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

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MISSOURI OFFICE
752 Bagnell Dam Blvd.
Lake Ozark, MO 65049
573-365-2100
f: 573-365-2102

STATE OF MISSOURI
DARRYL WARREN HAWKINS
NUMBER A-2001023626
ARCHITECT

8-19-22

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) = 1,096 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	0hour
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

Flood Panel 29095C0430G Effective Date 1/20/2017

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

OIL AND GAS

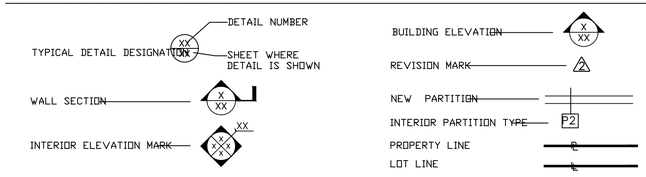
ACCORDING TO THE WELL INSTALLATION SECTION DRILLING INFORMATION MAP OF THE MISSOURI DEPARTMENT OF NATURAL RESOURCES THERE ARE NO OIL AND GAS WELLS IN THE VICINITY OF THIS PROPERTY

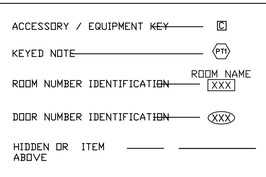
ABBREVIATIONS

ACOUS	ACOUSTICAL	CLG	CEILING	ELEV	ELEVATOR	H	HIGH	MH	MANHOLE	QT	QUARRY TILE
AC	AIR CONDITIONING	CLG	CLOSET	ENCL	ENCLOSURE	HB	HOSE BIBB	MIN	MINIMUM	QTR	QUARTER
ACT	ACOUSTIC TILE CEILING	CLR	CLEAR	ENGR	ENGINEER	HC	HANDICAP	MO	MASONRY OPENING		
ADJ	ADJACENT	CMU	CONCRETE MASONRY UNIT	EQ	EQUAL	HD	HEAD	MS	MACHINE SCREW	RA	RETURN AIR
ADJUST	ADJUSTABLE	CO	CLEAN OUT	EQUIP	EQUIPMENT	HDW	HARDWARE	MTL	METAL	RB	RESILIENT BASE
AFF	ABOVE FINISH FLOOR	COL	COLUMN	ESMT	EASEMENT	HM	HOLLOW METAL	MULL	MULLION	R	RISER
AGG	AGGREGATE	CONC	CONCRETE	EWC	ELECT. WATER COOLER	HORIZ	HORIZONTAL			RAD	RADIUS
ALT	ALTERNATE OR ALTERNATIVE	CONST	CONSTRUCTION	EXH	EXHAUST	HP	HIGH POINT	NEG	NEGATIVE	RES	RESILIENT
AL	ALUMINUM	CONT	CONTINUOUS	EXIST	EXISTING	HT	HEIGHT	NIC	NOT IN CONTRACT	RD	ROOF DRAIN
AP	ACCESS PANEL	CONTR	CONTRACTOR	EXP AGG	EXPOSED AGGREGATE	HVAC	HEATING VENTILATING	NO	NUMBER	RE	REFER TO
APPROX	APPROXIMATE (LY)	CPT	CARPET	EXPAN	EXPANSION		AND AIR CONDITIONING	NOM	NOMINAL	REF	REFERENCE
ASPH	ASPHALT	CSK	COUNTERSUNK	EXT	EXTERIOR			NTS	NOT TO SCALE	REINF	REINFORCE
ATTEN	ATTENUATION	CT	CERAMIC TILE	EXTGR	EXTINGUISHER	INFO	INFORMATION			REQD	REQUIRED
ATTN	ATTENTION	D				ID	INSIDE DIAMETER	OA	OVER ALL	RET	RETAINING
			DEEP	FD	FLOOR DRAIN	IN	INCH	OC	ON CENTER	REV	REVISION
BETWN	BETWEEN	DBL	DOUBLE	FDN	FOUNDATION	INSUL	INSULATION	OD	OUTSIDE DIAMETER	RD	ROUND
BL	BRICK LEDGE	DEG	DEGREE	FEC	FIRE EXTINGUISHER CAB.	INT	INTERIOR	OH	OVERHEAD	RM	ROOM
BLDG	BUILDING	DTL	DETAIL	FF	FINISH FLOOR			OPNG	OPENING	RO	ROUGH OPENING
BLK	BLOCK	DF	DRINKING FOUNTAIN	FH	FLAT HEAD	JAN	JANITOR	OPP	OPPOSITE	RTU	ROOF TOP UNIT
BM	BEAM	DIA	DIAMETER	FHC	FIRE HOSE CABINET	JT	JOINT	OZ	OUNCE		
B.N.	BUILDING NORTH	DIAG	DIAGONAL	FIN	FINISH	JST	JOIST			SA	SUPPLY AIR
BD	BOARD			FLASH	FLASHING			P	PAINT	SAN	SANITARY
BO	BOTTOM OF	DIFF	DIFFUSER	FLR	FLOOR	LAM	LAMINATE OR LAMINATED	PART	PARTITION	SC	SEALED CONCRETE
BRG	BEARING	DN	DOWN	FLUOR	FLUORESCENT	LAV	LAVATORY	PL	PLATE	SD	SMOKE DETECTOR
BSMT	BASEMENT	DR	DOOR	FR	FIRE RETARDENT	LOC	LOCATION	PC	PLUMBING CONTRACTOR	SF	SQUARE FEET
BUR	BUILT UP ROOF	DT	DRAIN TILE	FT	FEET	LP	LOW POINT	PCE	PIECE		
		DW	DRY WALL	FTG	FOOTING	LBR	LUMBER	PLS	PLASTER	SHT	SHEET
CAB(S)	CABINET(S)	DWG(S)	DRAWING(S)					P LAM	PLASTIC LAMINATE	SIM	SIMILAR
CB	CATCH BASIN			GA	GAUGE	MACH	MACHINE	PLBG	PLUMBING	SP	STAND PIPE
CEM	CEMENT	EA	EACH	GALV	GALVANIZED	MAG	MAGNESIUM			SPAN	SPANDREL
CJ	CONTROL JOINT	EC	ELECTRICAL CONTR.	GC	GENERAL CONTRACTOR	MAS	MASONRY	PLYWD	PLYWOOD	SPEC	SPECIFICATION
℄	CENTER LINE	EF	EXHAUST FAN	GFRP	GLASS FIBER	MATL	MATERIAL	POL	POLISHED	SQ	SQUARE
		EJ	EXPANSION JOIST		REINFORCED CONCRETE	MAX	MAXIMUM	PR	PAIR	SS	STAINLESS STEEL
		EL	ELEVATION	GL	GLASS	MB	MOP BASIN	PREFAB	PREFABRICATED	STD	STANDARD
		ELEC	ELECTRICAL	GO	GLASS OPENING	MECH	MECHANICAL	PROJ	PROJECT	STL	STEEL
				GR	GRADE	MC	MECHANICAL CONTRACTOR	PROP	PROPERTY	STRUC	STRUCTURAL
				GYP	GYPSUM	MFR	MANUFACTURER	PSF	POUNDS PER SQUARE FOOT	SUSP	SUSPENDED
								PSI	POUNDS PER SQUARE INCH		
								PTD	PAINTED		

T	TREAD		
T & B	TOP AND BOTTOM		
T & G	TONGUE AND GROOVE		
TELE	TELEPHONE		
TEMP	TEMPERED		
TERR	TERRAZZO		
THK	THICK		
THRU	THROUGH		
TO	TOP OF		
TRANS	TRANSFORMER		
TYP	TYPICAL		
UC	UNDER CUT		
UH	UNIT HEATER		
UNFIN	UNFINISHED		
UL	UNDERWRITERS LABORATORY		
UNO	UNLESS NOTED OTHERWISE		
VB	VINYL BASE		
VCT	VINYL COMPOSITION TILE		
VT	VINYL TILE		
VENT	VENTILATION		
VERT	VERTICAL		
VEST	VESTIBULE		
VTR	VENT THROUGH ROOF		
VWC	VINYL WALL COVERING		
W	WIDE		
WC	WATER CLOSET		
W/(O)	WITH/(OUT)		
WD	WOOD		
WDW	WINDOW		
W GL	WIRE GLASS		
WP	WORKING POINT		
WSCOT	WAINSCOT		
WT	WEIGHT		
WWF	WELDED WIRE FABRIC		
YD	YARD DRAIN		
YH	YARD HYDRANT		

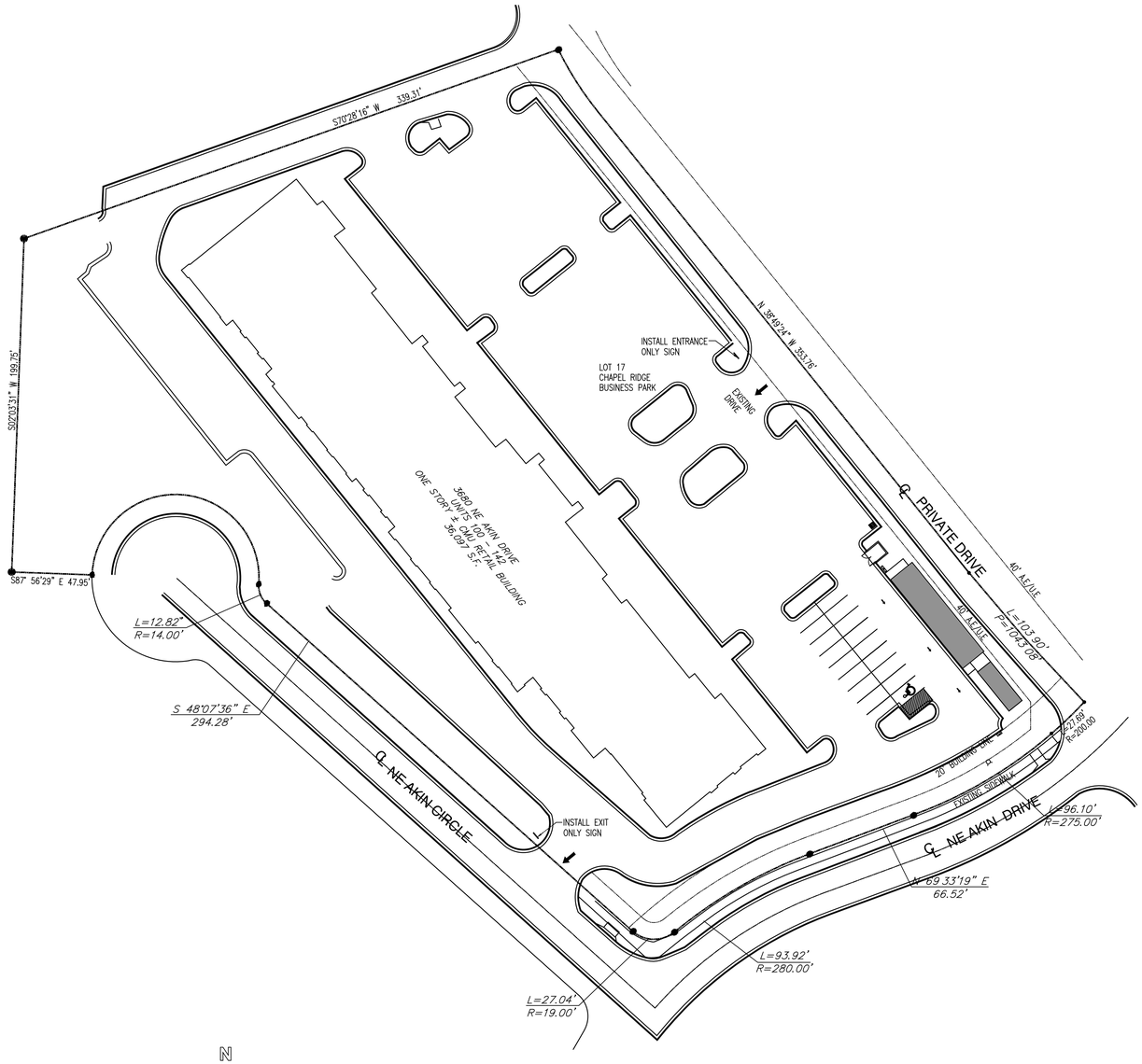
SYMBOLS LEGEND





SITE LOCATION

VICINITY MAP



SITE PLAN

Scale 1"=40.0'

SITE LEGEND

- Section Line
- GAS Gas Line
- OHE Overhead Electric Line
- UGE Underground Electric Line
- SS Stormwater Sewer Line
- AT&T Telephone Line
- W Water Line
- S 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 = XFMR = Transformer
- NEW CONTOURS
- EXISTING CONTOURS
- ℄ CENTELINE
- R/W 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

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

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DARRYL W. HAWKINS
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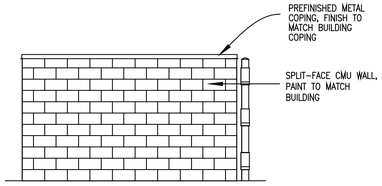
GROUND ROOTS COFFEE

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

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

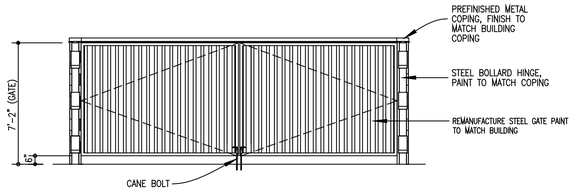
sheet no.

C1



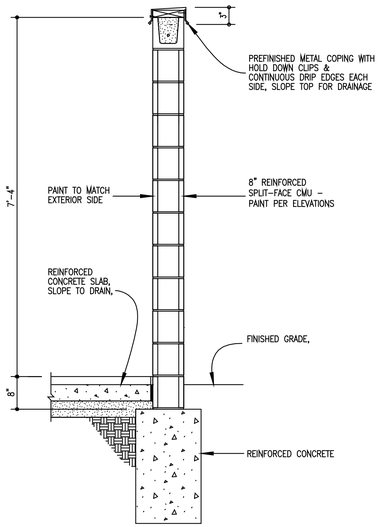
TRASH ENCLOSURE SIDE ELEVATON

Scale 1/4"=1'-0"



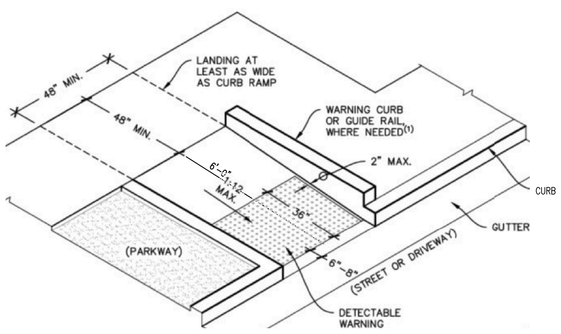
TRASH ENCLOSURE FRONT ELEVATON

Scale 1/4"=1'-0"



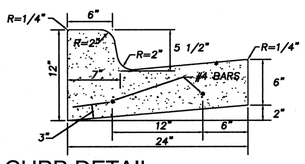
1 / C2 SECTION

Scale 3/4"=1'-0"

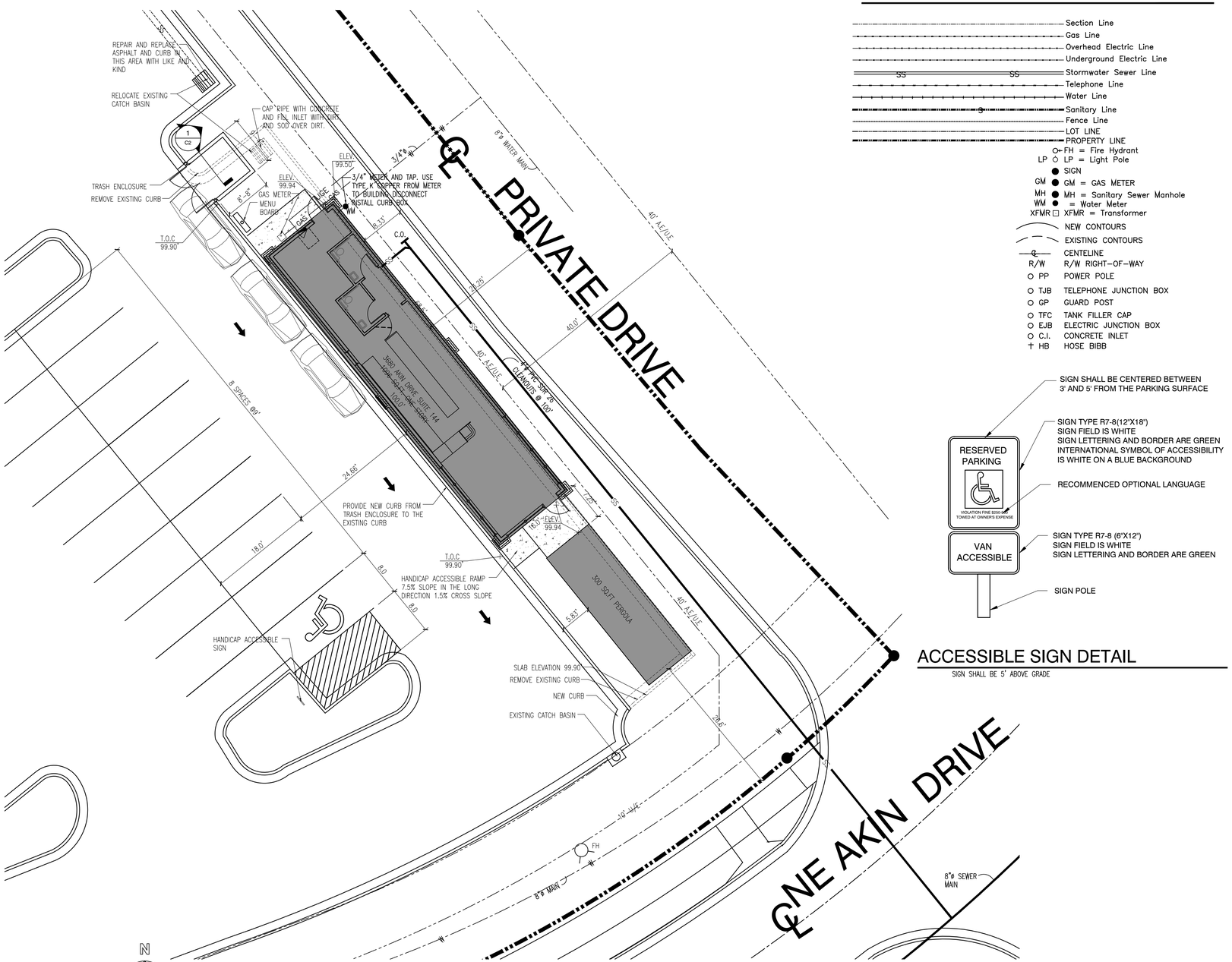


ACCESSIBLE RAMP DETAIL

6' RAMP LENGTH



CURB DETAIL



N

SITE PLAN

Scale 1"10.0'

SITE LEGEND

- Section Line
- Gas Line
- Overhead Electric Line
- Underground Electric Line
- SS — SS — Stormwater Sewer Line
- Telephone Line
- Water Line
- Sanitary Line
- Fence Line
- LOT LINE
- PROPERTY LINE
- FH = Fire Hydrant
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- C.I. = CONCRETE INLET
- HB = HOSE BIBB

ACCESSIBLE SIGN DETAIL

SIGN SHALL BE 5' ABOVE GRADE

GENERAL NOTES

1. Contractor shall obtain all permits including land disturbance, right-of-way, hauling, etc., with public works prior to construction as applicable.
2. 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, waddles, etc.) fully surrounding the stockpile area to protect adjacent inlets or areas, etc. until such time that stockpile is removed from site.
3. Good housekeeping including all spill response shall be done
4. The new building must maintain proper clearances from Evergy overhead electric lines.
5. Provide Irrigation for new landscaping.
6. Parking lot shall be paved and stripped and will comply with the unified development ordinance article 8 in terms of paving and thickness base.
7. 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.
8. 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.
9. All water service installations including backflow devices are subject to field verification and approval by the Water Departmen inspector.
10. Sanitary sewer improvements- The site will utilize the existing sanitary sewer on the North side of the building.
11. Water main improvements - The site will utilize the existing 8" water main on the North side of the building.
12. Storm water improvements - the site will utilize the existing storm water catch basins.

UTILITY NOTE:
THE INFORMATION SHOWN ON THIS DRAWING CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILLITES 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 UTILLITES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

BEFORE YOU DIG - DRILL - BLAST

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1-800-344-7483 (MISSOURI)
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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:

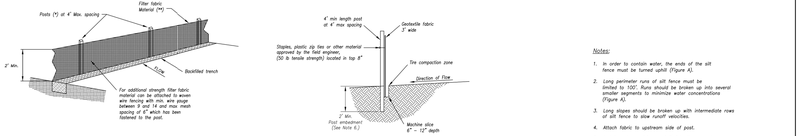
SODDING, may be used in any area requiring permanent seeding.

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.



SILT FENCE DETAILS
Not to Scale

Notes:
1. In order to contain water, the ends of the silt fence must be turned uphill (Figure A).
2. Long perimeter runs of silt fence must be limited to 1320'. Runs should be broken up into several smaller segments to minimize water concentrations (Figure A).
3. Long slopes should be broken up with intermediate rows of silt fence to slow runoff velocities.
4. Attach fabric to upstream side of post.
5. Install posts a minimum of 2' into the ground.
6. Trenching will only be allowed for small or difficult installation, where slicing machine cannot be reasonably used.

Maintenance:
1. Remove and dispose of sediment deposits when the deposit approaches ½ the height of silt fence.
2. Repair as necessary to maintain function and structure.

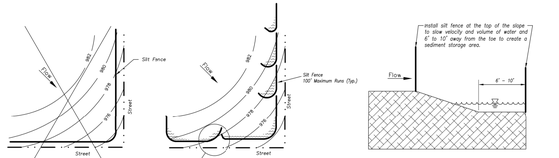
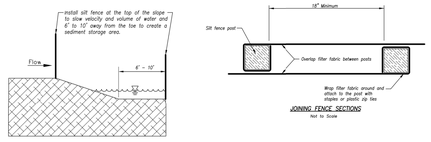


Figure A

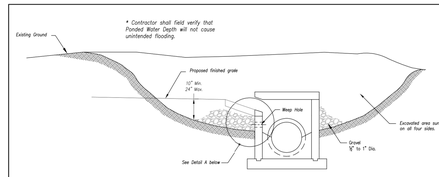
SILT FENCE LAYOUT
Not to Scale

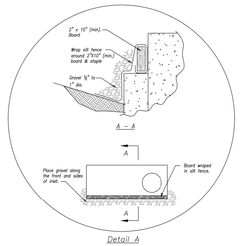


JOINING FENCE SECTIONS
Not to Scale

Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

AMERICAN PUBLIC WORKS ASSOCIATION	KANSAS CITY METRO CHAPTER
SILT FENCE	STANDARD DRAWING NUMBER ESC-03 ADOPTED: 10/24/2016

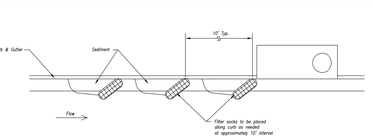




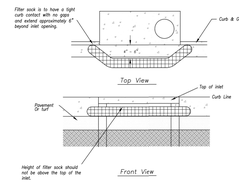
EARLY STAGE CURB INLET
(Open Box and Prior to Pouring Curb and Inlet Throat)

Notes:
1. Immediately following inlet construction and prior to construction of curb and inlet throat, protect inlet opening by installing 2" X 10" (min.) board wrapped in silt fence. Structures shall have excavated storage area on all four sides to allow settling of sediment (Early Stage Curb Inlet).
2. When inlet is completed and curb poured, filter socks or approved equal should be used (Late Stage Curb Inlet). Straw wattles are not approved for curb inlet use.
3. Contractor to field verify ponding water shall not create a traffic hazard.

Maintenance:
1. Remove deposited sediment from excavated storage areas when available storage has been reduced by 20%.
2. Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.
3. Repair or replace as necessary to maintain function and integrity of installation.



On Grade Curb Inlet Protection

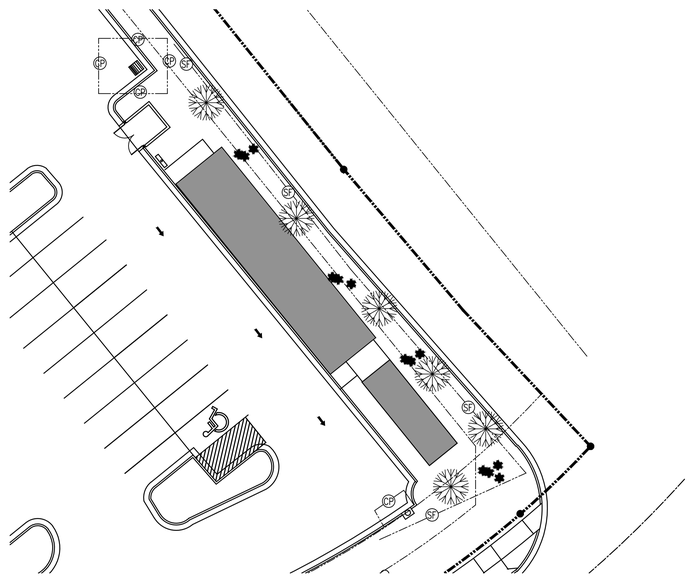


Sump Inlet Sediment Filter

LATE STAGE CURB INLET
(After Pouring Curb and Inlet Throat)

Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

AMERICAN PUBLIC WORKS ASSOCIATION	KANSAS CITY METRO CHAPTER
CURB INLET PROTECTION	STANDARD DRAWING NUMBER ESC-06 ADOPTED: 10/24/2016



N

EROSION CONTROL PLAN
Scale 1"=20.0'

CP 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

1. 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.
2. 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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(816) 531–2221
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DARRYL W. HAWKINS
STATE OF MISSOURI
DARRYL WARREN HAWKINS
NUMBER A-2001023626
ARCHITECT
8-19-22

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

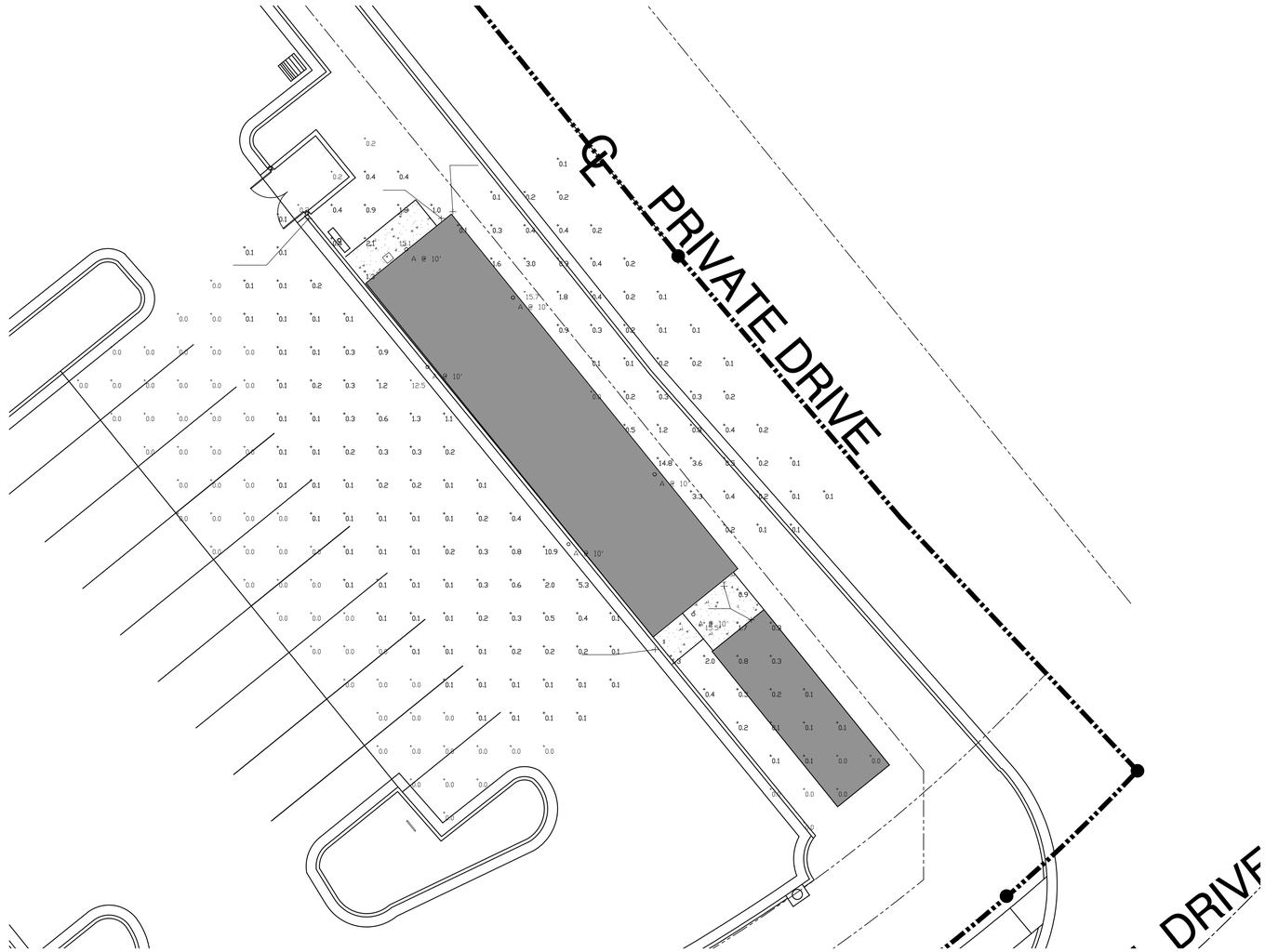
date 5-11-22
drawn by R.E.S.
checked by
revised

sheet no.
C3

Schedule										
Symbol	Label	QTY	Manufacturer	Catalog	Description	Number Lamps	Lamp Outputt	LLF	Input Power	Polar Plot
◯	A	6	Peachtree Lighting, LLC	C6BLRUD-14-35K-80-SH--RC-FINISH-WAL2-WL	6" CYLINDER, WITH A GEN 7 VERDI0 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.



N

SITE PLAN
Scale 1"=10.0'

INNOVATIVE DESIGN & RENOVATION
8011 PASEO SUITE 201
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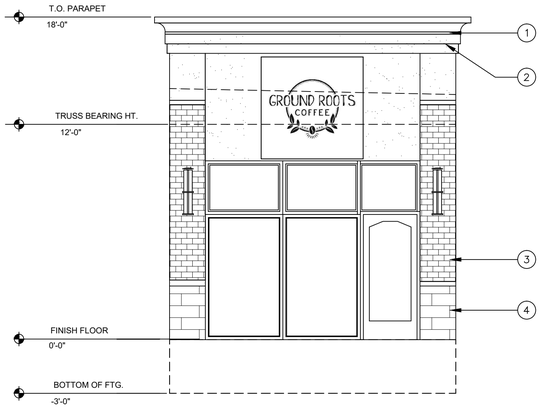
C4

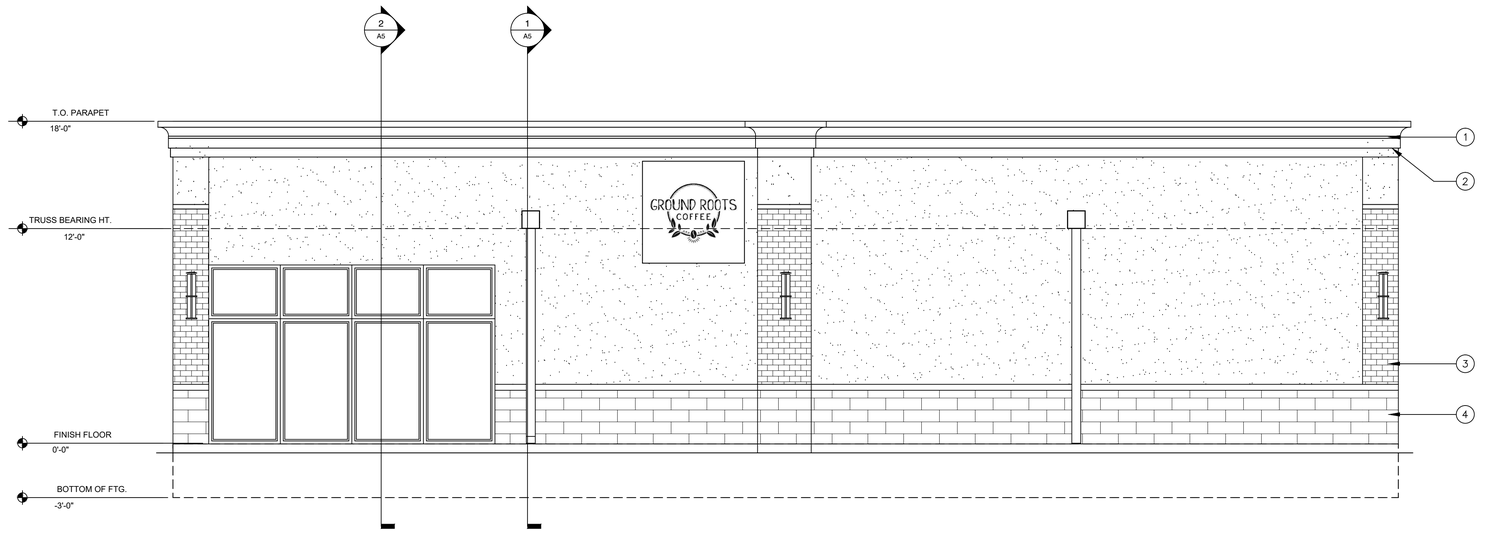
FINISH SCHEDULE

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



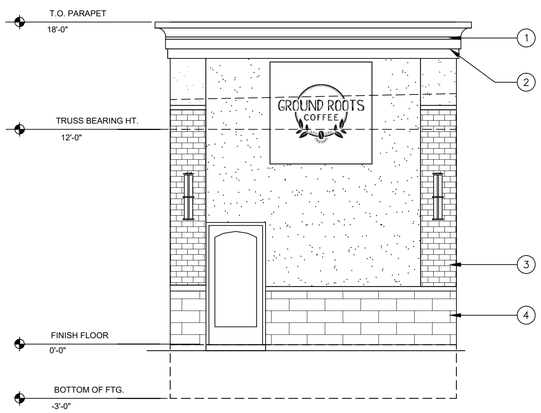
NORTH ELEVATION

Scale 1/4"=1'-0"



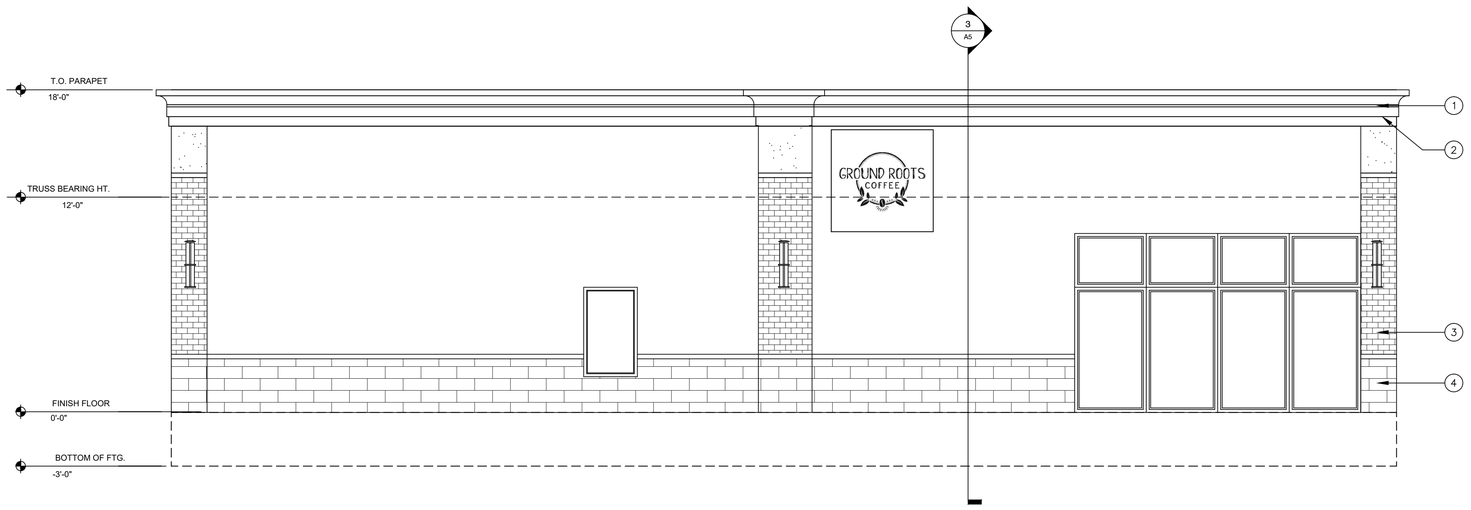
EAST ELEVATION

Scale 1/4"=1'-0"



SOUTH ELEVATION

Scale 1/4"=1'-0"



WEST ELEVATION

Scale 1/4"=1'-0"

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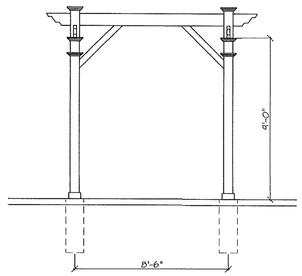
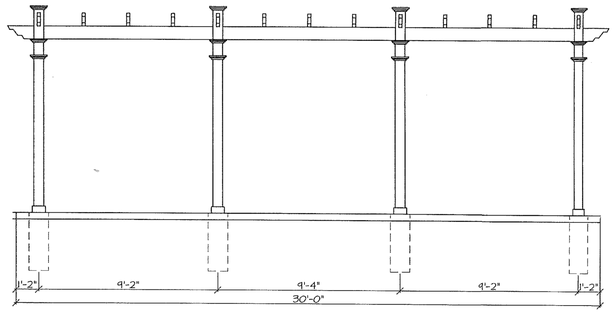
A4



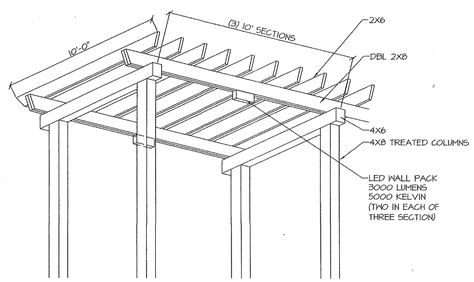
PURGOLA SIDE ELEVATION

Scale 1/4"=1'-0"



PURGOLA FRONT ELEVATION

Scale 1/4"=1'-0"



PURGOLA DETAIL

Scale 1/4"=1'-0"

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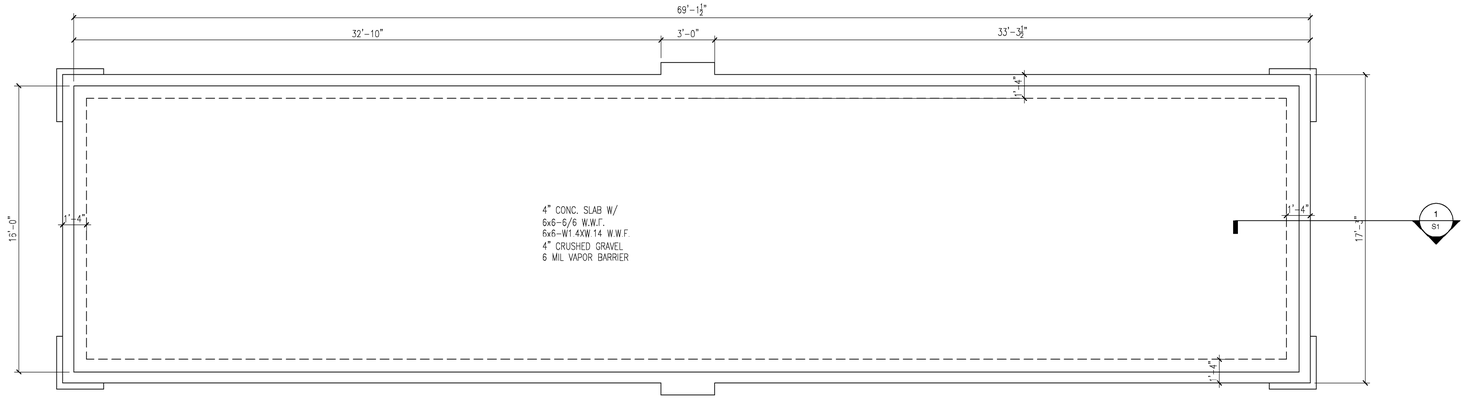
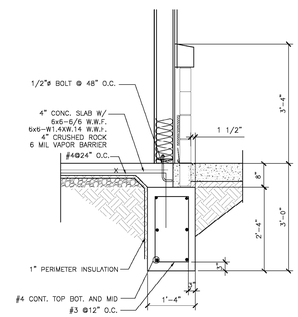
A5

A. Concrete
1. 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.
2. Coarse aggregate: regular weight concrete ASTM C33–81, maximum size as indicated for class of concrete.
3. Fine aggregate: ASTM C33–81, fineness modulus 2.3 to 3.1.
4. 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/Fl–15
   Specified local value: Ff–15/Fl–10
5. Protect concrete from freezing with a blanket or straw covering. Follow ACI 306R–78 for cold weather conditions.
6. Protect concrete from hot weather according to ACI 306R–77.

B. SOIL
1. SOIL BEARING q=1500 psf
2. Foundation design is based on the reactions indicated and the soil bearing capacity.



FOUNDATION PLAN
Scale 1/4"=1'-0"



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

MARK A TOWNER
8011 PASEO SUITE 201
KANSAS CITY, MO. 64131

MARK A TOWNER
STATE OF MISSOURI
MARK ALAN TOWNER
NUMBER E-22568
PROFESSIONAL ENGINEER
8.10.22

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

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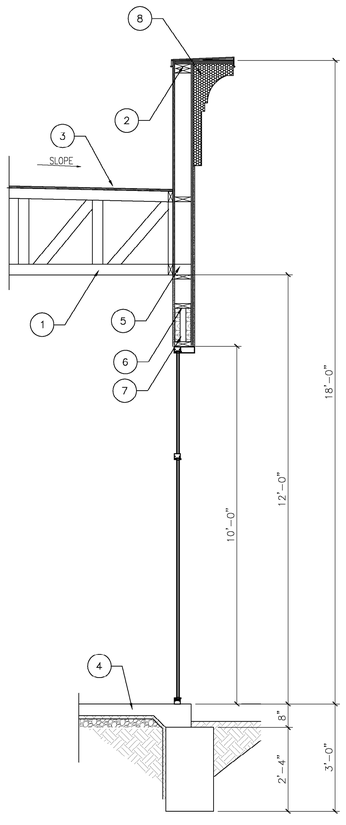
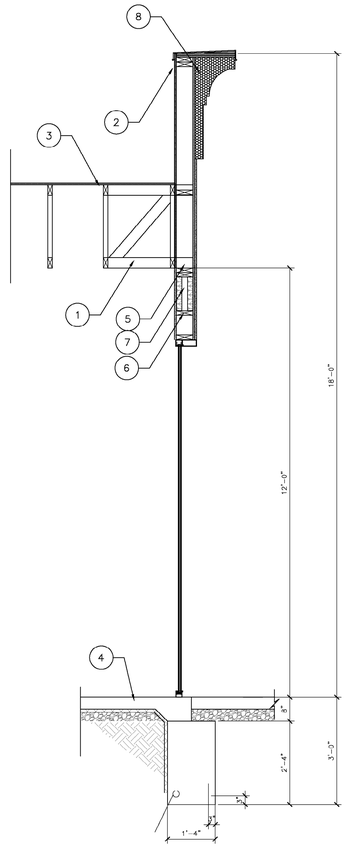
S1

KEYED NOTES

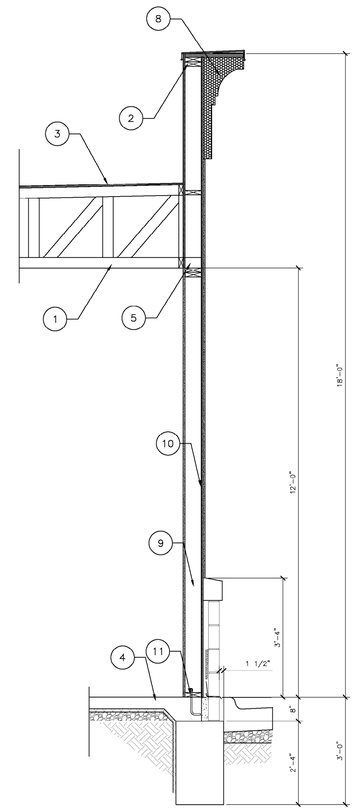
1. PRE-ENGINEERED ROOF TRUSSES BY TRUSS MANUFACTURES
2. DOUBLE TOP PLATE
3. ROOF SHEATHING 15/32
4. SLAB ON GRADE
5. REFER TO TRUSS MANUFACTURER DESIGN FOR TIEDOWN REQUIREMENTS MIN. SIMPSON H2.5@ EACH TRUSS
6. TOP PLATE
7. 3-1 7/8x11 1/4 LVL
8. E.F.I.S CORNICE SEE ARCH.
9. 2X6 @16" O.C.
10. MIN 7/16 WOOD STRUCTURAL SHEATHING MIN.
11. 5/8"ø 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



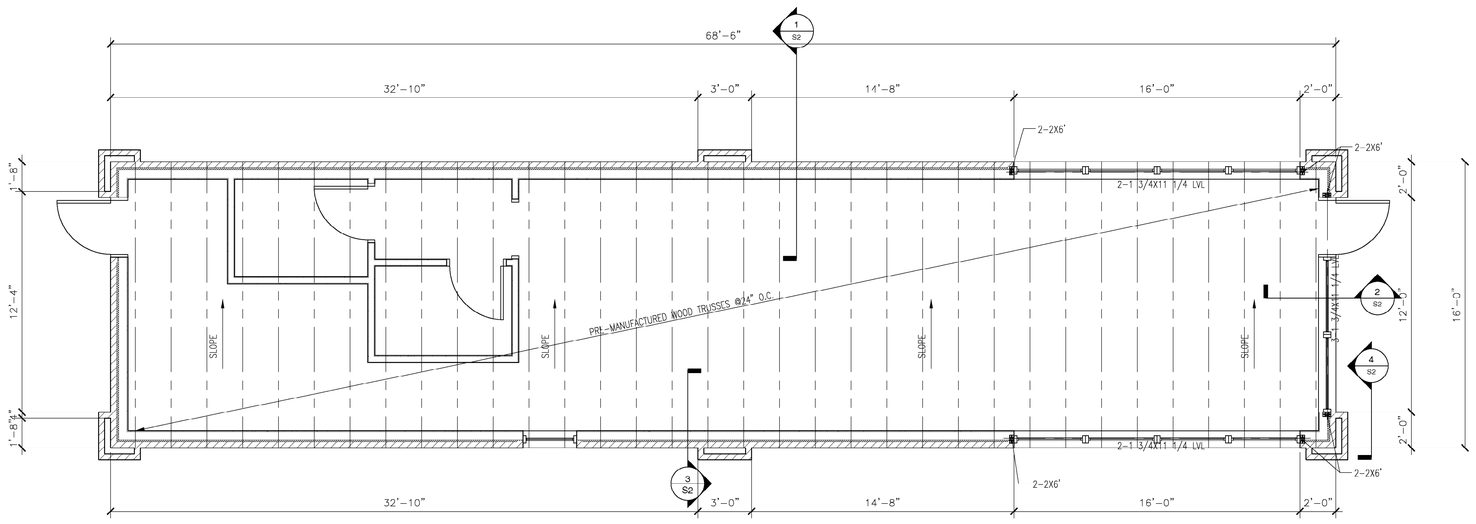
1 S2 SECTION
Scale 1/2"=1'-0"



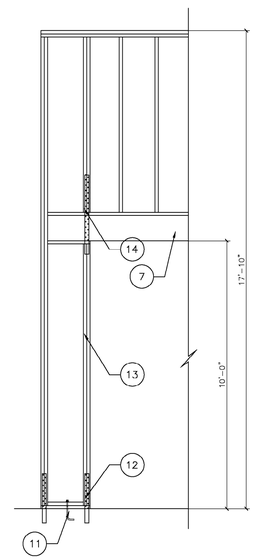
2 S2 SECTION
Scale 1/2"=1'-0"



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



ROOF FRAMING PLAN
Scale 1/4"=1'-0"



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

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S2

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 Knauf. 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.

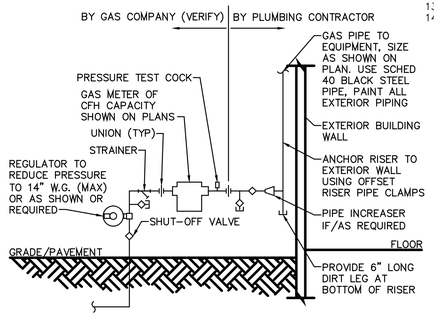
INSTALLATION: Thoroughly clean items before installation. Cap pipe openings to exclude dirt until fixtures are installed and final connections have been made. Proceed as rapidly as construction will permit. Set fixtures level and in proper alignment. Install supplies in proper alignment with fixtures. 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, condesation 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 #G0820023 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 Ceranix 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 ide of tank only. Also install State model ETC–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.

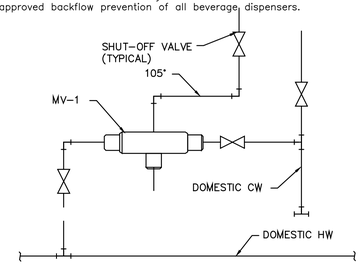
VOLUME OF 3 COMPARTMENT SINK
=(18 x 18x 13) x 3 = 12636 CU. IN.
= 12636/1728 = 7.31 CU. FT.
7.31 x 7.24 = 52.94 GAL.

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.



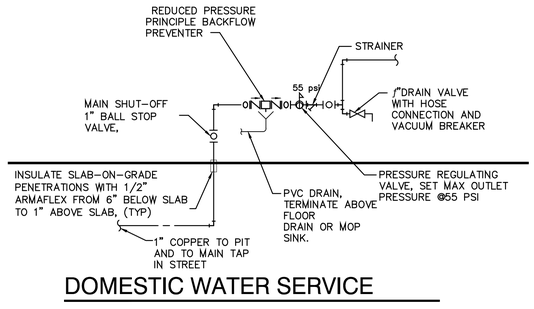
MIXING VALVE DETAIL

(FOR LAVS AND HAND SINKS)

WATER SUPPY PIPING CALCULATION

MARK	DESCRIPTION	QTY.	SIZE OF FIX. SUPPLY	WSFU C	WSFU H	WSFU TOTAL	TOTAL WSFU C	TOTAL WSFU H	TOTAL WSFU 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	4	-	-	-	-	-	-	-
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"



DOMESTIC WATER SERVICE

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	4	1	3
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			21

TOTAL DRAINAGE FIXTURE UNITS (DFU) : 21
SLOPE OF SANITARY PIPE : 1/4" PER FT
MIN. SIZE OF SANITARY PIPE : ø4"
MIN. SIZE OF VENT PIPE : ø4"

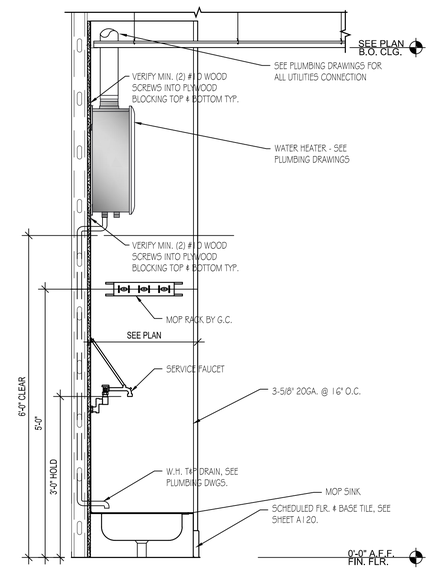
GAS DEMAND SCHEDULE:

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

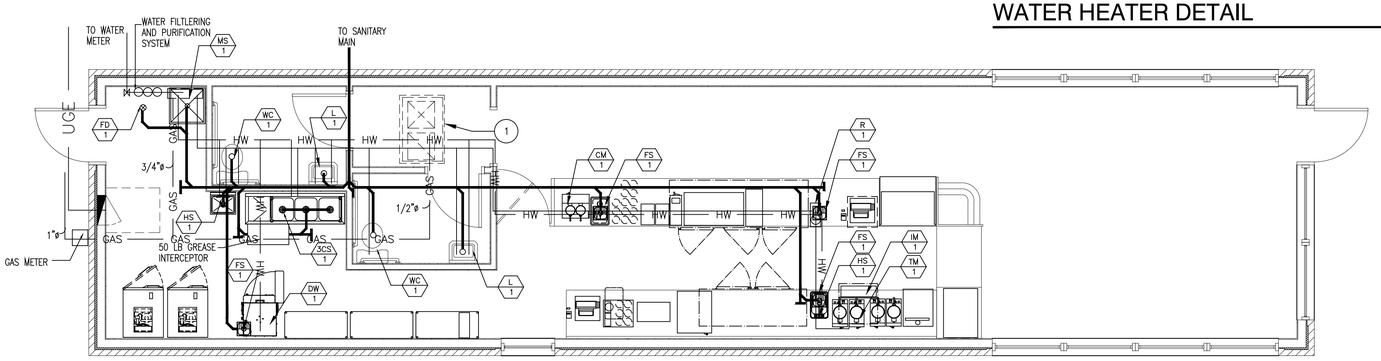
MAX. DEVELOPED LENGTH > 70 FT
TOTAL GAS DEMAND IN BTU PER HOUR =279,000 BTUH
TOTAL GAS DEMAND IN CU. FT. PER HOUR =279,000/1100 = 253.63 CFH
ALLOWABLE PRESSURE DROP IS 0.5" COLUMN OF WATER

NOTE:
COORDINATE CLEARANCES WITH PLUMBING ROUGH–INS FOR WATER HEATER INSTALLATION.

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



WATER HEATER DETAIL



PLUMBING FLOOR PLAN

Scale 1/4"=1'-0"

STATE OF MISSOURI
GREGORY P. GLADFELTER NUMBER E–2000150421
REGISTERED PROFESSIONAL ENGINEER
05/20/2022

GROUND ROOTS COFFEE

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

AEC
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Date:	Issued for:

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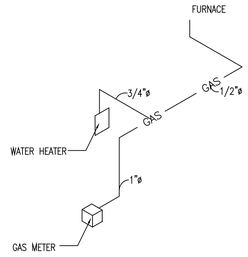
Drawn: RES

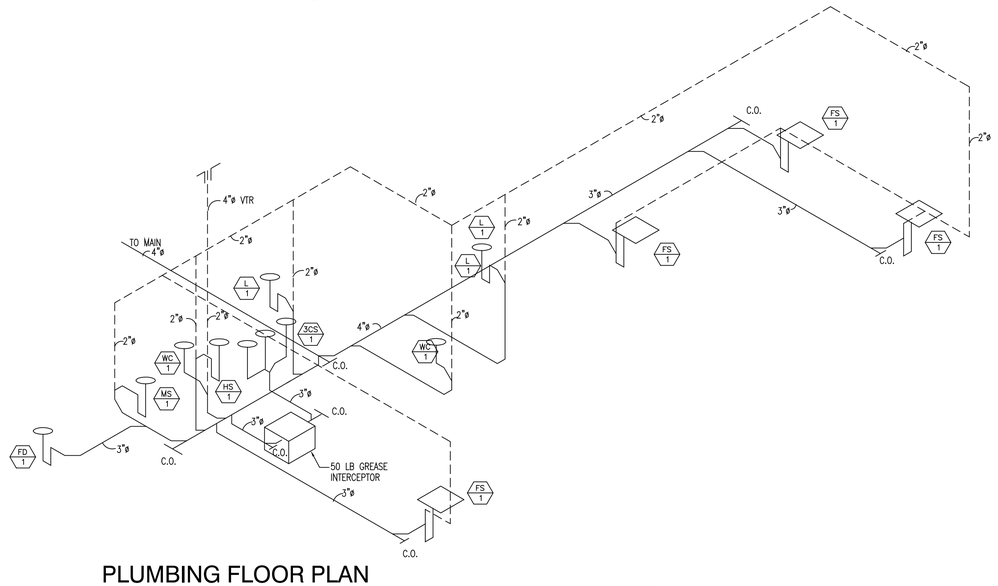
Date: 5-11-22

Sheet Number: P1



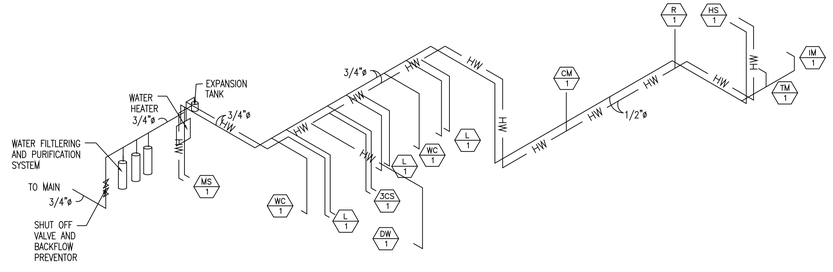
GAS SUPPLY RISER DIAGRAM

use schedule 40 steel piping



PLUMBING FLOOR PLAN

use scheule 40 PVC



PLUMBING FLOOR PLAN

use copper tubing or pex

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ELECTRICAL SYMBOLS

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
F	DISCONNECT SWITCH–UNFUSED/FUSED FUSE SIZE SHOWN OVER FRAME SIZE	6'–6" TO TOP
$ $3 $4	SWITCH–SINGLE POLE, THREE–WAY, SUBSCRIPT DENOTES OUTLET CONTROLLED	3'–10"
$PL $OS	SWITCH–PILOT LIGHT, OCCUPANCY SENSOR	3'–10"
$M	SWITCH–MOTOR RATED	
J	JUNCTION BOX	
	RECEPTACLE–20A–125 VOLTS–DUPLEX, DOUBLE DUPLEX	1'–8"
	RECEPTACLE–20A–125 VOLTS–DUPLEX – MOUNTED FLUSH IN CEILING	
IG	RECEPTACLE–20A–125 VOLTS–ISOLATED GROUND	1'–8"
GFI	RECEPTACLE–20A–125 VOLTS– GROUND FAULT CIRCUIT INTERRUPTER	1'–8"
	RECEPTACLE–20A–125 VOLTS–COUNTER HEIGHT	
WP	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	
1 1	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

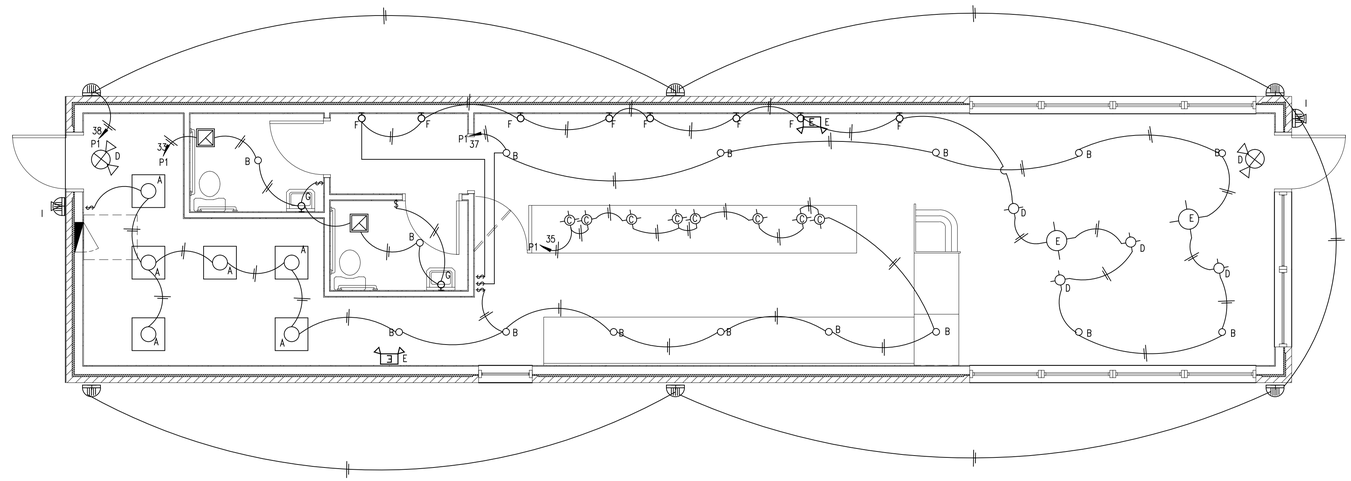
AFF	ABOVE FINISHED FLOOR	NIC	NOT IN CONTRACT
C,CDT	CONDUIT	NEC	NATIONAL ELECTRIC CODE
EF	EXHAUST FAN	NL	NIGHT LIGHT
GFI	GROUND FAULT INTERRUPTER	PL	PILOT LIGHT
HP	HORSEPOWER	RX	REMOVE EXISTING
IG	ISOLATED GROUND	N	NEW
MH	MOUNTING HEIGHT	WP	WEATHERPROOF
MTD	MOUNTED	XR	EXISTING TO REMAIN

LIGHTING FIXTURE SCHEDULE

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.



LIGHTING FLOOR PLAN

Scale 1/4"=1'-0"

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ELECTRICAL SPECIFICATION

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.

PROVIDE ALL fixtures, devices, accessories, offsets and materials necessary to facilitate the system's functioning.

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 grounds both conductor and conduit. 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, NEWA 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 hickeys, 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 volume 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 on 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.

ELECTRICAL NOTES

1. The electrical panel is new
2. Supply and install Internet cableing 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 servcie size.

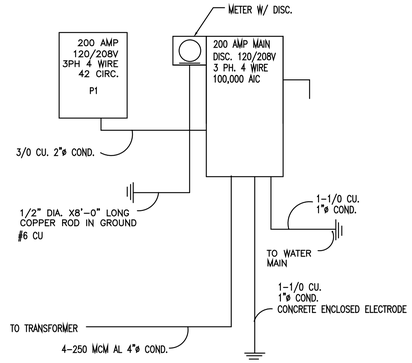
P1 PANELBOARD

120 / 208 VAC, 3PH/4W
200 A MLO

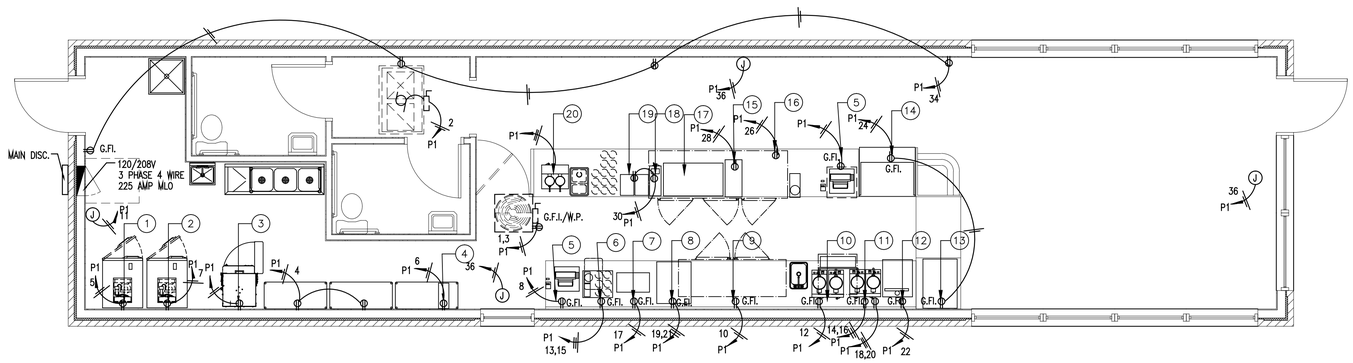
LOCATION: COFFEE SHOP
SERVES: TENANT

	DESCRIPTION	WIRE	BRKR	PL	KVA A	KVA B	KVA C	PL	BRKR	WIRE	DESCRIPTION	
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	TEA MAKER	12
13					1.19 1.00							14
15	EGG MAKER	12	20	2		1.19 1.00		2	20	12	BLENDER	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	13.07	KVA				44
	CALCULATED LOAD PER PHASE				123.78	95.35	90.11	AMPS				46
												48
	LOADS CALCULATED PER NEC ARTICLE 220				TOTAL CALCULATED LOAD		123.78	AMPS				50
												52

EQUIPMENT CONNECTION SCHEDULE				
ITEM NO	DESCRIPTION	VOLTAGE	LOAD	DISCONNECT DEVICE AT UNIT
1	FREEZER	115V/60/1	14 AMPS	NEMA 5-20 PLUG
2	REFRIGERATOR	115V60/1	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 MAKEER	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



ELECTRICAL RISER DIAGAM



POWER FLOOR PLAN

Scale 1/4"=1'-0"

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MECHANICAL LEGEND

AH 1 — GOODMAN HORIZONTAL GAS FURNACE MODEL GMEC 9608004CN with a 96% AFUE and 80,000 BTUH 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

CU 1 — 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.

EF 1 — BATH EXHAUST FANS (EF1) – 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" 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)

MECHANICAL NOTES

1. The duct sizes are shown on the drawing.
2. Install programmable thermostat for control of temperature.
3. Install an exhaust fan in each bathroom. The exhaust must be at least 70 cfm per toilet.
4. Install weatherproof duplex outlet within 25' of all exterior units
5. 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 or urinal.
6. Fresh air shall be provided through the louver on the outside wall. Use a 6"x 10" duct from the outside to the return air duct of the furnace above the ceiling.
7. 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.
8. Install filters in return air vents.
9. All units must be behind the barrier on the roof to keep them hidden from the ground.
10. All remote ACU units must have a disconnect box at the unit.

MECHANICAL SPECIFICATION

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.

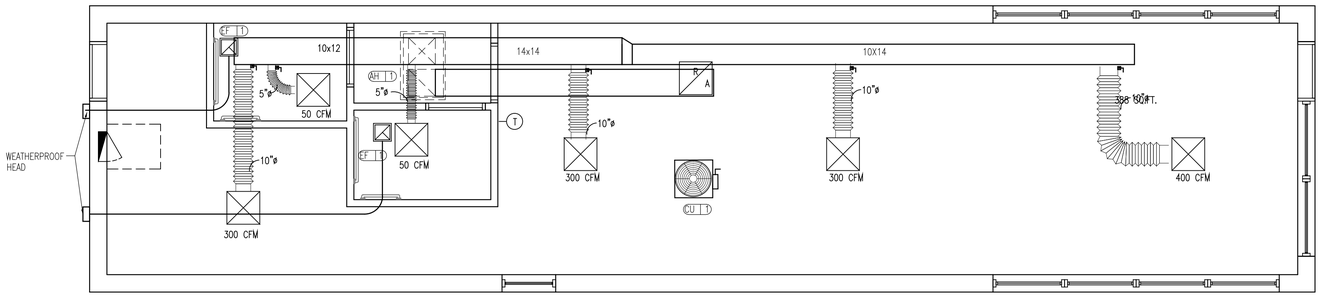
CEILING DIFFUSERS/RETURNS: Provide supply diffusers, grilles and registers, capacities and pattern indicated on the Drawings. The pattern shall be in all four directions unless noted otherwise on the drawings. All return air shall be ducted.

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 material inward to cover exposed insulation with vapor barrier and band on outside. Provide Panduit straps or metal adjustable bands only. Use twistlock conical tap collars at connections into sheet metal ductwork.

AUTOMATIC TEMPERATURE CONTROL: Provide three wire type proportional thermostats where indicated on the drawings. Provide plenus 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.



MECHANICAL FLOOR PLAN

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 PRESSSURE = 0 CFM					

	ZONE FLOOR AREA	OCCUPANCY DENSITY	OCCUPANT LOAD	PEOPLE OUTDOOR AIR RATE (Rp)	AREA OUTDOOR AIR FLOW RATE (Ra)	FRESH AIR TOTAL SUPPLY AIR	EXHAUST AIRFLOW RATE	EXHAUST AIRFLOW PER FIXTURE	NUMBER OF FIXTURES	TOTAL EXHAUST
OCCUPANCY	**SQ. FT.**	**#1000**	**Pz**	**CFM/PERSON**	**CFM/SF**	**CFM/SF**	**CFM**	**CFM**		**CFM**
DINING	388	70	27	7.5	0.18	274	0	0	0	0
KITCHEN	415				0.7	291	0	0	0	0
HALLWAY	34				0.06	2	0	0	0	0
BATH EXHAUST							70		2	140
FRESH AIR						566				
TOTAL SUPPLY AIR						566				
TOTAL EXHAUST AIR										140

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