PANERA BREAD BAKERY - CAFE

OAKVIEW - LOT 2

SITE DEVELOPMENT PLANS

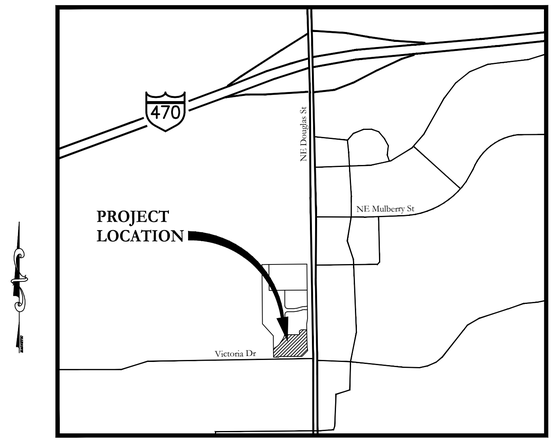
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI
NE 1/4 OF SEC. 31-48-31

LEGAL DESCRIPTION

LOT 2 OF THE FINAL PLAT OF OAKVIEW - LOTS 1-5, A REPLAT OF LOT 2, "MINOR PLAT, POLYTAINERS ADDITION, LOTS 1 AND 2", AND PART OF NE DOUGLAS STREET, ALL IN THE NE $\frac{1}{4}$ OF SEC. 31-48-31, A SUBDIVISION IN THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI.

BENCHMARK & HORIZONTAL CONTROL

REFERENCE SHEET 4 FOR VERTICAL AND HORIZONTAL CONTROL POINTS LOCATED IN THE PRIVATE DRIVE WEST OF THE SITE.



LOCATION MAP

NOT TO SCALE

SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
1	COVER
2	GENERAL NOTES & LEGEND
3	EXISTING CONDITIONS
4	SITE PLAN
5	GRADING & EROSION CONTROL PLAN
6	GRADING PLAN - CUT & FILL
7	UTILITY PLAN
8	SPOT ELEVATION PLAN
9	SPOT ELEVATION PLAN
10	DRAINAGE AREA MAP & CALCULATIONS
11	STORM PLAN & PROFILES
12	DETAILS
13	DETAILS
14	DETAILS
15	DETAILS
16	DETAILS
L100	LANDSCAPE PLAN
SEE ADDITIONAL PLANS & SPECIFICATIONS PREPARED BY SCHARHAG ARCHITECTS.	
McLAUGHLIN MUELLER, INC. HAS SOLE RESPONSIBILITY FOR SHEET 3 AND VSR DESIGN HAS SOLE RESPONSIBILITY FOR SHEET L100.	

UTILITIES AND PUBLIC AGENCIES

CITY OF LEE'S SUMMIT PUBLIC WORKS	Dena Mezger	(816) 969-1800
CITY OF LEE'S SUMMIT WATER UTILITIES	Mark Schaufler	(816) 969-1900
ELECTRIC EVERGY	Ron Dejarnette	(816) 347-4316
GAS SPIRE	Brent Jones	(816) 399-9633
TELEPHONE AT&T	Marty Loper Mark Manion	(816) 275-1550 (816) 325-6516
CABLE COMCAST	Barbara Brown	(816) 795-2255

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

CONTACTS

ENGINEERING

Engineering Alternate 781-4200
Ronald L. Cowger, PE

Engineering Primary 781-4200
Art Akin, PE

DEVELOPER

STAR DEVELOPMENT, INC.
TIM HARRIS, PRESIDENT
244 W. MILL STREET, SUITE 101
LIBERTY, MISSOURI, 64068
(816) 781-3322

STATUS

	DATE:
☒ FOR PERMIT	5-21-20
☐ FOR CONSTRUCTION	
☐ PLANS CONFORMING TO CONSTRUCTION RECORDS	

ENGINEER'S CERTIFICATION:

I hereby certify that this project has been designed, and these plans prepared, to meet or exceed the design criteria of City of Lee's Summit, Missouri, in current usage, except as indicated below.

Exceptions:
1. 20' parking setback along Victoria (less than 3.8' encroachment) and along Douglas (less than 1.2' encroachment)
2. _____
3. _____

I have not been retained to coordinate as-built drawings for this project.

STATE OF MISSOURI RONALD L. COWGER NUMBER 29705 PROFESSIONAL ENGINEER
FOR REVIEW
5-21-20

Art Akin, PE
AGC Engineers, Inc.

Date

NOTE:

Contractor shall be responsible for determining the exact locations of all underground utilities or appurtenances prior to commencing construction. Existing underground utilities shown on the drawings are for reference only, and their accuracy and completeness are not guaranteed. Contractor shall be responsible for repair or replacement of all underground utilities damaged during construction.

AGC Engineers, INC.
405 S. Leonard St., Suite D
Liberty, Missouri 64068
www.agcengineers.com
816.781.4200 ■
fax 792.3666

BY	REVISION	DATE
AA/ACA	FOR REVIEW	5-21-20

GENERAL PROJECT NOTES:

1. The Contractor shall, at a minimum, have the following document(s) at the job site at all times:
   Signed approved plans,
   Contract Documents and Project Specifications,
   Standard Specifications (Kansas City Metro Chapter-APWA)
   Storm Water Pollution Plan (SWPPP)
   All required permits
2. The Contractor shall reference the City of Lee's Summit Design Criteria, Standard Specifications, Standard Details, Approved Products Lists found at the following website
   https://cityofls.net/development-services/design/design-criteria/design-construction-manual-infrastructure
3. This Project shall be constructed in accordance with these Plans, City of Lee's Summit criteria and specifications (listed above), and their absence the Kansas City Metro Chapter of American Public Works Association (most current version) "APWA".
4. All work required to complete the project and that is not specifically itemized in the Contractor's proposal shall be considered subsidiary to other work itemized in the proposal.
5. All materials and workmanship associated with this project shall be subject to inspection by the City of Lee's Summit and the Owner. The City and/or Owner reserves the right to accept or reject any such materials and workmanship that does not conform to the Standards and Technical Specifications.
6. RESERVED
7. The Contractor shall notify the Engineer immediately of any discrepancies in the Plans.
8. By use of these Plans the Contractor agrees that he shall be solely responsible for the safety and protection of the construction workers and the public.
9. Contractor is to obtain the necessary permits for all construction activities.
10. Contractor shall be responsible for determining the exact locations of all underground utilities or appurtenances prior to commencing construction. Existing underground utilities shown on the drawings are for reference only, and their accuracy and completeness are not guaranteed. Contractor shall be responsible for repair or replacement of all underground utilities damaged during construction.
11. RESERVED
12. It shall be the responsibility of the Contractor to control erosion and siltation during all phases of construction.
13. Any sidewalk, curb & gutter or pavement disturbed, damaged or destroyed during construction shall be replaced by Contractor at no additional cost to Owner.
14. Modified curb shall be used at all locations where pavement drains away from curb.

GRADING NOTES:

1. Erosion protection shall be in place prior to any land disturbance.
2. Contours shown are to finished grade.
3. The construction area shall be cleared, grubbed, and stripped of topsoil and organic matter from all areas. Excess topsoil shall be stockpiled separately from compactable material. Stripping existing topsoil and organic matter shall be to a minimum depth of six (6) inches.
4. Areas to receive fill shall be striped of top soil and other organic material, scarified, and the top eight (8) inch depth compacted to 98% standard proctor density prior to the placement of any fill material. Any unsuitable areas shall be undercut and replaced with suitable material before any fill material can be placed.
5. Fill material shall be made in lifts not to exceed nine (9) inches depth compacted to 98% standard proctor density (per ASTM D-698) with a moisture content -3% and +2% optimum moisture. Contractor shall provide (at his/her sole cost) an independent geotechnical report certifying compaction at a sample interval of one (1) sample per 5000 square feet per lift or more frequent if required/recommended by the geotechnical firm. Geotechnical firm shall be approved by Owner prior to beginning fill operations. Fill material may include rock from on-site excavation if carefully placed so that large stones are well disturbed and voids are completely filled with smaller stones, earth, sand or gravel to furnish a solid embankment. No rock larger than three (3) inches in any dimension nor any shale shall be placed in the top 12 inches of embankment.
6. In all areas of excavation, if unsuitable soil conditions are encountered, a qualified Geotechnical engineer shall recommend to the Owner on the methods of undercutting and replacement of property compacted, approved fill material.
7. All slopes are to be 3:1 or flatter unless otherwise indicated.
8. All slopes and areas disturbed by construction shall be graded smooth and a minimum four (4) inches of topsoil applied. If adequate topsoil is not available on-site, the Contractor shall provide topsoil, approved by the Owner, as needed. Any areas disturbed for any reason shall be corrected by the Contractor at no additional cost to the Owner prior to final acceptance of the project.
9. All disturbed areas shall be seeded, fertilized and mulched or sodded in accordance with the standards and specifications adopted by the reviewing governing agency and good engineering practices.

EROSION CONTROL NOTES:

1. Control of sediment is a very dynamic (ever changing) process. These plans are provided as a basis of anticipated erosion control measures. The Contractor shall modified add or delete with the Owner's permission the erosion control measure shown to prevent the migration of sediment off of the Owner's property and/or into jurisdictional waters/waterways.
2. Any sediment deposited on public streets shall be removed immediately by Contractor at his sole expense.
3. Stockpile excavation materials away from existing channels and grade to drain to adequate erosion control measures.
4. Remove silt build up in temporary sediment basins (if applicable), inlet protection devices and/or silt fence until site is completely stabilized. Verify grade prior to final seeding, lining or rip-rap installation.
5. All disturbed areas shall be seeded, fertilized and mulched, or sodded, in accordance with the Kansas City Metro Chapter of American Public Works Association. Seeding/Sodding shall be completed within 14 days after completing the work, in any area. If this is outside of the recommended seeding period, erosion control measures or other similarly effective measure shall remain and be maintained by Contractor until such time that the areas can be seeded and a stand of grass established per Missouri DNR or MoDOT Section 805.4 standards.
6. When sediment deposits reach approximately one-half the height of the BMP, the sediment shall be removed or a second BMP shall be installed. All costs associated with this work, including related incidents, shall be the Contractor's responsibility and shall be included in the bid for the proposed work.
7. Contractor shall perform BMP inspection once a week and after each rainfall event, and provide Owner a copy of report within 48 hrs. Faulty or inadequate erosion control measures shall be remediated or modified the same day of inspection so as to minimize the risk of sediment discharge from the Owner's property or jurisdictional waters/waterways.
8. Contractor shall protect and maintain erosion control measures until a complete stand of grass as defined by Missouri DNR has been established.
9. Concrete Washout Areas will be determined onsite by the Job Superintendent.
10. At a minimum the following permits/approvals shall be posted on site or as required by the permit terms and conditions:
    City of Lee's Summit Land Disturbance Permit.
11. Permanent fertilizing, seeding (Type "A") and mulch shall be in accordance with Kansas City Metro Chapter of American Public Works Association. Final acceptance per MoDOT Sections 805.4
12. The Contractor shall install Erosion Control Blanket (ECB) on all slopes with 3:1 slope or greater. ECB shall be Landlok CS2 or approved equal.
13. Provide temporary silt fencing at all pipe entrances until all site seeding and sodding has been established. Maintain as necessary.
14. Immediately remove sediments or other materials tracked onto public roadways.
15. Provide and maintain stabilized roadway construction entrance (or entrances as may be required).
16. Coordinate site grading with existing and proposed utilities.
17. Stock pile waste excavation materials away from existing channels and grade to drain.
18. Remove silt build up in basin and verify grade prior to final seeding, lining or rip-rap installation and clean up.
19. All disturbed areas shall be seeded, fertilized and mulched, or sodded, in accordance with the Standards and Specifications adopted by the City of Lee's Summit, MoDOT, MoDNR or other governing agency and good engineering practices.
20. Silt fences, whether straw bales or filter fabric, require maintenance to preserve their effectiveness. All silt fences shall be inspected immediately after each heavy rainstorm and at least daily during prolonged rainfall. Any required repairs shall be made immediately. When sediment deposits reach approximately one-half the height of the silt fence, the sediment shall be removed or a second silt fence shall be installed. All costs associated with this work, including related incidentals, shall be the contractor's responsibility and shall be included in the bid for the proposed work.

WATER NOTES:

1. Reference MEP Plans to confirm fire protection main size, domestic water and meter sizes. If a discrepancy exists between the Plans contact the Engineer prior to ordering material.
2. Domestic water shall be 2-inch "k" copper conforming to the latest federal specifications.
3. Minimum cover for water lines shall be 42 inches.
4. Install fittings as required. maximum pipe deflection per manufacturers recommendations.
5. Install 2 " water meter at property line (on private property side).
6. All water service installation, including back-flow devices, are subject to field verification and approval by City inspector.
7. Install 6" Fire Protection Line including outside vault with Double Check Detector assembly Backflow Protection Device and shut off valves for assembly removal.

REFERENCE DOCUMENTS & DRAWINGS:

Contractor shall reference the following documents prior to beginning Work
1. SWPPP and Missouri DNR Land Disturbance Permit
2. Architectural Plans (including but not limited to MEP and Structural Plans)
3. Standard drawings and work details supplied by Panera
4. Landlord work order list from Star Development Corp

STORM NOTES:

1. All HDPE pipe shall be Soil-Tight
2. All High Density Polyethylene (HDPE) pipe shall conform to AASHTO M294 Type S. Acceptable pipe must come from a Plastic Pipe Institute (PPI) certified manufacturer and have passed the PPI 3rd Party Certification testing. Each individual section of pipe shall be marked in accordance with AASHTO M294 and shall be affixed with the PPI Certification label. HDPE pipe shall be joined with water tight joints meeting the requirements of AASHTO M294 Paragraph 7.9.3.
3. Pipe lengths are from inside face to inside face.
4. End sections for HDPE pipe shall be metal with concrete toe wall unless noted otherwise.

ELECTRIC:

1. Contractor to coordinate with Evergy Electric for electrical service.
2. Contractor to coordinate with Evergy Electric for location of transformer pad and transformer if required.

GAS:

1. Contractor to coordinate with Spire for gas service, and location of meter.

TELEPHONE:

1. Site contractor to install PVC conduit(s) for use by telephone company. Site contractor to coordinate with telephone company for installation of service and location of proposed pedestals, etc. Telephone conduit shall have a minimum cover of 30". Site contractor shall coordinate location with telephone company representative and locate PVC crossings as necessary. See building plans for entrance locations.

SANITARY NOTES:

1. All sanitary stub lines shall be laid on 2.00% grade unless approved otherwise.
2. The Contractor shall install and properly maintain a mechanical plug at all connection points with existing lines until such time that the new line is tested and approved.
3. Where sanitary sewer lines are to be installed over and across water lines, a minimum of 24 inches of clearance shall be provided. Where clearance is not provided, construct sanitary sewer line of ductile iron pipe for a distance of at least 10 feet in each direction from crossing, with no joint within 6 feet of crossing.
4. Performance testing in accordance with APWA Section 2508. Witness and acceptance by City is required before placing in service.
5. All service lines shall be schedule 40 PVC.
6. All pre-cast manholes shall meet or exceed standards and specifications as set forth in ASTM C-478.
7. All PVC pipe shall meet or exceed standards and specifications as set forth in ASTM D-3034.
8. All proposed and existing street crossings shall be tamped granular backfill (Type 3) from the bottom of the trench to a point that is 15" below the finished grade of the street. All existing street crossings shall be filled with flowable fill per detail STR-011.
9. Mandrel testing is required and shall be performed in accordance with APWA 2508.5, at a minimum of 30 days after installation.
10. All inspection of sanitary sewer construction shall be performed by the City of Lone Jack.
11. It is the responsibility of the contractor to have sanitary sewer lines air tested and sanitary sewer manholes vacuum tested for new construction and modifications to existing. Contractor shall provide city with test results upon completion of construction.
12. Areas with less than three (3) feet of depth from existing grade to proposed top of pipe shall be filled to an elevation of three (3) feet above the proposed top of pipe, compacted to 95% density +/-2% prior to trenching or laying of any pipe.
13. Sanitary sewer piping material shall be as follows:
    0 to 15' depth; SDR-35 PVC
    15' to 22' depth; SDR-26 PVC
    22' to 30' depth; SDR-21 PVC
    greater than 30' depth; D.I.P.
    6" service laterals; SDR-35 PVC at 2.0% minimum.
14. All manholes, catch basins, utility valves, and meter pits shall be adjusted or rebuilt to grade as required.
15. Service lines shall be extended a minimum of 1 foot past the house side of all utility easements.
16. Insert Tee's or Saddles for service lines are not allowed except in special cases with prior City approval and City observation of installation.

LEGEND

EXISTING

◉	SET MONUMENT AS NOTED STAMPED LS 1999141096
○	FOUND 1/2" REBAR LS 1989
◦	FOUND MONUMENT AS NOTED
(M)	MEASURED DISTANCE
△	CONTROL POINT
⟨—	DOWN GUY
◑	FIRE HYDRANT
☼	LIGHT POLE
PP	POWER POLE
◦	POST
●	MANHOLE
⊗	WATER VALVE
B/L	BUILDING LINE
D/E	DRAINAGE EASEMENT
—OHP—	AERIAL UTILITY
S/E	SANITARY SEWER EASEMENT
U/E	UTILITY EASEMENT
—UGG—	UNDERGROUND GAS
—UGP—	UNDERGROUND POWER
—UGT—	UNDERGROUND TELEPHONE
—UGW—	UNDERGROUND WATER

PROPOSED

●	SANITARY STRUCTURE
SAN	SANITARY SEWER
▭	STORM STRUCTURE
	STORM SEWER
W	WATERLINE
WM	WATER METER
⊗	WATER VALVE
G	GAS LINE
CO ○	CLEANOUT
(13)	PARKING COUNT
780	CONTOUR
▭	LIGHT POLE (SITE PARKING)

D/E	DRAINAGE EASEMENT
GM	GAS METER
WM	WATER METER
E/E	ELECTRIC EASEMENT
U/E	UTILITY EASEMENT
B/L	BUILDING LINE SETBACK
MH	MANHOLE
R	RADIUS OR RAMP (as it relates to sidewalks)
L	LANDING (as it relates to sidewalks)
S/W or SW	SIDEWALK
AC	AIR CONDITIONER
MEP	MECHANICAL, ELECTRICAL & PLUMBING
WSD	WATER SERVICES DEPARTMENT
D.S.	DOWN SPOUT
TC	TOP OF CURB
G	GROUND
P	PAVEMENT
LP	LOW POINT
HP	HIGH POINT

BY	REVISION	DATE
RC/ACA	FOR REVIEW	5-21-20

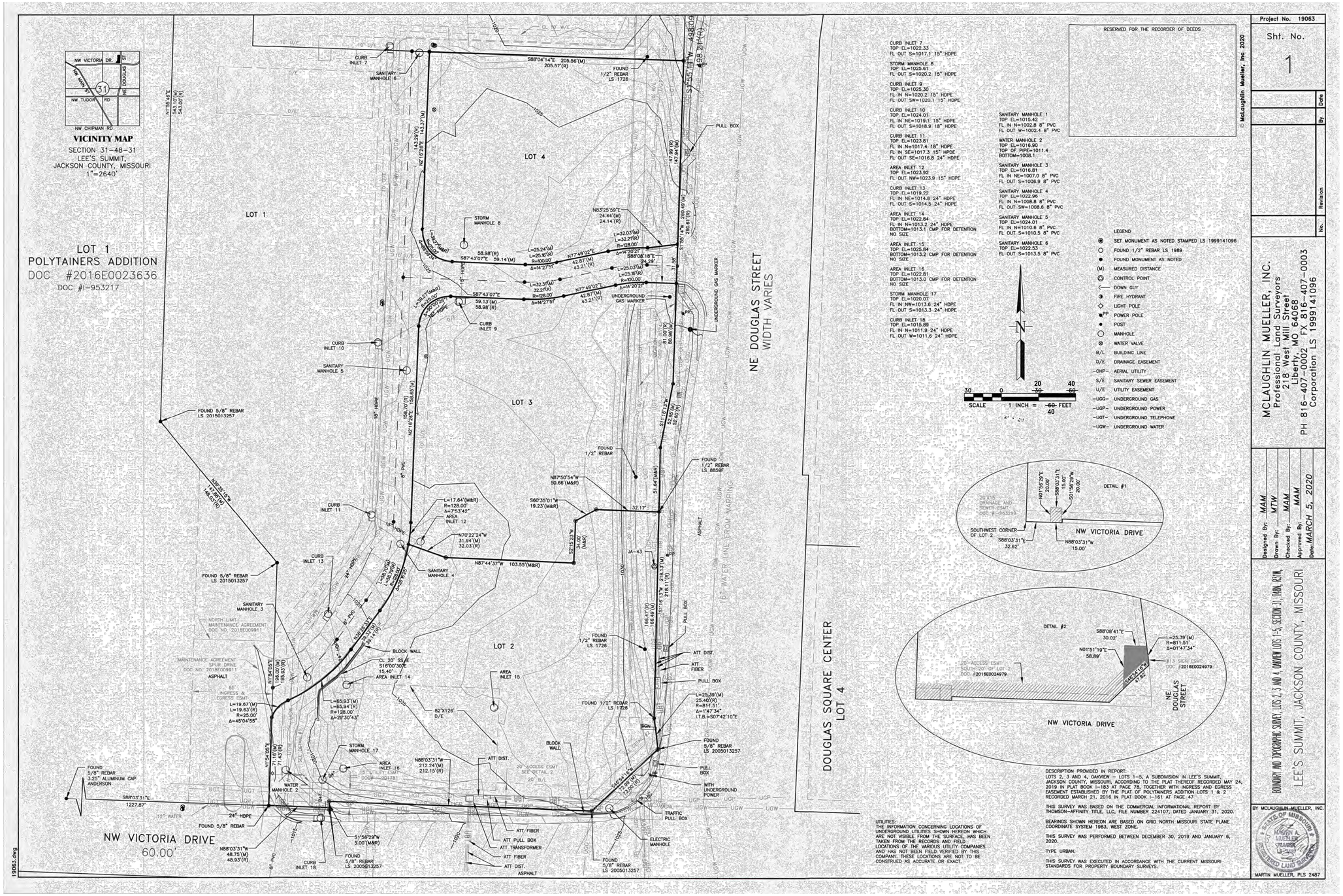
AGC Engineers, INC.
405 S. Leonard St., Suite D
Liberty, Missouri 64068
816.781.4200
fax 792.3666
www.agcengineers.com

STATE OF MISSOURI
RONALD L. COMMER
NUMBER PE-29705
5-21-20
PROFESSIONAL ENGINEER

PANERA BREAD BAKERY - CAFE
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SITE DEVELOPMENT PLANS
GENERAL NOTES & LEGEND

2



BY	REVISION	DATE
RC/ACA	FOR REVIEW	5-21-20

AGC Engineers, INC.
405 S. Leonard St., Suite D
Liberty, Missouri 64068
816.781.4200 ■
fax 792.3666
www.agcengineers.com

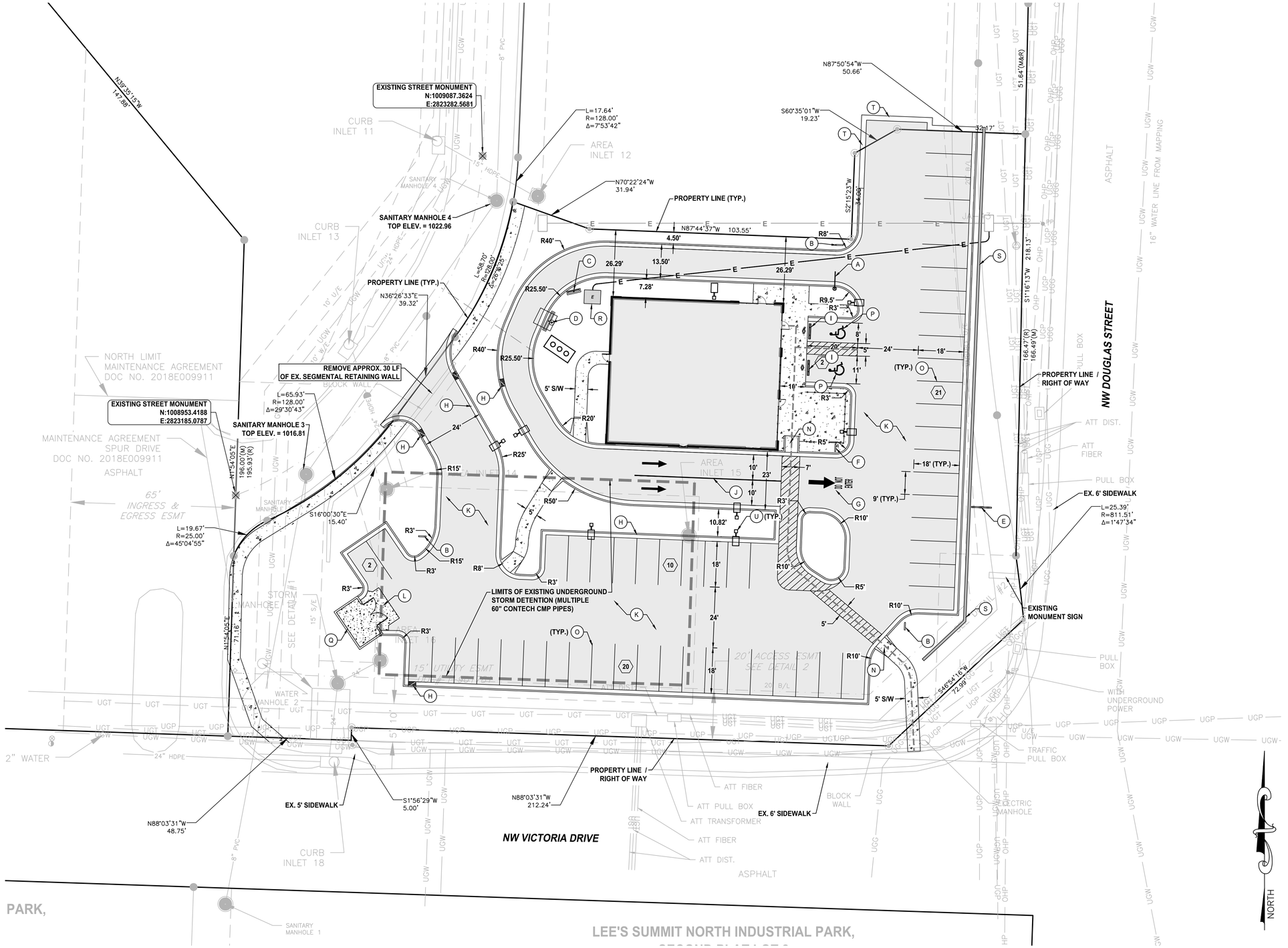
PANERA BREAD BAKERY - CAFE

LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SITE DEVELOPMENT PLANS

EXISTING CONDITIONS

3



SITE DATA:

1. **ZONING:** CP-2
2. **LOT SIZE:** 1.32 ACRES
3. **BUILDING:** 1 STORY BUILDING, 3,860 SF FOOTPRINT AREA
4. **PARKING SUMMARY:** REQUIRED: 14 STALLS PER 1,000 SF - 54 STALLS
   PROVIDED: 53 STALLS + 2 ADA STALLS - TOTAL 55 STALLS
5. **PERCENT IMPERVIOUS:** 63%
6. **FLOOR AREA RATIO:** (FAR): 0.07
7. THERE IS NO FEMA DESIGNATED 1% FLOODPLAIN ON THIS PROPERTY.

LEGEND:

- ADA PEDESTRIAN ROUTE
- (6) PARKING STALL COUNTS

KEY LEGEND

- (A) CLEARANCE BAR (SEE NOTE 1)
- (B) DIRECTIONAL SIGNAGE (SEE NOTE 1)
- (C) PREVIEW BOARD (SEE NOTE 1)
- (D) MENU SIGN (SEE NOTE 1)
- (E) MONUMENT SIGN (SEE NOTE 1)
- (F) "THANK YOU / DO NOT ENTER" SIGN (SEE NOTE 1)
- (G) PAVEMENT MARKING " DO NOT ENTER" 12" BLOCK LETTERING (YELLOW)
- (H) CURB INLET - 2'X3' NYLOPLAST
- (I) CONCRETE WHEEL STOP
- (J) DRIVE THRU STRIPING - 4" YELLOW
- (K) ASPHALT PAVEMENT
- (L) HEAVY DUTY CONCRETE
- (M) CG-1 CURB & GUTTER (RE: SPOT ELEVATION PLANS)
- (N) ADA RAMP
- (O) PARKING STRIPING - 4" YELLOW
- (P) STRIPING - (RE: ADA ACCESSIBLE STRIPING LAYOUT)
- (Q) TRASH ENCLOSURE (RE: ARCH)
- (R) ELECTRICAL TRANSFORMER
- (S) SEGMENTAL BLOCK WALL
- (T) 6" TEMPORARY ASPHALT CURB
- (U) LIGHT POLE (RE: MEP)

NOTE:

1. ALL SIGNAGE IS TO BE PROVIDED BY PANERA WITH THEIR TENANT FINISH .

BY	REVISION	DATE
RC/ACA	FOR REVIEW	5-21-20

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

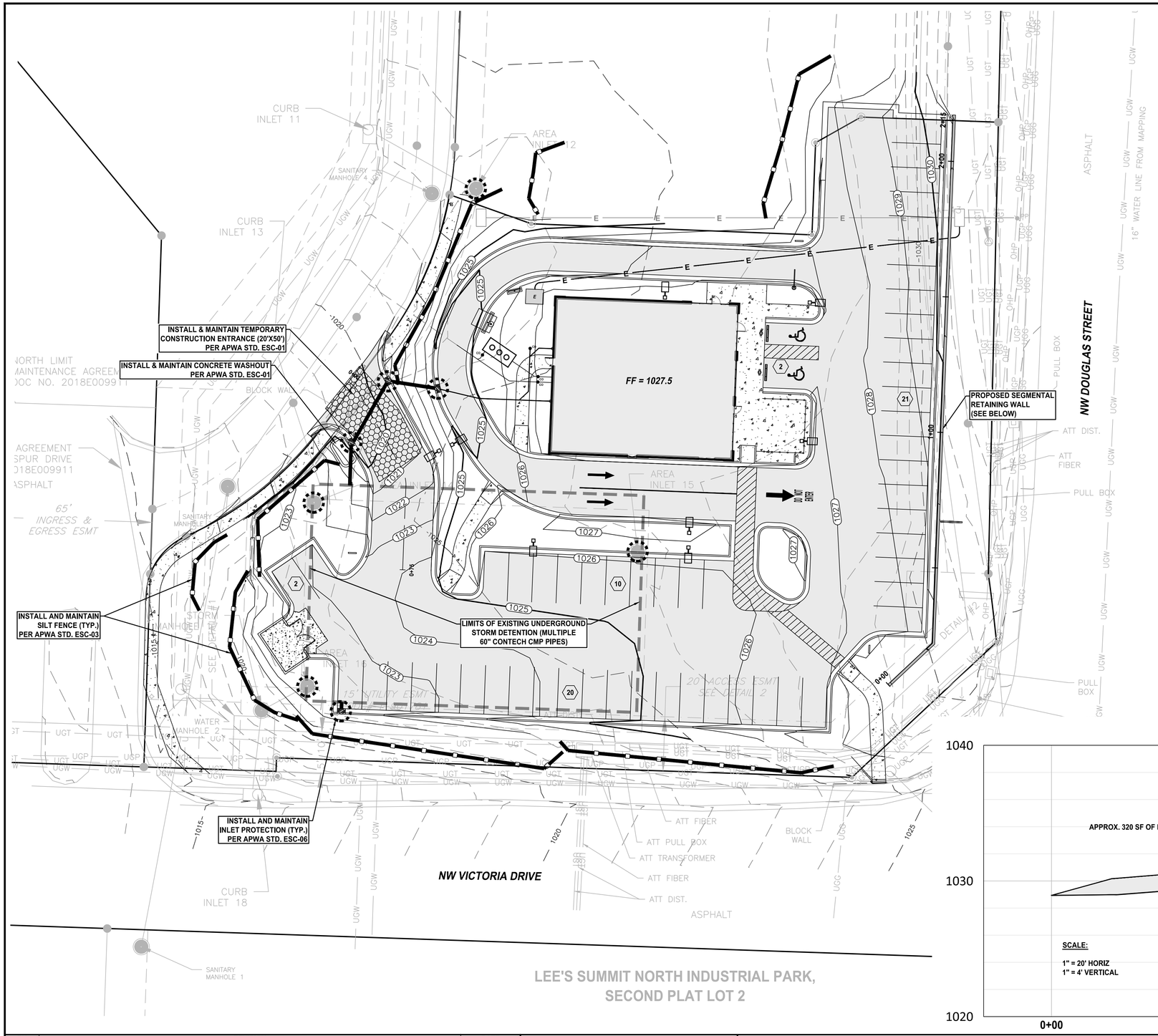
AGC Engineers, INC.
405 S. Leonard St., Suite D
Liberty, Missouri 64068
816.781.4200 ■
fax 792.3666
www.agcengineers.com

STATE OF MISSOURI
RONALD L. COWDER
NUMBER PE-29705
5-21-20
PROFESSIONAL ENGINEER

PANERA BREAD BAKERY - CAFE
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SITE DEVELOPMENT PLANS
SITE PLAN

4



LEGEND:

EROSION CONTROL

INLET PROTECTION PER APWA STD. DWG ESC-06

SILT FENCE PER APWA STD. DWG ESC-03

NOTES:

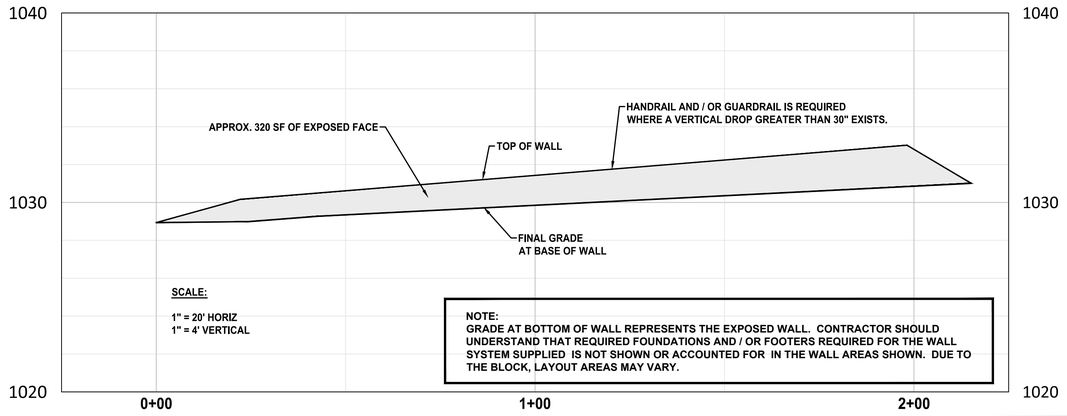
1. INSTALL TEMPORARY CONSTRUCTION ENTRANCE AND PERIMETER SILT FENCE BEFORE GRADING.
2. REMOVE TEMPORARY BMPs AFTER PAVING IS COMPLETED AND PERMANENT GRASS IS ESTABLISHED.
3. DISTURBED AREA = 1.05 AC

NORTH

RETAINING WALL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR WALL DESIGN DEPENDING ON THE WALL SYSTEM PROPOSED. COST OF SEALED ENGINEERING DESIGN, CALCULATIONS AND DETAILS SHALL BE INCLUDED IN BASE BID. BASE BID SHALL INCLUDE ALL APPURTENANCES FOR A COMPLETE INSTALLATION. INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
   - ENGINEERING
   - CONSTRUCTION LAYOUT
   - EXCAVATION
   - LEVELING PAD / FOOTER
   - GRAVEL, BACKFILL AND GEOGRID (AS REQUIRED)
   - PIN OR OTHER ANCHORING SYSTEMS
   - CAP BLOCKS
   - CLEAN-UP AND BLOCK CLEANING (AS REQUIRED)
2. GRADE AT BOTTOM OF WALL REPRESENTS THE FINAL GRADE AT BASE OF WALL. CONTRACTOR SHOULD UNDERSTAND THAT REQUIRED FOUNDATIONS AND / OR FOOTERS REQUIRED TO THE WALL SYSTEM SUPPLIED IS NOT SHOWN OR ACCOUNTED FOR IN THE AREAS SHOWN. DUE TO THE BLOCK, LAYOUT AREAS MAY VARY.
3. HANDRAIL AND / OR GUARDRAIL IS REQUIRED WHERE A VERTICAL DROP GREATER THAN 30" EXISTS.
4. WALL LOCATIONS ARE SHOWN TO EXPOSED FRONT FACE.

RETAINING WALL



SCALE:

1" = 20' HORIZ
1" = 4' VERTICAL

NOTE:
GRADE AT BOTTOM OF WALL REPRESENTS THE EXPOSED WALL. CONTRACTOR SHOULD UNDERSTAND THAT REQUIRED FOUNDATIONS AND / OR FOOTERS REQUIRED FOR THE WALL SYSTEM SUPPLIED IS NOT SHOWN OR ACCOUNTED FOR IN THE WALL AREAS SHOWN. DUE TO THE BLOCK, LAYOUT AREAS MAY VARY.

BY	REVISION	DATE
RC/ACA	FOR REVIEW	5-21-20

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

AGC Engineers, INC.
405 S. Leonard St., Suite D
Liberty, Missouri 64068
816.781.4200 ■
fax 792.3666
www.agcengineers.com

STATE OF MISSOURI
RONALD L. COWGER NUMBER PE-29705
5-21-20
PROFESSIONAL ENGINEER

PANERA BREAD BAKERY - CAFE
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SITE DEVELOPMENT PLANS
GRADING & EROSION CONTROL PLAN

5

LEGEND:

- CUT AREA

+ FILL AREA

NOTE:
CUT / FILL SHOWN IS TO FINISHED GRADE AND / OR TOP OF PAVEMENT

BY	REVISION	DATE
RC/ACA	FOR REVIEW	5-21-20

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

AGC Engineers, INC.
405 S. Leonard St., Suite D
Liberty, Missouri 64068
816.781.4200
fax 792.3666
www.agcengineers.com

STATE OF MISSOURI
RONALD L. COWSER
NUMBER PE-29705
PROFESSIONAL ENGINEER
5-21-20

PANERA BREAD BAKERY - CAFE
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SITE DEVELOPMENT PLANS
GRADING PLAN - CUT & FILL

6

NOTE:

CONTRACTOR SHALL COORDINATE WITH STAR DEVELOPMENT CORP. PRIOR TO BEGINNING UNDERGROUND UTILITIES TO VERIFY SPECIFIC TENANT REQUIREMENTS SUCH AS DOMESTIC WATER, METER AND FIRE LINE SIZES, CONDUITS TO / FROM MESSAGE BOARDS, AND GROUND LOOP DETECTION SYSTEMS

KEY LEGEND

- (A) DOMESTIC WATER ENTRY (RE: MEP)
- (B) 2" DOMESTIC WATER LINE (CONFIRM WITH MEP PRIOR TO INSTALLATION)
- (C) 2" WATER METER AND METER PIT
- (D) FIRE LINE ENTRY (RE: MEP)
- (E) 6" FIRE LINE
- (F) GAS ENTRY (RE: MEP)
- (G) 1" GAS LINE (RE: MEP FOR GAS SIZE AND MATERIAL)
- (H) GREASE WASTE ENTRY (RE: MEP)
- (I) 4" GREASE WASTE LINE
- (J) 1500 GALLON GREASE INTERCEPTOR (RE: MEP)
- (K) SANITARY SEWER ENTRY (RE: MEP)
- (L) 4" SANITARY SEWER LINE (2% MIN. SLOPE)
- (M) CLEANOUT
- (N) PHONE / DATA SERVICE ENTRY (RE: ARCH)
- (O) ELECTRICAL TRANSFORMER (RE: MEP)
- (P) DOWNSPOUT (RE: ARCH) (SEE CONNECTION SHOE DETAIL)
- (Q) 6" PVC DOWNSPOUT STORM LINE (MIN. 4% SLOPE)
- (R) BACKFLOW PREVENTER (RE: CITY DETAIL)

EXIST. SECTIONALIZER

EXIST. SECTIONALIZER

CONTRACTOR TO COORDINATE CONNECTION FOR ELECTRIC

CONNECT TO EXISTING 4" GAS MAIN CONTRACTOR TO COORDINATE CONNECTION FOR GAS

CONNECT TO EXISTING 6" SANITARY (INSTALL REDUCER AS NECESSARY)

FF = 1027.5

NW DOUGLAS STREET

LIMITS OF EXISTING UNDERGROUND STORM DETENTION (MULTIPLE 60" CONTECH CMP PIPES)

EXISTING FIRE HYDRANT

CONTRACTOR TO COORDINATE CONNECTION FOR PHONE / DATA

TAP EXISTING 12" WATER MAIN CONTRACTOR TO COORDINATE CONNECTION FOR DOMESTIC WATER SERVICE AND FIRE LINE

NW VICTORIA DRIVE

NORTH LIMIT MAINTENANCE AGREEMENT DOC NO. 2018E009911

MAINTENANCE AGREEMENT SPUR DRIVE DOC NO. 2018E009911

65' INGRESS & EGRESS ESMT

15' UTILITY ESMT

30' ACCESS ESMT SEE DETAIL 2

CURB INLET 11

CURB INLET 13

AREA INLET 12

AREA INLET 14

AREA INLET 15

AREA INLET 16

CURB INLET 18

SANITARY MANHOLE 4

SANITARY MANHOLE 3

SANITARY MANHOLE 1

STORM MANHOLE 17

WATER MANHOLE 2

BLOCK WALL

PULL BOX

ATT DIST.

ATT FIBER

ATT TRANSFORMER

ATT PULL BOX

TRAFFIC PULL BOX

ELECTRIC MANHOLE

16" WATER LINE FROM MAPPING

12" WATER

LEE'S SUMMIT NORTH INDUSTRIAL PARK,

SEE DETAIL #1

SEE DETAIL #2

BY	REVISION	DATE
RC/ACA	FOR REVIEW	5-21-20

20 0 10 20 40

(IN FEET)
1 inch = 20 ft.

AGC Engineers, INC.

405 S. Leonard St., Suite D
Liberty, Missouri 64068

816.781.4200 ■
fax 792.3666

www.agcengineers.com

STATE OF MISSOURI
RONALD L. COWDER
NUMBER PE-29705
5-21-20
PROFESSIONAL ENGINEER

PANERA BREAD BAKERY - CAFE

LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SITE DEVELOPMENT PLANS

UTILITY PLAN

7

LEGEND

EXISTING		PROPOSED	
EX800	EXISTING GROUND ELEVATION	SW800	SIDEWALK ELEVATION
		SW/TC800	SIDEWALK/TOP OF CURB
PROPOSED		SW/P800	SIDEWALK/TOP OF PAVEMENT
G800	GROUND ELEVATION		CG-1 CURB AND GUTTER
P800	PAVEMENT ELEVATION		CG-1 MODIFIED CURB AND GUTTER
TC800	TOP OF CURB ELEVATION	R	RAMP
TW800	TOP OF WALL ELEVATION	L	LANDING
LP800	LOW POINT	T	TRANSITION
HP800	HIGH POINT		GRADE BREAK

TEMPORARY 6" ASPHALT CURB

FF = 1027.5

CURB INLET 11
AREA INLET 12
SANITARY MANHOLE 4
CURB INLET 13
BLOCK WALL
AREA INLET 15
DO NOT ENTER
NORTH

BY	REVISION	DATE
RC/ACA	FOR REVIEW	5-21-20

10 0 5 10 20
(IN FEET)
1 inch = 10 ft.

AGC Engineers, INC.
405 S. Leonard St., Suite D
Liberty, Missouri 64068
816.781.4200 ■
fax 792.3666
www.agcengineers.com

STATE OF MISSOURI
RONALD L. COWDER
NUMBER PE-29705
5-21-20
PROFESSIONAL ENGINEER

PANERA BREAD BAKERY - CAFE
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SITE DEVELOPMENT PLANS
SPOT ELEVATION PLAN

8

LEGEND

	EXISTING		PROPOSED
		SW800	SIDEWALK ELEVATION
EX800	EXISTING GROUND ELEVATION	SW/TC800	SIDEWALK/TOP OF CURB
	PROPOSED	SW/P800	SIDEWALK/TOP OF PAVEMENT
G800	GROUND ELEVATION		CG-1 CURB AND GUTTER
P800	PAVEMENT ELEVATION		CG-1 MODIFIED CURB AND GUTTER
TC800	TOP OF CURB ELEVATION	R	RAMP
TW800	TOP OF WALL ELEVATION	L	LANDING
LP800	LOW POINT	T	TRANSITION
HP800	HIGH POINT		GRADE BREAK

NORTH

BY	REVISION	DATE
RC/ACA	FOR REVIEW	5-21-20

10 0 5 10 20
(IN FEET)
1 inch = 10 ft.

AGC Engineers, INC.
405 S. Leonard St., Suite D
Liberty, Missouri 64068
816.781.4200 ■
fax 792.3666
www.agcengineers.com

STATE OF MISSOURI
RONALD L. COWGER
NUMBER PE-29705
5-21-20
PROFESSIONAL ENGINEER

PANERA BREAD BAKERY - CAFE
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SITE DEVELOPMENT PLANS
SPOT ELEVATION PLAN

9

CURB INLET DESIGN TABLE

Return Frequency 10 yr

Inlet Struct. #	Overland Flow (To) L (ft)	Overland Flow (To) S (%)	Gutter Flow (Tt) L (ft)	Gutter Flow (Tt) C	Gutter Flow (Tt) S (%)	Gutter Flow (Tt) Mannings n	Inlet Time Ti (min)	Inlet Time Tt (min)	Inlet Time Tc (min)	K	I Inlet (in/hr)	Area Label	Area Inlet (ac)	Q Inlet (cfs)
11	25	2	0.9	210	2	0.014	1.43	0.63	5.00	1.00	7.35	D	0.04	**0.3**
12	15	2	0.9	40	6	0.014	1.11	0.07	5.00	1.00	7.35	C	0.04	**0.3**
13	5	2	0.9	40	6	0.014	0.64	0.07	5.00	1.00	7.35	B	0.38	**2.5**
21	25	2	0.9	260	2	0.014	1.43	0.78	5.00	1.00	7.35	A	0.48	**3.2**

Inlet Struct. #	Gutter Capacity: Back of Curb to Back of Curb (ft)	Gutter Type (1 = CG-1 or 2 = CG-2)	Allowable Gutter Spread (ft)	Street Cross Slope (%)	Max. Gutter Depth (ft)	Max. Gutter Area (sf)	Gutter Cap. (cfs)	Gutter Bypass (positive # = bypass) (cfs)	Inlet Capacity: Slope (%)	Slope Width	100% Cap(cfs)	80% Cap(cfs)	Inlet Bypass (positive # = bypass) (cfs)
11	26	1	10.5	2.08	0.24	1.04	**4.1**	**-3.8**	sag	3	7.00	**5.60**	-5.34
12	26	1	10.5	2.08	0.24	1.04	**7.1**	**-6.8**	6	3	6.80	**5.44**	-5.18
13	26	1	10.5	2.08	0.24	1.04	**7.1**	**-4.6**	6	3	6.80	**5.44**	-2.93
21	26	1	10.5	2.08	0.24	1.04	**4.1**	**-0.9**	sag	3	7.00	**5.60**	-2.42

Return Frequency 100 yr

Inlet Struct. #	Overland Flow (To) L (ft)	Overland Flow (To) S (%)	Gutter Flow (Tt) L (ft)	Gutter Flow (Tt) C	Gutter Flow (Tt) S (%)	Gutter Flow (Tt) Mannings n	Inlet Time Ti (min)	Inlet Time Tt (min)	Inlet Time Tc (min)	K	I Inlet (in/hr)	Area Label	Area Inlet (ac)	Q Inlet (cfs)
11	25	2	0.9	210	2	0.014	1.43	0.63	5.00	1.25	10.32		0.04	**0.5**
12	15	2	0.9	40	6	0.014	1.11	0.07	5.00	1.25	10.32		0.04	**0.5**
13	5	2	0.9	40	6	0.014	0.64	0.07	5.00	1.25	10.32		0.38	**4.4**
21	25	2	0.9	260	2	0.014	1.43	0.78	5.00	1.25	10.32		0.48	**5.6**

Inlet Struct. #	Gutter Capacity: Back of Curb to Back of Curb (ft)	Gutter Type (1 = CG-1 or 2 = CG-2)	Allowable Gutter Spread (ft)	Street Cross Slope (%)	Max. Gutter Depth (ft)	Max. Gutter Area (sf)	Gutter Cap. (cfs)	Gutter Bypass (positive # = bypass) (cfs)	Inlet Capacity: Use a slope of 0.5% for sump conditions	Slope (%)	Width	100% Cap(cfs)	80% Cap(cfs)	Inlet Bypass (positive # = bypass) (cfs)
11	26	1	10.5	2.08	0.24	1.04	**4.1**	**-3.6**	sag	3	7.00	**5.60**	**5.44**	-5.14
12	26	1	10.5	2.08	0.24	1.04	**7.1**	**-6.6**	6	3	6.80	**5.44**	**5.44**	-4.98
13	26	1	10.5	2.08	0.24	1.04	**7.1**	**-2.7**	6	3	6.80	**5.44**	**5.44**	-1.03
21	26	1	10.5	2.08	0.24	1.04	**4.1**	**1.5**	sag	3	7.00	**5.60**	**5.60**	-0.03

PIPE DESIGN TABLE

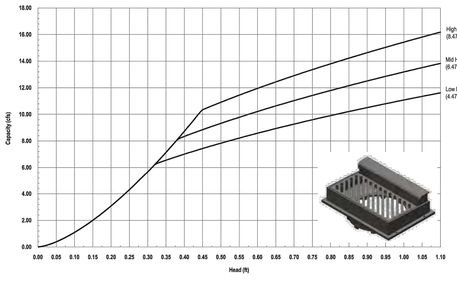
Return Frequency 10 yr

Line	Inlet Struct. #	Inlet Type	Inlet Tc (min)	Pipe Tt (min)	K	C	I Pipe (in/hr)	A Inlet (ac)	A Total (ac)	Q Pipe (cfs)	Pipe Capacity: Pipe dia. (in)	Mannings "n"	Pipe slope (%)	Full Pipe Capacity (cfs)	Full Pipe Velocity (fps)	Gravity Flow Pipe Velocity (fps)	Pressure Flow Pipe Velocity (fps)	Gravity Pipe Flow Depth (feet)	Minor Head Loss Coefficient "K"	Gravity kV²/2g (feet)	Pressure kV²/2g (feet)	Length to downstream struct. (ft)	Pressure Slope of Hydro S_f (%)
1	13	CI	5.00	5.00	1.00	0.90	7.35	0.38	0.38	**2.5**	15	0.012	20.31	**31.6**	25.8	15.4	2.1	0.24	1.00	3.67	0.07	19	0.13%
	12	CI	5.00	5.02	1.00	0.90	7.35	0.04	0.42	**2.8**	15	0.012	2.83	**11.8**	9.6	7.9	2.3	0.41	0.50	0.48	0.04	27	0.16%
	11	CI	5.00	5.08	1.00	0.90	7.33	0.04	0.46	**3.0**	15	0.012	1.00	**7.0**	5.7	5.5	2.5	0.56	0.50	0.23	0.05	17	0.19%
	10	Inserta Tee to CMP Detention																					
2	21	CI	5.00	5.00	1.00	0.90	7.35	0.48	0.48	**3.2**	15	0.012	1.00	**7.0**	5.7	5.6	2.6	0.59	1.00	0.48	0.10	5	0.20%
	20	Inserta Tee to CMP Detention																					
ROOF DRAIN			5.00	5.00	1.00	0.90	7.35	0.09	0.09	**0.6**	6	0.012	4.00	**1.2**	6.2	6.1	2.9	0.24	1.00	0.58	0.13	57	0.89%

Return Frequency 100 yr

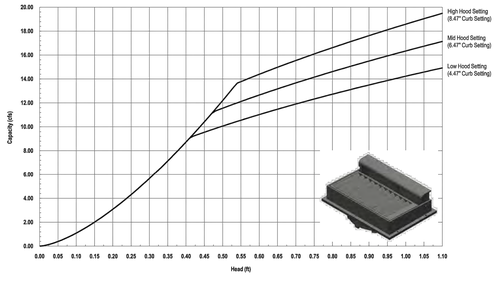
Line	Inlet Struct. #	Inlet Type	Tc (min)	Tt* for pipe calculation (min)	K	C	I Pipe (in/hr)	A Pipe (ac)	A Pipe (ac)	Q Pipe (cfs)	Pipe Capacity: Pipe dia. (in)	Mannings "n"	Pipe slope (%)	Full Pipe Capacity (cfs)	Full Pipe Velocity (fps)	Gravity Flow Pipe Velocity (fps)	Pressure Flow Pipe Velocity (fps)	Gravity Pipe Flow Depth (feet)	Minor Head Loss Coefficient "K"	Gravity kV²/2g (feet)	Pressure kV²/2g (feet)	Length to downstream struct. (ft)	Pressure Slope of Hydro S_f (%)
1	13	CI	5.00	5.00	1.25	0.90	10.32	0.38	0.38	**4.4**	15	0.012	20.31	**31.6**	25.8	18.0	3.6	0.31	1.0	5.1	0.20	19	0.39%
	12	CI	5.00	5.02	1.25	0.90	10.31	0.04	0.42	**4.9**	15	0.012	2.83	**11.8**	9.6	9.1	4.0	0.55	0.5	0.6	0.12	27	0.48%
	11	CI	5.00	5.08	1.25	0.90	10.29	0.04	0.46	**5.3**	15	0.012	1.00	**7.0**	5.7	6.3	4.3	0.81	0.5	0.3	0.15	17	0.57%
	10	Inserta Tee to CMP Detention																					
2	21	CI	5.00	5.00	1.25	0.90	10.32	0.48	0.48	**5.6**	15	0.012	1.00	**7.0**	5.7	6.3	4.5	0.84	1.0	0.6	0.32	5	0.63%
	20	Inserta Tee to CMP Detention																					
ROOF DRAIN			5.00	5.00	1.25	0.90	10.32	0.09	0.09	**1.0**	6	0.012	4.00	**1.2**	6.2	6.9	5.2	0.35	1.0	0.7	0.41	57	2.75%

Nyloplast 2' x 3' Curb Inlet Diagonal Grate Inlet Capacity Chart

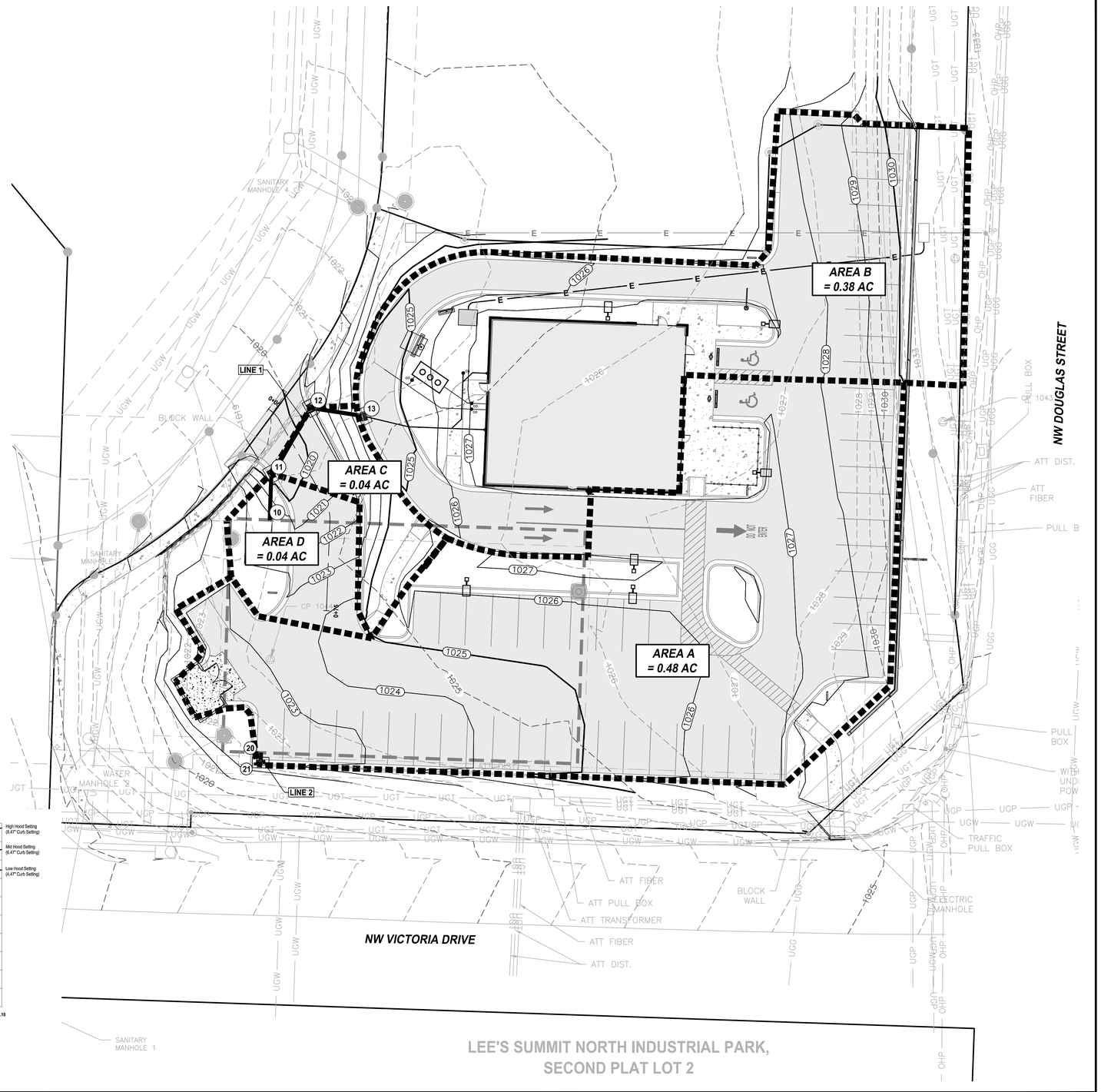


Nyloplast
3130 Wilma Avenue • Buford, GA 30518
(866) 888-8479 / (770) 932-2443 • Fax: (770) 932-2490
© Nyloplast Inlet Capacity Charts June 2012

Nyloplast 2' x 3' Curb Inlet High Flow Grate Inlet Capacity Chart



Nyloplast
3130 Wilma Avenue • Buford, GA 30518
(866) 888-8479 / (770) 932-2443 • Fax: (770) 932-2490
© Nyloplast Inlet Capacity Charts June 2012



BY	REVISION	DATE
RC/ACA	FOR REVIEW	5-21-20

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

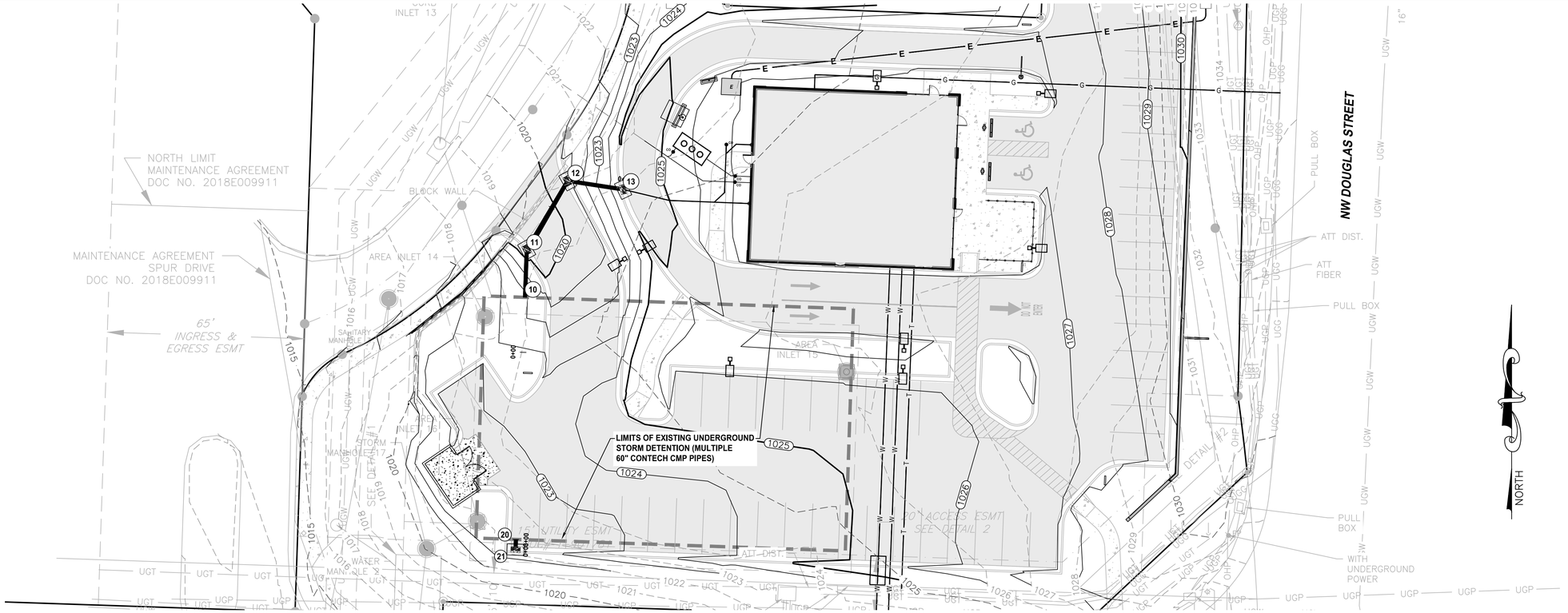
AGC Engineers, INC.
405 S. Leonard St., Suite D
Liberty, Missouri 64068
816.781.4200 ■
fax 792.3666
www.agcengineers.com

STATE OF MISSOURI
RONALD L. COWGER
NUMBER PE-29705
5-21-20
PROFESSIONAL ENGINEER

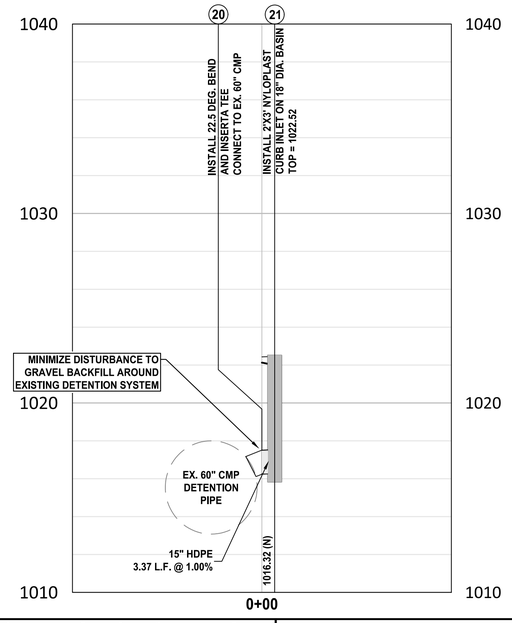
PANERA BREAD BAKERY - CAFE
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SITE DEVELOPMENT PLANS
DRAINAGE AREA MAP & CALCULATIONS

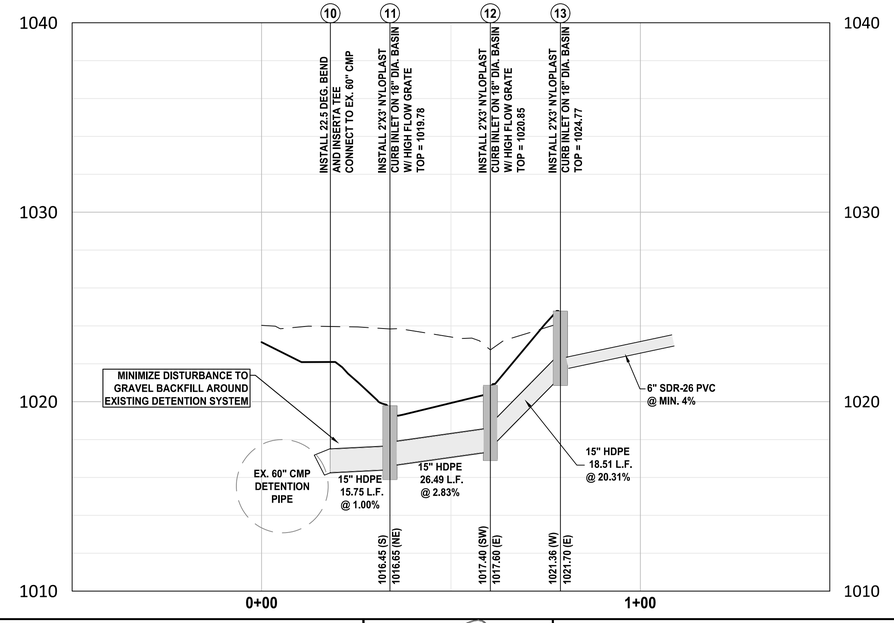
10



LINE 2



LINE 1



BY	REVISION	DATE
RC/ACA	FOR REVIEW	5-21-20

4 0 2 4 8
(VERT. IN FEET)
1 inch = 4 ft.

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

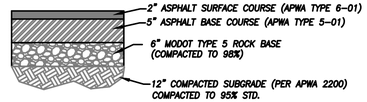
AGC Engineers, INC.
405 S. Leonard St., Suite D
Liberty, Missouri 64068
816.781.4200 ■
fax 792.3666
www.agcengineers.com

STATE OF MISSOURI
RONALD L. COWDER
NUMBER PE-29705
5-21-20
PROFESSIONAL ENGINEER

PANERA BREAD BAKERY - CAFE
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

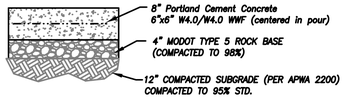
SITE DEVELOPMENT PLANS
STORM PLAN & PROFILES

11



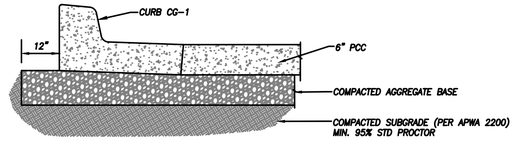
STANDARD DUTY ASPHALT PAVEMENT SECTION

NOT TO SCALE



REINFORCED CONCRETE PAVEMENT SECTION @ TRASH ENCLOSURE AND DRIVE THRU

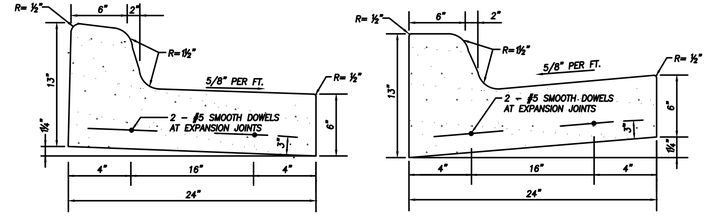
NOT TO SCALE



- EXTEND BASE SECTION 12" BEHIND CURB
- SEE PAVEMENT SECTIONS FOR TYPE & THICKNESS

CURB & GUTTER BASE SECTION

NOT TO SCALE



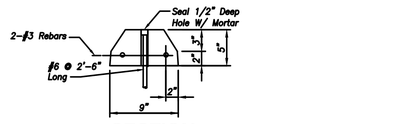
CG-1 (Modified) **CG-1**

NOTES:

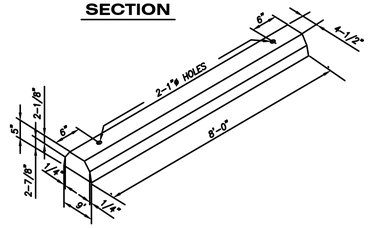
1. EXPANSION JOINTS SHALL BE FORMED BY A ONE-HALF (1/2) INCH THICK PREFORMED JOINT FILLER, CUT TO THE CONFIGURATION OF THE FULL SIZE OF THE CURB AND GUTTER SECTION AND BEING SECURED SO THAT THEY ARE NOT MOVED BY DEPOSITING AND COMPACTING THE CONCRETE AT THESE JOINTS. THE EDGES OF THESE JOINTS SHALL BE ROUNDED WITH AN EDGING TOOL ONE-EIGHTH (1/8) INCH RADIUS.
2. EXPANSION JOINTS SHALL BE PLACED WHERE CURB AND GUTTER ABUTS OTHER STRUCTURES AND AT ALL TANGENT POINTS TO CURBS. EXPANSION JOINTS SHALL NOT BE SPACED MORE THAN 50 FEET APART ON STRAIGHT RUNS FOR HAND LAID CURB AND GUTTER AND NOT MORE THAN 100 FEET APART FOR MACHINE LAID CURB AND GUTTER PROVIDED 3/4 INCH THICK JOINT FILLER IS USED. ALL JOINTS SHALL BE FORMED AT RIGHT ANGLES TO THE ALIGNMENT OF THE CURB AND GUTTER.
3. CONTRACTION JOINTS SHALL BE CONSTRUCTED BY SAWING THROUGH THE CURB AND GUTTER TO A DEPTH OF NOT LESS THAN ONE AND ONE-FOURTH (1 1/4) INCHES BELOW THE SURFACE AND TO A WIDTH NOT TO EXCEED THREE-EIGHTHS (3/8) INCH OR THEY MAY BE FORMED BY INSERTING A REMOVABLE METAL TEMPLATE IN THE FRESH CONCRETE, OR BY OTHER METHODS APPROVED BY THE ENGINEER. SEALING OF JOINTS IS NOT REQUIRED. CONTRACTION OR CONSTRUCTION JOINTS SHALL BE LOCATED APPROXIMATELY 10 FEET APART.
4. EXTEND 6" THICK AGGREGATE BASE MINIMUM 12" BEHIND BACK OF CURB.

CURB AND GUTTER

NOT TO SCALE

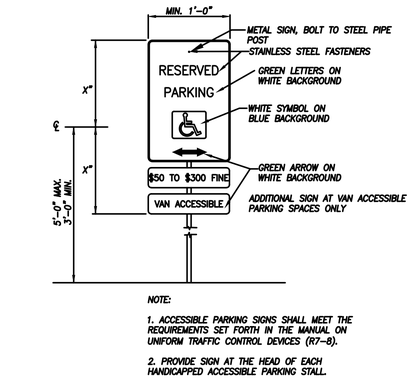


SECTION



PRECAST CONCRETE WHEEL STOP

NOT TO SCALE

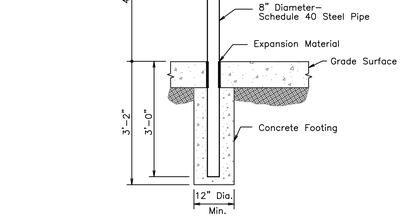


NOTE:

1. ACCESSIBLE PARKING SIGNS SHALL MEET THE REQUIREMENTS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (R7-8).
2. PROVIDE SIGN AT THE HEAD OF EACH HANDICAPPED ACCESSIBLE PARKING STALL.

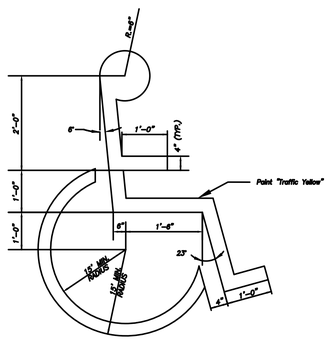
HANDICAP SIGN (HCS)

NOT TO SCALE



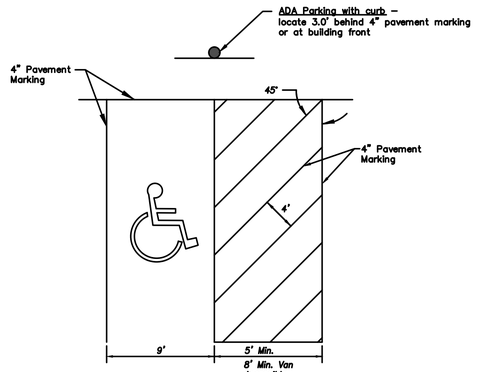
BOLLARD

NOT TO SCALE



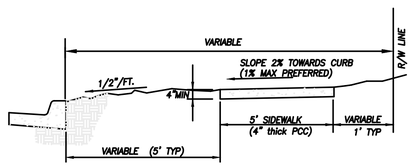
ACCESSIBLE PARKING SYMBOL

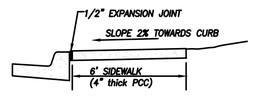
NOT TO SCALE



ADA ACCESSIBLE STRIPING LAYOUT

NOT TO SCALE





NOTES:

1. JOINTS SHALL BE FORMED AT RIGHT ANGLES TO THE ALIGNMENT OF THE SIDEWALK AND TO THE DEPTHS INDICATED BELOW.
2. THE SIDEWALK SHALL BE MARKED OFF INTO SQUARE SECTIONS (PICTURE FRAMED) BY CONTRACTION JOINTS. CONTRACTION JOINTS SHALL BE ONE-EIGHTH (1/8) INCH WIDE BY ONE (1) INCH DEEP AND SHALL BE FORMED BY TOOLING.
3. EXPANSION JOINTS SHALL BE FORMED BY A ONE-HALF (1/2) INCH THICK PREFORMED JOINT FILLER, EXTENDING THE FULL DEPTH OF THE SLAB, AND SECURED SO THAT THEY ARE NOT MOVED BY DEPOSITING AND COMPACTING THE CONCRETE AT THESE JOINTS.
4. EXPANSION JOINTS SHALL BE PLACED WHERE SIDEWALK ABUTS OTHER STRUCTURES AND SHALL NOT BE SPACED MORE THAN 50 FT APART ON STRAIGHT RUNS FOR HAND LAID SIDEWALK AND NOT MORE THAN 100 FT APART ON STRAIGHT RUNS FOR MACHINE LAID SIDEWALKS.
5. SIDEWALK TO BE INSTALLED ON COMPACTED SUBGRADE (MIN 95% STD PROCTOR). CONTRACTOR MAY ELECT TO INSTALL AGGREGATE LEVEL COURSE.

SIDEWALK DETAILS

NOT TO SCALE

BY	REVISION	DATE
RC/ACA	FOR REVIEW	5-21-20

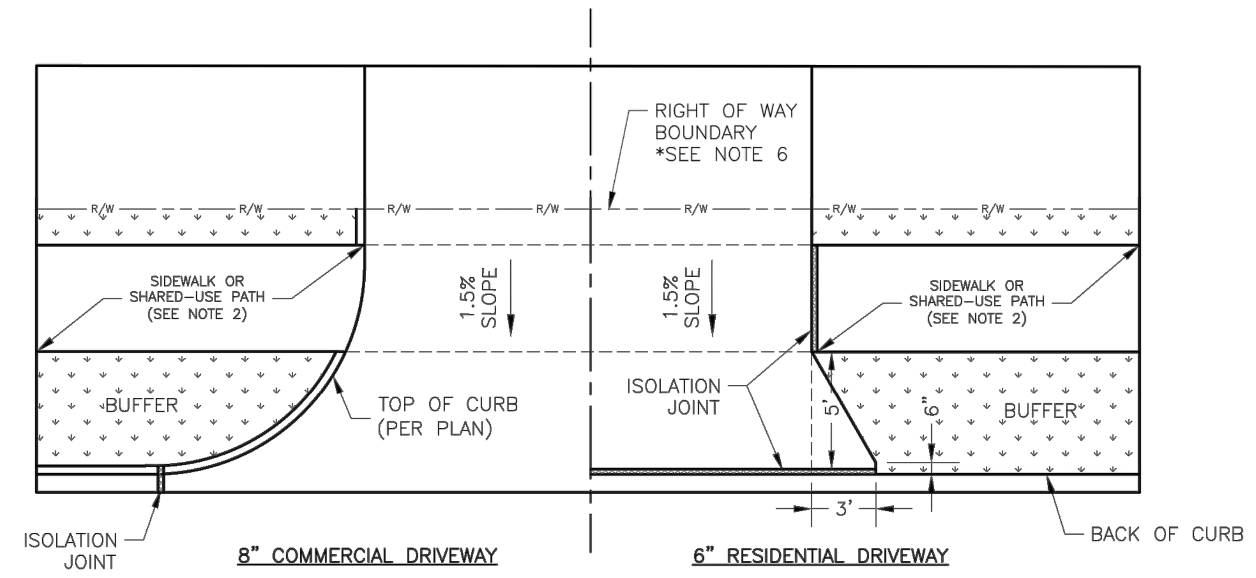
AGC Engineers, INC.
405 S. Leonard St., Suite D
Liberty, Missouri 64068
816.781.4200 ■
fax 792.3666
www.agcengineers.com

STATE OF MISSOURI
RONALD L. COWGER
NUMBER PE-29705
5-21-20
PROFESSIONAL ENGINEER

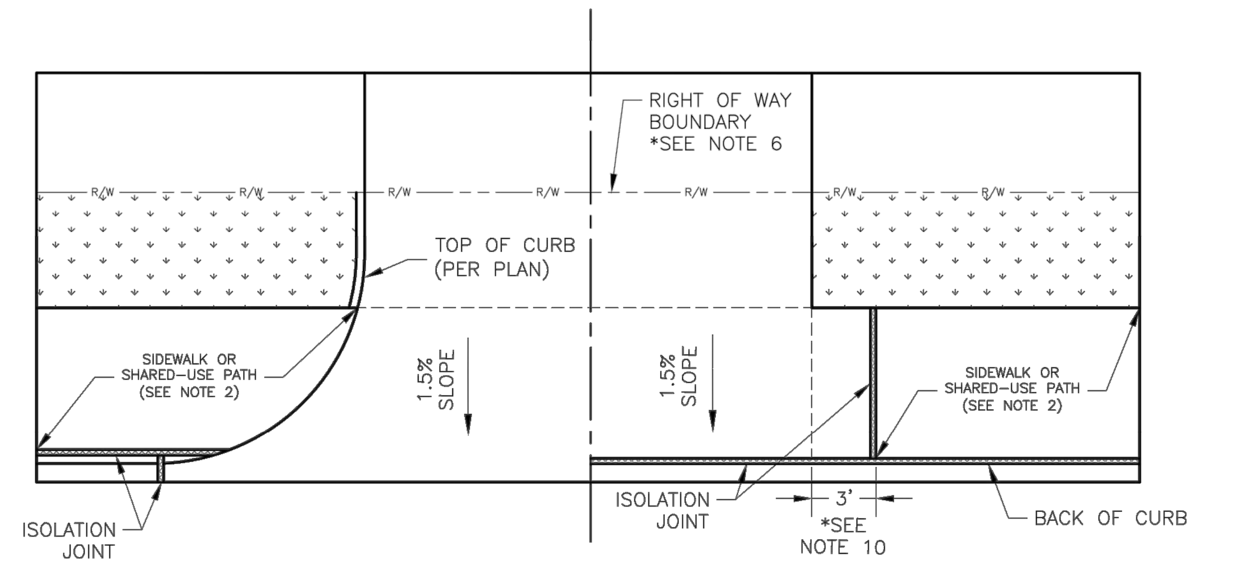
PANERA BREAD BAKERY - CAFE
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SITE DEVELOPMENT PLANS
DETAILS

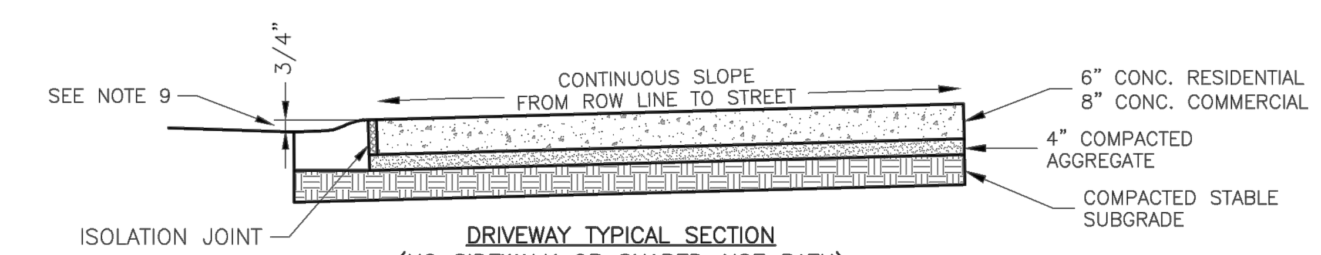
12



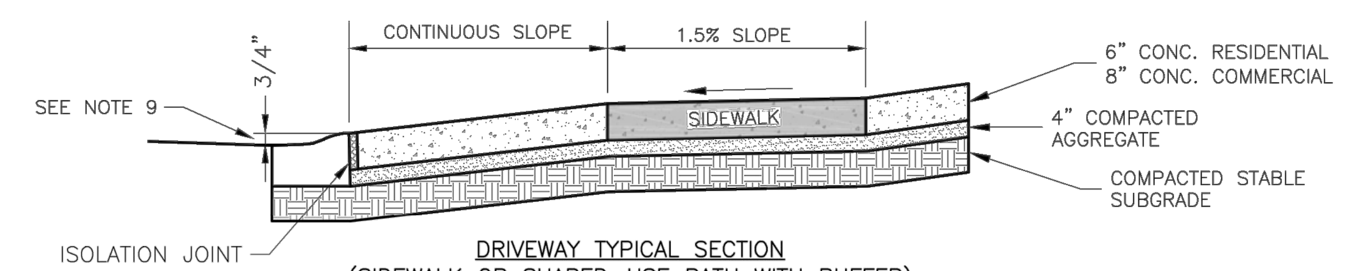
DRIVEWAY WITH BUFFER
NOT TO SCALE



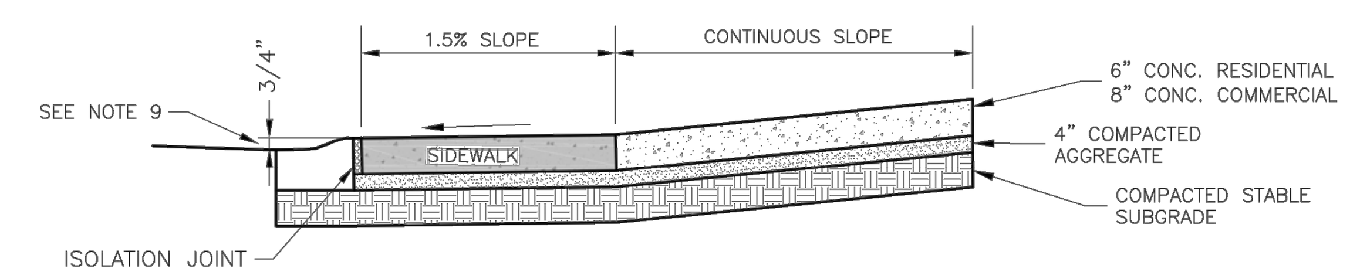
DRIVEWAY WITHOUT BUFFER
NOT TO SCALE



DRIVEWAY TYPICAL SECTION (NO SIDEWALK OR SHARED-USE PATH)
NOT TO SCALE



DRIVEWAY TYPICAL SECTION (SIDEWALK OR SHARED-USE PATH WITH BUFFER)
NOT TO SCALE



DRIVEWAY TYPICAL SECTION (SIDEWALK OR SHARED-USE PATH WITHOUT BUFFER)
NOT TO SCALE

GENERAL NOTES

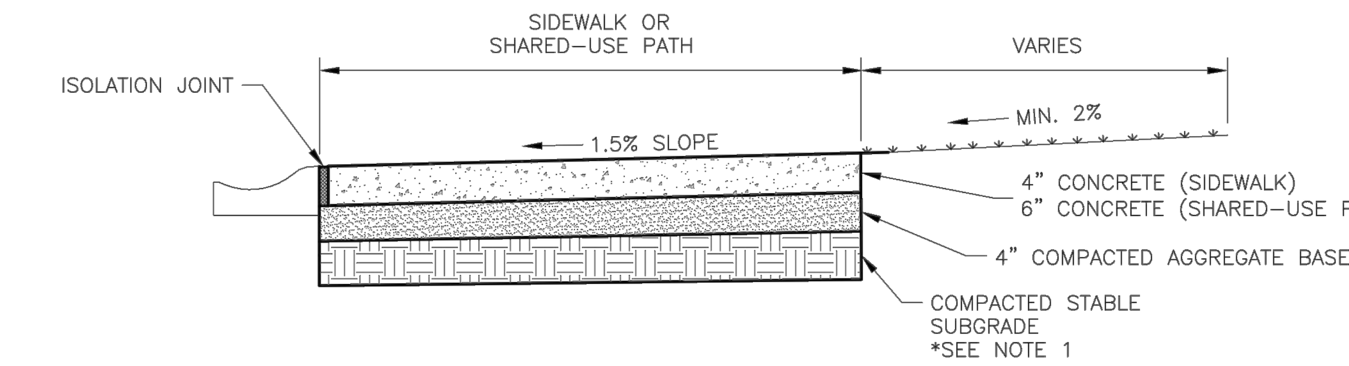
1. SUBGRADE SHALL BE STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
2. ALL DRIVE APPROACHES SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG) FOR SLOPE REQUIREMENTS WHEN SIDEWALK IS REQUIRED (SEE ADA RAMP RETROFIT DETAIL GEN-3B, SIDEWALK/SHARED USE PATH RAMP AT DRIVEWAY DETAIL).
3. JOINT AT BACK OF CURB LINE SHALL BE AN ISOLATION JOINT FOR RESIDENTIAL DRIVEWAYS.
4. KCMMB 4K CONCRETE MIX IS REQUIRED FOR ALL CURBS.
5. COMMERCIAL DRIVEWAYS, IN THE PUBLIC RIGHT OF WAY, SHALL BE KCMMB 4K CONCRETE MIX.
6. RESIDENTIAL DRIVEWAYS, IN THE PUBLIC RIGHT OF WAY, KCMMB 4K CONCRETE MIX IS RECOMMENDED. OTHER CONCRETE MIXES NEEDS TO BE APPROVED BY CITY INSPECTOR.
7. A JOINT MUST BE INSTALLED AT THE RIGHT OF WAY BOUNDARY FOR PROPERTY DELINEATION.
8. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.
9. ¾" FROM TOP OF CURB TO FLOWLINE AT DRIVEWAY (TYPE CG-1 CURB ONLY). MUST MAINTAIN ORIGINAL FLOWLINE OF CURB.
10. SIDEWALK ADJOINING CURB SHALL BE 6" THICK, EXTENDING 3' FROM THE DRIVEWAY.
11. THE MAXIMUM WIDTH OF A RESIDENTIAL DRIVEWAY IS 36 FEET WITHIN THE RIGHT OF WAY.

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

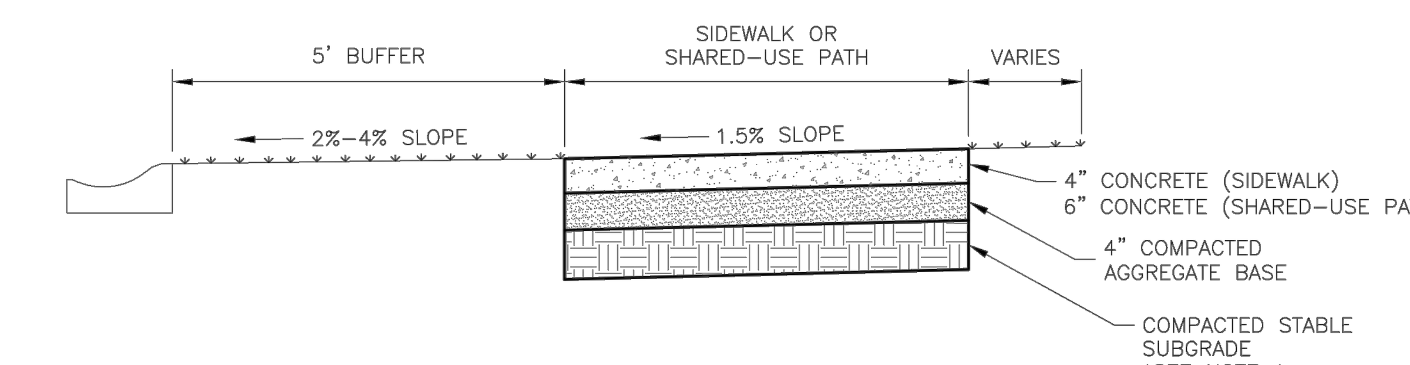
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
DRIVEWAY DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17

GEN-1



SIDEWALK/SHARED-USE PATH WITHOUT BUFFER
NOT TO SCALE



SIDEWALK/SHARED-USE PATH WITH BUFFER
NOT TO SCALE

GENERAL NOTES:

1. SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
2. 1.5% CROSS SLOPE MUST BE MAINTAINED THROUGH DRIVEWAYS.
3. KCMMB 4K CONCRETE MIX SHALL BE REQUIRED FOR ALL SIDEWALKS/SHARED-USE PATHS OR AS APPROVED BY THE CITY INSPECTOR.
4. ALL SIDEWALK/SHARED-USE PATHS SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
5. AN ISOLATION JOINT SHALL BE PLACED AT A MAXIMUM OF 150 FT. CONSTRUCTION JOINTS SHALL BE PLACED THE SAME WIDTH OF SIDEWALK/SHARED-USE PATHS, BUT NO GREATER THAN 10 FT.
6. AN ISOLATION JOINT SHALL BE PLACED WHERE THE SIDEWALK/SHARED-USE PATHS MEETS A RESIDENTIAL DRIVEWAY.
7. SHARED-USE PATHS WIDTH SHALL BE 10 FT. WIDE.
8. SIDEWALK/SHARED-USE PATHS FINISHING SHALL BE FULL BROOM FINISH OR AS DIRECTED BY CITY INSPECTOR.
9. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
SIDEWALK/SHARED-USE PATH DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

GEN-2

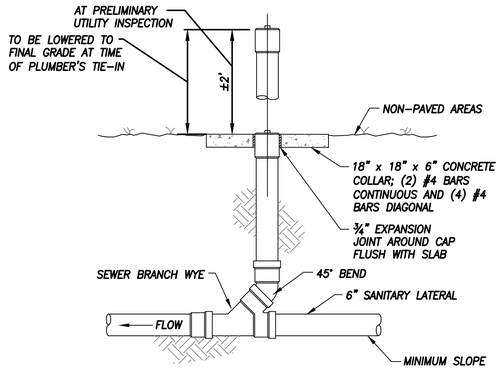
BY	REVISION	DATE
RC/ACA	FOR REVIEW	5-21-20

AGC Engineers, INC.
405 S. Leonard St., Suite D
Liberty, Missouri 64068
816.781.4200 ■
fax 792.3666
www.agcengineers.com

STATE OF MISSOURI
RONALD L. COWGER
NUMBER PE-29705
5-21-20
PROFESSIONAL ENGINEER

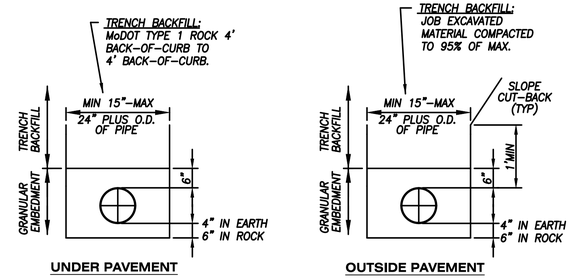
PANERA BREAD BAKERY - CAFE
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SITE DEVELOPMENT PLANS
DETAILS



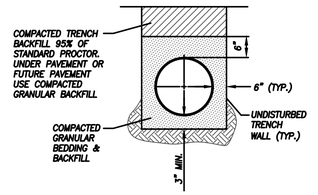
CLEAN-OUT DETAIL

NOT TO SCALE



EMBEDMENT AND BACKFILL FOR SANITARY SEWERS

NOT TO SCALE



SURFACE LIVE LOADING CONDITION	MINIMUM RECOMMENDED COVER
H25 (FLEXIBLE PAVEMENT)	12" (24" FOR 60" PIPE)*
H25 (RIGID PAVEMENT)	12" (24" FOR 60" PIPE)
E80 RAILWAY	24"
HEAVY CONSTRUCTION	48"

*TOP OF PIPE TO BOTTOM OF BITUMINOUS PAVEMENT SECTION

1. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH A FOUNDATION OF CLASS I OR II MATERIAL AS DEFINED IN ASTM D2321, "STANDARD PRACTICE FOR INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS," LATEST EDITION: AS AN ALTERNATIVE AND AT THE DISCRETION OF THE ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING WOVEN GEOTEXTILE FABRIC.

2. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION. UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4"; FOR 4"-24" DIA. HDPE; 6" FOR 30"-60" DIA. HDPE.

3. HAUNCHING AND INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

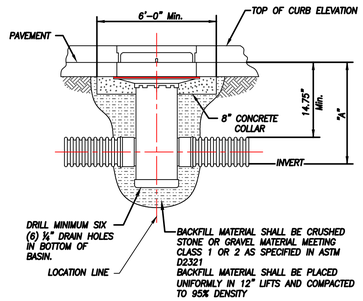
4. UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM TRENCH WIDTHS SHALL BE AS FOLLOWS:

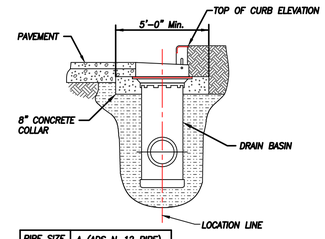
NOMINAL DIA.	MIN. RECOMMENDED TRENCH WIDTH
4	21
6	23
8	25
10	28
12	31
15	34
18	39
24	48
30	66
36	78
42	83
48	89
60	102

5. MINIMUM COVER: MINIMUM RECOMMENDED DEPTHS OF COVER FOR VARIOUS LIVE LOADING CONDITIONS ARE SUMMARIZED IN THE FOLLOWING TABLE. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE TAKEN FROM THE TOP OF THE PIPE TO THE GROUND SURFACE.

HDPE (HIGH DENSITY POLYETHYLENE) PIPE INSTALLATION DETAIL

NOT TO SCALE





PIPE SIZE	A (ADS N-12 PIPE)
4"	20.00"
6"	22.00"
8"	24.00"
10"	26.00"
12"	29.00"
15"	32.00"
18"	35.00"
24"	42.00"
30"	48.00"

NYLOPLAST DRAIN BASIN - TYPICAL INSTALLATION

NOT TO SCALE

BY	REVISION	DATE
RC/ACA	FOR REVIEW	5-21-20

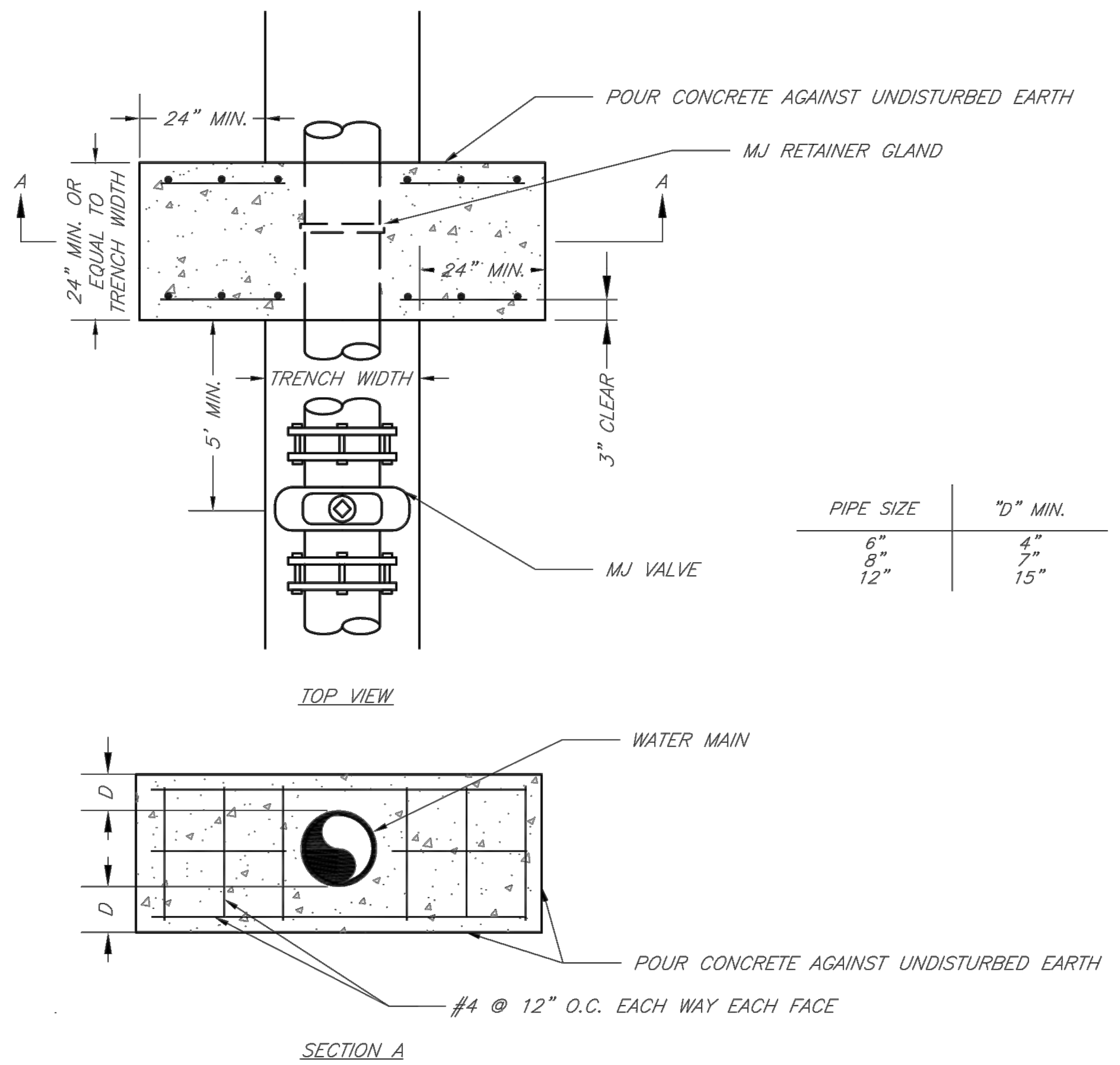
AGC Engineers, INC.
405 S. Leonard St., Suite D
Liberty, Missouri 64068
816.781.4200 ■
fax 792.3666
www.agcengineers.com

STATE OF MISSOURI
RONALD L. COWSER
NUMBER PE-29705
5-21-20
PROFESSIONAL ENGINEER

PANERA BREAD BAKERY - CAFE
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SITE DEVELOPMENT PLANS
DETAILS

14



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

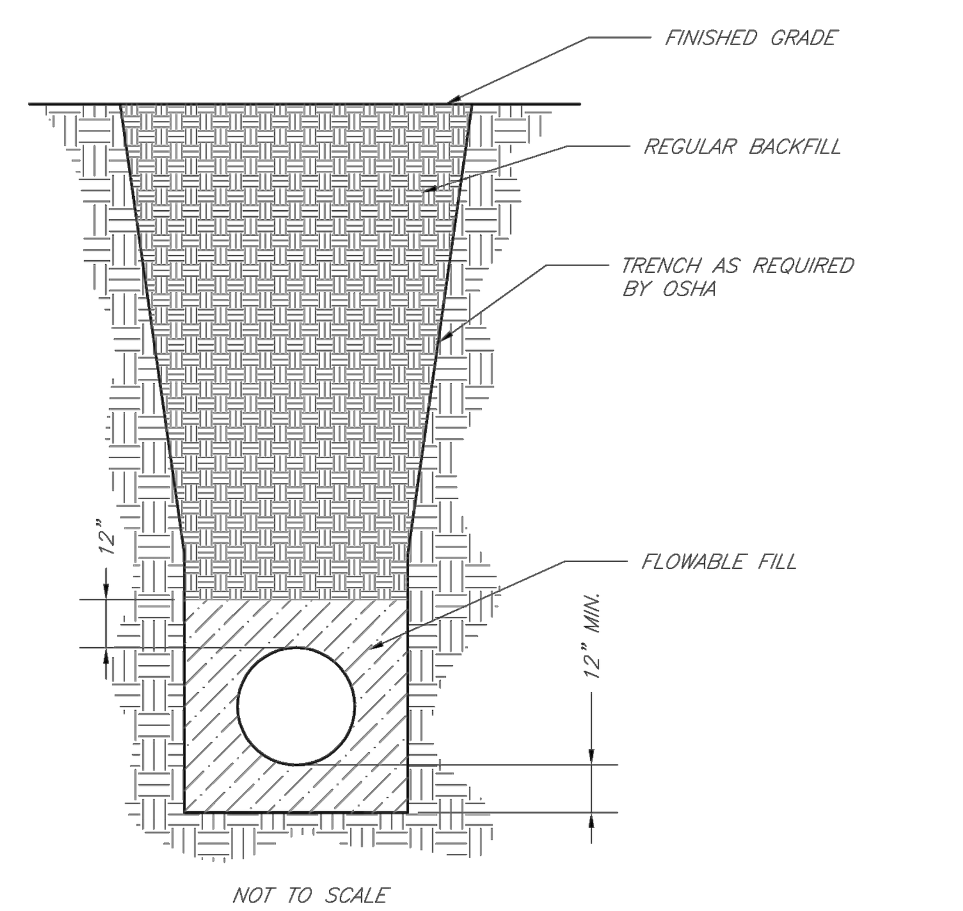
NOTE:

THIS DETAIL NOT TO BE USED FOR PIPE GREATER THAN 12"

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

STRADDLE BLOCK

Date: 02/13
Drawn By: JN
Checked By: DL
FILE: WAT-3
Rev: 1/14
Rev:



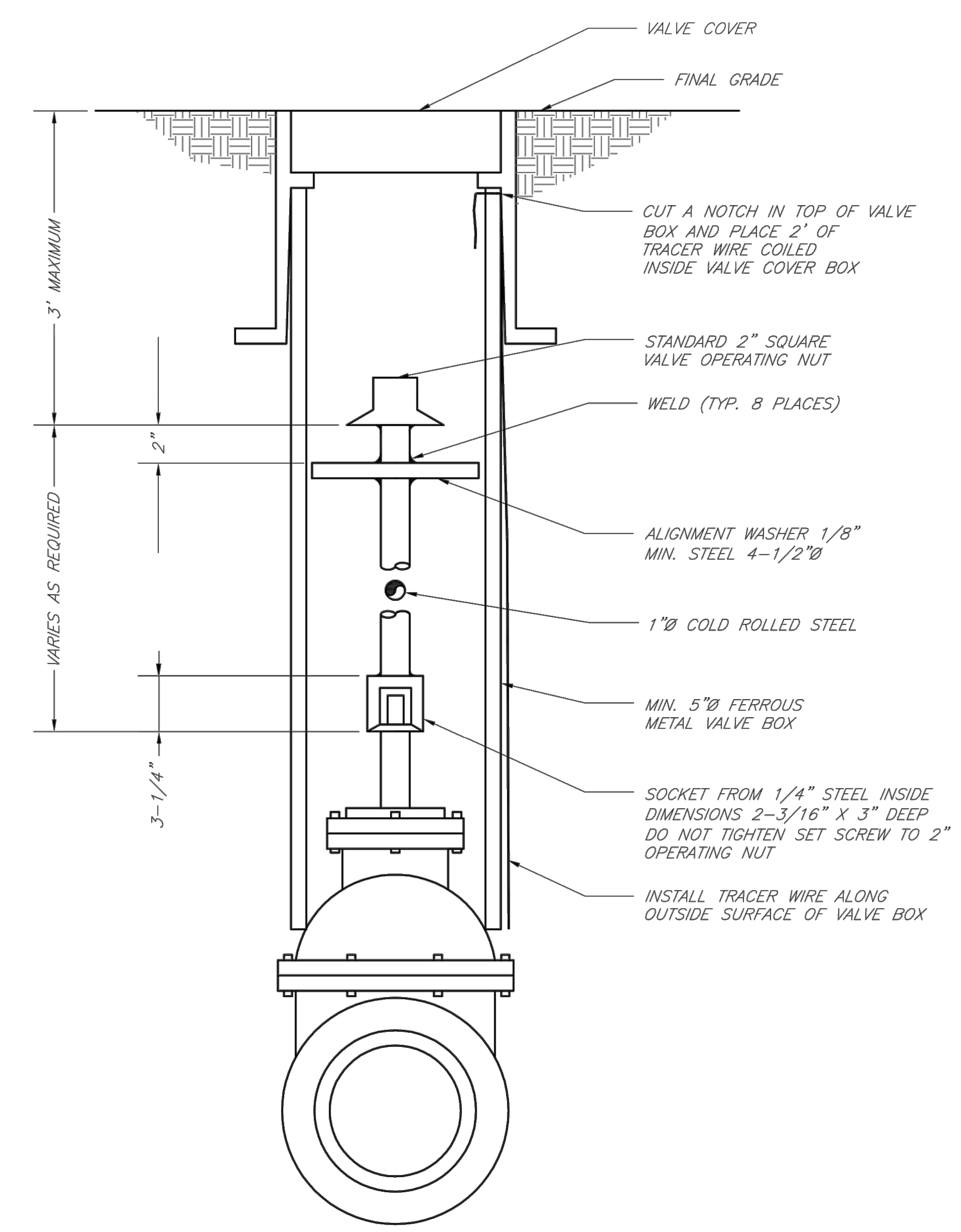
NOTES:

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

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

TRENCH CHECK

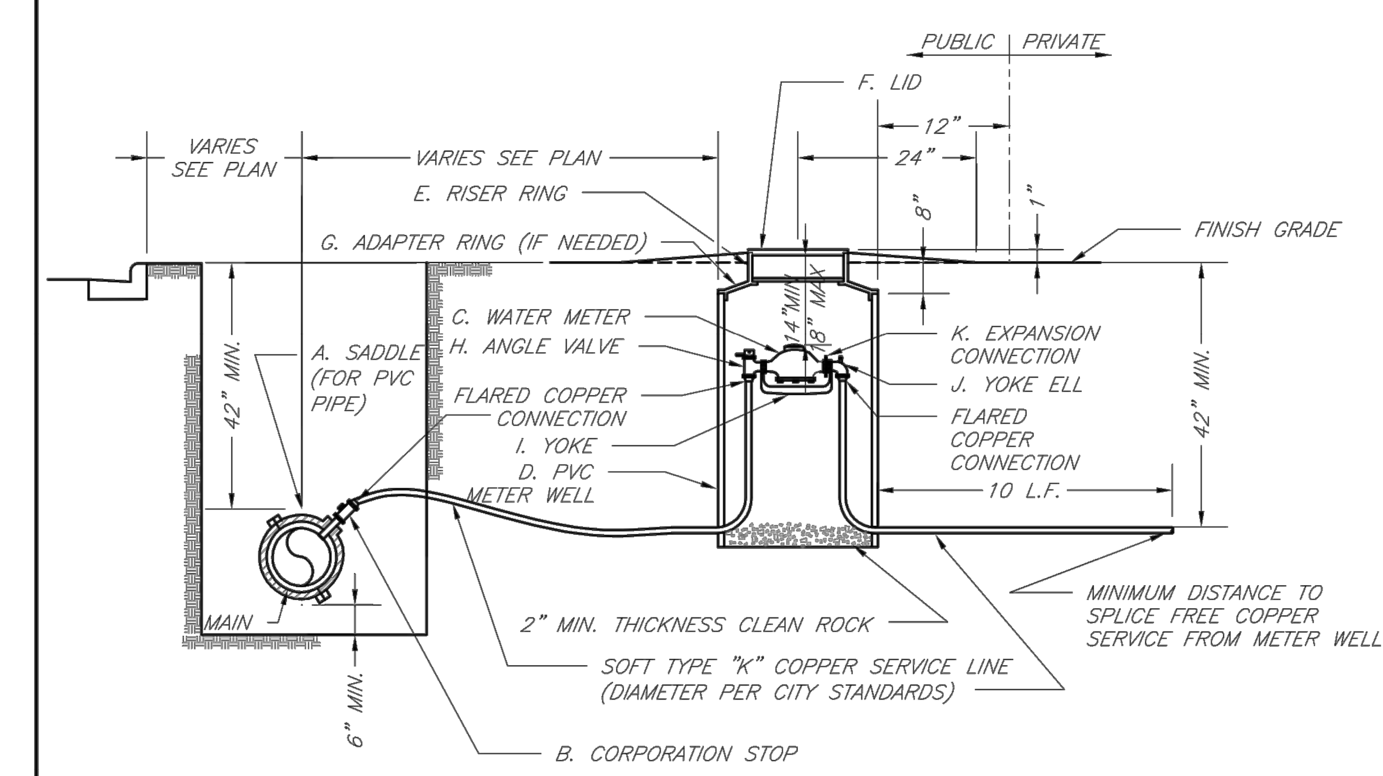
Date: 02/13
Drawn By: JN
Checked By: DL
FILE: WAT-6
Rev: 1/14
Rev:



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

VALVE STEM EXTENSION AND VALVE BOX

Date: 02/13
Drawn By: JN
Checked By: DL
FILE: WAT-9
Rev: 1/14
Rev:



TYPICAL METER INSTALLATION – 2" AND SMALLER
NOT TO SCALE

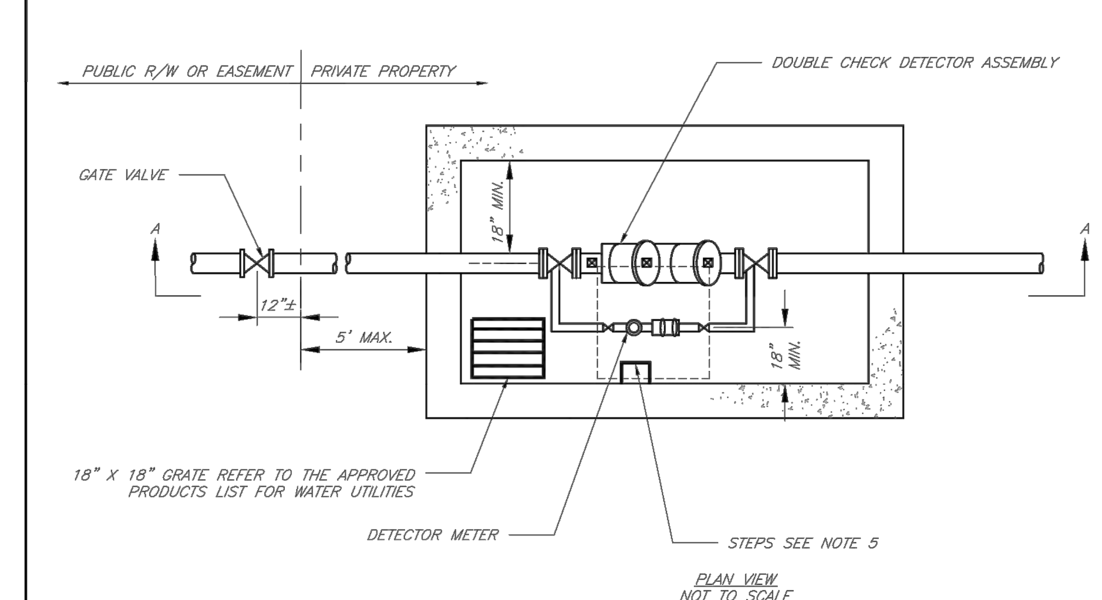
NOTES:

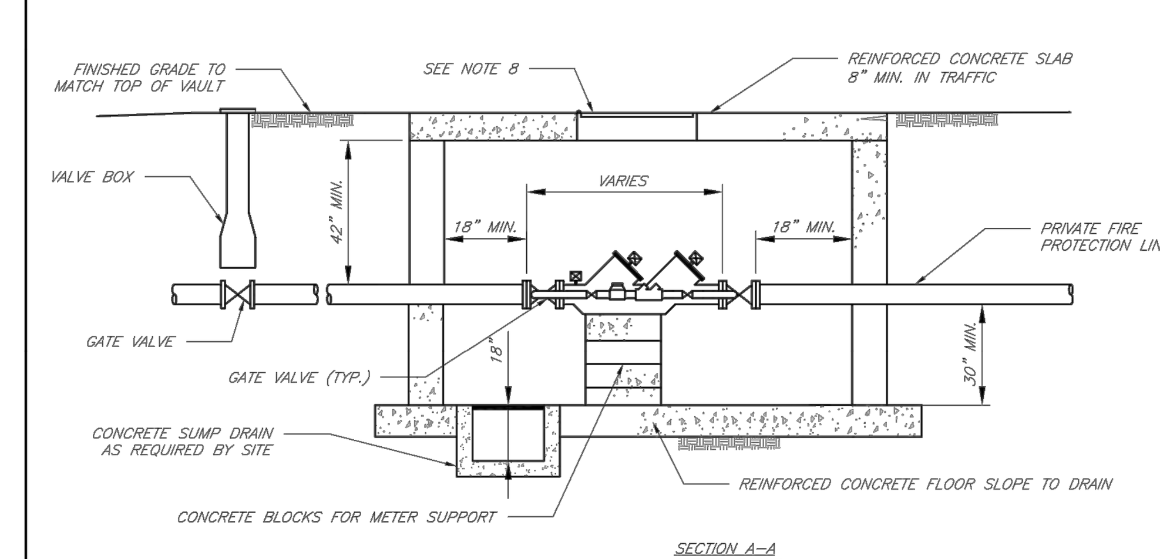
1. METER INSTALLATION SHALL NOT BE LOCATED IN AREAS SUBJECT TO VEHICULAR TRAFFIC OR IN CONCRETE PAVEMENT WITHOUT CITY APPROVAL.
2. IF METER IS TO BE LOCATED OTHER THAN IN FRONT OF PROPERTY LINE, CITY APPROVAL SHALL BE OBTAINED.
3. CITY TO FURNISH ITEMS A–K.
4. NO OTHER EQUIPMENT SHALL BE INSTALLED IN THIS PIT.
5. 42" MINIMUM BURY DEPTH FOR ALL SERVICE LINES.
6. EXCAVATION FOR TAP TO EXPOSE 4 LINEAR FEET OF MAIN.
7. NO SPLICES ALLOWED BETWEEN METER AND MAIN.
8. SERVICE CONNECTION TAP AT APPROXIMATELY 45 DEGREES.
9 LID AND RISER RING SHALL BE SET SO THAT GROUND WATER WILL DRAIN AWAY FROM THE WELL.
10. CONTACT WATER UTILITIES, 816-969-1900, FOR REQUIREMENTS OF A METER LARGER THAN 2"

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

SERVICE CONNECTION/METER WELL

Date: 02/13
Drawn By: JN
Checked By: DL
FILE: WAT-11
Rev: 1/14
Rev:





GENERAL NOTES:

1. METER VAULT WALLS TO BE POURED OR PRECAST CONCRETE. METER VAULT ROOF TO BE REINFORCED CONCRETE WITH OPENING CENTERED OVER DETECTOR METER. REINFORCED WALLS AND SLABS ARE TO BE DESIGNED BY THE OWNER'S ENGINEER OR PRECAST ENGINEER.
2. METER VAULT TO BE LOCATED, WHEN POSSIBLE, OUTSIDE TRAFFIC AREA AND WHERE SURFACE WATER WILL NOT DRAIN INTO IT. PROVIDE CONCRETE SUMP TO DRAIN TO AN ABOVE GROUND DISCHARGE POINT.
3. ALL PIPE AND FITTINGS FROM THE CITY WATER MAIN THROUGH THE VAULT SHALL BE PROVIDED WITH RESTRAINED JOINT FITTINGS.
4. ALL FITTINGS FOR THE DETECTOR METER TO BE BRASS.
5. STEPS SHALL BE IN ACCORDANCE WITH THE APPROVED PRODUCTS LIST FOR WATER UTILITIES AND SHALL BE ON 16" CENTERS.
6. A DEPARTMENT OF NATURAL RESOURCES APPROVED DOUBLE CHECK DETECTOR ASSEMBLY BACKFLOW PREVENTER MUST BE USED. FOR A COPY OF THE MISSOURI DEPARTMENT OF NATURAL RESOURCES APPROVED BACKFLOW PREVENTION ASSEMBLIES, CONTACT WATER UTILITIES AT 816-969-1900.
7. ALL VALVES SHALL HAVE RISING STEMS.
8. MANHOLE COVER SHALL BE A BILCO K-1 MODEL UNLESS IN A VEHICLE TRAFFIC AREA. SEE THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR TRAFFIC CONDITIONS. THE COVER SHALL HAVE A 1-3/4" Ø HOLE DRILLED FOR A TOUCH/READ DEVICE.
9. A MINIMUM OF 18" CLEARANCE SHALL BE PROVIDED AROUND ALL PIPING, VALVES, APPURTENANCES, ETC.
10. CONTACT PUBLIC WORKS ENGINEERING FOR VAULTS THAT INCLUDE A FIRE DEPARTMENT CONNECTION OR A 3" OR LARGER METER.

CITY OF LEE'S SUMMIT, MO
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

STANDARD DRAWINGS

VAULT FOR DOUBLE CHECK DETECTOR CHECK

WAT-12

BY	REVISION	DATE
RC/ACA	FOR REVIEW	5-21-20

AGC Engineers, INC.

405 S. Leonard St., Suite D
Liberty, Missouri 64068

816.781.4200 ■
fax 792.3666

www.agcengineers.com

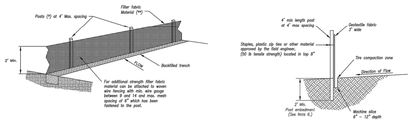
STATE OF MISSOURI
RONALD L. COWGER
NUMBER PE-29705
5-21-20
PROFESSIONAL ENGINEER

PANERA BREAD BAKERY - CAFE

LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SITE DEVELOPMENT PLANS

DETAILS



(*) ESSTS

- MIN. LENGTH 4'
- HARDWOOD 1 ¾" x 1 ¾"
- W.I.S. SOUTHERN PINE 2 ¾" x 2 ¾"
- STEEL 1.33 LB/FT

(**) – Geotextile Fabric shall meet the requirements of AASHTO M288

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 silting 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.

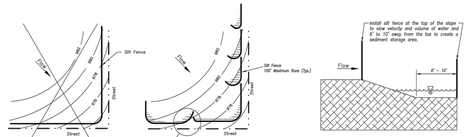
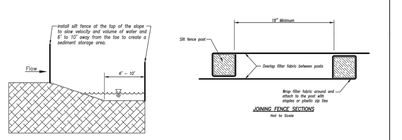


Figure A

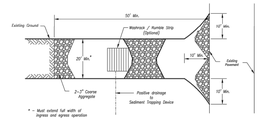
SILT FENCE LAYOUT
Not to Scale



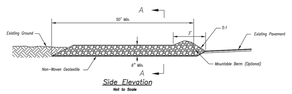
JOINING FENCE SECTIONS
Not to Scale

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

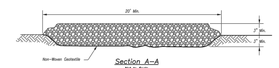
AMERICAN PUBLIC WORKS ASSOCIATION	
APWA	KANSAS CITY METRO CHAPTER
SILT FENCE	STANDARD DRAWING NUMBER ESC-03 ADOPTED: 10/24/2016



Plan View
Not to Scale



Side Elevation
Not to Scale



Section A–A
Not to Scale

Notes for Construction Entrance:

1. Avoid locating on steep slopes, at curves on public roads, or downhill of disturbed area.
2. Remove all vegetation and other unsuitable material from the foundation area, grade, and crown for positive drainage.
3. If slope towards the public road exceeds 2%, construct a 6– to 8–inch high ridge with 3H:1V side slopes across the foundation approximately 50 feet from the edge of the public road to divert runoff from it.
4. Install pipe under the entrance if needed to maintain drainage ditches along public roads.
5. Place stone to dimensions and grade as shown on plans. Leave surface sloped for drainage.
6. Divert all surface runoff and drainage from the entrance to a sediment control device.
7. If conditions warrant, place geotextile fabric on the graded foundation to improve stability.

Maintenance for Construction Entrance:

1. Reshape entrance as needed to maintain function and integrity of installation. Top dress with clean aggregate as needed.

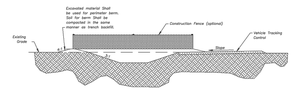
CONSTRUCTION ENTRANCE

Notes for Concrete Washout:

1. Concrete washout areas shall be installed prior to any concrete placement on site.
2. Concrete washout area shall include a flat subsurface pit sized relative to the amount of concrete to be placed on site. The slope of the pit shall be minimized to prevent spills. The Vehicle tracking pad shall be sloped towards the concrete washout area.
3. Vehicle tracking control is required at the access point to all concrete washout areas.
4. Signs shall be placed at the construction site entrance, washout area and elsewhere as necessary to clearly indicate the location(s) of the concrete washout area(s) to operators of concrete truck and pump trip.
5. A one-piece impervious liner may be required along the bottom and sides of the subsurface pit to sandy or gravelly soils.

Maintenance for Concrete Washout:

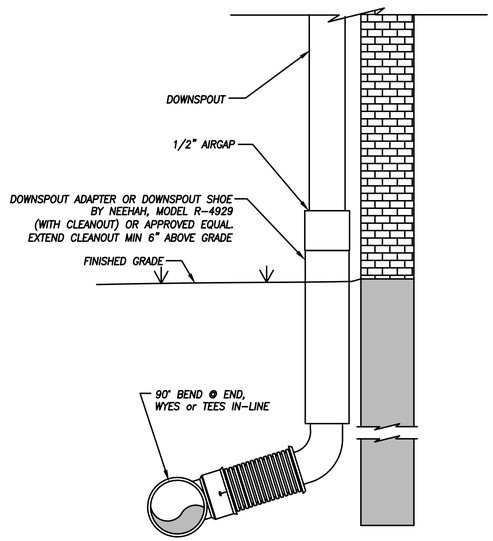
1. Concrete washout materials shall be removed once the materials have filled the washout to approximately 75% full.
2. Concrete washout areas shall be enlarged as necessary to maintain capacity for washed concrete.
3. Concrete washout water, washed pieces of concrete and all other debris shall be removed from the site and disposed of per the job site's or water–tight container and disposed of properly.
4. Concrete washout areas shall remain in place until all concrete for the project is placed.
5. When concrete washout areas are removed, excavations shall be filled with soil, compacted and stabilized. Any other disturbance areas associated with the installation, maintenance, and/or removal of the concrete washout areas shall be stabilized.



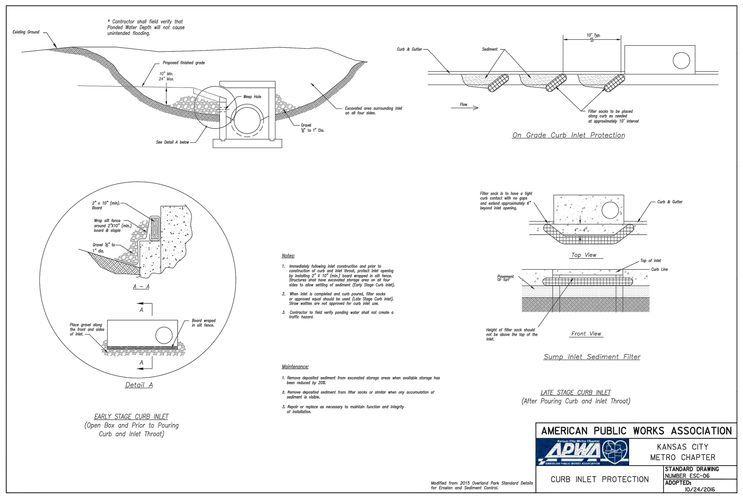
CONCRETE WASHOUT

Construction Entrance modified from 2015 Overland Park Standard Details for Erosion and Sediment Control. Concrete Washout modified from 2009 City of Great Bend Standard Drawings.

AMERICAN PUBLIC WORKS ASSOCIATION	
APWA	KANSAS CITY METRO CHAPTER
CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT	STANDARD DRAWING NUMBER ESC–01 ADOPTED: 10/24/2016



DOWNSPOUT DRAIN DETAIL
NOT TO SCALE



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

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

BY	REVISION	DATE
RC/ACA	FOR REVIEW	5-21-20

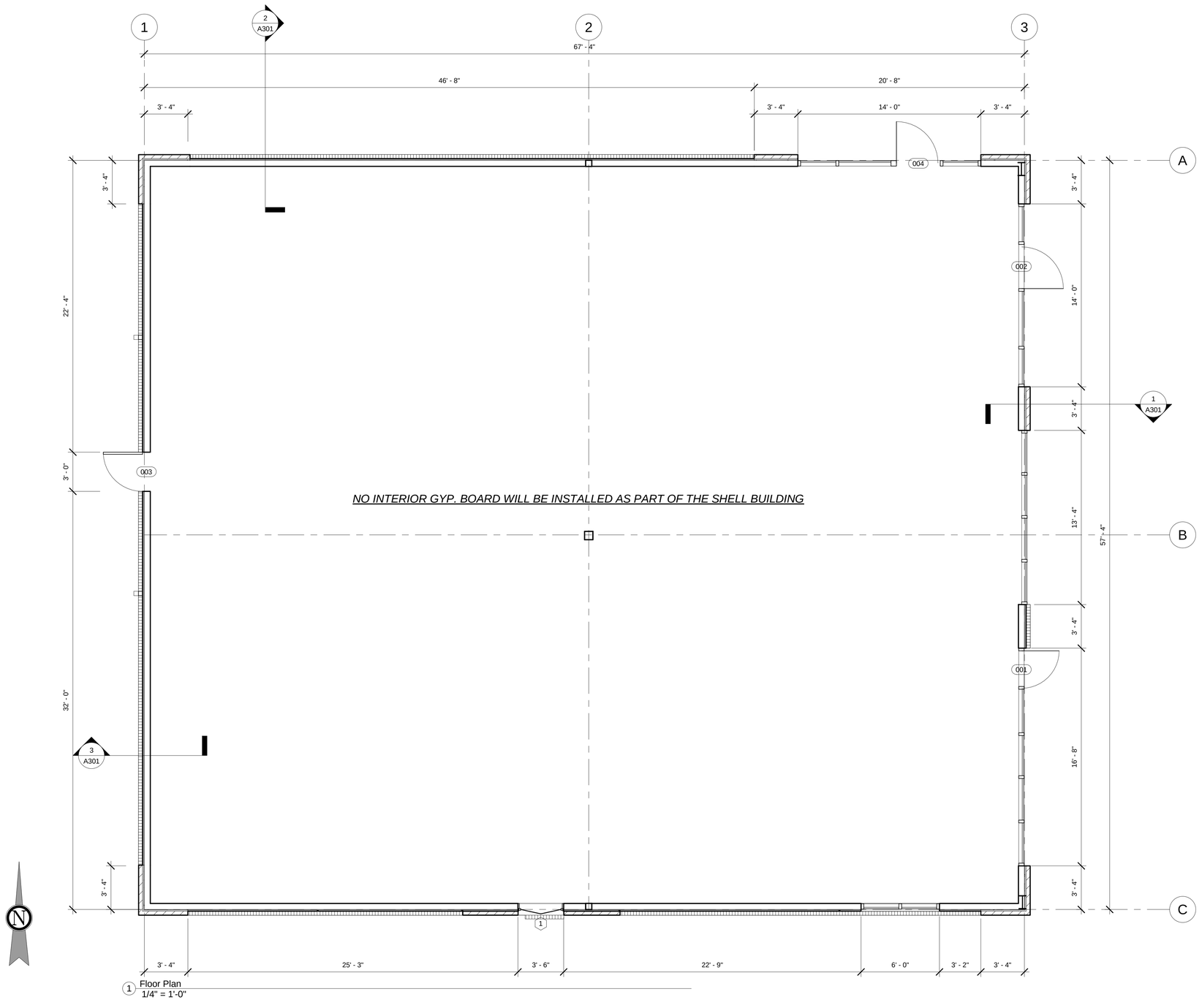
AGC Engineers, INC.
405 S. Leonard St., Suite D
Liberty, Missouri 64068
816.781.4200 ■
fax 792.3666
www.agcengineers.com

STATE OF MISSOURI
RONALD L. COWGER
NUMBER PE-29705
PROFESSIONAL ENGINEER
5-21-20

PANERA BREAD BAKERY - CAFE
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SITE DEVELOPMENT PLANS
DETAILS

16



1 Floor Plan
1/4" = 1'-0"

BUILDING CODE ANALYSIS

APPLICABLE CODES
2018 INTERNATIONAL BUILDING CODE
2018 INTERNATIONAL MECHANICAL CODE
2018 INTERNATIONAL PLUMBING CODE
2018 INTERNATIONAL FIRE CODE
2018 INTERNATIONAL ENERGY CONSERVATION CODE
2017 NATIONAL ELECTRICAL CODE
2009 ICC/ANSI A117.1

SUMMARY OF WORK
NEW SHELL BUILDING FOR PANERA BREAD. THIS APPLICATION DOES NOT REQUEST A C.O., JUST A FINAL INSPECTION. SEPARATE TENANT FINISH PLANS WILL BE SUBMITTED AT A LATER DATE FOR INTERIOR BUILD OUT.

OCCUPANCY CLASSIFICATION
A-3 (RESTAURANT)

TYPE OF CONSTRUCTION
V-B, SPRINKLED

FLOOR AREA
TOTAL AREA: 3,860 SQ.FT.

OCCUPANT LOAD
TO BE DETERMINED

EXITS REQUIRED
TO BE DETERMINED

EXITS PROVIDED
FOUR

TOILET FACILITIES REQUIRED
TO BE DETERMINED

TOILET FACILITIES PROVIDED
NONE WITH SHELL

DEFERRED SUBMITTALS TO BE COMPLETED BY OTHERS
FIRE SPRINKLER PLANS (PLANS BY SUBCONTRACTOR)
FIRE ALARM PLANS (PLANS BY SUBCONTRACTOR)
ROOF TRUSS PLANS (PLANS BY SUBCONTRACTOR)

EGRESS DOORS SHALL BE READILY OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT. (THUMBTURN IS ACCEPTABLE)

PREMISES SHALL BE IDENTIFIED ON BOTH FRONT AND REAR DOORS, WITH NUMBERS AND/OR LETTERS. EACH CHARACTER SHALL BE NOT LESS THAN 6" HIGH WITH A MINIMUM STROKE WIDTH OF 0.5 INCHES. THEY SHOULD BE INSTALLED ON A CONTRASTING BACKGROUND AND BE PLAINLY LEGIBLE AND VISIBLE FROM THE STREE OR ROAD FRONTING THE PROPERTY. ADDRESS NUMBERS AND/OR LETTERS SHALL BE ARABIC NUMBERS OR ALPHABETIC LETTERS.

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd. #204 Kansas City, Mo 64113
Phone: 816-656-5055 Scharhagarch@gmail.com

NEW BUILDING FOR
PANERA BREAD
LOT 2

J.Jeffry Schroeder Mo. Licence A-4226
Herman Scharhag Co., Arch. Cert. of Authority A-22

STATE OF MISSOURI
JEFFREY SCHROEDER
NUMBER A-4226
5-6-20
REGISTERED ARCHITECT

No.	Description	Date
	Revision Schedule	

Floor Plan

Project number	2119
Date	05.04.2020

A101

Scale 1/4" = 1'-0"

5/7/2020 9:50:23 AM

ALL ALUMINUM ENTRY DOORS TO BE KAWNEER NARROW STYLE 250, SINGLE ACTING, WITH WEATHERSTRIPPING, LCN 4041 CLOSER, MAX. 1/2" THRESHOLD, TYPE 'B' PUSH/PULL AND 1/4" CLEAR TEMPERED DOOR GLASS. DOOR #009 SHALL HAVE HAGAR 4500 SERIES WITH 45NL ARC US26D AND SHALL HAVE EXTERIOR KEYED ACCESS. DOORS FOR THE WEST BUILDING SECTION, THE CENTER BUILDING SECTION AND THE EAST BUILDING SECTION SHALL ALL HAVE DIFFERENT KEYING FOR THREE DIFFERENT TENANTS. DOOR #006 SHALL BE KEYED FOR A FOURTH TYPE OF KEY.

Door Schedule					
Number	Family	Type	Door Finish	Frame Finish	hardware type
001	Storefront Entry Single for Curtain Wall	Store Front Single Door	AL	AL	
002	Storefront Entry Single for Curtain Wall	Store Front Single Door	AL	AL	
003	Single-Flush	3 x7 Exterior	HM	HM	Lockset w/ lever handles, strike plate, 1 1/2 pair hinges, closer, drip cap, gasketing, bottom sweep
004	Storefront Entry Single for Curtain Wall	Store Front Single Door	AL	AL	

HM = 16 GA. HOLLOW METAL, PAINTED
WD = SOLID CORE RED OAK, STAINED
AL = ANODIZED ALUMINUM
IRP = IMPACT RESISTANT PLASTIC

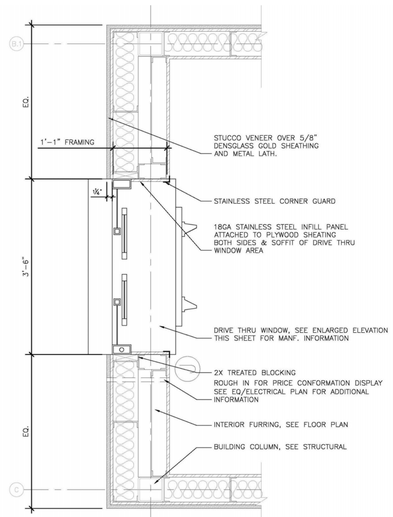
HARDWARE SHALL BE MEDIUM DUTY COMMERCIAL GRADE. DOOR HARDWARE SHALL CONSIST OF BUTTS, LATCHSET OR LOCKSET, SILENCERS, SMOKE GASKETING FOR RATED DOORS, CLOSERS WHERE NOTED, PANIC DEVICES WHERE NOTED. EXTERIOR DOORS SHALL ALSO HAVE THRESHOLD, WEATHERSTRIPPING, SWEEP AND KEYED LOCK. CONTRACTOR SHALL COORDINATE ALL LATCH/LOCK FUNCTIONS AND KEYING OF LOCKS WITH OWNER. MAX. THRESHOLD = 1/2". ALL HARDWARE TO BE LEVER TYPE OR PUSH/PULL. ALL DOORS IN EGRESS PATHWAYS SHALL BE FREE TURNING FOR EXITING. ALL EGRESS DOORS SHALL BE READILY OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT. FURTHER, ALL EGRESS DOORS FROM ROOMS AND EXTERIOR EGRESS DOORS, FOR GROUP A AND GROUP E OCCUPANCIES SHALL NOT HAVE A LOCK OR LATCH OTHER THAN PANIC HARDWARE. ALL DOOR THRESHOLDS SHALL BE A MAX. OF ½" ABOVE FLOOR LEVEL AND BOTH SIDES SHALL BE BEVELED AT A SLOPE OF 1:2. SCHLAGE OR EQUAL STANDARD DUTY HARDWARE (SATIN CHROME) WITH LEVERS.

GLASS IN DOORS AND SIDELIGHTS SHALL BE SAFETY GLASS PER IBC SEC. 2406.1

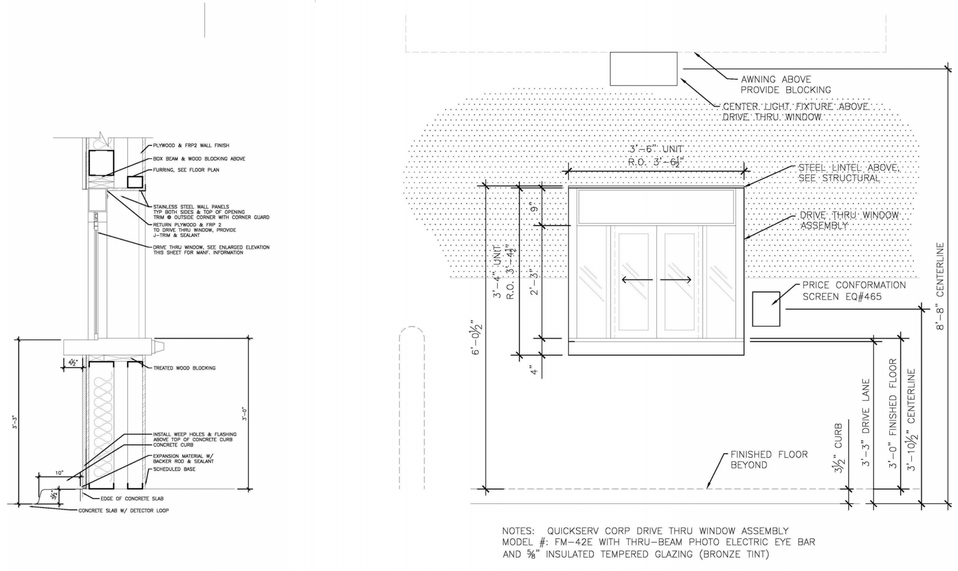
ALL ALUMINUM STOREFRONT AND ENTRY FRAMING WILL BE KAWNEER DARK BRONZE TRIFAB VERSAGLAZE 451T FRAMING SYSTEM WITH 1" INSULATED CLEAR GLAZING. ALL GLAZING WITHIN 18" OF FLOOR OR WITHIN 18" OF ANY DOOR SHALL BE TEMPERED GLAZING

PANERA BREAD HARDWARE SCHEDULE

GROUP 1B- (SINGLE ENTRY W/LOCK)- MATCH STOREFRONT FINISH		
1 EACH	CONTINUOUS GEAR HINGE, CONCEALED 780-224HD	HAGER
1 EACH	EXIT DEVICE 25-R (PANIC BAR)	FALCON
1 EACH	PULL 12L	HAGER
1 EACH	CYLINDER (VERIFY CAM & FINISH MAT'L)	FALCON
1 EACH	CLOSER, HEAVY DUTY, 4041 (4040 SERIES)	LCN
1 EACH	THRESHOLD, HEAVY DUTY, 1715	PEMKO
1 EACH	WEATHERSTRIP 315SSR	PEMKO
1 EACH	STOP - AS REQUIRED. WALL-WS407CCV, FLOOR-FS436 OR FS438	IVES
GROUP 2 - (SERVICE DOOR)		
1 EACH	CONTINUOUS PIANO HINGE, 780-210HD	HAGER-ROTON
1 EACH	EXIT DEVICE 18-R-EQ (PANIC BAR	FALCON
1 EACH	CLOSER, HEAVY DUTY, 4041 (4040 SERIES)	LCN
1 EACH	EXIT ALARM EAX-3500 (FLUSH-MOUNTED)	DETEX
1 EACH	THRESHOLD 171A - SIZE AS REQUIRED	PEMKO
1 EACH	SWEEP 307AV - SIZE AS REQUIRED	PEMKO
1 EACH	WEATHERSTRIP 303AV- SIZE AS REQUIRED KICK	PEMKO
2 EACH	KICK PLATE 24"X34" (US32D FINISH)	-
1 EACH	WIDE ANGLE VIEWER 698	IVES
1 EACH	24" HC STAINLESS GRAB BAR BUMPER-B-5806-24 OR EQUAL	BOBRICK
1 EACH	STOP - AS REQUIRED. WALL-WS407CCV, FLOOR-FS436 OR FS438	IVES



GENERAL CONTRACTOR TO COORDINATE MOUNTING HEIGHTS OF BLOCKING FOR AWNINGS/SIGNAGE/GOOSENECK FIXTURES WITH SIGNAGE VENDOR AND ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION



NOTES: QUICKSERV CORP DRIVE THRU WINDOW ASSEMBLY MODEL #: FM-42E WITH THRU-BEAM PHOTO ELECTRIC EYE BAR AND ⅜" INSULATED TEMPERED GLAZING (BRONZE TINT)

FRAME SHALL BE INSULATED & HAVE A CLEAR ANODIZED ALUM FINISH

3 Drive Up window Detail
1/2" = 1'-0"

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd. #204 Kansas City, Mo 64113
Phone: 816-656-5055 Scharhagarch@gmail.com

NEW BUILDING FOR
PANERA BREAD
LOT 2

J.Jeffry Schroeder Mo. Licence A-4226
Herman Scharhag Co., Arch. Cert. of Authority A-22

STATE OF MISSOURI
JEFFREY SCHROEDER
NUMBER A-4226
5-6-20
REGISTERED ARCHITECT

No.	Description	Date
	Revision Schedule	

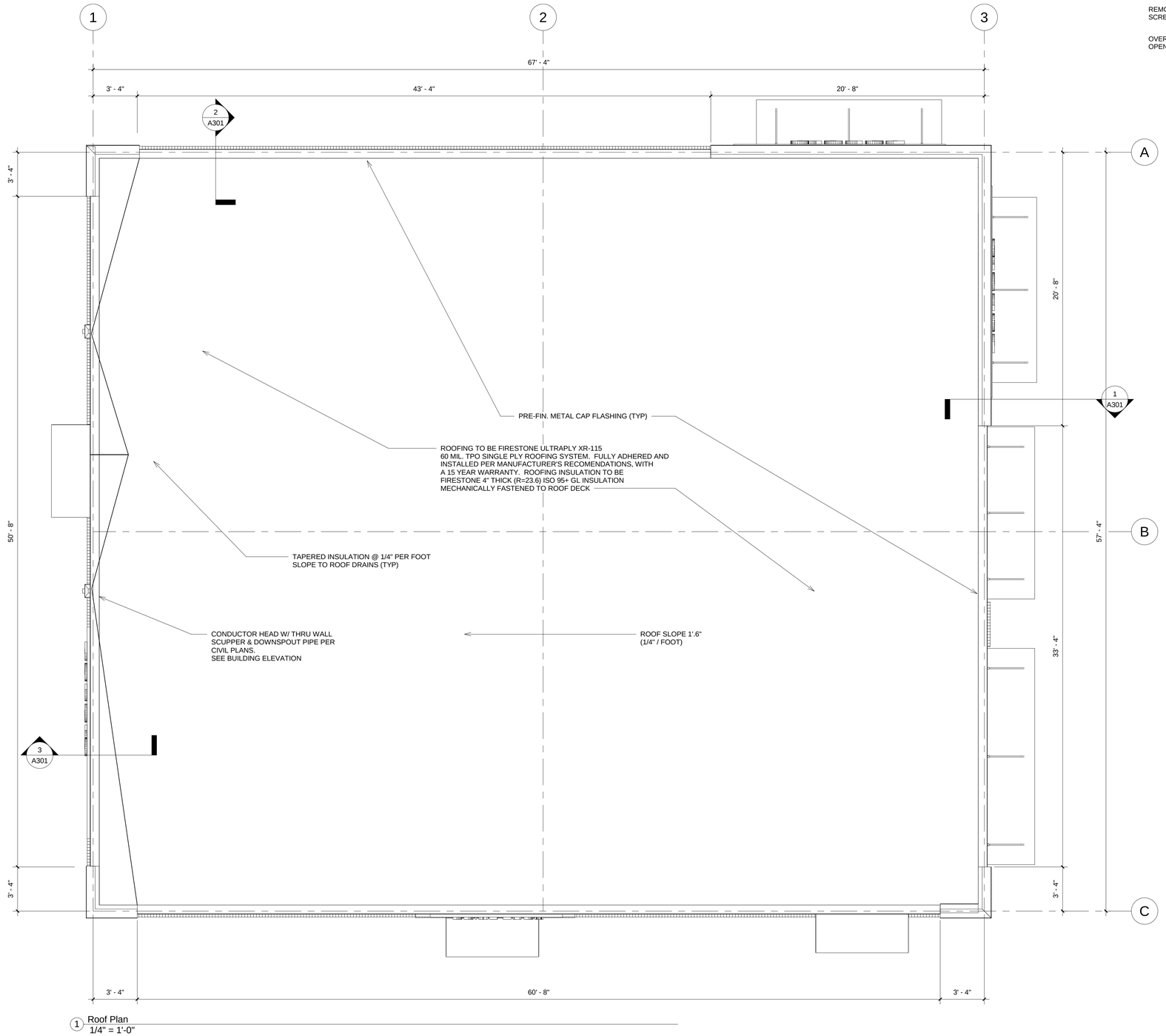
Architectural Details

Project number 2119
Date 05.04.2020

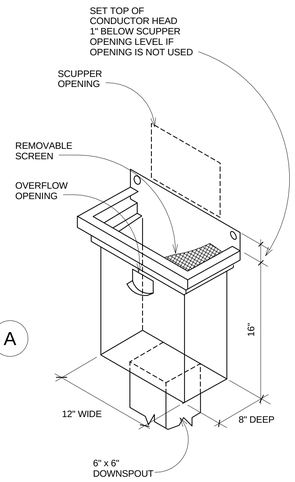
A102

Scale As indicated

5/7/2020 9:50:25 AM



1 Roof Plan
1/4" = 1'-0"



SCUPPER DETAIL AT PARAPET WALL
NOT TO SCALE

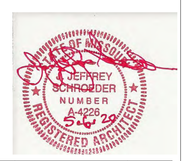
NOTE:

CONDUCTOR HEADS AND DOWNSPOUTS SHOULD BE FABRICATED OF 24 GA. PRE-FINISHED METAL

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd. #204 Kansas City, Mo 64113
Phone: 816-656-5055 Scharhagarch@gmail.com

NEW BUILDING FOR
PANERA BREAD
LOT 2

J.Jeffry Schroeder Mo. Licence A-4226
Herman Scharhag Co., Arch. Cert. of Authority A-22



No.	Description	Date
Revision Schedule		

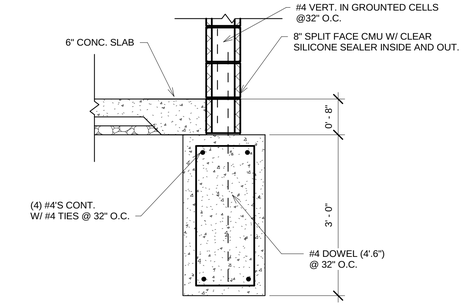
Roof Plan

Project number	2119
Date	05.04.2020

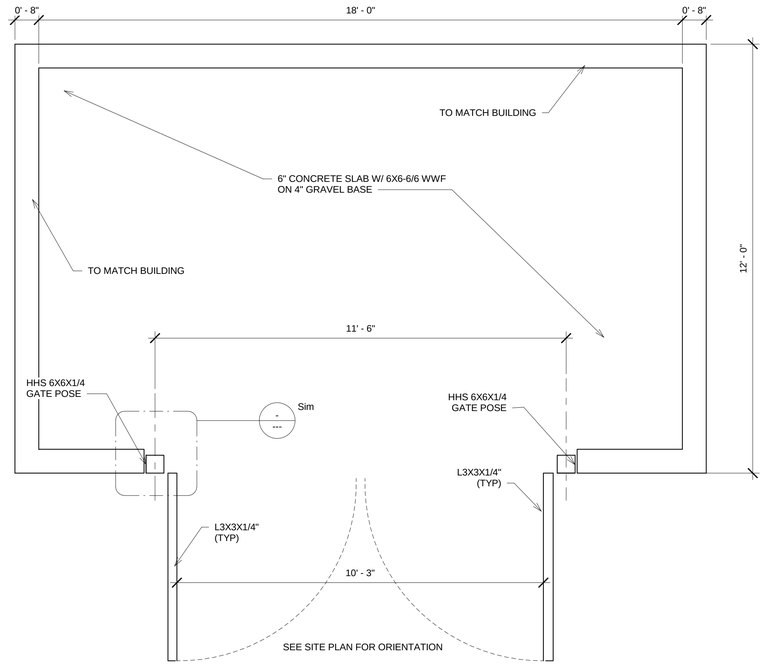
A103

Scale As indicated

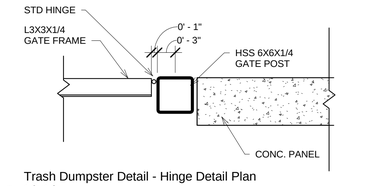
5/15/2020 2:17:35 PM



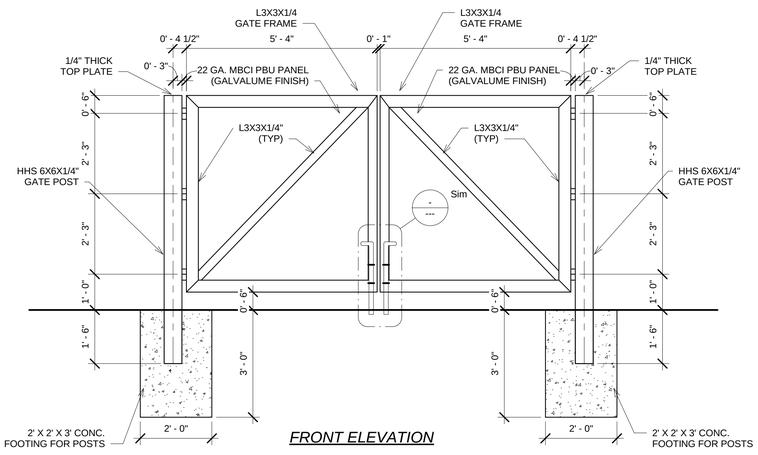
4 Trash Dumpster Detail Wall Section1
3/4" = 1'-0"



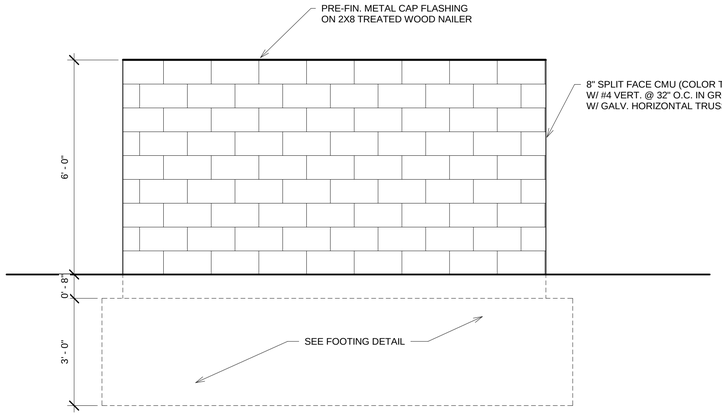
PLAN VIEW



Trash Dumpster Detail - Hinge Detail plan
12x18
1" = 1'-0"

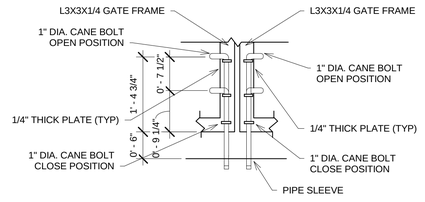


FRONT ELEVATION



SIDE ELEVATION

2 Trash Dumpster Detail 12x18
1/2" = 1'-0"



3 Trash Dumpster Detail - Hinge Detail1
3/4" = 1'-0"

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd. #204 Kansas City, Mo 64113
Phone: 816-656-5055 Scharhagarch@gmail.com

NEW BUILDING FOR
PANERA BREAD
LOT 2

J.Jeffry Schroeder Mo. Licence A-4226
Herman Scharhag Co., Arch. Cert. of Authority A-22

No.	Description	Date
Revision Schedule		

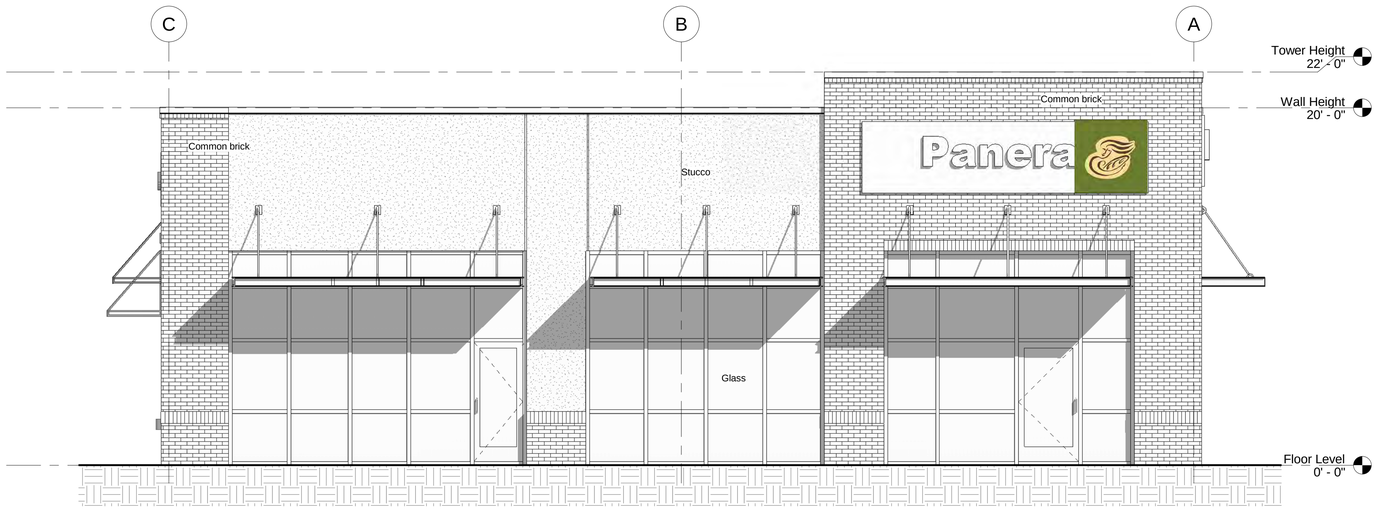
Dumpster Details

Project number	2119
Date	05.04.2020

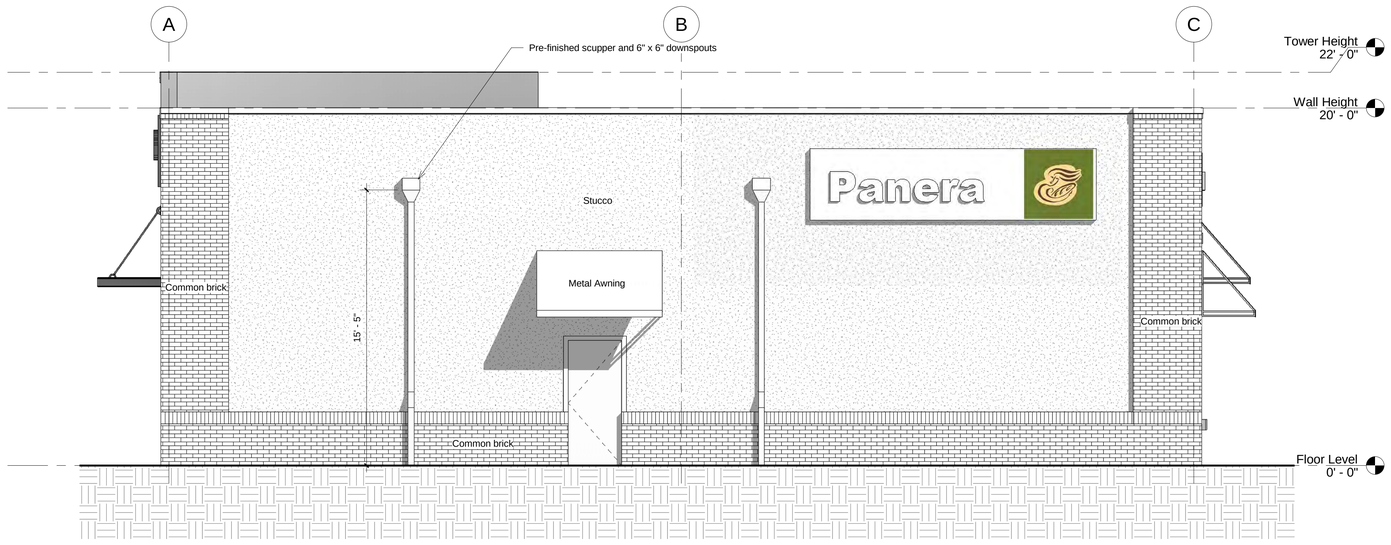
A104

Scale: As indicated

5/15/2020 1:45:53 PM



1 East
1/4" = 1'-0"



4 West
1/4" = 1'-0"

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd. #204 Kansas City, Mo 64113
Phone: 816-656-5055 Scharhagarch@gmail.com

NEW BUILDING FOR

PANERA BREAD

LOT 2

J.Jeffry Schroeder Mo. Licence A-4226
Herman Scharhag Co., Arch. Cert. of Authority A-22

STATE OF MISSOURI
JEFFREY SCHROEDER
NUMBER A-4226
5-6-20
REGISTERED ARCHITECT

No.	Description	Date
	Revision Schedule	

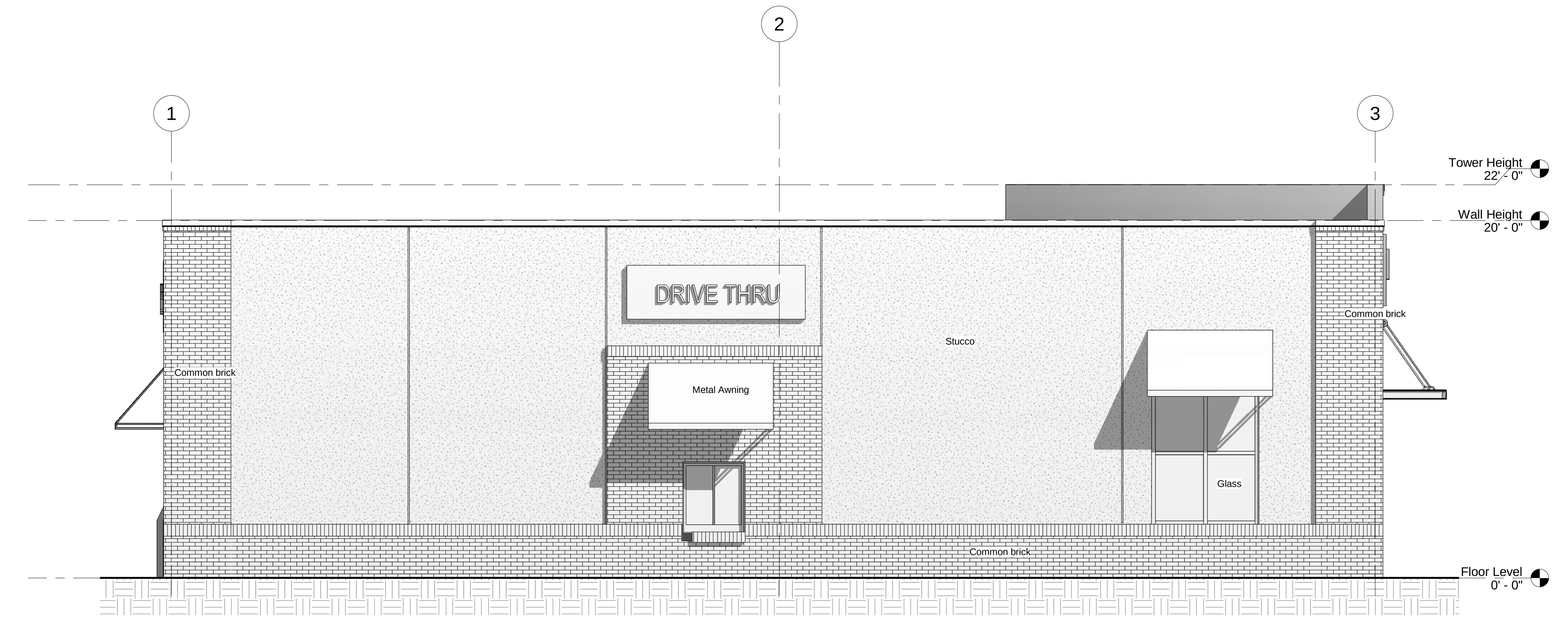
Elevations

Project number	2119
Date	05.04.2020

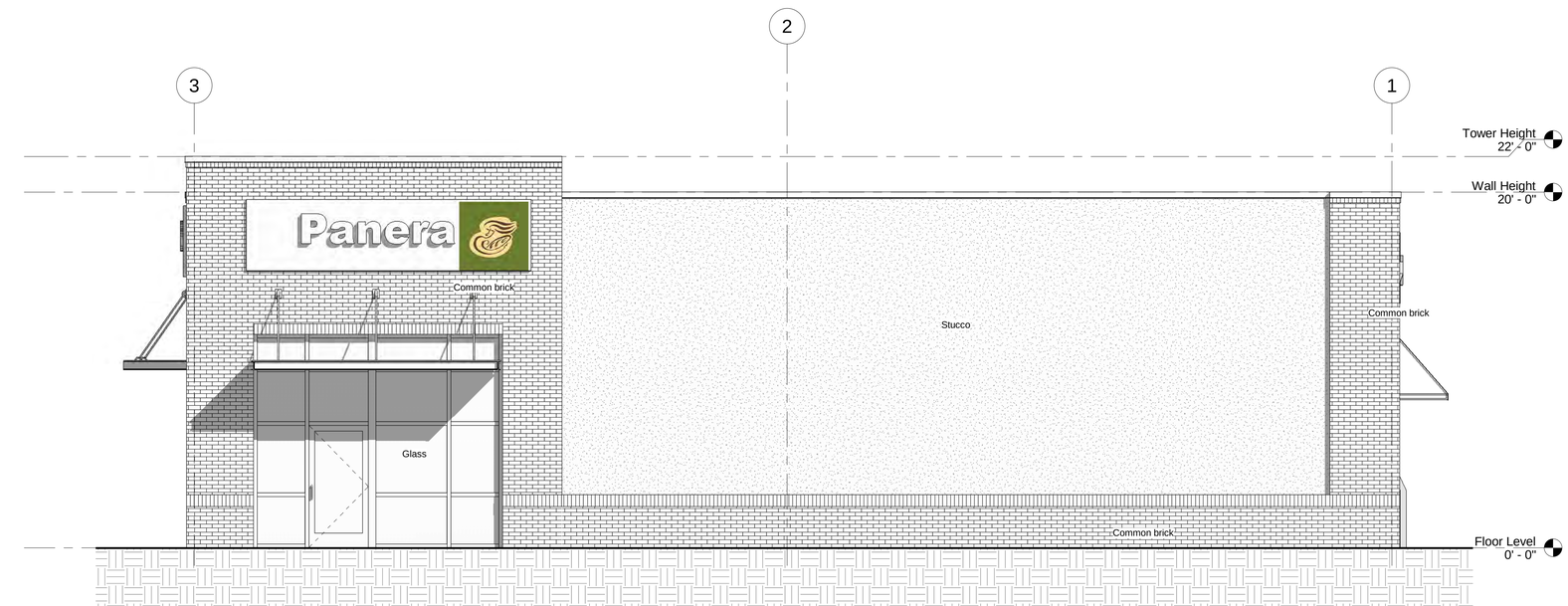
A201

Scale 1/4" = 1'-0"

5/7/2020 9:50:29 AM



1 South
1/4" = 1'-0"



2 North
1/4" = 1'-0"

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd. #204 Kansas City, Mo 64113
Phone: 816-656-5055 Scharhagarch@gmail.com

NEW BUILDING FOR
PANERA BREAD
LOT 2

J.Jeffry Schroeder Mo. Licence A-4226
Herman Scharhag Co., Arch. Cert. of Authority A-22

STATE OF MISSOURI
JEFFREY
SCHROEDER
NUMBER
A-4226
5-6-20
REGISTERED ARCHITECT

No.	Description	Date
	Revision Schedule	

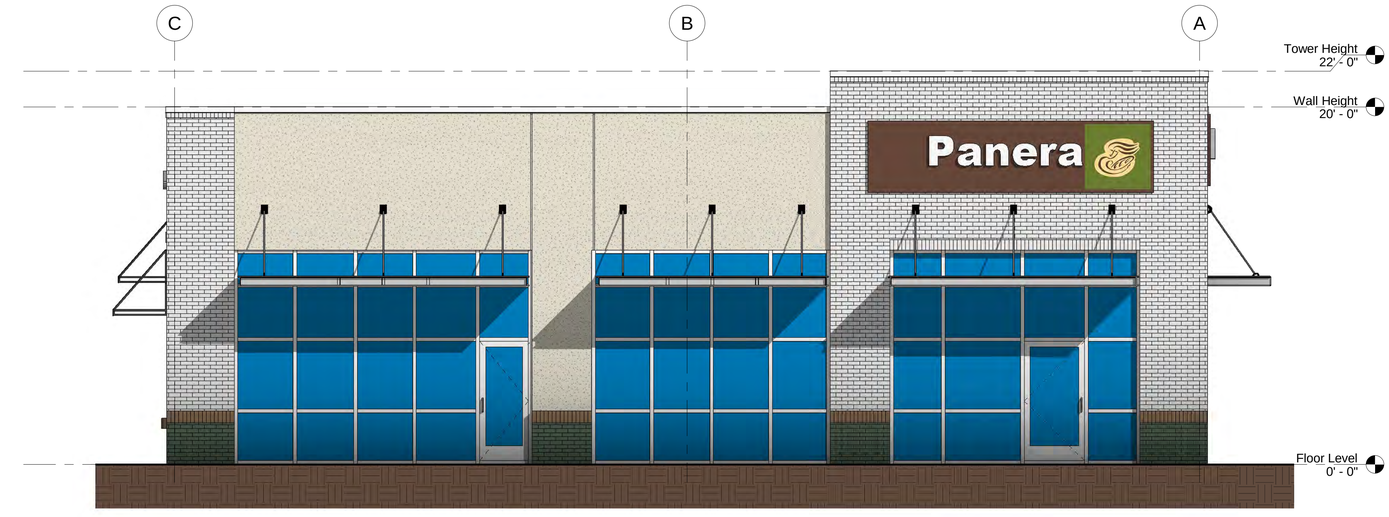
Elevations

Project number	2119
Date	05.04.2020

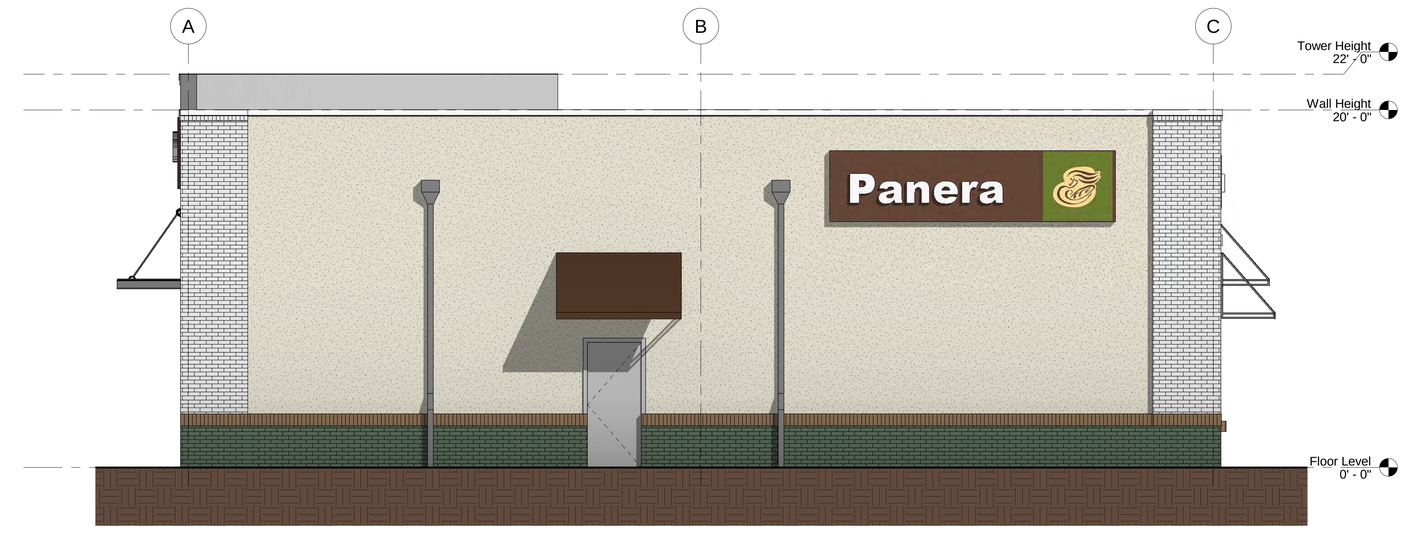
A202

Scale 1/4" = 1'-0"

5/7/2020 9:50:30 AM



1 East Color
1/4" = 1'-0"



2 West Color
1/4" = 1'-0"

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd. #204 Kansas City, Mo 64113
Phone: 816-656-5055 Scharhagarch@gmail.com

NEW BUILDING FOR
PANERA BREAD
LOT 2

J.Jeffry Schroeder Mo. Licence A-4226
Herman Scharhag Co., Arch. Cert. of Authority A-22

STATE OF MISSOURI
JEFFREY SCHROEDER
NUMBER A-4226
5-6-20
REGISTERED ARCHITECT

No.	Description	Date
	Revision Schedule	

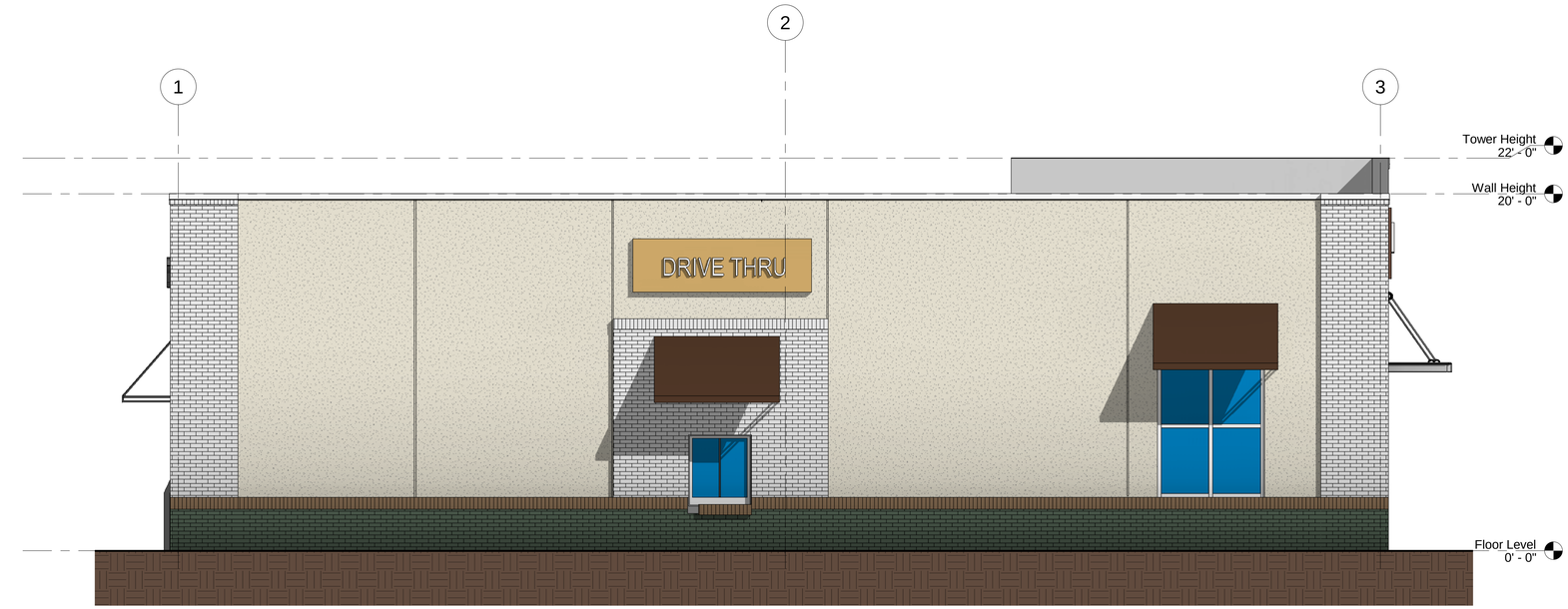
Colored Elevations

Project number	2119
Date	05.04.2020

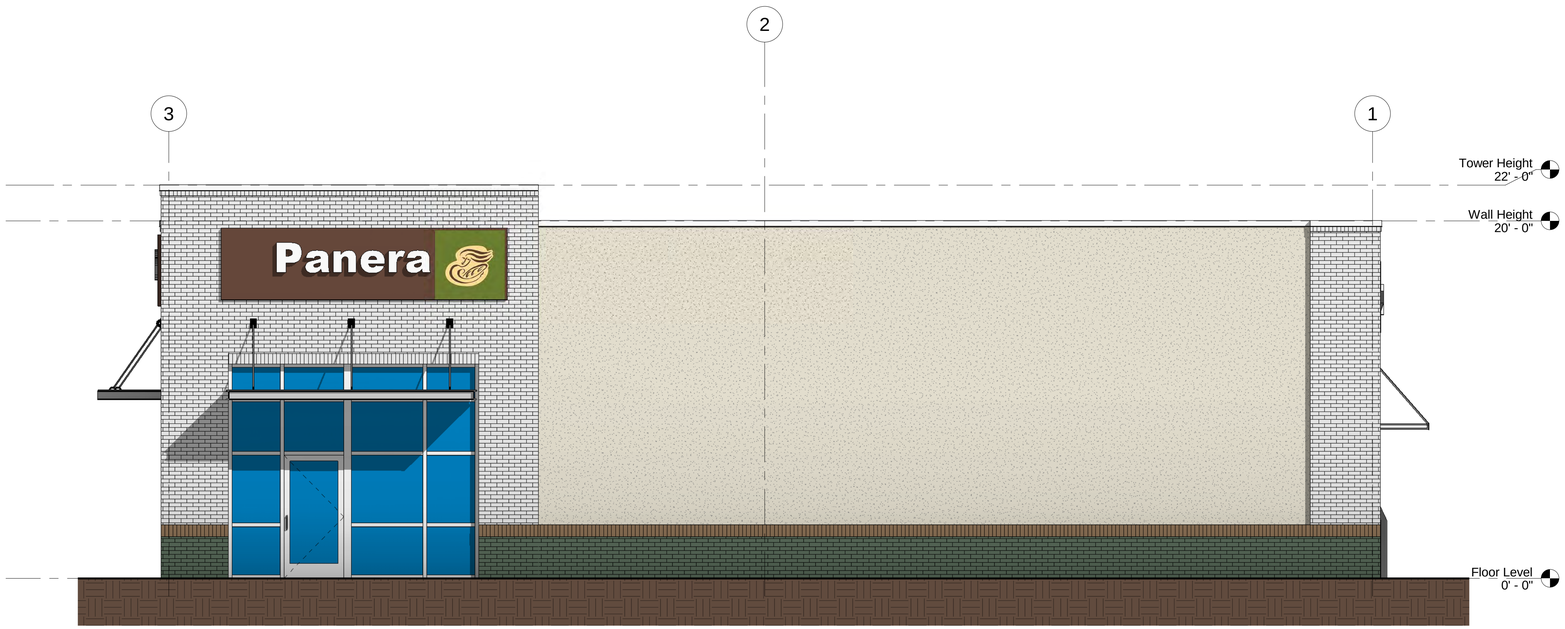
A203

Scale 1/4" = 1'-0"

5/7/2020 9:50:33 AM



1 South Color
1/4" = 1'-0"



2 North Color
1/4" = 1'-0"

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd. #204 Kansas City, Mo 64113
Phone: 816-656-5055 Scharhagarch@gmail.com

NEW BUILDING FOR
PANERA BREAD
LOT 2

J.Jeffry Schroeder Mo. Licence A-4226
Herman Scharhag Co., Arch. Cert. of Authority A-22

STATE OF MISSOURI
JEFFREY SCHROEDER
NUMBER A-4226
5-6-20
REGISTERED ARCHITECT

No.	Description	Date
	Revision Schedule	

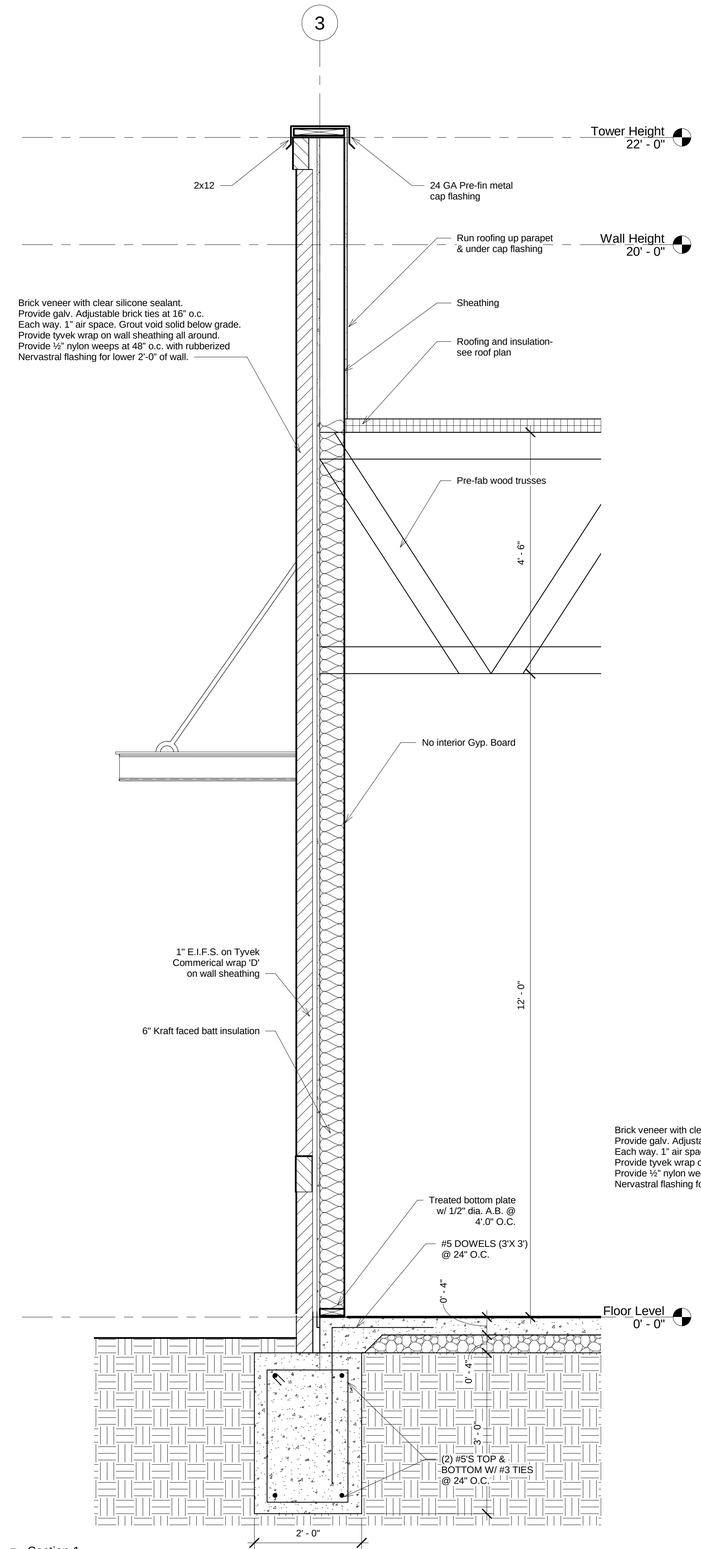
Colored Elevations

Project number	2119
Date	05.04.2020

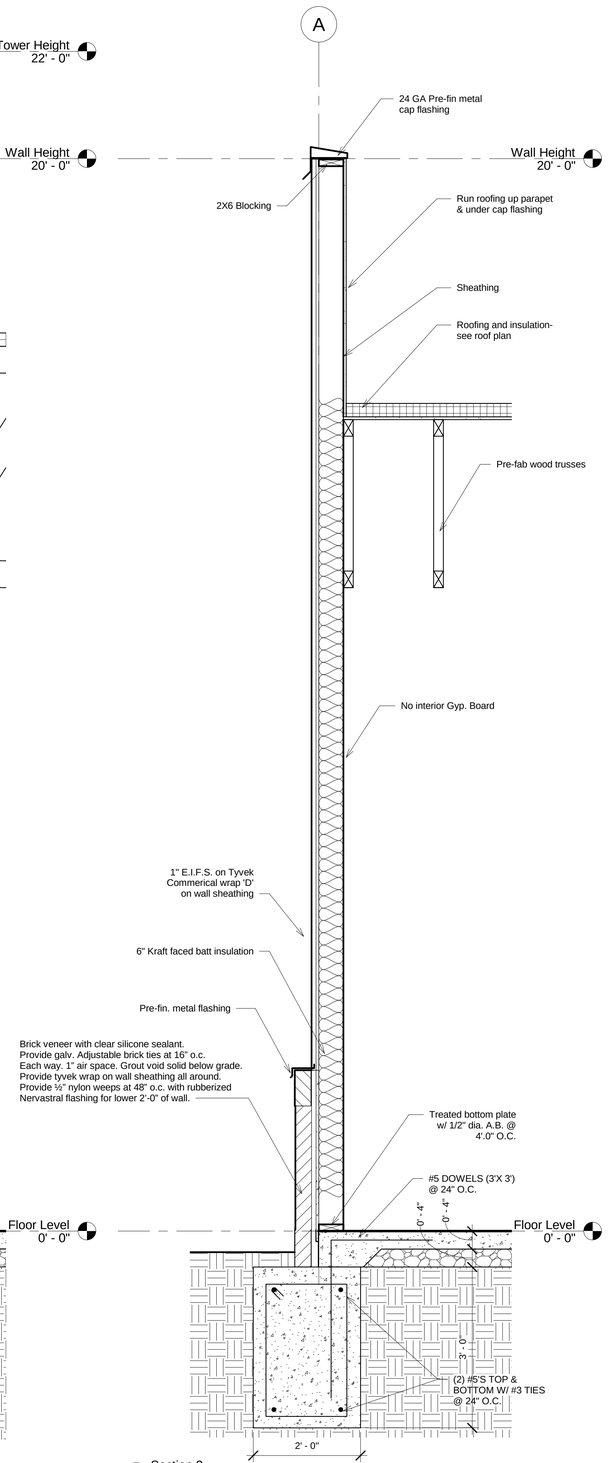
A204

Scale 1/4" = 1'-0"

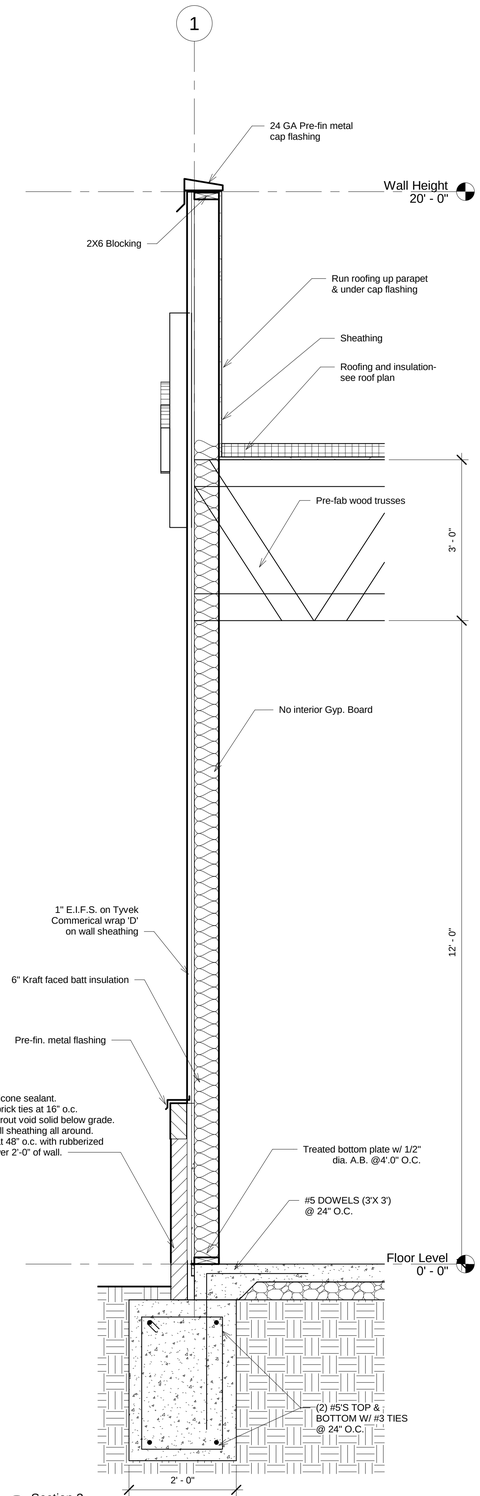
5/7/2020 9:50:35 AM



1 Section 1
3/4" = 1'-0"



2 Section 2
3/4" = 1'-0"



3 Section 3
3/4" = 1'-0"

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd. #204 Kansas City, Mo 64113
Phone: 816-656-5055 Scharhagarch@gmail.com

NEW BUILDING FOR
PANERA BREAD
LOT 2

J.Jeffry Schroeder Mo. Licence A-4226
Herman Scharhag Co., Arch. Cert. of Authority A-22

No.	Description	Date
	Revision Schedule	

Wall Sections

Project number	2119
Date	05.04.2020

A301

Scale 3/4" = 1'-0"

5/7/2020 9:50:36 AM

GENERAL NOTES

A. GENERAL

1. These notes shall be read in conjunction with the Specifications and the Drawings. In the event of a conflict, notify the Architect for clarification.
2. Before executing anything herein shown, examine actual job conditions.Report any discrepancy, dimensional or otherwise, between architectural and structural Drawings and any other error, omission, or difficulty affecting the work to the Architect and to the Structural Engineer for review.
3. The Owner or his Representative reserves the right to inspect any material, fabrication, or workmanship at any time in field or shop for conformance to the Specifications and Drawings.
4. All details and sections are intended to be typical and shall be construed to apply to any similar situation elsewhere, except where a different detail is shown.

B. DESIGN

1. Codes, specifications and standards (latest editions, U.N.O.)
   a. All design and construction shall conform to the International Building Code (currently adopted edition) as amended and adopted by the City of jurisdiction.
   b. All construction shall comply with the provisions of the following codes,specifications and standards, except where noted to the contrary on drawings and specifications or where more stringent requirements are specified or shown:
      ACI 117 "Standard Specifications for Tolerance for Concrete Construction and Materials"
      ACI 301 "Specifications for Structural Concrete for Buildings"
      ACI 318 "Building Code Requirements for Reinforced Concrete"
      ACI 530 "Building Code Requirements for Masonry Structures"
      AISC "Load and Resistance Factor Design (LRFD) Specification for Structural Steel Buildings"
      SDI "Steel Deck Manual for Floor Decks and Roof Decks"
      AWS D1.1 "Structural Welding Code - Steel "
2. Design Loads:
   a. Roof - Snow (incl. rain on snow)
      - Pf = 20 psf
      - Ce = 1.00
      - I = 1.00
      - Ct = 1.00
   b. Wind
      - Basic Wind Speed = 115 mph
      - I = 1.00
      - Wind Exposure B
      - Internal Pressure Coefficient = 0.3
   d. Floor Live Load - Office 50 psf
      - Entrances (exits), stairs 100 psf
      - Light Storage 125 psf
      - Heavy storage 250 psf
   e. Canopy Roof Design Dead Loads:
      - Roof Panels 30 psf
      - Steel Framing 5 psf
      - Roofing 5 psf
      Total 40 psf
3. Foundations are designed for the following net allowable bearing capacities:
   a. Isolated Footings: 2 ksf
   b. Continuous Footings: 2 ksf
4. Foundations and retaining walls have been designed for an equivalent fluid pressure of 100 pcf.

C. CONCRETE

1. Concrete used in the Work shall have the following minimum 28-day ultimate compressive strengths:
   a. Columns 4000 psi
   b. Retaining walls, slabs on grade, and footings 4000 psi
   c. Framed slabs 4000 psi
2. Air entrain all exterior concrete (admixture: ASTM C 260).
3. Do not use calcium chloride admixtures under any circumstances.
4. Reinforcing bars: ASTM A 615 Specifications, Grade 60, deformed. Bend bars cold.
5. Welded wire fabric (WWF): ASTM A 185.
6. Maintain minimum concrete coverage for reinforcing as indicated, unless noted otherwise. Reference details 17/S1.0 and 18/S1.0 for placement of reinforcement in typical framed slabs.
   a. 3 in. clear where concrete is deposited directly against earth.
   b. 2 in. clear where concrete is exposed to earth or weather but poured against forms for bars larger than #5.
   c. 1-1/2 in. clear where concrete is exposed to earth or weather, but poured against forms for bars #5 or smaller.
   d. 3/4 in. clear for slabs and walls formed above grade not exposed to weather.
   e. 1-1/2 in. clear for beam and columns formed above grade and not exposed to weather.
7. Lap all bars at splices in accordance with ACI 318, unless specifically noted otherwise.
8. Top and bottom bars in continuous grade beams shall run continuous through multiple spans, where possible. Otherwise, top bars shall splice within the middle 1/3 span and bottom bars shall splice over supports.
9. Pour columns, walls, and pilasters to be monolithic.
10. All concrete walls shall be properly braced and held in line until supporting slabs or floors are in place.
11. All bar steel and WWF shall be properly supported and held accurately in place as recommended by the Concrete Reinforcing Steel Institute, except that maximum spacing of any bar or mesh support shall be 3 feet.
    a. Support top slab bars with continuous high chairs.
    b. Support beam bars on heavy beam bolsters.
    c. Support footing and grade beam bottom reinforcing on concrete bricks, concrete blocks, or mounds of poured concrete.
    d. Support WWF in slab-on-grade properly at the mid-depth of the slab.Hooking and pulling up mesh after concrete has started to take its initial set is prohibited.
    e. Supports for reinforcement for exposed-to-view concrete surfaces shall have legs that are in contact with forms plastic protected (CRSI, Class 1) or stainless steel (CRSI, Class 2).
12. Where slabs-on-grade make an abrupt change in direction, such as at doors and corners or ends of walls, provide 2-#4 by 4 feet across the reentrant corner.
13. Provide the following minimum concrete cover for fire rating:
    Interior load bearing walls and columns 2 hrs 1 1/2" cover
    Concrete beams 2 hrs 1/2" cover
    Concrete joists 2 hrs 1 1/2" cover
    Floor slab 2 hrs 3/4" cover

D. MASONRY

1. Concrete masonry units (CMU): ASTM C 90, lightweight units (105 pcf or less), with the minimum net area compressive strength of 2200 psi.
2. Mortar: Portland cement and lime, and proportioned in accordance with ASTM C 270 for the following types:
   Type N - for all walls above grade
   Type S - for all walls below grade, in contact with earth
3. f'm = 1500 psi.
4. Provide mortar bed on webs between grouted cells and hollow cells.
5. Grout: ASTM C 476, 3000 psi minimum 28-day compressive strength.
6. Grout all vertical cells and spaces containing reinforcing bars (as detailed) bond beams, and lintels.
7. Vertically reinforce walls as shown on drawings. However, if not indicated on the drawing, reinforce wall as indicated below, at each corner, at ends of 48 inches horizontally throughout the wall, of walls, each side of control joints and openings, and at a maximum spacing unless noted otherwise.
   8" or 6" wall #6
   12" or 10" wall (2) #6
8. Horizontally provide continuous bond beam with 2 #5 minimum for 12" or 10" CMU; 1 #5 minimum for 8" or 6" CMU at floor/roof, near midheight (10'-0 maximum spacing) and top of wall, unless noted otherwise. Provide #5 corner bar for each horizontal bond beam corners.
9. Place reinforcement prior to grouting. Hold vertical reinforcement in position with rebar positioner.
10. Provide horizontal joint reinforcement as indicated on the drawings and specifications, at a minimum provide at 16"o.c.
11. Lap joint reinforcement a minimum of 12 in.
12. In no case shall shores and forms at lintels be removed until it is certain that the masonry has hardened sufficiently to carry its own weight and all other reasonable temporary loads that may be placed on it during construction.
13. Do not wet concrete masonry units.
14. Do not use calcium chloride.
15. Do not use masonry cement.
16. Keep masonry walls shored during construction until the roof deck and floor slabs are in place to provide lateral stability.

E. STEEL

1. Qualifications for Welding Work:
   a. Perform all welding by a certified welder.
   b. Qualify welding processes and welding operators in accordance with AWS "Standard Qualification Procedure".
   c. Provide certifications that welders to be employed in work have satisfactorily passed AWS qualification tests within previous 12 months.
   d. If recertification of welders is required, retesting will be Contractor's responsibility.
2. Erector must examine areas and conditions under which structural steel work is to be installed, and notify Contractor in writing of conditions detrimental to proper and timely completion of Work.Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to the Erector.
3. Submit shop drawings prepared under supervision of a registered professional engineer,including complete details and schedules for fabrication and assembly of structural steel members procedures and diagrams.Include details of cuts, connections, camber, holes, and other pertinent data. Indicate welds by standard AWS symbols, and show size,length, and type of each weld. Show size and type of bolt for all bolted connections.
4. Provide setting drawings, templates, and directions for installation of anchor bolts and other anchorages to be installed by others.
5. Paragraph 4.2.1 of the (AISC) "Code of Standard Practice for Steel Buildings and Bridges" is hereby modified by deletion of the following sentence: "This approval constitutes the owner's acceptance of all responsibility for the design adequacy of any detail configuration of connections developed by the fabricator as a part of his preparation of these shop drawings."
6. If required cut edges of backing strips, extension bars, or run-off plates flush with edge of abutting parts.
7. Where framing members and/or connections for steel stairs are not indicated on either structural or architectural drawings, Design the members and/or connections and submit calculations or supporting data to verify their adequacy.A live load of 125 psf shall be used in the design. Fully detail stair connections, including attachments to supporting members.
8. Structural steel: ASTM A 572 - wide flange sections, ASTM A 36 - angles,channels, and plates, ASTM A 501 - pipes, and ASTM A 500, Grade B - tubes.
9. High Strength Bolts (steel-to-steel connections): ASTM A 325N, with twist-off load indicator type heads.
10. Anchor bolts: ASTM A 307, sizes indicated are based on preliminary reactions and spacing.
11. Welded connections: AWS Standards and Specifications using E70xx electrodes, unless noted otherwise.
12. Expansion Bolts: Stud type expansion anchors...(Hilti Kwik Bolt II).
13. Injection Adhesive: Hilti Dowelling Anchor (HY-150); Rawl/Sika Foil-Fast;Ramset/Redhead Epcon Ceramic 6.
14. Drill holes for anchors using a bit incapable of cutting steel. Do not cut existing concrete reinforcing steel. If, while drilling, reinforcing steel is encountered, notify the Structural Engineer for approval of new location. Cleaned and patch the abandoned hole grout.
15. Ends of beams which have copes to the extent that allowable shear or bending stress of steel is exceeded shall have web plates of sufficient size welded to the beam to reduce such stresses.
16. Provide holes required for securing other work to structural steel framing, and for passage of other work through steel framing members, as shown on final shop drawings.
17. Do not flame cut holes or enlarge holes by burning.
18. Set structural frames accurately to lines and elevations indicated.Align and adjust various members forming apart of a complete frame or structure before permanently fastening.Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
19. Provide temporary shoring and bracing members with connections of sufficient strength to bear imposed loads.Remove temporary members and connections when permanent members are in place and final connections are made. Provide temporary guy line to achieve proper alignment of structure as erection proceeds.
20. Clean bearing surfaces of bond-reducing materials and roughen to improve bond to surfaces. Clean bottom surface of base plates.
21. Grout plates are prohibited. Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims. but if protruding, cut off flush with edge of base plate prior to packing with grout.
22. Nonshrink grout: CRD-621 Type A, premixed, nonmetallic, noncorrosive, nonstaining.
23. Provide open-web joists (K-series), longspan joists (LH-series), and joist girders as indicated on the Drawings and in accordance with specifications of SJI.
    a. Weld K-series joists to supporting steel with 1/8 in. fillet welds in. long, each side, u.n.o.
    b. Weld LH-series joists to supporting steel with 1/4 in. fillet welds 2 in. long, each side, u.n.o.
    c. Bolt joists at or nearest a column to supporting steel in conformance with O.S.H.A.with erection bolts.
    d. Provide continuous horizontal bridging for joists (u.n.o.) and bottom chord braces for joist girders as required by SJI,except where the net uplift loading requires additional bridging.
    e. Provide horizontal bridging to resist 10psf uplift for main roof at service building and main building penthouse.
    f. Extend bottom cord to brace beam bottom flange at mid-span of beams in service building.
24. Form deck: 9/16 in.galvanized deck with the following minimum properties:
    Minimum thickness 0.0295
    Moment of Inertia 0.024 in ^4
    Section Modulus 0.070 in ^3
25. Composite floor deck: 1-1/2 in. galvanized deck with the following minimum properties:
    Minimum thickness 0.0358
    Moment of Inertia 0.195 in ^4
    Section Modulus 0.240 in ^3
26. Roof deck: 1-1/2" painted wide rib deck with the following minimum properties:
    Minimum thickness 0.358
    Moment of Inertia 0.212 in ^4
    Section Modulus 0.234 in ^3
27. Roof deck shall be welded to supports to resist a net uplift of 20 PSF.
28. Provide 2-1/2" x 2-1/2" x 1/4" angles as required to support deck at columns, ends of beams, around openings, etc. Except as noted otherwise.
29. Provide 1,500 # misc. steel for use by Engineer, as needed.

E. EPOXY AND MECHANICAL ANCHORS

1. For concrete, grouted CMU, and solid masonry use Hilti HIT HY 150 two-part hybrid adhesive. For hollow CMU and masonry use Hilti HIT HY20 two-part hybrid adhesive with screen tubes. Equivalent adhesives may be used with prior written approval by the Structural Engineer.
2. Thoroughly clean holes with nylon brush and pressurized air per manufacturers instructions.
3. Drill holes to the embedment depths indicated on the drawings. If no depths are indicated, use 9 bolt or bar diameters with HY150 and 12 bolt diameters for HY 20.
4. "Wedge" or "Expansion" anchors shall be Hilti Kwik bolt II expansion anchors. Embed anchor 7 bolt diameters unless noted otherwise. Equivalent anchors may be substituted with prior written approval of the Structural Engineer.

F. METAL STUDS

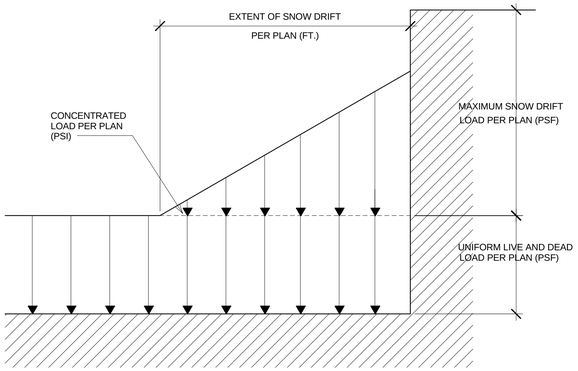
1. Install cold-formed metal studs per drawings and manufacturer's recommendations. See Structural Plan for sizes and gauges.

G. CONSTRUCTION

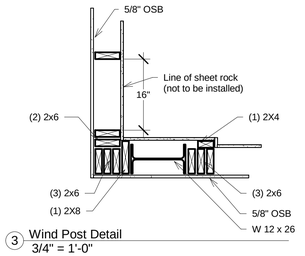
1. See architectural and mechanical requirements for embedded items not shown herein and to verify size and location of all openings.
2. Coordinate the sizes and locations of all miscellaneous metal items required for mechanical and electrical.
3. Requirements for embedded items, sleeves, block outs, duct openings,etc., in the concrete frame shall be submitted (plans and details) to the structural engineer for approval at least two weeks prior to the proposed date of casting concrete. No such items, other than those shown, shall be provided in the structure without the approval of the structural engineer.
4. Provide adequate shoring or bracing during construction to resist forces such as wind and unbalanced loading due to construction.
5. Field verify the location and depth (or height) of all utilities prior to beginning construction in order to provide adequate clearances and to insure noninterruption of service.

STRUCTURAL NOTES

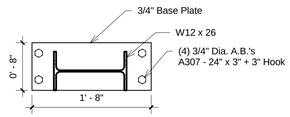
1. TRUSS MANUFACTURER TO FURNISH ALL HOLD DOWNS AND CLIPS FOR WOOD TRUSSES
2. PROVIDE HEAVY DUTY CLIPS AT ALL PANEL EDGES PERPENDICULAR TO TRUSSES AT 2'-0" O.C. STAGGER END OF PANELS AND GAP ALL PANELS 1/16" AT ALL EDGES
3. PROVIDE SIMPSON H1 HOLD DOWN CLIPS FOR EACH TRUSS
4. ROOF SHEATHING TO BE 5/8" EXTERIOR APA PLYWOOD, NAILED WITH 10d NAILS AT 6" O.C. ALL AROUND PLYWOOD EDGES (BLOCKING AS REQUIRED) AND ALL AROUND ROOF PERIMETER WITH 10d NAILS AT 6" O.C. AT ALL INTERMEDIATE SUPPORTS
5. BRACING DESIGN BY TRUSS MANUFACTURER
6. TRUSS MANUFACTURER TO PROVIDE DESIGN DRAWINGS AND CALCULATIONS AND LAYOUT PLAN, SEALED BY REGISTERED ENGINEER, FOR REVIEW, AND FOR APPROVAL BY THE CITY
7. WALL SHEATHING TO BE 5/8" OSB, NAILED WITH 8d NAILS AT 6" O.C. AT ALL STUDS AND FULL PERIMETER OF EACH PLYWOOD SHEET (BLOCKING AS REQUIRED) AND ALL AROUND PERIMETER OF WALL AND AROUND ALL OPENINGS
8. SEE ARCHITECTURAL SHEETS FOR ALL OPENING HEIGHTS AND WIDTHS



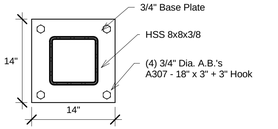
4 Snow load
1/2" = 1'-0"



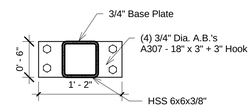
3 Wind Post Detail
3/4" = 1'-0"



BASE PLATE 'A'

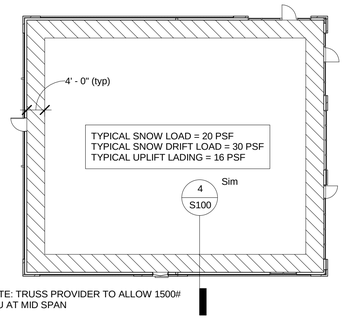


BASE PLATE 'B'



BASE PLATE 'C'

6 Base Plate Details
1" = 1'-0"



NOTE: TRUSS PROVIDER TO ALLOW 1500# RTU AT MID SPAN

5 Snow Load Plan
1/16" = 1'-0"

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd, #204 Kansas City, Mo 64113
Phone: 816-656-5055 Scharhagarch@gmail.com

NEW BUILDING FOR
PANERA BREAD
LOT 2

JOSEPH A. TOWNS MO. LIC. E 22017
LORAC DESIGN GROUP
CERT. OF AUTHORITY E-2005032846-D

STATE OF MISSOURI
JOSEPH ALAN TOWNS
NUMBER E-22017
REGISTERED PROFESSIONAL ENGINEER

No.	Description	Date
	Revision Schedule	

Structural Notes

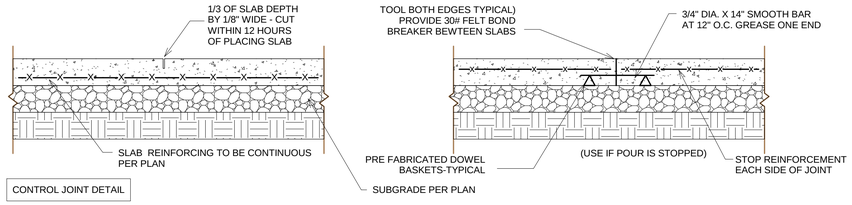
Project number 2119
Date 05.04.2020

S100

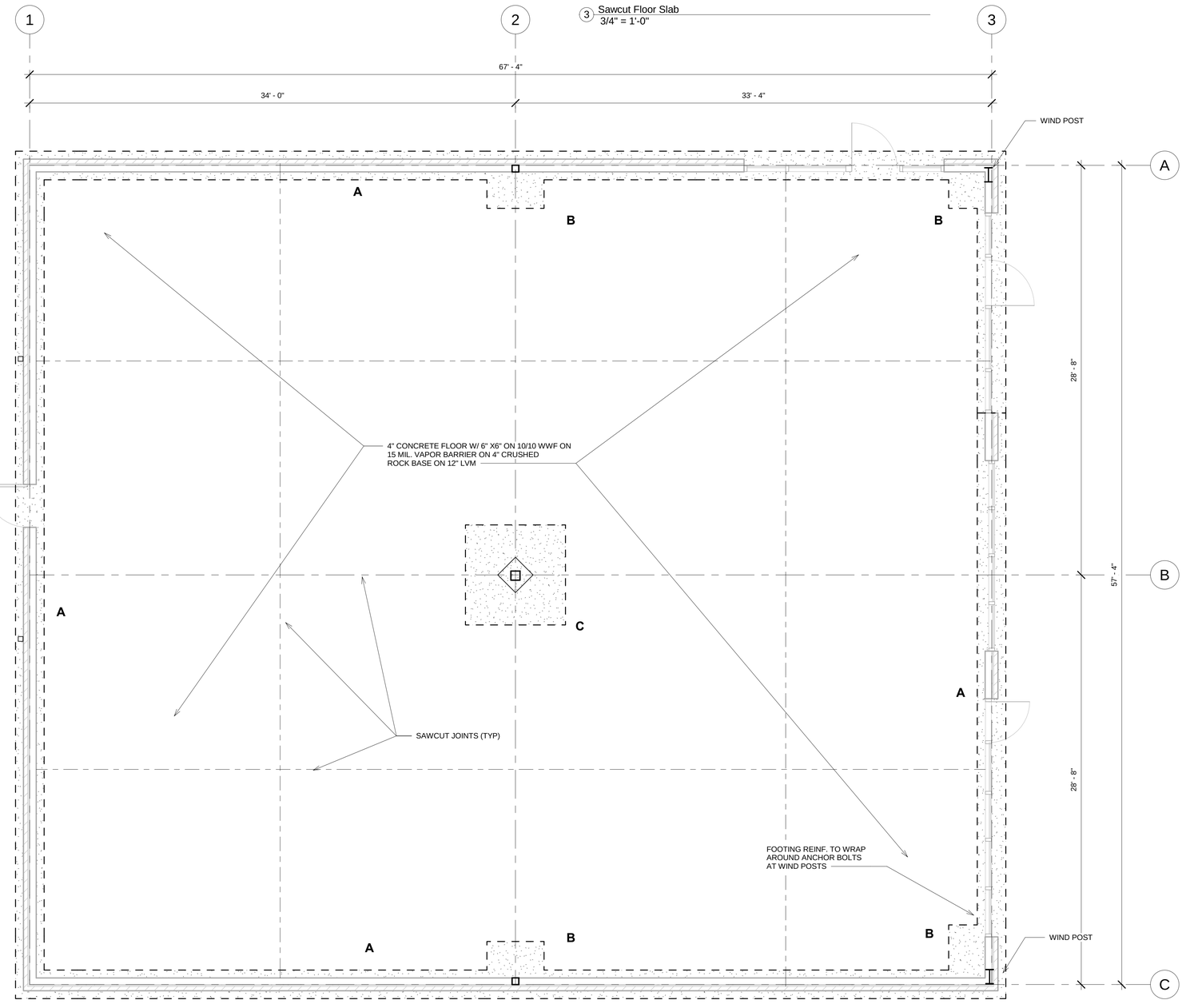
Scale As indicated

5/7/2020 9:50:37 AM

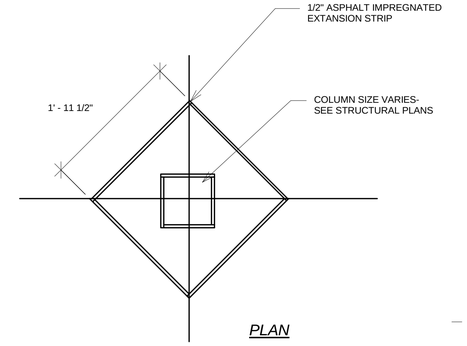
Structural Foundation Schedule		
Type Mark	Type	Type Comments
A	Bearing Footing - 2'.0" Wide	
B	4' x 4' x 3'.0" deep	(6) #6's Each way at top and bottom w/ (1) #6 @ each corner
C	7' x 7' x 2'.0" deep	(7) #6's each way at bottom



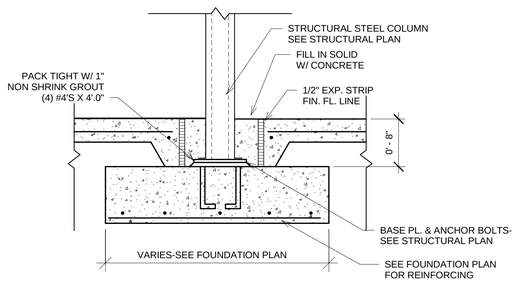
CONTROL JOINT DETAIL



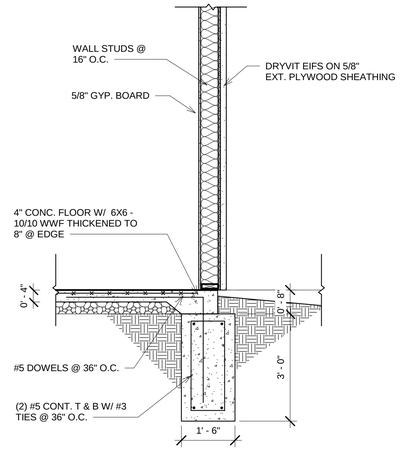
3 Sawcut Floor Slab
3/4" = 1'-0"



PLAN



2 Column Detail
1" = 1'-0"



4 Footing 3
1/2" = 1'-0"

1 Foundation Plan
1/4" = 1'-0"

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd, #204 Kansas City, Mo 64113
Phone: 816-656-5055 Scharhagarch@gmail.com

NEW BUILDING FOR
PANERA BREAD
LOT 2

JOSEPH A. TOWNS MO. LIC. E 22017
LORAC DESIGN GROUP
CERT. OF AUTHORITY E-2005032846-D

STATE OF MISSOURI
JOSEPH
ALAN TOWNS
NUMBER
E-22017
REGISTERED PROFESSIONAL ENGINEER

No.	Description	Date
	Revision Schedule	

Foundation

Project number	2119
Date	05.04.2020

S101

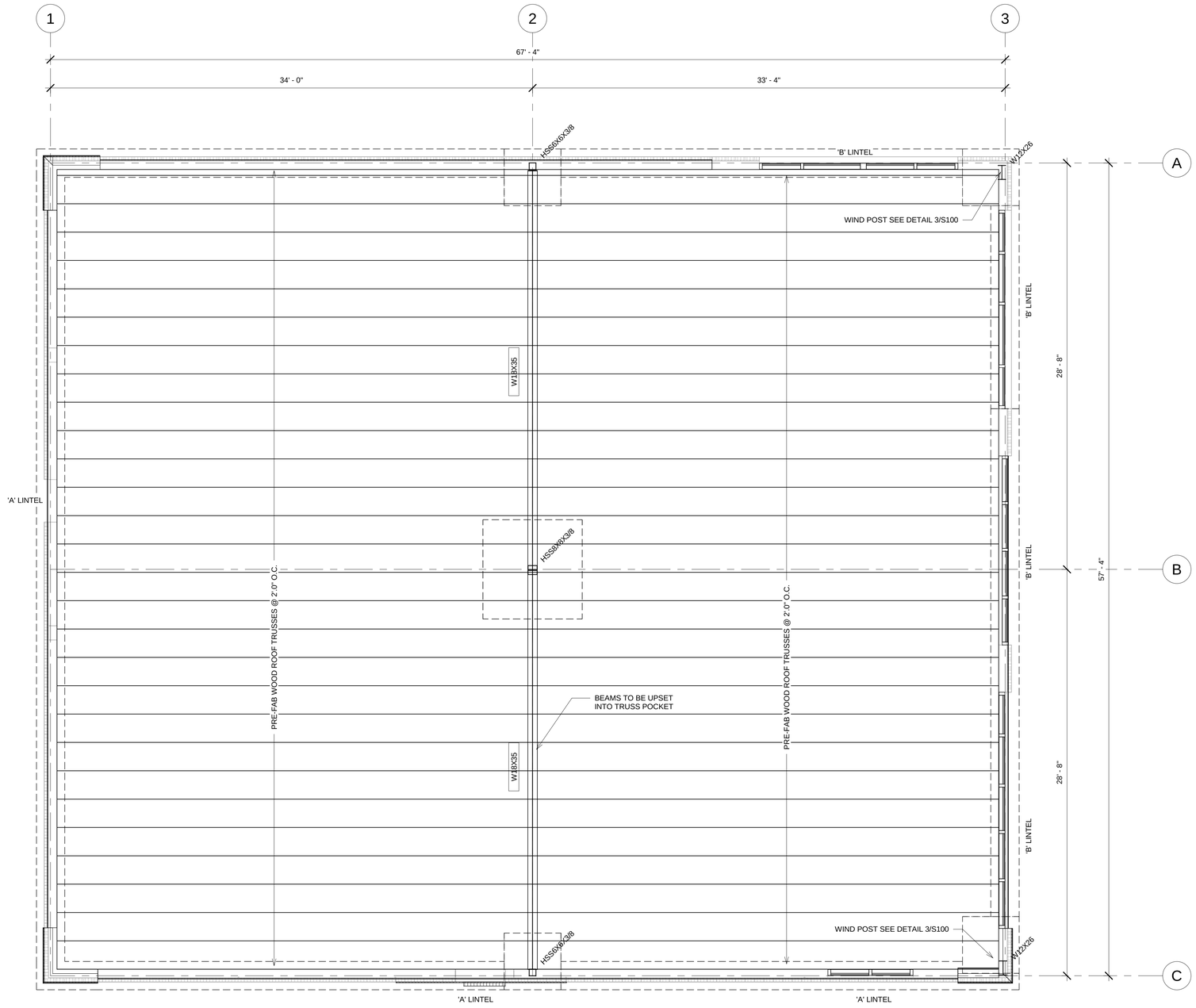
Scale As indicated

5/7/2020 9:50:37 AM

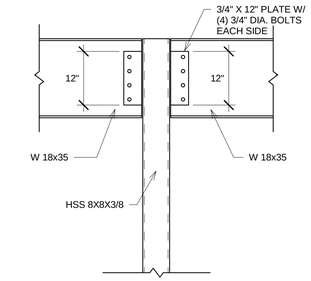
LINTEL SCHEDULE

LINTEL TYPE 'A'	TWO 2X 14 LVL'S
LINTEL TYPE 'B'	THREE 2X 14 LVL'S

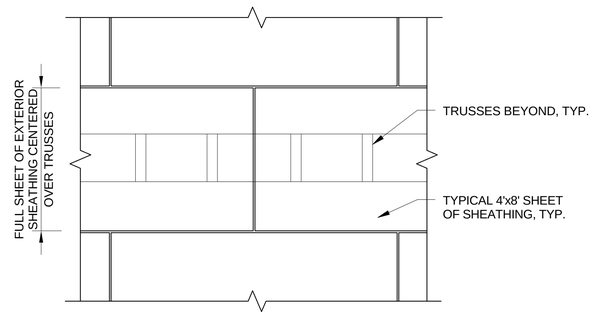
PROVIDE (6) 2X6'S BEARING AT EACH END OF LINTELS



1 Roof Framing Plan
1/4" = 1'-0"

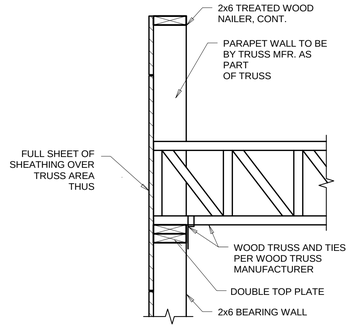


5 Beam Connection Detail
3/4" = 1'-0"



NOTE: ALL EXTERIOR SHEATHING TO HAVE NAILS @ 4" O.C. AROUND EDGE AND 6" O.C. INFIELD.

4 Typical Exterior sheathing wood
1/2" = 1'-0"



NOTE: FOR TYPICAL SHEATHING DETAIL RE: 1/S001

3 typical section at truss bearing wood
1" = 1'-0"

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd, #204 Kansas City, Mo 64113
Phone: 816-656-5055 Scharhagarch@gmail.com

NEW BUILDING FOR
PANERA BREAD
LOT 2

JOSEPH A. TOWNS MO. LIC. E 22017
LORAC DESIGN GROUP
CERT. OF AUTHORITY E-2005032846-D

STATE OF MISSOURI
JOSEPH
ALAN TOWNS
NUMBER
E-22017
REGISTERED PROFESSIONAL ENGINEER

No.	Description	Date
	Revision Schedule	

Framing

Project number	2119
Date	05.04.2020

S102

Scale As indicated

5/7/2020 9:50:38 AM

DIVISION 4 - MASONRY

MASONRY

A. IN GENERAL:

1. Includes furnishing, setting and laying of materials for all masonry walls built of face brick, common brick, concrete blocks or combinations, that are shown on the plans.
2. Build in all lintels, flashings, reinforcing, inserts, ties and accessories as required on the plans.

B. MATERIALS:

1. Brick:
a. Face Brick - for veneer of exterior walls and certain interior facings as indicated on the drawings. Brick shall be hard-burned modular sized to match approved samples. Clinkers, warped or underburned bricks will not be accepted. Provide a cash allowance of $500 per M for the purchase and delivery to the job site of all face brick.
b. Exterior 18" walls are to be built of 12" block backup and 4" face brick veneer with a 2" cavity.
2. Concrete Block:
a. Load Bearing Block - shall conform to the Standard Specifications of ASTM C-90, latest edition. (fm = 2250 psi)
b. Aggregate of all blocks to be left exposed to view shall be Haydite. Blocks made with other lightweight aggregate of similar characteristics may be used only with the approval, prior to bidding, of the Architect.
c. All blocks to have nominal 8" x 16" face dimension.
3. Miscellaneous:
a. Galvanized Blok-Mesh Ladder type for bonding face brick veneer to concrete block backup, with drip. Bloc-Mesh selected of proper width for wall to be bonded. Lap all joints and corners.
b. Galvanized adjustable wall ties at min. 18" o.c. each way
c. Reinforcing in grouted cells per plans
4. Mortar for Brick of Concrete Masonry:
a. Materials:
(1) Portland Cement - Standard Spec. of ASTM C-15-Type 1.
(2) Lime-Standard Spec. of the ASTM C-5, latest edition.
(3) Sand - Clean, washed sand, free from lignite, clay, etc. 100% of the sand shall pass a #4 mesh sieve.
(4) Mortar to be type N.
(5) Use type S mortar for all masonry below grade.

1. General Bricks and Blocks:
a. Face brick and blocks have been figured modular sizes. Horizontal joints for block or brick have been figured as follows: 3 courses of brick equal one course of block equals 8" in height. Vertical joints are figured at 3/8".
2. Brick facing:
a. Brick shall be laid in running bond in general. See elevations for pattern work or stack bond on certain walls.
b. Lay all face brick in full mortar beds and butter all head joints fully with mortar to produce a tight, shoved joint.
c. Brick work shall be pointed at time wall is laid up. Face of joints shall be concave.
3. Block Backup:
a. Shall be laid up with progress of facing following parge coat. Facings shall be laid not more than one wall tie ahead of backup.
b. Head joints of blocks shall be buttered fully to produce a tight shoved joint.
4. All outside masonry work shall be covered on top surface at completion of each days work. Use tarpaulins as protection against rain or snow.
5. Masonry walls shall be properly braced against wind damage until proper ties are made integrally with remainder of structure, and the roof deck has been installed and all connections have been completed.
6. Protect work as necessary from the work of the other sections of these specifications.
7. Point all masonry work as required to eliminate holes from string pins and rake out and point any defective joints at completion of work.
8. Clean all masonry work as follows: Brush down all brickwork with Sure-Kleen Solvent by Process Solvent Co., Kansas City, Mo. All washing solution shall be taken that masonry work is not damaged by the cleaning process.

D. SAMPLE:

1. Contractor shall submit brick samples to architect for approval.

E. MASONRY WATER REPELLANT:

1. After masonry is thoroughly cleaned, all exposed surfaces shall be treated with a silicone water repellent material. Surfaces to be thoroughly dry and free of all surface dirt, efflorescence and construction stains. Masonry water repellent shall be Sure Klean "Weather Seal 201-GP" or similar. Application shall be in strict accordance with manufacturer's printed instructions.

DIVISION 6 - WOOD AND PLASTICS

CARPENTRY AND MILLWORK

A. IN GENERAL:

1. Furnish materials, complete all rough carpentry work which includes blocking plates, grounds, etc.
2. Furnish and install all finished carpentry, and millwork shown on the drawings and described herein, consisting generally of the following: shelving, interior and exterior wood trim, wood paneling, doors, etc.
3. Coordinate work with the erection and installation of all laminated beams and arches and adjoining wood framing if any.

B. ROUGH CARPENTRY MATERIALS:

1. Provide nails, bolts, screws, and fastenings required to properly support blocking, framing, furrings, etc. required for the completion of finish carpentry and cabinet work.
2. Miscellaneous blocking, plates, etc. required in the support of roof overhangs, cant strips, nailers, for all purposes shall be #1 grade dimensional Douglas Fir.
3. Furring, plaster grounds, etc. shall be #2 grade Douglas Fir or White Pine.
4. Studs, plates, bucks, etc. shall be Douglas Fir Standard grade with fiber stress of 1200 psi (S4S).
5. All plywood shall bear the D.F.P.A. grade and trademark. Secure to wood framing members with 3d common cement coated nails @ 6" o.c. at panel edges and 10" o.c. at intermediate framing members. Or as otherwise noted.
6. Plywood sheathing shall be C-C EXT-DFPA plywood. Or as otherwise noted.
7. Structural Lumber - Flexural 2" thick WD members and all WD studs other than those specifically designated as #1 or better shall be Douglas Fir - larch #2 or better (Fb=1,250 psi, Fv=95 psi, E=1,700,000 psi.)
8. Roofing Deck - Plywood - Roof sheathing shall be 5/8" plywood - Structural 11 with exterior glue, C-C exterior, or better.

C. FINISH MATERIALS:

1. Interior trim shall be as noted on the drawings out of the following materials.
a. Oak Trim - all oak trim as shown on the drawings shall be premium grade white oak.
b. White Pine Trim - all white pine trim as shown on the drawings shall be C select or better.
c. Birch Trim - all birch trim as shown on the drawings shall be clear red birch.
d. Redwood Trim - all redwood trim as shown on the drawings shall be clear all heart redwood.
2. Plywood roof deck shall be thickness shown on the drawings, structural I, C-C EXT-APA with application in accordance with American Plywood Assoc. requirements.

3. Exterior trim shall be clear white pine treated with WOODLIFE PRESERVER. Wood soffits and fascia of extended roofs shall be exterior grade, fir plywood, thickness as noted on the drawings. Erect in lengths as indicated on the drawings with close fitting joints.

D. WORKMANSHIP AND INSTALLATION:

1. Doors shall be fabricated in accordance with details of approved shop drawings. They shall be fitted to the frames so as to leave uniform margins approximately 1/8" at head and jambs and 1/4" at thresholds.
2. Door frames shall be set plumb and true and in line with partition.
3. Interior trim around cabinets, etc. shall be set square and true. Joints shall be lap mitered. Drill pilot holes as necessary to prevent slitting. Nail securely with finish nails and counter sink heads.
4. Exterior trim shall be installed plumb, true and in proper planes. Fascia joints shall be butt mitered, securely nailed with casing nails set below the finish surface.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

CAULKING

A. IN GENERAL:

1. Furnish all labor and materials to complete all caulking work shown on the drawings or specified herein, or both.

B. MATERIALS:

1. Caulking compound shall be a two-part polytremdyne terpolymer sealant with movement capable of 40% extension and 25% compression. Sealant to be "DYMERIC" as manufactured by Tremco Manufacturing Co.
2. Joint Backing shall be closed-cell polethylene joint backing as manufactured by Tremco.

C. INSTALLATION:

1. All joints shall be clean, dry and free from foreign matter.
2. Depth of joint should not exceed width of joint from 1/4" to 1/2". For joints larger than 1/2", the depth of joints should be no more than 50% of the width.
3. Use Tremco backing to control depth of joint to within 1/2" of surface.
4. Mix according to manufacturers instruction (minimum 8 minutes).
5. Apply with conventional caulking equipment, tooling immediately.
6. Tool all exposed joints neatly.
7. Caulk around all exterior windows and doors.
8. Caulk at intersection of 2 dissimilar exterior materials.
9. Set all thresholds in full bed of caulking.
10. Caulk all expansion joints.
11. Caulk all Aluminum Flashing where detailed on the drawings.
12. Caulk at all locations shown on drawings, but not listed here.

DIVISION 7 - THERMAL & MOISTURE PROTECTION

SINGLE MEMBRANE ROOFING SYSTEM

A. IN GENERAL:

1. The scope of work covered by this specification shall include installation of a fully adhered, single-ply roof membrane, complete and in place, including flashings, separation barrier, walkways and associated items to provide the Owner with a watertight roofing system. All installation shall be per manufacturer's instructions.

B. MATERIALS:

1. Roofing system shall be a fully adhered roof membrane. The roofing system shall be Firestone Building Products Ultraply TPO XR with .060 in thickness, white in color.
2. Vapor barrier under base layer of insulation to be woven tri-laminate high density polyethylene top surface factory laminated to SBS modified bitumen tape adhesive.
3. Insulation shall be poyisocyanurate foam board with min. R=30, installed in two layers with staggered joints, with cold adhesive attachment. Provide insulation cover board of high density poyisocyanurate foam board ½" thick, with cold adhesive.
4. Adhesive shall be per manufacturer's requirements.
5. Splicing shall be as directed by manufacturer.
6. Materials shall be delivered in their original, un-opened containers, clearly labled with the manufacturere's brand name, and appropriate identifying numbers. All materials shall be stored between 60 degrees F and 80 degrees F.

C. SHOP DRAWINGS / SAMPLES:

1. Prior to beginning application, contractor shall submit shop drawings covering integral flashings, expansion joints (if any), walkways, separation layer, tapered insulation and any other appropriate items.

E. GUARANTEE:

1. The roofing contracting firm shall have experience with work related to the roofing work and shall be factory trained for installation.
2. Roofing system shall carry a 20 year Red Shield Limited Warranty.

DIVISION 7 - THERMAL & MOISTURE PROTECTION

FLASHINGS & SHEET METAL

A. IN GENERAL:

1. Furnish and install flashings and sheet metal work as indicated on the drawings and specified herein.
2. Includes the following general items: Flashings, metal fascias, gravel stops, cap flashings, thru wall scuppers, gutters, standing seam roofs and downspouts.
3. Coordinate work of flashing with the work of other sections of the specifications.

B. MATERIALS:

1. Counter or cap flashings at intersections of roof and vertical sections or intersections of any horizontal surface with vertical surface to be 28 ga. G.I. made in two sections.
2. Gravel stops and Caps-Berridge 24 ga. or approved equal. Color as selected by Architect.
3. Over all windows and doors in masonry walls, not protected by canopies or extended roofs – 2 oz. Cop-R-Tex by Wasco.
4. Wall window sills – 2 oz. Cop-R-Tex by Wasco

C. FABRICATION & INSTALLATION:

1. Coordinate all flashing and metal work with roofing contractor.
2. All flashings shall be installed in accord with details of the drawings. Where dimensions are not specifically shown, contact the architect for such dimensions.
3. Counter to cap flashings shall be built in with progress of work.
4. Fascia and gravel stops shall be erected square, plumb, true and straight. Provide concealed joint strips as required. No exposed screws or nails shall show on face of metal. Allow expansion and contraction of metal.
5. All window and door flashings shall be built in single pieces

E. GUARANTEE:

1. Full manufacturer's guarantee shall be provided, but in no case shall guarantee be less than one year for parts and labor.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

BELOW GRADE WATERPROOFING

A. IN GENERAL:

1. Provide all below grade waterproofing on exterior side on concrete foundation walls as shown and indicated on the plans and details.

B. MATERIAL:

1. Waterproofing material shall be a single ply of Grace Bituthene System 4000.

C. INSTALLATION:

1. Concrete surface to be clean, dry, and free from dust, with all holes filled and all high spots removed.
2. Apply memebrane waterproofing per manufacturer's recommendations.
3. Care shall be taken to prevent excessive material from showing above grade. Work shall be taken to finish grade line around the building, plus 2".
4. Apply Hydroduct 220 protection and cover board at completion of membrane installation, prior to any back fill.

D. WARRANTY:

1. Contractor shall guarantee system to be waterproof for a period of 2 years from date of substantial completion.

DIVISION 7 – E.I.F.S.

DRYVIT OUTSULATION PLUS MD SYSTEM

PART I GENERAL

1.01 SUMMARY
A. This document is to be used in preparing specifications for projects utilizing the Dryvit Outsulation Plus MD System. For complete product description and usage refer to:
1. Dryvit Outsulation Plus MD System Data Sheet, DS445
2. Dryvit Outsulation Plus MD System Application Instructions, DS218
3. Dryvit Outsulation Plus MD System Installation Details, DS110

1.02 SYSTEM DESCRIPTION
A. General: The Dryvit Outsulation Plus MD System is an Exterior Insulation and Finish System (EIFS), Class PB, consisting of an air/water-resistive barrier, an adhesive, expanded polystyrene insulation board, base coat, reinforcing mesh(es) and finish.
B. Methods of Installation:
1. Field Applied: The Outsulation Plus MD System is applied to the substrate system in place.
C. Requirements:
1. Acceptable substrates for the Outsulation Plus MD System shall be:
a. Exterior grade gypsum sheathing meeting ASTM C 1396 (formerly C 79) requirements for water resistant core or Type X core at the time of application of the Outsulation Plus MD System.
b. Exterior sheathing having a water-resistant core with fiberglass mat facers meeting ASTM C 1177.
c. Exterior fiber reinforced cement or calcium silicate boards.
d. APA Exterior or Exposure 1 Rated Plywood, Grade C-D or better, nominal 1/2 in (12.7 mm), minimum, installed with the C face out.
e. APA Exterior or Exposure 1 Fire Retardant Treated (FRT) Plywood, Grade C-D or better, nominal 1/2 in (12.7 mm), minimum, installed with the C face out.
f. APA Exposure 1 Rated Oriented Strand Board (OSB) nominal 1/2 in (12.7 mm), minimum. NOTE: Applications over OSB sheathing requires a minimum of 2 coats of Backstop NT – Smooth or Spray. Backstop NT – Texture is not recommended for the field of wall application over OSB.
g. Unglazed brick, cement plaster, concrete or masonry.
h. Pre-engineered metal building panels with an acceptable substrate as noted in Section 1.04.C.1.a through f.
2. Deflection of the substrate systems shall not exceed 1/240 times the span.
3. The substrate shall be flat within 1/4 in (6.4 mm) in a 4 ft (1.2 m) radius.
4. The slope of inclined surfaces shall not be less than 6:12 (27°) and the length shall not exceed 12 in (305 mm).
5. Expansion Joints:
a. Design and location of expansion joints in the Outsulation Plus MD System is the responsibility of the project designer and shall be noted on the project drawings. As a minimum, expansion joints shall be placed at the following locations:
1) Where expansion joints occur in the substrate system

2) Where building expansion joints occur
3) At floor lines in wood frame construction
4) At floor lines of non-wood framed buildings where significant movement is expected
5) Where the Outsulation Plus MD System abuts dissimilar materials
6) Where the substrate type changes
7) Where prefabricated panels abut one another
8) In continuous elevations at intervals not exceeding 75 ft (23 m)
9) Where significant structural movement occurs, such as changes in roof line, building shape or structural system
6. Terminations:
a. Prior to applying the Dryvit Outsulation Plus MD System, wall openings shall be treated with Dryvit AquaFlash System, Backstop® Flash & Fil or Flashing Tape. Refer to Dryvit Outsulation Plus MD Installation Details, DS110.
b. The Outsulation Plus MD System shall be held back from adjoining materials around openings and penetrations such as windows, doors, and mechanical equipment a minimum of 3/4 in (19 mm) for sealant application. See Dryvit's Outsulation Plus MD System Installation Details, DS110.
c. The system shall be terminated a minimum of 8 in (203 mm) above finished grade.
d. Sealants
1) Shall be manufactured and supplied by others.
2) Shall be compatible with the Outsulation Plus MD System materials. Refer to current Dryvit Publication DS153 for listing of sealants tested by sealant manufacturer for compatibility.
3) The sealant backer rod shall be closed cell.
7. Flashing: Shall be provided at all roof-wall intersections, windows, doors, chimneys, decks, balconies and other areas as necessary to prevent water from entering behind the Outsulation Plus MD System.
8. Site Coated EPS Shapes and Starter Boards: Shall be coated on site utilizing the same materials (EPS, base material mixture, reinforcing mesh, and finish) as specified for the project.
9. Pre Base Coated EPS Shapes and Starter Boards: Shall be supplied by Acrocore or other approved shape manufacturer.

1.03 QUALITY ASSURANCE
A. Qualifications
1. System Manufacturer: Shall be Dryvit Systems, Inc. All materials shall be manufactured or sold by Dryvit and shall be purchased from Dryvit or its authorized distributors.
a. Materials shall be manufactured at a facility covered by a current ISO 9001:2015 and ISO 14001:2015 certification. Certification of the facility shall be done by a registrar accredited by the American National Standards Institute, Registrar Accreditation Board (ANSI-RAB).
2. Contractor: Shall be knowledgeable in the proper installation of the Dryvit Outsulation Plus MD System and shall be experienced and competent in the installation of Exterior Insulation and Finish Systems. Additionally, the contractor shall possess a current Outsulation Plus MD System Trained Contractor Certificate" issued by Dryvit Systems, Inc.
3. Insulation Board Manufacturer: Shall be listed by Dryvit Systems, Inc., shall be capable of producing the Expanded Polystyrene (EPS) in accordance with the current Dryvit

Specification for Insulation Board, DS131, and shall subscribe to the Dryvit Third Party Certification and Quality Assurance Program.
B. Regulatory Requirements:
1. The EPS shall be separated from the interior of the building by a minimum 15-minute thermal barrier.
2. The use and maximum thickness of EPS shall be in accordance with the applicable building code(s).

1.04 DELIVERY, STORAGE AND HANDLING
A. All Dryvit materials shall be delivered to the job site in the original, unopened packages with labels intact.
B. Upon arrival, materials shall be inspected for physical damage, freezing or overheating. Questionable materials shall not be used.
1. Materials shall be stored at the job site, and at all times, in a cool, dry location, out of direct sunlight, protected from weather and other sources of damage. Minimum storage temperature shall be as follows:
a. DPR, PMR™, HDP™, Weatherlastic® and E™ Finishes, Color Prime™, Primus®, Genesis® and NCB™,
40 °F (4 °C).
b. For other products, refer to specific product data sheets.
2. Maximum storage temperature shall not exceed 100 °F (38 °C). **NOTE: Minimize exposure of materials to temperatures over 90 °F (32 °C). Finishes exposed to temperatures over 110 °F (43 °C) for even short periods may exhibit skinning, increased viscosity and should be inspected prior to use.**
C. Protect all products from inclement weather and direct sunlight.

1.05 PROJECT CONDITIONS
A. Environmental Requirements
1. Application of wet materials shall not take place during inclement weather unless appropriate protection is provided. Protect materials from inclement weather until they are completely dry.
2. At the time of Dryvit product application, the air and wall surface temperatures shall be from 40 °F (4 °C) minimum to 100 °F (38 °C) maximum for the following products:
a. DPR, PMR, HDP, Weatherlastic and E Finishes, Color Prime, Primus, Genesis and NCB.
b. For other products, refer to specific product data sheets.
3. These temperatures shall be maintained with adequate air ventilation and circulation for a minimum of
24 hours (48 hours for Weatherlastic Finishes, Ameristone, TerraNeo and Lymestone) thereafter, or until the products are completely dry. Refer to published product data sheets for more specific information.

1.06 WARRANTY
A. Dryvit Systems, Inc. shall provide a written moisture drainage and limited materials warranty against defective material. Dryvit shall make no other warranties, expressed or implied. Dryvit does not warrant workmanship. Full details are available from Dryvit Systems, Inc.
B. The applicator shall warrant workmanship separately. Dryvit shall not be responsible for workmanship associated with installation of the Outsulation Plus MD System.

2.01 MANUFACTURER
A. All components of the Outsulation Plus MD System shall be supplied or obtained from Dryvit or its authorized distributors. Substitutions or additions of materials other than specified will void the warranty.

2.02 MATERIALS
A. Portland Cement: Shall be Type I or II, meeting ASTM C 150, white or gray in color, fresh and free of lumps.
B. Water: Shall be clean and free of foreign matter.

2.03 COMPONENTS
A. Air/Water-Resistive Barrier Components:
1. Dryvit Backstop NT: A vapor permeable, flexible, polymer-based noncementitious water-resistive and air barrier coating available in Texture, Smooth, and Spray. See DS180 and DS181.
2. Dryvit Backstop NT-VB: A Class 1 vapor retarder, available in trowel and spray versions. When specified, consider having a WVT analysis performed. See DS830 and DS831.
3. Dryvit Grid Tape™: An open weave fiberglass mesh tape with pressure sensitive adhesive available in rolls
4 in (102 mm) wide by 100 yds (91 m) long.
4. Dryvit Backstop DMS: A sprayable single step water-resistive membrane/air barrier and adhesive.
NOTE: Backstop DMS is not approved for use over wood based substrates.
B. Flashing Materials: Used to protect substrate edges at terminations.
1. Liquid Applied: An extremely flexible water-based polymer material, ready for use.
a. Shall be AquaFlash and AquaFlash Mesh
2. Gun Applied: A flexible waterproof material, ready for use.
a. Shall be Backstop Flash & Fill
3. Sheet Type:
a. Shall be Flashing Tape and Surface Conditioner
1) Dryvit Flashing Tape™: A high density polyethylene film backed with a rubberized asphalt adhesive available in rolls 4 in (102 mm), 6 in (152 mm) and 9 in (229 mm) wide by 75 ft (23 m) long.
2) Dryvit Flashing Tape Surface Conditioner™: A water-based surface conditioner and adhesion promoter for the Dryvit Flashing Tape.
C. Dryvit AP Adhesive™: A moisture cure, urethane-based adhesive used to adhere the Dryvit Drainage Strip™ and
Drainage Track.
D. Drainage Track: UV treated PVC "J" channel perforated with weep holes, complying with ASTM D 1784 and
ASTM C 1063. Drainage track usage is limited to the base of the system at finished grade level when installing system in noncombustible construction. All other horizontal terminations shall utilize the Dryvit Drainage Strip as shown in Outsulation Plus MD Installation Details, DS110. Shall be one of the following:
1. Starter Trac STWP – without drip edge by Plastic Components, Inc.
2. Starter Trac STDE – with drip edge by Plastic Components, Inc.
3. Universal Starter Track by Wind-lock Corporation
4. Sloped Starter Strip with Drip by Vinyl Corp.
E. Dryvit Drainage Strip: A corrugated plastic sheet material, which provides drainage.

F. Adhesives: Used to adhere the EPS to the air/water-resistive barrier, shall be compatible with the water-resistive barrier and the EPS.
1. Cementitious: A liquid polymer-based material, which is field mixed with Portland cement.
a. Shall be Primus, or Genesis
2. Ready mixed: A dry blend cementitious, copolymer-based product, field mixed with water.
a. Shall be Primus® DM, Genesis® DM, Genesis® DMS, Rapidry DM 35-50 or Rapidry DM 50-75
G. Insulation Board: Expanded Polystyrene meeting Dryvit Specification for Insulation Board, DS131.
1. Thickness of insulation board shall be minimum 1 in (25 mm).
2. The insulation board shall be manufactured by a board supplier listed by Dryvit Systems, Inc.
H. Machine Coated Dryvit EPS Shapes and Starter Boards: Shall be supplied by Acrocore or other approved manufacturer that subscribes to the Dryvit third party certification and quality assurance program.
I. Base Coat: Shall be compatible with the EPS insulation board and reinforcing mesh(es).
1. Cementitious: A liquid polymer-based material, which is field mixed with Portland cement.
a. Shall be Primus, or Genesis
2. Noncementitious: A factory-mixed, fully formulated, water-based product.
a. Shall be NCB
3. Ready mixed: A dry blend cementitious, copolymer-based product, field mixed with water.
a. Shall be Primus DM, Genesis DM, Genesis DMS, Rapidry DM 35-50 or Rapidry DM 50-75
4. Shieldit™: A 2-pass base coat used over existing EIFS or a Dryvit reinforced base coat to improve impact resistance against woodpeckers when specified.
J. Reinforcing Mesh: A balanced, open weave, glass fiber fabric treated for compatibility with other system materials.
1. Shall be Standard, Standard Plus, Intermediate, Panzer 15, Panzer 20, Detail and Corner Mesh
2. Shall be colored blue for product identification bearing the Dryvit logo.
K. Finish: Shall be the type, color and texture as selected by the architect/owner and shall be one or more of the following:
1. Standard DPR (Dirt Pickup Resistance): Water-based, acrylic coating with integral color and texture and formulated with DPR chemistry:
a. Quarzputz® DPR: Open-texture

3.01 EXAMINATION
A. Prior to installation of the Outsulation Plus MD System, the contractor shall verify that the substrate:
1. Is of a type listed in Section 1.04.C.1.
2. Is flat within 1/4 in (6.4 mm) in a 4 ft (1.2 m) radius.
3. Is sound, dry, connections are tight; has no surface voids, projections, or other conditions that may interfere with the Outsulation Plus MD System installation or performance.
B. Prior to installation of the Outsulation Plus MD System, the general contractor shall insure that all needed flashings and other waterproofing details have been completed, if such

completion is required prior to the Outsulation Plus MD application. Additionally, the Contractor shall ensure that:
1. Metal roof flashing has been installed in accordance with the manufacturer's requirements, Asphalt Roofing Manufacturers Association (ARMA) Standards and Dryvit Outsulation Plus MD Installation Details, DS110, or as otherwise necessary to maintain a watertight envelope.
2. Openings are flashed in accordance with the Outsulation Plus MD System Installation Details, DS110, or as otherwise necessary to prevent water penetration.
3. Chimneys, balconies and decks have been properly flashed.
4. Windows, doors, etc. are installed and flashed per manufacturer's requirements and the Outsulation Plus MD System Installation Details, DS110.
C. Prior to the installation of the Outsulation Plus MD System, the contractor shall notify the general contractor, and/or architect, and/or owner of all discrepancies.

3.02 PREPARATION
A. The Outsulation Plus MD materials shall be protected by permanent or temporary means from inclement weather and other sources of damage prior to, during, and following application until completely dry.
B. Protect adjoining work and property during Outsulation Plus MD installation.
C. The substrate shall be prepared as to be free of foreign materials, such as oil, dust, dirt, form-release agents, efflorescence, paint, wax, water repellants, moisture, frost, and any other condition that may inhibit adhesion.

3.03 INSTALLATION
A. The system shall be installed in accordance with the Dryvit Outsulation Plus MD System Application Instructions, DS218.
B. The overall minimum base coat thickness shall be sufficient to fully embed the mesh. The recommended method is to apply the base coat in two (2) passes.
C. Sealant shall not be applied directly to textured finishes or base coat surfaces. Dryvit Outsulation Plus MD System surfaces in contact with sealant shall be coated with Demandit Smooth or Color Prime.
D. High impact meshes shall be installed as specified at ground level, high traffic areas and other areas exposed to or susceptible to impact damage.

3.04 FIELD QUALITY CONTROL
A. The contractor shall be responsible for the proper storage and application of the Outsulation Plus MD materials.
B. Dryvit assumes no responsibility for on-site inspections or application of its products.
C. If required, the contractor shall certify in writing the quality of work performed relative to the substrate system, details, installation procedures, workmanship and as to the specific products used.
D. If required, the EPS supplier shall certify in writing that the EPS meets Dryvit's specifications.
E. If required, the sealant contractor shall certify in writing that the sealant application is in accordance with the sealant manufacturer's and Dryvit's recommendations.

3.05 CLEANING
A. All excess Outsulation Plus MD System materials shall be removed from the job site by the contractor in accordance with contract provisions and as required by applicable law.

B. All surrounding areas, where the Dryvit Outsulation Plus MD System has been applied, shall be left free of debris and foreign substances resulting from the contractor's work.

3.06 PROTECTION
A. The Outsulation Plus MD System shall be protected from inclement weather and other sources of damage until dry and permanent protection in the form of flashings, sealants, etc. are installed.

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd. #204 Kansas City, Mo 64113
Phone: 816-656-5055 Scharhagarch@gmail.com

NEW BUILDING FOR
PANERA BREAD
LOT 2

J.Jeffry Schroeder Mo. Licence A-4226
Herman Scharhag Co., Arch. Cert. of Authority A-22

STATE OF MISSOURI
JEFFREY SCHROEDER
NUMBER A-4226
5-6-20
REGISTERED ARCHITECT

No.	Description	Date
	Revision Schedule	

Specs

Project number	2119
Date	05.04.2020

SPEC001

Scale As indicated

5/7/2020 9:50:39 AM

DIVISION 8 - DOORS AND WINDOWS

GLASS AND GLAZING

A. IN GENERAL:

1. Furnish and install materials required to complete glass and glazing work shown on the drawings and described herein. Work includes glazing of aluminum frames, wood frames, sidelights, metal doors, mirrors, etc.
2. Consult door schedules, window schedules, exterior elevations and details for specific types of glass to be used.

B. SETTING:

1. Set all glass in aluminum frames in accordance with mfg. recommendations using neoprene glazing gasket and sealant as required.
2. Openings with wood or metal stops - Set glass in bet of putty; apply thin bed of putty stops; set stops with counter-sunk nails or screws as per details.

C. BREAKAGE:

1. Replace all glass broken after setting. Breakage due to imperfect setting or imperfections in the material will be replaced without charge.
2. Breakage due to accidents or carelessness of others will be charged to the trade at fault.

D. CLEANING:

1. At the completion of the work, remove all dirt, stains, putty, etc. and wash and polish all glass.

F. MATERIALS:

1. Aluminum frames, sidelights, and windows, 1" solar bronze, insulating glass 1/4" thick light inside and out with 1/2" air space between. (Tempered where required by I.B.C. or as indicated on drawings.)
2. Aluminum entry doors - 1/4" solar bronze tempered.

DIVISION 8 - DOORS AND WINDOWS

HOLLOW METAL DOORS AND FRAMES

A. IN GENERAL:

1. Furnish and erect hollow metal door frames, shown on the drawings and hereinafter specified. Refer to Door Schedule for types and sizes.

B. DOORS AND FRAMES:

1. Frames:
a. Made of 16 ga. cold rolled, pickled and annealed steel welded assembly with welds ground smooth for finishing. Exterior frames to be 16 ga. steel.
b. Provide 14 ga. anchors and clips for fastening to masonry jambs and drywall anchors for sheet rock walls.
c. Frames shall be adequately reinforced on inside to support metal doors without sagging.
d. Frames shall be cleaned free from scale, rust and rough spots and receive one coat of rust inhibitive paint before shipment.
e. Frames shall be prepared to receive mortiss-type hardware in accordance with the type of hardware specified. See hardware specifications.
2. Frames are as manufactured by Overly Mfg. Co., Steel Craft or approved equal. See door schedule for types, width, plaster flanges, etc.
3. Template for hardware to be supplied by hardware manufacturers.
4. Doors shall be 16 ga. cold rolled, pickled and annealed steel welded assembly with welds ground smooth.

C. SHOP DRAWINGS:

1. Shop drawings showing all door frames shall be prepared and submitted to Architect for approval.

DIVISION 8 - DOORS & WINDOWS

ALUMINUM GLAZING FRAMES AND DOORS

A. IN GENERAL:

1. Furnish labor and materials for entrance frames including all accessories and related items. Coordinate the work of this section with that of Glass and Glazing as required for the complete installation.

B. MATERIALS:

1. Aluminum entrance frames shall be as manufactured by "Kawneer" or equal.
2. Door frames shall be 4-1/2" deep by 1-3/4", reinforced as required for overall height, with flush glazing.
3. Sections shall be of 6063-T5 extruded aluminum alloy.
4. Finish shall be "Permanodic" anodic color coating and seal per ASTM B-136. Color as selected from standard finishes.
5. Doors shall be narrow style "190", finish to match.
6. Hardware shall be furnished and installed under this section. Hardware includes exposed streamline closer (color anodized), M-S lock, Style "F" push pull, butt hinges, weather stripping, threshold and bottom sweep.

C. ERECTION:

1. Entrance frames shall be installed all in accordance with the manufacturers recommendations. After erection and glazing, this contractor shall check and adjust as required, all items or operating hardware. Coordinate the erection with that of Glass and Glazing. All joint between frames and adjacent framing shall be caulked.

D. PERFORMANCE:

1. The Grid framing system shall not leak when tested in accordance with ASTM E331-68 at test pressure of 7.5 psf.
2. Per ASTM E330, maximum deflection of any member shall not exceed 1/175th of its span and there shall be no permanent deformation or damage upon removal of load. Test for wind loads as required by local building code load requirements.

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd. #204 Kansas City, Mo 64113
Phone: 816-656-5055 Scharhagarch@gmail.com

NEW BUILDING FOR

PANERA BREAD

LOT 2

J.Jeffry Schroeder Mo. Licence A-4226
Herman Scharhag Co., Arch. Cert. of Authority A-22

No.	Description	Date
	Revision Schedule	

Specs

Project number	2119
Date	05.04.2020

SPEC002

Scale 1/16" = 1'-0"

5/7/2020 9:50:39 AM

MECHANICAL & PLUMBING SPECIFICATIONS

1. GENERAL PROVISIONS:
   A. PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE COMPLETE INSTALLATION OF THE PLUMBING AND MECHANICAL SYSTEMS OUTLINED.
   B. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATIONS OF COMPLIANCE OR APPROVAL AS REQUIRED BY AUTHORITIES.
   C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE.
   D. ALL TESTING REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK.
   E. DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, PIPE, DUCT, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERING SHALL BE REMOVED BEFORE FINAL ACCEPTANCE.
   F. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NECESSARY. PATCH AROUND ALL OPENINGS SHALL MATCH ADJACENT AREA. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE MAINTAINED.
   G. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECT FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.
   H. INSPECTION OF THE SITE: THIS CONTRACTOR SHALL THOROUGHLY ACQUAINT HIMSELF WITH THE MEP DRAWINGS, SPECIFICATIONS, DETAIL, AND THE SITE. THIS CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY SPECIAL OR UNUSUAL PROBLEMS, CONFLICTS, OR OBSTRUCTIONS THAT AFFECT HIS BID.
   I. FOR THE PURPOSE OF CLEARNESS AND LEGIBILITY, THE MECHANICAL DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND DO NOT SHOW ALL OFFSETS AND FITTINGS REQUIRED FOR INSTALLATION. DO NOT SCALE DRAWINGS. THE SIZE AND LOCATION OF EQUIPMENT IS SHOWN TO SCALE WHEREVER POSSIBLE. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DATA AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATION SECTIONS WHERE MECHANICAL WORK INTERFACES WITH OTHER TRADES.
   J. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE PLANS OR WITH CODE REQUIREMENTS, THE NOTE OR CODE WHICH PRESCRIBES AND ESTABLISHES THE MORE COMPLETE JOB OR HIGHER STANDARD SHALL PREVAIL.
   K. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE FOR EXPOSED WORK. COORDINATE WITH WORK OF OTHER SECTIONS. COMPLY WITH APPLICABLE REGULATIONS AND CODE REQUIREMENTS. PROVIDE PROPER CLEARANCES FOR SERVICING.
   L. INCLUDE ALL BASIC MATERIALS AND CONSTRUCTION METHODS INCLUDING PIPES, PIPE FITTINGS, AND SPECIALTIES AND SUPPORTING DEVICES, VALVES, PIPE AND VALVE IDENTIFICATION, PUMPS, VIBRATION ISOLATION, ETC.
   M. FURNISH ADEQUATE ACCESS PANELS AND DOORS TO ALLOW FOR FUTURE PIPING ALTERATIONS, REPLACEMENT, AND MAINTENANCE OF PIPING. PROPERLY IDENTIFY ALL ACCESS PANELS AND DOORS.

2. OPERATION AND MAINTENANCE MANUALS:
   A. DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CATALOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS, ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT.
   B. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION IN THE OPERATING AND MAINTENANCE MANUALS.
   C. ALL LITERATURE LISTED ABOVE AND ALL PAPERS LISTING WARRANTIES, ETC. SHALL BE BOUND IN A 3-RING BINDER AND LABELED WITH THE PROJECT NAME, ADDRESS, ARCHITECT, ENGINEER AND CONTRACTORS.

3. MANUFACTURERS:
   A. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN.
   B. THE ELECTRICAL SYSTEM DESIGN IS BASED IN PART ON THE SPECIFIED EQUIPMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE ELECTRICAL REQUIREMENTS OF THE EQUIPMENT BEING FURNISHED. ANY CHANGES TO THE ELECTRICAL SYSTEM DUE TO HVAC EQUIPMENT OTHER THAN THE SPECIFIED EQUIPMENT BEING FURNISHED SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

4. MOTORS:
   A. PROVIDE THERMAL OVERLOAD PROTECTION FOR EACH MOTOR PROVIDED BY THIS WORK.

5. PLUMBING:
   A. PROVIDE AN APPROVED WATER HAMMER ARRESTOR FOR EACH PLUMBING FIXTURE SUPPLY AS REQUIRED BY FIXTURE MANUFACTURER.
   B. ALL EXPOSED PIPE IN FINISHED AREAS SHALL BE CHROME PLATED BRASS PIPE, NO FERROUS PIPE.
   C. PROVIDE CLEANOUTS AT EACH CHANGE IN DIRECTION AND AT 100 FOOT INTERVALS IN STRAIGHT RUNS.
   D. PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES AND TRAPS.
   E. CLEANOUTS:
      1. VINYL TILE FLOOR (FCO):JR SMITH #4140, OR EQUAL.
      2. QUARRY TILE FLOOR (FCO):JR SMITH #4200, OR EQUAL.
      3. CARPETED FLOOR (FCO):JR SMITH #4020-Y, OR EQUAL.
      4. UNFINISHED FLOOR (FCO):JR SMITH #4020, OR EQUAL.
      5. WALL (WCO):JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR.
      6. GRADE (GCO):JR SMITH #4256, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER.
   F. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES.
      1. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL.
      2. INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL.
      3. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL.
   G. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTION TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS.
   H. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES.
      1. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE.
      2. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE.

6. PIPING
   A. DOMESTIC COLD WATER (ABOVEGROUND).
      1. TYPE L HARD DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS.
      2. GATE VALVE: CRANE #428 OR EQUAL.
      3. BALL VALVE: CRANE #932 OR EQUAL.
   B. DOMESTIC COLD WATER, 1"-3" (UNDERGROUND).
      1. TYPE K HARD OR SOFT DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERING FITTINGS.
   C. DOMESTIC COLD WATER AND FIRE WATER, 3" OR LARGER (UNDERGROUND).
      1. DUCTILE IRON PIPE AND FITTINGS, AWWA C151, CLASS 50, CEMENT LINING, SEALCOATED, AWWA C104. THRUST BLOCKS IN ACCORDANCE WITH NFPA 24.
   D. SANITARY SEWER AND VENTS (INTERIOR TO BUILDING).
      1. UNDERGROUND SOIL: WASTE, DRAIN AND VENT PIPE AND FITTINGS, THROUGHOUT THE BUILDING BELOW THE BASE SLAB TO THE LOCATIONS NOTED OUTSIDE OF THE BUILDING, SHALL BE SCHEDULE 40 PVC SOLID PLASTIC PIPE MAY BE USED WHERE PERMITTED BY GOVERNING CODES.
      2. ABOVE SOIL: WASTE, DRAIN, VENT PIPE, AND FITTINGS ABOVE GROUND INSIDE OF THE BUILDING SHALL BE SCHEDULE 40 PVC SOLID PLASTIC PIPE.
      3. SEWER LINES SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINGS. THE EXACT LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR IN SUCH A MANNER AS TO MAINTAIN PROPER CLEARANCES AND SUFFICIENT SLOPE TO ENSURE DRAINAGE.
      4. VENT STACKS SHALL BE EXTENDED FULL SIZE THROUGH THE ROOF AND FLASHED WITH 4 POUND LEAD SHEETS TURNED DOWN INTO THE STACK AT LEAST 2" AND EXTENDED 12" IN ALL DIRECTIONS FROM THE PIPE AT THE ROOF LINE. VENTS THROUGH ROOF SHALL NOT BE LESS THAN 3". PVC PIPING SHALL NOT BE USED FOR VENT PIPING THROUGH THE ROOF. WHERE APPLICABLE FOR ROOFING SYSTEM USED, PROVIDE FLASHING VIA PLEATED EPDM CONE IN LIEU OF LEAD. ALL VENT STACKS IN OR AT OUTSIDE WALLS SHALL BE OFFSET 1'-6" MINIMUM FROM OUTSIDE WALLS BEFORE GOING THROUGH THE ROOF, TO FACILITATE FLASHING.
   E. CONDENSATE DRAIN AND INDIRECT WASTE (ABOVEGROUND)
      1. PVC DWV PIPE, SCHEDULE 40, SOLVENT JOINT.
   F. NATURAL GAS PIPING:
      1. SCHEDULE 40 BLACK STEEL PIPING: 2" AND SMALLER WITH SCREWED JOINTS AND 150 LB. MALLEABLE IRON SCREWED FITTINGS. PIPE 2-1/2" AND LARGER SHALL USE STANDARD WEIGHT BLACK STEEL WELDING FITTINGS WITH WELDED JOINTS.
      2. GAS VALVES SHALL BE ROCKWELL 142/143, PLUG VALVE.
      3. SUPPORT PIPING AT INTERVALS NOT TO EXCEED THOSE LISTED IN TABLE 415.1 OF THE I.F.G.C.
      4. PROVIDE A.G.A. APPROVED SHUT OFF VALVES AND DIRT LEGS AT CONNECTIONS TO ALL EQUIPMENT.
      5. ALL ELEVATED PRESSURE GAS PIPING (GREATER THAN 14" W.C.) SHALL BE LABELED EVERY 40' WITH SIGNS INDICATING "ELEVATED PRESSURE".
   G. ALL PIPE HANGERS AND SUPPORTS SHALL BE STANDARD PRODUCTS OF GRINNELL, FEE AND MASON, OR ANVIL. HANGER SPACING SHALL BE IN ACCORDANCE WITH MSS-SP-69.
   H. SLEEVES
      1. PROVIDE, SET, AND PROPERLY LOCATE PIPE SLEEVES AS REQUIRED FOR THIS WORK. ALL SLEEVES SHALL BE OF SUFFICIENT SIZE TO PERMIT PIPE MOVEMENT DUE TO EXPANSION AND CONTRACTION AND TO ACCOMMODATE PIPE INSULATION.
      2. INTERIOR PARTITIONS: 16 GAUGE GALVANIZED STEEL, PACK BETWEEN PIPE AND SLEEVE WITH FIRE SAFING AND CAULK AT EACH END WITH FIRE RESISTANT SEALANT.
      3. ROOF: PROSET OR EQUAL, MANUFACTURED PVC SCHEDULE 40 PIPE SLEEVE WITH WATERPROOF SEAL. COORDINATE WITH ROOFING CONTRACTOR AND FLASH AS REQUIRED TO MAINTAIN ROOF WARRANTY.
      4. PLUMBING VENTS: FLASH ROOF VENT INTO ROOFING SYSTEM AS REQUIRED BY THE ROOFING CONTRACTOR TO MAINTAIN THE EXISTING ROOF WARRANTY. ALL PLUMBING VENT TERMINALS SHALL TERMINATE A MINIMUM OF 12" ABOVE ROOF OR EQUAL TO HEIGHT OF PARAPET, WHICHEVER IS GREATER.
   I. PROVIDE CHROME PLATED ESCUTCHEONS ON ALL PIPE ENTERING FINISHED AREAS.

7. INSULATION AND DUCT LINING:
   A. ALL INSULATIONS AND ACCESSORIES SHALL HAVE A FIRE HAZARD CLASSIFICATION WITH A FLAME SPREAD RATING OF NOT OVER 25, A FUEL CONTRIBUTION RATING OF NOT OVER 50, AND A SMOKE DEVELOPMENT RATING OF NOT OVER 50, IN ACCORDANCE WITH NFPA.
   B. PIPE INSULATION (ABOVE GRADE):
      1. THE PIPE INSULATION USED SHALL HAVE A THERMAL CONDUCTIVITY OF 0.27 BTU PER IN/HR*SQ-FT*°F OR LESS.
      2. FIBERGLASS INSULATION WITH FACTORY APPLIED VAPOR BARRIER, ASJ JACKET, FACTORY APPLIED PRESSURE SEALING LONGITUDE LAP JOINT, NO STAPLES, ZESTON PREMOLDED PVC FITTING COVERS. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
      3. FLEXIBLE CLOSED CELL ELASTOMERIC THERMAL INSULATION, UNSLIT OR PRESLIT WITH PRESSURE SENSITIVE ADHESIVE SYSTEM FOR CLOSURE AND VAPOR SEALING, EQUAL TO ARMSTRONG AP ARMAFLEX OR ARMAFLEX 2000.
      4. INSULATION SCHEDULE:
         a. DOMESTIC COLD WATER: 1/2"
   C. DUCTWORK THERMAL INSULATION (INTERIOR):
      1. DUCT COVERING: 3/4 LB/CF, FIBERGLASS BLANKET WITH FACTORY APPLIED VAPOR BARRIER AND FACING. THICKNESS AS SCHEDULED, INSTALLATION IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. DUCT COVERING SHALL BE MINIMUM R-6.
         a. RECTANGULAR SUPPLY DUCT: 2"
         b. RETURN AIR DUCT: 2"

8. TESTING, BALANCING AND CLEANING:
   A. ALL PIPING SHALL BE TESTED FOR LEAKS BEFORE BEING CONCEALED IN WALL CONSTRUCTION OR COVERED WITH INSULATION.
   B. SEWER AND VENT PIPING SHALL BE HYDROSTATICALLY TESTED WITH NO LESS THAN 10 FEET OF HEAD FOR A PERIOD OF NOT LESS THAN 15 MINUTES, PER THE LOCAL PLUMBING CODE, WITH NO LEAKS.
   C. DOMESTIC WATER PIPING SHALL BE HYDROSTATICALLY TESTED AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 60 PSI, FOR A PERIOD OF NOT LESS THAN 2 HOURS, WITH NO LEAKS.
   D. NATURAL GAS SYSTEMS SHALL BE TESTED WITH COMPRESSED AIR AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE , BUT NOT LESS THAN 50 PSIG FOR A PERIOD OF 2 HOURS WITH NO LEAKS.
   E. THE INSPECTION AUTHORITY HAVING JURISDICTION SHALL BE NOTIFIED AT LEAST 24 HOURS PRIOR TO PERFORMANCE OF ALL TESTS SO THAT THEY TESTS MAY BE WITNESSED IF DEEMED NECESSARY.

9. DUCTWORK:
   A. ALL DUCTWORK UNLESS OTHERWISE INDICATED SHALL BE FABRICATED FROM GALVANIZED SHEET STEEL COMPLYING WITH ASTM A 527, LOCKFORMING QUALITY, WITH G60 ZINC COATING IN ACCORDANCE WITH ASTM A 525, AND MILL PHOSPHATIZED FOR EXPOSED LOCATIONS.
   B. DUCTWORK METAL GAUGES, REINFORCING, ETC SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS," LATEST EDITION FOR A 2" WATER GAUGE STATIC PRESSURE.

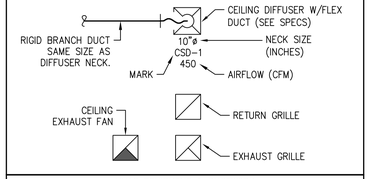
10. ROOFTOP UNITS:
   A. UNIT SHALL BE FACTORY-ASSEMBLED AND TESTED, DESIGNED FOR ROOF INSTALLATION, AND SHALL CONSIST OF COMPRESSOR(S), CONDENSERS, EVAPORATOR COILS, CONDENSER AND EVAPORATOR FANS, REFRIGERATION CONTROLS, GAS FIRED HEAT EXCHANGER, FILTERS AND DAMPERS. CAPACITIES AND ELECTRICAL CHARACTERISTICS SHALL BE AS SCHEDULED ON THE DRAWINGS.
   B. COMPRESSOR(S): UNIT SHALL INCLUDE VIBRATION ISOLATORS AND CRANKCASE HEATER. REFRIGERANT CIRCUIT SHALL INCLUDE A FILTER DRYER, SIGHT GLASS, COMPRESSOR SERVICE VALVES, AND LIQUID LINE SERVICE VALVES.
   C. SAFETY CONTROLS SHALL INCLUDE
      1. LOW PRESSURE CUTOUT, MANUAL RESET.
      2. HIGH PRESSURE CUTOUT, MANUAL RESET.
      3. COMPRESSOR MOTOR OVERLOAD PROTECTION, MANUAL RESET.
      4. ANTI-RECYCLING TIMING DEVICE.
      5. ADJUSTABLE LOW-AMBIENT LOCKOUT.
      6. OIL PRESSURE SWITCH.
   D. REFRIGERANT COIL: ALUMINUM FINS BONDED TO SEAMLESS COPPER TUBE BY MEANS OF MECHANICAL EXPANSION. AN EQUALIZING TYPE VERTICAL DISTRIBUTOR SHALL ENSURE EACH COIL CIRCUIT RECEIVES THE SAME AMOUNT OF REFRIGERANT.
   E. ECONOMIZER SHALL CONSIST OF RETURN AIR DAMPER, OUTDOOR AIR DAMPER, AND BAROMETRIC RELIEF DAMPER. PROVIDE POWERED EXHAUST FAN WITH MANUFACTURER'S STANDARD CONTROLS FOR UNITS SCHEDULED ON DRAWINGS.
   F. GAS HEAT: INDIRECT FIRED, GAS HEAT EXCHANGER, AUTOMATIC SPARK IGNITION, MANUFACTURER'S STANDARD GAS TRAIN WITH REGULATOR (IF REQUIRED), AGA APPROVED. VERIFY GAS SERVICE PRESSURE TO INDIVIDUAL ROOFTOP UNITS.
   G. ROOFTOP UNITS SHALL BE WIRED TO SHUTDOWN ON A SIGNAL FROM THE SMOKE DETECTORS AND SHALL AUTOMATICALLY RESET WHEN THE SMOKE DETECTORS ARE RESET.

M&P SYMBOLS

THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS, ETC, ARE NECESSARILY USED ON THE DRAWINGS.

HVAC EQUIPMENT & DUCTWORK

- SPIN-IN FITTING WITH MANUAL VOLUME DAMPER
- BRANCH DUCT WITH 45° RECTANGLE-ROUND BRANCH FITTING AND MANUAL VOLUME DAMPER
- ELBOW WITH TURNING VANES
- RETURN, EXHAUST, OR OUTSIDE AIR DUCT UP
- RETURN, EXHAUST, OR OUTSIDE AIR DUCT DOWN
- SUPPLY AIR DUCT UP
- SUPPLY AIR DUCT DOWN
- EQUIPMENT WITH FLEXIBLE DUCT CONNECTION
- MANUAL VOLUME DAMPER
- SQUARE TO ROUND TRANSITION
- DUCT TRANSITION
- (T) THERMOSTAT
- DUCT MOUNTED SMOKE DETECTOR



HVAC EQUIPMENT & DUCTWORK

SYMBOL	DESCRIPTION
——SS——	SANITARY SEWER (ABOVE GRADE)
— — SS — —	SANITARY SEWER (BELOW GRADE)
——CD——	CONDENSATE DRAIN
- - - - V - - - -	VENT PIPING
——G——	G = GAS PIPING LESS THAN 2 PSI
——MPG——	MPG = GAS PIPING 2 PSI
——CW——	COLD WATER PIPING
——HW——	HOT WATER PIPING
——HWR——	RECIRCULATING HOT WATER
——CA——	COMPRESSED AIR
	PIPE ELBOW DOWN
	PIPE ELBOW UP
	GATE VALVE
	BACKFLOW PREVENTER
	BALL VALVE
	PLUG VALVE
	FLOOR CLEANOUT (FCO)
	WALL CLEANOUT (WCO)
	FLOOR DRAIN
	FLOOR SINK
	HOSE BIB

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	MC	MECHANICAL CONTRACTOR
BAS	BUIDLING AUTOMATION SYSTEM	MIN	MINIMUM
BD	BACKDRAFT	NC	NOISE CRITERIA
CFM	CUBIC FEET PER MINUTE	OA	OUTSIDE AIR
DDC	DIRECT DIGITAL CONTROL	RA	RETURN AIR
DX	DIRECT EXPANSION	SA	SUPPLY AIR
EA	EXHAUST AIR	SD	SMOKE DUCT DETECTOR
FFA	FROM FLOOR ABOVE	TFA	TO FLOOR ABOVE
FFB	FROM FLOOR BELOW	TFB	TO FLOOR BELOW
GPM	GALLONS PER MINUTE	TYP	TYPICAL
IN WC	INCHES OF WATER COLUMN	UNO	UNLESS NOTED OTHERWISE
MAX	MAXIMUM	W/	WITH
MBH	1000 BTU PER HOUR	W/O	WITHOUT

ANNOTATION

- (#) PLAN WORK NOTE
- (RTU 1) MECHANICAL EQUIPMENT DESIGNATION (CONTRACTOR FURNISHED AND INSTALLED UNLESS NOTED OTHERWISE)
- (—) PLUMBING FIXTURE DESIGNATION
- (A / M1) DETAIL REFERENCE UPPER NUMBER INDICATED DETAIL NUMBER LOWER NUMBER INDICATES SHEET NUMBER

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd, #204
Kansas City, Mo 64113
Phone: 816-656-5055 Scharhag@gmail.com

MEP ENGINEER:

JSC ENGINEERS
MO COA NO. 2012006786 | KS COA NO. E-2818
1901 NW BLUE PARKWAY, UNITY VILLAGE, MO 64065
3rd FLOOR UNITY VILLAGE TOWER
phone: (816) 272-6289, email: jsmothers@jscengineers.com

NEW BUILDING FOR **PANERA BREAD** LOT 2

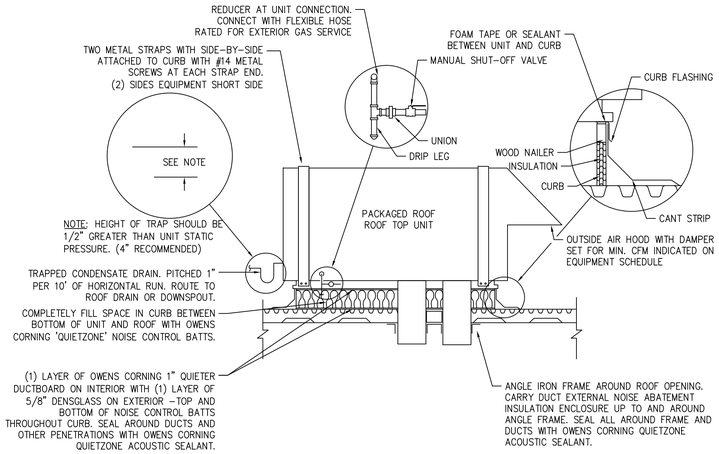
STATE OF MISSOURI
JUSTIN R. SMOTHERS
NUMBER PE-2012003568
PROFESSIONAL ENGINEER
05-04-2020

No.	Description	Date

MECHANICAL AND PLUMBING SPECS AND SYMBOLS

Project number 20-089
Date 05.04.2020

MP001



ROOFTOP UNIT MOUNTING DETAIL 5

SCALE : NO SCALE

RTU SCHEDULE

MARK	LOCATION	MANUFACTURER	MODEL	NOMINAL CAPACITY (TONS)	SUPPLY FAN			COOLING COIL			HEAT EXCHANGER				MIN. O/A CFM	ELECTRICAL				WEIGHT	NOTES
					CFM	ESP (IN)	HP	RFR. TYPE	TOTAL (MBH)	MIN. EER	MIN. OUTPUT (MBH)	NOM. INPUT (MBH)	MIN. EFF (%)	STAGES		VOLTS	PHASE	MCA	MOCP		
RTU-1	ROOF	LENNOX	LGH092H4B	7.5	3000	0.6	2	R-410A	93	12.5	144	180	80	2	450	208	3	39	45	1339	A-H
RTU-2	ROOF	LENNOX	LGH092H4B	7.5	3000	0.6	2	R-410A	93	12.5	144	180	80	2	450	208	3	39	45	1339	A-H
RTU-3	ROOF	LENNOX	LGH092H4B	7.5	3000	0.6	2	R-410A	93	12.5	144	180	80	2	450	208	3	39	45	1339	A-H
RTU-4	ROOF	LENNOX	LGH092H4B	7.5	3000	0.6	2	R-410A	93	12.5	144	180	80	2	450	208	3	39	45	1339	A-H

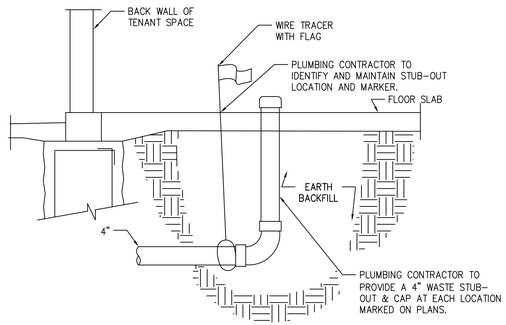
NOTES:
- A. PROVIDE WITH 14" MANUFACTURER'S STANDARD ADJUSTABLE ROOF CURB.
- B. PROVIDE FACTORY MOUNTED ECONOMIZER WITH BAROMETRIC RELIEF DAMPER.
- C. PROVIDE 7 DAY PROGRAMMABLE THERMOSTAT.
- D. PROVIDE FACTORY INSTALLED POWERED GFCI CONVENIENCE OUTLET.
- E. PROVIDE 2" 30% EFFICIENT PLEATED THROWAWAY FILTERS.
- F. DISCONNECT SWITCH FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.
- G. STARTERS FOR ALL MOTORS SHALL BE FURNISHED INTEGRAL WITH UNIT.
- H. PROVIDE GUARDS TO PROTECT CONDENSER COIL FROM HAIL OR OTHER DAMAGE.

FIXTURE BRANCH CONNECTION SCHEDULE

FIXTURE	COLD WATER	HOT WATER	WASTE	VENT
FLOOR DRAIN	-	-	3"	1 1/2"
GREASE INTERCEPTOR	-	-	4"	2"
BACKFLOW PREVENTER	2"	-	-	-
NOTE:	PIPE SIZES SHOWN ARE MINIMUM. MINIMUM SANITARY SIZE UNDERGROUND IS 2".			

PLUMBING FIXTURE SCHEDULE

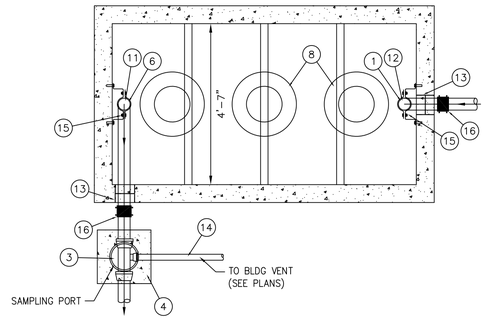
FD	FLOOR DRAIN: SOUIX CHIEF 832-3PNR, FLOOR DRAIN, PVC BODY AND CLAMPING COLLAR, ADJUSTABLE 5-1/2" ROUND NICKEL BRONZE STRAINER. PROVIDE WITH PROSET SYSTEMS "TRAP GUARD" INSERT FOR ACTUAL FLOOR DRAIN MODEL AND SIZE PROVIDED.
GI	1500 GALLON GREASE INTERCEPTOR, JENSEN PRECAST CONCRETE SHELL WITH ABS PIPING, 4" INLET AND OUTLET, WITH SAMPLE PORT
RPZ	REDUCED PRESSURE ZONE BACKFLOW PREVENTER: WATTS LF009, 2", MEETING ASSE 1013, LEAD FREE CAST BRONZE BODY, QUARTER TURN TESTING COCKS, QUARTER TURN BALL VALVES, AND AIR GAP FITTING.

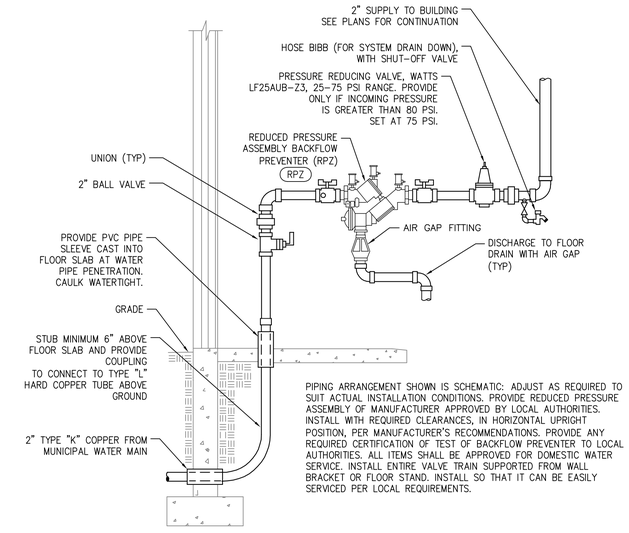


GREASE WASTE STUB-OUT 4

SCALE : NO SCALE

ITEM	DESCRIPTION
1	4" ABS INLET PIPE
2	4"x4"x2" TEE WITH 2" PIPE TO BUILDING VENT
3	GRADE CLEANOUT CAP (SEE SPECIFICATIONS)
4	CONCRETE PAD
5	4"x4"x4" TWO-WAY CLEANOUT TEE
6	4" ABS OUTLET
7	4" - 6" GRAVEL BEDDING
8	HEAVY-DUTY CAST IRON FRAME AND COVER
9	CONCRETE ADJUSTMENT RINGS
10	REINFORCE AS REQUIRED FOR SERVICE CONDITIONS
11	4" ABS 90° ELBOW
12	4" ABS TEE
13	A-LOK OR PRESS SEAL PSX PIPE/WALL CONNECTOR
14	2" VENT PIPE
15	STAINLESS STEEL PIPE SUPPORT CLAMP
16	TO JOIN DIS-SIMILAR PIPE; FERNCO STRONG BACK RC COUPLER OR MISSION FLEX-SEAL ARC COUPLER

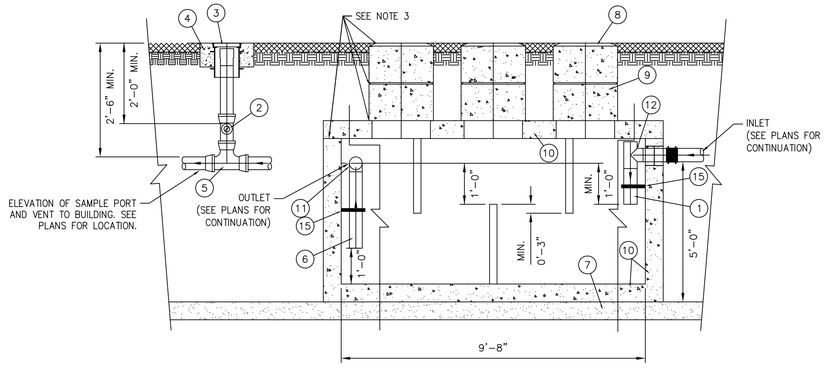




PIPING ARRANGEMENT SHOWN IS SCHEMATIC: ADJUST AS REQUIRED TO SUIT ACTUAL INSTALLATION CONDITIONS. PROVIDE REDUCED PRESSURE ASSEMBLY OF MANUFACTURER APPROVED BY LOCAL AUTHORITIES. INSTALL WITH REQUIRED CLEARANCES, IN HORIZONTAL UPRIGHT POSITION, PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE ANY REQUIRED CERTIFICATION OF TEST OF BACKFLOW PREVENTER TO LOCAL AUTHORITIES. ALL ITEMS SHALL BE APPROVED FOR DOMESTIC WATER SERVICE. INSTALL ENTIRE VALVE TRAIN SUPPORTED FROM WALL BRACKET OR FLOOR STAND. INSTALL SO THAT IT CAN BE EASILY SERVICED PER LOCAL REQUIREMENTS.

DOMESTIC WATER SERVICE ENTRY 3

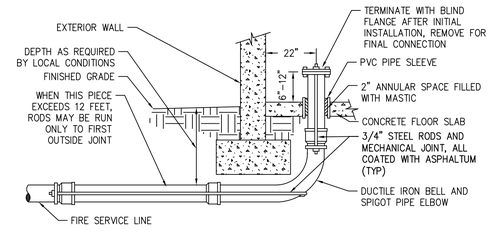
SCALE : NO SCALE



NOTES:
1) THREE COVERS AND RISERS SHOWN. TWO COVERS AND RISERS CENTERED OVER UPPER TWO BAFFLES ARE OPTIONAL.
2) INTERCEPTOR SIZE - 1500 GAL MINIMUM
3) ALL JOINTS AT THE FRAME & COVER*, CONCRETE ADJUSTMENT RINGS AND THE LID OF THE INTERCEPTOR SHALL BE SEALED WITH A MINIMUM OF TWO (2) ROWS OF 3/4 TO 1 INCH PREFORMED BUTYL JOINT SEALER AND A 6" BUTYL JOINT WRAP AROUND SLEEVE (EZ WRAP). THE ENDS OF THE 6" EZ WRAP SHALL OVERLAP BY 12".
4) PIPING ON THE INTERIOR OF THE INTERCEPTOR SHALL BE ABS WITH SOLVENT-CEMENTED JOINTS.
5) INTERCEPTOR INCLUDING ADJUSTMENT RINGS AND CASTINGS SHALL BE VACUUM TESTED FOR WATER TIGHTNESS AFTER THE BACKFILL OPERATIONS HAVE BEEN COMPLETED. A VACUUM OF 10 INCHES OF MERCURY SHALL BE DRAWN AND WITH THE VACUUM PUMP SHUT OFF THE MERCURY SHALL NOT DROP BELOW 9 INCHES WITHIN 1 MINUTE OR BELOW 5 INCHES WITHIN 5 MINUTES.

GREASE INTERCEPTOR DETAIL 2

SCALE : NO SCALE



ARRANGEMENT SHOWN IS SCHEMATIC. MODIFY TO SUIT FIELD CONDITIONS AND MEET APPLICABLE CODE REQUIREMENTS. VERIFY FOUNDATION WITH ARCHITECTURAL DRAWINGS. COORDINATE WHO IS TO PROVIDE THE FIRE SERVICE ENTRY WITH THE GENERAL CONTRACTOR OR CONSTRUCTION MANAGER PRIOR TO SUBMITTING BID.

FIRE LINE ENTRY DETAIL 1

SCALE : NO SCALE

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd, #204
Kansas City, Mo 64113
Phone: 816-656-5055 Scharhag@gmail.com

MEP ENGINEER:

JSC ENGINEERS
MO COA NO. 2012006786 | KS COA NO. E-2818
1901 NW BLUE PARKWAY, UNITY VILLAGE, MO 64065
3rd FLOOR UNITY VILLAGE TOWER
phone: (816) 272-6289, email: jsmothers@jscengineers.com

NEW BUILDING FOR **PANERA BREAD** LOT 2

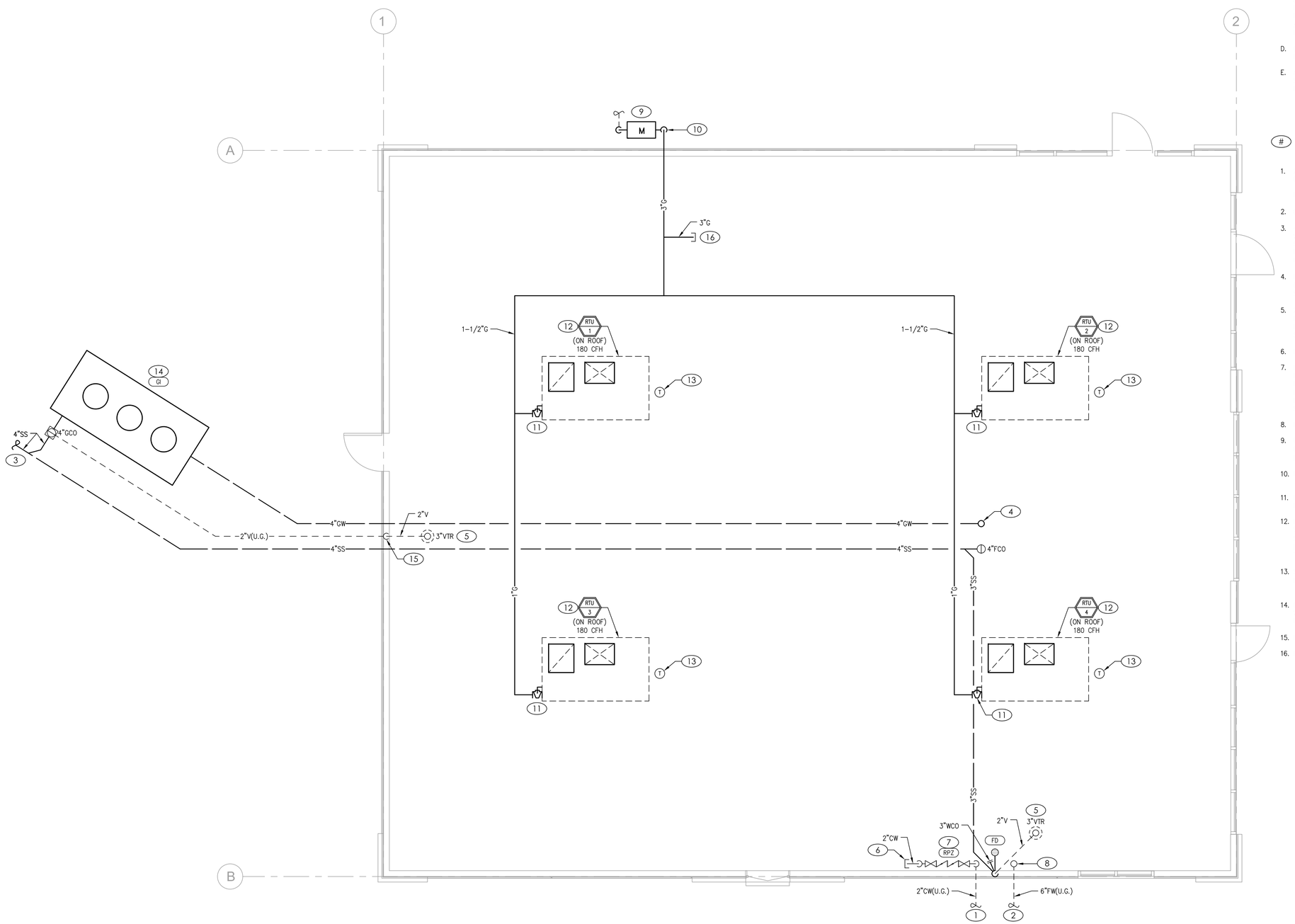
JUSTIN R. SMOTHERS NUMBER PE-2012003568 STATE OF MISSOURI PROFESSIONAL ENGINEER
05-04-2020

No.	Description	Date

MECHANICAL AND PLUMBING DETAILS AND SCHEDULES

Project number 20-089
Date 05.04.2020

MP002



MECHANICAL AND PLUMBING PLAN

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

1

NORTH

GENERAL WORK NOTES

A. ROUTE PIPING AS HIGH AND AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE ROUTING WITH ALL EXISTING CONDITIONS, EQUIPMENT, STRUCTURAL ELEMENTS, DUCTWORK, ETC.

B. COORDINATE PIPE ROUTING AWAY FROM ELECTRICAL PANELS. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS.

C. PRIOR TO SUBMITTING BID, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE PROJECT. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.

D. COORDINATE LOCATION OF ROOF MOUNTED HVAC EQUIPMENT AND ROOF PENETRATIONS WITH THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.

E. ALL WATER SERVICE INSTALLATIONS INCLUDING BACKFLOW DEVICES ARE SUBJECT TO FIELD VERIFICATION AND APPROVAL BY THE WATER DEPARTMENT INSPECTOR.

(#) KEYED PLAN NOTES

1. 2" DOMESTIC COLD WATER TO UTILITY SERVICE. SEE CIVIL PLANS FOR CONTINUATION. CONTRACTOR SHALL WORK WITH THE WATER COMPANY FOR THE INSTALLATION OF A NEW WATER MAIN ENTRANCE, INCLUDING TAP, METER, METER PIT, PIPING, ETC. FOR A COMPLETE INSTALLATION.
2. 6" FIRE WATER TO UTILITY SERVICE. SEE CIVIL PLANS FOR CONTINUATION.
3. 4" SANITARY TO UTILITY SERVICE. CONTRACTOR SHALL WORK WITH LOCAL WASTE WATER AUTHORITY AND BEAR ALL COST FOR INSTALLATION OF A NEW SEWER LINE CONNECTING INTO THE SEWER MAIN FOR A COMPLETE INSTALLATION. REFER TO CIVIL PLANS FOR CONTINUATION. COORDINATE INVERT ELEVATION WITH EXISTING SITE UTILITIES PRIOR TO START OF WORK.
4. INSTALL 4" GREASE WASTE STUB-OUT AND CAP FOR FUTURE TENANT CONNECTION. EXTEND 4" PVC UP 6" ABOVE FINISHED FLOOR. SEE DETAIL ON SHEET MP002.
5. 2" VENT UP TO 3" VENT THRU ROOF. LOCATE MINIMUM 3'-0" FROM EDGE OF ROOF AND 10'-0" FROM RTU OUTSIDE AIR INTAKE. CONTRACTOR PIPE PENETRATION WITH ROOFING CONTRACTOR SO NOT TO VOID ROOF WARRANTY. SEAL ROOF PENETRATION WEATHERTIGHT.
6. PROVIDE CAPPED 2"CW LINE AT CEILING LEVEL FOR FUTURE TENANT.
7. PROVIDE RPZ BACKFLOW PREVENTER AS SCHEDULED. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO INSTALLATION. INSTALL BACKFLOW PREVENTER 24" ABOVE FINISHED FLOOR (CENTERLINE ELEVATION) AND MINIMUM 12" CLEARANCE FRONT AND BACK. PROVIDE DRAIN FROM BFP TO FLOOR DRAIN AND DISCHARGE WITH AIR GAP. SEE INSTALLATION DETAIL ON SHEET MP002.
8. FIRE SPRINKLER RISER. SEE DETAIL ON SHEET MP002.
9. COORDINATE WITH GAS COMPANY FOR INSTALLATION OF GAS METER WITH CAPACITY FOR 1600 CFH (INCLUDING FUTURE ALLOWANCE). CURRENT DEMAND FOR METER IS 720 CFH @ 14"W.C.
10. ROUTE GAS LINE UP EXTERIOR WALL TO ROOF. ALL GAS PIPING SHOWN PAST THIS POINT IS ON ROOF.
11. PROVIDE DIRT LEG AND SHUT-OFF VALVE PRIOR TO FINAL CONNECTION AT UNIT.
12. INSTALL NEW RTU ON ROOF. COORDINATE ROOFTOP UNIT LOCATION WITH STRUCTURAL ENGINEER. PROVIDE SUPPLY AND RETURN DROPS OF EQUAL SIZE TO RTU OPENINGS. TERMINATE SUPPLY AND RETURN DROPS 24" BELOW DECK FOR EXTENSION BY TENANT. PROVIDE 3/4" CONDENSATE DRAIN WITH TRAP ROUTED TOWARDS NEAREST ROOF DRAIN.
13. SUSPEND THERMOSTAT (ENERSTAT DSL-700 DIGITAL SET-POINT) BENEATH RETURN DUCT OPENING WITH 50' OF COILED WIRE FOR INSTALLATION BY TENANT.
14. GREASE INTERCEPTOR INSTALLED BELOW GRADE PER MANUFACTURER'S WRITTEN INSTRUCTIONS. SEE INSTALLATION DETAIL ON SHEET M0002 FOR MORE INFORMATION. COORDINATE LOCATION WITH CIVIL DRAWINGS.
15. ROUTE 2"VENT UP IN WALL FROM UNDERGROUND AT THIS LOCATION.
16. PROVIDE CAPPED GAS STUB FOR FUTURE TENANT USE.

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd, #204
Kansas City, Mo 64113
Phone: 816-656-5055 Scharhag@gmail.com

MEP ENGINEER:

JSC ENGINEERS
MO COA NO. 2012006786 | KS COA NO. E-2818
1901 NW BLUE PARKWAY, UNITY VILLAGE, MO 64065
3rd FLOOR UNITY VILLAGE TOWER
phone: (816) 272-6289, email: jsmothers@jscengineers.com

NEW BUILDING FOR **PANERA BREAD** LOT 2

STATE OF MISSOURI
JUSTIN R. SMOTHERS
NUMBER PE-2012003568
PROFESSIONAL ENGINEER

05-04-2020

No.	Description	Date

MECHANICAL AND PLUMBING PLAN

Project number	20-089
Date	05.04.2020

MP101

ELECTRICAL SPECIFICATIONS

PART I – GENERAL

A. CONDITIONS

1. FURNISH AND INSTALL A COMPLETELY WIRED AND OPERATIONAL ELECTRICAL SYSTEM AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO, THESE MAJOR ITEMS.
   A. LIGHTING FIXTURES AS INDICATED AND SPECIFIED ON THE PLANS.
   B. ELECTRICAL PANELS, SERVICE, CONDUIT, WIRING, ETC., FOR ALL OUTLETS AND EQUIPMENT.
   C. TELEPHONE, TELEVISION, AND FIRE ALARM. OUTLETS AND CONDUIT AS INDICATED.

2. OBTAIN AND REVIEW ALL OTHER DRAWINGS INCLUDING REFLECTED CEILING PLAN, INTERIOR AND EXTERIOR ELEVATIONS, FURNITURE PLANS AND ALL MILL WORK DRAWINGS. COORDINATE INSTALLATION OF ALL ELECTRICAL DEVICES AND EQUIPMENT PRIOR TO ROUGH–IN.

3. OBTAIN SUBMITTAL AND SHOP DRAWINGS FROM OTHER TRADES AND EQUIPMENT TO COORDINATE INSTALLATION ACCORDINGLY.

4. INSTALLATION SHALL COMPLY WITH ALL CURRENT APPLICABLE CODES AND GOVERNING AGENCIES HAVING JURISDICTION.

5. FIRE ALARM SYSTEM, IF REQUIRED PER IBC, SHALL BE DESIGN–BUILD BY OWNER'S/GC'S FIRE ALARM CONTRACTOR. DESIGN SHALL BE IN ACCORDANCE WITH NFPA 72. FIRE ALARM CONTRACTOR SHALL SUBMIT STAMPED DRAWINGS TO AHJ FOR REVIEW AND APPROVAL. FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR TESTING AND VERIFYING THAT THE AUDIBILITY OF THE FIRE ALARM SYSTEM MEETS A MINIMUM OF 15 DBA ABOVE AMBIENT NOISE LEVELS. ADD HORNS WHERE REQUIRED TO MAINTAIN MINIMUM LEVELS.

6. PROVIDE FIRE STOP ON ALL PIPING THAT PENETRATES RATED WALLS. METHOD OF FIRE STOP SHALL MEET WALL RATING. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF FIRE RATED WALLS. THIS CONTRACTOR SHALL PROVIDE FIRE RATED ENCLOSURES AROUND ALL ROUGH–IN BOXES, PANELS, ETC. THAT ARE LOCATED IN FIRE RATED WALLS AND SHALL FIRE CAULK ALL OPENINGS IN RATED ASSEMBLIES.

B. RELATED WORK BY OTHERS

1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT, TRENCH, AND BACKFILL FOR ELECTRICAL SERVICE ENTRANCE FROM THE MAIN SERVICE TO UTILITY POINT OF ELECTRICAL SERVICE. ELECTRICAL CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE ELECTRICAL SERVICE ENTRANCE WITH SERVING UTILITY COMPANY.
2. THE ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT, TRENCH, AND BACKFILL FOR PRIMARY PHONE AND CATV SERVICE FROM THE TELEPHONE TERMINAL BOARD OR CABINET TO THE PHONE COMPANY AND CATV COMPANY POINT OF SERVICE COORDINATE WITH LOCAL UTILITY COMPANIES.

C. CODES, REGULATIONS, AND STANDARDS

1. THE INSTALLATION SHALL COMPLY WITH APPLICABLE LOCAL AND STATE CODES AND ORDINANCES, WITH THE REGULATIONS OF THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE AND WITH THE REQUIREMENTS OF THE POWER, TELEPHONE, AND CATV COMPANIES FURNISHING SERVICES TO THIS INSTALLATION.
2. THE LATEST EDITIONS OF THE FOLLOWING INDUSTRY STANDARDS, SPECIFICATIONS, AND CODES ARE MINIMUM REQUIREMENTS:
   A. THE NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION STANDARDS.
   B. THE NATIONAL ELECTRICAL CODE, INCLUDING LOCAL AMENDMENTS.
   C. UNDERWRITER LABORATORIES INCORPORATED STANDARDS.
   D. AMERICAN NATIONAL STANDARDS INSTITUTE.
   E. INTERNATIONAL BUILDING CODE.

D. INSPECTION OF SITE

1. PRIOR TO SUBMITTING A BID FOR ELECTRICAL WORK, THE CONTRACTOR SHALL VISIT THE SITE OF THE PROPOSED CONSTRUCTION AND SHALL THOROUGHLY ACQUAINT HIMSELF WITH EXISTING UTILITIES, AND WORKING CONDITIONS TO BE ENCOUNTERED, ETC. ALLOWANCE WILL NOT BE MADE FOR NONCOMPLIANCE WITH THIS CONDITION AFTER BIDDING.
2. ELECTRICAL INSTALLATION SHALL MEET THE EXISTING CONDITIONS.

E. STORAGE AND HANDLING OF MATERIAL

1. DELIVER MATERIALS AND EQUIPMENT TO THE PROJECT IN THE MANUFACTURER'S ORIGINAL, UNOPENED, LABELED CONTAINERS. PROTECT AGAINST MOISTURE, TAMPERING, OR DAMAGE FROM IMPROPER HANDLING OR STORAGE. CONTRACTOR SHALL PROTECT AND BE RESPONSIBLE FOR ANY DAMAGE TO WORK OR MATERIALS UNTIL FINAL ACCEPTANCE BY THE OWNER, AND SHALL MAKE GOOD WITHOUT COST TO THE OWNER, ANY DAMAGE OR LOSS THAT MAY OCCUR DURING THIS PERIOD.
2. ARRANGE FOR TIMELY DELIVERY OF MATERIALS AND EQUIPMENT TO THE JOB SITE IN ORDER TO MINIMIZE THE LENGTH OF TIME BETWEEN DELIVERY AND INSTALLATION.
3. COVER AND PROTECT ANY MATERIAL WHICH MAY BE AFFECTED BY THE WEATHER WHILE IN TRANSIT OR STORED AT THE PROJECT SITE. ANY MATERIAL FOUND DEFECTIVE OR NOT INSTALLED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS MAY BE REJECTED BY THE ENGINEER.

F. CLEANUP

1. KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIALS, OR RUBBISH CAUSED BY EMPLOYEES OR WORK UNDER THIS DIVISION OF THE SPECIFICATIONS. AT THE COMPLETION OF THE WORK REMOVE ALL SURPLUS MATERIALS, TOOLS, ETC., AND LEAVE THE PREMISES BROOM–CLEAN.

G. EXCAVATION, CUTTING, AND FITTING

1. PERFORM ALL EXCAVATION AND BACK FILLING REQUIRED FOR WORK PERFORMED UNDER THIS DIVISION OF THE SPECIFICATIONS. USE EXCAVATED MATERIALS FOR BACKFILL UNLESS OFF SITE MATERIALS ARE DEEMED NECESSARY.
2. PERFORM THE EXCAVATION, CUTTING, FITTING, REPAIRING, AND FINISHING OF THE WORK NECESSARY FOR THE INSTALLATION OF THE EQUIPMENT OF THIS SECTION. HOWEVER, NO CUTTING OF THE WORK OF OTHER TRADES OR OF ANY STRUCTURAL MEMBERS SHALL BE DONE WITHOUT THE CONSENT OF THE ARCHITECT.

H. DRAWINGS

1. THE DRAWINGS INDICATE THE GENERAL ARRANGEMENT AND LOCATIONS OF THE ELECTRICAL WORK DATA PRESENTED ON THESE DRAWINGS ARE AS ACCURATE AS PLANNING CAN DETERMINE, BUT FIELD VERIFICATION OF ALL DIMENSIONS, LOCATIONS, LEVELS, ETC., TO SUIT FIELD CONDITIONS IS REQUIRED. REVIEW ALL ARCHITECTURAL, STRUCTURAL, AND MECHANICAL DRAWINGS AND ADJUST ALL WORK TO MEET THE REQUIREMENTS OF CONDITIONS SHOWN. THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER ALL OTHER DRAWINGS. DISCREPANCIES BETWEEN DIFFERENT PLANS, OR BETWEEN DRAWINGS AND SPECIFICATIONS, OR REGULATIONS AND CODES GOVERNING THE INSTALLATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING BEFORE THE DATE OF BID OPENING. IF DISCREPANCIES ARE NOT REPORTED, THE CONTRACTOR SHALL BID THE GREATER QUANTITY OR BETTER QUALITY, AND APPROPRIATE ADJUSTMENTS WILL BE MADE AFTER CONTRACT AWARD. CONTRACTOR SHALL BE RESPONSIBLE TO FIELD MEASURE AND CONFIRM MOUNTING HEIGHTS AND LOCATION OF ELECTRICAL EQUIPMENT WITH RESPECT TO COUNTERS, RADIATION, ETC. DO NOT SCALE DISTANCES OFF THE ELECTRICAL DRAWINGS, USE ACTUAL BUILDING DIMENSIONS.

I. COOPERATION WITH OTHER CONTRACTORS

1. COOPERATE WITH THE OTHER TRADES SO THAT THE INSTALLATION OF THE ELECTRICAL OUTLETS AND EQUIPMENT WILL BE PROPERLY COORDINATED. CONDUIT, LIGHTING FIXTURES, AND OTHER EQUIPMENT LOCATIONS SHALL BE VERIFIED WITH OTHER TRADES TO AVOID CONFLICT WITH THE PIPING, DUCTWORK, STEEL, BEAMS, OR OTHER OBSTRUCTIONS.
2. CAREFULLY VERIFY THE LOCATIONS OF THE OUTLET BOXES AND DETERMINE THAT THEY HAVE NOT BEEN DISTURBED DURING THE INSTALLATION OF MATERIALS OF OTHER TRADES.
3. COORDINATE THE LOCATION OF THE TRENCHES AND CONDUITS FOR ELECTRICAL AND TELEPHONE UTILITY SERVICES WITH THE GENERAL CONTRACTOR.
4. COORDINATE HVAC AND PLUMBING EQUIPMENT CONNECTION REQUIREMENTS WITH HVAC AND PLUMBING CONTRACTORS.

J. RECORD DRAWINGS

1. THE ELECTRICAL CONTRACTOR SHALL MAINTAIN A SET OF DRAWINGS AT THE JOB SITE FOR THE EXCLUSIVE PURPOSE OF MAINTAINING A RECORD OF ALL WORK INSTALLED AND TO SHOW ANY DEVIATIONS FROM THE WORK INDICATED ON THE DRAWINGS.
2. AT THE COMPLETION OF THE PROJECT, ONE SET OF REPRODUCIBLE DRAWINGS, SHOWING ALL RECORD CONDITIONS, SHALL BE DELIVERED TO THE OWNER FOR ACCEPTANCE PRIOR TO FINAL PAYMENT.

PART II – PRODUCTS AND EXECUTION

A. MATERIALS

1. ALL MATERIALS SHALL BE NEW AND OF QUALITY AS SPECIFIED ON THE PLANS OR SPECIFICATIONS AND MUST CARRY THE UNDERWRITER'S LABORATORIES APPROVAL COVERING THE PURPOSE FOR WHICH THEY ARE USED, IN ADDITION TO MEETING ALL REQUIREMENTS OF THE CURRENT APPLICABLE CODES AND REGULATIONS.

B. SHOP DRAWINGS AND APPROVALS

1. THE ITEMS SPECIFIED HEREIN AND ON DRAWINGS ARE USED AS A STANDARD OF QUALITY. ANY MATERIALS OF EQUAL QUALITY AND AESTHETIC VALUE WILL BE GIVEN CONSIDERATION AS A SUBSTITUTE FOR THE MATERIALS SPECIFIED. NO APPROVAL WILL BE GIVEN TO A SPECIFIC CATALOG NUMBER, MODEL, OR TYPE OF EQUIPMENT, PRIOR TO BIDDING. AFTER BIDDING, THE DECISION OF THE ARCHITECT AND/OR ENGINEER DETERMINING EQUAL MATERIALS WILL BE FINAL.
2. THE CONTRACTOR SHALL SUBMIT SEVEN (7) IDENTICAL BOUND SETS OF SHOP DRAWINGS ON THE FOLLOWING ITEMS:
   A. LIGHTING FIXTURE CUTS AND PERFORMANCE DATA.
   B. OUTLINE DRAWINGS AND DATA SHEETS OF EACH PANELBOARD, LOAD CENTERS, AND DISTRIBUTION PANELS.
   C. OUTLINE DRAWINGS OF ALL SWITCH GEAR COMPONENTS.
   D. WIRING DEVICES AND COVERPLATES.
   E. ALL CIRCUIT BREAKERS INSTALLED IN PANELBOARDS, LOAD CENTERS, AND DISTRIBUTION PANELS.
3. SUBMIT ITEMS AT ONE TIME IN A NEAT AND ORDERLY MANNER WITHIN 15 DAYS OF AWARD OF CONTRACT. PARTIAL SUBMITTALS WILL NOT BE ACCEPTABLE.

C. SYSTEM GROUNDING

1. GROUNDING SHALL COMPLY WITH REQUIREMENTS OF ARTICLE 250. ALL EXPOSED NONCURRENT CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT, METALLIC RACEWAY SYSTEMS, METALLIC CABLE ARMOR, GROUNDING CONDUCTOR OF NONMETALLIC SHEATHED CABLES, GROUNDING CONDUCTOR IN NONMETALLIC RACEWAYS, AND GROUNDED CONDUCTORS OF THE WIRING SYSTEM SHALL BE GROUNDED.
2. GROUNDING CONDUCTOR (NEUTRAL) OF THE WIRING SYSTEM SHALL BE CONNECTED TO THE SYSTEM GROUNDING CONDUCTOR AT A SINGLE PLACE IN EACH SYSTEM BY REMOVABLE BONDING JUMPERS, SIZED ACCORDING TO THE APPLICABLE PROVISIONS OF THE NATIONAL ELECTRICAL CODE. THE GROUNDED CONDUCTOR (NEUTRAL) TO THE GROUNDING CONDUCTOR CONNECTION SHALL BE LOCATED IN THE ENCLOSURE FOR THE SYSTEM'S OVERCURRENT PROTECTION OR WHERE OTHERWISE INDICATED ON THE PLANS OR SPECIFICATIONS.
3. A GROUND BUS SEPARATE FROM THE NEUTRAL BUS SHALL BE PROVIDED IN ALL DISTRIBUTION PANELS AND PANELBOARDS. PROPER TORQUE ON GROUND BUS SHALL BE VERIFIED, PER MANUFACTURER'S RECOMMENDATIONS, PRIOR TO ENERGIZING EQUIPMENT.
4. GROUND BUSES AND NEUTRAL BUSES IN ALL DISTRIBUTION PANELS, LOAD CENTERS, PANELBOARDS, AND THOSE PROVIDED IN ANY EQUIPMENT SHALL BE ISOLATED EXCEPT WHERE REQUIRED TO BE CONNECTED AS SPECIFIED ABOVE FOR THE SERVICE ENTRANCE
5. WHEN INDICATED ON THE DRAWINGS, EQUIPMENT GROUNDING CONDUCTORS SHALL BE EXTENDED FROM THE GROUND BUS IN THE DISTRIBUTION EQUIPMENT TO THE RECEPTACLE, FIXTURE OR DEVICE LUGS WHERE THEY ARE PROVIDED. WHERE LUGS ARE NOT PROVIDED, EQUIPMENT GROUNDING CONDUCTORS SHALL BE CONNECTED TO EQUIPMENT ENCLOSURES. THE CONNECTIONS SHALL BE ARRANGED SUCH THAT REMOVAL OF THE RECEPTACLE, EQUIPMENT GROUND CONDUCTORS, OR GROUND JUMPERS FROM GROUND BUSING SHALL NOT AFFECT THE GROUND SYSTEM.
6. RACEWAYS MAY NOT BE USED AS A GROUNDING CONDUCTOR FOR POWER AND LIGHTING CIRCUITS. ALL CONDUIT SHALL HAVE SEPARATE CODE SIZED GREEN GROUND WIRE INSTALLED IN THE CONDUIT TO INSURE A CONTINUOUS GROUNDING PATH.
7. IN INACCESSIBLE LOCATIONS, MAKE CONNECTIONS BY EXOTHERMIC WELD PROCESS.
8. IN ACCESSIBLE LOCATIONS, CONNECTIONS SHALL BE MADE WITH BOLTED THROUGH, APPROVED SOLDERLESS BRONZE GROUNDING DEVICES.

D. WIRE

1. CONDUCTOR SIZES SHOWN ON THE DRAWINGS ARE BASED ON COPPER WIRE. UNLESS OTHERWISE SPECIFIED, ALL WIRE SHALL BE TYPE XHHW OR SE FOR FEEDERS OR BRANCH CIRCUITS LARGER THAN 4 AWG, TYPE THHN/THWN INSULATION FOR FEEDERS AND BRANCH CIRCUITS 4 AWG AND SMALLER. ALL BRANCH CIRCUIT WIRING SHALL BE COPPER.
2. ALUMINUM CONDUCTORS MAY BE UTILIZED FOR SERVICE ENTRANCE AND PANEL FEEDERS. CONDUCTORS SHALL BE ALUMINUM ALLOW AA–8000 SERIES.
3. THE WIRES SHALL BE MARKED WITH COLOR TO SIMPLIFY CIRCUIT IDENTIFICATION. UNLESS OTHERWISE REQUIRED BY LOCAL ORDINANCES GROUND WIRES SHALL BE GREEN, NEUTRAL WIRES SHALL BE 120V–WHITE, AND LIVE WIRES 208Y/120V AND 120/240 SHALL BE BLACK (PHASE A), RED (PHASE B), AND BLUE (PHASE C). CIRCUIT SHALL BE LABELED IN EACH J–BOX.
4. ALL CONDUCTORS SHALL BE RATED 600 VOLT.
5. SPLICES IN EXTERIOR PULL BOXES AND MANHOLES SHALL BE WEATHERPROOF USING "SCOTCHCAST" SPLICE KIT OR APPROVED EQUAL. SEAL ENDS OF CONDUITS AND DUCTS WITH "DUCTSEAL" OR APPROVED EQUAL.
6. PROVIDE SOLID CONDUCTOR FOR 12 AWG AND SMALLER.
7. ALL WIRING WITHIN RESIDENTIAL UNITS ONLY MAY BE TYPE NM CABLE.
8. NO WIRE SHALL BE INSTALLED IN THE CONDUIT SYSTEM UNTIL THE CONDUIT SYSTEM IS COMPLETE. USE MINERALAC NO. 100 OR EQUIVALENT AS A LUBRICANT TO FACILITATE THE INSTALLATION OF THE CONDUCTORS IN THE CONDUIT SYSTEM.
9. MC CABLE WITH COPPER CONDUCTORS AND GROUND WIRE MAY BE USED WHERE PERMITTED.

E. CONDUIT

1. ALL WIRING SHALL BE INSTALLED IN LISTED METALLIC CONDUIT EXCEPT AS PERMITTED IN OTHER SECTIONS. RGS, WITH A 20 MIL PVC COATING WILL BE USED WHEN IN CONTACT WITH EARTH. IMC MAY BE USED IN INDOOR LOCATIONS NOT IN CONTACT WITH THE EARTH. EMT MAY BE USED IN INDOOR LOCATIONS NOT IN CONTACT WITH EARTH, NOT IN CONCRETE SLABS OR WALLS AND NOT SUBJECT TO DAMAGE. PVC MAY BE USED IN OR BELOW CONCRETE AND DIRECT BURIED IN EARTH. FLEXIBLE STEEL CONDUIT SHALL BE USED FOR INDOOR FINAL CONNECTIONS TO EQUIPMENT IN LENGTHS NOT TO EXCEED 72". LIQUID–TIGHT FLEXIBLE STEEL CONDUIT SHALL BE FOR OUTDOOR FINAL CONNECTIONS TO EQUIPMENT NOT TO EXCEED 48".
2. WHERE CONDUIT ENTERS OUTLET BOXES, FIXTURES OR CABINETS, FIRMLY FASTEN WITH STEEL SET SCREW, COMPRESSION CONNECTORS, OR DOUBLE LOCKNUTS FOR GRC. ALL CONNECTIONS SHALL HAVE BUSHINGS OR INSULATED THROAT CONNECTORS. FIRMLY FASTEN CONDUIT TO THE BUILDING CONSTRUCTION. RUN EXPOSED CONDUIT PARALLEL TO THE BUILDING LINES, SUPPORTED BY APPROPRIATE HANGERS (UNISTRUT, T & B OR APPLETON, OR EQUAL).
3. COVER METALLIC CONDUIT IN CONTACT WITH EARTH WITH POLYETHYLENE TAPED SPIRAL WRAPPED, 1/2 LAPPED TO PROVIDE 20 MIL. THICKNESS. TAPE SHALL BE SCOTCH NO. 50 TAPE. CONDUIT AND DUCTS NOT UNDER BUILDINGS AND FEEDER DUCTS SHALL BE INSTALLED PER N.E.C. 300–5. MAKE JOINTS WITH COMPOUND TO BE WATERTIGHT.
4. SCHEDULE 40 PVC CONDUIT SHALL BE PERMITTED UNDERGROUND WITH PROPER FITTINGS, ALL UL APPROVED AND CEMENTED JOINTS. PENETRATIONS THROUGH FLOOR SLABS AND BENDS GREATER THAN 22° SHALL BE WRAPPED RIGID GALVANIZED STEEL ELBOWS.
5. FITTINGS AND CONDUIT BODIES SHALL BE STEEL. DIECAST FITTINGS ARE NOT ACCEPTABLE.
6. CONDUIT SIZES SHALL BE AS REQUIRED BY CODE AND AS INDICATED OR SPECIFIED.
7. ALL EMPTY CONDUIT SYSTEMS SHALL HAVE A 200 LB. TEST NYLON PULL STRING TO FACILITATE INSTALLATION OF FUTURE WIRE.
8. WIRING, CONDUITS, AND OUTLETS SHALL BE CONCEALED WITH THE BUILDING STRUCTURE, EXCEPT THAT CERTAIN MOTOR AND LIGHTING FEEDER CONDUITS MAY BE RUN EXPOSED IN CERTAIN AREAS AS INDICATED ON THE DRAWINGS.
9. CONDUIT PENETRATION THROUGH ROOF SHALL HAVE ROOF FLASHING WITH CAULK TYPE COUNTER FLASHING SLEEVE. INSTALLATION SHALL BE WATERTIGHT.
10. CONDUITS SHALL BE ROUTED PARALLEL AND PERPENDICULAR TO THE STRUCTURE.

F. OUTLET, PULL, AND JUNCTION BOXES

1. EACH SWITCH, LIGHT. RECEPTACLE OR OTHER OUTLET, INSTALLED IN RESIDENTIAL UNITS, SHALL BE PROVIDED WITH A CODE SIZED, PLASTIC OUTLET BOX. JUNCTION AND PULL BOXES SHALL BE CODE SIZED, PLASTIC OR METAL OUTLET BOX. ALL OTHER OUTLET BOXES SHALL BE STEEL
2. BOXES INSTALLED IN POURED CEMENT FLOORS SHALL BE FLUSH TYPE CAST IRON OR STEEL WITH WATERTIGHT GASKETED COVERS. WHERE BOXES ARE INSTALLED IN FLOORS WITH TILE OR CARPET FLOOR COVERING, COVERS SHALL BE OF THE RECESSED TYPE TO ACCOMMODATE THE FLOOR COVERING.
3. BOXES INSTALLED FOR THE ALARM, COMPUTER, AND SECURITY SYSTEM SHALL BE PROVIDED WITH APPROPRIATE COVER PLATES.
4. BOXES FOR TELEPHONE, COMPUTER, T.V., FIRE ALARM, SECURITY, AND SIMILAR SYSTEMS SHALL BE MINIMUM 2–1/8" DEEP.

G WIRING DEVICES

1. WALL SWITCHES SHALL BE SPECIFICATION GRADE AC SILENT TYPE SWITCHES, 20A 120/277 VOLT.
2. RECEPTACLES SHALL BE SPECIFICATION GRADE, DUPLEX TYPE. NEMA5–20R, 20 AMPERE, 120VOLT GROUNDED TYPE. SPECIAL APPLICATION RECEPTACLES SHALL BE INDICATED ON PLANS. MOUNT WITH THE GROUND DOWN.
3. DEVICE PLATES SHALL BE EQUAL TO SIERRA SMOOTH–LINE PLASTIC WALL PLATES. COLOR SHALL BE WHITE, UNLESS OTHERWISE NOTED.
4. RECEPTACLES IN OUTDOOR AND WET LOCATIONS SHALL BE INSTALLED WITH A HINGED OUTLET COVER/ENCLOSURE CLEARLY MARKED AND U.L. LISTED SUITABLE FOR WET LOCATIONS WHILE IN USE, EQUAL TO TAYMAC SPECIFICATION GRADE.

H. SERVICE ENTRANCE SECTION

1. THE SERVICE ENTRANCE EQUIPMENT SHALL BE AS INDICATED ON THE DRAWINGS. EQUIPMENT SHALL CARRY THE U.L. LABEL AND SHALL CONFORM TO THE POWER COMPANY REGULATIONS.
2. SERVICE ENTRANCE EQUIPMENT SHALL BE PROVIDED WITH A FULLY RATED COPPER OR ALUMINUM BUS. HORIZONTALLY TAPERED BUSSING SHALL NOT BE ALLOWED.

I. DISTRIBUTION PANELS

1. DISTRIBUTION PANELS SHALL BE PROVIDED WITH FULLY RATED COPPER OR ALUMINUM BUS. HORIZONTAL TAPERED BUSSING SHALL NOT BE ALLOWED
2. ACCEPTABLE MANUFACTURERS – CUTLER HAMMER, SEIMENS, SQUARE D OR GENERAL ELECTRIC
3. FACTORY ASSEMBLED DEAD FRONT, METAL ENCLOSED, AND SELF–SUPPORTING SWITCH BOARD ASSEMBLY CONFORMING T NEMA PB 2 AND UL 891, AND COMPLETE FROM INCOMING LINE TERMINALS TO LOAD SIDE TERMINATIONS.
4. LINE AND LOAD TERMINATIONS: ACCESSIBLE FROM FRONT ONLY OF THE SWITCH BOARD. SUITABLE FOR CONDUCTOR MATERIALS AND NUMBER OF CONDUCTORS USED.
5. BUS CONNECTIONS: BOLTED. ACCESSIBLE FROM FRONT FOR MAINTENANCE. PROVIDE BELLEVILLE WASHERS FOR PROPERLY TORQUE ALL CONNECTIONS
6. PROVIDE FULLY–RATED NEUTRAL BUS AND FULLY RATED GROUND BUS MATCHING MATERIAL USED FOR MAIN BUS.
7. FUTURE PROVISIONS: FULLY EQUIP SPACES FOR FUTURE DEVICES WITH BUSSING AND BUS CONNECTIONS SUITABLY INSULATED AND BRACED FOR SHORT CIRCUIT CURRENTS. CONTINUOUS CURRENT RATING AS INDICATED ON DRAWINGS.
8. ALL CIRCUIT BREAKERS SHALL BE BOLT–ON TYPE.

J. PANEL BOARDS

1. CIRCUIT BREAKER TYPE AS INDICATED ON DRAWINGS. UNLESS INDICATED OTHERWISE, ALL PANELS SHALL HAVE PANEL HAVE PANEL BOARD TYPE CONSTRUCTION WITH BOLT–ON CIRCUIT BREAKERS FOR 3ø PANELS
2. MANUFACTURERS SHALL BE GENERAL ELECTRIC, SQUARE D, SEIMENS, CUTLER–HAMMER WITH VOLTAGE, SIZES, AND RATINGS AS INDICATED ON DRAWINGS.
3. THE CIRCUIT BREAKERS SHALL BE OPERABLE IN ANY POSITION AND BE REMOVABLE FROM THE FRONT OF THE PANEL BOARD WITHOUT DISTURBING THE ADJACENT UNITS. BRANCH BREAKERS SHALL BE OF SUCH DESIGN THAT COMBINATION OF SINGLE–POLE, DOUBLE–POLE, AND THREE–POLE BREAKERS CAN BE ASSEMBLED ON THE SAME PANEL. EACH BRANCH CIRCUIT SHALL BE CLEARLY NUMBERED. BRANCH AND MAN TERMINALS SHALL BE SOLDERLESS TYPE. HANDLE TIES TO FORM MULTI–POLE BREAKERS NOT ACCEPTABLE.

L. LIGHTING FIXTURES

1. PROVIDE ALL LIGHTING FIXTURES, WIRED AND CONNECTED. THE DRAWINGS INDICATE THE FIXTURES FOR EACH LOCATION. PROVIDE LAMPS FOR ALL FIXTURES. THE LAMPS SHALL BE BY THE SAME MANUFACTURER. VERIFY CEILING CONSTRUCTION BEFORE ORDERING RECESSED UNITS. PROVIDE PLASTER FRAMES AND HANGERS AS REQUIRED. CEILING CONSTRUCTION, ARCHITECTURAL ACCESSORIES, VOLTAGE, AND BALLASTS TO MEET THE EXISTING CEILING CONDITION.

M. LIGHTING CONTROL

1. FURNISH AND INSTALL TIME SWITCHES, PHOTOCELLS, CONTRACTORS AND FULL LIGHTING CONTROL SYSTEMS AS REQUIRED FOR LIGHTING CONTROLS INDICATED ON THE DRAWINGS.
2. TIME SWITCHES SHALL BE EQUAL TO PARAGON, GENERAL ELECTRIC, TORK, OR INTERMATIC AND SHALL HAVE SIZE AND NUMBER OF POLES AS REQUIRED.
3. PHOTOCELLS SHALL BE EQUAL TO TORK OR INTERMATIC WITH VOLTAGE AS INDICATED.

N. TELEPHONE AND CABLE TELEVISION SYSTEMS

1. TELEPHONE WALL OUTLETS SHALL CONSIST OF STANDARD BOXES MOUNTED 18" ABOVE THE FLOOR UNLESS OTHERWISE INDICATED. PROVIDE A TERMINAL MOUNTING BOARD FOR THE INCOMING SERVICE CABLE.
2. CABLE TELEVISION OUTLETS SHALL CONSIST OF STANDARD BOXES MOUNTED 18" ABOVE THE FLOOR UNLESS OTHERWISE INDICATED. PROVIDE A TERMINAL MOUNTING BOARD FOR THE INCOMING SERVICE CABLE.

O. GUARANTEE

1. GUARANTEE ALL MATERIAL FURNISHED AND ALL WORKMANSHIP PERFORMED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF WORK. ANY DEFECTS DEVELOPING WITHIN THIS PERIOD, TRACEABLE TO MATERIAL FURNISHED AS A PART OF THIS SECTION OR WORKMANSHIP PERFORMED HEREUNDER, SHALL BE MADE GOOD AT NO EXPENSE TO THE OWNER.

SYMBOLS LEGEND

NOTE: THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS, ETC, ARE NECESSARILY USED ON THE DRAWINGS.

▭ ▭ ⊢⊣	FLUORESCENT OR LED FIXTURE (SEE SCHEDULE)
◩	FIXTURE WITH EMERGENCY BATTERY BALLAST UNIT
▽—▽	TRACK LIGHT
⊘	DOWNLIGHT FIXTURE WITH EMERGENCY BATTERY BALLAST UNIT
⊘┤	WALL MOUNTED FIXTURE WITH EMERGENCY BATTERY BALLAST UNIT
○	DOWNLIGHT FIXTURE
○┤	WALL MOUNTED FIXTURE
¤	PENDANT MOUNTED FIXTURE
◐	WALL WASHER
⊗	SINGLE FACE EXIT SIGN – UNIVERSAL MOUNTED
↑⊗	SINGLE FACE EXIT SIGN W/ DIRECTIONAL ARROWS – UNIVERSAL MTD
↑⊗↑	DOUBLE FACE EXIT SIGN W/ DIRECTIONAL ARROWS – UNIVERSAL MTD
◁▭▷	DUAL HEADED EMERGENCY UNIT
◁⧓▷	COMBO DUAL HEADED EMERGENCY AND EXIT SIGN UNIT
A	LETTER INDICATES LIGHT FIXTURE AS INDICATED ON FIXTURE SCHED
S	SINGLE POLE SWITCH @ +48" UNLESS NOTED
S_{abc}	SWITCH BANK @ +48" UNLESS NOTED. LOWER CASE LETTER INDICATES FIXTURE CONTROLLED.
S_2	2 POLE SWITCH @ +48" UNLESS NOTED
S_3	3–WAY SWITCH @ +48" UNLESS NOTED
S_4	4–WAY SWITCH @ +48" UNLESS NOTED
S_D	DIMMER SWITCH – SIZE AS REQUIRED @ +48" UNLESS NOTED
S_{3D}	3–WAY DIMMER SWITCH – SIZE AS REQUIRED @ +48" UNLESS NOTED
S_{3Dxy}	3–WAY DIMMER SWITCH BANK @ +48" UNLESS NOTED. LOWER CASE LETTER INDICATES FIXTURE CONTROLLED.
S_S	SWITCH SENSOR @ +48" UNLESS NOTED
S_M	MANUAL MOTOR STARTER
(OS)	OCCUPANCY SENSOR
S_{OSa}	WALL SWITCH WITH OCCUPANCY SENSOR. TWO BUTTON DIGITAL LOW VOLTAGE WALL SWITCH. PROVIDES ON/OFF/0–10V DIMMING. SWITCH @ +48" UNLESS NOTED. LOWER CASE LETTER INDICATES FIXTURE CONTROLLED.
S_{Da}	TWO BUTTON DIGITAL LOW VOLTAGE WALL SWITCH. PROVIDES ON/OFF/0–10V DIMMING. SWITCH @ +48" UNLESS NOTED. LOWER CASE LETTER INDICATES FIXTURE CONTROLLED.
LC	LIGHTING CONTACTOR
(P#)	LIGHTING CONTROLS POWER PACK (SEE LIGHTING CONTROLS SCHEDULE FOR TYPE INDICATED BY "#")
(DH)	DAYLIGHT SENSOR (SEE LIGHTING CONTROLS SCHEDULE)
((X))	OCCUPANCY SENSOR (SEE LIGHTING CONTROLS SCHEDULE FOR TYPE INDICATED BY "X")
▭╡	CAMERA
(S)	SPEAKER
⊳	TELEPHONE OUTLET@ +18" UNLESS NOTED
▷	DATA OUTLET @ +18" UNLESS NOTED
▶	COMBINATION TELEPHONE/DATA OUTLET @ +18" UNLESS NOTED
TV┤	TELEVISION OUTLET @ +18" UNLESS NOTED
◇DD—	DUCT DETECTOR
(HD)	HEAT DETECTOR
(SD)	120 VOLT SMOKE DETECTOR WITH SOUNDER BASE AND BATTERY BACKUP
▱	AUXILIARY SYSTEM TERMINAL CABINET
▨	SWITCHBOARD, MOTOR CONTROL CENTER OR DISTRIBUTION BOARD
▬	120/240V., 3 PHASE, 3 WIRE PANELBOARD, UNO
CR┤	CARD READER. PROVIDE 2–GANG OUTLET BOX WITH SINGLE GANG RING AND 3/4" CONDUIT STUBBED UP IN WALL TO ABOVE ACCESSIBLE CEILING WITH BUSHING ON END OF CONDUIT @ 48" UNLESS NOTED OTHERWISE.
(G)	GENERATOR
T	TRANSFORMER
⌀	MOTOR OUTLET
□┘	DISCONNECT SWITCH – SIZE AND TYPE NOTED
☒┘	COMBINATION FUSED STARTER DISCONNECT SWITCH FUSE SIZE AS INDICATED, STARTER SIZE '1'
EF 1	MECHANICAL EQUIP. CONNECTION, SEE SCHED. ON MECH. PLAN
(J)	JUNCTION BOX
——	CONDUIT RUN CONCEALED IN WALL OR ABOVE CEILING
——	CONDUIT RUN BELOW FLOOR OR GRADE
⊜	SPECIAL HEAVY DUTY RECEPTACLE – SIZE AS NOTED. @ +18" UNLESS NOTED
⊖	1/2 SWITCHED RECEPTACLE @ +18" UNLESS NOTED
⊙	FIRE RATED POKE THRU WITH TYPE INDICATED
⊡	FLUSH FLOOR BOX WITH TYPE INDICATED
⊖	SINGLE RECEPTACLE @ +18" UNLESS NOTED
⊜	DUPLEX RECEPTACLE @ +18" UNLESS NOTED
⊕	DOUBLE DUPLEX RECEPTACLE @ +18" UNLESS NOTED
⊜ GFI	GFI DUPLEX RECEPTACLE
⊖	FULL SWITCHED RECEPTACLE
⊕	DUPLEX RECEPTACLE INSTALLED ABOVE COUNTERTOP
⊜ WP	DUPLEX RECEPTACLE WITH WEATHERPROOF COVERPLATE @ 18" UNLESS NOTED
P1–3,5,7	HOMERUN TO PANELBOARD, INFORMATION AT ARROWS ARE CIRCUIT NUMBERS AND PANELBOARD FOR TERMINATION. REFER TO ASSOCIATED NOTE FOR BRANCH CIRCUIT CONDUCTOR SIZES.
∫——∫	INDICATES 1/2" CONDUIT CONCEALED IN CEILING OR WALL WITH (3) CONDUCTORS. (1) PHASE, (1) NEUTRAL AND (1) GROUND WIRE. ALL ARE #12 AWG UNLESS NOTED OTHERWISE.
—///—	WHIP COUNT INDICATES NUMBER OF HOT CONDUCTORS

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd, #204
Kansas City, Mo 64113
Phone: 816-656-5055 Scharhag@gmail.com

MEP ENGINEER:

JSC ENGINEERS
MO COA NO. 2012006786 / KS COA NO. E-2818
1901 NW BLUE PARKWAY, UNITY VILLAGE, MO 64065
3rd FLOOR UNITY VILLAGE TOWER
phone: (816) 272-5289, email: jsmothers@jscengineers.com

NEW BUILDING FOR
PANERA BREAD
LOT 2

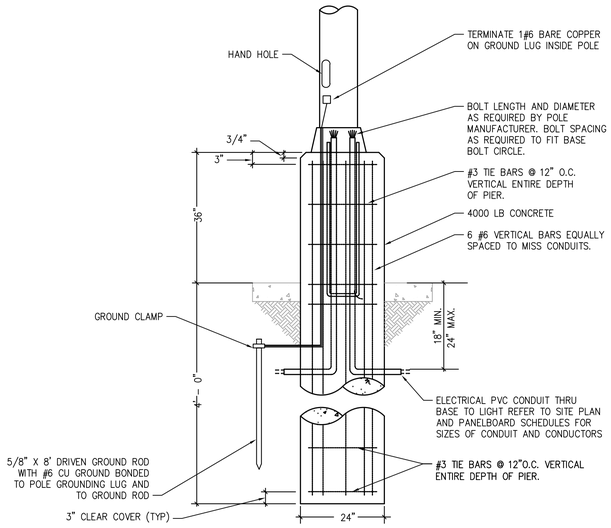
JUSTIN R. SMOTHERS
NUMBER PE-2012003568
05-04-2020

No.	Description	Date

ELECTRICAL SPECS
AND SYMBOLS

Project number 20-089
Date 05.04.2020

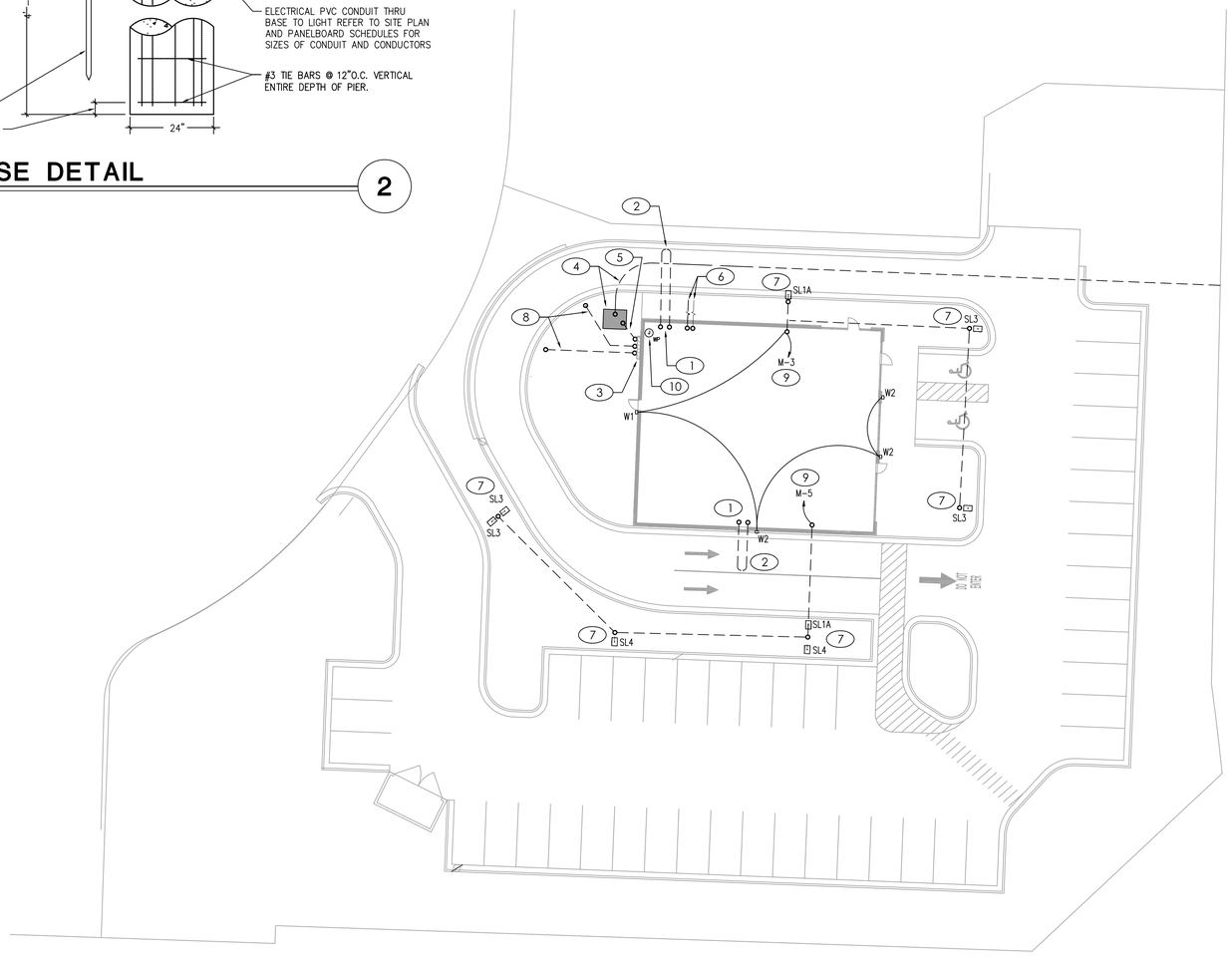
E001



POLE BASE DETAIL

SCALE : NONE

2



SITE PLAN

SCALE : 1" = 20'-0"

1

NORTH

GENERAL NOTES

A. DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. REFER TO ARCHITECTURAL PLANS OR FIELD MEASUREMENTS FOR DIMENSIONS.

B. ALL WORK SHALL COMPLY WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70) AND ALL LOCAL BUILDING CODES AND AMENDMENTS.

C. ALL ROOF AND WALL PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PROVIDE ALL REQUIRED SLEEVES, FLASHINGS, CURBS, REINFORCED ANGLES, SUPPORTING FRAMES, ETC. UNLESS THEY ARE SPECIFICALLY CALLED OUT TO BE FURNISHED BY OTHERS.

D. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACE AVAILABLE, AND WITHOUT INTERFERENCES.

E. THIS CONTRACTOR SHALL PERFORM ALL WORK INDICATED AND/OR AS REQUIRED FOR THE PROPER INSTALLATION AND OPERATION OF THE ELECTRICAL SYSTEMS.

F. THE ELECTRICAL SYSTEM DESIGN IS BASED IN PART ON THE SPECIFIED HVAC EQUIPMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE EXACT LOCATIONS AND ELECTRICAL REQUIREMENTS OF ALL HVAC EQUIPMENT BEING FURNISHED. ANY CHANGES TO THE ELECTRICAL SYSTEM DUE TO HVAC EQUIPMENT SUBSTITUTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

G. ALL WIRING SHALL BE IN APPROVED RACEWAY.

H. WIRE SIZE SHALL BE MINIMUM #12 AWG, THWN SOLID COPPER UNLESS OTHERWISE NOTED. PROVIDE GROUND WIRE WHERE REQUIRED BY CODE. INCREASE WIRE SIZE TO COMPENSATE FOR VOLTAGE DROP WHERE TOTAL LENGTH OF ANY BRANCH EXCEEDS 100 FEET.

I. MAXIMUM NUMBER OF UNGROUNDED WIRES IN ANY CONDUIT SHALL BE THREE. ADDITIONAL WIRES ARE ACCEPTABLE IF WIRE SIZE IS INCREASED TO ALLOW FOR DERATING PER CODE. PROVIDE ADDITIONAL WIRES FOR SWITCHING AS REQUIRED.

J. ALL CIRCUIT NUMBERS SHOWN NEXT TO DEVICES ARE ASSOCIATED WITH THE HOMERUN SHOWN AT A NEARBY DEVICE AND SHALL TERMINATE AT THE DESIGNATED PANELBOARD CIRCUIT BREAKER.

K. EC TO PROVIDE AND INSTALL RECEPTACLES, CAPS, AND CORDS AS REQUIRED. CAPS AND CORDS ARE TO BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

L. EC TO CONNECT ELECTRICAL SERVICE DIRECTLY TO EQUIPMENT ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

M. WHERE EQUIPMENT IS NOT PRE-WIRED, EC TO CONNECT THE ELECTRICAL SERVICE AND PROVIDE INTER-WIRING AS REQUIRED.

N. WHERE RECEPTACLES ARE PROVIDED WITH THE EQUIPMENT, EC TO PROVIDE AND INSTALL ELECTRICAL SERVICE DOWN FROM ABOVE THROUGH THE SERVICE CHASE PROVIDED WITH THE EQUIPMENT.

(#) KEYED PLAN NOTES

1. STUB CONDUIT UP IN WALL STUDS AND CAP, TYP.
2. 2" CONDUIT DETECTOR LOOP WITH PULL STRING. FINAL LOCATION TO BE DETERMINED BY TENANT PRIOR TO INSTALLATION.
3. 800A, 3ø, 4W, 208Y/120V ELECTRICAL SERVICE ENTRANCE MAIN DISTRIBUTION EQUIPMENT 'MDP' PROVIDED BY PANERA BREAD. FINAL LOCATION OF 'MDP' AND ASSOCIATED METER, CT, AND DISCONNECT TO BE DETERMINED BY TENANT PRIOR TO INSTALLATION.
4. UTILITY TRANSFORMER AND PRIMARY CONDUIT ROUTE PROPOSED BY CIVIL. COORDINATE FINAL LOCATION OF TRANSFORMER AND PRIMARY CONDUIT WITH UTILITY PROVIDER.
5. ROUTE SECONDARY ELECTRIC SERVICE CONDUIT UNDERGROUND FROM UTILITY TRANSFORMER TO MAIN SERVICE DISCONNECT.
6. PROVIDE (2) 1" CONDUITS FOR TELECOMMUNICATIONS SERVICE CABLING STUBBED UP INTO BUILDING TELECOM ROOM AND EXTENDED TO PROPERTY LINE FOR SERVICE CONNECTION. COORDINATE EXACT LOCATION OF TELECOMMUNICATIONS SERVICE CONNECTION AT PROPERTY LINE WITH SERVICE PROVIDER.
7. SITE LIGHTING POLE LOCATION. ROUTE 1" CONDUIT UNDERGROUND INTO POLE BASE AS SHOWN IN DETAIL 2 ON THIS SHEET.
8. PROVIDE (1) 1" CONDUIT FOR POWER AND (1) 1-1/4" CONDUIT FOR DATA TO DRIVE-THRU SPEAKER POST AND REVIEW BOARD AND ROUTE BACK TO BUILDING ELECTRICAL ROOM.
9. ROUTE CIRCUIT THROUGH PHOTO SENSOR EN ROUTE TO DESIGNATED PANEL AND BREAKER. MAKE CONNECTION TO BYPASS PUSHBUTTON CONTROL PER MANUFACTURER'S RECOMMENDATIONS.
10. PROVIDE PHOTOCELL FOR LIGHTING CONTROL OVERRIDE. MOUNT TO PARAPET AND FACE NORTH. MOUNT AND MAKE CONNECTIONS PER MANUFACTURER'S RECOMMENDATIONS.

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd, #204
Kansas City, Mo 64113
Phone: 816-656-5055 Scharhag@gmail.com

MEP ENGINEER:
JSC ENGINEERS
MO COA NO. 2012006786 | KS COA NO. E-2818
1901 NW BLUE PARKWAY, UNITY VILLAGE, MO 64065
3rd FLOOR UNITY VILLAGE TOWER
phone: (816) 272-6289, email: jsmothers@jscengineers.com

NEW BUILDING FOR **PANERA BREAD** LOT 2

STATE OF MISSOURI
JUSTIN R. SMOTHERS
NUMBER PE-2012003508
PROFESSIONAL ENGINEER

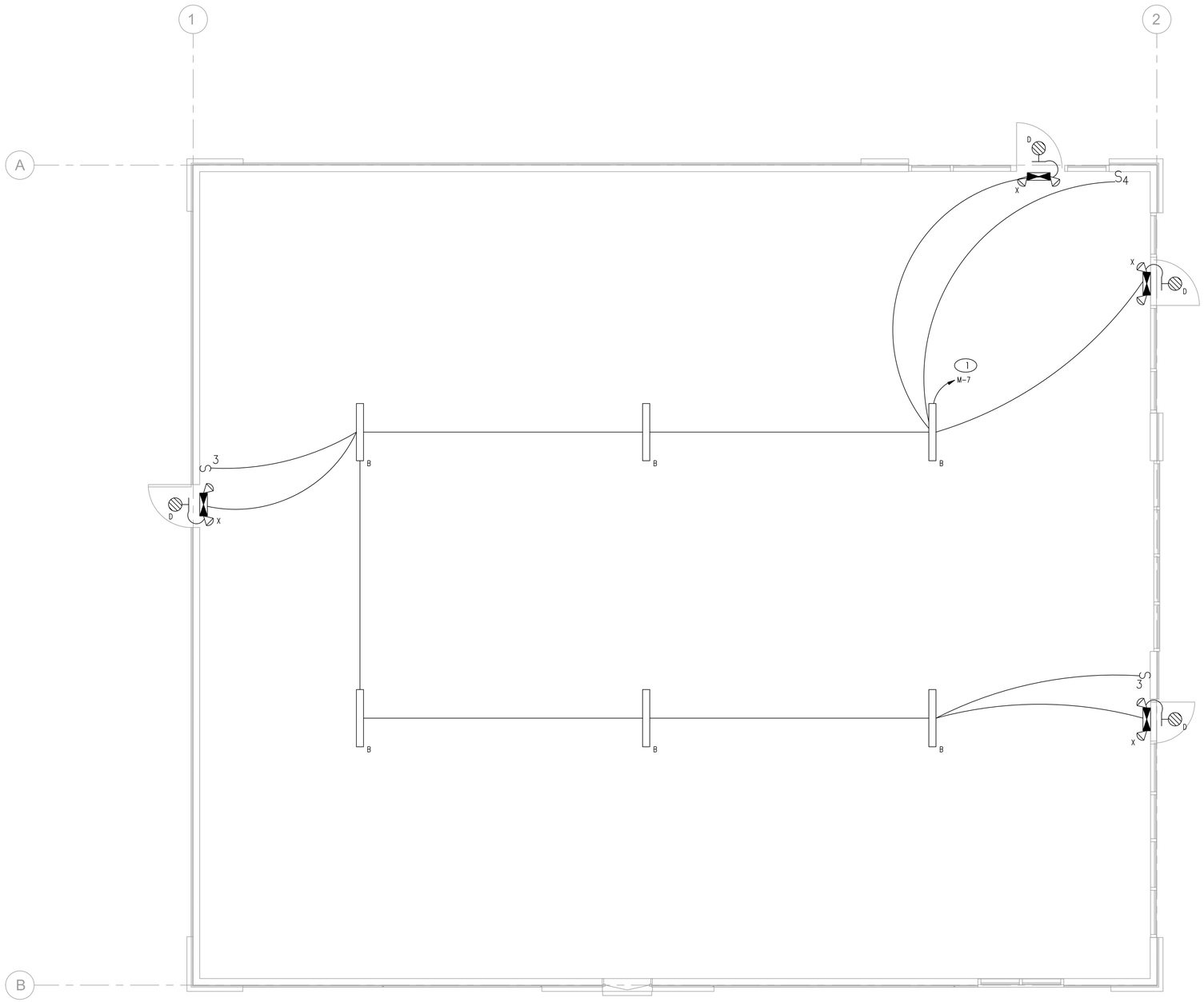
05-04-2020

No.	Description	Date

ELECTRICAL PLANS: SITE

Project number	20-089
Date	05.04.2020

E100



LIGHTING PLAN

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

1

NORTH

GENERAL NOTES

A. DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. REFER TO ARCHITECTURAL PLANS OR FIELD MEASUREMENTS FOR DIMENSIONS.

B. ALL WORK SHALL COMPLY WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70) AND ALL LOCAL BUILDING CODES AND AMENDMENTS.

C. ALL ROOF AND WALL PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PROVIDE ALL REQUIRED SLEEVES, FLASHINGS, CURBS, REINFORCED ANGLES, SUPPORTING FRAMES, ETC. UNLESS THEY ARE SPECIFICALLY CALLED OUT TO BE FURNISHED BY OTHERS.

D. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACE AVAILABLE, AND WITHOUT INTERFERENCES.

E. THIS CONTRACTOR SHALL PERFORM ALL WORK INDICATED AND/OR AS REQUIRED FOR THE PROPER INSTALLATION AND OPERATION OF THE ELECTRICAL SYSTEMS.

F. PROVIDE CONSTANT UNSWITCHED HOT LEG TO ALL LIGHTS WITH EMERGENCY BATTERY PACKS AND ALL OUTDOOR SCONCES.

G. ALL WIRING SHALL BE IN APPROVED RACEWAY.

H. WIRE SIZE SHALL BE MINIMUM #12 AWG, THWN SOLID COPPER UNLESS OTHERWISE NOTED. PROVIDE GROUND WIRE WHERE REQUIRED BY CODE. INCREASE WIRE SIZE TO COMPENSATE FOR VOLTAGE DROP WHERE TOTAL LENGTH OF ANY BRANCH EXCEEDS 100 FEET.

I. MAXIMUM NUMBER OF UNGROUNDED WIRES IN ANY CONDUIT SHALL BE THREE. ADDITIONAL WIRES ARE ACCEPTABLE IF WIRE SIZE IS INCREASED TO ALLOW FOR DERATING PER CODE. PROVIDE ADDITIONAL WIRES FOR SWITCHING AS REQUIRED.

J. ALL CIRCUIT NUMBERS SHOWN NEXT TO DEVICES ARE ASSOCIATED WITH THE HOMERUN SHOWN AT A NEARBY DEVICE AND SHALL TERMINATE AT THE DESIGNATED PANELBOARD CIRCUIT BREAKER.

K. EC TO CONNECT ELECTRICAL SERVICE DIRECTLY TO EQUIPMENT ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

L. WHERE EQUIPMENT IS NOT PRE-WIRED, EC TO CONNECT THE ELECTRICAL SERVICE AND PROVIDE INTER-WIRING AS REQUIRED.

(#) KEYED PLAN NOTES

1. REFER TO SHEETS E102 & E103 FOR PANELBOARD LOCATION INFORMATION.

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd, #204
Kansas City, Mo 64113
Phone: 816-656-5055 Scharhag@gmail.com

MEP ENGINEER:

JSC ENGINEERS
MO COA NO. 2012006786 | KS COA NO. E-2818
1901 NW BLUE PARKWAY, UNITY VILLAGE, MO 64065
3rd FLOOR UNITY VILLAGE TOWER
phone: (816) 272-6289, email: jsmothers@jscengineers.com

NEW BUILDING FOR **PANERA BREAD** LOT 2

JUSTIN R. SMOTHERS
NUMBER PE-2012003568
STATE OF MISSOURI
PROFESSIONAL ENGINEER

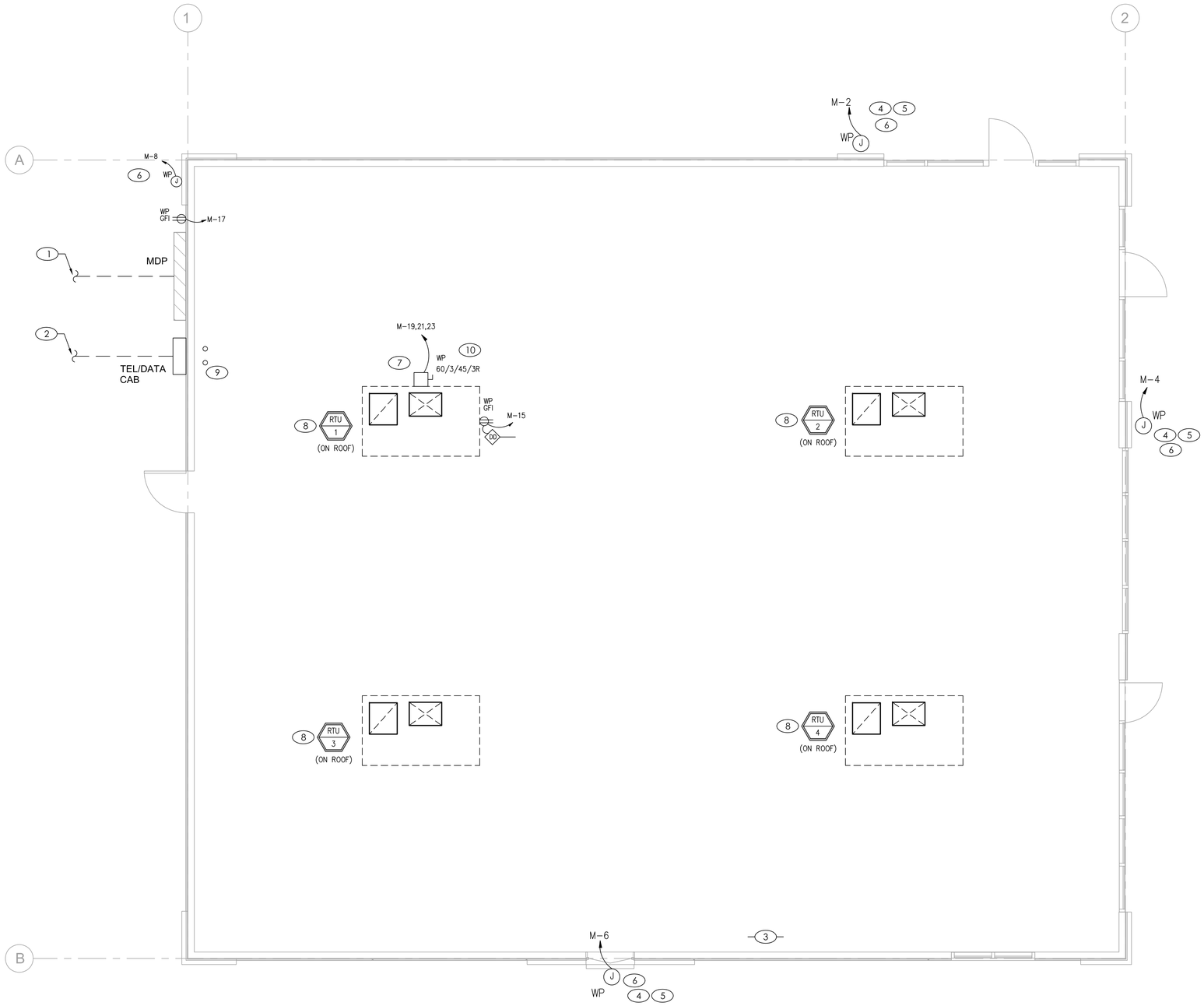
05-04-2020

No.	Description	Date

ELECTRICAL PLANS: LIGHTING

Project number	20-089
Date	05.04.2020

E101



POWER PLAN

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

1

NORTH

GENERAL NOTES

A. DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. REFER TO ARCHITECTURAL PLANS OR FIELD MEASUREMENTS FOR DIMENSIONS.

B. ALL WORK SHALL COMPLY WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70) AND ALL LOCAL BUILDING CODES AND AMENDMENTS.

C. ALL ROOF AND WALL PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PROVIDE ALL REQUIRED SLEEVES, FLASHINGS, CURBS, REINFORCED ANGLES, SUPPORTING FRAMES, ETC. UNLESS THEY ARE SPECIFICALLY CALLED OUT TO BE FURNISHED BY OTHERS.

D. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACE AVAILABLE, AND WITHOUT INTERFERENCES.

E. THIS CONTRACTOR SHALL PERFORM ALL WORK INDICATED AND/OR AS REQUIRED FOR THE PROPER INSTALLATION AND OPERATION OF THE ELECTRICAL SYSTEMS.

F. THE ELECTRICAL SYSTEM DESIGN IS BASED IN PART ON THE SPECIFIED HVAC EQUIPMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE EXACT LOCATIONS AND ELECTRICAL REQUIREMENTS OF ALL HVAC EQUIPMENT BEING FURNISHED. ANY CHANGES TO THE ELECTRICAL SYSTEM DUE TO HVAC EQUIPMENT SUBSTITUTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

G. ALL WIRING SHALL BE IN APPROVED RACEWAY.

H. WIRE SIZE SHALL BE MINIMUM #12 AWG, THWN SOLID COPPER UNLESS OTHERWISE NOTED. PROVIDE GROUND WIRE WHERE REQUIRED BY CODE. INCREASE WIRE SIZE TO COMPENSATE FOR VOLTAGE DROP WHERE TOTAL LENGTH OF ANY BRANCH EXCEEDS 100 FEET.

I. MAXIMUM NUMBER OF UNGROUNDED WIRES IN ANY CONDUIT SHALL BE THREE. ADDITIONAL WIRES ARE ACCEPTABLE IF WIRE SIZE IS INCREASED TO ALLOW FOR DERATING PER CODE. PROVIDE ADDITIONAL WIRES FOR SWITCHING AS REQUIRED.

J. FIRE ALARM, AUDIO/VIDEO AND SURVEILLANCE SYSTEMS BY OTHERS.

J. ALL CIRCUIT NUMBERS SHOWN NEXT TO DEVICES ARE ASSOCIATED WITH THE HOMERUN SHOWN AT A NEARBY DEVICE AND SHALL TERMINATE AT THE DESIGNATED PANELBOARD CIRCUIT BREAKER.

K. EC TO PROVIDE AND INSTALL RECEPTACLES, CAPS, AND CORDS AS REQUIRED. CAPS AND CORDS ARE TO BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

L. EC TO CONNECT ELECTRICAL SERVICE DIRECTLY TO EQUIPMENT ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

M. WHERE EQUIPMENT IS NOT PRE-WIRED, EC TO CONNECT THE ELECTRICAL SERVICE AND PROVIDE INTER-WIRING AS REQUIRED.

N. WHERE RECEPTACLES ARE PROVIDED WITH THE EQUIPMENT, EC TO PROVIDE AND INSTALL ELECTRICAL SERVICE DOWN FROM ABOVE THROUGH THE SERVICE CHASE PROVIDED WITH THE EQUIPMENT.

(#) KEYED PLAN NOTES

1. CONDUIT AND FEEDERS FROM UTILITY TRANSFORMER TO BUILDING/TENANT ELECTRICAL SERVICE. COORDINATE ROUTE OF TRENCHING WITH CIVIL DRAWINGS PRIOR TO BID. REFER TO SHEET E301 FOR ADDITIONAL INFORMATION.
2. PROVIDE (2) 2"C TO PROPERTY LINE FOR BUILDING/TENANT TELEPHONE/DATA SERVICES. TERMINATE AT LOCATION DIRECTED BY LOCAL SERVICE PROVIDER.
3. COORDINATE QUANTITY OF TAMPER/FLOW SWITCHES WITH FIRE PROTECTION CONTRACTOR.
4. (1) 3/4" -2 #10 & 1 #10 GND.
5. CIRCUIT VIA PHOTOCELL.
6. PROVIDE JBOX FOR TENANT SIGNAGE. COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
7. PROVIDE MANUFACTURER'S MAXIMUM RECOMMENDED FUSE SIZE.
8. 1/2"C W/ PULLSTRING TO THERMOSTAT FOR HVAC CONTROLS.
9. PROVIDE (2) 2"C CONDUITS WITH PULLSTRINGS FROM TELE/DATA ENTRY FOR TENANT TELE/DATA. COORDINATE LOCATION AND REQUIREMENTS WITH OWNER/ARCHITECT PRIOR TO ROUGH-IN.
10. (1) 3/4" -3 #8 & 1 #10 GND.

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd, #204
Kansas City, Mo 64113
Phone: 816-656-5055 Scharhag@gmail.com

MEP ENGINEER:

JSC ENGINEERS
MO COA NO. 2012006786 | KS COA NO. E-2818
1901 NW BLUE PARKWAY, UNITY VILLAGE, MO 64065
3rd FLOOR UNITY VILLAGE TOWER
phone: (816) 272-6289, email: jsmothers@jscengineers.com

NEW BUILDING FOR **PANERA BREAD** LOT 2

STATE OF MISSOURI
JUSTIN R. SMOTHERS
NUMBER PE-2012003568
PROFESSIONAL ENGINEER

05-04-2020

No.	Description	Date

ELECTRICAL PLANS: POWER

Project number	20-089
Date	05.04.2020

E102

ELECTRICAL LIGHTING SCHEDULE (OR EQUAL. VERIFY ALL SELECTIONS AND FINISHES WITH OWNER OR ARCHITECT PRIOR TO ORDERING).

FIXTURE TYPE	MANUFACTURER NAME	MANUFACTURER CATALOG NUMBER	VOLT AMPS	MOUNTING	LAMP TYPE	REMARKS	VOLT	REMARKS
SL	HUBBELL	*CL1-30L-3K-1A/3/4*	70	POLE	*70 WATT, 3000K, 8,000 LUMEN LED*	*HUBBELL CIMARRON SITE POLE. FIXTURE MOUNTED AT 25' ABOVE GRADE. DISTRIBUTION BY FIXTURE (1A/3/4)*	120	1
B	WILLIAMS	77 SERIES	64	PENDANT	*TWO (2) 32 WATT 48" T8 3500K LINEAR FLUORESCENT*	*4'-0" LONG SPECIFICATION-GRADE STRIP FIXTURE. CHAIN MOUNT FROM CEILING AT 8-6" A.F.F. ALL PARTS PAINTED WHITE AFTER FABRICATION. ELECTRONIC BALLAST.*	120	1
D	DUAL-LITE	PG SERIES	5	WALL	ONE (1) 5 WATT LED ARRAY.	*EMERGENCY LIGHT, WET LOCATION, LED, DIE-CAST ALUMINUM WET LOCATION LISTED EMERGENCY LIGHTING UNIT FOR INDOOR/OUTDOOR INSTALLATION FEATURING LONG-LIFE, HIGH-OUTPUT LEDS. FINISH DARK BRONZE. MAINTENANCE-FREE NICKEL-CADMIUM BATTERY FOR 90 MINUTE OPERATION OF LAMPS. FULLY AUTOMATIC, SOLID-STATE CHARGER WITH TEST SWITCH AND AC-ON LIGHT. PROVIDE BATTERY HEATER FOR COLD TEMPERATURE OPERATION.*	120	1
X	DUAL-LITE	LT SERIES	5	WALL	TOTAL POWER CONSUMPTION: 5.25 WATTS. EMERGENCY: TWO (2) 5 WATT MR-16 HALOGEN. EXIT: FOUR (4) HIGH-OUTPUT LEDS.	*COMBINATION EMERGENCY LIGHTING UNIT / EXIT LIGHT. UV-STABLE THERMOPLASTIC HOUSING, FINISH WHITE. ADJUSTABLE EYEBALL STYLE LIGHTING HEADS WITH GLASS LENS FOR EMERGENCY LIGHT. EXIT SIGN TO HAVE RED LETTERS WITH DIRECTIONAL ARROWS AS INDICATED ON THE PLANS. MAINTENANCE-FREE NICKEL-CADMIUM BATTERY FOR 90 MINUTE OPERATION OF LAMPS AND EXIT SIGN. FULLY AUTOMATIC, SOLID-STATE CHARGER WITH TEST SWITCH AND AC-ON LIGHT.*	120	1
W1	ACUITY	WST SERIES	14	WALL	ONE (1) 14 WATT LED ARRAY.	*WET LOCATION, LED, DIE-CAST ALUMINUM WET LOCATION LISTED WALL PACK. FORWARD THROW.*	120	1
W2	ACUITY	WST SERIES	14	WALL	ONE (1) 14 WATT LED ARRAY.	*WET LOCATION, LED, DIE-CAST ALUMINUM WET LOCATION LISTED WALL PACK. WIDE THROW.*	120	1

REMARKS:
1. FURNISH WITH AND INSTALL ALL NECESSARY HARDWARE AND MOUNTING BRACKETS.

GENERAL NOTES (APPLICABLE TO ALL FIXTURES):
1) ALL FIXTURES UTILIZING LINEAR FLUORESCENT LAMPS SHALL COMPLY WITH NEC 410.130(G) REQUIREMENTS FOR DISCONNECTING MEANS. CONTRACTOR SHALL SUPPLY SAME IF NOT STANDARD ON FIXTURE.
2) ALL BALLASTS FOR FLUORESCENT FIXTURES SHALL BE ELECTRONIC PROGRAMMED START.

PANEL: M — MDP CABINET - EXTERIOR
LOCATION: MDP CABINET - EXTERIOR
SHEET/ 1 LINE: E102/ E103
AIC RATING: 65,000
VOLTAGE: 208/120V 3PH, 4W
BUS: 400 AMPS
MAIN: M.L.O.
MOUNTING: SURFACE
CIRCUIT CODES: 1=(CONTINUOUS LOAD) 2=(NON-CONTINUOUS LOAD) 3=(RECEPTACLES) 4=(KITCHEN EQUIPMENT)

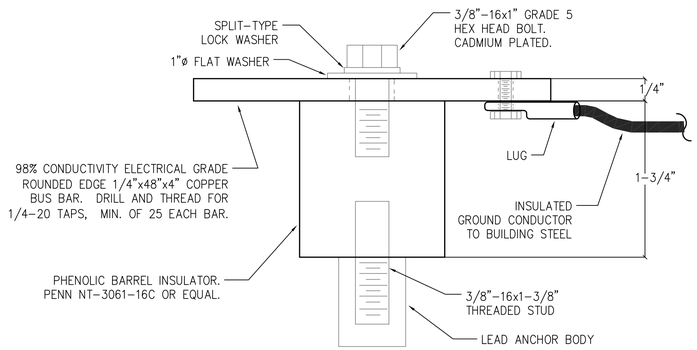
CKT NO.	CB CODE	CB TRIP	CB POLE	LOAD DESIGNATION	MISC	REC	LITE	LOAD VA	PHASES A	PHASES B	PHASES C	LOAD VA	LITE	REC	MISC	LOAD DESIGNATION	CB POLE	CB TRIP	CB CODE	CKT NO.
1	3	20	1	GENERAL OUTLETS				720	1920	//////	//////	1200				OUTDOOR TENANT SIGN *	1	20	1	2
3	2	20	1	LTG - SITE 1				900	//////	2100	//////	1200				OUTDOOR TENANT SIGN *	1	20	1	4
5	2	20	1	LTG - SITE 2				400	//////	//////	1600	1200				OUTDOOR TENANT SIGN *	1	20	1	6
7	2	20	1	SPARE					1200	//////	//////	1200				OUTDOOR TENANT SIGN *	1	20	1	8
9	2	20	1	LTG - INTERIOR/ABOVE DOOR				600	//////	600	//////					SPACE			1	10
11	2	20	1	SPARE					//////	//////	0					SPACE			1	12
13	2	20	1	SPARE					0	//////	//////					SPACE			1	14
15	2	20	1	RTU-1 OUTLET/DUCT DETECTOR				180	//////	180	//////					SPACE			1	16
17	3	20	1	RCPT - SERVICE ENTRANCE CONV.				180	//////	//////	180					SPACE			1	18
19	2	45		RTU-1				3732	3732	//////	//////					SPACE			1	20
21	2			/				3732	//////	3732	//////					SPACE			1	22
23	2		3	/				3732	//////	//////	3732					SPACE			1	24
25	2			SPACE					0	//////	//////					SPACE			1	26
27	2			SPACE					//////	0	//////					SPACE			2	28
29	2			SPACE					//////	//////	0					SPACE			2	30
31	2			SPACE					0	//////	//////					SPACE			2	32
33	2			SPACE					//////	0	//////					SPACE			2	34
35	2			SPACE					//////	//////	0					SPACE			2	36
37	2			SPACE					0	//////	//////					SPACE			2	38
39	2			SPACE					//////	0	//////					SPACE			2	40
41	2			SPACE					//////	//////	0					SPACE			2	42
								TOTAL 6852		6612	5512									

CONNECTED KVA	19.0
CONNECTED KVA (CODE 1)	4.8
CONNECTED KVA (CODE 2)	13.3
CONNECTED KVA (CODE 3)	0.9
CONNECTED KVA (CODE 4)	0.0
FEEDER DEMAND KVA	20.2
FEEDER DEMAND AMPS	56.0

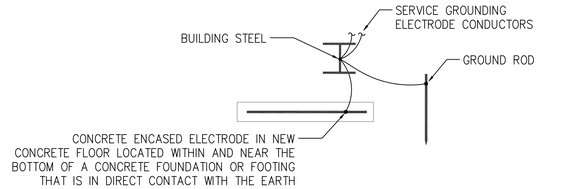
* CIRCUIT VIA PHOTOCELL TO BE PROVIDED AS PART OF THIS BID AND MOUNTED ON ROOF FACING NORTH

JOB NAME: PANERA BREAD
ISSUE DATE: 4.30.2020

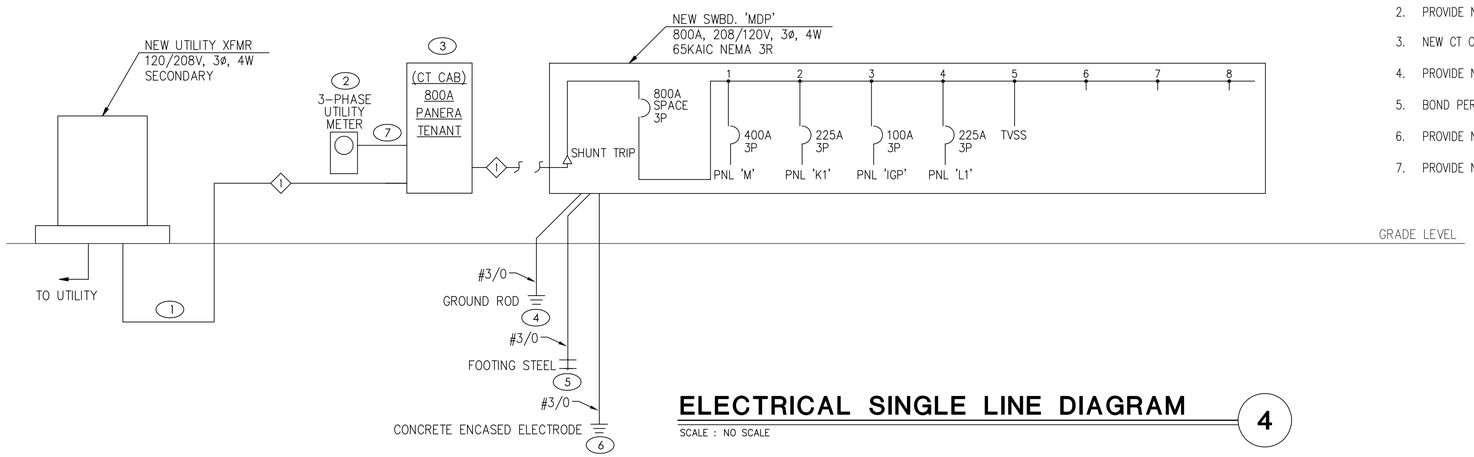
HOUSE PANEL SCHEDULE (1)
SCALE : NO SCALE



GROUND BUS MOUNTING DIAGRAM (2)
SCALE : NO SCALE



GROUNDING ELECTRODE SYSTEM DIAGRAM (3)
SCALE : NO SCALE



ELECTRICAL SINGLE LINE DIAGRAM (4)
SCALE : NO SCALE

(#) KEYED SLD NOTES

1. PROVIDE NEW CONDUCTORS TO UTILITY SOURCE. VERIFY EXACT LOCATION AND REQUIREMENTS WITH UTILITY PRIOR TO ROUGH-IN.
2. PROVIDE NEW UTILITY METER PER UTILITY REQUIREMENTS.
3. NEW CT CABINET PER UTILITY REQUIREMENTS.
4. PROVIDE NEW GROUND PER NEC 250.52(A)(5).
5. BOND PER NEC 250.52(A)(2).
6. PROVIDE NEW GROUND PER NEC 250.52(A)(3).
7. PROVIDE NEW 1 1/4" RGS CONDUIT FOR METER CONTROLS.

FEEDER SCHEDULE	
FEEDER NUMBER	CONDUIT AND CONDUCTOR SIZES
1	(2) 4" EA W/ 3 #500KCM AL

scharhag
HERMAN A. SCHARHAG COMPANY, ARCHITECTS
6247 Brookside Blvd, #204
Kansas City, Mo 64113
Phone: 816-656-5055 Scharhag@gmail.com

MEP ENGINEER:

JSC ENGINEERS
MO COA NO. 2012006786 | KS COA NO. E-2818
1901 NW BLUE PARKWAY, UNITY VILLAGE, MO 64065
3rd FLOOR UNITY VILLAGE TOWER
phone: (816) 272-6289, email: jsmothers@jscengineers.com

NEW BUILDING FOR **PANERA BREAD** LOT 2

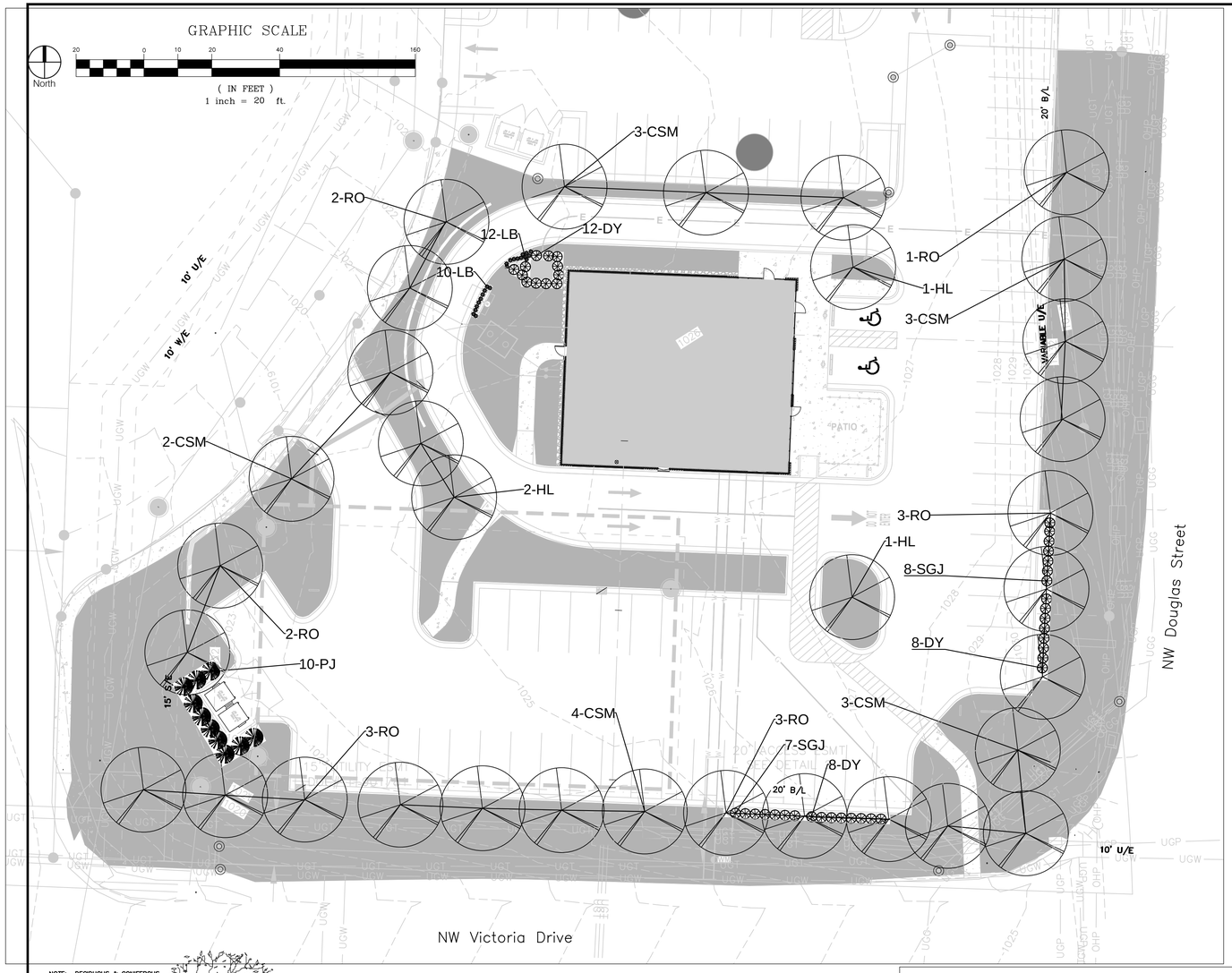
STATE OF MISSOURI — JUSTIN R. SMOTHERS — NUMBER PE-2012003568 — PROFESSIONAL ENGINEER
05-04-2020

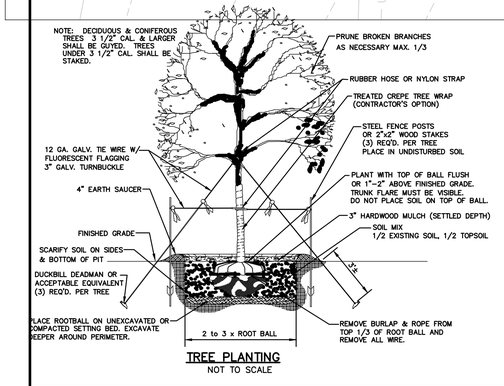
No.	Description	Date

ELECTRICAL SCHEDULES AND DIAGRAMS

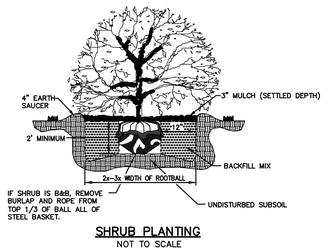
Project number	20-089
Date	05.04.2020

E103





TREE PLANTING
NOT TO SCALE



SHRUB PLANTING
NOT TO SCALE

IRRIGATION PERFORMANCE SPECIFICATION:

THE FOLLOWING CRITERIA SHALL BE CONSIDERED MINIMUM STANDARDS FOR DESIGN AND INSTALLATION OF LANDSCAPE IRRIGATION SYSTEM:

1. GENERAL – IRRIGATION SYSTEM TO INCLUDE DRIP IRRIGATION OF SHRUB BEDS ADJACENT TO BUILDINGS, SPRAY HEADS IN THE PARKING ISLANDS, AND ROTORS AROUND THE PERIMETER OF THE PARKING LOTS. HEADS SHALL THROW AWAY FROM BUILDING AND AVOID SPRAYING OVER SIDEWALKS.
2. IRRIGATION SYSTEM SHALL CONFORM TO ALL INDUSTRY STANDARDS AND ALL FEDERAL, STATE AND LOCAL LAWS GOVERNING DESIGN AND INSTALLATION.
3. WATER LINE TYPE, SIZE LOCATION, PRESSURE AND FLOW SHALL BE FIELD VERIFIED PRIOR TO SYSTEM DESIGN AND INSTALLATION.
4. ALL MATERIALS SHALL BE FROM NEW STOCK FREE OF DEFECTS AND CARRY A MINIMUM ONE YEAR WARRANTY FROM THE DATE OF SUBSTANTIAL COMPLETION.
5. THE IRRIGATION SYSTEM SHALL BE DESIGNED AND INSTALLED IN SUCH A WAY THAT ALL SYSTEM COMPONENTS OPERATE WITHIN THE GUIDELINES ESTABLISHED BY THE MANUFACTURER.
6. LAWN AREA AND SHRUB BEDS SHALL BE ON SEPARATE CIRCUITS.
7. PROVIDE WATER TAP, METER SET, METER VAULT AND ALL OTHER OPERATIONS NECESSARY TO PROVIDE WATER FOR IRRIGATION SHALL CONFORM TO LOCAL WATER GOVERNING AUTHORITY GUIDELINES AND STANDARDS.
8. BACKFLOW PREVENTION SHALL BE PROVIDED IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS.
9. IRRIGATION CONTROLLER TO BE LOCATED IN UTILITY ROOM INSIDE BUILDING, AS IDENTIFIED BY OWNER.
10. IRRIGATION CONTROLLER STATIONS SHALL BE LABELED TO CORRESPOND WITH THE CIRCUIT IT CONTROLS.
11. CONTRACTOR SHALL PROVIDE TO THE OWNER WRITTEN OPERATION INFORMATION FOR ALL SYSTEM COMPONENTS.
12. CONTRACTOR SHALL PROVIDE TO THE OWNER ALL KEYS, ACCESS TOOLS, WRENCHES AND ADJUSTING TOOLS NECESSARY TO GAIN ACCESS, ADJUST AND CONTROL THE SYSTEM.
13. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO THE OWNER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
14. AN AUTOMATIC RAIN SHUT-OFF OR MOISTURE DEVICE SHALL BE INSTALLED.
15. INSTALL SCHEDULE 40 PVC SLEEVES UNDER ALL CURBS, PAVING AND SIDEWALKS. SLEEVES TO BE TWICE THE SIZE OF THE LINE IT HOUSES.
16. INSTALL MANUAL DRAIN VALVES AT LOWEST POSSIBLE ELEVATION ON IRRIGATION MAIN TO ALLOW GRAVITY DRAINING OF MAIN DURING WINTER MONTHS. PROVIDE QUICK COUPLERS AT MULTIPLE LOCATIONS TO ALLOW FOR EASY "BLOWING OUT" OF LATERAL AND MAIN LINES.
17. ZONES OR NOZZLES SHALL BE DESIGNED WITH MATCHED PRECIPITATION RATES.
18. MINIMUM LATERAL DEPTH IS 15" AND MAIN DEPTH IS 18".
19. SUBMIT DESIGN DRAWING WITH BID TO ALLOW OWNER TO EVALUATE SYSTEM. INCLUDE CUT SHEETS OF ALL COMPONENTS AND ZONE TABLE ILLUSTRATING FLOWS AND ANTICIPATED PRESSURE AT FURTHEST HEAD.
20. AN "AS-BUILT" SCALED DRAWING SHALL BE PROVIDED TO THE OWNER BY THE CONTRACTOR AND SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
    - AS CONSTRUCTED LOCATION OF ALL COMPONENTS
    - COMPONENT NAME, MANUFACTURER, MODEL INFORMATION, SIZE AND QUANTITY
    - PIPE SIZE AND QUANTITY
    - INDICATION OF SPRINKLER HEAD SPRAY PATTERN
    - CIRCUIT IDENTIFICATION SYSTEM
    - DETAILED METHOD OF WINTERIZING SYSTEM

SUBMIT AS-BUILT DRAWING IN FULL SIZE DRAWING FORM AS WELL AS PDF ELECTRONIC FORMAT. (SCANNING FULL SIZE COPY OF PLAN IS ACCEPTABLE IF IT CAN BE PRINTED TO SCALE)

LANDSCAPING NOTES:

1. LOCATE ALL UTILITIES BEFORE LANDSCAPE CONSTRUCTION BEGINS.
2. NOTIFY OWNER REPRESENTATIVE OF ANY LAYOUT DISCREPANCIES.
3. ALL EXTERIOR GROUND WITHIN THE LIMITS OF THE CONTRACT, EXCEPT FOR SURFACES OCCUPIED BY BUILDINGS, STRUCTURES,PAVING, AND AS DIRECTED ON THE DRAWINGS AS UNDISTURBED, SHALL BE FILLED WITH SIX INCHES (6") OF TOPSOIL.
4. ALL DISTURBED AREAS NOT DESIGNATED FOR OTHER PLANTING SHALL BE SODDED. SOD SHALL CONSIST OF 90% TURF TYPE TALL FESCUE 10% BLUEGRASS.
5. WEED MAT SHALL BE USED UNDER ALL PLANTING AREAS NOT TO BE SODDED OR AS DIRECTED ON THE DRAWINGS. THE MAT SHALL BE COVERED WITH MULCH AND SECURED IN-PLACE BY A SOIL ANCHOR.
6. QUANTITIES INDICATED IN PLANT LIST ARE FOR CONVENIENCE ONLY. CONTRACTOR IS RESPONSIBLE FOR PLANT QUANTITIES AS ILLUSTRATED ON THE PLAN.
7. SHREDDED HARDWOOD MULCH SHALL BE USED AS THREE INCH (3") TOP DRESSING IN ALL PLANT BEDS AND AROUND ALL TREES. SINGLE TREES OR SHRUBS SHALL BE MULCHED TO THE OUTSIDE EDGE OF SAUCER OR LANDSCAPE ISLAND (SEE PLANTING DETAILS).
8. PROVIDE STEEL EDGING AROUND ALL SHRUB AND GROUNDCOVER BEDS. STEEL EDGING SHALL BE 1/8" x 4" WITH CLIPS AND REBAR STAKES FIVE FEET(5') ON CENTER.
9. FERTILIZE ALL PLANTS AT THE TIME OF PLANTING WITH TIME-RELEASE FERTILIZER(3-4 SLOW-RELEASE TABLETS/PELLETS).
10. IF LEANING OCCURS WITHIN ONE YEAR, TREES SHALL BE RE-STAKED (SEE PLANTING DETAILS).
11. CONTRACTOR SHALL STAKE ALL PLANT MATERIALS PRIOR TO INSTALLATION FOR THE PURPOSE OF DETERMINING CONFLICTS WITH ROCK, UTILITIES, ETC. NO PLANTS CAN BE PLANTED DIRECTLY ON ROCK OR UTILITIES. NOTIFY ARCHITECT/ENGINEER/OWNER AT ONCE IF ANY CONFLICTS OCCUR. CONTRACTOR WILL BE REQUIRED TO ADJUST PLANT LOCATIONS AT NO ADDITIONAL COST.
12. CONTRACTOR IS RESPONSIBLE FOR WATERING ALL SOD UNTIL ROOTS HAVE KNOTTED INTO SOIL AND OWNER HAS OCCUPIED THE BUILDING.
13. PROVIDE "GATOR" BAGS ON ALL TREES. REFILL AS NECESSARY UNTIL OWNER OCCUPIES THE BUILDING.
14. PROVIDE ROLLED EROSION CONTROL MAT, NORTH AMERICAN GREEN SC150BN OR APPROVED EQUAL OVER ALL NATIVE GRASS SEEDED AREAS.
15. 12" GRAVEL MOW STRIP – PROVIDE AND INSTALL: ¼" x 5" STEEL EDGING (SURE-LOC OR EQ.). ANCHOR IN PLACE WITH STAKES PER MANUFACTURER. PROVIDE AND INSTALL HEAVY DUTY WEED BARRIER FABRIC UNDER GRAVEL. PROVIDE AND INSTALL 3" DEPTH OF 1"-2" MULTI-COLORED WASHED RIVER GRAVEL, SUBMIT COLOR SAMPLE TO OWNER FOR APPROVAL.

PLANT SCHEDULE

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE/REMARKS
TREES				
CSM	15	ACER SACHARUM 'AUTUMN SPLENDOR'	CADDO SUGAR MAPLE	3" CAL. B&B
HL	4	GLEDITISA TRIACANTHOS 'SKYLINE'	SKYLINE HONEYLOCUST	3" CAL. B&B
RO	14	QUERCUS RUBRA	RED OAK	3" CAL. B&B
PJ	10	JUNIPEROUS CHINENSIS 'PERFECTA'	PERFECTA JUNIPER	6' HT. B&B
SHRUBS/GRASSES/GROUNDCOVER				
SGJ	15	JUNIPEROUS CHINENSIS 'SEA GREEN'	SEA GREEN JUNIPER	5 GAL
TX	28	TAXUS x MEDIA 'DENSIFORMIS'	DENSIFORMIS YEW	5 GAL
LB	21	PENNISETUM ALOPECURIODES 'LITTLE BUNNY'	LITTLE BUNNY FOUNTAIN GRASS	2 GAL

LANDSCAPE WORKSHEET

	ORDINANCE REQUIRMENT	REQUIRED FOR THIS SITE	PROPOSED (EXISTING AND NEW LANDSCAPE)
8.720.A.1 Street Frontage Trees (NW Douglas)	1 tree per 30 feet of street frontage	229 ft. of street frontage /30= 8 trees required	8 trees
8.720.A.2 Street Frontage Green Strip (NW Douglas)	20 feet	20 feet	20 feet
8.720.A.3 Street Frontage Shrubs (NW Douglas)	1 shrub per 20 feet of street frontage	229 ft. of street frontage /20= 12 shrubs required	16 shrubs
8.720.A.1 Street Frontage Trees (NW Victoria)	1 tree per 30 feet of street frontage	297 ft. of street frontage /30= 10 trees required	10 new trees
8.720.A.2 Street Frontage Green Strip (NW Victoria)	20 feet	20 feet	20 feet
8.720.A.3 Street Frontage Shrubs (NW Victoria)	1 shrub per 20 feet of street frontage	297 ft. of street frontage/20= 15 shrubs required	15 shrubs
8.790.B.1 Open Yard Shrubs	2 shrubs per 5000 sq. ft. of total lot area excluding building footprint.	23,300 sq. ft./5000 x 2=10 shrubs.	12 shrubs
8.790.B.2 Open Groundcover	Open area not covered with other materials shall be covered with sod.		Sod
8.790.B.3 Open Yard Trees	1 tree per 5000 sq. ft. of total lot area excluding building and parking.	23,300 sq. ft./5000=5 trees.	5
8.810.A Parking Lot Landscape Islands	5% of entire parking area (spaces, aisles & drives); 1 island at end of every parking bay, min. 9' wide	25,153 sq.ft. of parking area x .05 = 1,257 sq.ft. of landscape parking lot islands required	1,714 sq.ft.
8.820 Screening of Parking Lot, NW Douglas	12 shrubs per 40 linear feet (must be 2.5 feet tall; berms may be combined with shrubs)	229 linear feet/40 x 12 69 shrubs required	69 shrubs
8.820 Screening of Parking Lot, NW Victoria.	12 shrubs per 40 linear feet (must be 2.5 feet tall; berms may be combined with shrubs)	297 linear feet/40 x 12 90 shrubs required	90 shrubs

BY	REVISION	DATE
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
VSR	FINAL DEVELOPMENT PLAN	5.13.2020

AGC Engineers, INC.
405 S. Leonard St., Suite D
Liberty, Missouri 64068
816.781.4200 ■
fax 792.3666
www.agcengineers.com

STATE OF MISSOURI
VANCE S. RZEPKA
NUMBER LA-000144
LANDSCAPE ARCHITECT
5/13/2020

PANERA BREAD BAKERY - CAFE

LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

FINAL DEVELOPMENT PLANS

LANDSCAPE PLAN

L100