

LOCATION MAP

OWNER: BILL BROWN FORD
32222 PLYMOUTH ROAD
LIVONIA, MICHIGAN 48154

LOCATION: BILL BROWN FORD
CUSTOMER SERVICE CENTER
32222 PLYMOUTH ROAD
LIVONIA, MICHIGAN 48154

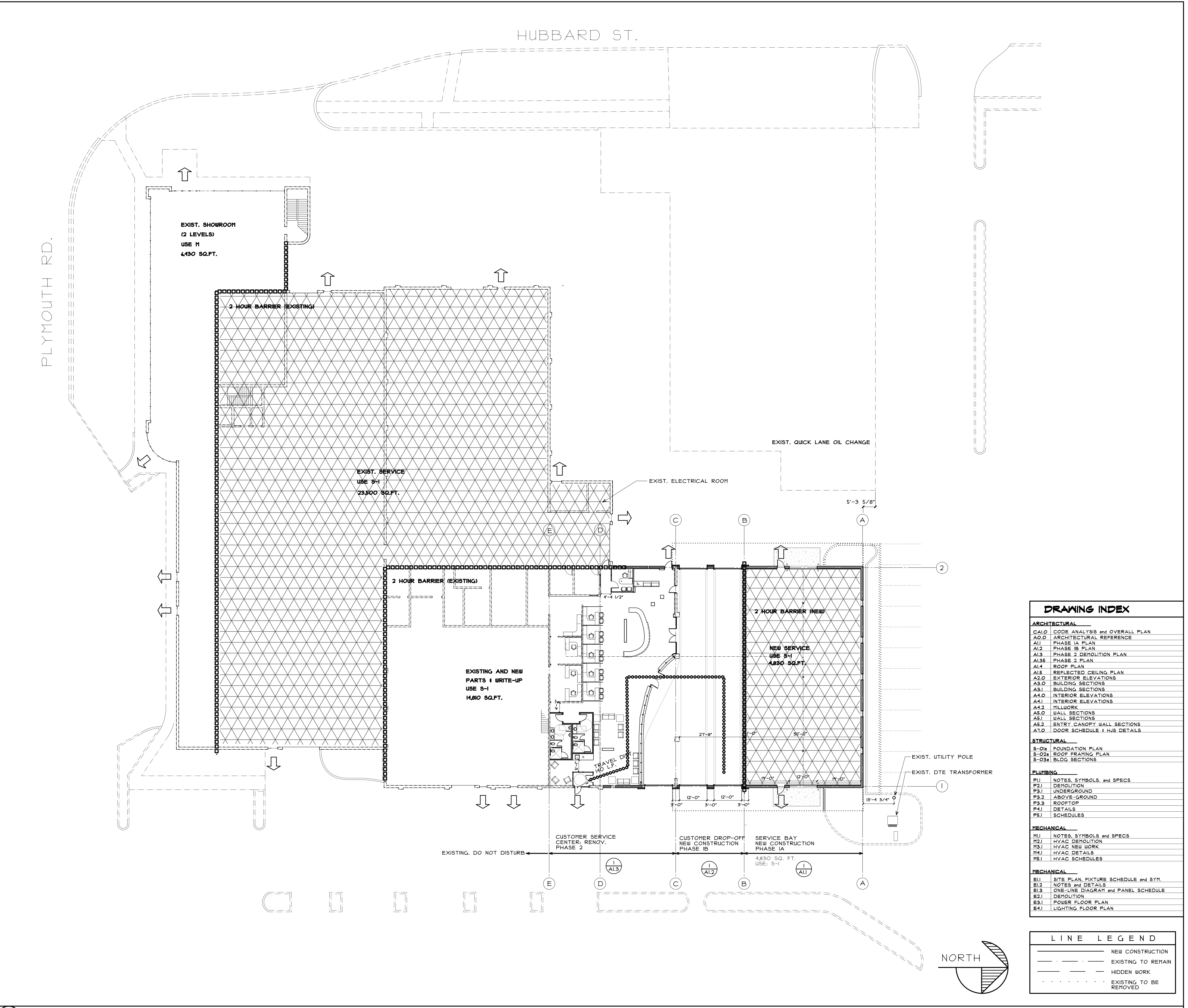
ZONING: C-2 (GENERAL BUSINESS) (WAIVER USE)
USE: BUSINESS GROUP B
NEW AND USED CAR LOTS

ZONING DATA

APPLICABLE CODES:	MICHIGAN BUILDING CODE 2009 MICHIGAN BARRIER FREE MICHIGAN LABOR PLUMBING CODE: PART 1 MICHIGAN ELECTRIC CODE 2012
USE CLASSIFICATION: (SEPARATED MIXED USE)	M (AUTO DEALER) S-1 (MODERATE HAZARD STORAGE) (MOTOR VEHICLE REPAIR GARAGE)
CONSTRUCTION TYPE:	IIB (NO FIRE SUPPRESSION)
BUILDING AREAS:	
ALLOWABLE BUILDING AREA PER FLOOR	PER TABLE 503 = 11,500 sf
ALLOWABLE INCREASE WITH FIRE SUPPRESSION	200 PERCENT = 35,000 sf
	TOTAL ALLOWABLE 52,500 sf
ALLOWABLE HEIGHT	3 STORY (2 + 1 FOR ALLOWABLE INCREASE) (EXISTING = 2 STORY)
OCCUPANCY CALCULATIONS (AIRCRAFT HANGARS & WAREHOUSES PER TABLE 1004L)	FABRICATION/MANUFACTURING REQUIRE 200 SF/OCCUPANT THEREFORE: USED 300 SF/OCCUPANT (FIRST FLOOR = 112 OCCUPANTS) (SECOND FLOOR = 71 OCCUPANTS)

BUILDING CODE DATA

REQUIRED EGRESS COMPONENTS	
REQUIRED EXIT WIDTH	FIRST FLOOR: 112 X 0.2 = 23' SECOND FLOOR: 71 X 0.2 = 14' TOTAL BOTH FLOORS = 37'
PROPOSED DOOR WIDTH	FIRST FLOOR: 10 @ 3' = 30' SECOND FLOOR: 2 @ 3' = 12'
MIN. STAIR WIDTH	71 OCCUPANTS X 0.3 = 21.3'
EXIST'G. STAIR MIN. WIDTH	ONE AT 34', ONE AT 48'
MAX. EXIT TRAVEL DIST.	300 FT.
MAX. PROP. EXIT TRAVEL	100 FT.
MAX. COMMON PATH	
PLUMBING FIXTURES REQ'D. (183 OCCUPANTS)	WATER CLOSET/URINAL = 4 LAV'S. = 4 DRINKING FOUNTAIN = 1
EXIST'G. PLUMBING FIX'S.	WATER CLOSETS = 12 URINALS = 8 LAV'S. = 8 DRINKING FOUNTAIN =



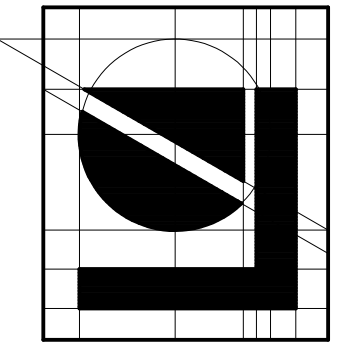
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LINE LEGEND

---	NEW CONSTRUCTION
- - - -	EXISTING TO REMAIN
---	HIDDEN WORK
.....	EXISTING TO BE REMOVED

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PROPOSED ADDITION FOR:
BILL BROWN FORD
CUSTOMER SERVICE CENTER
LIVONIA, MICHIGAN

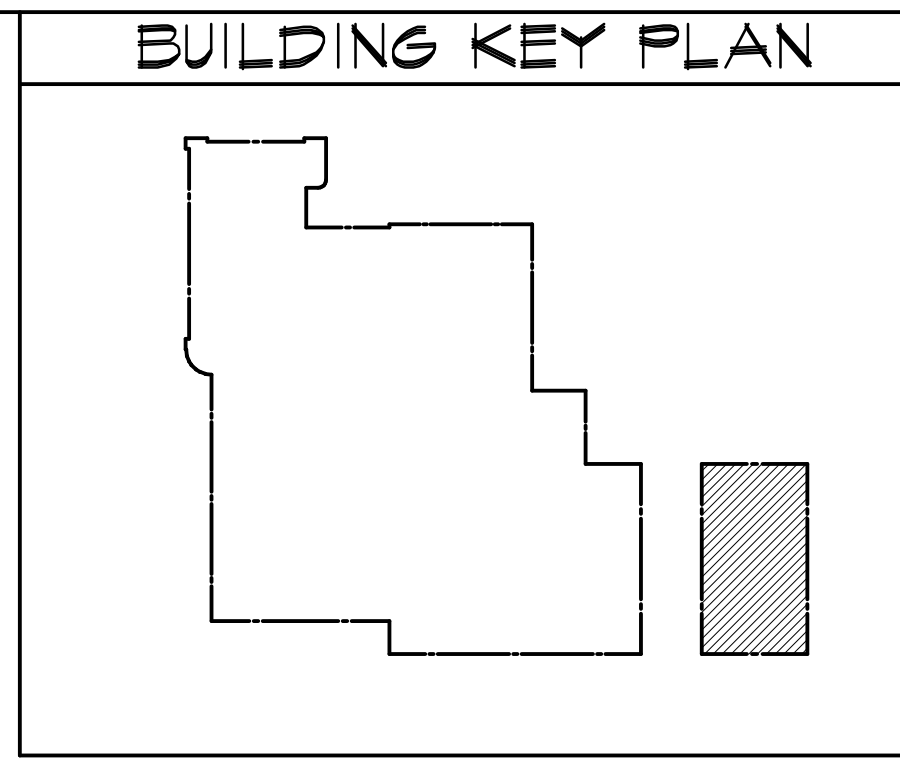
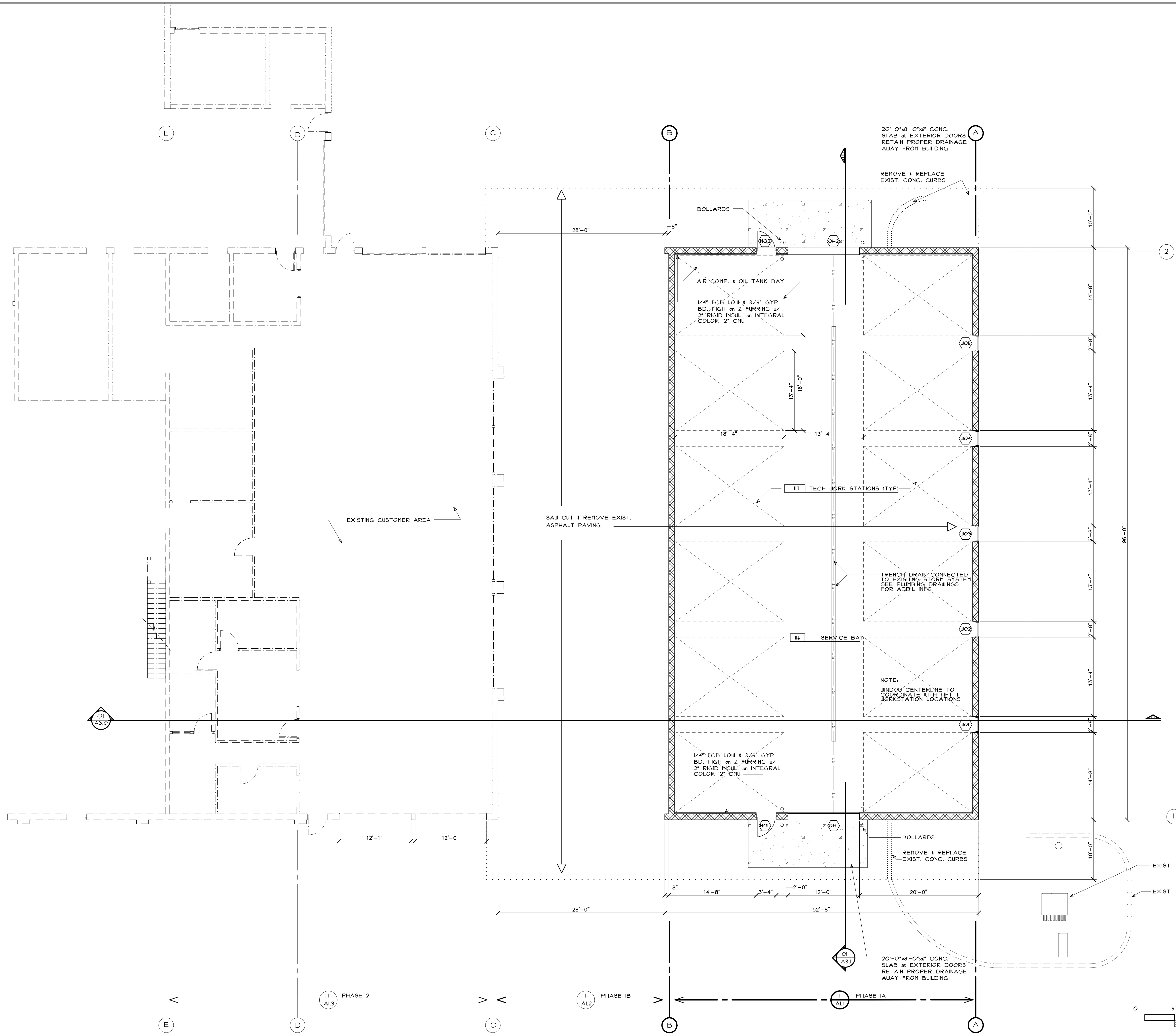
PHASING, PLAN & CODE REVIEW

CA1.0

1429

SCALE: 1" = 20'

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ROOM LEGEND

ROOM NO.	ROOM NAME
100	VESTIBULE
101	CUSTOMER WORK STATIONS
102	CUSTOMER WAITING
103	SERVICE ADVISORS
104	CUSTOMER SERVICE DESK
105	SALES COUNTER
106	MENS TOILET
107	WOMENS TOILET
108	OFFICE
109	OFFICE
110	OFFICE
111	OFFICE
112	SHARED WORKSTATION
113	HOLDING BAY
114	CUSTOMER DROP-OFF
115	SERVICE BAY
116	TECH. WORK STATIONS

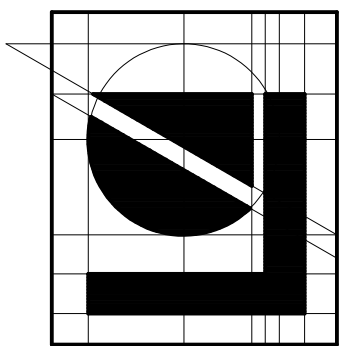
WALL LEGEND

- 1/4" FCB (BELOW 8'-0" HT.) w/ 3/8" GYP BD. ABOVE ON 2" RIGID INSUL. & HTL Z FURRING ON 12" INTEGRAL COLOR CMU.
- 12" INTEGRAL COLOR CMU (FOAMED INSUL. WHERE EXT.)
- 4" INTEGRAL COLOR CMU on 1 1/2" AIR SPACE w/ W.B. on 2" RIGID INSUL. 12" INTEGRAL COLOR CMU
- 5/8" GYP. BD. ON 3 5/8" (or 4") HTL. STUD FURRING @ 24" O.C. ON NEW or EXIST 12" CMU
- 3 5/8" (or 4") MET. STUD FULL HT. at 24" O.C. w/ SOUND INSUL. and 5/8" GYP. BD. EA. SIDE

F.E.C. = FIRE EXTINGUISHER CABINET-RECESSED
 F.E. = FIRE EXTINGUISHER SURFACE MOUNT

LINE LEGEND

REMOVED EXISTING TO BE
 HIDDEN WORK
 EXISTING TO REMAIN
 NEW CONSTRUCTION



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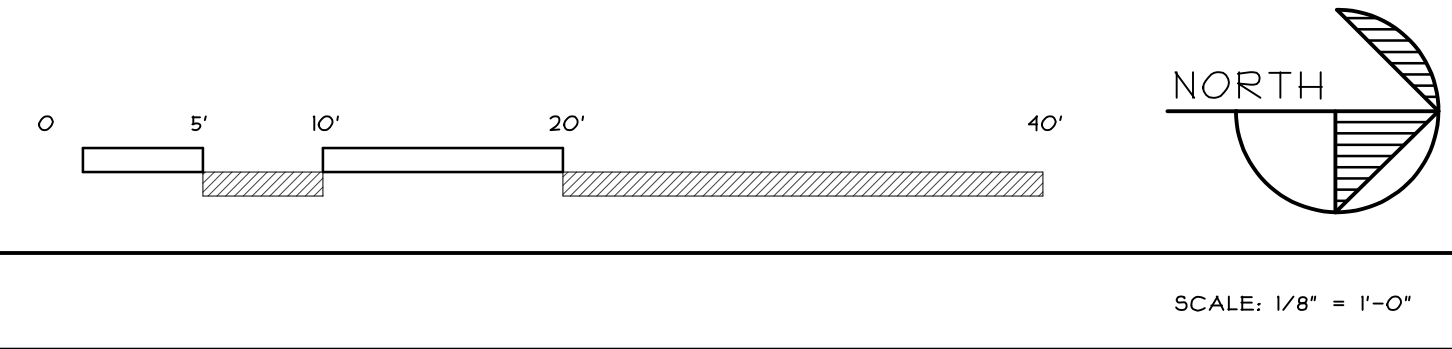
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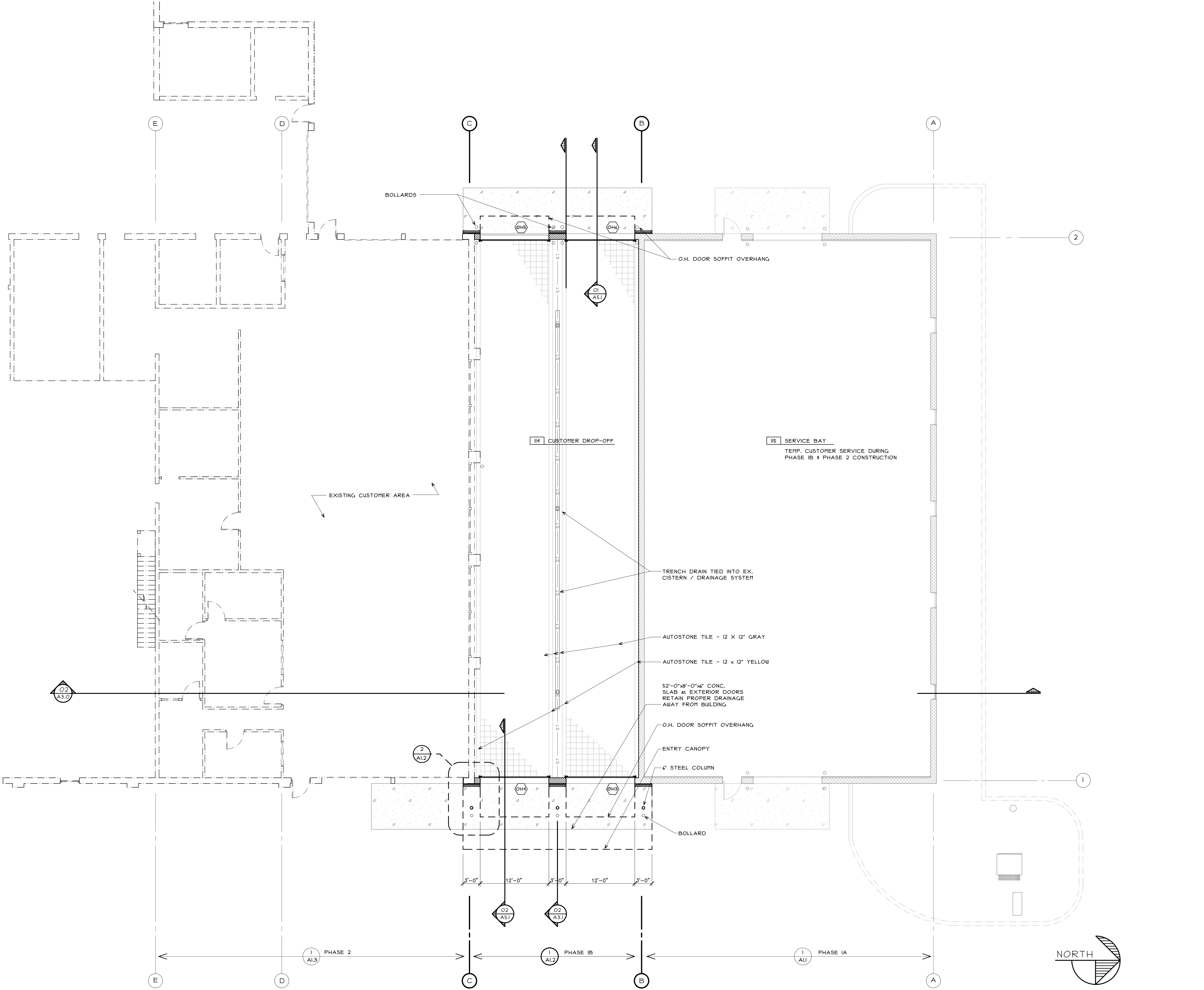
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 BILL BROWN FORD
 SERVICE CENTER
 LIVONIA, MICHIGAN
 PHASE IA ENLARGED PLAN

A1.1
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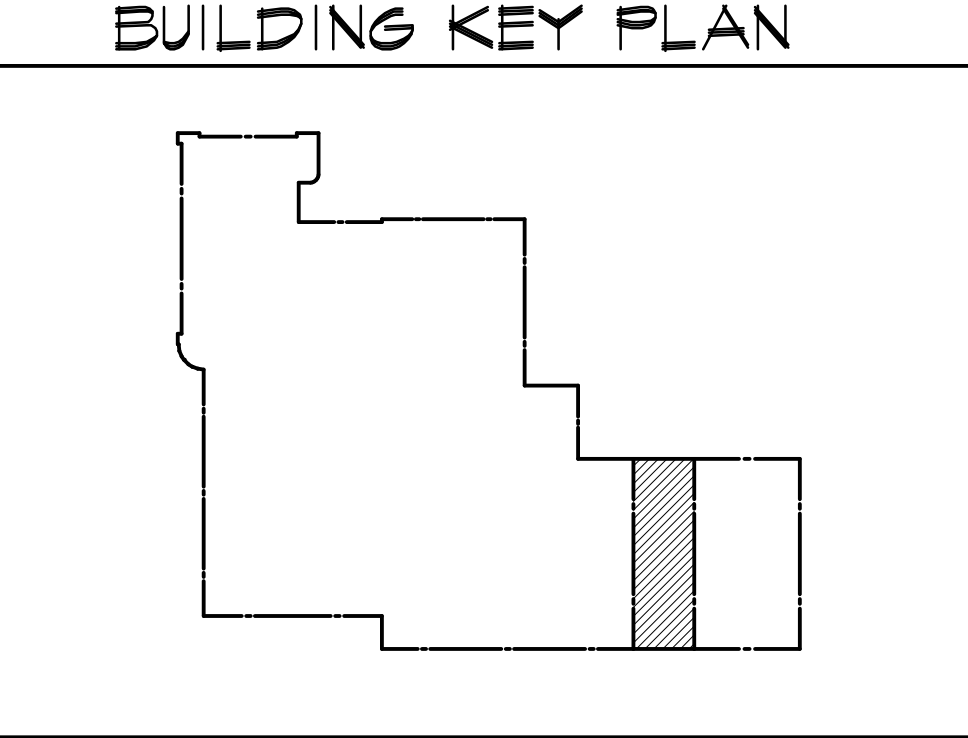
PHASE IA ENLARGED FLOOR PLAN



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1
A1.2 PHASE IB ENLARGED FLOOR PLAN



ROOM LEGEND

ROOM NO.	ROOM NAME
100	VESTIBULE
101	CUSTOMER WORK STATIONS
102	CUSTOMER WAITING
103	SERVICE ADVISORS
104	CUSTOMER SERVICE DESK
105	SALES COUNTER
106	MENS TOILET
107	WOMENS TOILET
108	OFFICE
109	OFFICE
110	OFFICE
111	OFFICE
112	SHARED WORKSTATION
113	HOLDING BAY
114	CUSTOMER DROP-OFF
115	SERVICE BAY
116	TECH. WORK STATIONS

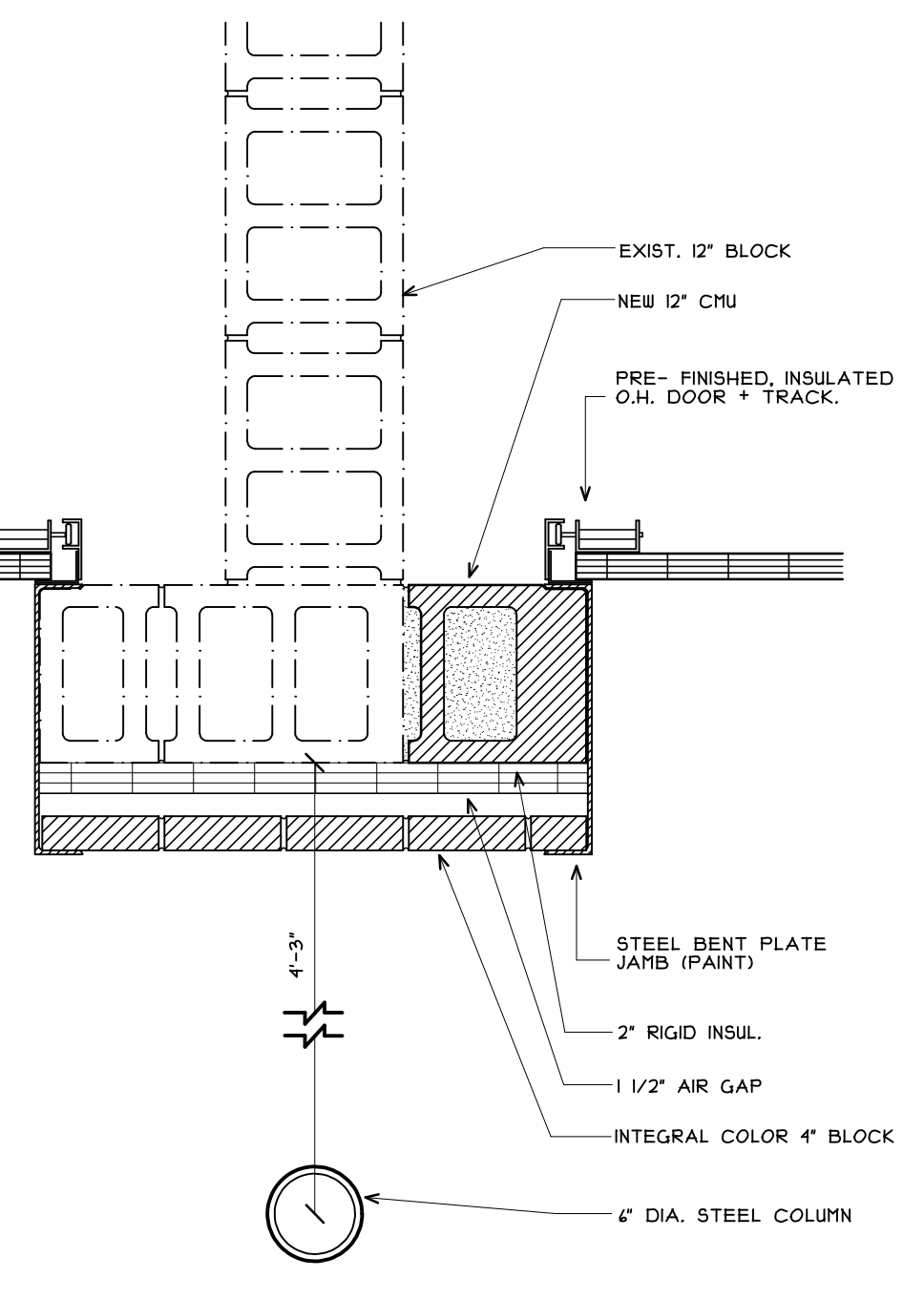
WALL LEGEND

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- 12" INTEGRAL COLOR CMU (FOAMED INSUL. WHERE EXT.)
- 4" INTEGRAL COLOR CMU on 1 1/2" AIR SPACE w/ 3/8" GYP. on 2" RIGID INSUL. 12" INTEGRAL COLOR CMU
- 5/8" GYP. BD. ON 3 5/8" (or 4") MET. STUD FURRING @ 24" O.C. ON NEW or EXIST 12" CMU
- 3 5/8" (or 4") MET. STUD FULL HT. @ 24" O.C. w/ SOUND INSUL. and 5/8" GYP. BD. EA. SIDE

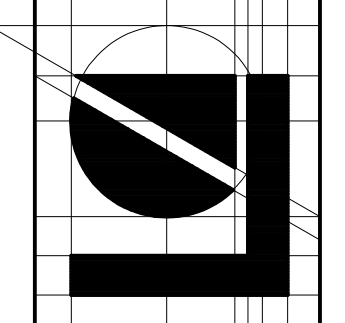
F.E.C. = FIRE EXTINGUISHER CABINET-RECESSED
 F.E. = FIRE EXTINGUISHER SURFACE MOUNT

LINE LEGEND

- REMOVED EXISTING TO BE
- HIDDEN WORK
- EXISTING TO REMAIN
- NEW CONSTRUCTION



2
A1.2 PLAN DETAIL



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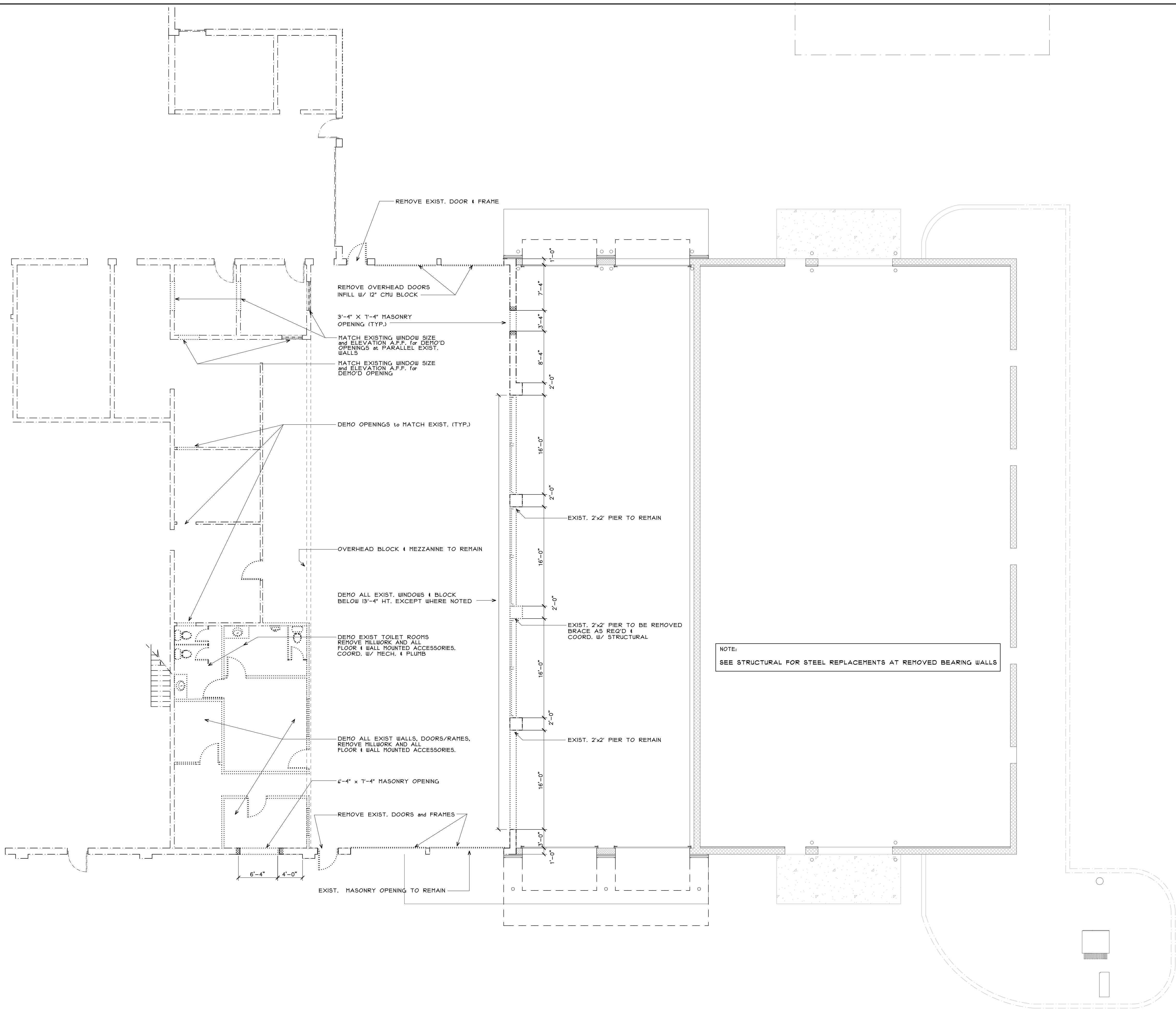
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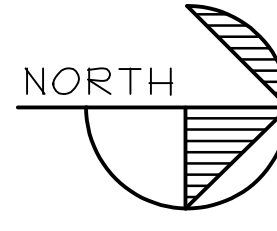
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 SERVICE CENTER
 LIVONIA, MICHIGAN
 PHASE IB ENLARGED PLAN

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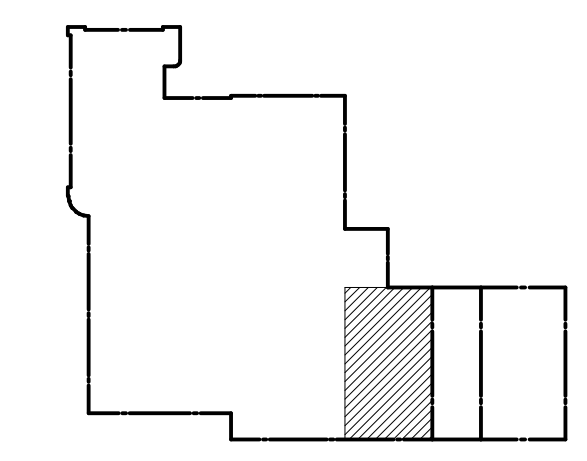
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NOTE:
SEE STRUCTURAL FOR STEEL REPLACEMENTS AT REMOVED BEARING WALLS



BUILDING KEY PLAN

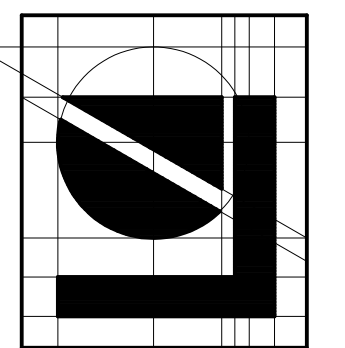


DEMOLITION NOTES

DEMOLITION WORK TO BEGIN ONLY AFTER PHASES IA AND IB ARE COMPLETED
ALL UTILITIES ARE EXISTING. NOTIFY OWNER PRIOR TO ANY PLANNED DISRUPTIONS OF POWER, WATER, SEWER, GAS, TELECOMMUNICATIONS, OR ANY OTHER UTILITY.
SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ALL MECHANICAL, PLUMBING AND ELECTRICAL DEMO.
PROVIDE CLEAN JOINTS AT ENDS OF DEMOLITION WORK TO RECEIVE FUTURE FINISH MATERIALS.
REMOVE ALL EXIST. FLOORING AND WALL BASE. LEAVE EXIST. SUB-FLOOR AND WALL SURFACES IN SUITABLE CONDITION TO RECEIVE FUTURE FINISH MATERIALS.
REMOVE ALL EXIST. SUSP. CEILING GRID AND TILE. RECYCLE. LEAVE IN SUITABLE CONDITION TO RECEIVE NEW SUSPENDED CEILING SYSTEM.
REMOVE ALL EXISTING GYP. CEILING. LEAVE IN SUITABLE CONDITION TO RECEIVE NEW CEILING.
REMOVE ALL EXIST. LIGHT FIXTURES.
REMOVE ALL EXIST. ENTRY CANOPIES/AWNING WITHIN AREA OF WORK.

LINE LEGEND

- NEW CONSTRUCTION
- EXISTING TO REMAIN
- HIDDEN WORK
- EXISTING TO BE REMOVED



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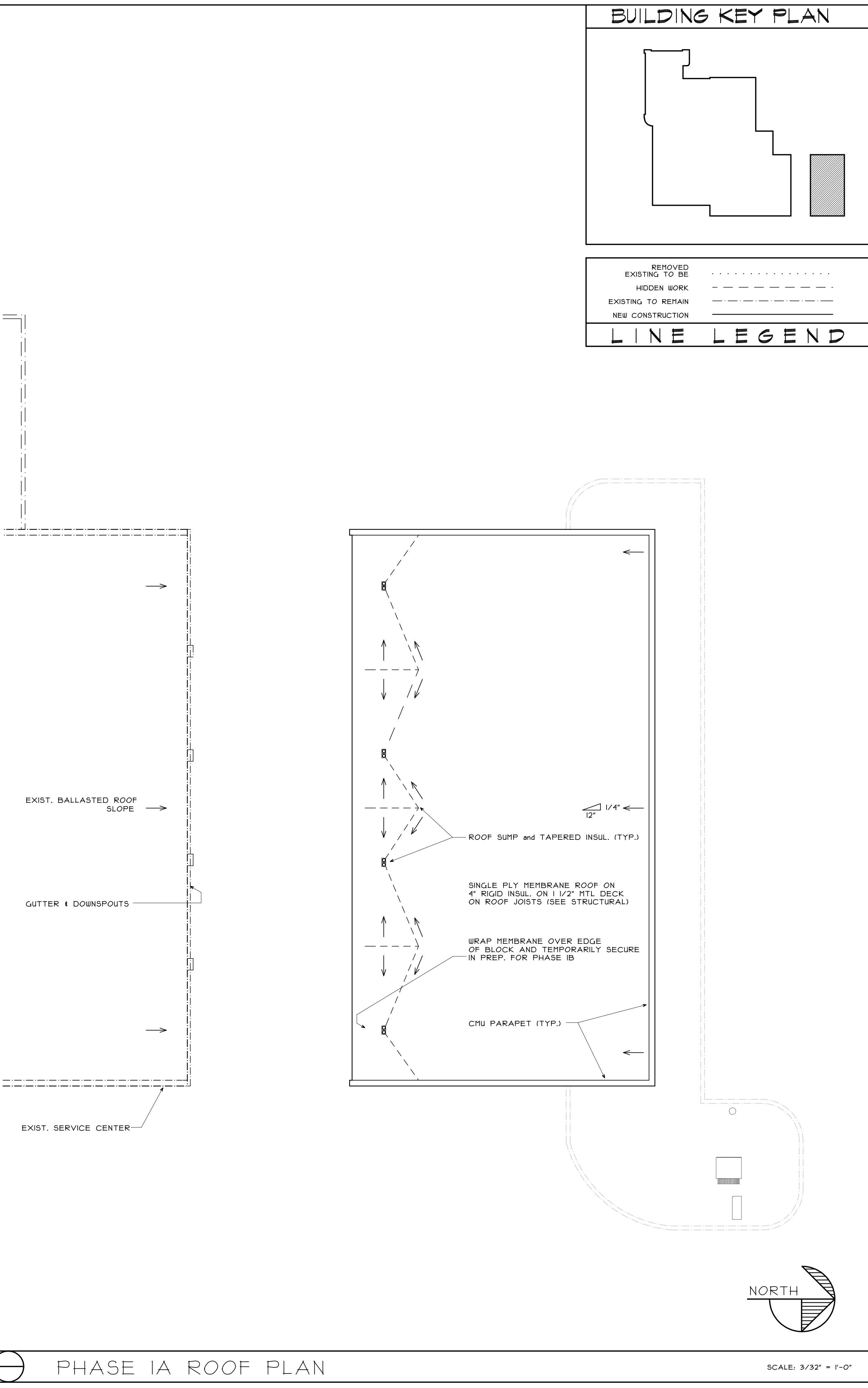
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SERVICE CENTER
LIVONIA, MICHIGAN
PHASE 2 DEMO FLOOR PLAN

A13
1429

PHASE 2 DEMO PLAN

SCALE: 1/8" = 1'-0"

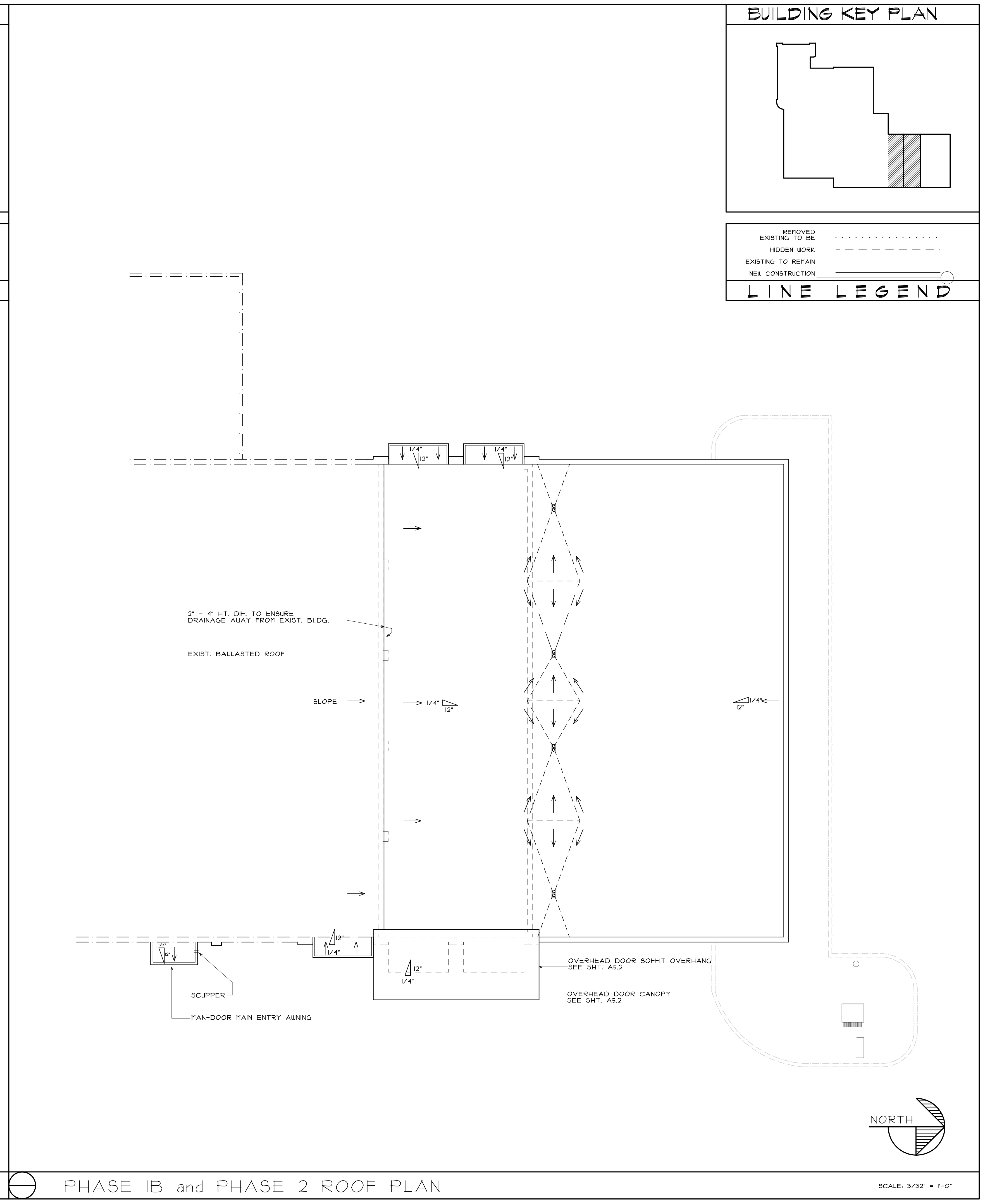
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BUILDING KEY PLAN

LINE LEGEND

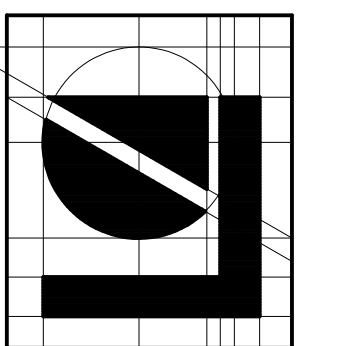
REMOVED EXISTING TO BE
HIDDEN WORK	-----
EXISTING TO REMAIN	-----
NEW CONSTRUCTION	_____



BUILDING KEY PLAN

LINE LEGEND

REMOVED EXISTING TO BE
HIDDEN WORK	-----
EXISTING TO REMAIN	-----
NEW CONSTRUCTION	_____



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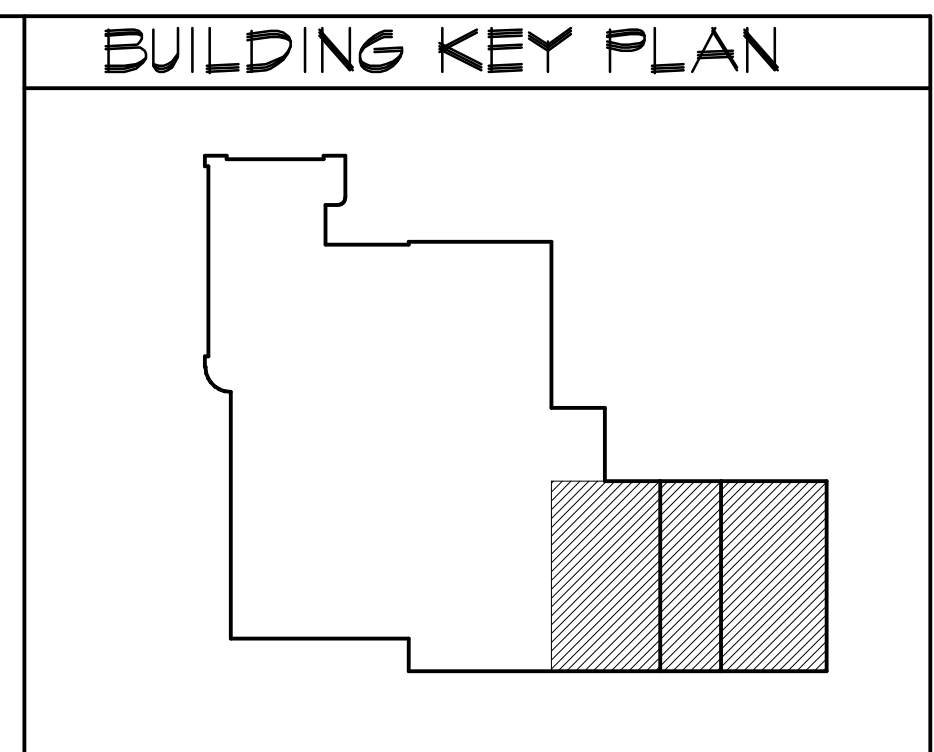
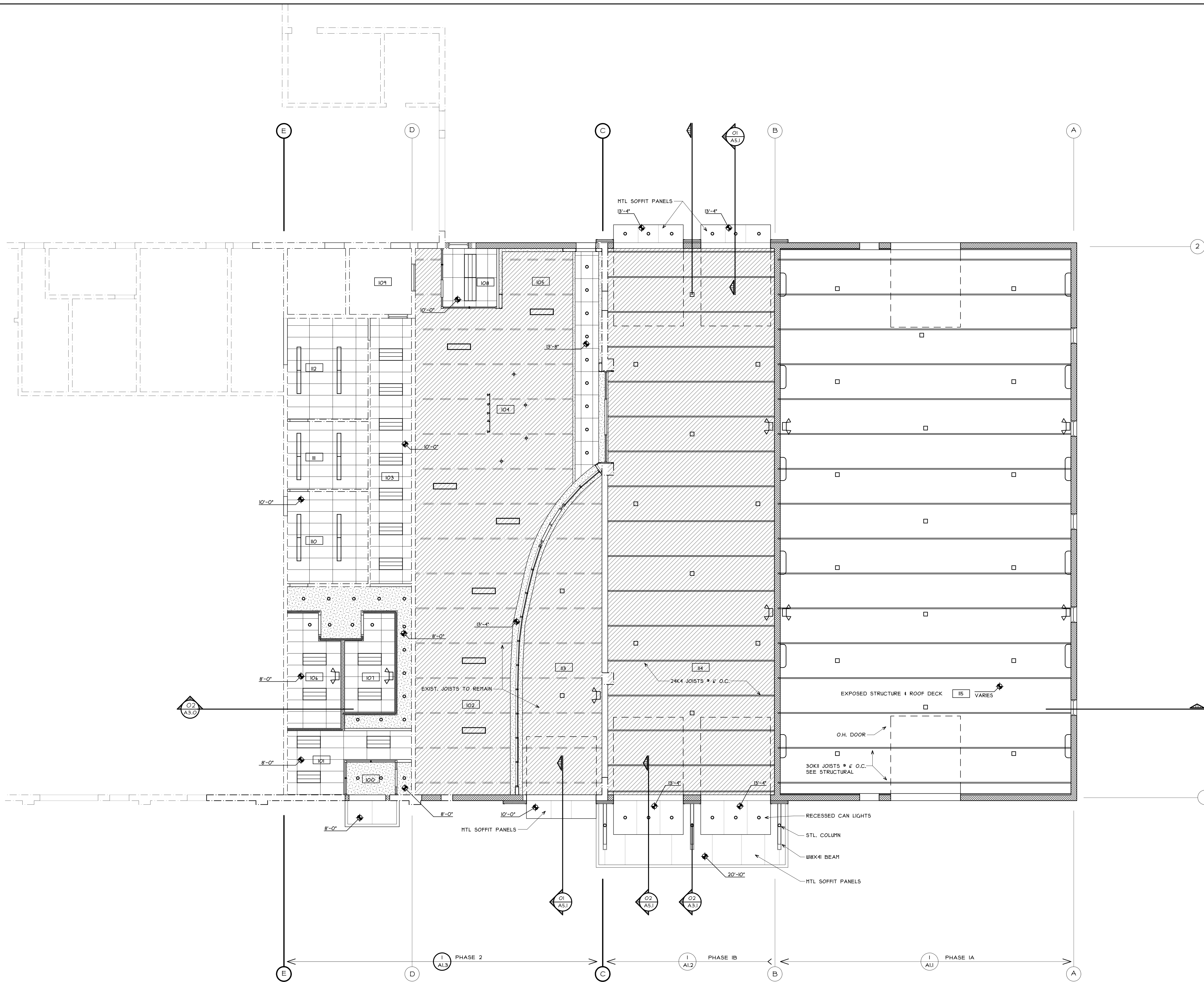
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PROPOSED ADDITION FOR:
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CUSTOMER SERVICE CENTER
 LIVONIA, MICHIGAN
PHASED ROOF PLAN

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ROOM LEGEND

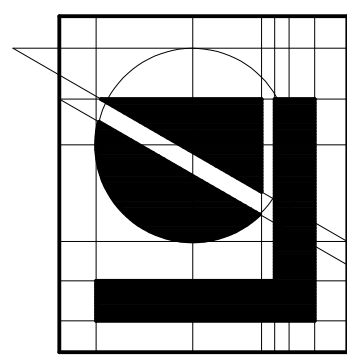
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100	VESTIBULE
101	CUSTOMER WORK STATIONS
102	CUSTOMER WAITING
103	SERVICE ADVISORS
104	CUSTOMER SERVICE DESK
105	SALES COUNTER
106	MENS TOILET
107	WOMENS TOILET
108	OFFICE
109	OFFICE
110	OFFICE
111	OFFICE
112	SHARED WORKSTATION
113	HOLDING BAY
114	CUSTOMER DROP-OFF
115	SERVICE BAY
116	TECH. WORK STATIONS

SYMBOL LEGEND

	PAIN EXPOSED DECK, DUCTS, and JOISTS
	2'x4' SUSPENDED ACOUSTICAL CEILING SYSTEM
	5/8" GYP. BD. CEILING (PAINT)
	CABLE-HUNG LINEAR LED LIGHT FIXTURE
	2'x4' RECESSED LED LIGHT FIXTURE
	LED PENDANTS # 8" A.F.F. ALIGNED TO CENTERLINE OF DESK SURFACE
	RECESSED LED DOWNLIGHT FIXTURE
	CABLE-HUNG 1'x4' LED FIXTURE
	LED HIGH-BAY FIXTURE
	CABLE-HUNG LED TRACK LIGHTING
	WALL MTD. LED TASKLIGHT

LINE LEGEND

	REMOVED EXISTING TO BE
	HIDDEN WORK
	EXISTING TO REMAIN
	NEW CONSTRUCTION



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PROPOSED ADDITION FOR:
**BILL BROWN FORD
 CUSTOMER SERVICE CENTER**
 LYONIA, MICHIGAN
REFLECTED CEILING PLAN

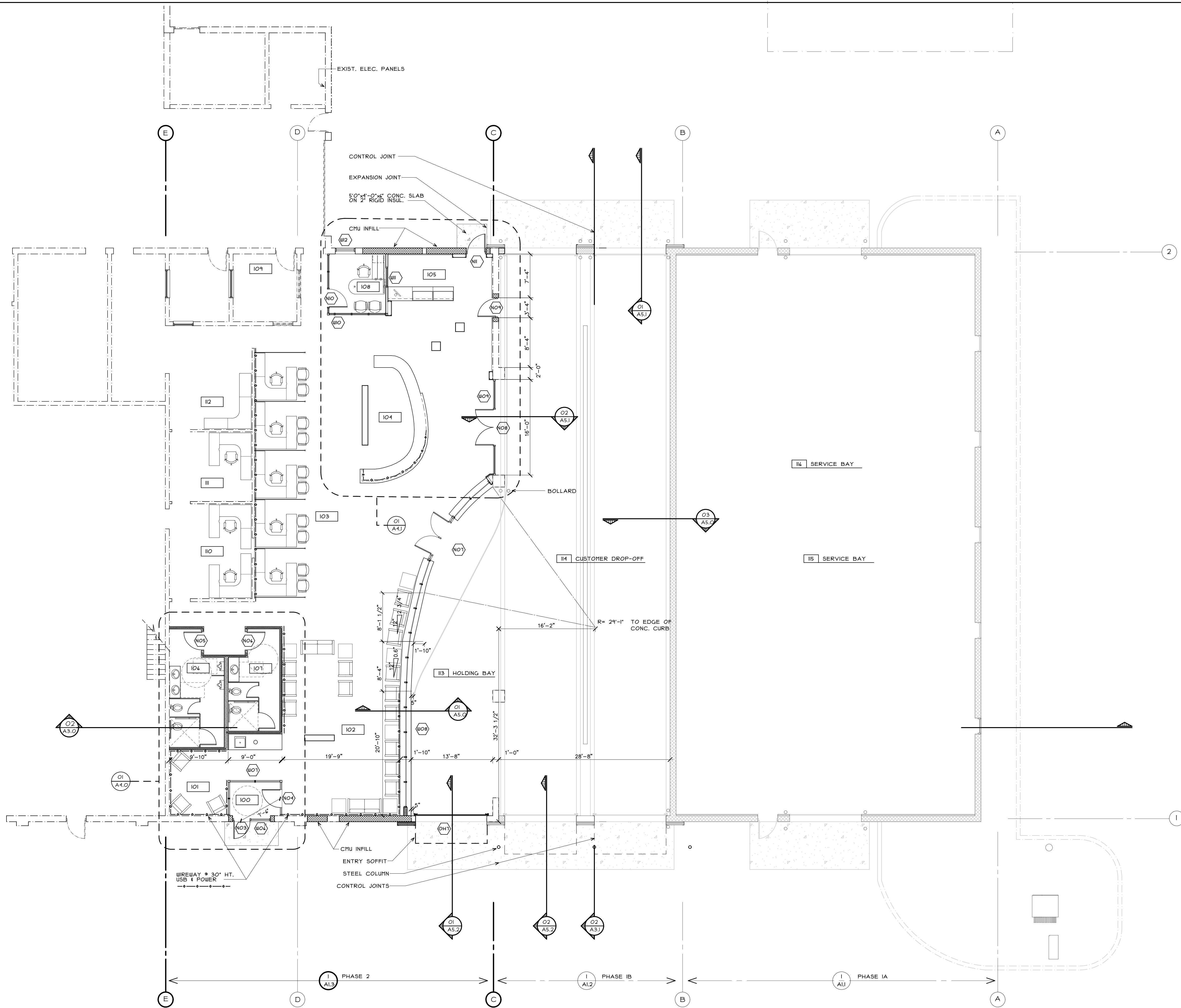
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REFLECTED CEILING PLAN

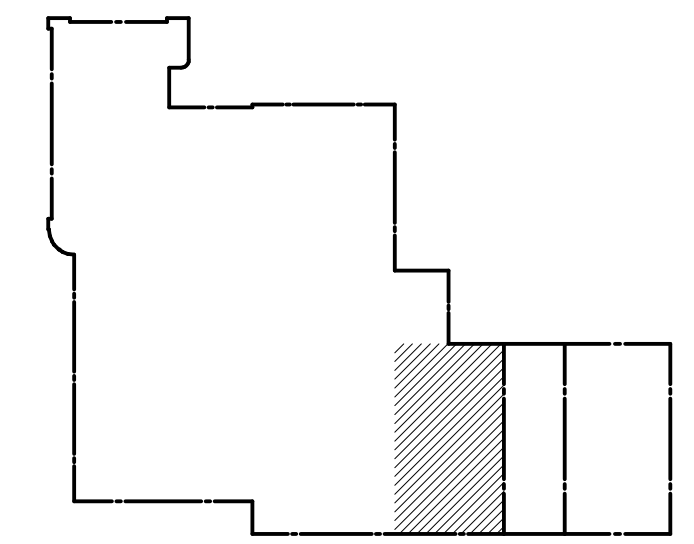
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BUILDING KEY PLAN



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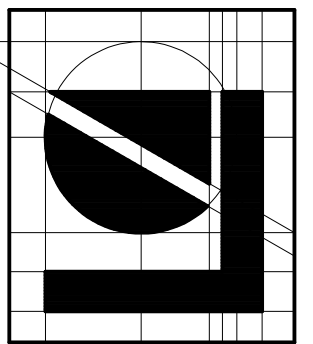
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I00	VESTIBULE
I01	CUSTOMER WORK STATIONS
I02	CUSTOMER WAITING
I03	SERVICE ADVISORS
I04	CUSTOMER SERVICE DESK
I05	SALES COUNTER
I06	MENS TOILET
I07	WOMENS TOILET
I08	OFFICE
I09	OFFICE
I10	OFFICE
I11	OFFICE
I12	SHARED WORKSTATION
I13	HOLDING BAY
I14	CUSTOMER DROP-OFF
I15	SERVICE BAY
I16	TECH. WORK STATIONS

WALL LEGEND

- 1/4" FCB (BELOW 8'-0" HT.) W/ 3/8" GYP BD. ABOVE ON 2" RIGID INSUL I MTL Z FURRING ON 12" INTEGRAL COLOR CMU.
 - 12" INTEGRAL COLOR CMU (FOAMED INSUL. WHERE EXT.)
 - 4" INTEGRAL COLOR CMU on 1 1/2" AIR SPACE W/ W.R.B. on 2" RIGID INSUL. 12" INTEGRAL COLOR CMU
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- F.E.C. = FIRE EXTINGUISHER CABINET-RECESSED
 F.E. = FIRE EXTINGUISHER SURFACE MOUNT

LINE LEGEND

- REMOVED EXISTING TO BE
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- EXISTING TO REMAIN
- NEW CONSTRUCTION



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PROPOSED ADDITION FOR:
BILL BROWN FORD
SERVICE CENTER
LIVONIA, MICHIGAN
PHASE 2 PLAN

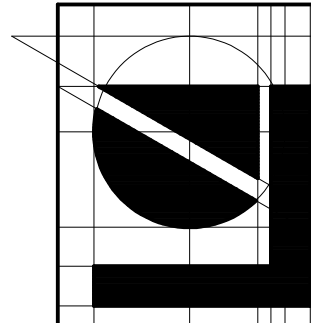
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PHASE 2 FLOOR PLAN: CUSTOMER SERVICE CENTER

SCALE: 1/8" = 1'-0"

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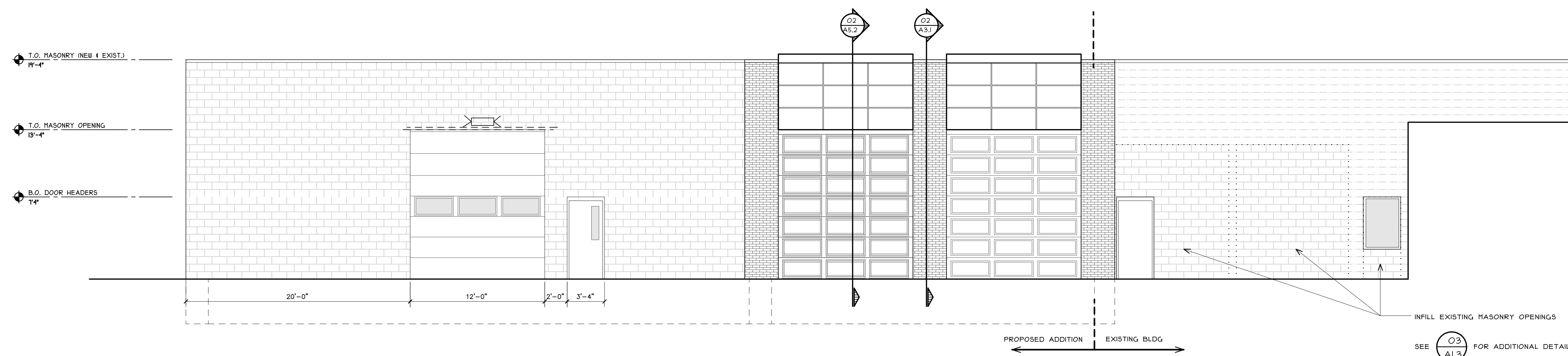
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PROPOSED ADDITION FOR:
BILL BROWN FORD
SERVICE CENTER
LIVONIA, MICHIGAN
EXTEIROR ELEVATIONS

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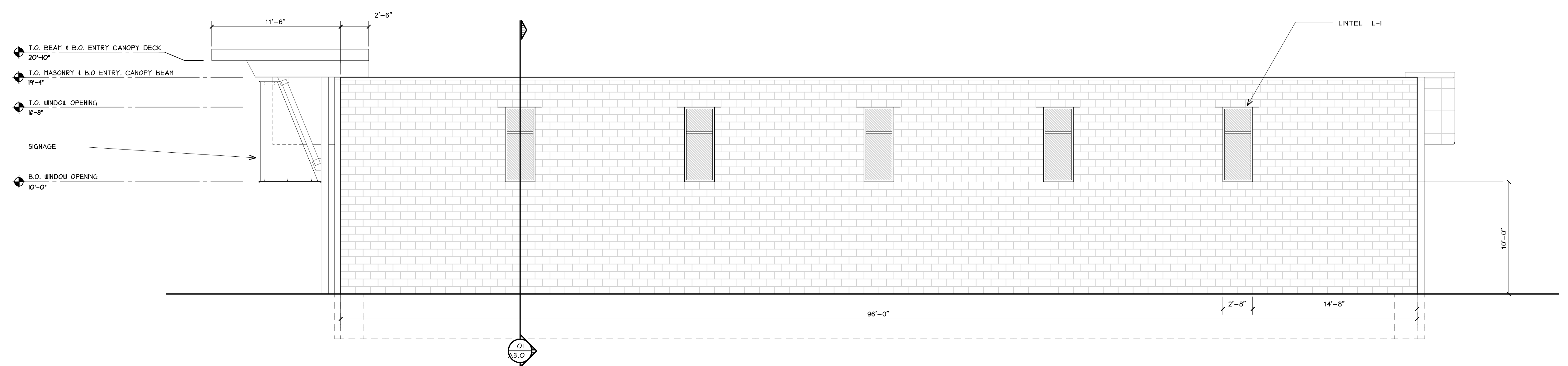


LINE LEGEND

NEW CMU	[Pattern]
EXIST BLOCK	[Pattern]
REMOVED EXISTING TO BE	[Pattern]
HIDDEN WORK	[Pattern]
EXISTING TO REMAIN	[Pattern]
NEW CONSTRUCTION	[Pattern]

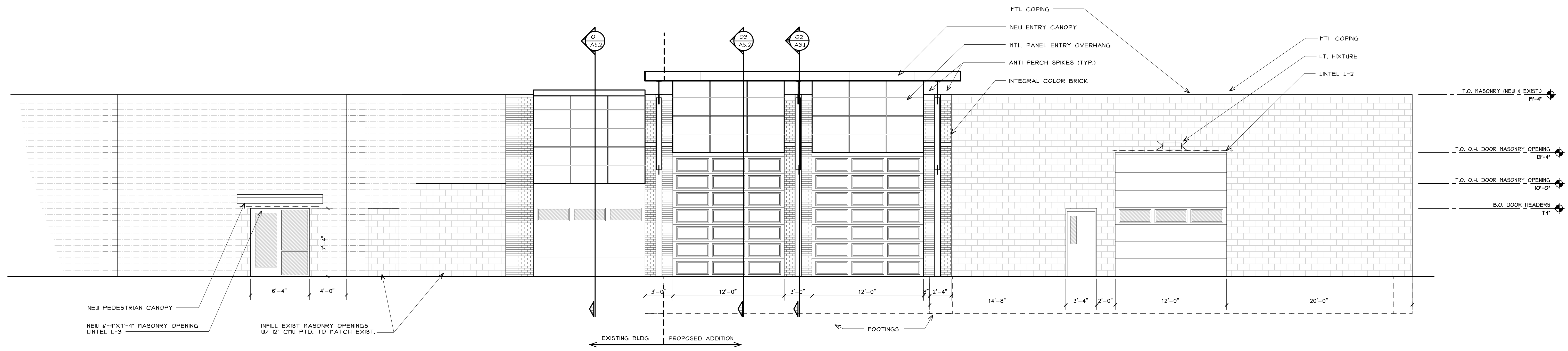
01 WEST ELEVATION

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



02 NORTH ELEVATION

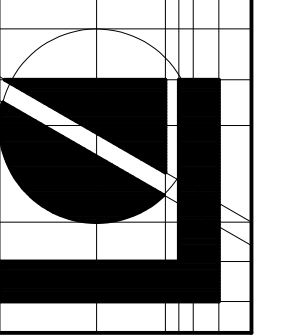
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03 EAST ELEVATION

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

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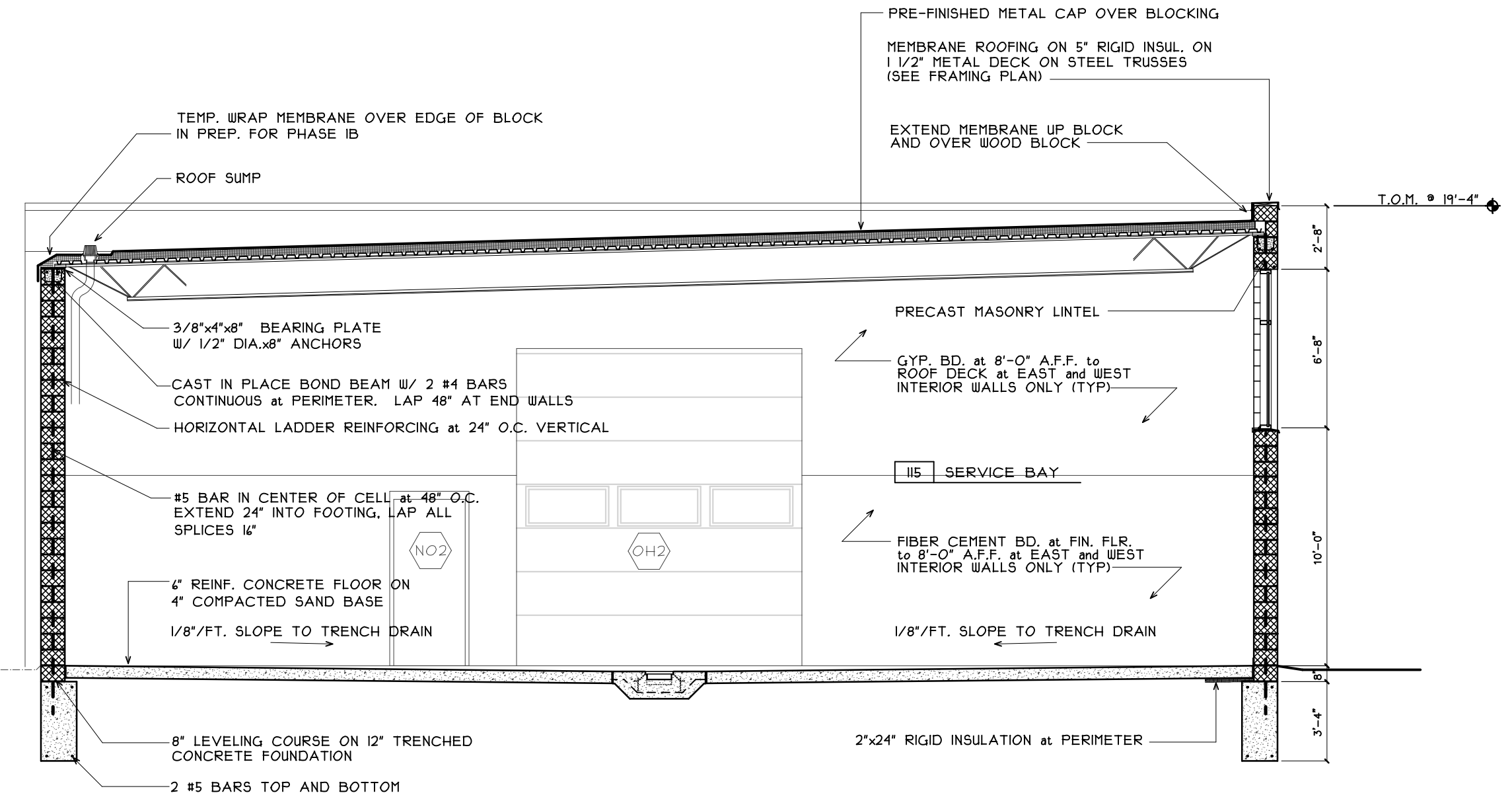
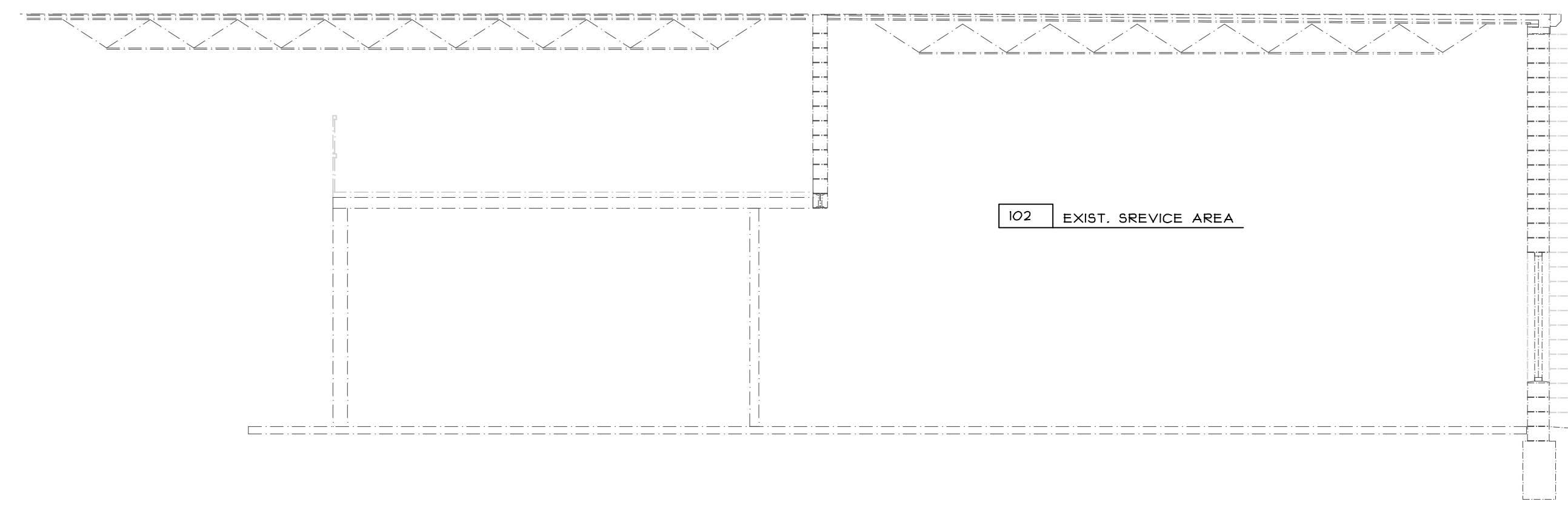
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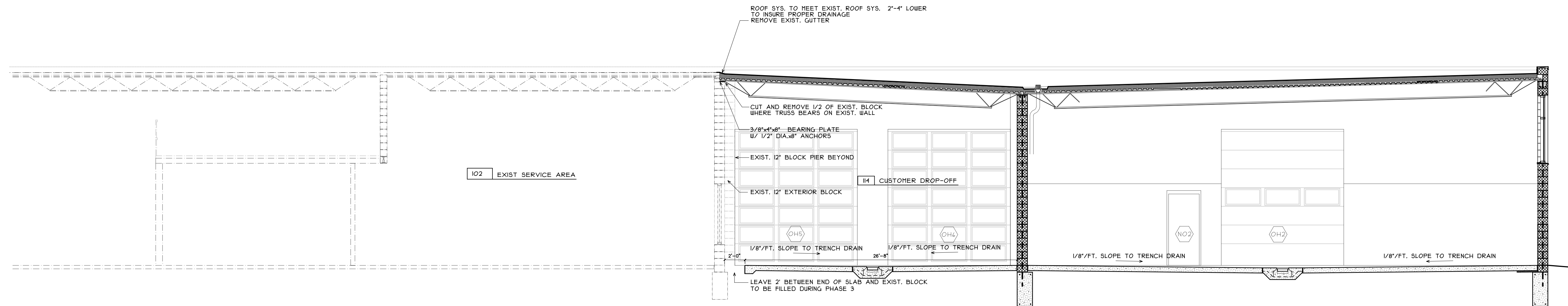
PROPOSED ADDITION FOR:
BILL BROWN FORD
SERVICE CENTER
 LIVONIA, MICHIGAN
BUILDING SECTIONS

A3.0

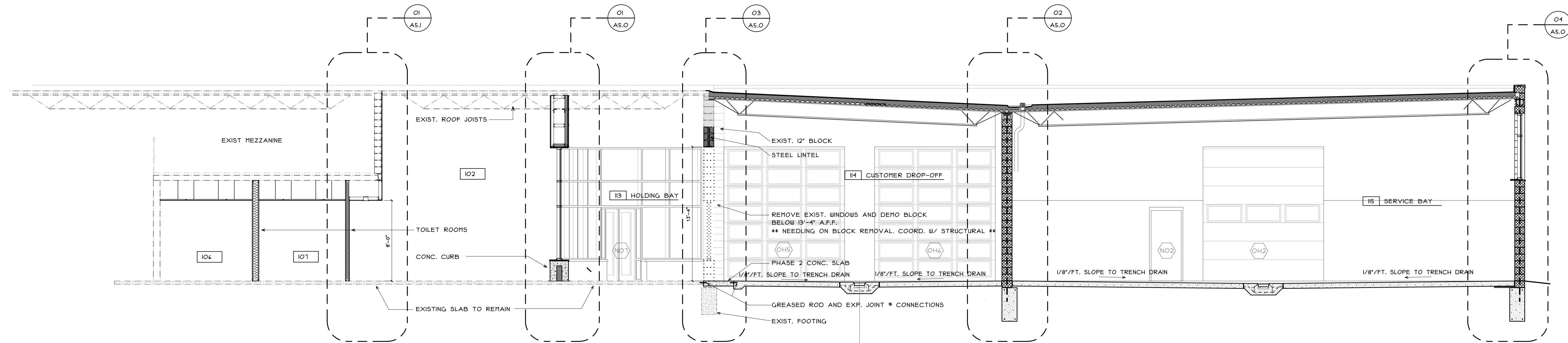
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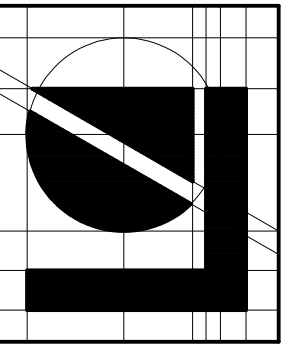
03
A1.1 PHASE 1A: SERVICE BAY



02
A1.2 PHASE 1B: CUSTOMER DROP-OFF



01
A1.3 PHASE 2: CUSTOMER SERVICE AREA



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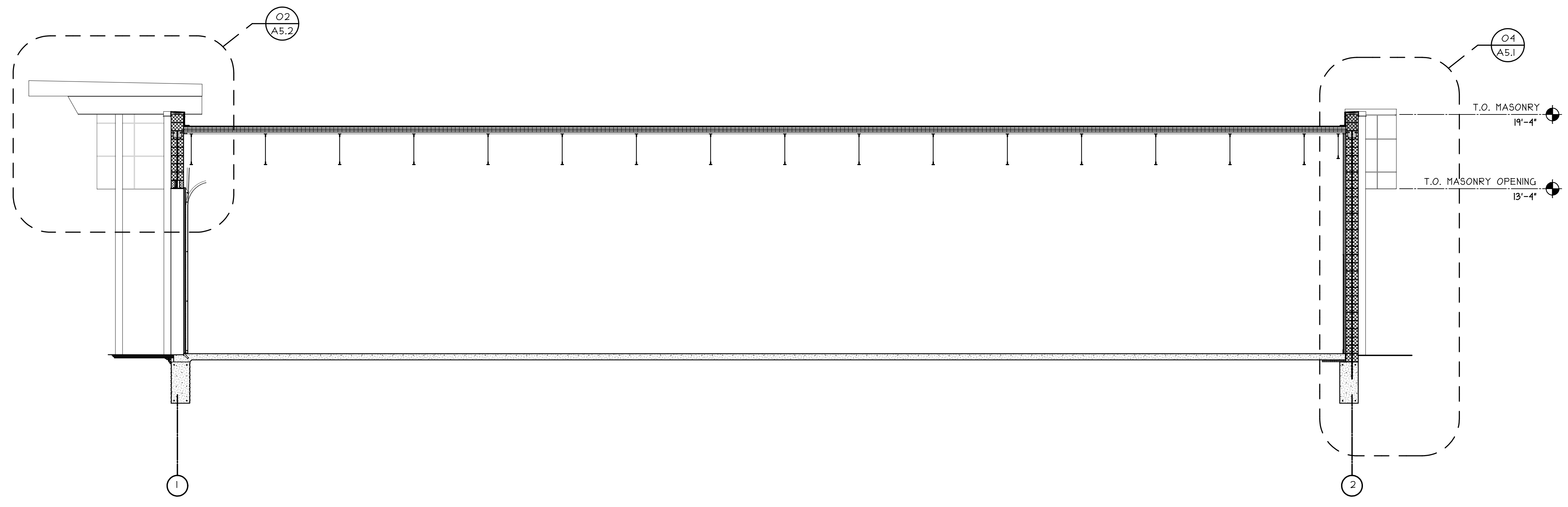
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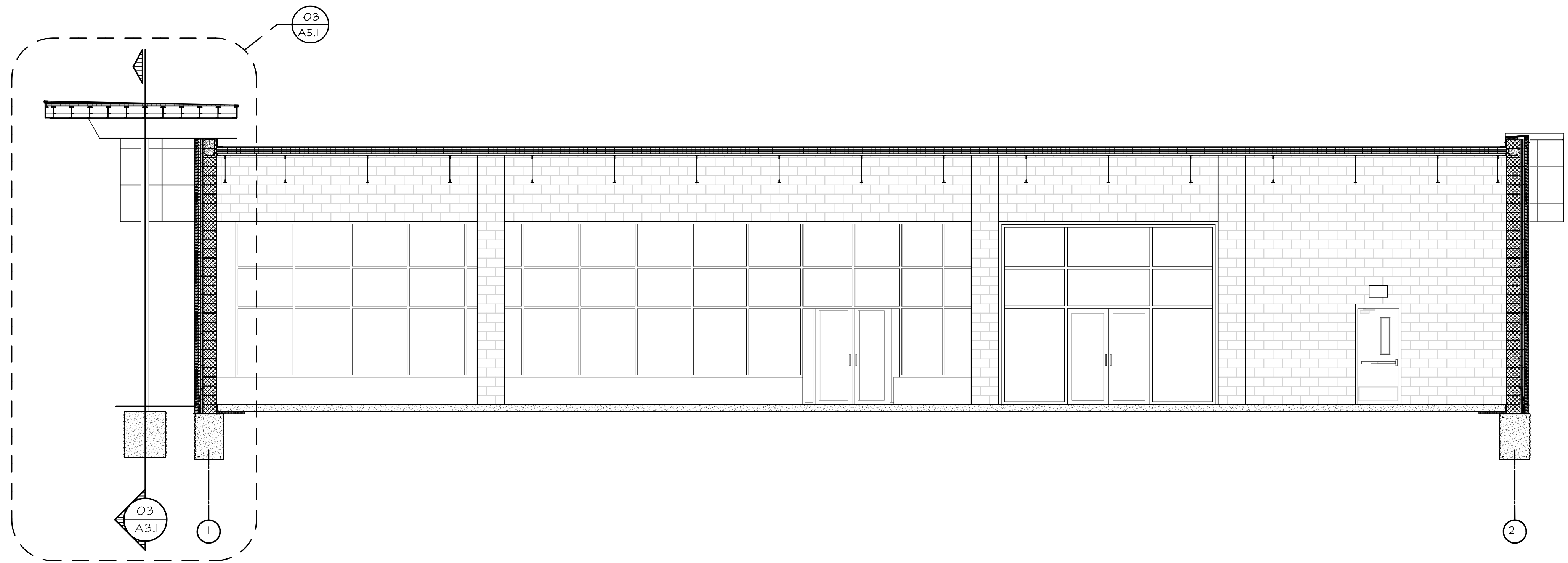
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A3.1
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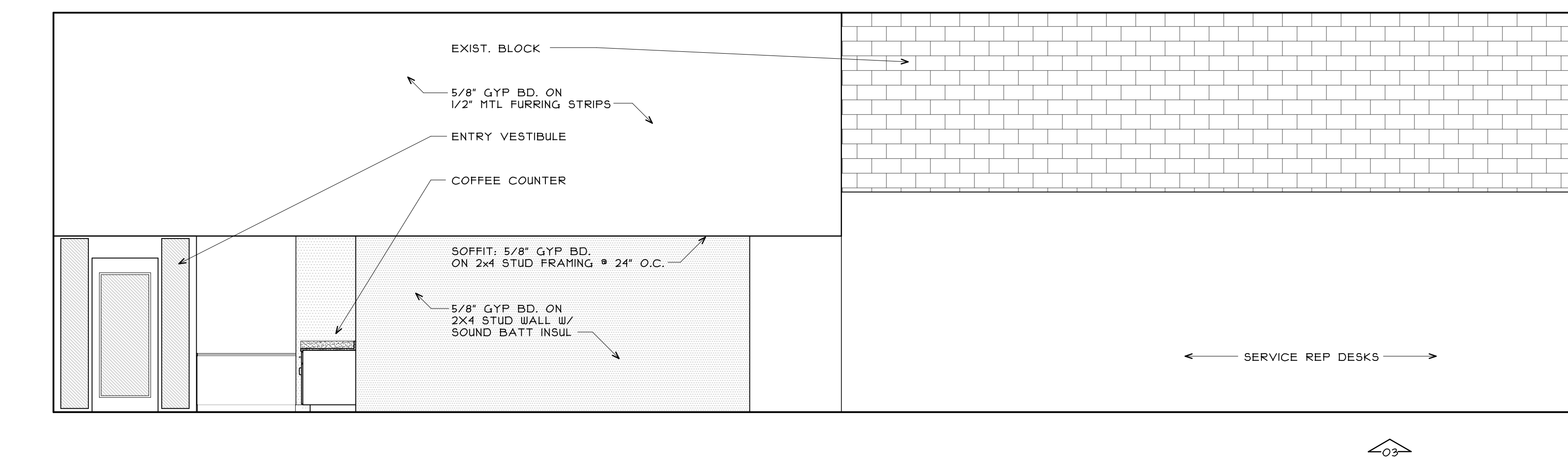
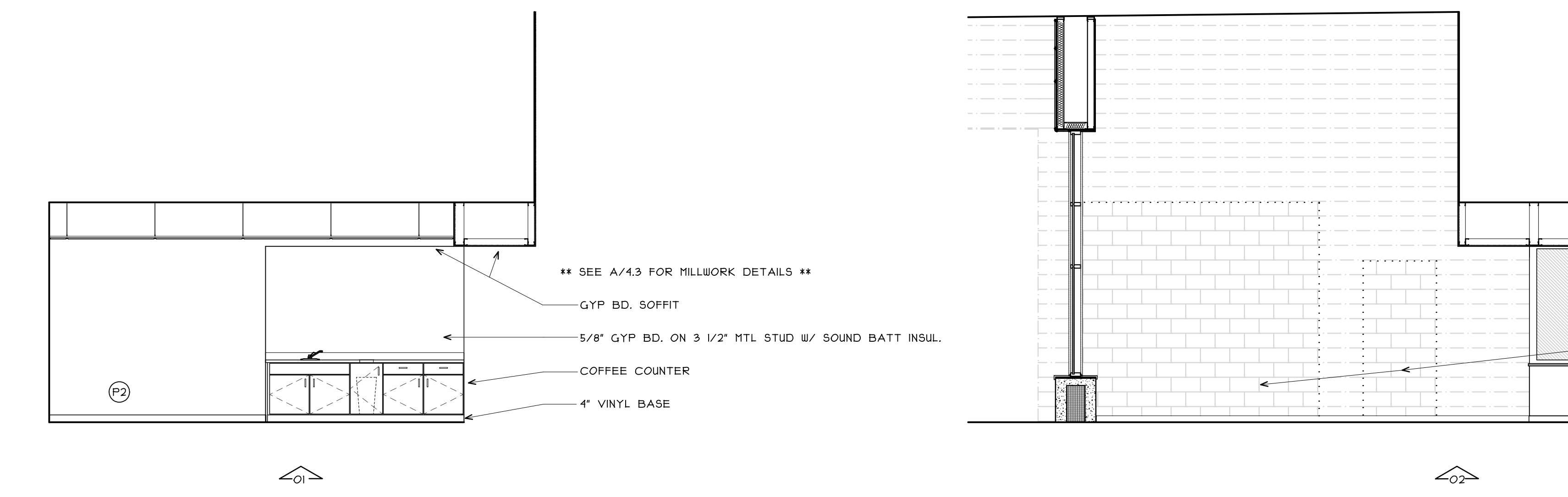
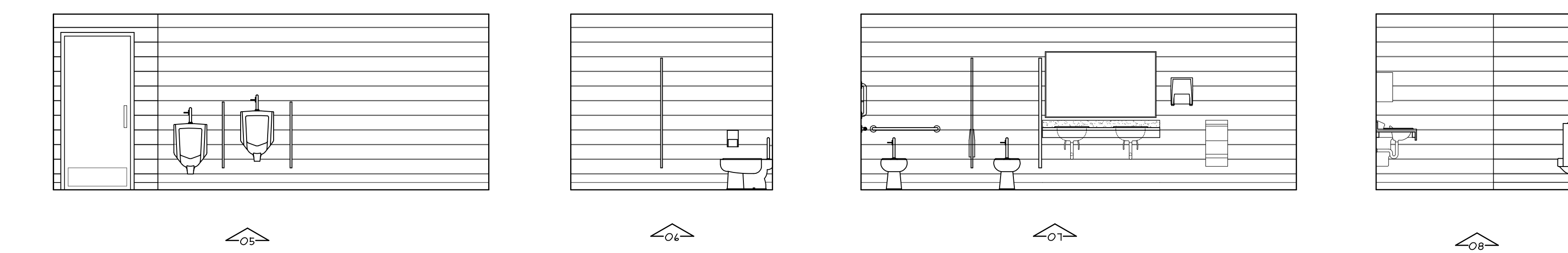
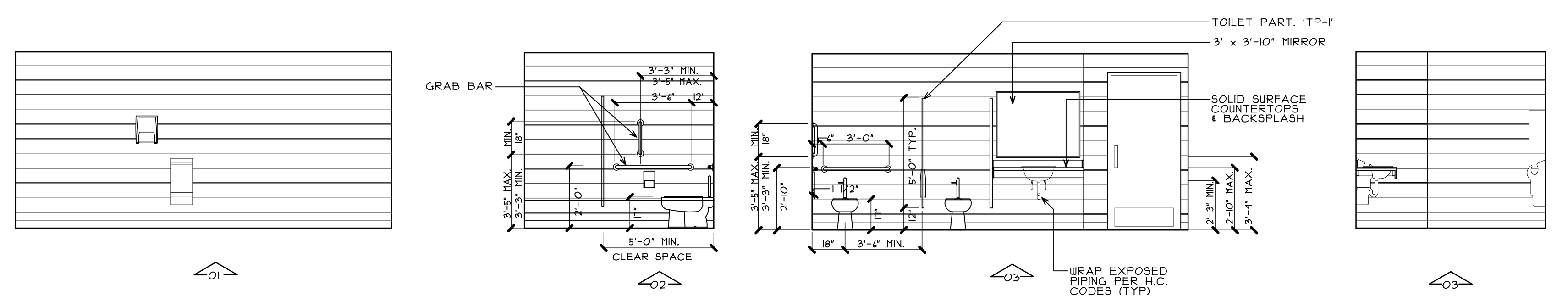


02
A1.3 PHASE 1B: CUSTOMER DROP OFF ENTRY MASONRY OPENING



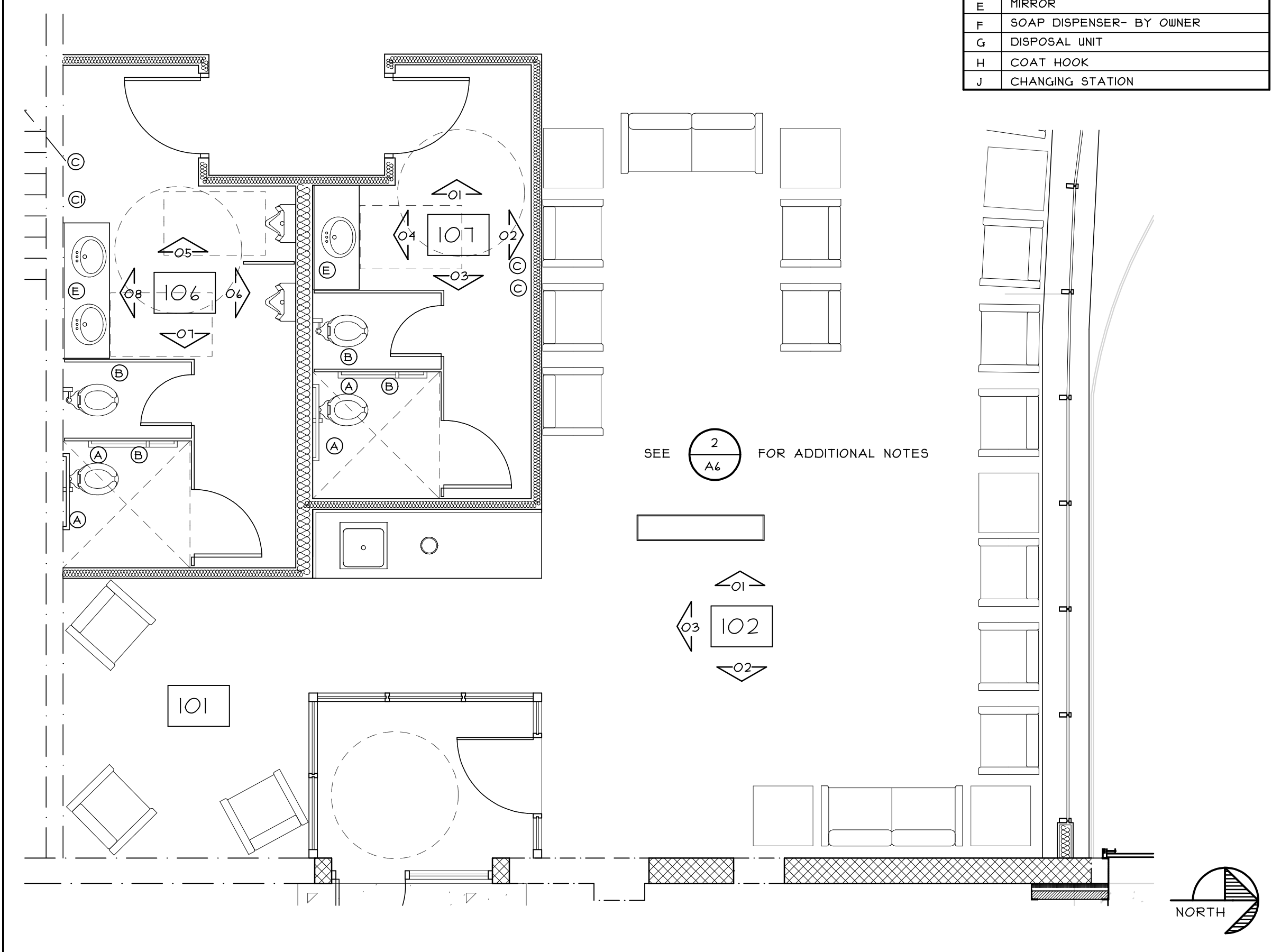
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A1.3 PHASE 2: CUSTOMER SERVICE AREA

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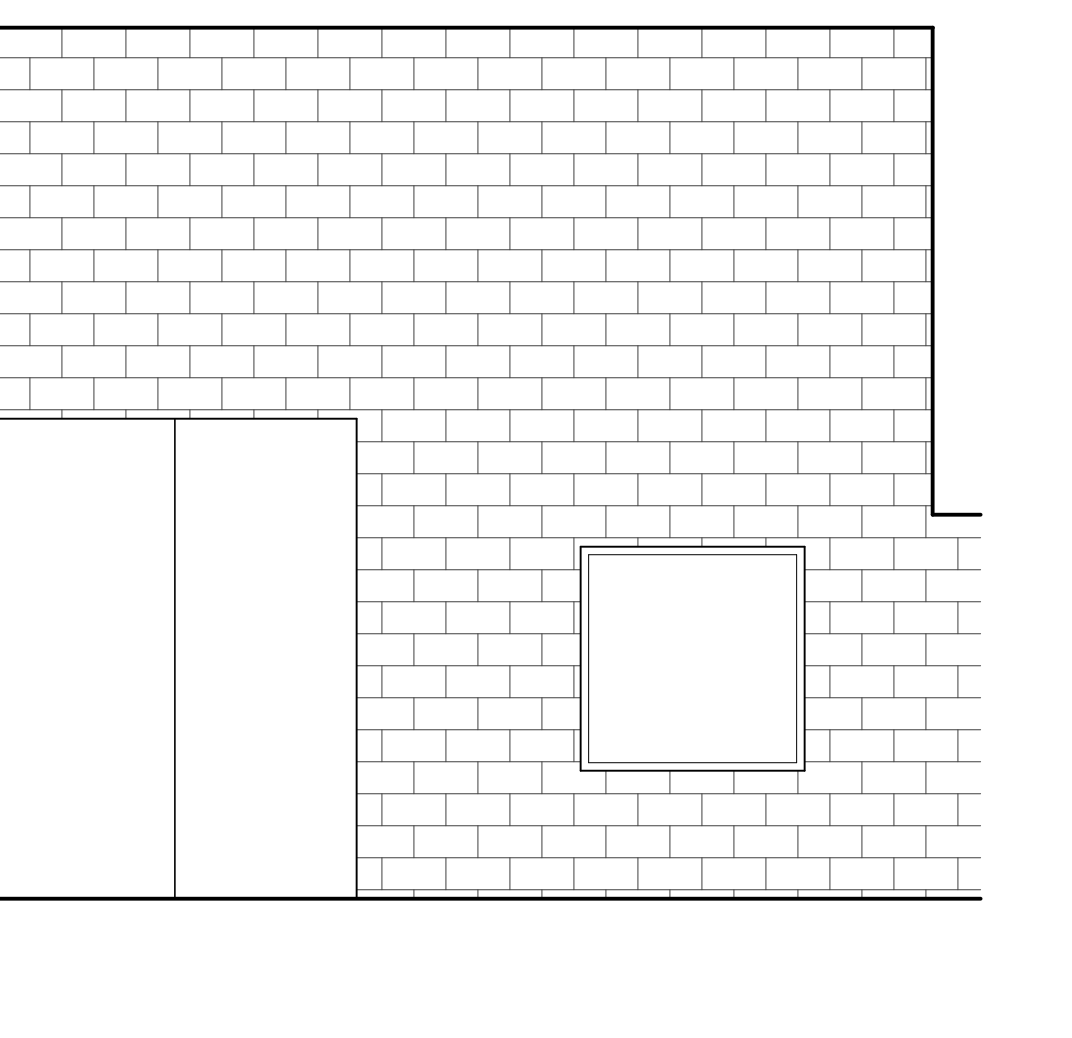
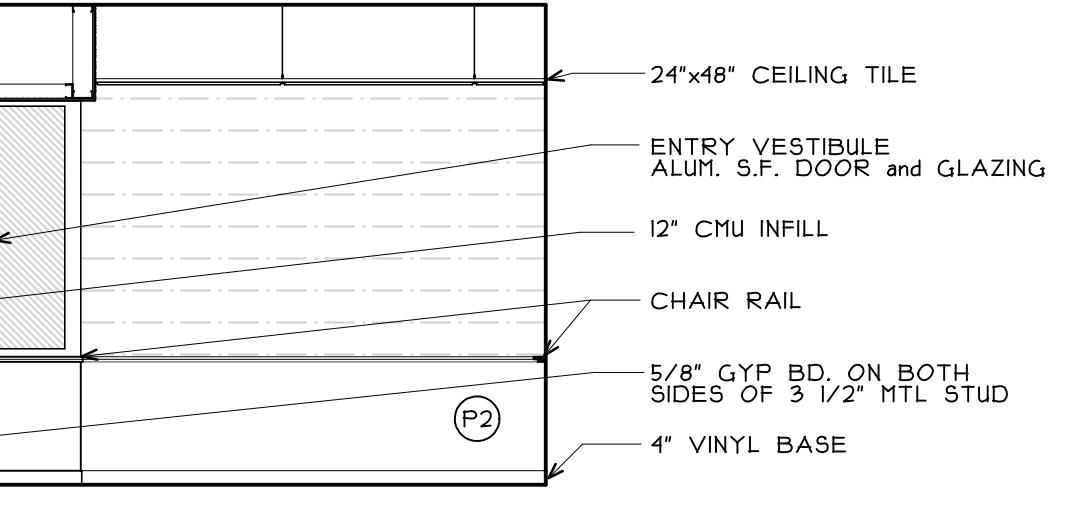


TOILET ROOM INT. ELEVATIONS

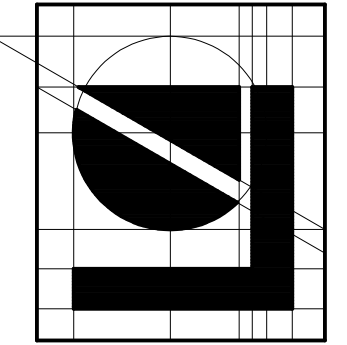
TOILET ROOM ACCESSORY SCHEDULE	
A	GRAB BARS
B	TOILET PAPER HOLDER- BY OWNER
C	HAND DRYING STATION
CI	HAND DRYING STATION
D	WASTE BASKET-BY OWNER
E	MIRROR
F	SOAP DISPENSER- BY OWNER
G	DISPOSAL UNIT
H	COAT HOOK
J	CHANGING STATION



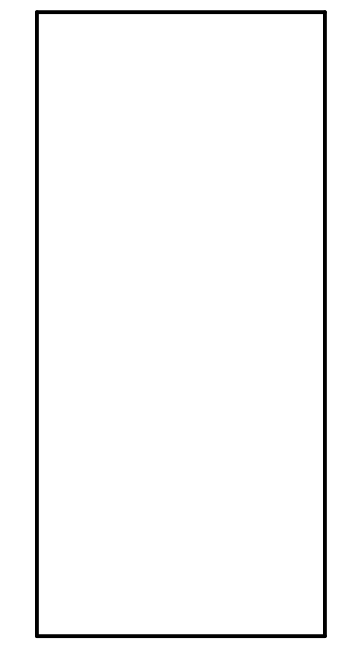
TOILET ROOMS PLAN SCALE: 1/4" = 1'-0"



TOILET ROOMS INT. ELEVATIONS SCALE: 1/4" = 1'-0"



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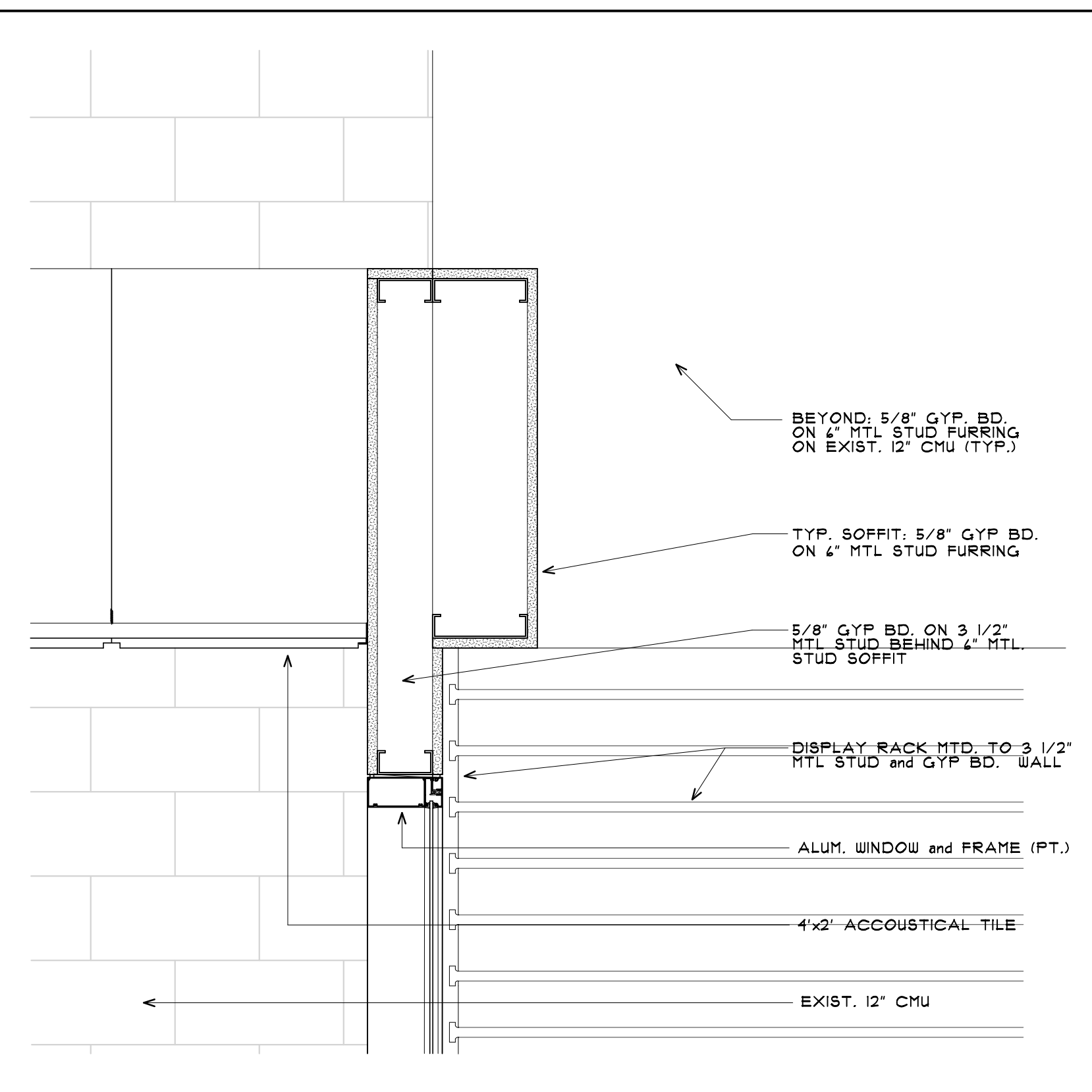


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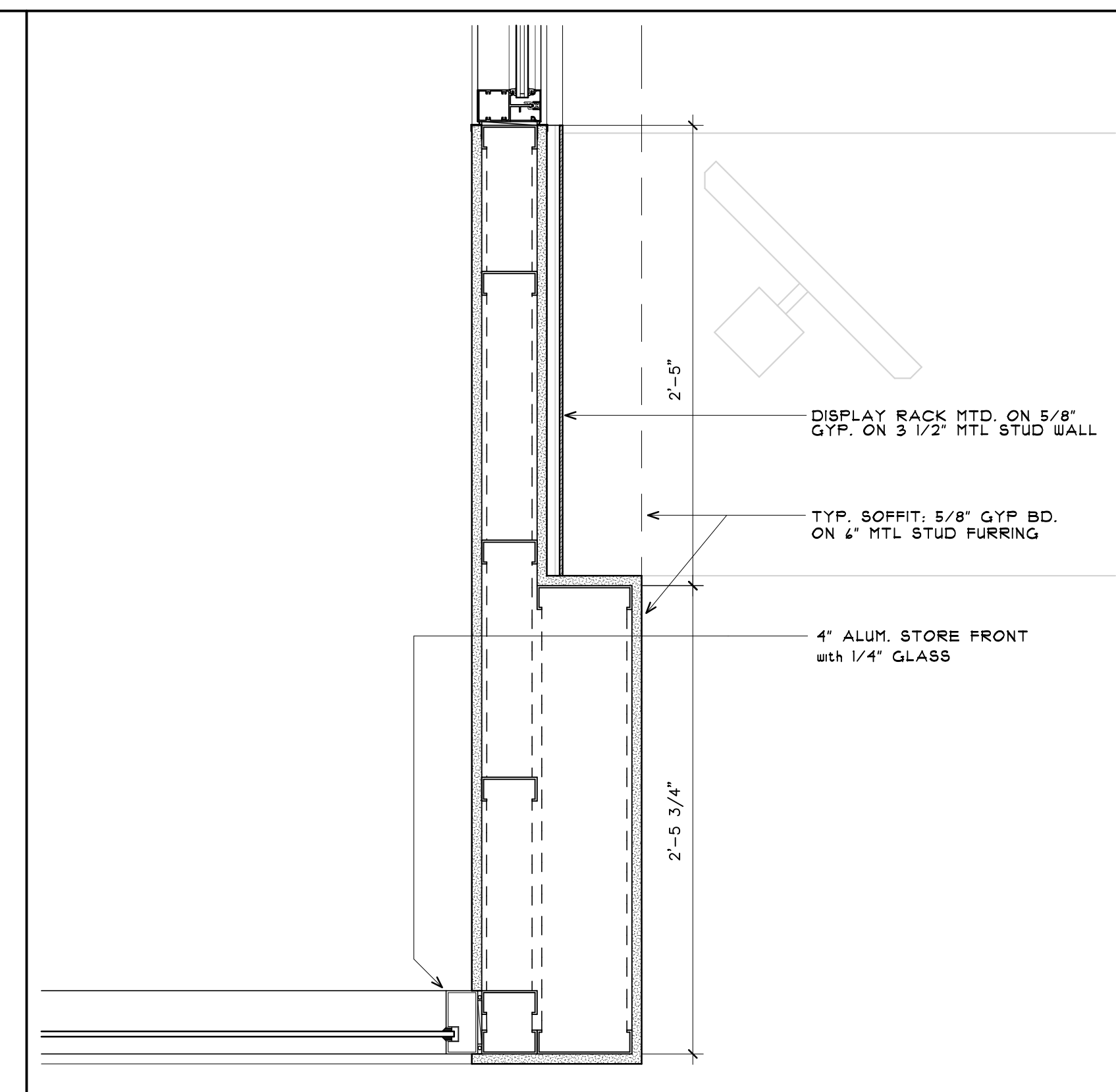
dr: mrl
 ck'd: dar
 app'd:

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BILL BROWN FORD
 LIVONIA, MI
INTERIOR ELEVATIONS

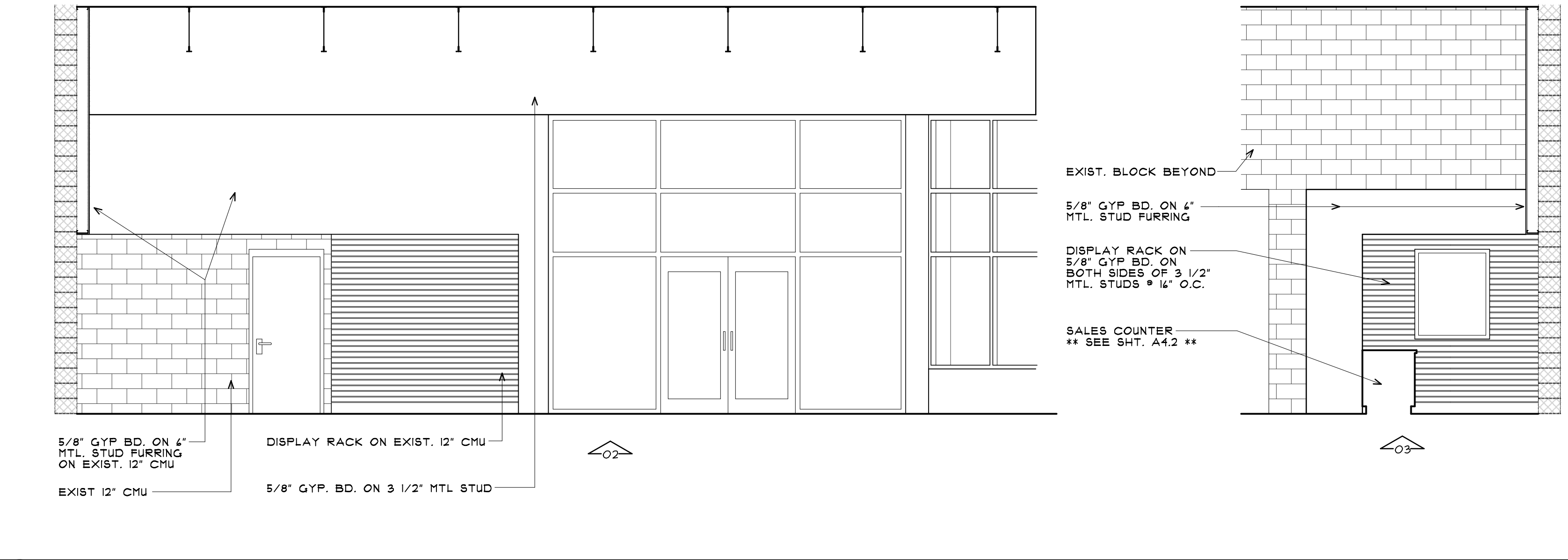
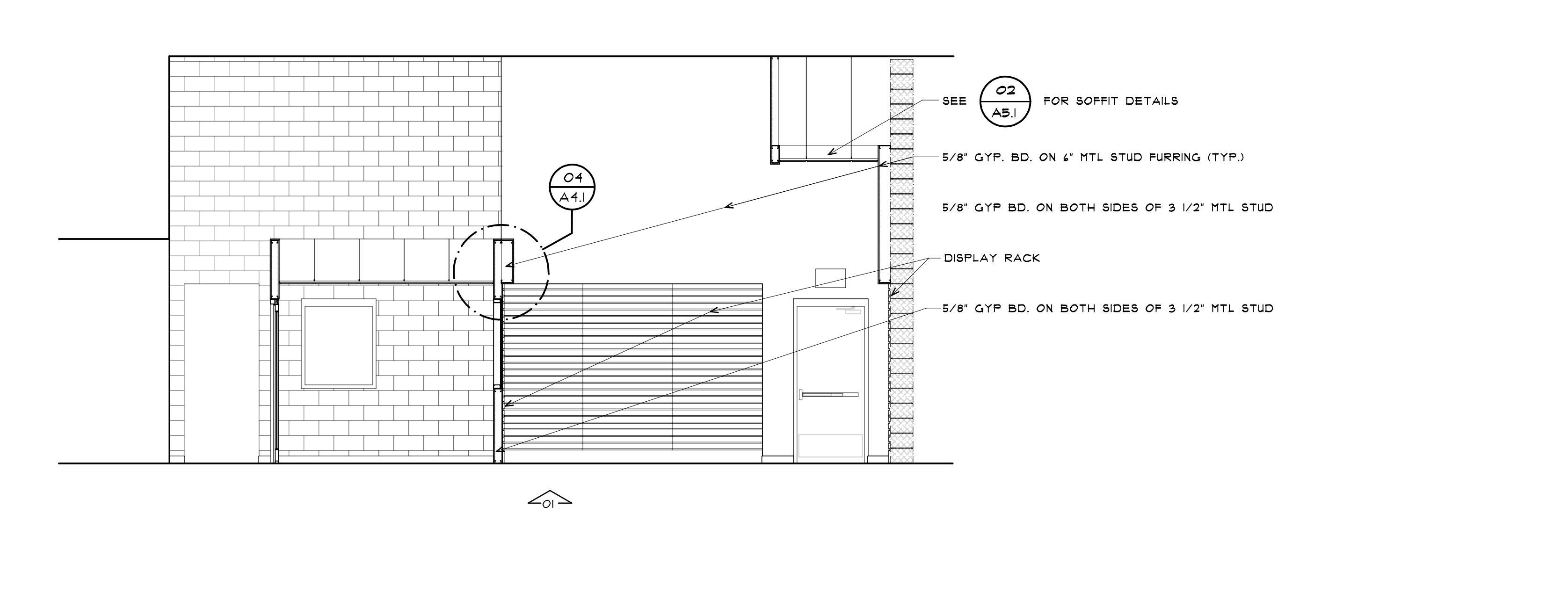
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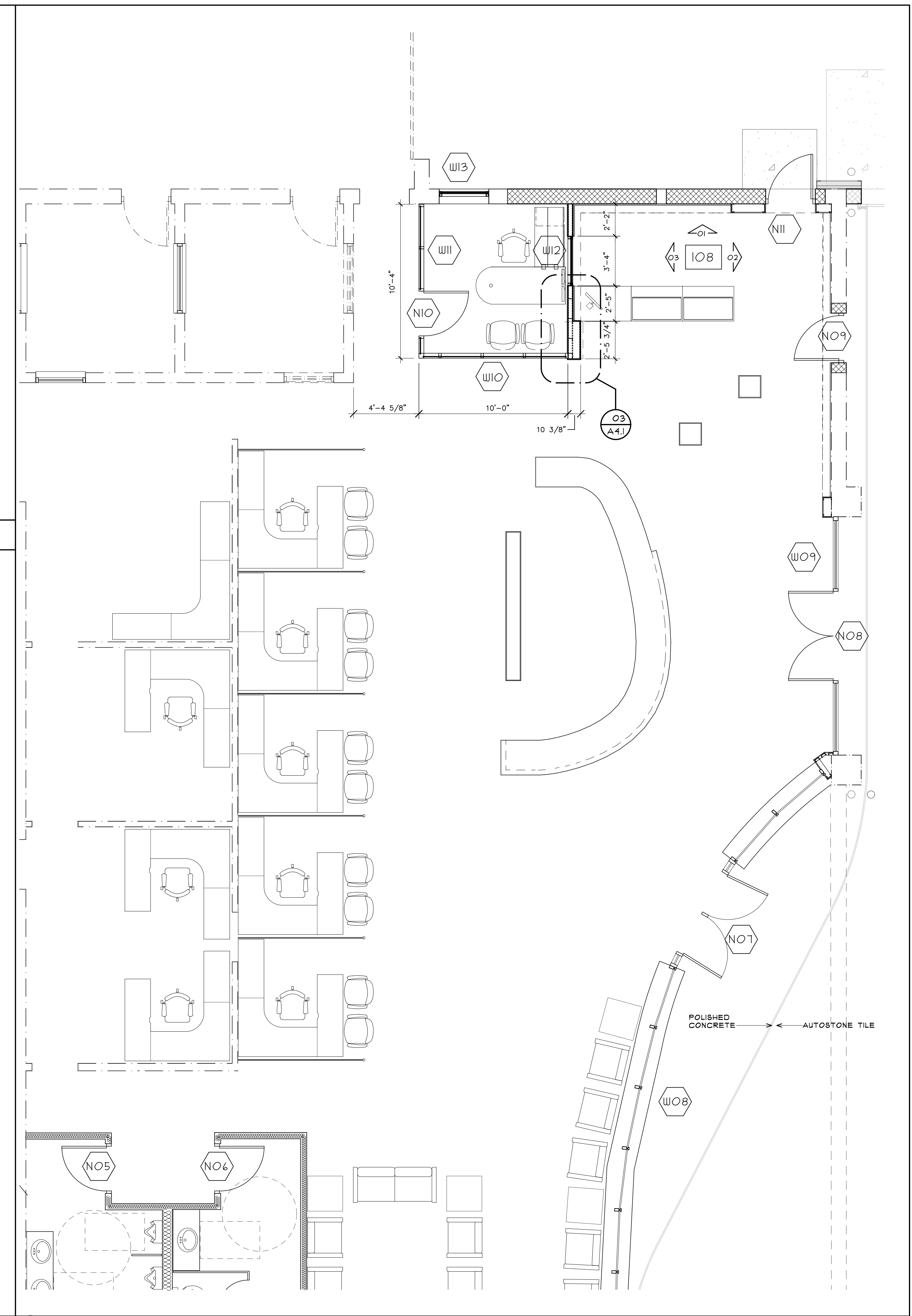
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A4.1 OFFICE WALL SECTION DETAIL SCALE: 1/2" = 1'-0"



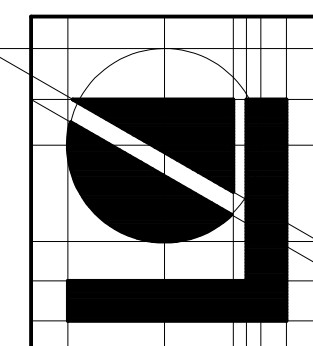
3
A4.1 OFFICE WALL PLAN DETAIL SCALE: 1/2" = 1'-0"



2
A4.2 PRODUCTS & SALES COUNTER INT. SECTION-ELEVATIONS SCALE: 1/4" = 1'-0"



1
A4.1 ENLARGED RESTROOM FLOOR PLAN SCALE: 1/4" = 1'-0"



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app'd: XXX	01-01-2014	REVIEW	

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 08-20-2014
 01-01-2014
 date

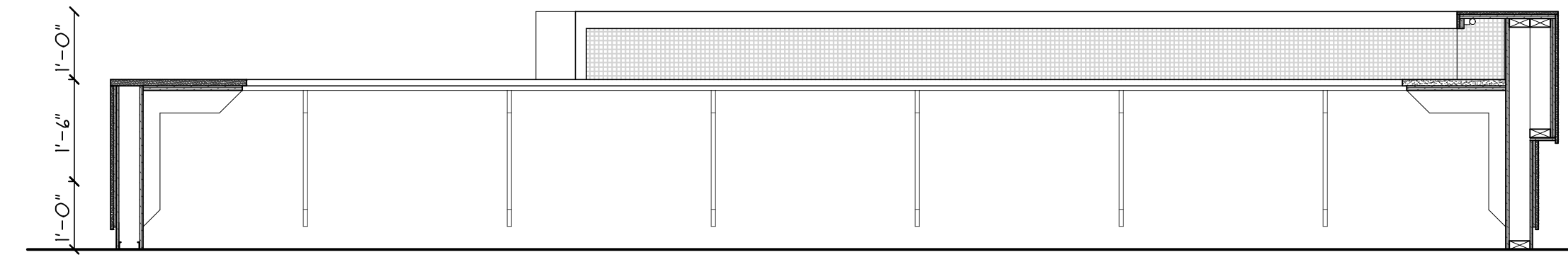
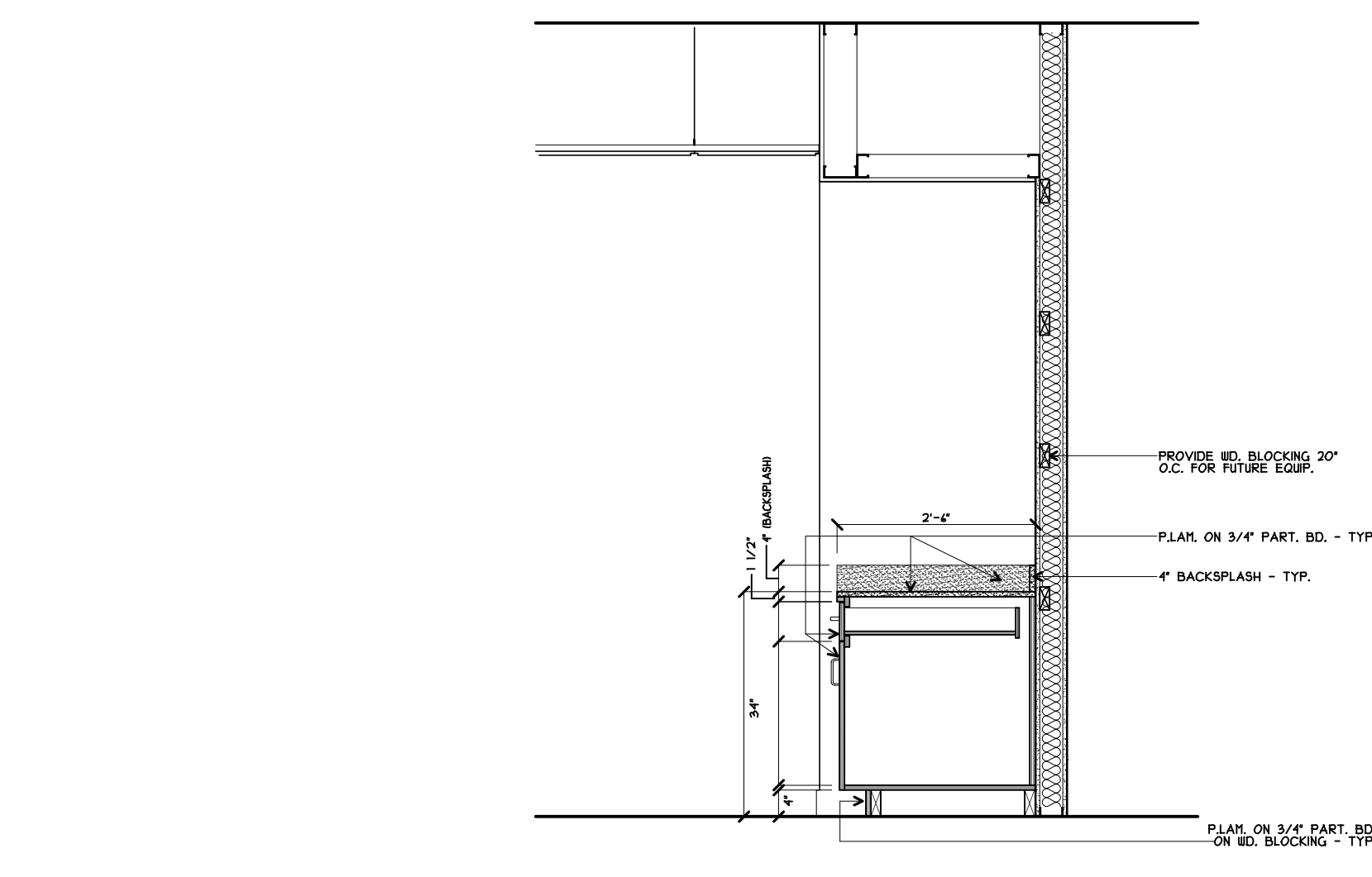
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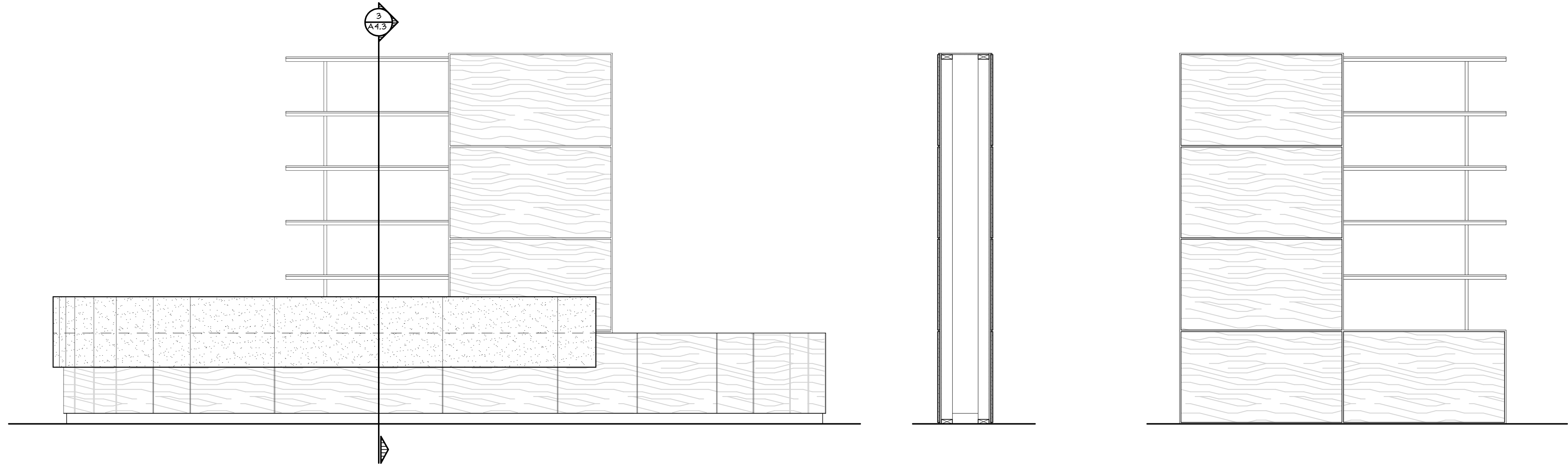
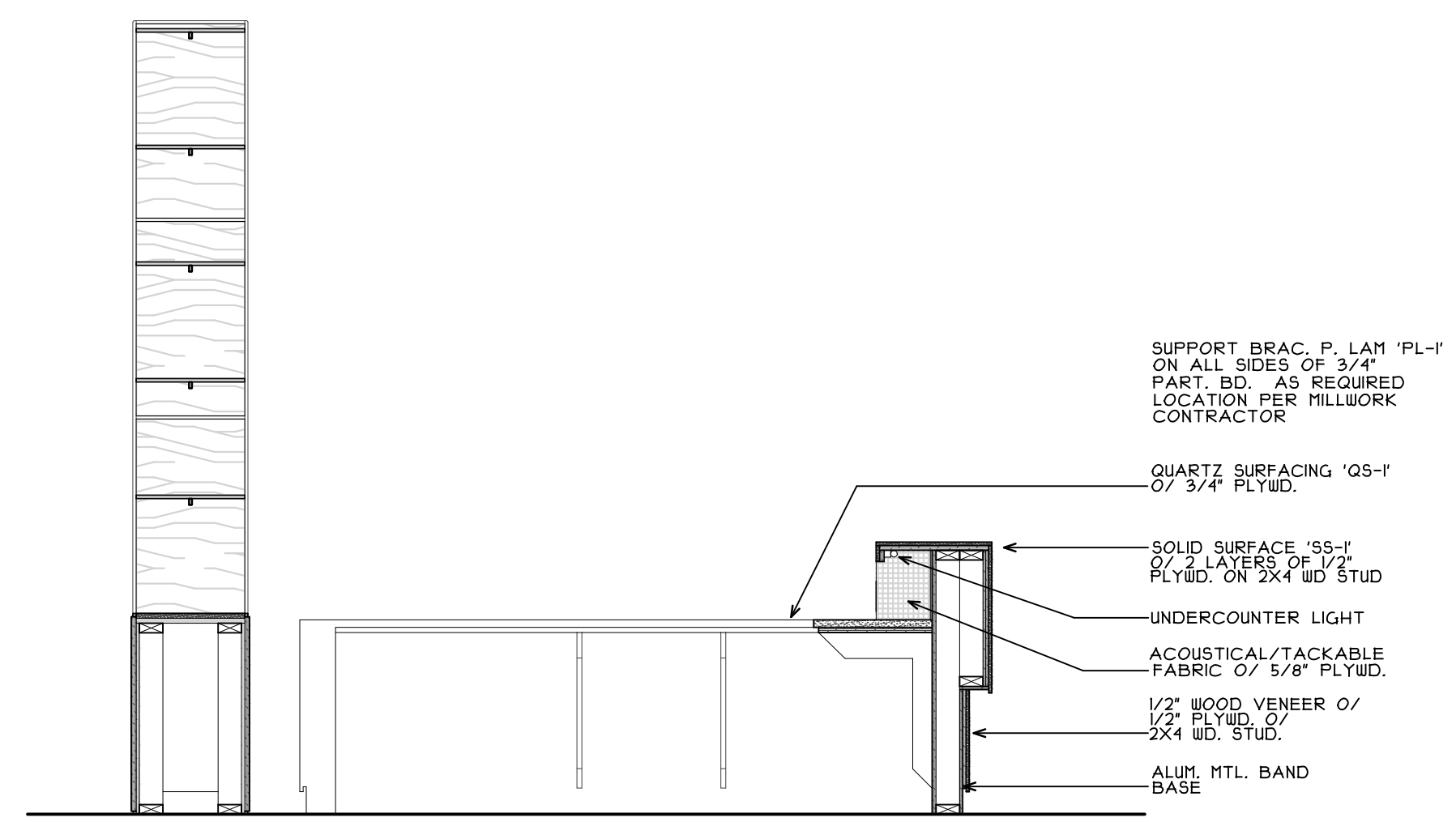
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ENLARGED RESTROOM FLOOR PLAN

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

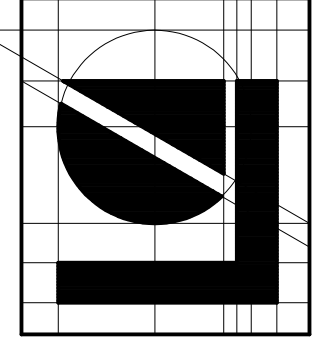


- TACKABLE WALLCOVERING 'WC-2'
- SOLID SURFACE 'SS-1' COUNTERTOP O/ 3/4" PLYWD.
- QUARTZ SURFACES 'QS-1'
- SUPPORT BRAC. P. LAM ON ALL SIDES OF 3/4" PART. BD. AS REQUIRED LOCATION PER MILLWORK CONTRACTOR
- 3/4" WOOD VENEER W/ 1/4" RETAL REVEALS

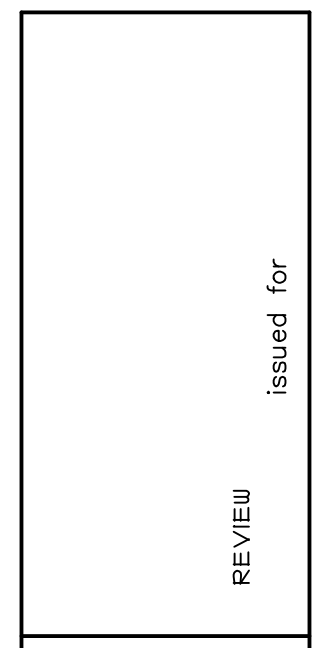
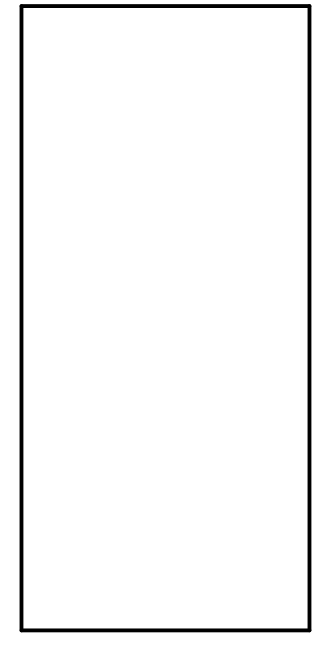


1
A4.2 PRODUCTS & SALES COUNTER INT. ELEVATIONS

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



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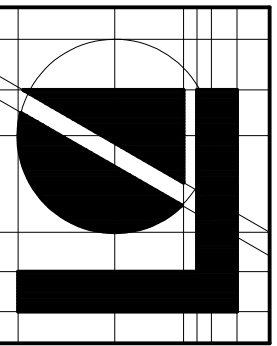
01-01-2014
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dr: MRL
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 INTERIOR ELEVATIONS

A4.2
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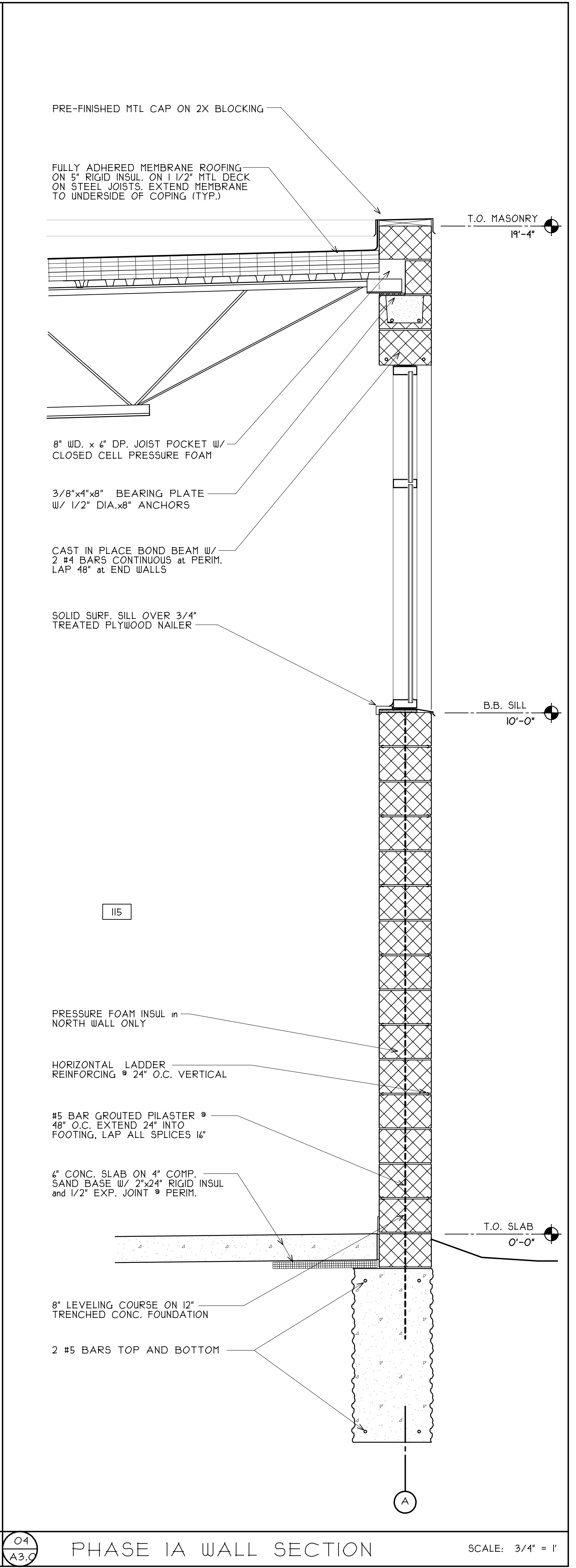
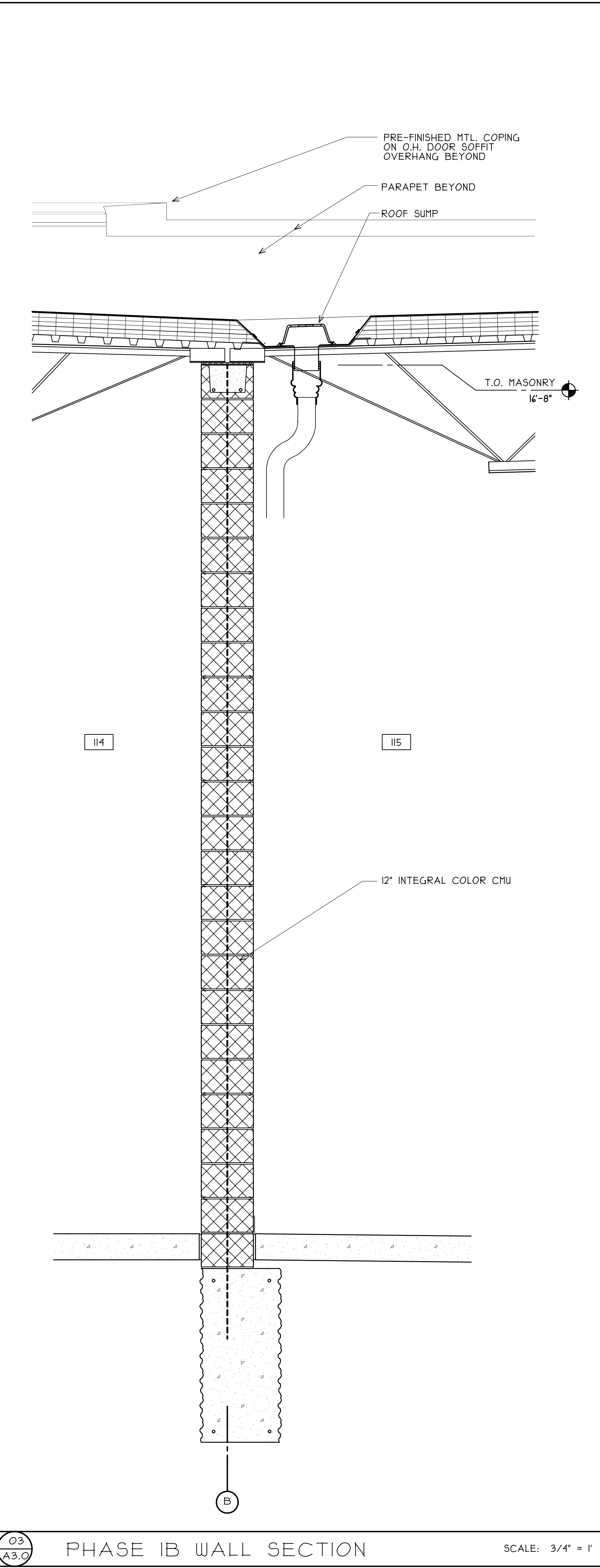
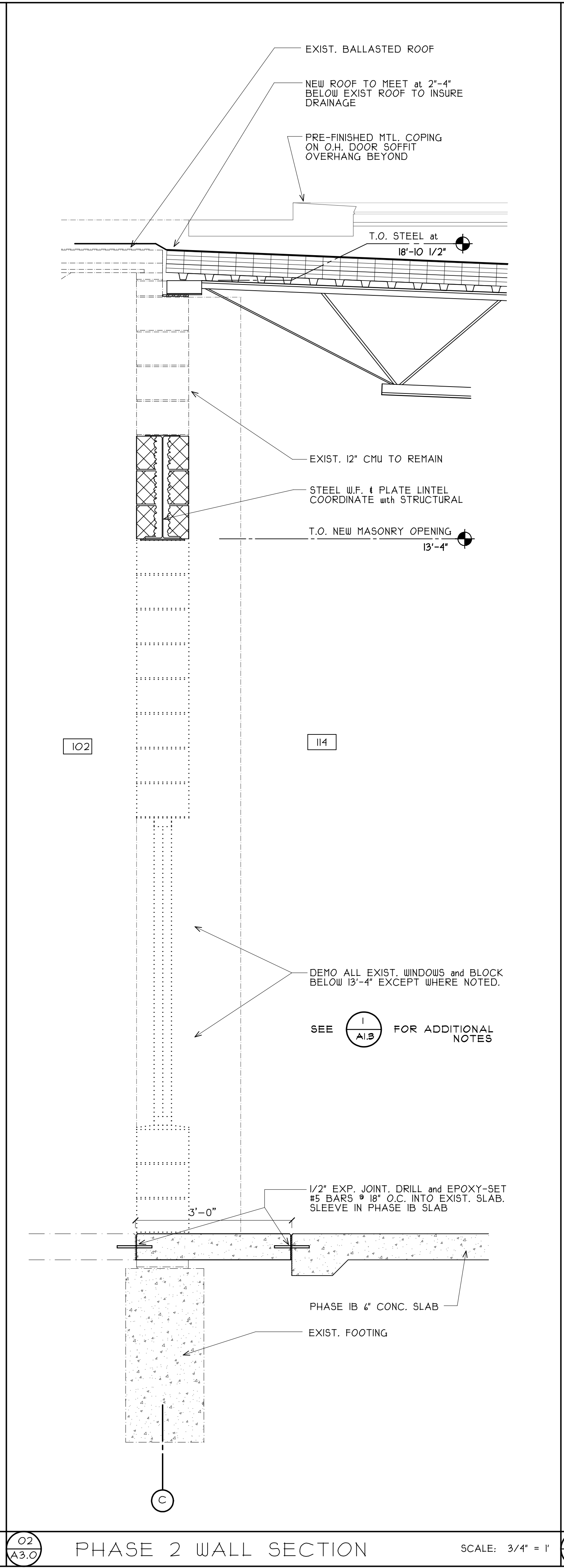
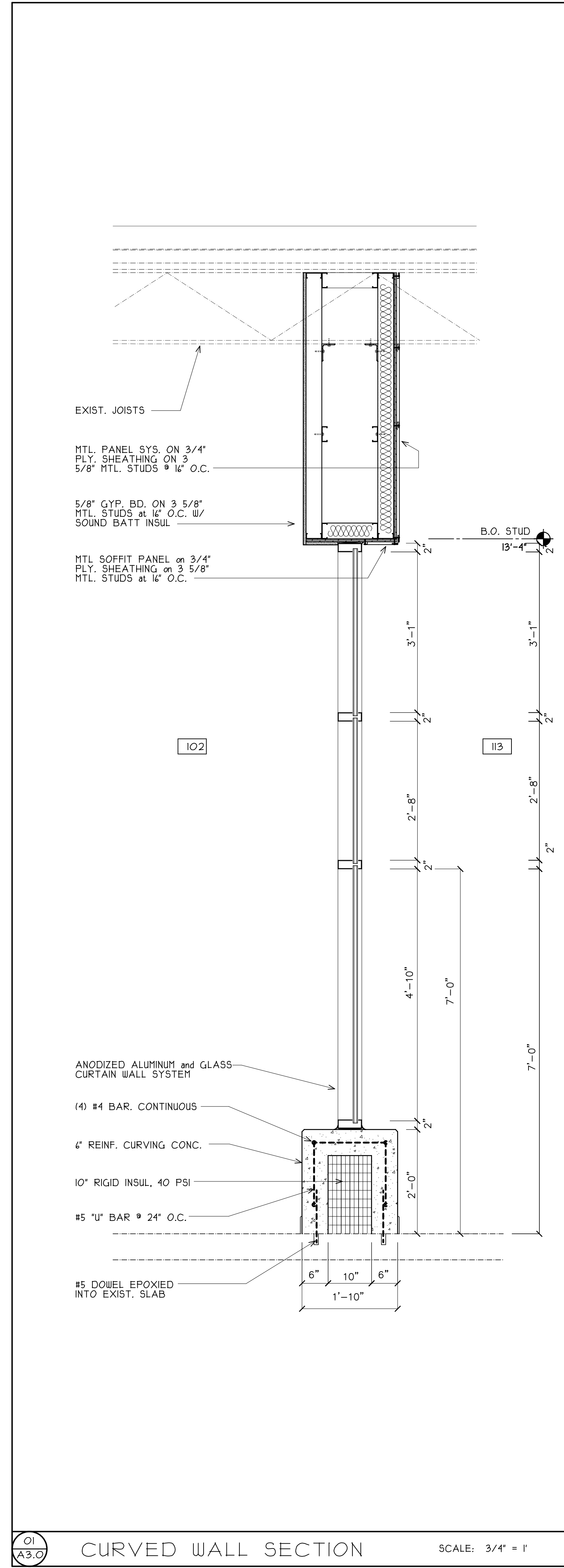
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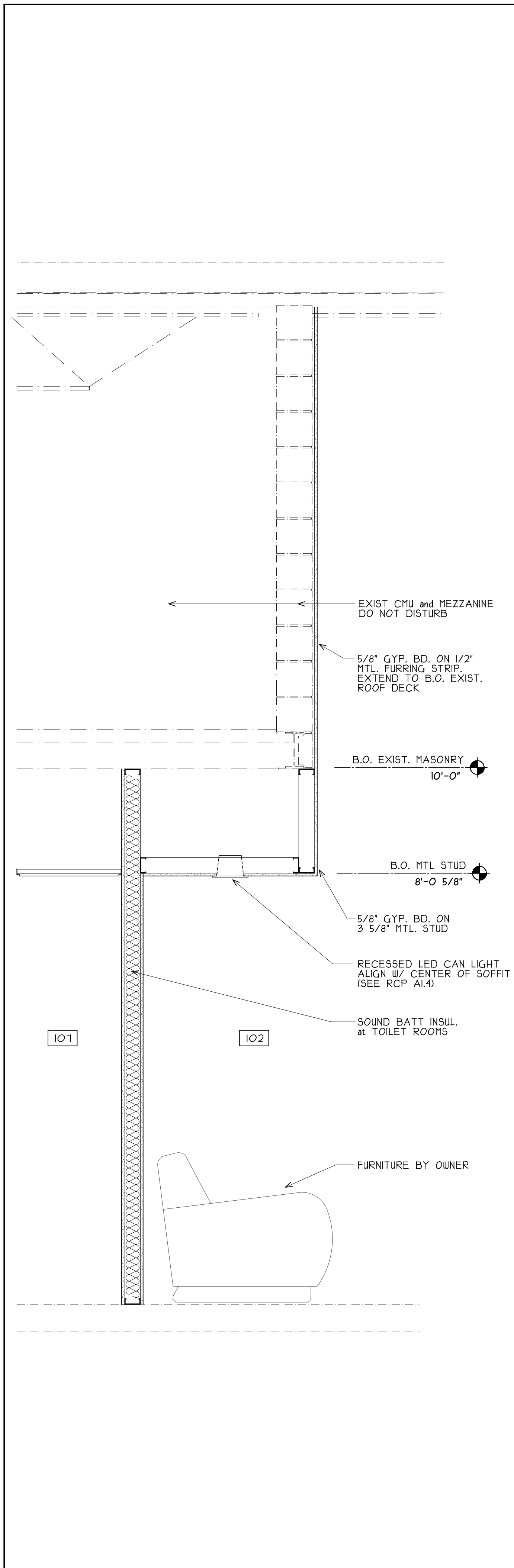
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PROPOSED ADDITION FOR:
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 LIVONIA, MICHIGAN
WALL SECTIONS

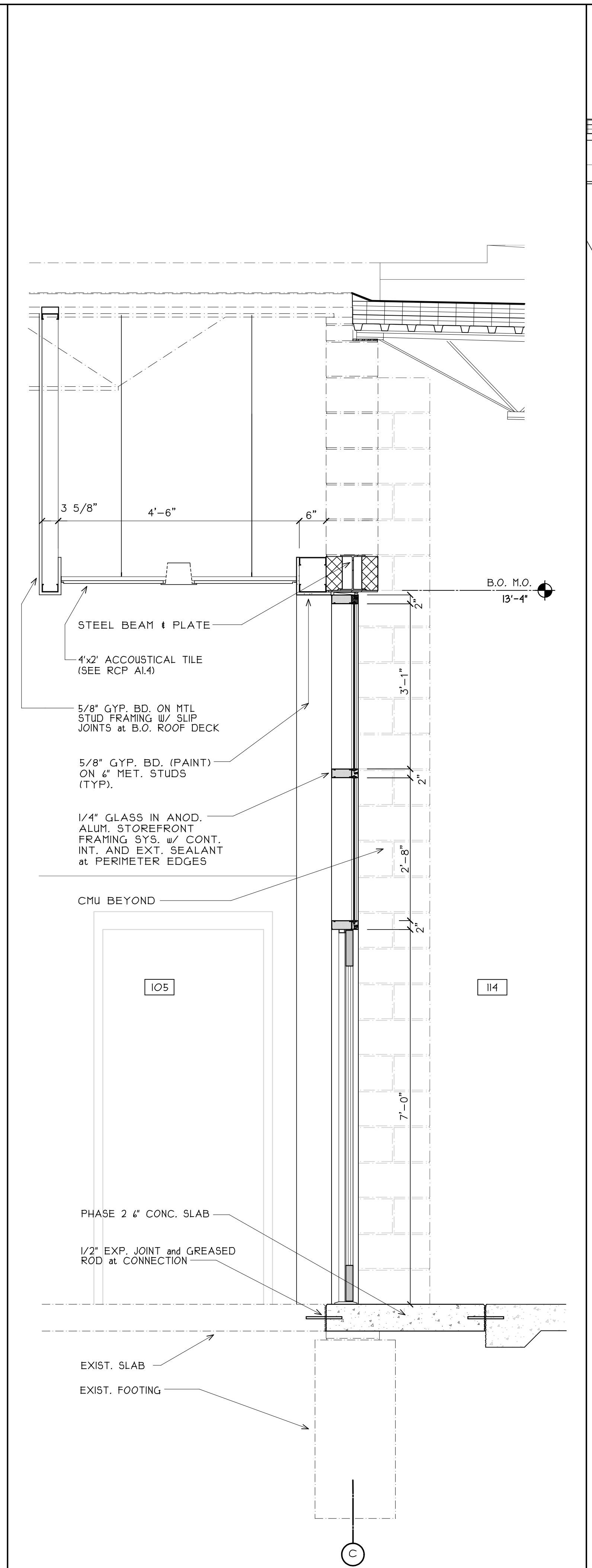
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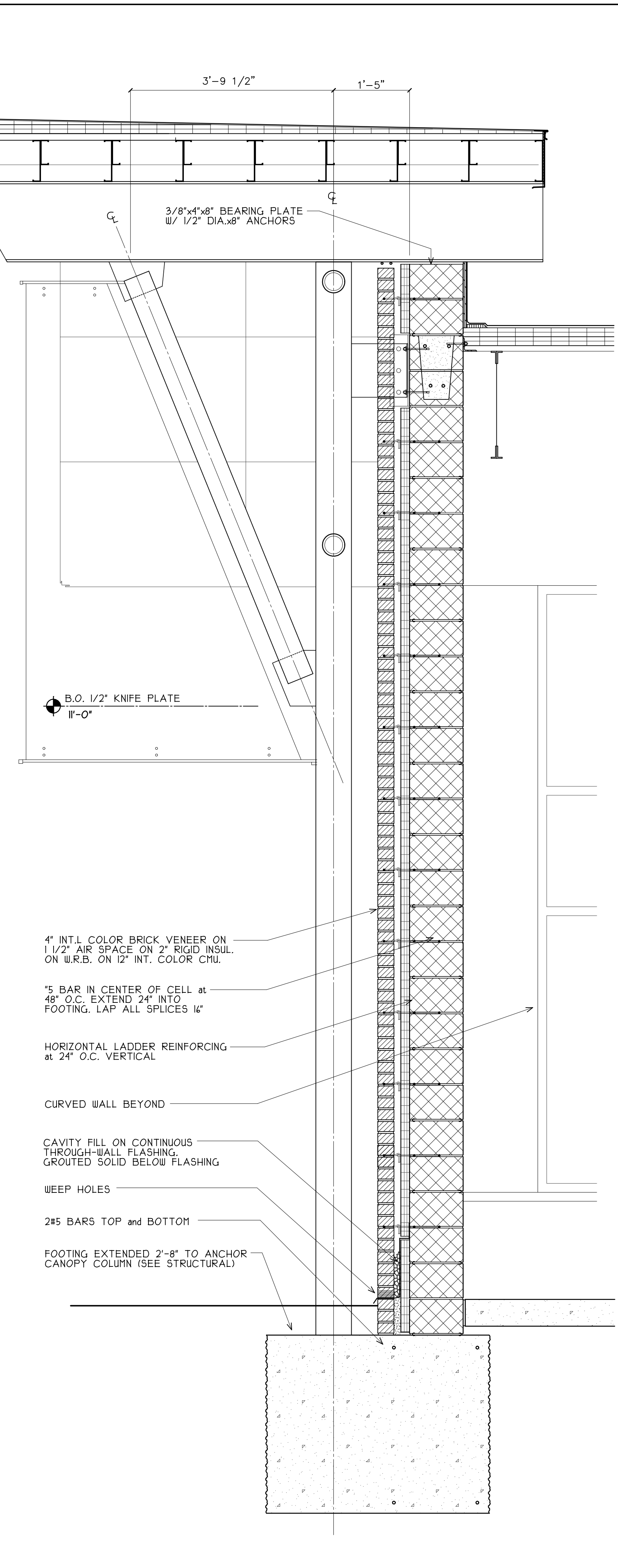
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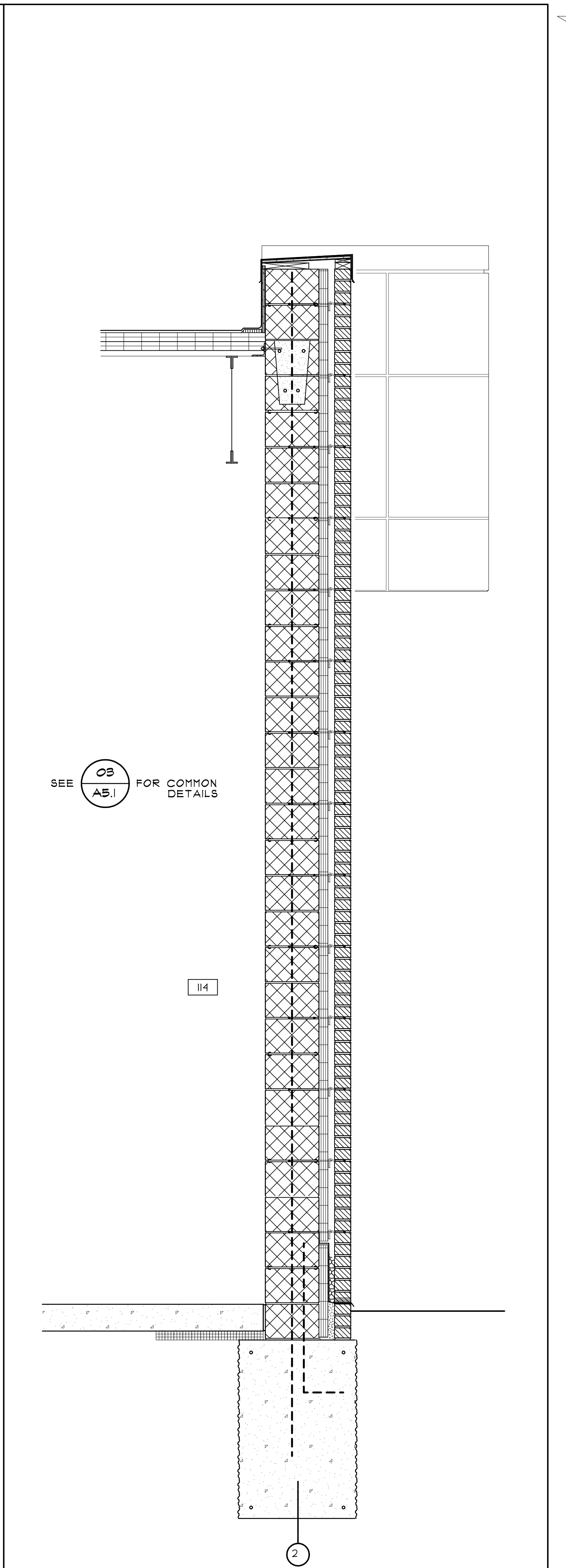
01 WALL SECTION SCALE: 3/4" = 1'



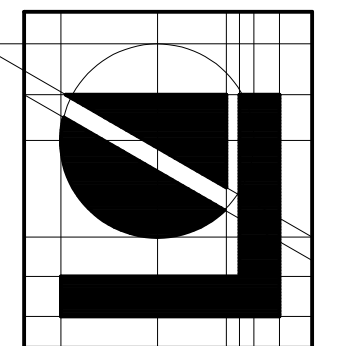
02 WALL SECTION SCALE: 3/4" = 1'



03 WALL SECTION SCALE: 3/4" = 1'



04 WALL SECTION SCALE: 3/4" = 1'



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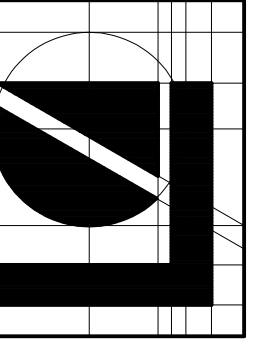
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PROPOSED ADDITION FOR:
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 LIVONIA, MICHIGAN
WALL SECTIONS

A5.1
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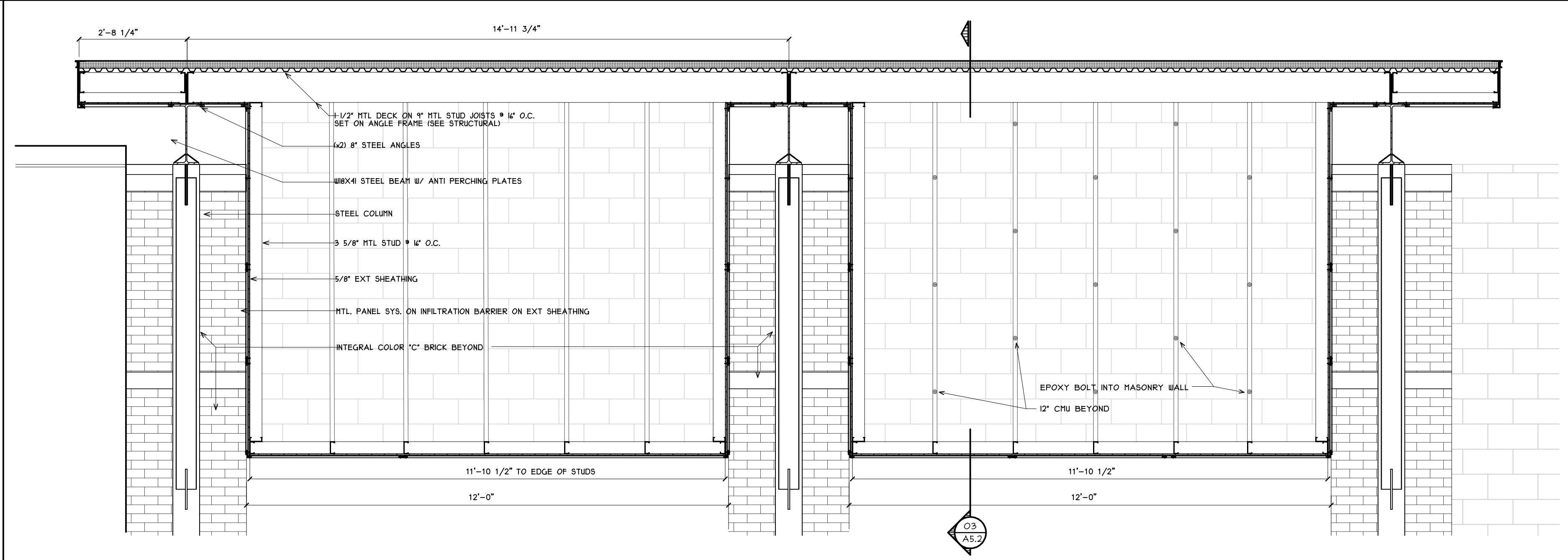
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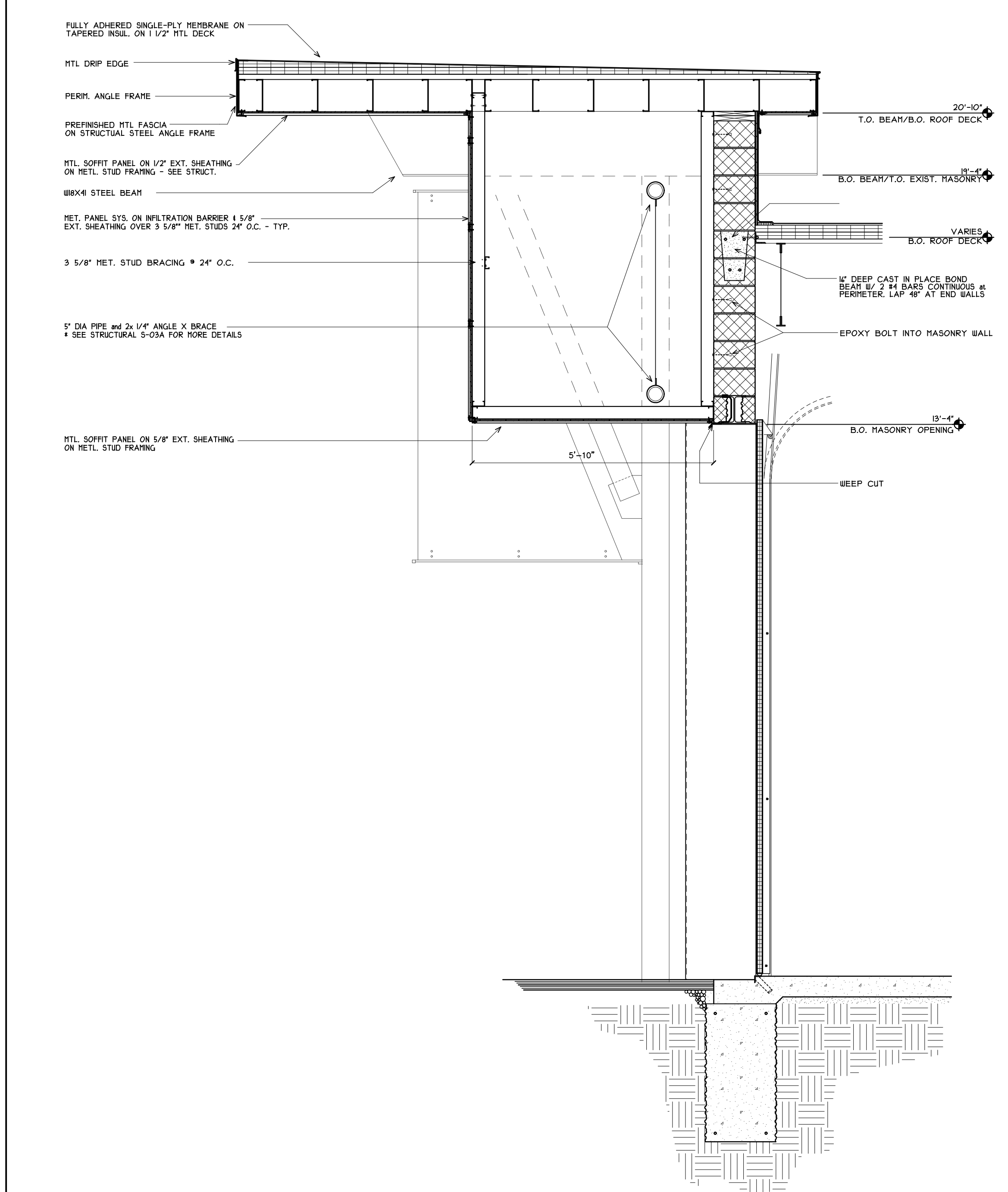
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WALL SECTIONS

AS.2

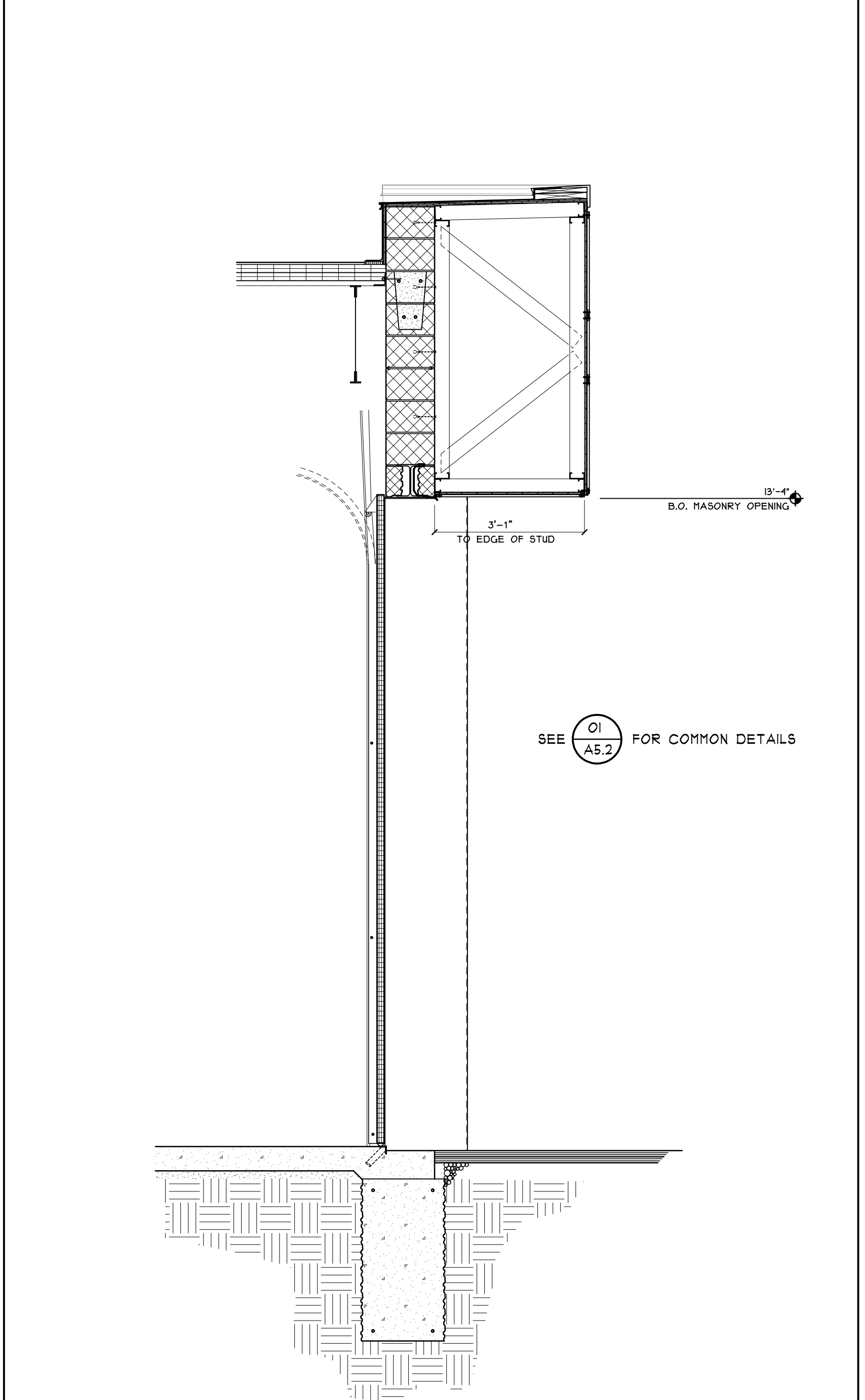
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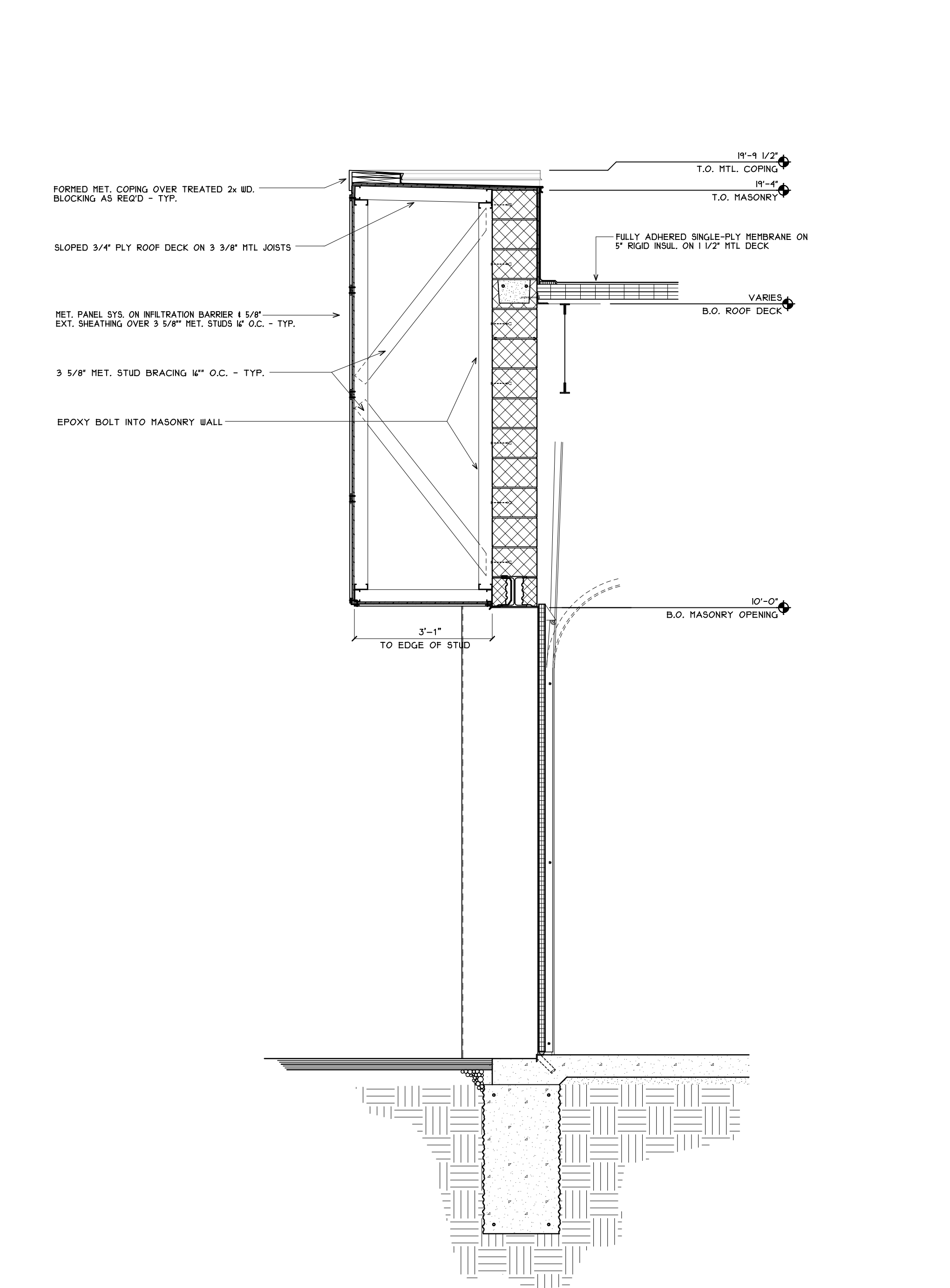
04
 A1.3 CUSTOMER SERVICE ENTRANCE- CANOPY SECTION SCALE: 1/2" = 1'



03
 A1.3 CUSTOMER SERVICE ENTRANCE: SECTION DETAIL SCALE: 1/2" = 1'



02
 A1.3 ENTRY SOFFIT SECTION SCALE: 1/2" = 1'



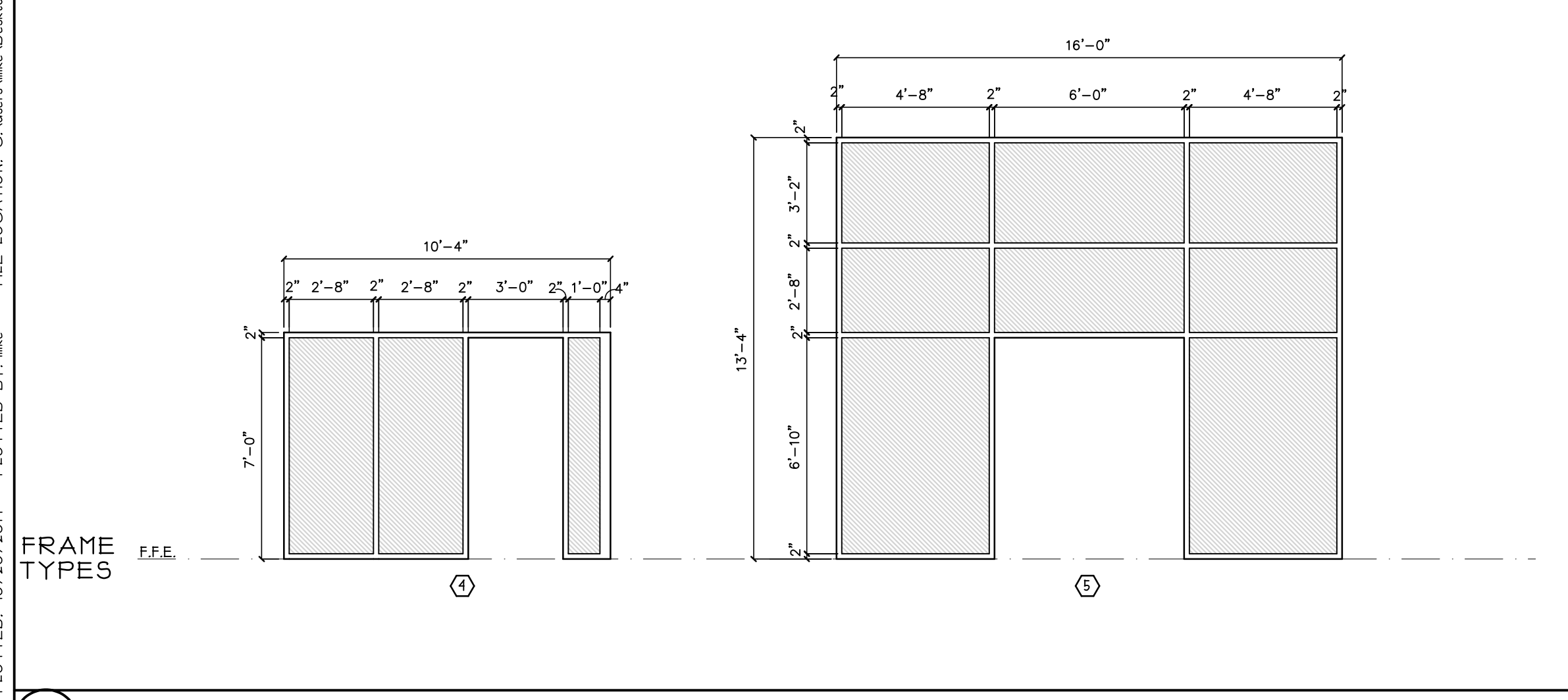
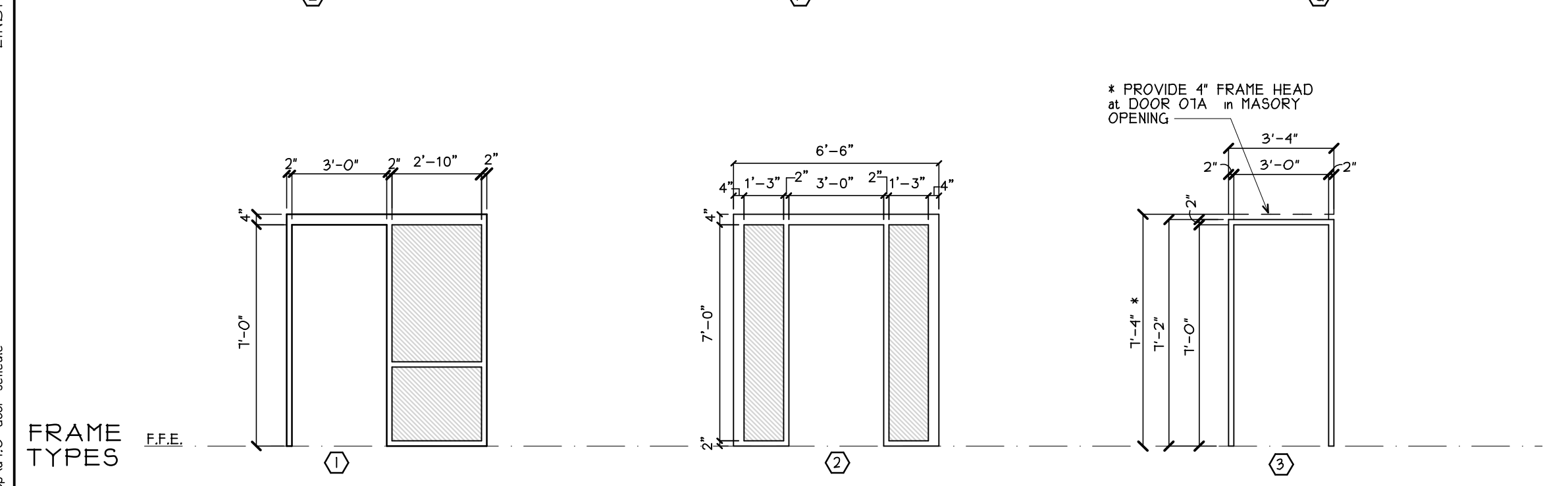
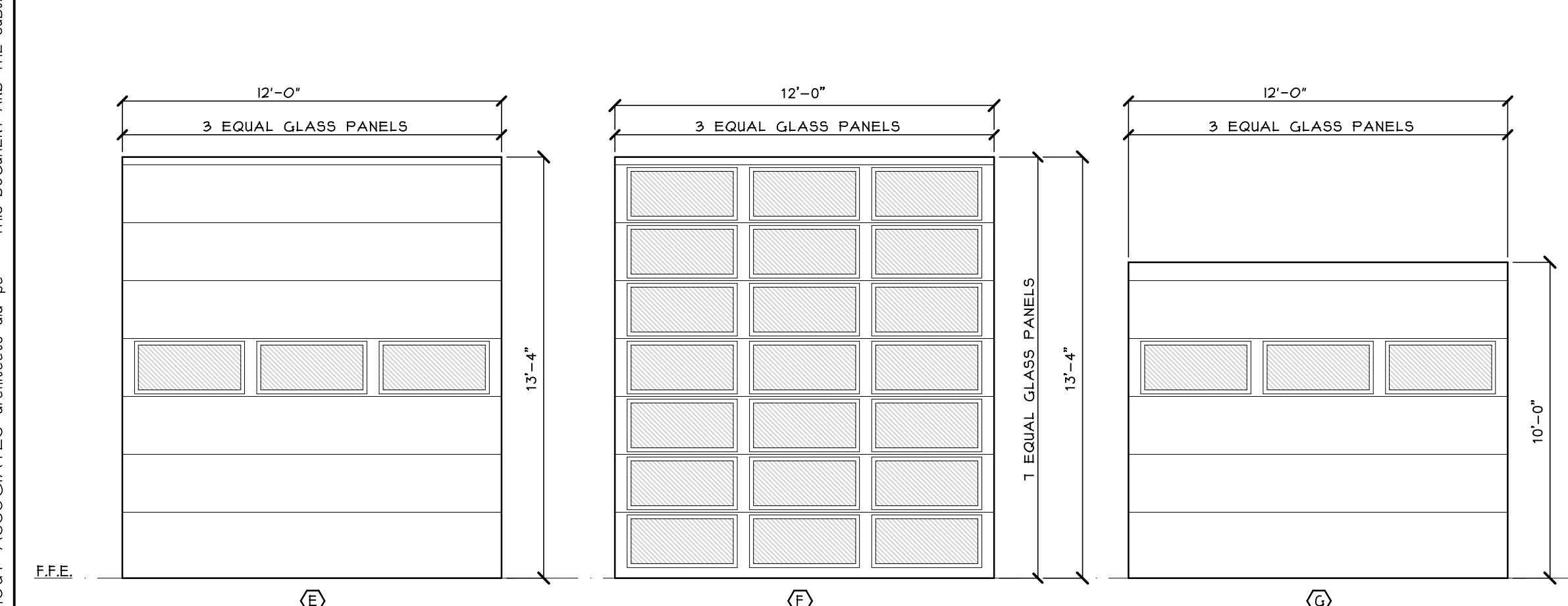
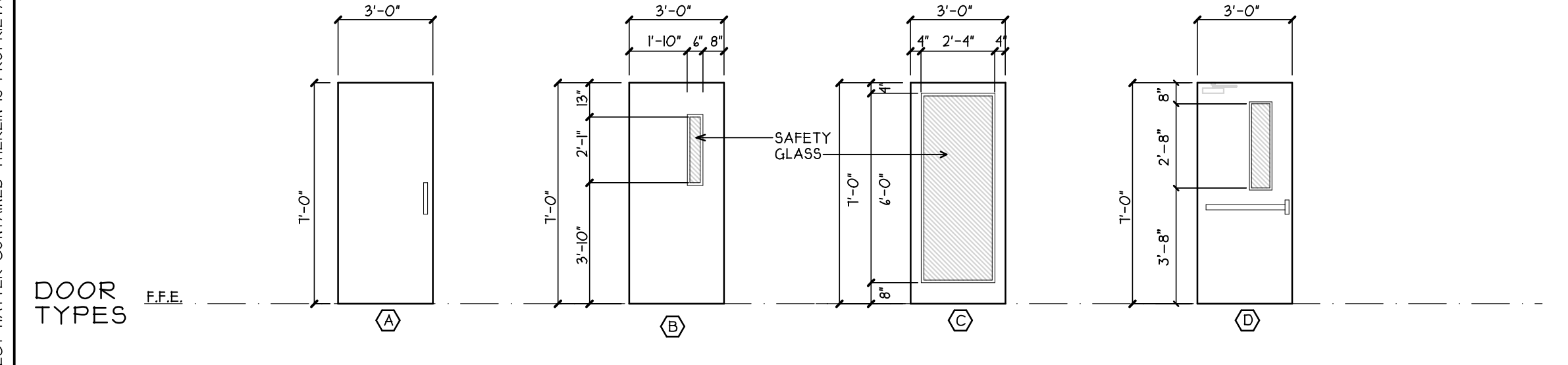
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 A1.3 ENTRY SOFFIT SECTION SCALE: 1/2" = 1'

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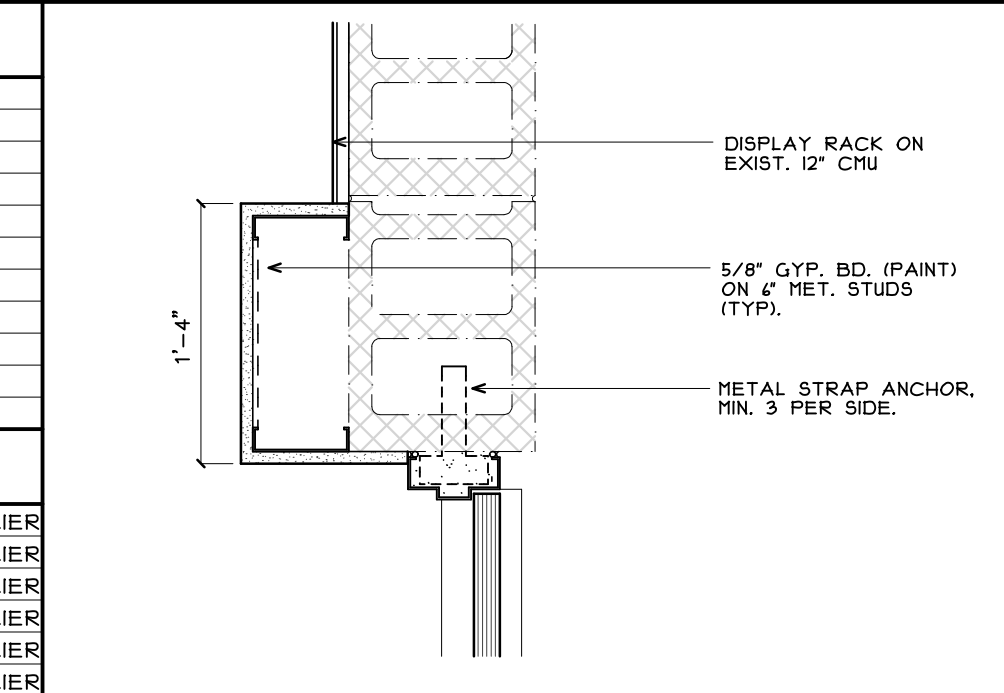
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		TYPE	MAT.	FIN.	TYPE	MAT.	FIN.	HEAD	JAMB	SILL	
NO1	3'-0" x 7'-0"	B	H.M.	PT.	3*	H.M.	PT.	02/A1.0	02/A1.0	04/A1.0	
NO2	3'-0" x 7'-0"	B	H.M.	PT.	3*	H.M.	PT.	02/A1.0	02/A1.0	04/A1.0	
NO3	3'-0" x 7'-0"	C	ALUM. S.F.	ANOD.	1	ALUM. S.F.	ANOD.	10/A1.0	09/A1.0	08/A1.0	
NO4	3'-0" x 7'-0"	C	ALUM. S.F.	ANOD.	2	ALUM. S.F.	ANOD.	17/A1.0	18/A1.0	17/A1.0	
NO5	3'-0" x 7'-0"	A	H.M.	PT.	3	H.M.	PT.	11/A1.0	12/A1.0	11/A1.0	
NO6	3'-0" x 7'-0"	A	H.M.	PT.	3	H.M.	PT.	11/A1.0	12/A1.0	11/A1.0	
NO1	(2) 3'-0" x 7'-0"	B	H.M.	PT.	-	ALUM. S.F.	ANOD.	13/A1.0	14/A1.0	13/A1.0	SEE WINDOW W08 FOR FRAME TYPE
NO8	(2) 3'-0" x 7'-0"	B	H.M.	PT.	5	ALUM. S.F.	ANOD.	02/A5.1	16/A1.0	02/A5.1	
NO9	3'-0" x 7'-0"	D	H.M.	PT.	3*	H.M.	PT.	19/A5.1	15/A1.0	05/A1.0	
NO	3'-0" x 7'-0"	C	ALUM. S.F.	ANOD.	4	ALUM. S.F.	ANOD.	17/A1.0	18/A1.0	17/A1.0	
NI	3'-0" x 7'-0"	D	H.M.	PT.	3*	H.M.	PT.	19/A5.1	20/A1.0	03/A1.0	

OH DOOR #	SIZE (H x W)	OH DOOR			FRAME			DETAILS			REMARKS
		TYPE	MAT.	FIN.	TYPE	MAT.	FIN.	HEAD	JAMB	SILL	
OH1	12'-0" x 13'-4"	E	STEEL & GLASS	PT.	STEEL	STEEL	PT.	01/A1.0	02/A1.0	03/A1.0	SECTIONAL DOOR - HARDWARE BY SUPPLIER
OH2	12'-0" x 13'-4"	E	STEEL & GLASS	PT.	STEEL	STEEL	PT.	01/A1.0	02/A1.0	03/A1.0	SECTIONAL DOOR - HARDWARE BY SUPPLIER
OH3	12'-0" x 13'-4"	F	STEEL & GLASS	PT.	STEEL	STEEL	PT.	01/A1.0	02/A1.2	03/A1.0	SECTIONAL DOOR - HARDWARE BY SUPPLIER
OH4	12'-0" x 13'-4"	F	STEEL & GLASS	PT.	STEEL	STEEL	PT.	01/A1.0	02/A1.2	03/A1.0	SECTIONAL DOOR - HARDWARE BY SUPPLIER
OH5	12'-0" x 13'-4"	F	STEEL & GLASS	PT.	STEEL	STEEL	PT.	01/A1.0	02/A1.2	03/A1.0	SECTIONAL DOOR - HARDWARE BY SUPPLIER
OH6	12'-0" x 13'-4"	F	STEEL & GLASS	PT.	STEEL	STEEL	PT.	01/A1.0	02/A1.2	03/A1.0	SECTIONAL DOOR - HARDWARE BY SUPPLIER
OH7	12'-0" x 10'-0"	G	STEEL & GLASS	PT.	STEEL	STEEL	PT.	04/A1.0	02/A1.2	03/A1.0	SECTIONAL DOOR - HARDWARE BY SUPPLIER

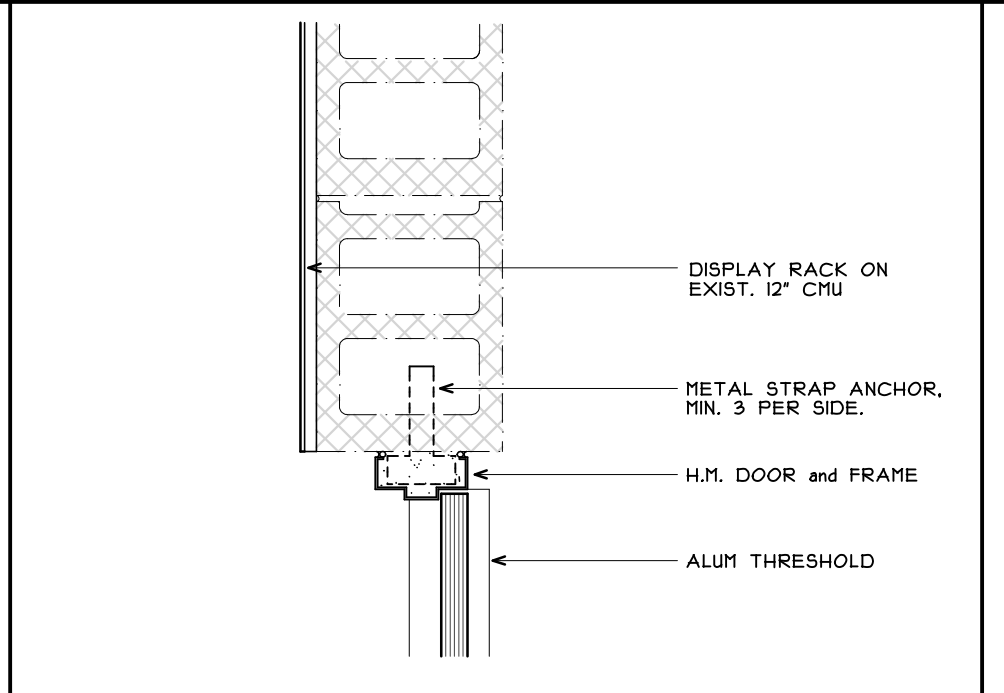
1 DOOR SCHEDULE



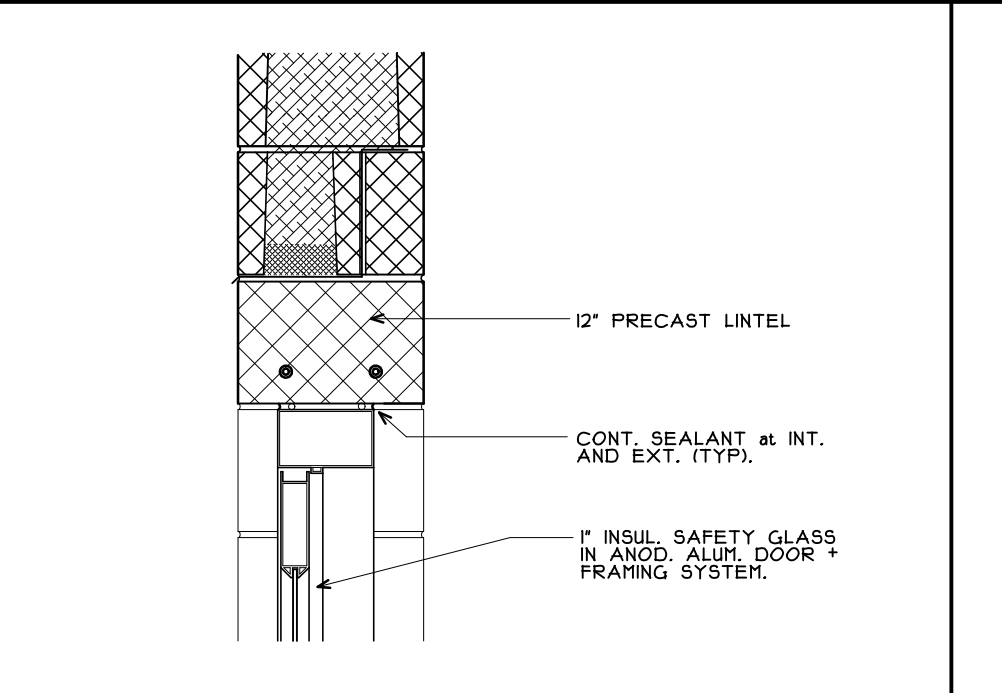
2 DOOR AND FRAME SCHEDULE SCALE: 1/4" = 1'-0"



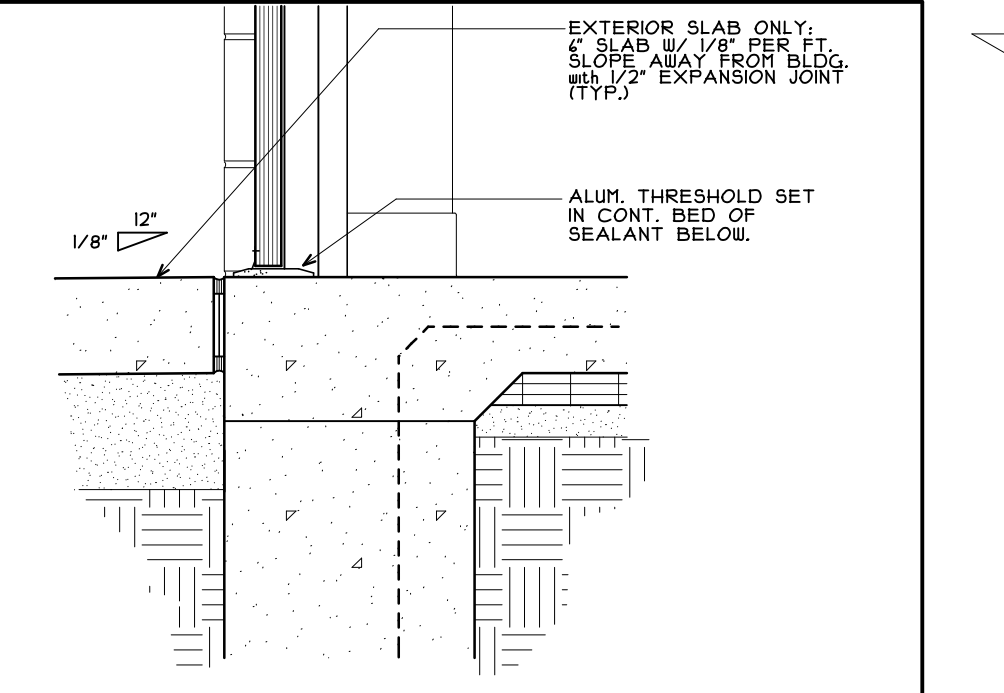
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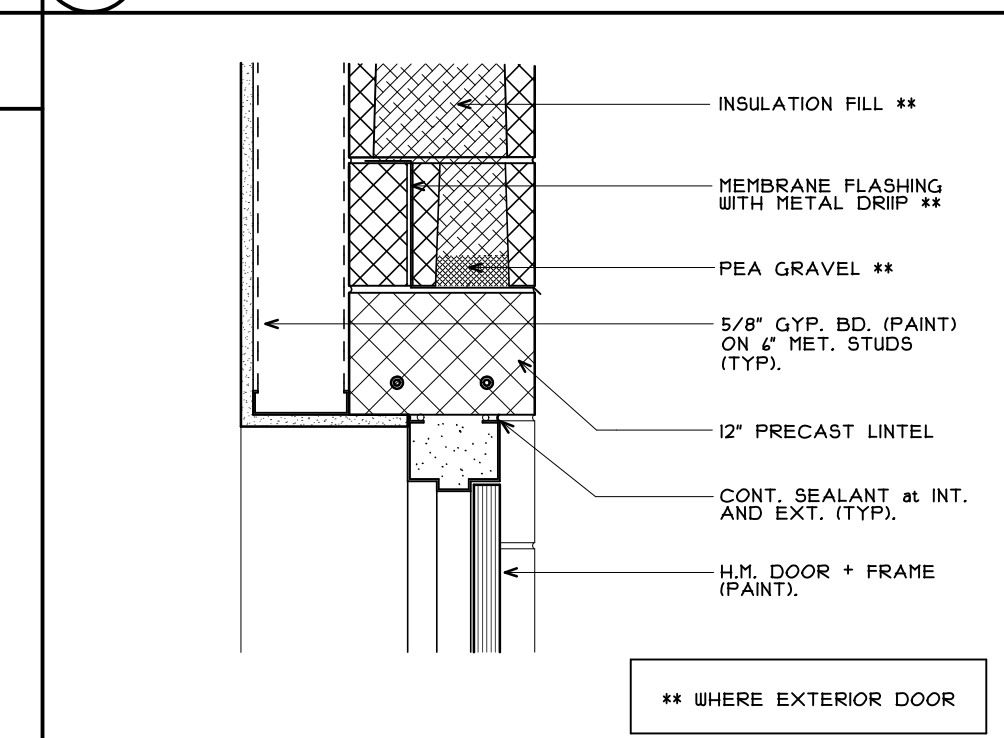
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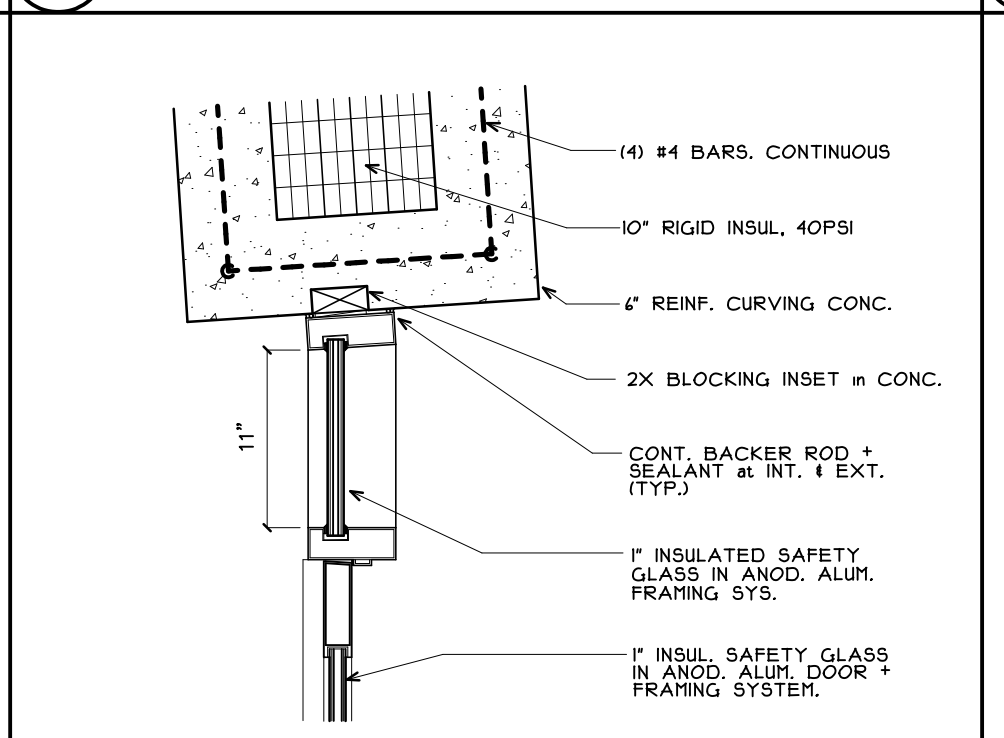
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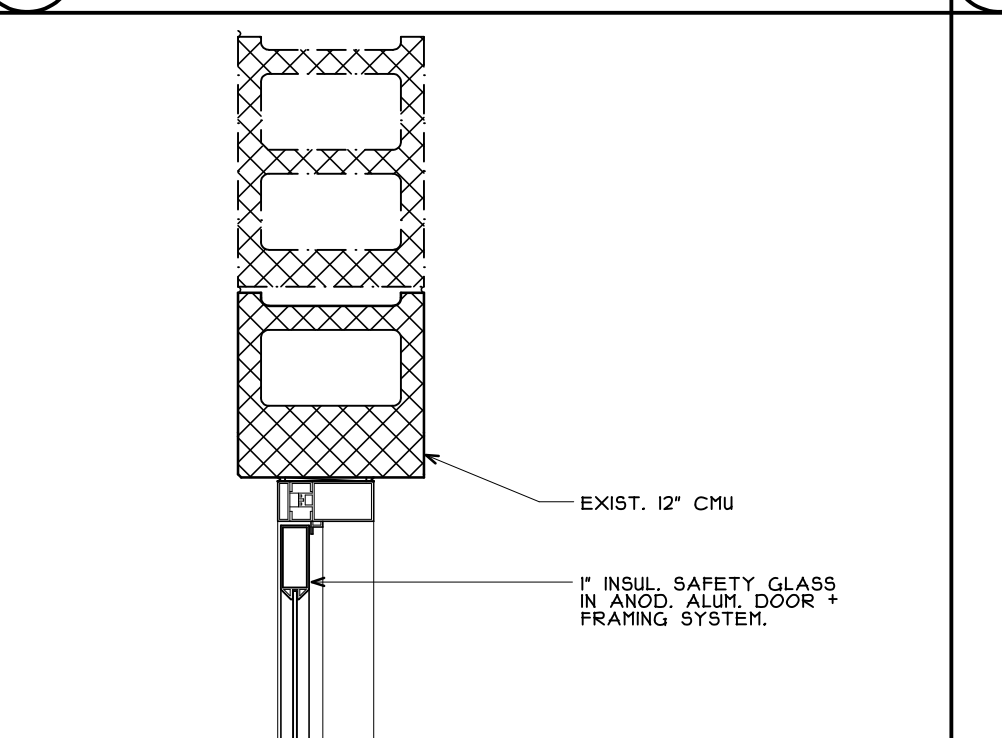
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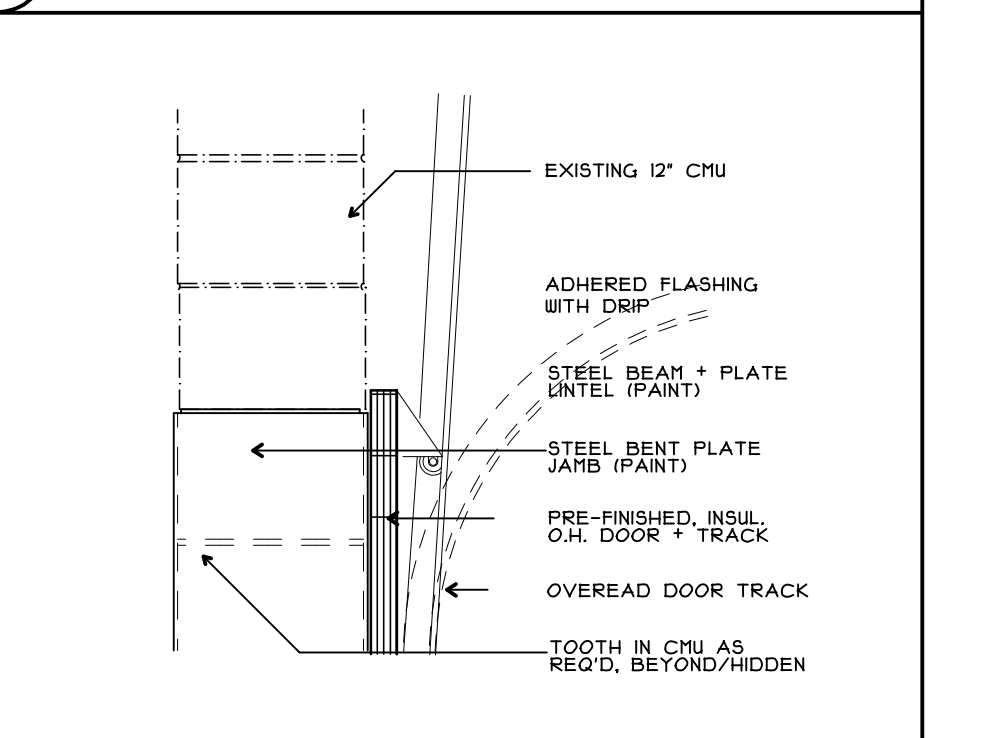
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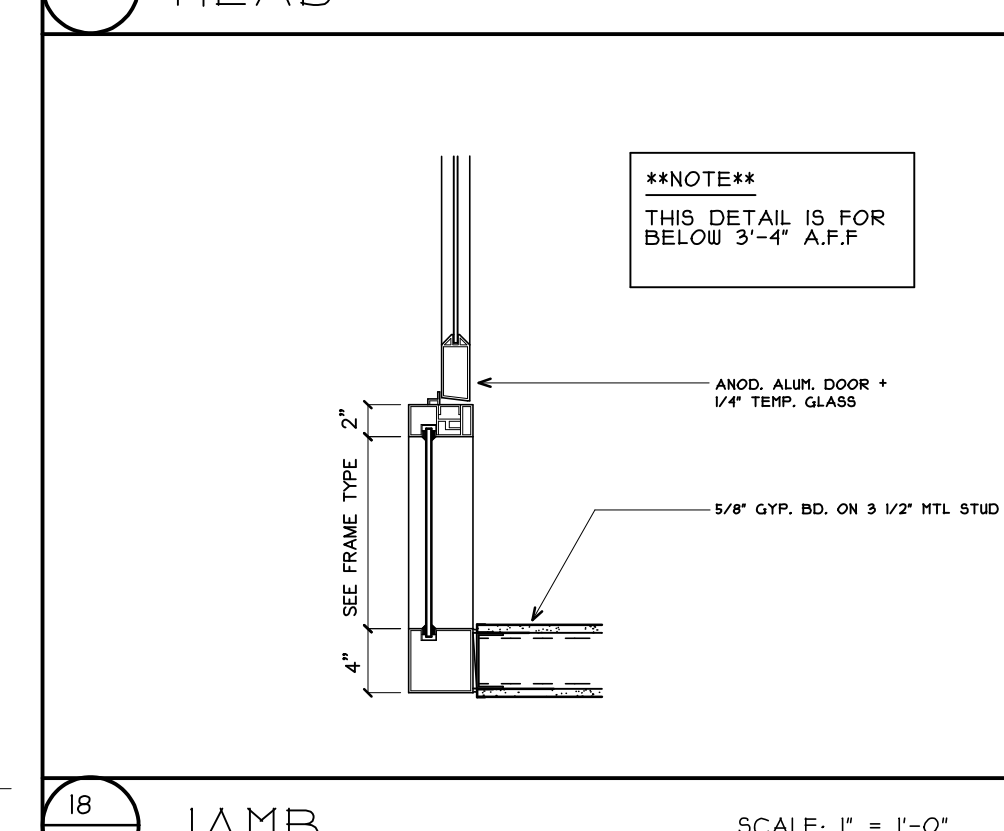
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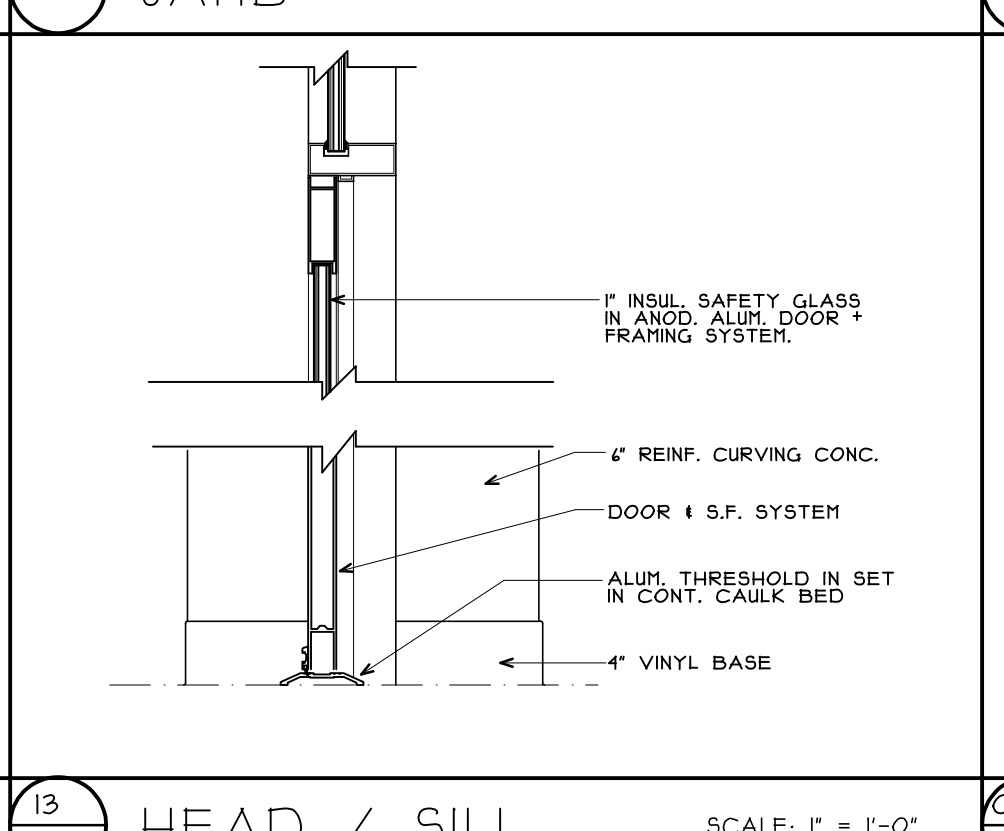
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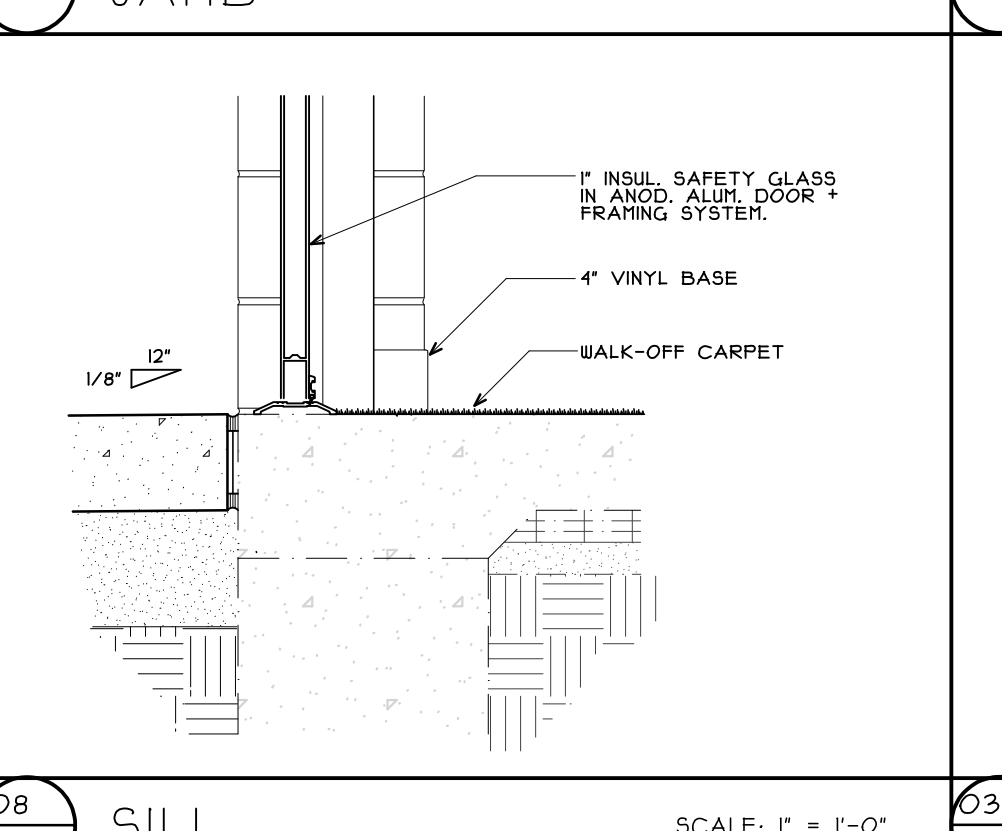
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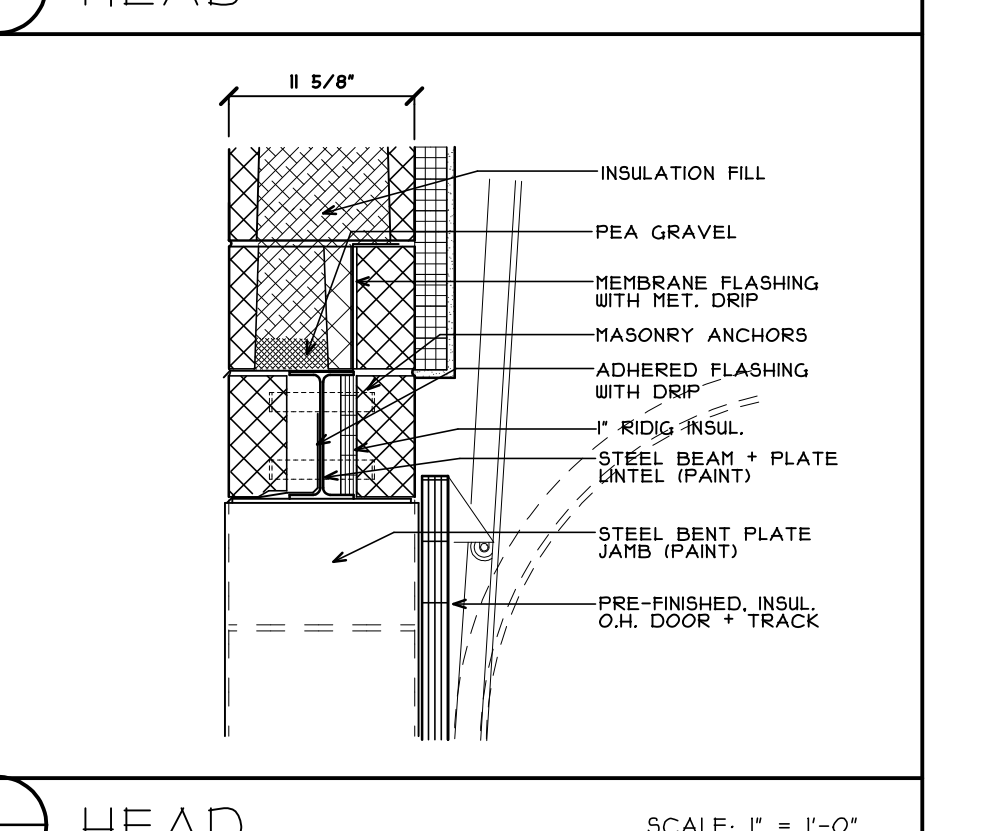
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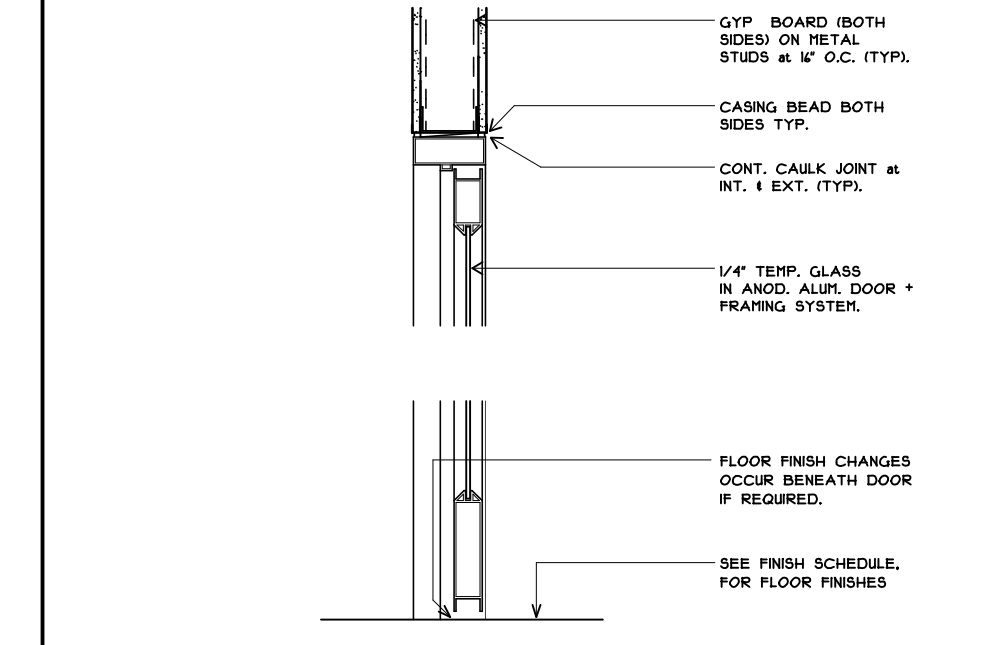
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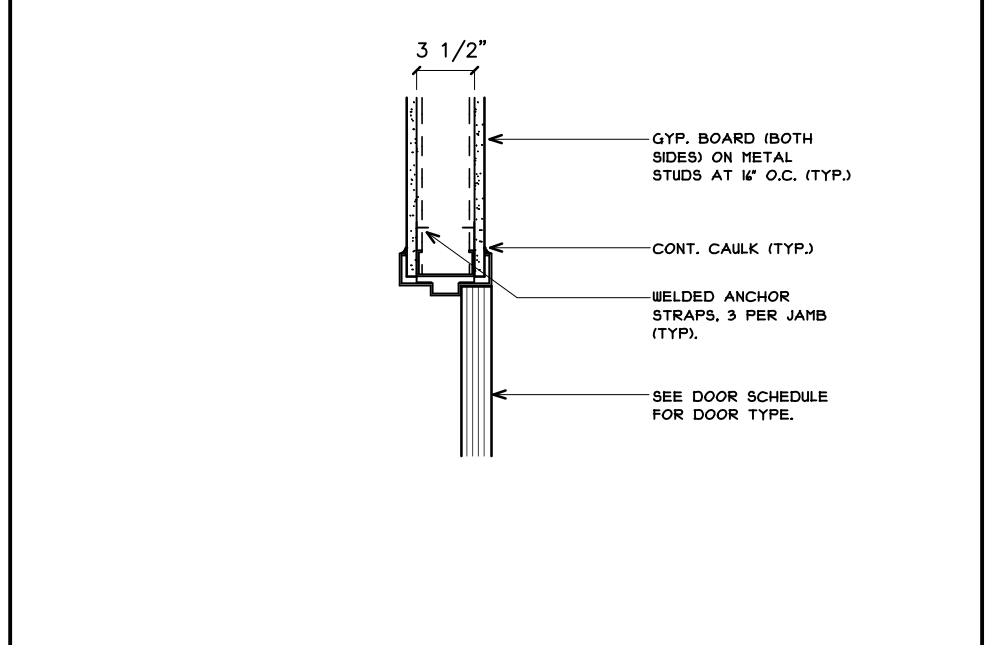
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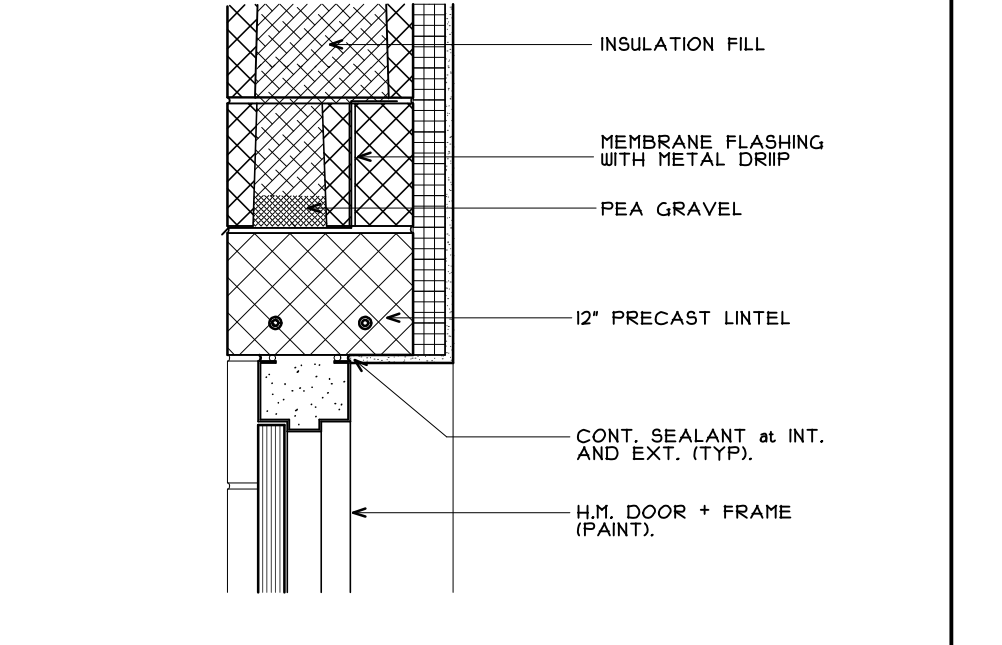
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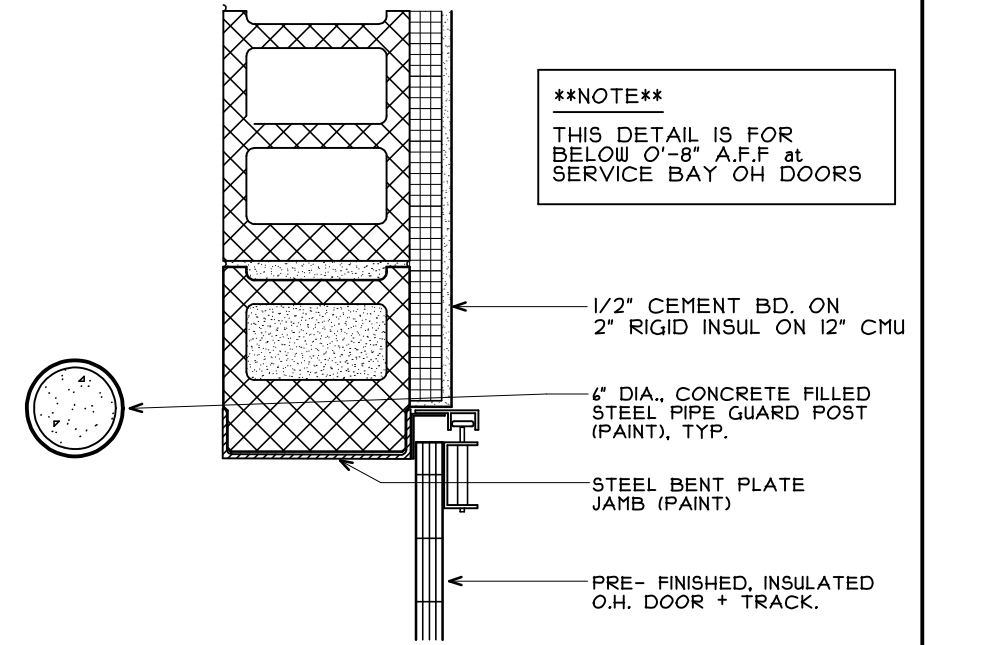
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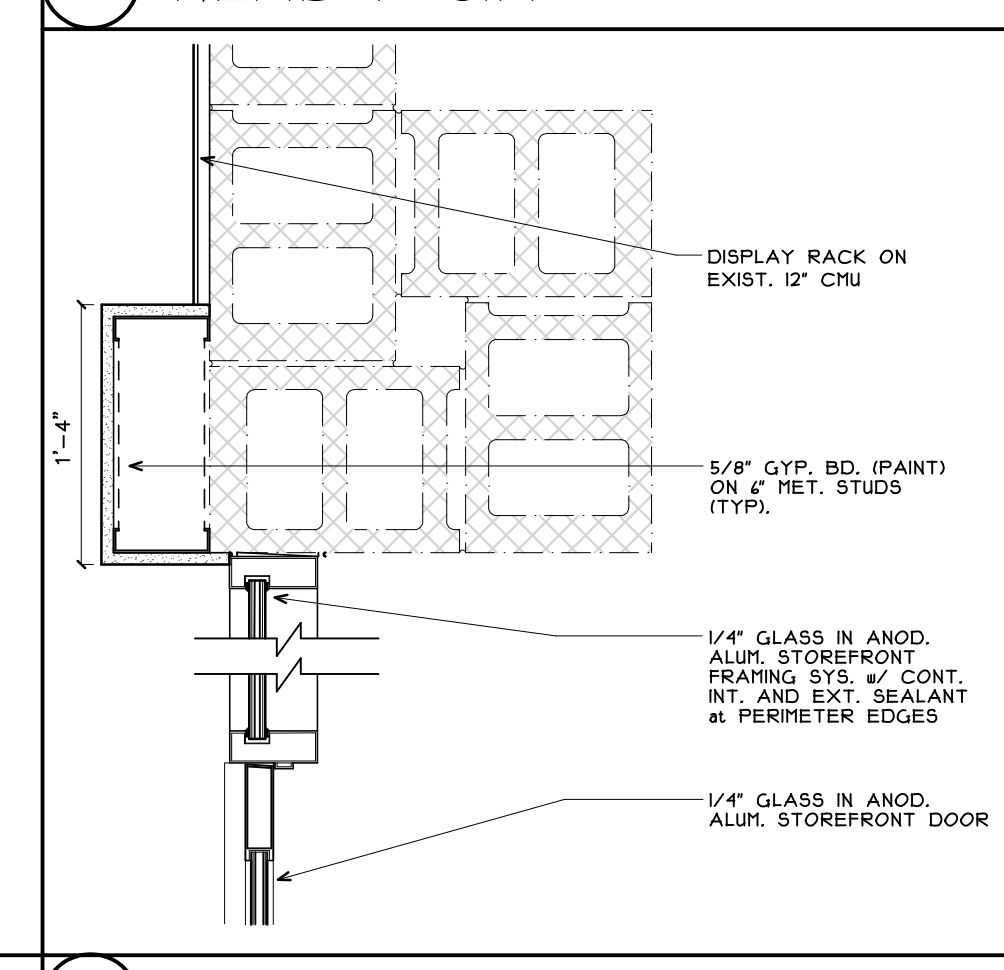
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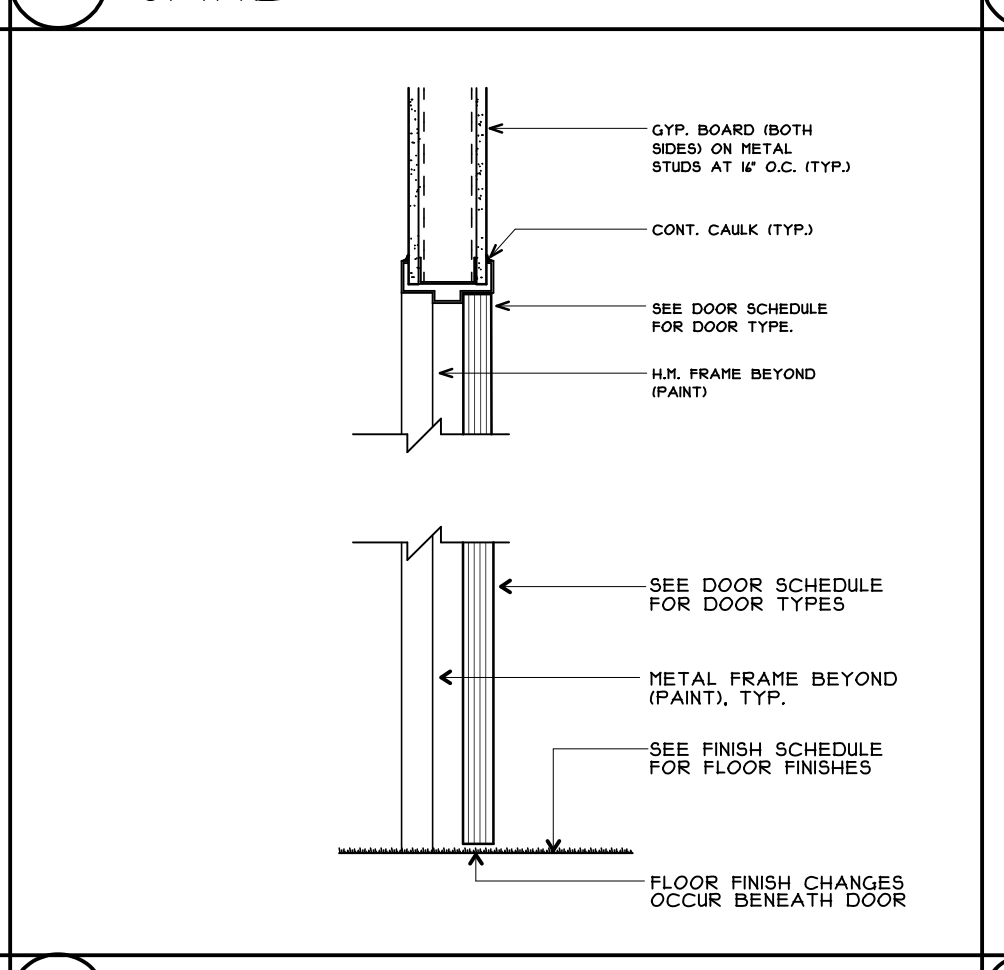
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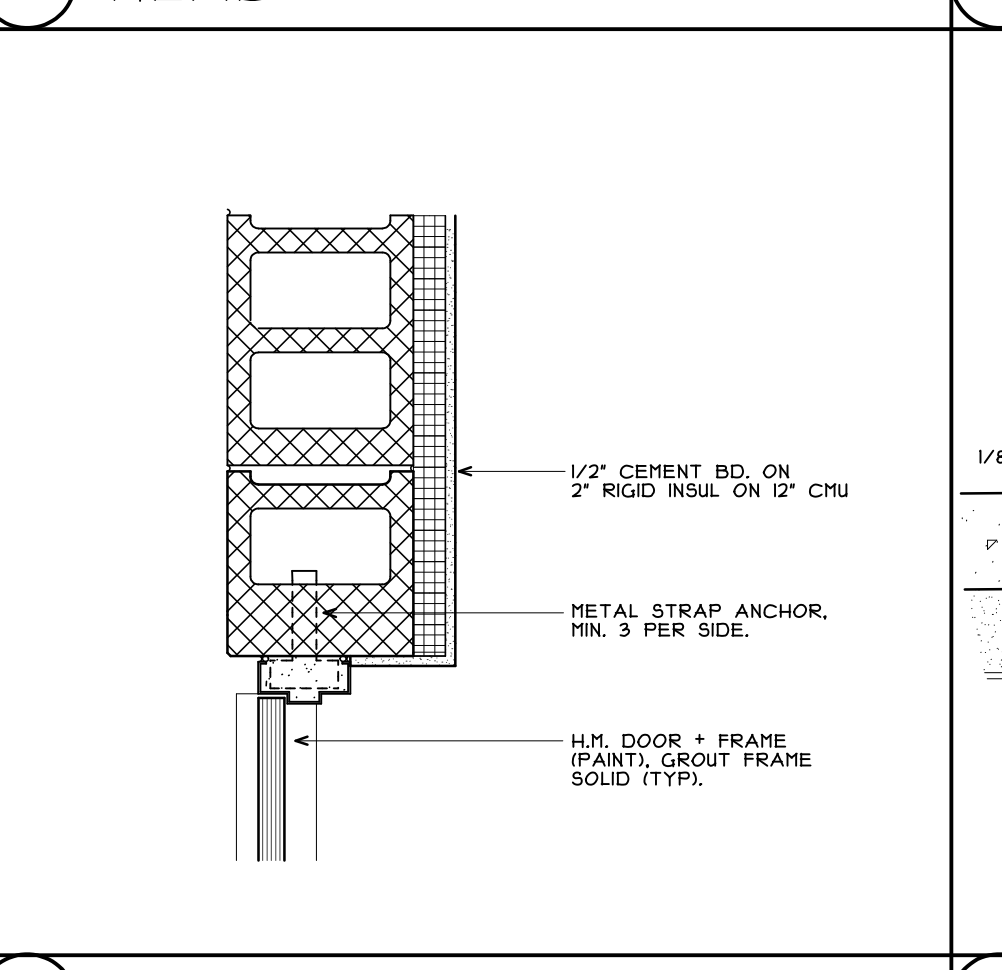
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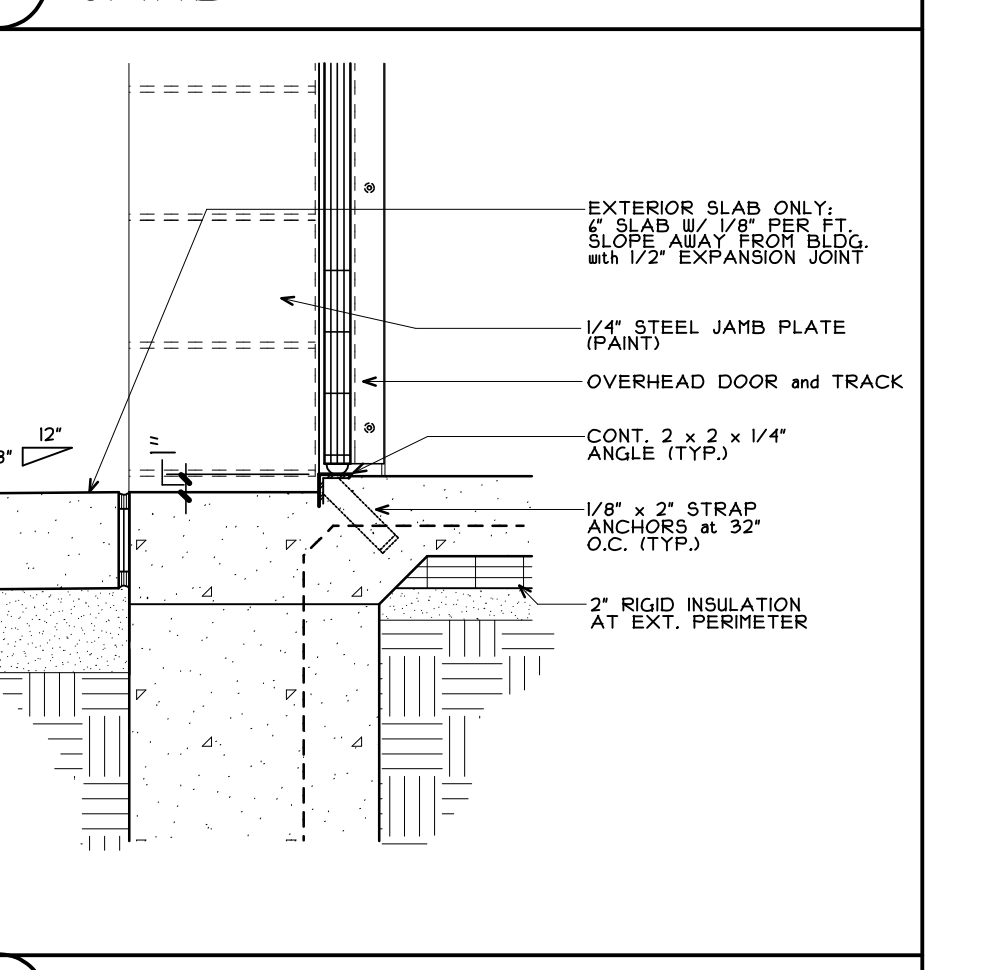
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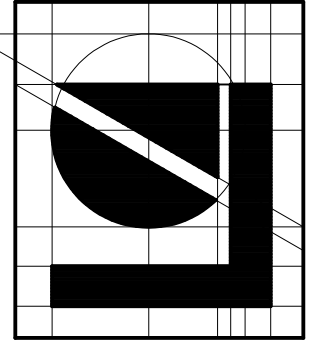
32 JAMB SCALE: 1" = 1'-0"



33 HEAD SCALE: 1" = 1'-0"



34 SILL SCALE: 1" = 1'-0"



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BID SET
OWNER REVIEW
ISSUED FOR

10-15-2014
06-07-2014
date

dr: MFL
ckd:
app d:

PROPOSED ADDITION FOR:
BILL BROWN FORD
CUSTOMER SERVICE CENTER
LIVONIA, MICHIGAN
DOOR SCHEDULE & DETAILS

A7.0
1429

PLUMBING SPECIFICATIONS:

1. PROVIDE MATERIALS AND EQUIPMENT AND EXECUTE THE WORK, INCLUDING ALL TESTING AND INSPECTIONS, IN COMPLIANCE WITH THE APPLICABLE PROVISIONS OF FEDERAL, STATE AND LOCAL ORDINANCES, CODES AND STANDARDS. ALL WORK SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE LOCAL AUTHORITY. THE DATE OF THESE DRAWINGS, ALL MORE STRINGENT REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL MODIFY, SUPPLEMENT AND SUPERSEDE APPLICABLE PORTIONS OF GOVERNING LAWS, ORDINANCES, CODES AND STANDARDS.
2. CONTRACTOR SHALL PRESENT CERTIFICATE TO THE TENDANT AND LANDLORD THAT ALL APPLICABLE LOCAL, STATE AND FEDERAL ORDINANCES, CODES AND STANDARDS HAVE BEEN MET AND THAT ALL APPLICABLE LOCAL AND LANDLORD WITH ALL REQUIRED CERTIFICATES OF FINAL APPROVAL FROM THE GOVERNING JURISDICTIONS AT COMPLETION OF THE WORK. PROVIDE ALL SHOP DRAWINGS AS REQUIRED IN FOLLOWING SECTIONS.
3. COORDINATE EXACT LOCATION OF CONSTRUCTION TO PRECLUDE ANY INTERFERENCES BETWEEN PIPES, MARKS, LIGHTING FIXTURES, DUCTWORK, BUILDING EQUIPMENT, PROCESS EQUIPMENT AND OTHER CONSTRUCTION.
4. PROVIDE LABOR, INCLUDING FIELD ERECTION AND SUPERVISION, MATERIALS, EQUIPMENT AND ANCHLAINERS, AND COORDINATE, PROCURE, FABRICATE, DELIVER, ERECT OR INSTALL, INTERFACE WITH EXISTING WORK, START, DEBUG AND TEST ALL SYSTEMS AS NECESSARY TO PROVIDE THE OWNER WITH A COMPLETE, OPERATING FACILITY IN CONFORMANCE WITH THE CONSTRUCTION BID DOCUMENTS.
5. ALL CUTTING AND PATCHING THAT MAY BE NECESSARY FOR THE INSTALLATION OF THE MECHANICAL CONTRACTORS' WORK SHALL BE PERFORMED AND REPAIRED BY THE TRADE WHOM NORMALLY PERFORMS THAT WORK AND PAID FOR BY THE MECHANICAL CONTRACTOR. NO CUTTING / ALTERATION OF THE BUILDING STRUCTURAL SYSTEM SHALL BE PERFORMED WITHOUT THE WRITTEN CONSENT OF THE LANDLORD AFTER ARCHITECT HAS APPROVED AND SIGNED OFF.
6. THE PLUMBING CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING HIS BID TO FAMILIARIZE HIMSELF WITH THE ACTUAL PROJECT CONDITIONS AND TO CHECK FOR ANY INTERFERENCES BETWEEN HIS WORK AND THAT OF THE OTHER TRADES, AMONG ANY APPARENT VIOLATIONS OF LOCAL OR STATE CODES, LAWS, ORDINANCES AND REGULATIONS. SHOULD ANY VIOLATIONS OF LOCAL OR STATE CODES, LAWS, ORDINANCES AND REGULATIONS BE IDENTIFIED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY PRIOR TO ENTERING INTO A CONTRACT WITH THE OWNER. FAILURE TO PROVIDE THE ARCHITECT WITH THE FOREMENTIONED NOTIFICATION SHALL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE INTENT OF THE CONTRACT DOCUMENTS WITH NO ADDITIONAL EXPENSES BEING INCURRED BY THE OWNER.
7. THE DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL LOCATIONS AND ARRANGEMENTS OF ALL THE EQUIPMENT AND PLUMBING. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS BUILDING CONSTRUCTION AND ALL OTHER WORK WILL PERMIT. DO NOT SCALE DRAWINGS FOR EXACT MEASUREMENTS.
8. SHOULD THE CONTRACTOR SUBMIT ANY SHOP DRAWINGS FOR REVIEW THAT VARY FROM WHAT THE ARCHITECT HAS INDICATED, THE CONTRACTOR SHALL PAY THE ENGINEER FOR REVIEWING HIS SUBMISSION.

GENERAL NOTES: PLUMBING

1. ALL PLUMBING SHALL BE CONCEALED UNLESS OTHERWISE NOTED. EXPOSING OF ANY PLUMBING MUST HAVE APPROVAL OF THE ARCHITECT.
2. THE PLUMBING SYSTEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL STATE AND LOCAL PLUMBING CODES. THE PLUMBING CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY FOR ALL FEES, AND ARRANGE FOR ALL INSPECTIONS FOR HIS WORK. AT THE COMPLETION OF THE PROJECT, THE PLUMBING CONTRACTOR SHALL FURNISH THE OWNER WITH CERTIFICATES OF FINAL INSPECTIONS AND APPROVALS.
3. PLUMBING SHALL BE AS FOLLOWS:
 - A. SANITARY AND VENT PIPING:
 - 1) ALL 1/2" AND LARGER WASTE AND VENT PIPING ABOVE GROUND SHALL BE STANDARD WEIGHT CAST IRON SOIL PIPE WITH NO-HUB FITTINGS AND HEAVY DUTY BANOS.
 - 2) ALL WASTE PIPING BELOW GRADE SHALL BE SERVICE WEIGHT CAST IRON SOIL PIPE WITH COMPRESSION TYPE FITTINGS, OR SCHEDULE 40 PVC WHERE LOCAL CODE PERMITS.
 - B. DOMESTIC WATER PIPING:
 - 1) ALL ABOVE GROUND DOMESTIC WATER PIPING SHALL BE TYPE "L" HARD DRAWN COPPER TUBING WITH WROUGHT COPPER OR CAST RED BRONZE FITTINGS. ALL SOLDERED FITTINGS SHALL BE MADE WITH SILFOS SOLDER OR AN APPROVED NON-TOXIC SOLDER. MECHANICAL TYPE FITTINGS EQUAL TO "PROGRESS SYSTEMS" ARE APPROVED IN LIEU OF SOLDERED FITTINGS.
 - 2) ALL UNDERGROUND PIPING SHALL BE TYPE "K" COPPER OR PEK PIPE FITTINGS ARE NOT ALLOWED BELOW FLOOR SLAB.
 - C. VALVES:
 - 1) BALL VALVES SHALL BE TWO PIECE FULL PORT BRONZE BALL VALVES WITH STAINLESS STEEL TRIM, THE SEATS WITH 316 STAINLESS STEEL BALL AND STEEL THREADED BODY PACK BUT DESIGN WITH ADJUSTABLE STEW PACKING WITH THREADED EROS RATED FOR 150 PSIG SWP AND 600 PSIG CWP.
 - 2) CHECK VALVES SHALL BE SWING CHECK WITH BRONZE DISC, GLASS 150, ASTM B92, V-PATTERN DESIGN WITH THREADED OR SOLDERED ENDS, RATED FOR 300 PSIG CWP.
 - D. PIPING INSULATION:
 - 1) DOMESTIC HOT, COLD & HOT WATER RETURN PIPING SHALL BE INSULATED WITH MINIMUM 1" THICK FIBERGLASS INSULATION WITH A FIRE RETARDANT JACKET HAVING AN AVERAGE R VALUE OF 2.5. INSULATION SHALL BE INSTALLED OVER THE PIPING WITH A VAPOR BARRIER. PROVIDE PREFORMED SECTIONS WITH PVC COVERS AT ALL FITTINGS.
 - 2) ABOVE GROUND STORM PIPING (HORIZONTAL PIPING INCLUDING FITTINGS) AND ROOF SWAMP BODIES SHALL BE INSULATED WITH A MINIMUM 1/2" THICK FIBERGLASS INSULATION WITH A VAPOR BARRIER.
 - 3) PIPE INSULATION SHALL HAVE A FLAME SPREAD AND SMOKE DENSITY RATING NOT EXCEEDING 25/50, AS TESTED PER ASTM STANDARD E-84.

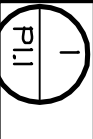
PLUMBING GENERAL NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL NEW PLUMBING FIXTURES.
2. ALL PLUMBING RELATED CORING THROUGH FLOORS SHALL BE BY PLUMBING CONTRACTOR.
3. COORDINATE ALL NEW LOCATIONS, SIZES AND ELEVATIONS OF SLEEVES THROUGH WALLS SLABS AND FOUNDATIONS WITH STRUCTURAL DRAWINGS AND EXISTING CONDITIONS.
4. COORDINATE ALL PIPE ROUTING WITH SITE CONDITIONS, EQUIPMENT MANUFACTURER RECOMMENDATIONS AND ALL OTHER TRADES TO AVOID INTERFERENCES. PROVIDE ACCESS AROUND ALL NEW EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS.
5. ALL OVERHEAD DOMESTIC WATER AND STORM PIPING SHALL BE INSULATED AND LABELED IN ACCORDANCE WITH THE SPECIFICATION REQUIREMENTS.
6. ALL PIPING SHALL BE CONCEALED IN WALLS, CEILING SPACES OR ARCHITECTURAL SOFFITS.
7. SEAL ALL PENETRATIONS THROUGH WALLS AND FLOORS AIR AND WATER TIGHT. COORDINATE LOCATIONS AND ELEVATIONS OF ALL NEW UNDERGROUND UTILITIES WITH CIVIL SITE PLANS PRIOR TO START OF CONSTRUCTION.
8. CONTRACTOR SHALL MAINTAIN ADEQUATE CLEARANCES PER NEC ABOVE AND AROUND ANY NEW ELECTRICAL PANELS, EQUIPMENT AND TRANSFORMERS WHEN ROUTING OVERHEAD DOMESTIC WATER AND STORM PIPING.
9. FAUCETS AND PLUMBING FIXTURES SHALL BE OF WATER CONSERVATION TYPE AND COMPLY WITH THE STATE OF MICHIGAN ENERGY STANDARDS.
10. RUN ALL UNDERGROUND SANITARY AND STORM PIPING LARGER THAN 2" AT 1/8" PER FOOT MINIMUM PITCH UNLESS NOTED OTHERWISE. SANITARY PIPING LESS THAN 2" SHALL BE PITCHED AT 1/4" PER FOOT MINIMUM, UNLESS NOTED OTHERWISE.

PLUMBING SYMBOLS

SYMBOL	DESCRIPTION	ABBREVIATIONS
	ABOVE FINISHED FLOOR	AF#
	AUTOMATIC SPRINKLER RISER	ASR
	CLEAN OUT	C.O.
	CONDENSATE	CND
	COLD WATER (DOMESTIC)	CW
	DIAMETER	DIAMØ
	EXISTING	(E)
	FLOOR DRAIN	FD#
	FINISHED ELEVATION	FE#
	FROST PROOF WALL HYDRANT	FPWH#
	FLOOR SINK	FS#
	GALLONS PER MINUTE	GPM
	HOT WATER (DOMESTIC)	HW
	HOT WATER RETURN (DOMESTIC)	HWHR
	INVERT ELEVATION	I.E.
	LABORATORY	L-# / LAV-#
	OVERHEAD ROOF DRAIN	ORD-#
	PRESSURE REDUCING VALVE	PRV
	POUNDS PER SQUARE INCH	PSI
	POLYVINYL CHLORIDE	PVC
	ROOF DRAIN	RD-#
	SINK	S-#
	TYPICAL	(TYP)
	VENT THRU-ROOF	V.T.R.
	WATER CLOSET	WC-#
	WATER CLOSET	W.C.O.
	WATER HEATER	WH-#
	STORM PIPING	ST

ABBREVIATIONS



PLUMBING - NOTES, SYMBOLS, ABBREVIATIONS & SPECIFICATIONS

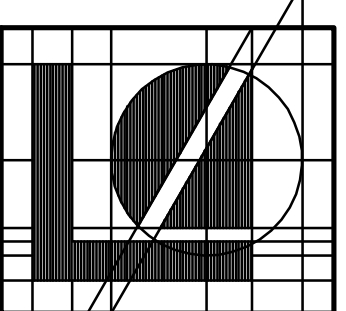
SCALE: NONE

PROPOSED ADDITION FOR:
BILL BROWN FORD
CUSTOMER SERVICE CENTER
 LIVONIA, MICHIGAN
PLUMBING - NOTES, SYMBOLS, ABBREVIATIONS & SPECIFICATIONS

dr: m.v.	10/9/2014	PROGRESS SET	issued for
ck'd: m.v.	10/3/2014	OWNER REVIEW	
app'd: J.B.	date		

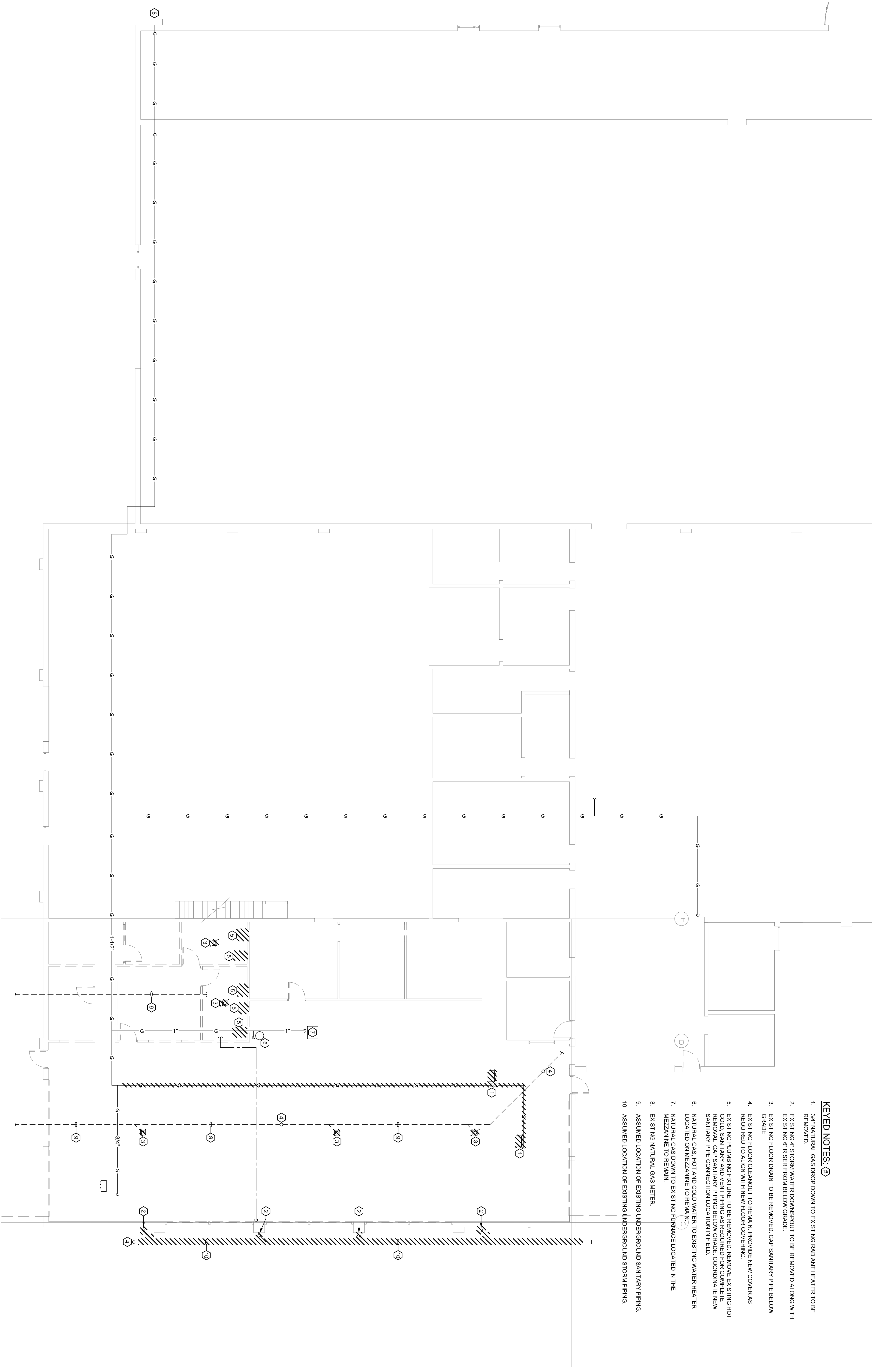
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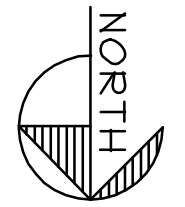


1429

PARTIAL FIRST FLOOR PLAN - PLUMBING DEMOLITION



- KEYED NOTES:**
1. 3/4" NATURAL GAS DROP DOWN TO EXISTING RADIANT HEATER TO BE REMOVED.
 2. EXISTING 4" STORM WATER DOWNSPOUT TO BE REMOVED ALONG WITH EXISTING 6" RISER FROM BELOW GRADE
 3. EXISTING FLOOR DRAIN TO BE REMOVED. CAP SANITARY PIPE BELOW GRADE.
 4. EXISTING FLOOR CLEANOUT TO REMAIN. PROVIDE NEW COVER AS REQUIRED TO ALIGN WITH NEW FLOOR COVERING.
 5. EXISTING PLUMBING FIXTURE TO BE REMOVED. REMOVE EXISTING HOT, COLD SANITARY AND VENT PIPING AS REQUIRED FOR COMPLETE REMOVAL. CAP SANITARY PIPING BELOW GRADE. COORDINATE NEW SANITARY PIPE CONNECTION LOCATION IN FIELD.
 6. NATURAL GAS, HOT AND COLD WATER TO EXISTING WATER HEATER LOCATED ON MEZZANINE TO REMAIN.
 7. NATURAL GAS DOWN TO EXISTING FURNACE LOCATED IN THE MEZZANINE TO REMAIN.
 8. EXISTING NATURAL GAS METER.
 9. ASSUMED LOCATION OF EXISTING UNDERGROUND SANITARY PIPING.
 10. ASSUMED LOCATION OF EXISTING UNDERGROUND STORM PIPING.



THIS DRAWING IS FOR INFORMATION ONLY AND IS NOT TO BE USED FOR CONSTRUCTION. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND CONDITIONS OF WORK BEFORE BEGINNING WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS.

SCALE: 1/8" = 1'-0"

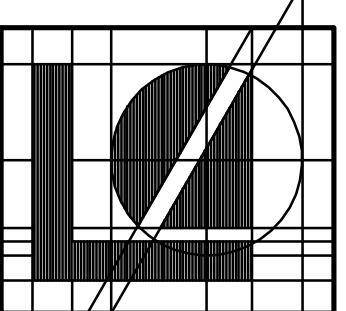
P2.1
1429

PROPOSED ADDITION FOR:
**BILL BROWN FORD
 CUSTOMER SERVICE CENTER**
 LIVONIA, MICHIGAN
PARTIAL FLOOR PLAN - PLUMBING DEMOLITION

dr: w.v.	10/9/2014	PROGRESS SET
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app'd: J.B.	date	issued for

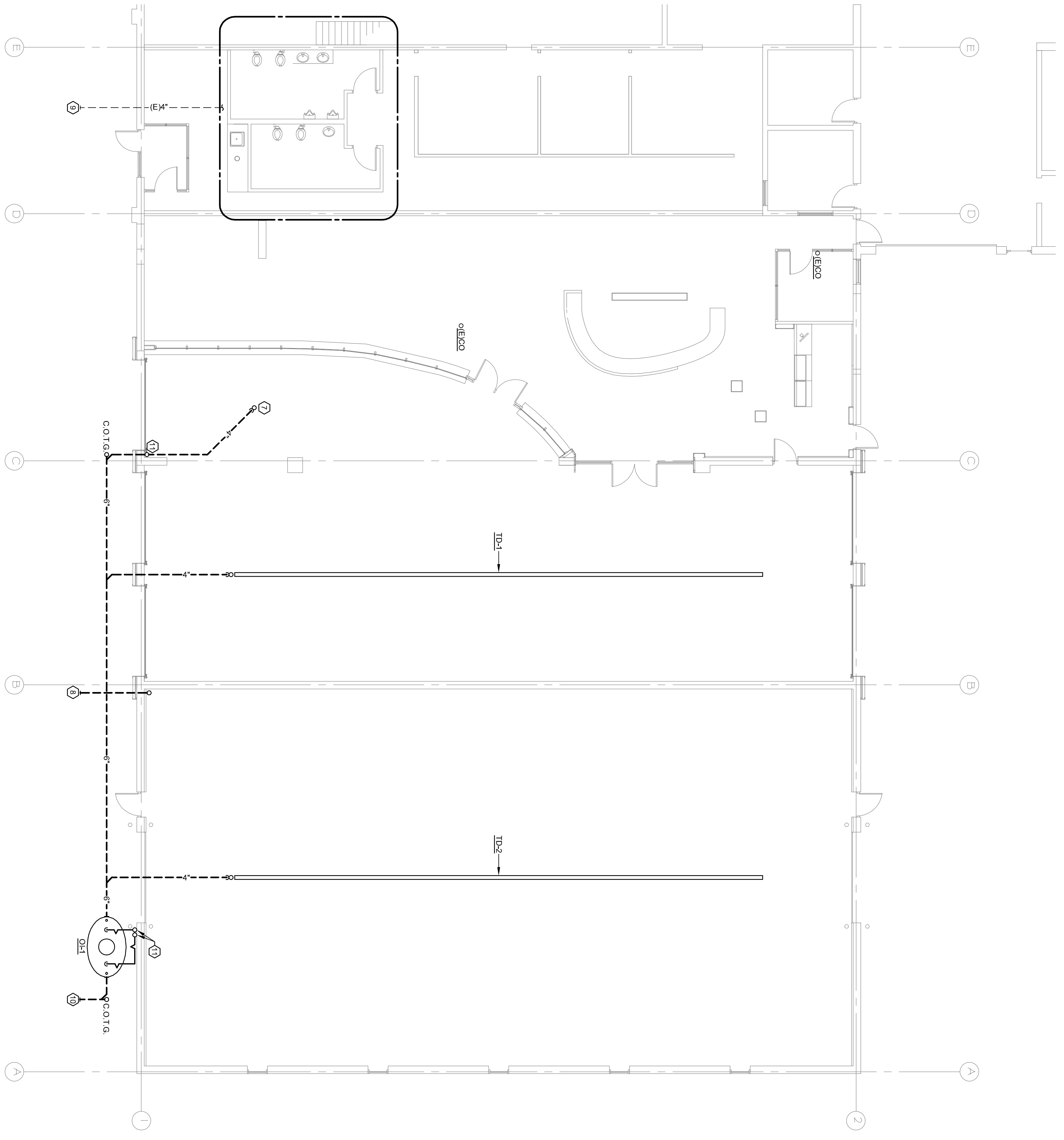
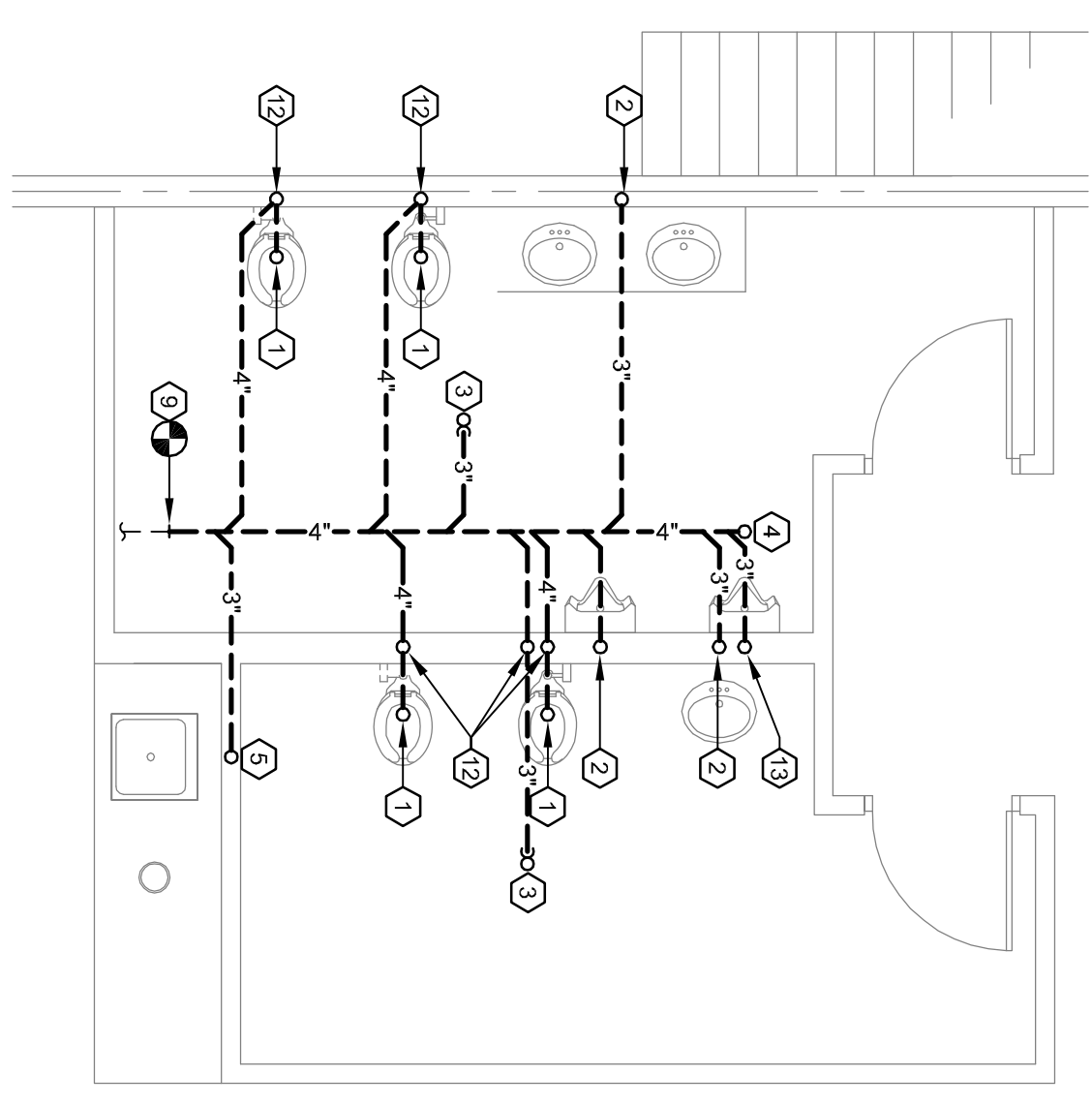
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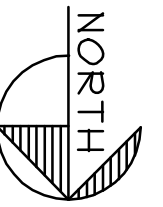
KEYED NOTES:

1. 4" SANITARY UP TO WATER CLOSET FLOOR FLANGE.
2. 3" UNDERGROUND SANITARY WITH 2" UP IN WALL TO LAVATORY.
3. 3" SANITARY WITH P-TRAP UP TO FLOOR DRAIN.
4. 4" SANITARY UP TO FLOOR CLEANOUT.
5. 3" UNDERGROUND SANITARY WITH 2" UP IN COUNTERTOP SINK.
6. 4" SANITARY WITH P-TRAP UP TO TRENCH DRAIN.
7. 4" SANITARY WITH P-TRAP UP TO FLOOR DRAIN.
8. 10" STORM MAIN REFER TO CIVIL PLANS FOR CONTINUATION AND FINAL INVERT ELEVATION.
9. PLUMBING CONTRACTOR SHALL CAMERA THE EXISTING SANITARY PIPING TO DETERMINE THE EXACT ROUTING AND DIRECTION OF FLOW. ONCE ROUTING IS CONFIRMED THE NEW SANITARY PIPING SHALL BE TIED INTO THE EXISTING PIPING INDICATED IS REPRESENTATIVE OF THE ASSUMED EXTENT OF NEW WORK TO BE COMPLETED.
10. 6" SANITARY REFER TO CIVIL PLANS FOR CONTINUATION. COORDINATE INVERT ELEVATION IN FIELD FOR THE INTO EXISTING UTILITY.
11. 3" VENT UP ALONG EXTERIOR WALL. REFER TO DRAWING P3.2 FOR CONTINUATION.
12. 2" SANITARY VENT UP IN WALL ABOVE.
13. 2" SANITARY UP TO WALL MOUNTED URINAL.



ROOM SCHEDULE

I00	VESTIBULE
I01	CUSTOMER WORK STATIONS
I02	CUSTOMER WAITING
I03	CUSTOMER WAITING
I04	SERVICE ADVISORS
I05	CUSTOMER SERVICE DESK
I06	SALES COUNTER
I07	MENS TOILET
I08	WOMENS TOILET
I09	OFFICE
I10	OFFICE
I11	OFFICE
I12	OFFICE
I13	SHARED WORKSTATION
I14	HOLDING BAY
I15	CUSTOMER DROP-OFF
I16	SERVICE BAY
I17	TECH. WORK STATION



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SCALE: 1/8" = 1'-0"

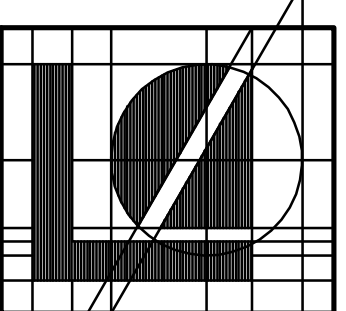
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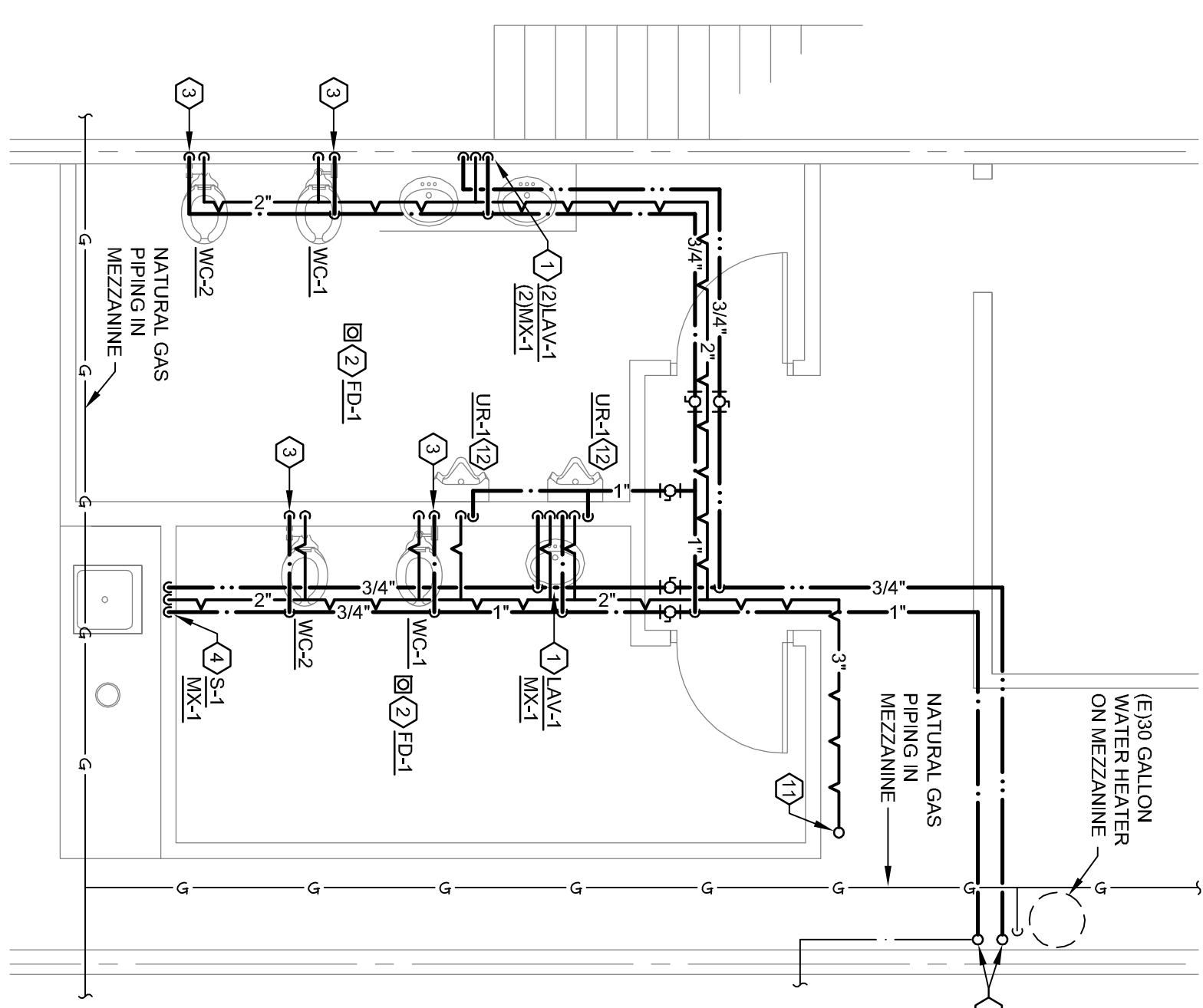
PROPOSED ADDITION FOR:
**BILL BROWN FORD
CUSTOMER SERVICE CENTER**
LIVONIA, MICHIGAN
PARTIAL FLOOR PLANS - UNDERGROUND PLUMBING

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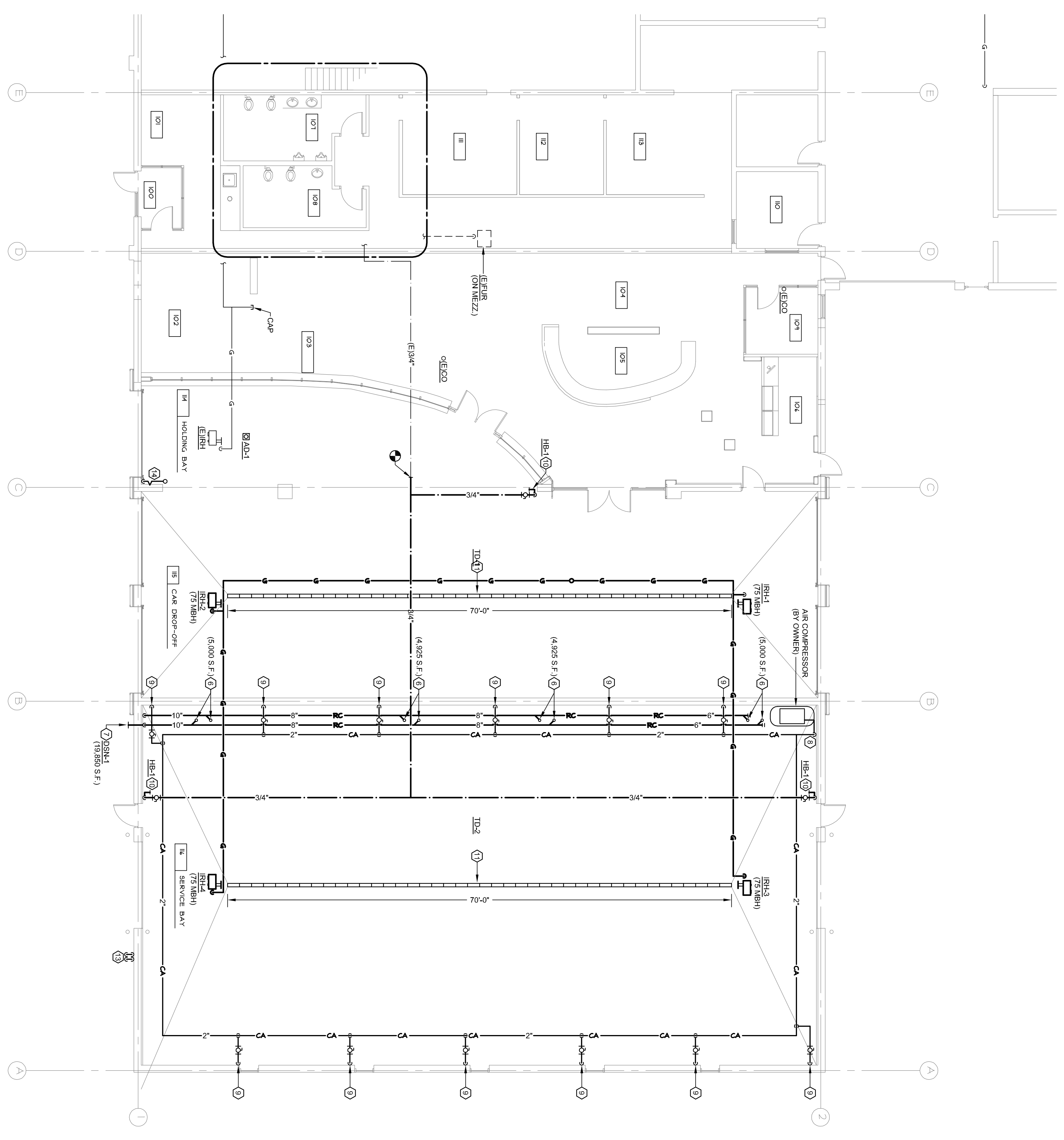
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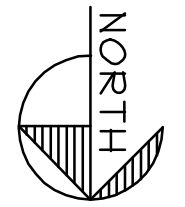


- KEYED NOTES:**
1. 1/2" HOT AND COLD WATER WITH 2" SANITARY AND VENT TO LAVATORY. PROVIDE THERMOSTATIC MIXING VALVE UNDER LAVATORY(S).
 2. COORDINATE FINAL FLOOR/FRENCH DRAIN LOCATION WITH FLOOR SLOPE.
 3. 1/2" COLD WATER WITH DOWN TO 1/4" TURN ANGLE VALVE FOR WATER CLOSET FLUSH TANK.
 4. 1/2" HOT AND COLD WATER WITH 1-1/2" SANITARY AND VENT TO SINK. PROVIDE THERMOSTATIC MIXING VALVE UNDER SINK.
 5. 1" COLD WATER & 3/4" HOT WATER UP THROUGH FLOOR TO EXISTING 30 GALLON WATER HEATER LOCATED ON MEZZANINE ABOVE.
 6. 6" RAIN CONDUCTOR PIPE UP TO ROOF DRAIN. INSULATE SUMP PAN AND ALL HORIZONTAL RAIN CONDUCTOR PIPING.
 7. 10" OVERFLOW RAIN CONDUCTOR DOWN TO 18" A.F.G. TO TERMINATE AT WALL MOUNTED DOWNSPOUT NOZZLE (DSN1).
 8. 2" COMPRESSED AIR PIPE DOWN TO OWNER PROVIDED AIR COMPRESSOR.
 9. 3/4" DOWN WALL TO 48" A.F.F. PROVIDE DIRT LEG, SHUT-OFF VALVE AND QUICK DISCONNECT FITTING.
 10. 3/4" INSULATED COLD WATER DOWN WALL TO 36" A.F.F. TO WALL HYDRANT WITH ATMOSPHERIC VACUUM BREAKER/HOSE FITTING.
 11. CONNECT NEW 3/8" VENT TO EXISTING VENT IN THIS LOCATION.
 12. 3/4" COLD WATER AND 1-1/2" VENT DOWN TO WALL MOUNTED URINAL FITTING AT 24" A.F.G.
 13. 3" VENT PIPES FROM OIL INTERCEPTOR. PROVIDE GOOSENECK FITTING AT 24" A.F.G.
 14. 3" VENT UP ALONG WALL TO 3" VENT THROUGH ROOF PENETRATION.



ROOM SCHEDULE

100	VESTIBULE
101	CUSTOMER WORK STATIONS
102	CUSTOMER WAITING
103	CUSTOMER WAITING
104	SERVICE ADVISORS
105	CUSTOMER SERVICE DESK
107	MENS TOILET
108	WOMENS TOILET
109	OFFICE
110	OFFICE
112	OFFICE
113	SHARED WORKSTATION
114	HOLDING BAY
115	CUSTOMER DROP-OFF SERVICE BAY
116	TECH. WORK STATION



THESE DRAWINGS TO BE USED FOR INFORMATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL CONDITIONS AND CONDITIONS OF THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL, STATE AND FEDERAL AUTHORITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL, STATE AND FEDERAL AUTHORITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL, STATE AND FEDERAL AUTHORITIES.

SCALE: 1/8" = 1'-0"

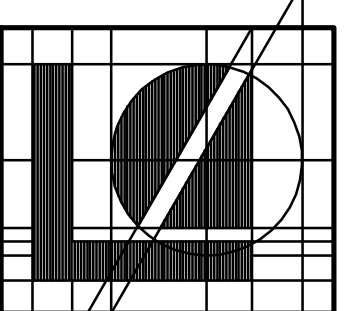
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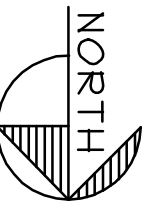
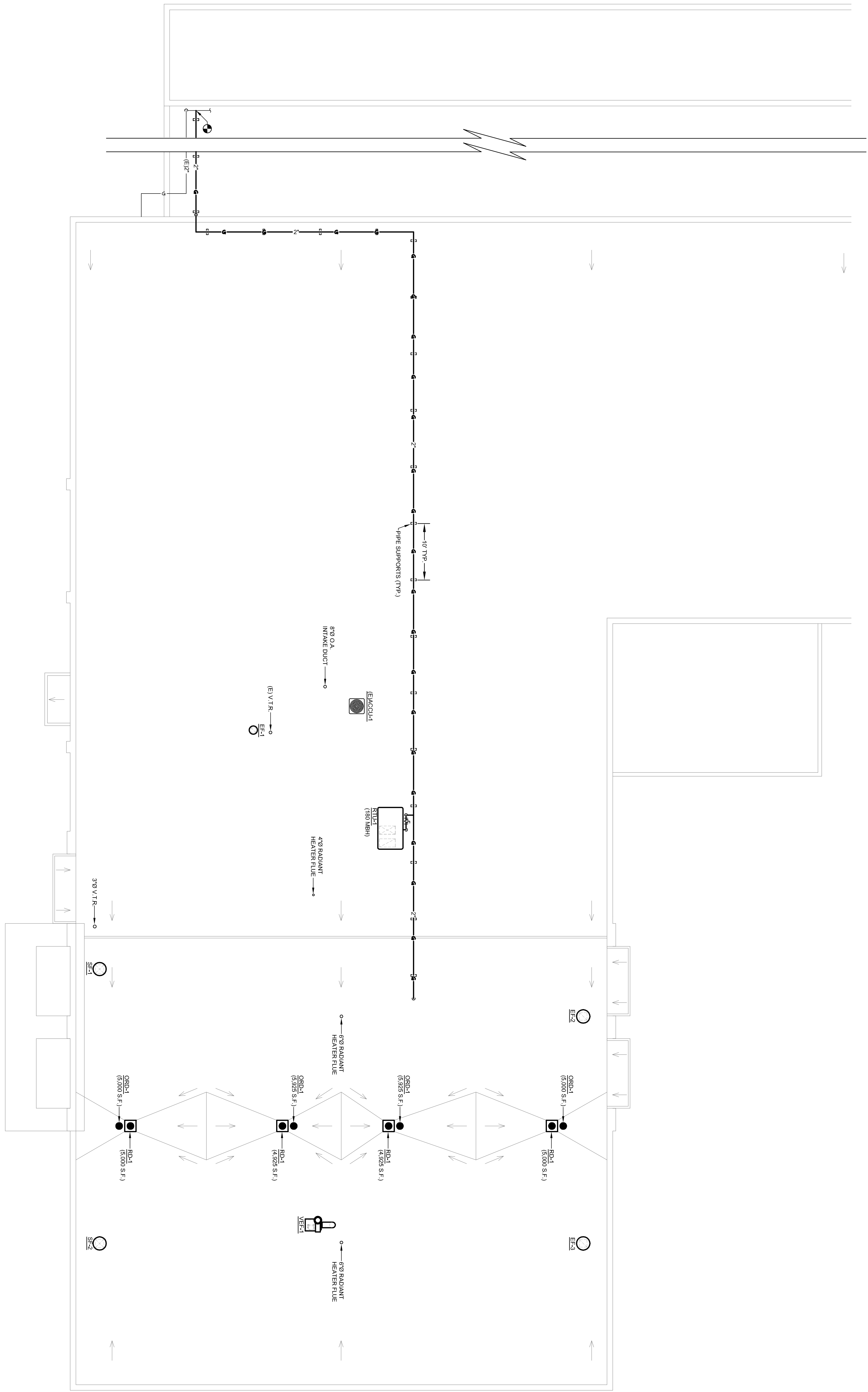
PROPOSED ADDITION FOR:
**BILL BROWN FORD
CUSTOMER SERVICE CENTER**
LIVONIA, MICHIGAN
PARTIAL FLOOR PLANS - ABOVEGROUND PLUMBING

dr: w.v.	10/9/2014	PROGRESS SET
ck'd: w.v.	10/3/2014	OWNER REVIEW
app'd: J.B.	date	issued for

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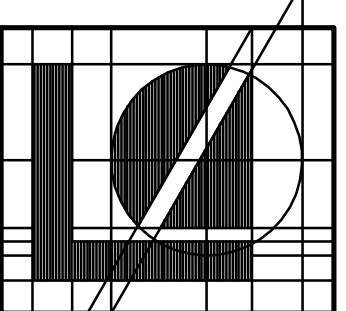
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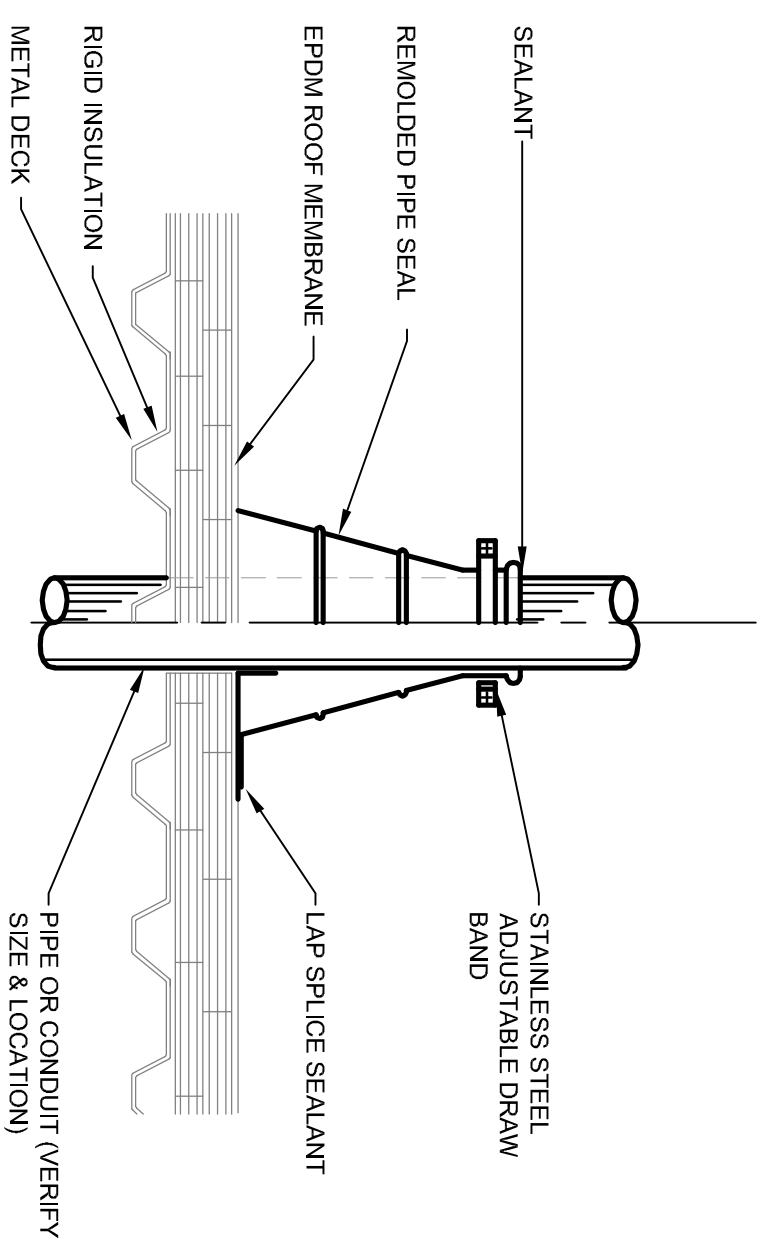
PROPOSED ADDITION FOR:
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 CUSTOMER SERVICE CENTER**
 LIVONIA, MICHIGAN
PARTIAL ROOF PLAN - PLUMBING

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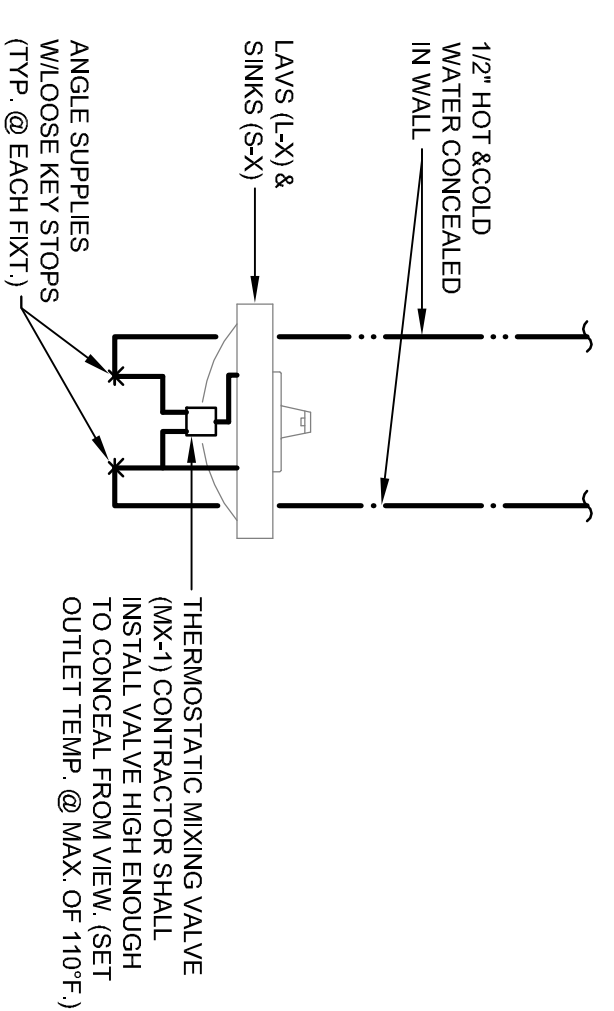
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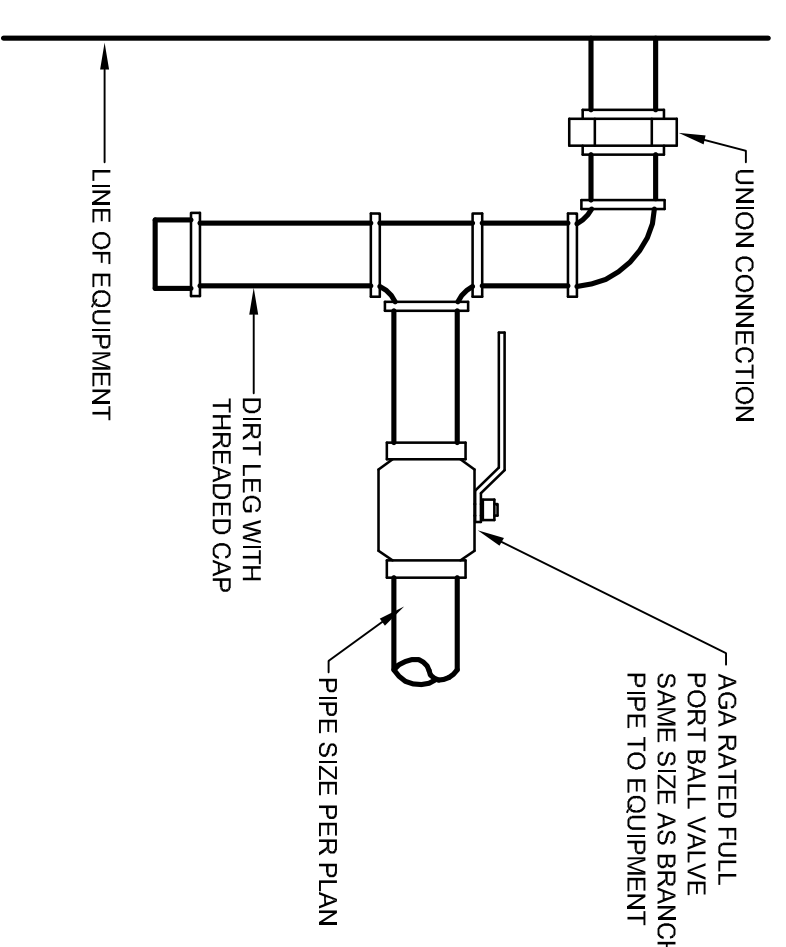




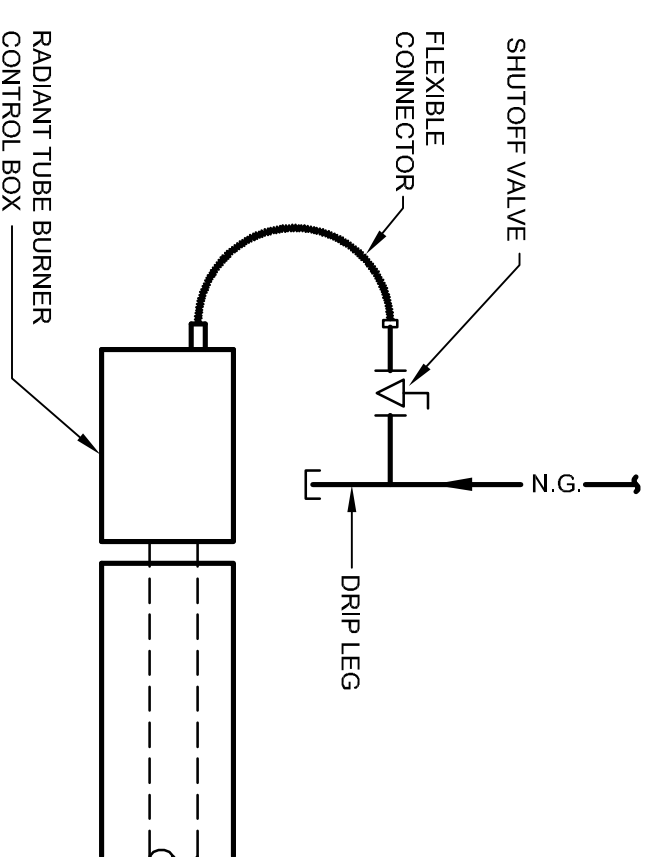
PIPE PENETRATION AND ROOF FLASHING DETAIL
N.T.S.



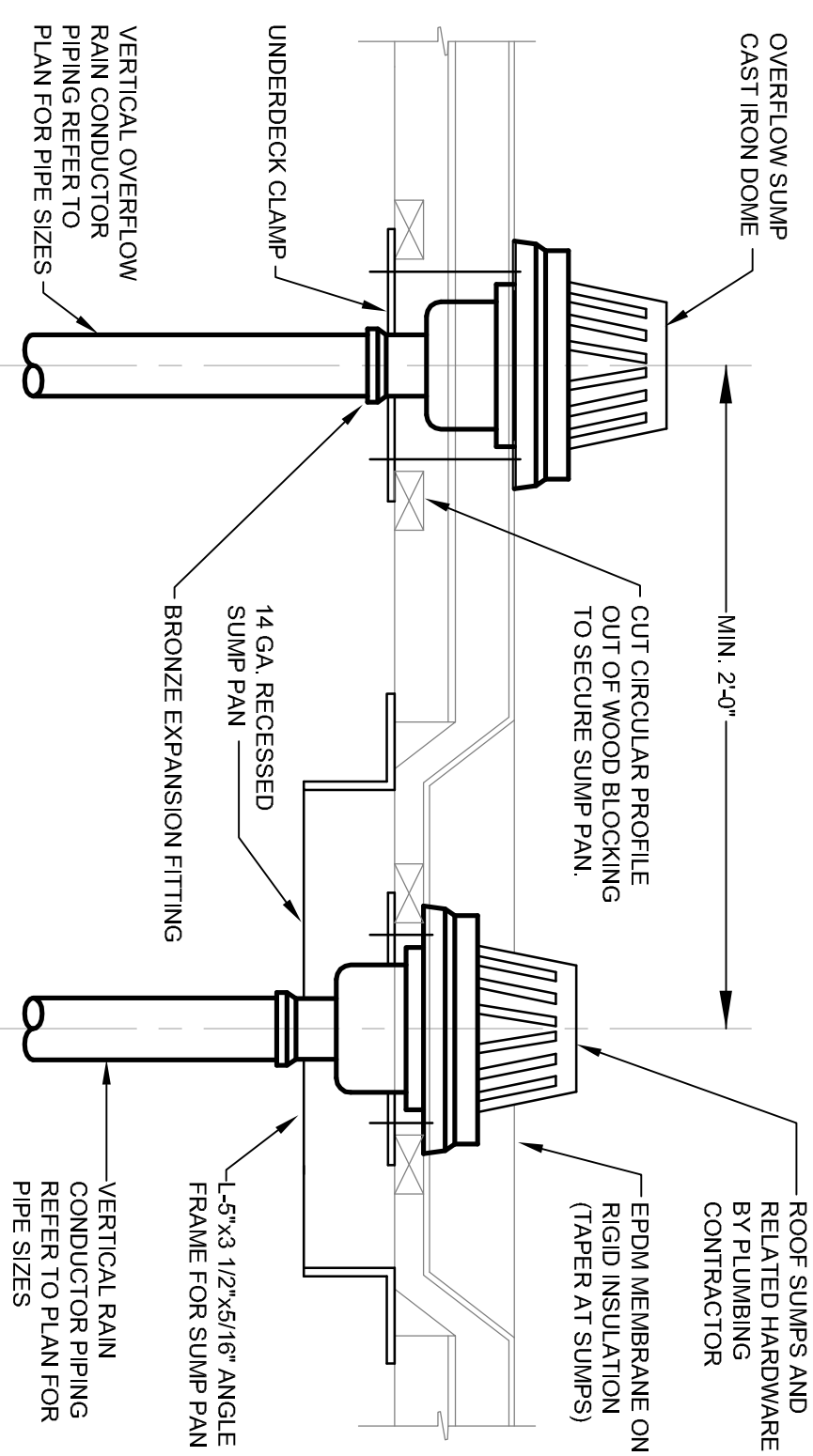
THERMOSTATIC MIXING VALVE DETAIL
N.T.S.



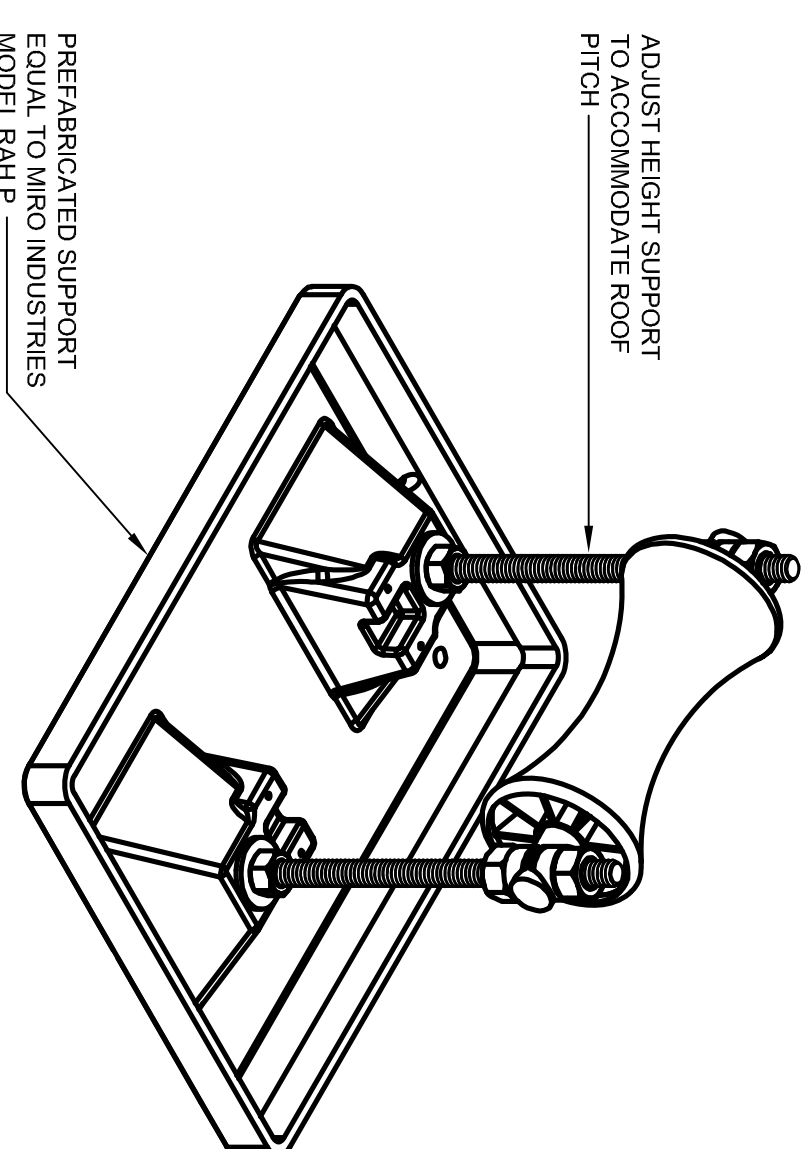
GAS PIPE EQUIPMENT CONNECTION DETAIL
N.T.S.



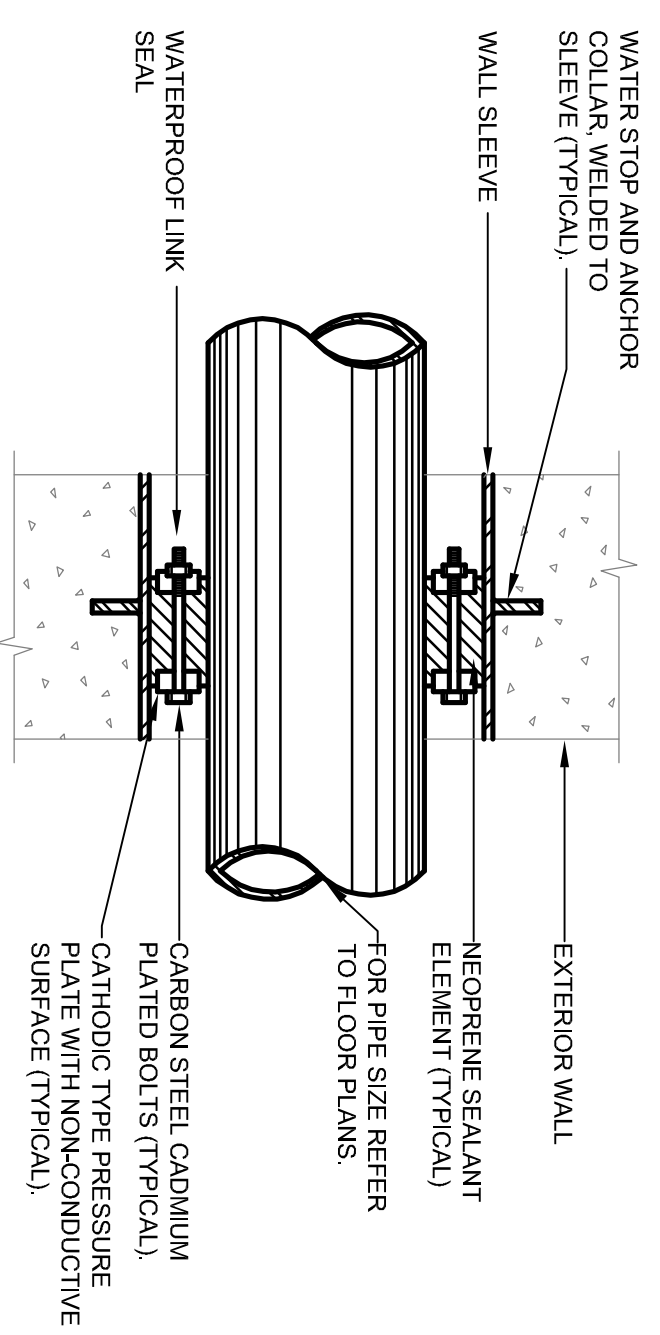
RADIANT HEATER N.G. CONNECTION DETAIL
N.T.S.



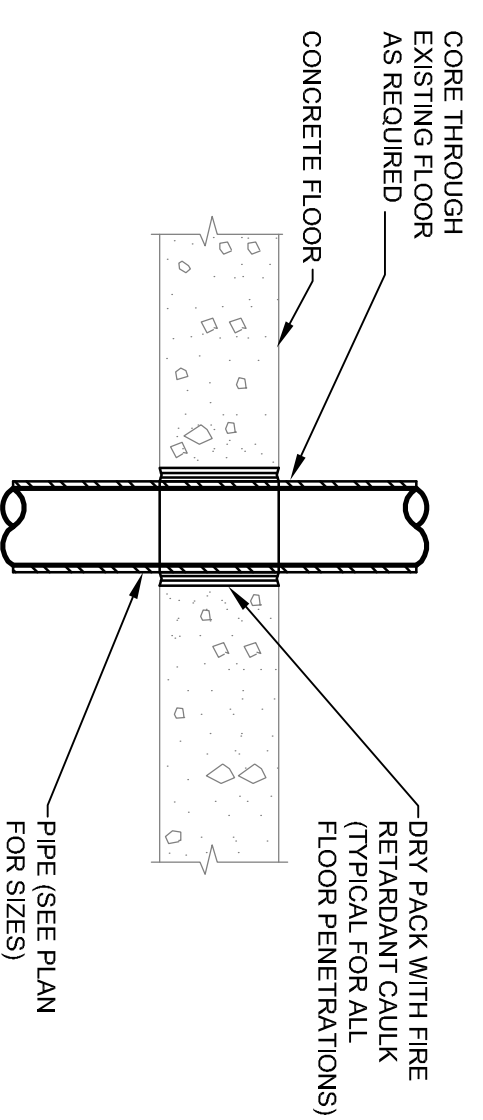
TYPICAL ROOF SUMP WITH OVERFLOW DETAIL
N.T.S.



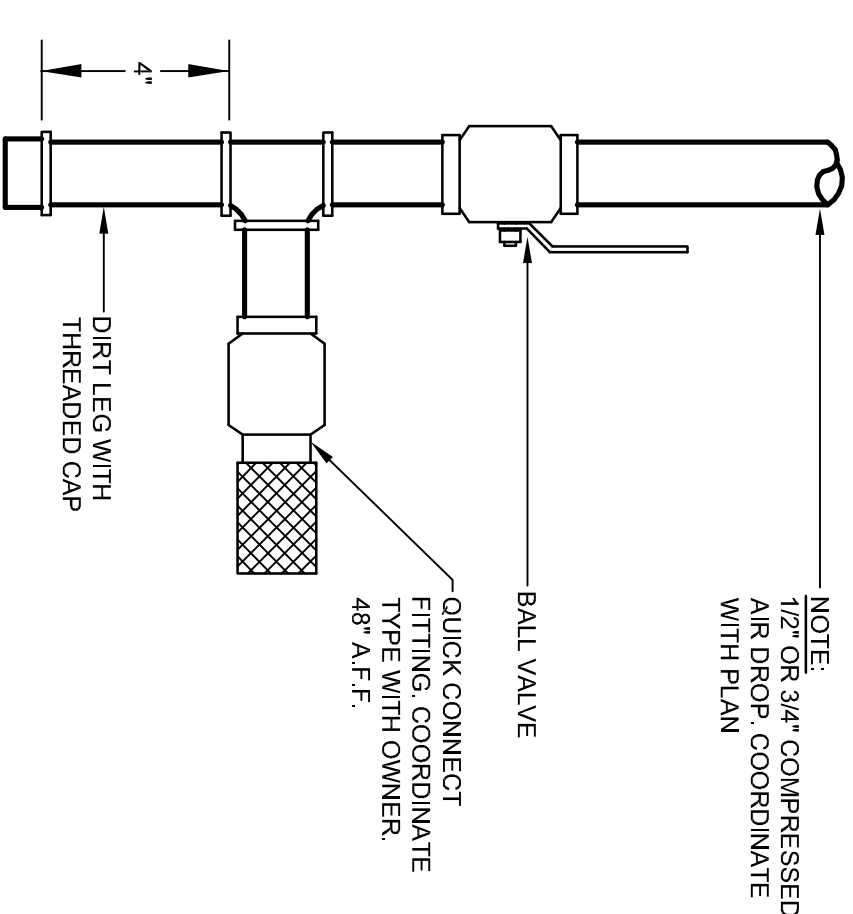
DETAIL OF ROOF GAS PIPE SUPPORT
N.T.S.



TYPICAL DETAIL OF WATERTIGHT SEAL AND SLEEVE THRU EXTERIOR WALL
N.T.S.



PIPE SLEEVE THROUGH FLOOR DETAIL
N.T.S.



COMPRESSED AIR OUTLET DETAIL
N.T.S.

PLUMBING FIXTURE SCHEDULE

MARK	ITEM	ADA	DESCRIPTION	ACCESSORIES	PIPE CONNECTION SIZES				NOTES
					W	V	CW	HW	
WC-1	FLOOR MOUNTED TANK TYPE WATER CLOSET		American Standard CHAMPION 4 Elongated Low Consumption Two Piece Tank Toilet #2018 804	Seat: American Standard #5905-110 Supply: McGuire #H1728V Flange 1/4 turn angle valve	4"	2"	1/2"	—	2
WC-2	FLOOR MOUNTED TANK TYPE WATER CLOSET	X	American Standard CHAMPION 4 Elongated Right Height 16-1/2" High Low Consumption Two Piece Tank Toilet #2002 014	Seat: American Standard #5905-110 Supply: McGuire #H1728V 1/4 turn angle valve	4"	2"	1/2"	—	2
L-1	WALL MOUNTED LAVATORY		American Standard #4056 012 LUCEFENE Basin	Faucet: American Standard #7365 000/VA.002 Aerator: American Standard #W05 Drain: McGuire #H454 Supply: McGuire #H1709V/LR 1/4 turn p-trap: McGuire #8872C-177 1-1/2" Chrome Carrier: Jay R. Smith #970Z	1-1/2"	1-1/2"	1/2"	1/2"	1
S-1	STAINLESS STEEL SINK (18 ga)		Elkay #LRT1919 with Elkay #LKD2432BH two lever faucet, 8" under swingspout aerator, 3/8" O.D. Copper tube inlet, 3" hole installation	3-1/2" drain outlet, conical strainer plate with removable fit KnoX, neoprene gasket c.p. brass 1-1/2" O.D. Supplies	2"	2"	1/2"	1/2"	
GD-1	GARBAGE DISPOSER		INSINK-E-RATOR BADGERS	1/2 HP 110V/60	1-1/2"	—	—	—	
MX-1	THERMOSTATIC MIXING VALVE		WATTS USGB	ASSE 1070 Thermostatic Mixing Valve	—	—	1/2"	1/2"	
HB-1	HOSE BIBB		WOODFORD MODEL 26	Atmospheric Vacuum Breaker	—	—	3/4"	—	

APPROVED PLUMBING FIXTURE MANUFACTURERS: AMERICAN STANDARD, MANSFIELD, GRAINE, TOTO, ELKAY, KOHLER, ZURN, FAIR, FORESTONE, MUSTE.
APPROVED PLUMBING MANUFACTURERS: AMERICAN STANDARD, MANSFIELD, GRAINE, TOTO, ELKAY, KOHLER, ZURN, FAIR, FORESTONE, MUSTE.
(FIXTURES TO BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE BARRIER FREE DESIGN REQUIREMENTS OF THE MICHIGAN CONSTRUCTION CODE.)

NOTES:
1. PROVIDE PLASTIC TYPE PIPE COVERS EQUAL TO "TRUBERO T-LAW GUARD" ON ALL ACCESSIBLE LAVATORIES AND SINKS.

ELECTRIC WATER COOLER SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	FINISH	TYPE	ADA	CAPACITY G.P.H.	ELECTRICAL			NOTES
							WATTS	F.L.A.	VOLT / PHASE	
EMC-1	ELKAY	EZSR	STAINLESS	WALL MOUNT	ADULT & CHILD	8	370	4.0	120 / 1	1, 2

(APPROVED EQUAL: SUNROC, HAUSER-TAYLOR, ACRON AQUA)

NOTES:
1. PROVIDE OPTIONAL STAINLESS STEEL CABINET
2. NO LEAD DESIGN

FLOOR DRAIN SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	LOCATION	BODY MATERIAL	GRATE		FINISH	STRAINER	PIPE SIZE (IN.)	NOTES
					TYPE	SIZE				
FD-1	ZURN	ZM115-88	SEE PLAN	DUOCO CAST IRON	6" DIA.	NICKEL BRONZE	NONE	NONE	3"	1
FD-2	ZURN	Z504	SEE PLAN	DUOCO CAST IRON	12" DIA.	CAST IRON	NONE	NONE	4"	1

(APPROVED EQUAL: JOSAM, JR SMITH, SGOUX CHIEF, MIFAB)

NOTES:
1. PROVIDE "SURESEAL" IN LINE TRAP SEAL.

TRENCH DRAIN SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	LOCATION	BODY MATERIAL	GRATE		FINISH	DIMENSIONS	PIPE SIZE (IN.)	NOTES
					TYPE	SIZE				
TD-1	ZURN	Z88BHD	SEE PLAN	HDPE	CG-SLOTTED	GRATE	CAST IRON	6" x 840"	4"	1, 2, 3
TD-2	ZURN	Z88BHD	SEE PLAN	HDPE	CG-SLOTTED	GRATE	CAST IRON	6" x 840"	4"	1, 2, 3

(APPROVED EQUAL: JOSAM, SIOUX CHIEF, MIFAB)

NOTES:
1. PROVIDE END OUTLET WITH 4" NO-HUB FITTING.
2. BODY SHALL HAVE 75% BUILT-IN SLOPE.
3. PROVIDE OPTIONAL HD FRAME ASSEMBLY.

ROOF DRAIN SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	BODY MATERIAL	DOME		PIPE SIZE (IN.)	NOTES
				MATERIAL	SIZE		
RD-1	ZURN	Z100	DUOCO CAST IRON	POLYETHYLENE	15"Ø	6	
ORD-1	ZURN	Z100-W3	DUOCO CAST IRON	POLYETHYLENE	15"Ø	6	1
DSN-1	ZURN	Z199	NICKEL BRONZE	-	-	10"	

(APPROVED EQUAL: JOSAM, ZURN, MIFAB)

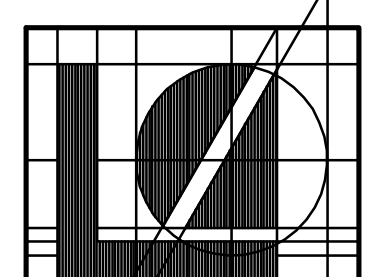
NOTES:
1. INTERNAL 3" WATER DAM.

OIL INTERCEPTOR SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	LOCATION	INLET OUTLET SIZE (IN.)	SEDIMENT CAPACITY (GAL.)	OIL STORAGE CAPACITY (GAL.)	DIMENSIONS (L x W x H)	NOTES

(APPROVED EQUAL: JR. SMITH, JOSAM, ZURN, PROCEPTOR)

NOTES:
1. 2,000 LB. LOAD RATED, BOLTED GAS/WATER TIGHT COVER.
2. OPTIONAL 6" INLET/OUTLET CONNECTIONS.



HVAC SPECIFICATIONS:

- HVAC GENERAL REQUIREMENTS:**
1. PROVIDE MATERIALS AND EQUIPMENT AND EXECUTE THE WORK, INCLUDING ALL TESTING AND INSPECTIONS, IN COMPLIANCE WITH THE APPLICABLE PROVISIONS OF FEDERAL, STATE AND LOCAL GOVERNMENT LAWS, ORDINANCES, REFERENCED CODES AND STANDARDS CURRENT AS OF THE ISSUE DATE OF THESE DRAWINGS. ALL MORE STRINGENT REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL MODIFY, SUPPLEMENT AND SUPERSEDE APPLICABLE PORTIONS OF GOVERNING LAWS, ORDINANCES, CODES AND STANDARDS.
 2. CONTRACTOR SHALL PRESENT CERTIFICATE TO THE TENANT AND LANDLORD THAT ALL APPLICABLE BUILDING PERMITS HAVE BEEN SECURED PRIOR TO STARTING ANY WORK, AND APPROVAL FROM THE GOVERNING JURISDICTIONS AT COMPLETION OF THE WORK. PROVIDE ALL SHOP DRAWINGS AS REQUIRED IN FOLLOWING SECTIONS.
 3. COORDINATE EXACT LOCATION OF CONSTRUCTION TO PRECLUDE ANY INTERFERENCE BETWEEN PIPING, WIRING, LIGHTING FIXTURES, DUCTWORK, BUILDING EQUIPMENT, PROCESS EQUIPMENT AND OTHER CONSTRUCTION.
 4. PROVIDE LABOR, INCLUDING FIELD ERECTION AND SUPERVISION MATERIALS, EQUIPMENT AND ANCHLERS, AND COORDINATE PROCEDURE, FABRICATE, DELIVER, ERECT OR INSTALL, AND INSTALL ALL PIPING, WIRING, LIGHTING FIXTURES, DUCTWORK, BUILDING EQUIPMENT, PROCESS EQUIPMENT AND OTHER CONSTRUCTION IN CONFORMANCE WITH THE CONSTRUCTION BID DOCUMENTS.
 5. ALL CUTTING AND PATCHING THAT MAY BE NECESSARY FOR THE INSTALLATION OF THE MECHANICAL CONTRACTORS WORK SHALL BE PERFORMED AND REPAIRED BY THE TRADE CONTRACTOR RESPONSIBLE FOR THE WORK. ALL CUTTING AND PATCHING SHALL BE PERFORMED WITHOUT THE WRITTEN CONSENT OF THE LANDLORD AFTER ARCHITECT HAS APPROVED AND SIGNED OFF.
 6. THE MECHANICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING HIS BID TO MAKE SURE ALL CONDITIONS OF THE PROJECT, INCLUDING ALL CONDITIONS AND PROVISIONS APPEAR AS SHOWN ON THE DRAWINGS AND ALL OTHER WORK WILL PERMIT DO NOT SCALE DRAWINGS FOR EXACT MEASUREMENTS.
 7. SHOULD THE CONTRACTOR SUBMIT ANY SHOP DRAWINGS FOR REVIEW THAT VARY FROM WHAT THE CONSTRUCTION BID DOCUMENTS INDICATE, THE CONTRACTOR SHALL PAY THE ENGINEER FOR REVIEWING HIS SUBMISSION.
- GENERAL NOTES: PIPING**
1. ALL PIPING SHALL BE CONCEALED UNLESS OTHERWISE NOTED. EXPOSING OF ANY PIPING MUST HAVE APPROVAL OF THE ARCHITECT.
 2. THE PIPING SYSTEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL STATE AND LOCAL CODES. THE PIPING CONTRACTOR SHALL OBTAIN PERMITS FOR ALL PIPING AND ARRANGE FOR ALL INSPECTIONS FOR HIS WORK. AT THE COMPLETION OF THE PROJECT, THE PIPING CONTRACTOR SHALL FURNISH THE OWNER WITH CERTIFICATES OF FINAL INSPECTIONS AND APPROVALS.
 3. PIPING SHALL BE AS FOLLOWS:
 - A. GAS PIPING:
 - 1) GAS PIPING SHALL BE SCHEDULE 40, BLACK STEEL, WITH THREADED OR WELDED FITTINGS AS REQUIRED. PROVIDE SHUT-OFF COOKS ON ALL OUTLETS WHERE SHOWN.
 - 2) VALVES SHALL NOT BE LOCATED IN ANY AIR RETURN, PORTIONS OF A GAS PIPING SYSTEM INSTALLED IN CONCEALED LOCATIONS SHALL NOT HAVE UNIONS, TUBE FITTINGS, OR RUNNING THREADS.
 - 3) PAINT ALL NATURAL GAS PIPING ON ROOF YELLOW. PAINT ALL VERTICAL PIPING ON EXTERIOR WALL TO MATCH BUILDING COLOR.
 - B. VALVES:
 - 1) GAS VALVE SHALL BE LUBRICATED TYPE CAST IRON OR U.L. LISTED TWO PIECE BRONZE BALL VALVE WITH RP/TF SEALS AND SEAT.
 5. PIPING SHALL BE SUPPORTED FROM HANGERS AT AN ADEQUATE DISTANCE WITH SUPPORTING HANGER RODS FASTENED TO THE BUILDING FRAMING WHENEVER POSSIBLE.
 6. ISOLATE PIPING AND EQUIPMENT FROM THE BUILDING STRUCTURE WITH INSULATING HANGERS AND FITTINGS AS REQUIRED TO PREVENT GALVANIC CORROSION OF THE BUILDING PIPING SYSTEMS.
 7. ALL SERVICES SHALL BE PROPERLY SLEEVED WHEN ROUTED THROUGH FLOORS AND WALLS. CONTRACTOR TO PROVIDE FIRE RESISTANT ROPE PACKING FOR ALL PIPES PENETRATING FIRE RATED WALLS. CONTRACTOR SHALL OBTAIN A COPY OF THE ARCHITECTURAL DRAWINGS TO IDENTIFY FIRE RATED WALLS.
 8. THE PIPING CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND PROVIDE ROUGHING FOR ALL EQUIPMENT FINISHED BY OTHER CONTRACTORS. AFTER ALL EQUIPMENT HAS BEEN INSTALLED BY OTHER CONTRACTORS, THE PIPING CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS AND SHALL INCLUDE IN HIS BASE BID ALL VALVES, UNIONS, COUPLINGS, ETC., THAT ARE REQUIRED TO MAKE FINAL CONNECTIONS.
 9. THE PIPING CONTRACTOR SHALL OBTAIN OTHER TRADES DRAWINGS AND COORDINATE HIS WORK WITH THE TOTAL PROJECT AS IT RELATES TO ALL TRADES AND VISIT THE PROJECT SITE PRIOR TO SUBMITTING HIS BID TO FAMILIARIZE HIMSELF WITH THE ACTUAL PROJECT CONDITIONS AND TO CHECK FOR ANY INTERFERENCES WITH HIS SCOPE OF WORK AND THAT OF THE OTHER TRADES, AND/OR ANY APPARENT VIOLATIONS OF LOCAL OR STATE BUILDING CODES, LAWS, ORDINANCES, AND REGULATIONS. IF ANY INTERFERENCES OR VIOLATIONS APPEAR AND DEPARTURE FROM THE INTENT, DESIGN INTENT OF THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO ENTERING INTO A CONTRACT WITH THE OWNER. FAILURE TO PROVIDE THE ARCHITECT WITH THE APPROPRIATE NOTIFICATION SHALL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE INTENT OF THE CONSTRUCTION BID DOCUMENTS WITH NO ADDITIONAL COSTS BEING INCURRED BY THE OWNER.
 10. THE CONTRACTOR SHALL SUBMIT EQUIPMENT SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW PRIOR TO INSTALLATION OF ANY OF THE FOLLOWING EQUIPMENT:
 - A. GAS PIPING AND FITTINGS
 11. THE CONTRACTOR SHALL GUARANTEE ALL WORK INSTALLED UNDER THIS CONTRACT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER THE ACCEPTANCE OF THE BUILDING BY THE OWNER, AND SHOULD DEFECTS OCCUR WITHIN THIS PERIOD, REPAIR AND/OR REPLACE DEFECTIVE ITEMS AND ANY DAMAGE RESULTING FROM FAILURE OF THESE ITEMS, AT NO EXPENSE TO THE OWNER.

MECHANICAL GENERAL NOTES:

12. PROVIDE PRE-MANUFACTURED SUPPORTS EQUAL TO AERO INDUSTRIES 3/8" SPACED 10'-0" ON CENTER AND AT ALL FITTINGS FOR SUPPORT OF ALL GAS PIPING RUN ON ROOF. FASTEN GAS PIPING SECURELY TO EACH SUPPORT AND PROVIDE SPACERS AS REQUIRED TO ADJUST FOR ROOF SLOPE WITHOUT STRESSING THE PIPING.
 13. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF HIS EQUIPMENT AND WORK WITH ALL OTHER TRADES TO AVOID ANY INTERFERENCES BETWEEN HIS WORK AND THE WORK OF OTHER TRADES.
 14. ANY CUTTING AND/OR PATCHING THAT MAY BE REQUIRED FOR THE INSTALLATION OF THE PIPING SYSTEMS, SHALL BE PERFORMED BY THE BUILDING STRUCTURAL TRADES AND PAID FOR BY THIS CONTRACTOR. NO CUTTING OF THE BUILDING STRUCTURAL SYSTEM SHALL BE PERFORMED WITHOUT WRITTEN APPROVAL OF THE ARCHITECT BEING OBTAINED.
 15. A SEPARATE REFRIGERATION CONTRACTOR SHALL INSTALL COOLER AND FREEZER REFRIGERATION SYSTEMS, COMPRESSORS, COILS, CONTROLS, AIR COOLED CONDENSING UNITS, AND VALVES SHALL BE PROVIDED BY THE REFRIGERATION EQUIPMENT SUPPLIER. THIS CONTRACTOR SHALL INCLUDE PROVIDING RETRIGERATION LINES, NECESSARY FITTINGS, CHARGING SYSTEM WITH REFRIGERANT INSULATION, AND CONNECTIONS TO COMPRESSORS AND COILS.
 16. THE CONTRACTOR SHALL COORDINATE HIS ROUGH-IN WORK WITH THE DIMENSIONED DRAWINGS FURNISHED BY THE FOOD SERVICE EQUIPMENT CONTRACTOR.
- HVAC SYSTEM SPECIFICATIONS:**
1. SHEET METAL DUCTWORK CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "SMACNA" STANDARDS, NEPA, 90A AND 96, AND THE LATEST EDITION OF THE ASHRAE GUIDE AND DATA BOOKS. ALL DUCTWORK SIZES INDICATED ON THE PLANS ARE THE INTERNAL DIMENSIONS AND DUCTWORK SIZES SHALL BE INCREASED ACCORDING SHOULD DUCTWORK BE INTERNALLY LINED WITH INSULATION. ALL DUCTWORK SHALL BE SEALED AIR SYSTEM.
 2. PROVIDE VOLUME DAMPERS IN THE DUCT SYSTEMS WHERE SHOWN ON PLANS AND WHERE DAMPERS TO INSURE PROPER SYSTEM BALANCING. SPIN-IN FITTINGS WITH MANUAL VOLUME DAMPERS MAY BE USED.
 3. PROVIDE FLEXIBLE DUCT CONNECTIONS ON ALL DUCT CONNECTIONS TO AIR HANDLING EQUIPMENT.
 4. THE CONTRACTOR SHALL SUBMIT TO THE ARCHITECT A COMPLETE AIR BALANCE REPORT OF ALL AIR HANDLING SYSTEMS. THE REPORT SHALL INCLUDE FAN RPM, TOTAL STATIC PRESSURE, MOTOR VOLTAGE, AMPLIFY, MOTOR OPERATING AMPLIFY, ENTERING AND LEAVING AIR TEMPERATURES, AIR FLOW, AIR BALANCE, AND RECOMMENDATIONS TO CORRECT ANY DEFICIENCIES. THE AIR BALANCE REPORT SHALL BE PERFORMED BY AN INDEPENDENT N.E.B.B. CERTIFIED AIR BALANCE CONTRACTOR.
 5. DUCTWORK INSULATION:
 - A. ALL CONCEALED SUPPLY AND RETURN AIR DUCTWORK INSIDE OF THE BUILDING SHALL BE INSULATED WITH DUCT WRAP OF 1" MINIMUM THICKNESS AND 1-1/2" DENSITY, WITH VAPOR BARRIER JOINTS SHALL BE STAPLED AND TAPED.
 - B. DUCTWORK INSULATION SHALL HAVE A FLAME SPREAD/SMOKE DENSITY RATING NOT EXCEEDING 25/50 PER NFPA CHAPTER 90A.
 7. VIBRATION ABSORBING SUPPORTS SHALL BE INSTALLED ON ALL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION AND NOISE TO THE STRUCTURE. PROVIDE VIBRATION ISOLATION PER ASHRAE STANDARDS.
 8. ALL MECHANICAL EQUIPMENT LOCATED ON THE ROOF SHALL BE PROPERLY SUPPORTED WITH PRE-FABRICATED CROSS, EQUIPMENT RAILS, OR OTHER MEANS AS APPROVED BY THE ARCHITECT.
 - HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS ARE DESIGNED ON THE FOLLOWING CONDITIONS:

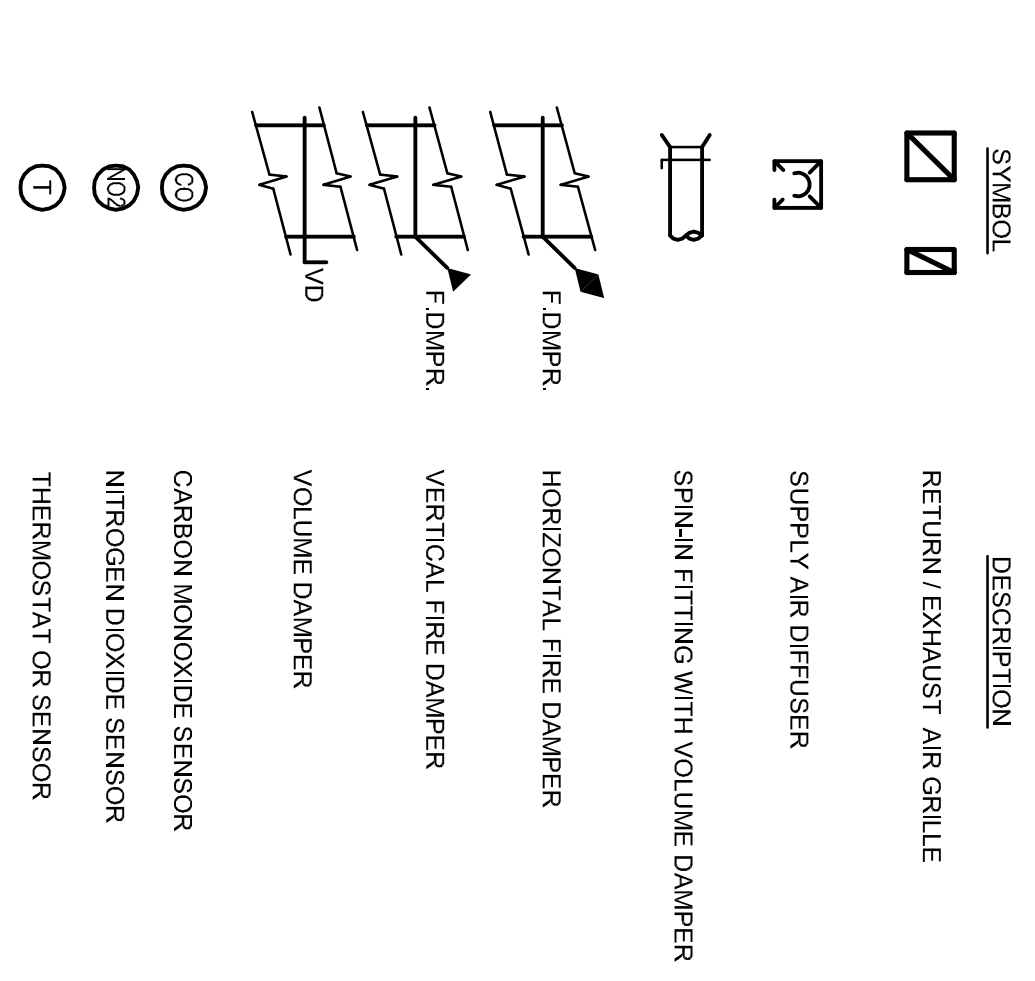
WINTER:	INSIDE TEMP.:	72°F
	OUTSIDE TEMP.:	14°F
SUMMER:	INSIDE TEMP.:	78.0°F D.B. & 50% R.H.
	OUTSIDE TEMP.:	90.3°F D.B. & 73.8°F W.B.
 11. SHEET METAL RUNOUTS AND FLEX DUCT CONNECTIONS TO AIR DISTRIBUTION DEVICES SHALL BE THE SAME SIZE AS THE DEVICE NECK, UNLESS OTHERWISE NOTED.
 12. DUCTS CONNECTING TO HVAC EQUIPMENT SHALL BE THE SAME SIZE AS EQUIPMENT DUCT CONNECTIONS, UNLESS OTHERWISE NOTED.
 13. AIR DISTRIBUTION DEVICE LOCATIONS INDICATED ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL AIR DISTRIBUTION DEVICES WITH ARCHITECTURAL PLANS AND/OR ELECTRICAL PLANS PRIOR TO INSTALLATION. LIGHT FIXTURES AND SPRINKLER HEAD LOCATIONS SHALL TAKE PRECEDENCE OVER AIR DISTRIBUTION DEVICES, UNLESS OTHERWISE NOTED.
 14. THE CONTRACTOR SHALL SUBMIT EQUIPMENT SHOP DRAWINGS TO THE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION OF ANY OF THE FOLLOWING:
 - A. ROOFTOP UNITS
 - B. SUPPLY & EXHAUST FANS
 - C. DUCTWORK & ACCESSORIES
 - D. AIR DISTRIBUTION DEVICES
 - E. ELECTRIC VOLUME DAMPERS
 - F. RADIAN HEATERS
 - G. ELECTRIC DUCT HEATERS
 - H. GAS DETECTION SYSTEM & CONTROLS

APPROVAL OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO CONFORM TO THE DESIGN INTENT OF THE BID DOCUMENTS.

APPROVAL OF SHOP DRAWINGS IS INTENDED TO BE FOR GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS ONLY. ANY EQUIPMENT THAT IS INSTALLED THAT WILL INVOLVE THE WORK OF OTHER TRADES SHALL BE COORDINATED WITH THOSE TRADES.

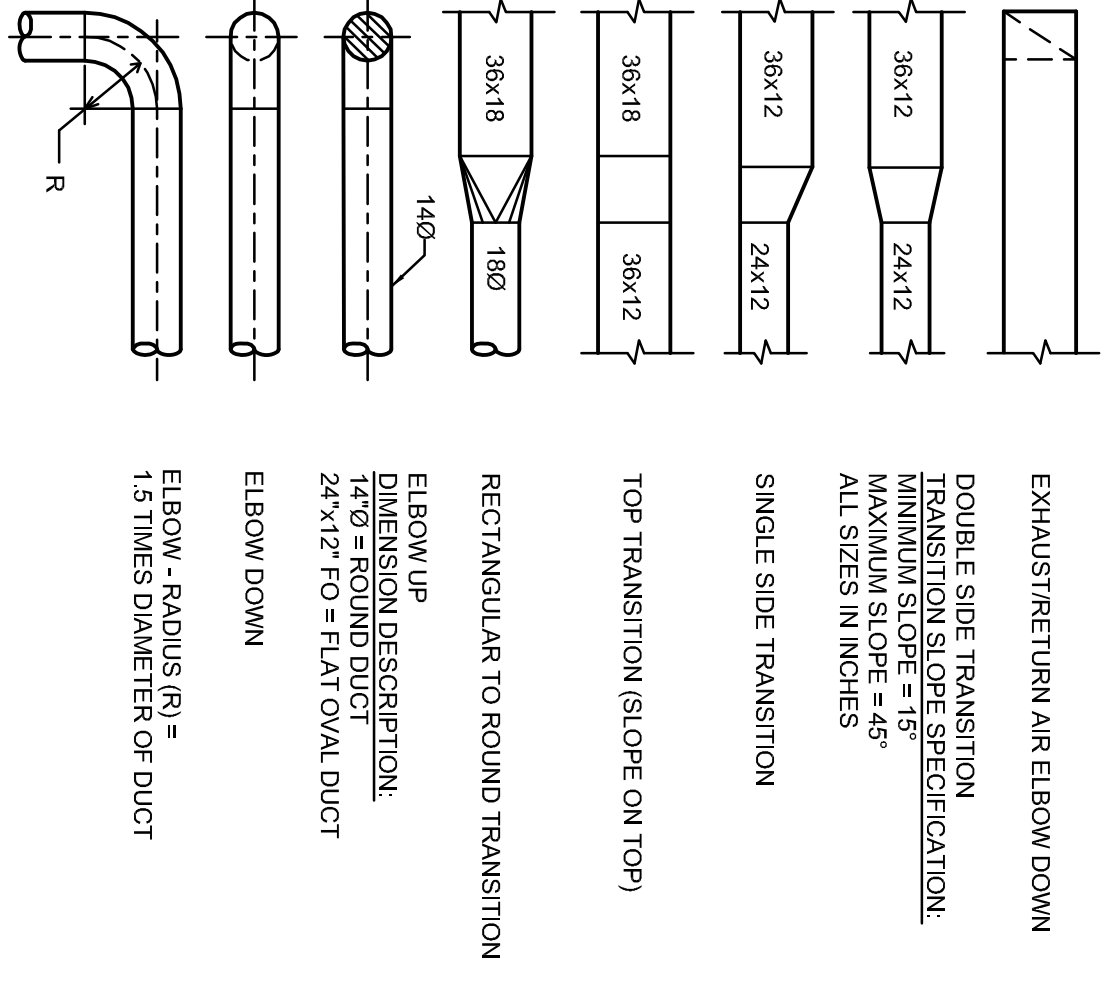
OTHER TRADES BID DOCUMENTS.
 15. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTROL AND INTERLOCK WIRING UNLESS OTHERWISE NOTED ON THE DRAWINGS. MECHANICAL CONTRACTOR SHALL PAY AND COORDINATE WITH THE ELECTRICAL CONTRACTOR ALL HIGH VOLTAGE WIRING THAT IS REQUIRED FOR INTERLOCKING OF CONTROLS.
 16. CONTRACTOR SHALL PROVIDE BUILDING OWNER WITH OPERATING AND MAINTENANCE MANUALS FOR ALL HVAC EQUIPMENT UPON COMPLETION OF PROJECT.
 17. MECHANICAL CONTRACTOR SHALL TEST ALL CONTROL ELEMENTS, VERIFY CALIBRATION OF ALL CONTROL DEVICES AND MAKE ADJUSTMENTS AS REQUIRED AT COMPLETION OF PROJECT.

HVAC SYMBOLS



ABBREVIATIONS

SYMBOL	DESCRIPTION	ABBREVIATIONS
	RETURN/EXHAUST AIR GRILLE	B.O.D.
	SUPPLY AIR DIFFUSER	CD# CFM CL CLG
	SPIN-IN FITTING WITH VOLUME DAMPER	D.B. / Ø D.A. / Ø
	HORIZONTAL FIRE DAMPER	(E) E.A. E.F. E.G. E.H.# E.H.
	VERTICAL FIRE DAMPER	E.H.# E.H.
	VOLUME DAMPER	F-DMPR ID
	CARBON MONOXIDE SENSOR	MAU-#
	NITROGEN DIOXIDE SENSOR	N.T.S.
	THERMOSTAT OR SENSOR	O.A. O.E.D.
	SUPPLY AIR ELBOW UP	RA RA# R.H. RPM RTU-#
	EXHAUST/RETURN AIR ELBOW UP	RA RA# R.H. RPM RTU-#
	EXHAUST/RETURN AIR ELBOW DOWN	RA RA# R.H. RPM RTU-#
	DOUBLE SIDE TRANSITION	SC-#
	SINGLE SIDE TRANSITION	S.A.
	TOP TRANSITION (SLOPE ON TOP)	T.A.D. (TYP)
	RECTANGULAR TO ROUND TRANSITION	VO V.B.



HVAC - NOTES, SYMBOLS, ABBREVIATIONS & SPECIFICATIONS

SCALE: NONE

PROPOSED ADDITION FOR:
BILL BROWN FORD
 CUSTOMER SERVICE CENTER
 LIVONIA, MICHIGAN

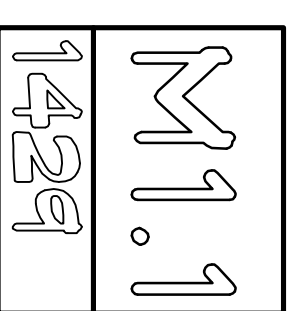
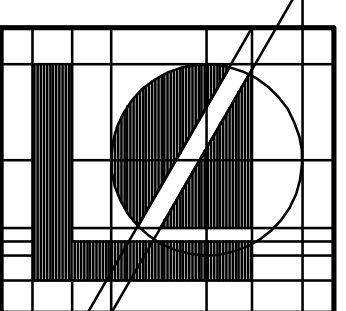
HVAC - NOTES, SYMBOLS, ABBREVIATIONS & SPECIFICATIONS

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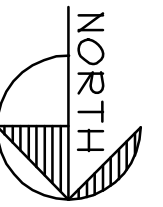
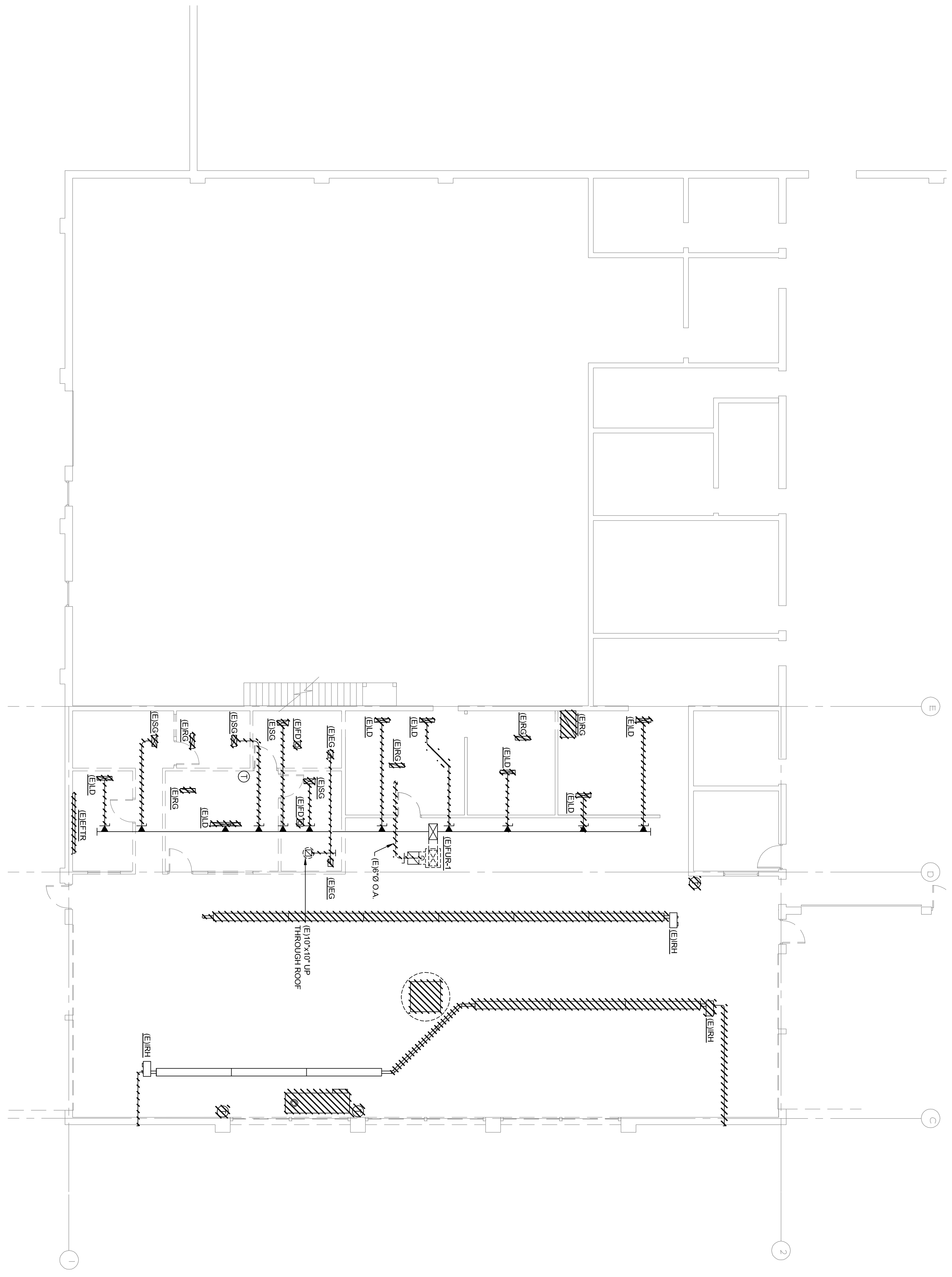
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121 PARTIAL FIRST FLOOR PLAN - HVAC DEMOLITION



THIS DRAWING IS PREPARED BY THE CONSULTANT FOR THE CLIENT AND IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED. THE CONSULTANT DOES NOT WARRANT THE ACCURACY OF ANY INFORMATION OR DATA PROVIDED BY THE CLIENT OR ANY OTHER SOURCE. THE CONSULTANT SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THIS DRAWING OR FOR ANY CONSEQUENCES ARISING FROM THE USE OF THIS DRAWING. THE CONSULTANT SHALL NOT BE RESPONSIBLE FOR ANY DELAYS OR DISRUPTIONS TO THE PROJECT CAUSED BY ANY CAUSES OTHER THAN THOSE UNDER THE CONSULTANT'S CONTROL. THE CONSULTANT SHALL NOT BE RESPONSIBLE FOR ANY INADEQUACIES OF THE CLIENT'S DESIGN OR CONSTRUCTION. THE CONSULTANT SHALL NOT BE RESPONSIBLE FOR ANY INADEQUACIES OF THE CLIENT'S MATERIALS OR WORKMANSHIP. THE CONSULTANT SHALL NOT BE RESPONSIBLE FOR ANY INADEQUACIES OF THE CLIENT'S CONTRACTORS OR SUBCONTRACTORS. THE CONSULTANT SHALL NOT BE RESPONSIBLE FOR ANY INADEQUACIES OF THE CLIENT'S SUPPLIERS OR VENDORS. THE CONSULTANT SHALL NOT BE RESPONSIBLE FOR ANY INADEQUACIES OF THE CLIENT'S DESIGN OR CONSTRUCTION. THE CONSULTANT SHALL NOT BE RESPONSIBLE FOR ANY INADEQUACIES OF THE CLIENT'S MATERIALS OR WORKMANSHIP. THE CONSULTANT SHALL NOT BE RESPONSIBLE FOR ANY INADEQUACIES OF THE CLIENT'S CONTRACTORS OR SUBCONTRACTORS. THE CONSULTANT SHALL NOT BE RESPONSIBLE FOR ANY INADEQUACIES OF THE CLIENT'S SUPPLIERS OR VENDORS.

SCALE: 1/8" = 1'-0"

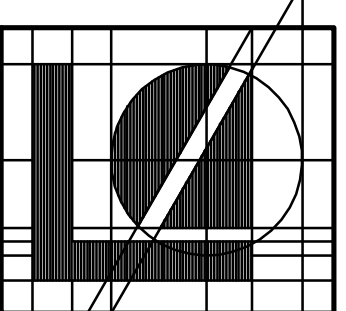
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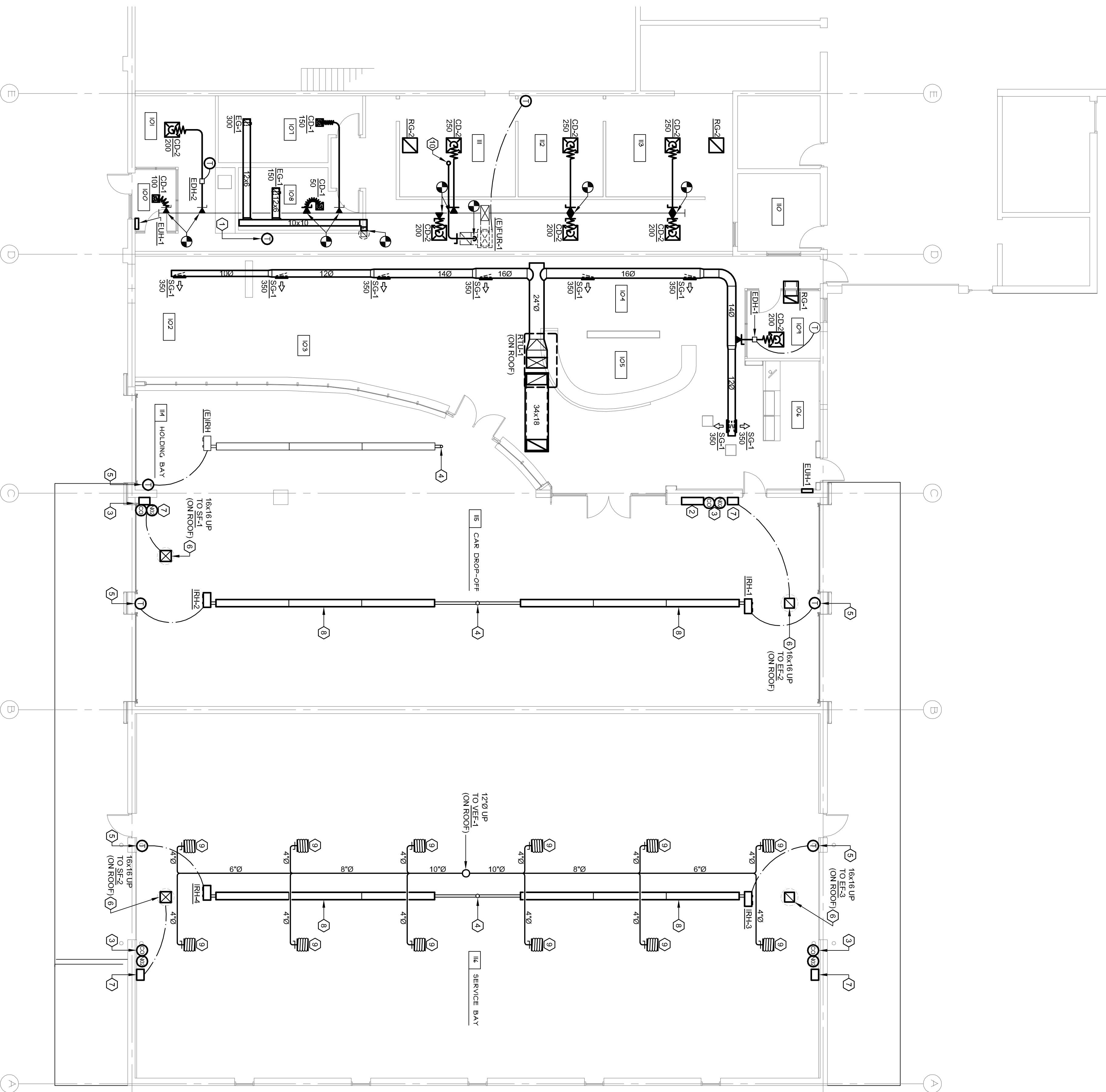
PROPOSED ADDITION FOR:
BILL BROWN FORD
CUSTOMER SERVICE CENTER
 LIVONIA, MICHIGAN
PARTIAL FLOOR PLAN - HVAC DEMOLITION

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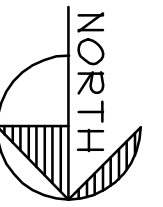


KEYED NOTES:

1. PROGRAMMABLE THERMOSTAT WITH CLEAR LOCKABLE COVER. MOUNT WITH 1/2" CLEARANCE FROM WALL & SWITCH. MOUNT @ 48" ABOVE FINISHED FLOOR TO MATCH ADJACENT LIGHT SWITCHES.
2. NEW CARBON MONOXIDE / NITROGEN DIOXIDE CONTROL PANEL. NEW 1/2" V. ADDRESSABLE CARBON MONOXIDE AND NITROGEN DIOXIDE SENSORS (DIGITAL) 5' MAX. MOUNT EACH SENSOR AT MANUFACTURERS RECOMMENDED MOUNTING HEIGHTS.
3. 4"Ø RADIANT HEATER FLUE THROUGH ROOF.
4. 24" V RADIANT TUBE HEATER THERMOSTAT. MOUNT @ 48" A.F.F.
5. ROUTE DUCT DOWN TO BOTTOM OF ROOF JOIST. PROVIDE BELLMOUTH FITTING WITH EXPANDED METAL OVER EXHAUST DUCTS. SUPPLY DUCTS TO BE OPEN END DUCT.
6. SUPPLY EXHAUST FAN HAND/GEAR/TO. STARTER TO BE INTERLOCKED IN AUTO MODE WITH VEHICLE EXHAUST MONITORING SYSTEM. REFER TO WIRING DIAGRAM ON M4.1.
7. MOUNT RADIANT HEATER AT XX"-Ø" ABOVE FINISHED FLOOR AND LEVEL AND CENTERED BETWEEN ADJACENT LIGHT FIXTURES.
8. VEHICLE EXHAUST HOSE REEL SHALL BE SIMILAR TO NEDERMAN SERIES 868 MODEL 50 WITH 24 FEET OF 4"Ø HOSE. PROVIDE 803 SERIES ROUND EXHAUST NOZZLE. PROVIDE AUTOMATIC DAMPER AND MICRO SWITCH TO ACTIVATE FAN WHEN HOSE IS PULLED DOWN OR RETRACTED. BALANCE EXHAUST SYSTEM TO MEET MANUFACTURERS RECOMMENDATION WITH UNISTRUT AND COORDINATE EXACT MOUNTING LOCATION WITH OWNER.
9. REMOVE EXISTING 8"Ø O.A. DUCT AND REPLACE WITH NEW 8"Ø INSULATED O.A. DUCT. PROVIDE VOLUME DAMPER AND AIR DUCT WHERE 8"Ø DUCT WAS REMOVED. PROVIDE NEW SEALED ROOF PENETRATION AND ASSOCIATED CAP.

ROOM SCHEDULE

I00	VESTIBULE
I01	CUSTOMER WORK STATIONS
I02	CUSTOMER WAITING
I03	CUSTOMER WAITING
I04	SERVICE ADVISORS
I05	CUSTOMER SERVICE DESK
I06	SALES COUNTER
I07	MENS TOILET
I08	WOMENS TOILET
I09	OFFICE
I10	OFFICE
I11	OFFICE
I12	OFFICE
I13	SHARED WORKSTATION
I14	HOLDING BAY
I15	CUSTOMER DROP-OFF SERVICE BAY
I16	TECH. WORK STATION



THIS DRAWING IS UNRECORDED AND SHOULD BE USED TO RETRACE THE DESIGN INTENT. THE CONTRACTOR SHALL VERIFY THE ACCURACY OF ALL DIMENSIONS AND CONDITIONS OF ALL MATERIALS IN THE FIELD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING MATERIALS AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING MATERIALS AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING MATERIALS AND STRUCTURES.

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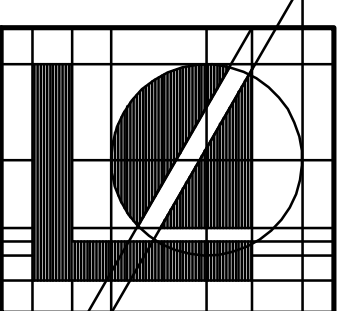
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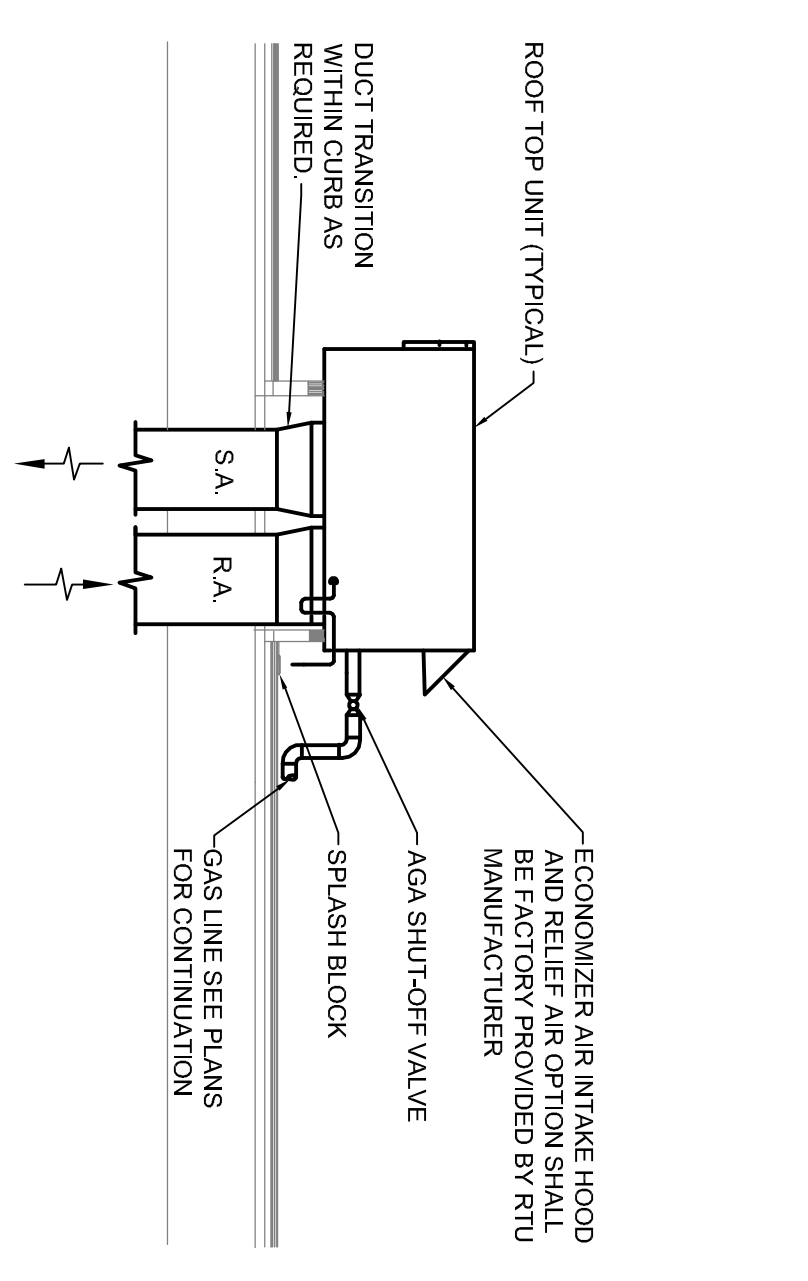
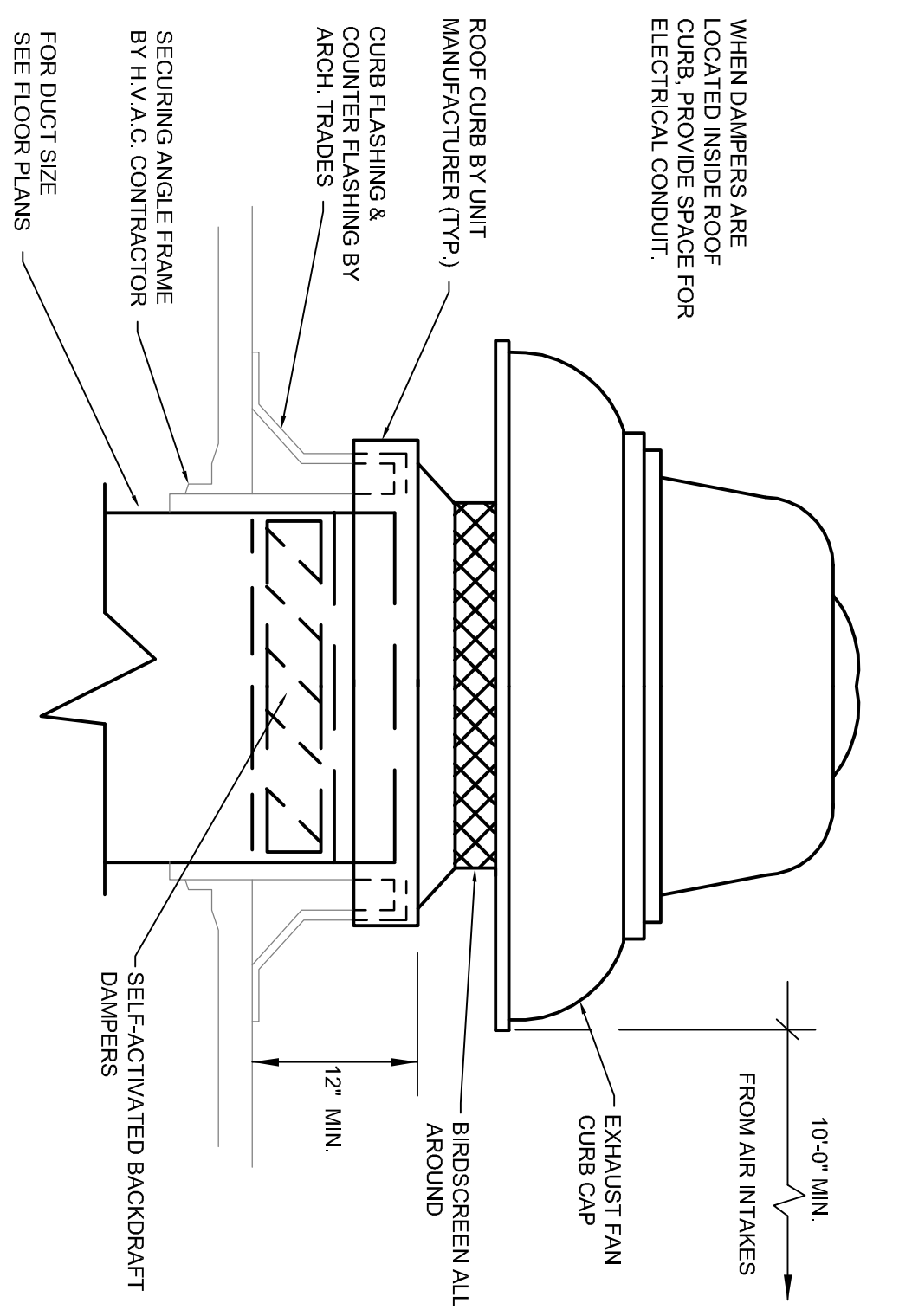
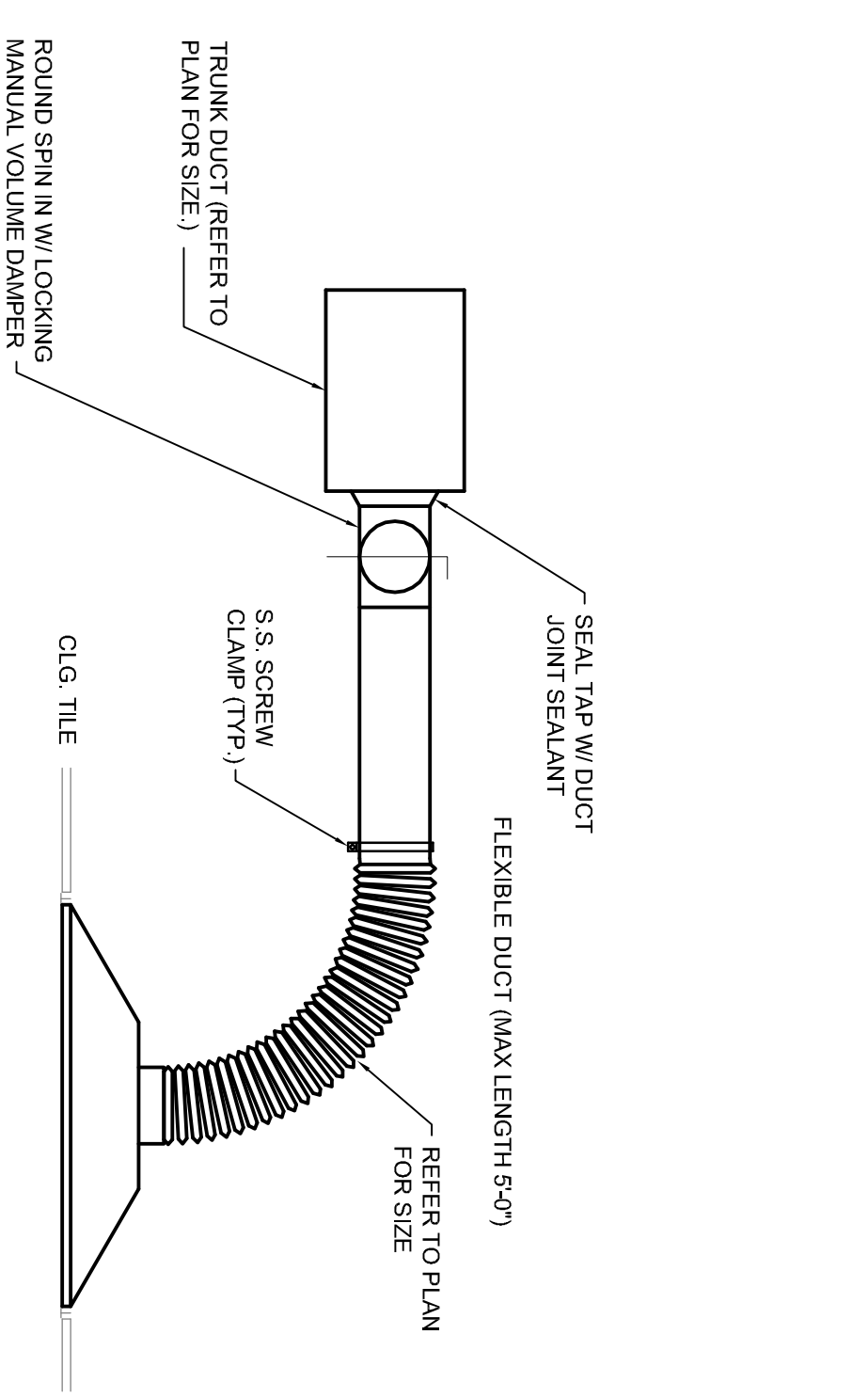
PROPOSED ADDITION FOR:
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CUSTOMER SERVICE CENTER**
LIVONIA, MICHIGAN
PARTIAL FLOOR PLAN - HVAC NEW WORK

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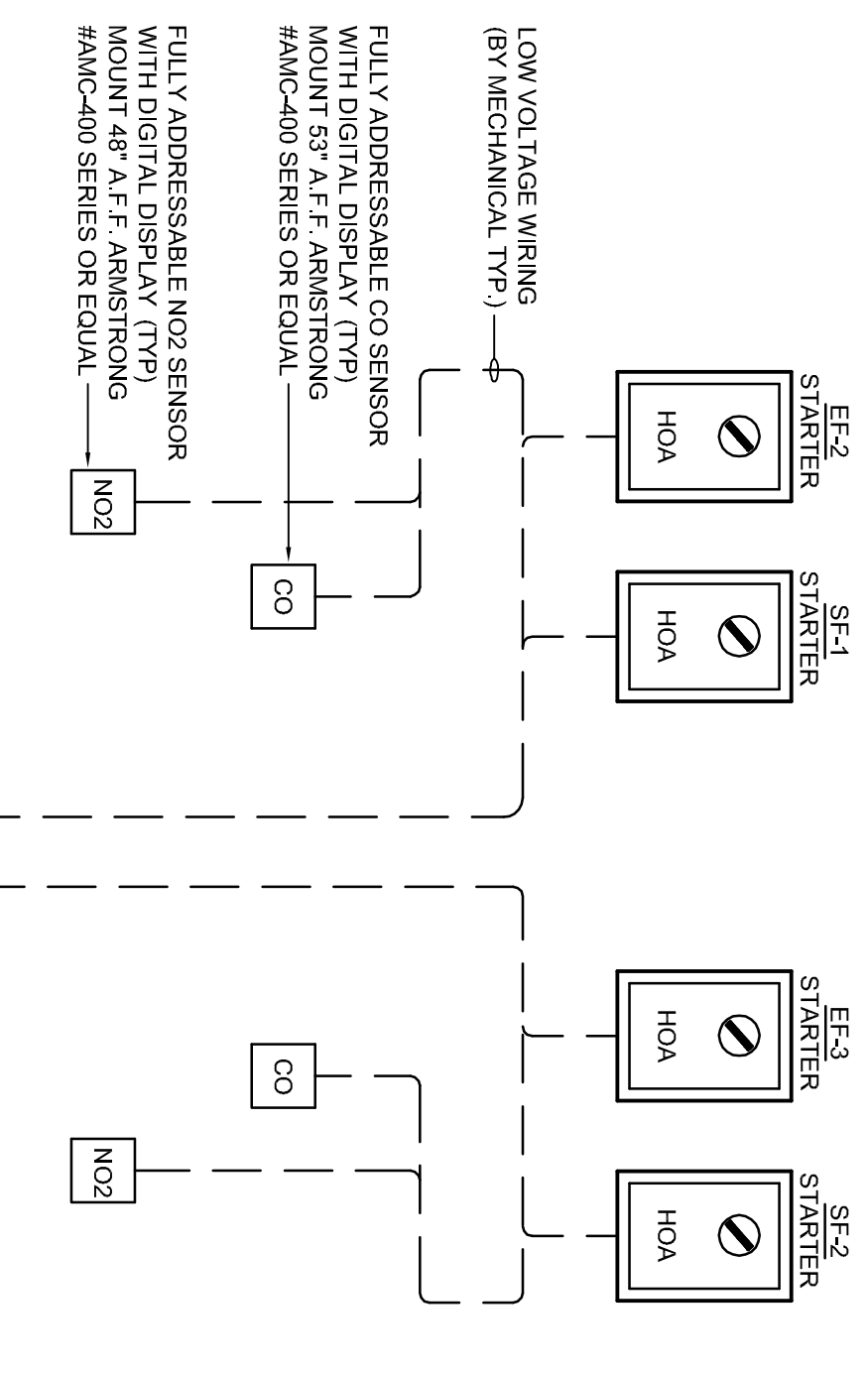
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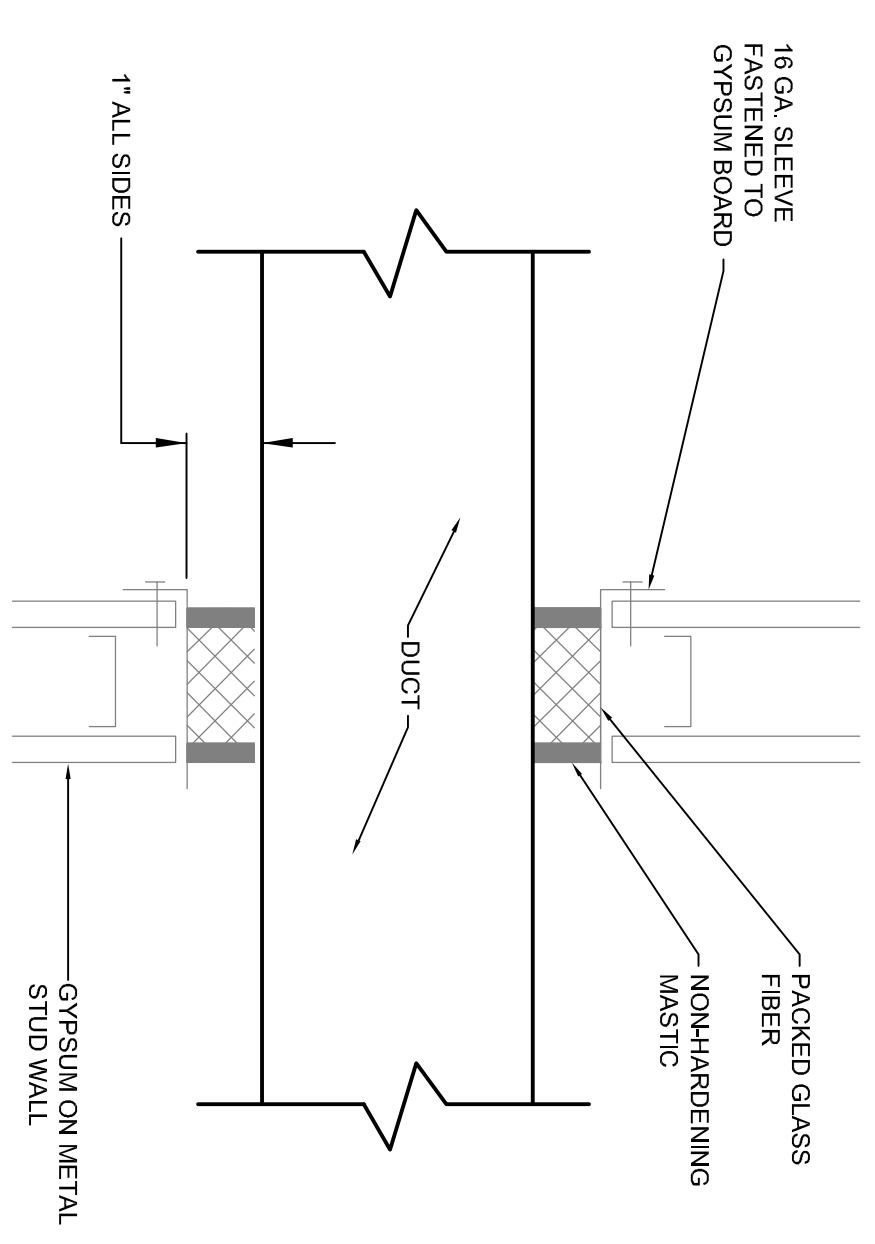




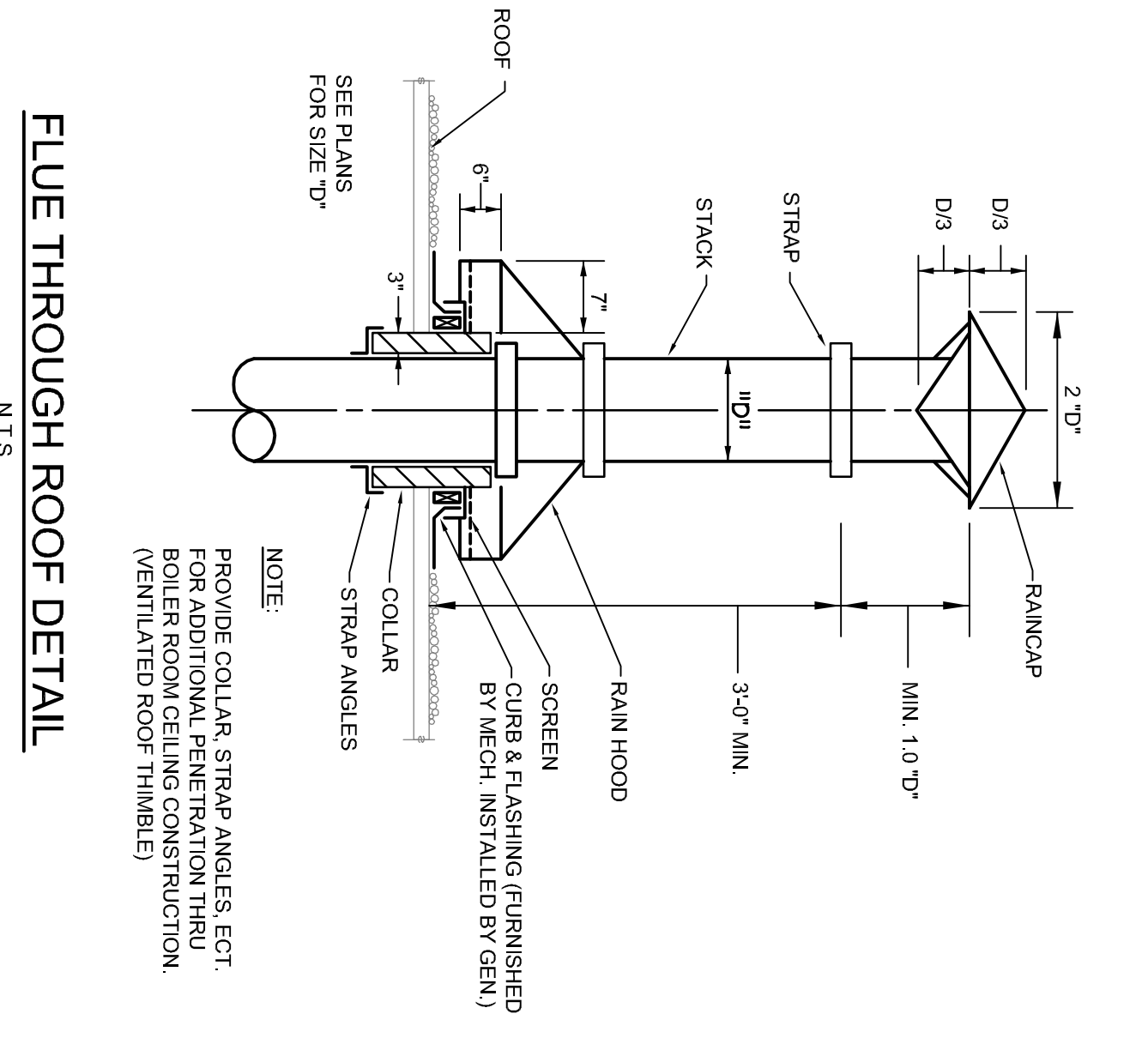
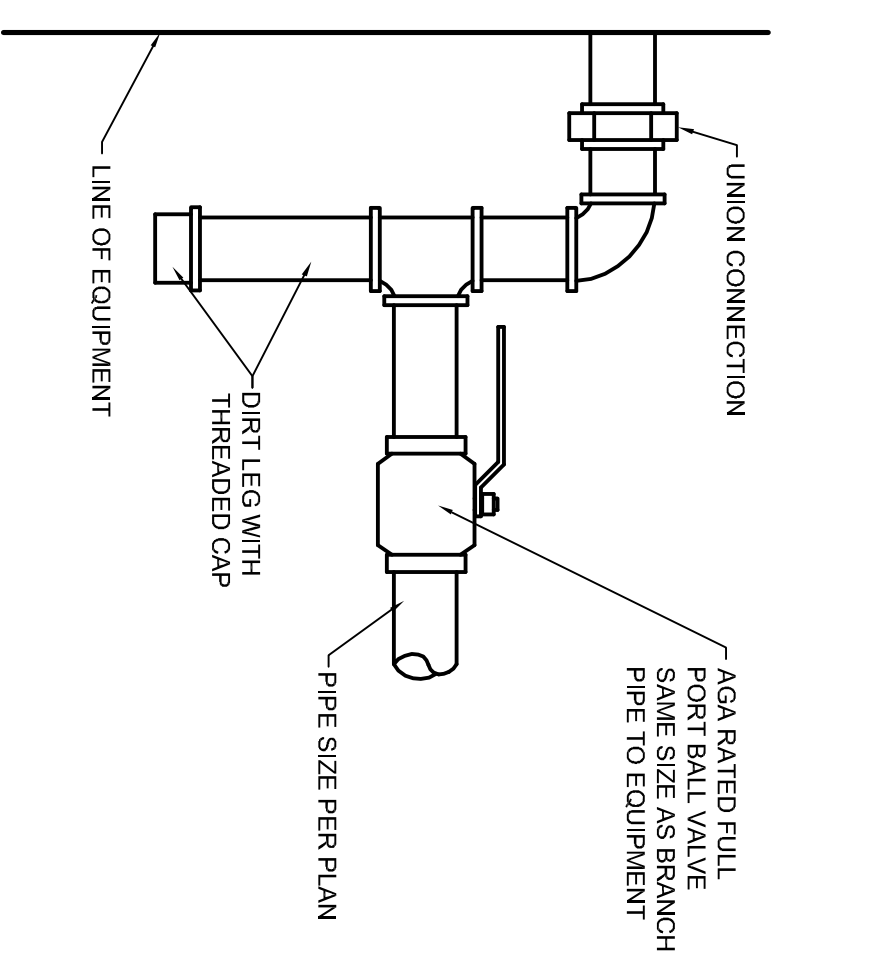
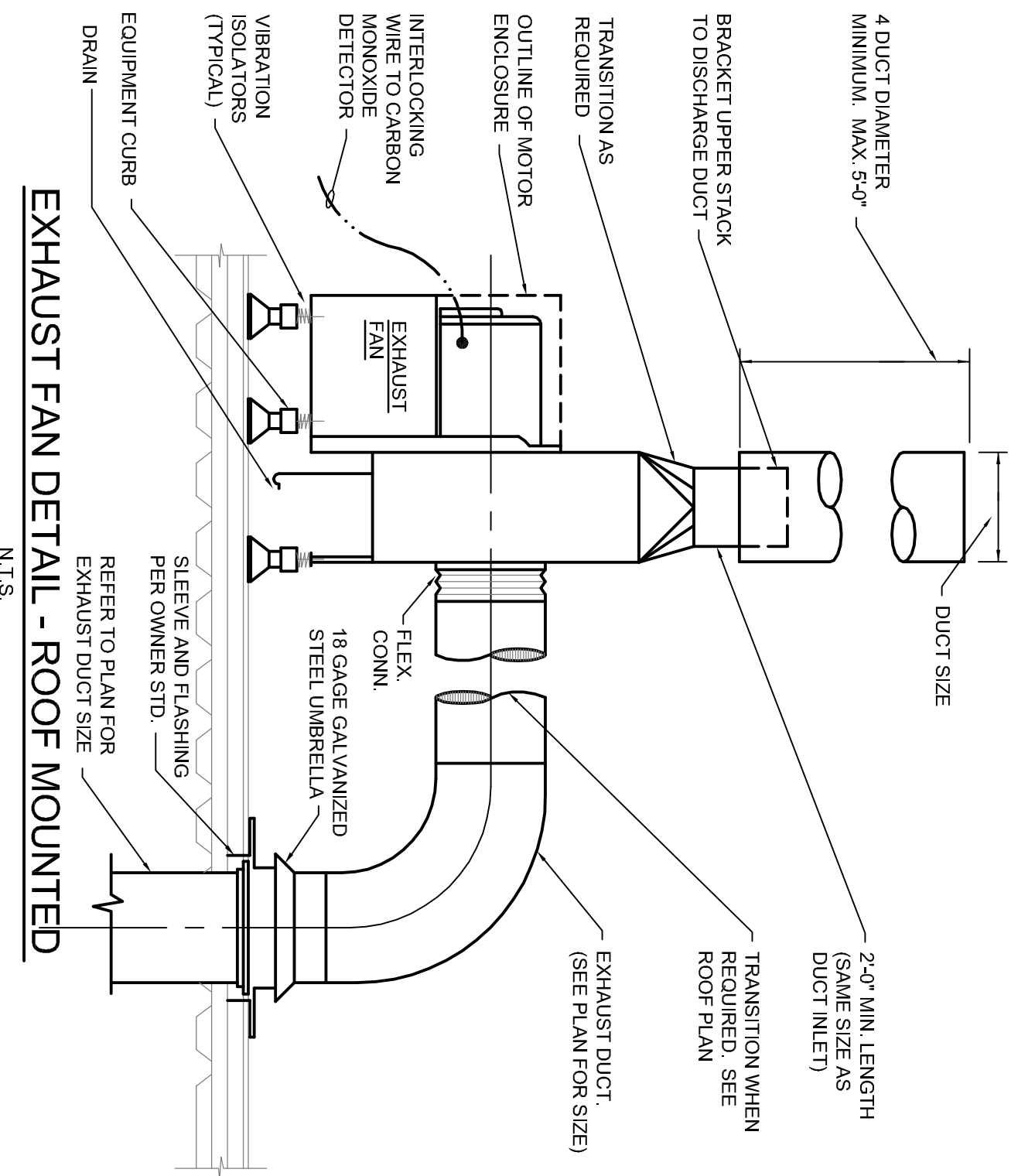
NOTE:
MECHANICAL CONTRACTOR SHALL NOTIFY GENERAL CONTRACTOR OF WEIGHT OF EACH ROOFTOP UNIT TO BE USED AS SOON AS IT BECOMES AVAILABLE.



ALARM CONDITION:
THE VEHICLE EXHAUST SYSTEM SHALL PRODUCE A VISUAL AND AUDIBLE ALARM ONCE CO OR NO2 LEVELS REACH PRESET POINTS. THE EXHAUST FANS SHALL OPERATE FOR AN ADDITIONAL TWO MINUTES (ADJUSTABLE) ONCE THE AREA IS PURGED.



NOTE:
1. COORDINATE WITH ARCHITECTURAL TRADES TO FRAME WALL OPENINGS LARGER THAN 1/4 INCHES WIDE OR WHERE METAL STUD MUST BE CUT TO INSTALL DUCT.



ROOF TOP UNIT SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	AREA SERVED	SUPPLY FAN SECTION			MOTOR DATA			FILTER SECTION			HEATING SECTION		EVAPORATOR SECTION BASED ON 95°F AMBIENT		ELECTRICAL		ACCESSORIES								
				CFM	MIN. O.A. (CFM)	E.S.P. IN WG.	FAN RPM	MAX BHP	# FANS	HP EACH	TYPE	SIZE	MERV	INPUT MBH	OUTPUT MBH	NOMINAL TONS	TOTAL MBH	SENSIBLE MBH		E.A.T. (°F)		L.A.T. (°F)		VOLTS PHASE	MCA	MOP	OPERATING WEIGHT (LBS.)
RTU-1	LENNOX	KGA092	SEE PLANS	3,000	355	1.0	812	1.23	1	2	PLEATED	2"	8	180	144	7.5	88.9	64.0	76.8	64.0	54.5	54.0	480/3	20	25	1,200	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

- APPROVED EQUAL: INDECO, BRASCH, Q MARK
- ACCESSORIES:
- UNIT CAPACITIES SHALL BE BASED ON A.R.I. CONDITIONS.
 - 7.24V PROGRAMMABLE THERMOSTAT WITH FAN/OCCUPANT PROGRAMMING AND AUTO CHANGE OVER
 - FACTORY MOUNTED FUSED DISCONNECT SWITCH WITH PHASE MONITOR
 - 100% COMPARATIVE ENTHALPY ECONOMIZER CONTROLS
 - UNIT MOUNTED N.A. SMOKE DETECTOR
 - U.L. LISTED
 - ASHRAE 90.1-2007 COMPLIANT.
 - 1/4" PREFABRICATED ROOF CURB.
 - FILTER/REAR
 - 10/CRANKCASE HEATER
 - CONVENIENCE OUTLET

ELECTRIC UNIT HEATER SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	AREA SERVED	AIRFLOW CFM	KW OUTPUT (BTU/H)	HEAT OUTPUT (BTU/H)	VOLTAGE	PHASE	AMPS	NOTES
EUH-1	MARKEL	F2463	SEE PLANS	230	3.0	10,239	208	1	14.4	1, 2, 3, 4, 5

- APPROVED EQUAL: INDECO, BRASCH, Q MARK
- NOTES:
- BUILT-IN 2-STAGE STAT AND RELAYS WHICH ARE OPERATED BY AN INTERNAL 24V SOURCE
 - UNIT MOUNTED DISCONNECT SWITCH
 - SUPPORT BRACKET
 - U.L. LISTED
 - REMOVE 24V THERMOSTAT WITH CONTROL TRANSFORMER

GRILLES REGISTERS AND DIFFUSERS SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	NECK SIZE	DIFFUSER SIZE	FINISH	MOUNTING TYPE	CONSTRUCTION	ACCESSORY	NOTES
GD-1		6" / 12"x12" / SPD/D/IB12	6" Ø	12"x12"	WHITE	SURFACE	STEEL	-	1
GD-2		8" / 24"x24" / SPD/D/IB12	8" Ø	24"x24"	WHITE	LAY-IN	STEEL	-	1
EG-1		10"x10" 80 / F/AB12	8"x8"	10"x10"	WHITE	SURFACE	ALUMINUM	DAMPER	1, 2
RG-1		12"x24" 80 / F/AB12	10"x22"	12"x24"	WHITE	LAY-IN	ALUMINUM	SCUIM BOOT	1, 2
RG-2		24"x24" 80 / F/AB12	22"x22"	24"x24"	WHITE	LAY-IN	ALUMINUM	-	1, 2
SG-1		16"x6" SDOE	17"x6"	16"x6"	WHITE	DUCT	STEEL	AIR SCOOP	1, 2

- APPROVED EQUAL: TTUS
- NOTES:
- TO BE SELECTED CEILING PLAN FOR LOCATIONS. PROVIDE ALL ACCESSORIES NEEDED TO PROPERLY MOUNT DEVICES
 - 1/2"x1/2"x1/2" ALUMINUM EGGRATE GRID

INFRA-RED TUBE HEATER SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	LOCATION	TYPE	UNIT LENGTH	MOUNTING HEIGHT	GAS DATA		NOTES	
							TYPE	MBH (HIGH FIBER)		
IRH-1	RE-VERBARAY	HI-3-30-75	SEE PLANS	VENTED	31'-3"	18'-0"	NATURAL	75	50	1, 2, 3, 4, 5
IRH-2	RE-VERBARAY	HI-3-30-75	SEE PLANS	VENTED	31'-4"	18'-0"	NATURAL	75	50	1, 2, 3, 4, 5
IRH-3	RE-VERBARAY	HI-3-30-75	SEE PLANS	VENTED	31'-5"	18'-0"	NATURAL	75	50	1, 2, 3, 4, 5
IRH-4	RE-VERBARAY	HI-3-30-75	SEE PLANS	VENTED	31'-6"	18'-0"	NATURAL	75	50	1, 2, 3, 4, 5
IRH-5	RE-VERBARAY	HI-3-30-75	SEE PLANS	VENTED	31'-7"	18'-0"	NATURAL	75	50	1, 2, 3, 4, 5

- APPROVED EQUAL: ROBERTS GORDON, SOLARONICS
- NOTES:
- DIRECT SPARK IGNITION
 - 24V HEATING THERMOSTAT
 - WEATHERPROOF ROOF EXHAUST CAP
 - A.G.A. CERTIFIED
 - 12 GA. HEAT EXCHANGER TUBE

ELECTRIC DUCT HEATER SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	ROOM #	TYPE	AIRFLOW CFM	DUCT SIZE	KW OUTPUT	HEAT OUTPUT (BTU/H)	CONTROL STAGES	VOLTAGE	PHASE	AMPS	NOTES
EDH-1	MARKEL	HF-SERIES	101	INSERT	200	8"Ø	2	6,824	1	208	1	9.8	1, 2, 3, 4
EDH-2	MARKEL	HF-SERIES	109	INSERT	200	8"Ø	2	6,824	1	208	1	9.8	1, 2, 3, 4

- APPROVED EQUAL: INDECO, BRASCH, Q MARK
- NOTES:
- REMOVE LOW VOLTAGE SPACE THERMOSTAT WITH CONTROL TRANSFORMER
 - U.L. LISTED
 - U.L. LISTED
 - AIRFLOW PROVING SWITCH

EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	AREA SERVED	LOCATION	AIRFLOW (CFM)	EXTERNAL S.P.	FAN (RPM)	FAN (BHP)	FAN (HP)	ELECTRICAL	NOTES
EF-1	GREENHECK	G-085-VG	BATHROOMS	ROOF	450	0.25	1,596	0.05	1/6	115/1Ø0	1, 2, 3, 4, 5, 6
EF-2	GREENHECK	G-183-VG	CAR DROP OFF & HOLDING BAY	ROOF	3,500	0.25	968	0.52	1	208/1Ø0	1, 2, 3, 4, 5, 6
EF-3	GREENHECK	G-183-VG	SERVICE BAY	ROOF	4,800	0.25	1,284	1.18	2	208/1Ø0	1, 2, 3, 4, 5, 6
VEF-1	GREENHECK	11-PA	SERVICE BAY VEHICLE EXH.	ROOF	3,000	3.5	1,806	3.67	5.0	480/3Ø0	1, 7, 8, 9, 10, 11

- APPROVED EQUAL: AOME, COOK, PENN VENTILATORS
- NOTES:
- SHALL HAVE ANCA SEAL & BE U.L. 706 LISTED
 - FAN SHALL HAVE GALVANIZED BIRD SCREEN
 - SAFETY DISCONNECT SWITCH (BY ELECTRICAL)
 - PROVIDE STANDBY 1" INSULATED 12" TALL ROOF CURB
 - PROVIDE DUCT MOUNTED GRAVITY BACKDRIFT DAMPER
 - PROVIDE HIGH EFFICIENCY BRUSHLESS (E.C.) MOTOR WITH MOUNTED POTENTIOMETER DIAL
 - PROVIDE DRAIN WEATHERHOOD
 - PROVIDE DRAIN CONNECTION WITHOUT PLUG
 - PROVIDE UPBLAST CONFIGURATION WITH STACK CAP
 - PROVIDE ROOF CURB WITH RESTRAINED VIBRATION ISOLATORS
 - PROVIDE VFD DRIVE AND DUCT STATIC PRESSURE SENSOR
 - PROVIDE VFD DRIVE AND DUCT STATIC PRESSURE SENSOR

SUPPLY FAN SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	AREA SERVED	LOCATION	AIRFLOW (CFM)	EXTERNAL S.P.	FAN (RPM)	FAN (BHP)	FAN (HP)	ELECTRICAL	NOTES
SF-1	GREENHECK	AS-24-419-8	CAR DROP OFF & HOLDING BAY	ROOF	3,500	0.25	1,076	0.35	1/2	115/1Ø0	1, 2, 3, 4, 5, 6
SF-2	GREENHECK	AS-24-430-8	SERVICE BAY	ROOF	4,800	0.25	1,120	0.87	1	208/1Ø0	1, 2, 3, 4, 5, 6

- APPROVED EQUAL: AOME, COOK, PENN VENTILATORS
- NOTES:
- SHALL HAVE ANCA SEAL & BE U.L. 706 LISTED
 - FAN SHALL HAVE GALVANIZED BIRD SCREEN
 - SAFETY DISCONNECT SWITCH (BY ELECTRICAL)
 - PROVIDE DUCT MOUNTED GRAVITY BACKDRIFT DAMPER
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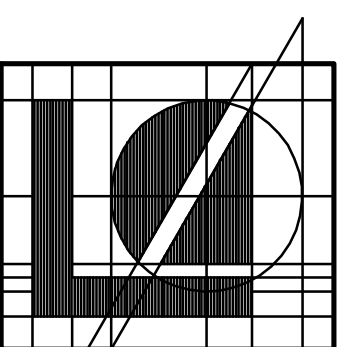
OUTDOOR AIR CALCULATION SCHEDULE

UNIT TAG	ROOM NUMBER	AREA SQ. FT. (A2)	2009 MNC OCCUPANCY CLASSIFICATION	AREA OUTDOOR AIRFLOW RATE CFM/SQ. FT.	AREA OUTDOOR AIR (Ra) x (A2) CFM	POPULATION (# OF SEAT)	ZONE	PEOPLE	OUTDOOR AIRFLOW RATE CFM/PERSON	OCCUPANT OUTDOOR AIR (Ra) x (Pa) CFM	BREATHING ZONE OUTDOOR AIR (Vbz=Rpz+Rba2) CFM	ZONE AIR DISTRIBUTION EFFECTIVENESS (Ez)	ZONE OUTDOOR AIRFLOW REQUIRED (Voz2) CFM	TOTAL OUTDOOR AIR REQUIRED WITH ZONE CFM
	109	92	OFFICE	.06	6	3	5	5	150	50.0	20.5	0.8	25.7	
	101-103	915	RECEPTION	.06	55	10	5	5	50.0	104.9	104.9	0.8	131.1	365
	104-106	1146	SALES	.06	69	18	5	5	90.0	158.8	158.8	0.8	198.5	
	111, 112, 113	982	OFFICE	.06	60	9	5	5	45.0	104.5	104.5	0.8	130.7	
	101	178	RECEPTION	.06	11	3	5	5	150	25.7	25.7	0.8	32.1	163

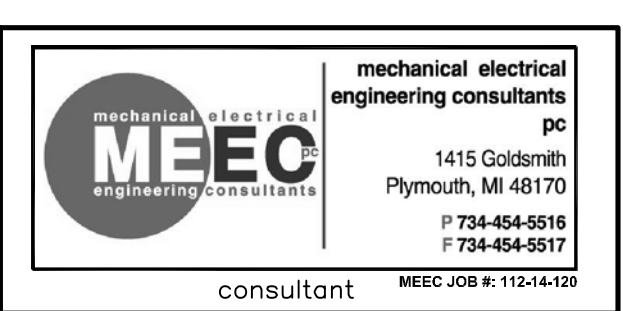
PER THE 2009 MICHIGAN MECHANICAL CODE TABLE 403.3 THE SPACES WITHIN THIS SCHEDULE MEET OR EXCEED THE REQUIREMENTS FOR OUTDOOR AIR FLOW RATE.

DUCTWORK APPLICATION SCHEDULE

AIR SYSTEM	MATERIAL	DESIGN PRESSURE CLASSIFICATION (INCHED W/G)
SUPPLY AIR	GALVANIZED STEEL	+2
EXHAUST AIR	GALVANIZED STEEL	-2
RETURN AIR	GALVANIZED STEEL - LINED GALVANIZED STEEL (WHERE INDICATED ON DRAWINGS)	-2
OUTSIDE AIR INTAKE DUCTWORK	GALVANIZED STEEL	+2

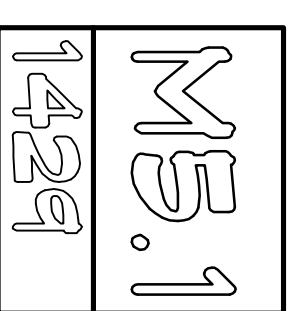


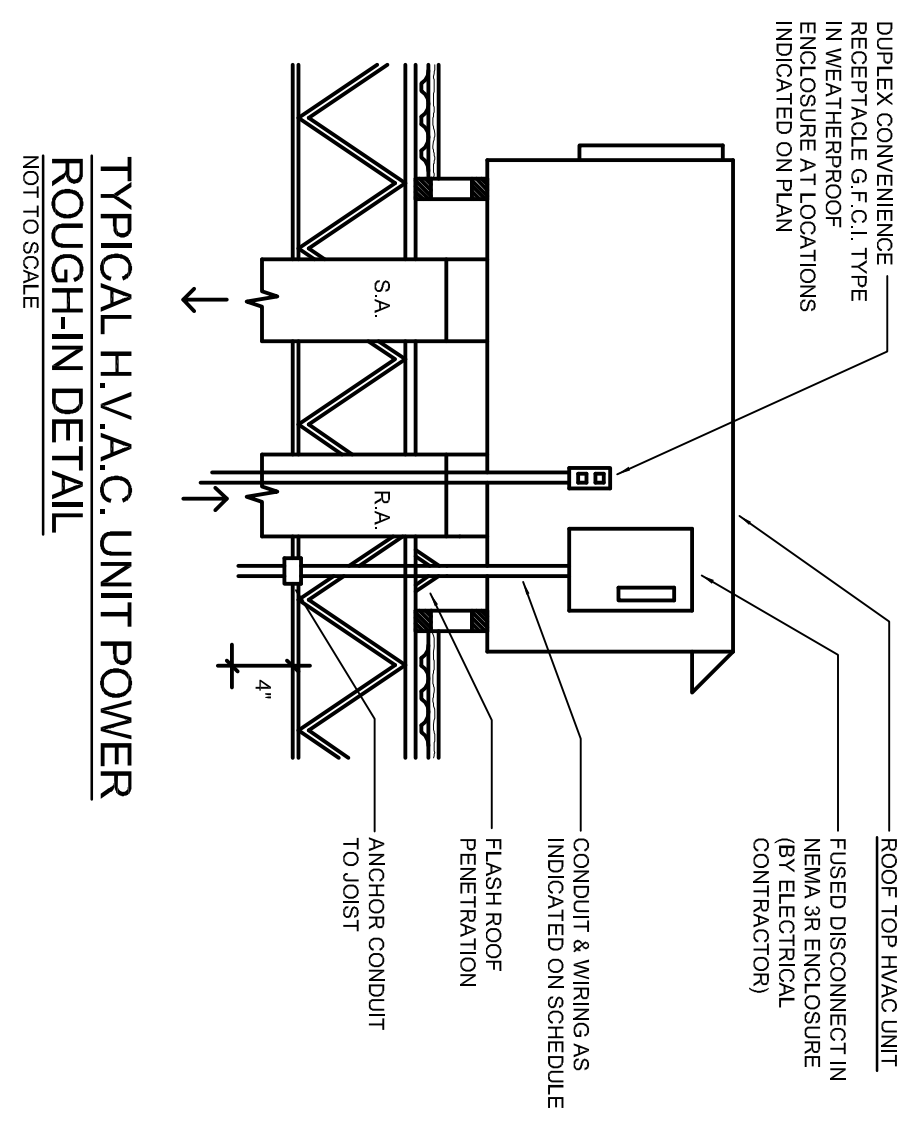
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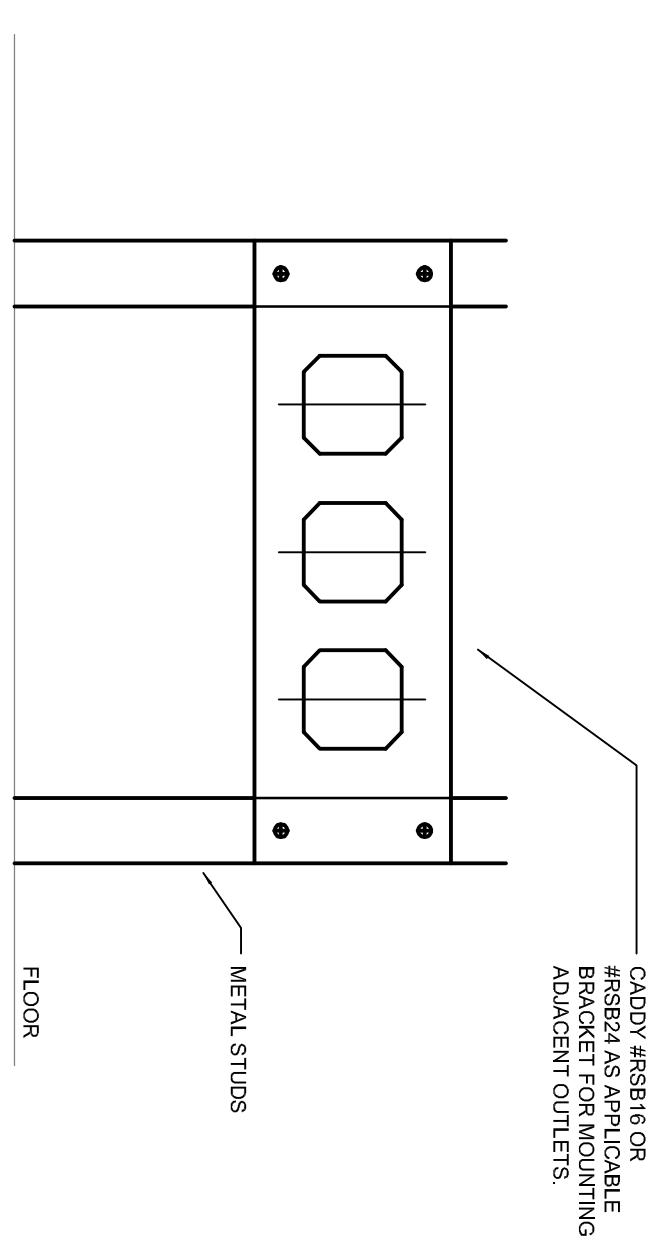
dr: M.V.
 ck'd: M.V.
 opp'd: J.B.
 10/9/2014
 10/3/2014
 date
 PROGRESS SET
 OWNER REVIEW
 issued for

PROPOSED ADDITION FOR:
 BILL BROWN FORD
 CUSTOMER SERVICE CENTER
 LIVONIA, MICHIGAN
 HVAC - SCHEDULES

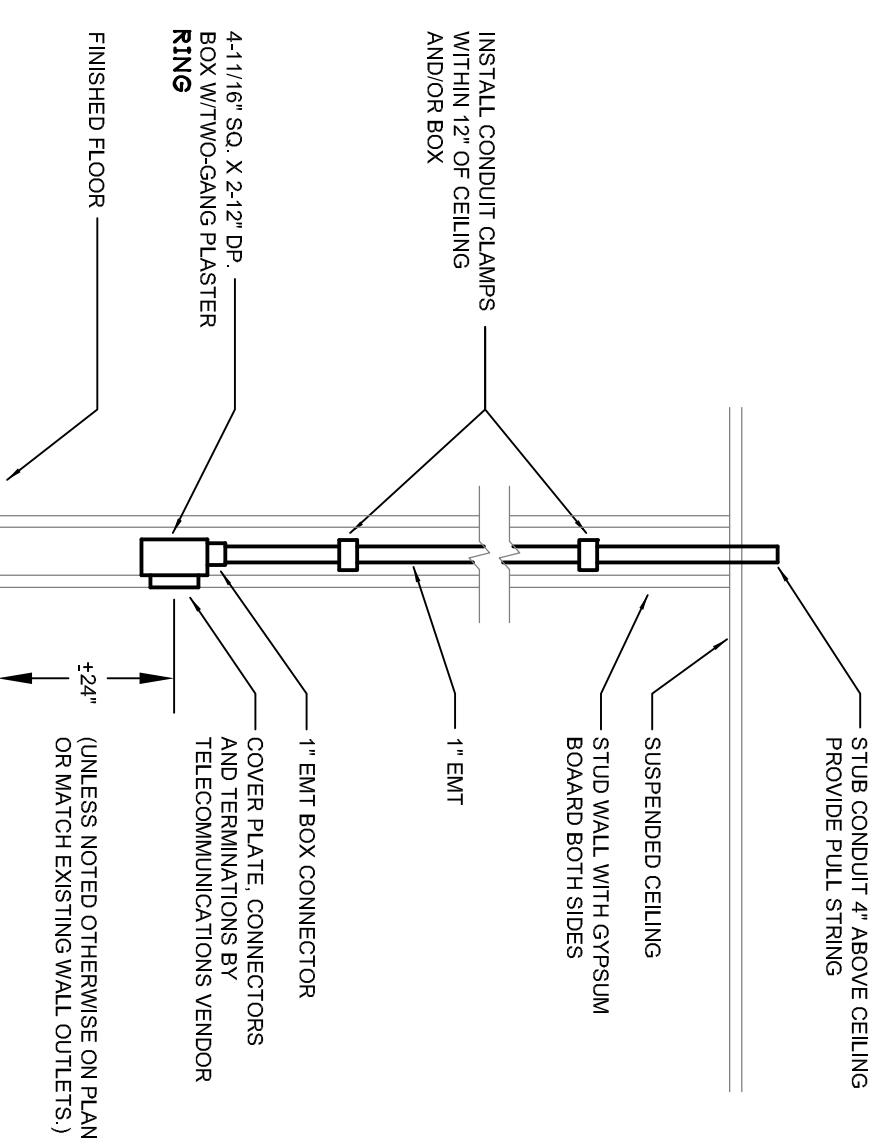




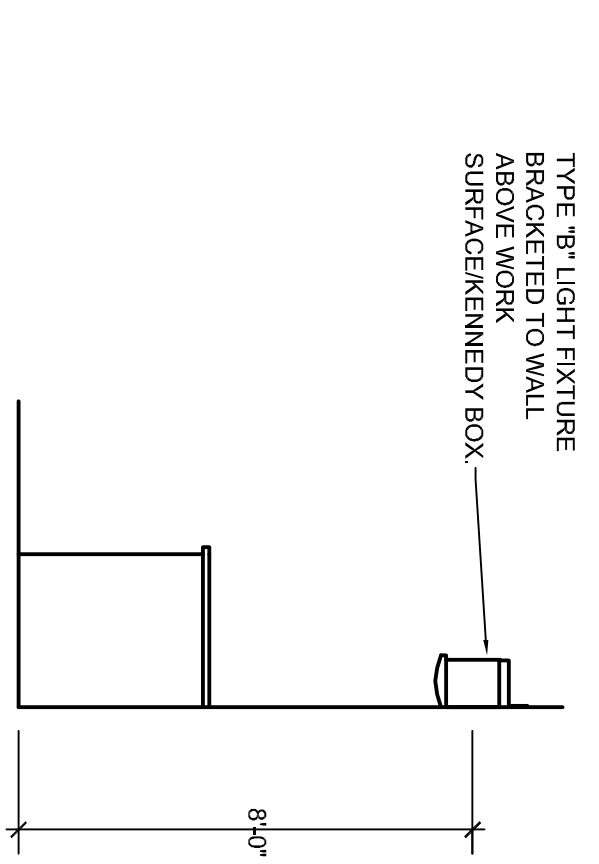
TYPICAL HVAC UNIT POWER ROUGH-IN DETAIL



MULTIPLE OUTLET MOUNTING BRACKET DETAIL



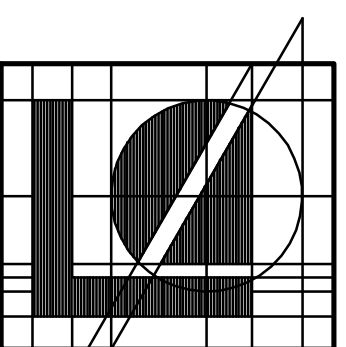
TYPICAL COMMUNICATIONS OUTLET DETAIL



DETAIL - TYPE "B" FIXTURE MOUNTING

THIS DRAWING IS EXPLANATORY AND SHOULD BE REFERRED TO IN CONNECTION WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY OF ALL DIMENSIONS AND CONDITIONS SHOWN ON THIS DRAWING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY MATERIALS AND LABOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY INFORMATION FROM THE ARCHITECT AND ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY INFORMATION FROM THE ARCHITECT AND ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY INFORMATION FROM THE ARCHITECT AND ENGINEER.

SCALE: N.T.S.



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dr: S.L.	10/9/2014	PROGRESS SET	
ck'd: J.B.	10/3/2014	OWNER REVIEW	
app'd: J.B.	date	issued for	

PROPOSED ADDITION FOR:
BILL BROWN FORD
CUSTOMER SERVICE CENTER
LIVONIA, MICHIGAN

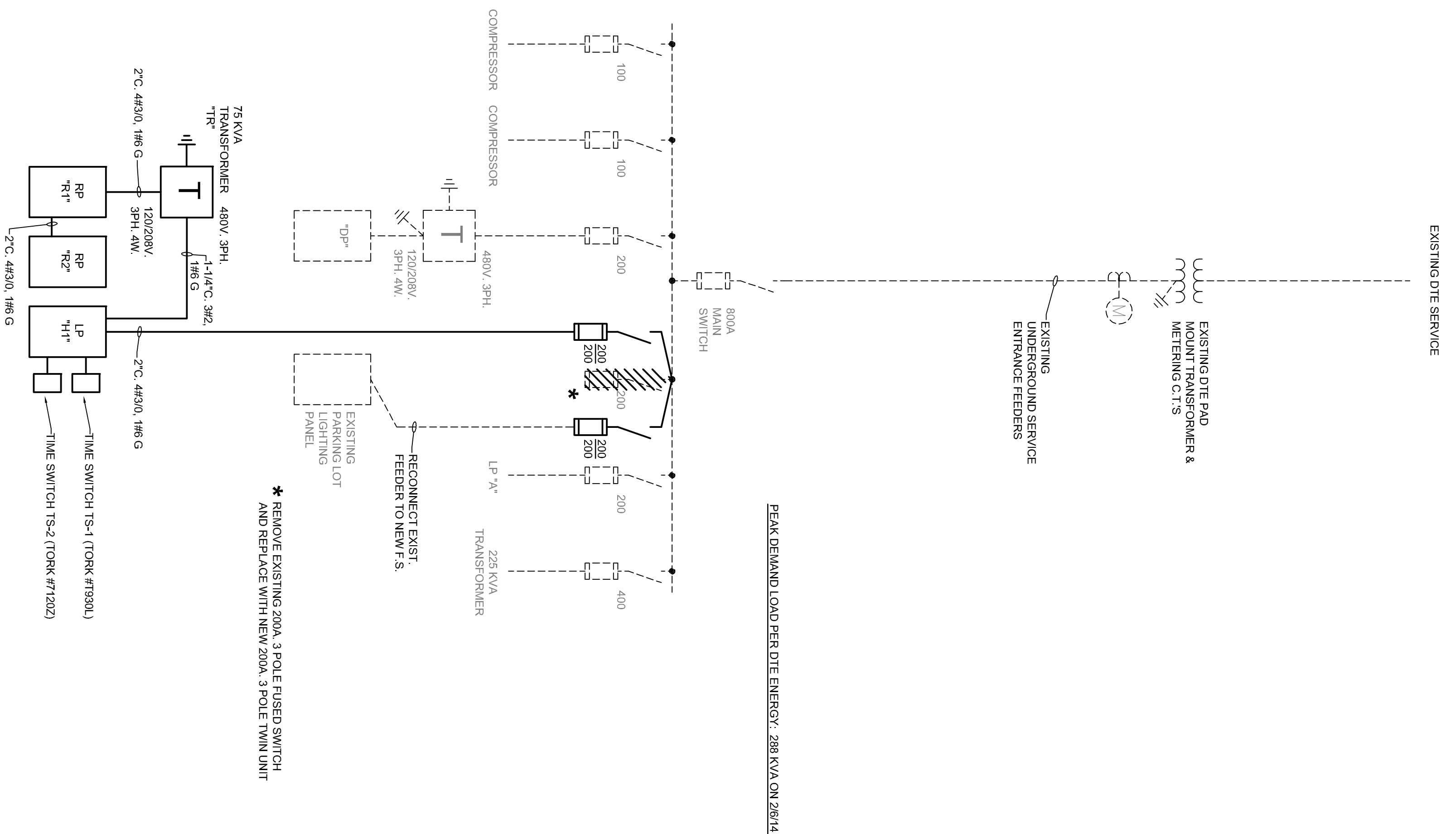
ELECTRICAL NOTES AND DETAILS

1429

PANEL BOARD H1 MAIN BREAKER 200		VOLTAGE 277/480V, 3PH, 4W MAIN LUGS 10,000						SYM. A.I.C. MIN. 44,495			MOUNTING SURFACE				
LOAD - V-A	A	B	C	BRKR	#	CT	LOAD - V-A	A	B	C	LOAD SERVED				
LOAD SERVED	280			20	1	2	40	5570			AIR COMPRESSOR 10 HP				
NIGHT LIGHTS & EMERGENCY LIGHTING	3600			20	3	4		5570							
TASK LIGHTS	275			20	5	6	3								
SPARE				20	7	8	15	940			VEF-1 2 HP				
SPARE				20	9	10		940							
RTU-1	5300			25	11	12	3								
TRANSFORMER TR*	15742			100	19	20	18								
	15742			3	17	18									
	15742			21	22	22									
	15742			23	24	24									
				25	26	26									
				27	28	28									
				29	30	30									
				31	32	32									
				33	34	34									
				35	36	36									
				37	38	38									
				39	40	40									
				41	42	42									
LOAD DESCRIPTION	DEMAND FACTOR D.F.						CONNECTED						DEMAND		
LIGHTING	1.0						4195						44495		
RECEPTACLES							19500						25000		
SMALL MOTORS	1.0						15900						41228		
AC EQUIPMENT							15900						116471		
TOTAL	39555						39555						39555		

PANEL BOARD E2 MAIN BREAKER 200		VOLTAGE 277/480V, 3PH, 4W MAIN LUGS 10,000						SYM. A.I.C. MIN. 23,886			MOUNTING SURFACE				
LOAD - V-A	A	B	C	BRKR	#	CT	LOAD - V-A	A	B	C	LOAD SERVED				
LOAD SERVED	1250			20	1	2	20	1250			HOIST				
HOIST	1250			20	2	3	4	2			HOIST				
HOIST	1250			20	5	6	20	1250			HOIST				
HOIST	1250			20	7	8	2	1250			HOIST				
HOIST	1250			20	9	10	20	1250			HOIST				
HOIST	1250			20	11	12	2	1250			HOIST				
HOIST	1250			20	13	14	20	1250			HOIST				
HOIST	1250			20	15	16	2	1250			HOIST				
HOIST	1250			20	17	18	20	1250			HOIST				
HOIST	1250			20	19	20	2	1250			HOIST				
EF-2	920			20	21	22	20	1250			HOIST				
EF-2	920			20	23	24	2	1250			HOIST				
EF-3	1380			25	25	26	20	920			SF-2				
SF-1	1380			25	27	28	2	920			S.O.				
DOOR MOTOR	1200			20	29	30		832			EF-2 1HP				
DOOR MOTOR	1200			20	31	32	20	832							
DOOR MOTOR	1200			20	33	34	2	832							
DOOR MOTOR	1200			20	35	36									
DOOR MOTOR	1200			20	37	38									
DOOR MOTOR	1200			20	39	40									
DOOR MOTOR	1200			20	41	42									
LOAD DESCRIPTION	DEMAND FACTOR D.F.						CONNECTED						DEMAND		
LIGHTING							6816						5840		
RECEPTACLES	1.0						6816						29507		
SMALL MOTORS	.50						6000						20607		
DOOR MOTORS							27500						13750		
HOIST MOTORS							40116						81		
TOTAL	23886						23886						23886		

PANEL BOARD E1 MAIN BREAKER 200		VOLTAGE 277/480V, 3PH, 4W MAIN LUGS 10,000						SYM. A.I.C. MIN. 10,000			MOUNTING SURFACE				
LOAD - V-A	A	B	C	BRKR	#	CT	LOAD - V-A	A	B	C	LOAD SERVED				
LOAD SERVED	1080			20	1	2	20	360			LOAD SERVED				
6 RECEPTACLES	1080			20	3	4	20	300			2 RECEPTACLES				
6 RECEPTACLES	1080			20	5	6	20	300			IRH-4				
6 RECEPTACLES	1080			20	7	8	20	300			IRH-3				
4 RECEPTACLES	720			20	9	10	20	300			IRH-1				
6 RECEPTACLES	1080			20	11	12	20	300			IRH-2				
6 RECEPTACLES	1080			20	13	14	20				SPARE				
6 RECEPTACLES	1080			20	15	16	20	1000			SPARE				
6 RECEPTACLES	1080			20	17	18	2	1000			EDH-1				
AIR DRYER	900			20	19	20	20	1500			EDH-1				
DOOR MOTOR	1200			20	21	22	2	1000			EDH-1				
2 RECEPTACLES	360			20	23	24	20	1000			EDH-2				
DOOR MOTOR	1200			20	25	26	2	1000			EDH-2				
S.O.				20	27	28	20	1500			EDH-1				
S.O.				29	30	30	2	1500			EDH-1				
LOAD DESCRIPTION	DEMAND FACTOR D.F.						CONNECTED						DEMAND		
LIGHTING							8980						23880		
RECEPTACLES	NEC						3300						6000		
SMALL MOTORS	1.0						3300						23286		
MISC. EQUIPMENT	1.0						1200						63228		
ELECTRIC HEAT							10000						147		
TOTAL	23880						23880						23880		



POWER ONE-LINE DIAGRAM
N.T.S.

- NOTES
- EQUIPMENT SHOWN SOLID IS NEW.
 - EQUIPMENT SHOWN DASHED IS EXISTING TO REMAIN.
 - EQUIPMENT SHOWN DASHED WITH HATCHING IS EXISTING EQUIPMENT TO BE REMOVED.

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SCALE: N.T.S.

PROPOSED ADDITION FOR:
BILL BROWN FORD
CUSTOMER SERVICE CENTER
LIVONIA, MICHIGAN

POWER ONE-LINE DIAGRAM & PANEL SCHEDULES

dr: X.X.
ck'd: J.B.
app'd: J.B.

10/9/2014
10/3/2014

date

PROGRESS SET
OWNER REVIEW

issued for

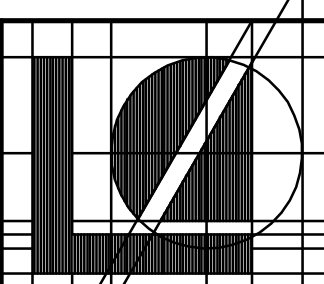
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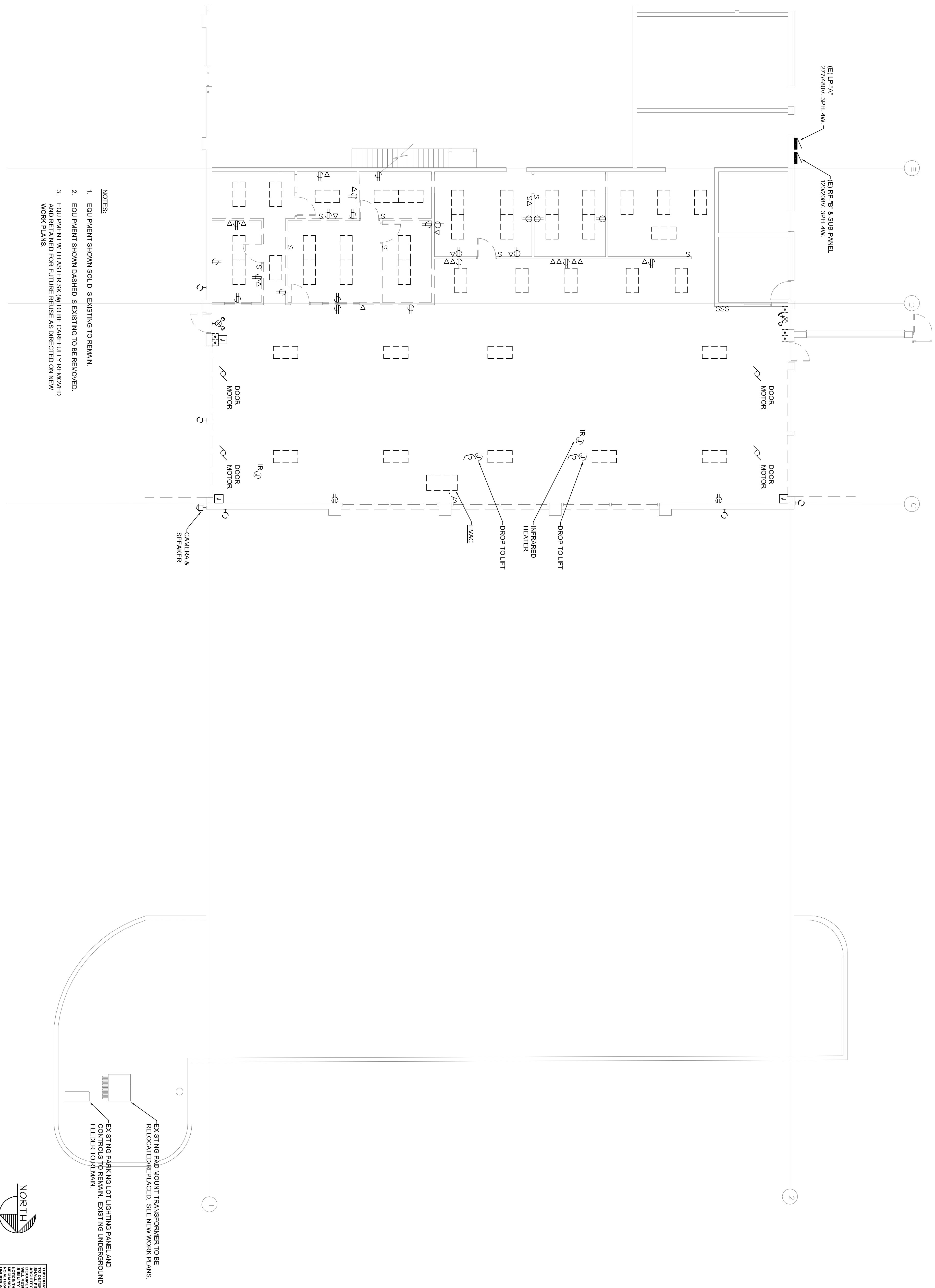
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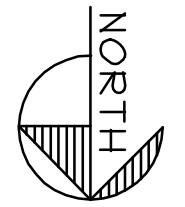
14291 PARTIAL FIRST FLOOR PLAN - ELECTRICAL DEMOLITION



- NOTES
1. EQUIPMENT SHOWN SOLID IS EXISTING TO REMAIN.
 2. EQUIPMENT SHOWN DASHED IS EXISTING TO BE REMOVED.
 3. EQUIPMENT WITH ASTERISK (*) TO BE CAREFULLY REMOVED AND RETAINED FOR FUTURE REUSE AS DIRECTED ON NEW WORK PLANS.

EXISTING PAD MOUNT TRANSFORMER TO BE RELOCATED/REPLACED. SEE NEW WORK PLANS.

EXISTING PARKING LOT LIGHTING PANEL AND CONTROLS TO REMAIN. EXISTING UNDERGROUND FEEDER TO REMAIN.



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SCALE: 1/8" = 1'-0"

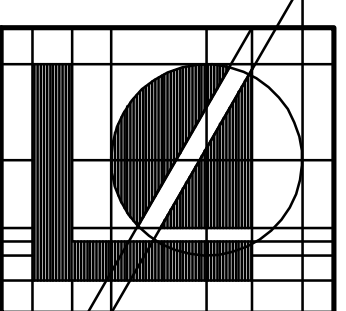
14291
E2.1

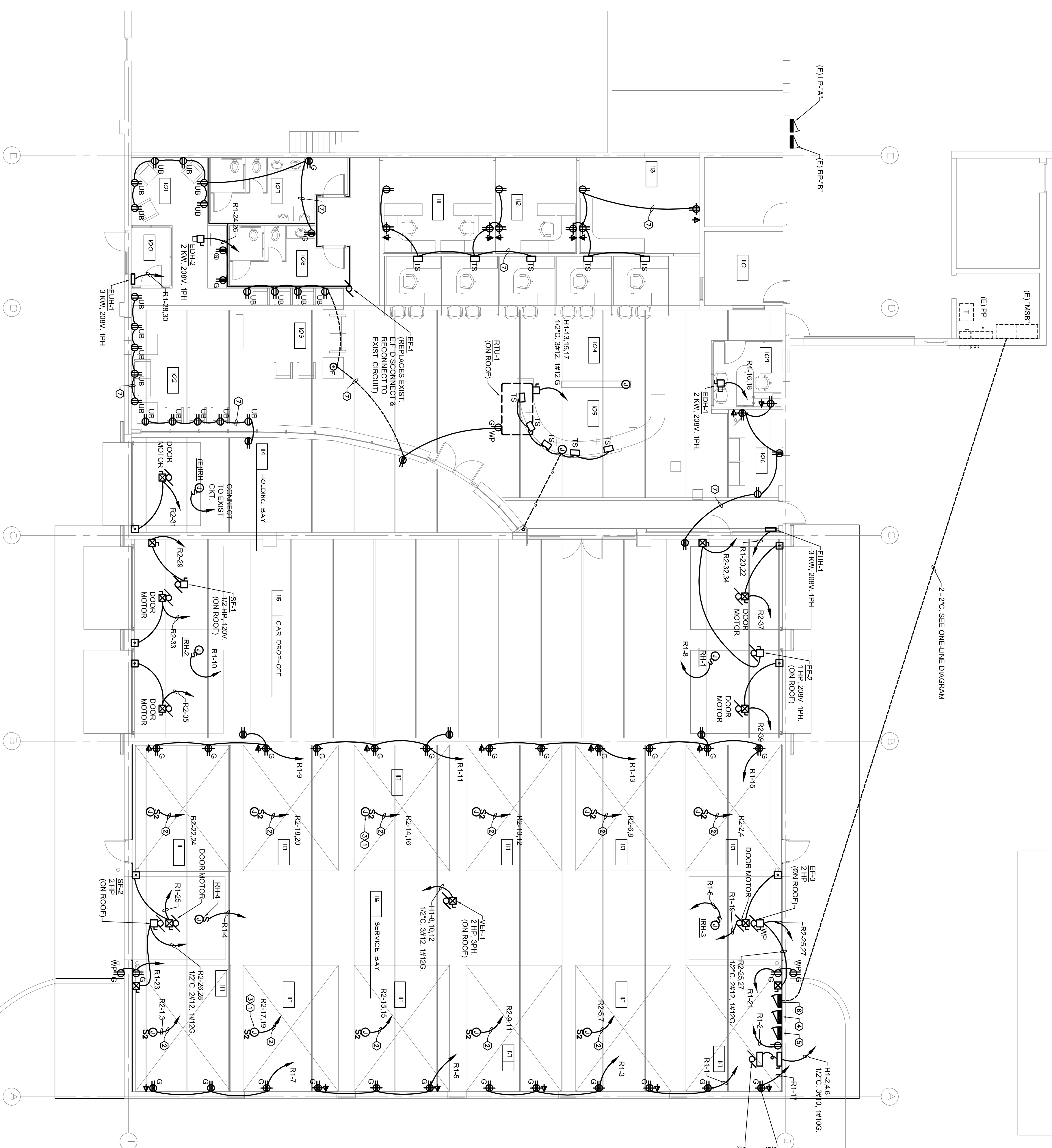
PROPOSED ADDITION FOR:
BILL BROWN FORD
CUSTOMER SERVICE CENTER
LIVONIA, MICHIGAN
PARTIAL FLOOR PLAN - ELECTRICAL DEMOLITION

dr: S.L.	10/9/2014	PROGRESS SET
ck'd: J.B.	10/3/2014	OWNER REVIEW
app'd: J.B.	date	issued for

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2-2-C. SEE ONE-LINE DIAGRAM

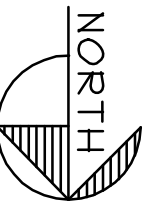
- KEYED NOTES**
- ① DROP DOWN TO LIFT POWER UNIT FROM ABOVE. POWER UNIT IS MOUNTED ON PASSENGER SIDE OF LIFT FRAME. (TYPICAL)
 - ② 1/2"C. 3#12. 1#12G
 - ③ JUNCTION BOX AT STRUCTURE ABOVE WITH 2-POLE DISCONNECTING TOGGLE SWITCH. (TYPICAL)
 - ④ ELECTRIC PANEL LP-R1 WITH TRANSFORMER MOUNTED ABOVE ON PLATFORM MOUNTED TO WALL. PRIMARY DISCONNECT TO BE MOUNTED ADJACENT TO PANEL FOR TRANSFORMER.
 - ⑤ RP-R2
 - ⑥ LP-H WITH LIGHTING CONTROL TIME SWITCH-TS-1 MOUNTED ADJACENT TO PANEL.
 - ⑦ CONNECT TO SPARE CIRCUIT IN PANEL "B". PROVIDE NEW BREAKERS WHERE REQUIRED.

CONTRACTOR NOTE

MULTI-WIRE BRANCH CIRCUITS SHALL BE PROVIDED WITH THE MEANS TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDING CONDUCTORS REFERRED TO IN THIS SECTION. THE BRANCH CIRCUIT SHALL BE PROVIDED WITH THE MEANS TO DISCONNECT ALL UNGROUNDING CONDUCTORS REFERRED TO IN THIS SECTION. THE BRANCH CIRCUIT SHALL BE PROVIDED WITH THE MEANS TO DISCONNECT ALL UNGROUNDING CONDUCTORS REFERRED TO IN THIS SECTION. THE BRANCH CIRCUIT SHALL BE PROVIDED WITH THE MEANS TO DISCONNECT ALL UNGROUNDING CONDUCTORS REFERRED TO IN THIS SECTION.

ROOM SCHEDULE

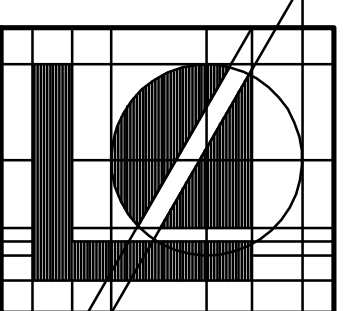
100	VESTIBULE	1
101	CUSTOMER WORK STATIONS	
102	CUSTOMER WAITING	
103	CUSTOMER WAITING	
104	SERVICE ADVISORS	
105	CUSTOMER SERVICE DESK	
106	SALES COUNTER	
107	MENS TOILET 1	
108	WOMENS TOILET	
109	OFFICE	1
110	OFFICE	1
111	OFFICE	1
112	OFFICE	1
113	SHARED WORKSTATION	
114	HOLDING BAY	
115	CUSTOMER DROP-OFF	
116	SERVICE BAY	
117	TECH. WORK STATION	



EXISTING OUTDOOR LIGHTING CABINET & CONTROLS TO REMAIN

EXISTING DTE PAD MOUNT TRANSFORMER TO REMAIN

SCALE: 1/8" = 1'-0"



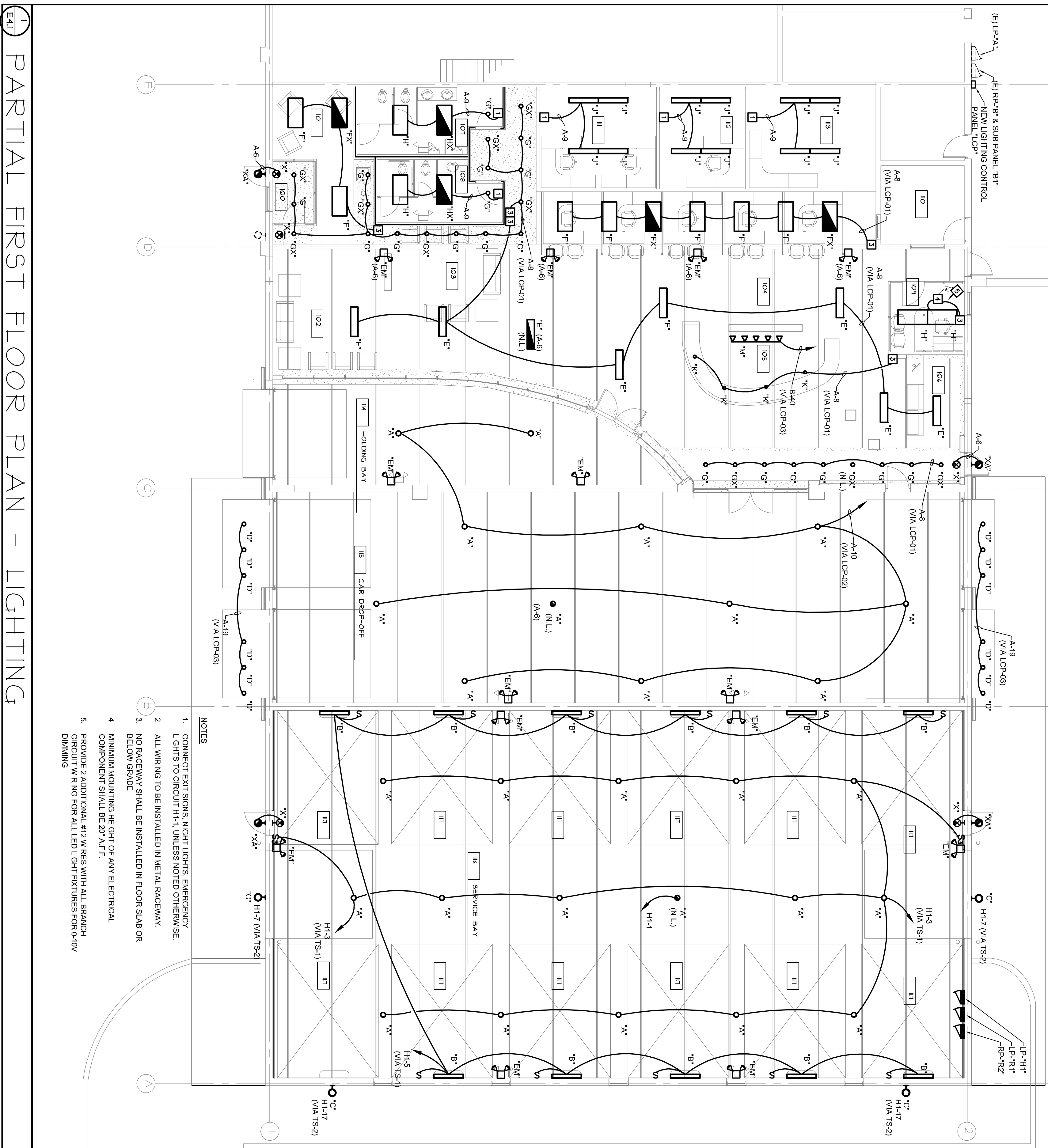
SMARTWIRED SWITCHING SYSTEM		PANEL					
RELAY SCHEDULE		LCP					
RELAY NUMBER	SUPPLY	LOAD DESCRIPTION	AUTOMATION CHANNEL				
			A	B	C	D	E
-01	A-8	SERVICE ADVISORS					
-02	A-10	HOLDING BAY					
-03	B-40	TRACK LIGHTS					
-04							
-05							
-06							
-07							
-08							
-09							
-10							
-11							
-12							

CHANNEL	DESCRIPTION OF GROUP	AUTOMATION SCENARIO	DATA
A		<input type="checkbox"/> SCHEDULED ON/OFF <input type="checkbox"/> SCHEDULED ON/OFF (P.I.R.) <input type="checkbox"/> MANUAL ON/SWEEP AUTO SW <input type="checkbox"/> ASTRO (DARK) ON/OFF <input type="checkbox"/> ASTRO (DARK) ON/SCHEDULED OFF <input type="checkbox"/> SCHEDULED ON/OFF <input type="checkbox"/> MANUAL ON/SWEEP AUTO SW <input type="checkbox"/> ASTRO (DARK) ON/OFF <input type="checkbox"/> ASTRO (DARK) ON/SCHEDULED OFF	
B		<input type="checkbox"/> SCHEDULED ON/OFF <input type="checkbox"/> SCHEDULED ON/OFF (P.I.R.) <input type="checkbox"/> MANUAL ON/SWEEP AUTO SW <input type="checkbox"/> ASTRO (DARK) ON/OFF <input type="checkbox"/> ASTRO (DARK) ON/SCHEDULED OFF	
	Scenario	Data Required - ON/OFF times for each day of the week and holidays - Blink when (YES/NO) - Level override duration (1-240) - Same as above except ON/OFF replaced with open 00:00 two 00:00 - Occupied/unoccupied times for each day of week & holidays (leave override duration) (1-240) - Astro (DARK) ON/OFF (Yes/No) - Astro (DARK) ON/OFF (P.I.R.) - Astro (DARK) ON/OFF (P.I.R.) - Physical (daisy) - Endurable level that equals daisy - (typical footcandle settings: security and parking = 2 to 20fc, signage = 20 to 200fc) - Same as Astro (Dark) ON/OFF plus: - Occupancy time for each day of the week and holidays	
	Scheduled ON/OFF	- ON/OFF times for each day of the week and holidays - Blink when (YES/NO) - Level override duration (1-240) - Same as above except ON/OFF replaced with open 00:00 two 00:00	
	Manual On/Scheduled Off	- Occupied/unoccupied times for each day of week & holidays (leave override duration) (1-240) - Astro (DARK) ON/OFF (Yes/No) - Astro (DARK) ON/OFF (P.I.R.) - Physical (daisy) - Endurable level that equals daisy - (typical footcandle settings: security and parking = 2 to 20fc, signage = 20 to 200fc) - Same as Astro (Dark) ON/OFF plus: - Occupancy time for each day of the week and holidays	
	Manual On/Sweep Auto SW	- Occupied/unoccupied times for each day of week & holidays (leave override duration) (1-240) - Astro (DARK) ON/OFF (Yes/No) - Astro (DARK) ON/OFF (P.I.R.) - Physical (daisy) - Endurable level that equals daisy - (typical footcandle settings: security and parking = 2 to 20fc, signage = 20 to 200fc) - Same as Astro (Dark) ON/OFF plus: - Occupancy time for each day of the week and holidays	

ROOM SCHEDULE	
I00	VESTIBULE
I01	CUSTOMER WORK STATIONS
I02	CUSTOMER WAITING
I03	CUSTOMER WAITING
I04	SERVICE ADVISORS
I05	CUSTOMER SERVICE DESK
I06	SALER COUNTER
I07	REAR TOILET
I08	REAR TOILET
I09	OFFICE
I10	OFFICE
I11	OFFICE
I12	OFFICE
I13	OFFICE
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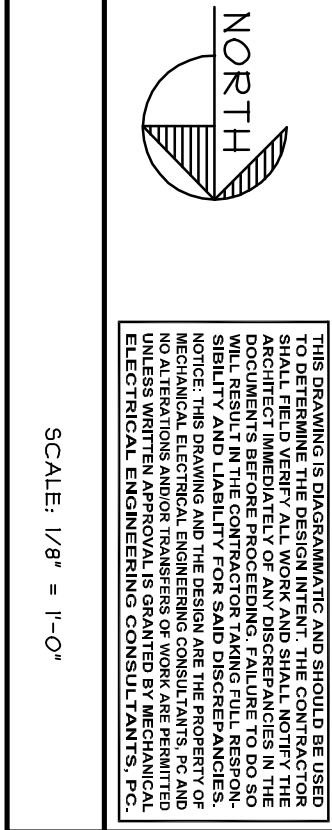
AUTOMATIC LIGHTING CONTROL LEGEND

- (CATALOG NUMBERS BASED ON SENSORSWITCH® EQUIPMENT) OR AS NOTED.
- 1 WSD AUTOMATIC WALL SWITCH, P.I.R.
 - 2 WY16 PASSIVE INFRARED (P.I.R.) OCCUPANCY SENSOR (MOUNT IN CORNER AT CEILING)
 - 3 LUTRON D17VAWH 0-10 DIMMER CONTROL
 - 4 MP20 120/277 VAC RELAY/POWER PACK (MOUNT IN ACCESSIBLE CEILING SPACE)
 - 5 WV PDT 16 DUAL TECHNOLOGY P.I.R./ULTRASONIC OCCUPANCY SENSOR (MOUNT IN CORNER AT CEILING)
 - 6 CM PDT 9 DUAL TECHNOLOGY P.I.R./ULTRASONIC OCCUPANCY SENSOR 450 SQ. FT. 380 DEG. COVERAGE (MOUNT ON CEILING)
 - 7 CM PDT 10 DUAL TECHNOLOGY P.I.R./ULTRASONIC OCCUPANCY SENSOR 2500 SQ.FT. 380 DEG. COVERAGE (MOUNT ON CEILING)
 - 8 HM13WVBR P.I.R. DETECTION HALLWAY OCCUPANCY SENSOR 130 FT. MAXIMUM DETECTION (MOUNT ON CEILING)
 - 9 WV 16WVBR DUAL TECHNOLOGY P.I.R./ULTRASONIC WIDE VIEW OCCUPANCY SENSOR, 40 FOOT MOTION COVERAGE (MOUNT IN CORNER OF ROOM AT CEILING)
- LOW VOLTAGE DATA LINE SWITCH, NUMERAL INDICATES SWITCH DESIGNATION. SEE DATA LINE SWITCH DOCUMENTATION FOR BUTTON & RELAY INFORMATION.
LX&D LIGHTING CONTROLS - CHELSEA SWITCH
LOW VOLTAGE WIRING
- SEE SPEC
- NOTES
1. ALL OCCUPANCY SENSORS SHALL BE MOUNTED TO A VIBRATION-FREE SURFACE WITH SENSORS FACING THE AREA OF COVERAGE. PLACE AT LEAST 48" FROM SUPPLY AIR GRILLES, 72" FROM HORIZONTAL DISCHARGE DUCTS AND 6" FROM POWER PACKS.
 2. ALL CONTROL TYPES INDICATED MAY NOT NECESSARILY BE USED ON THIS PROJECT.
 3. ARROWS INDICATE DIRECTION TO AIM SENSOR.
 4. SET TIME DELAY OF EACH SENSOR TO 15 MINUTES.



- NOTES
1. CONNECT EXIT SIGNS, NIGHT LIGHTS, EMERGENCY LIGHTS TO CIRCUIT H-1, UNLESS NOTED OTHERWISE.
 2. ALL WIRING TO BE INSTALLED IN METAL RACEWAY.
 3. NO RACEWAY SHALL BE INSTALLED IN FLOOR SLAB OR BELOW GRADE.
 4. MINIMUM MOUNTING HEIGHT OF ANY ELECTRICAL COMPONENT SHALL BE 20" A.F.F.
 5. PROVIDE 2 ADDITIONAL #12 WIRES WITH ALL BRANCH CIRCUIT WIRING FOR ALL LEAD LIGHT FIXTURES FOR D-W/ DIMMING.

PARTIAL FIRST FLOOR PLAN - LIGHTING



PROPOSED ADDITION FOR:
BILL BROWN FORD
CUSTOMER SERVICE CENTER
LIVONIA, MICHIGAN

PARTIAL FLOOR PLAN - LIGHTING

dr: S.L.
ck'd: J.B.
app'd: J.B.

10/9/2014
10/3/2014

date

PROGRESS SET
OWNER REVIEW

issued for

mechanical electrical
MEEC
engineering consultants

1415 Goldsmith
Plymouth, MI 48170
P 734-454-5517
F 734-454-5517
MEEC JOB #: 112-14-152

consultant

Lindhout Associates
architects aia pc

10465 citation drive, brighton, michigan 48116-9510
www.lindhout.com (810)227-5668 fax:(810)227-5855

CONCRETE NOTES:

Contractor & all sub-trades are responsible for reviewing & complying with all applicable specifications contained herein. Where discrepancies occur between design drawings and these notes, design drawing specifications are to supersede.

A. Measuring, mixing and placing of concrete shall be in accordance with ACI 304.

B. Protection and curing of concrete shall be in accordance with ACI 305, 306 and 308.

C. All permanent sections of ACI 318 shall apply.

D. Reinforcing steel shall be fabricated and placed in accordance with the ACI 315.

E. All reinforcing steel shall be ASTM A615 Grade 60, deformed in accordance with ASTM 305, unless otherwise noted.

F. Step all footings at a rate of (2) horizontal to (1) vertical.

G. All footings to rest on undisturbed soil.

H. In concrete piers provide (8) #7 vert. bars (3) each face] with ties @ 12" c/c max. Ties to be 2" from top & bott. of pier.

I. All columns & baseplates are to be fully encased in concrete from fin. floor to top of footing. Provide isolation joint encompassing entirety of base plate down, column pour & fin. floor slab.

J. All columns & baseplates are to be fully encased in concrete from fin. floor to top of footing. Provide isolation joint encompassing entirety of base plate down, column pour & fin. floor slab.

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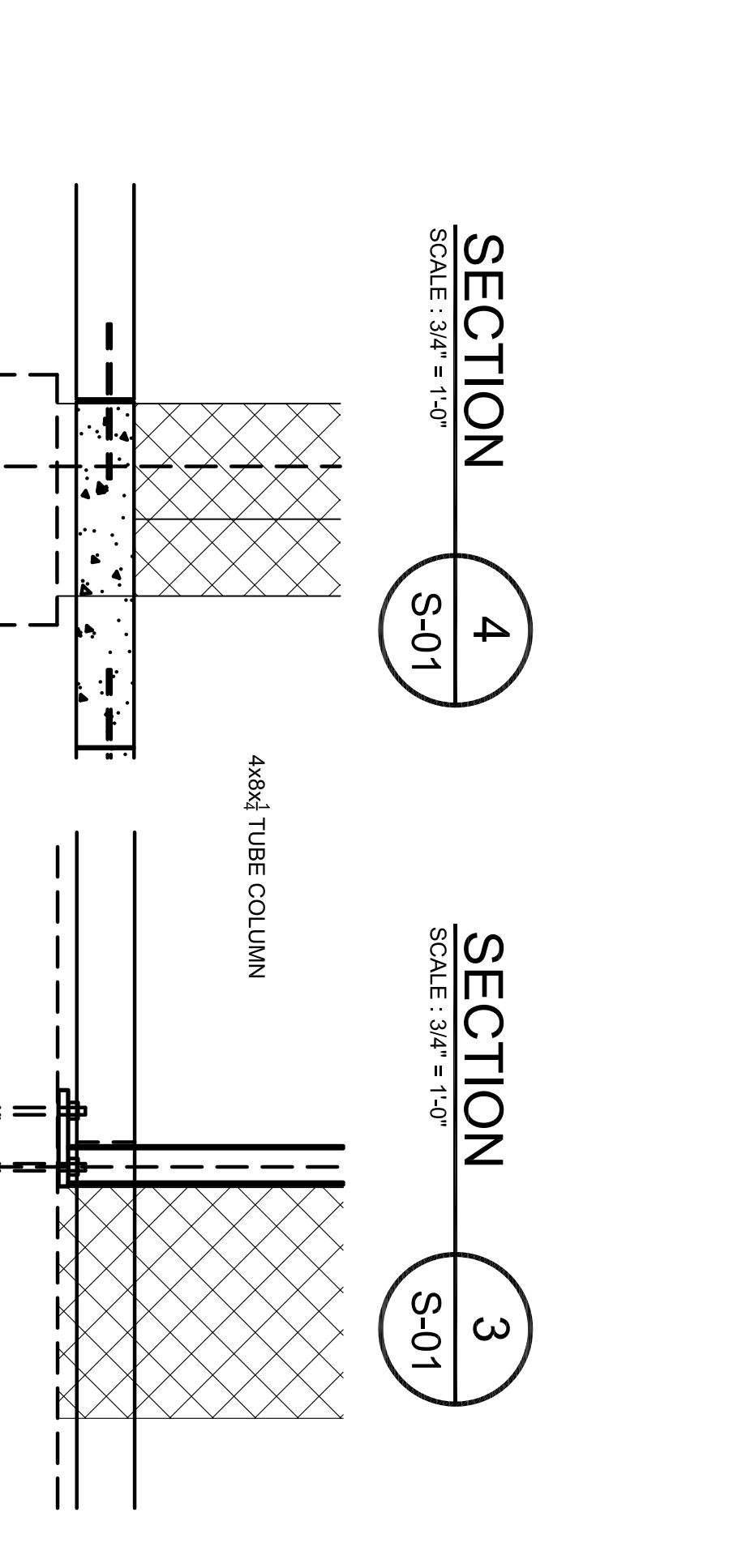
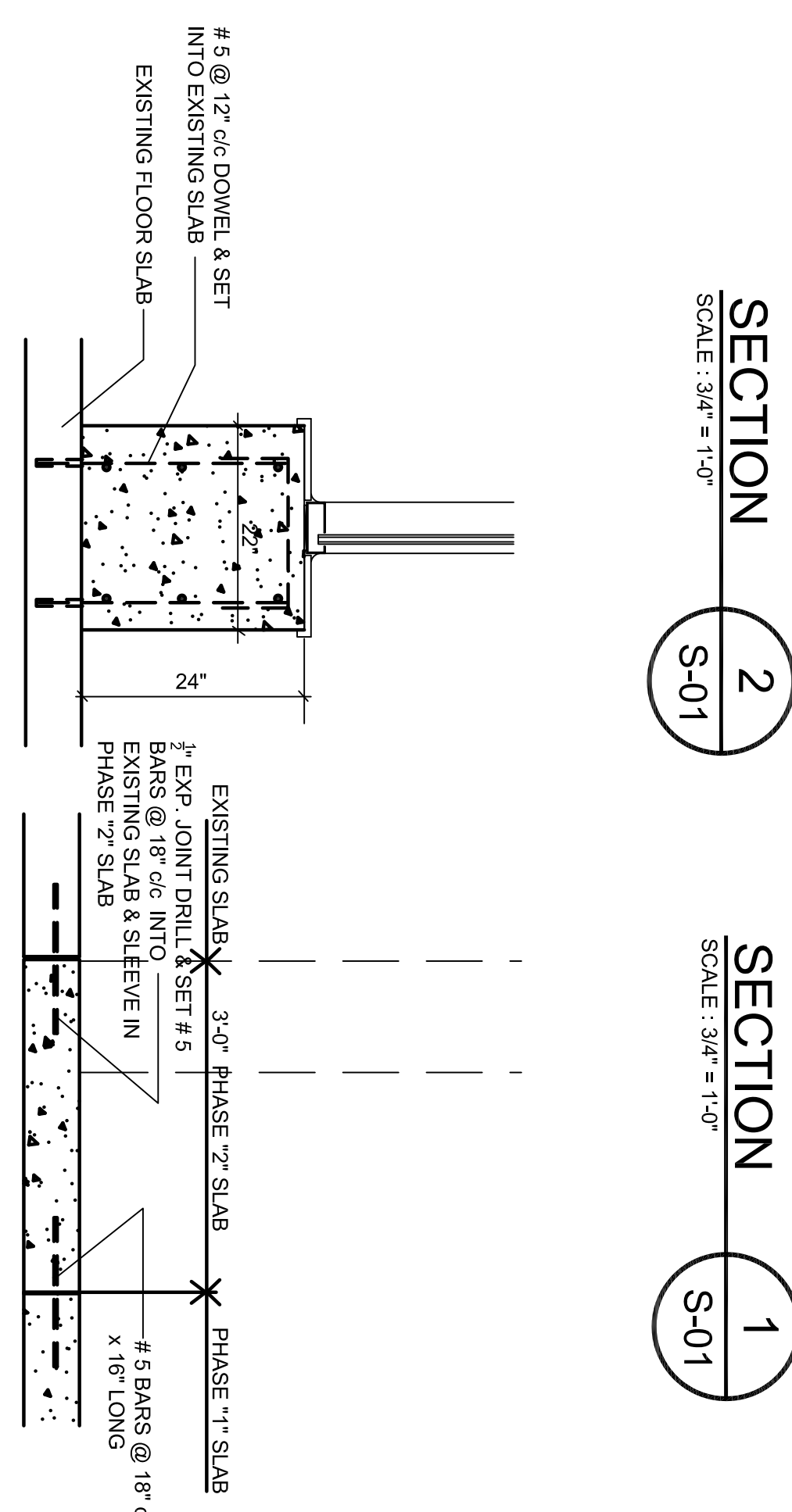
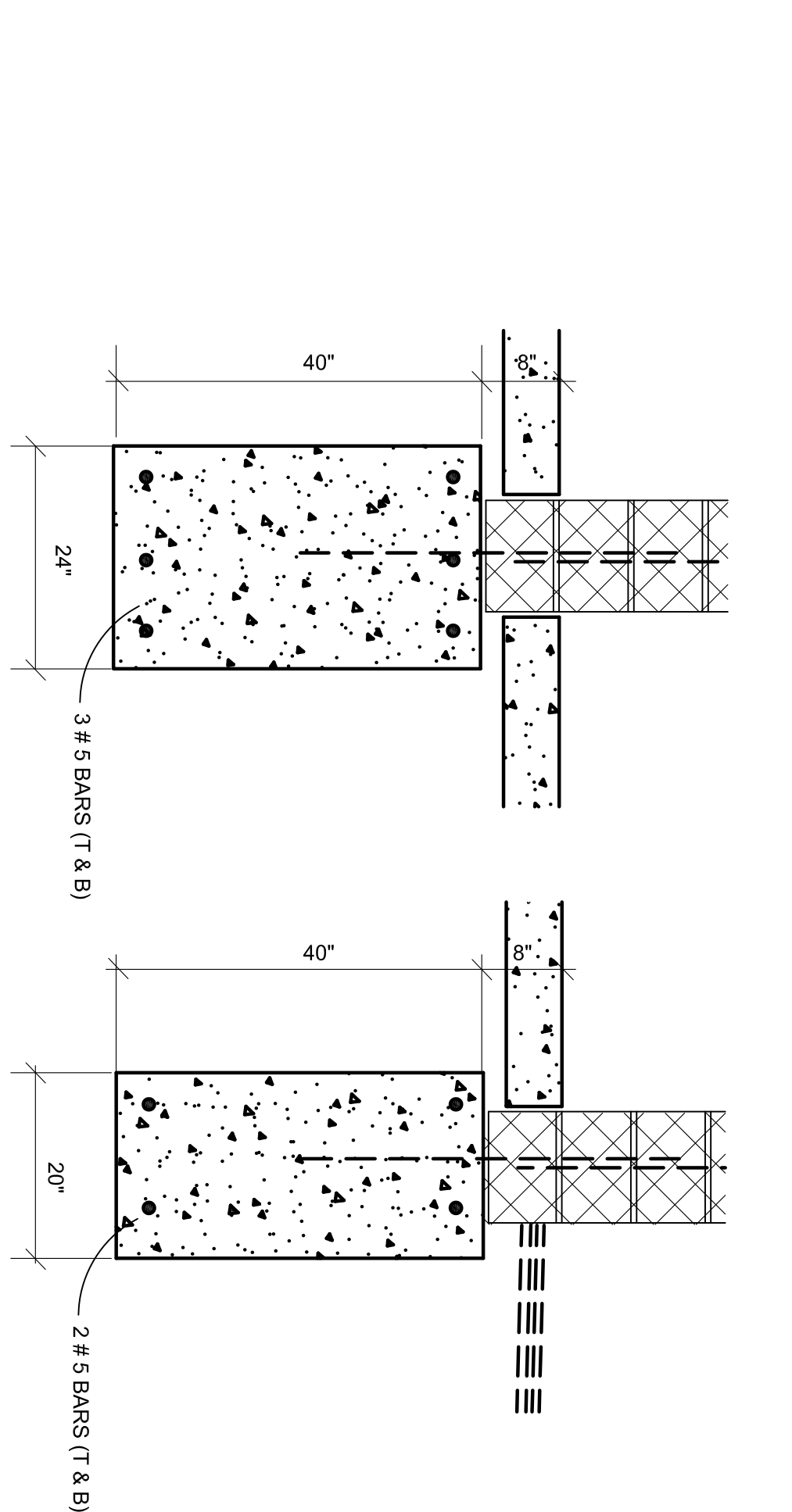
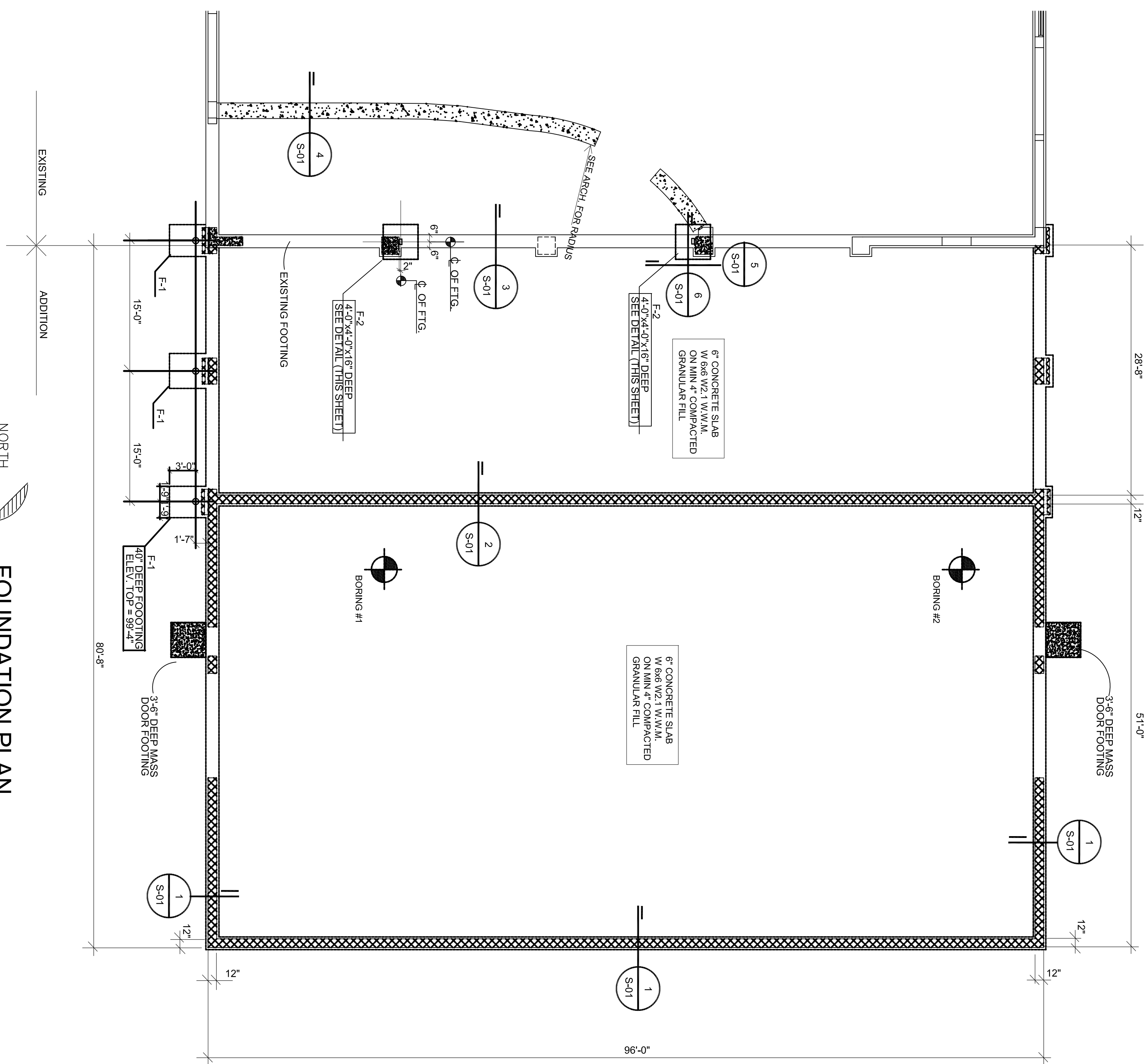
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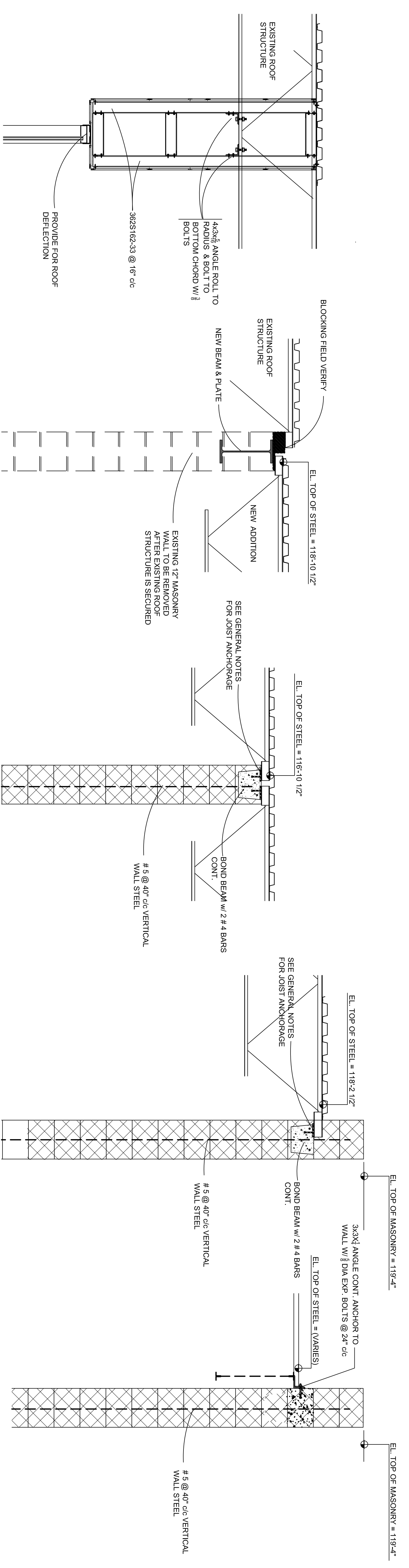
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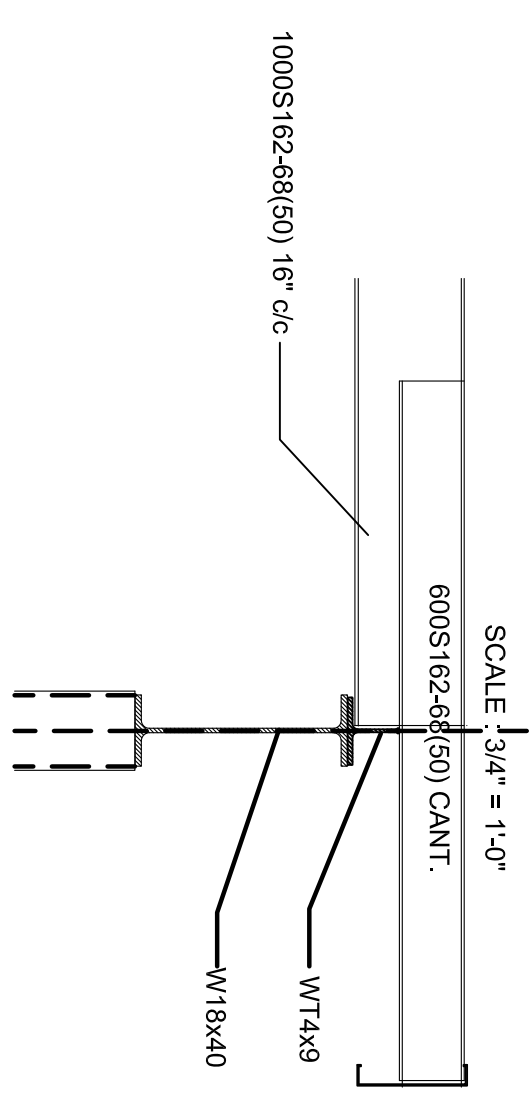
CLASS OF CONCRETE	MIN. 28 DAY COMP. STRENGTH (PSI)	MAX. W/C RATIO	NOM. MAX. SIZE OF AGGREGATE	MIN. CEMENTITIOUS MATERIAL CONTENT PER CUBIC FOOT	MIN. AIR CONT. (%)
STANDARD EXPOSED CONCRETE	4500	0.45	3/4"	5-3/4	5.41
STANDARD CONCRETE	4000	0.55	3/4"	5-1/2	5.94
STANDARD FOUNDATION CONCRETE	3000	0.60	3/4"	5-1/2	5.17
STANDARD CONCRETE TOPPING	3500	0.60	1-1/2"	5-1/4	4.94
			3/8" PEA GRAVEL	6	5.64
					4"
					2

* INDIVIDUAL CEMENTITIOUS MATERIAL CONTENT TO BE LIMITED TO LEVELS GIVEN IN TABLE 1904.2.3 OF MICHIGAN BUILDING CODE.
 CEMENTITIOUS MATERIAL CONTENT MAY BE REDUCED BY 12 BAG PER CU. YD. FOR UNREINFORCED MASS CONCRETE.
 ** OMIT AIR ENTRAINING AGENT IN HARDENED SLABS.

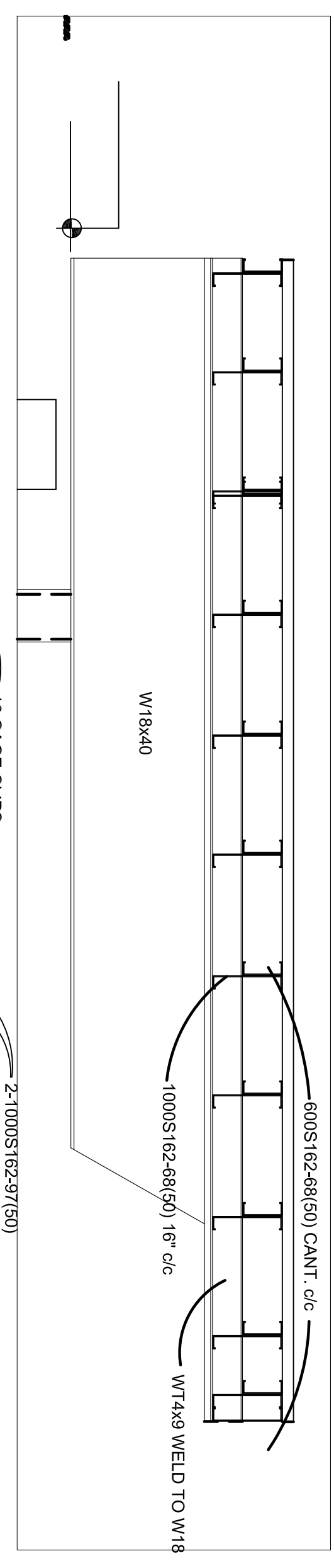




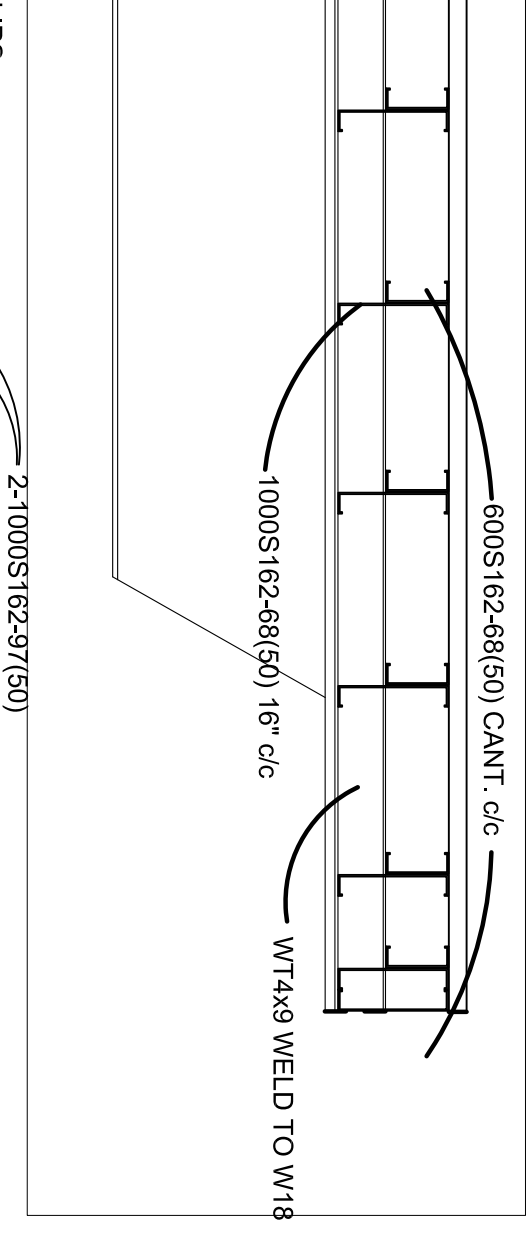
SECTION 5
SCALE: 3/4" = 1'-0"



SECTION 4
SCALE: 3/4" = 1'-0"



SECTION 3
SCALE: 3/4" = 1'-0"



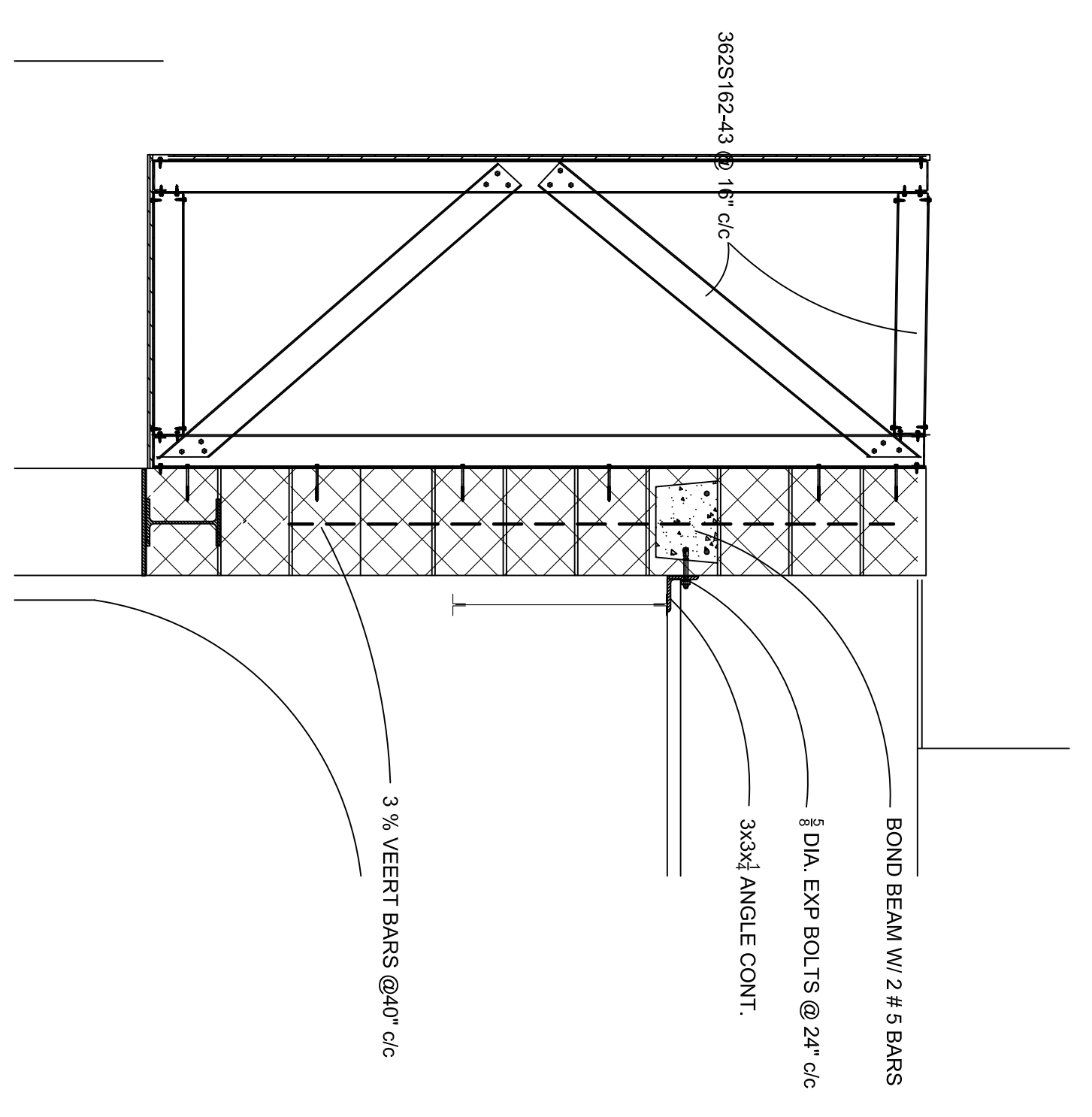
SECTION 2
SCALE: 3/4" = 1'-0"



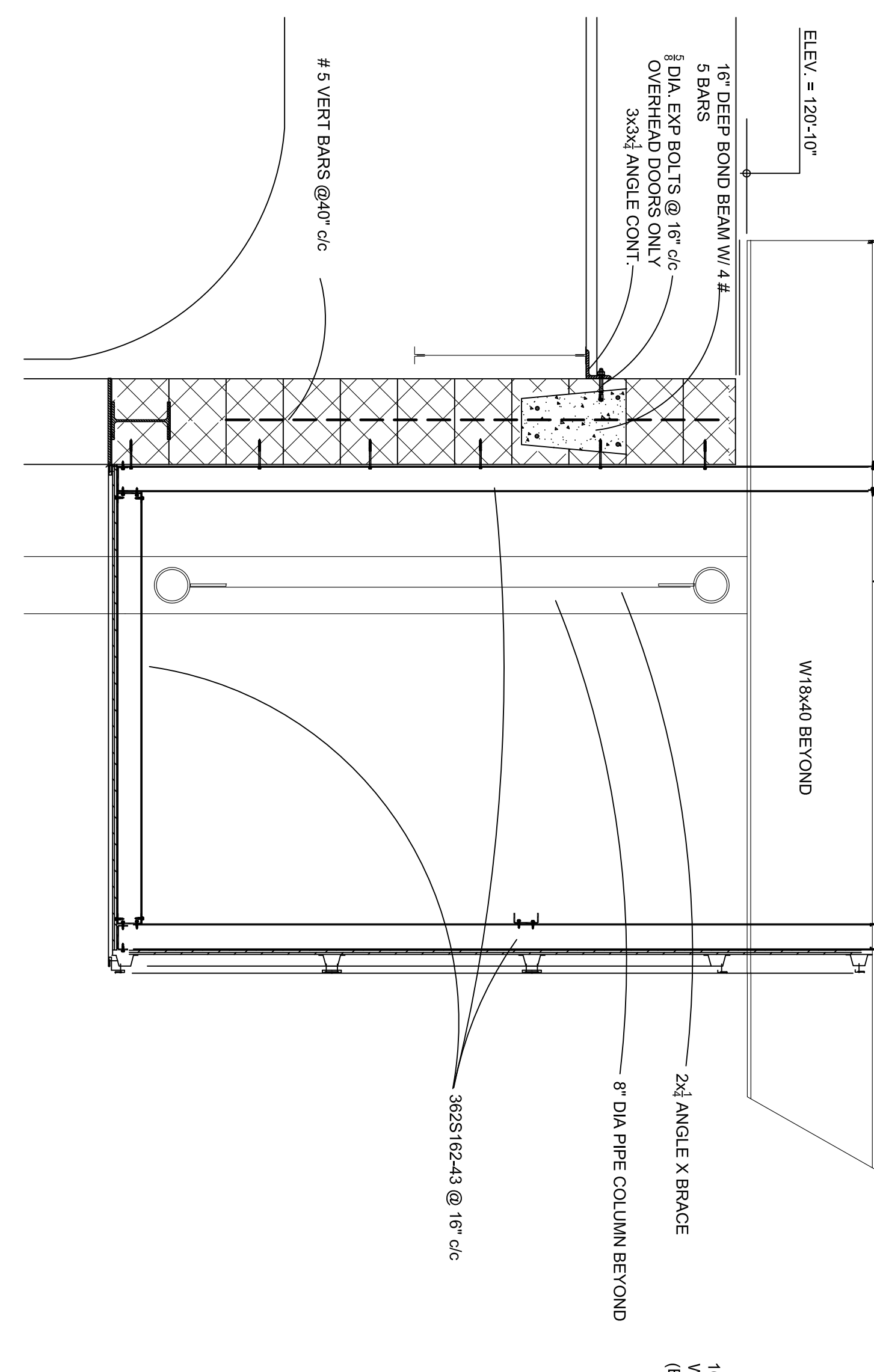
SECTION 1
SCALE: 3/4" = 1'-0"



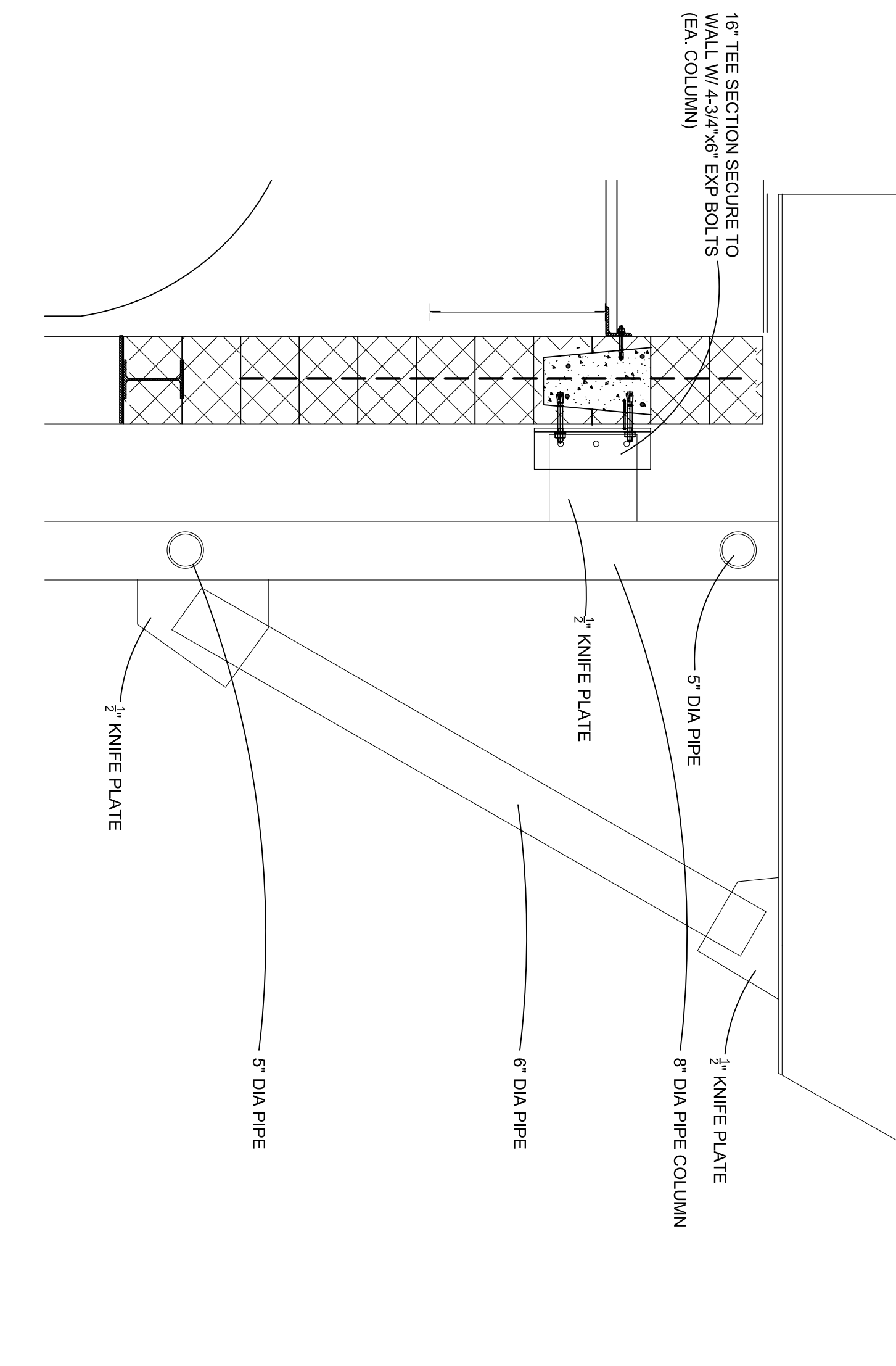
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SCALE: 3/4" = 1'-0"



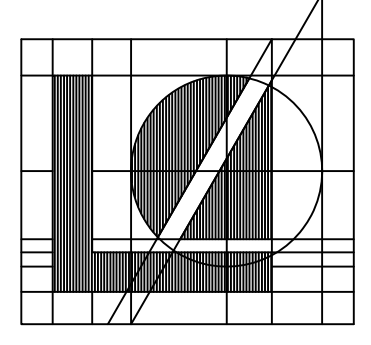
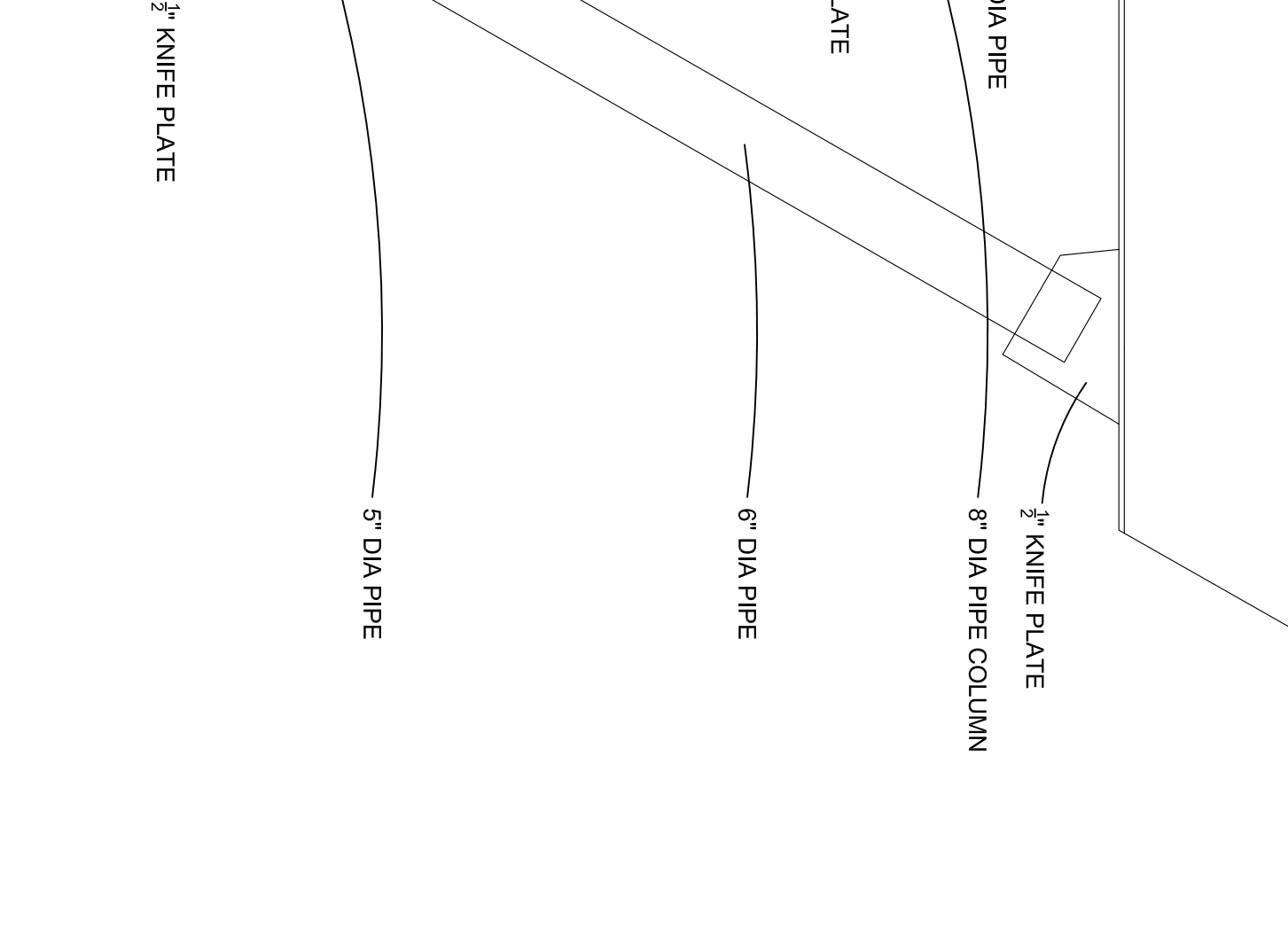
SECTION 7
SCALE: 3/4" = 1'-0"



SECTION 6A
SCALE: 3/4" = 1'-0"



SECTION 6
SCALE: 3/4" = 1'-0"



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Rochester, Michigan 48307
(248) 650-4905
consultant

dr: MRP
ck'd: GOP
app'd: GOP
11-03-14
09-22-14
06-10-14
date
BIDS
Permit Review
Prelim Review
issued for

PROPOSED ADDITION FOR:
BILL BROWN FORD SERVICE CENTER
LIVONIA, MICHIGAN
SECTIONS

S-03a
1429A

RM #			100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115
	FIN. MATERIALS	#																
FLOOR	EXPOSED CONSTRUCTION	01																01
	AUTOSTONE TILE	02														02	02	
	POLISHED CONCRETE	03			03		03	03					03	03	03	03	03	
	WALK OFF CARPET	04	04															
	CARPET TILE	05		05		05					05		05	05	05			
	RUG (BY OWNER)	06			06		06											
	CERAMIC TILE	07							07	07								
BASE	VINYL	08	08	08	08	08	08	08			08		08	08	08	08	08	08
	CERAMIC TILE	09							09	09								
WALL	GYP. BOARD (PAINT)	10	10	10	10			10	10	10	10							10
	FIBER CEMENT BD. (ACRYLIC PT.)	11																11
	EXPOSED CONSTRUCTION	12														12	12	12
	CMU (PAINT)	13	13	13	13	13		13					13	13	13			
	SEALANT	14			14											14	14	
CEILING	EXPOSED CONSTRUCTION (PAINT)	15			15		15	15								15	15	15
	GYP. BOARD (PAINT)	16	16	16	16													
	ACOUSTIC LAY-IN	17		17		17			17	17	17		17	17	17			
TRIM	3/4" CASING and JAMB OAK TRIM	18		18					18	18	18		18	18	18			
	NOTE: TRIM TO BE INSTALLED AROUND NEW AND EXISTING ARCHWAYS																	

SECTION 09B**FLOOR COVERING****SCOPE OF WORK**

- 01 This Section shall provide all labor and material, services and equipment necessary and incidental for installation of floor coverings and related items.
- 02 Floor materials furnished under this Section shall meet all applicable requirements of ASTM, NFPA, ISO, NSF/ANSI as they may relate to the project..

MATERIALS**01 FLOOR TILE SCHEDULE**

Material	Manufacturer	Size	Thick.	Pattern	Color	Comments
Autostone Tile	Autostone Floor Systems	12" x 12"	1/8"	See Plan Sh. A1.2 For Markings	As Selected from Std.	Slip-and-fall resistant Enviroshop Series
Ceramic Tile	Daltile	12"x12"		Straight Joint	F926 "Ghiaccio"	Grout: # 165 "Delorean Gray"

02 CARPET SCHEDULE

Name	Manufacturer/ Style	Size	Collection	Style	Pattern	Color	Installation
Carpet Tile	Shaw	18"x36"	Beyond the Fold	#5T062	Folded Edge Tile	#60764 Global Leather	Ashlar
Walk Off	Shaw	24"x24"	All Access	#5T035 Portal Tile	None	#34500 Ebony	Monolithic

- a. All Broadloom carpet shall be 12 feet wide; All Carpet Tile shall be as scheduled.
- b. Alternate Carpet Tile Manufacturers: Mohawk Group, Mannington, Contract Group, Milliken, Tandus, Interface, Lees.

03 BASE SCHEDULE

Base at	Manufacturer	Height	Type	Color
All walls other than restrooms	Armstrong	4"	Vinyl Wall Base	69 Light Gray
Ceramic Tile	Daltile	6"		As selected
Millwork	Armstrong	4"	Vinyl Wall Base	61 Graphite Gray

- 04 Adhesives, leveling and patching compounds shall be as recommended by Manufacturer for particular floor coverings employed.

Volatile Organic Content of all adhesive materials on the project shall not exceed 50 grams per litre.

MATERIAL LOCATION

- 01 See Finish Schedule, Sh. No. A7.1 for location of all floor covering materials.

DELIVERY, STORAGE AND HANDLING

- 01 Shall be in accordance with the product manufacturer's stated conditions for product being used.

INSTALLATION

- 01 Room temperature during installation shall be 70 degrees F. Follow manufacturers recommendations on installation throughout. Proceed with installation only when proper moisture content of concrete floor slab is achieved for type of material being applied.

- 02 a. Carpet laid in Room #'s 103, 110, 111 and 112 to follow the Shaw "Ashlar" pattern. All other carpet to be of no particular pattern.
- b. Autostone Tile in room #'s 113 and 114 to follow pattern indicated on Sh. A1.35

03 Composition Tile:

- a. This Contractor shall inspect the cement finish and concrete floors for any defects in same. Notify Architect of any defects existing in sub-floors. Starting of work shall imply acceptance by this Contractor of the surface to which tile is being laid. Fill in all cracks in concrete sub-floors.
- b. Lay the resilient floor so as to be true, level and even with tight joints, and in accordance with manufacturer's instructions. Fit border tightly to door jambs and fit to and around all permanent fixtures, piping, etc.
- c. At resilient tile terminations where tile edge is exposed, provide Mercer vinyl Tile Reducer, color as selected by Architect.

04 Carpet:

- a. Provide seam layout for Architect's review prior to ordering material. Layout shall be conscious of oblique light direction; carpet "grain", pattern and widths. Minimize all seams crossing traffic areas.
- b. Carpet installation shall generally be installed by direct glue method with self-releasing adhesive.
- c. Manufacturer's detailed installation instructions shall be strictly followed. Installation shall be under direction of manufacturer's trained personnel and meet their approval.
- d. At all doorways and carpet terminations at hard surfaced floor materials provide Burke-Mercer carpet reducer strip, color as selected by Architect.

- e. Provide all necessary protection for completed installation and turn carpeting over to Owner in perfect condition, free from stain and damage from other trades.

05 Vinyl Base:

- a. Provide and install vinyl base where indicated on the Drawings. Base is generally required at carpet (except at brick walls) and resilient tile and at Millwork. Neatly fit all base to walls; interior and exterior corners and insert returns at hollow metal door frames into joint between frame and wall.

08 Rubber Tile:

- a. Provide and install rubber tile, treads, risers, and base where indicated on drawings.
- b. Manufacturer's detailed installation instructions shall be strictly followed.

CLEANING, WAXING, POLISHING

01 At completion of all other work, thoroughly clean all resilient tiles and sheet goods installed under this contract.

- a. All resilient tile or sheet goods shall receive a complete application of waxing and polishing in strict accordance with the recommendations of the manufacturer of the flooring material.
- b. This contractor shall present the Owner, or the Owners maintenance personnel, with instructions on the correct maintenance procedures to be followed in future use of the flooring.

02 Clean all adhesive from carpet with "Disolve" solution and leave in perfect condition, cleaned and vacuumed for Owner's acceptance.

03 Provide heavy paper protection against any subsequent traffic prior to Owner accepting building.

REPLACEMENT MATERIAL

01 At completion of project, deliver to Owner:

- a. One case of floor tile for each color used in quantities exceeding 5,000 square feet and proportionately lesser amounts for smaller usages.
- b. Usable carpet scraps and overage.
- c. One box of each major field color of carpet tile

GUARANTEE

01 This contractor shall guarantee all materials and workmanship under this heading to be free from defect for a one (1) year period from date of acceptance.

SECTION 09C**GYPSUM DRYWALL****SCOPE OF WORK**

- 01 The work under this Section shall provide all materials, labor, protections and appliances necessary to furnish, deliver, and install gypsum board panels. Gypsum panels are identified as "Gyp. Bd." on drawings.
- 02 Work Included:
- a. Interior partitions, exterior wall interior finish, ceilings, and ceiling drops.
- 02 Work by Others:
- a. By Section 05H – Exterior metal studs and framing, furring, and sill sealers.
- b. By Section 07C – Sound Insulation in partitions.

MATERIALS

- 01 All gypsum board materials described herein are as manufactured by United States Gypsum Company and shall be installed in accordance with its printed instructions.
- a. Accepted Alternate Manufacturers: National Gypsum Co., U.S. Steel Super C Steel Framing, Wheeling Steel Framing, CECO, Dale/Incor.
- 02 Gypsum Panels:
- a. Face Boards: Shall be 5/8" tapered edge Sheetrock SW, 48" wide in lengths as long as practical to minimize the number of joints; 5/8" Sheetrock Firecode (ASTM C36/C36M, Type "X") where required for fire rated construction. W/R Regular Gypsum Panels where required for water-resistant construction, Securock Glass-Mat Gypsum Sheathing for exterior usage.
- b. Fiber Cement Board: Shall be 3/8" Hardie Bd. or Certainteed Soffit Bd.
- 03 Metal Framing:
- a. Interior:
1. Studs - ST, sizes as indicated on drawings, gauges: 3-5/8" up to 9'-0" high - 25 gauge; 3-5/8" 9'-0" to 16'-0" - 20 gauge; 3-5/8" over 16'-0" – 18 gauge. 6" any height - 20 ga., 8" any height - 18 ga., Furring shall be 25 gauge.
 2. Runners - CR25 - sizes as indicated on drawings.
 3. Steel Framing: Unimast SJ members for load-bearing wall applications.
 4. Furring Channels – Z-furring channels, 1½" deep; hat channels 7/8".
 5. Flexible framing – 20 ga. hot dipped galvanized steel ASTM A653 Structural Grade 33, : as manufactured by Flex-Ability-Concepts. (www.flexc.com)
 - a. Flexible Tracks: Flex-C Trac, width as required, and Flex-C Angle, with slideable strap
 - b. Flexible Arch: Flex-C Arch, width as required..
 6. Shaft wall studs – CH type, 20 ga.
- 04 Joint System: U.S. Gypsum "Perf-A-Tape" joint system with USG Sheetrock Lightweight All Purpose Joint Compound with dust control.
- 05 Fasteners: Per Selector Guide for USG Screws - for conditions of use.

- 06 Accessories:
- a. Corner Bead - USG No. 104 Dur-A-Bead.
 - b. Casing Bead - USG No. 200A or 200B Type metal trim; Paper faced B9. J-Stop not acceptable
 - c. Control Joint - USG No. 093.
- 07 Adhesive: USG Durabond 200 or 300 adhesive. Volatile Organic Content of adhesives for gypsum boards shall not exceed 50 grams per litre. Preferred alternate meeting panel manufacturers approval: OSI GreenSeries construction adhesive meeting ASTM E72 and C557. V.O.C. content < 2 g/L (1% by weight).
- 08 Caulking: USG Sheetrock Acoustical Sealant.
- 09 Ceiling Suspension: USG Drywall Suspension System.
- a. Gypsum Panels: ASTM C36/C36M, 5/8" thickness for flat ceilings, laminated lesser thicknesses to accommodate curved and dome conditions.

MATERIAL LOCATIONS

- 01 Gypsum Panel System: All new interior partition walls.
- 02 Gypsum Panels on Furring: Rm# 105
- 03 Gypsum Panels on Furring Channels w/insulation: Rm# 115
- 04 W/R Water Resistant Panels: All Restrooms – Rm# 106 & 107
- 05 Fiber Cement Board: Rm# 115
- 06 Metal Framing: All new framing .
- 07 Ceiling Suspension: Rm# 101, 104, 105, 106, 107, 108, 110, 111, and 112

INSTALLATION

- 01 General:
- a. This Contractor shall inspect all walls, grounds, surfaces, hangers, electrical boxes, heating outlets, etc., by other trades and assure himself that all are true and secure. Defective work shall be reported and corrected before proceeding with the work. No work of other trades shall be covered until installations are complete, tests and inspections made, and approval given.
 - b. The temperature of the area where the gypsum panels are being applied shall be maintained between 45 degrees and 70 degrees and adequate ventilation shall be provided to eliminate excessive moisture.
 - c. Material shall be applied by skilled mechanics, properly trained and experienced in the application of the board and joint treatment.
 - d. System shall generally consist of 5/8" gypsum panels suspended or applied over steel framing. Drywall shall be applied with manufacturer's approved screws, and joints treated with tape and joint compound.

02 Walls:

- a. Before applying gypsum board, install metal casing bead at termination of work, specifically where drywall abuts masonry, door frames etc. Use maximum lengths of material available to avoid joints.
- b. Apply gypsum panels perpendicular to studs or furring. Position all ends over studs. Use maximum practical length to minimize joints. Fit ends and edges closely, but not forced together. Install panels with USG screw application method. Secure panel at top and bottom.
- c. Corner beads shall be applied to all external corners of the boards. Beads shall be set plumb and in the plane of the board. Corner beads shall be straight and true, without bends, butt joints or crimps.
- d. Provide control joints at all construction changes in the plane of the panels, and for partition or ceiling runs exceeding 30 feet.
- e. Where structural deflection is a consideration provide slip or slotted track detail suitable to accommodate the anticipated deflection. Detail shall be as standard with the manufacturer of the studs

03 Ceilings:

- a. Install in accordance with ASTM C636, CISCA installation standards and other applicable codes. Install in accordance with manufacturer's current printed recommendations.
- b. Ceilings: Main tees shall be spaced a maximum of 48" on center and supported by 12ga. hanger wires spaced a maximum of 48" on center and as specified by UL Fire Resistance Directory attaching hanger wires directly to structure above. Cross tees shall be spaced per manufacturer's recommendations. At any ceiling openings interrupting the grillage, provide additional cross reinforcing. Apply gypsum panels of maximum practical length with long dimension perpendicular to furring channels. Position end joints over channel web and stagger in adjacent rows. Fit ends and edges of panels closely, but not forced together. Fasten panels to furring with 1" Type S screws spaced 12" o.c. in field of panels and along abutting ends and edges.
- c. Install control joints where indicated on Reflected Ceiling Plan.

04 Ceiling Drops:

- a. Install miscellaneous ceiling drops at upper cabinets, movable partitions, lighting drops, etc. where shown throughout. Construction shall be consistent with ceiling construction standards.
- b. Provide structural headers and vertical supports where indicated at large openings.
- c. Install control joints where indicated on Reflected Ceiling Plan.
- d. Provide stop beads and corner beads required to complete the drop details.

05 Joint System:

- a. Using a suitable tool or machine, a thin uniform layer of joint compound approximately 3" wide shall be applied over the joint to be reinforced. The tape shall be centered over the

joint and seated into the compound, leaving sufficient compound under the tape to provide proper bond. Excess compound shall be cleaned from the surface of the board.

- b. The tape shall be covered with topping spread evenly over and slightly beyond the tapered edge area of the board and feathered at the edges. After the previous coat is dry, it shall be covered with a second coat of topping with a smooth uniform slight crown over the joint and the edge feathered slightly beyond the preceding coat. All dimples at nail heads shall receive three coats of joint compound.
- e. Flanges of all corner beads and casing beads shall receive at least two coats of joint compound. When completed, the compound shall extend approximately 8" to 10" on either side of the exposed nosing. Columns and ceiling drops, less than 20" wide shall have full bed of compound between beads.
- f. All coats in finished ceiling areas shall be sanded as necessary after each application of joint compound has dried. The final coat and subsequent sanding shall leave gypsum wallboard and treated areas uniformly smooth and ready to receive paint finish.
- g. All panels in concealed ceiling areas shall be "fire taped" only to seal off attic space.

CLEANING

- 01 Upon completion of work, remove all debris resulting from the work and leave areas in neat condition for subsequent trades.

PROTECTION

- 01 Protect all wood, glass, aluminum and other finished work during the progress of work and make good any damages done to such work.

GUARANTEE

- 01 This Contractor shall guarantee all materials and workmanship under this heading for a one (1) year period from the date of acceptance. The guarantee shall include repainting of areas damaged due to defects under this heading

SECTION 09D**ACOUSTICAL TREATMENT****SCOPE OF WORK**

- 01 The work under this heading shall provide all materials, labor, services, equipment, necessary for and incidental to the installation and furnishing of acoustical tile and related suspension systems as called for on the drawings and specified herein.
- 02 Construction conditions shall comply with Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings - ASTM C635/C635M and Recommended Practice for Installation of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings - ASTM C636/C636M.
- 03 Systems shall be rated for Noise Reduction Coefficient in accordance with ASTM C423 and Sound Transmission Coefficient in accordance with AMA 1-II as tested by an independent agency.

MATERIALS

- 01 Acoustical tile specified herein is as manufactured by USG Interiors, Inc. All tile shall be Class A.
- 02 Tile Schedule:

Tile Type	Product Name	Panel Size	Thick.	Item No.	Edge	NRC	CAC Minimum	Light Refl.	Color
Acoustic Tile	Radar Clima Plus	24"x48"	5/8"	2410	SQ	.55	35	.84	White

- 03 Approved Alternate Manufactures: Armstrong, Certainteed & Owens-Corning.
- 04 Suspension System: Shall be Donn Products Exposed Suspension System. All Suspension system parts shall be of sufficient strength and rigidity to carry acoustical units in a true and level plane without exceeding a deflection of 1/360th of its span.
- 05 Suspension System Schedule:

At Tile Type	Grid Type	Grid Edge	Wall Molding	Color
Acoustic Tile	DX	SQ	M7 (MS 154)	White

- 06 Acceptable Alternate Manufacturer: Flange Klamp, Eastern.

MATERIAL LOCATIONS

- 01 See Reflected Ceiling Plan Sh. No. A1.4 of the drawings for location of ceiling tile types.

INSTALLATION

- 01 All acoustical tile and panels shall be installed in strict accordance with the manufacturers recommendations by experienced, skilled mechanics. Cutting and edging of all boarder tiles shall be done in a precise and accurate manner to match field tiles. Framing and installation of suspension systems shall be in accordance with ASTM C635 and C636 respectively as applied to Metal Ceiling Suspension Systems for Acoustic Tile and Lay-in Panels.
- 02 All lighting fixtures are installed by Division 16. Ceiling diffusers are installed by Division 15.
- 03 At exposed grid system provide Main Tees supported by No. 12 ga. wire at 4' - 0" o.c. for tees not bearing light fixtures. Provide additional hangers at each corner of light fixtures for support. Provide wall angles at all walls to match exposed grid and as detailed. Water or laser level for uniform ceiling height. All members shall be surely interlocked for good stability and shall be plumb and in true alignment throughout the combined lengths. Use maximum available lengths of material wherever possible. Miter all corners in wall angles. Acoustical panels shall lay flat and true in grid. All panels shall securely fit into the suspension system.
- 04 Entire installation shall be coordinated as necessary with Mechanical and Electrical Trades. This contractor's layout in accordance with Electrical Plan will establish dimensions for all affected trades. See Reflected Ceiling Plans Drawing Sh. A1.4, for location and details of all ceiling work.
- 05 Immediately remove any foreign substances from exposed grid members. Touch up any minor scratches or blemishes with paint type and application to match. Replace any grid members showing crimps or major blemishes and leave installation in acceptable condition.
- 06 At direct glue tile provide gypsum lath on trussed rafters and/or wood/metal framing members. Lath shall provide for true and level plane upon which to adhere acoustical units. Clean all construction dust from surface of lath prior to installation. Apply manufacturers approved adhesive to lath to receive tile. Place tile on adhesive with sufficient pressure to properly seat and align tile. Provide fiber splines to allow flush installation of tiles.

REPLACEMENT MATERIAL

- 01 At completion of installation provide to Owner one (1) unopened box of each type of acoustic tile used on the project.

GUARANTEE

- 01 This Contractor shall guarantee that all work executed under this heading will be free from defects of material and workmanship for a period on one (1) year after date of acceptance.

SECTION 09E**TILE WORK****SCOPE OF WORK**

- 01 This Section shall provide everything necessary and incidental for the installation of tile work as scheduled on drawings - Ceramic Tile and Quarry tile.
- 02 The Handbook for Ceramic Tile installation of the Tile Council of America shall describe the work insofar as any portion shall affect the work and are made a part of this Specification, except as specifically modified herein.
- 03 Marble shall be installed in accordance with the Marble Institute of America.
- 04 Installation References:
- a. ANSI A108.1B - Installation of Ceramic Tile on cured Portland Cement setting bed with Dry-Set or Latex-Portland Cement Mortar.
 - b. ANSI A108.5 - Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar.

MATERIALS**01 FLOOR TILE SCHEDULE**

Finish Schedule Name	Manufacturer	Name	Size	Pattern	Color	Finish	C.O.F. Wet / Dry
Ceramic Tile	Daltile	Diamante	12"x12"	Straight Joint	F926 Ghiaccio	Unglazed	≥0.6 / ≥0.7
Autostone Tile	Autostone Floor Systems	Enviroshop	12"x12"	See Sh. A1.35	Field: Smoke Grey Lane Marker: Carbon	Glazed	>0.6 / >0.8

02 BASE SCHEDULE

Base At	Manufacturer	Name	Size	Type	Pattern	Color	Finish
Ceramic Tile	Daltile	Diamante	6"x12"	Straight Joint	F926 Ghiaccio	Unglazed	≥0.6 / ≥0.7

Tile Manufacturer's List: Autostone Floor Systems and Daltile

- 03 Ceramic Tile: Shall meet ANSI A137.1 requirements.
- 04 Water: Shall be as used for drinking purposes.
- 05 Sand: ASTM C-144.
- 06 Portland Cement: ASTM C-150 Type I.
- 07 Lime: ASTM C-206 and 207 Types.
- 08 Latex-Portland Cement Mortar: ANSI A118.4.

- 09 Grout: ANSI A118.6, color as selected by Architect.
- 10 Marble: M.I.A. "A" group classification.
Size: 3-3/4" wide at Toilet Room thresholds, notched ends. Color: Domestic White.
- 11 Wire Mesh: ASTM A185/A185M 2 x 2 x 16 ga.
- 12 Divider Strip: Tile contractor to provide and install 1/8" thick aluminum vertical divider strip at perimeter joint of tile and carpet tiles. Divider to be attached to floor slab.
- 13 Membrane: Noble Company "Chloraloy 240". ASNI A118.10
- 14 Bridging Membrane: ECB Membrane, sheet applied, self bonding elastomeric membrane as manufactured by N.A.C. Products, Inc. ASNI A118.12

MATERIAL LOCATION

- 01 See Interior Finish Schedule, Sh. No. A7.1 for schedule of all Tile Work.
- 04 Bridging Membrane: Wherever construction joints or shrinkage cracks occur in the concrete sub floor for tile work.

SAMPLES

- 01 Samples of tile and grout shall be submitted to the Architect for approval and selection.

DELIVERY, STORAGE AND HANDLING

- 01 Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Prevent damage or contamination to materials by water, freezing, foreign matter or other causes.
- 02 If frozen, do not stir until material has completely thawed. Deliver and store materials on site at least 24 hours before work begins.
- 03 Provide heated and dry storage facilities on site.

INSTALLATION

- 01 Floors: TCNA Handbook most recent Design No. F113 applied over concrete slabs on grade; @ Autostone Tile: follow manufacturer's install instructions.
- 02 Walls: TCNA Handbook Design No. W244 applied over moisture resistant gypsum board in toilet rooms; No. W202 applied over masonry.
- 03 Counters: TCNA Handbook Design No. C512 applied over particle board counter, gypsum board splash.
- 04 Job Conditions:
- a. Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer's printed recommendations.

- b. Vent temporary heaters to exterior to prevent damage to tile work from carbon dioxide build-up.
 - c. Maintain temperatures at not less than 50 degrees F (10 degrees C) in tiled areas during installation and for 7 days after completion, unless higher temperatures are required by referenced installation standards or manufacturer's written instructions.
- 05 Examination: Examine surfaces to receive tile work and conditions under which tile will be installed. Do not proceed with tile work until surfaces and conditions comply with requirements indicated in referenced tile installation standard and manufacturer's instructions.
- 06 General:
- a. All work shall be done by experienced craftsmen familiar with the type of installation scheduled
 - b. All tiles shall be firmly secured in place. Joints shall be well filled and lines shall be kept straight and true, and all finished surfaces brought to true level planes. The complete work shall be free from cracked or broken tiles.
 - c. All intersections and returns shall be accurately formed. All cutting and drilling of tiles shall be neatly done without marring the surface. The cut edges of tiles against any trim, built-in fixtures, etc., shall be carefully ground and jointed.
 - d. All joints shall be rubbed to a consistent evenness, flush with face or shoulder of tiles as the case may be.
 - e. Do all cutting of tiling that may be required for all fixtures, outlet boxes, piping, etc., extending to or through tile.
 - f. Installation of tile shall be in accordance with American National Standards Institute Spec. No. A108 for types of tile and setting methods described above.
 - g. Damaged or defective work must be replaced with new. Replacement of work damaged by other trades shall be done by this Contractor and paid for by those responsible. Replacements must match original work.
 - h. Marble thresholds to be set 1/4" above finish floor line.
 - i. Install expansion and control joints in accordance with TCNA method EJ171.

PROTECTION

- 01 Protect floors from foot traffic for at least 24 hours and general traffic for at least 72 hours after installation. Prohibit heavy traffic on floors for at least 7 days after installation.
- 02 Protect walls from impact, vibration and heavy hammering on adjacent and opposite walls for at least 14 days after installation.
- 03 Protect from freezing and total water immersion for at least 21 days after installation.

CLEANING

- 01 At completion of work, thoroughly clean all tile, leaving work in unstained and perfect condition.

GUARANTEE

- 01 This Contractor shall guarantee all materials and workmanship under this heading to be free from defects for a two (2) year period from date of acceptance.