DRAWING INDEX

5/29/2025	SHEET #	SHEET NAME
•	G-0.0	COVER SHEET, CODE INFO, PROJECT DATA, & DIRECTORY
•	G-0.1	SPECIFICATIONS & GENERAL NOTES
•	G-0.2	DIVISION OF WORK & SYMBOL LEGEND
•	D-1.1	DEMOLITION PLANS
•	A-0.1	SCHEDULES
•	A-1.1	CONSTRUCTION PLAN, SCHEDULES, & NOTES
•	A-1.2	FITTING ROOM PLAN & DETAILS
•	A-1.3	ENLARGED TOILET ROOM, PLAN & DETAILS
•	A-1.4	CONSTRUCTION DETAILS
•	A-2.1	REFLECTED CEILING PLAN & DETAILS
•	A-3.1	EXTERIOR ELEVATION
•	A-4.1	INTERIOR ELEVATIONS
•	A-5.1	FINISH PLAN
•	A-6.1	LOW VOLTAGE PLAN
•	F-1.1	FIXTURE PLAN, SCHEDULE & NOTES
•	F-1.2	FIXTURE DETAILS
•	F-2.1	INTERIOR SIGNAGE & GRAPHICS PLANS
•	E-001	ELECTRICAL COVER SHEET
•	E-100	ELECTRIC LIGHTING PLAN
•	E-101	ELECTRIC LIGHTING - DETAILS
•	E-200	ELECTRIC POWER PLAN
•	E-300	ELECTRIC POWER - SINGLE LINE DIAGRAM
•	E-301	ELECTRIC PANEL SCHEDULES
•	E-400	ENERGY COMPLIANCE
•	E-500	ELECTRICAL SPECIFICATIONS
•	E-501	ELECTRICAL SPECIFICATIONS
•	M-001	MECHANICAL COVER SHEET
•	M-101	MECHANICAL DUCTWORK PLAN
•	M-401	ENERGY COMPLIANCE
•	M-501	MECHANICAL SPECIFICATIONS
•	M-601	MECHANICAL DETAILS
•	M-602	MECHANICAL SPECIFICATIONS
•	P-001	PLUMBING COVER SHEET
•	P-101	PLUMBING PLAN
•	P-501	PLUMBING SPECIFICATIONS
•	P-601	PLUMBING DETAILS & SCHEDULES

- SHEET INDEX

FIXTURES - GRAND + BENEDICTS
C: MOLLY CROUSER
T: 503.233.6222
E: MOLLYC@GRAND-BENEDICTS.COM

LIGHTING - CITY LIGHTING
C: TOM MISPAGEL
T: 314.534.1090
E: TMISPAGEL@CITYLIGHTING.COM

LOCKS / SAFE - REDFORD LOCK SECURITY SOLUTIONS
C: DAVID BOILORE
T: 313.401.7004
E: DBOILORE@REDLORDLOCK.COM

SIGNAGE - VICTORY SIGN INDUSTRIES
C: DANA REYNOLDS
T: 706.820.6820
E: DREYNOLDS@VICTORYSIGN.COM

STOCK ROOM FIXTURES - PIPP MOBILE STORAGE SYSTEMS, INC.
C: KATY LOWRY
T: 616.988.4063
E: KLOWRY@PIPPMOBILE.COM

SENSORMATIC - JOHNSON CONTROLS
C: MH TOTH
T: 269.271.8401
E: MH.TOTH@JCI.COM

REGISTED ACCESSIBILITY SPECIALIST
JOHNSON - KELLY ASSOCIATES, INC.
780 N WATTERS RD, STE 150
ALLEN, TX 75013
C: JEFFERY L. KELLEY
T: 972.422.5384 EXT 1869
E: JKELLEY@JOHNSONKELLEY.COM
RAS # : 55

- VENDOR CONTACTS

LANDLORD - TENANT COORDINATOR
ALAMO QUARRY MARKET
255 E BASSE RD, SUITE 400
SAN ANTONIO, TX 78209
C: PRISCILLA GONZANBA, SR. PROPERTY MGR.
T: 210.826.1724
E: PGONZABA@QUARRYMARKET.COM

TENANT / OWNER
CARHARTT INC.
5750 MERCURY DRIVE
DEARBORN, MI 48126
C: MARK KASTNER
T: 313.212.7021
E: MKASTNER@CARHARTT.COM

ARCHITECT
CAITLIN DODGE
ROBERT G. LYON & ASSOCIATES, INC.
5100 RIVER ROAD, SUITE 125
SCHILLER PARK, IL 60176
PLEASE CONTACT PROGRAM MANAGER
FOR ALL INQUIRIES.

PROGRAM MANAGER
RGLA SOLUTIONS, INC.
5100 RIVER ROAD, SUITE 125
SCHILLER PARK, IL 60176
C: ADRIAN TAFOLLA / SANDI LEAMON
T: 847.916.2728 / 847.707.7452
C: ATAFOLLA@RGLA.COM / SLEAMON@RGLA.COM

MEP ENGINEER
KLH ENGINEERS, PSC
333 EAST MAIN, SUITE 175
LEXINGTON, KY 40507
C: JORDAN LAYCOCK
T: 859.547.0242
E: JLAYCOCK@KLHENGRS.COM

- PROJECT DIRECTORY

UPON AWARDING THE GENERAL CONTRACTOR'S CONTRACT, THE GENERAL CONTRACTOR MUST INFORM THE OWNER (CARHARTT) IN WRITING OF ALL MATERIALS AND EQUIPMENT WITH LEAD TIMES OF 4 WEEKS OR GREATER

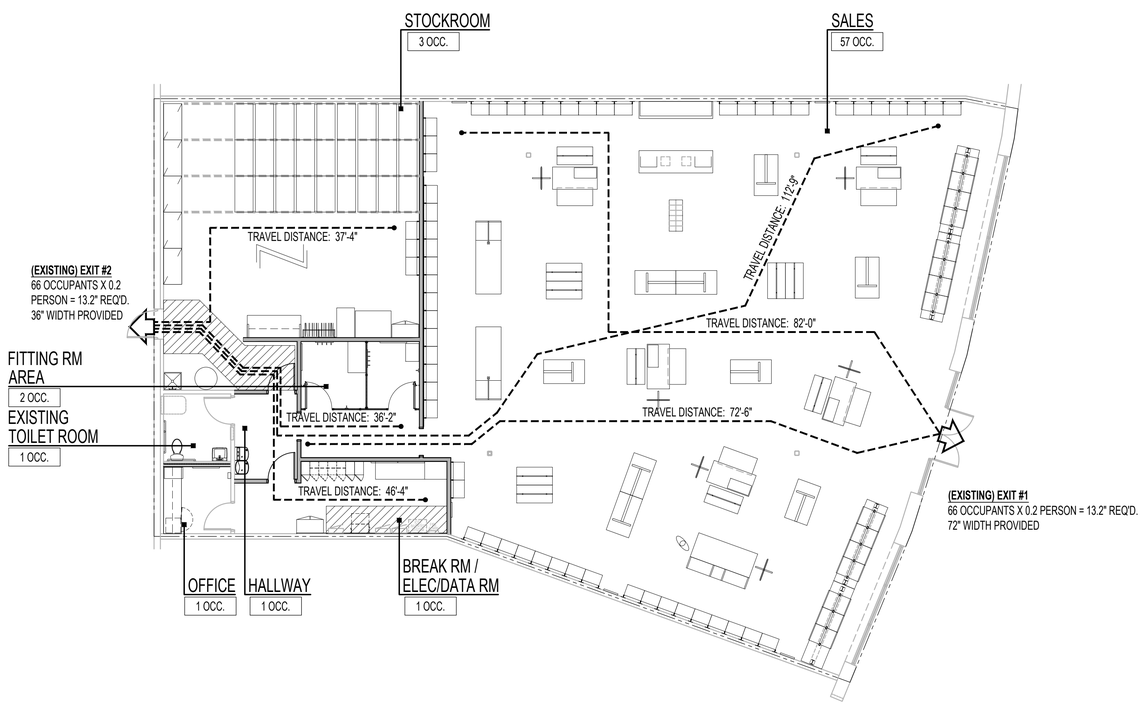
ALL CHANGE ORDERS TO BE APPROVED BY CARHARTT - MARK KASTNER - IN WRITING PRIOR TO PROCEEDING WITH WORK. ANY WORK COMPLETED WITHOUT AN APPROVED CHANGE ORDER WILL NOT BE PAID.

WORK UNDER SEPARATE PERMIT:
- SPRINKLER WORK
- FIRE ALARM
- STOREFRONT SIGNAGE

ALL MATERIAL SUBSTITUTIONS MUST OBTAIN OWNER AND ARCHITECT'S APPROVAL PRIOR TO COMMENCEMENT

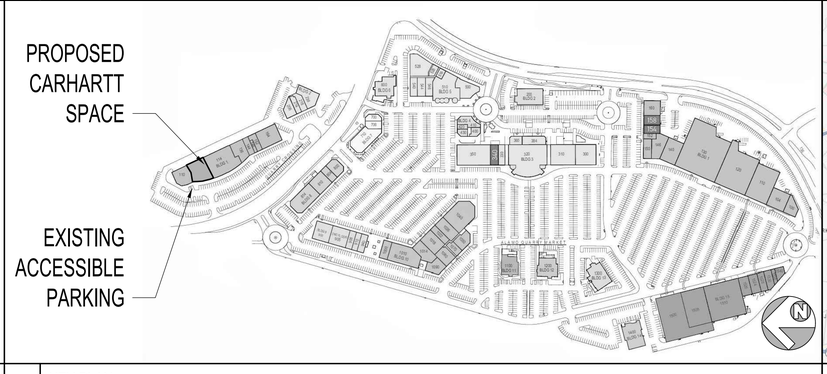
GC SHALL PROVIDE CARPENTER ON-SITE FOR ONE EIGHT-HOUR DAY AFTER TURNOVER FOR MISCELLANEOUS TASKS.

REQUIRED SUBCONTRACTORS:
VERIFY WITH MALL OPERATIONS MANAGER FOR ALL REQUIRED SUBCONTRACTORS.

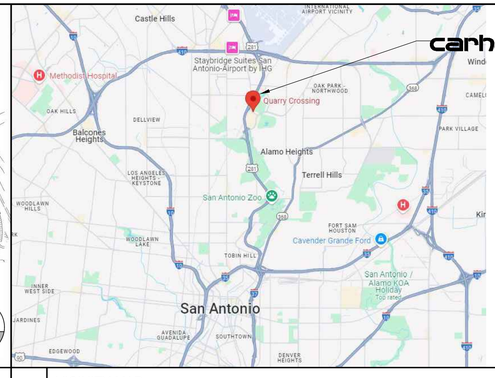


- EGRESS PLAN

SCALE
1/8"=1'-0"



- KEY PLAN



- VICINITY MAP

carhartt

ALAMO QUARRY MARKET
7322 JONES MALTSBERGER RD.
SUITE 112
SAN ANTONIO, TX 78209

TABS2025019368

SCOPE OF WORK STATEMENT
THE INTENT OF THE SCOPE CONTAINED WITHIN THESE DOCUMENTS RELATES TO THE INTERIOR BUILD-OUT OF A MERCANTILE SPACE CONTAINED WITHIN AN EXISTING SHOPPING CENTER. PROPOSED WORK INCLUDES CONSTRUCTION AND INSTALLATION OF NEW NON-LOAD BEARING PARTITIONS, FIXTURES, FINISHES, LIGHTING, MECHANICAL, ELECTRICAL, AND PLUMBING.

PERMIT SCOPE INCLUDES
ONLY CHECKED BOXES
☒ BUILDING
☒ MECHANICAL
☒ ELECTRICAL
☒ PLUMBING
☐ SPRINKLER
☐ STOREFRONT SIGN

MALL TYPE
☐ COVERED MALL BUILDING
☒ EXTERIOR MALL
☐ STREET LOCATION

- SCOPE OF WORK

APPLICABLE CODES

BUILDING:	2024 INTERNATIONAL BUILDING CODE
ELECTRICAL:	2024 NATIONAL ELECTRICAL CODE
MECHANICAL:	2024 INTERNATIONAL MECHANICAL CODE
PLUMBING:	2024 INTERNATIONAL PLUMBING CODE
ACCESSIBILITY:	TEXAS ACCESSIBILITY STANDARD
FIRE CODE:	2024 INTERNATIONAL FIRE CODE
ENERGY CODE:	2021 INTERNATIONAL ENERGY CONSERVATION CODE
EXISTING BUILDING CODE:	2024 INTERNATIONAL EXISTING BUILDING CODE

OCCUPANCY LOAD CALCULATIONS

GROSS AREA:	4,890 SQ.FT. (LEASED AREA)	
SALES AREA:	3,402 SQ.FT. / 60 SQ.FT. PER PERSON =	57
FITTING ROOMS:	2 PRIVATE FITTING ROOMS =	2
TOILET ROOM:	1 PRIVATE TOILET ROOM =	1
OFFICE	1 PRIVATE OFFICE =	1
HALLWAY	151 SQ.FT. / 300 SQ.FT. PER PERSON =	1
BREAK ROOM	190 SQ.FT. / 300 SQ.FT. PER PERSON =	1
STOCKROOM:	900 SQ.FT. / 300 SQ.FT. PER PERSON =	3
TOTAL OCCUPANCY:		66 PERSONS

BUILDING REQUIREMENTS

DESCRIPTION	CODE SECTION	REQUIREMENTS
USE GROUP:	IBC CHAPTER 3, SECTION 309	M (MERCANTILE)
NUMBER OF LEVELS:		LOCATED ON GROUND LEVEL OF 1 LEVEL
CONSTRUCTION TYPE:	IBC TABLE 601	TYPE II B
FIRE SPRINKLERS:	IBC SECTIONS 506.3, 903.1	FULLY SPRINKLERED
TENANT AREA:	IBC SECTION 507.3	4,890 SQ.FT. AREA OF WORK
OCCUPANT LOAD:	IBC SECTION 1004.1 & NFPA 101	66 PERSONS
NUMBER OF EXITS:	IBC TABLE 1006.3	2 REQUIRED
		2 PROVIDED
EXIT WIDTH:	IBC TABLE 1005.1	26.4" REQUIRED
		108" PROVIDED

- CODE AND BUILDING SUMMARY

STATEMENT OF COMPLIANCE
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY PROFESSIONAL KNOWLEDGE THEY CONFORM TO THE CODES AND ORDINANCES OF SAN ANTONIO, TX.

CAITLIN DODGE
LICENSE # : 27873
EXPIRATION DATE: 9/30/25

SEAL: REGISTERED ARCHITECT CAITLIN DODGE 27873 STATE OF TEXAS

- CERTIFICATION STATEMENT

RGLA
rgla solutions, inc.
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

REVISIONS:	DATE:
ISSUE FOR PERMIT, LANDLORD, PRICING	05/29/25

robert g. lyon + associates, inc.
retail architecture
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

carhartt
ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD.
SUITE 112
SAN ANTONIO, TX 78209

COVER SHEET, CODE INFORMATION, PROJECT DATA, & DIRECTORY

DRAWN BY
SLS
CHECKED BY
AT / SL
JOB NUMBER
25341
SHEET NAME
G-0.0

SPECIFICATIONS

DIVISION 01: GENERAL REQUIREMENTS:

1. GENERAL: THESE DRAWINGS AND SPECIFICATIONS INCLUDING DESIGNS AND IDEAS REPRESENTED THEREON ARE AND SHALL REMAIN THE PROPERTY OF THE ARCHITECT; AND NO PART THEREOF SHALL BE COPIED, DISCLOSED TO OTHERS OR USED IN CONJUNCTION WITH ANY WORK OR PROJECT EXCEPT THOSE FOR WHICH THEY HAVE BEEN DEVELOPED AND PREPARED, WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT. VISUAL CONTACT WITH THE DRAWINGS AND SPECIFICATIONS SHALL CONSTITUTE CONCLUSIVE EVIDENCE OF ACCEPTANCE OF THESE RESTRICTIONS. THE TERM "GENERAL CONTRACTOR" USED IN THESE DOCUMENTS REFER TO TENANTS AS WELL AS LANDLORDS GENERAL CONTRACTOR.

A. THE WORK UNDER THIS CONTRACT COMPRISES THE BUILD-OUT OF A NEW RETAIL STORE FOR CARHARTT (SEE PLANS FOR SQUARE FOOTAGE AND EXACT SCOPE OF WORK).

B. THE LANDLORD/TENANT GENERAL CONTRACTORS SHALL VISIT THE SITE TO VERIFY ANY EXISTING CONDITIONS AND DIMENSIONS BEFORE SUBMITTING BIDS/PRICING AND REPORT TO THE ARCHITECT ANY DISCREPANCIES OR CONDITIONS WHICH MAY INTERFERE WITH THE EXECUTION OF THE DEPICTED WORK. EXTRAS WILL NOT BE ALLOWED FOR UNREPORTED DISCREPANCIES OR CONDITIONS.

C. THE GENERAL CONTRACTOR SHALL CONTACT LOCAL UTILITY COMPANIES TO VERIFY ALL ELEVATIONS, SIZES, LOCATIONS AND CONNECTION POINTS FOR ALL UTILITIES AFFECTED BY THIS PROJECT. THE GENERAL CONTRACTOR SHALL COORDINATE AND OBTAIN ALL APPLICATIONS FOR, AND ENSURE ALL UTILITIES ARE TURNED ON PRIOR TO COMPLETION OF WORK.

D. CONTRACTOR TO PROVIDE ALL SUB-CONTRACTORS WITH A COMPLETE SET OF THE MOST CURRENT CONSTRUCTION DOCUMENTS.

2. CONTRACTS: THE LATEST EDITION OF THE AMERICAN INSTITUTE OF ARCHITECTS - "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION (A201)" ARE HEREBY MADE A PART OF THESE DRAWINGS AND SPECIFICATIONS, AS WELL AS THE CONTRACT FOR CONSTRUCTION BY REFERENCE AND THEY SHALL BE LEGALLY ENFORCEABLE TO THE SAME DEGREE AND EXTENT AS IF THEY WERE REPRODUCED HEREON.

3. PERMITS & CERTIFICATES: ALL WORK SHALL COMPLY WITH STATE AND LOCAL REGULATIONS AND ORDINANCES, ANY OTHER APPLICABLE CODES AND SHOPPING CENTER CRITERIA.

A. THE GENERAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND LICENSES AND ARRANGE FOR ALL INSPECTIONS BY LOCAL JURISDICTIONS.

B. A COMPLETE UP TO DATE SET OF THE DRAWINGS, INCLUDING APPROVED SHOP DRAWINGS SHALL BE KEPT AT THE SITE FOR THE DURATION OF THE WORK. COPIES OR ORIGINALS, IF REQUIRED, OF ALL PERMITS AND APPROVALS, SHALL ALSO BE KEPT AT THE SITE.

C. UPON COMPLETION OF THE WORK AND BEFORE FINAL PAYMENT IS MADE, THE CONTRACTOR SHALL SECURE AND DELIVER TO THE LANDLORD AND TENANT (COPY TO ARCHITECT) A PROPERLY ISSUED OCCUPANCY CERTIFICATE AND COPIES OF ANY OTHER REQUIRED APPROVALS BY ANY AND ALL AGENCIES HAVING JURISDICTION OVER THE WORK (INCLUDING THE LANDLORD).

4. INSURANCE: ALL CONTRACTORS (GENERAL AND SUBCONTRACTORS) SHALL COMPLY WITH THE LANDLORD'S AND TENANT'S REQUIREMENT FOR INSURANCE, BONDS AND WAIVERS OF LIEN.

A. PRIOR TO COMMENCEMENT OF THE WORK, ALL CONTRACTORS AND SUBCONTRACTORS SHALL OBTAIN INSURANCE POLICIES AS OUTLINED BELOW. INSURANCE POLICIES ARE TO NAME THE TENANT, TENANT'S PROGRAM MANAGER (RGLA SOLUTIONS, INC.) TENANT'S ARCHITECT (ROBERT G. LYON & ASSOCIATES, INC.), LANDLORD AND THE LANDLORD'S GENERAL CONTRACTOR (IF APPLICABLE) AS ADDITIONALLY INSURED. CERTIFICATES OF INSURANCE SHALL BE SUBMITTED TO THOSE NAMED.

B. WORKMAN'S COMPENSATION AND OCCUPATIONAL DISEASE INSURANCE.

B.A. STATE: -STATUTORY-

B.B. APPLICABLE FEDERAL (E.G.: LONGSHOREMEN, HARBOR WORK, WORK OUTSIDE THE UNITED STATES): -STATUTORY-

B.C. EMPLOYER'S LIABILITY:

$500,000.00	PER ACCIDENT
$500,000.00	DISEASE

B.D. BENEFITS REQUIRED BY UNION LABOR CONTRACTS AS APPLICABLE

C. COMPREHENSIVE GENERAL LIABILITY (INCLUDING PREMISES - OPERATIONS: INDEPENDENT CONTRACTORS' PROTECTIVE; PRODUCTS AND COMPLETED OPERATIONS: BROAD FORM PROPERTY DAMAGE; AUTOMOBILE COVERAGE, AND CONTRACTUAL LIABILITY.)

C.A. BODILY INJURY:

$4,000,000.00	EACH OCCURRENCE
$4,000,000.00	AGGREGATE

C.B. PROPERTY DAMAGE (INCLUDING WATER DAMAGE AND SPRINKLER LEAKAGE, LEGAL LIABILITY).

$4,000,000.00	EACH OCCURRENCE
$4,000,000.00	AGGREGATE

C.C. PRODUCTS AND COMPLETED OPERATIONS SHALL BE MAINTAINED FOR A MINIMUM OF ONE (1) YEAR AFTER FINAL PAYMENT AND CONTRACTOR SHALL CONTINUE TO PROVIDE EVIDENCE OF SUCH COVERAGE TO OWNER ON AN ANNUAL BASIS DURING THE AFOREMENTIONED PERIOD.

C.D. PROPERTY DAMAGE LIABILITY INSURANCE SHALL INCLUDE COVERAGE FOR EXPLOSION AND COLLAPSE.

C.E. CONTRACTUAL LIABILITY
(HOLD HARMLESS COVERAGE):
BODILY INJURY:

$2,000,000.00	EACH OCCURRENCE

PROPERTY DAMAGE:

$2,000,000.00	EACH OCCURRENCE
$2,000,000.00	AGGREGATE

C.F. PERSONAL INJURY (WITH EMPLOYMENT EXCLUSION DELETED):

C.G. $2,000,000.00 EACH PERSON

D. COMPREHENSIVE AUTOMOBILE LIABILITY (OWNED, NON-OWNED, HIRED)

D.A. BODILY INJURY:

$2,000,000.00	EACH PERSON
$2,000,000.00	EACH ACCIDENT

D.B. PROPERTY DAMAGE:

$2,000,000.00	EACH OCCURRENCE

E. OTHER INSURANCE AND BONDS AS MAY BE REQUIRED BY THE LANDLORD (VERIFY REQUIREMENTS WITH THE LANDLORD).

5. CONTRACTOR (G.C.): THE GENERAL CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND TRANSPORTATION NECESSARY, WHETHER STATED OR IMPLIED, TO COMPLETE THE WORK AS DESCRIBED ON THESE DRAWINGS AND SPECIFICATIONS.

A. REFER TO THE DIVISION OF WORK FOR A BREAKDOWN OF THE VARIOUS RESPONSIBILITIES OF ALL INVOLVED PARTIES. ALL CONTRACTORS, VENDORS AND TRADES ARE RESPONSIBLE FOR THE VARIOUS PROVISIONS OF THE SPECIFICATION AS IT APPLIES TO THEM.

B. INSTALL ALL SYSTEMS, COMPONENTS, ASSEMBLIES, FIXTURES, HARDWARE AND FINISHES PER THE MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS.

C. IMMEDIATELY REPAIR ALL DAMAGE TO ANY SYSTEMS OR COMPONENTS BEING MAINTAINED AT NO COST TO THE LANDLORD.

D. PROTECT ALL PEOPLE

E. ALL WORK SHALL BE COORDINATED WITH, AND IS SUBJECT TO APPROVAL BY, AND IS SUBJECT TO THE RULES OF THE LANDLORD. CONTRACTOR TO OBTAIN RULES AND REGULATIONS FROM LANDLORD.

F. THE WORK UNDER THIS CONTRACT INCLUDES BOTH A FULL TIME SITE SUPERINTENDENT AND PROJECT MANAGER FOR THE DURATION OF CONSTRUCTION.

6. WORK BY TENANT: REFER TO THE DIVISION OF WORK FOR ANY TENANT FURNISHED AND SUPPLIED ITEMS.

7. WORK BY LANDLORD: REFER TO THE DIVISION OF WORK FOR ANY LANDLORD FURNISHED AND SUPPLIED ITEMS.

8. WORK BY GENERAL CONTRACTOR IS SUBJECT TO THE RULES OF THE LANDLORD. SUBMIT EVIDENCE OF SAME AS MAY BE REQUIRED, OBTAIN A LIST OF RULES AND REGULATIONS FROM THE LANDLORD.

A. MINIMUM INTERFERENCE - ALL WORK SHALL BE PERFORMED SO AS TO CAUSE A MINIMUM OF INTERFERENCE WITH ANY OTHER TENANTS AND THE OPERATION OF THE LANDLORD'S ENTIRE PREMISES. CONTRACTOR SHALL TAKE ALL PRECAUTIONARY STEPS TO PROTECT THE FACILITIES ON THE PREMISES AND THE FACILITIES OF OTHERS AFFECTED BY PERFORMANCE OF THE WORK AND POLICE SAME PROPERLY.

B. ALL MATERIALS AND PRODUCTS SPECIFIED SHALL BE NEW AND ARE TO BE INSTALLED IN ACCORD WITH MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS. GENERAL CONTRACTOR IS TO CONSTRUCT PROJECT IN ACCORD WITH THE DOCUMENTS. ANY DEVIATION FROM THE INTENT OF THE DOCUMENTS WITHOUT ARCHITECT APPROVAL IS THE CONTRACTOR'S OWN RISK.

9. TENANT SUPPLIED/TENANT'S GENERAL CONTRACTOR INSTALLED MATERIALS:

A. THE GENERAL CONTRACTOR SHALL INCLUDE IN BASE BID THE COST TO UNLOAD AND STORE OWNER FURNISHED ITEMS FOR INSTALLATION BY THE GENERAL CONTRACTOR.

B. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR FILING FREIGHT CLAIMS DIRECT WITH CARRIER, AND FOLLOWING THROUGH AS NECESSARY WITH ALL SUBSEQUENT PROCEDURES, INCLUDING INSPECTIONS AND REMOVAL OF DAMAGED MATERIAL. THIS APPLIES TO VISIBLE AND CONCEALED DAMAGES OF ALL OWNER SUPPLIED MATERIALS. FAILURE TO DO SO WILL RESULT IN BACK-CHARGE EXPENSES TO THE GENERAL CONTRACTOR.

C. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL OWNER SUPPLIED MATERIALS THROUGHOUT THE COURSE OF THE PROJECT, AND IS TO MAKE REPAIRS AS REQUIRED.

10. APPLICATION FOR PAYMENT: SUBMIT (3) THREE COPIES OF EACH APPLICATION ON AIA G702 FORMS. PAYMENT MAY BE APPLIED FOR MONTHLY AND WILL BE BASED ON PERCENTAGE OF WORK COMPLETED LESS RETAINAGE.

A. BEGINNING WITH PAY REQUEST #2, GENERAL CONTRACTOR SHALL SUBMIT A PARTIAL WAIVER OF LIEN EQUAL TO THE AMOUNT OF THE PREVIOUS PAY REQUEST FROM EACH SUBCONTRACTOR.

B. UPON COMPLETION OF THE WORK AND PRIOR TO FINAL PAYMENT, THE GENERAL CONTRACTOR SHALL SUBMIT FINAL UNCONDITIONAL (NOTARIZED) WAIVERS OF LIEN FROM ALL SUBCONTRACTORS AND A FINAL NOTARIZED UNCONDITIONAL WAIVER OF LIEN FROM HIMSELF FOR THE FULL AMOUNT OF THE CONTRACT (INCLUDING ALL ADDITIONS AND CREDITS).

11. COORDINATION: THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL SUBCONTRACTORS AND TRADES.

A. PROVIDE AND MAINTAIN AN UP-TO-DATE SCHEDULE OF WORK.

B. SCHEDULE AND ADMINISTER MEETINGS AS AGREED TO BY THE OWNER AND ARCHITECT AND COMPOSE MINUTES TO THOSE MEETINGS.

C. PROVIDE A FULL TIME QUALIFIED SUPERVISOR ON SITE

D. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL OTHER CONTRACTORS AND VENDORS WORKING IN THE SPACE.

12. SUBMITTALS: SUBMITTALS SHALL BE PROVIDED FOR MATERIALS AND ASSEMBLIES LISTED IN EACH SECTION OF THIS SPECIFICATION:

A. SHOP DRAWINGS AND SAMPLES: WHERE CALLED FOR IN DOCUMENTS, SUBMIT TO ARCHITECT FOR APPROVAL AS FOLLOWS.

A.A. REPRODUCIBLE DRAWINGS: ONE SEPIA TRANSPARENCY.

A.B. NON-REPRODUCIBLE DATA: TWO COPIES.

A.C. SAMPLES: (2) EACH.

A.D. CLEARLY MARK ALL SUBMISSIONS WITH DATA, PROJECT, CONTACT AND SUB-CONTRACTOR AND ALLOW SPACE FOR APPROVAL STAMP.

B. PRODUCT DATA: SUBMIT MANUFACTURER'S TECHNICAL INFORMATION AND INSTALLATION INSTRUCTIONS FOR SPECIFIED MATERIALS, EXCEPT BULK MATERIALS, TO THE TENANT (COPY TO THE ARCHITECT).

C. PRODUCT WARRANTY: SUBMIT MANUFACTURER'S PRODUCT AND MATERIAL INFORMATION TO TENANT (COPY TO THE ARCHITECT).

13. INSPECTION AND TESTING: THE GENERAL CONTRACTOR SHALL EMPLOY AND PAY FOR AN INDEPENDENT FIRM (APPROVED BY THE ARCHITECT) TO PERFORM INSPECTION AND TESTING REQUIRED BY THESE DRAWINGS AND SPECIFICATIONS.

A. SUBMIT TESTING AND INSPECTION RESULTS TO THE ARCHITECT, AND TENANT FOR THEIR FILES.

14. TEMPORARY SERVICES: PROVIDE TEMPORARY SERVICES NECESSARY TO COMPLETE THE CONSTRUCTION INCLUDING (BUT NOT LIMITED TO): ELECTRICITY, LIGHTING, HVAC, TELEPHONE, FACSIMILE MACHINE, WATER SERVICE, SANITARY FACILITIES, FIRE PROTECTION EQUIPMENT, FENCES/BARRICADES AND SECURITY.

A. GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY BARRICADES, TEMPORARY CONSTRUCTION, DUSTSHIELDS, AND SCAFFOLDING REQUIRED TO COMPLETE THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BARRICADE MAINTENANCE, REMOVAL AND REPAIR, CLEANUP OR ANY RECONSTRUCTION REQUIRED AS A RESULT OF THE BARRICADE.

B. GENERAL CONTRACTOR IS TO BE FAMILIAR WITH ALL LANDLORD CRITERIA. SPECIAL WORKING CONDITIONS PERTAINING TO BARRICADES, NOISE, DUST, TRASH REMOVAL, ETC. AND TO COORDINATE WITH LANDLORDS.

C. GENERAL CONTRACTOR MUST HAVE A JOB PHONE ON PREMISES DURING ENTIRE CONSTRUCTION PERIOD AND PROVIDE NUMBER AND NAME OF CONTACT TO ARCHITECT AND TENANT IMMEDIATELY.

15. SITE ACCESS: COORDINATE SITE ACCESS, WORK HOURS, WORKER PARKING, LOADING AND UNLOADING AND STORAGE OF MATERIALS WITH THE LANDLORD.

16. JOB SAFETY REQUIREMENTS: THE GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING SAFETY DURING CONSTRUCTION. PROVIDE AND POST SAFETY RULES AT THE JOBSITE.

17. CLEANING/FINAL CLEANING: MAINTAIN SITE IN A CLEAN AND ORDERLY FASHION AT ALL TIMES. FINAL CLEAN THE ENTIRE SITE, DISPOSING OF ANY REMAINING DEBRIS AND TRASH, VACUUMING OR SWEEPING AND MOPPING FLOORS AND CLEANING ALL GLAZED, TILED, PAINTED, ETC. SURFACES FOR SUBSTANTIAL COMPLETION.

A. GENERAL CONTRACTOR SHALL PAY FOR ALL SCAVENGER SERVICES, BE RESPONSIBLE FOR REMOVAL OF DEBRIS FOR ALL TRADES (INCLUDING OTHER CONTRACTORS AND VENDORS) AND FOR KEEPING THE JOB SITE CLEAN AT ALL TIMES.

B. TENANT GENERAL CONTRACTOR TO PROVIDE FINAL DEEP CLEANING OF ALL WOOD, GLASS, AND METAL FIXTURES, STOREFRONT GLAZING INSIDE AND OUT, VACUUMING OF CARPET, MOPPING AND WAXING OF VCT FLOORING, MOPPING AND BUFFING OF SOLID VINYL FLOORING PRIOR TO TURN OVER TO OPERATING COMPANY.

18. RECORD DRAWINGS/O&M MANUALS: MAINTAIN, ON SITE, ONE SET OF CONTRACT DOCUMENTS TO BE UTILIZED FOR RECORD DRAWINGS. RECORD ALL REVISIONS OF WORK.

A. UPON COMPLETION OF THE WORK AND BEFORE FINAL PAYMENT IS MADE, THE CONTRACTOR SHALL SECURE AND DELIVER TO THE TENANT (COPY TO THE ARCHITECT) ALL GUARANTEES AND/OR WARRANTIES ON ALL EQUIPMENT SUPPLIED AND/OR INSTALLED BY THE CONTRACTOR, AND HIS SUBCONTRACTORS.

B. UPON COMPLETION OF THE WORK AND BEFORE FINAL PAYMENT IS MADE, THE CONTRACTOR SHALL SUBMIT (ON REPRODUCIBLE MYLAR) ONE SET OF AS-BUILT DRAWINGS INDICATING ALL CHANGES AND MODIFICATIONS MADE TO THE PROJECT DURING CONSTRUCTION.

B.A. PROVIDE THE LANDLORD WITH COPIES OF RECORD DRAWINGS AND O & M MANUALS AS REQUIRED.

19. PUNCH LIST/CLOSE-OUT: UPON NOTIFICATION, THE ARCHITECT & TENANT SHALL PREPARE A PUNCH LIST OF THE PROJECT AND THE GENERAL CONTRACTOR SHALL MAKE GOOD ALL PUNCH LIST ITEMS TO THE SATISFACTION OF THE ARCHITECT / TENANT PRIOR TO FINAL PAYMENT.

THE GENERAL CONTRACTOR SHALL:
-FINAL CLEAN SITE.
-RESOLVE ALL PUNCH LIST ITEMS.
-TEST AND BALANCE HVAC SYSTEM.
-SUBMIT TWO COPIES OF ALL O&M MANUALS.
-SUBMIT COPIES OF MANUFACTURER'S WARRANTIES.
-SUBMIT RECORD DRAWINGS.
-LEAVE ON SITE ATTIC STOCK FOR CEILING TILE AND FLOOR TILE.

NOTE: THE GENERAL CONTRACTOR SHALL BE DIRECTLY RESPONSIBLE FOR ANY EXPENSES INCURRED BY THE ARCHITECT FOR ADDITIONAL VISITS AS A RESULT OF PUNCH LIST ITEMS NOT CORRECTED BEFORE THE FOLLOW-UP VISIT.

20. GUARANTEE: THE GENERAL CONTRACTOR SHALL GUARANTEE THE WORK FOR ONE (1) YEAR AFTER THE SUBSTANTIAL COMPLETION OF ALL WORK.

A. GUARANTEE/WARRANTY CERTIFICATES BY THE MANUFACTURER SHALL BE SUBMITTED AS APPROPRIATE.

B. REFER TO OTHER SECTION OF THE SPECIFICATION FOR ADDITIONAL GUARANTEE/WARRANTY REQUIREMENTS.

DIVISION 02: SITE WORK:

1. REFER TO THE ARCHITECTURAL DRAWINGS FOR ANY NOTES RELATED TO DEMOLITION WORK.

2. THE GENERAL CONTRACTOR IS TO DEMOLISH AND REMOVE FROM THE PREMISES IN A MANNER ACCEPTABLE TO ANY JURISDICTIONAL AGENCIES, THE LANDLORD, AND THE APPROVAL OF THE ARCHITECT, ALL WORK SO INDICATED OR REQUIRED BY THE WORK OF THE CONTRACT DOCUMENTS OR AS MAY BE DIRECTED IN THE FIELD BY THE ARCHITECT. THE WORK WHICH IS TO BE REMOVED SHALL INCLUDE ANY EXISTING CONSTRUCTION, FURNISHINGS, EQUIPMENT OR FINISHES NOT TO REMAIN IN THE COMPLETED

3. LAYOUT WORK:

A. GENERAL CONTRACTOR SHALL LOCATE ALL EXISTING UTILITY SERVICE LINES AND PROTECT THEM THROUGHOUT THE CONSTRUCTION PERIOD.

B. GENERAL CONTRACTOR SHALL LAY OUT WORK AND BE RESPONSIBLE FOR ALL LINES, ELEVATIONS, MEASUREMENTS OF THE BUILDING UTILITIES, AND OTHER WORK EXECUTED UNDER THE CONTRACT.

C. LANDLORD/ TENANT GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AS THEY MAY APPLY TO EXISTING CONDITIONS WITH PARTICULAR EMPHASIS ON DIMENSIONS MARKED "VERIFY" OR VERIFY IN FIELD (V.I.F.) NOTIFY ARCHITECT AND TENANT IMMEDIATELY OF ANY DISCREPANCIES BETWEEN THE DRAWINGS AND EXISTING CONDITIONS IN WRITTEN FORM. WORK.

D. ANY DISCREPANCIES, ERRORS, OR OMISSIONS DISCOVERED IN THE CONTRACT DOCUMENTS BY THE CONTRACTOR SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND TENANT BEFORE PROCEEDING WITH RELATED WORK. OTHERWISE, THE CORRECTION OF SUCH ITEMS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

DIVISION 03: CONCRETE WORK:

1. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR A SMOOTH TRANSITION BETWEEN STORE FLOORS AND ADJACENT FLOORS. STORE FLOOR MAY REQUIRE LATEX FEATHERING OR, WHERE POSSIBLE, GRINDING DOWN OF STORE SUBFLOOR TO ALLOW FOR A SMOOTH TRANSITION, IF FLOOR GRINDING IS NOT PERMITTED BY LANDLORD CONTACT ARCHITECT.

2. (WHEN APPLICABLE) NEW OR ADDITIONAL CONCRETE WORK STAIRS, STOOPS, RAMPS, ECT. REFER TO ALL DRAWINGS FOR ADDITIONAL CONCRETE SPECIFICATIONS.

DIVISION 04: MASONRY: (WHEN APPLICABLE)

1. REFER TO THE ARCHITECTURAL DRAWINGS FOR ADDITIONAL MASONRY SPECIFICATIONS.

2. PRODUCTS:

A. LINTELS AND BOND BEAMS: (IF APPLICABLE)

A.A. INSTALL LINTELS WHERE NOTED ON THE DRAWINGS.

A.B. INSTALL BOND BEAMS WHERE NOTED ON THE DRAWINGS; REINFORCE AS DETAILED AND GROUT SOLID.

B. REMOVE EXCESS MORTAR AND CLEAN SURFACES UPON COMPLETION OF MASONRY INSTALLATION.

DIVISION 05: METALS:

1. REFER TO THE ARCHITECTURAL DRAWINGS FOR SPECIFICATIONS RELATED TO STRUCTURAL METAL WORK.

2. (WHEN APPLICABLE) REFER TO ALL DRAWINGS FOR ADDITIONAL ARCHITECTURAL METAL WORK, RAILINGS, REFER HANDRAILS, ETC.

DIVISION 06: WOOD AND PLASTIC:

1. SCOPE OF WORK INCLUDES, BUT IS NOT LIMITED TO, ROUGH CARPENTRY (WOOD BLOCKING) AND FINISH CARPENTRY (CABINETRY, WOOD TRIM, HARDWARE AND ACCESSORIES).

2. ROUGH CARPENTRY: WOOD BLOCKING

A. PROVIDE SOLID BLOCKING IN STUD WALLS WHERE ALL FIXTURES OR DEVICES ARE TO BE MOUNTED. ALL WOOD BLOCKING SHALL BE FIRE RESISTANT TREATED.

B. ALL DIMENSIONAL LUMBER TO BE FIRE RETARDANT WITH U.L. RATING "NON-COMBUSTIBLE.

3. FINISH CARPENTRY: CABINETRY, AND WOOD TRIM:

A. ALL MILLWORK SHALL COMPLY WITH THE APPROPRIATE SPECIFICATIONS OF "THE ARCHITECTURAL QUALITY STANDARDS ILLUSTRATED" OF THE AMERICAN WOODWORK INSTITUTE (AWI) FOR "CUSTOM" GRADE MILLWORK.

B. PAINT GRADE FINISH LUMBER SHALL BE `POPLAR' OR `BIRCH' SANDED SMOOTH AND FREE OF BLEMISHES OR ABRASIONS. ALL WOOD SHALL HAVE TIGHT AND UNIFORM JOINTS.

C. MILLWORK CONTRACTOR SHALL VERIFY ALL DIMENSIONS AFFECTING HIS WORK IN THE FIELD PRIOR TO FABRICATION.

D. FIXTURE MILLWORK AS NOTED ON DRAWINGS IS SUPPLIED BY TENANT AND INSTALLED BY TENANT GENERAL CONTRACTOR.

E. SOME FIELD ASSEMBLY OF MILLWORK IS REQUIRED. FOLLOW SHOP DRAWING ACCOMPANYING MILLWORK. ALL FIELD ASSEMBLED MILLWORK TO BE SCRIBED AND JOINED ACCURATELY.

F. INSTALLATION TO BE IN ACCORDANCE WITH MANUFACTURER'S SHOP DRAWINGS.

G. MAKE ALL JOINTS INCONSPICUOUS MAINTAINING A UNIFORM FLUSH CONNECTION USING COMBINATION OF SCREWS, DOWELS AND GLUE. BLIND FASTEN WHERE POSSIBLE. WHERE BLIND FASTENINGS IS IMPOSSIBLE, DRILL HOLES UNIFORMLY, SET AND PUTTY HEADS AND FINISH AS APPLICABLE TO

4. PLASTIC LAMINATES:

A. ALL LAMINATE SURFACES, EDGES AND ADJACENT MATERIALS TO BE FREE OF ALL ADHESIVES, MARKINGS, CHIPS AND SURFACE BLEMISHES. REMOVE WRAPPINGS.

B. PLASTIC LAMINATES TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL EDGES TO BE FLUSH, TRUE AND STRAIGHT, WITHOUT GAPS. ADJACENT LAMINATED PANELS TO BE CONCEALED SPLINE JOINTS.

C. LAMINATE TO BE INSTALLED OVER MEDIUM DENSITY PARTICLE BOARD. SPACKLE AND SAND SMOOTH TO AVOID TELEGRAPHING OF FASTENER LOCATIONS, BACKER, EDGES, ETC.

D. ALL LAMINATE WORK TO BE FASTENED WITH CONCEALED MECHANICAL FASTENERS ATTACHED TO SUBSTRATE FRAMING AND WITH ADHESIVES. SET WITH BLOCKS AND CLAMPS UNTIL ADHESIVES HAVE DEVELOPED ADEQUATE BONDING STRENGTH.

DIVISION 07: THERMAL & MOISTURE PROTECTION:

1. SCOPE OF WORK INCLUDES, BUT IS NOT LIMITED TO, VAPOR BARRIER, BUILDING INSULATION, MEMBRANE ROOFING SYSTEM, `EIFS' SYSTEM, FLASHING, COPING/FASCIA, AND SEALANTS.

2. BUILDING INSULATION (WHEN APPLICABLE).

A. CEILING INSULATION - SOUND BATTS: 3 1/2" THICK SOUND ATTENUATION BATT INSULATION CONFORMING TO ASTM C665 AS MANUFACTURED BY OWENS CORNING FIBERGLASS "FIRECODE 60", R19.

B. WALL INSULATION - THERMAL BATT - 1 1/2" THICK FOILFACED BATT INSULATION - TYPE 703, R 6.5

C. WALL INSULATION - THERMAL BATT - 3 1/2" THICK FOILFACED BATT INSULATION - TYPE 705, R 15.2 (WHEN APPLICABLE)

DIVISION 08: DOORS, WINDOWS & GLASS:

1. SCOPE OF WORK INCLUDES, BUT IS NOT LIMITED TO, WOOD AND METAL DOORS AND FRAMES, METAL WINDOWS, GLASS AND GLAZING AND HARDWARE.

2. WOOD AND STEEL DOORS (WHEN APPLICABLE):

A. STEEL DOORS (EXTERIOR): GRADE III, EXTRA HEAVY DUTY, SEAMLESS COMPOSITE CONSTRUCTION, SHOP PRIMED, WITH INSULATED CORES AND FIRE RATED AS NOTED ON THE DRAWINGS. ACCEPTABLE MANUFACTURERS INCLUDE CECO, KEWANEE OR STEELCRAFT.

B. WOOD DOORS (INTERIOR): 1 3/4" THICK SOLID CORE AND HOLLOW CORE CONSTRUCTION WITH WOOD VENEER FACES. FABRICATE DOORS IN ACCORDANCE WITH AWI STANDARDS.

B.A. VENEER TO BE BIRCH, ROTARY SLICED WITH RANDOM MATCH GRAIN FOR PAINT FINISH.

B.B. PROVIDE CUTOUTS FOR GLAZING AS NOTED ON THE DRAWINGS.

3. METAL FRAMES (WHEN APPLICABLE):

A. METAL FRAMES (EXTERIOR): 16 GAUGE WITH INSULATED CORE, SHOP PRIMED, WELDED FRAMES AND 4" MASONRY HEAD.

B. METAL FRAMES (INTERIOR): 16 GAUGE, SHOP PRIMED, KNOCK-DOWN TYPE FOR DRYWALL SLIP-ON ASSEMBLY, UNLESS OTHERWISE NOTED.

4. ALUMINUM DOORS AND WINDOWS (WHEN APPLICABLE):

A. ALUMINUM SYSTEM SHALL MATCH EXISTING STOREFRONT SYSTEM. FOLLOW MANUFACTURER'S SPECIFICATIONS FOR FABRICATION AND INSTALLATION.

B. ALUMINUM ENTRANCE DOORS SHALL MATCH EXISTING STOREFRONT SWINGING DOORS WITH INTERMEDIATE MULLIONS AS SHOWN ON THE DRAWINGS.

C. COLOR TO MATCH EXISTING PROPERTY STOREFRONT.

5. HARDWARE: FURNISH AND INSTALL HARDWARE AS NOTED ON THE HARDWARE/DOOR SCHEDULE.

6. GLASS (WHEN APPLICABLE):

A. GLASS (EXTERIOR) STOREFRONT TO MATCH EXISTING ADJACENT GLAZING. GLAZING TO BE TEMPERED WHERE REQUIRED BY CODE.

B. ALL INTERIOR STOREFRONT GLASS TO BE PURCHASED BY G.C. GLASS SHALL BE 1/2" TEMPERED GLASS AS MANUFACTURED BY PPG INDUSTRIES

C. FLOAT GLASS (INTERIOR, WHEN APPLICABLE): CLEAR, 1/4" THICKNESS.

D. WIRE GLASS VISION PANEL (WHEN APPLICABLE) CLEAR FULLY TEMPERED, 1/4" THICKNESS

E. PROVIDE NEOPREME GASKETS AND GLAZING TAPE AT ALL STOPS (INTERIOR GLAZING).

F. MIRRORS TO HAVE ELECTROPLATED COPPER BACKS, EXPOSED MIRROR EDGES TO BE POLISHED AND CONCEALED EDGES TO BE PAINTED FLAT BLACK. USE NON-STAINING MIRROR MASTIC FOR CEMENTING MIRRORS TO WALL. MIRRORS CEMENTED TO WALL SHALL HAVE A CONTINUOUS BEAD OF SILICONE CEMENT AROUND ENTIRE EDGE OF MIRROR AND WALL.

DIVISION 09: FINISHES

1. SCOPE OF WORK INCLUDES, BUT IS NOT LIMITED TO: GYPSUM BOARD SYSTEMS, SUSPENDED ACOUSTICAL CEILINGS, RESILIENT FLOORING, CARPET, PAINTING AND WALL COVERING AND FLOOR COVERING.

A. ALL EXIT WAY WALL AND CEILING FINISHES SHALL HAVE A FLAME SPREAD CLASSIFICATION OF NOT MORE THAN CLASS II AND FLAME SPREAD INDEX OF 75 OR LESS. ALL OTHER WALL AND CEILING FINISHES SHALL HAVE A FLAME SPREAD CLASSIFICATION OF NOT MORE THAN CLASS III AND FLAME SPREAD OF 200 OR LESS.

2. GYPSUM BOARD SYSTEMS: INCLUDES METAL STUDS AND GYPSUM BOARD WALLS AND ALL REQUIRED METAL BEADS, CORNER TRIM, FASTENING DEVICES, ETC.

A. ALL GYPSUM BOARD WALLS AND CEILINGS SHALL BE BUILT IN ACCORDANCE WITH THE GUIDELINES OF THE MOST RECENT VERSION OF THE "GYPSUM CONSTRUCTION HANDBOOK" OF THE UNITED STATES GYPSUM COMPANY.

B. GYPSUM BOARD SHALL BE 5/8" THICK, TYPE AS INDICATED ON THE DRAWINGS. ALL DRYWALL TO BE TAPED, RECEIVE THREE COATS SPACKLE, SANDED. ALL CORNERS AND EDGES TO HAVE METAL CORNER BEAD BEDDED AND SANDED FOR FINISH.

C. METAL STUDS SHALL BE 20 GAUGE GALVANIZED STEEL `C' SHAPED. FASTENERS SHALL BE TYPE 'W' DRYWALL SCREWS. STRUCTURAL STUDS - CEE (WHEN REQUIRED) SHALL BE BY DALE/INCOR.

D. PROVIDE SOUND INSULATION IN PARTITIONS WERE NOTED ON DRAWINGS.

E. ACCESS DOORS, WHERE INDICATED OR AS REQUIRED, SHALL BE PROVIDED TO ALL CONTROL DEVICES, CLEAN OUTS, DAMPERS, AND THE MIXED AIR DISCHARGE AND INTAKE PLENUMS AT THE HVAC UNIT (VERIFY WITH LANDLORD) BY G.C.

3. SUSPENDED CEILING SYSTEM: (WHEN APPLICABLE)

3.1. 2'X2' ACOUSTICAL CEILING AND GRID SYSTEM.

A. CEILING TO BE INSTALLED IN STRICT COMPLIANCE WITH MANUFACTURER'S PUBLISHED SPECIFICATIONS AND CURRENT BULLETIN OF ACOUSTICAL MATERIALS ASSOCIATION -- JOB CONDITIONS.

B. SUSPENSION SYSTEM TO BE RIGID CEILING GRID SYSTEM WITH CROSS FURRING CHANNELS - DIRECT SUSPENSION SYSTEM.

C. ALL FIXTURES INSTALLED IN LAY-IN CEILING SHALL BE PLACED IN CENTER OF CEILING TILE UNLESS DIMENSIONED OTHERWISE.

4. RESILIENT FLOORING AND BASE: INCLUDES VINYL TILE, COMPOSITION TILE, VINYL BASE, AND (WHEN APPLICABLE) SHEET VINYL.

A. PRODUCTS - AS INDICATED IN THE FINISH SCHEDULE.

B. INSTALLATION:

B.A. VINYL COMPOSITION, & VINYL TILE FLOORS TO BE PROPERLY PREPARED WITHOUT HOLES, CRACKS AND BUMPS TO INSURE A FIRST CLASS FLOOR INSTALLATION.

B.B. VINYL COMPOSITION FLOOR TILE AND VINYL TILE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

B.C. VINYL BASE ROLLED SMOOTH, CORNERS AND EDGES TO BE TRUE AND TIGHT, SEAM SEALER TO BE APPLIED. SIZE OF SMALLEST PIECE TO BE 8 INCH LENGTH.

B.D. ALL VINYL BASE SHALL BE FURNISHED WITH PREFORMED INSIDE AND OUTSIDE CORNERS.

B.E. CONCRETE SUBSTRATE - SHALL BE CLEAN, SMOOTH AND FREE OF DEFECTS.

B.F. AFTER INSTALLATION, CLEAN, SEAL AND WAX FLOOR PER THE MANUFACTURER'S INSTRUCTION.

C. DELIVER TO OWNER REPLACEMENT TILES IN THE AMOUNT OF 10% OF MATERIALS (ATTIC STOCK).

5. CERAMIC TILE (WHEN APPLICABLE)

A. PREPARATION OF SURFACES:

A.A. SUBSTRATE SHALL BE FURNISHED CLEAN, SMOOTH AND LEVELED TO A TOLERANCE OF NO MORE THAN 1/4" IN TEN FEET. JOINTS, CONSTRUCTION SEAMS, AND OTHER IRREGULARITIES ARE TO BE FILLED, LEVEL AND SMOOTH WITH QUALITY PRODUCTS MEETING INDUSTRY STANDARDS SPECIFIED BY THE NATIONAL TILE CONTRACTORS ASSOCIATES, INC. OR THE TILE COUNCIL OF AMERICA. ALL CONTAMINANTS SUCH AS GREASE, WAX, OIL, SEALERS CURING MEMBRANES, AND OLD ADHESIVE MUST BE COMPLETELY REMOVED. EXPANSION JOINTS MUST BE PROVIDED AS PER SPECIFICATIONS AND MATERIALS DETAILED BY TILE COUNCIL OF AMERICA INSTALLATION HANDBOOK, SEE EJ171-89.

A.B. ALL CONCRETE MUST BE SCOURED (ALSO AFTER PATCHING OR LEVELING) WITH 3-1/2" OPEN GRIT PAPER TO LOOSEN DIRT AND REMOVE WEAK CONCRETE.

B. INSTALLATION OF FLOORING:

B.A. INSTALLATION PROCEDURES WILL BE THIN SET METHODS IN STRICT ACCORD WITH MANUFACTURER'S RECOMMENDATIONS CONTAINED IN EACH BOX OF MATERIAL. ACCEPTED METHODS BY THE TILE COUNCIL OF AMERICA INCLUDING USING THE PROPER TROWEL (1/4" X 3/8" X 1/4"), BEATING-IN AND BACK-BUTTERING. THESE TECHNIQUES, ESPECIALLY FOR LARGER TILE, MUST BE FOLLOWED TO OBTAIN PROPER TRANSFER AND LEVELNESS.

B.B. CLOSE AREA TO NORMAL TRAFFIC FOR 24 HOURS (OR LONGER) DEPENDING ON TYPE OF MATERIAL AND MANUFACTURER'S RECOMMENDATION. FLOORING WILL BE PROTECTED FROM CONSTRUCTION TRAFFIC AFTER LAYING AND GROUTING.

B.C. PROVIDE SETTING AND MATERIALS OBTAINED FROM ONE SOURCE FOR EACH TYPE AND COLOR OF GROUT AND SETTING MATERIALS.

6. CARPETING: (WHEN APPLICABLE)

A. INSTALLATION:

A.A. PREPARE SUBSTRATE FOR CARPET:
CLEAN, SCRAPE, FILL AND LEVEL FLOOR AS REQUIRED FOR NEW CARPET.

A.B. INSTALLATION TO BE DIRECTGLUE-DOWN METHOD, USING LATEX MASTIC - ROBERT SEAM SEALER #4015, CAPITAL ADHESIVES OR EQUAL.

A.C. GENERAL CONTRACTOR TO INSTALL METAL ANGLE PER DETAIL ON DRAWINGS. MITER CUT CORNERS AND NAIL TO SUBFLOOR.

A.D. ALL DEBRIS TO BE LEGALLY REMOVED FROM PREMISES. SEE NOTE #6.

A.E. SEE SHT. A-1 FOR TRANSITION STRIP LOCATIONS AND FINISH SCHEDULE THIS SHT. FOR SPECS.

A.F. CLEAN AND VACUUM AFTER INSTALLATION. ANY SCRAPS LARGER THAN 48" SHALL BE ROLLED AND TURNED OVER TO THE TENANT (ATTIC STOCK).

7. PAINTING:

A. PAINT SHALL BE MANUFACTURER AND COLOR AS NOTED IN THE SCHEDULES.

B. ALL SURFACES TO RECEIVE PAINT SHALL BE PROPERLY PREPARED AND SHALL BE CLEAN AND FREE OF DUST, BLEMISHES AND ABRASIONS PRIOR TO APPLICATION OF FINISH. G.C TO FOLLOW FLOOR COVERING MANUFACTURER SPECIFICATIONS FOR APPLYING PAINT & FURNISH & INSTALL MOISTURE BARRIER AS ACCEPTABLE TO PAINT MANUFACTURER IF TEST RESULTS DETERMINE THAT ADDITIONAL MOISTURE PROTECTION IS REQUIRED. ALL WORK SHALL BE PERFORMED AS PART OF INITIAL CONTRACT & SHALL BE INCLUDED IN INITIAL BID. EXTRAS WILL NOT BE ALLOWED.

C. ALL SURFACES TO BE PAINTED SHALL RECEIVE ONE (1) COAT OF PRIMER AND TWO (2) FINISH COATS.

D. PAINT COLORS-SEE FINISH SCHEDULE.

E. GENERAL CONTRACTOR TO FILL AND TOUCH UP ALL NAIL HOLES IN WOOD TRIM.

F. ALL ELECTRICAL PLATES AND DEVICES TO RECEIVE FINISH AS NOTED ON EMP SPECIFICATIONS.

8. ENGINEERED WOOD FLOORING:

A. MATERIALS:

A.A. PROVIDE MATERIALS AS NECESSARY FOR A COMPLETE INSTALLATION.

A.B. UNDER FLOOR MATERIAL TO BE AS SPECIFIED IN FINISH SCHEDULE.

A.C. FINISHES TO BE AS SPECIFIED IN THE FINISH SCHEDULE.

B. INSTALLATION

B.A. INSTALL PER MANUFACTURER'S DIRECTIONS.

B.B. PROVIDE MOISTURE TEST

B.C. PROVIDE MANUFACTURER RECOMMENDED MOISTURE BARRIER AS NEEDED

DIVISION 10: MISCELLANEOUS SPECIALTIES:

1. SCOPE OF WORK INCLUDES TOILET ROOM ACCESSORIES AND ANY OWNER SUPPLIED MISCELLANEOUS SPECIALTIES.

2. TENANT'S GENERAL CONTRACTOR (TGC) SHALL INSTALL OWNER SUPPLIED MISCELLANEOUS SPECIALTIES (AS NOTED).

3. ALL EXTERIOR ILLUMINATED STORE SIGNS SHALL BE FURNISHED AND INSTALLED BY TENANT SIGN CONTRACTOR. TENANT SIGN CONTRACTOR TO PROCURE ALL NECESSARY APPROVALS AND PERMITS, PRIOR TO FABRICATION AND/OR INSTALLATION OF SIGNS. GENERAL CONTRACTOR TO PROVIDE FINISHED SIGN FASCIA AND ACCESS TO BULKHEAD INTERIOR AS REQUIRED FOR ELECTRICAL WIRING AND CONNECTION. FINAL CONNECTION BY

GENERAL NOTES

1. THE CONTRACTOR SHALL REVIEW DOCUMENTS AND VERIFY ALL DIMENSIONS AND FIELD CONDITIONS AND SHALL CONFIRM THAT WORK IS BUILDABLE AS SHOWN.

2. THE CONTRACTOR SHALL MAINTAIN FOR THE ENTIRE DURATION OF THE WORK, ALL EXITS, EXIT LIGHTING, FIRE PROTECTION DEVICES AND ALARMS, SPRINKLERS IN CONFORMANCE WITH ALL APPLICABLE CODES AND ORDINANCES.

3. CONTRACTOR SHALL NOT DISTURB THE DELIVERIES AND FUNCTION OF ADJACENT TENANTS OR BUILDING'S OPERATION DURING THE ENTIRE DURATION OF THE PROJECT.

4. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS GOVERN. FLOOR PLAN PREPARED BY ARCHITECT SUPERSEDE ALL OTHERS. ALL DIMENSIONS MARKED OR NOTED "CLEAR" SHALL BE MAINTAINED AND SHALL ALLOW FOR THICKNESS OF ALL FINISHES.

5. THESE GENERAL CONDITIONS APPLY TO ALL DRAWINGS IN THIS SET AND SHALL EXTEND TO ANY CHANGES, EXTRAS OR ADDITIONS AGREED TO DURING THE COURSE OF THE WORK.

6. ALL WORK IS TO CONFORM WITH ARCHITECTS DRAWINGS AND SPECIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK AS REQUIRED TO FULFILL THE INTENTIONS OF THE DOCUMENTS.

7. ALL CONSTRUCTION SHALL CONFORM TO AND BE IN ACCORDANCE WITH, THE REQUIREMENTS OF ALL APPLICABLE MUNICIPAL, STATE AND FEDERAL REGULATIONS HAVING JURISDICTION

8. ALL WORK SHALL BE COMPLETED FOR THE AGREED CONTRACT PRICE WITHOUT RECOURSE TO LABOR STOPPAGES OR REVISIONS OF GOVERNING REGULATIONS, LAWS AND CODES. UNLESS NOTED BY THE CONTRACTOR(S) IN THE BID FOR THE PROJECT, ALL WORK SHALL BE COMPLETED AS SHOWN WITHOUT LIMITATIONS, EXCLUSIONS OR MODIFICATIONS.

9. AFTER THE JOB IS IN PROGRESS, THE CONTRACTOR(S) SHALL NOT PROCEED WITH ANY ADDITIONAL WORK OR CHANGES FOR WHICH ADDITIONAL COMPENSATION IS EXPECTED WITHOUT WRITTEN "CHANGE ORDER" AUTHORIZED BY THE TENANT/OWNER OR ARCHITECT IF APPOINTED AS THE OWNERS/TENANTS REPRESENTATIVE. FAILURE TO OBTAIN PRIOR AUTHORIZATION CAN INVALIDATE A CLAIM FOR ADDITIONAL COMPENSATION.

10. ALL CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLYING WITH THE LANDLORDS RULES AND REGULATIONS ON MATERIAL HANDLING, EQUIPMENT, DEBRIS, ELEVATOR AND/OR LOADING DOCK AVAILABILITY, AND ALL THERE TENANT CONSTRUCTION REGULATIONS.

11. MAINTAIN ALL EXISTING BUILDING SERVICES IN USE AT ALL TIMES UNLESS PERMISSION IS RECEIVED IN WRITING FROM THE LANDLORD TO TEMPORARILY INTERRUPT SERVICE. PERMANENTLY RECONNECT ALL SERVICES DISRUPTED BY THE PROJECT WORK WHETHER WITHIN OR OUTSIDE OF THE CONTRACT LIMIT LINES.

12. ALL WORK SHALL BE PERFORMED DURING REGULAR BUSINESS HOURS UNLESS AUTHORIZED IN WRITING BY THE LANDLORD AND/OR OWNER/TENANT.

13. IF APPLICABLE TO THE PROJECT, PASSENGER ELEVATORS SHALL NOT BE USED BY THE TRADES AT ANY TIME DURING THE PERFORMANCE OF THE WORK.

14. TIME IS OF THE ESSENCE AND THE CONTRACTOR(S) SHALL KEEP SUFFICIENT PERSONNEL ON THE JOB AT ALL TIMES TO PERFORM THE WORK IN THE MOST EXPEDITIOUS MANNER CONSISTENT WITH GOOD WORKMANSHIP, AND SOUND BUSINESS PRACTICE. THE CONTRACTOR(S) SHALL CONFIRM THAT ALL ITEMS WILL BE ORDERED, FABRICATED AND INSTALLED PRIOR TO THE AGREED UPON COMPLETION DATE. EXCEPTIONS WILL NOT BE ALLOWED WITHOUT WRITTEN AUTHORIZATION OF THE OWNERS/TENANTS REPRESENTATIVE PRIOR TO THE PLACEMENT OF THE ORDER.

15. THE CONTRACTOR(S) SHALL PROVIDE TEMPORARY WALLS, ENCLOSURES, AND DUST PROOF BARRICADES AS REQUIRED FOR SAFETY, TO CONTROL AND MINIMIZE DUST FROM DEMOLITION AND CONSTRUCTION OPERATIONS, AND TO EFFECTIVELY SEPARATE WORK AREAS FROM OTHER OCCUPIED AREAS. THE CONTRACTOR(S) SHALL EXERCISE ALL DUE CARE AND BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING CONDITIONS AND PROVIDE PROTECTION DEVICES TO MAINTAIN SAME. VERIFY WITH OWNER/TENANT AND LANDLORD ANY SPECIAL REQUIREMENTS TO PROTECT BUILDING SYSTEMS, EQUIPMENT OR COMPUTERS.

16. DO NOT CLOSE, OBSTRUCT, OR STORE MATERIAL IN WALKWAYS, PASSAGEWAYS, STAIRS OR OTHER MEANS OF EGRESS.

17. NO USE OF ARC WELDING BLOWTORCH EQUIPMENT SHALL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE OWNER/TENANT OR LANDLORD.

18. CONTRACTOR(S) MUST PROVIDE TEMPORARY LIGHTING FOR THE PERFORMANCE OF HIS WORK AS WELL THAT REQUIRED TO INSURE PUBLIC SAFETY IN OR AROUND THE PREMISES.

19. REMOVE DEBRIS AS WORK PROGRESSES. MAINTAIN THE PREMISES IN A NEAT AND CLEAN CONDITION. THE FURNISHING OF REFUSE CONTAINERS, CARTS, EQUIPMENT, LABOR AND THE SCHEDULING OF ELEVATOR AND/OR LOADING DOCK (IF APPLICABLE TO PROJECT) SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR(S). UPON COMPLETION OF ALL WORK, REMOVE ALL MATERIALS AND RUBBISH OF ANY SORT AND PROVIDE FINAL CLEAN UP OF PREMISES.

20. GENERAL CONTRACTOR IS TO COORDINATE ALL DELIVERIES WITH THE LANDLORD'S DESIGNATED REPRESENTATIVES

21. GENERAL CONTRACTOR IS TO ACQUIRE AND CONFORM TO THE LANDLORDS CRITERIA AND CONDITIONS FOR GENERAL CONTRACTORS.

22. TENANT GENERAL CONTRACTOR IS NOT PERMITTED TO ATTACH OR SUSPEND ANY COMPONENTS / EQUIPMENT TO THE BOTTOM CHORD OF JOISTS OR TO THE ROOF DECK. ALL WALL CONSTRUCTION SHALL BE SUPPORTED BY THE TOP CHORD OF THE STRUCTURAL JOISTS.

23. COORDINATE ALL FLOOR CUTS WITH THE OPERATIONS DIRECTOR FOR THE PROPERTY

24. ALL FIRE SPRINKLER WORK IS TO BE COMPLETED BY THE LANDLORD APPROVED SPRINKLER CONTRACTOR, AT THE GENERAL CONTRACTOR'S EXPENSE. COORDINATE THIS WORK WITH THE ON SITE LANDLORD REPRESENTATIVE.

25. TENANT'S GENERAL CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGES DONE TO THE LANDLORD / PROPERTY PROPERTY AT THEIR OWN EXPENSE.

26. SIGNAGE SHOP DRAWINGS MUST BE SUBMITTED FOR LANDLORD AND CITY REVIEW AND APPROVAL.

27. TENANT'S GENERAL CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION BARRICADE AND TRASH DUMPSTERS AT THEIR OWN EXPENSE AND SHALL BE COORDINATED WITH LANDLORD'S REPRESENTATIVE.

28. TENANT'S GENERAL CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL LANDLORD / PROPERTY RULES AND REGULATIONS OR AS DIRECTED BY THE ON SITE LANDLORD REPRESENTATIVE.

29. TENANT'S GENERAL CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY ALL EXISTING CONDITIONS AND MUST NOTIFY THE ARCHITECT / OWNER IMMEDIATELY IF SITE CONDITIONS CONFLICT WITH THESE PLANS.

30. APPROVAL OF THE TENANT'S CONSTRUCTION DOCUMENTS AND SPECIFICATIONS DOES NOT RELEASE THE TENANT OR THE TENANT'S GENERAL CONTRACTOR FROM COMPLYING WITH THE LEASE AGREEMENT AND ALL APPLICABLE BUILDING CODES AND GOVERNING REGULATIONS.

IT IS THE TENANT'S GENERAL CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND VERIFY EXACT LOCATION OF LEASE LINE WITH LANDLORD REPRESENTATIVE. CONTRACTOR MUST NOTIFY ARCHITECT / OWNER IMMEDIATELY OF ANY DISCREPANCIES.

RGLA
rgla solutions, inc.
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

REVISIONS:	DATE:
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robert g. lyon + associates, inc.
retail architecture
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

CAITLIN DODGE
27873

carhartt

ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD.
SUITE 112
SAN ANTONIO, TX 78209

SPECIFICATIONS &
GENERAL NOTES

DRAWN BY	SLS
CHECKED BY	AT / SL
JOB NUMBER	25341
SHEET NAME	G-0.1

ACCESSIBILITY NOTES:

TENANT MUST COMPLY WITH TITLE III OF THE AMERICANS WITH DISABILITIES ACT (ADA) AND ALL LOCAL AND STATE CODES.

DOOR HARDWARE: HAND-ACTIVATED DOOR OPENING HARDWARE SHALL BE MOUNTED 2'-10" A.F.F. AND BE OPERABLE WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE.

DOOR EFFORT: MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 8.5 POUNDS FOR EXTERIOR DOORS AND 5 POUNDS FOR INTERIOR DOORS.

SMOOTH DOOR BOTTOM: THE BOTTOM OF ALL DOORS SHALL (EXCEPT SLIDING AUTOMATIC) HAVE A SMOOTH UNINTERRUPTED SURFACE.

REQUIRED DOOR OPENING WIDTH & SIZE: ALL REQUIRED EXIT DOORWAYS SHALL HAVE A MIN. 32" CLEAR OPENING WITH THE DOOR AT 90° TO THE CLOSED POSITION. EVERY REQUIRED ENTRANCE OR PASSAGE DOORWAY SHALL BE OF A SIZE AS TO PERMIT THE INSTALLATION OF A DOOR NOT LESS THAN 3'-0" IN WIDTH & NOT LESS THAN 6'-8" IN HEIGHT.

THRESHOLD HEIGHT: MAXIMUM HEIGHT OF THRESHOLD SHALL BE 1/2" WITH VERTICAL CHANGE AT EDGE OF 1/2 WITH A MAXIMUM LEVEL OF 45 DEGREES CHANGE IN LEVEL BETWEEN 1/4" AND 1/2" SHALL BE BEVELED WITH A SLOPE NO GREATER THEN 1:2.

FAUCET LEVERS: ALL FAUCET CONTROLS FOR SINKS (EXISTING AND/OR NEW) ARE TO BE OPERABLE WITH LEVER TYPE CONTROLS.

PLUMBING PROTECTION: ALL EXPOSED PLUMBING IS TO BE WRAPPED WITH INSULATION.

DOOR OPERABILITY: LATCHING AND LOCKING DOORS THAT ARE HAND ACTIVATED AND WHICH ARE IN A PATH OF TRAVEL SHALL BE OPERABLE WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE, PANIC BARS OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITH OUT REQUIRING THE ABILITY TO GRASP THE OPENING HARDWARE.

CHANGES IN LEVEL: ABRUPT CHANGES IN LEVEL ALONG ACCESSIBLE ROUTES SHALL NOT EXCEED 1/2" IN HEIGHT. WHEN CHANGES IN LEVEL DO OCCUR, THEY SHALL BE BEVELED WITH A SLOPE OF NO GREATER THAN 1:12, EXCEPT THAT LEVEL CHANGES NOT EXCEEDING 1/4 " MAY BE VERTICAL.

DOOR LANDING AREAS: THE FLOOR OR LANDING ON EACH SIDE OF AN ENTRANCE OR PASSAGE DOOR SHALL BE LEVEL AND CLEAR. THE LEVEL AND CLEAR AREA SHOULD BE LEVEL AND CLEAR IN THE LENGTH AND THE DIRECTION OF THE DOOR SWING AT LEAST 60", AND THE LENGTH ON THE OPPOSITE SIDE OF THE DOOR SWING AT 44" AS MEASURED PERPENDICULAR TO THE PLAN OF THE DOOR IN ITS CLOSED POSITION.

AVAILABLE SIDE ACCESS TO DOORS: THE WIDTH OF THE LEVEL AND CLEAR AREA ON THE SIDE TO WHICH THE DOOR SWINGS SHALL EXTEND 24" PAST THE STRIKE EDGE OF THE DOOR FOR EXTERIOR DOORS AND 24" PAST THE STRIKE EDGE FOR INTERIOR DOORS.

TOILET CONTROLS: TOILET FLUSH CONTROLS PROVIDED & INSTALLED AS PART OF THE WORK SHALL BE OPERABLE WITH ONE HAND, & SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. CONTROL FOR THE FLUSH VALVES SHALL BE MOUNTED ON THE WIDE SIDE OF THE TOILET AREAS. NO MORE THAN 44" ABOVE THE FLOOR. THE FORCE REQUIRED TO ACTIVATE THE CONTROLS SHALL BE NOT GREATER THAN 5 LBS.

OTHER FLUSH CONTROLS: OTHER FLUSH CONTROLS PROVIDED & INSTALLED AS PART OF THE WORK SHALL BE OPERABLE WITH ONE HAND, & SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. CONTROL FOR THE FLUSH VALVES SHALL BE MOUNTED ON THE WIDE SIDE OF THE TOILET AREAS. NO MORE THAN 44" ABOVE THE FLOOR. THE FORCE REQUIRED TO ACTIVATE THE CONTROLS SHALL BE NOT GREATER THAN 5 LBS.

ACCEPTABLE DEVICE/FIXTURE CONTROLS: FAUCET CONTROLS OR OTHER OPERATING MECHANISMS SHALL BE OPERABLE WITH ONE HAND & SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE THE CONTROLS SHALL BE NOT GREATER THAN 5 POUNDS. LEVER OPERATED, PUSH TYPE & ELECTRONICALLY CONTROLLED MECHANISMS ARE EXAMPLES OF ACCEPTABLE DESIGNS. SELF CLOSING VALVES ARE ALLOWED IF THE FAUCET REMAINS OPEN FOR AT LEAST 10 SECONDS.

ELECTRICAL & MECHANICAL CONTROLS: THE CENTER OF RECEPTACLE OUTLETS SHALL BE NOT LESS THAN 15" ABOVE THE FINISHED FLOOR OR WORKING PLATFORM. THE CENTER OF THE GRIP OF THE OPERATING HANDLE OF SWITCHES INTENDED TO BE USED BY THE OCCUPANT OF THE ROOM OR AREA TO CONTROL LIGHTING AND RECEPTACLE OUTLETS, APPLIANCES, HVAC EQUIPMENT SHALL BE NOT LESS THAN 36" OR MORE THAN 48" ABOVE THE FLOOR OR WORKING PLATFORM. THE CENTER OF FIRE ALARM INITIATING DEVICES (BOXES) SHALL BE LOCATED 48" ABOVE THE LEVEL OF THE FLOOR, WORKING PLATFORM, GROUND SURFACE, OR SIDEWALK.

FLOOR FINISHES: FLOOR SHALL BE SLIP RESISTANT.

ENTRY SIGNAGE: ALL DISABLED ACCESSIBLE ENTRANCES SHALL BE IDENTIFIED WITH AT LEAST ONE STANDARD SIGN AND WITH ADDITIONAL DIRECTIONAL SIGNS, AS REQUIRED, VISIBLE FROM APPROACHING PEDESTRIAN WAYS.

TELEPHONES & DRINKING FOUNTAINS: WHEN PROVIDED, AT LEAST ONE TELEPHONE & ONE DRINKING FOUNTAIN IN THE BUILDING SHALL BE ACCESSIBLE & USABLE BY THE PHYSICALLY DISABLED.

- ACCESSIBILITY GENERAL NOTES

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
# / AX.X	ELEVATION TAG- SEE DWG. AS NOTED	# / AX.X	DETAIL TAG- SEE DWG. AS NOTED	#	RCP KEY TAG- SEE DWG. AS NOTED	XXX SQ. FT. ROOM-NAME2 ROOM-NAME XXX	ROOM NUMBER TAG
# # AX.X # #	INTERIOR ELEVATION TAG- SEE DWG. AS NOTED	#	PARTITION TYPE TAG- SEE WALL TYPE LEGEND	#	ELEVATION KEY TAG- SEE DWG. AS NOTED	NAME ELEV. X'-X"	ELEVATION BENCHMARK
# / AX.X	SECTION TAG- SEE DWG. AS NOTED	#	PLAN KEY TAG- SEE DWG. AS NOTED	#	FINISH KEY TAG- SEE DWG. AS NOTED	#	REVISION TAG

- SYMBOL LEGEND

DIVISION OF WORK

DESCRIPTION	EXIST. TO REMAIN	DOES NOT APPLY	GENERAL CONTRACTOR AND SUB. CONTRACTOR FURNISH	GENERAL CONTRACTOR AND SUB. CONTRACTOR INSTALL	OWNER FURNISH	OWNER INSTALL	LANDLORD FURNISH	LANDLORD INSTALL	REMARKS
DIVISION 01: GENERAL REQUIREMENTS									
AS APPLICABLE			●	●	●	●			
PERMITS			●						
DIVISION 02: SITE WORK									
BARRICADE / FENCE		●							
GRAPHICS (BARRICADE)				●	●				
DEMOLITION			●	●					
DIVISION 03: CONCRETE									
CHANNEL / CORE SLAB FOR IN FLOOR PLUMBING FIXTURE			●	●					
CHANNEL / CORE SLAB FOR NEW IN FLOOR ELECTRICAL/DATA CONDUIT			●	●					
CHANNEL, LEVEL AND SLOPE CONCRETE SLAB FOR FINISHES AND TRANSITIONS			●	●					
GRINDING AND POLISHING CONCRETE			●	●					
DIVISION 04: MASONRY									
STOREFRONT STONE REPAIR	●		●	●					
MASONRY FINISHES (SEE FINISH LEGEND ON A0.1)	●	●							
DIVISION 05: METALS									
STRUCTURAL FRAMING			●	●					
STRUCTURAL PANEL SYSTEM	●								
STRUCTURAL COLUMNS AND ANGLES	●								
DIVISION 06: WOOD & PLASTICS									
ROUGH CARPENTRY			●	●					
BLOCKING			●	●					
FINISH CARPENTRY			●	●					
DIVISION 07: THERMAL & MOISTURE CONTROL									
CAULK AND SEALANTS			●	●					
INSULATION (SOUND)			●	●					
DIVISION 08: DOORS, WINDOWS & GLASS									
STOREFRONT GLAZING / GLAZING SYSTEM	●								
STOREFRONT SYSTEM	●								
STOREFRONT DOOR AND HARDWARE	●		●	●					
INTERIOR DOORS, FRAMES & HARDWARE	●		●	●					
									SEE DOOR SCHEDULE
DIVISION 09: FINISHES									
PATCH AND REPAIR DEMISING WALL			●	●					VERIFY CONDITION
INTERIOR METAL STUD FRAMING AND DRYWALL			●	●					SEE A1.1
PATCH AND REPAIR EXISTING DRYWALL AS REQUIRED			●	●					PATCH AS REQUIRED
INTERIOR DRYWALL CEILING			●	●					SEE A2.1
FINISHES									SEE FINISH SCHEDULE A0.1
FLOORING TRANSITIONS			●	●					
DIVISION 10: MISCELLANEOUS SPECIALTIES									
COMING SOON GRAPHICS				●	●				SEE F2.1
PERMANENT VINYL GRAPHICS					●	●			SEE F2.1
INTERIOR GRAPHICS / SIGNAGE (NON-VINYL)				●	●				SEE F2.1
EXTERIOR AWNINGS			●	●					
DIVISION 11 AND 12: FURNITURE, FIXTURE AND EQUIPMENT									
UNLOADING FIXTURES				●					
STORE FIXTURES				●	●				SEE FIXTURE PLAN
GRAPHIC RAILS, BRACKETS & HARDWARE			●	●					
PROPS AND DISPLAY					●	●			
MANAGEMENT OF OWNER SUPPLIED ITEMS				●	●				
DIVISION 13 AND 14: SPECIAL CONSTRUCTION AND CONVEYING SYSTEMS									
NOT APPLICABLE		●							
DIVISION 16: ELECTRICAL									
LOW VOLTAGE CONDUITS	●		●	●					SEE A6.1 FOR NEW WORK
LOW VOLTAGE WIRING	●		●	●					SEE A6.1 FOR NEW WORK
LOW VOLTAGE WIRING - TERMINATIONS AT THE PATCH PANEL / SWITCH	●		●			●			SEE A6.1 FOR NEW WORK
LIGHTING			●	●					USE OWNER REQ'D VENDOR

- DIVISION OF WORK

RGLA
rgla solutions, inc.
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

REVISIONS:	DATE:
ISSUE FOR PERMIT, LANDLORD, PRICING	05/29/25

robert g. lyon + associates, inc.
retail architecture
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

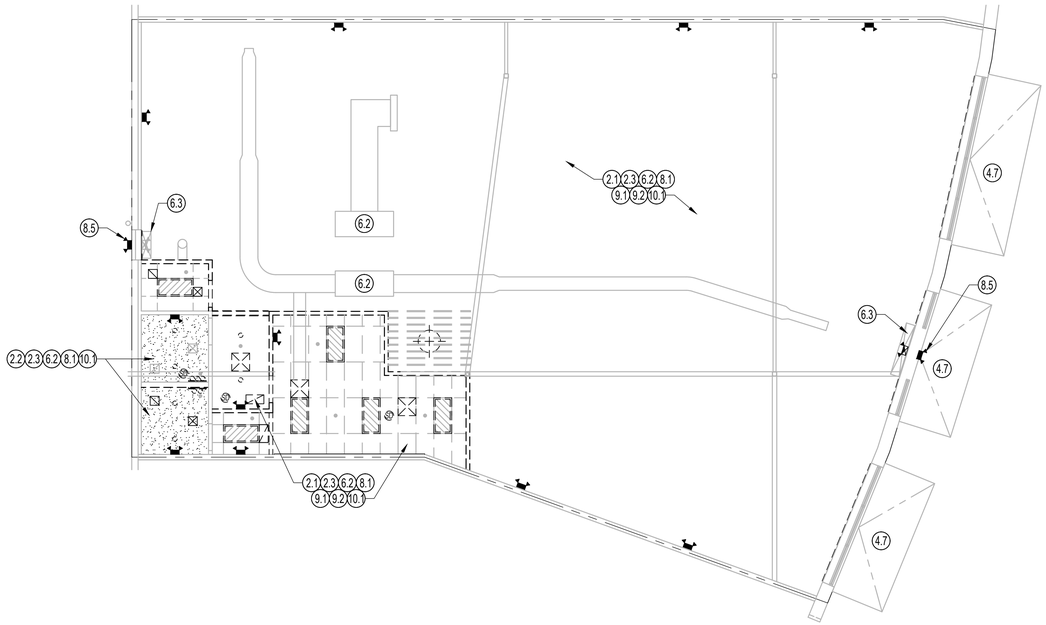
REGISTERED ARCHITECT
CHRISTLIN DODGE
27873
STATE OF TEXAS

carhartt

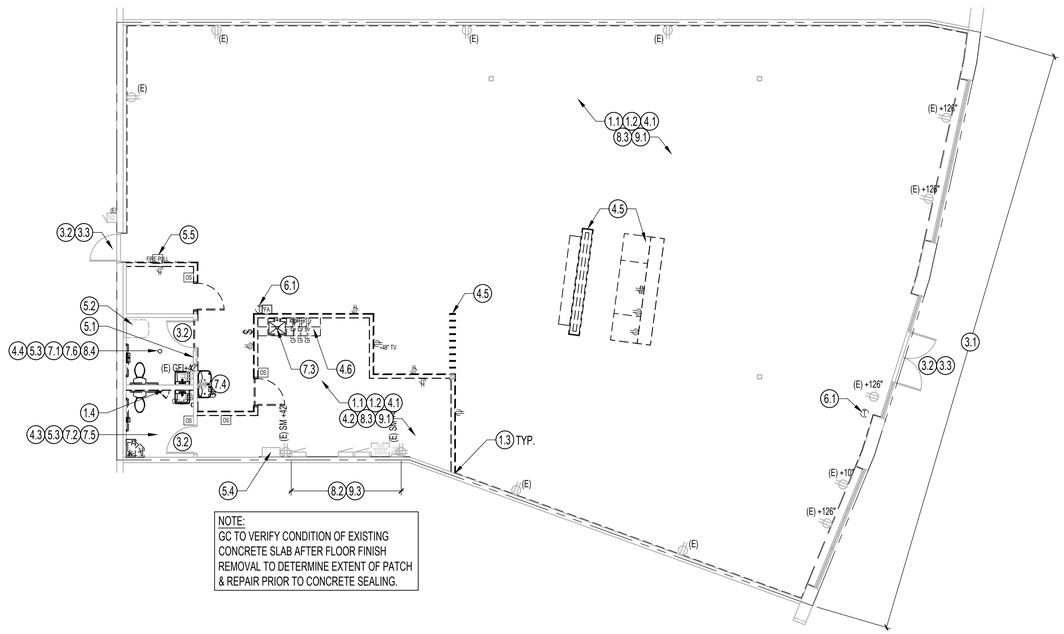
ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD.
SUITE 112
SAN ANTONIO, TX 78209

DIVISION OF WORK & SYMBOLS LEGEND

DRAWN BY	SLS
CHECKED BY	AT / SL
JOB NUMBER	25341
SHEET NAME	G-0.2



2 | DEMOLITION CEILING PLAN | SCALE 1/8"=1'-0"



1 | DEMOLITION FLOOR PLAN | SCALE 1/8"=1'-0"

1. DEMOLITION PLANS ARE FOR GENERAL SCOPE. GENERAL CONTRACTOR IS TO VERIFY ALL EXISTING CONDITION AND COORDINATE REQUIRED DEMOLITION WITH TENANT & TENANT'S ARCHITECT.
2. WHEN EXISTING MECHANICAL, ELECTRICAL AND PLUMBING FIXTURES AND/OR EQUIPMENT ARE TO BE REMOVED, THEY ARE TO BE DISCONNECTED AT THE SOURCE, UNLESS NOTED OR DIRECTED OTHERWISE. COORDINATE ALL WORK WITH MECHANICAL, ELECTRICAL AND PLUMBING PLANS.
3. ALL EXISTING DUCTWORK TO REMAIN UNLESS INDICATED ON MECHANICAL PLANS. ALL ABANDONED HVAC EQUIPMENT AND DUCTWORK SHALL BE REMOVED UPON DISCOVERY.
4. ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE ALL EXISTING ELECTRICAL, TELEPHONE OUTLETS, AND ALL ASSOCIATED WIRES IN WALLS TO BE REMOVED AND TERMINATE AT THE LAST OUTLET THAT REMAINS IN SERVICE.
5. ALL EMPTY OR ABANDONED CONDUIT AND JUNCTION BOXES TO BE REMOVED.
6. DEMOLITION CONTRACTOR SHALL REMOVE ALL EXISTING FLOOR COVERINGS AND/OR FINISHES, UNDERLAYMENT, GLUE AND ANY OTHER ADHESIVE; AND SHALL PATCH REPAIR CONCRETE SLAB AS REQUIRED TO ACCOMMODATE FINAL FLOOR PREP. REFER TO FINISH PLAN FOR ADDITIONAL INFORMATION.
7. ALL ABANDONED UTILITIES ARE TO BE REMOVED AS DIRECTED BY LANDLORD OR AS SPECIFIED BY MALL MANAGEMENT. COORDINATE WITH MALL MANAGEMENT OR LANDLORD AS NECESSARY.
8. ALL FIREPROOFING AT STRUCTURAL ELEMENTS SHALL REMAIN, UNLESS NOTED OTHERWISE. ANY FIREPROOFING REMOVED AND/OR DAMAGED DURING THE COURSE OF DEMOLITION SHALL BE REPLACED WITH THE SAME MATERIALS AND RATING AS THAT WHICH WAS REMOVED AT THE CONTRACTOR'S EXPENSE.
9. LANDLORD ROOFING CONTRACTOR - IF REQUIRED - IS TO REMOVE EXISTING ROOFING INSULATION AND ROOF DECK AS REQUIRED WHERE NEW ROOF TOP EQUIPMENT IS SPECIFIED. G.C. IS TO VERIFY EXACT LOCATION AND EXTENT IN THE FIELD. REFER TO MECHANICAL DRAWINGS.
10. PRIOR TO SAWCUTTING OF EXISTING SLAB, G.C. IS TO VERIFY WITH THE LANDLORD THE LOCATION OF ANY AND ALL EXISTING UTILITIES RUNNING THROUGH THE SPACE. IF IT IS DETERMINED THAT UTILITIES ARE PRESENT , BUT EXACT LOCATIONS ARE NOT KNOWN, THEN THE G.C. SHOULD XRAY THE SLAB.
11. USE CARE DURING DEMOLITION SO AS NOT TO DISTURB THE REMAINING WALLS, CEILINGS, PIPING AND DUCTWORK. EXISTING DUCTWORK TO BE REVISED BY SHEET METAL CONTRACTOR. GENERAL CONTRACTOR TO PROVIDE TEMPORARY SUPPORT FOR ALL EXISTING DUCTWORK AND SPRINKLER LINES AFFECTED BY THE REMOVAL.
12. TENANT RESERVES THE RIGHT TO RETAIN ITEMS AS DESIRED. THE CONTRACTOR SHALL REMOVE RETAINED ITEMS TO A STORAGE AREA AS DIRECTED BY THE TENANT OR HIS REPRESENTATIVE. ALL OTHER MATERIALS AND DEBRIS SHALL BE REMOVED FROM THE BUILDING SITE IMMEDIATELY.
13. CONTRACTORS ENGAGED SHALL BE PROTECTED BY THE PROPER INSURANCE AND SHALL FILE EVIDENCE THEREOF WITH THE OWNER'S AGENT, INCLUDING HOLD HARMLESS PROTECTION FOR THE TENANT AND ARCHITECT.
14. DEBRIS FROM THE DEMOLITION SHALL BE REMOVED PROMPTLY FROM THE BUILDING BY MEANS APPROVED BY THE LANDLORD.
15. DO NOT REMOVE ANY UTILITIES RUNNING THROUGH THE SPACE TO ADJACENT TENANTS.

B | GENERAL DEMOLITION NOTES

1. FRAMING
   - 1.1. REMOVE INTERIOR PARTITIONS AND INTEGRATED DOORS, FIXTURES, FINISHES AND POWER (SHOWN DASHED.) NOTIFY ARCHITECT IMMEDIATELY IF DEMOLITION EXPOSES ANY UNFORESEEN CONDITIONS.
   - 1.2. EXISTING WALLS TO REMAIN (SHOWN SOLID). SEE SHEET A1.1
   - 1.3. AT DEMISING WALLS IN SALES AREA, G.C. SHALL REMOVE EXISTING BUILD-OUTS WHILE MAINTAINING INTEGRITY OF RATED DEMISING WALLS. G.C. SHALL CONTACT ARCHITECT IF GYP. BD. IS MISSING ON DEMISING WALLS.
   - 1.4. REMOVE GYP. BD. AT THIS SIDE FOR NEW INSULATION.

2. CEILINGS
   - 2.1. REMOVE ALL CEILINGS, SOFFITS, FINISHES & LIGHT FIXTURES THROUGHOUT, UNLESS OTHERWISE NOTED. EXISTING 'OPEN CEILING' IN SALES TO REMAIN.
   - 2.2. EXISTING GYP. BD. CLNG TO REMAIN, TOILET ROOM AND CONVERTED OFFICE. REMOVE ALL LIGHT FIXTURES & ABANDONED EQUIPMENT.VPREPARE SURFACE FOR NEW FINISH.
   - 2.3. REMOVE ALL EXISTING EXIT & EMERGENCY LIGHTS.

3. DOORS / GLAZING
   - 3.1. EXISTING STOREFRONT SYSTEM TO REMAIN
   - 3.2. EXISTING DOOR TO REMAIN. SEE A-0.1 FOR NEW HARDWARE.
   - 3.3. REMOVE ALL EXISTING WEATHERSTRIPPING AND PREPARE DOOR SURFACE FOR NEW.

4. FIXTURES / FINISHES
   - 4.1. REMOVE ALL SHIPLAP WOOD, WALL BASE & TRIM THROUGHOUT INTERIOR (TYP. U.N.O). G.C. SHALL ENSURE INTEGRITY OF EXISTING GYP. BD. BENEATH. NOTIFY ARCHITECT IMMEDIATELY IF DEMOLITION EXPOSES ANY UNFORESEEN CONDITIONS.
   - 4.2. REMOVE VCT FLOORING, THROUGHOUT
   - 4.3. REMOVE ALL EXISTING FINISHES WITHIN THIS TOILET ROOM.
   - 4.4. REMOVE ALL EXISTING FLOOR & WALL TILE.
   - 4.5. REMOVE EXISTING SLATWALL SYSTEM AND ABANDONED FIXTURES THROUGHOUT.
   - 4.6. REMOVE BREAK AREA COUNTERTOP & ALL CABINETRY.
   - 4.7. EXISTING AWNING FRAMES TO REMAIN. REMOVE FABRIC & PREPARE FOR NEW.

5. EQUIPMENT
   - 5.1. EXISTING PARTIALLY RECESSED PAPER TOWEL DISPENSER / WASTE RECEPTACLE TO REMAIN. G.C. SHALL CLEAN AND VERIFY PROPER WORKING ORDER AND INSTALLATION. SEE SHEET A1.3
   - 5.2. EXISTING STAINLESS STEEL CHANGING TABLE TO REMAIN. G.C. SHALL CLEAN AND VERIFY PROPER WORKING ORDER AND INSTALLATION. SEE SHEET A1.3
   - 5.3. ALL TOILET ROOM ACCESSORIES TO BE REMOVED UNLESS OTHERWISE NOTED.
   - 5.4. EXISTING EQUIPMENT SHELF TO REMAIN.
   - 5.5. EXISTING FIRE ALARM PULL TO REMAIN FOR REUSE. G.C. TO COORDINATE WITH FIRE ALARM COMPANY PRIOR TO THE REMOVAL/RELOCATION OF THE DEVICE.

6. MECHANICAL
   - 6.1. REMOVE / RELOCATE THERMOSTAT / TEMPERATURE SENSOR - SEE MECHANICAL SHEETS
   - 6.2. EXISTING MECHANICAL SYSTEM SHALL BE MODIFIED AS REQUIRED TO ACCOMMODATE NEW CEILING CONDITIONS. REMOVE ALL HVAC COMPONENTS NOT BEING RE-USED. (SEE MECHANICAL PLANS).
   - 6.3. EXISTING AIR CURTAIN(S) TO BE REMAIN. G.C. SHALL CLEAN AND VERIFY PROPER WORKING ORDER. SEE MECHANICAL DRAWINGS.

7. PLUMBING
   - 7.1. THIS TOILET ROOM ONLY - EXISTING TOILET & SINK TO BE REMOVED. ASSOCIATED PLUMBING TO REMAIN AND RE-USED WITH NEW FIXTURES.
   - 7.2. THIS TOILET ROOM ONLY - EXISTING TOILET, SINK, FLOOR DRAIN, MOP SINK AND ALL ASSOCIATED PLUMBING TO BE REMOVED COMPLETELY.
   - 7.3. REMOVE EXISTING SINK IN BREAK AREA.
   - 7.4. EXISTING DRINKING FOUNTAIN TO BE REMOVED. EXISTING WATER LINES / ELECTRICAL TO BE RE-USED IF FEASIBLE FOR NEW WATER HEATER. SEE PLUMBING DRAWINGS. SEE PLUMBING DRAWINGS.
   - 7.5. EXISTING WATER HEATER TO BE REMOVED. EXISTING WATER LINES / ELECTRICAL TO BE RE-USED IF FEASIBLE FOR NEW WATER HEATER. SEE PLUMBING DRAWINGS.
   - 7.6. EXISTING FLOOR DRAIN TO REMAIN.

8. ELECTRICAL
   - 8.1. REMOVE ALL LIGHTING THROUGHOUT. SEE SHEET A2.1
   - 8.2. EXISTING ELECTRICAL PANELS TO BE REMAIN. SEE ELECTRICAL SHEETS
   - 8.3. REMOVE EXISTING OUTLETS THROUGHOUT, INCLUDING ALL FLOOR OUTLETS UNLESS OTHERWISE NOTED. REMOVE WIRE TO SOURCE.
   - 8.4. EXISTING OUTLETS / OCCUPANCY SENSOR TO REMAIN THIS ROOM
   - 8.5. EXISTING EXTERIOR EMERGENCY LIGHT TO BE REMOVED. JUNCTION BOX TO REMAIN FOR NEW FIXTURE

9. LOW VOLTAGE COMMUNICATION SYSTEM
   - 9.1. ALL EXISTING ELECTRIC, VOICE AND DATA COMPONENTS ARE TO BE REMOVED, UNLESS NOTED OTHERWISE. SEE ELECTRICAL SHEETS. DO NOT REMOVE UTILITY PROVIDER DEVICES OR CABLING ON THE PRIMARY SIDE OF UTILITY PROVIDER DEVICES.
   - 9.2. REMOVE EXISTING SPEAKERS, CAMERAS AND SECURITY DEVICES THROUGHOUT
   - 9.3. REMOVE EXISTING DATA RACK CABLES

10. FIRE SUPPRESSION / SPRINKLER SYSTEM
    - 10.1. EXISTING SPRINKLER / HEAD LOCATION TO REMAIN IN PROPOSED 'OPEN TO DECK' & EXISTING GYP. CEILING AREAS. INSPECT AND ENSURE PROPER WORKING ORDER (TYP.) .C. SHALL PROTECT DURING CONSTRUCTION.

A | KEY NOTES (#)

RGLA
rgla solutions, inc.
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

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robert g. lyon + associates, inc.
retail architecture
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

REGISTERED ARCHITECT
CAITLIN DODGE
27873
STATE OF TEXAS

carhartt

ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD.
SUITE 112
SAN ANTONIO, TX 78209

DEMOLITION PLANS

DRAWN BY
SLS
CHECKED BY
AT / SL
JOB NUMBER
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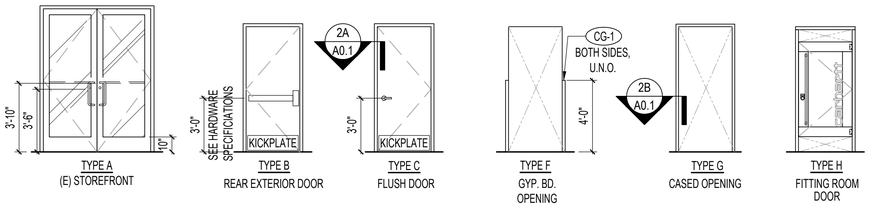
SHEET NAME
D1.1



TYPE A (E) STOREFRONT

TYPE B REAR EXTERIOR DOOR

TYPE C FLUSH DOOR

TYPE F GYP. BD. OPENING

TYPE G CASED OPENING

TYPE H FITTING ROOM DOOR

8 DOOR TYPES

OPENING					DOOR					FRAME			KEY	REMARKS
MARK	STATUS	LOCATION	SIZE	TYPE	STATUS	HARDWARE	SIZE	MATERIAL	FINISH	STATUS	MATERIAL	FINISH		
101	EXISTING	ENTRY	6'-0" X 7'-0"	A	EXISTING	4	(2) 3'-0" X 7'-0"	ALUM. / GLASS	BLACK	EXISTING	ALUM.	BLACK	AA	1
102	NEW	HALLWAY	3'-0" X 7'-0"	G	N/A	N/A	N/A	N/A	N/A	NEW	H.M.	P-1	-	
103	NEW	FITTING ROOM	3'-0" X 7'-0"	H	NEW	6	3'-0" X 5'-4" X 1 3/4"	WOOD/ LAMINATE	LAM	NEW	STEEL	N/A	AF	2
104	NEW	FITTING ROOM	3'-0" X 7'-0"	H	NEW	6	3'-0" X 5'-4" X 1 3/4"	WOOD/ LAMINATE	LAM	NEW	STEEL	N/A	AF	2
105	NEW	HALLWAY	3'-0" X 7'-0"	G	N/A	N/A	N/A	N/A	N/A	NEW	H.M.	P-1	-	
106	NEW	BREAK ROOM / ELEC. ROOM	3'-0" X 7'-0"	C	NEW	2	3-0" X 7'-0" X 1 3/4"	S.C. WOOD	P-1	NEW	H.M.	P-1	AF	4
107	EXISTING	OFFICE	3'-0" X 7'-0"	C	EXISTING	2	3-0" X 7'-0" X 1 3/4"	S.C. WOOD	P-1	EXISTING	H.M.	P-1	AA	1
108	EXISTING	TOILET ROOM	3'-0" X 7'-0"	C	EXISTING	1	3'-0" X 7'-0" X 1 3/4"	S.C.WOOD	P-1	EXISTING	H.M.	P-1	AF	1, 4
109	NEW	STOCKROOM	3'-0" X 7'-0"	C	NEW	5	3'-0" X 7'-0" X 1 3/4"	S.C.WOOD	P-1	NEW	H.M.	P-1	AF	
110	EXISTING	REAR EXIT	3'-0" X 7'-0"	B	EXISTING	3	4'-0" X 7'-0"	H.M.	NOTE 3	EXISTING	H.M.	NOTE 3	AA	3

REMARK NOTES:
1. EXISTING DOOR & FRAME WITH NEW DOOR LOCKSET / LATCH SET & FINISH.
2. FITTING ROOM DOORS TO BE OWNER PROVIDED, G.C. INSTALLED. REFER TO APPROVED VENDOR SHOP DRAWINGS FOR INSTALLATION. HARDWARE TO BE INSTALLED BY GC.
3. INTERIOR TO BE PAINTED P-1, EXTERIOR TO BE PAINT TO MATCH PROPERTY SPEC. INSTALL SUITE # ON EXTERIOR PER LANDLORD REQUIREMENTS.
4. UNDERCUT DOOR 1" FOR RETURN AIR PATH

7 DOOR SCHEDULE

(108) SET 1 - TOILET ROOM :
HINGES: STANLEY # FBB199, 1 1/2 PR. PER DOOR 4 1/2" X 4 1/2" FINISH: 626 SATIN CHROME
LOCKSET: SCHLAGE ND73B RHO 626
DOOR STOPS: TRIMCO 1270CV (PULL SIDE WALL ONLY)
KICK PLATE: EXISTING
SILENCERS
CLOSER : LCN 4041 SUPER SMOOTHIE SURFACE CLOSER

(106) (107) SET 2 - OFFICE / BREAK RM/ELEC ROOM:
HINGES: STANLEY # FBB199, 1 1/2 PR. PER DOOR 4 1/2" X 4 1/2" FINISH: STAINLESS STEEL
LOCKSET: SCHLAGE ND70B RHO 626
DOOR STOPS: TRIMCO 1270CV (PULL SIDE WALL ONLY)
KICK PLATE: IVES 8"X34" STAINLESS STEEL, MFR# 8400 S 32D 8X24 (PUSH SIDE ONLY)
(ON OFFICE DOOR ONLY)
SILENCERS
CLOSER : LCN 4041 SUPER SMOOTHIE SURFACE CLOSER *(ON OFFICE DOOR ONLY)*
KICK PLATE: IVES 8"X34" STAINLESS STEEL, MFR# 8400 S 32D 8X24 (PUSH SIDE ONLY)
(ON OFFICE DOOR ONLY)

(110) SET 3 - REAR EXIT:
HARDWARE: 'DETEX' SELF CONTAINED DOOR ALARM W/ BATTERY #ECL-230D W/ STANDARD HARDWARE & IC7/IC7R. ADD EXTERIOR DOOR PULL
CYLINDER: TO ACCEPT SMALL FORMAT INTERCHANGEABLE CORE.
HINGES: EXISTING
DOOR STOPS: EXISTING
KICK PLATE: EXISTING
SILENCERS: EXISTING
CLOSER: EXISTING
PEEP HOLES: EXISTING
NOTE: ALL WEATHERSTRIPPING, THRESHOLD & SWEEP TO BE REPLACED

(101) SET 4 - ENTRY:
PULLS : EXISTING
HINGES : EXISTING
LOCKSET : ADAMS RITE MS-1850A-505 DEADLOCK FOR SMALL FORMAT INTERCHANGEABLE CORE
ADDITIONAL LOCKING : KAWNEER CONTROLLER LOCKING SYSTEM
STRIKES : EXISTING
CYLINDERS : KEYED CYLINDERS AT INSIDE AND OUTSIDE WITH ADAMS RITE 4089 EXIT INDICATOR
CLOSER : EXISTING
ALUMINUM THRESHOLD : 'BARRIER FREE WITH WEATHER STRIPPING & BOTTOM SWEEP
NOTE: ALL WEATHERSTRIPPING, THRESHOLD & SWEEP TO BE REPLACED

(109) SET 5 - PASSAGE LATCH SET:
HINGES: STANLEY # FBB199, 1 1/2 PR. PER DOOR 4 1/2" X 4 1/2" FINISH: STAINLESS STEEL
LOCKSET: SCHLAGE ND10 RHO 626 (NON-LOCKING)
SILENCERS
DOOR CLOSER: LCN 4041 SUPER SMOOTHIE SURFACE CLOSER
DOOR STOPS: TRIMCO 1270CV (PULL SIDE WALL ONLY)
KICK PLATE: IVES 8"X34" STAINLESS STEEL, MFR# 8400 S 32D 8X24 (PUSH SIDE ONLY)

(103) (104) SET 6 - FITTING ROOM *ALL HARDWARE IN FITTING ROOMS FURNISHED BY OWNER*
HINGES: SCHLAGE #S3P1011FRP622. 3 1/2" X 3 1/2" PLAIN BEARING 5/8" RADIUS. FINISH: 622 MATTE BLACK
DOOR PULLS: ROCKWOOD ASSA ABLOY. RM4160, BLACK POWDER COAT (BPC); TYPE 5 MOUNTING DETAIL (ONE ON EACH SIDE)
LOCKSET: SCHLAGE: B560B 622. IS-OCC, OS-OCC
DOOR STOPS: BALDWIN 4015.190; 4015 CONVEX WALL BUMPER; 190 SATIN BLACK (PULL SIDE WALL ONLY)
STRIKEPLATE:
SILENCER: ADD CONTINUOUS FELT/RUBBER STRIP IN BLACK FINISH. SPEC. T.B.D.

NOTE:
OWNER'S VENDOR WILL PROVIDE THE FOLLOWING KEYS:
AA : 7
AF : 12
AA (KNOX BOX) : 1

NOTE:
OWNER'S VENDOR WILL PROVIDE FINAL CORES FOR ALL LOCKING DOORS (IN THE FINAL DAYS OF CONSTRUCTION)

9 MATERIAL BOARD

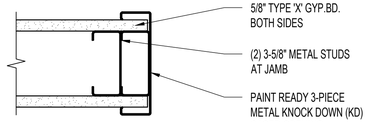
6 HARDWARE SCHEDULE

1. NO SUBSTITUTIONS ON DOOR HARDWARE
2. MOUNT HARDWARE UNITS AT HEIGHTS INDICATED IN THE FOLLOWING PUBLICATIONS, EXCEPT AS SPECIFICALLY INDICATED AND/OR REQUIRED TO COMPLY WITH GOVERNING REGULATIONS INCLUDING ADA.
   A. "RECOMMENDED LOCATIONS FOR BUILDERS HARDWARE FOR STANDARD STEEL DOORS & FRAMES" BY DOOR & HARDWARE INSTITUTE
   B. "HARDWARE LOCATIONS FOR WOOD FLUSH DOORS" BY NWWDA INDUSTRY STANDARD INSTITUTE
   C. WHEN FLUSH BOLTS ARE PROVIDED, THE UPPER BOLT MECHANISM TO BE NO HIGHER THAT 6'-0" AFF
3. THE BOTTOM 10" OF ALL DOORS EXCEPT AUTOMATIC AND SLIDING SHALL HAVE SMOOTH UNINTERRUPTED SURFACE TO ALLOW THE DOOR TO BE OPENED BY WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION. WHERE NARROW FRAME DOORS ARE USED, A 10' H. SMOOTH PANEL SHALL BE INSTALLED ON THE PUSH SIDE OF THE DOOR, WHICH WILL ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION
4. ALL NEW AND EXISTING PASSAGE, LOCKSETS, ECT. TO HAVE LEVER HANDLES. REPLACE EXISTING HANDLES AS REQUIRED
5. DOOR HARDWARE CONSTRUCTION CORES TO REMAIN. OWNER TO REMOVE AND INSTALL FINAL CORES
6. EXIT DOORS SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT
7. THE FORCE REQUIRED TO OPEN A DOOR IN THE REQUIRED MEANS OF EGRESS SHALL BE IN ACCORDANCE WITH SECTION 7.2.1.4.5, NFPA 101 2006 EDITION
8. THE MAXIMUM FORCE FOR PUSHING OR PULLING ALL INTERIOR DOORS SHALL NOT EXCEED 5 POUNDS
9. DOOR HARDWARE MUST BE ADA COMPLIANT
10. ALL RATED DOORS SHALL HAVE SMOKE AND DRAFT CONTROL WITH GASKETS TO SEAL.

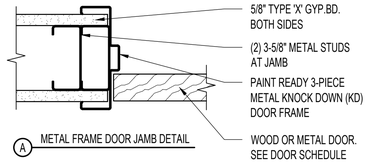
5 DOOR GENERAL NOTES

1. ALL FINISH MATERIALS TO BE CLASS 1: = FLAME SPREAD INDEX 0-25: SMOKE-DEVELOPED INDEX 200
2. G.C. SHALL VERIFY THAT THE MAXIMUM THRESHOLD HEIGHT DOES NOT EXCEED 1/2"
3. NEW WEATHER-STRIPPING TO BE INSTALLED ON ALL EXISTING EXTERIOR DOORS AS REQUIRED.

3 FINISH GENERAL NOTES



B METAL FRAME CASED OPENING DETAIL



A METAL FRAME DOOR JAMB DETAIL

2 DOOR DETAILS

SCALE 3"=1'-0"

4 FINISH SCHEDULE

	FURN. & INST. BY G.C.	FURN. BY OWNER / INST. BY GC	EXISTING	MILLWORK	NOT USED

PAINT

NOTE: ALL WALLS SHALL BE EGGSHELL, ALL DRYWALL CEILINGS SHALL BE FLAT, DOOR/JAMBS TO BE SATIN. BEFORE PURCHASE PROVIDE DRAW-DOWN TO ARCHITECT FOR APPROVAL

P-1	PPG PAINTS ; PPG1008-2_STORM'S COMING	●					
P-2	PPG PAINTS ; PPG1001-6_KNIGHT'S ARMOR NOTE: DRY FALL CANNOT BE USED ON WALLS.	●					
P-5	BENJAMIN MOORE - OC-152 SUPER WHITE - FLAT	●					
P-8	SHERWIN WILLIAMS SW6991 (BLACK MAGIC)	●					
P-9	BENJAMIN MOORE MARDI GRAS GOLD. 2019-10	●					

WALL BASE

B-1	1X4 WOOD BASE (3/4" X 3 1/2") - STAINED WITH VARATHANE PREMIUM WOOD STAIN "EARLY AMERICAN" WITH VARATHANE ULTIMATE POLYURETHANE WATER BASED TOP COAT "CRYSTAL CLEAR SATIN"	●					
B-2	FLEXCO TRADITIONAL 4" VINYL BASE; COLOR 34 BARLEY (6" IN TOILET ROOMS)	●					
B-4	1 X 4 (3/4" X 3 1/2") WOOD BASE- PAINT P-8 IN THE FIELD	●					

WALLCOVERINGS

WC-1	PIONEER MILLWORKS - AMERICAN PRAIRIE REDWOOD - 4.5"W X RANDOM LENGTHS T&G, ONE FACE UNTOUCHED W/ WIREBRUSH LIGHT UNFINISHED. INSTALL OVER 3/4" PLYWOOD THAT HAS BEEN PAINTED P-8 CONTACT: JESSICA SHELDON 585.455.2711 JESSICA@PIONEERMILLWORKS.COM						●
WC-2	CDX PLYWOOD FROM FLOOR TO 48" A.F.F. PAINT TO MATCH WALLS ABOVE. SMOOTH EDGES (NO TRIMS REQUIRED)	●					
WC-3	MARLITE FIBER COMPOSITION PANEL; P-1100 WHITE	●					
WC-5	BODAQ - NS602 BLACK COPPER PATINA FILM. CONTACT: TOM BRASSELL 773.480.7031 TBRASSELL@GMAIL.COM PRODUCT IS SELF ADHESIVE. USE PRODUCT PRIMER. INSTALL PER MANUFACTURER INSTRUCTIONS.	●					

CORNER GUARDS

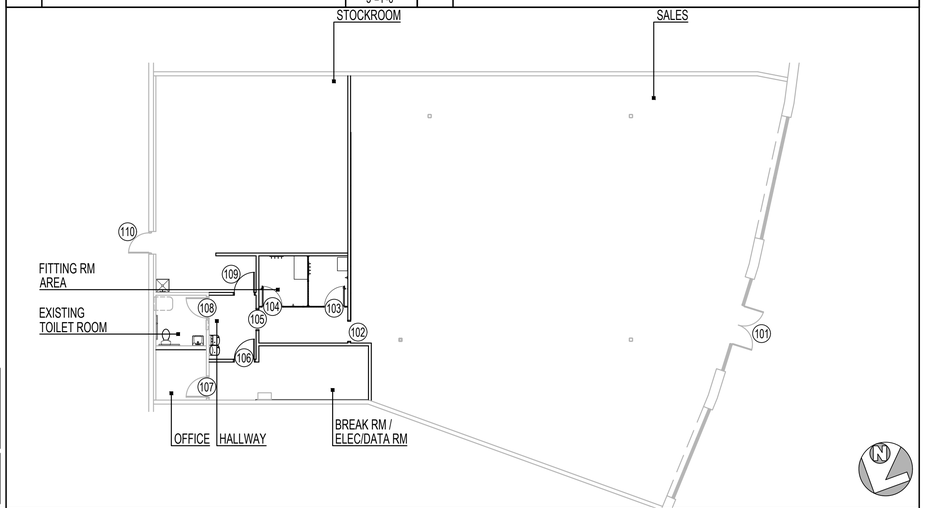
CG-1	STEELWORKS 1 1/2"W X 1 1/2" D. X 48" L. PLAIN HOT ROLLED STEEL SOLID ANGLE. AVAILABLE AT LOWES.COM (USED AT SALES / FITTING ROOM AREAS ONLY) EASE EDGES	●					
CG-2	.36 X 1" X 48" SILVER METAL CORNER GUARD (OR EQUAL) ATTACH TO WALL WITH SCREWS & ADHESIVE. EASE EDGES	●					

FLOORING

F-1	POLISHED CONCRETE - SEMI-GLOSS SHEET - 400 GRIT						●
F-2	SEAL-KRETE - CLEAR-SEAL CONCRETE & GARAGE FLOOR SEALER OR EQUAL - SATIN FINISH	●					
F-4	ARMSTRONG IMPERIAL TEXTURE - COOL WHITE - 12" X 12" VCT	●					
F-5	MILLIKEN MOARAINE EXPLORER CARPET TILE - EXR231-133-6 MEASURE W/ GOLD (19.7" X 39.4" X 0.310"). CARPET TILES TO BE RANDOMIZED PRIOR TO INSTALL AND LAID OUT IN 1/3 STAGGERED RUNNING BOND	●					

ACOUSTICAL TILE

ACT-1	TILE: "SECOND LOOK" 24" DUNE TEGULAR EDGE 24" X 48" X 5/8" TILE COLOR: WHITE GRID: 15/16" GRID COLOR: WHITE OR APPROVED EQUAL. USE HEAVY DUTY MAIN TEE & CONNECTORS	●					



1 DOOR KEY PLAN

SCALE N.T.S.

RGLA
rgla solutions, inc.
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

REVISIONS:	DATE:
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REGISTERED ARCHITECT CHITLIN DODGE 27873 STATE OF TEXAS

carhartt

ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD.
SUITE 112
SAN ANTONIO, TX 78209

SCHEDULES

DRAWN BY	SLS
CHECKED BY	AT / SL
JOB NUMBER	25341
SHEET NAME	A-0.1

1. ALL WOOD FURRING AND BLOCKING SHALL BE FIRE-RETARDENT TREATED - TYPICAL.
2. ALL DIMENSIONS TO BE TO FINISHED SURFACES UNLESS NOTED OTHERWISE. GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN FIELD AND COORDINATE DIMENSIONS WITH VARIOUS TRADES BEFORE FABRICATION OR PURCHASE OF FIXTURES, MILLWORK, COUNTERS, ETC.
3. REQUIREMENTS AND DESIGN DATA SHALL BE FOLLOWED ENTIRELY, REGARDLESS OF WHETHER THEY ARE GIVEN BY BOTH THE SPECIFICATIONS AND DRAWINGS OR BY EITHER ONE ONLY.
4. SHOP DRAWINGS PREPARED BY SUPPLIERS AND SUBCONTRACTORS SHALL BE REVIEWED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTAL TO ARCHITECT.
5. CONTRACTORS TO ASSUME FULL RESPONSIBILITY, UNRELIEVED BY REVIEW OF SHOP DRAWINGS AND BY SUPERVISION OR PERIODIC OBSERVATION OF CONSTRUCTION, FOR THE FOLLOWING:
   - 5.1. COMPLIANCE WITH CONTRACT DOCUMENTS.
   - 5.2. DIMENSIONS TO BE CONFIRMED AND CORRELATED ON THE JOB SITE AND BETWEEN INDIVIDUAL DRAWINGS OR SETS OF DRAWINGS.
   - 5.3. COORDINATION OF THE VARIOUS TRADES.
   - 5.4. SAFE CONDITIONS AT THE JOB SITE.
6. UNLESS OTHERWISE NOTED, ALL DETAILS, SECTIONS AND NOTES ON DRAWINGS ARE INTENDED TO BE TYPICAL FOR SIMILAR SITUATIONS ELSEWHERE.
7. GC TO PROVIDE FIRE EXTINGUISHERS TO MEET LOCAL CODE REQUIREMENTS.

A GENERAL NOTES

- LIGHT METAL STRUCTURAL PARTITION BOTTOM TRACKS MAY BE FASTENED TO CONCRETE SLAB USING LOW-VELOCITY POWER DRIVEN PINS FOLLOWING THE MANUFACTURER'S INSTALLATION RECOMMENDATIONS UNLESS OTHERWISE NOTED. THE FASTENING SYSTEM USED SHALL BE AS MANUFACTURED BY HILTI (ICBO REPORT NO. ESR-2269) OR APPROVED EQUAL. PINS SHALL HAVE A MINIMUM SHANK DIAMETER OF 0.157", A MINIMUM LENGTH OF 1-1/8", AND SHALL BE SPACED AT 16" O.C. MAXIMUM.
- THE TOP TRACK OF EACH FULL HEIGHT WALL SHALL BE ATTACHED DIRECTLY TO THE FRAMING WHEN THE WALL IS PERPENDICULAR TO FRAMING AND TO BLOCKING BETWEEN FRAMING @ 4'-0" O.C. WHEN THE WALL IS PARALLEL TO THE FRAMING.
- PROVIDE MIN. 2'-0" HIGH CEMENT BOARD @ FLOOR BEHIND ALL FIBERGLASS REINFORCED PANELS.
- PROVIDE CEMENT BOARD UNDER ALL WALL TILE WHERE APPLICABLE.
- ALL BRACING AND SUSPENDED COMPONENTS ARE FROM STRUCTURE (NOT FROM DECK). DO NOT PENETRATE THROUGH DECK ABOVE.
- GYPSUM BOARD SHALL BE ATTACHED WITH #6 SCREWS MINIMUM UNLESS NOTED OTHERWISE.

B PARTITION NOTES

NOTE:
A. COORDINATE WALL TYPE WITH SECTIONS AND PLANS. NOTIFY ARCHITECT OF DISCREPANCIES PRIOR TO ISSUING BIDS.
B. 5/8" WATER RESISTANT GYP. BD. IS TO BE USED IN ALL AREAS WHERE EXPOSED TO MOISTURE OR WATER SUCH AS TOILET ROOM, MOP SINKS, ETC.

NON-BEARING METAL STUD SCHEDULE

STUD SIZE*	SPACING	MAX. HEIGHT (W/ FLEXIBLE FINISH)
362S162-18	16" O.C.	13'-6"
362S162-33	16" O.C.	21'-1"
362S162-43	12" O.C.	25'-0"
600S162-33	16" O.C.	30'-0"

*STUDS BY ANGELES METAL SYSTEMS, ICBO NO.1715 OR APPROVED EQUAL

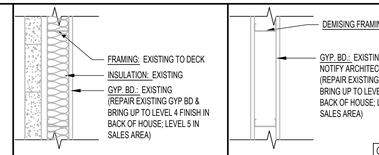
C STUD SCHEDULE

NOTE:
G.C. TO ENSURE THAT CONCRETE IS LEVEL TO WITHIN 1/8" VARIATIONS AT AREAS UNDER ROLLING SHELVES. VERIFY EXACT LOCATIONS W/ FIXTURE PLAN. ROLLING SHELVES EQUIPMENT IS 2,000-3,000 PSI. VERIFY EXACT CONCRETE LEVELING REQUIREMENTS W/ ARCHITECT & SHELVING VENDOR PRIOR TO CONSTRUCTION.

NOTE:
G.C. TO CALL CARHARTT PM DURING FRAMING STAGE TO DISCUSS ANY FIELD DIMENSIONS DISCREPANCIES PRIOR TO FRAMING. ESPECIALLY OVERALL SALES FLOOR AND STOCKROOM DIMENSIONS. FAILURE TO DO SO CAN RESULT IN G.C. RE-FRAMING AT THEIR EXPENSE

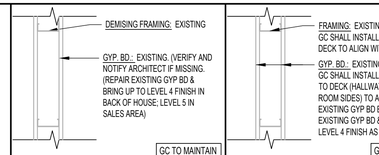
NOTE:
PRIOR TO FRAMING G.C. SHALL VERIFY NEW WALLS DO NOT CONFLICT WITH EXISTING HVAC DROPS & PIPES. FAILURE TO DO SO CAN RESULT IN G.C. RE-FRAMING AT THEIR EXPENSE

NOTE:
ALL EXISTING WALLS IN SALES AREA TO BE BROUGHT UP TO LEVEL 5 FINISH.



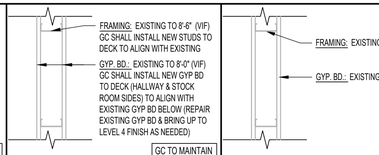
EXTERIOR PARTITION

WALL TYPE A



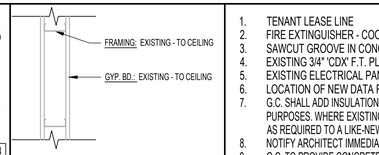
EXISTING DEMISING PARTITION

WALL TYPE A1



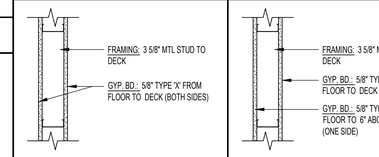
EXISTING INTERIOR PARTITION

WALL TYPE A2



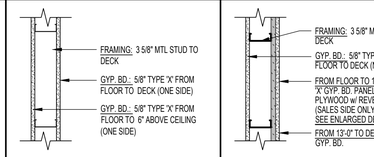
EXISTING INTERIOR PARTITION

WALL TYPE A3



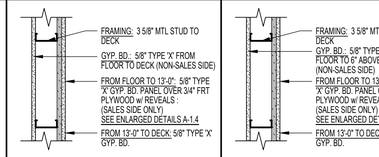
FULL HEIGHT PARTITION

WALL TYPE C



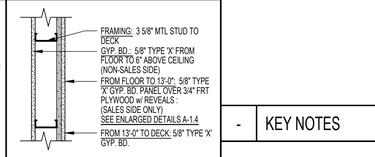
FULL HEIGHT PARTITION

WALL TYPE C1



FULL HEIGHT PARTITION - PANT WALL

WALL TYPE D



FULL HEIGHT PARTITION - PANT WALL

WALL TYPE D1

3 WALL TYPES

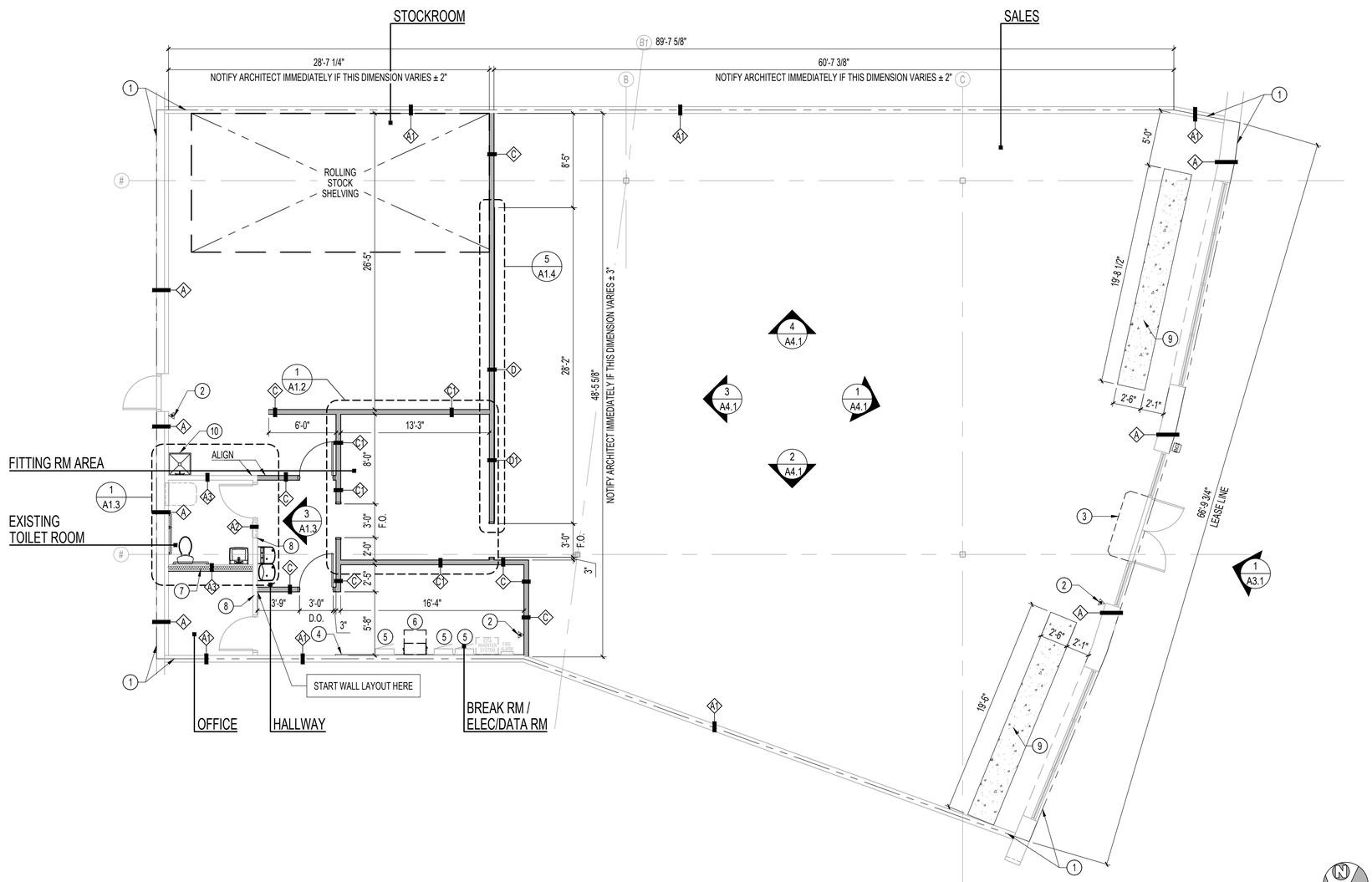
SCALE 1"=1'-0"

1. TENANT LEASE LINE
2. FIRE EXTINGUISHER - COORDINATE LOCATIONS WITH FIRE MARSHAL
3. SAWCUT GROOVE IN CONCRETE SLAB PER DETAIL 8/A1.4
4. EXISTING 3/4" 'CDX' F.T. PLYWOOD TO REMAIN
5. EXISTING ELECTRICAL PANELS - SEE ELECTRICAL SHEETS
6. LOCATION OF NEW DATA RACK.
7. G.C. SHALL ADD INSULATION TO EXISTING PARTITION AS SHOWN FOR SOUND ATTENUATION PURPOSES. WHERE EXISTING GYP. BD. HAS BEEN DAMAGED, G.C. SHALL REPLACE & REPAIR AS REQUIRED TO A LIKE-NEW APPEARANCE.
8. NOTIFY ARCHITECT IMMEDIATELY IF EXISTING STUDS DO NOT EXTEND TO DECK.
9. G.C. TO PROVIDE CONCRETE FOR BASE OF WINDOW FIXTURE. FORMWORK IS PROVIDED WITH FIXTURE. EACH BASE IS 30" W. X 6" H.
10. G.C. SHALL PROVIDE ACCESS TO WATER HEATER ON PLATFORM ABOVE MOP SINK.

- KEY NOTES (#)

ONE-HOUR RATED

- RATED WALL KEY



1 CONSTRUCTION PLAN / FINISH PLAN

SCALE 3/16" = 1'-0"

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rgla solutions, inc.
5100 River Road, Ste 125
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Schiller Park, IL 60176
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REGISTERED ARCHITECT
CAITLIN DODGE
27873
STATE OF TEXAS

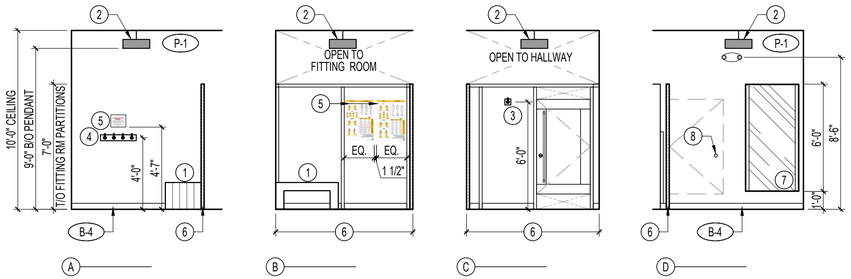
carhartt

ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD.
SUITE 112
SAN ANTONIO, TX 78209

CONSTRUCTION PLAN, SCHEDULE & NOTES

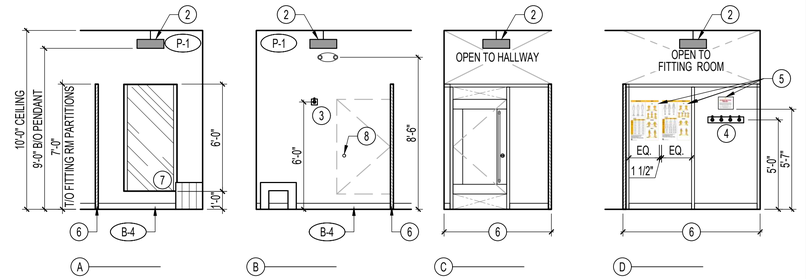
DRAWN BY	SLS
CHECKED BY	AT / SL
JOB NUMBER	25341
SHEET NAME	A-1.1

PROVIDE BLOCKING BEHIND WALL MOUNTED ACCESSORIES (TYP.)

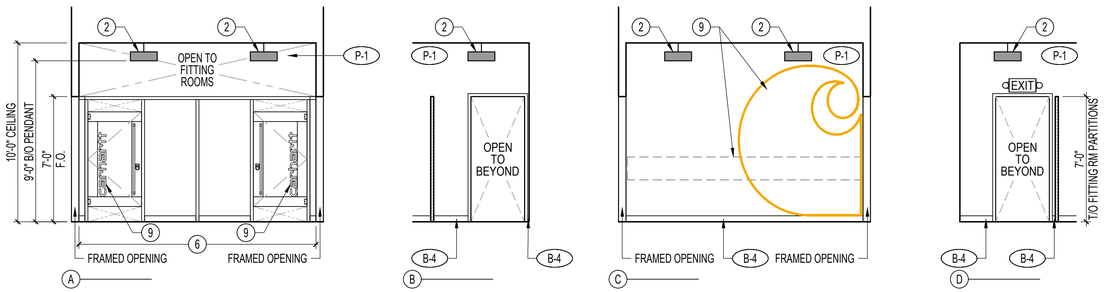


3 ELEVATIONS - ADA FITTING ROOM — SCALE 1/4"=1'-0"

PROVIDE BLOCKING BEHIND WALL MOUNTED ACCESSORIES (TYP.)



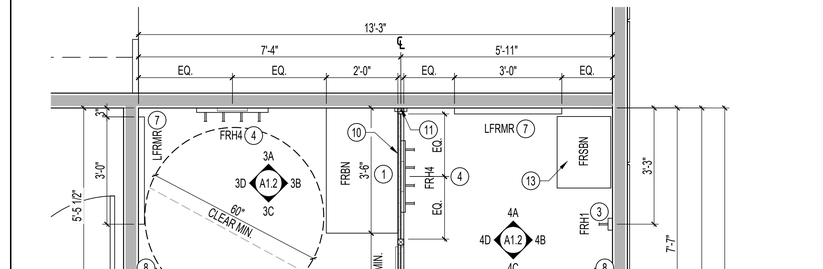
4 ELEVATIONS - FITTING ROOM — SCALE 1/4"=1'-0"



2 ELEVATIONS - FITTING ROOM HALLWAY — SCALE 1/4"=1'-0"

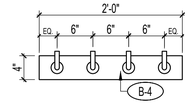
1. GC TO SECURE BENCH TO THE FLOOR & ADD CLEAR SEALANT TO WALL. CUT BASEBOARD TO ACCOMMODATE BENCH . BENCH IS 24" DEEP X 42" LONG X 18" HIGH
2. PENDANT LIGHT - SEE A2.1 & LIGHTING PLANS
3. (1) GC SUPPLIED HOOKS INSTALLED ON 'B-4'. HOOKS: SUNMALL INDUSTRIAL PIPE COAT HOOKS - BLACK. AVAILABLE AT AMAZON.COM
4. (4) GC SUPPLIED HOOKS INSTALLED ON 'B-4'. HOOKS: SUNMALL INDUSTRIAL PIPE COAT HOOKS - BLACK. AVAILABLE AT AMAZON.COM
5. G.C. TO INSTALL OWNER SUPPLIED GRAPHICS. SEE F2.1 FOR DETAILS.
6. OWNER SUPPLIED, G.C. INSTALLED FITTING ROOM POST/PARTITION SYSTEM. SEE APPROVED VENDOR SHOP DRAWINGS FOR INSTALLATION INSTRUCTIONS.
7. ILLUMINATED WALL MOUNTED FITTING ROOM MIRROR - STYLMARK MODEL 620096-03 BEVEL: LED-LIT SINGLE PANE MIRROR. 36" X 72" FINISH: 123-BUFFED SATIN BLACK - 3700K CORD & PLUG - NO SWITCH
8. WALL MOUNTED DOOR STOP
9. VINYL GRAPHIC. SEE F-2.1 FOR DETAILS.
10. G.C. TO INSTALL FITTING ROOM PANEL ON ADA FITTING ROO SIDE SO THE BENCH IS MNOUNTED TO A FLUSH SURFACE.
11. G.C. TO INSTALL BLOCKING WHERE FITTING ROOM PARTITIONS ATTACH TO WALL
12. NO DEVICES ARE TO BE INSTALLED ON THIS WALL.
13. THIS BENCH TO REMAIN LOOSE.
14. 'F-5' TRANSITION TO ALIGN WITH INSIDE EDGE OF FITTING ROOM PANEL

- KEY NOTES (#)

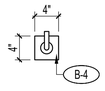


PROVIDE BLOCKING BEHIND WALL MOUNTED ACCESSORIES (TYP.)

1 ENLARGED PLAN - FITTING ROOMS — SCALE 1/2"=1'-0"



B FITTING ROOM HOOK - FRH4 (4)



A FITTING ROOM HOOK - FRH1 (3)

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f: 847.671.4200
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STATE OF TEXAS

carhartt

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MALTSBERGER RD.
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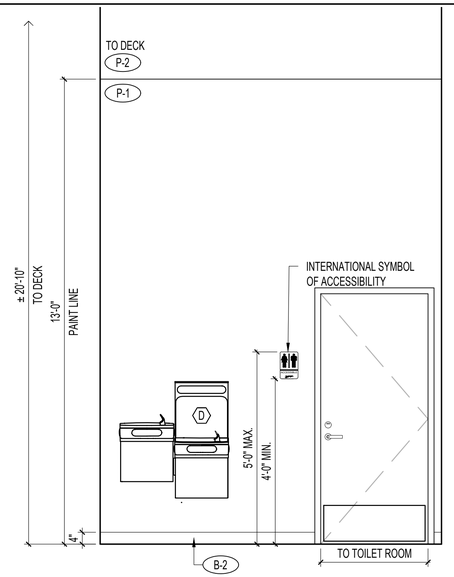
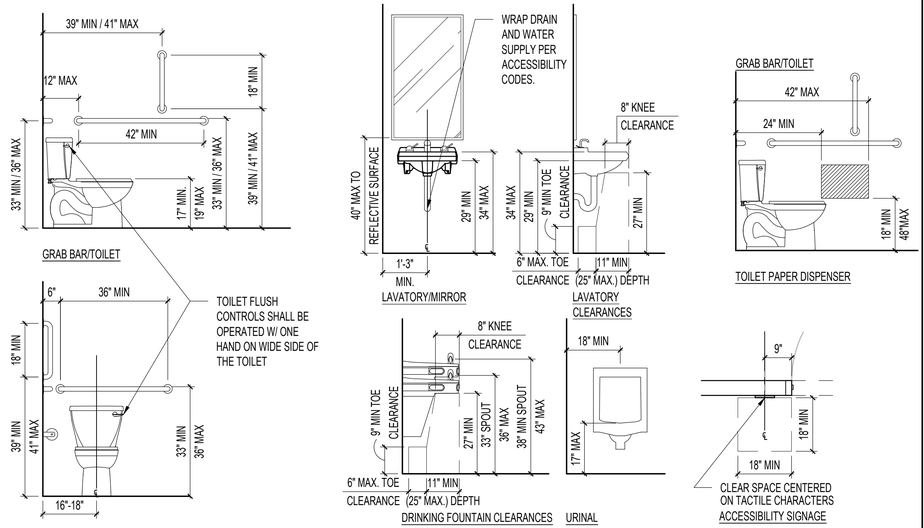
SAN ANTONIO, TX 78209

FITTING ROOM DETAILS

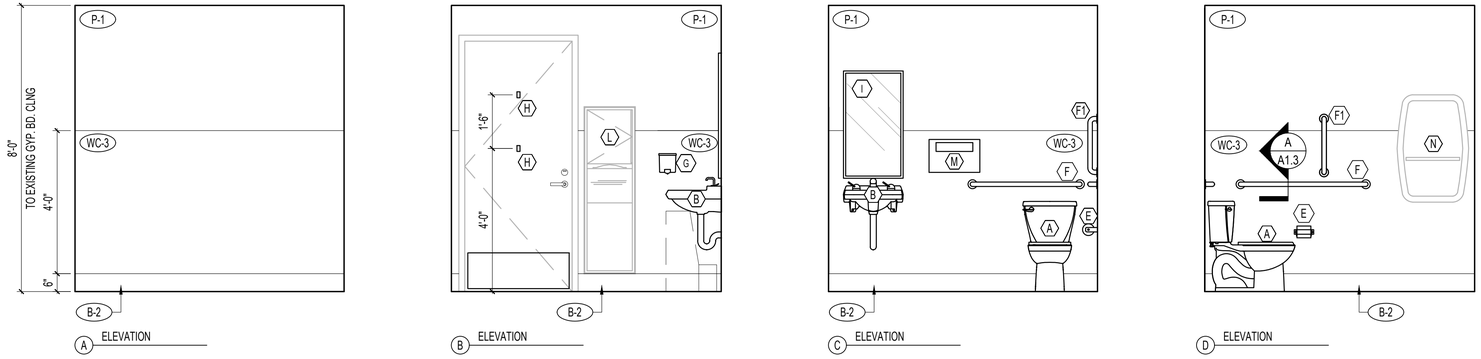
DRAWN BY	SLS
CHECKED BY	AT / SL
JOB NUMBER	25341
SHEET NAME	A-1.2



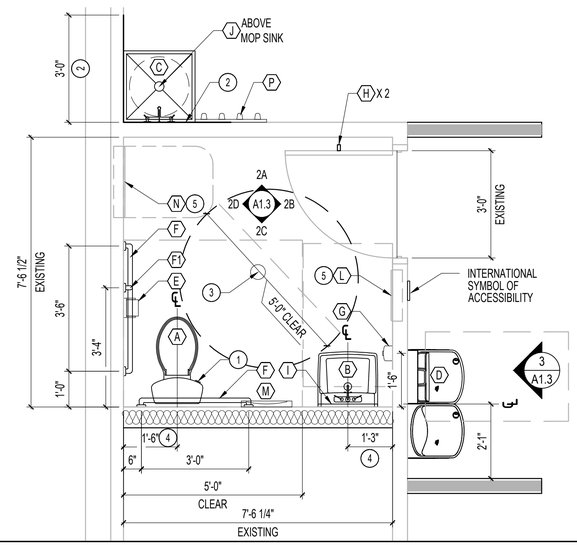
3 ELEVATION - HALLWAY — SCALE 1/2"=1'-0"



4 RESTROOM DETAILS — SCALE 1/2"=1'-0"



2 ELEVATIONS - TOILET ROOM — SCALE 1/2"=1'-0"

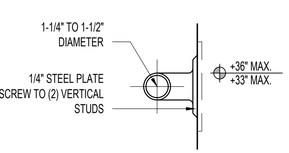


1 ENLARGED TOILET ROOM PLAN — SCALE 1/2"=1'-0"

NOTE:
SEE DETAIL 5/A1.3 REGARDING LOCATIONS OF PLUMBING FIXTURES & ACCESSORIES
GRAB BARS - NOTIFY ARCHITECT IMMEDIATELY IF ANY EXISTING TO REMAIN ITEMS DO NOT COMPLY.

	TOILET ROOM SPECIFICATION	EXISTING	PROVIDED BY GC INSTALLED BY GC	EXISTING TO BE RELOCATED BY GC	OWNER SUPPLIED INSTALLED BY GC
A	WATER CLOSET - SEE PLUMBING DRAWING		●		
B	LAVATORY - SEE PLUMBING DRAWING		●		
C	MOP SINK - SEE PLUMBING DRAWING		●		
D	DRINKING FOUNTAIN / BOTTLE FILLER SEE PLUMBING DRAWINGS		●		
E	TOILET PAPER HOLDER		●		
F	GRAB BARS - (1) 36"HORIZ, (1) 42"HORIZ		●		
F1	GRAB BARS - (1) 18" VERT		●		
G	TOUCHLESS SOAP DISPENSER				●
H	HOOKS - (2) HOOKS PER ROOM, DOOR MOUNTED - SUNMALL INDUSTRIAL PIPE COAT HOOKS - BLACK. AVAILABLE AT AMAZON.COM		●		
I	MIRROR OVER LAVATORY 20" X 36"		●		
J	WATER HEATER (ABOVE MOP SINK)		●		
K	CABINET				
L	SEMI-RECESSED TRASH RECEPTACLE / PAPER TOWEL DISPENSER	●			
M	TOILET SEAT COVER DISPENSER				●
N	STAINLESS STEEL BABY CHANGING STATION	●			
P	MOP / BROOM HOLDER - ULINE MODEL 3 H-2840				●

- T.R. ACCESS. SCHEDULE



A GRAB BAR SECTION — SCALE 3"=1'-0"

- KEY NOTES (#)

1. REQUIRED LOCATION OF FLUSH VALVE.
2. CONTINUOUS 4'-0" H. 'WC-3' PANEL TO BE INSTALLED AT MOP SINK WALLS
3. LOCATION OF EXISTING FLOOR DRAIN. REPAIR AS REQUIRED AFTER REMOVAL OF EXISTING TILE. NEW CAP SHALL BE FLUSH WITH FLOOR.
4. LOCATION OF EXISTING PLUMBING TO BE REUSED FOR NEW FIXTURES
5. EXISTING ACCESSORIES TO REMAIN SHALL BE INSPECTED, CLEANED AND SANITIZED TO 'LIKE-NEW' APPEARANCE.

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f: 847.671.4200
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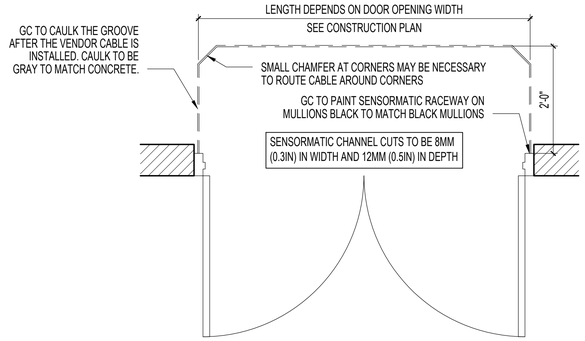
REGISTERED ARCHITECT
CAITLIN DODGE
27813
STATE OF TEXAS

carhartt

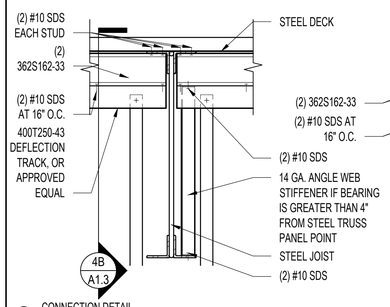
ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD.
SUITE 112
SAN ANTONIO, TX 78209

ENLARGED
TOILET ROOMS,
PLANS & ELEVATIONS

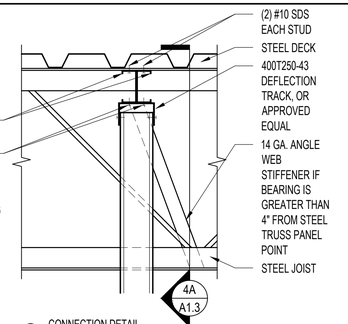
DRAWN BY	SLS
CHECKED BY	AT / SL
JOB NUMBER	25341
SHEET NAME	A-1.3



8 SENSORMATIC CHANNEL DETAIL — SCALE 3/4" = 1'-0"

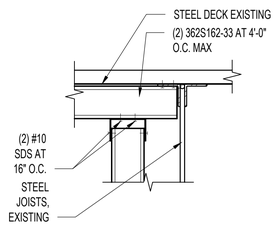


A CONNECTION DETAIL
PERPENDICULAR TO STEEL JOIST

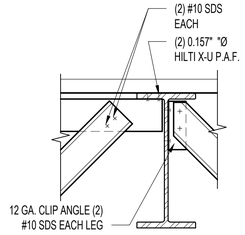


B CONNECTION DETAIL
PERPENDICULAR TO STEEL JOIST

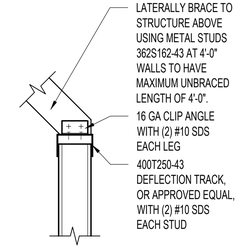
NOTE:
NOTHING IS PERMITTED TO BE ATTACHED SUSPENDED FROM OR PENETRATED THROUGH THE ROOF DECK ABOVE. G.C. REQUIRED TO FRAME, BRACE AND SUSPEND FROM THE TOP CHORD OF THE JOIST OR STRUCTURAL STEEL WHICH EXISTS ABOVE YOUR TENANT SPACE.



C CONNECTION DETAIL
PARALLEL TO STEEL JOIST

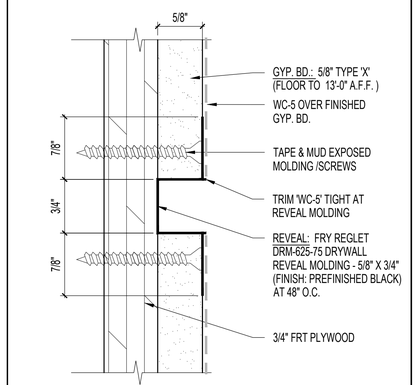


D LATERAL BRACE CONNECTION DETAIL
AT STEEL ROOF STRUCTURE

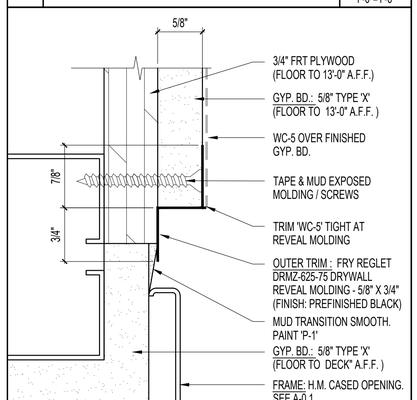


E WALL CONNECTION DETAIL
AT LATERAL BRACE

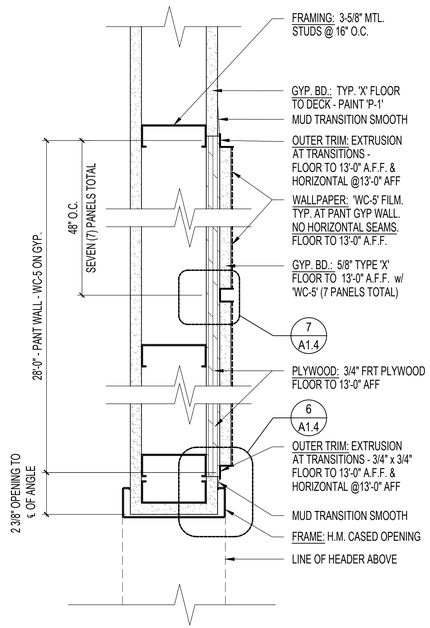
4 CONNECTION DETAILS



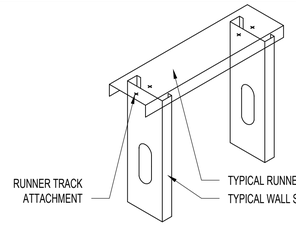
7 PANT WALL REVEAL DETAIL — SCALE 1'-0"=1'-0"



6 PANT WALL REVEAL DETAIL — SCALE 1'-0"=1'-0"



5 PANT WALL DETAIL — SCALE 3/4"=1'-0"

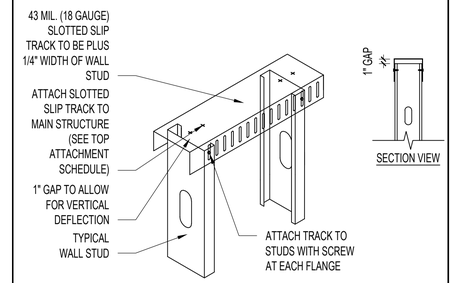


TOP TRACK ATTACHMENT SCHEDULE			
MATERIAL	FASTENER	SPACING	REMARKS
CONCRETE	HILTI X-U, 0.157" SHANK, 1-1/2" MINIMUM PENETRATION, 2,000 PSI MINIMUM CONCRETE ESR-2269	16" O.C.	EMBED 1" MINIMUM
STEEL	(1) - #10 SCREW	32" O.C.	MATERIAL > 43 MILS (> 18 GAUGE)
	(1) - #10 SCREW	16" O.C.	MATERIAL < 43 MILS (< 18 GAUGE)
OTHER	ATTACHMENT TO BE APPROVED BY DESIGN ENGINEER		

2 PARTITION DETAIL - TOP TRACK

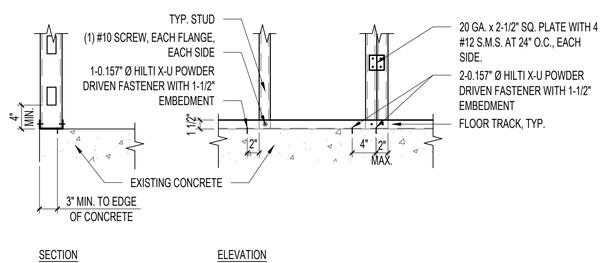
NOTE:
FOR ALTERNATE GAP AMOUNT, NOTIFY ARCHITECT/ENGINEER.

FOR ATTACHMENT OF SLOTTED SLIP TRACK TO WALL STUDS: TIGHTEN SCREWS, THEN BACK OFF 1/2 TURN



3 PARTITION DETAIL - SLOTTED TRACK

NOTE:
3/8" Ø HILTI KWIK KB TZ W/2" EMBEDMENT AND STANDARD WASHERS MAY BE SUBSTITUTED FOR EACH HILTI X-U POWDER DRIVEN FASTENER.



1 PARTITION DETAIL - TYPICAL BOTTOM TRACK AND AT DOOR OPENING

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STATE OF TEXAS
Caitlin Dodge

carhartt

ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD.
SUITE 112
SAN ANTONIO, TX 78209

CONSTRUCTION DETAILS

DRAWN BY	SLS
CHECKED BY	AT / SL
JOB NUMBER	25341
SHEET NAME	A-1.4

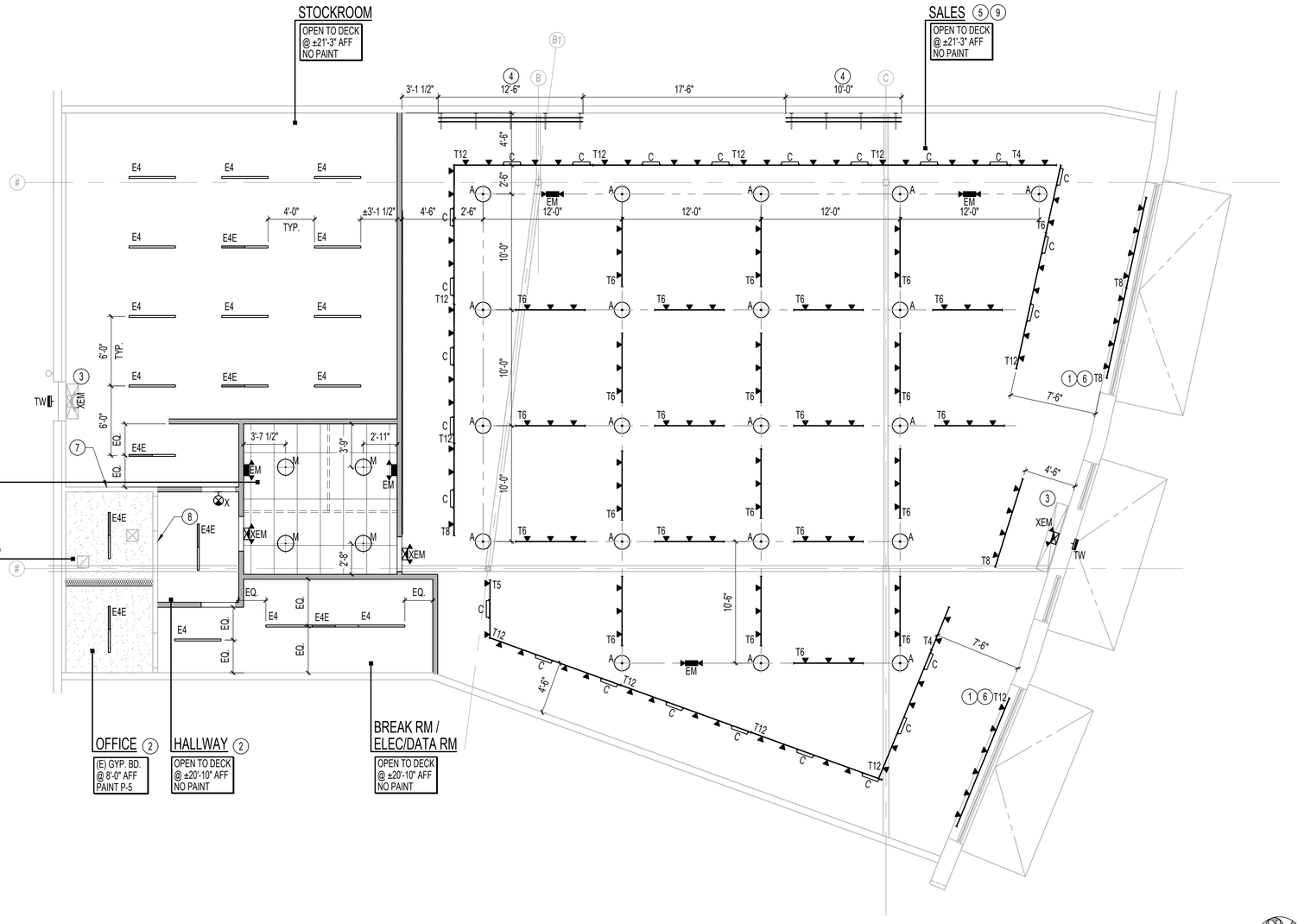
- KEY NOTES (#)

1. CENTER THIS TRACK LIGHTING ON THIS WALL, STRUCTURAL FRAME, OR WINDOW PANE
2. CENTER THIS LIGHT IN THE ROOM / SPACE.
3. EXISTING AIR CURTAIN(S) TO REMAIN. SEE MECHANICAL DRAWINGS.
4. GRAPHIC TRACK - SEE DETAIL 3/A2.1
5. OPEN TO STRUCTURE ABOVE 13'-0" A.F.F. ALL EXISTING TRUSSES, JOISTS, BEAMS, DUCTS, CONDUITS, EQUIPMENT, STRUCTURE, ETC. TO REMAIN UNPAINTED (TYP. THROUGHOUT UNLESS NOTED OTHERWISE)
6. SURFACE MOUNT TRACK LIGHTING 6" FROM GLASS.
7. G.C. SHALL INSTALL PROVIDE ACCESS TO WATER HEATER ON PLATFORM ABOVE EXISTING TOILET ROOM.
8. G.C. TO INSTALL 6" X 18 GA METAL STUDS @ 16" O.C. ON EXISTING STUD PARTITION IN PREPARATION FOR NEW GYP. BD. IF STUDS ARE EXISTING, PROVIDE CREDIT.
9. PAINT NEW DIFFUSERS & NEW RETURN DUCT DROP IN SALES TO MATCH EXISTING.

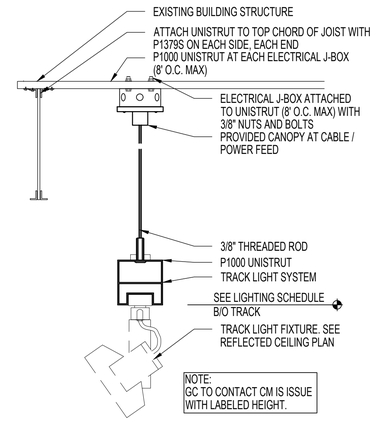
B GENERAL NOTES

- ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL O.S. - OCCUPANCY SENSOR SWITCHES AT FITTING ROOMS AND TOILET ROOMS. SEE ELECTRICAL PLANS FOR MORE INFORMATION
- ELECTRICAL CONTRACTOR TO VERIFY LIGHTING IS IN WORKING CONDITION WHEN JOB IS COMPLETE
- NO DUCTWORK, PIPING, CONDUIT, ETC. SHALL BE SUSPENDED OR ATTACHED TO THE FLOOR DECK AND/OR ROOF DECK. ALL SUCH ITEMS MUST BE SUSPENDED ONLY FROM JOISTS AND/OR BEAMS.
- BOTTOM OF SUSPENDED EMERGENCY LIGHTING TO BE MOUNTED AT SAME HEIGHT AS TRACK LIGHTING
- SUPPLY AND RETURN HVAC DIFFUSERS SHOWN FOR REFERENCE / LOCATION ONLY REFER TO MECHANICAL PLANS.

NOTE: NOTIFY OWNER/PROJECT MANAGER IMMEDIATELY IF LIGHT FIXTURES AND CEILING HEIGHTS ARE NOT ACHIEVABLE

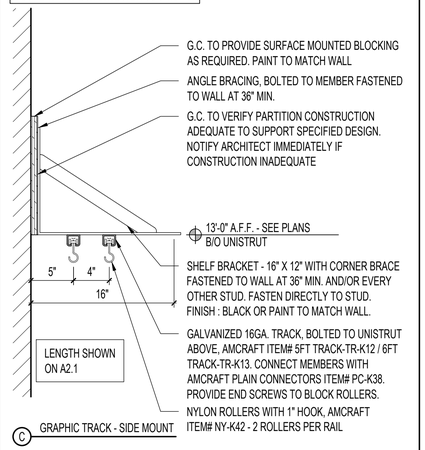


1 REFLECTED CEILING PLAN — SCALE 3/16"=1'-0"



4 SUSPENDED TRACK LIGHT DETAIL — SCALE N.T.S.

NOTE: G.C. TO FURNISH AND INSTALL ALL COMPONENTS SHOWN ON THIS DETAIL.



3 GRAPHIC TRACK DETAIL — SCALE 1 1/2"=1'-0"

TAG	SYMBOL	DESCRIPTION	HEIGHT
A		HIGH BAY LIGHTING	BOTTOM @ 13'-0" A.F.F.
B		TRACK HEAD - LED SPOT	TRACK MOUNTED
C		TRACK HEAD - WALL WASHER	TRACK MOUNTED
E4		4FT LINEAR LED	12'-0" AF.F.
E4E		4 FT LINEAR LED W/ EMERGENCY	12'-0" AF.F.
M		PENDANT LIGHT (FITTING ROOM)	BOTTOM AT 9'-0" A.F.F.
T	2, 4, 6, 8, 12	1 CIRCUIT TRACK (LENGTH PER PLAN).	13'-0" A.F.F. (UNO)
TW		EXTERIOR EMERGENCY LIGHT	6" - 12" ABOVE OPENING
EM		EMERGENCY LIGHT WITH BATTERY BACK UP	12'-0" (UNO)
X		EXIT SIGN	10'-0" (UNO)
XEM		EMERGENCY LED LAMPS EXIST LIGHTING COMBO LIGHTING	12'-0" (UNO)

2 LIGHT FIXTURE SCHEDULE

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p: 847.671.7452
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f: 847.671.4200
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7322 JONES
MALTSBERGER RD.
SUITE 112
SAN ANTONIO, TX 78209

REFLECTED CEILING PLAN

DRAWN BY
SLS
CHECKED BY
AT / SL
JOB NUMBER
25341
SHEET NAME
A-2.1

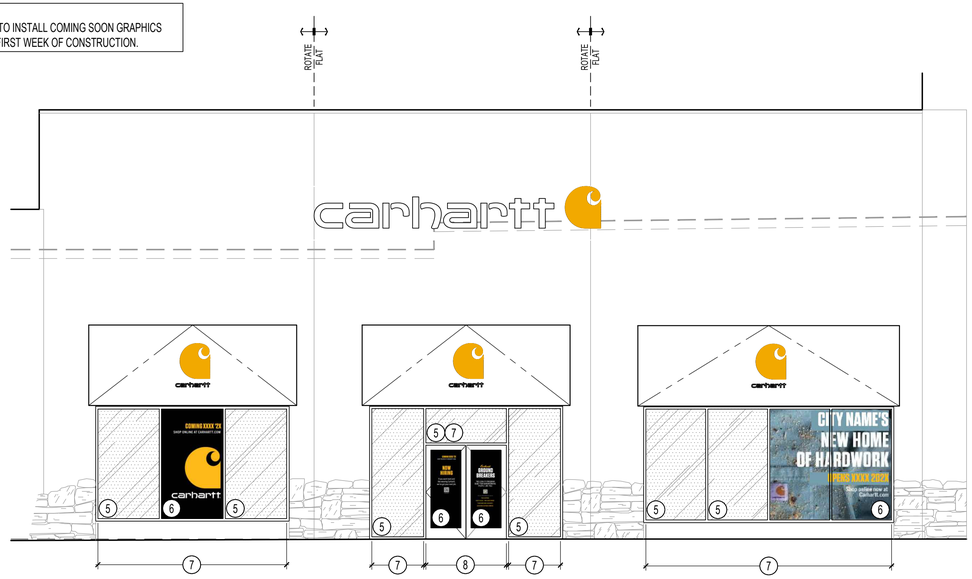
STOREFRONT WORK:

THE STORE FACADE, GLAZING, BASE ARE EXISTING TO REMAIN UNLESS OTHERWISE NOTED.

NEW EXTERIOR WORK IS LIMITED TO THE FOLLOWING
- STOREFRONT SIGNAGE
- AWNING COVERS OVER EXISTING FRAMES

SIGN FURNISHED AND INSTALLED BY EXTERIOR SIGN CONTRACTOR. G.C. SHALL COORDINATE INSTALLATION WITH SIGN CONTRACTOR. SIGN CONTRACTOR TO PROVIDE SHOP DRAWINGS TO ARCHITECT PRIOR TO FABRICATION. SIGN COMPANY TO **PULL SEPARATE PERMIT FOR ALL SIGNAGE.**

NOTE:
OWNER TO INSTALL COMING SOON GRAPHICS WITHIN FIRST WEEK OF CONSTRUCTION.



3 | STOREFRONT ELEVATION - COMING SOON GRAPHICS | SCALE 3/16"=1'-0"

LETTERS SHALL BE:
TYPE: FACE-LIT
FACE OF LETTERS SHALL BE: BLACK (DAY) / WHITE (NIGHT)
RETURNS OF LETTERS SHALL BE: BLACK

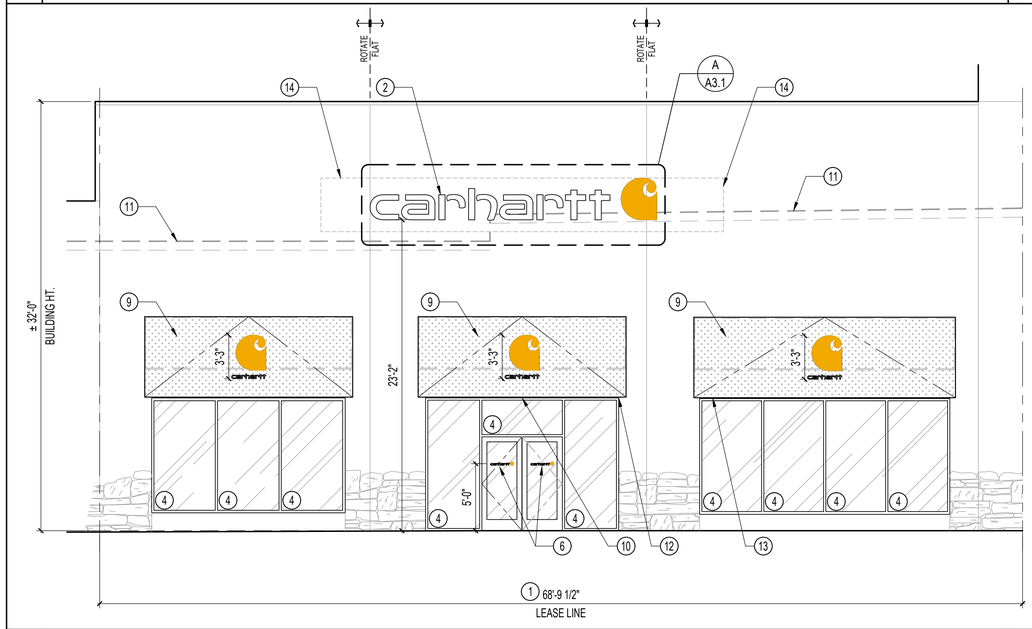
LOGO SHALL BE:
TYPE: FACE-LIT
FACE OF LETTERS SHALL BE: MATTE YELLOW PMS #130
FACES. RETAINER & RETURNS SHALL BE: MATTE YELLOW PMS #130

SIGN CONTRACTOR TO PROVIDE RACEWAY @ REAR OF PARAPET TO CONCEAL WIRING

SEE ELEVATION

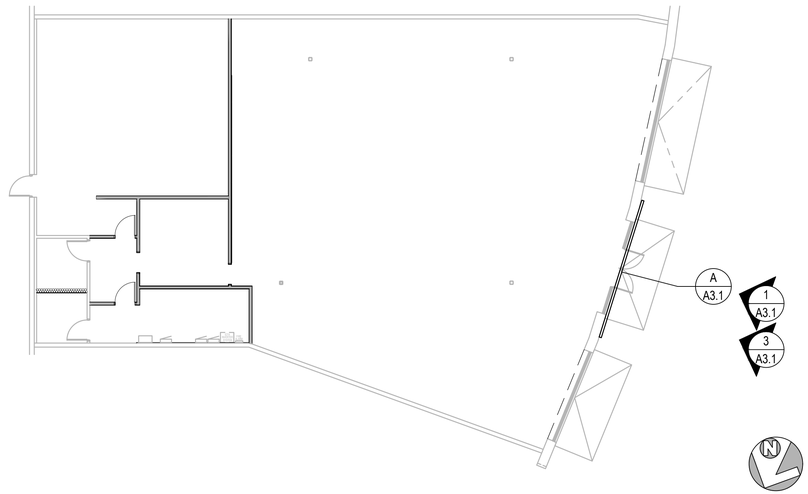
A | SIGNAGE DETAILS | SCALE 1"=1'-0"

1. EXISTING FACADE TO REMAIN. PATCH/REPAIR FACADE AS REQUIRED TO A LIKE-NEW APPEARANCE.
2. COORDINATE WITH SIGN CONTRACTOR DRAWINGS.
3. GC TO INSTALL OWNER SUPPLIED GRAPHIC.
4. EXISTING STOREFRONT GLAZING SYSTEM TO REMAIN. GC SHALL CLEAN, INSPECT & NOTIFY ARCHITECT IMMEDIATELY OF ANY NECESSARY REPAIRS. DAMAGED GASKETS TO BE REPLACED.
5. GC TO PROVIDE & INSTALL BLACK PAPER ON STOREFRONT GLAZING AS SHOWN
6. OWNER SUPPLIED / OWNER INSTALLED VINYL GRAPHICS AS SHOWN.
7. OWNER SHALL REMOVE VINYL AND PAPER WHERE INDICATED AT END OF CONSTRUCTION.
8. OWNER WILL REMOVE VINYL IN THIS AREA AT OPENING.
9. EXISTING AWNINGS. GC SHALL REMOVE EXISTING FABRIC & INSTALL NEW OVER EXISTING FRAME. SUNBRELLA BLACK WITH GOLD CARHARTT ICON (PMS 130)
10. EXISTING EXTERIOR LIGHT FIXTURE(S) TO BE REPLACED. SEE LIGHT FIXTURE SCHEDULE.
11. APPROXIMATE LINE OF ROOF BEHIND PARAPET.
12. EXISTING KNOX BOX
13. EXISTING LANDLORD SPEAKER TO REMAIN.
14. WHERE FORMER TENANT'S SIGNAGE IS REMOVED, G.C. SHALL PATCH / REPAIR & PAINT ALL HOLES / DAMAGE. PAINT COLOR AND SHEEN SHALL MATCH EXISTING ADJACENT SURFACE AND APPEAR SEAMLESS.



1 | STOREFRONT ELEVATION | SCALE 3/16"=1'-0"

- | KEY NOTES | #



2 | SIGN KEY PLAN | SCALE 3/32" = 1'-0"

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MALTSBERGER RD.
SUITE 112
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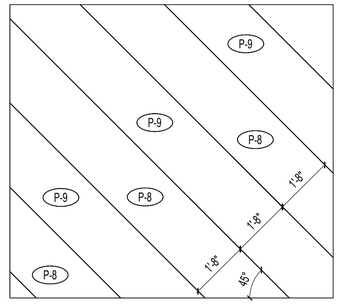
EXTERIOR ELEVATION

DRAWN BY	SLS
CHECKED BY	AT / SL
JOB NUMBER	25341
SHEET NAME	A-3.1

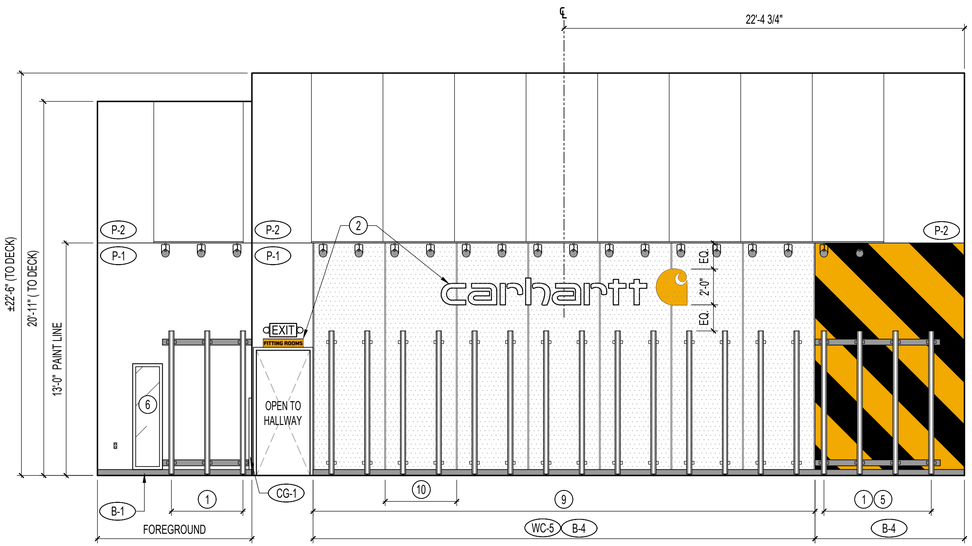
1. FIXTURE POST SYSTEM. SEE DETAIL ON F-1.1.
2. GRAPHIC / INTERIOR SIGNAGE. SEE F-2.1 FOR DETAILS.
3. EXISTING SURFACE MOUNTED AIR CURTAIN. SEE MECHANICAL SHEETS.
4. MILLWORK.
5. WALL BLOCKING / PLYWOOD IN THIS AREA TO BE PAINTED 'P-8'. PAINT WALL PER B/A4.1
6. WALL MOUNTED MIRROR
7. PATH FOR SENSORMATIC / EAS LOOP AND ASSOCIATED EQUIPMENT. G.C. TO PAINT EAS MOULDING / COVER TO MATCH ADJACENT SURFACE.
8. OWNER SUPPLIED / G.C INSTALLED SCENT MACHINE
9. PANT WALL WITH POST SYSTEM. SEE DETAILS A-1.4 & F-1.1
10. 3/4" REVEALS AT 48" O.C. TO BE CENTERED AT PANT WALL GYP. BD. SEE DETAILS A-1.4

A | KEY NOTES (#)

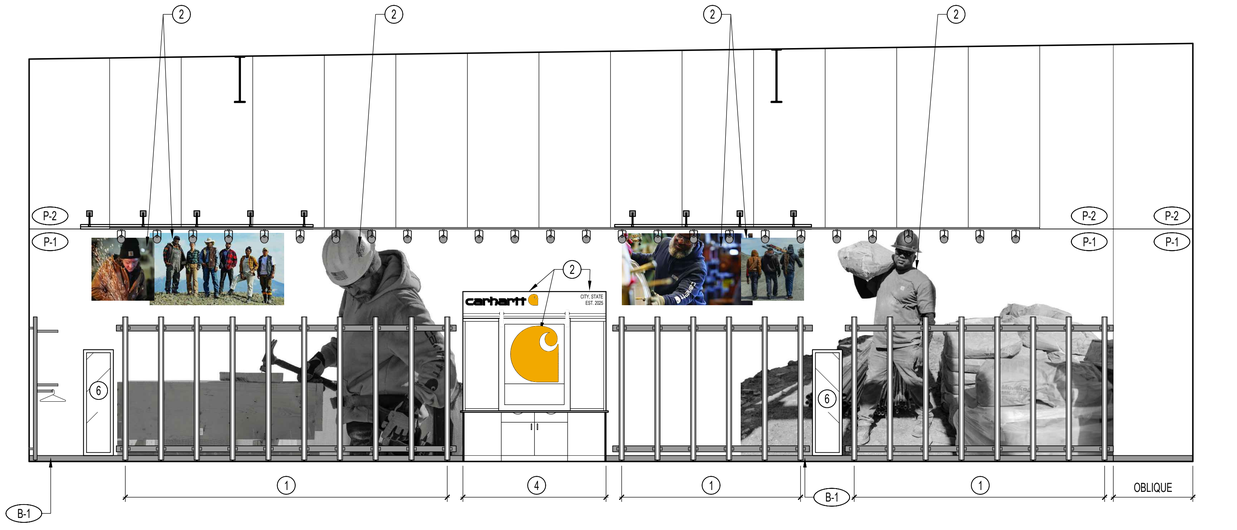


B | CAUTION TAPE PAINT

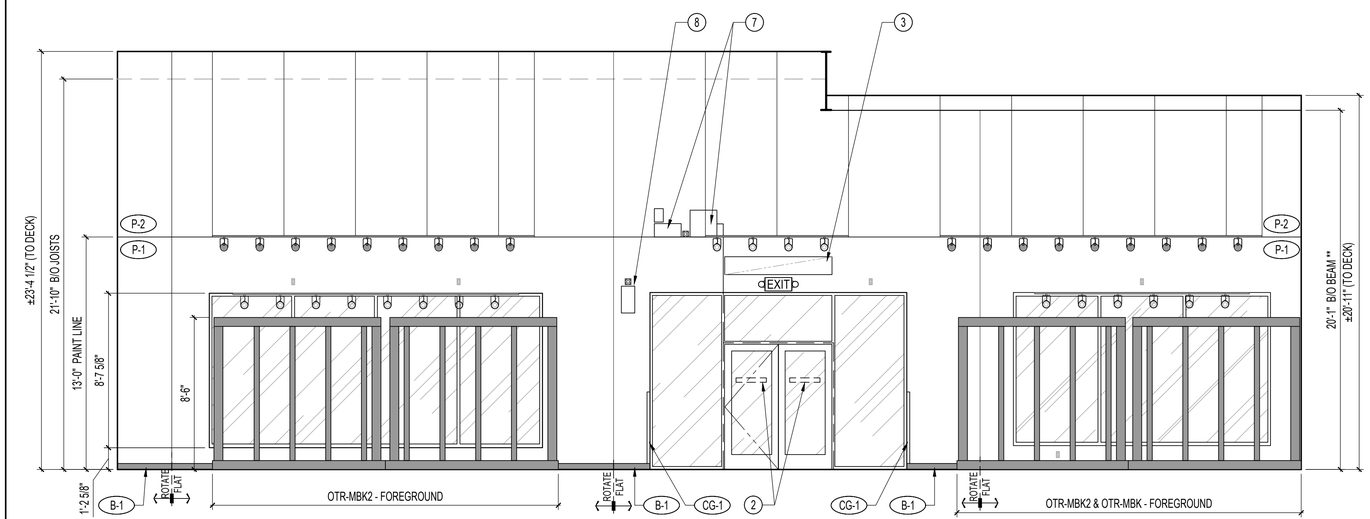
SCALE 1/2"=1'-0"



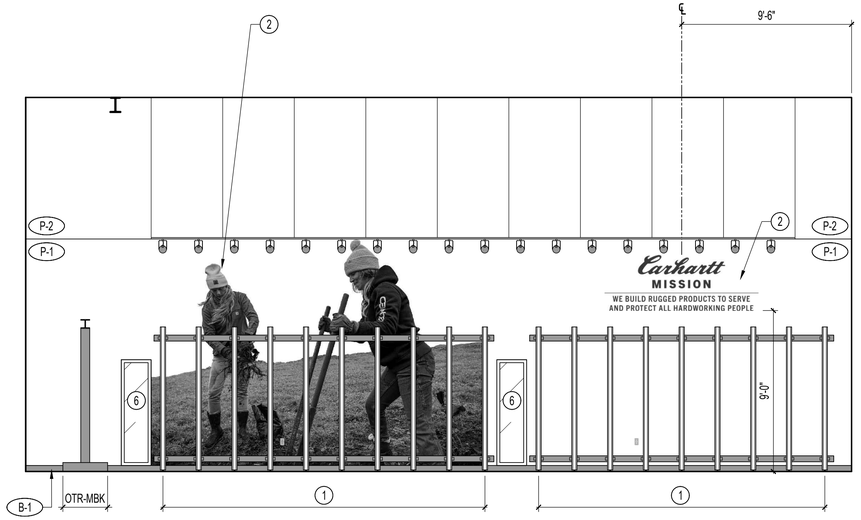
3 | ELEVATIONS - SALES | SCALE 1/4"=1'-0"



4 | ELEVATIONS - SALES | SCALE 1/4"=1'-0"



1 | ELEVATIONS - SALES | SCALE 1/4"=1'-0"



2 | ELEVATIONS - SALES | SCALE 1/4"=1'-0"

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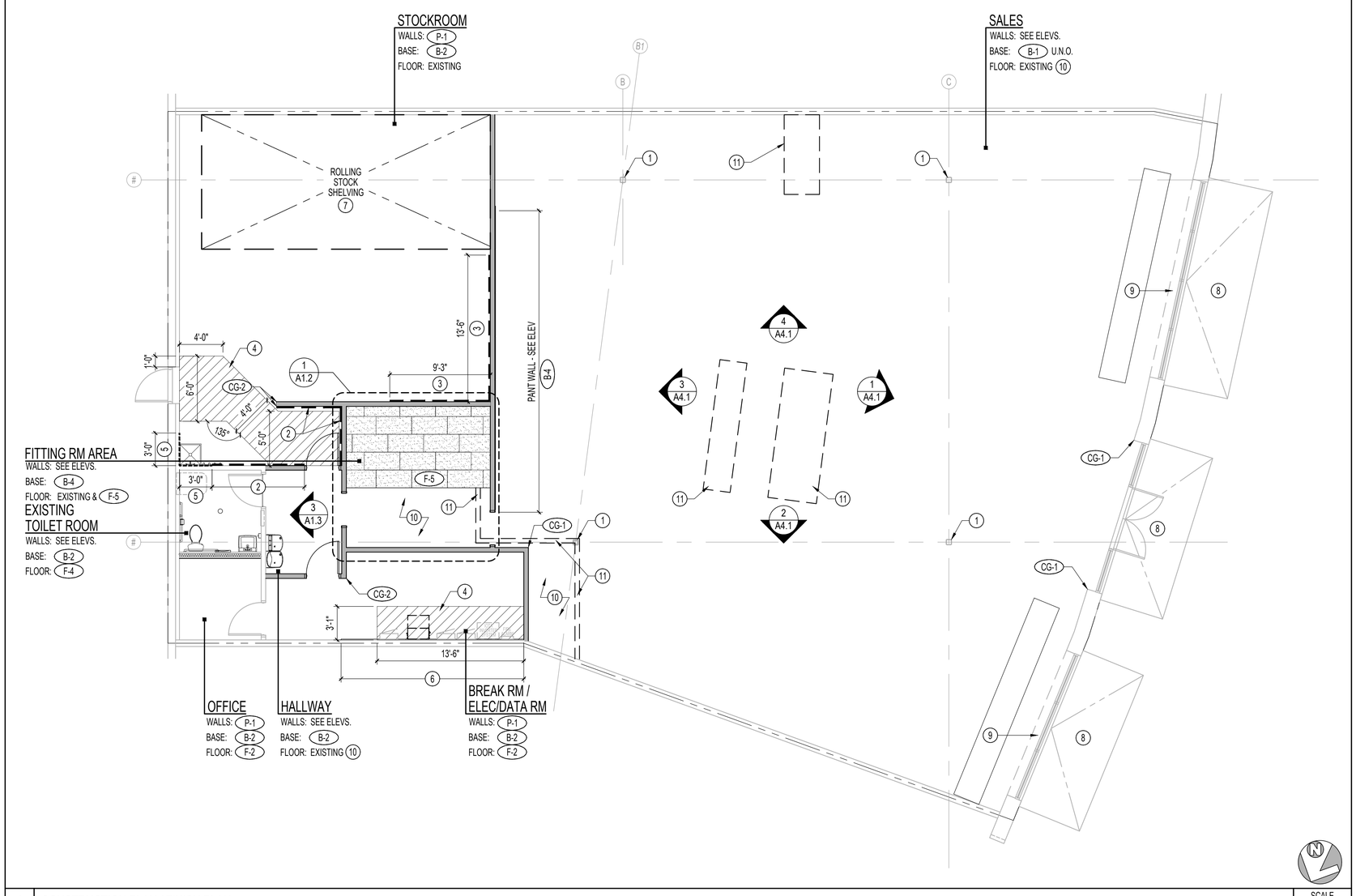
INTERIOR ELEVATIONS

DRAWN BY	SLS
CHECKED BY	AT / SL
JOB NUMBER	25341
SHEET NAME	A-4.1

1. EXISTING STEEL COLUMNS. PAINT P-8 THROUGHOUT SALES AREA.
2. INSTALL 'WC-2' FLOOR TO 4'-0". PAINT TO MATCH ADJACENT WALL
3. INSTALL 'WC-2' FLOOR TO 8'-0". PAINT TO MATCH ADJACENT WALL
4. G.C. TO INSTALL A STRIPED PATH ON THE FLOORING. G.C. TO USE RED COLOR ON CONCRETE. 8" STRIPE / 8" UNPAINTED
5. INSTALL NEW FRP 'WC-3' ON MOP SINK WALLS - 2 SIDES - FLOOR TO 48" AFF
6. EXISTING PLYWOOD TO REMAIN FLOOR TO 12'-0". PAINT TO MATCH ADJACENT WALL
7. G.C. TO ENSURE THAT CONCRETE IS LEVEL TO WITHIN 1/8" VARIATIONS AT AREAS UNDER ROLLING SHELVES. VERIFY EXACT LOCATIONS W/ FIXTURE PLAN. ROLLING SHELVES EQUIPMENT IS 2,000-3,000 PSI. VERIFY EXACT CONCRETE LEVELING REQUIREMENTS W/ ARCHITECT & SHELVING VENDOR PRIOR TO CONSTRUCTION.
8. EXISTING AWNING FRAMES TO REMAIN WITH NEW FABRIC & LOGO. SEE A-3.1.
9. WINDOW SILL FINISH @ ±14 1/2" AFF
10. CLEAN EXISTING CONCRETE FLOORING TO LIKE-NEW CONDITION.
11. POLISH AREAS OF NEW FLOOR TRENCH AND REMOVE WALLS TO MATCH EXISTING ADJACENT.

\- KEY NOTES (#)



1 CONSTRUCTION PLAN / FINISH PLAN

SCALE 3/16" = 1'-0"

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FINISH PLAN

DRAWN BY	SLS
CHECKED BY	AT / SL
JOB NUMBER	25341
SHEET NAME	A-5.1

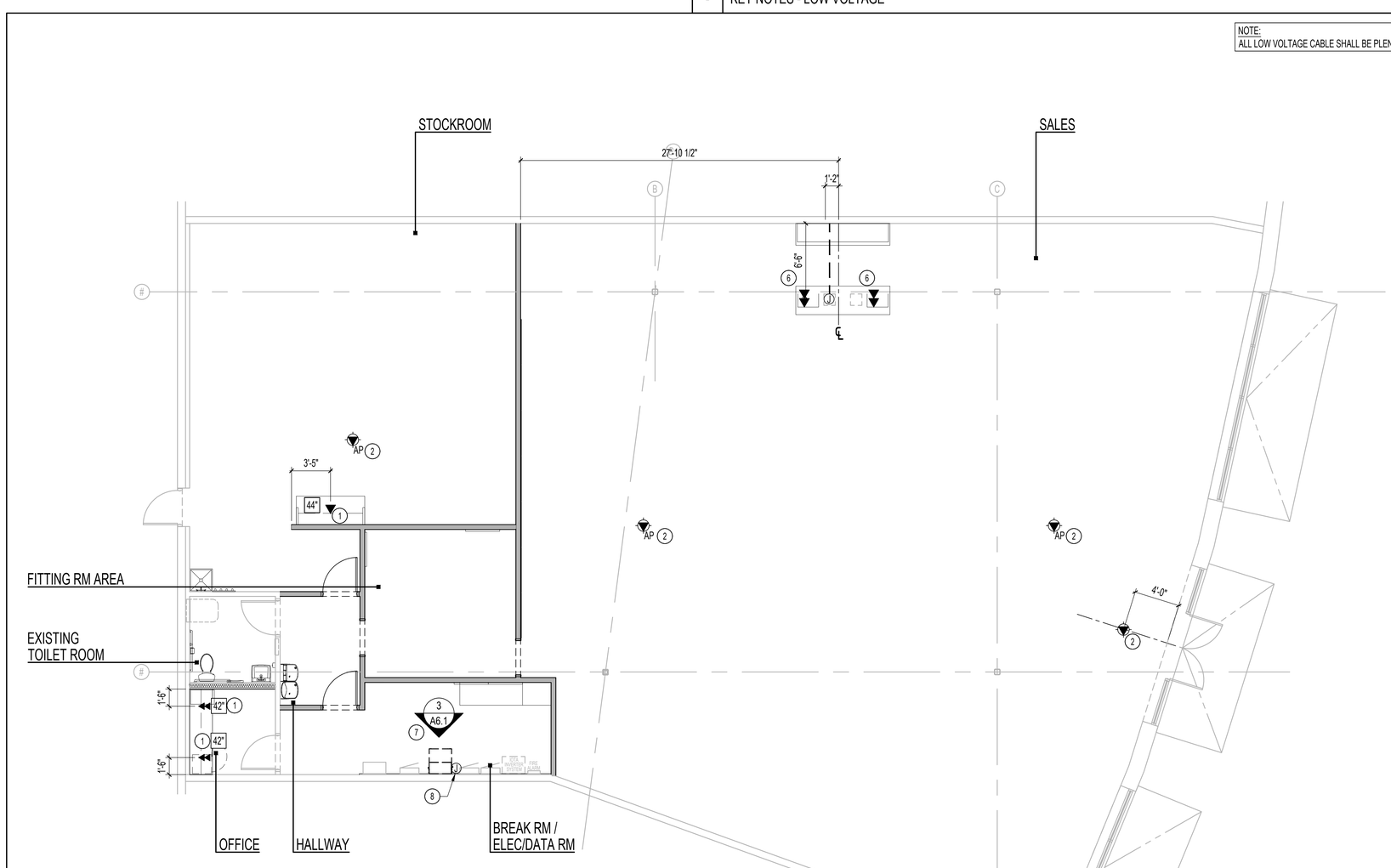
1. (WALL MOUNT) ROUTE (1) CAT 6 CABLE IN 3/4" CONDUIT FROM PATCH PANEL IN DATA RACK TO RECESSED SINGLE GANG J-BOX IN WALL. NO COVER PLATE IS NEEDED. CARHARTT'S TECH WILL EXTEND INTO THE BOXES AND TERMINATE. LEAVE SLACK SO THIS MAY BE TERMINATED. J-BOX SHALL BE INSTALLED AT HEIGHT SHOWN. J-BOX MAY BE SURFACE MOUNTED IF ON STEEL COLUMN OR MASONRY WALL. CONDUIT IS NOT REQUIRED AT CEILING / DECK OF SALES / STOCKROOM. LABEL BOTH ENDS OF THE CABLE.
2. (METAL DECK MOUNT) ROUTE (1) CAT 6 CABLE IN 3/4" CONDUIT FROM PATCH PANEL IN DATA RACK TO J-BOX SUSPENDED FROM THE DECK. J-BOX SHALL QUAD J-BOX WITH SINGLE GANG DEVICE RING AND SHALL BE SUSPENDED AT 11'-6" A.F.F. WITH CONDUIT TO DECK. CONDUIT IS NOT REQUIRED AT CEILING / DECK OF STOCKROOM OR SALES AREA BUT IS REQUIRED IN THE WALLS FOR THE VERTICAL PORTION OF THE RUN IN THE SALES AREA. SEE 2C/A6. LABEL BOTH ENDS OF THE CABLE.
3. NOT USED (CONCRETE DECK MOUNT / WOOD JOIST AND DECK MOUNT) ROUTE (1) CAT 6 CABLE IN 3/4" CONDUIT FROM PATCH PANEL IN DATA RACK TO J-BOX SUSPENDED FROM THE DECK. J-BOX SHALL QUAD J-BOX WITH SINGLE GANG DEVICE RING AND SHALL BE SUSPENDED AT 11'-6" A.F.F. WITH CONDUIT TO DECK. REVIEW LOCATIONS WITH REQUIRED LOW VOLTAGE WIRING SUB-CONTRACTOR PRIOR TO INSTALLING CONDUIT. CONDUIT IS NOT REQUIRED AT CEILING / DECK OF STOCKROOM BUT IS REQUIRED AT CEILING / DECK OF SALES AREA. LABEL BOTH ENDS OF THE CABLE.
4. NOT USED (CEILING MOUNT) ROUTE (1) CAT 6 CABLE FROM PATCH PANEL IN DATA RACK TO J-BOX ABOVE CEILING. LOOP CABLE ABOVE CEILING USING PROPER SUPPORTS. J-BOX TO BE MOUNTED WITHIN 18" ABOVE CEILING AND 24" OF DEVICE LOCATION SHOWN. PROVIDE 10' OF SERVICE LOOP ON SECONDARY END. CONDUIT IS NOT REQUIRED AT CEILING / DECK OF STOCKROOM. LABEL BOTH ENDS OF THE CABLE.
5. NOT USED (EXTERIOR DOOR) ROUTE (1) CAT 6 CABLE IN 3/4" CONDUIT FROM PATCH PANEL IN DATA RACK TO WATERPROOF DUAL GANG J-BOX. J-BOX SHALL BE INSTALLED AT HEIGHT SHOWN. J-BOX MUST BE RECESSED UNLESS INSTALLED IF ON MASONRY WALL. LABEL BOTH ENDS OF THE CABLE.
6. (CASHWRAP) ROUTE SEVERAL CAT 6 CABLES IN CONDUIT FROM PATCH PANEL IN DATA RACK TO J-BOX IN CABINET. EXTEND CABLES TO THE CASHWRAP AND LEAVE LOOPED WITHIN THE CASHWRAP AT LOCATION OF LOCATION OF EMPTY J-BOX. PROVIDE SLACK SO THEY CAN BE EXTENDED TO THE ENDS OF THE CASHWRAP. LABEL BOTH ENDS OF THE CABLE. CARHARTT'S TECH WILL EXTEND INTO THE BOXES AND TERMINATE. INSTALL SINGLE GANG J-BOX FOR EACH POS AT INSIDE REAR SURFACE OF CABINET. SEE 2/A6.1. NUMBER OF CABLES ARE REPRESENTED ON THE PLAN WITH A TRIANGLE SYMBOL. USE INDUSTRY STANDARD FOR CONDUIT SIZE BASED ON THE QUANTITY OF CABLES SHOWN.
7. GC TO INSTALL OWNER SUPPLIED DATA RACK ON WALL AT THE HEIGHTS / LOCATIONS SHOWN ON 3/A6.1 ALL CABLES SHOULD BE LEFT NEXT TO THE RACK WITH PLENTY OF SLACK. THE CARHARTT TECH WILL EXTEND INTO THE RACK AND TERMINATE ON THE PATCH PANELS.
8. GC TO ROUTE TWO (2) CAT6 CABLES IN EXISTING LANDLORD CONDUIT FROM BUILDING TELCO ROOM / MDF TO TENENT'S DATA RACK AREA / IDF. ASSUME 300' FOR PRICING.

\- KEY NOTES - LOW VOLTAGE (#)

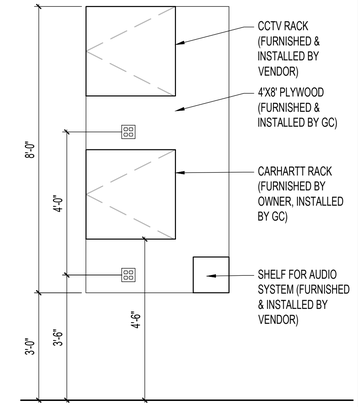
SYMBOL	DESCRIPTION
▼	DATA OUTLET
▼	CEILING MOUNTED DATA OUTLET
▼	FLOOR MOUNTED DATA OUTLET

\- SYMBOL LEGEND

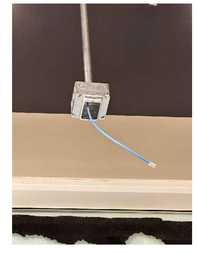
NOTE:
ALL LOW VOLTAGE CABLE SHALL BE PLENUM RATED.



1 LOW VOLTAGE WIRING PLAN — SCALE 3/16"=1'-0"



3 SERVER ELEVATION — SCALE 1/2"=1'-0"



C DECK SUSPENDED J-BOXES

B LOWER CASHWRAP @ ACCESS PANEL

A INSIDE CASHWRAP

2 REFERENCE PHOTOS

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LOW VOLTAGE PLAN

DRAWN BY	SLS
CHECKED BY	AT / SL
JOB NUMBER	25341
SHEET NAME	A-6.1

A KEY NOTES (#)

1. THIS PORTION OF CASHWRAP MEETS ACCESSIBILITY GUIDELINES AND IS 36" WIDE BY 24" DEEP, AND COUNTER TOP AT 34" AFF.
2. PROPOSED FIRE EXTINGUISHER LOCATION - CONFIRM WITH FIRE MARSHAL
3. REMOVE WOOD TRIM FROM THE SIDES OF THESE POSTS
4. INSTALL OWNER SUPPLIED CORK BOARD VERTICALLY, WITH BOTTOM AT 42" A.F.F.
5. INSTALL OWNER SUPPLIED DRY-ERASE BOARD VERTICALLY, WITH BOTTOM AT 52" A.F.F.

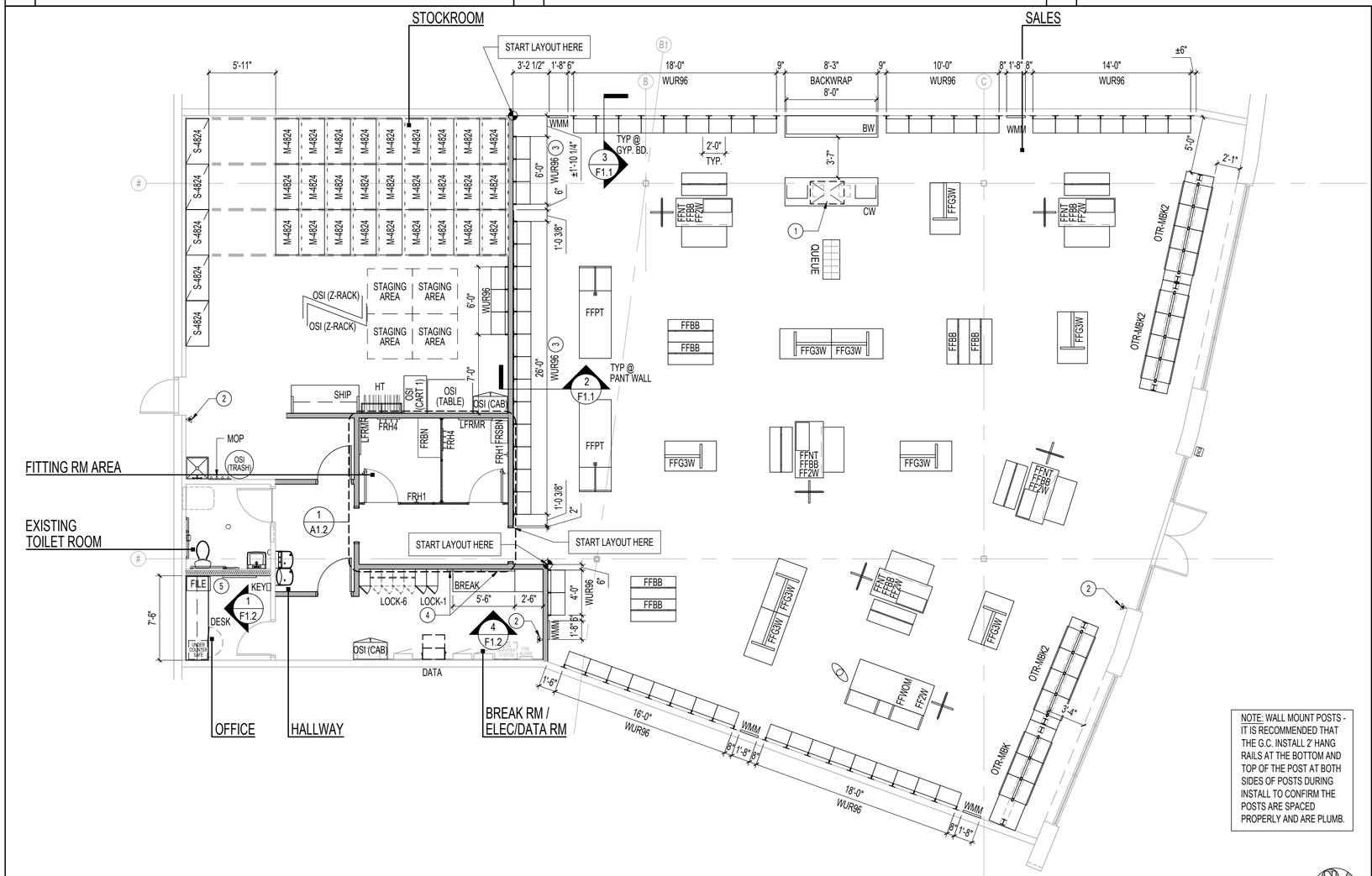
B STOCKROOM FIXTURE SCHEDULE

MARK	ITEM DESCRIPTION	NOT USED	EXIST	CONTRACTOR		VENDOR		OWNER	
				FURN.	INST.	FURN.	INST.	FURN.	INST.
BREAK	BREAK COUNTER - SEE F1.2			●	●				
DATA	DATA CABINET				●			●	
DESK	MANAGER'S DESK - SEE F1.2			●	●				
HT	HANGER MANAGEMENT SECTIONS WITH 12 H-BARS IN EACH SECTION				●			●	
LOCK-1	LOCKERS - ULINE : 12" X 18" X 72"				●			●	
LOCK-6	LOCKERS - ULINE: 72" X 18" X 72"				●			●	
M-XXXX	MOBILE STOCK SHELVING							●	●
MOP	MOP & BROOM RACK ABOVE MOP SINK				●			●	
SHIP	PACKING STATION				●			●	
S-XXXX	STATIONARY STOCK SHELVING							●	●
CAB	STORAGE & CABINET WITH DOORS. SHORTER UNIT IN TOILET ROOM.				●			●	
OSI	OWNER SUPPLIES EQUIP.				●			●	
FILE	FILE CABINET (UNDER-COUNTER)				●			●	
KEY	KEY BOX				●			●	

C FIXTURE SCHEDULE

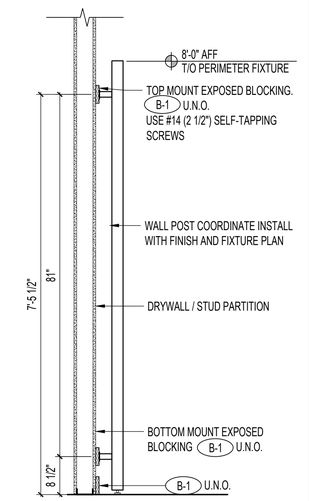
• ASSEMBLY REQUIRED FOR ALL G+ B FIXTURES

MARK	FIXTURE ITEM DESCRIPTION	NOT USED	EXIST.	CONTRACTOR		G+B*		VERMONT STORE FIXTURES		OWNER	
				FURN.	INST.	FURN.	INST.	FURN.	INST.	FURN.	INST.
BW	BACKWRAP				●	●					
CW	CASHWRAP				●	●					
CMP96	POST - CEILING MOUNT (96" CEILING)	●									
CMP144	POST - CEILING MOUNT (144" CEILING)	●									
FF2W	T-STAND				●	●					
FFBB	BALLET BAR				●	●					
FFC30	CUBE FIXTURE - 30" SQUARE	●									
FFG3W	GONDOLA - 3 WAY				●	●					
FFNT	NESTING TABLE SET WITH RISER				●	●					
FFPT	PANT TABLE				●	●					
FFWOM	WOMEN'S FIXTURE DISPLAY				●	●					
FRH1	FITTING ROOM HOOK - 1 - SEE A1.2 FOR SPEC			●	●						
FRH4	FITTING ROOM HOOKS - 4 SEE A1.2 FOR SPEC			●	●						
FRMR	FITTING ROOM MIRROR				●	●					
FRBN	FITTING ROOM BENCH - ADA				●	●					
FRSBN	FITTING ROOM BENCH - SMALL				●	●					
LFRMR	ILLUMINATED WALL MOUNTED MIRROR SEE A-1.2 FOR SPEC.			●	●						
OTR-MBK	POST SYSTEM ON BASE FOR CONCRETE				●	●					
OTR-MBK2	POST SYSTEM ON BASE FOR CONCRETE				●	●					
OTR-K	POST SYSTEM ON BASE	●									
QUEUE	QUEUE SYSTEM				●	●					
WMM	WALL MOUNT MIRROR				●	●					
WUR96	POST - WALL MOUNT				●	●					

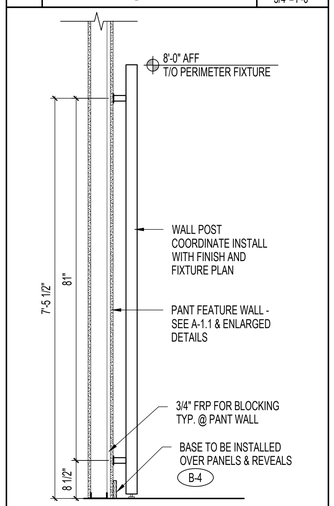


NOTE: WALL MOUNT POSTS - IT IS RECOMMENDED THAT THE G.C. INSTALL 2' HANG RAILS AT THE BOTTOM AND TOP OF THE POST AT BOTH SIDES OF POSTS DURING INSTALL TO CONFIRM THE POSTS ARE SPACED PROPERLY AND ARE PLUMB.

1 FIXTURE PLAN — SCALE 3/16" = 1'-0"



3 WALL POST @ GYP. BD. — SCALE 3/4"=1'-0"



2 WALL POST @ PANT WALL — SCALE 3/4"=1'-0"

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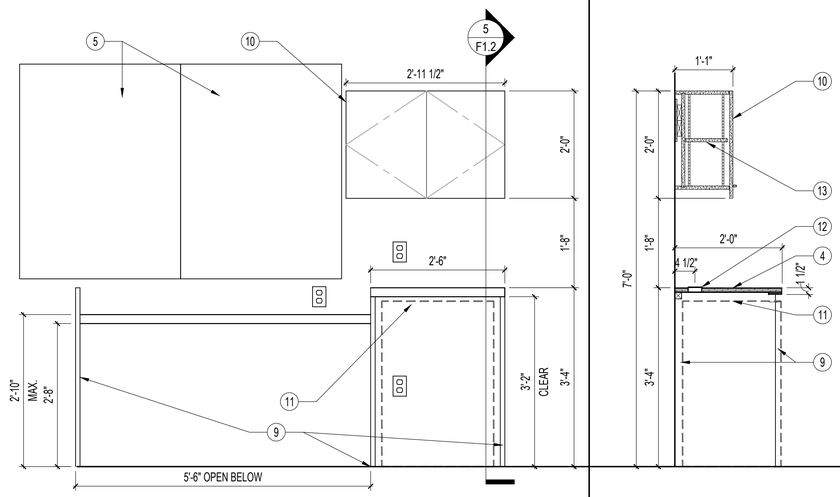
FIXTURE PLAN,
SCHEDULE & NOTES

DRAWN BY	SLS
CHECKED BY	AT / SL
JOB NUMBER	25341
SHEET NAME	F-1.1

1. 3/4" THICK FIRE RATED PLYWOOD MOUNTING BOARD (PAINT TO MATCH WALL)
2. MANAGERS AREA
   - 2.1. STANDARDS: CAPITOL HARDWARE - 2000-00649 - C-LINE CHROME SLOTTED STANDARDS
   - 2.2. BRACKETS: CAPITOL HARDWARE - 2001-01403 - BRACKET - 14" WITH THUMB SCREW - ZINC
   - 2.3. SHELF REST: CAPITOL HARDWARE - 2075-00001 - CENTER - FOR C-LINE BRACKETS - ZINC
   - 2.4. 14" DEEP SHELF - WHITE MELAMINE
3. HANGBAR AREA:
   - 3.1. STANDARDS: CAPITOL HARDWARE - 2000-00649 - C-LINE CHROME SLOTTED STANDARDS
   - 3.2. BRACKETS: CAPITOL HARDWARE - 2001-01603 - BRACKET - 16" WITH THUMB SCREW, ZINC
   - 3.3. HANGRAIL ADAPTER: CAPITOL HARDWARE - 2039-30078 - ADAPTER WITH SPRING CLAMP FOR 1" DIAMETER ROUND TUBE - CHROME
   - 3.4. HANGRAIL: CAPITOL HARDWARE - 646-30847 - 1" DIAMETER ROUND TUBE
   - 3.5. END CAP: CAPITOL HARDWARE - 652-30047 - END CAP FOR 1" DIAMETER ROUND TUBE - CHROME
4. PLASTIC LAMINATE COUNTERTOP - WHITE
5. INSTALL OWNER SUPPLIED CORK BOARD HORIZONTALLY, WITH BOTTOM AT 42" A.F.F.
6. NOT USED
7. ALL POWER & DATA @ DESK SHALL BE MOUNTED @ +38"
8. 2'-6" d. WHITE LAMINATED COUNTERTOP W/MATCH SUPPORTS.
9. LAMINATE SUPPORTS AT EDGES OF COUNTERTOP
10. PLASTIC LAMINATE FINISH. SHELF UNIT HUNG ON CONTINUOUS WOOD CLEARS AT WALL. REINFORCE W/ PLYWOOD BACKING AT WALL & BLOCKING IN WALL-PLASTIC LAMINATE
11. OUTLINE OF UNDER COUNTER REFRIGERATOR (20"w. x 35"h. x22"d)
12. LOCATION OF 3" DIA. GROMMET W/ COVER (2 TYP.)
13. ADJUSTABLE SHELF ON RECESSED PILASTER STANDARDS
14. LOCATION OF VERTICAL FILING CABINET (15" W X 25" D X 29" H)
15. LOCATION OF SAFE (20" W X 20" D X 20" H)

7 ELEVATION KEY NOTES

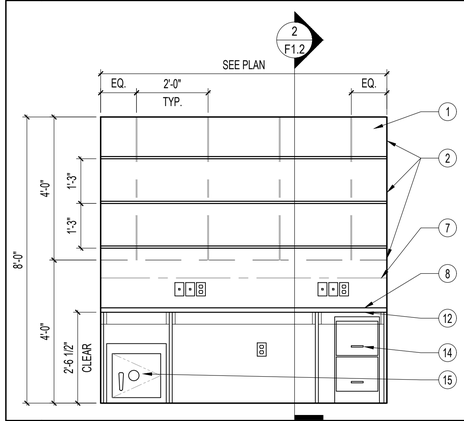


4 BREAK COUNTER ELEVATION — SCALE 3/4"=1'-0"

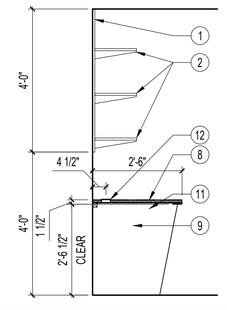
5 BREAK COUNTER SECTION — SCALE 3/4"=1'-0"

NOTE:
BREAK ROOM AND MANAGER'S DESK COUNTERTOPS MAY BE SOURCED FROM PRE-MANUFACTURED / IN-STOCK COUNTERTOPS IN A NEUTRAL COLOR AT LOCAL HOME IMPROVEMENT CENTER.

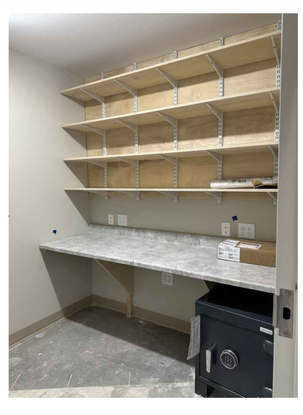
6 BREAK COUNTER - REFERENCE PHOTO



1 MANAGER'S DESK ELEVATION — SCALE 1/2"=1'-0"



2 MANAGER'S DESK SECTION — SCALE 1/2"=1'-0"



3 MANAGERS DESK - REFERENCE PHOTO

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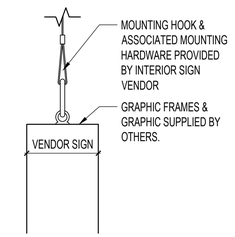
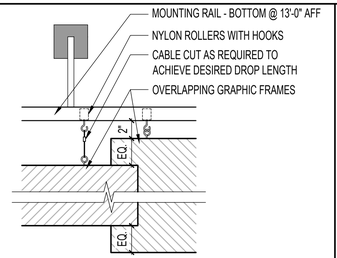
FIXTURE DETAILS

DRAWN BY
SLS
CHECKED BY
AT / SL
JOB NUMBER
25341
SHEET NAME
F-1.2

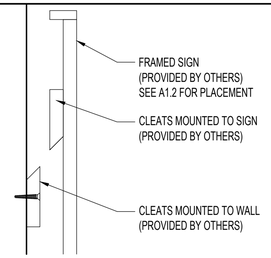


GRAPHIC TYPE 'A' - SECTION



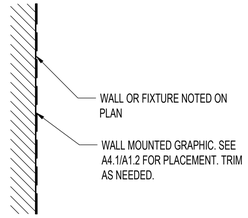
GRAPHIC TYPE 'A' - FRONT ELEV.

A	HANGING GRAPHIC SIGN DETAIL	SCALE
		NONE



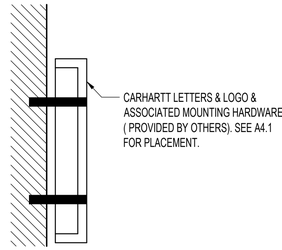
GRAPHIC TYPE 'B'

B	FRAMED SIGN DETAIL	SCALE
		NONE



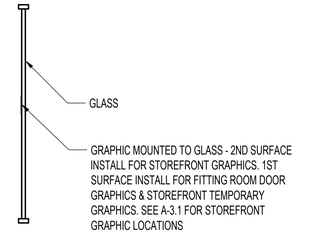
GRAPHIC TYPE 'C'

C	WALL MOUNTED SIGN DETAIL	SCALE
		NONE



GRAPHIC TYPE 'D'

D	PIN MOUNTED SIGN DETAIL	SCALE
		NONE

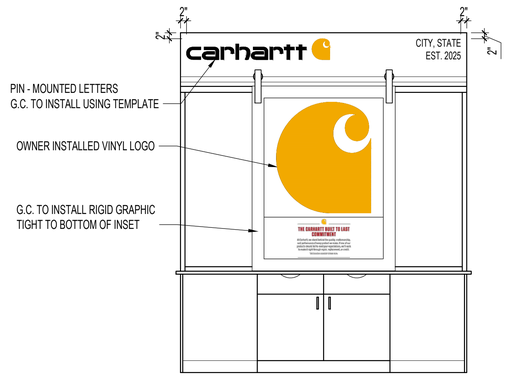


GRAPHIC TYPE 'E'

E	GLAZING GRAPHICS DETAIL	SCALE
		NONE

2 KEY NOTES

1. SUSPENDED GRAPHIC FRAME : G.C. TO ASSEMBLE & INSTALL SUSPENDED FRAME. SUSPEND FROM GRAPHIC RAIL NYLON ROLLERS ABOVE. SEE A/F2.1.
2. FRAMED SIGN : G.C. TO INSTALL FRAMED SIGNS. MOUNT WITH CLEATS. PROVIDE CONCEALED BLOCKING. SEE B/F2.1.
3. VINYL GRAPHICS ON WALL / WOOD DOOR : SEE C/F2.1
4. PROJECTED PIN MOUNTED SIGN : G.C. TO INSTALL PIN MOUNTED LETTERS & LOGO ON WC-1. SEE D/F2.1
5. VINYL GRAPHIC ON GLAZING : SEE E/F2.1.
6. BACKWRAP GRAPHICS : SEE F/F2.1
7. VINYL GRAPHIC ON GLAZING : OWNER FURNISHED, G.C. INSTALLED WITHIN THE FIRST 5 DAYS OF CONSTRUCTION. SEE E/F2.1. G.C. SHALL REMOVE VINYL AT THE END OF CONSTRUCTION.



GRAPHIC TYPE 'F' @ BACKWRAP

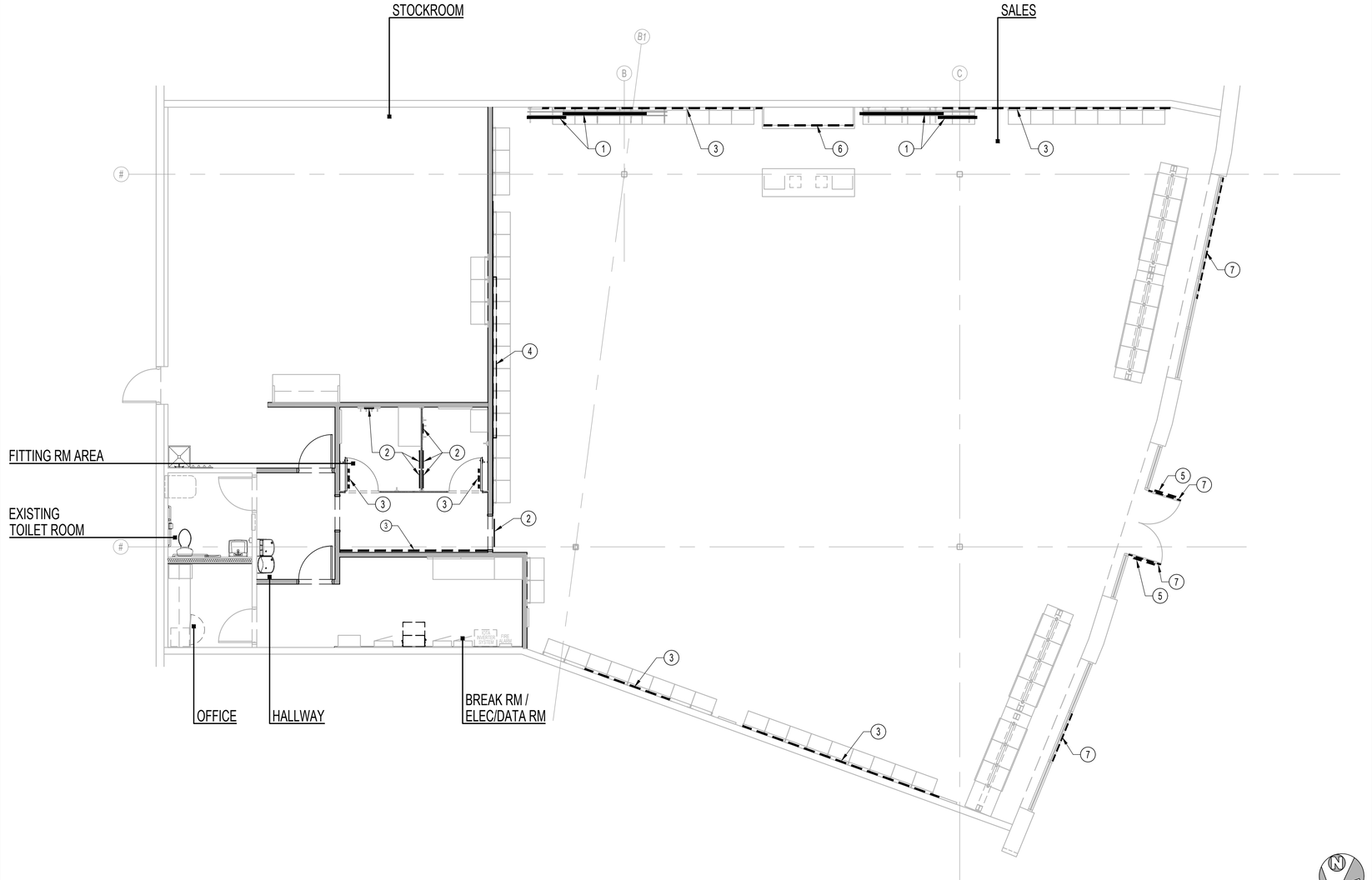
F	BACKWRAP GRAPHIC SIGN DETAIL	SCALE
		1/2" = 1'-0"

SEE GRAPHIC INSTALLATION GUIDELINES FOR LOCATIONS

NOT ALL INTERIOR SIGNS / GRAPHICS ARE SHOWN.
ONLY THOSE REQUIRING GC ASSEMBLY / INSTALLATION ARE SHOWN.

SEE INTERIOR ELEVATIONS FOR GRAPHIC IMAGES

ALL GRAPHICS / INTERIOR SIGNAGE ARE FURNISHED BY OWNER.
SEE SHEET G-0.2 FOR 'INSTALLED BY' RESPONSIBILITY



1	INTERIOR SIGNAGE & GRAPHICS PLAN	SCALE
		3/16" = 1'-0"

RGLA
rgla solutions, inc.
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

REVISIONS:	DATE:
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retail architecture
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

REGISTERED ARCHITECT
CAITLIN DODGE
27813
STATE OF TEXAS

carhartt

ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD.
SUITE 112
SAN ANTONIO, TX 78209

INTERIOR SIGNAGE &
GRAPHIC PLAN

DRAWN BY
SLS
CHECKED BY
AT / SL
JOB NUMBER
25341
SHEET NAME
F-2.1

ELECTRIC LEGEND

SYMBOL	DESCRIPTION
LIGHTING AND LIGHTING CONTROLS	
o ◊ ♀ ¤ ▽ ▯ ◎ ◎	LUMINAIRE (REFER TO THE LUMINAIRE SCHEDULE) NOTE THAT OTHER SHAPES MAY ALSO BE USED TO REPRESENT LUMINAIRES
● ▬ ⊢●	SHADED LUMINAIRES DENOTE THOSE CONNECTED TO EMERGENCY OR STANDBY POWER AS APPLICABLE (UNSWITCHED LUMINAIRES ARE EGRESS LIGHTS AND/OR NIGHT-LIGHTS THAT OPERATE 24/7)
△△△	TRACK LIGHTING IN LENGTH SHOWN AND WITH NUMBER OF LUMINAIRE HEADS AS INDICATED PROVIDE ALL REQUIRED ACCESSORIES (FITTINGS, END CAPS, POWER FEEDS, ETC.)
WALL MOUNT ⊢⊗ ⊗	SINGLE / DOUBLE SIDED EXIT SIGN CONNECT AHEAD OF SWITCHING & CONFIGURE ARROWS TO INDICATE DIRECTION OF EGRESS TRAVEL
●▬●	EMERGENCY LIGHTING UNIT WITH 90-MINUTE BATTERY BACKUP AND ASSOCIATED REMOTE HEADS WHERE APPLICABLE. CONNECT TO LOCAL LIGHTING CIRCUIT AHEAD OF SWITCHING
A NL a EL	A = LUMINAIRE TYPE, NL = NIGHT-LIGHT (UNSWITCHED), a = SWITCHING DESIGNATION, EL = EGRESS LUMINAIRE (ILLUMINATES PATH OF EGRESS, UNSWITCHED UNLESS OTHERWISE NOTED)
$	LIGHTING SWITCH (KEYS: 2 = 2-POLE, 3 = 3-WAY, 4 = 4-WAY, D=DIMMER, K=KEYED, T = TIMER SWITCH, M = MOMENTARY-CONTACT, P = SWITCH W/PILOT LIGHT)
$ TYPE	CEILING-MOUNTED OCCUPANCY SENSOR. DUAL TECHNOLOGY UNLESS OTHERWISE NOTED BY TYPE. TYPE "IR" = INFRARED, TYPE "US" = ULTRASONIC
$ TYPE#	WALL-MOUNTED OCCUPANCY SENSOR SWITCH. DUAL TECHNOLOGY UNLESS OTHERWISE NOTED BY TYPE. TYPE "IR"=INFRARED, TYPE "US"=ULTRASONIC, "V"=VACANCY SENSOR, "D" = DIMMED.
RECEPTACLES AND MISCELLANEOUS OUTLETS	
ϕ ϕ ϕ	SINGLE ("SIMPLEX"), DUPLEX, AND DOUBLE DUPLEX ("QUAD") RECEPTACLE RESPECTIVELY
ϕ ϕ ϕ	GFI / GFCI RECEPTACLES
ϕ ϕ	FULL SWITCHED RECEPTACLES
ϕH ϕC T ϕ42" ϕW ϕSW ϕL	RECEPTACLE ATTRIBUTES 42" = MOUNT RECEPTACLE AT THIS HEIGHT ABOVE GRADE / FINISHED FLOOR C = INSTALL ABOVE COUNTER AND BACKSPLASH H = INSTALL RECEPTACLE HORIZONTALLY L = LIT (PROVIDE ILLUMINATED FACE OR INDICATOR LIGHT TO INDICATE THERE IS POWER TO RECEPTACLE) SW = SPLIT WIRED T = TAMPER-RESISTANT W = WEATHER PROOF WHILE IN USE COVER AND WEATHER RESISTANT RECEPTACLE
MISCELLANEOUS	
Ⓣ TS	LOW VOLTAGE THERMOSTAT (LEFT) AND TEMPERATURE SENSOR (RIGHT)
■	INDICATES DIRECT CONNECTION TO EQUIPMENT
$ $MS $MSR	MOTOR RATED TOGGLE SWITCH, MANUAL STARTER WITH PILOT LIGHT, AND MANUAL STARTER WITH PILOT LIGHT WITH EXTERNAL RELAY FOR CONTROL OR MONITORING RESPECTIVELY - ALL MAY BE KEYED "K"
▬ ▬	ELECTRICAL PANELBOARD OR DISTRIBUTION BOARD (DIMENSIONS MAY VARY / FLUSH OR SURFACE MOUNTED AS INDICATED)
FRONT	DRY TYPE TRANSFORMER - FLOOR MOUNTED ON CONCRETE PAD (LEFT), SUSPENDED FROM CEILING OR WALL (RIGHT)
PAD POLE	OIL FILLED TRANSFORMER

ELECTRIC LEGEND

SYMBOL	DESCRIPTION
SINGLE LINE DIAGRAM	
Ⓜ	ELECTRIC UTILITY COMPANY METER AND ASSOCIATED CURRENT TRANSFORMERS
HD Ⓜ	CUSTOMER ELECTRIC METER AND ASSOCIATED CURRENT TRANSFORMERS HD = HIGH DENSITY METERING CABINET/BANK MOUNTED TO TIGHTLY GROUP ALL METERS TOGETHER
⏚	GROUNDING ELECTRODE PER NFPA 70 ARTICLE 250 MINIMUM
PANEL NAME	ELECTRICAL PANELBOARD OR DISTRIBUTION BOARD
∿	SURGE PROTECTIVE DEVICE
WIRE / CABLE / RACEWAY	
→ LPA-1,3	BRANCH CIRCUIT HOME RUN WITH PANEL NAME AND CIRCUIT NUMBER(S)
———	CABLING / RACEWAY INSTALLED CONCEALED IN WALLS OR ABOVE CEILING
— — —	CABLING / RACEWAY INSTALLED BELOW FLOOR OR GRADE
▭	CABLE TRAY
▭	FEEDER DUCT / BUS DUCT
Ⓙ	JUNCTION BOX ABOVE ACCESSIBLE CEILING JUNCTION BOX AT OVERHEAD STRUCTURE IN AREAS WITH NO CEILING
UP ○ DN	CONDUIT UP OR DOWN

ABBREVIATIONS

42"	DISTANCE ABOVE FINISHED FLOOR / GRADE / PAVEMENT	LR	LEGALLY REQUIRED STANDBY
AF	AMP FRAME OF FUSED SWITCH OR CIRCUIT BREAKER	LI	LONG - INSTANTANEOUS
AFCI	ARC-FAULT CIRCUIT INTERRUPTER	LSI	LONG - SHORT - INSTANTANEOUS
AT	AMP TRIP OF FUSED SWITCH OR CIRCUIT BREAKER	LSIG	LONG - SHORT - INSTANTANEOUS - GROUND FAULT
ATS	AUTOMATIC TRANSFER SWITCH	MCB	MAIN CIRCUIT BREAKER
BAS	BUILDING AUTOMATION SYSTEM	MFR	MANUFACTURER
C.T.C.	WORK UNDER DIVISION 27 OR 28 AS APPLICABLE	MLO	MAIN LUGS ONLY
C/B	CIRCUIT BREAKER	MTS	MANUAL TRANSFER SWITCH
C / CH	COUNTER HEIGHT OR SPECIAL HEIGHT DEVICE	MW	MICROWAVE OVEN
DW	DISHWASHER	NIC	NOT IN CONTRACT (SHOWN FOR REFERENCE ONLY)
E	EMERGENCY	NTS	NOT TO SCALE
E.C.	WORK UNDER DIVISION 26	OFE	OWNER-FURNISHED EQUIPMENT - INSTALLED AND WIRED BY E.C.
EMS	ENERGY MANAGEMENT SYSTEM	OS	OPTIONAL STANDBY
EPO	EMERGENCY POWER OFF	P.C.	WORK UNDER DIVISION 22
ER	EQUIPMENT ROOM	(R)	RELOCATE
ERM	ENERGY REDUCTION MAINTENANCE SWITCH	S.C.	WORK UNDER DIVISION 21
ESP	EMERGENCY STANDBY RATING	SCCR	SHORT CIRCUIT CURRENT RATING
ETR	EXISTING TO REMAIN	SPD	SURGE PROTECTIVE DEVICE
EWC	ELECTRIC WATER COOLER	ST	SHUNT TRIP
EX.	EXISTING	TAAC	TO ABOVE ACCESSIBLE CEILING
FBO	FURNISHED BY OTHERS - INSTALLED AND WIRED BY E.C.	T	TAMPER RESISTANT
FIBO	FURNISHED AND INSTALLED BY OTHERS - WIRED BY E.C.	TTB	TELEPHONE TERMINAL BOARD
FP	RECEPTACLE TO BE USED FOR A FLAT PANEL DISPLAY.	TYP	TYPICAL
FWE	FURNISHED WITH EQUIPMENT BY OTHERS - INSTALLED AND WIRED BY E.C.	UCR	UNDER COUNTER REFRIGERATOR
GD	GARBAGE DISPOSAL	UL	UNDERWRITER'S LABORATORY
GFEP	GROUND FAULT EQUIPMENT PROTECTION	U.L.S.E.	LISTED FOR SERVICE ENTRANCE
GFI / GFCI	GROUND FAULT CIRCUIT INTERRUPTER DEVICE	UNO	UNLESS NOTED OR INDICATED OTHERWISE ON DRAWINGS OR IN SPECIFICATIONS
GND	GROUND	VFD / VSD	VARIABLE FREQUENCY / SPEED DRIVE
H.C.	WORK UNDER DIVISION 23	VIF	VERIFY IN FIELD
H.O.A.	"HAND - OFF - AUTO" SWITCH	VM	VENDING MACHINE
IG	ISOLATED GROUND	VP	VANDAL PROOF
Isc	SHORT CIRCUIT CURRENT	W / WP	WEATHERPROOF
		WG	WIRE GUARD
		WR	WEATHER RESISTANT
		X	RATED FOR CLASSIFIED LOCATION

PLAN-VIEW AND GRAPHIC LINE TYPES

WORK SHOWN BOLD-CONTINUOUS INDICATES NEW WORK
(UNLESS OTHERWISE INDICATED)

WORK SHOWN FADED INDICATES EXISTING WORK TO REMAIN OR NEW WORK BY OTHERS AS APPLICABLE
(UNLESS OTHERWISE INDICATED)

WORK SHOWN BOLD-DASHED INDICATES SELECTIVE DEMOLITION WORK
(UNLESS OTHERWISE INDICATED)

ELECTRONIC DRAWING REQUEST

ELECTRONIC COPIES OF THESE DRAWINGS MAY BE REQUESTED AT:
APPS.KLHENGRS.COM/DRAWINGREQUESTS.

GENERAL ELECTRICAL INSTALLATION NOTES

A. CODE COMPLIANCE: PROVIDE ALL ELECTRICAL WORK COMPLIANT WITH ALL PREVAILING CODES.

B. LISTINGS: PROVIDE MATERIALS, COMPONENTS AND ASSEMBLED COMPONENTS WITH LISTINGS AND LABELS FROM A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL), MANUFACTURED, LISTED AND LABELED FOR THEIR INTENDED USE.

C. RATED BUILDING SURFACES: SEPARATE DEVICE BOXES BY A MINIMUM OF 6 INCHES WHERE INSTALLED BACK-TO-BACK WITHIN DEMISING WALLS TO MAINTAIN REQUIRED FIRE AND SOUND RATING (TYPICAL OF ALL DEVICE BOXES INSTALLED ON DEMISING WALLS). PROVIDE LISTED FIRE-RATED WRAPS AROUND ALL RECESSED OUTLET, DEVICE AND EQUIPMENT BOXES IN FIRE/SMOKE RATED WALLS, CEILINGS AND FLOORS TO MEET OR EXCEED THE RESPECTIVE FIRE/SMOKE RATING OF THE SURFACE.

D. RATED PENETRATIONS: SEAL ALL PENETRATIONS THROUGH FIRE-RATED AND/OR SMOKE-RATED MEMBRANES (FLOORS, WALLS, CEILINGS, ETC.) USING SEALANT PRODUCTS THAT MEET OR EXCEED THE RATING OF THE RESPECTIVE MEMBRANE.

E. GANGED DEVICES: INSTALL WIRING DEVICES GANGED WHEREVER POSSIBLE FOR INSTANCES WHERE THEY ARE SHOWN TOGETHER. THIS INCLUDES LOCATIONS ABOVE COUNTERS AND WORK SURFACES WHERE APPLICABLE.

F. OUTLET BOXES NEAR CORNERS: INSTALL WALL-MOUNTED SWITCHES, CONTROLS, RECEPTACLES, OUTLETS, ETC. AT LEAST 6 INCHES FROM WALL CORNERS.

G. CONCEALMENTS: CONCEAL ALL CONDUIT DROPS AND RISES WITHIN WALLS, AND PROVIDE FLUSH-MOUNTED WALL OUTLET BOXES UNLESS OTHERWISE INDICATED.

H. DOCUMENTS OF OTHER TRADES: REVIEW DOCUMENTS OF OTHER TRADES, INCLUDING ARCHITECTURAL, PRIOR TO SUBMITTING A BID. PROVIDE ELECTRICAL WORK FOR EQUIPMENT, DEVICES, ETC. OF OTHER TRADES AS REQUIRED TO RENDER THEM FULLY OPERATIONAL. REFER TO ARCHITECTURAL ELEVATIONS FOR INTENDED LOCATIONS AND MOUNTING HEIGHTS FOR EQUIPMENT AND OUTLETS, ETC. PRIOR TO COMMENCING WITH ANY RELATED ROUGH-IN WORK.

I. SCHEMATIC REPRESENTATIONS: CIRCUITING WORK SHOWN ON DRAWINGS IS FOR SCHEMATIC GENERAL GRAPHIC REPRESENTATION ONLY. DETERMINE SPECIFICS IN FIELD (POINT-TO-POINT ROUTING, HOME-RUN LOCATIONS, METHODS OF CONCEALMENT, ETC.). LOCATIONS AND ROUTING INDICATED ON PLANS ARE SCHEMATIC AND DIAGRAMMATIC IN NATURE. LAYOUT AND INSTALL ALL ELECTRICAL WORK IN STRICT COMPLIANCE WITH CHAPTER 1, PART II, ARTICLE 110.26 OF THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70).

J. HOME-RUN DESIGNATIONS: HOME-RUN DESIGNATIONS INDICATED ON PLANS ARE SCHEMATIC DESIGNATIONS ONLY. DETERMINE EXACT CIRCUIT ASSIGNMENTS IN FIELD BASED ON FIELD CONDITIONS. PROVIDE COLOR-CODED CONDUCTOR INSULATION ACCORDINGLY, CODED PROPERLY DEPENDING ON SYSTEM, PHASE, NEUTRAL, ETC. PROVIDE EQUIPMENT AND PANELBOARD SCHEDULES THAT ACCURATELY INDICATE INSTALLED CONDITIONS.

K. LOCAL DISCONNECTS AND CONTROLS AT EQUIPMENT: LOCAL DISCONNECTS AND LOCAL CONTROLS SHOWN AT OR ON EQUIPMENT IN PLAN-VIEW ARE SHOWN FOR SCHEMATIC ASSOCIATIONS ONLY. AVOID INSTALLING DISCONNECTS OR CONTROLS ON EQUIPMENT ENCLOSURES. INSTALL ON ADJACENT WALLS OR BUILDING STRUCTURE, OR PROVIDE FIELD-FABRICATED UNISTRUT OR EQUIVALENT ASSEMBLIES AS NEEDED. PROVIDE FIELD COORDINATION WITH SITE CONDITIONS AND OTHER TRADES, AND PROVIDE ALL RELATED WORK IN STRICT COMPLIANCE WITH NFPA 70, INCLUDING ARTICLE 110.26. PROVIDE A PERMANENT LABEL ON LOCAL DISCONNECTS NOTING THE EQUIPMENT IT SERVES AND THE PANEL AND CIRCUIT NUMBER FEEDING THE EQUIPMENT PER NFPA 70, ARTICLE 110.22(A).

L. EQUIPMENT & LOAD COORDINATION: REFER TO AND COORDINATE WITH POWER FLOOR PLANS, EQUIPMENT SCHEDULES (INCLUDING EQUIPMENT COORDINATION SCHEDULES), DRAWINGS OF ALL TRADES, ALL DIVISIONS AND SECTIONS OF SPECIFICATIONS AND INSTALLERS OF ALL TRADES. BASED ON ACTUAL EQUIPMENT BEING PROVIDED, DETERMINE AND PROVIDE APPROPRIATE BREAKERS, FUSES, CONDUCTORS, CONTROLS, POWER DISTRIBUTION EQUIPMENT, ETC. PERFORM THESE SERVICES PRIOR TO FURNISHING POWER DISTRIBUTION EQUIPMENT SUBMITTALS.

M. EXTERIOR ELECTRICAL WORK AND WORK SUBJECT TO MOISTURE: EXTERIOR ELECTRICAL WORK SHALL BE WEATHERPROOF AND WATER-TIGHT, AND SHALL BE RUST-RESISTANT. PROVIDE XHHW-2 CONDUCTORS FOR ALL APPLICATIONS THAT ARE BELOW GRADE OR SUBJECT TO MOISTURE. PROVIDE MINIMUM NEMA 3R ENCLOSURES FOR ALL OUTDOOR EQUIPMENT AND ALL INDOOR EQUIPMENT THAT IS SUBJECT TO MOISTURE. PROVIDE NEMA 1 ENCLOSURES FOR ALL OTHER INDOOR EQUIPMENT.

N. EQUIPMENT GROUNDING CONDUCTORS: PROVIDE EQUIPMENT GROUNDING CONDUCTORS IN STRICT COMPLIANCE WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70), INCLUDING ARTICLE 250 AND TABLE 250.122. THESE CONDUCTORS MAY OR MAY NOT BE INDICATED ON SINGLE-LINE DIAGRAMS OR ELSEWHERE, BUT SHALL BE PROVIDED UNDER BASE BID NEVERTHELESS.

O. OVERHEAD WORK: HOLD ALL NEW OVERHEAD ELECTRICAL WORK AS TIGHTLY AS POSSIBLE TO THE BOTTOM OF THE OVERHEAD STRUCTURE. DO NOT INSTALL ANY ELECTRICAL WORK WITHIN SIX INCHES OF ROOF DECKING.

P. COORDINATION DRAWINGS: LAYOUT ALL PROPOSED RACEWAY ROUTING, ELEVATIONS, INSTALLATION METHODS, ETC. ON COORDINATION DRAWINGS AND COORDINATE ALL PROPOSED RACEWAY ROUTING WITH ALL AFFECTED TRADES PRIOR TO COMMENCING WITH WORK. IN ADDITION, REVIEW THE INFORMATION WITH ARCHITECT, ENGINEER AND OWNER FOR ALL AREAS WHERE THE RACEWAYS WILL BE VISIBLE AFTER COMPLETION OF CONSTRUCTION.

Q. JUNCTION AND PULL BOXES: LOCATE JUNCTION AND PULL BOXES SO THAT THEY REMAIN ACCESSIBLE AFTER ALL CONSTRUCTION WORK IS COMPLETE. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO COMMENCEMENT OF THE WORK. LOCATE BOXES IN A MANNER THAT AVOIDS HAVING TO USE ACCESS PANELS. IF ACCESS PANELS ARE INEVITABLE, PROVIDE THEM RATED TO MEET OR EXCEED THE FIRE AND/OR SMOKE RATINGS OF THE RESPECTIVE CEILING OR WALL, AND OBTAIN APPROVAL OF DESIGN PROFESSIONALS FOR EACH LOCATION..

R. CONDUCTOR TERMINATIONS: IN CASES WHERE CONDUCTOR SIZES ARE TOO LARGE TO FIT INTO LUGS/TERMINALS, PROVIDE APPROPRIATE FACTORY LUG KITS FOR AFFECTED EQUIPMENT IF AVAILABLE. ELSEWHERE, PROVIDE INSULATED BUTT-SPLICES OR EQUIVALENT METHOD, WITH TAILS SIZED TO FIT LUGS/TERMINALS. PROVIDE SPLICES IN SEPARATE BOXES IF REQUIRED BASED ON FIELD CONDITIONS, BOX SIZE LIMITATIONS, ETC. CONCEAL BOXES IN ACCESSIBLE OVERHEAD JOIST SPACES IN FINISHED REGULARLY OCCUPIED AREAS.

S. TYPE MC, AC, NM, SE CABLE: WHERE MORE THAN TWO TYPE MC, AC, NM, OR SE CABLES CONTAINING TWO OR MORE CURRENT CARRYING CONDUCTORS IN EACH CABLE ARE INSTALLED IN CONTACT WITH THERMAL INSULATION, CAULK, OR SEALING FOAM MAINTAIN SPACING BETWEEN CABLES.

ELECTRIC DESIGN CRITERIA

APPLICABLE BUILDING CODES

IBC (2021) INTERNATIONAL BUILDING CODE
IECC (2021) INTERNATIONAL ENERGY CONSERVATION CODE
NFPA 70 (2023) NATIONAL ELECTRIC CODE
NFPA 72 (2019) NATIONAL FIRE ALARM & SIGNALING CODE

TESTING/COMMISSIONING FOR LIGHTING CONTROLS

LIGHTING CONTROL DEVICES AND SYSTEMS SHALL BE TESTED TO ENSURE THE HARDWARE AND SOFTWARE IS CALIBRATED, PROGRAMMED, AND IN PROPER WORKING ORDER. INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED INSTALLATION REPORTS AND CERTIFICATES (UNLESS COMMISSIONING IS BEING PERFORMED IN WHICH CASE THE COMMISSIONING PROVIDER SHALL BE RESPONSIBLE FOR ALL REPORTS, CERTIFICATES, ETC.) AND SHALL PROVIDE MANUALS FOR LIGHTING CONTROL DEVICES TO OWNER PRIOR TO PROJECT CLOSE-OUT AND ALSO INCLUDE THE NAME AND ADDRESS OF AT LEAST ONE SERVICING AGENCY FOR THE LIGHTING CONTROL EQUIPMENT. INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR CONTRACTING WITH APPROPRIATE PARTIES TO ARRANGE FOR TESTING OF THE LIGHTING CONTROL SYSTEMS AND SHALL BE RESPONSIBLE FOR ENSURING ALL REQUIRED FUNCTIONAL PERFORMANCE TESTING FORMS/REPORTS ARE COMPLETED AND SUBMITTED TO THE OWNER AND LOCAL AHJ PRIOR TO PROJECT CLOSE-OUT (NO LATER THAN WITHIN 90 DAYS OF PROJECT CLOSEOUT). FUNCTIONAL PERFORMANCE TESTING OF LIGHTING CONTROLS SHALL FOLLOW THE REQUIREMENTS LISTED IN THE APPLICABLE ENERGY CODE INCLUDING (BUT NOT LIMITED TO) VERIFICATION OF THE PERFORMANCE OF OCCUPANCY SENSORS, AUTOMATIC TIME SWITCHES, AND DAYLIGHT HARVESTING CONTROLS.

EXISTING CONDITIONS - POWER CONTINUITY NOTES

THE FOLLOWING NOTES BROADLY DEFINE SOME OF THE SPECIALTY BASE BID SCOPE OF WORK REQUIRED TO PROVIDE SPECIAL TEMPORARY POWER FOR NEW AND EXISTING FACILITIES TO ACCOMMODATE UTILITY POWER INTERRUPTIONS. FIELD VERIFY ALL SPECIFICS AND PROVIDE MATERIALS, NORMAL TIME LABOR, PREMIUM TIME LABOR, SERVICES, ETC. FOR ALL WORK UNDER BASE BID, INCLUDING BUT NOT LIMITED TO THE FOLLOWING.

A. INVESTIGATION OF EXISTING CONDITIONS: LOCATE, IDENTIFY, AND PROTECT ELECTRICAL SERVICES PASSING THROUGH DEMOLITION AREAS AND SERVING OTHER AREAS OUTSIDE THE DEMOLITION LIMITS. MAINTAIN SERVICES TO AREAS OUTSIDE DEMOLITION LIMITS. WHEN SERVICES MUST BE INTERRUPTED, PROVIDE TEMPORARY SERVICES FOR AFFECTED AREAS. IT IS RECOGNIZED THAT THERE MAY BE SOME CONDUIT SYSTEMS RENDERED INACTIVE BY DEMOLITION, CAUSING DISCONNECTION OF "DOWNSTREAM" OUTLETS, ETC. INVESTIGATE THESE TYPES OF CONDITIONS (FOR ALL SYSTEMS) PRIOR TO DEMOLITION. PROVIDE NECESSARY CORRECTIVE ELECTRICAL WORK PRIOR TO DEMOLITION TO ENSURE THAT SUCH "DOWNSTREAM" DEVICES REMAIN PERMANENTLY ACTIVE THROUGHOUT DEMOLITION, DURING NEW CONSTRUCTION, AND AFTER PROJECT COMPLETION. PROTECT EXISTING ELECTRICAL WORK SERVING EXISTING SPACES AND EQUIPMENT THAT MUST REMAIN OPERATIONAL DURING PART OR ALL OF THE CONSTRUCTION PERIOD, AND ENSURE POWER CONTINUITY IS MAINTAINED FOR SAME THROUGHOUT DURATION OF CONSTRUCTION ACTIVITIES.

B. COORDINATION WITH OWNER: CAREFULLY COORDINATE WORK AND SYSTEM SHUTDOWNS IN ADVANCE WITH OWNER'S REPRESENTATIVE, AND WITH AFFECTED TRADES SO THAT NORMAL BUILDING ACTIVITIES AND OTHER CONSTRUCTION TRADES ARE MINIMALLY AFFECTED. DO NOT INTERRUPT ELECTRICAL UTILITY SERVICE(S) TO THE FACILITY, OR ANY PART THEREOF, UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS, AND THEN ONLY AFTER PROVIDING TEMPORARY ELECTRICAL SERVICE(S)/FEEDS: NOTIFY OWNER NO FEWER THAN FOURTEEN DAYS IN ADVANCE OF EACH PROPOSED INTERRUPTION OF AN ELECTRICAL SERVICE; DO NOT PROCEED WITH INTERRUPTION OF AN ELECTRICAL SERVICE WITHOUT OWNER'S WRITTEN PERMISSION; DO NOT ENERGIZE ANY NEW WORK WITHOUT NOTIFICATION TO, AND SUBSEQUENT PERMISSION FROM, THE OWNER AND ALL AFFECTED PARTIES.

C. TEMPORARY ARRANGEMENTS: COMPLY WITH NFPA 70 (INCLUDING ARTICLE 590), NFPA 70E AND ALL OTHER PREVAILING CODES. DURING CONSTRUCTION RELATED ELECTRICAL OUTAGES, PROVIDE ALL TEMPORARY ELECTRICAL WORK REQUIRED TO MAINTAIN POWER TO OCCUPIED AREAS OF THE BUILDING. COORDINATE WITH, AND OBTAIN APPROVAL FROM, OWNER AND DESIGN PROFESSIONALS FOR ALL MEANS AND METHODS. COMPLY WITH NFPA 70E. SCHEDULE ALL OUTAGES IN ADVANCE WITH OWNER, AT DAYS OF WEEK AND TIMES OF DAY OR NIGHT AS DIRECTED BY OWNER.

EXISTING CONDITIONS - GENERAL NOTES

A. INTENT OF DOCUMENTS: EXISTING CONDITIONS SHOWN ON THE DRAWINGS ARE BASED ON VISUAL FIELD OBSERVATIONS AND THE REVIEW OF PREVIOUS DRAWINGS THAT MAY NOT HAVE BEEN CERTIFIED "AS-BUILTS". IT IS NOT THE INTENT OF THE ELECTRICAL DOCUMENTS THAT EXISTING CONDITIONS BE ACCURATELY SHOWN. EXISTING ELECTRICAL WORK IS SHOWN TO A VERY LIMITED EXTENT ON THE DRAWINGS AND IS SHOWN FOR GENERAL PLANNING REFERENCE ONLY.

B. PRE-BID SURVEY: PERFORM A DETAILED PRE-BID WALK-THROUGH FIELD INSPECTION AND SURVEY TO REVIEW THE EXISTING STRUCTURES AND PREMISES, TO ACCURATELY DETERMINE EXISTING CONDITIONS, AND TO DETERMINE SCOPE OF REQUIRED ELECTRICALLY RELATED WORK. INCLUDE APPLICABLE ACCESSIBLE CEILING CAVITY AREAS IN THIS INSPECTION.

C. REUSE OF REMOVED MATERIALS: DO NOT REUSE REMOVED ELECTRICAL MATERIALS UNLESS SPECIFICALLY INDICATED IN PROJECT DOCUMENTS. EXISTING WIRING SYSTEMS MAY BE UTILIZED ONLY TO THE EXTENT INDICATED IN PROJECT DOCUMENTS, OR AS DIRECTED BY OWNER'S REPRESENTATIVE IN FIELD.

D. EXISTING POWER DISTRIBUTION EQUIPMENT: WHERE MODIFICATIONS ARE MADE TO EXISTING POWER DISTRIBUTION EQUIPMENT, COMPLETELY RE-TYPE PANELBOARD DIRECTORIES USING ACCURATE “AS-BUILT” INFORMATION. WHEN ADDING COMPONENTS TO EXISTING POWER DISTRIBUTION EQUIPMENT, PROVIDE FULL SIZE (NO SPLIT OR TANDEM DEVICES) OVERCURRENT PROTECTION DEVICES (OCPs) TO MATCH THOSE ALREADY IN PLACE, INCLUDING MANUFACTURER, MODEL/SERIES, SHORT CIRCUIT CURRENT (SCCR/AIC) RATINGS. PROVIDE COMMON TRIPS (NO FIELD-INSTALLED HANDLE TIES) IN THE SAME GUTTER FOR MULTI-POLE DEVICES. PROVIDE SWITCHING DUTY (SWD), HACR AND HID RATINGS WHERE APPLICABLE FOR LOADS. PROVIDE HANDLE LOCK-ON DEVICES FOR EMERGENCY AND CRITICAL LOADS.

E. EXISTING BRANCH CIRCUITS: MAINTAIN, AND RECONNECT IF REQUIRED, BRANCH CIRCUITS THAT ARE EXISTING TO REMAIN. UNLESS NOTED OTHERWISE, ALL CIRCUIT DESIGNATIONS SHOWN ON THE DRAWINGS INDICATE NEW CIRCUIT ASSIGNMENTS, NOT EXISTING. WHERE COLOR CODING OF BRANCH CIRCUIT CONDUCTORS DOES NOT COMPLY WITH NFPA 70 OR IS NOT CONSISTENT WITH EXISTING CONDITIONS, MODIFY TO COMPLY.

F. ADDED LOADS TO EXISTING CIRCUITS: IN CASES WHERE NEW LOADS ARE INDICATED TO BE CONNECTED TO EXISTING CIRCUITS WITH EXISTING LOADS, METER THE EXISTING CIRCUIT IN ADVANCE AND ENSURE THE EXISTING PLUS ADDED LOAD DOES NOT EXCEED 80 PERCENT OF THE SOURCE CIRCUIT BREAKER AMPERE RATING. IF THAT LOAD IS EXCEEDED, NOTIFY DESIGN PROFESSIONAL.

G. REASSIGNMENT OF EXISTING CIRCUITS: IN CASES WHERE EXISTING CIRCUITS ARE REUSED (BASED ON INFORMATION SHOWN ON DRAWINGS OR BASED ON FIELD CONDITIONS) BUT MUST BE CONNECTED TO BREAKERS OTHER THAN THEIR ORIGINAL BREAKER, MODIFY COLOR-CODING AS REQUIRED IF THE NEW BREAKER ASSIGNMENT IS CONNECTED TO A DIFFERENT LINE/PHASE THAN THE ORIGINAL ONE. USE MEANS AND METHODS COMPLIANT WITH NFPA 70 AND WITH AUTHORITIES HAVING JURISDICTION.

H. ELECTRICAL WORK TO REMAIN OR BE RELOCATED: IF REQUIRED TO ACCOMMODATE CONSTRUCTION RELATED ACTIVITIES OR WHERE SPECIFICALLY SHOWN ON THE DRAWINGS, TEMPORARILY REMOVE, STORE IN PROTECTED LOCATION ON SITE, AND REINSTALL CONFLICTING ELECTRICAL EQUIPMENT, LUMINAIRES, OR DEVICES THAT ARE TO REMAIN OR TO BE RELOCATED.

I. PROTECTIVE BARRIERS: PROVIDE AND MAINTAIN TEMPORARY PARTITIONS AND DUST BARRIERS ADEQUATE TO PREVENT THE SPREAD OF DUST AND DIRT TO ADJACENT FINISHED AREAS AND OTHER SYSTEM COMPONENTS. PROTECT ADJACENT INSTALLATIONS DURING CUTTING AND PATCHING OPERATIONS. REMOVE PROTECTION AND BARRIERS AFTER DEMOLITION OPERATIONS ARE COMPLETE. PREVENT AIRBORNE DUST AND PARTICULATE MATTER RESULTING FROM ELECTRICAL WORK FROM ENTERING OCCUPIED SPACES, AND FROM ENTERING AIR INTAKES TO OPERATING HVAC SYSTEMS. MEET WITH OWNER AND HVAC INSTALLER TO DETERMINE SPECIAL INDOOR AIR QUALITY (IAQ) REQUIREMENTS RELATED TO ELECTRICAL THAT MAY APPLY TO THIS PROJECT. COOPERATE FULLY WITH HVAC IAQ REQUIREMENTS THAT AFFECT ELECTRICAL WORK AND ARE AFFECTED BY ELECTRICAL WORK.

J. PENETRATIONS: MAKE REQUIRED ELECTRICAL OPENINGS THROUGH WALLS, FLOORS, ETC. IMMEDIATELY PRIOR TO INSTALLATION OF WORK. PROPERLY AND PERMANENTLY SEAL ELECTRICAL OPENINGS IMMEDIATELY AFTER INSTALLATION OF WORK. PROVIDE TEMPORARY SEALS FOR APPLICATIONS WHERE PENETRATIONS ARE MADE BUT CANNOT BE PERMANENTLY SEALED WITHIN FOUR HOURS.

K. PRE-EXISTING CODE VIOLATIONS: INSPECT EXISTING ELECTRICAL WORK IN AREAS ACCESSED UNDER THIS PROJECT AND BRING INTO COMPLIANCE WITH NFPA 70. THIS APPLIES ONLY TO THE EXTENT THAT SUCH WORK IS UNCOVERED IN THE IMMEDIATE PROJECT AREAS AFFECTED BY CONSTRUCTION ACTIVITIES, AND ONLY TO THE LIMITED EXTENT THAT IT APPLIES TO PRE-EXISTING GENERAL INSTALLATION METHODS SUCH AS MISSING JUNCTION BOX PLATE, OPEN JUNCTION BOX KNOCKOUT, MINOR CONDUIT RE-ANCHORING AND MINOR EXPOSED WIRING/CONNECTIONS. IF MORE EXTENSIVE CODE OR SAFETY VIOLATIONS ARE DISCOVERED, IMMEDIATELY BRING THEM TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE (DETAILED IN WRITING) ALONG WITH PROPOSED COST FOR CORRECTIONS AND IMPACT (IF ANY) ON THE CONSTRUCTION SCHEDULE.

L. TEMPORARY LIGHTING AND POWER: COMPLY WITH NFPA 70 (INCLUDING ARTICLE 590), NFPA 70E AND ALL OTHER PREVAILING CODES. PROVIDE SUFFICIENT LIGHTING AND POWER CENTERS THROUGHOUT INTERIOR OF NEW WORK OR RENOVATION SCOPE. PROVIDE GFCI PROTECTION FOR ALL WORK. COORDINATE WITH GENERAL CONTRACTOR AND OTHER TRADES, AND PROVIDE ANY ADDITIONAL TEMPORARY ELECTRICAL NEEDS THAT ARE REQUIRED. FULLY DEMOLISH TEMPORARY ELECTRIC BY END OF PROJECT. UPON RECEIVING WRITTEN PERMISSION FROM OWNER’S REPRESENTATIVE, TEMPORARY ELECTRICAL SERVICE(S) MAY BE DERIVED FROM EXISTING BUILDING ENERGIZED SERVICE. PROVIDE OVERCURRENT PROTECTION, DISCONNECTS, CABLES, CONDUCTORS, RACEWAY, ETC. ACCORDINGLY. PROVIDE TEMPORARY SERVICE FROM UTILITY IF PERMISSION TO USE EXISTING BUILDING POWER IS NOT GRANTED BY OWNER’S REPRESENTATIVE; ARRANGE WITH LOCAL UTILITY FOR TEMPORARY SERVICE AND PAY ASSOCIATED FEES FOR INSPECTIONS, CONNECTIONS, ETC., AND PAY FOR UTILITY ELECTRIC USAGE/CONSUMPTION COSTS. RESTORE ASSOCIATED SITE AND BUILDING MATERIALS TO THEIR PRE-CONSTRUCTION STATE AND CONDITION AFTER TEMPORARY LIGHTING AND POWER IS NO LONGER NEEDED.

M. INTERIM LIFE-SAFETY PROVISIONS: PROVIDE INTERIM FIRE ALARM AND CODE MINIMUM LIGHTING IN DEMOLITION AND CONSTRUCTION AREAS. PROVIDE TEMPORARY PLASTIC COVERS, OBTAINED FROM SMOKE DETECTOR MANUFACTURER OR OBTAINED FROM A THIRD PARTY AND SPECIFICALLY APPROVED FOR SUCH USE BY SMOKE DETECTOR MANUFACTURER, OVER EXISTING SMOKE DETECTORS WITHIN PROJECT AREA, AND IN ADJACENT AREAS THAT ARE EXPOSED TO CONSTRUCTION-RELATED DUST OR AIRBORNE PARTICULATES. REMOVE ALL TEMPORARY LIFE SAFETY WORK WHEN NO LONGER NEEDED.

N. INTERIM EGRESS PATH PROVISIONS: PROVIDE TEMPORARY UL 924 COMPLIANT EXIT AND/OR EGRESS LIGHTING ALONG EGRESS ROUTES THAT MUST REMAIN ACCESSIBLE DURING CONSTRUCTION. PROVIDE TEMPORARY FIRE ALARM SYSTEM PULL STATIONS AND AUDIO/VISUAL ALARM NOTIFICATION DEVICES ALONG ALL AFFECTED EGRESS ROUTES. REMOVE THIS SCOPE WHEN NO LONGER NEEDED.

ELECTRIC CONDUIT AND WIRE MATERIAL SCHEDULE

MC - METAL CLAD CABLE	ARC - ALUMINUM RIGID CONDUIT
MI - MINERAL INSULATED CABLE	EMT - ELECTRIC METALLIC TUBING
HMC - HEALTHCARE METAL CLAD CABLE	ENT - ELECTRIC NON-METALLIC TUBING
USE - UNDERGROUND SERVICE ENTRANCE CABLE	FMC - FLEXIBLE METALLIC CONDUIT
SE - SERVICE ENTRANCE CABLE	GRC - GALVANIZED RIGID STEEL CONDUIT
UF - UNDERGROUND FEEDER	HDPE - HIGH DENSITY POLYETHYLENE CONDUIT
NM - NON-METALLIC SHEATHED CABLE	IMC - INTERMEDIATE METAL CONDUIT
RMC - RIGID METAL CONDUIT	LFMC - LIQUID-TIGHT FLEXIBILE METALLIC CONDUIT
RNC - RIGID NON-METALLIC CONDUIT	LFNC - LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT
RTRC - REINFORCED THERMOSETTING RESIN CONDUIT	SCH 40 PVC - SCHEDULE 40 POLYVINYL CHLORIDE CONDUIT
LIM - LINE ISOLATION MONITOR	SCH 80 PVC - SCHEDULE 80 POLYVINYL CHLORIDE CONDUIT

CONDUIT APPLICATION	CONDUCTOR TYPE	RACEWAY TYPE	RACEWAY AND CONDUCTOR NOTES
---FIRE ALARM---			
EXISTING HOLLOW PARTITIONS	NON-PLENUM RATED	EMT	
CONCEALED	NON-PLENUM RATED	EMT	
EXPOSED	NON-PLENUM RATED	EMT	
CONCEALED, ABOVE ACCESSIBLE CEILINGS	PLENUM RATED	J-HOOKS	
CONCEALED, ABOVE INACCESSIBLE CEILINGS	NON-PLENUM RATED	EMT	
EMBEDDED IN CONCRETE SLAB	NON-PLENUM RATED	RNC (SCH 40 PVC)	
---POWER - INDOOR---			
EXISTING HOLLOW PARTITIONS	THHN	MC	
CONCEALED, IN STUD WALLS	THHN	MC	
CONCEALED, DAMP LOCATIONS	XHHW-2	EMT	
CONCEALED, MASONRY	THHN	RNC (SCH 40 PVC)	
VERTICAL RISERS FROM BELOW GRADE INCLUDING ELBOW	XHHW-2	RMC (GRC)	
CONNECTION TO SYSTEMS FURNITURE	THHN	LFMC	
EMBEDDED IN CONCRETE SLAB	THHN	RNC (SCH 40 PVC)	
LUMINAIRE WHIPS IN ACCESSIBLE CEILING, 72" MAX	THHN	MC	
EXPOSED	THHN	EMT	
UNDERGROUND	XHHW-2	RNC (SCH 40 PVC)	
EMBEDDED IN CONCRETE WALL	THHN	RNC (SCH 40 PVC)	
HOMERUNS, CONCEALED IN CEILINGS AND STUD WALLS	THHN	EMT	
CONCEALED, IN CEILINGS	THHN	EMT	

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MECHANICAL/ELECTRICAL ENGINEERS
WWW.KLHENGRS.COM

1538 ALEXANDRIA PIKE, SUITE 11
FT. THOMAS, KENTUCKY 41075
800-354-9783
859-442-8050
859-442-8058 FAX

LEXINGTON, KENTUCKY
LOUISVILLE, KENTUCKY
COLUMBUS, OHIO
KLH JOB #: 27478

RGLA
rgla solutions, inc.
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

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retail architecture
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Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
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JAMES S. TAVERNELLI
102735
5/29/2025

SEAL:

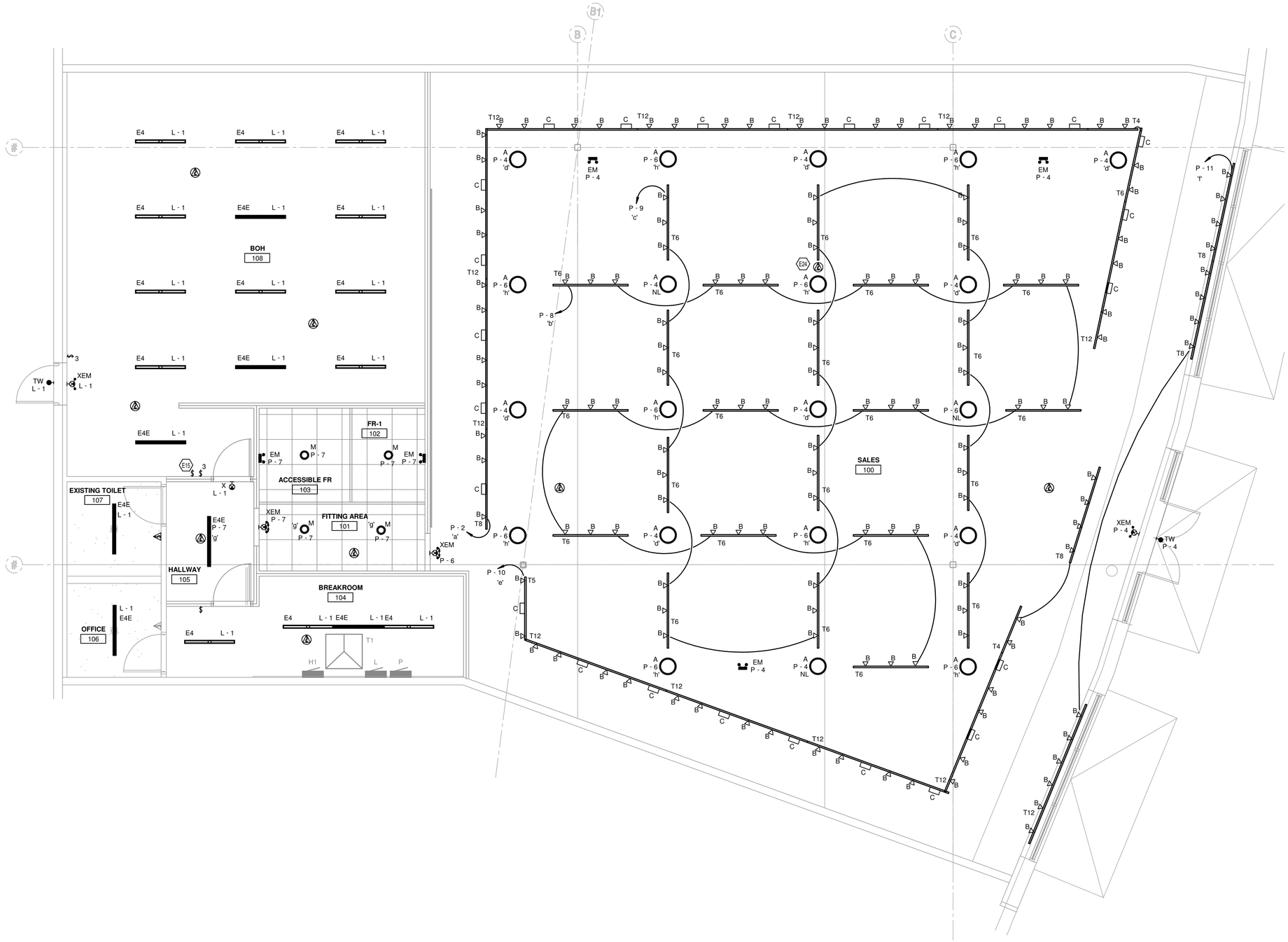
carhartt
ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD #112,
SAN ANTONIO, TX 78209

ELECTRIC COVER SHEET

DRAWN BY	TMG
CHECKED BY	MR
JOB NUMBER	25341
SHEET NAME	E-001

KEYED NOTES

E15	PROVIDE NEW LIGHTING SWITCH BANK. REFER TO DETAILS AND SCHEDULES ON SHEET E-101 FOR MORE INFORMATION.
E24	PROVIDE CEILING MOUNTED OCCUPANCY SENSOR TO OVERRIDE SALES AREA GENERAL LIGHTING ON CIRCUIT P-6 FOR AFTER-HOURS USE. MOUNT OCCUPANCY SENSOR ON CEILING WITH LIGHT FIXTURES IN THE SAME AREA. CENTER BETWEEN LIGHT FIXTURE, TYP. SEE LIGHTING CONTROL DESIGN INTENT DETAIL ON SHEET E-101 FOR MORE INFORMATION.



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

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FT. THOMAS, KENTUCKY 41075
800-354-9783
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ENGINEERS, INC. #F-3634
STATE OF TEXAS
JAMES S. TAVERNELLI
102735
LICENSED
PROFESSIONAL ENGINEER
5/29/2025
SEAL:

carhartt

ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD #112,
SAN ANTONIO, TX 78209

ELECTRIC LIGHTING PLAN

DRAWN BY	TMG
CHECKED BY	MR
JOB NUMBER	25341
SHEET NAME	E-100

ELECTRIC LUMINAIRE SCHEDULE

GENERAL NOTES:
A. REFER TO DRAWINGS FOR MOUNTING TYPE, NUMBER OF FACES AND ARROWS OF EXIT SIGNS. VERIFY IN FIELD PRIOR TO INSTALLATION.
B. VERIFY COMPATIBILITY WITH VOLTAGE, CONTROLS, ETC. FOR ALL LUMINAIRE COMPONENTS
C. COORDINATE EACH LUMINAIRE LOCATION WITH THE ARCHITECTURAL REFLECTED CEILING PLANS, CEILING INSTALLERS, ETC. AND PROVIDE APPROPRIATE MOUNTING SYSTEM REQUIRED FOR EACH LUMINAIRE. ALSO, PROVIDE PLASTER FRAMES, WALL BRACKETS, SUPPORTS, OR OTHER APPURTENANCES AS REQUIRED FOR PROPER AND COMPLETE INSTALLATIONS.
D. WEAR CLEAN WHITE COTTON GLOVES WHEN HANDLING EXPOSED REFLECTIVE LUMINAIRE SURFACES. REMOVE PLASTIC SHIPPING BAGS ONLY AFTER INTERIOR WORK IS COMPLETE, AND CLEAN ALL SURFACES WITH CLEAN DRY CHEESECLOTH.
E. MOUNTING HEIGHTS INDICATED ARE TO THE BOTTOM OF THE LUMINAIRE, UNLESS OTHERWISE NOTED.
F. PRODUCTS: PROVIDE PRODUCTS INDICATED ON DRAWINGS AND SCHEDULES. WHERE MULTIPLE MANUFACTURER SERIES/MODEL NUMBERS ARE LISTED FOR A SINGLE LUMINAIRE, PROVIDE ONE OF THOSE LISTED. WHERE A SPECIFIC MANUFACTURER SERIES/MODEL NUMBER IS LISTED AS BASIS-OF-DESIGN, AND WHERE IT IS STATED THAT EQUIVALENTS WILL BE CONSIDERED, ANY PROPOSED NON-LISTED LUMINAIRES ARE SUBJECT TO REVIEW BY DESIGN PROFESSIONAL(S). SUBMITTALS FOR WHICH SHALL BE FURNISHED AT LEAST (10) DAYS PRIOR TO BID DUE DATE OR THEY WILL NOT BE CONSIDERED. THESE PRE-BID SUBMITTALS SHALL CLEARLY STATE EXACTLY WHAT IS BEING PROPOSED AND SHALL DEMONSTRATE COMPLIANT EQUIVALENCY. SIMILAR REQUESTS FOR PROPOSED SUBSTITUTIONS MAY BE MADE ONLY AFTER BIDS ARE...

TYPE	DESCRIPTION	MANUFACTURER	MODEL	MOUNTING	LIGHT SOURCE	LAMP QTY	DRIVER	DRIVER QTY	BATTERY	BATTERY TYPE	FINISH	LOAD (VA)	UNIVERSAL VOLTAGE (MVOLT)	VOLTAGE	PHASE	COMMENTS
A	HI BAY LIGHTING	SPECTRUM LIGHTING	ALDDH16LX-100L-3-5K-DS10X-CD72-AL 16/MWI-DR16D-CN FR-PT	PENDANT	INTEGRAL LED	1	ELECTRONIC	1	No		PLATINUM SILVER	81 VA	No	120 V		
B	TRACK HEAD - LED SPOT	CONTECH	CTL-2838-N-S	TRACK	17PAR38/F25/930	1	ELECTRONIC	1	No		SILVER	19 VA	No	120 V		
C	TRACK HEAD - WALL WASHER	CONTECH	CTL192H3D-S	TRACK	INTEGRAL LED	1	ELECTRONIC	1	No		SILVER	28 VA	No	120 V		
E4	LINEAR LED	NICOR	LSL-1-4-455-U-S-8	SURFACE	INTEGRAL LED	1	ELECTRONIC	1	No		WHITE	20 VA	Yes	120 V		
E4E	LINEAR LED	NICOR	LSL-1-4-455-U-S-E M8	SURFACE	INTEGRAL LED	1	N/A	1	Yes	INTEGRAL-90 MINUTE	WHITE	64 VA	Yes	120 V		NL
EM	EMERGENCY LIGHT WITH BATTERY BACK UP	LITHONIA	ELM4L	PENDANT/SURFACE	INTEGRAL LED	2	N/A	2	Yes	INTEGRAL-90 MINUTE	WHITE	8 VA	Yes	120 V		
M	HI BAY LIGHTING	DAC LIGHTING	D5242-LED35-120-AN-COIL	PENDANT	INTEGRAL LED	1	ELECTRONIC	1	No		SILVER	12 VA	Yes	120 V		
T4	TRACK	CONTECH	SINGLE CIRCUIT TRACK - SILVER	PENDANT/SURFACE	N/A	1	N/A		No		SILVER	0 VA		120 V		
T5	TRACK	CONTECH		PENDANT/SURFACE	N/A	1	N/A		No		SILVER	0 VA		120 V		
T6	TRACK	CONTECH	SINGLE CIRCUIT TRACK - SILVER	PENDANT/SURFACE	N/A	1	N/A		No		SILVER	0 VA		120 V		
T8	TRACK	CONTECH	SINGLE CIRCUIT TRACK - SILVER	PENDANT/SURFACE	N/A	1	N/A		No		SILVER	0 VA		120 V		
T12	TRACK	CONTECH	SINGLE CIRCUIT TRACK - SILVER	PENDANT/SURFACE	N/A	1	N/A		No		SILVER	0 VA		120 V		
TW	EXTERIOR EGRESS FIXTURE	TRACE LITE	SLW-15-4K-WH-EM-NS	WALL MOUNTED	LED	2	ELECTRONIC	1	Yes	INTEGRAL-90 MINUTE	WHITE	10 VA	Yes	120 V	1	FURNISHED BY LL
X	EXIT SIGN	SURE-LITES	APC7RSQ	SURFACE	LED	2	ELECTRONIC	1	Yes	INTEGRAL-90 MINUTE	WHITE	4 VA	Yes	120 V		
XEM	EXIT SIGN EMERGENCY LIGHT COMBO WITH BATTERY BACKUP	SURE-LITES	APC7RSQ	SURFACE	LED	2	ELECTRONIC	1	Yes	INTEGRAL-90 MINUTE	WHITE	4 VA	Yes	120 V	1	PROVIDE WITH 90 MINUTE BATTERY BACK UP.

ELECTRIC CONTACTOR SCHEDULE

NOTES:
1) PROVIDE A MINIMUM OF (2) SPARE CONTACTS IN EACH CONTACTOR UNLESS NOTED OTHERWISE.
2) REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3) CONTACTOR DESIGNATIONS DO NOT INDICATE QUANTITY OF CONTACTORS, THEY INDICATE CONTACTOR GROUPING(S) AND COMMON CONTROL METHODS ONLY. PROVIDE QUANTITY OF CONTACTOR(S) NEEDED TO ACCOMMODATE NUMBER OF POLES SHOWN.

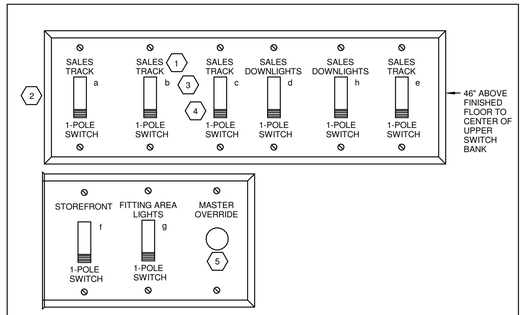
CONTROL ZONE DESCRIPTION & CONTACTOR CONTROL METHOD

C1 - STOREFRONT LIGHTING

C2 - GENERAL LIGHTING

C3 - EXTERIOR LIGHTING/SIGNAGE

SUPPLY	CIRCUIT NUMBER	NUMBER OF POLES	CONTACT CURRENT	LOAD NAME
C1				
P	11	1	2 A	(#) LTG SALES 100
C2				
P	2	1	9 A	(#) LTG SALES 100
P	4	1	7 A	(#) LTG SALES 100
P	6	1	7 A	(#) LTG SALES 100
P	7	1	1 A	(#) LTG 102, 103, 101
P	8	1	6 A	(#) LTG SALES 100
P	9	1	6 A	(#) LTG SALES 100
P	10	1	6 A	(#) LTG SALES 100
C3				
P	18	1	10 A	(#) SIGNAGE | CONTINUOUS



KEYED NOTES:

1. PROVIDE ENGRAVED DESCRIPTION WITH BLACK REVEAL & +/- 3/16" HIGH LETTERING (TYPICAL).
2. SEE SPECIFICATIONS FOR WALL PLATE MATERIAL, STYLE AND TYPE (TYPICAL).
3. SWITCHING DESIGNATION (TYPICAL - SHOWN FOR REFERENCE ONLY, NOT TO BE ENGRAVED).
4. TYPE OF SWITCH (TYPICAL - SHOWN FOR REFERENCE ONLY, NOT TO BE ENGRAVED).
5. PROVIDE MASTER OVERRIDE SWITCH.

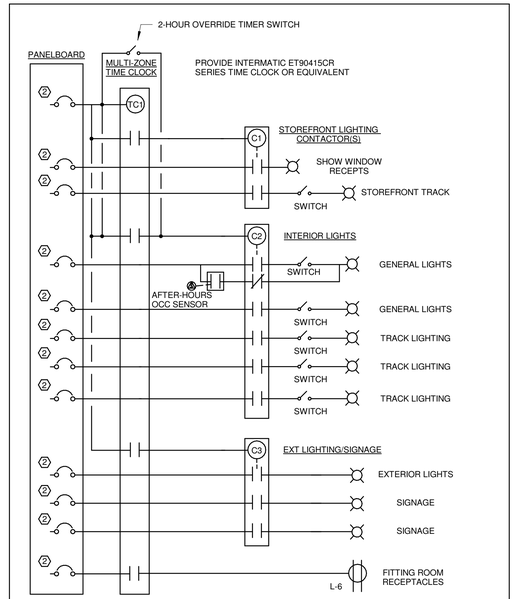
262726.00-02 - SWITCH BANK WALL PLATE DETAIL

SCALE: NONE

ELECTRIC CURRENT LIMITER SCHEDULE

PROVIDE INTEGRAL CURRENT LIMITERS AS SPECIFIED IN THIS SCHEDULE FOR EACH CIRCUIT IN THIS SCHEDULE. ATTACH CURRENT LIMITER TO THE END OF THE TRACK. WHERE ONE CIRCUIT FEEDS MULTIPLE RUNS OF TRACK PROVIDE ALL ADDITIONAL END-FEEDS AND CONNECTORS NECCESSARY SO THAT A SINGLE CURRENT LIMITER FEEDS ALL TRACK SEGMENTS ON THAT CIRCUIT.

MANUFACTURER	VOLTAGE	FED FROM		CONNECTED LOAD	EXTRA CAPACITY (%)	RATING	LOAD NAME
		PANEL	CIRCUIT				
Juno	120 V	P	2	9.28 A	25	12.00 A	(#) LTG SALES 100
Juno	120 V	P	8	5.70 A	25	8.00 A	(#) LTG SALES 100
Juno	120 V	P	9	5.70 A	25	8.00 A	(#) LTG SALES 100
Juno	120 V	P	10	5.90 A	25	8.00 A	(#) LTG SALES 100
Juno	120 V	P	11	2.22 A	25	3.00 A	(#) LTG SALES 100



LIGHTING CONTROL DESIGN INTENT

STOREFRONT SIGNAGE AND EXTERIOR LIGHTING:
HARDWARE: TIMECLOCK AND CONTACTOR
CONTROL INTENT: STOREFRONT SIGNAGE SHALL TURN "ON" AND "OFF" BASED ON THE TIME SCHEDULE(S) PROGRAMMED INTO THE TIMECLOCK.

SALES AREA DISPLAY LIGHTS:
HARDWARE: WALL MOUNTED TOGGLE SWITCHES, LIGHTING CONTACTOR, TIMECLOCK, AND TIMER SWITCH.
CONTROL INTENT: DURING BUSINESS HOURS (HOURS PROGRAMMED INTO TIMECLOCK) THE DISPLAY LIGHTS AND TRACK LIGHTING SHALL TURN "ON" AND "OFF" BASED ON THE TIME SCHEDULE(S) PROGRAMMED INTO THE TIMECLOCK.
THE TIMER SWITCH SHALL OVERRIDE THE TIMECLOCK SCHEDULING (FOR A MAXIMUM OF 2-HOURS) AND ALLOW FOR AFTER HOURS CONTROL OF THE LIGHTING.

SALES AREA GENERAL LIGHTING:
HARDWARE:WALL MOUNTED TOGGLE SWITCHES, TIMECLOCK,TIMER SWITCH, AND OCCUPANCY SENSOR.
CONTROL INTENT: DURING BUSINESS HOURS (HOURS PROGRAMMED INTO TIMECLOCK) THE SALES AREA GENERAL LIGHTING SHALL TURN "ON" AND "OFF" BASED ON THE TIME SCHEDULE(S) PROGRAMMED INTO THE TIMECLOCK.
THE TIMER SWITCH SHALL OVERRIDE THE TIMECLOCK SCHEDULING (FOR A MAXIMUM OF 2-HOURS) AND ALLOW FOR AFTER HOURS CONTROL OF THE LIGHTING. OCCUPANCY SENSORS SHALL ALLOW FOR AFTER HOURS GENERAL LIGHTING OVERRIDE WHENEVER THE CONTACTOR IS OFF.

STOREFRONT LIGHTING AND RECEPTACLES:
HARDWARE: WALL MOUNTED TOGGLE SWITCH, LIGHTING CONTACTOR(S), AND TIMECLOCK.
CONTROL INTENT: STOREFRONT LIGHTING, RECEPTACLES AND SIGNAGE SHALL TURN "ON" AND "OFF" BASED ON THE TIME SCHEDULE(S) PROGRAMMED INTO THE TIMECLOCK.

KEYED NOTES:

1. PROVIDE TIME-BASED CONTROL FOR APPLICABLE CIRCUITS AS DEFINED ON TIMECLOCK SCHEDULE.
2. PROVIDE CONTACTOR CONTROL FOR APPLICABLE CIRCUITS AS DEFINED ON LIGHTING CONTACTOR SCHEDULE.

265100.00-17 - LIGHTING CONTROL

SCALE: NONE

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1538 ALEXANDRIA PIKE, SUITE 11
FT. THOMAS, KENTUCKY 41075
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5/29/2025

SEAL:

carhartt

ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD #112,
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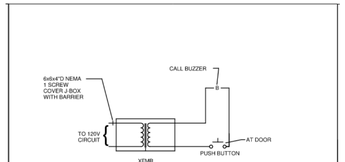
ELECTRIC LIGHTING - DETAILS

DRAWN BY	TMG
CHECKED BY	MR
JOB NUMBER	25341
SHEET NAME	E-101

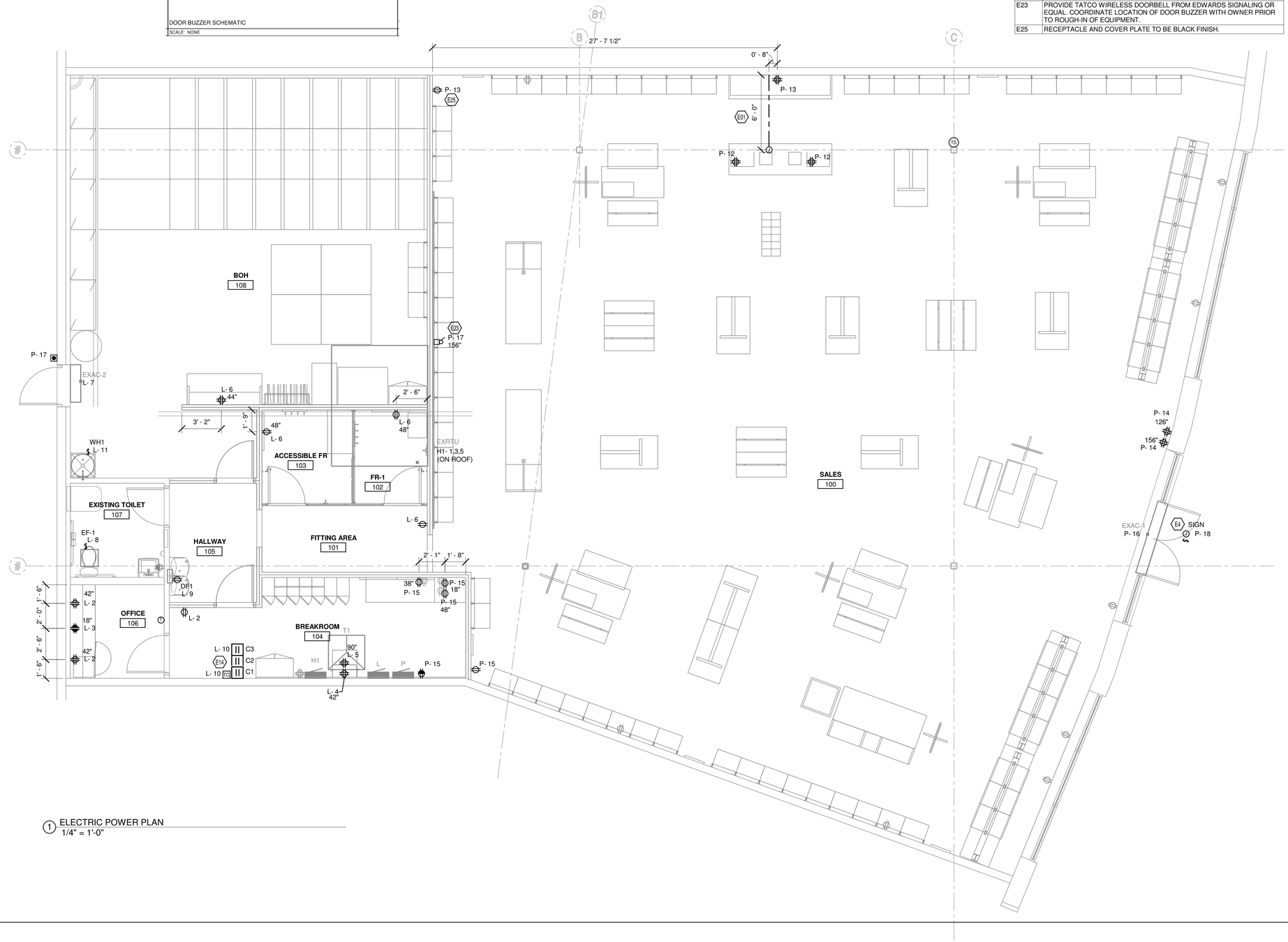


DOOR BUZZER SCHEMATIC

SCALE: NONE

KEYED NOTES

E01	PROVIDE (2) 1" CONDUITS FOR POWER, (1) 1-1/2" CONDUIT FOR DATA UNDER SLAB AND STUB-UP IN CASHWRAP. CONDUITS SHALL BE ROUTED IN A COMMON TRENCH. COORDINATE SLAB CUTTING REQUIREMENTS (IE. X-RAY, ETC.) WITH LANDLORD PRIOR TO BID. COORDINATE STUB UP LOCATION WITH MILLWORK VENDOR PRIOR TO ROUGH-IN
E4	PROVIDE POWER AND CONTROL WIRING, CONNECTIONS, ETC. FOR SIGNAGE. COORDINATE EXACT LOCATION, HEIGHT, AND ELECTRICAL REQUIREMENTS WITH SIGNAGE INSTALLER AND PROVIDE ELECTRICAL WORK ACCORDINGLY. WHERE THE SIGN IS NOT PROVIDED WITH AN INTEGRAL DISCONNECTING MEANS, PROVIDE FLUSH-MOUNTED, LOCAL DISCONNECT SWITCH INSTALLED IN A CONCEALED, BUT ACCESSIBLE, LOCATION WITHIN SITE OF THE SIGN. WHERE THIS IS NOT POSSIBLE, PROVIDE LOCK-OUT, TAG-OUT BREAKER IN SOURCE PANELBOARD IN LIEU OF LOCAL DISCONNECT SWITCH AND A LABEL INSIDE THE SIGN ENCLOSURE IDENTIFYING THE BREAKER'S LOCATION PER NEC 600.6(A)(2).
E14	PROVIDE NEW OSEEC COMPLIANT 7-DAY 24-HOUR ASTRONOMICAL TIME CLOCK WITH HOLIDAY SCHEDULING. MOUNT TO WALL NEXT TO PANEL WITH CONTACTORS INDICATED. REFER TO CONTACTOR SCHEDULES ON SHEET E-1.0 FOR MORE INFORMATION.
E23	PROVIDE TATCO WIRELESS DOORBELL FROM EDWARDS SIGNALING OR EQUAL. COORDINATE LOCATION OF DOOR BUZZER WITH OWNER PRIOR TO ROUGH-IN OF EQUIPMENT.
E25	RECEPTACLE AND COVER PLATE TO BE BLACK FINISH.



1 ELECTRIC POWER PLAN
1/4" = 1'-0"

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859-442-8050
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KOHRS LONNEMANN HEIL ENGINEERS, INC. #F-3634

STATE OF TEXAS
JAMES S. TAVERNELLI
102735
LICENSED PROFESSIONAL ENGINEER
5/29/2025

SEAL:

carhartt

ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD #112,
SAN ANTONIO, TX 78209

ELECTRIC POWER PLAN

DRAWN BY	TMG
CHECKED BY	MR
JOB NUMBER	25341
SHEET NAME	E-200

ELECTRIC PANELBOARD AND SWITCHBOARD SCHEDULE

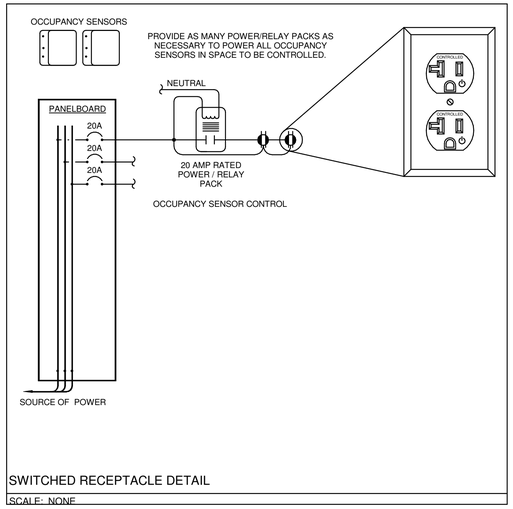
TYPICAL EQUIPMENT NAME NOMENCLATURE:
1 - POWER DISTRIBUTION SYSTEM (BLANK - NORMAL, E - EMERGENCY, S - STANDBY, L - LIFE SAFETY)
2 - DESCRIPTION (H - 480Y/277V, L - 208Y/120V)
3 - FLOOR / LEVEL
4 - SEQUENCE

ALL ALUMINUM BUSSING SHALL BE TIN-PLATED. ALL COPPER BUSSING SHALL BE EITHER TIN-PLATED OR SILVER-PLATED

EQUIPMENT	PHASE	SPACE NUMBER	SPACE NAME	SUPPLY FROM	POWER BRANCH	TYPE	VOLTAGE	PHASE	WIRES	DEMAND (kVA)	DEMAND (A)	MAINS RATING (A)	MAINS FRAME RATING (A)	MAINS TYPE	BUSSING (PLATED)	MOUNTING	FEEDER	LUGS TYPE	SPD	ULSE	GEC	ENCLOSURE TYPE	FAULT CURRENT (A)	SHORT CIRCUIT RATING (A)	NOTES
H1	Existing	104	BREAKROOM	LL	NORMAL	Branch Panelboard	480	3	4	52717 VA	63 A	400	400	THERMAL MAGNETIC	COPPER OR ALUMINUM	SURFACE	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS NOTED OTHERWISE					NEMA 1	29587	EXISTING	
L	Existing	104	BREAKROOM	P	NORMAL	Branch Panelboard	208	3	4	8378 VA	23 A	100	100	THERMAL MAGNETIC	COPPER OR ALUMINUM	SURFACE	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS NOTED OTHERWISE					NEMA 1	10238	EXISTING	
P	Existing	104	BREAKROOM	T1	NORMAL	Branch Panelboard	208	3	4	20148 VA	56 A	200	200	THERMAL MAGNETIC	COPPER OR ALUMINUM	SURFACE	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS NOTED OTHERWISE					NEMA 1	10644	EXISTING	

ELECTRIC EQUIPMENT SUPPLY SCHEDULE

EQUIPMENT MARK	SUPPLY FROM	CKT	EMERG.	LOAD (kVA)	AVAILABLE FAULT CURRENT	VOLTS	POLE	HTG KW	WATT	HP	FLA (A)	MCA (A)	RQD OCP (A)	BREAKER RATING (A)
DF1	L	9		0.72	2114	120 V	1				6			20
EF-1	L	8	NO	0.04	1608	120 V	1				0.29	0.4	15	15
WH1	L	11		2.50	2097	120 V	1	2.5						30



SWITCHED RECEPTACLE DETAIL

SCALE: NONE

HVAC ELECTRICAL COORDINATION SCHEDULE

ABBREVIATIONS		CONTRACTOR TYPE		MOTOR CONTROL TYPE		CONTROL TYPE		SHORT CIRCUIT RATING
DC	LOCAL DISCONNECT	EC	ELECTRICAL CONTRACTOR	CS	COMBINATION STARTER	TC	TIMECLOCK	WHERE SHORT CIRCUIT RATING CODE REQUIRED VALUE INDICATES "YES" APPLICABLE EQUIPMENT'S SHORT CIRCUIT RATING SHALL EXCEED THE AVAILABLE FAULT CURRENT VALUE INDICATED.
MC	MOTOR CONTROL (POWER)	EX	EXISTING	MCC	MOTOR CONTROL STARTER	CPT	CONTROL POWER TRANSFORMER	
SD	DUCT SMOKE DETECTOR	FC	FIRE PROTECTION CONTRACTOR	MG	MAGNETIC STARTER OR CONTACT	BAS	BUILDING AUTOMATION SYSTEM	
CN	CONTROLS	GC	GENERAL CONTRACTOR	MS	MANUAL STARTER	LOW	LOW VOLTAGE CONTROLS	
TS	TOGGLE SWITCH	HC	HVAC CONTRACTOR	VFD	VARIABLE FREQUENCY DRIVE	LINE	LINE VOLTAGE CONTROLS	
C/B	H.A.C.R. CIRCUIT BREAKER AT SOURCE PANELBOARD	MFR	MANUFACTURER	MSR	MANUAL STARTER W/ CONTROL RELAY	RLINE	REVERSE ACTING LINE VOLTAGE THERMOSTAT	
FUSE	FUSE AT LOCAL DISCONNECT (VERIFY FIELD RATING)	PC	PLUMBING CONTRACTOR	OV	OVERCURRENT PROTECTION	MAN	MANUAL	
FLA	OPERATING FULL LOAD AMPS	OR	OWNER OR OTHERS			FA	FIRE ALARM	
MCA	MINIMUM CIRCUIT AMPACITY					CO	CARBON MONOXIDE SENSOR	
CP	CORD AND PLUG CONNECTION					INT	INTEGRAL TO EQUIPMENT	
[BLANK]	HARD WIRED (WHEN INDICATED FOR DC TYPE)					AREA	AREA SMOKE DETECTOR	
						DUCT	DUCT SMOKE DETECTOR	
						ALARM	SHUTDOWN EQUIP ON GENERAL FIRE ALARM	
						FLOW	SHUTDOWN ON SPRINKLER FLOW	
						ANSUL	SHUTDOWN ON ANSUL ACTIVATION	

CONNECTION MARK	DESCRIPTION	VOLTAGE	PHASE	EMERGENCY	HP	WATTS	HTG KW	FLA	MCA	OCP	FED FROM	DC TYPE	DC FURN	DC INST	DC WIRE	MC TYPE	MC FURN	MC INST	MC WIRE	CN TYPE	CN FURN	CN INST	CN WIRE	FA SHUTDOWN	SHORT CIRCUIT RATING CODE REQUIRED?	AVAILABLE FAULT CURRENT
EF-1	HVAC EXHAUST FAN	120 V	1	NO				0.29	0.4	15			EC	EC	EC	ECM	MFR	MFR	MFR	MAN	EC	EC	EC	NONE	No	1608
EXAC-1	AIR CURTAIN W/NO HEAT	120 V	1	NO		666						EX	--	--	--	EX	--	--	--	EX	--	--	EX	NONE	No	890
EXAC-2	AIR CURTAIN W/NO HEAT	120 V	1	NO		329						EX	--	--	--	EX	--	--	--	EX	--	--	EX	NONE	No	1252
EXRTU	PACKAGED ROOFTOP UNIT, GAS HEAT	480 V	3	NO					35	45		EX	--	--	--	EX	--	--	--	LOW	HC	HC	HC	NONE	Yes	9389

PLUMBING ELECTRICAL COORDINATION SCHEDULE

ABBREVIATIONS		CONTRACTOR TYPE		MOTOR CONTROL TYPE		CONTROL TYPE		SHORT CIRCUIT RATING
DC	LOCAL DISCONNECT	EC	ELECTRICAL CONTRACTOR	CS	COMBINATION STARTER	TC	TIMECLOCK	WHERE SHORT CIRCUIT RATING CODE REQUIRED VALUE INDICATES "YES" APPLICABLE EQUIPMENT'S SHORT CIRCUIT RATING SHALL EXCEED THE AVAILABLE FAULT CURRENT VALUE INDICATED.
MC	MOTOR CONTROL (POWER)	EX	EXISTING	MCC	MOTOR CONTROL STARTER	CPT	CONTROL POWER TRANSFORMER	
SD	DUCT SMOKE DETECTOR	FC	FIRE PROTECTION CONTRACTOR	MG	MAGNETIC STARTER OR CONTACT	BAS	BUILDING AUTOMATION SYSTEM	
CN	CONTROLS	GC	GENERAL CONTRACTOR	MS	MANUAL STARTER	LOW	LOW VOLTAGE CONTROLS	
TS	TOGGLE SWITCH	HC	HVAC CONTRACTOR	VFD	VARIABLE FREQUENCY DRIVE	LINE	LINE VOLTAGE CONTROLS	
C/B	H.A.C.R. CIRCUIT BREAKER AT SOURCE PANELBOARD	MFR	MANUFACTURER	MSR	MANUAL STARTER W/ CONTROL RELAY	RLINE	REVERSE ACTING LINE VOLTAGE THERMOSTAT	
FUSE	FUSE AT LOCAL DISCONNECT (VERIFY FIELD RATING)	PC	PLUMBING CONTRACTOR	OV	OVERCURRENT PROTECTION	MAN	MANUAL	
FLA	OPERATING FULL LOAD AMPS	OR	OWNER OR OTHERS			FA	FIRE ALARM	
MCA	MINIMUM CIRCUIT AMPACITY					CO	CARBON MONOXIDE SENSOR	
CP	CORD AND PLUG CONNECTION					INT	INTEGRAL TO EQUIPMENT	
[BLANK]	HARD WIRED (WHEN INDICATED FOR DC TYPE)							

CONNECTION MARK	DESCRIPTION	VOLTAGE	PHASE	EMERGENCY	HP	WATTS	HTG KW	FLA	MCA	OCP	FED FROM	DC TYPE	DC FURN	DC INST	DC WIRE	MC TYPE	MC FURN	MC INST	MC WIRE	CN TYPE	CN FURN	CN INST	CN WIRE	SHORT CIRCUIT RATING CODE REQUIRED?	AVAILABLE FAULT CURRENT
DF1	DRINKING FOUNTAIN	120 V	1					6				CP	EC	EC	EC	MG	MFR	MFR	MFR	MAN	MFR	MFR	MFR	No	2114
WH1	TANK TYPE ELECTRIC WATER HEATER	120 V	1				2.5					DC	EC	EC	EX	--	--	--	--	INT	MFR	MFR	MFR	No	2097

ELECTRIC FEEDER SCHEDULE

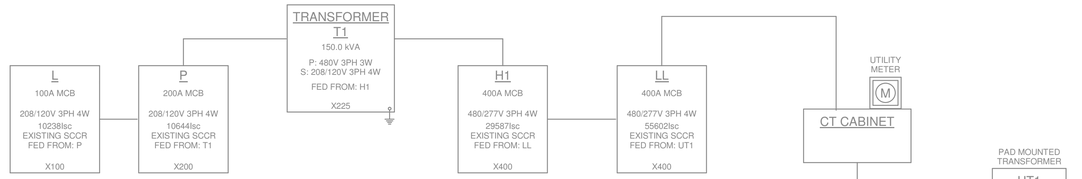
NOTES:
ALL CONDUIT SIZES INDICATED ARE MINIMUM SIZES. INCREASE SIZES AS REQUIRED TO ACCOMMODATE CONDUCTOR PULLING EASE, FIELD CONDITIONS, ETC.

"CU" = COPPER CONDUCTOR,
"AL" = ALUMINUM CONDUCTOR

** WHERE THESE FIELDS ARE BLANK, PROVIDE INSULATION & CONDUIT MATERIAL PER THE CONDUIT & WIRE MATERIAL SCHEDULE.

FEEDER ID NOMENCLATURE:
* - INDICATES FEEDER SIZED TO COMPENSATE FOR VOLTAGE DROP
1 - GROUND TYPE (MAY BE BLANK)
U = EQUIPMENT GROUND CONDUCTOR REMOVED FOR SERVICE ENTRANCE FROM UTILITY
P = PARITY-SIZED EQUIPMENT GROUND CONDUCTOR
X = EXISTING FEEDER TO REMAIN UNLESS OTHERWISE NOTED
T = UPSIZED GROUND CONDUCTORS FOR TRANSFORMER SECONDARY
2 - CONDUCTOR AMPACITY
3 - TOTAL NUMBER OF PHASE AND GROUNDED ("NEUTRAL") CONDUCTORS
4 - CONDUCTOR MATERIAL: C = COPPER, A = ALUMINUM
5 - SPECIAL (MAY BE BLANK)
I = ISOLATED GROUND (PROVIDE CONTINUOUS INSULATED ISOLATED EQUIPMENT GROUNDING CONDUCTOR(S) FROM INSULATED ISOLATED GROUND BAR(S) TO RESPECTIVE UPSTREAM SERVICE ENTRANCE OR DERIVED SYSTEM GROUNDING ELECTRODE CONDUCTOR AS APPLICABLE.

SUPPLY TO	SUPPLY FROM	FEEDER ID	FEEDER	INSULATION **	CONDUIT**	DEMAND (A)	VD %	NOTES
UT1								
-- LL	UT1	X400	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS NOTED OTHERWISE			63 A	0.06	
---- H1	LL	X400	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS NOTED OTHERWISE			63 A	0.179	
------ T1	H1	X225	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS NOTED OTHERWISE			24 A	0.183	
--------- P	T1	X200	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS NOTED OTHERWISE			56 A	0.214	
---------- L	P	X100	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS NOTED OTHERWISE			23 A	0.22	



FAULT CURRENT CALCULATIONS

FAULT CURRENT CALCULATIONS ARE BASED ON EXISTING FAULT CURRENT VALUES ON EXISTING ELECTRICAL PANELS. VERIFY THE AVAILABLE FAULT CURRENT AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.

SINGLE LINE - LAYOUT

SCALE: NONE

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SEAL:

carhartt
ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD #112,
SAN ANTONIO, TX 78209

ELECTRIC POWER - SINGLE LINE DIAGRAM

DRAWN BY
TMG
CHECKED BY
MR
JOB NUMBER
25341
SHEET NAME
E-300

PANEL NAME: H1

PHASE: Existing

SUPPLY FROM: LL | **MAINS RATING (A):** 400 | **FAULT CURRENT (A):** 29587 | **SURGE SUPRESSION:**
LOCATION: BREAKROOM 104 | **MAINS TYPE:** THERMAL MAGNETIC | **SHORT CIRCUIT RATING (A):** EXISTING | **ULSE:**
DISTRIBUTION SYSTEM: 480/277V 3PH 4W | **FEEDER ID:** X400 | **LUGS TYPE:** | **200% NEUTRAL:**
FEEDER: EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS NOTED OTHERWISE | **ENCLOSURE TYPE:** NEMA 1 | **ISOLATED GROUND:**

CKT	CIRCUIT DESCRIPTION	VD%	AWG	GND	TRIP	FRAME	POLE	A		B		C		POLE	FRAME	TRIP	GND	AWG	VD%	CIRCUIT DESCRIPTION	CKT
1								8.73	5.11												2
3	EXRTU	0.279	#6	#10	45 A	45 A	3			8.73	5.45			3	225 A	225 A	SL	SL	SL	(EX) T1	4
5												8.73	6.84								6
7	(EX) SPACE	--	--	--	--	--	1	--	--					1	--	--	--	--	--	(EX) SPACE	8
9	(EX) SPACE	--	--	--	--	--	1			--	--			1	--	--	--	--	--	(EX) SPACE	10
11	(EX) SPACE	--	--	--	--	--	1					--	--	1	--	--	--	--	--	(EX) SPACE	12
13	(EX) SPACE	--	--	--	--	--	1	--	--					1	--	--	--	--	--	(EX) SPACE	14
15	(EX) SPACE	--	--	--	--	--	1			--	--			1	--	--	--	--	--	(EX) SPACE	16
17	(EX) SPACE	--	--	--	--	--	1					--	--	1	--	--	--	--	--	(EX) SPACE	18
19	(EX) SPACE	--	--	--	--	--	1	--	--					1	--	--	--	--	--	(EX) SPACE	20
21	(EX) SPACE	--	--	--	--	--	1			--	--			1	--	--	--	--	--	(EX) SPACE	22
23	(EX) SPACE	--	--	--	--	--	1					--	--	1	--	--	--	--	--	(EX) SPACE	24
25	(EX) SPACE	--	--	--	--	--	1	--	--					1	--	--	--	--	--	(EX) SPACE	26
27	(EX) SPACE	--	--	--	--	--	1			--	--			1	--	--	--	--	--	(EX) SPACE	28
29	(EX) SPACE	--	--	--	--	--	1					--	--	1	--	--	--	--	--	(EX) SPACE	30
31	(EX) SPACE	--	--	--	--	--	1	--	--					1	--	--	--	--	--	(EX) SPACE	32
33	(EX) SPACE	--	--	--	--	--	1			--	--			1	--	--	--	--	--	(EX) SPACE	34
35	(EX) SPACE	--	--	--	--	--	1					--	--	1	--	--	--	--	--	(EX) SPACE	36
37	(EX) SPACE	--	--	--	--	--	1	--	--					1	--	--	--	--	--	(EX) SPACE	38
39	(EX) SPACE	--	--	--	--	--	1			--	--			1	--	--	--	--	--	(EX) SPACE	40
41	(EX) SPACE	--	--	--	--	--	1					--	--	1	--	--	--	--	--	(EX) SPACE	42
	TOTAL CONNECTED LOAD:							13.8 kVA		14.2 kVA		15.6 kVA									

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
Continuous	4420 VA	125.00%	5525 VA	EXISTING CONNECTED LOAD:	
Cooling	0 VA	0.00%	0 VA	EXISTING LOAD DEMAND FACTOR:	
Elevator	0 VA	0.00%	0 VA	ADDED CONNECTED LOAD:	43588 VA
Heating	0 VA	0.00%	0 VA	DEMAND CALCULATION NOTES:	
Kitchen Equipment	0 VA	0.00%	0 VA		
Lighting	5910 VA	125.00%	7387 VA	TOTAL DEMAND:	52716.9 VA
Motor	27218 VA	124.05%	33765 VA	TOTAL DEMAND AMPS:	**63 A**
Non-Continuous	280 VA	100.00%	280 VA		
Receptacle	5760 VA	100.00%	5760 VA		

NOTES:	BREAKER QUANTITIES (NEW ONLY)
	(1) 45A / 3P

PANEL NAME: L

BUSSING: COPPER OR ALUMINUM | **MOUNTING:** SURFACE | **PHASE:** Existing

SUPPLY FROM: P | **MAINS RATING (A):** 100 | **FAULT CURRENT (A):** 10238 | **SURGE SUPRESSION:**
LOCATION: BREAKROOM 104 | **MAINS TYPE:** THERMAL MAGNETIC | **SHORT CIRCUIT RATING (A):** EXISTING | **ULSE:**
DISTRIBUTION SYSTEM: 208/120V 3PH 4W | **FEEDER ID:** X100 | **LUGS TYPE:** | **200% NEUTRAL:**
FEEDER: EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS NOTED OTHERWISE | **ENCLOSURE TYPE:** NEMA 1 | **ISOLATED GROUND:**

CKT	CIRCUIT DESCRIPTION	VD%	AWG	GND	TRIP	FRAME	POLE	A		B		C		POLE	FRAME	TRIP	GND	AWG	VD%	CIRCUIT DESCRIPTION	CKT
1	(#) LTG 108, 107, 105, 106, 104	0.185	#12	#12	20 A	20 A	1	0.66	0.90					1	20 A	20 A	#12	#12	0.644	(#) RCPT OFFICE 106	2
3	(#) RCPT OFFICE 106	0.319	#12	#12	20 A	20 A	1			0.36	0.36			1	20 A	20 A	#12	#12	0.033	(#) RCPT BREAKROOM 104	4
5	(#) RCPT BREAKROOM 104	0.063	#12	#12	20 A	20 A	1					0.36	0.90	1	20 A	20 A	#12	#12	0.482	(#) RCPT 103, 101, 102	6
7	EXAC-2	0.469	#12	#12	20 A	20 A	1	0.33	0.04					1	15 A	15 A	#12	#12	0.037	EF-1 | EXISTING TOILET 107	8
9	(G) DF1 | HALLWAY 105	0.551	#12	#12	20 A	20 A	1			0.72	0.20			1	20 A	20 A	#12	#12	0.064	(#) C1 C2 C3 | BREAKROOM 104	10
11	WH1 | BOH 108	1.931	#10	#10	30 A	30 A	1					2.50	0.00	1	20 A	20 A	--	--	--	(EX) SPARE	12
13	(EX) SPARE	--	--	--	20 A	20 A	1	0.00	0.00					1	20 A	20 A	--	--	--	(EX) SPARE	14
15	(EX) SPARE	--	--	--	20 A	20 A	1			0.00	0.00			1	20 A	20 A	--	--	--	(EX) SPARE	16
17	(EX) SPARE	--	--	--	20 A	20 A	1					0.00	0.00	1	20 A	20 A	--	--	--	(EX) SPARE	18
19	(EX) SPARE	--	--	--	20 A	20 A	1	0.00	0.00					1	20 A	20 A	--	--	--	(EX) SPARE	20
21	(EX) SPARE	--	--	--	20 A	20 A	1			0.00	0.00			1	20 A	20 A	--	--	--	(EX) SPARE	22
23	(EX) SPARE	--	--	--	20 A	20 A	1					0.00	0.00	1	20 A	20 A	--	--	--	(EX) SPARE	24
25	(EX) SPARE	--	--	--	20 A	20 A	1	0.00	0.00					1	20 A	20 A	--	--	--	(EX) SPARE	26
27	(EX) SPARE	--	--	--	20 A	20 A	1			0.00	0.00			1	20 A	20 A	--	--	--	(EX) SPARE	28
29	(EX) SPARE	--	--	--	20 A	20 A	1					0.00	0.00	1	20 A	20 A	--	--	--	(EX) SPARE	30
31	(EX) SPARE	--	--	--	20 A	20 A	1	0.00	0.00					1	20 A	20 A	--	--	--	(EX) SPARE	32
33	(EX) SPARE	--	--	--	20 A	20 A	1			0.00	0.00			1	20 A	20 A	--	--	--	(EX) SPARE	34
35	(EX) SPARE	--	--	--	20 A	20 A	1					0.00	0.00	1	20 A	20 A	--	--	--	(EX) SPARE	36
37	(EX) SPARE	--	--	--	20 A	20 A	1	0.00	0.00					1	20 A	20 A	--	--	--	(EX) SPARE	38
39	(EX) SPARE	--	--	--	20 A	20 A	1			0.00	0.00			1	20 A	20 A	--	--	--	(EX) SPARE	40
41	(EX)(L) FIRE ALARM	--	--	--	20 A	20 A	1					0.00	0.00	1	20 A	20 A	--	--	--	(EX) SPARE	42
	TOTAL CONNECTED LOAD:							1.9 kVA		1.6 kVA		3.8 kVA									

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	NOTES:	BREAKER QUANTITIES (NEW ONLY)
Continuous	3220 VA	125.00%	4025 VA		(1) 15A / 1P, (1) 20A / 1P, (1) 20A / 1P(G), (1) 30A / 1P
Lighting	661 VA	125.00%	827 VA		
Motor	364 VA	122.60%	446 VA		
Non-Continuous	200 VA	100.00%	200 VA		
Receptacle	2880 VA	100.00%	2880 VA		

PANEL TOTALS	
TOTAL CONNECTED LOAD:	7.3 kVA
DEMAND CALCULATION NOTES:	
TOTAL DEMAND:	8.4 kVA
TOTAL DEMAND AMPS:	**23 A**

PANEL NAME: P

BUSSING: COPPER OR ALUMINUM | **MOUNTING:** SURFACE | **PHASE:** Existing

SUPPLY FROM: T1 | **MAINS RATING (A):** 200 | **FAULT CURRENT (A):** 10644 | **SURGE SUPRESSION:**
LOCATION: BREAKROOM 104 | **MAINS TYPE:** THERMAL MAGNETIC | **SHORT CIRCUIT RATING (A):** EXISTING | **ULSE:**
DISTRIBUTION SYSTEM: 208/120V 3PH 4W | **FEEDER ID:** X200 | **LUGS TYPE:** | **200% NEUTRAL:**
FEEDER: EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS NOTED OTHERWISE | **ENCLOSURE TYPE:** NEMA 1 | **ISOLATED GROUND:**

CKT	CIRCUIT DESCRIPTION	VD%	AWG	GND	TRIP	FRAME	POLE	A		B		C		POLE	FRAME	TRIP	GND	AWG	VD%	CIRCUIT DESCRIPTION	CKT
1								0.00	1.11					1	20 A	20 A	#12	#12	0.783	(#) LTG SALES 100	2
3	(EX) SPARE	--	--	--	30 A	30 A	3			0.00	0.85			1	20 A	20 A	#12	#12	0.861	(#) LTG SALES 100	4
5												0.00	0.81	1	20 A	20 A	#12	#12	0.4	(#) LTG SALES 100	6
7	(#) LTG 102, 103, 101	0.068	#12	#12	20 A	20 A	1	0.13	0.68					1	20 A	20 A	#12	#12	0.573	(#) LTG SALES 100	8
9	(#) LTG SALES 100	0.578	#12	#12	20 A	20 A	1			0.68	0.71			1	20 A	20 A	#12	#12	0.366	(#) LTG SALES 100	10
11	(#) LTG SALES 100	0.514	#12	#12	20 A	20 A	1					0.27	0.72	1	20 A	20 A	#12	#12	1.467	(#) RCPT SALES 100	12
13	(#) RCPT SALES 100	0.798	#12	#12	20 A	20 A	1	0.54	0.72					1	20 A	20 A	#12	#12	1.824	(#) RCPT SALES 100	14
15	(#) RCPT BREAKROOM 104	0.102	#12	#12	20 A	20 A	1			0.90	0.67			1	20 A	20 A	#12	#12	1.398	EXAC-1	16
17	(#) NON-CONT. SALES 100	0.087	#12	#12	20 A	20 A	1					0.08	1.20	1	20 A	20 A	#12	#12	2.599	(#) SIGNAGE | CONTINUOUS	18
19	(EX) SPARE	--	--	--	20 A	20 A	1	0.00	0.00					1	20 A	20 A	--	--	--	(EX) SPARE	20
21	(EX) SPARE	--	--	--	20 A	20 A	1			0.00	0.00			1	20 A	20 A	--	--	--	(EX) SPARE	22
23	(EX) SPARE	--	--	--	20 A	20 A	1					0.00	0.00	1	20 A	20 A	--	--	--	(EX) SPARE	24
25	(EX) SPARE	--	--	--	20 A	20 A	1	0.00	0.00					1	20 A	20 A	--	--	--	(EX) SPARE	26
27	(EX) SPARE	--	--	--	20 A	20 A	1			0.00	0.00			1	20 A	20 A	--	--	--	(EX) SPARE	28
29	(EX) SPARE	--	--	--	20 A	20 A	1					0.00	0.00	1	20 A	20 A	--	--	--	(EX) SPARE	30
31	(EX) SPARE	--	--	--	20 A	20 A	1	0.00	0.00					1	20 A	20 A	--	--	--	(EX) SPARE	32
33	(EX) SPARE	--	--	--	20 A	20 A	1			0.00	0.00			1	20 A	20 A	--	--	--	(EX) SPARE	34
35	(EX) SPARE	--	--	--	20 A	20 A	1					0.00	0.00	1	20 A	20 A	--	--	--	(EX) SPARE	36
37								1.93	0.00					1	20 A	20 A	--	--	--	(EX) SPARE	38
39	(EX) L	SL	SL	SL	100 A	100 A	3			1.64	0.00			1	20 A	20 A	--	--	--	(EX) SPARE	40
41												3.76	0.00	1	20 A	20 A	--	--	--	(EX) SPARE	42
	TOTAL CONNECTED LOAD:							5.1 kVA		5.4 kVA		6.8 kVA									

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	NOTES:	BREAKER QUANTITIES (NEW ONLY)
Continuous	4420 VA	125.00%	5525 VA		(1) 20A / 1P
Lighting	5910 VA	125.00%	7387 VA		
Motor	1030 VA	116.17%	1197 VA		
Non-Continuous	280 VA	100.00%	280 VA		
Receptacle	5760 VA	100.00%	5760 VA		

PANEL TOTALS	
TOTAL CONNECTED LOAD:	17.4 kVA
DEMAND CALCULATION NOTES:	
TOTAL DEMAND:	20.1 kVA
TOTAL DEMAND AMPS:	**56 A**

PANEL SCHEDULE LEGEND

*	=	WIRE SIZED TO COMPENSATE FOR VOLTAGE DROP
**	=	REFER TO DRAWINGS FOR SPECIFICATIONS
(#)	=	NEW CIRCUIT TO EXISTING CIRCUIT BREAKER
(->)	=	CONNECT BRANCH CIRCUIT, WHICH WAS DISCONNECTED FROM ANOTHER SOURCE AS PART OF SELECTIVE DEMOLITION, TO POLE SPACE(S) INDICATED, DETERMINE EXACT POLE ASSIGNMENT(S) BASED ON EXISTING COLOR-CODING OF THE BRANCH CIRCUIT CONDUCTOR INSULATION. PROVIDE NEW BREAKER IF REQUIRED.
(A)	=	PROVIDE ARC FAULT CIRCUIT INTERRUPTER (AFCI) CIRCUIT BREAKER
(AG)	=	PROVIDE COMBINATION ARC FAULT (AFCI) / GROUND FAULT (GFCI) CIRCUIT INTERRUPTER CIRCUIT BREAKER
(AT)	=	EXISTING FUSIBLE SWITCH/CIRCUIT BREAKER WITH NEW FUSES/TRIP RATING
(DO)	=	PROVIDE DRAW-OUT CIRCUIT BREAKER
(ERM)	=	PROVIDE ENERGY REDUCTION MAINTENANCE (REDUCED ENERGY) CIRCUIT BREAKER
(EX)	=	EXISTING CIRCUIT TO REMAIN
(F)	=	CIRCUIT FOR FURTURE USE. PROVIDE BREAKER INDICATED. LOAD SHOWN FOR REFERENCE ONLY.
(G)	=	PROVIDE GROUND-FAULT CIRCUIT INTERRUPTER (GFCI) CIRCUIT BREAKER
(GE)	=	PROVIDE GROUND-FAULT EQUIPMENT PROTECTION (GFEP) CIRCUIT BREAKER
(GS)	=	PROVIDE SPECIAL PURPOSE GROUND-FAULT CIRCUIT INTERRUPTER (SPGFCI) CIRCUIT BREAKER
(H)	=	PROVIDE HANDLE TIE
(L)	=	PROVIDE LOCK-ON DEVICE
(LI)	=	PROVIDE ELECTRONIC LONG AND INSTANTANEOUS ADJUSTABILITY
(LSI)	=	PROVIDE ELECTRONIC LONG, SHORT, AND INSTANTANEOUS ADJUSTABILITY
(LSIA)	=	PROVIDE ELECTRONIC LONG, SHORT, INSTANTANEOUS, AND GROUND-FAULT ALARM ADJUSTABILITY
(LSIG)	=	PROVIDE ELECTRONIC LONG, SHORT, INSTANTANEOUS, AND GROUND-FAULT ADJUSTABILITY
(LT)	=	PROVIDE LOCK-OUT/TAG-OUT DEVICE
SL	=	SEE THE SINGLE LINE DIAGRAM / SCHEDULE FOR WIRE SIZE AND VOLTAGE DROP
(ST)	=	PROVIDE SHUNT TRIP CIRCUIT BREAKER

PANEL SCHEDULE GENERAL NOTES

A. PROVIDE HACR RATED BREAKERS ON ALL MOTOR LOADS.
B. ALL CONDUCTORS SHOWN ARE COPPER.
C. ALL VOLTAGE DROP CALCULATIONS AND COMPENSATED WIRE SIZES ARE BASED ON RIGHT ANGLE CIRCUIT LENGTHS. ACTUAL VOLTAGE DROP MAY VARY BASED ON INSTALLED WIRE LENGTH.
D. VOLTAGE DROP CALCULATIONS AND WIRE SIZES SHOWN IN THE PANEL SCHEDULES ARE FOR HOMERUN CONDUCTORS ONLY. FOR CIRCUITS WITH MORE THAN 1 DEVICE, THESE SIZES ASSUME THE CONDUCTORS DOWNSTREAM OF THE HOMERUN DEVICE ARE THE MINIMUM SIZE REQUIRED BY THE NEC BASED ON THE RATING OF THE CIRCUIT. WHERE THIS IS NOT THE CASE, IT HAS BEEN INDICATED ON THE DRAWINGS. VOLTAGE DROP TO THE FARTHEST DEVICE HAS BEEN CALCULATED TO NEVER EXCEED 5%.
E. RECEPTACLE LOADS CALCULATED AT 100% OF FIRST 10kVA, 50% OF REMAINDER. MOTOR LOADS CALCULATED AT 125% OF THE LARGEST MOTOR, 100% OF ALL OTHER MOTORS.

KLH ENGINEERS
KOHRS LONNEMANN HEIL ENGINEERS, INC.
MECHANICAL/ELECTRICAL ENGINEERS
WWW.KLHENGRS.COM
1538 ALEXANDRIA PIKE, SUITE 11
FT. THOMAS, KENTUCKY 41075
800-354-9783
859-442-8050
859-442-8058 FAX
LEXINGTON, KENTUCKY
LOUISVILLE, KENTUCKY
COLUMBUS, OHIO
KLH JOB #: 27478

RGLA
rgla solutions, inc.
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

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robert g. lyon + associates, inc.
retail architecture
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

KOHRS LONNEMANN HEIL ENGINEERS, INC. #F-3634
STATE OF TEXAS
JAMES S. TAVERNELLI
102735
LICENSED PROFESSIONAL ENGINEER
5/29/2025
SEAL:

carhartt
ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD #112,
SAN ANTONIO, TX 78209

ELECTRIC PANEL SCHEDULES

DRAWN BY	TMG
CHECKED BY	MR
JOB NUMBER	25341
SHEET NAME	E-301

COM*check* Software Version COMcheckWeb

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2021 IECC
Project Title: CARHARTT - QUARRY CROSSING
Project Type: Alteration

Construction Site:
7322 JONESMALTSBERGER RD #
112
SAN ANTONIO, TX 78209

Owner/Agent:

Designer/Contractor:
KLH Engineers
1538 Alexandria Pike
Fort Thomas, KY 41075

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts
1-BREAKROOM (Common Space Types:Atrium) (Ceiling Height 10 ft.)	175	0.48	84
2-ACCESSIBLE FR (Common Space Types:Atrium) (Ceiling Height 10 ft.)	54	0.48	26
3-HALLWAY (Common Space Types:Atrium) (Ceiling Height 10 ft.)	62	0.48	30
4-EXISTING TOILET (Common Space Types:Atrium) (Ceiling Height 10 ft.)	57	0.48	27
5-OFFICE (Common Space Types:Atrium) (Ceiling Height 10 ft.)	56	0.48	27
6-SALES (Common Space Types:Atrium) (Ceiling Height 10 ft.)	3335	0.48	1601
Allowance: Furniture, clothing, cosmetics highlighting / Fix. ID: A	500 (a)	1.05	525 (b)
Allowance: Furniture, clothing, cosmetics highlighting / Fix. ID: Track lighting <not circuited>	950 (a)	1.05	720 (b)
Allowance: Furniture, clothing, cosmetics highlighting / Fix. ID: Track lighting <not circuited>	680 (a)	1.05	714 (b)
Allowance: Furniture, clothing, cosmetics highlighting / Fix. ID: Track lighting <not circuited>	1500 (a)	1.05	1200 (b)
Allowance: Furniture, clothing, cosmetics highlighting / Fix. ID: Track lighting <not circuited>	800 (a)	1.05	720 (b)
7-BOH (Common Space Types:Atrium) (Ceiling Height 10 ft.)	805	0.48	386
8-FR-1 (Common Space Types:Atrium) (Ceiling Height 10 ft.)	38	0.48	18
9-FITTING AREA (Common Space Types:Atrium) (Ceiling Height 10 ft.)	67	0.48	32
		Supplemental Allowed Watts (null) =	1000
		Total Allowed Watts =	7111

(a) Area claimed may exceed total floor area when Retail Merchandise Highlighting allowance(s) are specified.
(b) Allowance is (B x C) or the actual wattage of the fixtures given in Proposed Power section, whichever is less.
(c) Supplemental watts must be associated with retail merchandise highlighting fixtures.

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
BREAKROOM (Common Space Types: Atrium, 175 sq.ft.)				
E: E: LINEAR LED: Other:	1	3	20	60
E: E: LINEAR LED: Other:	1	1	64	64
ACCESSIBLE FR (Common Space Types: Atrium, 54 sq.ft.)				
M: M: HI BAY LIGHTING: Other:	1	1	12	12
HALLWAY (Common Space Types: Atrium, 62 sq.ft.)				
E: E: LINEAR LED: Other:	1	1	64	64
EXISTING TOILET (Common Space Types: Atrium, 57 sq.ft.)				
E: E: LINEAR LED: Other:	1	1	64	64
OFFICE (Common Space Types: Atrium, 56 sq.ft.)				
E: E: LINEAR LED: Other:	1	1	64	64
SALES (Common Space Types: Atrium, 3335 sq.ft.)				
A: A: HI BAY LIGHTING: Other:	1	20	81	1620
Track lighting <not circuited>: Wattage based on current limiting device capacity	0	0	360	360
Track lighting <not circuited>: Wattage based on current limiting device capacity	0	0	720	720
Track lighting <not circuited>: Wattage based on current limiting device capacity	0	0	720	720
Track lighting <not circuited>: Wattage based on current limiting device capacity	0	0	1200	1200
Track lighting <not circuited>: Wattage based on current limiting device capacity	0	0	720	720
BOH (Common Space Types: Atrium, 805 sq.ft.)				
E: E: LINEAR LED: Other:	1	10	20	200
E: E: LINEAR LED: Other:	1	3	64	192
FR-1 (Common Space Types: Atrium, 38 sq.ft.)				
M: M: HI BAY LIGHTING: Other:	1	1	12	12
FITTING AREA (Common Space Types: Atrium, 67 sq.ft.)				
M: M: HI BAY LIGHTING: Other:	1	2	12	24
			Total Proposed Watts =	6096

Interior Lighting PASSES

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting aiteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2021 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title _____ Signature _____ Date _____

COM*check* Software Version COMcheckWeb

Inspection Checklist

Energy Code: 2021 IECC

Requirements: 100.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR4][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.3.1 [EL22][1]	Spaces required to have light-reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern >= 50 percent.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.2.1, C405.2.1.1 [EL18][1]	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, corridors, warehouse storage areas, and other spaces <= 300 sqft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.2.1.2 [EL19][1]	Occupancy sensors control function in warehouses: In warehouses, the lighting in aisleways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more within 20 minutes of when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor. Lights not turned off by occupant sensors is done so by time-switch.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.2.1.3 [EL20][1]	Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces >= 300 sq.ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas <= 600 sq.ft. within the space, 2) general lighting in each zone permitted to turn on upon occupancy in control zone, 3) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 4) are configured so that general lighting power in each control zone is reduced by >= 80% of the full zone general lighting power within 20 minutes of all occupants leaving that control zone.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.2.2, C405.2.2.1 [EL21][2]	Each area not served by occupancy sensors (per C405.2.1.1) have time-switch controls and functions detailed in sections C405.2.2.1.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.4, C405.2.4.1, C405.2.4.2 [EL23][2]	Daylight zones provided with individual controls that control the lights independent of general area lighting. See code section C405.2.3 Daylight-responsive controls for applicable spaces, C405.2.3.1 Daylight responsive control function and section C405.2.3.2 Sidelit zone.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.2.5 [EL27][1]	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.7 [EL26][2]	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.8 [EL27][2]	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.9.1, C405.9.2 [EL28][2]	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.10 [EL29][2]	Total voltage drop across the combination of feeders and branch circuits <= 5%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.1.1 [EL30][2]	At least 90% of dwelling unit permanently installed lighting shall have lamp efficacy >= 65 lm/W or luminaires with efficacy >= 45 lm/W or comply with C405.2.4 or C405.3.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.11, C405.11.1 [EL31][2]	50% of 15/20 amp receptacles installed in enclosed offices, conference rooms, copy rooms, break rooms, classrooms and workstations and > 25% of branch circuit feeders for modular furniture will have automatic receptacle control in accordance with C405.11.1.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5.2 [FI17][3]	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.1.1 [FI57][1]	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.5 [FI16][1]	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.3 [FI33][1]	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

KLH ENGINEERS
KOHRS LONNEMANN HEIL ENGINEERS, INC.
MECHANICAL/ELECTRICAL ENGINEERS
WWW.KLHENGRS.COM
1538 ALEXANDRIA PIKE, SUITE 11
FT. THOMAS, KENTUCKY 41075
800-354-9783
859-442-8050
859-442-8058 FAX
LEXINGTON, KENTUCKY
LOUISVILLE, KENTUCKY
COLUMBUS, OHIO
KLH JOB #: 27478

RGLA
rgla solutions, inc.
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

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robert g. lyon + associates, inc.
retail architecture
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

KOHRS LONNEMANN HEIL ENGINEERS, INC. #F-3634
STATE OF TEXAS
JAMES S. TAVERNELLI
102735
LICENSED PROFESSIONAL ENGINEER
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SEAL:

carhartt

ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD #112,
SAN ANTONIO, TX 78209

ENERGY COMPLIANCE

DRAWN BY	TMG
CHECKED BY	MR
JOB NUMBER	25341
SHEET NAME	E-400

26 05 01.00 - COMMON WORK RESULTS FOR ELECTRIC

The General Provisions of the Contract including the General and Supplemental Conditions and General Requirements apply to the work in this section. Before submitting a bid, examine documents of all other trades, visit the site and get acquainted with all conditions that may in any way affect the execution of this contract. Take measurements and be responsible for exact size and locations of all openings required for the installation of work. Noted dimensions convey desired locations for devices. Coordinate with owner representative on site prior to deviating from noted dimensions for any reason. Where detailed method of installation is not indicated or where variations exist between described work and approved practice, direction of the Owners representative on job site shall be followed.

Whenever the words "contractor", "this contractor", etc. appear on drawings or in these specifications for the Electrical Work, it shall refer to the Electrical Sub-Contractor. Whenever the word "Provide" appears in these documents, it shall be interpreted to mean "Furnish and Install". Whenever the word "Relocate" appears in these documents, it shall be interpreted to disconnect electrical feed, make safe including lock out, store and protect device, reinstall, rework and extend conduit and wire to new location, re-energize and test.

The exact mounting height of devices shall be determined in the field with relation to architectural details and equipment being served. It shall be the responsibility of this contractor to coordinate outlet location with equipment. The Owners representative shall be permitted to relocate any outlet prior to installation within a 15 foot limit at no additional charge in contract price. All fasteners, hangers and methods of hanging exposed work in finished areas shall be submitted to the Owners representative for approval before installation.

The contract includes all items of material and labor required for the complete installation and full operation of the electrical work as shown on the drawings and hereinafter specified. All materials and methods shall be in accordance with applicable codes, regulations and/or ordinances and meet the approval of local inspection authority having jurisdiction. The latest edition of NFPA 70 (NEC/National Electrical Code) shall be the minimum requirement for all work. Examine the drawings and specifications for compliance with the above codes, regulations and ordinances and base bid and work accordingly. Obtain and pay for all permits and inspections related to this work. A certificate of approval for work from inspection authority shall be given to the Owner before final acceptance will be given by Owners representative.

All work, materials, and equipment shall have a one-year warranty after acceptance of the work by the Owner. Any defective items shall be removed and replaced at the electrical sub-contractor's expense and to the satisfaction of the engineer and owner's representative.

Perform work under this contract in close harmony with other contractors so completed work shall present a neat and workmanlike installation. Exposed finished materials and equipment shall be carefully cleaned and wiped to remove grease, smudges, fingerprints, dust and other spots and left smooth and clean. During the progress of the work, the electrical sub-contractor shall carefully clean the job site and shall leave the premises and all portions of the building in which he is working free of debris and in a clean and safe condition.

This contractor shall be responsible for the training of owner's representatives of each system to the satisfaction of the Owners representative.

The Electrical Contractor shall consult the Plumbing, HVAC and Structural plans (where applicable) in all instances before installing his work so that his work will not interfere with those branches. In the event of a conflict, this contractor shall report to the Owners representative at once and do no further work to be installed until a satisfactory arrangement is decided upon. Any work done, or equipment placed in position by this contractor, creating a conflict in violation hereof, shall be readjusted to the satisfaction of the Owner's representative at the expense of the contractor. The decision of the Owners representative shall be final in regard to changes due to conflicting conditions. Contractor shall complete his work or any part thereof at such time as may be designated by the Owner, so that it can be used for temporary or permanent use and such use of the system shall not be construed as an acceptance of same by Owner.

Obtain the latest Owner's Design and Construction Standards document(s). Comply with all Owner-specific requirements in addition to requirements set forth in these specifications and accompanying drawings. Should there be a conflict, the Owner's standards shall take precedence, unless prevailing codes and regulations mandate otherwise.

Two sets of electrical drawings shall be provided as record drawings which shall be separate, clean, copies reserved for the purpose of showing a complete picture of the work as actually installed. These drawings shall also serve as work progress report sheets and the electrical contractor shall make any notations, neat and legible thereon daily as work proceeds. The drawings shall be available for inspection at all times and shall be kept at the job at a location designated by the Owners representative. At the completion of the work, these record drawings shall be signed by the electrical contractor, dated and returned to the Owners representative. Final payment of contract will not be made until receipt and review of said drawings.

Provide two neatly bound (with tabbed sections) copies of maintenance books, instruction books and parts list pertaining to all equipment furnished. Submit to the Owners representative for approval. Final payment will not be made until drawings for record, maintenance and instruction manuals are delivered to the Owners representative.

26 05 02.00 - COMMON ELECTRICAL MATERIALS AND METHODS

All materials and equipment shall be new. All materials, apparatus and equipment shall bear the seal of Underwriters Laboratories Inc. (UL), or a similar credible testing agency, label where regularly supplied. Certain manufacturers of material and equipment are specified and plans are detailed according to this material. This contractor shall base his bid on furnishing and installing this make of material and equipment.

Where more than one make of material or equipment is specified, the contractor shall state in his bid which make he proposes to furnish. Shop drawings shall be submitted on material and equipment to be furnished by the contractor for Engineers approval. This approval to be obtained prior to shipment of equipment.

Hold routing of new raceways in new and existing buildings as tightly as possible to the structure above. Obtain approval of owner's representative prior to installation. Do not install any electrical work within 6 inches of roof decking.

Neatly dress all work. Install all work parallel and perpendicular to surfaces or exposed structural members, and follow surface contours, where possible. Install splice and tap connectors which possess equivalent or better mechanical strength and insulation rating than conductors being spliced. Use splice and tap connectors which are compatible with conductor material. All wires shall be run continuous from outlet to outlet/luminaire to luminaire. Insulation value of joints shall be 100% in excess of wire. Provide adequate length of conductors within electrical enclosures and train the conductors to terminal points with no excess. Bundle multiple conductors, with conductors no larger than 10 AWG cabled in individual circuits. Make terminations so there is no bare conductor at the terminal.

Maintain a uniform elevation for all cable runs wherever possible. All cables shall be supported/anchored at maximum 4 foot intervals and within 12" of box or outlet and shall not sag. Install cables in a manner that prevents overheating. Cables shall be fastened directly to the structure using factory clamps/clips specifically designed for the respective cable (Caddy or equal).

Keep conductor splices to minimum. Pull conductors simultaneously where more than one is being installed in same raceway. Use UL listed pulling compound or lubricant, where necessary. Increase wire sizes to offset voltage drop as/if required.

Branch subfeeder circuits shall be installed as shown on the floor plans. Where outlets are indicated by letters on plans, they shall be controlled by corresponding switches.

Outlets shall be located approximately as shown on the plans and shall be wired to provide control of outlets indicated. All wires of any one circuit shall be run in the same conduit.

Mechanical wire splicers shall be Scotchlock insulated type, TandB Stakon or approved equal. The conductors terminating at each wired outlet shall be left not less than 8" long at their outlet fittings to facilitate installment of devices or luminaires. Friction and rubber tape conform to Federal Specifications HH-T-11 and HH-T-111. Plastic electrical tape shall be Scotch #33+ or approved equal.

Do not share neutrals when amongst multiple branch circuits or with multi-wire branch circuits.

Provide grounding electrode conductors for service entrances and derived systems.

Provide all feeders and branch circuits with insulated (green covering) equipment grounding.

Only install conduit exposed on rooftops when it is impossible to do otherwise, or only if specifically indicated for such installation case-by-case elsewhere in documents. Installation convenience, financial considerations, lack of coordination with other trades and similar rationale are not sufficient reasons for doing so. In cases where conduits must be installed on rooftops, de-rate conductors and modify conduit sizes as needed to accommodate this condition. Provide expansion fittings, which are UL listed and labeled for the respective applications, at all building expansion joints and at maximum distances of 100 feet. Paint all such conduits with at least two coats of UV-resistant weatherproof paint. Provide white paint on flat rooftops that have finishes white in color, and for otherwise-colored roof finishes that are not visible from the building interior or from the ground outdoors. Elsewhere select colors to match surrounding surfaces; submit colors to Architect for review in advance of procuring paint.

Provide all cutting and patching required for the admission of work. Any damage done by this contractor to the building during the progress of work shall be made good at contractor's own expense. All patching shall be done by a skilled craftsman in that respective trade. It shall be the responsibility of this contractor to supervise the installation of, and pay for all additional members, wood or metal and labor which may be required to support any type of permanent or temporary electrical apparatus employed in the execution of this contractor's work.

Access Doors: Do not use access doors unless special prior written permission is granted from the Owner's Representative. Install pull boxes, junction boxes, etc. in areas which are accessible after completion of construction. Do not install pull boxes or junction boxes above gypsum board or similar inaccessible ceiling systems. Where there is no other recourse but to provide an access door/panel, and where approval of Owner's Representative has been obtained, provide required access doors/panels as required for a complete code-compliant electrical installation as defined below. Provide access doors in fire/smoke ratings that meet or exceed the surrounding surface that is being penetrated.

Seal all new floor, ceiling, wall, slab, etc. penetrations to match or exceed existing assembly fire ratings. Provide sleeve seals for all sleeves, provide sleeves for all penetrations. All penetrations of fire-rated or smoke-rated wall, floors ceilings, etc. shall be sealed immediately after raceways are installed. All new electrically related work shall be supported directly from building structural members. New electrically related work shall not be supported from ductwork, ductwork hanger, ceiling supports, existing conduit support, etc.

26 05 03.00 - SUBMITTALS FOR ELECTRICAL SYSTEMS

Provide submittals in accordance with the Contract Documents. In addition to Division 01, the Contractor is advised to review and comply with the requirements articulated within each Division and within each section of that Division.

Some Divisions may include a division-specific "Submittal Requirements for …." section. Where this section exists, it articulates additional requirements for submittals that apply to the work of that Division. The following requirements help to identify, track and keep the project organized for all parties involved. They are necessary to ensure a timely turnaround and an appropriate technical review. Submittals that do not conform to the administrative requirements are rejected and returned, without technical review.

Supply submittals for each section: Submittals shall be supplied on a section-by-section and type-by-type basis. For example, independent product data submittals shall be furnished for each section that requires product data submittals. Independent shop drawing submittals shall be furnished for each section that requires shop drawings. Separate PDF file packages shall be supplied for each section, for each submittal type. Each PDF shall represent a single standalone submittal.

Include a transmittal: Transmittals shall enumerate each submittal for each section of each type and iteration.

Include cover sheet / title page: The cover sheet shall include the information identified in the contract documents. It shall be included as the first page of each electronic and/or hardcopy document-based submittal. An editable and printable PDF form created with editable fields and specification compliant appearance is available from KLH upon request. It is also downloadable from the KLH website at www.klhengrs.com.

Include an index: The index shall enumerate the contents of the submittal.

Include checklists: Where checklists are included with the specifications, complete and include them within the appropriate submittal. Supply complete submittals: Complete submittals of each type are required. Partial submittals will be rejected. Where a section requires a product data submittal, all product data for that section shall be supplied together, at one time, as one complete submittal. When resubmittal is required (e.g. Revise and Resubmit) the revised submittal shall be more complete, more accurate and more contract-compliant than its rejected predecessor. The submittal number (for each section and type) shall increment for each subsequent submittal (00 – Original submission, 01 – First Resubmission, 02 – Second Resubmission, etc…). Resubmittals shall include a copy of the reviewers comments supplied with the prior submittal rejection and shall be amended with a description of the specific action taken to comply with the reviewer's comments. The absence of this on resubmittal is cause for rejection.

Name electronic files to match the submittal ID and cover sheet: The electronic file name of submittals shall match the submittal ID included on the submittals cover page. For example: The original/first product data submittal for Section 260519 would be labeled as "260519.00-PD-00"; the first resubmittal of same shall be labeled "260519.00-PD-01". The original/first shop drawings submittal file for the same section would be labeled "260519.00-SD-00"; the first resubmittal of same shall be labeled "260519.00-SD-01".

If expressly permitted by the Owner and the terms of the Contract, editable electronic drawings may be made available for the creation of shop and as-built drawings upon request. Drawings will be made available at the discretion of the Engineer.

"Request Drawings" form can be accessed, filled out and submitted at http://www.klhengrs.com (right hand side of page - Contractor Resources). Direct access to this form can be found here: http://files.klhengrs.com/requestdrawings.html

26 05 19.00 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

Submittal Requirements
Product Data
For each type of conductor and cable.

Furnish and install all necessary cable of the size and type indicated on the drawings or specified hereinafter. All wire shall be copper. All wiring shall be new. No wire smaller than #12 AWG shall be installed unless specifically designated. Use of #14 color coded wire will be allowed for control circuits only. Provide stranded conductors for all sizes unless indicated otherwise.

Provide THHN/THWN-2 insulation for all conductors as appropriate for the locations where installed. Provide color coded insulation/jacket for phase identification. All wires shall be rated at 600 volts. Provide type XHHW-2 insulation for all wiring below grade or subject to moisture.

Unless specifically indicated otherwise on drawings, provide grounded ("neutral") conductors that are at least parity-sized with corresponding phase/line conductors for all applications.

All conductors shall be rated for 90 deg. C. minimum. Provide with green insulated equipment ground conductor. Provide compatible steel fittings with integral red plastic insulated throat bushings. Cables shall be 90 deg. C. rated and all components and fittings listed for grounding and compliant with the following: UL Std.4 and UL Std. 83; ANSI E119 and E814; NFPA 70.

Aluminum Conductors: Where applicable for electrical equipment connections for aluminum wiring, provide the following supplemental requirements and work regardless of who furnishes the equipment or what type of equipment is affected. Review equipment submittals, installation documents and nameplates to determine if there are any warranty or UL limitations regarding copper versus aluminum wiring connections at equipment. If there are any limitations, provide local non-fused disconnect at or near equipment (external to the equipment) and terminate aluminum conductors to the line side terminals of the disconnect switch. Provide copper conductors from load side terminals of the disconnect switch to the respective equipment factory disconnect or terminals as applicable. Provide UL-Listed AA-8000 series compact-stranded conductors compliant with specifications, prevailing codes and end-use equipment manufacturer requirements. Provide appropriately UL-Listed connectors as recommended by conductor manufacturer.

Cables: Route cables perpendicular and parallel to the building architectural lines, surfaces, and structural members, keeping offsets to a minimum and following surface contours where possible. Maintain a uniform elevation for cable runs wherever possible. Support and anchor cables at maximum 4 foot intervals and within 12" of box or outlet in a manner that prevents sagging. Install cables in a manner that prevents overheating. Fasten cables directly to the structure using factory clamps and clips (zip ties and like products are not permitted) specifically designed for the respective cable (Caddy or equal). Cables may be utilized only if code-approved for the intended use and in the limited applications defined below.

Type MC (Metal-Clad) Cable: Form from continuous length of spirally wound, interlocked zinc-coated or galvanized (inside and outside) strip steel or aluminum jacket, with stranded copper conductors with 90 deg. C THHN insulation system. Provide only where permitted in the Conduit/Wire Material Schedule shown on the drawings For exposed runs of cables down walls to surface mounted panelboards, provide partition chase walls (constructed in a manner approved by architect), or within appropriately sized steel wireway(s), or within a custom fabricated heavy-gage painted sheetmetal chase approved in advance by the engineer. Install in a manner that fully conceals cables, prevents overheating of cables, and is approved by the local authority having jurisdiction.

26 05 26.00 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

All metallic conduit, surface raceways, wireways, supports, cabinet and equipment shall be grounded.

26 05 29.00 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

It shall be the responsibility of the electrical contractor to supervise the installation of and pay for all additional members, wood or metal and labor which may be required to support any type of permanent or temporary electrical apparatus employed in the execution of the electrical contractor's work. Provide supports, anchors, sleeves and seals furnished as part of factory-fabricated equipment as required. Locations and routing that may be shown on plans are schematic and diagrammatic in nature. Metallic products shall be galvanized steel.

Conduit shall be supported by approved straps, fasteners and hangers. Hangers shall be suspended from rods. Perforated straps will not be acceptable. Fasteners shall be lead expansion shields in block or concrete, toggle bolts in hollow walls, machine screws on metal surfaces and wood screws on wood construction. At building expansion joints and where deflection is expected, conduits shall be provided with expansion fittings with bonding jumpers. Conduits passing through structural members shall be provided with stub and coupling or sleeve in the member. Where moisture conditions are encountered, a hole shall be drilled at the lowest point in the conduit run. Also provide sleeves for all fire wall and smoke partition penetrations (sealed accordingly).

All conduit shall be supported independently from all other building systems and shall be supported directly from structural components. Electrically related work shall not be supported from ductwork, ductwork hangers, ceiling supports, existing conduit supports, etc.

Use of synthetic or plastic "tie-wraps", "zip ties", "wire ties" and similar products are not permitted as a permanent means of anchoring, securing, supporting or otherwise installing any cables, conductors, conduits, raceways, devices, equipment or other electrical work.

All conduits, raceways and cables (where applicable) shall be routed parallel and perpendicular to building structural members. Any and all noncompliant work installed by the electrical contractor shall be removed and reinstalled by the electrical contractor to the satisfaction of the Owner's representative and the Engineer, at the expense of the electrical contractor. At building expansion joints and where deflection is expected, provide conduits with expansion fittings with bonding jumpers. Conduits passing through structural members shall be provided with stub and coupling or sleeve in the member. Where moisture conditions are encountered, a hole shall be drilled at the lowest point in the conduit run. Provide sleeves for all fire wall and smoke partition penetrations (sealed accordingly).

Stem lengths of all pendant fixtures shall be as directed by the owner's representative. All fasteners, hangers and method of hanging exposed work in finished areas shall be submitted to the owner's representative for review before installation. Fasteners shall be zinc-coated, type, grade, and class as required for a neat finished installation.

Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded. Install anchor bolts to elevations required for proper attachment to supported equipment. Provide female expansion anchors, and install studs and nuts after equipment is positioned. Provide bushings for floor/wall-mounted equipment anchors to allow for resilient media between anchor bolts/studs and mounting hole in concrete.

Touchup Painting: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting.

Provide supports for multiple raceways capable of supporting combined weight of supported systems, equipment, connected systems and associated components/contents. Provide supports adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this project, with a minimum structural safety factor of five times the applied force.

Coordinate installation of roof curbs, equipment supports, and roof penetrations.

Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly. Construct with all necessary fittings which mate and match with U-channel. Provide metallic coatings that are hot-dip galvanized after fabrication and applied according to MFMA-4. Provide channel dimensions that are selected for applicable load criteria. Comply with NECA 1 and NECA 101 unless requirements in this or other specification sections are stricter.

Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted, sized so capacity can be increased by at least 50 percent in future without exceeding specified design load limits. Secure raceways and cables to these supports with two-bolt conduit clamps, single-bolt conduit clamps, or single-bolt conduit clamps using spring friction action for retention in support channel as applicable.

Overhead Electric Work: Install work so that no raceway or cable is within six inches below roof deck(s). Suspend and support overhead electrical work from roof trusses and joists/joist girders only at panel points, at top cord only, unless otherwise indicated.

Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.

Plywood Equipment Boards: Lumber shall be preservative treated in accordance with AWPB LP-2, and kiln dried to a moisture content of not more than 19 percent. Provide plywood panels; APA C-D PLUGGED INT, with exterior glue; thickness as indicated, or if not indicated, not less than 3/4 inches deep. Provide marine grade plywood where subject to moisture conditions. Unless otherwise noted, boards shall be painted with two coats of good grade weatherproof flat gray non-conductive fire-retardant paint on all sides and edges (prior to mounting) and plumbed in a true vertical position. Provide nominal 1/2" rustproof spacers between back of plywood and wall. Maintain at least 4 inches from bottom of plywood equipment boards and the finished floor surface. Unless directed otherwise in field, plywood equipment boards shall be 8 feet high by 3/4 inches deep by length shown on drawings (as dimensioned if scaled) or length as required to accommodate equipment if not indicated on drawings. Provide plywood equipment boards at locations as shown on drawings. Unless directed otherwise in field, plywood equipment boards shall be provided for all surface mounted panelboards and systems "head-end" equipment for all applications where located in mechanical or electrical rooms and only where specifically shown on drawings for all other applications.

26 05 53.00 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

Provide manufacturers standard self-adhesive vinyl tape not less than 3 mils thick by 1-1/2" wide. Where applicable, install on all concealed raceways at connection to all junction boxes, pull boxes, equipment, wall/floor/roof penetrations, etc. Unless otherwise indicated or required by governing regulations, provide orange tape with black letters. Provide circuit identification bands for all cables and conductors. Provide manufacturers standard color coding for cable/conductor jacket and/or insulation for all cables and conductors of all systems. Match identification with marking system used in existing systems (where applicable), shop drawings, contract documents, and similar previously established identification for projects electrical work. Provide on all conductors of all systems.

The following insulation color code shall be used for system and voltage identification. This shall apply to both feeder and branch circuit wiring. Interchange of colors shall not be permitted.

208Y/120V System: (neutral	Black, Red, Blue and White
480Y/277V System: (neutral	Brown, Orange, Yellow and Gray
Equipment Grounding:	Green
Systems:	To match existing where applicable - verify in field.

Provide engraved plastic-laminate sign on major units of electrical equipment, including panelboards, disconnects, starters, control panels, etc. Except as otherwise indicated, provide single line of text, 1/2" high lettering, on 1-1/2" high sign (2" high where 2 lines are required), white lettering in black field. Unless determined otherwise in field, provide text matching terminology and numbering of the contract documents and shop drawings. Secure to substrate with fasteners, except use adhesive where fasteners should not or cannot penetrate substrate.

All equipment and system identification nomenclature shown on drawings or listed herein is shown for general design and installation reference only. The actual nameplate, etc. nomenclature for this project shall be verified by electrical contractor in field prior to fabrication and where applicable, shall be an extension of existing nomenclature used on the site as determined in field by electrical contractor.

Equipment to Be Labeled: All enclosures for all electrical equipment furnished or installed under Divisions 26 and 28; Remote-controlled switches, dimmer modules, and control devices, via engraved wall plates; Miscellaneous Control Stations; Access doors and panels for concealed electrical items; Other similar equipment designated by owner's representative, architect or engineer in field.

Emergency Systems: Provide permanent identification for boxes, enclosures, etc. that are associated with emergency system work. Paint and identify emergency system pull boxes, junction boxes, and other access/pull points (boxes and covers). Provide emergency system equipment panelboards, cabinets, enclosures, etc. with engraved nameplates (white letters on red background) with the first line of text to read "EMERGENCY CIRCUITS" and the remaining lines to include the necessary descriptive text. Properly identify system components, wiring, cabling, and terminals. Provide red color on jacket of all emergency system cables. Provide red-colored breaker handle and red-colored lock-on device at source circuit breakers that feed emergency systems.

Provide red coloring for all Emergency system junction boxes, along with identification.

Legally-Required Standby Systems: Provide permanent identification for boxes, enclosures, etc. that are associated with Legally-Required Standby system work. Paint and identify Legally-Required Standby system pull boxes, junction boxes, and other access/pull points (boxes and covers). Provide Legally-Required Standby system equipment panelboards, cabinets, enclosures, etc. with engraved nameplates (white letters on red background) with the first line of text to read "LEGALLY-REQUIRED STANDBY CIRCUITS" and the remaining lines to include the necessary descriptive text. Properly identify system components, wiring, cabling, and terminals. Provide red color on jacket of all Legally-Required Standby system cables. Provide red-colored breaker handle and red-colored lock-on device at source circuit breakers that feed Legally-Required Standby Systems. Provide red coloring for all Legally-Required Standby system junction boxes, along with identification.

26 05 84.00 - MECHANICAL EQUIPMENT

Provide all necessary electrically related work as required to render all mechanical equipment (including plumbing, heating, ventilating and air conditioning equipment) fully operational and fully compliant with all local and national codes. This includes, prior to ordering materials or commencing with rough-in, reviewing equipment submittal data and coordinating with installing contractors to ensure the correct size, rating and quantity of conductors are provided.

Provide raceway, wiring, connections, and terminations for power and interlocks for electrically operated equipment.

Provide disconnect switch ahead of all equipment, including controls, unless shown otherwise on the drawings. Provide NEMA 3R enclosures where installed outdoors and where installed indoors in areas subject to moisture. Ground metal frames of equipment by connecting frames to the grounded metal raceway and to a full-size green ground conductor. Provide the necessary electrical connections to the specified equipment. Where mechanical equipment lugs cannot accommodate conductor sizes, provide ILSCO ClearTap Insulated Multi-Tap Connectors.

Sizes, electrical ratings, etc. of equipment and wiring shown on drawings are based on the respective equipment basis of design. If different manufacturer(s) or model(s) are supplied, provide necessary coordination in field (prior to ordering materials and prior to rough-in) and provide the necessary size of related electrical equipment, wiring, conduit, etc.

Prior to furnishing submittals and prior to rough-in, determine exact electrically related characteristics, loads, voltages, disconnect and starter requirements, locations, mounting heights, connection points, etc. of mechanical equipment.

Disconnect and Controller Locations: Locations shown on drawings are indicated for schematic purposes only. Determine exact locations in field. Refer to Electrical Coordination Schedules on drawings. Provide disconnects, starters, accessories, wiring, connections, services, etc. where defined as "EC" in the schedule. Information in this section supplements the information in the schedules. Provide power wiring and connections for all equipment (including motor dampers and accessories where applicable) as required to render equipment fully operational. Install local disconnects and starters at 48 inches to top of outlet box or enclosure where applicable above finished floor/slab/grade. Provide flush mounted units in finished areas. Provide key operated manual starters where accessible to unauthorized personnel, including general public.

Maintenance Receptacles: Provide duplex GFCI receptacle within 25 feet of all electrically operated equipment of any nature that requires periodic testing or maintenance. This applies for all indoor and outdoor equipment. Provide Type WR duplex GFCI weatherproof receptacle for outdoor applications (including rooftops) and for applications subject to high humidity or moisture.

Commercial Kitchen Exhaust Hoods and Related Fan Equipment: Refer to detail(s) on drawings.
Refer to food service drawings, food service specifications and manufacturer's submittals for specific information. Field-coordinate work with affected entities.
Note that multiple kitchen hoods may exist, and any single hood shown may actually consist of multiple sections. Provide electrical work for hoods as required to render them and ancillary systems/controls fully operational.
Provide power wiring and connections to line side of factory disconnect switches for fan units.
Provide interlock wiring and connections to and from the various equipment and controls.
Provide control wiring from the fan units to respective remote duct stats.
Provide control wiring to and from duct heat sensors.
Provide 120V, single-phase,, 2-wire, 20 ampere wiring and connections to the indoor hood bodies for factory hood lights and for control circuits.
Provide control wiring from the indoor hood bodies to respective fan units.
Provide 120V, 2-wire (#12 AWG) control wiring connections from indoor hood bodies to contacts on factory micro-switch in respective hood fire suppression system.
Provide auxiliary control circuit wiring from the factory micro-switch in the hood fire suppression systems to respective dedicated fire alarm system monitor modules to initiate alarm signal when respective hood fire protection system is activated.
Provide a auxiliary control circuit wiring from the factory micro-switch in the hood fire suppression system to contactor control coil(s).
Provide surface mounted empty octagon box for hood fire suppression system manual activation station. Provide for each hood fire suppression system installed. Install at 48" to top of outlet box above finished floor and provide (1) surface mounted, straight 1/2" empty conduit (no bends) from box to above accessible ceiling unless otherwise directed by the fire suppression installer. Install box near means of egress, between 10 and 20 feet from the cooking area. Final locations shall be determined by fire suppression system installer, coordinate in field.
Provide interlock control wiring between gas solenoid shut off valves and respective kitchen hood fire suppression system. Coordinate with affected installers.

Domestic Water Heaters (Electric): Provide local disconnect switch, and power wiring and connections. Provide interlock wiring with circulating pumps, flow switches and aquastat controls where applicable.

Domestic Hot Water Circulating Pumps (Return Line): Provide manual starter with pilot light, and wire pump to operate through the aquastat. Refer to wiring diagrams on drawings for further definition.

General Control Wiring Requirements: Unless specifically indicated as empty conduit on drawings or herein, provide electrical control and interlock work as shown on drawings. Provide additional control work as specifically indicated herein. Coordinate HVAC thermostat and sensor locations in field (case by case) with Architect, Owner's Representative and equipment installer to ensure that they are placed in locations that will not interfere with furniture, equipment, artwork, wall-hung specialties, room finishes, etc. Field-verify these wall locations case by case, prior to rough-in, since locations shown on drawings are schematic only.

Schematic Thermostat and Sensor Locations: Refer to applicable drawings and documents.

Low Voltage Thermostats and Sensors: Provide 4-inch square by 2-1/8 inch deep wall outlet boxes at 46 inches above finished floor to center of outlet box (with single-gang rings) for each unit. Provide one 3/4 inch empty conduit from each location, turned out above accessible ceilings (in

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FT. THOMAS, KENTUCKY 41075
800-354-9783
859-442-8050
859-442-8058 FAX

LEXINGTON, KENTUCKY
LOUISVILLE, KENTUCKY
COLUMBUS, OHIO
KLH JOB #: 27478

RGLA
rgla solutions, inc.
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

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retail architecture
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

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MALTSBERGER RD #112,
SAN ANTONIO, TX 78209

ELECTRICAL SPECIFICATIONS

DRAWN BY	TMG
CHECKED BY	MR
JOB NUMBER	25341
SHEET NAME	E-500

joist space or against overhead slab/deck). Identify conduit in ceiling cavity; provide sweep bends, bushings and drag line.

Line Voltage Thermostats and Sensors: Provide 4-inch square by 2-1/8 inch deep wall outlet boxes at 46 inches above finished floor to center of outlet box (with single-gang rings) for each unit. Provide line voltage power wiring, in 3/4 inch conduit, and connections from thermostats and sensors to respective equipment that is to be controlled by same. Install thermostats and sensors.

Motor Operated Dampers: Provide wiring associated with interlock of motors to associated motor dampers. Provide local disconnect at each motor damper if fan is not furnished with one. Where HVAC equipment or exhaust fans are controlled by VFC/VFD units, wire motor operated dampers (MOD's) back to the respective VFC/VFD unit separately from the respective exhaust fan power wiring, with (2) #12 AWG in 3/4 inch conduit. Provide local disconnect for each such MOD.

26 09 19.00 - ENCLOSED CONTACTORS

Provide contactors equipped with external pilot lights in cover, and external HOA selector switches in cover. Wire contactors for lighting applications so that the "AUTO" position is the normal activated condition (i.e. photocell controlled, photocell/time-clock controlled, remote switch controlled, BAS controlled, etc.); so that the "OFF" position is manual override to turn lighting off; and so that the "HAND" position is manual override to turn lighting on. Provide contactors with field convertible N.O./N.C. contacts and descriptive nameplates.

Electrically Held Contactors: Provide contactors equal to Square D Class 8903 (or Allen-Bradley Bul. 500L-BA*94 series) for tungsten lighting loads, ballast lighting loads, and small resistance heating loads. Provide contactors that are electrically operated and electrically held (EOEH). Provide contactors in factory NEMA 1 enclosures, with 120V coils (unless indicated otherwise elsewhere or otherwise required to render controls fully operable). Provide "dry" contacts rated at 30A, minimum 250V (600V if required by application). Provide number of poles (minimum of three poles) and number of contactors as required for each application. Field verify coil voltage ratings.

26 09 23.00 – LOCAL LIGHTING CONTROLS

Submittal Requirements
Product Data
For equipment, materials and systems specified in this section. Include product data, descriptive information, technical data, wiring diagrams, load restrictions, etc.

General Requirements
Finishes & Wall Plates: Refer to specification 262726.00 – Wiring Devices and match all requirements.

Toggle Switches:
Refer to specification 262726.00 – Wiring Devices.

Momentary-Contact Toggle Switches: Provide Standard of Quality equal to Legrand LVS-1, 3 Amp, 24 VAC/VDC, single-pole, double-throw with center rest, designed to fit conventional toggle switch openings.

Wall-Box Dimmers
Provide dimmer switches equal to Leviton #TSL06 series in configurations shown on the drawings. Dimmer shall be compatible with the light fixtures controlled, specification grade, full dimming range. DO not break off side heat-sink sections when ganging dimmers. Modular, full wave, solid-state units with integral, quiet on-off switches, with audible frequency and EMI/RFI suppression filters.

Time Clocks
365-Day Multi-Purpose Time Clocks: Provide time clock that is programmable 365-day/24-hour with override controls and holiday option. Provide number of channels indicated on the drawings. Provide required external contactors, relays, etc. to render the control systems fully operational. Verify zone control requirements in field prior to rough-in. Provide 100-hour carryover. Provide Ethernet module.

Occupancy Sensors, Passive Infrared Wall Switches: Provide Wattstopper PW-100 wall switch (or equivalent) and configure as manual on, auto off (vacancy sensor) unless otherwise specified on drawings. Provide with time delay as specified on drawings. If no time delay is specified, program to 10 minutes.

Occupancy Sensors, Dual Technology Wall Switches: Provide Wattstopper DW-100 wall switch (or equivalent) and configure as manual on, auto off (vacancy sensor) unless otherwise specified on drawings. Provide with time delay as specified on drawings. If no time delay is specified, program to 10 minutes.

Occupancy Sensors, Dual Technology Ceiling Sensors: Provide Wattstopper DT-300 ceiling mounted occupancy sensor (or equivalent). Provide with time delay as specified on drawings. If no time delay is specified, program to 20 minutes. Adjust sensitivity based on field conditions and occupancy of room to provide 100% coverage without nuisance tripping. Provide Wattstopper BZ-150 universal voltage pack(s) as required to properly power all occupancy sensors and provide switching per the design intent. In areas where multiple occupancy sensors control a single zone together, interlock occupancy sensors/power packs per manufacturer instructions to meet control intent.

26 27 26.00 - WIRING DEVICES

Submittal Requirements
Product Data
For each type include electrical characteristics, configurations, ratings, markings, colors, etc.

Unless specifically indicated otherwise, or directed otherwise in field, coordinate finishes for wiring devices with architect and owner prior to ordering. Where applicable, devices on different branches of power shall be a different color.

Provide grounded ("neutral") conductors in all wall switch, dimmer and other lighting control outlet boxes, even if not immediately utilized.

Provide wall plates with engraved legends where indicated on drawings and/or where required per 26 05 53.00 - IDENTIFICATION FOR ELECTRICAL SYSTEMS Section. All device wall plates shall be standard size; "midway", "oversized" ("jumbo") or "extra deep" wall plates shall not be acceptable. Construct with metal screws for securing plates to devices; screw heads colored to match finish of plates. Except where/if indicated otherwise on drawings, wall plates in finished areas shall be commercial specification grade, satin finish stainless steel, with beveled edges, equal to Leviton Type 430 series. Wall plates in unfinished areas shall be galvanized steel unless otherwise noted. Refer to architectural finish schedules and owner representative for additional information.

Wall-Box Type Lighting Controls:
Refer to specification 260923.00 – Local Lighting Controls for types not listed here.

Toggle Switches:
Provide toggle switches equal to Leviton #122x-2 series in configurations shown on the drawings. Provide switches that are flush, self-grounding with green ground screw, back and side wired, and specification grade. 120/277V, 20A, AC quiet type.

Decorator Style Switches:
Provide decora style switches equal to Leviton #560x-2 series in configurations shown on the drawings. Provide switches that are flush, self-grounding with green ground screw, and specification grade. 120/277V, 15A, AC quiet type.

Receptacles:

Special purpose receptacles shall be of the size, type and manufacturer as indicated on the plans or as determined in field.

Weather Resistant (WR) GFCI Receptacles: Provide for all receptacles installed in damp or wet locations. Any receptacle shown on the drawings with "WP/GFCI" next to it denoting exterior cover shall be installed with a WR GFCI receptacle. Provide duplex weather resistant receptacles equal to Leviton # W7899 series. Provide Weather-Resistant Receptacles with UL "WR" marking. For receptacle circuits protected with 15A breakers, provide NEMA 5-15R equivalents.

Duplex and Single Specification Grade Receptacles: 2-pole, 3-wire grounding, self-grounding, green grounding screw, ground terminals and poles internally connected to mounting yoke, color coded base, 20-amperes, 125-volts, with metal plaster ears, back and side wiring, NEMA configuration 5-20R. Provide duplex receptacles equal to Leviton #5362 series. For receptacle circuits protected with 15A breakers, provide NEMA 5-15R equivalents. Provide receptacles equal to Leviton #5361 series for simplex (single) applications. Provide clock hanger receptacles equal to Leviton #5361-CH.

Self-Grounding Commercial Specification grade, Duplex Receptacles, Ground-Fault Circuit Interrupters: Feed-thru type, capable of protecting connected downstream receptacles on single circuit, grounding type UL-rated 943, Class A, Group 1, specification grade, 20-amperes rating (device and feed-thru), 125-volts, 60 Hz; with solid-state ground-fault sensing and signaling (maximum threshold of 5mA at 0.025 seconds maximum); equip with 20-ampere plug configuration, NEMA 5-20R. Provide ground fault circuit interrupter duplex receptacles equal to Leviton #8898 series. For receptacle circuits protected with 15A breakers, provide NEMA 5-15R equivalents. Where GFCI protected receptacles are shown on drawings, provide a separate GFCI receptacle for each one shown. Do not feed downstream receptacles from load-side (GFCI-protected) terminals of upstream receptacles.

26 51 00.00 - LIGHTING

Submittal Requirements
Product Data
For each type include detailed product information, light source, color temperature, color rendering index, lumen outputs, life, driver manufacturer, model and type, ceiling connection details, integral controls as applicable, drawings of custom fixtures or components, wiring diagrams, warranty, etc. Arrange luminaire submittals in booklet form with separate sheets for each luminaire, assembled by luminaire "type" in alphabetical order.

All recessed luminaires shall be equipped with necessary plaster frames and surface trim.

All junction boxes and serviceable components for recessed luminaires shall be readily accessible for service or replacement from below the ceiling, without removing any ceiling components (other than tiles).

All luminaires utilized for emergency and/or egress lighting shall be connected ahead of switching. All drivers of the same type shall be of the same manufacturer and catalog number. All LED modules of the same type shall be of the same manufacturer and catalog number.

Light Emitting Diode (LED) Systems: Provide factory installed LED modules that are specifically designed for, and matched and mated to, the respective luminaire in which they are used. Provide LED modules that can easily be replaced in the field and are readily accessible for replacement. Provide color temperature as indicated in Luminaire Schedule. Provide factory installed driver(s) for the LED source utilized that are specifically coordinated to the LED source and luminaire in which they are used. Provide driver(s) having specific operating characteristics defined in the Luminaire Schedule. Provide driver(s) that can easily be replaced in the field and are readily accessible for replacement. Provide specification sheet for the specific driver as part of the Luminaire Submittal. Provide Total Harmonic Distortion (THD) rating of less than 20 percent. Provide factory-installed integral filtering system to ensure THD does not exceed 20 percent regardless of quantities and/or mixes with other manufactured LED systems.

All surface and recessed ceiling luminaires installed on grid or tile ceilings shall be installed to agree with module of ceiling either displacing a tile, or unit on center of tile, or centered on grid lines.

Provide luminaires and/or luminaire outlet boxes with hangers to properly support luminaire weight. All luminaires installed in or on suspended ceiling systems shall be anchored directly to the building structural system above. Such anchoring shall be independent of the ceiling support system. All luminaires shall be installed plumb and level. Support surface mounted luminaires greater than 2 feet in length at a point in addition to the outlet box luminaire stud.

Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting aimable luminaires to suit actual occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose. Some of this work may be required after dark. Adjust aimable luminaires in the presence of Owner's Representative and Design Professionals.

All exteriors lighting standards shall have inline fuses installed at the hand hole of each pole.

26 60 01.00 – ELECTRICAL COORDINATION OF OTHER DIVISION EQUIPMENT

Product Data Submittal Requirements
Provide equipment electrical characteristic data for equipment specified under other divisions of this project for an electrical coordination review. Submit each type of equipment submittal as a separate submittal, for example: Pool Equipment, Kitchen Equipment, Gymnasium Equipment, Motorized Shades, etc. Each submittal should be label as 266001-PD-## where ## increments from 00 for each submittal.

28 46 21.25 - FIRE ALARM SYSTEM EXTENSION

Submittal Requirements
Product Data
For each type of devices including catalog numbers, electrical characteristics, ratings, color, temperature limitations, etc. Submit as separate submittal (PD) but at same time as Shop Drawings for this section.
Shop Drawings
Provide a complete set of floor plan drawings showing conduit sizes and number of conductors required to all components plus detailed wiring connections required at each type of device. Clearly show the intended location of all field devices and their connections to the system. Include battery calculations, voltage drop calculations, critical dimensions, ductwork sizes for sampling tubes and associated required dimensions, wiring diagrams, sequence of operation, cable sizes and types, etc. Shop Drawings shall be prepared by persons with the following qualifications: Trained and certified by manufacturer in fire-alarm system design, and licensed and certified by authorities having jurisdiction. Submit as separate submittal (SD) but at same time as Product Data for this section.
Extra Materials
Audible and Visual Notification Appliances: Furnish one of each type installed.
Smoke Detectors: Furnish 5% of new work quantity, minimum of one.
Fuses: Furnish two of each type installed in the system.

Refer to Division 26 sections for requirements associated with all electrical work not specifically defined in this section, which shall be considered additional and concurrent scope of work that is associated with work of this section. Provide all work in strict compliance with all prevailing codes, standards and ordinances, including NFPA 70 and NFPA 72.

Qualifications of system designers, installers, programming personnel, inspection personnel, testing personnel and maintenance personnel shall be trained and certified by manufacturer for installation of units required for this Project. Provide all materials, labor and services to provide fully operational modifications to and extensions of existing facility fire alarm system(s).

Provide submittals for equipment, materials and systems specified in this section. Include cuts, descriptive information, technical data, wiring diagrams, system battery calculations, plan-view layouts, legend, point-to-point wiring, etc. Identify all information that is specific to this project.

The fire alarm system supplier shall provide to the electrical contractor a complete set of floor plan drawings showing conduit sizes and number of conductors required to all components plus detailed wiring connections required at each type of device.

It shall be the responsibility of the Fire Alarm System Manufacturer to furnish submittals to the authority having jurisdiction for approval. This action shall be taken during the shop drawing procedure. The system must be approved by this authority and a copy submitted to the Engineer with the shop drawing submittal. All fire alarm system working drawings shall be provided by manufacturer.

Program detailed device and room descriptions so that any trouble, supervisory or alarm condition clearly annunciates floor level, room number, room name, device, and indication of normal, alarm, trouble and supervisory status at fire alarm control panel(s), at fire alarm annunciator panel(s) and at the supervising central station.

Initiating Device, Notification Appliance and Signaling Line Circuits: Class A or Class A and B (provide Class A for circuits that provide isolation module protection for zones). Provide power-limited cables that have a temperature rating of at least 60 degrees C; provide additional marking for conductor size and temperature ratings for cables rated in excess of 60°C (140°F).

Interruption of Existing Fire-Alarm Service: Do not interrupt fire-alarm service to facilities occupied by Owner or others unless owner and others have been notified with at least two-day notice and approval.

Maintain existing equipment fully operational until new equipment has been tested and accepted. As new equipment is installed, label it "NOT IN SERVICE" until it is accepted. Remove labels from new equipment when put into service.

Added Devices and Extension of Existing System:

Verify that existing fire-alarm system is operational without troubles before making changes or connections.
Connect new equipment to existing control panel in existing part of the building.

Connect new equipment to existing monitoring equipment at the supervising station.

Expand, modify, and supplement existing control/monitoring equipment as necessary to extend existing control/monitoring functions to the new points. New components shall be capable of merging with existing configuration without degrading the performance of either system.

Perform reacceptance testing to verify the proper operation of added or replaced devices and appliances.
Initiating Device, Notification Appliance, and Signaling Line Circuits: NFPA 72, Class A, B, or A and B as required to match existing conditions.

Provide materials and labor as required to result in a fully operational extension and modification to the existing fire alarm system.

Where indicated on drawings, remove existing fire alarm devices in affected areas and protect during demolition and construction phases. Clean and reinstall these existing devices as indicated on drawings. Relocate devices as indicated on drawings and extend conduit and wiring as required. Modify and/or extend related existing wiring using code-compliant and landlord-compliant methods as required for a complete operational system.

Provide fire alarm system devices of the same manufacturer as, compatible with, and UL Listed and labeled for use on, the existing building fire alarm system.

Provide auxiliary contacts if required for special applications. All strobe alarms shall be compliant with NFPA and ADA.

Install wall-mounted devices at the following heights above finished floor:
Fire Alarm Manual Pull Stations: 46" to top of operating handle.
Fire Alarm Visual-Only and A/V Annunciators: 80" to bottom of outlet box.

All new wiring shall be installed in strict accordance with manufacturer's requirements.

The installation shall include a complete system test of the equipment by the local representative of the system installed. This test shall be performed in the presence of representatives of the Owner, and local fire department and other Authority/Authorities Having Jurisdiction (AHJ) if/as applicable.

Provide all required modifications (cards, power supplies, hardware, firmware, software, etc.) to the existing Fire Alarm system as required to render the entire extension fully operable.

The audio/visual and visual-only alarm indicating devices shall be red ADA-compliant units wall mounted at 6'8" to bottom of outlet box as shown on plans. Synchronize strobe units wherever required by any authority having jurisdiction, including ADAAG. Additionally, where required by local authority, the strobes shall meet ANSI S3.41 temporal code.

Provide isolation modules as/if required to isolate wire to wire shorts on a data loop to limit the number of other modules or detectors that are incapacitated by the short circuit fault and/or grounds. Isolation modules shall be part of the smoke detector base. The isolation modules shall permit the entire system to operate independently of the area disconnected by the isolation module due to wiring faults. Provide isolation modules and wiring configurations (using Class A, or Class A and B, pathways) for fault isolation so that any one fault will not cause any part of the system to go down other than the zone of the fault; provide zoning compliant with prevailing codes, including NFPA 72, with at least one zone per floor (more if areas are subdivided into multiple zones by fire and/or smoke barriers).

Provide monitor modules in quantities as required to interface all "non-intelligent" devices into the system. Application examples include fire alarm system remotes panels, remote power supplies, Sprinkler Flow Switches, Sprinkler Valve Tamper Switches, Sprinkler Valve Tamper Switches at Post Indicator Valves (PIVs), Sprinkler Valve Tamper Switches at meter pits, Fire Suppression/Protection System Pressure Switches, etc. as applicable. Refer to documents of all trades since some such devices may not be specifically shown on electrical drawings. Review fire suppression system submittals and installation drawings to determine exact quantities and locations for devices that require monitor modules, as project drawings may not include all devices that require monitoring; provide monitor modules, wiring, connections, programming, etc. accordingly. Provide indoor monitor modules for applications where outdoor valves are being monitored. Field-verify locations for outdoor valves (meter pits, PIVs, etc.). Provide analog wiring in conduit from outdoor tamper switch to indoor monitor module.

Provide control modules for all auxiliary devices and all supervised control functions such as air handler shutdowns.

Photoelectric Smoke Detectors: Provide photoelectric type smoke detectors. Provide contact bases for all applications where auxiliary contacts are required. Smoke detector locations shall not exceed the rated coverage of the detector and, in general, shall be no more than 15 feet from a wall or 30 feet apart. Placement Restrictions: Locate detectors no closer than 3 feet horizontally from air-supply diffuser or return-air opening; Locate detectors no closer than 12 inches from any part of a lighting fixture; Locate detectors no closer than 3 feet horizontally from the tip of a ceiling fan blade. Locate detectors no closer than 3 feet horizontally from the door or opening of a bathroom that contains a bathtub or shower, unless this would prevent placement of a detector that is required by prevailing codes. Locate detectors no closer than 6 feet horizontally from a permanently installed cooking appliance, unless this would prevent placement of a detector that is required by prevailing codes.

Provide ceiling mounted smoke detector located above each control/power unit (all types, including those for associated systems), and above all remote annunciators.

Provide weatherproof audible alarm notification device on the exterior wall at the location where the fire suppression sprinkler system water service enters the building.

Provide ceiling mounted photoelectric smoke detector located above each Fire Alarm Control Unit (FACU), if not already existing.

Provide all required 120V AC power as required to energize all new fire alarm related components. This requirement applies whether or not such power work is shown on the drawings. Branch circuits serving fire alarm related equipment shall be dedicated to fire alarm related equipment only.

Duct Smoke Detectors:

Provide intelligent duct-mounted photoelectric smoke detectors to match fire alarm system. Install the duct detector in an indoor accessible location, positioned in the duct per NFPA. Provide sampling tube, test station and all other required accessories.

Unless otherwise required by prevailing code(s), provide all duct smoke detectors in the return air duct/plenum of the respective air handling equipment, or in multiple locations of the return duct branches if necessary to meet the minimum straight distances that are required by manufacturer of smoke duct detectors. Refer to HVAC ductwork drawings, and to HVAC installer's coordination drawings, for configurations when determining actual locations and quantities of duct smoke detectors. Where more than one detector is already indicated associated with a particular piece of air handling equipment, there are special reasons for the additional detectors (i.e. split returns, return risers serving multiple floors, etc.); coordinate all locations for same with the HVAC installer.

In cases where multiple HVAC units serve a common space, provide interlocking functionality so that activation of any one duct smoke detector (or spot smoke detector where applicable) provides shutdown functions for all HVAC units that collectively serve the affected space.

Provide all required power and control wiring so that upon detection of smoke, the following sequence of operations occurs: Report as alarm or supervisory signal to the fire alarm system and monitoring central station based on prevailing codes and direction from AHJ – verify in field with AHJ); The respective HVAC unit shuts down (including applicable dampers); Associated smoke dampers close, if present (wired and configured to automatically re-open on duct detector reset).

Provide keyed test/monitor station (with status/alarm/trouble indicating LED's) on the ceiling or wall (flush in finished areas) beneath the duct detector at discreet but readily visible location as determined in field unless specific location is shown on drawings. Provide engraved (or approved equivalent method) plate at each remote station to read: "#### Duct Smoke Detector", where #### is the equipment identification used on drawings. Connect to fire alarm system.

If required by authority having jurisdiction, provide identified key-operated air handler reset station on the ceiling or wall (flush in finished areas) beneath the air handler at discreet but readily visible location as determined in field unless specific location is shown on drawings. Provide engraved (or approved equivalent method) plate at each reset station to read: "#### Reset Switch to reset #### after a duct smoke detection event has been cleared and the fire alarm system has been reset.", where #### is the equipment identification used on drawings. Coordinate with authority having jurisdiction for verification of, or required modification to, the language to be engraved. Connect to fire alarm system.

Smoke Dampers and Fire/Smoke Dampers:

Provide all related power and control wiring. Provide control module(s) (and relay(s) if necessary) to provide wired/programmed control of the damper(s). Furnish and wire all smoke detectors associated with dampers. Detectors in ductwork shall be installed by Division 23 contractor. All others shall be installed by Division 28 contractor. Where a damper is installed within a duct, provide duct smoke detector within five feet of the damper with no air outlets or inlets between the detector and the damper. In cases where a duct smoke detector is not practical due to position or post-construction access, a smoke detector may be provided inside the duct instead of a duct detector, with no air outlets or inlets between the detector and the damper. In cases where ductwork is open to a plenum or similar application, smoke detectors may be provided instead of a duct detector if a duct smoke detector is not practical due to position or post-construction access. Install within 12 inches of the opening and provide in quantities and spacing as required to comply with Part A.17.7.5.4.2.2 of NFPA 72 (one detector centered in opening for up to 36-inch wide duct, 2 detectors at one-quarter points of the opening for ducts between 36 and 72 inches wide, and one additional detector for each full 24 inches of opening beyond 72 inches wide). Quantities and types of detectors that may be indicated on drawings are for functional representation only. Provide types and quantities as needed to comply with device specifications, means and methods, and with prevailing codes and ordinances. Provide detectors that are listed for the respective air velocities, temperatures and humidity anticipated at the point where it is installed. Install smoke detection in strict compliance with all prevailing codes and regulations, including Parts 17.7.5.4 and 17.7.5.5 of NFPA 72. Where a damper is installed above smoke barrier doors in a smoke barrier, provide one ceiling smoke detector (listed for releasing service) on each side of the respective smoke barrier door opening. Where a damper is installed within an unducted opening in a wall, provide one ceiling smoke detector (listed for releasing service) on each side of the respective damper, within five feet horizontally of the damper. Provide all required power/control modules, wiring and programming so that, upon detection of smoke by any of the smoke detectors related to the respective damper, the following sequence of operations occurs as applicable: Damper automatically closes; Related HVAC unit shuts down; Alarm signal is sent to the fire alarm control unit and to the monitoring central station. (Where duct smoke detectors are used, program to report as an alarm signal or as a supervisory signal, based on prevailing codes and direction from AHJ – verify with AHJ in field); Damper automatically resets (opens) upon successful reset of the fire alarm system after the initiating condition has been cleared.

KLH ENGINEERS
KOHRS LONNEMANN HEIL ENGINEERS, INC.
MECHANICAL/ELECTRICAL ENGINEERS
WWW.KLHENGRS.COM
1538 ALEXANDRIA PIKE, SUITE 11
FT. THOMAS, KENTUCKY 41075
800-354-9783
859-442-8050
859-442-8058 FAX
LEXINGTON, KENTUCKY
LOUISVILLE, KENTUCKY
COLUMBUS, OHIO
KLH JOB #: 27478

RGLA
rgla solutions, inc.
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

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robert g. lyon + associates, inc.
retail architecture
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

KOHRS LONNEMANN HEIL ENGINEERS, INC. #F-3634
STATE OF TEXAS
JAMES S. TAVERNELLI
102735
LICENSED PROFESSIONAL ENGINEER
5/29/2025
SEAL:

carhartt
ALAMO QUARRY MARKET
7322 JONES MALTSBERGER RD #112,
SAN ANTONIO, TX 78209

ELECTRICAL SPECIFICATIONS

DRAWN BY
TMG
CHECKED BY
MR
JOB NUMBER
25341
SHEET NAME
E-501

KLH ENGINEERS
KOHRS LONNEMANN HEIL ENGINEERS, INC.
MECHANICAL/ELECTRICAL ENGINEERS
WWW.KLHENGRS.COM

1538 ALEXANDRIA PIKE, SUITE 11
FT. THOMAS, KENTUCKY 41075
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STANDARD HVAC ABBREVIATIONS

AAV	AUTOMATIC AIR VENT
ACCESS	ACCESSORIES
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AMP	AMPERE
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
ARI	AIR CONDITIONING AND REFRIGERATION INSTITUTE
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
BAS	BUILDING AUTOMATION SYSTEM
BD	BACKDRAFT DAMPER
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
CD	CEILING DIFFUSER
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CI	CAST IRON
CLG	COOLING
CO	CARBON MONOXIDE
CO2	CARBON DIOXODE
COP	COEFFICIENT OF PERFORMANCE
CV	CONSTANT VOLUME
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
DB	DECIBELS
DB	DRY-BULB TEMPERATURE
DC	DISCONNECT
DDC	DIRECT DIGITAL CONTROLS
DEG	DEGREE DELTA(CHANGE IN TEMPERATURE)
DIA	DIAMETER
DIW	DEIONIZED WATER
DP	DEW POINT TEMPERATURE
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EG	EXHAUST GRILLE
EMERG	EMERGENCY POWER
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
EX.	EXISTING
F	FAHRENHEIT
F&T	FLOAT AND THERMOSTATIC
FA	FREE AREA
FD	FIRE DAMPER
FLA	FULL LOAD AMPERES
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FEET
FURN	FURNISHED
GA	GAUGE
GAL	GALLONS
GPM	GALLONS PER MINUTE
HD	HEAD
HOA	HAND/OFF/AUTOMATIC
HP	HORSEPOWER
HPR	HIGH PRESSURE RETURN (STEAM CONDENSATE)
HSTAT	HUMIDISTAT
HTG	HEATING
HWR	HEATING HOT WATER RETURN
HWS	HEATING HOT WATER SUPPLY
HZ	HERTZ
I/O	INPUT/OUTPUT
IAQ	INDOOR AIR QUALITY
IN HG	INCHES OF MERCURY
IN WC	INCH WATER COLUMN
IN WG	INCH WATER GAUGE
IPLV	INTERGRATED PART LOAD VALUE
INST	INSTALLED
KW	KILOWATT
KWH	KILOWATT HOUR
LAT	LEAVING AIR TEMPERATURE
LBS/HR	POUNDS PER HOUR
LF	LINEAR FOOT (FEET)
LPR	LOW PRESSURE RETURN (STEAM CONDENSATE)
LPS	LOW PRESSURE STEAM
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	1000 BTUH
MCA	MINIMUM BRANCH CIRCUIT AMPACITY
MERV	MINIMUM EFFICIENCY REPORTING VALUE
MIN	MINIMUM
MOD	MOTOR OPERATED DAMPER
MPR	MEDIUM PRESSURE RETURN (STEAM CONDENSATE)
MPS	MEDIUM PRESSURE STEAM
MRI	MAGNETIC RESONANCE IMAGING
MVD	MANUAL VOLUME DAMPER
NA	NOT APPLICABLE
NC	NOISE CRITERIA
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OCP	OVER CURRENT PROTECTION
PD	PRESSURE DROP
PPM	PARTS PER MILLION
PRS	PRESSURE REGULATING (VALVE) STATION
PRV	PRESSURE REGULATING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH – ABSOLUTE
PSIG	POUNDS PER SQUARE INCH – GAGE
RA	RETURN AIR
RAT	RETURN AIR TEMPERATURE
RH	RELATIVE HUMIDITY
RL	REFRIGERANT LIQUID LINE
RLA	RUN LOAD AMPERE
RO	REVERSE OSMOSIS
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
SA	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SC	SHADING COEFFICIENT
SCD	SMOKE CONTROL DAMPER
SD	SMOKE DETECTOR
SENS	SENSIBLE HEAT
SP	STATIC PRESSURE
TAB	TESTING, ADJUSTING, BALANCE
TDH	TOTAL DYNAMIC HEAD
TDS	TOTAL DISSOLVED SOLIDS
TSP	TOTAL STATIC PRESSURE
TSTAT	THERMOSTAT
UL	UNDERWRITERS LABORATORY
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE
WB	WET-BULB (TEMPERATURE)
WG	WATER GAGE
WPD	WATER SIDE PRESSURE DROP
WIRE	WIRED

MECHANICAL LEGEND

SYMBOL	DESCRIPTION
MECHANICAL AIR DEVICES	
SR	SUPPLY REGISTER
RR	RETURN REGISTER
SG	SUPPLY GRILLE
RG	RETURN GRILLE
CD	CEILING DIFFUSER
MECHANICAL DUCTWORK	
UP	SUPPLY DUCT WITH ELBOW TURNED UP
DN	SUPPLY DUCT WITH ELBOW TURNED DOWN
UP	RETURN DUCT WITH ELBOW TURNED UP
DN	RETURN DUCT WITH ELBOW TURNED DOWN
UP	EXHAUST DUCT WITH ELBOW TURNED UP
DN	EXHAUST DUCT WITH ELBOW TURNED DOWN
24X12 SA	SUPPLY DUCT
24X12 RA	RETURN DUCT
24X12 EA	EXHAUST DUCT
	1" LINED DUCTWORK
	DUCT FLEX CONNECTOR
	BRANCH TAKEOFF
	REDUCER, CONCENTRIC
	REDUCER, NONCONCENTRIC
MECHANICAL DUCTWORK ACCESSORIES	
	DUCT WITH MANUAL VOLUME DAMPER
S	DUCT MOUNTED SMOKE DETECTOR (HARD WIRE INTERLOCK TO FAN MOTOR BY E.C.) FURNISHED BY E.C., INSTALLED BY M.C.
MECHANICAL STATS & SENSORS	
TS	TEMPERATURE SENSOR
T	LOW VOLTAGE THERMOSTAT
MECHANICAL MISCELLANOUS	
	CONNECT TO EXISTING (FIELD VERIFY EXISTING UTILITY SERVICE TYPE, PRIOR TO MAKING CONNECTION)

KOHRS LONNEMANN HEIL ENGINEERS, INC. #F-3634

STATE OF TEXAS
MATTHEW C. DEBEVEC
127140
LICENSED PROFESSIONAL ENGINEER
5/29/2025

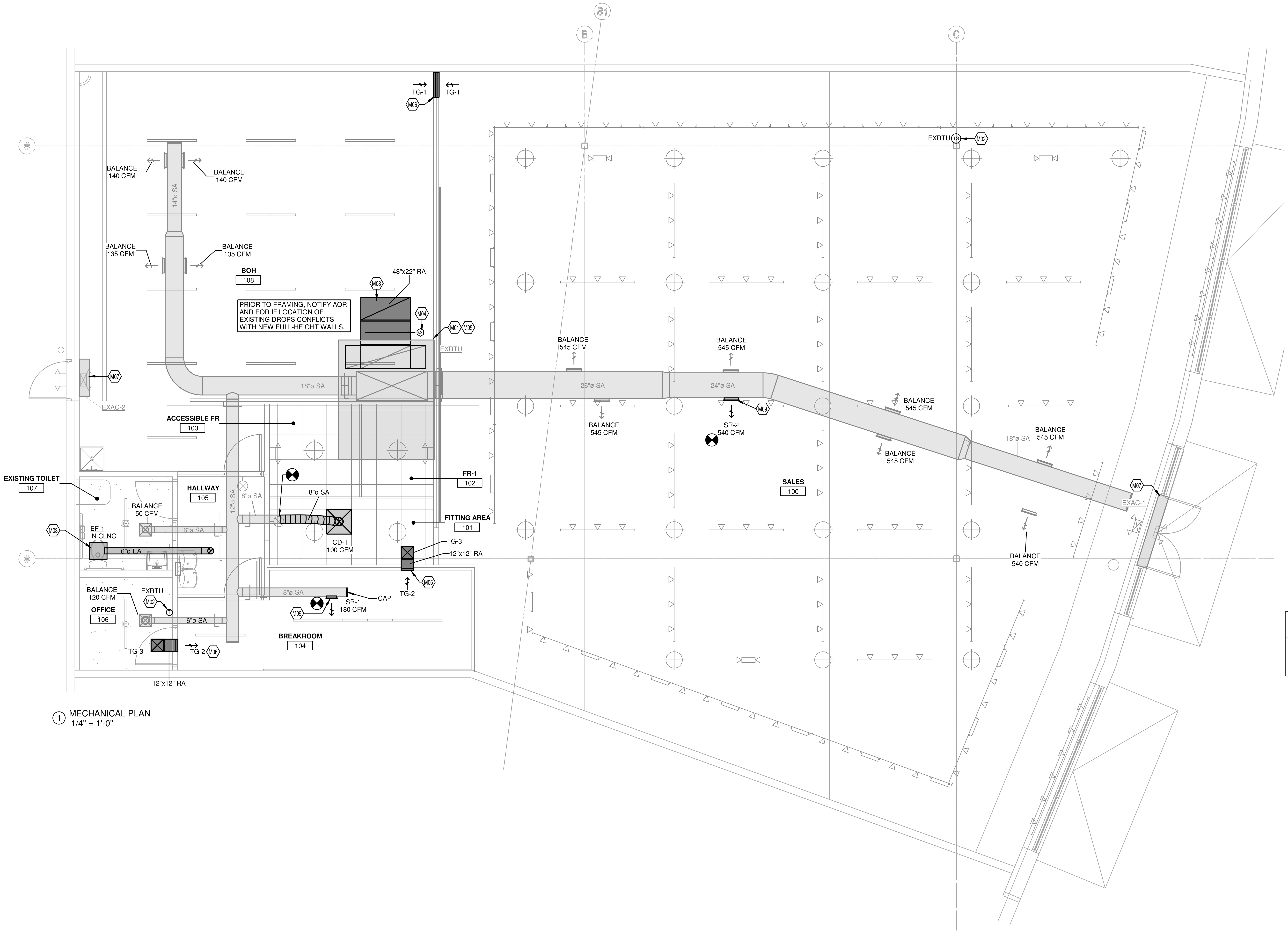
SEAL:

carhartt

ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD #112,
SAN ANTONIO, TX 78209

MECHANICAL COVER SHEET

DRAWN BY	JCH
CHECKED BY	AJK
JOB NUMBER	25341
SHEET NAME	M-001



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

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KOHRS LONNEMANN HEIL ENGINEERS, INC.
MECHANICAL/ELECTRICAL ENGINEERS
WWW.KLHENGRS.COM

1538 ALEXANDRIA PIKE, SUITE 11
FT. THOMAS, KENTUCKY 41075
800-354-9783
859-442-8050
859-442-8058 FAX

LEXINGTON, KENTUCKY
LOUISVILLE, KENTUCKY
COLUMBUS, OHIO
KLH JOB #: 27478

RGLA
rgla solutions, inc.
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

NO.:	REVISIONS:	DATE:
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robert g. lyon + associates, inc.
retail architecture
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

FIELD VERIFY ALL CONDITIONS

DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.

THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.

BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

KEYED NOTES

M01	EXISTING ROOFTOP UNIT TO REMAIN. BALANCE TO THE SCHEDULED AIRFLOW. CLEAN AND VERIFY PROPER OPERATION; CLEAN COOLING, HEATING COILS, RECHARGE REFRIGERANT, REPLACE BELT, DRIVE, AND MOTOR AS REQUIRED, REPLACE FILTERS. CHECK COMPRESSOR AND FANS, REPLACE/REPAIR AS REQUIRED. PROVIDE OWNER WITH RECONDITIONING REPORT PRIOR TO TURNOVER. FIELD VERIFY EXACT LOCATION AND ORIENTATION PRIOR TO BID.
M02	PROVIDE NEW PROGRAMMABLE THERMOSTATS IN BACK OFFICE AREA WITH EXISTING REMOTE SENSORS RELOCATED TO LOCATIONS INDICATED ON PLANS. COORDINATE EXACT LOCATION WITH ARCHITECT AND SALES RACKS PRIOR TO INSTALLATION. REWIRE TO ROOFTOP UNIT PER MANUFACTURER'S PRINTED INSTRUCTIONS.
M03	PROVIDE NEW CEILING MOUNTED EXHAUST FAN WITH INTEGRAL BACKDRAFT DAMPER AS SCHEDULED. BALANCE TO THE SCHEDULED AIRFLOW. EXTEND EXHAUST DUCTWORK THROUGH ROOF AND TERMINATE WITH VENT CAP. MAINTAIN A MINIMUM OF 10'-0" FROM ANY BUILDING INTAKE. LANDLORD APPROVED ROOFING CONTRACTOR TO PERFORM ALL ROOF WORK AT THE GENERAL CONTRACTOR'S EXPENSE.
M04	VERIFY THAT EXISTING DUCT SMOKE DETECTOR EXISTS IN RETURN DUCTWORK. IF NOT, CONTRACTOR TO INSTALL E.C. FURNISHED 120 VAC ADDRESSABLE SMOKE DETECTOR IN DUCTWORK AND INTERLOCK SMOKE DETECTOR TO SHUTDOWN UNIT UPON ALARM.
M05	EXTEND AND CONNECT NEW COPPER CONDENSATE PIPING TO EXISTING AND ROUTE TO NEW MOP SINK BASIN FOR INDIRECT DISCHARGE. ENSURE CONDENSATE PIPING MAINTAINS A MINIMUM OF 1/8" PER FOOT SLOPE. INSULATE PIPING THROUGHOUT. FIELD VERIFY LOCATION OF EXISTING CONDENSATE PIPING PRIOR TO WORK. NOTIFY EOR IF CONDITIONS IN THE FIELD DO NOT ALIGN.
M06	PROVIDE TRANSFER OPENING HIGH IN WALL. EQUIVALENT SIZE AS NOTED IN SCHEDULES.
M07	EXISTING AIR CURTAIN TO REMAIN. CLEAN AND VERIFY PROPER OPERATION.
M08	COVER OPEN END OF RETURN DUCT WITH 1" MESH HARDWARE CLOTH IN A REMOVABLE METAL FRAME AND ELBOW UP FOR SOUND ATTENUATION.
M09	PROVIDE NEW SUPPLY REGISTER, AS SCHEDULED, AND BALANCE TO THE AIRFLOW SHOWN. PATCH AND SEAL PER SMACNA.

HVAC DEMOLITION SCOPE OF WORK

MECHANICAL CONTRACTOR TO REMOVE EXISTING HVAC EQUIPMENT, DUCTWORK, HANGERS, INSULATION, AIR DEVICES, CONTROLS AND MISCELLANEOUS EQUIPMENT, ETC... NOT INTENDED FOR REUSE.

KOHRS LONNEMANN HEIL ENGINEERS, INC. #F-3634

STATE OF TEXAS
MATTHEW C. DEBEVEC
127140
LICENSED PROFESSIONAL ENGINEER
5/29/2025

SEAL:

carhartt
ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD #112,
SAN ANTONIO, TX 78209

MECHANICAL DUCTWORK PLAN

DRAWN BY
JCH
CHECKED BY
AJK
JOB NUMBER
25341
SHEET NAME
M-101

COM*check* Software Version COMcheckWeb

Mechanical Compliance Certificate

Project Information

Energy Code: 2021 IECC
Project Title:
Location: San Antonio, Texas
Climate Zone: 2a
Project Type: Alteration

Construction Site: Owner/Agent: Designer/Contractor:

Mechanical Systems List

Quantity System Type & Description

1 Water Heater:
Electric Storage Water Heater, Capacity: 20 gallons w/ Circulation Pump
No minimum efficiency requirement applies

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2021 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title Signature Date

COM*check* Software Version COMcheckWeb

Inspection Checklist

Energy Code: 2021 IECC

Requirements: 100.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plumbing Rough-In Inspection	Complies?	Comments/Assumptions
C404.5, C404.5.1, C404.5.2 [PL6][3]	Heated water supply piping conforms to pipe length and volume requirements. Refer to section details.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C404.6.1, C404.6.2 [PL3][1]	Automatic time switches installed to automatically switch off the recirculating hot-water system or heat trace.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C404.6.3 [PL7][3]	Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating cycle.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C404.6.1, C404.6.1.1 [PL8][3]	Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C402.2.6 [ME41][3]	Thermally ineffective panel surfaces of sensible heating panels have insulation >= R-3.5.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.9 [ME144][2]	Large diameter fans where installed shall be tested and labeled in accordance with AMCA 230.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.7.2 [ME115][3]	Enclosed parking garage ventilation has automatic contaminant detection and capacity to stage or modulate fans to 50% or less of design capacity.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.7.5 [ME116][3]	Kitchen exhaust systems comply with replacement air and conditioned supply air limitations, and satisfy hood rating requirements and maximum exhaust rate criteria.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.4.1.4 [ME63][2]	Heating for vestibules and air curtains with integral heating include automatic controls that shut off the heating system when outdoor air temperatures > 45F. Vestibule heating and cooling systems controlled by a thermostat in the vestibule with heating setpoint <= 60F and cooling setpoint >= 80F.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C408.2.2.1 [ME53][3]	Air outlets and zone terminal devices have means for air balancing.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.11.3, C403.11.3.1, C403.11.3.2 [ME123][3]	Refrigerated display cases, walk-in coolers or walk-in freezers served by remote compressors and remote condensers not located in a condensing unit, have fan-powered condensers that comply with Sections C403.11.3.1 and refrigeration compressor systems that comply with C403.11.3.2..	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.7 [EL26][2]	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.8 [EL27][2]	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.9.1, C405.9.2 [EL28][2]	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.10 [EL29][2]	Total voltage drop across the combination of feeders and branch circuits <= 5%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.1.1 [EL30][2]	At least 90% of dwelling unit permanently installed lighting shall have lamp efficacy >= 65 lm/W or luminaires with efficacy >= 45 lm/W or comply with C405.2.4 or C405.3.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.11, C405.11.1 [EL31][2]	50% of 15/20 amp receptacles installed in enclosed offices, conference rooms, copy rooms, break rooms, classrooms and workstations and > 25% of branch circuit feeders for modular furniture will have automatic receptacle control in accordance with C405.11.1.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C404.3 [FI11][3]	Heat traps installed on supply and discharge piping of non-circulating systems.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C404.4 [FI25][2]	All piping insulated in accordance with section details and Table C403.12.3.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C404.6.1 [FI12][3]	Controls are installed that limit the operation of a recirculation pump installed to maintain temperature of a storage tank. System return pipe is a dedicated return pipe or a cold water supply pipe.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.1.1 [FI57][1]	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

KLH ENGINEERS
KOHRS LONNEMANN HEIL ENGINEERS, INC.
MECHANICAL/ELECTRICAL ENGINEERS
WWW.KLHENGRS.COM
1538 ALEXANDRIA PIKE, SUITE 11
FT. THOMAS, KENTUCKY 41075
800-354-9783
859-442-8050
859-442-8058 FAX
LEXINGTON, KENTUCKY
LOUISVILLE, KENTUCKY
COLUMBUS, OHIO
KLH JOB #: 27478

RGLA
rgla solutions, inc.
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

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robert g. lyon + associates, inc.
retail architecture
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
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STATE OF TEXAS
MATTHEW C. DEBEVEC
127140
LICENSED
PROFESSIONAL ENGINEER
5/29/2025
SEAL:

carhartt
ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD #112,
SAN ANTONIO, TX 78209

ENERGY COMPLIANCE

DRAWN BY
JCH
CHECKED BY
AJK
JOB NUMBER
25341
SHEET NAME
M-401

SECTION 23 05 01.00 – COMMON REQUIREMENTS FOR HVAC

General
General Provisions of the Contract including General and Supplementary Conditions and General Requirements apply to work of this section.
Scope
The base bid includes furnishing all materials, labor, tools, and equipment and the performance of all work required to install a complete heating and air conditioning system as outlined herein.
Guarantee
The contractor shall provide a guarantee in written form stating that all work under this section shall be free of defective work, materials, or parts for a period of one year from the date of owner's final acceptance and shall repair, revise or replace at no cost to the owner any such defects occurring within the guarantee period. Contractor shall also state in written form that any items or occurrences arising during the guarantee period will be attended to in a timely manner and will in no case exceed four (4) working days from date of notification by owner.
Quality Assurance
Provide a complete installation in conformance with the following standards.
ASHRAE: American Society of Heating, Refrigerating and Air Conditioning Engineers
NFPA: National Fire Protection Association
SMACNA: Sheet Metal and Air Conditioning Contractors National Association.
Statewide Building Code
IMC: International Mechanical Code
Permits, Fees, Inspections, Laws and Regulations
Permits and fees of every nature required in connection with this work shall be obtained and paid for by this contractor who shall also pay for all the installation fees and similar charges. Laws and regulations, which bear upon or affect the various branches of this work shall be complied with by this contractor and are hereby made a part of this contract. All work, which such laws require to be inspected, shall be submitted to the proper public official for inspection and a certificate of final approval must be furnished.
Work in Existing Spaces
General: Care shall be taken when working in existing spaces so as not to damage existing walls and ceilings where work is being performed.
Ceilings: Where work is being performed above ceilings, and the architectural drawings do not indicate ceiling modifications by the general contractor, it shall be the responsibility of this contractor to remove and replace existing ceilings where work is being performed. In those instances, all repair and installation of new grid, ceiling panels, etc shall be the responsibility of this contractor. Match existing finishes.
Walls & Floors: It shall be the responsibility of this contractor to patch existing walls and floors and match existing finishes where work is being removed or installed and patching is being performed, unless noted otherwise on the architectural drawings.
Demolition
Any Equipment to be demolished shall also include the demolition of any and all ductwork, piping etc serving or served by the equipment, all accessories, air devices, wiring, gas piping, controls, control wiring and power wiring associated with the equipment.
Demolition shall be coordinated with all trades. All materials shall be turned over to the owner or disposed at the owner's direction.
Contractor is responsible for reclaiming any refrigerant in association with the demolition in accordance with all local, state and federal regulations.
Any roof or wall penetration shall be patched watertight to the satisfaction of the architect.
Tests and Adjustments
No ducts, piping, fixtures or equipment shall be concealed or covered until they have been inspected and approved by the Architect and the inspector who shall be notified by the contractor when the work is ready for inspection.
Work shall be completely installed, tested and leak tight before inspection is required. All tests shall be repeated to the satisfaction of those making the inspection.
Architectural cutting and patching
Cutting and Patching: Cut and drill all openings in walls and floors required for the installation. Secure approval of Engineer before cutting and drilling. Neatly patch all openings cut.
Fire Caulking: Patching through fire rated walls and enclosures shall not diminish the rating of that wall or enclosure. Patch shall be equal to rockwool, firestop, caulk or approved "rated" patch.
Access Panels and Pathways: Furnish all access panels required for proper servicing of equipment. Provide access panels for all concealed valves, vents, controls, cleanout doors, and sprinkler devices required by NFPA. Provide access panels for all fire and/or fire & smoke dampers. Provide frame as required for finish. Furnish panels to General Contractor. Exact locations to be approved by the Architect. Minimum size to be 12" x 12", units to be 16 gauge steel, locking device shall be screwdriver cam locks.
project conditions
Where new HVAC systems are required to be connected to existing HVAC systems, it is the contractor's responsibility to verify the location, size, pressure, condition, and they shall verify that the existing HVAC system is indeed the correct and appropriate HVAC system before any work is done. Provide all necessary camera scoping and dye testing as necessary. If there is any need for concern, if it is determined that the existing HVAC system is not a correct or appropriate HVAC system or not connected to a correct or appropriate HVAC system, if the condition of the existing HVAC system is not viable for re-use, or any other condition that would not allow the proper functioning of the new HVAC system, the contractor shall notify the engineer in writing immediately via RFI and wait for direction before proceeding.
Interruption of Existing HVAC Services: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:
Notify, Architect, Construction Manager, and Owner no fewer than seven days in advance of proposed interruption of service.
Do not proceed with interruption of service without Architect's written permission.
DELEGATED DESIGN
For equipment supports, this contractor shall retain a qualified professional engineer to provide support calculations of static and dynamic loading due to operating equipment weight. The signed and sealed calculations and details shall be submitted by the retained professional engineer.

MECHANICAL EQUIPMENT COMMON REQUIREMENTS
INSPECTION
Examine areas and conditions under which mechanical equipment is to be installed. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer.
Uncrate equipment and inspect for damage. Verify that nameplate data corresponds with unit designation.
INSTALLATION
General: Install mechanical equipment as indicated, and in accordance with manufacturer's installation instructions.
Location: Install each unit level/plum and accurately in position indicated in relation to other work; and maintain sufficient clearance for normal service and maintenance, but in no case less than that recommended by manufacturer.
Coordinate with other trades to assure correct recess size for recessed units.
Protect interior mechanical equipment with protective covers during balance of construction.
For ducted equipment, connect ductwork to units with flexible duct connections. Provide transitions to exactly match unit duct connection size. Provide 1" acoustic duct lining on return air side a minimum of 10' from fan.
Provide trap at drain piping connection to unit sized per manufacturer's recommendations.
Access: Provide access space around and over mechanical equipment for service as indicated, but in no case less than that recommended by manufacturer or required by code in effect.
Access Panels: Furnish all access panels required for proper servicing of equipment. Provide access panels for all concealed valves, vents, controls and cleanout doors, and sprinkler devices required by NFPA. Provide frame as required for finish. Furnish panels to General Contractor. Exact locations to be approved by the Architect. Minimum size to be 12" x 12", units to be 16 gauge steel, locking device shall be screwdriver cam locks.
ELECTRICAL COORDINATION ITEMS
Electrical Wiring: Install electrical devices furnished by manufacturer but not specified to be factory-mounted. Furnish copy of manufacturer's wiring diagram submittal to Electrical Installer.
Verify that electrical wiring installation is in accordance with manufacturer's submittal and installation requirements of Division 26 sections. Do not proceed with equipment start-up until wiring installation is acceptable to equipment installer.
Install electric heating terminal units including components in accordance with equipment manufacturer's written instructions, and with recognized industry practices; complying with applicable installation requirements of NEC and NECA's "Standard of Installation".
Tighten connectors and terminals, including screws and bolts, in accordance with equipment manufacturer's published torque tightening values for equipment connectors. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL Std 486A.
Grounding: Provide equipment grounding connections for electric heating terminals as indicated. Tighten connections to comply with tightening torque values specified in UL Std 486A to assure permanent and effective grounding.
FIELD QUALITY CONTROL
Testing: After installation has been completed, test to demonstrate proper operation of mechanical equipment at performance requirements specified. When possible, field correct malfunctioning units, then retest to demonstrate compliance. Replace units, which cannot be satisfactorily corrected. Test controls and demonstrate compliance with requirements.
Cleaning: After construction is completed, including painting, clean unit exposed surfaces, vacuum clean coils and inside of cabinets. Clean factory-finished surfaces. Repair any marred or scratched surfaces with manufacturer's touch-up paint.
START-UP
Provide the services of a factory-authorized service representative to start-up rooftop units, in accordance with manufacturer's written start-up instructions. Test controls and demonstrate compliance with requirements. Replace damaged or malfunctioning controls and equipment.
TRAINING OF OWNER'S PERSONNEL
Provide services of manufacturer's technical representative for 1-half day to instruct Owner's personnel in operation and maintenance of units. Schedule training with Owner, provide at least 7-day notice to Contractor and Engineer of training date.

SECTION 23 05 03.00 – SUBMITTALS FOR HVAC

General
Where submittals are required by the Contract Documents, they shall be prepared and supplied in accordance with the Contract Documents. In addition to Division 01, the Contractor is advised to review and comply with the requirements articulated within each Division and within each section of that Division.
Some Divisions may include a division-specific "Submittal Requirements for …." section. Where this section exists, it articulates additional requirements for submittals that apply to the work of that Division.
The following requirements help to identify, track and keep the project organized for all parties involved. They are necessary to ensure a timely turnaround and an appropriate technical review. Submittals that do not conform to the administrative requirements are rejected and returned, without technical review.
Requirements
Supply submittals for each section: Submittals shall be supplied on a section-by-section and type-by-type basis. For example, independent product data submittals shall be furnished for each section that requires product data submittals. Independent shop drawing submittals shall be furnished for each section that requires shop drawings.
Refer to the specifications for identification of which submittals are required for the project. Separate PDF file packages shall be supplied for each section, for each submittal type, where electronic submittals are required. Each PDF shall represent a single standalone submittal. Separately bound and identified submittals shall be provided where hardcopies are required.
Include a transmittal: Transmittals shall enumerate each submittal for each section of each type and iteration.
Include cover sheet / title page: The cover sheet shall include the information identified in the contract documents. It shall be included as the first page of each electronic and/or hardcopy document-based submittal. An editable and printable PDF form created with editable fields and specification compliant appearance is available from KLH upon request. It is also downloadable from the KLH website at www.klhengrs.com.
Include an index: The index shall enumerate the contents of the submittal.
Include checklists: Where checklists are included with the specifications, complete and include them within the appropriate submittal. Supply complete submittals: Complete submittals of each type are required. Partial submittals will be rejected. Where a section requires a product data submittal, all product data for that section shall be supplied together, at one time, as one complete submittal. Do not send half the product data as one submittal and the other half as a separate one. When a resubmittal is required (e.g. Revise and Resubmit) the revised submittal shall be more complete, more accurate and more contract-compliant than its rejected predecessor. The submittal number (for each section and type) shall increment for each subsequent submittal (00 – Original submission, 01 – First Resubmission, 02 – Second Resubmission, etc…). Resubmittals shall include a copy of the reviewer's comments supplied with the prior submittal rejection and shall be amended with a description of the specific action taken to comply with the reviewer's comments. The absence of this on resubmittal is cause for rejection.
Name electronic files to match the submittal ID and cover sheet: The electronic file name of submittals shall match the submittal ID included on the submittals cover page. For example: The original/first product data submittal for Section 234116 would be labeled as "234116.00-PD-00"; the first resubmittal of same shall be labeled "234116.00-PD-01". The original/first shop drawings submittal file for the same section would be labeled "234116.00-SD-00"; the first resubmittal of same shall be labeled "234116.00-SD-01".
Use of Electronic Drawings from the Owner's Design Team
Plan drawings for the Project were created with AutoCAD and Revit.
If expressly permitted by the Owner and the terms of the Contract, editable electronic versions of standard-scale, AutoCAD-based plan drawings may be made available for the creation of shop and as-built drawings.
Upon request when available, electronic versions of standard-scale, Navisworks (.dwf) and (.nwc) or AutoCAD 36 (.dwg) files may be made available for coordination purposes.
Due to the proprietary nature of internal design systems, editable native-software versions of some drawings, including but not limited to system diagrams and details will not be made available in an editable form. In these cases, electronic versions of the drawings may be made available only in PDF, JPG or similar non-editable electronic form, at the sole discretion of the Design Professional.
The Request Drawings form can be accessed, filled out and submitted at the following internet address (scroll down to bottom of home page): http://www.klhengrs.com.

SECTION 23 05 29.00 – HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

Submittal Requirements
Product Data: For each type of product indicated.
Shop Drawings: Fabrication and installation details.

General
Support all piping, ductwork and equipment by hangers or brackets properly from the building structure. Support from decking above is prohibited. Furnish structural steel members where required to support piping and equipment. No portion of piping or valves shall be supported by equipment.
Ductwork - Support by means of hangers as follows:

Duct Width	Hanger Size and Type	Max. Spacing
30 or less	(#16 gage)	8
31 to 61	(#14 gage)	8
61 to 90	3/8" dia. Rod	8

A pair of hangers shall be located at every transverse joint and elsewhere according to the table.

SECTION 23 05 93.00 – TESTING, ADJUSTING AND BALANCING FOR HVAC

Submittal Requirements
Shop Drawings: Certified Reports: Submit testing, adjusting, and balancing reports bearing the seal and signature of the Test and Balance Engineer. The reports shall be certified proof that the systems have been tested, adjusted, and balanced in accordance with the referenced standards; are an accurate representation of how the systems have been installed; are a true representation of how the systems are operating at the completion of the testing, adjusting, and balancing procedures; and are an accurate record of all final quantities measured, to establish normal operating values of the systems. Final Report: Upon verification and approval prepare final reports, type written, and organized and formatted as specified below. Submit 2 complete sets of final report to the landlord.

General
Test, adjust, and balance the following mechanical systems:
Supply air systems, all pressure ranges
Return air systems.
Exhaust air systems.
Verify temperature control system operation.
Test systems for proper sound and vibration levels.
Quality Assurance
Codes and Standards:
AABC: "National Standards for Total System Balance".
ASHRAE: ASHRAE Handbook, 2011 Applications, Chapter 38, Testing, Adjusting, and Balancing.
Qualifications
The contractor shall procure the services of an independent Balance and Testing Agency, approved by the Engineer, and a member of Associated Air Balance Council (AABC) or NEBB, which specializes in the balancing and testing of heating, ventilating and air conditioning systems, to balance, adjust and test all air and water systems and equipment as herein specified. All work by this agency shall be done under direct supervision of a qualified heating and ventilating Engineer employed by this agency. All instruments used by this agency shall be accurately calibrated and maintained in good working order.
Sequencing and Scheduling
Test, adjust, and balance the air systems before hydronic, steam, and refrigerant systems.
Test, adjust and balance air conditioning systems during summer season and heating systems during winter season, including at least a period of operation at outside conditions within 5 deg F wet bulb temperature of maximum summer design condition, and within 10 deg F dry bulb temperature of minimum winter design condition. Take final temperature readings during seasonal operation.
Check all filters for cleanliness, provide new as required. Check dampers (volume and fire) for correct and locked position, and temperature control for completeness of installation before starting fans. Place outlet dampers in full open position. Lubricate all motors and bearings. Check fan belt tension. Check fan rotation.
Air balance and testing shall not begin until the system has been completed and is in full working order. The Contractor shall put all heating, ventilating and air conditioning systems and equipment into full operation and shall continue the operation of same during each working day of testing and balancing. The contractor shall submit within 30 days after receipt of contract, 8 copies of submittal data for the testing and balancing of the air conditioning, heating, and ventilating systems. The Air Balance and Testing Agency shall provide proof of having successfully completed at least five projects of similar size and scope.
The air balancing contractor shall include the additional cost to change every fan factory installed sheave, pulley and/or belt of in order to obtain the design air flows.
Renovations: In areas where existing HVAC equipment is being utilized, balancing contractor shall include the cost to pre-check each equipment air flows, serving the area of work, prior to demolition, and re-check and adjust each air handler after new construction. Air flows of existing air handlers serving existing spaces shall be similar after project is complete.
Performing Testing, Adjusting and Balancing
Perform testing and balancing procedures on each system identified, in accordance with the detailed procedures outlined in the referenced standards.
Cut insulation, ductwork, and piping for installation of test probes to the minimum extent necessary to allow adequate performance of procedures.
Patch insulation, ductwork, and housings, using materials identical to those removed.
Seal ducts and piping, and test for and repair leaks.
Seal insulation to re-establish integrity of the vapor barrier.
Mark equipment settings, including damper control positions; valve indicators, fan speed control levers, and similar controls and devices, to show final settings. Mark with paint or other suitable, permanent identification materials.
Retest, adjust, and balance systems subsequent to significant system modifications, and resubmit test results.

SECTION 23 07 13.00 – DUCT INSULATION

Submittal Requirements
Product Data: For each product indicated.
Shop Drawings: Include plans, elevations, sections, details and attachments to other work.

All liners, insulation and adhesives shall have a flame spread index not more than 25 and a smoke developed index of not more than 50. Insulation shall have a minimum installed thermal resistance value of R6 or code minimum, whichever higher.
Rigid Fiberglass Ductwork Insulation: Glass fibers bonded with a thermosetting resin. Comply with ASTM C 612, Type IB, without facing and with vapor barrier all-service jacket manufactured from kraft paper, reinforcing scrim, aluminum foil, and vinyl film.
Flexible Fiberglass Ductwork Insulation: Glass fibers bonded with a thermosetting resin. Comply with ASTM C 553, Type II, without facing and with vapor barrier all-service jacket manufactured from kraft paper, reinforcing scrim, aluminum foil, and vinyl film.
Vapor Barrier Material for Ductwork: Paper-backed aluminum-foil, except as otherwise indicated; strength and permeability rating equivalent to factory-applied vapor barriers on adjoining ductwork insulation, where available; with following additional construction characteristics:
High Puncture Resistance: Low vapor transmission (for ducts in exposed areas: Mech. Rooms, etc.)
Moderate Puncture Resistance: Medium vapor transmission (for ducts in concealed areas).
All ductwork shall be insulated except:
Double wall ductwork
Fabric ductwork
Metal ducts with duct liner of sufficient thickness to comply with energy code.
Factory insulated flexible ductwork
Factory insulated plenums and casings
Flexible connectors
Vibration control devices
Factory insulated access panels and doors
Supply ductwork exposed in conditioned spaces excluding mechanical rooms, server rooms and electric equipment rooms
Toilet exhaust, general exhaust and return ductwork in an insulated joist or attic space.

SECTION 23 07 19.00 – HVAC PIPING INSULATION

Submittal Requirements
Product Data: For each type of product indicated.

Provide 1" fiberglass insulation on concealed condensate drain piping.
Insulation shall have a minimum thickness as required by Code.
All insulation and adhesives shall have a flame spread index not more than 25 and a smoke developed index of not more than 50.

SECTION 23 09 93.00 – SEQUENCE OF OPERATIONS FOR HVAC CONTROLS

Submittal Requirements
Product Data: Provide written sequences of operation for each controlled system and piece of equipment.

Packaged Rooftop Unit
1. Startup
The unit shall operate on a 7 day/night programmable thermostat.
During startup, the fan shall run with the dampers in the full recirculation position. Provide occupied changeover sequence with optimum start function. When the return air temperature reaches occupied setpoint (adjustable), the minimum outside air damper shall open to the controlled minimum outdoor air position.
2. Supply Fan Control
The supply fan shall be two staged and modulate up and down based on a call for heating or cooling.
3. Space Temperature Control
Provide 7-day programmable thermostat with digital display of space temperature and setpoint (+/- deg. F. adjustable), with override feature and remote space temperature sensor.
4. Minimum Outside Air Control
During occupied mode, the minimum outside air damper shall be open to the scheduled minimum outdoor air flow and modulate proportionally with the supply fan speed to maintain the scheduled minimum outside airflow. When the supply fan speed is set to high, outside air damper shall be partially closed allowing minimum outside air flow as scheduled. As supply fan speed is set to low, damper shall fully open allowing minimum outside air flow as scheduled. Provide motor operated dampers.
5. Economizer Control
Provide dual enthalpy economizer control. Economizer control shall be enabled whenever the outside air enthalpy is lower than the return air enthalpy. Enthalpy shall be calculated from sensors which are tied to the same controller for accuracy. During economizer mode, the outside air damper shall modulate to 100% open. The economizer damper shall modulate open on a call for cooling and modulate closed on a call for heating. The return damper shall modulate inversely with the economizer damper. Economizer shall have powered relief.
6. Cooling Control
Cooling shall be controlled to maintain space temperature setpoint. On a call for cooling, the heating shall be off and supply fan speed shall be low. On a further call for cooling, the economizer shall be enabled. On a further call for cooling, disable the economizer and energize first stage cooling on. On a further call for cooling, the supply fan speed shall be high and energized second stage of cooling.
7. Heating Control
Heating shall be controlled to maintain space temperature setpoint. On a call for heating, the mechanical cooling shall be off. On a further call for heating, the economizer mode shall be disabled. On a further call for heating, the supply fan shall be set to low speed and the gas heating shall be disabled. On a further call for heating, the supply fan shall be set to high speed and the gas heating shall be staged on. On a further call for heating, the supply fan shall be set to high speed.
8. Smoke Detector
When the smoke detector is alarmed, the system shall be alarmed and the air handler shall fail safe with manual reset.
9. Unoccupied Mode
During the unoccupied mode of operation, the RTU shall go into night setback mode.
Night Setback/Shutdown
At night setback/shutdown the RTU shall go to fail safe position. Fail safe position is defined by the following: The supply fan is off, the outdoor air intake damper is closed, the heating is off and the mechanical cooling is off. The supply fan shall cycle in conjunction with either the heating or cooling system to maintain a minimum/maximum space temperature depending on the season.

Exhaust Fans (Manual)
Exhaust fans shall be controlled by local manual switch furnished, installed and wired by electrical contractor. When activated, exhaust fan motor damper shall open and fan shall start.
(Indicated by EC on HECS schedule)

Controls
Electrical contractor will provide power wiring. HVAC contractor shall provide all the low voltage wiring of HVAC units and controls, thermostats and controllers.
Thermostat shall be by the manufacturer of the HVAC unit (heat/cool/auto/off) with night setback. Provide plastic protective cover for all thermostats. Replace controls on existing unit, adjust and calibrate controls.

Low Voltage Thermostats
Low voltage thermostats shall be furnished, installed and wired by the HVAC contractor. The electrical contractor shall provide 4" square x 1- 1/2" deep wall outlet boxes (with single-gang cut-in rings) for all thermostats/sensors. The electrical contractor shall provide one 3/4" empty conduit from each thermostat/sensor location, turned out above accessible ceilings (in joist space or against overhead slab/deck). The HVAC/Temperature Control Contractor shall provide all other necessary conduit, raceway and wiring related work. Conduit shall be identified in ceiling cavity and shall be provided with sweep bends, bushings and dragline.
The HVAC/Temperature Control Contractor shall coordinate with the General Contractor to ensure thermal envelope is maintained at these locations.

General Control Wiring Requirements and Installation Methods
Except where specifically indicated otherwise above, the HVAC/Temperature Control Contractor shall provide all electrical work as required for all temperature control related wiring (i.e. conduit, raceway, outlet boxes, junction boxes, wiring, etc.) in accordance with Electrical Specifications requirements. All conduit shall be 3/4" minimum.
Coordinate all thermostat/sensor locations in field (case by case) with Architect, Owner and Electrical Contractor to ensure that they are placed in locations that will not interfere with furniture, equipment, artwork, wall-hung specialties, room finishes, etc. All thermostat/sensor wall locations indicated on HVAC drawings are schematic only and must be verified case-by-case prior to roughing-in.
All electrical work as described in this specification shall be per the latest edition of the National Electrical Code (NEC) and per applicable state and local codes.
Where "free-air" installation methods (either exposed above the ceilings, in bridle rings or in cable trays) are permitted under Electrical Specifications above ceilings, provide plenum-rated cables wherever plenum ceilings (if any) exist and install as defined under Electrical Specifications. Install low voltage circuits, located in concrete slabs and masonry walls, in inaccessible locations, or exposed in occupied areas, in electrical conduit regardless of what wiring methods are permitted under Electrical Specifications.
Where cable trays or bridle rings are provided by the electrical contractor for low voltage cables, these raceways may be utilized for control wiring by this contractor (provide special color coded jackets, label cable jackets per Electrical Specifications and group control wiring cables together). Provide conduit drops from cable tray/bridle ring paths to wall outlet boxes and equipment unless directed otherwise under Electrical Specifications. Regardless of permitted methods in Electrical Specifications, all cables/wiring installed concealed by gypsum board, masonry or other inaccessible materials in walls or above ceilings shall be installed in conduit, 3/4" minimum.
All conduit, bridle rings, raceway, outlet boxes, etc. necessary for complete operational installation of control wiring shall be provided (furnished and installed) by the temperature control contractor in strict compliance with Electrical Specifications documents. Coordinate all work with all other applicable trades including the electrical contractor.
Provide all required conduit work to and between equipment in a manner compliant with that described above (i.e. between VAV boxes, to boilers, starters, condensing units, etc. as applicable).
Install control wiring without splices between terminal points, color-coded. Install in neat workmanlike manner, securely fastened. Install in accordance with National Electrical Code and per Electrical Specifications.
Install circuits over 25 volt with color-coded No. 12 wire in electrical metallic tubing, per Electrical Specifications.
Install circuits under 25 volt with color-coded No. 18 wire with 0.031" high temperature (105 degs. F) plastic insulation on each conductor and plastic sheath over all.
Install electronic circuits with color-coded No. 22 wire with 0.023" polyethylene insulation on each conductor with plastic-jacketed copper shield over all.

Smoke Detector
All duct smoke detectors will be furnished by electrical contractor, installed by the HVAC contractor, and wired by the electrical contractor per local codes. HVAC contractor will interlock fan with smoke detector.

SECTION 23 31 13.00 – METAL DUCTS

Submittal Requirements
Product Data: For liners, adhesives, sealants and gaskets.
Shop Drawings: Sheet metal thickness, reinforcing details, duct layouts indicating sizes, configuration, liner material, elevation and static pressure class.

Ductwork Materials
Exposed Ductwork Materials: Where ductwork is indicated to be exposed to view in occupied spaces, provide materials which are free from visual imperfections including pitting, seam marks, roller marks, stains and discolorations, and other imperfections, including those which would impair painting. Mechanical contractor shall confirm ductwork paint scope and color with architect.
Exposed ductwork which is to be painted shall have paint grip applied and be oil free.
Sheet Metal: Except as otherwise indicated, fabricate ductwork from galvanized sheet steel, lock forming quality; with G 90 zinc coating and mill phosphatized for exposed locations. Minimum gauge: comply with table 2-4.
Miscellaneous Ductwork Materials
Volume Dampers: Provide volume dampers in all branch ducts or as required for balancing to required air flows.
Fittings: Provide radius type fittings fabricated in multiple sections with maximum 15 deg. change of direction per section. Unless specifically detailed otherwise, use 45 deg. laterals and 45 deg. elbows for branch take-off connections. Where 90 deg. branches are indicated, provide conical type tees.
Duct Sealant: Non-hardening, non-migrating mastic or liquid elastic sealant, type applicable for fabrication/installation detail, as compounded and recommended by manufacturer specifically for sealing joints and seams in ductwork.
Duct Cement: Non-hardening migrating mastic or liquid neoprene based cement, type applicable for fabrication/installation detail, as compounded and recommended by manufacturer specifically for cementing fitting components, or longitudinal seams in ductwork.
Ductwork Support Materials: Except as otherwise indicated, provide hot-dipped galvanized steel fasteners, anchors, rods, straps, trim and angles for support of ductwork.
Flexible Ducts
Either spiral-wound spring steel with flameproof vinyl sheathing, or corrugated aluminum. Unless specifically mentioned, the maximum length of flex duct on the supply equals 5 feet. Flex is not allowed for return, relief or exhaust applications. The flexible ducts indicated for use in the H.V.A.C. system shall conform to the requirements of UL 181 for Class 0 or Class 1 flexible air ducts and shall be so identified.
Where installed in unconditioned spaces other than return air plenums, provide 1" thick 1-1/2 lb. continuous flexible fiberglass sheath with vinyl vapor barrier jacket.
Installation is not permitted above drywall ceilings and inaccessible ceilings.
Fabrication
Shop fabricate ductwork in 4, 8, 10 or 12-ft lengths, unless otherwise indicated or required to complete runs. All ductwork shall be Pittsburgh Construction with a minimum of thickness of 24 gauge. In addition, ductwork used in systems over 3" W.G. shall have cold sealant applied.
Shop fabricate ductwork of gauges and reinforcement complying with SMACNA "HVAC Duct Construction Standards".
Lined Duct
Fabricate ductwork with duct liner in each section of duct where indicated. Laminate liner to internal surfaces of duct in accordance with instructions by manufacturers of lining and adhesive, and fasten with mechanical fasteners. Duct liner to be 3-lb density for acoustic requirements 1" thick or as noted. Size of ductwork shown on the drawings is free net area, outside dimension of ducts will need to be increased if lined duct is used.
Duct Liner: Fibrous glass of thickness indicated. 3-lb density. All liners, insulation and adhesives shall have a flame spread index not more than 25 and a smoke developed index of not more than 50.
Duct Liner Adhesive: As recommended by insulation manufacturer and complying with NFPA 90A or NFPA 90B.
Duct Liner Fasteners: Comply with SMACNA HVAC Duct Construction Standards.
Installation of Metal Ductwork
General: Assemble and install ductwork in accordance with recognized industry practices which will achieve air-tight (5% leakage for systems rated 3" and under; 1% for systems rated over 3") and noiseless (no objectionable noise) systems, capable of performing each indicated service. Install each run with minimum number of joints. Align ductwork accurately at connections, within 1/8" misalignment tolerance and with internal surfaces smooth. Support ducts rigidly with suitable ties, braces, hangers and anchors of type which will hold ducts true-to-shape and to prevent buckling. Support vertical ducts at every floor.
Sealing: Seal all longitudinal seams, S's and drives and all joints with mastic or cement. Install according to SMACNA standards.
Balancing Dampers: The sheet metal contractor shall be fully responsible for installing balancing dampers in the ductwork, (whether shown on the drawing or not) in order to arrive at the intended air flow. The balancing sub-contractor shall provide direction and assistance in determining locations where dampers are required. Additional dampers, if required shall be installed at no additional cost to the owner.
Wall Penetrations: Seal and pack around all ducts and piping sleeves which pass through walls that extend to bottom side of structure and rated walls.
Field Fabrication: Complete fabrication of work at project as necessary to match shop-fabricated work and accommodate installation requirements.
Routing: Locate ductwork runs, except as otherwise indicated, vertically and horizontally and avoid diagonal runs wherever possible. Run ductwork in shortest route which does not obstruct useable space or block access for servicing building and its equipment. Hold ducts close to walls, overhead construction, columns, and other structural and permanent enclosure elements of building. Limit clearance to 1/2" where routing is shown for enclosure or concealment of ducts, but allow for insulation thickness, if any. Where possible, locate insulated ductwork for 1" clearance outside of insulation. Wherever possible in finished and occupied spaces, conceal ductwork from view, by locating in mechanical shafts, hollow wall construction or above suspended ceilings. Do not encase horizontal runs in solid partitions, except as specifically shown.
Coordinate layout with suspended ceiling and lighting layouts and similar finished work.
Electrical Equipment Spaces: Do not route ductwork through transformer vaults and their electrical equipment spaces and enclosures.
Penetrations: Where ducts pass through interior partitions and exterior walls, and are exposed to view, conceal space between construction opening and duct or duct insulation with sheet metal flanges of same gage as duct. Overlap opening on 4 sides by at least 1-1/2". Fasten to duct and substrate.
All dampers shall be low leakage with edge and blade seals. Damper manufacturers are subject to specification compliance. Provide products by one of the following:
Greenheck Fan Corporation
Nailor Industries
Pottorff
Ruskin Company
Young Regulator Company
Coordination: Coordinate duct installations with installation of accessories, dampers, coil frames, equipment, controls and other associated work of ductwork system.
Installation of Duct Liner
General: Install duct liner in accordance with SMACNA HVAC Duct Construction Standards. Size of ductwork shown on the drawings is free net area, outside dimension of ducts will need to be increased if lined duct is used. Store internally lined ductwork up off of the floor. Protect internally lined ductwork from water and dust.
The following ductwork shall be lined in addition to that shown per plans:
Return from open ceiling plenum return to HVAC unit.
Supply and return ductwork 10 feet downstream of HVAC unit.
Transfer air ducts.
Supply air duct 10 feet downstream of VAV box.
Butter the leading edge of all internal duct lining with the manufacturer's recommended adhesive.
Inspect and repair all damaged lining prior to installation of ductwork.
Installation of Flexible Ducts
Maximum Length: For any duct run using flexible ductwork, do not exceed 5' - 0" extended length.
Installation shall have smooth full radius turns down to diffuser.
Installation not permitted above inaccessible ceilings.

23 34 23.00 – HVAC POWER VENTILATORS

Submittal Requirements
Product Data: For each type of product indicated.
Ceiling Ventilators
Centrifugal Ceiling Exhausters: Provide centrifugal ceiling exhausters, designed for ceiling or wall mounting, of type, size and capacity as scheduled.
Provide AMCA Certified Ratings Seal.
Type: Provide galvanized steel housing lined with acoustical insulation, adaptable for ceiling or wall installation. Provide centrifugal fan wheels mounted on motor shaft with fan shrouds, all removable for service.
Provide integral backdraft damper fan discharge.
Grille: Provide steel louvered grille with flange on intake with thumbscrew attachment to fan housing.
Motor: Provide permanent split-capacitor motor, permanently lubricated.
Accessories: Provide manufacturer's standard roof jack, wall cap, and transition fittings as indicated on drawings or schedules.
Duct Lining: Provide 1" thick, 3-lb density duct liner a minimum of 5' (five feet) up and down stream of fan.
Manufacturer: Subject to compliance with requirements, provide centrifugal ceiling exhausters of one of the following:
Acme
Cook (Loren) Co.
Greenheck.
Twin City Fan & Blower
INSTALLATION
Coordinate ventilator work with work of roofing, walls, and ceilings, as necessary for proper interfacing.
Provide access door in duct below ventilator to service damper.
Solder bottom joints and up 2" of side joints of duct under roof ventilator to retain any moisture entering ventilator.

23 37 13.00 – DIFFUSERS, REGISTERS AND LOUVERS

Submittal Requirements
Product Data: For each type of product indicated.

DIFFUSERS, GRILLES AND REGISTERS
Manufacturer: Subject to compliance with requirements, provide diffusers of one of the following:
Anemostat Products Div., Dynamics Corp. of America.
Metal-Aire
Titus Products Div., Philips Industries, Inc.
Tuttle and Bailey.
Price

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f: 847.671.4200
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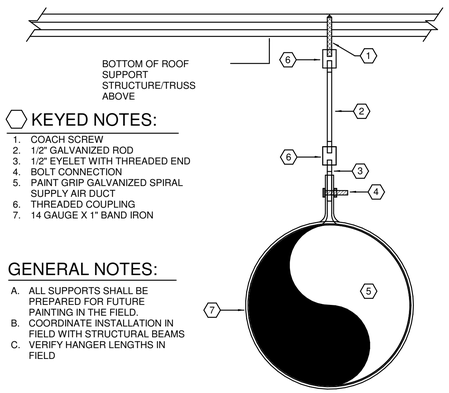
MECHANICAL SPECIFICATIONS

DRAWN BY
JCH
CHECKED BY
AJK
JOB NUMBER
25341
SHEET NAME
M-501



KEYED NOTES:

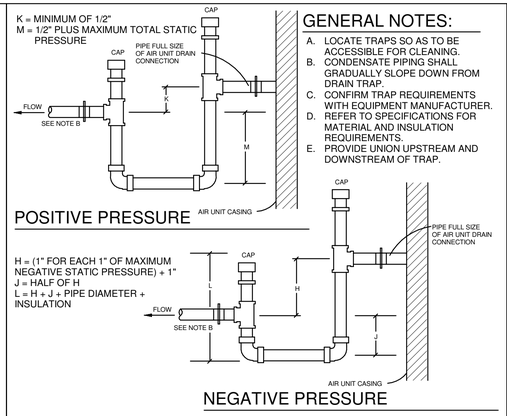
1. COACH SCREW
2. 1/2" GALVANIZED ROD
3. 1/2" EYELET WITH THREADED END
4. BOLT CONNECTION
5. PAINT GRIP GALVANIZED SPIRAL SUPPLY AIR DUCT
6. THREADED COUPLING
7. 14 GAUGE X 1" BAND IRON

GENERAL NOTES:

A. ALL SUPPORTS SHALL BE PREPARED FOR FUTURE PAINTING IN THE FIELD.
B. COORDINATE INSTALLATION IN FIELD WITH STRUCTURAL BEAMS
C. VERIFY HANGER LENGTHS IN FIELD

233113.00-03 - DUCT SUPPORT DETAIL B

SCALE: NONE



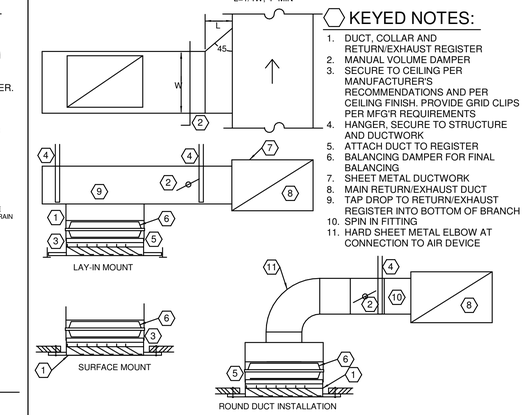
GENERAL NOTES:

A. LOCATE TRAPS SO AS TO BE ACCESSIBLE FOR CLEANING.
B. CONDENSATE PIPING SHALL GRADUALLY SLOPE DOWN FROM DRAIN TRAP.
C. CONFIRM TRAP REQUIREMENTS WITH EQUIPMENT MANUFACTURER.
D. REFER TO SPECIFICATIONS FOR MATERIAL AND INSULATION REQUIREMENTS.
E. PROVIDE UNION UPSTREAM AND DOWNSTREAM OF TRAP.

NOTE: OUTDOOR UNITS AND UNITS LOCATED IN UNCONDITIONED SPACES WHICH PROVIDE COOLING IN THE WINTER MUST HAVE HEAT TRACE ON THE CONDENSATE PIPING.

232113.23-05 - CONDENSATE DRAIN TRAP POSITIVE & NEGATIVE

SCALE: NONE

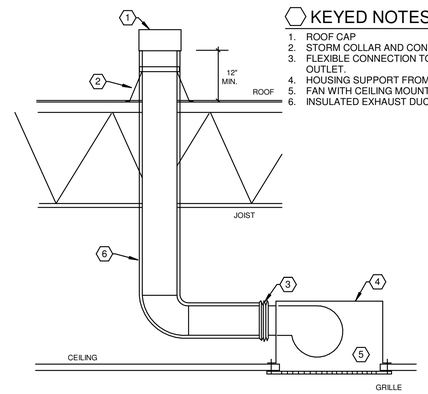


KEYED NOTES:

1. DUCT, COLLAR AND RETURN/EXHAUST REGISTER
2. MANUAL VOLUME DAMPER
3. SECURE TO CEILING PER MANUFACTURER'S REMMENDATIONS AND PER CEILING FINISH. PROVIDE GRID CLIPS PER MFG'R REQUIREMENTS
4. HANGER, SECURE TO STRUCTURE AND DUCTWORK
5. ATTACH DUCT TO REGISTER
6. BALANCING DAMPER FOR FINAL BALANCING
7. SHEET METAL DUCTWORK
8. MAIN RETURN/EXHAUST DUCT
9. TAP DROP TO RETURN/EXHAUST REGISTER INTO BOTTOM OF BRANCH
10. SPIN IN FITTING
11. HARD SHEET METAL ELBOW AT CONNECTION TO AIR DEVICE

233713.00-21 - RETURN/EXHAUST REGISTER INSTALLATION

SCALE: NONE

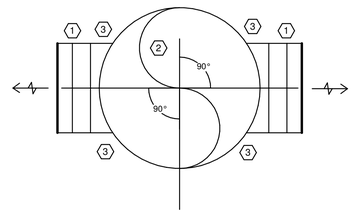


KEYED NOTES:

1. ROOF CAP
2. STORM COLLAR AND CONE FLASHING
3. FLEXIBLE CONNECTION TO FAN OUTLET.
4. HOUSING SUPPORT FROM JOIST.
5. FAN WITH CEILING MOUNTED GRILLE.
6. INSULATED EXHAUST DUCTWORK.

233423.00-15 - CEILING EXHAUST FAN

SCALE: NONE

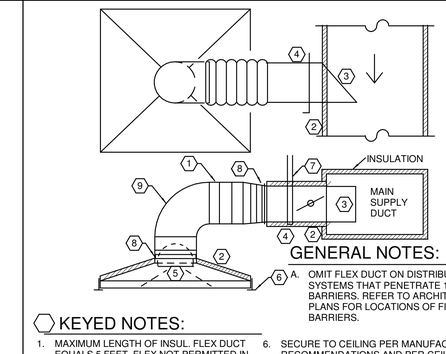


KEYED NOTES:

1. REGISTER WITH 0 DEGREE DEFLECTION BLADE DAMPER (TO BE SIZED AS SCHEDULED)
2. SUPPLY DUCT
3. SEAL JOINTS BETWEEN COLLAR AND MAIN DUCT

233713.00-01 - ANGLED REGISTER INSTALLATION 0 DEGREES

SCALE: NONE



GENERAL NOTES:

A. OMIT FLEX DUCT ON DISTRIBUTION SYSTEMS THAT PENETRATE 1-HR FIRE BARRIERS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE BARRIERS.

KEYED NOTES:

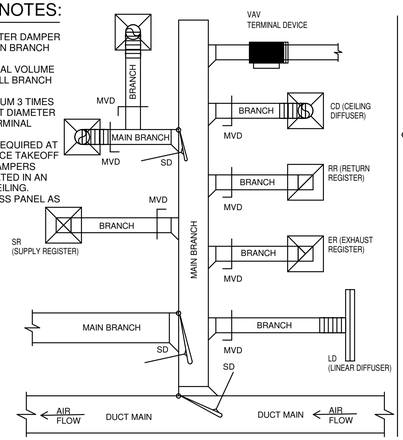
1. MAXIMUM LENGTH OF INSUL. FLEX DUCT EQUALS 5 FEET. FLEX NOT PERMITTED IN INACCESSIBLE CEILINGS
2. INSULATED DUCT, COLLAR AND DIFFUSER BY HVAC CONTRACTOR
3. SCOOP
4. SPIN IN FITTING WITH MANUAL VOLUME DAMPER
5. INTERNAL BUTTERFLY DAMPER FOR DRYWALL APPLICATIONS ONLY. (PROVIDE KEY FOR ADJUSTMENT)
6. SECURE TO CEILING PER MANUFACTURER'S RECOMMENDATIONS AND PER CEILING FINISH. PROVIDE GRID CLIPS PER MFG'R REQUIREMENTS. PROVIDE FRAMING FOR DRYWALL INSTALLATION.
7. HANGER, SECURE TO STRUCTURE AND DUCTWORK
8. PEEL BACK INSULATION AND PROVIDE STRAPPING AND SHEET METAL SCREWS AT FLEX CONNECTION TO DUCT. THEN PROVIDE STRAPPING AROUND INSULATION
9. HARD SHEET METAL ELBOW ON CONNECTION TO DIFFUSER

233713.00-03 - DIFFUSER INSTALLATION SHEET METAL

SCALE: NONE

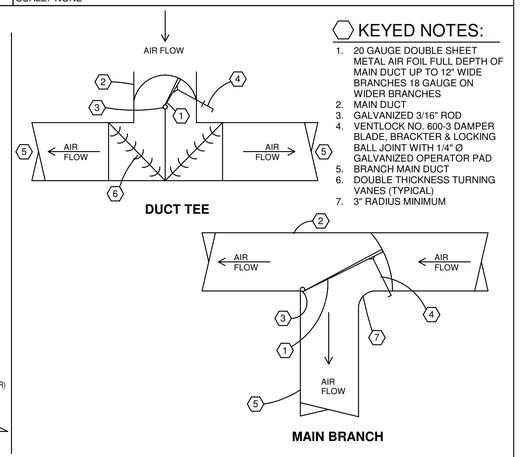
GENERAL NOTES:

1. PROVIDE SPLITTER DAMPER (SD) AT ALL MAIN BRANCH TAKEOFFS
2. PROVIDE MANUAL VOLUME DAMOERS AT ALL BRANCH TAKEOFFS
3. PROVIDE MINIMUM 3 TIMES STRAIGHT INLET DIAMETER TO ALL VAV TERMINAL DEVICES
4. DAMPER NOT REQUIRED AT TERMINAL DEVICE TAKEOFF
5. ALL MANUAL DAMPERS SHALL BE LOCATED IN AN ACCESSIBLE CEILING. PROVIDE ACCESS PANEL AS REQUIRED.



233300.00-01 - MANUAL DAMPER DETAIL

SCALE: NONE



KEYED NOTES:

1. 20 GAUGE DOUBLE SHEET METAL AIR FOIL FULL DEPTH OF MAIN DUCT UP TO 12" WIDE BRANCHES 18 GAUGE ON WIDER BRANCHES
2. MAIN DUCT
3. GALVANIZED 3/16" ROD
4. VENTLOCK NO. 600-3 DAMPER BLADE, BRACKTER & LOCKING BALL JOINT WITH 1/4" Ø GALVANIZED OPERATOR PAD
5. BRANCH MAIN DUCT
6. DOUBLE THICKNESS TURNING VANES (TYPICAL)
7. 3" RADIUS MINIMUM

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KOHRS LONNEMANN HEIL ENGINEERS, INC.
MECHANICAL/ELECTRICAL ENGINEERS
WWW.KLHENGRS.COM
1538 ALEXANDRIA PIKE, SUITE 11
FT. THOMAS, KENTUCKY 41075
800-354-9783
859-442-8050
859-442-8058 FAX
LEXINGTON, KENTUCKY
LOUISVILLE, KENTUCKY
COLUMBUS, OHIO
KLH JOB #: 27478

RGLA
rgla solutions, inc.
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

NO.:	REVISIONS:	DATE:
	ISSUED FOR PERMIT, LANDLORD, PRICING	05/28/25

robert g. lyon + associates, inc.
retail architecture
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

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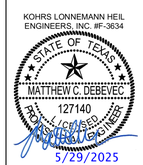

SEAL:

carhartt
ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD #112,
SAN ANTONIO, TX 78209

MECHANICAL - DETAILS

DRAWN BY	JCH
CHECKED BY	AJK
JOB NUMBER	25341
SHEET NAME	M-601

HVAC VENTILATION SCHEDULE

NUMBER	NAME	AREA	PEOPLE	OA PER PERSON	OA PER SQ FT.	REQ SUP	ACT SUP	REQ OA	ACT OA	ACT RET	ACT EXH	CRIT OA	PRESSURE	NATURAL VENTILATION
100	SALES	3285 SF	51	7.5	0.12	3110	4350	927	927	4350	0	22.5	Neutral	False
101	FITTING AREA	71 SF	0	0	0	25	100	21	21	100	20	0	Negative	False
102	FR-1	44 SF	0	0	0	15	0	0	0	0	10	0	Negative	False
103	ACCESSIBLE FR	54 SF	0	0	0	20	0	0	0	0	15	0	Negative	False
104	BREAKROOM	174 SF	1	5	0.06	70	180	38	38	180	0	10.8	Neutral	False
105	HALLWAY	67 SF	0	0	0.06	20	50	11	11	50	0	9.3	Neutral	False
106	OFFICE	56 SF	1	5	0.06	100	120	26	26	120	0	8.7	Neutral	False
107	EXISTING TOILET	57 SF	0	0	0	40	50	11	11	0	80	0	Negative	False
108	BOH	841 SF	0	0	0.12	515	550	117	117	550	0	21.9	Neutral	False
TOTAL		4648 SF												

HVAC ELECTRICAL COORDINATION SCHEDULE

ABBREVIATIONS

DC	LOCAL DISCONNECT
MC	MOTOR CONTROL (POWER)
SD	DUCT SMOKE DETECTOR
CN	CONTROLS
TS	TOGGLE SWITCH
C/B	H.A.C.R. CIRCUIT BREAKER AT SOURCE PANELBOARD
FUSE	FUSE AT LOCAL DISCONNECT (VERIFY FIELD RATING)
FLA	OPERATING FULL LOAD AMPS
MCA	MINIMUM CIRCUIT AMPACITY
CP	CORD AND PLUG CONNECTION
[BLANK]	HARD WIRED (WHEN INDICATED FOR DC TYPE)

CONTRACTOR TYPE

EC	ELECTRICAL CONTRACTOR
EX	EXISTING
FC	FIRE PROTECTION CONTRACTOR
GC	GENERAL CONTRACTOR
HC	HVAC CONTRACTOR
MFR	MANUFACTURER
PC	PLUMBING CONTRACTOR
OR	OWNER OR OTHERS

MOTOR CONTROL TYPE

CS	COMBINATION STARTER
MCC	MOTOR CONTROL STARTER
MG	MAGNETIC STARTER OR CONTACT
MS	MANUAL STARTER
VFD	VARIABLE FREQUENCY DRIVE
MSR	MANUAL STARTER W/ CONTROL RELAY
OV	OVERCURRENT PROTECTION

CONTROL TYPE

TC	TIMECLOCK
CPT	CONTROL POWER TRANSFORMER
BAS	BUILDING AUTOMATION SYSTEM
LOW	LOW VOLTAGE CONTROLS
LINE	LINE VOLTAGE CONTROLS
RLINE	REVERSE ACTING LINE VOLTAGE THERMOSTAT
MAN	MANUAL
FA	FIRE ALARM
CO	CARBON MONOXIDE SENSOR
INT	INTEGRAL TO EQUIPMENT
AREA	AREA SMOKE DETECTOR
DUCT	DUCT SMOKE DETECTOR
ALARM	SHUTDOWN EQUIP ON GENERAL FIRE ALARM
FLOW	SHUTDOWN ON SPRINKLER FLOW
ANSUL	SHUTDOWN ON ANSUL ACTIVATION

SHORT CIRCUIT RATING

WHERE SHORT CIRCUIT RATING CODE REQUIRED VALUE INDICATES "YES" APPLICABLE EQUIPMENT'S SHORT CIRCUIT RATING SHALL EXCEED THE AVAILABLE FAULT CURRENT VALUE INDICATED.

CONNECTION MARK	DESCRIPTION	VOLTAGE	PHASE	EMERGENCY	HP	WATTS	HTG KW	FLA	MCA	OCP	FED FROM	DC TYPE	DC FURN	DC INST	DC WIRE	MC TYPE	MC FURN	MC INST	MC WIRE	CN TYPE	CN FURN	CN INST	CN WIRE	FA SHUTDOWN	SHORT CIRCUIT RATING CODE REQUIRED?	AVAILABLE FAULT CURRENT
EF-1	HVAC EXHAUST FAN	120 V	1	NO				0.29	0.4	15			EC	EC	EC	ECM	MFR	MFR	MFR	MAN	EC	EC	EC	NONE	No	1576

HVAC DIFFUSERS AND REGISTERS SCHEDULE

TAG	MANUFACTURER	MODEL	FACE	MOUNTING	MATERIAL	FINISH	DAMPER TYPE	BORDER STYLE
CD-1	TITUS	OMNI	24"x24"	CEILING	STEEL	STANDARD WHITE	OPPOSED BLADE	SURFACE MOUNT
SR-1	TITUS	272RL	10"x3"	DUCT	STEEL	BLACK FINISH G.C. TO FIELD PAINT TO MATCH CEILING OR WALLS	OPPOSED BLADE	SURFACE MOUNT
SR-2	TITUS	272RL	14"x6"	DUCT	STEEL	BLACK FINISH G.C. TO FIELD PAINT TO MATCH CEILING OR WALLS	OPPOSED BLADE	SURFACE MOUNT
TG-1	TITUS	350RL	24"x14"	SIDEWALL	STEEL	STANDARD WHITE	(none)	SURFACE MOUNT
TG-2	TITUS	350RL	12"x12"	SIDEWALL	STEEL	STANDARD WHITE	(none)	SURFACE MOUNT
TG-3	TITUS	350RL	12"x12"	CEILING	STEEL	STANDARD WHITE	(none)	SURFACE MOUNT

HVAC LOAD SCHEDULE

THE HEATING AND COOLING LOAD CALCULATIONS ARE BASED ON THE CLTD/CLF (COOLING LOAD TEMPERATURE DIFFERENCE/COOLING LOAD FACTOR) METHOD. ASSUMPTIONS AND EXECUTION OF THESE METHODS ARE PER ASHRAE 183-2007 STANDARD FOR PEAK COOLING AND HEATING LOAD CALCULATIONS IN BUILDINGS EXCEPT LOW-RISE RESIDENTAL BUILDINGS.

COOLING LOAD BREAKDOWN

CROOF	SENSIBLE HEAT GAIN FROM ROOF
CWALL	SENSIBLE HEAT GAIN FROM EXTERIOR WALLS
CPART	SENSIBLE HEAT GAIN FROM PARITIONS
CGLASS	SENSIBLE HEAT GAIN FROM GLAZING
CSOLAR	SENSIBLE HEAT GAIN FROM SOLAR GAIN THROGH GLAZING
CLIGHTS	SENSIBLE HEAT GAIN FROM INTERIOR LIGHTING
CEQUIP	SENSIBLE HEAT GAIN FROM PLUG LOADS, COMPUTERS, ETC.
CPSENS	SENSIBLE HEAT GAIN FROM PEOPLE
CSSENS	TOTAL SENSIBLE HEAT GAIN TO SPACE
CFAN	SENSIBLE HEAT GAIN FROM AIR HANDLER FAN
COAS	SENSIBLE HEAT GAIN FROM OUTDOOR VENTILATION AIR
CTSENS	TOTAL SENSIBLE HEAT GAIN
CPLAT	LATENT HEAT GAIN FROM PEOPLE
COAL	LATENT HEAT GAIN FROM OUTDOOR VENTILATION AIR
CTLAT	TOTAL LATENT HEAT GAIN
CTOT	TOTAL HEAT GAIN (SENSIBLE + LATENT)

HEATING LOAD BREAKDOWN

HROOF	HEAT LOSS FROM ROOF
HWALL	HEAT LOSS FROM EXTERIOR WALLS
HPART	HEAT LOSS FROM PARTITIONS
HGLASS	HEAT LOSS FROM GLAZING
HSLAB	HEAT LOSS FROM SLAB
HSPACE	TOTAL HEAT LOSS FROM SPACE
HOA	HEAT LOSS FROM OUTDOOR VENTILATION AIR
HTOT	TOTAL HEAT LOSS

EQUIPMENT MARK	CROOF	CWALL	CPART	CGLASS	CSOLAR	CLIGHTS	CEQUIP	CPSENS	CSSENS	CFAN	COAS	CTSENS	CPLAT	COAL	CTLAT	CTOT	HROOF	HWALL	HPART	HGLASS	HSPACE	HSLAB	HOA	HTOT
EXRTU	9.15	5.72	0	5.62	17.32	33.91	10.96	18.78	110.6	2.7	28.54	141.84	10.6	18.41	29.01	170.85	9.58	9.92	0	13.25	44.96	12.2	50.58	95.54

HVAC EXHAUST FAN SCHEDULE

PRODUCT						GENERAL		AIRFLOW				ELECTRICAL	MISC	ELECTRICAL																PRODUCT
MARK	DESCRIPTION	MANUFACTURER	MODEL	OPERATING WEIGHT (LBS)	SECTION NUMBER	AREA SERVED	STATUS	EA (CFM)	ESP (IN. W.C.)	FAN BHP	FAN MTR SPEED (RPM)	EMERGENCY	ACCESSORIES	CONNECTION MARK	ELECTRIC CONNECTION SUMMARY	CN TYPE	CN FURNISHED BY	CN INSTALLED BY	CN WIRED BY	MC TYPE	MC FURNISHED BY	MC INSTALLED BY	MC WIRED BY	DC TYPE	DC FURNISHED	DC INSTALLED BY	DC WIRED BY	FA SHUTDOWN	FAULT CURRENT	MARK
EF-1	HVAC EXHAUST FAN	GREENHECK	SP-LP0511-1	10	23 34 00.00	--	NEW	75	0.45	--	773	NO	--	EF-1	EF-1 - 120V/1PH, 0.29A FLA, 0.4 MCA, 15A OCP	MAN	EC	EC	EC	ECM	MFR	MFR	MFR	--	EC	EC	EC	NONE	EF-1: 1576	EF-1

AIR CURTAIN W/NO HEAT SCHEDULE

PRODUCT						GENERAL		AIRFLOW					ELECTRICAL	MISC	ELECTRICAL																PRODUCT
MARK	DESCRIPTION	MANUFACTURER	MODEL	OPERATING WEIGHT (LBS)	SECTION NUMBER	AREA SERVED	STATUS	SA (CFM)	FAN BHP	FAN HP	FAN MTR SPEED (RPM)	FAN SPEED (RPM)	EMERGENCY	ACCESSORIES	CONNECTION MARK	ELECTRIC CONNECTION SUMMARY	CN TYPE	CN FURNISHED BY	CN INSTALLED BY	CN WIRED BY	MC TYPE	MC FURNISHED BY	MC INSTALLED BY	MC WIRED BY	DC TYPE	DC FURNISHED	DC INSTALLED BY	DC WIRED BY	FA SHUTDOWN	FAULT CURRENT	MARK
EXAC-1	AIR CURTAIN W/NO HEAT	VEVOR	59"	49	23 34 33.00	FRONT ENTRY	EXISTING	2515	EX	EX	EX	EX	NO	EX	EXAC-1	EXAC-1 - 120V/1PH, 666W	EX	--	--	EX	EX	--	--	--	EX	--	--	--	NONE	EXAC-1: 880	EXAC-1
EXAC-2	AIR CURTAIN W/NO HEAT	VEVOR	56	32	23 34 33.00	FRONT ENTRY	EXISTING	2515	EX	EX	EX	EX	NO	EX	EXAC-2	EXAC-2 - 120V/1PH, 329W	EX	--	--	EX	EX	--	--	--	EX	--	--	--	NONE	EXAC-2: 1233	EXAC-2

PACKAGED ROOFTOP UNIT, GAS HEAT SCHEDULE

PRODUCT						GENERAL		AIRFLOW					COOLING										HEATING									ELECTRICAL	MISC	ELECTRICAL																PRODUCT
MARK	DESCRIPTION	MANUFACTURER	MODEL	OPERATING WEIGHT (LBS)	SECTION NUMBER	AREA SERVED	STATUS	SA (CFM)	OA (CFM)	DCV MIN AIRFLOW (CFM)	ESP (IN. W.C.)	FAN BHP	NOM CLG CAP (TON)	TOTAL CALC CLG MBH	CALC SENS CLG MBH	EAT DB CLG	EAT WB CLG	LAT DB CLG	LAT WB CLG	MIN SEER	MIN EER	CALC HTG MBH	EAT HTG	LAT HTG	FUEL TYPE	GAS INPUT	GAS OUT	MIN GAS PRESS	MAX GAS PRESS	MIN AFUE	EMERGENCY	ACCESSORIES	CONNECTION MARK	ELECTRIC CONNECTION SUMMARY	CN TYPE	CN FURNISHED BY	CN INSTALLED BY	CN WIRED BY	MC TYPE	MC FURNISHED BY	MC INSTALLED BY	MC WIRED BY	DC TYPE	DC FURNISHED	DC INSTALLED BY	DC WIRED BY	FA SHUTDOWN	FAULT CURRENT	MARK
EXRTU	PACKAGED ROOFTOP UNIT, GAS HEAT	TRANE	YHD180F4RLA0300A1A1	EX	23 74 33.00	EX	EXISTING	5400	1151	514.29	1	EX	EX	170.85	141.84	80	66	55	54	EX	EX	95.54	63	90	NATURAL GAS	252	203	2.5	14	80	NO	EX	EXRTU	EXRTU - 480V/3PH, 35 MCA, 45A OCP	LOW	HC	HC	HC	EX	--	--	--	EX	--	--	--	NONE	EXRTU: 8657	EXRTU

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KOHRS LONNEMANN HEIL ENGINEERS, INC.
MECHANICAL/ELECTRICAL ENGINEERS
WWW.KLHENGRS.COM

1538 ALEXANDRIA PIKE, SUITE 11
FT. THOMAS, KENTUCKY 41075
800-354-9783
859-442-8050
859-442-8058 FAX

LEXINGTON, KENTUCKY
LOUISVILLE, KENTUCKY
COLUMBUS, OHIO
KLH JOB #: 27478

RGLA
rgla solutions, inc.
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

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robert g. lyon + associates, inc.
retail architecture
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

KOHRS LONNEMANN HEIL ENGINEERS, INC. #F-3634
MATTHEW C. DEBEVEC
127140
5/29/2025
SEAL:

carhartt
ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD #112,
SAN ANTONIO, TX 78209

MECHANICAL - SCHEDULES

DRAWN BY
JCH
CHECKED BY
AJK
JOB NUMBER
25341
SHEET NAME
M-602

KLH ENGINEERS
KOHRS LONNEMANN HEIL ENGINEERS, INC.
MECHANICAL/ELECTRICAL ENGINEERS
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PLUMBING DEMOLITION NOTE

PLUMBING CONTRACTOR TO REMOVE EXISTING PLUMBING EQUIPMENT, PIPE, HANGERS, INSULATION, CONTROLS AND MISCELLANEOUS EQUIPMENT, ETC... NOT INTENDED FOR REUSE.

FIELD VERIFY ALL CONDITIONS

DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.

THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.

BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

STANDARD PLUMBING ABBREVIATIONS

AAV	AIR ADMITTANCE VALVE
AD	AREA DRAIN
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS
AV	ACID VENT
AW	ACID WASTE
BAS	BUILDING AUTOMATION SYSTEM
BFP	BACKFLOW PREVENTER
BT	BATHTUB
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
BWV	BACK WATER VALVE
CA	COMPRESSED AIR
CB	CATCH BASIN
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CO	CLEAN OUT
CO2	CARBON DIOXIDE
CP	CIRCULATION PUMP
CW	DOMESTIC COLD WATER
DF	DRINKING FOUNTAIN
DI	DEIONIZED WATER
DIA	DIAMETER
DN	DOWN
DS	DOWNSPOUT
DSN	DOWNSPOUT NOZZLE
EC	ELECTRICAL CONTRACTOR
ET	EXPANSION TANK
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EX	EXISTING
F	FAHRENHEIT
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FFE	FINISHED FLOOR ELEVATION
FLA	FULL LOAD AMPERES
FS	FLOOR SINK
FT	FEET
FW	FILTERED WATER
G	GAS
GCO	GRADE CLEAN OUT
GWH	GAS FIRED WATER HEATER
GI	GREASE INTERCEPTOR
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GPR	GAS PRESSURE REGULATOR
GW	GREASE WASTE
H&CW	HOT & COLD WATER
HB	HOSE BIBB
HC	HVAC CONTRACTOR
HD	HUB DRAIN
HP	HORSEPOWER
HW	DOMESTIC HOT WATER
HWR	HOT WATER RETURN
IE	INVERT ELEVATION
IN WC	INCH WATER COLUMN
KW	KILOWATT
KWH	KILOWATT HOUR
LPG	LIQUID PROPANE GAS
LV	LAVATORY
MAU	MAKEUP AIR UNIT
MAX	MAXIMUM
MBH	1000 BTUH
MH	MANHOLE
MIN	MINIMUM
MOCP	MAXIMUM OVERCURRENT PROTECTION
MS	MOP SINK
MV	MIXING VALVE
N	NITROGEN
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NITROUS OXIDE
NOM	NOMINAL
NTS	NOT TO SCALE
O	OXYGEN
OCP	OVER CURRENT PROTECTION
OD	OVERFLOW DRAIN
OI	OIL INTERCEPTOR
PC	PLUMBING CONTRACTOR
PRV	PRESSURE REGULATING VALVE
PSI	POUNDS PER SQUARE INCH
RD	ROOF DRAIN
RH	ROOF HYDRANT
RO	REVERSE OSMOSIS
RPZ	REDUCED PRESSURE ZONE VALVE
RTU	ROOF TOP UNIT
S	SANITARY
SI	SOLIDS INTERCEPTOR
SK	SINK
SOFT	SOFT WATER
SPEC	SPECIFICATION
SQ FT	SQUARE FOOT (FEET)
ST	STORM PIPING
TD	TRENCH DRAIN
TEMP	TEMPERATURE
TMV	THERMOSTATIC MIXING VALVE
TP	TRAP PRIMER
UH	UNIT HEATER
UR	URINAL
VAC	VACUUM
VFD	VARIABLE FREQUENCY DRIVE
VP	VACUUM PUMP
VTR	VENT THRU ROOF
WAGD	WASTE ANESTHESIA GAS
WB	WASHER BOX
WC	WATER CLOSET
WCO	WALL CLEAN OUT
WH	WALL HYDRANT
WF	WATER FILTER
YH	YARD HYDRANT

CODE INFORMATION

PLUMBING CODE	2021 INTERNATIONAL PLUMBING CODE
ENERGY CODE	2021 INTERNATIONAL ENERGY CONSERVATION CODE

PLUMBING LEGEND

SYMBOL	DESCRIPTION
PIPING LINE TYPES	
S	SANITARY WASTE PIPING
V	VENT PIPING
CW	DOMESTIC COLD WATER PIPING
HW	DOMESTIC HOT WATER PIPING (140°F)
HWR	DOMESTIC HOT WATER RETURN PIPING (140°F)
PLUMBING ACCESSORIES	
	UNION
	PIPE CAP
	PRESSURE GAUGE
	THERMOMETER
	EXPANSION TANK
PIPE VALVES	
	SHUT-OFF VALVE
	CHECK VALVE
	BALANCING VALVE
	PRESSURE AND TEMPERATURE RELIEF VALVE
	DOUBLE CHECK VALVE BACKFLOW PREVENTER
PLUMBING SYMBOLS	
	PIPE UP
	PIPE DOWN
	PIPE TEE DOWN
	PIPE TEE UP
1	RISER NUMBER
	CONNECT TO EXISTING (FIELD VERIFY EXISTING UTILITY SERVICE TYPE, PRIOR TO MAKING CONNECTION)
PLUMBING MISCELLANEOUS	
	CIRCULATION PUMP, RETURN PUMP

KOHRS LONNEMANN HEIL ENGINEERS, INC. #F-3634
STATE OF TEXAS
MATTHEW C. DEBEVEC
127140
REGISTERED PROFESSIONAL ENGINEER
5/29/2025
SEAL:

carhartt

ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD #112,
SAN ANTONIO, TX 78209

PLUMBING COVER SHEET

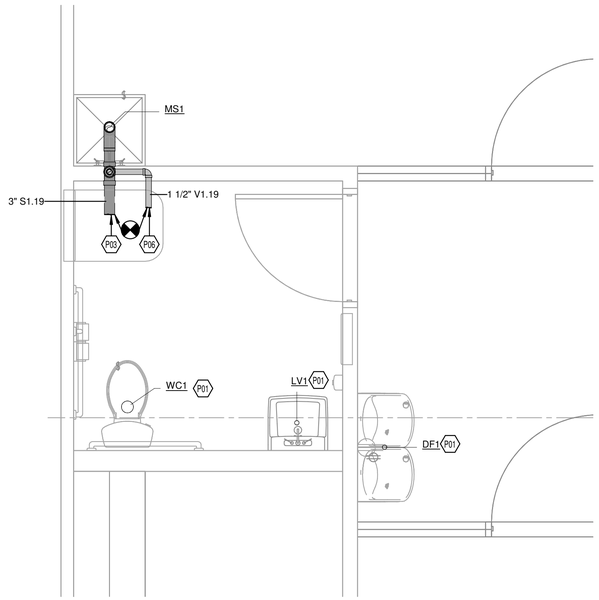
DRAWN BY	JCH
CHECKED BY	AJK
JOB NUMBER	25341
SHEET NAME	P-001

KEYED NOTES

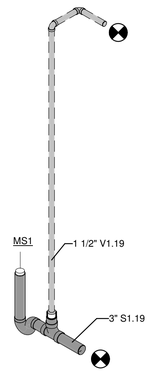
P01	NEW FIXTURE TO REPLACE EXITING FIXTURE IN PLACE. EXTEND AND CONNECT NEW PIPING AS NECESSARY FOR REPLACEMENT. FIELD VERIFY EXISTING PIPE MATERIAL TYPE, SIZE AND LOCATION PRIOR TO MAKING CONNECTION.
P02	EXTEND DOMESTIC WATER TO EXISTING 3/4" MIN. WATER MAIN. PROVIDE SHUT-OFF, BACKFLOW PREVENTER, PRESSURE REGULATING VALVE, METER, AND REMOTE READER IF REQUIRED. INSULATE ENTIRE LINE WITHIN BUILDING. FIELD VERIFY EXACT LOCATION OF EXISTING DOMESTIC WATER PRIOR TO INSTALLING ANY PIPING. REPORT DIFFERENCES TO ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
P03	CONNECT NEW SANITARY PIPING TO NEAREST EXISTING 3" MINIMUM SANITARY MAIN. FIELD VERIFY EXACT LOCATION, INVERT, DIRECTION OF FLOW, AND SYSTEM TYPE PRIOR TO STARTING WORK. CONTACT ENGINEER WITH ANY DIFFERENCES OTHER THAN WHAT IS SHOWN ON PLAN. PROVIDE CAMERA SCOPING TO INSURE PIPING SIZES AND LOCATION.
P04	PROVIDE ELECTRIC HOT WATER HEATER ABOVE MOP SINK WITH 6'8" CLEAR TO BOTTOM OF WATER HEATER SUPPORT PLATFORM.
P05	PROVIDE NEW ASSE 1070 RATED THERMOSTATIC MIXING VALVE.
P06	CONNECT NEW VENT PIPING TO NEAREST EXISTING VENT MAIN. FIELD VERIFY EXACT LOCATION, INVERT, MATERIAL, SIZE AND SYSTEM TYPE PRIOR TO STARTING WORK. CONTACT ENGINEER WITH ANY DIFFERENCES OTHER THAN WHAT IS SHOWN ON PLAN.

Pipe Type Legend

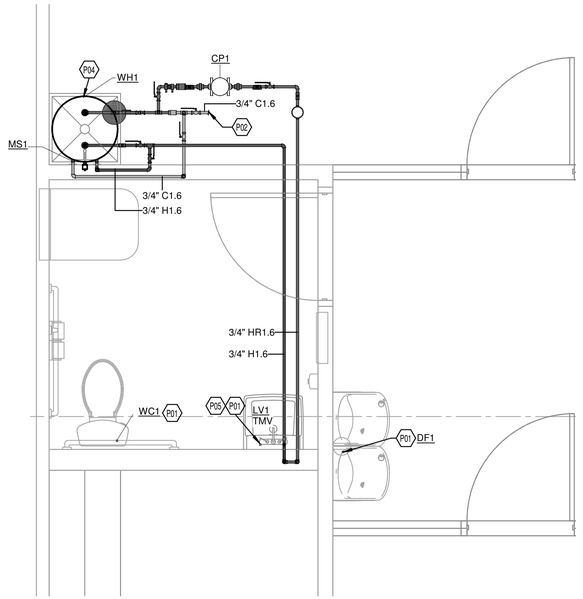
Mark	System Name	Pipe Material
C1.6	C1 - Domestic Cold Water	6 - Copper - Type L - ASTM B88
H1.6	H1 - Domestic Hot Water	6 - Copper - Type L - ASTM B88
HR1.6	HR1 - Hot Water Return	6 - Copper - Type L - ASTM B88
S1.19	S1 - Sanitary	19 - PVC - Schedule 40 - ASTM D1785/D2665
V1.19	V1 - Vent	19 - PVC - Schedule 40 - ASTM D1785/D2665



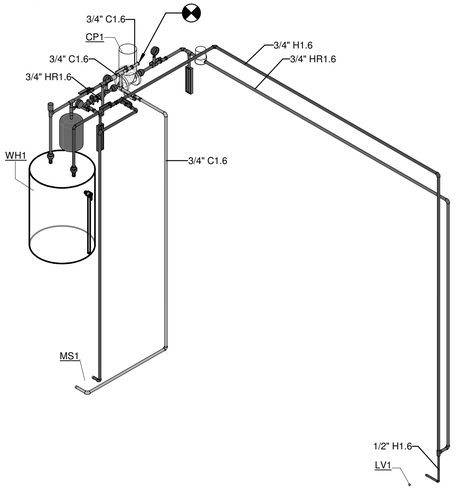
2 ENLARGED SANITARY AND VENT PLAN
1/2" = 1'-0"



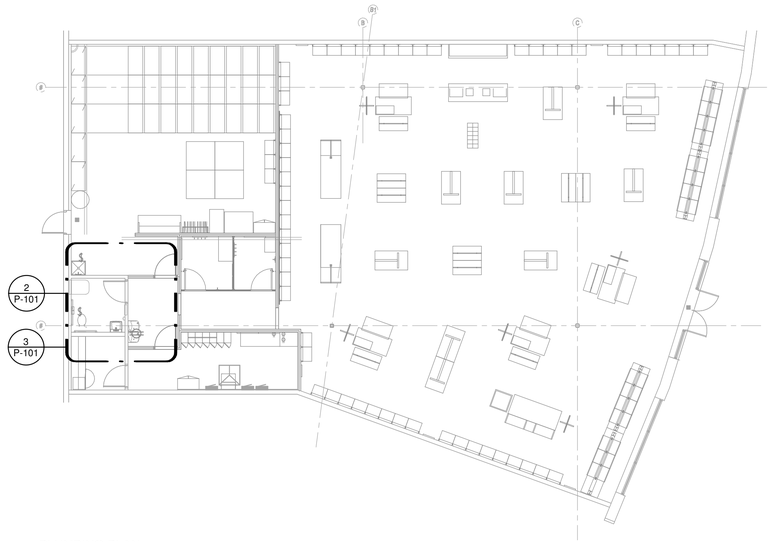
4 MOP SINK ISOMETRIC



3 ENLARGED WATER SUPPLY PLAN
1/2" = 1'-0"



5 WATER SUPPLY ISOMETRIC



1 PLUMBING PLAN
1" = 10'-0"

KLH ENGINEERS
KOHRS LONNEMANN HEIL ENGINEERS, INC.
MECHANICAL/ELECTRICAL ENGINEERS
WWW.KLHENGRS.COM

1538 ALEXANDRIA PIKE, SUITE 11
FT. THOMAS, KENTUCKY 41075
800-354-9783
859-442-8050
859-442-8058 FAX

LEXINGTON, KENTUCKY
LOUISVILLE, KENTUCKY
COLUMBUS, OHIO
KLH JOB #: 27478

RGLA
rgla solutions, inc.
5100 River Road. Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

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robert g. lyon + associates, inc.
retail architecture
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

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7322 JONES
MALTSBERGER RD #112,
SAN ANTONIO, TX 78209

PLUMBING PLAN

DRAWN BY	JCH
CHECKED BY	AJK
JOB NUMBER	25341
SHEET NAME	P-101

SECTION 22 05 00.00 - COMMON WORK RESULTS FOR PLUMBING

GENERAL

The General Provisions of the Contract including the General and Supplemental Conditions and General Requirements apply to the work in this section. Before submitting a bid, examine documents of all other trades, visit the site and get acquainted with all conditions that may in any way affect the execution of this contract.

Contractor shall obtain and pay for all permits, certificates of inspection and approvals required.

Submittal of a bid indicates that the contractor has examined the drawings, specifications, and had an opportunity to visit the site to be able to provide a comprehensive complete bid to include providing all materials, labor, tools, and equipment required to provide complete plumbing systems as outlined in Division-22.

Clearly state all full load amps (FLA), voltages and model numbers on all submittals.

Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories. Provide wiring diagrams: For power, signal, and control wiring.

APPLICABLE STANDARDS

The installation of all plumbing work shall conform to all the following, but not limited, applicable local and municipal utility standards, rules and regulations, plumbing codes and statutes having jurisdiction.

All plumbing fixtures, equipment, accessories, and appurtenances shall be NSF/ANSI 61-372 compliant.

State Building Code;
State Plumbing Code;
American Society for Test Materials (ASTM);
National Sanitation Foundation (NSF);
American Standards Association (ASA);
Underwriters Laboratories (UL);
National Fire Protection Association (NFPA);
National Electric Code (NEC);

PLANS AND SPECIFICATIONS

Obtain the latest owner design and construction standards document(s). Comply with all owner-specific requirements in addition to requirements set forth in these specifications and accompanying drawings. Should there be a conflict, the owner's standards shall take precedence, unless prevailing codes and regulations mandate otherwise.

The drawings that accompany these specifications are diagrammatic. Wherever possible make use of submittal data and verify all dimensions on site. Provide additional fittings as required by site conditions and codes at no additional cost to conform to the structure, avoid obstructions, provide required service clearances and preserve headroom. Do not scale from drawings, all measurements should be taken in the field.

EXISTING CONDITIONS

Where new plumbing systems are required to be connected to existing plumbing systems, provide all camera scoping and dye testing necessary to verify the exact location, size, invert elevation, pressure, pipe integrity, and system type to ensure a proper connection is executed. The contractor shall notify the engineer immediately if it is found a proper connection cannot be executed.

CUTTING, PATCHING AND DEMOLITION

The contractor shall be responsible for damages to the grounds, walks, road, building, piping systems, electrical systems, and their equipment and contents, caused by leaks in the piping systems being installed or having been installed by him. The contractor shall repair at his expense all damaged so caused. All repair work shall be done as directed by and in such manner as satisfactory to the architect.

Owner reserves the right to make emergency repairs as required to keep equipment in operation without voiding the contractor's guarantee bond nor relieving the contractor of his responsibilities during the bonding period.

Cut and drill all openings in roofs, walls, and floors required for the installation. Neatly patch all openings cut.

Hold cutting and patching to a minimum by arranging with other contractors for all sleeves and openings before construction is started. When drilling/cutting concrete slabs, utilize ground penetrating radar (GPR) and/or X-ray scanning equipment to verify the location is free from obstructions, including but not limited to: structural rebar/strands/tendons, electrical conduit/wiring, and/or piping/ductwork.

EXCAVATION AND BACKFILL

Perform all excavation and backfilling required for this work. Contractor shall consult with utility company prior to beginning excavation. At a minimum, all piping shall be laid on a bed of sand, 6" deep, well tamped into place and properly graded to permit the pipe to have an even bearing throughout its entire length. Sand shall be installed around the piping in 6" lifts to a point 6" above the piping.

INTERRUPTION OF EXISTING SERVICES

Interruption of Existing Plumbing Services: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:

Notify, Architect, Construction Manager, and Owner no fewer than seven days in advance of proposed interruption of service.

Do not proceed with interruption of service without Architect's written permission.

DELEGATED DESIGN

For equipment supports, this contractor shall retain a qualified professional engineer to provide support calculations of static and dynamic loading due to operating equipment weight. The signed and sealed calculations and details shall be submitted by the retained professional engineer.

WARRANTY

This contractor shall warrant that all work under this section shall be free of defective work, materials and parts for a period of one year after acceptance of the work and shall repair, revise, and replace, at no cost to the owner, any such defects occurring within the warranty period.

Use of Electronic Drawings from the Owner's Design Team

If expressly permitted by the Owner and the terms of the Contract, editable electronic drawings may be made available for the creation of shop and as-built drawings upon request. Drawings will be made available at the discretion of the Engineer. "Request Drawings" form can be accessed, filled out and submitted at http://www.klhengrs.com (right hand side of page - Contractor Resources). Direct access to this form can be found here: http://files.klhengrs.com/requestdrawings.html

22 05 03.00 - SUBMITTALS FOR PLUMBING

Provide submittals in accordance with the Contract Documents. In addition to Division 01, the Contractor is advised to review and comply with the requirements articulated within each Division and within each section of that Division.

Some Divisions may include a division-specific "Submittal Requirements for …." section. Where this section exists, it articulates additional requirements for submittals that apply to the work of that Division.

The following requirements help to identify, track and keep the project organized for all parties involved. They are necessary to ensure a timely turnaround and an appropriate technical review. Submittals that do not conform to the administrative requirements are rejected and returned, without technical review.

Supply submittals for each section: Submittals shall be supplied on a section-by-section and type-by-type basis. For example, independent product data submittals shall be furnished for each section that requires product data submittals. Independent shop drawing submittals shall be furnished for each section that requires shop drawings. Separate PDF file packages shall be supplied for each section, for each submittal type. Each PDF shall represent a single standalone submittal.

Include a transmittal: Transmittals shall enumerate each submittal for each section of each type and iteration.

Include cover sheet / title page: The cover sheet shall include the information identified in the contract documents. It shall be included as the first page of each electronic and/or hardcopy document-based submittal. An editable and printable PDF form created with editable fields and specification compliant appearance is available from KLH upon request. It is also downloadable from the KLH website at www.klhengrs.com.

Include an index: The index shall enumerate the contents of the submittal.

Include checklists: Where checklists are included with the specifications, complete and include them within the appropriate submittal. Supply complete submittals: Complete submittals of each type are required. Partial submittals will be rejected. Where a section requires a product data submittal, all product data for that section shall be supplied together, at one time, as one complete submittal. When resubmittal is required (e.g. Revise and Resubmit) the revised submittal shall be more complete, more accurate and more contract-compliant than its rejected predecessor. The submittal number (for each section and type) shall increment for each subsequent submittal (00 – Original submission, 01 – First Resubmission, 02 – Second Resubmission, etc…).

Resubmittals shall include a copy of the reviewers comments supplied with the prior submittal rejection and shall be amended with a description of the specific action taken to comply with the reviewer's comments. The absence of this on resubmittal is cause for rejection.

Name electronic files to match the submittal ID and cover sheet: The electronic file name of submittals shall match the submittal ID included on the submittals cover page. For example: The original/first product data submittal for Section 220523 would be labeled as "220523.00-PD-00"; the first resubmittal of same shall be labeled "220523.00-PD-01". The original/first shop drawings submittal file for the same section would be labeled "220523.00-SD-00"; the first resubmittal of same shall be labeled "220523.00-SD-01".

If expressly permitted by the Owner and the terms of the Contract, editable electronic drawings may be made available for the creation of shop and as-built drawings upon request. Drawings will be made available at the discretion of the Engineer.

"Request Drawings" form can be accessed, filled out and submitted at http://www.klhengrs.com (right hand side of page - Contractor Resources). Direct access to this form can be found here:
http://files.klhengrs.com/requestdrawings.html

22 05 17.00 – SLEEVES AND SLEEVE SEALS FOR PLUMBING PIPING

SLEEVES

Steel Pipe: ASTM A 53, Type E, Grade B, Schedule 40, galvanized, plain ends.

EXECUTION

Install steel pipe sleeves two sizes larger than pipes passing through floors, rated walls, building foundation walls or masonry construction. Sleeves are not required for core drilled holes.

For sleeves that will have sleeve-seal systems installed, select sleeves of size large enough to provide 1-inch annular clear space between piping and concrete slabs and walls.

Install sleeves in concrete floors, concrete roof slabs, and concrete walls as new slabs and walls are constructed.

Permanent sleeves are not required for holes in slabs formed by molded-PE or -PP sleeves.

Cut sleeves to length for mounting flush with both surfaces.

Exception: Extend sleeves installed in floors of mechanical equipment areas or other wet areas 2 inches above finished floor level.

Using grout, seal the space outside of sleeves in slabs and walls without sleeve-seal system.

Install sleeves for pipes passing through interior partitions.

Cut sleeves to length for mounting flush with both surfaces.

Install sleeves that are large enough to provide 1/4-inch annular clear space between sleeve and pipe or pipe insulation.

Seal annular space between sleeve and piping or piping insulation; use joint sealants appropriate for size, depth, and location of joint.

Seal sleeves and piping with material rating equivalent to the wall rating. Maintain indicated fire rating of walls, partitions, ceilings, and floors at pipe penetrations. Seal pipe penetrations with firestop materials where required.

22 05 23.00 - GENERAL DUTY VALVES

Submittal Requirements

Product Data: For each type of product indicated.

GENERAL

Provide stops or isolation valves on domestic water supplies to isolate hot and cold water to each fixture, including all equipment and equipment provided by others. Access shall be provided to all valves. Provide fire-rated access panel(s) to maintain full access to concealed valves.

Ball valves - 2 inch and smaller: Lead-Free, 150 psi @ 250°F minimum pressure rating, cast bronze body, blowout-proof stem.

Butterfly Valves - 3" and up: Ductile Iron Butterfly Valve, 200 WOG, Lug Body, Lever Operator.

Approved Manufacturers: Milwaukee Valve, NIBCO, and Watts Water Technologies Co.

Valves to conform to: MSS-SP-110 Type I/ MSS-SP-67 Type I, NSF/ANSI -61/372.

Check valves - to be same size as system piping it accompanies. Lead-free, bronze body, 250 WOG, non-shock, spring check valve. Conforms to the following standard(s): MSS-SP-80 I, NSF/ANSI -61/372

22 05 29.00 – HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

GENERAL

Provide hangers, supports, clamps, attachments, and structural steel members where required to support piping and equipment from building structure.

Support of piping from the decking or equipment is prohibited.

Arrange for grouping of parallel runs of horizontal piping supported together on field-fabricated, heavy-duty trapeze hangers where possible. Trapeze hangers shall conform to: MSS SP-69, Type 59. Horizontal-Piping Clamps: Provide Carbon- or Alloy-Steel, Double-Bolt Pipe Clamps (MSS Type 3) for suspension of pipes requiring clamp flexibility and up to 4 inches of insulation.

Vertical-Piping Clamps: Provide extension pipe or Riser Clamps (MSS Type 8) for support of pipe risers.

Hangers shall be sized to allow insulation to pass through unobstructed.

Hanger and support types:

Hangers: Provide adjustable, Steel Clevis Hangers (MSS Type 1) for suspension of noninsulated or insulated, stationary pipes.

Horizontal-Piping Clamps: Provide Carbon- or Alloy-Steel, Double-Bolt Pipe Clamps (MSS Type 3) for suspension of pipes requiring clamp flexibility and up to 4 inches of insulation.

Vertical-Piping Clamps: Provide extension pipe or Riser Clamps (MSS Type 8) for support of pipe risers.

Hangers and supports shall be placed at all changes in direction, valves and equipment.

The maximum horizontal spacing of cast-iron pipe hangers can be 10' where 10-foot lengths of pipe are installed.

Piping shall also be supported at each change in direction, valves and equipment.

Clevis-type hangers shall and supports shall conform to: MSS SP-58, Type 1-58.

22 05 53.00 - IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

PIPING

Provide self-adhesive pipe labels with white background and black lettering, contact type with permanent adhesive backing. Include identification of piping service using same designations or abbreviations as used on the drawings and an arrow indicating flow direction.

EQUIPMENT

Provide self-adhesive plastic equipment labels with white background and black lettering, contact type with permanent adhesive backing, 160 degree F temperature. Include equipment's drawing designation and specification section number where equipment is specified.

22 07 19.00 – PLUMBING SYSTEM INSULATION

GENERAL

Insulation shall be listed and labeled per ASTM E 84 for plenum installations employing slip on techniques.

Provide insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of piping including fittings, valves, and specialties.

Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.

PIPING SYSTEMS REQUIRING INSULATION

Insulate domestic cold water piping, associated fittings and valves with flexible elastomeric 1/2" wall thickness insulation.

Insulate domestic hot water piping, associated fittings and valves with 1" thick flexible elastomeric, 1-1/2" thick fiberglass insulation or per local energy code, whichever greater.

Insulate domestic hot water return piping, associated fittings and valves with 1" wall thickness insulation or per local energy code, whichever greater.

Insulate waste piping above ceilings that receive condensate with 1/2" wall thickness insulation.

Insulate exposed sanitary drains, domestic water, domestic hot water, and stops for plumbing fixtures for people with disabilities.

FLEXIBLE ELASTOMERIC INSULATION

Closed-cell, sponge- or expanded-rubber materials.

Comply with ASTM C 534, Type I for tubular materials and Type II for sheet materials.

Adhesives, Sealers, and Protective Finishes: As recommended by insulation manufacturer for applications indicated.

Manufacturers: Subject to compliance with requirements, available products that may be incorporated into the work include, and are limited to, the following:

Aeroflex USA, Inc.; Aerocel., Armacell LLC; AP Armaflex.,K-Flex USA;

FIBERGLASS INSULATION

Fiberglass piping insulation: ASTM C 547, Class 1

Encase pipe fittings insulation with one-piece pre-molded PVC fitting covers.

Vapor Barrier Material: Paper-backed aluminum foil, except as otherwise indicated, strength and permeability rating equivalent to adjoining pipe insulation jacketing.

Staples, Bands, Wires, and Cement: As recommended by insulation manufacturer for applications indicated.

Adhesives, Sealers, and Protective Finishes: As recommended by insulation manufacturer for applications indicated.

Manufacturers: Subject to compliance with requirements, available products that may be incorporated into the work include, and are limited to, the following:

Armstrong World Industries, Inc., Owens-Corning Fiberglass Corp., Johns Manville.

ADHESIVES

Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated, unless otherwise indicated.

Insulation for handicap accessible fixtures

All handicap lavatory p-trap and angle stop assemblies shall be insulated with trap wrap protective kit manufactured by Proflo model PF202WH or equal. Abrasion resistant, anti-microbial vinyl exterior cover shall be smooth. For traps, the insulation shall have a cleanout nut cap to allow service to the trap without disassembly. For stops, the insulation shall have a lock lid that prevents tampering but allows access without removal of the insulation. Fasteners shall remain substantially out of sight.

Manufacturers: subject to compliance with requirements: Proflo, Truebro, Plumberex

22 11 16.00 – DOMESTIC WATER PIPING

Submittal Requirements

Product Data: For each type of product indicated.

GENERAL

Install piping concealed from view unless noted otherwise, free of sags and bends. Do not enclose, cover, or put piping into operation until it has been inspected and approved by authorities having jurisdiction. Clean and disinfect potable domestic water piping using approved procedures by authorities having jurisdiction or AWWA C651, whichever is more rigorous.

Install at right angles; diagonal runs are prohibited unless otherwise shown. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.

Coordinate all piping with all other trades.

Provide water pressure regulators where necessary to limit the incoming water pressure to 80 psi inside the building.

DOMESTIC WATER PIPING ABOVE GROUND:

Hard copper tube, ASTM B 88, Type L; wrought-copper, solder-joint fittings; and soldered joints.

Solder Filler Metals: ASTM B 32, lead-free alloys.

Flux: ASTM B 813, water flushable.

Type "L"; copper pressure-seal joint; and pressure-seal joint systems.

CATHODIC PROTECTION

Provide dielectric insulation at points where copper or brass pipe comes in contact with ferrous piping, reinforcing steel or other dissimilar metal in structure.

22 11 19.00 – DOMESTIC WATER PIPING SPECIALTIES

Submittal Requirements

Product Data: For each type of product indicated.

Manufacturers: Subject to compliance with requirements, available products that may be incorporated into the work include, and are limited to, the following:

Conbraco Industries, Inc., Watts Water Technologies Co., Zurn Industries, LLC., Thermomegatech, Acorn Engineering Co., and Caleffi, N. America., MIFAB, Inc., Precision Plumbing Products, Inc., Sioux Chief Manufacturing Company, Inc., Jay R. Smith Mfg. Co., Provent Systems, Rector Seal.

BALANCING VALVES

Provide balancing valves where required for proper balancing of water systems as shown on the contract documents.

Balancing valves shall be equal to Red-White Valve Corporation model 9517AB (NPT) or model 9519 (solder). Valve shall have brass body, globe valve regulation and isolation properties, fixed orifice design for precise measurement, integral memory stop to ensure repeatable setting, full shutoff without affecting memory settings, high and low pressure metering points, precision indicator windows, rugged top set hand-wheel assembly, pressure rating of 300 psi, and temperature rating of 15 deg. F to 260 deg. F.

STRAINERS

Provide lead-free wye-pattern strainer rated for 125 psig minimum, bronze body, threaded connections, stainless steel screen with round perforations of 0.020 inch and pipe plug drain. Provide strainers on supply side of each pressure reducing valve, solenoid valve and pump.

WATER HAMMER ARRESTERS

Provide water-hammer arresters in water piping according to PDI-WH 201.

Standard: ASSE 1010 or PDI-WH 201.

Type: Metal bellows or copper tube with piston.

Size: ASSE 1010, sizes AA and A through F, or PDI-WH 201, sizes a through F.

22 11 23.00 – RECIRCULATION DOMESTIC WATER PUMP

Submittal Requirements

Product Data: For each type of product indicated.

GENERAL

Hot-water circulating pump shall be constructed of the following: in-line wet-rotor, lead-free bronze body, plastic impeller, with ceramic bearings. Working pressure to be a minimum 125 psig with a maximum continuous operating temperature of 220° F.

Pump shall be controlled with an aquastat and timer.

Aquastat: Electric; surface mounted sensing element.

Adjustable temperature control of hot-water circulation from 65 to 200 °F.

Timer: Electric; for control of hot-water circulation.

Programmable type, seven-day, twenty-four hour clock with manual override on-off switch. Programmable for pre-set times during the day for each day for seven days.

Approved Manufacturers: Armstrong Pumps Inc, Bell & Gossett/Goulds Water Technology; Xylem Inc., Taco inc., Honeywell International inc.

Pumps shall conform to: UL 778, NSF 61/372.

CONNECTIONS

On water heating systems with separate storage tanks, interlock pump between water heater(s) and hot-water storage tank(s) with water heater burner and time-delay relay.

22 13 16.00 - SANITARY, WASTE AND VENT PIPING SYSTEM

Submittal Requirements

Product Data: For each type of product indicated.

GENERAL

Provide a complete soil, waste and vent system in the building and on the site as indicated on the drawings and as specified herein.

Above ground soil, waste and vent piping within buildings including soil stacks, vent stacks, horizontal branches, traps, and connections to fixtures and drains.

Underground building drain piping including mains, branches, traps, connections to fixtures and drains, and connections to stacks, terminating at connection to existing sanitary sewer.

INTERIOR PIPING ABOVE GRADE

Solid wall schedule 40 PVC pipe and fittings 1-1/2" and larger shall conform to ASTM D 2665 / ASTM D 1785 DWV. Fittings shall conform to ASTM D 2665, made to ASTM D, DWV patterns and fit schedule 40 pipe.

Contractor shall maintain integrity of fire ratings. Piping shall not be run in plenum spaces and contractor shall provide intumescent collars when penetrating a rated wall, floor, or other assembly

Piping alignment shall be as indicated on the drawings using approved wye branches or eight bands for direction changes and shall be surely supported or secured to maintain such alignment.

Soil, waste and vent piping smaller than 1-1/2" shall be Type "M" copper and conform to ASTM B-306.

BELOW GRADE PIPING

Solid wall schedule 40 PVC pipe and fittings 2" and larger shall conform to ASTM D 2665 / ASTM D 1785 DWV. Fittings shall conform to ASTM D 2665, made to ASTM D, DWV patterns and fit schedule 40 pipe.

Piping alignment shall be as indicated on the drawings using approved wye branches or eight bands for direction changes and shall be surely set and buried to maintain such alignment.

Soil, waste and vent piping smaller 1-1/2" and smaller below grade shall not be permitted

Slope piping according to local codes.

Protection shall be given to all footings and other structural elements during underground work adjacent to such items. Refer to architectural and/or structural drawings for locations.

Vent all fixtures, connect branch vents to main vent risers at least six inches above flood rim of fixtures. Pitch vent lines back to soil or waste pipe, free of drops and sags.

Cleanouts shall be full size of pipe up to 4", and 4" for larger sizes. For underground and concealed lines, provide cleanouts in accessible positions at each right angle turn and at intervals not to exceed fifty feet. In floors, install flush with finish floor with extension pipe from cleanout wye.

22 13 19.00 - SANITARY WASTE PIPING SPECIALTIES

Submittal Requirements

Product Data: For each type of product indicated.

[CLEANOUTS

[Floor cleanout equal to Zurn Z-1400 adjustable floor cleanout.]

[Wall cleanout equal to Zurn Z-1443 with smooth nickel bronze square wall access panel and frame.]

[Grade cleanout equal to Zurn Z-1400 adjustable cleanout.]

Provide a sanitary tee with threaded cap cleanout plug for changes-in-direction in aboveground horizontal waste piping.

Manufacturers: Subject to compliance with requirements, available products that may be incorporated into the work include, and are limited to, the following:

Jay R Smith MFG. Co., Watts Drainage Products Inc., Zurn Plumbing Products Group.]

[FLOOR DRAINS

Provide floor drains in compliance with ASME A112.6.3.

Provide floor drains with trap-seal primer fitting. All floor drains located in rooms with tile floors shall be provided with manufacturer's standard square grate, unless noted otherwise.

Refer to plumbing drain schedule for project specific floor drain manufacturers and models.

Manufacturers: Subject to compliance with requirements, available products that may be incorporated into the work include, and are limited to, the following:

Jay R Smith MFG. Co., Watts Drainage Products Inc., Zurn Plumbing Products Group.]

[FLOOR SINKS

Provide floor sinks in compliance with ASME A112.6.7. All floor sinks shall have a cast iron body unless noted otherwise. All floor sinks located in a commercial kitchen to have a half grate cover unless noted otherwise.

Refer to plumbing drain schedule for project specific floor drain manufacturers and models.

Manufacturers: Subject to compliance with requirements, available products that may be incorporated into the work include, and are limited to, the following:

Jay R Smith MFG. Co., Watts Drainage Products Inc., Zurn Plumbing Products Group.]

22 33 00.00 - COMMERCIAL ELECTRIC, DOMESTIC WATER HEATERS

Submittal Requirements

Product Data: For each type of product indicated.

TANK TYPE

Provide commercial electric tank type water heater as scheduled. Comply with UL 1453 Standard.

Provide corrosion resistant metal drain pan with raised edges at the base of the water heater and include drain outlet.

Provide field fabricated piping heat trap arrangement according to ASHRAE/IESNA 90.1.

Provide combination temperature and pressure relief valve, ASME rated and stamped with relieving capacity at least as great as heat input and pressure setting less than water heater's rated operating pressure.

Provide steel pressure-rated thermal expansion tank constructed with welded joints and factory-installed butyl rubber diaphragm, pre-charged to minimum system operating pressure at tank.

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the work include, and are limited to, the following:

Bock Water Heaters, Bradford White Corp., Lochinvar Corp., State Industries.

22 40 00.00 - PLUMBING FIXTURES

Submittal Requirements

Product Data: For each type of product indicated.

GENERAL

Refer to plumbing fixture schedule and install per the manufacturer's installation and operation manual.

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the work include, and are limited to, the following:

American Standard, Kohler Co., Zurn Industries, LLC.

KLH ENGINEERS
KOHRS LONNEMANN HEIL ENGINEERS, INC.
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WWW.KLHENGRS.COM
1538 ALEXANDRIA PIKE, SUITE 11
FT. THOMAS, KENTUCKY 41075
800-354-9783
859-442-8050
859-442-8058 FAX
LEXINGTON, KENTUCKY
LOUISVILLE, KENTUCKY
COLUMBUS, OHIO
KLH JOB #: 27478

RGLA
rgla solutions, inc.
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

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robert g. lyon + associates, inc.
retail architecture
5100 River Road, Ste 125
Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
www.rgla.com

KOHRS LONNEMANN HEIL ENGINEERS, INC. #F-3634
STATE OF TEXAS
MATTHEW C. DEBEVEC
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5/29/2025
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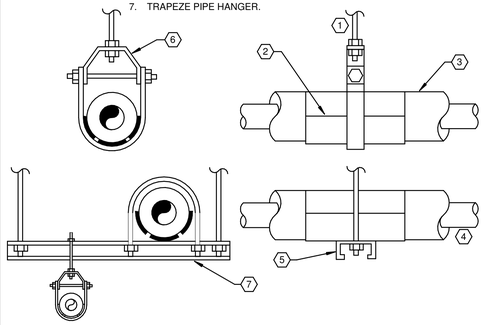
carhartt
ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD #112,
SAN ANTONIO, TX 78209

PLUMBING - SPECIFICATIONS

DRAWN BY: JCH
CHECKED BY: AJK
JOB NUMBER: 25341
SHEET NAME: P-501

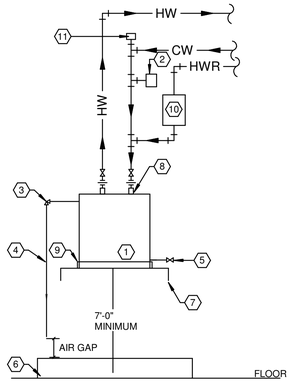
KEYED NOTES:

1. HANGER ROD.
2. GALVANIZED STEEL PIPE SHIELD AND 360° CALCIUM SILICATE INSULATION HANGER SUPPORT.
3. PIPE INSULATION.
4. PIPE.
5. UNISTRUT CHANNEL.
6. CLEVIS HANGER.
7. TRAPEZE PIPE HANGER.



220529.00-01 - PLUMBING PIPE HANGER INSTALLATION

SCALE: NONE

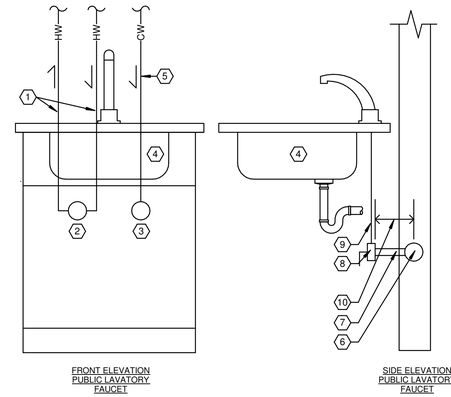


KEYED NOTES:

1. ELECTRIC WATER HEATER.
2. 2 GALLON AMTROL ST-5 EXPANSION TANK.
3. ASME APPROVED TEMPERATURE AND PRESSURE RELIEF VALVE, 210°F, 150 PSI.
4. RELIEF PIPE, FULL SIZE OF DISCHARGE OPENING.
5. DRAIN VALVE.
6. MOP SINK.
7. MOUNT ON BRACKETS OR SUSPEND FROM JOISTS ABOVE.
8. HEAT TRAP/DIELECTRIC NIPPLE (TYPICAL).
9. GALVANIZED DRIP PAN WITH DRAIN.
10. RECIRCULATION PUMP. REFER TO ADDITIONAL DETAIL.
11. VACUUM RELIEF VALVE.

223300.00-01 - SHELF MOUNTED ELECTRIC WATER HEATER

SCALE: NONE



KEYED NOTES:

1. IN WALL RECIRCULATING HOT WATER LINE. SHALL DROP DOWN IN WALL AS SHOWN TO ACHEIVE ENERGY CODE COMPLIANCE.
2. HOT WATER SUPPLY STUB OUT TO SUPPLY LAVATORY FAUCET. ASSE 1070 MIXING VALVE NOT SHOWN REFERENCE PROJECT SCHEDULES AND DETAILING FOR APPLICABILITY.
3. COLD WATER SUPPLY STUB OUT TO SUPPLY LAVATORY FAUCET.
4. PUBLIC LAVATORY FAUCET.
5. IN WALL COLD WATER LINE TO SERVE AS SUPPLY TO FIXTURE.
6. IN WALL HOT WATER RECIRCULATING PIPE.
7. HOT WATER SUPPLY PIPE TO SERVE AS HOT WATER SUPPLY TO FIXTURE.
8. SUPPLY STOP & VALVE.
9. FLEX LINE SUPPLY TO SINK.
10. APPLICABLE LENGTH OF SUPPLY PIPE FROM RECIRCULATING HOT WATER SOURCE TO POINT OF FIXTURE SUPPLY STOP. REFERENCE GENERAL NOTES AND PROVIDED TABLE FOR MAXIMUM ALLOWABLE LENGTH.

GENERAL NOTES:

A. TO ACHIEVE ENERGY CODE COMPLIANCE THE TOTAL LENGTH OF PIPING AS INDICATED BY KEYED NOTE 10 SHALL NOT EXCEED LENGTHS AS INDICATED IN THE PROVIDED TABLE BASED ON SUPPLY PIPE NOMINAL SIZE. TABLE DATA AS PUBLISHED IN THE INTERNATIONAL ENERGY CONSERVATION CODE (IECC),

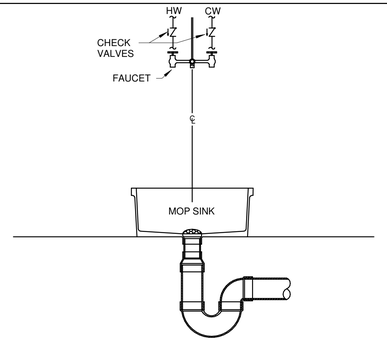
B. COMPLIANCE WITH THIS DETAILING SHALL BE REQUIRED WHERE INDICATED ON PLANS BY PIPE ROUTING (ALL PUBLIC LAVATORY FAUCETS). SINGLE LAVATORY SHOWN. REQUIREMENTS SHALL ALSO APPLY TO LAVATORY GROUPINGS.

PIPING VOLUME AND MAXIMUM PIPING LENGTHS	
NOM. SIZE (IN.)	MAXIMUM PIPING LENGTH (FEET)
3/8	3
1/2	2
5/8	1
3/4	0.5
1	0.5

TABLE DATA AS PUBLISHED IN TABLE C404.5.1 OF THE INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

221116.00-03 - IECC COMPLIANT PUBLIC LAVATORY FAUCET DETAIL

SCALE: NONE

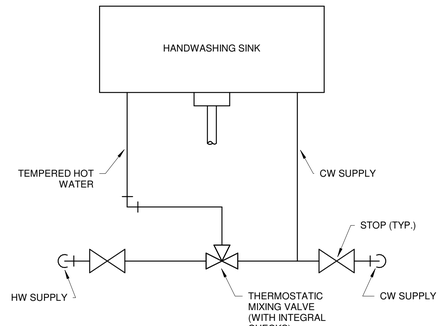


NOTES:

1. SEAL TOP OF SINK TO WALL USING A CONTINUOUS BEAD OF SILICONE CAULKING, WHEREVER SINK ABUTS WALL.
2. FOR EXTERIOR MASONRY AND SOLID WALLS APPLICATION PROVIDE SURFACE MOUNT WATER SUPPLY LINES. WHEN POSSIBLE ROUTE WATER SUPPLY LINES INSIDE INTERIOR STUD WALLS.
3. INCLUDE MOP HANGER, HOSE & HOSE BRACKET, WALL AND BUMPER GUARDS.

224000.00-02 - MOP SINK DETAIL

SCALE: NONE



223001.00-01 - THERMOSTATIC MIXING VALVE TMV DETAIL

SCALE: NONE

DOMESTIC HOT WATER CIRCULATION PUMP SCHEDULE

PRODUCT						GENERAL				MISC	FLOW INFORMATION	
MARK	DESCRIPTION	MANUFACTURER	MODEL	OPERATING WEIGHT (LBS)	SECTION NUMBER	ENTERING PSIG (PSIG)	LEAVING PSIG (PSIG)	LOCATION	STATUS	ACCESSORIES	FLUID FLOW	PUMP HEAD (FEETOFHEAD)
CP1	DOMESTIC HOT WATER CIRCULATION PUMP	TACO	SMARTPLUS 006	7	22 11 23.00	--	--	REFER TO PLAN	NEW	--	11	10

MOP SINK SCHEDULE

PRODUCT					GENERAL		MISC	VALVE/FAUCET INFORMATION		FIXTURE UNITS				FLOW INFORMATION	TRAP INFORMATION
MARK	DESCRIPTION	MANUFACTURER	MODEL	SECTION NUMBER	LOCATION	STATUS	ACCESSORIES	FIXTURE MFG	FIXTURE MODEL	DFU	WSFU	CW SFU	HW SFU	FLUID FLOW	INTEGRAL TRAP
MS1	MOP SINK	FIAT	MSB102424	22 40 00.00	REFER TO PLAN	NEW	--	FIAT	830AA	2	3	2.25	2.25	--	NO

TANK TYPE WATER CLOSET SCHEDULE

PRODUCT					FLOW INFORMATION	GENERAL		MISC	VALVE/FAUCET INFORMATION		FIXTURE UNITS				TRAP INFORMATION
MARK	DESCRIPTION	MANUFACTURER	MODEL	SECTION NUMBER	GALLONS PER FLUSH (GAL(US))	LOCATION	STATUS	ACCESSORIES	FIXTURE MFG	FIXTURE MODEL	DFU	WSFU	CW SFU	HW SFU	INTEGRAL TRAP
WC1	TANK TYPE WATER CLOSET	ZURN	Z5560	22 40 00.00	--	--	NEW	FURNISH ADA CLOSET AND TANK. ADA OPEN FRONT SEAT, SELF SUSTAINING HINGE, FLOOR FLANGE. CLOSET BOLTS AND CAPS, WAX RINGS, SUPPLY STOPS AND TUBE. FLUSH CONTROL MUST BE LOCATED ON THE WIDE/ACCESS SIDE OF THE WC (OPPOSITE OF THE WALL)	--	--	--	--	--	--	YES

LAVATORY SCHEDULE

PRODUCT					GENERAL		MISC	VALVE/FAUCET INFORMATION		FIXTURE UNITS				FLOW INFORMATION	TRAP INFORMATION
MARK	DESCRIPTION	MANUFACTURER	MODEL	SECTION NUMBER	LOCATION	STATUS	ACCESSORIES	FIXTURE MFG	FIXTURE MODEL	DFU	WSFU	CW SFU	HW SFU	FLUID FLOW	INTEGRAL TRAP
LV1	LAVATORY	AMERICAN STANDARD	0124024.020 COMRADE WALL-MOUNT SINK	22 40 00.00	REFER TO PLAN	NEW	FURNISH LAVATORY, SUPPLY STOPS AND TUBES, DRAIN AND ADA PIPING PROTECTION. PROVIDE TOUCHLESS FAUCET	AMERICAN STANDARD	7025.103	1	2	1.5	1.5	--	NO

TANK TYPE ELECTRIC WATER HEATER SCHEDULE

PRODUCT						MISC		GENERAL		ELECTRICAL	DESIGN CONDITIONS		ELECTRICAL															PRODUCT
MARK	DESCRIPTION	MANUFACTURER	MODEL	OPERATING WEIGHT (LBS)	SECTION NUMBER	STORAGE VOLUME (GAL(IMP))	ACCESSORIES	LOCATION	STATUS	EFFICIENCY	EWT	LWT	CONNECTION MARK	ELECTRIC CONNECTION SUMMARY	CN TYPE	CN FURNISHED BY	CN INSTALLED BY	CN WIRED BY	MC TYPE	MC FURNISHED BY	MC INSTALLED BY	MC WIRED BY	DC TYPE	DC FURNISHED	DC INSTALLED BY	DC WIRED BY	FAULT CURRENT	MARK
WH1	TANK TYPE ELECTRIC WATER HEATER	A0 SMITH	DEL-20	240	22 33 00.00	20	--	ABOVE MOP SINK	NEW	--	40	140	WH1	WH1 - 120V/1PH, 2.5KW HTG	INT	MFR	MFR	MFR	--	--	--	--	DC	EC	EC	EX	WH1: 3627	WH1

DRINKING FOUNTAIN SCHEDULE

PRODUCT					GENERAL		MISC	VALVE/FAUCET INFORMATION		FIXTURE UNITS				FLOW INFORMATION	TRAP INFORMATION	ELECTRICAL														PRODUCT
MARK	DESCRIPTION	MANUFACTURER	MODEL	SECTION NUMBER	LOCATION	STATUS	ACCESSORIES	FIXTURE MFG	FIXTURE MODEL	DFU	WSFU	CW SFU	HW SFU	FLUID FLOW	INTEGRAL TRAP	CONNECTION MARK	ELECTRIC CONNECTION SUMMARY	CN TYPE	CN FURNISHED BY	CN INSTALLED BY	CN WIRED BY	MC TYPE	MC FURNISHED BY	MC INSTALLED BY	MC WIRED BY	DC TYPE	DC FURNISHED	DC INSTALLED BY	DC WIRED BY	FAULT CURRENT	MARK
DF1	DRINKING FOUNTAIN	ELKAY	LZSTL8WSLK	22 40 00.00	REFER TO PLAN	NEW	WITH BOTTLE FILLER AND CANE APRON	--	--	--	--	--	--	--	NO	DF1	DF1 - 120V/1PH, 6A FLA	MAN	MFR	MFR	MFR	NG	MFR	MFR	MFR	CP	EC	EC	EC	DF1: 2060	DF1

KLH ENGINEERS
KOHRS LONNEMANN HEIL ENGINEERS, INC.
MECHANICAL/ELECTRICAL ENGINEERS
WWW.KLHENGRS.COM
1538 ALEXANDRIA PIKE, SUITE 11
FT. THOMAS, KENTUCKY 41075
800-354-9783
859-442-8050
859-442-8058 FAX
LEXINGTON, KENTUCKY
LOUISVILLE, KENTUCKY
COLUMBUS, OHIO
KLH JOB #: 27478

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rgla solutions, inc.
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Schiller Park, IL 60176
p: 847.671.7452
f: 847.671.4200
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retail architecture
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f: 847.671.4200
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SEAL:

carhartt

ALAMO QUARRY MARKET
7322 JONES
MALTSBERGER RD #112,
SAN ANTONIO, TX 78209

PLUMBING - DETAILS & SCHEDULES

DRAWN BY
JCH
CHECKED BY
AJK
JOB NUMBER
25341
SHEET NAME
P-601