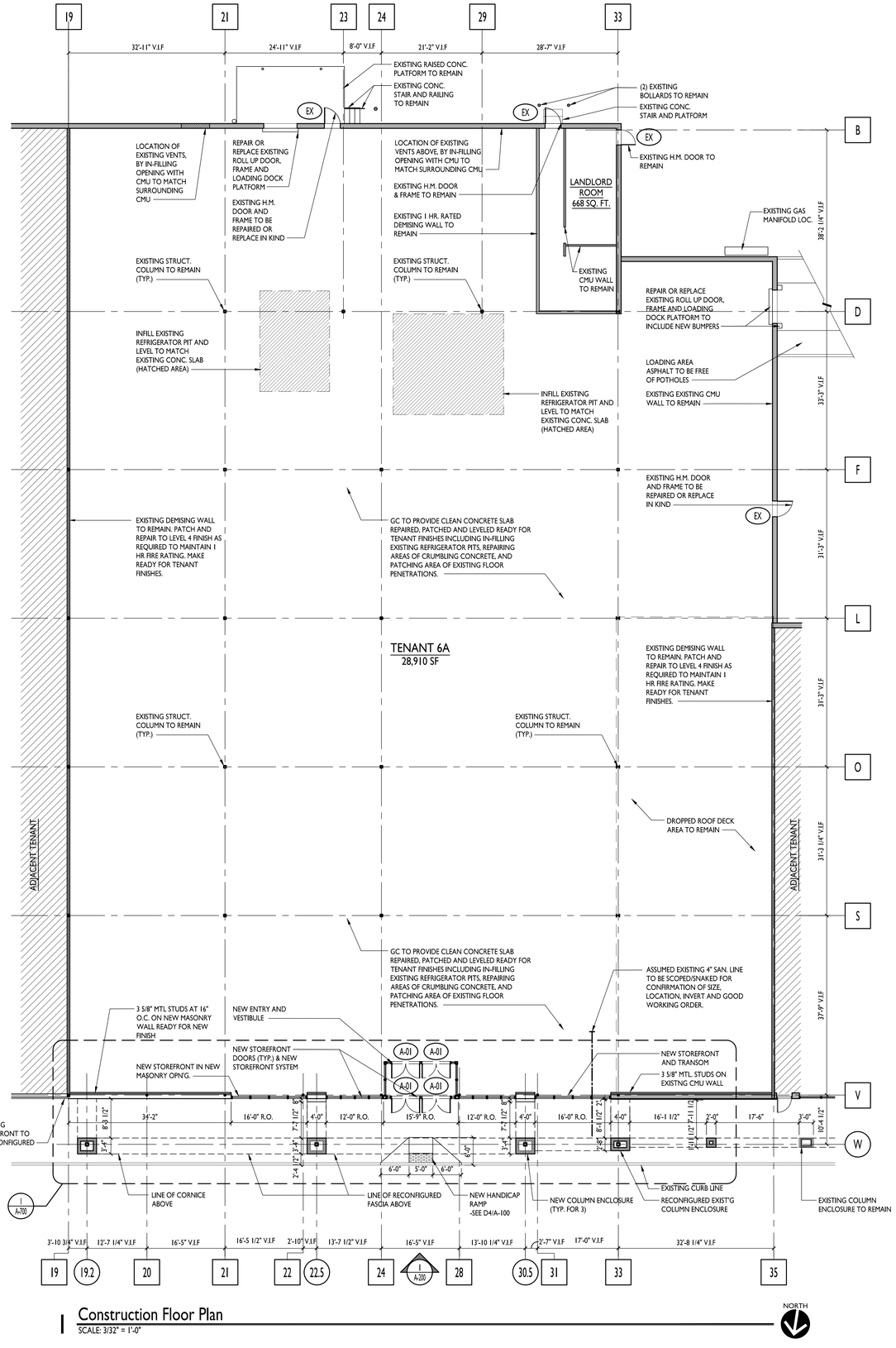
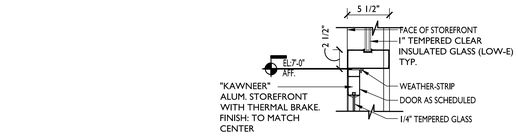


1 Construction Floor Plan
SCALE: 3/32" = 1'-0"

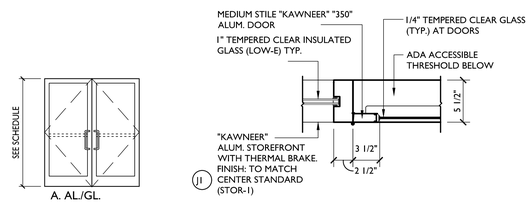
Door Schedule

General		Door				Frame		Details				
Door No.	Location	Size	Thk.	Type	Material	Type	Material	Jamb	Head	Hardware	Threshold Mat	Remarks
A-01	ENTRY DOORS	(2) 3'-0" x 7'-0"	--	A	AL/GL	--	AL/GL	J-1	H-1	1	ALUM (ADA)	--

HARDWARE SET #1
- 3 PR. HINGES 4½"x4½" (NRP)
- 1 KEYED DEADBOLT (EXT. DOORS ONLY)
- 2 PUSH SETS (BY S.F. MFR)
- 2 PULL HANDLES (BY S.F. MFR)
- 2 CLOSERS
- 1 THRESHOLD (ADA COMPLIANT)
- 2 SETS GASKETING AND SILL SWEEP (BY SF MFR)
- ADHESIVE SIGN "THIS DOOR TO REMAIN UNLOCKED DURING BUSINESS HOURS" (EXT. DOORS ONLY)

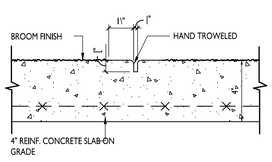


H1



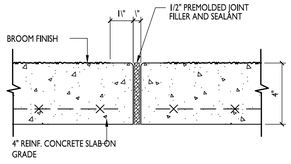
2 Door Type
SCALE: 1/4" = 1'-0"

3 Head, Jamb and Threshold Details
SCALE: 1 1/2" = 1'-0"

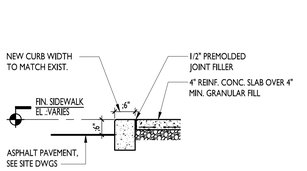


D1 Sidewalk Control Joint
SCALE: 3" = 1'-0"

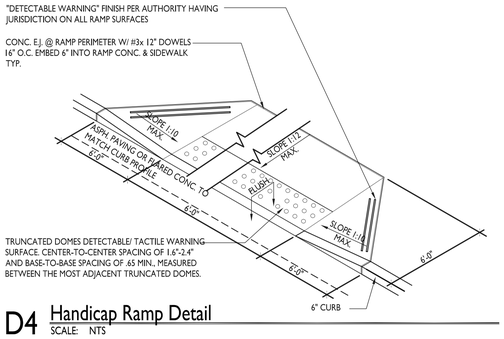
NOTE: ENSURE ALL SIDEWALK JOINTS & NEW CURB POSITIONS ALIGN W/ EXIST. TYP.



D2 Sidewalk Expansion Joint
SCALE: 3" = 1'-0"



D3 Curb Detail
SCALE: 1/2" = 1'-0"



D4 Handicap Ramp Detail
SCALE: NTS

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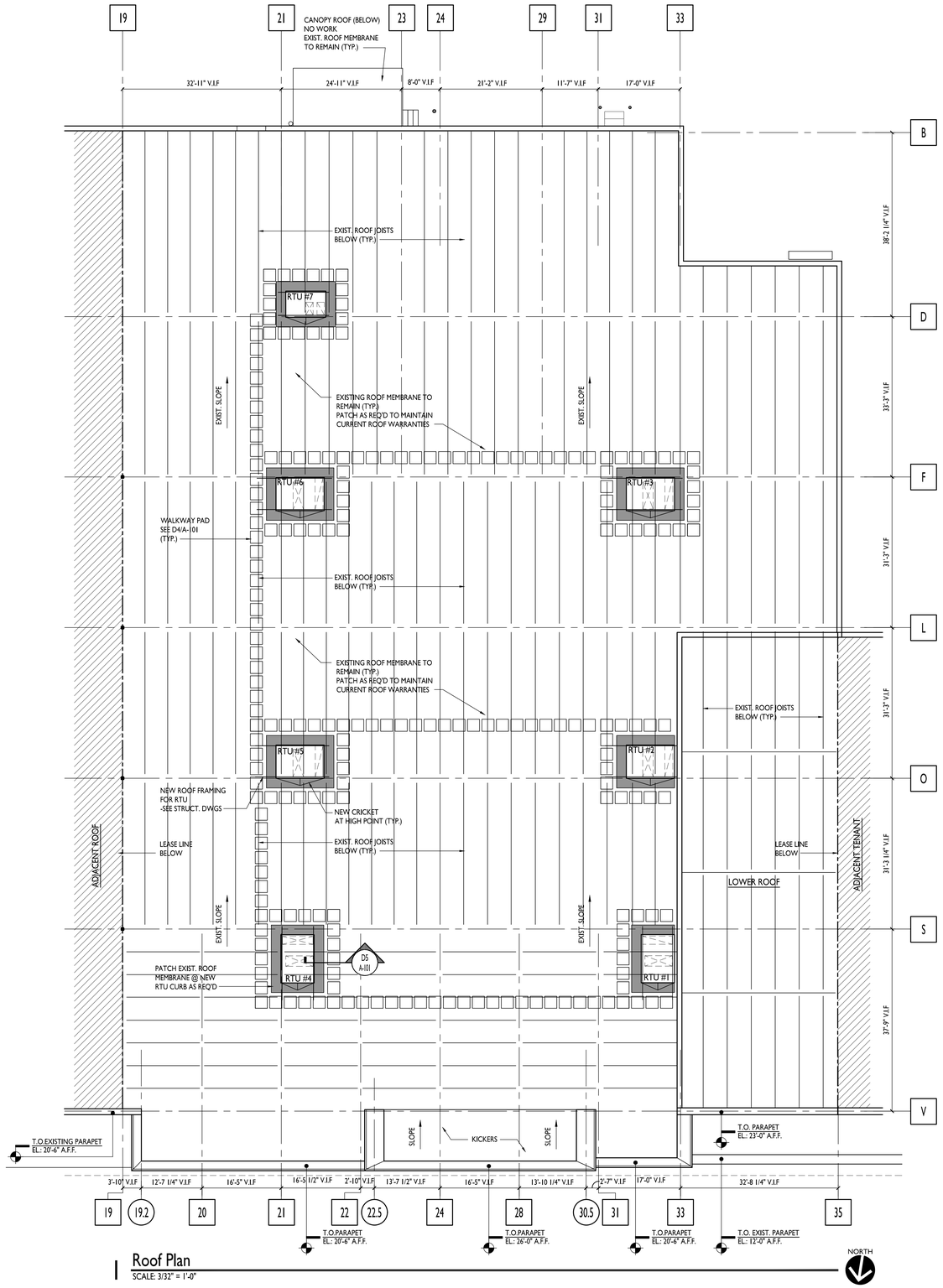
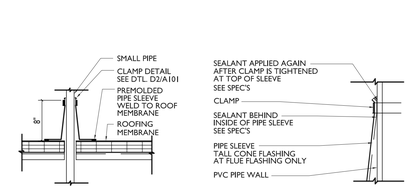
Construction Floor Plan

1838.C A-100

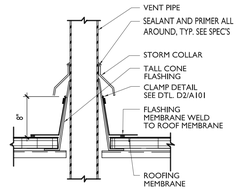


1 Roof Plan
SCALE: 3/32" = 1'-0"

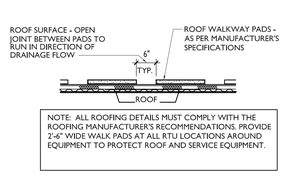


D1 Small Pipe Sleeve
SCALE: 1" = 1'-0"

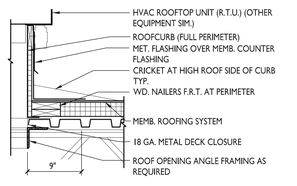
D2 Clamp Detail
SCALE: 1" = 1'-0"



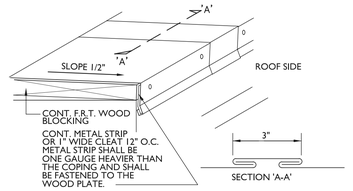
D3 Flue Flashing
SCALE: 1" = 1'-0"



D4 Walkway Pad Detail
SCALE: 1" = 1'-0"



D5 Mech. Curb Detail
SCALE: 1" = 1'-0"



D6 Coping Splice
SCALE: NTS

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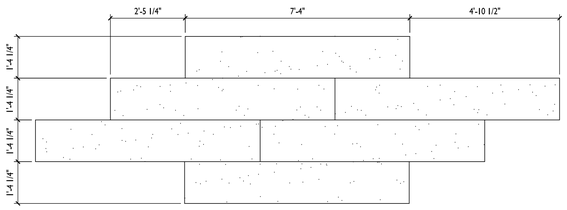
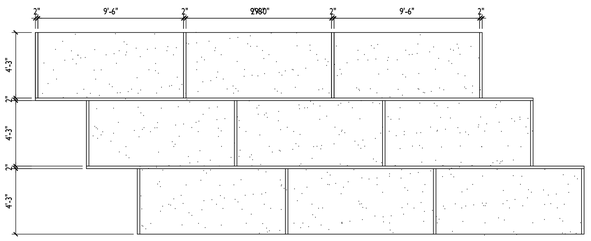
Roof Plan

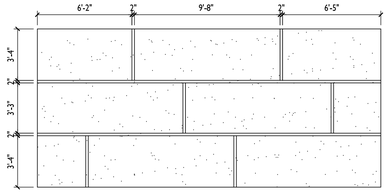
1838.C A-101



D1 TYPICAL DETAIL - EIFS SCORE LINE 1
SCALE: 1/2" = 1'-0"



D2 TYPICAL DETAIL - EIFS SCORE LINE 2
SCALE: 1/4" = 1'-0"



D2 TYPICAL DETAIL - EIFS SCORE LINE 3
SCALE: 1/4" = 1'-0"

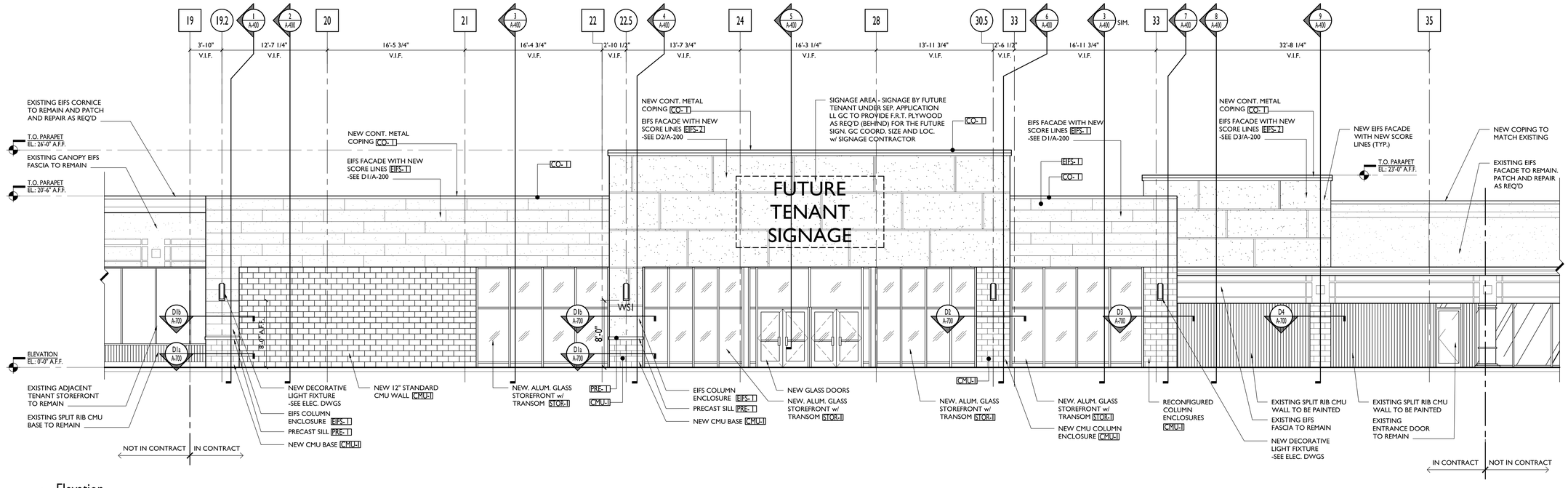
Material Legend

CO- 1	ATAS 10 - ASCOT WHITE
CMU-1	TRADITIONAL COLOR SPLITFACE CMU, MANUF. BY ANCHOR; CO -COLOR L-0
EIFS- 1	DRYVIT SANDPEBBLE FINISH SHERWIN WILLIAMS COLOR SW 7757 REFLECTIVE WHITE
EIFS- 2	DRYVIT SANDPEBBLE FINISH SHERWIN WILLIAMS COLOR SW 6048 TERRA BURN
PRE- 1	PRECAST COLOR - WHITE
MTL- 1	ATAS 032 ALUM. SMOOTH LAT434 COLOR - MEDIUM TEAK
STOR- 1	ALUM. STOREFRONTS AS MANUF. BY KAWNEER, COLOR: BRONZE ANODIZED ALUMINUM *

NOTES:

1. 12" x 12" SAMPLES MUST BE SUBMITTED TO ARCHITECT OF ALL EXTERIOR MATERIALS (EIFS, PAINT, COPING/METAL, AND AWNING).

* AS AN ALTERNATE TO KAWNEER 451T GC TO PROVIDE KAWNEER 1600 CURTAIN WALL SYSTEM PER DIRECTION OF OWNER OR AHJ.



1 Elevation
SCALE: 3/16" = 1'-0"

NOTES:

AS AN ALTERNATE TO KAWNEER 451T GC TO PROVIDE KAWNEER 1600 CURTAIN WALL SYSTEM PER DIRECTION OF OWNER OR AHJ.

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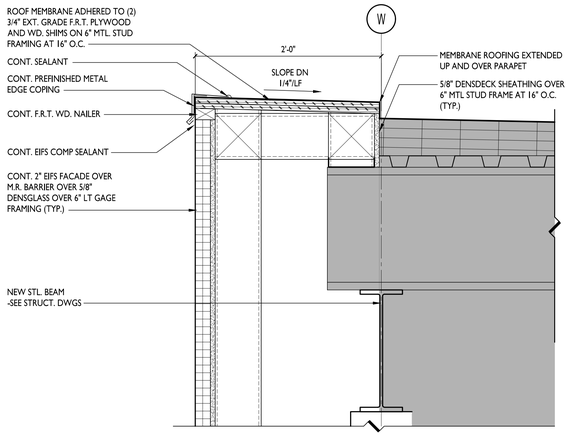
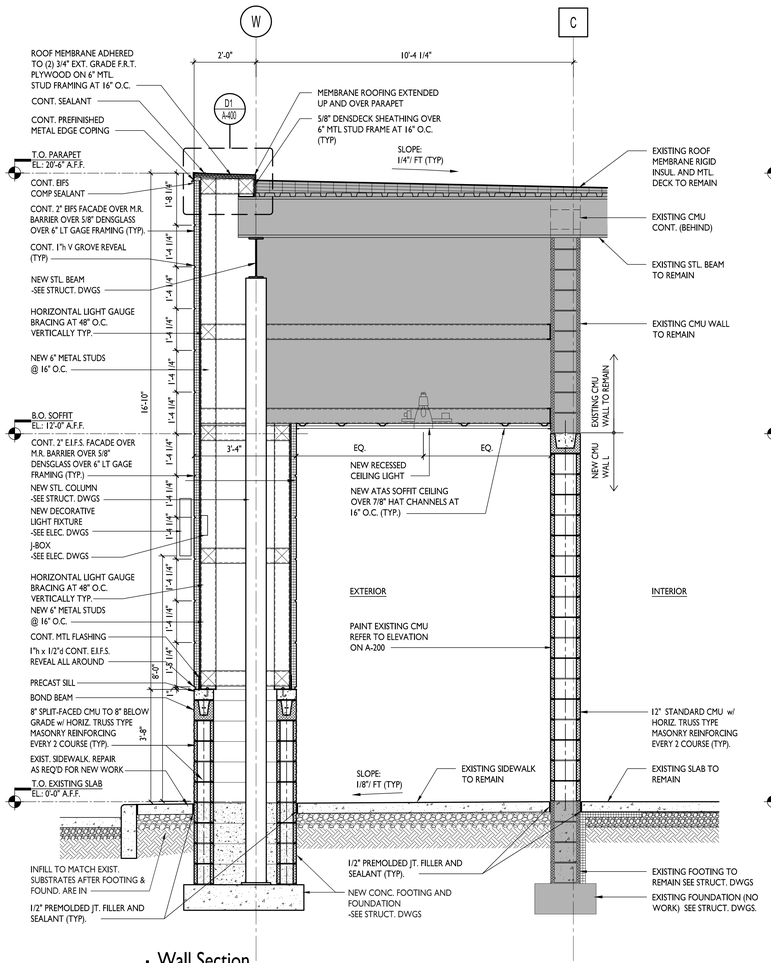
Elevation

1838.C A-200



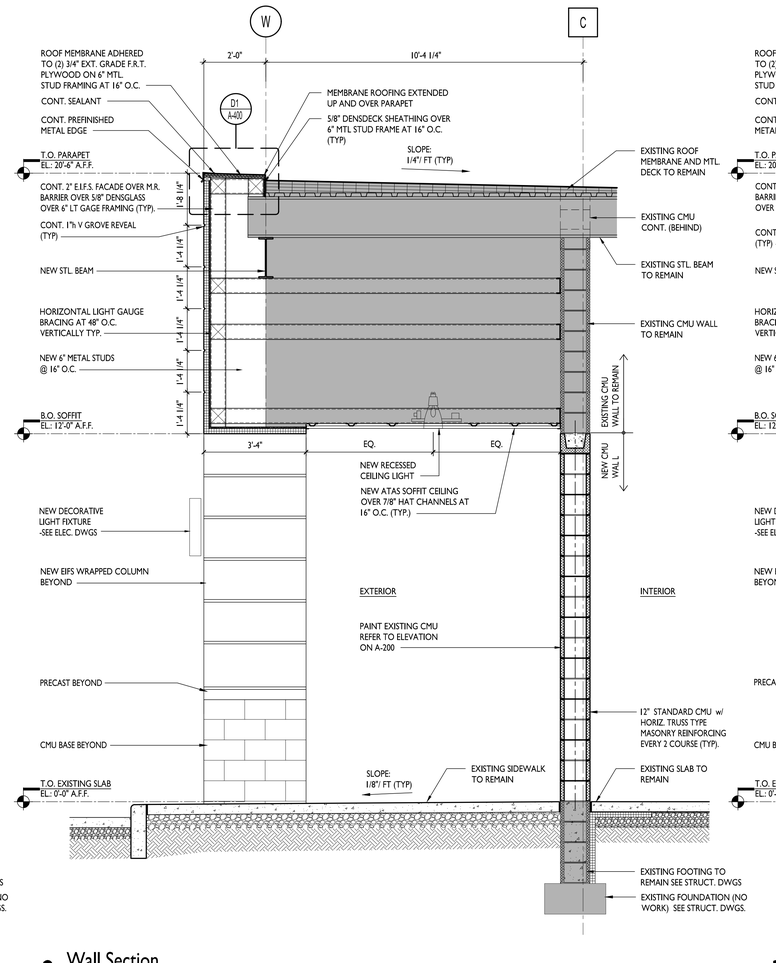
D1 Cornice Detail

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



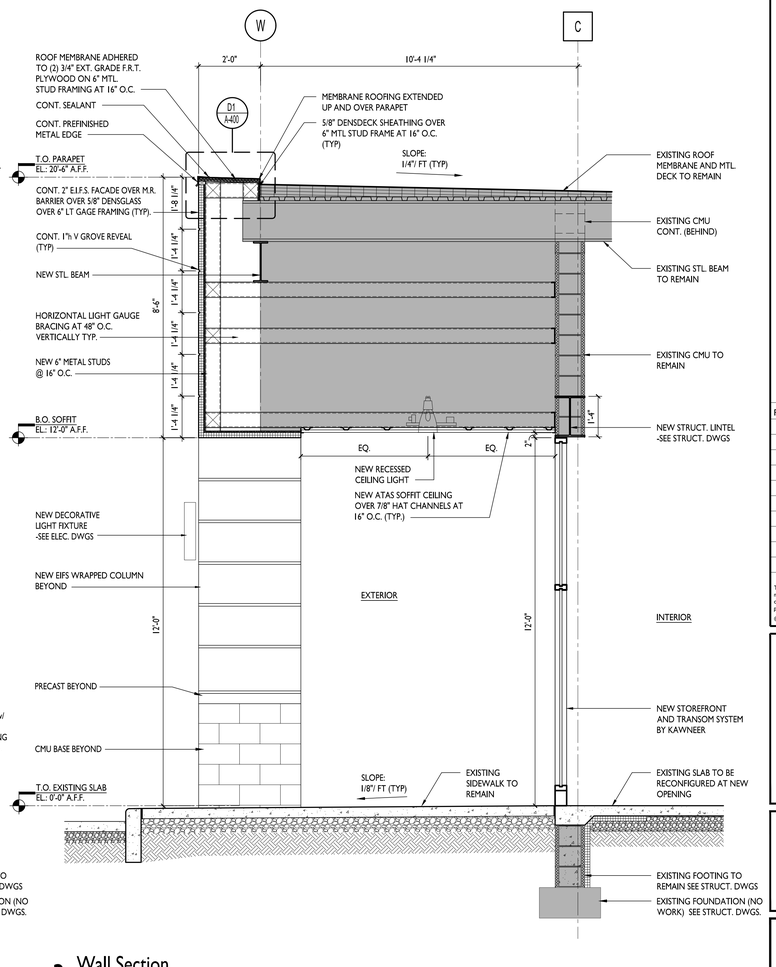
1 Wall Section

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



2 Wall Section

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



3 Wall Section

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

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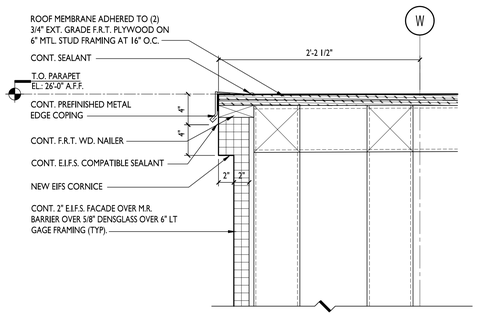
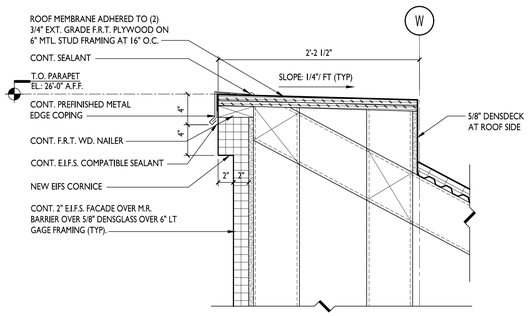
Wall Sections

1838.C A-400



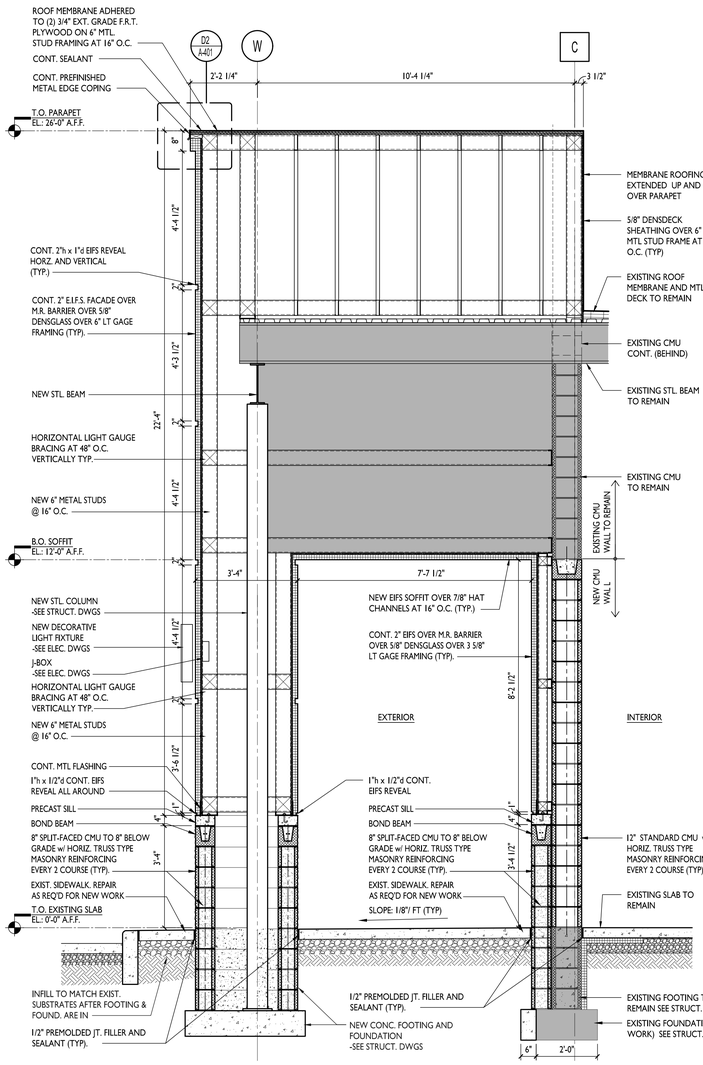
D2 Cornice Detail

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



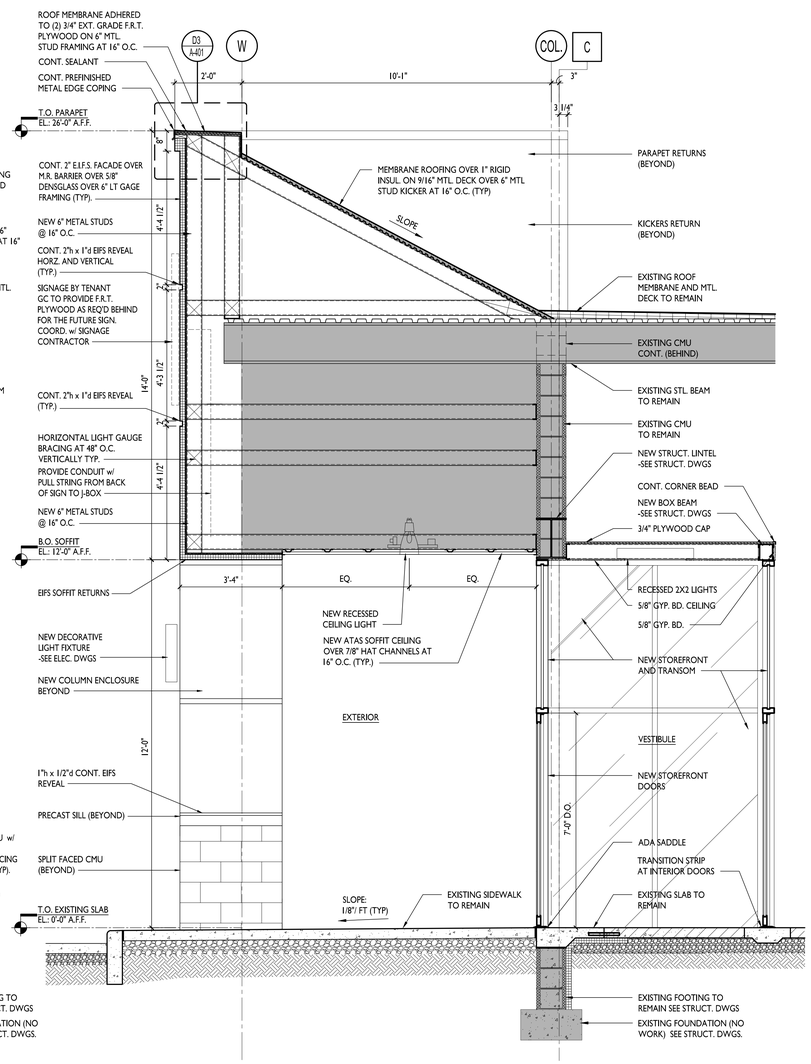
D3 Cornice Detail

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



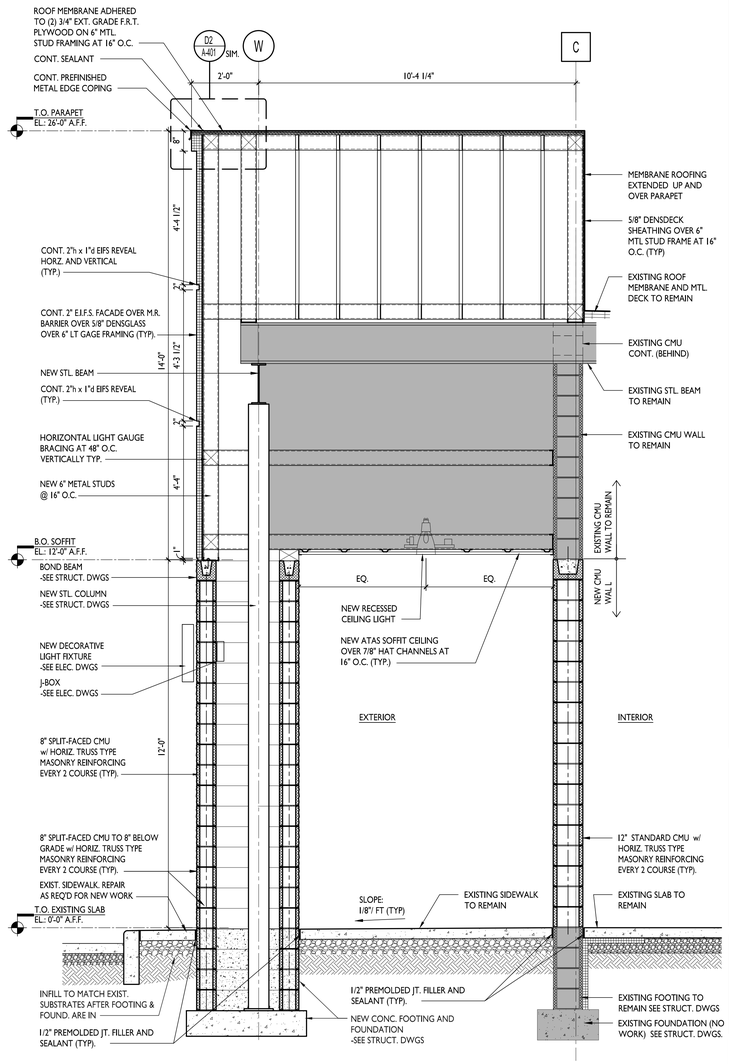
4 Wall Section

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



5 Wall Section

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



6 Wall Section

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

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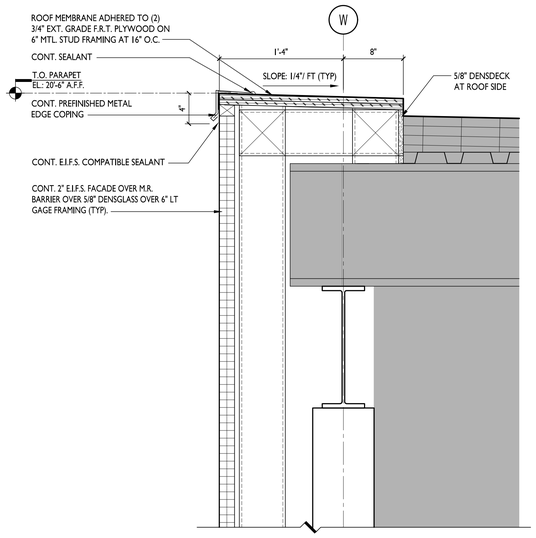
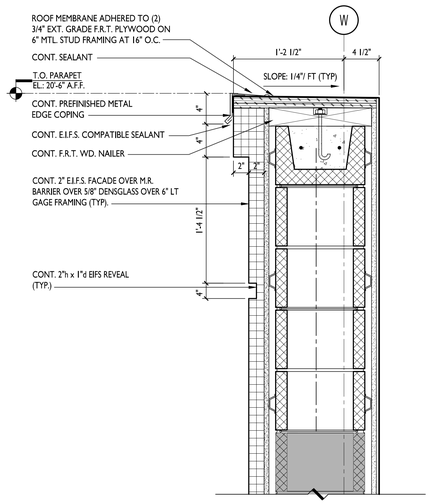
Wall Sections

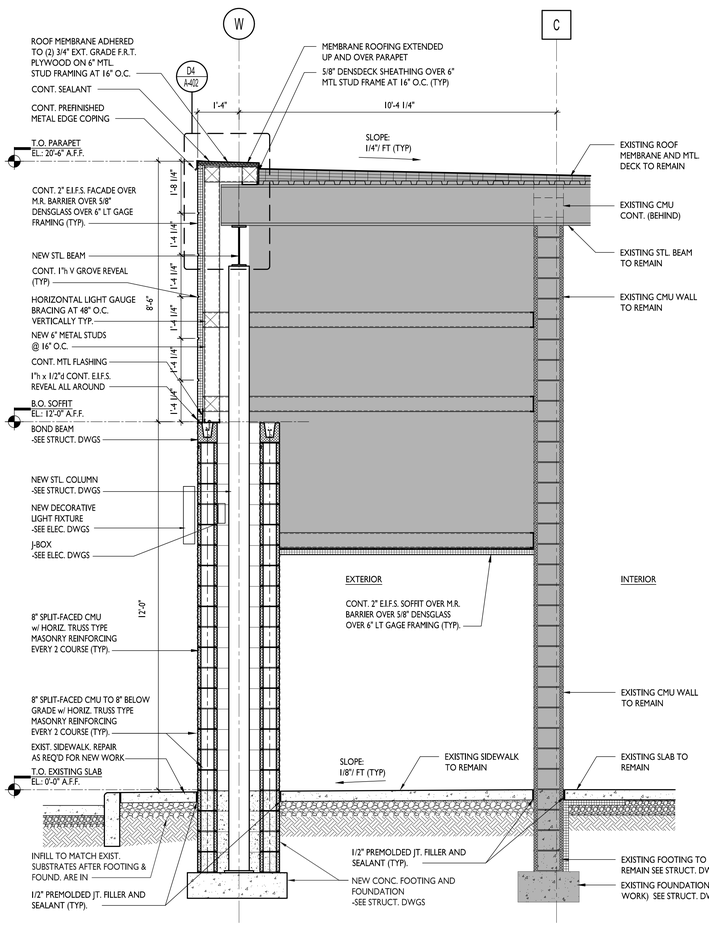
1838.C A-401



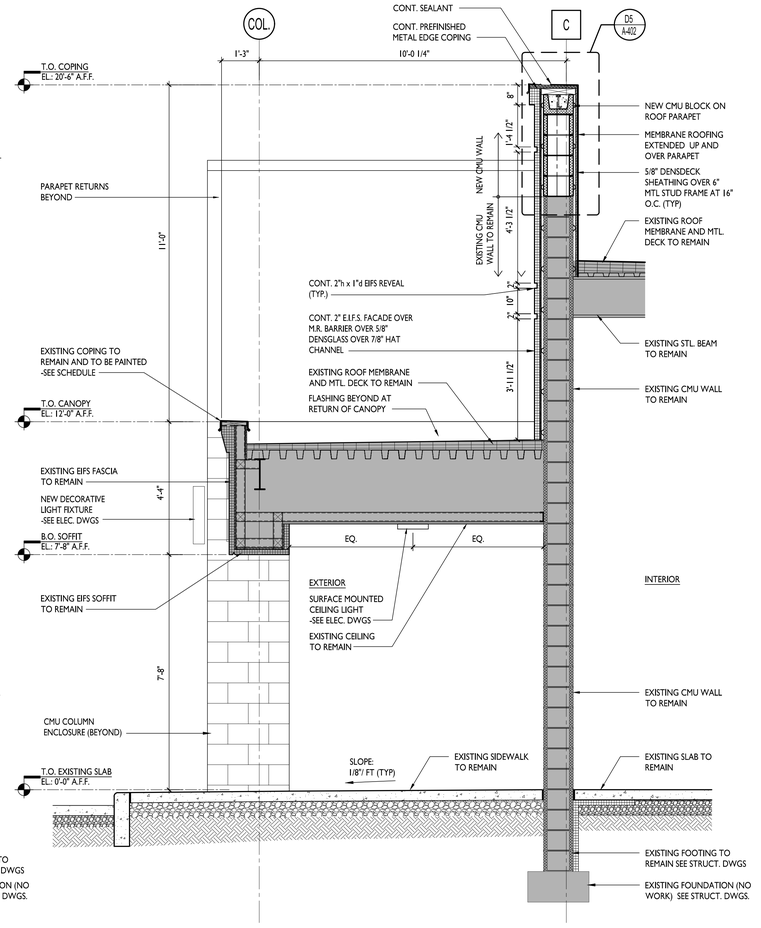
D4 Cornice Detail
SCALE: 1 1/2" = 1'-0"



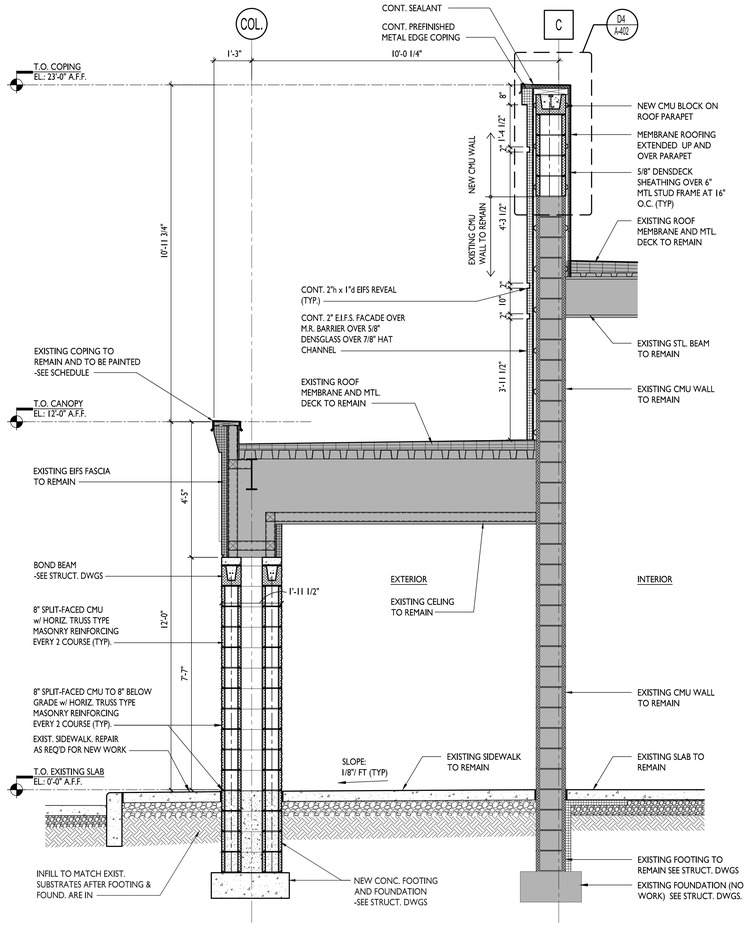
D5 Parapet Detail
SCALE: 1 1/2" = 1'-0"



7 Wall Section
SCALE: 1/2" = 1'-0"



8 Wall Section
SCALE: 1/2" = 1'-0"



9 Wall Section
SCALE: 1/2" = 1'-0"

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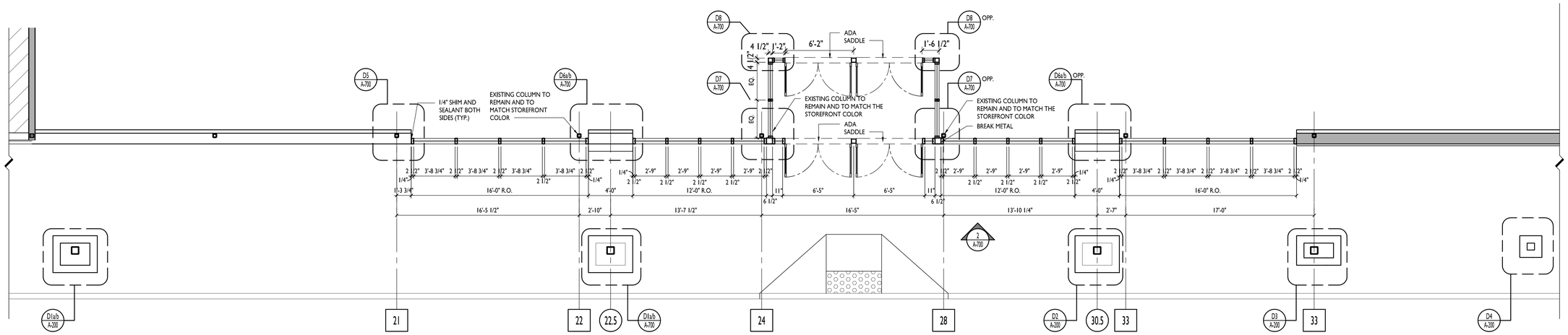
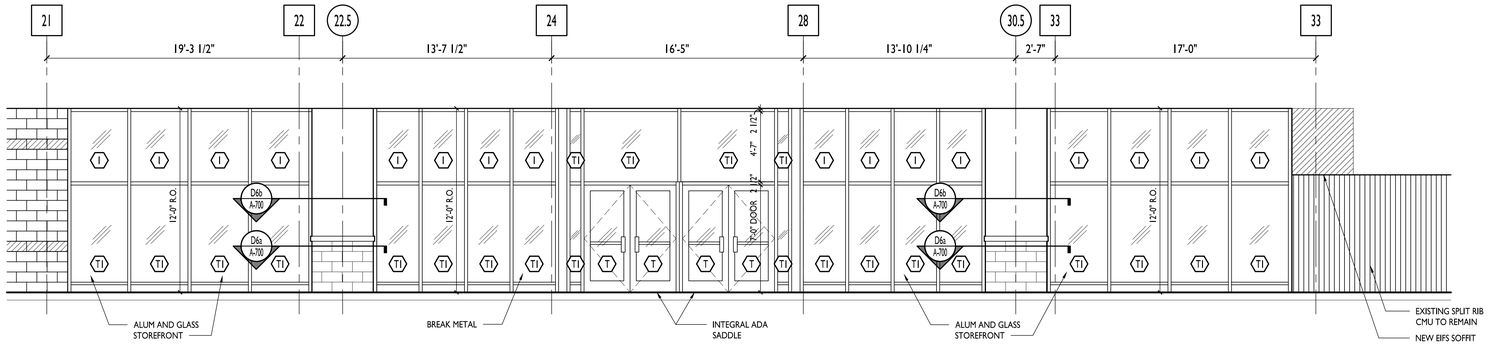
Wall Sections

1838.C A-402

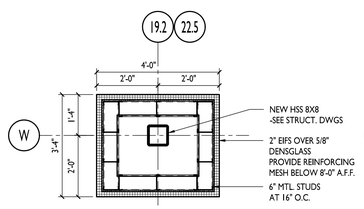


1 Enlarged Storefront Elevation
SCALE: 1/4" = 1'-0"

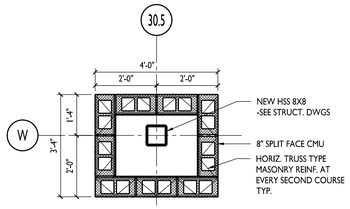


2 Enlarged Storefront Elevation
SCALE: 1/4" = 1'-0"

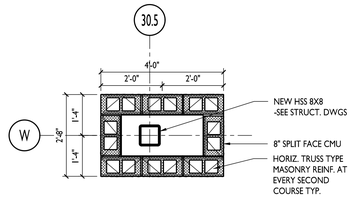
GLAZING LEGEND :	
TYPE	DESCRIPTION
T	1/4" TEMPERED CLEAR INSULATED GLASS
T1	1" TEMPERED CLEAR INSULATED GLASS (LOW-E)
1	1" CLEAR INSULATED GLASS (LOW-E)



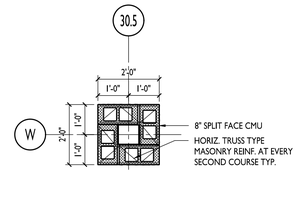
D1b Plan Detail
SCALE: 1/2" = 1'-0"



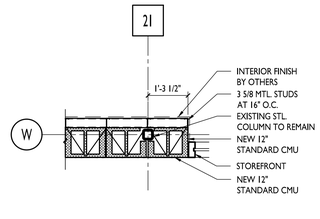
D2 Plan Detail
SCALE: 1/2" = 1'-0"



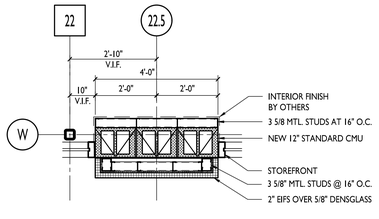
D3 Plan Detail
SCALE: 1/2" = 1'-0"



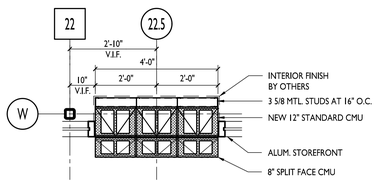
D4 Plan Detail
SCALE: 1/2" = 1'-0"



D5 Plan Detail
SCALE: 1/2" = 1'-0"

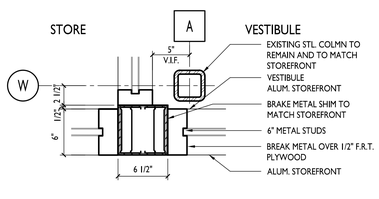


D6b Plan Detail
SCALE: 1/2" = 1'-0"

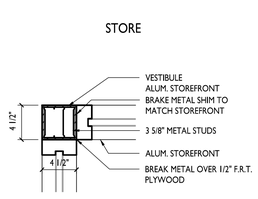


D6a Plan Detail
SCALE: 1/2" = 1'-0"

D1a Plan Detail
SCALE: 1/2" = 1'-0"



D7 Enlarged Plan Detail
SCALE: 1 1/2" = 1'-0"



D8 Enlarged Plan Detail
SCALE: 1 1/2" = 1'-0"

Tenant 6A LL Work
at Laurel Square

Laurel Square Shopping Center
Brick Township, NJ

CREATE
ARCHITECTURE PLANNING & DESIGN LLC

45 West 34th Street
Penthouse
New York, NY 10001

Phone: (212) 297-0880
createworldwide.com

Owner / Developer:
BRIXMOR Property Group
One Fayette Street, Suite 150
Conshohocken, PA 19428

Structural & M/E/P Engineers:
Thorson Baker + Associates, Inc.
3030 West Streetsboro Rd
Richfield, OH 44286

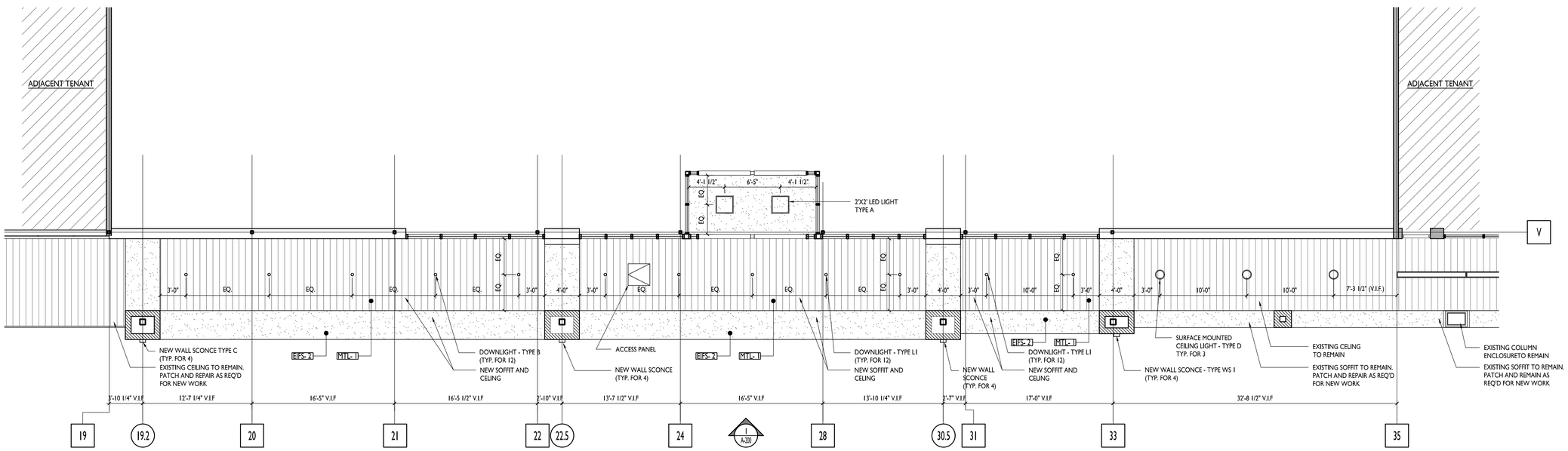
Rev:	Date:	Description:
	APRIL 01, 2022	ISSUED FOR BID AND PERMIT

LICENSE # RA NO. 13964
EXP. 07/31/23

Enlarged Storefront Plan Elevation and Plan Details

1838.C A-700

SYMBOL LEGEND		
SYM		DESCRIPTION
□ A		LED 2' x 2' PANEL
° B/B-EM		4" RECESSED DOWNLIGHT
▭ C		25" OUTDOOR LED
○ D		12"W OURDOOR CEILING LIGHT



1 Reflected Ceiling Plan

SCALE: 3/16" = 1'-0"

Tenant 6A LL Work
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Brick Township, NJ

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Partial Reflected Ceiling Plan and Lighting Schedule

1838.C A-900

Tenant 6A LL Work

Laurel Square

Brick, New Jersey

Owner/Developer:
BRIXMOR Property Group
450 Lexington Avenue, 13th Floor
New York City, NY 10017

CREATE
ARCHITECTURE PLANNING & DESIGN PLLC
45 West 34th Street
Penthouse
New York, NY 10001

Structural & M/E/P Engineers:
Thorson Baker + Associates, Inc.
3030 West Streetboro Rd
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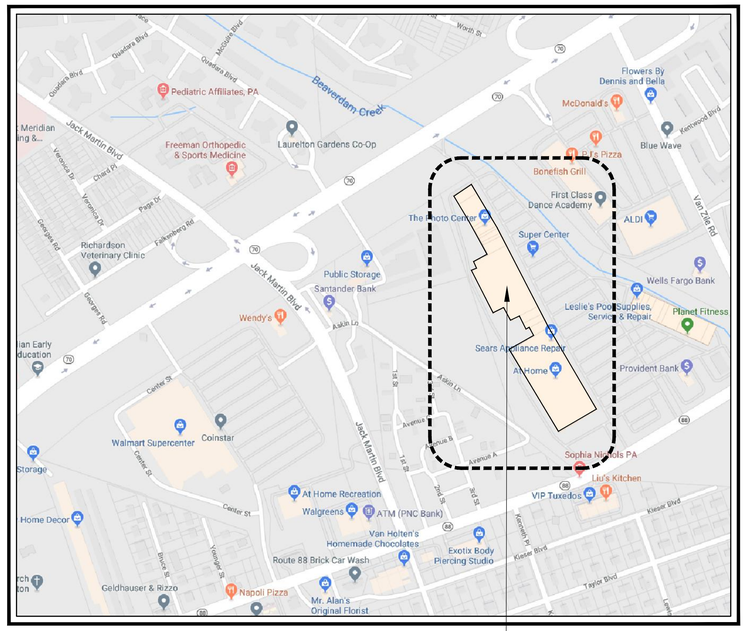
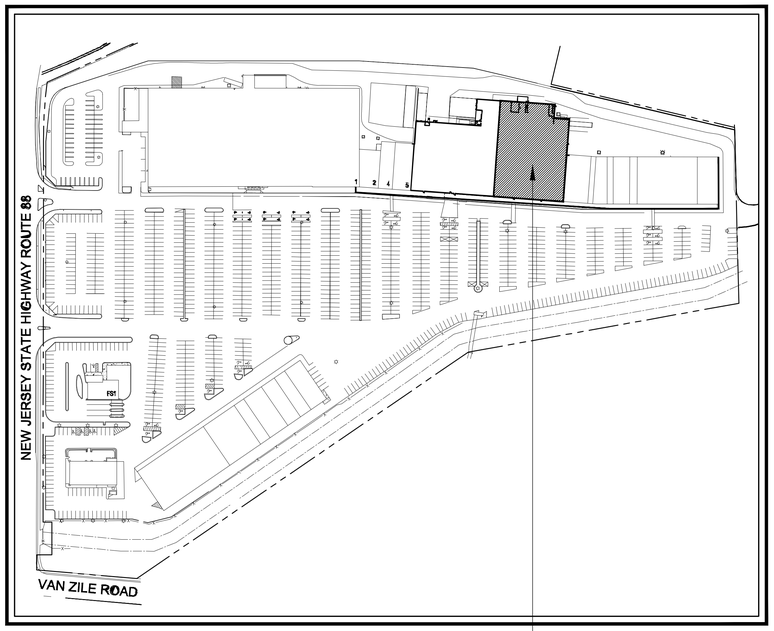


1 Location Map
SCALE: N.T.S.

NORTH



2 Site Plan
SCALE: N. T. S.

NORTH

List of Drawings

04/01/2022 ISSUED FOR BID & PERMIT

ARCHITECTURAL DRAWINGS

SHEET #	SHEET TITLE	REV.	DATE
CS-1	COVER SHEET		4/1/2022
CS-2	GENERAL NOTES, CODE REVIEW, SYMBOLS & ABBREVIATIONS		4/1/2022
SP-1	SPECIFICATIONS		4/1/2022
SP-2	SPECIFICATIONS		4/1/2022
SP-3	SPECIFICATIONS		4/1/2022
D-100	DEMOLITION FLOOR PLAN AND ELEVATION		4/1/2022
A-100	CONSTRUCTION FLOOR PLAN AND DETAILS		4/1/2022
A-101	ROOF PLAN AND DETAILS		4/1/2022
A-200	EXTERIOR ELEVATIONS AND MATERIAL LEGEND		4/1/2022
A-400	WALL SECTIONS AND ENLARGED DETAILS		4/1/2022
A-401	WALL SECTIONS AND ENLARGED DETAILS		4/1/2022
A-402	WALL SECTIONS AND ENLARGED DETAILS		4/1/2022
A-700	ENLARGED STOREFRONT PLAN, ELEVATION AND PLAN DETAILS		4/1/2022
A-900	REFLECTED CEILING PLAN AND LIGHTING SCHEDULE		4/1/2022

STRUCTURAL DRAWINGS

SHEET #	SHEET TITLE	REV.	DATE
S-001	GENERAL NOTES AND SPECIFICATIONS		4/1/2022
S-002	GENERAL NOTES AND SPECIFICATIONS		4/1/2022
S-003	GENERAL NOTES AND SPECIFICATIONS		4/1/2022
S-100	EXISTING PARTIAL FOUNDATION PLAN		4/1/2022
S-101	EXISTING ROOF FRAMING PLAN		4/1/2022
S-200	FOUNDATION SECTIONS & DETAILS		4/1/2022
S-300	FRAMING SECTIONS AND TYPICAL DETAILS		4/1/2022
S-301	FRAMING SECTIONS AND TYPICAL DETAILS		4/1/2022
S-302	FRAMING SECTIONS AND TYPICAL DETAILS		4/1/2022

M/E/P DRAWINGS

SHEET #	SHEET TITLE	REV.	DATE
M-001	MECHANICAL GENERAL NOTES		4/1/2022
M-101	MECHANICAL PLAN		4/1/2022
M-201	PLUMBING PLAN		4/1/2022
M-301	MECHANICAL SPECIFICATIONS		4/1/2022
M-302	MECHANICAL SPECIFICATIONS		4/1/2022
E-001	ELECTRICAL LEGENDS, SCHEDULES AND DETAILS		4/1/2022
E-002	ELECTRICAL LEGENDS, SCHEDULES AND DETAILS		4/1/2022
E-003	ONE-LINE DIAGRAM AND PANEL SCHEDULE		4/1/2022
E-100	DEMOLITION ELECTRICAL PLAN		4/1/2022
E-101	ELECTRICAL PLAN		4/1/2022
E-200	ELECTRICAL FACADE PLAN AND ELEVATION		4/1/2022
E-300	ELECTRICAL SPECIFICATIONS		4/1/2022
E-301	ELECTRICAL SPECIFICATIONS		4/1/2022

Abbreviations:

ACT	Acoustical Ceiling Tile
AC	Air Conditioning
ADAAG	American With Disabilities Act Accessibility Guidlinf
ADJ	Adjacent
ALT	Alternate
AHU	Air Handling Unit
AL	Aluminum
APPROX.	Approximate
B.O.C.	Bottom Of Curb
BSMT	Basement
BLDG.	Building
BW	Both Ways
BOT	Bottom
B.O.F.	Bottom OF Footing
BUR	Built Up Roofing
CPT	Carpet(ed)
CB	Catch Basin
CLG	Ceiling
CO	Clean Out
CONC	Concrete
CT	Ceramic Tile
CMU	Concrete Masonry Unit
CONST	Construction
CONT	Continuous/Continue
CONTR	Contractor
CRS	Course(s)
DEMO	Demolish/Demolition
DTL/DET	Detail
DIM	Dimension
DWG	Drawing
DO	Door Opening
ELEC	Electric(al)
E	Electrical Line
EWC	Electric Water Cooler
EL	Elevation(height)
ELEV	Elevator
EQ	Equal
EXIST	Existing
EXP	Exposed
EXT	Exterior
FIN	Finish
FE	Fire Extinguisher
FEC	Fire Extinguisher Cabinet
FD	Floor Drain
FTG	Footing
FND	Foundation
FL	Floor(ing)
FRP	Fiberglass Reinforce Panel
GA	Gage/Gauge
GALV	Galvanized
GC	General Contractor
GL	Glass/Glazing
GWB/GYP.BD.	Gypsum Wallboard
HWD	Hardwood
HVAC	Heating,Ventilating, Air Conditioning
HGT	Height
HM	Hollow Metal
HORZ	Horizontal
ID	Inside Diameter
INS	Insulate (ed) (ion)
INT	Interior
INV	Invert
JT	Joint
KIT	Kitchen
LL	Live Load
MFG	Manufacturer (ed)
MAS	Masonry
MO	Masonry Opening
MAX.	Maximum
MECH.	Mechanic (al)
MTL	Metal
MT	Metal Threshold
MIN.	Minimum
MIR	Mirror
MISC	Miscellaneous
MR	Moisture Resistant
NOM	Nominal
NIC	Not In Contract
NTS	Not To Scale
OC	On Center (s)
OPG	Opening
OPP	Opposite
OD	Outer Diameter
OA	Overall
OH	Overhead
PTD	Paint (ed)
PLAS	Plaster
P.LAM	Plastic Laminate
PL	Plate
PLY	Plywood
PSF	Pounds Per Square Foot
PSI	Pounds Per Square Inch
PCC	Pre-cast Concrete
QT	Quarry Tile
QTY	Quantity
RAD	Radius
REV	Revision(s)/Revised
ROW	Right Of Way
R	Riser
RO	Rough Opening
RD	Roof Drain
RWC	Rain Water Conductor
SIM	Similar
SPEC	Specification(s)
SQ	Square
SS	Stainless Steel
STD	Standard
STL	Steel
STOR	Storage
STRUC	Structural
SUSP	Suspended
TEL	Telephone
THK	Thick (ness)
TPD	Toilet Paper Dispenser
T	Tread
TYP	Typical
T.O.B.	Top of Bearing
T.O. Conc	Top of Concrete
T.O.F.	Top of Footing
T.O.	Top of
T.O.P.	Top of Pier
T.O.S.	Top of Steel
T.O. Stud	Top of Stud
UON	Unles Otherwise Noted
VBR	Vapor Barrier
VERT	Vertical
VAT	Vinyl Asbestos Tile
VB	Vinyl Base
VCT	Vinyl Composite Tile
WC	Water Closet
WP	Waterproofing
WWF	Welded Wire Fabric
W/	With
W/O	Without
WD	Wood
WP	Work Point

General Notes:

1. GENERAL CONTRACTOR SHALL REPLACE AND/OR RESTORE ALL MATERIALS STORED OR INSTALLED ON THE SITE SUBJECT TO DAMAGE OR THEFT.

2. GENERAL CONTRACTOR TO VERIFY ALL DIMENSIONS THROUGHOUT THE SET OF DRAWINGS. IF DISCREPANCY OCCURS, IMMEDIATELY CONTACT THE ARCHITECT FOR CLARIFICATIONS.

3. NOTICE TO ALL GENERAL CONTRACTORS AND SUBCONTRACTORS: IT IS YOUR RESPONSIBILITY TO BID YOUR SCOPE OF WORK USING THE COMPLETE SET OF PLANS AND SPECIFICATIONS AND INCLUDE ALL WORK REQUIRED TO PROVIDE A FINISHED PRODUCT CONSISTENT WITH THE CONTRACT DOCUMENTS INTENT. ALL WORK NEEDED TO PROVIDE SUCH A PRODUCT SHALL BE INCLUDED AND PERFORMED. THE FACT THAT SOMETHING WAS NOT INDICATED ON "YOUR PORTION OF THE DRAWINGS" WILL NOT BE ACCEPTABLE AS AN EXTRA. IT IS AT THE DISCRETION OF THE OWNER AND ARCHITECT TO DECIDE ON ANY DISCREPANCIES DURING CONSTRUCTION AND THE GENERAL CONTRACTOR AND SUBCONTRACTOR ARE RESPONSIBLE TO BUILD IT.

4. IF THERE ARE ANY DISCREPANCIES IN THE COMPLETE SET OF PERMIT OR CONSTRUCTIONS DOCUMENTS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IN A WRITTEN FORM OF AN R.F.I. "REQUEST FOR INFORMATION" FROM THE GENERAL CONTRACTOR DURING THE BIDDING STAGE AND PRIOR TO SUBMITTING BIDS, VIA FAX ONLY.

5. A COMPLETE SET OF AS-BUILTS SHALL BE FURNISHED TO THE OWNER AT COMPLETION OF THE PROJECT. THE CLOSE OUT PACKAGE IN A FORM OF A HARD BINDER, INDEXED, LABELED AND DIVIDED, WHICH INCLUDES COPIES OF PERMITS AND THE CERTIFICATE OF OCCUPANCY, A LIST OF SUBCONTRACTOR AND PHONE NUMBERS, ALL WARRANTIES AND MANUALS, ETC.

6. GENERAL CONTRACTOR AND SUBCONTRACTOR ARE TO BID THIS PROJECT AS DESIGNED. VALUE ENGINEERING IS WELCOMED AND IS ALSO ENCOURAGED IN AN EFFORT TO GET THE BEST VALUE FOR THE OWNER. GENERAL CONTRACTOR SHALL SUBMIT HIS BID PER PLANS AND SPECIFICATIONS AND SUBMIT VALUE ENGINEERING ITEMS SEPARATELY.

7. GENERAL CONTRACTOR TO PROVIDE A MINIMUM OF A ONE YEAR WARRANTY (UNLESS INDICATED AS ADDITIONAL REQUIREMENTS IN THE SPECIFICATIONS FROM ALL OF HIS SUB- CONTRACTORS FOR ALL LABOR, PRODUCTS, AND/OR ANY SYSTEMS PUT INTO THIS PROJECT. ONE YEAR WARRANTY TO START AT CERTIFICATE OF OCCUPANCY TURN OVER TO OWNER.

8. THE CONTRACTOR SHALL PROVIDE ALL BLOCKING, BACKING, SUPPORT MEMBERS, AS TO ALLOW FOR THE CORRECT ATTACHMENT OF ALL WORK INDICATED WITHIN.

9. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE THE COORDINATION OF ALL TRADES, DURING BIDDING AND CONSTRUCTION.

Material and Symbol Legend:

Material Designation:

Earth		Porous Fill	
Concrete (W/ Reinforcing)		Concrete Masonry Unit	
Brick		Concrete Masonry Unit (Grouted Solid)	
Concrete Brick		Metal or Wood Stud Walls (Defined in Wall Types)	
Steel (Small Scale)		Dimension Stock Lumber - size as Noted	
Steel (Large Scale)		Wood Blocking - Cut to Size	
Aluminum (Large Scale)		Batt Insulation	
Plywood		Rigid Insulation	
Finished Wood		Structural Facing Tile	
Gypsum Wallboard (Large Scale)		Glass Block	
Plaster (Large Scale)		Glass (Large Scale)	
Acoustic Tile (Large Scale)		Carpet (Large Scale)	
Fireproofing (Large Scale)			

Graphic Symbols:

Graphic Symbol	Same Sheet	Sheet Noted
Partition Type	3	3
Detail Cross Section	3	3 / 400
Enlarged Detail	6	6 / 401
Wall Section	3	4 / 400
Building Section	6 / 9-3	6 / 9-3
Interior Room Elevation - Single	12 / 13	INT. ELEV. SHT. A-4
Interior Room Elevation - Multiple	12 / 13	INT. ELEV. SHT. A-4
Building Elevation	7	7 / A-1
Door Mark	100	
Window Mark	K	
Keynote	3	

Code Review & Compliance:

APPLICABLE CODES:

BUILDING CODE:
INTERNATIONAL BUILDING CODE/2018 WITH NJ EDITS
PLUMBING CODE:
NATIONAL STANDARD PLUMBING CODE/2018 WITH NJ EDITS
ELECTRICAL CODE:
NATIONAL ELECTRICAL CODE (NFPA 70) 2017 WITH NJ EDITS
ENERGY CODE:
ASHRAE 90.1 -2016
MECHANICAL CODE:
INTERNATIONAL MECHANICAL CODE/2018 WITH NJ EDITS
FUEL GAS CODE:
INTERNATIONAL FUEL GAS CODE/2018 WITH NJ EDITS
ACCESSIBILITY CODE:
2010 ADA STANDARDS

CHAPTER 3:
USE AND OCCUPANCY CLASSIFICATION

SECTION 309
309.1 MECHANTILE : GROUP M
TENANT: 6A

CHAPTER 5:
GENERAL BUILDING HEIGHT & AREA LIMITATIONS

SECTION 504
BUILDING HEIGHT: EXISTING 1 STORY / 26' HIGH PARAPET (MAX)

ALLOWABLE BUILDING HEIGHTS AND AREAS: EXIST.
BUILDING TYPE II B HEIGHT LIMIT - 3 STORIES / 55'
AREA LIMIT 23,000 SF (IF NON-SPRINKLERED- SEE BELOW)

SECTION 508 - TABLE 508.4 REQUIRED SEPARATION OF OCCUPANCIES (HOURS)
(FOR FIRE ALARM DETERMINATION ON A TENANT BY TENANT BASIS)
B/B - SPRINKLERED BUILDING = 0

CHAPTER 6:
TYPES OF CONSTRUCTION

TABLE 601 - FIRE RESISTANCE RATING REQUIRMENTS FOR BUILDING ELEMENTS (HOURS)

EXIST. TYPE II B NON-COMBUSTIBLE:

STRUCTURAL FRAME, COLUMN, GIRDERS, TRUSSES = 0 HR.

BEARING WALLS EXTERIOR = 0 HR. NOT LESS THAN FIRE- RESISTANCE RATING BASED ON FIRE SEPARATION DISTANCE (SEE TABLE 602)

INTERIOR WALLS = 0 HR.

NON BEARING WALLS AND PARTITIONS FOR EXTERIOR WALLS - FLOOR CONSTRUCTION = 0 HR. (INCL. SUPPORTING BEAM AND JOIST)

ROOF CONSTRUCTION (BEAM AND JOIST) = 0 HR.

TABLE 602 - FIRE RESISTANCE RATING REQUIRED FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE.

FIRE SEPARATION (EXIST. BUILDING)	Group B
LESS THAN 5 FT	1 Hr
GREATER THAN 5 FT BUT LESS THAN 10 FT	1 Hr
GREATER THAN 10 FT BUT LESS THAN 30 FT	0 Hr
GREATER THAN 30 FT	0 Hr

SECTION 603 - COMBUSTIBLE MATERIALS IN TYPE I AND II CONSTRUCTION

SECTION 603.1 - ALLOWABLE MATERIALS:

1. THERMAL AND ACOUSTICAL INSULATION, OTHER THAN FOAM PLASTICS, HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 25.

2. N/A

3. ROOF COVERINGS THAT HAVE AN A, B OR C CLASSIFICATION

4.-7. N/A

8. WHERE NOT INSTALLED OVER 15 FEET ABOVE GRADE, SHOW WINDOWS, NAILING OR FURRING STRIPS AND WOODEN BULKHEADS BELOW SHOW WINDOWS, INCLUDING THEIR FRAMES, APRONS AND SHOW CASES.

9.-12. N/A

13. BLOCKING SUCH AS FOR HANDRAILS, MILLWORK, CABINETS, WINDOWS AND DOOR FRAMES.

14. N/A

15. MASTICS AND CAULKING MATERIALS APPLIED TO PROVIDE FLEXIBLE SEALS BETWEEN COMPONENTS OF EXTERIOR WALL CONSTRUCTION.

16. N/A

17. NAILING OR FURRING STRIPS AS PERMITTED BY SECTION 803.4.

18.-20. N/A

21. MATERIALS USED TO PROTECT PENETRATIONS IN FIRE-RESISTANCE-RATED ASSEMBLIES IN ACCORDANCE WITH SECTION 713.

22. MATERIALS USED TO PROTECT JOINTS IN FIRE-RESISTANT-RATED ASSEMBLIES IN ACCORDANCE WITH SECTION 714.

23. MATERIALS ALLOWED IN THE CONCEALED SPACES OF BUILDINGS OF TYPES I & II CONSTRUCTION IN ACCORDANCE WITH SECTION 717.5.

24. N/A

25. FIRE-RETARDANT-TREATED WOOD SHALL BE PERMITTED IN:
25.1 NON-BEARING PARTITIONS WHERE THE REQUIRED FIRE-RESISTANCE-RATING IS 2 HOURS OR LESS.
25.2 NON-BEARING EXTERIOR WALLS WHERE NO FIRE RATING IS REQUIRED.
25.3 ROOF CONSTRUCTION, INCLUDING GIRDERS, TRUSSES, FRAMING AND DECKING.

CHAPTER 9:
FIRE PROTECTION SYSTEMS

NO CHANGE UNDER THIS APPLICATION

CHAPTER 10
MEANS OF EGRESS FOR THIS SCOPE OF WORK.
TENANTS ASSUMED TO BE MERCANTILE.
FULL S.F. AREAS CALCULATED @ 150 S.F. GROSS.

SECTION 1004 - OCCUPANT LOAD

TABLE 1004.1.2

ALL EGRESS EXITS ARE EXISTING AND UNCHANGED FOR TENANT 6A

TENANT 6A 28,910 SF / 60 GROSS 482 PERSONS

SECTION 105 - EGRESS SIZING

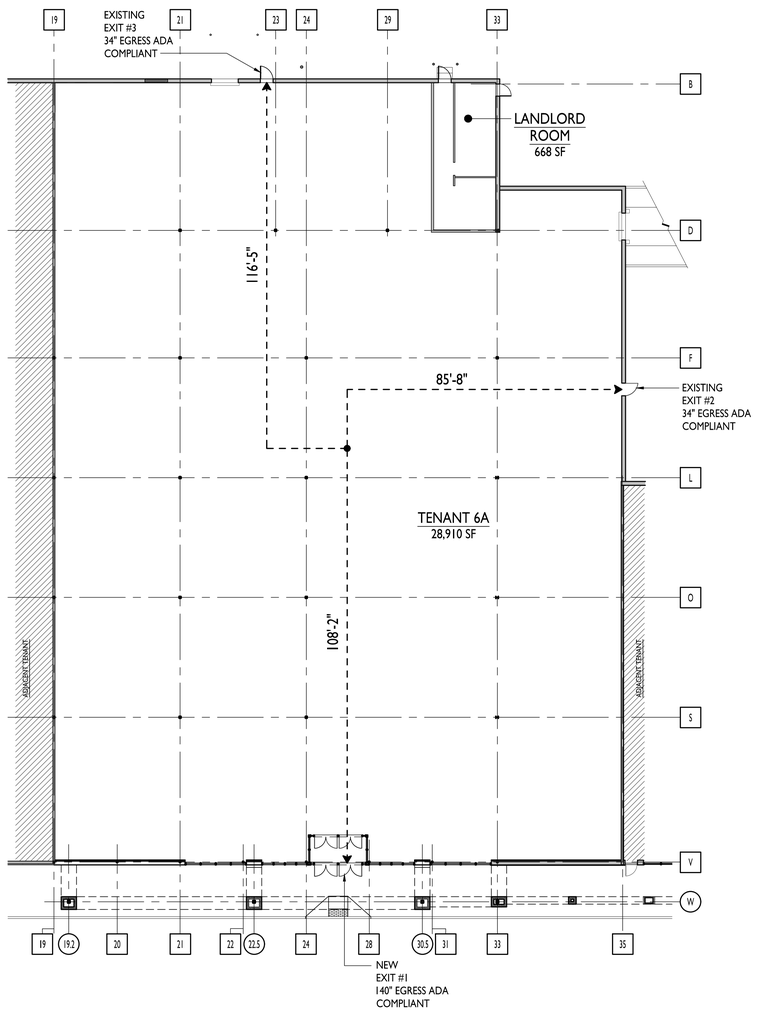
TENANT 6A 482X 0.2" / PERSON = 96.4" (REQ'D)
EXISTING EXIT #1 = 140"
EXISTING EXIT #2 = 34"
EXISTING EXIT #3 = 34"
TOTAL = 208 " (PROVIDED)

CHAPTER 11
ACCESSIBILITY:

SECTION 1101.2 - DESIGN
BUILDINGS AND FACILITIES SHALL BE DESIGNED AND CONSTRUCTED TO BE ACCESSIBLE IN ACCORDANCE WITH THIS CODE AND ICC A117.1.

2018 NATIONAL STANDARD PLUMBING CODE

NEW RESTROOMS WILL BE PROVIDED IN TENANT FIT OUT, UNDER SEPARATE APPLICATION



Egress Plan

NORTH

Project Scope:

THE PROJECT CONSISTS OF THE FITTING OF EXISTING SPACE (28,910 SF) FOR ASHLEY FURNITURE USE. SPACE IS FULLY SPRINKLED. STRUCTURE IS EXISTING WITH CONCRETE SLAB LEVELED, STEEL COLUMNS AND CMU WALLS. SELECTIVE DEMOLITION WILL BE PERFORMED TO ALLOW FOR NEW STOREFRONT. EXTERIOR FACADE WILL BE RECONFIGURED PER ASHLEY FURNITURE REQUIREMENTS AND RECEIVING NEW FINISHES. NEW RTUS ON THE ROOF ARE PROVIDED PER THE TENANT NEEDS. LOADING DOCK AREA IMPROVEMENTS AND REAR WALL INFILL IS INCLUDED.

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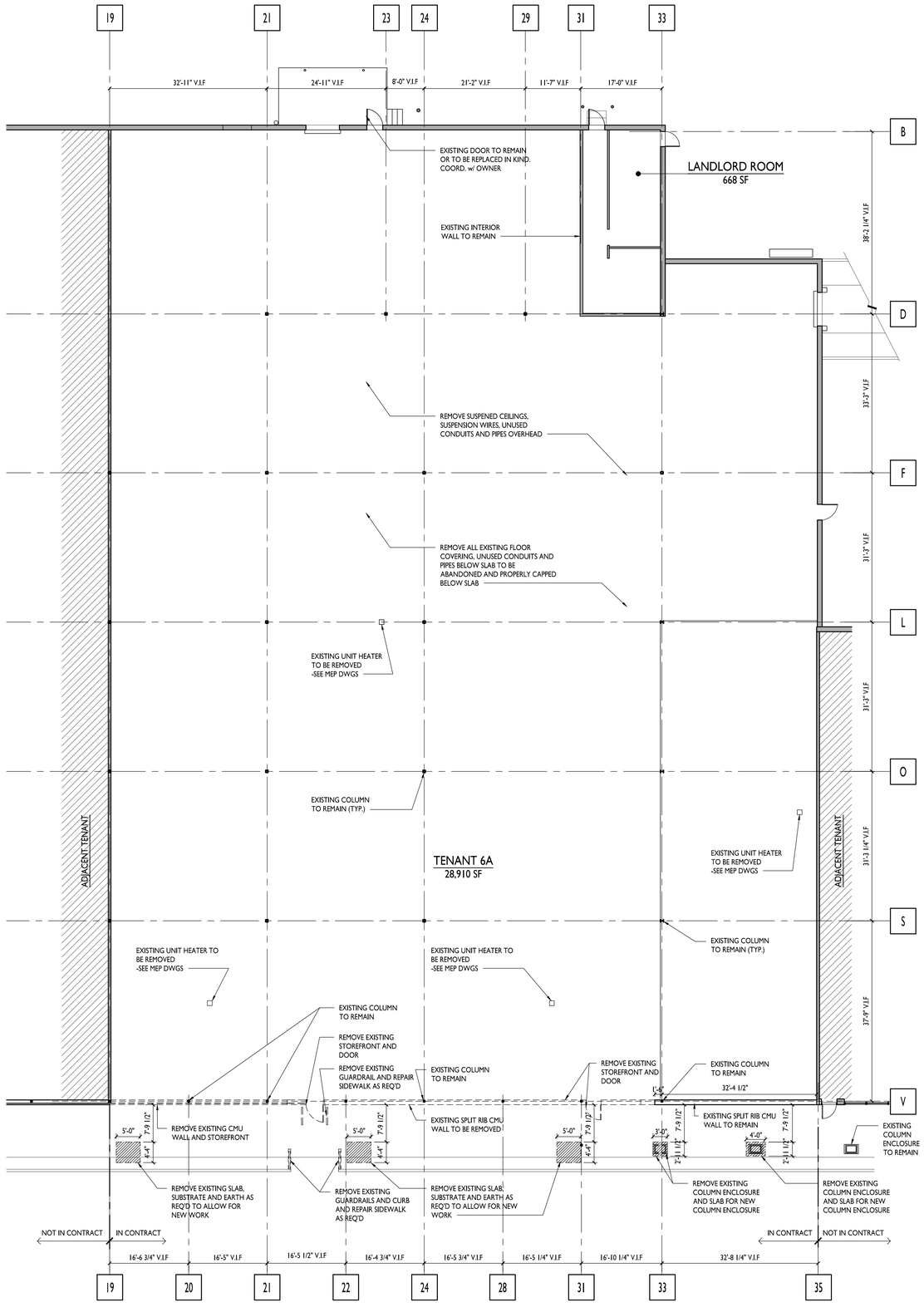
General Notes, Code Review, and Abrevations

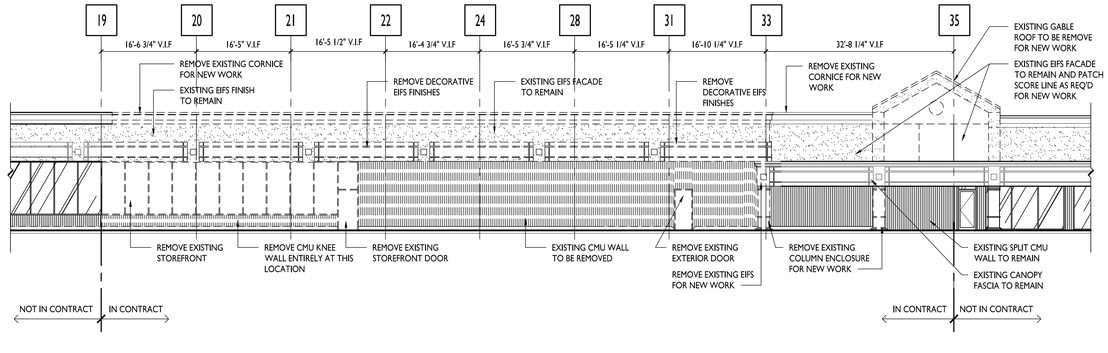
1838.C CS-2



1 Demolition Floor Plan
SCALE: 3/32" = 1'-0"

Demolition Notes:

1. ALL MECHANICAL AND ELECTRICAL SYSTEMS THAT ARE TO BE RETAINED ARE TO BE SHUT OFF AND CAPPED AT ALL POINTS FOR PROTECTION OF PROPERTY AND ALL PARTIES CONCERNED.
2. ALL DEMOLITION WORK IS TO BE DONE IN ACCORDANCE WITH ALL OSHA REGULATIONS, AND ANY / ALL LOCAL RULES AND REGULATIONS HAVING JURISDICTION OVER SAID PROJECT.
3. COORDINATE THE REMOVAL OF ANY / ALL WORK WITH THE PROPOSED WORK TO BE CONSTRUCTED AS PART OF THE PROPOSED RENOVATIONS.
4. DEMOLITION CONTRACTOR IS FULLY RESPONSIBLE FOR SEQUENCING OF SHOWN ITEMS REMOVAL AND PROPERTY PROTECTION FROM WEATHER AND VANDAL DAMAGE.
5. WHEREVER REMOVAL STATES "AS TO ALLOW FOR NEW", REFER TO PROPOSED CONSTRUCTION DRAWINGS (BOTH ARCHITECTURAL AND ENGINEERING) FOR EXTENT OF NEW WORK AND ACTUAL DEMOLITION REQUIREMENTS.
6. PROTECTION FROM WEATHER, WIND, WATER, ETC. ARE THE RESPONSIBILITY OF THE DEMOLITION CONTRACTOR.
7. NO WORK IS TO PROCEED UNTIL OWNER APPROVAL OF DEMOLITION WORK HAS BEEN SECURED.
8. PATCHING AND REPAIRING OF EXISTING AREAS TO REMAIN IS INCLUDED AS PART OF THIS DIVISION'S WORK.
9. REMOVAL OF ALL LIGHTING TO BE DONE AS PART OF THIS SCOPE OF WORK, TYPICAL THROUGHOUT ENTIRE TENANT B SPACE, INCLUDING ALL EXTERIOR APPLICATIONS IN THE AREA OF WORK. REMOVAL OF EXISTING LIGHT FIXTURES IS REQUIRED AS TO ALLOW FOR NEW. COORDINATE WITH ELECTRICAL DRAWINGS AS TO WHICH FIXTURES ARE REMOVED IN THEIR ENTIRETY VS. THOSE WHICH HOUSING IS TO REMAIN. (IF ANY).
10. ALL AREAS AFTER DEMOLITION ARE TO BE LEFT "BROOM CLEAN" AND IN AREAS OF PUBLIC ACCESS "MOPPED CLEAN" BY THE DEMOLITION CONTRACTOR. NO SURFACE DUST IS ALLOWED TO ACCUMULATE DURING AND AT THE END OF EACH DAY WHICH MAY BE A HAZARD TO THE GENERAL PUBLIC.
11. GENERAL CONTRACTOR, DEMOLITION CONTRACTOR AND RELATED TRADES SHALL BE AWARE THAT ADDITIONAL DEMOLITION WORK IS NOTED THROUGHOUT THE CONSTRUCTION DOCUMENTS AS IT PERTAINS TO THAT PARTICULAR AREA OF WORK. AS SUCH DEMOLITION CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR AS TO ALL WORK INCLUDED IN CONTRACT DOCUMENTS TO BE CONSIDERED WITHIN THE SCOPE OF WORK TO BE PERFORMED.



2 Demolition Elevation
SCALE: 3/32" = 1'-0"

Tenant 6A LL Work
at Laurel Square
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Brick Township, NJ

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Demolition Floor Plan and Elevation

1838.C D-100

Specifications:

TABLE OF CONTENTS -

DIVISION ZERO: CONDITIONS OF THE CONTRACT

SECTION 00700 - GENERAL CONDITIONS

A. CONDITIONS: AMERICAN INSTITUTE OF ARCHITECTS (AIA) DOCUMENT A201, "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION," 1997 EDITION, ARTICLES 1 THROUGH 14 INCLUSIVE IS MADE A PART OF THIS CONTRACT.

1. REFERENCED CONDITIONS MAINTAIN FORCE AND EFFECT AS THOUGH SET FORTH IN FULL AND SHALL APPLY TO ALL PORTION OF WORK.

B. THE TERM "CONTRACTOR" UNDER THIS CONTRACT SHALL REFER TO SUBCONTRACTORS AND WELL AS GENERAL CONTRACTOR.

SECTION 00800 - SUPPLEMENTARY CONDITIONS

A. WHERE PROVISIONS OF GENERAL CONDITIONS RELATE TO PROJECT ADMINISTRATION AND WORK RELATED REQUIREMENTS OF THE CONTRACT, THOSE PARAGRAPHS ARE EXPANDED IN DIVISION 1 - GENERAL REQUIREMENTS.

B. GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS AND DIVISION 1 - GENERAL REQUIREMENTS CONTAIN INFORMATION NECESSARY FOR COMPLETION OF EVERY PART OF THE PROJECT.

DIVISION ONE: GENERAL REQUIREMENTS

SECTION 01010 - SUMMARY OF WORK

A. WORK OF CONTRACT COMPRISES CONSTRUCTION OF FACILITY AS INDICATED IN CONTRACT DOCUMENTS.

B. TITLES AND HEADINGS IN CONTRACT DOCUMENTS ARE FOR CONVENIENCE AND ARE NOT TO BE TAKEN AS A SEGREGATION OF UNITS OF MATERIALS AND LABOR.

1. NO RESPONSIBILITY, DIRECT OR IMPLIED, IS ASSUMED BY ARCHITECT OR OWNER FOR OMISSIONS OR DUPLICATIONS BY CONTRACTOR OR SUBCONTRACTORS DUE TO ARRANGEMENT OF MATTER IN CONTRACT DOCUMENTS.

C. CONTRACTOR USE OF PREMISES: CONDUCT OPERATIONS TO ENSURE LEAST INCONVENIENCE TO GENERAL PUBLIC AND OTHER BUSINESSES.

1. LIMIT USE OF PREMISES FOR CONSTRUCTION AND STORAGE TO AREAS DESIGNATED.

2. ASSUME FULL RESPONSIBILITY FOR PROTECTION AND SAFEKEEPING OF PRODUCTS UNDER CONTRACT, INCLUDING THOSE STORED ON SITE.

D. REGULATORY REQUIREMENTS: CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING GOVERNING AUTHORITIES DIRECTLY FOR NECESSARY INFORMATION AND DECISIONS BEARING UPON PERFORMANCE OF WORK.

E. REFERENCE STANDARDS: FOR PRODUCTS SPECIFIED BY ASSOCIATION OR TRADE STANDARDS, COMPLY WITH REQUIREMENTS OF REFERENCED STANDARD, EXCEPT WHEN MORE RIGID REQUIREMENTS ARE SPECIFIED OR REQUIRED BY APPLICABLE CODES.

F. CUTTING AND PATCHING: CUT, FIT, AND PATCH AS REQUIRED TO COMPLETE WORK TO MATCH ADJACENT UNDISTURBED MATERIALS AND FINISHES.

SECTION 01150 - ENVIRONMENTAL PROCEDURES

A. GENERAL ENVIRONMENT CONCERNS: PROJECT REQUIRES MAXIMUM ENVIRONMENTALLY CONSCIOUS WORK FEASIBLE WITHIN LIMITS SPECIFIED, AVAILABLE MATERIALS, EQUIPMENT, AND PRODUCTS.

1. INFORM ARCHITECT AND OWNER WHERE ENVIRONMENTAL REQUIREMENTS COULD DETRIMENTALLY IMPACT CRITICAL PATH OF CONSTRUCTION SCHEDULE.

2. INTENTION OF THIS SECTION IS TO ENSURE THOSE INVOLVED WITH PROJECT CONDUCT ACTIVITIES TO PROTECT THE ENVIRONMENT, BOTH ON-SITE AND OFF-SITE, DURING DEMOLITION AND/OR DURING CONSTRUCTION OPERATIONS.

B. SPECIAL ENVIRONMENTAL DEFINITIONS:

1. ENVIRONMENTAL POLLUTION AND DAMAGE: PRESENCE OF CHEMICAL, PHYSICAL, OR BIOLOGICAL ELEMENTS OR AGENTS WHICH COULD:

a. ADVERSELY AFFECT HUMAN HEALTH OR WELFARE.

b. ADVERSELY IMPACT THE ENVIRONMENT AND/OR ECOLOGICAL BALANCE.

c. DEGRADE OR DAMAGE THE ENVIRONMENT FOR NATURAL AESTHETIC, CULTURAL OR HISTORICAL PURPOSES.

2. CLASS III LANDFILL: LANDFILL THAT ACCEPTS NON-HAZARDOUS WASTE SUCH AS HOUSEHOLD, COMMERCIAL, AND INDUSTRIAL WASTE, INCLUDING CONSTRUCTION, REMODELING, REPAIR, AND DEMOLITION OPERATIONS.

3. CONSTRUCTION AND DEMOLITION WASTE: SOLID WASTES SUCH AS BUILDING MATERIALS, PACKAGING, RUBBISH, DEBRIS, AND RUBBLE RESULTING FROM CONSTRUCTION, REMODELING, REPAIR, AND DEMOLITION OPERATIONS.

4. CHEMICAL WASTE: PETROLEUM PRODUCTS, BITUMINOUS MATERIALS, SALTS, ACIDS, ALKALOIDS, HERBICIDES, PESTICIDES, ORGANIC CHEMICAL, AND INORGANIC CHEMICAL WASTE & CONSTRUCTION MATERIALS, SUCH AS ADHESIVES, SOLVENTS, & PAINTS.

C. SPECIAL RECYCLING REQUIREMENTS:

1. ARRANGE FOR COLLECTION BY OR DELIVERY TO APPROPRIATE RECYCLING CENTER OR TRANSFER STATION THAT ACCEPTS CONSTRUCTION AND DEMOLITION WASTE FAR PURPOSE OF RECYCLING.

2. PARTICIPATE IN RE-USE PROGRAMS: PARTICIPATE IN RE-USE PROGRAM TO EXTENT AVAILABLE IN PROJECT AREA.

D. ENVIRONMENTAL CONTROLS: COMPLY WITH FEDERAL, STATE, PROVINCIAL AND LOCAL REGULATIONS INCLUDING, BUT NOT LIMITED TO, WATER, AIR, SOLID WASTE, HAZARDOUS WASTE, SANITARY WASTE, SEDIMENT, STORM WATER, DUST, HAZARDOUS MATERIALS AND NOISE POLLUTION.

E. PROTECTION OF NATURAL RESOURCES: PRESERVE THE NATURAL RESOURCES WITHIN THE PROJECT BOUNDARIES AND OUTSIDE LIMITS OF PERMANENT WORK PERFORMED UNDER CONTRACT IN EXISTING CONDITION OR RESTORE TO AN EQUIVALENT OR IMPROVED CONDITION UPON COMPLETION OF WORK.

F. DUST, AIR POLLUTION, AND ODOR CONTROL: PREVENT CREATION OF DUST, AIR POLLUTION AND ODORS.

G. NOISE CONTROL: PERFORM DEMOLITION AND CONSTRUCTION OPERATIONS TO MINIMIZE NOISE, PERFORM NOISE PRODUCING WORK IN LESS SENSITIVE HOURS OF THE DAY OR WEEK AS DIRECTED BY OWNER AND/OR ON-SITE MANAGEMENT.

SECTION 01300 - SUBMITTALS

A. SUBMITTALS ARE ONLY REQUIRED WHERE SPECIFICALLY INDICATED IN DRAWINGS/SPECS OR REQUESTED FROM OWNER/ARCHITECT.

B. GENERAL CONTRACTOR SHALL REVIEW AND COORDINATE SUBMITTALS PRIOR TO ARCHITECT'S REVIEW.

C. GENERAL CONTRACTOR SHALL OBTAIN ARCHITECTS APPROVAL PRIOR TO FABRICATION OR INSTALLATION OF RELEVANT WORK.

D. CONTRACTOR, BY REVIEWING SUBMITTALS, INDICATE VERIFICATION OF COMPLIANCE WITH CONTRACT DOCUMENTS, FIELD MEASUREMENTS, FIELD CONSTRUCTION, CRITERIA, MATERIALS, AND SIMILAR DATA.

E. PRODUCT DATA: MARK EACH COPY TO IDENTIFY APPLICABLE PRODUCTS, MODELS, OPTIONS, AND OTHER DATA, SUPPLEMENT MANUFACTURES STANDARD DATA TO PROVIDE INFORMATION UNIQUE TO WORK: INCLUDE INSTALLATION INSTRUCTIONS.

F. SHOP DRAWINGS: PROVIDE SHOP DRAWINGS TO OWNER / ARCHITECT FOR CUSTOM FABRICATED ITEMS (5 HARD COPIES).

G. SAMPLES: PROVIDE MINIMUM TWO SAMPLES TO ARCHITECT PREPAID.

1. INCLUDE PROJECT, SPECIFICATION AND LOCATION ON EACH SAMPLE, GIVING FULL INFORMATION.

H. CERTIFICATES: SUBMIT CERTIFICATES TO ARCHITECT, IN DUPLICATE, IN ACCORDANCE WITH REQUIREMENTS OF SPECIFICATIONS SECTION.

SECTION 01400 - QUALITY CONTROL

A. GENERAL QUALITY CONTROL: MAINTAIN QUALITY CONTROL OVER SUPPLIERS, MANUFACTURERS, PRODUCTS, SERVICES, SITE CONDITIONS, AND WORKMANSHIP, TO PRODUCE WORK AT THE SPECIFIED QUALITY.

B. MANUFACTURER'S FIELD SERVICES: WHEN SPECIFIED IN THE CONTRACT DOCUMENTS SECTIONS, REQUIRE MANUFACTURER OR SUPPLIER TO HAVE QUALIFIED PERSONNEL PROVIDE ON-SITE OBSERVATIONS AND RECOMMENDATIONS.

C. TESTING LABORATORY SERVICES: PROVIDE TESTING LABORATORY SERVICES REQUIRED BY LOCAL AUTHORITIES FOR CONFORMANCE TO APPLICABLE CODES.

D. DELIVER AND STORE ALL ITEMS IN PROTECTED AREAS. KEEP FREE OF ANY DAMAGE. REPLACE ANY DAMAGED ITEMS OR PARTS AT NO COST TO THE OWNER.

E. A MINIMUM OF 20 PROGRESS PHOTOS SHALL BE SENT TO THE ARCHITECT AND OWNER ON THURSDAY OF EACH WEEK INDICATING WORK TO DATE ALONG WITH CONSTRUCTION PROGRESS REPORTS AND/OR MEETING MINUTES.

SECTION 01500 - CONSTRUCTION FACILITIES

A. TEMPORARY POWER: PROVIDE POWER SERVICES AND LIGHTING REQUIRED FOR OPERATIONS, WITH BRANCH WIRING AND DISTRIBUTION BOXES LOCATED TO ALLOW SERVICES AND LIGHTING BY MEANS OF CONSTRUCTION-TYPE POWER CORDS.

B. NOISE, DUST AND POLLUTION CONTROL: PROVIDE MATERIALS, AND EQUIPMENT NECESSARY TO COMPLY WITH LANDLORD AND LOCAL REQUIREMENTS FOR NOISE DUST AND POLLUTION.

C. PROVIDE ENVIRONMENTALLY SAFE BARRIERS AS MAY BE REQUIRED TO PROTECT ADJACENT PROPERTIES FROM DAMAGE FROM OPERATIONS: AND AS REQUIRED BY GOVERNING AUTHORITIES.

D. CLEANING: CONTROL ACCUMULATION OF WASTER MATERIALS AND RUBBISH, RECYCLE OR DISPOSE OF OFF-SITE AT INTERVALS APPROVED BY THE LANDLORD AND COMPLYING WITH SPECIAL ENVIRONMENTAL PROCEDURES SPECIFIED IN SECTION 01150.

E. SIGNS: WHEREVER GENERAL CONTRACTOR SIGNAGE IS HUNG SIMILAR OWNER/ARCHITECT SIGNAGE SHALL ACCOMPANY AT CONTRACTOR'S EXPENSE. NO GC SIGNAGE SHALL BE HUNG WITHOUT OWNER / ARCHITECT SIGNAGE DIRECTLY ADJACENT.

F. REMOVAL AND CLEANING: REMOVE CONSTRUCTION FACILITIES, CLEAN AND REPAIR ANY DAMAGE, WHICH WERE CAUSED BY PERFORMING THE WORK IN THE CONTRACT DOCUMENTS.

SECTION 01600 - MATERIALS AND EQUIPMENT

A. PRODUCTS:

1. COMPONENTS SUPPLIED IN QUANTITY SHALL BE INTERCHANGEABLE: PROVIDE MATERIALS AND SYSTEMS BY ONE MANUFACTURER TO EXTENT POSSIBLE, PROVIDE NEW MATERIALS UNLESS OTHERWISE DIRECTED IN CONTRACT DOCUMENTS.

2. PROVIDE ONLY NO ASBESTOS CONTAINING MATERIALS.

B. INSTALLATION: INSTALL ITEMS PLUMB, LEVEL, AND SECURE AND IN CORRECT RELATION TO ADJACENT PRODUCTS.

1. SECURE PRODUCTS IN PLACE WITH POSITIVE ANCHORAGE DEVICES DESIGNED AND SIZED TO WITHSTAND STRESSES, VIBRATION AND RACKING.

C. TRANSPORTATION: TRANSPORT PRODUCTS BY METHODS TO AVOID DAMAGE, DELIVER UNDAMAGED IN MANUFACTURERS UNOPENED CONTAINERS OR PACKAGING. MANUFACTURERS ARE ENCOURAGED TO USE RECYCLABLE OR REUSABLE PACKAGING MATERIALS.

D. HANDLING: PROVIDE EQUIPMENT AND PERSONNEL TO HANDLE BY METHODS TO PREVENT SOILING DAMAGE.

1. PROMPTLY INSPECT SHIPMENTS TO ASSURE PRODUCTS COMPLY WITH CONTRACT DOCUMENT REQUIREMENTS, QUANTITIES ARE CORRECT, AND PRODUCTS ARE UNDAMAGED.

E. STORAGE: STORE PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS WITH SEALS AND LABELS INTACT AND LEGIBLE.

1. PERIODICALLY INSPECT TO ASSURE PRODUCTS ARE UNDAMAGED AND ARE MAINTAINED UNDER REQUIRED CONDITIONS.

F. PROTECTION: AFTER INSTALLATION, PROVIDE COVERINGS TO PROTECT PRODUCTS FROM DAMAGE FROM TRAFFIC AND CONSTRUCTION OPERATIONS, REMOVE WHEN NO LONGER NEEDED.

SECTION 01630 - SUBSTITUTIONS

A. SUBSTITUTION REQUESTS WILL ONLY BE CONSIDERED IF SPECIFIED ITEM IS NOT AVAILABLE TO MEET PROJECT SCHEDULE OR REQUIREMENTS.

B. PRODUCTS: PROVIDE MATERIALS, SYSTEMS AND EQUIPMENT SPECIFIED, FOR PRODUCTS SPECIFIED BY REFERENCE STANDARD, PROVIDE PRODUCT MEETING STANDARD, SUBMIT REQUESTS FOR SUBSTITUTIONS FOR PRODUCTS NOT SPECIFIED.

C. REQUESTS FOR SUBSTITUTIONS: SUBMIT REQUESTS FOR SUBSTITUTIONS TO ARCHITECT WITH MANUFACTURERS "CUT SHEET" IN WRITING DURING BID AND NOT AS A SUBMITTAL.

D. CONTRACTOR: INVESTIGATE PROPOSED SUBSTITUTIONS PRIOR TO SUBMITTAL TO ARCHITECT, INCLUDE COST AND SCHEDULE CHANGES CAUSED BY SUBSTITUTIONS, SUBMIT SEPARATE REQUESTS FOR EACH PRODUCT.

1. REQUESTS INDICATE CONTRACTOR HAS INVESTIGATED PRODUCT AND THAT IT MEETS OR EXCEEDS SPECIFIED PRODUCTS, WILL PROVIDE SAME WARRANTY, AND WAIVES CLAIMS FOR ADDITIONAL COSTS WHICH SUBSEQUENTLY BECOME APPARENT.

2. SUBSTITUTE PRODUCTS SHALL BE NOT BE ORDERED WITHOUT WRITTEN ACCEPTANCE OF ARCHITECT AND OWNER.

3. ENVIRONMENTAL CONCERNS: PROPOSED SUBSTITUTIONS SHALL BE AT LEAST ENVIRONMENTALLY SOUND AS SPECIFIED PRODUCTS, MANUFACTURERS CUT SHEETS, PRODUCT COMPOSITION INFORMATION, FIRE RATING, SMOKE DENSITY, AND OTHER INFORMATION MAY BE REQUIRED BY ARCHITECT OR ENVIRONMENTAL CONSIDERATIONS.

4. ARCHITECT AND OWNER WILL BE FINAL JUDGES OF ACCEPTABILITY AND RESERVE RIGHT TO REJECT PROPOSALS DUE TO INSUFFICIENT INFORMATION.

SECTION 01700 - CONTRACT CLOSEOUT

A. COMPLETION: AT COMPLETION THE CONTRACTOR SHALL SUBMIT CERTIFICATION TO THE OWNER, THAT THE WORK HAS BEEN INSPECTED AND HAS BEEN COMPLETED IN ACCORDANCE WITH CONTRACT DOCUMENTS AND DEFICIENCIES NOTED BY ARCHITECT AND OWNER HAVE BEEN CORRECTED.

B. FINAL CLEANING: CLEAN INTERIOR AND EXTERIOR SURFACES EXPOSED TO VIEW, REMOVE TEMPORARY LABELS, STAINS AND FOREIGN SUBSTANCES, POLISH TRANSPARENT AND GLASSY SURFACES, VACUUM CARPETED AND SOFT SURFACES. USE ONLY NON-TOXIC CLEANING MATERIALS: VINEGAR AND WATER SHALL BE USED FOR CLEANING GLASS, NO OTHER CLEANING MATERIALS SHALL BE PERMITTED FOR GLASS.

C. PROJECT RECORD DOCUMENTS: KEEP DOCUMENTS CURRENT, DO NOT PERMANENTLY CONCEAL WORK UNTIL REQUIRED INFORMATION HAS BEEN RECORDED.

1. INDICATE ACTUAL WORK ON DRAWINGS, INDICATE ACTUAL PRODUCTS USED IN PROJECT MANUAL, INCLUDING MANUFACTURER, MODEL NUMBER AND OPTIONS.

2. PLACE ONE COMPLETE SET OF AS-BUILT DRAWINGS IN A PROTECTIVE PLASTIC TUBE PERMANENTLY SECURED TO THE WALL. DELIVER ONE COMPLETE SET OF AS-BUILT DRAWINGS TO OWNER AT COMPLETION OF PROJECT.

D. DATA: PROVIDE, TO OWNER, MATERIAL, FINISH, MAINTENANCE DATA SUBMITTED BY MANUFACTURES BOUND IN THREE RING BINDERS, ORGANIZED IN FORMAT SIMILAR TO SPECIFICATIONS.

1. PROVIDE WRITTEN OPERATING INSTRUCTIONS AND MAINTENANCE PROCEDURE FOR EQUIPMENT INSTALLED UNDER EQUIPMENT, ELECTRICAL PLUMING, AIR CONDITIONING, HEATING AND VENTILATING SUBCONTRACTS.

E. WARRANTIES: PROVIDE WARRANTIES, TO OWNER AND REQUIRED BY CONTRACT DOCUMENTS AND WHERE PROVIDED BY MANUFACTURER FOR PRODUCTS SPECIFIED.

1. PROVIDE DUPLICATE COPIES ON CONTRACTOR LETTERHEAD, COUNTERSIGNED BY SUBCONTRACTOR AND INSTALLER.

2. REJECTION OF WARRANTIES: OWNER RESERVES THE RIGHT TO REJECT UNSOLICITED AND COINCIDENTAL PRODUCT WARRANTIES WHICH DETRACT FROM OR CONFUSE INTERPRETATIONS OF CONTRACT DOCUMENTS.

F. DEMONSTRATIONS: PRIOR TO FINAL INSPECTION, DEMONSTRATE OPERATION OF EACH SYSTEM TO OWNER.

DIVISION TWO: SITE WORK -ALSO SEE SITE/CIVIL DOCUMENTS UNDER SEPARATE CONTRACT THRU OWNER

SECTION 02221 - SELECTIVE DEMOLITI0N

A. COMPLY WITH APPLICABLE LOCAL, STATE, PROVINCIAL AND FEDERAL CODES AND REGULATIONS PERTAINING TO SAFETY OF PERSONS, PROPERTY AND ENVIRONMENTAL PROTECTION. PROVIDE, ERECT AND MAINTAIN TEMPORARY BARRICADES, SECURITY DEVICES, GUARD RAILS AND LIGHTING AND NECESSARY, TO PROTECT WORKERS AND OCCUPANTS OF THE BUILDING.

B. CONDUCT DEMOLITION TO MINIMIZE INTERFERENCE WITH ADJACENT BUILDINGS AREAS. MAINTAIN PROTECTED EGRESS AND ACCESS AT ALL TIMES.

C. PREVENT MOVEMENT OR SETTLEMENT OF STRUCTURES. PROVIDE, ENGINEER AND PLACE BRACING OR SHORING AND BE RESPONSIBLE FOR SAFETY AND SUPPORT OF STRUCTURE.

D. CAP OFF EXISTING PLUMBING, ELECTRICAL AND MECHANICAL NOT UTILIZED IN NEW SCHEME PER CODE AND CLEAR OF NEW WORK. CAP ABANDONED FLOOR PENETRATIONS BELOW FLOOR FINISHING. REUSE EXISTING CIRCUITS AND PLUMING LINES WHERE POSSIBLE.

E. DEMOLISH IN A ORDERLY AND CAREFUL MANNER AS REQUIRED TO ACCOMMODATE NEW WORK, INCLUDING THAT REQUIRED FOR CONNECTION TO THE EXISTING BUILDING. PROTECT EXISTING SUPPORTING STRUCTURAL MEMBERS.

F. ASSUME COSTS OF DISPOSAL OF DEBRIS FROM DEMOLISHED WORK, INCLUDING COSTS ASSESSED BY A LANDLORD ON A PRO-RATA BASIS, CONTRACTOR TO DETERMINE IF SUCH CHARGES ARE TO BE ASSESSED.

G. REPAIR ALL DEMOLITION PERFORMED IN EXCESS OF THAT REQUIRED AT NO COST TO THE OWNER.

DIVISION THREE: CONCRETE - SEE STRUCTURAL DRAWINGS

DIVISION FOUR: MASONRY - SEE STRUCTURAL DRAWINGS

DIVISION FIVE: METALS

SECTION 05500- METAL FABRICATIONS

A. FURNISH AND INSTALL STOCK AND CUSTOM FABRICATED METAL ITEMS WHICH ARE NOT PART OF SYSTEMS SPECIFIED ELSEWHERE, COMPLETE IN RESPECT TO INTENDED FUNCTIONS.

B. METAL FRAMING AND METAL SUSPENSION SYSTEMS (INCLUDING FRAMING FOR PLASTER WORK WHERE APPLICABLE), AS

DESIGNATED IN THE CONSTRUCTION DOCUMENTS. ACCEPTABLE MANUFACTURER'S: UNITED STATES GYPSUM OR CANADIAN GYPSUM COMPANY.

C. SUBMITTALS: SUBMIT SHOP DRAWINGS TO ARCHITECT PRIOR TO FABRICATION FOR ALL ARCHITECTURAL ORNAMENTAL METALWORK. SHOW DETAILS ON CONSTRUCTION, GAUGES OF MATERIALS, JOINTING, FASTENING, SUPPORTS, SIZE AND LOCATION OF WELDS, ANCHORING AND ANY OTHER INFORMATION RELATING TO FIELD CONDITIONS.

D. STEEL SHAPES, PLATES AND BARS: ASTM A36

E. FITTINGS: MALLEABLE CAST IRON, SLIP-ON, THREADLESS PIPE FITTINGS.

F. GROUT: NONMETALLIC, SHRINKAGE-RESISTANT GROUT:

ASTM C 1107, FACTORY-PACKAGED, NONMETALLIC AGGREGATE GROUT, NONCORROSIVE, NONSTAINING, MIXED WITH WATER TO CONSISTENCY SUITABLE FOR APPLICATION AND A 30-MINUTE WORKING TIME, OF TYPE SPECIFICALLY RECOMMENDED BY MANUFACTURER AS APPLICABLE TO JOB CONDITION.

G. FASTENERS AND ROUGH HARDWARE: TYPE REQUIRED FOR SPECIFIC USAGE: PROVIDE ZINC COATED FASTENERS FOR EXTERIOR USE OR WHERE BUILT IN EXTERIOR WALLS. FITTINGS SHALL BE SECURED TO PIPE BY ZINC PLATED SET SCREWS WITH A CASED HARDENED CUP POINT.

H. METAL FRAMING:

1. STUDS AND RUNNERS: 3-5/8" OR 6" (SEE PARTITION TYPES) SCREW-TYPE, PUNCHED CEE-SHAPED ROLL, 20 GAUGE U.O.N., OR UNLESS HEAVIER GAUGE IS RECOMMENDED BY THE MANUFACTURER FOR SPANS AND LOADS ANTICIPATED.

2. FURRING CHANNELS: SCREW-TYPE, HAT SHAPED, 2-3/4"x7/8" DEEP WITH 1/2° WIDE FLANGE, 25 GAUGE.

3. CARRYING CHANNELS: HOT OR COLD ROLLED, RUST INHIBITIVE PAINTED, 1-1/2", MINIMUM WEIGHT 0.475/1/F.

4. WIRE: GALVANIZED ANNEALED STEEL, MINIMUM 9 GAUGE FOR HANGERS, 16 GAUGE FOR TIES.

5. FASTENERS AS RECOMMENDED BY MANUFACTURER.

a. FOR FLOOR RUNNER: 1/4" DIAMETER EXPANSION BOLTS, OR 1" MIN. L. POWER DRIVEN FASTENERS (WHEN PERMITTED BY CODE).

I. FIELD MEASUREMENTS: TAKE FIELD MEASUREMENTS PRIOR TO PREPARATION OF SHOP DRAWING AND FABRICATION, WHERE POSSIBLE, DO NOT DELAY JOB PROGRESS, ALLOW FOR TRIMMING AND FITTING WHERE NECESSARY.

J. FABRICATE ITEMS WITH JOINTS NEATLY FITTED AND PROPERLY SECURE, GRIND EXPOSED WELDS CONTINUOUS, SMOOTH AND FLUSH WITH ADJACENT FINISHED SURFACES, AND EASE EXPOSED EDGES.

K. SHOP PRIME STRUCTURAL STEEL SURFACES.

L. INSTALL SQUARE AND LEVEL, ACCURATELY FITTED AND FREE OF DISTORTION AND DEFECTS DETRIMENTAL TO APPEARANCE AND PERFORMANCE.

M. WALL FURRING: REFER TO DWGS. FOR STUD PLACEMENT

N. CEILING FRAMING:

1. SPACE MAIN CARRYING CHANNELS AND HANGERS MAXIMUM 48" O.C., U.O.N., AND NOT MORE THAN 6" FROM PERIMETER WALLS.

2. LAP SPLICES MINIMUM 12" AND SECURE TOGETHER 2" FROM EACH END OF SPLICE.

3. PLACE GYPSUM BOARD FURRING CHANNELS PERPENDICULAR TO CARRYING CHANNELS AT 24" O.C. MAXIMUM AND 2" FROM PERIMETER WALLS. LAP SPLICES 8" MINIMUM.

DIVISION SIX: WOOD AND PLASTICS

SEC11ON 06100 - ROUGH AND FINISH CARPENTRY

A. FURNISH AND INSTALL ROUGH AND FINISH CARPENTRY AND MILLWORK AS REQUIRED, INCLUDING BUT NOT LIMITED TO:

1. ROUGH CARPENTRY, INCLUDING ALL WOOD STUDS, FURRING, BLOCKING, ROUGH FRAMES, WOOD CURBS, NAILERS, BACKING, FIXTURE FRAMING, EQUIPMENT SUPPORTS, HARDWARE, ETC.

2. STOREFRONT AS DETAILED.

B. FINISH CARPENTRY SHALL CONFORM TO AMERICAN WOODWORK INSTITUTE (AW), OR WOODWORK INSTITUTE OF CALIFORNIA (WC)

C. THE WORK UNDER THIS SECTION INCLUDES THE NECESSARY FRAMING REQUIRED FOR THE PROPER INSTALLATION OF WORK OF OTHER TRADES, INCLUDING WALLBOARD, TOILET ACCESSORIES, MERCHANDISING FIXTURES, ETC.

D. PROVIDE BLOCKING IN WALLS AT ALL LOCATIONS THAT REQUIRE ADDITIONAL WALL SUPPORT.

E. GENERAL: OF GRADES INDICATED ACCORDING TO THE AMERICAN LUMBER STANDARDS COMMITTEE NATIONAL GRADING RULE PROVISIONS OF THE GRADING AGENCY INDICATED.

F. CONCEALED PLYWOOD: ANY SOFT WOOD SPECIES, APA EXTERIOR TYPE, MEDIUM DENSITY OVERLAY, APA MDO/EXT-APA, FIRE RETARDANT TREATED WHERE REQUIRED BY APPLICABLE CODE, ECONOMY GRADE MOISTURE CONTENT MAXIMUM 12%, MINIMUM 6%.

G. SOLID LUMBER: WOOD SPECIES AS SPECIFIED IN DRAWINGS SUITABLE FOR PAINT FINISH, PREMIUM GRADE MOISTURE CONTENT MAXIMUM 12%, MINIMUM 6%.

H. MEDIUM DENSITY FIBERBOARD (MDF): SHALL COMPLY ANSI A208.2 AND ASTM E84 CLASS C (III) FIRE RATING (76-200)

I. PANELING: PROVIDE FIRE-RETARDANT TREATED CORE WITH FLAME SPREAD RATING OF MAXIMUM 25 (ASTM E84): TREATMENT, WHICH DOES NOT CAUSE STAINS IN FINISHED SYSTEM.

J. FIBERBOARD WALL SHEATHING: AHA A194.1, TYPE IV, CLASS 1 (REGULAR DENSITY) CELLULOSIC FIBERBOARD SHEATHING WITH SQUARE EDGES.

K. PAPER-SURFACED GYPSUM WALL SHEATHING: ASTM C 79/C 79M, WITH WATER-RESISTENT MATERIAL INCORPORATED INTO CORE AND WITH WATER-REPELLENT PAPER BONDED TO CORE'S FACE, BACK, AND LONG EDGES.

L. GLASS-MAT GYPSUM WALL SHEATHING: ASTM C 1177C/C 1177M.

M. FASTENERS: FURNISH ROUGH HARDWARE, BOLTS, NAILS, FASTENERS, ANCHORS, AND CONNECTORS AS REQUIRED TO COMPLETE THE WORK.

N. PROVIDE FRAMING MEMBERS OF SIZE, AND WITH SPACING AND ANCHORAGE, AS REQUIRED IN ACCORDANCE WITH RECOGNIZED STANDARDS.

DO NOT SPLICE STRUCTURAL MEMBERS BETWEEN SUPPORTS.

O. SET ROUGH CARPENTRY TO REQUIRED LEVELS AND LINES, WITH MEMBERS PLUMB, TRUE TO LINE, CUT, AND FITTED. FIT ROUGH CARPENTRY TO OTHER CONSTRUCTION, SCRIBE AND COPE AS NEEDED FOR ACCURATE FIT. LOCATE FURRING, NAILERS, BLOCKING, AND SIMILAR SUPPORTS TO COMPLY WITH REQUIREMENTS FOR ATTACHING OTHER CONSTRUCTION.

P. USE FINISHING NAILS FOR EXPOSED WORK, UNLESS OTHERWISE INDICATED. COUNTERSINK NAIL HEADS AND FILL HOLES WITH WOOD FILLER.

Q. ALL WOOD FRAMING IN CONTACT WITH CONCRETE OR MASONRY TO BE PRESSURE TREATED.

R. BACKBOARDS FOR EQUIPMENT: INSTALL AS RECOMMENDED BY AMERICAN PLYWOOD ASSOCIATION FOR TYPES OF SUBSTRATES INVOLVED IN THE WORK.

DIVISION SEVEN: THERMAL AND MOISTURE PROTECTION

07240- WATER MANAGED EIFS

PART 1- GENERAL

A. SUMMARY: PROVIDE A MECHANICALLY ATTACHED, WATER MANAGED EXTERIOR INSULATION AND FINISH SYSTEM, INCLUDING PRE-MANUFACTURED FOAM CORNICE MOULDINGS AS SHOWN ON THE DRAWINGS, AS SPECIFIED IN THIS SECTION, AND AS NEEDED FOR A COMPLETE AND PROPER INSULATION.

B. RELATED WORK: SECTION 06200- ROUGH & FINISH CARPENTRY, PRODUCT SPECIFICATION FOR PLYWOOD EIFS SUBSTRATE. SECTION 09260- GYPSUM WALLBOARD & PARTITION SYSTEM, PRODUCT SPECIFICATION FOR EIFS SUBSTRATE. SECTION 09860- EXTERIOR MASONRY COATINGS, PRODUCT SPECIFICATION FOR EIFS-BASED COATING SYSTEM ON EXISTING EXTERIOR MASONRY SURFACES.

C. SUBMITTALS:

1. SELECTED EIFS MANUFACTURER AND INSTALLER SHALL REVIEW THE DESIGN DOCUMENTS THOROUGHLY. SHOP DRAWINGS SHALL BE SUBMITTED ONLY IF EXCEPTIONS OR DEVIATIONS ARE TAKEN WITH DESIGN DOCUMENTS. SHOP DRAWINGS SHALL SPECIFICALLY IDENTIFY ANY RECOMMENDATIONS OR CORRECTIONS REQUIRED TO MAINTAIN COMPLIANCE WITH MANUFACTURER'S STANDARDS AND WARRANTY CONDITIONS, INCLUDING BUT NOT LIMITED TO PENETRATIONS, SEALANTS & FLASHINGS. ANY EXCEPTIONS OR DEVIATIONS TO DESIGN DOCUMENTS SHALL BE INCORPORATED IN THE SHOP DRAWINGS BY THE EIFS MANUFACTURER AND INSTALLER AND SHALL SUPERSEDE DESIGN DOCUMENTS. IF SHOP DRAWINGS ARE NOT SUBMITTED FOR REVIEW TO THE PROFESSIONAL OF RECORD, THIS SHALL SIGNIFY THAT THE DESIGN DOCUMENT INFORMATION IS APPROVED AS IN TOTAL COMPLIANCE WITH MANUFACTURER AND INSTALLER STANDARDS AND RECOMMENDATIONS.

2. GIVEN THE CURRENT LITIGATION ASSOCIATED WITH THIS PRODUCT, AS AN INDUCEMENT TO ACCEPT THE EIFS PRODUCT, THE EIFS MANUFACTURER AND INSTALLER SHALL AGREE TO INDEMNIFY, DEFEND AND HOLD HARMLESS THE OWNER, ARCHITECT, ENGINEER AND THE PROFESSIONAL OF RECORD AGAINST ANY AND ALL CLAIMS, DAMAGES, SUITS, ACTIONS, LEGAL COSTS AND EXPENSES DIRECTLY AND/OR INDIRECTLY RELATED TO LITIGATION ASSOCIATED WITH THE EIFS SYSTEM.

3. A REPRESENTATIVE OF THE EIFS MANUFACTURER SHALL PROVIDE OBSERVATIONS AND DOCUMENTATION DURING THE INSTALLATION AS NOTED IN PART III OF THIS SECTION TO ASSURE PROPER INSTALLATION OF THE MANUFACTURER'S PRODUCT.

4. FURNISH MANUFACTURER'S CERTIFICATION THAT THE MATERIALS MEET OR EXCEED SPECIFIED REQUIREMENTS.

5. REVIEW OF SUBMITTAL BY PROFESSIONAL OF RECORD SHALL BE LIMITED TO VERIFYING AESTHETIC COMPLIANCE WITH DESIGN.

6. ANY REQUEST FOR PRODUCT SUBSTITUTION MUST BE SUBMITTED PER SECTION 01340-SUBMITTALS

D. QUALITY ASSURANCE: THE WATER MANAGED EXTERIOR INSULATION AND FINISH SYSTEM MANUFACTURER'S SPECIFICATIONS AND RECOMMENDED STANDARD INSTALLATION DETAILS SHALL BE FOLLOWED COMPLETELY AND SHALL BE CONSIDERED A PART OF THIS SECTION AS IF THE MANUFACTURER'S SPECIFICATION WAS INCLUDED IN ITS ENTIRETY.

E. WARRANTY:

1. MANUFACTURER'S WARRANTY: THE CONTRACTOR SHALL PROVIDE THE MANUFACTURER'S STANDARD 5-YEAR PRODUCT WARRANTY IN THE BUILDING MAINTENANCE MANUALS SUBMITTED TO OWNER PER SECTION 01700- CONTRACT CLOSEOUT.

2. INSTALLER'S WARRANTY: THE CONTRACTOR SHALL INCLUDE A COPY OF THE EIFS INSTALLER'S WARRANTY FOR ALL WORK PROVIDED, FOR A TERM OF 1 YEAR AFTER THE DATE OF SUBSTANTIAL COMPLETION, IN THE BUILDING MAINTENANCE MANUALS SUBMITTED TO OWNER PER SECTION 01700- CONTRACT CLOSEOUT.

PART 2- PRODUCTS

A. ACCEPTABLE WATER-MANAGED EIFS MANUFACTURERS:

1. BASIS OF DESIGN: PROVIDE OUTSULATION, BY DRYVIT SYSTEMS, INC., WARWICK, RI (401/822-4100)

SHEATHING: GLASS MAT FACED EXTERIOR SHEATHING SHALL BE DENS-GLASS GOLD SHEATHING BY G-P GYPSUM CORPORATION, ATLANTA, GA (800/947-4497 NORTHEAST US), SUBJECT TO ACCEPTANCE BY THE EIFS MANUFACTURER AS PART OF THE WARRANTED EIFS SYSTEMS. PAPER-FACED EXTERIOR GYPSUM SHEATHING IS NOT AN ACCEPTABLE PRODUCT SUBSTITUTION.

SHEATHING AT BUILDING SIGNAGE: DO NOT PROVIDE GLASS MAT FACED EXTERIOR SHEATHING.

AIR/ WEATHER BARRIER: DRYVIT "BACKSTOP" ACRYLIC AIR/ WEATHER BARRIER

FLASHING TRIMS: MANUFACTURER'S STANDARD, AS DESIGNED AND MANUFACTURED FOR THE INTENDED PURPOSE

EXTERIOR INSULATION BOARD: DRYVIT OMD EXTERIOR GROOVED EPS INSULATION BOARD, BOARD THICKNESS MINIMUM 1-1/2" WITH 3/4" EPS DEEP V-GROOVE REVEALS WHERE SHOWN ON THE DRAWINGS, LEAVING A MINIMUM 3/4" EPS MATERIAL THICKNESS. EPS BOARD SHALL BE AGED/ AIR DRIED FOR THE EQUIVALENT OF SIX WEEKS PRIOR TO INSTALLATION.

EXTERIOR INSULATION BOARD: TO BE ADHERED TO MASONRY SUBSTRATE

EXTERIOR BASECOAT: DRYVIT EXTERIOR BASECOAT

RENIFORCING MESH:

ABOVE 8'-0" HEIGHT AT ADJACENT FINISH GRADE: DRYVIT STANDARD REINFORCING MESH (4.3 OZ. PER SQUARE YARD)

BELOW 8'-O" HEIGHT AT ADJACENT FINISH GRADE: DRYVIT PANZER 15 REINFORCING MESH (15 OZ. PER SQUARE YARD), APPLIED AS A SECONDARY REINFORCEMENT UNDER USG STANDARD REINFORCING MESH

TEXTURED FINISH: DRYVIT EXTERIOR TEXTURED FINISH, TROWEL APPLIED, MINIMUM INSTALLED THICKNESS 1/16" OVER REINFORCING, 3/16" MAX

COLORS/ TEXTURES: SEE DRAWINGS

PART 3- EXECUTION

A. SURFACE CONDITIONS: THE CONTRACTOR SHALL EXAMINE THE AREAS AND CONDITIONS UNDER WHICH WORK OF THIS SECTION WILL BE PROVIDED, SHALL CORRECT CONDITIONS DETRIMENTAL TO TIMELY AND PROPER COMPLETION OF THE WORK, AND SHALL NOT PROCEED INTIL UNSATISFACTORY CONDITIONS ARE CORRECTED.

B. INSTALLATION:

1. THE WATER-MANAGED EIFS MANUFACTURER'S SPECIFICATIONS AND RECOMMENDED STANDARD INSTALLATION DETAILS SHALL BE FOLLOWED COMPLETELY, AND SHALL BE CONSIDERED A PART OF THIS SECTION AS IF THE MANUFACTURER'S SPECIFICATION WAS INCLUDED IN ITS ENTIRETY.

2. INSTALL THE WORK OF THIS SECTION IN ACCORDANCE WITH THE SHOP DRAWINGS AND WITH PERTINENT REQUIREMENTS OF GOVERNMENTAL AGENCIES HAVING JURISDICTION, ANCHORING ALL COMPONENTS FIRMLY INTO POSITION STRAIGHT, LEVEL AND PLUMB.

3. THE OVERALL MINIMUM BASE COAT THICKNESS SHALL BE SUFFICIENT TO FULLY EMBED THE MESH IN MULTIPLE BASE COAT APPLICATIONS.

4. EIFS SURFACES IN CONTACT WITH SEALANTS SHALL BE COATED WITH MANUFACTURER-APPROVED SEALER..

5. EIFS SUBSTRATE TOLERANCE: MAXIMUM VARIANCE FROM PLANE SHALL BE 1/4" WITHIN A 4-FOOT RADIUS OR MORE STRINGENT MANUFACTURER'S REQUIREMENTS AS APPLICABLE.

C. FIELD VISITS/ OBSERVATIONS

1. OBSERVATION OF THE EIFS INSTALLATION SHALL BE PERFORMED BY A REPRESENTATIVE OF THE MANUFACTURER. A REPORT OF EACH DAY'S WORK SHALL BE DEVELOPED DESCRIBING THE MATERIALS AND WORKMANSHIP TO BE IN COMPLIANCE WITH MANUFACTURER'S RECOMMENDATIONS, OR TO DESCRIBE ANY DEFICIENCIES, WITH ASSOCIATED CORRECTION IDENTIFIED. REPORTS SHALL BE ON EIFS MANUFACTURER'S COMPANY LETTERHEAD. A COPY OF EACH REPORT SHALL BE SENT TO THE OWNER, CONTRACTOR AND PROFESSIONAL OF RECORD. IF DEFICIENCIES OCCUR, THE CONTRACTOR SHALL IMMEDIATELY PERFORM CORRECTIONS RECOMMENDED BY EIFS MANUFACTURER AND INSURABLE BY PROPERTY LOSS UNDERWRITERS.

2. THE INTENT OF THESE SPECIFICATIONS IS TO ENSURE THE SYSTEM IS INSTALLED STRICTLY IN A MANNER THAT WILL BE WARRANTED BY THE EIFS MANUFACTURER AND INSURABLE BY PROPERTY LOSS UNDERWRITERS.

SECTION 07550- ROOFING (PATCHING AND REPAIR)

A. FURNISH AND INSTALL WEATHER TIGHT ROOFING SYSTEM COMPATIBLE WITH EXISTING ROOFING SYSTEMS AND APPROVED BY LANDLORD'S REPRESENTATIVE AND OWNER.

B. GC TO CONTACT OWNER'S ROOFER AND CONTRACT DIRECTLY WITH THEM FOR ALL ROOFING WORK TO MAINTAIN ANY AND ALL ROOF WARRANTIES.

SECTION 07600 SHEET METAL

PART 1 GENERAL

1.01 SUMMARY:

A. PROVIDE SHEET METAL PRODUCTS AND ACCESSORIES WHERE NOTED ON DRAWINGS, AS SPECIFIED IN THIS SECTION, AND AS NEEDED FOR A COMPLETE INSTALLATION, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. METAL VENTED AND NON-VENTED SOFFIT PANEL.
2. MISCELLANEOUS SHEET METAL CLOSURES AND ACCESSORY ITEMS.
3. PARAPET COPING.
4. RAINWATER CONDUCTORS.

B. FINISH MUST CONFORM TO THE "METAL CONSTRUCTION ASSOCIATION CERTIFIED PREMIUM PAINTED™" STANDARD.

1.02 SUBMITTAL:

A. PRODUCT DATA: INCLUDE CONSTRUCTION DETAILS, MATERIAL DESCRIPTIONS, DIMENSIONS OF INDIVIDUAL COMPONENTS AND PROFILES, AND FINISHES FOR EACH TYPE OF METAL ROOF PANEL AND ACCESSORY, INCLUDING EACH TYPE OF UNDERLAYMENT PRODUCT INDICATED:
1. CONCEALED FASTENER, STANDING SEAM METAL ROOF PANELS AND ACCESSORIES.
2. UNDERLAYMENT.

B. SHOP DRAWINGS: SHOW LAYOUTS OF SHEET METAL ROOFING, INCLUDING PLANS, ELEVATIONS, AND KEYED REFERENCES TO TERMINATION POINTS. ALL FASTENING PATTERNS SHALL BE CLEARLY DESIGNATED TO MEET THE SPECIFIED WIND SPEED REQUIREMENTS.
1. INCLUDE DETAILS FOR FORMING, JOINING, AND SECURING SHEET METAL ROOFING, INCLUDING PATTERN OF SEAMS, TERMINATION POINTS, EXPANSION JOINTS, ROOF PENETRATIONS, EDGE CONDITIONS, SPECIAL CONDITIONS, CONNECTIONS TO ADJOINING WORK, AND ACCESSORY ITEMS.

C. COORDINATION DRAWINGS: ROOF PLANS DRAWN TO SCALE AND COORDINATING PENETRATIONS AND ROOF-MOUNTED ITEMS. SHOW THE FOLLOWING:
1. PURLINS AND RAFTERS.
2. ROOF-MOUNTED ITEMS INCLUDING ROOF HATCHES, EQUIPMENT SUPPORTS, PIPE SUPPORTS AND PENETRATIONS, LIGHTING FIXTURES, SNOW GUARDS, AND ITEMS MOUNTED ON ROOF CURBS.

D. SAMPLES: FOR EACH EXPOSED FINISH.

E. FIELD QUALITY CONTROL INSPECTION REPORTS, TO BE SUBMITTED FOR WARRANTY PROGRAM LEVEL, IF APPLICABLE.

F. PRODUCT TEST REPORTS. BASED ON EVALUATION OF COMPREHENSIVE TESTS PERFORMED BY A QUALIFIED TESTING AGENCY, FOR THE FOLLOWING:
1. INSULATION AND VAPOR RETARDERS: INCLUDE REPORTS FOR THERMAL RESISTANCE, FIRE-TEST-RESPONSE CHARACTERISTICS, WATER-VAPOR TRANSMISSION, AND WATER ABSORPTION.

1.03 WARRANTY/CLOSEOUT DOCUMENTS:

A. MANUFACTURER'S WARRANTY: THE CONTRACTOR SHALL INCLUDE THE SHEET METAL MANUFACTURER'S STANDARD 20 YEAR WARRANTY ON FINISH DURABILITY (FOR KYNAR 500/HYLAR 5000 FINISH) AND WORKMANSHIP, IN THE BUILDING MAINTENANCE MANUALS SUBMITTED TO OWNER PER SECTION 01700-CONTRACT CLOSEOUT.

B. INSTALLER'S WARRANTY: THE CONTRACTOR SHALL INCLUDE A COPY OF THE INSTALLER'S WARRANTY FOR ALL WORK PROVIDED, FOR A TERM OF 1 YEAR AFTER THE DATE OF SUBSTANTIAL COMPLETION, IN THE BUILDING MAINTENANCE MANUALS SUBMITTED TO OWNER PER SECTION 01700-CONTRACT CLOSEOUT.

1.04 PERFORMANCE REQUIREMENTS:

A. GENERAL: PROVIDE METAL ROOF PANEL ASSEMBLIES THAT COMPLY WITH PERFORMANCE REQUIREMENTS SPECIFIED AS DETERMINED BY TESTING MANUFACTURERS' STANDARD ASSEMBLIES SIMILAR TO THOSE INDICATED FOR THIS PROJECT, BY A QUALIFIED TESTING AND INSPECTING AGENCY.

B. WIND-UPLIFT RESISTANCE: CAPABLE OF RESISTING DESIGN NEGATIVE UPLIFT PRESSURES BASED UPON MAXIMUM WIND SPEEDS OF 115 MPH. PROVIDE CLIPS, FASTENERS, AND CLIP SPACING OF TYPE INDICATED AND WITH CAPABILITY TO SUSTAIN, WITHOUT FAILURE, A LOAD EQUAL TO 2 TIMES THE DESIGN NEGATIVE UPLIFT PRESSURE.

C. WIND-UPLIFT RESISTANCE: CAPABLE OF PRODUCING SHEET METAL ROOFING ASSEMBLIES THAT COMPLY WITH UL 580 FOR CLASS 115 WIND-UPLIFT RESISTANCE. OTHER PERFORMANCE TEST SHALL INCLUDE ASTM E1592 STATIC AIR PRESSURE TEST FOR ROOF COVERINGS.

Tenant 6A LL Work at Laurel Square

Laurel Square Shopping Center
Brick Township, NJ

CREATE
ARCHITECTURE PLANNING & DESIGN PLLC

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Owner / Developer:
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Rev:	Date:	Description:
	APRIL 01, 2022	ISSUED FOR BID AND PERMIT

LICENSE # RA NO. 13964
EXP. 07/31/23

Specifications

1838.C SP-1

1.05 QUALITY ASSURANCE:

A. INSTALLER QUALIFICATIONS: INSTALLER OF SHEET METAL ROOFING FOR A MINIMUM OF 10 YEARS.

B. ROLL-FORMED SHEET METAL ROOFING FABRICATOR QUALIFICATIONS: MINIMUM OF 10 YEARS FACTORY FORMING EXPERIENCE.

C. TESTING AGENCY QUALIFICATIONS: QUALIFIED ACCORDING TO ASTM E 329 FOR TESTING INDICATED, AS DOCUMENTED ACCORDING TO ASTM E 548.

D. SOURCE LIMITATIONS: OBTAIN EACH TYPE OF METAL ROOF PANELS THROUGH ONE SOURCE FROM A SINGLE MANUFACTURER.

E. SHEET METAL ROOFING STANDARD: COMPLY WITH SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL" AND NRCA

F. WATERPROOFING MANUAL AND MANUFACTURER'S INSTALLATION GUIDELINES.

G. FIRE-RESISTANCE RATINGS: WHERE INDICATED, PROVIDE METAL ROOF PANELS IDENTICAL TO THOSE OF ASSEMBLIES TESTED FOR FIRE RESISTANCE THAT COMPLY WITH ASTME 108 IN ACCORDANCE WITH UL790.

H. PRE-INSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT LOCATION WITH BUILDING OWNER, ARCHITECT, INSTALLING CONTRACTOR, GENERAL CONTRACTOR AND SHEET METAL ROOFING MANUFACTURER A MINIMUM OF 10 DAYS PRIOR TO START OF WORK. ALL DETAILS SHALL BE REVIEWED INCLUDING; UNDERLAYMENTS, SUBSTRATES, FASTENING PATTERNS, SCHEDULING, TRIM AND FLASHING COMPONENTS, ACCESSORIES SUCH AS FASTENERS AND SEALANTS.

1.07 DELIVERY, STORAGE & HANDLING:

A. DO NOT DELIVER MATERIALS OF THIS SECTION TO PROJECT SITE UNTIL SUITABLE FACILITIES FOR STORAGE AND PROTECTION ARE AVAILABLE.

B. PROTECT MATERIALS FROM DAMAGE DURING TRANSIT AND AT PROJECT SITE. STORE UNDER COVER, BUT SLOPED TO PROVIDE POSITIVE DRAINAGE. DO NOT EXPOSE MATERIALS WITH STRIPPABLE PROTECTIVE FILM TO DIRECT SUNLIGHT OR EXTREME HEAT.

C. DO NOT ALLOW STORAGE OF OTHER MATERIALS OR ALLOW STAGING OF OTHER WORK ON INSTALLED METAL PANEL SYSTEM.

D. UPON RECEIPT OF DELIVERY OF METAL PANEL SYSTEM, AND PRIOR TO SIGNING THE DELIVERY TICKET, THE INSTALLER IS TO EXAMINE EACH SHIPMENT FOR DAMAGE AND FOR COMPLETION OF THE CONSIGNMENT.

1.08 PROJECT CONDITIONS:

A. WEATHER LIMITATIONS: PROCEED WITH INSTALLATION ONLY WHEN EXISTING AND FORECASTED WEATHER CONDITIONS PERMIT ASSEMBLY OF METAL ROOF PANELS TO BE PERFORMED ACCORDING TO MANUFACTURERS' WRITTEN INSTRUCTIONS AND WARRANTY REQUIREMENTS.

B. FIELD MEASUREMENTS: VERIFY LOCATIONS OF ROOF FRAMING AND ROOF OPENING DIMENSIONS BY FIELD MEASUREMENTS BEFORE METAL ROOF PANEL FABRICATION AND INDICATE MEASUREMENTS ON SHOP DRAWINGS.

1.09 SCHEDULING:

A. COORDINATE METAL PANEL ROOF ASSEMBLIES WITH RAIN DRAINAGE WORK, FLASHING, TRIM, AND CONSTRUCTION OF DECKS, PURLINS AND RAFTERS, PARAPETS, WALLS, AND OTHER ADJOINING WORK TO PROVIDE A LEAKPROOF, SECURE, AND NON-CORROSIVE INSTALLATION.

1.10 WARRANTY:

A. SPECIAL WARRANTY ON FINISHES: MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR FINISH OR REPLACE SHEET METAL ROOFING THAT SHOWS EVIDENCE OF DETERIORATION OF FACTORY-APPLIED FINISHES WITHIN SPECIFIED WARRANTY PERIOD.

B. FLUOROPOLYMER FINISH WARRANTY PERIOD: 30 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

C. SPECIAL INSTALLER'S WARRANTY: SPECIFIED FORM IN WHICH ROOFING INSTALLER AGREES TO REPAIR OR REPLACE COMPONENTS OF CUSTOM-FABRICATED SHEET METAL ROOFING THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN 5 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

PART 2 PRODUCTS:

2.01 SHEET METAL PRODUCT MANUFACTURERS:

A. "BASIS OF DESIGN": ALUMINUM PRODUCTS BY ENGLERT INC. 1200 AMBOY AVENUE, PERTH AMBOY, NJ 08861
732-826-8614

1. SOFFIT PANELS: ENGLERT 3/8" DEEP V GROOVE SOFFIT E-375 (VENTED), COLOR AS PER CONSTRUCTION DOCUMENTS OR AS CHOSEN BY ARCHITECT, FROM STANDARD AND PREMIUM COLOR OPTIONS WITH PERIMETER TRIM AND MOULDINGS AS REQUIRED FOR A COMPLETE AND PROPER INSTALLATION.
2. COPING: ENGLERT .040", EMBOSSED TEXTURE, WITH ACCESSORIES AS DETAILED ON THE DRAWINGS, COLORS AS PER CONSTRUCTION DOCUMENTS.

B. MANUFACTURER'S QUALIFICATIONS:
ALL PANELS ARE TO BE FACTORY FORMED AND PACKAGED PER JOB REQUIREMENTS.

C. MANUFACTURER SHALL HAVE A MINIMUM OF TEN (10) YEARS EXPERIENCE IN THE FACTORY FABRICATION OF METAL WALL PANELS.

D. SPECIFICATION IS BASED UPON THE PRODUCTS OF ENGLERT INC. OTHER MANUFACTURERS ARE ACCEPTABLE PROVIDED THEY ARE SUBMITTED DURING THE BID PROCESS WITH COLORS APPROVED BY ARCHITECT. ALTERNATE MANUFACTURERS WITHOUT COLOR MATCHES WILL NOT BE ACCEPTED.

2.02 SHEET METAL REQUIREMENTS:

A. SHEET METAL COPING: PREFINISHED 3004 ALUMINUM ALLOY H-12 TO H-14, TEMPERED PER ASTM B209; 12'-0" LENGTHS WITH SPLICE PLATES. PROVIDE CONCEALED ANCHORS THAT RESIST WIND UPLIFT AND PERMIT EXPANSION AND CONTRACTION WITH TEMPERATURE CHANGES. COPING CORNERS SHALL BE 45 DEGREE SHOP-MITERED AND HELIARC WELDED. FIELD FABRICATED COPING CORNERS WITH SEALANT APPLIED AT NON-WELDED MITERED MEETING JOINTS ARE NOT PERMITTED.

B. SHEET METAL ACCESSORIES: EXPOSED SHEET METAL ACCESSORIES SHALL BE THE SAME MATERIAL AND FINISH AS THE COPING. ALL WELDS SHALL BE GROUND AND SHOP PAINTED TO MATCH THE FIELD COLOR. PROVIDE EXPANSION JOINTS AT 20' TO 30' INTERVALS TO PREVENT THERMAL MOVEMENT DISTORTION.

DESCRIPTION	THICKNESS/TEXTURE
COPING CAP	.040"/EMBOSSED TEXTURE
CONT.HOLD-DOWN CLEAT	.040"
SPLICE PLATES (CONCEALED)	.032"
SPLICE PLATES (EXPOSED)	.040"/EMBOSSED TEXTURE
RAINWATER CONDUCTORS	.040"/EMBOSSED TEXTURE
FLASHING	.040"/EMBOSSED TEXTURE
CLOSURE (EXPOSED)	.040"/EMBOSSED TEXTURE
DRIP EDGES	.040"/EMBOSSED TEXTURE
16" ROOFING PANELS	.040"/EMBOSSED TEXTURE
12" SOFFIT PANELS	.032"/SMOOTH
12" SOFFIT PANELS/VENTED	.032"/SMOOTH, PERFORATED
FASTENERS	#14 W/NEOPRENE WASHERS

2.03 OTHER ACCESSORY COPING ITEMS:

A. ANCHOR CLEATS: PROVIDE STAINLESS STEEL OR ALUMINUM, DESIGNED TO ALLOW FOR EXPANSION AND CONTRACTION OF THE ADJACENT CONSTRUCTION.

B. EXPOSED FASTENERS: ALUMINUM OR STAINLESS STEEL, WITH SEPARATE WASHERS WITH HOT BONDED NEOPRENE FACES; STAINLESS STEEL FOR WOOD CONNECTION.

C. SEALANT OR NON-CURING, NON-SKINNING BUTYL, POLYISOBUTYLENE TAPE: PROVIDE BETWEEN SURFACES DURING ASSEMBLY WITH A MINIMUM AMOUNT EXPOSED ON THE COMPLETED INSTALLATION.

D. COPING UNDERLAYMENT: PROVIDE TYPE 15 OR 30 ASPHALT RAG FELT PER FED. SPEC. HH-R-595B.

2.04 UNDERLAYMENT:

A. SELF-ADHERING, HIGH-TEMPERATURE SHEET: 80 MIL HOMOGENEOUS RUBBERIZED ASPHALT WATERPROOFING COMPOUND, GLASS FIBER REINFORCED DESIGNED SPECIFICALLY FOR USE UNDER SHEET METAL ROOFING. THERMAL STABILITY: RESISTANT TO 260 DEG F; ASTM D 1970. LOW TEMPERATURE FLEXIBILITY: PASSES AFTER TESTING AT MINUS 20 DEG F; ASTM D 1970. WITH ASPHALT FREE FELT: CONFORMING TO ASTM D 226, POLYOLEFIN BASED, 100 PERCENT ASPHALT FREE, HIGH STRENGTH REINFORCED ROOFING UNDERLAYMENT.

2.05 MISCELLANEOUS MATERIAL:

A. FASTENERS: SELF-TAPPING SCREWS, SELF-LOCKING RIVETS AND BOLTS, AND OTHER SUITABLE FASTENERS DESIGNED TO WITHSTAND DESIGN LOADS. MANUFACTURER SHALL PROVIDE OR AUTHORIZE ALL FASTENERS UTILIZED WITH THE SHEET METAL ROOFING SYSTEM.

1. EXPOSED FASTENERS: HEADS MATCHING COLOR OF SHEET METAL ROOFING BY MEANS OF PLASTIC CAPS OR FACTORY-APPLIED COATING.
2. FASTENERS FOR FLASHING AND TRIM: BLIND FASTENERS OR SCREWS SPACED TO RESIST WIND UPLIFT LOADS.

B. SEALING TAPE: PRESSURE-SENSITIVE, 100 PERCENT SOLID POLYISOBUTYLENE COMPOUND SEALING TAPE WITH RELEASE-PAPER BACKING. PROVIDE PERMANENTLY ELASTIC, NON-SAG, NON-TOXIC, NON-STAINING TAPE.

C. ELASTOMERIC JOINT SEALANT: ASTM C 920, OF BASE POLYMER, TYPE, GRADE, CLASS, AND USE CLASSIFICATIONS REQUIRED TO PRODUCE JOINTS IN SHEET METAL ROOFING THAT WILL REMAIN WEATHERTIGHT.

D. EXPANSION-JOINT SEALANT: FOR HOOKED-TYPE EXPANSION JOINTS, WHICH MUST BE FREE TO MOVE, PROVIDE NON-SETTING, NON-HARDENING, NON-MIGRATING, HEAVY-BODIED POLYISOBUTYLENE SEALANT.

E. BITUMINOUS COATING: COLD-APPLIED ASPHALT MASTIC, SSPC-PAINT 12, COMPOUNDED FOR 15 MIL DRY FILM THICKNESS PER COAT.

2.06 ACCESSORIES:

A. SHEET METAL ROOFING ACCESSORIES: PROVIDE COMPONENTS REQUIRED FOR A COMPLETE SHEET METAL ROOFING ASSEMBLY INCLUDING TRIM, COPINGS, FASCIAE, CORNER UNITS, RIDGE CLOSURES, CLIPS, FLASHINGS, SEALANTS, GASKETS, FILLERS, CLOSURE STRIPS, AND SIMILAR ITEMS. MATCH MATERIAL AND FINISH OF SHEET METAL ROOFING, UNLESS OTHERWISE INDICATED. ALL TRIM AND FLASHING COMPONENTS SHALL BE SUPPLIED IN A MINIMUM OF 12'-0" LENGTHS AND SHALL CONFORM TO MANUFACTURER'S STANDARD PART DIMENSIONS AND DETAILS.

1. FLAT CLIP, 24 GA. GALVANIZED STEEL CLIPS DESIGNED TO WITHSTAND NEGATIVE-LOAD REQUIREMENTS.
2. CLOSURES: CLOSED-CELL, EXPANDED, CELLULAR, RUBBER OR CROSS LINKED, POLYOLEFIN-FOAM OR CLOSED-CELL LAMINATED POLYETHYLENE; MINIMUM 1-INCH THICK, FLEXIBLE CLOSURE STRIPS; CUT OR PREMOLDED TO MATCH SHEET METAL ROOFING PROFILE. PROVIDE CLOSURE STRIPS WHERE INDICATED OR NECESSARY TO ENSURE WEATHERTIGHT CONSTRUCTION.
3. SEALANTS AS RECOMMENDED BY MANUFACTURER.
4. FASTENERS AS RECOMMENDED BY MANUFACTURER.

B. FLASHING AND TRIM: FORMED FROM MATCHING MATERIALS AS SHEET METAL ROOF PANEL IN GAUGES NOTED. PROVIDE FLASHING AND TRIM IN HEAVIER GAUGE MATERIALS AS REQUIRED TO SEAL AGAINST WEATHER AND TO PROVIDE FINISHED APPEARANCE. LOCATIONS INCLUDE, BUT ARE NOT LIMITED TO, EAVES, RAKES, CORNERS, BASES, FRAMED OPENINGS, RIDGES, FASCIAE, AND FILLERS. FINISH FLASHING AND TRIM WITH SAME FINISH SYSTEM AS ADJACENT SHEET METAL ROOFING.

C. SNOW GUARDS: PREFABRICATED, NON-CORROSIVE UNITS DESIGNED FOR COMPATIBILITY WITH METAL ROOF PANELS.

2.07 EQUIPMENT:

A. MANUFACTURER MUST MAINTAIN QUALITY CONTROL AND MAINTENANCE PROCEDURES OF ALL EQUIPMENT. VERIFICATION OF QUALITY CONTROL PROCEDURES MUST BE VALIDATED BY A 3RD PARTY ENTITY.

1. AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
2. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:

A. ENGLERT,, INC.

2.08 FABRICATION:

A. GENERAL: FABRICATE SHEET METAL ROOFING AND COMPONENTS TO COMPLY WITH DETAILS SHOWN, MANUFACTURERS INSTALLATION DETAILS AND RECOMMENDATIONS IN SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL" AND NRCA WATERPROOFING MANUAL THAT APPLY TO THE DESIGN, DIMENSIONS (PAN WIDTH AND SEAM HEIGHT), GEOMETRY, METAL THICKNESS, AND OTHER CHARACTERISTICS OF INSTALLATION INDICATED. FABRICATE SHEET METAL ROOFING AND ACCESSORIES AT THE MANUFACTURER'S LOCATION TO THE GREATEST EXTENT POSSIBLE.

B. GENERAL: FABRICATE SHEET METAL ROOFING PANELS TO COMPLY WITH DETAILS SHOWN AND SHEET METAL ROOFING MANUFACTURER'S WRITTEN INSTRUCTIONS.

C. FABRICATE SHEET METAL ROOFING TO ALLOW FOR EXPANSION IN RUNNING WORK SUFFICIENT TO PREVENT LEAKAGE, DAMAGE, AND DETERIORATION OF THE WORK. FORM EXPOSED SHEET METAL WORK TO FIT SUBSTRATES WITHOUT EXCESSIVE OIL CANNING, BUCKLING, AND TOOL MARKS, TRUE TO LINE AND LEVELS INDICATED, AND WITH EXPOSED EDGES FOLDED BACK TO FORM HEMS.

1. FOLD AND CLEAT EAVES AS REQUIRED BY MANUFACTURER TO INSURE WEATHERTIGHTNESS AND WIND UPLIFT RESISTANCE.
2. FORM AND FABRICATE SHEETS, SEAMS, STRIPS, CLEATS, VALLEYS, RIDGES, EDGE TREATMENTS, INTEGRAL FLASHINGS, AND OTHER COMPONENTS OF METAL ROOFING TO PROFILES, PATTERNS, AND DRAINAGE ARRANGEMENTS SHOWN AND AS REQUIRED FOR LEAK PROOF CONSTRUCTION AND WIND UPLIFT RESISTANCE.

D. METAL PROTECTION: WHERE DISSIMILAR METALS WILL CONTACT EACH OTHER, PROTECT AGAINST GALVANIC ACTION BY PAINTING CONTACT SURFACES WITH BITUMINOUS COATING, BY APPLYING RUBBERIZED-ASPHALT UNDERLAYMENT TO EACH CONTACT SURFACE, OR BY OTHER PERMANENT SEPARATION AS RECOMMENDED BY MANUFACTURERS OF DISSIMILAR METALS OR BY FABRICATOR.

E. SHEET METAL ACCESSORIES: CUSTOM FABRICATE FLASHINGS AND TRIM TO COMPLY WITH RECOMMENDATIONS IN SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL" THAT APPLY TO DESIGN, DIMENSIONS, METAL, AND OTHER CHARACTERISTICS OF ITEM INDICATED. OBTAIN FIELD MEASUREMENTS FOR ACCURATE FIT BEFORE MANUFACTURER FABRICATION.

PART 3 EXECUTION

3.01 EXAMINATION:

A. EXAMINE SUBSTRATES, AREAS, AND CONDITIONS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES, METAL ROOF PANEL SUPPORTS, AND OTHER CONDITIONS AFFECTING PERFORMANCE OF WORK.

1. EXAMINE PRIMARY AND SECONDARY ROOF FRAMING TO VERIFY THAT RAFTERS, PURLINS, ANGLES, CHANNELS, AND OTHER STRUCTURAL PANEL SUPPORT MEMBERS AND ANCHORAGES HAVE BEEN INSTALLED WITHIN ALIGNMENT TOLERANCES REQUIRED BY METAL ROOF PANEL MANUFACTURER.
2. EXAMINE SOLID ROOF SHEATHING TO VERIFY THAT SHEATHING JOINTS ARE SUPPORTED BY FRAMING OR BLOCKING AND THAT INSTALLATION IS WITHIN FLATNESS TOLERANCES REQUIRED BY METAL ROOF PANEL MANUFACTURER.
3. FOR THE RECORD, PREPARE WRITTEN REPORT FOR THE GENERAL CONTRACTOR, ENDORSED BY INSTALLER, LISTING CONDITIONS DETRIMENTAL TO PERFORMANCE OF WORK.

B. . EXAMINE ROUGHING-IN FOR COMPONENTS AND SYSTEMS PENETRATING METAL ROOF PANELS TO VERIFY ACTUAL LOCATIONS OF PENETRATIONS RELATIVE TO SEAM LOCATIONS OF METAL ROOF PANELS BEFORE METAL ROOF PANEL INSTALLATION.

C. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED

3.02 PREPARATION:

A. LAY OUT AND EXAMINE SUBSTRATE BEFORE INSTALLATION OF SHEET METAL ROOFING. SPACE FASTENERS AS REQUIRED TO RESIST DESIGN UPLIFT, BUT NOT MORE THAN 24 INCHES O.C.

B. INSTALL FLASHINGS AND OTHER SHEET METAL TO COMPLY WITH REQUIREMENTS SPECIFIED IN DIVISION 7 SECTION "SHEET METAL FLASHING AND TRIM."

3.03 UNDERLAYMENT INSTALLATION:

A. INSTALL POLYETHYLENE SHEET ON ROOF SHEATHING UNDER METAL ROOF PANELS. USE ADHESIVE FOR ANCHORAGE TO MINIMIZE USE OF MECHANICAL FASTENERS UNDER METAL ROOF PANELS. APPLY AT LOCATIONS INDICATED ON DRAWINGS, IN SHINGLE FASHION TO SHED WATER, WITH LAPPED AND TAPED JOINTS OF NOT LESS THAN 2 INCHES. WITH SELF-ADHERING SHEET UNDERLAYMENT; INSTALL SELF-ADHERING SHEET UNDERLAYMENT, WRINKLE FREE, ON ROOF SHEATHING UNDER SHEET METAL ROOFING. COMPLY WITH TEMPERATURE RESTRICTIONS OF UNDERLAYMENT MANUFACTURER FOR INSTALLATION; USE PRIMER RATHER THAN NAILS FOR INSTALLING UNDERLAYMENT AT LOW TEMPERATURES. APPLY AT LOCATIONS NOTED ON DRAWINGS IN SHINGLE FASHION TO SHED WATER, WITH END LAPS OF NOT LESS THAN 6 INCHES STAGGERED 24 INCHES BETWEEN COURSES. OVERLAP SIDE EDGES NOT LESS THAN 3.5 INCHES. EXTEND UNDERLAYMENT A MINIMUM OF 1.5 INCHES OF FASCIA BOARD. ROLL LAPS WITH ROLLER. COVER UNDERLAYMENT WITHIN 14 DAYS.

3.04 INSTALLATION, GENERAL:

A. GENERAL: ANCHOR SHEET METAL ROOFING AND OTHER COMPONENTS OF THE WORK SECURELY IN PLACE, WITH PROVISIONS FOR THERMAL AND STRUCTURAL MOVEMENT. INSTALL FASTENERS, PROTECTIVE COATINGS, SEPARATORS, SEALANTS, AND OTHER MISCELLANEOUS ITEMS AS REQUIRED FOR A COMPLETE ROOFING SYSTEM AND AS RECOMMENDED BY FABRICATOR FOR SHEET METAL ROOFING.

1. FIELD CUTTING OF SHEET METAL ROOFING BY TORCH IS NOT PERMITTED.
2. RIGIDLY FASTEN RIDGE END OF SHEET METAL ROOFING AND ALLOW FOR POSITIVE PANEL ATTACHMENT AS PER MANUFACTURER'S RECOMMENDATIONS. ALL FLASHING DETAILS SHALL ACCOMMODATE THERMAL MOVEMENT.
3. PROVIDE METAL CLOSURES AT PEAKS, RIDGE, GABLE AND HIP CAPS.
4. FLASH AND SEAL SHEET METAL ROOFING WITH WEATHER CLOSURES AT EAVES, RAKES, AND AT PERIMETER OF ALL OPENINGS. FASTEN WITH SELF-TAPPING SCREWS.
5. LOCATE ROOFING SPLICES OVER, BUT NOT ATTACHED TO, STRUCTURAL SUPPORTS. STAGGER ROOFING SPLICES AND END LAPS TO AVOID A FOUR-PANEL LAP SPLICE CONDITION.
6. LAP METAL FLASHING OVER SHEET METAL ROOFING TO ALLOW MOISTURE TO RUN OVER AND OFF THE MATERIAL.

B. FASTENERS: USE FASTENERS OF SIZE AND LENGTH AS REQUIRED FOR COMPATIBILITY WITH SUBSTRATE.

C. METAL PROTECTION: WHERE DISSIMILAR METALS WILL CONTACT EACH OTHER OR CORROSIVE SUBSTRATES, PROTECT AGAINST GALVANIC ACTION BY PAINTING CONTACT SURFACES WITH BITUMINOUS COATING, BY APPLYING RUBBERIZED-ASPHALT UNDERLAYMENT TO EACH CONTACT SURFACE, OR BY OTHER PERMANENT SEPARATION AS RECOMMENDED BY FABRICATOR OF SHEET METAL ROOFING OR MANUFACTURERS OF DISSIMILAR METALS.

D. SEPARATE SHEET METAL ROOFING FROM BITUMINOUS COATING WHERE ROOFING WILL CONTACT WOOD, FERROUS METAL, OR CEMENTITIOUS CONSTRUCTION. INTERLOCK AND OVERLAP SHINGLES AND STAGGER END JOINTS FROM SHINGLES ABOVE AND BELOW ACCORDING TO SHINGLE MANUFACTURER'S WRITTEN INSTRUCTIONS.

E. CONCEAL FASTENERS AND EXPANSION PROVISIONS WHERE POSSIBLE IN EXPOSED WORK AND LOCATE TO MINIMIZE POSSIBILITY OF LEAKAGE. COVER AND SEAL FASTENERS AND ANCHORS AS REQUIRED FOR A TIGHT INSTALLATION.

3.05 ACCESSORY INSTALLATION:

A. RAINWATER CONDUCTORS TERMINATING AT GRADE SHALL TIE TO A SUBSURFACE STORM DRAINAGE SYSTEM. RAINWATER CONDUCTORS TERMINATING AT A LOWER ROOF SHALL DISCHARGE ONTO PRECAST CONCRETE SPLASHBLOCKS AS DETAILED ON THE DRAWINGS.

B. GENERAL: INSTALL ACCESSORIES WITH POSITIVE ANCHORAGE TO BUILDING AND WEATHERTIGHT MOUNTING AND PROVIDE FOR THERMAL EXPANSION. COORDINATE INSTALLATION WITH FLASHINGS AND OTHER COMPONENTS.

3.06 CLEANING AND PROTECTION:

A. REMOVE TEMPORARY PROTECTIVE COVERINGS AND STRIPPABLE FILMS, IF ANY, AS SHEET METAL ROOFING IS INSTALLED. ON COMPLETION OF SHEET METAL ROOFING INSTALLATION, CLEAN FINISHED SURFACES, INCLUDING REMOVING UNUSED FASTENERS, METAL FILINGS, POP RIVET STEMS, AND PIECES OF FLASHING. MAINTAIN IN A CLEAN CONDITION DURING CONSTRUCTION.

SECTION 07900- JOINT SEALERS

A. FURNISH AND INSTALL JOINT SEALERS, INCLUDING CAULKING, AND BACKING MATERIAL FOR INTERIOR AND EXTERIOR JOINTS NOT SPECIFIED ELSEWHERE.

B. TWO YEAR WARRANTY. REPAIR OR REPLACE JOINT SEALERS WHICH FAIL TO PERFORM AS INTENDED, BECAUSE OF LEAKING, CRUMBLING, HARDENING, SHRINKAGE, BLEEDING, SAGGING, STAINING OR LOSS OF ADHESION.

C. SELECT MATERIALS FOR COMPATIBILITY WITH JOINT SURFACES
AND INDICATED EXPOSURES: SELECT MODULUS OF ELASTICITY AND HARDNESS RECOMMENDED BY MANUFACTURER FOR APPLICATION.

1. GENERAL EXTERIOR SEALANT: TREMCO/DYRNERIC, MAMECO VULKEM 922, OR PECORA/DYNATROL II MULTI-COMPONENT POLYURETHANE SEALANT, ASTMK C920, TYPE M, GRADE NS, CLASS 25, NON-SAG.

2. TRAFFIC BEARING SEALANT: TREMCO/THC-900, MAMECO VULKEM 245, OR PECORA/NR-200 UREXPAN MULTI-COMPONENT POLYURETHANE SEALANT, ASIM C920, TYPE M, GRADE P, CLASS 25M SELF-LEVELING.

3. INTERIOR WET AREA SEALANT: GE/SANITARY SEALANT, DOW/786 MILDEW RESISTANT SILICONE SEALANT, TREMCO/PROGLAZE OR PECORA/863 MILDEW-RESISTANT SILICONE RUBBER SEALANT COMPOUNDED SPECIFICALLY FOR MILDEW RESISTANCE.

4. INTERIOR GENERAL SEALANT: TREMCO/ACRYIIC LATEX OR PECORA/AC-20 ACRYLIC OR MODIFIED ACRYLIC SEALANT, NONSTAINING AND NONBLEEDING, RECOMMENDED BY MANUFACTURER GENERAL INTERIOR EXPOSURE.

5. PRIMERS/SEALERS: NON-STAINING TYPES RECOMMENDED BY JOINT SEALER MANUFACTURER FOR JOINT SURFACES TO BE PRIMED OR SEALED.

6. JOINT CLEANERS: NON-CORROSIVE TYPES RECOMMENDED BY JOINT SEALER MANUFACTURER, COMPATIBLE WITH JOINT FORMING MATERIALS.

7. BOND BREAKER TAPE: POLYETHYLENE TAPE AS RECOMMENDED BY JOINT SEALER MANUFACTURER WHERE BOND TO SUBSTRATE OR JOINT FILLER MUST BE AVOIDED FOR PROPER PERFORMANCE OF JOINT SEALER.

8. SEALANT BACKER ROD: COMPRESSIBLE POLYETHYLENE FOAM ROD OR OTHER FLEXIBLE, PERMANENT, DURABLE NONABSORPTIVE MATERIAL AS RECOMMENDED BY JOINT SEALER MANUFACTURER FOR COMPATIBILITY WITH JOINT SEALER.

a. OVERSIZE BACKER ROD MINIMUM 30% TO 50% OF JOINT OPENING

DIVISION EIGHT:

SECTION 08410- ALUMINUM FRAMED STOREFRONTS
REFER TO DRAWINGS FOR ADDITIONAL INFORMATION

A. PROVIDE ALL NECESSARY MATERIALS, LABOR AND EQUIPMENT FOR THE COMPLETE INSTALLATION OF ALL-GLASS FRAMED TYPE ENTRANCE AND STOREFRONT SYSTEM, INCLUDING GLASS AND GLAZING, AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN.

B. SUBMITTALS: PROVIDE MANUFACTURER'S LITERATURE INDICATING STANDARD CONSTRUCTION AND SHOP DRAWINGS SHOWING ACTUAL FIELD MEASUREMENTS.

C. DELIVERY. STORE MATERIALS PROTECTED FROM EXPOSURE TO
HARMFUL WEATHER CONDITIONS AND OF TEMPERATURE CONDITIONS RECOMMENDED BY MANUFACTURER.

D. CERTIFICATION

1. GLAZING CONTRACTOR TO SUBMIT CERTIFICATION BY A LICENSED STRUCTURAL ENGINEER REGISTERED IN PROJECT STATE INDICATING COMPLIANCE WITH APPLICABLE CODES AND CONTRACT DOCUMENTS.

E. WHEN IN-PLACE CONSTRUCTION IS FOUND NOT IN PROPER CONDITION FOR RECEIVING WORK NEXT TO BE APPLIED, NOTIFY CONTRACTOR.

1. DO NOT PROCEED WITH WORK UNTIL ADVERSE CONDITIONS ARE CORRECTED. START OF WORK SIGNIFIES ACCEPTANCE OF SUPPORTING CONSTRUCTION AND ADJACENT CONDITIONS.

F. SUBMIT COPIES OF WRITTEN WARRANTY. SIGNED BY MANUFACTURER AND SUBCONTRACTOR, AGREEING TO REPLACE SYSTEM COMPONENTS WHICH FAIL IN MATERIALS OR WORKMANSHIP.

1. FAILURE INCLUDES EXCESSIVE LEAKAGE, EXCESSIVE DEFLECTIONS, DETERIORATION OF FINISH OR METAL IN EXCESS OF NORMAL WEATHERING, AND DEFECTS IN ACCESSORIES, WEATHERSTRIPPING, AND OTHER COMPONENTS.

2. WARRANTY PERIOD: TWO YEARS.

G. DESIGN COMPONENT PART AND ASSEMBLIES SO COMPLETE SYSTEM COMPLIES WITH APPLICABLE CODE REQUIREMENTS FOR LOADS, SPECIFIED STANDARDS AND CONTRACT DOCUMENTS.

1. PROVIDE COMPLETE SYSTEM WITH JOINTS, GAPS AND PENETRATIONS SEALED AND WEATHER TIGHT.

2. STRENGTH: DESIGN SYSTEM TO WITHSTAND LIVE LOADINGS AND WIND LOADINGS AS REQUIRED BY GOVERNING CODES AND REGULATIONS, LIMIT DEFLECTION TO L/180 UNDER FULLY LOADED CONDITION.

3. WATER PENETRATION: NO UNCONTROLLED WATER PENETRATION WHEN TESTED IN ACCORDANCE WITH ASTM E331, WITH NO WATER ON EXPOSED INTERIOR COMPONENTS.

4. AIR LEAKAGE: MAXIMUM 0.06 CFM/FT, ASTM E283, AT DIFFERENTIAL PRESSURE OF 1.57 PSF, EXCLUDING ENTRANCE DOORS.

5. THERMAL MOVEMENTS: DESIGN FOR AMBIENT TEMPERATURE RANGE OF 100F AND MATERIAL TEMPERATURE RANGE OF 160F WITHOUT OBJECTIONABLE DISTORTION OR STRESSES IN FASTENINGS OR JOINERY.

a. PROVIDE FOR NOISELESS MOVEMENT OF COMPONENT PARTS AND MATERIALS WITHOUT BUCKLING, OPENING AT JOINTS, GLASS BREAKAGE, OR OTHER DETRIMENTAL EFFECTS.

H. STOREFRONT SYSTEM:

1. KAWNEER TRIFAB VG 451-T OR KAWNEER 1600 WALL SYSTEM. COLOR TO BE SELECTED BY ARCHITECT.

SEALANT: SHALL BE BY DOW CORNING TO MATCH STOREFRONT.

J. GLAZING AT STOREFRONTS (WHERE APPLICABLE):

1. DOORS: MINIMUM 1/4" THICK CLEAR TEMPERED GLASS.

2. GLAZING WITHIN 2'-0" OF DOOR SWING: MINIMUM 3/8" THICK CLEAR TEMPERED GLASS, INSULATED OR AS INDICATED ON DRAWINGS.

3. LOWER STOREFRONT GLAZING: MINIMUM 3/8" THICK CLEAR TEMPERED GLASS, INSULATED OR AS INDICATED ON DRAWINGS.

4. TRANSOM GLAZING: MINIMUM 3/8" THICK CLEAR TEMPERED GLASS FOR GLAZING ONTO FRAMES, INSULATED OR AS INDICATED ON DRAWINGS.

5. GENERAL GLAZING: MINIMUM 3/8" THICK CLEAR PLATE GLASS FOR GLAZING ONTO FRAMES, INSULATED OR AS INDICATED ON DRAWINGS.

6. CUT PRIOR TO TEMPERING, TO TOLERANCES NECESSARY TO PROVIDE EVEN JOINTS (SIZE AS SHOWN) WITHIN PLUS OR MINUS 1/16".

7. GLAZING SHALL HAVE FLOAT QUALITY Q3 (GLAZING SELECT)

K. DOORS:

L. METAL FRAMES: EXTRUDED ALUMINUM AS SHOWN ON DRAWINGS, SIZED AND BRACED AS REQUIRED TO SUPPORT GLASS.

M. METAL CLADDING: MINIMUM 16 GAUGE (0.040") CLADDING, FORM CLADDING WITH EDGE CONCEALED IN FINISHED CONSTRUCTION UNDER GLAZING STOP AND AT SILICONE BUTT JOINTS.

N. GLAZING SEALANT: STRUCTURAL SILICONE TYPE DESIGNED FOR GLAZING.

O. SETTING AND SPACING BLOCKS: STANDARD RESILIENT TYPES AS REQUIRED.

P. GASKETS: POLYVINYL CHLORIDE OR MANUFACTURER'S STANDARD, TO SUIT ALUMINUM OR STEEL SECTIONS AS APPLICABLE.

Q. ANCHORAGES AND FASTENINGS: MANUFACTURER'S STANDARD, CONCEALED EXCEPT AS OTHERWISE REQUIRED: FINISH HEADS OF EXPOSED FASTENERS TO MATCH ADJACENT METAL SURFACES.

R. ALL EXPOSED SURFACES SHALL BE FREE OF UNSIGHTLY SCRATCHES AND BLEMISHES. THE EXPOSED SECTIONS SHALL RECEIVE A CAUSTIC ETCH FOLLOWED BY AN ANODIC COATING.

S. LOCATE AND PROVIDE HOLES AND CUTOUTS TO RECEIVE HARDWARE BEFORE TEMPERING GLASS. FABRICATE DOORS, STOREFRONTS, AND TRANSOMS TO ACCOMMODATE REQUIRED HARDWARE AND ACCESSORY ITEMS.

1. INSTALL HARDWARE AT THE FABRICATION PLANT (WHERE APPLICABLE). REMOVE ONLY AS REQUIRED FOR FINAL FINISHING OPERATIONS, AND FOR DELIVERY AND INSTALLATION OF THE WORK AT THE PROJECT SITE.

T. THE FRAMING MUST BE FACTORY FABRICATED AND ACCURATELY ASSEMBLED WITH UNEXPOSED FASTENERS UTILIZING EXTRUDED SPLINES, CLIPS AND/OR SNAP-IN FEATURES.

U. ALL GLAZING SHALL HAVE REMOVABLE STOPS TO FACILITATE GLAZING. GLASS SHALL BE HELD IN PLACE BY REMOVABLE STOP WITH E.P.D.M. GLAZING GASKETS ON BOTH SIDES.

V. SEPARATE ALUM. & OTHER CORRODIBLE MTL. SURFACES FROM SOURCES OF CORROSION OR ELECTROLYTIC ACTION.

W. ALL OPENINGS SHALL BE PREPARED PLUM AND SQUARE BY OTHERS AND SHALL BE OF SUFFICIENT SIZE TO PROVIDE CLEARANCE AT JAMBS, HEAD, AND SILL AS SHOWN ON THE ARCHITECTURAL DRAWINGS.

X. INSTALLATION, GLASS AND GLAZING SHALL BE PERFORMED BY EXPERIENCED TECHNICIANS ACCORDING TO THE MANUFACTURER'S RECOMMENDATION PROCEDURES.

Y. INSTALL GLASS AS DETAILED AND IN ACCORDANCE WITH FGMA STANDARDS FOR INDICATED FRAME SYSTEM: GLASS SHALL NOT TOUCH METAL.

1. APPLY SEALANT TO UNIFORM AND LEVEL LINE, SLIGHTLY CONCAVE, FREE OF AIR POCKETS, EMBEDDED MATTER, RIDGES AND SAGS; TOOL SEALANT SURFACE FOR SMOOTH APPEARANCE.

a. PROVIDE SEALANT AT FLOOR, CEILING AND

INTERSECTING WALLS AT VERTICAL JOINTS: REFER TO DRAWINGS FOR ADDITIONAL SEALANT REQUIREMENTS AT BUTT JOINTS

2. REMOVE AND REPLACE GLASS WHICH IS BROKEN, CHIPPED, CRACKED ABRADED, STAINED OR DAMAGED DURING CONSTRUCTION PERIOD, INCLUDING NATURAL CAUSES, ACCIDENTS AND VANDALISM.

3. SET DOOR PLUMB LEVEL AND TRUE TO LINE, WITHOUT WARP OR RACK. ANCHOR SECURELY IN PLACE. PROVIDE MINIMAL CLEARANCE FROM TOP OF GLASS DOOR TO SOFFIT.

Z. WHEN GENERAL CONTRACTOR REMOVES STOREFRONT BARRICADE,
FULLY CLEAN ALL GLASS/RAIL SURFACES INSIDE AND OUT. INSTALL TEMPORARY FULL HEIGHT PAPER COVERING ON INSIDE FACE OF GLASS. (VERIFY WITH BUILDING MANAGEMENT, TYPE AND COLOR OF ACCEPTABLE PAPER.)

AA. UPON COMPLETION OF CONSTRUCTION, THE GENERAL CONTRACTOR
SHALL BE RESPONSIBLE FOR CLEANING ALL ANODIZED ALUMINUM WITH PLAIN WATER CONTAINING MILD DETERGENT, OR AS RECOMMENDED BY MANUFACTURER. NO ABRASIVE AGENT SHALL BE USED.

SECTION 08710 - DOOR HARDWARE

PART 1 - GENERAL

1.01 SUMMARY: THE CONTRACTOR SHALL PURCHASE DOOR FINISH HARDWARE AS SELECTED BY OWNER / ARCHITECT AND SUBMIT SAME TO AoR IN THE FORM OF SHOP DRAWINGS FOR REVIEW AND APPROVAL. SEE BELOW.

1.02 SUBMITTALS:

A. FINISH HARDWARE SCHEDULE/ LIST: SUBMIT FINISH HARDWARE SCHEDULE/ LIST.

B. FINISH HARDWARE PRODUCT DATA: SUBMIT PRODUCT DATA FOR ALL FINISH HARDWARE ITEMS, WITH THE SPECIFIED FINISH HARDWARE CLEARLY IDENTIFIED.

PART 2 - PRODUCTS

2.01 DOOR FINISH HARDWARE (INVENTORY AGREEMENT): THE CONTRACTOR SHALL PURCHASE DOOR FINISH HARDWARE FROM THE PETCO VENDOR VIA AN INVENTORY AGREEMENT, AND SHALL INSTALL DOOR FINISH HARDWARE. THE CONTRACTOR SHALL COORDINATE PURCHASE AND DELIVERY OF DOOR FINISH HARDWARE WITH OWNER'S CONSTRUCTION MANAGER.

2.02 DOOR FINISH HARDWARE NOTES:

A. EXCEPT AS MAY BE SPECIFIED OTHERWISE, FINISHES SHALL BE AS FOLLOWS:

1. HINGES (INTERIOR), CYLINDER, THUMBTURN, DEADLOCK, INTERCHANGEABLE STORE CORE, LEVERSET, DOOR PUSH PLATES, DOOR PULLS: 626, US26D SATIN CHROMIUM PLATED
2. HINGES (EXTERIOR), KICKPLATE, ARMOR PLATE: 32D STAINLESS STEEL
3. SILENCER: (OTHER) GRAY RUBBER
4. THRESHOLD, WEATHERSTRIPPING: (OTHER) MILL FINISH ALUMINUM

B. ACCESSIBILITY COMPLIANCE: LEVER SETS AND DOOR THRESHOLDS SHALL BE PROVIDED TO MEET ADA STANDARDS

2.03 DOOR HARDWARE, ACCEPTABLE MANUFACTURERS:

A. ACCEPTABLE MANUFACTURERS (W/ KEY ABBREVIATIONS USED IN FINISH HARDWARE SCHEDULE):

1. HA HAGER HINGE CO., ST. LOUIS, MO (800-325-9995)
2. LC LCN CLOSERS, PRINCETON, IL (800-526-2400)
3. RD RUDOLPH DESCO COMPANY INC., ENGLEWOOD CLIFFS, NJ (WWW.DESCO-GROUP.COM)
4. SC SCHLAGE LOCK COMPANY, SAN FRANCISCO, CA (800-847-1864)
5. VD VON DUPRIN (WWW.VONDUPRIN.COM)

2.04 FINISH HARDWARE SCHEDULE: REFER TO DRAWINGS FOR ADDITIONAL INFORMATION

PART 3 - EXECUTION

3.01 GENERAL:

A. DOOR CLOSERS: ADJUST ALUMINUM AND HOLLOW METAL DOOR CLOSER OPERATION, SO THAT FROM A 90 DEGREE OPEN POSITION, THE TIME REQUIRED TO MOVE THE DOOR TO AN OPEN POSITION OF 12 DEGREES (VIA THE DOOR'S CLOSING ACTION) IS 5 SECOND MINIMUM (ANSI A117.1 STANDARD)

B. STORE CORES: WHERE AN INTERCHANGEABLE STORE CORE IS SPECIFIED, THE CONTRACTOR SHALL PROVIDE THE INTERCHANGEABLE CONSTRUCTION CORE. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL LEAVE THE INTERCHANGEABLE CONSTRUCTION CORE IN PLACE. THE INTERCHANGEABLE STORE CORES SHALL BE PURCHASED BY THE OWNER'S CONSTRUCTION SUPERVISOR.

C. FURNISH AND INSTALL COMPLETE, CODE CONFORMING FINISH HARDWARE INSTALLATION AS REQUIRED FOR FULLY OPERATIONAL FACILITIES, INCLUDING WORK REQUIRED FOR PROPER COMPLETION OF PROJECT, THOUGH NOT DEFINITELY SPECIFIED HEREIN.

D. CONTRACTOR IS RESPONSIBLE FOR THE PROPER APPLICATION AND FIT OF ALL FINISH AND SPECIALTY HARDWARE IN LOCATIONS AS INDICATED ON DRAWINGS OR AS SPECIFIED. COORDINATE DIMENSIONS BETWEEN HARDWARE ITEMS WHERE THE INSTALLATION OF ANY ITEMS AFFECTS THE OPERATION OR INSTALLATION OF ANOTHER ITEM.

E. TEMPLATES: FURNISH TEMPLATES OF PHYSICAL HARDWARE TO DOOR AND FRAME MANUFACTURERS AS REQUIRED TO ENSURE PROPER PREPARATION FOR HARDWARE.

F. INSTALL HARDWARE IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS AND RECOMMENDATIONS.

1. HEIGHTS OF ITEMS SHALL CONFORM WITH APPLICABLE CODES. INSTALL ITEMS NOT SHOWN ON DRAWINGS IN ACCORDANCE WITH RECOMMENDATIONS OF BUILDERS HARDWARE MANUFACTURERS ASSOCIATION.

2. MOUNTING POSITIONS SUBJECT TO APPROVAL BY ARCHITECT.

3. FIT HARDWARE PRIOR TO PAINTING, THEN REMOVE FOR PAINTING OF DOORS AND FRAMES BEFORE FINAL INSTALLATION OF HARDWARE.

G. HARDWARE: SECURELY ANCHOR WITH APPROPRIATE FASTENING DEVICES, FINISH EXPOSED FASTENERS TO MATCH HARDWARE.

1. KEYING:

a. PROVIDE ONE SET OF CONSTRUCTION CORES AND TWO CONSTRUCTION CONTROL KEYS.

2. HEX BOLTS AND GROMMET NUTS SHALL NOT BE PERMITTED:
COORDINATE TEMPLATES AND REINFORCING WITH DOOR AND FRAME MANUFACTURERS.

H. NOTIFY OWNER REPRESENTATIVE OF ANY MODIFICATIONS REQUIRED DUE TO LOCAL CODE REQUIREMENTS.

SECTION 08800- GLAZING

PART 1 - GENERAL

1.01 SUMMARY:

A. THE CONTRACTOR SHALL PROVIDE GLAZING AND GLAZING ACCESSORIES, AS SPECIFIED IN THIS SECTION, AND AS NEEDED FOR A COMPLETE AND PROPER INSTALLATION.

1.02 RELATED WORK: SECTION 01100- BID ALTERNATES, VOLUNTARY BID ALTERNATES & ALLOWANCES

1.03 SUBMITTAL: NO PRODUCT SUBMITTAL IS REQUIRED FOR THE WORK OF THIS SECTION IF PROVIDED PER THE CONSTRUCTION DOCUMENTS. ANY REQUEST FOR PRODUCT SUBSTITUTION MUST BE SUBMITTED PER SECTION 01340- SUBMITTALS

1.04 WARRANTIES/ CLOSEOUT DOCUMENTS:

A. MANUFACTURER'S WARRANTY: THE CONTRACTOR SHALL INCLUDE THE GLAZING MANUFACTURER'S TWO (2) YEAR WARRANTY AGAINST DEFECTS ON ALL GLASS PRODUCTS IN THE BUILDING MAINTENANCE MANUALS PER SECTION 01700- CONTRACT CLOSEOUT

B. INSTALLER'S WARRANTY: THE CONTRACTOR SHALL PROVIDE THE GLAZING INSTALLER'S WARRANTY FOR ALL WORK, FOR A TERM OF ONE YEAR AFTER THE DATE OF SUBSTANTIAL COMPLETION, IN THE BUILDING MAINTENANCE MANUALS PER SECTION 01700- CONTRACT CLOSEOUT

PART 2 - PRODUCTS

2.01 GLASS

A. GENERAL: PROVIDE THE GLASS TYPE AND THICKNESS SHOWN ON THE DRAWINGS AND SPECIFIED IN THIS SECTION

B. TEMPERED GLASS: COMPLY WITH FED. SPEC. DD-G-1403 AND ANSI Z97.1. THICKNESS: 1 INCH

C. INSULATING GLASS UNITS (EXTERIOR STOREFRONT): TYPE G, SIGMA NO. 64-7-2 DOUBLE PANE CLEAR GLASS, OUTER PANE 1/4", INNER PANE 1/4" AND TOTAL UNIT THICKNESS 1". CLEAR INSULATING UNITS SHALL HAVE A MAXIMUM SHADING COEFFICIENT OF .80 OR LESS. THE INSULATED GLASS UNITS SHALL COMPLY WITH IECC 2015, TABLE C402.4, CLIMATE ZONE 4, U-FACTOR & SHGC.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS: THE CONTRACTOR SHALL EXAMINE THE AREAS AND CONDITIONS UNDER WHICH WORK OF THIS SECTION WILL BE PROVIDED, SHALL CORRECT CONDITIONS DETRIMENTAL TO TIMELY AND PROPER COMPLETION OF THE WORK AND SHALL NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED.

3.02 INSTALLATION: IN ADDITION TO COMPLYING WITH PERTINENT CODES AND REGULATIONS OF THE LOCAL JURISDICTION, THE CONTRACTOR SHALL COMPLY WITH PERTINENT RECOMMENDATIONS CONTAINED IN THE FLAT GLASS MARKETING ASSOCIATION'S "GLAZING SEALING SYSTEMS MANUAL", AND "GLAZING MANUAL".

DIVISION NINE: FINISHES

SECTION 09260 - GYPSUM WALLBOARD & PARTITION SYSTEM

PART 1 GENERAL

1.01 SUMMARY: PROVIDE LIGHT GAUGE METAL STUDS AND ACCESSORIES, AND GYPSUM WALLBOARD, ACCESSORIES AND GYPSUM WALLBOARD FINISHING AS INDICATED ON THE DRAWINGS, AS SPECIFIED IN THIS SECTION, AND AS NEEDED FOR A COMPLETE AND PROPER INSTALLATION.

1.02 RELATED WORK: SECTION 05400- COLD FORMED METAL FRAMING.

1.03 SUBMITTAL: NO PRODUCT SUBMITTAL IS REQUIRED FOR THE WORK OF THIS SECTION IF PROVIDED PER THE CONSTRUCTION DOCUMENTS. ANY REQUEST FOR PRODUCT SUBSTITUTION MUST BE SUBMITTED PER SECTION 01340- SUBMITTALS.

1.04 QUALITY ASSURANCE:

A. PROVIDE GYPSUM WALLBOARD FINISH WORK CONSISTENT WITH THE STANDARDS AS ESTABLISHED BY GYPSUM ASSOCIATION SPECIFICATION NUMBER GA-214-90 "LEVELS OF GYPSUM BOARD FINISH".

B. AMBIENT TEMPERATURE FOR FINISHING: GYPSUM WALLBOARD FINISHING WORK SHALL BE PROVIDED ONLY WHEN THE AMBIENT CONTROLLED AIR TEMPERATURE IS NO LESS THAN 50 DEGREES F AND RISING.

PART 2 PRODUCTS

2.01 METAL STUDS AND ACCESSORIES:

A. METAL STUDS:

1. FRAMING: MINIMUM 20-GAUGE STANDARD PUNCHED STEEL STUDS, DIP GALVANIZED, PER FED. SPEC. QQ-S-698 AND FED. SPEC. QQ-S-775D, CLASS D. SUBCONTRACTOR IS RESPONSIBLE TO VERIFY LIMITING HEIGHTS WITH PARTITION FRAMING & SPAN TABLES AND BID WILL ACCOMMODATE ACCORDINGLY. NO CHANGE ORDERS WILL BE ACCEPTED.

2. FURRING SHALL BE 20 GAUGE, 7/8" HAT SECTIONS.

B. ACCESSORIES: PROVIDE ALL ACCESSORIES INCLUDING, BUT NOT LIMITED TO, TRACKS, CLIPS, ANCHORS, FASTENING DEVICES, SOUND ATTENUATION PENCIL RODS AND RESILIENT CLIPS, AND OTHER ACCESSORIES REQUIRED FOR A COMPLETE AND PROPER INSTALLATION.

2.02 DEFLECTION TRACK METAL FRAMING:

A. INTERIOR DEFLECTION PARTITION:

1. SECURE JAMB STUDS AND/OR KING STUDS TO THE DEFLECTION RUNNER WHILE ALLOWING FOR DEFLECTION, BY USING 20 GAUGE SLIP CLIPS ON EACH SIDE OF JAMB STUD/ KING STUD LEGS, USING PRE-MANUFACTURED CLIPS EQUAL TO "SLIP CLIP" PRODUCT, BY FIRE TRACK CORP. (800/ 394-9875)

A. ACCEPTABLE ALTERNATIVE PRODUCT/MANUFACTURER FOR INTERIOR PARTITIONS: VERTICLIP SLD SLIDE CLIP OR VERTITRACK VTD, BY THE STEEL NETWORK, RALEIGH NC (888/ 474-4876)

1. PROVIDE SPACED METAL ROOF DECK SECURING PLATES AS SHOWN ON THE DRAWINGS, WHEN THE PARTITION RUN PERPENDICULAR TO THE METAL DECK FLUTES.

2.03 GYPSUM WALLBOARD:

A. INTERIOR GYPSUM WALLBOARD:

1. PROVIDE GYPSUM WALLBOARD COMPLYING WITH ASTM C36 AND FED. SPEC. SS-L-30D, IN 48" WIDTHS AND IN SUCH LENGTHS AS WILL RESULT IN A MINIMUM OF JOINTS.
2. REGULAR WALLBOARD: PROVIDE TYPE III, GRADE R, CLASS 1, 5/8" THICK.
3. FIRE-RETARDANT WALLBOARD: PROVIDE TYPE III, GRADE X, CLASS 1, UL LISTED, 5/8" THICK.

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Brick Township, NJ

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Rev:	Date:	Description:
	APRIL 01, 2022	ISSUED FOR BID AND PERMIT

LICENSE # RA NO. 13964
EXP. 07/31/23

Specifications

1838.C SP-2

4. ACCEPTABLE ALTERNATIVE PRODUCT/ MANUFACTURERS:

A. G-P GYPSUM, BY GEORGIA-PACIFIC, ATLANTA GA (404/ 652-4000).

B. GOLD BOND GYPSUM BY NATIONAL GYPSUM COMPANY, CHARLOTTE NC (704/ 365-7300).

C. GYPSUM PRODUCTS BY TEMPLE-INLAND, DIBOLL TX (409/ 829-1220).

D. SHEETROCK GYPSUM PRODUCTS, BY UNITED STATES GYPSUM COMPANY, CHICAGO IL.

E. NO OTHER PRODUCT/ MANUFACTURERS ARE PERMITTED.

B. INTERIOR MOISTURE-RESISTANT GYPSUM WALLBOARD (WHERE SCHEDULED ON DRAWINGS AND AT ALL WET WALLS):

1. PROVIDE MOISTURE RESISTANT GYPSUM WALLBOARD AT WALLS ONLY, WHERE SCHEDULED OR OTHERWISE SHOWN ON THE DRAWINGS, EQUAL TO THE FOLLOWING PRODUCT/ MANUFACTURERS:

A. "GOLD BOND 5/8" MR (MOISTURE RESISTANT) BOARD", BY NATIONAL GYPSUM COMPANY, CHARLOTTE NC (704/ 365-7300).

B."SHEETROCK WATER-RESISTANT 5/8" REGULAR GYPSUM PANELS", BY UNITED STATES GYPSUM COMPANY, CHICAGO IL.

C. INTERIOR IMPACT-RESISTANT GYPSUM WALLBOARD (WHERE SCHEDULED ON DRAWINGS):

1. PROVIDE IMPACT/ PENETRATION RESISTANT GYPSUM WALLBOARD, WHERE SCHEDULED OR OTHERWISE SHOWN ON THE DRAWINGS (KEYED OR SCHEDULED AS "VHI GYP. BD."), EQUAL TO "FIBEROCK VHI" (VERY HIGH IMPACT) 5/8" ABUSE-RESISTANT GYPSUM FIBER PANELS, BY UNITED STATES GYPSUM COMPANY, CHICAGO IL.

D. EXTERIOR SHEATHING FOR EIFS SUBSTRATES:

1. PROVIDE DENS-GLASS GOLD, GLASS MAT FACED EXTERIOR SHEATHING BY G-P GYPSUM CORPORATION, ATLANTA GA (800/ 947-4497 NORTHEAST US), SUBJECT TO ACCEPTANCE BY THE EIFS MANUFACTURER AS PART OF THE WARRANTED EIFS SYSTEM. PAPER-FACED EXTERIOR GYPSUM SHEATHING IS NOT AN ACCEPTABLE PRODUCT SUBSTITUTION. (IF APPLICABLE)

E. EXTERIOR GYPSUM WALL SHEATHING:

1. PROVIDE EXTERIOR GYPSUM SHEATHING COMPLYING WITH ASTM C79, IN 48" WIDTHS AND IN SUCH LENGTHS AS WILL RESULT IN A MINIMUM OF JOINTS.

2.04 METAL TRIM:

A. FORM FROM ZINC COATED STEEL NOT LIGHTER THAN 26 GAUGE, COMPLYING WITH FED. SPEC. QQ-S-775, TYPE I, CLASS D OR E.

B. CASING BEADS: PROVIDE GALVANIZED STEEL CHANNEL-SHAPED CASING BEADS AT EXPOSED WALLBOARD EDGES, EQUAL TO USG SERIES NO. 200, AT LOCATIONS INCLUDING BUT NOT LIMITED TO HORIZONTAL EDGES AT TOP OF PARTIAL HEIGHT PARTITIONS, AND VERTICAL AND HORIZONTAL EDGES WHERE GYPSUM WALLBOARD ABUTS OTHER MATERIALS.

C. CORNER BEADS: PROVIDE ANGLE SHAPES WITH WINGS NOT LESS THAN 7/8" WIDE AND PERFORATED FOR NAILING AND JOINT TREATMENT, EQUAL TO USG DUR-A-BEAD CORNER BEAD.

D. EDGE BEADS FOR USE AT PERIMETER OF CEILINGS:

1. PROVIDE ANGLE SHAPES WITH WINGS NOT LESS THAN 3/4" WIDE.

2. PROVIDE CONCEALED WING PERFORATED FOR NAILING, AND EXPOSED WING EDGE FOLDED FLAT.

E. CONTROL JOINTS: PROVIDE STAPLE-APPLIED ROLL-FORMED ZINC CONTROL JOINTS EQUAL TO USG CONTROL JOINT NO. 093 WHERE SHOWN ON THE DRAWINGS, IF NOT OTHERWISE INDICATED PROVIDE EVERY 30' LINEAR FEET. PROVIDE FLUSH CAULK BEAD TO FILL 1/4" OPEN SLOT AFTER PROTECTIVE TAPE IS REMOVED AFTER ADJACENT WALLBOARD FINISHING.

2.05 JOINT SYSTEM: PROVIDE A JOINTING SYSTEM, INCLUDING REINFORCING TAPE AND COMPOUND, DESIGNED AS A SYSTEM TO BE USED TOGETHER AND AS RECOMMENDED FOR THIS USE BY THE MANUFACTURER OF THE GYPSUM WALLBOARD APPROVED FOR USE ON THIS WORK. JOINTING COMPOUND MAY BE USED FOR FINISHING IF SO RECOMMENDED BY ITS MANUFACTURER.

2.06 FASTENING DEVICES:

A. FOR FASTENING GYPSUM WALLBOARD IN PLACE ON METAL STUDS AND METAL CHANNELS, USE FLAT-HEAD SCREWS, SHOULDERED, SPECIALLY DESIGNED FOR USE WITH POWER-DRIVEN TOOLS, NOT LESS THAN 1" LONG, WITH SELF TAPPING THREADS AND SELF DRILLING POINTS.

B. FOR FASTENING GYPSUM WALLBOARD IN PLACE ON WOOD, USE 1-1/4" TYPE W BUGLE-HEAD SCREWS OR USE ANNULAR RING TYPE NAILS COMPLYING WITH ASTM C514 AND OF THE LENGTH REQUIRED BY GOVERNMENTAL AGENCIES HAVING JURISDICTION.

2.07 FLOOR RUNNER GROUT: PROVIDE COMMERCIAL GROUT FOR LEVELING THE FLOOR RUNNER MEMBER OF STEEL STUD PARTITIONS AS REQUIRED.

2.08 OTHER MATERIALS: PROVIDE OTHER MATERIALS, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR A COMPLETE AND PROPER INSTALLATION OF THE WORK.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS: THE CONTRACTOR SHALL EXAMINE THE AREAS AND CONDITIONS UNDER WHICH WORK OF THIS SECTION WILL BE PROVIDED, SHALL CORRECT CONDITIONS DETRIMENTAL TO THE TIMELY AND PROPER COMPLETION OF THE WORK, AND SHALL NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED.

3.02 METAL FRAMING INSTALLATION: PROVIDE METAL FRAMING INSTALLATION TOLERANCE OF 1:200 HORIZONTALLY AND 1:360 VERTICALLY.

3.03 GYPSUM WALLBOARD FINISHING COMPOUNDS: PROVIDE A GYPSUM ASSOCIATION LEVEL 5 GYPSUM BOARD FINISH.

C. 3.04 OTHER METAL TRIM: THE DRAWINGS DO NOT REPRESENT LOCATIONS AND REQUIREMENTS FOR ALL METAL TRIMS. THE CONTRACTOR

SHALL CAREFULLY REVIEW THE DRAWINGS AND THE INSTALLATION, AND SHALL PROVIDE METAL TRIMS AS TYPICALLY RECOMMENDED.

3.05 CONTROL JOINTS: PROVIDE WALLBOARD CONTROL JOINTS IN ACCORDANCE WITH ASTM C-840 REQUIREMENTS, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING LOCATIONS:

A. WHEREVER A WALL OR PARTITION RUNS IN AN UNINTERRUPTED, STRAIGHT PLANE EXCEEDING 30 LINEAR FEET.

B. WHEREVER A PARTITION, WALL OR CEILING TRAVERSES A CONSTRUCTION JOINT IN THE BASE BUILDING.

C. WHEREVER A CEILING SURFACE EXCEEDS 900 SQ. FT.

09900- PAINTING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS: DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION-1 SPECIFICATION SECTIONS, APPLY TO THE WORK SPECIFIED IN THIS SECTION.

1.02 DESCRIPTION OF WORK:

A. EXTENT OF PAINTING WORK IS SHOWN ON DRAWINGS AND SCHEDULES, AND AS HEREIN SPECIFIED.

B. PREPARATORY WORK INCLUDING SPACKLING, FILLING, TAPING, SANDING AND OTHER REQUIRED OPERATIONS FOR ALL SURFACES TO BE PAINTED.

C. PAINTING AND FINISHING OF INTERIOR AND EXTERIOR EXPOSED ITEMS AND SURFACES THROUGHOUT PROJECT INCLUDING THE FURNISHING AND APPLYING OF ALL PRIME COATS AND FINISH COATS OF PAINT SCHEDULED TO BE PAINTED SHALL BE PERFORMED UNDER THE GENERAL CONTRACT, EXCEPT AS OTHERWISE INDICATED.

D. THE WORK INCLUDES FIELD PAINTING OF EXPOSED BARE AND COVERED PIPES AND DUCTS (INCLUDING COLOR CODING), AND OF HANGERS, EXPOSED STEEL AND IRON WORK, AND PRIMED METAL SURFACES OF EQUIPMENT INSTALLED UNDER MECHANICAL AND ELECTRICAL WORK, EXCEPT AS OTHERWISE INDICATED.

E. "PAINT" AS USED HEREIN MEANS ALL COATING SYSTEMS MATERIALS, INCLUDING PRIMERS, EMULSIONS, ENAMELS, STAINS, SEALERS AND FILLERS, AND OTHER APPLIED MATERIALS WHETHER USED AS PRIME, INTERMEDIATE OR FINISH COATS.

F. PAINT EXPOSED SURFACES WHETHER OR NOT COLORS ARE DESIGNATED IN "SCHEDULES", EXCEPT WHERE NATURAL FINISH OF MATERIAL IS SPECIFICALLY NOTED AS A SURFACE NOT TO BE PAINTED. WHERE ITEMS OR SURFACES ARE NOT SPECIFICALLY MENTIONED, PAINT SAME AS ADJACENT SIMILAR MATERIALS OR AREAS. IF COLOR OR FINISH IS NOT DESIGNATED, ARCHITECT WILL SELECT THESE FROM STANDARD COLORS AVAILABLE FOR MATERIALS SYSTEMS SPECIFIED. THE FOLLOWING IS ASSUMED AND CONSIDERED PART OF THE PAINTING CONTRACT WHETHER SHOWN ON DRAWINGS OR NOT. IT IS ADVISABLE THAT THE CONTRACTOR REQUEST A WALK-THRU WITH THE ARCHITECT FOR VERIFICATION, HOWEVER THE FOLLOWING IS TO BE UNDERSTOOD:

A. WHEN A PORTION OF A PAINTED WALL OR CEILING IS PATCHED, THE ENTIRE PATCHED WALL OR CEILING SHALL BE PAINTED.
B. WHEN A NEW WALL OF AN ALTERED SPACE IS REQUIRED TO BE PAINTED, REMAINING WALLS OF THAT SPACE SHALL BE PAINTED.
C. WHEN AN ALTERED SPACE IS CHANGED BY THE REMOVAL OF A WALL OR PARTITION, ALL PAINTED WALLS AND CEILING OF THE ALTERED SPACE SHALL BE PAINTED.

1.03 WORK NOT INCLUDED: FOLLOWING CATEGORIES OF WORK ARE NOT INCLUDED AS PART OF FIELD-APPLIED FINISH WORK, OR ARE INCLUDED IN OTHER SECTIONS OF THESE SPECIFICATIONS.

A. SHOP PRIMING: UNLESS OTHERWISE SPECIFIED, SHOP PRIMING OF FERROUS METAL ITEMS IS INCLUDED UNDER VARIOUS SECTIONS FOR STRUCTURAL STEEL, MISCELLANEOUS METAL, HOLLOW METAL WORK, AND SIMILAR ITEMS. ALSO, FOR FABRICATED COMPONENTS SUCH AS ARCHITECTURAL WOODWORK, WOOD CASEWORK, AND SHOP-FABRICATED OR FACTORY-BUILT MECHANICAL AND ELECTRICAL EQUIPMENT OR ACCESSORIES.

B. PRE-FINISH ITEMS: UNLESS OTHERWISE INDICATED, DO NOT INCLUDE PAINTING WHEN FACTORY-FINISHING OR INSTALLER FINISHING IS SPECIFIED FOR SUCH ITEMS AS (BUT NOT LIMITED TO) PREFINISHED PARTITION SYSTEMS, ACOUSTIC MATERIALS, ARCHITECTURAL WOODWORK AND CASEWORK, FINISHED MECHANICAL AND ELECTRICAL EQUIPMENT INCLUDING LIGHT FIXTURES, SWITCHGEAR AND DISTRIBUTION CABINETS, DOORS AND EQUIPMENT.

D. CONCEALED SURFACES: UNLESS OTHERWISE INDICATED, PAINTING IS NOT REQUIRED ON SURFACES SUCH AS WALLS OR CEILINGS IN CONCEALED AREAS AND GENERALLY INACCESSIBLE AREAS, FOUNDATION SPACES, FURRED AREAS AND PIPE SPACES.

E. FINISHED METAL SURFACES: METAL SURFACES OF ANODIZED ALUMINUM, STAINLESS STEEL, CHROMIUM PLATE, COPPER, BRONZE AND SIMILAR FINISHED MATERIALS WILL NOT REQUIRE FINISH PAINTING, UNLESS OTHERWISE INDICATED.

F. OPERATING PARTS AND LABELS: MOVING PARTS OF OPERATING UNITS, MECHANICAL AND ELECTRICAL PARTS, SUCH AS VALVE AND DAMPER OPERATORS, LINKAGES, SENSING DEVICES, MOTOR AND FAN SHAFTS WILL NOT REQUIRE FINISH PAINTING, UNLESS OTHERWISE INDICATED.

G. DO NOT PAINT OVER ANY CODE-REQUIRED LABELS, SUCH AS UNDERWRITERS' LABORATORIES AND FACTORY MUTUAL, OR ANY EQUIPMENT IDENTIFICATION, PERFORMANCE RATING, NAME, OR NOMENCLATURE PLATES.

1.04 QUALITY ASSURANCE:

A. SINGLE-SOURCE RESPONSIBILITY: PROVIDE PRIMERS AND UNDERCOAT PAINT PRODUCED BY THE SAME MANUFACTURER AS THE FINISH COATS.

1.05 SUBMITTALS:

A. PRODUCT DATA: SUBMIT MANUFACTURER'S TECHNICAL INFORMATION INCLUDING PAINT LABEL ANALYSIS AND APPLICATION INSTRUCTIONS FOR EACH MATERIAL PROPOSED FOR USE.

B. SAMPLES: SUBMIT SAMPLES FOR ARCHITECT'S REVIEW OF COLOR AND TEXTURE ONLY. PROVIDE A LISTING OF MATERIAL AND APPLICATION FOR EACH COAT OF EACH FINISH SAMPLE.

1. ON 12" X 12" HARDBOARD, PROVIDE TWO SAMPLES OF EACH COLOR AND MATERIAL, WITH TEXTURE TO SIMULATE ACTUAL CONDITIONS. RESUBMIT SAMPLES AS REQUESTED BY ARCHITECT UNTIL ACCEPTABLE SHEEN, COLOR, AND TEXTURE IS ACHIEVED.
2. ON ACTUAL WOOD SURFACES, PROVIDE TWO 4" X 8" SAMPLES OF NATURAL AND STAINED WOOD FINISH. LABEL AND IDENTIFY EACH AS TO LOCATION AND APPLICATION.

C. ON ACTUAL WALL SURFACES AND OTHER EXTERIOR AND INTERIOR BUILDING COMPONENTS, DUPLICATE PAINTED FINISHES OF PREPARED SAMPLES. ON AT LEAST 100 SQ. FT. OF SURFACE AS DIRECTED, PROVIDE FULL-COAT FINISH SAMPLES UNTIL REQUIRED SHEEN, COLOR AND TEXTURE IS OBTAINED; SIMULATE FINISHED LIGHTING CONDITIONS FOR REVIEW OF IN-PLACE WORK. COORDINATE WITH ARCHITECT AT LEAST TWO WEEKS PRIOR TO FIELD SAMPLE FOR FIELD VERIFICATION AND APPROVALS.

1.06 DELIVERY AND STORAGE:

A. DELIVER MATERIALS TO JOB SITE IN ORIGINAL, NEW PACKAGES AND CONTAINERS BEARING MANUFACTURER'S NAME AND LABEL, AND FOLLOWING INFORMATION:

NAME OR TITLE OF MATERIAL.
FEDERAL SPECIFICATION NUMBER
MANUFACTURER'S STOCK NUMBER AND DATE OF MANUFACTURER.
MANUFACTURER'S NAME.
CONTENTS BY VOLUME, FOR MAJOR PIGMENT AND VEHICLE CONSTITUENTS.
THINNING INSTRUCTIONS.
APPLICATION INSTRUCTIONS.
COLOR NAME AND NUMBER.

B. STORE MATERIALS USED ON THE JOB INDOORS, IN A SINGLE ROOM OR PLACE DESIGNATED BY THE ARCHITECT OR OWNER'S REPRESENTATIVE. RESTRICT STORAGE TO PAINT MATERIALS AND RELATED EQUIPMENT ONLY. COMPLY WITH HEALTH AND FIRE REGULATIONS.

1.07 JOB CONDITIONS:

A. ENVIRONMENT REQUIREMENTS: COMPLY WITH MANUFACTURER'S RECOMMENDATIONS AS TO ENVIRONMENT CONDITIONS UNDER WHICH COATINGS AND COATING SYSTEMS CAN BE APPLIED. DO NOT APPLY FINISH IN AREAS WHERE DUST IS BEING GENERATED.

B. INTERIOR AREAS TO BE PAINTED SHALL BE CLEAN, WELL LIGHTED AND VENTILATED.

C. APPLY WATER-BASE PAINTS ONLY WHEN TEMPERATURE OF SURFACES TO BE PAINTED AND SURROUNDING AIR TEMPERATURES ARE BETWEEN 50O F. AND 90O F., UNLESS OTHERWISE PERMITTED BY PAINT MANUFACTURER'S PRINTED INSTRUCTIONS.

D. APPLY SOLVENT-THINNED PAINTS ONLY WHEN TEMPERATURE OF SURFACES TO BE PAINTED AND SURROUNDING AIR TEMPERATURES ARE BETWEEN 45O F. AND 90O F., UNLESS OTHERWISE PERMITTED BY PAINT MANUFACTURER'S PRINTED INSTRUCTIONS.

E. EXTERIOR SURFACES TO BE PAINTED: DO NOT APPLY PAINT IN SNOW, RAIN, FOG OR MIST, OR WHEN RELATIVE HUMIDITY EXCEEDS 85%; OR TO DAMP OR WET SURFACES, UNLESS OTHERWISE PERMITTED BY PAINT MANUFACTURER'S PRINTED INSTRUCTIONS.

F. DO NOT PAINT SURFACES EXPOSED TO HOT SUN.

G. PAINTING MAY BE CONTINUED DURING INCLEMENT WEATHER IF AREAS AND SURFACES TO BE PAINTED ARE ENCLOSED AND HEATED WITHIN TEMPERATURE LIMITS SPECIFIED BY PAINT MANUFACTURER DURING APPLICATION AND DRYING PERIODS.

1.08 PROTECTION: SAFEGUARD ALL SURFACES NOT TO BE PAINTED FROM PAINT DAMAGE. PROTECT STORE CONSTRUCTION, FIXTURES, FURNISHING, EQUIPMENT AND MERCHANDISE BY PROPERLY COVERING AND MASKING OR BY OTHER ACCEPTED METHODS.

A. HARDWARE: EXCEPT FOR HARDWARE TO BE PAINTED, REMOVE EXPOSED HARDWARE FROM DOORS AND FRAMES SCHEDULED TO BE PAINTED OR PROTECT BY MASKING OR OTHER SUITABLE MEANS.

B. FLOORS: PROTECT WITH DROP CLOTHS, TAPED DOWN KRAFT PAPER, OR OTHER SUITABLE COVERING. PROTECT NOT ONLY THE IMMEDIATE AREAS UNDER CEILINGS AND WALLS TO BE PAINTED, BUT ALSO THOSE FLOOR AREAS SUBJECT TO THE TRAFFIC OF PAINTING WORKMEN.

C. LIGHTING FIXTURES IN CONTACT WITH OR FLUSH WITH CEILINGS AND WALLS TO BE PAINTED ARE TO BE REMOVED OR LOWERED TO PERMIT PAINTING OF THE IMMEDIATE CEILING AREA. LIGHTING FIXTURES INCLUDING STEMS AND ESCUTCHEONS SHALL BE PROPERLY COVERED. AFTER PAINTING, LIGHTING FIXTURES TO BE RESTORED TO THEIR FORMER POSITION.

PART 2 - PRODUCTS

2.01 COLORS AND FINISHES:

A. PAINT COLORS, SURFACE TREATMENTS, AND FINISHES, ARE INDICATED ON THE CONTRACT DOCUMENTS.

B. PRIOR TO BEGINNING WORK, ARCHITECT WILL APPROVE COLOR CHIPS FOR SURFACES TO BE PAINTED.

1. USE REPRESENTATIVE COLORS WHEN PREPARING SAMPLES FOR REVIEW.
2. FINAL ACCEPTANCE OF COLORS WILL BE FROM SAMPLES APPLIED ON THE JOB BY ARCHITECT.

C. COLOR PIGMENTS: PURE, NON-FADING, APPLICABLE TYPES TO SUIT SUBSTRATES AND SERVICE INDICATED.

2.02 PAINT COORDINATION:

A. PROVIDE FINISH COATS WHICH ARE COMPATIBLE WITH PRIME PAINTS USED. REVIEW OTHER SECTIONS OF THESE SPECIFICATIONS IN WHICH PRIME PAINTS ARE TO BE PROVIDED TO ENSURE COMPATIBILITY OF TOTAL COATINGS SYSTEM FOR VARIOUS SUBSTRATES. UPON REQUEST FROM OTHER TRADES, FURNISH INFORMATION ON CHARACTERISTICS OF FINISH MATERIALS PROPOSED FOR USE, TO ENSURE COMPATIBLE PRIME COATS ARE USED. PROVIDE BARRIER COATS OVER INCOMPATIBLE PRIMERS OR REMOVE AND REPRIME AS REQUIRED. NOTIFY ARCHITECT IN WRITING OF ANY ANTICIPATED PROBLEMS USING SPECIFIED COATING SYSTEMS WITH SUBSTRATES PRIMED BY OTHERS.

2.03 MATERIAL QUALITY:

A. PROVIDE BEST QUALITY GRADE OF VARIOUS TYPES OF COATINGS AS REGULARLY MANUFACTURED BY ACCEPTABLE PAINT MATERIALS MANUFACTURERS. MATERIALS NOT DISPLAYING MANUFACTURER'S IDENTIFICATION AS A STANDARD, BEST-GRADE PRODUCT WILL NOT BE ACCEPTABLE.

B. MANUFACTURER'S PRODUCTS WHICH COMPLY WITH COATING QUALITATIVE REQUIREMENTS OF APPLICABLE FEDERAL SPECIFICATIONS, YET DIFFER IN QUANTITATIVE REQUIREMENTS, MAY BE CONSIDERED FOR USE WHEN ACCEPTABLE TO ARCHITECT. FURNISH MATERIAL DATA AND MANUFACTURER'S CERTIFICATE OF PERFORMANCE TO ARCHITECT FOR ANY PROPOSED SUBSTITUTIONS.

C. APPROVED MANUFACTURERS: THE FOLLOWING ARE AMONG THOSE MANUFACTURERS THAT COMPLY WITH THESE SPECIFICATIONS:

TYPICAL PAINT PRODUCTS:

THE SHERWIN WILLIAMS CO.
GLIDDEN COATINGS & RESINS
BENJAMIN MOORE & CO.
PPG INDUSTRIES INC.
PRATT & LAMBERT, INC.

2.04 UNIT MASONRY, CONCRETE, (SYNTHETIC) STUCCO, CEMENT PLASTER:

2.05 PAINT FINISH SCHEDULE: EXCEPT WHERE OTHERWISE SPECIFIED, SELECT PAINT MATERIALS FROM THE FOLLOWING SCHEDULE. MATERIALS SELECTED FOR COATING SYSTEMS FOR EACH SURFACE DESIGNATION SHALL BE OF ONE PAINT TYPE AND THE PRODUCT OF A SINGLE MANUFACTURER.

A. REFER TO ARCHITECTURAL DRAWINGS FOR PAINT COLORS AND PAINT TYPE FINISHES. CONSULT ARCHITECT FOR SURFACES INADVERTENTLY OMITTED OR OTHERWISE NOT REPRESENTED. SURFACE DESIGNATIONS SPECIFIED ARE PRIMARILY BASIC CLASSIFICATIONS OF SURFACES UPON WHICH THE VARIOUS PAINTS SPECIFIED MAY BE APPLIED. FINAL DETERMINATION SHALL BE AS INDICATED ON CONTRACT DRAWINGS AND AS APPROVED BY ARCHITECT.

B. PROVIDE UNDERCOAT PAINT PRODUCED BY SAME MANUFACTURER AS FINISH COATS. USE ONLY THINNERS APPROVED BY PAINT MANUFACTURER, AND USE ONLY WITHIN RECOMMENDED LIMITS.

PROVIDE FOLLOWING PAINT SYSTEMS FOR VARIOUS SUBSTRATE, AS INDICATED:

EXTERIOR PAINT SYSTEMS
CONCRETE & POURED CONCRETE

FILLER FOR POROUS SURFACES:

MINIMUM REQUIREMENTS:		SOLIDS CONTENT:	
TITANIUM DIOXIDE	- 3.5%	BY WEIGHT	- 59.1%
RESIN	- 9.0%	BY VOLUME	- 38.8%

FLAT: 2ND & 3RD COATS - LATEX

MINIMUM REQUIREMENTS:		SOLIDS CONTENT:	
TITANIUM DIOXIDE	- 19.5%	BY WEIGHT	- 54.3%
RESIN	- 15.8%	BY VOLUME	- 36.8%

METALS:

PRIME COAT: 1ST COAT - LATEX

MINIMUM REQUIREMENTS:		SOLIDS CONTENT:	
TITANIUM DIOXIDE	- 13.9%	BY WEIGHT	- 49.2%
RESIN	- 29.1%	BY VOLUME	- 38.8%

GLOSS: 2ND & 3RD COATS - LATEX

MINIMUM REQUIREMENTS:		SOLIDS CONTENT:	
TITANIUM DIOXIDE	- 21.4%	BY WEIGHT	- 38.8%
RESIN	- 24.6%	BY VOLUME	- 31.0%

WOODWORK AND TRIM:

PRIME COAT: 1ST COAT - LATEX

MINIMUM REQUIREMENTS:		SOLIDS CONTENT:	
TITANIUM DIOXIDE	- 14.2%	BY WEIGHT	- 49.4%
RESIN	- 30.2%	BY VOLUME	- 39.7%

SOFT GLOSS: 2ND & 3RD COATS - LATEX

MINIMUM REQUIREMENTS:		SOLIDS CONTENT:	
TITANIUM DIOXIDE	- 24.6%	BY WEIGHT	- 50.2%
RESIN	- 23.1%	BY VOLUME	- 35.3%

FLAT: 2ND & 3RD COATS - LATEX

MINIMUM REQUIREMENTS:		SOLIDS CONTENT:	
TITANIUM DIOXIDE	- 19.5%	BY WEIGHT	- 54.3%
RESIN	- 15.8%	BY VOLUME	- 36.8%

PART 3 - EXECUTION

3.01 INSPECTION:

A. APPLICATOR MUST EXAMINE AREAS AND CONDITIONS UNDER WHICH PAINTING WORK IS TO BE APPLIED AND NOTIFY CONTRACTOR IN WRITING OF CONDITIONS DETRIMENTAL TO PROPER AND TIMELY COMPLETION OF WORK. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN A MANNER ACCEPTABLE TO APPLICATOR.

B. STARTING OF PAINTING WORK WILL BE CONSTRUED AS APPLICATOR'S ACCEPTANCE OF SURFACES AND CONDITIONS WITHIN ANY PARTICULAR AREA.

C. DO NOT PAINT OVER DIRT, RUST, SCALE, GREASE, MOISTURE, SCUFFED SURFACES, OR CONDITIONS OTHERWISE DETRIMENTAL TO FORMATION AND ADHESION OF A DURABLE PAINT FILM.

D. SURFACE PREPARATION: PERFORM PREPARATION AND CLEANING PROCEDURES IN ACCORDANCE WITH PAINT MANUFACTURER'S INSTRUCTIONS AND AS HEREIN SPECIFIED, FOR EACH PARTICULAR SUBSTRATE CONDITION.

1. CLEAN SURFACES TO BE PAINTED BEFORE APPLYING PAINT OR SURFACE TREATMENTS. REMOVE OIL AND GREASE PRIOR TO MECHANICAL CLEANING. PROGRAM CLEANING AND PAINTING SO THAT CONTAMINANTS FROM CLEANING PROCESS WILL NOT FALL ONTO WET, NEWLY-PAINTED SURFACES.

E. CEMENTITIOUS MATERIALS: PREPARE SURFACES BY SCRAPING AND BRUSHING TO REMOVE ALL DIRT, FOREIGN MATTER, MORTAR SPATTER, NIBS AND OLD LOOSE OR FLAKING PAINT. OIL AND GREASE SHALL FIRST BE REMOVED WITH SOLVENTS, OR DETERGENT WASHING.

1. DETERMINE ALKALINITY AND MOISTURE CONTENT OF SURFACES TO BE PAINTED BY PERFORMING APPROPRIATE TESTS. IF SURFACES ARE FOUND TO BE SUFFICIENTLY ALKALINE TO CAUSE BLISTERING AND BURNING OF FINISH PAINT, CORRECT THIS CONDITION BEFORE APPLICATION OF PAINT. DO NOT PAINT OVER SURFACES WHERE MOISTURE CONTENT EXCEEDS THAT PERMITTED IN MANUFACTURER'S PRINTED DIRECTIONS.

F. WOOD: CLEAN WOOD SURFACES TO BE PAINTED OF DIRT, OIL, OR OTHER FOREIGN SUBSTANCES WITH SCRAPERS, MINERAL SPIRITS, AND SANDPAPER, AS REQUIRED. SANDPAPER SMOOTH THOSE FINISHED SURFACES EXPOSED TO VIEW, AND DUST OFF. SCRAPE AND CLEAN SMALL, DRY, SEASONED KNOTS AND APPLY A THIN COAT OF WHITE SHELLAC OR OTHER RECOMMENDED KNOT SEALER, BEFORE APPLICATION OF PRIMING COAT. AFTER PRIMING, FILL HOLES AND IMPERFECTIONS IN FINISH SURFACES WITH PUTTY OR PLASTIC WOOD-FILLER. SANDPAPER SMOOTH WHEN DRIED.

G. FERROUS METALS: CLEAN FERROUS SURFACES, WHICH ARE NOT GALVANIZED OR SHOP-COATED, OF OIL, GREASE, DIRT, LOOSE MILL SCALE AND OTHER FOREIGN SUBSTANCES BY SOLVENT OR MECHANICAL CLEANING.

H. TOUCH-UP SHOP-APPLIED PRIME COATS WHEREVER DAMAGED OR BARE, WHERE REQUIRED BY OTHER SECTIONS OF THESE SPECIFICATIONS. CLEAN AND TOUCH-UP WITH SAME TYPE SHOP PRIMER.

3.02 MATERIALS PREPARATION:

A. MIX AND PREPARE PAINTING MATERIALS IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS.

B. STORE MATERIALS NOT IN ACTUAL USE IN TIGHTLY COVERED CONTAINERS. MAINTAIN CONTAINERS USED IN STORAGE, MIXING AND APPLICATION OF PAINT IN A CLEAN CONDITION, FREE OF FOREIGN MATERIALS AND RESIDUE.

C. STIR MATERIALS BEFORE APPLICATION TO PRODUCE A MIXTURE OF UNIFORM DENSITY, AND STIR AS REQUIRED DURING APPLICATION. DO NOT STIR SURFACE FILM INTO MATERIAL. REMOVE FILM AND, IF NECESSARY, STRAIN MATERIAL BEFORE USING.

3.03 APPLICATION: APPLY PAINT IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS. USE APPLICATORS AND TECHNIQUES BEST SUITED FOR SUBSTRATE AND TYPE OF MATERIAL BEING APPLIED.

A. APPLY ADDITIONAL COATS WHEN UNDERCOATS, STAINS OR OTHER CONDITIONS SHOW THROUGH FINAL COAT OF PAINT, UNTIL PAINT FILM IS OF UNIFORM FINISH, COLOR AND APPEARANCE. GIVE SPECIAL ATTENTION TO INSURE THAT SURFACES, INCLUDING EDGES, CORNERS, CREVICES, WELDS, AND EXPOSED FASTENERS RECEIVE A DRY FILM THICKNESS EQUIVALENT TO THAT OF FLAT SURFACES.

B. PAINT SURFACES BEHIND MOVABLE EQUIPMENT AND FURNITURE SAME AS SIMILAR EXPOSED SURFACES. PAINT SURFACES BEHIND PERMANENTLY-FIXED EQUIPMENT OR FURNITURE WITH PRIME COAT ONLY BEFORE FINAL INSTALLATION OF EQUIPMENT.

C. PAINT INTERIOR SURFACES OF DUCTS, WHERE VISIBLE THROUGH REGISTERS OR GRILLES, WITH A FLAT, NON-SPECULAR BLACK PAINT.

D. PAINT BACK SIDES OF ACCESS PANELS, AND REMOVABLE OR HINGED COVERS TO MATCH EXPOSED SURFACES.

E. FINISH EXTERIOR DOORS ON TOPS, BOTTOMS AND SIDE EDGES SAME AS EXTERIOR FACES, UNLESS OTHERWISE INDICATED.

F. SAND LIGHTLY BETWEEN EACH SUCCEEDING ENAMEL OR VARNISH COAT.

G. OMIT FIRST COAT (PRIMER) ON METAL SURFACES WHICH HAVE BEEN SHOP-PRIMED AND TOUCH-UP PAINTED, UNLESS OTHERWISE INDICATED.
SCHEDULING PAINTING: APPLY FIRST-COAT MATERIAL TO SURFACES THAT HAVE BEEN CLEANED, PRETREATED OR OTHERWISE PREPARED FOR PAINTING AS SOON AS PRACTICABLE AFTER PREPARATION AND BEFORE SUBSEQUENT SURFACE DETERIORATION.

1. ALLOW SUFFICIENT TIME BETWEEN SUCCESSIVE COATINGS TO PERMIT PROPER DRYING. DO NOT RECOAT UNTIL PAINT HAS DRIED TO WHERE IT FEELS FIRM, DOES NOT DEFORM OR FEEL STICKY UNDER MODERATE THUMB PRESSURE, AND APPLICATION OF ANOTHER COAT OF PAINT DOES NOT CAUSE LIFTING OR LOSS OF ADHESION OF THE UNDERCOAT.

H. MINIMUM COATING THICKNESS: APPLY MATERIALS AT NOT LESS THAN MANUFACTURER'S RECOMMENDED SPREADING RATE, TO ESTABLISH A TOTAL DRY FILM THICKNESS AS INDICATED OR, IF NOT INDICATED, AS RECOMMENDED BY COATING MANUFACTURER.

I. MECHANICAL AND ELECTRICAL WORK: PAINTING OF MECHANICAL AND ELECTRICAL WORK IS LIMITED TO THOSE ITEMS EXPOSED IN MECHANICAL EQUIPMENT ROOMS AND IN OCCUPIED SPACES.

1. MECHANICAL ITEMS TO BE PAINTED INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
   A. PIPING, PIPE HANGERS, AND SUPPORTS.
   B. HEAT EXCHANGES.
   C. TANKS.
   D. MOTOR, AND MECHANICAL EQUIPMENT SUPPORTS.
   E. ACCESSORY ITEMS.

J. PRIME COATS: APPLY PRIME COAT OF MATERIAL WHICH IS REQUIRED TO BE PAINTED OR FINISHED, AND WHICH HAS NOT BEEN PRIME COATED BY OTHERS.

1. RECOAT PRIMED AND SEALED SURFACES WHERE THERE IS EVIDENCE OF SUCTION SPOTS OR UNSEALED AREAS IN FIRST COAT, TO ASSURE A FINISH COAT WITH NO BURN-THROUGH OR OTHER DEFECTS DUE TO INSUFFICIENT SEALING.

K. STIPPLE ENAMEL FINISH: ROLL AND REDISTRIBUTE PAINT TO AN EVEN AND FINE TEXTURE. LEAVE NO EVIDENCE OF ROLLING SUCH AS LAPS, IRREGULARITY IN TEXTURE, SKID MARKS, OR OTHER SURFACES IMPERFECTIONS.

L. PIGMENTED (OPAQUE) FINISHES: COMPLETELY COVER TO PROVIDE AN OPAQUE, SMOOTH SURFACE OF UNIFORM FINISH, COLOR, APPEARANCE AND COVERAGE. CLOUDINESS, SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, RUNS, SAGS, ROPINESS OR OTHER SURFACE IMPERFECTIONS WILL NOT BE ACCEPTABLE.

M. TRANSPARENT (CLEAR) FINISHES: USE MULTIPLE COATS TO PRODUCE GLASS-SMOOTH SURFACE FILM OF EVEN LUSTER. PROVIDE A FINISH FREE OF LAPS, CLOUDINESS, COLOR IRREGULARITY, RUNS, BRUSH MARKS, ORANGE PEEL, NAIL HOLES, OR OTHER SURFACE IMPERFECTIONS.

1. PROVIDE STAIN FINISH FOR FINAL COATS, UNLESS OTHERWISE INDICATED.

N. COMPLETED WORK: MATCH APPROVED SAMPLES FOR COLOR, TEXTURE AND COVERAGE. REMOVE, REFINISH OR REPAINT WORK NOT IN COMPLIANCE WITH SPECIFIED REQUIREMENTS.

3.04 FIELD QUALITY CONTROL:

A. THE RIGHT IS RESERVED BY OWNER AND/OR OWNER'S REPRESENTATIVE TO INVOKE THE FOLLOWING MATERIAL TESTING PROCEDURE AT ANY TIME, AND ANY NUMBER OF TIMES DURING PERIOD OF FIELD PAINTING:

1. ENGAGE SERVICES OF AN INDEPENDENT TESTING LABORATORY TO SAMPLE PAINT BEING USED. SAMPLES OF MATERIALS DELIVERED TO PROJECT SITE WILL BE TAKEN, IDENTIFIED AND SEALED, AND CERTIFIED IN PRESENCE OF CONTRACTOR.
2. TESTING LABORATORY WILL PERFORM APPROPRIATE TESTS FOR ANY OR ALL OF FOLLOWING CHARACTERISTICS: ABRASION RESISTANCE, APPARENT REFLECTIVITY, FLEXIBILITY, WASHABILITY, ABSORPTION, ACCELERATED WEATHERING, DRY OPACITY, ACCELERATED YELLOWNESS, RECOATING, SKINNING, COLOR RETENTION, ALKALI RESISTANCE AND QUANTATIVE MATERIALS AND ANALYSIS.
3. IF TEST RESULTS SHOW THAT MATERIAL BEING USED DOES NOT COMPLY WITH SPECIFIED REQUIREMENTS, CONTRACTOR MAY BE DIRECTED TO STOP PAINTING WORK, AND REMOVE NON-COMPLYING PAINT; PAY FOR TESTING; REPAINT SURFACES COATED WITH REJECTED PAINT; REMOVE REJECTED PAINT FROM PREVIOUSLY PAINTED SURFACES IF, UPON REPAINTING WITH SPECIFIED PAINT, THE TWO COATINGS ARE NON-COMPATIBLE.

3.05 CLEAN-UP AND PROTECTION:

A. CLEAN-UP: DURING PROGRESS OF WORK, REMOVE FROM SITE DISCARDED PAINT MATERIALS, RUBBISH, CANS AND RAGS AT END OF EACH WORK DAY.

1. UPON COMPLETION OF PAINTING WORK, CLEAN WINDOW GLASS AND OTHER PAINT-SPATTERED SURFACES. REMOVE SPATTERED PAINT BY PROPER METHODS OF WASHING AND SCRAPING, USING CARE NOT TO SCRATCH OR OTHERWISE DAMAGE FINISHED SURFACES.

B. PROTECTION: PROTECT WORK OF OTHER TRADES, WHETHER TO BE PAINTED OR NOT, AGAINST DAMAGE BY PAINTING AND FINISHING WORK. CORRECT ANY DAMAGE BY CLEANING, REPAIRING OR REPLACING, AND REPAINTING, AS ACCEPTABLE TO ARCHITECT.

1. PROVIDE "WET PAINT" SIGNS AS REQUIRED TO PROTECT NEWLY-PAINTED FINISHES. REMOVE TEMPORARY PROTECTIVE WRAPPINGS PROVIDED BY OTHERS FOR PROTECTION OF THEIR WORK, AFTER COMPLETION OF PAINTING OPERATIONS.

C. AT THE COMPLETION OF WORK OF OTHER TRADES, TOUCH-UP AND RESTORE ALL DAMAGED OR DEFACED PAINTED SURFACES.

Tenant 6A LL Work
at Laurel Square

Laurel Square Shopping Center
Brick Township, NJ

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Rev:	Date:	Description:
	APRIL 01, 2022	ISSUED FOR BID AND PERMIT

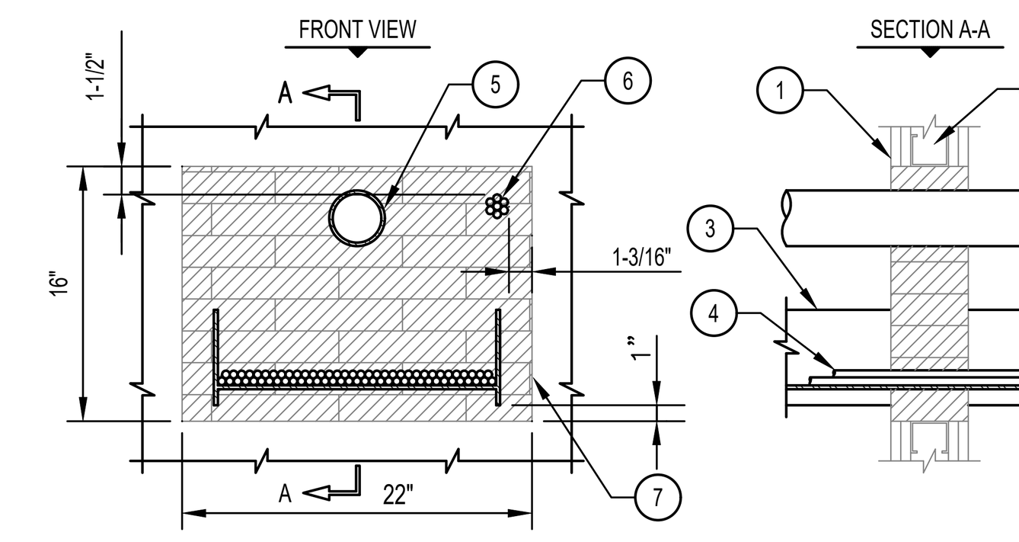
LICENSE # RA NO. 13964
EXP. 07/31/23

Specifications

UL/cUL SYSTEM NO. W-L-8013

MULTIPLE PENETRATIONS THROUGH 1-HR. OR 2-HR. GYPSUM WALL ASSEMBLY

L-RATING AT AMBIENT = 5 CFM/SQ. FT. F-RATING = 1-HR. OR 2-HR. L-RATING AT 400°F = 2 CFM/SQ. FT. T-RATING = 0-HR.



1. GYPSUM WALL ASSEMBLY (UL/ULC CLASSIFIED U300 OR U400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
2. (NOT SHOWN). WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER. STEEL STUDS TO BE MINIMUM 2-1/2" WIDE.
3. OPEN LADDER CABLE TRAY (MAXIMUM 18" x 6", STEEL OR ALUMINUM).
4. ANY OF THE FOLLOWING CABLES MAY BE USED WITH MAXIMUM 30% FILL OF CABLE TRAY :
   A. MAXIMUM 350 KCMIL SINGLE CONDUCTOR POWER CABLE.
   B. MAXIMUM 7/C NO. 12 AWG COPPER CONDUCTOR CABLE.
   C. MAXIMUM 100 PAIR NO. 24 AWG TELEPHONE CABLE.
5. MAX. 3" NOMINAL DIAMETER PVC PLASTIC PIPE (SCHEDULE 40) (CLOSED OR VENTED PIPING SYSTEM) (SEE NOTE NO. 1 BELOW).
6. MAXIMUM 1-1/2" DIAMETER CABLE BUNDLE TO CONSIST OF ANY OF THE FOLLOWING :
   A. FIBER-OPTIC CABLE (24 FIBER). C. MAX. 25 PAIR NO. 24 AWG TELEPHONE CABLE.
   B. RG 59 COAXIAL CABLE. D. MAX. 7/C NO. 12 AWG COPPER CONDUCTOR.
7. HILTI FS 657 FIRE BLOCKS (2" THICK x 8" WIDE x 5" DEEP, REFERENCE : FRONT VIEW).

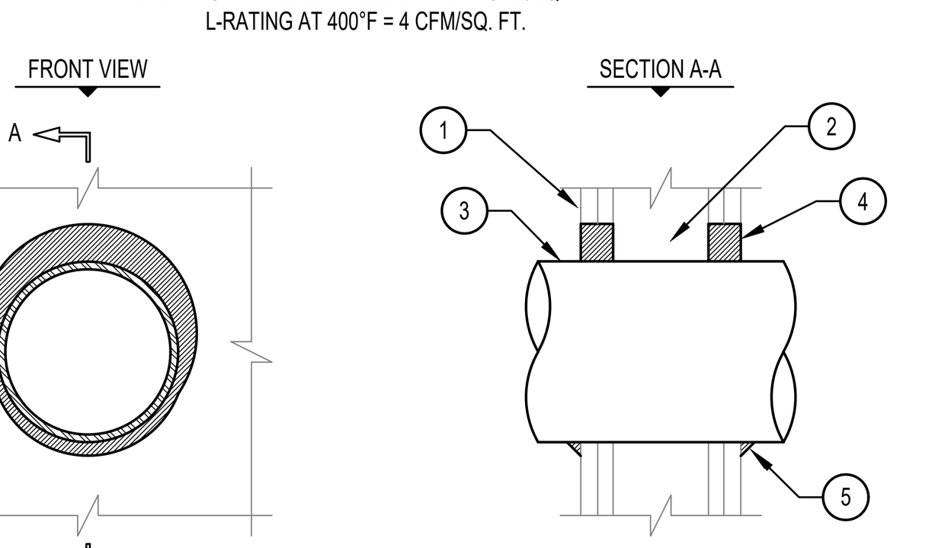
NOTES :
1. (NOT SHOWN). PENETRATING ITEMS MAY ALSO INCLUDE A MAX. 6" NOM. DIA. STEEL PIPE, MAX. 6" NOM. DIA. STEEL CONDUIT; MAX. 4" NOM. DIA. COPPER PIPE, OR MAX. 4" NOM. DIA. EMT.
2. (NOT SHOWN): MAX. 1-1/2" GLASS-FIBER INSULATION MAY BE USED ON ANY OR ALL METALLIC PIPES.
3. ANNULAR SPACE = MINIMUM 1", MAXIMUM 9-1/4".
4. APPLY HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT IN ANY VOID THAT MAY EXIST (AROUND PENETRANTS, INTO INTERSITICES OF CABLES, BETWEEN CABLES AND CABLE TRAY, OR BETWEEN FIRE BLOCKS) TO MAXIMUM EXTENT POSSIBLE.

UL/cUL SYSTEM NO. W-L-1054

METAL PIPE THROUGH 1-HR. OR 2-HR. GYPSUM WALL ASSEMBLY

N.T.S.

F-RATING = 1-HR. OR 2-HR.
T-RATING = 0-HR.
L-RATING AT AMBIENT = LESS THAN 1 CFM/SQ. FT.
L-RATING AT 400°F = 4 CFM/SQ. FT.



1. GYPSUM WALL ASSEMBLY (UL/ULC CLASSIFIED U300 OR U400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
2. (NOT SHOWN). WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER. STEEL STUDS TO BE MINIMUM 2-1/2" WIDE.
3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
   A. MAXIMUM 30" DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
   B. MAXIMUM 30" DIAMETER CAST IRON PIPE.
   C. MAXIMUM 6" NOMINAL DIAMETER COPPER PIPE.
   D. MAXIMUM 6" NOMINAL DIAMETER STEEL CONDUIT.
   E. MAXIMUM 4" NOMINAL DIAMETER EMT.
4. HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT :
   A. MINIMUM 5/8", FOR A 1-HR. FIRE-RATING.
   B. MINIMUM 1-1/4" DEPTH, FOR A 2-HR. FIRE-RATING.
5. MINIMUM 1/2" BEAD HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT AT POINT OF CONTACT.

NOTES : 1. MAXIMUM DIAMETER OF OPENING :
A. 32-1/4" FOR STEEL STUD WALLS.
B. 14-1/2" FOR WOOD STUD WALLS.
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 2-1/2".

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION
	20A - 125V GROUNDING TYPE DUPLEX RECEPTACLE MOUNTED 18" AFF TO TOP OF BOX, UNLESS NOTED OTHERWISE
GFI WR	20A - 125V GROUND FAULT INTERRUPTING TYPE DUPLEX RECEPTACLE, WEATHER RESISTANT LISTED AND MOUNTED 18" AFF TO TOP OF BOX, UNLESS NOTED OTHERWISE
J	JUNCTION BOX - TYPE AND SIZE AS REQUIRED BY NEC
	DISCONNECT SWITCH - TYPE AND RATING AS INDICATED ON PLANS
F	FIRE ALARM AUDIO/VISUAL (HORN/STROBE) NOTIFICATION APPLIANCE MOUNTED FLUSH IN FINISHED WALL AT THE LESSOR OF 80" AFF TO BOTTOM OR 6" BELOW FINISHED CEILING.
F	FIRE ALARM MANUAL PULL STATION MOUNTED 48" AFF TO TOP.
DD	DUCT-TYPE SMOKE DETECTOR WITH REMOTE TEST STATION AND AUXILIARY RELAY FURNISHED AND WIRED BY ELECTRICAL CONTRACTOR; INSTALLED IN DUCTWORK BY MECHANICAL CONTRACTOR PER CODE. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR AND MANUFACTURER. PROVIDE CONDUIT AND WIRING NECESSARY TO SHUT DOWN HVAC UNIT UPON ACTIVATION OF SMOKE DETECTOR.
	PANELBOARD SURFACE MOUNTED 6'-6" TO TOP. SEE SPECIFICATIONS, PANEL SCHEDULES AND ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.
	DRY TYPE TRANSFORMER. SEE SPECIFICATIONS AND ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.
	CONDUIT WITH WIRING RUN CONCEALED IN OR ABOVE CEILING OR WALL, OR RUN EXPOSED IN UNFINISHED AREAS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS (#12 AWG - MINIMUM). PROVIDE A CODE-SIZED GROUND WIRE IN ALL CONDUITS IN ADDITION TO THE CONDUCTORS SHOWN. SHADED DOT INDICATES CODE-SIZED ISOLATED GROUND WIRE IN CONDUIT.
	CONDUIT WITH WIRING RUN CONCEALED BELOW FLOOR. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS (#12 AWG - MINIMUM). PROVIDE A CODE-SIZED GROUND WIRE IN ALL CONDUITS IN ADDITION TO THE CONDUCTORS SHOWN. SHADED DOT INDICATES CODE-SIZED ISOLATED GROUND WIRE IN CONDUIT.
T	THERMOSTAT - COORDINATE INSTALLATION REQUIREMENTS WITH MECHANICAL CONTRACTOR AT THE START OF PROJECT. PROVIDE ROUGH-IN OF JUNCTION BOX WITH CONDUIT STUBBED UP TO ABOVE ACCESSIBLE CEILING. LOW VOLTAGE CABLING BY MECHANICAL CONTRACTOR. IF THERMOSTAT IS LINE VOLTAGE CONTROLLED, FURNISH AND INSTALL WIRING FROM THERMOSTAT TO EQUIPMENT BEING SERVED. REFERENCE MECHANICAL PLANS, SCHEDULES AND NOTES.

ELECTRICAL SYMBOL LEGEND NOTES:

1. NOT ALL SYMBOLS SHOWN IN THIS LEGEND MAY APPEAR ON THE DRAWINGS.
2. WHERE CEILINGS DO NOT EXIST TO STUB CONDUITS ABOVE FOR LOW VOLTAGE, CONDUITS SHALL BE STUBBED UP TO BOTTOM OF / ABOVE STRUCTURE ABOVE. IN FINISHED AREAS, PROVIDE COMPLETE CONDUIT PATHWAYS, INCLUDING PULL-BOXES, UNLESS OTHERWISE DIRECTED. CONDUIT, JUNCTION BOXES AND THE LIKE SHALL BE PAINTED TO MATCH AREA FINISHES. ALL CONDUIT SHALL BE ROUTED IN STRAIGHT RUNS WITH 90 DEGREE BENDS.
3. WHERE HARD INACCESSIBLE CEILINGS EXIST, PROVIDE COMPLETE CONTINUOUS CONDUIT PATHWAYS, INCLUDING PULL-BOXES, AND ACCESS PANELS, FOR LOW VOLTAGE UNLESS OTHERWISE DIRECTED. PROVIDE CONDUIT SLEEVES TRAVERSING OVER INACCESSIBLE CEILINGS BETWEEN AREAS WITH ACCESSIBLE CEILINGS, AS REQUIRED. VERIFY JUNCTION BOXES ABOVE INACCESSIBLE CEILINGS ARE WITHIN REACH OF THE ACCESS PANEL AND CAN BE ACCESSIBLE PER N.E.C. AND LOCAL CODE.

GENERAL NOTES

1. FINAL CONNECTIONS TO LIGHT FIXTURES SHALL BE MADE WITH GREENFIELD FLEXIBLE CONDUIT. MAXIMUM LENGTH OF FLEXIBLE CONDUIT SHALL BE 6'-0".
2. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF LIGHT FIXTURES. CONTRACTORS TO COORDINATE LOCATIONS OF LIGHTING, SPEAKERS, AIR DIFFUSERS, GRILLES, SPRINKLER HEADS & THE LIKE, WITH REFLECTED CEILING LAY-OUTS AS REQUIRED & DIRECTED BY THE ARCHITECT.
3. ALL DEVICES, EQUIPMENT, FIXTURES, & THE LIKE, MUST BE GROUNDED BY USE OF A PROPERLY SIZED GROUNDING CONDUCTOR. MECHANICAL/ ELECTRICAL BONDS OF THE METALLIC RACEWAY SYSTEM SHALL ALSO BE MAINTAINED.
4. REFER TO MECHANICAL, PLUMBING, AND FIRE PROTECTION PLANS FOR EXACT LOCATION OF MECHANICAL AND PLUMBING EQUIPMENT. COORDINATE LOCATION OF DISCONNECT SWITCH ASSOCIATED WITH EACH PIECE OF EQUIPMENT WITH RESPECTIVE CONTRACTOR AND INSTALL IN ACCORDANCE WITH THE NEC.
5. REFER TO DIVISION 15 (21, 22 & 23) SPECIFICATIONS, HVAC, PLUMBING AND FIRE PROTECTION PLANS FOR ADDITIONAL ELECTRICAL WORK REQUIREMENTS & COORDINATION.
6. ALL RECEPTACLES SHOWN BACK-TO-BACK IN WALLS SHALL BE SEPARATED HORIZONTALLY BY 8" MINIMUM.
7. WHERE OPEN WIRING METHODS FOR LOW VOLTAGE SYSTEMS ARE PERMITTED BY THE CONTRACT DOCUMENTS, OWNER AND LOCAL AUTHORITY, THE CABLE/CONDUCTOR INSULATION SHALL BE RATED PER NEC FOR ENVIRONMENT (I.E. PLENUM RATED, ETC.) BEING INSTALLED.
8. BRANCH CIRCUIT CONDUCTOR SIZES (& CONDUITS) SHALL BE INCREASED FROM THOSE INDICATED ON THE PLANS TO PREVENT EXCESSIVE VOLTAGE DROP. BRANCH CIRCUITS SHALL BE INSTALLED WITH WIRES OF SUFFICIENT SIZE SO THAT VOLTAGE DROP BETWEEN THE PANEL & THE LOADS DO NOT EXCEED A LIMIT OF 3%.
9. REGARDLESS OF THE TEMPERATURE RATING OF THE CONDUCTOR INSULATION, ALL CONDUCTOR AMPACITY RATINGS FOR THIS PROJECT SHALL BE DETERMINED FROM THE 75°C CONDUCTOR TEMPERATURE RATINGS INDICATED IN THE NEC TABLES. WHERE EQUIPMENT OR DEVICES ARE PROVIDED WITH TERMINALS/LUGS RATED FOR 60°C, THE AMPACITY RATING OF THE 75°C CONDUCTOR SHALL BE LIMITED TO ITS ASSOCIATED 60°C RATING AS INDICATED IN THE NEC TABLES. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO INCREASE THE CONDUCTORS AND CONDUIT SIZE AS REQUIRED.
10. ALL 120V AND 277V BRANCH CIRCUITS SHALL BE PROVIDED WITH SEPARATE NEUTRAL CONDUCTORS. SHARED NEUTRALS WILL NOT BE PERMITTED FOR MULTI-CIRCUIT INSTALLATIONS. WHERE MULTIPLE CIRCUITS ARE RUN IN A COMMON RACEWAY, THE AMPACITY OF THE CONDUCTORS SHALL BE PROPERLY DERATED & CONDUIT SHALL BE SIZED PER CODE. UNDER NO CIRCUMSTANCES SHALL MORE THAN SIX (6) CURRENT CARRYING CONDUCTORS BE RUN IN A SINGLE CONDUIT. REFERENCE NEC ARTICLE AND TABLE 310.15(B)(3)(a).
11. ALL CONDUITS SHALL CONTAIN A GROUND CONDUCTOR SIZED PER NEC TABLE #250.122. IN ADDITION, WHERE AN ISOLATED, INSULATED GROUND IS REQUIRED, A SEPARATE GROUND CONDUCTOR WITH GREEN INSULATION SHALL BE RUN FROM THE PANEL GROUND BUS TO THE ISOLATED GROUND CONNECTION OF THE DEVICE. IN NO CASE SHALL THE SYSTEM GROUND (CONDUCTOR & ASSOCIATED OUTLET BOXES, CONDUIT & BUILDING STEEL) BE ALLOWED TO CONTACT THE ISOLATED GROUND (CONDUCTOR & DEVICE). WHERE CIRCUIT CONDUCTORS ARE INCREASED IN SIZE FOR ANY REASON (I.E. VOLTAGE DROP, DERATING, ETC.), THE GROUND CONDUCTOR SIZE SHALL BE INCREASED PROPORTIONATELY (ACCORDING TO CIRCULAR MIL AREA) FROM THE SIZE REQUIRED BY NEC TABLE #250.122.
12. ELECTRICAL INSTALLATION REQUIREMENTS FOR ALL HVAC, PLUMBING, FIRE PROTECTION, SPECIAL SYSTEMS AND OWNER EQUIPMENT BEING FURNISHED BY OTHERS SHALL BE REVIEWED AND COORDINATED WITH OTHER TRADES PRIOR TO ROUGH-IN. OBTAIN EQUIPMENT SHOP DRAWINGS FROM INSTALLER/SUPPLIER/CONTRACTOR/OWNER FURNISHING EQUIPMENT, AS REQUIRED, FOR REVIEW AND COORDINATION. CONTACT ARCHITECT/ENGINEER WITH ANY DISCREPANCIES FOUND BETWEEN CONSTRUCTION DRAWINGS AND EQUIPMENT BEING FURNISHED PRIOR TO ROUGH-IN.
13. THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL ACCESS PANELS, AS REQUIRED FOR SERVICING AND TESTING, FOR EQUIPMENT AND/OR DEVICES FURNISHED UNDER HIS CONTRACT. THE GENERAL CONTRACTOR SHALL INSTALL ACCESS PANELS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE SIZE AND LOCATION OF EACH ACCESS PANEL WITH THE ARCHITECT AND GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
14. ELECTRICAL CONTRACTOR SHALL INCLUDE IN HIS BID ALL CUTTING, TRENCHING AND PATCHING ASSOCIATED WITH THE ELECTRICAL INSTALLATION.
15. ALL PENETRATIONS IN OR THROUGH FIRE RATED ASSEMBLIES ASSOCIATED WITH THE ELECTRICAL INSTALLATION SHALL BE FIRE-STOPPED USING A UL APPROVED METHOD. FURNISH AND INSTALL UL LISTED FIRE RATED MATERIALS AND EQUIPMENT SUCH AS BOXES, PUDDY PADS, ENDOTHERMIC MAT, LIGHT FIXTURES WITH RATED ENCLOSURES, ETC… TO COMPLY WITH CODE FOR PROJECT CONDITIONS. FURNISH AND INSTALL SLEEVES, WHERE REQUIRED. UL APPROVED METHOD FOR FIRE STOPPING SHALL MEET OR EXCEED FIRE RATING OF STRUCTURE BEING PENETRATED. REFERENCE ARCHITECTURAL PLANS FOR FIRE RATED STRUCTURES.
16. NO CONDUIT, BOXES, WIRING, OR CABLES SHALL BE INSTALLED WITHIN 1 1/2" OF THE LOWEST POINT OF THE UNDERSIDE OF THE ROOF DECKING, NOR SHALL THEY BE INSTALLED CONCEALED WITHIN METAL-CORRUGATED ROOF DECKING. FOR EXISTING INSTALLATIONS, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE AND/OR REWORK EXISTING CONDUIT, BOXES, WIRING, AND CABLING THAT IS NOT IN COMPLIANCE WITH THIS REQUIREMENT.
17. ALL ELECTRICAL EQUIPMENT AND DEVICES FOR THIS PROJECT MUST BE UL LISTED. DEVICES, EQUIPMENT, SYSTEMS SHALL BE INSTALLED PER N.E.C. REQUIREMENTS AND MANUFACTURER'S INSTRUCTIONS.
18. THE DESIGN INTENT IS ALL DEVICES SHALL BE RECESSED MOUNTED, UNLESS OTHERWISE NOTED. THE DEVICE BACK-BOX AND RACEWAY BEING FURNISHED SHALL BE RATED TO COMPLY WITH NEC PER THE APPLICATION. WHERE MOUNTED WITHIN A FIRE RATED WALL OR STRUCTURE, FURNISH AND INSTALL UL APPROVED FIRE STOPPING ASSEMBLIES AND MATERIALS TO MAINTAIN RATING OF WALL OR STRUCTURE. WHEN THERE IS NO AVAILABLE OPTION BUT TO INSTALL A SURFACE MOUNTED DEVICE, CONSULT ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
19. THE DESIGN INTENT IS ALL CONDUIT, CABLES, RACEWAYS AND PATHWAYS SHALL BE CONCEALED FROM SIGHT WITHIN THE BUILDING CONSTRUCTION, UNLESS OTHERWISE NOTED. THE CONDUIT, CABLES, RACEWAYS AND PATHWAYS BEING FURNISHED SHALL BE RATED TO COMPLY WITH NEC PER THE APPLICATION. WHEN THERE IS NO AVAILABLE OPTION BUT TO INSTALL A VISIBLE CONDUIT, CABLE, RACEWAY OR PATHWAY, CONSULT ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
20. ALL CONDUIT AND CABLING SHALL BE PROPERLY SUPPORTED AS REQUIRED BY THE NATIONAL ELECTRICAL CODE. FOR EXISTING INSTALLATIONS, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE AND/OR REWORK EXISTING CONDUIT AND/OR CABLING THAT IS NOT IN COMPLIANCE WITH THIS REQUIREMENT.
21. CONTRACTOR SHALL FIELD VERIFY SLAB ON GRADE FLOOR CONSTRUCTION TYPE PRIOR TO CUTTING. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR CUT A STRUCTURAL FLOOR SLAB THICKER THAN FOUR (4") INCHES WITHOUT PRIOR WRITTEN APPROVAL FROM ENGINEER OF RECORD. NOTIFY ENGINEER OF RECORD OF ANY SLAB THICKNESS GREATER THAN FOUR (4") INCHES PRIOR TO PROCEEDING WITH ANY SAW CUTTING.
22. IN OTHER THAN DWELLING UNITS, ALL 125-VOLT THROUGH 250-VOLT RECEPTACLES SUPPLIED BY SINGLE PHASE BRANCH CIRCUITS RATED 150 VOLTS OR LESS TO GROUND, 50 AMPERES OR LESS, AND ALL RECEPTACLES SUPPLIED BY THREE PHASE BRANCH CIRCUITS RATED 150 VOLTS OR LESS TO GROUND , 100 AMPERES OR LESS, INSTALLED IN LOCATIONS IDENTIFIED IN 210-8(B)(1) THROUGH (B)(12) SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL. WHERE DEVICE IS READILY ACCESSIBLE, THE DEVICE SHALL BE PROVIDED WITH INTEGRAL GROUND FAULT PROTECTION. WHERE DEVICE IS NOT READILY ACCESSIBLE AND/OR NOT AVAILABLE WITH INTEGRAL GROUND FAULT PROTECTION, THE BRANCH CIRCUIT BREAKER SERVING THE DEVICE(S) SHALL BE GROUND FAULT TYPE.

ELECTRICAL ABBREVIATIONS

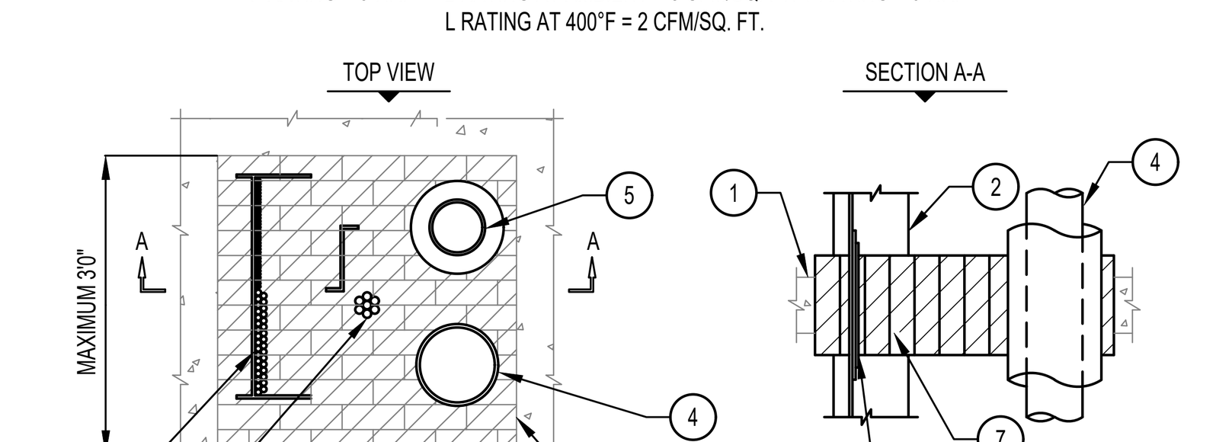
A ---- AMPS
AC ---- AIR CONDITIONING UNIT
AFC ---- ABOVE FINISH COUNTER
AFF ---- ABOVE FINISH FLOOR
AFG ---- ABOVE FINISH GRADE
AHU ---- AIR HANDLING UNIT
AIC ---- ASYMMETRICAL INTERRUPTING CURRENT
ARCH. ---- ARCHITECTURAL
A.T. ---- AMP TRIP
ATS ---- AUTOMATIC TRANSFER SWITCH
AWG ---- AMERICAN WIRE GAGE
BKR ---- BREAKER
BLDG. ---- BUILDING
C ---- CONDUIT
CATV ---- CABLE TELEVISION
CCTV ---- CLOSED CIRCUIT TELEVISION
CH ---- CHILLER
CONTR ---- CONTRACTOR
CT ---- COOLING TOWER
CU ---- COPPER
CUH ---- CABINET UNIT HEATER
DE ---- DUAL ELEMENT
DN ---- DOWN
DS ---- DISCONNECT SWITCH
DWG. ---- DRAWING
(E) or EXIST. ---- EXISTING
EBB ---- ELECTRIC BASEBOARD
E.C. ---- ELECTRICAL CONTRACTOR
EF ---- EXHAUST FAN
EH ---- ELECTRIC HEATER
ELEC. ---- ELECTRICAL
EM ---- EMERGENCY
EMT ---- ELECTRICAL METALLIC TUBING
EOR ---- ENGINEER OF RECORD
EQ. ---- EQUAL
ETR ---- EXISTING TO REMAIN
EUH ---- ELECTRIC UNIT HEATER
EWC ---- ELECTRIC WATER COOLER
EWH ---- ELECTRIC WATER HEATER
F ---- FUSE
FA ---- FIRE ALARM
FACP ---- FIRE ALARM CONTROL PANEL
FC ---- FAN COIL UNIT
FLUOR ---- FLUORESCENT
FPB ---- FAN POWER BOX (VAV)
F.P.C. ---- FIRE PROTECTION CONTRACTOR
FS ---- FLOW SWITCH
FT. ---- FOOT/FEET
G.C. ---- GENERAL CONTRACTOR
GFI ---- GROUND FAULT INTERRUPTING PROTECTION
GND ---- GROUND
HID ---- HIGH INTENSITY DISCHARGE
HOA ---- HAND-OFF-AUTOMATIC
HP ---- HORSEPOWER
HPS ---- HIGH PRESSURE SODIUM
HVAC ---- HEATING, VENTILATION, AIR CONDITIONING
IG ---- ISOLATED GROUND
INCAND. ---- INCANDESCENT
JB ---- JUNCTION BOX
KCMIL ---- ONE THOUSAND CIRCULAR MILS
K.E.C. ---- KITCHEN EQUIPMENT CONTRACTOR
KVA ---- KILOVOLT AMPERE
KW ---- KILOWATT
LTG ---- LIGHTING
MATV ---- MASTER ANTENNA TV
MAU ---- MAKE-UP AIR UNIT
MAX ---- MAXIMUM
MCB ---- MAIN CIRCUIT BREAKER
MCC ---- MOTOR CONTROL CENTER
M.C. ---- MECHANICAL CONTRACTOR
MECH. ---- MECHANICAL
MFR ---- MANUFACTURER
MH ---- METAL HALIDE
MIN ---- MINIMUM
MLO ---- MAIN LUGS ONLY
MOD ---- MOTOR OPERATED DAMPER
MSB ---- MAIN SWITCHBOARD
MTD ---- MOUNTED
NEC ---- NATIONAL ELECTRIC CODE
NF ---- NON FUSED
NFPA ---- NATIONAL FIRE PROTECTION ASSOCIATION
NIC ---- NOT IN CONTRACT
NL ---- NIGHTLIGHT
NTS ---- NOT TO SCALE
Ø or PH ---- PHASE
P ---- POLE
PB ---- PULL BOX
P.C. ---- PLUMBING CONTRACTOR
PNL ---- PANEL
PRE ---- POWER ROOF EXHAUSTER
PVC ---- POLYVINYL CHLORIDE
REC ---- RECEPTACLE
RTU ---- ROOF TOP UNIT
SPKR ---- SPEAKER
SPST ---- SINGLE POLE SINGLE THROW
TIE ---- MULTIPLE OUTLETS WIRED ON SAME BRANCH CICRUIT
TR ---- TAMPER RESISTANT
TS ---- TAMPER SWITCH
TTB ---- TELEPHONE TERMINAL BOARD
TV ---- TELEVISION
TYP. ---- TYPICAL
UH ---- GAS FIRED UNIT HEATER
UL ---- UNDERWRITER'S LABORATORY
UNO ---- UNLESS NOTED OTHERWISE
UV ---- UNIT VENTILATOR
V ---- VOLTS
W ---- WATTS
WP ---- WEATHER-PROOF TYPE DEVICE (NEMA 3R RATED)
WR ---- WEATHER-RESISTANT TYPE DEVICE (NEMA 3R RATED)
X'FMR ---- TRANSFORMER

UL/cUL SYSTEM NO. CAJ8056

MULTIPLE PENETRATING ITEMS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

N.T.S.

F RATING = 3-HR. L RATING AT AMBIENT = 5 CFM/SQ. FT. T RATING = 0-HR.
L RATING AT 400°F = 2 CFM/SQ. FT.



1. CONCRETE FLOOR OR WALL ASSEMBLY (3-HR FIRE-RATING):
   A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MIN. 4-1/2" THICK).
   B. ANY UL/ULC CLASSIFIED CONCRETE BLOCK WALL.
2. MAXIMUM 18" x 6" ALUMINUM OR STEEL OPEN LADDER CABLE TRAY.
3. ANY COMBINATION OF THE FOLLOWING CABLES MAY BE USED WITHIN THE CABLE TRAY (SEE NOTE NO. 4 BELOW):
   A. 7/C NO. 12 AWG COPPER CONDUCTOR CABLE. C. MAX. 300 PAIR NO. 24 AWG TELEPHONE CABLE.
   B. MAX. 500 KCMIL SINGLE CONDUCTOR CABLE. D. 24 FIBER-OPTIC CABLE (MAX. 1/2" DIAMETER).
4. PENETRATING ITEMS TO BE ANY OF THE FOLLOWING: MAXIMUM 6" NOMINAL DIAMETER STEEL PIPE OR STEEL CONDUIT; MAXIMUM 6" NOMINAL DIAMETER CAST IRON PIPE; OR MAXIMUM 4" NOMINAL DIAMETER COPPER PIPE OR EMT.
5. MAXIMUM 1-1/2" GLASS FIBER INSULATION.
6. MAXIMUM 2" CABLE BUNDLE TO BE A COMBINATION OF ANY OF THE FOLLOWING:
   A. 7/C NO. 12 AWG CABLE. D. 3/C NO. 8 ALUMINUM CLAD CABLE.
   B. 25 PAIR NO. 24 AWG TELEPHONE CABLE. E. RG 62A COAXIAL CABLE.
   C. ROMEX (2/C NO. 10 +GRND). F. 24 FIBER-OPTIC CABLE (MAX. 1/2" DIA.).
7. HILTI FS 657 FIRE BLOCK (2" THICK x 5" WIDE x 8" DEEP, REF. TOP VIEW).

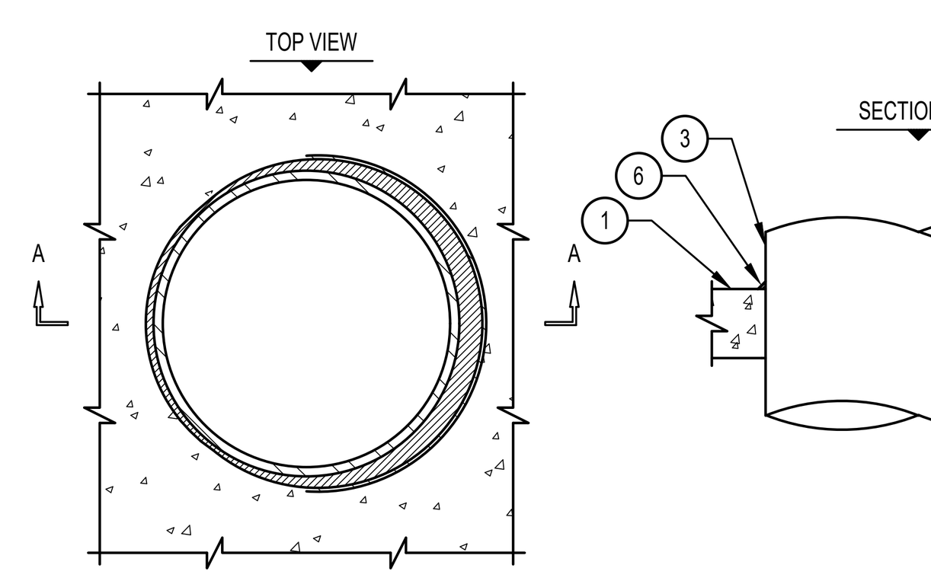
NOTES :
1. MAXIMUM AREA OF OPENING = 1296 SQUARE INCHES, WITH MAXIMUM DIMENSION OF 36 INCHES
2. ANNULAR SPACE FOR CABLE TRAY = MINIMUM 1-1/2", MAXIMUM 4-1/2".
3. ANNULAR SPACE FOR PIPE AND CABLE PENETRATIONS = MINIMUM 1", MAXIMUM 4-1/2".
4. MAXIMUM AREA OF CABLES EQUALS 30% OF CROSS-SECTIONAL AREA OF CABLE TRAY.
5. APPLY HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT INTO INTERSTICES OF CABLES, BETWEEN CABLES AND CABLE TRAY, AND ANY VOIDS TO MAXIMUM EXTENT POSSIBLE.
6. WIRE MESH (NOT SHOWN). WHEN THE ANNULAR SPACE EXCEEDS 4-1/2", A NOMINAL 2 IN. SQ., NO. 16 SWG WIRE MESH SHALL BE USED TO KEEP THE HILTI FS 657 FIRE BLOCKS IN PLACE.

UL/cUL SYSTEM NO. CAJ1226

METAL PIPE THROUGH A SLEEVE IN CONCRETE FLOOR/WALL OR BLOCK WALL

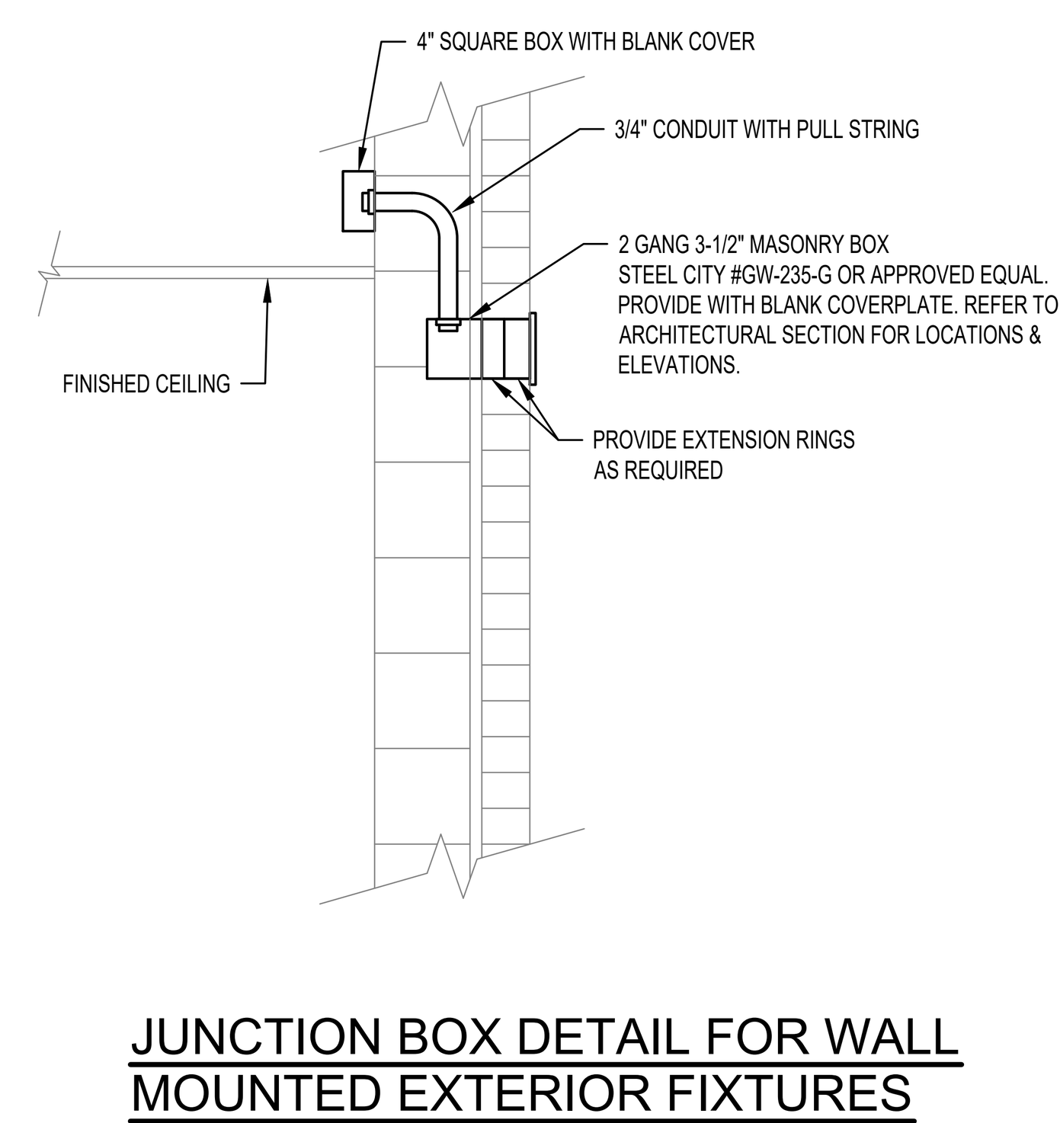
N.T.S.

F RATING = 3-HR.
T RATING = 0-HR.
L RATING AT AMBIENT = LESS THAN 1 CFM/SQ. FT.
L RATING AT 400° F = 4 CFM/SQ. FT.



1. CONCRETE FLOOR OR WALL ASSEMBLY (3-HR FIRE-RATING):
   A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MIN. 4-1/2" THICK).
   B. ANY UL/ULC CLASSIFIED CONCRETE BLOCK WALL.
2. OPTIONAL: MAXIMUM 32" NOMINAL DIAMETER STEEL PIPE SLEEVE (SCHEDULE 40 OR HEAVIER).
3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING:
   A. MAXIMUM 30" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
   B. MAXIMUM 30" NOMINAL DIAMETER CAST IRON PIPE.
   C. MAXIMUM 6" NOMINAL DIAMETER COPPER PIPE.
   D. MAXIMUM 6" NOMINAL DIAMETER STEEL CONDUIT.
   E. MAXIMUM 4" NOMINAL DIAMETER EMT.
4. MINIMUM 4" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED.
5. MINIMUM 1/4" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT.
6. MINIMUM 1/4" CROWN HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 32".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1-7/8".
3. MINIMUM 1/4" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.



JUNCTION BOX DETAIL FOR WALL MOUNTED EXTERIOR FIXTURES

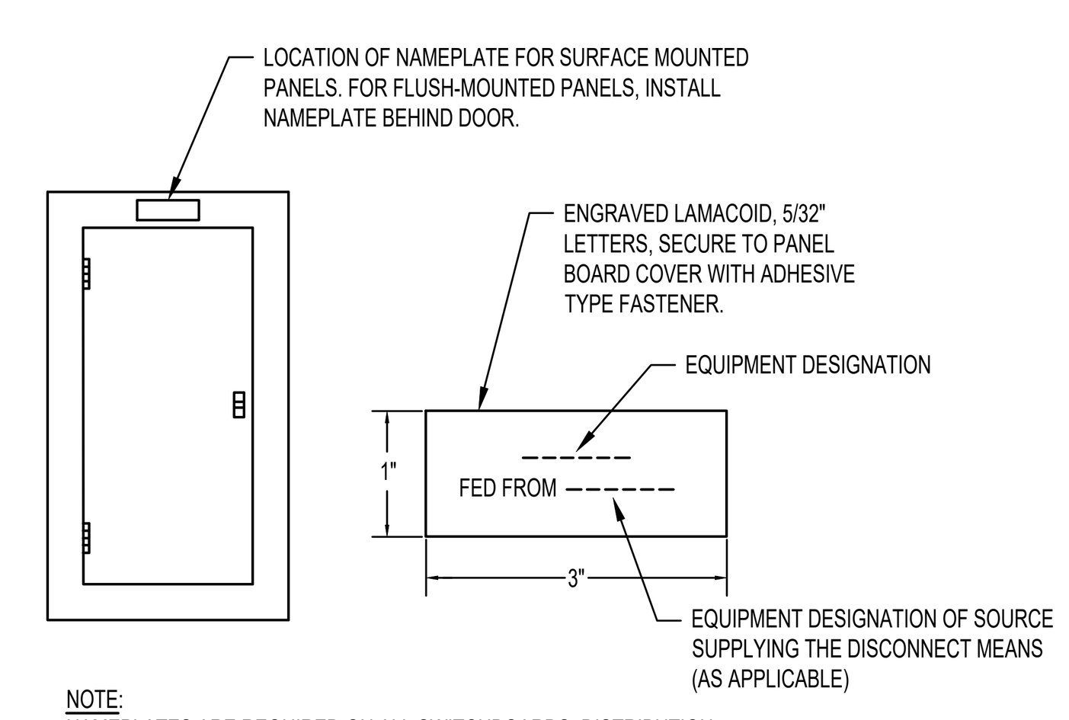
N.T.S.

EXISTING LIGHTING FIXTURE SCHEDULE

TYPE	LOAD (VA)	LAMPS NO.	LAMPS TYPE	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	APPROXIMATE FIXTURE COUNT
EX	13.3	-	WITH UNIT	ENCORE	LC8-2-LED	LED EXIT SIGN WITH STENCIL FACE, RED LETTERS, WHITE DIE FORMED STEEL FACE AND HOUSING, UNIVERSAL MOUNTING AND EMERGENCY BATTERY PACK WITH 2 LED HEADS. SINGLE OR DOUBLE FACE AND ARROWS AS INDICATED ON PLANS. 120/277 VAC	VERIFY QUANTITY ON PLANS
EM	2.5	-	LED	LITHONIA	AFF-OEL-XX-UVOLT-LTP-SDRT -WT-BAA	SELF-CONTAINED EMERGENCY FIXTURE WITH WET LOCATION LISTING AND LITHIUM IRON PHOSPHATE BATTERY LISTED FOR 32°F TO + 122°F. COORDINATE FINISH AND MOUNTING HEIGHT WITH ARCHITECTURAL DRAWINGS AND OWNER. 120-347 VAC	VERIFY QUANTITY ON PLANS
A	28.7	-	LED	LITHONIA	CPX-2X2-3200LM-35K-M4	LED 2X2 PANEL. DIMMING COMPATIBLE. 3500K CCT, 3555 LUMENS, 80 CRI. COORDINATE FINISH AND MOUNTING HEIGHT WITH ARCHITECTURAL DRAWINGS AND OWNER. 120-277 VAC	VERIFY QUANTITY ON PLANS
B/B-EM	11	-	LED	SPECTRUM	SGEF4LEDOS-10L-30K-E1-XX-XX -WL (PROVIDE EMERGENCY BATTERY BACK UP, EM, AS INDICATED ON PLANS)	4" RECESSED LED DOWNLIGHT. DAMP LOCATION RATED. STEEL HOUSING. COORDINATE FINISH AND MOUNTING HEIGHT WITH ARCHITECTURAL DRAWINGS AND OWNER. 120 VAC.	VERIFY QUANTITY ON PLANS
C	17	-	LED	KICHLER	KICHLER STYLE # 1R157	25" OUTDOOR LED. 875 LM. METAL FRAMING. WET LOCATION RATED. COORDINATE FINISH AND MOUNTING WITH ARCHITECTURAL DRAWINGS AND OWNER. 120 VAC.	VERIFY QUANTITY ON PLANS
D	60 PER LAMP	2	LED	QUOIZEL	QUOIZEL STYLE # 96F66	12"W OUTDOOR CEILING LIGHT. IRON FRAME. WET LOCATION RATED. COORDINATE FINISH AND MOUNTING WITH ARCHITECTURAL DRAWINGS AND OWNER. 120 VAC.	VERIFY QUANTITY ON PLANS

LIGHTING FIXTURE SCHEDULE NOTES:

1. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN AND/OR ROOM FINISH SCHEDULE TO DETERMINE PROPER TYPE OF LIGHT FIXTURE REQUIRED FOR THE CEILING CONSTRUCTION PRIOR TO ORDERING THE FIXTURES & PROVIDE FIXTURES THAT ARE COMPATIBLE WITH THE CEILING SYSTEM.
2. ALL BALLASTS FOR LINEAR AND COMPACT FLUORESCENT LAMPS SHALL BE INSTANT START WITH LESS THAN 10% THD. ALL SUCH BALLASTS FOR EXTERIOR FIXTURES SHALL BE COLD WEATHER BALLASTS RATED FOR 0°F OR LOWER. SEE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. ALL LIGHTING FIXTURES UTILIZING DOUBLE ENDED FLUORESCENT LAMPS SHALL BE PROVIDED WITH AN INTEGRAL DISCONNECTING MEANS INSTALLED BY THE FIXTURE MANUFACTURER. FOR SAID FIXTURES WHERE AN INTEGRAL DISCONNECTING MEANS IS NOT AVAILABLE BY THE MANUFACTURER, THE E.C. SHALL FURNISH AND INSTALL A LOCAL EXTERNAL DISCONNECTING MEANS AS REQUIRED PER NEC 410.
4. WHERE LIGHT FIXTURES ARE NOTED TO HAVE EMERGENCY BALLASTS THE EMERGENCY BALLASTS SHALL PROVIDE A MINIMUM OF NINETY (90) MINUTES OF CODE REQUIRED EMERGENCY LIGHTING. EACH EMERGENCY BALLAST PROVIDED SHALL PRODUCE THE MAXIMUM LUMEN OUTPUT AVAILABLE FOR THE LAMP USED. EMERGENCY LIGHTING BALLASTS SHALL BE BODINE OR APPROVED EQUAL.

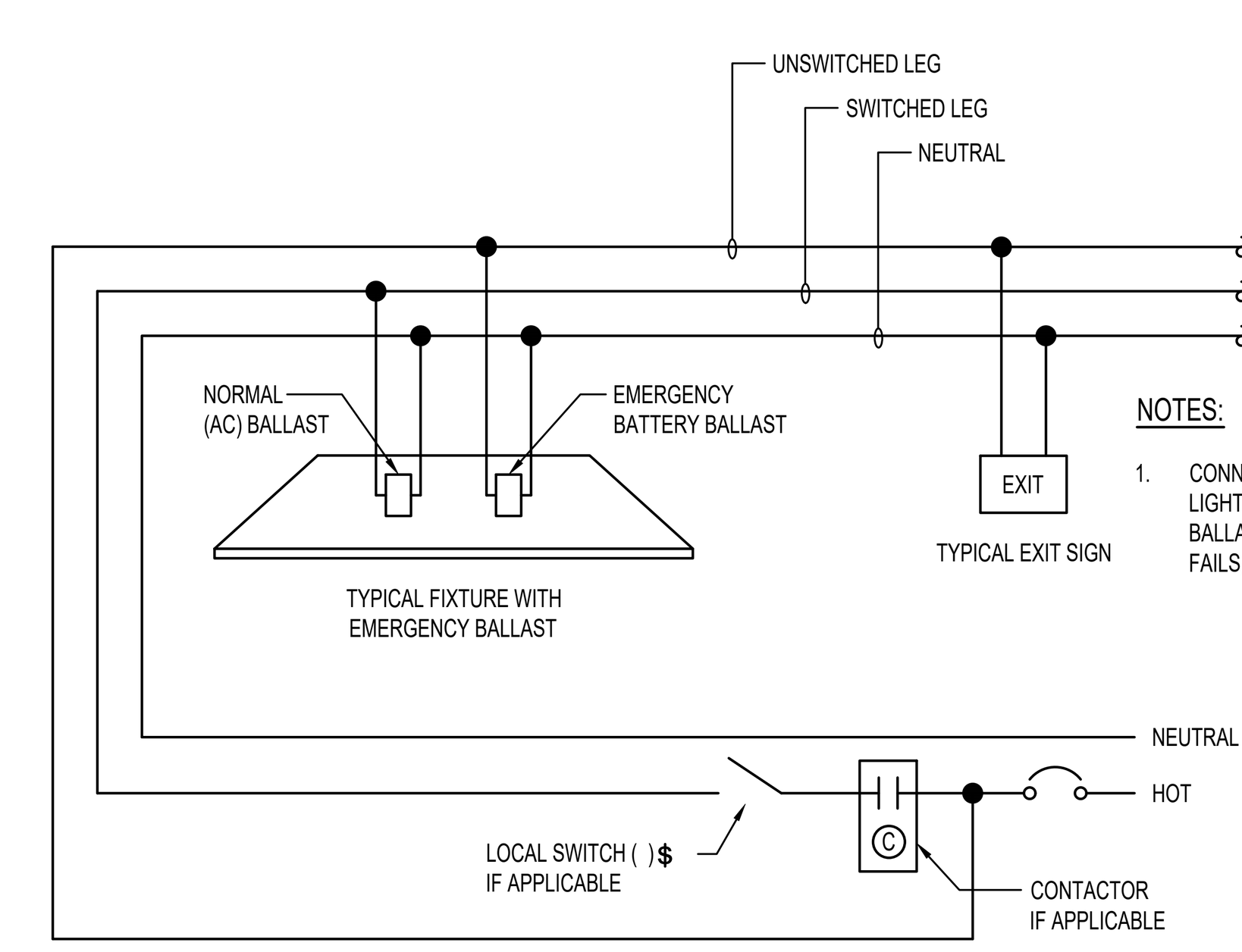


NOTE:
NAMEPLATES ARE REQUIRED ON ALL SWITCHBOARDS, DISTRIBUTION PANELS, PANELBOARDS, ENCLOSURES AND ELECTRICAL CABINETS, ACCESS DOORS/PANELS FOR CONCEALED ELECTRICAL EQUIPMENT, EMERGENCY SYSTEMS/BOXES, MOTOR CONTROL CENTERS, ENCLOSED SWITCHES/CIRCUIT BREAKERS/CONTROLLERS, POWER-TRANSFER DEVICES, PUSH-BUTTONS, CONTACTORS, LIGHTING CONTROL SYSTEMS, INVERTERS, GENERATORS, UPS, MONITORING EQUIPMENT, STARTERS, DISCONNECT SWITCHES, METER SOCKETS, RELAYS, TRANSFORMERS, AND JUNCTION BOXES GREATER THAN 4 11/16" SQUARE. ALSO PROVIDE NAMEPLATES ON BRANCH SWITCHES/BREAKERS OF SWITCHBOARDS AND DISTRIBUTION PANELS.

STANDARD COLORS:
1. NORMAL POWER - WHITE BACKGROUND, BLACK LETTERS
2. EMERGENCY POWER - RED BACKGROUND, WHITE LETTERING
3. IN ADDITION TO THE FUNCTION NAMEPLATE, PROVIDE NAMEPLATES IDENTIFYING ALL "MAIN SERVICE NAMEPLATE DISCONNECTS" - RED BACKGROUND - WHITE LETTERING

NAMEPLATE DETAIL

N.T.S.



NOTES:
1. CONNECT EMERGENCY FIXTURES TO UNSWITCHED LEG OF LOCAL LIGHTING CIRCUIT. EMERGENCY FIXTURES OR EMERGENCY BALLASTS SHALL OPERATE WHEN POWER TO LIGHTING CIRCUIT FAILS, REGARDLESS OF NORMAL LIGHTING ON/OFF STATE.

EMERGENCY BALLAST & LIGHTING WIRING DIAGRAM

N.T.S.

Tenant 6A LL Work at Laurel Square

Laurel Square Shopping Center
Brick Township, NJ

CREATE
ARCHITECTURE PLANNING & DESIGN PLLC
45 West 34th Street
Penthouse
New York, NY 10001
Phone: (212) 297-0880
createworldwide.com

Owner / Developer:
BRIXMOR Property Group
One Fayette Street, Suite 150
Conshohocken, PA 19428

Structural & M/E/P Engineers:
Thorson Baker + Associates, Inc.
3030 West Streetsboro Rd
Richfield, OH 44286

Rev:	Date:	Description:
	04/01/2022	ISSUED FOR BID AND PERMIT

PROGRESS
NOT FOR
CONSTRUCTION
3/31/2022

JEFFERY D. MITERKO, NJ Professional Engineer, NO: GE 40635, 24GA28104800

ELECTRICAL LEGENDS, SCHEDULES, & DETAILS

1838.C E-001

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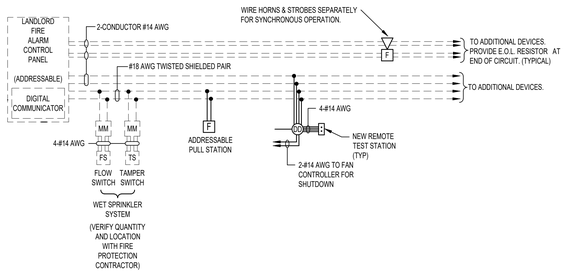
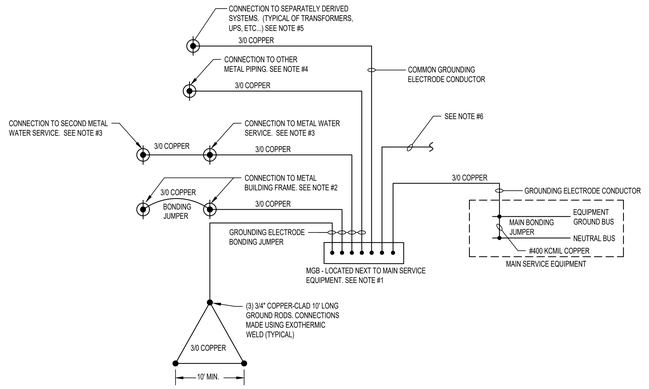


EXISTING TYPICAL FIRE ALARM DEVICE WIRING DIAGRAM
N.T.S.

INDICATES EXISTING EQUIPMENT/CONDUIT/WIRING, UNLESS INDICATED OTHERWISE

INDICATES EQUIPMENT/CONDUIT/WIRE INSTALLED UNDER THIS CONTRACT



GROUNDING DETAIL
N.T.S.

REFERENCED DETAIL NOTES:

1. MGB (MAIN GROUND BAR) SHALL BE ERICO #EGBA14412- - (INCLUDES MOUNTING BRACKET AND INSULATORS; HOLE PATTERN AS REQUIRED FOR INSTALLATION, INCLUDING SPARE HOLES FOR FUTURE USE.) OR EQUAL BY HARGER. USE COMPRESSION CONNECTORS (LISTED FOR GROUNDING) TO CONNECT COPPER WIRE TO MGB.
2. METAL BUILDING FRAME MUST BE USED AS A GROUNDING ELECTRODE WHERE IT IS EFFECTIVELY GROUNDED PER NEC SECTION 250.52. PROVIDE #3/0 BONDING JUMPERS AS REQUIRED TO PROVIDE CONTINUOUS CONDUCTIVITY WHERE BUILDING FRAME IS SEPARATED INTO ELECTRICALLY ISOLATED SECTIONS AS MAY OCCUR FROM EXPANSION JOINTS, BUILDING ADDITIONS, BUILDING ELEVATION CHANGES, AND THE LIKE.
3. WHERE A WATER METER OR FILTERING EQUIPMENT IS IN THIS METAL WATER PIPING SYSTEM, IT MUST BE BONDED AROUND TO MAINTAIN CONTINUITY EVEN IF THE WATER METER OR FILTER IS REMOVED PER NEC SECTION 250.52.
4. IF INSTALLED IN OR ATTACHED TO A BUILDING OR STRUCTURE, METAL PIPING SYSTEM(S), INCLUDING GAS PIPING, THAT IS LIKELY TO BECOME ENERGIZED SHALL BE BONDED PER NEC 250.104 (B). THE BONDING CONDUCTOR(S) OR JUMPER(S) SHALL BE SIZED IN ACCORDANCE WITH TABLE 250.102(C)(1) OR 250.122, AND EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH TABLE 250.102(C)(1) OR 250.122 USING THE RATING OF THE CIRCUIT THAT IS LIKELY TO ENERGIZE THE PIPING SYSTEM(S). THE POINTS OF ATTACHMENT OF THE BONDING JUMPER(S) SHALL BE ACCESSIBLE
5. THE METAL FRAME OF THE BUILDING SHALL BE USED AS A COMMON GROUNDING ELECTRODE CONDUCTOR. IF BUILDING DOES NOT HAVE A METAL FRAME, A #3/0 COMMON GROUNDING ELECTRODE CONDUCTOR SHALL BE RUN FROM THE MAIN GROUND BAR FOR ALL SEPARATELY DERIVED SYSTEMS. MULTIPLE SEPARATELY DERIVED SYSTEMS MAY BE CONNECTED TO THE GROUNDING ELECTRODE SYSTEM BY INDIVIDUAL CONDUCTORS OR A COMMON CONDUCTOR WITH TAPS. THE GROUNDING ELECTRODE TAP CONDUCTOR FOR EACH SYSTEM SHALL BE CONNECTED TO THE COMMON GROUNDING ELECTRODE CONDUCTOR WITH THE CONNECTION IN AN ACCESSIBLE LOCATION.
6. GROUNDING CONDUCTORS TO ADDITIONAL EQUIPMENT AS REQUIRED BY NEC 250 AND SPECIFICATIONS.

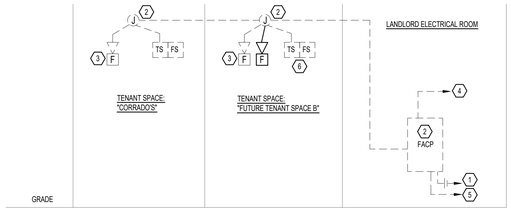
GENERAL NOTES:

1. ALL GROUNDING WORK AND MATERIALS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH REQUIREMENTS IN NEC 250.
2. ALL GROUNDING CONDUCTORS SHALL BE COPPER. PROVIDE INSULATED CONDUCTORS FOR INTERIOR INSTALLATIONS AND BARE COPPER FOR EXTERIOR INSTALLATIONS.
3. ALL UNDERGROUND CONNECTIONS TO ELECTRODES AND CONDUCTORS SHALL BE MADE BY EXOTHERMIC WELDING.
4. CONDUCTOR CONNECTIONS TO MAIN GROUND BAR SHALL BE MADE WITH COMPRESSION CONNECTORS LISTED FOR GROUNDING.
5. GROUNDING ELECTRODE AND BONDING JUMPERS SHALL BE INSTALLED SO THAT THEY ARE NOT ANY LONGER THAN NECESSARY AND ANY UNNECESSARY BENDS AND LOOPS ARE AVOIDED.
6. REFERENCE ONE-LINE DIAGRAM FOR CONDUCTOR SIZE OF THE SUPPLY SIDE BONDING JUMPER AND GROUNDING ELECTRODE TAP CONDUCTOR SERVING SEPARATELY DERIVED SYSTEM(S).
7. REFERENCE ONE-LINE DIAGRAM FOR CONDUCTOR SIZE OF THE EQUIPMENT GROUNDING CONDUCTOR SERVING ELECTRICAL DISTRIBUTION EQUIPMENT.
8. INSTALL SLEEVES, SLEEVE SEALS, FIRE STOPPING, RACEWAYS TO PROTECT AGAINST PHYSICAL DAMAGE AND ENVIRONMENTAL CONDITIONS WHERE REQUIRED. FURNISH AND INSTALL BONDING BUSHINGS WHERE FERROUS METALLIC RACEWAYS ARE UTILIZED.

FIRE ALARM SYSTEM NOTES:

1. THE BUILDING CONTAINS AN EXISTING FIRE ALARM SYSTEM. THE EXISTING SYSTEM SHALL BE MODIFIED AND UPGRADED AS REQUIRED TO ACCOMMODATE THE PROPOSED AREAS OF RENOVATIONS. THE INTENT IS TO FURNISH AND INSTALL NEW DEVICES AND EQUIPMENT WITHIN THE PROPOSED AREAS OF RENOVATION, UNLESS NOTED OTHERWISE.
2. THE FIRE ALARM SYSTEM MUST BE INSTALLED IN ACCORDANCE WITH PLANS AND SPECIFICATIONS AND MUST MEET ALL STATE & LOCAL CODE REQUIREMENTS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL CODE REQUIRED DOCUMENTS INCLUDING, BUT NOT LIMITED TO THE FOLLOWING.
   A. A FLOOR PLAN WHICH INDICATES THE USE OF ALL ROOMS.
   B. LOCATIONS OF ALARM-INITIATING AND NOTIFICATION APPLIANCES.
   C. ALARM CONTROL AND TROUBLE SIGNALING EQUIPMENT.
   D. ANNUNCIATION.
   E. POWER CONNECTION.
   F. BATTERY CALCULATIONS.
   G. CONDUCTOR TYPE AND SIZES.
   H. VOLTAGE DROP CALCULATIONS.
   I. MANUFACTURERS, MODEL NUMBERS AND LISTING INFORMATION FOR EQUIPMENT, DEVICES AND MATERIALS.
   J. DETAILS OF CEILING HEIGHT AND CONSTRUCTION.
   K. THE INTERFACE OF FIRE SAFETY CONTROL FUNCTIONS.

   THESE DOCUMENTS MUST BE PREPARED BY A CERTIFIED FIRE ALARM DESIGNER AND MUST BE SUBMITTED TO THE LOCAL AUTHORITIES FOR REVIEW AND APPROVAL PRIOR TO START OF WORK.
3. A STAMPED SET OF APPROVED FIRE ALARM DRAWINGS SHALL BE AT THE JOB SITE AND SHALL BE USED FOR INSTALLATION.
4. UPDATE AN AS-BUILT DRAWING SET DAILY WITH JOB PROGRESS. PROVIDE AN AS-BUILT DRAWING SET TO OWNER NO LATER THAN 7 DAYS AFTER FINAL TEST.
5. EQUIPMENT: WHERE THE PROJECT REQUIRES NON-ALARM AUDIO SYSTEMS (MUSIC, PAGING OR THE LIKE) TO BE INTERCONNECTED TO THE FIRE ALARM SYSTEM, FURNISH AND INSTALL ALL REQUIRED STANDARD AND OPTIONAL FIRE ALARM SYSTEM EQUIPMENT AND PROGRAMMING TO SUPPORT AND FUNCTION WITH SUCH SYSTEMS. PROVIDE THE REQUIRED CONSTANT SUPERVISION MODULES, INTERFACES AND SYSTEM WIRING AND INTERCONNECTIONS AS REQUIRED. COORDINATE INTEGRATION OF SUCH SYSTEMS WITH RESPECTIVE SYSTEM INSTALLERS AND VENDORS PRIOR TO START OF WORK.
6. EQUIPMENT: ZONING OF THE AUDIO NOTIFICATION APPLIANCES SHALL COMPLY WITH CODE AND LOCAL AUTHORITY REQUIREMENTS. CONFIRM ZONING OF SYSTEM WITH OWNER'S PROJECT REQUIREMENTS FOR NON-ALARM AUDIO SYSTEMS, IF APPLICABLE, AND WITH AUTHORITY HAVING JURISDICTION PRIOR TO DRAWING SUBMISSION TO LOCAL AUTHORITY AND START OF WORK.
7. EQUIPMENT: ALL DEVICES, COMBINATIONS OF DEVICES, APPLIANCES AND EQUIPMENT SHALL BE LISTED FOR THE PURPOSE FOR WHICH THEY ARE USED AND SHALL BE INSTALLED IN COMPLIANCE WITH APPLICABLE CODES, STANDARDS AND MANUFACTURER'S INSTRUCTIONS.
8. SYSTEM DEVICES, BACK-BOXES, AND ENCLOSURES MUST BE RATED FOR THE ENVIRONMENT WHICH IT IS INSTALLED. FURNISH AND INSTALL CONDUIT SEALS WHERE RACEWAYS PASS BETWEEN CONDITIONED AND UNCONDITIONED SPACES.
9. NOTIFICATION DEVICE COVERS SHALL BE WHITE WITH RED LETTERING, UNLESS OTHERWISE REQUIRED.
10. ALL WIRING SHALL BE IN CONDUIT, UNLESS DIRECTED OTHERWISE. DO NOT RUN ANY OTHER WIRING IN THE SAME CONDUIT WITH ALARM WIRING. DO NOT RUN 120VAC WIRING WITH ALARM WIRING. ALL WIRE TO BE SHIELDED CABLE. ALL J-BOXES ASSOCIATED WITH THE FIRE ALARM SYSTEM SHALL BE SPRAY PAINTED "FIRE ENGINE" RED.
11. ALL WIRE & CABLE MUST BE RATED PER THE LATEST REVISION OF THE NATIONAL ELECTRIC CODE SECTION 760.
12. CONFIRM ALL WIRING REQUIREMENTS WITH THE MANUFACTURER OF THE PROPOSED FIRE ALARM EQUIPMENT BEING FURNISHED PRIOR TO BID AND PROVIDE IN ACCORDANCE THEREWITH. WIRING SHOWN ON THIS DIAGRAM REPRESENTS THE MINIMUM SIZE REQUIRED. WIRE SIZES SHALL BE INCREASED AS REQUIRED FOR VOLTAGE DROP.
13. FIRE ALARM CIRCUITS SHALL BE IDENTIFIED IN ACCORDANCE WITH APPROPRIATE SECTION OF NEC 760. MARK ALL FIRE ALARM WIRES IN ACCORDANCE WITH NEC 760 SECTIONS FOR POWER LIMITED AND NON-POWER LIMITED WIRE.
14. WIRING SHALL BE CONTINUOUS FROM ONE DEVICE TO THE NEXT. SPLICING IS PROHIBITED.
15. THE TYPICAL WIRING DIAGRAM IS NOT INTENDED TO SHOW QUANTITIES OF DEVICES. REFER TO PLANS FOR QUANTITIES.
16. WHERE PROPOSED ROUTING OF SYSTEM CONDUIT AND WIRING IS INDICATED ON PLANS, DETAILS AND DIAGRAMS, SAID ROUTING IS DIAGRAMMATIC. EXACT ROUTING OF CONDUITS AND WIRING TO BE DETERMINED IN THE FIELD BY THE INSTALLING CONTRACTOR TO SUIT CONDITIONS. INSTALLATION SHALL COMPLY WITH CODE AND PROJECT REQUIREMENTS. ALL MODIFICATIONS SHALL BE CLEARLY INDICATED ON THE RECORD DRAWINGS.
17. ALL CONDUCTORS INCLUDING SHIELDS MUST TEST FREE OF OPENS, SHORTS & GROUNDS BEFORE MAKING CONNECTIONS TO THE FIRE ALARM CONTROL PANEL.
18. EACH FIRE ALARM PANEL AND ANCILLARY EQUIPMENT REQUIRES A DEDICATED 120VAC CIRCUIT. RUN 3-#12 (INCLUDES THE GREEN GROUND WIRE) FROM A 20 AMP CIRCUIT BREAKER. PROVIDE A LOCK-ON CLIP & RED MARKING ON THE BREAKER AND IDENTIFY AS "FIRE ALARM CIRCUIT CONTROL." THE LOCATION OF THE CIRCUIT DISCONNECTING MEANS (CIRCUIT BREAKER) SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL PANEL AND ANCILLARY EQUIPMENT.
19. DO NOT APPLY POWER TO SYSTEM EXCEPT IN THE PRESENCE OF A FACTORY TRAINED TECHNICAL REPRESENTATIVE.
20. INSTALLATION OF SYSTEM DEVICES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. POWER LIMITED AND NON-POWER LIMITED FIELD WIRING MUST BE INSTALLED WITHIN EQUIPMENT ENCLOSURES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND NEC
21. STROBES SHALL BE WIRED SEPARATELY FOR SYNCHRONOUS OPERATION. PROVIDE SYNCHRONIZATION MODULES AS REQUIRED TO COMPLY WITH CODE.
22. SMOKE DETECTOR HEADS MUST BE INSTALLED FREE OF DUST OR ANY OTHER CONTAMINATION. SMOKE DETECTORS SHALL NOT BE MOUNTED WITHIN 3'-0" OF A SUPPLY OR RETURN AIR GRILLE. COORDINATE SMOKE DETECTOR LOCATIONS WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
23. IN ALL ROOMS REQUIRING SMOKE DETECTION, IF THERE IS NOT A SMOOTH, FLAT CEILING, THEN DETECTION SHALL BE SPACED PER NFPA 72. IF THERE ARE BEAM DEPTHS LESS THAN 10% OF THE CEILING HEIGHT (0.1 X H), SMOOTH CEILING SPACES SHALL BE PERMITTED. IF THERE ARE BEAM DEPTHS EQUAL OR GREATER THAN 10% OF THE CEILING HEIGHT (0.1 X H), AND THE BEAM SPACING IS EQUAL TO OR GREATER THAN 40% OF THE CEILING HEIGHT (0.4 X H), SPOT SMOKE DETECTORS SHALL BE LOCATED ON THE CEILING IN EACH BEAM POCKET PER NFPA 72 2007, 5.7.3.2.4.
24. DUCT DETECTORS SHALL HAVE REMOTE TEST STATIONS INSTALLED IN AN ACCESSIBLE LOCATION AND BE CLEARLY LABELED TO INDICATE THEIR FUNCTION AND THE MECHANICAL UNIT ASSOCIATED WITH EACH DETECTOR. DUCT DETECTOR TEST STATIONS SHALL BE LOCATED AS CLOSE TO THE APPLIANCES AS POSSIBLE FOR EASE IN LOCATING AND UNLESS ASSOCIATED WITH ROOF TOP MECHANICAL UNITS
   A. IF THERE IS A DROP CEILING, THE REMOTE TEST STATIONS SHALL BE MOUNTED IN CEILING TILES BELOW THE DUCT DETECTORS.
   B. IF THERE IS A HARD CEILING, THE REMOTE TEST STATIONS SHALL BE LOCATED IN THE CEILING NEXT TO A MINIMUM OF A 2'x4' OR 3'x3' ACCESS PANEL LOCATED BELOW THE DUCT DETECTOR.
   C. IF THERE IS NO CEILING, THE REMOTE TEST STATIONS SHALL BE MOUNTED ON A PILLAR OR WALL AS CLOSE TO THE DEVICE AS POSSIBLE.
34. THE LOCATION OF ALL DETECTORS IN AIR DUCT SYSTEMS SHALL BE PERMANENTLY AND CLEARLY IDENTIFIED AND RECORDED.
35. ALL DETECTORS NOT ACCESSIBLE STANDING AT FINISHED FLOOR SHALL BE PROVIDED WITH A REMOTE TEST SWITCH WITH INDICATOR LIGHT. LOCATIONS OF ALL FIRE ALARM REMOTE TEST STATIONS SHALL BE LABELED PER LOCAL LOCAL AUTHORITY REQUIREMENTS. TEST STATION LOCATIONS SHALL BE FIELD VERIFIED WITH LOCAL AUTHORITY PRIOR TO ROUGH-IN.
36. DUCT DETECTORS SHALL BE INSTALLED AND POSITIONED TO ALLOW EASY ACCESS FOR PERIODIC INSPECTION AND TESTING.
37. FURNISH AND INSTALL A KNOX BOX AS REQUIRED BY LOCAL FIRE DEPARTMENT. EXACT QUANTITIES AND LOCATIONS AS DETERMINED BY LOCAL AUTHORITY. KNOX BOX MANUFACTURER SHALL BE AS REQUIRED BY LOCAL AUTHORITY. PROVIDE AN ADDRESSABLE MONITOR MODULE WHEN REQUIRED.
38. THE FIRE ALARM SUPPLIER SHALL PROVIDE A COPY OF THE PROGRAMMING CODES AND OPERATION MANUALS IN A SLEEVED BINDER ATTACHED TO THE FIRE ALARM CONTROL PANEL.
39. PROVIDE CONNECTION TO REMOTE SUPERVISION AS DIRECTED FOR SUPERVISION OF SYSTEM IN COMPLIANCE WITH LOCAL AUTHORITY & OWNER. PROVIDE ALL INTERFACE REQUIRED TO INITIATE REMOTE SUPERVISION.
40. PROVIDE & INSTALL A CEILING MOUNTED SMOKE DETECTOR IN FRONT OF FIRE ALARM CONTROL PANEL AND EACH REMOTE MOUNTED AUXILIARY PANEL IN ADDITION TO THE DEVICES SHOWN ON THE FLOOR PLANS.
41. PROVIDE & INSTALL MANUAL STATIONS WHERE REQUIRED BY LOCAL AUTHORITIES TO MEET THE REQUIREMENTS OF NFPA-72 SECTION 3-8.1.2 IN ADDITION TO THE DEVICES SHOWN ON THE PLANS. VERIFY WITH LOCAL AUTHORITY PRIOR TO BIDDING & INDICATE COST IN BID PRICE.
42. INCLUDE ON-SITE SERVICES OF A CERTIFIED TECHNICIAN TO PROVIDE TECHNICAL INSTALLATION SUPPORT FOR EQUIPMENT START UP, PROGRAM EDITING, TROUBLESHOOTING OF THE SYSTEM, AND ASSISTANCE TO THE INSTALLER FOR ONE COMPLETE FINAL SYSTEM CHECKOUT.
43. THE COMPLETED FIRE ALARM SYSTEM SHALL BE FULLY TESTED IN ACCORDANCE WITH NFPA-72, AND LOCAL AND STATE CODE REQUIREMENTS, BY THE INSTALLER, IN THE PRESENCE OF THE G.C., OWNER'S REPRESENTATIVE AND AUTHORITY HAVING JURISDICTION. UPON COMPLETION OF A SUCCESSFUL TEST, THE INSTALLER SHALL SO CERTIFY, IN WRITING, TO THE OWNER AND GENERAL CONTRACTOR.



GENERAL TENANT FIRE ALARM RISER DIAGRAM
N.T.S.

NOTE: RISER DOES NOT REFLECT EXACT QUANTITY OF DEVICES

INDICATES EQUIPMENT/CONDUIT/WIRE INSTALLED UNDER THIS CONTRACT

INDICATES EXISTING EQUIPMENT/CONDUIT/WIRE TO REMAIN

FIRE ALARM RISER DIAGRAM GENERAL NOTES:

1. PROVIDE ALL REQUIRED WIRING, INITIATING DEVICE CIRCUIT CARDS, RELAYS, PROGRAMMING, POWER EXTENDERS, POWER SUPPLIES, ANCILLARY DEVICES, ENCLOSURES, HEATERS, FANS, ETC. PER MANUFACTURER'S DIRECTION FOR A COMPLETE FUNCTIONING CODE COMPLIANT SYSTEM.
2. ALL WIRING SHALL BE INSTALLED IN CONDUIT, UNLESS OTHERWISE NOTED.
3. ALL FIRE ALARM A/V DEVICES SHALL BE WHITE IN COLOR. WHERE SUBJECT TO EXTERIOR ENVIRONMENT, A/V DEVICES SHALL BE CONTAINED WITHIN WEATHERPROOF ENCLOSURES
4. FIRE ALARM DESIGNER SHALL SELECT LOCATION/QUANTITIES PER BEST DESIGN PRACTICES, THESE DRAWINGS SHOW DEVICES FOR INTENT ONLY.
5. REFERENCE FIRE ALARM SYSTEM NOTES, ON THIS SHEET.

FIRE ALARM RISER DIAGRAM CODED NOTES: (#)

1. EXISTING A 20A, 120V CIRCUIT FROM LANDLORD 120V BRANCH PANEL.
2. MAIN FIRE ALARM PANEL LOCATED WITHIN LANDLORD ELECTRICAL ROOM.
3. TEMPORARY FIRE ALARM DEVICES SHOWN ON PLANS WITHIN EACH FUTURE TENANT SPACE TO BE TIED INTO THE MAIN FIRE ALARM SYSTEM FOR TEMPORARY PURPOSES. FINAL FIRE ALARM EQUIPMENT/PANELS, INITIATING DEVICES, NOTIFICATION DEVICES, AND OTHER AUXILIARY DEVICES SHALL BE FURNISHED, INSTALLED AND WIRED BY FUTURE TENANT WITHIN THEIR RESPECTIVE TENANT SPACE. QUANTITIES AND LOCATIONS AS REQUIRED BY CODE. FIRE ALARM SYSTEM DESIGN OF EACH TENANT SPACE TO BE PROVIDED UNDER EACH RESPECTIVE TENANTS' FIT-OUT DRAWING PACKAGE.
4. TO LANDLORD COMMON AREA AND BACK OF HOUSE INITIATING DEVICES, NOTIFICATION DEVICES, AND OTHER AUXILIARY DEVICES.
5. EXISTING DIGITAL COMMUNICATOR WITHIN THE MAIN FIRE ALARM PANEL TIED INTO THE LANDLORD TELEPHONE SERVICE.
6. EXISTING FLOW AND TAMPER SWITCH LOCATIONS AND QUANTITIES TO BE VERIFIED IN FIELD. COMBINE EXISTING TENANT SPACE B-1 AND TENANT SPACE B-2 FIRE ALARM SYSTEMS INTO ONE FLOW AND TAMPERED TENANT SPACE B FIRE ALARM SYSTEM.

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JEFFERY D. MITERKO, NJ Professional Engineer, NO. GE 49035, 24GA28154800

ELECTRICAL LEGENDS, SCHEDULES, & DETAILS

1838.C E-002

PANELBOARD DESIGNATION A

277/480 VOLTS 3 PH. 4 WIRE SOLID NEUTRAL MOUNTING: FLUSH -
600 AMPERE BUS 600 AMPERE MAIN M.C.B. SURFACE X
SPECIAL REQUIREMENTS

CKT NO.	KVA	DESCRIPTION	BKR	A	B	C	BKR	DESCRIPTION	KVA	CKT No.
1	8.3	RTU-1	40	16.6			40	RTU-2	8.3	2
3	8.3				16.6				8.3	4
5	8.3					16.6			8.3	6
7	8.3	RTU-3	40	16.6			40	RTU-4	8.3	8
9	8.3				16.6				8.3	10
11	8.3					16.6			8.3	12
13	8.3	RTU-5	40	16.6			40	RTU-6	8.3	14
15	8.3				16.6				8.3	16
17	8.3					16.6			8.3	18
19	6.1	RTU-7	25	6.1				SPARE	-	20
21	6.1				6.1			SPARE	-	22
23	6.1					6.1		SPARE	-	24
25	-	SPARE		-				SPARE	-	26
27	-	SPARE			-			SPARE	-	28
29	-	SPARE				-		SPARE	-	30
31	-	SPARE		-				SPARE	-	32
33	-	SPARE			-			SPARE	-	34
35	-	SPARE				-		SPARE	-	36
37	-	SPARE		1.3			125	T-B	1.3	38
39	-	SPARE			1.6				1.6	40
41	-	SPARE				-			-	42
		KVA SUB TOTALS		57.2	57.5	55.9				

TOTAL CONNECTED LOAD 170.6 KVA

PANELBOARD DESIGNATION B

120/208 VOLTS 3 PH. 4 WIRE SOLID NEUTRAL MOUNTING: FLUSH -
250 AMPERE BUS 250 AMPERE MAIN M.C.B. SURFACE X
SPECIAL REQUIREMENTS

CKT NO.	KVA	DESCRIPTION	A	B	C	DESCRIPTION	KVA	CKT No.
1	0.1	LTG - VESTIBULE/EMERG.	1.3			REC - HVAC	1.2	2
3	0.9	REC - HVAC		1.6		LTG - FACADE/CANOPY	0.7	4
5	-	SPARE			-	SPARE	-	6
7	-	SPARE	-			SPARE	-	8
9	-	SPARE		-		SPARE	-	10
11	-	SPARE			-	SPARE	-	12
13	-	SPARE	-			SPARE	-	14
15	-	SPARE		-		SPARE	-	16
17	-	SPARE			-	SPARE	-	18
19	-	SPARE	-			SPARE	-	20
21	-	SPARE		-		SPARE	-	22
23	-	SPARE			-	SPARE	-	24
25	-	SPARE	-			SPARE	-	26
27	-	SPARE		-		SPARE	-	28
29	-	SPARE			-	SPARE	-	30
31	-	SPARE	-			SPARE	-	32
33	-	SPARE		-		SPARE	-	34
35	-	SPARE			-	SPARE	-	36
37	-	SPARE	-			SPARE	-	38
39	-	SPARE		-		SPARE	-	40
41	-	SPARE			-	SPARE	-	42
		KVA SUB TOTALS	1.3	1.6	-			

TOTAL CONNECTED LOAD 2.9 KVA

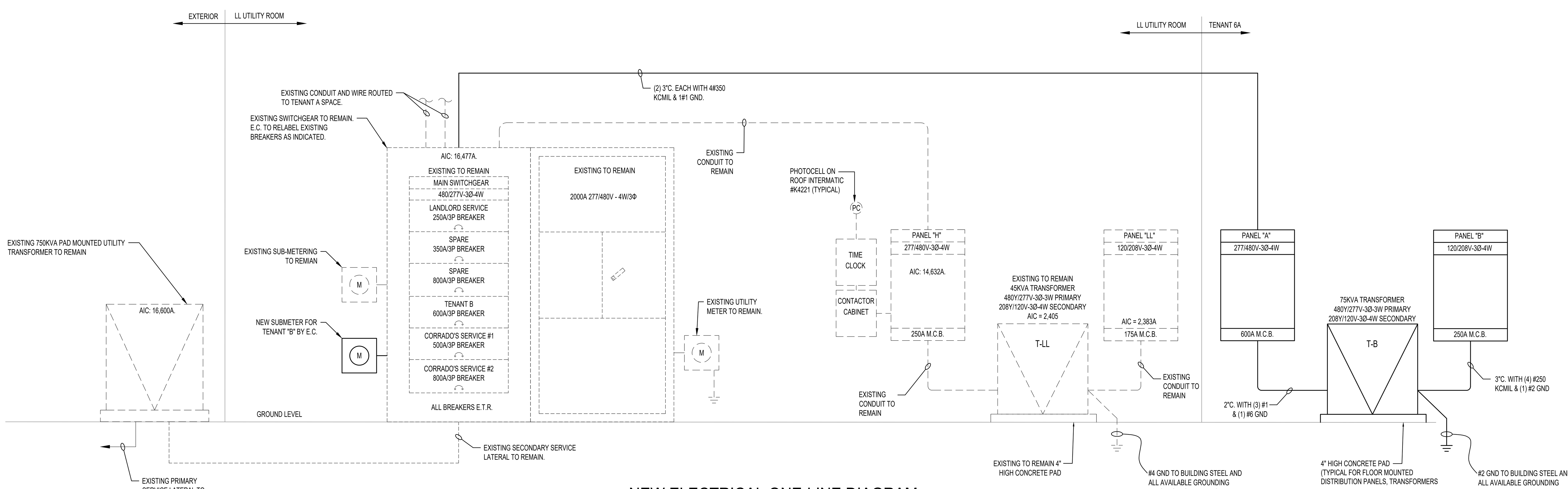
ONE-LINE DIAGRAM NOTES

1. THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL POWER COMPANY REQUIREMENTS PRIOR TO BIDDING & INCLUDE THE COST OF ALL ASSOCIATED LABOR, MATERIALS, & CHARGES IN HIS BID.
2. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE AVAILABLE FAULT CURRENT WITH THE UTILITY COMPANY PRIOR TO BIDDING AND PROVIDE EQUIPMENT RATED ACCORDINGLY. SUBMIT FAULT CURRENT CALCULATIONS WITH SHOP DRAWING SUBMITTAL.
3. ALL BUSSING SHALL BE COPPER.
4. PROVIDE FULL LENGTH VERTICAL BUSSING IN ALL SWITCHBOARDS, DISTRIBUTION PANELS, & PANELBOARDS.
5. PROVIDE FULL SIZE HORIZONTAL BUSSING IN ALL SWITCHBOARDS.
6. ALL CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE.
7. ALL WALL-MOUNTED EQUIPMENT SHALL BE MOUNTED ON 3/4" FIRE RATED BACKBOARD.
8. ALL FLOOR-MOUNTED EQUIPMENT SHALL BE MOUNTED ON 4" HIGH CONCRETE HOUSEKEEPING PAD.
9. PROVIDE NAMEPLATES PER NAMEPLATE DETAIL.
10. COORDINATE SPACE WITH ALL OTHER TRADES TO MAINTAIN ALL CODE-REQUIRED CLEARANCES.
11. REFER TO ELECTRICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
12. THE ELECTRICAL CONTRACTOR SHALL PROVIDE FINAL SETTINGS REQUIRED FOR ALL ADJUSTABLE/ELECTRONIC TYPE CIRCUIT BREAKERS WITH LONGTIME, SHORT TIME, GF, INSTANTANEOUS, ETC. THE ELECTRICAL CONTRACTOR SHALL PROVIDE FINAL COORDINATION STUDY.
13. THE ELECTRICAL CONTRACTOR SHALL COMPLY WITH NEC ARTICLE 110.16 FOR LABELING OF PANELS FOR ARC FLASH HAZARD WARNING AS WELL AS FOLLOWING REQUIRED SAFETY PRECAUTIONS WHEN SERVICING OR MAINTAINING ELECTRICAL EQUIPMENT.
14. HVAC CIRCUIT BREAKERS TO BE "HACR" TYPE WHERE REQUIRED BY EQUIPMENT NAMEPLATE PER N.E.C
15. ELECTRICAL CONTRACTOR SHALL BALANCE PANELS AND ELECTRICAL EQUIPMENT TO ±10% BETWEEN PHASES: A/B, B/C, A/C REGARDLESS OF CIRCUITING INDICATED.
16. PROPER CLEARANCE MUST BE MAINTAINED ABOUT ELECTRICAL EQUIPMENT PER N.E.C.. FIELD VERIFY EXACT MOUNTING SPACE AVAILABLE IN ELECTRICAL ROOM / AREA PRIOR TO INSTALLATION OF ELECTRICAL EQUIPMENT.
17. ELECTRICAL CONTRACTOR SHALL MAKE FINAL ELECTRICAL CONNECTIONS FOR A COMPLETE ELECTRICAL DISTRIBUTION SYSTEM.
18. EXTERIOR MOUNTED ELECTRICAL EQUIPMENT SHALL BE NEMA 3R RATED AND BE FURNISHED WITH HEATERS, THERMOSTAT AND DISCONNECTING MEANS INTEGRAL TO EQUIPMENT.
19. DRY TYPE TRANSFORMERS SHALL BE GROUNDED TO THE BUILDING GROUNDING ELECTRODE SYSTEM PER NEC.
20. GROUNDING ELECTRODE SYSTEM CONDUCTORS SHALL BE COPPER.
21. CONDUCTORS SHALL BE COPPER, UNLESS NOTED OTHERWISE.
22. FEEDER ROUTING IS DIAGRAMMATIC ONLY. ACTUAL ROUTING OF FEEDERS (OVERHEAD OR UNDERGROUND) IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

ELECTRICAL LOAD SUMMARY (TENANT B)

LOAD DESCRIPTION	CONNECTED LOAD (KVA)	COMPUTED DEMAND LOAD (KVA)	
GENERAL LIGHTING:	0.8	GREATER OF CONTINUOUS LOAD x 1.25 OR 3W/SF =	1.0
HVAC (INCLUDING ALL MOTORS):	168.9	CONTINUOUS LOAD (INCLUDING 125% OF LARGEST MOTOR):	175.2
RECEPTACLES:	0.9	NONCONTINOUS LOAD: 1st 10KW @100% + REMAINING @50% =	0.9
TOTAL CONNECTED LOAD:	170.6	TOTAL DEMAND LOAD:	177.1

COMPUTED SERVICE DEMAND LOAD OF 177.1 KVA @277/480V-3Ø-4W = 213.0 AMPS



NEW ELECTRICAL ONE-LINE DIAGRAM

N.T.S. 277/480V-3Ø-4W

- - - INDICATES EXISTING EQUIPMENT/CONDUIT/WIRE, UNLESS NOTED OTHERWISE

——— INDICATES EQUIPMENT/CONDUIT/WIRE INSTALLED UNDER THIS CONTRACT

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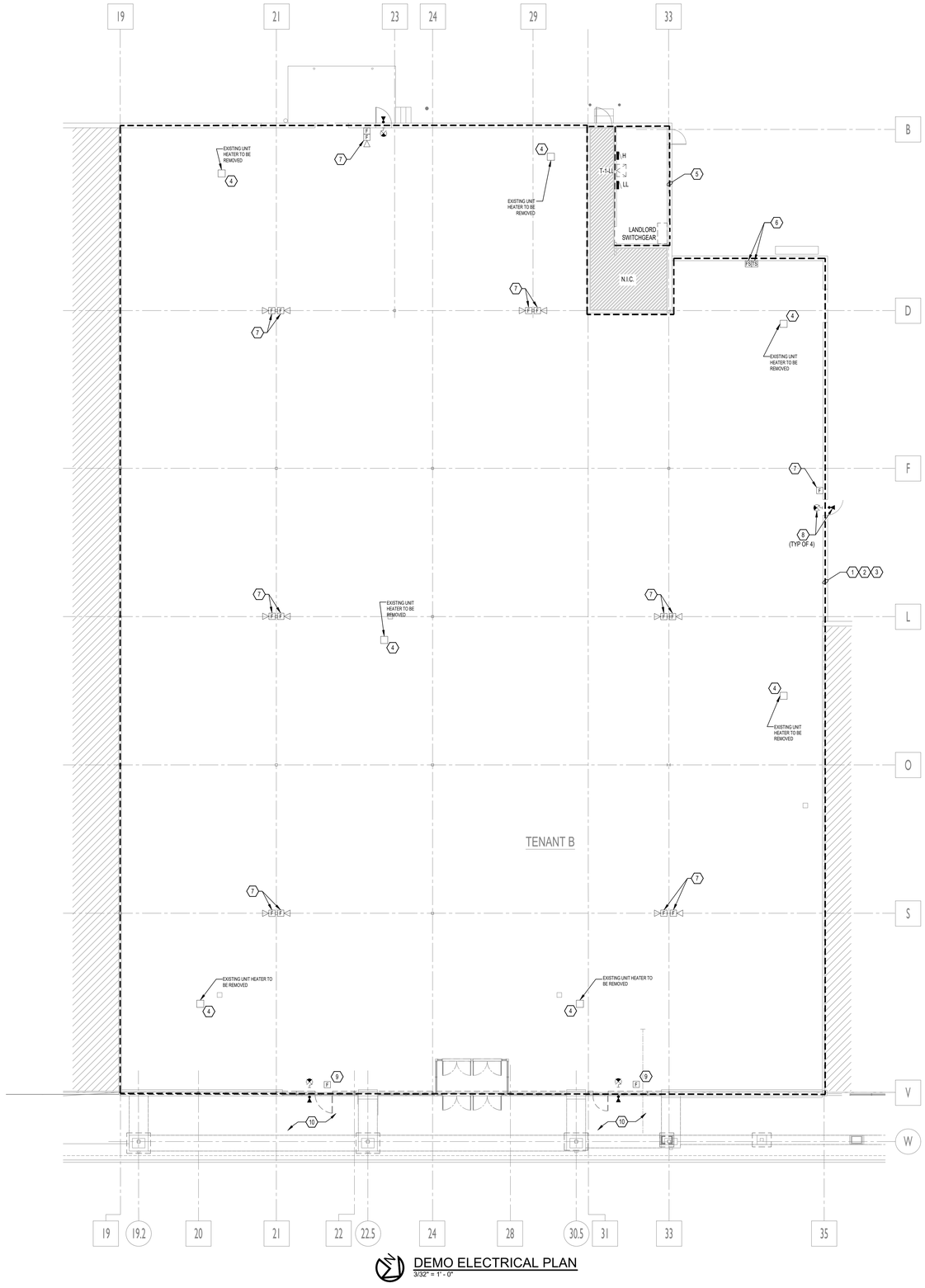
ONE-LINE DIAGRAM & PANEL SCHEDULE

1838.C E-003



DEMO ELECTRICAL PLAN
3/32" = 1' - 0"

GENERAL NOTES:

1. REFER TO ARCHITECTURAL, MECHANICAL, AND PLUMBING DRAWINGS FOR ADDITIONAL DEMO WORK.
2. E.C. SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY LIGHTING AND POWER FOR USE DURING DEMOLITION AND NEW SHELL WORK CONSTRUCTION. E.C. TO DETERMINE EXACT SCOPE PRIOR TO FINALIZING BID.
3. E.C. TO REMOVE ALL EXISTING CONDUIT, WIRE, ETC. THAT IS NOT TO REMAIN. NO ABANDONED CIRCUIT, WIRE, DEVICES, ETC. IS PERMITTED TO REMAIN WITHIN THE SPACE. NO ABANDONED MATERIAL IS PERMITTED TO REMAIN ABOVE ANY CEILING OR WITHIN WALLS. E.C. TO FIELD DETERMINE SCOPE PRIOR TO BID.
4. EXACT CONDUIT ROUTING, AND CIRCUITING IS UNKNOWN. E.C. TO FIELD DETERMINE SCOPE PRIOR TO BID.
5. E.C. TO FIELD DETERMINE EXACT SCOPE AND VERIFY ANY ADDITIONAL PANELS, EQUIPMENT, DEVICES, ETC. ARE INCLUDED IN THEIR SCOPE UNLESS OTHERWISE NOTED PRIOR TO BID.
6. THE E.C. SHALL VISIT THE SITE AND VERIFY ANY EXISTING CONDITIONS AND NOTIFY THE EOR OF ANY DISCREPANCIES OR CONCERNS FOR EQUIPMENT THAT IS REQUIRED TO REMAIN.
7. REFERENCE EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR MORE INFORMATION ON SHEET E-003.
8. EXISTING FIRE ALARM DEVICES WITH BE EXISTING TO REMAIN U.N.O.

CODED NOTES: (#)

1. E.C. SHALL COMPLETELY DEMO AND REMOVE ALL TELEPHONE, FIRE ALARM, LOW VOLTAGE, ELECTRICAL WIRING, CONDUIT, DEVICES, ETC. ON ANY EXISTING WALLS BACK TO SOURCE U.N.O. E.C. TO FIELD VERIFY PRIOR TO BID.
2. E.C. SHALL COMPLETELY DEMO AND REMOVE ALL TELEPHONE, FIRE ALARM, LOW VOLTAGE, ELECTRICAL WIRING, CONDUIT, DEVICES, ETC. IN THE FLOOR BACK TO SOURCE U.N.O. E.C. SHALL PATCH FLOOR AS REQUIRED. E.C. TO FIELD VERIFY PRIOR TO BID.
3. E.C. SHALL COMPLETELY DEMO AND REMOVE ALL TELEPHONE, FIRE ALARM, LOW VOLTAGE, ELECTRICAL WIRING, CONDUIT, DEVICES, LIGHTING, ETC. WITHIN THE EXISTING CEILINGS BACK TO SOURCE U.N.O. E.C. TO FIELD VERIFY SCOPE PRIOR TO BID.
4. E.C. SHALL COMPLETELY DEMO AND REMOVE ALL HVAC EQUIPMENT AND ASSOCIATED THROUGHOUT U.N.O. E.C. SHALL DEMO AND REMOVE ALL ASSOCIATED ELECTRICAL CONDUIT, WIRING, DISCONNECTS, FIRE ALARM, LOW VOLTAGE, CONTROLS, ETC. BACK TO SOURCE. E.C. SHALL FIELD VERIFY SCOPE PRIOR TO BID. REFERENCE MECHANICAL DEMOLITION PLANS FOR ADDITIONAL INFORMATION.
5. EXISTING ELECTRICAL EQUIPMENT IN LANDLORD UTILITY ROOM TO REMAIN.
6. EXISTING FLOW AND TAMPER SWITCH TO REMAIN. E.C. TO VERIFY EXACT LOCATION AND QUANTITIES AS EXISTING LOCATION IS UNKNOWN. REFERENCE GENERAL TENANT FIRE ALARM RISER DIAGRAM FOR MORE INFORMATION.
7. EXISTING TO REMAIN FIRE ALARM DEVICES.
8. EXISTING TO BE REMOVE EMERGENCY EGRESS LIGHTING AND EXIT SIGN.
9. EXISTING TO BE REMOVED FIRE ALARM DEVICES.
10. E.C. TO REMOVE EXISTING FACADE AND CANOPY LIGHTING.

DEMOLITION NOTES

1. IN EVERY INSTANCE OF DEMOLITION AND/OR REMODELING, THE ELECTRICAL CONTRACTOR SHALL FIGURE A COMPLETE JOB AS NONE OTHER SHALL BE ACCEPTED.
2. THE DRAWINGS ARE TO BE USED ONLY AS A GUIDELINE FOR DEMOLITION. THE ELECTRICAL CONTRACTOR MUST VISIT THE SITE PRIOR TO BIDDING TO VERIFY ALL WORK REQUIRED FOR A COMPLETE JOB & INCLUDE THE COST OF SUCH WORK IN HIS BID.
3. THE ELECTRICAL CONTRACTOR SHALL MAINTAIN EXISTING SERVICES TO & IN THE EXISTING AREA AS REQUIRED.
4. IF NECESSARY, THE ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY SERVICES IN THE EXISTING AREAS.
5. THE ELECTRICAL CONTRACTOR SHALL DISCONNECT & REMOVE ELECTRIC SERVICE TO ALL MECHANICAL EQUIPMENT BEING REMOVED AS A RESULT OF THE REMODELING.
6. ELECTRICAL EQUIPMENT & DEVICES SHALL BE REMOVED COMPLETE INCLUDING CONDUIT & WIRE.
7. FLUSH MOUNTED WALL OUTLETS SHALL BE BLANKED-OFF WITH A COVERPLATE. COVERPLATE COLOR SHALL BE SELECTED BY ARCHITECT.
8. ANY EXISTING CONDUIT, WIRING AND/OR ELECTRICAL & MECHANICAL DEVICES BEING DISTURBED BY THE WORK SHALL BE REWORKED BY THIS CONTRACTOR AS REQUIRED TO RETURN TO ITS FORMER EXISTING OPERATING CONDITION.
9. ANY CIRCUITS FEEDING THROUGH DEVICES OR EQUIPMENT BEING RELOCATED, REWORKED, OR ABANDONED & SERVING OTHER ELECTRICAL DEVICES, AND/OR EQUIPMENT SHALL BE MAINTAINED BY PROVIDING J-BOXES OR OTHER ACCEPTABLE METHOD AS REQUIRED.
10. ALL WALLS, CEILINGS, FLOORS, ETC., BEING DISTURBED BY THE WORK SHALL BE RETURNED TO FINISHED CONDITIONS TO MATCH EXISTING BY THE ELECTRICAL CONTRACTOR & HE SHALL DO HIS OWN CUTTING & PATCHING AS NECESSARY UNDER HIS CONTRACT.
11. EXISTING MATERIALS SHALL BE TURNED OVER TO THE OWNER. IF NOT REQUIRED BY OWNER, THE ELECTRICAL CONTRACTOR SHALL REMOVE THESE MATERIALS FROM THE PREMISES.
12. NO CONDUIT, BOXES, WIRING, OR CABLES SHALL BE INSTALLED WITHIN 1 1/2" OF THE LOWEST POINT OF THE UNDERSIDE OF THE ROOF DECKING, NOR SHALL THEY BE INSTALLED CONCEALED WITHIN METAL-CORRUGATED ROOF DECKING. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE AND/OR REWORK EXISTING CONDUIT, BOXES, WIRING, AND CABLING THAT IS NOT IN COMPLIANCE WITH THIS REQUIREMENT.
13. ALL CONDUIT AND CABLING SHALL BE PROPERLY SUPPORTED AS REQUIRED BY THE NATIONAL ELECTRICAL CODE. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE AND/OR REWORK EXISTING CONDUIT AND/OR CABLING THAT IS NOT IN COMPLIANCE WITH THIS REQUIREMENT.
14. CONTRACTOR SHALL FIELD VERIFY SLAB ON GRADE FLOOR CONSTRUCTION TYPE PRIOR TO CUTTING. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR CUT A STRUCTURAL FLOOR SLAB THICKER THAN FOUR (4") INCHES WITHOUT PRIOR WRITTEN APPROVAL FROM ENGINEER OF RECORD. NOTIFY ENGINEER OF RECORD OF ANY SLAB THICKNESS GREATER THAN FOUR (4") INCHES PRIOR TO PROCEEDING WITH ANY SAW CUTTING.

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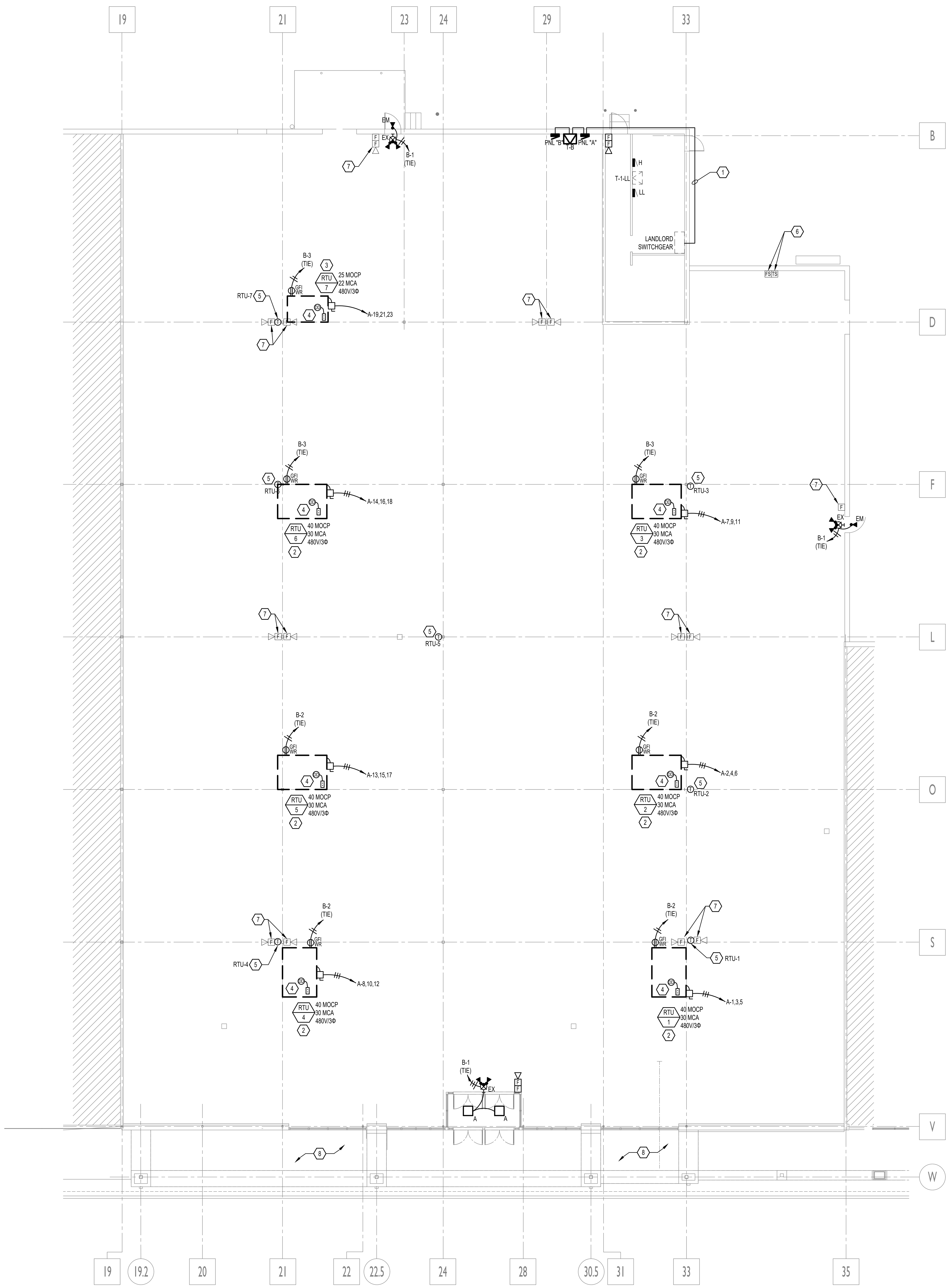
DEMO ELECTRICAL PLAN

1838.C E-100



ELECTRICAL PLAN

3/32" = 1' - 0"

GENERAL NOTES:

1. ALL EMERGENCY LIGHTING MUST BE WIRED AHEAD OF LOCAL SWITCHING.
2. ELECTRICAL CONTRACTOR SHALL VISIT SITE PRIOR TO BIDDING PROCESS AND FIELD VERIFY EXISTING CONDITIONS. CONTRACTOR SHALL TAKE ALL INTERFERENCES INTO CONSIDERATION.
3. CONTRACTOR SHALL BE FAMILIAR WITH OWNER'S STANDARDS, RULES AND REGULATIONS. ALL OWNER'S CRITERIA SHALL BE COMPLIED WITH AND INCLUDED IN THIS BID.
4. MAINTAIN ALL CODE AND MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES FOR ALL EQUIPMENT.
5. ALL OVERHEAD WIRING MUST BE IN CONDUIT AND SHALL BE INSTALLED TIGHT TO STRUCTURE.
6. FINAL LOCATION OF ELECTRICAL STUB IN LOCATIONS ALONG WITH ANY LANDLORD PROVIDED ELECTRICAL PANELS ARE TO BE COORDINATED WITH TENANT FIT OUT PLANS PRIOR TO ROUGH IN.
7. E.C. SHALL BE RESPONSIBLE FOR PROVISIONS OF TEMPORARY LIGHTING AND POWER DURING CONSTRUCTION. E.C. SHALL REMOVE ALL TEMPORARY LIGHTING, WIRING, CONDUIT, DEVICES, ETC. UTILIZED DURING CONSTRUCTION ONCE PERMANENT POWER HAS BEEN ESTABLISHED.
8. SEE ARCHITECTURAL SHEETS FOR EXACT MOUNTING HEIGHTS OF ALL LIGHT FIXTURES.
9. E.C. TO WIRE ALL FIRE ALARM DEVICES TO EXISTING LANDLORD FIRE ALARM PANEL.

CODED NOTES: ⟨#⟩

1. ROUTE NEW 2-1/2" CONDUIT WITH (4) #300 KCMIL AND (1) #1 GND HIGH AS POSSIBLE TIGHT TO STRUCTURE FROM LANDLORD ROOM TO NEW PANEL "A". E.C. TO CONCEAL STUB UP IN WALL ABOVE PANEL WHEN ROUTING CONDUIT.
2. E.C. TO ROUTE 3#8 & 1#10(G) -3/4"C. FROM THE INTEGRAL DISCONNECT AT THE UNIT TO A NEW 40A/3P BREAKER AT THE PANEL INDICATED FOR RTU-1,2,3,4,5,6.
3. E.C. TO ROUTE 3#10 & 1#10(G) -3/4"C. FROM THE INTEGRAL DISCONNECT AT THE UNIT TO A NEW 25A/3P BREAKER AT THE PANEL INDICATED FOR RTU-7.
4. RETURN AIR MOUNTED DUCT SMOKE DETECTOR PROVIDED AND INSTALLED BY M.C. WIRED BY E.C. REFERENCE EXISTING TYPICAL FIRE ALARM DEVICE WIRING DIAGRAM DETAIL ON E-002 SHEET.
5. E.C. TO INSTALL ROOF-TOP UNIT THERMOSTAT AND PROVIDE BACK-BOXES WITH CONDUIT AND PULL STRINGS AS REQUIRED. VERIFY FINAL REQUIREMENTS WITH MECHANICAL CONTRACTOR.
6. EXISTING FLOW AND TAMPER SWITCH TO REMAIN. E.C. TO VERIFY EXACT LOCATION AND QUANTITIES AS EXISTING LOCATION IS UNKNOWN. REFERENCE GENERAL TENANT FIRE ALARM RISER DIAGRAM ON SHEET E002 FOR MORE INFORMATION.
7. EXISTING TO REMAIN FIRE ALARM DEVICES.
8. REFERENCE SHEET E-200 FOR EMERGENCY EGRESS LIGHTING.

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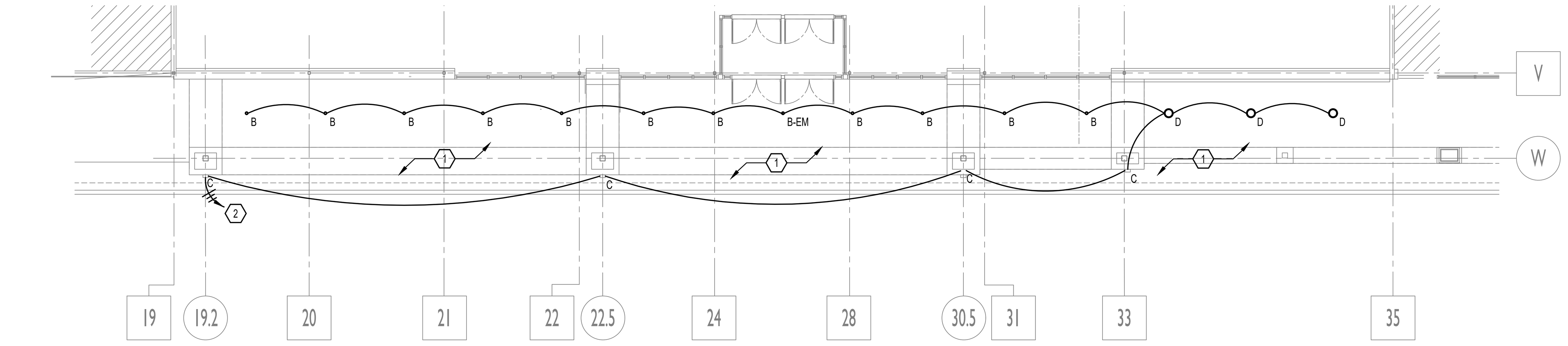
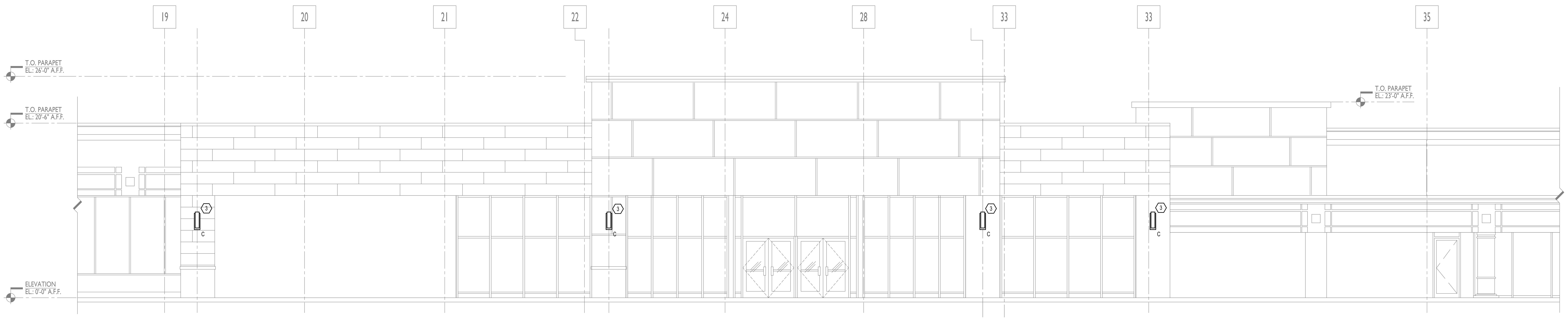
NOT FOR
CONSTRUCTION
3/31/2022

ELECTRICAL PLAN

1838.C E-101



ELECTRICAL PLAN
3/32" = 1' - 0"



ELECTRICAL ELEVATION
3/16" = 1' - 0"

GENERAL NOTES:

1. E.C. SHALL SURVEY AND DOCUMENT EXISTING CANOPY LIGHTING CIRCUITS (INCLUDING BUT NOT LIMITED TO: NUMBER OF CONDUCTORS, CONDUCTOR INSULATION, CONDUCTOR LENGTH, VOLTAGE AND ROUTING OF HOMERUNS, AND CONDUCTOR SIZES), THE PANELS THAT SERVE THESE LIGHTS, PANEL LOCATIONS, AS WELL AS ANY LIGHTING CONTROLS BEING USED FOR THESE LIGHTS AND SEND A REPORT WITH DETAILED PICTURES TO E.O.R. IF ANY DISCREPANCIES ARE FOUND ON SITE OR IF EMERGENCY LIGHTING CIRCUITS ARE NOT FED AHEAD OF ALL LOCAL CONTROLS PRIOR TO START OF CONSTRUCTION. E.C. TO NOTIFY E.O.R. OF ANY EXISTING EMERGENCY LIGHTING ALONG STOREFRONT.

2. E.C. IS RESPONSIBLE FOR THE RELOCATION OF ALL STOREFRONT SIGNAGE TO NEW FACADE. E.C. SHALL REUSE EXISTING JUNCTION BOXES AND EXTEND EXISTING CIRCUITS AS REQUIRED. VERIFY EXACT SCOPE IN FIELD PRIOR TO BID.

CODED NOTES: #

1. E.C. TO REMOVE EXISTING EXTERIOR LIGHTS AND REPLACE WITH NEW FIXTURES.

2. E.C. TO POWER CANOPY/FACADE LIGHTING AT 120V FROM CIRCUIT B-4 IN TENANT PANEL "B".

3. E.C. TO VERIFY FACADE LIGHTING MOUNTING AND HEIGHT BEFORE ROUGH-IN.

Tenant 6A LL Work at Laurel Square

Laurel Square Shopping Center
Brick Township, NJ

CREATE
ARCHITECTURE PLANNING & DESIGN PLLC
45 West 34th Street
Penthouse
New York, NY 10001
Phone: (212) 297-0880
createworldwide.com

Owner / Developer:
BRIXMOR Property Group
One Fayette Street, Suite 150
Conshohocken, PA 19428

Structural & M/E/P Engineers:
Thorson Baker + Associates, Inc.
3030 West Streetsboro Rd
Richfield, OH 44286

Rev:	Date:	Description:
	04/01/2022	ISSUED FOR BID AND PERMIT

PROGRESS
NOT FOR
CONSTRUCTION
3/31/2022

JEFFERY D. MITERKO, NJ Professional Engineer, NO: GE 40635, 24GA28104800

ELECTRICAL FACADE PLAN & ELEVATION

1838.C E-200

ELECTRICAL SPECIFICATIONS

Section 260010 - General Provisions

A. General
1. Requirements specified in Division 1, instructions to bidders, supplemental general conditions, special conditions, addenda, alternates, contract and proposal, along with Division 26, 27, 28 and all its sections, comprise the contract documents for the electrical contract, along with these specifications as though they were one, and anything implied by the specifications shall be interpreted as also implied by the drawings and vice versa. Provide necessary items for a complete installation of all electrically operated equipment listed in the specifications or shown on the contract drawings.
2. The architectural, structural, mechanical, plumbing and equipment drawings and specifications are incorporated into, and become a part of this division. This contractor shall examine all such drawings and specifications and become thoroughly familiar with the provisions contained therein. The submission of his bid shall indicate such knowledge.
3. Electrical drawings are diagrammatic. They are intended to show the approximate locations of equipment and conduit. Dimensions given on the plans, in figures, shall take precedence over scaled dimensions and shall be verified in the field. The electrical contractor shall layout all equipment rooms to make sure the equipment, as purchased, fits in the room or space shown. Exact location of all equipment shall be verified in the field and routing of conduits shall suit field conditions.
4. Until the time of installation, the architect reserves the right to make minor changes in the location of conduit and equipment without additional cost to the contract.
5. The electrical drawings and specifications are intended to supplement each other. Material and labor necessary to the project shall be furnished and installed even though not specifically mentioned in both. Labor and/or materials neither shown nor specified, but obviously necessary for the completion and proper functioning of the system, shall be furnished and installed by the electrical contractor.
6. Arrange all equipment substantially as shown on the drawings. Make deviations only where necessary to avoid interference. Check all equipment sizes against available space prior to shipment to avoid interference.
7. Examine the work of other trades insofar as their work comes in contact with or is covered by this work in no case attach to, or finish against any defective work or install work in a manner which will prevent proper installation of the work of other trades.
8. Electrical contractor shall verify with other trades all electrical characteristics of equipment requiring electrical connections, contractor shall verify voltage, phase and horsepower and shall notify engineer of any discrepancies prior to start of work. Electrical contractor shall provide disconnecting means and overload protection for all equipment, unless furnished integral with equipment package.
9. It is the intent of these drawings that this be a complete electrical job, any errors or omissions shall be brought to the attention of the engineer prior to bidding the job.
10. Should any of the general notes, specifications, details or instructions on plans conflict, the strictest provision shall govern.
11. The existing conditions of these documents are based upon existing drawings prepared by THORSON BAKER & ASSOCIATES dated 10/20/2020 and may not reflect current installations or as-bu conditions. Prior to initiating material procurement and construction, it is the contractor's responsibility to verify existing conditions are consistent with the contract documents. This may require removal of existing finishes and possible selective demolition to verify as-built conditions.
12. Do NOT scale drawings.
13. The contractor shall make provisions for the delivery and safe storage of his/her materials and equipment in coordination with the work of other trades. Materials and equipment shall be delivered at such stages of the work as will expedite the work as a whole and shall be marked and stored in such a way as to be easily checked and inspected. The arrival and placing of large equipment items shall be scheduled early enough to permit entry and setting when there is no restriction or problem due to size and weight. Protection of all finishes during delivery is the responsibility of the contractor.

B. Visit to the Site
1. This contractor shall visit the site of the work and familiarize himself with all conditions affecting his work. The submission of his proposal shall indicate such knowledge. No additional payment shall be made on claims that arise from a lack of knowledge of the existing conditions

C. Code and Permits
1. Installation shall be in full accordance with all codes, rules and regulations of municipal, city, county, state and public utilities and all other authorities having jurisdiction over the premises.
2. Comply with any specification requirements that are in excess but not in conflict with code requirements.
3. The contractor shall secure and pay for all permits, plan reviews and certificates of inspection in connection with his work, required by the foregoing authorities. Before final payment of the contract is allowed, all certificates shall be delivered to the architect in duplicate.
4. Electrical material and equipment shall bear the UL label except where UL does not label such types of material and equipment.

D. Shop Drawings Submittals
1. The electrical contractor shall submit product data and shop drawings. Each submittal shall be identified using the respective specification numbering system and titles. Each submittal shall clearly identify which products and options are applicable. The submittals shall be submitted through the architect to the engineer and then, if necessary, resubmitted for final approval. Submittals shall be submitted for the following items:
   - D.a. Wiring devices
   - D.b. Switchboards, Panelboards, transformers and safety switches including fault current study based on equipment being supplied.
   - D.c. Lighting control system and devices
   - D.d. Lighting fixtures
   - D.e. Fire / Supervisory alarm system
2. Electronic Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.
3. Each submittal shall be provided with a cover identifying the following:
   - D.a. Name of the job
   - D.b. Location of the job, address, city and state.
   - D.c. Name and address of the company issuing the submittal.
   - D.d. Date of the submittal
4. All submitted product data and shop drawings (manufacturers' equipment descriptive sheets or vendors' prepared drawings) shall have the general contractor's or subcontractor's "stamp of approval" indicating that the item submitted is as called for on the plans and specifications, is approved by the general contractor or subcontractor, the date of approval and initialed by the person approving the submittal and the name of the company submitting said equipment for approval.
5. Any submittal not as specified shall be returned without review for corrections and re-submittal.
6. Every effort shall be made, in checking the shop drawings, to detect and correct all errors, omissions and inaccuracies. Failure to do this will not relieve the electrical contractor of the responsibility for the proper and complete installation in accordance with the contract documents.

E. As-built Drawings
1. Submit three paper-copy set(s) of marked-up record prints to the architect. Contractor shall use red ink for all contractor mark-ups on record prints.
2. Submit PDF electronic files of scanned record prints. Scanned record prints shall be in color.
3. Print and scan each drawing, whether or not changes and additional information were recorded.

F. Standards and Substitutions
1. Wherever the words "approved by", "approved equal", "as directed" or similar phrases are used in the following specifications, they shall be understood to refer to the owner as the approving agency. The name or make of any equipment or materials named in this specifications (whether or not the words "or approved equal" are used) shall be known as the "standard".
2. These specifications establish quality standard of materials and equipment to be provided. Specific items are identified by manufacturer, trade name or catalog designation. This contractor shall submit his base bid price based upon standard specified equipment described herein and as detailed on drawings and associated contract documents. These specifications are not to be considered proprietary. The contractor may submit information on materials and manufacturers (other than those listed) for review by the architect and engineer no later than ten (10) days before bids are submitted. Manufacturers of products accepted by the architect and engineer will be listed in an addendum to the specifications as an acceptable substitution equipment accepted as detailed below and shall be shown as a separate add or deduct price to be factored into the base bid price by the architect and owner if accepted.
3. Should the contractor propose to furnish materials and equipment other than those specified or approved by addendum, submit a written request for substitutions to the architect at the bid opening. The request shall be an alternate to the original bid; be accompanied with complete descriptive (manufacturer, brand name, catalog number, etc.) and technical data for all items. Failure by this contractor to submit the requisite documentation detailed above shall be understood by the architect and engineer to indicate that substitute equipment will not be presented by the contractor for consideration. Such substitutions will not be considered after the bid opening date and delay of project will not be permitted for further inspection and evaluation after this date.
4. Where such substitutions alter the design or space requirements indicated on the drawings, include all items of cost for the revised design and construction including cost of all allied trades involved.
5. Acceptance or rejection of the proposed substitutions shall be subject to approval of the architect and engineer. If requested, the contractor shall submit (at his cost) inspection samples of both the specified and proposed substitute items.
6. In all cases where substitutions are permitted, the contractor shall bear any extra cost of evaluating the quality of the material and equipment to be provided.

G. Testing and Placing in Service
1. Any material or equipment failing a test shall be repaired or replaced at the contractor's expense.
2. Tests shall include the following:
   - G.a. Measure the load on each phase of the main service and each phase of every feeder under full load conditions.
   - G.b. Measure the no-load and full-load voltages (phase to phase, phase to neutral and phase to ground for each phase of each service, of each separately derived system, and at each panelboard or transformer).
   - G.c. Measure the ground resistance of the main service grounding electrode and the ground resistance of each separately derived system's grounding electrode.
   - G.d. Make insulation resistance tests on all dry type transformers and motors.
3. Provide performance testing as required per N.E.C. or local authority having jurisdiction.

H. Interferences
1. Before the installation of any item begins, the electrical contractor shall carefully ascertain that it does not interfere with clearances for the erection of finish beams, columns, pilasters, walls or other structural or architectural members as shown on the architectural drawings. If any work is installed and the architectural design cannot be followed, this contractor shall, at his own expense, make changes in his work as directed by the architect to permit the completion of the architectural work in accordance with drawings and specifications.
2. It shall be the duty of this contractor to report any interferences between his work and that of any of the other contractors as soon as they are discovered. The architect shall determine which equipment will be relocated, regardless of which was installed first. His decision will be final.

I. Quality Assurance
1. All products shall be new and of the type and quality specified. Where materials, equipment, apparatus or other products are specified by manufacturer, brand name, type of catalog number, such designation shall establish the standards of the desired quality and style. It is the intent of these specifications to establish a standard of quality of materials and equipment installed.

Section 260010 (cont.)

J. Special Inspections
1. Special Inspection (as applicable) is to be provided in addition to inspections conducted by the department of building safety and shall not be construed to relieve the owner or his/her authorized agent from requesting periodic and called inspections required by the building code. Special Inspection shall be paid by the owner.
2. Special Inspector shall meet the qualifications as stated in the applicable building code and shall perform the duties and responsibilities as outlined in the applicable building code.
3. The electrical contractor shall provide access to areas requiring testing or inspections, and provide requested documentation (if required by the Special Inspector).

Section 260050 - Basic Electrical Materials and Methods

A. Nameplates
1. General: furnish and mount on each panelboard, switchboard (including branch devices), large junction box, safety switch, starter, remote control, push button station, and all similar controls, a nameplate descriptive of the equipment or equipment controlled.
2. Provide black and white nameplates constructed from laminated phenolic with a white center core. Letters shall be engraved in the phenolic to form white letters 3/8" high. Fasten the nameplates with an adhesive type fastener.

B. Mounting Accessories
1. This contractor shall furnish and install all angle iron, channel iron, rods, supports, hangers, concrete or plywood required to install, mount and support any electrical equipment or device called for on the plans.
2. Supporting material shall be complete with hangers, connectors, bolts, clamps and necessary accessories to make a complete installation. Supporting material shall be galvanized, painted or otherwise suitably finished. Products by Binkley, Steel City, or Raco will be acceptable.
3. All surface-mounted equipment on block walls shall be mounted on 3/4" plywood backboard. All floor-mounted equipment shall be installed on a 4" high concrete housekeeping pad.

C. Execution
1. The electrical work for construction proposed shall conform to all federal (OSHA), state, all specific safety requirements and the requirements of the current edition of the NEC.
2. Review the HVAC and plumbing specifications for electrical requirements and include the same in the contract cost.
3. Equipment connections, starters, disconnect switches, control transformers and pushbutton stations for the equipment furnished by the owner or under a separate contract shall be installed and connected under this division, as indicated on the contract drawings.
4. All cutting, patching, excavating, backfilling and concrete work related to this contract will be the responsibility of the electrical contractor. This contractor shall assume the responsibility of providing the sleeves, chases and openings necessary for the electrical installation and for their repair in an acceptable manner, as determined by the architect. All holes shall be core-drilled. Provide fire stopping materials, UL Listed for application, in all openings created through fire-rated walls, floors or ceilings. Contractor shall field verify slab on grade floor construction type prior to cutting. Under no circumstances shall the contractor cut a structural floor slab thicker than four (4") inches without prior written approval from Engineer of Record. Notify Engineer of Record of any slab thickness greater than four (4") inches prior to proceeding with any saw cutting.
5. This contractor shall be responsible for providing all required access panels necessary for his work, coordinate with architect prior to installation.

D. Materials and Workmanship
1. All work shall be installed in a practical and workmanlike manner, by mechanics skilled in the several trades necessary.
2. All materials shall be new and free from defects and shall be the best of their several kinds unless specified or indicated on the drawings to the contrary.
3. During each phase and at the completion of the construction, this contractor shall remove all debris and excess materials caused by his work. He shall leave the area of operation broom clean.
4. All electrical equipment shall bear the underwriters laboratories label or ETL label.
5. This contractor shall guarantee his workmanship and material (lamps excepted) for a period of one year from the date of building opening and leave his work in perfect order at the completion. Should defects develop within the guarantee period, the contractor shall, upon notice of the same, remedy the defects and have all damages to other work or furnishings caused by the repairs corrected at his expense to the condition before such damage.

E. Scope of Work
1. The electrical contractor shall provide all labor, material, storage, unpacking and placement; to include but not be limited to, the following items:
   - E.a. Demolition
   - E.b. Emergency lighting and power.
   - E.c. Complete electrical distribution system including, but not limited to, switchboards, distribution and appliance panelboards, transformers, safety switches and feeders.
   - E.d. Complete branch circuit wiring system.
   - E.e. Complete power wiring for all air conditioning equipment, plumbing equipment, heating equipment, ventilating and exhaust equipment.
   - E.f. Complete lighting fixture installation, including all lamps.
   - E.g. Complete communications conduit system including but not limited to, back boxes, plates, j-hooks, cable trays, etc., as specified on the drawings and as required by the local service provider and/or owner.
   - E.h. Temporary electrical power and lighting, as required for construction.
   - E.i. Testing of all cables and circuit wiring after installation.
   - E.j. Exit light system.
   - E.k. Wiring devices, floor boxes, multi-outlet assemblies.
   - E.l. Lighting control system and devices
   - E.m. Grounding and Bonding of the electrical system.
   - E.n. Outdoor lighting and controls.
   - E.o. Fire / Supervisory alarm system.
   - E.p. Communication service
   - E.q. Electric service.

F. Temporary Service
1. The electrical contractor shall furnish, install and remove as required all temporary power and temporary lighting in all areas and individual rooms when needed by the individual trades in the performance of their work. This contractor shall provide a minimum of twenty (20) footcandles of illumination for temporary lighting. Any additional lighting required by individual trades shall be provided by the individual trades including power for the lighting. The electrical work for construction purposes shall conform to all federal (OSHA), state, specific safety requirements, as well as the requirements of the national electric code and national electrical safety code. The electrical contractor shall obtain and pay for all required applications, permits and inspections pertaining to this work. This cost shall be included in the contractor's price.
2. New light fixtures shall not be used for temporary lighting.

G. Electric Service
1. Provide trenching and backfill to the power company specifications.
2. Provide conduit for primary service where required by the power company.
3. Concrete encase conduits where required by the power company and where indicated on the plans.
4. Provide metering to power company specifications.
5. Make provisions for the pad-mount transformer as required by the power company including the transformer pad and grounding.
6. Pay the cost of all power company charges connected with permanent electric service to the building.
7. Coordinate all work with the power company and perform any work necessary to assure a complete, working installation. The entire service installation shall be in complete conformance with the power company's requirements.
8. Verify the exact routing of the primary and secondary services, and all service requirements, with the power company prior to bidding.

Section 260519 - Wiring and Cable

A. Color code conductors (except control and instrumentation conductors) as follows:

	208/120 System	480/277 System
Phase A	Black	Brown
Phase B	Red	Orange
Phase C	Blue	Yellow
Neutral	White	Grey
Ground	Green	Green

1. #12 and #10 conductors shall have continuous insulation color, as listed above.
2. Color code conductors larger than above, which do not have continuous insulation color by application of at least two laps of colored tape on each conductor at all points of access including junction boxes. Color tape shall be the equal of 3M products Scotch #35.
3. Conductors shall be soft annealed copper insulated for 600 volts unless specifically indicated otherwise. Aluminum conductors are not allowed on this project.

B. Insulation type shall be type THWN for wire sizes #8 AWG and larger and THHN or THWN for #10 AWG and smaller. THHN shall not be used in wet or damp locations.

C. Flexible cord shall be heavy duty type so with an equipment ground conductor in addition to the current carrying conductors.

D. Provide #12 conductors, unless otherwise indicated.
1. Control conductors shall be #14 minimum for NEC class I and #16 for NEC class II.

E. Conductors #8 AWG and larger shall be stranded.

F. Conductors #10 AWG and smaller shall be solid.

G. Install wiring in conduit.

H. Connect #10 and smaller wires with constant pressure expandable spring type connectors, "Scotchlok" by 3M or B-Cap by Buchanan.

I. Connect #8 and larger wires with compression connectors or splices as manufactured by Burndy or T&B.

J. Insulate splicing connectors to at least 200% of the wire insulation. Use pre-stretched tubing connector insulators, 3M PST for #2 and larger conductors.

K. Pull conductors using recognized methods and equipment leaving at least 6" wire at all junction boxes for connections.
1. Clean out each conduit system before pulling wire.

L. Form and tie all wiring in panelboards.

M. There shall be no wirenut joints or splices made inside switchboards/panelboards.

N. Branch circuit wire sizes (and conduits) shall be increased from those indicated on the plans to prevent excessive voltage drop. Branch circuits shall be installed with wires of sufficient size so that voltage drop between the panel and the loads does not exceed limit of 3%.

Section 260519 (cont.)

O. Regardless of the temperature rating of the conductor insulation, all conductor ampacity rating for this project shall be determined from the 75°C conductor temperature ratings indicated in the NEC tables. Where equipment or devices are provided with terminals/lugs rated for 60°C, the ampacity rating of the 75°C conductor shall be limited to its associated 60°C rating as indicated in the NEC tables. The electrical contractor shall be responsible to increase the conductors and conduit size as required.

P. Circuits may be multi-plexed in conduit provided wire is properly derated and conduit sized per code. Under no circumstances shall more than six (6) current carrying conductors be run in a single conduit.

Section 260526 - Grounding and Bonding

A. Ground all equipment per N.E.C.

B. Ground each outside lighting pole separately with one ground rod and a #6 ground wire.

C. Ground all dry type transformers as per drawings and NEC #450-10.

D. All conduits shall contain a code-sized ground wire size per N.E.C. in addition to the conductors shown on the plans. Where circuit conductors are increased in size for any reason (i.e. voltage drop, derating, etc.), the ground wire size shall be increased proportionately (according to circular mil area).

E. Where an isolated, insulated ground is required a separate isolated green ground shall be run from the panel isolated ground bus to the isolated ground connection of the device served. In no case shall the system ground (green wire and associated outlet boxes, conduit and building steel) be allowed to contact the isolate ground (green wire with white stripe).

Section 260533 - Raceways and Boxes

A. Raceways
1. All wire shall be run in accordance with code in corrosion resistant, rigid, threaded, metal conduit or electrical metallic tubing (E.M.T.) unless otherwise specifically stated herein.
   - A.a. Conduit in exterior walls, below floor slab, or underground shall be rigid, threaded, galvanized, heavy wall type.
   - A.b. Carlon PVC type 40 heavy wall conduit with ground wire may be used below floor slab or underground in lieu of rigid, threaded, galvanized conduit. PVC 40 conduit shall not be run in or above floor slab. PVC conduit shall terminate below floor slab with rigid, threaded metal conduit adapter. Conduit above slab shall be metal.
   - A.c. Conduit run exposed to the weather shall be heavy wall, metal threaded type.
2. Conduit size shall be 3/4" minimum.
3. Conduit shall be securely fastened in place.
4. All conduit shall be concealed in walls, floors and ceilings wherever possible. Exposed conduit in finished areas will not be permitted. Exposed conduit will be permitted in the unfinished areas with the specific approval of the architect.
5. Use flexible conduit for the connection to recessed or semi-recessed lighting fixtures (6' length maximum). Use liquid tight metal conduit for all connections to motors and other equipment subject to vibration and in areas subject to moisture.
6. Use watertight joints with buried and concrete encased conduit. All buried conduits outside of buildings shall have a minimum of 24" of cover. Metal conduits buried in earth shall be painted (two coats) with heavy asphaltum paint.
7. Support runs of conduit as detailed in the appropriate table of the national electrical code (NEC).
8. Installed exposed runs of conduit and conduit above lay-in ceilings parallel or perpendicular to the walls, structural members of intersections of vertical planes and ceilings. Provide right angle turns using fittings or symmetrical bends. Support conduits within 1" of all changes in direction.
9. If a conduit is suspended, it shall be supported on trapeze hangers which use "all-thread" rods from the structural steel. The use of ceiling support wire or similar material will not be accepted.
10. Install empty conduit for future use as indicated on the drawings. Conduit shall be complete with jetline or pull rope, junction/outlet boxes, tile rings and appropriate cover plates.
11. Provide pitch pockets where conduits penetrate the roof.
12. Thread lubrication/sealant is required on outdoor and underground threaded metal joints.
13. Install fire seal fittings where conduits penetrate concrete floor slabs or masonry walls required to be fire rated.
14. Horizontal portion of conduit exposed on the roof and feeding equipment shall not be more than 5'-0" unless the written approval from architect or engineer is obtained.

B. Pull and Junction Boxes
1. Install pull and junction boxes where shown on the drawings, and where required for changes in direction, at junction points, and to facilitate wire pulling. Furnish box sizes in accordance with NEC unless larger boxes are indicated.
2. Provide steel boxes and removable covers of code gauge, hot rolled sheet steel, hot dipped galvanized inside and outside, for above ground work. Furnish weatherproof boxes when installed above ground outside.
3. Provide cast iron boxes, hot dipped galvanized inside and outside where shown on the drawings. Furnish removable covers with gaskets and stainless steel, brass or bronze screws.
4. Provide concrete boxes for underground work unless otherwise indicated on the drawings. Furnish steel frames and covers with the cover attached to the frame with hexagon head, brass or bronze cap screws, 3/8" in diameter. Provide a rubber gasket for sealing between the cover and the frame. Paint the cover with two coats of heavy asphaltum.

C. Outlet Boxes
1. Use sheet steel boxes, zinc coated or cadmium plated, for concealed interior work.
2. Use cast boxes, zinc-cadmium finish malleable iron, for exposed interior work, and for exposed or concealed work in wet, damp or exterior locations. Cast boxes shall be series FD by Crouse Hinds or Appleton.
3. Wall box sizes (minimum) shall be 4" square X 2-1/2" deep where wall construction permits. Where wall construction dictates, the depth may be reduced to 2-1/8" or 1-1/2" under special conditions.
4. Fixture outlets in ceilings (minimum) shall be 4" octagonal X 1-1/2" deep (4-11/16" octagonal X 2-1/2" deep where required to accommodate larger conduit or larger number of wires).
5. Ganged boxes shall be one piece (minimum), 2-1/8" deep.
6. Provide cast iron, concrete-tite floor boxes with adjustable covers set flush and level with the finished floor, with outlets as indicated on the drawings. Provide Hubbell #B-2400, 4200, or 4300 series boxes with leveling screws. Flush type covers and openings to serve outlets used. Furnish flush caps for closing off box when not in use.
7. Flush mount boxes in all finished walls, install the plaster rings in drywalled plastered walls and raised covers as required in walls with other finishes so that the cover plates fit tightly against boxes or rings, 3/16" maximum gaps are allowed for noncombustible walls.
8. Adjust location of outlets in masonry or tile construction to occur in the nearest joint to the height specified. Heights shall meet A.D.A. requirements.
9. Support all boxes to maintain proper alignment and rigidity.
10. Clean boxes of all foreign matter prior to the installation or wiring of devices.
11. Mounting heights on the drawings are to the centerline of the box unless otherwise noted.

Section 260573 - Fault Current Study

A. The fault current study shall be performed by the distribution equipment manufacturer. The study shall be submitted to the engineer prior to receiving final approval of the distribution equipment shop drawings and/or prior to release of equipment for manufacture. If formal completion of the study may cause delay in equipment manufacture, approval from the engineer may be obtained for a preliminary submittal of sufficient study data to ensure that the selection of device ratings and characteristics will be satisfactory.

B. The fault current study shall be performed with the aid of a "Windows" based computer program.

C. The input data shall include the power company's fault current contribution, resistance and reactance components of the branch impedances, the X/R ratios, base quantities selected and other source impedances.

D. Short circuit momentary duty values and interrupting duty values shall be calculated on the basis of three phase bolted short circuits at each switchgear bus, switchboard, distribution panel, branch circuit panel, and other significant locations through the system. The short circuit tabulations shall include symmetrical fault currents and X/R ratios. For each fault location, the total duty on the bus, as well as the individual contribution from each connected branch, shall be listed with its respective X/R ratio.

Section 260923 - Lighting Control Devices

A. Sensor Layout: Utilizing project-specific floor plans, manufacturer shall produce a CAD layout of their recommended locations for all occupancy sensors and daylight sensors. Indicate where additional sensors are recommended or where any sensors can be eliminated. Contractor shall use this layout for rough-in of sensor locations.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Acuity Controls
2. Hubbell Control Solutions
3. Wattstopper
4. Lutron
5. Greengate
6. Douglas Lighting Controls
7. Crestron
8. Steinel Professional
9. Touché Lighting Control
10. B.E.G. Controls

C. Daylight Harvesting Controls
1. Sequence of Operation: A daylight harvesting lighting control system shall be furnished and installed complete in rooms indicated on plans. The control sequence shall be as follows:
   a. General Mode: Occupants shall have the ability to turn on/off and dim all lighting fixtures in the room to a desired light level via the wall dimmer switch(es). Refer to plans for the quantity of zones required.
   b. Occupancy Detection (where indicated): The occupancy sensor shall turn off all lighting fixtures in the room if occupancy is not detected within 20 minutes. Sensor shall function as off only (manual on).
   c. Daylight Harvesting: The daylight sensor shall measure lighting levels within the space and automatically dim lighting fixtures according to their daylight zones. Daylight zones shall be dimmed independently to maintain a consistent lighting level across the space. Note: Some rooms may have fixtures that are not on daylight zones. Confirm lighting level setpoints with the Architect prior to programming.
   d. Emergency Mode (rooms with lighting fixtures on an emergency circuit): Upon loss of normal power, any lighting fixtures on emergency circuits shall be forced on to full light output. All such rooms shall either have UL924 power packs as part of the lighting controls or UL924 devices furnished and installed as required.
2. Dimming Control Module
   a. Provide an open loop continuous dimming daylight harvesting control module with three individually adjustable zones of control.
   b. Module shall have pushbutton programming and automated setup.
   c. LCD display shall provide “real-time” light-level readings.
   d. Compatible with 2-wire 0-10 volt dimming ballasts, 50 ballasts per channel.
   e. Module shall be capable of integrating with occupancy sensors and manual override control stations.
   f. DIN rail mounting.
   g. Shall have standard 2 year warranty and shall be UL listed.

Section 260923 (cont.)

3. On/Off Control Module
   a. Provide an open loop on/off daylight harvesting stepped control module with three individually adjustable zones of control.
   b. Module shall have pushbutton programming and automated setup.
   c. LCD display shall provide “real-time” light-level readings.
   d. Module shall be capable of integrating with occupancy sensors and manual override control stations.
   e. DIN rail mounting.
   f. Shall have standard 2 year warranty and shall be UL listed.
4. Power Pack (with 3 Relays)
   a. Provide a 120/277VAC to +24VDC power pack to power the dimming control module with three individually controlled relays for ON/OFF control.
   b. Built-in overload protection.
   c. Quick connect.
   d. DIN rail mounting.
   e. Shall have standard 2 year warranty and shall be UL listed.
5. Power Pack (with 1 Relay)
   a. Provide a 120/277VAC to +24VDC power pack with one relay for ON/OFF control.
   b. Built-in overload protection.
   c. Quick to install connector.
   d. Plenum rated for mounting inside or outside a junction box or inside a fluorescent ballast cavity.
   e. Shall have standard 5 year warranty and shall be UL listed.
6. Relay
   a. Provide a 10 amp single-pole double-throw relay with 10-30 VAC/DC/120 VAC coil or 10-30 VAC/DC/208-277 VAC coil.
   b. Normally open and normally closed isolated contacts.
   c. LED status indicator.
   d. Plenum rated housing.
   e. Shall have standard 1 year warranty and shall be UL listed.
7. UL924 Relay
   a. Provide a 10 amp single-pole double-throw relay with 10-30 VAC/DC/120 VAC coil or 10-30 VAC/DC/208-277 VAC coil.
   b. Normally open and normally closed isolated contacts.
   c. LED status indicator.
   d. Plenum rated housing.
   e. UL924 listed for emergency use.
   f. Shall have standard 1 year warranty and shall be UL listed.
8. Photosensor
   a. Provide an open loop photosensor that continuously measures footcandle levels using a photodiode element to provide input to the dimming control module.
   b. Foot-candle range of 3 to 6,000 fc.
   c. Sensor shall be capable of mounting both horizontally and vertically.
   d. User selectable foot-candle range setting via jumper beneath front cover.
   e. Shall have standard 2 year warranty and shall be UL listed.
9. Occupancy Sensor
   a. Provide a digital dual-technology ultrasonic and passive infrared occupancy sensor to turn lighting ON/OFF based on occupancy via the dimming control module.
   b. Automatic self-adaptive technology with no manual adjustment required.
   c. Non-volatile memory for sensor settings.
   d. 1,600 square-foot coverage area.
   e. Auxiliary relay for building automation system integration.
   f. Shall have standard 5 year warranty and shall be UL listed.
10. 4-Button Wall Dimmer Switch
   a. Provide a low voltage four button wall switch for manual override control of the dimming control module.
   b. Four buttons provide ON/OFF, dim up, dim down and automatic controls with LED indicators.
   c. Mounts in standard single-gang box.
   d. Contractor shall provide decorator style wall plate (not included).
   e. Buttons shall have engraved labels.
   f. Standard finish as selected by architect.
   g. Shall have standard 2 year warranty and shall be UL listed.
11. 1-Button Wall Switch
   a. Provide a low voltage one button latching wall switch for manual override control of lighting fixtures.
   b. Single button provides ON/OFF control with LED indicator.
   c. Mounts in standard single-gang box.
   d. Contractor shall provide decorator style wall plate (not included).
   e. Button shall have engraved label.
   f. Standard finish as selected by architect.
   g. Shall have standard 2 year warranty and shall be UL listed.

D. Occupancy Sensors, Line Voltage, Wall Switch Type
1. Shall use passive infrared motion detection.
2. Shall be compatible with incandescent, magnetic or electronic low voltage, and magnetic or electronic fluorescent, as well as motor loads.
3. Switch shall be microprocessor controlled.
4. Shall be capable of detecting occupancy with true, 180º field of view.
5. Shall utilize zero crossing circuitry, which increases relay life, protects from the effects of inrush current, and increases sensor longevity.
6. Wall switch shall have integral shutters that narrow the field of view from 180º.
7. Shall feature pushbutton for manual on and off, which times out based upon occupancy detection.
8. An LED shall indicate occupancy status.
9. Internal timer shall be factory set at 10 minutes, shall be push-button programmable from 30 seconds to 20 minutes and shall reset every time occupancy is re-detected. Requires no field calibration or sensitivity adjustments.
10. Manual range, photocell, and time settings shall be user-configurable.
11. Switch shall be rated at 120/277V in one unit.
12. Unit shall fit in a standard box and use a standard wallplate, which is gangable.
13. Wall switch shall not protrude more than .4 inches from box.
14. Shall be a Decora style unit with a matching wallplate available.
15. Shall have standard 5 year warranty and shall be UL listed.
16. Two-pole devices shall provide switching for 2 separate banks from a single unit.

E. Occupancy Sensors, Low Voltage, Ceiling Mount
1. Shall incorporate dual-technology passive infrared and ultrasonic motion detection.
2. Shall mount on ceiling.
3. Shall have 360° coverage with at least a 28 ft coverage pattern (when mounted at 9 ft) in all directions for walking motions.
4. Shall automatically adapt to changing room conditions--including background PIR levels and continuous airflow not less than 6 feet from sensor.
5. Shall incorporate a real-time motion indicator LED, which is visible from the front of unit.
6. Shall have mask inserts for PIR rejection to prevent false tripping.
7. Internal timer shall be factory set at 10 minutes, shall be push-button programmable from 30 seconds to 20 minutes and shall reset every time occupancy is re-detected. Requires no field calibration or sensitivity adjustments.
8. Shall be included with a low voltage relay for tie-in to building automation system.
9. Shall have standard 5 year warranty and shall be UL listed.

F. Power Pack
1. Transforms 120 or 277V to class 2, 15 to 24V DC, to power remote sensors.
2. Shall be compatible with incandescent, magnetic or electronic low voltage, and magnetic or electronic fluorescent, as well as motor loads.
3. Ratings: 20A incandescent, 20A fluorescent, 120 or 277V.
4. Shall be plenum rated. Mount in deep junction box where required per local AHJ.
5. Shall have elongated mounting nipple which can be mounted either directly through a ½” knockout in a junction box or to be located inside an adjacent box for specific local code requirements, contractor to verify.
6. Shall be capable of powering up to 14 sensors.
7. Shall have self-contained relays with relay circuit protection.
8. Provide 2-pole version for rooms with two levels of lighting control including inboard/outboard switching.
9. Shall have standard 5 year warranty and shall be UL listed.

G. Wall Timer Switches
1. The timer shall be an electronic interval timer with a manually operated toggle switch.
2. The timer switch shall be capable of 3-way operation.
3. Switch contacts shall break the current at the end of a preset time which is user adjustable from 1 minute to 18 hours. Timer adjustment shall be hidden after wallplate is installed.
4. Flicker feature shall be provided to provide a flick warn of the load controlled two minutes before the end of the timed cycle and again one minute before the end of the timed cycle.
5. Unit shall fit into a standard 2-1/2 inch deep wall box, single or multi-gang installation, and accept a standard toggle switchplate.
6. Unit shall be capable of switching fluorescent lights with electronic or electromagnetic ballasts, incandescent lights, or motor loads. Unit shall accept input of 24, 120, 208-240, or 277 volts AC at 50/60 Hz.
7. Time switch shall have 5 year warranty and shall be UL listed.

H. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust field-assembled components and equipment installation, including connections, and assist in field testing. Report results in writing. Remove and replace lighting control devices where test results indicate that they do not comply with specified requirements.

I. Adjusting
1. Final occupancy sensor locations shall be determined in accordance with manufacturer's recommendations and locations adjusted as required prior to rough-in. Refer to sensor layout submittal provided by manufacturer. All sensors shall have non-adjustable factory calibrated sensitivity for maximum performance. A factory-authorized service representative shall be engaged to meet on-site with the contractor to determine proper device locations prior to rough-in.
2. Once lighting fixtures and occupancy sensors have been installed, a factory-authorized service representative shall be engaged to set-up and program occupancy sensors and photosensors. Contractor and service representative shall meet on-site with the Owner to determine appropriate set points and programming.
   a. All occupancy sensors shall be field adjusted/aimed to effectively detect motion and eliminate nuisance tripping.
   b. Time Delay settings for occupancy sensors shall be factory set at 10 minutes, and shall not be field adjusted unless specifically instructed by Architect. This delay selection is based on lamp life vs. energy savings and sensor performance.
3. Once all occupancy sensors have been set-up, adjusted and programmed, contractor shall meet again with factory-authorized service representative and Owner to test operation of systems. Service representative shall be engaged to make adjustments to sensors, set points and programming as necessary for proper operation.

Section 260923 (cont.)

J. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, a factory-authorized service representative shall be engaged to provide on-site assistance in adjusting sensors to suit actual occupied conditions. Provide up to two visits to site outside normal occupancy hours for this purpose.

K. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain lighting controls. Refer to Division 1 Section "Closeout Procedures." Provide a minimum of four (4) hours of Owner training.

Section 262213 - Dry Type Transformers

A. Transformers shall be continuously rated isolating type for 60 hertz service unless otherwise indicated.

B. Insulation systems shall be 220 degrees C (150 degrees C rise).

C. Enclosures for transformers shall be metallic, suitable for indoor and outdoor installation as applicable and rodent proof.

D. Manufacturer shall be Cutler-Hammer, Square "D", General Electric or I.T.E.-Siemens. Fractional KVA transformers shall be manufactured by Edwards or the special equipment manufacturer in which the transformers are used.

E. Four approved vibration dampeners per transformer shall be employed as necessary to avoid transmitting any vibration to the building structure. Sizes of the mountings shall be selected on the basis of the weight of the transformer, using:
1. A minimum 1" thick rubber-cork-rubber sandwich type for floor mounting.
2. A spring type for suspension mounting.
3. Two (2) spring type at the top (with two (2) steel brackets) and two (2) rubber-in compression type at the bottom (stand-off) for wall mounting.

F. No conduits shall be attached directly to the transformer. At each attachment, provide a vibration dampening assembly consisting of:
1. AT&B #5721, 2, 3 etc., or equivalent female hub type liquid-tight connector by Steel City, Efcor or approved equal.
2. T&B #5331, 2, 3 etc., or equivalent male hub type liquid-tight connector with an insulated throat by Steel City, Efcor or approved equal.
3. Shor length (24" plus or minus) of liquid-tight flexible conduit.
4. A bonding jumper of NEC size outside of the assembly.

G. Floor mounting: All floor mounted transformers shall be installed on a 4" high concrete pad. This contractor shall furnish and install concrete pad.

Section 262416 - Distribution and Panelboards

A. Distribution Panels (circuit breaker style)
1. Distribution panels shall be dead front type with features and rating as scheduled on the drawings.
2. Molded case circuit shall be as scheduled, of size and number indicated on the drawings. All breakers shall be bolt-on type.
3. All lugs shall be UL approved CU/AL type.
4. Panels shall be manufactured as a complete unit and not an assembly of parts secured from a supply house.
5. All panels shall be capable of accepting circuit breakers sized up to and including 400 amps.
6. Vertical bussing shall be extended the full length of the panel.
7. All bus bars shall be rectangular solid copper.
8. Distribution panels shall be G.E., Square D, Siemens or Cutler-Hammer.
9. Install panels such that handle for the top breaker does not exceed 6'-6" above finished floor.
10. Provide phenolic labels for each panel.
11. All bolted connections shall be torqued in accordance with manufacturer's standards.
12. Surface-mounted panels shall be mounted on a 3/4" plywood backboard. Floor-mounted panels shall be mounted on a 4" high concrete pad.

B. Panelboards
1. Panelboards shall be enclosed dead front safety type with features and ratings as scheduled on the drawings.
2. Panels known as "load centers" are unacceptable.
3. Molded case circuit breakers shall be as scheduled on the drawings and specified in this division.
4. All bus bar shall be rectangular solid copper.
5. Space, where shown in panel schedules, designates space for future protective devices and shall include bus and support.
6. Install cabinets so that center of the top breaker does not exceed 6'-6" above the finished floor.
7. Entries on directory cards shall be typed, complete and accurate.
8. All bolted connections shall be torqued in accordance with manufacturer's standards.
9. Electrical contractor shall arrange circuits as near as possible to circuit numbers on the drawings. At completion of job, electrical contractor shall take current reading checks of respective phases. A minimum of circuit connections shall be rearranged to balance, as closely as possible, the load in the panel.
10. All breakers shall be bolt-on type.
11. Provide (3) spare 1" conduits into accessible ceiling space where panels are flush-mounted.
12. Manufacturer shall be Square D, Siemens, G.E., or Cutler-Hammer.

Section 262726 - Wiring Devices

A. Wiring device color shall be selected by architect, unless otherwise indicated.

B. Provide totally enclosed, 20 ampere, 120/277 volt, quiet A/C general use snap switches.

C. Switches shall be specification grade as manufactured by Hubbell, P&S, or Leviton.

D. Provide NEMA configuration 5-20R Duplex 125 volt grounding type receptacles rated for 20 amperes unless otherwise indicated on the drawings.

E. Receptacles shall be specification grade as manufactured by Hubbell, P&S or Leviton.

F. Receptacles requiring amperages, voltages or configurations different from the duplex convenience receptacles above shall be as indicated on the drawings.

G. Provide other receptacles of a quality, material and workmanship equal to that specified for duplex convenience receptacles.

H. Provide cover or device plates for outlet boxes as follows unless otherwise noted:
1. Finished areas: Thermoplastic - color to match device.
2. Unfinished areas: Zinc coated sheet metal, aluminum, or cast metal as appropriate for the type of box.
3. Exterior areas: Copper free aluminum with gray, powder epoxy finish, gasket, weatherproof, Crouse-Hinds "WLRD" for duplex receptacles and WLRS for single receptacles or equal.
4. Telephone, communication, and signal outlet plates, shall match those used for receptacles and switches. All outlet and/or junction boxes shall be complete with a cover plate by this contractor.
5. Where devices are ganged, they shall be installed under a common cover plate.

I. Locate the switches approximately 4'-0" above the finished floor elevation or nearest block course (within A.D.A. requirements), unless otherwise indicated. The long dimension of the switches shall be vertical.

J. Locate receptacles approximately 1'-6" above the finished floor elevation or nearest block course (within A.D.A. requirements), unless noted otherwise. The long dimension of receptacles shall be vertical.

Section 262813 - Fuses

A. The contractor shall furnish a complete set of fuses for all switches, plus fusible equipment furnished by other trades. Unless indicated otherwise on plans, the fuses shall be of the following types:
1. Fuses 601 to 6000 amps shall be UL class. Trade type shall be KRP-C as manufactured by Bussmann Company.
2. Fuses 1/10 to 600 amps shall be UL class RK1. Trade type shall be low peak LPS-RK (600V) and LPN-RK (250V) as manufactured by Bussmann Company.
3. All other fuses shall be dual-element current-limiting type with 200,000 amperes symmetrical interrupting capacity.

B. Fuses shall be manufactured by Bussman, Gould-Shawmutt, or Reliance.

C. Spare fuses amounting to a duplicate set of each size installed shall be turned over to the owner upon completion of the project. Provide and place in a spare fuse cabinet similar to Bussman # SFC.

D. This contractor shall replace all fuses blown during construction.

Section 262816 - Safety Switches

A. Safety switches shall be the enclosed heavy-duty type (type HD) with quick-make, quick-break mechanism and external pad lockable operating handle.

B. Safety switches shall be rated for 240 or 600 volts as applicable. They shall be horsepower rated when used in motor circuits.

C. Safety switches shall be fusible or non-fusible 2, 3, or 4 pole as indicated on the drawings.

D. Safety switches shall be single throw unless otherwise indicated on the drawings.

E. Enclosures shall be NEMA 1 indoors and NEMA 3R outdoors unless otherwise indicated on the drawings.

F. Manufacturer shall be Square D, Siemens, G.E., or Cutler-Hammer. All safety switches shall be by one manufacturer.

G. Mount the safety switches securely between 3' X 6' levels above the floor unless otherwise indicated on the drawings.

H. Switches on block walls shall be mounted on a 3/4" plywood backboard, where located indoors.

Section 262913 - Motor Starters

A. Provide motor starters (magnetic or fused combination) and control equipment where shown. Starters shall be provided with 120 volt coils, 3 overloads, control transformer with fused 120 volt secondary control circuit, (2) N.(and (2) N.C. auxiliary contacts, hand-off-auto selector switch and running pilot light, unless otherwise noted. Wir thru control devices furnished by other trades. Since motor driven equipment is furnished by other trades, the co indicated on the drawings shall be considered as for bidding purposes only. Wire to conform to the actual equipn supplied and installed by the other trades. All fuses shall be dual element type. Provide "blownfuse" indicator lan in cover.

B. Starters shall be Square D, G.E., Cutler-Hammer, or Siemens.

C. The exact number of normally open and normally close auxiliary contacts in each starter shall be determined by temperature control contractor.

D. Coordinate all equipment indicated on the electrical drawings with mechanical equipment schedules and specifications and provide motor starters for all equipment indicated as being interlocked or started from a remot location.

Tenant 6A LL Work
at Laurel Square

Laurel Square Shopping Center
Brick Township, NJ

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Owner / Developer:
BRIXMOR Property Group
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Structural & M/E/P Engineers:
Thorson Baker + Associates, Inc.
3030 West Streetsboro Rd
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Rev:	Date:	Description:
	04/01/2022	ISSUED FOR BID AND PERMIT

PROGRESS
NOT FOR
CONSTRUCTION
3/31/2022

JEFFERY D. MITERKO, NJ Professional Engineer, NO: GE 40635, 24GA28104800

ELECTRICAL SPECIFICATIONS

1838.C E-300

ELECTRICAL SPECIFICATIONS

E. Starters supplied as an integral part of equipment shall be furnished under the division providing the equipment. Wiring and disconnect shall be by this contractor. All other starters and auxiliary control equipment shall be supplied and wired by this contractor unless otherwise noted.

Section 265119 - Lighting Fixtures

A. LED lighting fixtures:
   1. Recessed Fixtures: Comply with NEMA LE 4.
   2. Bulb shape complying with ANSI C79.1.
   3. Lamp base complying with ANSI C81.61.
   4. CRI of minimum 80.
   5. CCT of 3500K, unless noted otherwise on the plans or fixture schedule.
   6. Rated lamp life of 50,000 hours, minimum at 70 percent lumen maintenance.
   7. Lamps dimmable from 100 percent to 10 percent of maximum light output, unless noted otherwise on the plans or fixture schedule.
   8. Integral driver. Driver power factor shall be 40 percent or greater. Harmonic distortion shall be less than 10% THD. Drivers shall be equipped with automatic thermal protection and 20 KA surge protection with end of life LED indicator.
   9. Nominal Operating Voltage: as indicated on plans and schedules.
   10. Efficiency minimum of 80 lumens per watt.
   11. Each LED luminaire type shall be binned within a three-step MacAdam Ellipse to ensure color consistency among luminaires.
   12. Fixtures shall comply with UL 1598 and UL 8750.

B. Linear fluorescent lighting fixtures:
   1. Lamps for new light fixtures shall be T8, 3500K, minimum 80 CRI of the following manufacturers:
      a. General Electric "Starcoat" SPX35 Series
      b. Sylvania "Octron" 835 Series
      c. Phillips TLD835 Series
   2. Ballasts shall be electronic, parallel, instant-start, normal output type, less than 10% THD, CBM and ETL certified, as manufactured by Sylvania, Philips Advance, Universal Lighting Technologies and Robertson.
   3. All lamps shall be furnished and installed by electrical contractor. Lamps shall be of the same manufacturer for all types.
   4. Fixtures shall comply with UL 1598.

C. Compact fluorescent lighting fixtures:
   1. Lamps for new light fixtures shall be 3500K, minimum 80 CRI of the following manufacturers:
      a. General Electric "Biax" SPX35 Series (4 pin base)
      b. Sylvania "Dulux" 835 Series (4 pin base)
      c. Phillips "PL-T" 3500K Series (4 pin base)
   2. Ballasts for "T5" compact fluorescent lamps shall be electronic, parallel, instant-start, normal output type, less than 10% THD, CBM and ETL certified, as manufactured by Sylvania, Philips Advance, Universal Lighting Technologies and Robertson.
   3. Ballasts for "T4" compact fluorescent lamps shall be electronic, parallel, rapid-start, normal output type, less than 10% THD, CBM and ETL certified, as manufactured by Sylvania, Philips Advance, Universal Lighting Technologies and Robertson.
   4. All lamps shall be furnished and installed by electrical contractor. Lamps shall be of the same manufacturer for all types.
   5. Fixtures shall comply with UL 1598.

D. Exit Signs:
   1. Comply with UL 924; for sign colors and lettering size, comply with authorities having jurisdiction.
   2. Internally Lighted Signs: Lamps for AC Operation: Light-emitting diodes, 70,000 hours minimum of rated lamp life.
   3. NFPA 101 Compliance: Comply with visibility and luminance requirements for exit signs.

E. All lighting fixtures shall be furnished and installed by electrical contractor as indicated on the lighting fixture schedule. Other acceptable manufacturers shall be at the discretion and approval of the architect and engineer.

F. All fixtures shall bear the underwriter's laboratories (UL) label, be listed and approved for the purpose intended and installed according to manufacturer's instructions.

G. Existing fixtures noted to be reused shall be cleaned and relamped.

H. Electrical contractor shall confirm that all lighting fixtures and associated drivers, ballasts, etc. are coordinated with the lighting/dimming controls being provided. Contractor shall verify if and where Generator Transfer Devices (GTDs) are required prior to ordering lighting fixtures.

I. Electrical contractor shall confirm that all lighting fixture mounting options and hardware are coordinated with the ceiling height and construction. Contractor shall verify fixture mounting heights with architect prior to ordering and rough-in.

J. Coordinate layout and installation of lighting fixtures and suspension system with other construction that penetrates ceilings or is supported by them, including HVAC equipment, fire-suppression system, and partition assemblies.

K. Set all lighting fixtures level, plumb, and square with ceilings and walls.

L. This contractor shall provide and install all necessary support media for all lighting fixtures including structural steel, angle, rods, etc. and shall be supported in a manner acceptable to the local inspection authorities. All fixtures shall be firmly supported from beams or joists.
   1. Provide all necessary backing, blocking and supports for wall mounted fixtures.
   2. Fixtures shall not be supported from roof deck.
   3. Support for Fixtures in or on Grid-Type Suspended Ceilings:
      a. Install a minimum of four ceiling support system rods or wires for each fixture. Locate not more than 6 inches (150 mm) from fixture corners.
      b. Support Clips: Fasten to fixtures and to ceiling grid members at or near each fixture corner with clips that are UL listed for the application.
      c. Fixtures of Sizes Less Than Ceiling Grid: Install as indicated on reflected ceiling plans or center in acoustical panel, and support fixtures independently with at least two 3/4-inch (20-mm) metal channels spanning and secured to ceiling tees.
   4. Suspended Fixture Support: Pendants and Rods: Where longer than 48 inches (1200 mm), brace to limit swinging.

M. If required by code, light fixtures shall be Chicago Plenum or New York City rated. If required by code or project requirements, light fixtures shall be CALGREEN, DC Green, Title 24 and/or Energy Star compliant/certified.

N. Recessed fixtures recessed in air plenums shall be approved for the purpose intended and installed according to manufacturer's instructions. Fixtures shall be air-tight rated and/or provide air-tight gaskets to seal around openings.

O. Recessed fixtures in direct contact with insulation shall be IC (Insulated Ceiling) rated. Insulation shall be kept away from Non-IC rated fixtures as required by code and manufacturer's instructions. Provide barriers as required.

P. All penetrations associated with the electrical installation located in or passing through fire rated assemblies shall be fire-stopped using a UL approved method. Furnish and install UL listed fire rated materials and equipment such as boxes, puddy pads, endothermic mat, lighting fixtures with rated enclosures, fire rated covers for lighting fixtures, etc. to comply with code for project conditions. UL approved method for fire stopping shall meet or exceed fire rating of structure being penetrated. Reference architectural plans for fire ratings.

Q. All adjustable fixtures shall be aimed and adjusted during evening hours to the satisfaction of the architect.

R. Submittals: In accordance with other sections of these specifications, provide shop drawings for lighting fixtures containing the following information (as applicable):
   1. Project specific luminaire designation
   2. All features, options, accessories, mounting, etc. clearly marked
   3. Luminaire dimensions
   4. Delivered lumen output, CCT and CRI
   5. Lamp life
   6. Energy efficiency data
   7. Photometric data
   8. Listings (NRTL, IC, IP, etc.)
   9. Lighting controls compatibility
   10. Emergency batteries (integral or remote) including the capacity and lumen output
   11. Factory shop drawings indicating project specific lengths and layouts for all continuous linear products

Tenant 6A LL Work
at Laurel Square

Laurel Square Shopping Center
Brick Township, NJ

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3/31/2022

JEFFERY D. MITERKO, NJ Professional Engineer, NO. GE 40635, 24GA28154800

ELECTRICAL
SPECIFICATIONS

1838.C E-301

GENERAL NOTES

GENERAL

1. The term General Contractor (G.C.) as used in these documents refers to the Contractor / Construction Manager in responsible charge of the project in terms of coordination, scheduling, subcontractor coordination, etc. this term refers to, but is not limited to, General Contractor, Construction Manager, Design Build Contractor, Prime Contractor, etc. The term is referencing the entity that coordinates the work of other trades.
2. These drawings are diagrammatic and indicate the general extent of the work. The contractor shall be responsible for the coordination and proper installation of all mechanical systems. The contractor shall provide all necessary offsets and fitting which may be required due to space constraints or other conditions.
3. Existing building HVAC, Plumbing and Fire Protection systems shown on these drawings which are to be removed or modified where taken from the original drawings and may not show current installations or conditions. Each contractor shall field verify all existing systems.
4. The mechanical systems or its modifications are designed to be a complete operating system and stable after the building or its modifications are fully completed. It is solely the contractor's responsibility to determine construction, installation, and programming procedures and sequences to have a complete and working system and to insure the safety of the construction personnel, public, building and its component parts, and adjacent buildings and properties. This includes the addition of whatever temporary or permanent bracing, etc. that may be necessary to brace new or existing construction, walls, and framing to remain so that the structure is braced for construction loads, etc. and that no horizontal or vertical settlement or any damage occurs to the adjacent new or permanent supports and bracing that are installed. Design of these supports shall be provided by the contractor. Provide all materials, labor, equipment, and accessories required to furnish and install the systems identified in specifications and drawings.
5. It is the contractor's responsibility to enforce all applicable safety codes and regulations during all phases of construction.
6. Construction loads shall not exceed structural design live loads. The contractor shall be responsible for all design required to support construction equipment used in constructing this project. Verify and coordinate with structural drawings.
7. The contractor shall perform all construction for the project in a manner and sequence that are based on accepted industry standards that recognize the interaction of the components that comprise the systems, without causing distress, unanticipated movements or irregular load paths as a result of the construction means and methods employed.
8. The contractor shall provide all miscellaneous supporting steel, etc. for the proper installation of all mechanical systems.
9. Before fabrication and/or installing any work, contractor shall see that it does not interfere with clearance required for finish on beams, columns, pilasters, walls, or other structural or architectural members, as shown on architectural drawings. If any work is so installed and it later develops that architectural design cannot be followed, contractor shall, at his own expense, make such changes in his work as architect may direct to permit completion of architectural work in accordance with plans and specifications.
10. All piping shall be protected as required by the applicable Mechanical, Plumbing, Fire Protection and Building Codes: " General Regulations" and other Code Chapters.
11. Pipes passing through or under walls shall be protected from breakage. Pipes passing through studs, joist, rafters or similar members less than 1 1/2" from the nearest edge of the members shall be protected by steel shield plates.
12. Piping shall be installed to prevent strains and stresses that exceed the structural strength of the pipe. Where necessary, provisions shall be made to protect piping from the damage resulting from pipe expansion and contraction and structural/soil settlement. Expansion joint fittings shall be used where necessary to provide for expansion and contraction of the pipes. Sleeved openings shall be sized appropriately to accommodate pipe movement and structural/soil settlement. Expansion joint fittings shall be of the typical material suitable for use with the type of piping in which fittings are installed. At a minimum install rubber mechanical joint couplings or CSA-certified expansion joints on all vertical piping at every other floor of the building and rigidly support the stack pipe on alternating floors to direct any movement into the appropriate expansion compensator. Design of these expansion fittings shall be provided by the contractor. Any analysis which requires additional support or expansion detailing shall be shared with the mechanical design professional and any stresses or point loads created by the engineered system shall be shared with the structural designer for review.
13. Install additional offsets on piping or ductwork where required to obtain maximum headroom or to avoid conflict with other work without additional cost to owner.
14. Report any interferences between work under this division and that of any other contractors to architect as soon as they are discovered. Architect will determine which equipment shall be relocated, regardless of which was first installed, and his decision shall be final.
15. The contractor shall coordinate floor, wall, and roof penetrations, louver sizes, etc. with general trades.
16. Principal openings on these drawings through the framing are shown on the structural drawings. The mechanical contractor shall examine the structural and mechanical drawings for the required openings and shall verify size and location of all openings with the general contractor. General contractor shall provide all openings required through the framing by the mechanical, electrical, plumbing, or other trades, whether or not shown on the structural drawings. Any deviation from the openings shown on the structural drawings shall be brought to the engineer's attention for review.
17. All mechanical and electrical work: Ductwork, plumbing, piping, wiring, lighting, etc. and all architectural items that need to be removed during the modification of or reinforcing of, existing structure shall be replaced in kind by the respective contractor. The contractors shall keep all existing systems in operation during the construction phase of the project.
18. All contractors are required to examine the drawings and specifications carefully, visit the site and fully inform themselves as to all existing conditions and limitations, prior to agreeing to perform the work. Failure to visit the site and familiarize themselves with the existing conditions and limitations will in no way relieve the contractor from furnishing any materials or performing any work in accordance with drawings and specification without additional cost to the owner to have a complete and working system.
19. Details labeled "Typical Details" or "Typical" on drawings apply to situations occurring on the whole project that are the same or similar to those specifically detailed. Such details apply whether or not details are referenced at each location on drawings. Notify engineer for clarifications regarding applicability of "Typical Details".
20. Work and coordinate these drawings with architectural, civil, structural, mechanical, plumbing, fire protection, electrical, and technology drawings.
21. Do not scale drawings.
22. Any discrepancies between mechanical and architectural drawings shall be brought to the attention of the architect and mechanical engineer.
23. Should any of the general notes conflict with any details or instructions on plans, or in the specifications, the strictest provision shall govern.
24. Shop drawings and submittals
    A. Shop drawings and submittals shall be checked and coordinated with other materials and contracts by the general, mechanical and electrical contractors and shop drawings and submittals shall bear the prime contractor's review stamp with the checker's initials before being submitted to the architect for approval.
    B. When the contractor has been authorized to use the architect and engineer's drawings as construction coordination drawings, the contractor must remove all title blocks, professional seals and any other references to the architect and engineer from those drawings. The contractors name and title shall be placed on the drawings.
    C. Where voltage, amp draw, dimensions and elevations of existing construction could affect the new construction, it is the contractor's responsibility to make field verifications and measurements in time for their incorporation into the shop drawings.
24. Refer to architectural and electrical reflected ceiling plans for exact location of light fixtures. Contractors to coordinate locations of lighting, speakers, air diffusers, grilles, sprinkler heads and the like, with reflected ceiling lay-outs as required and directed by the architect.
25. Ductwork or piping shall not be located over the top of any electrical panels or equipment.
26. Contractor shall include in his bid all cutting, trenching, and patching associated with the installation of this projects work.
27. Cutting, Patching and Drilling
    A. All cutting and patching of the building construction required for this work shall be by this contractor unless shown on architectural drawings and confirmed as to size and location prior to new construction. Cutting shall be in a neat and workmanlike manner.
    B. Neatly saw cut all rectangular openings, set sleeve through opening, and finish patch or provide trim flange around opening.
    C. Neatly saw cut floors and patch floor to match existing, including floor covering.
    D. Contractor shall field verify slab-on-grade or supported floor construction type prior to cutting. Under no circumstances shall this contractor cut a floor thicker than 4 inches, a structural floor slab, whether on grade or supported, without prior written approval from the architect. If floor slab indicated to be cut on mechanical plans is found to be structural in nature, do not cut. Contact architect immediately for further directions.
    E. Core drill and sleeve all round openings.
    F. Do not cut any structural components without architect's written approval, including, but not limited to roof joists, columns, floor joists, beams, girders, structural floor slabs, rebar, etc.
    G. Patch, and finish to match adjacent areas that have been cut, damaged or modified as a result of the installation of the mechanical systems. Fire-stop all penetrations of fire rated construction in a code approved manner.
    H. All contractors shall confirm with owner, prior to bid, times available for noise producing work such as cutting and core drilling of floors, walls, etc. as well as times for work which requires access into adjoining tenant spaces. Include any premium time in bid.
    I. Exact location of roof top air conditioning units shall be approved by the structural engineer. Mechanical contractor shall furnish and install all supplemental support steel for equipment and roof penetrations after approval of structural engineer.
    J. The mechanical contractor shall coordinate work with the general contractor prior to construction. The mechanical contractor shall provide information regarding openings in walls, floors, etc., concrete equipment pads and foundations to the general contractor. If the mechanical contractor fails to comply with this request, or if incorrect information is given, the necessary cutting and patching will be performed by the general contractor, the mechanical contractor's expense.
    K. All openings required for this branch of work shall be accomplished in time to be incorporated in, and be compatible with the construction program; otherwise this contractor shall be responsible and pay for all changes made necessary for his failure to do so. Pipe holes in floors and walls shall be core drilled if not sleeved during construction.
    L. Existing slabs shall be core drilled at reentrant corners of new floor openings to prevent overcutting.
28. Refer to mechanical, plumbing, fire protection, and electrical plans for location of mechanical, plumbing, and electrical equipment. Coordinate location of disconnect switch associated with each piece of mechanical and plumbing equipment with electrical contractor.
29. Installation requirements for all HVAC, plumbing, and fire protection systems shall be reviewed and coordinated with all other trades involved prior to rough-in. Give equipment shop drawings from installer/supplier/contractor equipment, as required, for review and coordination to all other trades involved. Contact architect/engineer with any discrepancies found between construction drawings and equipment being furnished prior to rough-in.
30. The contractor shall furnish all access panels or doors in hard ceilings and walls with a size as required for servicing and testing, for equipment, valves and/or devices furnished under this contract. The general contractor shall install access panels. The contractor shall coordinate the size and location of each access panel with the architect and general contractor prior to rough-in.
31. Firestopping
    A. All penetrations through fire rated walls associated with the installation shall be sleeved and fire-stopped using a UL approved method. UL approved method shall meet or exceed fire rating of structure being penetrated. Reference architectural plans for fire rated structures. If shown, reference architectural, mechanical and electrical drawings for penetration details.
    B. All openings through fire rated walls, floors, and/or roofs for ductwork, piping, conduit, etc., shall be fire sealed with a calcium salicate, silicone "RTV" foam, "3M" fire rated sealants, Hilti Firestop Systems, or approved equal to maintain the intended fire rating and associated UL ratings as recommended by the architect and/or sealant manufacturer.
    C. All fire stopping sealants shall be thixotropic so as not so slump or sag and shall be trowelable. Fire stopping sealants shall be intumescent and shall be free of asbestos, halogens, and volatile solvents.
    D. Fire stopping materials shall be classified in the Underwriters Laboratories (UL) fire resistance directory or listed in the Warnock Hersey International Directory.
32. All equipment and devices for this project must be UL listed. Devices, equipment, systems shall be installed per National Electrical Code requirements and manufacturer's instructions.
33. All conduit and cabling shall be properly supported as required by the National Electrical Code. For existing installations, the contractor shall be responsible to replace and/or rework existing conduit and/or cabling that is not in compliance with this requirement.
34. All materials and work in the ceiling return air plenum shall be approved for plenum rated application in accordance to the current building code. Where open wiring methods for low voltage systems is permitted by the contract documents and local authority, the conductor insulation must be plenum rated.
35. All hot water heating supply and return branch run-out piping shall be 3/4 inches unless otherwise noted on drawing.
36. Shop Areas and Material Storage
    A. No plumbing or mechanical trade is permitted to use as shop working area, any concrete slab that is to receive metallic waterproofing, asphalt tile, plastic tile, etc., except by express permission of the architect.
    B. The contractor shall make provisions for the delivery and safe storage of his materials and equipment in coordination with the work of others. Materials and equipment shall be delivered at such stages of the work as will expedite the work as a whole and shall be marked and stored in such a way as to be easily checked and inspected. The arrival and placing of large equipment items shall be scheduled early enough to permit entry and setting when there is no restriction or problem due to size and weight.

DEMOLITION

1. The architectural drawings are to be used only as a guideline for demolition. The contractor must visit the site prior to bidding to verify all work required for a complete job and include the cost of such work in his bid.
2. The mechanical drawings are intended to show only the general existing building construction within the area of demolition. The drawings do not show all systems, quantities, sizes, obstructions, etc., and are not intended to be used by the contractor to define the complete scope of demolition. The contractor must field verify the actual building and systems conditions to define all elements within the scope of demolition.
3. Examine areas and conditions under which demolition work must be performed. This contractor shall coordinate his work with other trades performing demolition work and/or demolition work performed by the owner. In every instance of demolition and/or remodeling, the contractor shall figure a complete job as none other shall be accepted.
4. The extent of work shown or not shown shall include removal and legally dispose off site, all the items and systems being removed.
5. Where temperature controls are indicated for demolition, retain the services of a temperature control contractor to perform such demolition.
6. This contractor shall retain on the premises in neatly stacked piles where instructed for selection by the owner, all material, wire, fixtures and/or equipment which are specified to be removed or replaced. All such items, not selected for salvage by the owner, shall become the property of this contractor and shall be removed from the premises and legally disposed.
7. Conform to all applicable codes for demolition of items and systems, safety of adjacent systems, dust control, legal run-off control, disposal and all items necessary to complete the work completely.
8. Demolition shall be done in a manner so as not to damage adjacent work and not affect the operation of systems to remain in use. Any item to remain that is damaged by the contractor shall be replaced and/or repaired at the contractor's expense.
9. Demolition and cutting shall be done in a manner which does not deform or apply loads to the existing framing and equipment of the building to remain.
10. All walls, ceilings, floors, etc., being disturbed by the work shall be returned to finished conditions to match existing by the contractor and contractor shall do his own cutting and patching as necessary under his contract.
11. The contractor shall maintain existing services to and in the existing area as required.
12. The existing systems to remain are to be supported as required until the modified elements are installed and supported.
13. If necessary, the contractor shall provide temporary services in the existing areas.
14. Existing slabs shall be saw-cut in a manner that does not cause the steel framing or the rebar supporting the slab to be cut. Contractor shall field verify slab thickness and rebar spacing.
15. Existing slabs shall be core drilled at reentrant corners of new floor openings to prevent over cutting.
16. The demolished systems shall be reduced to pieces of a weight, and transported across the remaining structure in a manner, such that the remaining structure is not overstressed.
17. The electrical contractor shall disconnect and remove electric service to all mechanical equipment being removed as a result of the renovation.
18. Equipment and devices shall be removed complete including hangers, supports, controls, conduit, wire, pipes, ductwork, etc. Wiring shall be disconnected at circuit breakers, removed and breakers marked "spare."
19. All open ended piping and ductwork that is to remain shall be capped and property secured.
20. Any existing pipes, ductwork, conduit, low voltage control, wiring and/or electrical and mechanical devices being disturbed by the work shall be reworked by this contractor as required to return to its former existing operating condition.
21. Any pipes or ductwork, or control wiring, or tubing feeding through devices or equipment being relocated, reworked, or abandoned and serving other devices, and/or equipment shall be maintained in working condition.
22. Mechanical contractor shall remove and reclaim any refrigerant in existing systems prior to demolition of any equipment according to federal requirements.
23. All asbestos removal will be handled by the owner and is not a part of this work.
24. Use of explosives shall not be permitted.
25. Existing architectural, mechanical and electrical equipment and systems shall be protected from damage resulting from demolition.
26. Contractor shall submit a proposed deconstruction sequence to the owner and architect for review prior to commencement of work.

EXCAVATING/BACKFILLING

1. The contractor shall familiarize himself with the survey and the geotechnical investigation report before starting construction. All underground work shall be in accordance with the recommendations of the geotechnical report except where noted otherwise on drawings or specifications.
2. All building pad preparation and patching shall follow the recommendations of the geotechnical report and the structural drawings and architectural drawings (uno).
3. All objectionable materials encountered are to be removed from excavated areas of the site per the geotechnical report.
4. If unstable subgrade sectors cannot be stabilized by excavation and re-compaction, then crushed stone or similar coarse aggregate materials shall be rolled into the subgrade until a firm subgrade reaction is achieved.
5. The geotechnical engineer shall determine on site or off site imported material that can be used for engineered fill. All fill material shall be approved by the geotechnical engineer.
6. The proposed engineered fill materials are to be placed in lifts not exceeding eight (8) inches in loose measured thickness. Each lift is to be compacted as follows:
    A. Slab on grade: Minimum of 95 percent maximum density by ASTM D698.
7. All fill materials shall be free of organic contaminations and other deleterious matter.
8. For back fill against basement walls, retaining walls, footings, etc., place in 8 inch thick layers, with each lift compacted at near optimum moisture content, until a minimum in place density of 95 percent of the maximum density as determined by ASTM D698 is achieved.
9. All soil surrounding and under footing shall be protected from frost action and freezing during the course of construction.
10. Notify structural engineer of any unusual soil conditions that are in variance with the geotechnical report.

MECHANICAL LEGEND

CW	DOMESTIC COLD WATER PIPING
HW	DOMESTIC HOT WATER PIPING
SAN	SANITARY SEWER PIPING
V	VENT PIPING
G	GAS PIPING
	PIPING ABOVE GRADE/FLOOR
	PIPING BELOW GRADE/FLOOR
	EXISTING PIPING TO BE REMOVED
	EXISTING PIPING TO REMAIN
	CHECK VALVE
	SHUTOFF VALVE
	PIPE UNION
M	UTILITY METER
T AC-1	THERMOSTAT
	POINT OF CONNECTION
XX / XX	EQUIPMENT TAG
	SUPPLY OR OUTDOOR AIR DUCT
	RETURN OR RELIEF DUCT
	EXHAUST DUCT
	DUCT UP
	DUCT DOWN
SD	DUCT-TYPE SMOKE DETECTOR WITH REMOTE TEST STATION AND AUXILIARY RELAY FURNISHED AND WIRED BY ELECTRICAL CONTRACTOR; INSTALLED IN DUCTWORK BY MECHANICAL CONTRACTOR PER CODE. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR AND MANUFACTURER. PROVIDE CONDUIT AND WIRING NECESSARY TO SHUT DOWN HVAC UNIT UPON ACTIVATION OF SMOKE DETECTOR.

ABBREVIATIONS

A	AMPS	MC	MECHANICAL CONTRACTOR
AFF	ABOVE FINISH FLOOR	MFR	MANUFACTURER
AFG	ABOVE FINISH GRADE	MIN	MINIMUM
ARCH	ARCHITECTURAL	NEC	NATIONAL ELECTRIC CODE
BLDG	BUILDING	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CFH	CUBIC FEET PER HOUR	NIC	NOT IN CONTRACT
CFM	CUBIC FEET PER MINUTE	NTS	NOT TO SCALE
CI	CAST IRON	OD	OVERFLOW DRAIN
CLG	CEILING	PC	PLUMBING CONTRACTOR
CO	CLEANOUT	PH (ø)1	PHASE
COL	COLUMN	PSI	POUNDS/SQUARE INCH
CTX	CONNECT TO EXISTING	PVC	POLYVINYL CHLORIDE
CU	CONDENSING UNIT	RA	RETURN AIR
DIA (Ø)	DIAMETER	RD	ROOF DRAIN
DWG	DRAWING	RTU	ROOF TOP UNIT
EC	ELECTRICAL CONTRACTOR	SA	SUPPLY AIR
EL	ELEVATION	SQ	SQUARE
ELEC	ELECTRICAL	STL	STEEL
ETR	EXISTING TO REMAIN	STRUCT	STRUCTURAL
EXIST (E)	EXISTING	TS	TAMPER SWITCH
FA	FIRE ALARM	TYP OR T/	TYPICAL
FCO	FLOOR CLEAN-OUT	UH	UNIT HEATER
FD	FLOOR DRAIN / FIRE DAMPER	UL	UNDERWRITER'S LABORATORY
FFE	FINISH FLOOR ELEVATION	V	VOLTS
FPC	FIRE PROTECTION CONTRACTOR	VERT	VERTICAL
GC	GENERAL CONTRACTOR	VTR	VENT THRU ROOF
HP	HORSEPOWER	W	WATTS
HVAC	HEATING, VENTILATION, AIR CONDITIONING	W/	WITH
IE	INVERT ELEVATION	WCO	WALL CLEANOUT
KW	KILOWATT	WH	WALL HYDRANT
MBH	1,000 BTUH		

Tenant 6A LL Work
at Laurel Square

Laurel Square Shopping Center
Brick Township, NJ

CREATE
ARCHITECTURE PLANNING & DESIGN LLC
45 West 34th Street
Penthouse
New York, NY 10001
Phone: (212) 297-0880
createworldwide.com

Owner / Developer:
BRIXMOR Property Group
One Fayette Street, Suite 150
Conshohocken, PA 19428

Structural & M/E/P Engineers:
Thorson Baker + Associates, Inc.
3030 West Streetsboro Rd
Richfield, OH 44286

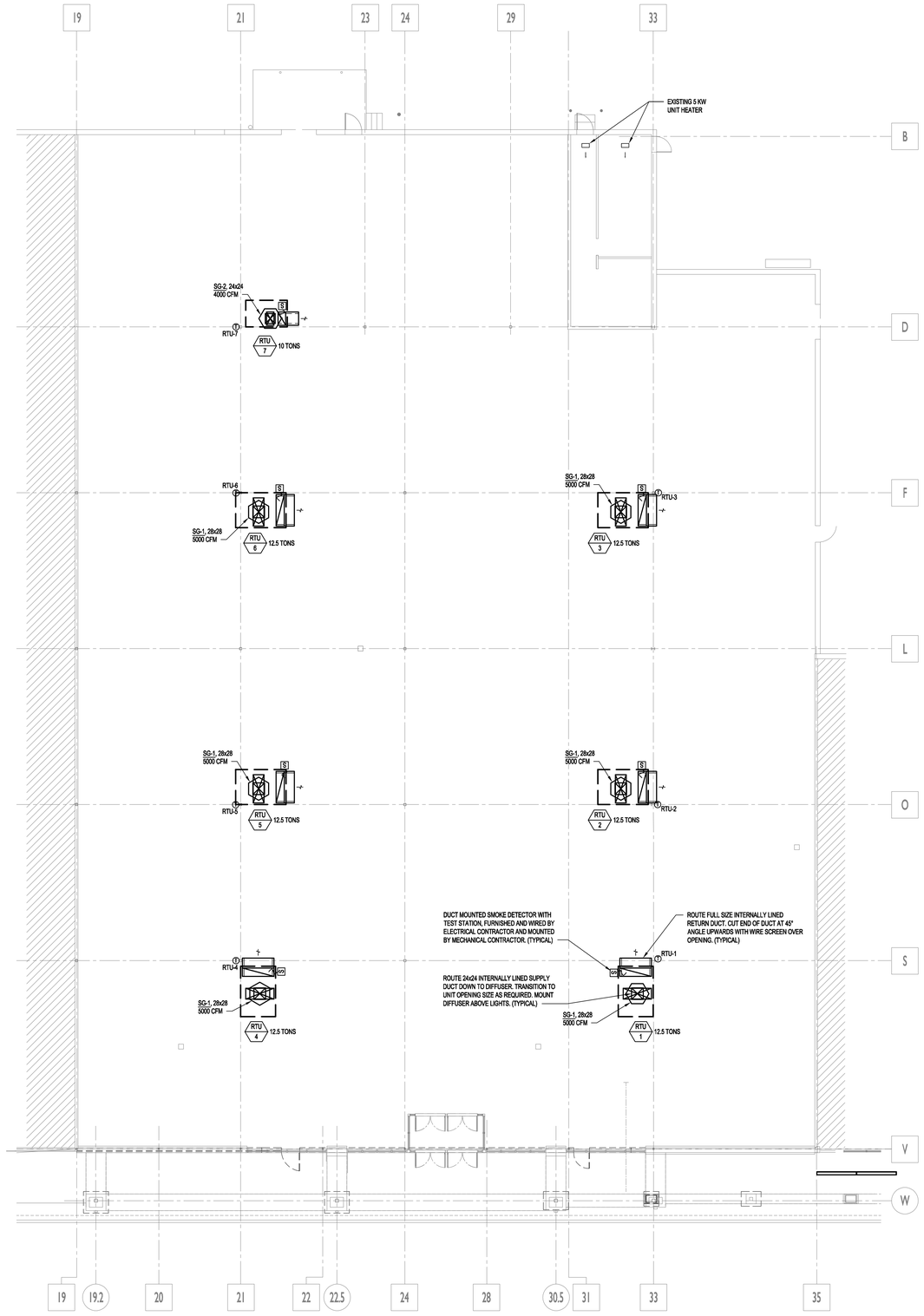
Rev.	Date:	Description:
	04/01/2022	ISSUED FOR BID AND PERMIT

PROGRESS
NOT FOR
CONSTRUCTION
3/31/2022

NATHANIEL J. KOBB, NJ Professional Engineer, NO. GE 52221, 24GA28104600

MECHANICAL
GENERAL NOTES

1838.C M-001



MECHANICAL PLAN
3/32" = 1' - 0"

ROOFTOP AIR CONDITION UNIT SCHEDULE (GAS FIRED)

MARK	MANUFACTURER	MODEL	NOMINAL TONS	SUPPLY AIR (CFM)	MINIMUM OUTDOOR AIR (CFM)	EXTERNAL STATIC PRESSURE ("WC)	BHP	HP	FAN RPM	HEATING INPUT / OUTPUT (MBH)	NO. OF HEATING STAGES	TOTAL COOLING CAPACITY (MBH)	SENSIBLE COOLING CAPACITY (MBH)	No. OF COOLING STAGES	REFRIGERANT TYPE	EER / IEER	COOLING EAT DB/WB (°F)	COOLING LAT DB/WB (°F)	ELECTRICAL				OPERATING WEIGHT (LBS)	REMARKS
																			MCA	MOCP	VOLT.	PH.		
RTU-1	TRANE	YHD150	12.5	5000	1000	0.8	0.95	3.0	1362	250 / 200	2	150	112	2	R410A	12.1 / 15.0	80 / 67	55 / 54	30	40	480	3	3000	1,2,3,4,5,6,7,8
RTU-2	TRANE	YHD150	12.5	5000	1000	0.8	0.95	3.0	1362	250 / 200	2	150	112	2	R410A	12.1 / 15.0	80 / 67	55 / 54	30	40	480	3	3000	1,2,3,4,5,6,7,8
RTU-3	TRANE	YHD150	12.5	5000	1000	0.8	0.95	3.0	1362	250 / 200	2	150	112	2	R410A	12.1 / 15.0	80 / 67	55 / 54	30	40	480	3	3000	1,2,3,4,5,6,7,8
RTU-4	TRANE	YHD150	12.5	5000	1000	0.8	0.95	3.0	1362	250 / 200	2	150	112	2	R410A	12.1 / 15.0	80 / 67	55 / 54	30	40	480	3	3000	1,2,3,4,5,6,7,8
RTU-5	TRANE	YHD150	12.5	5000	1000	0.8	0.95	3.0	1362	250 / 200	2	150	112	2	R410A	12.1 / 15.0	80 / 67	55 / 54	30	40	480	3	3000	1,2,3,4,5,6,7,8
RTU-6	TRANE	YHD150	12.5	5000	1000	0.8	0.95	3.0	1362	250 / 200	2	150	112	2	R410A	12.1 / 15.0	80 / 67	55 / 54	30	40	480	3	3000	1,2,3,4,5,6,7,8
RTU-7	TRANE	YHC120	10	4000	800	0.8	0.85	2.75	1313	200 / 160	2	120	90	2	R410A	12.4 / 15.2	80 / 67	55 / 54	22	25	480	3	1600	1,2,3,4,5,6,7,8

REMARKS:
1. PROVIDE WITH SINGLE POINT POWER CONNECTION AND DISCONNECT.
2. PROVIDE WITH ENTHALPY ECONOMIZER WITH POWERED EXHAUST.
3. PROVIDE WITH CONDENSER HAIL GUARD.
4. PROVIDE WITH MINIMUM 14" HIGH INSULATED ROOF CURB
5. PROVIDE WITH UNPOWERED CONVENIENCE OUTLET (120/1Ø).
6. PROVIDE WITH HINGED ACCESS DOORS.
7. PROVIDE WITH PROGRAMMABLE THERMOSTAT.
8. MULTI SPEED SUPPLY FAN

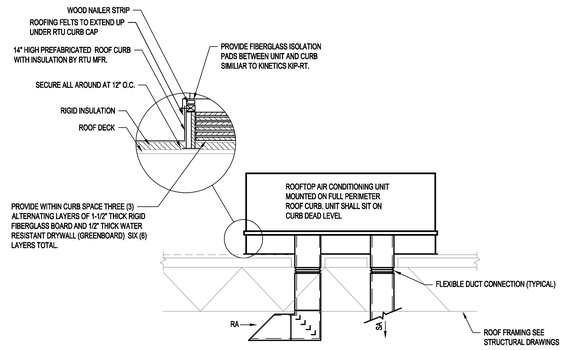
GRILLE AND DIFFUSER SCHEDULE

MARK	MANUFACTURER	MODEL	FRAME OR BOARDER TYPE	MODULE SIZE	DAMPER	FINISH	REMARKS
SG-1	CURBS PLUS	DLPD6 2010-15	SURFACE	—	—	PER ARCHITECT	1,2
SG-2	CURBS PLUS	DLPD6 1806-10	SURFACE	—	—	PER ARCHITECT	1,2

REMARKS:
1. INSTALL PER MANUFACTURE RECOMMENDATIONS.
2. INSTALL ABOVE LIGHTS.

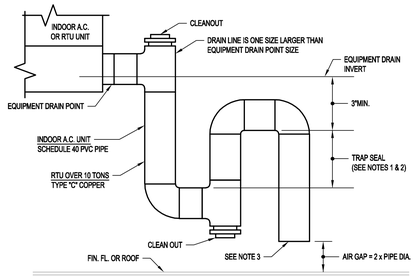
OUTSIDE AIR SCHEDULE

SPACE DESIGNATION	FLOOR AREA (SF)	SPACE OUTSIDE AIR REQUIREMENTS				SERVICE	OUTSIDE AIR (CFM)
		OCCUPANCY	CFM PER PERSON	CFM PER SF	MINIMUM CFM		
SALES	29,000	435	7.5	0.12	6743	RTU-1,2,3,4,5,6 RTU-7	1000 x 6 800
MINIMUM OUTSIDE AIR REQUIRED = 6743 CFM						MINIMUM OUTSIDE AIR DELIVERED = 6800 CFM	



NOTES:
1. FOR UNITS NOT SUPPLIED WITH SMOKE DETECTORS INSTALL SMOKE DETECTORS, PROVIDED BY THE ELECTRICAL CONTRACTOR, IN DUCTWORK WHERE INDICATED ON PLANS.
2. PROVIDE 1" ACOUSTICAL DUCT LINING IN SUPPLY AND RETURN DUCTS FROM UNIT CONNECTION TO POINTS INDICATED ON PLANS.
3. TRANSITION SUPPLY AND RETURN UNIT CONNECTIONS TO SIZES INDICATED ON PLANS.

ROOFTOP UNIT INSTALLATION
N.T.S.



NOTES:
1. FOR DRAINS ON SUCTION SIDE OF FAN USE 3"MIN. TRAP SEAL OR MAX. FAN SUCTION PRESSURE PLUS 1" WHICHEVER IS GREATER.
2. FOR DRAINS ON DISCHARGE SIDE OF FAN USE 6"MIN. TRAP SEAL OR MAX. FAN DISCHARGE PRESSURE PLUS 1" WHICHEVER IS GREATER.
3. DISCHARGE AT ROOF DRAIN OR TO AN APPROVED LOCATION.

CONDENSATE DRAIN DETAIL
N.T.S.

Tenant 6A LL Work at Laurel Square

Laurel Square Shopping Center
Brick Township, NJ

CREATE
ARCHITECTURE PLANNING & DESIGN LLC
45 West 34th Street
Penthouse
New York, NY 10001
Phone: (212) 297-0880
createworldwide.com

Owner / Developer:
BRIXMOR Property Group
One Fayette Street, Suite 150
Conshohocken, PA 19428

Structural & M/E/P Engineers:
Thorson Baker + Associates, Inc.
3030 West Streetsboro Rd
Richfield, OH 44286

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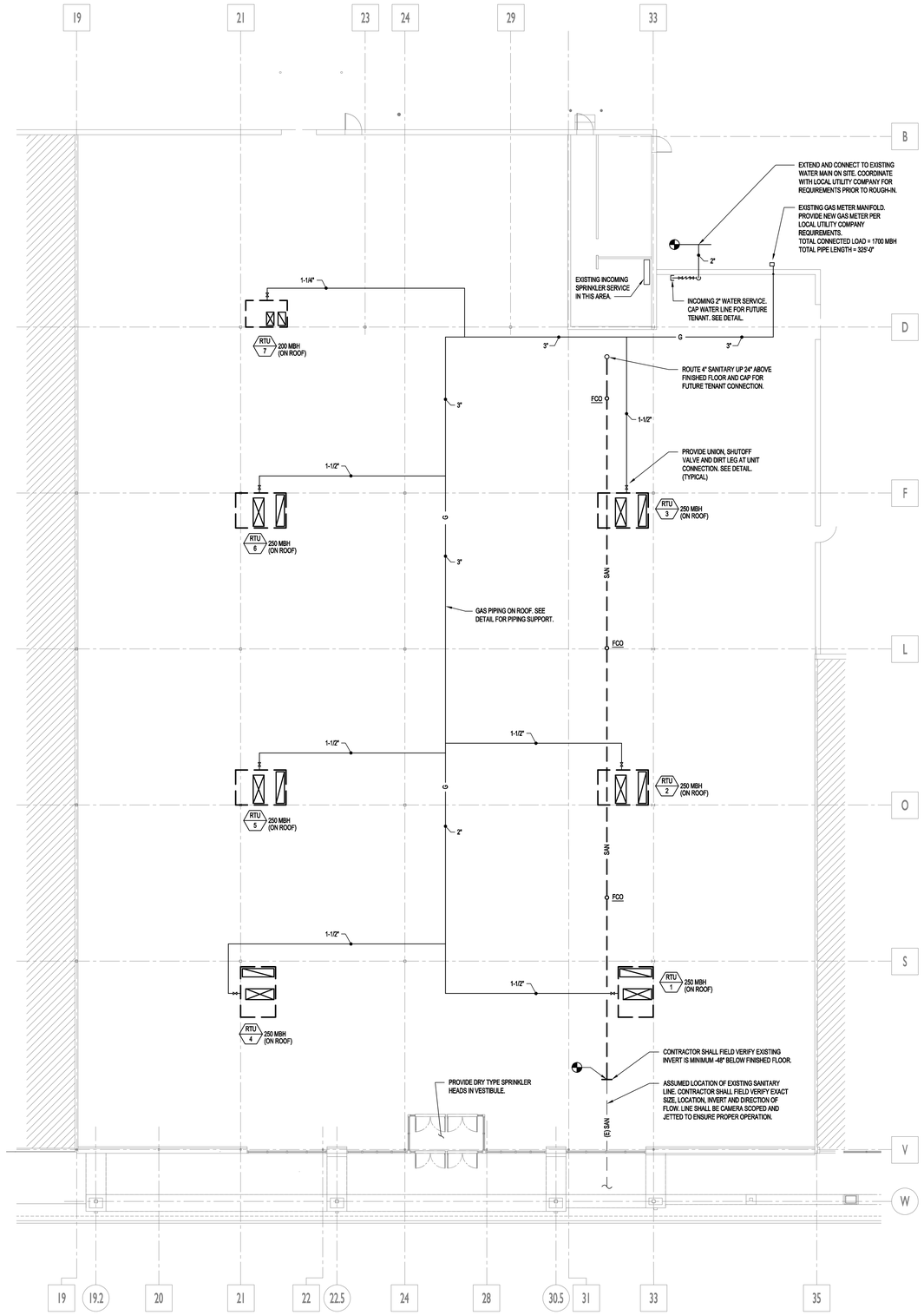
PROGRESS NOT FOR CONSTRUCTION 3/31/2022

NATHANIEL J. KOBB, N.J Professional Engineer, NO. GE 52221, 24GA28334800

MECHANICAL PLAN

1838.C M-101



PLUMBING PLAN
3/32" = 1' - 0"

GENERAL NOTES: (FIRE PROTECTION)

A. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION AND PROPER INSTALLATION OF ALL FIRE PROTECTION SYSTEMS.

B. THE CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS SUPPORTING STEEL ETC. FOR THE PROPER INSTALLATION OF ALL FIRE PROTECTION SYSTEMS.

C. THE CONTRACTOR SHALL COORDINATE FLOOR, WALL AND ROOF PENETRATIONS WITH THE GENERAL TRADES CONTRACTOR.

D. PIPING SHALL NOT BE LOCATED OVER THE TOP OF ANY ELECTRICAL PANELS OR EQUIPMENT.

E. THE CONTRACTOR SHALL PROVIDE TURNED UP SPRINKLER HEADS AS REQUIRED PER CODE. REUSE EXISTING HEADS AND PIPING IF APPLICABLE. TENANT IS RESPONSIBLE FOR MODIFYING SYSTEM PER THEIR TENANT CONSTRUCTION DRAWINGS.

F. A LICENSED FIRE PROTECTION CONTRACTOR SHALL PREPARE SUBMITTAL DRAWINGS AND HYDRAULIC CALCULATIONS FOR EACH TENANT SPACE BASED ON THAT TENANT'S REQUIREMENTS FOR DESIGN DENSITY, OWNER'S INSURANCE UNDERWRITER, BUILDING DEPARTMENT AND/OR LOCAL FIRE AUTHORITY REQUIREMENTS, WHICHEVER IS MOST STRINGENT.

G. IT IS THE FIRE PROTECTION CONTRACTOR'S RESPONSIBILITY TO VERIFY EACH TENANT'S DESIGN DENSITY WITH AGREED UPON LEASE DOCUMENTATION AND THAT TENANT'S PROTOTYPE OR INSURANCE UNDERWRITERS REQUIREMENTS.

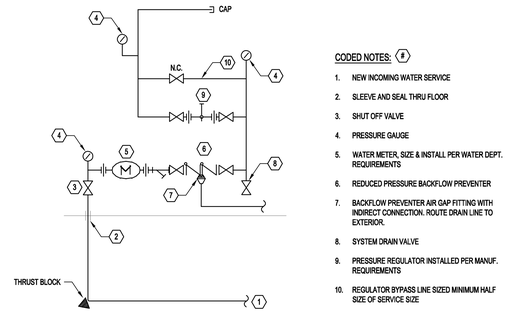
H. SHOP DRAWING REVIEW DOES NOT RELIEVE FIRE PROTECTION CONTRACTOR FROM RESPONSIBILITY TO MEET EACH TENANT'S REQUIREMENTS FOR SPRINKLER COVERAGE.

I. FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR VERIFYING ANY HIGH PILE STORAGE REQUIREMENTS OF FUTURE TENANTS AND PROVIDING AN INCOMING SPRINKLER SERVICE SIZE AND RISERS TO MEET THE REQUIREMENTS FOR ADEQUATE SPRINKLER COVERAGE.

J. THIS DRAWING IS FOR REFERENCE ONLY. FIRE PROTECTION CONTRACTOR FOR THIS PROJECT SHALL PROVIDE FULLY DETAILED SPRINKLER PLANS AND CALCULATIONS.

K. PROVIDE TURNED UP SPRINKLER HEADS IN AREAS WITHOUT CEILINGS.

TENANT SPACES DESIGN CRITERIA NOTE:
FIRE PROTECTION CONTRACTOR TO PROVIDE A FULLY OPERATIONAL WET FIRE SPRINKLER SYSTEM THROUGHOUT SPACE. EXISTING SPRINKLER SYSTEM AND UPRIGHT SPRINKLER HEADS SHALL REMAIN AS APPLICABLE. INSTALL ANY NEW SPRINKLER PIPING IN JOIST SPACE AS HIGH AS POSSIBLE WITH EXPOSED BRASS UPRIGHT SPRINKLERS PROVIDED NEAR ROOF DECK PER NFPA 13. SYSTEM SHALL BE DESIGNED TO ORDINARY HAZARD GPII OCCUPANCY (0.20gpm/sqft OVER THE MOST REMOTE 1,500sqft). SPRINKLER HEADS TO BE SPACED AT A MAXIMUM 130sqft AND INSTALLED ON 1" SPRIGS OR 1" REDUCING BUSHINGS. EXISTING SPRINKLER PIPING CAN BE REUSED AS REQUIRED PER SPRINKLER CONTRACTORS RECOMMENDATIONS.



CODED NOTES: (#)

1. NEW INCOMING WATER SERVICE
2. SLEEVE AND SEAL THRU FLOOR
3. SHUT OFF VALVE
4. PRESSURE GAUGE
5. WATER METER, SIZE & INSTALL PER WATER DEPT. REQUIREMENTS
6. REDUCED PRESSURE BACKFLOW PREVENTER
7. BACKFLOW PREVENTER AIR GAP FITTING WITH INDIRECT CONNECTION. ROUTE DRAIN LINE TO EXTERIOR.
8. SYSTEM DRAIN VALVE
9. PRESSURE REGULATOR INSTALLED PER MANUF. REQUIREMENTS
10. REGULATOR BYPASS LINE SIZED MINIMUM HALF SIZE OF SERVICE SIZE

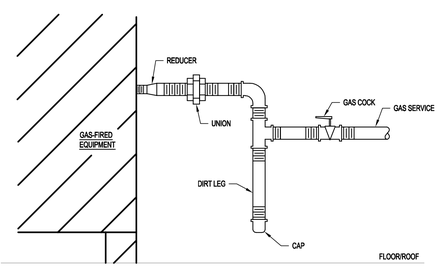
INCOMING WATER SERVICE PIPING DIAGRAM
N.T.S.

GAS LOAD SCHEDULE

MARK	GAS LOAD (MBH)
RTU-1	250
RTU-2	250
RTU-3	250
RTU-4	250
RTU-5	250
RTU-6	250
RTU-7	200
TOTAL LOAD (MBH)	1700
TOTAL EQUIVALENT LENGTH (FT)	325

GAS PIPING SIZED PER TABLE 402.4(2) FROM THE 2018 IFGC.
INLET PRESSURE = 7" W.C.
PRESSURE DROP = 0.5" W.C.
SPECIFIC GRAVITY = 0.6

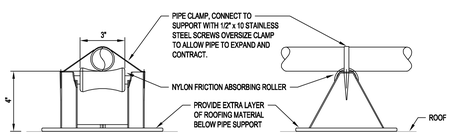
GAS PIPING SHALL BE PRESSURE TESTED PER IFGC 406 AND LOCAL UTILITY REQUIREMENTS.



GAS PIPING CONNECTION DETAIL
N.T.S.

NATURAL GAS PIPING RECOMMENDED SUPPORT SPACING FOR BLACK STEEL PIPE	
PIPE SIZE (IN)	DISTANCE BETWEEN SUPPORTS (FT)
1/2 3/4 - 1 1-1/4 - 3	4 6 7
GAS PIPE, CLEAN PIPE OF OIL AND DEBRIS, PAINT WITH TWO COATS OF PRIMER AND TWO COATS OF RUST INHIBITING PAINT. COLOR: YELLOW OR BY ARCHITECT.	

CONDENSATE PIPING RECOMMENDED SUPPORT SPACING FOR TYPE "L" COPPER PIPE	
PIPE SIZE (IN)	DISTANCE BETWEEN SUPPORTS (FT)
1-1/4 AND SMALLER 1-1/2 - 3"	5 7
ROOF PIPE SUPPORT AS MANUFACTURED BY MIRO INDUSTRIES, "PILLOW BLOCK" PIPE STAND. MODEL #3-R-4 STAND WILL ACCOMMODATE PIPE UP TO 3" IN DIAMETER. FOR INFO: 1-800-768-6978.	



PIPE ROOF SUPPORT DETAIL
N.T.S.

Tenant 6A LL Work at Laurel Square
Laurel Square Shopping Center
Brick Township, NJ

CREATE
ARCHITECTURE PLANNING & DESIGN LLC
45 West 34th Street
Penthouse
New York, NY 10001
Phone: (212) 297-0880
createworldwide.com

Owner / Developer:
BRIXMOR Property Group
One Fayette Street, Suite 150
Conshohocken, PA 19428

Structural & M/E/P Engineers:
Thorson Baker + Associates, Inc.
3030 West Streetsboro Rd
Richfield, OH 44286

Rev:	Date:	Description:
	04/01/2022	ISSUED FOR BID AND PERMIT

PROGRESS NOT FOR CONSTRUCTION 3/31/2022

NATHANIEL J. KOBB, NJ Professional Engineer, NO. GE 52221, 24GA28334600

PLUMBING PLAN

1838.C M-201

Section 200500 - General Requirements

A. General

1. Specifications are applicable to all contractors and/or subcontractors for all mechanical systems in Divisions 01, 20, 21, 22, and 23.
2. This contractor is also referred to the architectural, structural, electrical and all other drawings and specifications pertinent to this project and fully coordinate with all other trades, owner and architect requirements. All of the above mentioned drawings and specifications are considered a part of the contract documents.
3. Conform to all Instructions to Bidders, general and special conditions of contract as specified by architect and/or owner.
4. Refer to "Alternate Proposals" for possible changes affecting the extent of this section of work.
5. Before submitting a bid, each contractor is requested to visit the job site to familiarize themselves with construction condition, check facilities and conditions and make all necessary observations and measurements. Note conditions under which work is to be performed and take all items into consideration in bid. No consideration will be given for his failure to do so.
6. Systems are to be complete and workable in all respects, placed in operation and properly adjusted.
7. Each contractor shall provide for his own clean-up, removal and legal disposal of all rubbish daily.
8. Each contractor shall protect his work, his existing and adjacent property against weather.
9. Each contractor shall protect his work, materials, apparatus and fixtures from damage. Any work damaged by failure to provide protection required, shall be removed and replaced with new material at the contractor's expense.
10. Each contractor must confirm all utility company requirements and connection points in field, prior to starting work. Each contractor shall include cost of utility companies work in their bid.
11. Each contractor must confirm size, location and materials at point of tie in connections in the field prior to rough-in of new work.
12. Arrange for and obtain owner's and insurance representative's permission for any service shutdowns.
13. Each contractor shall be solely responsible for construction means, methods, sequences of construction and the safety of workmen.
14. No piping, ductwork, wiring, etc., shall be installed or routed above or below electrical panels and equipment, through elevator equipment rooms or elevator shafts or stairways unless these items serve these areas only.
15. All contractors shall coordinate with the electrical contractor and obtain a written approval identifying the electrical characteristics of all mechanical equipment prior to ordering of equipment. No additional payment will be made for lack of contractor coordination of electrical characteristics.
16. Each contractor shall include modifying existing conditions to complete the project. During construction the contractors may uncover an existing condition that will have to be modified. Any such work which comes under the jurisdiction of this contractor shall be done by this contractor without extra cost to the owner and project.
17. Work related to the existing building shall be coordinated to minimize interference or interruption of normal building use by the owner. Refer to architectural plans for phasing requirements.
18. Ceiling grid systems shall not be supported from ductwork, heating or plumbing lines or any other utility lines, and vice versa. Each utility and the ceiling grid system shall be a separate installation and each shall be independently supported from the building structure - concrete, steel or masonry. Where interferences occur, in order to support ductwork, piping, ceiling grid systems, etc., trapeze type hangers or supports shall be employed which shall be located so as not to interfere with access to such mechanical equipment as valves, regulators, mixing boxes, fire dampers, etc.

B. Work Coordination and Scope

1. Each contractor under this division shall familiarize himself with the work to be done under other divisions of this specification and their related drawings and shall so coordinate and schedule his work as not to cause delays or interference with the work of others. Such coordination and scheduling shall accomplish the installation of mechanical and plumbing equipment and piping with a minimum of cutting through masonry and other adjustments.
2. Work included under this division shall consist of furnishing all materials, supplies, equipment, tools, transportation and facilities and performing all labor and services necessary for the complete installation of the mechanical systems of plumbing, fire protection, heating, ventilating, air conditioning, and specialty systems.
3. The contractor under this division shall report discrepancies in the work of others which affect his work. Any changes made necessary by failure or neglect to report such discrepancies shall be made by and at the expense of the contractor of this division. Obtain written instructions for changes necessary to accommodate work of others.
4. The contractor under this division shall be responsible for proper size and location of anchors, chases, recesses, opening, etc., required for the proper installation of his work.
5. The division of responsibility under separate mechanical, fire protection and plumbing contracts for tie-in points shall be as follows:
   a. The plumbing contractor shall provide domestic water and gas to within five feet (5'-0") of equipment connection furnished by the mechanical or electrical contractor, final connection by mechanical or electrical contractor. On the water lines, the plumbing contractor shall provide the shut-off valve, check valve, backflow preventor and pressure regulator. On the gas lines, the plumbing contractor shall provide the shut-off valve and pressure regulator.
   b. Plumbing contractor shall run the gas, water, sanitary and storm to 5'-0" outside the building or to points as noted on the drawings.
   c. Fire protection, plumbing and mechanical contractor shall provide sleeves to the general contractor for placement in floors, walls, etc. and coordinate such location. The plumbing contractor shall be responsible for flashing at vent roof terminals.
   d. The fire protection, plumbing and mechanical contractor shall check with the architectural drawings concerning the test borings to determine areas of rock which should be included in his excavation work. Failure to adjust for rock conditions shall not warrant cause for additional compensation.
   e. The plumbing contractor shall rough-in and connect all other fixtures and equipment where shown on the drawings but not previously mentioned. Provide with shut-off valves and p-traps with clean-out plug.
   f. The plumbing contractor shall provide gas, cold water and drain for the emergency generator and install valves, etc. Generator furnished by the electrical contractor.
   g. Unless responsibility to provide or furnish is otherwise stated on the electrical or mechanical drawings and electrical and mechanical specifications the contractor, under these divisions shall provide motors, special controls, disconnects, transformers, starters and relays as required for the proper operations of all equipment furnished under this division. All electrical equipment shall conform to requirements set forth under the electrical division and be suitable for operation on 60 cycle current available at the site.
   h. All motors 1/3 HP and smaller shall be single phase motors, 1/2 HP and larger, shall be three phase motors except where otherwise specified. Thermal overload protection for all motors shall be provided. Combination fused disconnect and magnetic line starters with auto-off-test switch shall be provided for all three-phase motors. Thermal overload relays shall be sized for 115 percent of full load motor current. For motors with VFD; motors shall be inverter duty motors that meets current "MG 1 Part 31" specifications. Motors to have a minimum of 20:1 turn down ratio. Motors over 20 Hp shall have shaft ground rings. The installation of all motors, starters and other electrical work under this mechanical division shall be done so as to conform with the National Electric Code. Each motor shall be of squirrel cage type, open-drip proof, normal starting torque, having ball bearings unless otherwise specified. For manufacturers that use PMAC motors, this contractor shall supply VFD's to operate motor.
6. Each contractor shall provide OSHA approved handrail (Guard) system for all roof mounted equipment within 10'- 0" of roof edge where the roof edge does not have a 42" high parapet or higher.

C. Codes, Permits, Standards and Regulations

1. Contractors shall install work in full accordance with rules and regulations of all applicable codes (local, city, county, state, national codes, NFPA, OSHA, etc.), government regulations, utility company requirements, and applicable standards having jurisdiction over premises. This shall include safety requirements of the state department. Do not construe this as relieving contractor from compliance with any requirements of specifications which are in excess of code requirements and not in conflict therewith.
2. Contractors shall secure and pay for all fees, permits, and certificates of inspection incidental to this work required by foregoing authorities. Arrange for all required inspections and approvals.
3. Contractor shall be responsible for payments to all public utilities for work performed by them in connection with provision of service connections required under this division of specifications.
4. Deliver all permits and certificates to architect in duplicate.

D. Design Drawings

1. The design drawings, as submitted, are diagrammatic and are not intended to show exact location of equipment, piping and ductwork unless dimensions are given. Piping and ductwork are to be installed along the general plans shown on the drawings while conforming to actual building conditions. Each contractor shall confirm all dimensions by field measurement.
2. Before entering into a contract, the successful bidder may be required to submit satisfactory evidence to show that the manufacturer of all parts of the equipment offered have been regularly engaged in the manufacture of such equipment for three (3) years and have not less than three (3) installations of a similar type which have been in successful operation under conditions similar to those specified for not less than two (2) years.
3. All equipment, piping and material specified herein after as shown on the drawings shall be furnished and installed by the contractor, unless specifically indicated to the contrary. Installation shall comply with all required "Building Codes" and "Reference Standards."
4. If this contractor proposes to install equipment requiring space conditions other than those as specified and/or shown on the design drawings, or to rearrange the equipment, he shall assume full responsibility and submit drawings for the rearrangement of the space and shall obtain the full approval of the architect prior to start of any work.
5. The exact locations for fixtures, equipment and piping which is not covered by drawings shall be obtained from the architect or his representative in the field and the work shall be laid out accordingly.
6. Drawings and specifications are intended to supplement one another. Any materials or labor called for in one but not the other shall be furnished as if both were mentioned in the specifications and shown on the drawings.

E. Base Bid Equipment, Materials and Substitutions

1. All equipment and materials shall be new, free of defects and UL labeled.
2. Base bid manufacturers are included in the specification or listed in schedules on the drawings. All other manufacturers are considered substitution.
3. The name or make of any article, device, material, form of construction, fixture, etc., stated in this specification, whether or not the words "or approved equal" are used, shall be known as a "standard".
4. All cost shall be based on "standards" specified.
5. The equipment schedules on the drawings indicate manufacturer and their equipment model numbers that this design has been based on. Each contractor is required to bid upon the basis of design and furnish the makes specified.
6. Where more than one make or name is mentioned as being acceptable, it shall be understood that only the name or make referring to the manufacturers model numbers or sizes shall be considered the "Specified Standards." It shall be further understood that other makes and names, even though mentioned, have not been checked for detail and that their size and arrangement are the contractor's responsibility the same as a proposed substitute item. The use of other manufacturer's equipment that is listed as acceptable alternates that entails general trades, structural, mechanical, electrical, etc., revisions is this contractor's responsibility to provide revisions. Any additional cost of such changes shall be paid by the contractor submitting the acceptable alternates which necessitates changes in installing such submitted alternate equipment, even though such costs may be part of another division of work.

200500 (cont.)

7. Bids concerning the use of substitute products must be accompanied by complete specifications and performance characteristic covering these products. Contractor shall provide all available test data and experience records which may be helpful to the architect in evaluating the quality and/or suitability of alternate products.
8. Contractor is also invited to bid on any other similar products the contractor desires to propose as substitutions, stating any difference in cost (add or deduct from base bid cost) for each proposed substitution on the substitution sheet. If the architect decides to accept any of the proposed substitutions, proper notations thereof shall be made in the written contract. Where several makes are mentioned in the specifications and the contractor fails to state that he prefers a particular make in his bid, the owner shall have the right to choose any of the makes mentioned without change in price. No consideration will be given to proposals for alternative products unless submitted with the original bids.
9. Substitutions are subject to the approval of the owner. If a substitution is submitted, it is the contractor's responsibility to evaluate it and certify that the substitution is equivalent in all respects to the base specifications.
10. If substitutions are approved, notify all other contractors, subcontractors, etc., affected by the substitution and fully coordinate with them. Any costs resulting from substitution, whether by this contractor or others, shall be the responsibility of and paid for by the substituting contractor. Approved shop drawings do not absolve this contractor from this responsibility.
11. All equipment shall be installed in full accordance with the manufacturer's data and installation instructions and service clearances. It is this contractor's responsibility to check and confirm these requirements prior to starting of any work.

F. Warranty

1. Fully warrant all materials, equipment and workmanship and the successful operation of all equipment and apparatus installed by this contractor for one (1) year from date of final acceptance.
2. Extend all manufacturers' warranties to owner; including five (5) year compressor and ten (10) year heat exchanger extended warranty on HVAC equipment to include material and labor.
3. Repair or replace without material and labor charge to the owner all items found defective during the warranty periods. In the case of replacement or repair due to failure within the warranty period, the warranty on that portion of the work shall be extended for a minimum period of one (1) year from the date of such replacement or repair.

G. Shop Drawing Submittals

1. Submit shop drawings for mechanical, plumbing, fire protection, and control systems; including but not limited to sheetmetal, plumbing fixtures and equipment with adequate details and scales to clearly show construction. Indicate the operating characteristics for each required item. Clearly identify each item on the submittal as to mark, location and use, using the same identification as provided on the construction documents.
2. Sheetmetal and fire protection shop drawings shall be fully dimensioned and coordinated based on field verified building dimensions and clearances and architectural ceiling layouts. Indicate structural systems, lighting, ductwork and piping at all critical locations.
3. Contractor shall review and indicate his approval of each shop drawing prior to submittal for review. Shop drawings will not be reviewed by the engineer unless the contractor's approval is noted. Do not start work or fabrication until shop drawings have been reviewed by the engineer and returned to the contractor.
4. Submittals will be reviewed only for general compliance with the contract documents and not for dimensions or quantities. The architect and engineer will make every effort to detect and correct errors, omissions, and inaccuracies in such drawings, but the failure to detect errors, omissions, and inaccuracies shall not relieve the contractor of responsibility for the proper and complete installation in accordance with the intent of the contract documents. The submittal review shall not relieve the contractor of responsibility for purchase of any item in full compliance with the contract documents or its complete and proper installation.
5. Where submittals vary from the contract requirements, the contractor shall clearly indicate on submittal or accompanying documents the nature and reason for the variations.
6. Each manufacturer or his representative must check the application of his equipment and certify at time of shop drawing submittal that the equipment specified has been properly applied and can be installed, serviced and maintained where indicated on the drawings. Advise engineer in writing with submittal drawings of any potential problems. The manufacturer shall be responsible for any changes that might be necessary because of physical characteristics of equipment that have not been called to the engineer's attention at the time of submittal.
7. Submit a minimum of one (1) print and an electronic "pdf" of shop drawings to the architect. The architect and engineer shall review and return a pdf. The contractor shall distribute copies as required to properly conduct the work, including requirements of the operating manual.

H. Record Drawings

1. Each contractor or subcontractor shall keep one (1) complete set of the contract drawings and equipment submittals on the job site on which he shall regularly record any deviations or changes from such contract drawings made during construction. All recording shall be done in color ink.
2. These drawings shall record the installed location of all concealed equipment, piping, electric service, sewers, wastes, vents, ducts, conduit, etc., by measure dimensions to each such item from column centerlines or readily identifiable and accessible walls or corners of the building. Plans also shall show invert elevation of sewers and top elevation of all other below-grade lines.
3. Record drawings shall be kept clean and undamaged and shall not be used for any purpose other than recording deviations from working drawings and exact locations of concealed work.
4. After the project is completed, these drawings shall be scanned to an electronic "pdf" format and pdf and hard drawings shall be delivered to the architect in good condition, as a permanent record of the installation as actually constructed.

I. Supervision

1. The contractor shall have in charge of work at all times during construction a competent foreman or superintendent whose experience and background shall qualify him for the work to be performed under this division. Once assigned, the foreman or superintendent shall be retained until completion of the project and any consideration as to his removal on grounds of incompetence shall either be initiated by or referred to the architect for decision.

Section 200510 - Basic Materials and Methods

A. General

1. Provide all materials, labor, equipment, and accessories required to furnish and install the mechanical items identified in this section.
2. This section includes basic mechanical materials and methods to complement other division sections in this specification and requirements indicated on the mechanical drawings.

B. Interferences

1. Before installing any work, contractor shall see that it does not interfere with clearance required for finish on beams, columns, pilasters, walls, or other structural or architectural members, as shown on architectural drawings. If any work is so installed and it later develops that architectural design cannot be followed, contractor shall, at his own expense, make such changes in his work as architect may direct to permit completion of architectural work in accordance with plans and specifications.
2. Install additional offsets on piping or ductwork where required to obtain maximum headroom or to avoid conflict with other work without additional cost to owner.
3. Report any interferences between work under this division and that of any other contractors to architect as soon as they are discovered. Architect will determine which equipment shall be relocated, regardless of which was first installed, and his decision shall be final.

C. Protection of Work and Property

1. The contractor shall be responsible for safeguarding work, property, and facilities against damage, both his own as well as others with which he may come into contact in the performance of his work.
2. Stored materials shall be protected against damage from weather. Pipe and duct openings shall be closed with caps or plugs during installation. All fixtures and equipment shall be covered and protected against damage. Any materials or equipment damaged at any stage in the construction shall be replaced or repaired. Final completion, all work shall be in a clean and unblemished condition.
3. During construction, all return air ductwork and transfer air openings serving new and existing air handling equipment and/or adjacent tenant spaces shall be protected. Openings which need to remain active shall be covered and protected with MERV 8 filtration media; openings which can remain inactive during construction shall be covered with plastic sheathing and sealed air tight. Filter media shall be replaced regularly as required during construction in order to ensure adequate airflow through all required active openings. In addition, at the end of each phase of construction and at the end of the construction project, all filtration media within each piece of equipment serving the space shall be replaced.

D. Excavation and Backfill

1. Perform all excavation and backfill required for installation of below-grade piping and ductwork.
2. Excavate as required to install piping at required depth and pitch. Pipe to be laid on sand bedding to give uniform bearing along length of pipe (sand inside building and interlocking aggregate outside building).
3. Backfill with bedding material to a minimum of 12" above top of pipe and compact. Balance of backfill in outdoor grass areas shall be clean earth up to 6" above surrounding grades. Backfill below finished floors shall be sand. Backfill outdoors under paving shall be interlocking aggregate and shall be compacted in maximum 10" layers.
4. All other excavations shall be backfilled with clean earth, excluding rubbish and boulders. Backfill shall be thoroughly tamped and puddled.
5. Patch floor and paving to match existing adjacent surfaces.
6. Backfilling shall not be done until pipe lines are properly tested in the presence of the architect and/or inspection of the government agency having jurisdiction.
7. Control trench soil compaction during construction for compliance with the maximum density specified for the following areas:
   a. Building slabs, walkways, roadways, or public thorough-fares; compact top 12" of subgrade and each layer of backfill for fill material at 95 percent density for cohesionless soils, and 90 percent density for cohesive soil material. Tests to be performed by an independent testing service, with the compliance report submitted to the architect.
8. Pipe shall not be laid in water. Furnish all pumping equipment, power, temporary connections, etc., and do all pumping necessary to remove ground or casual water.
9. Where trenches cross roads, walks, or public thoroughfares, provide suitable barricades and bridges adequately protected by signs or red flags during day and lights as night.
10. Repave all streets or sidewalks disturbed at this contractor's expense to recommendations, procedures and satisfaction of architect and authorities having jurisdiction.

E. Supports and Hangers

1. Hangers and supports are to be provided to properly support, secure and align piping and to meet field conditions and as manufactured by Grinnell, Michigan Hanger or Caddy.
2. All hangers, brackets, clamps, etc., shall be of standard weight steel. Perforated strap hangers shall not be used in any work. When two or more pipes are run parallel, they may be supported on unistrut-type trapeze hangers. Other hangers for pipe 3" in size and smaller shall be clevis. For pipe transporting medium above 150 degrees F and 4" in size and above, use pipe roll. Each hanger is to be sized to include pipe insulation saddle for protection.
3. Where building service lines enter or leave building such as water, sewer, gas, etc., and are installed on filled earth, provide continuous support on a reinforced concrete beam furnished and installed under this division. Support beam on building and with vertical support down to foundation footing and on undisturbed earth at other end. Gas main shall enter building above grade.
4. All vertical piping passing through floors shall be supported at the floor by a riser clamp.
5. Isolate all copper lines form ferrous hangers or supports by using foil filler or vinyl tape.
6. Spacing to comply with ASHRAE standards and code requirements.

200510 (cont.)

F. Pipe Sleeves, Floor and Ceiling Plates

1. All pipes passing through floors or masonry walls shall be provided with machine-cut schedule 40 pipe steel sleeves. The sleeves shall be so sized to allow at least 1/4" clearance between the inside sleeve wall and the pipe or insulation surface. Sheet metal sleeves shall not be used in this work. Pipe sleeves are to extend 2" above finished floor and sealed. Pipe sleeves are to be full wall thickness and sealed.
2. Unused sleeves shall be plugged and finished to match adjoining surface.

G. Escutcheons

1. Fit all pipe passing through walls, floors or ceilings in finished rooms with steel or brass escutcheons. Where surface is to receive a paint finish, make escutcheons prime painted; otherwise, make escutcheons nickel or chrome plated. Where piping is insulated, fit escutcheons outside insulation.

H. Pipe Identification and Tags

1. Identify each pipe, valve and controls in equipment rooms, above accessible ceilings and in accessible shafts.
2. Color code identification bands or marker backgrounds to identify contents of pipe with initials and direction of flow located near each valve and fitting, on both sides of pipe passing through walls and on long runs at not over 20'-0" intervals.
3. At place where pipe is to have marking, covered pipe shall be properly primed with clear lacquer. After marking is applied, coat with lacquer. Apply marking adjacent to valves and equipment at major changes in directions, where pipes pass through walls or floors.
4. Each piece of equipment shall be identified by a number, together with a brief description of its purpose, e.g. "Air Handling Unit - East Lobby." Identification shall be embossed or engraved plastic or stamped brass strips firmly attached to the equipment or adjacent wall at the obvious location. The lettering for such strips shall be not less than 1/2" high.
5. All valves shall be provided with brass numbered tags attached to handle with a brass chain or ring. Wiring of tags will not be acceptable. At the completion of the work, a reproducible valve schedule shall be provided. Three (3) copies of this shall be mounted in metal, glass covered frames where requested by the architect. The schedule shall give a description of the line or equipment controlled; the normal position, emergency and/or shutdown position and location given either by description or diagram.
6. All controls, starters, switches, etc, shall be identified by embossed stencil or engraved plate as to purpose and/or equipment controlled. Control wiring shall be identified with program number and device it services.

I. Access Panels

1. Each contractor shall be responsible for providing all required access panels necessary for his work. This includes any access panels required for HVAC, plumbing and fire protection. Each contractor shall also provide access panels for any existing conditions as required.
2. Refer to architectural drawings and specifications for type of access panel and coordinate locations prior to any work.
3. Contractor shall mark lay-in ceiling tiles, in a method approved by the architect, where access is required to such mechanical, plumbing, and fire protection equipment, valves, regulators, mixing boxes, fire damper, etc.

J. Expansion Joints

1. Expansion joints in piping for heating and domestic water system 2-1/2" and below shall be Flexicraft ML loop stainless steel for steel and copper pipe or Flexonics model H, stainless steel bellows, internal guides, anti-torque device for steel pipe and model HB, bronze bellows, internal guides, anti-torque device for copper pipe; end connections to match corresponding pipe construction.
2. Expansion joints in heating and domestic water systems 3" pipe size and above shall be flexonics corrugated bellows type with mated neck rings and control rings; allowable working pressure to be 300 PSIG at 850 degrees F. End connections to be flanged.
3. Pipe alignment guide to be steel spider (copper clad for copper pipe) housed in a steel sleeve with feet for attachment to structure.
4. Expansion loops shall be provided on all pipe runs over 100 ft in length. Size loop per manufacturer's recommendations or as scheduled.

K. Thermometers and Gauges

1. Pressure gauges shall be provided in pipe lines and at inlets and outlets to equipment as called for or specified. These shall be installed to indicate pressure changes across equipment only. This means that they must have connections installed as close as possible to equipment flanges. These shall be bourdon tube type with 3" minimum dial 1/4 male NPT connection, steel cages with pressure ranges suitable for indicating the normal operating pressure at the two-third point of the scale range. Ashcroft, 3M or Taylor. Connections shall be made with shut-off cock and surge snubber.
2. Thermometers shall be a red mercury in glass-type with adjustable angle feature, 7" minimum scale length with range and bulb length suitable for the application and insertion well. These shall be located where they sense a true temperature and where they can be easily read and be installed with heat transfer grease.

L. Miscellaneous Steel

1. Furnish and install all miscellaneous steel required for supports, hangers, anchors, guides, etc., required for installation of equipment and materials furnished and installed under this division.

M. Painting

1. This contractor shall perform all painting incidental to this work.
2. All insulation shall be painted at the time of installation with one coat of Benjamin Foster "Lagtone" water base paint. At the completion of the work, all such insulation shall be given an additional coat of alkyd resin paint of a color to match existing building structure or as selected by the architect.
3. All uncovered black iron pipe, fittings, iron portions of valves, hangers, structural steel, expansion tanks, cooling tower sumps and all other black iron work shall be thoroughly cleaned and given two coats of alkyd resin paint of a color to match existing building structure or as selected by the architect.
4. All uncovered exposed sheet metal shall be thoroughly cleaned and neutralized and given two (2) coats of alkyd resin paint of a color to match existing building structure or as selected by the architect.
5. All painting shall be done with a brush or roller. Spray painting will be prohibited.
6. All finishing materials, thinners, etc., shall be the best quality, first line materials as manufactured by:
   a. E.I. Dupont De Nemours and Company
   b. Pratt and Lambert, Inc.
   c. The Glidden Company
   d. The Sherwin-Williams Company
   e. The Pittsburgh Plate Glass Company
7. All paint materials shall be delivered to the job in the manufacturer's original unopened and labeled containers, and they shall be used strictly in accordance with the manufacturer's directions.
8. This contractor shall submit a list of materials to the architect. The list shall state the branch names of the materials that the contractor intends to use. This list shall be secured from the paint manufacturer and shall be on his stationery.
9. The architect's approval must be secured before any painting work is started.

N. Clean-Up

1. Insofar as this contract is concerned, at all times keep premises and building in a neat and orderly condition: Follow explicitly any instructions of architect in regard to storing of materials, protective measures, cleaning-up of debris, etc.
2. Upon completion of work, this contractor shall thoroughly clean all apparatus furnished by him, pack all valves and thoroughly clean piping, fixtures and equipment removing all dirt, grease and oil.
3. Air systems shall not be operated without filters. Upon completion of work, replace all filters.

O. Operating and Maintenance

1. This contractor shall furnish competent personal instruction to the owner's operating personnel for a period of two (2) days in the proper operation of the heating and air conditioning equipment. He shall also supply the owner with copies of an operation manual containing the following:
   a. Step-by-step procedures for start-up and shut-down for each system and piece of equipment.
   b. Performance data, curves, ratings.
   c. Wiring diagrams.
   d. Manufacturer's descriptive literature.
   e. Automatic controls with diagrams and written description of operation.
   f. Manufacturer's maintenance and service manuals.
   g. Plumbing fixtures.
   h. Spare parts and replacement parts list for each piece of equipment.
   i. Name of service agency and installer.
   j. Final approved shop drawings.

P. Roof Curbs (as manufactured by Pate, Roof Products and Systems and Thycurb)

1. Curb shall be 18 gauge galvanized steel with continuous welded seams, wood nailer, counterflashing, R-8 minimum and liner insulation. Top of curb shall be a minimum size as shown in detail on drawings, but not less than 14" above the high point of roof where curb attaches.
2. Provide curb for all roof penetrations of ducts and piping.
3. All cutting and patching of existing roof shall be by the owner's roofing contractor and paid for by the mechanical contractor.
4. Curb shall be installed with top level. Curb base to match roof pitch.

Section 200523 - Piping and Valves

A. General

1. Furnish all material, labor, equipment, and accessories as required to install complete fire protection, plumbing, and HVAC piping systems as indicated on drawings and in these specifications.
2. Install in full accordance with local code requirements, see other specification section for additional requirements and install in accordance to manufacturer's recommendations and requirements.

B. Connections to Equipment Furnished by Others

1. Provide valved water and/or gas connection for equipment furnished by other contractors or owner.
2. Include accessories required by code, drawings and manufacturer's installation instructions.
3. Fully coordinate with lab equipment, pool equipment, kitchen equipment, and laundry equipment suppliers and confirm all rough-in requirements prior to starting work.

C. Installation

1. All piping shall be installed parallel with or perpendicular to the building walls. All vertical risers shall be installed plumb and straight. All piping above accessible ceilings shall be installed as high as possible and at height to allow sufficient space for ceiling panel removal.
2. All piping shall be installed with pitch in the direction of flow of not less than 1" in forty feet, except as otherwise shown. It must be possible to drain every portion of the piping system.
3. Run lines as direct as possible and avoid unnecessary offsets. However, if offsets are required in order to obtain maximum headroom or to avoid conflict with other work, they shall be made as required or as requested by the architect without addition cost to the owner. The architect reserves the right to make minor changes in the location of piping and equipment during the roughing-in, without additional cost to the owner. All changes proposed by others shall be approved by the architect.
4. Lines shall be cut accurately to measurement at the site and worked into place without springing or forcing. Sufficient offsets, pipe loops or expansion joints between anchor points shall be provided as needed, whether or not shown, to limit stresses and control movement of lines subject to the thermal expansion.
5. Before any piping is installed, it shall be up-ended and pounded to remove any foreign matter present, and shall be swabbed, if necessary, for thorough cleaning. After installation and before final connections made, all piping system shall be flushed with a material that is not injurious to either pipe or equipment. (See also "Tests and Adjustments.")
6. Pipe to be threaded shall be cut square and full threaded with clean-cut tapered threads and shall be reamed after threading. Threaded connections shall be made with pipe thread compound applied to the wall threads only.
7. The edges of pipe to be welded shall be machine beveled wherever possible. Before welding, the surfaces shall be thoroughly cleaned. The piping shall be carefully aligned. No metal shall project within the pipe. Mitered joints are prohibited. Only factory formed fittings shall be used. Elbows shall be long radius type. Flanges shall be welding neck type. Mitering of the pipe to form elbows or the notching of straight runs to form the tee connection will not be permitted.
8. Unions or companion flanges shall be installed in all connections to equipment, automatic valves, etc., as necessary to permit removal of equipment and specialties for servicing, repairing or cleaning. It shall be possible to remove any piece of equipment by removing only one or two sections of piping.
9. Valves shall be provided in suitable locations at each item of equipment, branch circuit, riser, or section of piping as indicated or required for proper and safe operation of the system and to facilitate maintenance and/or removal of all equipment and apparatus. On horizontal pipe runs, install all valve stems vertically up where possible and in no case shall the stems be turned more than 90 degrees from the vertically up position.
10. Drain valves shall be provided at all low points, trapped section, and on the equipment side of all branch valves to permit draining of all parts of all liquid piping systems. Drain valves shall have threaded hose ends with cap and chain. Drain piping shall be provided from pump glands, relief valves, etc., to spill at the floor over floor drains or other acceptable discharge points. The drain line shall terminate with plain, unthreaded end with a minimum 2" air gap at floor drain.
11. Taps (half couplings or tees) shall be provided as necessary to permit the installation of temperature control instruments, thermometers, pressure gauges, air vents, etc.
12. Connections between copper piping and screwed ferrous equipment connections or screwed ferrous piping systems shall be made as follows:
    a. For stationary non-rotating, non-vibrating equipment connections: dielectric unions.
    b. For rotating or vibrating equipment connection: cast brass adapter and bronze flanges with dielectric separation of flanges and bolts.
    c. Connections between copper piping and ferrous equipment flanges or flanged ferrous piping systems shall be made using bronze companion flange with dielectric separation of flanges and bolts.
    d. Brass or bronze valves in ferrous piping will not require dielectric separation.
    e. Nipples between copper piping and equipment or fixture connection fittings shall be brass, not galvanized steel.
13. All pressure piping systems shall be installed to conform to the requirements of the local AHJ or state's pressure piping system code.
14. All excavations for installation of pipe shall be open trench work and shall be kept open until piping has been inspected, tested, and accepted.
15. All piping passing thru cast-in place concrete construction shall be sleeved to provide a minimum of 1/2"annular space around entire pipe to be sleeved. Space between sleeve and pipes in foundation walls shall be tightly caulked or mechanical seal to give a waterproof penetration.
16. Any piping resting on or coming in contact with building structure shall be insulated at that point to prevent telegraphing of sound.
17. Metal piping laid in corrosive fill shall be encased in concrete or in split tile.
18. All sewers 14 feet -0" below finish grade shall be encased in concrete.
19. Threaded joints shall conform to American Taper Pipe Thread ASA-B2.1-1960. All burrs shall be removed, pipe ends shall be reamed or filed to size of bore and all chips removed. Pipe cement shall be used only on male threads.
20. Unions shall have metal seats for drainage systems and metal to metal ground seats on water system.
21. Furnish and install valve in branches to sill cocks, toilet rooms and other fixture groups. Plumbing fixtures shall have wheel or screwdriver stops as specified.
22. All piping shall be rigidly supported and shall not be loose or shaky.

D. Sanitary, Waste, Vent and Storm Sewers

1. Install sewers, stacks, vents, drains, etc., as indicated on the drawings.
2. All drainage and vent piping shall be constructed and run as direct as possible, protected from contact with slag or cinders and wherever practicable, shall be located so as to be accessible for inspection. The actual runs and locations of drains, soil waste, and leader piping shall be installed as to meet with the various conditions at the building and any work necessary to conceal pipes or clear pipes of other trades shall be done as directed by the architect.
3. Sewers to be pitched a minimum of 1/4" per foot for 3" sizes and under and 1/8" per foot for 4" sizes and larger or to slope as indicated on drawings. Kitchen sanitary waste shall be sloped ¼" per foot for all pipe sizes.
4. All piping shall be correctly aligned before joins are made. All changes of direction in drainage and vent piping shall be made by means of "Y" branches and 1/6, 1/8 or 1/16 bends. No lines shall be run with unnecessary bends or offsets and where changes in direction are unavoidable; they shall be made by use of proper fittings. Single and double sanitary tees, 1/4 bends and 1/8 bends may be used in vertical sections when direction of flow is from horizontal to vertical. Changes in direction and branch connections shall be made with approved drainage fittings compatible with the piping system material in which it is installed.
5. Install cleanouts at base of each vertical waste and rainwater stack, each change in a direction of piping greater than 45 degrees, within five feet (5'-0") of main sewer after exiting the building, or as shown on drawings. Cleanouts on underground lines shall extend up flush with finished floor or grade. Provide cleanouts not over 50'- 0" on center along straight runs. Cleanouts shall be size of pipe to which it is installed up to 6" in diameter. Pipe over 6" in diameter shall have a 6" cleanout.
6. Openings in pipes shall be properly plugged when work is not in progress
7. Roof drains shall be provided with a flashing ring and a 30" X 30" X 12 oz./s.f. -copper sheet ASTM B152/B, 152 M flashing properly fastened to the flashing ring.
8. Sewers shall be laid with full length of each section resting on a solid bed. Where necessary to obtain a firm support, the pipe shall be bedded on select material and thoroughly tamped. As pipe is laid, care shall be exercised to keep interior of pipe clear of foreign matter. Where trenching for pipe is excessively wide, the contractor shall, at his own expense, embed the pipe in concrete to support the added load of backfilling.
9. Pipe Schedule:
   a. Below grade inside building
      1) Service weight - cast iron pipe ASTM A-74-82 with ASTM C-564-80 neoprene compression joints or no-hub CISPI with clamps. All kitchen sanitary shall be cast iron only.
      2) PVC-DWV Sch. 40 solid core pipe, ASTM D-1785 with ASTM D-2665 DWV solvent weld socket fittings.
   b. Above grade and vent material shall be as follows:
      1) No-hub cast iron pipe CISPI 1-301-78.
      2) PVC-DWV SCH. 40 solid core pipe, ASTM D-1785 with ASTM D-2665 DWV solvent weld socket fittings.
      3) 1-1/4" and smaller, SCH. 40 galvanized steel pipe ASTM A-53/A53M, Type E with screwed fittings ASME B-16.4, class 125.
   c. Site below grade sewers
      1) No-hub cast iron pipe CISPI 1-301-78.
      2) PVC-DWV SCH. 40 solid core pipe. ASTM D-1785 with ASTM D-2665 DWV solvent weld socket fittings.
      3) Up to 15" - PVC pipe, ASTM D-3034 SDR 35 with ASTM F477 gasket joints.
      4) 18" and over - reinforced concrete pipe (RCP) ASTM C 76-83 with ASTM C 443-79 rubber gasket joints.
10. PVC piping shall not be installed unless permitted by code and shall not be installed in return air plenums.

200523 (cont.)

E. Gas Piping

1. Install gas piping in accordance to the latest version of the National Fuel and Gas Code, NFPA and local gas companies' requirements and State and local codes.
2. Include meter, regulators, valves and connect to all gas using equipment.
3. Equipment connections at each unit shall include gas cock, union, dirt leg, and reducer to unit connection size. For above low pressure gas systems, provide pressure reducing valve at equipment or low pressure branches.
4. Construct concrete base to below frost line for large meter installation.
5. Pipe Schedule:
   a. Below grade, outside building (<60 psi)
      1) Polyethylene plastic ASTM D-2513 with stab couplings or fusion weld joints.
      2) Black steel Schedule 40 pipe with wrought-steel fittings and welded joints, or mechanical couplings. Coat pipe and fittings with protective coating for steel pipe. Install cathodic protection anode on service line.
   b. Below grade, outside building (≥ 60 psi)
      1) Polyethylene plastic ASTM D-2513 with stab couplings or fusion weld joints.
      2) Schedule 40 black steel coated and wrapped with welded black steel fittings. Install cathodic protection anode on service line.
   c. Above grade, low pressure (≤ 2 psi)
      1) Schedule 40 seamless black steel pipe, beveled ends.
         a) 2" and smaller - screwed fittings, wrought iron.
         b) 2-1/2" and larger - welded fittings, black steel.
   d. Above grade, medium pressure (2 - 10 psi)
      1) Schedule 40 black steel with welded black steel fittings.
   e. Underground, below building
      1) Black steel Schedule 40 pipe with wrought-steel fittings and welded joints. Pipe in containment conduit which is steel pipe with wrought-steel fittings and welded joints coated with protective coating for steel pipe. Conduit to be vented to atmosphere at both ends. Install cathodic protection anode on conduit.
   f. Valves shall not be located above ceiling spaces used as a return air plenum.
   g. Exterior exposed bare steel pipe shall be painted with a primer coat and two (2) coats or rust inhibitive paint, color as selected by Architect.
   h. All welding shall be performed by state certified welders.
   i. All piping in non-accessible spaces shall have welded joints.

F. Gas Valves

1. Gas cocks 2" and smaller shall be 175# WOG, cast iron, screwed body pattern. Valves shall be UL listed for gas service. Valves shall be Dezurik series 425 with "RS-49" plug, seals and lever handle.
2. Gas cocks 2-1/2" thru 4" shall be 175# WOG, cast iron, flanged body pattern. Valves shall be UL listed for gas service. Valves shall be Dezurik series 425 with "RS-49" plug, seals and lever handle.
3. Pressure reducing valves shall be line size and to reduce pressure from supplied side to equipment pressure requirements. Valves shall be as specified on drawings or an approved equal by American Meter Company, Fisher Control Valves or Invensys.

G. Domestic Water Piping

1. Install domestic water piping as indicated on drawings. Include all fittings, valves, hangers, and other accessories including water meter and backflow preventer. Extend domestic water piping to all fixtures and equipment required for complete installation.
2. Include unions, or other disconnect means, stops or valves for isolation of fixtures and equipment. Valves to be fully compatible with piping for service intended as manufactured by Nibco, Crane or Milwaukee. Include hose or drain valves at low points where fixtures cannot be used for drainage.
3. Install shock absorbers at each quick closing fixture and where required to prevent water hammer as manufactured by J.R. Smith, Sioux Chief or Zurn. Absorbers shall be installed in vertical upright position.
4. Hangers on insulated pipe to be outside of insulation, sized accordingly with a sufficient saddle to protect insulation as manufactured by Grinnell or Michigan.
5. Pipe Schedule:
   a. Below grade outside building (2-1/2" and less).
      1) Soft copper ASTM B88, Type "K" without joints.
      2) PEX tube and fittings with stainless steel crimp rings. No joints for below grade installation.
      3) PP, SDR11 socket fittings; and fusion-weld joints.
      4) Piping may be routed inside a larger conduit so pipe can be removed without excavation.
      5) If maximum length of pipe available is not long enough and fitting needs to be installed underground, all fittings shall be stainless steel mechanical fittings wrapped with polyethylene encasement and encased in concrete.
   b. Below grade outside building (2-1/2" and larger)
      1) Ductile iron cement lined iron cement lined pipe, AWWA H3-C1.2 ductile fittings, and compression or mechanical joint.
      2) PE, AWWA pipe; PE, AWWA fittings, and heat-fusion joints.
      3) CPVC, Schedule 40; socket fittings and solvent cement joints.
   c. Below grade inside building (2-1/2" and less)
      1) Soft copper ASTM B88, Type "K" without joints.
      2) PEX tube and fittings with stainless steel crimp rings. No joints for below grade installation.
      3) CPVC, Schedule 40; socket fittings and solvent cement joints.
      4) Piping may be routed inside a larger conduit so pipe can be removed without excavation.
   d. Below grade inside building (2-1/2" and larger)
      1) Soft copper ASTM B88, Type "K" without joints.
      2) CPVC, Schedule 40; socket fittings and solvent cement joints.
      3) PP, SDR 11 socket fittings; and fusion-welding joints.
   e. Above grade (2" and less)
      1) Type "L" hard copper ASTM B 88-832 with wrought copper fittings ASTM B 16.22 1980 and non-lead or antimony solder joints.
      2) CPVC, Schedule 40; socket fittings and solvent cement joints.
      3) PEX tube and fittings with stainless steel crimp rings.
   f. Above grade (2-1/2" - 4")
      1) Type "L" hard copper ASTM B 88-832 with wrought copper fittings ASTM B 16.22 1980 and non-lead or antimony solder joints.
      2) CPVC, Schedule 40; socket fittings and solvent cement joints.
      3) PEX tube and fittings with stainless steel crimp rings.
      4) PP, SDR 11 socket fittings; and fusion-welding joints.
   g. Above grade (4" and larger)
      1) Galvanized steel pipe, galvanized C.1 or M.1 fittings or stainless steel pipe and fittings, and screwed or mechanical joint.
      2) Type "L" hard copper ASTM B 88-832 with wrought copper fittings ASTM B 16.22 1980 and non-lead or antimony solder joints.
      3) CPVC, Schedule 40; socket fittings and solvent cement joints.
      4) Stainless-steel Schedule 10 pipe, grooved-joint fittings, and grooved joints.
6. Flush, vent and sanitize all water piping with chlorine as required per AWWA, local building department and health department codes.
7. Domestic hot and cold water piping under concrete floor to be covered with sand so that piping will not become embedded in the floor slab.
8. All piping under concrete floor shall be type "K" soft copper, continuous. Splices or fittings will not be allowed.
9. Extreme caution must be taken so that no copper piping and insulation under concrete floors becomes crushed, cut, split or deformed during the pouring of the floor slab.
10. Allow 1-1/4" per 100 feet of length for expansion in domestic hot water lines.
11. All piping in return air ceiling plenums or walls shall be plenum rated materials.

Tenant 6A LL Work
at Laurel Square

Laurel Square Shopping Center
Brick Township, NJ

CREATE
ARCHITECTURE PLANNING & DESIGN PLLC

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Penthouse
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Phone: (212) 297-0880
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Owner / Developer:
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Structural & M/E/P Engineers:
Thorson Baker + Associates, Inc.
3030 West Streetsboro Rd
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Rev:	Date:	Description:
	04/01/2022	ISSUED FOR BID AND PERMIT

PROGRESS
NOT FOR
CONSTRUCTION
3/31/2022

NATHANIEL J. KOBB, NJ Professional Engineer, NO: GE 52221, 24GA28104800

MECHANICAL SPECIFICATIONS

1838.C M-301

Section 200593 - Testing, Adjusting and Balancing

A. General
1. After installation, check all equipment and perform start up in accordance with the manufacturer's instructions.
2. All piping shall be tested and free of leaks as required by the local authority having jurisdiction.
3. Work that is scheduled to be concealed or insulated shall remain uncovered until required tests have been completed. If the construction schedule requires, arrange for tests on sections of the system at a time.
4. Balance all systems, calibrate controls, check for proper operation and sequence under all conditions and make all necessary adjustments.
5. Instruct owner in operation of systems and submit operating and maintenance manual for all equipment and systems.
6. Submit air and water balance report from independent AABC or NEBB certified subcontractor for all air and water systems per AABC or NEBB standards.
7. Submit duct leakage test report from independent AABC or NEBB certified contractor.
8. When the contractor is ready to run capacity tests, he shall notify the architect. When this notice is given, the architect will assume that the contractor has made preliminary tests and is satisfied that the plant will develop specified and guaranteed capacities. It will be the contractor's responsibility to furnish any and all instruments required to obtain test data which shall include thermometers, electric meters, pressure gauges, etc.
9. Work under this division of the specifications shall not be considered complete until the contractor has obtained required inspection, performance tests, made necessary adjustments and has submitted satisfactory evidence of the architect or his representative will make spot checks to determine the accuracy and completeness of final adjustments. Should spot checks indicate more than a reasonable deviation from design requirements, the contractor shall repeat tests and adjustments to the satisfaction of the engineer.
10. During one complete heating and one complete cooling season, the contractor shall make any minor adjustments that may be necessary to ensure uniform temperatures throughout the spaces.
11. Test results shall be submitted to the architect/engineer.
12. The Test and Balancing contractor shall adjust all sheaves or provide new sheaves and belts as required in order to properly balance all air handling equipment.

B. Balancing, Start Up and Instructions
1. After equipment is placed in operation, systems shall be balanced to within 10% of design flow with report submitted to owner. Balancing shall be performed by an independent AABC or NEBB certified contractor.
2. Test, adjust and balance cooling systems during summer season and heating systems during winter season. Balance systems when the outside air conditions are within 5 degrees F wet bulb temperature of the maximum summer design condition and within 10 degrees F dry bulb temperature of the minimum winter design condition.
3. Start up and place all systems in operation and tag all switches and controls with permanent labels.
4. Train and instruct owner on proper operation and preventative maintenance of system.

C. Piping: Testing to be done by the contractor.
1. All piping shall be given the following pressure test without appreciable pressure drop: Contractor shall use recording line charts to record all pressure testing outcomes.

SERVICE	TEST MEDIUM	MIN. PRESSURE	TIME (HOURS)
*Gas, Natural	Natural Gas Co. Rules		24
Sanitary and Storm Sewer	As per State Plumbing Code or Local Authority		
Cold Water	Water	125 psi	24

*A minimum notice of 48 hours shall be given the architect prior to purging of any gas lines. Purging shall be to the outside of building at a safe location.

2. Care shall be exercised in installation of air piping so as not to allow contamination.
3. Minor leaks in welded joints shall be corrected by chipping out the weld and rewelding. A general sweating of a weld joint will be considered sufficient cause for rejection. Defects that may develop in screwed joints under test shall be corrected by replacing the fitting or thread or both. Caulking of defective threaded joints will not be permitted.
4. During the testing period, this contractor shall maintain on the job a competent individual thoroughly familiar with all phases of plumbing for as long as may be required to thoroughly adjust all of the systems and to demonstrate to the architect that they are functioning properly.
5. All hydrostatic and/or air tests shall be made before piping is concealed or covered. This contractor shall be responsible for completely draining the systems after hydrostatic tests are performed. Any damage from freezing prior to acceptance of the completed installation shall be repaired at the sole expense of this contractor.
6. All materials and installations under the plumbing system shall be inspected by the inspector to ensure compliance with requirements of the plumbing code.
7. This contractor shall notify the plumbing inspector whenever work is ready for test and inspection.
8. When work for the plumbing permit is issued and completed, this contractor shall request final inspection. Such request shall be made before the building is occupied or used but not more than 30 days after completion of the work.
9. Before approving the plumbing system, the plumbing inspector may require that the system in whole or part be tested to prove sufficiency. All equipment, material, power and labor necessary for inspections and test shall be supplied by the plumbing contractor.
10. All piping of plumbing system shall be tested with water or air per testing schedule.
    a. Drainage system water test: provide fitting at property line or termination point for purpose of test plug. Water test shall be applied to entire system or by section. When tested in sections, at least the lower 20 feet of the next section above shall be retested so that every section tested shall have at least a 20-foot head test. Hold without pressure loss for 15 minutes.
    b. Drainage system air test - attach air apparatus to suitable opening, close all other inlets and outlets, and then force air into the system until there is uniform pressure, sufficient to balance a column of mercury 10" in height or 5 pounds gauge pressure on the entire system. Hold without pressure loss for 15 minutes.
    c. No part of system shall be covered before inspection is made and approved. If covered before test, contractor shall pay for cost of uncovering so test can be made and accepted.
    d. Defective work or materials shall be replaced and inspection and tests repeated within three days.
11. Certificates of approval of satisfactory completion and final inspection shall be obtained by the plumbing contractor. One copy of each approval shall be given to the architect.
12. Damages which result from breakage or faulty installation shall be the responsibility of the plumbing contractor.
13. After the system has been in service for a two-week period and again before the system is turned over to the owner, all dirt pockets, traps, and strainers shall be cleaned, removed, and reinstalled.

D. Air Handling Equipment: For each piece of air handling equipment, this contractor shall list the data of the fan, motor and drive and shall obtain by measurement and furnish to the architect/engineer the fan speed, motor voltage, operating amps, for cfm and static pressure as determined from the manufacturer's fan curves. This contractor shall also determine the fan cfm by means of a velocity traverse which shall be taken a minimum of three fan diameters from fan outlet. Before running any tests, the contractor shall have installed all the components of the system and shall ensure the cleanliness of the filters.

E. Diffusers, Registers, Grilles: After completion of the air distribution systems and final adjustments, the contractor shall adjust all dampers and air supply, return and exhaust outlets so that each outlet handles its proper quantity of air. Supply registers and diffusers shall be adjusted to provide for the proper throw and a uniform distribution pattern.
1. For supply, return and exhaust air outlets, the velocity shall be measured with a heated wire resistance type anemometer held 1" from the face of the outlets; the air velocity shall be the average of velocity readings taken at points no more than 6" apart. The area shall be the net core area of the outlet.
2. Test readings shall be taken for each register, grille and diffuser. For each of these units, obtain and furnish information on manufacturer, testing equipment used, procedure followed, location, size, average, velocity, gross and net core areas, observed cfm and specified cfm. Separate tabulations shall be furnished for each manufacturer, each system and each type of register, grille and diffuser.

F. Holes in ducts and casings used for static pressure and velocity readings shall be provided with removable closures.

G. During the testing period, this contractor shall maintain on the job a competent individual thoroughly familiar with all phases of air conditioning, including refrigeration, temperature control and distribution, for as long a period as may be required to thoroughly adjust all of the systems and to demonstrate to the architect that they are functioning properly.

H. The testing and balancing engineer shall, as part of his work, perform a "Spot" re-check balancing conditions between 30 to 90 days after both summer and winter balancing operations at which time a representative of the temperature control manufacturer capable of performing adjustments to his system shall accompany the balancing engineer. This operation shall include a check of space temperature, calibration of controls, pump and fan performance and the necessary adjustments thereto.

Section 200700 - Insulation

A. General
1. Furnish all material, labor and equipment as required to install complete plumbing and HVAC insulation as indicated on mechanical drawings and in these specifications.
2. Install in full accordance with manufacturer's recommendations.

B. Scope: This contractor shall furnish and install all insulation necessary to the project and in accordance with the following requirements. All insulation and accessories used in an air plenum space, and all duct covering and lining, regardless of physical location, shall have a composite (insulation, jacket, and adhesive) fire and smoke hazard rating as tested under procedure ASTM E-84, NFPA 255 and UL 723, not exceeding a flame spread 25 and smoke developed 50. All other areas shall have insulating materials and accessories on pipes and vessels rated at a flame spread 25 and smoke developed 150 as tested by the same procedure. All calcium silicate shall be asbestos free.

C. Workmanship:
1. All insulation shall be installed over clean, dry surfaces. Insulation must be dry and in good condition. Wet or damaged insulation will not be acceptable. No insulation shall be applied prior to pressure test completion of the respective piping and/or duct system.
2. All pipe insulation shall be installed with joints butted firmly together. All valves and fittings shall be insulated using mitered sections of insulation equal in density and thickness to the adjoining insulation, or with an insulation cement equal in thickness to the adjoining insulation or premolded insulated fittings. The insulation applied to the valves and fittings shall be covered with the same type of covering as used on the pipe insulation. No staples.
3. All insulation ends shall be tapered and sealed regardless of services.
4. All insulated, exposed piping 8'-0" and below to the finished floor shall include a 0.020" thick vinyl jacket. This jacket is in addition to the normal finish for the respective service.
5. Rigid duct insulation shall be impaled over welded pins and secured with white insulation caps. All seams shall be firmly butted and sealed with white pressure sensitive vapor barrier tape. No staples.
6. Wrap around duct insulation shall be applied with all joints butted firmly together. Insulation shall be cemented to the surface with firepoof adhesive applied in 6" wide strips on 12" centers. All joints in the insulation covering shall be sealed with adhesive. Where ducts are over 24" wide, the ductwrap shall be additionally secured to bottom of rectangular or oval ducts with mechanical fasteners on 16" centers to prevent sagging. Vapor barrier shall be legibly printed by the manufacturer to show nominal thickness and type of insulation. Aluminum corner angles shall be used to prevent over compressing insulation during installation.
7. Ductliner insulation shall be applied with joints precoated with adhesive and butted firmly together. Lining shall be cemented to ductwork with a minimum of 75 percent coverage of fire resistant adhesive. Mechanical fasteners on 16" centers and adhesive shall be used when duct width exceeds 12" or when duct height exceeds 24".
8. All ductwork in the mechanical rooms is to be considered as "exposed ductwork," i.e. supply, return, relief, and outdoor air.
9. All round diffuser duct drops connected to lined ductwork shall be insulated the same as "ductwork" schedule non-lined.
10. All flexible elastomeric insulation shall have all fittings, butt ends, and seams sealed with vapor barrier adhesive.
11. Provide removable insulation sections to cover parts of equipment which must be opened periodically for maintenance including metal vessel covers, fasteners, flanges, chilled water pumps, frames and accessories.
12. Repair all damaged sections of the existing piping and mechanical insulation damaged during this construction period. Use insulation of same thickness as existing insulation. Install new jacket lapping and seal over existing.
13. Replace damaged insulation which cannot be repaired satisfactorily, including units with vapor barrier damage and moisture saturated units.

D. Plumbing Insulation (as manufactured by Owens Corning, Knauf or Schuller)
1. Insulate all above-grade hot water, hot water return and cold water piping with 1" thick molded fiberglass having an all service jacket.
2. Insulate all above-grade, horizontal air conditioning condensate floor drains and waste lines, overflow roof drains and piping, roof drains and piping and roof drain sumps with 1" thick molded fiberglass having an all service jacket.
3. Include insulation of fittings and valves. Keep vapor barriers intact. Apply per manufacturer's recommendations.
4. Insulate all exposed waste and water supply piping under lavatory with safety covers per ADA requirements (as manufactured by Plumberex Specialty Products, McGuire or Truebro).

E. HVAC Insulation (as manufactured by Owens Corning, Knauf)
1. All insulation to be applied in full accordance with the manufacturer's recommendations and comply with 25/50 flame and smoke hazard ratings per ASTM E-84, NFPA 255 and UL 723.
2. Insulate all supply, return, outside and exhaust air ducts with 3/4" thick lined insulation or less to none with 1-1/2" thick, 1.5 pcf, R-6, foil faced reinforced kraft jacket fiberglass duct wrap fully secured to duct. Lap and tape seams and secure tightly to the ducts with wire or stick pins. Exposed ductwork in conditioned spaces without ceilings shall not be insulated, unless otherwise noted to be insulated. Ductwork in ceiling plenum space shall be insulated.

Section 211000 - Fire Protection Systems

A. General
1. Furnish all labor, materials and equipment as required to install a complete fire protection system for project.
2. Field-verify sizes and location of existing sprinkler piping before fabrication of new.
3. This contractor shall be responsible for the removal and reinstallation of existing ceiling tiles, as required, for the installation of work shown in areas where existing ceilings are to remain. See architectural drawings for areas where existing ceilings are to remain.
4. This removal and reinstallation of existing lay-in ceiling tiles shall be the responsibility of the fire protection contractor (under the supervision of the general contractor) as required to perform his work. Any damage to existing ceiling tiles or supports shall be the responsibility of the general contractor. Ceiling tiles may be left out of the ceiling areas under construction only if stored in areas as directed by the owner so as not to hinder the daily operations of the building's occupations.
5. This contractor shall modify and relocate sprinkler piping and provide new sprinkler piping and heads, as required, to accommodate new mechanical work in full compliance with NFPA 13. This contractor shall also perform hydraulic calculations for sprinkler piping in the remodeled areas in accordance with NFPA 13.

B. Design Basis
1. Design basis for system shall be per NFPA 13 (latest edition) building code requirements, local water department, local fire department, state fire marshal, local code, and owner and owner's fire insurance underwriter requirements.
2. System shall be hydraulically calculated as required by code.
3. Pipe sizes shall be determined per the contractor's hydraulic calculations.

C. Drawings and Calculations
1. Contractor shall prepare submittal drawings and hydraulic calculations with a 10% factor of safety for building in accordance with owner's insurance company building department, and local fire authority requirements, tenant's requirements for design density, whichever is most stringent.
2. Contractor shall perform a flow test data on water main and submit data with calculations.
3. It is the fire protection contractor's responsibility to verify design density requirement and owners insurance underwriters requirements.
4. Provide wet standpipe system for project in accordance with NFPA 14 requirements.
5. Contractor and designer shall be state certified.
6. Coordinate layout and installation of sprinklers with ductwork and equipment above ceilings and other construction that penetrates ceilings, including but not limited to light fixtures, speakers, HVAC equipment, doors and partition assemblies. No sprinkler piping shall be routed beneath equipment above any ceilings that must be dropped directly down for service, repair, or replacement.
7. Examine areas and conditions under which fire protection materials and products are to be installed. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to installer. Schedule rough-in installations with installations of other building components.
8. Shop drawings review does not relieve fire protection contractor from responsibility to meet each tenant's requirements for sprinkler coverage.

D. Piping
1. All piping shall be installed in accordance with NFPA 13, 14 (latest edition) and local code requirements.
2. Fire protection piping shall be as follows:
    a. Inside building - pipe and tubing shall be steel or copper in accordance with NFPA requirements.
    b. Piping shall match existing building standards.
    c. Contractor shall arrange with owner and insurance underwriter prior to shut down of existing systems.
    d. Flush all piping upon completion of project and test per NFPA requirements.
    e. No piping shall be installed at locations subject to freezing.

E. Sprinkler Heads
1. Sprinkler heads shall be UL listed, match existing building standards and be manufactured by Central, Star or Viking.
2. Sprinkler heads shall be as follows:
    a. Areas with exposed structure
        1) Upright - rough brass.
    b. Areas with ceilings
        1) Recessed Pendent - chrome plated with matching two (2) piece, flush escutcheon.
        2) Concealed - brass finish with off-white ceiling cover plate.
        3) Sidewall - chrome plated with off-white, two (2) piece, semi-recessed escutcheon.
3. Sprinkler heads shall match existing building standards.
4. Install higher temperature sprinkler heads where required by code or application.
5. Sprinkler heads shall be located in the center of ceiling tiles if applicable. See architectural reflected ceiling plans.
6. Submit samples of sprinkler heads to architect prior to fabrication of any piping.

F. Valves
1. Install all valves as required by NFPA 13, UL or FM listed and as manufactured by Grinnell, Hammond or Milwaukee.
2. All shut-off valves shall be fitted with tamper switches by fire protection contractor and wired by electrical contractor. Tamper switches shall be as manufactured by Notifier, Potter or Viking.

G. Extra Materials
1. Valve wrenches: Furnish to owner, 2 valve wrenches for each type of sprinkler head installed.
2. Sprinkler heads and cabinets: Furnish 2 extra sprinkler heads of each style included in the project. Furnish each style with its own sprinkler head cabinet and special wrenches.
3. Obtain receipt from owner that extra stock has been received and give architect a copy of this receipt.

Section 230900 - Instrumentation and Controls

A. General
1. Furnish and install complete temperature control for all HVAC systems.
2. Provide new control devices including thermostats, humidistats, damper operators, motors, temperature sensors, staging relays, and other related devices for a complete operational system per the operating sequence and industry standards.
3. Mount all controls furnished as accessories to equipment and provide all control wiring required for proper operation. All wiring shall be in conduit per N.E.C. and local code requirements.
4. Mechanical contractor shall install all duct-mounted smoke detectors. Electrical contractor shall furnish and wire photo-electric duct smoke detectors at each unit to shut down fan upon activation. Detector shall be located in the supply/return air duct downstream/upstream of the unit connection. Detector will have manual reset and will activate a local alarm panel.

B. Rooftop Units
1. Gas Fired Rooftop Unit - Constant Volume (RTU)
    a. Wall mounted seven day programmable thermostat system shall sequence heating and cooling. Provide with sub-base to manually select heating, cooling, fan on-off, auto operation.
    b. Unit shall operate in occupied or unoccupied modes based upon time clock scheduling sequence as determined by owner.
    c. Unoccupied mode - The supply fan will be off, the outdoor air damper will go to 100% closed position and unit will cycle on with a call for heating or cooling. During the unoccupied mode, RTU shall remain off during the cooling season; during the heating season, RTU shall cycle on with outside air dampers remaining closed to maintain a space set-back temperature of 60 deg F (adjustable) as sensed by a night setback space temperature sensor.
    d. Occupied mode - The supply fan shall run continuously, the outdoor air damper will modulate to the required position based on ventilation sequencing and the unit will go into the heating or cooling mode based upon room thermostat setpoints.
        1) Upon a call for heating, the gas burner shall fire. Stage 1 heating shall be enabled when the zone temperature drops 1.5 degree (adjustable) below setpoint. Stage 2 heating shall be enabled when the zone temperature drops 3 degrees (adjustable) below setpoint.
        2) Upon a call for cooling, the stage 1 compressor shall energize. Stage 1 cooling shall be enabled when the zone temperature rises 1.5 degree (adjustable) above setpoint. Stage 2 cooling shall be enabled when the zone temperature rises 3 degrees (adjustable) above setpoint.
    e. Enthalpy Economizer
        1) The economizer shall be enabled whenever:
        The outside air dry-bulb temperature is less than the return air dry-bulb temperature and the fan status is on.
        2) When the outside air dew point is less than the return air dew point by an adjustable dead band (3 deg F), the outdoor air damper(s) shall be set for 100% outdoor air
        3) When the Outdoor Air temperature is less than the supply air temperature set point the outdoor air damper, exhaust air damper, and return air damper will modulate, as appropriate, between the adjustable minimum position and full open position to maintain a mixed air temperature setpoint (55 deg F adjustable) until room cooling setpoint is reached.
        4) When the return air dew point is greater than the outdoor air dew point OR the outdoor air temperature is greater than the return air temperature the exhaust air damper, return air damper and outside air damper shall be positioned to the minimum control air position and the unit shall operate in mechanical cooling.
        5) The economizer shall close to 0% (outside air and exhaust dampers shall be closed and return air damper shall be open) whenever:
        Supply fan or return fan is off
        OR mixed air temperature is less than 40°F
        OR on loss of fan status
        OR the Discharge Air Temperature Sensor has failed
        OR the RTU is in the Morning Warm-up or Cool-down mode
        OR the unit is in unoccupied mode
    f. A duct mounted, photoelectric smoke detector (furnished by electrical contractor and installed by mechanical contractor) shall shut down the unit, close the outside air damper and send a signal to the fire alarm panel when activated. Both safeties will require manual reset, and will activate an alarm at the local control panel.
    g. All points and settings shall be adjustable.

Section 233000 - Air Distribution Systems

A. General
1. Furnish all materials, labor, equipment and accessories required to install complete air distribution systems.
2. Contractors bidding this project shall visit this site and familiarize themselves with all condition affecting their work. Submission of a bid on this project shall be construed as having such knowledge.
3. Verify exact conditions in field and coordinate with these drawings and other trades before beginning new work.
4. Determine exact locations for all new and relocated ductwork and accessories in field.
5. Coordinate work of this contract with other trades.
6. Any discrepancies between what is shown on drawings or specified and the actual conditions in the field shall immediately be brought to the attention of the architect before proceeding.
7. Building and surfaces damaged during installation shall be repaired, replaced, and/or restored to original condition after completion of work and before acceptance by owner.
8. This contractor is also referred to the appropriate mechanical and plumbing specification sections the items of equipment to be bid as a part of this project.

B. Ductwork
1. Fabricate and erect all ductwork to ASHRAE and SMACNA standards from galvanized steel. Comply with NFPA 90A requirements.
2. Ductwork shall be SMACNA low pressure construction 2" static pressure rating with Seal Class A seams and joints, unless otherwise noted.
3. Outdoor-Air, Supply-Air, Return-Air, and Exhaust-Air ductwork (no matter the pressure class) shall have a Seal Class A construction.
4. Include all acoustic, airfoil shaped perforated aluminum turning vanes, manual dampers, flexible connectors, grilles and diffusers, acoustic lining, and other sheet metal accessories for the project.
5. Changes in direction, in low velocity supply air rectangular ductwork, shall be made with full radius elbows with radius equal to 1_1/2 times the horizontal width of the duct, or with square elbows with turning vanes. Turning vanes shall be constructed of the same material as the surrounding ductwork and two (2) gauge numbers heavier.
6. Furnish and install all manual balancing dampers, splitter dampers, extractors, and deflectors required to properly distribute the air. All dampers, extractors and deflectors shall be constructed of the same material as the surrounding ductwork, unless noted otherwise on the drawings. All manual balancing dampers shall be the opposed blade type.
7. Furnish and install all automatic control dampers unless noted otherwise on the drawings, all control dampers shall be opposed blade type and shall have leakage of less than 1 percent when closing against 4" water column static pressure and when sized for 2000 fpm velocity.
8. All manual balancing dampers, splitter dampers, extractors and deflectors shall be controlled by Young No. 1 or Ventlock No. 688 regulators. If ductwork is accessible, mount the regulator on the ductwork. If ductwork will be inaccessible after the installation of the ceiling or walls, mount the regulator in a steel, flush mounted box specifically designed for this purpose. Provide all linkage, top bearings and/or gear drives required for the remote installation of the regulator.
9. All branch connection fittings in rectangular ductwork shall be 45 degree transition type, conical fittings or spin-in fittings with integral air scoops. Butt fittings are not acceptable.
10. Exhaust duct outlets shall be installed a minimum of 10'-0" from all outside air intakes.
11. All exposed round ductwork shall be spiral seam ductwork and painted a color as selected by the architect.

C. Duct Liner
1. Acoustic line all rectangular ducts indicated on drawings with 1" thick non-flaking, coated medium density liner, apply to manufacturer's recommendations.
2. Duct dimensions indicated on drawings are clear inside dimensions (free area).
3. Duct liner shall comply with NFPA 90A and 90B (latest edition) requirements.

D. Duct Accessories
1. Flexible ductwork (as manufactured by Clevaflex, Flexmaster or Wiremold).
    a. Flexible ducts shall be independently supported from the structure and connected with plastic draw bands and tightened. Flexible ducts shall be limited to 48" maximum straight length. Flexible ducts shall be constructed of 1 1/2" insulation with vinyl vapor barrier jacket and rated at 10" W.C. for sizes though 12", UL listed, and meet 25/50 flame and smoke test. Flexible ducts are not permitted in rooms without ceiling.
2. Dampers (as manufactured by Ruskin, Nailor or Safe-Air)
    a. Fabricate in accordance with SMACNA Standards. Provide end bearings and locking, indicating quadrant regulators. Blade to be single thickness with continuous hinge or rod.
3. Control Dampers (as manufactured by Ruskin, Nailor or Safe-Air)
    a. Fabricate blade of double thickness sheet metal, opposed blade type with self-aligning rod and end bearing suitable for use with an actuator.
4. Backdraft Dampers (as manufactured by Ruskin, Nailor or Safe-Air)
    a. Multiple blade, parallel type damper constructed of galvanized steel with felt or flexible vinyl sealed edges, ball bearings, pivot pin and adjustment device for varying pressures.
5. Fire Dampers (as manufactured by Ruskin, Nailor or Safe-Air)
    a. Fabricate in accordance with NFPA 90A and UL555. Dampers shall be suitable for use in the vertical or horizontal position as indicated on the drawings, be type 'B' with blades out of airstream, and be rated for 1-1/2 hours minimum (unless noted otherwise).
    b. Provide duct mounted access doors at all fire damper locations.
6. Access Doors (as manufactured by Ruskin, Nailor or Safe-Air)
    a. Fabricate in accordance with SMACNA standards. Doors to be fabricated of galvanized steel with sealing gasket and quick locking device.
    b. For insulated ductwork, doors shall have minimum 1" insulation with sheet metal cover.

E. All grilles, registers, diffusers and louvers shall be of the sizes, type, etc., as shown on the plan and schedules.

F. Grilles, registers, louvers and diffusers as manufactured by Krueger, Anemostat or Titus Company will be considered provided dimensions, capacities, construction and sound characteristics are compatible and so shown by shop drawings and performance specifications. All grilles, registers and diffusers shall be finished a color as selected by the architect.

G. Furnish and install, as shown on the drawings and schedule, the centrifugal roof exhaust fans. The fan wheels, housing and curb caps shall be constructed of aluminum. The fans shall be complete with bird screens, disconnect switches, backdraft dampers and prefabricated curbs. The prefabricated curbs shall be constructed of 18 gauge galvanized steel with built_in cant and wood nailer strip at top of curb.

H. Roof mounted equipment shall be supported using factory curbs.

Section 235000 - Heat Generation Equipment

A. General
1. Furnish and install, labor, equipment, and accessories as required to install equipment as indicated on mechanical drawings.
2. Install in full accordance with local code requirements, other specification section requirements, and manufacturer recommendations.

B. See equipment schedules on mechanical drawings.

Section 236000 - Refrigeration Equipment

A. General
1. Furnish all material, labor, equipment, and accessories as required to install equipment as indicated on mechanical drawings.
2. Install in full accordance with local code requirements, other specification section requirements, and manufacturer recommendations.

B. See equipment schedules on mechanical drawings.

Section 237000 - HVAC Systems and Equipment

A. General
1. Furnish all equipment, material, labor, tools, etc., for the complete HVAC system. Install complete and place in operation.
2. Contractors bidding this project shall visit this site and familiarize themselves with all conditions affecting their work. Submission of a bid on this project shall be construed as having such knowledge.
3. Verify exact conditions in field and coordinate with these drawings and other trades before beginning new work.
4. Determine exact locations for all new and relocated equipment, piping, conduits and ductwork in field.
5. Coordinate work of this contract with other trades. Conflicts shall immediately be brought to the attention of the architect. Architect's resolution to conflicts shall be final.
6. Any discrepancies between what is shown on drawings or specified and the actual conditions in the field shall immediately be brought to the attention of the architect before proceeding.
7. Building and surfaces damaged during installation shall be repaired, replaced, and/or restored to original condition after completion of work and before acceptance by owner.

B. Equipment
1. Mechanical contractor to furnish all HVAC equipment indicated and/or scheduled on the drawings complete with bases, isolators, supports and other required accessories.
2. Install complete and place in proper operation per manufacturer's recommendations, lubricate and adjust as required. Furnish and install clean set of filters prior to balancing.
3. Equipment to be make and model as scheduled unless alternate equipment of equivalent quality and performance is submitted as a substitution prior to bidding. All substitutions are subject to acceptance without qualification by owner, engineer and architect.
4. Contractor shall perform routine service inspection of all existing HVAC equipment to remain. Lubricate bearing, service control systems, replace fan belts and install new filters in each rooftop unit.
5. Contractor shall field verify refrigerant charge and add refrigerant if the charge is less than manufacturer's specifications.
6. Submit service report to any major component failures or malfunctions. Report shall include cost to service all malfunctioning or damaged items listed. Cost shall include parts and labor. Equipment shall be placed in full operation with controls calibrated upon completion of project.

C. Cooling Coil Condensate Drains
1. Install condensate piping as indicated on drawings. Include all fittings, traps, hangers etc. Extend condensate piping from all equipment drain pans to approved locations for complete installation.
2. Install condensate piping at a uniform minimum slope of 1/8" per foot.
3. Condensate piping shall be as follows:
    a. Roof and Plenum space - type "L" hard copper ASTM B 88-832 with wrought copper fittings ASTM B 16.22 1980 and non-lead or antimony solder joints.
    b. Roof or non-return air plenum ceiling space - PVC schedule 40 plastic solvent weld socket fittings.
4. Insulation - see section 200700 - Insulation.

D. See equipment schedules on mechanical drawings.

Tenant 6A LL Work
at Laurel Square

Laurel Square Shopping Center
Brick Township, NJ

CREATE
ARCHITECTURE PLANNING & DESIGN LLC

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Penthouse
New York, NY 10001

Phone: (212) 297-0880
createworldwide.com

Owner / Developer:
BRIXMOR Property Group
One Fayette Street, Suite 150
Conshohocken, PA 19428

Structural & M/E/P Engineers:
Thorson Baker + Associates, Inc.
3030 West Streetsboro Rd
Richfield, OH 44286

Rev:	Date:	Description:
	04/01/2022	ISSUED FOR BID AND PERMIT

PROGRESS
NOT FOR
CONSTRUCTION
3/31/2022

NATHANIEL J. KOBB, NJ Professional Engineer, NO. GE 52221, 24GA28104400

MECHANICAL
SPECIFICATIONS

1838.C M-302

GENERAL NOTES & SPECIFICATIONS

Design Criteria

Applicable Building Code: International Building Code 2018

1. Design live loads

   A. Floor loads
      a. Retail
         • First floor =100 psf ⁎
      b. Where indicated with "⁎", live load reduction in accordance with the building code was used to reduce the given load.

   B. Roof loads
      a. Minimum roof snow or live load dictated by Building Official = N/A
      b. Minimum roof live load by code = 20 psf
      c. Ground snow load = 20 psf
         • Snow exposure factor (Ce) = 1.0
         • Snow importance factor (Is) = 1.0
         • Thermal Factor (Ct) = 1.0
      d. Flat roof snow load (Pf) = 14 psf
      e. Rain on snow = 5 psf
      f. Total design snow load = 20 psf + drifting
      g. Roof design is governed by the minimum roof live load or total design snow load + drifting whichever is more stringent.

2. Design wind loads

   A. Basic wind speed (3 second gust) (Ultimate) = 120 mph
      a. Exposure = B
      b. Risk Category = II
      c. Internal pressure coefficient (GCpi) = 0.18

   B. Components and Cladding Wind Loads (PSF) (Ultimate)

WALLS - WINDWARD COMPONENTS AND CLADDING

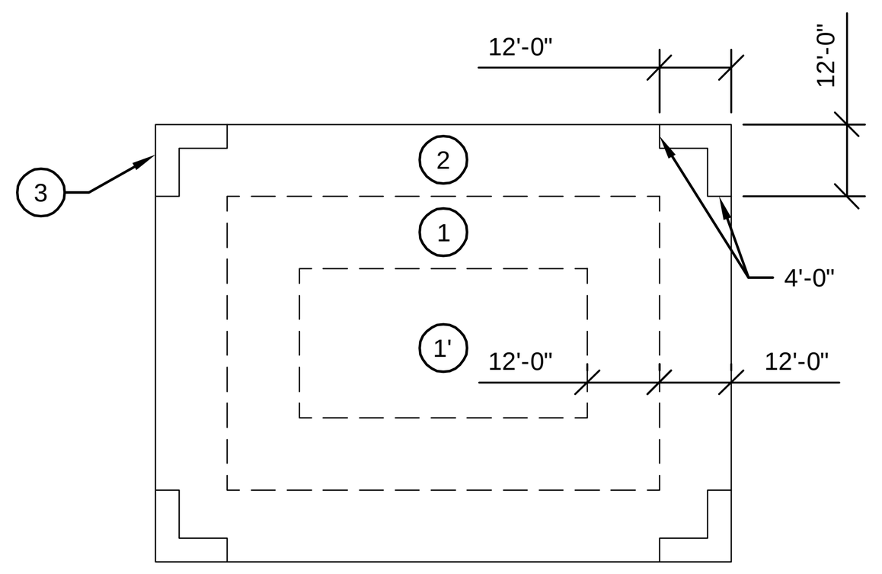
Height	Effective Area (sq.ft.)							
	Interior Zone				Exterior Zone			
	10	20	50	100	10	20	50	100
0-20	23.8	22.8	21.2	20.3	23.8	22.8	21.2	20.3

WALLS - LEEWARD COMPONENTS AND CLADDING

Height	Effective Area (sq.ft.)							
	Interior Zone				Exterior Zone			
	10	20	50	100	10	20	50	100
0-20	25.7	24.7	23.2	22.2	31.6	29.6	26.7	24.7

ROOF UPLIFT - COMPONENTS AND CLADDING

Effective Area (sq. ft.)	Gross				Net (roof joists)			
	10	20	50	100	10	20	50	100
Zone 1'	23.7	22.7	23.7	23.7	18.7	18.7	18.7	18.7
Zone 1	41.2	38.8	35.1	35.1	36.2	33.8	30.1	27.5
Zone 2	54.4	51.1	46.3	43.0	49.4	46.1	41.3	38.0
Zone 3	74.1	27.1	57.7	50.7	69.1	62.1	52.7	45.7
Overhang	51.4	46.9	40.0	34.7	46.4	41.9	35.0	29.7



   C. Components and cladding: use the most stringent wind load obtained from code, underwriter criteria (Factory Mutual, etc.), and the project specifications. Cladding manufacturer shall consider increased pressure coefficients at building perimeter, corners, eaves, and rakes. Loads noted in general notes are obtained from code.

3. Seismic

   S_S = 0.201

   S_1 = 0.049

   S_{DS} = 0.214

   S_{D1} = 0.078

   Seismic importance factor (Ie) 1.0
   Risk Category II
   Seismic site class D
   Seismic design category B
   Response Modification factor (R) 2.0
   Seismic Response Coefficient (Cs) 0.107
   Basic seismic force resistance system Ordinary reinforced masonry shear walls

4. Frost depth = 24"

General

1. The term General Contractor (G.C.) as used in these documents refers to the Contractor / Construction Manager in responsible charge of the project in terms of coordination, scheduling, subcontractor coordination, etc. This term refers to, but is not limited to, General Contractor, Construction Manager, Design Build Contractor, Prime Contractor, etc. The term is referencing the entity that coordinates the work of other trades.

2. All referenced standards, such as codes, specifications, and other publications noted herein, are intended to refer to the edition of said standard as referenced by the applicable building code or the latest edition published as of the date on the contract documents.

3. The structure or its modifications are designed to be self-supporting and stable after the building or its modifications are fully completed. It is solely the contractor's responsibility to determine erection procedure and sequence and insure the safety of the construction personnel, public, building and its component parts, and adjacent buildings and properties. This includes the addition of whatever temporary or permanent shoring, bracing, needling, underpinning, or sheet piling, etc. that may be necessary to brace new construction, adjacent buildings, existing walls, and framing to remain so that the structure is braced for wind, seismic, gravity, construction loads, etc. and so that no horizontal or vertical settlement or any damage occurs to the adjacent existing structures. Temporary supports shall be maintained in place until permanent supports and/or shoring and bracing are installed. Design of these supports shall be by an engineer registered in the state where the project is located in the employ of the contractor.

4. Fall protection support from perimeter of structure shall be provided in accordance with OSHA requirements as required. Such material shall remain the contractor's property after completion of the project.

5. It is the contractors' responsibility to enforce all applicable safety codes and regulations during all phases of construction.

6. The contractor shall perform all construction for the project in a manner and sequence that are based on accepted industry standards that recognize the interaction of the components that comprise the structure, without causing distress, unanticipated movements or irregular load paths as a result of the construction means and methods employed.

7. Construction loads shall not exceed design live loads. The contractor shall be responsible for all design required to support construction equipment used in constructing this project. Shoring and re-shoring is the responsibility of the contractor.

8. Principal openings through the structure are shown on these drawings. The general contractor shall examine the structural and mechanical, electrical, plumbing, and other trades drawings for the required openings and shall verify size and location of all openings with the appropriate trade contractor. Providing all openings required for mechanical, electrical, plumbing, or other trades shall be a part of the general contract, whether or not shown in the structural drawings. Any deviation from the openings shown on the structural drawings shall be brought to the engineer's attention for review.

9. The existing conditions shown on these documents are based upon existing drawings prepared by Meyer Consulting Engineers dated 11/11/2020. The drawings illustrate the existing structure, structural elements and framing details based on either the original construction drawings and/or site observation. Prior to initiating material procurement and construction, it is the contractor's responsibility to verify existing conditions are consistent with the contract documents. This may require the removal of existing finishes and possible selective demolition to verify the as-built conditions. The contractor is responsible for field verifying all existing conditions; any discrepancies are to be immediately reported to the engineer and architect prior to proceeding with any of the work in question.

General (cont.)

10. Contractor shall field verify slab on grade floor construction type prior to cutting. Under no circumstances shall the contractor cut a structural floor slab thicker than four (4") inches without prior written approval from Engineer of Record. Notify Engineer of Record of any slab thickness greater than four (4") prior to proceeding with any saw cutting.

11. All mechanical and electrical duct work, plumbing, piping, wiring, lighting and all architectural items that need to be removed during the modification of, or reinforcing of, existing structure shall be replaced in kind. The contractor shall keep all existing systems in operation during the construction phase of the project.

12. All contractors are required to examine the drawings and specifications carefully, visit the site and fully inform themselves as to all existing conditions and limitations, prior to agreeing to perform the work. Failure to visit the site and familiarize themselves with the existing conditions and limitations will in no way relieve the contractor from furnishing any materials or performing any work in accordance with drawings and specifications without additional cost to the owner.

13. Details labeled "Typical Details" on drawings apply to situations occurring on the project that are the same or similar to those specifically detailed. Such details apply whether or not details are referenced at each location. Notify engineer for clarifications regarding applicability of "Typical Details".

14. Work these drawings with architectural, mechanical, electrical, and plumbing drawings, along with all other drawings and specifications included in the contract documents.

15. Do not scale drawings.

16. Any discrepancies between structural and architectural drawings shall be brought to the attention of the architect and structural engineer.

17. Should any of the general notes conflict with any details or instructions on plans, or in the specifications, the strictest provision shall govern.

18. Shop drawings and submittals:

    A. These drawings shall be checked and coordinated with other materials and contracts by the general contractor and shop drawings and submittals shall bear the contractor's review stamp with the checker's initials before being submitted to the architect for approval.

    B. When the fabricator has been authorized to use the architect's and engineer's drawings as erection drawings, the fabricator must remove all title blocks, professional seals and any other references to the architect and engineer from that erection drawing. The fabricator's name and title shall be placed on the erection drawings.

    C. Where dimensions and elevations of existing construction could affect the new construction, it is the contractor's responsibility to make field measurements in time for their incorporation in the shop drawings.

Existing Foundation

1. Foundation design is based upon an assumed bearing pressure of _____ psf on firm undisturbed soil. A Geotechnical engineer shall be retained by the owner to field verify that the existing soils yield an allowable bearing pressure equal to or greater than the assumed value. The structural engineer shall be notified immediately if any discrepancies are discovered between field conditions and those presented herein.

2. A soils testing laboratory shall be retained by the owner to provide construction review to insure conformance with the construction documents during the excavation, back fill, and foundation phases of the project.

3. The soils testing laboratory shall:
   • Discuss with the engineer the design intent of the construction documents and the testing procedures used to ensure conformance with the construction documents before construction begins.
   • Inform the engineer of any variance in these procedures.

4. It shall be the responsibility of the soils testing laboratory to:
   • Determine topsoil and excavation stripping depth;
   • Inspect all subsoil exposed during stripping, site grading, and excavation operations;
   • Approve fill materials, perform density tests of fills to insure placement per specification requirements;
   • Inspect foundation bearing surfaces.
   • Field verify assumed bearing pressure and coordinate with Geotechnical engineer.

5. Top of footing elevations, footing steps and thickness of footings are shown on the drawings. The top and bottom of footing may vary depending on the conditions encountered at the site. Frost depth shall be maintained and coordinated with final grading and location of footing steps. If proper foundation bearing is found to be deeper than that shown on the drawings then foundations shall be thickened maintaining the top of footing elevation to assure proper foundation bearing. The contractor shall submit unit prices for such work and shall qualify the extent of work in the base bid. If top of footing elevations need to vary for final site conditions then the general contractor shall coordinate the effort of other trades.

6. Step footings, where required, at a ratio of one (1) vertical to two (2) horizontal with a maximum vertical step of 2'-0" unless noted otherwise.

7. Inundation and long term exposure of bearing surfaces, which will result in deterioration of bearing formations, shall be prevented. Footings shall be placed immediately following footing excavations and bearing surface inspection.

8. All fill materials shall be free of organic contaminations and other deleterious matter.

9. All soil surrounding and under footings shall be protected from frost action and freezing during the course of construction.

10. Notify structural engineer of any unusual soil conditions.

Concrete

1. All concrete construction shall conform to ACI 301, "Specifications for Structural Concrete", ACI 305.1, and ACI 306.1 unless noted otherwise.

2. All detailing, fabrication and placing of reinforcing bars, unless otherwise noted, shall conform to ACI 318, "Building Code Requirements for Structural Concrete", ACI 117, and the ACI Detailing Manual.

3. Concrete production: General as per ACI 301, Section 4, Article 4.3, except as noted.

4. Ready-mixed Concrete: Use for all work, except that when small quantities (not over 1/2 cubic yard) are needed for isolated or relatively unimportant items.

5. Concrete Types Schedule

Type of Concrete	Minimum cementious content (lb/cu. yd)	Maximum water/ cement ratio (by weight)	Specified 28-day compressive strength (psi)	Specified slump range for placement with W.R. (inches)	Specified air content range (% by volume)	Maximum size aggregate (inches)
• Spread footings	470	0.60	3000	5	0-3 Entrapped	1 1/2
• Interior concrete	564	0.48	4000	3-5	0-3 Entrapped	1
• Exterior slabs	564	0.45	4500	5-6	6 ±1.5%	1

Notes:

A. All cement shall be Type I or Type III Portland Cement per ASTM C150. Types IA and IP are not acceptable. Use one brand of cement throughout project.
B. Minimum cementitious content shall consist of 100% cement or a combination of cement and fly ash per Note C, or a combination of cement and slag cement per Note D. Fly Ash shall not be used in combination with slag cement as a substitute for cement.
C. Fly Ash is permitted and shall conform to ASTM C618 Type C or F, but shall not exceed 20% of cementitious content by weight indicated above on a substitution basis and shall be included in the water-to-cement ratio. If fly ash is used, the mix design submittals shall have tests using the same amount of fly ash. The contractor's schedule shall account for the use of fly ash.
D. Slag cement is permitted and shall conform to ASTM C989, but shall not exceed 15% of cementitious content by weight indicated above on a substitution basis and shall be included in the water-to-cement ratio. If slag cement is used, the mix design submittals shall have tests using the same amount of slag cement. The contractor's schedule shall account for the use of slag cement.
E. All light weight concrete shall conform to ACI 211.2 and shall meet the unit weight requirements of the specified UL classification, as specified on the architectural drawings, except where otherwise specified.
F. Concrete used for floors shall have 1800 psi, 3 day strength. Mixes to be pumped shall be so identified on the mix design submittal. All pumped mixes shall have a mid-range or high-range water reducer.
G. All admixtures other than superplasticizers shall be added at the batch plant. Superplasticizers, designed for addition to the mix at the plant, may be added at the batch plant with verifications from the structural engineer and verifications that the water-to-cement ratio has not been exceeded. Superplasticizers added at the site shall be sent in pre-measured containers from the batch plant.
H. All concrete used for cast-in-place concrete slabs shall contain the specified water reducing or water reducing/retarding admixture. All concrete slabs, placed at air temperature below 50°F shall contain the specified non-corrosive, non-chloride accelerator. All concrete placed at air temperature above 80° shall contain specified water-reducing/retarder admixture. All concrete required to be air-entrained shall contain an approved air-entraining admixture. All pumped concrete shall contain the specified high-range water-reducing admixture. Concrete with a water-cement ratio above 0.40 to 0.60 shall contain the specified water reducer.
I. All concrete requiring a high slump for placement (e.g. pumping, drilled piers, etc.) shall contain mid-range and high-range superplasticizer. Increased slump may not be achieved by exceeding the specified maximum water cement ratio. Maximum slump is 8 inches with use of water reducing admixture (ASTM C494).
J. Calcium chloride shall not be permitted nor shall any admixture containing calcium chloride be permitted.

Concrete (cont.)

6. Normal weight aggregate: ASTM C33, from a single source.

7. Air-entraining admixture: ASTM C260.

8. Water-reducing admixture: ASTM C494, Type A, containing not more than 0.1% chloride ions.

9. High-range water-reducing admixture (superplasticizer): ASTM C494, Type F or G, containing not more than 0.1% chloride ions.

10. Water-reducing, non-chloride accelerating admixture: ASTM C494, Type E, containing not more than 0.1% chloride ions.

11. Water-reducing, retarding admixture: ASTM C494, Type D, containing not more than 0.1% chloride ions.

12. Synthetic Micro-Fiber: Fibrillated polypropylene micro-fibers engineered and designed for use in concrete, complying with ASTM C 1116/C 1116M, Type III, 3/4" to 1 1/2" long. Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than 1.5 lb/cubic yard.

13. Synthetic Macro-Fiber: Polyolefin macro-fibers engineered and designed for use in concrete, complying with ASTM C1116/C1116M, Type III and ASTM D 7508/D 7508M, 1" to 2 1/4" long. Uniformly disperse in concrete mixture at manufacturer's recommended rate but not less than 4.0 lb/cubic yard.

14. Curing Compound: Liquid membrane-forming type (sodium silicate type not approved) meeting all requirements of ASTM C309, Type 1-D clear or translucent, having a fugitive dye to facilitate visual check of coverage. Use of Type 2 white pigmented type is recommended during hot weather.

15. Moisture-retaining sheet materials: Any of the types listed in and meeting requirements of ASTM C171: waterproof paper, 4 mil. (.004") polyethylene film, white burlap/polyethylene sheet.

16. Sealing materials: For laps in sheet cover, provide pressure sensitive tape, non-staining mastic, or other effective adhesive recommended by covering manufacturer.

17. Waterstops: Provide flat, dumbbell type waterstops at construction joints and ribbed type with centerbulb at contraction, expansion, or movement joints, sized to suit joints; either rubber (CE CRD-C 513), or polyvinyl chloride (PVC) (CE CRD-C 572).

18. Premolded joint filler: For use in expansion or isolation joints, size 1/2" thick x full depth of slab; either ASTM D1751 or D1752, and compatible with type of joint sealant used.

19. Vapor Retarder: Polyethylene sheet not less than 10 mils thick, which complies with ASTM E 1745, Class C.

20. Bond Breaker Felt: 15# felt.

21. All pipe sleeve openings through concrete slabs shall be formed with standard steel pipe.

22. No electrical conduit shall be placed above the welded wire reinforcement or top reinforcing of slabs. Conduit embedded in slabs on composite metal deck are subject to additional restrictions and shall be coordinated with the structural engineer. Where slab thickness on metal deck contributes to fire rating, embedded conduit is prohibited.

23. All aluminum in contact with concrete or dissimilar metals shall be coated with two coats coal tar epoxy, approved by the architect, unless otherwise noted.

24. Measure, batch, mix and deliver concrete according to ASTM C94/C94M (ASTM C1116/C1116M for concrete with synthetic or steel fiber) and furnish batch ticket information. Addition of water to the mix at the project site will not be permitted. All water must be added at the batch plant. Slump may be adjusted only through the use of additional water reducing admixture or high range water reducing admixture.

25. All concrete shall be placed without horizontal construction joints, except where specifically noted. Horizontal reinforcement shall be continuous through vertical construction joints.

26. Construction joint locations other than shown on the drawings are permitted subject to prior approval of the engineer. Expansion joint and control joint locations are mandatory as shown. Contractor shall submit drawings showing intended placing sequences and location of construction joints to the engineer for approval. At poured in place walls, construction joints shall be located so as to provide a 60'-0" maximum horizontal length of concrete placement in any direction.

27. All exposed edges of concrete members shall be chamfered 3/4" unless shown otherwise on architectural drawings.

28. See architectural drawings for concrete finishes, masonry anchors, and for miscellaneous embedded plates, bolts, anchors, angles, etc.

29. The placement of sleeves, outlet boxes, box-outs, anchors, etc., for the mechanical, electrical and plumbing trades is the responsibility of the trade involved; however, any box-outs not covered by typical details in the structural drawings shall be submitted for approval.

30. The general contractor shall coordinate locations and dimensions of all openings and sleeves required for mechanical, electrical, and plumbing penetrations before concrete is placed. Shop drawings of all slab openings and sleeves shall be submitted for review by structural engineer. Openings shall not be cut or drilled in slabs without prior approval by structural engineer.

31. Reinforcing steel shop drawings shall indicate the sequence in which layers of crossing reinforcing should be placed in order to produce the correct outermost layers as indicated on the drawings.

32. Slabs supported by unshored beams and girders shall be cast to a constant thickness over beams and girders using depth gauges and screed pins placed at midspan of all beams and girders. Due consideration should be given to camber tolerance and erection tolerance in providing for the thickness of concrete necessary to obtain the specified finish floor elevations. The final slab thickness shall not be less than called for on plans. Contractor is to provide the additional concrete required to compensate for deflection of unshored deck and to produce a slab level within tolerance and with a slab thickness at least the thickness specified in all locations.

33. Reinforcing bars shall conform to ASTM A615, Grade 60. No tack welding of reinforcing in the field will be permitted.

34. Reinforcing bars for welded applications shall conform to ASTM A706, 60 ksi yield strength. All welding shall conform to AWS D1.4.

35. Deformed bar anchors (DBA) shall conform to ASTM A1064, 70 ksi yield strength.

36. Welded wire reinforcement (W.W.R.) shall conform to ASTM A1064 and be furnished in flat sheets and installed on chairs or precast blocks for slab on grade.

37. Reinforcing bar sizes #3 through #5 may be bent cold the first time, provided reinforcing bar temperature is above 32°. For other bar sizes, preheat reinforcing bars before bending. See procedures as outlined in ACI 301.

38. Wire bar supports shall be furnished for all reinforcing within slabs, inclusive of welded wire reinforcement. Bottom bars in slabs on grade may be supported by other suitable supports. Reinforcing shall be properly positioned prior to concrete placement and may not be repositioned once concrete operations have begun. Wire bar and other types of supports shall be in accordance with the Concrete Reinforcing Steel Institute Manual of Standard Practice.

39. Reinforcement shall be continuous through all construction joints unless otherwise noted on drawings.

40. All hooks shown on drawings shall be standard hooks unless otherwise noted.

41. Where continuous bars are called for, they shall run continuously around corners and be lapped at necessary splices, or hooked at discontinuous ends. Lap lengths shall be as given in the splice and development table. Lap beam top bars at mid-span and beam bottom bars at supports, unless otherwise noted.

42. Provide additional reinforcing at the sides and corners of all openings in concrete in accordance with the typical details. Extend bars a minimum of 2'-0" beyond openings, hook where extension is not possible. Minimum additional requirements are as follows:

    (2) #5 top and bottom in slabs
    (2) #5 each face in walls
    (2) #5 x 4'-0" long diagonally each corner of opening

43. In reinforced concrete walls and footings provide corner dowels of same size and spacing as horizontal reinforcing. Dowels shall have a class "b" lap with horizontal reinforcing in each direction

44. Filling-in: Fill-in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place and cure concrete as herein specified, to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete work.

45. Grout base plates and foundations as indicated, using specified non-metallic non-shrink grout.

46. Form work for structural elements shall not be removed until concrete has reached 75% of its design strength.

47. Cold weather placing: Comply with ACI 306.1.

48. Hot weather placing: Comply with ACI 305.1.

Minimum Lap Splice and Anchorage Dimension Table

1. 3000 psi normal weight concrete, Fy=grade 60, non-coated bars

Top Bars			Other Bars		
Bar size	Lap	Anchorage	Bar Size	Lap	Anchorage
#3	28"	22"	#3	22"	17"
#4	37"	29"	#4	29"	22"
#5	47"	36"	#5	36"	28"
#6	56"	43"	#6	43"	33"

2. 4000 psi normal weight concrete, Fy=grade 60, non-coated bars

Top Bars			Other Bars		
Bar Size	Lap	Anchorage	Bar Size	Lap	Anchorage
#3	24"	19"	#3	19"	15"
#4	33"	25"	#4	25"	19"
#5	41"	31"	#5	31"	24"
#6	49"	37"	#6	37"	29"

Concrete (cont.)

3. 'Top Bars' as noted in the tables indicates the condition where horizontal bars are so placed that more than 12 inches of fresh concrete is cast below the splice.

4. When lapping two different size bars, use the lap dimension of the smaller bar or the anchorage dimension of the larger bar. Use whichever dimension is larger.

Minimum Concrete Cover for Reinforcing

1. Unless noted otherwise, concrete reinforcing shall be placed with proper cover to provide protection in accordance with ACI 318, and within deviation tolerances listed in ACI 117.

2.

Location	Minimum Cover
Footings cast against and permanently exposed to earth	3"
Interior slabs	3/4"
Exterior slabs: #5 and smaller #6 and larger	1 1/2" 2"

3. Maximum deviation from the above cover requirements shall be as follows:
   A. For member depth 4" or less: ±1/4".
      For member depth 12" or less but greater than 4": ±3/8".
      For member depth greater than 12": +1/2", -1/4".
   B. For slab on grade: +3/4", with lower bound per above item 'A'.
   C. Reduction in cover dimension shall not exceed 1/3 the specified cover.
   D. Reduction in cover dimension for formed soffits shall not exceed 1/4".

Floor Finish

1. Interior floor slabs: Machine trowel unless noted otherwise.

2. Exterior slab areas: Light flexible bristle broom unless noted otherwise.

3. Provide ACI 'Class A' tolerance, 1/8" variation in 10 feet, measured with a straight edge laid in any direction.

4. Control joints in slabs on grade: Control joints in slabs on grade shall be provided at the locations indicated on the drawings. Joints shall be made by saw cutting 0-2 hours after the final finish at each joint location using the early-entry dry-cut process per ACI 302.1R. Joint depth shall be per drawing detail. The saw shall use a diamond-impregnated blade and employ the use of a skid plate to prevent spalling and raveling of the slab. Approved supplier: Soff-cut International or equal.

Curing

1. Curing compound shall be provided as prescribed on architectural drawings based on floor use. Coordinate for compatibility of finish material.

2. Moisture-retaining sheet material meeting ASTM C171 may be used.

3. Maintain initial curing for 12 hours after finishing, 24 hours for air temperature of 75 degrees F and above.

Submittals

1. Product data: Submit data for proprietary materials and items including admixtures, patching compounds, waterstops, joint systems, curing compounds, finish materials, and others as requested by architect/engineer.

2. Certification: Upon engineer's request, provide admixture manufacturer's written certification that chloride ion content complies with specified requirements.

3. Shop drawings/Reinforcement: See ACI 301, Section 3.1. Detailing shall conform to the ACI Detailing Manual.

4. Shop drawing submittals shall consist of 3 prints of each drawing for the Structural Engineer, 1 print for the Architect and a minimum of 1 print for the General Contractor.

5. Mix design: Submit mix designs for each concrete mix for the project per ACI 301. Mix designs shall include all back up material with compressive strength breaks based on field experience or breaks from a laboratory trial mix per ACI 301.

Quality Assurance

1. Mold and cure four - 6"x12" cylinders or five - 4"x8" cylinders in accordance with ASTM C31 for each composite sample. Test one cylinder at 7 days, two - 6"x12" cylinders or three - 4"x8" cylinders at 28 days, and retain one cylinder for 56-day test if required. Two - 6"x12" cylinders or three - 4"x8" cylinders constitute a strength test. Acceptance of structure will be based on three consecutive 28-day strength tests.

2. In accordance with ASTM C172/C172M, obtain at least one composite sample set of cylinders for each 150 cubic yards or fraction thereof, but not less than one set for each 5000 square feet of surface area for slabs or walls, of each concrete mixture placed in any one day.

3. Air Content
   A. Determine air content of concrete for each strength test by either the pressure method (ASTM C231) or the volumetric method (ASTM C173). The "Chase" air indicator shall not be used.
   B. A minimum of one air content test shall be made in the morning and one in the afternoon. Air content tests shall be made on all concrete whether the concrete is designated as air-entrained or not.
   C. Additional air content tests, for concrete specified as air-entrained, shall be made when any of the following conditions occur:
      • A change in appearance or consistency of concrete.
      • Possible reduction of air content due to time delays of truck and/or hot weather.
      • When air temperature is over 80°F, check each truckload.

4. Slump test: Perform slump test on each truckload of concrete.

5. Inform engineer immediately of any slump and/or air content tests that do not meet these specifications. If strength, durability or aesthetics of the structure would be impaired, that concrete shall not be used.

6. Concrete test reports shall contain the following information: Concrete supplier, quantity of concrete represented, location of samples taken, design strength requirement at 28 days, list of all materials and admixtures used with quantity and brand or source, actual slump, actual air content, air temperature, concrete temperature, weather, cylinder weight as received, date molded, number of days on job site, date tested, test results for 7 and 28 days, and any other information necessary to evaluate test results.

7. Send one copy of reports on all required laboratory testing directly to the structural engineer, two copies to the architect, one copy to the contractor and one copy to the concrete supplier. A copy of all test reports shall be in the engineers office within a maximum of five (5) working days from date of test or inspection.

8. Acceptance of structure: If 28-day test results do not meet requirements, the engineer shall have the right to order a change in mix proportions for remaining portions of structure. The engineer may require core tests to be made at contractors expense. Any such testing shall be done by an independent testing agency acceptable to the engineer.

Post-Installed Anchors and Reinforcing Dowels

1. Design of anchors, adhesives, and embedments specified on the drawings is based on Hilti products. Any substitutions shall meet or exceed the allowable shear and allowable tension values published in the Hilti North American Product Technical Guide.

2. The contractor shall submit ICC ES Evaluation reports and manufacturer installation instructions for all post-installed anchors being used on the project.

3. The contractor shall ensure the installers of post-installed anchors shall have at least three (3) years of experience installing anchors in similar installations. If installers do not have the required experience with similar installations they must conduct a thorough training with the manufacturer's representative. Training shall consist of but not be limited to, proper hole drilling procedures, hole preparation and cleaning techniques, adhesive injection techniques and dispenser training / maintenance, rebar dowel preparation and installation and proof loading/torquing.

4. The contractor shall provide manufacturer product information for any requests for substitution for review to the EOR for compliance with the contract documents.

5. The contractor shall submit the specific product information, for each application, for any product requesting substitution. For each application being substituted, provide anchor type, embedment depth, adhesive type, edge distances, etc.; along with the allowable shear and tension capacity for the requested applications. Do not provide generic product data; only specific values for each substitution will be reviewed. If this information is not fully provided, the submittal will be immediately rejected.

6. Post-installed anchors and dowels shall be used only where specifically indicated on the drawings or for specific conditions approved by the engineer. Items indicated to be cast-in-place shall not be substituted with post-installed methods or products unless prior approval is given by the engineer. When requesting a substitution of a post-installed anchor in lieu of cast-in-place anchor, calculations, for a post installed alternate, shall be provided by an engineer registered in the appropriate jurisdiction of the project.

7. Fastener and anchor material shall be as follows:
   • Bolts and Studs: ASTM A307; ASTM A449 (where indicated as 'High Strength')
   • Carbon and Alloy Steel Nuts: ASTM A563
   • Carbon Steel Washers: ASTM F436
   • Carbon Steel Threaded Rod: ASTM F1554, GR.36
   • Wedge Anchors: ASTM A510 or ASTM A108
   • Stainless Steel Bolts, Hex Cap Screws, and Studs: ASTM F593
   • Stainless Steel Nuts: ASTM F594
   • Zinc Plating: ASTM B633
   • Hot-Dip Galvanizing: ASTM A153
   • Reinforcing Dowels: ASTM A615

Post-Installed Anchors and Reinforcing Dowels (cont.)

8. The following anchors shall only be used where indicated on the drawings, unless specifically noted otherwise in sections or details in the drawings:

CONCRETE ANCHORS (CRACKED AND UNCRACKED CONCRETE)

ANCHOR TYPE	ADHESIVE TYPE	ROD TYPE
Adhesive	Hilti HIT-HY200 SafeSet System	Hilti HIT-Z Rod
Mechanical	-	Hilti KWIK HUS-EZ
Mechanical	-	Hilti KWIK Bolt-TZ Mechanical Safe-Set with AT tool

CONCRETE REINFORCING (CRACKED AND UNCRACKED CONCRETE)

ANCHOR TYPE	ADHESIVE TYPE	REINFORCING
Medium Duty Adhesive	Hilti HIT-HY100 SafeSet System	As indicated on drawings.
Heavy Duty Adhesive	Hilti HIT-HY200 SafeSet System	As indicated on drawings.

MASONRY ANCHORS (MASONRY SHALL BE SOLID GROUTED A DISTANCE OF 8" FROM ANCHOR IN ALL DIRECTIONS)

ANCHOR TYPE	ADHESIVE TYPE	ROD TYPE
Adhesive	Hilti HIT-HY270 SafeSet System	3/8"Ø Hilti HAS-E Continuous Threaded (3 3/8" embed)
Adhesive	Hilti HIT-HY270 SafeSet System	1/2"Ø Hilti HAS-E Continuous Threaded (4 1/2" embed)
Adhesive	Hilti HIT-HY270 SafeSet System	5/8"Ø Hilti HAS-E Continuous Threaded (5 5/8" embed)
Adhesive	Hilti HIT-HY270 SafeSet System	3/4"Ø Hilti HAS-E Continuous Threaded (6 3/4" embed)
Mechanical	-	Hilti KWIK HUS-EZ (Note: anchors may not be installed within 1 1/4" of vertical mortar joints.)

Note: For applications into existing masonry / brick that may be ungrouted provide screen tube insert.

MASONRY REINFORCING (MASONRY SHALL BE SOLID GROUTED A DISTANCE OF 8" FROM ANCHOR IN ALL DIRECTIONS)

ANCHOR TYPE	ADHESIVE TYPE	REINFORCING TYPE
Adhesive	Hilti HIT-HY270 SafeSet System	#3 Rebar (3 3/8" embed.)
Adhesive	Hilti HIT-HY270 SafeSet System	#4 Rebar (4 1/2" embed.)
Adhesive	Hilti HIT-HY270 SafeSet System	#5 Rebar (5 5/8" embed.)
Adhesive	Hilti HIT-HY270 SafeSet System	#6 Rebar (6 3/4" embed.)

Note: For applications into existing masonry / brick that may be ungrouted provide screen tube insert.

9. Anchors used in existing masonry, brick, clay tile walls, etc., shall have a pull test performed on each wall type the anchors are to be used. Provide at least three (3) tests per wall type and provide results to the E.O.R. Pull test shall either be done by the manufacturer's representative or a qualified special inspection company.

Masonry

1. All masonry shall conform to "Building Code Requirements for Masonry Structures" (ACI 530/ASCE 5/TMS 402) and "Specification for Masonry Structures" (ACI 530.1/ASCE 6/TMS 602).

2. All brick and concrete masonry construction shall comply with the recommendations of the Brick Industry Association (BIA) and the National Concrete Masonry Association (NCMA) and minimum requirements established in the applicable building code.

3. Grouting and Reinforcing: All masonry and grouting and reinforcing work shall be performed by masonry craftworkers who have successfully completed the International Masonry Institute (1-800-IMI-0988) training course for Grouting and Reinforced Masonry Construction, or equal.

4. Structural masonry design compressive strength of wall assembly (f'm) = 2,000 psi based on Unit Strength Method, unless otherwise noted.

5. Concrete masonry units (CMU) shall be normal weight units conforming to ASTM C90.

6. Mortar for all structural masonry shall be Type S, conforming to ASTM C270 Proportion Specification, and shall be either Portland cement (ASTM C150, Type I or III) and hydrated lime (ASTM C207, Type S) or Mortar cement (ASTM C1329). Masonry cement mortar is not acceptable for structural masonry.

7. Grout to fill cores shall be ASTM C476, coarse grout (3/8" maximum aggregate) with a minimum compressive strength of 2500 psi in 28 days.

8. Reinforcing bars shall conform to ASTM A615, grade 60.

9. Deformed bar anchors (DBA) shall conform to ASTM A1064, 70 ksi yield strength.

10. All concrete masonry units shall have galvanized horizontal joint reinforcement as follows:

    A. 9 ga. side and cross rods (ladder type) spaced 16" o.c. vertically.

    B. 9 ga. side and cross rods (ladder type) spaced 8" o.c. vertically in parapets.

11. Lap joint reinforcing as shown in the table below:

Wire Joint Reinforcing	Splice Length
W1.1 (11 ga.)	6"
W1.7 (9 ga.)	7"
W2.1 (8 ga.)	8"
W2.8 (3/16 wire)	9"
W4.9 (1/4 wire)	12"

12. All cores with reinforcement shall be filled solid with grout. All grout shall be consolidated in place by vibration to insure complete filling of cells.

13. Place reinforcing bars before grouting. Properly secure reinforcing bars to maintain the positions indicated on the drawings. Bars to be located in center of cells unless otherwise noted.

14. Mortar protrusions, extending into cells or cavities to be reinforced and filled, shall be removed.

15. Place grout with pour height not exceeding 5 feet. Consolidate each pour by mechanical vibration. Reconsolidate after initial water loss and settlement has occurred.

16. Grout pour height may be increased where the following conditions are met:
    A. Limit pour height based on a minimum width of grout space in accordance with Table 7 of ACI530.1/ASCE 6 /TMS 602.
    B. Place grout in lifts not exceeding the limitations specified in ACI530.1/ASCE 6 /TMS 602.
    C. Consolidate each pour by mechanical vibration. Reconsolidate after initial water loss and settlement has occurred.
    D. Form a grout key between pours according to ACI530.1/ASCE 6 /TMS 602.
    E. Provide an inspection port (cleanout) at each cell to be grouted at the base of each pour.
    F. Submit shop drawings detailing the proposed grouting procedure along with (3) references of previous successful projects.

17. Lay masonry units with full mortar coverage on horizontal and vertical face shells. Bed webs in mortar in starting course on footing and in all courses of columns and pilasters, and where adjacent to cells or cavities to be reinforced or filled with concrete grout.

18. Grout one (1) course of masonry solid under all wall bearing slabs.

19. Provide 16" of solid masonry under wall bearing beams and joist girders unless noted otherwise.

20. All corners to be tied by masonry bond.

21. Grout cores solid a minimum of one course below any change in wall thickness.

22. Provide 8" solid masonry 24" wide minimum under wall bearing joists.

23. All masonry walls shall have vertical control joints at a maximum spacing of 25'. Coordinate with locations indicated on architectural drawings. Control joints shall extend through the entire wall thickness, except at continuous bond beams where the masonry shall be scored only.

24. All CMU shall be temporarily braced during construction in accordance with the governing building code for lateral design loads until permanent restraints have been installed. Temporary bracing is the sole responsibility of the contractor. The contractor is responsible for all costs associated with repairs resulting from improper or insufficient bracing.

Tenant 6A LL Work
at Laurel Square

Laurel Square Shopping Center
Brick Township, NJ

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Rev:	Date:	Description:
	04/01/2022	ISSUED FOR BID AND PERMIT

PROGRESS
NOT FOR
CONSTRUCTION
3/31/2022

DAVID L. NEMETH, NJ Professional Engineer, NO: GE 47251; 24GA28104800

GENERAL NOTES
& SPECIFICATIONS

1838.C S-001

GENERAL NOTES (cont.)

Masonry (cont.)

25. The collar joint in multi-wythe walls below grade shall be fully grouted as the wall is constructed.

26. CMU walls 12" or less in width shall be single-wythe. CMU walls greater than 12" wide may be constructed as multi-wythe, provided the collar joint is continuously grouted solid, continuous header course is provided at 40" o.c. maximum vertically and header overlaps the collar joint by 3" minimum. Use single wythe for walls greater than 12" and exposed to view.

27. All openings in masonry walls for mechanical, electrical, plumbing, etc. penetrations are to be coordinated and located prior to beginning wall construction. Detailed fully-dimensioned drawings of wall openings, including lintels and adjacent reinforcement shall be submitted for review prior to construction of the walls. No openings are permitted to be cut in bearing walls, shear walls or exterior walls without prior approval by the engineer.

Submittals

1. Product data / Material certificates: Submit data and certificates for masonry units, cementitious materials, mortar admixtures, pre-blended dry mortar mixes, reinforcing bars, joint reinforcement, anchors, ties, and metal accessories.

2. Shop drawings / Reinforcement: Show elevations of reinforced walls. Detail bending, lap lengths, and placement of unit masonry reinforcing bars. Comply with ACI Detailing Manual.

3. Shop drawings shall indicate the date of the structural drawings that were used to prepare the shop drawings.

4. Shop drawing submittals shall consist of 3 prints of each drawing for the Structural Engineer, 1 print for the Architect, and a minimum of 1 print for the General Contractor.

5. Mix designs: Submit mix designs for each type of mortar and grout. Include description of type and proportions of ingredients. Include test reports, according to ASTM C1019, for grout mixes.

Structural Steel

1. Detailing, fabrication, and erection shall conform to the latest edition as referenced in the applicable building code, of the AISC 'Steel Construction Manual' and AISC 360 'Specification for Structural Steel Buildings', herein referred to as 'AISC Manual' and 'AISC Specification'.

   Structural Steel: (W shapes) ASTM A992 (Fy=50ksi)
   (M, S, C shapes) ASTM A36 uno
   (Plate, Angles) ASTM A36 uno

   HSS: (tubular shapes) ASTM A500 grade C (Fy=50ksi)

   Pipe Sections: ASTM A53, type E or S, grade B (Fy=35ksi)

   High-Strength Bolts, Nuts, and Washers: ASTM F3125, Grade A325 or F1852, Type 1, heavy-hex steel structural bolts; ASTM A563, Grade C, heavy-hex carbon-steel nuts; and ASTM F436, Type 1, hardened carbon-steel washers; all with plain finish.

   All anchor rods shall be ASTM F1554 grade 36, uno.

   All structural steel not to receive spray fire-proofing shall be primed white or light gray; asphaltic paints are not acceptable.

   All column base plates shall have a minimum of four anchor rods.

   Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

2. Connections shown on these drawings are generally schematic. They are intended to define the spatial relationship of the framed members and show a feasible method of making the connection. Any connection that is not shown or is not completely detailed on the structural drawings shall be designed by a registered professional engineer, retained by the fabricator. Details and connections may be designed to conform to AISC Manual. Completely detailed means the following information is shown on the shop detail drawings:

   A. All plate dimensions and grade.
   B. All weld sizes, lengths, pitches and returns.
   C. All hole sizes and spacings.
   D. Number and type of bolts: where bolts are shown but no number is given, the connection has not been completely detailed.
   E. Where partial information is given, it shall be the minimum requirement for connection.
   F. Method of design.

3. Details and connections completely detailed in the contract drawings may not be altered without written approval by the engineer. Where approved, altered connections shall be completely detailed by the fabricator's engineer clearly on the shop drawings.

4. Alterations of schematic connection details may impact architectural concept and shall not be made without prior written approval of the engineer.

5. Minimum connection plate thickness shall be 3/8", unless otherwise indicated in the contract drawings.

6. For W, M, S, and C shapes, unless otherwise noted, beam to beam connections and beam to column connections shall be one of the following double angle (t min=5/16") framed beam connections:

   A. Shop welded per Table 10-2, AISC Manual for using weld A, and using 3/4" diameter A325-N bolts in standard or horizontally slotted holes for the field connection.

   B. All bolted connections per Table 10-1, AISC Manual. Controlling strength of connection shall be least of bolt / angle strength or beam web strength taking into account coped flanges.

   The minimum length of connection angles shall be equal to one-half the depth of the member to be supported.

7. Unless otherwise noted, all connections at HSS sections shall be designed and detailed in accordance with the AISC Manual and AISC Specification.

8. Where the reactions of uniformly loaded beams and girders are not shown on the drawings, the connections shall be designed to support the reactions due to the maximum allowable uniform load as indicated in the load tables of the AISC Manual, Part 3 for the given beam size and span. For beams and girders not uniformly loaded see plan for reactions; if no reaction is shown, contact Engineer of Record for reactions.

9. All bolts shall be considered bearing bolts. Do not over tighten bearing bolts, especially for beams to support concrete slabs. Tighten bearing bolts to a snug condition only, per AISC specifications.

10. Twist-off type tension control bolts are not permitted to be used as bearing bolts.

11. All moment plate connections shall be designed for the full moment capacity (as tabulated in the AISC Manual, Part 3) of the beam, unless noted otherwise. Local stresses at bolt holes do not govern.

12. All welding shall be done using E-70xx electrodes in accordance with the latest AWS specifications.

13. Work these drawings with architectural drawings for nailer holes and architectural clearances.

14. General contractor shall verify all structural beam locations, mechanical unit weights and opening sizes and locations with mechanical contractor and vendor's drawings for actual mechanical unit purchased.

15. Splicing of structural members where not detailed on the drawings is prohibited without prior approval of the structural engineer.

16. Cuts, holes, coping, etc. required for work of other trades shall be shown on the shop drawings and made in the shop. Cuts or burning of holes in structural steel members in the field will not be permitted, unless specifically approved in each case by the structural engineer.

17. All HSS shapes (round, square, rectangular, etc.) are to have a 1/4" cap plate at all exposed ends. Cap plates to be seal welded all around, uno. Provide 3/8"Ø weep holes in the center of the plate.

18. All weld sizes not shown in details herein shall be the minimum required size based on thickness of thinner part as per AISC Specification, Tables J2.3 & J2.4. Exception: At member splices welds or bolts shall develop full strength of the member or components being connected.

19. All around welds indicated herein shall be discontinuous at the flange tips of open sections.

20. All structural steel, including base plates and tops of anchor bolts, to be exposed to soil are to be coated with an approved coal tar epoxy, 16 mils minimum thickness.

21. Any member sizes shown on the plans, and currently listed in the AISC Manual, which are not currently available must be brought to the architect's and structural engineer's attention prior to award of steel contract. No claim for additional cost will be accepted after the award, for member/built up member substitutions for these sizes.

22. All supplemental steel required for roof units and roof openings over 12"x12" to be supplied by structural steel fabricator and be coordinated by general contractor with the joist fabricator, mechanical drawings and mechanical equipment supplier.

23. All structural steel beams and columns adjacent to masonry shall have adjustable masonry anchors at 2'-0" o.c.

24. Hot dip galvanize per ASTM A123 after fabrication the following structural steel members:

   A. Shelf angles supporting masonry.
   B. Lintels supporting single or multiple wythe exterior masonry walls.
   C. Items identified on the architectural and structural drawings. All steel permanently exposed to weather shall be hot dipped galvanized unless specified otherwise on the architectural drawings. For members shown to be galvanized, all connection material shall also be galvanized.

XXXXXXX (cont.)

Submittals

1. Submit shop drawings prepared under supervision of a registered engineer, including complete details and schedules for fabrication and assembly of structural steel members, procedures and diagrams. Include details of cuts, connections, camber, holes, and other pertinent data.

2. Indicate welds by standard AWS symbols and show size, length, and type of each weld. Provide setting drawings, templates and directions for installation of anchor bolts and other anchorages to be installed by others. Provide calculations used for designing connections.

3. Shop drawings shall indicate the date of the structural drawings that were used to prepare the shop drawings.

Quality Assurance

1. Test reports: Submit copies of reports of tests conducted on shop and field bolted and welded connections. Include data on types of tests conducted and test results.

2. An independent testing and inspection agency shall be engaged to inspect high-strength bolted connections and welded connections and to perform tests and prepare test reports. Testing agency shall conduct and interpret tests and state in each report whether test specimens comply with requirements, noting any deviations therefrom.

3. Correct deficiencies in structural steel work which inspection and laboratory test reports have indicated to be not in compliance with requirements. Perform additional tests, at contractor's expense, as may be necessary to reconfirm any noncompliance of original work, and as may be necessary to show compliance of corrected work.

4. Field bolted connections: Inspect in accordance with AISC Specification. Check at least one bolt on every connection. Non-slip critical bolts tightened to a snug fit condition only require a visual inspection. Slip critical bolts require a turn of the nut or calibrated wrench method inspection.

5. Shop and field welding: Inspect and test during fabrication and/or erection of structural steel. Certify welders and conduct inspections and tests as required. Record types and locations of defects found in work. Record work required and performed to correct deficiencies. Perform visual inspection of all welds, and perform ultrasonic tests of full penetration welds in accordance with ASTM E 164.

Cold-Formed Metal Framing

1. The design, installation and construction of cold-formed carbon or low-alloy steel, structural and nonstructural exterior steel framing, shall be in accordance with "The Standard for Cold-Formed Steel Framing-General Provisions, American Iron and Steel Institute" (AISI-general) and AISI-NASPEC.

2. System components: With each type of metal framing required, provide manufacturer's standard steel runners (tracks), bracing, clip angles, shoes, reinforcements, fasteners, and accessories as recommended by manufacturer for applications indicated, as needed, to provide a complete metal framing system.

3. The supplier shall provide all components and connections relative to size, spacing, gauge, location, and anchorage of metal studs shown on architectural and structural drawings. Additional costs associated with an increase in the size or gauge of the studs from that shown on the drawings are not permitted. The design intent shall be followed and supplier shall provide design for all framing components and connections not specifically detailed including trusses, headers, jambs, supplemental bracing, etc. Any deviation from this design shall be approved by the architect/engineer. Additional fees required to evaluate a revision in stud size, gauge or spacing are the responsibility of the contractor.

4. Design of cold-formed metal stud framing shown is based on SSMA studs with section properties and allowable resisting moment capacities as defined in AISI manual, Cold-Formed Steel Design.

5. Minimum thickness of exterior cold-formed wall studs and tracks shall be 18 ga. at masonry veneer and 20 ga. at other locations, (u.n.o.). Minimum stud flange width shall be 1 5/8". Increase gauge thickness as required by finish system manufacturer (e.g. metal panel system, etc.). G.C. to coordinate requirements with selected manufacturers.

6. Member sizes given or connections specifically detailed on the drawings shall be considered a minimum requirement.

7. All framing members 16 ga. and heavier shall be formed from steel with a minimum yield strength of 50 ksi. All other framing shall be formed from steel with a minimum yield strength of 33 ksi.

8. All framing shall be galvanized, G90 coating at masonry veneer and G60 at other locations.

9. All connections shall be screwed or welded. Powder driven fasteners are not acceptable for any structural applications without prior approval of engineer of record.

10. Welding: Use qualified welders and comply with AWS D1.3 "Structural Welding Code - Sheet Steel".

11. Connection methods and fastener sizes/types shall not deviate from that indicated on drawings unless a substitution request is submitted and approved by architect/engineer prior to installation.

12. Member web openings shall be positioned a minimum of 10" from connections.

13. All welds shall be touched up with zinc-rich paint.

14. At wall locations where multiple cold-formed studs are required to support vertical loads, a continuous load path shall be provided to support those loads through the structure inclusive of the floor system to the foundations. This may be accomplished through the use of beams, headers, blocking, stiffeners or other appropriate means based on location and detailing considerations.

15. Contractor shall design and furnish cold-formed metal framing for all exterior soffits and ceilings indicated on architectural drawings, designed to resist lateral wind loads and uplift wind pressure.

16. Erection tolerances: Install cold-formed metal framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8" in 10 feet (1:960) and as follows:

   A. Spacing: Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.
   B. Squareness: Install cold-formed metal framing to a maximum out-of-square tolerance of 1/8 inch.

17. Install cold-formed metal framing according to ASTM C 1007 and AISI's 'Standard for Cold-Formed Steel Framing - General Provisions' and to manufacturer's written instructions, unless more stringent requirements are indicated.

18. Install supplementary framing, blocking and bracing in metal framing system wherever walls, partitions, canopies and soffits are indicated to support fixtures, equipment, services, and similar work. Where type of supplementary support is not otherwise indicated, comply with stud manufacturer's recommendations and industry standards in each case, considering weight or loading resulting from item supported.

19. Installation of stud system: Secure studs to runner tracks by either welding or screw fastening at both inside and outside flanges unless otherwise noted on drawings. Seat studs completely in track.

20. Frame both sides of expansion and control joints with separate studs; do not bridge the joint with components of stud system.

21. Install horizontal stiffeners in stud system, spaced at not more than 4'-0" on center. Weld at each intersection.

22. Where stud system abuts structural columns, beams or walls, including masonry walls, anchor ends of stiffeners to supporting structure.

23. Install temporary bracing and supports to secure framing and support loads comparable in intensity to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.

24. Align studs vertically where wall-framing continuity is interrupted by floor framing. Where studs cannot be aligned, continuously reinforce track to transfer loads.

25. Align floor and roof framing over wall studs. Where framing cannot be aligned, continuously reinforce track to transfer loads.

26. Install headers over wall openings wider than stud spacing. Locate headers above openings as indicated. Fabricate headers of compound shapes indicated or required to transfer load to supporting studs, complete with clip-angle connectors, web-stiffeners, or gusset plates.

   A. Frame wall openings with not less than a double stud at each jamb or frame as indicated on shop drawings.
   B. Install runner tracks and jack studs above and below wall openings. Anchor tracks to jamb studs with clip angles or by welding, and space jack studs same as full-height wall studs.

27. Contractor shall coordinate installation of edge angles with steel erection and metal stud contractor to ensure proper alignment of angles for metal stud installation.

28. OSB or plywood sheathing shall be attached to light gauge framing with #10 TEK screws at 8" o.c. (uno). The screws shall be of sufficient length to penetrate through the cold-formed steel framing member by at least three exposed threads. All screws shall be hot dipped galvanized per ASTM A153 when sheathing is preservative treated or fire retardant treated.

29. All sheathing shall be APA rated sheathing.

30. Galvanized repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold formed metal framing with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

31. Touch up painting: Wire brush, clean, and paint scarred areas, welds, and rust spots on fabricated and installed prime-painted, cold-formed metal framing. Paint framing surfaces with same type of shop paint used on adjacent surfaces.

Cold-Formed Metal Framing (cont.)

Submittals

1. Contractor shall submit fabrication and erection shop drawings to the engineer for review for all cold formed metal framing components and connections indicated on the contract drawings. Any deviation from this design shall be approved by the architect/engineer and additional review costs shall be the responsibility of the contractor. For all framing components and connections not specifically detailed on the structural drawings including trusses, headers, jambs, etc. submit shop drawings and calculations stamped by an engineer registered in the appropriate jurisdiction of the project.

Quality Assurance

1. Testing: Owner will engage a qualified independent testing agency to perform field quality-control testing.

2. Field and shop welds will be subject to inspection and testing.

3. Testing agency will report test results promptly and in writing to contractor and architect.

4. Remove and replace work that does not comply with specified requirements.

5. Additional testing and inspecting, at contractor's expense, will be performed to determine compliance of corrected work with specified requirements.

ABBREVIATIONS

A.B._____ANCHOR BOLT
A.R._____ANCHOR ROD
ADD'L_____ADDITIONAL
A.F.F._____ABOVE FINISH FLOOR
ARCH._____ARCHITECTURAL
B/_____BOTTOM OF
BLDG._____BUILDING
BM._____BEAM
BOT._____BOTTOM
BRG._____BEARING
BTJ_____BOLTED TIE JOIST
CANT'L_____CANTILEVER
CFMF_____COLD FORMED METAL FRAMING
C.I.P._____CAST-IN-PLACE
C/J_____CONTROL JOINT
C/L_____CENTERLINE
CLR._____CLEAR
CMU_____CONCRETE MASONRY UNIT
COL._____COLUMN
CONC._____CONCRETE
CONSTR._____CONSTRUCTION
CONT._____CONTINUOUS
C.Y._____CUBIC YARD
DBA_____DEFORMED BAR ANCHOR
DET._____DETAIL
DIAG._____DIAGONAL
Ø / DIA._____DIAMETER
D.L._____DEAD LOAD
DWG._____DRAWING
E.F._____EACH FACE
EJ_____EXPANSION JOINT
EL._____ELEVATION
EMBED._____EMBEDMENT
E.S._____EACH SIDE
EQ._____EQUAL OR EQUIVALENT
EQUIP._____EQUIPMENT
E.W._____EACH WAY
EXP._____EXPANSION
(E)_____EXISTING
EXT._____EXTERIOR
F.D._____FLOOR DRAIN
FIN._____FINISH
FLG._____FLANGE
FLR._____FLOOR
F.S._____FAR SIDE OR FOOTING STEP
FT._____FEET
FTG._____FOOTING
GA._____GAUGE
GB._____GRADE BEAM
G.C._____GENERAL CONTRACTOR
GALV._____GALVANIZED
HDTD_____HEADED
HORIZ._____HORIZONTAL
I.F._____INSIDE FACE
INT._____INTERIOR
J/B OR J/BRG._____JOIST BEARING
k_____KIP
LG._____LONG
L.L._____LIVE LOAD
(LLH)_____LONG LEG HORIZONTAL
(LLV)_____LONG LEG VERTICAL
(LSH)_____LONG SIDE HORIZONTAL
(LSV)_____LONG SIDE VERTICAL
L.W._____LONG WAY
MECH._____MECHANICAL
MFR._____MANUFACTURER
(N)_____NEW
(N.I.C.)_____NOT IN CONTRACT
N.S._____NEAR SIDE
NTS_____NOT TO SCALE
O.C._____ON CENTER
O.F._____OUTSIDE FACE
O/O_____OUT TO OUT
OPP._____OPPOSITE
PC._____PRECAST CONCRETE
P/J_____PANEL JOINT
PL._____PLATE
PSF_____POUNDS/SQUARE FOOT
PSI_____POUNDS/SQUARE INCH
RAD._____RADIUS
R.D._____ROOF DRAIN
REINF._____REINFORCING
REQ'D_____REQUIRED
SECT._____SECTION
SIM._____SIMILAR TO
S.O.G._____SLAB ON GRADE
SP._____SPACES
SQ._____SQUARE
STIFF._____STIFFENER
STL._____STEEL
STRUCT._____STRUCTURAL
S.W._____SHORT WAY
SYM._____SYMMETRICAL
T/_____TOP OF
TYP._____TYPICAL
UNO_____UNLESS NOTED OTHERWISE
VERT._____VERTICAL
V.I.F._____VERIFY IN FIELD
W.P._____WORK POINT
W.W.R._____WELDED WIRE REINFORCEMENT
W/_____WITH

Tenant 6A LL Work
at Laurel Square

Laurel Square Shopping Center
Brick Township, NJ

CREATE
ARCHITECTURE PLANNING & DESIGN LLC

45 West 34th Street
Penthouse
New York, NY 10001

Phone: (212) 297-0880
createworldwide.com

Owner / Developer:
BRIXMOR Property Group
One Fayette Street, Suite 150
Conshohocken, PA 19428

Structural & M/E/P Engineers:
Thorson Baker + Associates, Inc.
3030 West Streetsboro Rd
Richfield, OH 44286

Rev:	Date:	Description:
	04/01/2022	ISSUED FOR BID AND PERMIT

PROGRESS
NOT FOR
CONSTRUCTION
3/31/2022

DAVID L. NEMETH, NJ Professional Engineer, NO. GE 47251, 24GA28034800

GENERAL NOTES
& SPECIFICATIONS

1838.C S-002

GENERAL NOTES (cont.)

Special Inspection

1. Special inspection is to be provided in addition to the inspections conducted by the department of building safety and shall not be construed to relieve the owner or his authorized agent from requesting the periodic and called inspections required by the applicable building code. Special inspection shall be paid by the owner.

Required Special Inspections

1. In addition to the regular inspections, the following items will also require special inspection in accordance with the applicable building code.

   A. Soils compliance prior to foundation inspection (compacting fill, special grading)
   B. Structural concrete over 2,500 psi
   C. Structural steel fabrication
   D. Field welding
   E. High strength bolts
   F. Structural masonry

2. Special inspector shall meet the qualifications as stated in the applicable building code and shall perform the duties and responsibilities as outlined in the applicable building code.

3. Special inspection shall meet the requirements of the applicable building code. Special inspector(s) shall be hired by the owner to perform the required special inspections. The names of persons or firms who are to perform the special inspections shall be forwarded to the building official for approval. The special inspector(s) shall complete and submit all forms required by the building department having jurisdiction.

4. The special inspector(s) shall:

   A. Observe the work assigned for conformance to the approved drawing and specifications.
   B. Furnish inspection reports to the engineer of record and building department. Discrepancies shall be brought to the immediate attention of the contractor for correction, then, if not corrected to the engineer and the building department.
   C. Submit to the engineer of record and the building department a signed final report stating that the work was in conformance with the approved drawings and specifications and the applicable workmanship provisions of the applicable building code.

5. Special Inspection Notes:

   A. Continuous special inspection is always required during the performance of the work unless specifically noted below.
   B. Where fabrication of structural load-bearing members and assemblies is being performed on the premises of a fabricator's shop, continuous special inspection is required during the performance of the work except as allowed in the applicable building code and unless specifically noted below.
   C. It is the responsibility of the contractor to provide the special inspector(s) with advance notice, no less than one working day, of the initiation of any work required to have special inspections. All work performed without required special inspection will be subject to removal.

6. Types of work requiring special inspection are:

   A. Structural steel elements of buildings and structures as required by the applicable building code and Table 1, except as allowed in the applicable building code:
      1. Structural steel welding in compliance with AWS D1.1:
         a. During welding of complete and partial penetration groove welds, multi-pass fillet welds, and single pass fillet welds greater than 5/16".
         b. Periodic inspection of single pass fillet welds less than or equal to 5/16" and floor and deck welds.
      2. Reinforcing steel welding in compliance with AWS D1.4, and the applicable building code and Table 1:
         a. During welding of reinforcing steel resisting flexural and axial forces in intermediate and special moment resisting frames, boundary elements of special reinforced concrete shear walls, and shear reinforcement.
         b. Periodic verification of weldability of reinforcing steel other than ASTM A 706 and periodic inspection of all other reinforcing steel, including deformed bar anchors.
      3. Structural steel frame in compliance with details indicated on approved construction documents including but not limited to bracing, stiffening, member locations, and proper application of joint details at each connection in compliance with the applicable building code and Table 1.
      4. Installation of high-strength bolting in compliance with AISC specifications, the applicable building code and Table 1:
         a. During installation of slip critical connections.
         b. Periodic inspection of bearing type connections and material verification of high-strength bolts, nuts, and washers.
   B. Concrete construction as required by the applicable building code and Table 2, except as allowed in the applicable building code:
      1. Periodic inspection of reinforcing steel material and placement during placement of concrete.
      2. Periodic inspection for verification of proper use of required mix design, maintenance of specified curing temperature and techniques, and formwork shape, location, and dimensions.
      3. During preparation of required strength test specimens and placement of concrete for proper application of techniques.
   C. Masonry construction as required by the applicable building code and Table 3, Level 1, special inspection, except as allowed in the applicable building code:
      1. As masonry construction begins, periodic inspection of proportions of site prepared mortar, construction of mortar joints, and location and placement of reinforcement and connectors.
      2. Periodic inspection during the laying of masonry units and placement of reinforcing steel as follows:
         a. Size and location of structural elements.
         b. Type, size, location of anchors, and details of anchorage of masonry to structrual members, frames, and other construction.
         c. Specified size, grade, and type of reinforcement.
         d. Protection of masonry during cold or hot weather.
      3. Welding of reinforcing bars.
      4. Prior to grouting, periodic inspection to ensure clean grout space, placement of reinforcement and connectors, proportions of site-prepared grout, and construction of mortar joints.
      5. During grout placement to ensure compliance with code provisions.
      6. During preparation of grout specimens, mortar specimens, and/or prisms.
      7. Periodic inspection to verify compliance with required inspection provisions of the construction documents and approved submittals.
   D. Special inspection for existing site soil conditions, during site preparation and fill placement, to ensure load-bearing requirements in compliance with the applicable building code and Table 5, except as allowed in the applicable building code:
      1. Periodic verification of subgrade materials are required as follows:
         a. Adequate bearing capacity below footings.
         b. Proper material and depth of excavations.
         c. Classification and testing of controlled fill materials.
         d. Site subgrade has been prepared properly prior to placement of controlled fill.
      2. During placement oand compaction of controlled fill, verify material, densities, and lift thickness.
   E. Special cases as deemed necessary by the building official in compliance with the applicable building code.

TABLE 1
REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

APPLICABLE TO PROJECT	VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD (a)	IBC REFERENCE
	1. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS				
X	a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	--	X	APPLICABLE ASTM MATERIAL SPECIFICATIONS, AISC 360, SECTION A3.3	--
X	b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQ'D.	--	X	--	--
	2. INSPECTION OF HIGH-STRENGTH BOLTING:				
X	a. BEARING-TYPE CONNECTIONS.	--	X	AISC 360, SECTION M2.5	1704.3.3
	b. SLIP CRITICAL CONNECTIONS.	X	X		
	3. MATERIAL VERIFICATION OF STRUCTURAL STEEL:				
X	a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	--	--	ASTM A 6 OR ASTM A 568	1708.4
X	b. MANUFACTURER'S CERTIFIED MILL TEST REPORTS	--	--	ASTM A 6 OR ASTM A 568	
	4. MATERIAL VERIFICATION OF WELD FILLER MATERIALS:				
X	a. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS.	--	--	AISC 360, SECTION A3.5	--
X	b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.	--	--	--	--
	5. INSPECTION OF WELDING				
X	a. STRUCTURAL STEEL:				
	1) COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS.	X	--	AWS D1.1	1704.3.1
	2) MULTI-PASS FILLET WELDS	X	--		
	3) SINGLE-PASS FILLET WELDS > 5/16"	X	--		
X	4) SINGLE-PASS FILLET WELDS ≤ 5/16"	--	X		
	5) FLOOR AND ROOF DECK WELDS.	--	X	AWS D1.3	--
	b. REINFORCING STEEL:				
	1) VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706.	--	X	AWS D1.4 ACE 318, SECTION 3.5.2	--
	2) REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF CONCRETE AND SHEAR REINFORCEMENT.	X	--		
	3) SHEAR REINFORCEMENT	X	--		
	4) OTHER REINFORCING STEEL	--	X		
	6. INSPECTION OF STEEL FRAME JOINT DETAIL FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS.				
X	a. DETAILS SUCH AS BRACING AND STIFFENING	--	--	--	1704.3.2
X	b. MEMBER LOCATIONS	--	--		
X	c. APPLICATION OF JOINT DETAILS AT EACH CONNECTION	--	X		

(a) Where applicable, also see Section 1707.1, Special Inspection for Seismic Resistance.

TABLE 2
REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

APPLICABLE TO PROJECT	VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD (a)	IBC REFERENCE
X	1. INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS AND PLACEMENT	--	X	ACI 318: 3.5, 7.1-7.7	1913.4
	2. INSPECTION OF REINFORCING STEEL WELDING IN ACCORDANCE WITH TABLE 1704.3, ITEM 5B	--	--	AWS D1.4 ACI 318: 3.5.2.	--
X	3. INSPECT BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED.	X	--	ACI 318: 8.1.3., 21.2.8.	1911.5, 1912.1
X	4. INSPECTION OF ANCHORS INSTALLED IN HARDENED CONCRETE.	--	X	ACI 318: 3.8.6., 8.1.3., 21.2.8.	1912.1
X	5. VERIFYING USE OF REQUIRED DESIGN MIX.	--	X	ACI 318: CH.4, 5.2-5.4	1904.2.2, 1913.2, 1913.3
X	6. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TEST AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X	--	ASTM C 172 ASTM C 31 ACI 318: 5.6, 5.8	1913.10
X	7. INSPECTION OF CONCRETE PLACEMENT AND SHOTCRETE FOR PROPER APPLICATION TECHNIQUES.	X	--	ACI 318: 5.9, 5.10	1913.6, 1913.7, 1913.8
X	8. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	--	X	ACI 318: 5.11-5.13	1913.10
	9. INSPECTION OF PRESTRESSED CONCRETE:				
X	a. APPLICATION OF PRESTRESSING FORCES	X	--	ACI 318: 18.20 ACI 318: 18.18.4.	--
X	b. GROUTING OF BONDED PRESTRESSING TENDONS IN THE SEISMIC-FORCE-RESISTING SYSTEM.	X	--		
	10. ERECTION OR PRECAST CONCRETE MEMBERS.	--	X	ACI 318: CH.16	--
	11. VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	--	X	ACI 318: 6.2	--
	12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF CONCRETE MEMBER BEING FORMED	--	X	ACI 318: 6.1.1.	--

TABLE 3
REQUIRED VERIFICATION AND INSPECTION OF MASONRY CONSTRUCTION

APPLICABLE TO PROJECT	VERIFICATION AND INSPECTION	FREQUENCY OF INSPECTION		REFERENCED FOR CRITERIA		
		CONTINUOUS	PERIODIC	IBC SECTION	TMS 402 / ACI 530 / ASCE 5a	TMS 602 / ACI 530.1 / ASCE 6a
	1. AS MASONRY CONSTRUCTION BEGINS, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:					
X	a. PROPORTIONS OF SITE-PREPARED MORTAR.	--	X	--	--	ART. 2.6A
X	b. CONSTRUCTION OF MORTAR JOINTS.	--	X	--	--	ART. 3.3B
X	c. LOCATION OF REINFORCEMENT, CONNECTORS.	--	X	--	--	ART. 3.4, 3.6A
	2. THE INSPECTION PROGRAM SHALL VERIFY:					
X	a. SIZE AND LOCATION OF STRUCTURAL ELEMENTS	--	X	--	--	ART. 3.3F
X	b. TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION.	--	X	--	SEC. 1.2.2 (e), 1.16.1.	--
X	c. SPECIFIED SIZE, GRADE AND TYPE OF REINFORCEMENT.	--	X	--	SEC. 1.13	ART. 2.4, 3.4
X	d. WELDING OF REINFORCING BARS.	X	--	--	SEC. 2.1.10.7.2., 3.3.3.4 (b)	--
X	e. PREPARATION, CONSTRUCTION AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F) OR HOT WEATHER (TEMPERATURE ABOVE 90°F)	--	X	SEC 2104.3, 2104.4	--	ART. 1.8C, 1.8D
	3. PRIOR TO GROUTING, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:					
X	a. GROUT SPACE IS CLEAN.	--	X	--	--	ART. 3.2D
X	b. PLACEMENT OF REINFORCEMENT AND CONNECTORS.	--	X	--	SEC. 1.13	ART. 3.4
X	c. PROPORTIONS OF SITE-PREPARED GROUT.	--	X	--	--	ART. 2.6B
X	d. CONSTRUCTION OF MORTAR JOINTS.	--	X	--	--	ART. 3.3B
X	4. GROUT PLACEMENT SHALL BE VERIFIED TO ENSURE COMPLIANCE WITH CODE AND CONSTRUCTION DOCUMENT PROVISIONS.	X	--	--	--	ART. 3.5
X	5. PREPARATION OF ANY REQUIRED GROUT SPECIMENS, MORTAR SPECIMENS AND/OR PRISMS SHALL BE OBSERVED.	--	X	SEC. 2105.2.2, 2105.3	--	ART. 1.4
X	6. COMPLIANCE WITH REQUIRED INSPECTION PROVISIONS OF THE CONSTRUCTION DOCUMENTS AND THE APPROVED SUBMITTALS SHALL BE VERIFIED.	--	X	--	--	ART. 1.5

TABLE 4
LEVEL 2 REQUIRED VERIFICATION AND INSPECTION OF MASONRY CONSTRUCTION

APPLICABLE TO PROJECT	VERIFICATION AND INSPECTION	FREQUENCY OF INSPECTION		REFERENCED FOR CRITERIA		
		CONTINUOUS	PERIODIC	IBC SECTION	TMS 402 / ACI 530 / ASCE 5a	TMS 602 / ACI 530.1 / ASCE 6a
	1. FROM THE BEGINNING OF MASONRY CONSTRUCTION THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:					
X	a. PROPORTIONS OF SITE-PREPARED MORTAR, GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS..	--	X	--	--	ART. 2.6A
X	b. PLACEMENT OF MASONRY UNITS AND CONSTRUCTION OF MORTAR JOINTS.	--	X	--	--	ART. 3.3B
X	c. PLACEMENT OF REINFORCEMENT, CONNECTORS AND PRESTRESSING TENDONS AND ANCHORAGES.	--	X	--	SEC. 1.13	ART. 3.4, 3.6A
X	d. GROUT SPACE PRIOR TO GROUTING.	X	--	--	--	ART. 3.2D
X	e. PLACEMENT OF GROUT.	X	--	--	--	ART. 3.5
X	f. PLACEMENT OF PRESTRESSING GROUT.	X	--	--	--	ART. 3.6C
	2. THE INSPECTION PROGRAM SHALL VERIFY:					
X	a. SIZE AND LOCATION OF STRUCTURAL ELEMENTS	--	X	--	--	ART. 3.3G
X	b. TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION.	X	--	--	SEC. 1.2.2 (e), 2.1.4., 3.1.6.	--
X	c. SPECIFIED SIZE, GRADE AND TYPE OF REINFORCEMENT.	--	X	--	SEC. 1.13	ART. 2.4, 3.4
	d. WELDING OF REINFORCING BARS.	X	--	--	SEC. 2.1.10.7.2., 3.3.3.4 (b)	--
X	e. PREPARATION, CONSTRUCTION AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F) OR HOT WEATHER (TEMPERATURE ABOVE 90°F)	--	X	SEC 2104.3, 2104.4	--	ART. 1.8C, 1.8D
X	f. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE.	X	--	--	--	ART. 3.6B
X	3. PREPARATION OF ANY REQUIRED GROUT SPECIMENS, MORTAR SPECIMENS AND/OR PRISMS SHALL BE OBSERVED.	X	--	SEC. 2105.2.2, 2105.3	--	ART. 1.4
X	4. COMPLIANCE WITH REQUIRED INSPECTION PROVISIONS OF THE CONSTRUCTION DOCUMENTS AND THE APPROVED SUBMITTALS SHALL BE VERIFIED.	--	X	--	--	ART. 1.5

TABLE 5
REQUIRED VERIFICATION AND INSPECTION OF SOILS

APPLICABLE TO PROJECT	VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC
X	1. VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	--	X
X	2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	--	X
X	3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	--	X
X	4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	--
X	5. PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUB-GRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	--	X

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Structural & M/E/P Engineers:
Thorson Baker + Associates, Inc.
3030 West Streetsboro Rd
Richfield, OH 44286

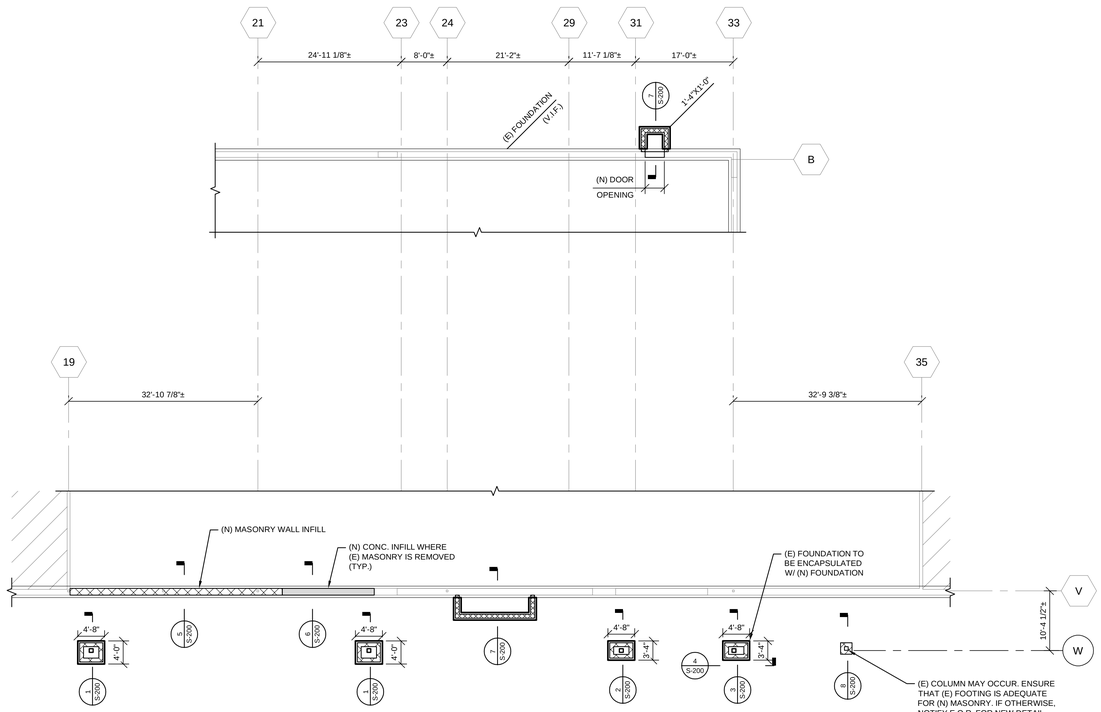
Rev:	Date:	Description:
	04/01/2022	ISSUED FOR BID AND PERMIT

PROGRESS NOT FOR CONSTRUCTION 3/31/2022

DAVID L. NEMETH, NJ Professional Engineer, NO. GE 47251, 24GA28104900

GENERAL NOTES & SPECIFICATIONS

1838.C S-003



EXISTING PARTIAL FOUNDATION PLAN

3/32" = 1'-0"

NOTES:

- EXISTING FLOOR CONSTRUCTION: 4" CONCRETE SLAB ON GRADE WITH ONE LAYER OF 6x6-W2.1xW2.1 W.W.R. PROVIDE 10 MIL VAPOR RETARDER AND 4" LAYER OF GRANULAR FILL BELOW SLAB (UNO).
- DENOTES FROST SLAB, SEE SECTION 1/S-300 FOR ADDITIONAL INFORMATION.
- ELEVATIONS NOTED THUS (+X'-X") ARE TO TOP OF FOOTING REFERENCED FROM SLAB ON GRADE ELEVATION (UNO).
- TOP OF EXTERIOR FOOTING ELEVATION = (-1'-4") (UNO).
- PROVIDE (2) #4x3'-0" LONG AT ALL REENTRANT CORNERS.
- SEE ARCHITECTURAL DRAWINGS FOR EXTENT AND FINISH OF SLAB ON GRADE AND ANY FLOOR DEPRESSIONS, UNDERFLOOR CONDUITS, DRAINS, ETC.
- SEE SHEET S-X FOR GENERAL NOTES.
- SEE SHEET S-X FOR TYPICAL DETAILS.
- (E) DENOTES EXISTING CONSTRUCTION.
- (N) DENOTES NEW CONSTRUCTION.

ELEVATION LEGEND		
LEVEL DESIGNATION	ELEVATION (UNO)	PROJECT DATUM
SLAB ON GRADE	0'-0"	•

- ELEVATIONS ON PLAN MAY VARY FROM ELEVATIONS SHOWN IN THE ELEVATION LEGEND. SEE PLAN FOR SPECIFIC ELEVATION VARIATIONS.
- • DENOTES THE LEVEL THAT IS THE PROJECT DATUM.

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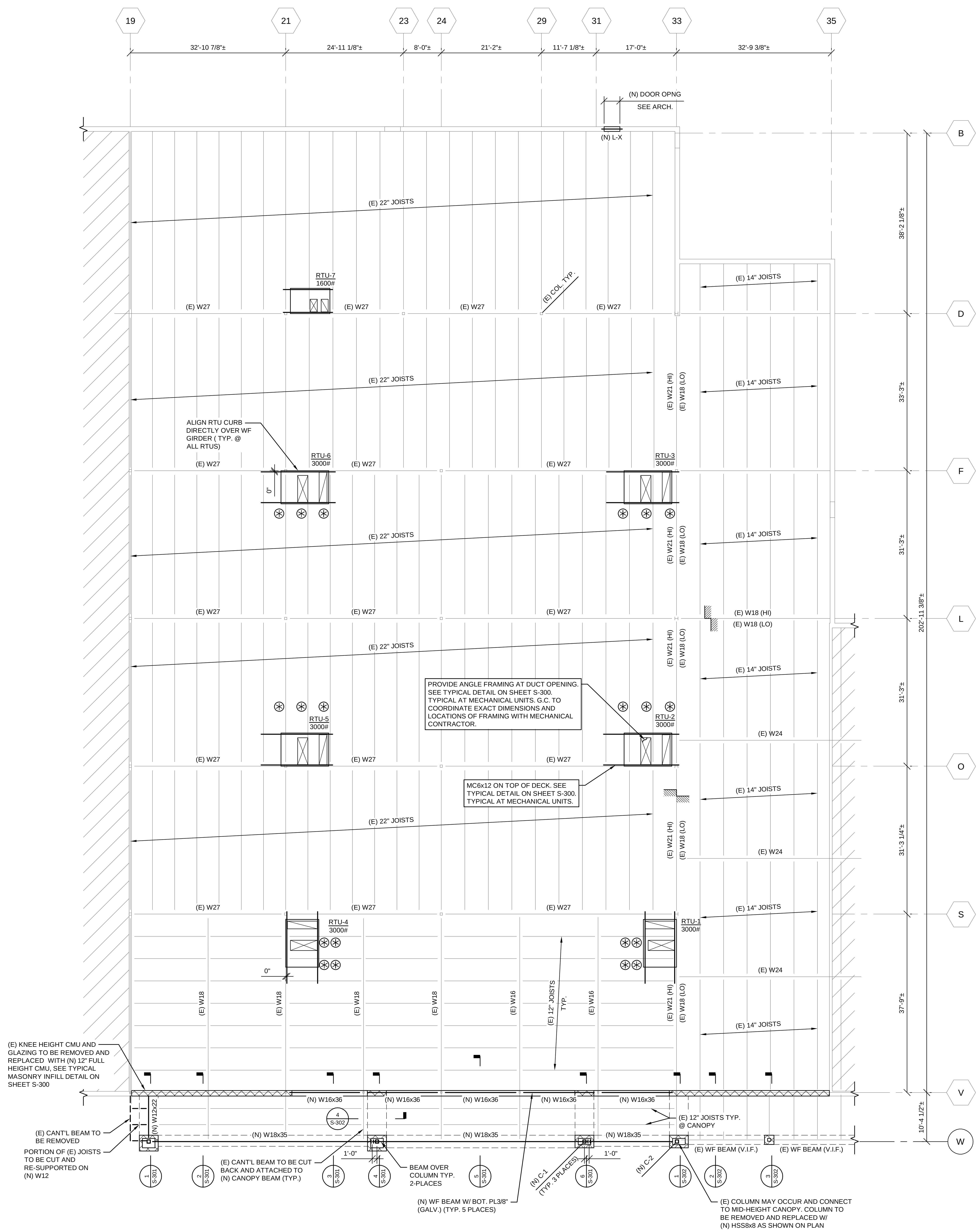
EXISTING PARTIAL FOUNDATION PLAN

1838.C S-100



EXISTING ROOF FRAMING PLAN

3/32" = 1'-0"

NOTES:

- EXISTING ROOF CONSTRUCTION: 1 1/2"x22GA. WIDE RIB DECK ON STEEL JOISTS AND WF GIRDERS.
- COORDINATE ALL OPENINGS AND EDGE CONDITIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. SEE SHEET S-300 FOR TYPICAL OPENING DETAIL.
- SEE SHEET S-001, S-002, AND S-003 FOR GENERAL NOTES.
- SEE SHEET S-300 FOR TYPICAL DETAILS.
- C-X DENOTES COLUMNS. SEE THIS SHEET FOR SCHEDULE.
- L-X DENOTES STEEL LINTELS. COORDINATE WITH STRUCTURAL AND ARCHITECTURAL SECTIONS. SEE SCHEDULE ON SHEET S-300 FOR MISC LINTELS.
- JOISTS ARE DESIGNED TO SUPPORT EQUIPMENT INDICATED ON PLAN. IF EQUIPMENT LOCATION VARIES OR WEIGHT EXCEEDS THAT NOTED THEN NOTIFY ENGINEER.
- ⊛ DENOTES JOIST TO BE REINFORCED FOR SHEAR. SEE SHEET S-300 FOR DETAILS.
- ⊛⊛ DENOTES JOIST TO BE REINFORCED FOR MOMENT AND SHEAR. SEE SHEET S-300 FOR DETAILS.
- (E) DENOTES EXISTING CONSTRUCTION.
- (N) DENOTES NEW CONSTRUCTION.

COLUMN SCHEDULE

MARK	COLUMN SIZE	BASE PLATE	TYPE	ANCHOR RODS
C-1	HSS8x8x1/4	PL3/4"x14"x1'-2"	III	(4) 3/4"Ø
C-2	HSS8x8x1/4	PL3/4"x14"x1'-2"	III	(4) 3/4"Ø POST INSTALLED

- SEE SHEET S-300 FOR TYPICAL COLUMN BASE PLATES.
- SEE SHEET S-300 FOR TYPICAL ANCHOR ROD DETAIL.

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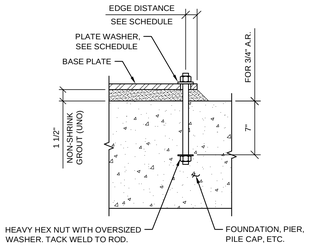
EXISTING ROOF
FRAMING PLAN

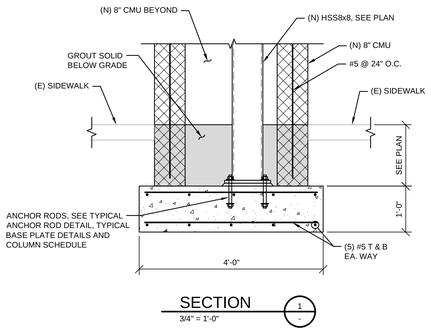
1838.C S-101



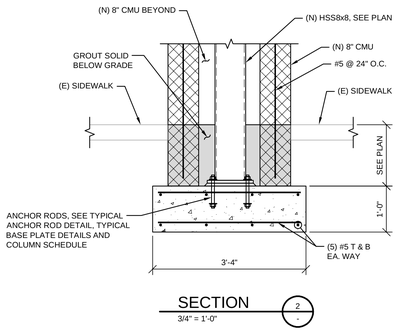
TYPICAL ANCHOR ROD DETAIL

(ASTM F1554 GR. 36)

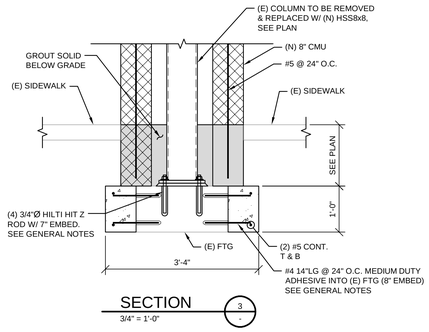
- ANCHOR ROD MATERIAL AND DETAILS MAY VARY AT MOMENT FRAMES AND BRACED FRAMES. SEE BASE DETAILS FOR MOMENT FRAMES AND/OR BRACED FRAMES.
- CONTRACTOR MAY USE LEVELING NUTS OR LEVELING PLATES AT CONTRACTORS OPTION.
- AN INCREASE IN GROUT THICKNESS FOR LARGE BASE PLATES IS PERMISSIBLE IF APPROVED BY THE ENGINEER. COORDINATION DUE TO INCREASE IN GROUT THICKNESS FOR OTHER TRADES IS THE RESPONSIBILITY OF THE CONTRACTOR.



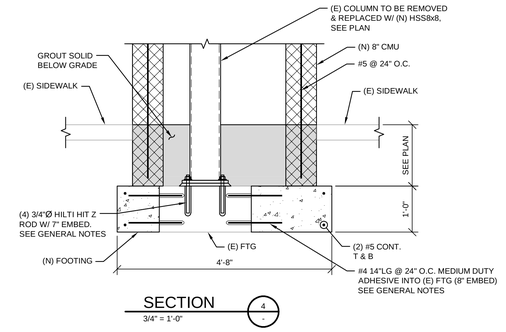
SECTION 1 — 3/4" = 1'-0"



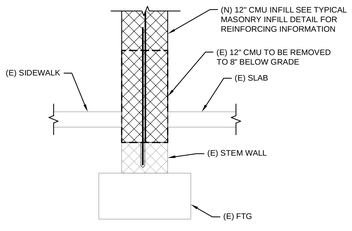
SECTION 2 — 3/4" = 1'-0"



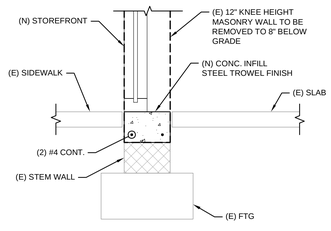
SECTION 3 — 3/4" = 1'-0"



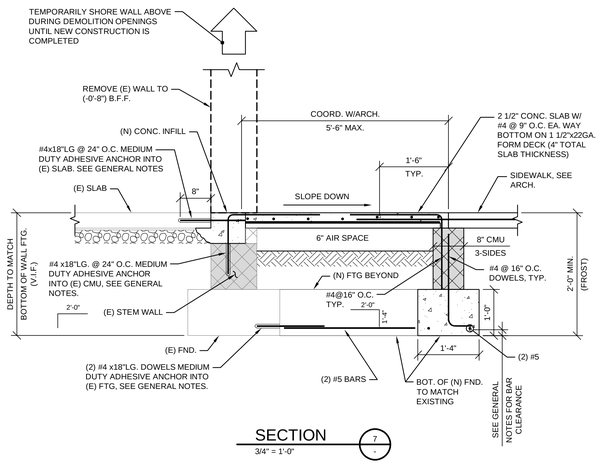
SECTION 4 — 3/4" = 1'-0"



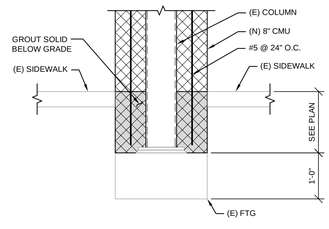
SECTION 5 — 3/4" = 1'-0"



SECTION 6 — 3/4" = 1'-0"



SECTION 7 — 3/4" = 1'-0"



SECTION 8 — 3/4" = 1'-0"

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FOUNDATION SECTIONS & DETAILS

1838.C S-200

MISCELLANEOUS STEEL LINTEL SCHEDULE	
OPENING	LINTEL
8" OR THICKER MASONRY WALLS *	
1'-0" TO 4'-0"	L3 1/2x3 1/2x5/16
4'-0" TO 5'-0"	L4x3 1/2x5/16 (LLV)
5'-0" TO 6'-0"	L5x3 1/2x5/16 (LLV)
6'-0" TO 7'-0"	L6x3 1/2x5/16 (LLV)
7'-0" TO 10'-0"	W8x21 + 5/16" BOTTOM PLATE

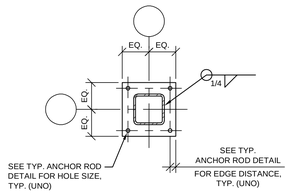
* USE ONE ANGLE FOR EACH 4" WYTHE OF MASONRY. ANGLES SHALL BE ORIENTED WITH VERTICAL LEGS BACK TO BACK.

NOTES:

- ALL LINTELS SHALL HAVE A BEARING LENGTH AT EACH END OF 1 INCH PER FOOT OF OPENING WITH A MIN. OF 6".
- ALL LINTELS SHALL BEAR ON 16" SOLID MASONRY EXTENDING 16" BEYOND END OF LINTEL.
- ALL LINTELS ON THE BUILDING EXTERIOR SHALL BE GALVANIZED.
- WHERE SUFFICIENT BEARING IS NOT AVAILABLE, PROVIDE ATTACHMENT OF THE LINTEL TO THE STRUCTURE.
- REFER TO THE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR ALL MASONRY WALL OPENING DIMENSIONS AND LOCATIONS. ANY CONFLICT WITH FRAMING SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR REVIEW.

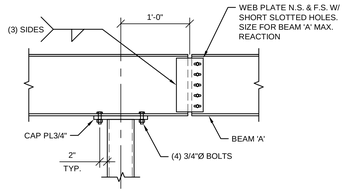
MASONRY SPLICE TABLE	
REINFORCING SIZE	LAP SPLICE
#3	18"
#4	24"
#5	30"
#6	36"
#7	42"

STANDARD SHEAR CONNECTION SCHEDULE	
BEAM SIZE	MINIMUM NO. OF ROWS OF A325 3/4"Ø BOLTS IN DOUBLE SHEAR
W12	3
W18	5



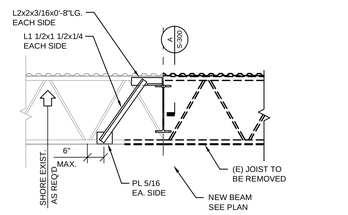
TYPE III

TYPICAL COLUMN BASE PLATE DETAIL

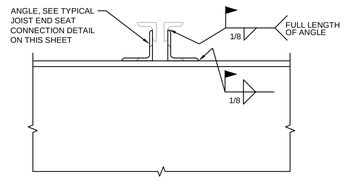


HSS COLUMN

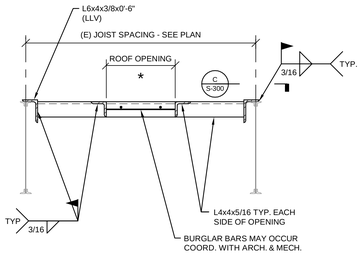
TYPICAL BEAM OVER COLUMN DETAIL



TYPICAL JOIST END SEAT CONNECTION DETAIL

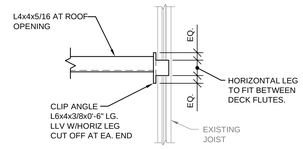


SECTION A
3" = 1'-0"

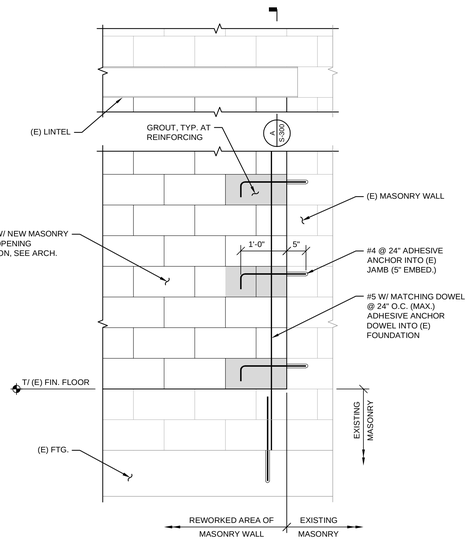


* FOR ALL ROOF OPENINGS 12" OR GREATER, COORD. OPENING SIZES AND LOCATIONS WITH ARCHITECT & MECHANICAL CONTRACTOR.

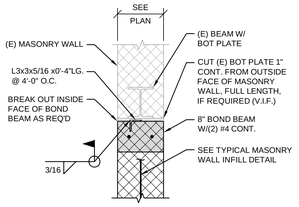
TYPICAL ROOF OPENING DETAIL



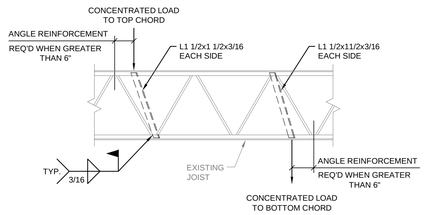
DETAIL C
3/4"=1'-0"



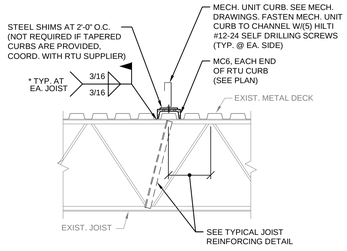
TYPICAL MASONRY INFILL DETAIL



DETAIL B
3/4" = 1'-0"

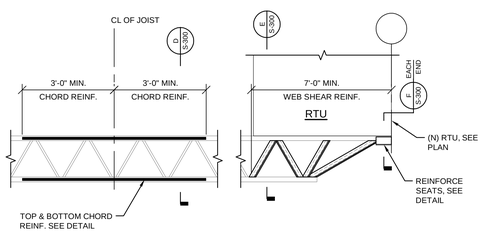


TYPICAL EXISTING JOIST REINFORCING DETAIL

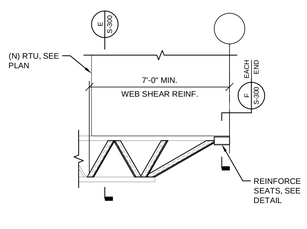


* USE CAUTION WHEN WELDING AS NOT TO DAMAGE JOIST.

TYPICAL ROOFTOP MECHANICAL UNIT SUPPORTS

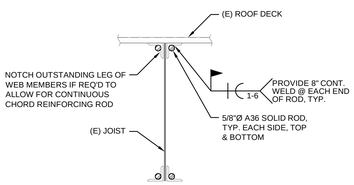


REINFORCING FOR MOMENT AND SHEAR (⊛⊛)



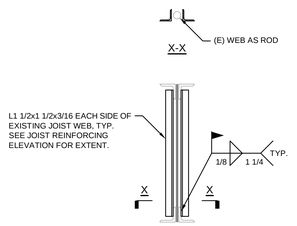
REINFORCING FOR SHEAR (⊛)

EXISTING JOIST REINFORCING ELEVATIONS



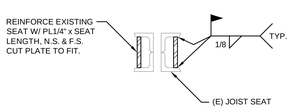
TOP & BOTTOM ANGLE CHORD REINFORCING

DETAIL D
3/4" = 1'-0"



EXISTING WEB AS ROD WITH ANGLE CHORDS

DETAIL E
3/4" = 1'-0"



JOIST SEAT REINFORCEMENT

DETAIL F
3" = 1'-0"

Tenant 6A LL Work at Laurel Square

Laurel Square Shopping Center
Brick Township, NJ

CREATE
ARCHITECTURE PLANNING & DESIGN LLC

45 West 34th Street
Penthouse
New York, NY 10001

Phone: (212) 297-0880
createworldwide.com

Owner / Developer:
BRIXMOR Property Group
One Fayette Street, Suite 150
Conshohocken, PA 19428

Structural & M/E/P Engineers:
Thorson Baker + Associates, Inc.
3030 West Streetsboro Rd
Richfield, OH 44286

Rev:	Date:	Description:
	04/01/2022	ISSUED FOR BID AND PERMIT

PROGRESS NOT FOR CONSTRUCTION 3/31/2022

DAVID L. NEMETH, NJ Professional Engineer, NO. GE 47251, 24GA28104800

FRAMING SECTIONS & TYPICAL DETAILS

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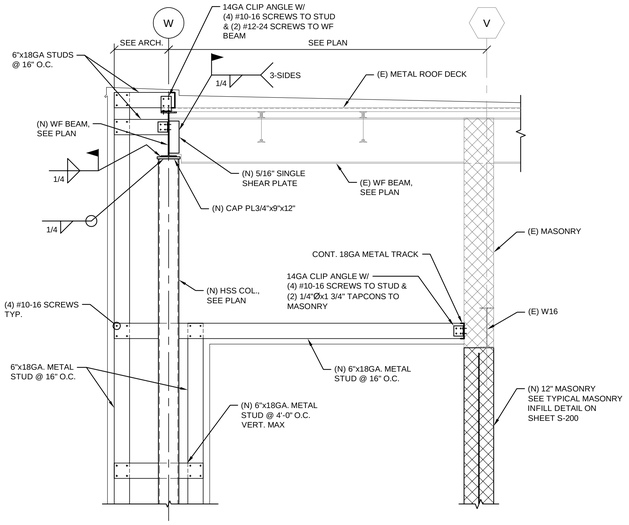
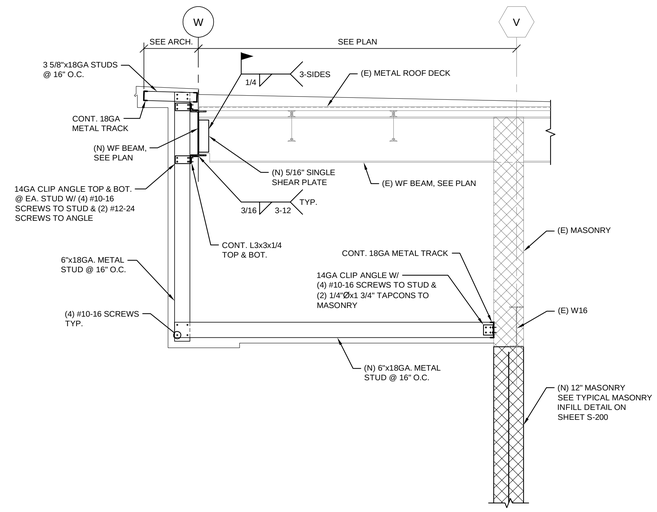
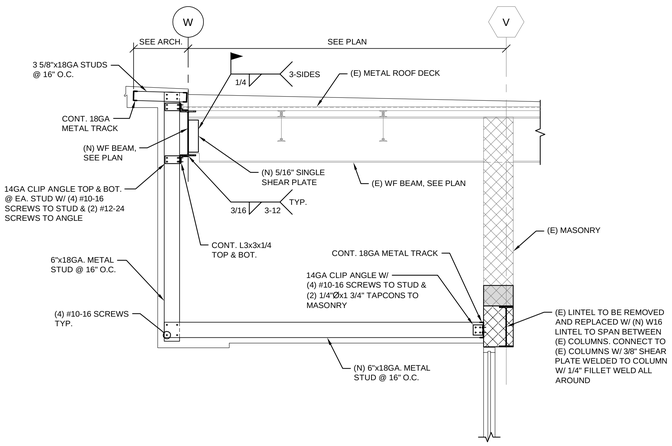


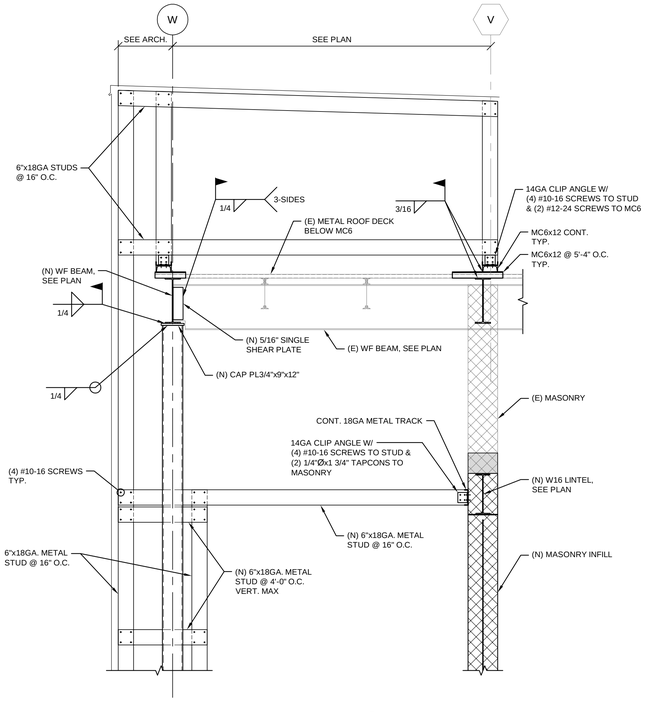
SECTION 1 / 1/2" = 1'-0"



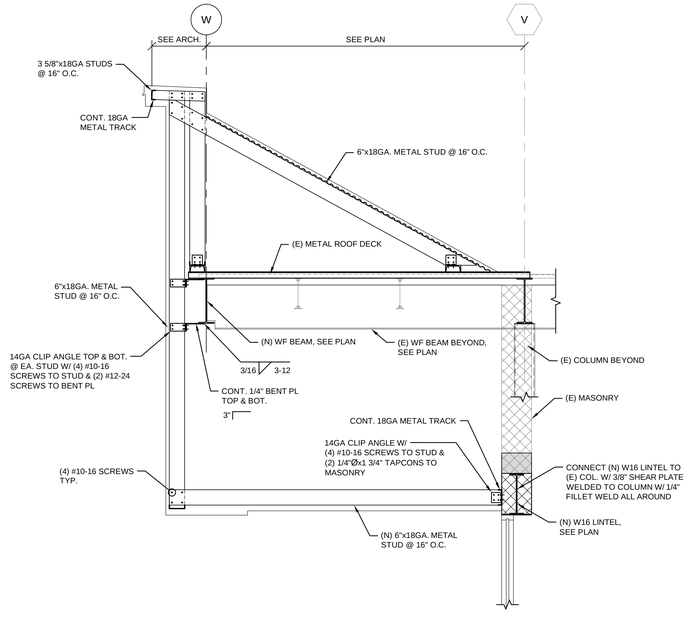
SECTION 2 / 1/2" = 1'-0"



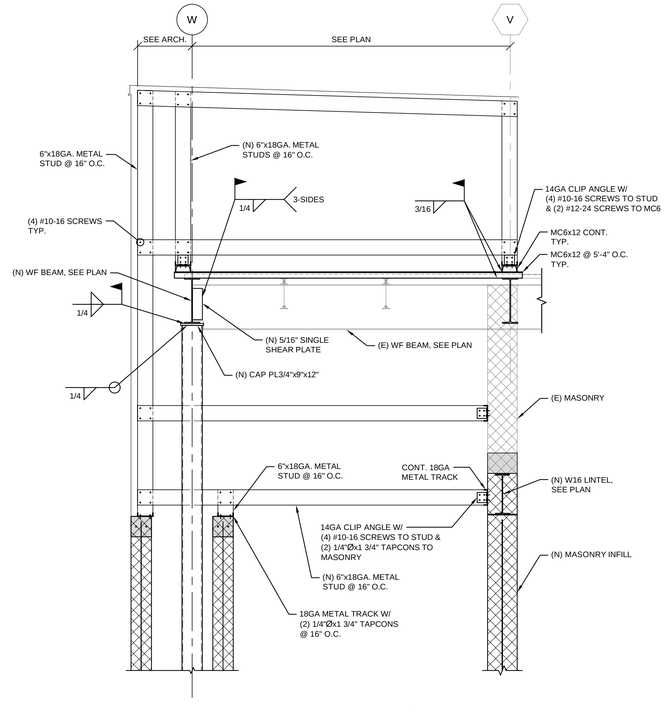
SECTION 3 / 1/2" = 1'-0"



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



SECTION 5 / 1/2" = 1'-0"



SECTION 6 / 1/2" = 1'-0"

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DAVID L. NEMETH, NJ Professional Engineer, NO. GE 47251, (MGA2024600

FRAMING SECTIONS & TYPICAL DETAILS

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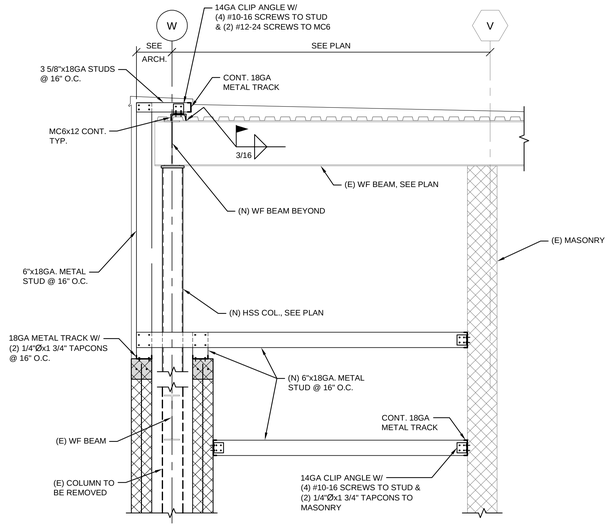
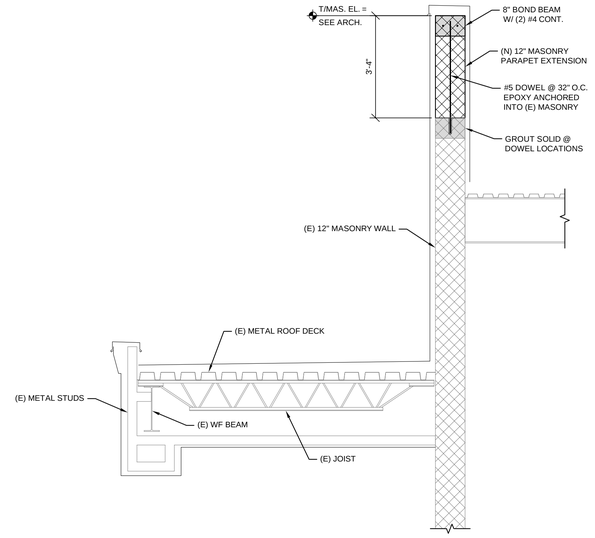
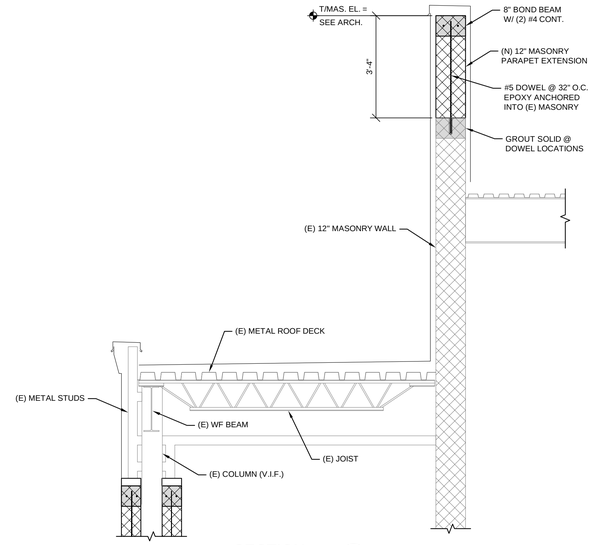


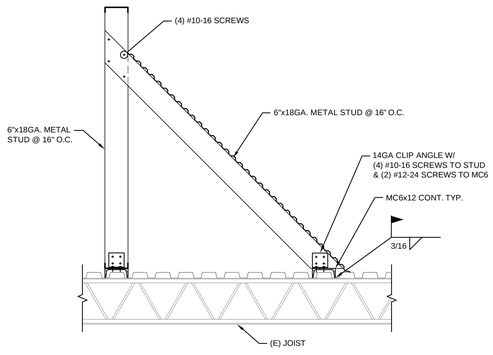
SECTION 1
1/2" = 1'-0"



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



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



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

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DAVID L. NEMETH, NJ Professional
Engineer, NO. GE 47251, 24GA28104600

FRAMING SECTIONS
& TYPICAL DETAILS

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