

GROUND ROOTS COFFEE

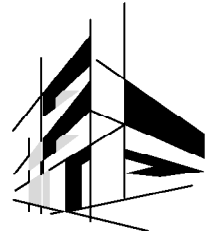
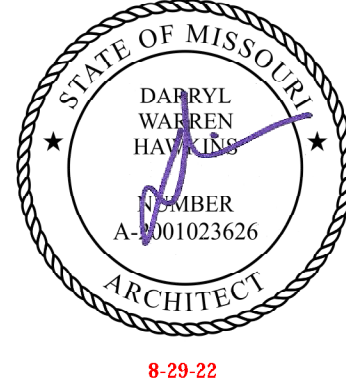
FINAL DEVELOPMENT PLAN

3680 NE AKIN DRIVE SUITE 144
LEE'S SUMMIT, MO

date: 5-11-22

INNOVATIVE DESIGN & RENOVATION

8011 PASEO SUITE 201
KANSAS CITY, MO. 64131
(816) 531-2221
Arkitec35@aol.com



AEC
ARCHITECTURAL
ENGINEERING
CONSORTIUM, INC.

MECHANICAL • ELECTRICAL • PLUMBING
STRUCTURAL • FIRE PROTECTION

WWW.AECONSORT.COM

KANSAS OFFICE	MISSOURI OFFICE
11032 S Green Rd. Olathe, KS 66061 913-879-3803 f. 913-829-6352	752 Bagnell Dam Blvd. Lake Ozark, MO 65049 573-365-2100 f. 573-365-2102

CODE REVIEW

1. Building codes used:
2018 International Building Code
2018 International Mechanical Code
2018 International Plumbing Code
2018 International Fuel and Gas Code
2018 International Fire Code
2017 National Electrical Code
2018 International Existing Building Code
2012 International Energy Conservation Code
2. Occupancy type: (B) Retail shop (New building) = 1,09% SF. gross
3. Construction type VB (NO SPRINKLERS)
4. Area of building for occupancy M
- | | | |
|--------------|--------------------|---|
| Retail Sales | 388 SF/60(gross) = | 6 |
| Kitchen | 415 SF/200(gross)= | 2 |
- TOTAL 8 Occupants
5. Sprinklers are NOT required.
6. Building height 18'-0" actual 40'-0" allowed.
7. Number of stories 1 actual, 2 allowed above grade plane.
8. Structural fire ratings for type VB construction per table 601:
- | | ALLOWABLE | ACTUAL |
|--------------------------|--------------------------------|--------|
| Primary structural frame | 0 hour | 0 hour |
| Bearing walls | Exterior 0 hour Noncombustible | 0 hour |
| | Interior 0 hour | 0 hour |
| Nonbearing walls | Interior 0 hour | 0 hour |
| Floor construction | 0 hour | 0 hour |
| Roof construction | 0 hour | 0 hour |
9. Number of exits required = 1 Number provided =2

The subject property lies within a flood zone designated Zone (X), areas located outside the 100-year floodplain, per FEMA Map, Community Panel No. 29095C0430G Effective Date 1/20/2017.

ENGINEERS ESTIMATE OF PROBABLE CONSTRUCTIONS COST TO BE
\$650,355.00

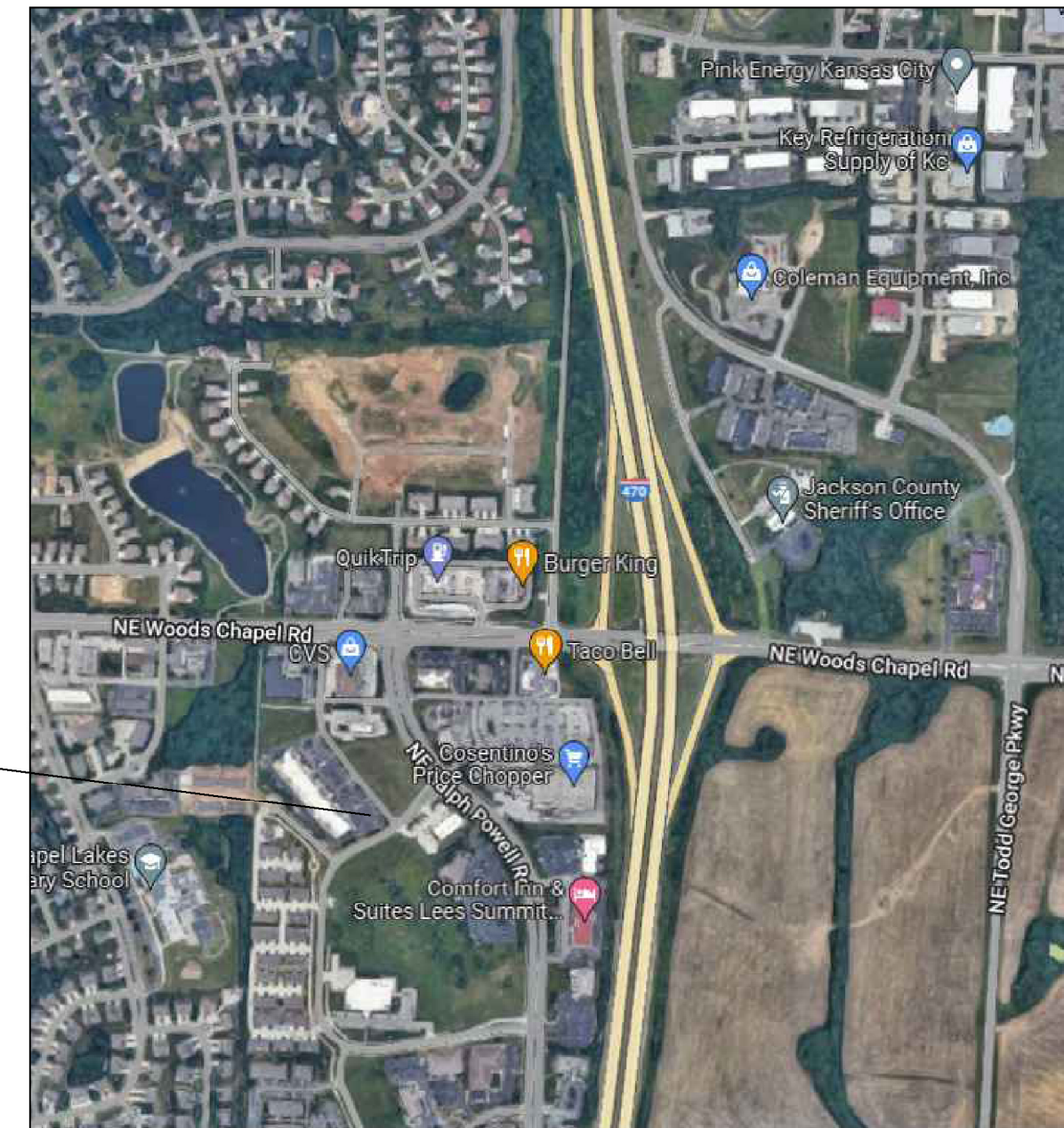
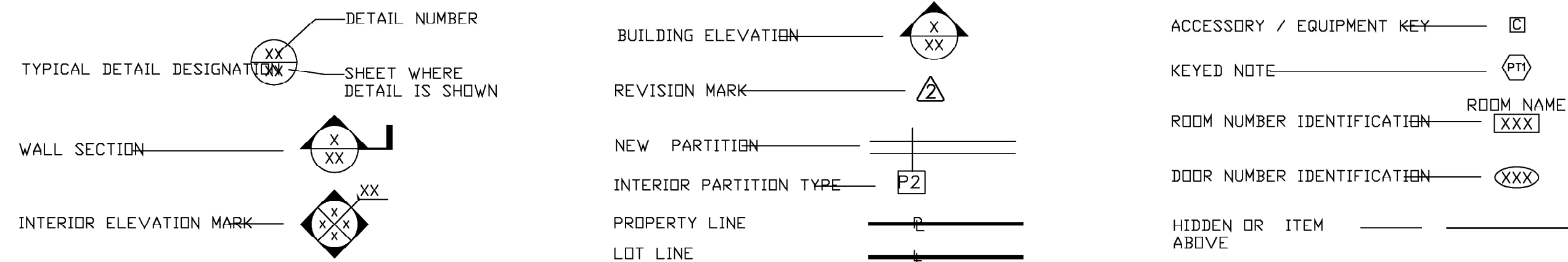
OIL AND GAS

ACCORDING TO THE WELL INSTALLATION SECTION DRILLING INFORMATION MAP OF THE MISSOURI DEPARTMENT OF NATURAL RESOURCES THERE ARE NO OIL AND GAS WELLS IN THE VICINITY OF THIS PROPERTY

ABBREVIATIONS

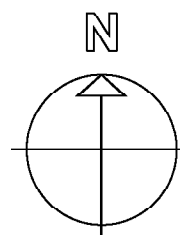
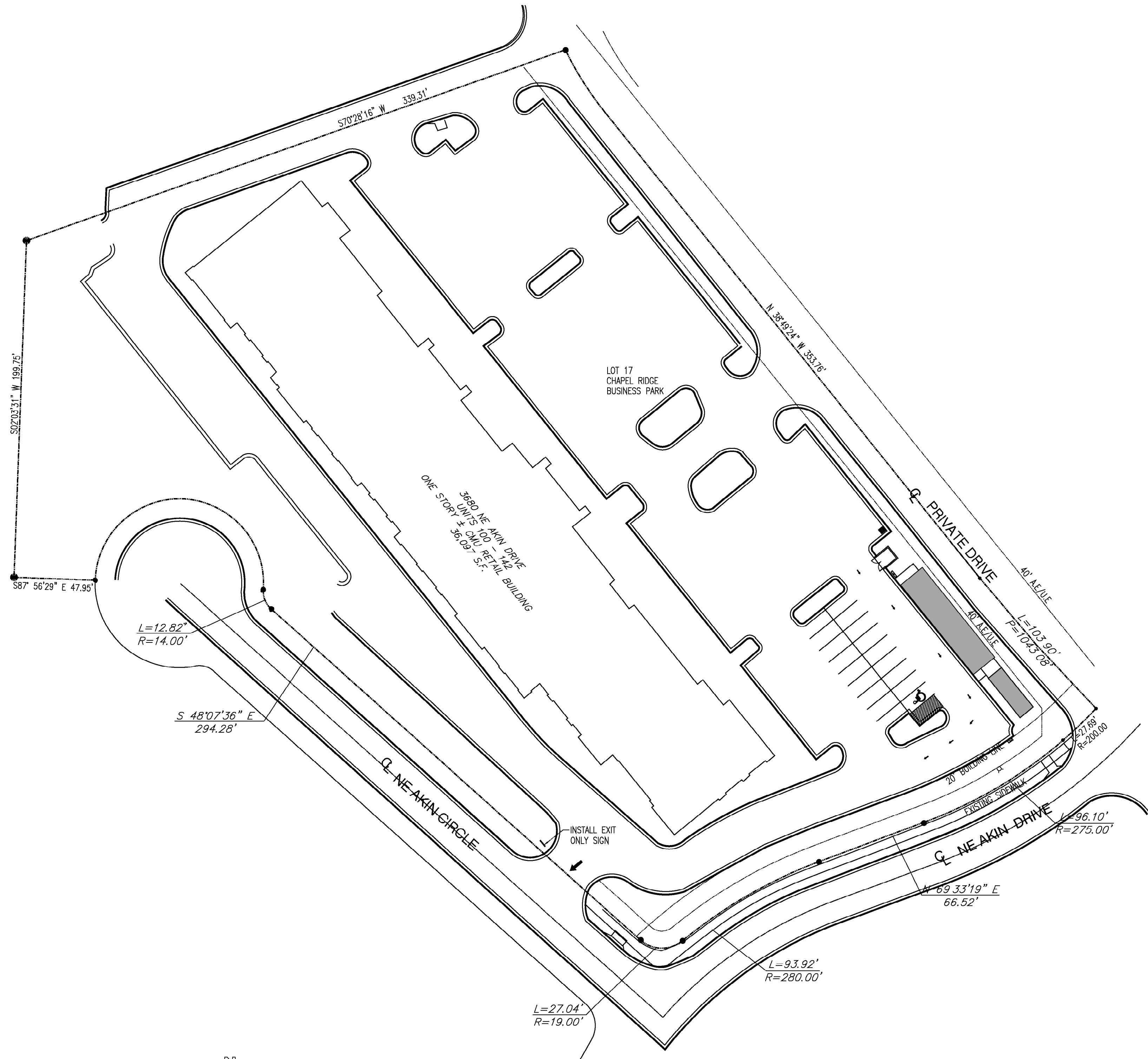
[illegible]

SYMBOLS LEGEND



SITE LOCATION

VICINITY MAP



SITE PLAN
Scale 1"=40.0'

SITE LEGEND

- Section Line
- Gas Line
- Overhead Electric Line
- Underground Electric Line
- Stormwater Sewer Line
- Telephone Line
- Water Line
- Sanitary Line
- Fence Line
- LOT LINE
- PROPERTY LINE
- FH = Fire Hydrant
- LP = Light Pole
- SIGN
- GM = GAS METER
- MH = Sanitary Sewer Manhole
- WM = Water Meter
- XFMR = Transformer
- NEW CONTOURS
- EXISTING CONTOURS
- CENTELINE
- R/W RIGHT-OF-WAY
- PP POWER POLE
- TJB TELEPHONE JUNCTION BOX
- GP GUARD POST
- TFC TANK FILLER CAP
- EJB ELECTRIC JUNCTION BOX
- C.I. CONCRETE INLET
- + HB HOSE BIBB

LEGAL DESCRIPTION

LOT 17, CHAPEL RIDGE BUSINESS PARK, LOTS 10 THRU 18 TRACTS H THRU K, A SUBDIVISION IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, ACCORDING TO THE RECORDED PLAT THEREOF.

SITE DATA TABLE

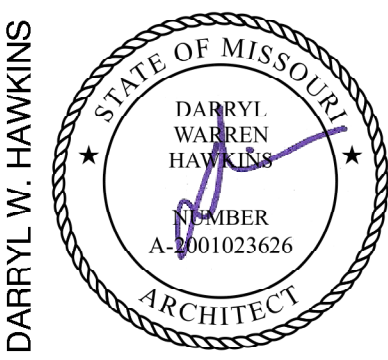
EXISTING LOT AREA	182,138 SQ.FT.
PROPOSED BUILDING AREA	1,096 SQ.FT.
FAR % (LOT 17)	1.9%
IMPERVIOUS AREA	NO CHANGE
EXISTING PARKING SPACES	170
PROPOSED PARKING SPACES	155

DEVELOPER

YAAP CHAPEL RIDGE, LLC
ATTN: DR. VEERAL BHOOT
P.O. BOX 24193
OVERLAND PARK, KS

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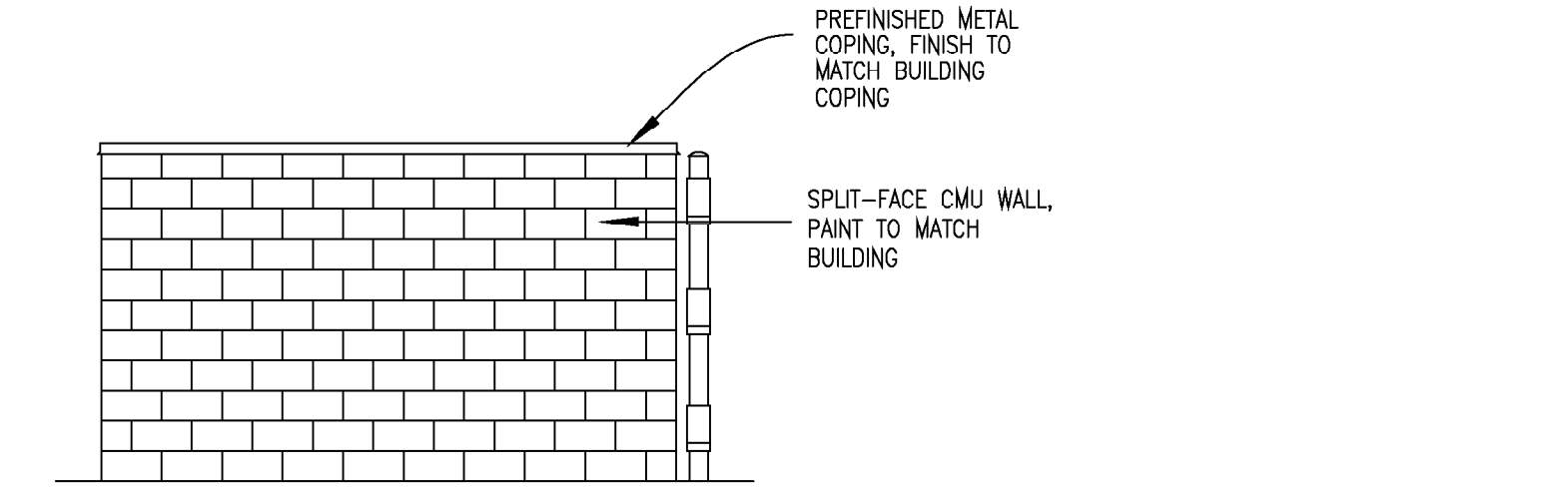
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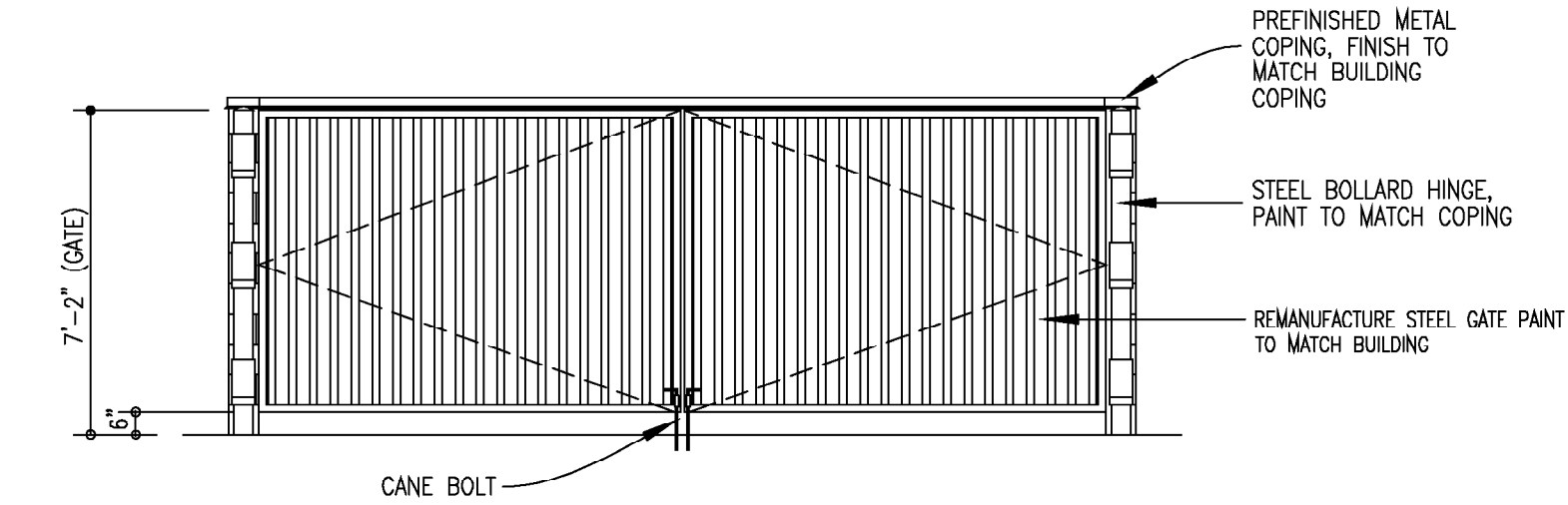
sheet no.

C1



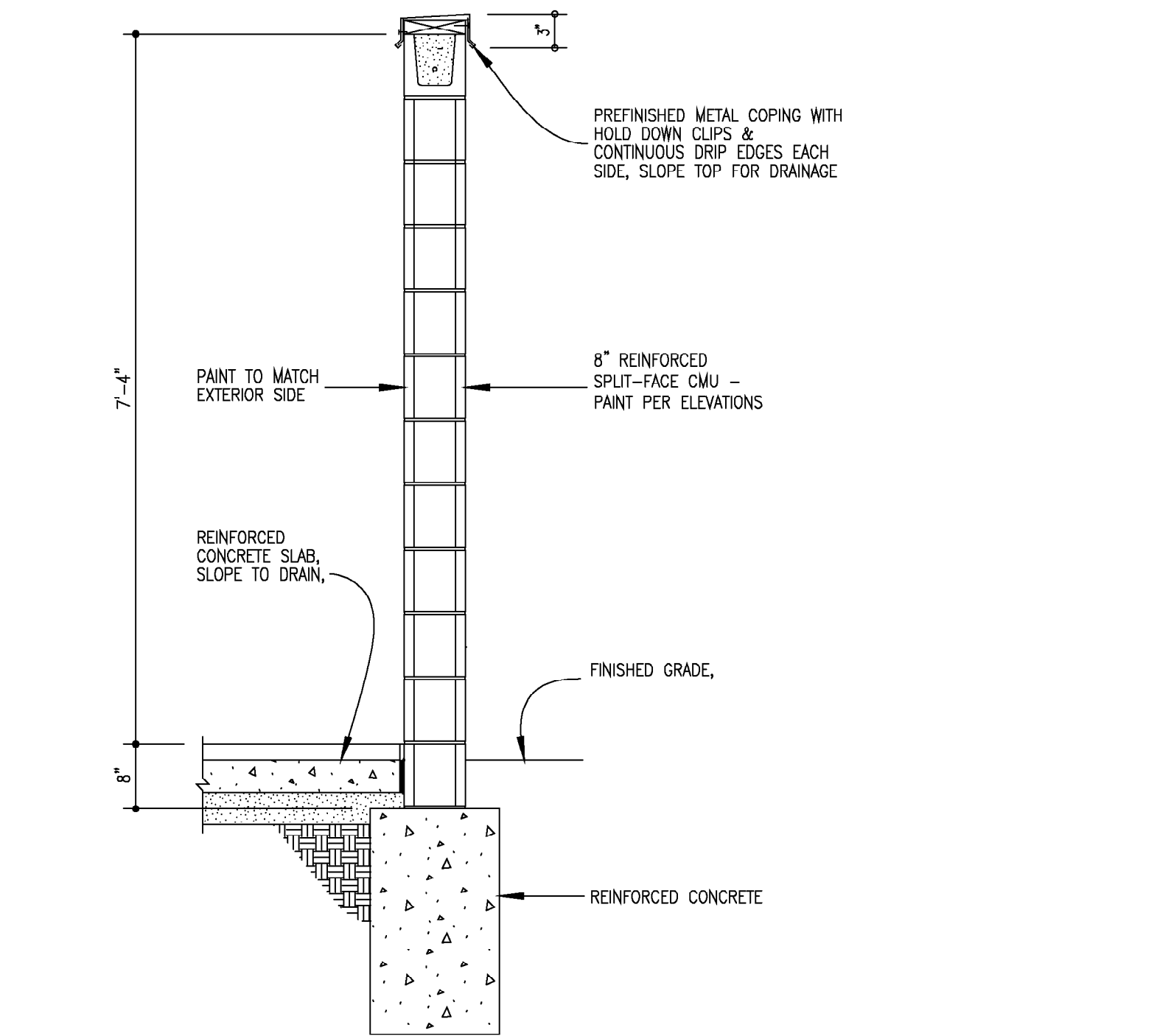
TRASH ENCLOSURE SIDE ELEVATION

Scale 1/4"=1'-0"



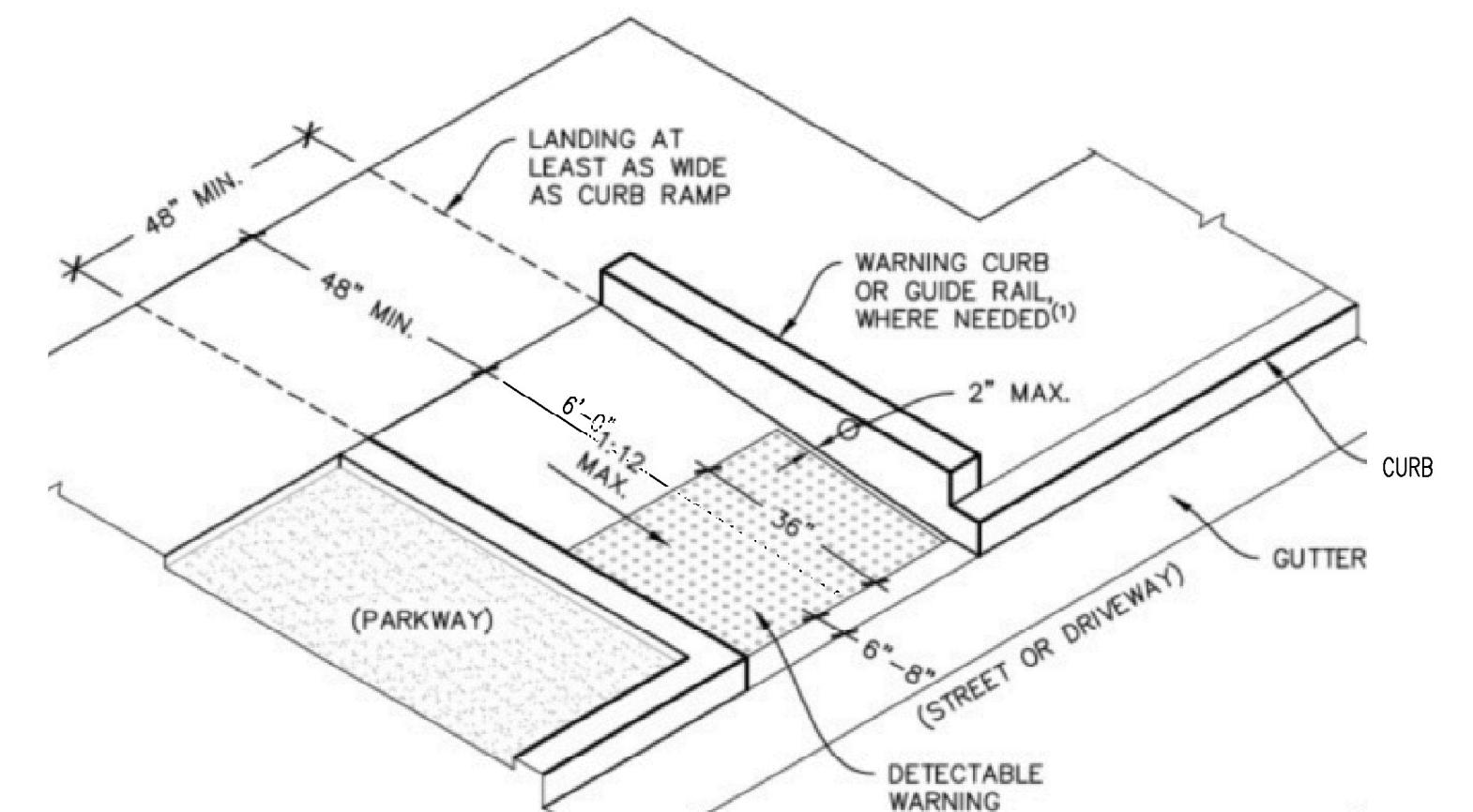
TRASH ENCLOSURE FRONT ELEVATION

Scale 1/4"=1'-0"



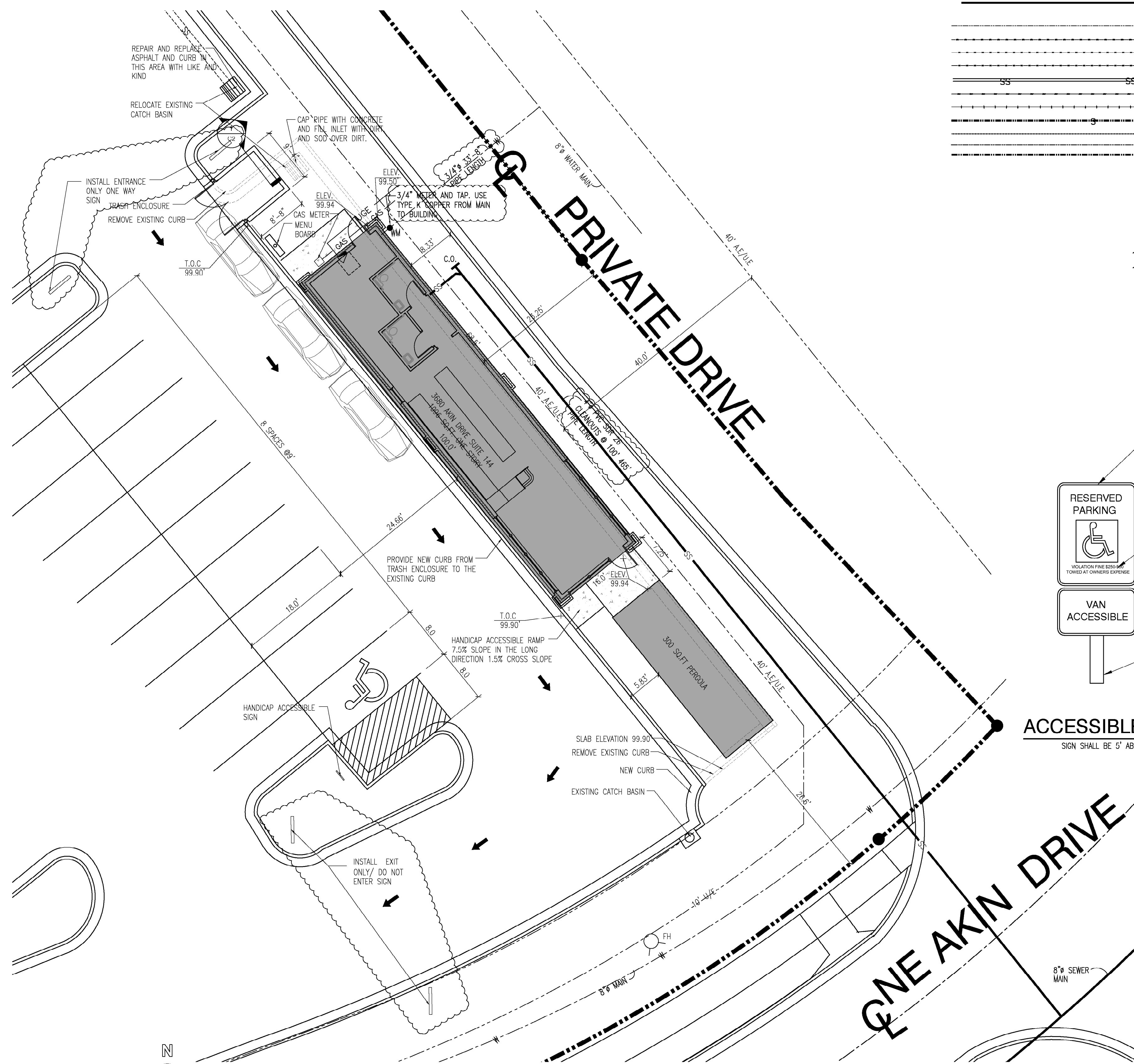
1 SECTION

C2 Scale 3/4"=1'-0"



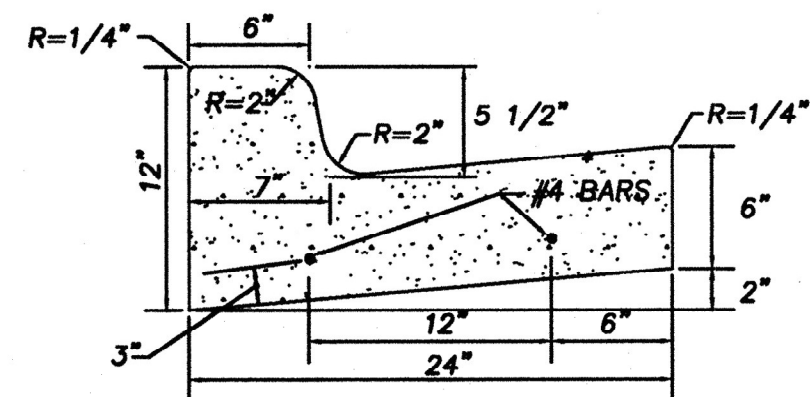
ACCESSIBLE RAMP DETAIL

6' RAMP LENGTH



SITE PLAN

Scale 1"=10.0'



CURB DETAIL

UTILITY NOTE:
THE INFORMATION SHOWN ON THIS DRAWING CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES FOR FIELD LOCATION OF ALL UNDERGROUND UTILITY LINES PRIOR TO ANY EXCAVATION AND FOR MAKING HIS OWN VERIFICATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

BEFORE YOU
DIG - DRILL - BLAST



Call
1-800-344-7483 (MISSOURI)
1-800-344-7233 (KANSAS)

SITE LEGEND

- Section Line
- Gas Line
- Overhead Electric Line
- Underground Electric Line
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MOUNTED A MIN. OF 5' ABOVE GRADE
TO THE BOTTOM OF THE SIGN



SIGN TYPE R7-8 (12'X18")
SIGN FIELD IS WHITE
SIGN LETTERING AND BORDER ARE GREEN
INTERNATIONAL SYMBOL OF ACCESSIBILITY
IS WHITE ON A BLUE BACKGROUND

RECOMMENCED OPTIONAL LANGUAGE



SIGN TYPE R7-8 (6'X12")
SIGN FIELD IS WHITE
SIGN LETTERING AND BORDER ARE GREEN

SIGN POLE

ACCESSIBLE SIGN DETAIL

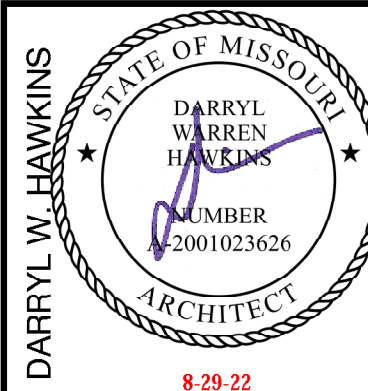
SIGN SHALL BE 5' ABOVE GRADE

GENERAL NOTES

- Contractor shall obtain all permits including land disturbance, right-of-way, hauling, etc., with public works prior to construction as applicable.
- Excavated material that is not immediately loaded and hauled off site shall be stockpiled on site. Contractor shall provide the appropriate BMP (silt fence, compost sock, gravel filter bags, wattles, etc.) fully surrounding the stockpile area to protect adjacent inlets or areas, etc. until such time that stockpile is removed from site.
- Good housekeeping including all spill response shall be done.
- The new building must maintain proper clearances from Every overhead electric lines.
- Provide irrigation for new landscaping.
- Parking lot shall be paved and stripped and will comply with the unified development ordinance article 8 in terms of paving and thickness base.
- All construction traffic, temporary traffic control devices, and pavement markings shall conform to the requirements of the latest manual of the UNIFORM TRAFFIC CONTROL DEVICES.
- The contractor shall provide all materials, tools, equipment and labor as necessary to install and maintain adequate erosion control, keep streets clean of mud and debris, and prevent soil from leaving the project site.
- All water service installations including backflow devices are subject to field verification and approval by the Water Department inspector.
- Sanitary sewer improvements- The site will utilize the existing sanitary sewer on the South side of the building.
- Water main improvements- The site will utilize the existing 8" water main on the East side of the building.
- Storm water improvements- The site will utilize the existing storm water catch basins.
- Connection to the sewer line shall be made with a cut-in wye.

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drawn by RES.
checked by 8-29-22
revised

sheet no.

C2

SILT FENCE EROSION CONTROL

1. Fabric fences may be constructed with supporting fences, such as snow fences or wire mesh fences. The supporting fences shall be strong enough to withstand the load from pond water and trapped sediment. The support posts shall be spaced at 10 feet intervals or less, and shall be placed or driven at least 2 feet into the ground. Posts shall be 4-inch diameter wooden posts or standard steel posts.

When fabric fence is installed without a supporting fence, the posts shall be spaced at 4 feet or less. Posts shall be placed or driven at least 2 feet into the ground. Posts shall be 2-inch square wood posts or standard steel posts.

2. A trench for anchoring the fabric shall be dug along the upslope side of the posts. The trench shall be at least 8 inches wide and 12 inches deep. The fabric shall be laid in the trench, which then shall be back filled and compacted to prevent water and sediment from passing underneath the fabric fence.

3. The filter fabric shall be furnished in a continuous roll cut to the length of the sill fence to avoid splices. When splices are necessary, the fabric shall be spliced at a support post with a minimum of 6-inch overlap, folded over, and securely fastened.

4. The synthetic filter fabric shall be a pervious sheet of polypropylene, nylon, polyester, or ethylene yarn uniform in texture and appearance and free from defects, flaws, or tears that would affect its physical properties. When installing fabric for silt fences, follow manufacturer's recommendations.

EROSION CONTROL:

All erosion control practices are to be in accordance with EROSION and SEDIMENT CONTROL SPECIFICATION, of the MDNR, Erosion control practices are to be in place prior to construction. Where it is impractical to install erosion control practices prior to construction, the contractor shall install erosion control practices as soon as practical, during or following construction.

SODDING:

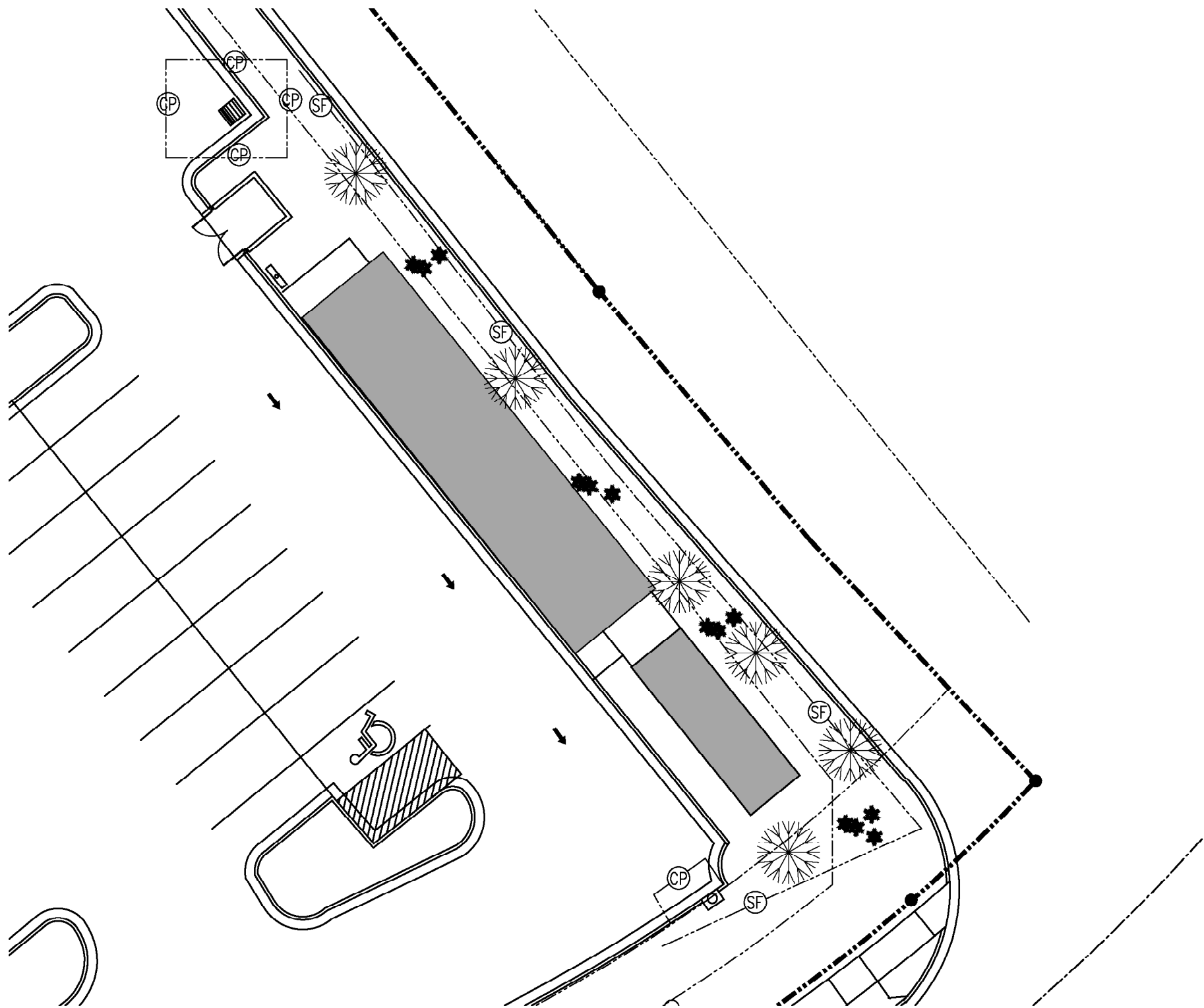
SODDING, may be used in any area requiring permanent seeding.

PERMANENT SEEDING/MULCHING
Permanent vegetation is to be seeded within 30 working days of the completion of construction and grading.
At the contractors option sod may be established in any area where permanent vegetation is required.

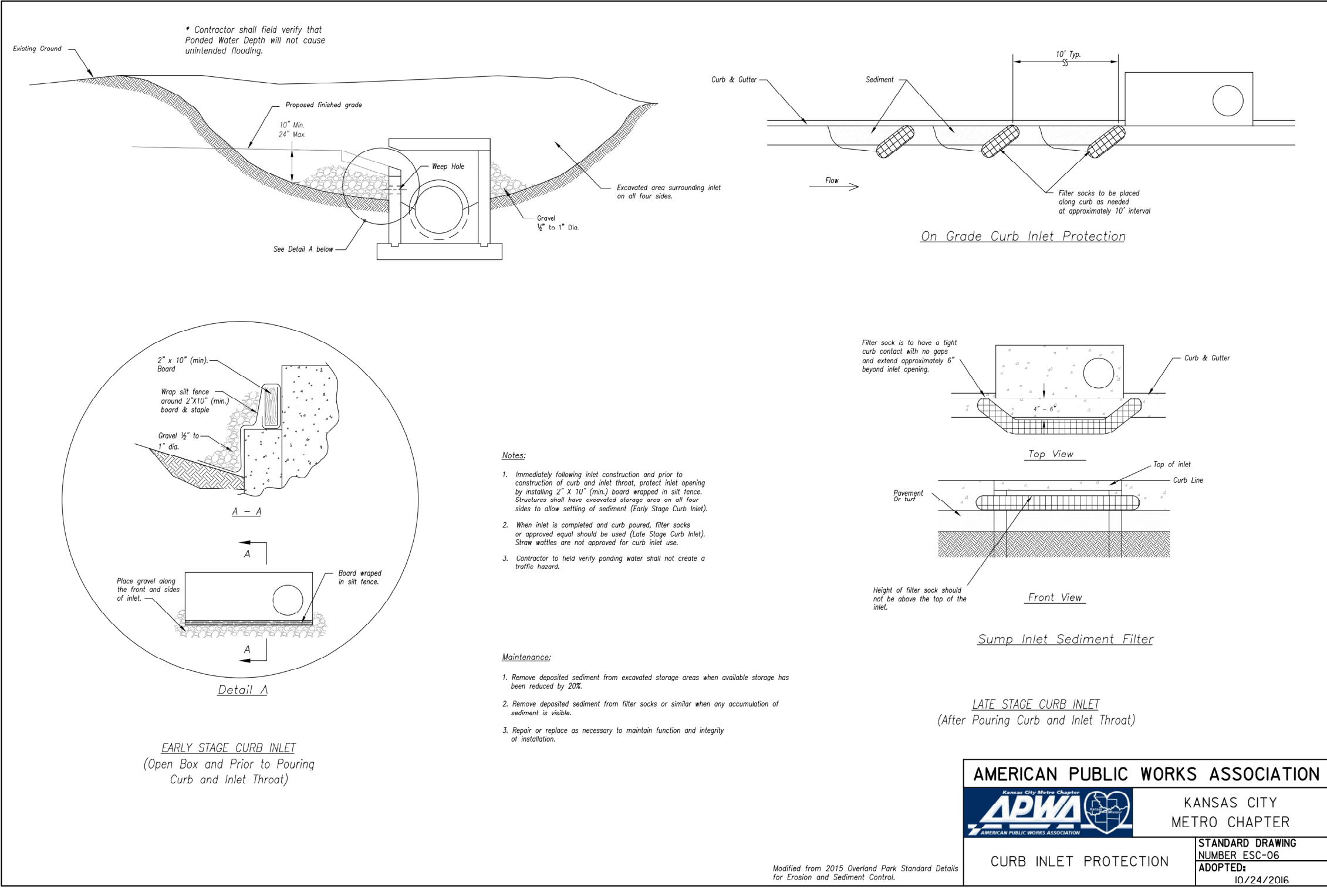
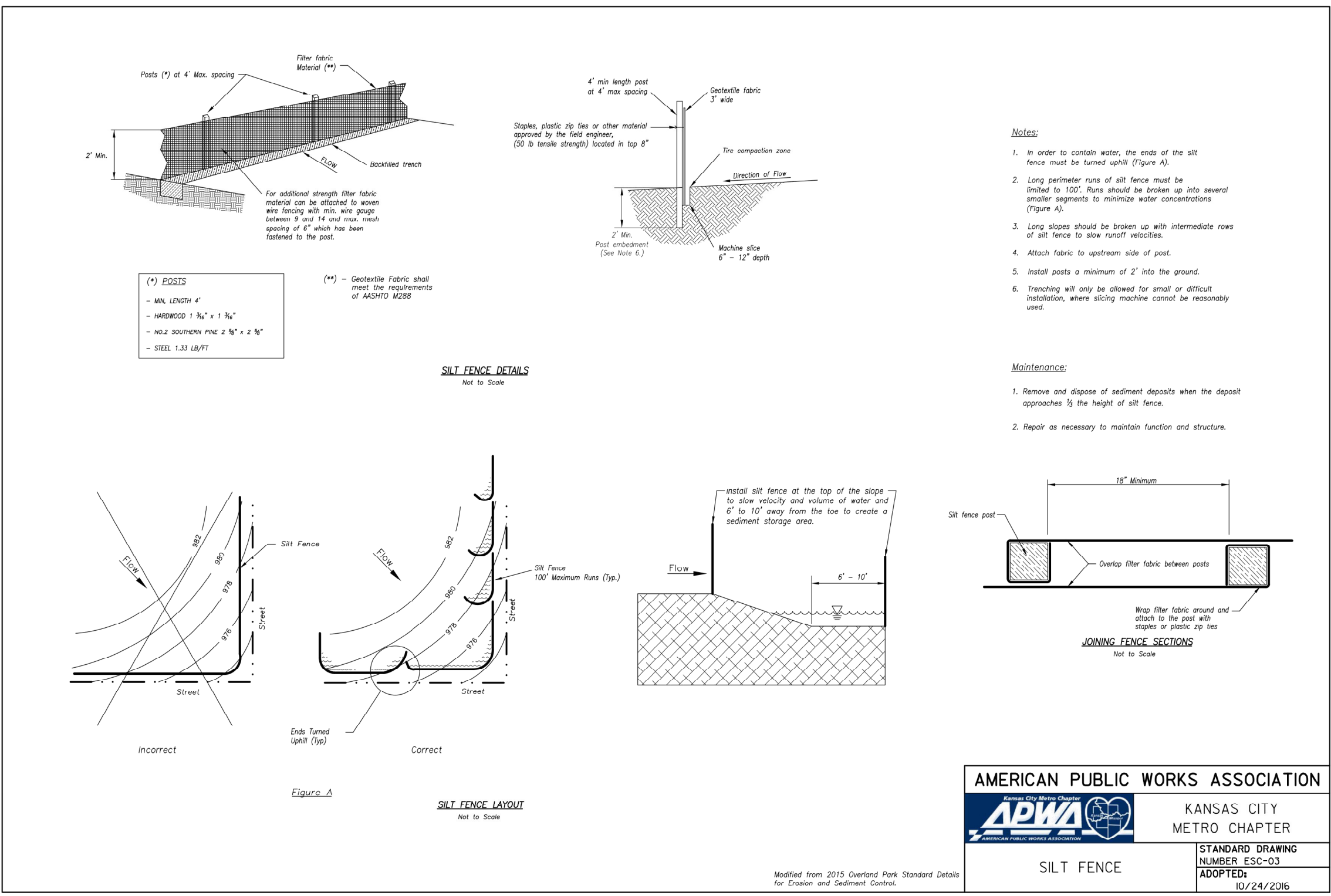
SILT FENCE or STRAW BALE BARRIERS:
Silt fence is to be installed in accordance with MDNR Standards

SEDIMENT FENCE.
Straw bale barriers are to be installed in accordance MDNR Standards.

Maintain sediment traps, silt fence straw bales after each significant rainfall, remove sediment and restore to original dimensions when sediment has accumulated to half the design depth. Place removed sediment in disposal or fill areas.



EROSION CONTROL PLAN
Scale 1"=20.0'



- (CB)— GRATE INLET PROTECTION TO BE IN PLACE PRIOR TO CONSTRUCTION
SILT FENCE SHALL BE INSTALLED IN ACCORDANCE WITH MISSOURI
DEPARTMENT OF NATURAL RESOURCES
- (SF)— SILT FENCING TO BE IN PLACE PRIOR TO CONSTRUCTION
SILT FENCE SHALL BE INSTALLED IN ACCORDANCE WITH
THE CITY OF LEE'S SUMMIT, MO

GENERAL NOTES

- The contractor shall provide all materials, tools, equipment and labor as necessary to install and maintain adequate erosion control, keep streets clean of mud and debris, and prevent soil from leaving the project site. The contractor's erosion control measures shall conform to the city of Lee's Summit, Mo. The contractor shall be responsible for providing additional erosion control measure or modifications if the plan fails to substantially control erosion or offsite sedimentation.
- The contractor shall inspect erosion control devices every 7 days and within 24 hours of a storm of 0.5" or more. The contractor shall repair damage, clean out sediment, and additional erosion control devices as needed, as soon as practicable, after inspection.

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DARRYL W. HAWKINS



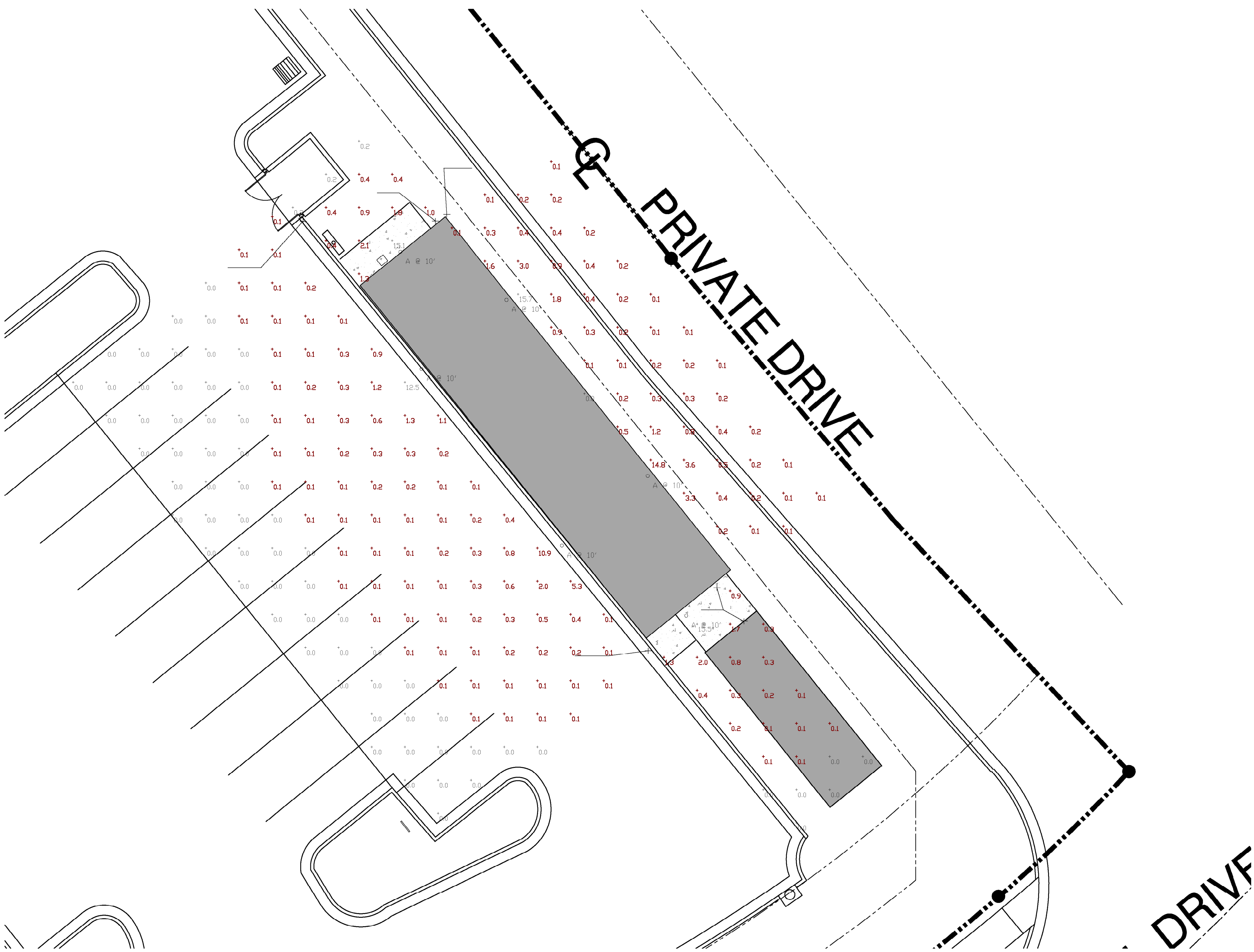
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C3



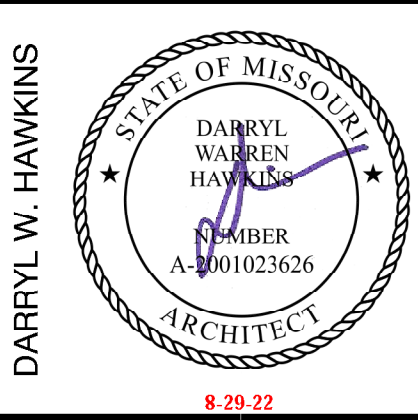
SITE PLAN
Scale 1"=10.0'

Schedule									
Symbol	Label	QTY	Manufacturer	Catalog	Description	Number Lamps	Lamp Output	LLF	Input Power
	A	6	Peachtree Lighting, LLC	C6BLRUD-14-35K-80-SH-RC-FINISH-WALP-WL	6" CYLINDER, WITH A GEN 7 VERDIO CoB, SURFACE MOUNT	1	2911	0.9	17

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
NW SIDE	+	1.9 fc	15.1 fc	0.2 fc	75.5:1	9.5:1
PARKING LOT	+	0.3 fc	12.5 fc	0.0 fc	N/A	N/A
SE SIDE	+	1.0 fc	15.5 fc	0.0 fc	N/A	N/A
NE SIDE	+	1.1 fc	15.7 fc	0.0 fc	N/A	N/A

Note
1. FIXTURES MOUNTED AT 10' ABOVE GRADE.

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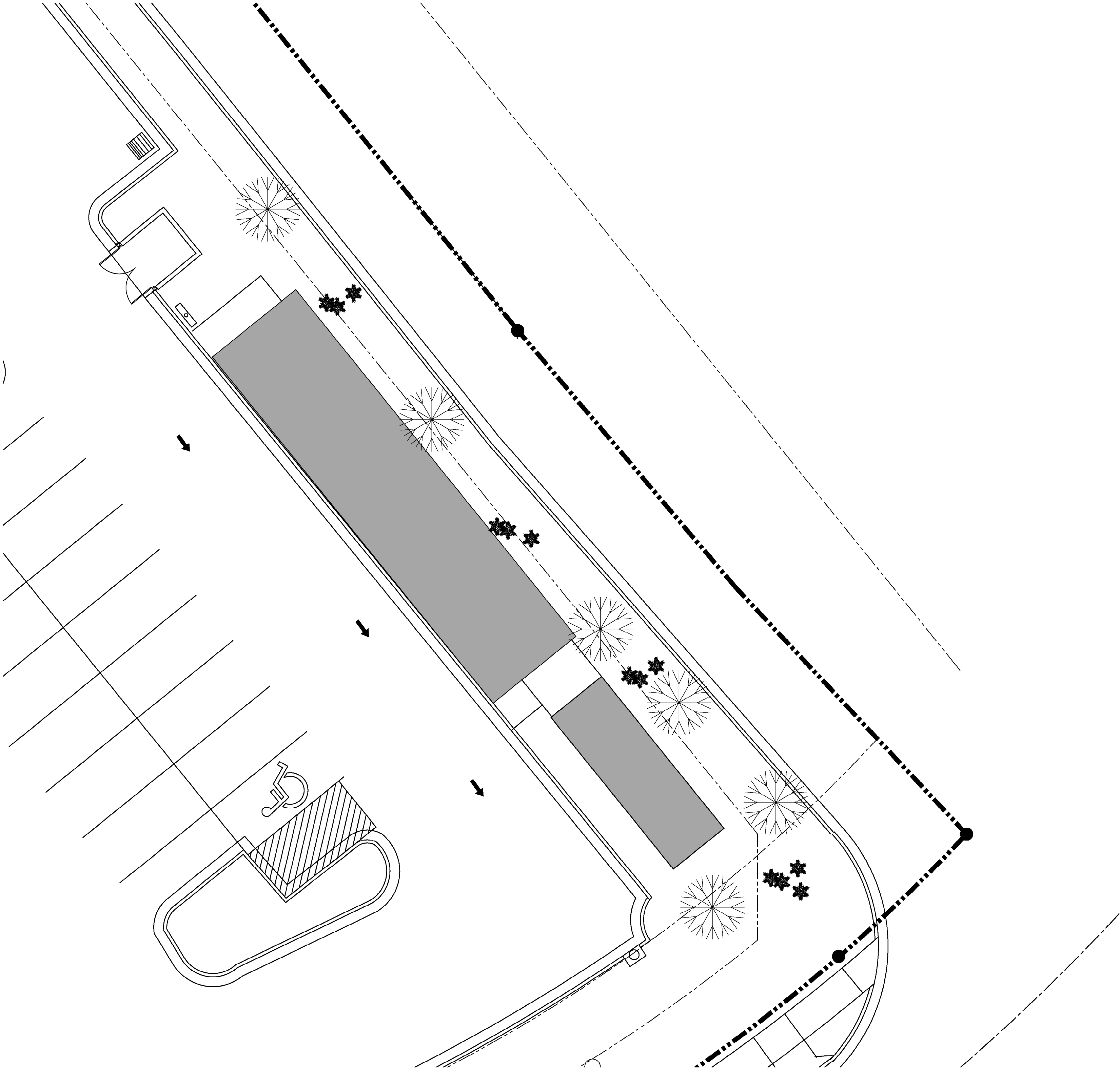
date	5-11-22
drawn by	R.E.S.
checked by	
revised	

sheet no.

C4

LANDSCAPE NOTES

1. ALL LANDSCAPING IS EXISTING, REPLACE WITH LIKE AND KIND AS NEEDED.

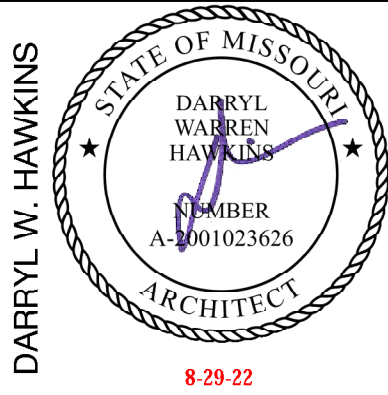


LANDSCAPE PLAN

Scale " = 10.0'

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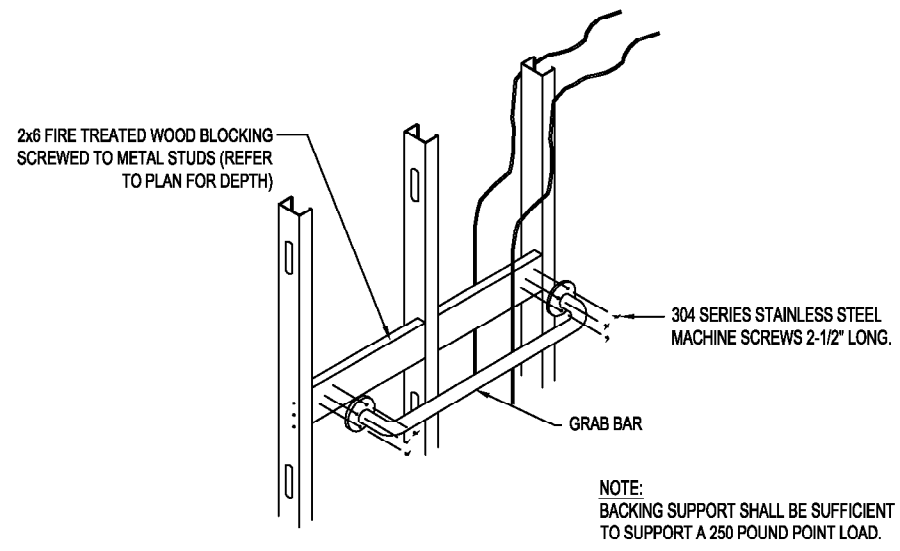
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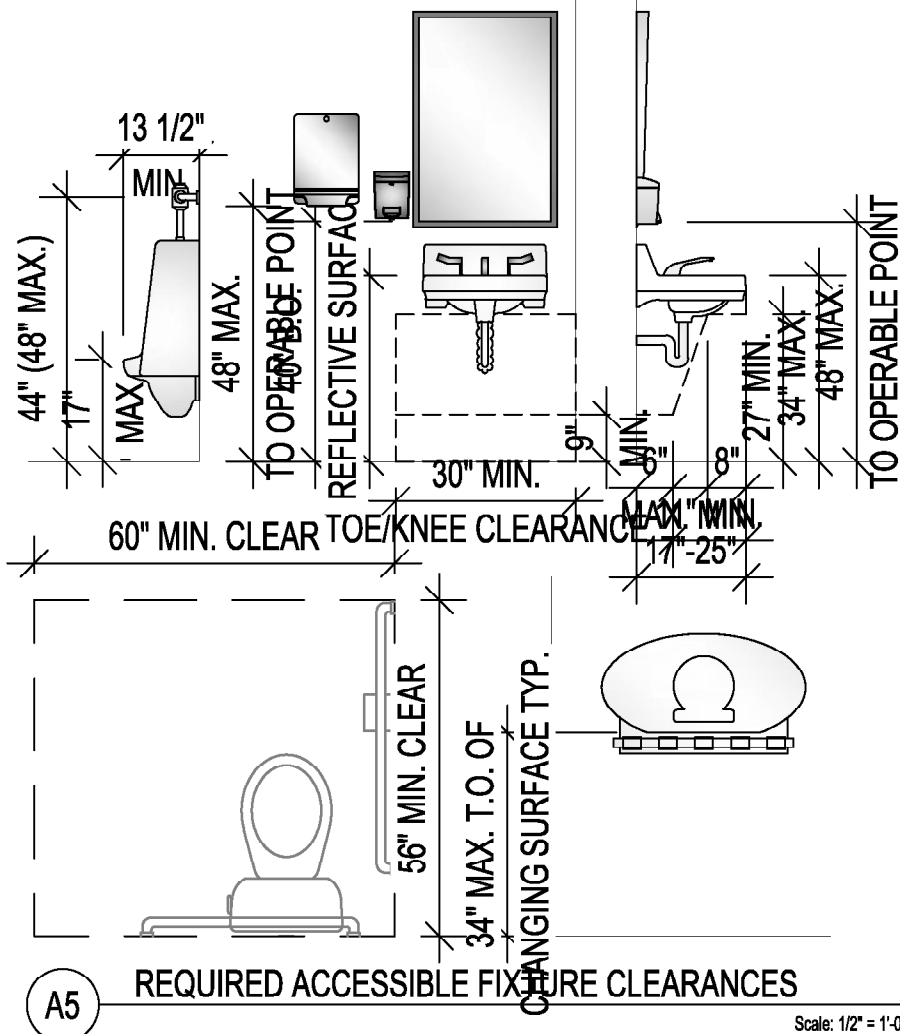
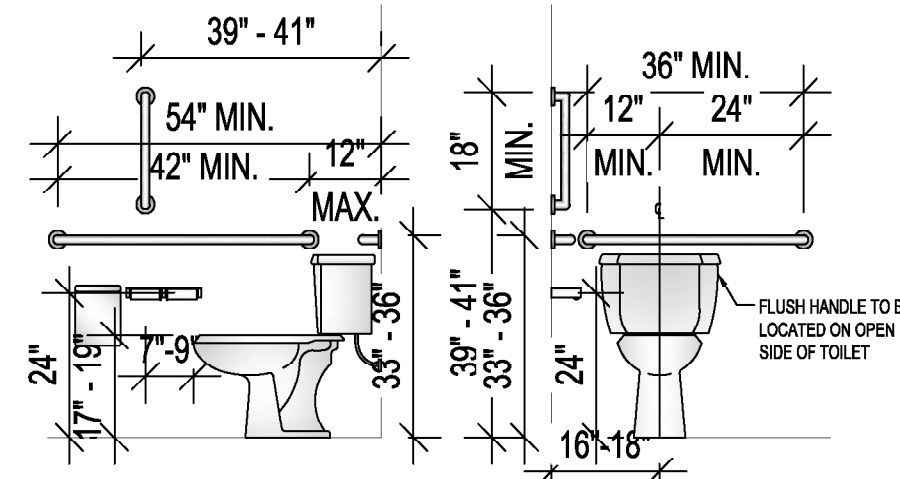
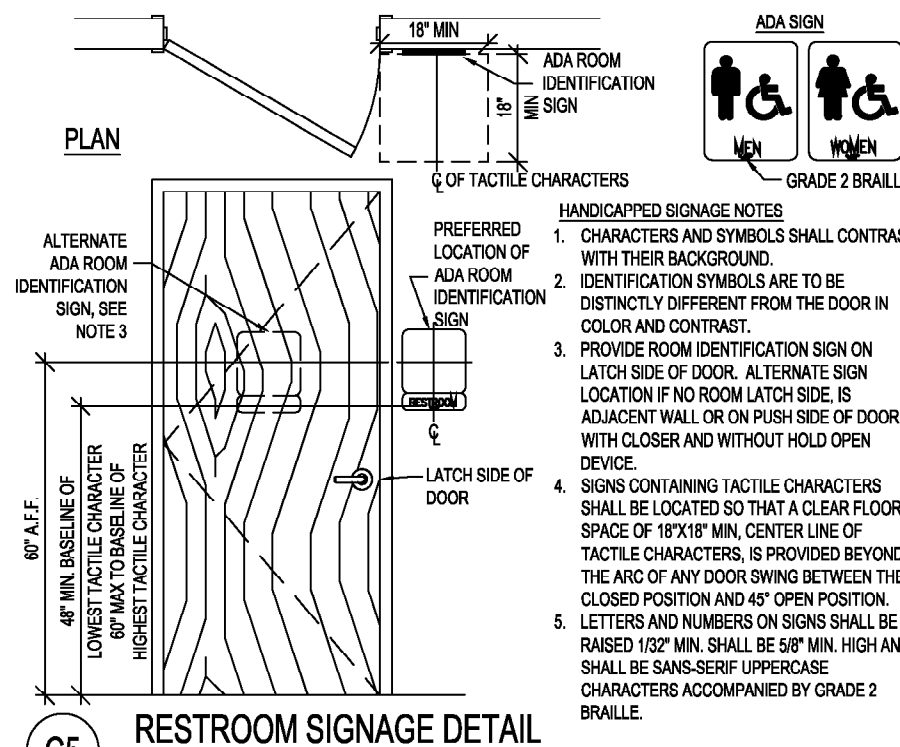
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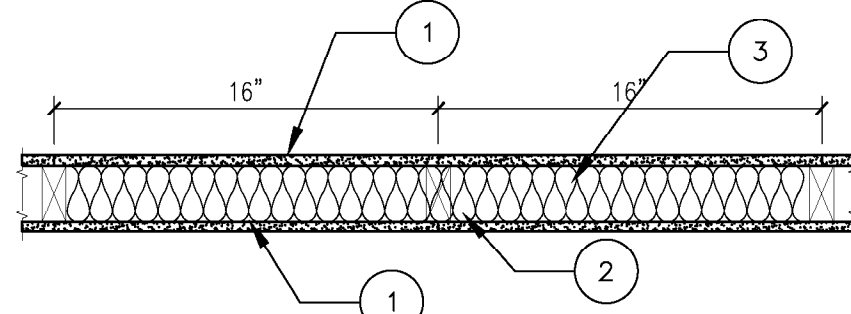
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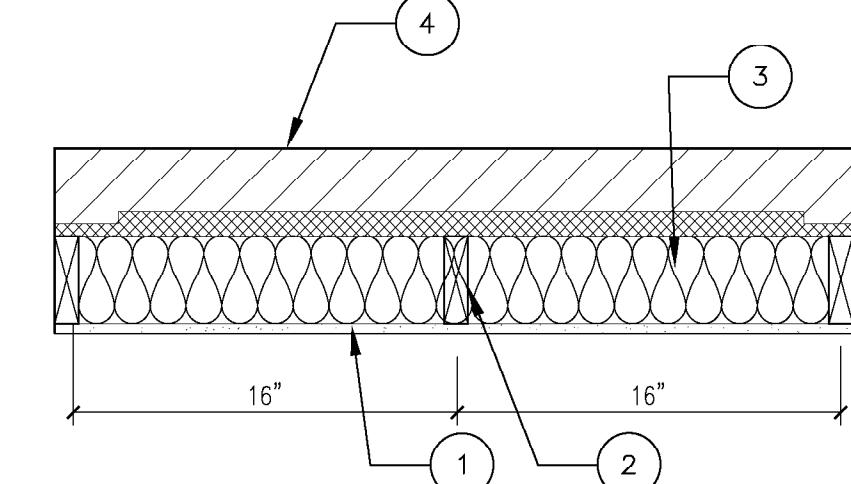
D5 TYP. GRAB BAR ATTACHMENT DETAIL Scale: 1/2" = 1'-0"



A5 REQUIRED ACCESSIBLE FIXTURE CLEARANCES Scale: 1/2" = 1'-0"



1 WALL TYPE
1. GYPSUM BOARD: 5/8 IN. THICK GYPSUM BOARD APPLIED VERTICALLY.
2. WOOD STUDS: 2X4 WOOD STUDS @16" O.C.
3. INSULATION: MIN. 3-1/2 IN. THICK FIBERGLASS. INSULATION



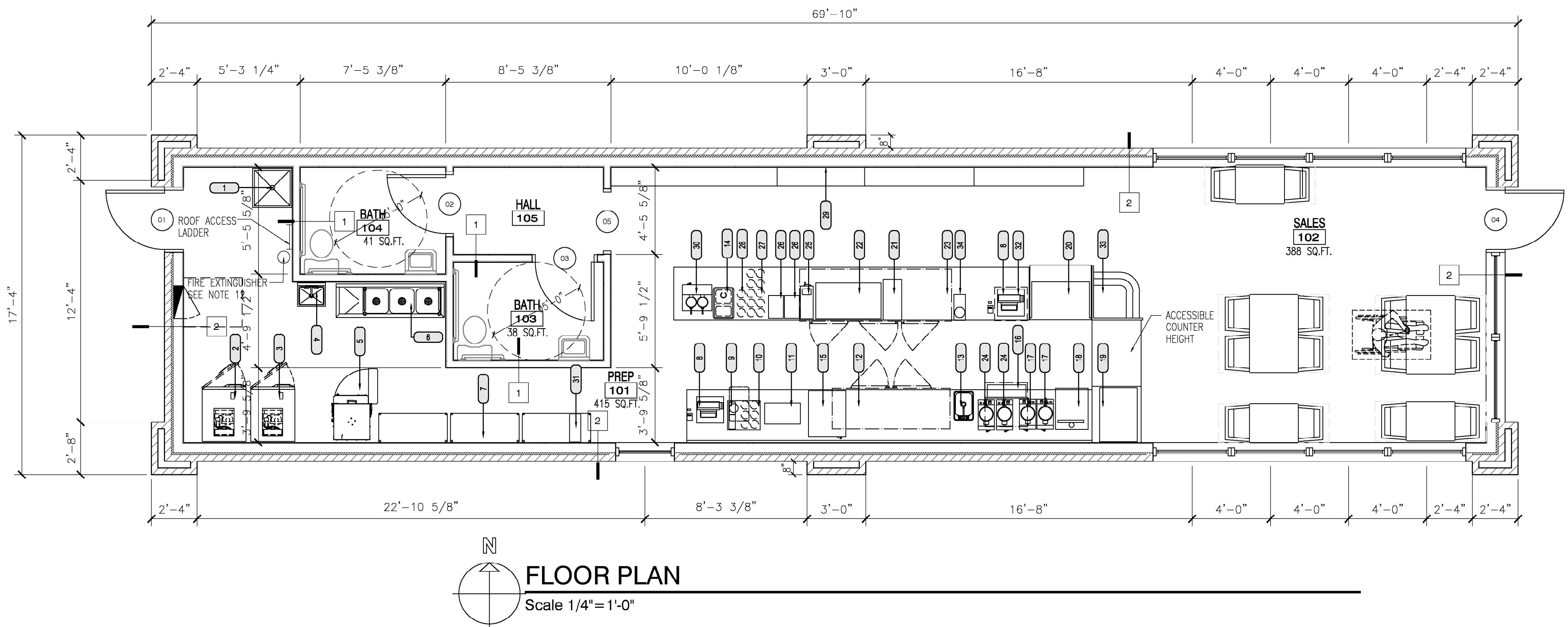
1 WALL TYPE
1. GYPSUM BOARD: 5/8 IN. THICK GYPSUM BOARD APPLIED VERTICALLY.
2. WOOD STUDS: 2X6 WOOD STUDS @16" O.C.
3. INSULATION: MIN. 3-1/2 IN. THICK FIBERGLASS. INSULATION
4. BRICK WAINSCOT

ROOM FINISH SCHEDULE									
ROOM NUMBER	ROOM NAME	FLOOR	WALLS				CEILING		NOTES
			N	S	E	W	MATL	HEIGHT	
101	PREP	SEALED CONC.	FRP	FRP	FRP	FRP	2X4	8'-0"	---
102	SALES	SEALED CONC.	GYP.BD	GYP.BD	GYP.BD	GYP.BD	EXPOSED	12'-0"	---
103	BATH	TILE	TILE 4" A.F.F.	TILE 4" A.F.F.	TILE 4" A.F.F.	TILE 4" A.F.F.	2X4	8'-6"	---
104	BATH	TILE	TILE 4" A.F.F.	TILE 4" A.F.F.	TILE 4" A.F.F.	TILE 4" A.F.F.	2X4	8'-0"	---
105	HALL	SEALED CONC.	GYP.BD	GYP.BD	GYP.BD	GYP.BD	2X4	8'-0"	---

LEGEND			
	NEW STUD WALLS		PARTITION TYPE
	NEW STUD WALLS		DOOR NUMBER
	WINDOW TAG		

DOOR AND FRAME SCHEDULE									
DOOR					FRAME	HARDWARE	NOTES		
MARK	SIZE			MATL					
	WD	HGT	THK		MATL	SET NO			
01	3'-0"	6'-8"	1 3/4"	GLASS	MTL				
02	3'-0"	6'-8"	1 3/4"	WD	WD	---	---	---	---
03	3'-0"	6'-8"	1 3/4"	WD	WD	---	---	---	---
04	3'-0"	7'-0"	1 3/4"	GLASS	MTL	---	---	---	---
05	3'-0"	6'-8"	NA	WD	WD	---	---	---	---

EQUIPMENT LIST		
EQ#	QTY	DESCRIPTION
1	1	MOP SINK
2	1	FREEZER
3	1	REFRIGERATOR
4	1	HAND SINK
5	1	DISHWASHER
6	1	3 COMPARTMENT SINK
7	3	SHELVING
8	2	P.O.S.
9	1	UNDERCOUNTER TRASH CONTAINER
10	1	EGG MAKER
11	1	MICROWAVE
12	1	REFRIGERATED PREP TABLE
13	1	DROP IN HAND SINK
14	1	ICE BIN
15	1	OVENTOASTER
16	1	UNDERCOUNTER ICE MAKER
17	2	BLENDERS
18	1	KOMBUCHA ON TAP
19	1	BEVERAGE COOLER
20	1	PASTRY DISPLAY
21	1	COLD BREW ON TAP
22	1	ESPRESSO MACHINE
23	1	UNDERCOUNTER REFRIGERATOR
24	2	ICE TEA MAKER
25	1	TAMPER
26	2	GRINDERS
27	-	SYRUPS
28	-	CUPS
29	-	PRODUCT DISPLAY
30	1	TWIN AIRPOT COFFEE BREWER
31	1	GHZ GRINDER
32	1	FLOOR SAFE
33	1	DISPLAY CASE
34	1	FLUSH MOUNT RINSER

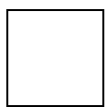
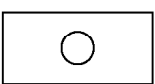


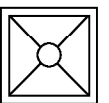
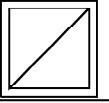






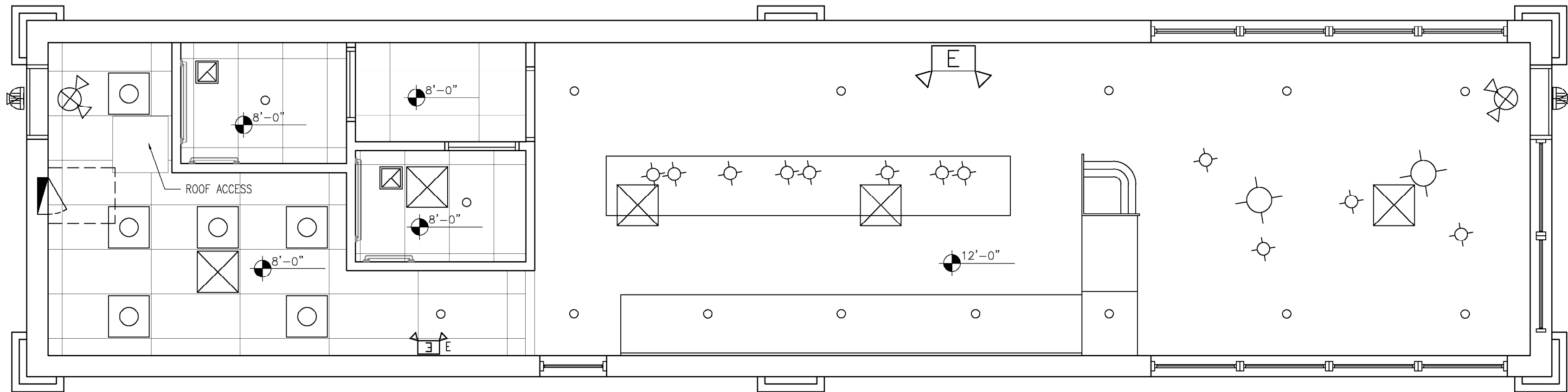
GENERAL NOTES

- All refrigeration units are capable of maintaining refrigerated foods at or below 41° Fahrenheit at all times. Reach-in refrigerators, prep refrigerators, refrigerated display cases, and freezers must be specifically constructed for commercial use.
- This is a non-smoking establishment.
- All cooking and food service equipment must be commercial grade and shall meet NSF Standards.
- Adequate and suitable space has been provided for the storage of food. Approximately twenty-five percent (25%) of the food preparation area, and at least 32 lineal feet of approved shelving for each 100 square feet of storage area are considered adequate (excluding refrigeration). Shelving is easily cleanable and durable. The lowest shelf of any shelving unit shall be at least six inches above the floor.
- The floor surfaces, in all areas in which food is prepared, packaged, or stored, where any utensil is washed, where refuse or garbage is stored and where janitorial facilities are located, and in all toilet and hand washing areas, shall be smooth and of such durable construction and non-absorbent material as to be easily cleaned. Floor surfaces are covered at the juncture of the floor and wall, with a three-eighths inch (3/8") minimum radius coving.
- Walls and ceilings of food preparation and utensil washing areas shall be light colored and constructed with materials that provide a durable, smooth, non-absorbent, washable surface. Conduits of all types shall be installed within walls as practicable. When otherwise installed, they are mounted or enclosed so as to facilitate cleaning.
- The delivery door leading to the outside is the overhead door #14.
- The main entrance door leading to the outside shall have a self-closing device. Provide a sign on the main exit door that says "THIS DOOR MUST REMAIN UNLOCKED DURING BUSINESS HOURS" instead of panic hardware.
- All floors, walls and ceilings in the kitchen, restrooms, food prep areas and storage areas will be smooth washable and nonabsorbent.
- Install batt insulation in all interior walls for sound transmission.
- Building address shall be posted in a conspicuous place during construction.
- Fire extinguishers shall be installed in accordance with the International Fire Code and NFPA 10. Extinguishers shall be mounted 5 feet for 40 lbs or 3.5 feet for greater the 40 lbs above finished floor. Provide blocking in wall for mounting. A class "K" fire extinguisher shall be supplied in the kitchen.
- Tactile "Exit" signs shall be placed at each Exit door. ADA required wall signage shall be placed on the latch side of single doors 9-inches center-line from the door edge. Tactile signs shall be installed 48-inches minimum and 60-inches maximum AFF to the baseline of the highest text.
- Verify existing dimensions before construction.
- Type I Hood system must have a current inspection tag and shall be cleaned upon final inspection.
- Additional emergency lighting/exit signs may be required if upon final fire inspection it is determined there is not adequate lighting to show a clear path of egress.
- Supply Knox box at front door facing the street. Install box 5' to the top of the box.
- Install towel and soap dispenser at all hand sinks
- Use suspended ceiling with a flame spread rating of 25.

Door Hardware:

- All doors required for egress (exit doors) shall be installed with approved hardware as listed below:
- Exit doors shall be operable from the inside without the use of a key or any special knowledge of effort. For exception on the main exterior exits. See note 8 sheet A1.
 - Manually operated edge- or surface-mounted flush bolts and surface bolts are prohibited.
 - Handles, pulls, latches, locks and other operating devices on accessible doors shall be easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist to operate. Lever-operated mechanisms, push-type mechanisms and U-shaped mechanisms are acceptable designs.

SUPPLIED AND INSTALLED BY GC CEILING SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	ACOUSTICAL CEILING TILE SEE FINISH SCHEDULE
	2X2 LED TROFFER
	PENDANT LIGHT
	PENDANT LIGHT
	SUPPLY AIR DIFFUSERS— FINISH TO MATCH ADJACENT CEILING TILE SEE MECHANICAL DWGS.
	RETURN AIR DIFFUSERS— FINISH TO MATCH ADJACENT CEILING TILE. SEE MECHANICAL DWGS.
	EMERGENCY LIGHT SEE ELECTRICAL DWGS.
	EXTERIOR EMERGENCY LIGHT SEE ELECTRICAL DWGS.
	EXIT LIGHT/EMERGENCY LIGHT. SEE ELECTRICAL DWGS.
	BATHROOM EXHAUST



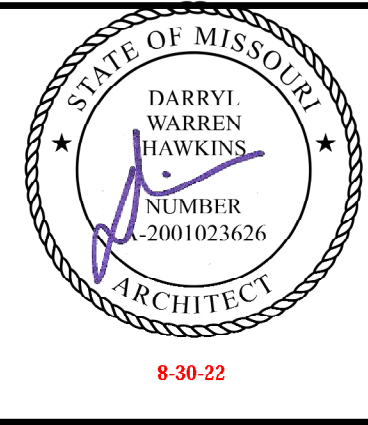
REFLECTED CEILING PLAN

Scale 1/4"=1'-0"

INNOVATIVE DESIGN & RENOVATION

8011 PASEO SUITE 201
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Arktec35@aol.com

DARRYL W. HAWKINS



GROUND ROOTS COFFEE

3680 NE AKIN DRIVE SUITE 144
LEES SUMMIT, MO

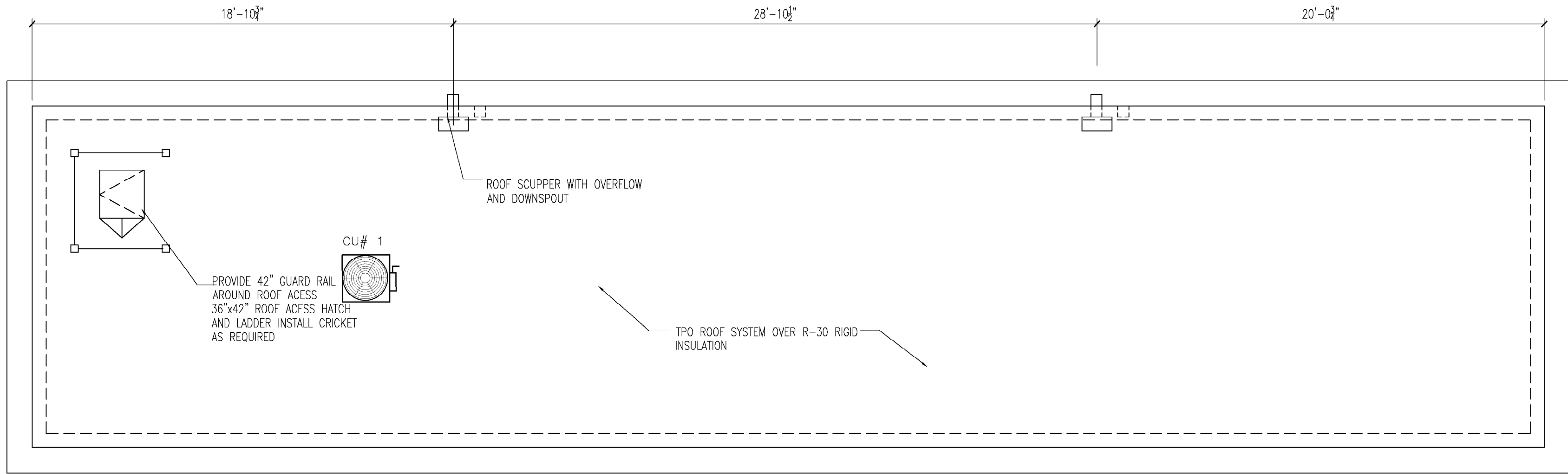
date 5-11-22
drawn by R.E.S.
checked by
revised

sheet no.

A2

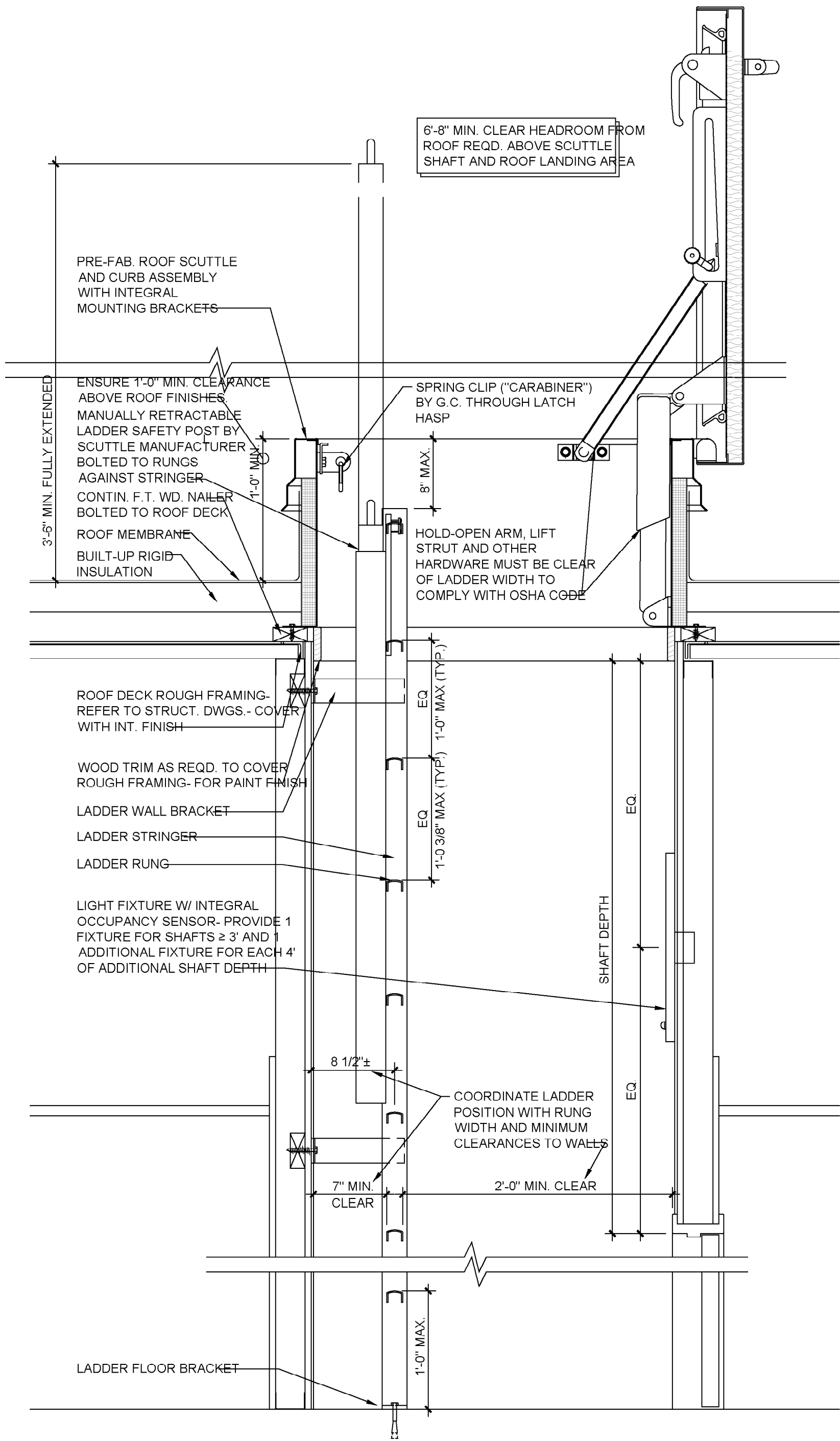
ROOF NOTES

1. ROOFING SUBCONTRACTOR TO COORDINATE LOCATION OF H.V.A.C. UNITS AND ROOF TOP ACCESSORIES WITH STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR PLACEMENT AND RIGID BOARD INSULATION LAY-OUT AND SUBSEQUENT INSTALLATION IN ORDER TO AVOID PONDING WATER CONDITIONS ATTRIBUTABLE TO BOARD LAY-OUT ISSUES.
2. ROOF SYSTEMS SPECIFIED SHALL BE APPLIED ONLY BY MANUFACTURER APPROVED APPLICATOR IN ORDER TO MEET WARRANTY REQUIREMENTS.
3. HVAC CONDENSATE LINES TO TERMINATE INTO GUTTER. COORD. WITH LOCAL AHJ TO DETERMINE IF CONDENSATE LINES ARE REQUIRED TO TIE INTO SANITARY.
4. ALL CURB FOR ROOF TOP EQUIPMENT TO BE FLASHED USING PREFABRICATED CUSTOM CURB FLASHING BY THE ROOFING MANUFACTURER.
5. ALL FLASHING CEMENTS, PRODUCTS AND ACCESSORIES SHALL BE SUPPLIED AND APPROVED BY ROOFING MANUFACTURER.
6. RIGID INSULATION TO BE MECHANICALLY FASTENED PER FACTORY
7. THE ROOF STRUCTURE SHALL NOT BE USED FOR STOCKPILING OF EQUIPMENT OR MATERIALS UNLESS APPROVED BY THE ARCHITECT, STRUCTURAL ENGINEER AND THE JOIST MANUFACTURER.
8. COORDINATE ROOF ELEVATIONS WITH STRUCTURAL DRAWINGS.
9. ALL ROOFING DETAILS TO BE VERIFIED AND COORDINATED WITH MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES, SPECIFICATIONS, AND WARRANTIES.
10. USE WADE MODEL 3004 CAST IRON ROOF DRAIN WITH FLANGE, FLASHING RING WITH GRAVEL STOP AND POLYPROPYLENE MUSHROOM LOCKING DOME. PROVIDE OVERFLOW.



ROOF PLAN

Scale 1/4"=1'-0"



ROOF HATCH DETAILS

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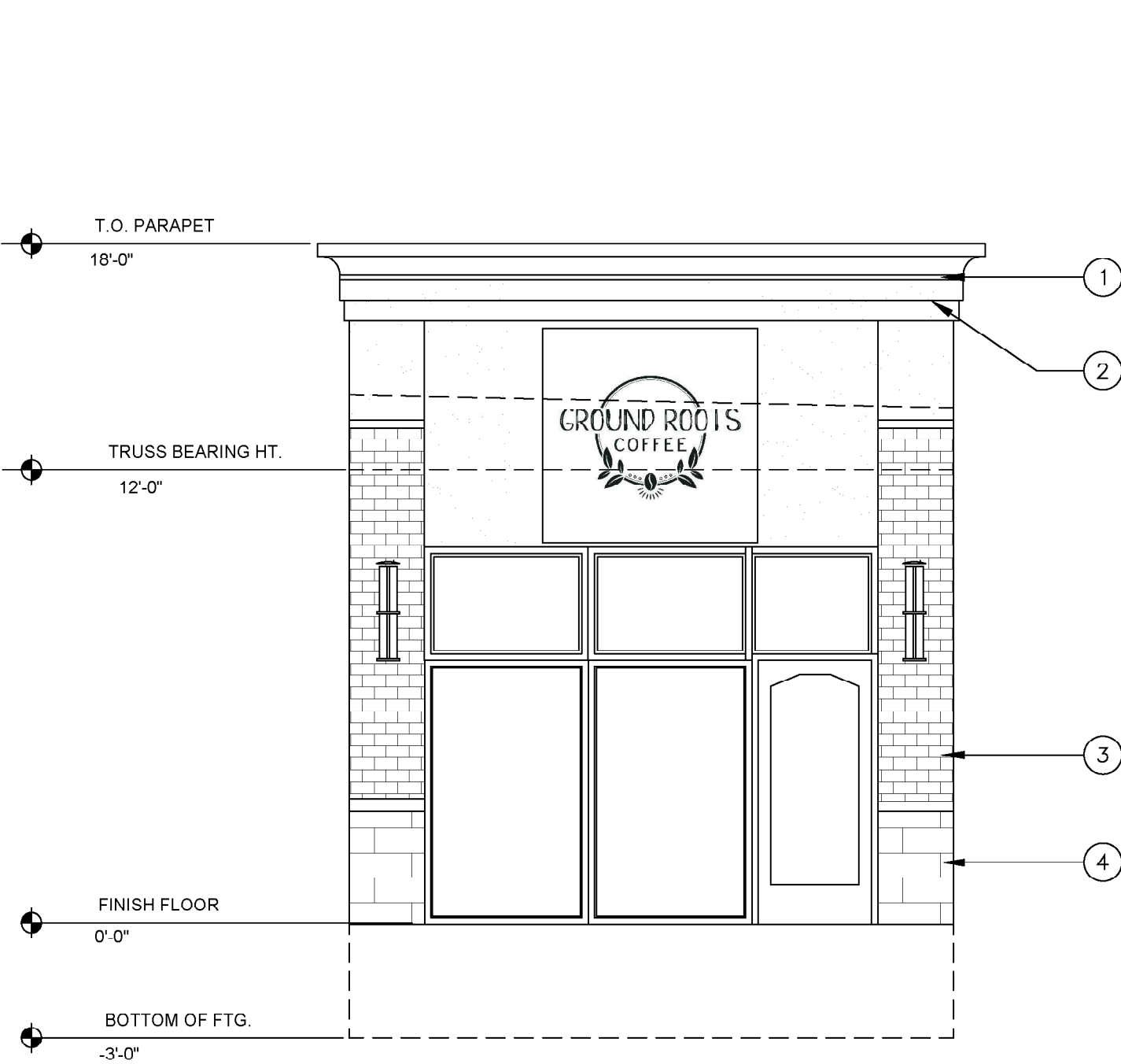
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drawn by R.E.S.
checked by B-29-22
revised

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A3

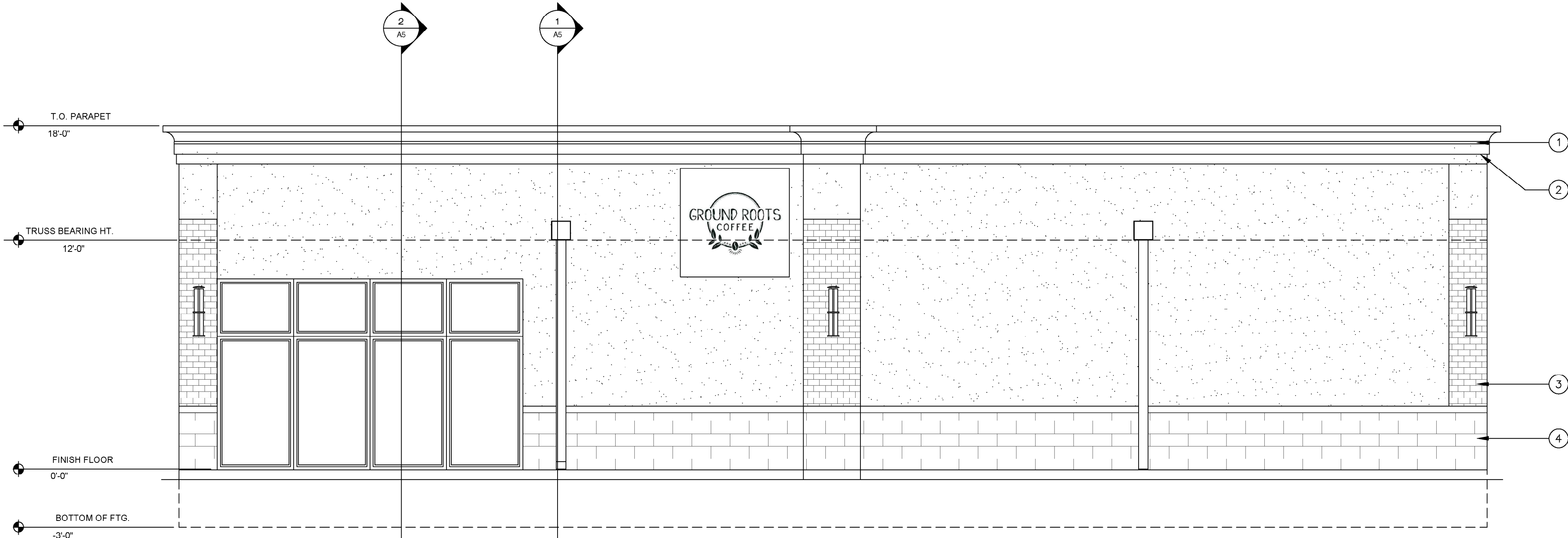
FINISH SCHEDULE

- 1. BUILT UP E.F.I.S FOR CORNICE
- 2. E.F.I.S. MATCH EXISTING SHOPPING CENTER COLOR
- 3. BRICK MATCH EXISTING SHOPPING CENTER COLOR
- 4. STONE WAINSCOT MATCH EXISTING SHOPPING CENTER COLOR



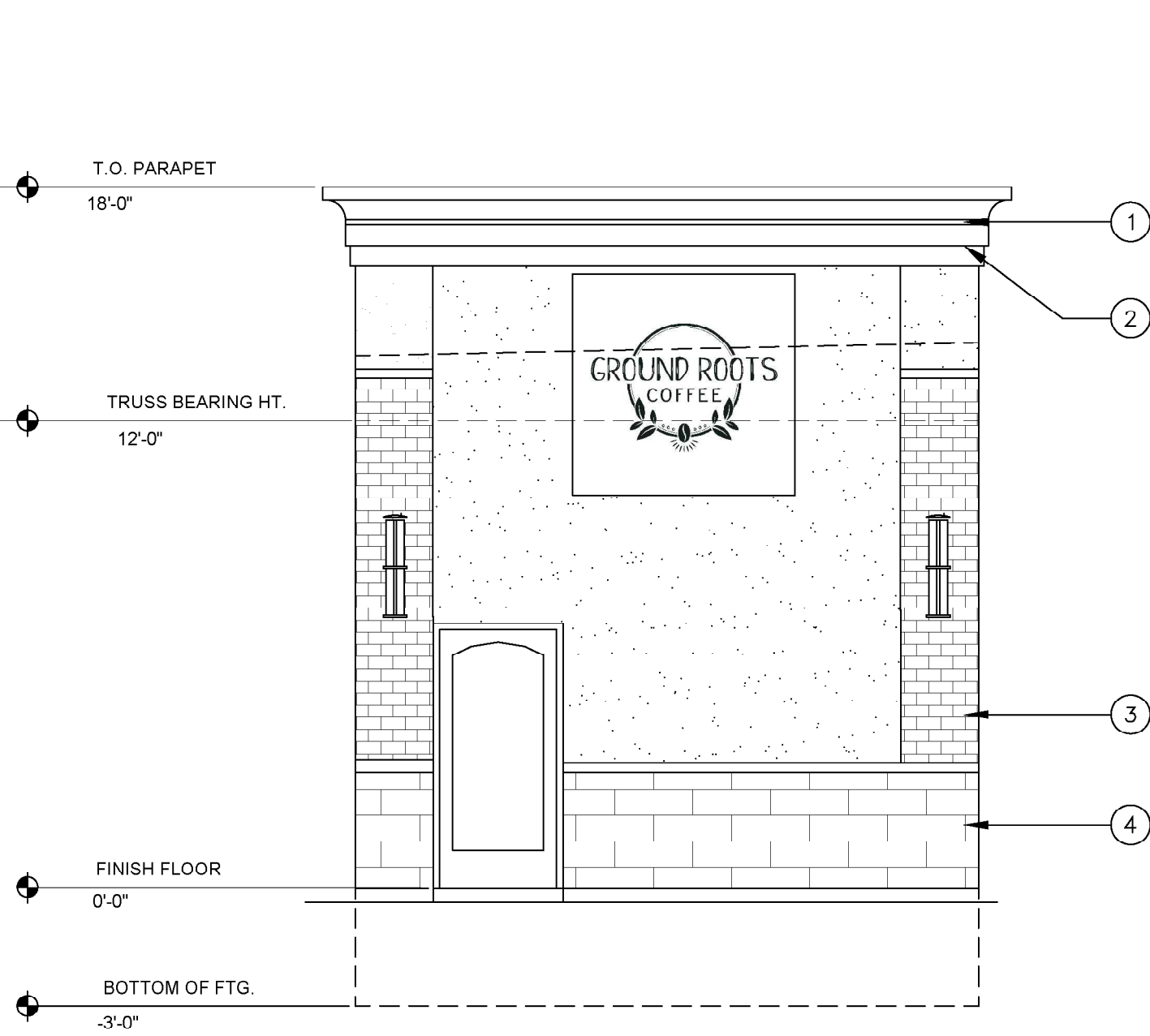
NORTH ELEVATION

Scale 1/4"=1'-0"



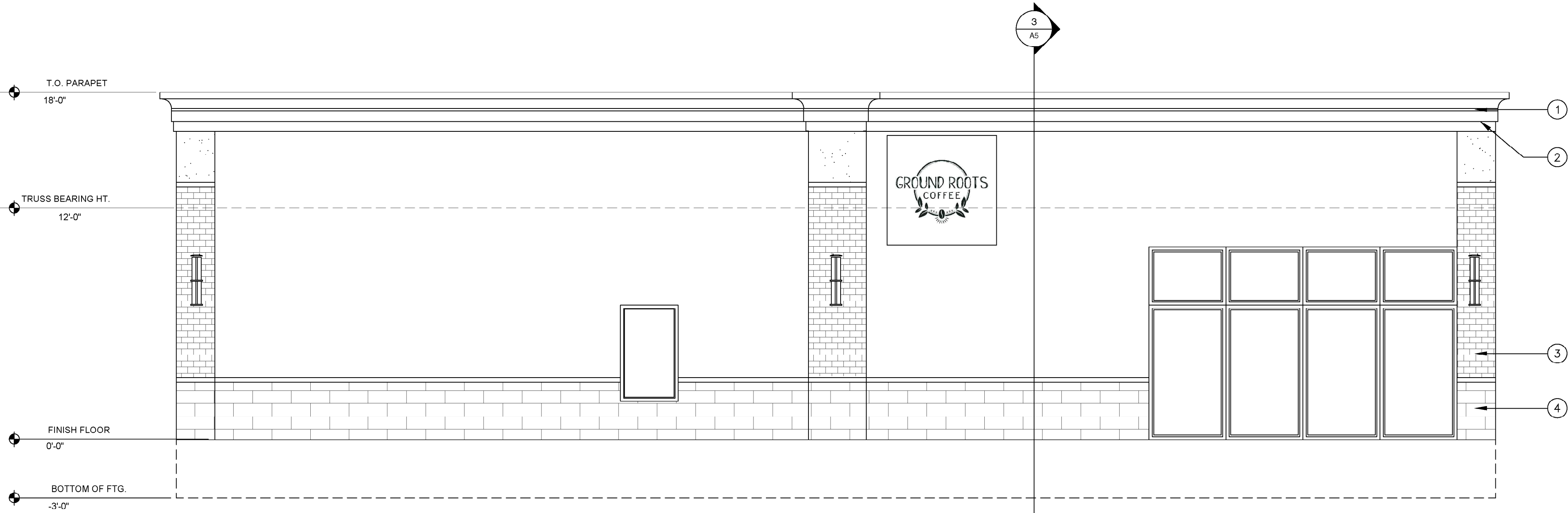
EAST ELEVATION

Scale 1/4"=1'-0"



SOUTH ELEVATION

Scale 1/4"=1'-0"



WEST ELEVATION

Scale 1/4"=1'-0"

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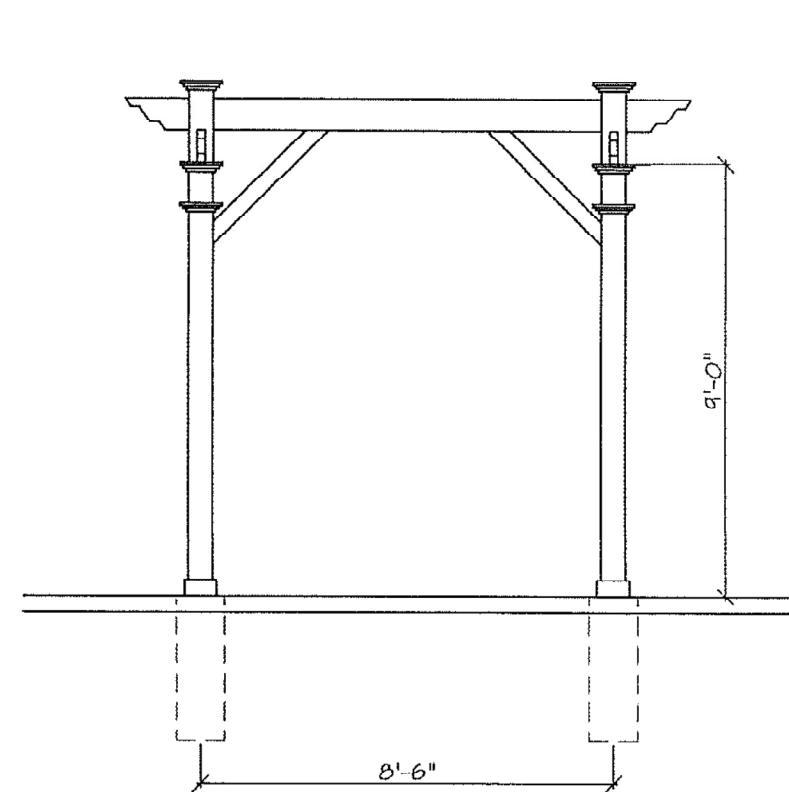
GROUND ROOTS COFFEE

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LEES SUMMIT, MO

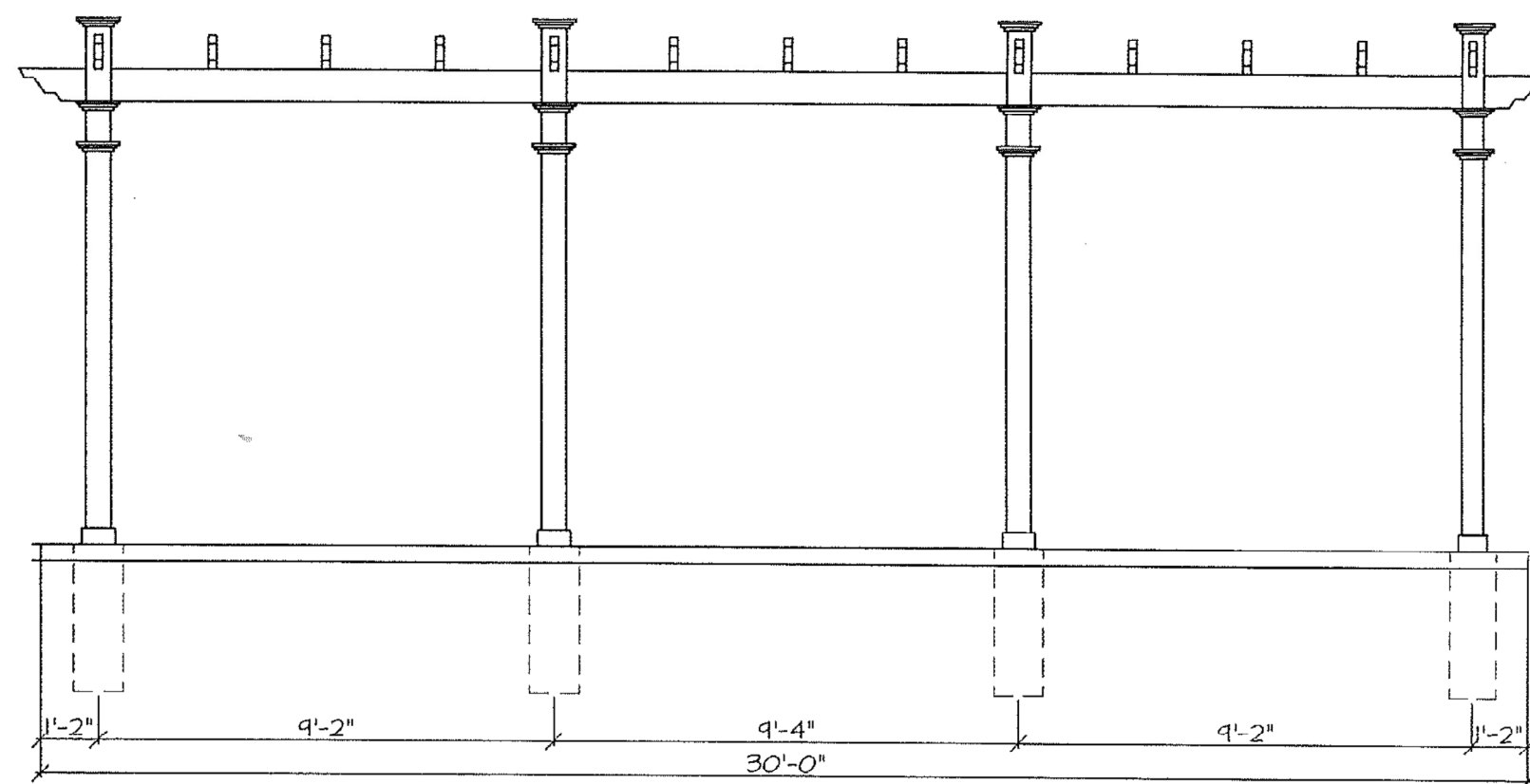
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drawn by R.E.S.
checked by
revised

sheet no.

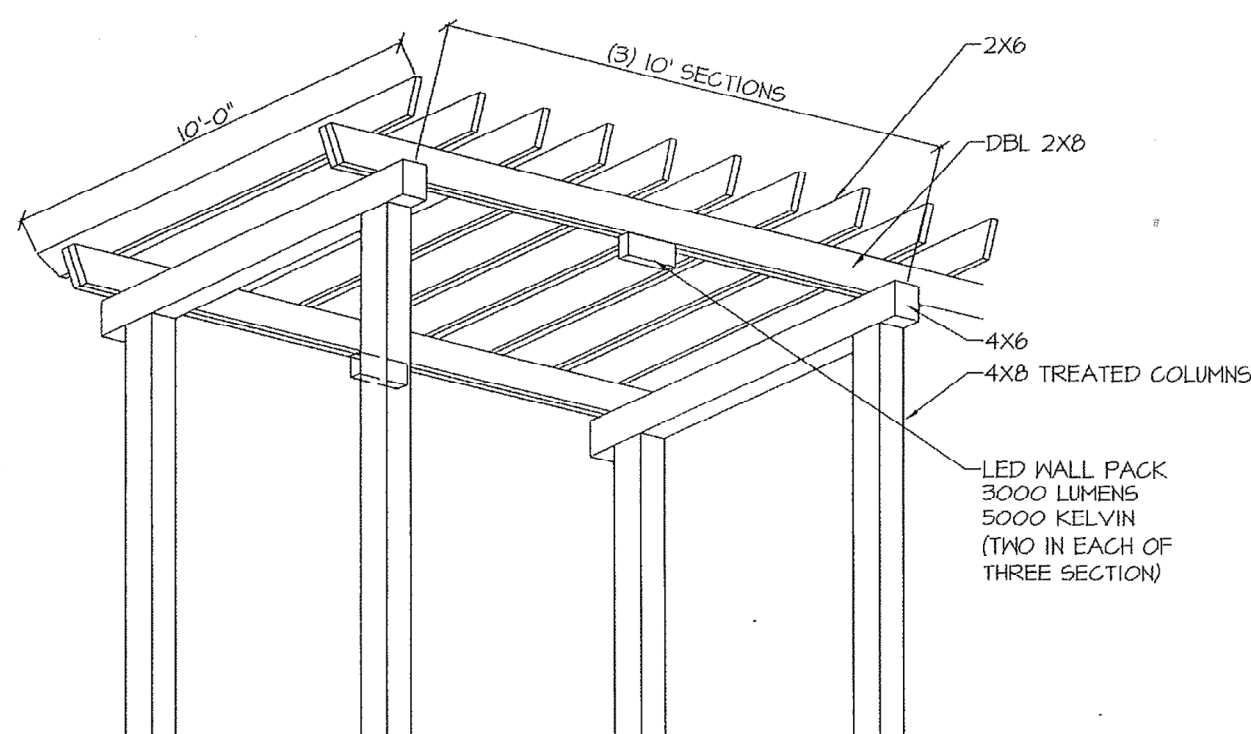
A4



PURGOLA SIDE ELEVATION
Scale 1/4"=1'-0"



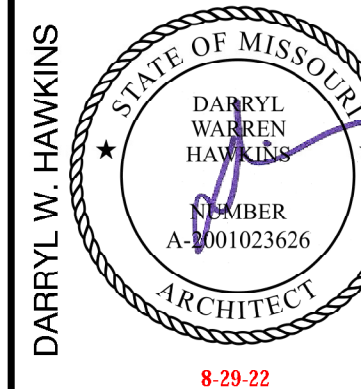
PURGOLA FRONT ELEVATION
Scale 1/4"=1'-0"



PURGOLA DETAIL
Scale 1/4"=1'-0"

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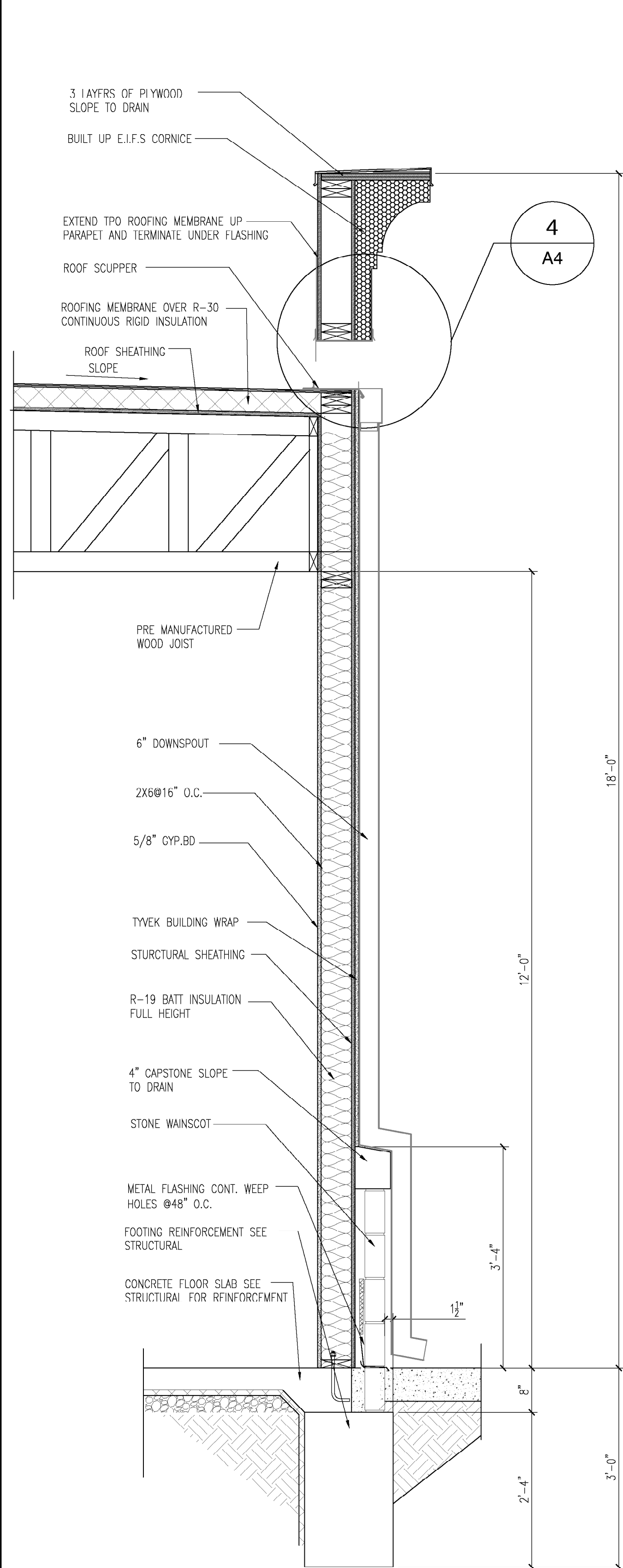
GROUND ROOTS COFFEE

3680 NE AKIN DRIVE SUITE 144 LEE'S SUMMIT, MO

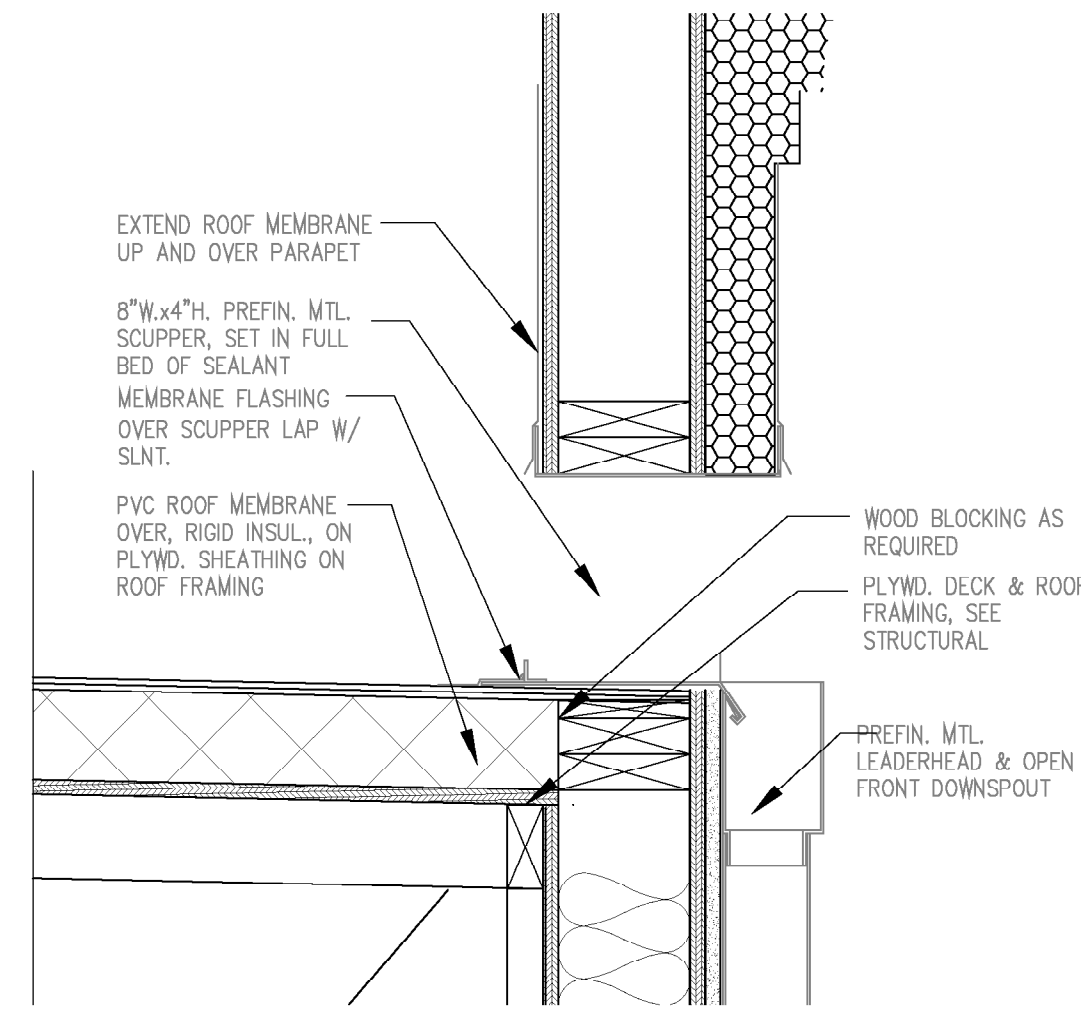
date 5-11-22
drawn by R.E.S.
checked by
revised

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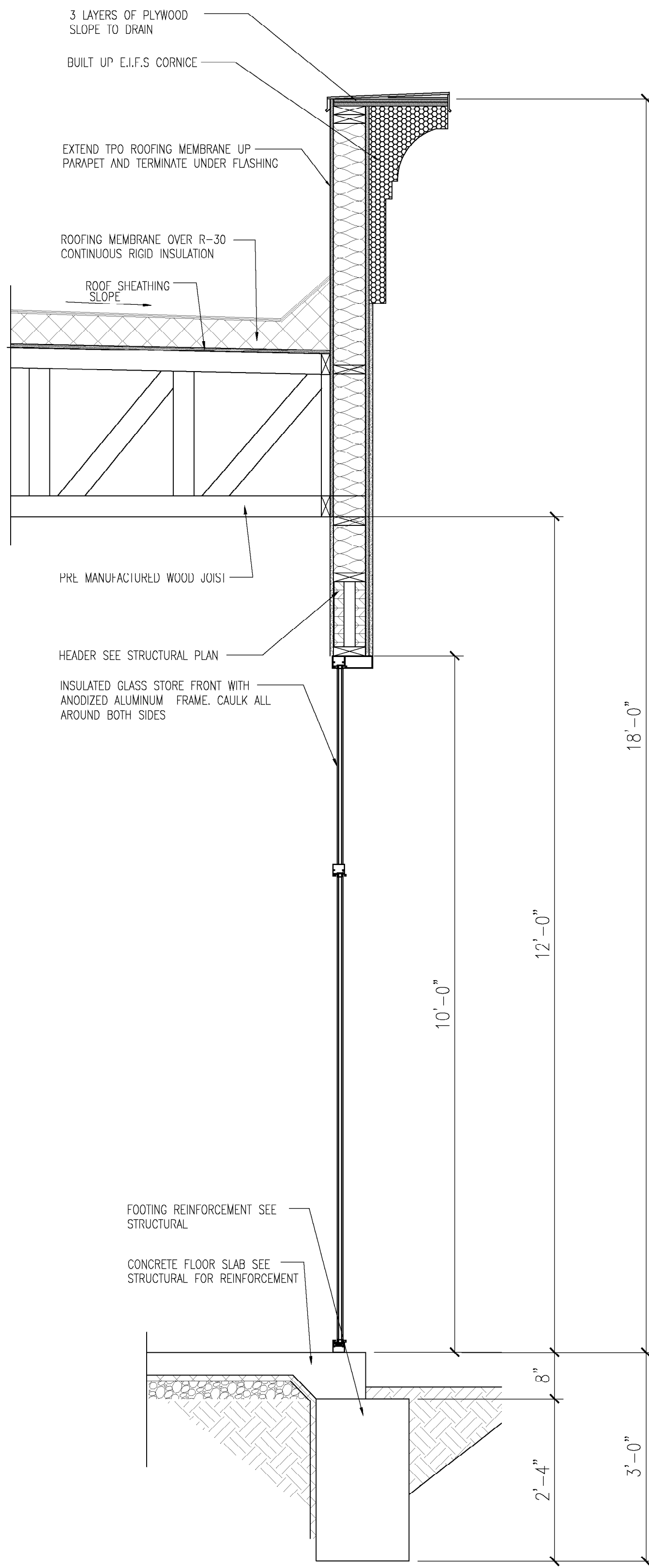
A5



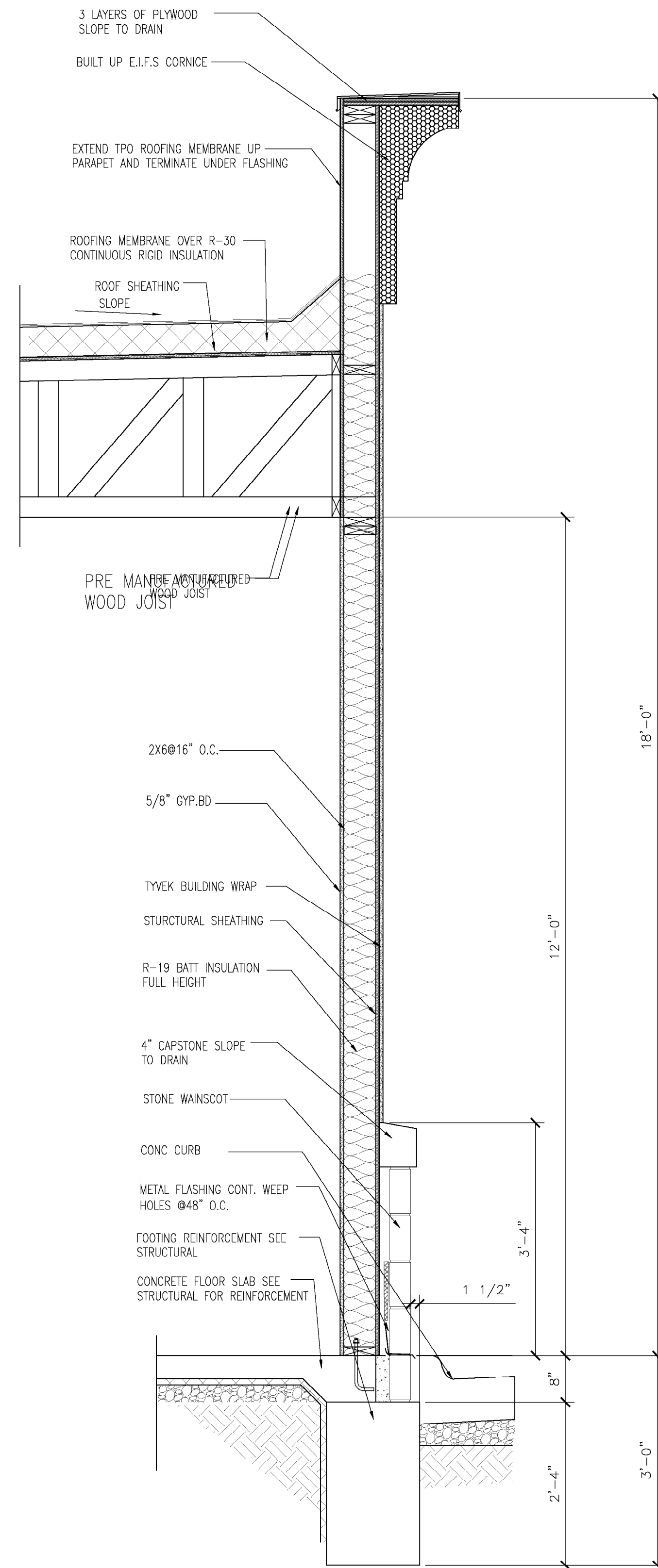
1 SECTION
A4 Scale 3/4" = 1'-0"



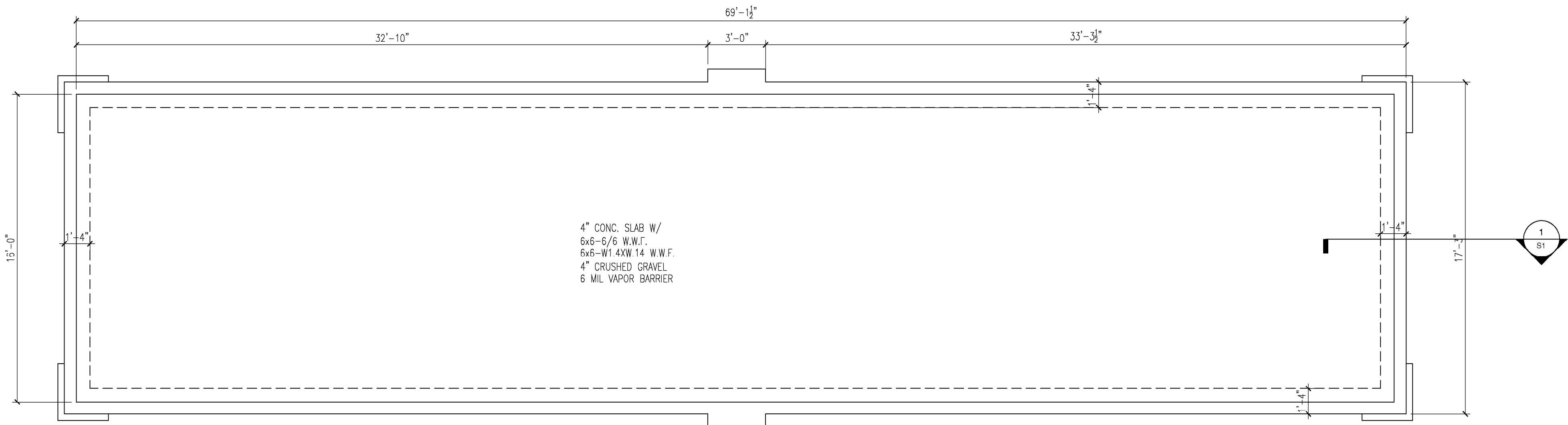
4 SECTION
A4 Scale 3/4" = 1'-0"



2 SECTION
A4 Scale 3/4" = 1'-0"



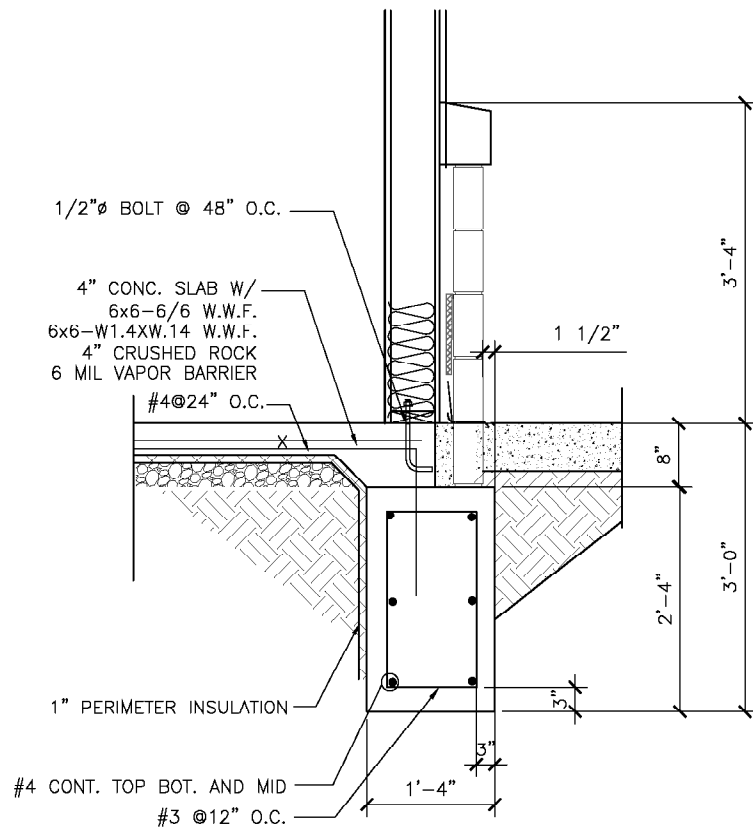
3 SECTION
A4 Scale 3/4" = 1'-0"



FOUNDATION PLAN

Scale 1/4"=1'-0"

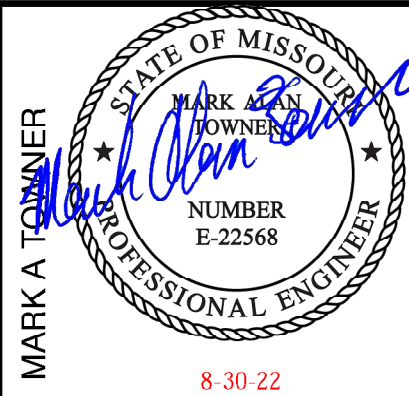
- A. Concrete
- Concrete shall develop a 28 day compressive strength (f_c) of at least 4000 psi and shall be in accordance with ACI 301. Cement shall be Type I (gray) Portland. Mix shall include a polymeric compound water reducing admixture which complies with ASTM C494 as per manufacturer's recommendations. Air entrainment shall be used. Contractor shall satisfy himself that the mix design is acceptable for its intended purpose.
 - Coarse aggregate: regular weight concrete ASTM C33-81, maximum size as indicated for class of concrete.
 - Fine aggregate: ASTM C33-81, fineness modulus 2.3 to 3.1.
 - Concrete shall be placed and cured in accordance with ACI 302.1R. Finish tolerance shall be in accordance with ACI 117 and shall conform to the following F number requirement:
Specified overall value: $Ff-20/Ff-15$
Specified local value: $Ff-15/Ff-10$
 - Protect concrete from freezing with a blanket or straw covering. Follow ACI 306R-78 for cold weather conditions.
 - Protect concrete from hot weather according to ACI 306R-77.
- B. SOIL
- SOIL BEARING $q=1500$ psf
 - Foundation design is based on the reactions indicated and the soil bearing capacity.



1 SECTION

S1 Scale 1/2"=1'-0"

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GROUND ROOTS COFFEE

3680 NE AKIN DRIVE SUITE 144
LEES SUMMIT, MO

date 5-11-22
drawn by R.E.S.
checked by
revised

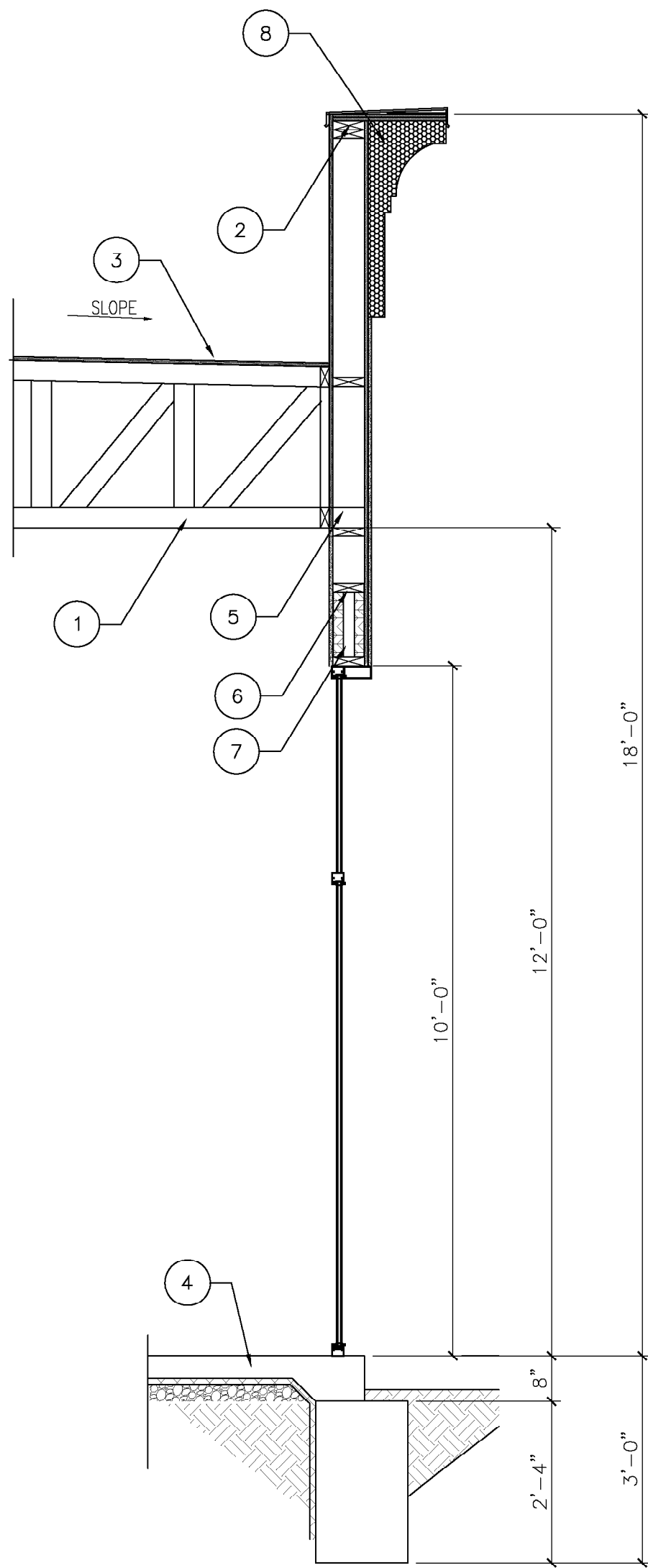
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S1

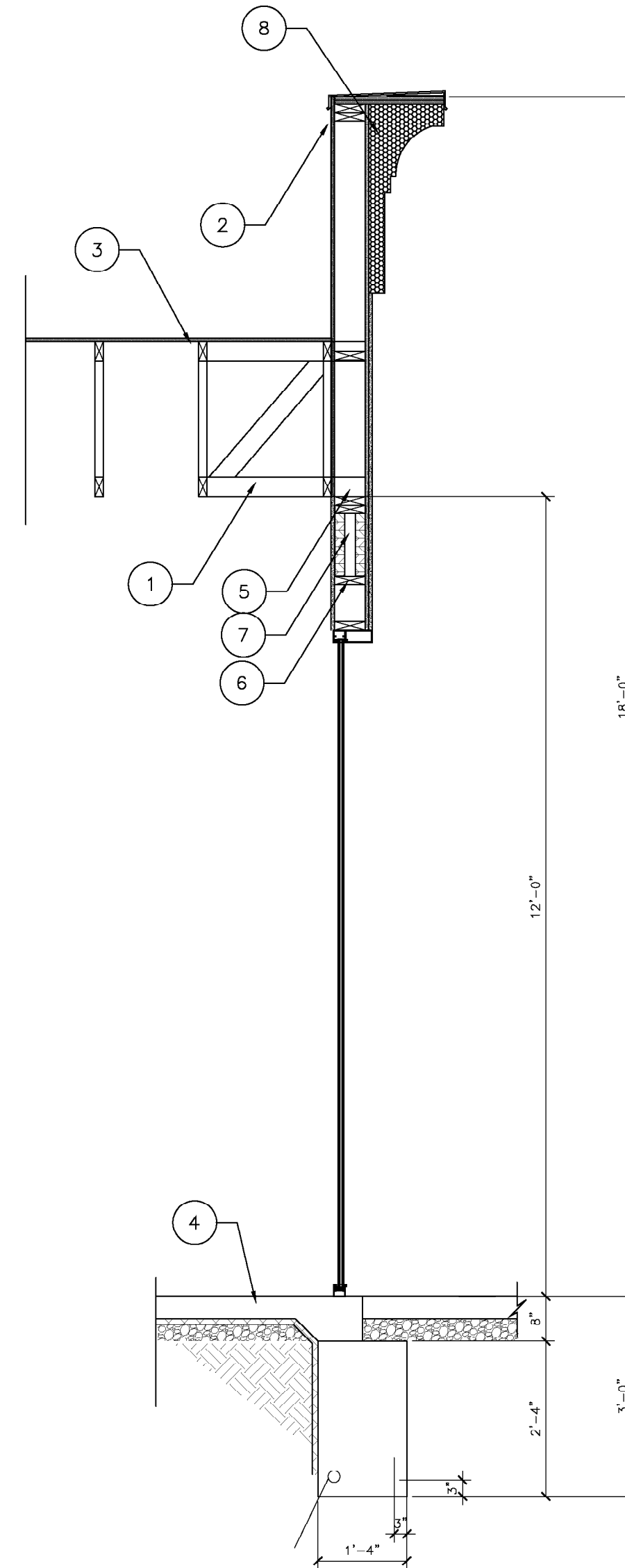


KEYED NOTES

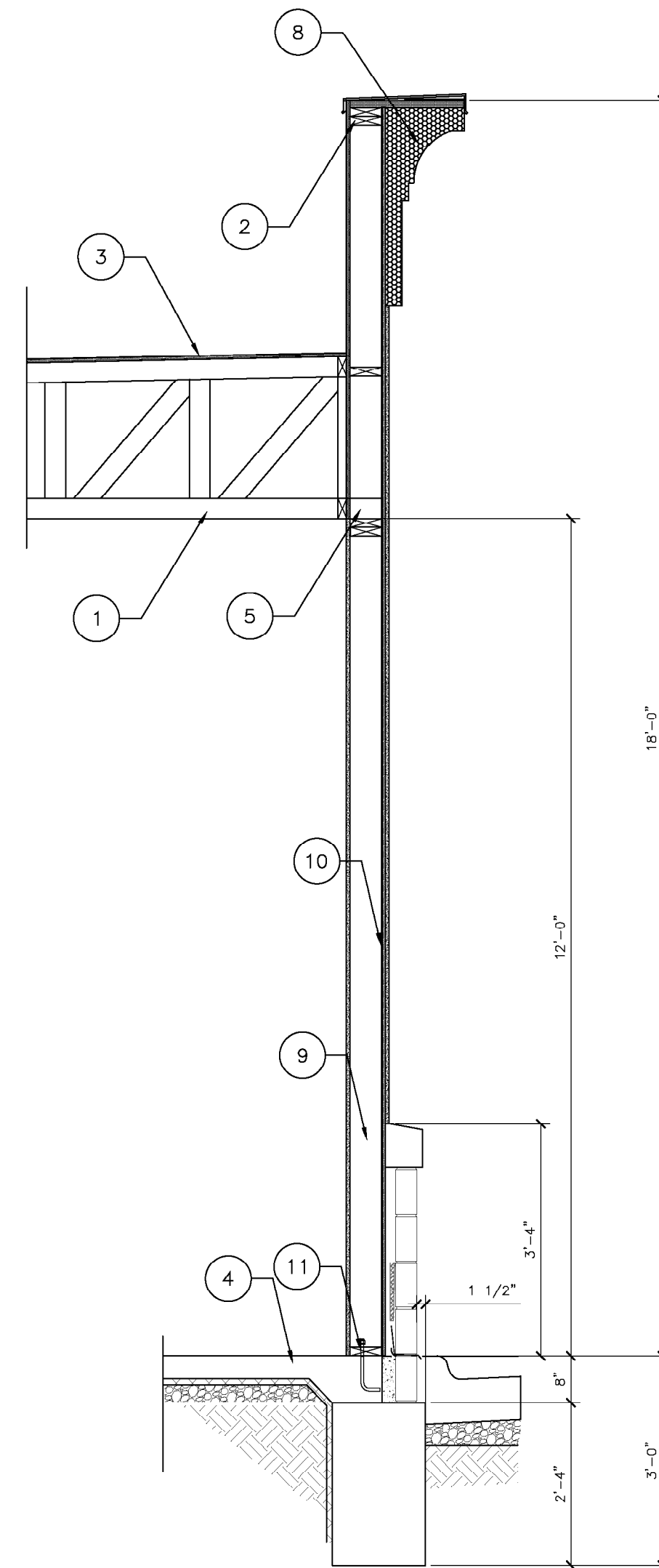
1. PRE-ENGINEERED ROOF TRUSSES BY TRUSS MANUFACTURES
2. DOUBLE TOP PLATE
3. ROOF SHEATHING 15/32
4. SLAB ON GRADE
5. REFER TO TRUSS MANUFACTURER DESIGN FOR TIEDOWN REQUIREMENTS MIN. SIMPSON H2.5@ EACH TRUSS
6. TOP PLATE
7. 3-1 7/8x11 1/4 LVL
8. E.F.I.S CORNICE SEE ARCH.
9. 2X6 @16" O.C.
10. MIN 7/16 WOOD STRUCTURAL SHEATHING MIN.
11. 5/8" A.B. 6'-0" O.C.
12. MIN. 1000 LBS CAPACITY TIE DOWN DEVICE EMBEDDED INTO CONCRETE AND NAILED INTO FRAMING.
13. 2-2X6
14. TENSION STRAP



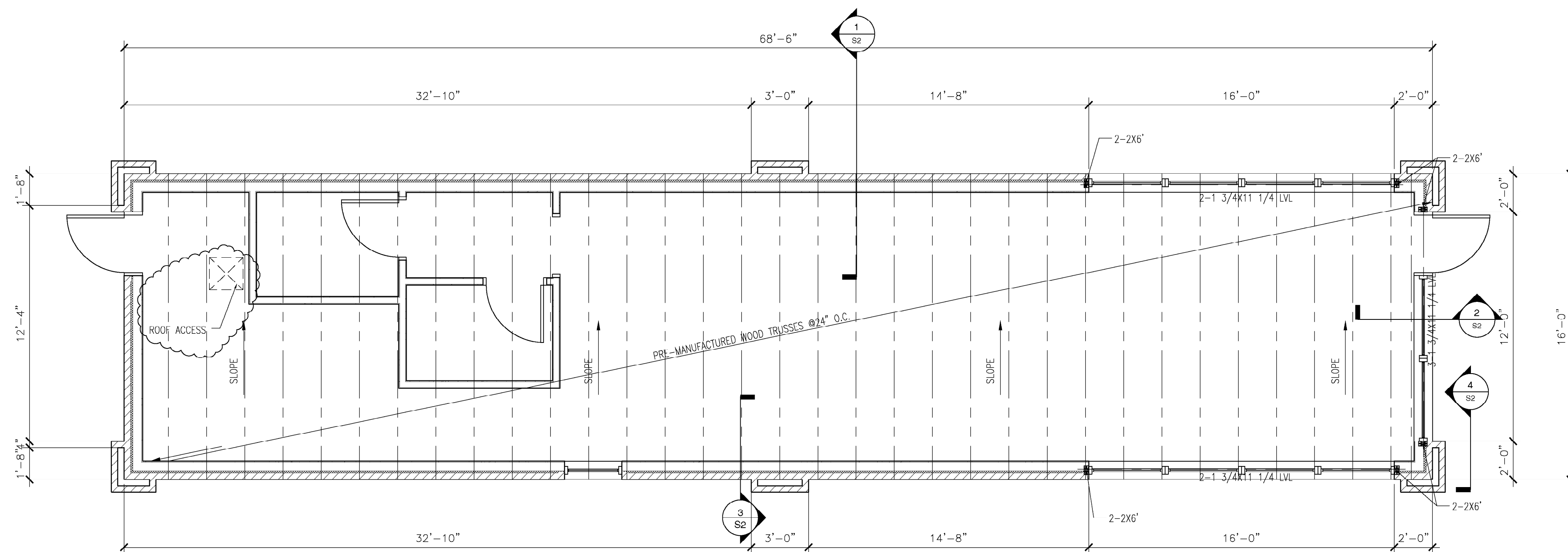
1 SECTION
S2 Scale 1/2"=1'-0"



2 SECTION
S2 Scale 1/2"=1'-0"

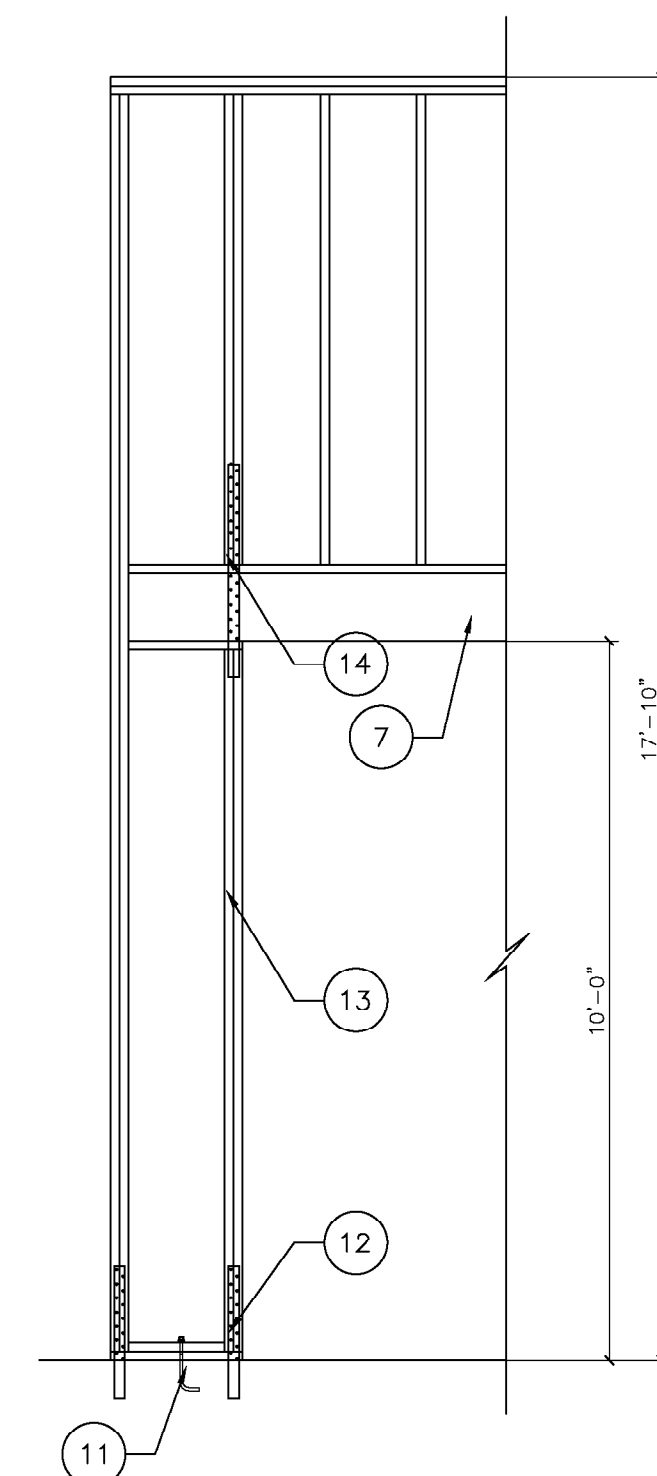


3 SECTION
S2 Scale 1/2"=1'-0"



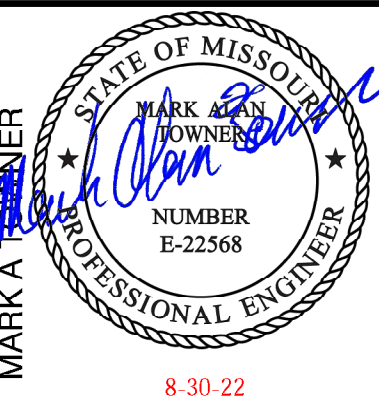
ROOF FRAMING PLAN

Scale 1/4"=1'-0"



4 SECTION
S2 Scale 1/2"=1'-0"

MARK A TOWNER
8011 PASEO SUITE 201
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GROUND ROOTS COFFEE

3680 NE AKIN DRIVE SUITE 144
LEES SUMMIT, MO

date 5-11-22
drawn by RES.
checked by 8-29-22
revised

sheet no.

S2

STRUCTURAL DESIGN CRITERIA (2018 IBC AND ASCE 7-10):

1. BUILDING OCCUPANCY RISK CATEGORY II.
2. LIVE LOADS [UNIFORM (PSF) / POINT LOADS (KIPS)]:
- ~ ROOF.....20 PSF / 300#
3. ROOF SNOW LOAD:
- ~ GROUND SNOW LOAD (Pg).....20 PSF
 - ~ FLAT ROOF SNOW LOAD (Pf).....20 PSF
 - ~ SNOW EXPOSURE FACTOR (Ce).....1.0
 - ~ SNOW LOAD IMPORTANCE FACTOR (Is).....1.0
 - ~ THERMAL FACTOR (Ct).....1.0

4. WIND DESIGN DATA:
- ~ BASIC WIND SPEED (3 SEC GUST).....115 MPH
 - ~ WIND IMPORTANCE FACTOR (Iw).....1.0
 - ~ WIND EXPOSURE.....B
 - ~ INTERNAL PRESSURE COEFF.....0.18
- ~ COMPONENTS AND CLADDING WIND PRESSURE:
- WALLS AT CORNERS & EDGES.....30 PSF
 - ALL OTHER MAIN WALL CONDITIONS.....25 PSF
 - PARAPET EDGES AND CORNERS.....55 PSF
 - PARAPET OTHER ROOF CONDITIONS.....45 PSF

5. EARTHQUAKE DESIGN DATA:
- ~ SEISMIC IMPORTANCE FACTOR (Ie).....1.0
 - ~ MAPPED SPECTRAL RESP ACCEL (Ss / S1).....0.12 / 0.07
 - ~ SITE CLASS.....C
 - ~ SPECTRAL RESPONSE COEFF (Sds / Sd1).....0.13 / 0.11
 - ~ SEISMIC DESIGN CATEGORY.....B
 - ~ SEISMIC FORCE RESISTING SYSTEM.....R=7, WOOD
 - ~ SEISMIC RESPONSE COEFF (Cs).....0.043
 - ~ ANALYSIS PROCEDURE.....ELF

6. PREFABRICATED WOOD TRUSS DESIGN CRITERIA:
- ~ TOP CHORD DEAD LOAD.....10 PSF
 - ~ TOP CHORD ROOF LIVE LOAD.....20 PSF
 - ~ NET UPLIFT LOAD.....11 PSF
 - ~ BOTT CHORD DEAD LOAD.....5 PSF
 - ~ LIVE LOAD DEFLECTION CRITERIA.....MIN OF L/360 OR 0.5"
 - ~ TOTAL LOAD DEFLECTION CRITERIA.....MIN OF L/240 OR 1"

STRUCTURAL GENERAL NOTES:

1. DESIGN AND CONSTRUCTION SHALL CONFORM TO THE "INTERNATIONAL BUILDING CODE, 2018 EDITION" REFER TO THE SPECIAL STRUCTURAL INSPECTION NOTES FOR ADDITIONAL REQUIREMENTS.

2. CONTRACTOR TO VERIFY ALL DIMENSIONS, ELEVATIONS AND EXISTING CONDITIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT IMMEDIATELY.

3. IF DISCREPANCIES EXIST BETWEEN STRUCTURAL PLANS, ARCHITECTURAL PLANS, OTHER PLANS, OR SPECIFICATIONS, THE CONTRACTOR OR SUBCONTRACTOR SHALL PROVIDE A WRITTEN REQUEST FOR CLARIFICATION FROM THE ARCHITECT AND/OR ENGINEER PRIOR TO PROCEEDING WITH THE WORK

4. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO EXECUTE AND DETERMINE FINAL ERECTION PROCEDURES, SEQUENCING AND TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES WHATEVER SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIE DOWNS WHICH MIGHT BE NECESSARY.

5. THE STRUCTURE AND FOUNDATIONS ARE NOT DESIGNED FOR FUTURE EXPANSION.

6. FABRICATORS AND SUPPLIERS SHALL CLEARLY NOTE AND HIGHLIGHT CHANGES MADE IN SHOP DRAWINGS, WHICH DO NOT COMPLY WITH THE CONTRACT DOCUMENTS.

7. COLUMNS, BEAMS, JOISTS, OR TRUSSES SHALL NOT BE FIELD CUT OR TRIMMED FOR ANY REASON WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER.

8. HOLES, PIPES, SLEEVES, ETC. NOT SHOWN ON THE DRAWINGS MUST BE REVIEWED BY THE ARCHITECT BEFORE PLACEMENT THROUGH STRUCTURAL MEMBERS.

9. IF MECHANICAL AND ELECTRICAL EQUIPMENT SIZES, WEIGHTS, OR LOCATIONS DO NOT COINCIDE WITH EQUIPMENT SHOWN ON THE PLANS, COORDINATE ADJUSTMENTS WITH THE ARCHITECT.

10. NO AREA OF THE STRUCTURE SHALL BE LOADED WITH CONSTRUCTION MATERIALS OR EQUIPMENT THAT EXCEEDS FINAL DESIGN CRITERIA.

11. BEAMS, COLUMNS, WALLS AND FOOTING CENTERS SHALL BE CENTERED UNDER SUPPORTING MEMBERS (TYPICAL UNLESS NOTED).

12. FOR DEFERRED SUBMITTALS (EXAMPLES: PRE-ENGINEERED CANOPIES, WOOD TRUSSES, PRECAST CONCRETE ELEMENTS, COLD FORMED FRAMING), SHOP DRAWINGS AND CALCULATIONS SEALED BY A STRUCTURAL ENGINEER LICENSED TO PRACTICE IN THE JURISDICTION OF THE PROJECT SHALL BE FURNISHED TO THE ENGINEER OF RECORD FOR REVIEW.

13. TYPICAL DETAILS ARE SHOWN ON SHEETS DESIGNATED "SDxx". THE INCLUDED TYPICAL DETAILS MAY OR MAY NOT BE CUT / REFERENCED ON PLANS OR SECTIONS, BUT ARE TO BE USED AS APPLICABLE.

EARTHWORK AND FOUNDATIONS:

1. ALL FOOTINGS SHALL BEAR A MINIMUM DEPTH BELOW GRADE OF 3'-0" ON FIRM NATIVE MATERIALS, COMPACTED OR ENGINEERED FILL CAPABLE OF SUPPORTING AN ALLOWABLE BEARING PRESSURE OF 1,500 PSF FOR CONT FOOTINGS AND 1,500 PSF FOR ISOLATED FOOTINGS.
- DEEPEN FOOTINGS AND REMOVE AND REPLACE SOFT SOILS WITH ENGINEERED FILL AS REQUIRED TO PROVIDE THIS MINIMUM DEPTH AND SUITABLE BEARING.

2. FILL PLACEMENT, COMPACTION, AND SOIL BEARING TESTS SHALL BE PERFORMED BY A GEOTECHNICAL ENGINEER PRIOR TO INSTALLING FOOTINGS TO ENSURE DESIGN ALLOWABLE BEARING VALUES AND SLAB SUBGRADE REQUIREMENTS ARE SATISFIED. IF ACTUAL SITE CONDITIONS DO NOT SATISFY THESE REQUIREMENTS, COORDINATE ADJUSTMENTS WITH ARCHITECT/ENGINEER/ GEOTECHNICAL ENGINEER

3. SURFACE WATER SHALL NOT BE ALLOWED TO STAND ADJACENT TO OR DRAIN TOWARDS THE FOUNDATION AND SLAB SUBGRADES UNDER ANY CIRCUMSTANCES. PAVEDMENTS OR GRADED SOILS AT THE PERIMETER OF THE BUILDING, EXCEPT AS REQUIRED AT EXITS OR AS NOTED, SHALL BE SLOPED AWAY AT 5% OR 6" MIN FOR THE FIRST TEN FEET AND AS REQUIRED TO PROVIDE POSITIVE DRAINAGE.

4. FOOTINGS MAY BE POURED TO NEAT LINES OF EXCAVATIONS PROVIDING VERTICAL LINES OF EXCAVATIONS CAN BE MAINTAINED DURING CONCRETE PLACEMENT.

5. FOUNDATION WALL BACKFILL SHALL NOT BE UNBALANCED BY MORE THAN TWO FEET ON EITHER SIDE AT ANY TIME. BASEMENT WALL AND RESTRAINED RETAINING WALL BACKFILL SHALL NOT BE PLACED, UNLESS THE WALL IS ADEQUATELY BRACED. RETAINING WALL AND BASEMENT WALL BACKFILL SHALL BE FREE DRAINING GRANULAR BACKFILL ACCEPTABLE TO THE GEOTECHNICAL ENGINEER.

CONCRETE AND MASONRY REINFORCING STEEL:

1. SUBMIT SHOP DRAWINGS FOR REBAR. ALL REINFORCING BARS SHALL MEET ASTM A615 GRADE 60.
2. ALL MESH SHALL MEET ASTM A-185: LAP A MINIMUM OF 8" OR ONE FULL MESH, WHICHEVER IS GREATER.
3. REINFORCING BARS QUANTITIES SHOWN ARE FOR ESTIMATING PURPOSES ONLY.

4. PROVIDE AN ADDITIONAL ALLOWANCE OF 1% OF THE TOTAL REINFORCING SHOWN ON THE FINAL DRAWINGS TO BE FABRICATED AND ERECTED DURING THE PROGRESS OF THE WORK AT THE DIRECTION OF THE STRUCTURAL ENGINEER. FOR THE ADDITIONAL REINFORCING ALLOWANCE, INCLUDE BOTH THE COST OF THE REINFORCING AND THE LABOR TO PLACE IT.

5. CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE 1/2" CLEAR FOR SLABS, 2" CLEAR FOR FORMED SURFACES AND 3" CLEAR FOR FOOTINGS (TYPICAL UNLESS NOTED).

6. CONTRACTOR SHALL VERIFY THAT ALL REINFORCEMENT, SLAB DOWELS, INSERTS, SLEEVES AND EMBEDDED ITEMS ARE PROPERLY LOCATED AND RIGIDLY SECURED PRIOR TO CONCRETE PLACEMENT. "WET STICKING" DOWELS WILL NOT BE ALLOWED.

7. REINFORCEMENT SHALL BE DETAILED IN ACCORDANCE WITH THE LATEST A.C.I. DETAILING MANUAL BY A QUALIFIED AND EXPERIENCED FIRM AND PERFORM. PLACE AND SUPPORT REINFORCEMENT WITH ACCESSORIES: MAXIMUM SPACING - 48" CENTERS (PLASTIC-TIPPED LEGS FOR EXPOSED SURFACES). USE 3" SBP REINFORCEMENT AT ALL FOOTINGS.

CAST-IN PLACE CONCRETE:

1. SUBMIT PROPOSED MIXED DEIGNS OF EACH TYPE FOR REVIEW. REQUIRED MINIMUM CONCRETE COMPRESSIVE STRENGTHS AT 28 DAYS:

- a. FOOTING AND GRADEBEAM CONCRETE.....4000 PSI
- b. SLAB ON GRADE AND STRUC SLAB ABOVE GRADE.....4000 PSI

2. ALL CONCRETE MIX DESIGNS SHALL HAVE WATER TO CEMENT RATIOS LESS THAN 0.52. WITH A MAXIMUM 60/40 FINE TO COARSE AGGREGATE RATIO. CONCRETE MIX DESIGNS THAT DO NOT CONFORM TO THE ABOVE STANDARD AND/OR CONTAIN WATER REDUCING ADMIXTURES SHALL BE SUBMITTED WITH APPROPRIATE TEST DATA PER A.C.I. ALL CONCRETE SHALL BE IN CONFORMANCE WITH THE LATEST A.C.I. 301 STANDARDS PUBLICATION.

3. EXTERIOR CONCRETE (FLOOR SLABS, WALLS, ETC) SHALL HAVE 6% (PLUS/MINUS 1%) ENTRAINED AIR.

4. CHAMFER ALL EXPOSED CONCRETE EDGES 3/4" (VERIFY WITH ARCHITECT).

5. NO ALUMINUM SHALL BE EMBEDDED IN ANY CONCRETE.

6. NO CALCIUM CHLORIDE SHALL BE USED IN CONCRETE

7. THE DESIGN, CONSTRUCTION, AND SAFETY OF ALL FORMWORK IS THE RESPONSIBILITY OF THE CONTRACTOR

8. ALL CONCRETE IS REINFORCED UNLESS SPECIFICALLY NOTED AS UNREINFORCED. REINFORCE ALL CONCRETE NOT OTHERWISE SHOWN WITH THE SAME REINFORCING AS SIMILAR SECTIONS OR AREAS.

9. CONSTRUCTION JOINTS IN GRADE BEAMS, CONTINUOUS FOOTINGS, AND WALLS THAT DO NOT CHANGE DIRECTION SHALL BE SPACED NO GREATER THAN 60"-0". INTERMEDIATE CONTROL JOINTS SHALL BE SPACED AT 25'-0" MAX FOR WALLS. CONTROL JOINTS IN WALLS SHALL ALSO BE LOCATED 15'-0" FROM CORNERS AND AT CHANGES IN WALL THICKNESS

10. WHERE FRESH CONCRETE IS DEPOSITED AGAINST HARDENED CONCRETE (GREATER THAN 8 HRS OLD), CLEAN EXISTING SURFACE OF LAITANCE AND FOREIGN MATERIAL AND DAMPEN THE EXISTING SURFACE. IF REQUIRED, ROUGHEN EXISTING CONCRETE TO 1/4" AMPLITUDE.

11. SLABS ON GRADE SHALL BE 4" THICK MINIMUM ON 4" OF GRANULAR FILL. REINF SLAB WITH 6 X 6-W2 1Wx2.1 W.W.F. OR #3 BARS @ 18" OC EA WAY. PLACE REINF IN UPPER 1/2 OF SLAB THICKNESS. AT INTERIOR SLABS, A 10 MIL VAPOR BARRIER SHALL BE PLACED BETWEEN THE CONCRETE AND GRANULAR BASE AND CARE SHOULD BE TAKEN DURING CURING TO PREVENT SLAB CURLING. THIS NOTE SHALL BE TYPICAL UNLESS NOTED OTHERWISE

12. SAW CUT JOINTS OR KEYED CONSTRUCTION JOINTS IN SLABS ON GRADE SHALL BE SPACED TO DIVIDE THE SLAB INTO PANELS NOT TO EXCEED 225 SQUARE FEET. THE LONGER DIMENSION OF EACH PANEL SHALL NOT EXCEED THE SHORTER DIMENSIONS BY MORE THAN 40%. JOINTS SHALL BE LOCATED AT COLUMN CENTERLINES WHERE POSSIBLE. SPACING BETWEEN JOINTS SHALL NOT EXCEED 15 FEET. CONTRACTOR SHALL SUBMIT JOINT LAYOUT TO ARCHITECT FOR APPROVAL. REFER TO TYP DETAIL RC-001A.

13. REINFORCEMENT SHALL BE CONTINUOUS AND LAPPED 53 BAR DIAMETERS (2'-6" MIN.) EXCEPT AS NOTED AND PROVIDE CORNER BARS OF SAME SIZE AND SPACING.

14. MINIMUM CONCRETE WALL REINFORCING (WALL 10" OR GREATER) SHALL BE #5 AT 10" CENTERS EACH WAY, EACH FACE

15. MINIMUM REINFORCING AROUND CONCRETE WALL OPENINGS 2'-0" OR GREATER (TYPICAL UNLESS NOTED): 2-#6, EXTEND REINF 2'-0" PAST OPENINGS. PROVIDE 2-#5 X 4'-0" DIAGONAL BARS AT CORNERS

16. CONTRACTOR SHALL COORDINATE ALL CURING COMPOUNDS WITH FLOOR FINISH REQUIREMENTS TO ENSURE COMPATIBILITY.

17. FOUNDATION CONTRACTOR TO ENSURE PROPER ANCHOR ROD PROJECTION AND THAT ANCHOR RODS ARE HELD SECURELY IN POSITION PRIOR TO CONCRETE PLACEMENT. INSTALL ANCHOR RODS TO THE STRICT DIMENSIONAL TOLERANCES PER AISC REQUIREMENTS. STRUCTURAL STEEL COLUMN ANCHOR RODS SHALL BE SET WITH A RIGID TEMPLATE.

18. AGGREGATES AND/OR CONCRETE MIXES SHALL BE CERTIFIED TO BE FREE OF AND ELIMINATE DAMAGE OF CONCRETE DUE TO ALKALI-SILICA REACTION OR ALKALI-AGGREGATE REACTIONS WHEN EXPOSED TO SOILS AND/OR AN EXTERIOR ENVIRONMENT.

SPECIAL INSPECTIONS

1. PROVIDE SPECIAL STRUCTURAL INSPECTIONS AND VERIFICATIONS BY A THIRD PARTY MEETING THE REQUIREMENTS OF CHAPTER 17 OF THE BUILDING CODE AND THE BUILDING OFFICAL.

2. SPECIAL INSPECTORS SHALL BE QUALIFIED AND FURNISH THEIR REPORTS IN A TIMELY MANNER TO THE CONTRACTOR, BUILDING OFFICIALS, ARCHITECT, AND/OR ENGINEER

3. SHOULD INSPECTOR IDENTIFY ANY DISCREPANCY, THEY SHALL NOTIFY CONTRACTOR FIRST, AND THEN ARCHIT/ENGINEER IMMEDIATELY THEREAFTER IF CORRECTIVE ACTION IS NEEDED.

4. SPECIAL INSPECTIONS AS REQUIRED BY CODE:
- A. STEEL: SECTION 1705.2, AISC 360, AND TABLE 1705.2.2. PERIODIC OBSERVATIONS OF CONNECTION, ALL BRACED-FRAME CONNECTIONS, WELDERS & FIELD WELDING.
 - B. CONCRETE: SECTION 1705.3 AND TABLE 1705.3. CONCRETE MATERIAL SAMPLING AND TESTING, REBAR OBSERVATIONS, TAKE SET OF (3) CYLINDERS FOR EVERY 50 C.Y., BUT NOT LESS THAN ONE SET OF SAMPLES PER DAY'S WORK AND PER MIX.
 - C. EARTHWORK: FOUNDATION BEARING, EXCAVATION, FILL PLACEMENT.

STRUCTURAL STEEL:

1. SUBMIT SHOP DRAWINGS FOR STEEL. STRUCTURAL STEEL SHAPES AND PLATE MATERIAL REQUIREMENTS (TYPICAL UNLESS NOTED OTHERWISE):

- a. WIDE FLANGE SHAPES - ASTM A992 (FY = 50 KSI MIN.)
- b. CHANNELS, ANGLES, AND PLATES - ASTM A36 (FY = 36 KSI MIN)
- c. ROUND HSS - ASTM A500, GR B (FY = 42 KSI)
- d. RECTANGULAR HSS - ASTM A500, GR B (FY = 46 KSI)
- e. PIPE - ASTM A53, GR B (FY = 36 KSI)
- f. ANCHOR RODS - ASTM F1554 (FY = 36 KSI MIN.),

2. STRUCTURAL STEEL SHALL BE NEW AND MEET THE '13TH EDITION A.I.S.C. "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS AND BRIDGES", AND THE "CODE OF STANDARD PRACTICES FOR STEEL BUILDINGS AND BRIDGES", EXCLUDING SECTION 4.4.1.B.

3. THE STRUCTURAL STEEL FABRICATOR SHALL BE AN AISC QUALITY CERTIFIED COMPANY FOR THE CATEGORY OF WORK IN THIS PROJECT OR PROVIDE A QUALITY ASSURANCE PLAN AND SPECIAL INSPECTIONS AS DEFINED IN THE CODE.

4. USE STANDARD AISC FRAMING CONNECTIONS WITH A325-N BOLTS AND WASHERS AS REQUIRED, UNLESS NOTED OTHERWISE.

5. BOLTS IN MOMENT AND BRACED FRAME CONNECTIONS SHALL BE PRE-TENSIONED. ALL A490 BOLTS SHALL BE PRE-TENSIONED. OTHER BOLTED CONNECTIONS USING A325 BOLTS MAY BE SNUG-TIGHTENED, UNLESS NOTED OTHERWISE.

6. STEEL BEAMS SHALL BE FABRICATED WITH MILL CAMBER UP.

7. WELDING SHALL CONFORM TO THE CURRENT AND APPLICABLE AWS STANDARDS AND BE COMPLETED BY AN AWS CERTIFIED WELDER. ALL WELDS SHALL UTILIZE E70xx ELECTRODES. SHOP DRAWINGS SHALL SHOW FIELD WELDS, AS APPROPRIATE.

- a. AWS D1.1 - STRUCTURAL WELDING CODE - STEEL
- b. AWS D1.3 - STRUCTURAL WELDING CODE - SHEET STEEL
- c. AWS D1.6 - STRUCTURAL WELDING CODE - STAINLESS STEEL

8. WELD SIZES SHALL BE INCREASED TO MEET THE REQUIRED EFFECTIVE THROAT WIDTH IF GAPS EXIST AT THE FAYING SURFACE

9. NO COLUMN OR BEAM SPLICES, UNLESS CLEARLY INDICATED ON THE STRUCTURAL DRAWINGS, WILL BE ALLOWED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.

10. SEE ARCHITECTURAL PLANS FOR FIREPROOFING & FINISHING REQUIREMENTS, AND COORDINATE STEEL PRIMING & COATINGS ACCORDINGLY.

11. GROUT WHERE INDICATED ON PLANS AT BASE PLATES SHALL BE NON-METALLIC NON-SHRINK WITH A MINIMUM COMPRESSIVE STRENGTH OF 6000 PSI AT 28 DAYS CONFORMING TO ASTM C1107

12. ALL POST-INSTALLED ANCHORS WHERE NOTED SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE OR HILTI, INC. AND INSTALLED PER MANUFACTURER'S SPECIFICATIONS. SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL WITH APPROPRIATE I-C-ES EVALUATION REPORTS.

WOOD:

1. FRAMING MATERIAL: ALL WOOD FRAMING SHALL MEET OR EXCEED THE FOLLOWING:
- A. NOMINAL STRUCTURAL LUMBER: DOUG. FIR - NO.2 OR BETTER, KILN-DRIED, MIN Fb = 900 PSI, MIN E = 1400 KSI.
 - B. EXPOSED TO WEATHER: NOMINAL STRUCT LUMBER - PRESS TREATED NO.2 OR BETTER, MIN Fb = 1000 PSI, MIN E = 1300 KSI.
 - C. MICRO LAM LVL (LAMINATED VENEER LUMBER) BEAMS SHALL MEET TRUSS JOIST SPECIFICATIONS: MINIMUM Fb = 2600 PSI AND MINIMUM E = 1900 KSI.
 - D. TIMBERSTRAND LSL (LAMINATED STRAND LUMBER) BEAMS SHALL MEET TRUSS JOIST SPECIFICATIONS: MINIMUM Fb = 2600 PSI AND MINIMUM E = 1700 KSI.
 - E. GLULAM FRAMING: 24F-V4 DOUGLAS FIR, ARCHITECTURAL FINISH (COORDINATE WITH ARCH).

2. SUBSTITUTIONS OF SPECIFIED WOOD MEMBERS SHALL NOT BE MADE WITHOUT REVIEW OF THE ARCHITECT/ENGINEER.
3. ALL LUMBER IN DIRECT CONTACT WITH CONCRETE OR MASONRY, SUCH AS SILL PLATES AND BEARING PLATES BELOW BEAMS POCKETED IN CMU, SHALL BE TREATED LUMBER.

4. WOOD SHEATHING:
- A. ROOF SHEATHING SHALL BE 15/32" OR 1/2" WITH AN APA SPAN RATING OF 3216, EXPOSURE 1, MINIMUM 2 SPAN. FASTEN WITH 10d COMMON NAILS AT 6" CENTERS AT ALL PANEL EDGES AND 12" CENTERS MAXIMUM AT INTERMEDIATE FRAMING MEMBERS (IN THE FIELD). USE PLYCLIPS AT MIDSPAN. BLOCK PANEL JOINTS AT SPECIFIED ZONES SHOWN ON PLAN.
 - B. WALL SHEATHING FOR EXTERIOR WALLS SHALL BE 7/16" WITH AN APA SPAN RATING OF 2416, UNLESS NOTED OTHERWISE. ALL PANEL EDGES SHALL BE BACKED WITH 2 INCH NOMINAL OR WIDER FRAMING. FASTEN WITH 8d COMMON NAILS AT 6" O.C. MAXIMUM AT ALL TOP PLATES, BLOCKING, BOUNDARIES AND 10" O.C. MAXIMUM IN THE FIELD.

5. ALL WOOD SHEATHING TO BE STAGGERED 4'X8" SHEETS. ORIENTED PERPENDICULAR TO SUPPORTING MEMBERS.

6. PROVIDE 1/8" GAP AT ALL SHEATHING PANEL EDGES AND END JOINTS UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER. DUE TO CONSTRUCTION CONDITIONS, TEMPORARY EXPANSION JOINTS MAY BE REQUIRED IN FLOOR/ROOF SHEATHING.

7. ALL HEADERS IN EXTERIOR OR INTERIOR BEARING WALLS SPANNING MORE THAN 3'-8" SHALL BE SUPPORTED ON DOUBLE STUDS UNLESS NOTED.

8. MINIMUM NAILING SHALL CONFORM TO IRC TABLE R602.3 (1). USE COMMON NAILS EXCEPT WHERE NOTED. ALL FASTENERS (BOLTS, SCREWS, NAILS, ETC) IN CONTACT WITH PRESSURE TREATED LUMBER SHALL BE HOT DIP GALVANIZED.

9. LIGHT GAGE WOOD FRAMING CONNECTORS AS NOTED ON THE PLANS FOR WOOD JOISTS, COLUMNS, BEAMS AND TRUSSES SHALL BE "STRONG - TIE" CONNECTORS BY THE SIMPSON CO. OR REVIEWED EQUIVALENT. CONNECTORS IN DIRECT CONTACT WITH PRESSURE TREATED LUMBER SHALL HAVE "ZMAX" G185 HOT DIP GALVANIZED COATING OR REVIEWED EQUIVALENT.

10. CONNECTORS IN DIRECT CONTACT WITH PRESSURE TREATED LUMBER SHALL HAVE "ZMAX" G185 HOT DIP GALVANIZED COATING OR REVIEWED EQUIVALENT.

11. STAINLESS STEEL FASTENERS, ANCHOR BOLTS, LIGHT GAGE CONNECTORS, ETC. MAY BE SUBSTITUTED FOR HOT DIP GALVANIZED MATERIALS AT THE CONTRACTORS OPTION.

12. STUDS SHALL BE CONTINUOUS BETWEEN EACH DIAPHRAGM LEVEL. EXTERIOR WALL STUDS AT GROUND FLOOR SHALL BE BRACED BY KICKERS AND/OR STRUCTURAL CEILING FRAMING.

13. TYPICAL SILL ANCHOR RODS SHALL BE GALVANIZED 1/2" DIAMETER EMBEDDED 7" MIN INTO CONCRETE, SPACED NO FURTHER THAN 3'-0" O.C. AND SHALL OCCUR WITHIN 12" OF THE ENDS OF A SILL PLATE. SPACE ANCHOR RODS MORE CLOSELY TOGETHER AT SHEAR WALLS AS SHOWN ON THE DRAWINGS. EACH SILL PLATE SHALL HAVE A MINIMUM OF 2 ANCHOR RODS. PROVIDE 2" SQ PLATE WASHERS AND NUTS.

14. STAINLESS STEEL FASTENERS, ANCHOR BOLTS, LIGHT GAGE CONNECTORS, ETC. MAY BE SUBSTITUTED FOR HOT DIP GALVANIZED MATERIALS AT THE CONTRACTORS OPTION.

15. PRE-FABRICATED WOOD ROOF TRUSS NOTES:

1. THE WOOD ROOF TRUSS MANUFACTURER SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER'S REVIEW. THE SHOP DRAWINGS SHALL INCLUDE PLACING PLANS OF ALL TRUSSES CLEARLY LABELED, DETAILS OF TRUSS CONNECTIONS AND ANCHORAGES, DETAILS OF METAL CONNECTORS USED AT JOINTS, AND ENGINEERING DESIGN DATA. THE ENGINEERING DESIGN FOR EACH TYPE OF TRUSS SHALL INCLUDE: TRUSS LOCATION IDENTIFICATION, ALL LOADINGS AND REACTIONS, WOOD SPECIES AND STRESS GRADES, MEMBER STRESSES, JOINT CONNECTIONS, CONFIGURATION, TRUSS TO TRUSS CONNECTIONS, BRACING FOR LATERAL STABILITY OF THE COMPLETED FRAMING SYSTEM, AND THE PROFESSIONAL ENGINEERS SEAL OF THE PERSON RESPONSIBLE FOR THE DESIGN OF THE TRUSSES/TRUSS SYSTEM.

2. THE CONTRACTOR SHALL FURNISH A COPY OF THE APPROVED PREFAB TRUSS SHOP DRAWINGS TO BUILDING OFFICAL FOR THEIR RECORDS.

3. TRUSS MEMBERS AND COMPONENTS SHALL NOT BE FIELD CUT, NOTCHED, DRILLED, OR ALTERED IN ANY WAY WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER RESPONSIBLE FOR THE TRUSS DESIGN.

FASTENER SCHEDULE FOR ROOF, WALL, AND FLOOR STRUCTURAL MEMBERS			
		FASTENER REQUIREMENTS	
ITEM	DESCRIPTION OF BUILDING ELEMENT	CODE REQD	ALTERNATIVE
ROOF ⑥⑤④③			
1	BLOCKING B/W JOISTS OR RAFTERS TO TOP PLATE, TOE NAIL	(3) 8d (2 1/2" X 0.113")	(3) 3" X 0.131" OR (4) 3" X 0.120"
2	CEILING JOISTS TO PLATE, TOE NAIL	(3) 8d (2 1/2" X 0.113")	(4) 3" X 0.131" OR (5) 3" X 0.120"
3	CEILING JOISTS NOT ATTACHED TO PARALLEL RAFTER, LAPS OVER PARTITIONS, FACE NAIL	(3) 10d	(4) 3" X 0.131" OR (5) 3" X 0.120"
4	COLLAR TIE TO RAFTER, FACE NAIL OR 1.25" X 20 GA RIDGE STRAP	(3) 10d (3" X 0.128")	(4) 3" X 0.131" OR (5) 3" X 0.120"
5	RAFTER OR ROOF TRUSS TO PLATE, TOE NAIL	(3) 16d BOX NAILS (3 1/2" X 0.135") OR (3) 10d COMMON NAILS (3" X 0.148") - 2 TOE NAILS ON ONE SIDE AND 1 TOE NAIL ON OPPOSITE SIDE OF EACH RAFTER OR TRUSS ①	(4) 3" X 0.131" OR (4) 3" X 0.120"
6	ROOF RAFTERS TO RIDGE, VALLEY OR HIP RAFTERS, TOE NAIL, FACE NAIL	(4) 16d (3 1/2" X 0.135") (5) 16d (3 1/2" X 0.135")	(5) 3" X 0.131"
WALL ⑥⑤④③			
7	BUILT-UP STUDS-FACE NAIL	10d (3" x 0.128") @ 24" oc	3" x 0.131" @ 16" oc (TYP) @ 12" oc (AT BRACED WALLS)
8	ABUTTING STUDS AT INTERSECTION WALL CORNERS, FACE NAIL	16d (3 1/2" x 0.135") @ 12" oc	3" x 0.131" @ 8" oc OR 3" x 0.120" @ 8" oc
9	BUILT UP HEADER, TWO PIECES W/ 1/2" SPACER	16d (3 1/2" x 0.135") @ 16" oc ALONG EA EDGE	3" x 0.131" @ 8" oc OR 3" x 0.120" @ 8" oc
10	CONTINUED HEADER, TWO PIECES	16d (3 1/2" x 0.135") @ 16" oc ALONG EA EDGE	(4) 3" X 0.131" OR (5) 3" X 0.120"
11	CONTINUOUS HEADER TO STUD, TOE NAIL	(4) 8d (2 1/2" X 0.113")	(4) 3" X 0.131" OR (5) 3" X 0.120"
12	DOUBLE STUDS, FACE NAIL	10d (3" x 0.128") @ 24" oc	3" X 0.131" @ 16" oc
13	DOUBLE TOP PLATES, FACE NAIL	10d (3" x 0.128") @ 24" oc	3" X 0.131" @ 12" oc OR 3" X 0.120" @ 8" oc
14	DOUBLE TOP PLATES, MIN 24" OFFSET OF END JOISTS, FACE NAIL IN LAPPED AREA	(8) 16d (3 1/2" x 0.135")	(12) 3" X 0.131"
15	SOLE PLATE TO JOIST OR BLOCKING, FACE NAIL	16d (3 1/2" x 0.135") @ 16" oc	3" X 0.131" @ 12" oc OR 3" X 0.120" @ 8" oc
16	SOLE PLATE TO JOIST OR BLOCKING AT BRACED WALL PANELS	(3) 16d (3 1/2" x 0.135") @ 16" oc	(4) 3" X 0.131" @ 16" oc OR (5) 3" X 0.120" @ 16" oc
17	STUD TO SOLE PLATE, TOE NAIL	(3) 8d (2 1/2" X 0.113") OR (2) 16d (3 1/2" X 0.135")	(4) 3" X 0.131" @ 16" oc OR (5) 3" X 0.120" @ 12" oc
18	TOP OR SOLE PLATE TO STUD, END NAIL	(2) 16d (3 1/2" x 0.135")	(4) 3" X 0.131" @ 12" oc OR (4) 3" X 0.120" @ 12" oc
19	TOP PLATE, LAPS AT CORNERS AND INTERSECTIONS, FACE NAIL	(2) 10d (3" x 0.128")	(3) 3" X 0.131" @ 16" oc OR (4) 3" X 0.120" @ 16" oc
20	1" BRACE TO EA STUD AND PLATE, FACE NAIL	(2) 8d (2 1/2" X 0.113")	(2) 3" X 0.131"
21	1" X 6" SHEATHIGN TO EACH BEARING, FACE NAIL	(2) 8d (2 1/2" X 0.113")	(2) 3" X 0.131"
22	1" X 8" SHEATHING TO EACH BEARING, FACE NAIL	(2) 8d (2 1/2" X 0.113")	(2) 3" X 0.131"
23	WIDER THAN 1" X 8" SHEATHING TO EACH BEARING, FACE NAIL	(3) 8d (2 1/2" X 0.113")	(3) 3" X 0.131"
FLOOR ⑥⑤④③			
24	JOIST TO SILL OR GIRDER, TOE NAIL	(3) 8d (2 1/2" X 0.113")	(3) 3" X 0.131" OR (4) 3" X 0.120"
25	RIM JOIST TO TOP PLATE, TOE NAIL (ROOF APPLICATIONS ALSO)	8d (2 1/2" X 0.113") @ 6" oc	3" X 0.131" @ 6" oc OR 3" X 0.120" @ 4" oc
26	RIM JOIST OR BLOCKING TO SILL PLATE, TOE NAIL	8d (2 1/2" X 0.113") @ 6" oc	
27	1"X6" SUBFLOOR OR LESS TO EACH JOIST, FACE NAIL	(2) 8d (2 1/2" X 0.113")	
28	2" SUBFLOOR TO JOIST OR GIRDER, BLIND AND FACE NAIL	(2) 16d (3 1/2" x 0.135")	
29	2" PLANKS (PLANK & BEAM - FLOOR AND ROOF)	(2) 16d (3 1/2" x 0.135") AT EA BRG	
30	BUILT-UP GIRDERS AND BEAMS, 2" LUMBER	10d (3" x 0.128") NAIL EA LAYER AS FOLLOWS: 32" oc AT TOP AND BOT STAGGERED, TWO NAILS AT ENDS AND AT EA SPLICE	3" x 0.131". NAIL EA LAYER AS FOLLOWS: 24" oc AT TOP AND BOT STAGGERED, (3) NAILS AT ENDS AND AT EA SPLICE
31	LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	(3) 16d (3 1/2" x 0.135") AT EA JOIST OR RAFTER	(5) 3" X 0.131" OR (6) 3" X 0.120"
WOOD STRUCTURAL PANELS, SUBFLOOR, ROOF AND INTERIOR WALL SHEATHING TO FRAMING ⑥⑤④③①			
32	3/8" TO 1/2"	6d COMMON (2" X 0.113") NAIL (SUBFLOOR WALL) 8d COMMON (2 1/2" X 0.131") NAIL (ROOF) SPACING: 6" OC EDGES, 12" OC FIELD ④	2" X

SPECIFICATION

THE WORK includes new materials, fittings and accessories necessary for a complete functioning plumbing system. The Work also includes final connections to all equipment and equipment systems. All Work shall be in accordance with local codes or ordinances and subject to inspection.

HOOK-UP CHARGES, permits and all other expenses related to a complete and functioning plumbing system are included as a part of this Section.

COORDINATE with the Work of other Sections, equipment furnished by others, and with the constraints of the existing conditions of the Project Site.

PIPING SYSTEMS – GENERAL: All piping shall be run parallel to building lines and supported and anchored as required to facilitate expansion and contraction. All piping shall be concealed except in unfinished spaces. Install as required to meet all construction conditions and to allow for installation of other Work including ducts and electrical conduit. At all connections between ferrous piping and nonferrous piping, provide an isolating dielectric union. All faucets with hose connections shall have a backflow preventor.

PROVIDE all fittings, accessories, offsets, and materials necessary to facilitate the Plumbing system's functioning as indicated by the design and the equipment indicated.

SEWER AND WASTE PIPING: Provide all drain, waste and sewer piping within the project space with connection to existing sanitary waste systems on-site. All piping below floor slabs shall be schedule 40 PVC pipe, connectors and fittings. All piping shall be uniformly pitched, two percent (2%) or more unless otherwise required by existing conditions.

VENTS: Provide a complete system of vent piping, consisting of schedule 40 PVC pipe, connectors and fittings. Combine the vent risers in the ceiling space and penetrate through the roof with flashing.

WATER PIPING: Provide a domestic hot and cold water piping system as shown on the Drawings. Lay out water piping so that the entire system can be drained. Hot and cold water piping shall be Type "L" copper tubing with wrought copper fittings and sweat connections using lead-free solder. Provide min. 18" high full air chamber or water hammer arrestors at each fixture stop. Flush water piping clear of debris and clean the aerators at the termination of the installation. Install escutcheon plates at all penetrations through finished surfaces (including cabinet interiors).

CLEANOUTS: Provide cleanouts at the end of each horizontal run, and at the base of all vertical waste and drain pipes. Cleanouts shall be of the same size as the pipes they serve.

PIPE INSULATION: Insulate all cold water piping with 1/2" thickness, and all hot water piping with 1" thickness of preformed fiberglass, ASJ-VB, flame spread 25, smoke developed 50, ASTM C-547, as manufactured by CT, OCF, JM, PPG, or Knouf. Install hot water insulation over heat tracing. At contractor's option, unicellular insulation meeting above flame spread rating and as manufactured by Armstrong, Rubatex or equal may be provided.

SHUTOFF VALVES, with unions shall be provided at each hot and cold water connection to each plumbing fixture or equipment, at connections to existing piping systems, and at branches to groups of more than two fixtures, to facilitate isolation for repair or replacement. Valves shall be equal to Jenkins #90-T ball valve, chrome-finished bronze, Teflon seats and packing, 400 lb. W.O.G., solder end.

ACCESS PANELS shall be provided where concealed control devices, valves, etc. are concealed within walls. Where access for adjustment and maintenance is possible through lay-in suspended ceilings, access panels are not required.

SUPPLIES AND TRAPS: Provide water sealed traps and/or supplies installed as close as possible to all plumbing fixtures, drains, and equipment items having a waste connection, or requiring water service. Exposed traps and supplies in exposed areas (including cabinet interiors) shall be chromium plated brass, with chrome plated escutcheon plates.

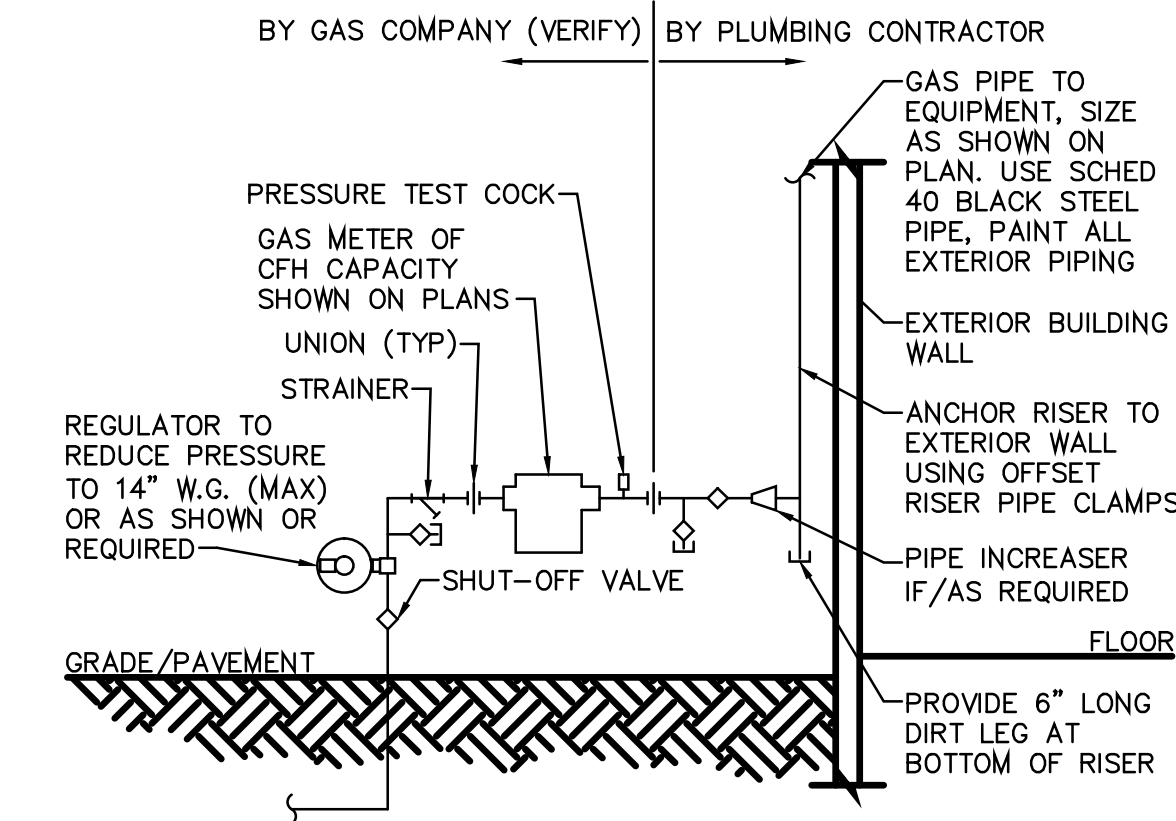
INSTALLATION: Thoroughly clean items before installation. Cap pipe openings to exclude dirt until fixtures are installed and final connections have been made. Proceed as rapidly as construction will permit. Set fixtures level and in proper alignment. Install supplies in proper alignment with fixtures. Install silicone sealant between fixtures and adjacent material, for sanitary joint.

REPAIR DAMAGE to existing elements and restore to original conditions. Provide clean and sanitary conditions at the completion of the Work.

TEST water system under 150 PSIG hydrostatic pressure, for four (4) hours minimum. When testing indicates materials or workmanship is deficient, replace or repair as required, and repeat test until standards are achieved.

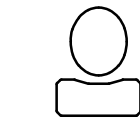
GUARANTEE the Work and the installation for one year after acceptance by the Owner.

NOTE: VERIFY & CONFORM TO REQUIREMENTS FOR METERING AND PIPING WITH GAS COMPANY. INSTALL OTHER UTILITIES MINIMUM TEN FEET FROM GAS LINE. PLUMBING CONTRACTOR SHALL PAY ALL GAS COMPANY FEES FOR INSTALLATION.

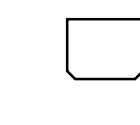


GAS METER DETAIL

PLUMBING LEGEND



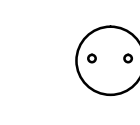
HANDICAP WATER CLOSET – American Standard model #3351.511.020 Afwall System with Everclean and Selectronic battery-powered flush valve elongated vitreous china toilet, 1.1 GPF Flushometer Toilet elongated bowl powerful direct fed siphon jet action 18" mounting bowl height, bolt caps, wall mounted, high efficiency, condensation channel, fully glazed 2-1/8" trapway. For handicap locations only. The spud shall be Crane model 047007-0070A inlet 1.5" inlet. Recommended working pressure 25 psi at valve when flushing and 80 psi static. Use Selectronic Toilet flush valve battery powered 6065.111 universal sensor flush valve. Use CR-P2 Lithium Battery. The seat shall be Zoro #G00820023 open front seat 18 3/8" without cover for elongated bowl.



LAVATORY – American Standard Declyn wall hung lavatory model #0321.026 with wall hanger, faucet holes @ 4" centers vitreous china lavatory with rear overflow, rectangular basin, soap depressions, faucet ledge and concealed hanger. Unit shall be drilled for carrier with concealed arms. Use Ceramix faucet with lever handle and aerator perforated open grid strainer. Use trap #8-5260 chrome plated cast brass adjustable "P" trap (1.25") with cleanout and waste to wall. Lavatory size is 18.5" x17" with a basin that is 14.25" x 10.75" and 6" deep.



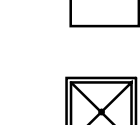
TOILET PAPER DISPENSER – Install one standard dispenser next to each water closet. Units shall be white in color or match the tile in each bathroom. Install 19" above finished floor.



WATER HEATER – Rheem Performance Platinum 11 GPM natural gas High Efficiency indoor recirculating tankless water heater or equal with 199,000 BTUH input, 120 volt single phase, 172 watts W/ 3/4" gas and water connection line. Install valve with pipe discharge to within 6" of the floor drain. Install shutoff valve on supply side of tank only. Also install State model ET0-2X expansion tank.



FLOOR DRAIN – Oatley Zoro #G6139217 Mfr # 42021 plastic drain cover with 6.75" overall diameter. Include trap. See drawings for exact locations.



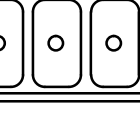
BATH MIRROR – 24" x 48". Location one over each lavatory.



MOP SINK – Fiat model #MSB-2424 mop sink shall have 10" high walls. Factory installed drain body shall be stainless steel and designed to provide for a lead caulk or QDC-3 joint to a 2" drain pipe. A combination dome strainer and lint basket made from stainless steel shall be included. Include faucet #830-AA, backflow preventer, mop hanger, hose and hose bracket.

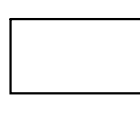


RPZ VALVE – Install one on the main trunk line coming into the building. Unit shall be in the room where the water enters the building. Install floor drain below RPZ valve.



THREE COMPARTMENT SINK – Stainless steel triple compartment sink. Compartment size is 18"x18"x13" deep. Install two splash mount faucets model #K-119 with 16 inch swing spout. Install basket type drain with continuous waste pipe to floor sink. A 2" gap must be formed between the bottom of the pipe and the floor sink. (3CS-1)

SINGLE COMPARTMENT SINK – Advance model 7-PS-50 stainless steel single compartment sink. Compartment size is 17.75"x15"x5" deep. Install one splash mount faucet model #K-121 gooseneck spout. Install basket type drain with continuous waste pipe. Use as hand sink in dishwashing and cooking areas. Install soap and towel dispensers at hand sink. (HS-1)



GREASE INTERCEPTOR

Use 50 lbs grease interceptor with a 35 gpm flow control. Unit shall be polyethylene material and shall be placed under the 3 compartment sink or flush with the floor. The unit shall be cleaned out at once per week. The top shall have a nonskid polyethylene cover. The size is based on the size of the 3 compartment sink.

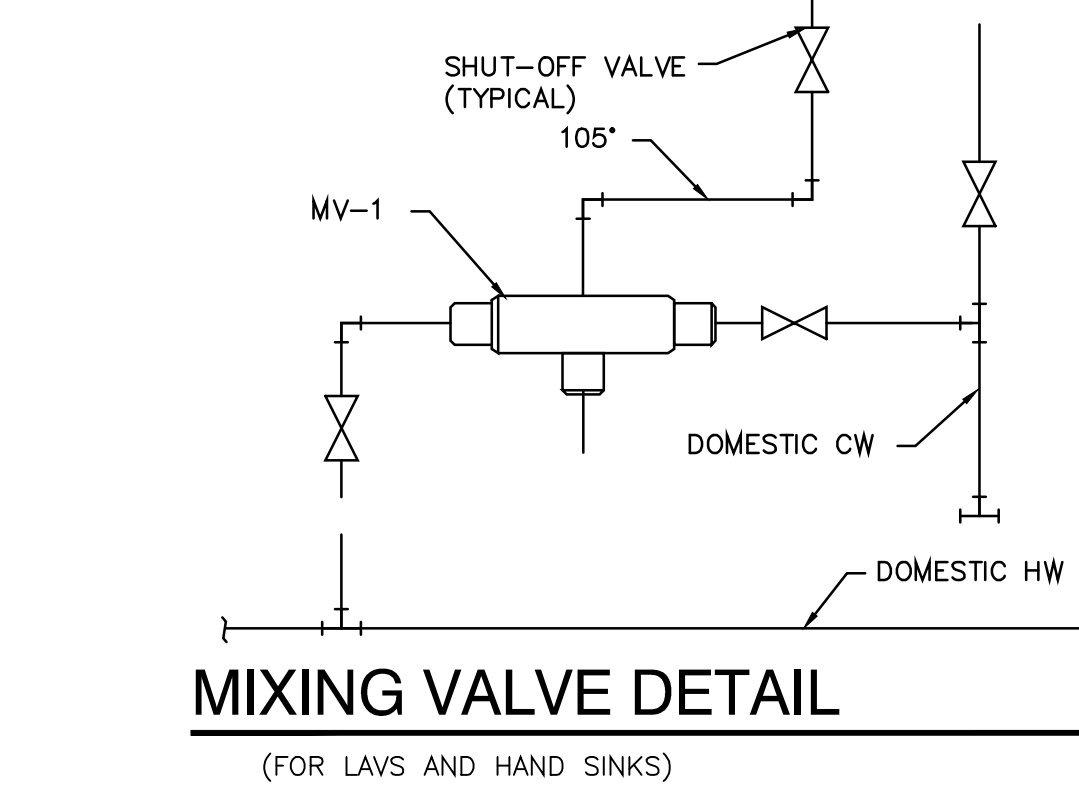
VOLUME OF 3 COMPARTMENT SINK
=(18 x 18x 13) x 3 = 12636 CU. IN.
= 12636/1728 = 7.31 CU. FT.
7.31 x 7.24 = 52.94 GAL.

FLOW RATE
52.94 / 2.5 = 21.18 GPM

FLOW RATE < 35 GPM
USE 50 LB GREASE INTERCEPTOR

PLUMBING NOTES

1. Water service to the building is new.
2. Supply and install all supply lines to each fixture.
3. Supply and install all wastewater plumbing with vents as required.
4. Supply and install new water heater.
5. Supply and install a valve on the entrance side to hot water heater.
6. Supply and install all fixtures in kitchen.
7. Sanitary sewer line to the building is new
8. The grease trap is new inside the building.
9. Supply and install all new floor drains.
10. Plumbing contractor shall supply all faucets for all fixtures.
11. Plumbing contractor is responsible for breakage of any plumbing units.
12. Use pex for the supply lines.
13. Use PVC schedule 40 for all sanitary lines.
14. Install approved backflow prevention of all beverage dispensers.



MIXING VALVE DETAIL

(FOR LAVS AND HAND SINKS)

WATER SUPPLY PIPING CALCULATION

MARK	DESCRIPTION	QTY.	SIZE OF FIX. SUPPLY	C	H	W	H	TOTAL	C	H	W	H	TOTAL
L	LAVATORY	2	1/2"	1.0	1.0	2.0	4.0	4.0	8.0				
WC	WATER CLOSET	2	1/2"	2.5	-	2.5	5.0	-	10.0				
HS	HAND SINK	2	1/2"	1.0	1.0	2.0	2.0	2.0	4.0				
MS	MOP SINK	1	1/2"	1.0	1.0	2.0	1.0	1.0	2.0				
FD	FLOOR SINK	5	-	-	-	-	-	-	-				
3CS	THREE COMPARTMENT SINK	1	1/2"	1.0	1.0	2.0	1.0	1.0	2.0				
R	RINSE STATION	1	1/2"	1.0		1.0			1.0	1.0			
IM	ICE MAKER	1	1/2"	1.0		1.0			1.0	1.0			
DW	DISHWASHER	1	1/2"	1.0		1.0			1.0	1.0			
TM	TEA MAKER	1	1/4"	1.0		1.0			1.0	1.0			
CM	COFFEE MAKER	1	1/4"	1.0		1.0			1.0	1.0			
	TOTAL						13.0	13.0	31.0				

AVAILABLE PRESSURE : 35 PSI
MAXIMUM DEVELOPMENT LENGTH > 120 FT
SIZE OF MAIN SERVICE PIPE : Ø 3/4"

SANITARY PIPING/VENT CALCULATION

MARK	DESCRIPTION	QTY.	DFU	TOTAL DFU
L	LAVATORY	2	1	3
WC	WATER CLOSET	2	4	8
HS	HAND SINK	2	1	2
FD	FLOOR SINK	5	1	5
3CS	THREE COMPARTMENT SINK	1	1	1
MS	MOP SINK	1	1	1
R	RINSE STATION	1	1	1
FD	FLOOR DRAIN	1	1	1
	TOTAL			22

TOTAL DRAINAGE FIXTURE UNITS (DFU) : 22
SLOPE OF SANITARY PIPE : 1/4" PER FT
MIN. SIZE OF SANITARY PIPE : Ø4"
MIN. SIZE OF VENT PIPE : Ø4"

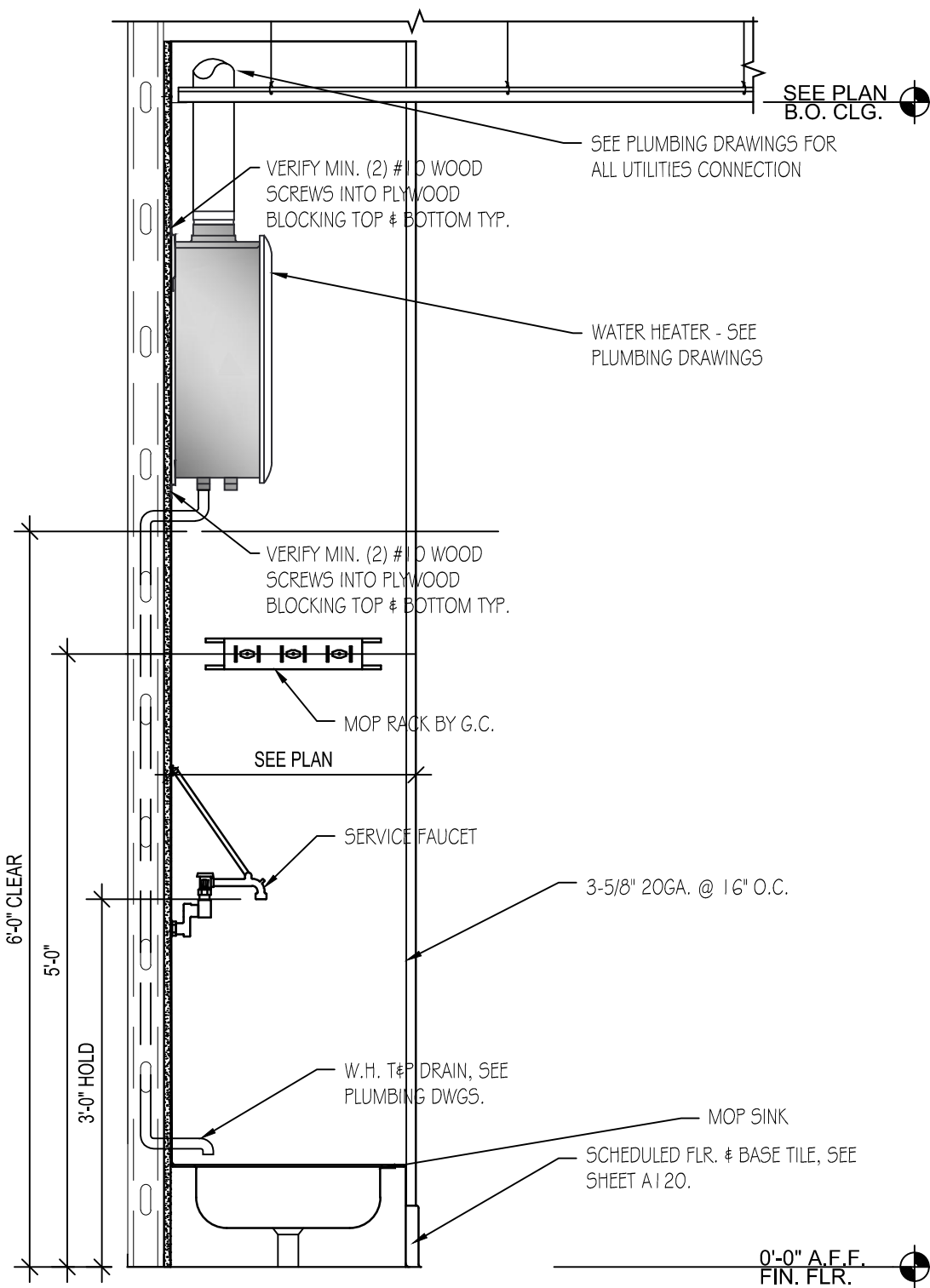
GAS DEMAND SCHEDULE:

NO.	ITEM	BTUH
1	WATER HEATER	199,000
2	FURNACE	80,000
	TOTAL	279,000

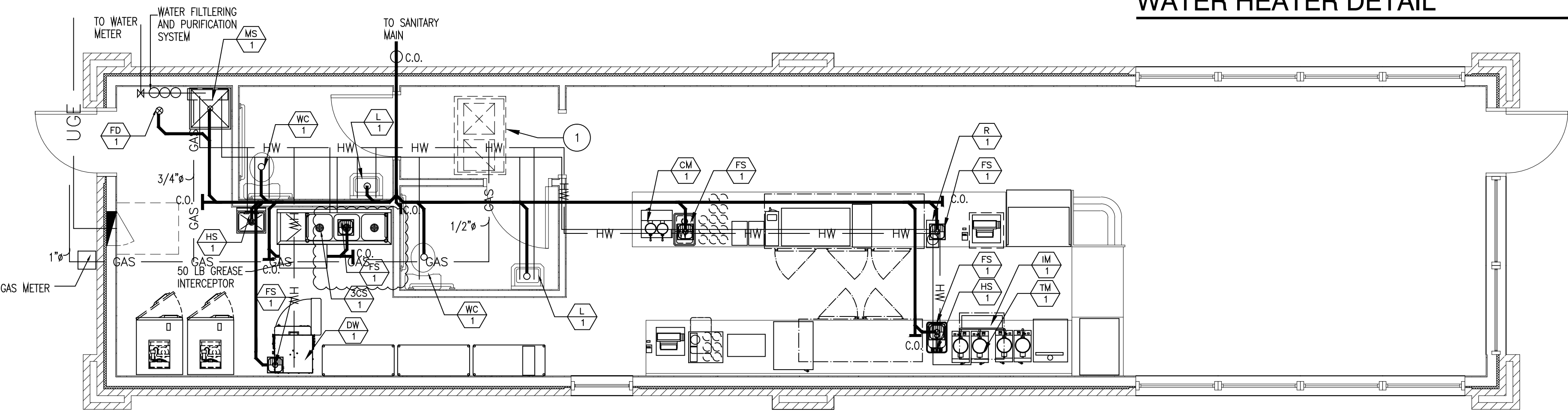
MAX. DEVELOPED LENGTH > 70 FT
TOTAL GAS DEMAND IN BTU PER HOUR =279,000 BTUH
TOTAL GAS DEMAND IN CU. FT. PER HOUR =279,000/100 = 253.63 CFH
ALLOWABLE PRESSURE DROP IS 0.5" COLUMN OF WATER

NOTE: COORDINATE CLEARANCES WITH PLUMBING ROUGHINS FOR WATER HEATER INSTALLATION.

NOTE: PLUMBING CONTRACTOR SHALL LOCATE & CONCEAL ALL FIRMS WITHIN BUILDING WALLS TO THE GREATEST EXTENT POSSIBLE.



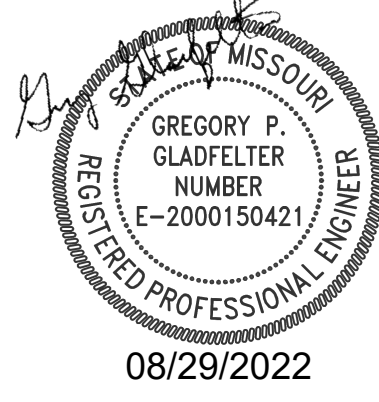
WATER HEATER DETAIL



PLUMBING FLOOR PLAN

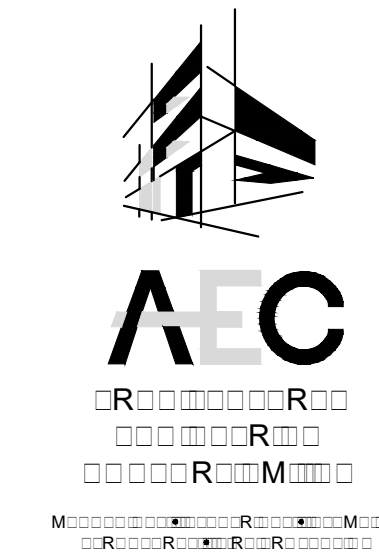
Scale 1/4"=1'-0"

Architectural Engineering Consortium, Inc. assumes design responsibility for this project for only the mechanical, electrical and plumbing disciplines with drawing sheet number beginning with M, E and P. All other drawings, including but not limited to: architectural plans, sections and elevations, site plans and surveys and other information pertinent to showing the mechanical, plumbing and electrical work which is furnished by others, generally indicated by screened or light type. Architectural Engineering Consortium, Inc. assumes no responsibility or liability for the accuracy or regulatory compliance for work prepared by others even though shown on MEP drawings. Architectural Engineering Consortium, Inc. assumes responsibility only for the design of mechanical, electrical and plumbing disciplines contained herein, generally indicated in bold type.



GROUND ROOTS COFFEE

3680 NE AKIN DRIVE SUITE 144 LEE'S SUMMIT, MO

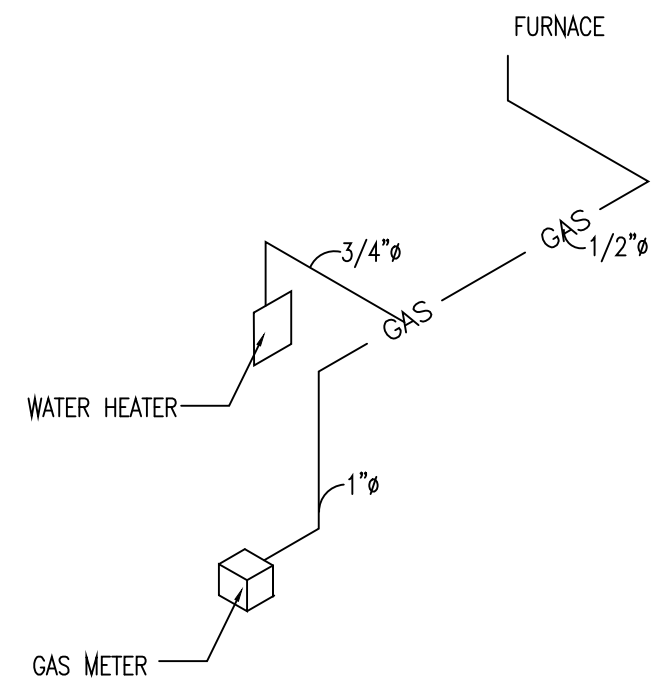


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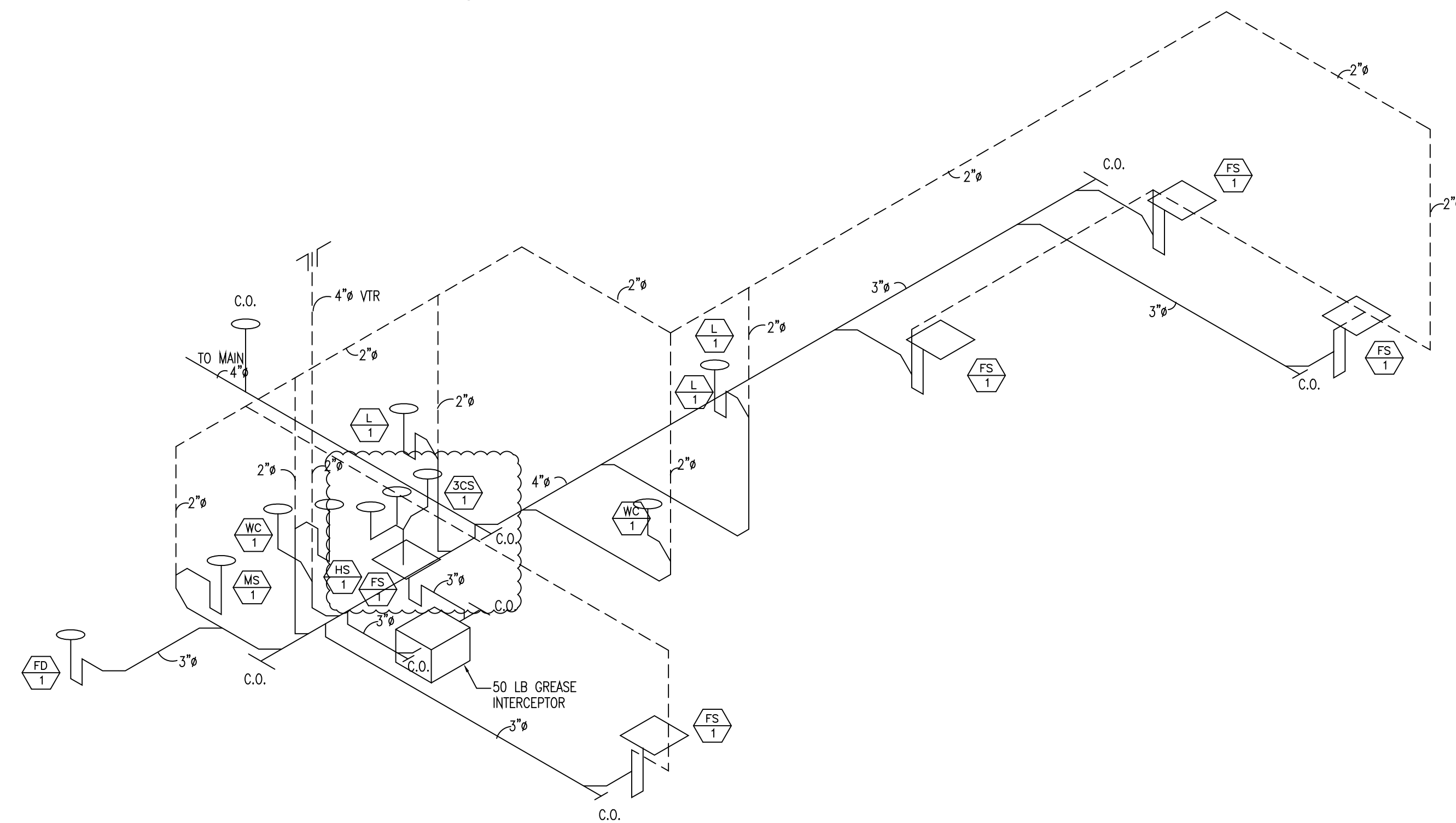
GROUND ROOTS COFFEE

3680 NE AKIN DRIVE SUITE 144 LEE'S
SUMMIT, MO



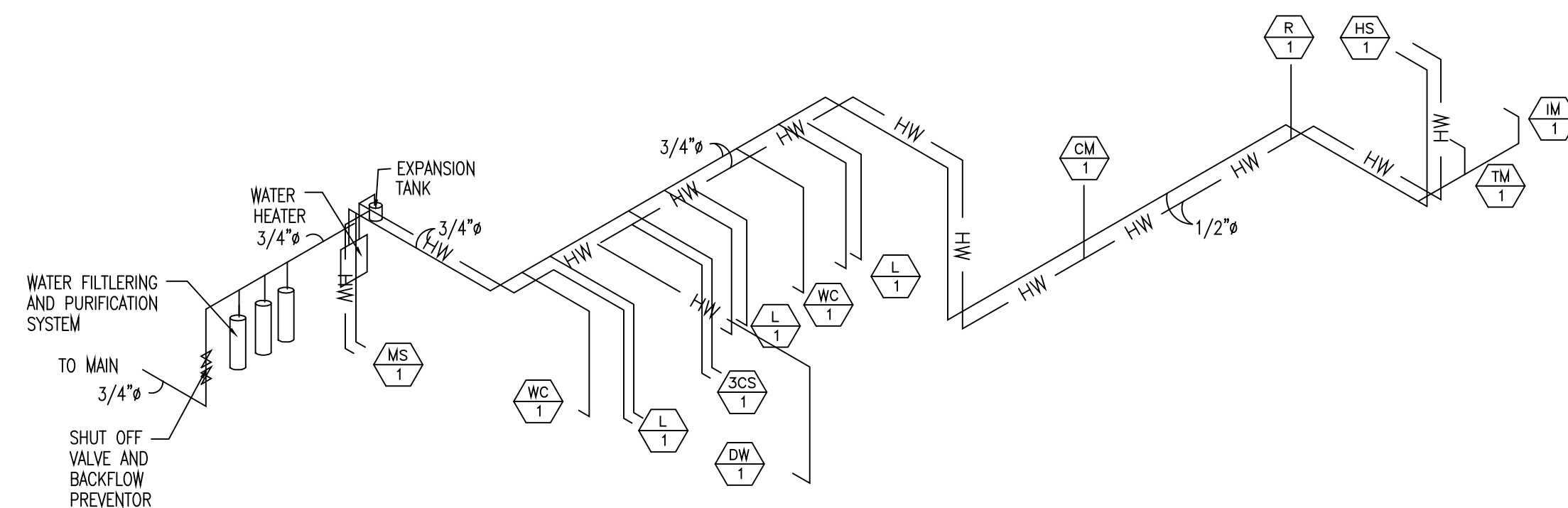
GAS SUPPLY RISER DIAGRAM

use schedule 40 steel piping



PLUMBING FLOOR PLAN

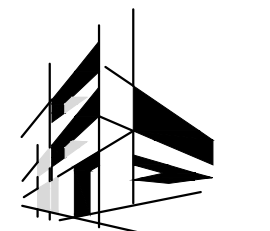
use scheule 40 PVC



PLUMBING FLOOR PLAN

use copper tubing or pex

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AEC

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ROOM

NSAS OFFICE	MISSOURI OFFICE
2000 R Rd	2000 D Rd
00000	00000 M 009
829 800	00000 200
829 2	00000 202

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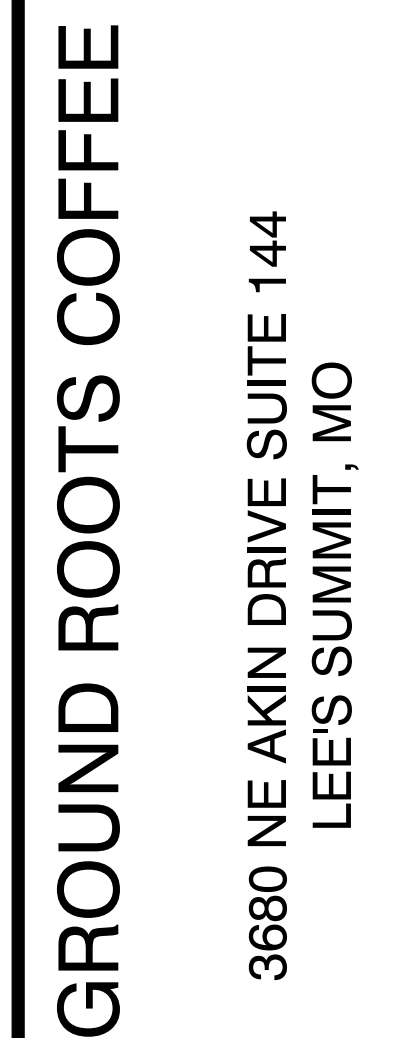
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Date: 5-11-22

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P2



NOTE: ALL MOUNTING HEIGHTS ARE TO CENTER LINE OF THE OUTLET BOX UNLESS OTHERWISE INDICATED.		
SYMBOL	DESCRIPTION	MTG. HT.
	FIXTURE-FLUORESCENT-CEILING	
	FIXTURE-FLUORESCENT-CEILING	
	EXIT LIGHT - CEILING, WALL	
	EMERGENCY BATTERY UNIT	
	EXTERIOR EMERGENCY BATTERY UNIT	
	EXTERIOR SURFACE MOUNTED LIGHTING	
	PANELBOARD 120/208 VOLTS-FLUSH MOUNTED	6'-6" TO TOP
	DISCONNECT SWITCH-UNFUSED/FUSED FUSE SIZE SHOWN OVER FRAME SIZE	5'-6" TO TOP
	SWITCH-SINGLE POLE, THREE-WAY, SUBSCRIPT DENOTES OUTLET CONTROLLED	3'-10"
	SWITCH-PILOT LIGHT, OCCUPANCY SENSOR	3'-10"
	SWITCH-MOTOR RATED	
	JUNCTION BOX	
	RECEPTACLE-20A-125 VOLTS-DUPLEX, DOUBLE DUPLEX	1'-8"
	RECEPTACLE-20A-125 VOLTS-DUPLEX - MOUNTED FLUSH IN CEILING	
	RECEPTACLE-20A-125 VOLTS-ISOLATED GROUND	1'-8"
	RECEPTACLE-20A-125 VOLTS- GROUND FAULT CIRCUIT INTERRUPTER	1'-8"
	RECEPTACLE-20A-125 VOLTS-COUNTER HEIGHT	
	RECEPTACLE-20A-125 VOLTS- WITH WEATHERPROOF IN-USE COVER	1'-8"
	RECEPTACLE-20A-125 VOLTS- FLOOR MOUNTED	
	MOTOR-SINGLE PHASE, THREE PHASE, HORSEPOWER AS NOTED.	
	SPECIAL RECEPTACLE AS NOTED	
	OUTLET-COMBINATION TELEPHONE/DATA	1'-8"
	HOOD FIRE SUPPRESSION SYSTEM	
	TELEPHONE TERMINAL BACKBOARD	
	DRAWING NOTE, SPECIAL EQUIPMENT NUMBER	
	GROUND CONNECTION	
	BRANCH CIRCUIT-IN CEILING OR WALLS	
	BRANCH CIRCUIT-IN FLOOR	
	HOMERUN TO PANEL-LETTER AND NO. INDICATES CIRCUIT NUMBER.	
	CEILING SPEAKER	

ABBREVIATIONS			
AFF	ABOVE FINISHED FLOOR	NIC	NOT IN CONTRACT
C,CDT	CONDUIT	NEC	NATIONAL ELECTRIC CODE
EF	EXHAUST FAN	NL	NIGHT LIGHT
GFI	GROUND FAULT INTERRUPTER	PL	PILOT LIGHT
HP	HORSEPOWER	RX	REMOVE EXISTING
IG	ISOLATED GROUND	N	NEW
MH	MOUNTING HEIGHT	WP	WEATHERPROOF
MTD	MOUNTED	XR	EXISTING TO REMAIN

TYPE	DESCRIPTION	VOLTS	MOUNTING
A	Lithonia cpx 2ft square flat panel	120	CEILING, RECESSED
B	Lithonia LBR4 4" round downlight	120	CEILING, RECESSED
C	Lithonia LBR4 4" round downlight	120	CEILING
D	EUREKA Quadrant Pendant 23" tall	120	CEILING
E	EUREKA Quadrant Pendant 35" tall	120	CEILING
F	OXYGEN AURORA 12" round wall sconce	120	WALL
G	Electric Mirror 30" Round Illuminated Mirror	120	WALL
H	WALL PAK	120	WALL
I	WALL MOUNTED EXTERIOR EMERGENCY LIGHT , USE 90 MIN. BATTERY BACKUP	120	SURFACE, WALL
NOTES:			
PROVIDE BATTERY PACK WITH CHARGER, INDICATOR LAMP, 90 MINUTE POWER AND CAPACITY TO ILLUMINATE ONE FLUORESCENT LAMP TO 1400 LUMENS. BATTERY PACK ASSEMBLY SHALL COMPLY WITH NEC 700-12.			



Scale 1/4"=1'-0"

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Date:	Issued for:
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E1

THE WORK includes materials, fixtures, devices and accessories necessary for the complete functioning electrical system. All work shall be in accordance with local codes or ordinances and subject to inspection.

COORDINATE with the Work of other Sections, make all connections to equipment furnished by others, and with the constraints of the existing conditions of the Project Site.

COMPLY with all laws applying to electrical installations in effect, and with the most recent addition of the National Electric Code. All materials used shall be new and shall conform to the standards established by the Underwriters Laboratories Inc.

VERIFY voltage drops and A.I.C. Ratings for all equipments connected, and verify size of electrical system breakers, conduit, etc. as necessary

ROOF PENETRATIONS shall comply with SMACNA and NRCA standards, with requirements of the Owner, and with all requirements of the roofing warrantee or guarantee. Sub-contract roofing penetration Work to an entity approved for use by the Owner. Do not perform roofing penetrations in a manner which would void or otherwise limit the roofing warrantee or guarantee.

PANELBOARDS shall be as manufactured by Square D or equal, meeting U.L. Standards 50 and 67, with U. L. label. Use equipment provided by owner where possible.

BREAKERS shall be thermal magnetic type, quick-make, quick-break, plug-in type of single unit construction. Two and three pole breakers shall be single unit common trip type. Breakers used as switches for 120V lighting circuits shall be approved for that use and marked "SWD".

CABINETS shall be one piece code gauge galvanized steel with mounting studs, wiring gutters of ample size and knockouts for conduit connections as required. Bus bars shall be 98% conductive copper, aluminum, or copper-clad aluminum. Fronts shall be one piece code gauge furniture steel with adjustable fasteners. Provide flush mount units unless otherwise indicated. Provide a plastic covered typewritten schedule identifying all branch circuits inside each cabinet.

GROUNDING SYSTEM: Permanently and effectively ground all metallic Conduit, supports, cabinets, panel boards and systems neutral conductors. Maintain continuity of equipment ground throughout the system. Ground clamps shall be approved type, specifically designed for grounding. Where grounding conductor is enclosed in conduit, ground clamp shall be of a type which encloses both conductors and ground. All circuits in flexible metal or plastic conduit shall include a ground wire sized in accordance with NEC Table 250-95. Equipment requiring a dedicated ground wire has been shown on the plans and must be verified in the field.

CONDUIT shall be sized to comply with NEC for number and size of conductors installed, minimum 1/2" above grade. Provide Schedule 40 PVC plastic or rigid steel conduit below grade, minimum 3/4". Provide electrical metal tubing (EMT) meeting FS W-C563, Armour cable, or flexible conduit (in lengths 6' or less) for interior locations. EMT connectors and couplings 2" and smaller shall be set-screw type. Clamp conduit to boxes with bushing inside and locknut outside.

CONDUCTORS shall be insulated soft annealed copper with color coding, B and S gage, #10 and smaller to be solid, #8 and larger to be stranded, minimum #12 unless otherwise indicated. THW and THHN may not be used underground, at service entrances, outside, or in wet locations. All insulation to be rated for 600V and types as follows:

- #10 and smaller: THW, THWN or THHN
- #8 to #4/0: THW or THHN
- Over #4/0 ordinary service: THW
- Over #4/0 wet or hot service: THW
- Service Entrance: THW
- Wire through Fluorescent fixture channels or within 3 feet of heating equipment: THHN

DEVICES shall be manufactured by Leviton or equal. All devices shall be ivory color. All cover plates shall be ivory color plastic. Standard duplex receptacles shall be grounding type, 20A, NEMA WD-2 standard 5-20R, back and side wired. Other devices shall be as indicated on the Drawings, or as required by the equipment item intended to be served. Where switches are grouped, provide gangplates.

LIGHT FIXTURES: Provide fixtures with lamps as indicated on Drawings. Provide fixture hickey, suspension nipples and splice fixture wiring to outlet box wiring as required. Provide trim to fit each ceiling condition encountered, notwithstanding model numbers indicated in Fixture Schedule.

LAYOUT branch circuit wiring and arrangement of home runs for maximum economy and efficiency. Increase wire size if voltage drop exceeds 3% or 100 feet of length.

CONCEAL WIRING SYSTEM above suspended ceilings or in wall or floor construction where possible. Install conduit parallel to building lines, and to clear all openings, depressions, pipes, ducts, structure, etc.

METAL-CLAD CABLE Type "MC" may be used in place of conduit and wire.
Installation to conform to Article 334, of the National Electric Code.

ADJUSTING AND TESTING: All electrical equipment shall be adjusted and tested for proper operation. Completed wiring system shall be free from short circuits.

TOUCH-UP or refinish damaged surfaces of fixtures and equipment, exposed to view.

INSTALL CONDUIT continuous between boxes and cabinets with no more than three (3) 90 degree bends. Securely fasten in place with straps, hangers and steel supports as required. Do not support conduit from suspended ceiling grid or suspension wires. Ream conduit ends before installation and thoroughly clean before installation. Openings shall be plugged or covered to keep conduit terminals and switches and outlets shall not be used to "feed thru" to the next switch or outlet. The disconnection or removal of a receptacle, fixture, or other device fed from a box shall not interfere with or interrupt the conductor continuity.

CLEAN all fixtures, glassware and lamps, ready for use.

1. The electrical panel is new
2. Supply and install Internet cabling as required.
3. Use copper wire for all circuits. The panel supply wire is new.
4. Supply and install electrical outlets as shown on the plan. All outlets within six feet of the water source must be GFI protected.
5. Supply and install lighting fixtures as shown on the plan.
6. Wire all the light fixtures and the outlets as shown on the plan.
7. Exit and emergency light fixtures shall be provided with emergency battery backup.
8. The 50 amps disconnect box next to the roof top unit is existing.
9. The weather proof outlet within 25 ft of the roof top unit is existing.
10. The fault current at the transformer is 10,000 amps.
11. The overcurrent protection at the main breaker is 22,000 A.I.C.
12. Contractor is responsible for all fixtures supplied and installed by him.
13. Contractor shall verify service size.

P1

KVA

120 / 208 VAC, 3PH/4W

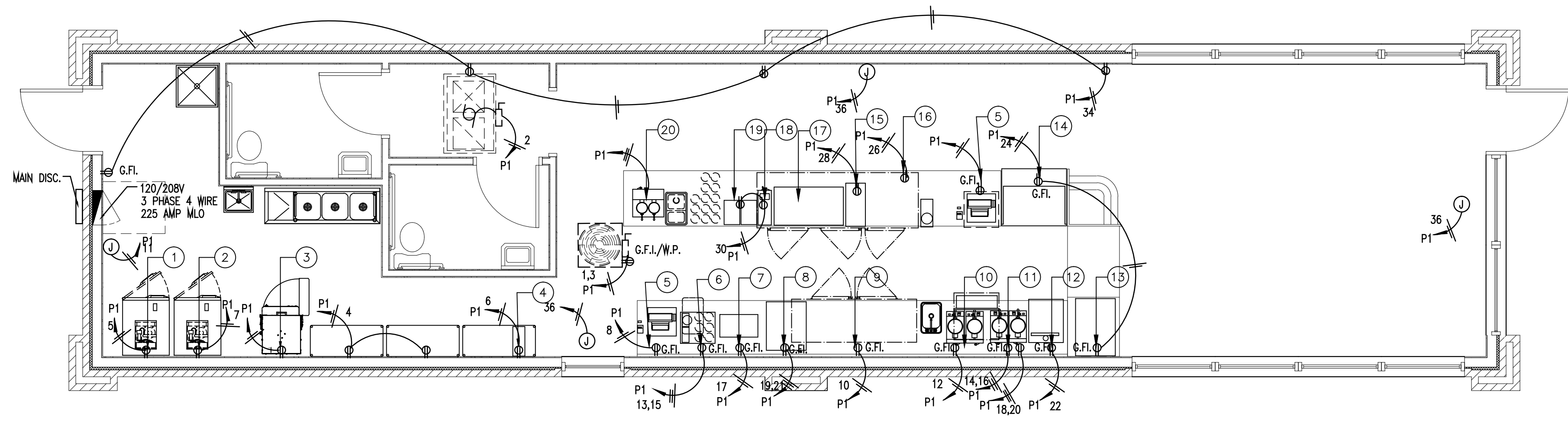
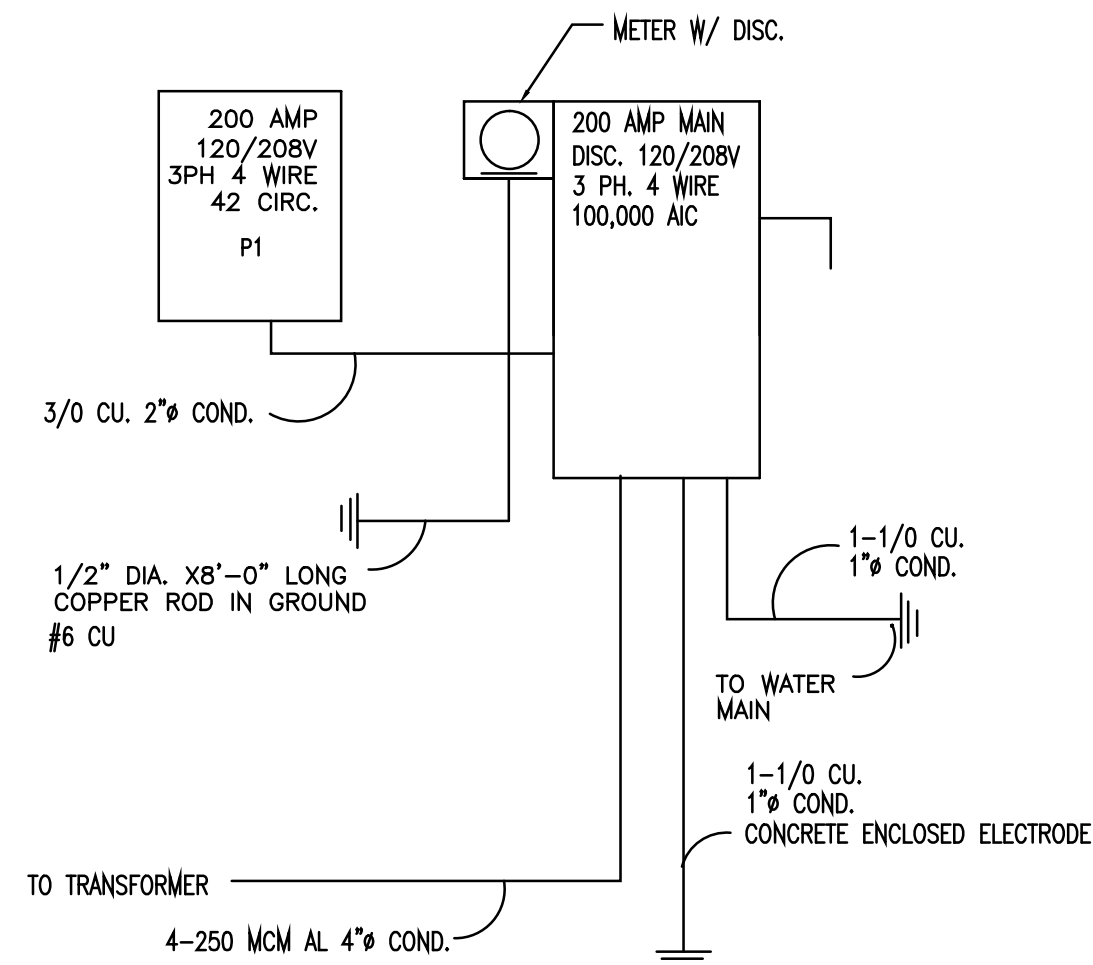
200 A 3-M.O.

LOCATION: COFFEE SHOP

SERVES: TENANT

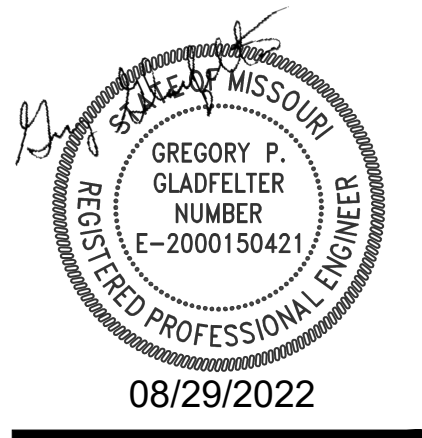
	DESCRIPTION	WIRE	BRKR	PL	KVA						PL	BRKR	WIRE	DESCRIPTION		
					A	B	C									
1					2.00	1.40					1	20	12	FURNACE	2	
3	CONDENSOR	12	35	2		2.00	0.36				1	35	12	OUTLETS	4	
5	FREEZER	12	20	1				1.50	0.37		1	20	12	GRINDER	6	
7	REFRIGERATOR	12	20	1	0.80	0.30					1	20	12	P.O.S.	8	
9	DISHWASHER	12	20	1		1.73	0.80				1	20	12	PREP TABLE	10	
11	MENU BOARD	12	20	1				0.20	0.75		1	20	12	TEAM/MAKER	12	
13					1.19	1.00					2	20	12	BLENDER	14	
15	EGG MAKER	12	20	2		1.19	1.00								16	
17	MICROWAVE	12	20	1				1.50	1.00						18	
19	OVEN/TOASTER	10	30		3.33	1.00					2	20	12	BLENDER	20	
21						3.33	1.09				1	20	12	KOMBUCHA ON TAP	22	
23								3.05	0.50		1	20	12	DISPLAY CASES	24	
25	ESPRESSO MACHINE	10	30	2	3.05	0.80					1	20	12	UNDERCOUNTER REFRIGERATOR	26	
27						0.00	0.35				1	20	12	COLD BREW	28	
29								2.55	1.15		1	20	12	TAMPER & GRINDER	30	
31	COFFEE BREWER	10	30	2	2.55	0.30					1	20	12	EXT/EMERGENCY LIGHTS	32	
33	LIGHTS	12	20	1		0.18	0.72				1	20	12	OUTLETS	34	
35	LIGHTS	12	20	1				0.30	0.20		1	20	12	EXTERIOR SIGN	36	
37	LIGHTS	12	20	1	0.13	0.90					1	20	12	EXTERIOR LIGHTS	38	
39						0.00	0.00								40	
41								0.00	0.00						42	
TOTAL PER PHASE					18.75	12.74				KVA	13.07				44	
CALCULATED LOAD PER PHASE					123.78	95.35				AMPS					46	
LOADS CALCULATED PER NEC ARTICLE 220					TOTAL CALCULATED LOAD					123.78	AMPS					48
																50

EQUIPMENT CONNECTION SCHEDULE				DISCONNECT DEVICE AT UNIT
ITEM NO	DESCRIPTION	VOLTAGE	LOAD	
1	FREEZER	115V/60/1	14 AMPS	NEMA 5-20 PLUG
2	REFRIGERATOR	115V/60/1	6.9 AMPS	NEMA 5-15 PLUG
3	DISHWASHER	115V/1/60	15 AMPS	NEMA 5-20 PLUG
4	GRINDER	115V/1/60	3.2 AMPS	NEMA 5-15 PLUG
5	P.O.S.	115V/60/1	5.5 AMPS	NEMA 5-15 PLUG
6	EGG COOKER	208V/50-60	11.4AMPS	NEMA 6-20 PLUG
7	MICROWAVE	115V/60/1	13.4 AMPS	NEMA 5-20 PLUG
8	OVEN/TOASTER	208V/50-60	16 AMPS	NEMA 6-20 PLUG
9	PREP TABLE	115/60/1	6.5 AMPS	NEMA 5-15 PLUG
10	TEA MAKER	115V/60/1	3.2 AMPS	NEMA 5-15 PLUG
11	BLENDER	208V/50-60	3.2 AMPS	NEMA 5-15 PLUG
12	KOMBUCHA ON TAP	115V/60/1	9.5 AMPS	NEMA 5-15 PLUG
13	BEVERAGE COOLER	115V/60/1	5 AMPS	NEMA 5-15 PLUG
14	PASTRY DISPLAY	115V/60/1	5.6 AMPS	NEMA 5-15 PLUG
15	COLD BREW	115V/60/1	5 AMPS	NEMA 5-15 PLUG
16	UNDER COUNTER FRIDGE	115/60/1	6.5 AMPS	NEMA 5-15 PLUG
17	ESPRESSO MAKER	208V/50-60	5.5 AMPS	NEMA 5-15 PLUG
18	TAMPER	115V/60/1	3.2 AMPS	NEMA 5-15 PLUG
19	GRINDER	115V/60/1	6.9 AMPS	NEMA 5-15 PLUG
20	COFFEE MAKER	220V/50-60	23.2 AMPS	DIRECT CONNECTION



Scale 1/4"=1'-0"

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GROUND ROOTS COFFEE



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E2

GOODMAN HORIZONTAL GAS FURNACE MODEL GMEC 9608004CN
with a 96% AFUE and 80,000 BTU/H input or equal. Unit is rated at 11.6 amps
and requires a 15 amp disconnect in the main panel. The air handler weight is 123
lbs. Provide cooling coil model CHPF3743C6. 1400 CFM

GOODMAN MODEL GSXC140421AA Condensing on the roof or equal. Unit is rated at 21.8 MCA and has a 35 AMP disconnect in the electrical panel. The unit has a cooling capacity of 42,000 BTUH. The SEER/EER is 14/12. The condensor weight is 189 lbs.

BATH EXHAUST FANS (L1) – Broan Model 671 fan unit or equal exhaust fan in bathroom with single toilet. Unit is 110 volt with a 70 cfm exhaust capacity and 3/4" diameter duct fan to sidewall of building. Backdraft damper is at the end of the duct. Use in bathroom and connect to exhaust duct provided in rear corridor. Provide a fire damper where the duct goes through the corridor wall. (2 THUS)

THE WORK INCLUDES providing new ductwork, grilles, registers, diffusers, duct insulation, thermostats and wiring, and other work as indicated by the Drawings, and as required for a complete and functioning system.

DRAWINGS for HVAC work are diagrammatic, showing the general location, type, layout, and equipment required. The drawings shall not be scaled for exact measurements. Refer to manufacturer's standard installation drawings for device connections and installation requirements. Provide ALL connections, accessories, offsets, and materials necessary to facilitate the system's functioning.

CODE COMPLIANCE: All Work shall comply with the latest edition of the applicable mechanical code, as approved and adopted by authorities having jurisdiction, and applicable sections of NFPA, OSHA, or any interim amendments at the time of the proposal, or other ordinances. All work is subject to inspection.

COORDINATE with the Work of other Sections, equipment furnished by others, requirements of the owners, and with the constraints of the project site. Coordinate with electrical and plumbing subcontractors and their associated drawings as necessary to install all work of the Project. Changes required in the field that require relocation of devices beyond the room or space shown, or those beyond a distance of three feet in any direction of the approximate location shown on the drawings, must be approved by the Engineer prior to fabrication or installation.

EMPLOY experienced tradesmen. The work shall be of the highest industry standards and quality, and shall be acceptable to the Engineer and Owner.

DUCTWORK: Shop fabricated and factory purchased sheet metal ductwork shall conform to ASHRAE and SMACNA standards, minimum of 26 gage. Sheet metal shall be galvanized sheet steel of lock-forming quality, ASTM A-525. Unless otherwise noted, duct dimensions on drawings are net inside clear dimensions on lined ducts, or sheet metal dimensions on unlined ducts. All angle iron used for support shall be galvanized. Connections to walls or floors shall be airtight with angle iron and caulking.

SEAL all duct seams, transverse and longitudinal, air-tight. Provide turning vanes at all elbows or offsets exceeding 33 degrees.

CEILING DIFFUSERS/RETURNS: Provide supply diffusers, grilles and registers, capacities and pattern indicated on the Drawings. The pattern shall be in all four directions unless noted otherwise on the drawings. All return air shall be ducted.

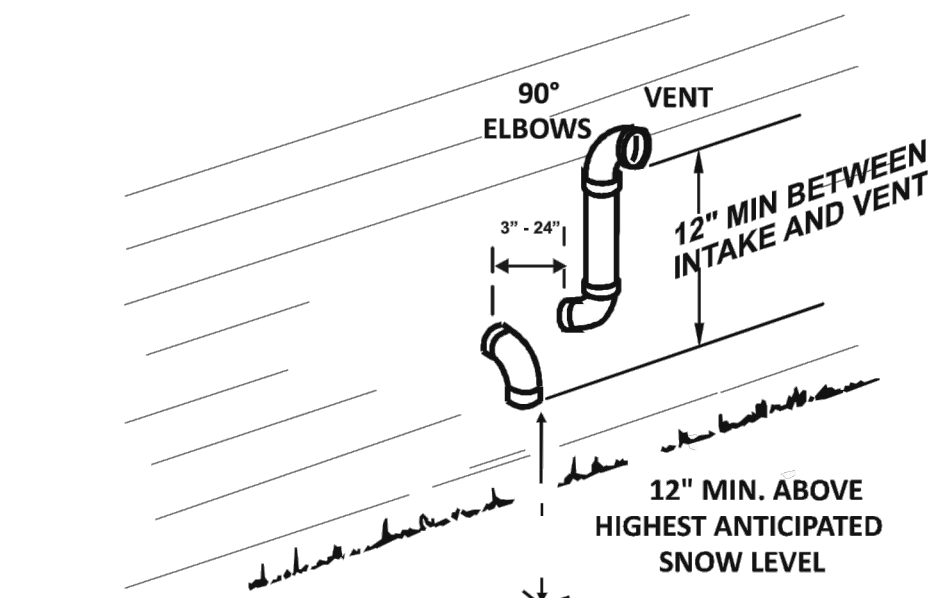
ROUND FLEXIBLE DUCTWORK: Provide Thermaflex # GK-M or other equivalent product approved for use by the Engineer, factory assembled class 1 air duct (UL 181) with 1" thick 1 PCF fiberglass insulation and reinforced outer protective cover/vapor barrier. Flex duct shall meet NFPA 90A with flame spread under 25, smoke developed under 50, and shall be rated for 2" w.g. pressure and 0 to 250 degree temperature. Provide all grilles and louvers with a minimum 4" duct starter collars, or sheet metal elbows. Attach flexible ductwork to grilles or duct collars with inner helix banded separately from the external vapor barrier and insulation. Fold over insulation and ductwork toward to cover exposed insulation with vapor barrier and band on outside. Provide Panduit straps or metal adjustable bands only. Use twistlock conical top collars at connections into sheet metal ductwork.

AUTOMATIC TEMPERATURE CONTROL: Provide three wire type proportional thermostats where indicated on the drawings. Provide plenum rated cable or conduit and wire, of minimum 18 AWG wire, for connection from thermostats to their termination point in the air handling unit.

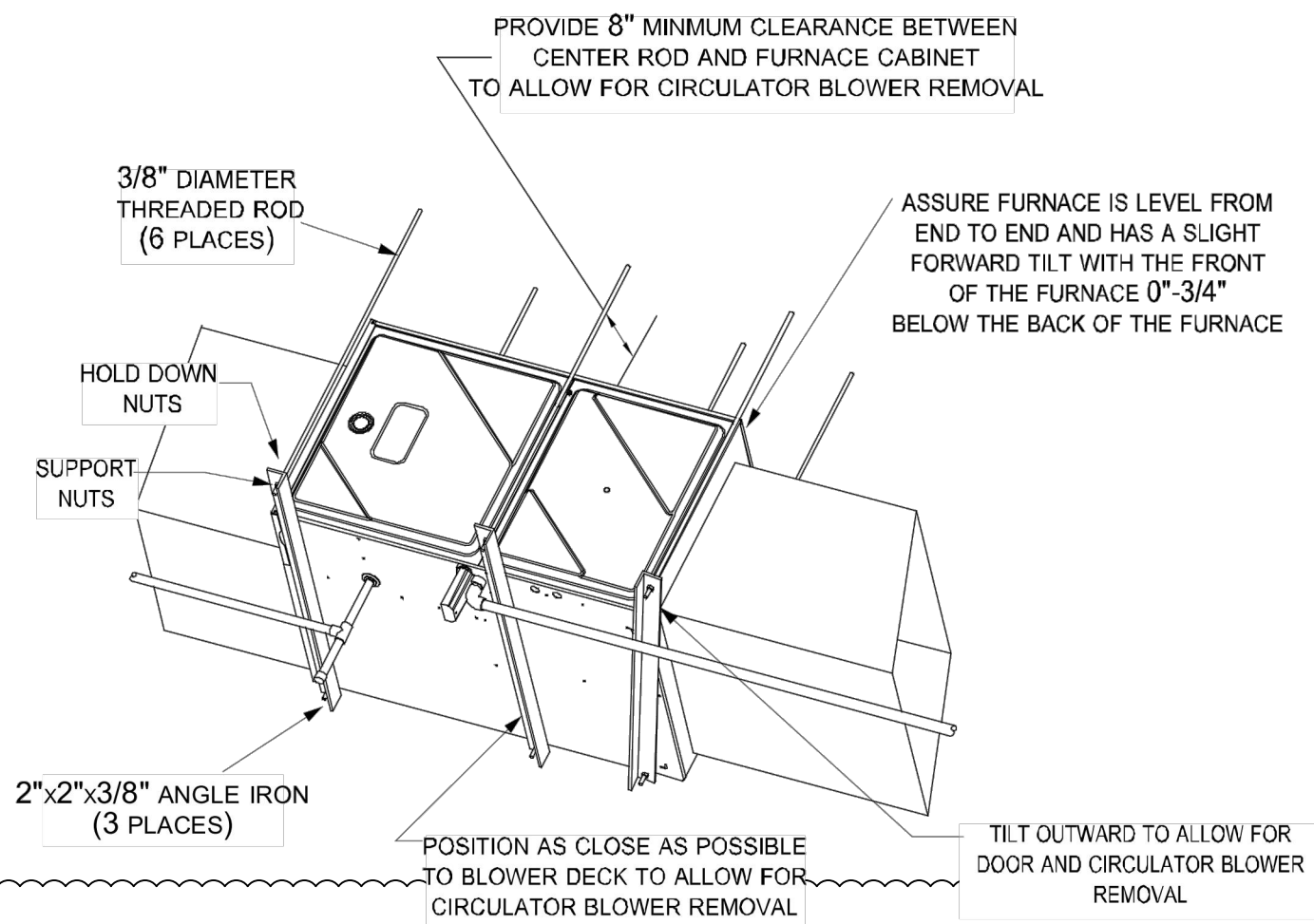
DUCT INSULATION shall be provided on all ductwork. The insulation must be provided on the outside of the duct. The exterior duct from the unit to the building must be insulated with an exterior duct insulation rated for the exterior use.

GUARANTEE all new work from defects in installation, and material defects for a period of one year after acceptance of the system by the Owner.

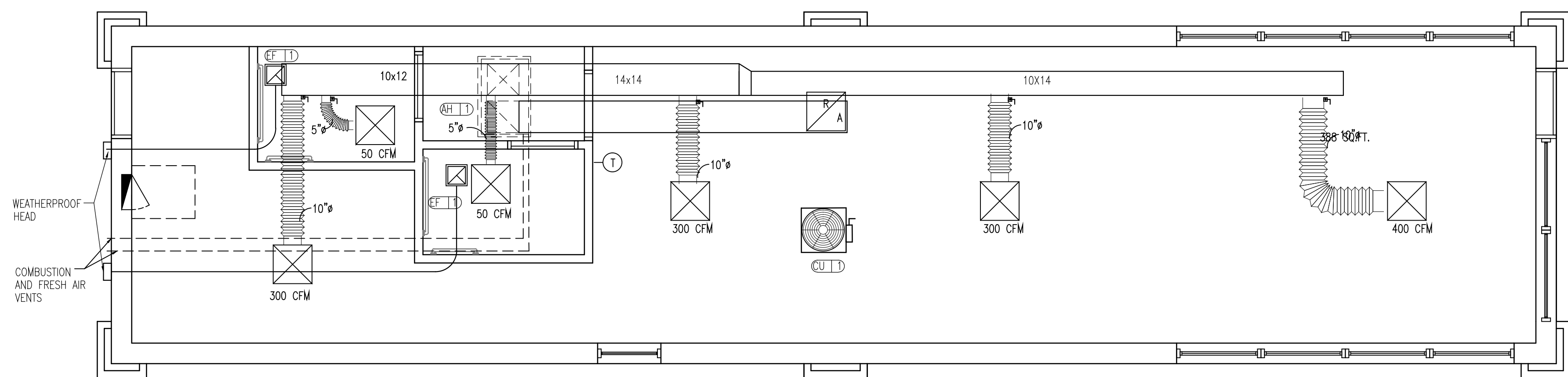
7. The duct sizes are shown on the drawing.
8. Install programmable thermostat for control of temperature.
9. Install an exhaust fan in each bathroom. The exhaust must be at least 70 cfm per toilet.
10. Install weatherproof duplex outlet within 25' of all exterior units
11. Install exhaust fans in each bathroom. The fan must be connected to the light so that they come on at the same time. I recommend using a sensor device to control the lighting and fan in each bathroom. The exhaust must be at least 70 cfm per toilet unit.
12. Fresh air shall be provided through the lower on the outside wall. Use a 6"x10" duct from the outside to the return air duct of the furnace above the ceiling.
13. The duct sizes for the exhaust fans are shown on the drawing. The duct must terminate above the roof or at the outside wall away from any intake vents.
14. Install filters in return air vents.
15. All units must be behind the barrier on the roof to keep them hidden from the ground.
16. All remote ACU units must have a disconnect box at the unit.



VENTING DETIL



Scale 1/4"=1'-0"



Scale $1/4"=1'-0"$

AIR BALANCE SCHEDULE					
ITEM	OUT DOOR AIR	RETURN AIR	SUPPLY AIR	EXHAUST AIR	PRESSURE
EF 1	140	0	0	-140	0
ACU 1	566	834	1400	0	0
TOTAL	706	834	1400	-140	0
BUILDING PRESSURE = 0 CFM					

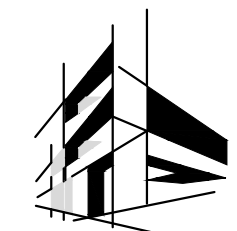
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GROUND ROOTS COFFEE

3680 NE AKIN DRIVE SUITE 144 LEE'S
SUMMIT, MO



□R□□□□□R□
□□□□□□R□□
□□□□□R□□M□□

R

SAS OFFICE	MISSOURI
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2980	████████20
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Date: 5-11-22

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M1