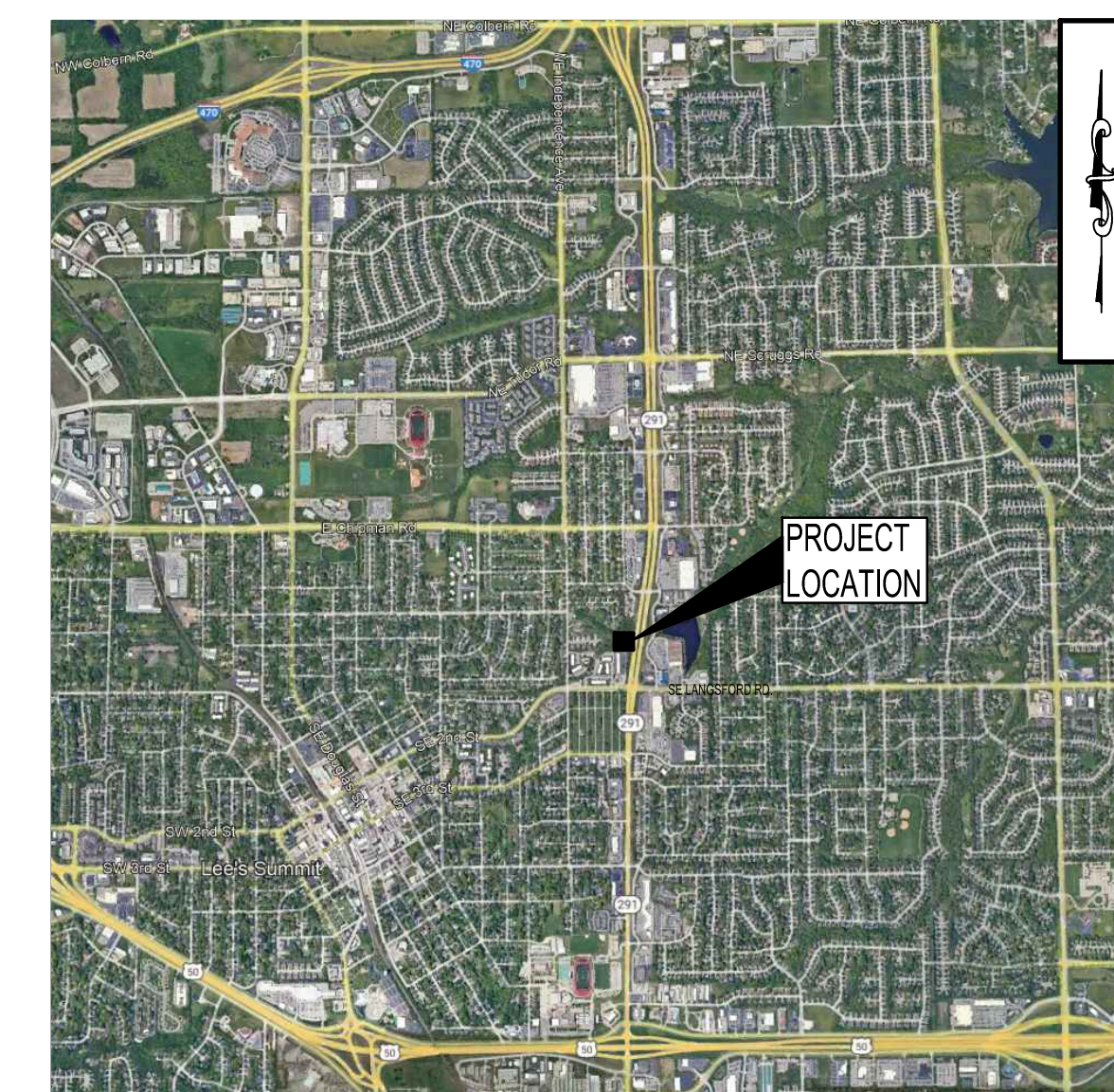
**HIGH TIDE**  
**CONSULTANTS LLC**  
434 N. COLUMBIA ST, SUITE 200A  
COVINGTON, LA 70433  
[www.hightide-la.com](http://www.hightide-la.com)

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

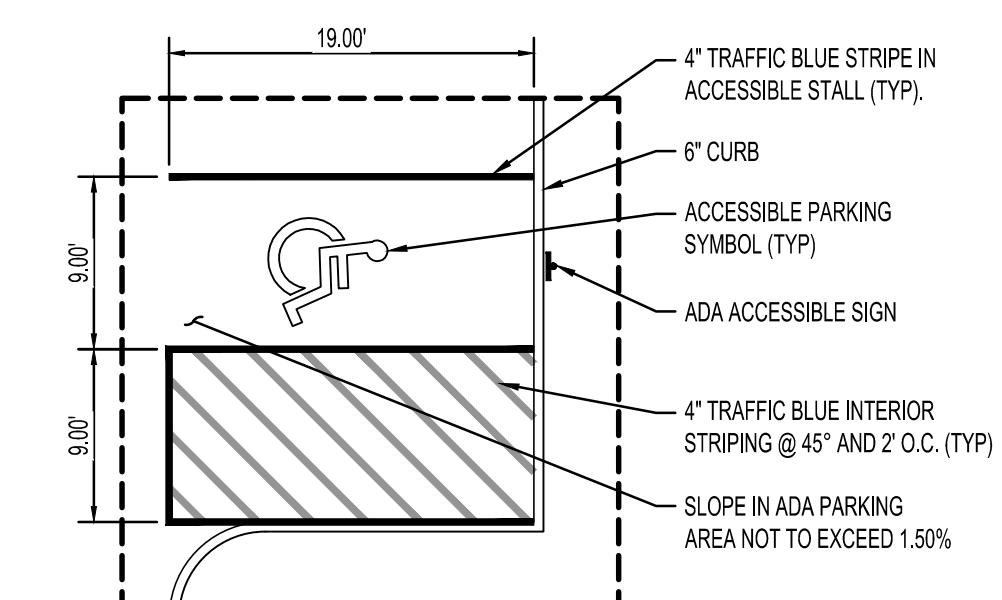
NTS

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		STANDARD DUTY CONCRETE PAVEMENT
	PROPOSED BUILDING		HEAVY DUTY CONCRETE CURB
	CG-1 CONCRETE CURB		HEAVY DUTY REINFORCED CONCRETE DUMPSTER PAD
	CG-1 CONCRETE CURB w/ PAVEMENT TURN DOWN		STAINED CONCRETE
	PARKING COUNT		SIDEWALK
	SITE LIGHTING FIXTURE		
	3' FLUME		

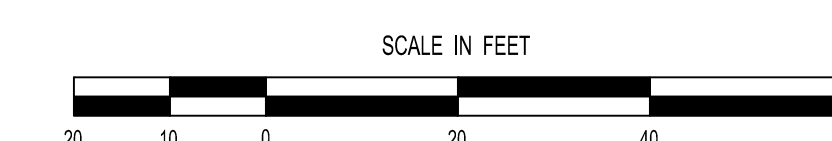
REFER TO SURVEY SHEETS FOR  
LEGEND OF EXISTING FEATURES



ADA DETAIL

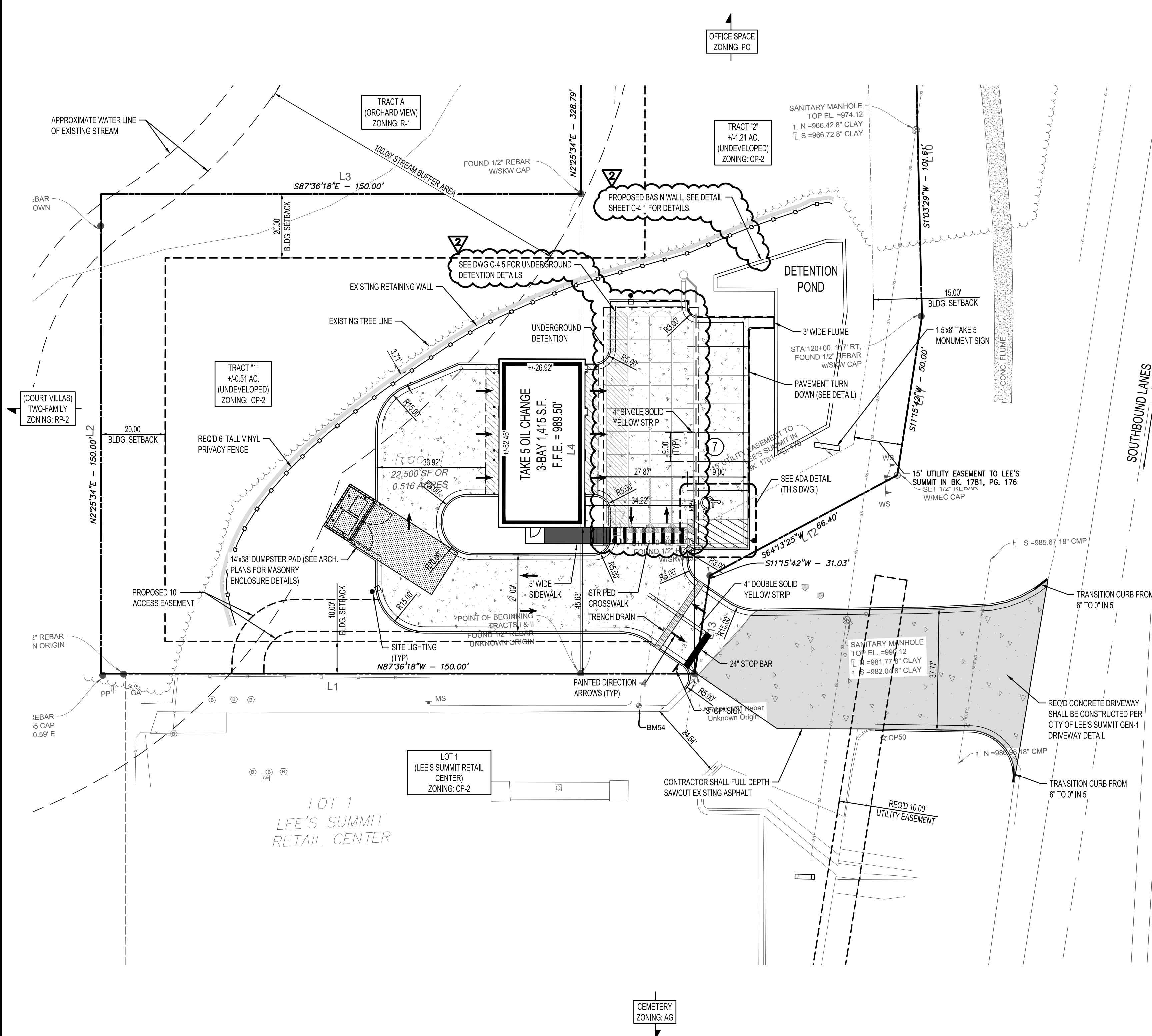


# SITE PLAN



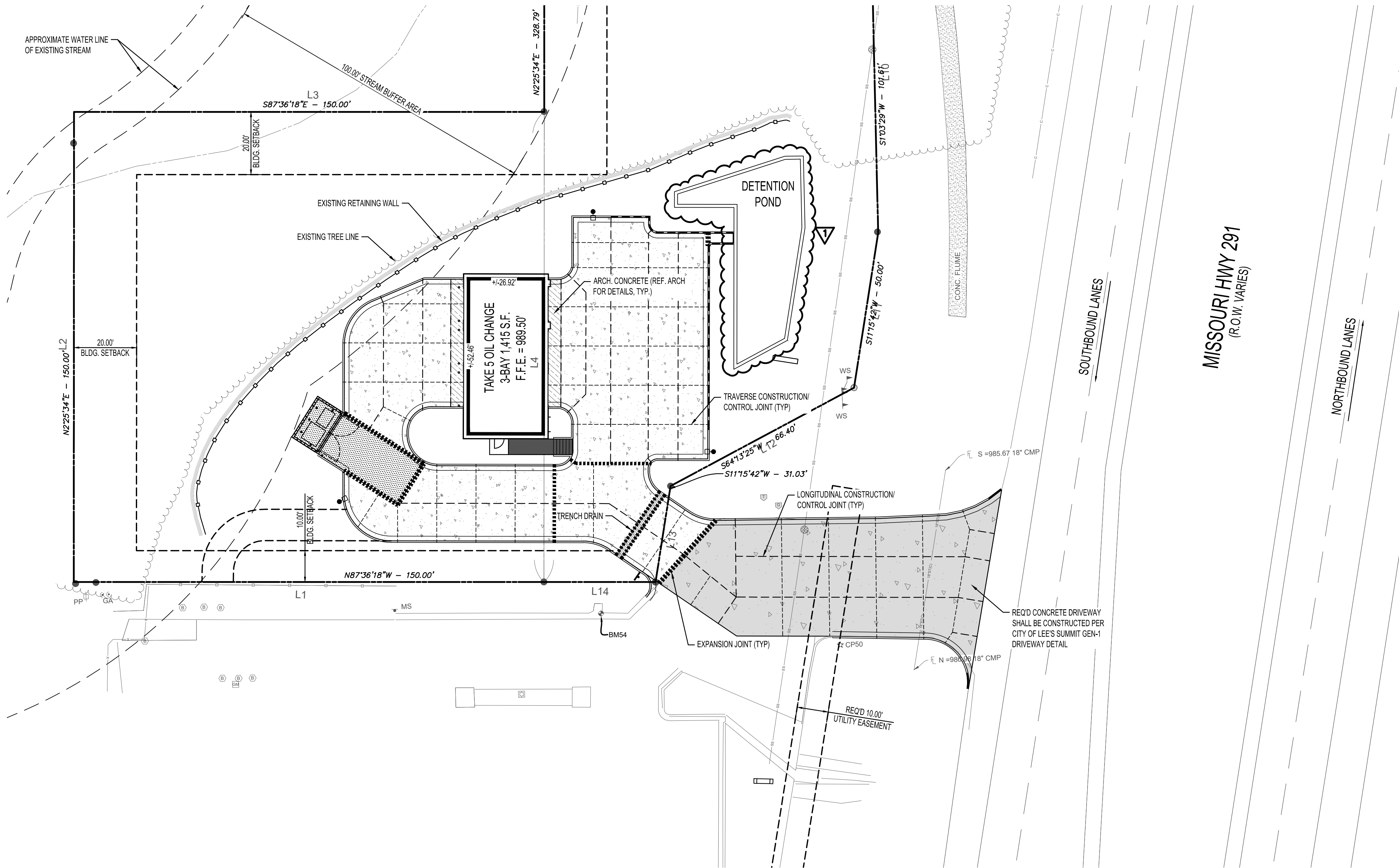
SITE DATA SUMMARY	
ZONING	CP-2
PROPOSED USE	AUTOMOBILE SERVICE
BUILDING AREA (GROSS SQUARE FOOTAGE)	1,415 S.F.
LAND AREA	21,501.56 S.F.
IMPERVIOUS SURFACE	10,042.20 S.F.
FLOOR AREA RATIO (FAR)	1,415/20,501 = 0.07 < 0.55 MAX

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.

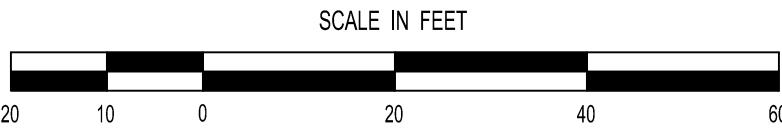
LEGEND

	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
	3' FLUME		LONGITUDINAL CONSTRUCTION/CONTROL JOINT
			TRAVERSE CONSTRUCTION/CONTROL JOINT
			EXPANSION JOINT

REFER TO SURVEY SHEETS FOR  
LEGEND OF EXISTING FEATURES.



JOINT LAYOUT  
PLAN



REVISION	BY
10/24/2024 REVISED PER CITY	KRG

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

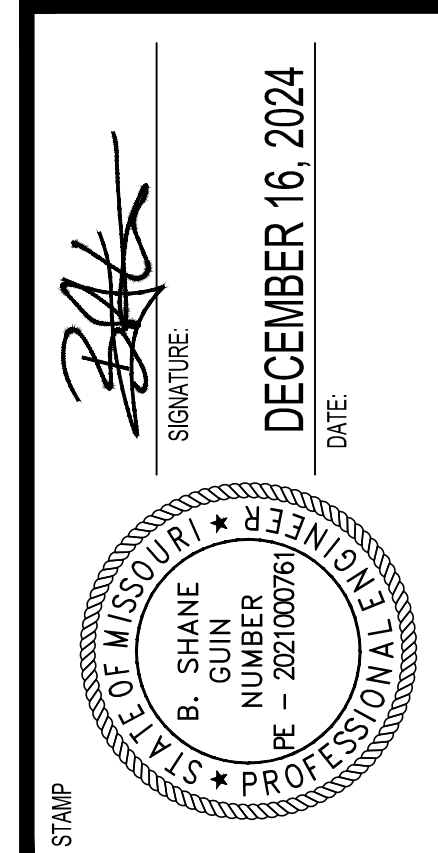
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PROPOSED TAKE 5  
LEE'S SUMMIT, MISSOURI  
FOR DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO 80302

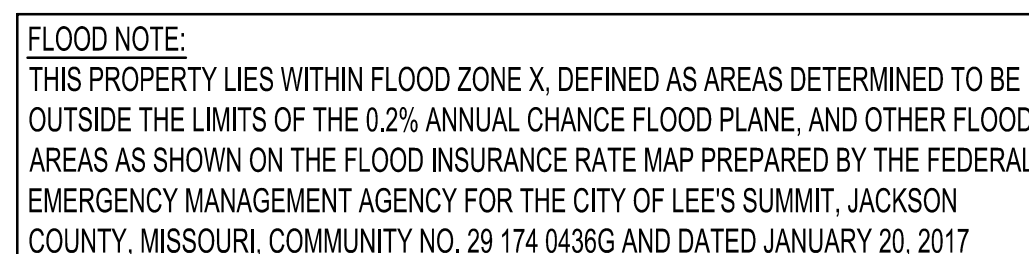
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ISSUED DATE 07/30/2024
ISSUED FOR PERMITTING
PROJECT NO. 22-218
FILE 22-218 C-1.1 Joint Layout Plan
SHEET C-1.1



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



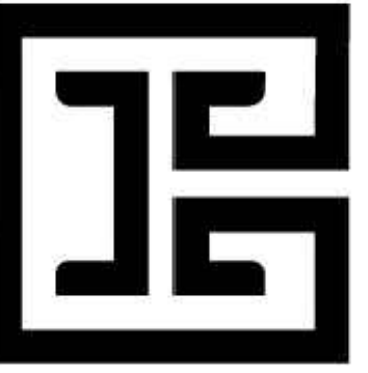
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ISSUED DATE 07/30/2024
ISSUED FOR PERMITTING
PROJECT NO. 22-218
FILE 22-218 C-2 Grading Plan
SHEET
C-2





REVISION	BY
1/ 12/16/2024 REVISED PER CITY	KRG

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



STATE OF MISSOURI ★  
B. SHANE  
GUIN  
NUMBER  
PE - 2021000761  
★ PROFESSIONAL ENGINEER

PROPOSED TAKE 3  
LEE'S SUMMIT, MISSOURI

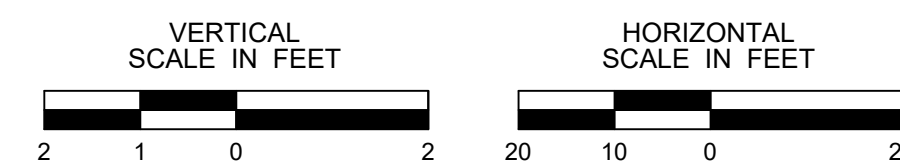
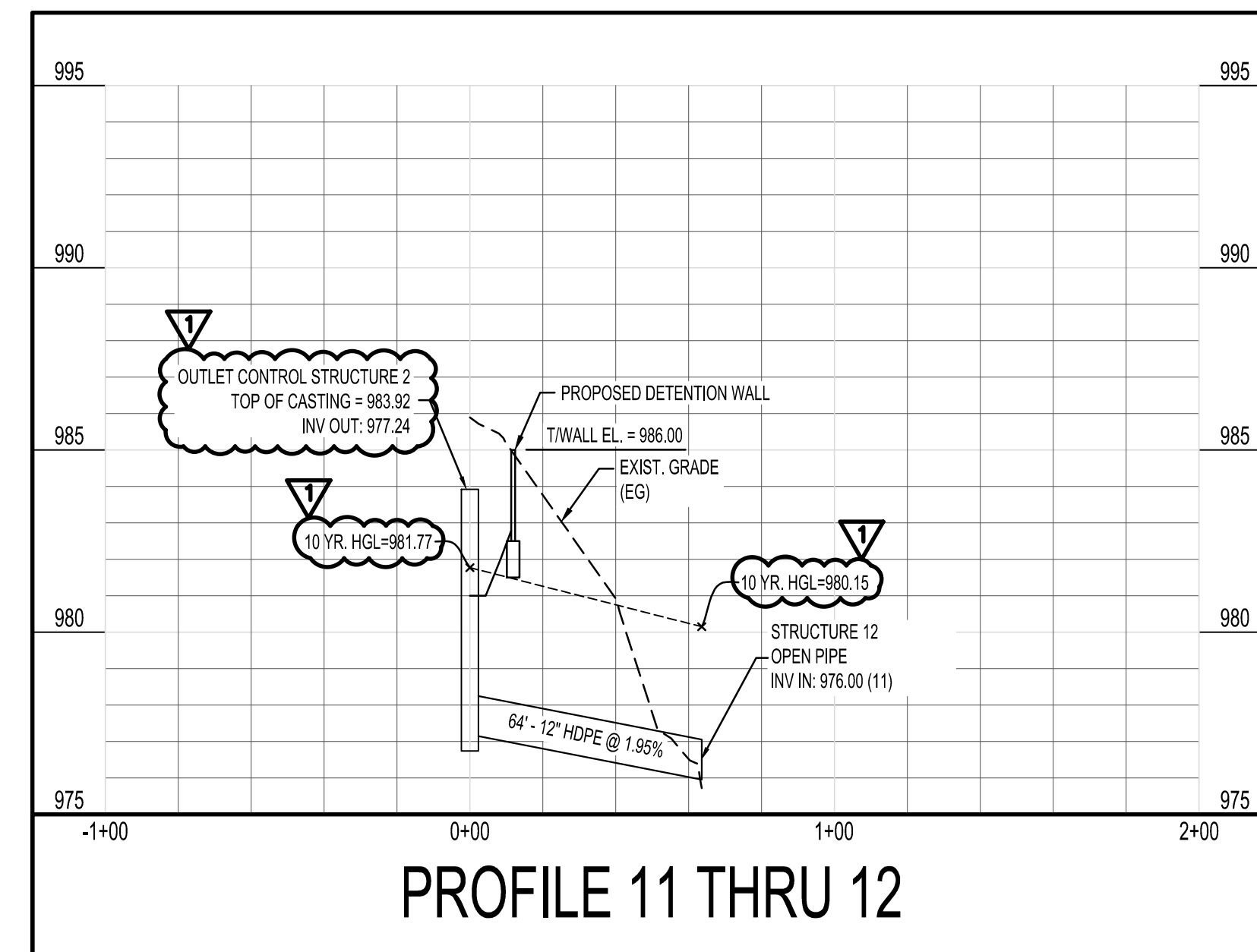
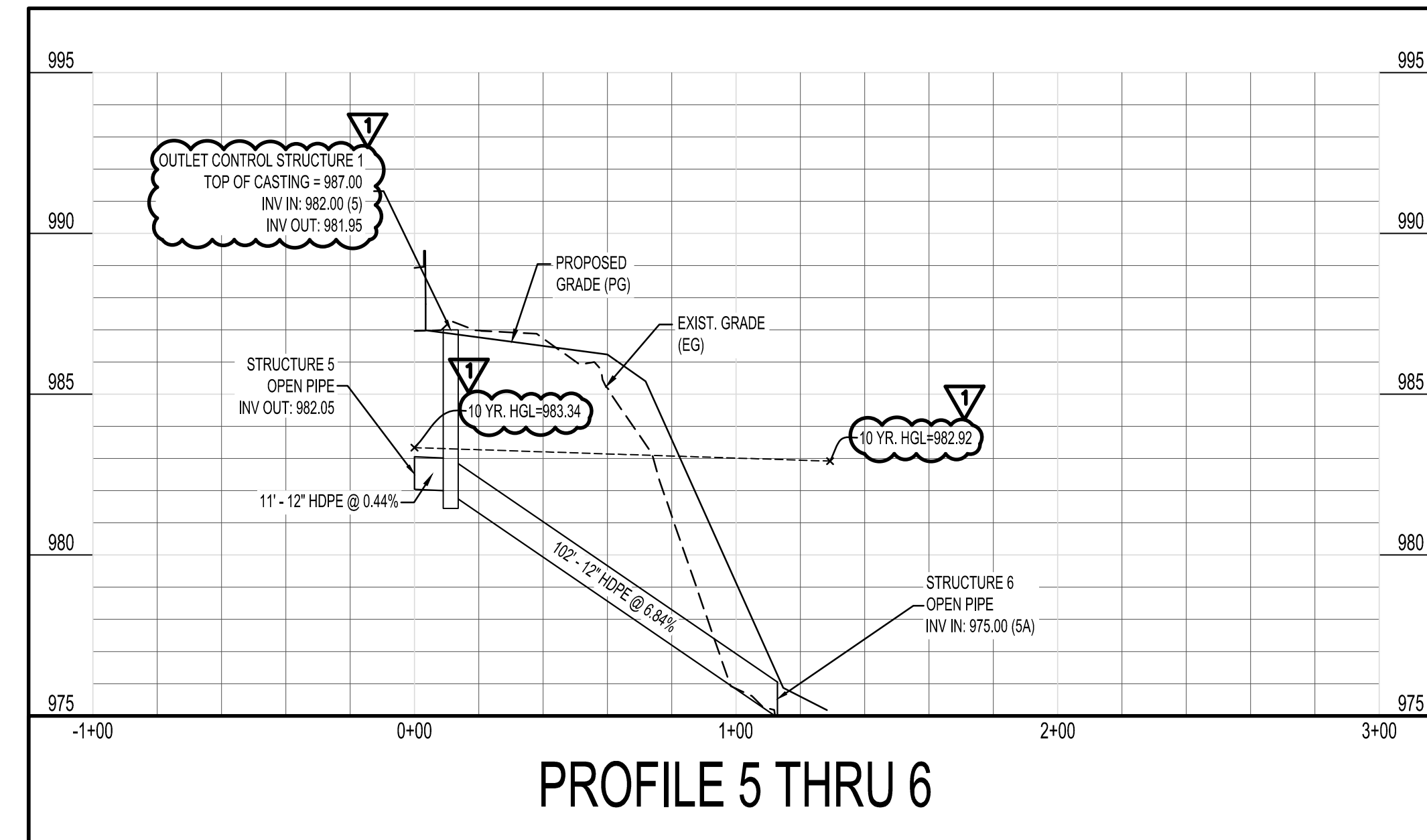
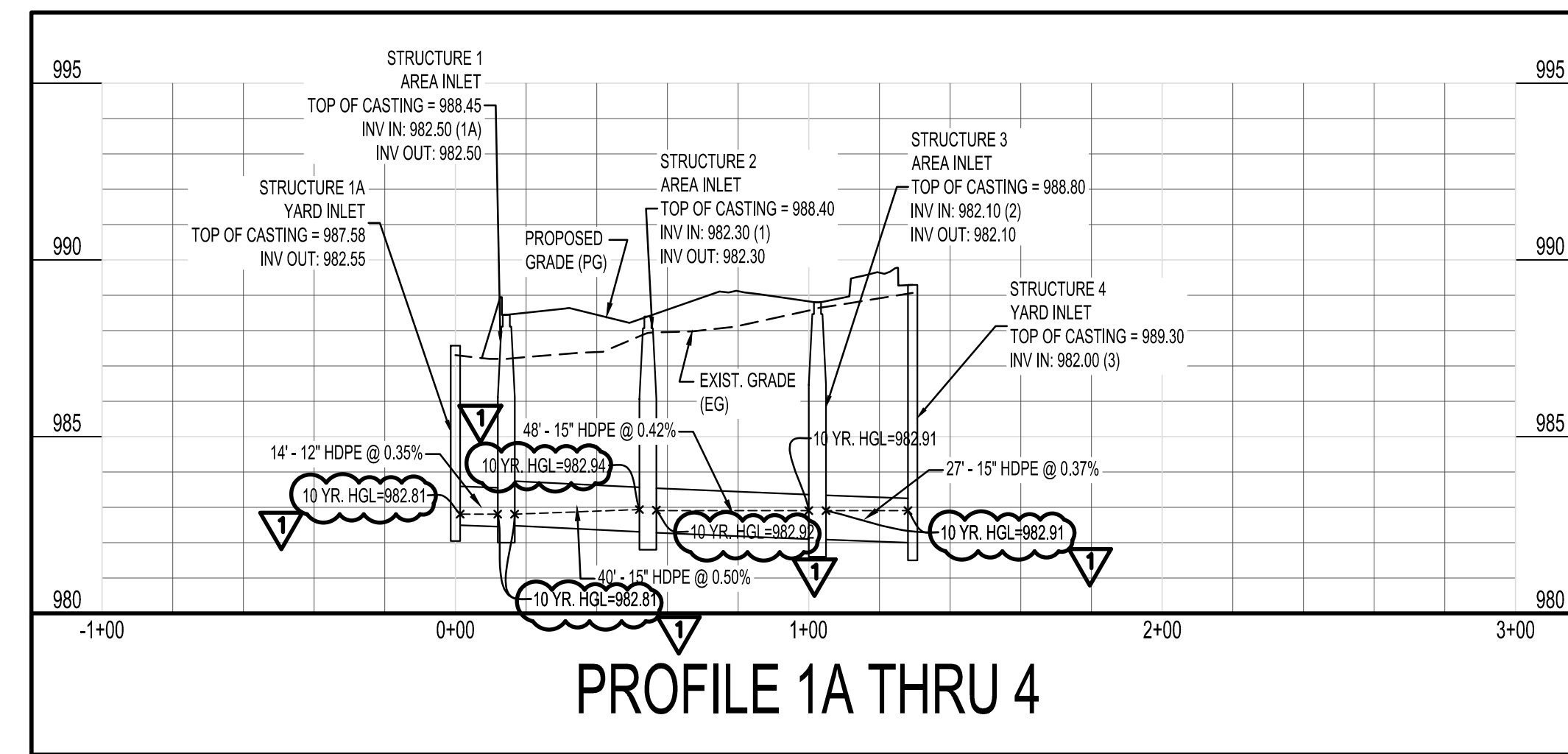
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FOR DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO 80302

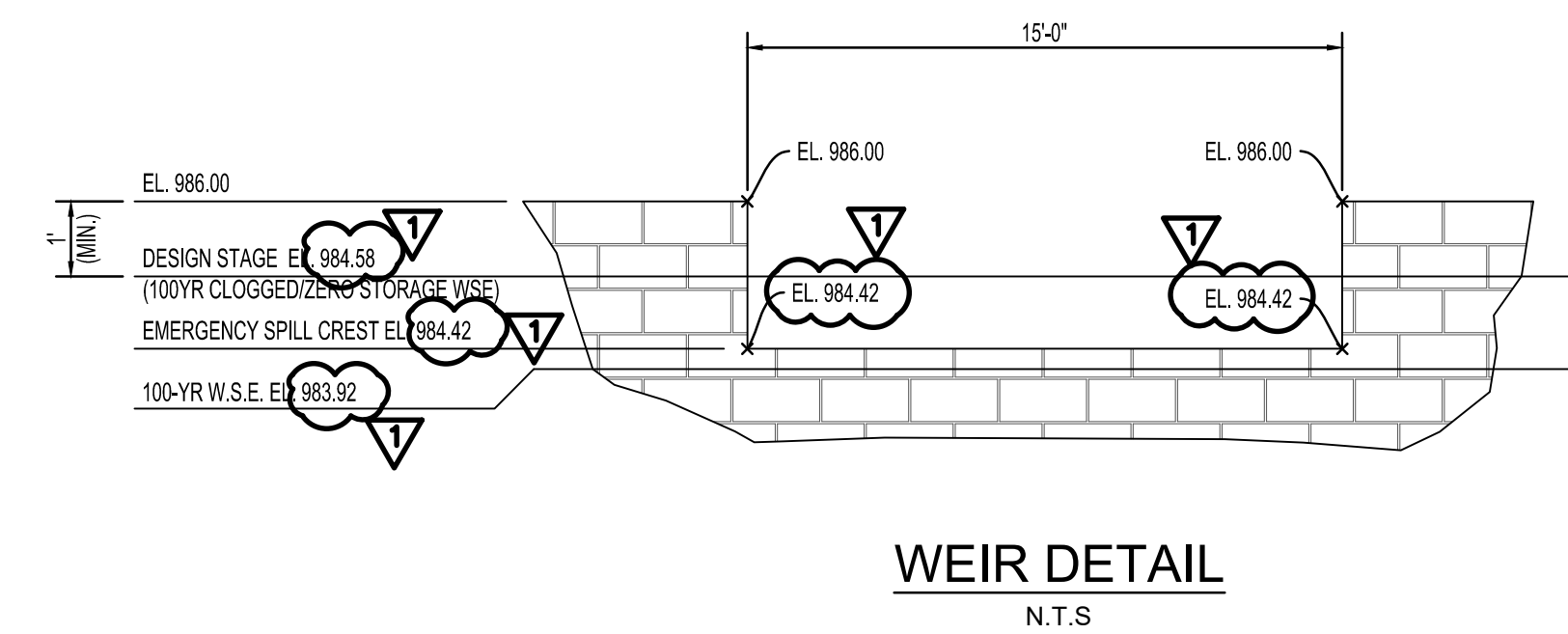
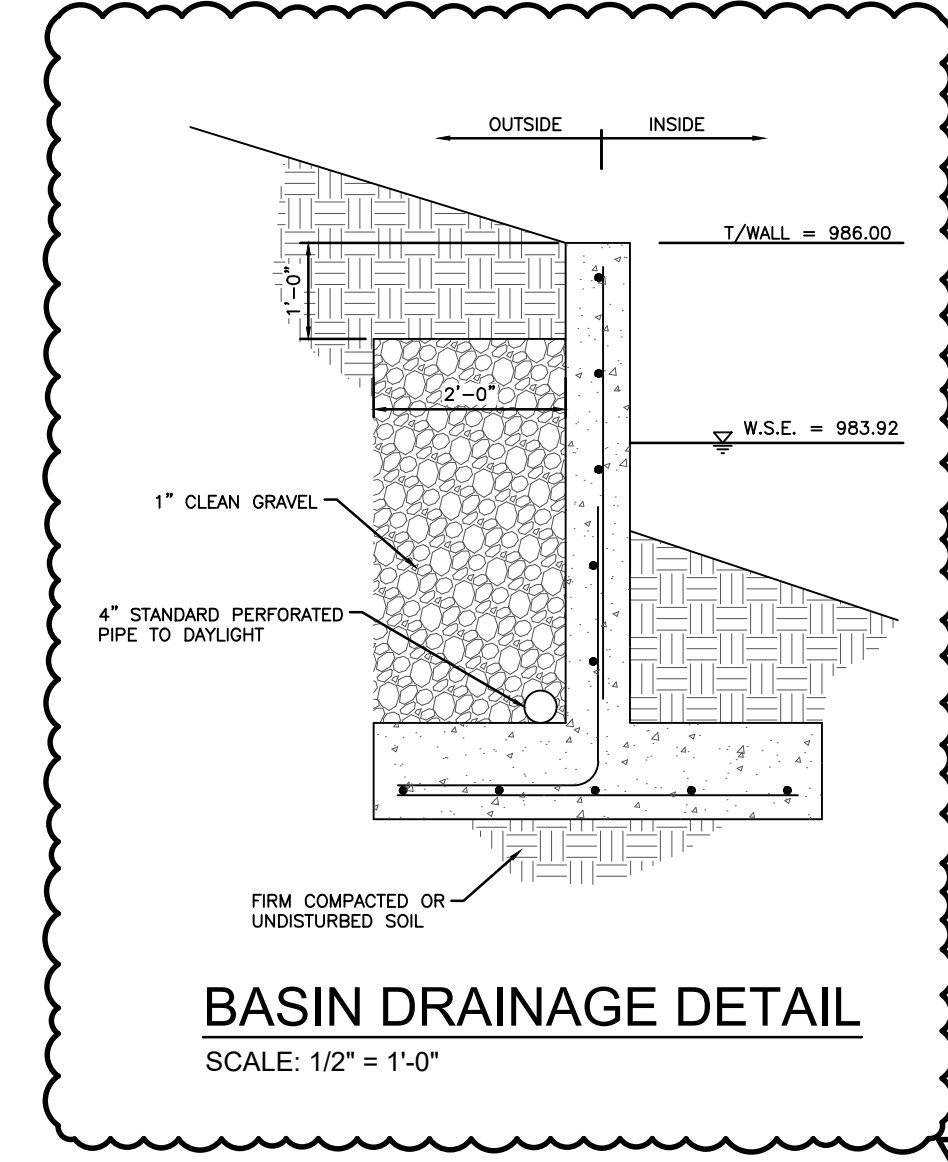
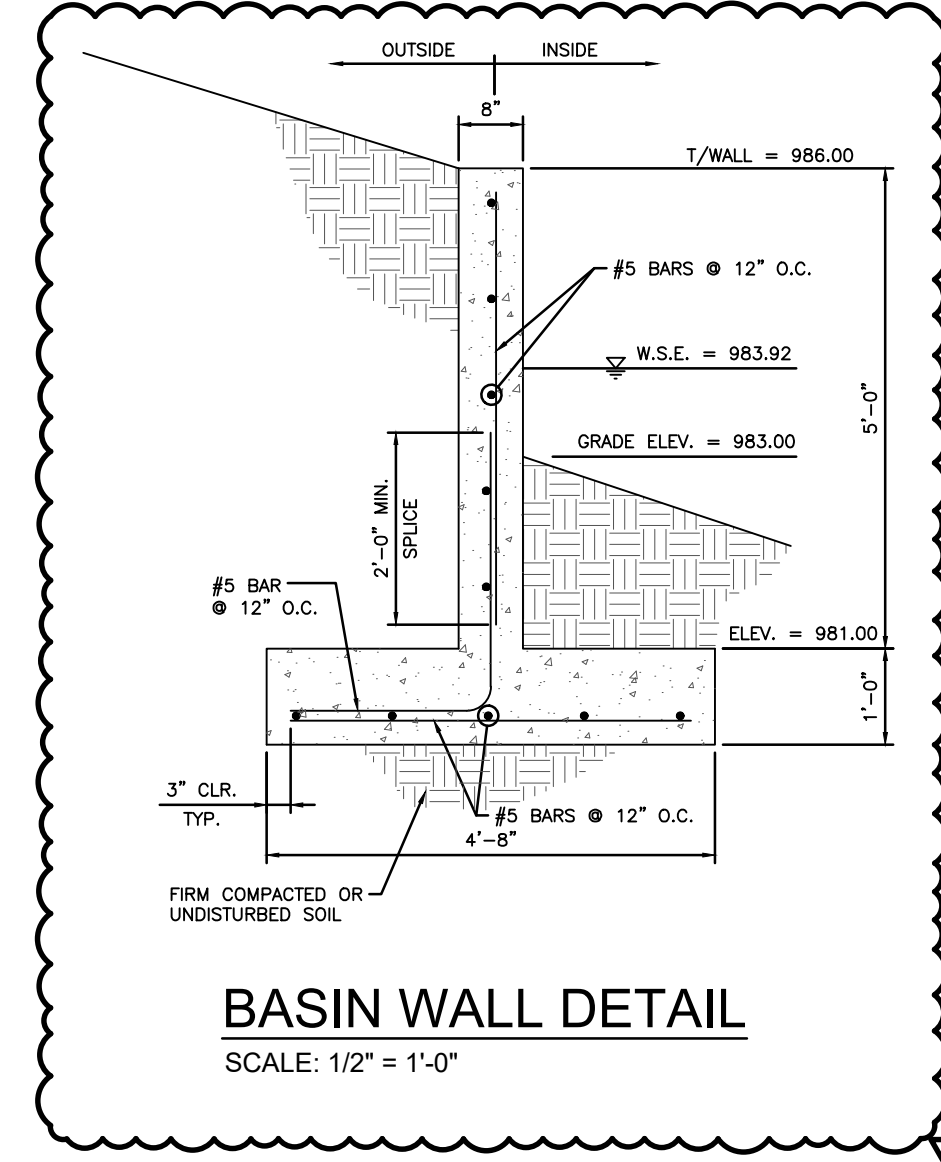
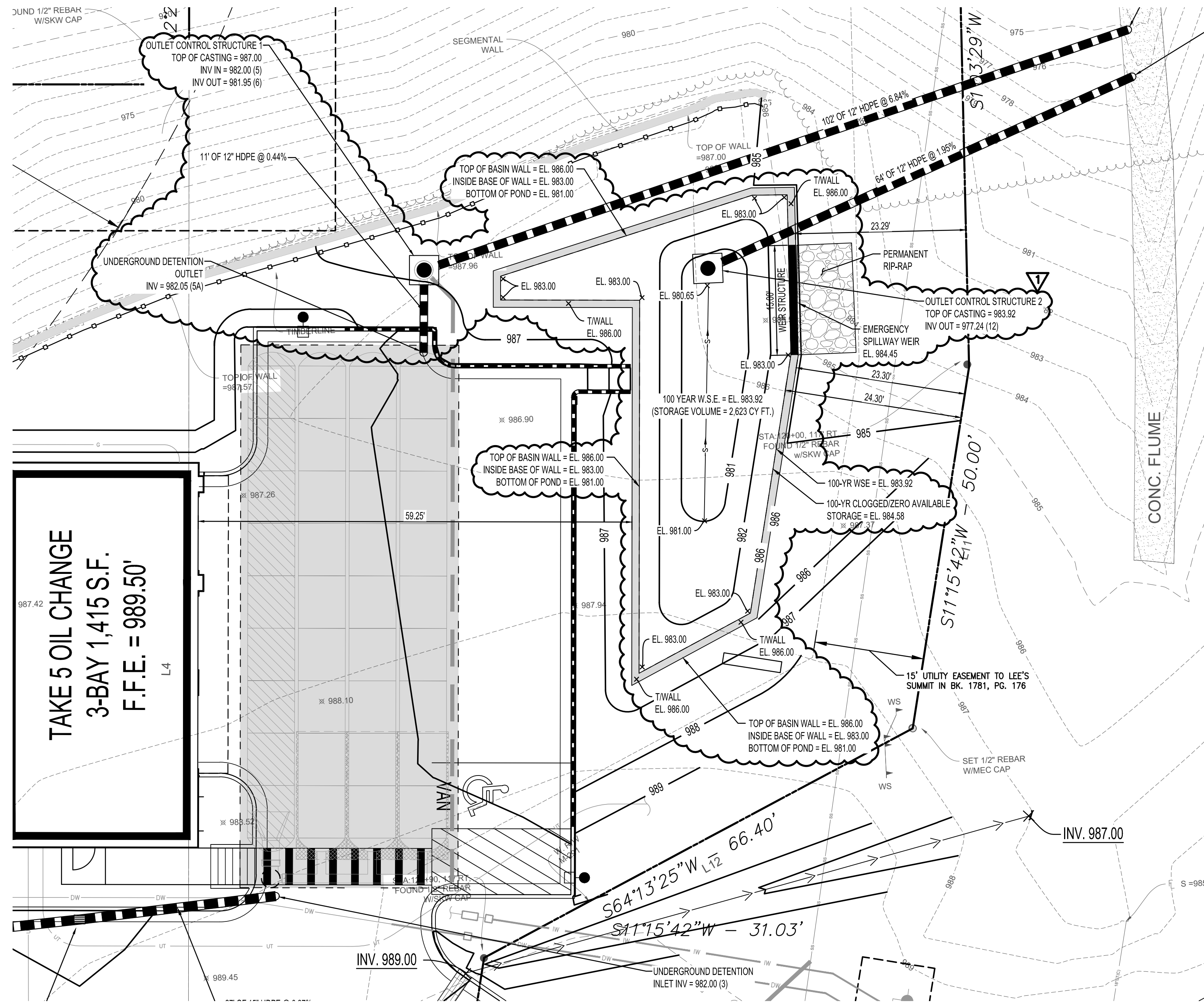
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ISSUED DATE 10/24/2024
ISSUED FOR PERMITTING
PROJECT NO. 22-218
FILE 22-218 X-Layout

SHEET

## C-2.1

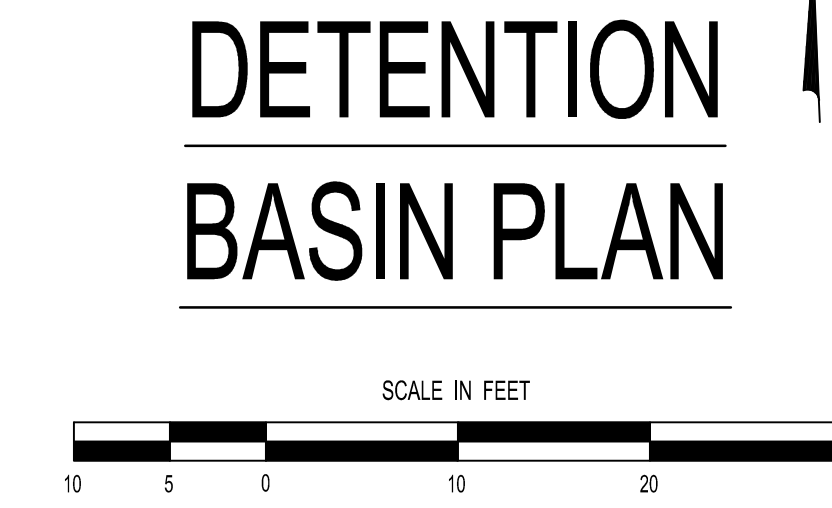
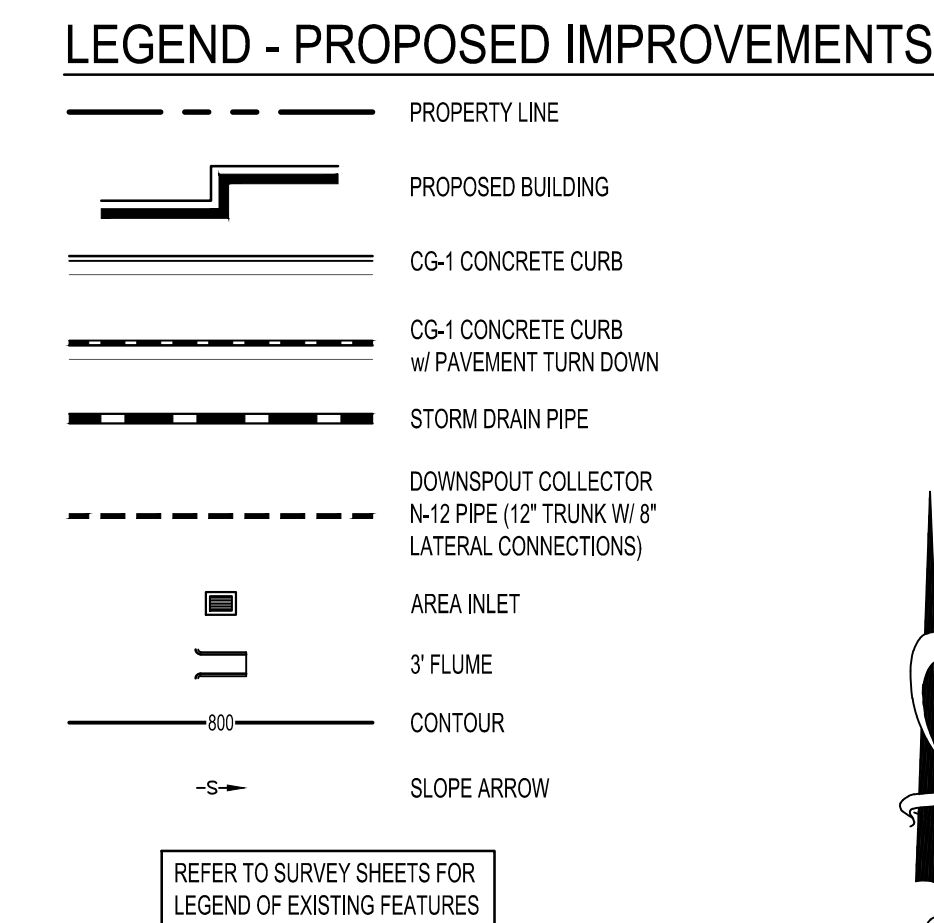
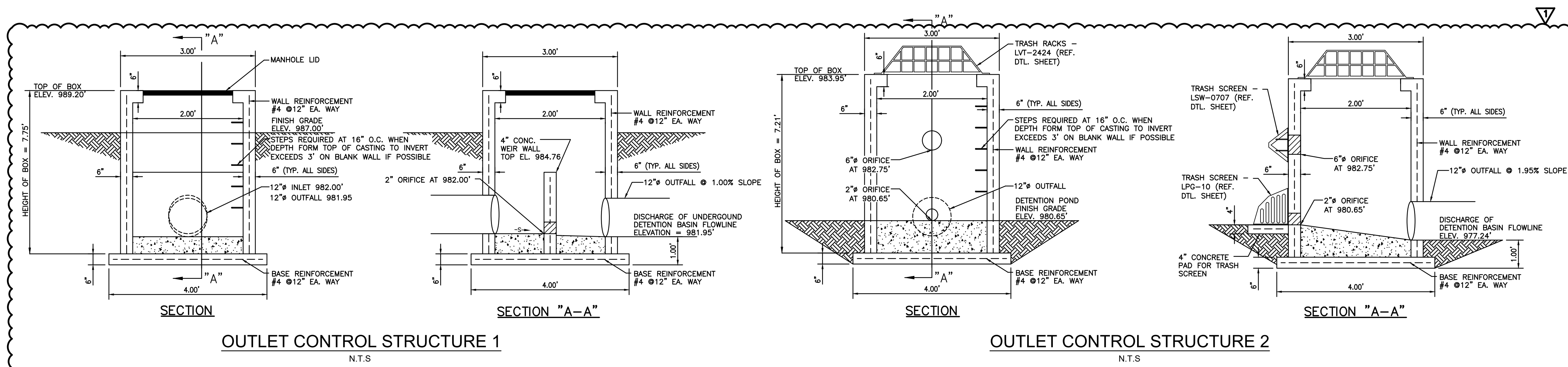






NOTE:  
DETENTION BASIN SHALL BE CONSTRUCTED  
PRIOR TO ALL OTHER WORK EXCEPT FOR  
EROSION AND SEDIMENT CONTROL

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



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

REVISION	BY
12/16/2024 REVISED PER CITY	KRG

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

DECEMBER 16, 2024  
DATE

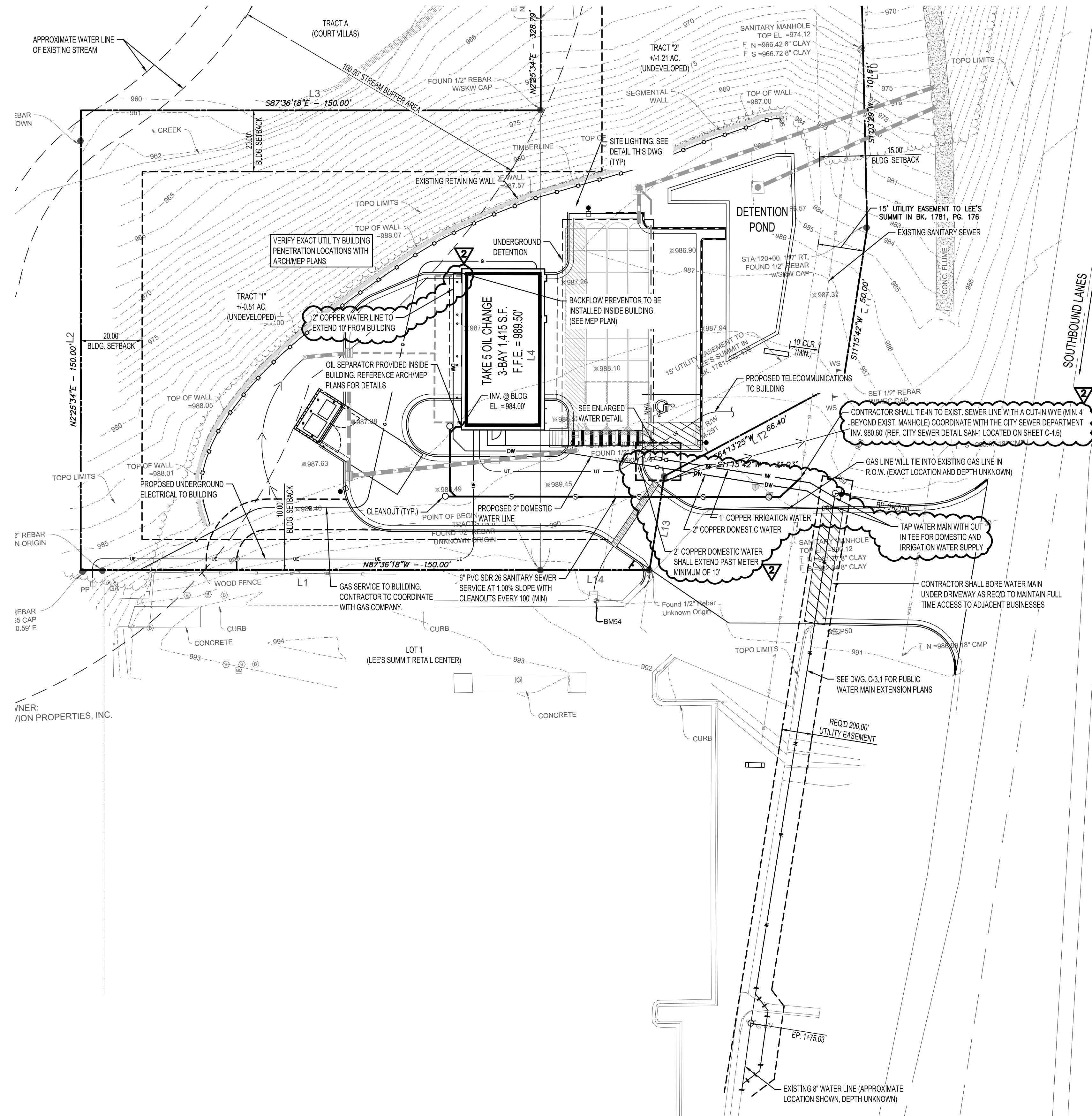
B. SHANE  
ENGINEER  
NUMBER 202100076  
MISSOURI

PROPOSED TAKE 5  
LEE'S SUMMIT, MISSOURI

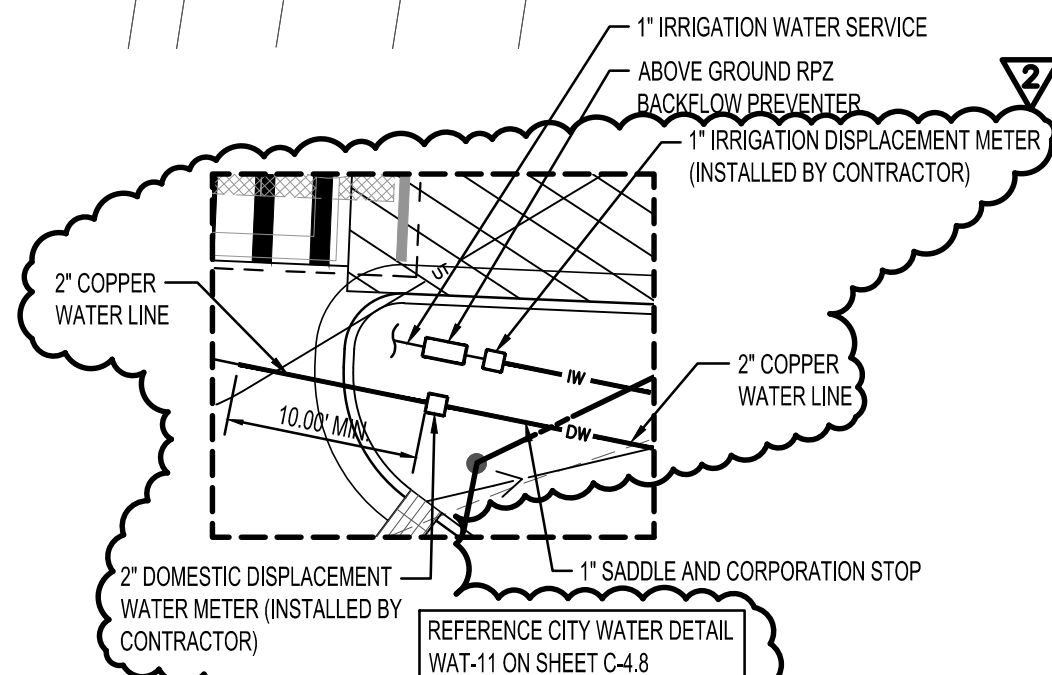
FOR DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO 80302

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





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



ENLARGED WATER DETAIL  
N.T.S.

### UTILITY NOTES

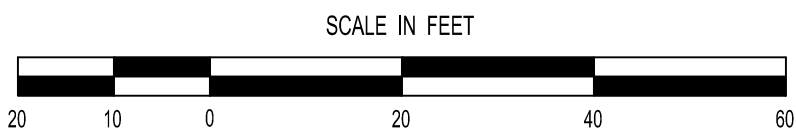
- ALL FILL MATERIAL IS TO BE IN PLACE AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
- ALL SEWER UTILITY WORK SHALL BE DONE TO THE CITY OF LEE'S SUMMIT STANDARDS AND SPECIFICATIONS. ALL WATER UTILITY WORK SHALL BE DONE TO LEE'S SUMMIT WATER UTILITIES STANDARDS AND SPECIFICATIONS. ALL ELECTRICAL 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 IN WRITING 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 A21.11 (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



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

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

SIGNATURE:   
DATE: DECEMBER 16, 2024

STATE OF MISSOURI  
B. SHANE GUIN  
NUMBER - 202100076  
PROFESSIONAL ENGINEER

STAMP

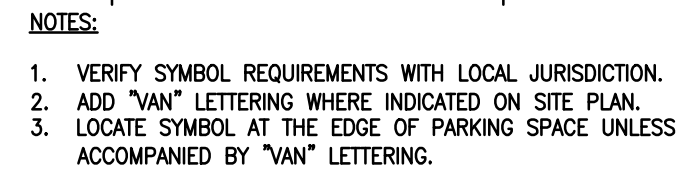
PROPOSED TAKE 5  
LEE'S SUMMIT, MISSOURI

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-3 Utility Plan

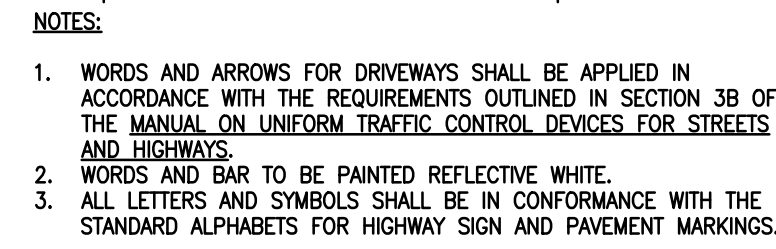
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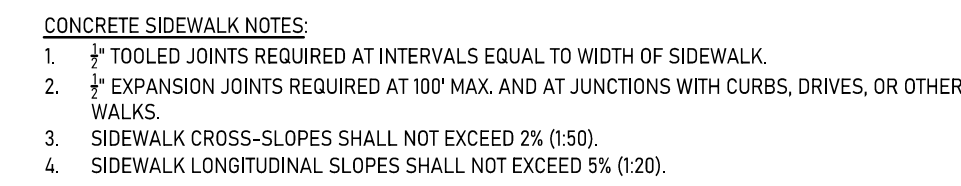


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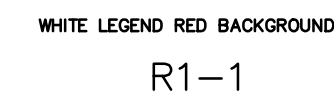
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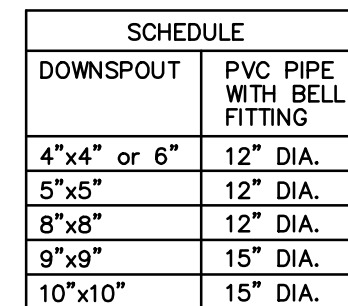
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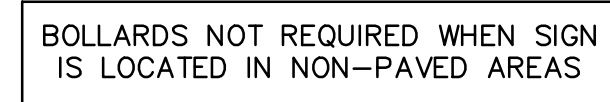
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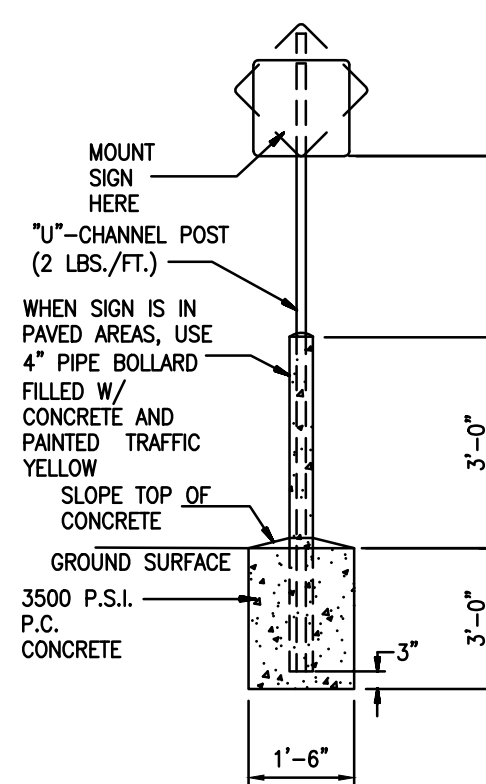
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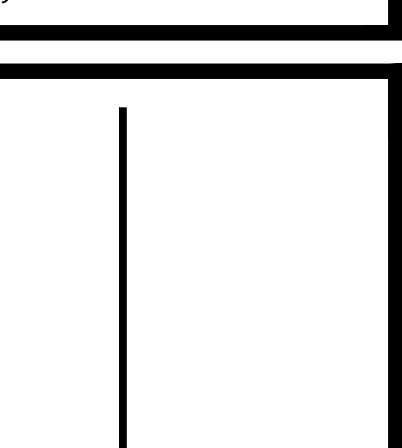
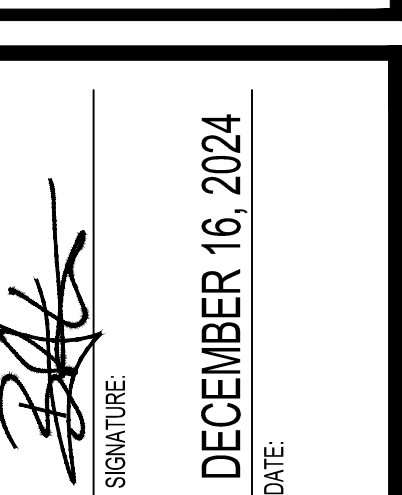
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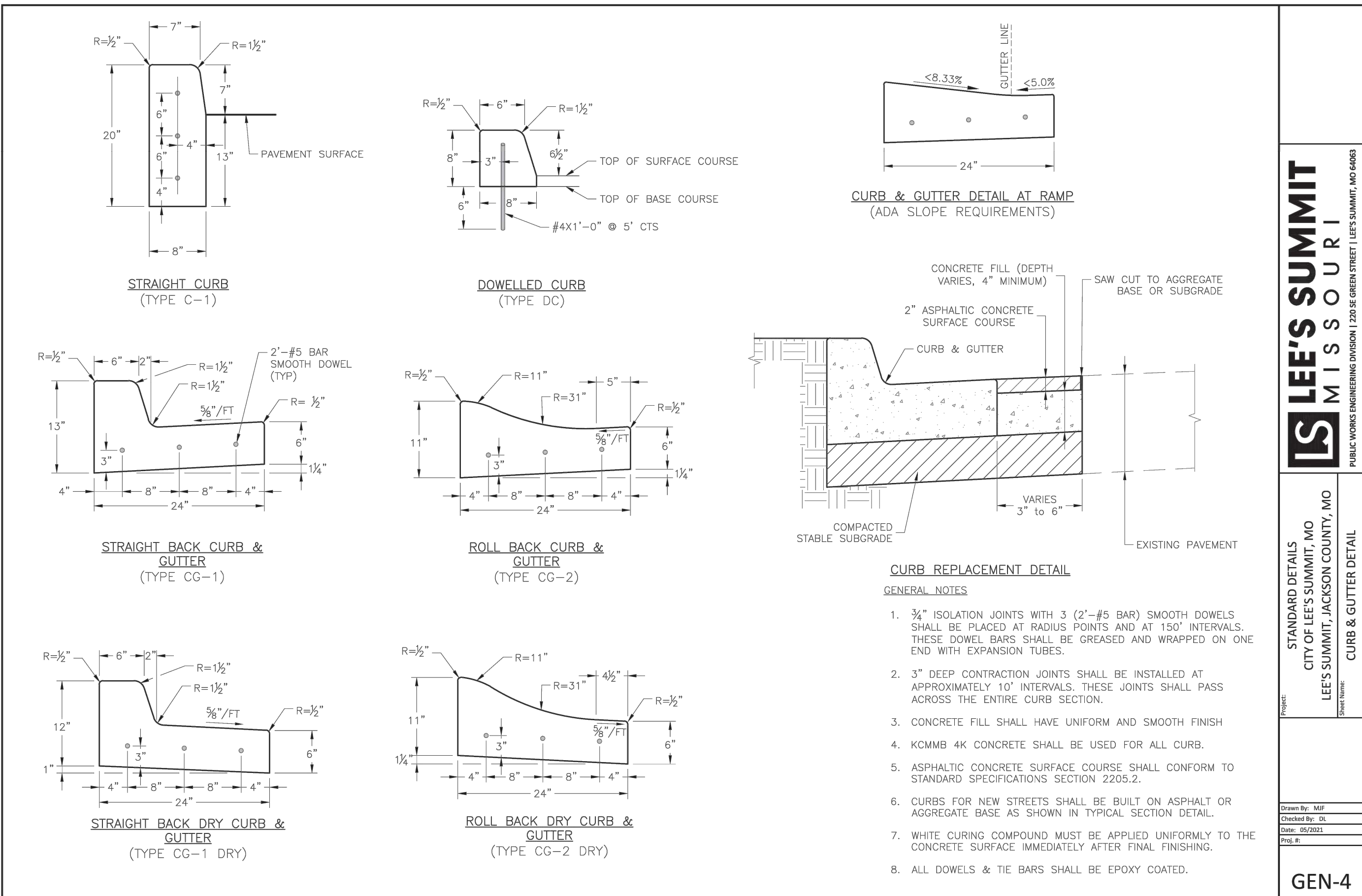
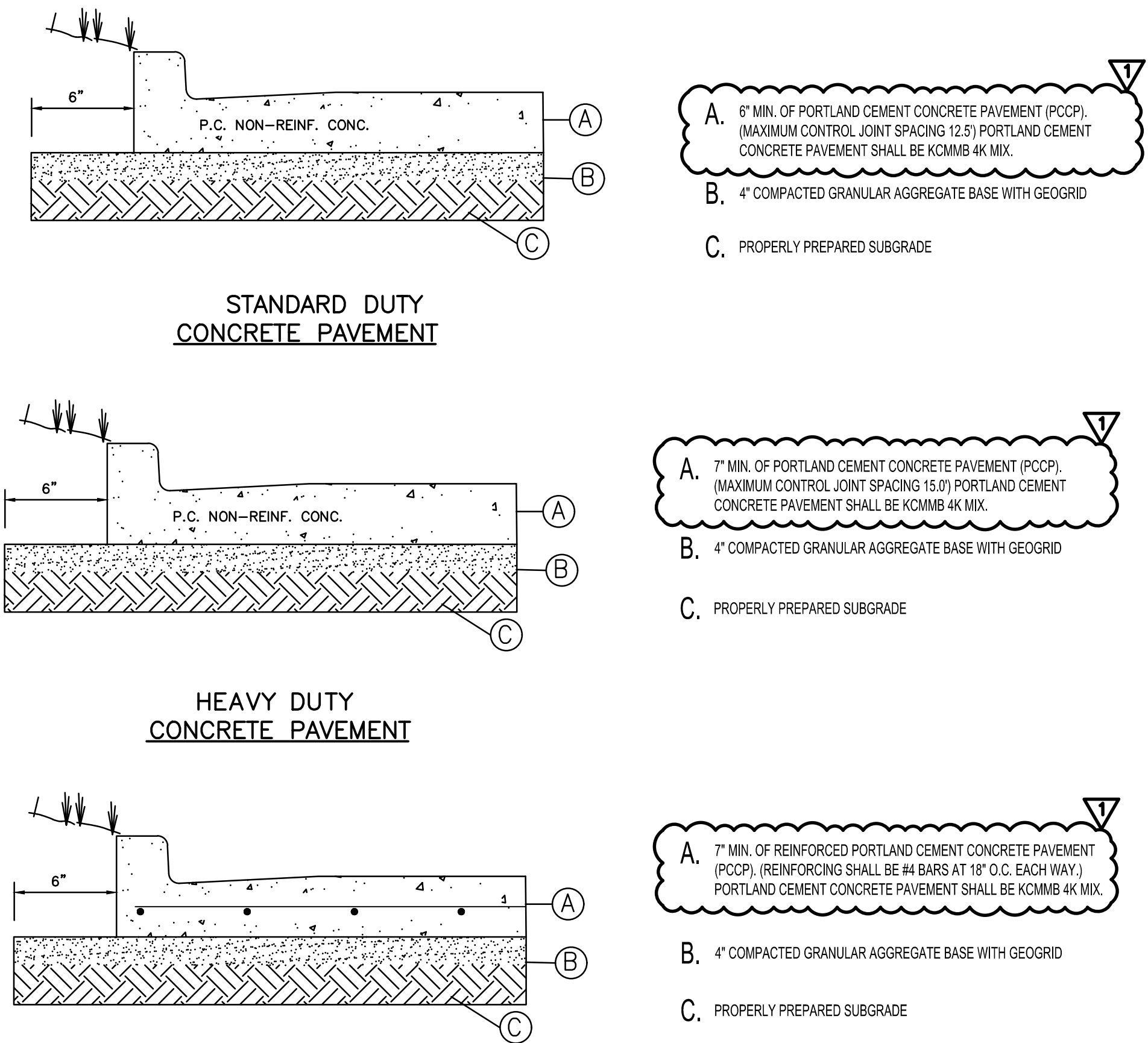
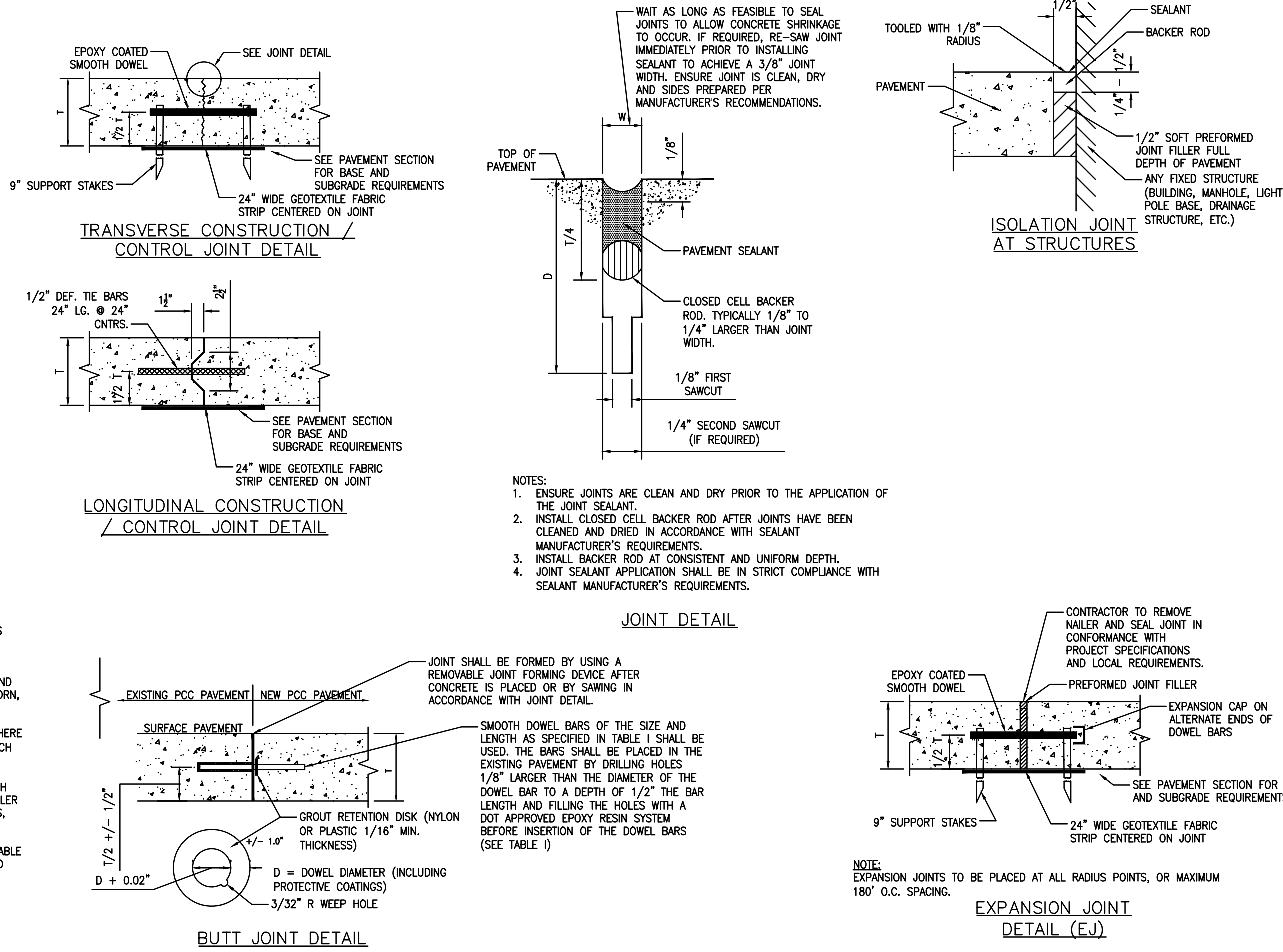


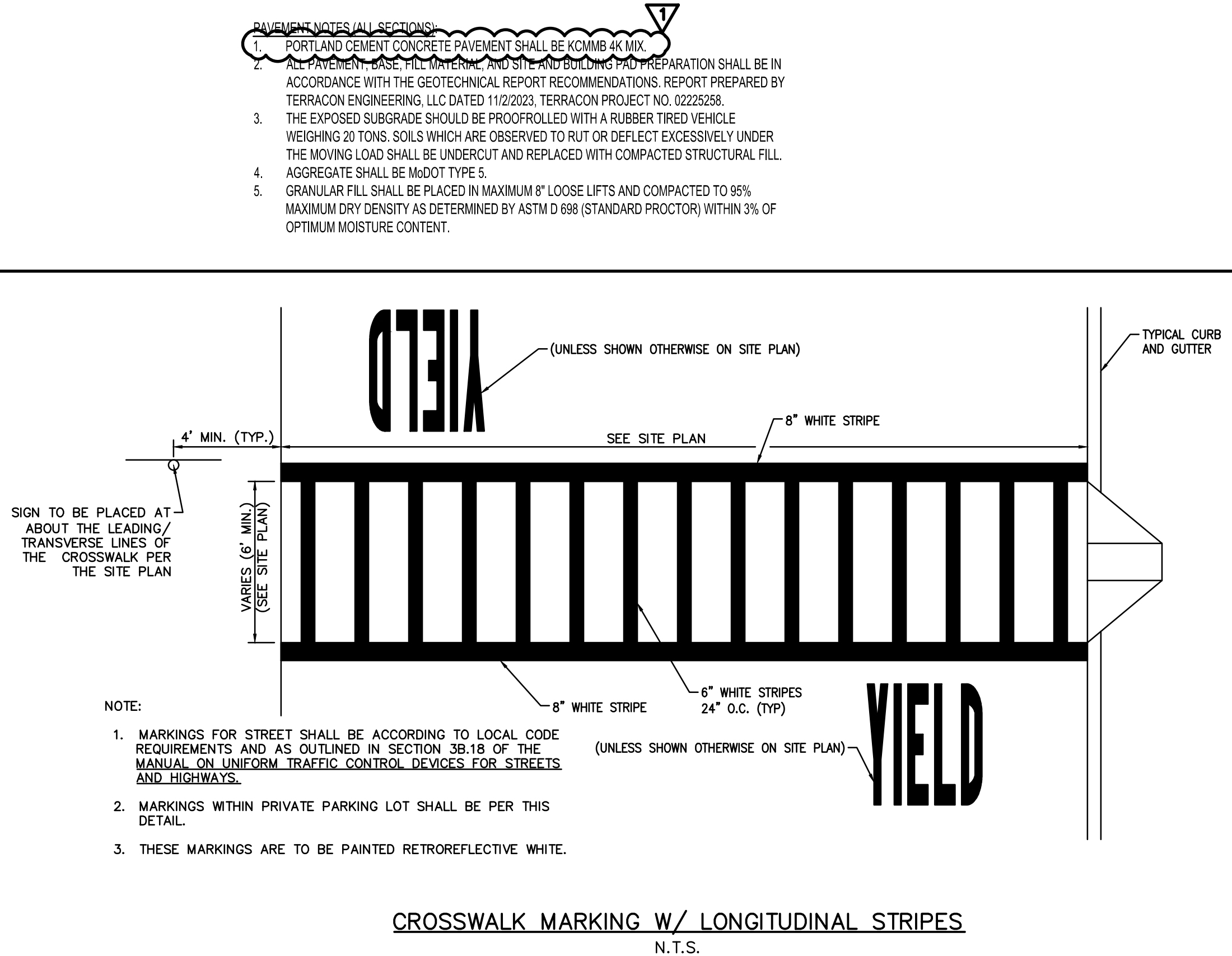
TABLE 1

PAVEMENT THICKNESS	SMOOTH DOWEL BARS				MINIMUM JOINT DEPTH
" T "	SIZE Ø	LENGTH	SPACING	" D "	" (IN)
5"	1 1/2"	12"	18"	1	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 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 DOWEL 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.



REINFORCED CONCRETE DUMPSTER PAD / APRON



SITE DETAILS

REVISION	BY
10/24/2024 REVISED PER CITY	KRG

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

**STATE OF MISSOURI**  
B. SHANE GUIN  
NUMBER 202100076  
PROFESSIONAL ENGINEER

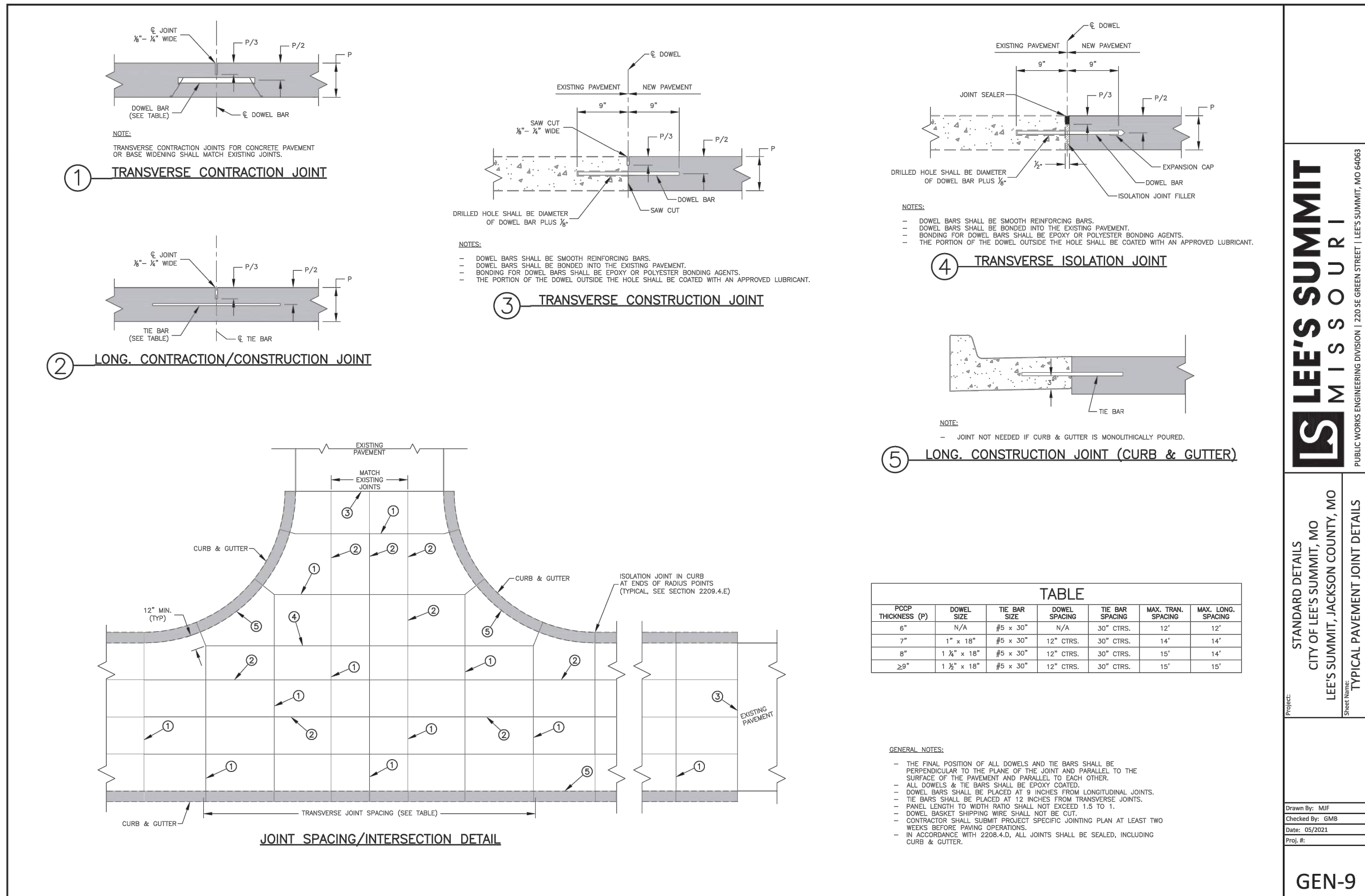
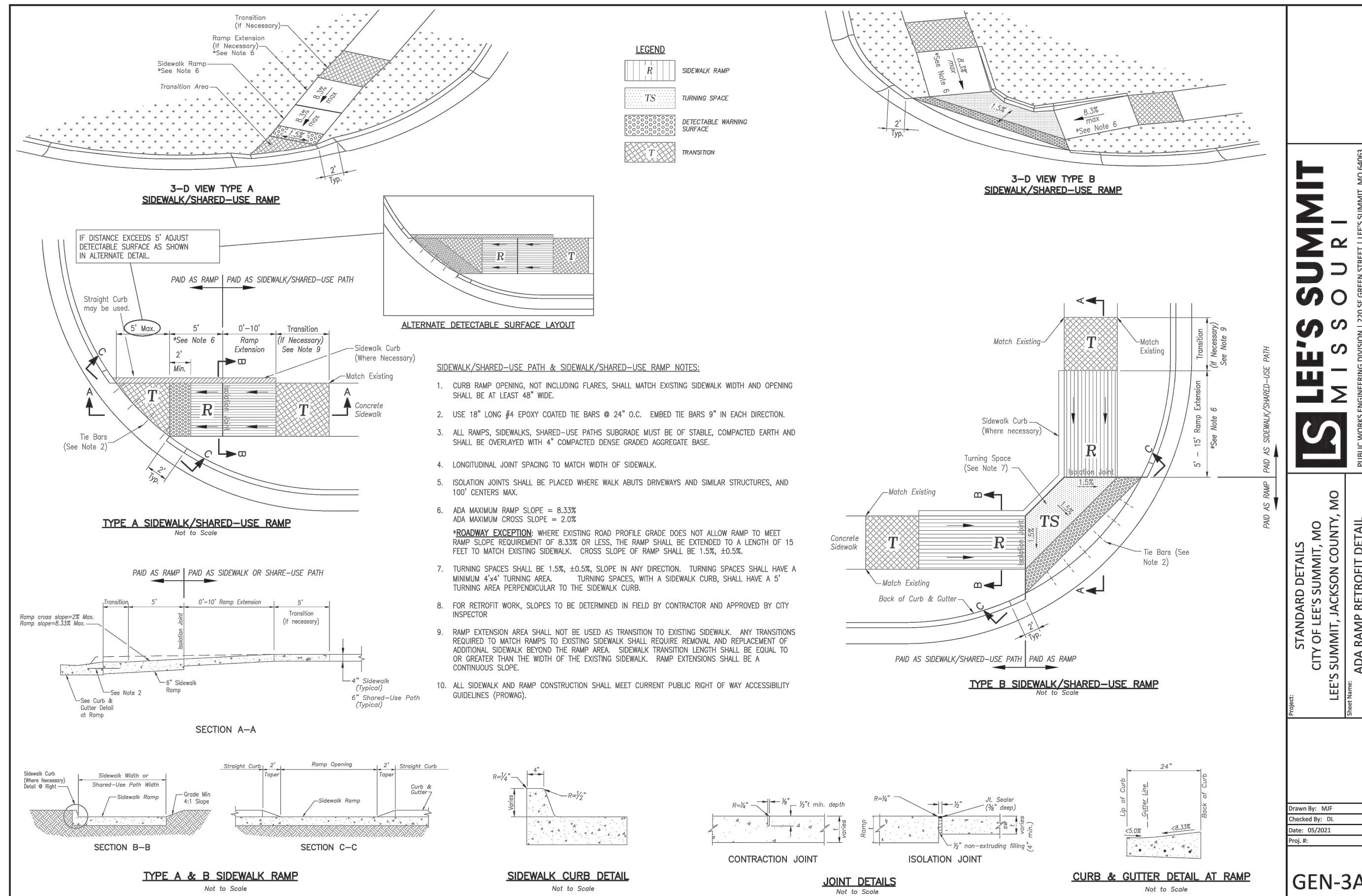
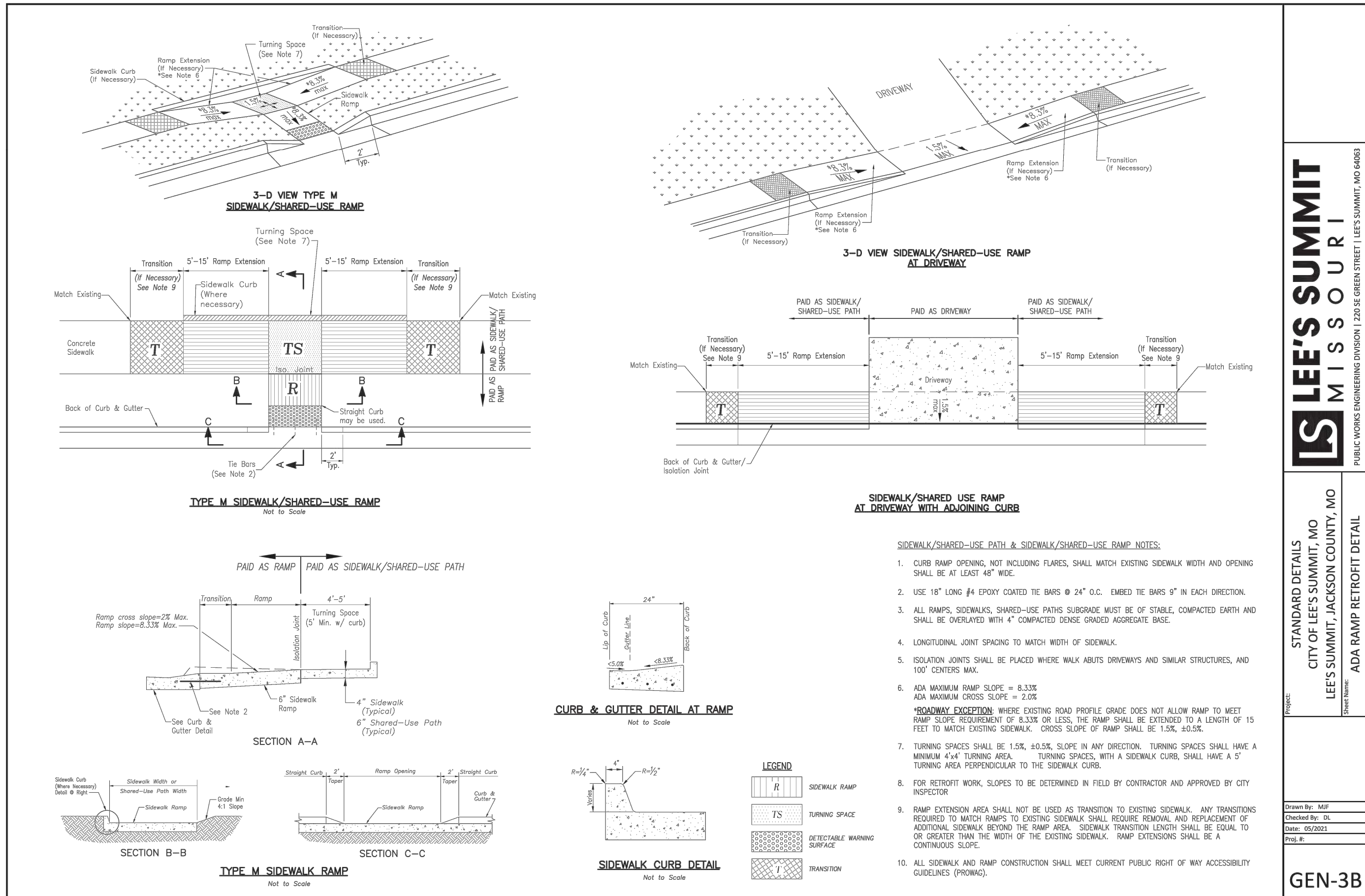
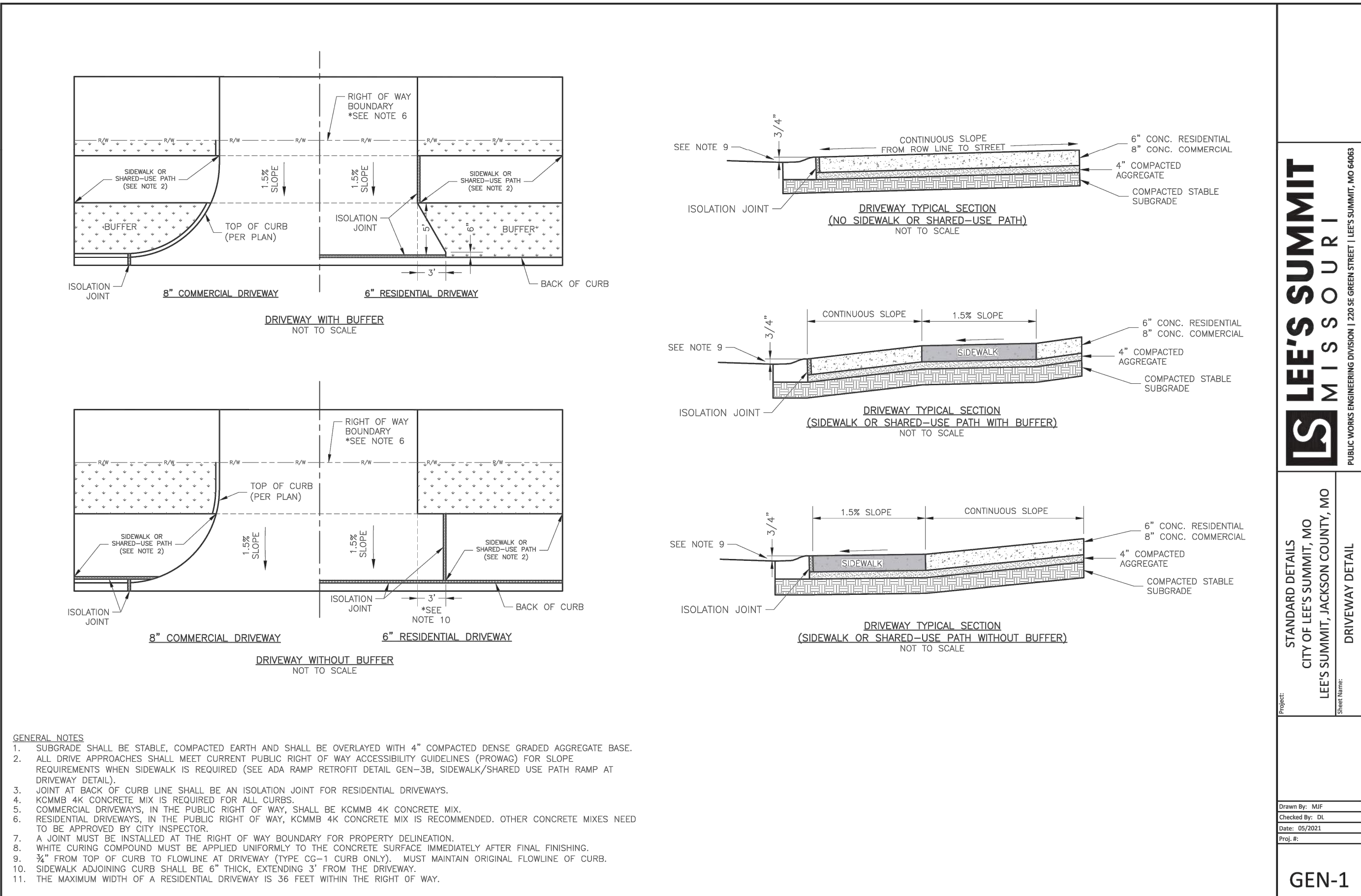
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DATE: OCTOBER 24, 2024

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 C-4.2





SITE DETAILS

REVISION	BY

HIGH TIDE CONSULTANTS LLC

434 N. COLUMBIA ST, SUITE 200A

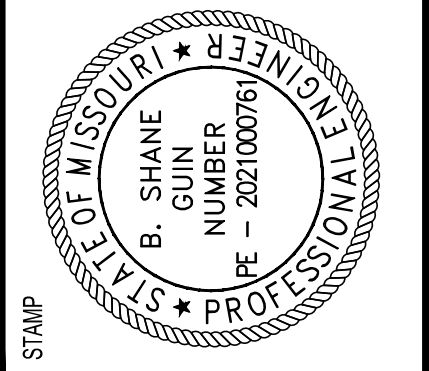
COVINGTON, LA 70433

www.hightidela.com



Signature: [Signature]

DATE: JULY 30, 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

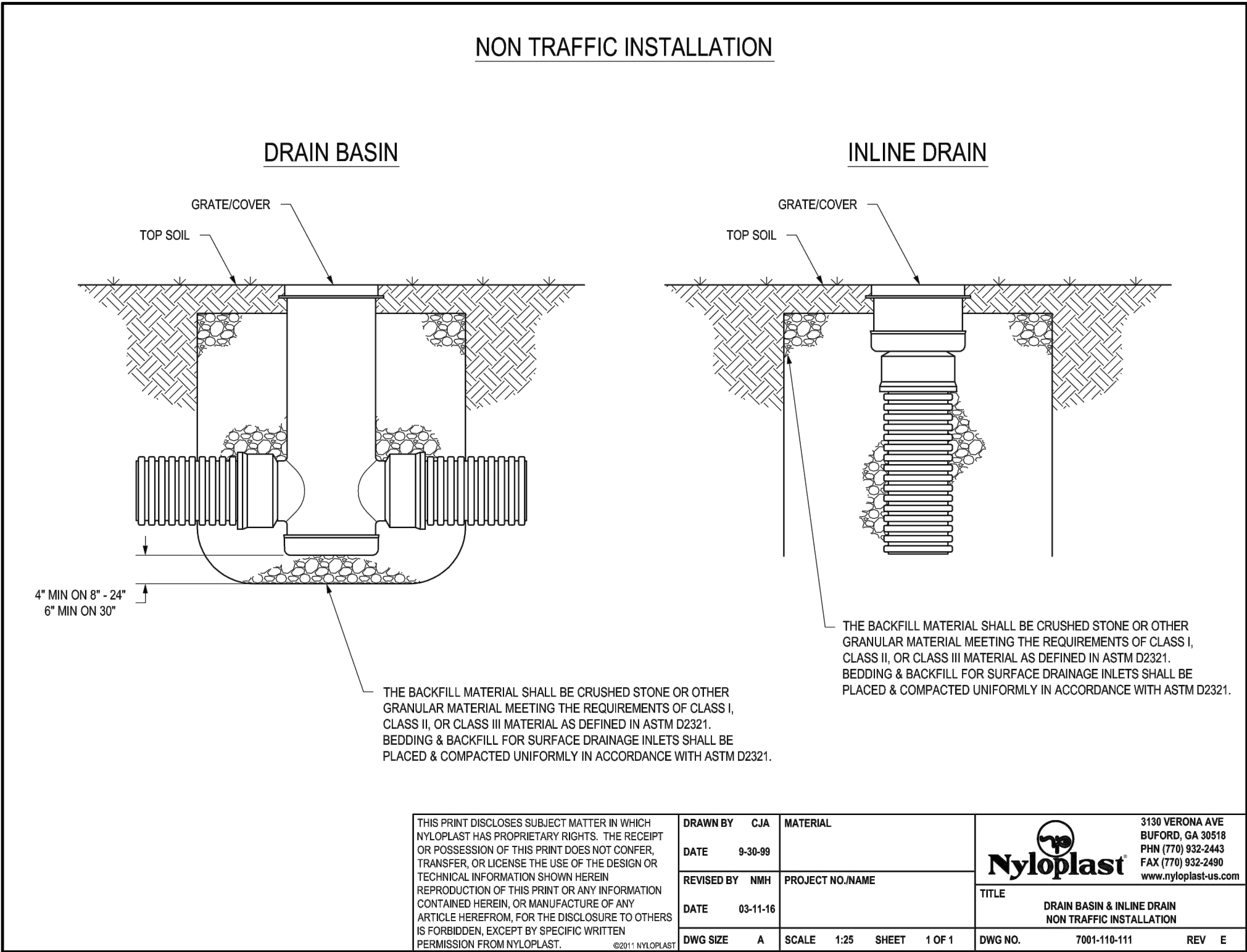
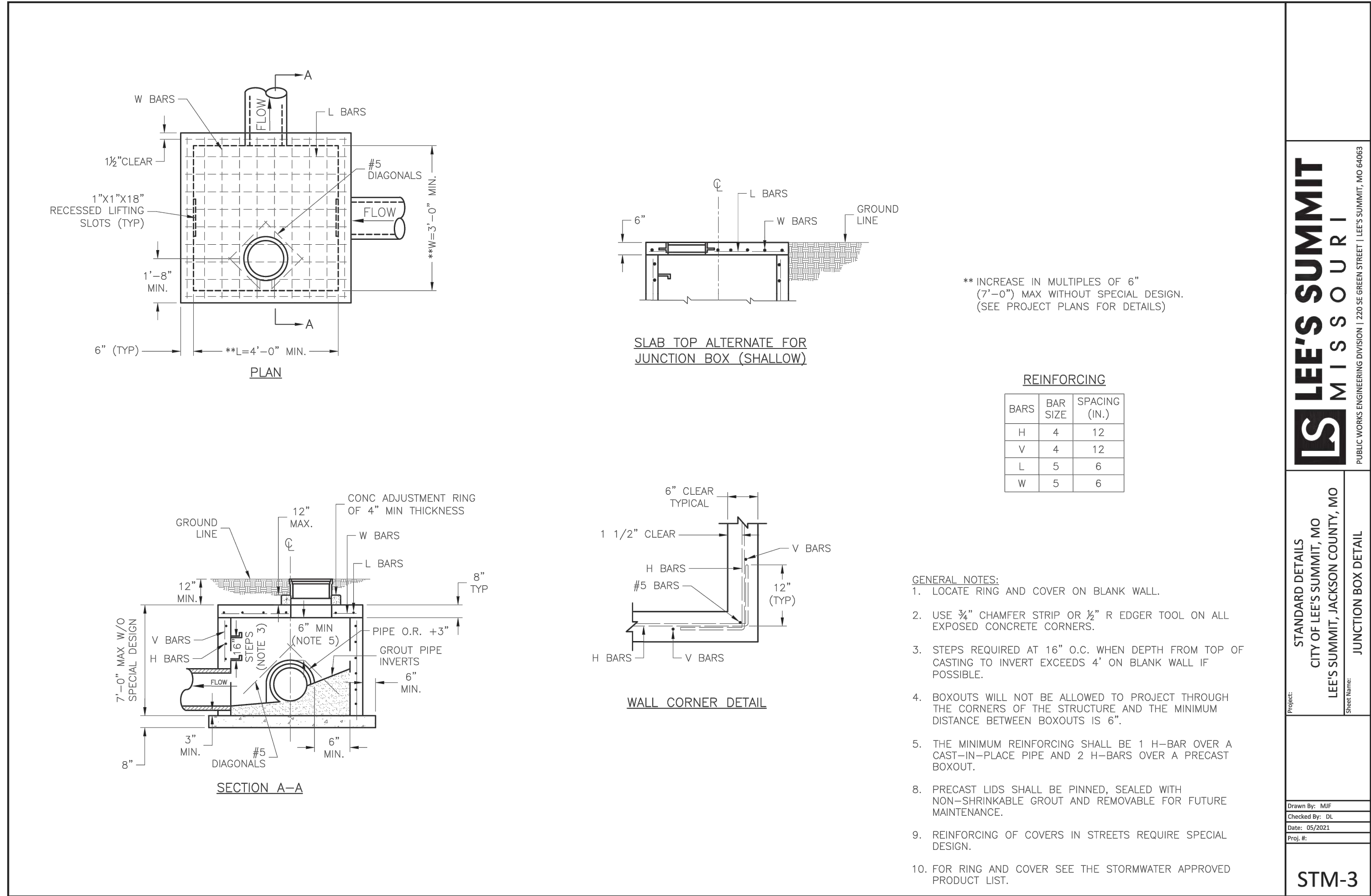
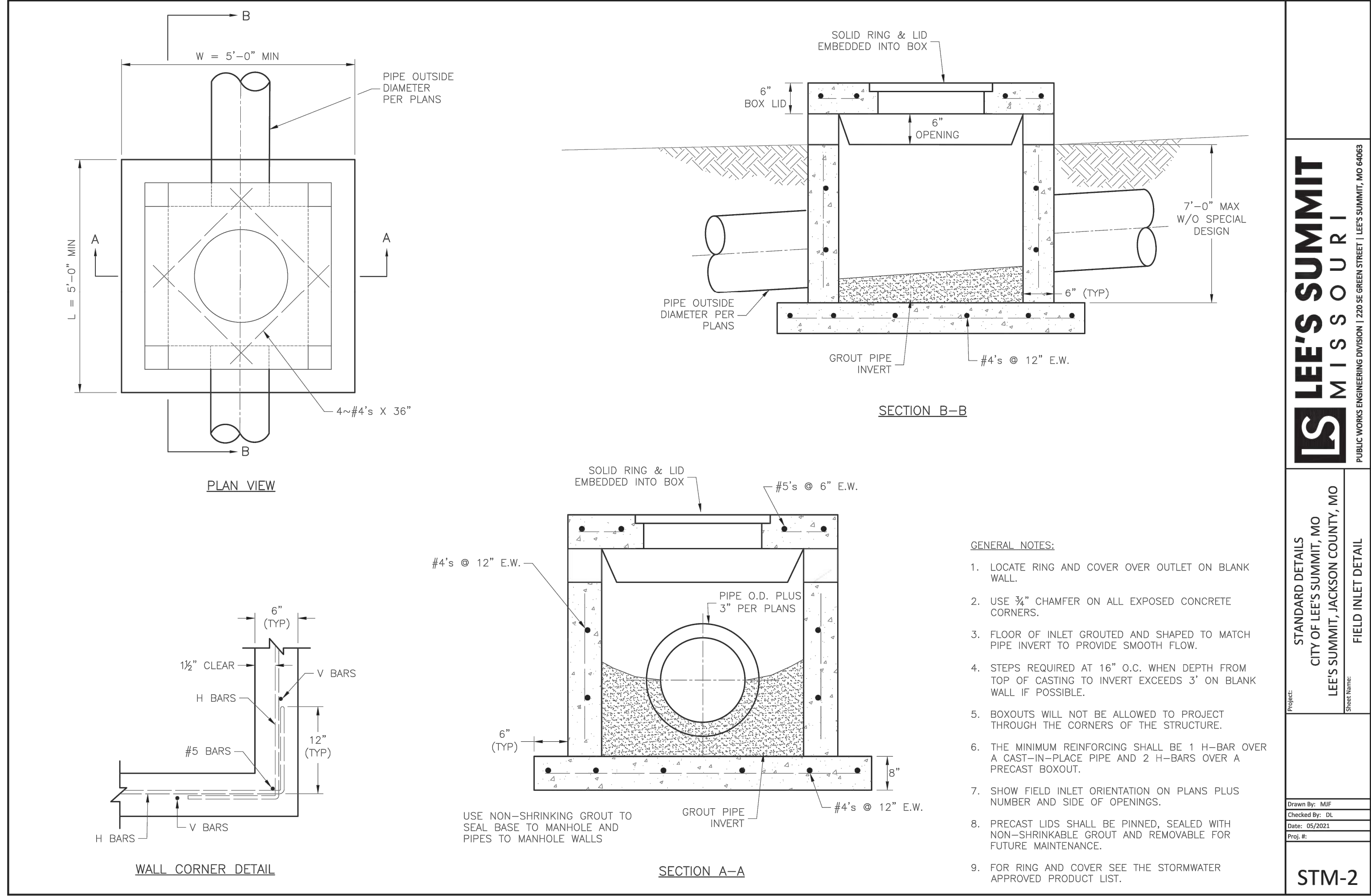
ISSUED FOR PERMITTING

PROJECT NO.: 22-218

FILE: 22-218 C-4 Details

SHEET: C-4.3





## DRAINAGE DETAILS

REVISION	BY

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

**STAMP**

**B. SHANE**  
REGISTERED PROFESSIONAL ENGINEER  
PE - 202100076  
STATE OF MISSOURI

**SIGNATURE**

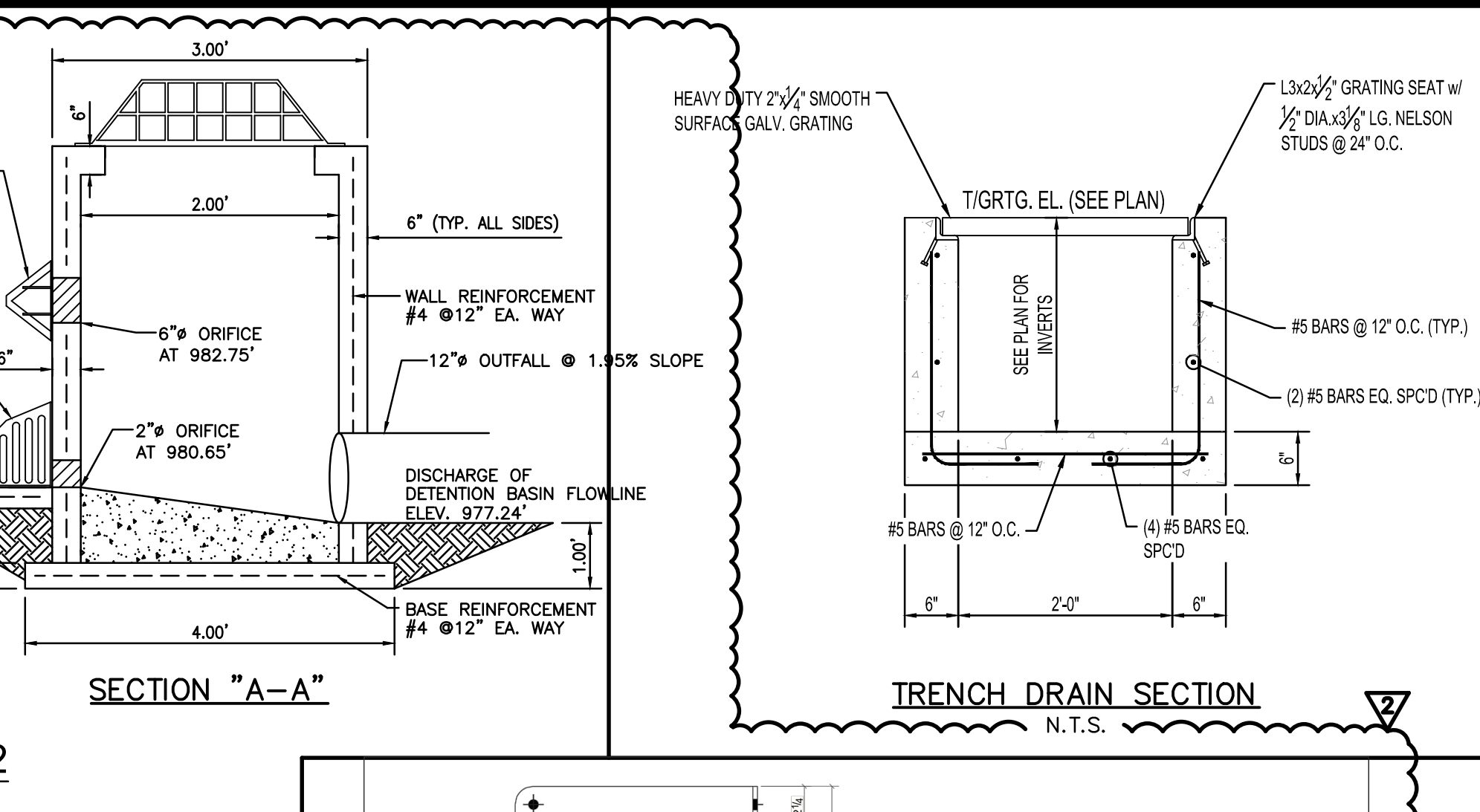
**DATE** JULY 30, 2024

**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** C-4.4





		<table><tr><td>MC3000LEPP00C</td><td>32" (750 mm)</td><td>mm</td><td>2.75" (70 mm)</td><td>THE PIPE SIZE.</td></tr></table>				MC3000LEPP00C	32" (750 mm)	mm	2.75" (70 mm)	THE PIPE SIZE.
MC3000LEPP00C	32" (750 mm)	mm	2.75" (70 mm)	THE PIPE SIZE.						
		NOTE: ALL DIMENSIONS ARE NOMINAL.								
		2	MC-3500 TECHNICAL SPECIFICATION							

1	MC-3500 CROSS SECTION DETAIL
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**PRODUCT ID** MATERIAL COATING WEIGHT

LPG-10-P ASTM A36 MILD STEEL N/A 21 LBS.  
 LPG-10-G ASTM A36 MILD STEEL GALVANIZED 23 LBS.  
 LPG-10-SS 304 STAINLESS STEEL POWDER COAT 23 LBS.  
 LPG-10-AL 6061-T6 ALUMINUM ANODIZED 19 LBS.

**CUSTOM SIZES AVAILABLE**

**TRASHRACKS.COM** TITLE:  
**LPG-10**  
 10" PIPE GUARD GRATE  
 A DIVISION OF J.R. ROE MADE IN THE U.S.A.

**PRODUCT ID** MATERIAL COATING WEIGHT

LSW-0707-P ASTM A36 MILD STEEL N/A 9 LBS.  
 LSW-0707-G ASTM A36 MILD STEEL GALVANIZED 9 LBS.  
 LSW-0707-SS 304 STAINLESS STEEL POWDER COAT 9 LBS.  
 LSW-0707-AL 6061-T6 ALUMINUM ANODIZED 3 LBS.

**CUSTOM SIZES AVAILABLE**

**TRASHRACKS.COM** TITLE:  
**LSW-0707**  
 7'x7' SIDE WALL TRASH RACK  
 A DIVISION OF J.R. ROE MADE IN THE U.S.A.

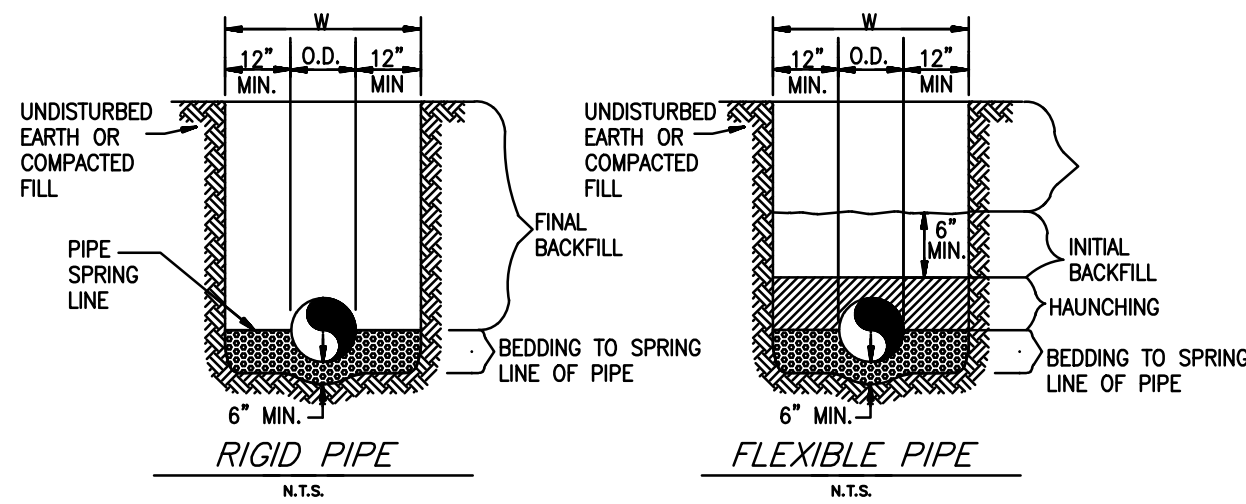
**PRODUCT ID** MATERIAL COATING WEIGHT

LVT-2424-P ASTM A36 MILD STEEL N/A 61 LBS.  
 LVT-2424-G ASTM A36 MILD STEEL GALVANIZED 61 LBS.  
 LVT-2424-SS 304 STAINLESS STEEL POWDER COAT 61 LBS.  
 LVT-2424-AL 6061-T6 ALUMINUM ANODIZED 21 LBS.

**CUSTOM SIZES AVAILABLE**

**TRASHRACKS.COM** TITLE:  
**LVT-2424**  
 7'x7' ANTI-VORTEX PLATE  
 A DIVISION OF J.R. ROE MADE IN THE U.S.A.





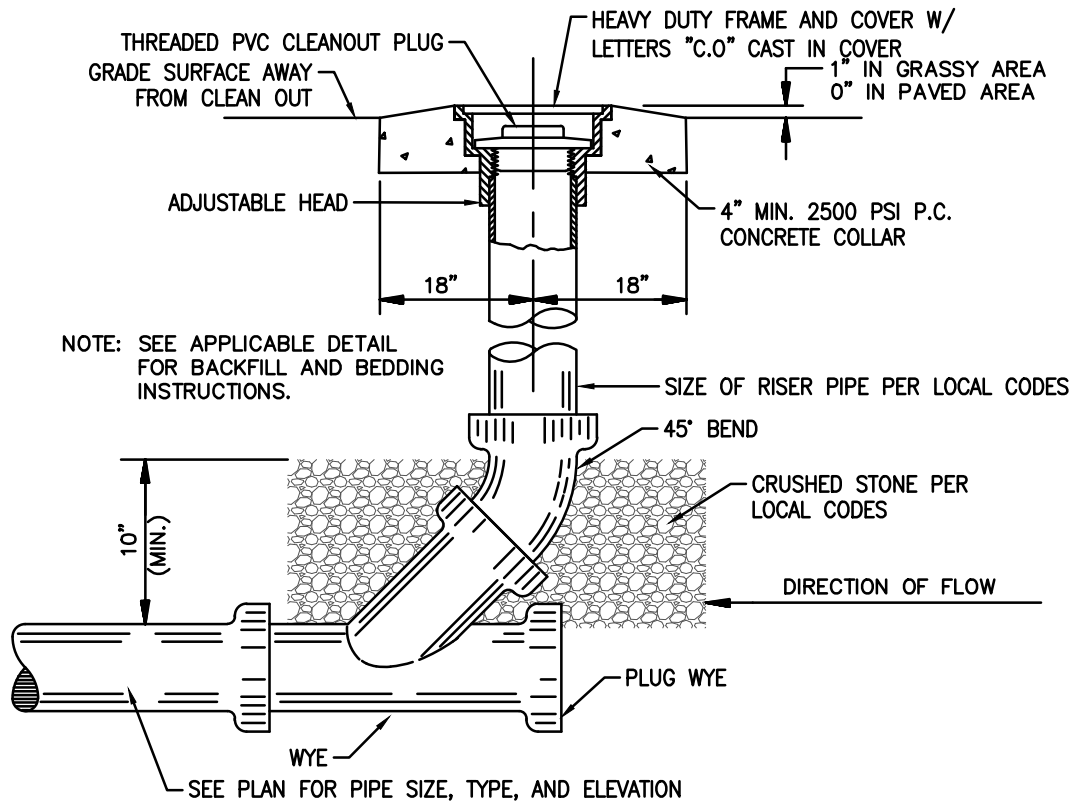
- GENERAL NOTES
- BEDDING SHALL BE CLASS I-A WORKED BY HAND. IF GROUNDWATER IS ANTICIPATED, THEN BEDDING SHALL BE CLASS I-B COMPACTED TO 95% STANDARD PROCTOR.
  - HAUNCHING SHALL BE WORKED AROUND THE PIPE BY HAND TO ELIMINATE VOIDS AND SHALL BE CLASS I-A OR CLASS I-B OR CLASS II COMPACTED TO 95% PROCTOR.
  - 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.
  - INITIAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS II COMPACTED TO 90% STANDARD PROCTOR.
  - FINAL BACKFILL UNDER PAVED AREAS 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-LATEST EDITION.
  - 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.
  - 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.
  - GEOTECH FABRIC TO BE USED UNDER BEDDING MATERIAL WHEN UNSUITABLE SOILS ARE ENCOUNTERED OR A STABLE NON-YIELDING FOUNDATION CANNOT BE OBTAINED.
  - 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 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 GRAVELY SANDS; LITTLE OR NO FINES (NO. 200 SIEVE)
		SP	POORLY-GRADED SANDS AND GRAVELY SANDS; LITTLE OR NO FINES (NO. 200 SIEVE)
	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
III	COARSE-GRAINED SOILS WITH FINES	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
		GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
		SM	SILTY SANDS, SAND-SILT MIXTURES
		SC	CLAYEY SANDS, SAND-CLAY MIXTURES
IV-A	FINE-GRAINED SOILS (INORGANIC)	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
IV-B	FINE-GRAINED SOILS (INORGANIC)	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
		CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
V	ORGANIC SOILS	OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
		OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
	HIGHLY ORGANIC	PT	PEAT AND OTHER HIGH ORGANIC SOILS.

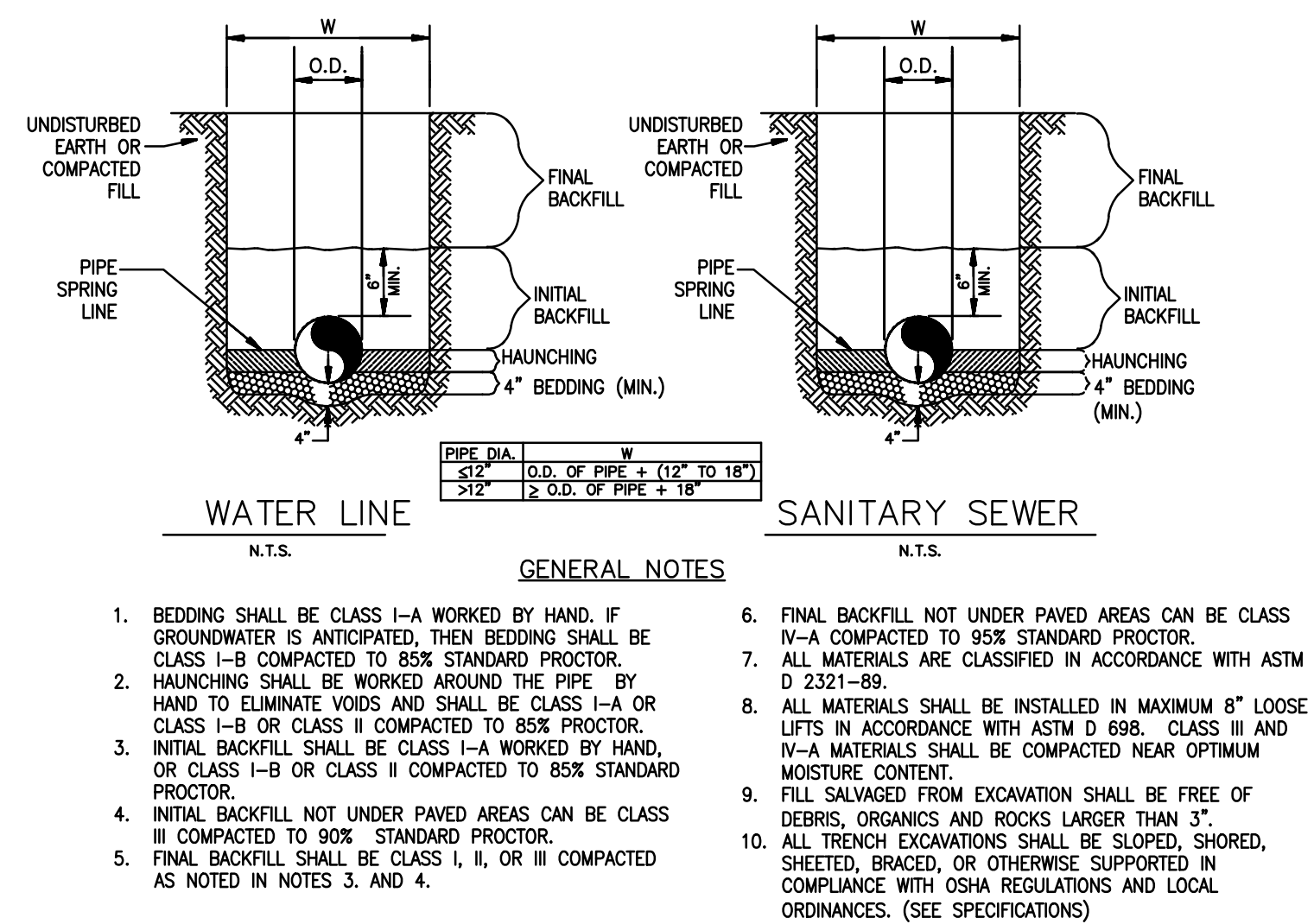
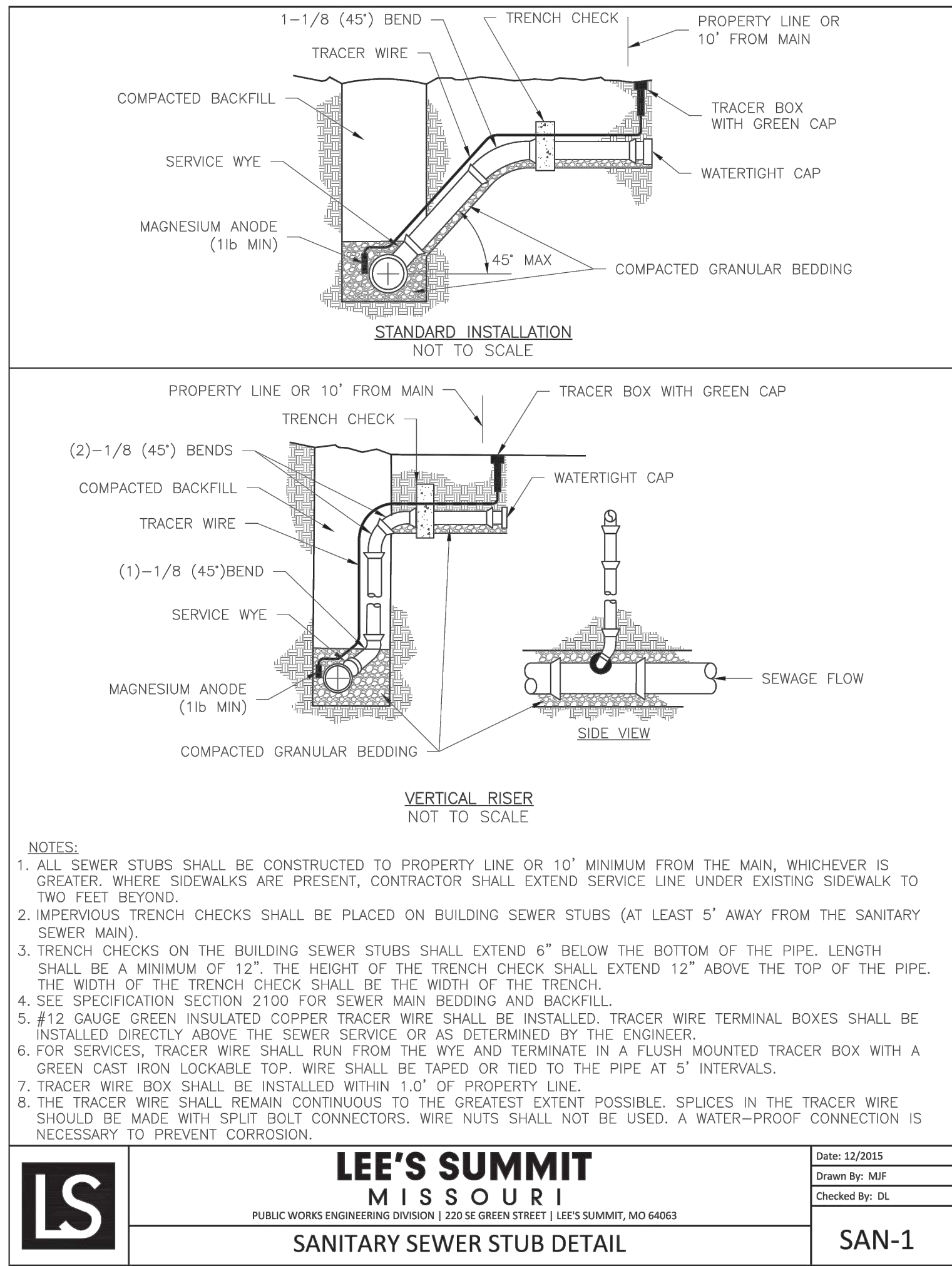
#### STORM SEWER TRENCH AND BEDDING

N.T.S.



#### SANITARY SEWER CLEAN-OUT

N.T.S.



#### UTILITY TRENCH AND BEDDING

N.T.S.

REVISION	BY

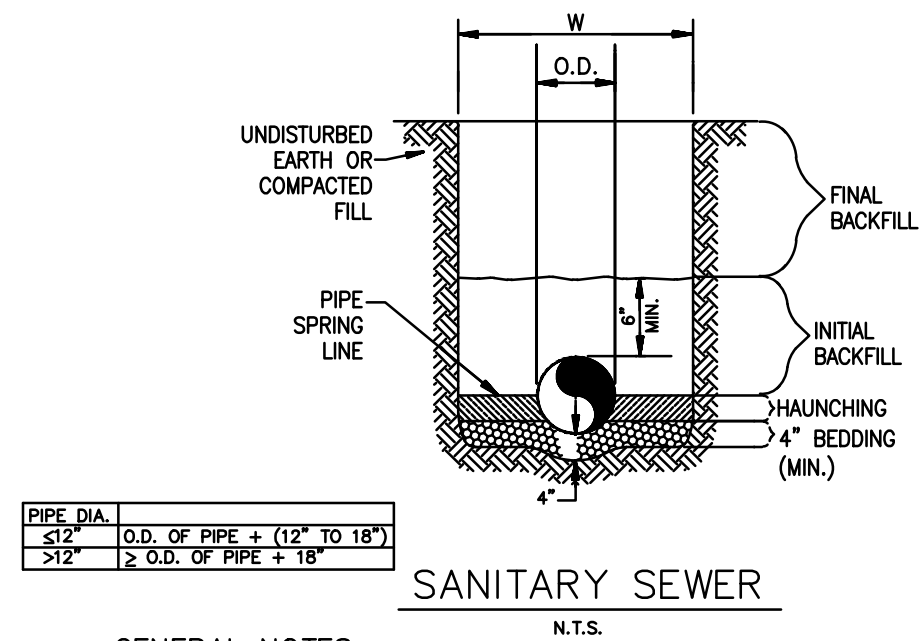
**HIGH TIDE**  
CONSULTANTS LLC  
434 N. COLUMBIA ST, SUITE 200A  
COVINGTON, LA 70433  
www.hightidela.com

Signature: [Signature]  
DATE: JULY 30, 2024  
Professional Engineer Seal: B. SHANE, MISSOURI, PE - 202100076

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

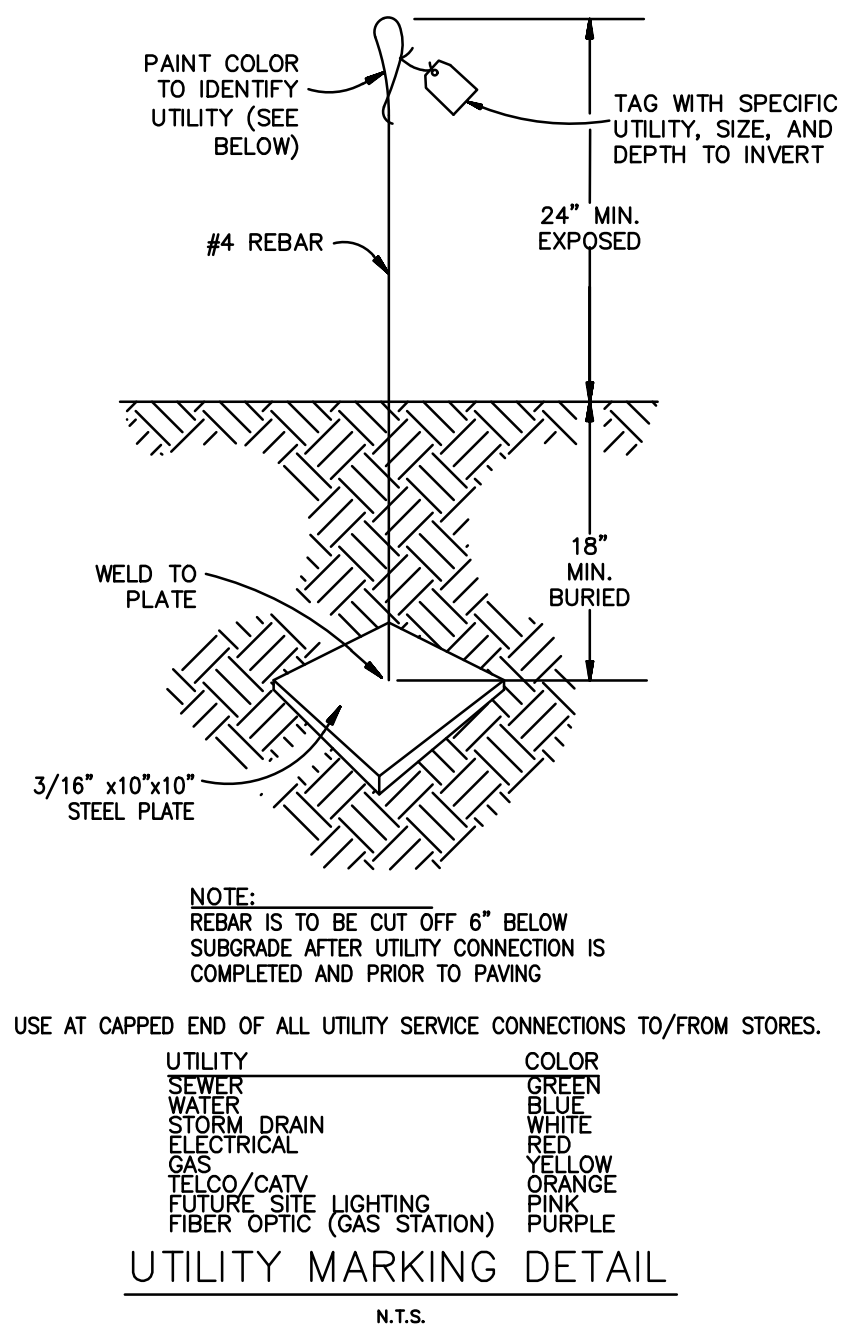




- GENERAL NOTES
- BEDDING SHALL BE CLASS I-A WORKED BY HAND, IF GROUNDWATER IS ANTICIPATED, THEN BEDDING SHALL BE CLASS I-B COMPACTED TO 85% STANDARD PROCTOR.
  - HAUNCHING SHALL BE WORKED AROUND THE PIPE BY HAND TO ELIMINATE VOIDS AND SHALL BE CLASS I-A OR CLASS I-B OR CLASS II COMPACTED TO 85% PROCTOR.
  - 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 656. 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

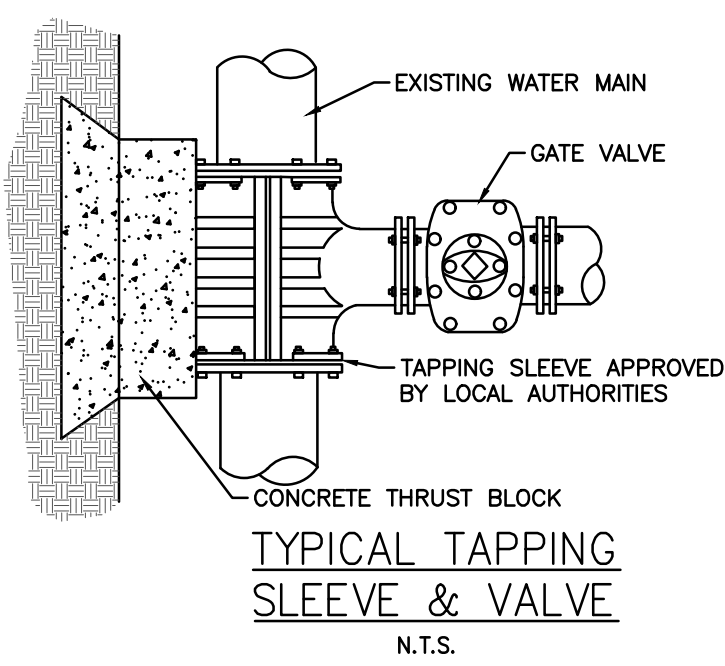
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#### UTILITY MARKING DETAIL

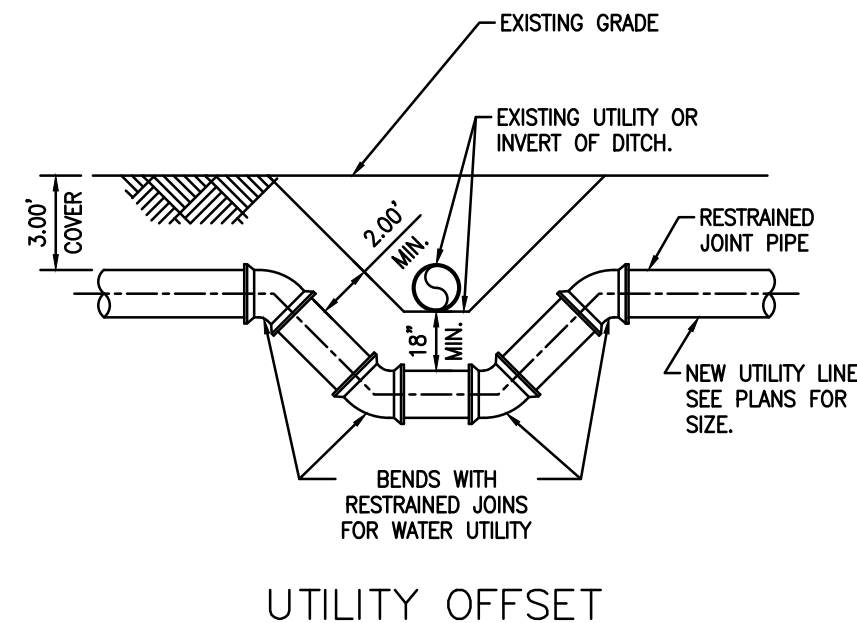
N.T.S.

CLASS	TYPE	SOIL GROUP SYMBOL D2487	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 GRAVELY SANDS; LITTLE OR NO FINES (NO. 200 SIEVE)
		SP	POORLY-GRADED SANDS AND GRAVELY SANDS; LITTLE OR NO FINES (NO. 200 SIEVE)
	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
III	COARSE-GRAINED SOILS WITH FINES	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-A	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.
IV-B	FINE-GRAINED SOILS (INORGANIC)		
V	ORGANIC SOILS		
	HIGHLY ORGANIC		

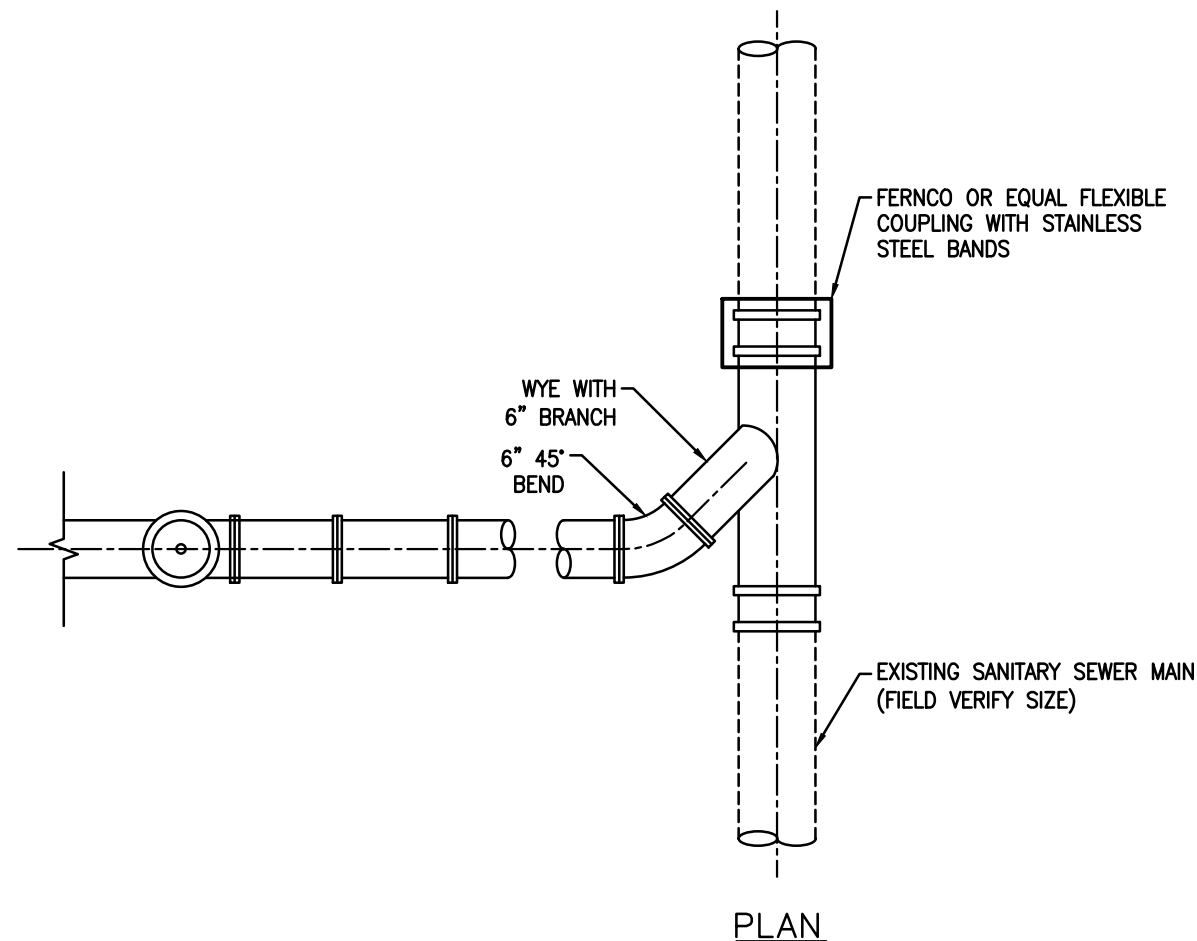


#### TYPICAL TAPPING SLEEVE & VALVE

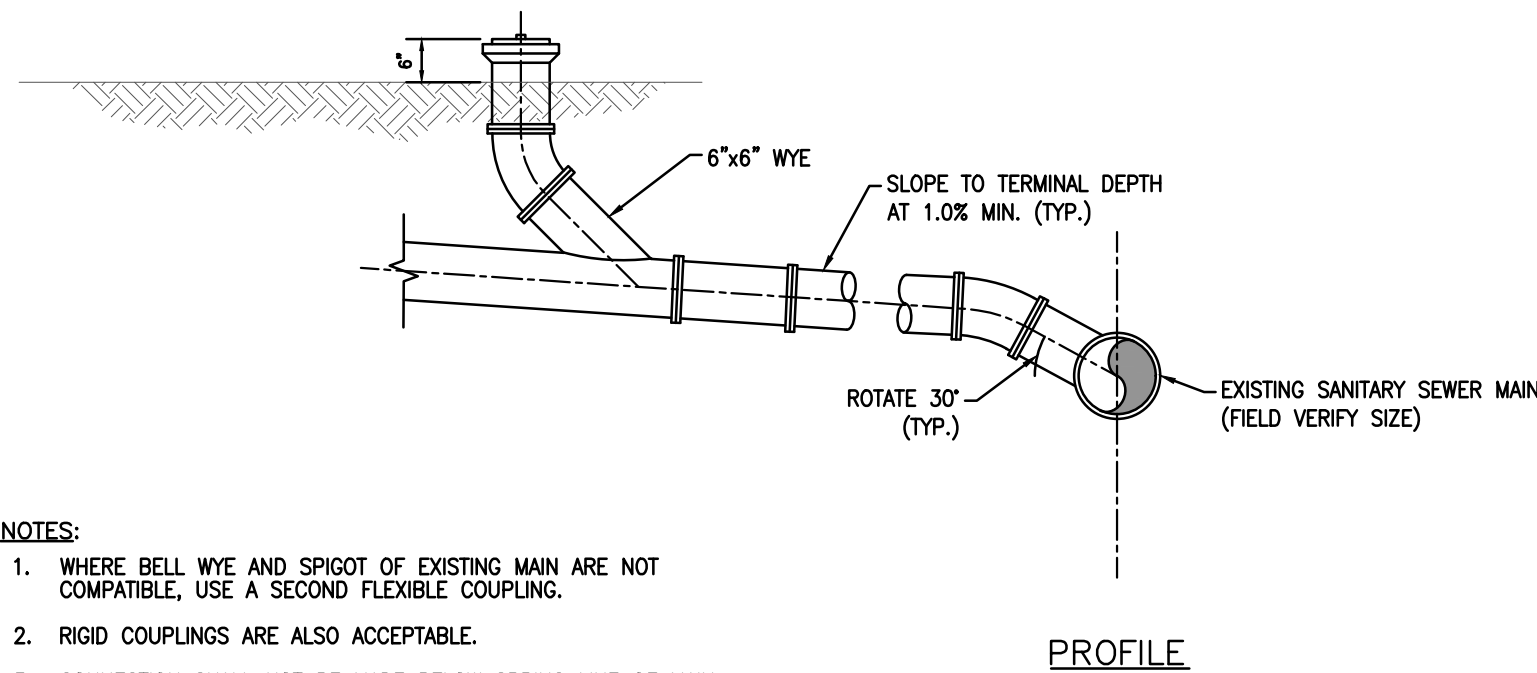
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#### UTILITY OFFSET



#### PLAN



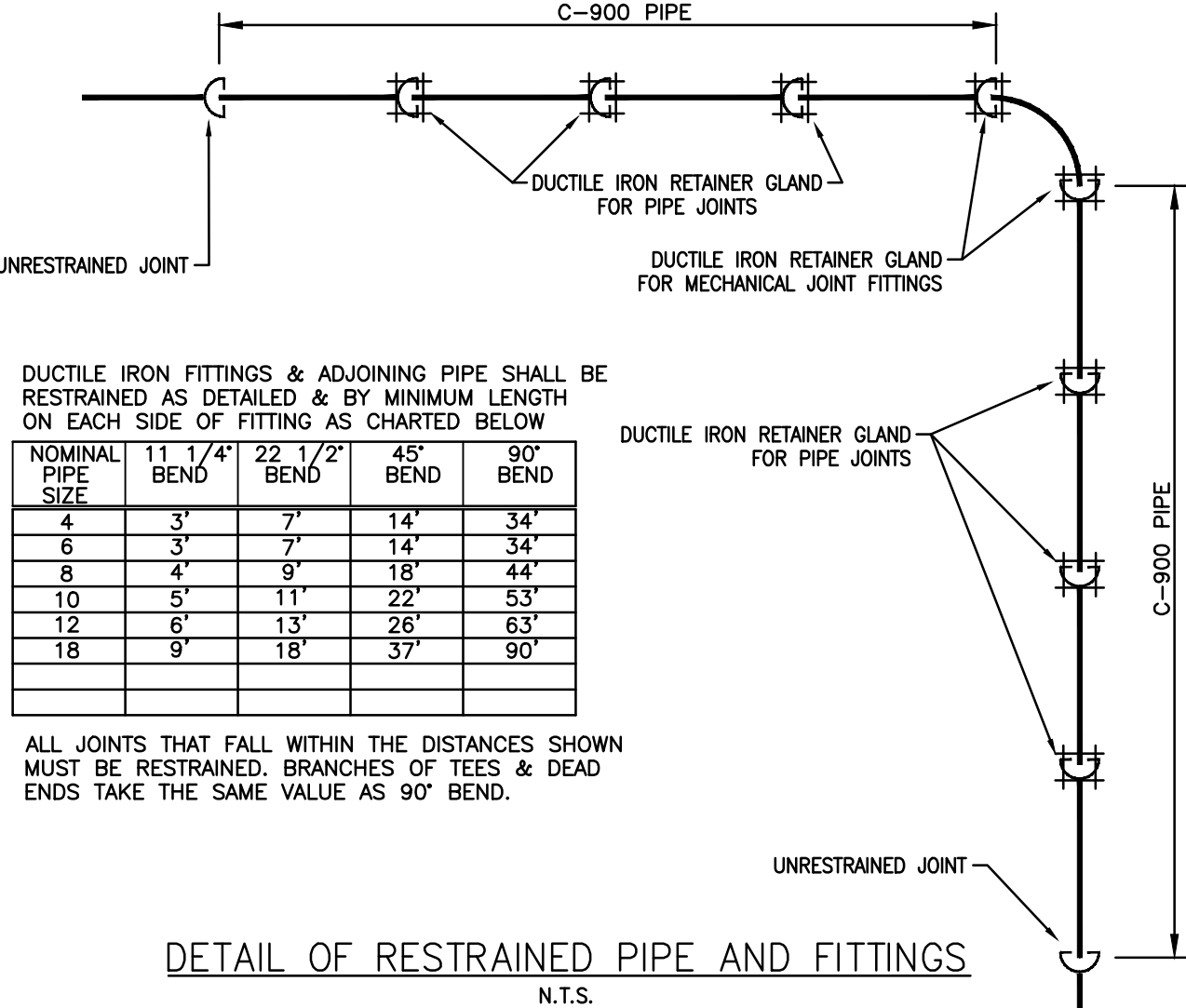
#### PROFILE

- 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

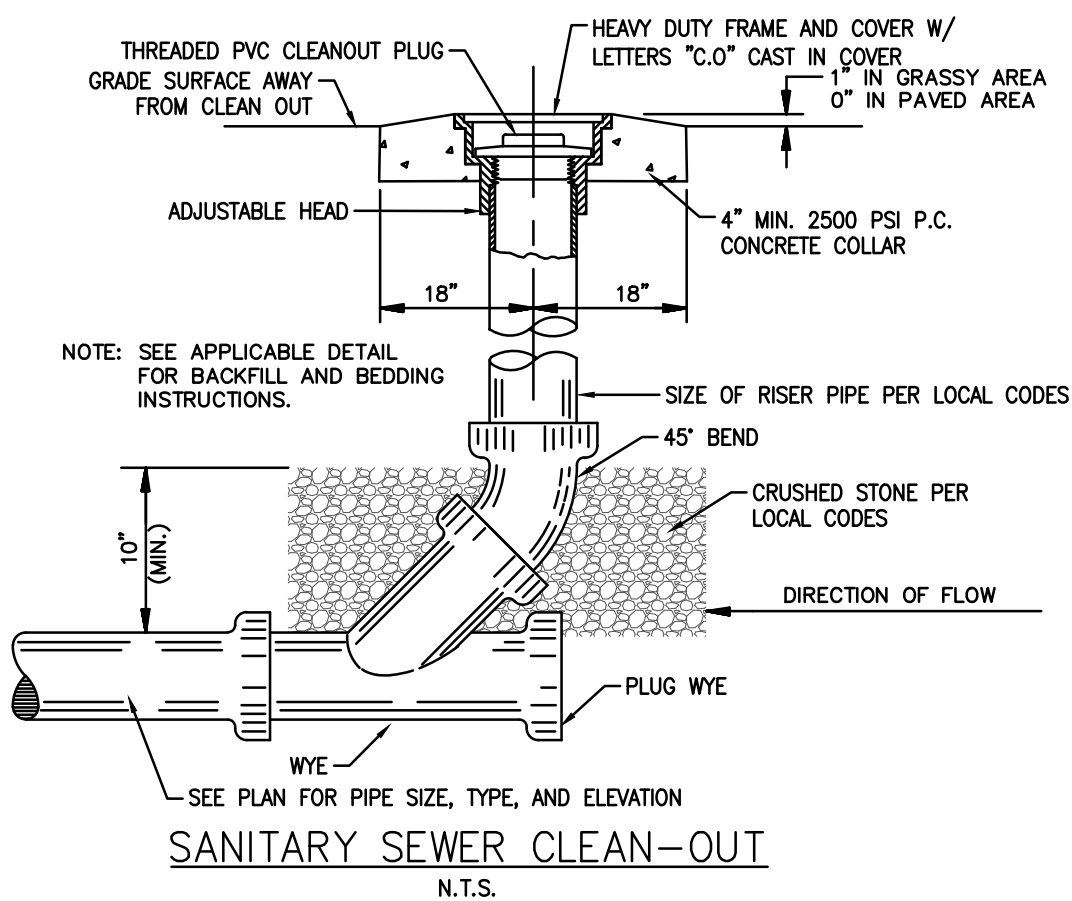
N.T.S.

- 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.



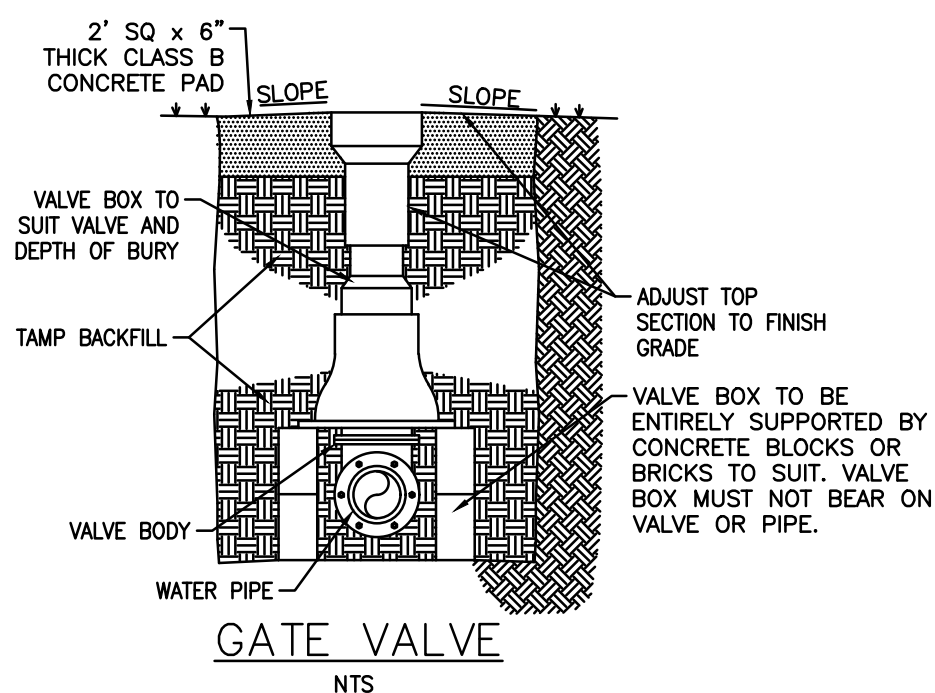
#### DETAIL OF RESTRAINED PIPE AND FITTINGS

N.T.S.



#### SANITARY SEWER CLEAN-OUT

N.T.S.



#### GATE VALVE

N.T.S.

## UTILITY DETAILS

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CONSULTANTS LLC  
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www.hightidelc.com

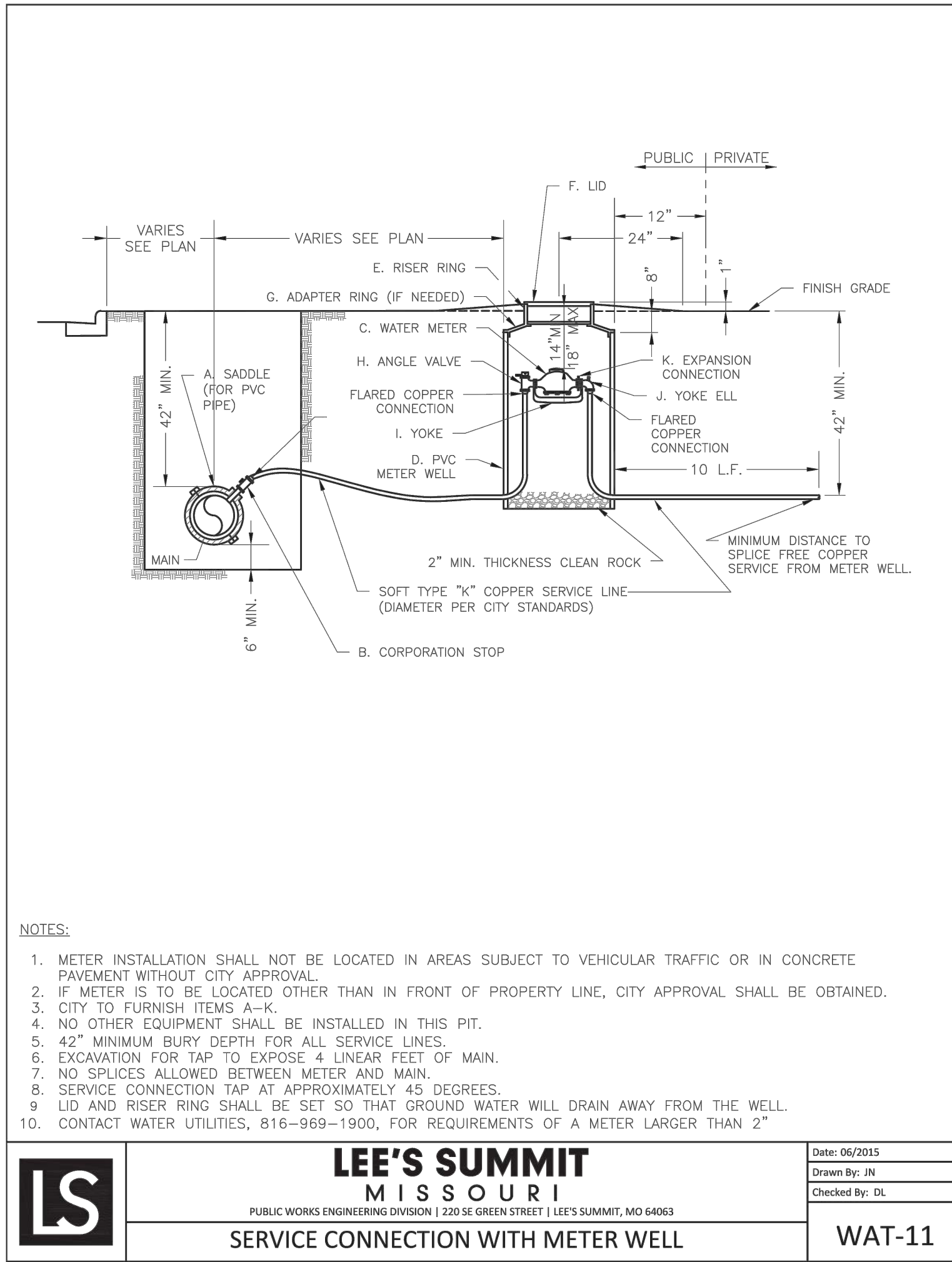
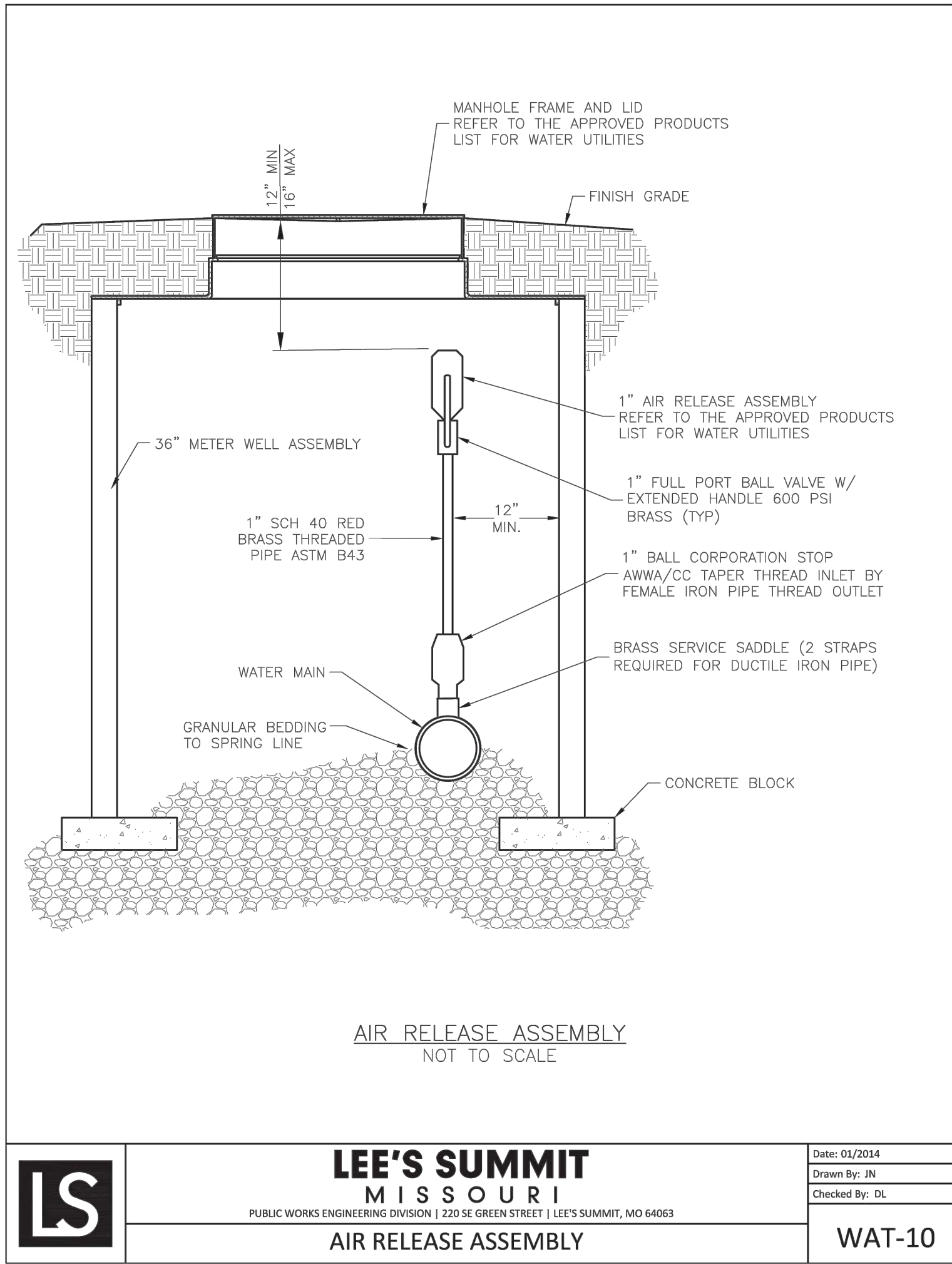
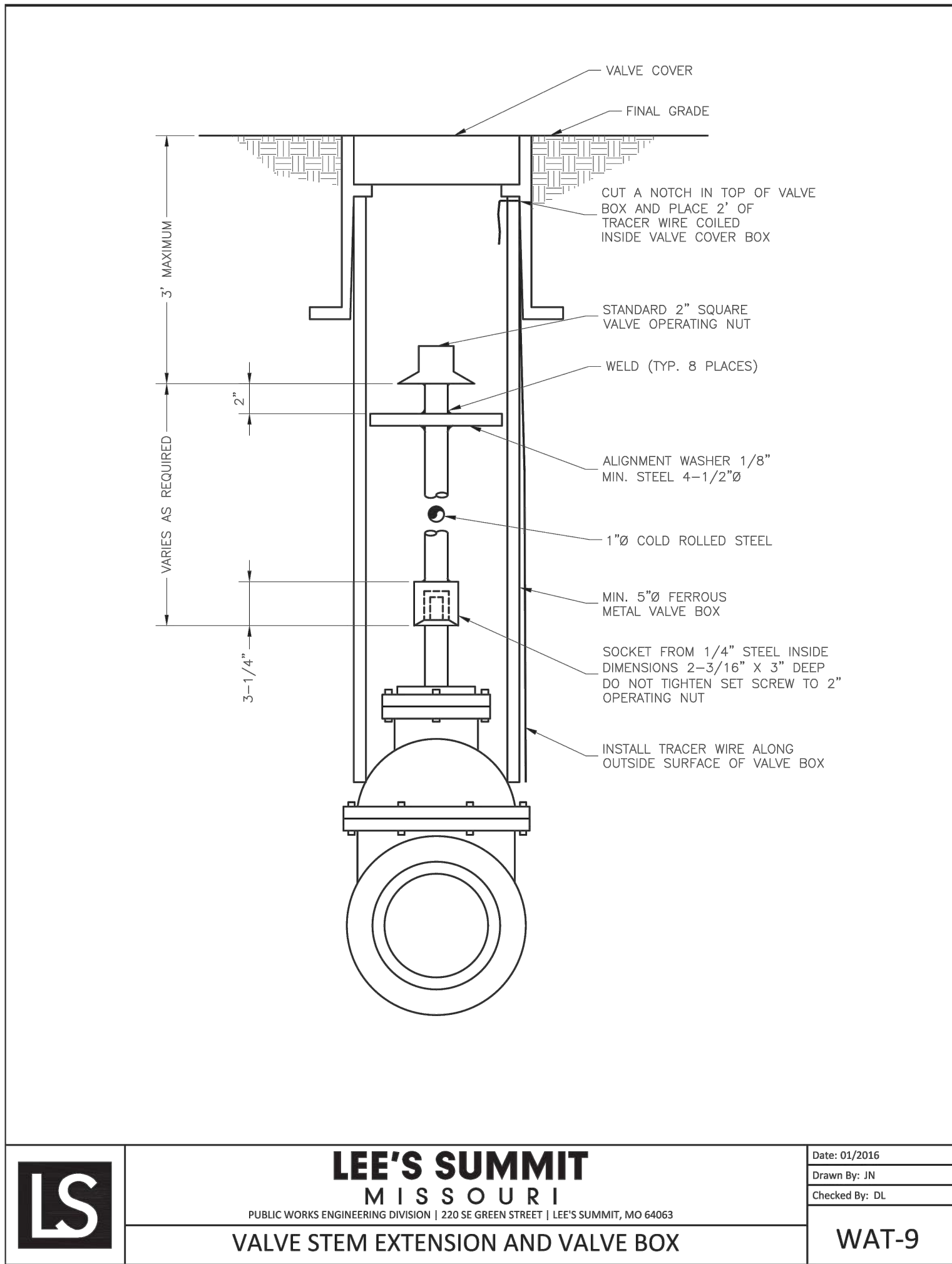
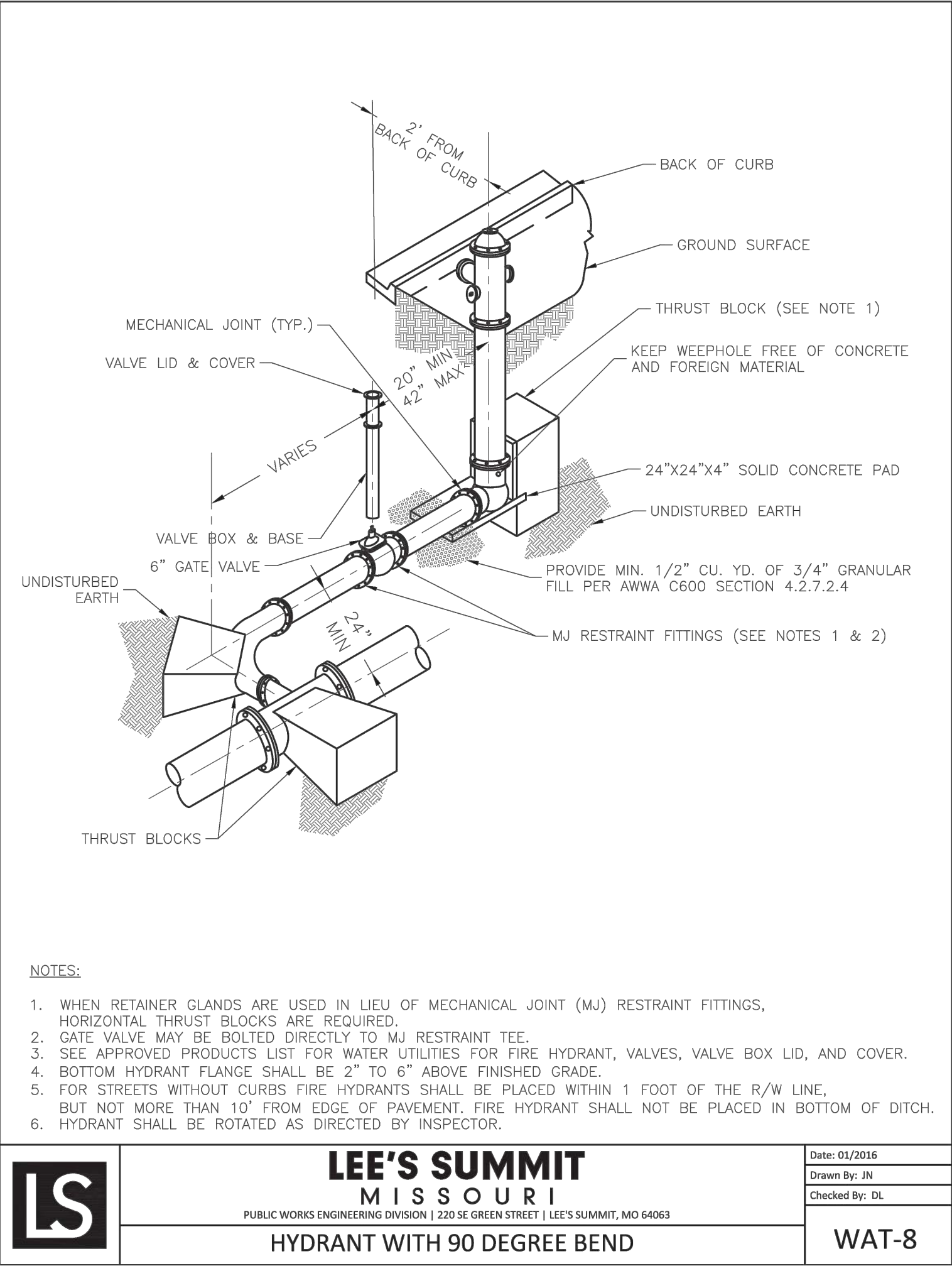
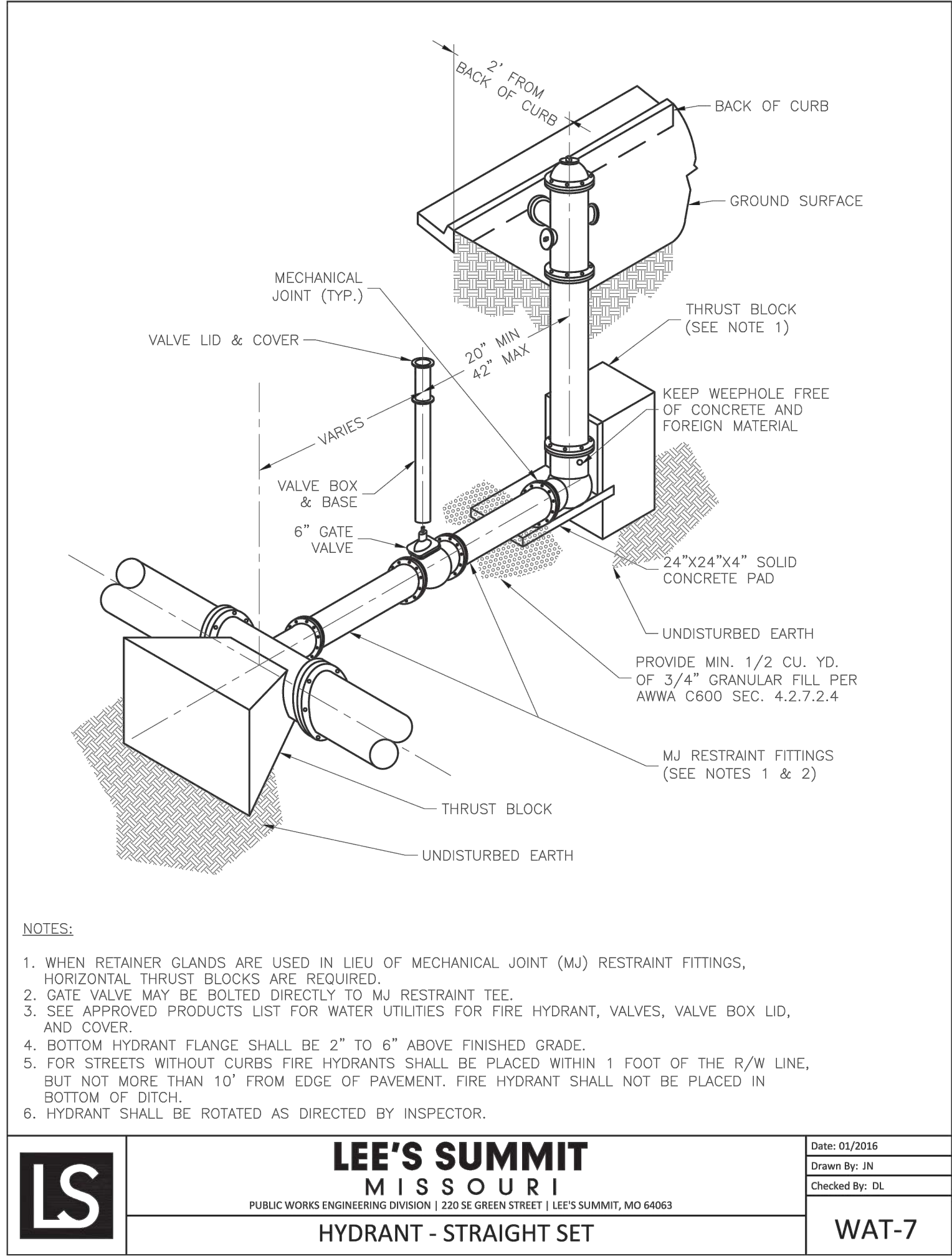


*[Signature]*  
B. SHANE  
GUIN  
NUMBER  
PE - 202100076  
JULY 30, 2024  
DATE  
STAMP  
OF MISSOURI  
PROFESSIONAL ENGINEER

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 C-4 Details  
SHEET  
C-4.7





## UTILITY DETAILS

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CONSULTANTS LLC

HIGH TIDE

DATE

JULY 30, 2024

SIGNATURE

STAMP

PE - 202100076

B. SHANE GUIN

NUMBER

PROFESSIONAL ENGINEER

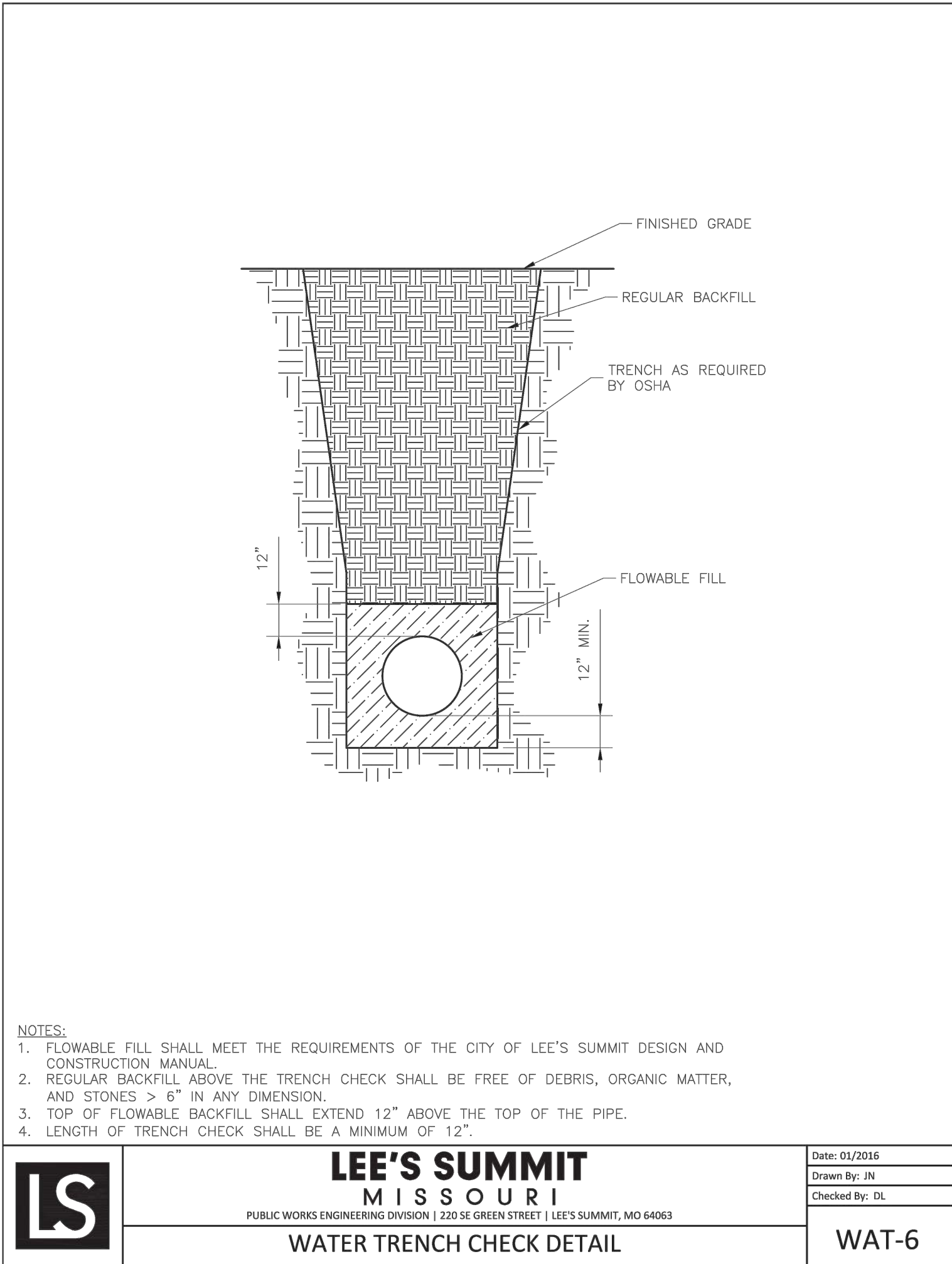
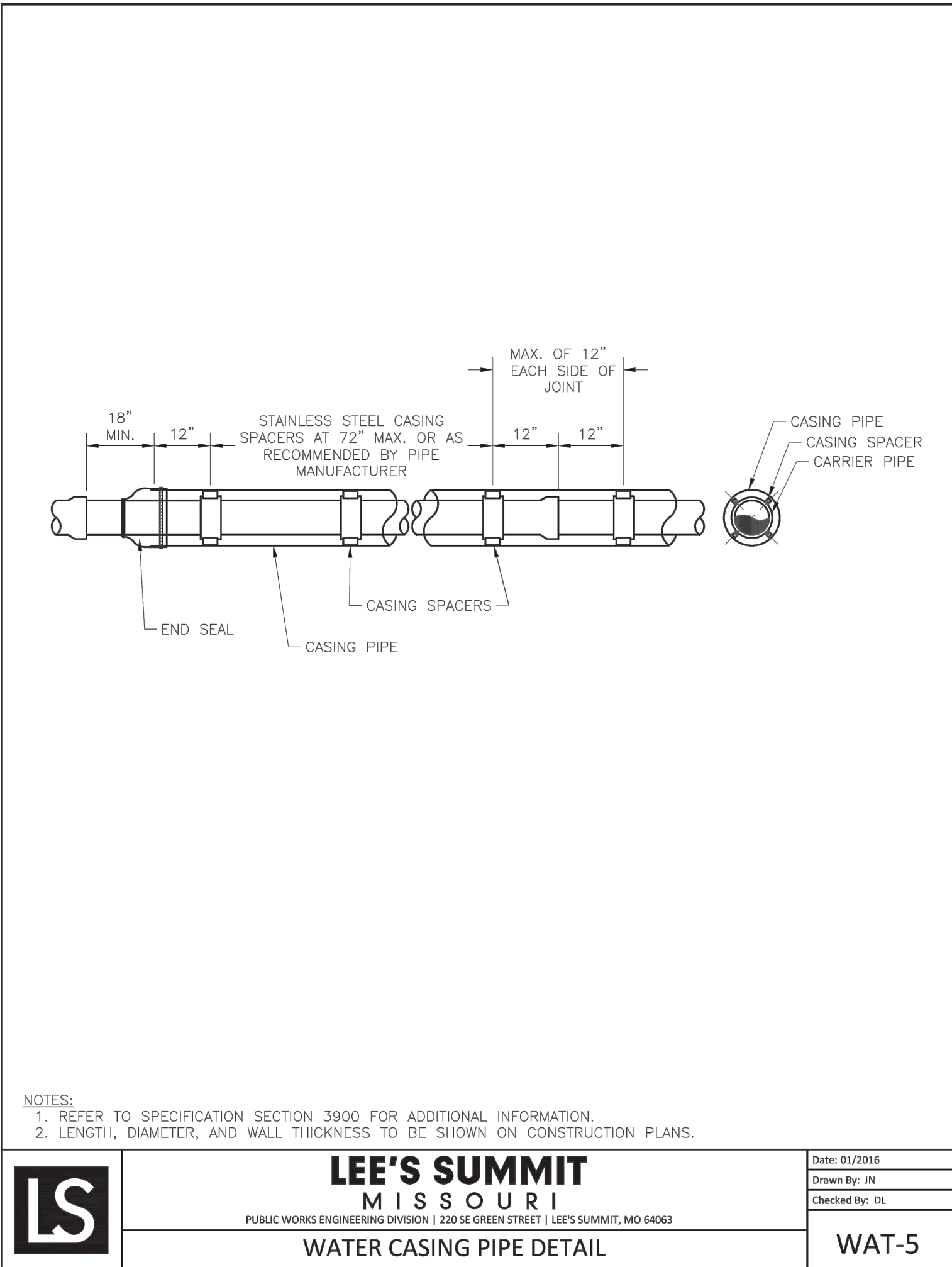
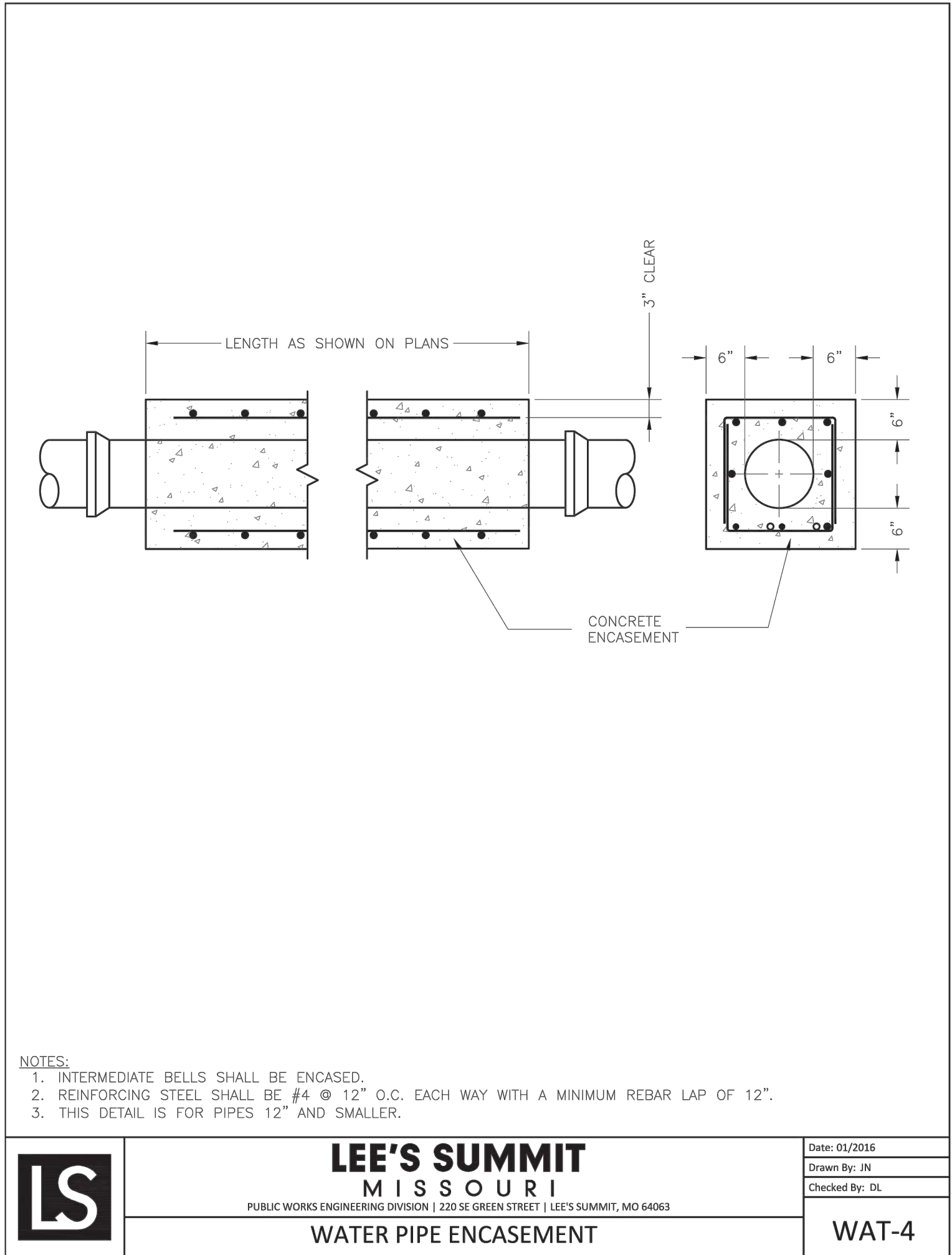
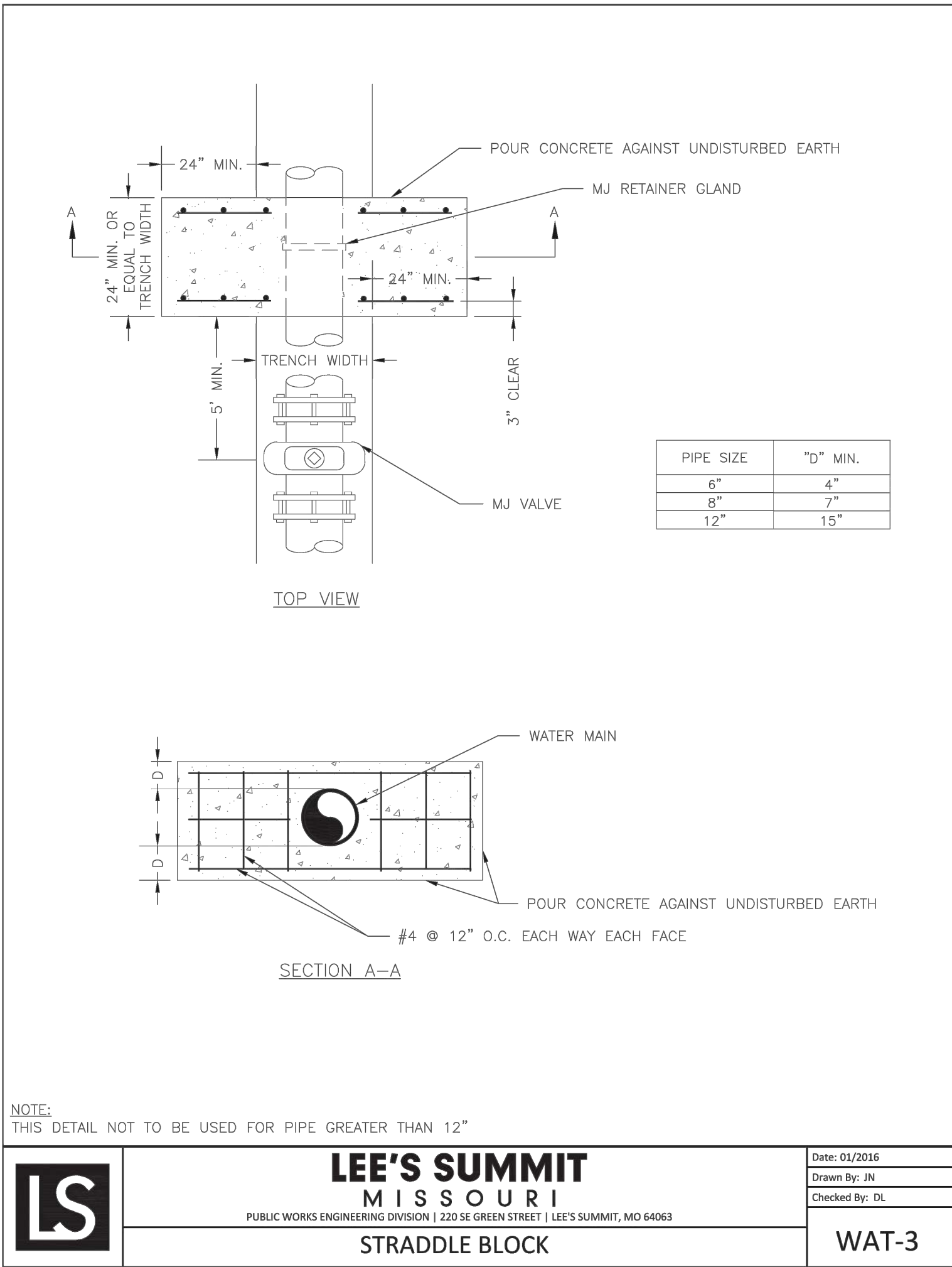
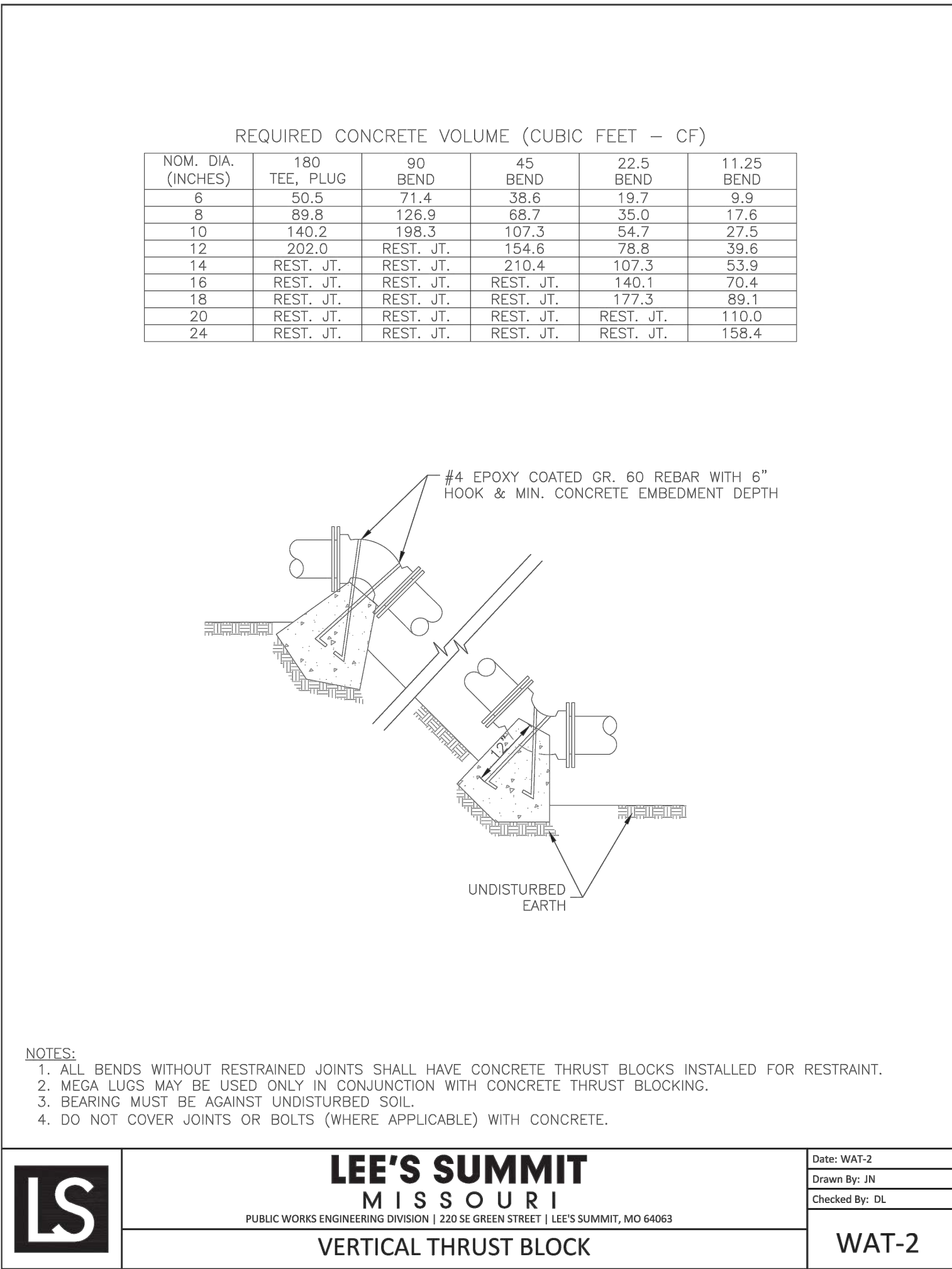
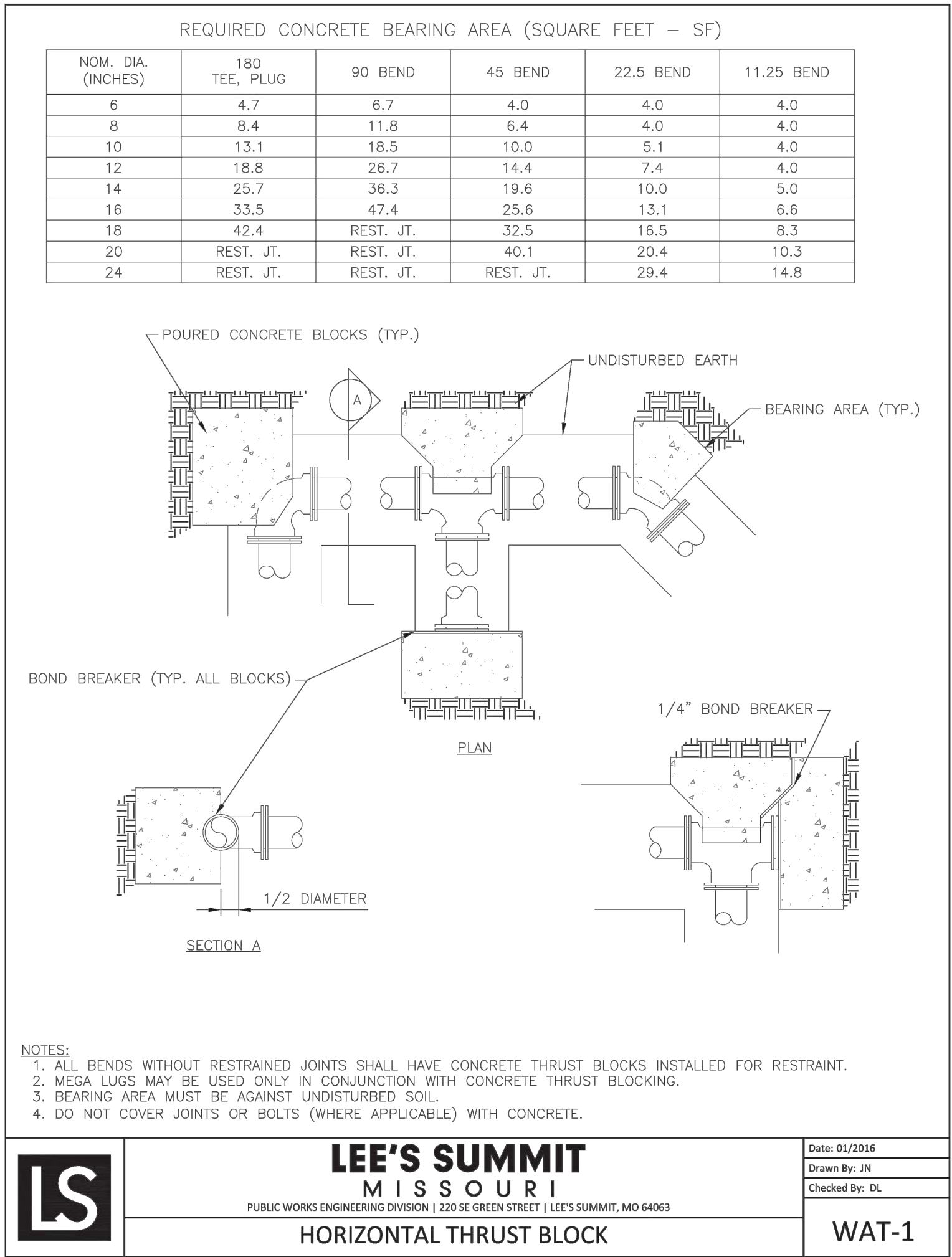
MISSOURI

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-4.8





## UTILITY DETAILS

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HIGH TIDE

CONSULTANTS LLC

434 N. COLUMBIA ST, SUITE 200A

COVINGTON, LA 70433

www.hightidela.com

Signature

DATE

JULY 30, 2024

DATE

STAMP

OF MISSOURI

B. SHANE

GIN

NUMBER

PE - 202100076

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 C-4 Details

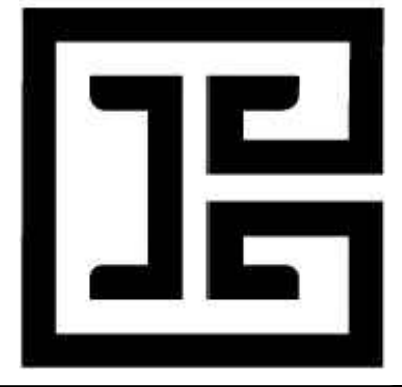
SHEET

C-4.9



REVISION	BY
REVISION #1	

HIGH TIDE  
CONSULTANTS LLC  
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COVINGTON, LA 70433  
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SIGNATURE  
DATE  
STAMP  
STATE OF MISSOURI  
RYAN  
McKNIGHT  
NUMBER  
PLA-2021099815  
PROFESSIONAL LANDSCAPE ARCHITECT

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

DRAWN  
ML  
CHECKED  
BG/EM  
ISSUED DATE  
9/28/2023  
ISSUED FOR  
PRELIMINARY DEVELOPMENT  
PROJECT NO.  
FILE  
L1.0 LANDSCAPE ORDINANCE PLAN  
SHEET  
L1.0

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 'Navarospop') 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)

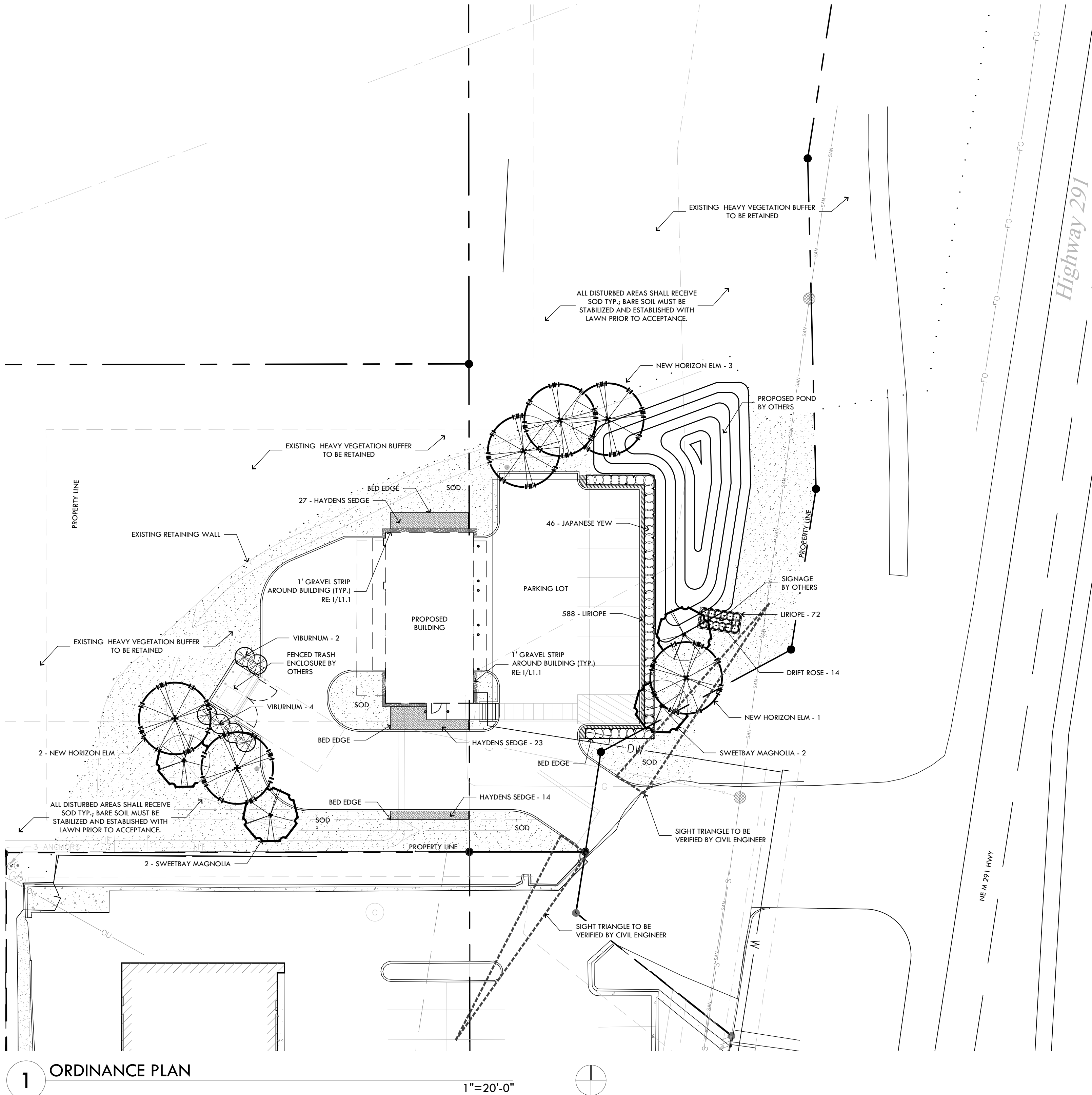
NO REQUIRED BUFFER

##### 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.



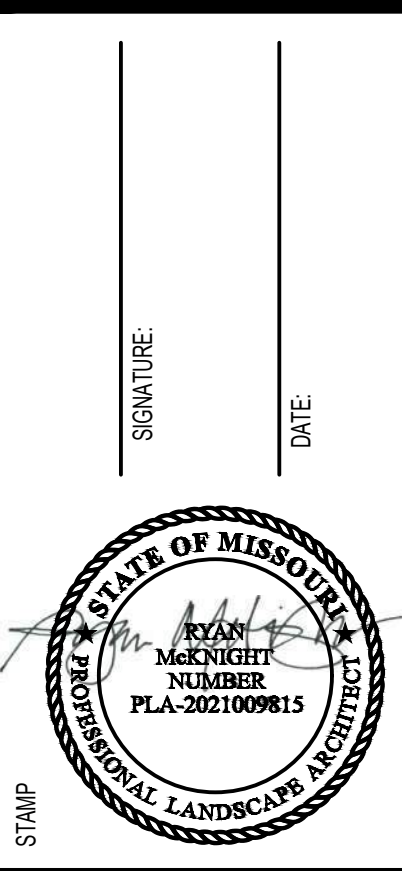
1 ORDINANCE PLAN

1"=20'-0"



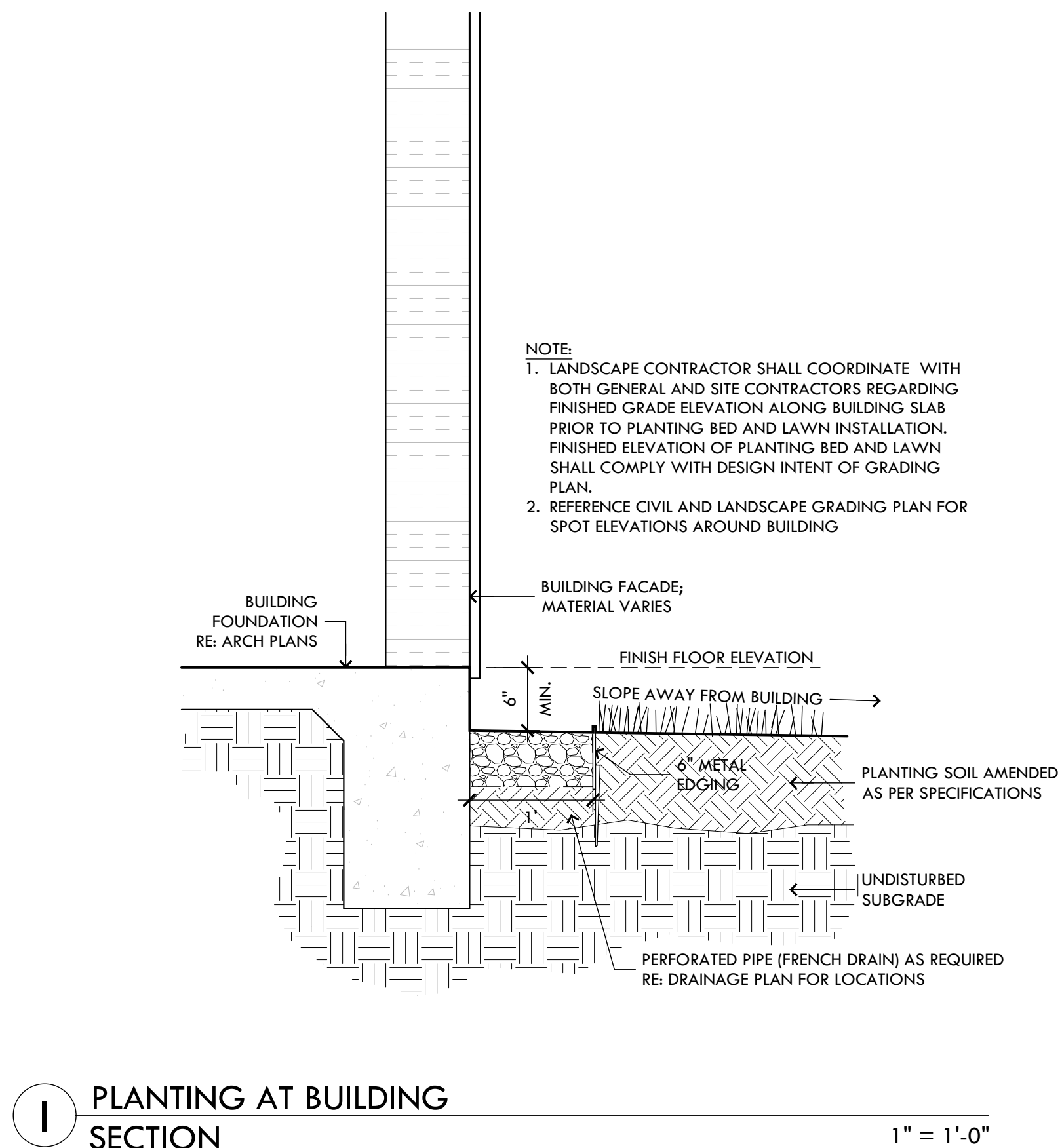
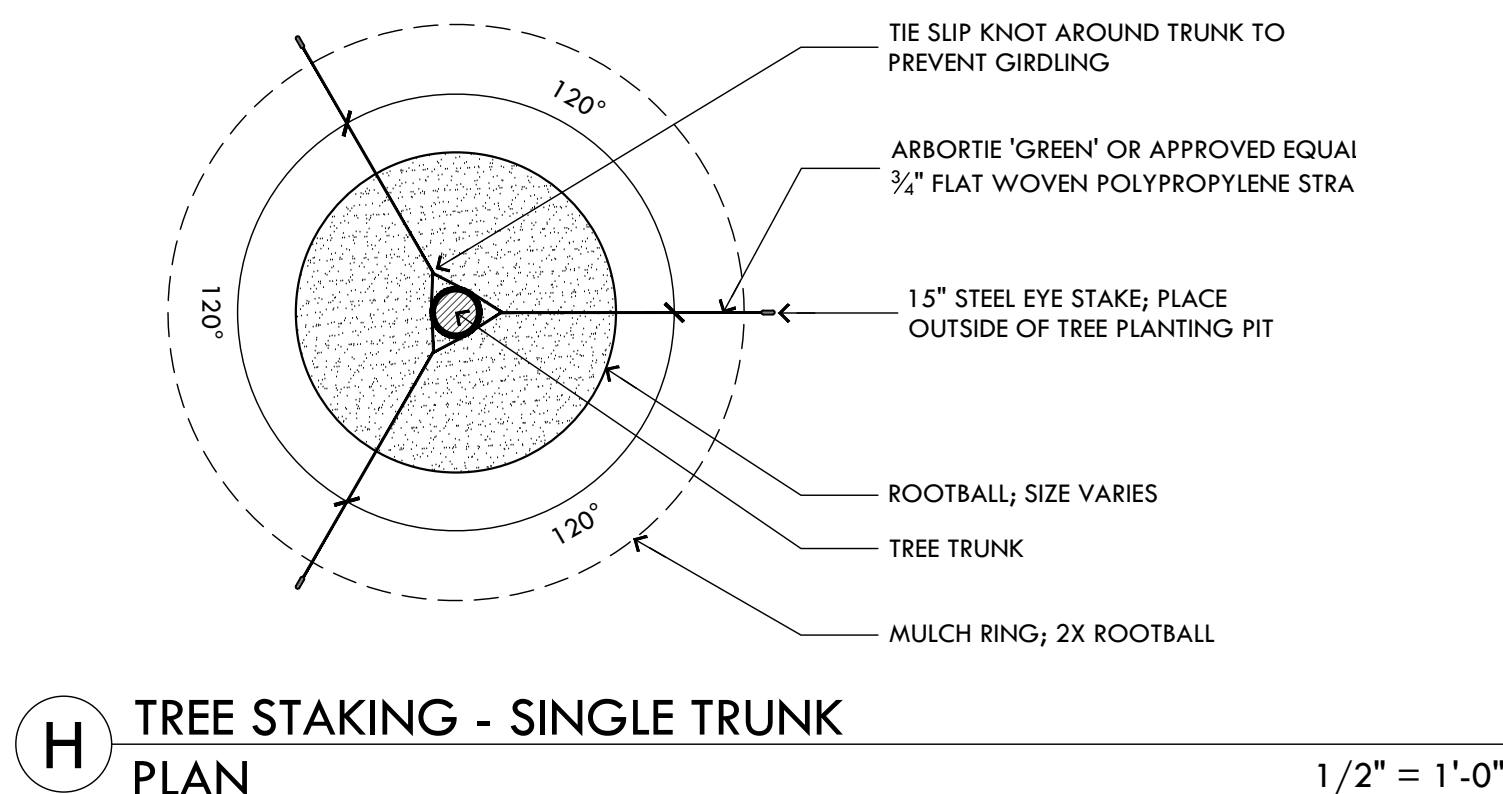
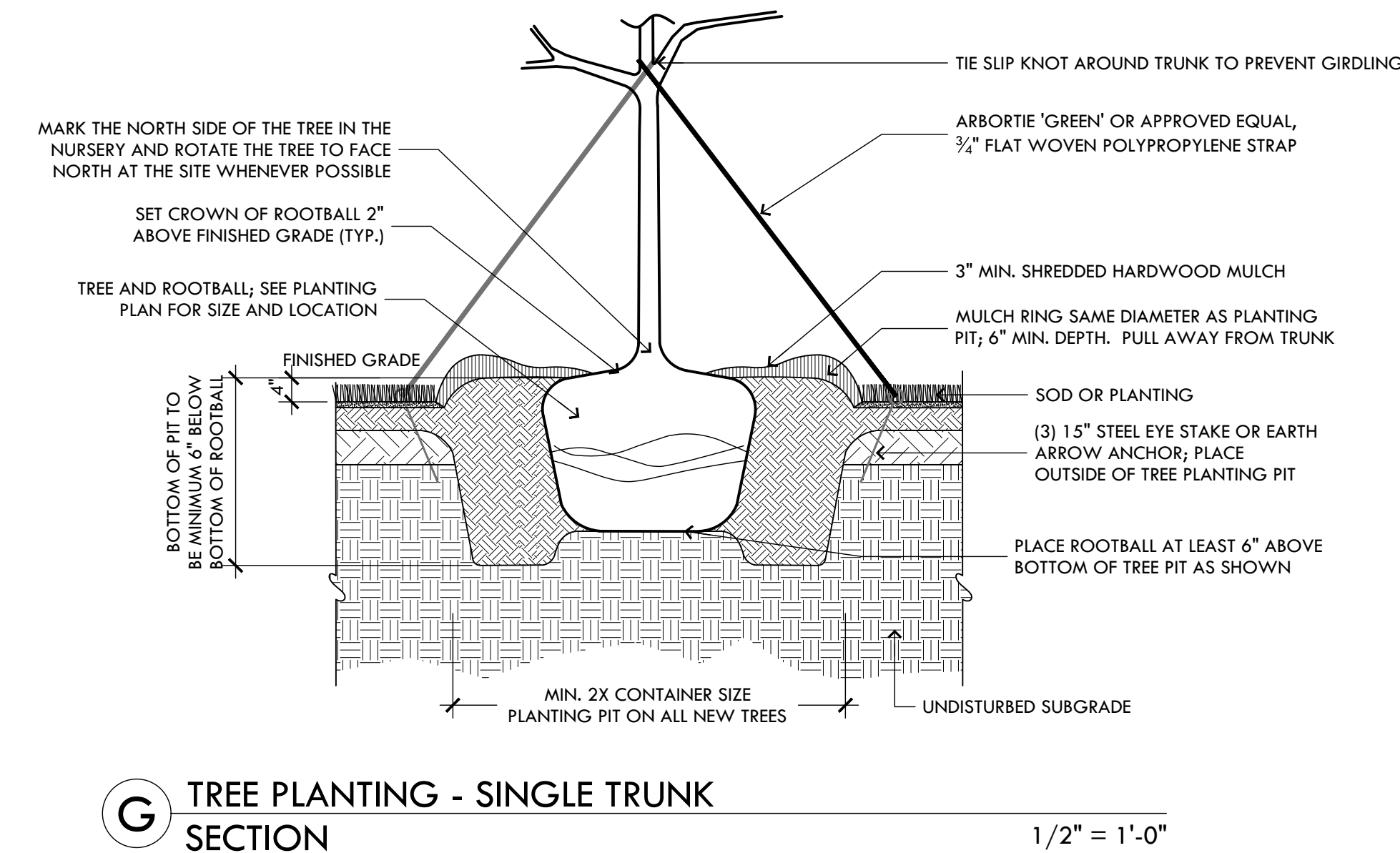
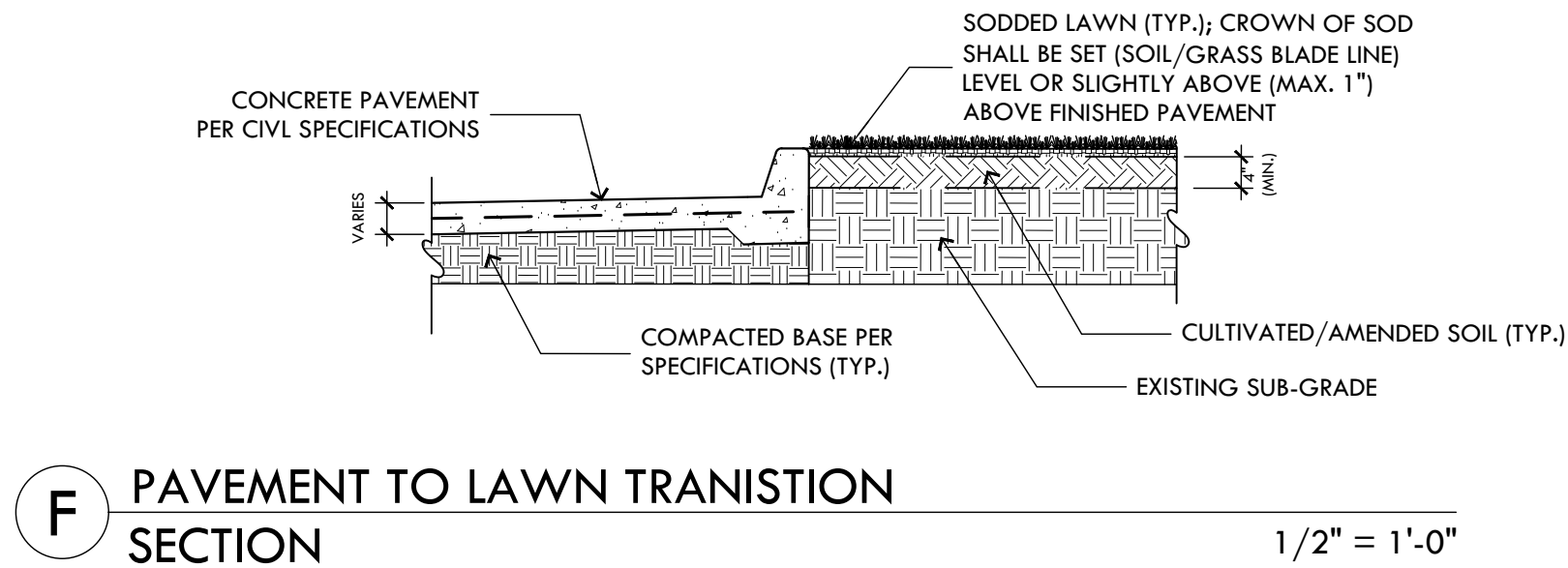
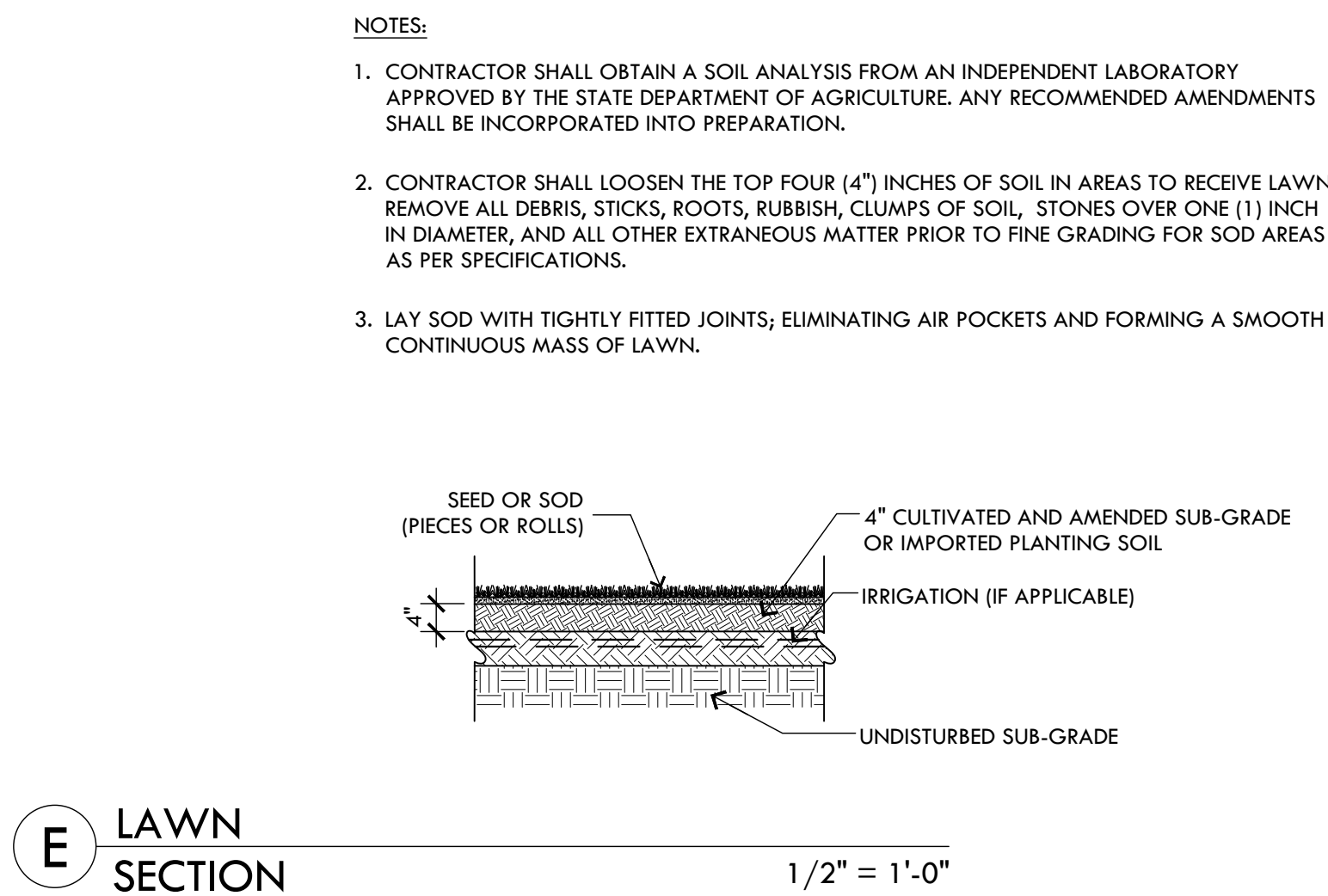
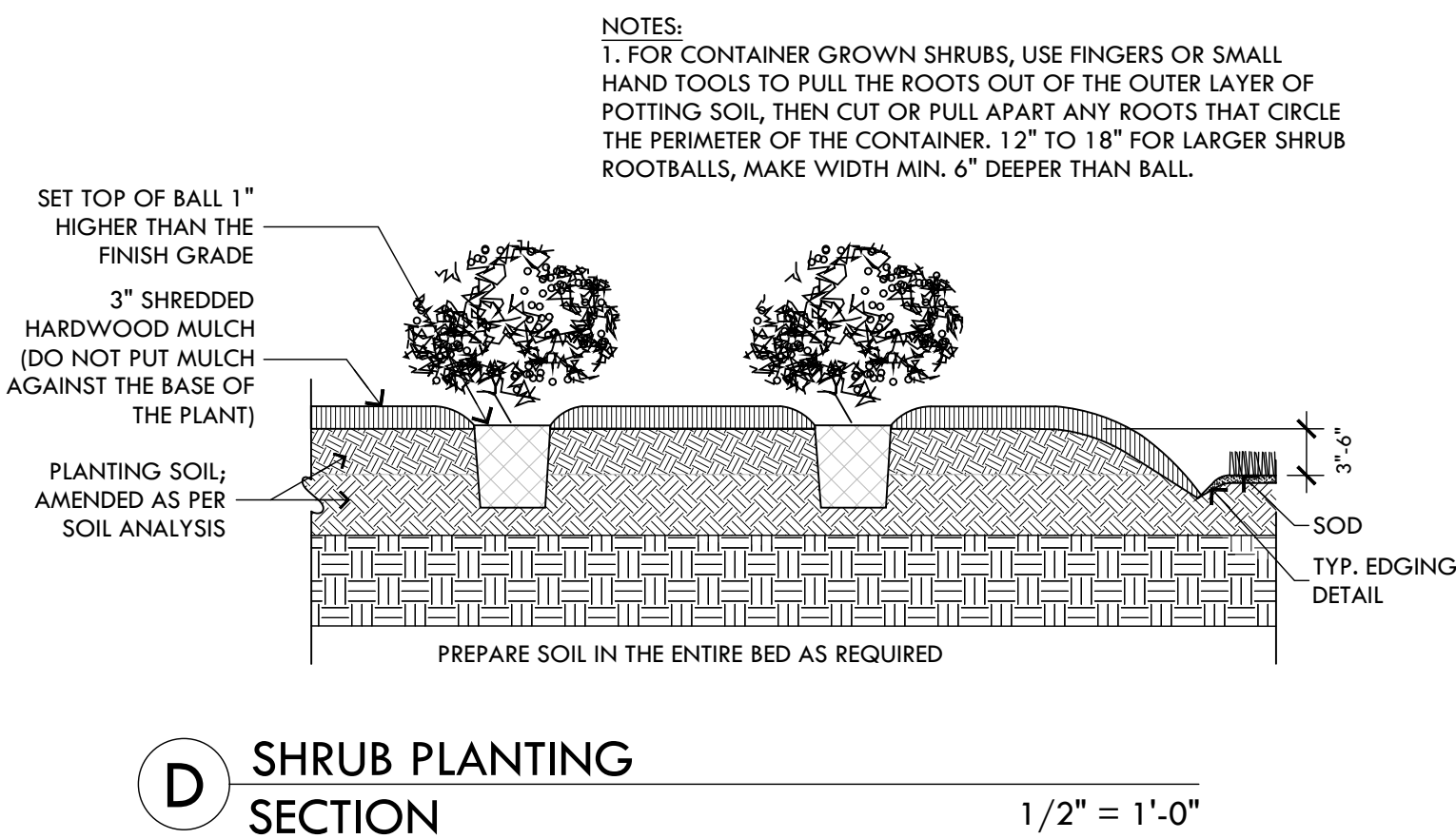
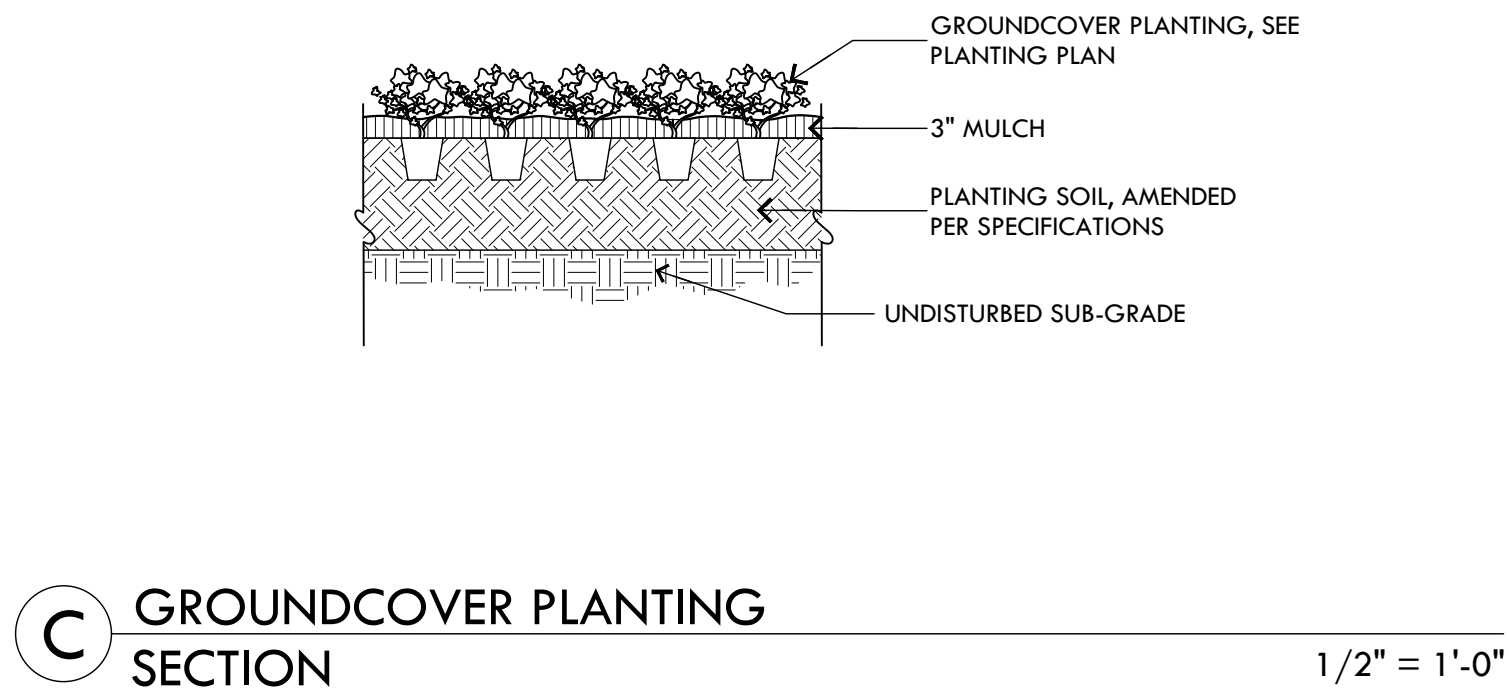
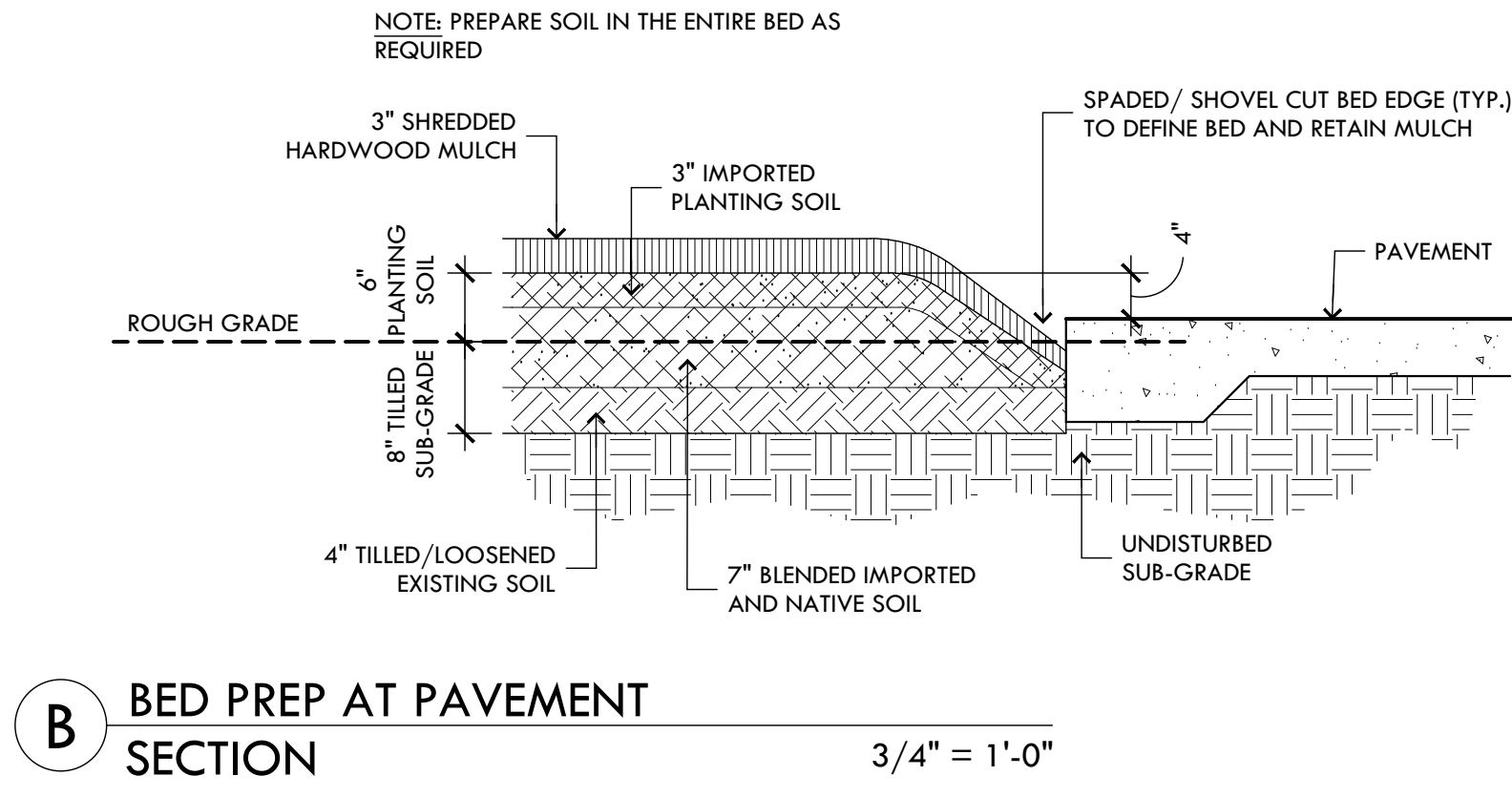
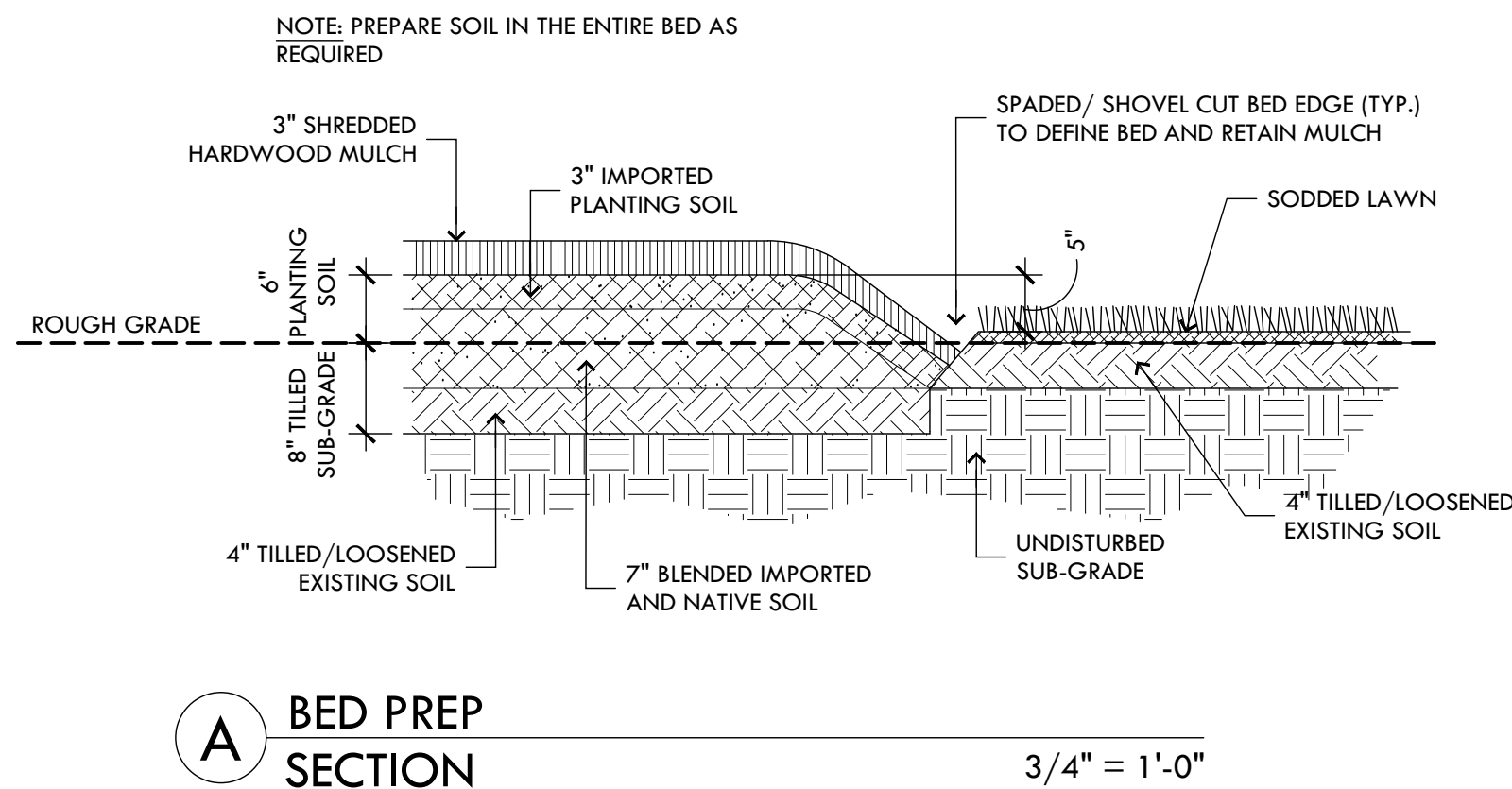
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COVINGTON, LA 70433  
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PROPOSED TAKE 5  
LEE'S SUMMIT, MISSOURI  
FOR DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO 80302

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>





OPERATIONAL NOTES:  
CLASS 1 LIQUIDS ARE NOT STORED IN TAKE 5 BUILDINGS.  
CLASS IIB LIQUID (MOTOR OIL) IS STORED IN THE BACK ROOM AREA WHICH IS VENTILATED AS REQUIRED. SEE MECHANICAL SHEETS.

NO LIQUIDS ARE STORED IN THE LUBE TRENCHES.

VEHICLES ARE OPERATED ONLY FOR THE DURATION OF MOVING THEM IN & OUT OF THE BUILDING.

4x4 PRE-FINISHED METAL DOWNSPOUT LEADERHEAD W/ 3 STRAP ANCHORS PER D.S. - TYP. (COLOR - DK BRONZE) - RE: SPECS.  
PROVIDE BLOCKING IN WALL FOR ALL GRAB BARS AND DISPENSERS.

DOOR & FRAME - RE: SCHEDULE

1 1/2" EIFS WALL SYSTEM OVER OSB SHEATHING - RE: SPECS.

1/2" PLYWOOD WALL W/ 2x6 WOOD STUDS @ 16" O.C. - CLEAN, FRIME & PAINT (TYPICAL)

(3) WIRE RACKS SHELVES ABOVE COMPRESSOR, MOUNT 14" O.C. VERT.

DOOR & FRAME - RE: SCHEDULE

ELEC. PANEL, PRIME & PAINT (COLOR - DK BRONZE) - RE: ELECTRICAL

2" RECESSED SLAB @ WASTE OIL TANK AREA - RE: STRUCTURE

1 1/2" EIFS WALL SYSTEM OVER OSB SHEATHING - RE: SPECS.

SAFE BY OWNER. PROVIDE BLOCKING IN WALL

WINDOW & FRAME - RE: SCHEDULE

PTAC UNIT WITH DARK BRONZE SHROUD

TRENCH FINISH:  
(2) COATS OF EPOXY AT WALLS AND FLOOR OF TRENCHES. RUST-OLEUM 2-PART EPOXY 6500 SYSTEM. COLOR: NAVY GRAY.

TRUE  
NORTH

① FLOOR PLAN  
1/4" = 1'-0"

4x4 PRE-FINISHED METAL DOWNSPOUT LEADERHEAD W/ 3 STRAP ANCHORS PER D.S. - TYP. (COLOR - DK BRONZE) - RE: SPECS.

LIGHT FIXTURE - RE: ELECTRICAL

OVERHEAD DOOR & FRAME - RE: SCHEDULE

1/2" PLYWOOD CEILING CLEAN, PRIME & PAINT - RE: SPECS.

1/2" PLYWOOD WALL W/ 2x6 WOOD STUDS @ 16" O.C. - CLEAN, FRIME & PAINT (TYPICAL)

ATTIC LADDER ABOVE - RE: SPECS.

1/2" PLYWOOD WALL W/ 2x6 WOOD STUDS @ 16" O.C. - CLEAN, FRIME & PAINT (TYPICAL)

1/2" PLYWOOD CEILING CLEAN, PRIME & PAINT - RE: SPECS.

LOUVER VENT (COLOR - DK BRONZE) - RE: MECHANICAL

1/2" PLYWOOD WALL W/ 2x6 WOOD STUDS @ 16" O.C. - CLEAN, FRIME & PAINT (TYPICAL)

1/2" PLYWOOD CEILING CLEAN, PRIME & PAINT - RE: SPECS.

OVERHEAD DOOR & FRAME - RE: SCHEDULE

LIGHT FIXTURE - RE: ELECTRICAL

③ REFLECTED CEILING PLAN  
1/4" = 1'-0"

NOTE: PROVIDE R-19 BATT INSULATION IN OFFICE AND RESTROOM WALLS

WIRE SHELVING:  
12" WIRE SHELVING TO BE "CLOSETMAID SUPERSLIDE" OR EQUAL, ON ADJUSTABLE MOUNT HARDWARE W/ VERTICAL STANDARDS AT 24" O.C. MAX SPACING.

16" WIRE SHELVING TO BE "CLOSETMAID MAX LOAD" OR EQUAL, ON HEAVY DUTY "MAX LOAD" ADJUSTABLE MOUNT HARDWARE W/ VERT STANDARDS AT 24" O.C. MAX SPACING.

CLOSET ROD TO BE "CLOSETMAID" EPOXY COATED STEEL "SUPER SLIDE SYSTEM" W/ CORNER ROUNDED BAR SUPPORTS TO BE HEAVY DUTY METAL "J" BRACKETS. PROVIDE CLOSET ROD END CAPS AT EACH END.

ALL FINISHES TO BE BRUSHED CHROME.

12x24 SPLASHBLOCK OR CONNECT TO STORM DRAIN (COORD. W/ CIVIL) - RE: CIVIL

4x4 PRE-FINISHED METAL DOWNSPOUT LEADERHEAD W/ 3 STRAP ANCHORS PER D.S. - TYP. (COLOR - DK BRONZE) - RE: SPECS.

2" RECESSED SLAB @ OIL TANK AREA - RE: STRUCTURE

STUB PVC UP 1" - RE: PLUMBING

WORK STATION - RE: MECHANICAL

PAINT A 2" DETECTABLE YELLOW STRIPE AT 2" SLAB EDGE.

STENCIL YELLOW LETTERING FOR WARNING OF FLOOR DROP.

1 1/2" EIFS WALL SYSTEM OVER OSB SHEATHING - RE: SPECS.

OVERHEAD DOOR & FRAME - RE: SCHEDULE

FAN ABOVE - RE: ELECTRICAL

1 1/2" EIFS WALL SYSTEM OVER OSB SHEATHING - RE: SPECS.

NOTE:  
PIT FRAMES AND ROLLING DRAIN PANS TO BE PROVIDED BY G.C.  
G.C. IS TO COORDINATE MANUFACTURER OF PIT RAILS AND TO CONTACT MANUFACTURER OF OIL DRAIN PANS AND SCHEDULE DELIVERY.  
G.C. IS TO TAKE DELIVERY AND INSTALL FRAMES AND ROLLING PANS PRIOR TO SUBSTANTIAL COMPLETION.

OIL DRAIN PAN MANUFACTURER CONTACT INFORMATION:  
JEFF JOHNSON,  
JEFF@OFAB.NET  
(325) 427-1713

TRUE  
NORTH

② STORAGE PLATFORM PLAN  
1/4" = 1'-0"

4x4 PRE-FINISHED METAL DOWNSPOUT LEADERHEAD W/ 3 STRAP ANCHORS PER D.S. - TYP. (COLOR - DK BRONZE) - RE: SPECS.

PRE-FINISHED METAL PARAPET CAP (COLOR - DK BRONZE) - RE: SPECS.

MAX. STANDING SEAM DISTANCE

MODIFIED BITUMEN ROOFING OVER HIGH DENSITY COVER BOARD OVER TAPERED POLYISO INSULATION - RE: SPECS.

PRE-FINISHED METAL PARAPET CAP (COLOR - DK BRONZE) - RE: SPECS.

MAX. STANDING SEAM DISTANCE

PRE-FINISHED METAL PARAPET CAP (COLOR - DK BRONZE) - RE: SPECS.

MAX. STANDING SEAM DISTANCE

PRE-FINISHED METAL PARAPET CAP (COLOR - DK BRONZE) - RE: SPECS.

MAX. STANDING SEAM DISTANCE

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PRE-FINISHED METAL PARAPET CAP (COLOR - DK BRONZE) - RE: SPECS.

MAX. STANDING SEAM DISTANCE

PRE-FINISHED METAL PARAPET CAP (COLOR - DK BRONZE) - RE: SPECS.

MAX. STANDING SEAM DISTANCE

PRE-FINISHED METAL PARAPET CAP (COLOR - DK BRONZE) - RE: SPECS.

④ ROOF & REFERENCE PLAN  
1/4" = 1'-0"

NOT FOR CONSTRUCTION

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Scales as stated herein 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  
P. 225.766.4848 F. 225.766.4724  
fusionapp.com

**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

Floor, Refl Ceiling, & Roof Plans

SHEET NO.  
**A2.10**  
OF



C:\Users\jlsensen\Documents\33- Lee's Summit, MO (24) Central Model.djnsensGFV5Z.rvt7/29/2024 12:04:03 PM

SCHEDULE - ROOM FINISH (NEW STYLE)																	
No.	ROOM NAME	FLR MATL.	BASE	WALL				FINISH				CEILING			REMARKS	Number	
		CONCRETE / SEALED	VINYL	NORTH	EAST	SOUTH	WEST	NORTH	EAST	SOUTH	WEST	PLY WOOD	FINISH	CEILING HEIGHT			
				1/2" PLY WD	1/2" PLY WD	1/2" PLY WD	1/2" PLY WD	PAINT	PAINT	PAINT	PAINT						
101	MANAGER OFFICE	•	•	•	•	•	•	•	•	•	•	•	PRIME & PAINT	8'- 0"	SMOOTH FINISH. STAINED	B-C PLYWD. NOTE 1,2,3,4,8,9,10	101
102	WASTE OIL	•	•	•	•	•	•	•	•	•	•	•	PRIME & PAINT	8'- 0"	SMOOTH FINISH. STAINED	B-C PLYWD. NOTE 1,2,3,4,8,9,10	102
103	TOILET ROOM	•	•	•	•	•	•	•	•	•	•	•	PRIME & PAINT	8'- 0"	SMOOTH FINISH. STAINED	B-C PLYWD. NOTE 1,2,3,4,8,9,10,11	103
104	SERVICE BAY	•	•	•	•	•	•	•	•	•	•	•	PRIME & PAINT	EXPOSED STRUCTURE	SMOOTH FINISH. STAINED	B-C PLYWD. NOTE 1,2,3,4,8,9,10	104
105	STORAGE PLATFORM	•	•	•	•	•	•	•	•	•	•	•	PRIME & PAINT	EXPOSED STRUCTURE	SMOOTH FINISH. STAINED	B-C PLYWD. NOTE 1,2,3,4,8,9,10	105

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.

SCHEDULE - DOOR & FRAME															
NO.	SINGLE / PAIR	SIZE			Type Mark	DOOR	FRAME	DOOR & FRAME FINISH	DETAILS			HARDWARE	Fire Rating	Comments	
		Width	Height	THICKNESS		MATERIAL	MATERIAL		HEAD	JAMB	SILL				
001	OVERHEAD	10' - 1"	11' - 6"	0' - 2"	B	METAL / GLASS	METAL		11:A3.01	10:A3.01	--	--		3 CENTER SECTIONS GLASS	
002	OVERHEAD	10' - 1"	11' - 6"	0' - 2"	B	METAL / GLASS	METAL		11:A3.01	10:A3.01	--	--		3 CENTER SECTIONS GLASS	
003	OVERHEAD	10' - 1"	11' - 6"	0' - 2"	B	METAL / GLASS	METAL		11:A3.01	10:A3.01	--	--		3 CENTER SECTIONS GLASS	
004	OVERHEAD	10' - 1"	11' - 6"	0' - 2"	B	METAL / GLASS	METAL		9:A3.01	10:A3.01	--	--		3 CENTER SECTIONS GLASS	
005	OVERHEAD	10' - 1"	11' - 6"	0' - 2"	B	METAL / GLASS	METAL		11:A3.01	10:A3.01	--	--		3 CENTER SECTIONS GLASS	
006	OVERHEAD	10' - 1"	11' - 6"	0' - 2"	B	METAL / GLASS	METAL		11:A3.01	10:A3.01	--	--		3 CENTER SECTIONS GLASS	
007	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"	C	FLUSH H.M.	H.M	PAINT / DK BRONZE EXT & GRAY INT	4:A3.01	5:A3.01	6:A3.01	SET 1		CLOSER, LOCKSET, THRESHOLD. NOTE 1,2,5	
101	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"	A	FLUSH H.M.	H.M	PAINT / DK BRONZE EXT & GRAY INT	7:A3.01	8:A3.01	--	SET 2		LOCKSET, CLOSER NOTE 1,2,6	
102	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"	B	FLUSH H.M.	H.M	PAINT / DK BRONZE EXT & GRAY INT	7:A3.01	8:A3.01	--	SET 4		LOCKSET, CLOSER NOTE 1,2	
103	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"	B	FLUSH H.M.	H.M	PAINT / DK BRONZE EXT & GRAY INT	7:A3.01	8:A3.01	--	SET 3		LOCKSET, HALF GLASS (TINTED), CLOSER NOTE 1,2,4	

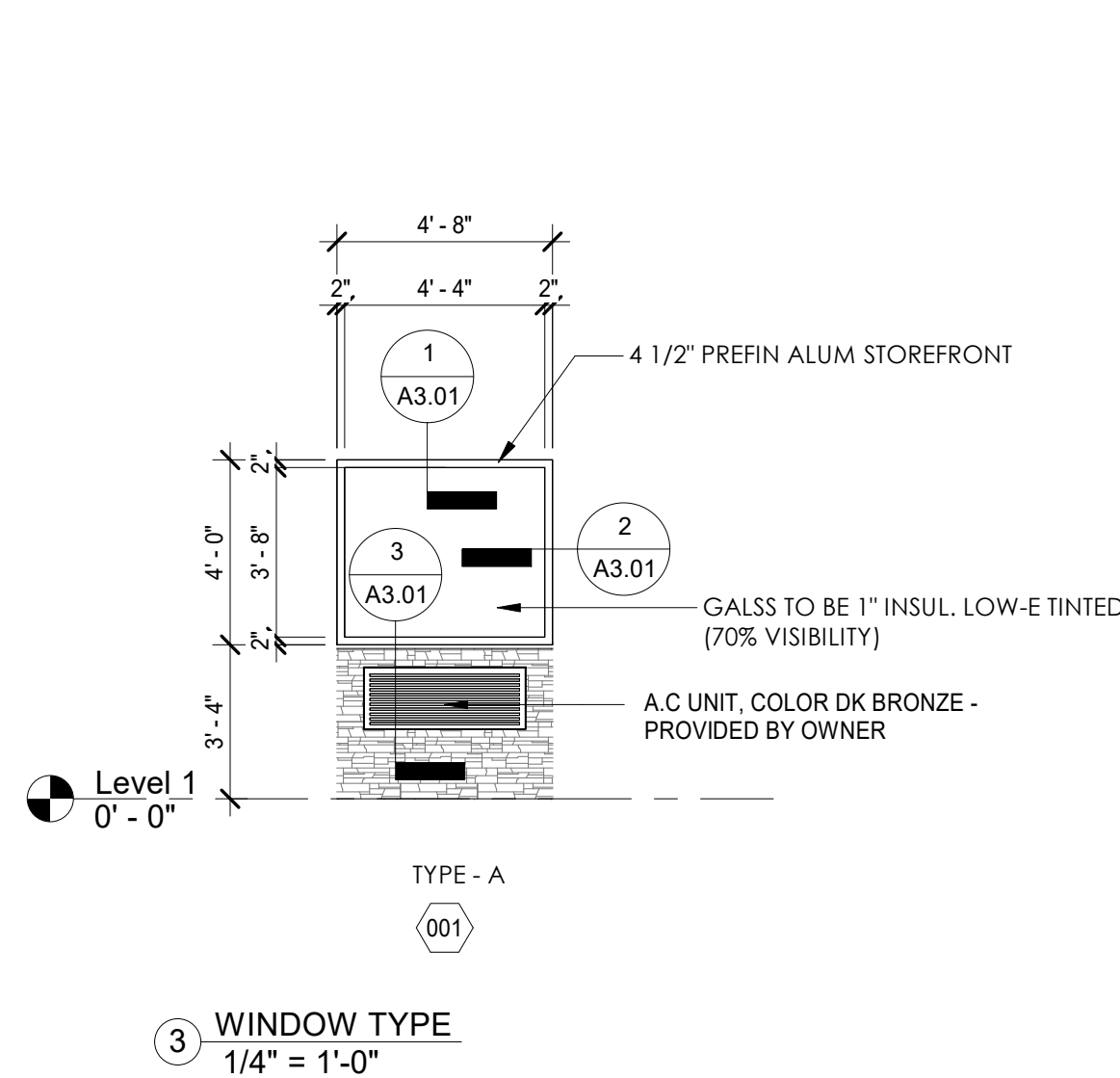
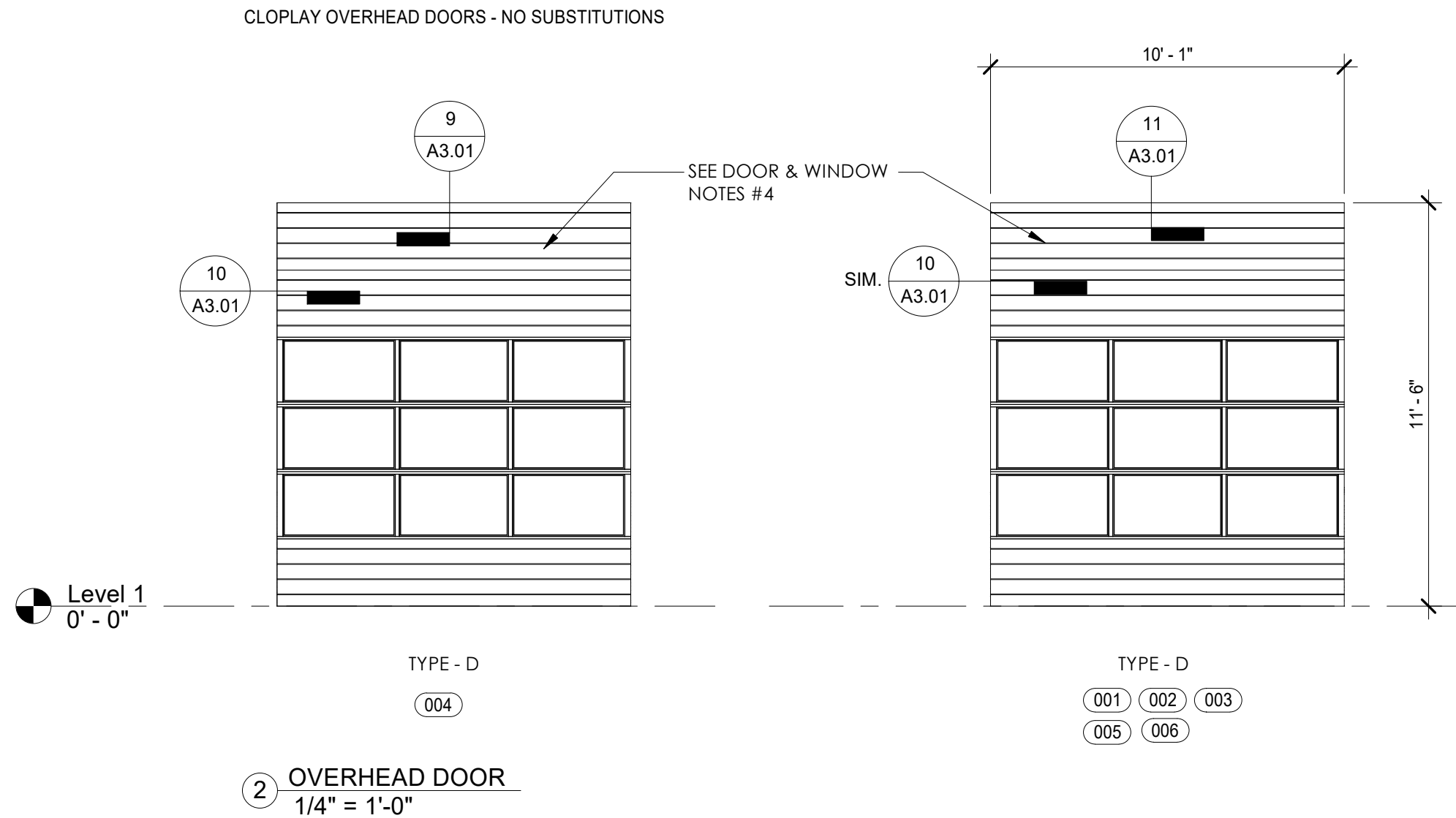
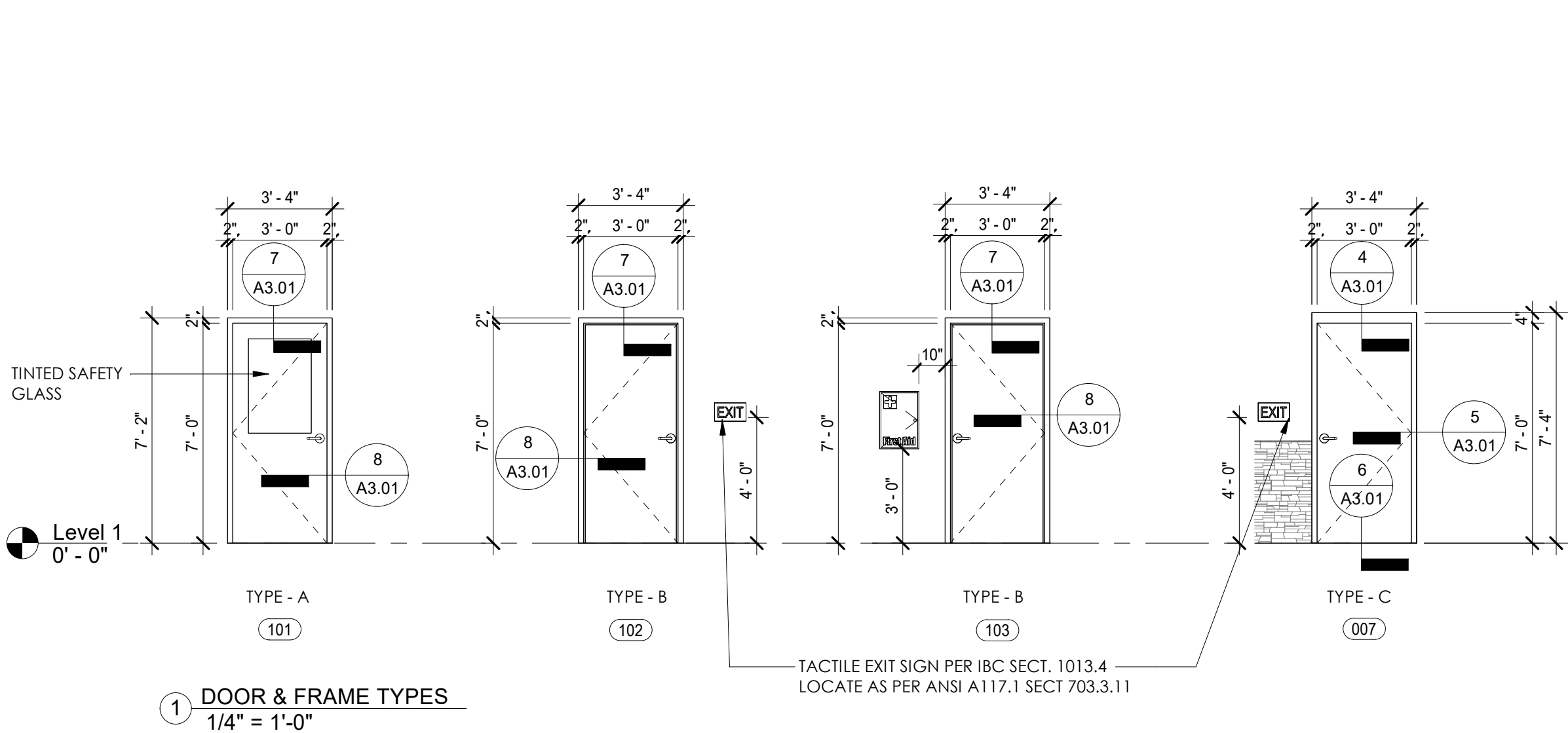
\* ALL METAL DOOR FRAMES TO BE G90

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

SCHEDULE - WINDOW & FRAME									
NO.	SIZE		GLAZING	FRAME		DETAILS			REMARKS
	WIDTH	HEIGHT		Type A	MATERIAL	HEAD	JAMB	SILL	
001	4' - 8"	4' - 0"	FIXED GLASS / DOUBLE PANE, LOW-E GLASS, TINTED		ALUMINUM	1:A3.01	2:A3.01	3:A3.01	ANODIZED / DARK BRONZE EXT - PAINT GRAY INT NOTE 4

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



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

Schedules - Room,  
Door,& Window

SHEET NO.

A3.00

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 Sargent*

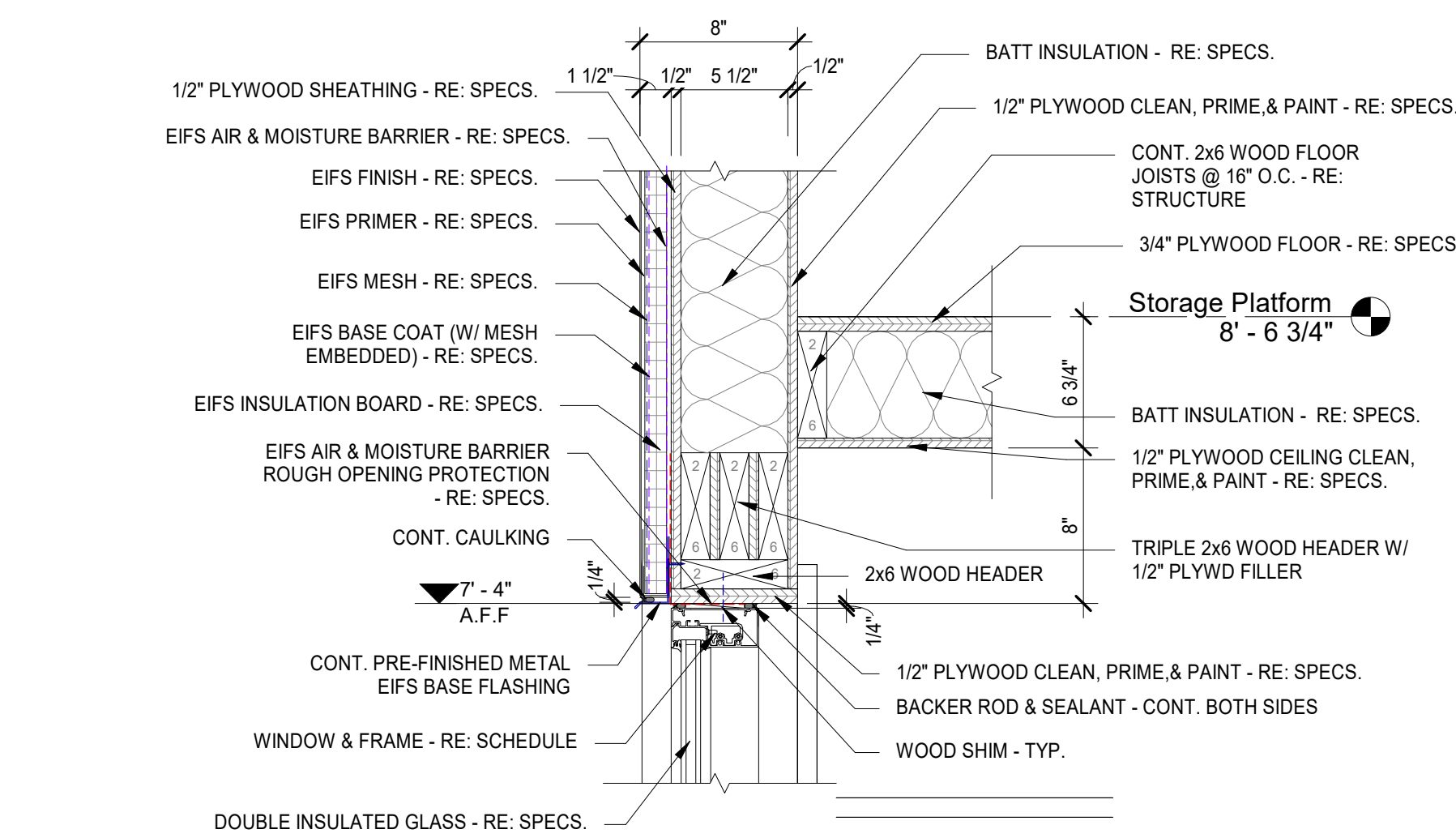
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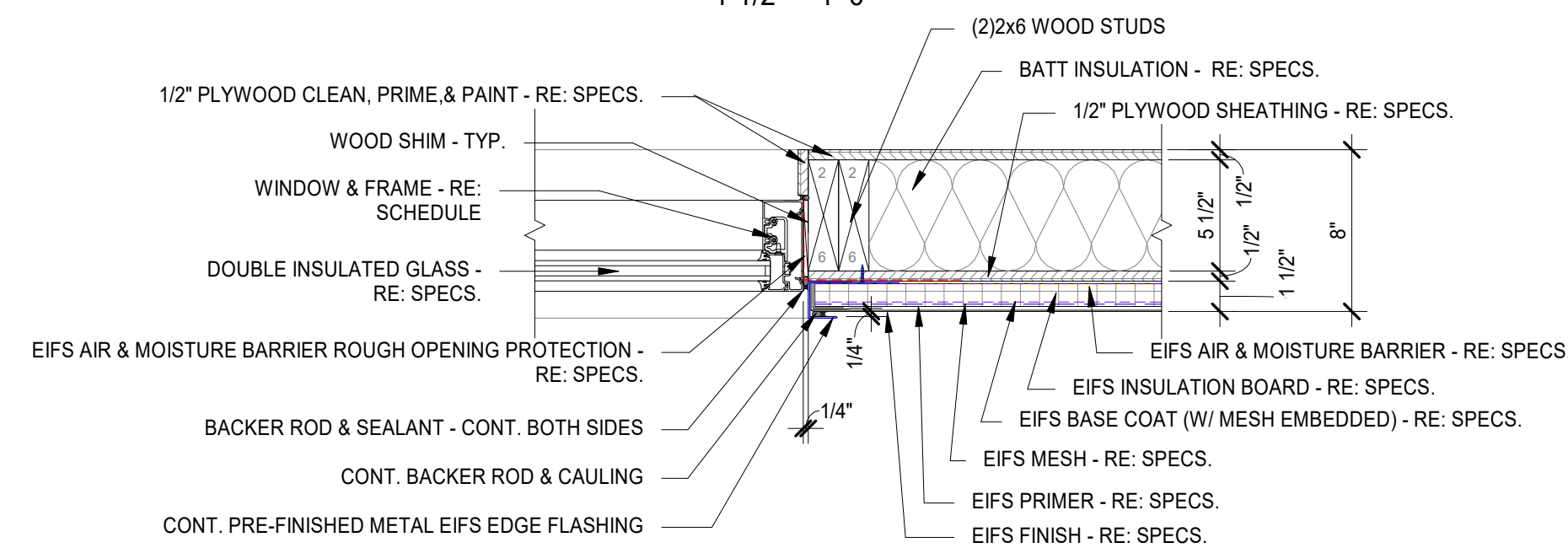
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DATE  
REVISION  
No.

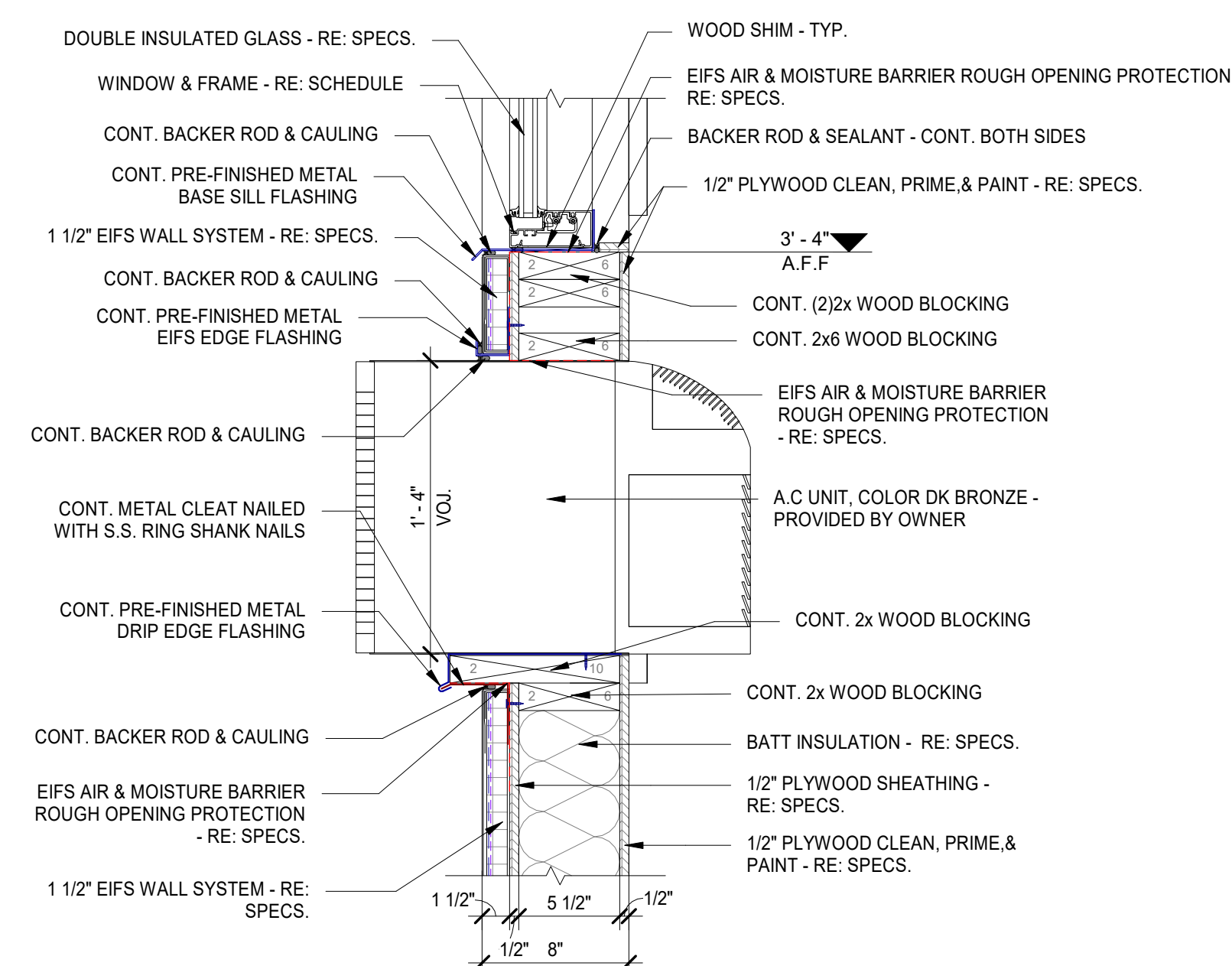




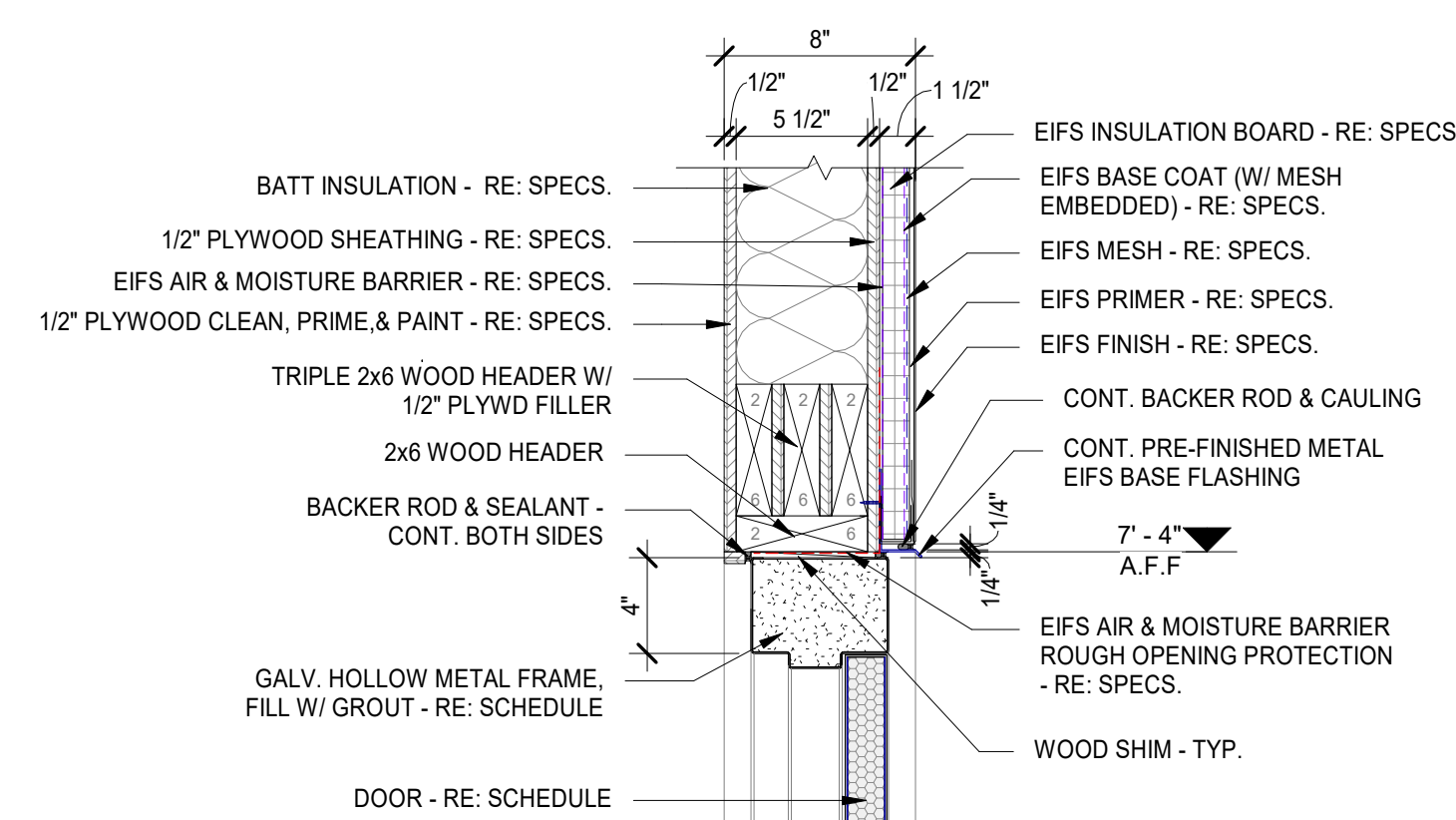
① WINDOW HEAD  
1 1/2" = 1'-0"



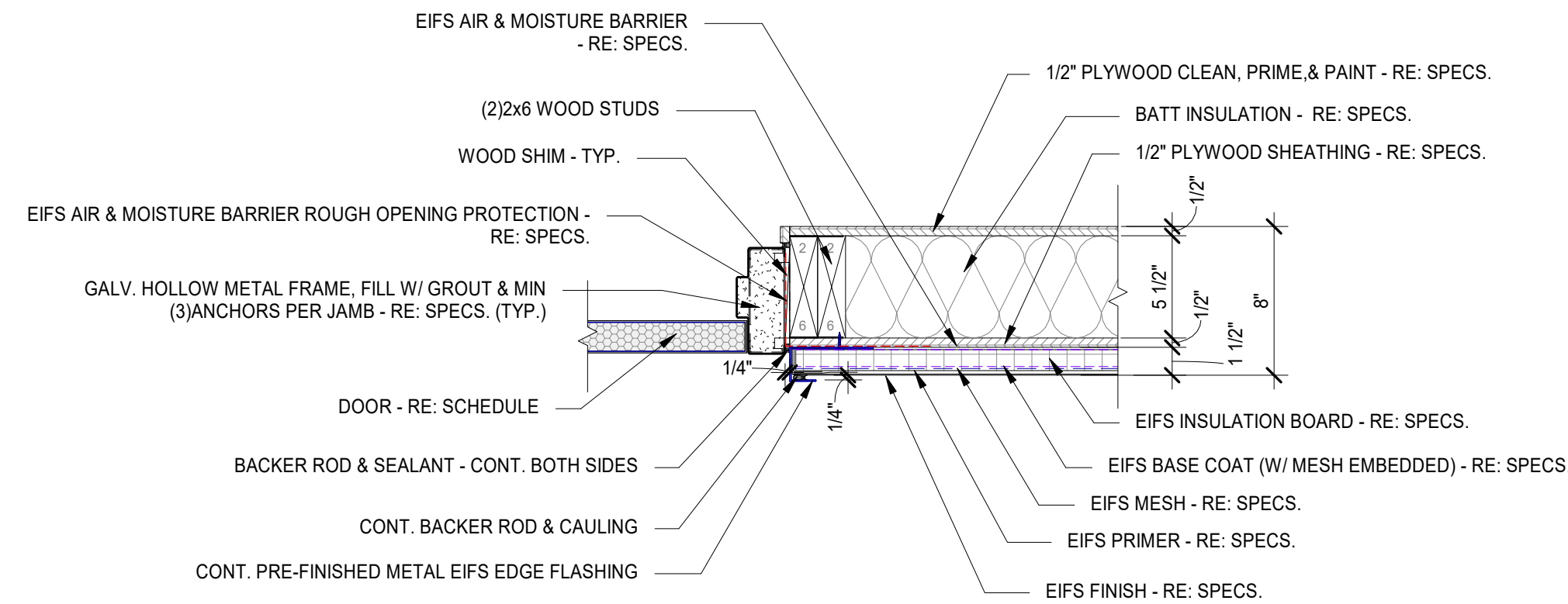
② WINDOW JAMB  
1 1/2" = 1'-0"



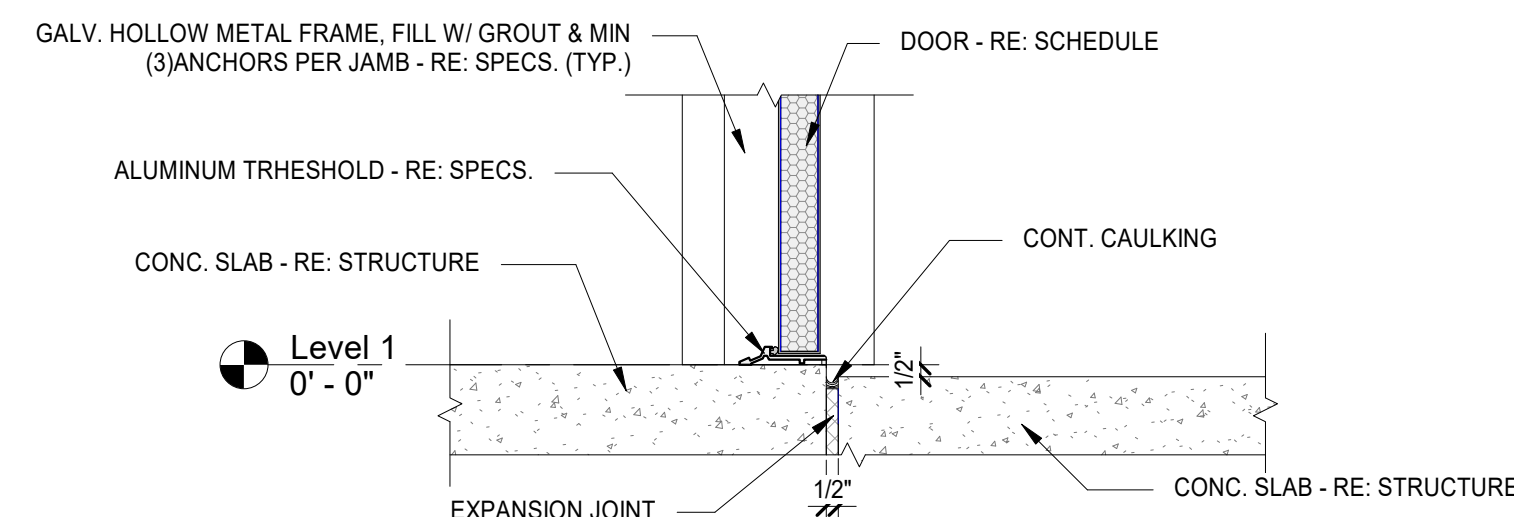
③ WINDOW SILL  
1 1/2" = 1'-0"



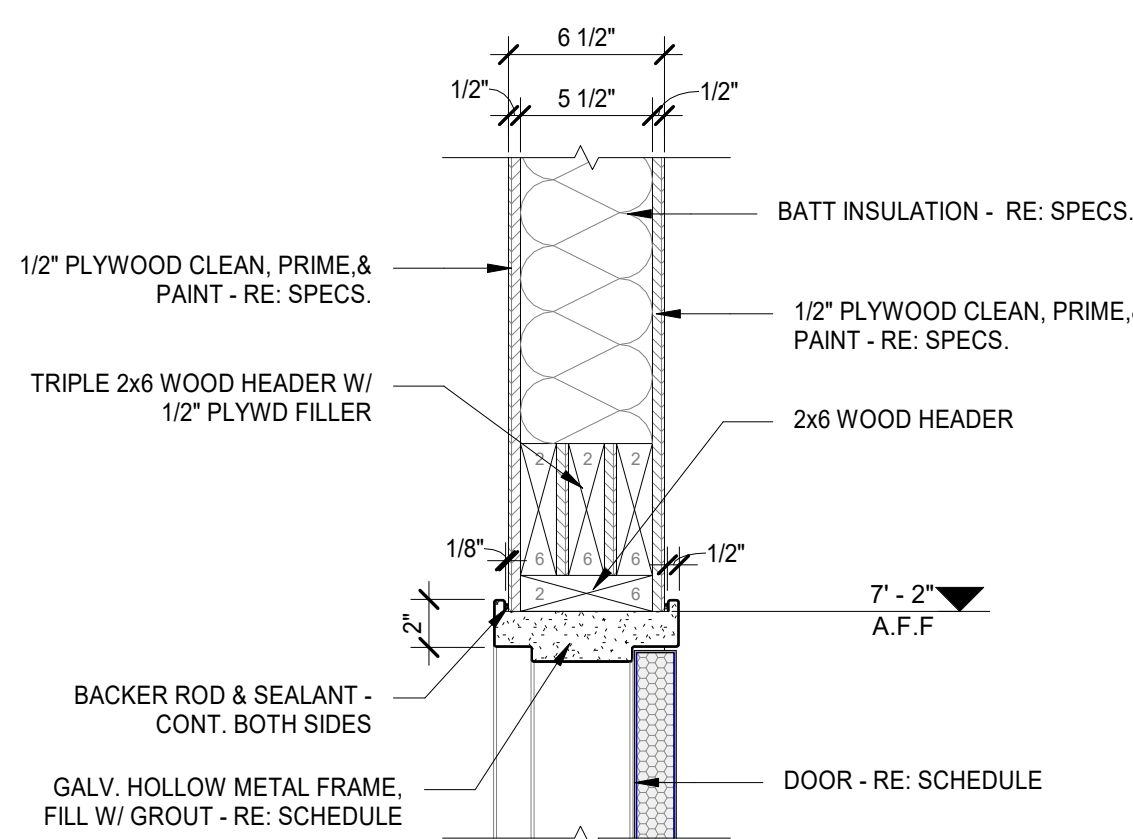
④ DOOR HEAD - 1  
1 1/2" = 1'-0"



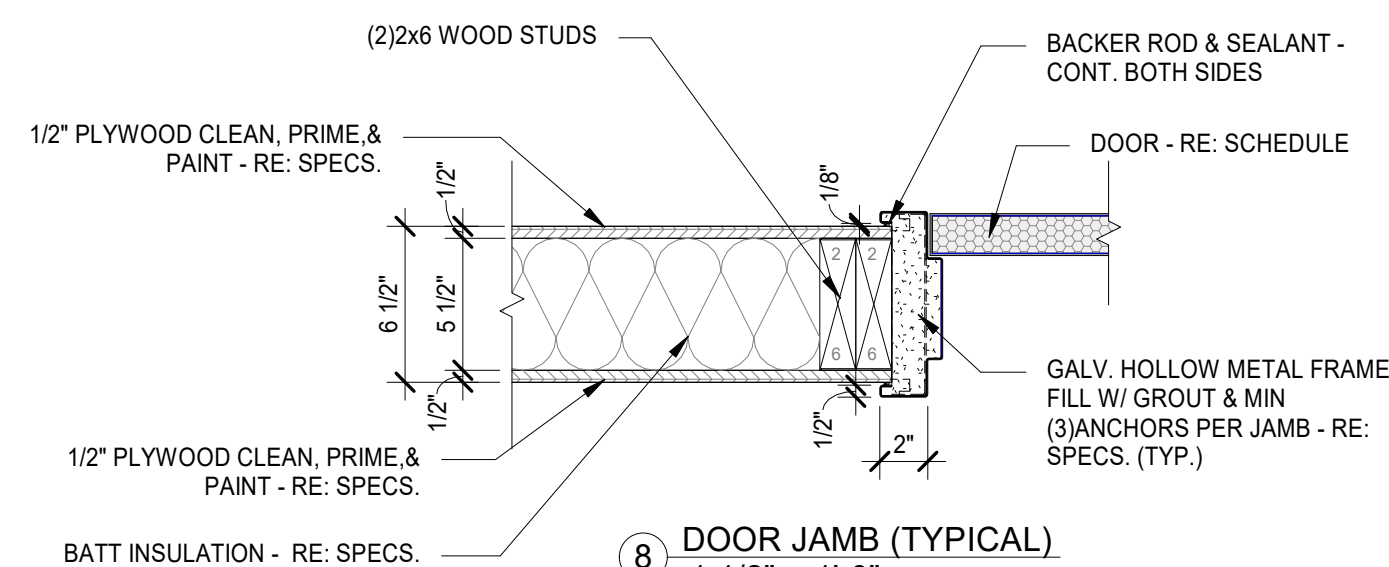
5 DOOR JAMB -1  
1 1/2" = 1'-0"



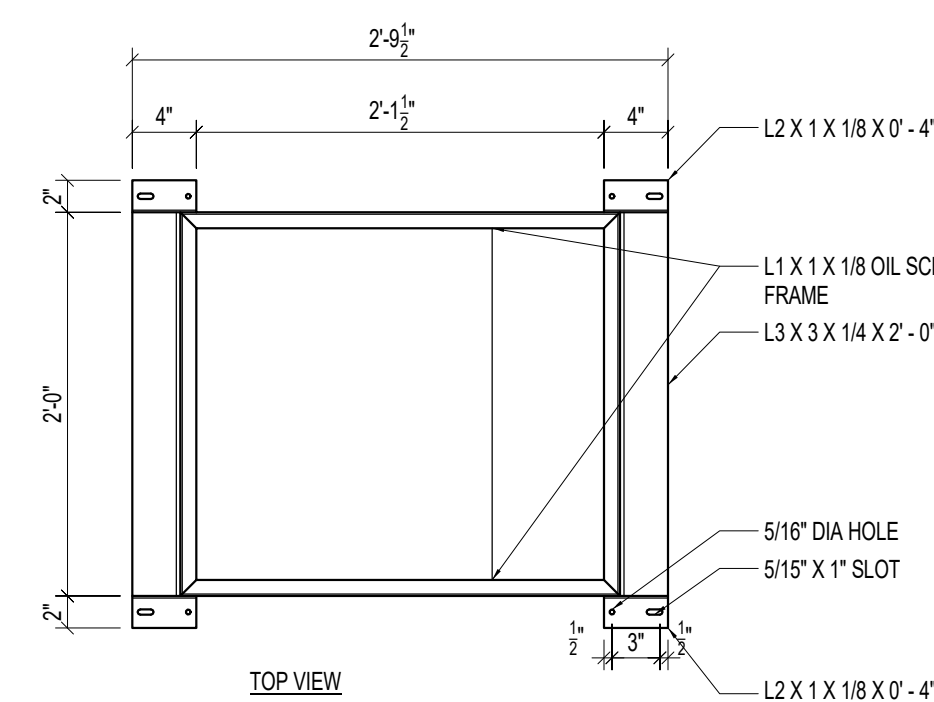
6 DOOR SILL  
1 1/2" = 1'-0"



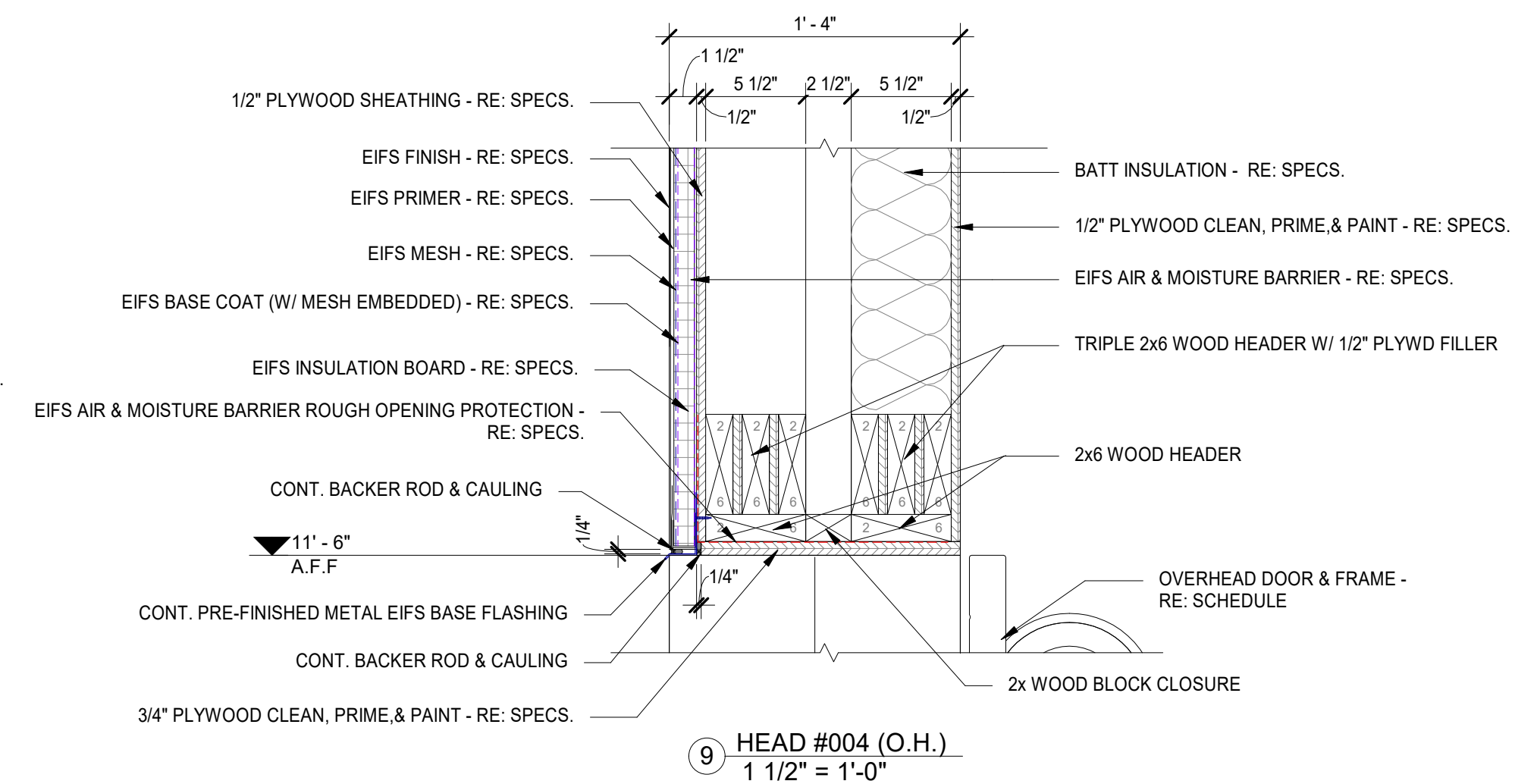
⑦ DOOR HEAD - 2  
1 1/2" = 1'-0"



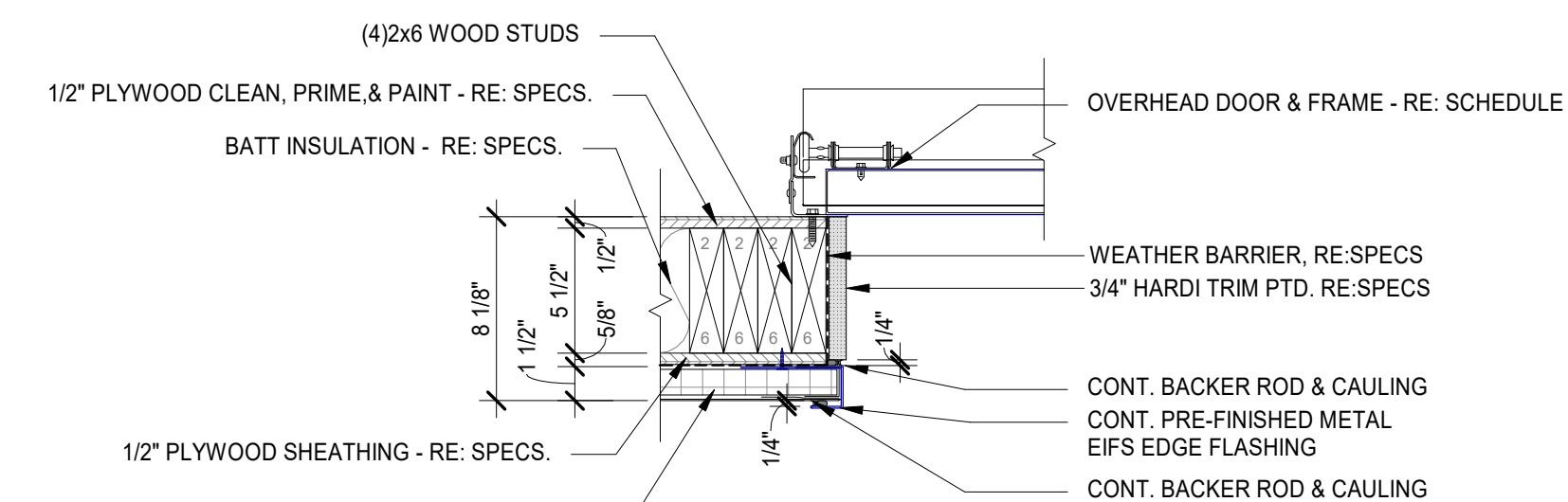
8 DOOR JAMB (TYPICAL)  
1 1/2" = 1'-0"



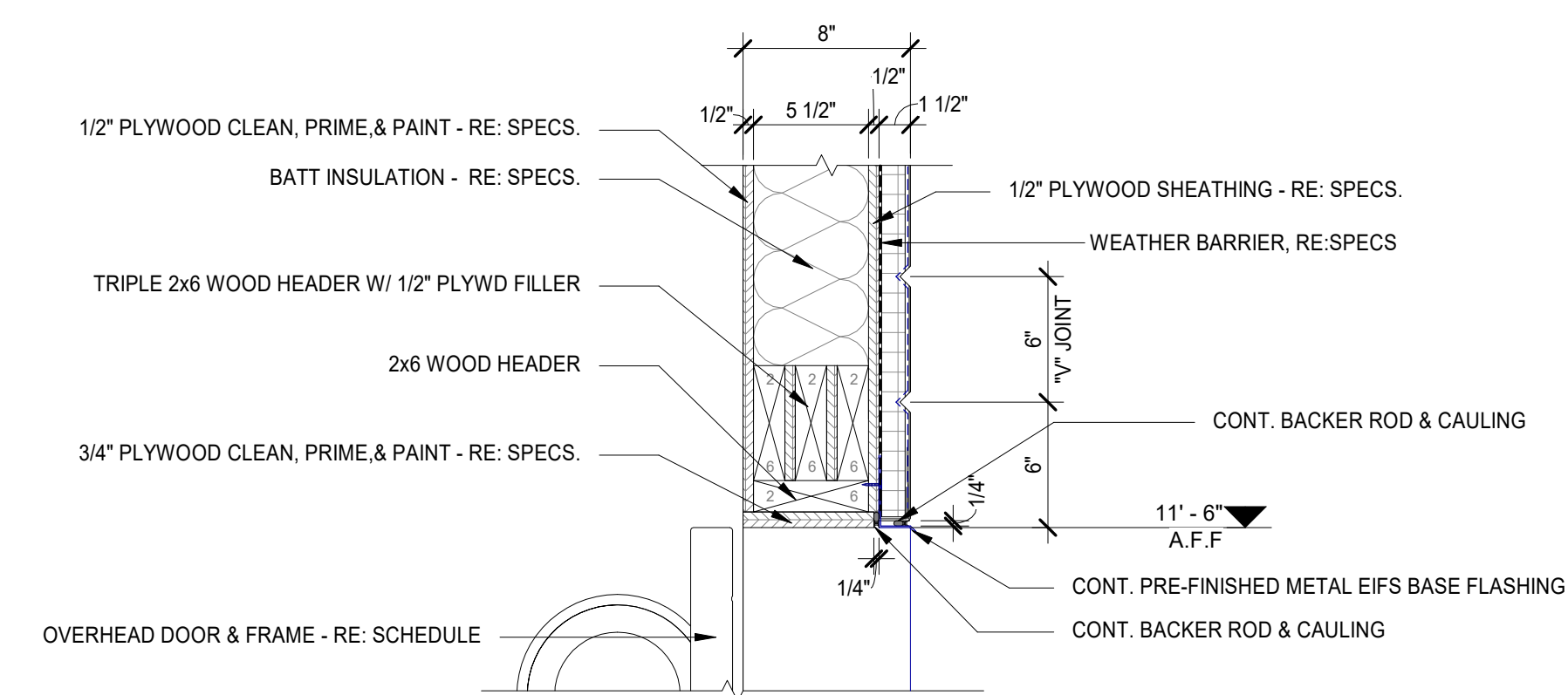
12 OIL TRAY DETAILS  
1" = 1'-0"



9 HEAD #004 (O.H.)  
1 1/2" = 1'-0"

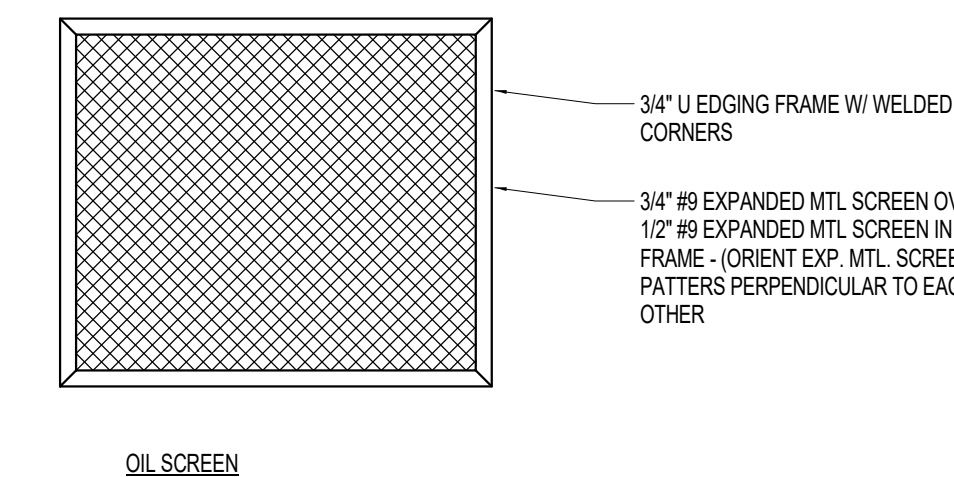
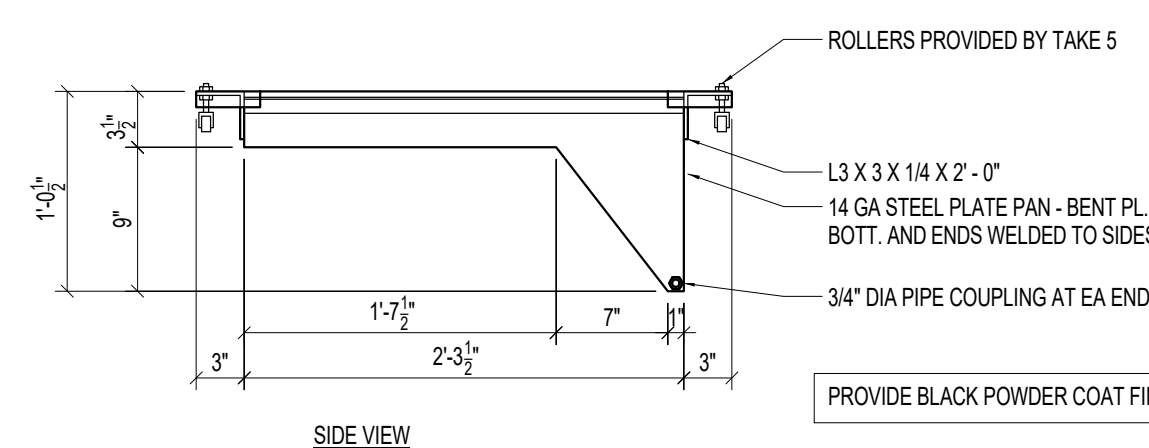


⑩ JAMB (O.H.) - TYPICAL  
1 1/2" = 1'-0"



⑪ HEAD (O.H.) - TYPICAL  
1 1/2" = 1'-0"

SEE 7/A5.11 FOR PIT FRAME DETAILS

[illegible]

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I will generally administer construction.

Matthew Driscoll

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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

## Door & Window Details

SHEET NO.  
**A3.01**  
OF

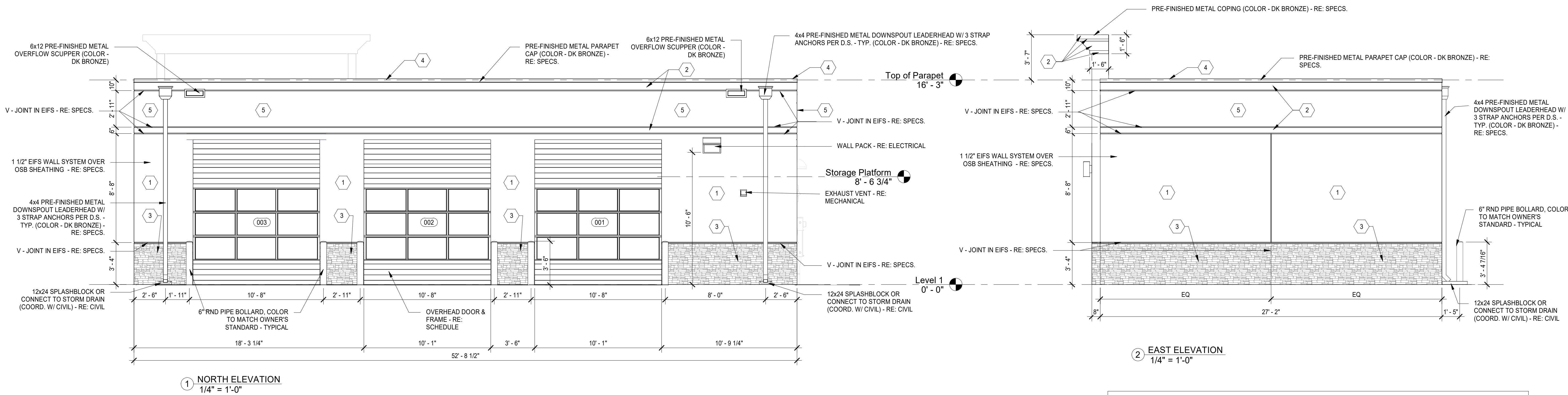






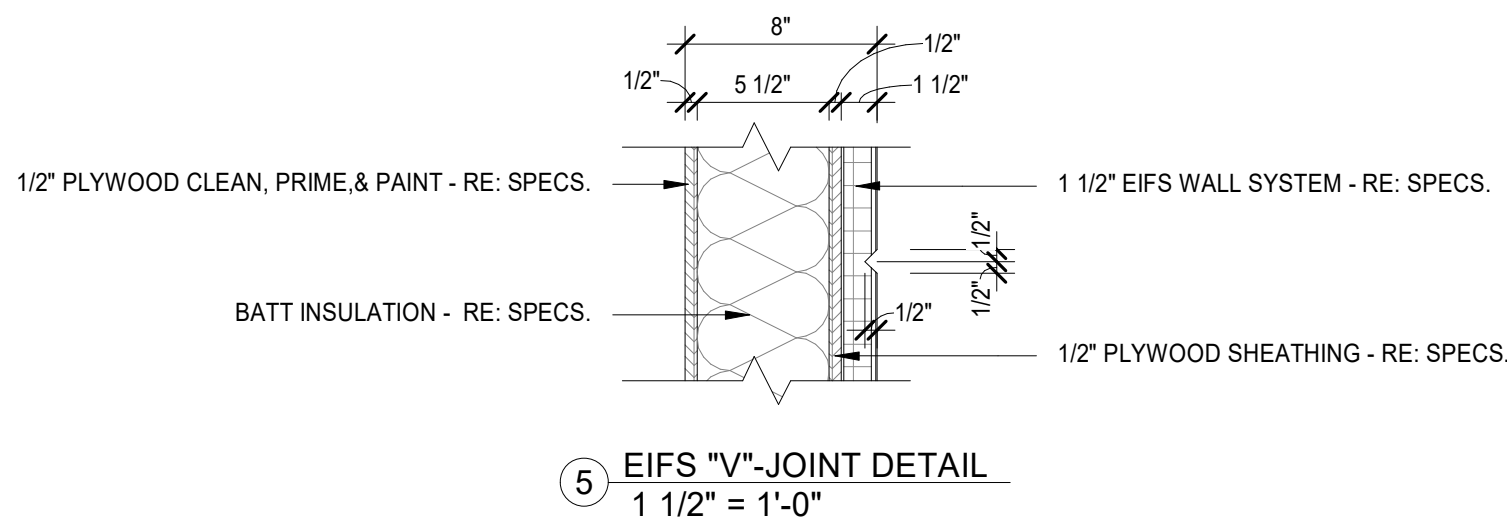
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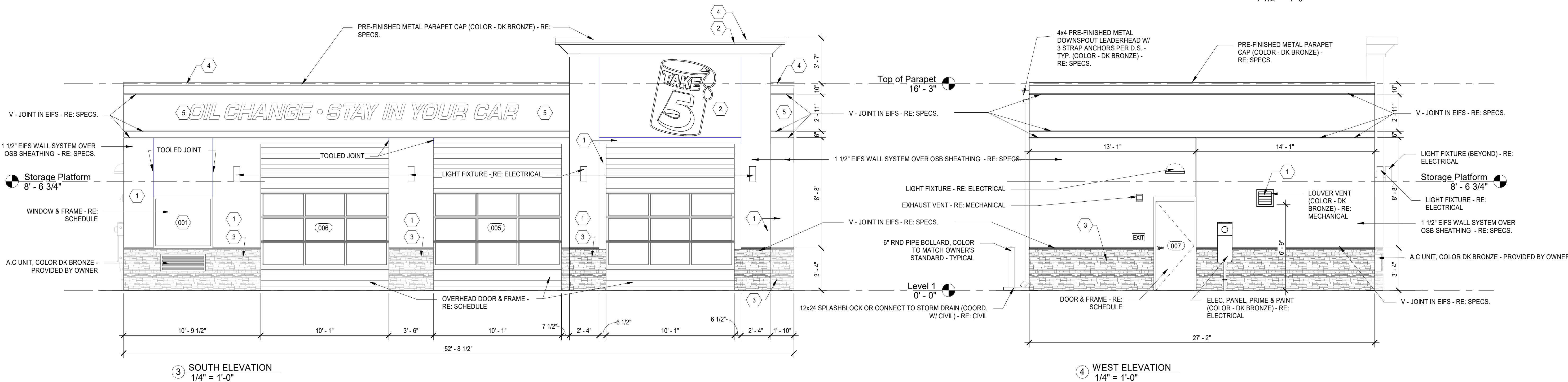


EXTERIOR FINISH NOTES:

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



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	-----



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By: *Matthew Sapp*

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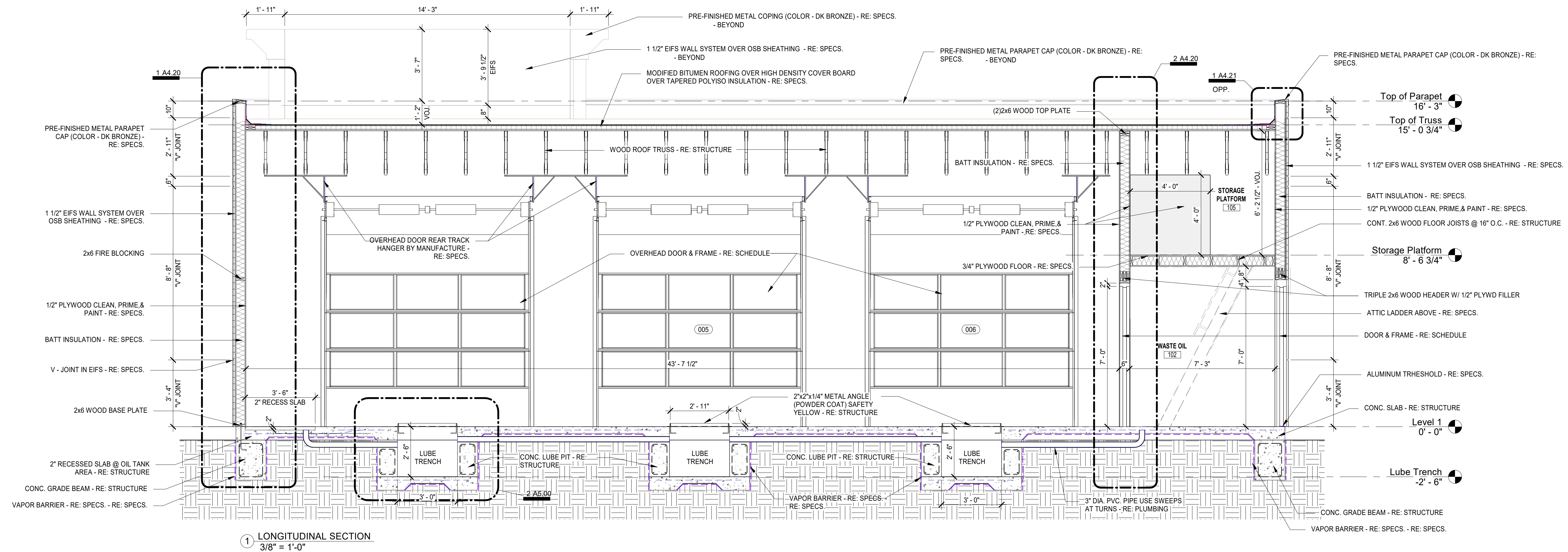


PROJECT NO: 33-006-22  
PHASE: Final Dev. Submittal  
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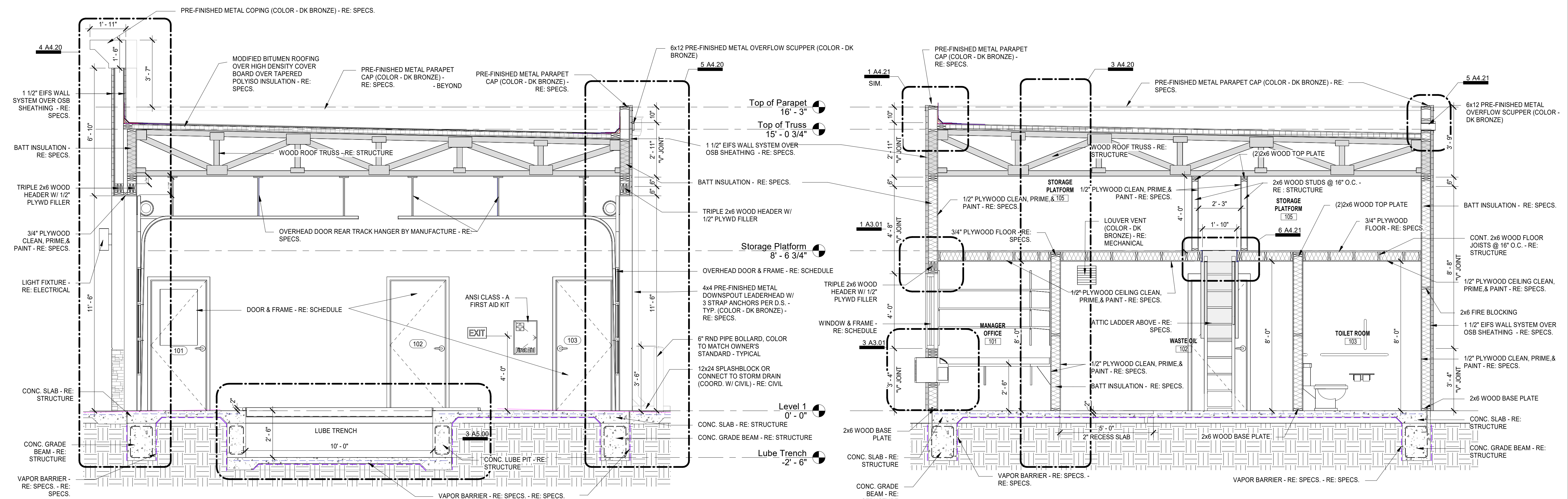
Bldg Elevations

SHEET NO.  
**A4.00**  
OF





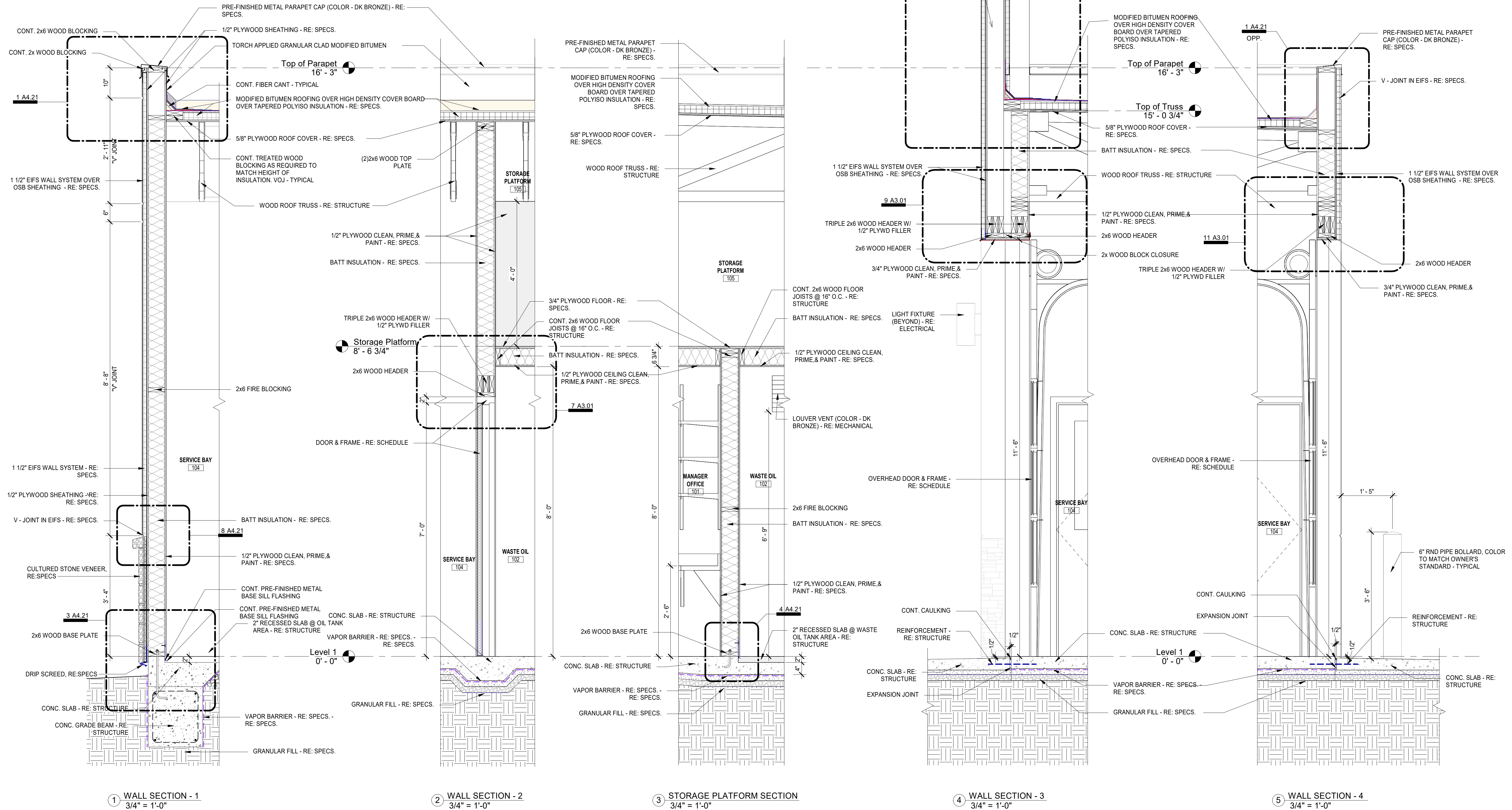
② TRANSVERSE SECTION - SERVICE BAY  
3/8" = 1'-0"



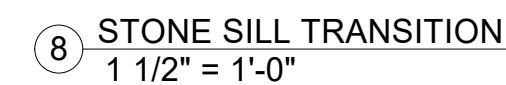
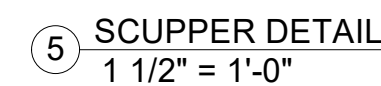
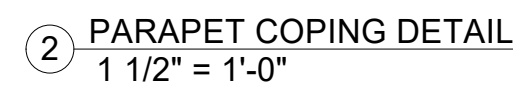
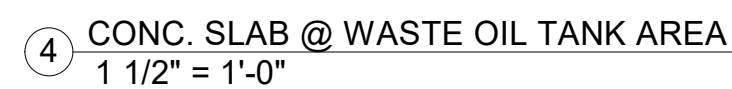
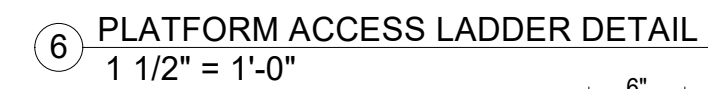
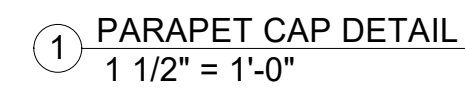
③ TRANSVERSE SECTION - OFFICE  
3/8" = 1'-0"



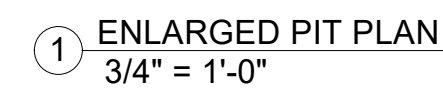
2 A4.21











(2) COATS OF EPOXY AT WALLS AND FLOOR OF TRENCHES. RUST-OLEUM 2-PART EPOXY 6500 SYSTEM. COLOR: NAVY GRAY

PIT FRAMES AND ROLLING DRAIN PANS TO BE PROVIDED BY G.C.. G.C. IS TO COORDINATE MANUFACTURE OF PIT RAILS AND TO CONTACT MANUFACTURER OF OIL DRAIN PANS AND SCHEDULE DELIVERY. G.C. IS TO TAKE DELIVERY AND INSTALL FRAMES AND ROLLING PANS PRIOR TO SUBSTANTIAL COMPLETION.

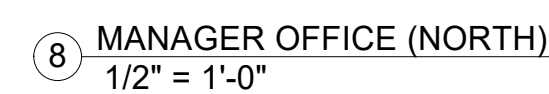
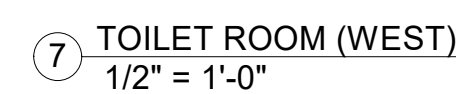
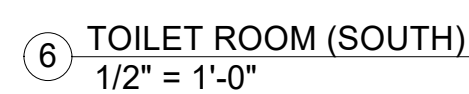
JEFF JOHNSON, JEFF@OFAB.NET  
(352)427-1713

- PIT FRAMES ARE TO BE SET IN PLACE.
- DO NOT FASTEN TO CONCRETE.
- PIT FRAMES TO BE SUPPLIED BY GC, AND INSTALLED BY G.C.



- 1 PAPER DISPENSER
- 2 SOAP DISPENSER
- 3 42" GRAB BAR
- 4 36" GRAB BAR
- 5 18"x30" MIRROR
- 6 VERTICAL GRAB BAR
- 7 PAPER TOWEL DISPENSER
- 8 UNDER LAVATORY GUARD

1. ALL TOILET ACCESSORIES SHALL BE LOCATED AND MOUNTED TO MEET ALL REQUIREMENTS OF THE ADA AND ALL LOCAL ACCESSIBILITY CODE REQUIREMENTS.
2. ALL TOILET ACCESSORIES SHALL BE BY BOBRICK OR EQUAL.
3. PROVIDE BLOCKING PER MANUFACTURER'S RECOMMENDATIONS.

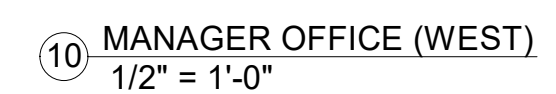
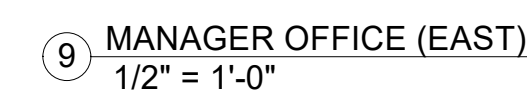


1/2" WIRE SHELVING TO BE "CLOSETMAID - SUPERSLIDE" OR EQUAL, ON ADJUSTABLE MOUNT HARDWARE W/ VERT. STANDARDS AT 24" O.C. MAX. SPACING.

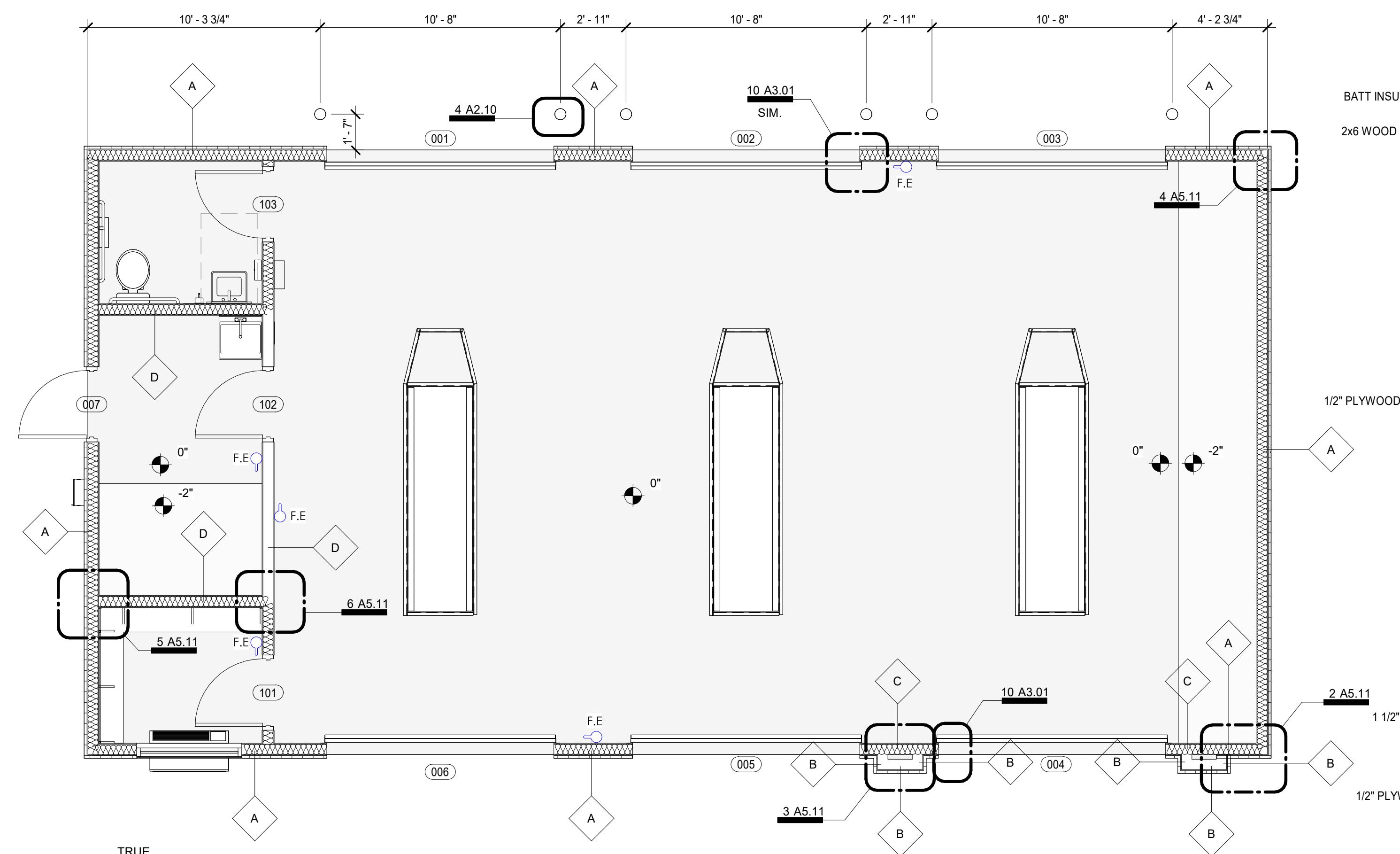
1 1/4" WIRE SHELVING TO BE "CLOSETMAID - MAX LOAD" OR EQUAL, ON HEAVY DUTY "MAX LOAD" ADJUSTABLE MOUNT HARDWARE W/ VERT STANDARDS AT 24" O.C. MAX. SPACING.

CLOSET ROD TO BE "CLOSETMAID" EPOXY COATED STEEL "SUPER SLIDE SYSTEM" W/ CORNER ROUNDER BAR. SUPPORTS TO BE HEAVY DUTY METAL "J" BRACKETS. PROVIDE CLOSET ROD END CAPS AT EACH END.

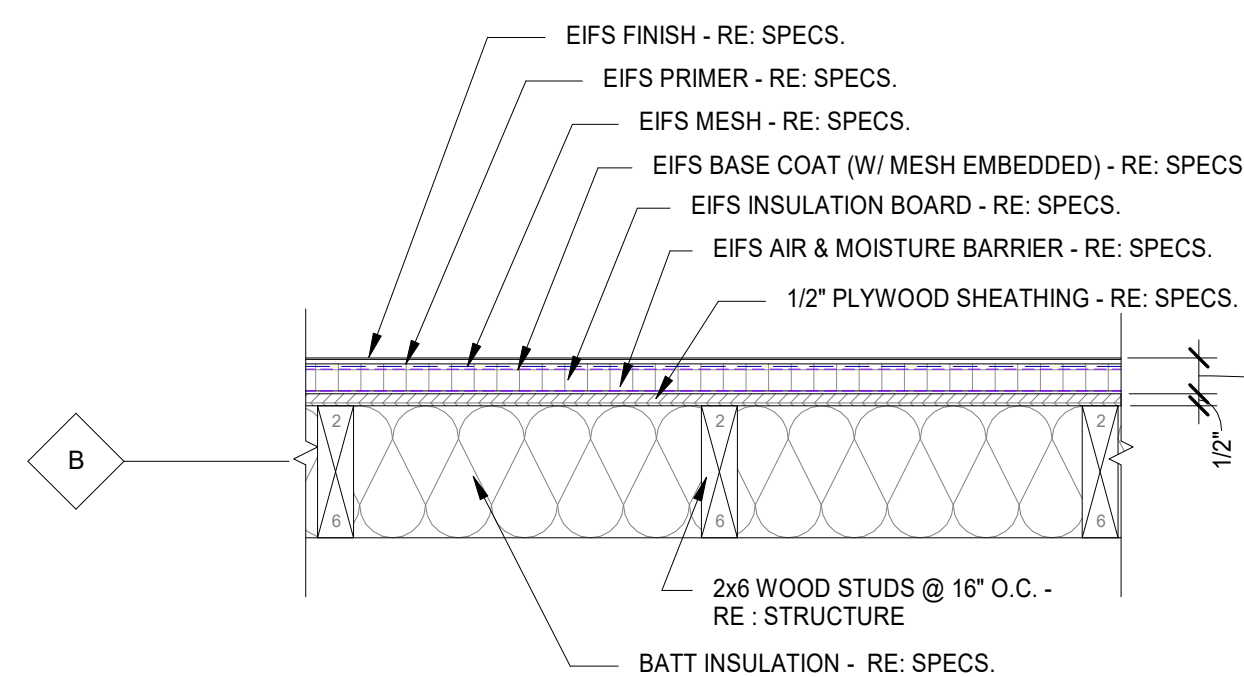
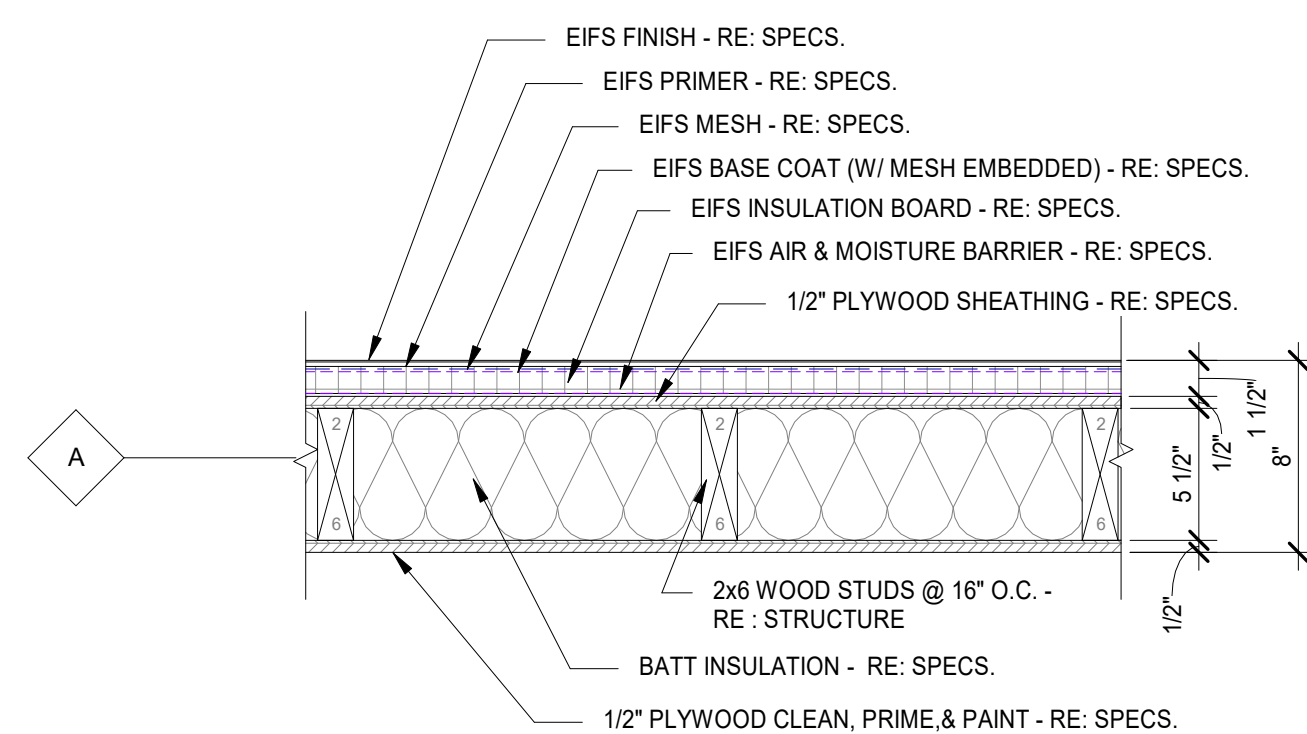
ALL FINISHES TO BE BRUSHED CHROME.



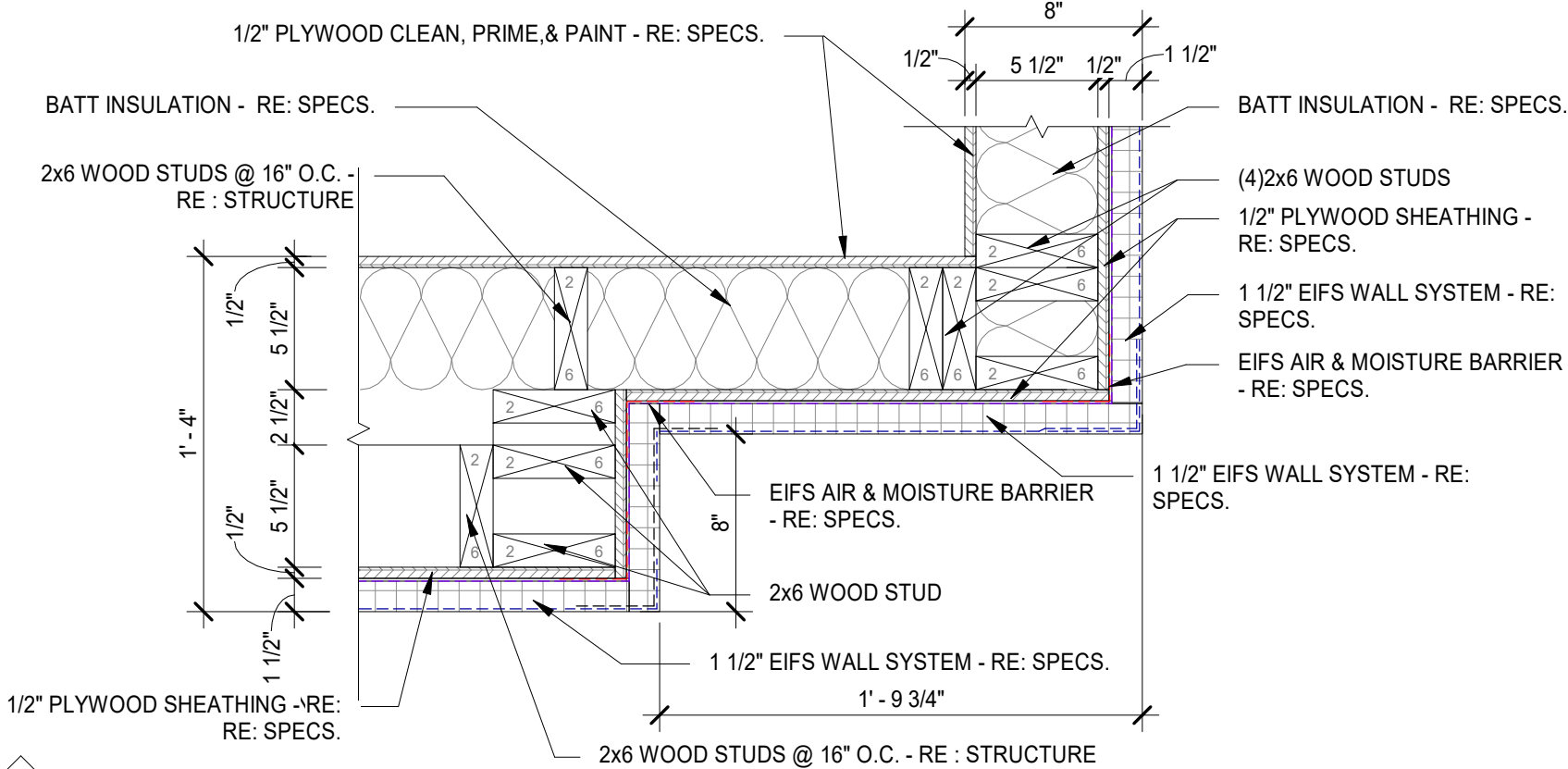




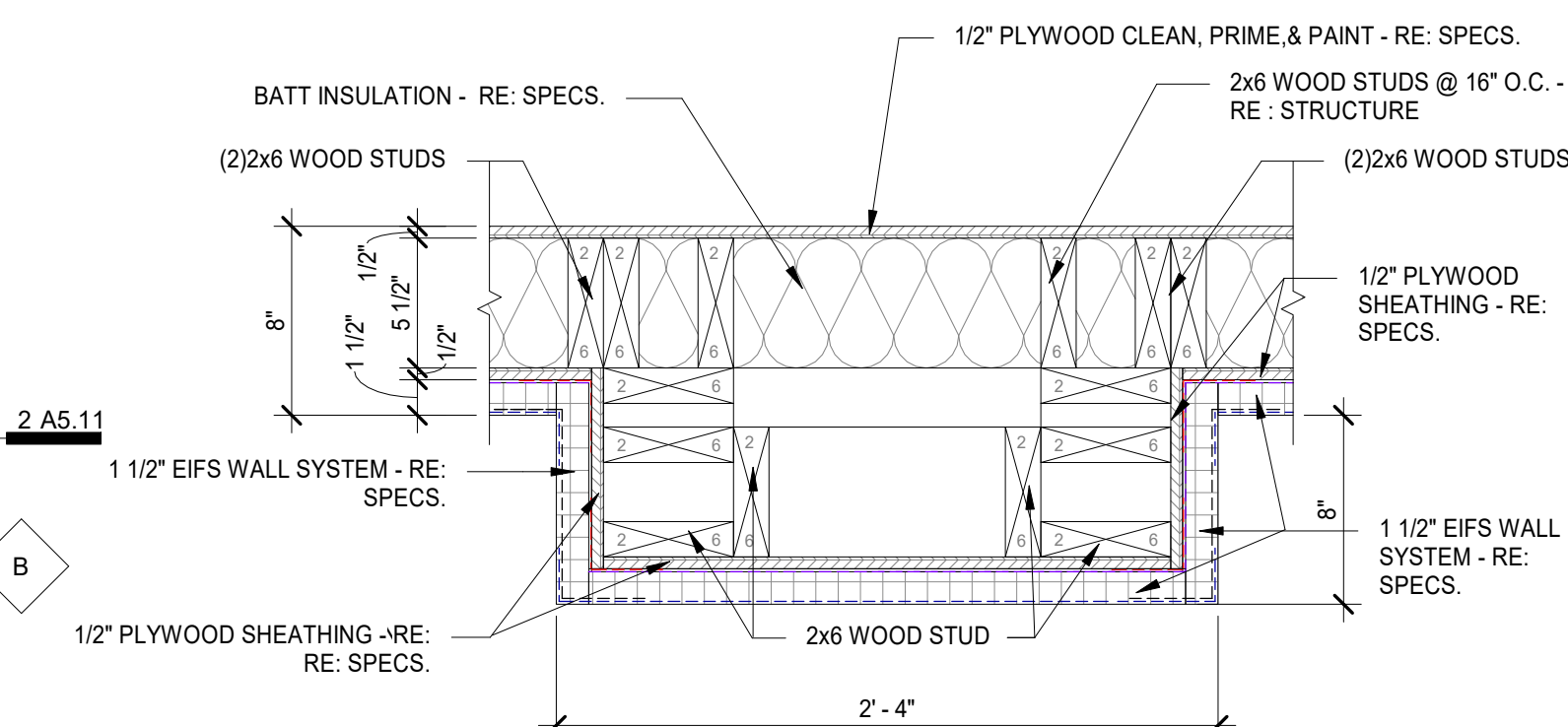
① WALL TYPES PLAN & FIRE EXTINGU.  
1/4" = 1'-0"



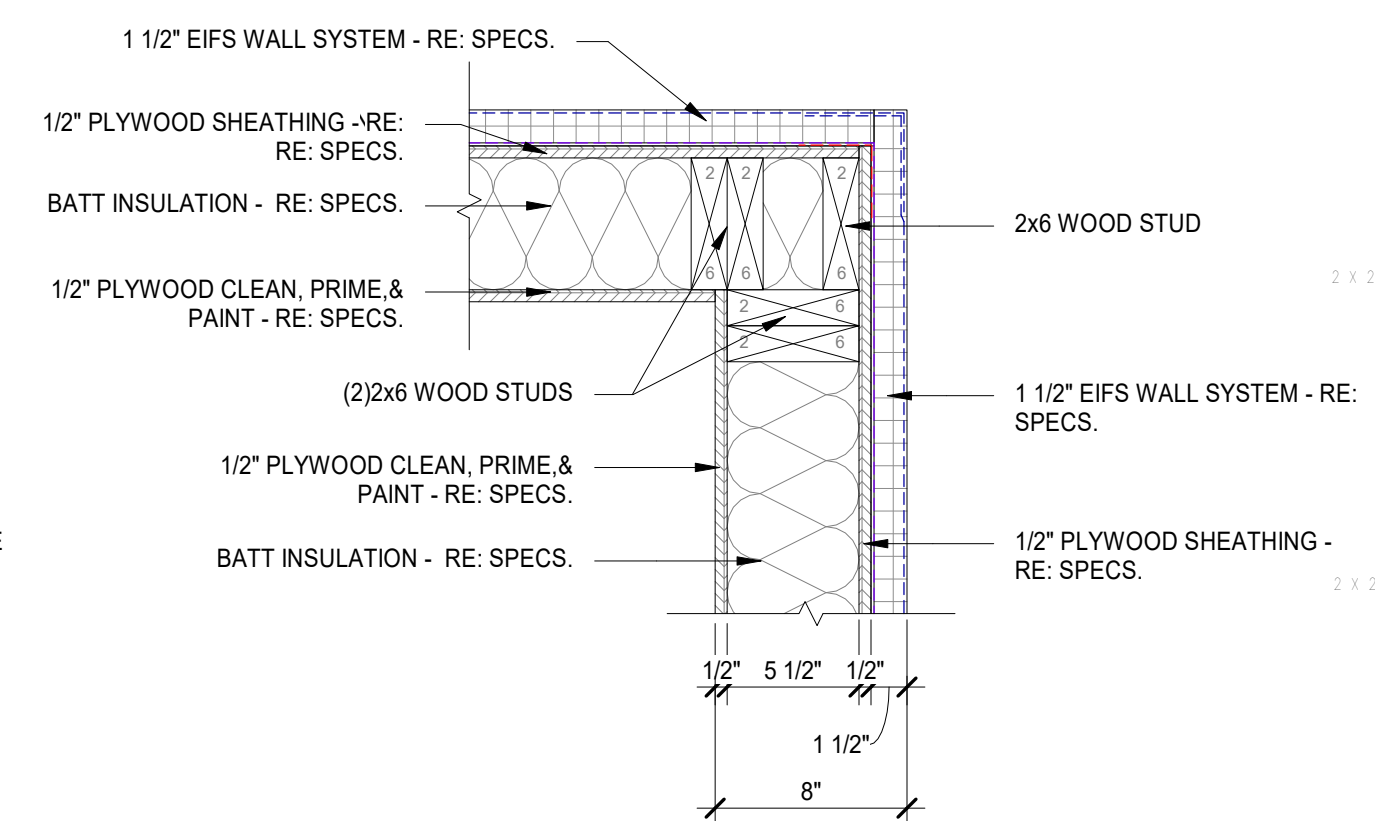
○ WALL TYPES PLAN  
1 1/2" = 1'-0"



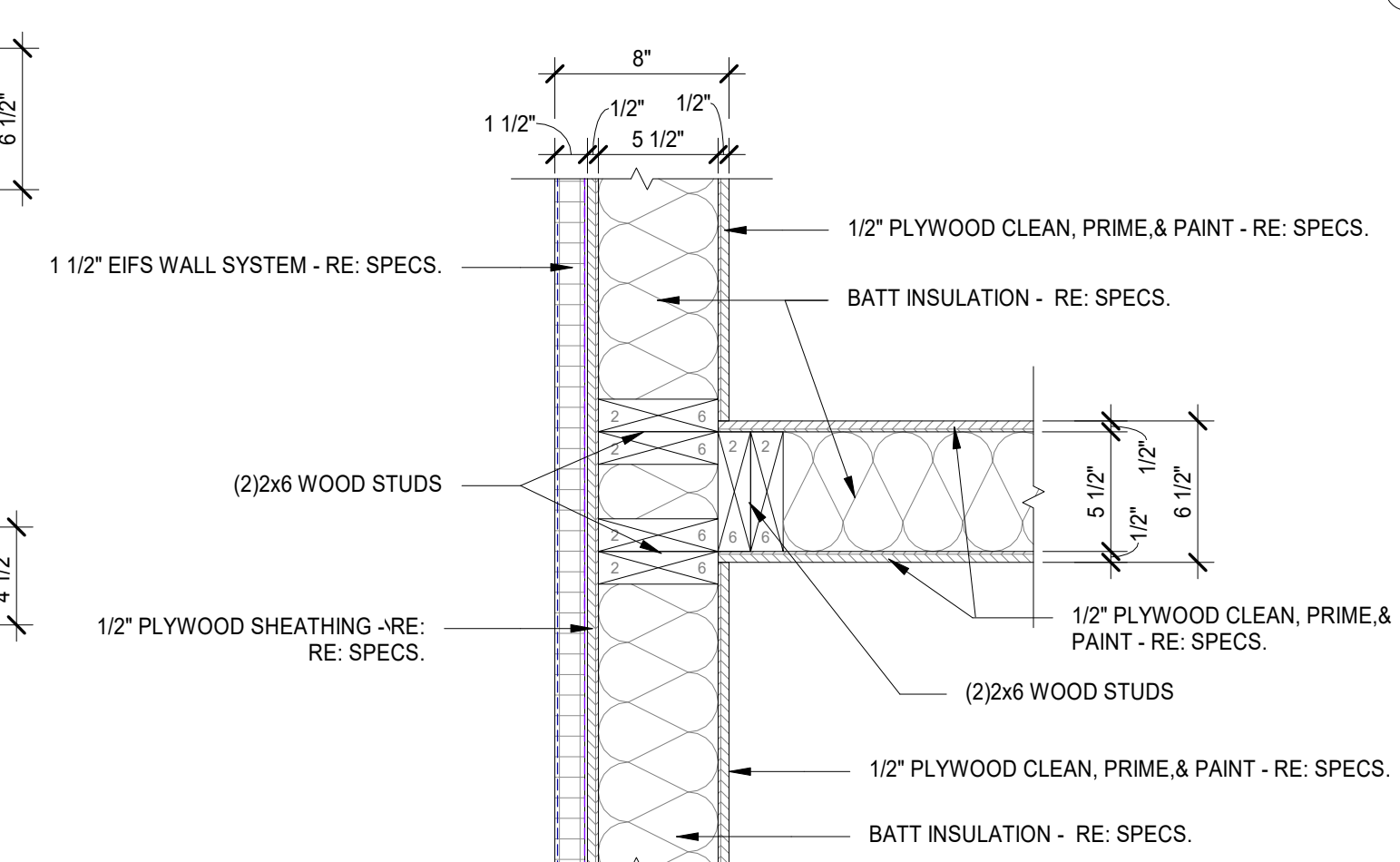
② PLAN DETAIL - 1  
1 1/2" = 1'-0"



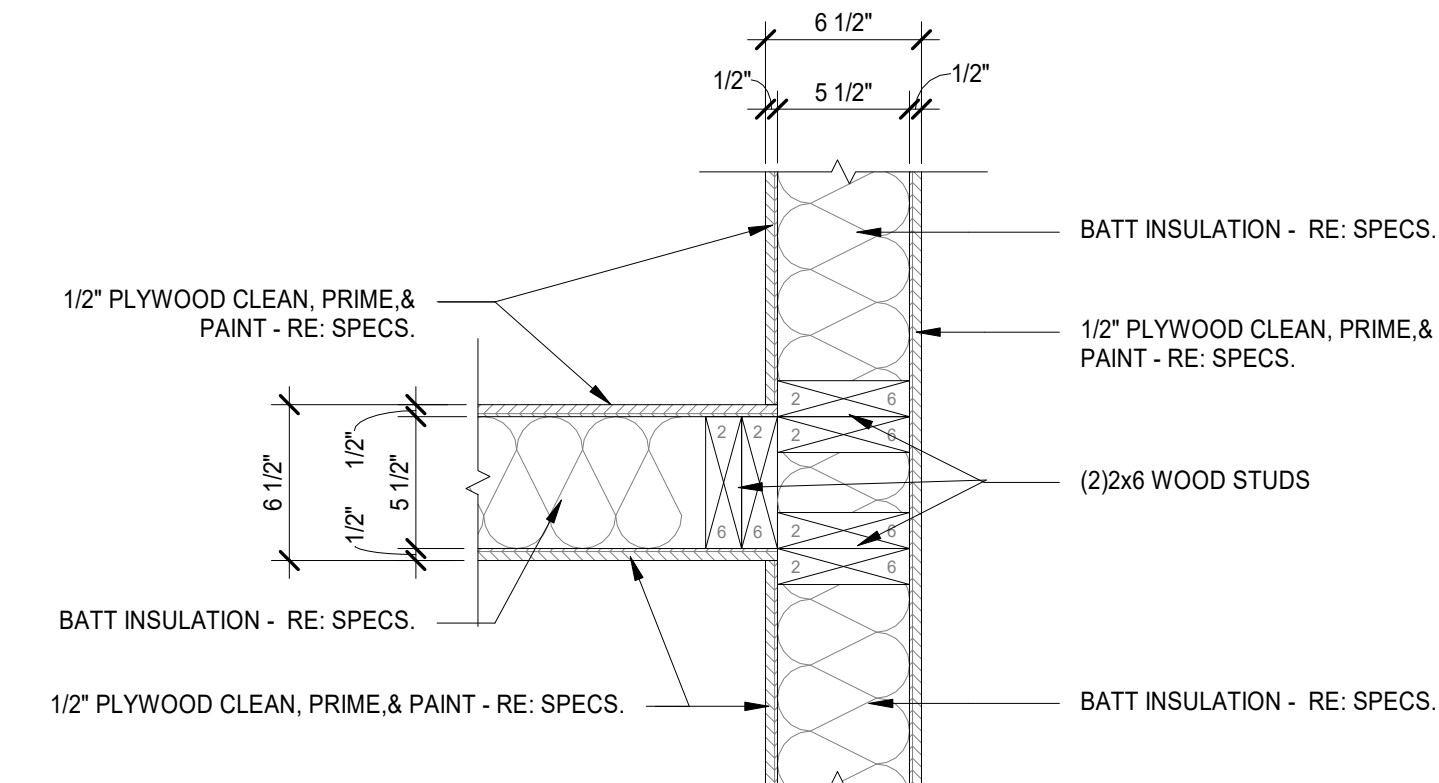
③ PLAN DETAIL - 2  
1 1/2" = 1'-0"



④ PLAN DETAIL - 3  
1 1/2" = 1'-0"

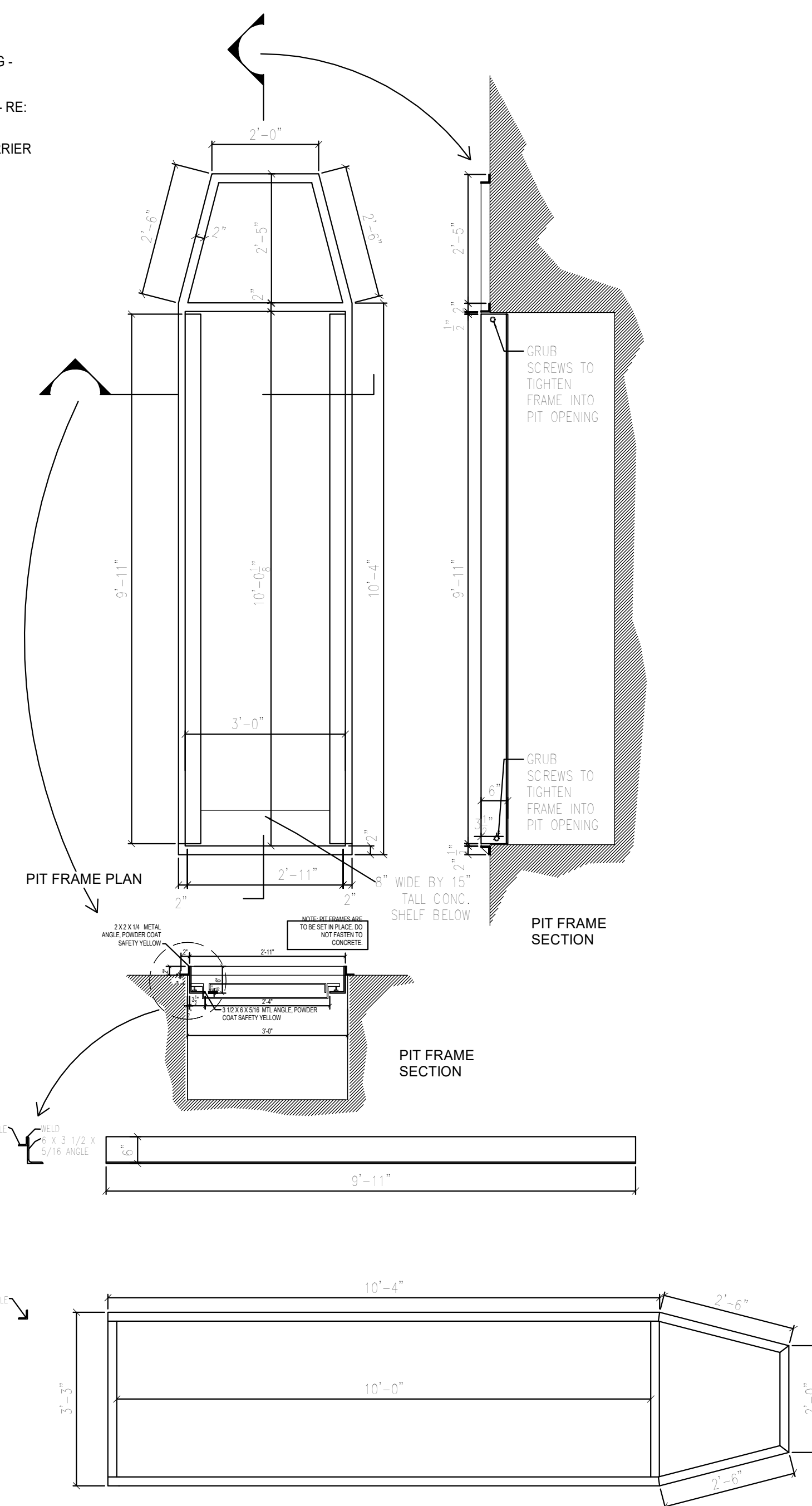


5 PLAN DETAIL - 4  
1 1/2" = 1'-0"



⑥ PLAN DETAIL - 5  
1 1/2" = 1'-0"

\* SEE 12/A3.01 FOR OIL TRAY DETAILS



7 PIT FRAME DETAILS  
1/2" = 1'-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:	8 July, 2024
PROJ. ARCHITECT:	MRD

## Plan Detail & Fire Extinguishers

**SHEET NO.**

## A5.11

OF

NOT FOR  
CONSTRUCTION

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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: Matthew D. Bryant

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ABBREVIATIONS				STRUCTURAL DESIGN				SYMBOL KEY				GENERAL NOTES							
<div><div><div>A.B. ADDL. ADJ. ADH. AFF. ALT. ARCH.  B.L. BLDG. BM. B.O.D. BOT. BRG. BTWN.  CANT. CIP. C.J. C.L. CLR. CMU. C.O. COL(S). COMP. CONC. CONNK. CONST. CONT. CONTR. CTR.  D.B. D.B.A. DBL. DET. DTL. DEMO. OR (D). DFL. DIA. DIAG. DIM. DIR. DISC. DWGS. DWL(S).  EA. E.F. E.J. EL. ELEV. EMBED. ENGR. EQ. E.W. EXIST. OR (E). EXP. EXT.  FDN. F.F. F.F.E. FLR. FSTN. F.S. FT. FTG. F.V.  GA. GALV. GEOTECH. GR. G.T.  HAS. HDR. HI. HK. HORIZ. HR. HSS. HT.  I.D. I.F. IN. INFO. INT. INTERM.  JT. JST.  K. K.O.</div><div>ANCHOR BOLT ADDITIONAL ADJACENT ADHESIVE ABOVE FINISH FLOOR ALTERNATE ARCHITECT  BRICK LEDGE BUILDING BEAM BOTTOM OF DECK BOTTOM BEARING BETWEEN  CANTILEVER CAST IN PLACE CONSTRUCTION JOINT CENTERLINE CLEAR CONCRETE MASONRY UNIT CUT OFF COLUMN(S) COMPOSITE CONCRETE CONNECTION CONSTRUCTION CONTINUOUS CONTRACTOR CENTER  DROPPED BEAM DEFORMED BAR ANCHOR DOUBLE DETAIL DEMOLISH DOUGLAS FIR-LARCH DIAMETER DIAGONAL DIMENSIONAL DIRECTION DISCONTINUOUS DOWEL(S)  EACH EACH FACE EXPANSION JOINT ELEVATION ELEVATOR EMBEDMENT ENGINEER EQUAL EACH WAY EXISTING EXPANSION EXTERIOR  FOUNDATION FINISH FLOOR FINISH FLOOR ELEVATION FLOOR FASTEN FAR SIDE FEET FOOTING FIELD VERIFY  GAGE GALVANIZE GEOTECHNICAL GRADE GIRDER TRUSS  HEADED ANCHOR STUD HEADER HIGH HOOK HORIZONTAL HARD ROCK HOLLOW STEEL SECTION HEIGHT  INSIDE DIAMETER INSIDE FACE INCH INFORMATION INTERIOR INTERMEDIATE  JOINT JOIST  KIPS KNOCK OUT</div><div>LBS LDG LH LLV LSH LSV LT LVL LV LW  MAT. MAX. MECH. MEZZ MFR MID. MIN. MISC. M.L. MTL  (N) NIC NO. N.S. NSG NTS NW  O.C. O.D. O.F. O.H. OPNG  P.A.F. PARA. PC PCF PEMB PERIM. PERP. PJ PL PLY. PREFAB. PSF PSI PT PTRN  R REF. REINF. REQUIRED RTU  S.A. S.B. SCHED. SECT. SHT SHR. SIM. S.O.G. SPA. SPEC. SS STD STIFF. STL SW SYM. SYP  T&amp;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  POUNDS LANDING LONG LEG HORIZONTAL LONG LEG VERTICAL LONG SIDE HORIZONTAL LONG SIDE VERTICAL LIGHT LEVEL LIGHT WEIGHT  MATERIAL MAXIMUM MECHANICAL MEZZANINE MANUFACTURER MIDDLE MINIMUM MISCELLANEOUS MATCH LINE METAL  NEW NOT IN CONTRACT NUMBER NEAR SIDE NON-SHRINK GROUT NOT TO SCALE NORMAL WEIGHT  ON CENTER OUTSIDE DIAMETER OUTSIDE FACE OPPOSITE HAND OPENING  POWDER ACTUATED FASTENERS PARALLEL PRECAST POUNDS PER CUBIC FOOT PRE-ENGINEERED METAL BUILDING PERIMETER PERPENDICULAR PANEL JOINT PLATE PLYWOOD PRE-FABRICATED 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  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</div></div></div>				<div><div><div>1. STRUCTURAL DESIGN STANDARDS:  2021 INTERNATIONAL BUILDING CODE LOCAL AMENDMENTS TO BUILDING CODE ASCE 7-10</div><div>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, Pg 20 psf IMPORTANCE FACTOR, Is 1.0 EXPOSURE FACTOR, Ce 1.0 THERMAL FACTOR, Ct 1.0 (NOTE: ROOF PARAPET DRIFT LOADS &amp; UNBALANCED SNOW LOADS TO BE CALCULATED FOR EACH BUILDING SECTION W/ ABOVE PARAMETERS &amp; 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, Vb 115 MPH IMPORTANCE FACTOR, Iw 1.0 EXPOSURE CATEGORY B GUST &amp; INTERNAL PRESSURE, GCp 0.18 (ENCLOSED) DIRECTIONALITY FACTOR, Kd 0.85 TOPOGRAPHIC FACTOR, Kzt 1.0 ELEVATION FACTOR, Ke 1.0 (REFER TO ROOF FRAMING PLAN FOR COMPONENTS &amp; CLADDING PRESSURES CHART)  SEISMIC LOAD: SITE CLASS C SEISMIC DESIGN CATEGORY B IMPORTANCE FACTOR, Ie 1.0 Ss 0.100 S1 0.068 S0.5 0.087 S0.1 0.068 SEISMIC FORCE-RESISTING SYSTEM LIGHT-FRAMED WOOD WALL SHEATHED W/ WOOD STRUCTURAL PANELS (R=6.5)</div></div></div>	<div><div><div><div>SYMBOL</div><div><div>A</div><div>EA</div><div>DTL # SHEET #</div><div>DTL # SHEET #</div><div>F.F. EL. XX'-X"</div><div>TOP OR BOT. XX'-XX"</div><div>WP</div><div>Step Up Step Down with Slope Slope Down</div><div></div><div>C1 COLUMN MARK</div><div><div>I</div><div>□</div><div>COLUMN SIZE / BASE PL</div></div><div>10P, 20P, 30P, 53P, 66P XXSP</div><div>BEAM SIZE REACTION (SERVICE LOAD) BEAM SIZE MOMENT CONNX</div><div>VERTICAL BRACE FLOOR OR ROOF BEAM</div></div><div><div>DESCRIPTION</div><div>GRIDLINE IDENTIFIER</div><div>EXISTING GRIDLINE IDENTIFIER</div><div>DETAIL MARKER</div><div>ELEVATION MARKER</div><div>FINISH FLOOR ELEVATION MARKER</div><div>SPOT ELEVATION MARKER</div><div>WORK POINT MARKER</div><div>ELEVATION CHANGE IN SLAB OR DECK</div><div>DECK OR SLAB SPAN DIRECTION</div><div>MASONRY WALL</div><div>WINDOW IN MASONRY WALL</div><div>DOOR IN MASONRY WALL</div><div>CONCRETE COLUMN</div><div>STEEL COLUMN</div><div>STANDARD PAN WIDTH SKIP PAN WIDTH</div><div>STEEL BEAM</div><div>STEEL BEAM MOMENT CONNX</div><div>STEEL BEAM SPLICE</div><div>VERTICAL STEEL BRACE - REF. ELEVATION</div></div></div></div></div>	<div><div><div>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.</div><div>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.</div><div>3. RESPONSES TO QUESTIONS AND RFI'S, 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.</div><div>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.</div><div>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.</div><div>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.</div><div>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.</div><div>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.</div><div>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.</div><div>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.</div><div>11. THESE PLANS MUST BE SUBMITTED TO THE GEOTECHNICAL ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.</div><div>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.</div><div>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.</div><div>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.</div></div></div>													
				SUBMITTALS								GEOTECHNICAL REPORT							
				<div><div><div>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.</div><div>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.</div><div>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.</div><div>4. ALL ITEMS DEVIATING FROM THE STRUCTURAL DRAWINGS OR FROM PREVIOUSLY SUBMITTED SHOP DRAWINGS SHALL BE CLOUDED.</div><div>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.</div><div>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.</div><div>7. DELEGATED STRUCTURAL DESIGN AND DEFERRED SUBMITTALS INCLUDE: 1. PREFABRICATED WOOD TRUSSES</div><div>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.</div></div></div>															

New Orleans, LA 70130

Registration: F-4111

Project No: 2497-66352-00



## CONCRETE MIX

1. ALL CONCRETE SHALL BE LABORATORY DESIGNED AND CONTROLLED AND SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318). SAND AND COARSE AGGREGATES SHALL MEET THE REQUIREMENTS OF ASTM C-33 OR C-330. PORTLAND CEMENT SHALL BE TYPE I OR II AND SHALL MEET THE REQUIREMENTS OF ASTM C-150. IN ADDITION, CONCRETE SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:

2. CONCRETE PROPORTIONS SHALL BE ESTABLISHED FROM CONCRETE COMPRESSIVE STRENGTH TEST RECORDS FROM THE FACILITY THAT WILL SUPPLY CONCRETE FOR THIS PROJECT. TEST RECORDS SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF ACI 318 AND THE SPECIFICATIONS AND SHALL BE REFLECTIVE OF THE PERIOD OF THE YEAR DURING WHICH THE CONCRETE IS TO BE PLACED. CHANGING MATERIAL PROPORTION, PROPERTIES, SOURCES, COMBINATIONS, ADDITIONS OR ANYTHING WHICH IS A CHANGE IN THE APPROVED MIX DESIGN REQUIRES A NEW MIX DESIGN SUBMITTAL.
3. SLUMP AT THE POINT OF PLACEMENT SHALL NOT EXCEED AMOUNT SPECIFIED. DO NOT PLACE CONCRETE WITH SLUMP AND TEMPERATURE OUTSIDE THE LIMITS PROVIDE ON THE APPROVED MIX DESIGNS. USE OF CHLORIDES IN ANY ADMIXTURE IS NOT PERMITTED. SLUMP RANGE DOES NOT APPLY TO SUPERPLASTICIZED CONCRETE.
4. FLY ASH SHALL NOT BE USED AS A CONSTITUENT IN ARCHITECTUALLY EXPOSED CONCRETE. FLY ASH IS ALLOWED IN ALL OTHER NON-ARCHITECTUALLY EXPOSED CONCRETE. FLY ASH SHALL MEET ASTM C618 CLASS F REQUIREMENTS. THE WEIGHT OF THE FLY ASH SHALL BE ADDED TO THE WEIGHT OF THE CEMENT IN THE CALCULATION OF WATER CEMENT RATIO. THE CONTRACTOR SHALL CONFIRM IN THE MIX DESIGN SUBMITTAL THAT THE USE OF FLY ASH WILL NOT INTERFERE WITH THE PERFORMANCE OF OTHER PRODUCTS AND MATERIALS THAT WILL BE IN CONTACT WITH THE CONCRETE.
5. AIR ENTRAINMENT IN NORMAL WEIGHT CONCRETE IS REQUIRED ONLY IN CONCRETE PERMANENTLY EXPOSED TO WEATHER CONDITIONS. AIR ENTRAINMENT IS REQUIRED FOR ALL EXPOSURE CONDITIONS FOR LIGHTWEIGHT CONCRETE. PERCENT AIR ENTRAINMENT SHALL BE 6% PLUS/MINUS 1.5%. DO NOT AIR-ENTRAIN INTERIOR FLOOR SLABS THAT RECEIVE HAND TROWEL FINISH OR POLISHED CONCRETE.
6. NON CHLORIDE ACCELERATING ADMIXTURE MAY BE USED IN CONCRETE SLABS PLACED AT AMBIENT TEMPERATURES BELOW 50 DEGREES FAHRENHEIT AT CONTRACTOR'S OPTION.
7. THE COMPRESSIVE STRENGTH OF GROUT BELOW BASE PLATES SHALL BE AT LEAST 7500 PSI.
8. CONTRACTOR MUST SUBMIT THE MIX DESIGN SUBMITTALS TO THE PROJECTS TESTING LABORATORY PRIOR TO SUBMITTING TO THE ARCHITECT AND/OR STRUCTURAL ENGINEER.

1. EXPANSIVE CLAYS ARE PRESENT AT THIS SITE. THE FOLLOWING PRACTICES SHALL BE FOLLOWED, IN ADDITION TO OTHER MEASURES DESCRIBED IN THE GEOTECHNICAL REPORT, AS A MINIMUM TO PREVENT DAMAGE TO THE STRUCTURE:
  - A. GRADE SOIL AROUND BUILDING AWAY FROM THE BUILDING.
  - B. EMPLOY APPROPRIATE MEASURES TO PREVENT FLOODING OF WATER IN THE BUILDING PAD AREAS.
  - C. MAINTAIN THE BUILDING PAD AT SPECIFIED MOISTURE CONTENT.
  - D. PLACE BACKFILL AROUND THE PERIMETER GRADE BEAMS AND OR BASEMENT WALLS IMMEDIATELY AFTER THEY ARE CAST. ANY STANDING WATER BEFORE BACKFILL PLACEMENT MUST BE PUMPED DRY AND THE UNDERLYING SOIL MUST BE RETESTED TO MEET THE REQUIREMENTS OF THE GEOTECHNICAL REPORT.
2. A VOID SHALL BE CONSTRUCTED BELOW ALL STRUCTURAL ELEMENTS SUPPORTED BY PIERS TO SEPARATE THESE ELEMENTS FROM THE SOIL. THE USE OF SIDE RETAINERS IS REQUIRED TO PREVENT SOIL FROM INFILTRATING INTO THE VOID DESCRIBED IN THE GEOTECHNICAL REPORT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE VOID SHALL BE AS SHOWN IN THE GEOTECHNICAL REPORT NOTES.
3. GRADE BEAM & WALL SIDES SHALL BE WOOD-FORMED. EARTH-FORMING IS NOT ALLOWED.

## REINFORCING STEEL

1. ALL CONCRETE REINFORCEMENT SHALL BE NEW BILLET STEEL CONFORMING TO ASTM A615, GRADE 60.
2. REINFORCING STEEL THAT REQUIRES WELDING SHALL CONFORM TO ASTM A706, WITH GRADES AS SHOWN ABOVE.
3. ALL REINFORCING BARS SHALL BE LAPPED 40 BAR DIAMETERS (2'-0" MINIMUM) AT SPLICES UNLESS NOTED OTHERWISE ON PLANS OR DETAILS. DEVIATIONS IN SPICE LOCATIONS AND LENGTHS ARE NOT ALLOWED UNLESS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.
4. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. ALL LAPS IN WELDED WIRE FABRIC SHALL BE ONE MESH PLUS TWO INCHES.
5. CONCRETE REINFORCEMENT AND ACCESSORIES SHALL BE DETAILED AND FABRICATED IN ACCORDANCE WITH ACI 315 AND ACI 318.
6. LAP SPLICES OF CONTINUOUS BEAM REINFORCEMENT SHALL BE MADE AT MIDSPAN FOR TOP BARS AND AT SUPPORTS FOR BOTTOM BARS.
7. PROVIDE CORNER BARS AT INTERSECTIONS OF WALLS, GRADE BEAMS AND STRIP FOOTINGS IN ACCORDANCE WITH THE TYPICAL DETAILS. BARS THAT HOOK AT CONTINUOUS ENDS SHALL HAVE THE HOOK PLACED HORIZONTALLY AT EXTERIOR CORNERS IN LIEU OF CORNER BARS.
8. MINIMUM CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE AS NOTED BELOW. REFER TO ACI 318 SECTION 20.6 FOR CONDITIONS NOT NOTED.

## CAST-IN-PLACE CONCRETE

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

**FUSION**  
ARCHITECTS

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# New Construction For Take 5 Oil Change



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

## STRUCTURAL INFORMATION

SHEET NO.  
**SO.11**  
OF



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):

#2 SYP	Fb
2x4	1100
2x6	1000
2x8	925
2x10	800
2x12	750

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: HILTI X-C P6S/SIMPSON STRONG-TIE PDPAWL-287 @ 16" O.C. MAX. REFER TO SHEAR WALL SCHEDULE FOR ANCHORS AT SHEAR WALLS.

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.

	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 SPUCE	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 SPICE
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>5)</sup> SUBFLOOR, ROOF AND WALL SHEATHING (TO FRAMING): 1/2" AND LESS 19/32" TO 3/4" 7/8" TO 1" 1-1/8" TO 1-1/4"	6d <sup>1)</sup> 8d <sup>2)</sup> OR 6d <sup>3)</sup> 8d <sup>4)</sup> 10d <sup>4)</sup> OR 8d <sup>4)</sup>
	SINGLE FLOOR (COMBINATION SUBFLOOR-UNDERLAYMENT TO FRAMING): 3/4" AND LESS 7/8" TO 1"	6d <sup>2)</sup> 8d <sup>2)</sup>
	1-1/8" TO 1-1/4"	10d <sup>4)</sup> OR 8d <sup>4)</sup>
32.	PANEL SIDING (TO FRAMING) 1/2" 5/8"	6d <sup>2)</sup> 8d <sup>2)</sup>
33.	FIBERBOARD SHEATHING; <sup>3)</sup> 1/2" 25/32"	NO. 11 GA. ROOFING NAIL <sup>1)</sup> OR 6d NO. 11 GA. ROOFING NAIL <sup>1)</sup> OR 8d
34.	INTERIOR PANELING 1/4" 3/8"	4d <sup>2)</sup> 6d <sup>2)</sup>



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

TRUSS LOADING SCHEDULE					
DESIGNATION	DEPTH	TOPPING	TCLL (PSF)	BCLL (PSF)	TCDL (PSF)
RT	REF. ARCH.	ROOF ASSEMBLY OVER ROOF SHEATHING	20	0	12
					BCDL (PSF)
					10
					NOTES

- 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

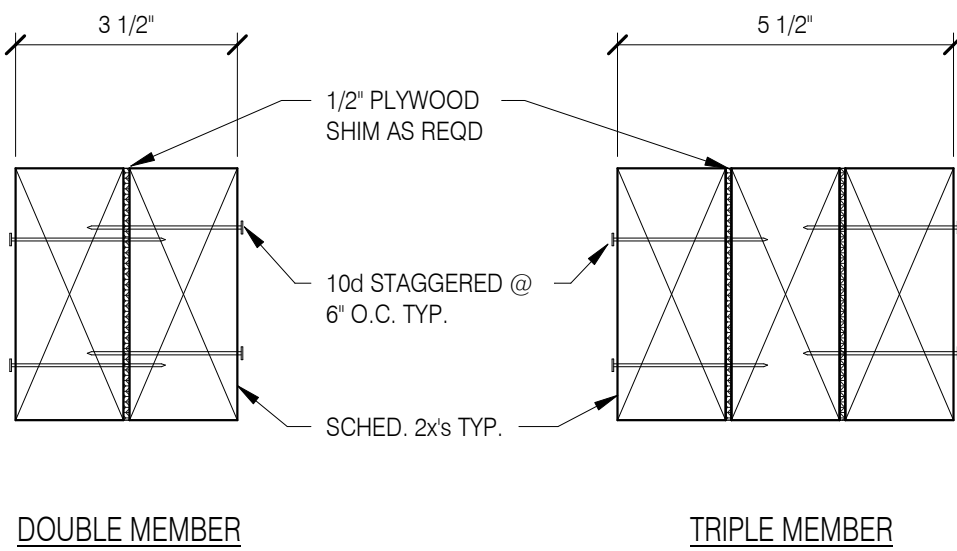
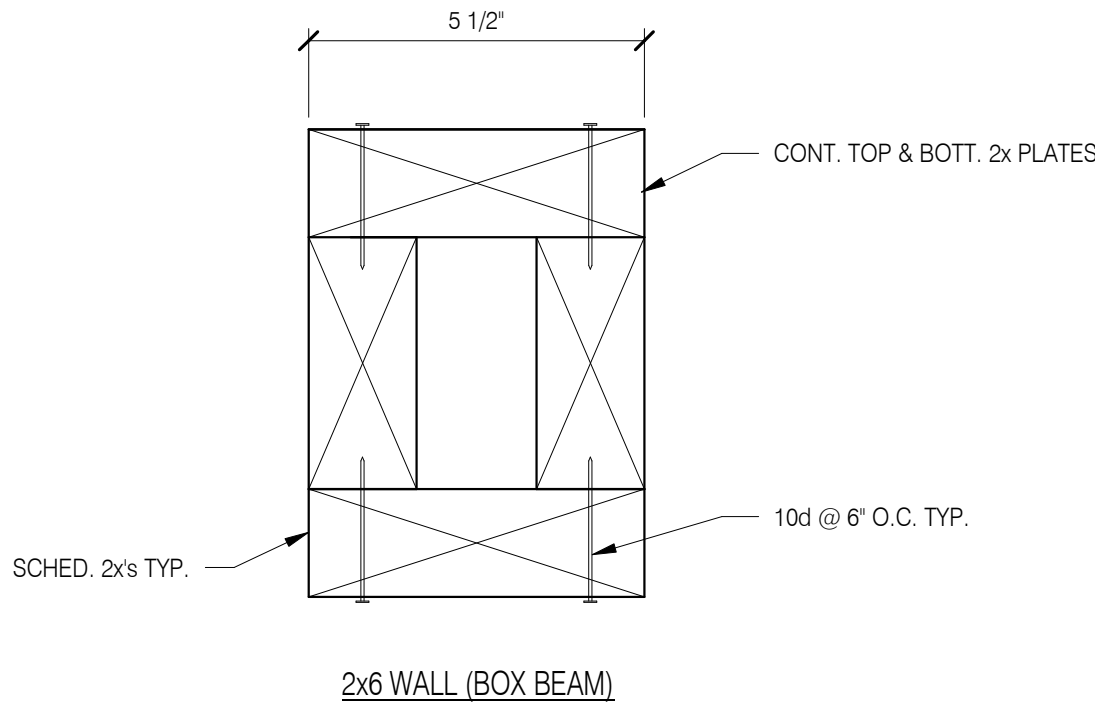
NTS

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	LTTP2	(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	H DU8	(20) 1/4x2 1/2 SDS	7/8"	(3) - 2x4	6970
11	H DU11	(30) 1/4x2 1/2 SDS	1"	(3) - 2x6	9535
12	H DU14	(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 HEADER FRAMING.
  - 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

NTS



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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  
DATE: 26 JULY, 2024  
PROJ. ENGINEER: BC

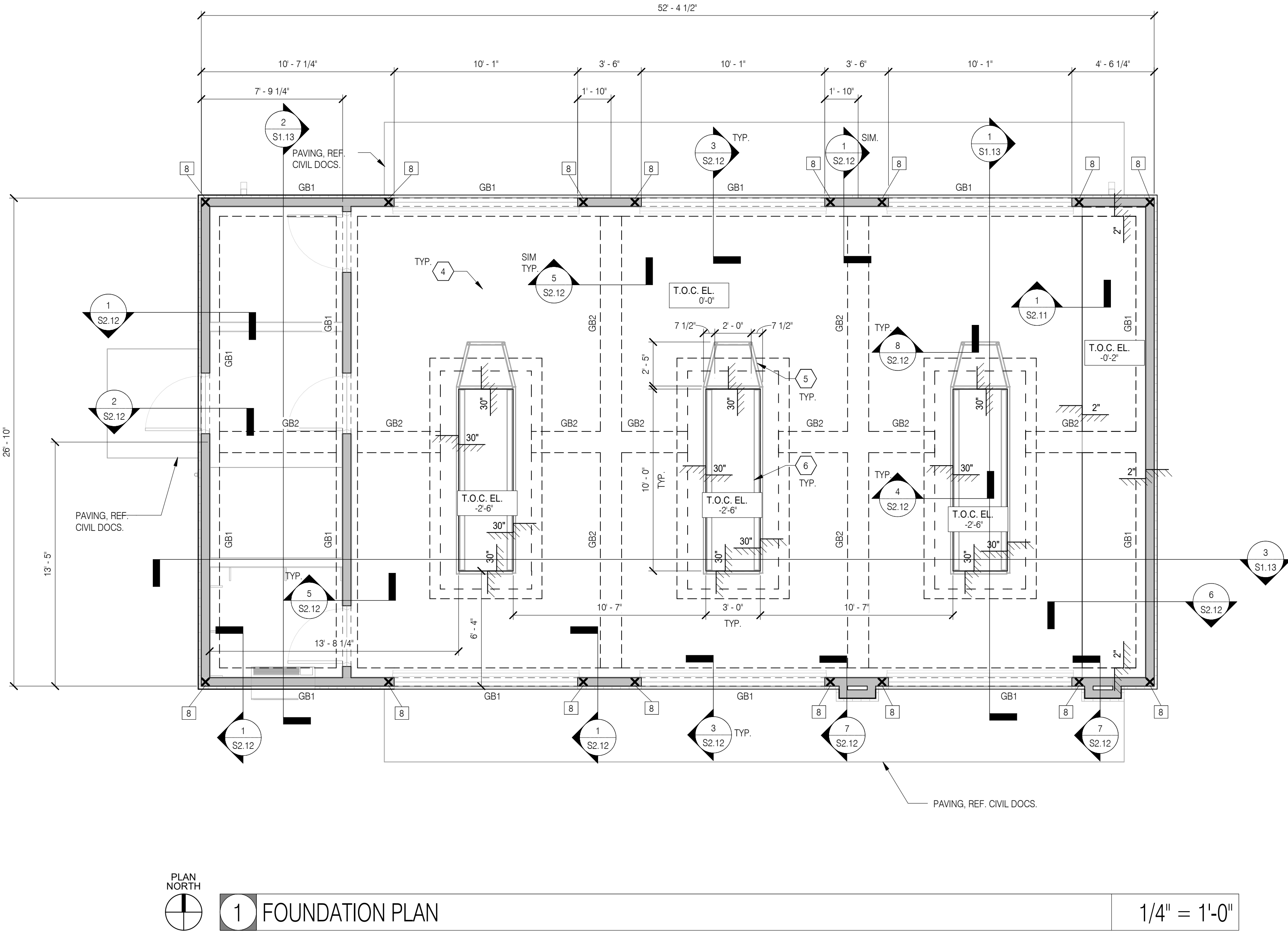
STRUCTURAL  
INFORMATION

SHEET NO.  
**S0.13**  
OF



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PLAN NOTES

1. FINISHED FLOOR ELEVATION = T.O. CONCRETE SLAB = EL. 0'-0" UNLESS NOTED OTHERWISE. REFER TO ARCHITECTURAL OR CIVIL DRAWINGS FOR DATUM ELEVATION.
2. COORDINATE ALL WORK THIS SHEET WITH THE STRUCTURAL NOTES ON SHEET **S1** SERIES AND WITH THE PROJECT SPECIFICATIONS.
3. REFER TO SHEET **S3** SERIES FOR FOUNDATION DETAILS.
4. CONCRETE FLOOR SLAB OVER MOISTURE RETARDER PER GENERAL NOTES OVER IMPORTED AND IMPROVED SUBGRADE PER THE GEOTECHNICAL REPORT.

SLAB THICKNESS: 5 inches

CONCRETE SPECIFICATION: REFER TO **4/S0.11** AND SPECIFICATIONS

SLAB REINFORCEMENT: #4 @ 12" O.C. EACH WAY MIDSLAB, LAPPED AT SPLICES REF. DETAIL **1/S2.11**

5. L 2X2X1/4" (GALV.) MOUNTED TO THE TOP OF CONCRETE
6. L 6X3 1/2X5/16" LLV (GALV.) MOUNTED TO THE INSIDE FACE OF THE TRENCH PER **4/S2.11**

SYMBOL LEGEND

	LOAD-BEARING WALL BELOW (REF. <b>5/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

GRADE BEAM SCHEDULE

MARK	WIDTH	DEPTH	REINFORCEMENT			NOTES
			TOP & BOTTOM	MID.	STIRRUPS	
GB1	14"	42"	4-#6	2-#5	#3 @ 30" O.C.	
GB2	14"	24"	3-#6	--	#3 @ 30" O.C.	

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Project No: 2497-66352-00

STATE OF MISSOURI  
SCOTT R. ARMSTRONG  
NUMBER PE-2007052756  
PROFESSIONAL ENGINEER  
26 JULY, 2024

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New Construction For  
Take 5 Oil Change  
Lee's Summit, Missouri 64063



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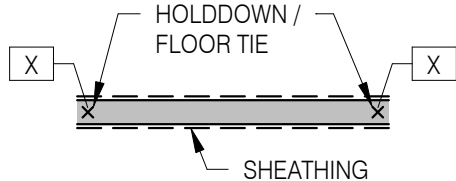

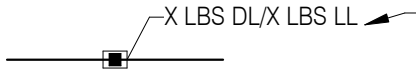

FOUNDATION PLAN

SHEET NO.  
**S1.10**  
OF



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1. REFER TO SHEET **S1** SERIES FOR STRUCTURAL INFORMATION, WOOD FRAMING NOTES AND WOOD SCHEDULES AND TYPICAL DETAILS.
1. THE BACKGROUND SHOWN ON THE PLAN IS FOR THE FLOOR BELOW.
4. ALL EXTERIOR WALLS ARE CONSIDERED LOAD-BEARING WALLS REGARDLESS OF HATCHING. **1/50.12**
3. PROVIDE 3/4" FLOOR DECK PER WOOD FRAMING NOTES ON SHEET **SX 6X** ON TOP OF WOOD JOISTS AS NOTED ON THE PLAN.
4. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONAL CONTROL.
5. BOTTOM OF DECK ELEVATION = 8'-0"

	LOAD-BEARING WALL BELOW (REF. <b>3/SO.13</b> FOR LOAD-BEARING WALL SCHEDULE)
	SHEAR WALL BELOW (REF. <b>4/SO.13</b> FOR SHEAR WALL SCHEDULE)
	HOLDDOWN / FLOOR TIE APPROX. LOCATION PER SHEAR WALL SCHEDULE (REF. <b>2/SO.13</b> FOR HOLDDOWN/FLOOR TIE SCHEDULE)
	SHEAR WALL PLAN VIEW
	BEAM (REF <b>1/SO.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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# New Construction For Take 5 Oil Change



PROJECT NO:	2497-66352-00
PHASE:	Final Dev. Submittal
DATE:	26 JULY, 2024
PROJ. ENGINEER:	BC
<p align="center"><b>MEZZANINE FRAMING PLAN</b></p>	
<p align="center"><b>SHEET NO.</b></p>	
<p align="center"><b>\$1.11</b></p>	
<p align="center">OF</p>	



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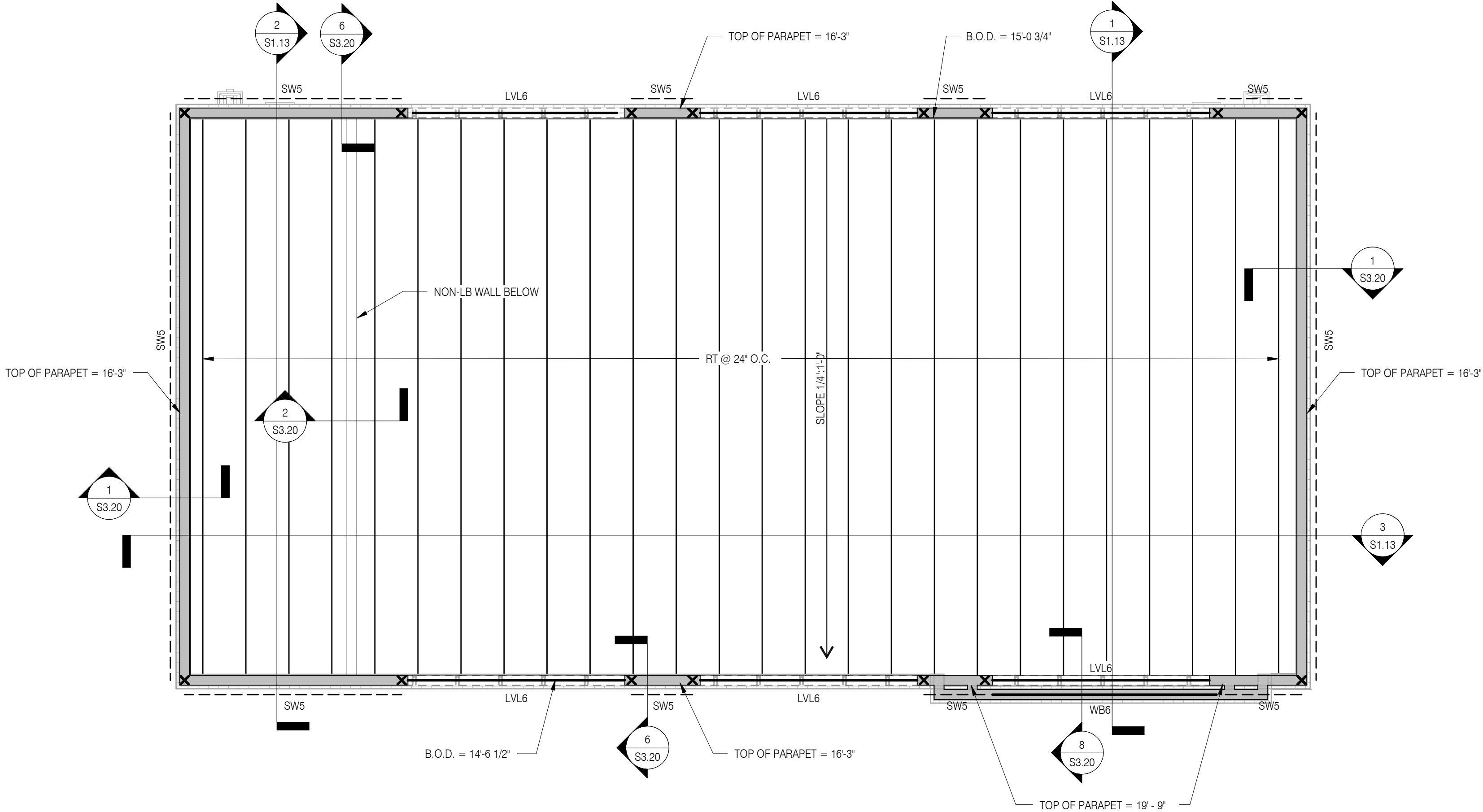
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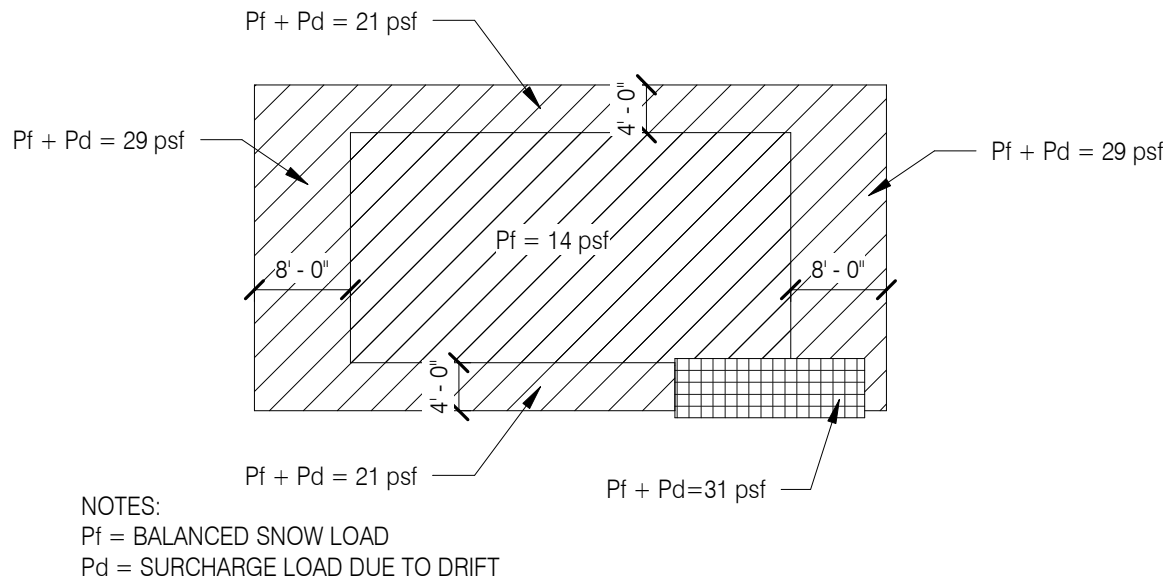
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PLAN NOTES AND KEY

- 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.



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.



2 SNOW LOADING DIAGRAM

1/16" = 1'-0"



1 ROOF FRAMING PLAN

1/4" = 1'-0"

No.	REVISION	DATE



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ROOF FRAMING  
PLAN

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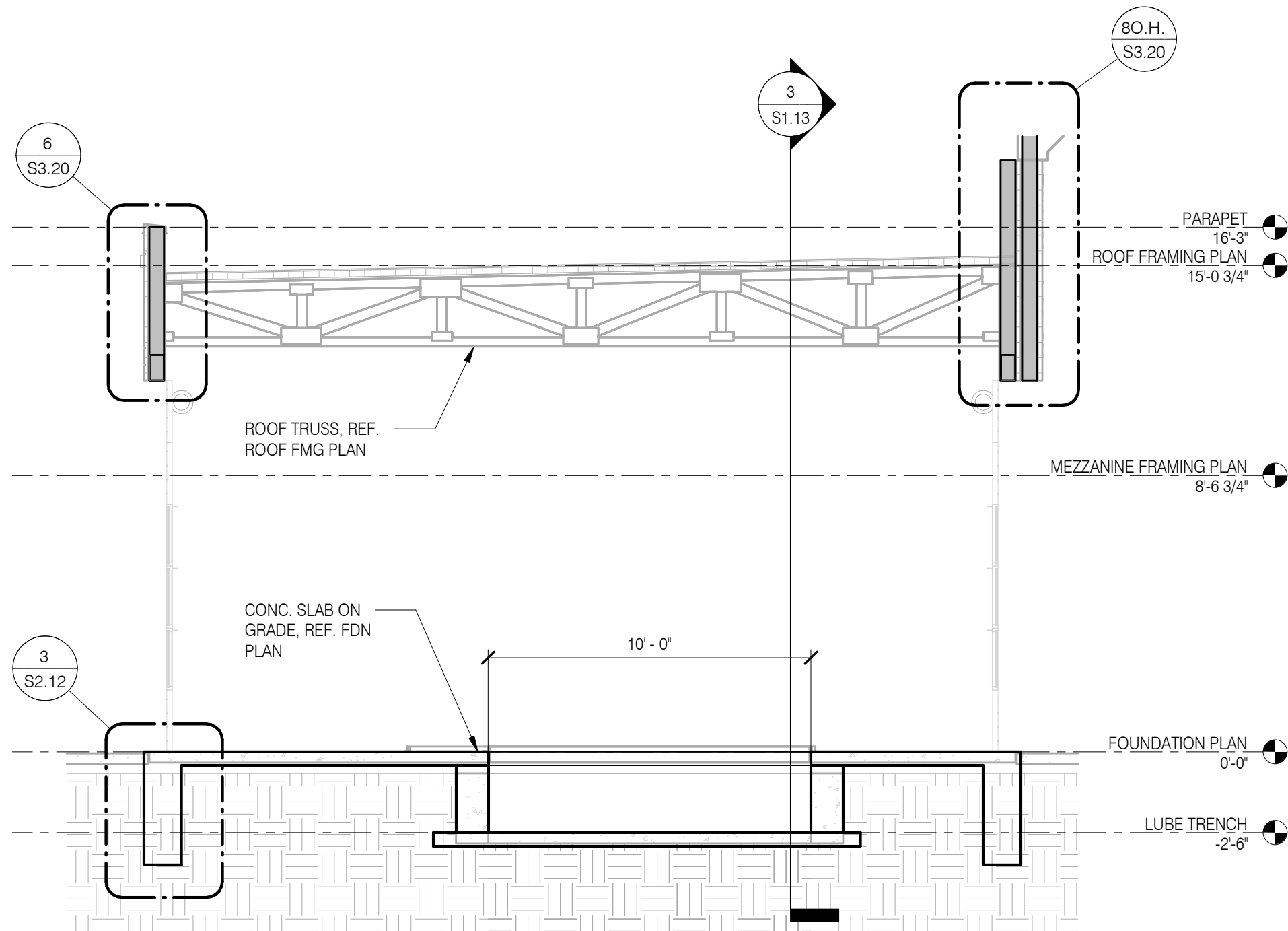
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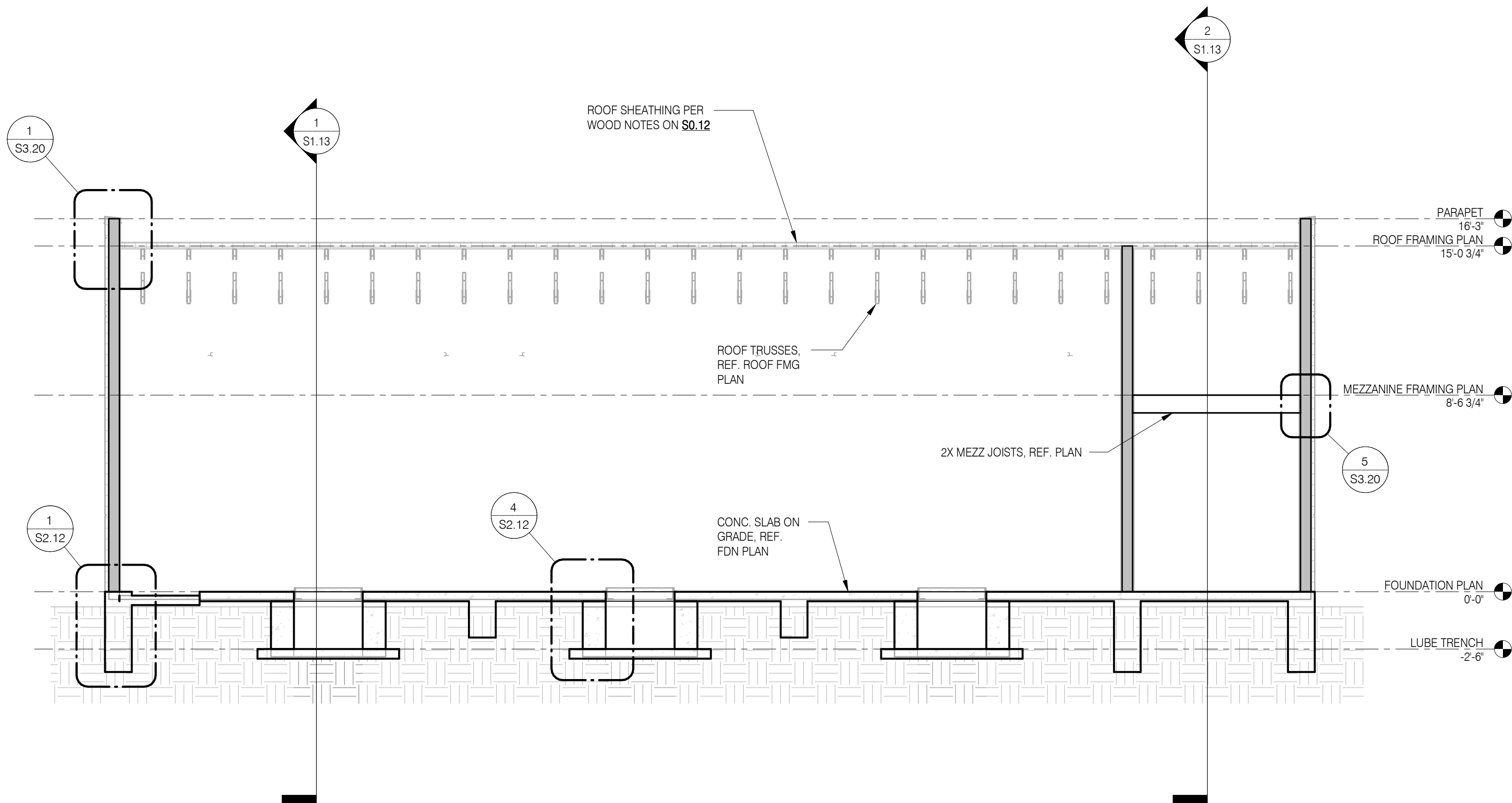
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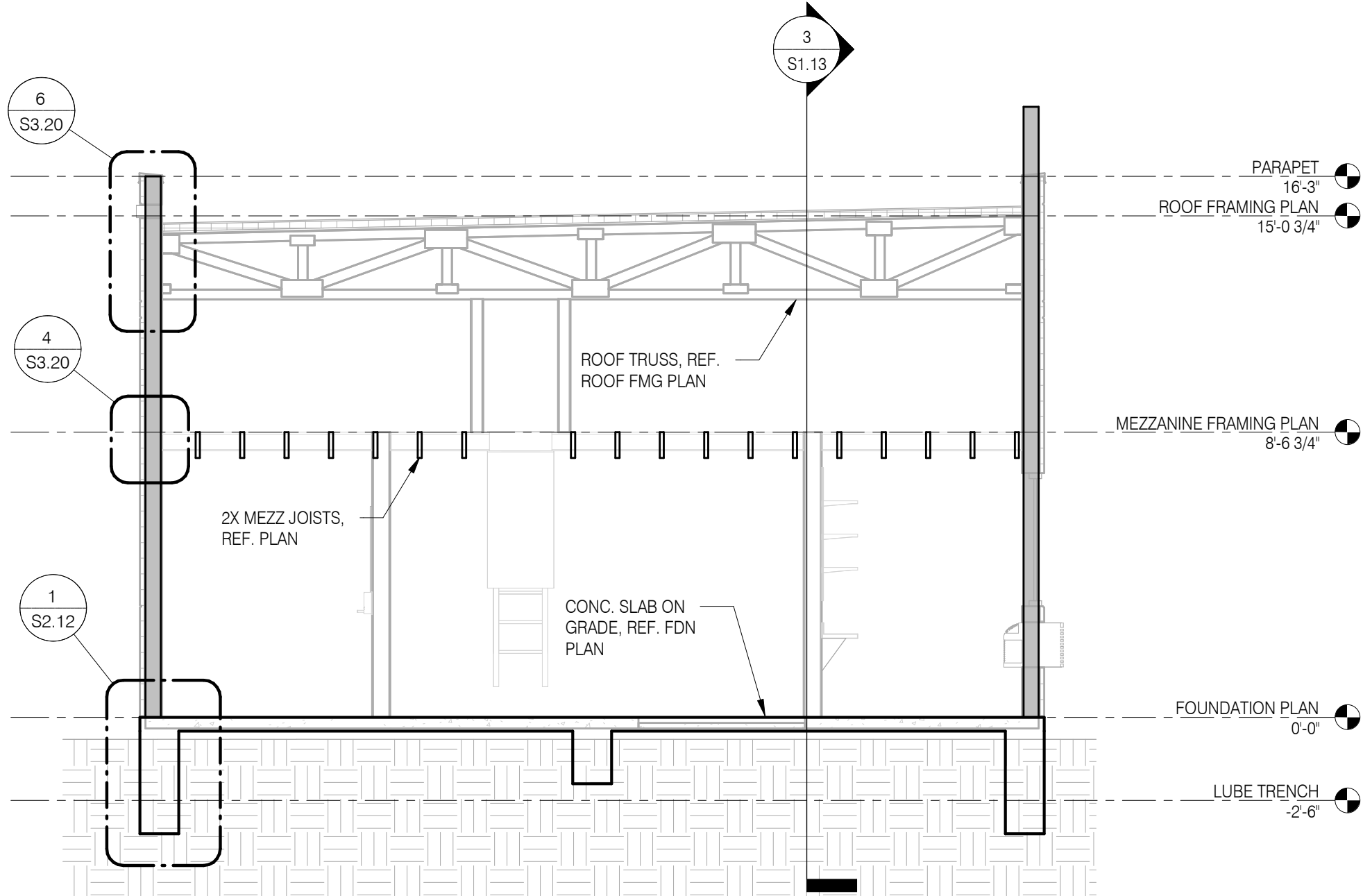
1 BUILDING SECTION

1/4" = 1'-0"



3 BUILDING SECTION

1/4" = 1'-0"



2 BUILDING SECTION

1/4" = 1'-0"



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BUILDING SECTIONS

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STATE OF MISSOURI

SCOTT R. ARMSTRONG

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BATON ROUGE, LA 70809  
P: 225.766.3486 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

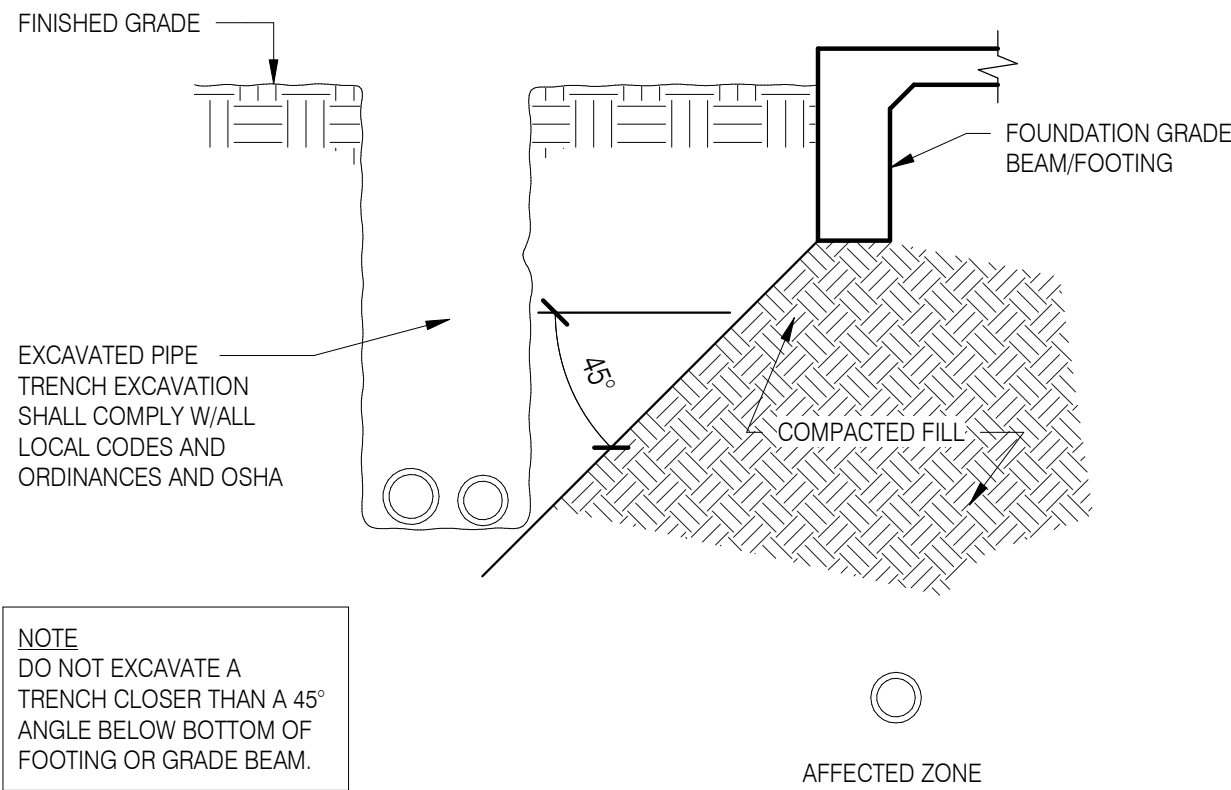
PROJ. ENGINEER: BC

FOUNDATION SECTIONS & DETAILS

SHEET NO. **S2.10**

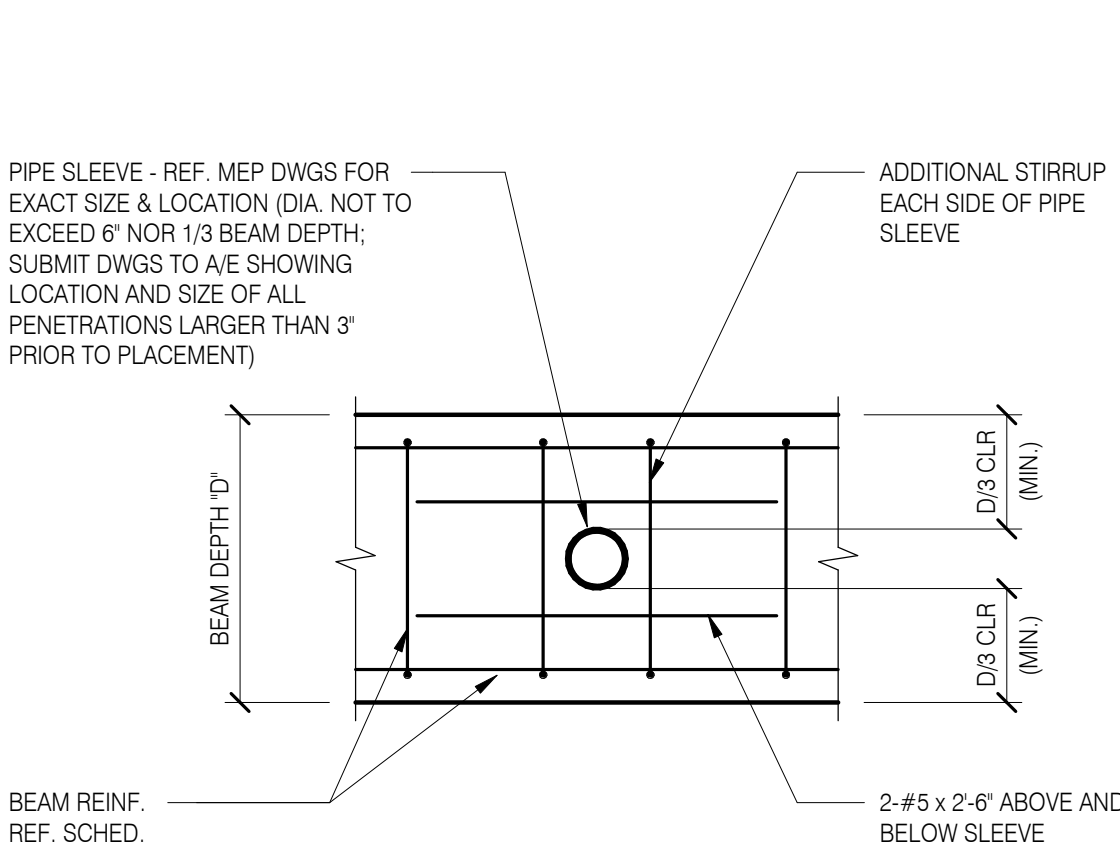
OF

NOTE  
ALL PLUMBING LINES, IN THE AFFECTED ZONE & MORE THAN 3'-0" BELOW THE BOTTOM OF FOOTING, SHALL BE PLACED BEFORE COMPACTING THE SUBGRADE. THE FOOTINGS/GRADE BEAMS SHALL BE PLACED LATER, G.C. TO NOTIFY STRUCTURAL ENGINEER OF ANY PIPES IN THE AFFECTED ZONE OF THE FOUNDATION & WITHIN 3'-0" BELOW THE BOTTOM OF FOUNDATION.



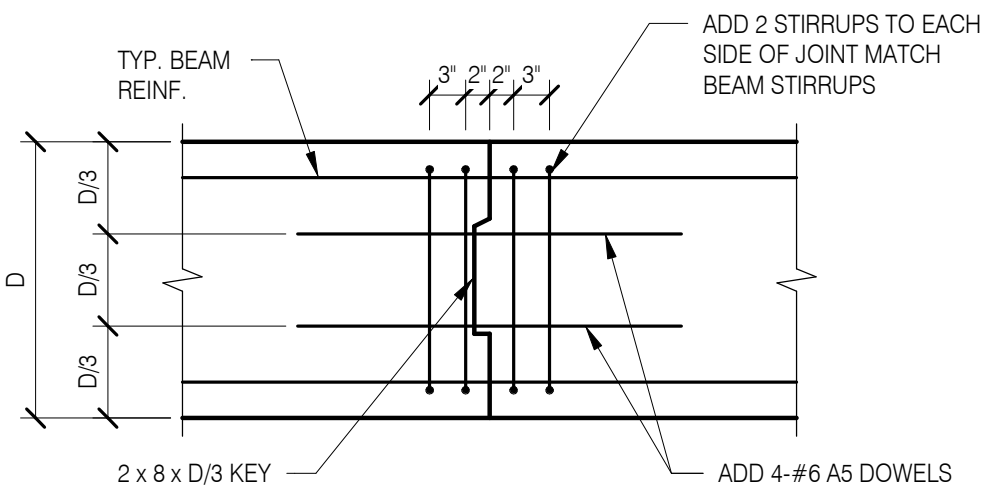
9 TRENCH PARALLEL TO FDN

NTS



7 TYP. HORIZ. GR. BM PENETRATION

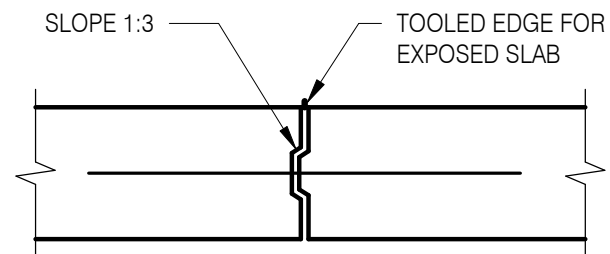
NTS



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

5 TYP. BEAM CONSTR. JOINT

NTS

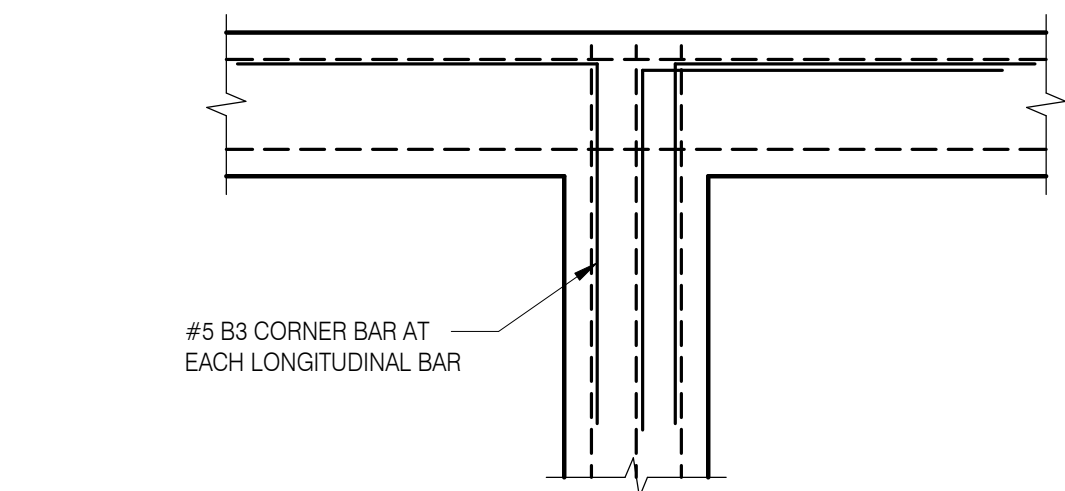


DOWELS  
@ 4 1/2" SLAB: #4 @ 2'-0"  
@ 18" O.C. IN ADDITION TO TYP. SLAB REINFORCING

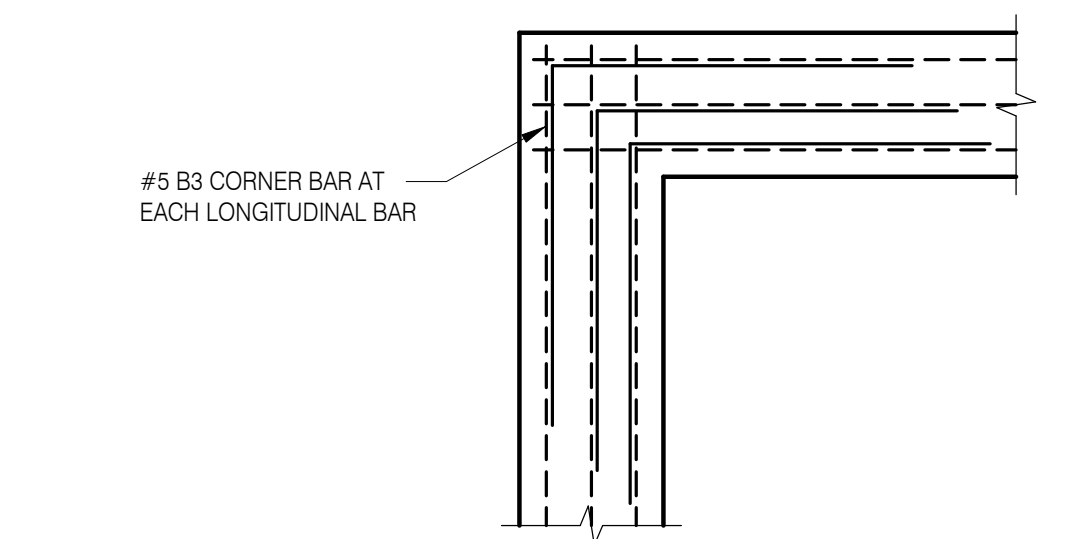
NOTES  
1. PREFORMED 24 GA MIN. COLD KEY MAY BE USED.  
2. CONSTRUCTION JOINT SHALL BE LOCATED IN THE MIDDLE THIRD OF THE SPAN BETWEEN SUPPORTS. DO NOT LOCATE SLAB CONSTRUCTION JOINT IN AN END SPAN.

3 TYP. CONSTRUCTION JOINT DTL

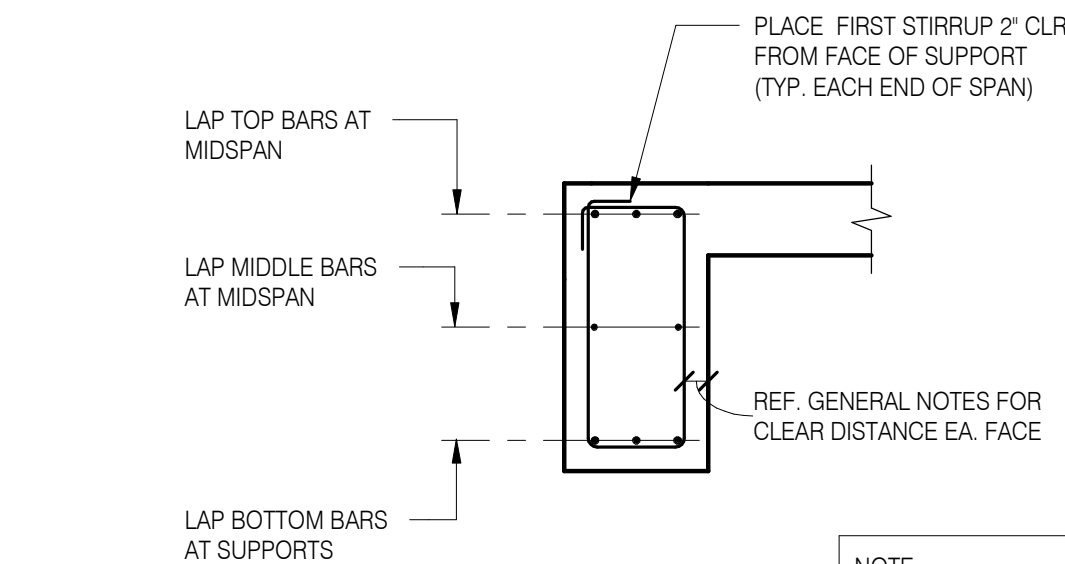
NTS



C. GRADE BEAM INTERSECTION



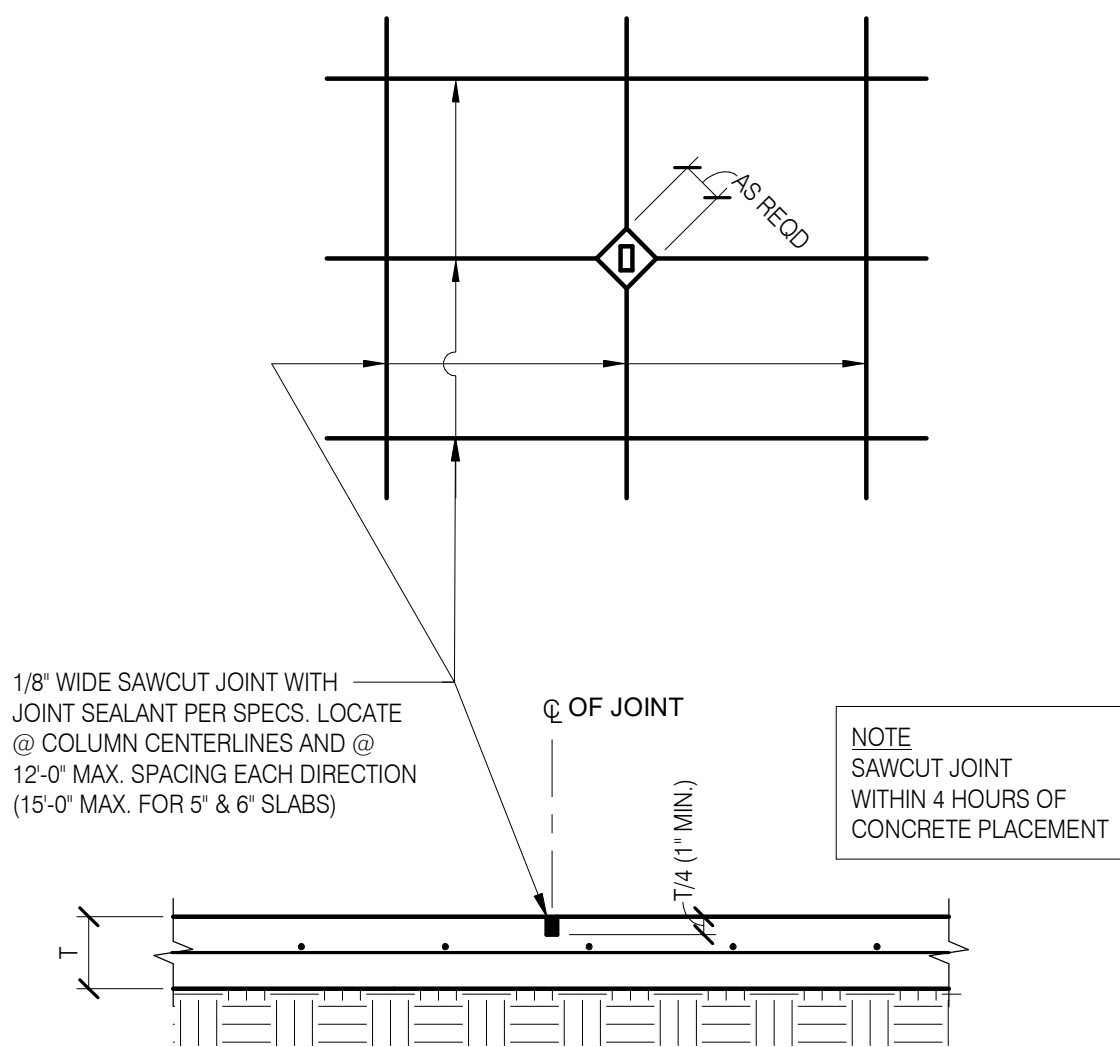
B. GRADE BEAM CORNER



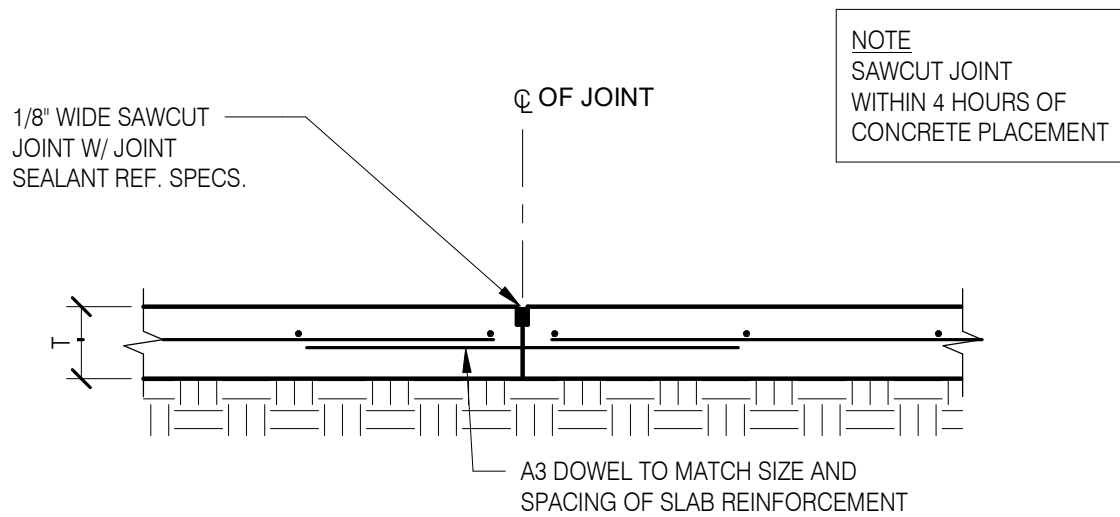
A. TYPICAL SECTION

8 TYP. GRADE BEAM REINF. DETAIL

NTS



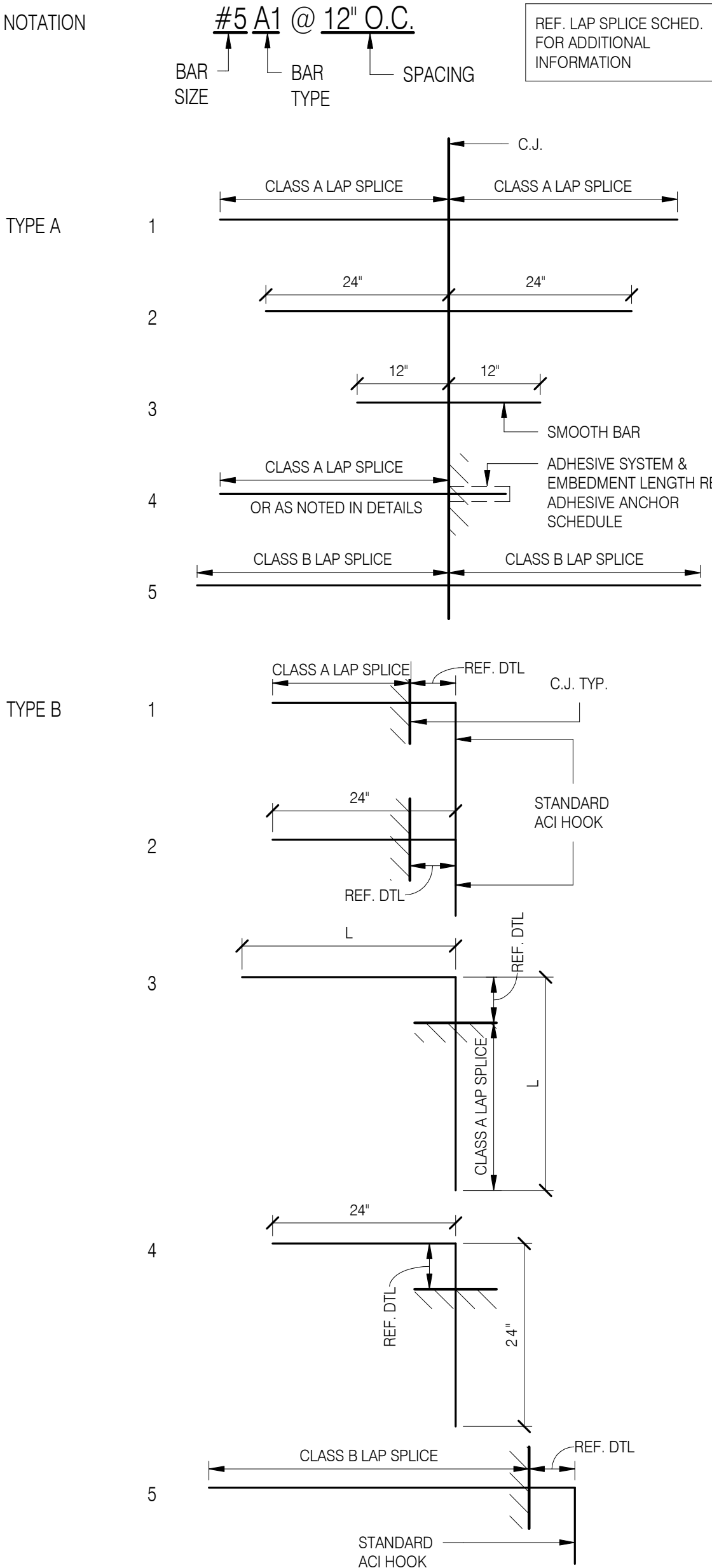
B. TYPICAL CONTROL JOINT



A. TYPICAL CONSTRUCTION JOINT

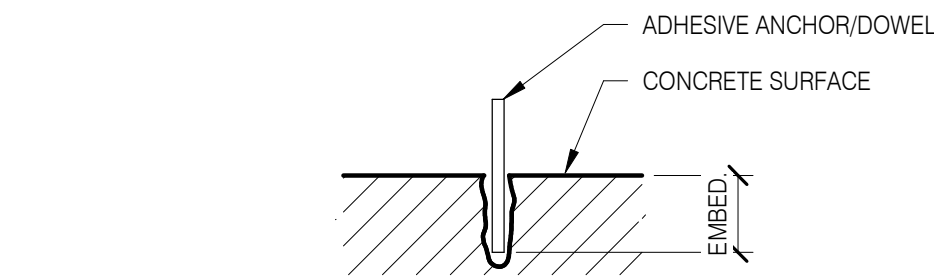
6 SLAB ON GROUND JOINTS

NTS



4 REBAR DOWEL SCHEDULE

NTS



ADHESIVE ANCHORS	
DIAMETER SIZE	EMBEDMENT
3/8"	3 1/2"
1/2"	4 1/2"
5/8"	5 5/8"
3/4"	6 3/4"
7/8"	7 7/8"
1"	9"

ADHESIVE DOWELS	
REBAR SIZE	EMBEDMENT
#3	3 3/8"
#4	4 1/2"
#5	5 5/8"
#6	6 3/4"
#7	7 7/8"
#8	9"

NOTES  
1. ADHESIVE TO BE ONE OF THE FOLLOWING PRODUCTS:  
- HILTI HIT - HY 200 SAFE SET  
- SIMPSON SET - 3G  
2. ANCHOR RODS SHALL BE ONE OF FOLLOWING:  
- FOR HILTI SYSTEM: HILTI HAS RODS OR HIT-Z RODS  
- FOR SIMPSON SYSTEM: A36 THREADED RODS  
3. FOLLOW MANUFACTURERS RECOMMENDATIONS FOR INSTALLATION.  
4. EMBEDMENTS SHOWN ARE TYPICAL FOR EACH ANCHOR SIZE U.N.O.  
5. SPECIAL INSPECTIONS ARE REQUIRED FOR ADHESIVE ANCHORS.

2 ADH. ANCHOR & DWL SCHEDULE

NTS

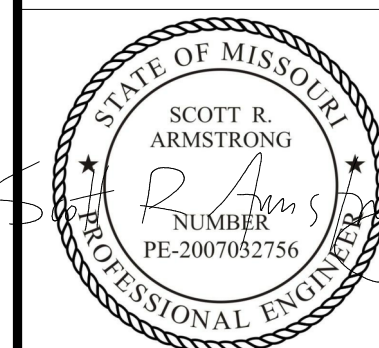
fc	SPLICE CLASS	BAR SIZE								
		#3	#4	#5	#6	#7	#8	#9	#10	#11
psi	fy	60ksi	60ksi	60ksi	60ksi	60ksi	60ksi	60ksi	60ksi	60ksi
3000	CLASS A 1.0 Ld	17	22	28	33	48	55	62	70	78
	CLASS B 1.3 Ld	22	29	36	43	63	72	81	91	101
4000	CLASS A 1.0 Ld	15	19	24	29	42	48	54	61	67
	CLASS B 1.3 Ld	19	25	31	37	54	62	70	79	87
5000	CLASS A 1.0 Ld	13	17	22	26	38	43	48	54	60
	CLASS B 1.3 Ld	17	23	28	34	49	56	63	71	78
6000	CLASS A 1.0 Ld	12	16	20	24	34	39	44	50	55
	CLASS B 1.3 Ld	16	21	26	31	45	51	57	64	71
7000	CLASS A 1.0 Ld	12	15	18	22	32	36	41	46	51
	CLASS B 1.3 Ld	14	19	24	28	41	47	53	60	66

NOTES  
1. TENSION DEVELOPMENT LENGTH = Ld. LENGTHS LISTED IN TABLE ARE IN INCHES.  
2. USE THE ABOVE DEVELOPMENT LENGTH AND LAP SPICE TABLE FOR BEAMS, JOISTS, COLUMNS, WALLS, SLABS, ETC. WHEN THE CLEAR SPACE BETWEEN BARS IS GREATER THAN OR EQUAL TO TWO BAR DIAMETERS AND CLEAR COVER IS NOT LESS THAN ONE BAR DIAMETER.  
3. WHEN THE CLEAR SPACE BETWEEN BARS IS LESS THAN TWO BAR DIAMETERS, MULTIPLY DEVELOPMENT AND SPLICE LENGTHS LISTED IN TABLE BY 1.50.  
4. PROVIDE LAP SPICE LENGTH BASED ON THE LARGER BAR BEING LAPPED WHEN BARS OF DIFFERENT SIZES ARE LAP SPICED.  
5. FOR TOP BARS, MULTIPLY THE DEVELOPMENT AND SPLICE LENGTHS BY 1.3. TOP BARS ARE DEFINED AS HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.

1 TENSION LAP SPICE SCHEDULE

NTS





26 JULY, 2024

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

# New Construction For Take 5 Oil Change



PROJECT NO: 2497-66352-01

PHASE: Final Dev. Submittal

DATE: 26 JULY 2024

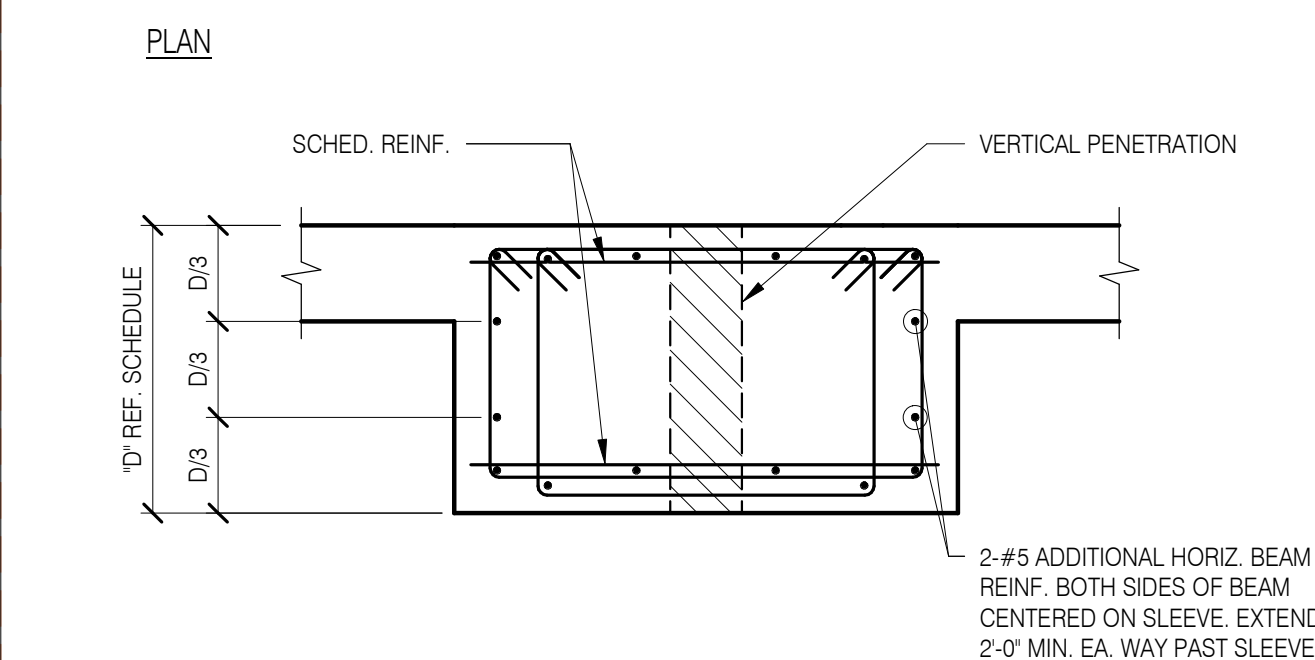
PROJ. ENGINEER:	BC
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FOUNDATION  
SECTIONS &  
DETAILS

SHEET NO.

## S2.11

OF



SECTION A

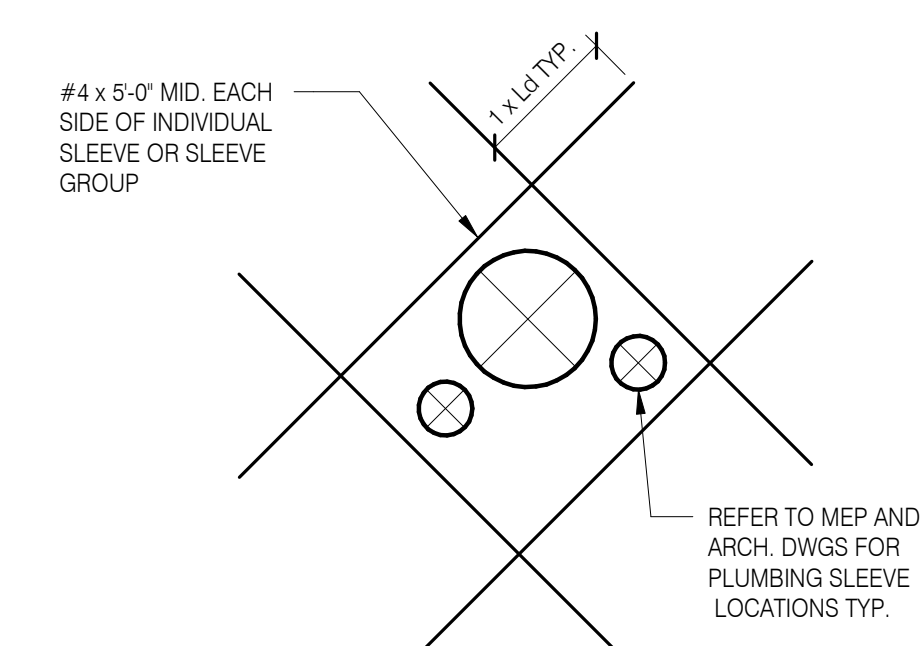
## NOTES

- REQUIRED BEAM SLEEVES ARE TO BE COORDINATED WITH MEP CONTRACTORS. REQUIRED SLEEVES MAY OR MAY NOT BE SHOWN ON THE STRUCTURAL DRAWINGS. GENERAL CONTRACTOR SHALL SUBMIT PLAN SHOWING LAYOUT OF ALL SLEEVES WITH FORM WORK SHOP DRAWING SUBMITTAL.
- SLEEVES SHALL BE LOCATED ON THE TOP SURFACE OR AT LEAST WITHIN THE MIDDLE THIRD OF THE SCHEDULED BEAM WIDTH.
- CONTINUOUS BEAM REINFORCING MAY BE SLIGHTLY DISPLACED (3" MAX.) OR ADJACENT BARS BUNDLED (2 BARS BUNDLED MAX.) TO FACILITATE SLEEVE INSTALLATION. DO NOT CUT, OFFSET, OR BEND REINFORCING.
- REINFORCING OCCURRING ON THE INSIDE OF THE SLEEVE MUST BE IN LINE. THE OUTSIDE DIAMETER OF A SLEEVE MAY NOT EXCEED 15% OF THE SCHEDULED WIDTH OF THE BEAM THROUGH WHICH IT MUST PASS.
- THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD FOR DIRECTION WHEN A SLEEVE SIZE OR LOCATION DOES NOT MEET THE CONDITIONS ESTABLISHED ABOVE.

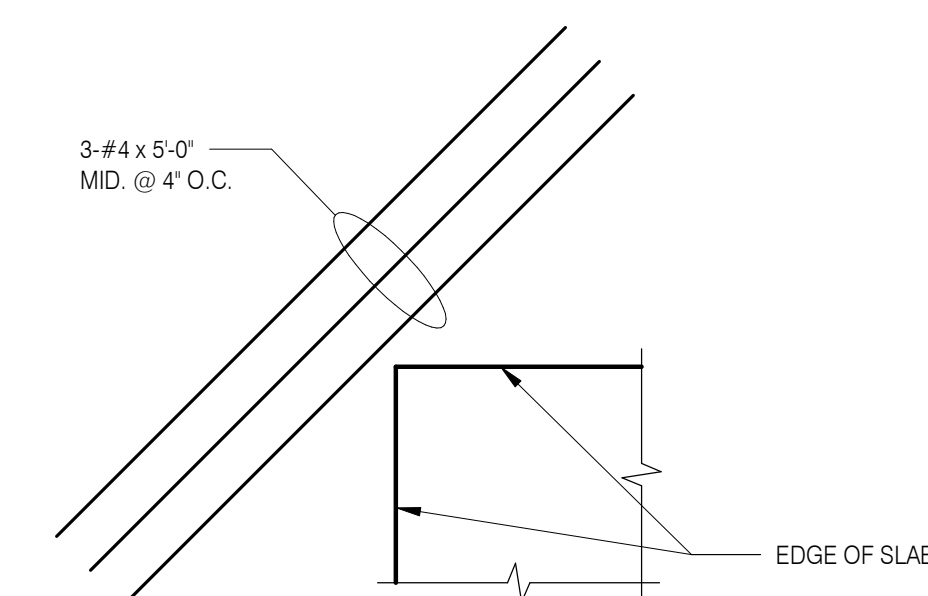
2 TYP. GR. BM DTL W/VERT. PENE.



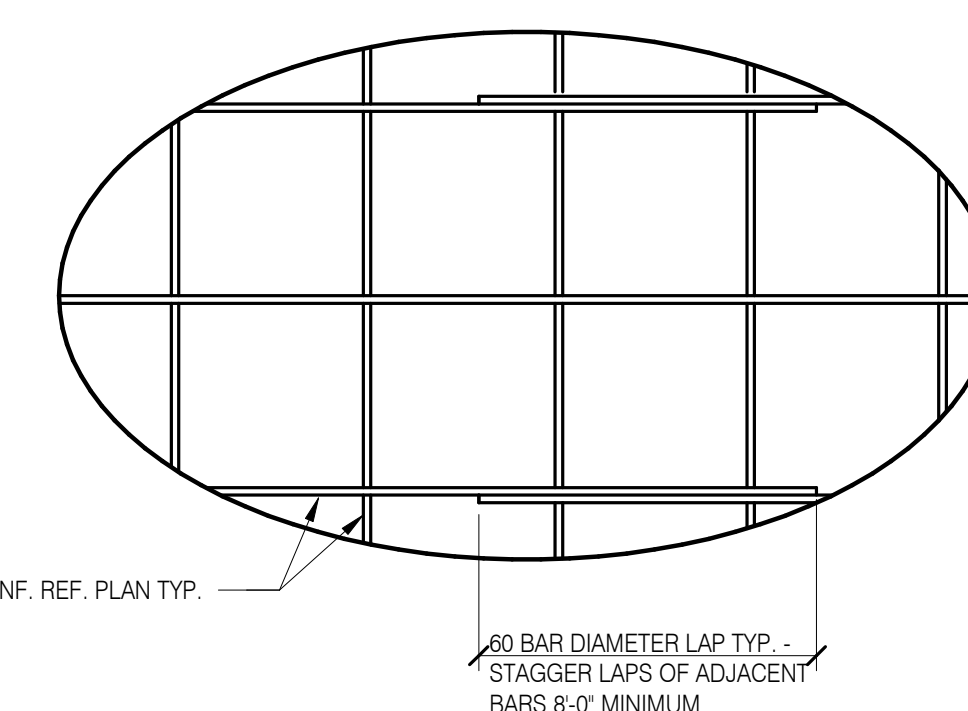
NTS 1 TYP. SLAB-ON-GROUND DETAILS



C. TYPICAL REINFORCEMENT AT SLAB PENETRATIONS



B. TYPICAL REINF. AT RE-ENTRANT CORNERS



#### A. TYPICAL REINFORCEMENT



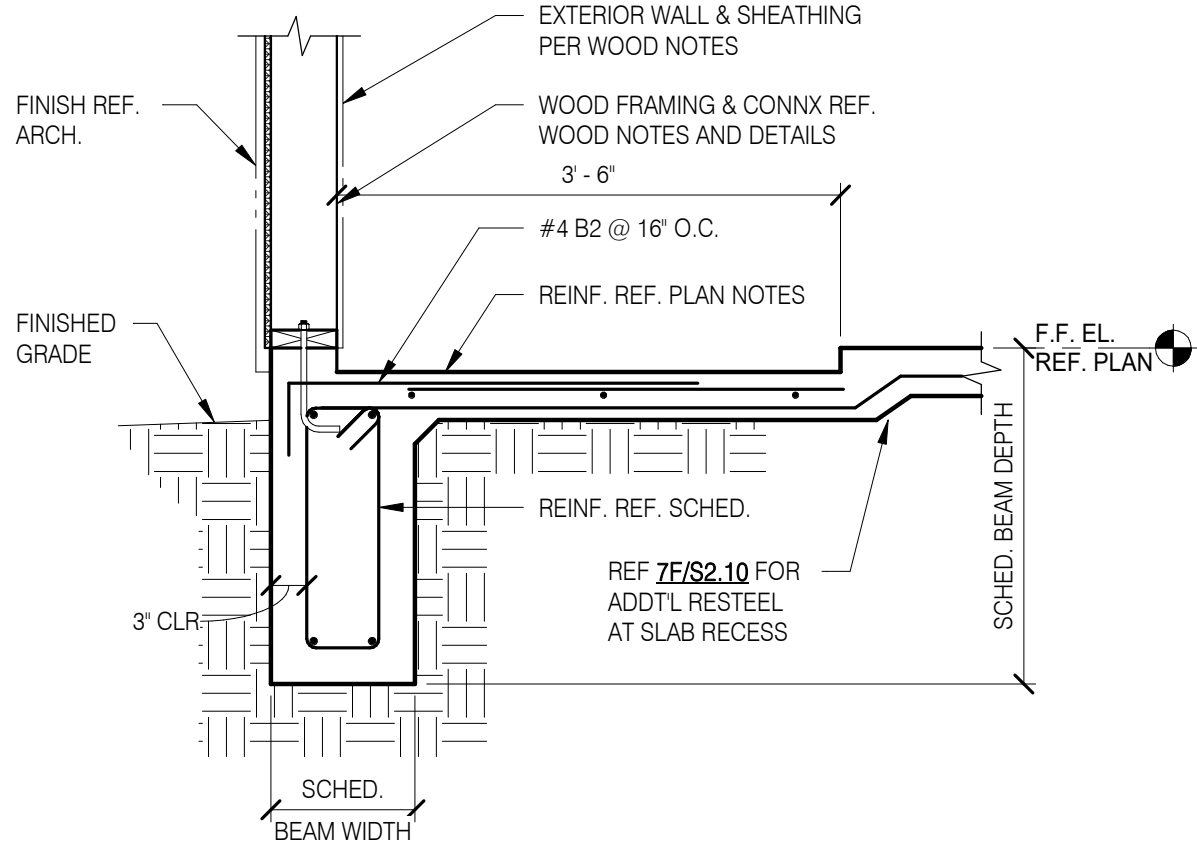
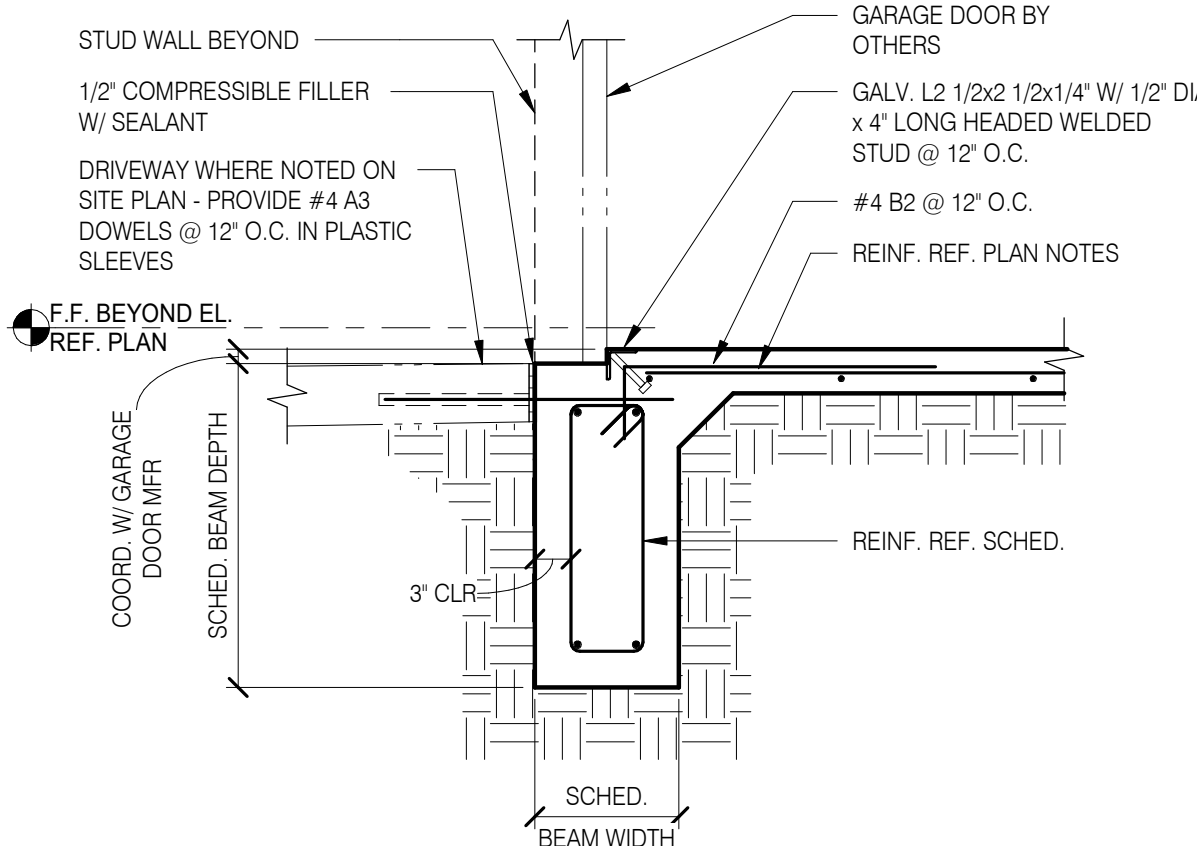
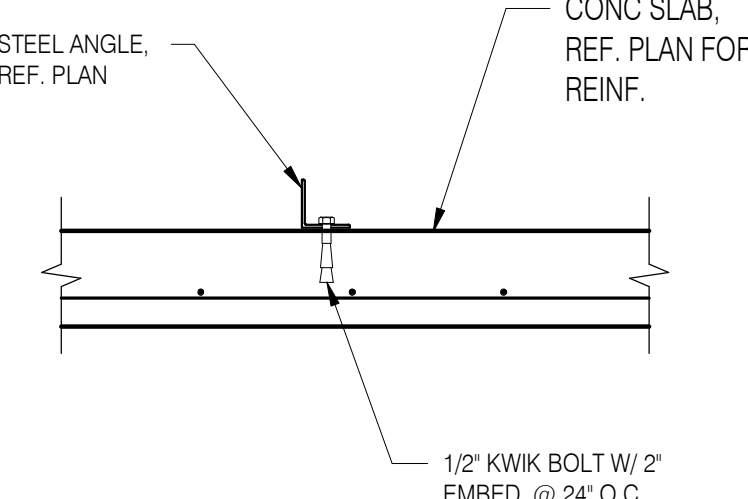
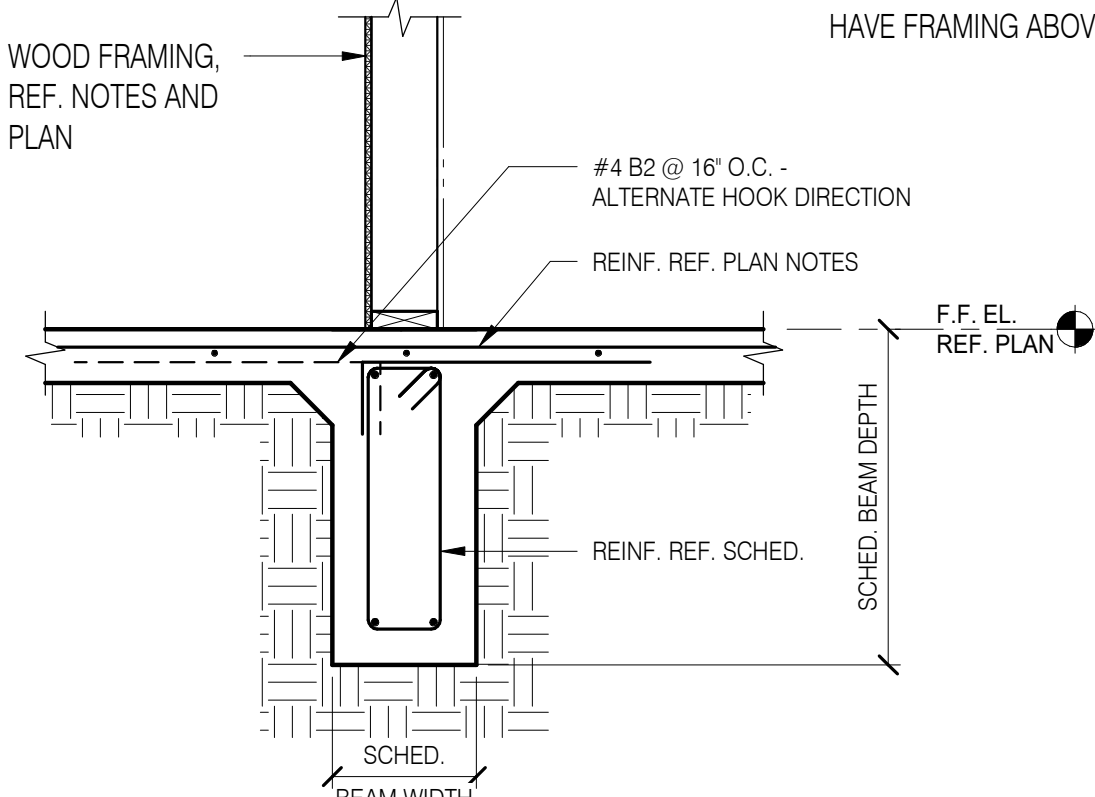
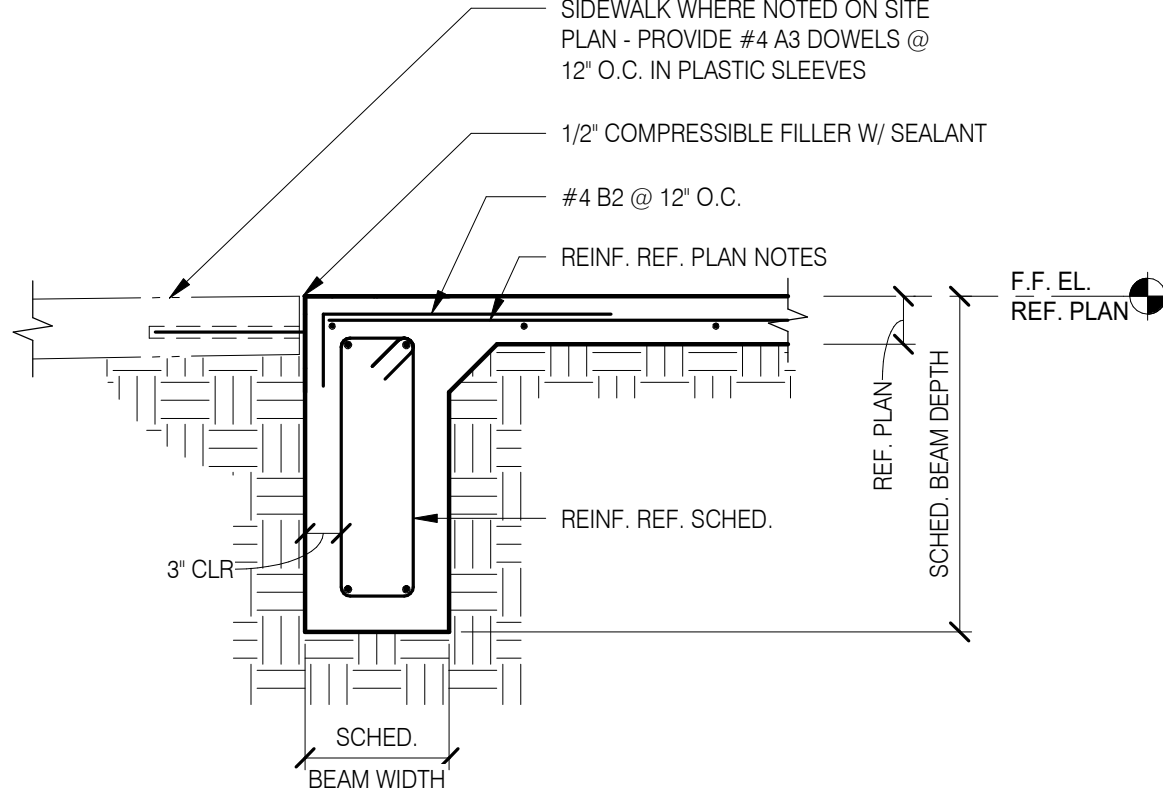
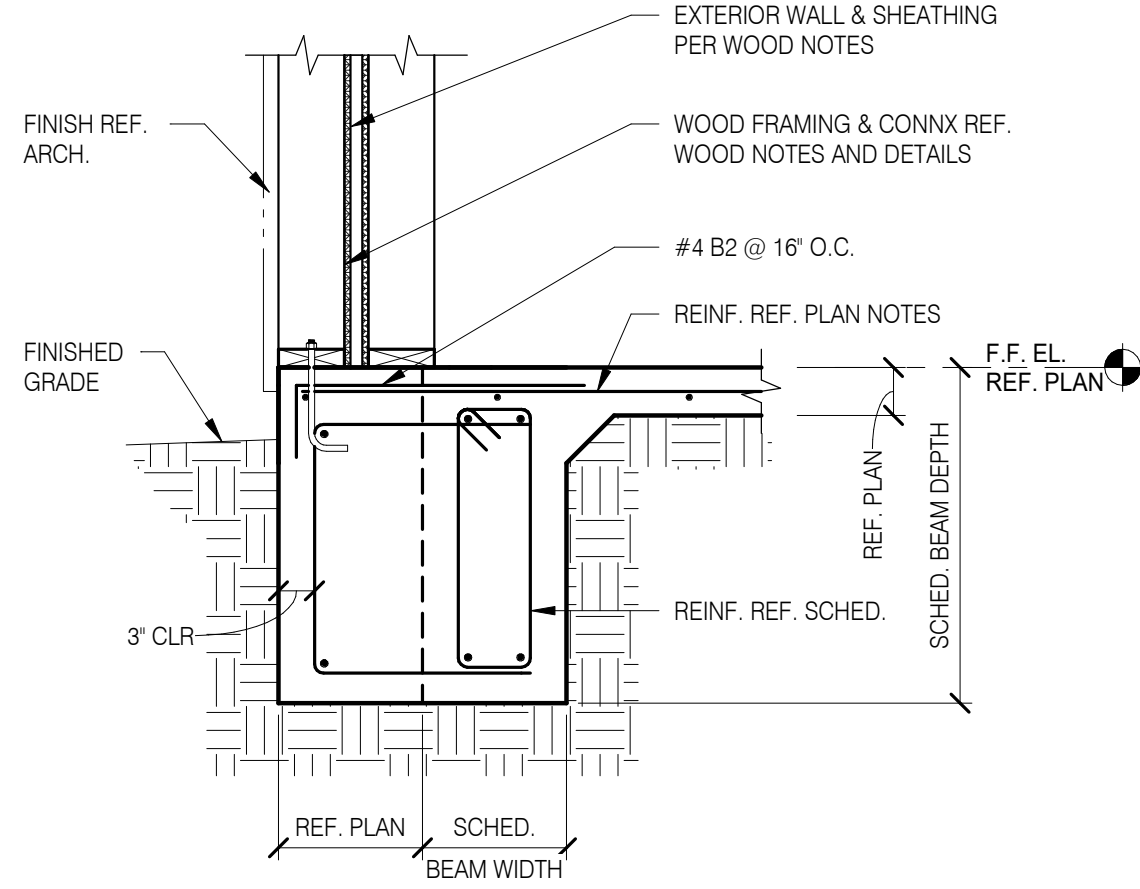
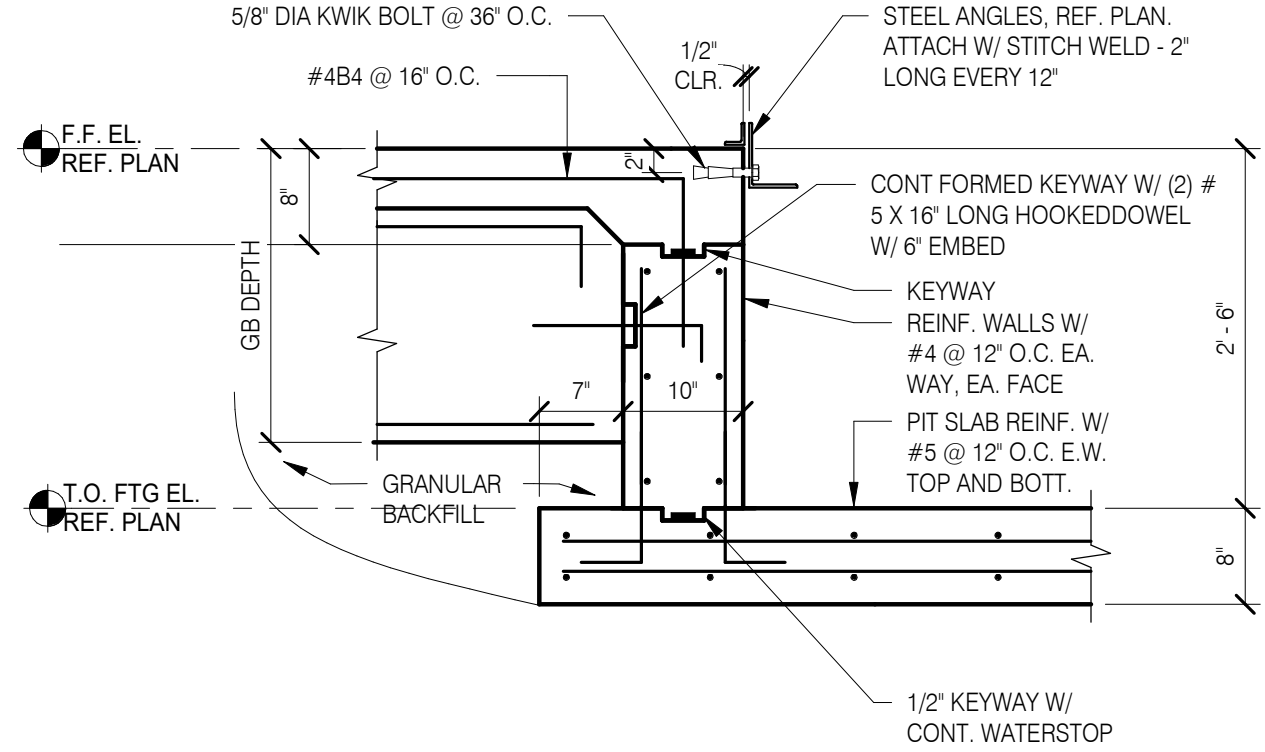
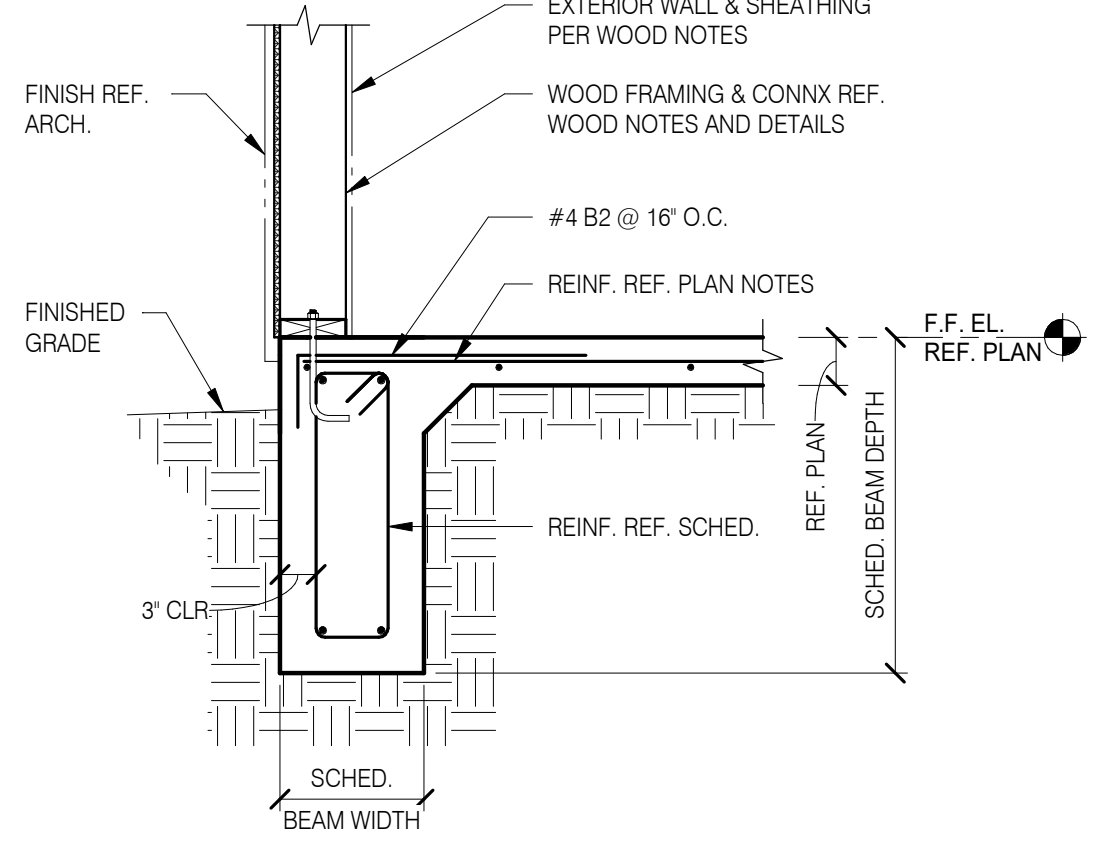
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Autodesk Docs/Take 5 - Lee's Summit MO - R24/Take 5 - Lee's Summit, MO - R22.MX

Salas O'Brien

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

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

	6 PERIM. GB @ RECESS	NTS		3 ENTRANCE @ GARAGE	NTS
	8 DETAIL AT ANGLE ATOP SLAB	NTS		5 TYP. INTERIOR GRADE BEAM	NTS
				2 TYP. GRADE BEAM @ ENTRY	NTS
	7 SECTION AT WIDENED GB	NTS		4 LUBE TRENCH DETAILS	NTS
				1 TYP. PERIMETER GRADE BEAM	NTS

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

FOUNDATION DETAILS

SHEET NO.  
**S2.12**  
OF

STATE OF MISSOURI  
SCOTT R. ARMSTRONG  
NUMBER  
PE-2007052756  
PROFESSIONAL ENGINEER  
26 JULY, 2024

**FUSION** ARCHITECTS  
3488 BRENTWOOD DRIVE  
BATON ROUGE, LA 70809  
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**Take 5** OIL CHANGE

New Construction For  
Take 5 Oil Change  
Lee's Summit, Missouri 64063

REVISION  
No. DATE



**Salas O'Brien**

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

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No.	REVISION	DATE

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PROFESSIONAL ENGINEER

26 JULY, 2024

**FUSION**  
ARCHITECTS

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New Construction For  
Take 5 Oil Change

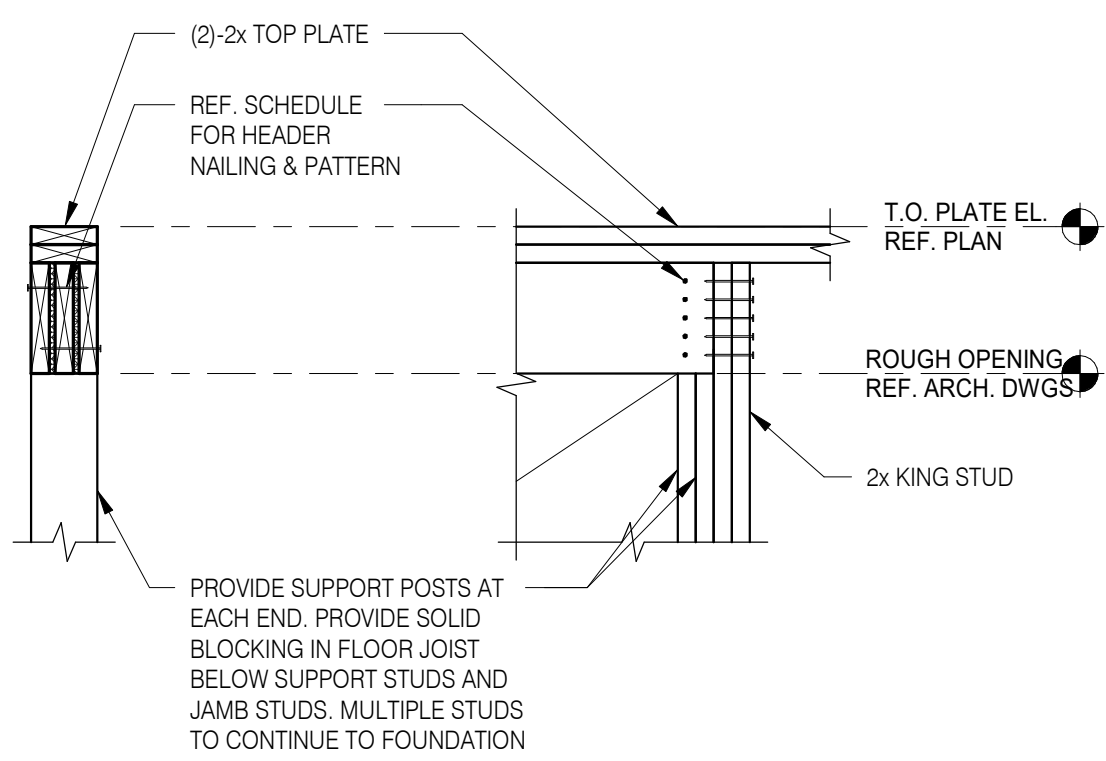
Lee's Summit, Missouri 64063

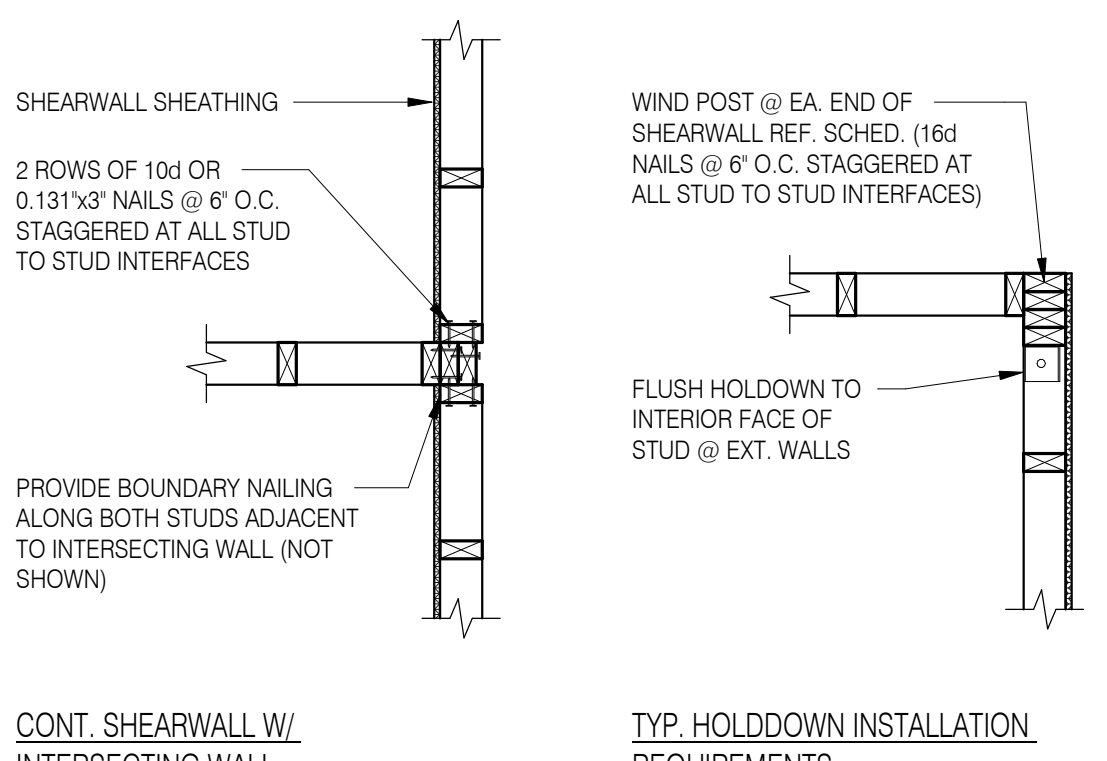


PROJECT NO:	2497-66352-00
PHASE:	Final Dev. Submittal
DATE:	26 JULY, 2024
PROJ. ENGINEER:	BC

FRAMING SECTIONS  
& DETAILS

SHEET NO.  
**\$3.10**  
OF

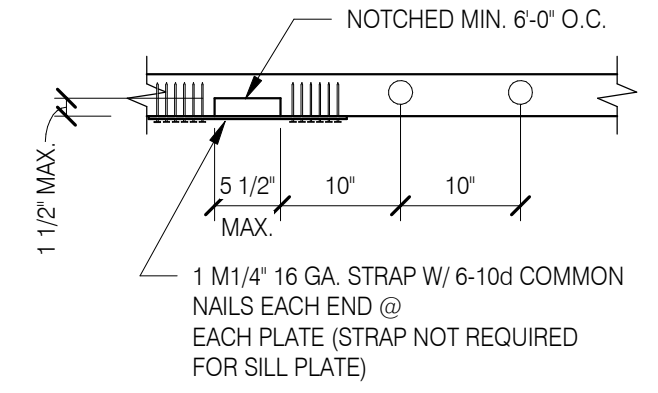


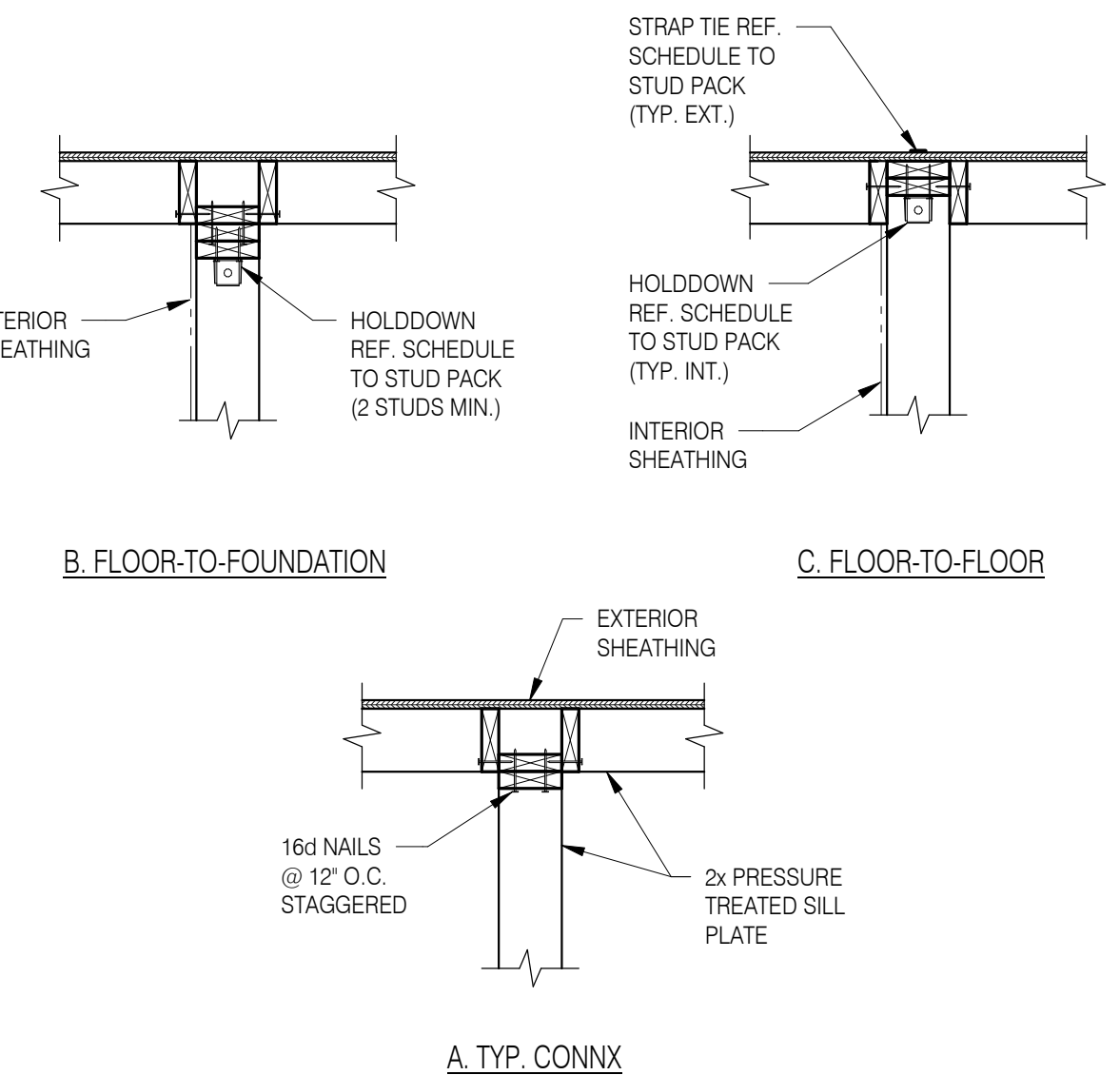


6 TYP. WOOD HEADER

NTS 3 SHEATHING & HOLD DOWN @ SW

3/4" = 1'-0"

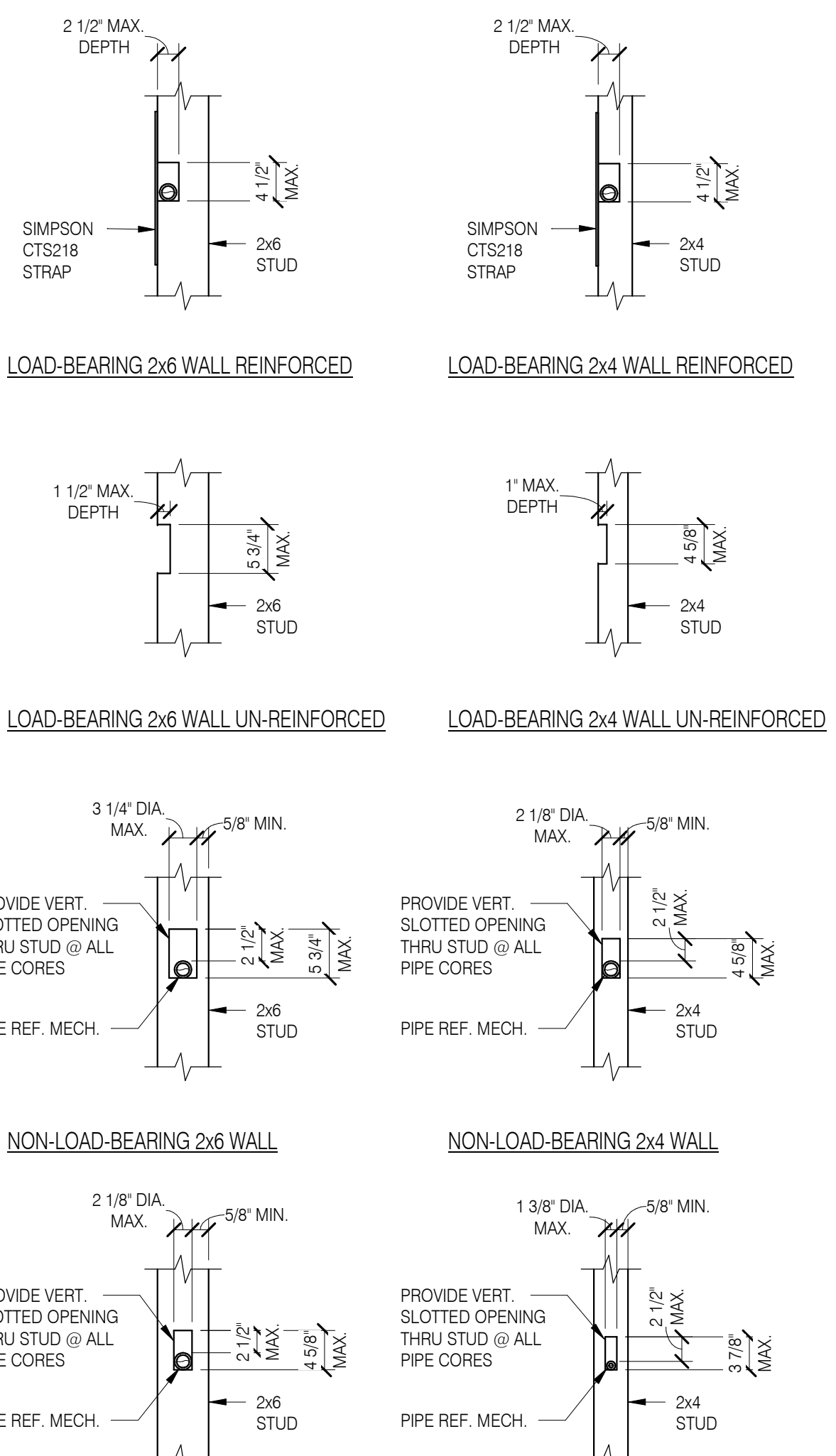


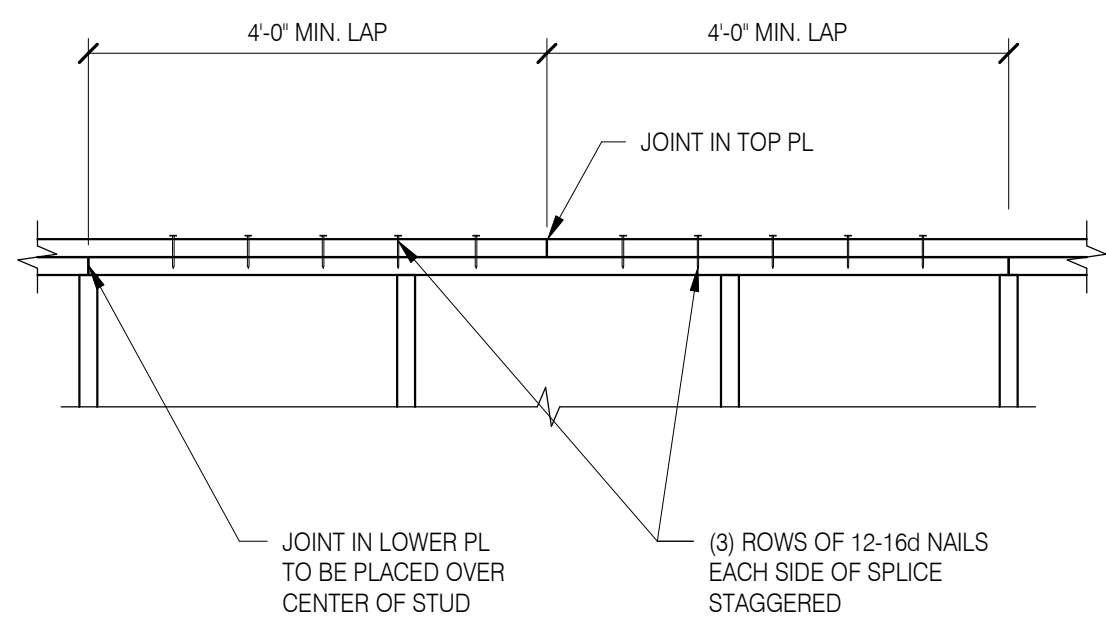


5 NOTCHES & BORINGS TOP, BOT.

NTS 2 TYP. WALL INTERSECTION

NTS





7 WALL BORING DETAILS

3/4" = 1'-0" 4 TYP. TOP PLATE SPLICE

NTS 1 TYP. WALL INTERSECTION

NTS

NOTES

1. BORED HOLES IN 2x4 STUDS SHALL NOT EXCEED 1 3/8" FOR LOAD-BEARING WALLS AND 2 1/8" IN NON-LOAD-BEARING WALLS.
2. BORED HOLES IN 2x6 STUDS SHALL NOT EXCEED 2 1/8" FOR LOAD-BEARING WALLS AND 3 1/4" FOR NON-LOAD-BEARING WALLS.
3. IN NO CASE SHALL THE EDGE OF THE BORED HOLE TO BE NEARER THAN 5/8" TO THE EDGE OF THE STUD. BORED HOLES SHALL NOT BE LOCATED AT CUTS OR NOTCHES IN THE STUD.



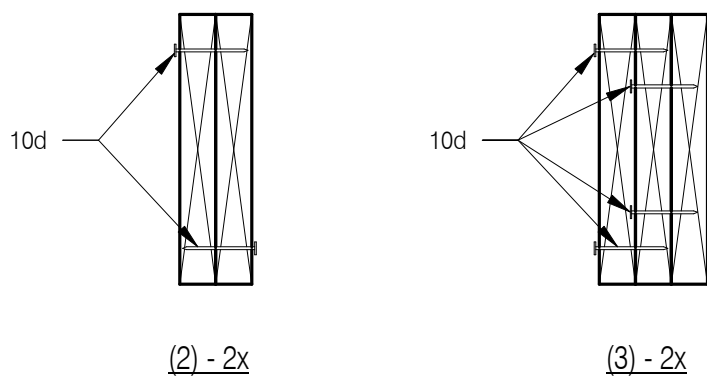
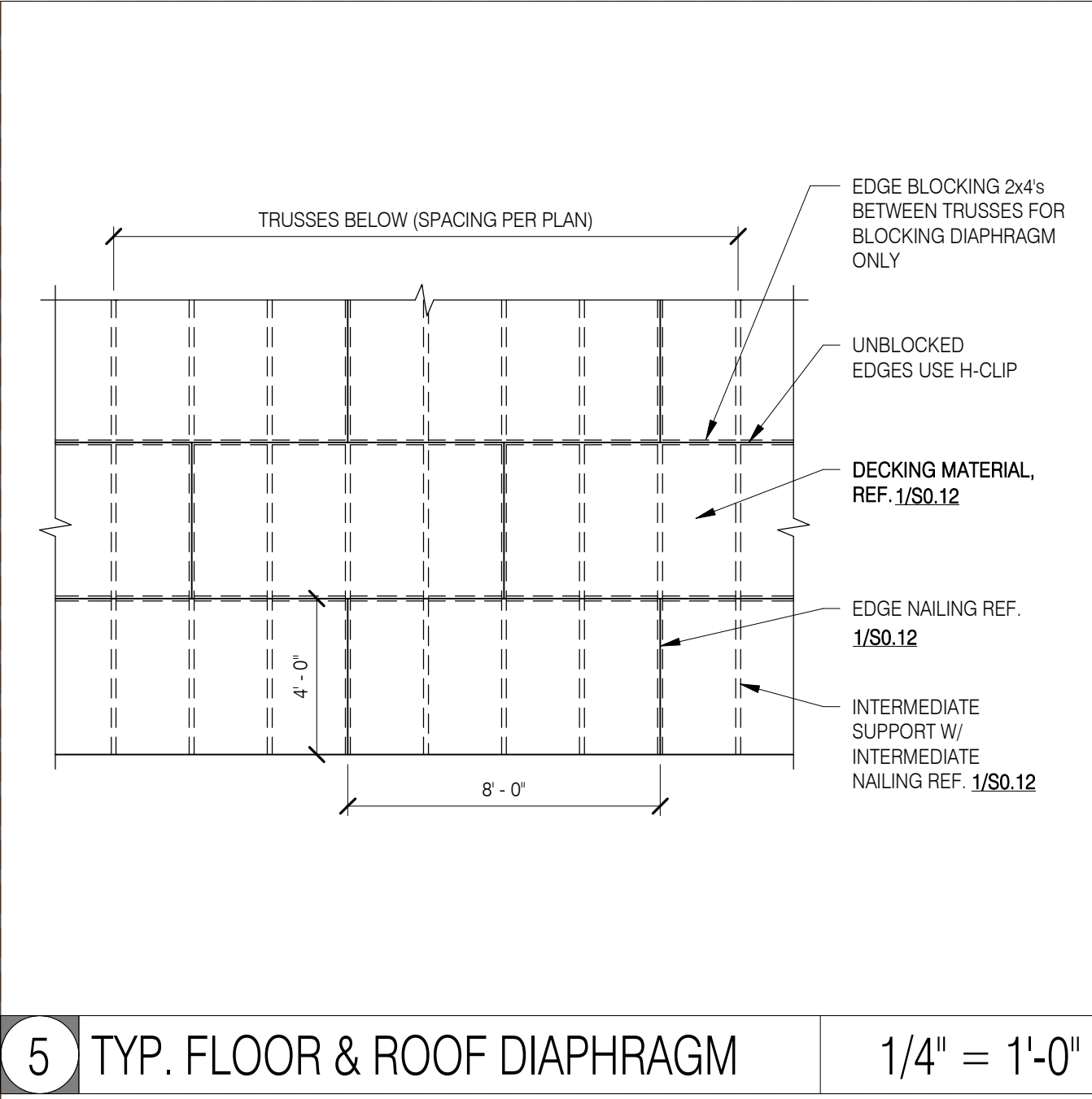
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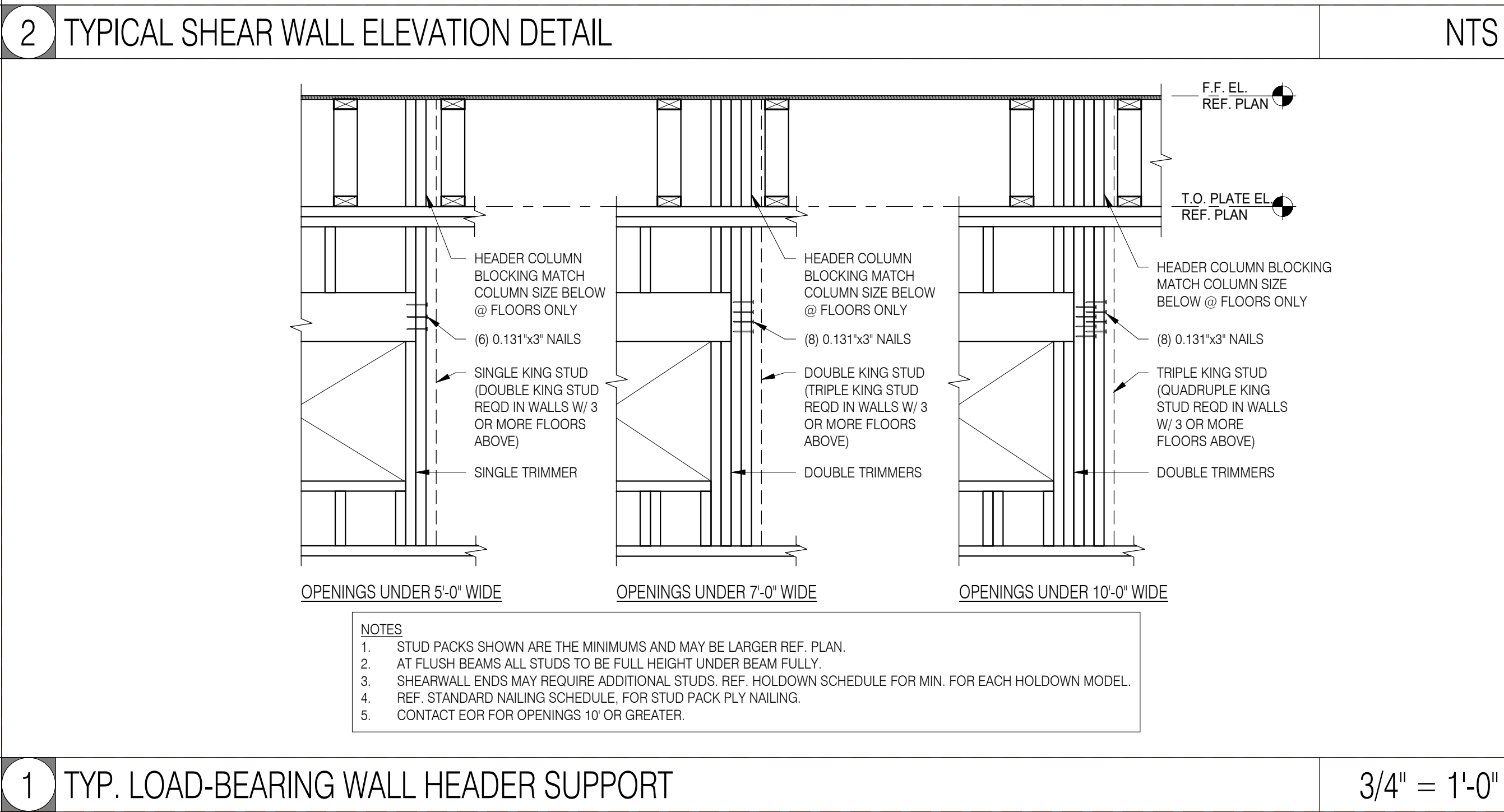
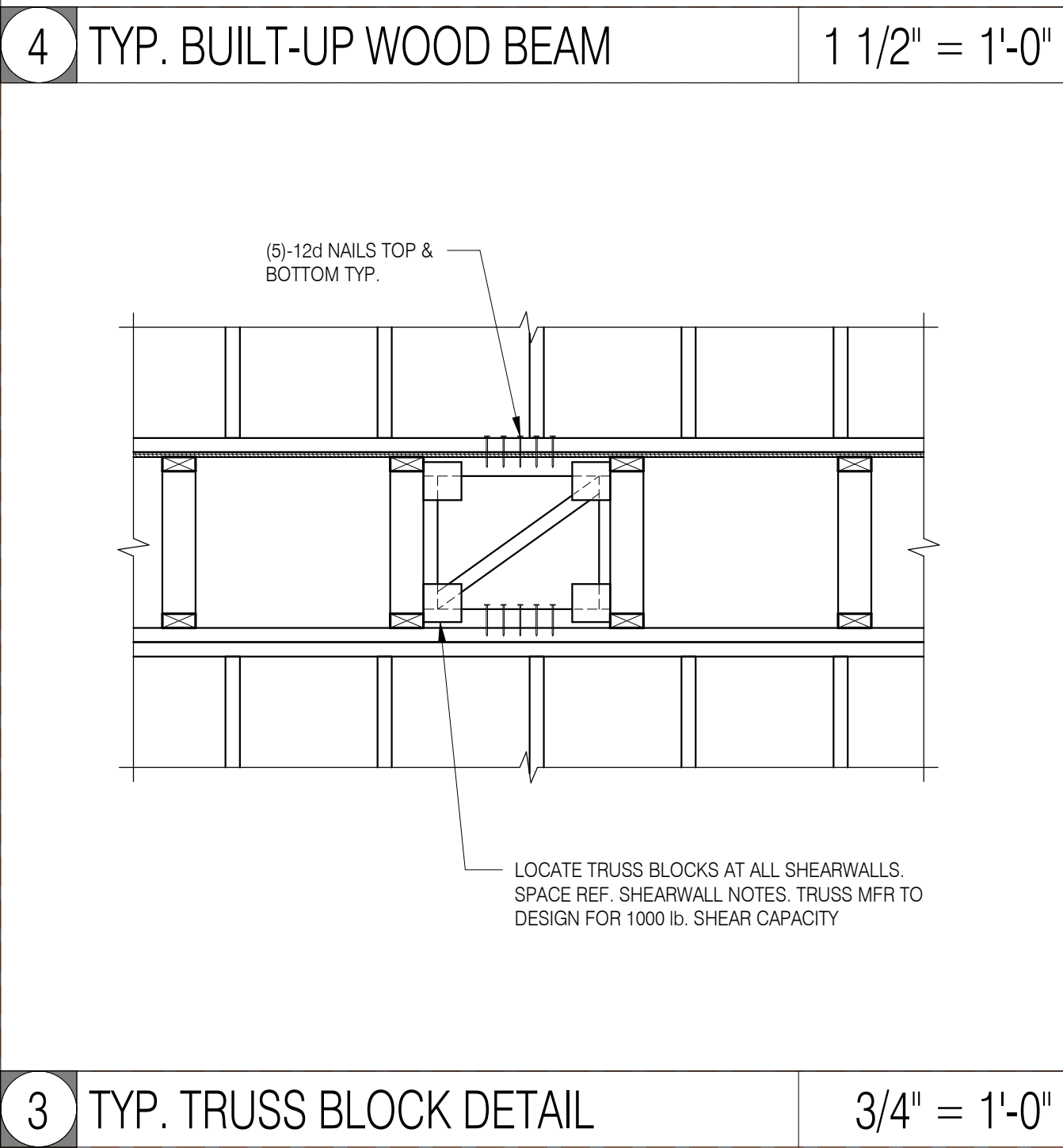
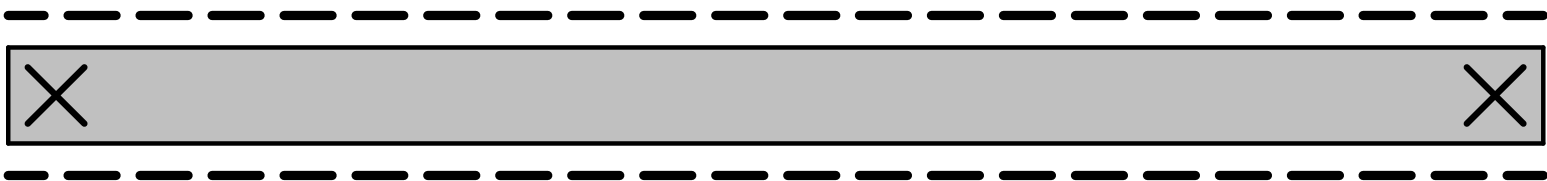
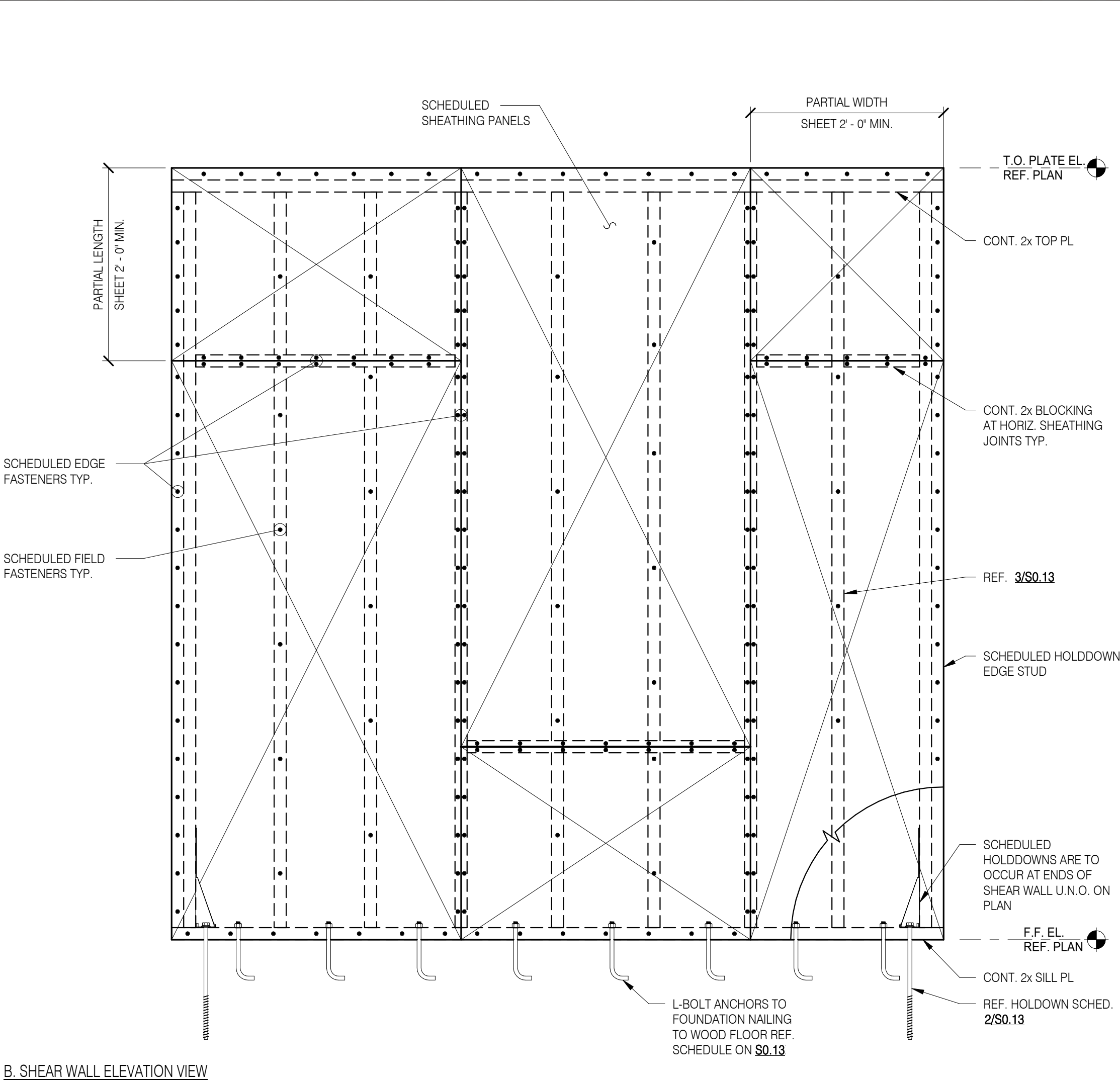
**Salas O'Brien**

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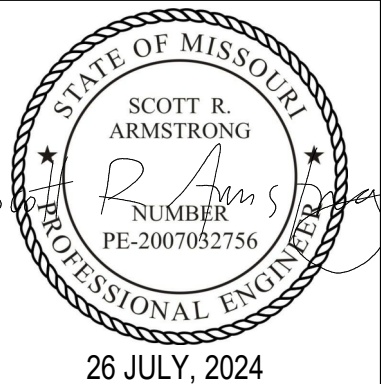
Registration: F-4111  
Project No: 2497-66352-00



- 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).



NO.	REVISION	DATE



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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

FRAMING SECTIONS

SHEET NO.  
**S3.11**  
OF

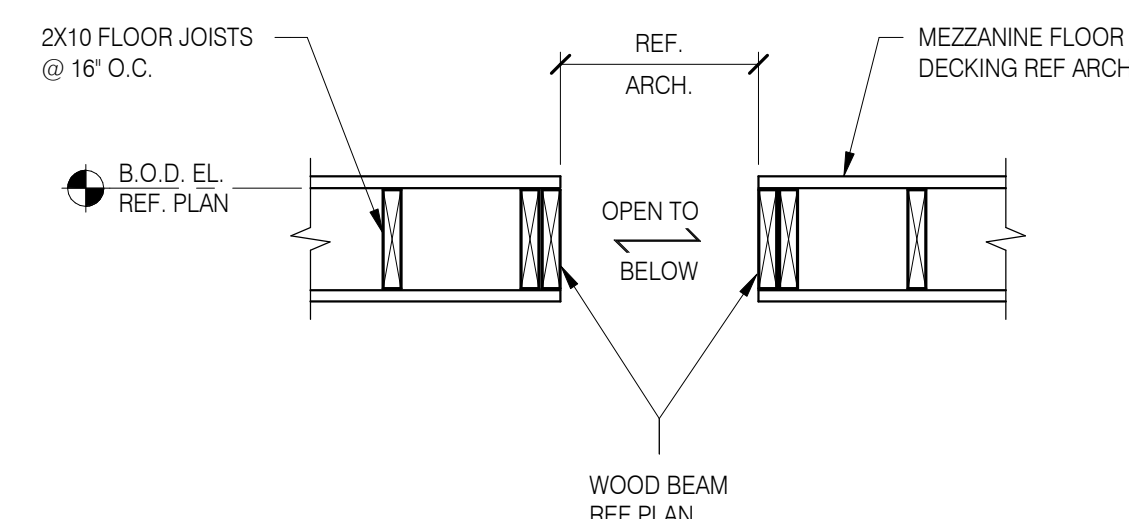
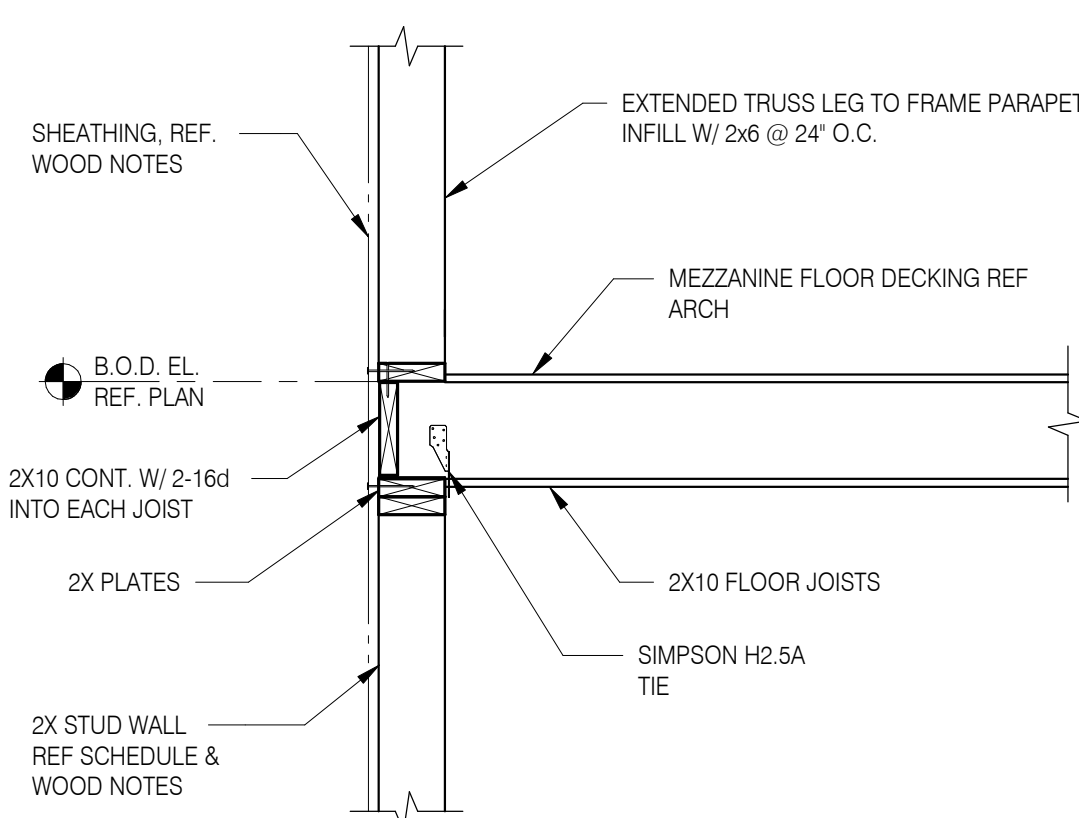


Lee's Summit, Missouri 64063

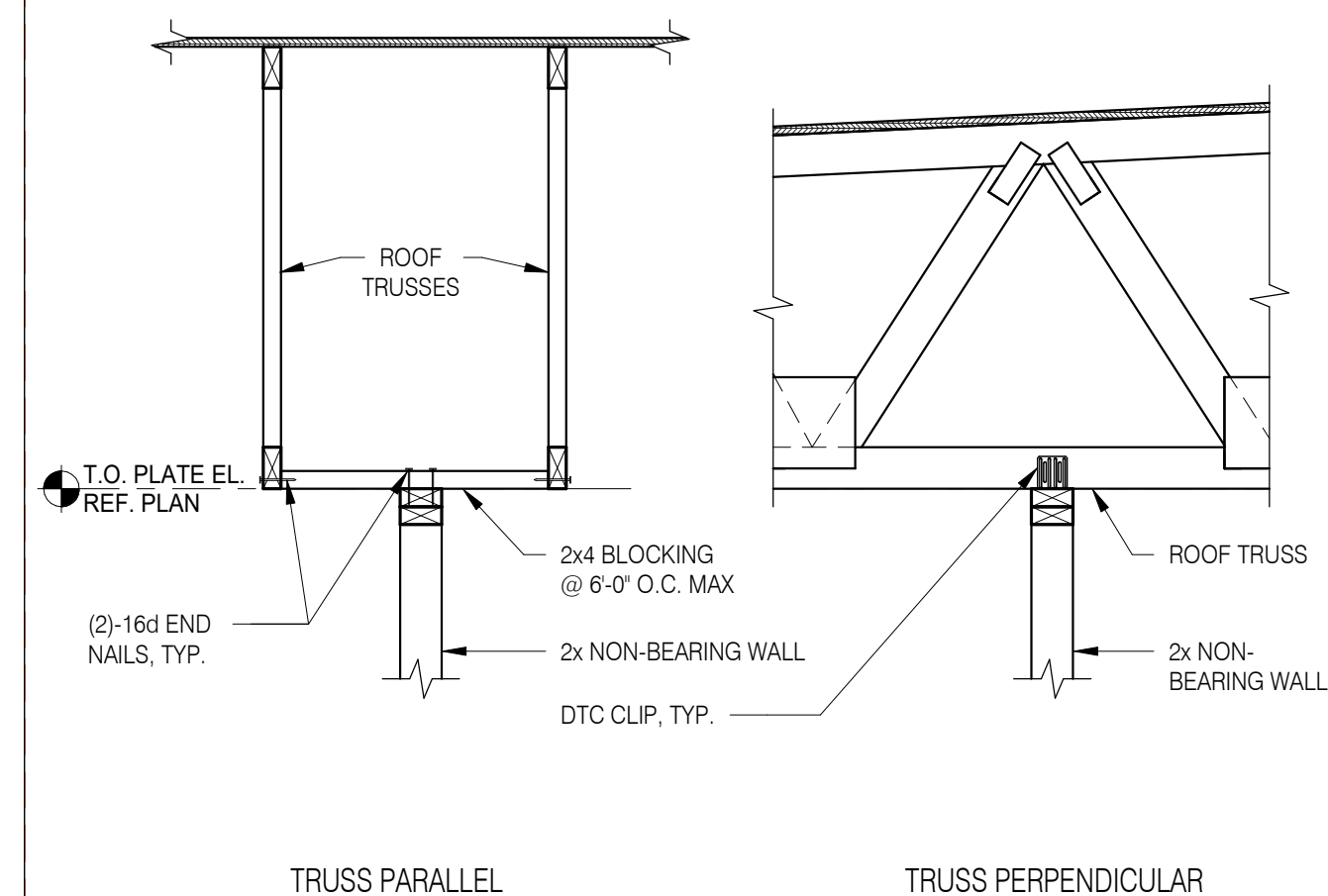


## FRAMING SECTIONS

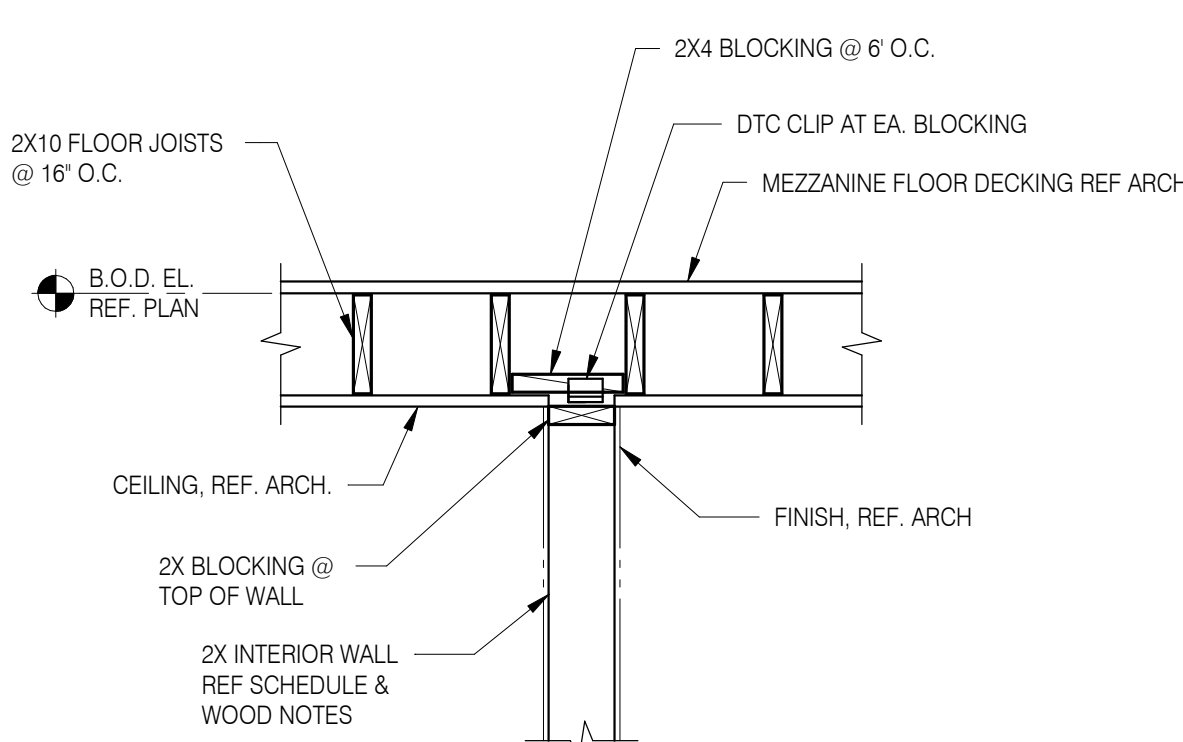
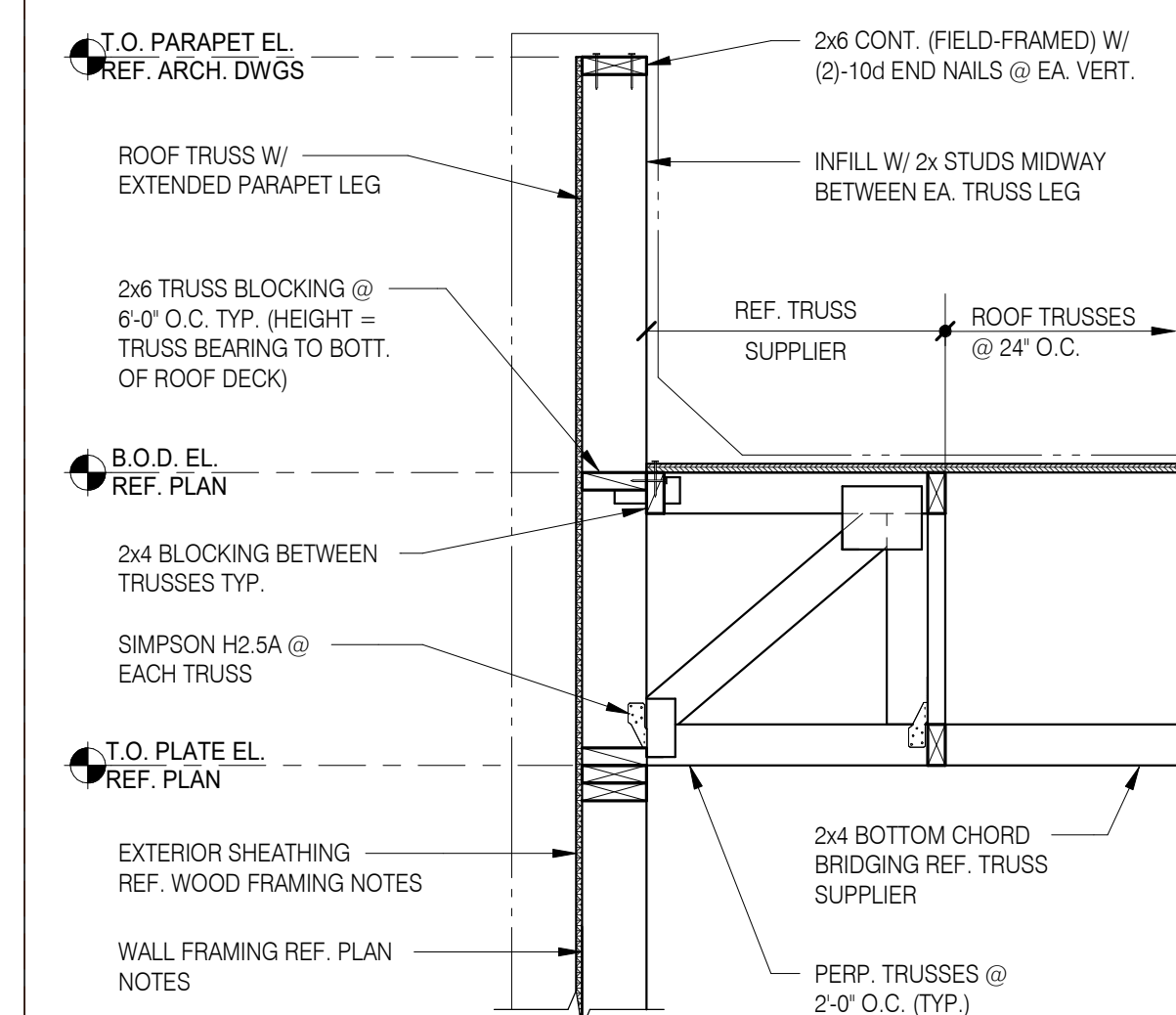
OF


$$3/4'' = 1'-0''$$


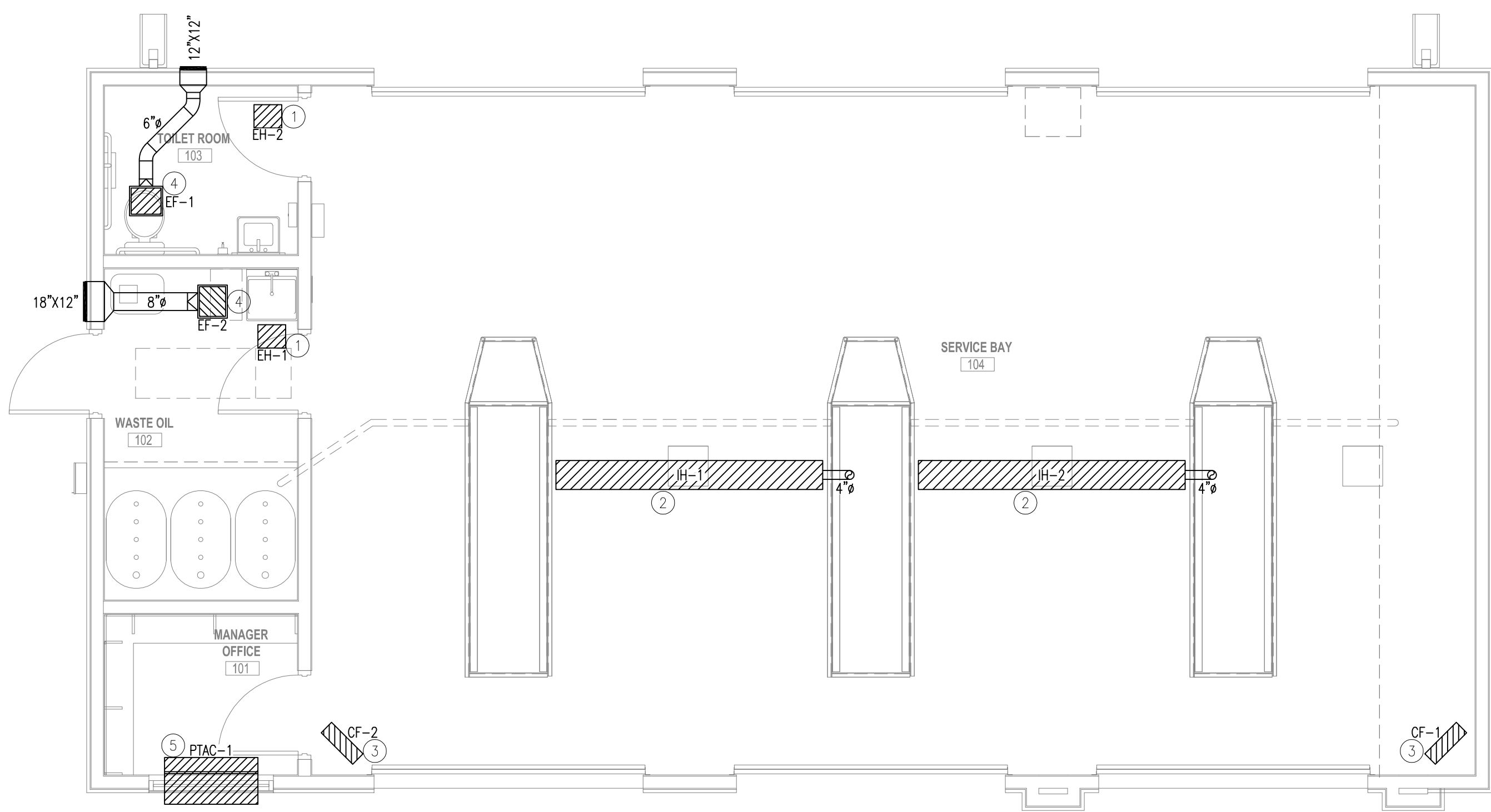
5	EXT. WALL @ MEZZ - JOIST PERP.	3/4" = 1'-0"
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2	NON-BRG WALL TO TRUSS CONNX	3/4" = 1'-0"
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$$3/4'' = 1'-0''$$

$$3/4'' = 1'-0$$





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

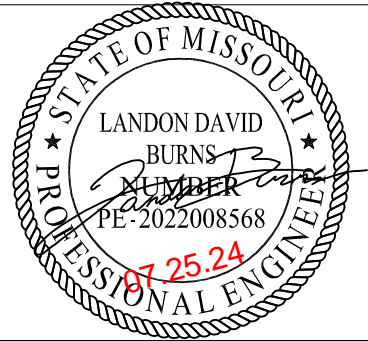
MECHANICAL PLAN NOTES:

- 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\"/>
- 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.



THOMPSON LUKE & ASSOCIATES, L.L.C.  
10705 Rieger Road., STE 101  
BATON ROUGE, LA 70809  
(225)293-9474 TLA PROJECT # 23-138  
Frank Saville Thompson - License No.28854  
Landon David Burns - License No. 46484

No.	REVISION	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. We'll generally administer construction.

By: *Matthew Sapp*

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fusionapc.com

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

MECHANICAL  
PLAN

SHEET NO.  
**M1.00**  
OF

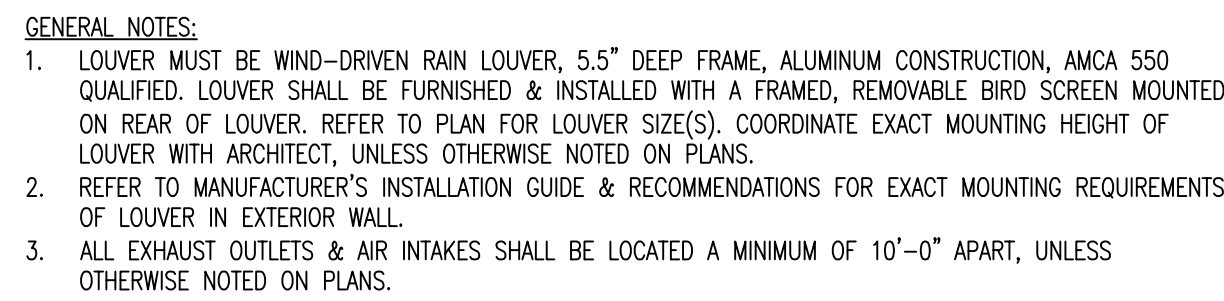


NOTES:															
1. CAPACITIES SHALL BE IN ACCORDANCE WITH ARI STANDARD 210/240: (A) COOLING: 80°F DB / 67°F WB ENTERING INDOOR COIL; 95°F ENTERING OUTDOOR COIL AT PUBLISHED NOMINAL CFM (B) HEATING: 47°F DB...															
GENERAL		EVAPORATOR COIL	ELECTRIC HEAT		ELECTRIC SERVICE					WEIGHT	ACCEPTABLE MANUFACTURERS	NOTES			
MARK	NOMINAL TONS	COOLING	MIN STAGES	MIN CAP	VOLTS	PH	FREQ	MCA	MOCP						
		TOT CAP													
PTAC-1	0.5	7200 BTU/H	1	3.0KW	240 V	1	60 Hz	17 A	20 A	-	TRANS PTHE070 OR APPROVED EQUAL	1			

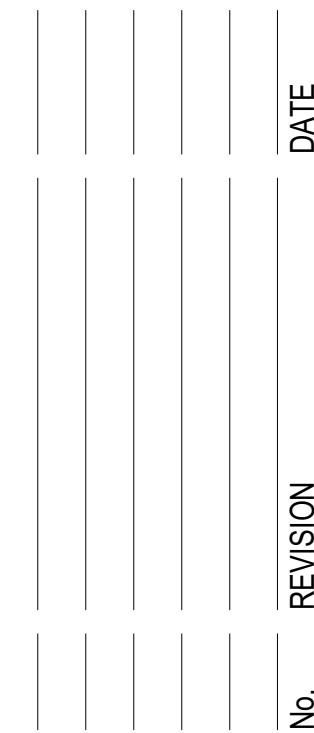
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NO.	BTUH OUTPUT	CFM	KW	MCA	MFS	STAGES	ELECTRIC SERVICE	REMARKS
EH-1	2,560	65	1.75	6.3	—	1	120V/1 $\phi$ /60Hz	QMARK QCH1151F OR APPROVED EQUAL
EH-2	5,120	65	1.5	6.3	—	1	240V/1 $\phi$ /60Hz	QMARK QCH1202F OR APPROVED EQUAL
IH-1,2	40,000	—	—	1.8	—	1	120V/1 $\phi$ /60Hz	SPACE RAY P15-40-10-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.



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



Matthew Driscoll

**FUSION**  
**A R C H I T E C T S**

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



712.00

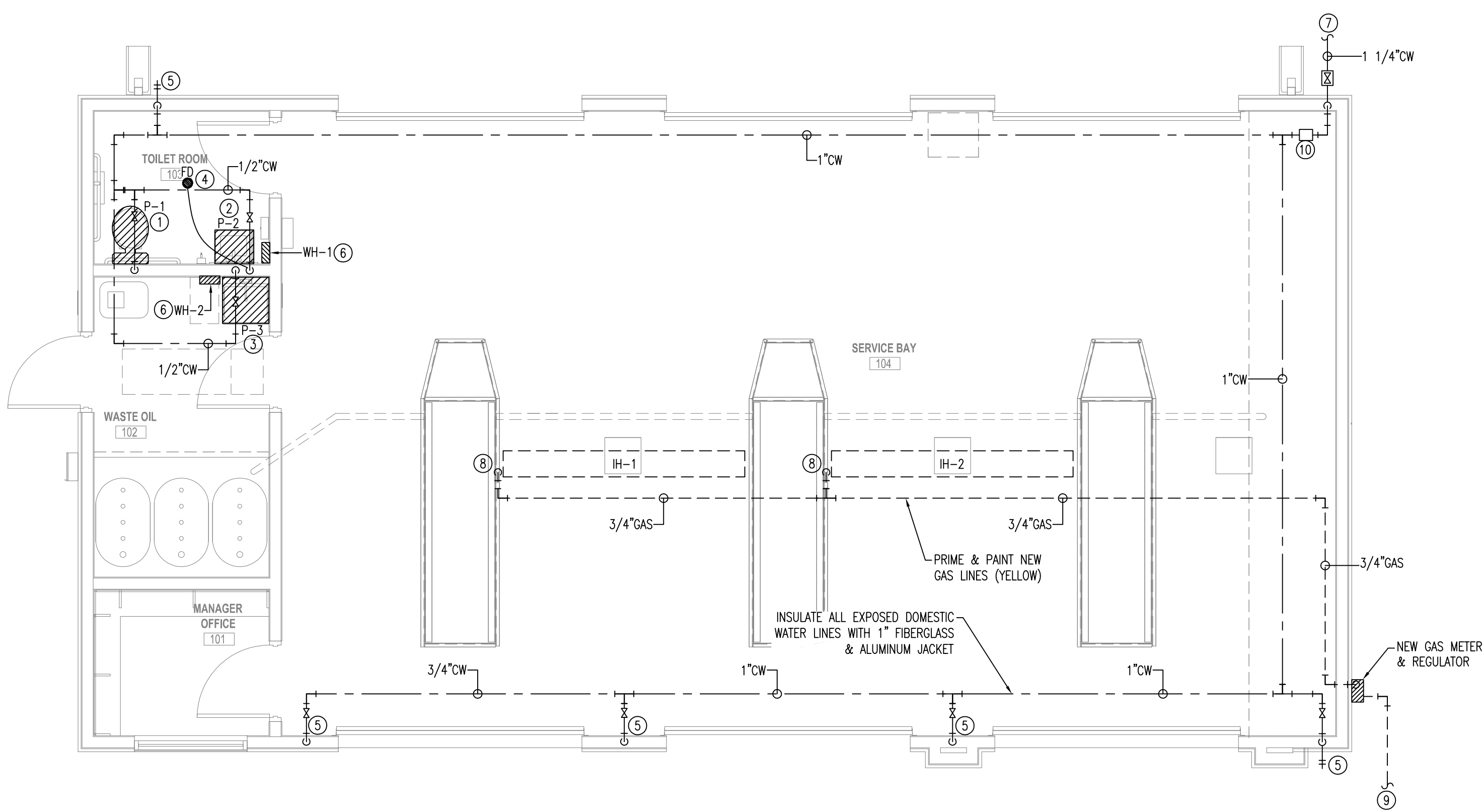


THOMPSON LUKE & ASSOCIATES, L.L.C.  
10705 Rieger Road., STE 101  
BATON ROUGE, LA 70809  
(225)293-9474 TLA PROJECT # 23-138  
Frank Saville Thompson - License No.28854  
Landon David Burns - License No. 46484



PLUMBING LEGEND

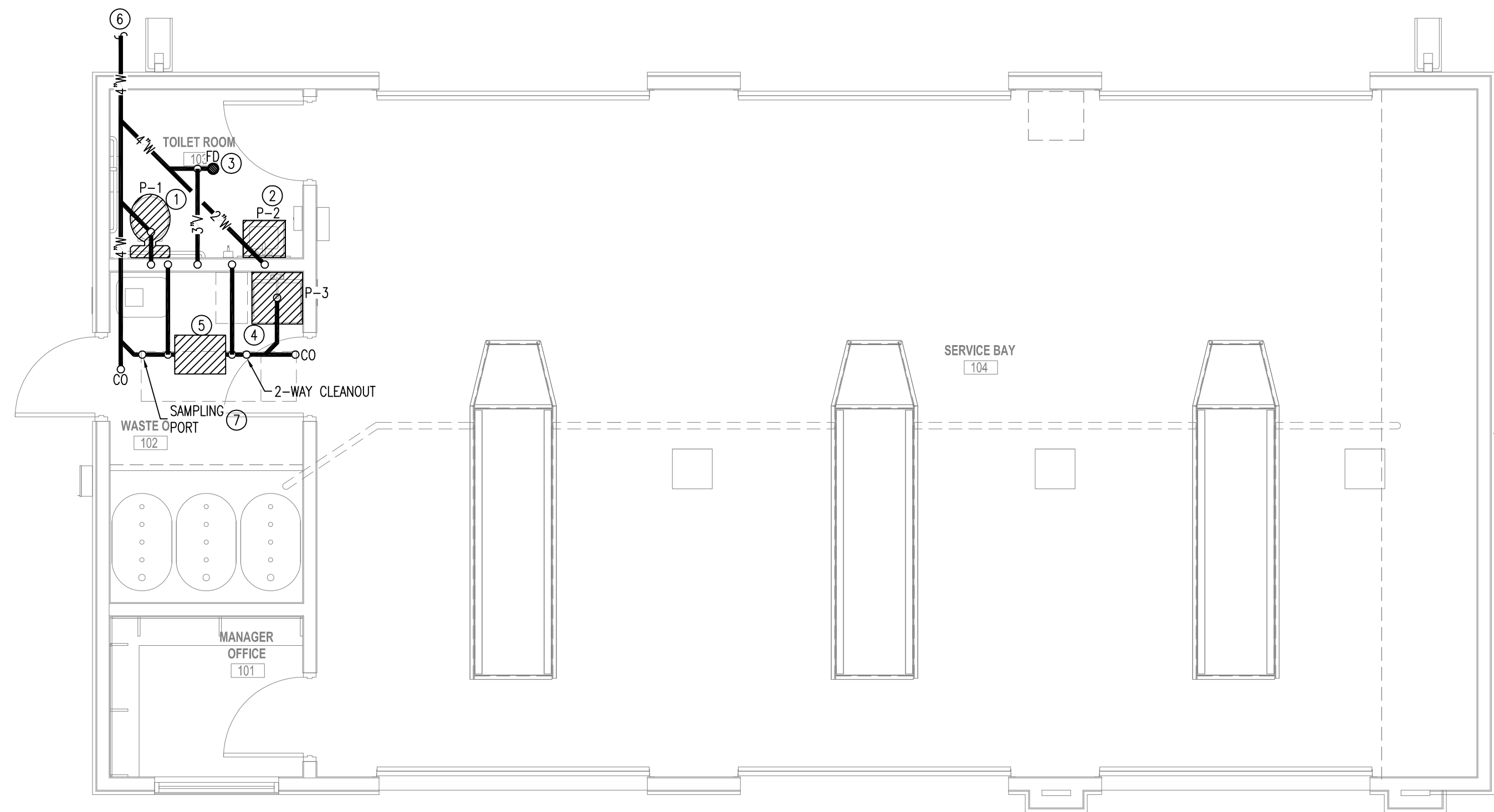
SYMBOL	ABBREVIATION	DECRYPTION
----	DCW	DOMESTIC COLD WATER PIPE
----	DHW	DOMESTIC HOT WATER PIPE
----	DHWR	DOMESTIC HOT WATER RETURN PIPE
----	-	FILTER WATER PIPING
	-	GATE VALVE (SAME SIZE AS PIPE IF NOT SPECIFIED)
	-	PIPE DOWN
	-	PIPE UP
	-	PIPE TEE
	-	PIPE ELL
	-	PIPE TEE UP
	-	PIPE TEE DOWN
	-	PIPE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



1 PLUMBING FLOOR PLAN - DOMESTIC WATER  
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.



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

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 LIL-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 SCHIER MODEL SV10 OR APPROVED EQUAL. MAINTAIN MINIMUM OF 18" TO ALLOW FOR SUFFICIENT ACCESS TO COLLECT WASTEWATER SAMPLES.



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NO.	REVISION	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. We will generally administer construction.

By: *Matthew Sargent*

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fusionapc.com

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

PLUMBING  
PLAN

SHEET NO.  
**P1.00**  
OF











## 2 LIGHTING GENERAL NOTES

- 4 ALL ELECTRICAL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.
- 5 VERIFY THE EXACT LOCATION OF ALL LIGHTING SWITCHES WITH THE ARCHITECT PRIOR TO ROUGH-IN.
- 6 VERIFY THE EXACT LOCATION OF ALL LIGHTING FIXTURES WITH THE ARCHITECTURAL REFLECTED CEILING PLAN PRIOR TO ROUGH-IN.
- 7 ROUTE NEW CONDUIT AND WIRING CONCEALED IN WALLS AND ABOVE CEILING WHERE POSSIBLE - COORDINATE INSTALLATION OF EXPOSED CONDUIT AND WIRING WITH THE ARCHITECT.
- 8 VERIFY THE EXACT LOCATION OF CEILING MOUNTED OCCUPANCY SENSORS WITH THE MANUFACTURER PRIOR TO INSTALLATION FOR MAXIMUM PERFORMANCE.
- 9 EMERGENCY FIXTURES AND EXIT FIXTURES SHALL BE CONNECTED TO NEAREST CIRCUIT AHEAD OF SWITCH.
- 10 WALL MOUNT TYPE "Z" FIXTURES ABOVE DOOR AS SHOWN ON DRAWINGS. COORDINATE WITH ARCHITECT.
- 11 MOUNT TYPE "EM" FIXTURES 8'-0" APART UNLESS OTHERWISE NOTED.
- 12 VERIFY THE CEILING TYPES FOR ALL LIGHT FIXTURES TO BE FLUSH MOUNTED OR SUSPENDED AND ADJUST FIXTURE HANGING TYPES IN ACCORDANCE WITH THE CEILING TYPE. AS REQUIRED.
- 13 ALL VANTY FIXTURES SHALL BE MOUNTED WITH 0-3" OF SPACE BETWEEN THE BOTTOM OF THE FIXTURE AND THE TOP OF THE MIRROR.
- 14 VERIFY THE EXACT MOUNTING LOCATION FOR ANY PHOTOELECTRIC CELLS WITH THE ARCHITECT PRIOR TO ROUGH-IN. ALL PHOTOELECTRIC CELLS MUST FACE NORTH.
- 15 CONTRACTOR SHALL CONFIRM COMPATIBILITY OF ALL LIGHTING CONTROL DEVICES/SWITCHES/DIMMERS WITH LIGHTING FIXTURES AND BALLASTS/DRIVERS PRIOR TO SUBMITTAL.
- 16 COORDINATE LOCATION OF LIGHT FIXTURES WITH 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.

## 1 | LIGHTING & SWITCHING SYMBOL LEGEND

	2x4 LED FIXTURE; "A" DENOTES TYPE		PHOTOELECTRIC CELL
	2x2 LED FIXTURE; "A" DENOTES TYPE		S SINGLE POLE TOGGLE SWITCH
	LINEAR LED FIXTURE; "A" DENOTES TYPE		S <sup>3</sup> 3-WAY TOGGLE SWITCH
	DOWNLIGHT LED FIXTURE; "A" DENOTES TYPE		S <sup>D</sup> LINEAR SLIDE DIMMER SWITCH
	TRACK LED FIXTURE; "A" DENOTES TYPE		S <sup>3D</sup> 3-WAY LINEAR SLIDE DIMMER SWITCH
	EMERGENCY LIGHTING UNIT		S <sup>M</sup> MOTOR RATED TOGGLE SWITCH
	EXIT/EMERGENCY LIGHTING UNIT		S <sup>O</sup> WALL MOUNT OCCUPANCY SENSOR
	SINGLE-SIDED EXIT LIGHT		OS CEILING MOUNT OCCUPANCY SENSOR
	DOUBLE-SIDED EXIT LIGHT		VS CEILING MOUNT VACANCY SENSOR
	SINGLE-SIDED DIRECTIONAL EXIT LIGHT		
	DOUBLE-SIDED DIRECTIONAL EXIT LIGHT		

## 5 | ABBREVIATION LEGEND

1	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

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

**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	3
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	5
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-**	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-L06-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

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

Will generally administer consistently.

By: M. Arnew. W. Algeblas

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BATON ROUGE, LA 70809  
P. 225.766.4848 F. 225.766.4724  
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# New Construction For Take 5 Oil Change

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



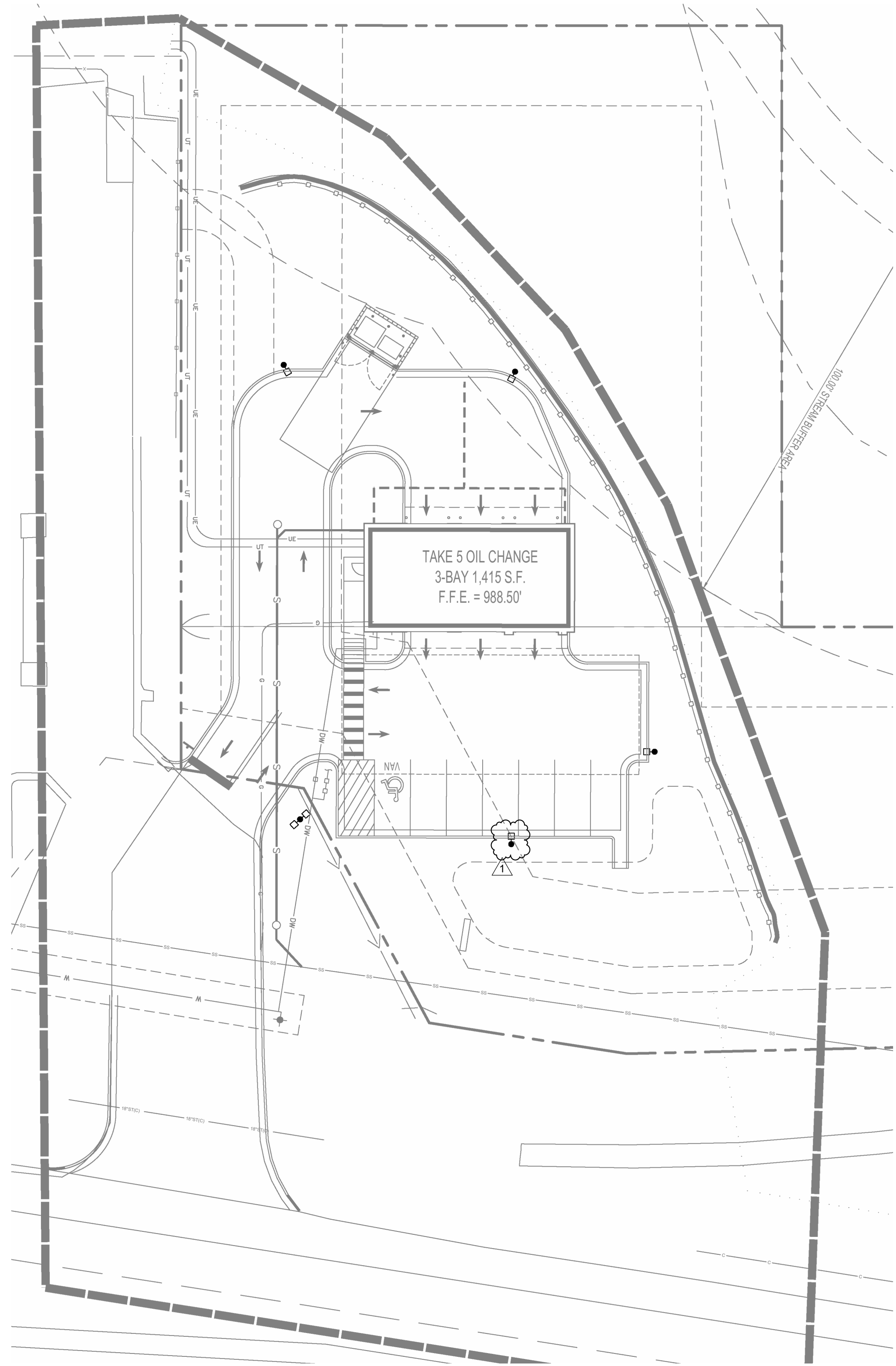
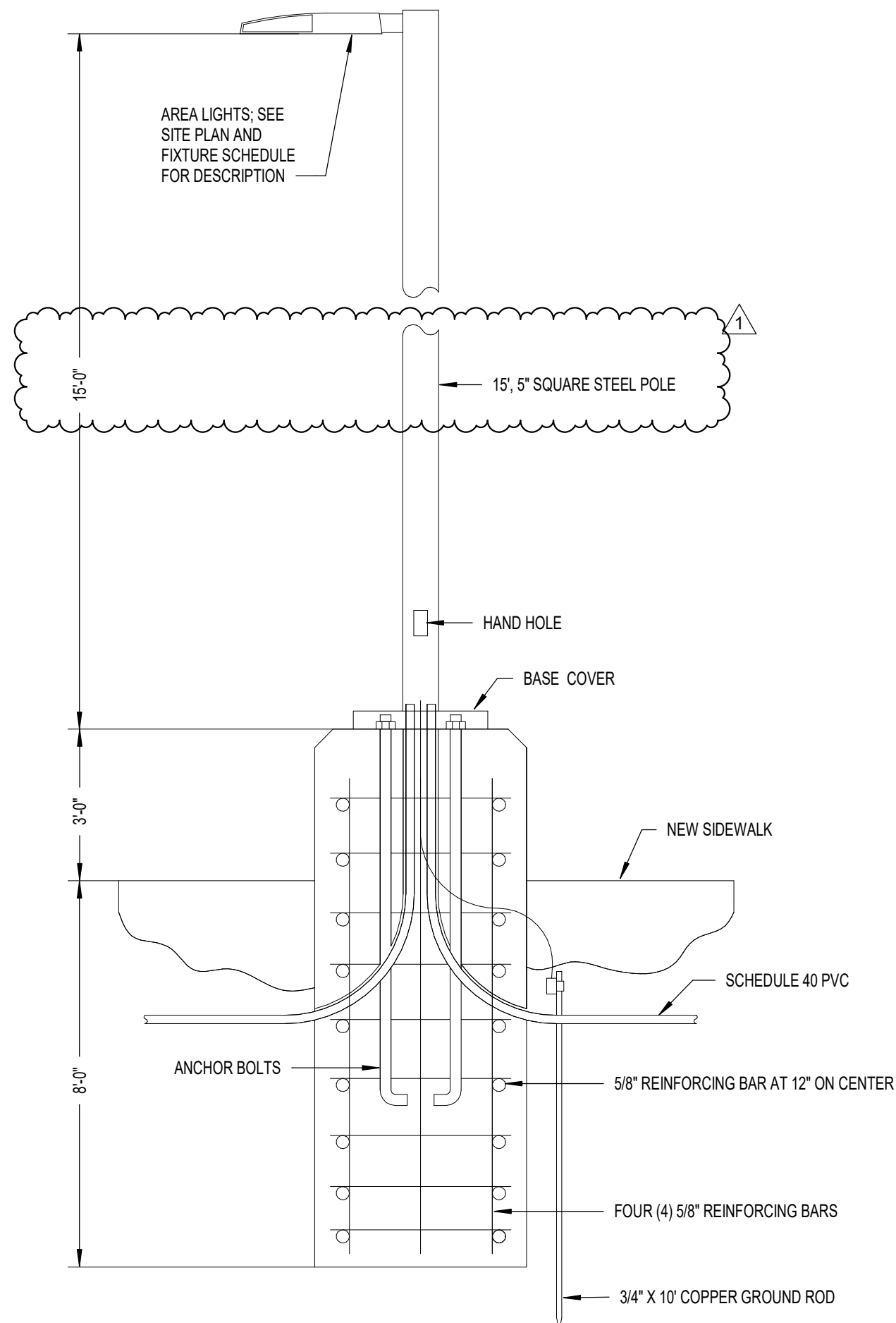
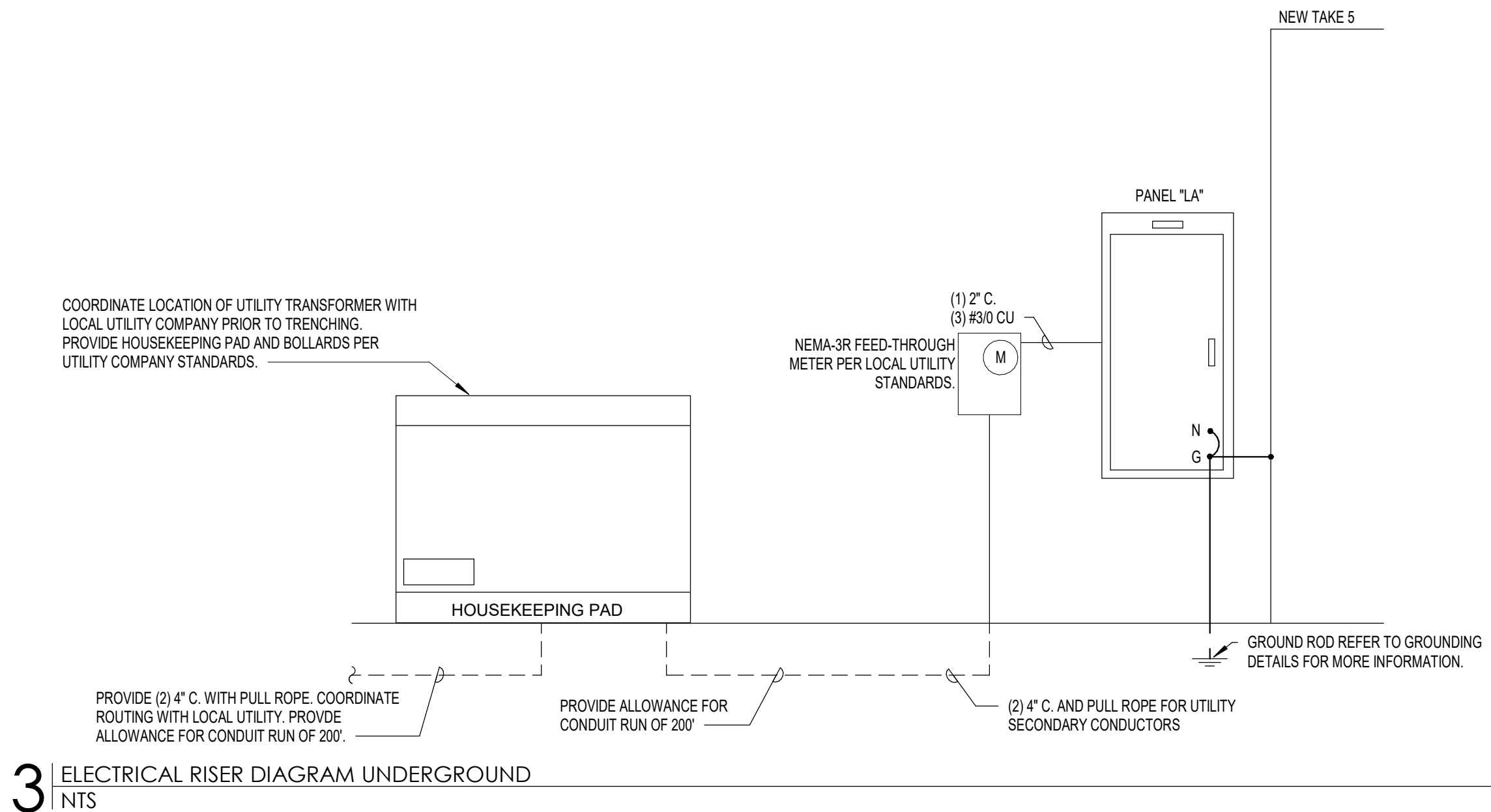
DATE: 26 July, 2024

PROJ. ARCHITECT: MRD

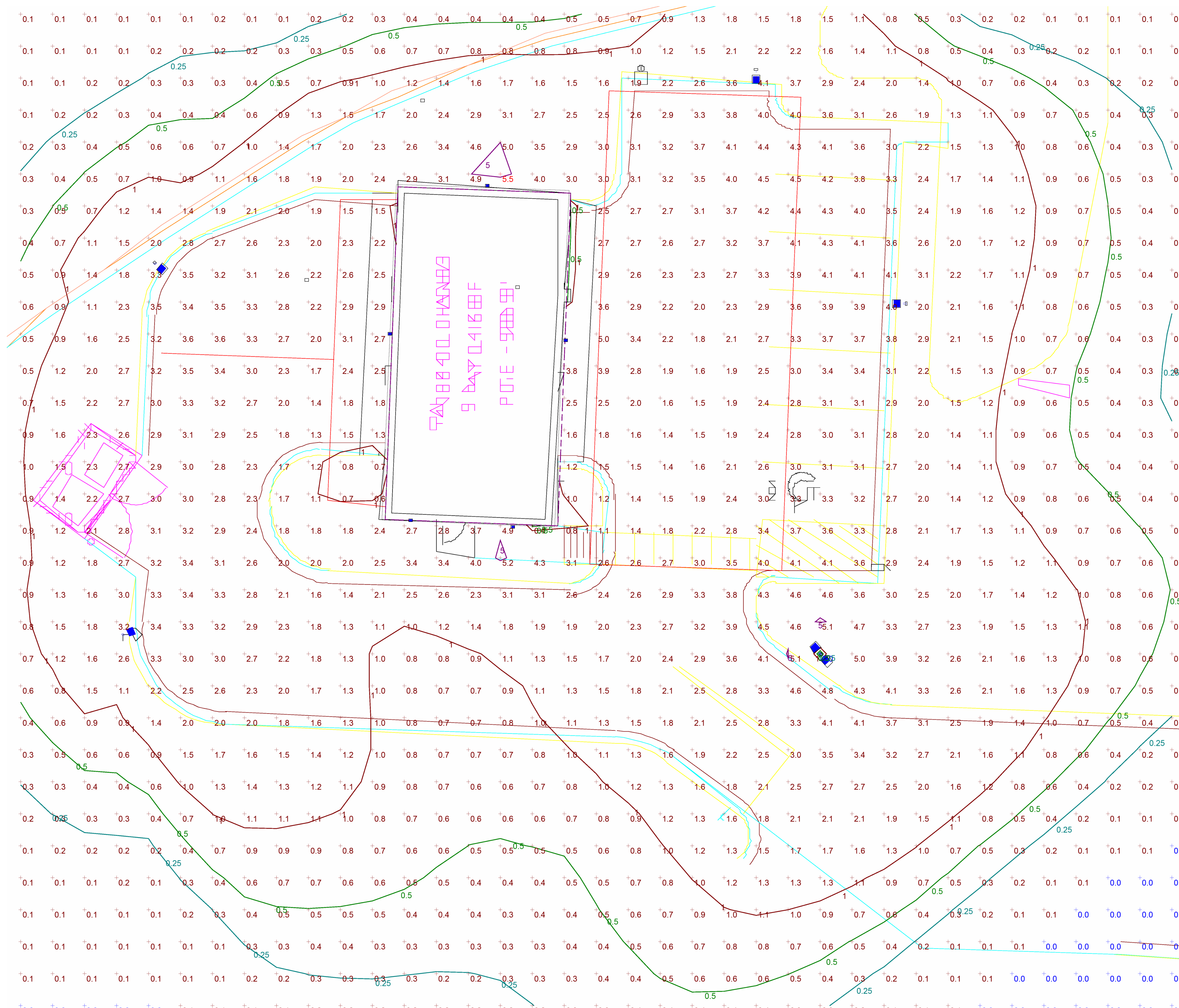
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**E1.00**  
OF

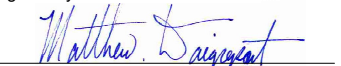






1 | SITE PHOTOMETRIC PLANNING  
NTS

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.



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Lee's Summit, Missouri 64086



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

# PHOTOMETRIC PLAN

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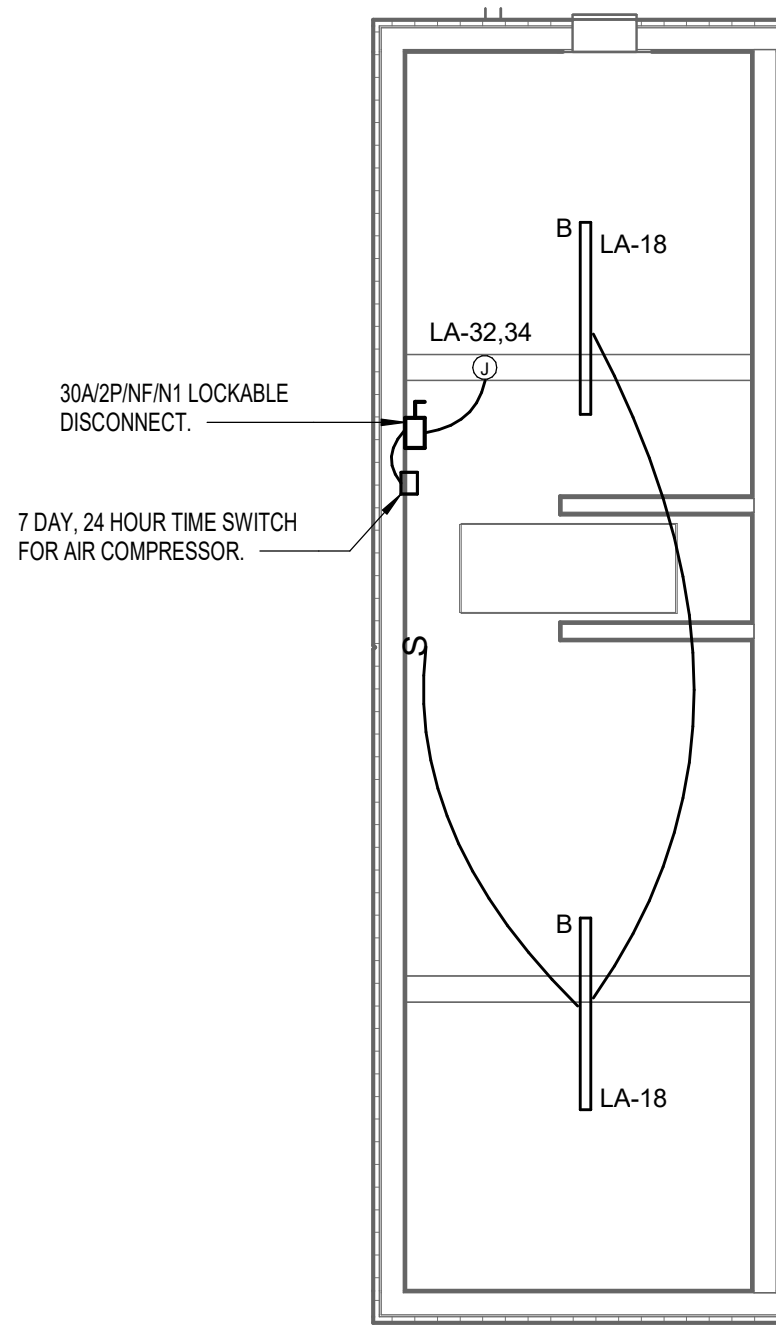
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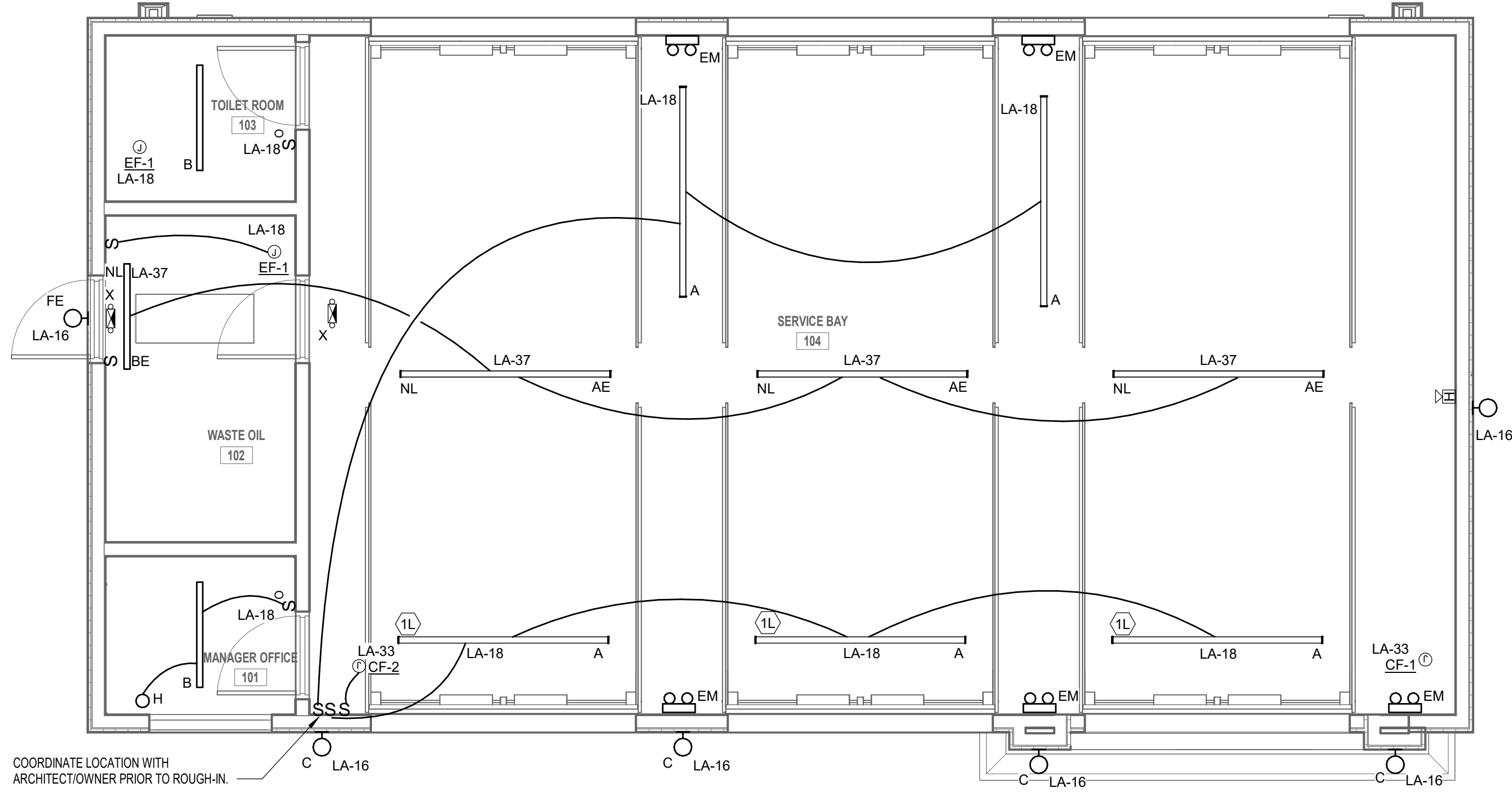


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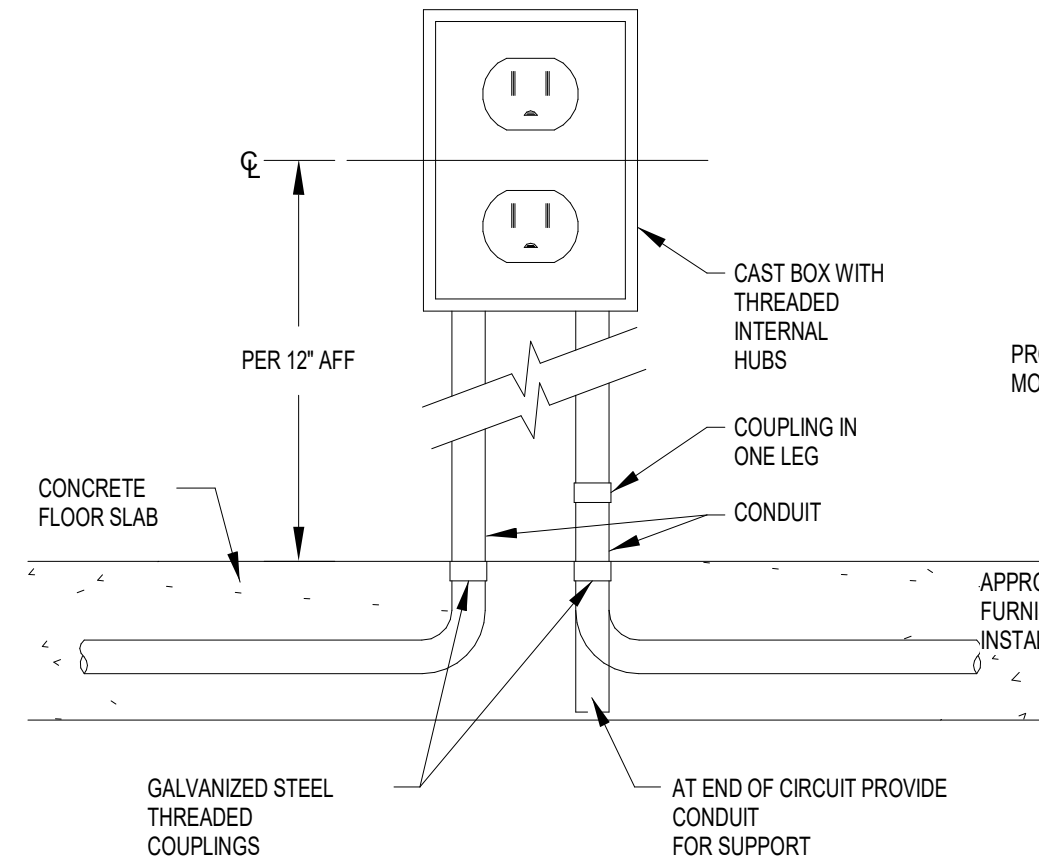
C:\Users\lylab\Documents\23-138 TAKE 5 LEE'S SUMMIT R22.kyle Baudoin.vrt



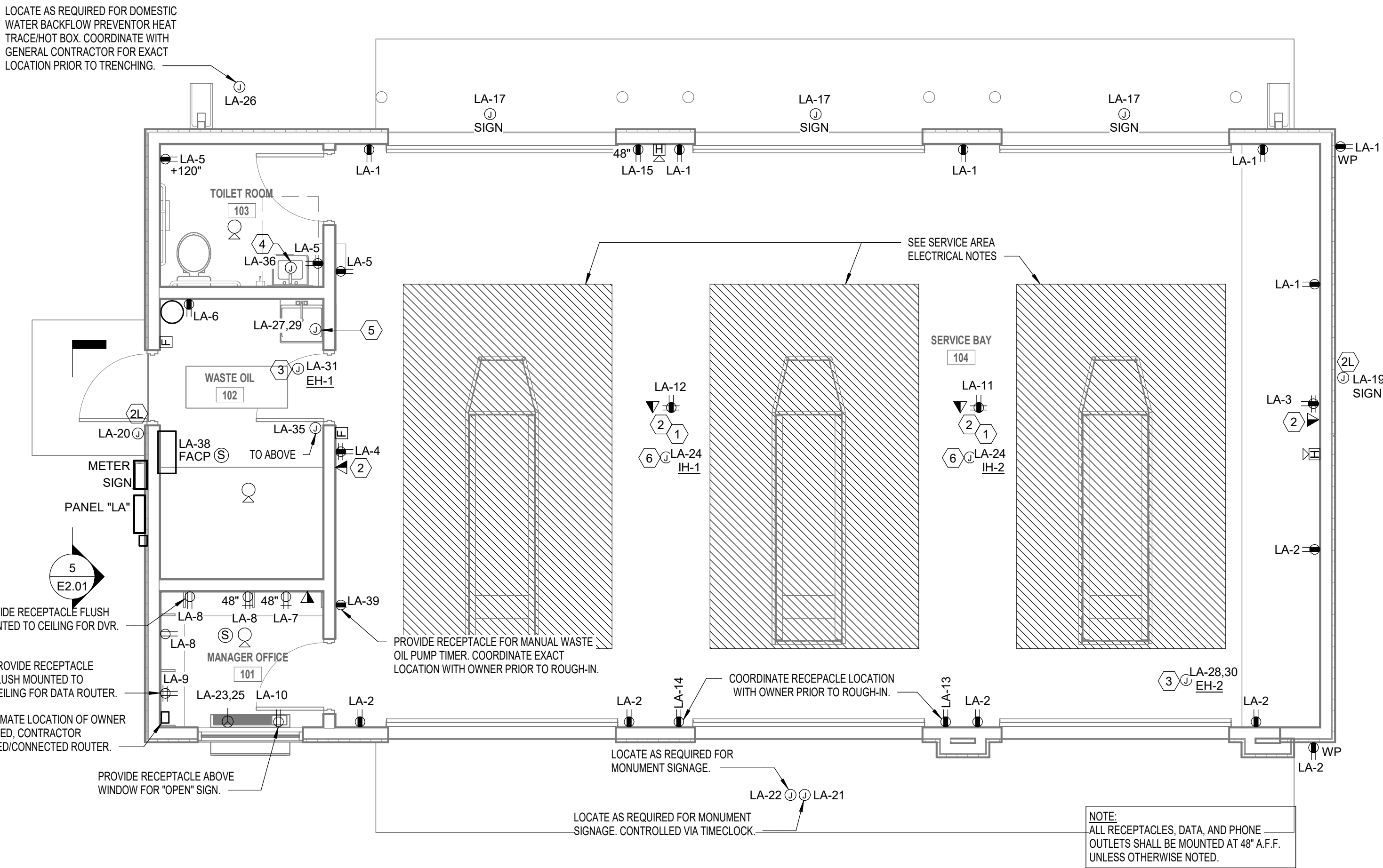
3 ELECTRICAL MEZZANINE PLAN  
1/4" = 1'-0"



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



4 RECEPTACLE STUB-UP DETAIL  
NTS



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

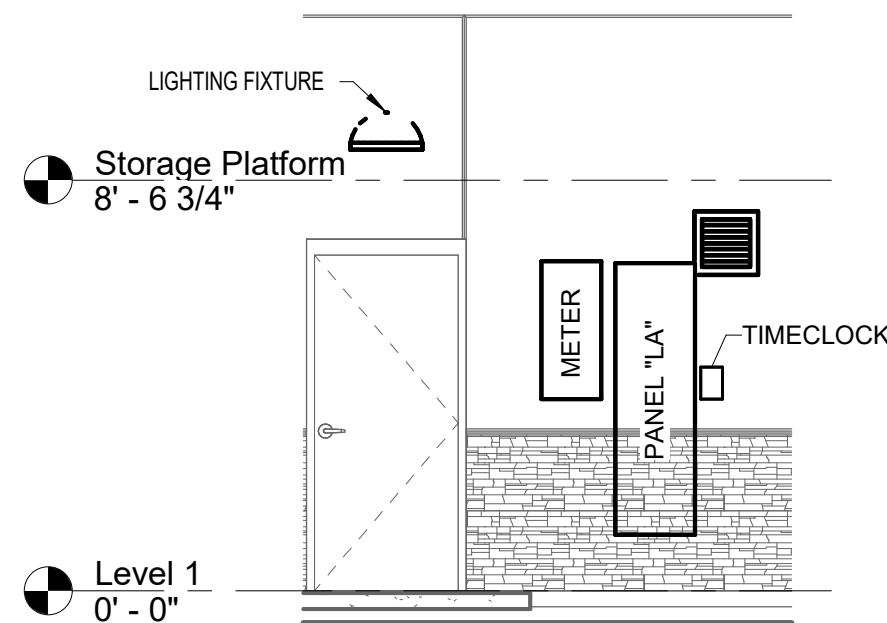
ALL EXTERIOR LIGHTING SHALL BE  
CONTROLLED VIA TIMECLOCK

LIGHTING KEYED NOTES:

- 1L COORDINATE EXACT LOCATION OF LIGHT FIXTURE WITH OWNER/ARCHITECT PRIOR TO INSTALLATION.
- 2L SIGNAGE CONTROLLED VIA TIMECLOCK

ELECTRICAL KEYED NOTES:

- 1 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.
- 2 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.
- 3 COORDINATE ELECTRICAL REQUIREMENTS WITH DIVISION 23 PRIOR TO PURCHASE.
- 4 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.
- 5 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.
- 6 MAKE CONNECTION TO GAS HEATERS FURNISHED AND INSTALLED BY DIVISION 23.



5 ELECTRICAL SERVICE ENTRANCE SECTION  
1/4" = 1'-0"

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.

NO.	REVISION	DATE



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By: *Matthew Sargent*

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

ELECTRICAL PLANS

SHEET NO.  
**E2.01**  
OF

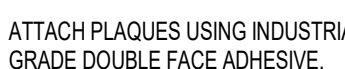
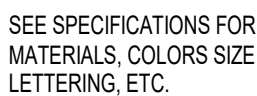


Location:  
Supply From:  
Mounting: SURFACE  
Enclosure: NEMA-3R  
Number of Sections: 1

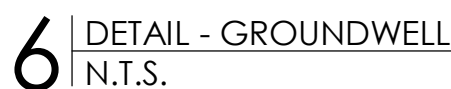
**A.I.C. Rating:** 22,000  
**Mains Rating:** 200 A  
**MCB Rating:** 200 A

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"	PLYON SIGN	500 VA	500 VA	PLYON 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	--	--	--	--	--	--	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	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	0 VA	0 VA	--	--	--	--	--	--	--	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	<b>Total Conn. Load:</b> 32723 VA
Lighting	3747 VA	125.00%	4684 VA	<b>Total Est. Demand:</b> 33604 VA
HVAC	5650 VA	100.00%	5650 VA	<b>Total Conn.:</b> 136 A
				<b>Total Est. Demand:</b> 140 A



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



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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 Daigneault

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

## ELECTRICAL DETAILS

**SHEET NO.**

## E3.01

OF



A. **WIRING DEVICES**  
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 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 all 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
<b>Toggle Switches:</b> 20A, 120/277V	1221-1	20AC-1	1221-1
Single pole	1223-1	20AC-3-1	1223-1
Three-way	1223-3	20AC-3-3	1223-3

**Duplex Receptacle:** 20A, 125V, NEMA 5-20R

5362A	5362-1	5363-A
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**Ground Fault Circuit Interrupter:** 20A, 125V, Feed Through, NEMA 5-20R

6899A-1	2091-S	GF-5362-1
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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**  
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:**

1. LED Color Temperature - Cool White (CWI), 5000K nom., CRI > 90
2. Line Voltage - Universal Voltage 120-277 volts
3. Governmental Standards - LM79 and LM80 Compliant
4. 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 Luminaires 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 UL 1598 environments and directly correlated to LED package manufacturers'IESNA LM-80 data. Predicted L70 B10 Limits (< 25°C maximum ambient operating environment): Greater than 60,000 hours @ 350mA Drive Current
5. Driver - Components must be fully encased in potting material for moisture resistance, and must comply with IEC and FCC standards
6. Surge Protection - Surge protection must be provided including separate surge protection built into electronic driver
7. 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 components 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 foot-less assembly for ease of installation and trouble-shooting.
8. 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 maps/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 banded using Velcro straps. 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 independent 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.