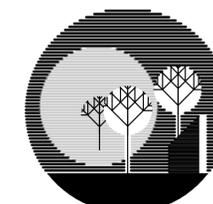


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project title

**DEMMER FORD RENOVATIONS**

37300 MICHIGAN AVE.  
WAYNE, MI

sheet title

**TITLE SHEET**

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project number

**13003**

drawn USA

approved USA

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BIDS AND PERMITS 07/02/2014

SHEET

**T-001**

# JACK DEMMER FORD RENOVATION & ADDITION

37300 Michigan Avenue  
Wayne, Michigan

### NEW CARS - CODE DATA:

Scope of work does not increase building area, change construction type, change occupancy or increase hazard. As such a comprehensive code analysis has not been provided. Under the Sun Architecture was not the Architect of Record for the previous renovation, as such, the following data is based on professional judgement:

Use Group: Mixed Use, B and S-1, Not Separated, Fully sprinklered.  
Construction Type: 2B Assumed  
Actual Building Area:  
Existing Group B 13,830 SF  
Existing Group S-1 46,680 SF  
Total Area 60,390 SF

Allowable Area:  
Tabular Area 2B (Table 503): 17,500 SF  
Area Increase (506.2) - Frontage (30') = +75% 13,125 SF  
Area Increase (506.3) - Sprinkler System +300% 52,500 SF  
Total Allowable Area: 83,125 SF

Actual Building Height: One story  
Allowable Building Height: Two Story

Occupancy Calculation:  
No change in use or occupancy.

Egress:  
Group B - Existing egress unchanged.  
Group S - Existing egress unchanged.

Plumbing Calculation:  
Occupancy Unchanged.  
Cosmetic changes to Public Toilets to meet Ford decor criteria.  
No change in fixture quantities.

### USED CARS - CODE DATA:

Use Group: Mixed Use, B and S-1, Not Separated, Unsprinklered  
Construction Type: 5B

Actual Building Area:  
Existing Group B 1,310 SF  
New Group B 1,340 SF  
Existing Group S-1 4,100 SF (Unaltered)  
Total Area 6,750 SF

Allowable Area:  
Tabular Area (Table 503): 9,000 SF  
Area Increase - Frontage (30') = +75% 6,750 SF  
Total Allowable Area: 15,750 SF

Actual Building Height: One story, 17'-0"

Allowable Building Height: One Story

Total S-1 area less than 12,000 SF and Repair Garage less than 10,000 SF. No fire sprinklers required.

Building contains 770 SF Lower Level used as non-occupied mechanical and electrical room.

Occupancy Calculation:  
Existing Group B 1,310 SF 1100 14 Occ.  
New Group B 1,340 SF 1100 14 Occ.  
Existing Group S-1 4,100 SF 1200 21 Occ.

Egress:  
Group B - 3 means of egress provided.  
Group S - No alterations

Plumbing Calculation:  
Group B 14 Occ. WC 125 Lav 140  
Existing Group S-1 21 Occ. WC 1100 Lav 1100

Provided: 2 WC, 2 Lav, 1 DF, 1 Jan. Sink in Shop (existing)  
1 Unisex o Grade Level - Barrier Free Compliant  
1 Unisex o Ex. Upper Level

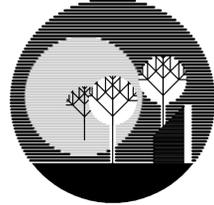


PLAN NORTH  
LOCATION MAP

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E-502	ELECTRICAL RISER DIAGRAM	●	
E-600	ELECTRICAL SPECIFICATIONS	●	



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**DEMMER FORD**  
**RENOVATIONS**

37300  
 MICHIGAN AVE.  
 WAYNE, MI

sheet title

**DEMOLITION**  
**ELEVATIONS**  
**AND SECTIONS**

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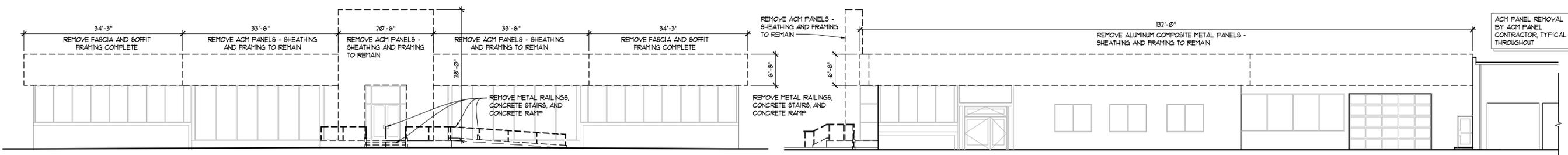
13003

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issued date  
 BIDS AND PERMIT 07/02/2014

SHEET

D-201

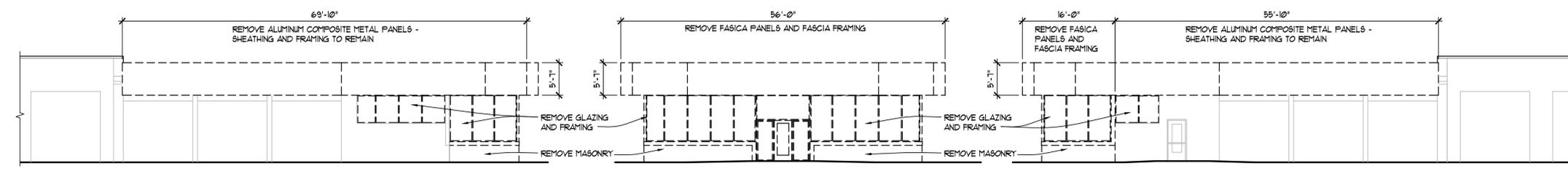


**12 SOUTH ELEVATION DEMOLITION**  
 NEW CAR BLDG  $3/32" = 1'-0"$

**11 EAST ELEVATION DEMOLITION**  
 NEW CAR BLDG  $3/32" = 1'-0"$



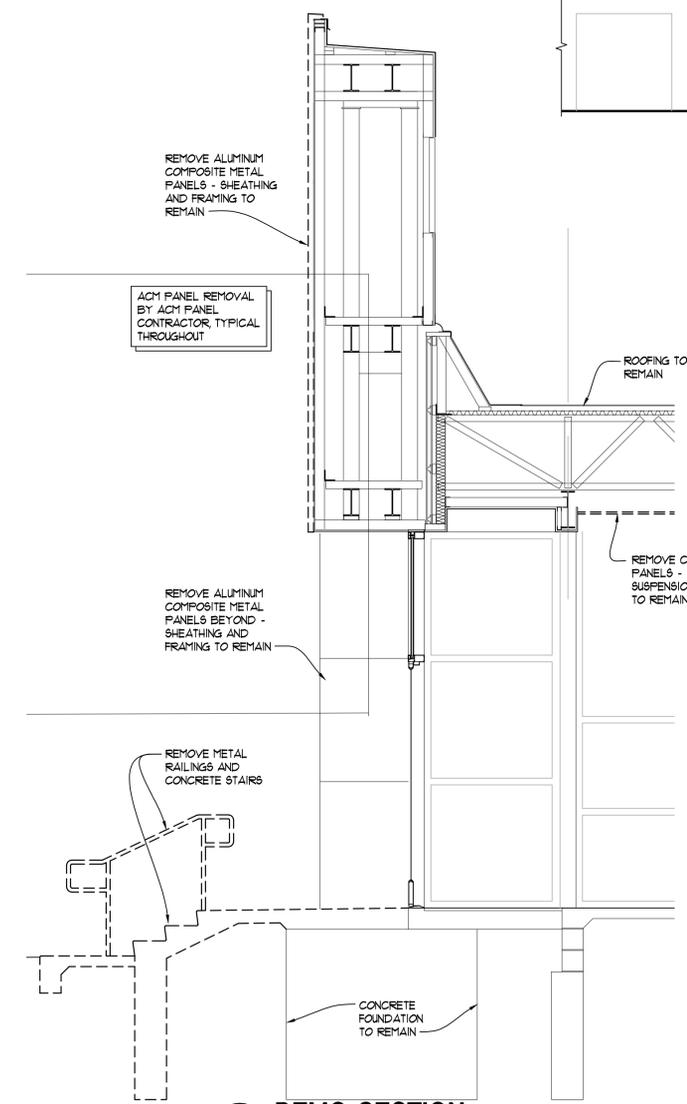
**10 WEST ELEVATION DEMOLITION**  
 NEW CAR BLDG  $3/32" = 1'-0"$



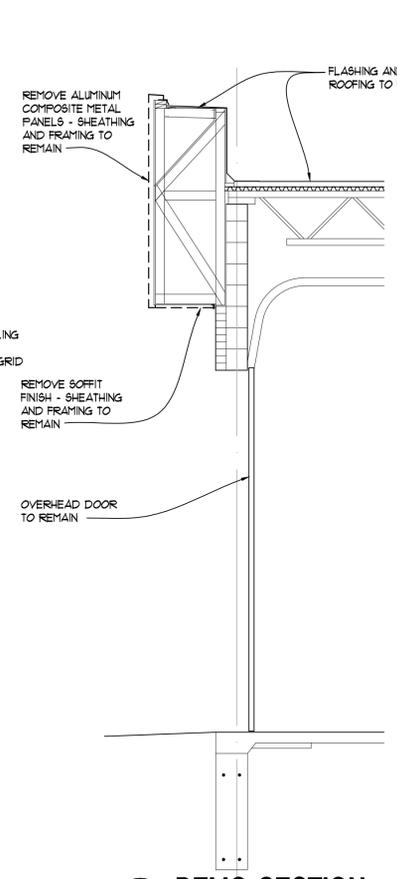
**9 WEST ELEVATION DEMOLITION**  
 USED CAR BLDG  $3/32" = 1'-0"$

**8 SOUTH ELEVATION DEMOLITION**  
 USED CAR BLDG  $3/32" = 1'-0"$

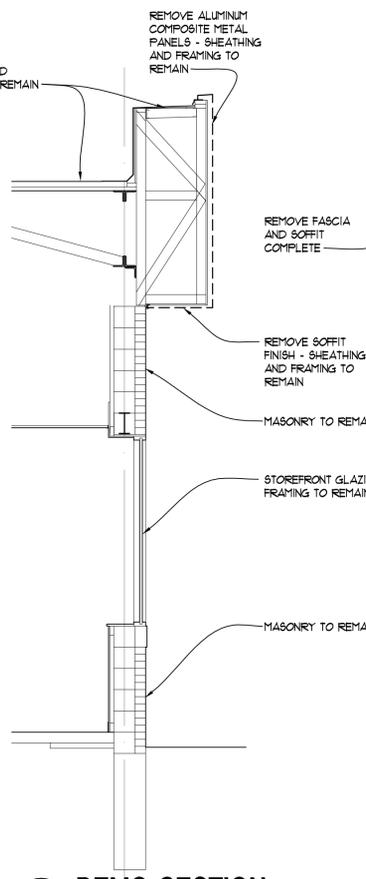
**7 EAST ELEVATION DEMOLITION**  
 USED CAR BLDG  $3/32" = 1'-0"$



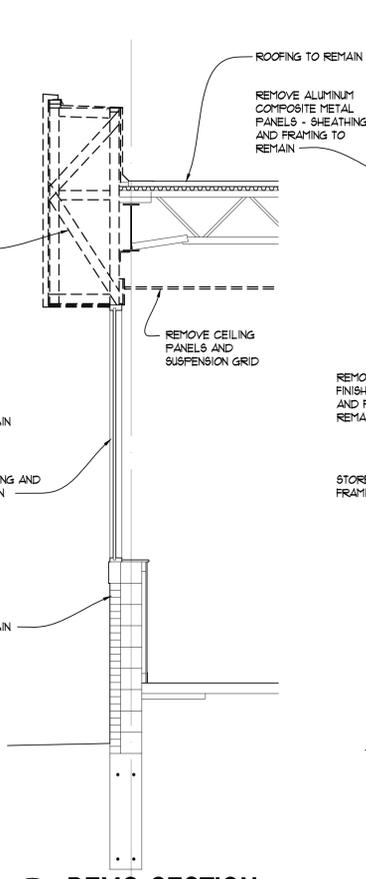
**6 DEMO SECTION**  
 NEW CAR BLDG  $3/8" = 1'-0"$



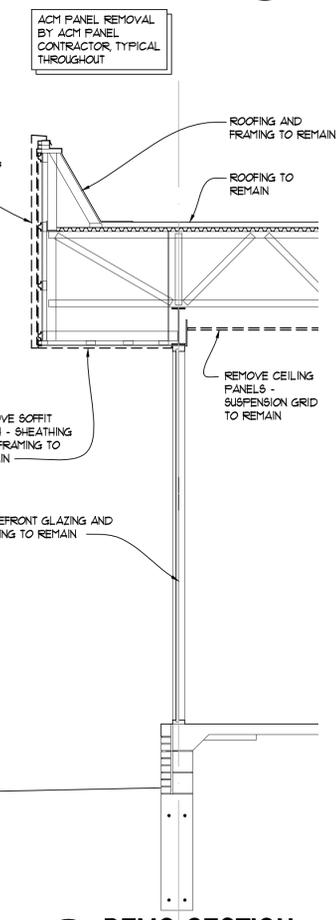
**5 DEMO SECTION**  
 NEW CAR BLDG  $3/8" = 1'-0"$



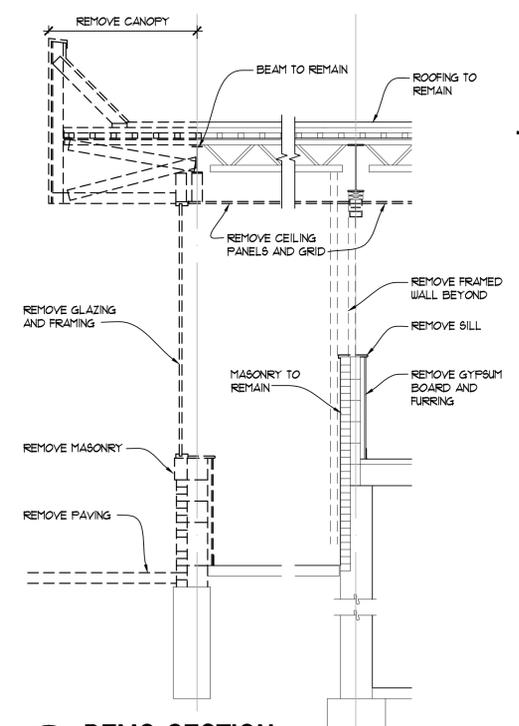
**4 DEMO SECTION**  
 NEW CAR BLDG  $3/8" = 1'-0"$



**3 DEMO SECTION**  
 NEW CAR BLDG  $3/8" = 1'-0"$



**2 DEMO SECTION**  
 NEW CAR BLDG  $3/8" = 1'-0"$



**1 DEMO SECTION**  
 USED CAR BLDG  $3/8" = 1'-0"$



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**DEMMER FORD RENOVATIONS**

37300  
MICHIGAN AVE.  
WAYNE, MI

**sheet title**

**OVERALL FLOOR PLANS**

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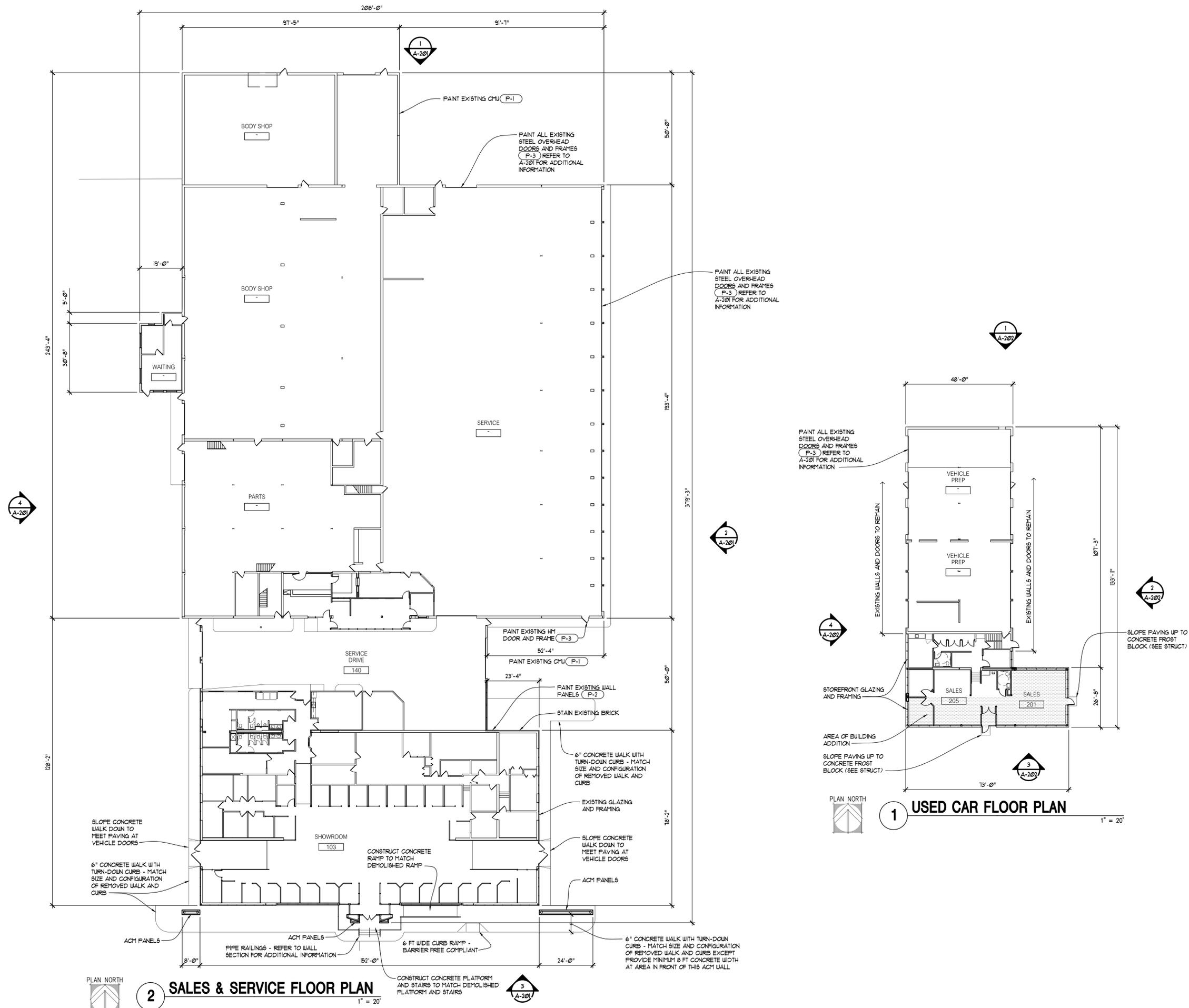
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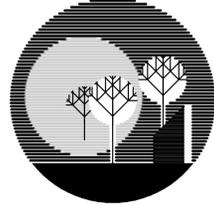
A-100



**2 SALES & SERVICE FLOOR PLAN**  
1" = 20'

**1 USED CAR FLOOR PLAN**  
1" = 20'

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**DEMMER FORD RENOVATIONS**

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**FLOOR PLAN - NEW CAR BLDG**

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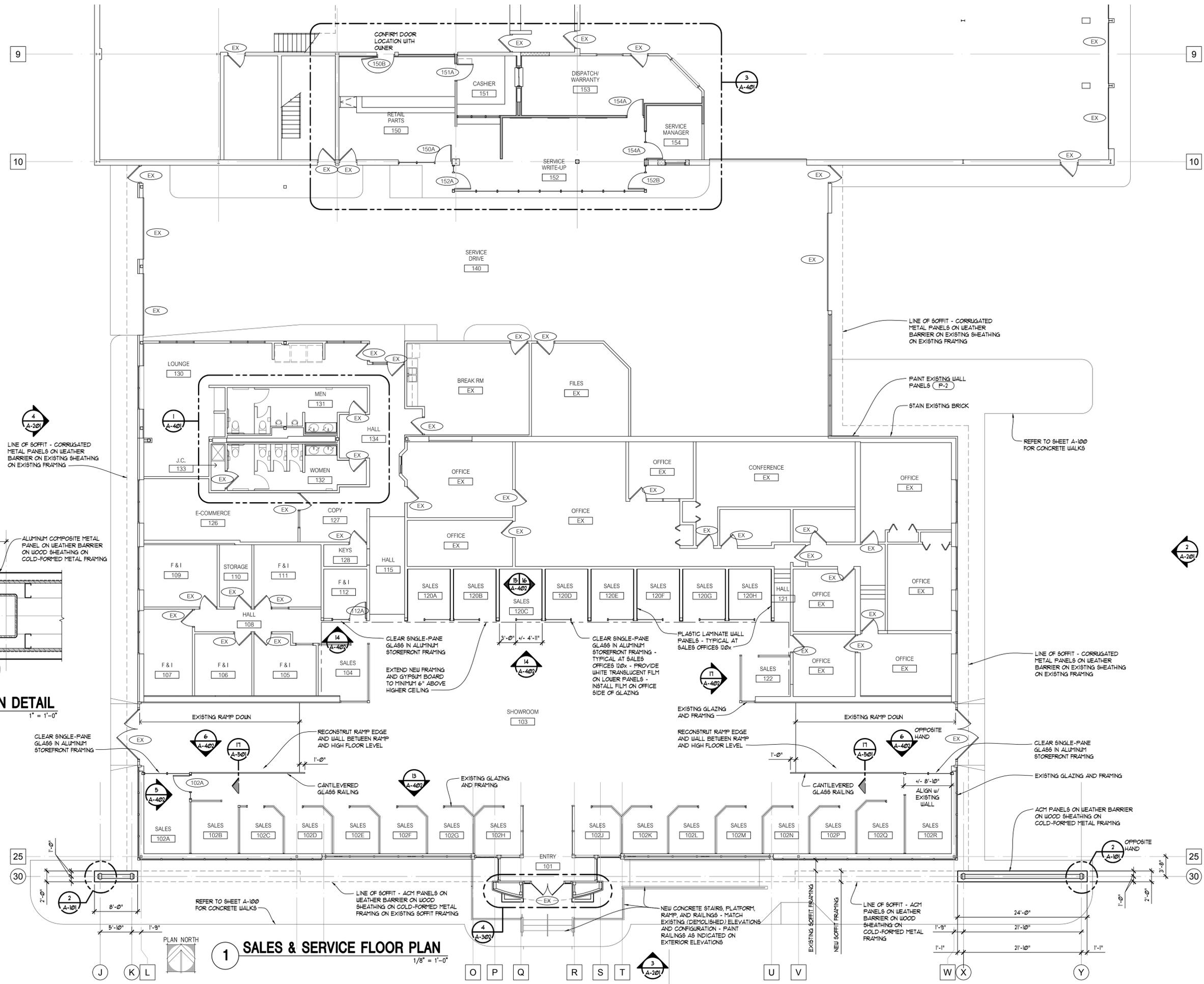
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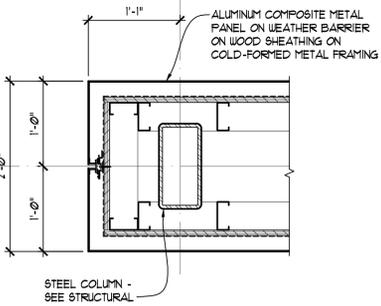
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**A-101**

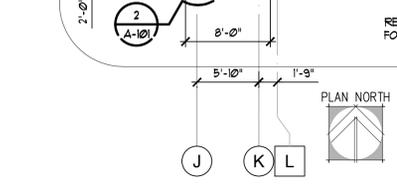


4  
A-201  
LINE OF SOFFIT - CORRUGATED METAL PANELS ON WEATHER BARRIER ON EXISTING SHEATHING ON EXISTING FRAMING



**2 PLAN DETAIL**  
1" = 1'-0"

**1 SALES & SERVICE FLOOR PLAN**  
1/8" = 1'-0"



REFER TO SHEET A-100 FOR CONCRETE WALKS

LINE OF SOFFIT - CORRUGATED METAL PANELS ON WEATHER BARRIER ON EXISTING SHEATHING ON EXISTING FRAMING

PAINT EXISTING WALL PANELS ( F-2)  
STAIN EXISTING BRICK

REFER TO SHEET A-100 FOR CONCRETE WALKS

14  
A-402  
CLEAR SINGLE-PANE GLASS IN ALUMINUM STOREFRONT FRAMING  
EXTEND NEW FRAMING AND GYPSUM BOARD TO MINIMUM 6" ABOVE HIGHER CEILING

11  
A-402  
CLEAR SINGLE-PANE GLASS IN ALUMINUM STOREFRONT FRAMING - TYPICAL AT SALES OFFICES 120x - PROVIDE WHITE TRANSLUCENT FILM ON LOWER PANELS - INSTALL FILM ON OFFICE SIDE OF GLAZING

11  
A-402  
PLASTIC LAMINATE WALL PANELS - TYPICAL AT SALES OFFICES 120x

LINE OF SOFFIT - CORRUGATED METAL PANELS ON WEATHER BARRIER ON EXISTING SHEATHING ON EXISTING FRAMING

CLEAR SINGLE-PANE GLASS IN ALUMINUM STOREFRONT FRAMING

RECONSTRUCT RAMP EDGE AND WALL BETWEEN RAMP AND HIGH FLOOR LEVEL

RECONSTRUCT RAMP EDGE AND WALL BETWEEN RAMP AND HIGH FLOOR LEVEL

CLEAR SINGLE-PANE GLASS IN ALUMINUM STOREFRONT FRAMING

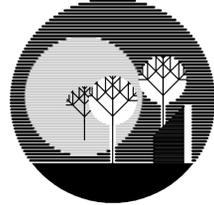
EXISTING GLAZING AND FRAMING

ACM PANELS ON WEATHER BARRIER ON WOOD SHEATHING ON COLD-FORMED METAL FRAMING

NEW CONCRETE STAIRS, PLATFORM, RAMP, AND RAILINGS - MATCH EXISTING (DEMOLISHED) ELEVATIONS AND CONFIGURATION - PAINT RAILINGS AS INDICATED ON EXTERIOR ELEVATIONS

LINE OF SOFFIT - ACM PANELS ON WEATHER BARRIER ON WOOD SHEATHING ON COLD-FORMED METAL FRAMING

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sheet title

**FLOOR PLAN -**
  
**USED CAR BDLG**

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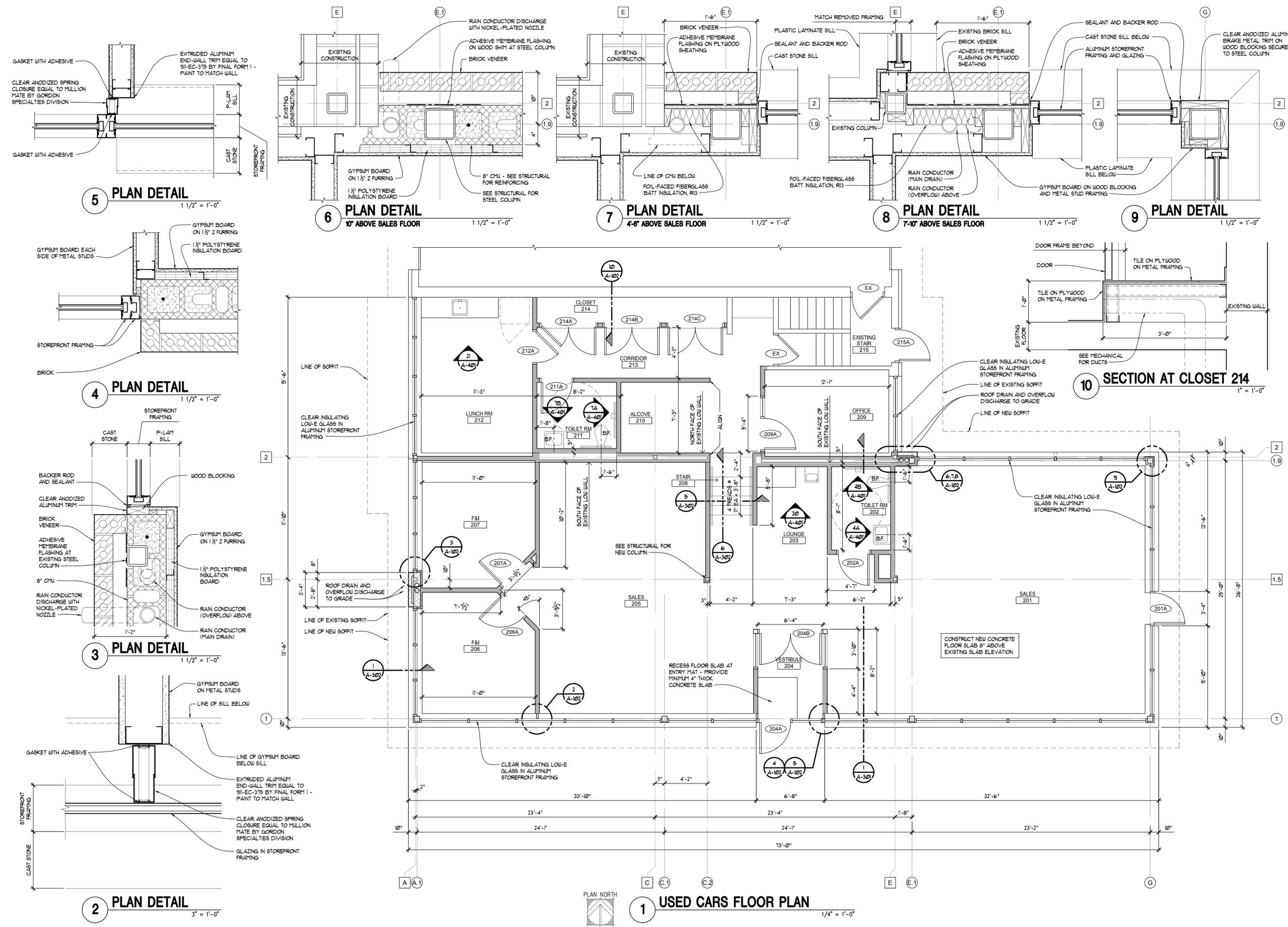
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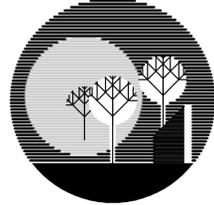
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A-102



**1 USED CARS FLOOR PLAN**
  
 1/4" = 1'-0"

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**REFLECTED CEILING PLANS**

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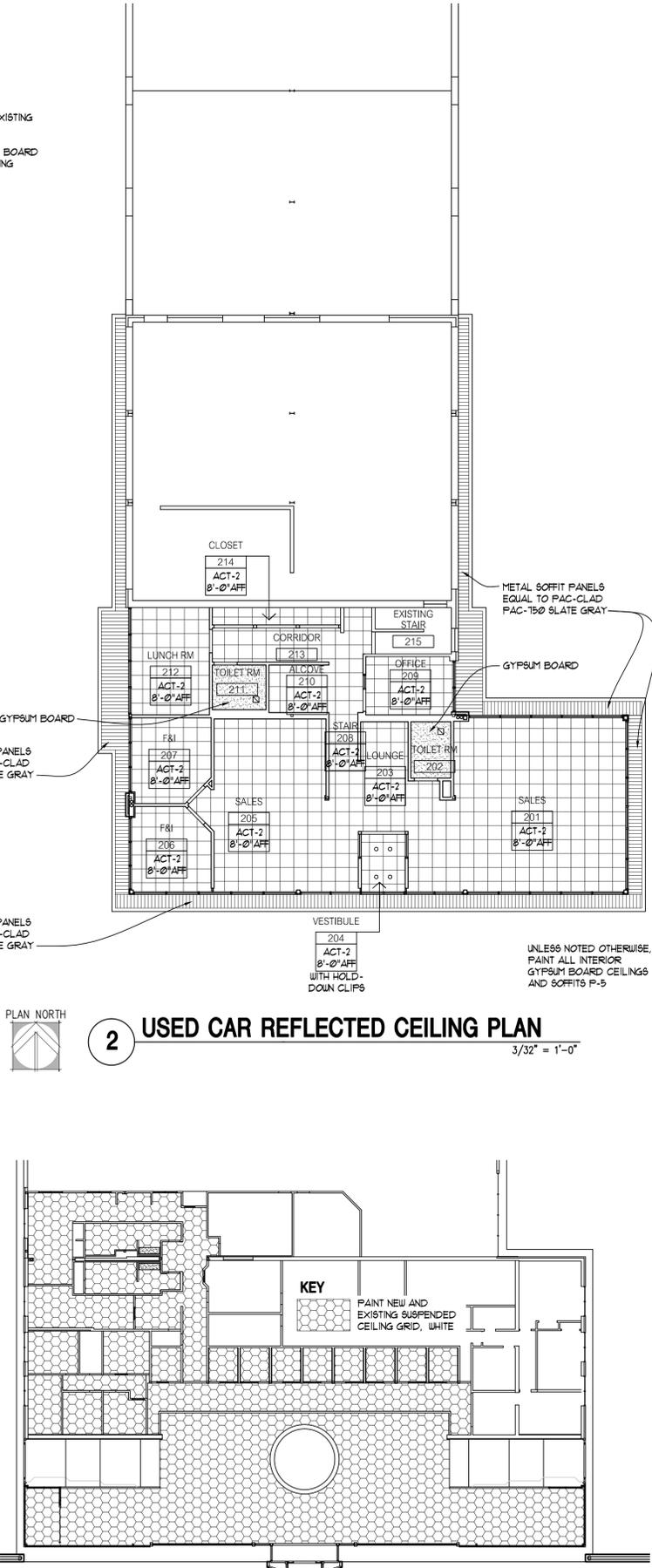
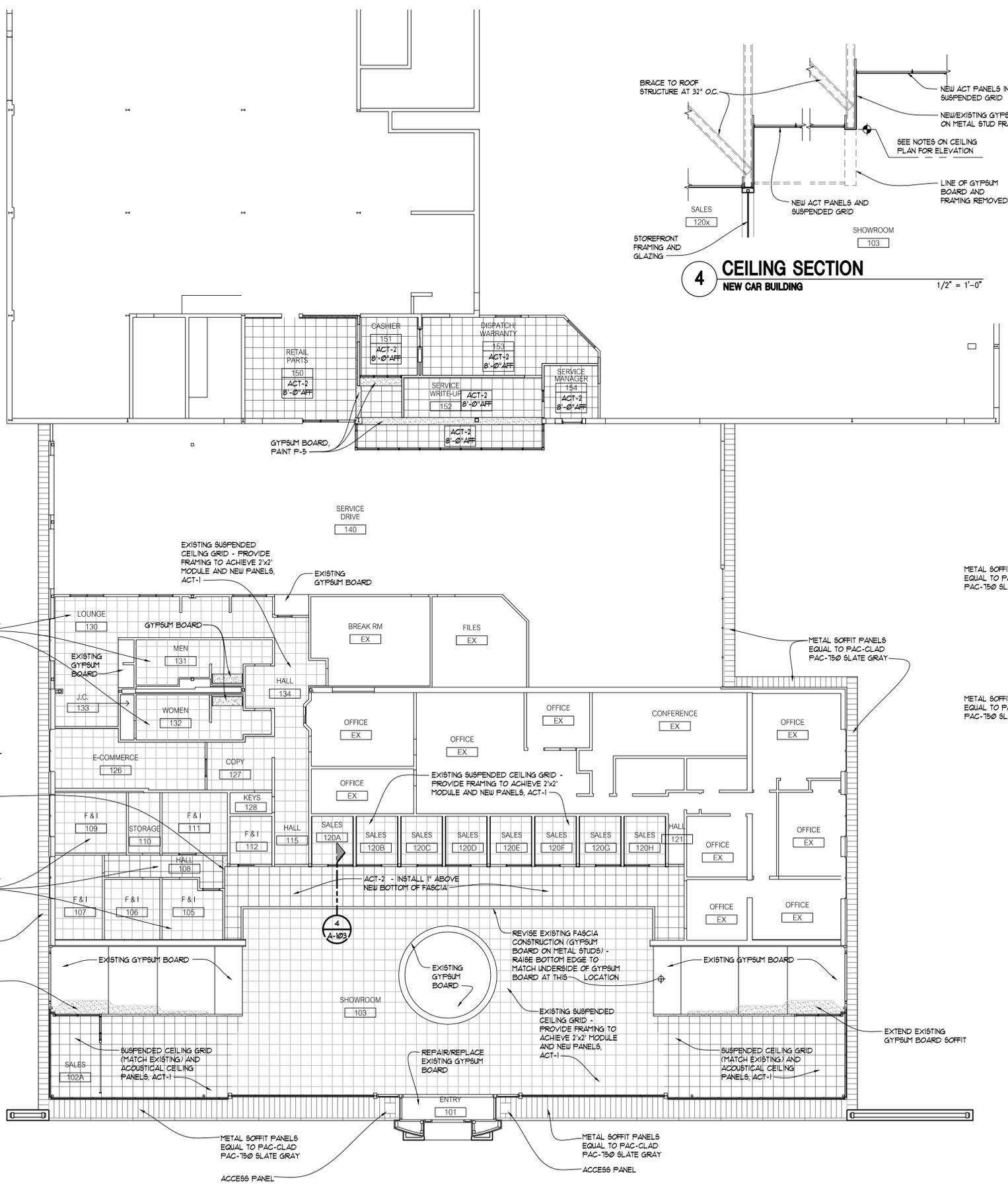
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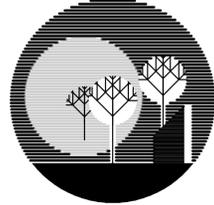
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**A-103**



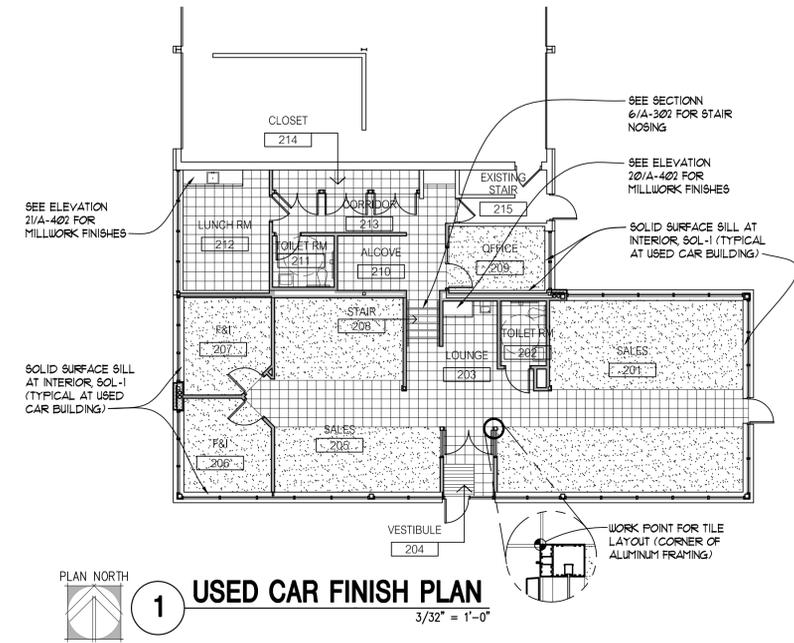
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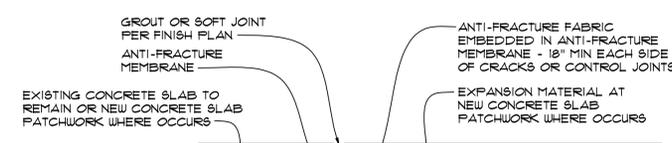
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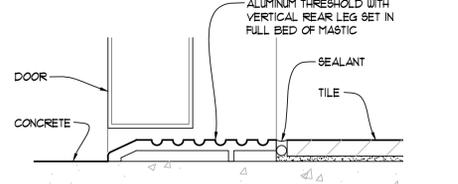
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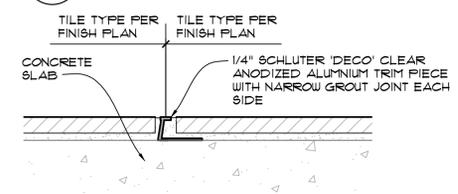
**1 USED CAR FINISH PLAN**  
3/32" = 1'-0"



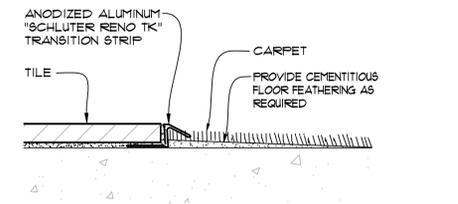
**6 CRACK CONTROL DETAIL**  
6" = 1'-0"



**5 FLOOR TRANSITION CONCRETE TO TILE**  
6" = 1'-0"



**4 FLOOR TRANSITION TILE T-1 TO TILE T-2**  
6" = 1'-0"

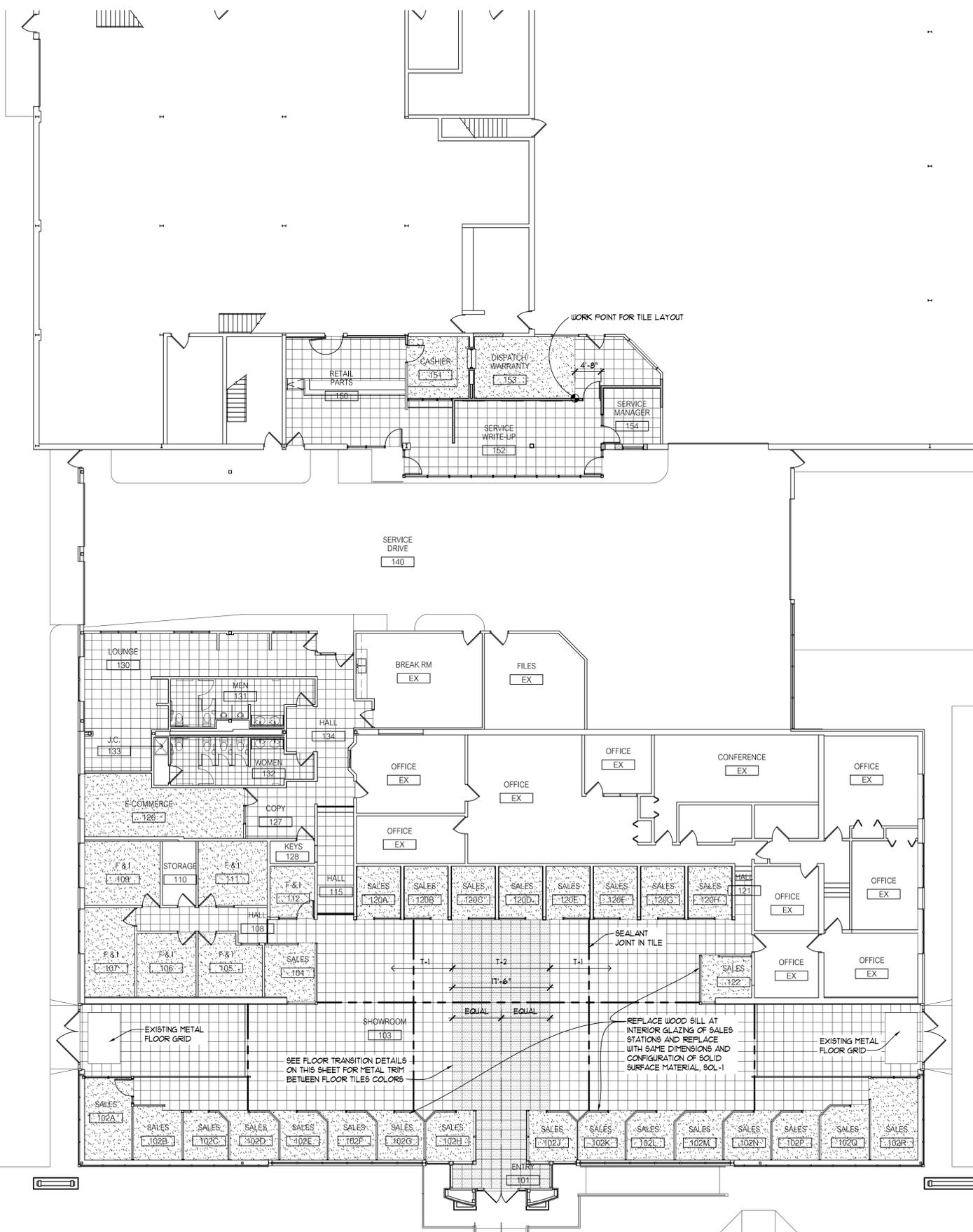


**3 FLOOR TRANSITION TILE TO CARPET**  
6" = 1'-0"

- ROOM FINISH NOTES**
- DEMOLITION WORK INCLUDES REMOVAL OF WALLCOVERING AT WALLS SCHEDULED TO RECEIVE PAINT - PREP THESE WALLS TO ACHIEVE SMOOTH PAINT APPLICATION.
  - SEE REFLECTED CEILING PLANS FOR CEILING MATERIALS AND HEIGHTS

NO.	NAME	FLOOR	BASE	WALLS			
				NORTH	EAST	SOUTH	WEST
101	ENTRY	T-2	T-4		P-4	P-4	P-4
102A-R	SALES	CPT-1	T-4	P-4	P-4	P-4	P-4
103	SHOWROOM	T-1 / T-2	T-4	P-4	P-4	P-4	P-4
104	SALES	CPT-1	T-4	P-4	P-4	P-4	P-4
105	F # 1	CPT-1	T-4	P-4	P-4	P-4	P-4
106	F # 1	CPT-1	T-4	P-4	P-4	P-4	P-4
107	F # 1	CPT-1	T-4	P-4	P-4	P-4	P-4
108	HALL	CPT-1	T-4	P-4		P-4	P-4
109	F # 1	CPT-1	T-4	P-4	P-4	P-4	P-4
110	STORAGE	EX	EX	EX	EX	EX	EX
111	F # 1	CPT-1	T-4	P-4	P-4	P-4	P-4
112	F # 1	CPT-1	T-4	P-4	P-4	P-4	P-4
115	HALL	T-1	T-4		P-4		P-4
120A-H	SALES	CPT-1	T-4	P-4	LAM-1		LAM-1
121	HALL	T-1	T-4		P-4		P-4
122	SALES	CPT-1	T-4	P-4	P-4	P-4	P-4
126	E-COMMERCE	CPT-1	T-4	P-4	P-4	P-4	P-4
127	COPY	T-1	T-4	P-4	P-4	P-4	P-4
128	KEYS	EX	EX	EX	EX	EX	EX
130	LOUNGE	T-1	T-4	P-4	P-4	P-4	P-4
131	MEN	T-3	T-4	P-4	P-4	T-3 / P-4	T-3 / P-4
132	WOMEN	T-3	T-4	T-3 / P-4	P-4	T-3 / P-4	P-4
133	J.C.	EX	EX	EX	EX	EX	EX
134	HALL	T-1	T-4	P-4	P-4	P-4	P-4
140	SERVICE DRIVE	EX	EX	P-4	P-4	P-4	P-4
150	RETAIL PARTS	T-1	T-4	SLT-1	P-4	P-4	P-4
151	CASHIER	CPT-1	T-4	P-4	P-4	P-4	P-4
152	SERVICE WRITEUP	T-1	T-4	P-4	P-4	P-4	P-4
153	DISPATCH / WARRANTY	CPT-1 / T-1	T-4	P-4	P-4	P-4	P-4
154	SERVICE MANAGER	T-1	T-4	P-4	P-4	P-4	P-4
201	SALES	CPT-1/T-3	T-4	P-4	P-4	P-4	P-4
202	TOILET RM	T-3	T-4	T-3 / P-4	T-3 / P-4	P-4	P-4
203	LOUNGE	T-3	T-4	P-4	P-4		P-4
204	VESTIBULE	MAT-1/T-3	T-4	P-4	P-4		P-4
205	SALES	CPT-1/T-3	T-4	P-4	P-4	P-4	P-4
206	F # 1	CPT-1	T-4	P-4	P-4	P-4	P-4
207	F # 1	CPT-1	T-4	P-4	P-4	P-4	P-4
208	STAIR	T-3	T-4		P-4		P-4
209	OFFICE	CPT-1	T-4	P-4	P-4	P-4	P-4
210	ALCOVE	CPT-1	T-4	P-4		P-4	P-4
211	TOILET RM	T-3	T-4	P-4	T-3 / P-4	T-3 / P-4	P-4
212	LUNCH RM	T-3	T-4	P-4	P-4	P-4	P-4
213	CORRIDOR	T-3	T-4	P-4	P-4	P-4	P-4
214	CLOSET	T-3	T-4	P-4	P-4	P-4	P-4
215	EXISTING STAIR	EX	EX	EX	EX	EX	EX

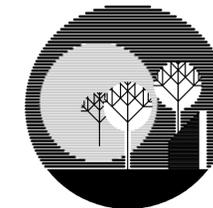
**ALTERNATE #1** - IF OFFICE CARPET IS AVAILABLE IN SHEET FORM, PROVIDE CARPET BASE WITH BOUND TOP EDGE IN THE FOLLOWING ROOMS: 107A - 107R, 104, 120A - 120H, 122



**2 SALES & SERVICE FINISH PLAN**  
3/32" = 1'-0"



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South Lyon, MI, 48178

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**DEMMER FORD RENOVATIONS**

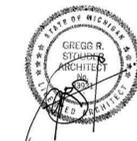
37300 MICHIGAN AVE.  
WAYNE, MI

sheet title

**USED CAR BLDG ROOF PLAN AND DETAILS**

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seal & signature



project number

**13003**

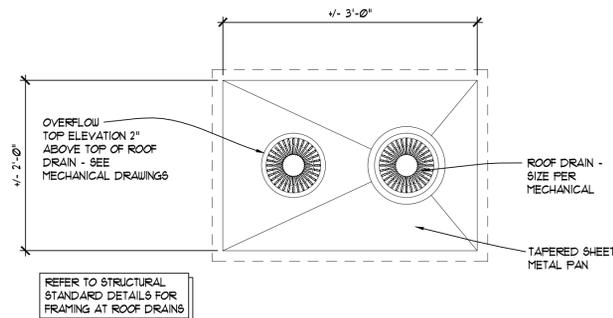
drawn USA

approved USA

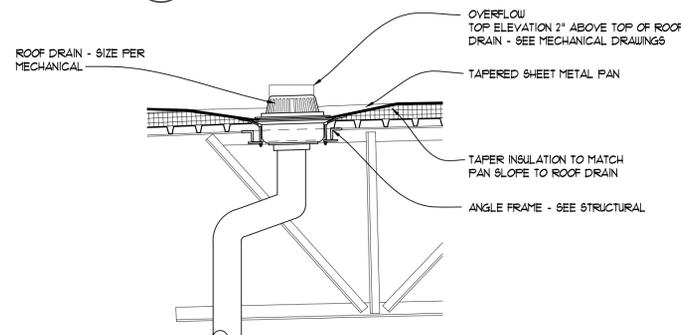
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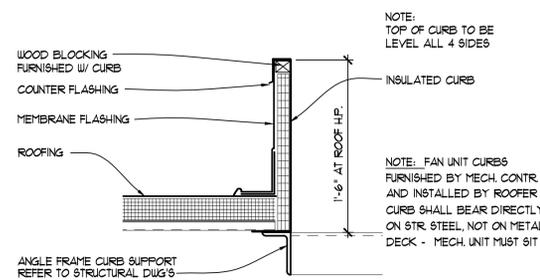
SHEET  
**A-105**



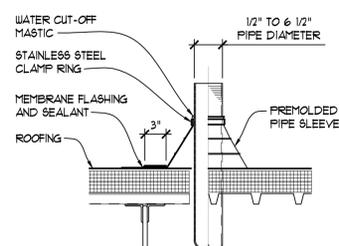
**5 TYPICAL ROOF DRAIN PLAN**  
1"=1'-0"



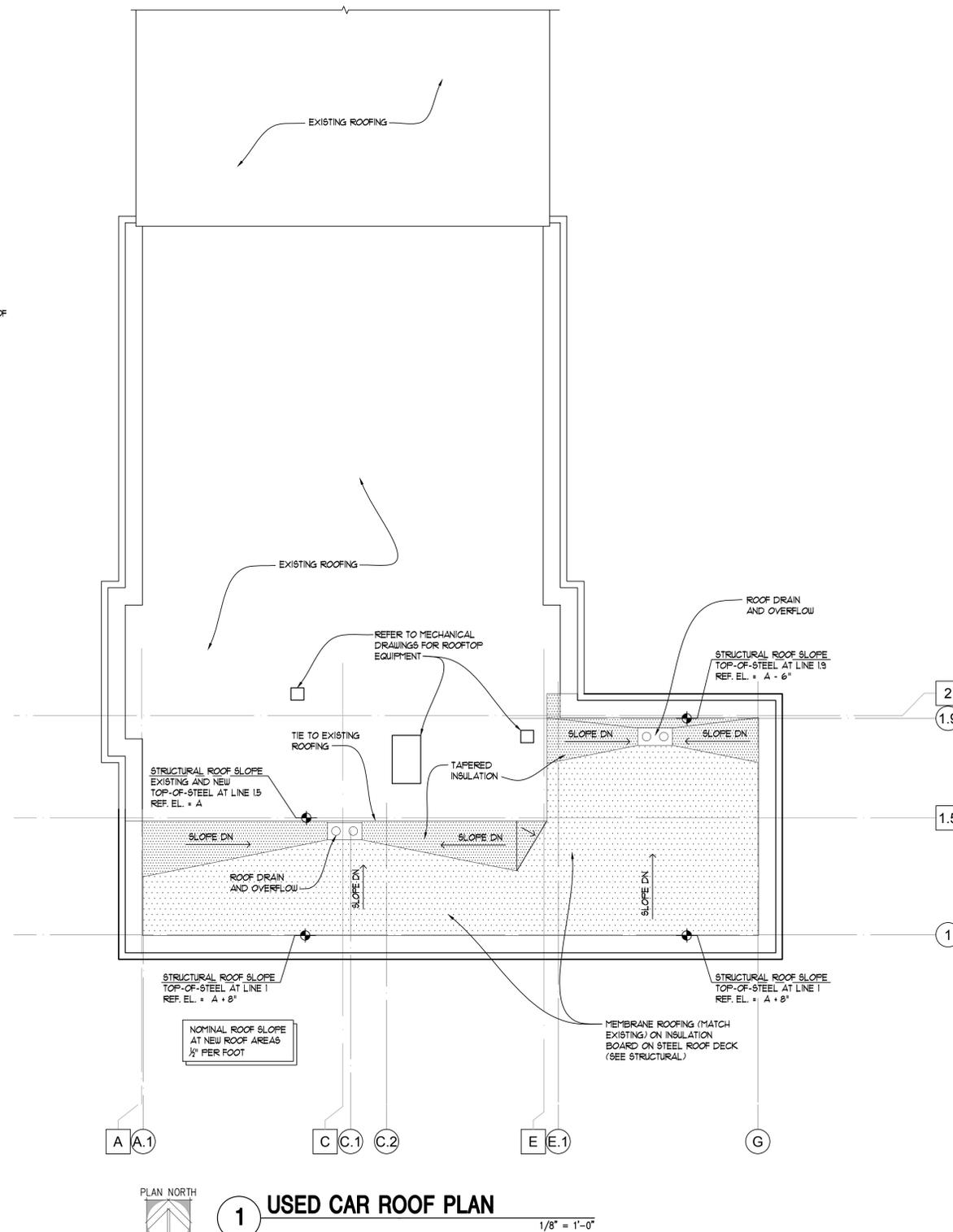
**4 TYPICAL ROOF DRAIN SECTION**  
1"=1'-0"



**3 TYPICAL ROOF CURB**  
1"=1'-0"

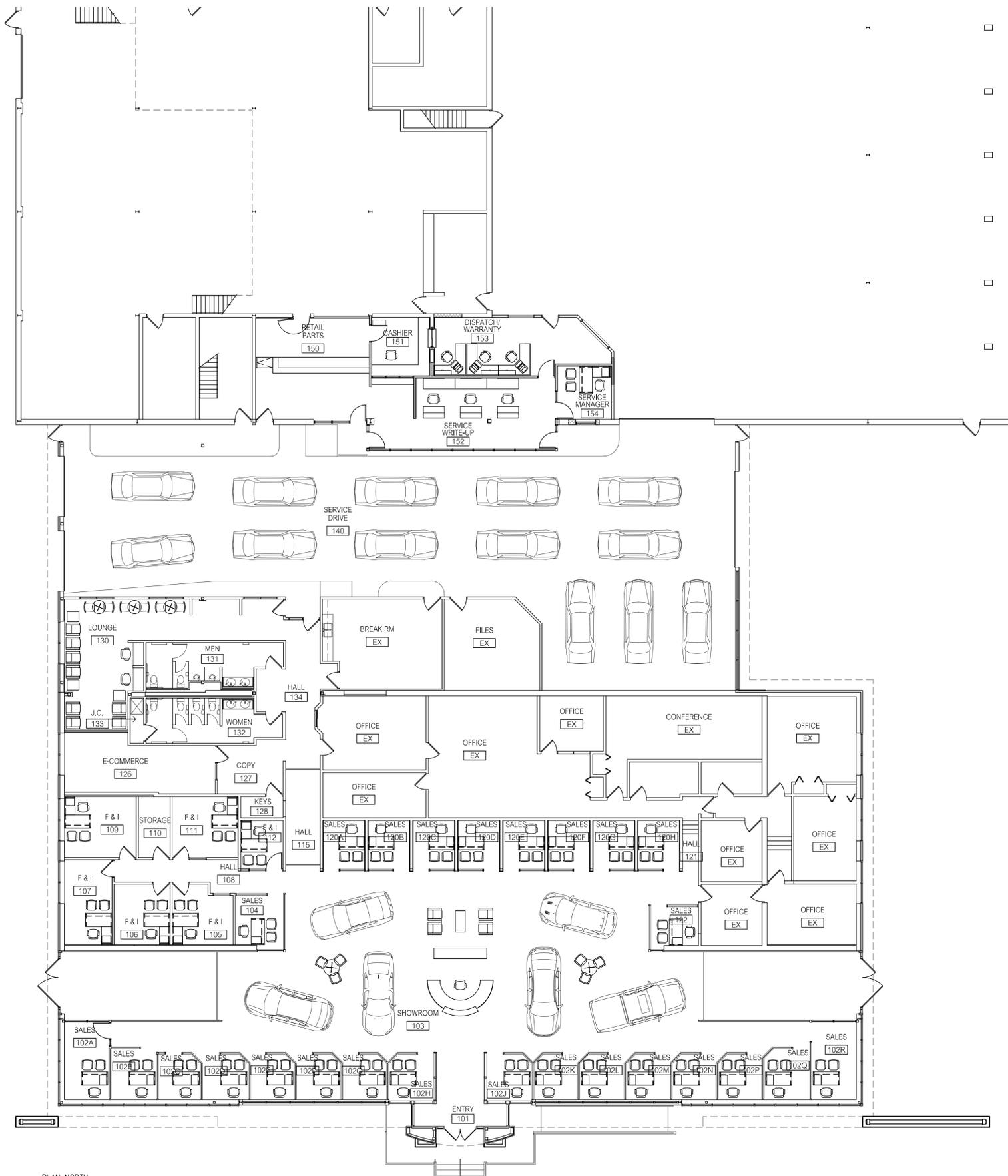


**2 TYPICAL PIPING/VENT DETAIL**  
1"=1'-0"

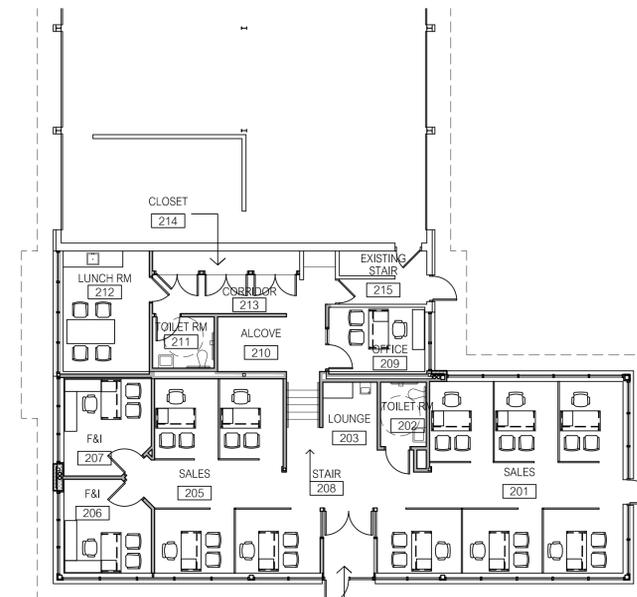


**1 USED CAR ROOF PLAN**  
1/8"=1'-0"

DATE PLOTTED: 07/02/2014 10:45:00 AM



PLAN NORTH  
**1 SALES & SERVICE FF&E PLAN**  
 3/32" = 1'-0"

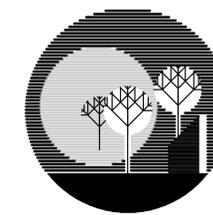


PLAN NORTH  
**1 USED CAR FF&E PLAN**  
 3/32" = 1'-0"

ISSUED FOR REFERENCE



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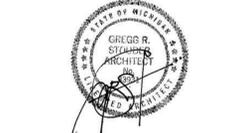
37300 MICHIGAN AVE.  
 WAYNE, MI

sheet title

**FF & E PLANS**

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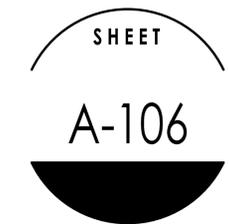


project number

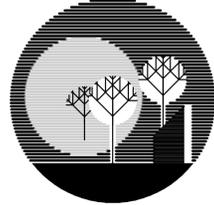
**13003**

drawn USA  
 approved USA

issued date  
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**DEMMER FORD RENOVATIONS**

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WAYNE, MI

sheet title

**NEW CAR BLDG EXTERIOR ELEVATIONS**

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project number

**13003**

drawn USA

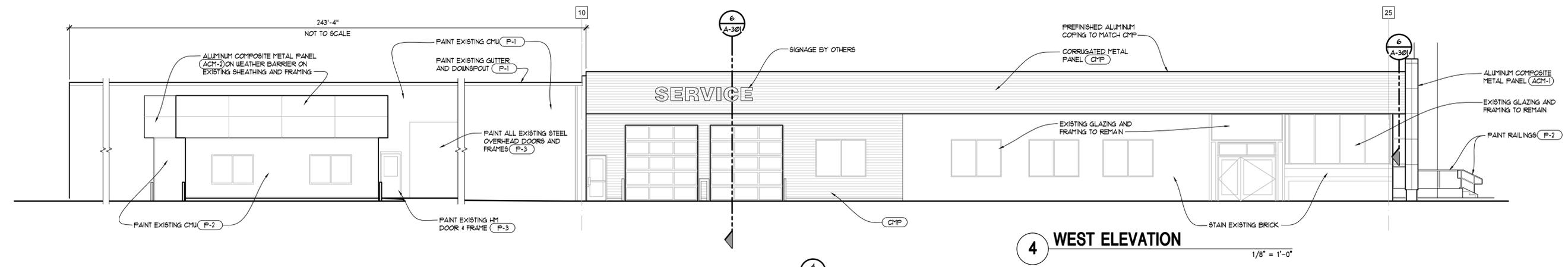
approved USA

issued date

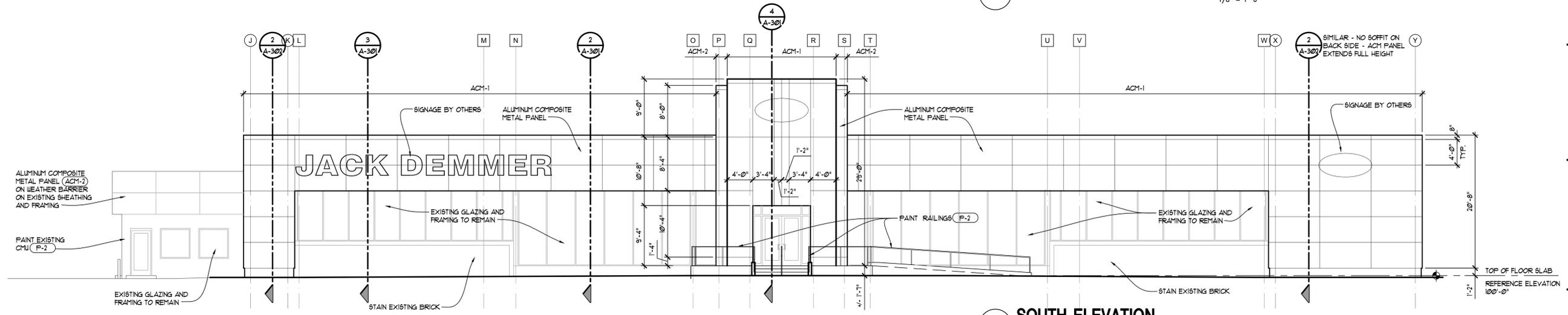
BIDS AND PERMIT 07/02/2014

SHEET

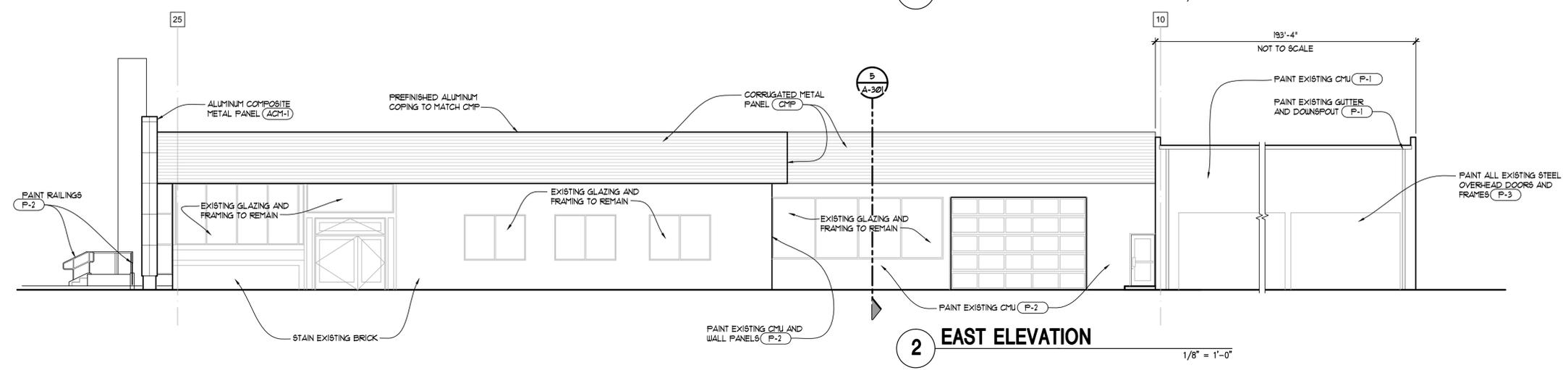
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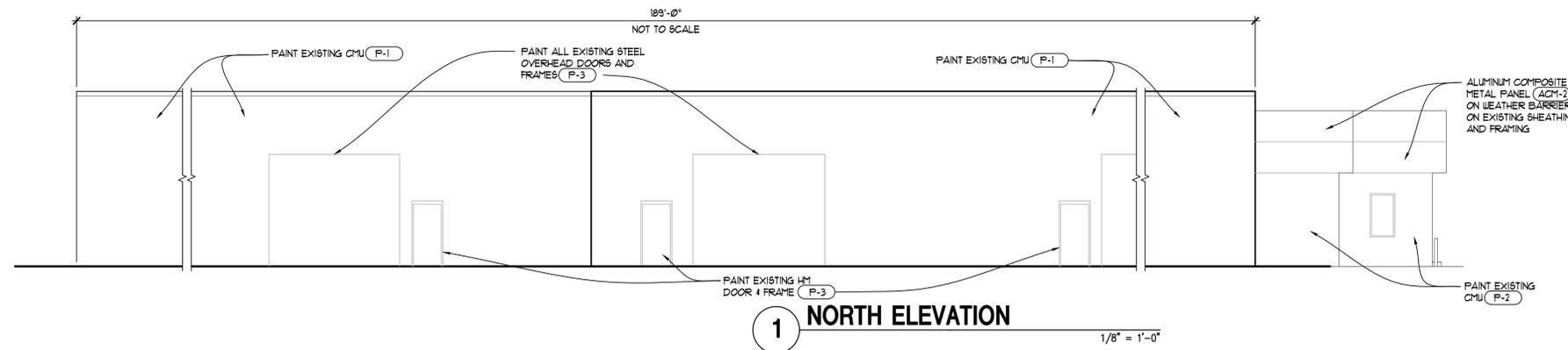
**4 WEST ELEVATION**  
1/8" = 1'-0"



**3 SOUTH ELEVATION**  
1/8" = 1'-0"



**2 EAST ELEVATION**  
1/8" = 1'-0"



**1 NORTH ELEVATION**  
1/8" = 1'-0"

**EXTERIOR FINISHES**

- ACM-1 ALUMINUM COMPOSITE METAL PANELS  
ALPOLIC HAIRLINE ALUMINUM  
4MM4HLZ
- ACM-2 ALUMINUM COMPOSITE METAL PANELS  
ALPOLIC M2G GRAY  
4MM4MGZ
- BRICK FACE BRICK - MATCH SIZE AND TEXTURE OF EXISTING BRICK
- BRICK STAIN COLOR TO BE SELECTED BY OWNER
- CMP CORRUGATED METAL PANEL  
ALCOA 1/8" RIB SIDING  
COLORWELD 300 SLATE GRAY
- P-1 PAINT (EXISTING AND NEW SURFACES)  
COLOR TO MATCH GLIDDEN UNIVERSAL GRAY
- P-2 PAINT (EXISTING AND NEW SURFACES)  
COLOR TO MATCH GLIDDEN GRANITE GRAY
- P-3 PAINT (EXISTING AND NEW SURFACES)  
COLOR TO MATCH GLIDDEN GRIMMYS GRAY



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project title

**DEMMER FORD  
RENOVATIONS**

37300  
MICHIGAN AVE.  
WAYNE, MI

sheet title

**USED CAR BLDG  
EXTERIOR  
ELEVATIONS**

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project number

**13003**

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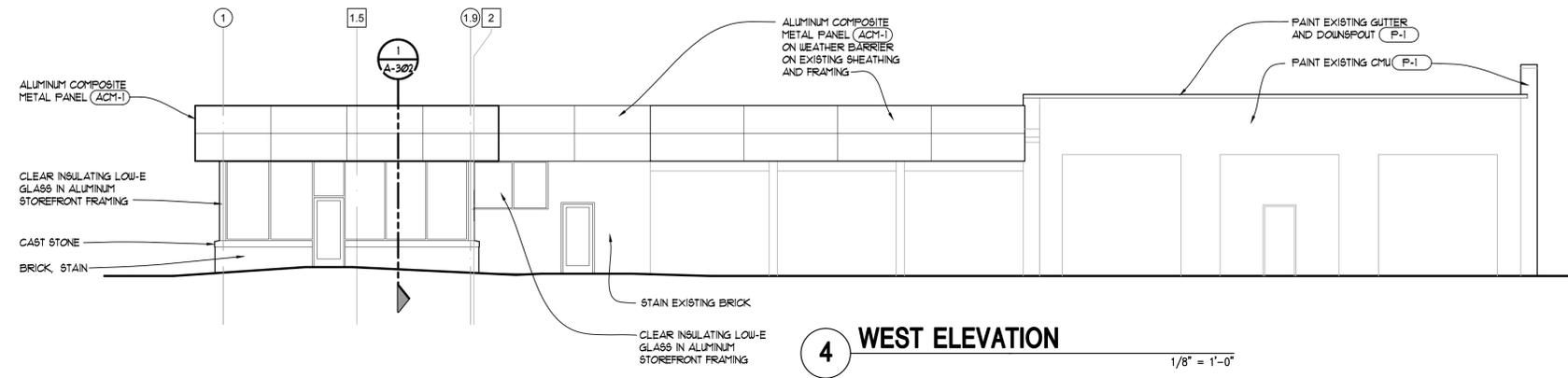
approved USA

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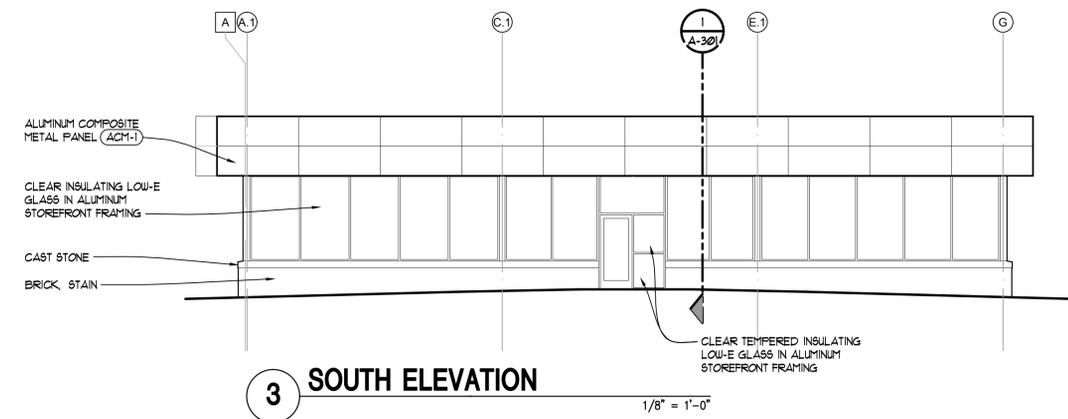
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**A-202**



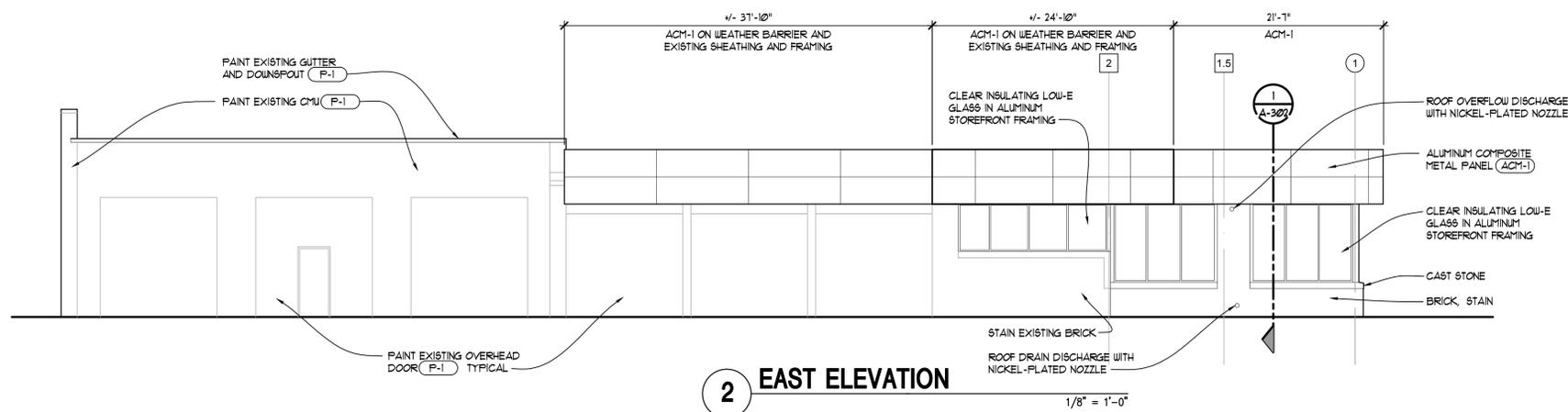
**4 WEST ELEVATION**

1/8" = 1'-0"



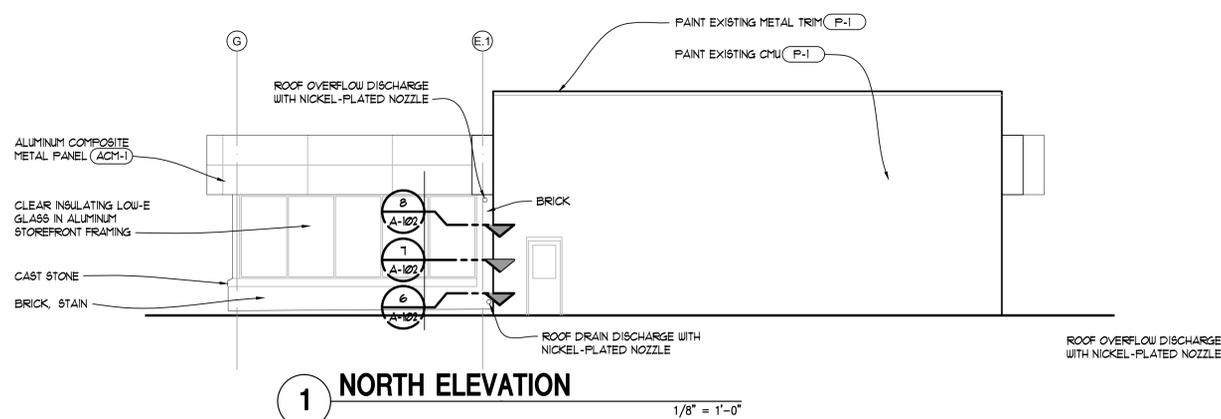
**3 SOUTH ELEVATION**

1/8" = 1'-0"



**2 EAST ELEVATION**

1/8" = 1'-0"



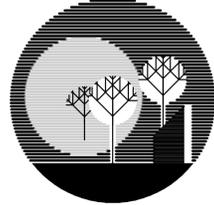
**1 NORTH ELEVATION**

1/8" = 1'-0"

**EXTERIOR FINISHES**

- |   |   |
|---|---|
| ACM-1 ALUMINUM COMPOSITE METAL PANELS<br>ALPOLIC HAIRLINE ALUMINUM<br>4\"x14\"xLZ | CMF CORRUGATED METAL PANEL<br>ALCOA 1/8\" RIB SIDING<br>COLORWELD 3000 SLATE GRAY |
| ACM-2 ALUMINUM COMPOSITE METAL PANELS<br>ALPOLIC M25 GRAY<br>4\"x14\"xGZ          | P-1 PAINT (EXISTING AND NEW SURFACES)<br>COLOR TO MATCH GLIDDEN UNIVERSAL GRAY    |
| BRICK FACE BRICK - MATCH SIZE AND TEXTURE OF<br>EXISTING BRICK                    | P-2 PAINT (EXISTING AND NEW SURFACES)<br>COLOR TO MATCH GLIDDEN GRANITE GRAY      |
| BRICK STAIN COLOR TO BE SELECTED BY OWNER   | P-3 PAINT (EXISTING AND NEW SURFACES)<br>COLOR TO MATCH GLIDDEN GRIMMY'S GRAY     |

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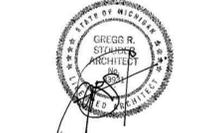
37300  
MICHIGAN AVE.  
WAYNE, MI

sheet title

**WALL SECTIONS**

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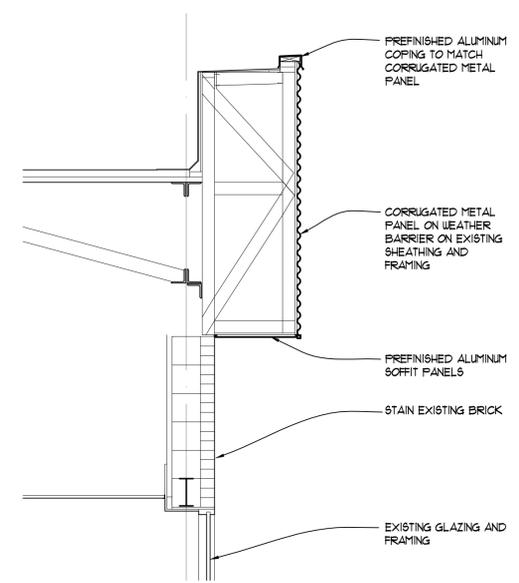
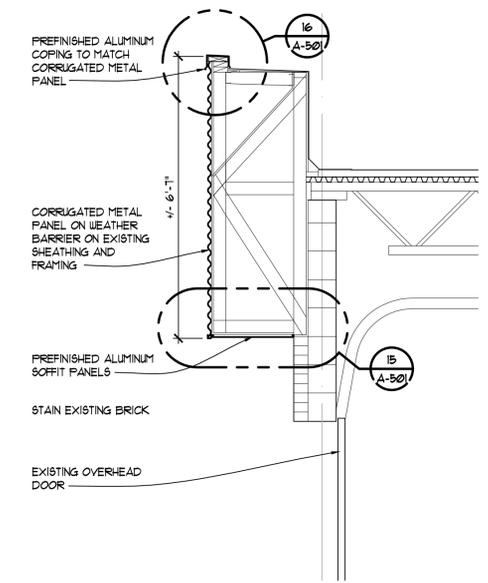
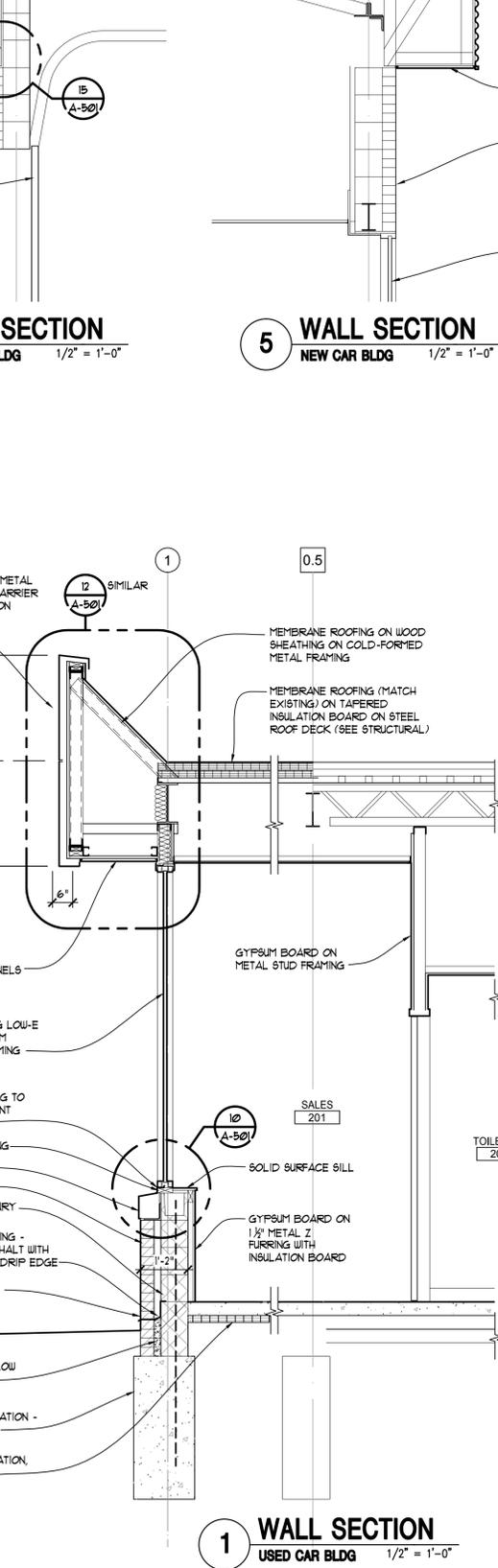
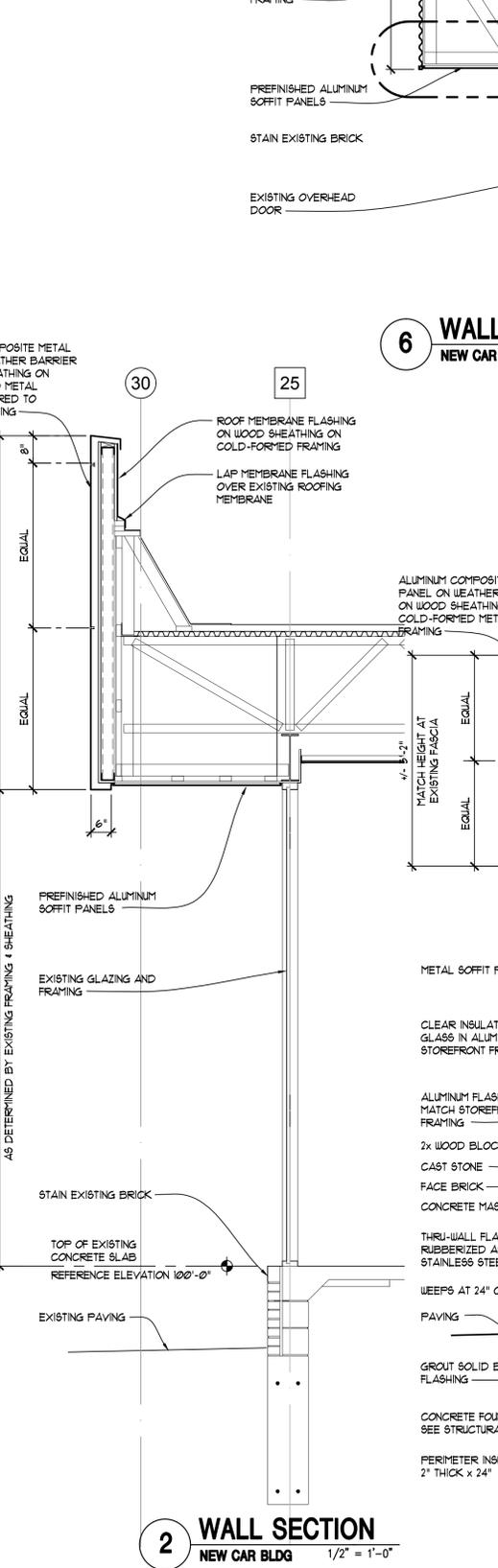
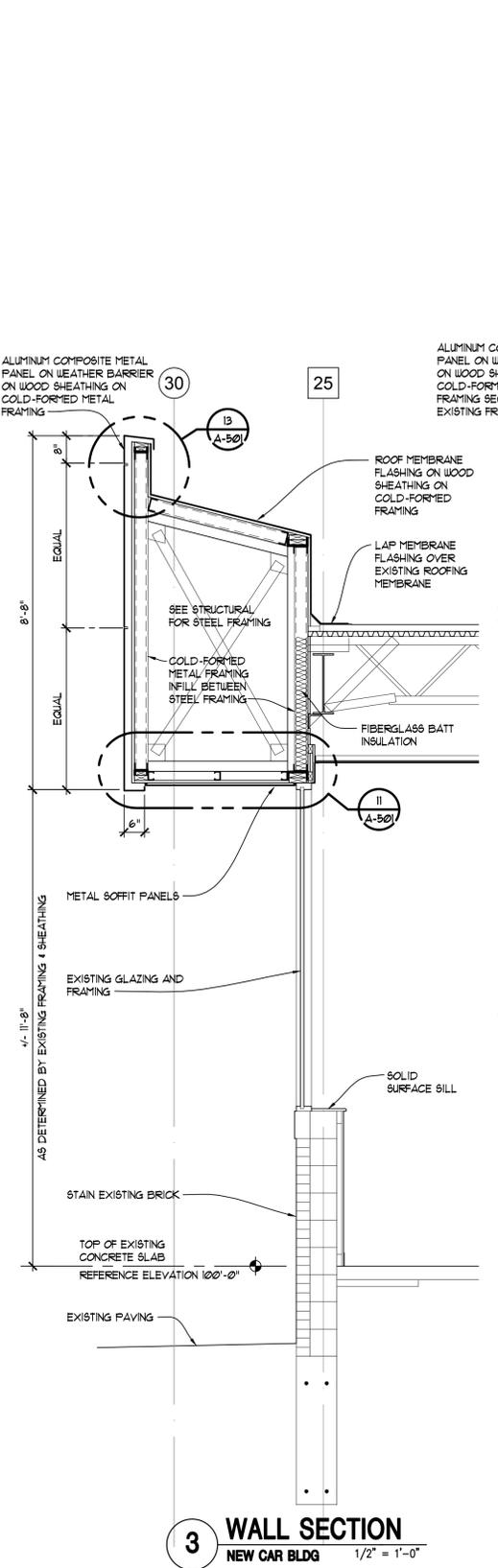
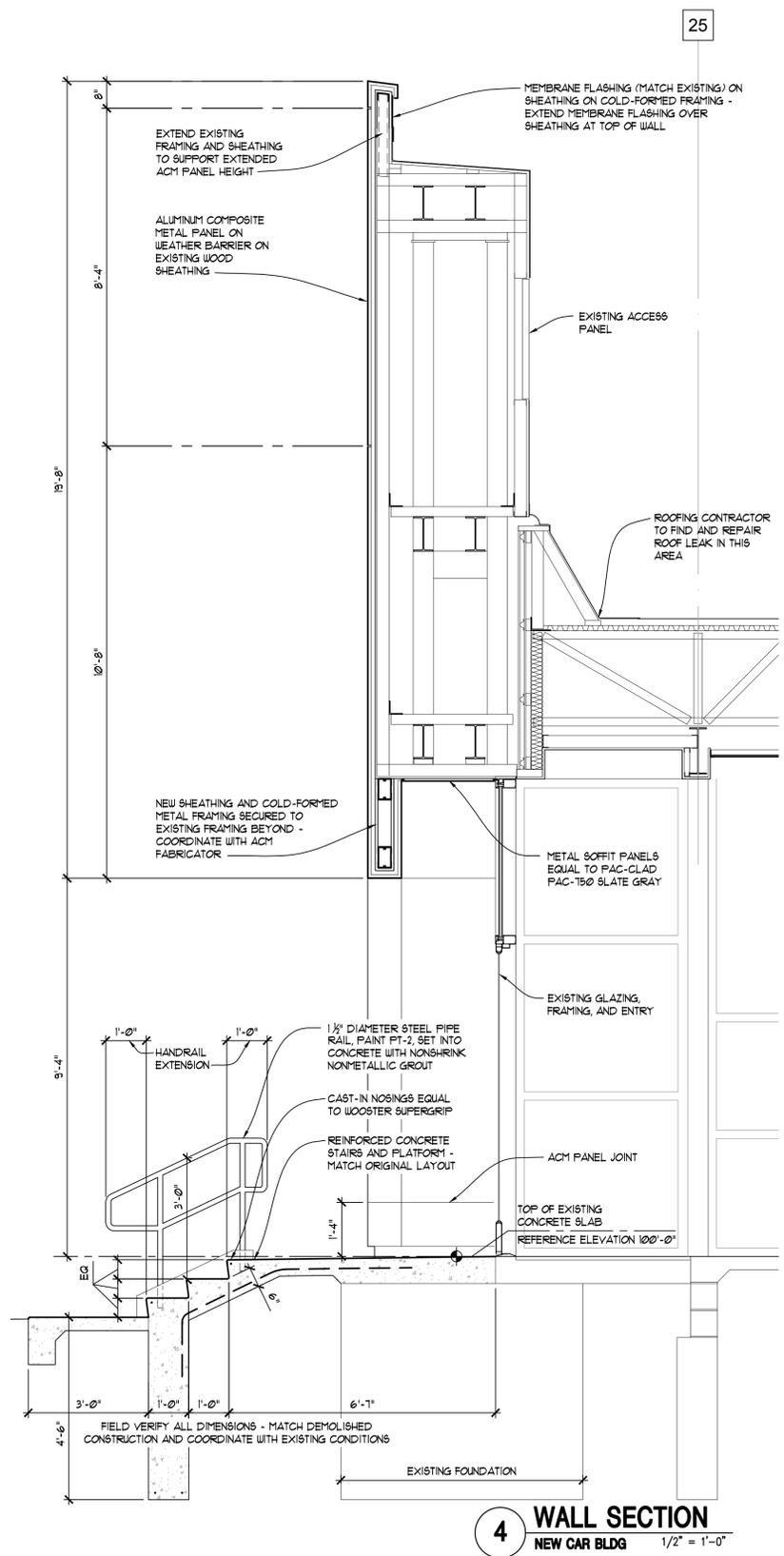
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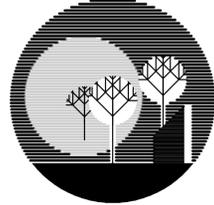
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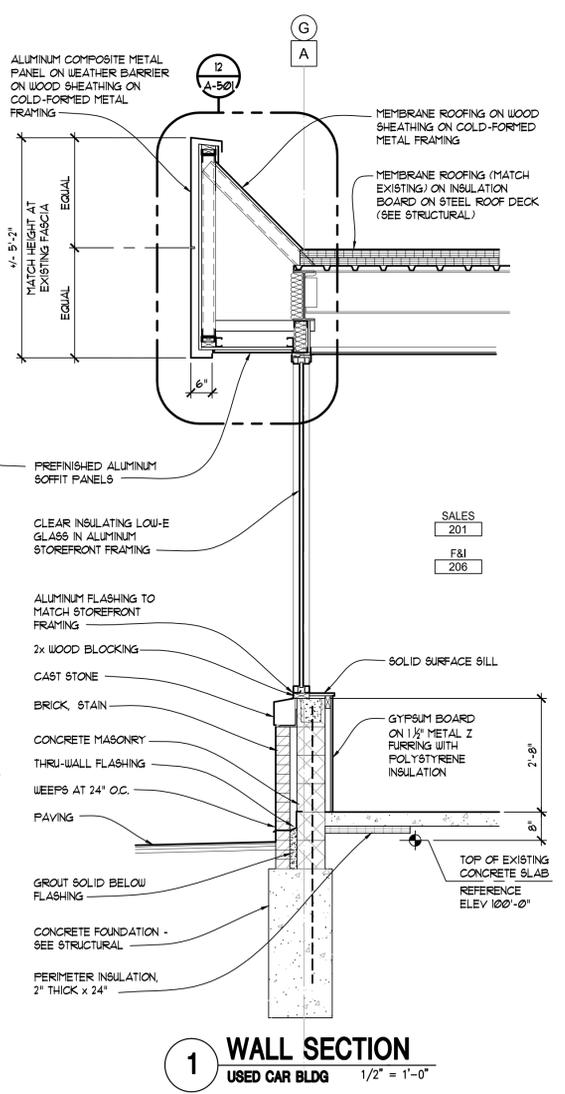
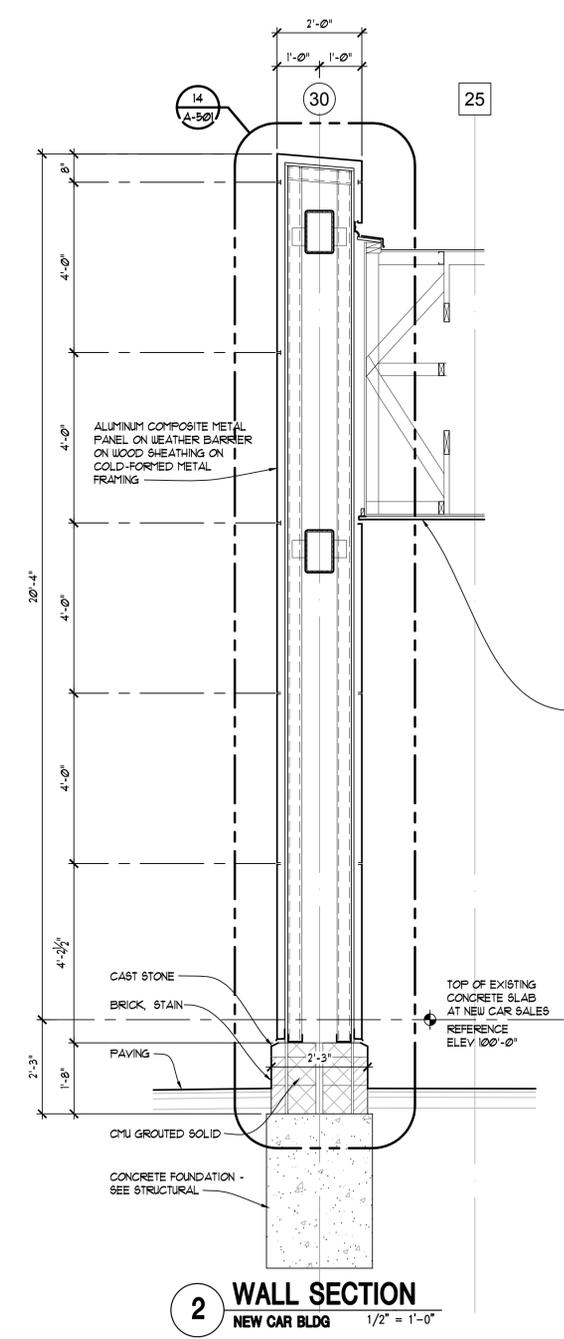
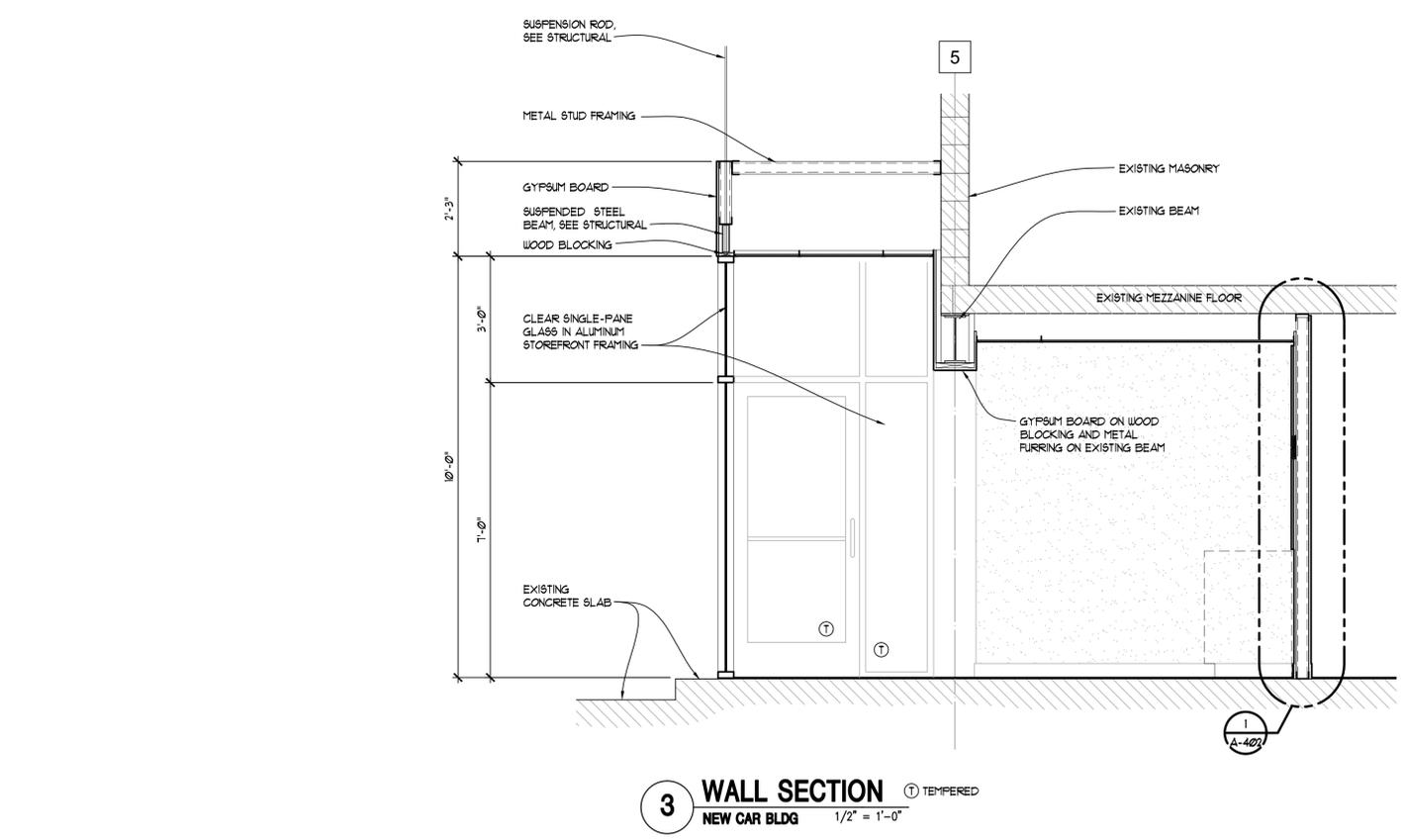
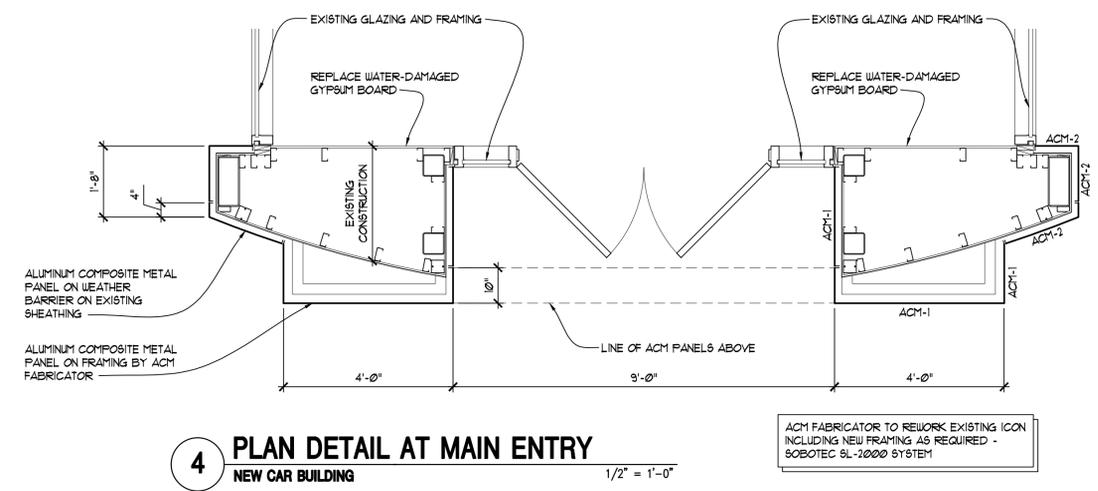
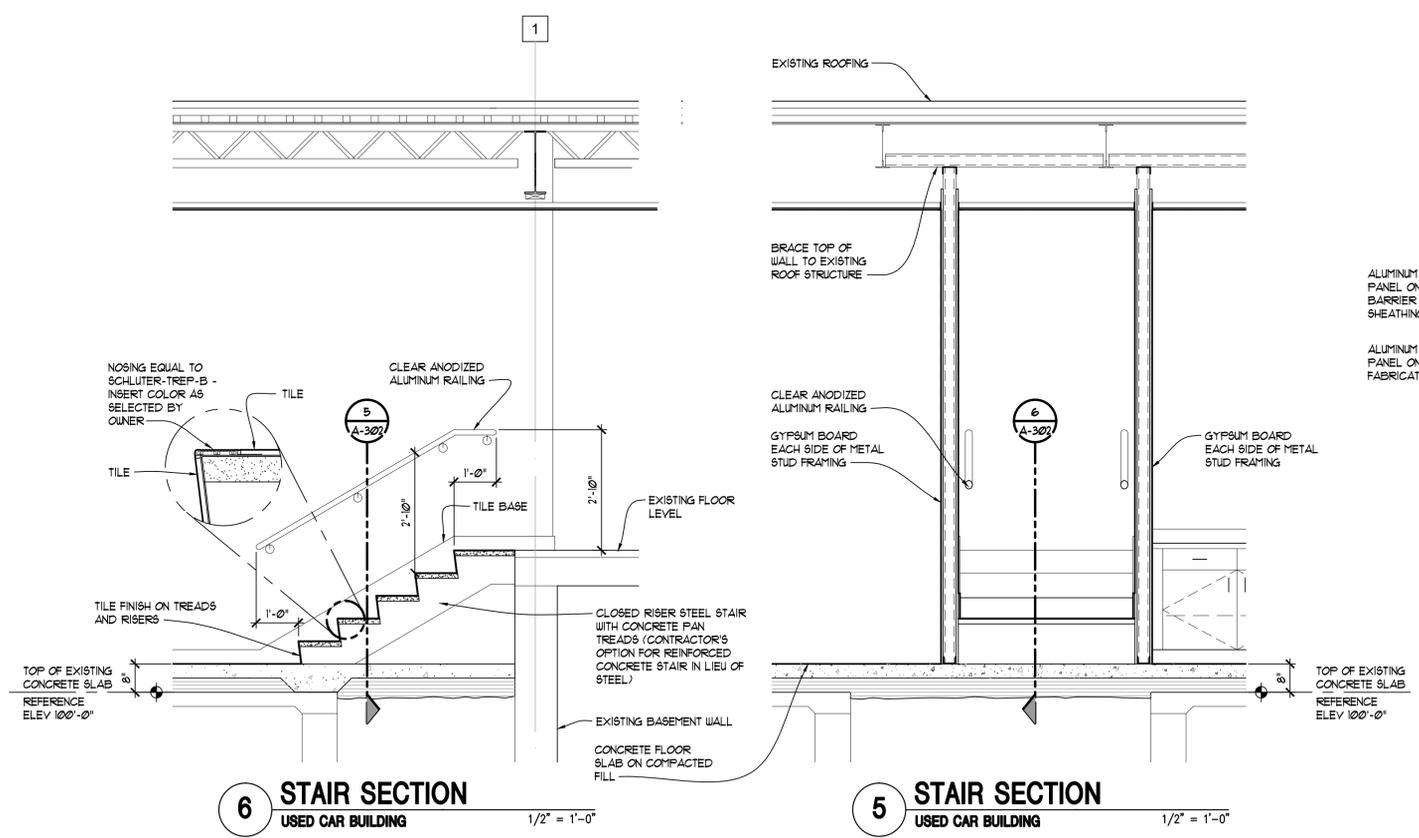
SHEET

**A-301**



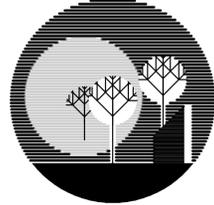


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SALES	201
F&I	206

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**DEMMER FORD RENOVATIONS**

37300 MICHIGAN AVE.  
 WAYNE, MI

sheet title

**ENLARGED PLANS AND INTERIOR ELEVATIONS**

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13003

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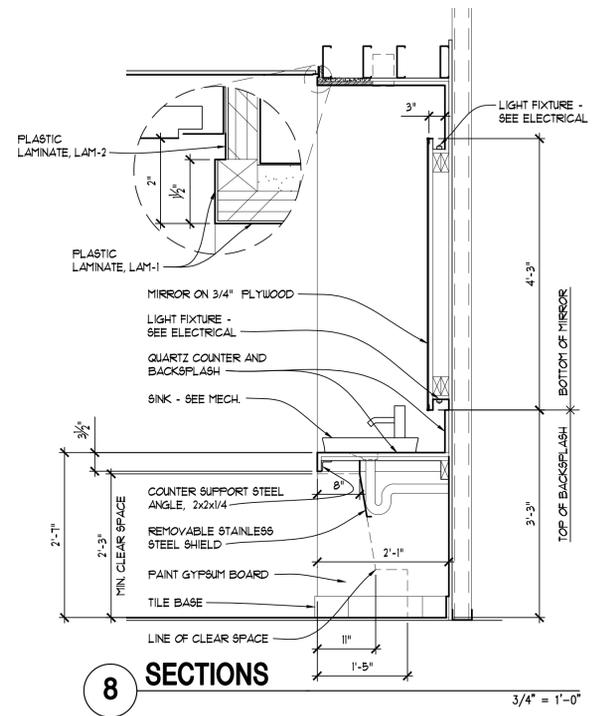
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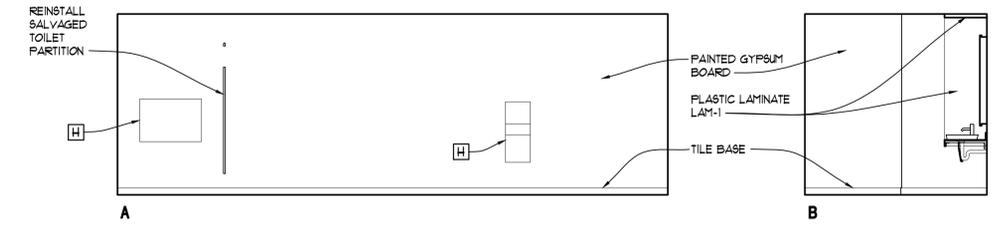
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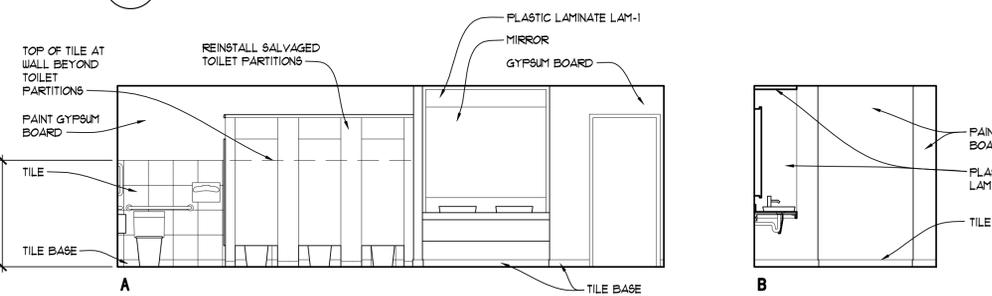
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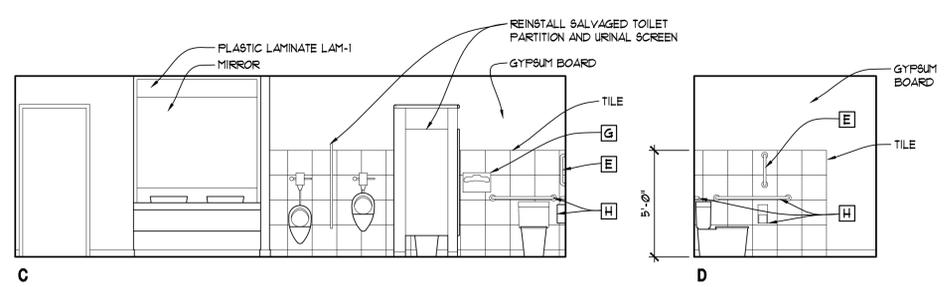
**8 SECTIONS**



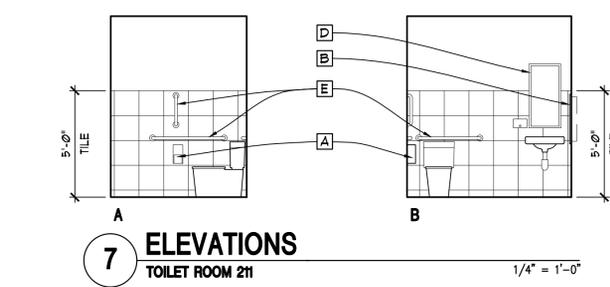
**6 ELEVATIONS MENS TOILET ROOM 131**



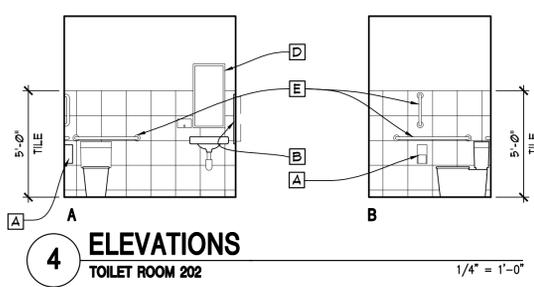
**5 ELEVATIONS WOMENS TOILET ROOM 132**



**1 SALES & SERVICE TOILET ROOMS**



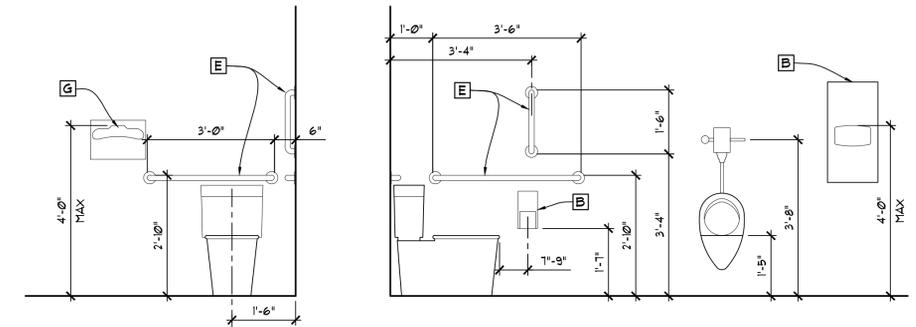
**7 ELEVATIONS TOILET ROOM 211**



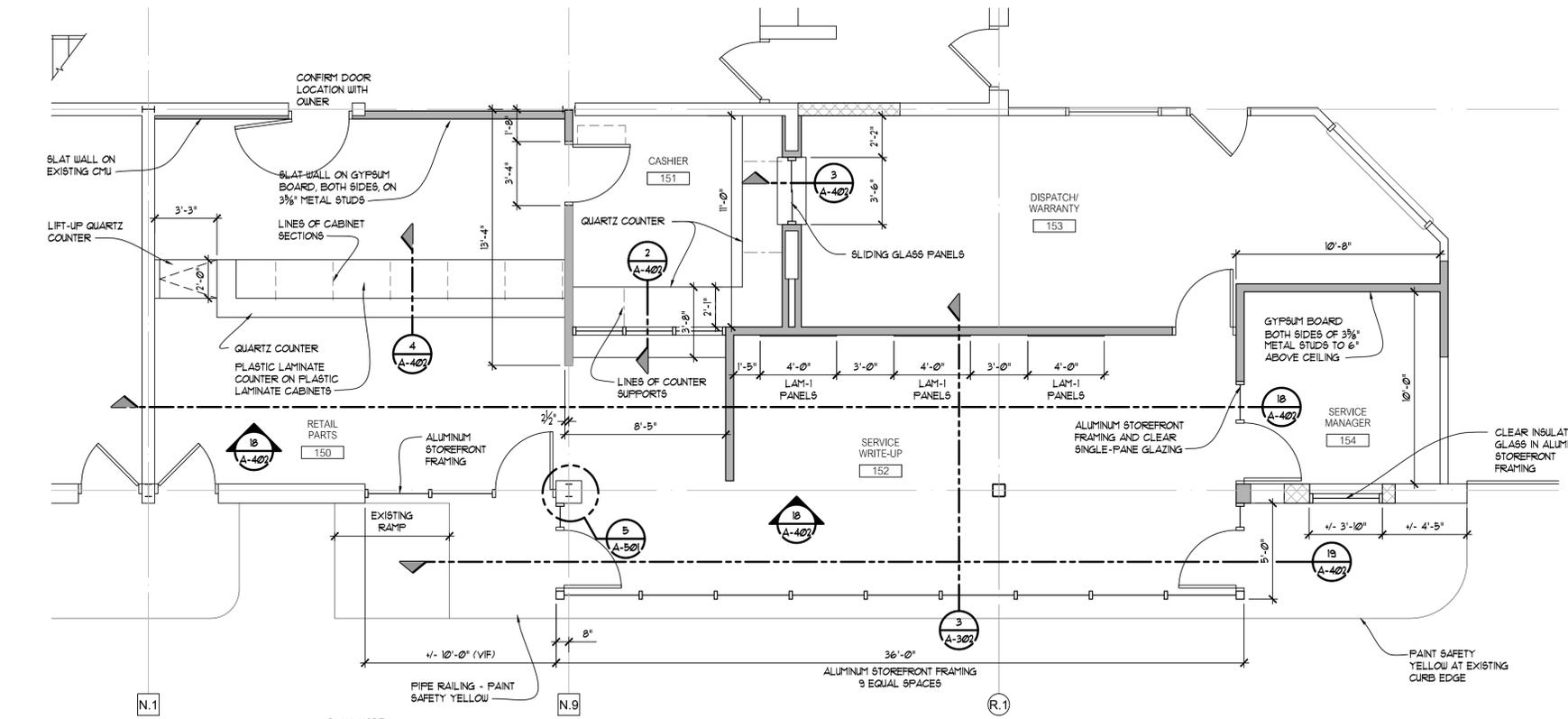
**4 ELEVATIONS TOILET ROOM 202**

**TOILET ACCESSORY SCHEDULE**

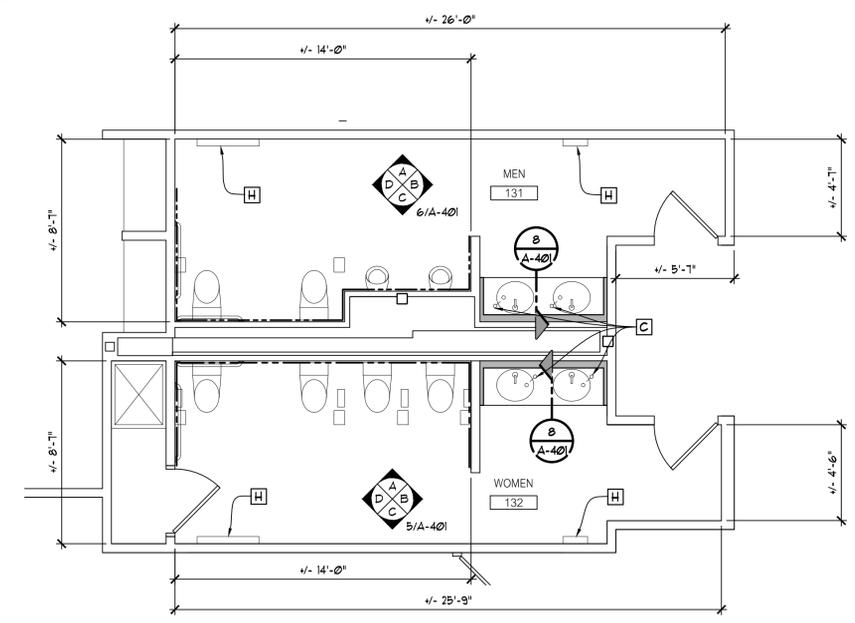
- A DOUBLE-ROLL TOILET TISSUE DISPENSER - BRADLEY 5402
- B RECESSED PAPER TOWEL DISPENSER & WASTE RECEPTACLE - BRADLEY 2231
- C LAV MOUNTED SOAP DISPENSER - KOHLER K-1935 - COORDINATE WITH OWNER
- D MIRROR - BRADLEY 181-1836
- E GRAB BARS (LENGTHS AS INDICATED) BOBRICK 19-6806 SERIES OR APPROVED EQUAL. PROVIDE BACKING FER MANUFACTURER'S SPECIFICATIONS - GC TO COORDINATE
- F LAV GUARD 2 BY TRIBORO IPS CORPORATION
- G SEAT COVER DISPENSER - BRADLEY 5031
- H REINSTALL TOILET ACCESSORY SAVED DURING DEMOLITION



**2 BARRIER FREE FIXT. AND ACCESSORY MOUNTING LOCATIONS**

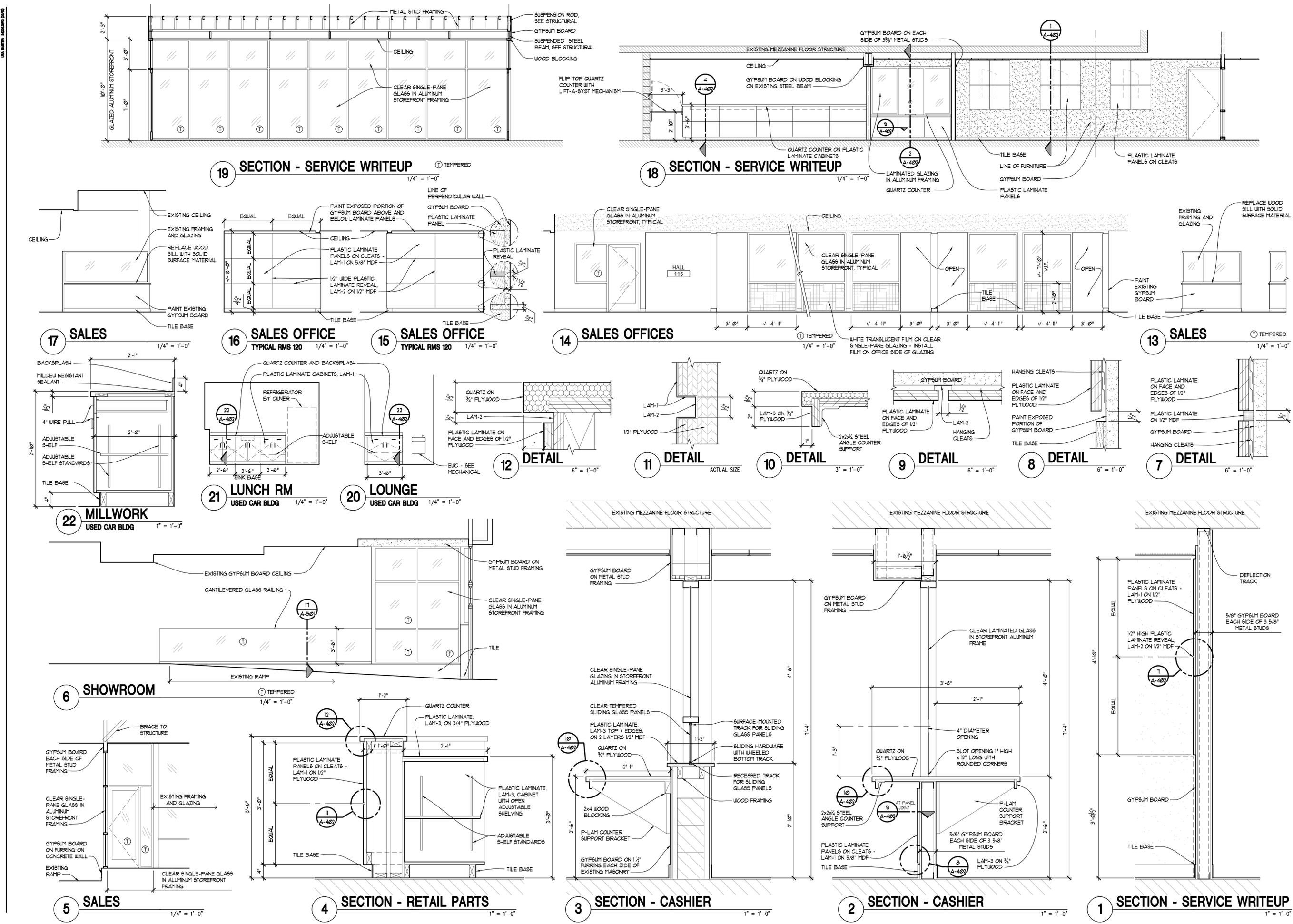
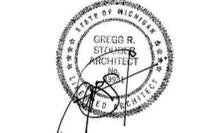
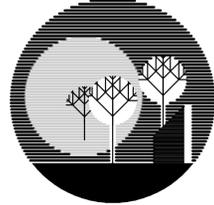


**3 SALES & SERVICE - SERVICE OFFICES**

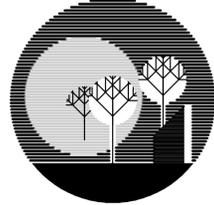


**1 SALES & SERVICE TOILET ROOMS**

REINSTALL SALVAGED TOILET PARTITIONS AND TOILET ACCESSORIES AT ORIGINAL LOCATIONS  
 INSTALL NEW TOILETS AND URINALS AT EXISTING FIXTURE LOCATIONS  
 PROVIDE TILE FINISH ON WALLS AT AREAS INDICATED THUS ON FLOOR PLAN



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**DEMMER FORD RENOVATIONS**

37300 MICHIGAN AVE.  
WAYNE, MI

sheet title

**DOOR SCHEDULE AND DETAILS**

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project number

13003

drawn USA  
approved USA

issued date  
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SHEET

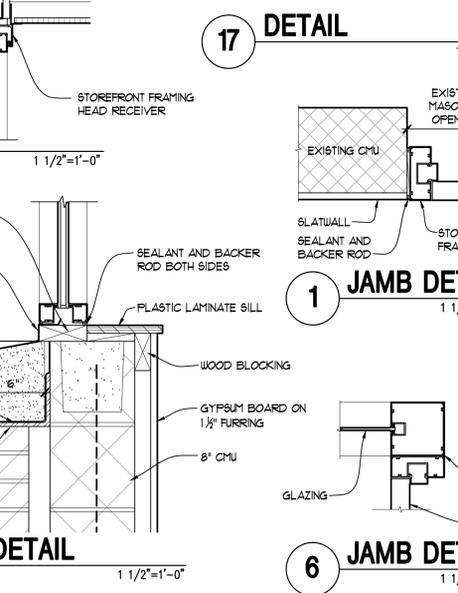
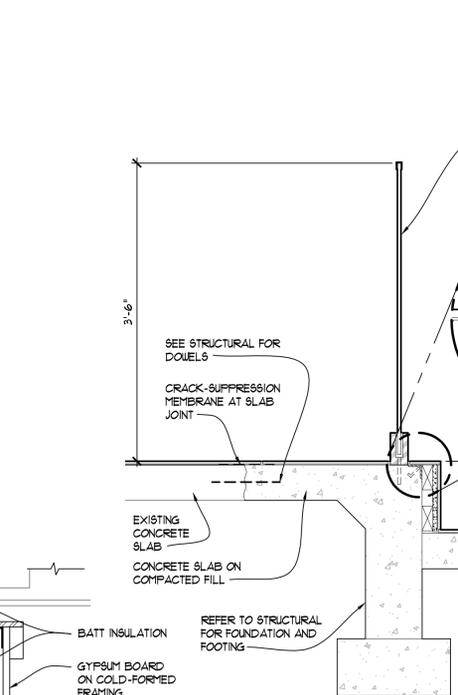
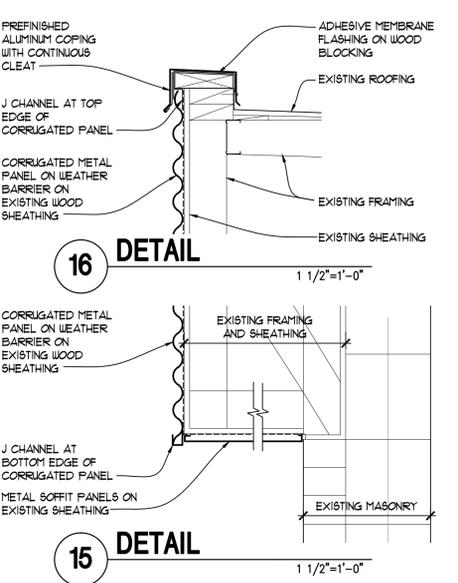
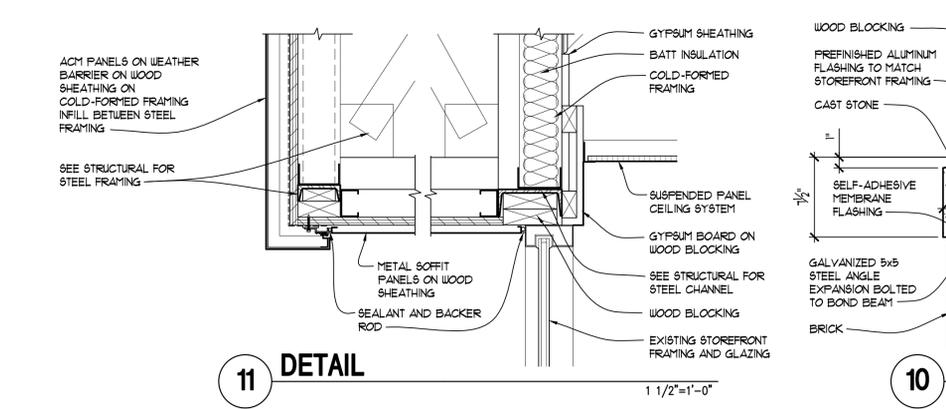
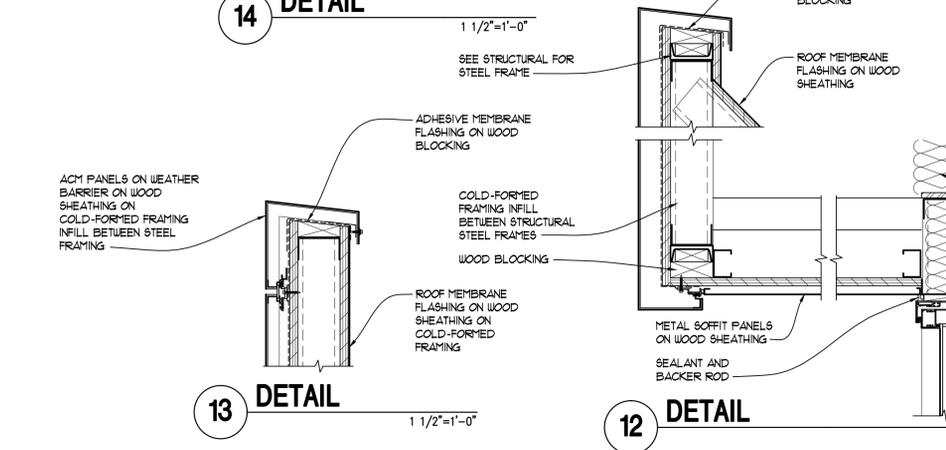
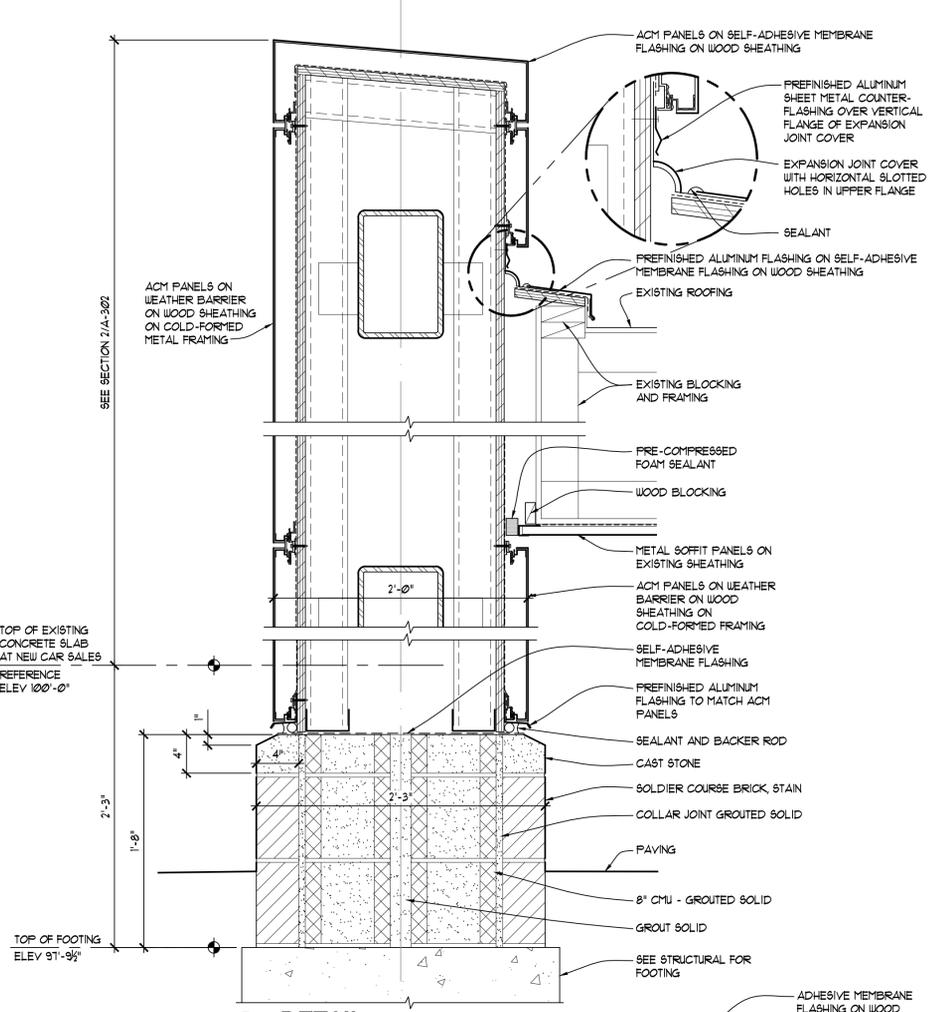
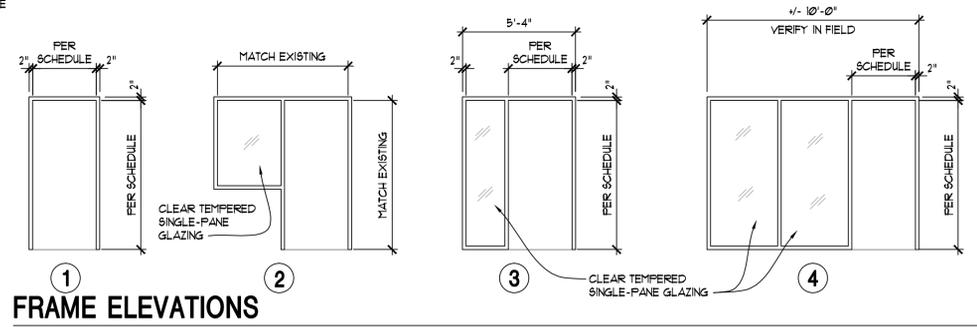
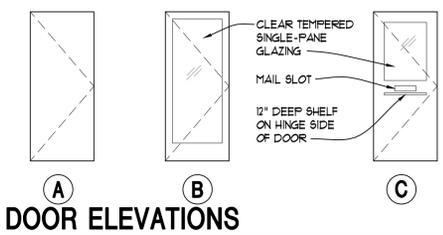
A-501

DOOR SCHEDULE - NEW CAR SALES AND SERVICE											
DOOR NO.	DOOR SIZE	DOOR			FRAME			DETAIL REFERENCE		HDW SET	REMARKS
		ELEV.	MAT'L	FINISH	ELEV.	MAT'L	FINISH	HEAD	JAMB		
102A	3'-0" x 7'-0"	B	ALUM/GLASS	CLR. ANOD.	3/A302	ALUM	CLR. ANOD.	1	6	1	
102B	3'-0" x 7'-0" (V/F)	B	ALUM/GLASS	CLR. ANOD.	2	ALUM	CLR. ANOD.	1	8 4 9	2	MATCH EXISTING DOOR/FRAME SIZE
150A	3'-0" x 7'-0"	B	ALUM/GLASS	CLR. ANOD.	4	ALUM	CLR. ANOD.	4	5	3	
150B	3'-0" x 7'-0" (V/F)	A	WOOD	LAM-1	1	ALUM	CLR. ANOD.	2	1	2	COORDINATE W/ EXISTING OPENING
151A	3'-0" x 7'-0"	C	WOOD	LAM-1	2	ALUM	CLR. ANOD.	1	8	4	
152A	3'-0" x 7'-0"	B	ALUM/GLASS	CLR. ANOD.	3/A302	ALUM	CLR. ANOD.	3/A302	5 4 6	3	
152B	3'-0" x 7'-0"	B	ALUM/GLASS	CLR. ANOD.	3/A302 (OFF HEAD)	ALUM	CLR. ANOD.	3/A302	6	3	
153A	3'-0" x 7'-0"	B	ALUM/GLASS	CLR. ANOD.	1	ALUM	CLR. ANOD.	1	8	2	
154A	3'-0" x 7'-0"	B	ALUM/GLASS	CLR. ANOD.	3	ALUM	CLR. ANOD.	1	8 4 9	2	

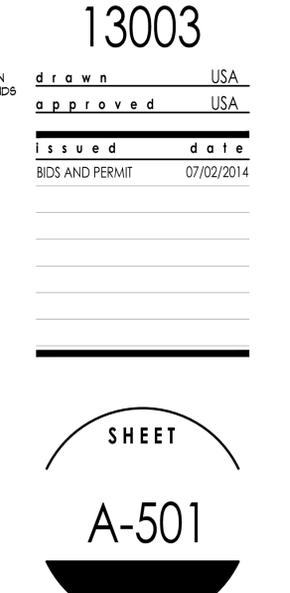
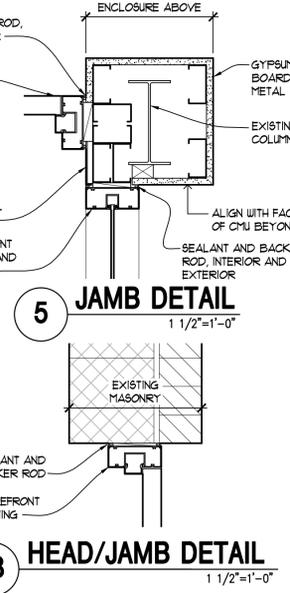
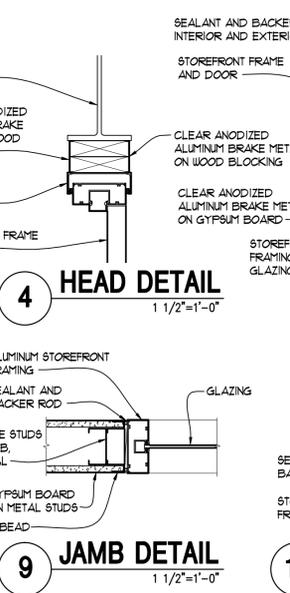
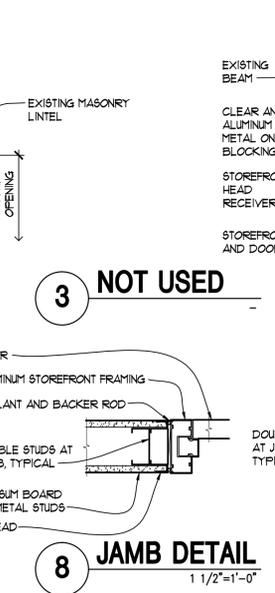
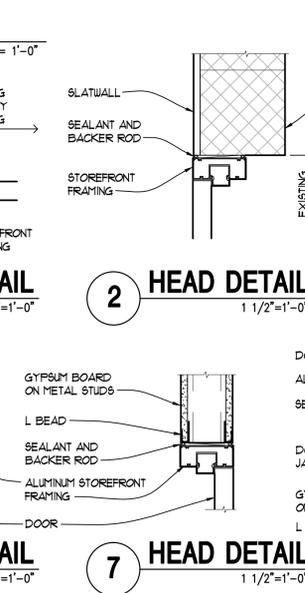
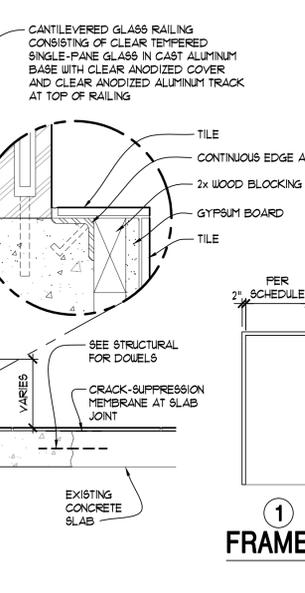
PAINT ALL EXISTING EXTERIOR STEEL OVER-HEAD DOORS AND FRAMES (P-3)  
PAINT ALL EXISTING EXTERIOR H.M. DOORS AND FRAMES (P-3)

DOOR SCHEDULE - USED CAR SALES											
DOOR NO.	DOOR SIZE	DOOR			FRAME			DETAIL REFERENCE		HDW SET	REMARKS
		ELEV.	MAT'L	FINISH	ELEV.	MAT'L	FINISH	HEAD	JAMB		
202A	3'-0" x 7'-0"	B	ALUM/GLASS	CLR. ANOD.	4/A302	ALUM	CLR. ANOD.	1	8	5	
202B	3'-0" x 7'-0"	A	WOOD	LAM-1	1	ALUM	CLR. ANOD.	1	8	5	
204A	3'-0" x 7'-0"	B	ALUM/GLASS	CLR. ANOD.	3/A302	ALUM	CLR. ANOD.	-	-	3	
204B	(2) 3'-0" x 7'-0"	(2) B	ALUM/GLASS	CLR. ANOD.	1	ALUM	CLR. ANOD.	-	-	6	
206A	3'-0" x 7'-0"	B	ALUM/GLASS	CLR. ANOD.	1	ALUM	CLR. ANOD.	1	8	2	
207A	3'-0" x 7'-0"	B	ALUM/GLASS	CLR. ANOD.	1	ALUM	CLR. ANOD.	1	8	2	
208A	3'-0" x 7'-0"	B	ALUM/GLASS	CLR. ANOD.	2	ALUM	CLR. ANOD.	1	8	2	
211A	3'-0" x 7'-0"	A	WOOD	LAM-1	1	ALUM	CLR. ANOD.	1	8	5	
212A	3'-0" x 7'-0"	A	WOOD	LAM-1	1	ALUM	CLR. ANOD.	1	8	1	
214A	(2) 3'-0" x 6'-0"	(2) A	WOOD	LAM-1	1	ALUM	CLR. ANOD.	1	8	8	
214B	(2) 3'-0" x 6'-0"	(2) A	WOOD	LAM-1	1	ALUM	CLR. ANOD.	1	8	8	
214C	(2) 3'-0" x 6'-0"	(2) A	WOOD	LAM-1	1	ALUM	CLR. ANOD.	1	8	8	
218A	3'-0" x 7'-0" (V/F)	B	ALUM/GLASS	CLR. ANOD.	1	ALUM	CLR. ANOD.	18	18	3	COORDINATE W/ EXISTING OPENING

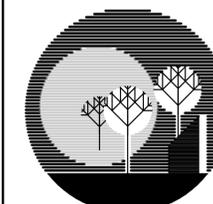
PAINT ALL EXISTING EXTERIOR STEEL OVER-HEAD DOORS AND FRAMES (P-3)  
PAINT ALL EXISTING EXTERIOR H.M. DOORS AND FRAMES (P-3)



- DOOR HARDWARE**
- HARDWARE SET 1**  
1 set offset pivots  
1 entrance lockset with lever handle (coordinate lock body with stile width)  
1 overhead stop
- HARDWARE SET 2**  
3 butt hinges  
1 entrance lockset with lever handle (coordinate lock body with stile width)  
1 wall stop
- HARDWARE SET 3**  
1 set offset pivots  
1 cylinder with thumbturn  
1 set push/pull bars  
1 surface-mounted closer with cushion stop  
1 set weatherstripping  
1 sweep  
1 half-saddle threshold
- HARDWARE SET 4**  
3 butt hinges  
1 entrance lockset with lever handle  
1 overhead stop  
1 nailslot
- HARDWARE SET 5**  
3 butt hinges  
1 privacy lockset with lever handle  
1 surface-mounted closer  
1 wall stop
- HARDWARE SET 6**  
2 sets offset pivots  
2 sets push/pull bars  
2 surface-mounted closers with cushion stop
- HARDWARE SET 7**  
3 butt hinges  
1 passage latchset with lever handle  
1 overhead stop
- HARDWARE SET 8**  
6 butt hinges  
1 entrance lockset with lever handle  
1 manual flush bolt, top only



prepared by:



**UNDER THE SUN  
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project title

**DEMMER FORD  
RENOVATIONS**

37300  
MICHIGAN AVE.  
WAYNE, MI

sheet title

**SIGNAGE AND  
ACM PANEL  
COORDINATION**

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seal & signature



project number

**13003**

drawn USA

approved USA

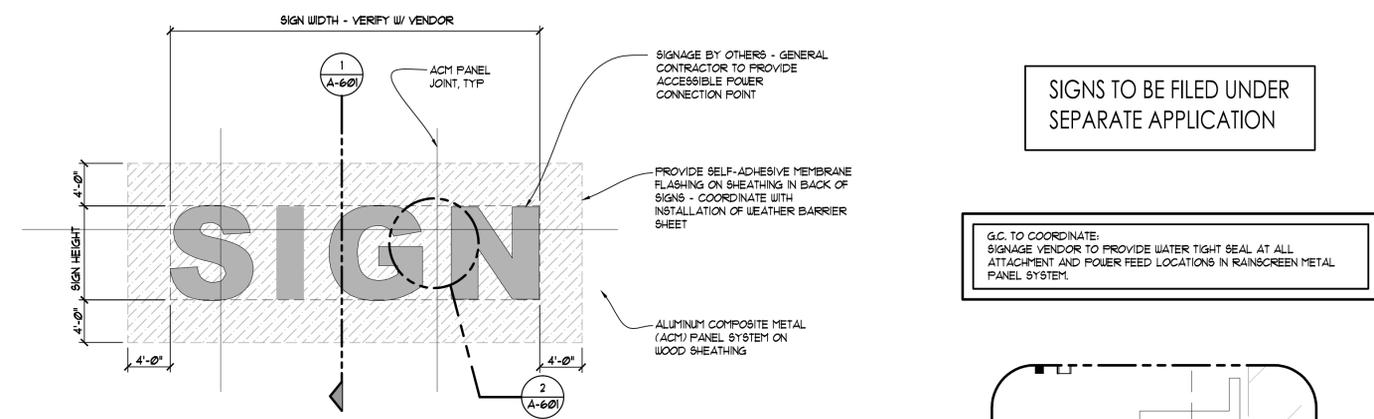
issued date

BIDS AND PERMIT 07/02/2014

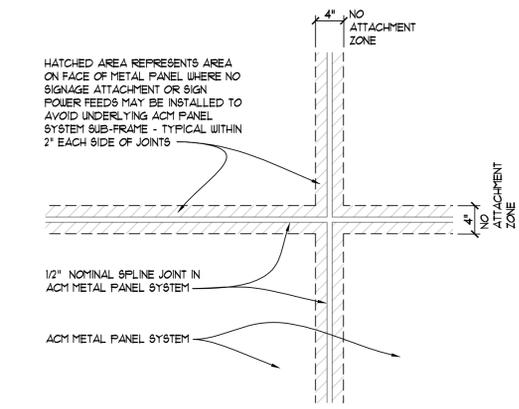
SHEET

**A-601**

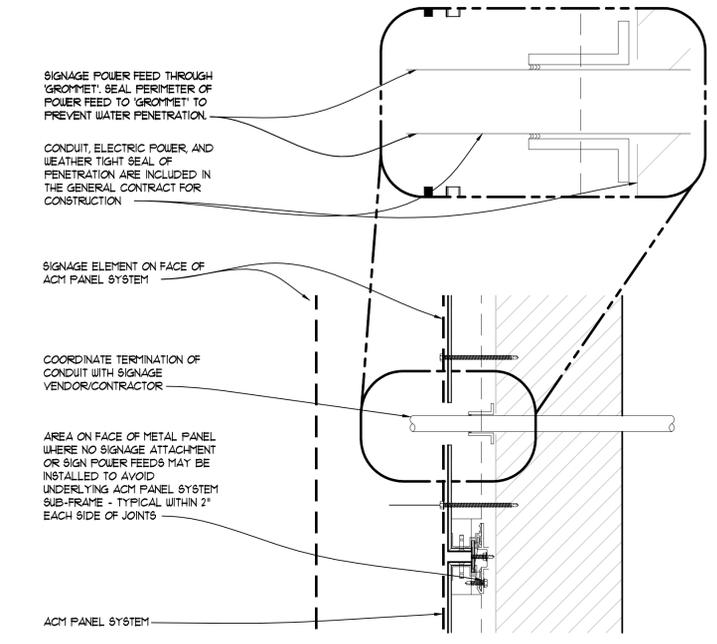
# SIGNAGE / ACM INTERFACE INFORMATION



**3 ELEVATION DETAIL @ SIGN**  
NO SCALE

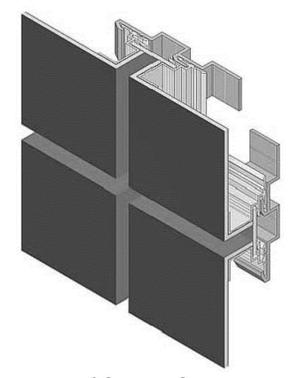


**2 ELEVATION DETAIL**  
NO SCALE

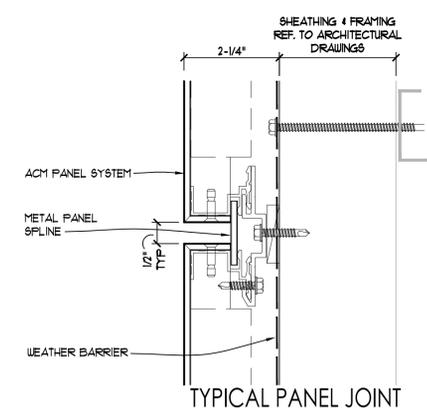


**1 DETAIL SECTION**  
NO SCALE

# ACM PANEL DESIGN



ISOMETRIC



TYPICAL PANEL JOINT

## ACM PANEL NOTES

1. ALUMINUM COMPOSITE METAL (ACM) PANEL DETAILS ON THIS DRAWING ARE PROVIDED ONLY FOR THE PURPOSE OF COORDINATION WITH SIGNAGE. REFER TO SPECIFICATIONS AND OTHER DRAWINGS FOR INSTALLATION OF ACM PANEL SYSTEM.
2. METAL PANEL SPECIFICATION: PREFINISHED ALUMINUM RAIN SCREEN AND SPLINE SYSTEM.
3. COMPOSITE METAL PANEL SYSTEM IS DESIGNED AS A "RAINSREEN" SYSTEM. WATER IS PERMITTED TO ENTER CAVITY AT REAR FACE OF THE METAL PANEL. THE PRIMARY WATER BARRIER IS A SHEET INSTALLED ON THE FACE OF SHEATHING. THE EXTERIOR FACE OF THE METAL PANEL IS NOT THE PRIMARY WATER BARRIER.
4. REFER TO ELEVATIONS FOR METAL PANEL JOINTING LOCATIONS.

# ARCHITECTURAL SPECIFICATIONS

## DIVISION 3 - CONCRETE

### CAST-IN-PLACE CONCRETE

- Provide cast-in-place concrete foundations and slabs as described in structural Drawings.

## DIVISION 4 - MASONRY

### CONCRETE AND CLAY MASONRY

#### CONCRETE MASONRY UNITS

- Provide units complying with ASTM C90.
  - Regular Units: Standard hollow units
    - Size: Nominal 8" x 16" x thickness noted on Drawings.
    - Provide special shapes (jamb blocks, corners, bond beams, etc.) as required by layout.
    - Factory-installed insulation inserts at exterior CMU.

#### FACE BRICK

- Complying with ASTM C 216, Grade SW, Type FBS
  - Match existing size and surface texture.
  - Color: As selected by Owner.

#### REINFORCING

- Provide vertical and horizontal reinforcing as indicated on structural Drawings.

#### MORTAR AND GROUT

- Mortar Mix: ASTM C 270, Proportion Specification.
  - Type M or S for masonry below grade or in contact with earth.
  - Type S for unreinforced masonry.
  - Type S for reinforced masonry.
- Standard Grout Mix: ASTM C 476, slump of 8 to 11 inches measured per ASTM C 143.
  - Water: Potable, clean and free of deleterious materials..

#### TIES AND ANCHORS

- Wire Ties:
  - Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A 82/A 82M; with ASTM A 153/A 153M, Class B-2 coating.
  - Size wire ties to extend at least halfway through veneer but with at least 5/8-inch cover on outside face. Outer ends of wires are bent 90 degrees and extend 2 inches parallel to face of veneer.

#### EMBEDDED FLASHING

- Rubberized-Asphalt Flashing: Composite flashing product consisting of a pliable, adhesive rubberized-asphalt compound, bonded to a high-density, cross-laminated polyethylene film to produce an overall thickness of not less than 0.040 inch.
  - Stainless Steel: ASTM A 240/A 240M, Type 304, 0.016 inch thick.

#### MASONRY ACCESSORIES

- Cavity Drainage Material: Provide one of the following:
  - Pea Gravel: Clean, hard, durable free-flowing naturally rounded particle of rock, free of clay, silt, and fine particles, with 100 percent passing a 3/8 inch sieve and not over 5 percent passing a No. 8 sieve.
  - Free-Draining Mesh: Free-draining polyethylene strand mesh designed to catch mortar droppings and prevent weep holes from being clogged.

#### INSULATION

- U-shaped expanded polystyrene inserts equal to KORFIL Block Insulation by Concrete Block Insulating Systems, Inc.
  - Install insulation inserts in block cores at CMU plant.

#### INSTALLATION

- Matching Existing Brick Masonry: Match size, texture, coursing, and bonding of existing masonry.
- Place concrete masonry units in running bond pattern unless otherwise noted.
- Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. per minute when tested per ASTM C 67. Allow units to absorb water so they are damp but not wet at time of laying.
- Tool mortar joints to a concave profile on exposed faces when mortar is thumbprint hard.
- Mortar bed joints on CMU cross webs where individual CMU cells are to be grouted.
- Install reinforcing as indicated on structural Drawings.
- Bracing of masonry walls shall meet the requirements of MIOSHA Construction Safety Standards, Part 2.
- Keep cavities clean of mortar droppings and other materials during construction. Bevel beds away from cavity to minimize mortar protrusions into cavity.
- Anchor masonry veneers using individual anchors. Space anchors not more than 18 inches o.c. vertically and 24 inches o.c. horizontally, with not less than 1 anchor for each 2 square feet of wall area.
- Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated.
- Install weep holes in head joints in exterior wythes of first course of masonry immediately above embedded flashing.
- At brick veneer, use open head joints or cellular plastic weep made from UV-resistant polypropylene copolymer.

#### 13. Cavity Drainage Material:

- Place pea gravel in cavities as soon as practical to a height equal to height of first course above top of flashing, but not less than 2 inches, to maintain drainage.
  - Fill cavities full height by placing pea gravel in cavities as masonry is laid so that at any point masonry does not extend more than 24 inches above top of pea gravel.
- Place cavity drainage material in cavities to comply with manufacturer's recommendations.

#### CAST STONE

- Provide cast stone units complying with ASTM C 1364 by one of the following manufacturers.
  - Custom Stone Works
  - Royal Stone
  - Superior Precast Products
- Shapes: As indicated on Drawings.
- Color: As selected by Owner
- Set units in full bed of mortar with full head joints. Build anchors and ties into mortar joints as units are set.

## DIVISION 5 - METALS

### STRUCTURAL STEEL FRAMING

#### STEEL JOIST FRAMING

#### METAL DECKING

#### COLD-FORMED METAL FRAMING

- Provide structural steel framing, steel joist framing, metal decking, and cold-formed metal framing as identified on structural Drawings.
- Provide submittals for structural steel framing, steel joist framing, metal decking, and cold-formed metal framing as identified on structural Drawings

### EXTERIOR PIPE AND TUBE RAILINGS

#### MATERIALS

- Steel Pipe: ASTM A53, Grade B Schedule 40, galvanized finish.
- Welded Fittings: Factory-or shop-welded from matching pipe or tube; seams continuously welded; joints and seams ground smooth.

#### FABRICATION

- Fit and shop assemble components in largest practical sizes for delivery to site.
- Fabricate components with joints tightly fitted and secured.
- Change direction of members by bending.
- Welded Joints: Continuously seal joined pieces by continuous welds. Drill condensate drainage holes at bottom of members at locations that will not encourage water intrusion.

#### INSTALLATION

- Install components plumb and level, accurately fitted, free from distortion or defects with tight joints.
- Anchor railings securely to structure.
- Anchor posts into concrete with non-shrink, non-metallic grout.

## DIVISION 6 - WOOD AND PLASTICS

### ROUGH CARPENTRY

- Sheathing: Provide fire-retardant treated exterior plywood, 3/4 inch thick unless indicated otherwise.
- Wood Blocking: As indicated on Drawings.
  - Where wood blocking is used in exterior wall or roof assemblies, use preservative-treated wood.
- Weather Barrier Sheet
  - Non-woven, non-perforated weather barrier sheet designed for mechanical fastening. Provide one of the following:
    - R-Wrap Protective House Wrap by Barricade Building Products
    - Tyvek CommercialWrap by DuPont
  - Accessory Materials
    - Seam Tape: Pressure-sensitive plastic tape recommended by building wrap manufacturer for sealing joints and penetrations in building wrap.
    - Fasteners: As recommended in writing by membrane manufacturer for each substrate.
- Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber or rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.030 inch. Provide GreenGuard Flashing by Pactiv Building Products or a comparable product by one of the following:
  - Grace Construction Products, a unit of W. R. Grace & Co.
  - DuPont (E. I. du Pont de Nemours and Company)

### ARCHITECTURAL WOODWORK

#### PLASTIC LAMINATE CABINETS

- Quality Standard: AWI Custom Grade, flush overlay construction.
- Laminate Cladding for Exposed Surfaces: HGS; color as indicated on Drawings.
- Materials for semiexposed Surfaces: Thermoset decorative overlay.

#### PLASTIC LAMINATE COUNTERTOPS, BACKSPLASHES, SIDESPLASHES

- Quality Standard: AWI Custom Grade.
- Laminate Cladding for Exposed Surfaces: HGS; color as indicated on Drawings.
- Edge Treatment: Same cladding as horizontal surfaces.
- Core Material:
  - At Counters without Sinks: Particleboard or medium-density fiberboard.
  - At Counters with Sinks: Particleboard made with exterior glue, medium-density fiberboard made with exterior glue, or exterior-grade plywood

#### CABINET HARDWARE AND ACCESSORIES

- Hinges: Frameless concealed
- Pulls: Wire pulls
- Drawer Slides: Side-mounted, full extension

#### INSTALLATION

- Coordinate blocking for wall supported cabinets, panels, and trim mounted on the wall.
- Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation.
- Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.
- Secure backsplashes and sidesplashes to tops with concealed metal brackets at 16 inches o.c. and to walls with adhesive.
- Caulk space between backsplash and wall with sealant.

## DIVISION 7 - THERMAL AND MOISTURE PROTECTION

### INSULATION

- Refer to Masonry specification for masonry cell insulation
- Refer to EPDM Roofing specification for roofing insulation
- Thermal Batt Insulation: Fiberglass blanket insulation with foil vapor barrier; R-value as noted on Drawings.
- Foam Board Insulation
  - Foundation Insulation: 2 inch thick extruded polystyrene board.
    - Water Absorption: <= 0.3% (ASTM C272)
  - Wall-furring Insulation: 1.5 inch thick extruded polystyrene board.
- Acoustical Batt Insulation: Unfaced slag-wool / rock-wool-fiber blanket; match stud thickness.
- Auxiliary Materials: Vapor retarder tape as recommended by insulation manufacturer.
- Install all insulation per manufacturer's recommendations.

### WEATHER BARRIER

- Vapor permeable air and water barrier sheet equal to Tyvek Commercial.
  - Include fasteners and sealant tape as recommended by manufacturer.

### CORRUGATED METAL WALL PANELS

#### MATERIALS

- Corrugated aluminum wall panels with exposed fasteners.
- Color and Profile: As indicated on exterior elevation Drawings.
- Miscellaneous Materials:
  - Trim: Trim shall be fabricated of the same material and finish to match the panels.
  - Closures: Provide premolded polyethylene to match the panel profile.
  - Fasteners: Provide fasteners of type, material, size, corrosion resistance, holding power and other properties required to fasten panels to substrates.

#### INSTALLATION

- Install metal panels over weather barrier on wood sheathing.
- Remove strippable film immediately before or after panel installation, as recommended by panel manufacturer.
- Install manufacturer's standard edge trim as indicated on Drawings and as recommended by manufacturer.

### ALUMINUM COMPOSITE METAL PANELS

#### MATERIALS

- Face sheets of aluminum and thermoplastic core.
  - Manufacturer and Color: As indicated on Drawings.
  - Thickness: 4 mm
- Fasteners: Concealed and non-corrosive fasteners as recommended by panel manufacturer.

#### FABRICATION

- Provide a rain screen system equal to Sobotec Dry Joint SL-2000 with 1/2 inch wide panel joints.
- Provide panel clips, stiffeners, anchor channels and all other hardware recommended by panel manufacturer and fabricator.

#### INSTALLATION

- Install metal panels over weather barrier on wood sheathing.
  - Remove strippable film immediately before or after panel installation, as recommended by panel manufacturer.
- Install manufacturer's standard edge trim as indicated on Drawings and as recommended by manufacturer.

### ROOFING

- At areas of new and patched roofing, match existing roofing materials and installation methods.
- Insulation:
  - Preformed roof insulation boards manufactured or approved by roof membrane manufacturer.
    - Match thickness of existing adjacent roofing.
  - Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 1, Grade 2, felt or glass-fiber-mat facer on both major surfaces.
  - Tapered Insulation: Provide factory-tapered insulation boards at locations shown on Drawings.
- Install according to manufacturer's written instructions. Arrange for inspection by roofing system manufacturer.

### SHEET METAL FLASHING AND TRIM

#### MATERIALS

- Factory-Painted Aluminum Sheet: ASTM B 209, 3003-H14, with a minimum thickness of 0.040 inch, unless otherwise indicated.
  - Finish: Fluoropolymer 2-Coat Coating System: Manufacturer's standard 2-coat, thermocured system composed of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 605.2.
- Anodized Aluminum Sheet: ASTM B 209, 3003-H14, with a minimum thickness of 0.040 inch, unless otherwise indicated.
  - Finish: AAMA Class II clear anodized.
- Fasteners: Same metal as sheet metal flashing or other noncorrosive metal as recommended by sheet metal manufacturer. Match finish of exposed heads with material being fastened.
- Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.
- Metal Accessories: Provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of Work, matching or compatible with material being installed; noncorrosive; size and thickness required for performance.

#### FABRICATION

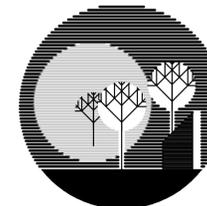
- Expansion Provisions: Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner or intersection.
- Fabricate cleats and attachment devices from same material as sheet metal component being anchored or from compatible, noncorrosive metal recommended by sheet metal manufacturer.
- Size: As recommended by SMACNA manual or sheet metal manufacturer for application but never less than thickness of metal being secured.

#### INSTALLATION

- Expansion Provisions: Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner or intersection.



prepared by:



**UNDER THE SUN  
ARCHITECTURAL LLC**

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RENOVATIONS**

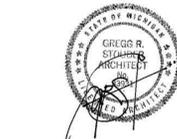
37300  
MICHIGAN AVE.  
WAYNE, MI

sheet title

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SPECIFICATIONS**

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project number

**13003**

drawn USA

approved USA

issued date

BIDS AND PERMIT 07/02/2014



## ARCHITECTURAL SPECIFICATIONS (continued)

### JOINT SEALANTS

#### LATEX JOINT SEALANTS

- Acrylic-Emulsion Sealant: Manufacturer's standard one part, non sag, mildew-resistant, acrylic-emulsion sealant complying with ASTM C 834, formulated to be paintable and recommended for exposed applications on interior.
- Products: Provide one of the following
  - AC-20 by Pecora Corporation.
  - Sonolac by Sonneborn Building Products Division.
  - Tremco Acrylic Latex 834 by Tremco Inc.
- Use for:
  - Exposed interior wall joints.
  - Joints between millwork and adjacent construction.

#### ELASTOMERIC SEALANTS

- Silicone Sealant: One part silicone sealant complying with ASTM C 290, Type S, Grade NS, Class 25, Use M, G, A, O.
- Products: Provide one of the following
  - Dow Corning 790.
  - General Electric Ultraglaze 4200.
- Use for joints between aluminum and masonry and metal.

#### URETHANE SEALANTS

- Multi-part non-sag urethane sealant complying with ASTM C 920, Type M, Grade NS, Class 25, Use T.
- Products: Provide one of the following
  - Vulken 922 by Mameco Corporation.
  - Dynatred by Pecora Corporation.
  - Permapol RC-270 by Products Research & Chemical Corporation.
  - Silkaflex 2C NS by Sika Corporation.
  - Sonolastic NP2 by Sonneborn Building Products Division.
- Use for flooring joints subject to traffic.

#### PRECOMPRESSED FOAM SEALANT

- Equal to BackerSeal by EmSeal.

### DIVISION 8 - OPENINGS

#### WOOD DOORS

- Solid-core doors with plastic laminate faces.
- Particleboard core complying with ANSI A208.1.

### ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

#### GENERAL

- Design storefront framing to resist wind loads indicated on structural Drawings.

#### MATERIALS

- Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.
  - Framing at locations where one side is exterior - Basis-of-Design: Kawneer Trifab VersGlaze 451T.
  - Framing at locations where both sides are interior - Basis-of-Design: Kawneer Trifab VersaGlaze 450 with 2 inch sight line.
- Concealed Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing, compatible with adjacent materials, and of type recommended by manufacturer.
- Framing System Gaskets and Sealants: Manufacturer's standard, recommended by manufacturer for joint type.
- Entrance Doors: Manufacturer's standard medium stile glazed entrance doors with 10 inch high bottom rail.
  - Glazing: 6mm clear single-pane glass.
- Framing and Door Finish: Clear anodized.

### GLAZING

#### MONOLITHIC GLASS

- Clear Single-Pane Glazing - Uncoated Clear Float Glass: Where indicated, provide Type I (transparent glass, flat), Class 1 (clear) glass lites complying with the following:
  - Fully tempered float glass, Kind FT, where tempered glass is indicated or required.
  - At locations other than those indicated above, provide fully tempered, heat strengthened, or annealed as required by application.
  - Minimum thickness: 6 mm.

#### LAMINATED GLASS

- Uncoated Clear Float Glass (Type 1 - transparent glass, flat; Class 1 - clear; minimum 4 mm) each side of clear PVB interlayer.

#### INSULATING-GLASS

- Insulating-Glass Units: Preassembled units consisting of sealed lites of glass separated by a dehydrated interspace, and complying with ASTM E 774.
- Clear Insulating Low-E Glass: Where glass of this designation is indicated, provide low-emissivity insulating-glass units complying with the following:
  - Basis-of-Design Product: Solarban 60 by PPG.
  - Overall Unit Thickness and Thickness of Each Lite: 25 mm and 6 mm.
  - Interspace Content: Air.
  - Indoor Lite: Type I (transparent glass, flat), Class 1 (clear) float glass.
    - Where indicated or required, provide Kind FT (fully tempered).
  - Outdoor Lite: Type I (transparent glass, flat), Class 1 (clear) float glass.
    - Where indicated or required, provide Kind FT (fully tempered).
  - Low-Emissivity Coating: Pyrolytic on second surface.

### DIVISION 9 - FINISHES

#### GYPSUM BOARD ASSEMBLIES

- Gypsum Wallboard: ASTM C 1396, Regular Type, 5/8 inch thick.
- Wall and Soffit Framing: Steel studs and runners, ASTM C645, minimum 0.027 inch thick metal, stud depth as indicated on Drawings.
  - Provide double studs at door jams.
  - Deflection Track: Manufacturer's standard top runner designed to prevent cracking of gypsum board applied to interior partitions resulting from deflection of the structure above.
  - Suspended Ceiling Framing: Cold-rolled steel channels and rigid steel hat channels or grid suspension system for interior ceilings consisting of direct-hung main beams and cross-furring members that interlock.
- Fasteners for Metal Framing: Provide fasteners of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel framing and furring members securely to substrates involved.
- Trim Accessories:
  - Accessories for Interior Installation: Cornerbead, edge trim, and control joints complying with ASTM C 1047.
  - Aluminum Trim: Extruded accessories of profiles and dimensions indicated on Drawings.
- Joint Treatment:
  - Embedding and First Coat: Setting-type joint compound.
  - Fill (Second) Coat: Setting-type joint compound.
  - Finish (Third) Coat: Drying-type, all-purpose or topping compound.

### INTERIOR FINISHES

- Provide finish materials as indicated on Drawings.
- Floor Transitions:
  - Locate floor material transitions beneath door in closed position.
  - Provide specially shaped resilient transitions where thresholds are not specified in hardware sets.

### DIVISION 12 - FURNISHINGS

#### QUARTZ COUNTERTOPS AND BACKSPLASHES

- Material: Solid sheets consisting of quartz aggregates bound together with a matrix of filled plastic resin and complying with the "Physical Characteristics of Materials" Article of ANSI SS1
  - Daltile One Quartz Surfaces, color NQ65 Moonlight Swim
- Countertops: 3/4 inch thick, quartz agglomerate with front edge built up with same material.
- Splashes: 3/4 inch thick, quartz agglomerate.
- Wood Subtop: Exterior softwood plywood complying with DOC PS 1, Grade C-C Plugged, touch sanded.
- Fabricate tops in one piece with shop-applied edges unless indicated otherwise. Comply with quartz agglomerate manufacturer's written instructions for adhesives, sealers, fabrication, and finishing.
- Install countertops level to a tolerance of 1/8 inch in 8 feet.

- Fasten countertops by screwing through corner blocks of base units into underside of countertop. Pre-drill holes for screws as recommended by manufacturer. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
- Install backsplashes and endsplashes to comply with manufacturer's written instructions for adhesives, sealers, fabrication, and finishing.

END OF ARCHITECTURAL SPECIFICATIONS



prepared by:



**UNDER THE SUN**  
**ARCHITECTURAL LLC**

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project title

**DEMMER FORD**  
**RENOVATIONS**

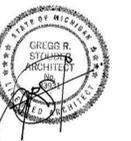
37300  
MICHIGAN AVE.  
WAYNE, MI

sheet title

**ARCHITECTURAL**  
**SPECIFICATIONS**

DO NOT SCALE DRAWINGS  
USE FIGURED DIMENSIONS ONLY

seal & signature



project number

13003

drawn USA

approved USA

issued date

BIDS AND PERMIT 07/02/2014

SHEET

A-702

SCHEDULES

footing schedule
see foundation typical details on S-002 for more information.
bottom of all exterior footings must be 42" minimum below grade. protect soil from freezing prior to pouring foundations.

base plate and anchor bolt schedule
for base plate and anchor bolt conventions, see typical detail ST-01/S-002.
for base plates not designated in plan, use typical detail ST-01/S-002 with 3/4" thick plate and (4) 1" dia. anchor bolts

Table with 4 columns: label, plate size & thickness, anchor rods, detail. Includes diagrams for BP-1, BP-2, and BP-3.

metal roof deck schedule
all roof deck to be G60 galvanized, minimum (G90 where permanently exposed to weather), provide 3 span minimum.
weld & fastener pattern:
- 5/8" puddle welds (support fasteners): 36/4 pattern
- #10 TEK screws (sidelap fasteners): 3 fasteners per span
- @ building perimeter: welds @ 36/7 or 6" o.c.

single-plate shear connection schedule
at locations where infill beams frame into girder beams or columns a single-plate shear connection can be used at the fabricator's option.
either STD or SSL holes are permitted.
see typical detail ST-22/S-002 for single-plate conventions.

bearing plate schedule
set edge of bearing plate back 1/2" from face of masonry or concrete

TESTING AND SUBMITTALS

INSPECTION OF STRUCTURAL ELEMENTS
The contractor shall coordinate owner paid, independent inspections meeting all applicable requirements of IRC Section 1704 and AISC 360-10, Chapter N.
All inspections shall be documented with written reports and a final report submitted to the owner and copied to the architect, structural engineer, and building official.
Steel - IBC1704.3 and AISC 360-10, Chapter N
Concrete - IBC1704.4
Masonry - IBC1704.5
Soils - IBC1704.7

SUBMITTALS
Approval of shop drawings by sdi does not authorize deviations from or omissions of the requirements of the construction documents, unless specifically indicated on the reviewed shop drawings with a note by sdi.
Any deviations or omissions from the construction documents must be specifically brought to sdi's attention in a format other than the shop drawings for review before approval.
The following items related to the building structural system are to be submitted to the architect in accordance with the requirements of the project specifications:
Concrete mix designs
Concrete test results
Reinforcing bar shop drawings
Steel joists shop drawings
Structural steel shop drawings
Structural steel connection calculations (signed and sealed)
Welder certifications for shop and field welders
Steel deck shop drawings
Exterior cold-formed steel framing shop drawings
Cold-formed metal connection calculations (signed and sealed)
Masonry vertical and horizontal reinforcing bar shop drawings
Masonry dowel layout (foundation to wall dowels) provided by the mason to the foundation contractor prior to foundation installation
All inspection reports as pertaining to items listed above

ELECTRONIC FILES
sdi cannot ensure the accuracy or appropriate use of electronic data. Electronic files (when requested) are provided for convenience only, and do not supersede requirements of construction documents or field conditions.

LOADS, REFERENCES, AND MATERIALS

THIS BUILDING HAS BEEN DESIGNED PER THE REQUIREMENTS OF THE MICHIGAN BUILDING CODE 2009
DESIGN LOADS:
occupancy category II
wind basic wind speed V = 90 mph
exposure category B
Importance factor I = 1.0
adjustment factor Iw = 1.0
component and cladding highest pressure pnet30 = 15.4 psf (may be reduced if calculated by a P.E. for specific location)
snow ground snow Pg = 20 psf
importance factor Is = 1.0
exposure factor Ce = 1.0
thermal factor Ct = 1.0
flat roof snow load Pf = 20 psf
drift snow load mapped on plan
seismic seismic use group Ie = 1.0
importance factor D
site classification of soil S1 = 5%
1.0 second spectral response Fv = 2.4
S15 = 8%
Ss = 13%
Fa = 1.6
SDS = 14%
Group II
B ordinary reinforced masonry shear walls
Cs = 0.067
R = 2.0
equivalent lateral force procedure
design base shear V = 240 kips
All loads are subject to modification per requirements of ASCE-7

REFERENCES
All work shall conform to the requirements of the most recent version of the following referenced standards:
Structural Loads ASCE-7
Concrete ACI 301
ACI 318: Building Code Requirements for Structural Concrete and Commentary
ACI SP 66: ACI Detailing Manual
Portland Cement Association "Design and Control of Concrete Mixtures"
Masonry ACI 530/ASCE 5
ACI 530.1/ASCE 6
NCMA TEK 3-4B: "Bracing Concrete Masonry Walls During Construction"
Brick BIA "Technical Notes on Brick Construction"
Steel AISC 360-10: Specification for Structural Steel Buildings
Welding American Welding Society AWS D1.1/D1.1M
Steel Joists Steel Joists Institute "Standard Specifications"
Metal Deck Steel Deck Institute Specifications
Soils Report Not Provided

MATERIALS
SOIL:
Soil supporting foundations 2000 psf minimum allowable brg. capacity
CONCRETE:
Concrete foundations 4000 psi at 28 days
Interior normal weight slab 4000 psi at 28 days
Interior light weight slab 4000 psi at 28 days (120 pcf max.)
Exterior slab 3500 psi at 28 days, 6%±1% air entr.
Interior columns, piers and walls (including foundation walls) 4000 psi at 28 days
Exterior columns, piers and walls (including foundation walls) 4000 psi at 28 days, 6%±1% air entr.
Reinforcing bar ASTM A615 (grade 60)
Welded wire fabric ASTM A185 flat sheets
Synthetic fiber reinforcing ASTM C1116 (Tuf-Strand SF by Euclid or equal)
MASONRY:
CMU ASTM C90 normal weight (net compressive strength fm = 2000 psi, minimum unit strength = 2800 psi)
Brick (clay masonry) ASTM C62 & C216 (net compressive strength = 1000 psi)
Rebar positioners Corelock rebar positioner by Wire-Bond, No. 376 rebar positioner by Heckmann Building Products or #RB rebar positioner by Hohmann&Barnard, Inc. or equal
Rebar splice connectors Spyra-Lox rebar lap-joint tie by Hohmann&Barnard, Inc. or equal
Mortar below grade ASTM C270, Type M
Mortar typical ASTM C270, Type S
Mortar brick ASTM C270, Type N
Grout in CMU cores ASTM C476 (3000 psi at 28 days)
STEEL:
Structural steel:
W-shapes ASTM A992 - Fy=50 ksi
Channels, Angles, Plates ASTM A36 - Fy=36 ksi
HSS Round ASTM A500 Type B - Fy = 42 ksi
HSS Rectangular, Square ASTM A500 Type B - Fy = 46 ksi
Structural steel pipe ASTM A53 - Type E or S, grade B, Fy = 35 ksi
Structural steel bolts ASTM A325-N
Washers ASTM F436 hardened washer
Nuts ASTM A563
Welding electrodes (E-70 series) ASTM A233
Steel roof deck ASTM A653-94 Structural Quality grade 33, G-60 galvanized
Steel composite floor deck ASTM A653-94 Structural Quality grade 33 or ASTM A611 grade 33, G-60 galvanized
Grout below plates Non-shrink, non-metallic (5000 psi)
Anchor bolts ASTM F1554 threaded rods
Epoxy bolts:
Epoxy Hilti HIT HY 200 Injection Adhesive
Rods Hilti HIT-Z
Headed steel studs ASTM A108-Grade 1010-1020, welded in accordance with chapter 7 of ANSI/AWS D1.1

PROCEDURAL NOTES

GENERAL
The structural integrity of the building, as shown in the construction documents, is stable only in its completed form and dependent upon completion according to plans and specifications. Temporary supports required for stability during all intermediate stages of construction shall be designed, furnished, and installed by the contractor. The contractor is responsible for construction analysis and erection procedure including design and erection of falsework, temporary bracing, etc. The temporary supports shall account for all forces, including but not limited to forces from gravity, earth, wind, and unbalanced forces due to construction sequence.
Structural members are not self-bracing and shall be shored and/or braced by the contractor as necessary until stabilized by virtue of completed connections.
Field measure and verify all dimensions and elevations before fabrication.
Basement walls shall not be backfilled until the basement slab and the first floor slab at the top of the wall are in place and are cured.
FOUNDATIONS
The slab on grade shall rest on a minimum of 4" of granular fill, compacted to at least 95% of the maximum density as defined by the ASTM D1557 Modified Proctor Test.
All footings shall bear on undisturbed soil, having a minimum safe bearing capacity as noted in the Materials section on this sheet. The Testing and Inspection Agency shall verify soil bearing capacity at each footing prior to installation of footing. Notify engineer of any variation from anticipated bearing capacity for appropriate redesign or lowering of footing.
The bottoms of all exterior footings shall be 3'-6" minimum below finished grade. If the building will be under construction during freezing weather, all interior foundations shall be depressed 3'-6" below construction grade for frost protection. If such additional footing depth will cause undermining of adjacent existing footings or structures, provide appropriate shoring, bracing or underpinning as required or leave footing elevation as designed and provide continued protection and heat to prevent formation of frost below footing and adjacent to footing.
The contractor shall safeguard and protect all excavations and adjacent structures, pavements, and utilities. All excavations shall be kept free of water. The contractor is responsible for the design, installation, maintenance, and removal of all shoring, bracing, and dewatering that is required to properly construct the foundations and protect adjacent structures, pavements and utilities.
CONCRETE
No concrete shall be placed until concrete design mixes have been submitted to and have been approved by the engineer. No calcium chloride shall be added to the concrete. Provide air-entrainment (6% ± 1%) for concrete exposed to weather.
WWF in slabs to be supported on chairs and bolsters. For all slabs where not otherwise specified, use 6x6-W1.4 x W1.4 W.W.F.

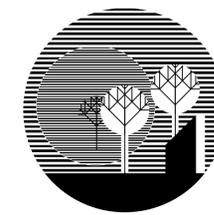
MASONRY
Masonry walls are to be adequately braced during construction until floor and wall systems are complete. See "Standard Practice for Bracing Masonry Walls Under Construction" by the Council for Masonry Wall Bracing, and also NCMA TEK 3-4B "Bracing Concrete Masonry Walls During Construction" for recommendations regarding bracing. Bracing shall be designed by the contractor and sealed by a PE licensed in the state that has jurisdiction over the project.
Place ladder type horizontal joint reinforcing with preformed lapped corner reinforcing at 16" c/c vertically in all masonry walls U.O.N. Joint reinforcing shall be galvanized and have side wires of 9 gage minimum conforming to ASTM A-82 U.O.N.
The discontinuous ends of all masonry walls shall be solidly grouted a minimum of 8" or one block cell and reinforced for their full height with one #5 bar unless otherwise noted.
At grouted cells lifts of grout shall be keyed 4" into the course of masonry below.
All CMU bond beams to have (2) #4 bars continuous. Provide (2) #4 L-bars at every corner, lapped 3'-0" w/ continuous bars.
Vertical control joints in CMU walls to have a minimum 3/8" gap and shall be located by the architect, but shall not be more than 20'-0" o.c. Brick ties shall be galvanized adjustable 2-piece wire ties of not less than 9 gage, and shall be spaced @ 16" o.c. vertically and horizontally
Where masonry meets structural members subject to vertical deflection, provide allowance for vertical movement of L/240 of structural member.
METAL DECK
Unless otherwise noted, all metal deck has been designed to be continuous over 2 spans minimum, and shall bear at least 2" on steel supports. For one span conditions, the contractor shall provide shoring as required, or furnish higher gage deck as required to support all the applicable loads. Contractor shall submit alternate for approval.
Provide reinforcing channels, standard closures, cant strips, sump pans, finish strips, pour stops and other accessories as required for a properly finished job, even if not specifically shown on the drawings. Provide bearing angles welded to columns to support metal deck as required.
Fasten steel deck units to structural supports using Hex washer head Tek screws or arc spot welds according to manufacturer's specifications and in conformance with the Steel Deck Institute's Specification section 4.4.
Arc spot welds (puddle welds) to supports shall have a diameter of 5/8" minimum, or an elongated weld of 3/8" minimum width and 3/4" minimum length. Weld metal shall penetrate all layers of deck material at end laps and have adequate fusion to the supporting members. Welding shall be done in accordance with the American Welding Society Standard "Specification for Welding Sheet Steel in Structures", AWS D1.3.

STEEL
Where steel connections are not fully detailed on the design drawings (with all requirements for bolts, plates, welds, dimensions, etc., shown) connections shall be designed by the steel contractor under the supervision of a P.E. licensed in the state that has jurisdiction over the project.
Where typical, or incomplete connections are shown on the design drawings, those details shall be used as a basis for connection design to be completed by the contractor. Alternate connections designed by the steel contractor will be provided if required design forces cannot be achieved by the typical or example connection, or if authorization to alter the detail is provided by the design engineer.
Where connection forces are indicated on the drawings, provide connections designed to resist the forces shown.
Where connection forces are not indicated on the drawings, provide connections designed to resist forces as follows:
For shear connections in non-composite members, design connections to resist 50% of the total allowable uniform load shown in the tables in part 3 of the AISC Manual of Steel Construction.
For shear connections in composite members, design connections to resist 75% of the total allowable uniform load shown in the tables in part 3 of the AISC Manual of Steel Construction.
For moment connections, design connections to resist 100% of moment capacity of the member.
All fully tensioned A325 bolts shall have washers beneath the turned element. All fully tensioned A490 bolts shall have washers beneath both nut and head.
All welds shall be provided as shown in the structural details unless thicker weld is required due to material thicknesses. Where weld is not detailed, welds shall be designed a licensed engineer retained by the contractor to meet connection capacity requirements listed above. Weld sizes shall be increased as needed to meet the following minimum weld size requirements based on the smaller material thickness of the pieces of steel being welded together:
material thickness minimum fillet weld size (provide larger weld if required for stress)
1/4" and under 1/8"
over 1/4" to 1/2" 3/16"
over 1/2" to 3/4" 1/4"
over 3/4" 5/16"
If penetrations through webs of steel beams will be required, contractor to notify engineer of record.
See architecture for miscellaneous and non-structural steel.
All angles, W-sections, HSS-sections, and plates acting as lintels to support exterior masonry or stone to be galvanized. All interior lintels to be painted.
COLD-FORMED STEEL FRAMING
Load-bearing and wind resisting cold-formed steel framing members and all connections between cold-formed members and to supporting structure are to be designed by contractor under the supervision of an engineer licensed in the state that has jurisdiction over the project to meet code required wind, snow and dead loads. Exterior cold-formed stud walls to be 16 gage studs, minimum. Wall framing shall be spaced at not more than 16" o.c., and shall be designed for all code prescribed loads with a maximum lateral deflection of L/720 for stone or masonry back-up and L/360 for other materials. Where cold-formed members attach to structural members subject to vertical deflection, provide allowance for vertical movement of the greater of 3/4" or L/240 of structural member.
METAL PANEL SYSTEMS
Metal panels, supporting members and all connections within metal panel system and to supporting structure are to be designed by contractor under the supervision of an engineer licensed in the state that has jurisdiction over the project to meet code required wind, snow and dead loads.

prepared for:



prepared by:



UNDER THE SUN ARCHITECTURAL LLC

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project title

DEMME FORD RENOVATIONS

37300 MICHIGAN AVE. WAYNE, MI

sheet title

TYPICAL NOTES

DO NOT SCALE DRAWINGS USE FIGURED DIMENSIONS ONLY

seal & signature

project number

13003

drawn KRG

approved FLW

issued date

Bids/Permits 07/02/2014



SHEET S-001

USA MASTER - 2403-2016 (09/13)

CONCRETE DETAILS

for use locating reinforcing bars in concrete structure (see ACI 7.7.1 for further info)
condition concrete cover
cast against & perm. exposed to earth: 3"
exposed to earth or weather:
#6 bar thru #18 bar 2"
#5 bars or smaller 1 1/2"
not exposed to weather or earth slabs/wall/joints (#11 bars and smaller) beams/clms. (primary reinf./ ties/stirrups) 3/4" 1 1/2"
typical clear cover for reinforcing bars (non-prestressed) no scale typical detail CT-08

for use with fc = 3000 psi (normal weight) concrete and fy = 60 ksi (non-epoxy coated) reinforcing bars
bar size minimum lap length
#3 16"
#4 22"
#5 28"
#6 34"
#7 48"
#8 56"
#9 62"
concrete reinforcing lap schedule (fc=3000psi) no scale typical detail CT-20

for use with fc = 3000 psi (normal weight) concrete and fy = 60 ksi (non-epoxy coated) reinforcing bars
bar size minimum development length
#3 16"
#4 22"
#5 28"
#6 34"
#7 48"
#8 56"
#9 62"
concrete reinforcing development length schedule (fc=3000psi) no scale typical detail CT-21

MOMENT CONNECTION DETAILS

for use where shown on plan
top and bottom flange plate provide shim plates welded all around to flange
double angle connection, ns + fs, provide max bolts for beam height
supporting beam
design connection for full moment capacity and 75% shear capacity of beam.
bolted moment connection through beam no scale typical detail MC-05

for use at single-plate shear connections at ends of beams
weld per schedule on sheet S0.1
infill beam
see schedule on S0.1 for plate size and number of bolts girder beam (or column)
single-plate shear connections at beam ends no scale typical detail ST-22

STEEL DETAILS

for use at plates welded to W-shapes
stiffener plates
beam end plates & column cap and base plates
minimum fillet weld thickness = 1/2 thickness of plate (5/16" weld thickness maximum)
plates welded to W-shapes no scale typical detail ST-10

for use at opening in metal deck and rooftop mechanical units weighing up to 300 lbs
1" max.
3/16"
supporting member
1" max. mech. opening
8'-0" max
4'-0" max
angles are L4x4x1/4
reinforce joists - add (2) L2 1/2 x 2 1/2 x 1/4 from top chord frame bearing points to adjacent bottom chord panel point, typ.
coordinate location and dimensions with mechanical contractor
opening in metal deck and small rooftop mechanical unit support no scale typical detail ST-11

for use at misc. steel attached to beams/columns
3/16" 3" @ 48"
misc. steel
3/16" 3" @ 48"
beam/column
misc. steel connection to beam/column no scale typical detail ST-14

for use at misc. steel attached to beams/columns
3/16" 3" @ 48"
misc. steel
3/16" 3" @ 48"
beam/column
misc. steel connection to beam/column no scale typical detail ST-14

for use at single-plate shear connections at ends of beams
weld per schedule on sheet S0.1
infill beam
see schedule on S0.1 for plate size and number of bolts girder beam (or column)
single-plate shear connections at beam ends no scale typical detail ST-22

for use at continuous angles
6" 6"
3/16" 3 sides, typical
continuous angle
(2) plates: thickness = angle thickness plus 1/8" width = angle leg width minus 3/4"
butt angles together
connection of continuous angles no scale typical detail ST-08

STEEL DETAILS

for use at column base plates
typical anchor rods to be F1554 threaded rods (A36) nipped at both ends.
rod dia. max. hole dia. min. washer dimension min. washer thickness edge distance
3/4" 1 5/16" 2" 1/4" 1 1/2"
1" 1 13/16" 3" 3/8" 2"
1 1/4" 2 1/16" 3" 1/2" 2 1/2"
1 1/2" 2 5/16" 3 1/2" 1/2" 3"
2" 3 1/4" 5" 3/4" 4"
base plate & anchor rod conventions no scale typical detail ST-01

for use at gravity-only column base plates
min. material thickness min. fillet weld size (w)
to 1/4" 1/8"
1/4" to 1/2" 3/16"
over 1/2" to 3/4" 1/4"
over 3/4" 5/16"
flat sides only
gravity column base plate welding conventions no scale typical detail ST-02

for use at beams along CMU walls
5/16" bent plate, 4" wide, at 24" o.c., dims as req'd, w/anchor in 2" vertically slotted hole w/washer, finger tighten and double nut to allow for 1" vert. movement.
3/16" 4" @ 24" o.c.
3/16" 4" @ 24" o.c.
all anchors to be 5/8" dia. threaded rods, embedded with epoxy per manufacturer recommendations to achieve not less than 700 lbs tension and 1200 lbs shear.
beams along CMU walls no scale typical detail ST-04

for use at rooftop mechanical curbs
L6x4x3/8, 6" long, LLV bear on beam or joist, weld to flange, typ.
C6x10.5 @ unit perimeter, typ.
7'-0" max
mech. opening
reinforce joists - add (2) L2 1/2 x 2 1/2 x 1/4 from top chord frame bearing points to adjacent bottom chord panel point, typ.
coordinate location and dimensions with mechanical contractor
rooftop mechanical curb support no scale typical detail ST-07

for use at continuous angles
6" 6"
3/16" 3 sides, typical
continuous angle
(2) plates: thickness = angle thickness plus 1/8" width = angle leg width minus 3/4"
butt angles together
connection of continuous angles no scale typical detail ST-08

for use at continuous angles
6" 6"
3/16" 3 sides, typical
continuous angle
(2) plates: thickness = angle thickness plus 1/8" width = angle leg width minus 3/4"
butt angles together
connection of continuous angles no scale typical detail ST-08

SLAB DETAILS

for use at slab on grade
d/4 sawcut or preformed insert.
control joint continuous key joint construction joint
use construction joints or control joints to divide slab into areas less than 300 sqft with no side more than one-and-one-half times greater than any other side in length.
joints in slab on grade no scale typical detail SL-01

for use at column bearing below slab on grade
isolation joint from pre-molded expansion material
control or construction joint
column isolation joint no scale typical detail SL-02

for use at new non-load bearing CMU locations
CMU wall
floor slab
6"
(2) #5 bars cont.
see plan for width of CMU wall
thickened slab under new CMU no scale typical detail SL-03

for use at stair stringer bearing locations
angles and epoxy bolts to slab per stair design
floor slab
12"
8" 16"
(2) #5 bars cont.
see arch for stair stringer bearing locations. extend thickened slab 24" beyond stringer in each direction, minimum
thickened slab under stair stringer no scale typical detail SL-08

for use at rooftop mechanical curbs
L6x4x3/8, 6" long, LLV bear on beam or joist, weld to flange, typ.
C6x10.5 @ unit perimeter, typ.
7'-0" max
mech. opening
reinforce joists - add (2) L2 1/2 x 2 1/2 x 1/4 from top chord frame bearing points to adjacent bottom chord panel point, typ.
coordinate location and dimensions with mechanical contractor
rooftop mechanical curb support no scale typical detail ST-07

for use at continuous angles
6" 6"
3/16" 3 sides, typical
continuous angle
(2) plates: thickness = angle thickness plus 1/8" width = angle leg width minus 3/4"
butt angles together
connection of continuous angles no scale typical detail ST-08

MASONRY DETAILS

for use at bond beams in intersecting CMU walls
provide corner bars to match continuous horiz. reinforcing at corners, lap 3'-0" min. with main bond beam reinforcing
intersection of CMU walls at bond beam no scale typical detail MS-17

for use with fm = 2000 psi masonry and fy = 60 ksi (non-epoxy coated) reinforcing bars (case A: standard reinforcing in tension)
bar size minimum lap length
#3 18"
#4 24"
#5 30"
#6 38"
#7 42"
#8 50"
#9 64"
masonry reinforcing lap schedule (fm=2000psi) no scale typical detail MS-21

for use at grouted masonry cells
CMU wall
next lift: all grouted cells shall have the grout lift keyed 4" into course of CMU below
previous lift: leave 4" at top for keying of next grout lift
reinforcing bar
keying of grout lift in CMU cores no scale typical detail MS-24

for use at steel columns adjacent to masonry
adjustable masonry ties @ 24" o.c.
masonry ties to be 12 gage galvanized adjustable masonry ties. attach on all sides of column which are adjacent to brick or CMU.
masonry ties at steel columns no scale typical detail MS-07

for use at masonry lintels
continuously solid grout full height of lintel (no cold joints), extend lintel and reinforcing 16" past opening, each side
shear stirrups (as required in schedule), with 180-degree hooks each end, typical
CMU bond beam course, see schedule for reinforcing, extend bars in each direction 16" min. past face of masonry opening
shore lintel until all grouted cores are cured.
masonry lintels no scale typical detail MS-13

for use at reinforced CMU
bars at face of core bar centered in core
solid grout all reinforced cores
provide rebar positioners (such as CoreLock by Wire-Bond) at 48" vertically
rebar locations in reinforced CMU no scale typical detail MS-14

MASONRY DETAILS

for use at masonry control joints
building paper and concrete fill rake joint and caulk
solid grouted core, horiz. reinforcing or bond beam is interrupted at joint
alternate: provide jamb blocks w/ preformed gasket
vertical control joints shall be located by the architect, but shall not be more than 20'-0" o.c.
masonry control joints no scale typical detail MS-04

for use at intersecting CMU walls
solid grouted cores, full height
1/4" x 6" wide mesh galvanized hardware cloth at 16" o.c.
rake joints and caulk
intersection of CMU walls no scale typical detail MS-05

for use as shown on drawings
solid grout for full length
extend vertical wall reinforcing through bond beam, when bond beam is at top of wall extend vertical wall reinforcing 6" into bond beam
(2) #4 continuous rebar, lap 3'-0" at splices and provide corner bars with 3'-0" lap to straight
bond beam no scale typical detail MS-06

for use at steel columns adjacent to masonry
adjustable masonry ties @ 24" o.c.
masonry ties to be 12 gage galvanized adjustable masonry ties. attach on all sides of column which are adjacent to brick or CMU.
masonry ties at steel columns no scale typical detail MS-07

for use at masonry lintels
continuously solid grout full height of lintel (no cold joints), extend lintel and reinforcing 16" past opening, each side
shear stirrups (as required in schedule), with 180-degree hooks each end, typical
CMU bond beam course, see schedule for reinforcing, extend bars in each direction 16" min. past face of masonry opening
shore lintel until all grouted cores are cured.
masonry lintels no scale typical detail MS-13

for use at reinforced CMU
bars at face of core bar centered in core
solid grout all reinforced cores
provide rebar positioners (such as CoreLock by Wire-Bond) at 48" vertically
rebar locations in reinforced CMU no scale typical detail MS-14

STEEL JOIST DETAILS

for use at concentrated loads on steel joists
concentrated load above
concentrated load below
provide (2) L2 1/2 x 2 1/2 x 1/4 from chord at concentrated load to adjacent chord panel point
joists reinforcing @ concentrated loads no scale typical detail JS-05

for use at intersecting CMU walls
solid grouted cores, full height
1/4" x 6" wide mesh galvanized hardware cloth at 16" o.c.
rake joints and caulk
intersection of CMU walls no scale typical detail MS-05

for use as shown on drawings
solid grout for full length
extend vertical wall reinforcing through bond beam, when bond beam is at top of wall extend vertical wall reinforcing 6" into bond beam
(2) #4 continuous rebar, lap 3'-0" at splices and provide corner bars with 3'-0" lap to straight
bond beam no scale typical detail MS-06

for use at steel columns adjacent to masonry
adjustable masonry ties @ 24" o.c.
masonry ties to be 12 gage galvanized adjustable masonry ties. attach on all sides of column which are adjacent to brick or CMU.
masonry ties at steel columns no scale typical detail MS-07

for use at masonry lintels
continuously solid grout full height of lintel (no cold joints), extend lintel and reinforcing 16" past opening, each side
shear stirrups (as required in schedule), with 180-degree hooks each end, typical
CMU bond beam course, see schedule for reinforcing, extend bars in each direction 16" min. past face of masonry opening
shore lintel until all grouted cores are cured.
masonry lintels no scale typical detail MS-13

for use at reinforced CMU
bars at face of core bar centered in core
solid grout all reinforced cores
provide rebar positioners (such as CoreLock by Wire-Bond) at 48" vertically
rebar locations in reinforced CMU no scale typical detail MS-14

FOUNDATION DETAILS

for use at steel columns
base plate
2" min. non-shrink grout (installed after column is plumb & leveled)
heavy hex leveling nuts
anchor rods w/ tack weld nut to rod
3" clr
3" clr
see baseplate schedule for required embedment depth to nut on anchor rod anchor rods at steel columns no scale typical detail FN-01

for use where approved by architect and soil conditions permit
dowels to match wall reinforcing above, extend to bottom rebar
form all footings if a smooth vertical face cannot be maintained from excavation through curing
(2) #5 bars, top and bottom, continuous, typical
3" clr
trench footing no scale typical detail FN-02

for use at exterior-outwing doors
floor slab
sidewalk
frost block
continuous strip or trench footing
#4 bars @ 12" o.c. e.w. in addition to continuous footing reinforcing
3" clr
see architectural plan for dimensions
match bottom of fig, min 42" below exterior grade
frost block no scale typical detail FN-04

for use at steps in footings
corner bars size & qty. to match long. reinf.
typ. fig. thickness
48 bar dia. min.
natural earth cut
min. step run = 2x step rise
max step rise = 24"
provide 3" cover where cast against earth, 2" cover where formed
step footings no scale typical detail FN-05

for use at mechanical penetrations through footing (maximum sleeve size = 10" diameter)
concrete foundation wall
wall reinforcing (beyond)
slab on grade
6" min.
steel sleeve thru footing, coord. size req'd w/ mech., locate to avoid reinforcing
thickened cont. concrete strip footing, see plans for dims and reinforcing
mechanical sleeve through thickened footing no scale typical detail FN-08

for use at reinforced CMU
bars at face of core bar centered in core
solid grout all reinforced cores
provide rebar positioners (such as CoreLock by Wire-Bond) at 48" vertically
rebar locations in reinforced CMU no scale typical detail MS-14

prepared for:



prepared by:



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South Lyon, MI 48178

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DEMME FORD
RENOVATIONS

37300
MICHIGAN AVE.
WAYNE, MI

sheet title

TYPICAL
DETAILS

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seal & signature

project number

13003

drawn KRG

approved FLW

issued date

Bids/Permits 07/02/2014



SHEET
S-002

USA MASTER: 2403.DWG (07/13)

prepared for:



prepared by:



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## DEMMER FORD RENOVATIONS

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#### sheet title

# FOUNDATION PLAN

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#### project number

# 13003

drawn KRG

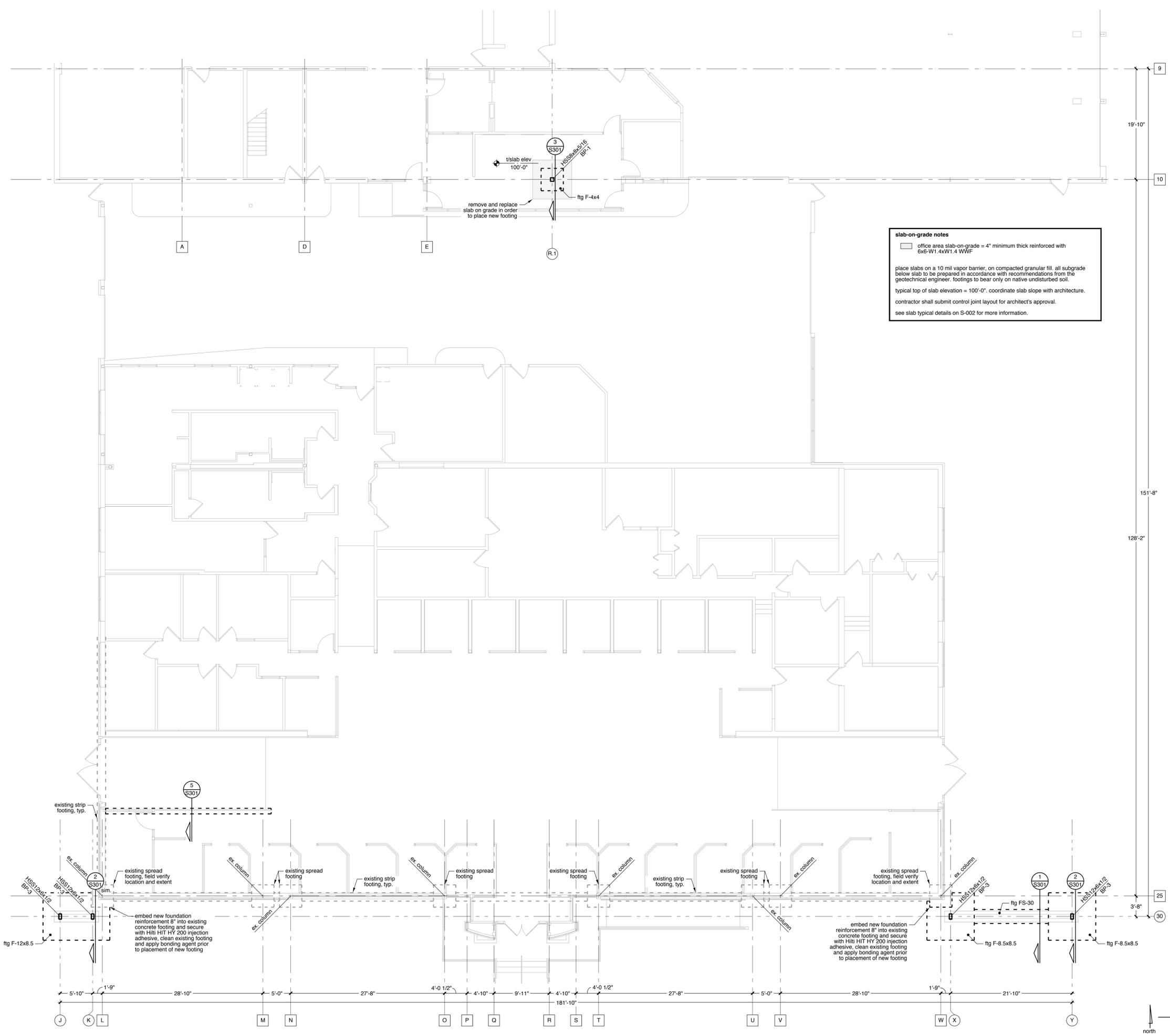
approved FLW

issued date

Bids/Permits 07/02/2014

#### SHEET

# S-101



**slab-on-grade notes**

- office area slab-on-grade = 4" minimum thick reinforced with 6x6-W1.4xW1.4 WWF

place slabs on a 10 mil vapor barrier, on compacted granular fill. all subgrade below slab to be prepared in accordance with recommendations from the geotechnical engineer. footings to bear on native undisturbed soil.

typical top of slab elevation = 100'-0". coordinate slab slope with architecture.

contractor shall submit control joint layout for architect's approval.

see slab typical details on S-002 for more information.



sales & service foundation plan

scale 1/8" = 1'-0"



USA MASTER 2403L DWG (07/13)

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**RENOVATIONS**

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sheet title

**FOUNDATION**  
**PLAN**

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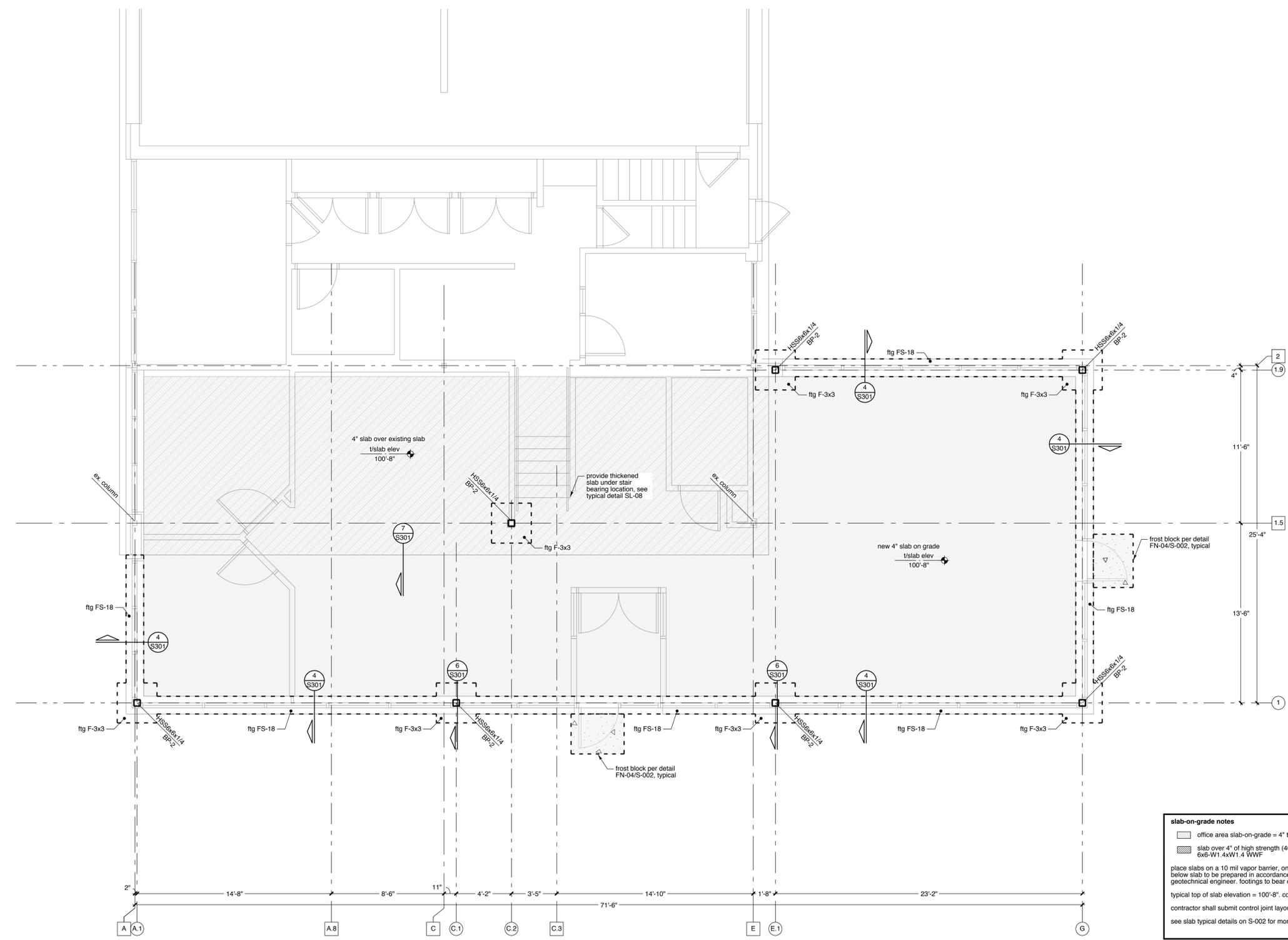
**13003**

drawn KRG

approved FLW

issued            date           

Bids/Permits            07/02/2014



**slab-on-grade notes**

- office area slab-on-grade = 4" thick reinforced with 6x6-W1.4xW1.4 WWF
- slab over 4" of high strength (40 psi) rigid foam insulation with 6x6-W1.4xW1.4 WWF

place slabs on a 10 mil vapor barrier, on compacted granular fill, all subgrade below slab to be prepared in accordance with recommendations from the geotechnical engineer. footings to bear only on native undisturbed soil.

typical top of slab elevation = 100'-8". coordinate slab slope with architecture.

contractor shall submit control joint layout for architect's approval.

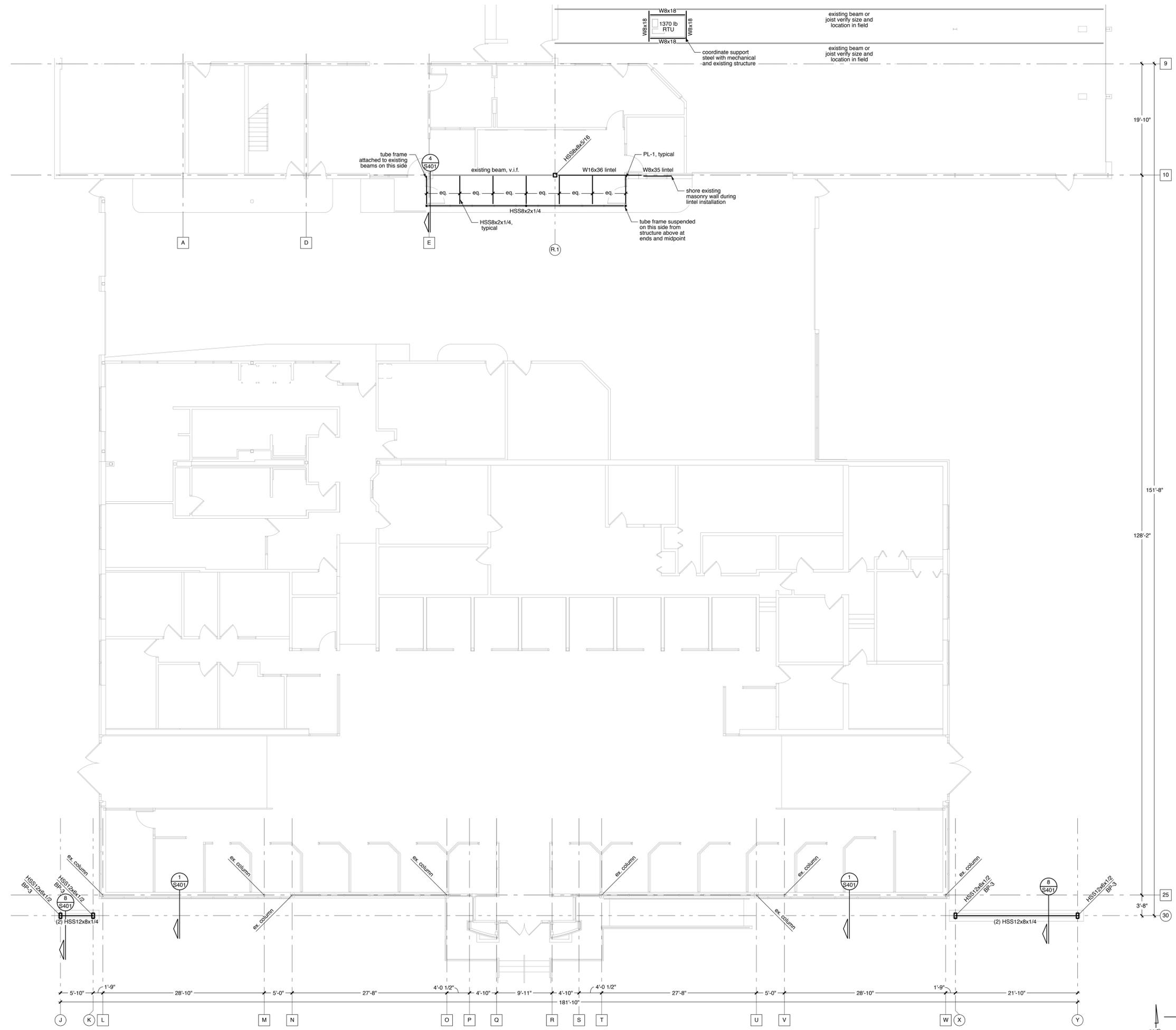
see slab typical details on S-002 for more information.

used car foundation plan  
scale 1/4" = 1'-0"  
north



SHEET  
**S-102**

USA MASTER 2403.DWG (07/13)



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**FRAMING  
PLAN**

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*Elisabeth M. Wong*

SHEET

**S-201**

sales & service framing plan

scale 1/8" = 1'-0"

USA MASTER 2403L.DWG (09/13)

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**RENOVATIONS**

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**FRAMING**  
**PLAN**

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project number

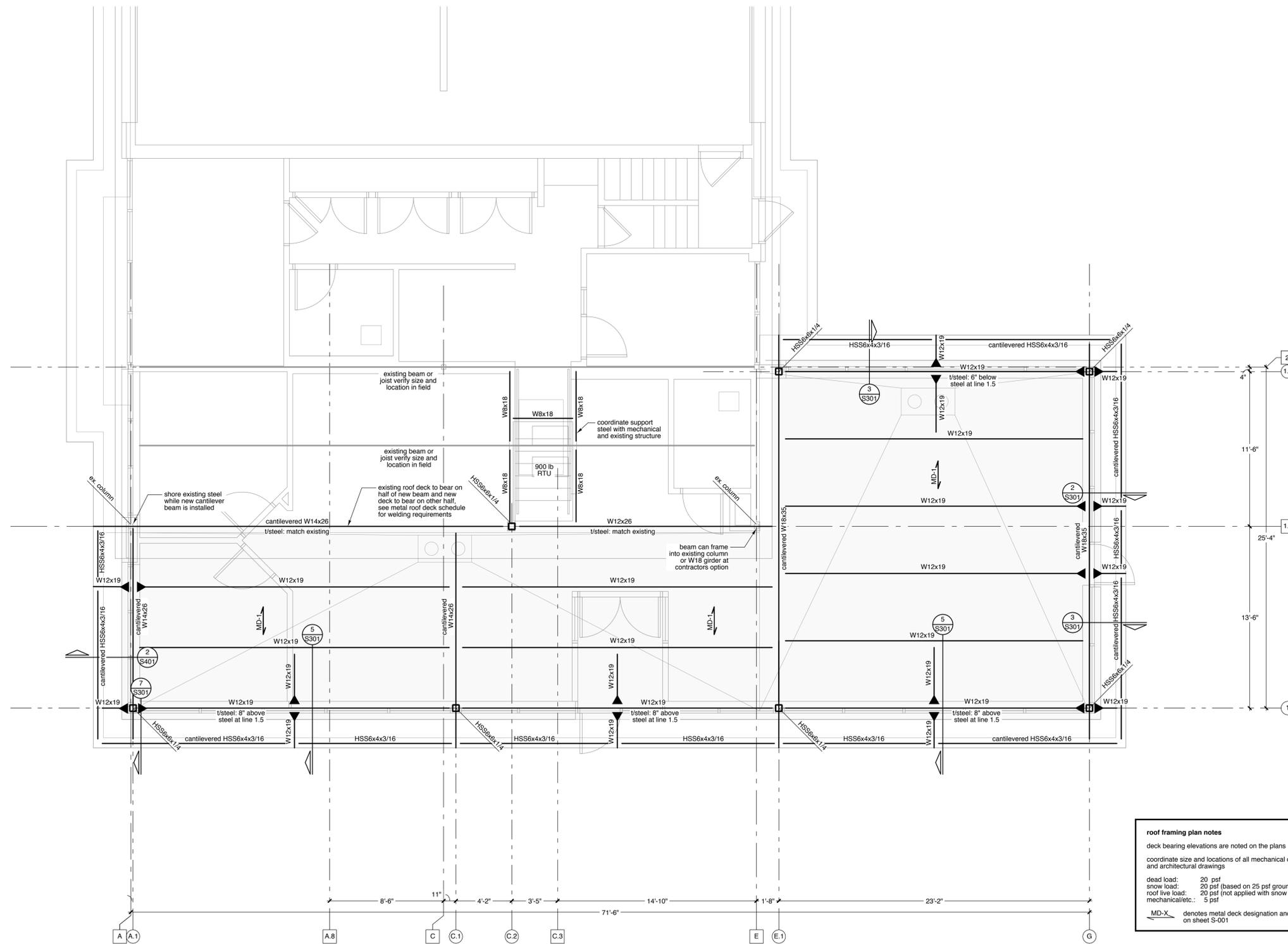
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**roof framing plan notes**

deck bearing elevations are noted on the plans

coordinate size and locations of all mechanical openings with mechanical and architectural drawings

dead load: 20 psf  
snow load: 20 psf (based on 25 psf ground snow) + drift per ASCE-7  
roof live load: 20 psf (not applied with snow load)  
mechanical/etc.: 5 psf

MD-X denotes metal deck designation and span direction. see schedule on sheet S-001

used car framing plan  
scale 1/4" = 1'-0"  
north



SHEET  
**S-202**



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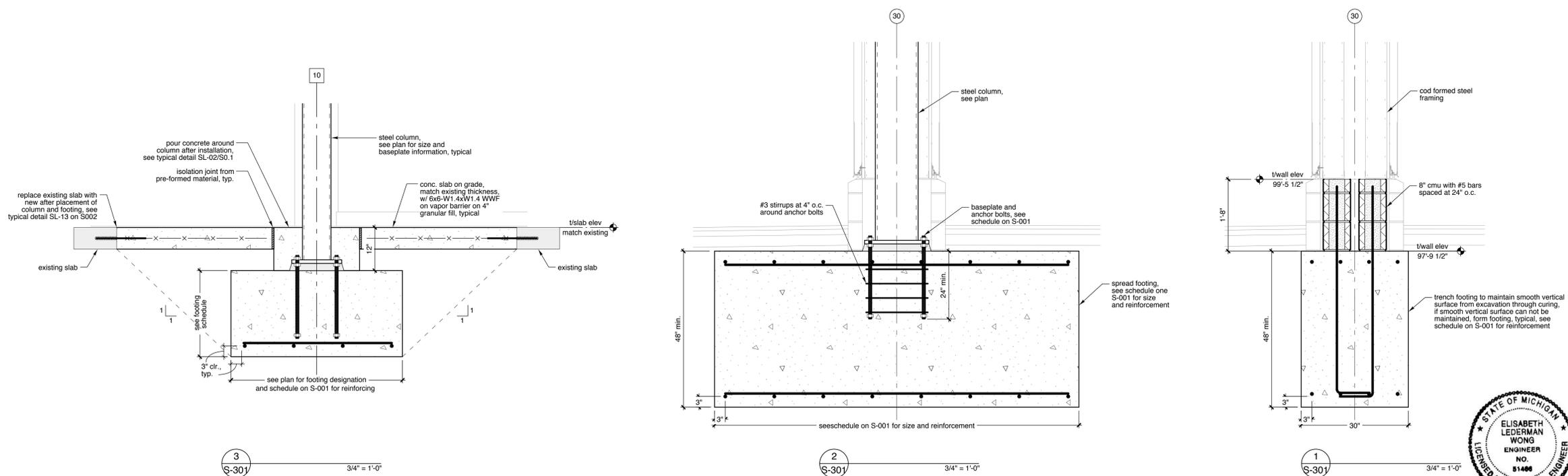
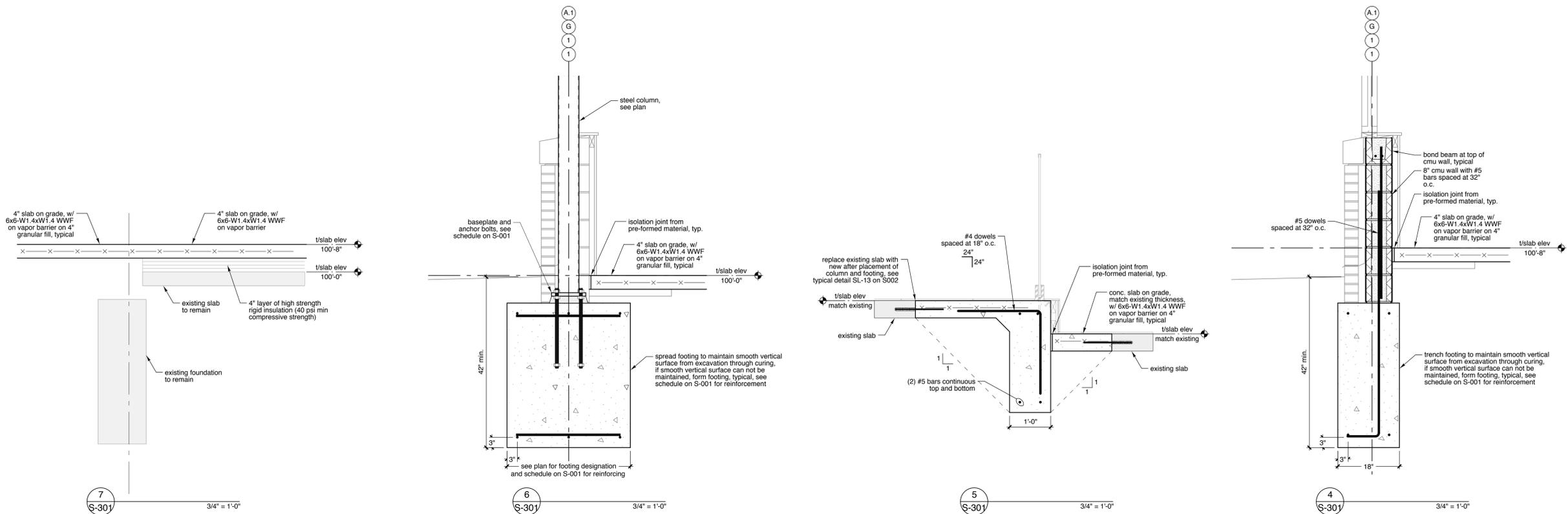
Bids/Permits **07/02/2014**

SHEET

**S-301**



*Elisabeth Wong*



USA MASTER - 24032.DWG (04/13)

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project number

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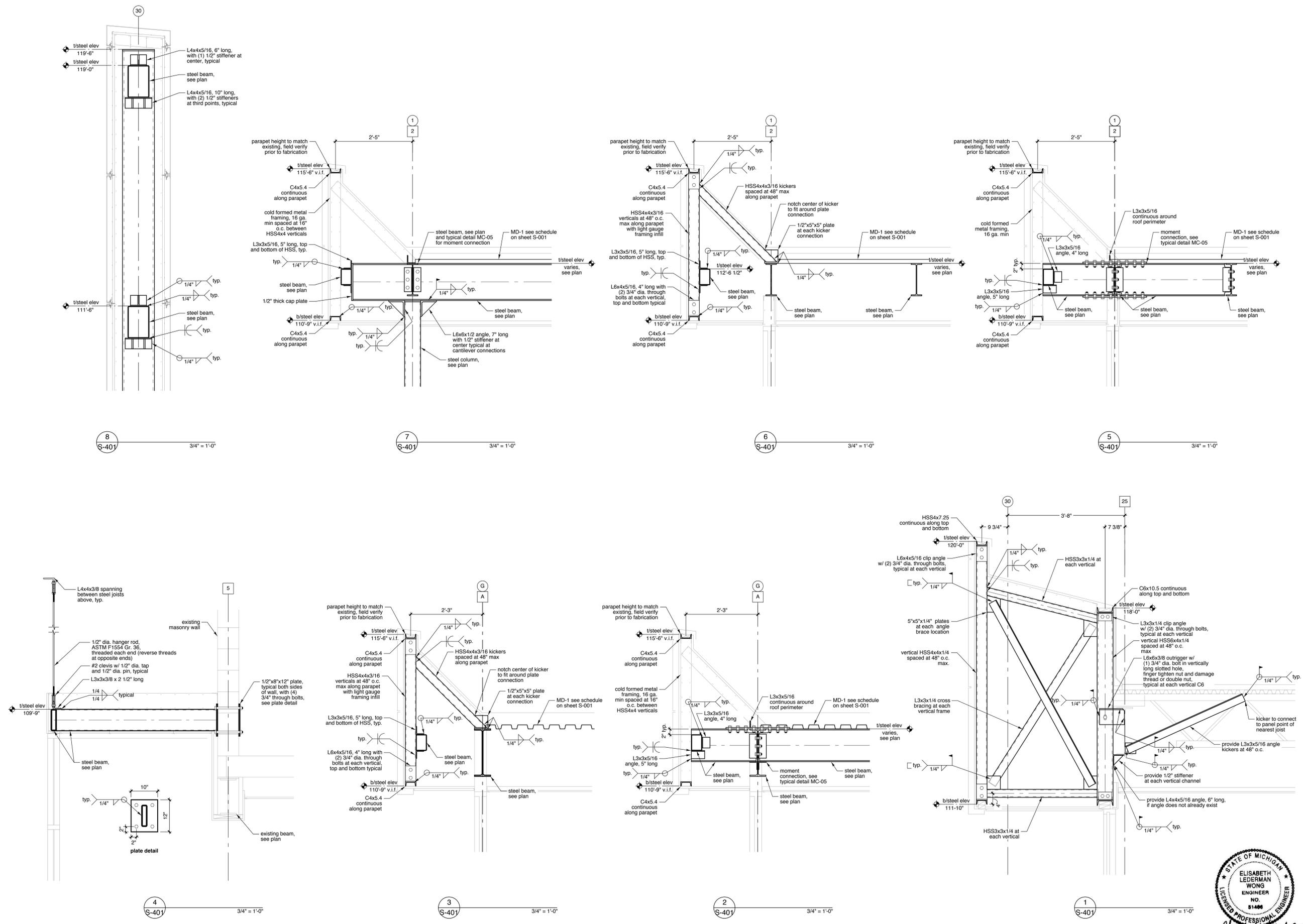
Bids/Permits 07/02/2014

SHEET

**S-401**



*Elisabeth Wong*





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**PLUMBING  
NEW WORK  
PLAN**

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13003

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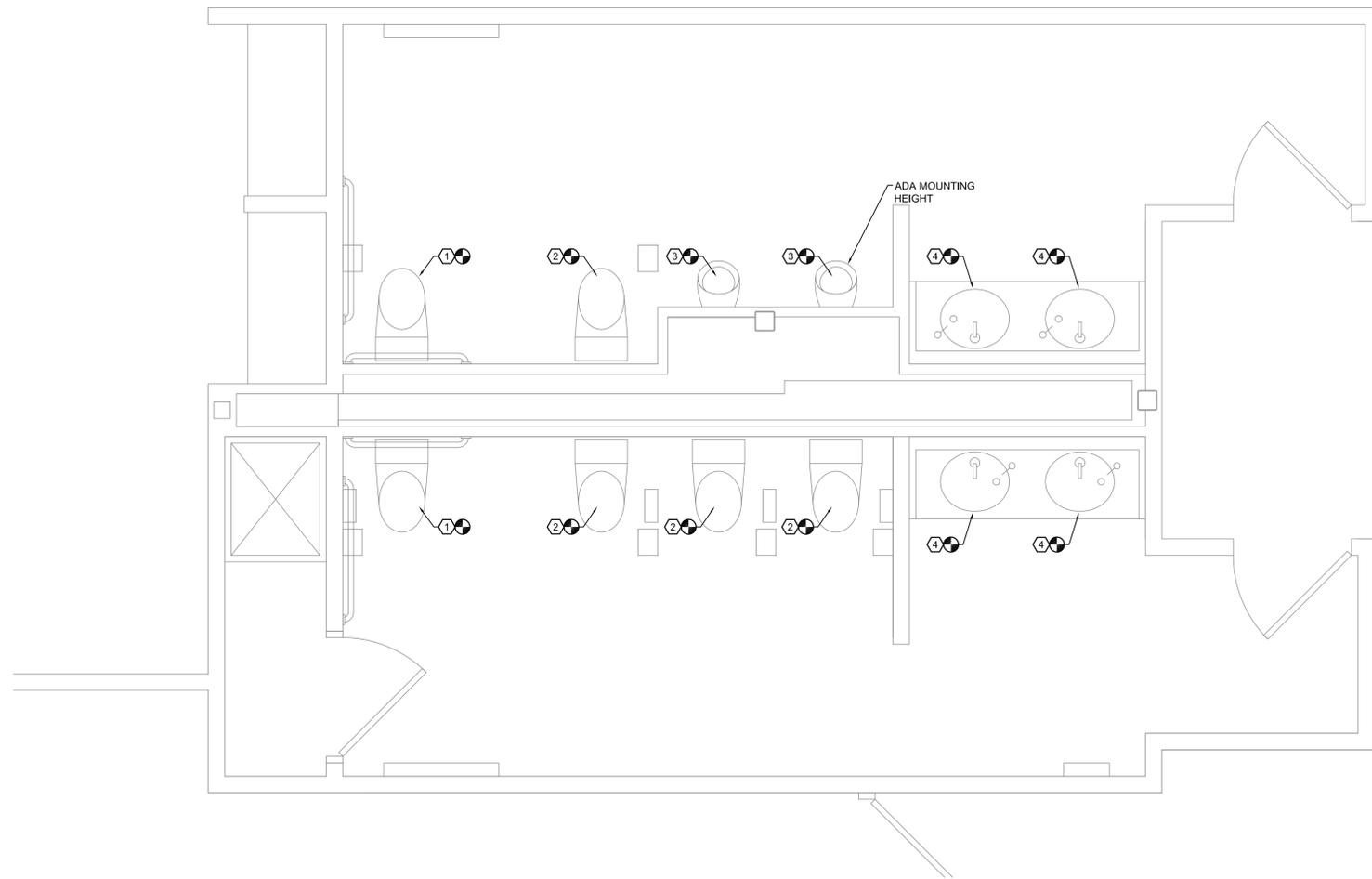
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issued date

PROGRESS 06-06-14

OWNER REVIEW 06-16-14

BIDS/PERMITS 07/02/14



**KEYED NOTES:**

- WC-1: REMOVE EXISTING WATER CLOSET AND REPLACE WITH SPECIFIED PLUMBING FIXTURE. MODIFY EXISTING PLUMBING PIPING AS NEEDED TO ACCOMMODATE NEW FIXTURE.
- WC-2: REMOVE EXISTING WATER CLOSET AND REPLACE WITH SPECIFIED PLUMBING FIXTURE. MODIFY EXISTING PLUMBING PIPING AS NEEDED TO ACCOMMODATE NEW FIXTURE.
- UR-1: REMOVE EXISTING URINAL AND REPLACE WITH SPECIFIED PLUMBING FIXTURE. MODIFY EXISTING PLUMBING PIPING AS NEEDED TO ACCOMMODATE NEW FIXTURE.
- L-1: REMOVE EXISTING LAVATORY AND REPLACE WITH SPECIFIED PLUMBING FIXTURE. MODIFY EXISTING PLUMBING PIPING AS NEEDED TO ACCOMMODATE NEW FIXTURE.



**1 NEW CAR FLOOR PLAN - PLUMBING NEW WORK**

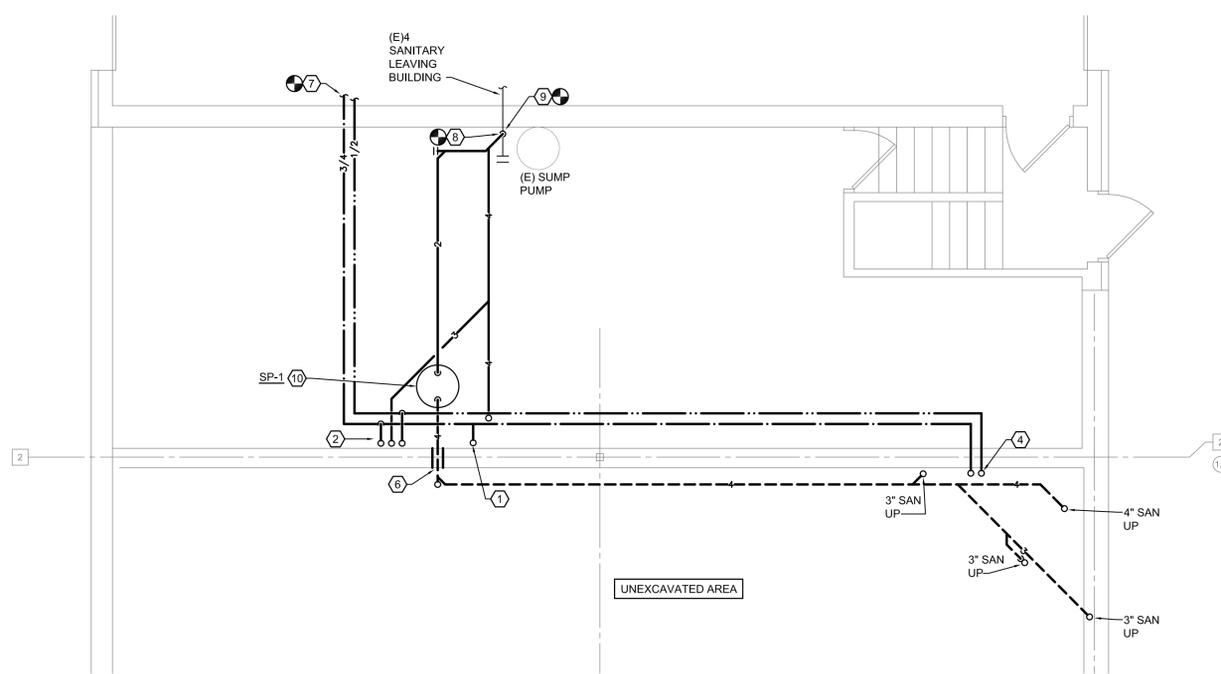
1/4" = 1'-0"



1415 Goldsmith  
Plymouth, MI 48170  
P 734-464-8019  
F 734-464-8017  
MEEC JOB # 20413-230

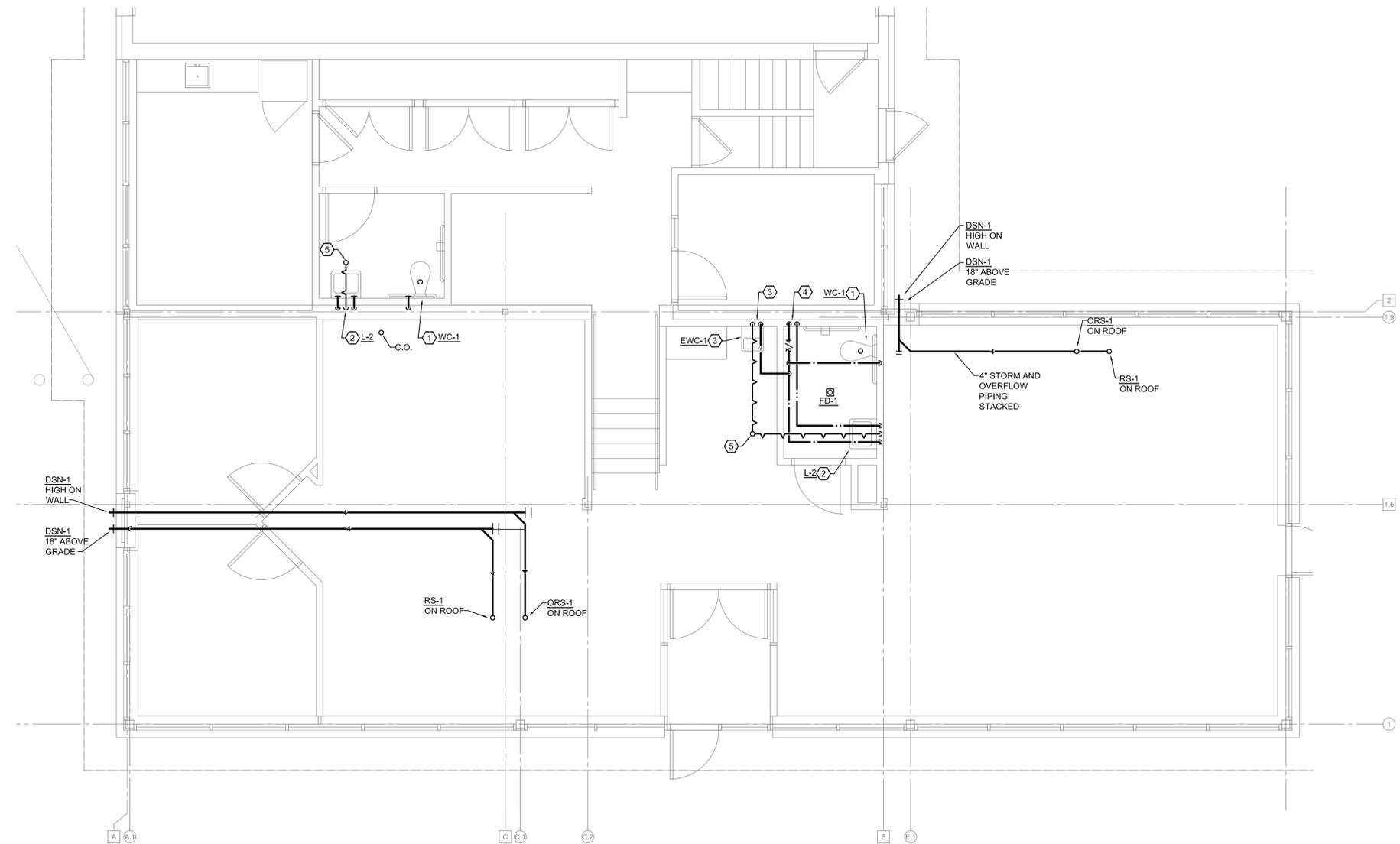


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- KEYED NOTES:**
1. 3/4\"/>
  - 2. 1/2\"/>
  - 3. 1/2\"/>
  - 4. 1/2\"/>
  - 5. 3\"/>
  - 6. ROUTE 4\"/>
  - 7. CONNECT NEW 3/4\"/>
  - 8. CONNECT NEW 4\"/>
  - 9. CONNECT PUMPED SEWAGE EJECTOR DISCHARGE TO EXISTING SANITARY.
  - 10. LOCATE SEWAGE EJECTOR AS NOT TO UNDERMINE EXISTING FOOTING.

**PLAN NORTH**  
**USED CAR BASEMENT PLAN - PLUMBING NEW WORK**  
 1/4" = 1'-0"



**PLAN NORTH**  
**1 USED CAR FLOOR PLAN - PLUMBING NEW WORK**  
 1/4" = 1'-0"

prepared for:



prepared by:



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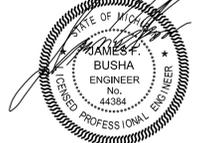
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**DEMMER FORD  
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 37300  
 MICHIGAN AVE.  
 WAYNE, MI

**sheet title**

**PLUMBING  
 NEW WORK  
 PLAN**  
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**project number**

**13003**

drawn USA  
 approved USA

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PROGRESS	06-06-14
OWNER REVIEW	06-16-14
BIDS/PERMITS	07/02/14



mechanical electrical  
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PLUMBING FIXTURE SCHEDULE									
MARK	ITEM	ADA	DESCRIPTION	ACCESSORIES	PIPE CONNECTION SIZES				NOTES
					W	V	CW	HW	
WC-1	FLOOR MOUNTED TANK TYPE WATER CLOSET	X	TOTO NEXUS Low Consumption Two Piece Tank Toilet #CST794SF	Seat: Closed front with cover Supply: McGuire #H172BV Flange 1/4 turn angle valve	4"	2"	1/2"	---	
WC-1	FLOOR MOUNTED TANK TYPE WATER CLOSET		TOTO NEXUS Low Consumption Two Piece Tank Toilet #CST794SF	Seat: Closed front with cover Supply: McGuire #H172BV Flange 1/4 turn angle valve	4"	2"	1/2"	---	
UR-1	WALL HUNG URINAL	X	TOTO CALGreen Urinal (0.5 GPF) #JT104EV	Flush Valve: Back Spud Flush mounted on wall with override button (0.5 gpf), "TEU2LN11" Strainer: American Standard #047068-0070A Cleanout: Jay R. Smith #SQ4-1819 Carrier: Jay R. Smith #0637	2"	1-1/2"	3/4"	---	
L-1	COUNTER LAVATORY		Kohler #K-2354-1 'Yin-Yang' Basin	Faucet: Kohler #K-14402 Aerator: 0.5 GPM Drain: McGuire #155A Supply: McGuire #H170BV-LR 1/4 turn p-Trap: McGuire #8872C-17T 1-1/2" Chrome Plated Brass	1-1/2"	1-1/2"	1/2"	1/2"	
L-2	WALL MOUNT LAVATORY		Kohler #K-2005 'Kingston' Basin	Faucet: Kohler #K-15182 Aerator: 0.5 GPM Drain: McGuire #155A Supply: McGuire #H170BV-LR 1/4 turn p-Trap: McGuire #8872C-17T 1-1/2" Chrome Plated Brass	1-1/2"	1-1/2"	1/2"	1/2"	
S-1	STAINLESS STEEL SINK (18 ga)		Elkay #LR1919 with Elkay #LKD2432BH two lever faucet, 8" tubular swing-spout aerator, 3/8" O.D. Copper tube inlets, 3-hole installation	3-1/2" drain outlet, conical strainer plate with moveable lift knob, neoprene stopper, c.p. brass 1-1/2" O.D. tailpiece	2"	2"	1/2"	1/2"	
GD-1	GARBAGE DISPOSER		IN-SINK-ERATOR BADGER 5	1/2 HP 110V/1Ø DISH WASHER CONNECTION	1-1/2"	---	---	---	
MX-1	THERMOSTATIC MIXING VALVE		WATTS USG-B	ASSE 1070 Thermostatic Mixing Valve	---	---	1/2"	1/2"	

APPROVED PLUMBING FIXTURE MANUFACTURERS: AMERICAN STANDARD, MANSFIELD, CRANE, TOTO, ELKAY, KOHLER, ZURN, FIAT, FLORESTONE, MUSTEE.  
APPROVED PLUMBING HARDWARE MANUFACTURERS: AMERICAN STANDARD, DELTA, KOHLER, CHICAGO, SLOAN, ZURN, TOTO.  
(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 TRUEBRO "LAV GUARD" ON ALL ACCESSIBLE LAVATORIES AND SINKS.

SUMP PUMP SCHEDULE														
MARK	MANUFACTURER	MODEL NUMBER	LOCATION	TYPE	FLOW (GPM)	TOTAL HEAD (FT)	PUMP DISCHARGE SIZE	BASIN SIZE	ELECTRICAL DATA					NOTES:
									HP	RPM	VOLTAGE	PHASE	HZ	
SP-1	XYLEM BELL & GOSSETT	WASTEWATER MWP1223	BASEMENT	WASTEWATER	30	20	2"	24"Øx3'-0"	0.4	1,750	120	1	60	1, 3, 4

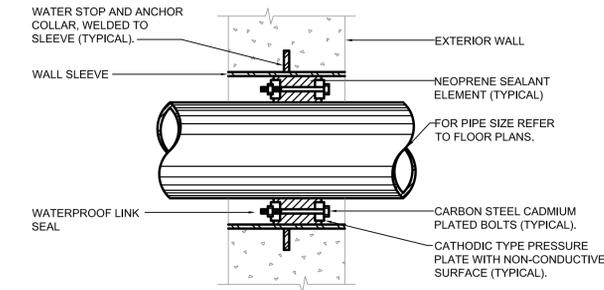
(APPROVED EQUAL: WEIL, BARNES, ABS, ZOELLER)

NOTES:  
1. U.L. LISTED  
2. PROVIDE 24"Ø X 3'-0" DEEP FIBERGLASS OR HDPE SUMP BASIN WITH SEALED COVER AND 2"Ø OPENINGS FOR DISCHARGE AND VENT PIPING.  
3. PROVIDE 3 MECHANICAL FLOATS (B&G #A2D33), AND PUMP LIFT CHAIN.

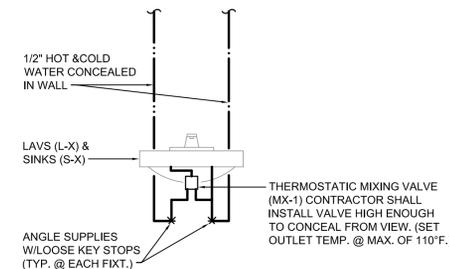
ROOF DRAIN SCHEDULE							
MARK	MANUFACTURER	MODEL NUMBER	BODY MATERIAL	DOME		PIPE SIZE (IN.)	NOTES:
				MATERIAL	SIZE		
RD-1	J.R. SMITH	1010	DUCO CAST IRON	POLYETHYLENE	15"Ø	4	
ORD-1	J.R. SMITH	1070	DUCO CAST IRON	POLYETHYLENE	15"Ø	4	1
DSN-1	J.R. SMITH	1770-NB	DUCO CAST IRON	NICKEL BRONZE	-	4	2

(APPROVED EQUAL: JOSAM, ZURN, MIFAB)

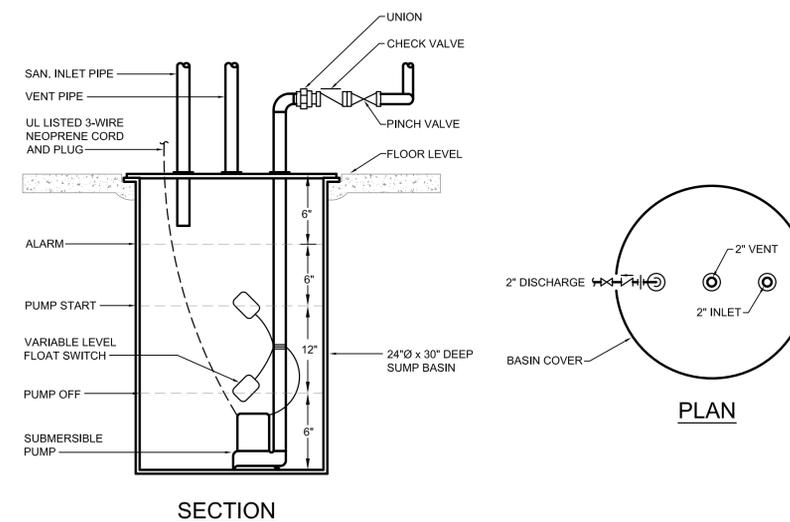
NOTES:  
1. INTERNAL 3" WATER DAM.



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



THERMOSTATIC MIXING VALVE DETAIL  
N.T.S.



SEWAGE EJECTOR DETAIL  
N.T.S.



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**DEMMER FORD  
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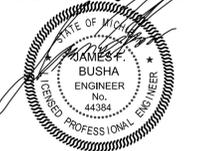
37300  
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**PLUMBING  
DETAILS &  
SCHEDULES**

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**MECHANICAL  
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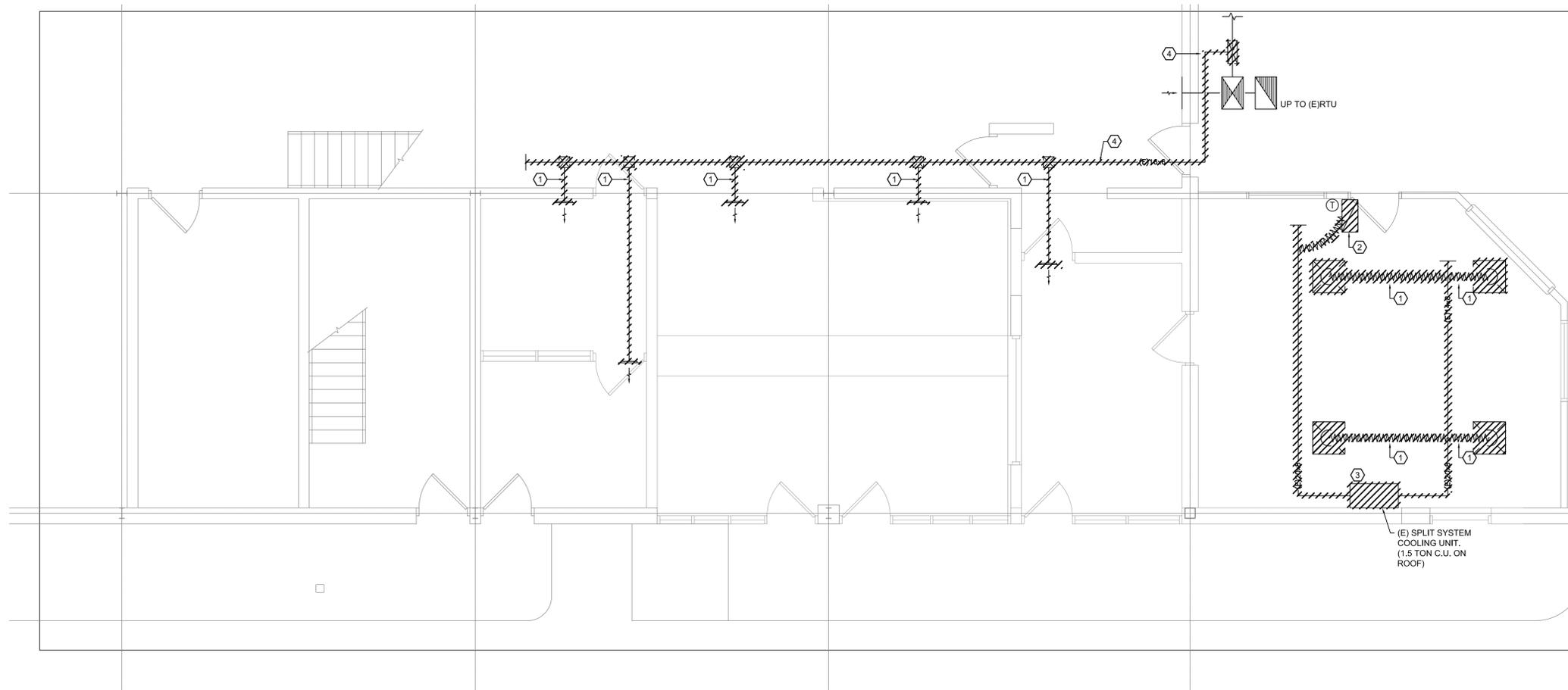
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**KEYED NOTES:**

1. REMOVE EXISTING SUPPLY AIR DUCTWORK AND DIFFUSERS AS SHOWN.
2. REMOVE RETURN GRILLE AND ASSOCIATED RETURN AIR DUCT. PATCH MAIN DUCT AIRTIGHT.
3. REMOVE EXISTING SPLIT SYSTEM COOLING UNIT AND ASSOCIATED DUCTWORK/CONDENSING UNIT ON ROOF.
4. DISCONNECT EXISTING 16x6 DUCT FROM EXISTING ROOFTOP UNIT. PATCH MAIN DUCT AIRTIGHT. REMOVE DUCTWORK DOWN CORRIDOR. REBALANCE EXISTING UNIT AS NEEDED.



**1 SALES & SERVICE FLOOR PLAN - MECHANICAL DEMOLITION**

1/4" = 1'-0"

mechanical electrical  
engineering consultants  
**MEEC**  
engineering consultants

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Plymouth, MI 48170  
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F 734-464-8017

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SHEET

**MD-101**



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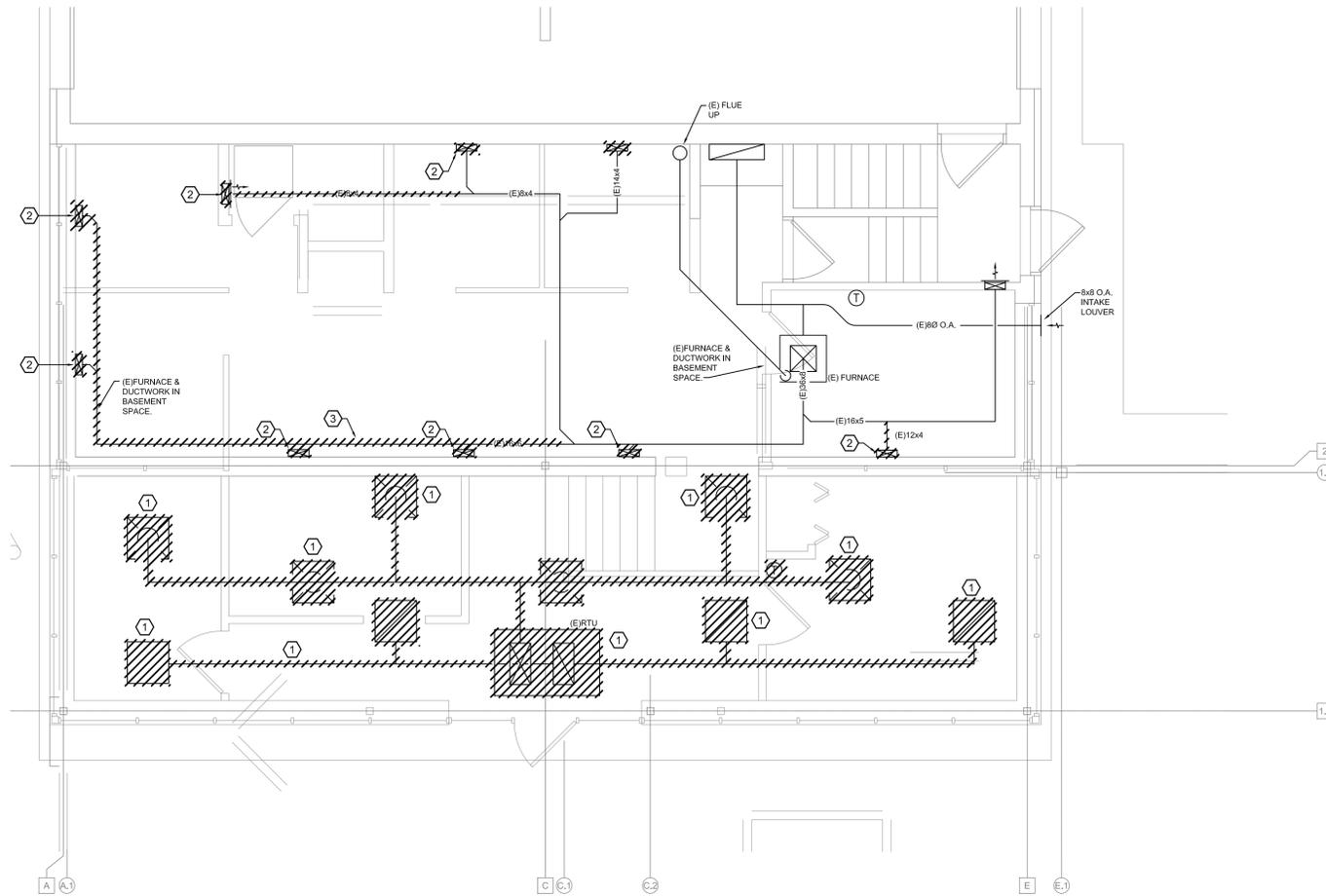
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**KEYED NOTES: (#)**

1. REMOVE EXISTING ROOFTOP UNIT ALONG WITH ALL ASSOCIATED DUCTWORK AND GRILLES.
2. REMOVE EXISTING FLOOR GRILLES AND ASSOCIATED DUCTWORK IN BASEMENT. PATCH MAIN DUCT AIRTIGHT.
3. REMOVE SECTION OF DUCTWORK FOR INSTALLATION OF NEW PLUMBING PIPING IN AREA. INSTALL NEW DUCTWORK SECTION LOWER UNDER NEW PIPING.



**1 USED CAR FLOOR PLAN - MECHANICAL DEMOLITION**

1/4" = 1'-0"



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**MECHANICAL NEW WORK PLAN**

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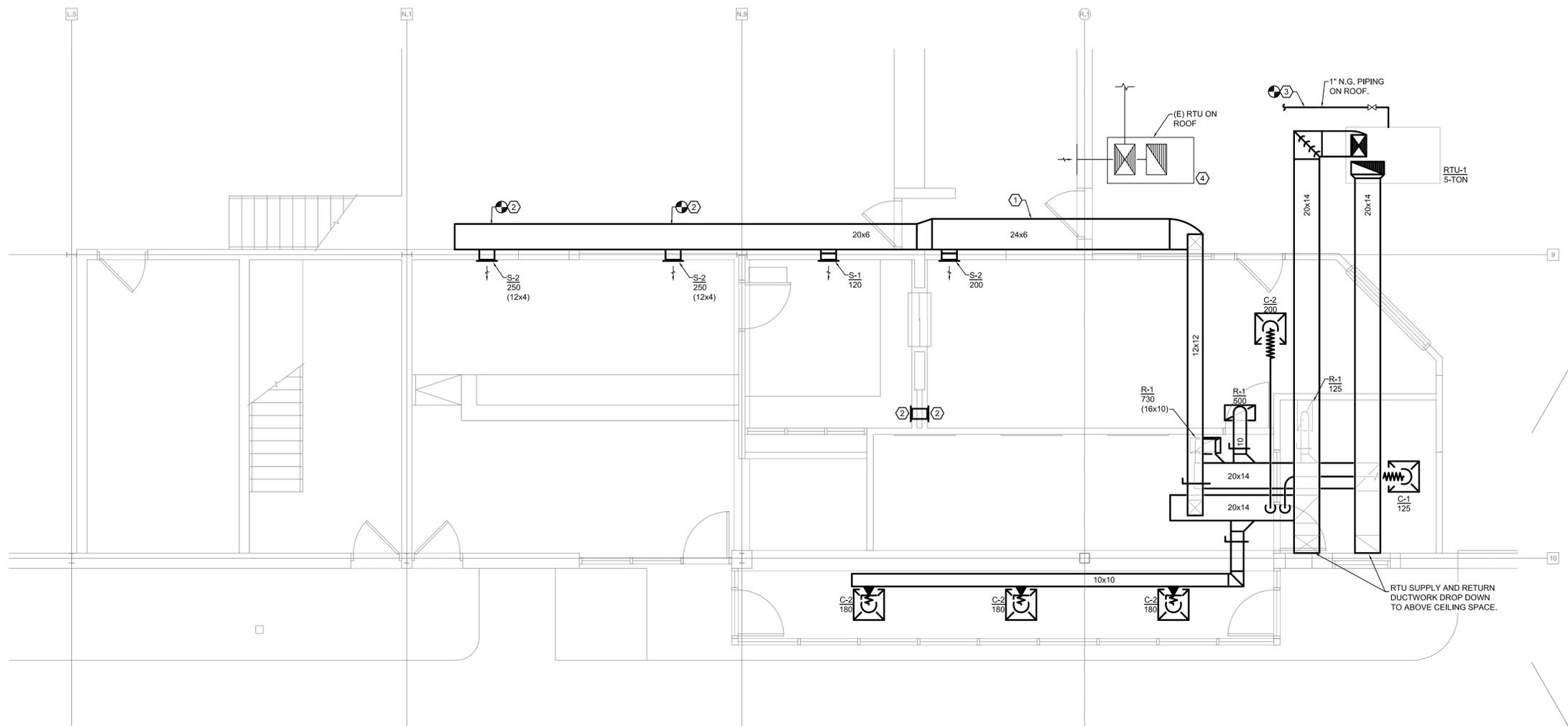
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**M-101**

**KEYED NOTES: (#)**

1. ROUTE NEW 24"x6" DOWN CORRIDOR IN PARTS DEPARTMENT. DUCT SHALL BE INSULATED. ROUTE TIGHT TO BEAM AND COLUMN LINE 9, AND COORDINATE WITH EXISTING STRUCTURAL BEAMS IN AREA.
2. 8"x8" TRANSFER GRILLE. (PRICE MOD# \*520 LOUVER FACE GRILLE EXPOSED ON WALL)
3. ROUTE NEW 1" NATURAL GAS PIPING TO NEW RTU-1. CONNECT TO EXISTING PIPING ON ROOF SERVING ABANDONED MAKE-UP AIR UNIT. INSTALL WITH GAS PIPE SUPPORTS AS NEEDED.
4. REBALANCE EXISTING UNIT AS NEEDED.

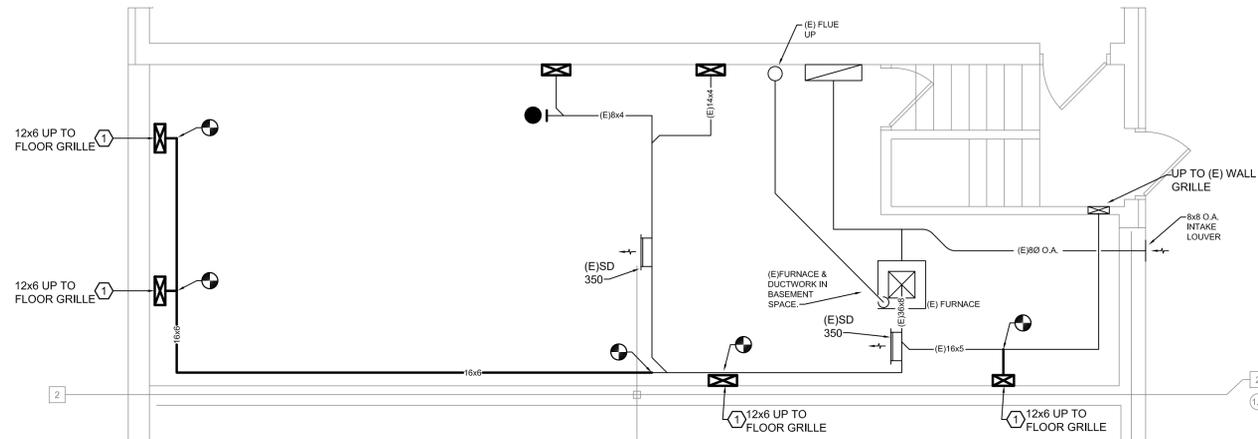


**1 SALES & SERVICE FLOOR PLAN - MECHANICAL NEW WORK**

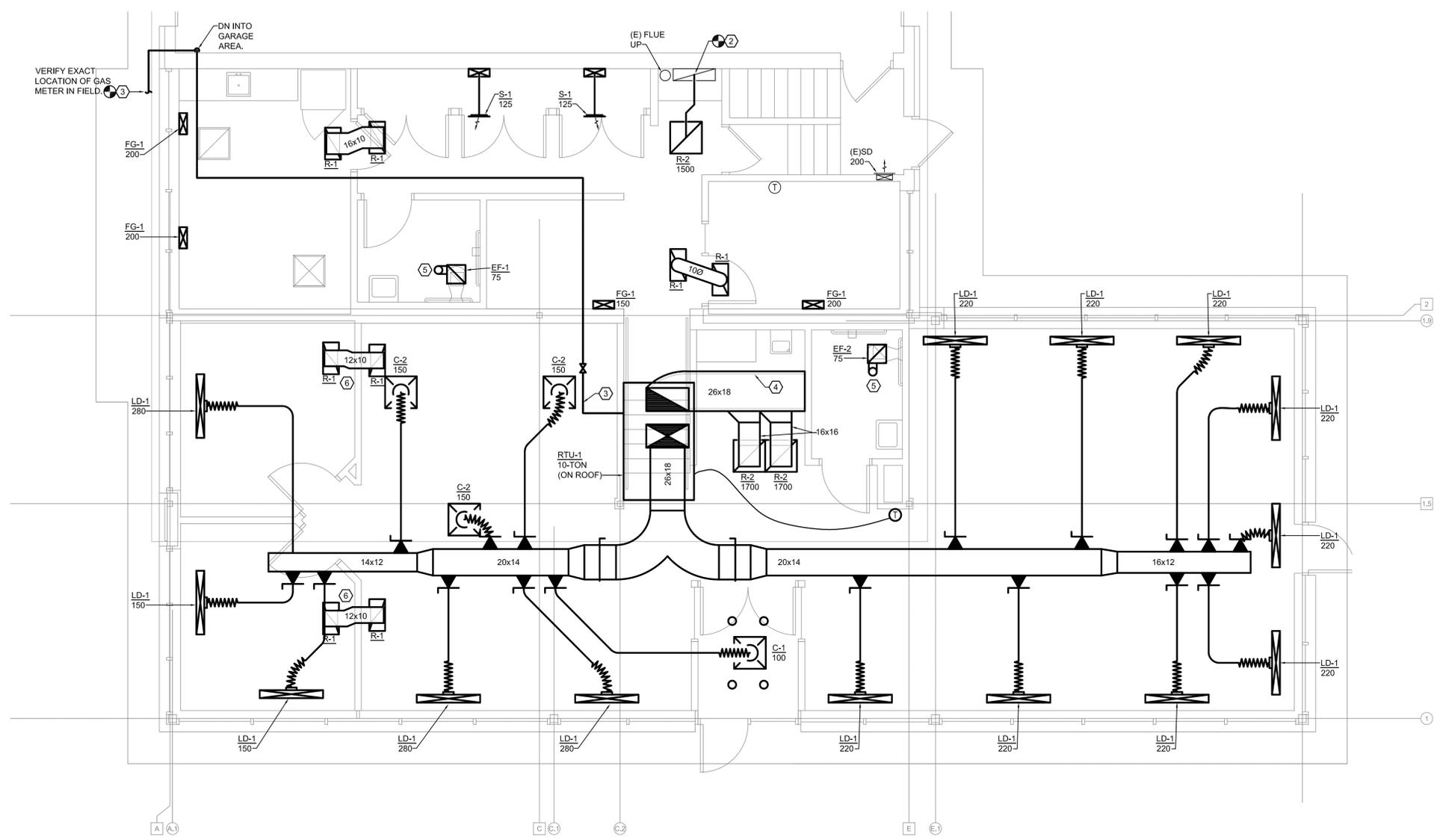
1/4" = 1'-0"

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**PLAN NORTH**  
**USED CAR BASEMENT PLAN - MECHANICAL NEW WORK**  
 1/4" = 1'-0"



**PLAN NORTH**  
**1 USED CAR FLOOR PLAN - MECHANICAL NEW WORK**  
 1/4" = 1'-0"

- KEYED NOTES:**
- UP TO NEW FLOOR GRILLE. RE-USE EXISTING FLOOR OPENING.
  - CONNECT NEW 20"x12" RETURN DUCT TO EXISTING RISER. ROUTE TO RETURN GRILLE IN CEILING.
  - ROUTE NEW 1-1/4" NATURAL GAS PIPING ON ROOF TO ROOFTOP UNIT. ROUTE DOWN AND CONNECT AT EXISTING GAS METER. INSTALL WITH GAS PIPING SUPPORTS.
  - 1" ACOUSTIC LINING.
  - 6" ROUND UP TO GOOSENECK ON ROOF.
  - RG-1 (TYP-2) WITH 12"x10" TRANSFER AIR DUCT.

prepared for:



prepared by:



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### ROOF TOP UNIT SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	AREA SERVED	SUPPLY FAN SECTION				MOTOR DATA			FILTER SECTION			POWER EXHAUST SECTION				HEATING SECTION		EVAPORATOR SECTION BASED ON 95°F AMBIENT						ELECTRICAL			OPERATING WEIGHT (LBS.)	ACCESSORIES		
				CFM	MIN. O.A. CFM	E.S.P. IN. WG.	FAN RPM	MAX BHP	# FANS	HP EACH	TYPE	SIZE	MERV	C.F.M.	E.S.P.	MOTOR R.P.M.	# FANS	HP	INPUT MBH	OUTPUT MBH	NOMINAL TONS	TOTAL MBH	SENSIBLE MBH	E.A.T. (°F)		L.A.T. (°F)		VOLTS PHASE			MCA	MOP
																								D.B.	W.B.	D.B.	W.B.					
RTU-1	TRANE	YSC120F3RH	USED CARS	4,000	600	0.80"	1504	2.3	1	3.8	PLEATED	2"	8	-	-	-	-	-	250	200	10	119	80	77	67	60	58	208/3	49.6	60	1370	1,2,3,4,7,8,9,10,12,13,16,17,18
RTU-2	TRANE	YSC060E3RH	SERVICE	2000	300	1.1"	1297	1.5	1	1	PLEATED	2"	8	-	-	-	-	-	130	104	5	63	41	77	67	61	58	208/3	27.4	40	900	1,2,3,4,7,8,9,10,12,13,17,18

(APPROVED EQUAL: CARRIER, TRANE, McQUAY, MAMMOTH, LENNOX, AAO)

**ACCESSORIES:**

- |   |                                 |  |   |
|---|---------------------------------|--|---|
| 1. UNIT CAPACITIES SHALL BE BASED ON A.R.I. CONDITIONS.                             | 6. FULLY MODULATING GAS HEAT.   | 11. STAINLESS STEEL HEAT EXCHANGER           | 16. CO2 SENSOR WITH DEMAND VENTILATION CONTROLS(DUCT MOUNTED) |
| 2. 7-DAY PROGRAMMABLE THERMOSTAT WITH FAN OCCUPIED PROGRAMMING AND AUTO CHANGE OVER | 7. ASHRAE 90.1-2007 COMPLIANT.  | 12. HINGED ACCESS DOORS                      | 17. UNIT MOUNTED R.A. SMOKE DETECTOR                          |
| 3. FACTORY MOUNTED NON-FUSED DISCONNECT SWITCH.                                     | 8. 12" PREFABRICATED ROOF CURB. | 13. U.L. LISTED                              | 18. CONVENIENCE OUTLET  |
| 4. 100% ENTHALPY "ECONOMIZER" CONTROLS.   | 9. FILTER/DRIER                 | 14. HAIL GUARDS                              |   |
| 5. 90% POWERED EXHAUST.   | 10. CRANKCASE HEATER            | 15. LONTALK, BACNET COMMUNICATIONS INTERFACE |   |

### GRILLES REGISTERS AND DIFFUSERS SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	NECK SIZE	DIFFUSER SIZE	FINISH	MOUNTING TYPE	CONSTRUCTION	ACCESSORY	NOTES
C-1	PRICE	6" / 12"x12" /SPD/31/B12	6" Ø	12"x12"	WHITE	LAY - IN	STEEL	O.B.D.	1
C-2	PRICE	8" / 24"x24" /SPD/31/B12	8" Ø	24"x24"	WHITE	LAY - IN	STEEL	O.B.D.	1
R-1	PRICE	12"x24" 80 /F/A/B12	SEE PLANS	12"x24"	WHITE	LAY-IN	ALUMINUM	-	1, 2
R-2	PRICE	24"x24" 80 /F/A/B12	SEE PLANS	24"x24"	WHITE	LAY-IN	ALUMINUM	-	1, 2
S-1	PRICE	7"x4" 920D /N/S/A/B12	7"x4"	8"x6"	WHITE	SURFACE	STEEL	DAMPER	1
S-2	PRICE	12"x4" 520D /F/A/B12	12"x4"	14.5"x8.5"	WHITE	SURFACE	STEEL	DAMPER	1
LD-1	PRICE	48"x2" SDB100 2-SLOT/B12	SEE PLANS	48"x3.5"	ALUMINUM	LAY-IN	ALUMINUM	SDA1100	1
FG-1	PRICE	6"x12" LBPH 25C/1000/B12	6"x12"	8"x14"	ALUMINUM	FLOOR	ALUMINUM	-	1, 3

(APPROVED EQUAL: TITUS, PRICE)

- NOTES:**  
 1. REFER TO REFLECTED CEILING PLAN FOR LOCATIONS. PROVIDE ALL ACCESSORIES NEEDED TO PROPERLY MOUNT DEVICES.  
 2. 1/2"x1/2"x1/2" ALUMINUM EGGRATE GRID.  
 3. RE-USE EXISTING FLOOR OPENING. CONTRACTOR MUST VERIFY FLOOR OPENING PRIOR TO ORDERING FLOOR GRILLES.

### EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	AREA SERVED	LOCATION	AIRFLOW (CFM)	EXTERNAL S.P.	FAN (HP)	ELECTRICAL	NOTES
EF-1	GREENHECK	SP-A110	TOILET ROOM	CEILING	75	0.25	1/15	115/1/60	1-3
EF-2	GREENHECK	SP-A110	TOILET ROOM	CEILING	75	0.25	1/15	115/1/60	1-3

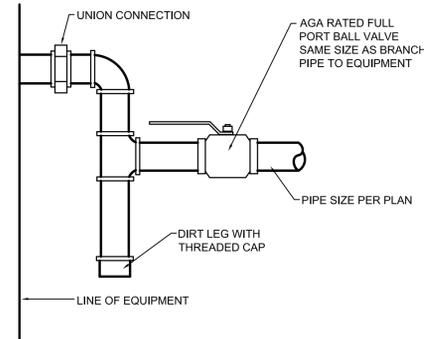
(APPROVED EQUAL: GREENHECK, ACME, COOK, PENN VENTILATOR)

- NOTES:**  
 1. FAN SHALL HAVE AMCA SEAL & BE U.L. CERTIFIED.  
 2. PROVIDE DUCT MOUNTED GRAVITY BACKDRAFT DAMPER.  
 3. INTERLOCKED WITH LIGHT SWITCH.

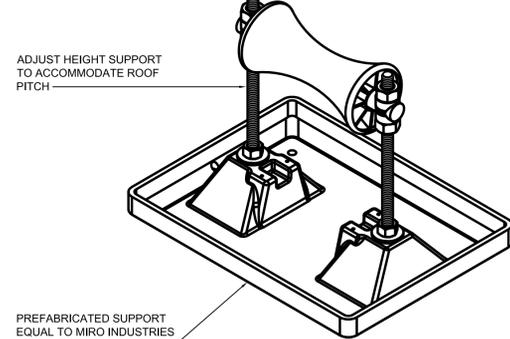
### OUTDOOR AIR CALCULATION SCHEDULE

UNIT TAG	ROOM TYPE	TOTAL AREA SQ. FT. (Az)	2009 MMC OCCUPANCY CLASSIFICATION	AREA OUTDOOR AIRFLOW RATE (Ra) CFM/SQ. FT.	AREA OUTDOOR AIR (Ra) x (Az) CFM	OCCUPANT DENSITY RATE #/1000 SQ. FT.	ZONE POPULATION (Pz=Az(#/1000)) PEOPLE	PEOPLE OUTDOOR AIRFLOW RATE (Rp) CFM/PERSON	OCCUPANT OUTDOOR AIR (Rp) x (Pz) CFM	BREATHING ZONE OUTDOOR AIR (Vbz=RpPz+RaAz) CFM	ZONE AIR DISTRIBUTION EFFECTIVENESS (Ez)	ZONE OUTDOOR AIRFLOW REQUIRED (Voz=Vbz/Ez) CFM	TOTAL OUTDOOR AIR REQUIRED WITHIN ZONE CFM
RTU-1	USED CAR SALES	1783	SALES	0.12	214	15	26.7	7.5	200.6	414.5	0.8	518.2	600
(E) FUR	OFFICE	96	OFFICE	.06	6	5	0.5	5	2.4	8.2	0.8	10.2	200
	CORRIDOR	213	CORRIDOR	0.06	13	0	0.0	0	0.0	12.8	0.8	16.0	
	BREAK ROOM	163	RECEPTION	0.06	10	30	4.9	5	24.5	34.2	0.8	42.8	
	BASEMENT	575	STORAGE	0.12	69	0	0.0	0	0.0	69.0	0.8	86.2	
RTU-2	SERVICE MANAGER	102	OFFICE	.06	6	5	0.5	5	2.6	8.7	0.8	10.8	300
	DISPATCH WARRANTY	320	OFFICE	.06	19	5	1.6	5	8.0	27.2	0.8	34.0	
	CASHIER	120	OFFICE	.06	7	5	0.6	5	3.0	10.2	0.8	12.8	
	SERVICE WRITE-UP	460	SALES	0.12	55	15	6.9	7.5	51.8	107.0	0.8	133.7	
	RETAIL PARTS	405	SALES	0.12	49	15	6.1	7.5	45.6	94.2	0.8	117.7	

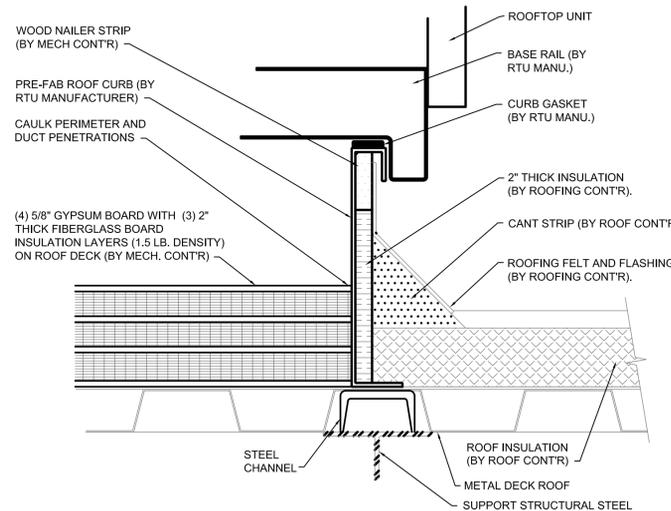
PER THE 2012 MICHIGAN MECHANICAL CODE TABLE 403.3 THE SPACES WITHIN THIS SCHEDULE MEET OR EXCEED THE REQUIREMENTS FOR OUTDOOR AIR FLOW RATE.



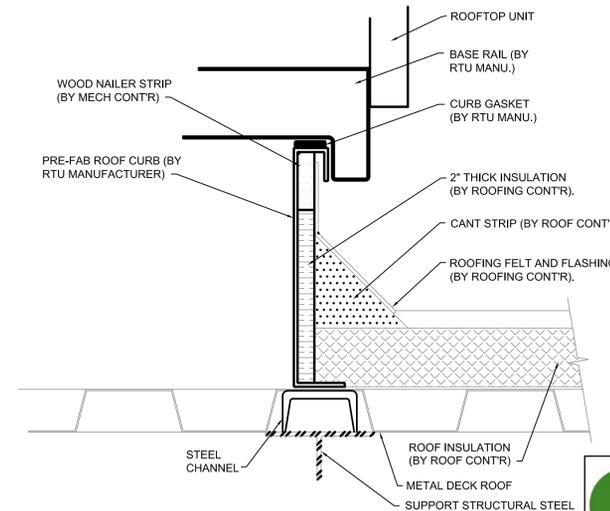
**GAS PIPE EQUIPMENT CONNECTION DETAIL**  
N.T.S.



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



**TYPICAL ROOFTOP UNIT CURB DETAIL WITH INSULATION(RTU-2)**  
N.T.S.



**TYPICAL ROOFTOP UNIT CURB DETAIL (RTU-1)**  
N.T.S.

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 MEEC JOB # 204-13-230

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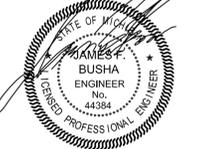
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**SHEET**

M-201

**GENERAL NOTES: MECHANICAL**

- 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.
- CONTRACTOR SHALL PRESENT CERTIFICATE TO THE OWNER THAT ALL APPLICABLE BUILDING PERMITS HAVE BEEN SECURED PRIOR TO STARTING ANY WORK, AND PROVIDE THE OWNER 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.
- MAKE ALL CONNECTIONS TO EXISTING SYSTEMS DURING DESIGNATED PERIODS UPON APPROVAL OF THE OWNER AND AT NO INCREASE IN CONTRACT SUM.
- EXISTING FACILITIES:
  - DO NOT INTERRUPT EXISTING UTILITIES UTILIZED BY THE OWNER EXCEPT AS SPECIFIED OR WHEN APPROVED IN WRITING, AND THEN ONLY AFTER TEMPORARY UTILITY SERVICES HAVE BEEN APPROVED AND PROVIDED. INTERRUPTIONS MUST BE SCHEDULED TO SUIT THE OWNER'S REQUIREMENTS.
  - VERIFY ALL EXISTING WORK, WHERE EXISTING CONNECTIONS ARE PARTIAL, PROVIDE ALL NECESSARY MATERIALS, LABOR AND EQUIPMENT REQUIRED TO MAINTAIN EXISTING WORK. IN ADDITION, MAINTAIN INTEGRITY OF THE EXISTING SYSTEMS, RECTIFY ANY CONTAMINATION, DEGRADATION OF CLEANLINESS OR DAMAGE TO THE EXISTING SYSTEMS TO THE SATISFACTION OF THE OWNER, PROVIDE ALL WORK SO REQUIRED AT NO INCREASE IN THE CONTRACTOR'S ORIGINAL PROPOSAL.
- COORDINATE EXACT LOCATION OF CONSTRUCTION TO PRECLUDE ANY INTERFERENCES WITH PLUMBING, LIGHTING AND/OR ELECTRICAL DUCTWORK, BUILDING EQUIPMENT, PROCESS EQUIPMENT AND OTHER CONSTRUCTION.
- PROVIDE LABOR, INCLUDING FIELD ERECTION AND SUPERVISION, MATERIALS, EQUIPMENT AND ANCILLARIES, 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.
- ALL CUTTING AND PATCHING THAT MAY BE NECESSARY FOR THE INSTALLATION OF THE MECHANICAL WORK SHALL BE PERFORMED AND REPAIRED BY THE TRADE WHOM NORMALLY PERFORMS THAT WORK AND PAID FOR BY THE MECHANICAL CONTRACTOR. NO CUTTING OF THE BUILDING STRUCTURAL SYSTEM SHALL BE PERFORMED WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT BEING PREVIOUSLY OBTAINED.
- THE MECHANICAL 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, AND/OR ANY APPARENT VIOLATIONS OF LOCAL OR STATE CODES, LAWS, ORDINANCES AND REGULATIONS, SHOULD ANY VIOLATIONS OR INTERFERENCES APPEAR AND DEPARTURE FROM THE INTENT OF THE CONTRACT DOCUMENTS IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO ENTERING INTO A CONTRACT WITH THE OWNER, FAILURE TO PROVIDE THE ARCHITECT WITH THE AFOREMENTIONED 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.
- THE DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL LOCATIONS AND ARRANGEMENTS OF ALL THE EQUIPMENT AND PIPING, THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS BUILDING CONSTRUCTION AND ALL OTHER WORK WILL PERMIT. DO NOT SCALE DRAWINGS FOR EXACT MEASUREMENTS.
- DEMOLITION OF MECHANICAL EQUIPMENT SHALL INCLUDE ALL EXISTING PIPING, VALVES, CONTROLS, SUPPORTS, FLUES AND DEPARTURES. ALL OTHER ITEMS ARE NOT REQUIRED FOR THE PROPER OPERATION OF THE REVISED SYSTEM. REMOVE, RECONNECT, CAP, PLUG AND REPLACE EXISTING PIPING AND DUCTWORK.
- 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: PLUMBING AND PIPING**

- ALL PIPING SHALL BE CONCEALED UNLESS OTHERWISE NOTED, EXPOSING OF ANY PIPING MUST HAVE APPROVAL OF THE ARCHITECT.
- PROVIDE BRANCH LINE SHUT-OFF VALVES ON DOMESTIC WATER PIPING EACH PLUMBING FIXTURE.
- THE PLUMBING AND PIPING SYSTEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL STATE AND LOCAL PLUMBING CODES, THE PLUMBING AND PIPING 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.
- PIPING SHALL BE AS FOLLOWS:
  - SANITARY AND VENT PIPING:
    - ALL 1-1/2" AND LARGER WASTE AND VENT PIPING ABOVE AND BELOW GROUND SHALL BE STANDARD WEIGHT CAST IRON SOIL PIPE WITH NO-HUB FITTINGS AND HEAVY DUTY BANDS OR SCHEDULE 40 PVC PIPE & CEMENTED FITTINGS WHERE LOCAL CODE PERMITS.
    - 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.
  - DOMESTIC WATER PIPING:
    - 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 SIL-FOS SOLDER OR AN APPROVED NON-TOXIC SOLDER. MECHANICAL TYPE FITTINGS EQUAL TO "PROGRESS" OR "APOLLO EXPRESS" ARE APPROVED IN LIEU OF SOLDERED FITTINGS.
    - ALL UNDERGROUND PIPING SHALL BE TYPE "K" COPPER OR PEK. PIPE FITTINGS ARE NOT ALLOWED BELOW FLOOR SLAB.
  - GAS PIPING:
    - GAS PIPING SHALL BE SCHEDULE 40, BLACK STEEL WITH THREADED OR WELDED FITTINGS AS REQUIRED. PROVIDE SHUT-OFF COCKS ON ALL OUTLETS WHERE SHOWN.
    - VALVES SHALL NOT BE LOCATED IN ANY AIR PLENUM, PORTIONS OF A GAS PIPING SYSTEM INSTALLED IN CONCEALED LOCATIONS SHALL NOT HAVE UNIONS, TUBE FITTINGS, OR RUNNING THREADS.
    - CORRUGATED STAINLESS STEEL TUBING MAY ALSO BE USED WHERE APPROVED BY LOCAL CODE. CONTRACTOR SHALL SUPPLY COMPLETE SYSTEM DESIGN DRAWING INDICATING LAYOUT, PIPE SIZING, PRESSURE DROP CALCULATIONS AND A COPY OF THE CURRENT MANUFACTURER'S INSTALLATION GUIDE. CORRUGATED STAINLESS STEEL TUBING SHALL BE MANUFACTURED FROM ASTM A240, TYPE 304 STAINLESS STEEL WITH A MINIMUM WALL THICKNESS OF 0.010". THE SYSTEM SHALL COMPLY WITH ANSI LC-1. FITTINGS SHALL BE MANUFACTURED FROM 300 BRASS ASTM B316 AND INCORPORATE A DOUBLE WELD FLARE FOR GAS TIGHT SEAL. TUBING SHALL HAVE A UV RESISTANT POLYETHYLENE JACKET THAT ALSO MEETS ASTM E84 FOR SMOKE AND FLAME. TUBING SYSTEM SHALL BE INSTALLED PER LOCAL CODE BY A MANUFACTURE CERTIFIED INSTALLER.

**D. VALVES:**

- BALL VALVES SHALL BE TWO PIECE FULL PORT BRONZE BALL VALVES WITH STAINLESS STEEL TRIM, THE SEATS WITH 316 STAINLESS STEEL BALL AND STEM, THREADED BODY PACK NUT DESIGN WITH ADJUSTABLE STEM PACKING WITH THREADED OR SOLDERED ENDS, RATED FOR 150 PSIG SWP AND 600 PSIG CWP.
- CHECK VALVES SHALL BE SWING CHECK WITH BRONZE DISC, CLASS 150, ASTM B82, Y PATTERN DESIGN WITH THREADED OR SOLDERED ENDS, RATED FOR 300 PSIG CWP.
- GATE VALVES SHALL BE CLASS 150 RISING STEM WITH BRONZE BODY, WEDGE AND BONNET, COPPER-SILICONE BRONZE STEM, SCREW IN BONNET WITH THREADED ENDS, RATED FOR 300 PSIG CWP.
- GAS VALVE SHALL BE LUBRICATED TYPE CAST IRON OR U.L. LISTED TWO-PIECE BRONZE BALL VALVE WITH RPTFE SEALS AND SEAT.

**E. PIPING INSULATION:**

- DOMESTIC HOT, COLD & HOT WATER RETURN WATER PIPING SHALL BE INSULATED WITH MINIMUM 1" THICK FIBERGLASS INSULATION WITH A FIRE RETARDANT JACKET, HAVING AN AVERAGE R VALUE OF 3.45. COLD WATER PIPING INSULATION SHALL BE PROVIDED WITH A VAPOR BARRIER. PROVIDE PREFORMED SECTIONS WITH PVC COVERS AT ALL FITTINGS.
- PIPE INSULATION SHALL HAVE A FLAME SPREAD AND SMOKE DENSITY RATING NOT EXCEEDING 25/50, AS TESTED PER ASTM STANDARD E-84.
- PIPING SHALL BE SUPPORTED FROM HANGERS AT AN ADEQUATE DISTANCE WITH SUPPORTING HANGER RODS FASTENED TO THE BUILDING FRAMING WHENEVER POSSIBLE.
- ISOLATE PIPING AND EQUIPMENT FROM THE BUILDING STRUCTURE WITH INSULATING HANGERS AND FITTINGS AS REQUIRED TO PREVENT GALVANIC CORROSION OF THE BUILDING PIPING SYSTEMS.
- DOMESTIC WATER HEATERS SHALL BE EQUIPPED WITH A.S.M.E. RATED TEMPERATURE AND PRESSURE RELIEF VALVES PIPED TO FLOOR, PROVIDE DRAIN PANS BELOW ALL UNITS LOCATED ABOVE CEILINGS AND IN CABINETS. ROUTE DRAIN LINE TO NEAREST FLOOR DRAIN OR INDIRECT WASTE UNDER SINK.
- 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. CONTRACTOR SHALL PROVIDE A WEATHERPROOF SEAL FOR PIPING PENETRATING EXTERIOR WALLS AND SHALL PROVIDE A WATER TIGHT SEAL, SIMILAR TO "LINK SEAL", FOR ALL PIPING PENETRATING BASEMENT WALLS.
- FURNISH AND INSTALL ISOLATION VALVES AT ALL SERVICE POINTS OR EQUIPMENT CONNECTIONS. PROVIDE VACUUM BREAKERS AND ANTI-SIPHON FITTINGS ON WATER PIPING SYSTEMS BEFORE EQUIPMENT CONNECTIONS, AND AT ALL HOSE END SPOIGTS AND HOSE CONNECTIONS, ETC. INSTALL REDUCED PRESSURE BACKFLOW PREVENTERS ON ALL MAKE-UP WATER LINES TO MECHANICAL EQUIPMENT AND ON BUILDING DOMESTIC WATER SERVICE WHERE LOCAL CODE REQUIRES. THE INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH LOCAL CODES AND/OR AUTHORITIES FOR THE PROTECTION OF THE WATER SUPPLY SYSTEM, INSTALL STRAINER UP STREAM OF REDUCED PRESSURE BACKFLOW PREVENTER.
- CLEANING OF WATER PIPING
  - BEFORE BEING PLACED IN SERVICE, ALL NEW DOMESTIC WATER DISTRIBUTION LINES SHALL BE CHLORINATED. AFTER THE PRESSURE TEST, AND BEFORE CHLORINATION, ALL DIRT AND FOREIGN MATTER SHALL BE REMOVED BY A THOROUGH FLUSHING WITH CLEAN POTABLE WATER THROUGH THE LINES, DISCHARGING THE FLOW FROM THE END OF THE LINES UNTIL DIRTY WATER DOES NOT APPEAR AT THE POINTS OF OUTLET.
  - THE SYSTEM SHALL BE THOROUGHLY STERILIZED USING THE PROCEDURE REQUIRED BY THE AUTHORITIES HAVING JURISDICTION.

**11. IDENTIFICATION:**

- TAG ALL VALVES WITH STAMPED OR ENGRAVED BRASS TAGS AND PROVIDE A COMPLETE VALVE CHART INDICATING LOCATION, FUNCTION AND EQUIPMENT SERVED. CHART SHALL BE TYPED AND MOUNTED IN A GLAZED FRAME.
  - LABEL ALL PIPING SYSTEMS WITH MANUFACTURED SELF ADHESIVE OR PRE-TENSIONED PIPE MARKERS. MARKERS SHALL INDICATE SERVICE AND DIRECTION OF FLOW, MARK PIPE NEAR VALVES, BRANCH CONNECTIONS, PENETRATIONS, ACCESS DOORS AND NEAR MAJOR PIECES OF EQUIPMENT. MARKER SPACING SHALL NOT EXCEED 50'.
- THE PLUMBING AND PIPING CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER PITCH OF PIPE FOR DRAINAGE AND AIR VENTING OF PIPING SYSTEMS AND SHALL PROVIDE DRAINS TO RECEIVE THE PIPING SYSTEMS CONTENTS OF INDIRECT WASTE AND CONDENSATE DRAINAGE FROM ALL MECHANICAL DRAINS.
  - THE PLUMBING AND PIPING CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND PROVIDE ROUGH-INS FOR ALL EQUIPMENT FURNISHED BY OTHER CONTRACTORS. AFTER ALL EQUIPMENT HAS BEEN INSTALLED BY OTHER CONTRACTORS, THE PLUMBING AND PIPING CONTRACTOR SHALL MAKE ALL TAPE SIMILAR TO VENTURE TAPE 1/2" CW OR APPROVED EQUAL. INSTALL ALL JACKETING PER MANUFACTURE'S RECOMMENDATIONS.
  - THE PLUMBING AND 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 BETWEEN 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 INTIAL DESIGN INTENT OF THE CONSTRUCTION BID DOCUMENTS IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO ENTERING INTO A CONTRACT WITH THE OWNER, FAILURE TO PROVIDE THE ARCHITECT WITH THE AFOREMENTIONED 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.
  - THE CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT FURNISHED BY THIS CONTRACTOR WITH THE ELECTRICAL CONTRACTOR.
  - FURNISH AND INSTALL AN INDIVIDUAL COMBINATION PRESSURE BALANCING AND THERMOSTATIC CONTROL VALVE THAT CONFORMS TO A.S.S.E. # 1070 WITH TEMPERED WATER PIPING CONNECTIONS FOR ALL ACCESSIBLE PLUMBING FIXTURES, SET THE VALVE FOR A MAXIMUM OF 110°F. IN ADDITION, ALL FIXTURES LOCATED IN THE FOLLOWING OCCUPANCIES REQUIRE THERMOSTATIC CONTROL VALVES:
    - ELEMENTARY SCHOOLS
    - CHILD CARE CENTERS
    - CHILD CARE CENTERS
    - NURSERIES
    - ADULT GROUP HOMES
    - ADULT CONGREGATE HOMES
  - THE CONTRACTOR SHALL SUBMIT EQUIPMENT SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW PRIOR TO INSTALLATION OF ANY OF THE FOLLOWING EQUIPMENT:
    - PLUMBING FIXTURES
    - PLUMBING VALVES, HANGERS & ACCESSORIES.
    - PLUMBING INSULATION
    - FLOOR DRAINS, CLEANOUTS, ROOF DRAINS, ETC.

- 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.
- PROVIDE PRE-MANUFACTURED SUPPORTS EQUAL TO MIRO INDUSTRIES 3-R, 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.
- THE CONTRACTOR SHALL COORDINATE LOCATIONS OF HIS EQUIPMENT AND WORK WITH OTHER BUILDING TRADES TO AVOID ANY INTERFERENCES BETWEEN HIS WORK AND THE WORK OF OTHER TRADES.
- ANY CUTTING AND/OR PATCHING, THAT MAY BE REQUIRED FOR THE INSTALLATION OF THE PLUMBING AND PIPING SYSTEMS, SHALL BE PERFORMED BY THE ARCHITECTURAL 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.
- WATER HAMMER ARRESTORS OR 15" HIGH AIR CHAMBERS SHALL BE INSTALLED ON BOTH COLD AND HOT WATER LINES. INSTALL IN AN UPRIGHT POSITION AT ALL QUICK CLOSING VALVES, SOLENOIDS, AND PLUMBING FIXTURES. MANUFACTURED WATER HAMMER ARRESTORS SHALL BE SIOUX CHEF 650680 SERIES PISTON TYPE LOCATED, SIZED, AND INSTALLED IN ACCORDANCE WITH PLUMBING AND DRAINAGE INSTITUTE STANDARD NO.WH201.
- THE CONTRACTOR SHALL COORDINATE HIS ROUGH-IN WORK WITH THE DIMENSIONED DRAWINGS FURNISHED BY THE FOOD SERVICE EQUIPMENT CONTRACTOR.
- SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL NEW PLUMBING FIXTURES.
- COORDINATE ALL NEW LOCATIONS, SIZES AND ELEVATIONS OF SLEEVES THROUGH WALL SLABS AND FOUNDATIONS WITH STRUCTURAL DRAWINGS AND EXISTING FIELD CONDITIONS.
- 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.
- CONTRACTOR SHALL MAINTAIN ADEQUATE CLEARANCES (PER N.E.C.) ABOVE AND AROUND ANY NEW ELECTRICAL PANELS, EQUIPMENT AND TRANSFORMERS WHEN ROUTING OVERHEAD DOMESTIC WATER AND STORM PIPING.
- FAUCETS AND PLUMBING FIXTURES SHALL BE OF WATER CONSERVATION TYPE AND COMPLY WITH THE STATE ENERGY STANDARDS.

**GENERAL NOTES: HVAC SYSTEM**

- EXISTING HVAC UNITS, MAKEUP AIR UNITS, DUCTWORK, DIFFUSERS, GRILLES, REGISTERS, ETC. SHALL REMAIN UNLESS OTHERWISE NOTED.
- SHEET METAL DUCTWORK CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "SMACNA" STANDARDS, NFPA 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 TIGHT AND SHALL NOT ALLOW MORE THAN 10% AIR LEAKAGE THROUGHOUT THE ENTIRE SYSTEM.
- ALL DUCTWORK SHALL BE CONCEALED, EXPOSING OF ANY DUCTWORK MUST HAVE PRIOR APPROVAL OF THE ARCHITECT.
- THE CONTRACTOR HAS THE OPTION OF REVISING DUCTWORK SIZES TO OTHERS OF EQUIVALENT CROSS-SECTIONAL AREA SHOULD SPACE PERMIT.
- PROVIDE VOLUME DAMPERS IN THE DUCT SYSTEMS WHERE SHOWN ON PLANS AND WHERE REQUIRED TO INSURE PROPER SYSTEM BALANCING. SPIN-IN FITTINGS WITH MANUAL VOLUME DAMPERS MAY BE USED.
- PROVIDE FLEXIBLE DUCT CONNECTORS ON ALL DUCT CONNECTIONS TO AIR HANDLING EQUIPMENT.
- 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 RATED AMPACITY, MOTOR OPERATING AMPACITY, ENTERING AND DISCHARGE AIR TEMPERATURES, AIR QUANTITIES AT ALL DIFFUSERS AND GRILLES, A DIAGRAM OF THE AIR HANDLING SYSTEM INSTALLED, AND RECOMMENDATIONS TO CORRECT ANY DEFICIENCIES. THE AIR BALANCE REPORT SHALL BE PERFORMED BY AN INDEPENDENT N.E.B.B. CERTIFIED AIR BALANCE CONTRACTOR.
- DUCTWORK INSULATION:
  - ALL SUPPLY DUCTWORK INSIDE OF THE BUILDING, IN NON-CONDITIONED SPACES INCLUDING SERVICE BAY, SHALL BE INSULATED WITH MINIMUM 3/8" R-VALUE DUCT WRAP.
  - ALL DUCTWORK EXPOSED OUTSIDE OF THE BUILDING SHALL BE SEALED AND COVERED WITH 2" THICK, 3# DENSITY, FIBERGLASS BOARD INSULATION WITH F.S.K. FACING AND A MINIMUM R-VALUE OF 6.0. ALL INSULATION SHALL BE JACKED WITH A UL LISTED INSULATION JACKETING TAPE SIMILAR TO VENTURE TAPE 1/2" CW OR APPROVED EQUAL. INSTALL ALL JACKETING PER MANUFACTURE'S RECOMMENDATIONS.
  - DUCTWORK INSULATION SHALL HAVE A FLAME SPREAD/SMOKE DENSITY RATING NOT EXCEEDING 25/50 PER NFPA PAMPHLET 90A.
- VIBRATION ABSORBING SUPPORTS SHALL BE INSTALLED AS REQUIRED ON ALL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION AND NOISE TO THE STRUCTURE. PROVIDE VIBRATION ISOLATION PER A.S.H.R.A.E. STANDARDS.
- ALL MECHANICAL EQUIPMENT LOCATED ON THE ROOF SHALL BE PROPERLY SUPPORTED WITH PRE-FABRICATED CURBS, EQUIPMENT RAILS, OR OTHER MEANS AS APPROVED BY THE ARCHITECT.
- SMOKE DETECTORS AND/OR HEAT DETECTORS (SYSTEMS 2000 CFM AND OVER):
  - WHERE REQUIRED BY LOCAL CODE, FURNISH AND INSTALL IN THE MAIN RETURN AIR DUCT OF EACH AIR HANDLING UNIT, A SELF-CONTAINED, IONIZATION-TYPE DUCT SMOKE DETECTOR DESIGNED TO MOUNT TO A DUCT USING SAMPLING TUBES ACROSS THE DUCT TO SENSE THE AIR. UNIT SHALL BE MANUALLY RESET AND SHALL HAVE A SET OF CONTACTS FOR FAN SHUT DOWN AS WELL AS FOR REMOTE ALARMING. SMOKE DETECTORS SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED EDITIONS OF NFPA 72 AND THE INTERNATIONAL MECHANICAL CODE.
  - SMOKE DETECTORS SHALL BE NATIONAL TYPE & SIGNAL MODEL #3041RCD24VDE WITH SAMPLING TUBES AND AUXILIARY CONTACTS FOR FAN SHUT-DOWN. SMOKE DETECTORS SHALL BE CONNECTED TO THE BUILDING FIRE ALARM SYSTEM, IF ONE IS IN PLACE. IF NOT, THE DETECTOR SHALL BE PROVIDED WITH A VISIBLE AND AUDIBLE ANNUNCIATOR LOCATED IN A CONSTANTLY ATTENDED LOCATION. ACCESS SHALL BE PROVIDED TO SMOKE DETECTORS FOR INSPECTION AND MAINTENANCE.

**12. HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS ARE DESIGNED ON THE FOLLOWING CONDITIONS:**

WINTER: INSIDE TEMP. 72 °F,  
OUTSIDE TEMP. 1.4 °F, & 15 MPH WIND.

SUMMER: INSIDE TEMP. 78 °F, D.B. & 50% R.H.  
OUTSIDE TEMP. 90.3 °F, D.B. & 73.8 °F, W.B.

- SHEET METAL RUN-OUTS AND FLEX DUCT CONNECTIONS TO AIR DISTRIBUTION DEVICES SHALL BE THE SAME SIZE AS THE DUCT NECK, UNLESS OTHERWISE NOTED.

- DUCTS CONNECTING TO HVAC EQUIPMENT SHALL BE THE SAME SIZE AS EQUIPMENT DUCT CONNECTIONS, UNLESS OTHERWISE NOTED.
- FIRE DAMPERS SHALL BE DYNAMIC STYLE WITH TYPE-B BLADES COMPLETELY OUT OF THE AIRSTREAM. DAMPERS SHALL MEET ALL NFPA REQUIREMENTS AND BE UL-655 LISTED.
- 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.
- THE CONTRACTOR SHALL SUBMIT EQUIPMENT SHOP DRAWINGS TO THE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION OF ANY OF THE FOLLOWING:
  - HVAC UNITS
  - ROOF AND/OR CEILING EXHAUST FANS
  - AIR DISTRIBUTION DEVICES
  - AIR DUCT ACCESSORIES

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. REFER TO OTHER TRADES BID DOCUMENTS.

- 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.
- CONTRACTOR SHALL PROVIDE BUILDING EQUIPMENT WITH OPERATING AND MAINTENANCE MANUALS FOR ALL H.V.A.C. EQUIPMENT UPON COMPLETION OF PROJECT.
- MECHANICAL CONTRACTOR SHALL TEST ALL CONTROL ELEMENTS, VERIFY CALIBRATION OF ALL CONTROL DEVICES AND MAKE ADJUSTMENTS AS REQUIRED AT COMPLETION OF PROJECT.
- COORDINATE NEW DUCTWORK WITH BUILDING STRUCTURAL CONDITIONS, EQUIPMENT MANUFACTURER RECOMMENDATIONS AND ALL OTHER TRADES TO AVOID INTERFERENCES.
- PROVIDE ACCESS AROUND ALL NEW EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS.
- ALL MECHANICAL RELATED CORING THROUGH WALLS AND FLOORS SHALL BE BY MECHANICAL CONTRACTOR. SEAL ALL PENETRATIONS THROUGH RATED WALLS AND FLOORS WITH U.L. RATED CAULK SEALANT IN ACCORDANCE WITH THE SPECIFICATION REQUIREMENTS.
- ALL DUCTWORK SHALL BE ROUTED AS HIGH AS POSSIBLE ABOVE CEILINGS OR IN ARCHITECTURAL SOFFITS, WHERE INDICATED ON DRAWINGS.
- COORDINATE ROUTING WITH ARCHITECTURAL AND STRUCTURAL TRADES TO AVOID INTERFERENCES.
- ALL FLEXIBLE DUCTWORK SHALL BE LIMITED TO 5'-0" MAXIMUM LENGTH FROM HARD DUCT CONNECTION TO ROUND NECK SUPPLY AIR DIFFUSERS, FLEX DUCT APPROVED ABOVE ACCESSIBLE CEILING ONLY.
- CONTRACTOR SHALL MAINTAIN ADEQUATE CLEARANCES (PER N.E.C.) ABOVE AND AROUND ANY ELECTRICAL PANELS, EQUIPMENT AND TRANSFORMERS WHEN ROUTING DUCTWORK.

**GENERAL NOTES: FIRE PROTECTION SYSTEM (EXISTING)**

- THE FIRE PROTECTION / SPRINKLER SYSTEM ARE EXISTING TO BE RECONFIGURED TO ACCOMMODATE THE NEW FLOOR PLANS. ALL RELOCATIONS OF EXISTING HEADS AND PIPING, AS REQUIRED TO ACCOMMODATE ARCHITECTURAL MODIFICATIONS, SPRING LIGHTING AND DUCTWORK AS INDICATED ON THE DRAWINGS, SHALL BE IN ACCORDANCE WITH THE OWNER'S FIRE INSURANCE UNDERWRITER'S REQUIREMENTS, THE REQUIREMENTS OF N.F.P.A., THE LOCAL FIRE MARSHAL, AND THE ARCHITECT.
- BEFORE STARTING ANY WORK ON THE SPRINKLER SYSTEM, THE CONTRACTOR SHALL SUBMIT TO THE OWNER A COMPLETE SET OF ENGINEERED REPRODUCIBLE SPRINKLER PLANS BEARING THE APPROVAL OF THE OWNERS FIRE INSURANCE UNDERWRITER, THE ARCHITECT, ENGINEER AND THE LOCAL FIRE MARSHAL.
- THE EXISTING AND NEW SPRINKLER SYSTEMS SHALL BE TESTED AT A WATER PRESSURE OF 200 PSIG FOR A PERIOD OF TWO (2) HOURS IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE AND SHALL HAVE ALL FACILITIES FOR PROPER DRAINAGE AND ANY NECESSARY TEST VALVES, ORIFICES, OR EQUIPMENT REQUIRED BY ALL AUTHORITIES HAVING JURISDICTION.
- UPON COMPLETION OF THE SYSTEM AND ON POSSESSION OF PREMISES, THE CONTRACTOR SHALL SUBMIT A WRITTEN CERTIFICATE TO THE LANDLORD FROM THE UNDERWRITER STATING THAT THE SYSTEM WAS INSPECTED AND APPROVED.
- THE FIRE PROTECTION CONTRACTOR SHALL GUARANTEE ALL WORK INSTALLED UNDER HIS CONTRACT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS, FOR A PERIOD OF ONE (1) 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.
- ALL SPRINKLER HEADS INSTALLED IN LAY-IN CEILINGS SHALL BE SEMI-RECESSED, CENTERED IN THE CEILING, AND THE CEILING SHALL BE FULLY CONCEALED TYPE. ALL SPRINKLER HEAD COVERS SHALL BE WHITE. PROVIDE A PLAN INDICATED THE SPRINKLER HEAD LOCATIONS TO THE ARCHITECT FOR FINAL PLACEMENT APPROVAL.
- ANY CUTTING AND PATCHING, THAT MAY BE REQUIRED FOR THE INSTALLATION OF THE FIRE PROTECTION SYSTEM, SHALL BE DONE AND REPAIRED BY THE FIRE PROTECTION CONTRACTOR. NO CUTTING OF THE STRUCTURAL SYSTEM SHALL BE DONE WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT BEING PREVIOUSLY OBTAINED.

prepared for:



prepared by:

**UNDER THE SUN  
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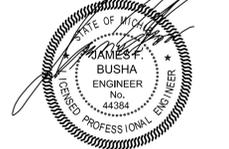
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**project title****DEMMER FORD  
RENOVATIONS**

37300  
MICHIGAN AVE.  
WAYNE, MI

**sheet title****SPECIFICATION**

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**seal & sign****project number**

13003

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PROGRESS 06-06-14

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SHEET

MP-301



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### ELECTRICAL SYMBOL LIST

	24" x 48" FLUORESCENT LUMINAIRE
	24" x 24" FLUORESCENT LUMINAIRE
	WALL MOUNTED LUMINAIRE, HEIGHT AS NOTED
	SINGLE FACE EXIT SIGN, ARROWS AS INDICATED
	DOUBLE FACE EXIT SIGN, ARROWS AS INDICATED
	BATTERY OPERATED EMERGENCY LIGHT
	EXIT/EMERGENCY COMBINATION UNIT
	EMERGENCY LIGHT
	NIGHT LIGHT
	SURFACE MOUNTED LIGHT FIXTURE
	PENDANT MOUNTED LIGHT FIXTURE
	RECESSED DOWNLIGHT
	FLUORESCENT STRIP LIGHT
	WALL BRACKET FIXTURE
	WALL SCONCE LUMINAIRE, HEIGHT AS NOTED
	SITE LIGHTING BOLLARD
	OUTDOOR LIGHTING POLE & LUMINAIRE
	SINGLE POLE TOGGLE SWITCH, +48" A.F.F.
	THREE-WAY TOGGLE SWITCH, +48" A.F.F.
	FOUR-WAY TOGGLE SWITCH, +48" A.F.F.
	KEY OPERATED SWITCH, +48" A.F.F.
	WALL DIMMER, INCANDESCENT OR FLUORESCENT, AS REQUIRED, WATTAGE REQUIRED EQUAL TO CONNECTED LOAD PLUS 25 PERCENT, +48" A.F.F.
	SWITCH WITH PILOT LIGHT, +48" A.F.F.
	MULTI-SPEED FAN CONTROL SWITCH, +48" A.F.F.
	DUPLEX RECEPTACLE, 120V, 20A, GROUNDING TYPE, +18" A.F.F., OR AS NOTED
	SHOW WINDOW DUPLEX RECEPTACLE, 120V, 20A, GROUNDING TYPE MOUNT ON CEILING WITHIN 18" OF WINDOW.
	TAMPER-RESISTANT DUPLEX RECEPTACLE, 120V, 20A, GROUNDING TYPE, +18" A.F.F., OR AS NOTED
	SINGLE RECEPTACLE, 120V, 20A, GROUNDING TYPE, +18" A.F.F., OR AS NOTED
	DUPLEX RECEPTACLE, GFCI TYPE, 120V, 20A, GROUNDING TYPE, +48" A.F.F., OR 9" ABOVE COUNTER
	DOUBLE DUPLEX RECEPTACLE, 120V, 20A, GROUNDING TYPE +18" A.F.F., OR AS NOTED
	DOUBLE DUPLEX RECEPTACLE 120V, 20A, GROUNDING TYPE +48" A.F.F., OR 9" ABOVE COUNTER
	DUPLEX RECEPTACLE, 120V, 20A, GROUNDING TYPE +48" A.F.F. OR 9" ABOVE COUNTER
	SINGLE RECEPTACLE, 120V, 20A, GROUNDING TYPE +48" A.F.F. OR 9" ABOVE COUNTER
	WEATHERPROOF RECEPTACLE, +24" A.F.F.G.
	1-GANG FLUSH FLOOR MOUNTED TELE/DATA OUTLET WITH 1-1/4" CONDUIT TO CEILING SPACE, HUBBELL #PFBG1 WITH #PBRFB1 FLANGE AND #PBR26BLA COVER AND DECORATOR INSERT, OR EQUAL.
	1-GANG FLUSH FLOOR MOUNTED 120V, 20A CONVENIENCE RECEPTACLE IN HUBBELL #PFBG1 WITH #PBRFB1 FLANGE AND #PBR26BLA COVER AND DUPLEX INSERT, OR EQUAL.
	2-GANG FLUSH FLOOR MOUNTED 120V, 20A CONVENIENCE RECEPTACLE WITH ADJACENT DATA OUTLET IN HUBBELL #PFBG2 WITH #PBRFB2 FLANGE AND #PBR26BLA COVERS AND DUPLEX AND DECORATIVE INSERTS, OR EQUAL.
	CEILING MOUNTED RECEPTACLE.
	SPECIAL RECEPTACLE, TYPE & MOUNTING HEIGHT AS NOTED
	DATA OUTLET, MOUNTING HEIGHT TO MATCH ADJACENT OUTLETS. OUTLET TO INCLUDE EMPTY 3/4" C. TO CEILING SPACE
	TELEPHONE OUTLET, MOUNTING HEIGHT TO MATCH ADJACENT OUTLETS. OUTLET TO INCLUDE EMPTY 3/4" C. TO CEILING SPACE
	TELE/DATA OUTLET COMBINATION, MOUNTING HEIGHT TO MATCH ADJACENT OUTLETS. OUTLET TO INCLUDE EMPTY 3/4" C. TO CEILING SPACE
	TELEPHONE OUTLET, +48" A.F.F., OUTLET TO INCLUDE EMPTY 3/4" C. TO CEILING SPACE
	INTERCOM OUTLET +48" A.F.F. WITH 3/4" C. EMPTY CONDUIT (WITH PULL STRING) TO CEILING SPACE
	RECESSED FLAT PANEL DUPLEX OUTLET 120V, 20A GROUNDING TYPE, +60" A.F.F.
	JUNCTION BOX - CEILING MOUNTED
	JUNCTION BOX - WALL MOUNTED, HEIGHT AS NOTED

	FUSIBLE DISCONNECT SWITCH - UPPER NUMERAL DENOTES SWITCH SIZE, LOWER NUMERAL DENOTES FUSE SIZE
	NON-FUSED DISCONNECT SWITCH - NUMERAL DENOTES SWITCH SIZE. SIZE AT 30A 3P, UNLESS OTHERWISE NOTED.
	MOTOR CONTROL SWITCH WITH PILOT LIGHT, +48" A.F.F.
	MAGNETIC MOTOR STARTER
	MANUAL MOTOR STARTER, +48" A.F.F., OR ON MOTORIZED EQUIP.
	COMBINATION MOTOR STARTER
	MOTOR CONNECTION
	LIGHTING PANELBOARD
	POWER PANELBOARD
	DISTRIBUTION PANELBOARD
	MAIN SWITCHBOARD
	TRANSFORMER
	CONTROL PANEL
	120V, SINGLE CIRCUIT ASTROMIC TIME CLOCK, +48" A.F.F.
	CEILING MOUNTED SPEAKER ASSEMBLY
	CEILING MOUNTED SECURITY CAMERA
	WALL MOUNTED SECURITY CAMERA
	CIRCUIT BREAKER
	CEILING SPEAKER ASSEMBLY FOR HOSPITAL PAGING SYSTEM
	FIRE ALARM MANUAL PULL STATION +48" A.F.F.
	FIRE ALARM AUDIBLE/VISUAL COMBINATION DEVICE +80" A.F.F.
	FIRE ALARM VISUAL DEVICE +80" A.F.F.
	MINI-HORN DEVICE +80" A.F.F.
	DOOR HOLD OPEN DEVICE
	DUCT SMOKE DETECTOR
	SYSTEM SMOKE DETECTOR
	SINGLE- OR MULTIPLE-STATION SMOKE DETECTOR
	SPRINKLER SYSTEM TAMPER SWITCH
	SPRINKLER SYSTEM WATER FLOW
	FIRE ALARM ANNUNCIATOR PANEL
	FIRE ALARM CONTROL PANEL
	CARD READER OUTLET + 44" A.F.F.
	HEAT DETECTOR
	1/2" C. STUBBED INTO DOOR FRAME FROM ABOVE FOR DOOR CONTACT
	CONDUIT RUN IN WALL OR ABOVE CEILING
	CONDUIT RUN BELOW GRADE OR CONCRETE SLAB
	BRANCH CIRCUIT HOMERUN
	EXISTING TO BE REMOVED OR ABANDONED

### ELECTRICAL ABBREVIATIONS

A.C.	ALTERNATING CURRENT
AC	ABOVE COUNTERTOP
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFB	ABOVE FINISHED FLOOR TO CENTERLINE
AFG	ABOVE FINISHED GRADE TO CENTERLINE
C	CONDUIT
CKT/CIRC	CIRCUIT
CTC	CURRENT TRANSFORMER CABINET
DP	DISTRIBUTION PANEL
(E)	EXISTING
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EWV	ELECTRIC WATER COOLER
FURN	FURNICE
GRD	GROUNDING
HWH	HOT WATER HEATER
MDP	MAIN DISTRIBUTION PANEL
PP	POWER PANEL
RTU	ROOFTOP UNIT
UC	UNDER COUNTER
UON	UNLESS OTHERWISE NOTED
WP	WEATHERPROOF

### AUTOMATIC LIGHTING CONTROL LEGEND

(CATALOG NUMBERS BASED ON "SENSORSWITCH" EQUIPMENT)

	WSD PDT	DUEL TECHNOLOGY, P.I.R./MICROPHONICS OCCUPANCY WALL SWITCH, LINE VOLTAGE (AUTOMATIC ON), 48" A.F.F.
	WSD PDT 2P FAN	DUEL TECHNOLOGY, P.I.R./MICROPHONICS OCCUPANCY WALL SWITCH 2-POLE WITH MINIMUM FAN RUN TIME. (AUTOMATIC ON)
	sPOD D	WALL POD: PUSH BUTTON ON/OFF, 0-10VDC DIMMING, 48" A.F.F.
	PP20	120/277 VAC RELAY/POWER PACK. (MOUNT ABOVE ACCESSIBLE CEILING)
	CM PDT 9 D	DUAL TECHNOLOGY, P.I.R./MICROPHONICS OCCUPANCY SENSOR WITH DIMMING OUTPUTS, 450 SQ.FT. 360 DEG. COVERAGE, LOW VOLTAGE. (MOUNT ON CEILING)
	CM PDT 10 D	DUAL TECHNOLOGY, P.I.R./MICROPHONICS OCCUPANCY SENSOR WITH DIMMING OUTPUTS, 2450 SQ.FT. 360 DEG. COVERAGE, LOW VOLTAGE. (MOUNT ON CEILING)
	WV PDT 16 D/WVBR	DUAL TECHNOLOGY, P.I.R./ ULTRASONIC WIDE VIEW OCCUPANCY SENSOR WITH DIMMING OUTPUTS, 40 FOOT MOTION COVERAGE, LOW VOLTAGE. (MOUNT IN CORNER OF ROOM AT CEILING)

 LOW VOLTAGE WIRING

#### NOTES:

- 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.
- ALL CONTROL TYPES INDICATED MAY NOT NECESSARILY BE USED ON THIS PROJECT.
- ARROWS INDICATE DIRECTION TO AIM SENSOR.
- SET TIME DELAY OF EACH SENSOR TO 15 MINUTES.

### GENERAL NOTES

- THE CONTRACTOR SHALL ABIDE BY ALL FEDERAL, STATE, AND/OR LOCAL CODES. IF A DISCREPANCY BETWEEN CODES OCCURS, THE MOST STRINGENT SHALL PREVAIL.
- THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO THE COMMENCEMENT OF ANY WORK. SHOULD DISCREPANCIES BE DISCOVERED, THE CONTRACTOR SHALL VERIFY INTENT WITH THE ENGINEER/OWNER BEFORE PROCEEDING.
- COORDINATE LOCATIONS OF ALL CEILING MOUNTED DEVICES WITH OTHER TRADES PRIOR TO INSTALLATION.
- COORDINATE ALL ROUGH-IN REQUIREMENTS FOR OWNER FURNISHED EQUIPMENT WITH THE OWNER PRIOR TO BEGINNING WORK. THESE DRAWINGS ARE BASED ON THE BEST INFORMATION AVAILABLE DURING THE DESIGN PHASE OF THE PROJECT.
- COORDINATE WITH MILLWORK CONTRACTOR TO DETERMINE THE EXACT LOCATION OF OUTLETS BEING PLACED IN MILLWORK.
- ALL DEVICES ARE TO BE FLUSH MOUNTED UNLESS NOTED OTHERWISE.
- DEVICES NOTED "WP" SHALL BE WEATHERPROOF, "WHILE-IN-USE" TYPE WHERE APPLICABLE.
- DEVICES NOTED "NL" SHALL BE NIGHT LIGHTS. PROVIDE UN-SWITCHED BRANCH CIRCUIT CONDUCTORS TO EACH FIXTURE.
- CONNECT ALL EXIT AND EMERGENCY LIGHTING FIXTURES TO LOCAL LIGHTING CIRCUIT, AHEAD OF ALL SWITCHES, PER NEC.
- MULTI-WIRE BRANCH CIRCUITS SHALL BE PROVIDED WITH THE MEANS TO SIMULTANEOUSLY DISCONNECT ALL UNDERGROUND CONDUCTORS AT THE POINT WHERE THE BRANCH CIRCUIT ORIGINATES. REFER TO 2011 NEC 210.4 (B). THIS APPLIES TO ALL MULTI-WIRE BRANCH CIRCUITS SUPPLYING ANY LOAD.
- DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT-CARRYING CONDUCTORS, HOMERUNS CONTAINING MORE THAN THREE CURRENT-CARRYING CONDUCTORS SHALL BE DERATED IN ACCORDANCE WITH THE 2011 NEC.
- BRANCH CIRCUIT HOMERUN CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH THE 2011 NEC. THE MAXIMUM ALLOWABLE VOLTAGE DROP ON A FEEDER IS 2% AND THE MAXIMUM ALLOWABLE VOLTAGE DROP ON A BRANCH CIRCUIT IS 3%. PROVIDE BRANCH CIRCUIT CONDUCTORS SIZED TO ENSURE THE TOTAL VOLTAGE DROP FROM THE SOURCE TO THE POINT OF UTILIZATION IS LESS THAN OR EQUAL TO 5%.
- ANY EQUIPMENT, DEVICES, MATERIALS, ETC., THE OWNER ELECTS NOT TO RETAIN SHALL BE LEGALLY DISPOSED OF BY THE CONTRACTOR OFF THE OWNER'S PREMISES.
- AT COMPLETION OF ALL ELECTRICAL WORK, UPDATE CIRCUIT DIRECTORIES IN PANELS AFFECTED BY NEW WORK WITH NEW TYPEWRITTEN CIRCUIT DESCRIPTIONS. CIRCUIT DIRECTORIES SHALL BE MOUNTED ON INSIDE OF FRONT PANEL COVER IN A CLEAR PLASTIC ENCLOSURE.
- EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, AND IN ACCORDANCE WITH THEIR LISTING OR LABELING REQUIREMENTS. ANY PENETRATIONS THROUGH FIRE RATED ASSEMBLIES THAT ARE CREATED BY THE ELECTRICAL DEMOLITION, SHALL BE SEALED AND RESTORED IN ACCORDANCE WITH THE UL FIRE RESISTANCE DIRECTORY.
- WHERE CONDUIT AND/OR OUTLET BOXES INDICATED FOR DEMOLITION ARE EMBEDDED IN CONCRETE OR BELOW CONCRETE SLAB, ABANDON IN PLACE, CUT BACK AND SEAL EXPOSED CONDUIT. PROVIDE BLANK COVERS FOR ABANDONED BOXES. REMOVE ALL ASSOCIATED WIRING BACK TO SOURCE.

### GENERAL NOTES - DEMOLITION

- CERTAIN AREAS IN THE EXISTING BUILDING SHALL BE MODIFIED TO SUIT THE NEW REQUIREMENTS. THESE DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO INDICATE THE SCOPE OF WORK REQUIRED TO COMPLETE A SAFE REMOVAL OF THE ELECTRICAL SYSTEMS AS INDICATED BY THE NOTES ON THIS DRAWING.
- WORK IN THE AREA SHALL INCLUDE THE DISCONNECTION, REMOVAL, RELOCATION, AND RECONNECTION COMPLETE IN ALL RESPECTS OF ALL ITEMS REQUIRED TO SUIT THE DESIGN INTENT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE PROJECT SITE TO CORRECTLY ASCERTAIN THE SCOPE OF SERVICES AND TO INCLUDE ALL PERTINENT COSTS IN HIS BID. NO EXTRAS WILL BE ALLOWED.
- ALL ELECTRICAL WORK INTERFERING WITH AND REQUIRING MODIFICATION FOR THE NEW REQUIREMENTS SHALL BE RELOCATED AS DIRECTED BY BUILDING MANAGEMENT PERSONNEL AND REINSTALLED AND REWIRED AS NECESSARY TO THE SATISFACTION OF THE BUILDING OWNER.
- PROVIDE ALL EQUIPMENT, MATERIALS, LABOR AND SUPERVISION NECESSARY TO PROVIDE A SAFE ELECTRICAL INSTALLATION. ALL ELECTRICAL DEVICES AND SYSTEMS THAT ARE INDICATED AS EXISTING TO REMAIN SHALL BE IN SAFE WORKING ORDER.
- OBTAIN NECESSARY PERMITS FROM THE LOCAL AUTHORITY HAVING JURISDICTION BEFORE PROCEEDING WITH ANY WORK IN THE FIELD.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, OSHA AND OTHER ELECTRICAL SAFETY STANDARDS AND GUIDELINES. CONFORM TO ALL STATE AND LOCAL CODES AND STANDARDS.
- ALL EQUIPMENT AND WIRING NOT IN RENOVATION AREAS SHALL BE RECONNECTED AS REQUIRED FOR A COMPLETE WORKING SYSTEM.
- ABANDONED AND INACTIVE CONDUITS, WIRE, DEVICES, EQUIPMENT, ETC., SHALL BE REMOVED IN THEIR ENTIRETY. IN ADDITION TO THESE ITEMS, THIS CONTRACTOR SHALL REMOVE ALL ITEMS AS INDICATED ON THE PLANS, OR AS REQUIRED TO CLEAN UP THE ENTIRE AREA OF UNUSED, ABANDONED, OR INACTIVE MATERIALS. CONDUIT AND WIRING FEEDING DEVICES AND EQUIPMENT TO BE REMOVED SHALL ALSO BE REMOVED UP TO THE NEXT ACTIVE PULLBOX, JUNCTION BOX, OR PANELBOARD. HANGERS, MESSENGER CABLE, BRACKETS, ETC, SUPPORTING ITEMS TO BE REMOVED SHALL ALSO BE UNFASTENED AND REMOVED. OPEN HOLES IN DUCTS, BOXES, PANELBOARDS, AND KNOCKOUTS SHALL BE CLOSED WITH SUITABLE SNAP PLUGS OR FILLER PLATES.
- THE CONTRACTOR SHALL REMOVE AND DELIVER TO A PLACE DESIGNATED BY THE OWNER ALL EXISTING ELECTRICAL EQUIPMENT NO LONGER INTENDED FOR USE. THIS EQUIPMENT REMAINS THE PROPERTY OF THE OWNER.
- ANY EQUIPMENT, DEVICES, MATERIALS, ETC., THE OWNER ELECTS NOT TO RETAIN SHALL BE LEGALLY DISPOSED OF BY THE CONTRACTOR OFF THE OWNER'S PREMISES.
- AT COMPLETION OF ALL ELECTRICAL WORK, UPDATE CIRCUIT DIRECTORIES IN PANELS AFFECTED BY NEW WORK WITH NEW TYPEWRITTEN CIRCUIT DESCRIPTIONS. CIRCUIT DIRECTORIES SHALL BE MOUNTED ON INSIDE OF FRONT PANEL COVER IN A CLEAR PLASTIC ENCLOSURE.
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- WHERE CONDUIT AND/OR OUTLET BOXES INDICATED FOR DEMOLITION ARE EMBEDDED IN CONCRETE OR BELOW CONCRETE SLAB, ABANDON IN PLACE, CUT BACK AND SEAL EXPOSED CONDUIT. PROVIDE BLANK COVERS FOR ABANDONED BOXES. REMOVE ALL ASSOCIATED WIRING BACK TO SOURCE.

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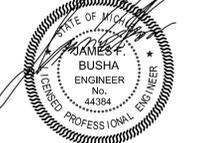
37300 MICHIGAN AVE. WAYNE, MI

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**ELECTRICAL LEGEND AND GENERAL NOTES**

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project number

13003

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PROGRESS 06-06-14

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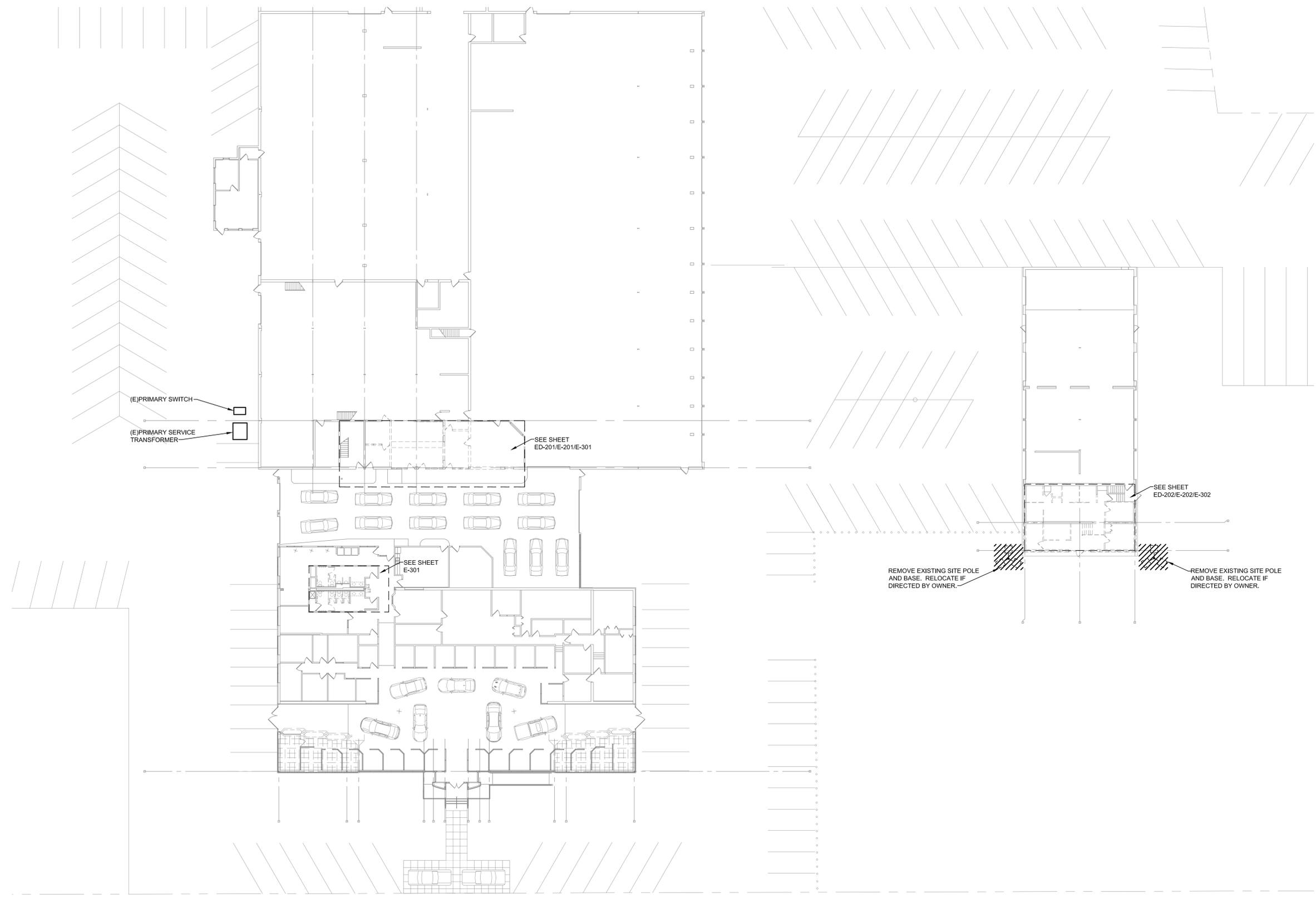
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USA MAPS: JACKSONVILLE (04/10)



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**EXISTING SITE PLAN  
- LIGHTING  
DEMOLITION**

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**1 EXISTING SITE PLAN - LIGHTING DEMOLITION**

1" = 20'-0"



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**ELECTRICAL  
DEMOLITION  
PLAN**

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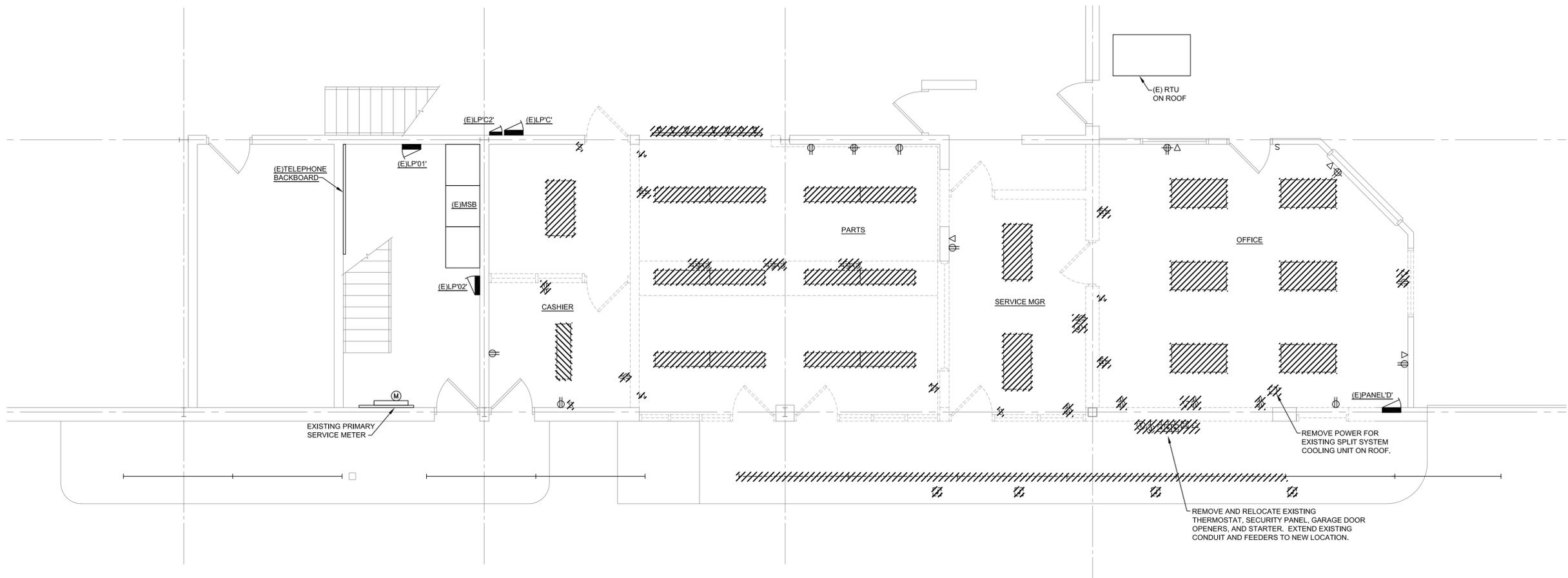
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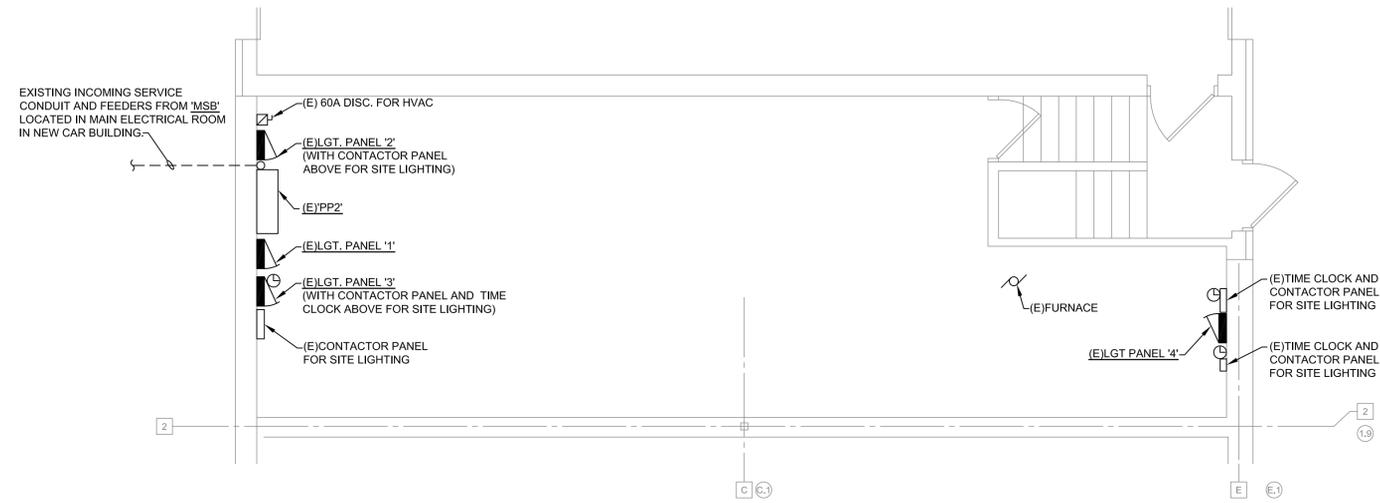
**1 SALES & SERVICE FLOOR PLAN - ELECTRICAL DEMOLITION**

1/4" = 1'-0"

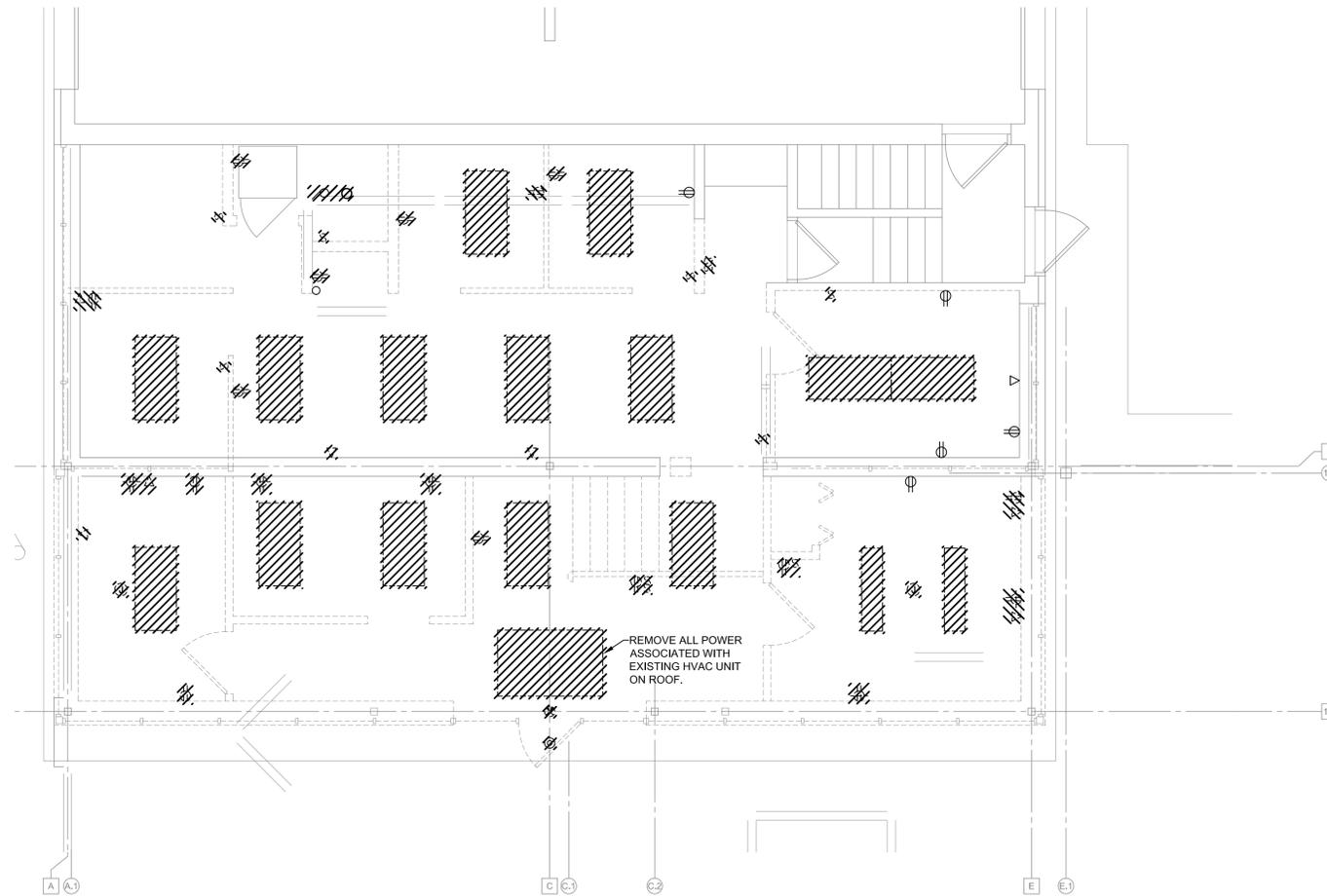
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SHEET  
**ED-201**



**2 USED CAR BASEMENT PLAN - ELECTRICAL DEMOLITION**  
1/4" = 1'-0"



**1 USED CAR FLOOR PLAN - ELECTRICAL DEMOLITION**  
1/4" = 1'-0"

prepared for:



prepared by:



**UNDER THE SUN  
ARCHITECTURAL LLC**

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project title

**DEMMER FORD  
RENOVATIONS**

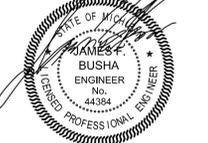
37300  
MICHIGAN AVE.  
WAYNE, MI

sheet title

**ELECTRICAL  
DEMOLITION  
PLAN**

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seal & signature



project number

**13003**

drawn USA

approved USA

issued date

PROGRESS 06-06-14

OWNER REVIEW 06-16-14

BIDS/PERMITS 07/02/14



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**project title**

**DEMMER FORD**  
**RENOVATIONS**

37300  
MICHIGAN AVE.  
WAYNE, MI

**sheet title**

**POWER**  
**NEW WORK**  
**PLAN**

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**project number**

**13003**

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approved USA

issued date

PROGRESS 06-06-14

OWNER REVIEW 06-16-14

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SHEET

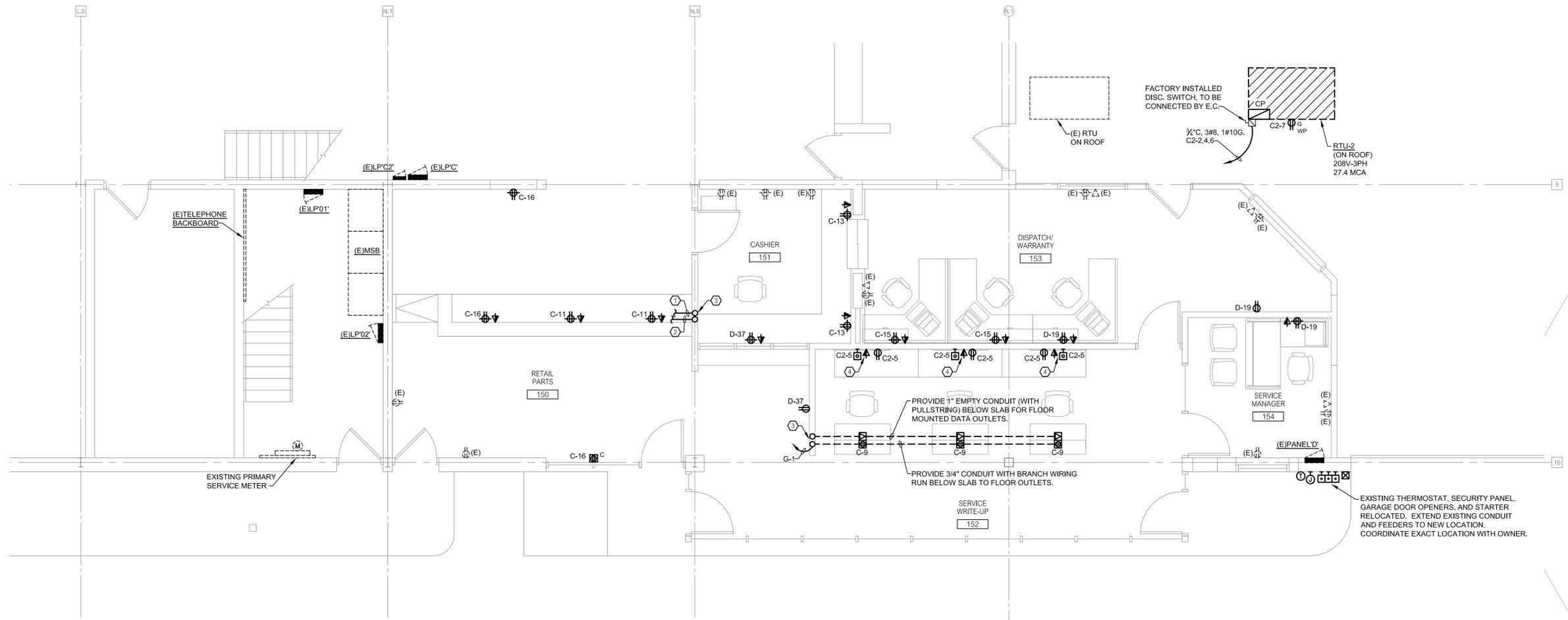
**E-201**

**SHEET NOTES:**

- EQUIPMENT INDICATED LIGHT AND DASHED IS EXISTING TO REMAIN.
- EQUIPMENT INDICATED BOLD AND SOLID IS NEW WORK.

**SHEET KEYED NOTES:**

- PROVIDE 3/4" CONDUIT WITH BRANCH WIRING RUN CONCEALED IN CASEWORK TO FULL HEIGHT WALL FOR CASH REGISTERS POWER. CIRCUIT NUMBERS AS INDICATED ON PLAN.
- PROVIDE 1" EMPTY CONDUIT (WITH PULLSTRING) CONCEALED IN CASEWORK TO FULL HEIGHT WALL FOR CASH REGISTER DATA SERVICES.
- STUB CONDUITS UP INTO ACCESSIBLE CEILING SPACE.
- COORDINATE EXACT LOCATIONS FOR FLAT PANEL POWER AND DATE OUTLETS WITH OWNER PRIOR TO ROUGH-IN.



**1 SALES & SERVICE FLOOR PLAN - POWER NEW WORK**

1/4" = 1'-0"



mechanical electrical  
engineering consultants  
pc  
1415 Goldsmith  
Plymouth, MI 48170  
P 734-464-8918  
F 734-464-8917  
MEEC JOB # 20413-230

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**DEMMER FORD RENOVATIONS**

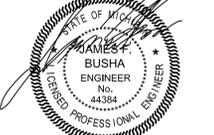
37300  
MICHIGAN AVE.  
WAYNE, MI

**sheet title**

**POWER NEW WORK PLAN**

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**project number**

**13003**

drawn USA

approved USA

issued date

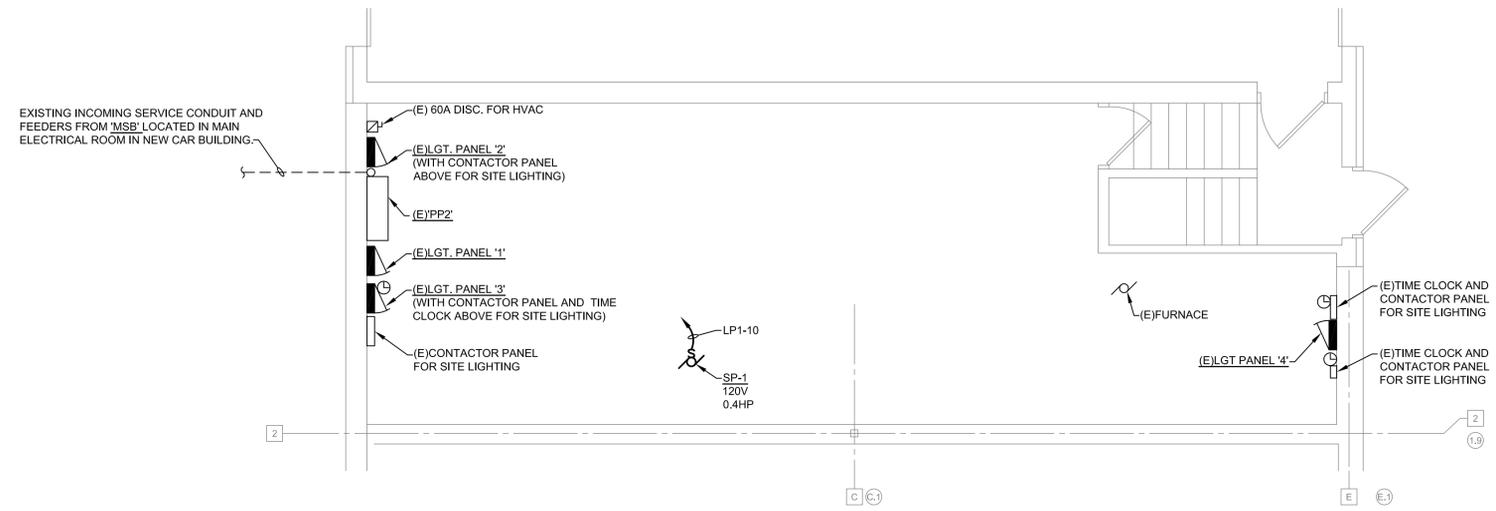
PROGRESS 06-06-14

OWNER REVIEW 06-16-14

BIDS/PERMITS 07/02/14

SHEET

**E-202**



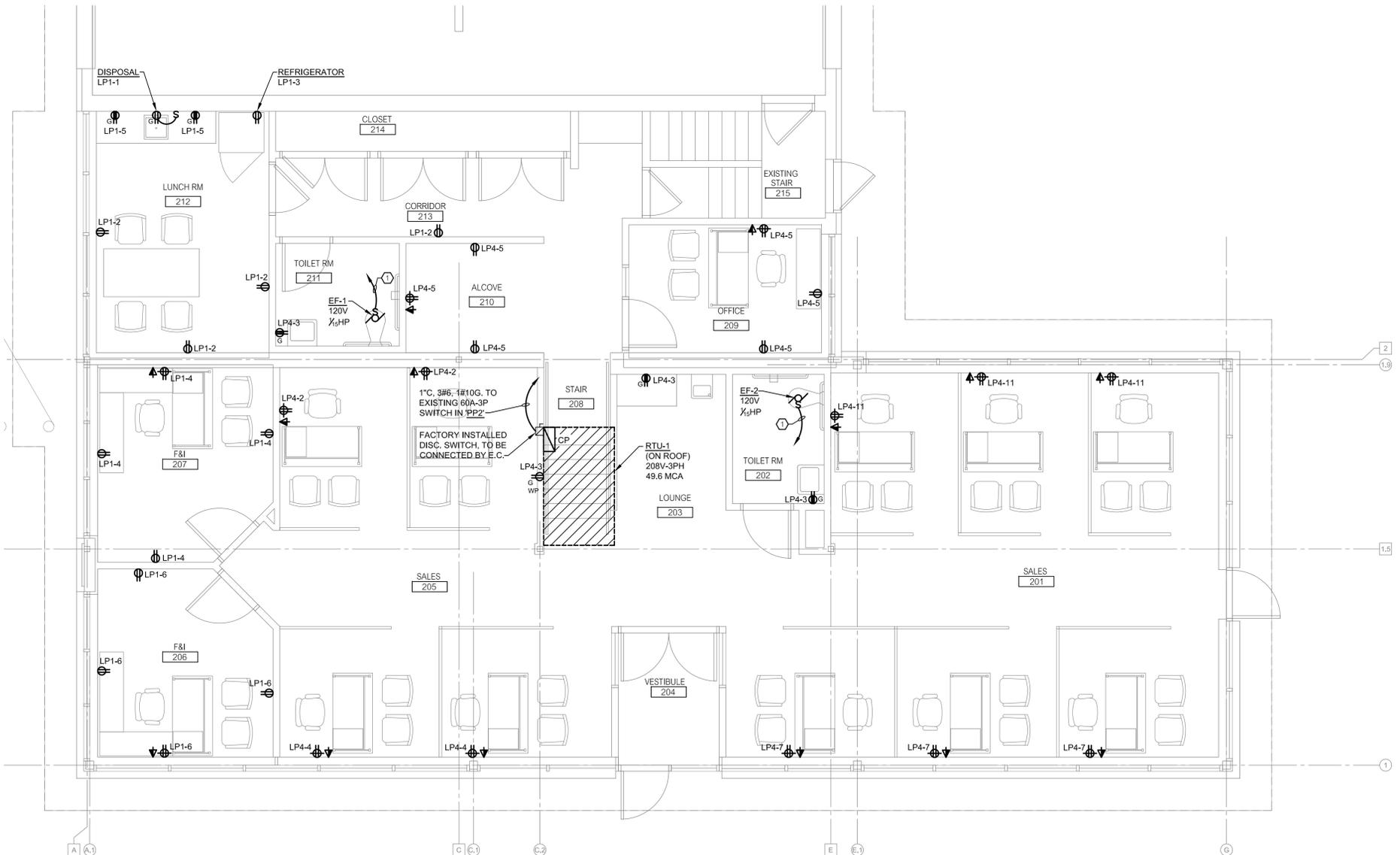
**SHEET NOTES:**

- EQUIPMENT INDICATED LIGHT AND DASHED IS EXISTING TO REMAIN.
- EQUIPMENT INDICATED BOLD AND SOLID IS NEW WORK.

**SHEET KEYED NOTES:**

- TO 2-POLE OCCUPANCY WALL SWITCH. REFER TO SHEET E-302.

**PLAN NORTH**  
**2 USED CAR BASEMENT PLAN - POWER NEW WORK**  
1/4" = 1'-0"

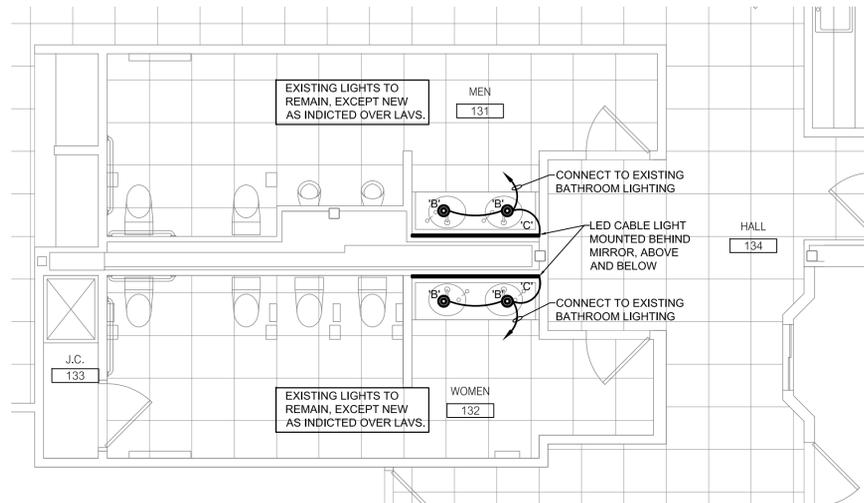


**PLAN NORTH**  
**1 USED CAR FLOOR PLAN - POWER NEW WORK**  
1/4" = 1'-0"



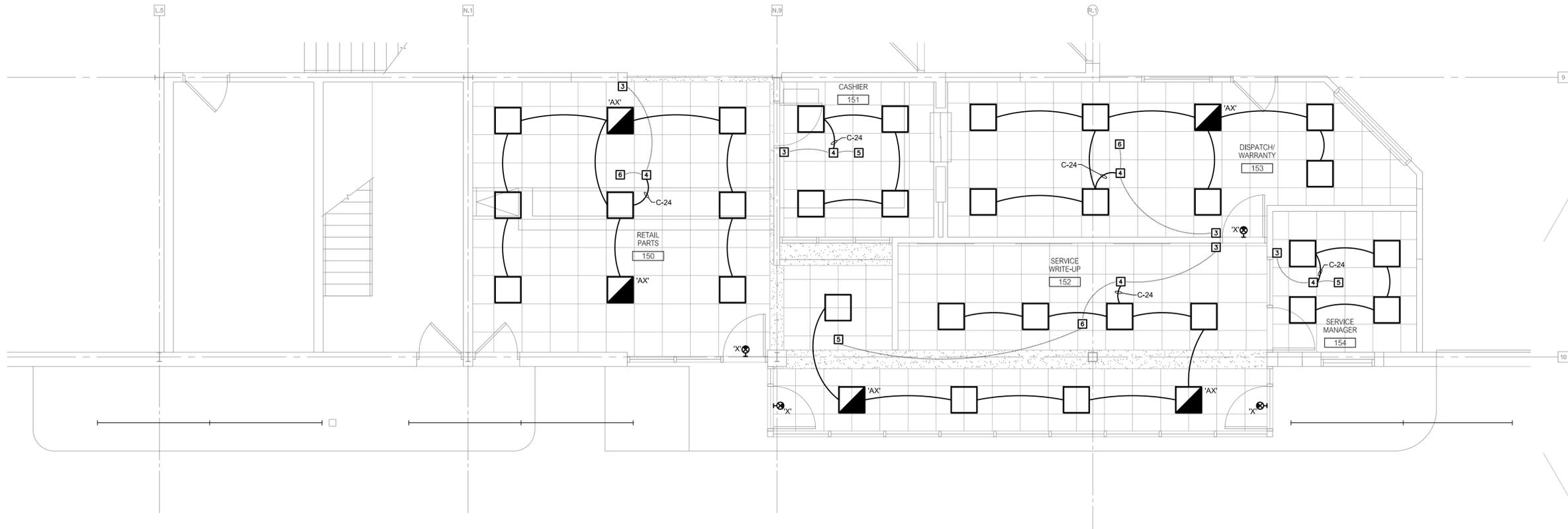
mechanical electrical engineering consultants pc  
1415 Goldsmith  
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P 734-466-8918  
F 734-466-8917  
MEEC JOB # 20413-238

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2 SALES & SERVICE TOILET ROOMS REFLECTED CEILING PLAN - LIGHTING NEW WORK

1/4" = 1'-0"



1 SALES & SERVICE - SERVICE OFFICE REFLECTED CEILING PLAN - LIGHTING NEW WORK

1/4" = 1'-0"

SHEET NOTES:

- EQUIPMENT INDICATED LIGHT AND DASHED IS EXISTING TO REMAIN.
- EQUIPMENT INDICATED BOLD AND SOLID IS NEW WORK.
- ALL LIGHTING FIXTURES ARE TYPE 'A', UNLESS NOTED OTHERWISE.
- CONNECT ALL EXIT LIGHTS TO LOCAL LIGHTING CIRCUIT, AHEAD OF ALL SWITCHES.

prepared for:



prepared by:



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South Lyon . MI . 48178

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project title

DEMMER FORD RENOVATIONS

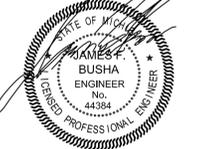
37300 MICHIGAN AVE. WAYNE, MI

sheet title

LIGHTING NEW WORK PLAN

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seal & signature



project number

13003

drawn USA

approved USA

issued date

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BIDS/PERMITS 07/02/14



mechanical electrical engineering consultants pc  
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MEEC JOB # 20413-231

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**project title**

**DEMMER FORD  
RENOVATIONS**

37300  
MICHIGAN AVE.  
WAYNE, MI

**sheet title**

**LIGHTING  
NEW WORK  
PLAN**

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**project number**

**13003**

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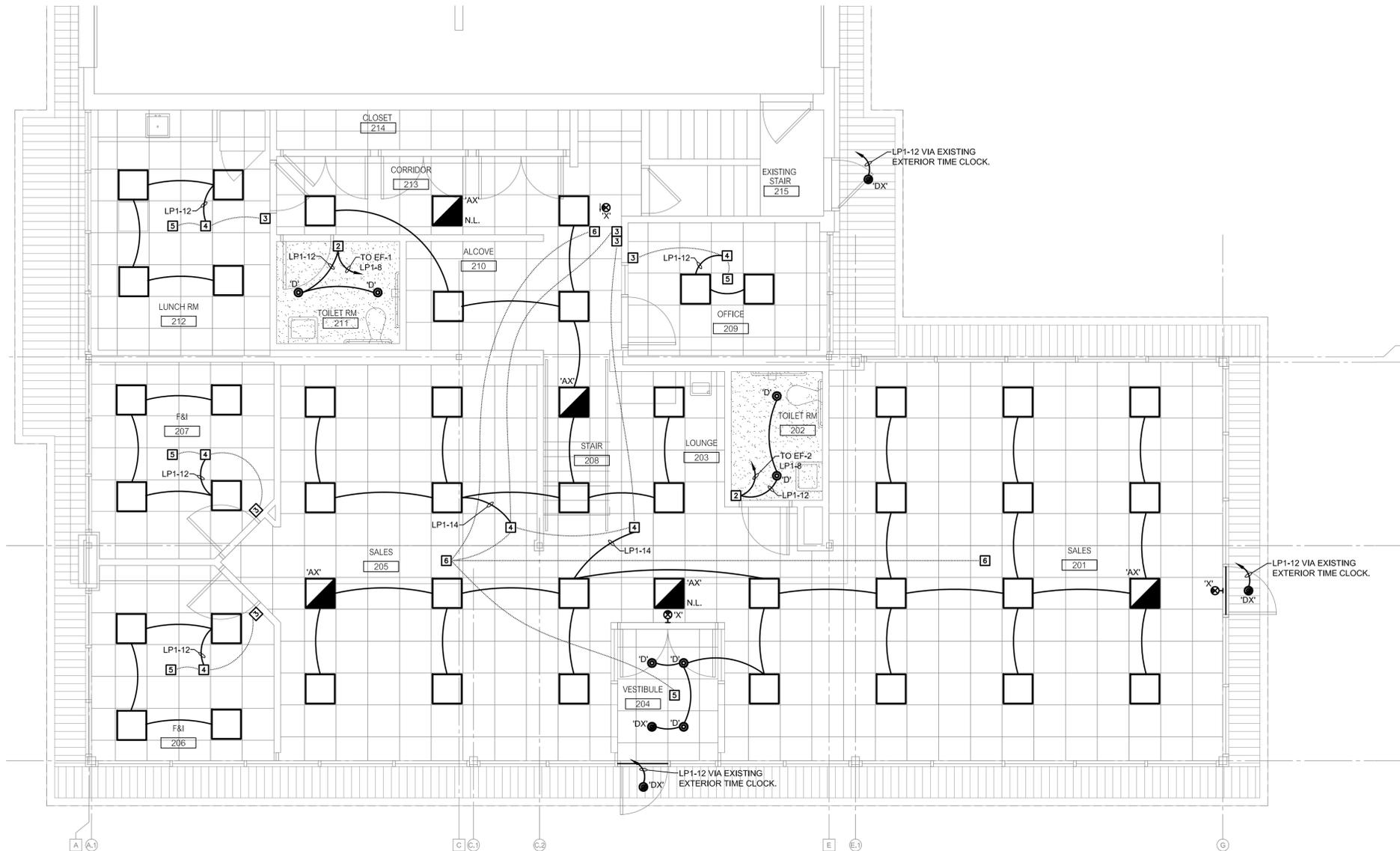
BIDS/PERMITS 07/02/14

SHEET

**E-302**

**SHEET NOTES:**

- EQUIPMENT INDICATED LIGHT AND DASHED IS EXISTING TO REMAIN.
- EQUIPMENT INDICATED BOLD AND SOLID IS NEW WORK.
- ALL LIGHTING FIXTURES ARE TYPE 'A', UNLESS NOTED OTHERWISE.
- CONNECT ALL EXIT LIGHTS TO LOCAL LIGHTING CIRCUIT, AHEAD OF ALL SWITCHES.



1

**USED CAR REFLECTED CEILING PLAN - LIGHTING NEW WORK**

1/4" = 1'-0"



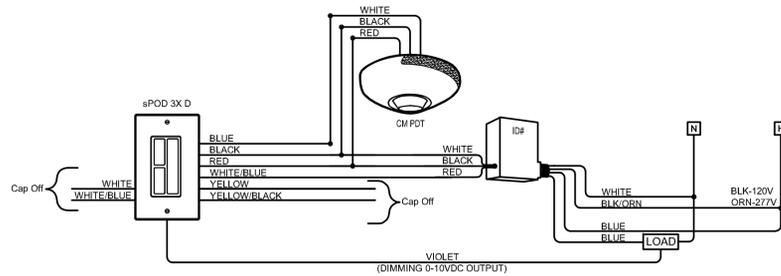
MEEC JOB # 204-13-231  
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### LIGHTING FIXTURE SCHEDULE

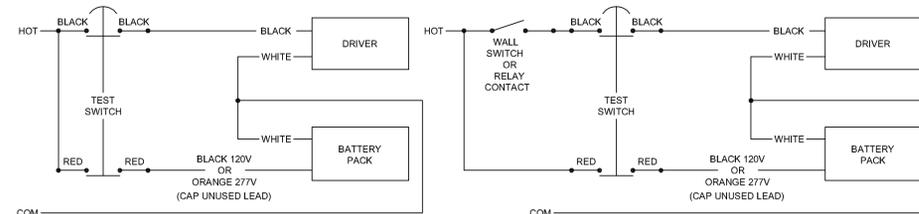
TYPE	DESCRIPTION	LAMP QUANTITY	LAMP TYPE	LAMP INITIAL LUMEN OUTPUT	CCT	CRI	VOLTAGE	INPUT WATTS	BALLAST TYPE	BASIS OF DESIGN	NOTES
A	2'x2' LED TROFFER	1	LED	3200	4000K	90	120-277	35	0-10V DIMMING DRIVER	CREE ZR22 32L 40K 10V	
AX	2'x2' LED TROFFER	1	LED	3200	4000K	90	120-277	35	0-10V DIMMING DRIVER	CREE ZR22 32L 40K 10V	INCLUDE EMERGENCY BATTERY PACK WITH REMOTE TEST SWITCH TO PROVIDE 1400 LUMEN OUTPUT FOR 90 MIN. DURING POWER FAILURE. PROVIDE AN UN-SWITCHED HOT LEAD TO BATTERY PACK FOR VOLTAGE SENSING OF NORMAL POWER.
B	6" RECESSED LED DOWNLIGHT	1	LED	1100		90	120	11	HIGH EFFICIENCY DRIVER	CREE LR6 10L - 120V LT6WH H6-GU24	SMOOTH WHITE TRIM. COLOR TEMPERATURE TO MATCH EXISTING BATHROOM LIGHTING.
C	LED CABLE LIGHT	1	LED	26	4000K	85	120:12V	0.661		AMBIENCE LIGHTING FESTOON: 961195-32-9830-15 TRACK: 94035-15 TRANSFORMER: 962245-15	FESTOONS SPACED 4" O.C. PROVIDE ALL NECESSARY, CABLE, TRANSFORMERS, AND COMPONENTS FOR A COMPLETE INSTALLATION.
D	6" RECESSED LED DOWNLIGHT	1	LED	1100	4000K	90	120	11	HIGH EFFICIENCY DRIVER	CREE LR6 10L 40K 120V LT6WH H6-GU24	SMOOTH WHITE TRIM.
DX	6" RECESSED LED DOWNLIGHT	1	LED	1100	4000K	90	120	11	HIGH EFFICIENCY DRIVER	CREE LR6 10L 40K 120V LT6WH H6-GU24	SMOOTH WHITE TRIM. INCLUDE EMERGENCY BATTERY PACK WITH REMOTE TEST SWITCH TO PROVIDE FULL LUMEN OUTPUT FOR 90 MIN. DURING POWER FAILURE. PROVIDE AN UN-SWITCHED HOT LEAD TO BATTERY PACK FOR VOLTAGE SENSING OF NORMAL POWER.
X	SELF POWERED EXIT SIGN	1	LED				120			DUJEL LIGHT EVE U R W E	6" RED LETTERS ON STENCIL FACE, POLYCARBONATE. NICKEL METAL HYDRIDE BATTERY.

#### LIGHTING FIXTURE NOTES

- ALTERNATE LIGHTING MANUFACTURERS EQUIPMENT SHALL BE SIMILAR IN PERFORMANCE, PHYSICAL APPEARANCE AND CONSTRUCTION TO BE CONSIDERED AS EQUAL TO UNITS SPECIFIED.
- ALTERNATE LIGHTING FIXTURE TYPES PROPOSED TO BE SUBSTITUTED BY BIDDING CONTRACTOR MUST BE PRE-APPROVED DURING BIDDING. CONTRACTOR, OR LIGHTING REPRESENTATIVE SHALL EMAIL ALL SUCH REQUESTS WITH FIXTURE CUTS TO ENGINEER AT LEAST ONE WEEK PRIOR TO SUBMITTING BIDS. ENGINEER SHALL REVIEW THE PROPOSED ALTERNATE LIGHTING FIXTURES AND ISSUE A WRITTEN ACCEPTANCE OR DENIAL BY RETURN EMAIL. VERBAL APPROVAL WILL NOT BE ACCEPTABLE.
- ALL SHOP DRAWINGS SUBMITTED AFTER AWARD OF CONTRACT FOR LIGHTING FIXTURES WHICH WERE NOT PRE-APPROVED WILL BE REJECTED.
- FIXTURES SIMILAR IN DESIGN, CONSTRUCTION AND PHOTOMETRIC CHARACTERISTICS MANUFACTURED BY LITHONIA, LSI INDUSTRIES, COOPER, LIGHTOLIER, HUBBELL, OR PHILIPS ARE ACCEPTABLE ALTERNATES TO THOSE FIXTURES SPECIFIED.
- ALL FLUORESCENT FIXTURES TO INCLUDE A BALLAST DISCONNECT PLUG PER NEC REQUIREMENTS.
- REMOTE TEST SWITCHES FOR EMERGENCY LIGHTS TO BE MOUNTED FLUSH IN WALL ADJACENT TO LIGHT FIXTURE. CONTRACTOR TO COORDINATE EXACT LOCATIONS FOR ALL SUCH REMOTE SWITCHES WITH ARCHITECT REPRESENTATIVE. ALL DIRECTIONS SHALL BE IN WRITING. VERBAL ORDERS ARE NOT ACCEPTABLE.



**ONE SENSOR CONTROLLING ONE CIRCUIT WITH DIMMING**  
N.T.S.



**UN-SWITCHED LUMINAIRE (NL/EM)**

**SWITCHED LUMINAIRE**

**TYPICAL WIRING DIAGRAM FOR EMERGENCY LIGHTING  
BATTERY POWER OPERATION**  
N.T.S.

prepared for:



prepared by:



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ARCHITECTURAL LLC**

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RENOVATIONS**

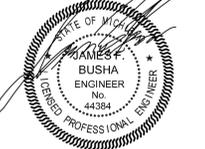
37300  
MICHIGAN AVE.  
WAYNE, MI

sheet title

**ELECTRICAL  
DETAILS**

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project number

**13003**

drawn USA

approved USA

issued date

PROGRESS 06-06-14

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BIDS/PERMITS 07/02/14



mechanical electrical  
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P 734-466-8919  
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MEEC JOB # 206-13-258



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EXISTING PANEL

LOAD SERVED	LOAD - V.A.			VOLTAGE MAIN LUGS				SYM. A.I.C. MIN.			MOUNTING SURFACE
	A	B	C	BRKR	#	#	BRKR	A	B	C	
OFF AT NIGHT				20	1	2	20				OFF AT NIGHT
OFF AT NIGHT				20	3	4	20				OFF AT NIGHT
OFF AT NIGHT				20	5	6	20				U.H.
SPARE				20	7	8	20				REAR OFFICE AND CEILING FAN
SERVICE WRITE-UP REC				20	9	10	20				OFF AT NIGHT
PARTS COUNTER OUTLETS			720	20	11	12	20				OFF AT NIGHT
CASHIERS OFFICE	720			20	13	14	20				COFFEE PLUGS
DISPATCH/WARRENTY OFFICE		720		20	15	16	20	900			PLUGS IN PARTS
LIGHTS OFFICE				20	17	18	20				TELEPHONE PLUG
LEAVE ON				20	19	20	20				HEATING/TIME CLOCK
SPARE				20	21	22	20				LIGHTS BATHROOM
AIR CONDITIONING TUBE SYSTEM				20	23	24	20			1190	LIGHTS OFFICE
S.O.					25	26	20				LEAVE OFF
S.O.					27	28					S.O.
S.O.					29	30					S.O.
LOAD DESCRIPTION	DEMAND FACTOR D.F.			VOLT-AMPS							TOTAL DEMAND LOAD
LIGHTING				CONNECTED		DEMAND					25% LIGHTING LOAD
RECEPTACLES											SPARE
SMALL MOTORS											
MISC. EQUIPMENT											DESIGN LOAD
											DESIGN AMPS
	TOTAL										

EXISTING PANEL

LOAD SERVED	LOAD - V.A.			VOLTAGE MAIN LUGS				SYM. A.I.C. MIN.			MOUNTING SURFACE
	A	B	C	BRKR	#	#	BRKR	A	B	C	
2ND FLOOR LIGHTS				20	1	2	40	3288			RTU-2
SMALL OFFICE LIGHTS				20	3	4		3288			
SERVICE WRITE UP BK CNTR REC				1080	5	6	3			3288	
ROOF TOP REC	180			20	7	8					S.O.
BODY SHOP OFFICE				20	9	10	20				COUNTER RECEPS
BODY SHOP OFFICE				20	11	12	20				CONCESSION RECEPS
BODY SHOP LIGHTS				20	13	14	20				NIGHT LIGHTS
BODY SHOP LIGHTS				20	15	16	20				BODY SHOP LIGHTS
				15	17	18	20				S.O.
				15	19	20	20				S.O.
LOAD DESCRIPTION	DEMAND FACTOR D.F.			VOLT-AMPS							TOTAL DEMAND LOAD
LIGHTING				CONNECTED		DEMAND					25% LIGHTING LOAD
RECEPTACLES											SPARE
SMALL MOTORS											
MISC. EQUIPMENT											DESIGN LOAD
											DESIGN AMPS
	TOTAL										

EXISTING PANEL

LOAD SERVED	LOAD - V.A.			VOLTAGE MAIN LUGS				SYM. A.I.C. MIN.			MOUNTING SURFACE
	A	B	C	BRKR	#	#	BRKR	A	B	C	
LIGHTS WEST				20	1	2	20				LIGHTS EAST
CENTER ROW LIGHTS, N.L.				20	3	4	20				LUBE DOOR
NITE LITES				20	5	6	20				SOUTH WALL RECEPT
SPARE				20	7	8	20				HEATER
RECEPTS C6				20	9	10	20				RECEPT ABOVE OFFICE
MAKE UP AIR #1				20	11	12	20				WEST DOOR
RECEPTS C2				20	13	14	20				LIGHTS
RECEPTS C9				20	15	16	20				EAST HEATER
RECEPTS				20	17	18	20				LIGHTS
DISPATCH/WARRENTY, MGR REC.	900			20	19	20	20				RECEPTS
WHEEL ALIGN				20	21	22	20				RECEPTS
DOOR OPENER				20	23	24	20				RECEPTS
WASHER RECEPT.				20	25	26	20				EAST DOOR
RECEPT SOUTH				20	27	28	20				LIGHTS WRITE UP
WRITE UP LIGHTS				20	29	30	20				LIGHTS WRITE UP
WRITE UP LIGHTS				20	31	32	20				LIGHTS FAR EAST
WRITE UP LIGHTS				20	33	34	20				LIGHTS FAR EAST
CENTER LIGHTS				20	35	36	20				LIGHTS WEST/SOUTH
CASHIER/PARTS REC.	540			20	37	38	20				GFI ROOF/EAST LIGHTS
SERVICE DISPATCH HEAT				50	39	40	50				SERVICE DISPATCH A/C
				2	41	42	2				
LOAD DESCRIPTION	DEMAND FACTOR D.F.			VOLT-AMPS							TOTAL DEMAND LOAD
LIGHTING				CONNECTED		DEMAND					25% LIGHTING LOAD
RECEPTACLES											SPARE
SMALL MOTORS											
MISC. EQUIPMENT											DESIGN LOAD
											DESIGN AMPS
	TOTAL										

EXISTING PANEL

LOAD SERVED	LOAD - V.A.			VOLTAGE MAIN LUGS				SYM. A.I.C. MIN.			MOUNTING SURFACE
	A	B	C	BRKR	#	#	BRKR	A	B	C	
SERVICE WRITE UP CPU				20	1	2	20				PLUG BELOW PANEL
SERVICE WRITE UP CPU				20	3	4	20				ALARM PANEL
PARTS CPU				20	5	6	100				PANEL IN CPU ROOM
PARTS CPU				20	7	8	2				
PARTS CPU				20	9	10	100				PANEL IN SERVICE DEPT
PHONE UPS				30	11	12	2				
COMPUTER UPS				30	13	14	40				BRAD A/C COMPRESSOR ROOF
COMPUTER UPS				30	15	16	2				
BRAD AIR HANDLER UP PARTS				15	17	18	20				BRAD COND. PUMP
S.O.				2	19	20					
S.O.					21	22					S.O.
S.O.					23	24					S.O.
S.O.					25	26					S.O.
S.O.					27	28					S.O.
S.O.					29	30					S.O.
LOAD DESCRIPTION	DEMAND FACTOR D.F.			VOLT-AMPS							TOTAL DEMAND LOAD
LIGHTING				CONNECTED		DEMAND					25% LIGHTING LOAD
RECEPTACLES											SPARE
SMALL MOTORS											
MISC. EQUIPMENT											DESIGN LOAD
											DESIGN AMPS
	TOTAL										

\* - DENOTES NEW BREAKER  
(N) - DENOTES EXISTING BREAKER WITH NEW LOAD

NOTES:

- THESE PANELS ARE EXISTING, AND THE CIRCUIT NUMBERS ARE FOR REFERENCE ONLY.
- CONTRACTOR SHALL EXAMINE PANELS AFTER DEMOLITION AND SHALL PROVIDE NEW BREAKERS AS REQUIRED OR MAY RE-USE EXISTING SPARE BREAKERS.
- THE CONTRACTOR SHALL RELABEL EXISTING PANELS CORRECTLY, AND TEST EACH EXISTING CIRCUIT TO VERIFY ITEMS SERVED. CONTRACTOR SHALL ALSO TEST EXISTING MAINS AND SHALL VERIFY THAT EXISTING SERVICE CONDUCTORS ARE NOT OVERLOADED.
- ELECTRICAL CONTRACTOR AT CONCLUSION OF PROJECT SHALL MAKE PROPER NOTATION AND/OR CORRECTIONS ON ELECTRICAL PLANS AS TO FINAL CONDITIONS (AS BUILTS), FOR OWNERS FUTURE USE AND REFERENCE.



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**DEMNER FORD**  
**RENOVATIONS**

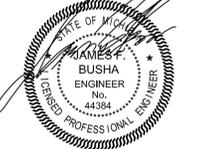
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sheet title

**EXISTING**  
**ELECTRICAL PANEL**  
**SCHEDULES**

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project number

13003

drawn USA

approved USA

issued date

PROGRESS 06-06-14

OWNER REVIEW 06-16-14

BIDS/PERMITS 07/02/14

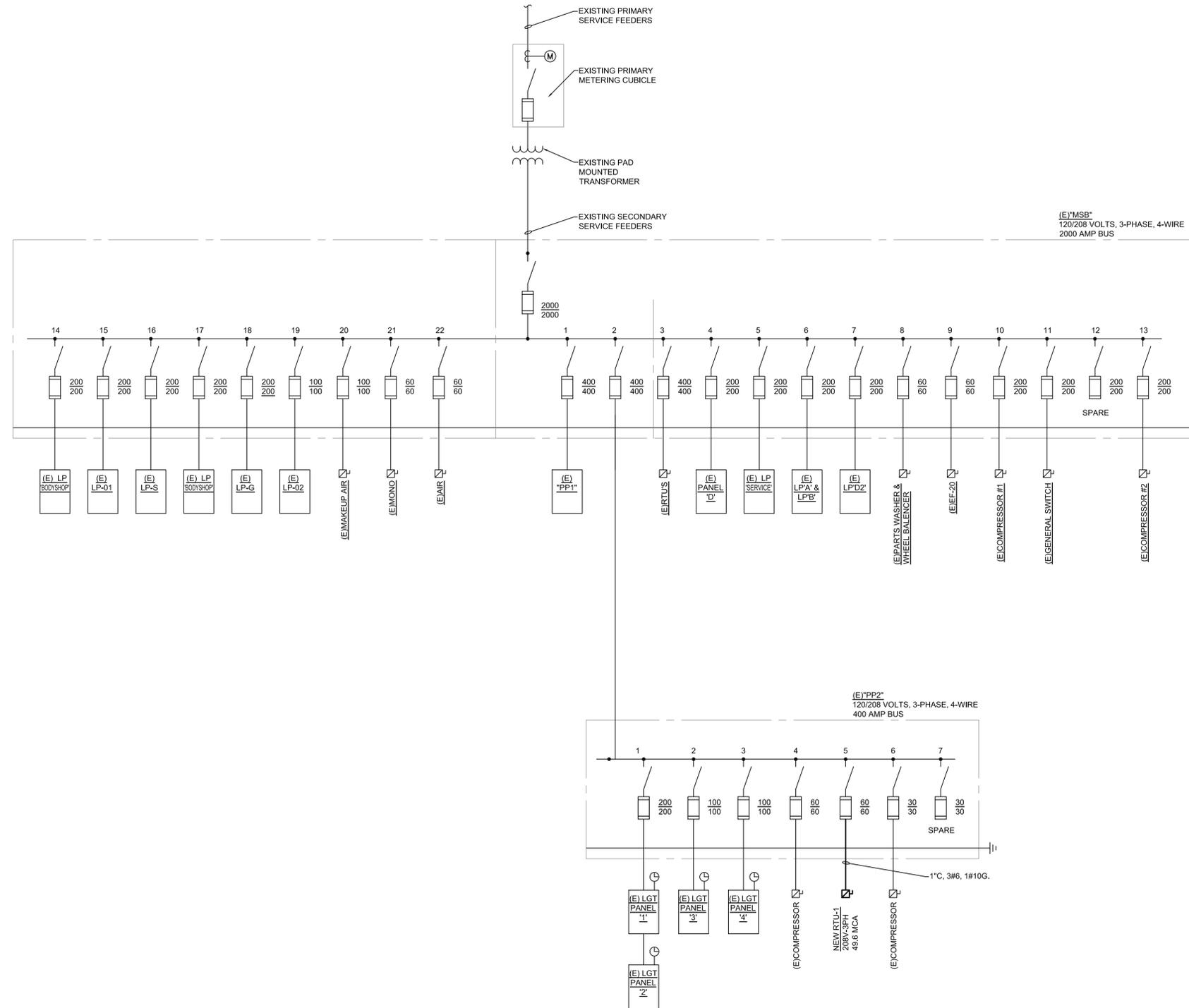


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SHEET

E-500





**EXISTING ELECTRICAL RISER DIAGRAM**  
N.T.S.

prepared for:



prepared by:



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**ELECTRICAL RISER DIAGRAM**

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DEMMER FORD RENOVATIONS

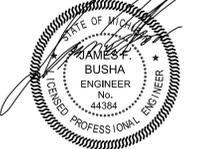
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ELECTRICAL SPECIFICATION

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E-600

ELECTRICAL SPECIFICATIONS

1. GENERAL CONDITIONS:

- A. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO WORK OF THIS SECTION. THE ELECTRICAL CONTRACTOR SHALL ASSUME ALL OBLIGATIONS CONTAINED THEREIN THAT AFFECT HIS WORK. THE ELECTRICAL ENGINEER SHALL BE CONSULTED IN CASE OF ANY DISPUTES AND HIS DECISION SHALL BE FINAL.
B. THE ELECTRICAL CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL, PLUMBING AND MECHANICAL DRAWINGS AND SPECIFICATIONS AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS OF WORK AFFECTING THE CONTRACT. SIZE AND CAPACITY OF ALL EQUIPMENT SHALL BE AS ON PLANS OR AS INDICATED HEREIN.
C. FURNISH LABOR AND MATERIALS TO PROVIDE A COMPLETE ELECTRICAL SYSTEM AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
D. ANY ITEM APPEARING ON THE DRAWINGS AND NOT IN THE SPECIFICATION OR VICE VERSA, AND ANY ITEMS APPEARING IN NEITHER BUT NECESSARY TO ACCOMPLISH THE INTENT OF THESE SPECIFICATIONS, SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR.
E. WHERE EQUIPMENT SPECIFICATIONS OR DESCRIPTIONS INCLUDE A SPECIFIC MANUFACTURER AND CATALOG NUMBER, ANY SUBSTITUTED EQUIPMENT OR EQUIPMENT PROPOSED TO BE PROVIDED BY AN ALTERNATIVE MANUFACTURER SHALL FUNCTIONALLY MEET, OR EXCEED, THE REQUIREMENTS OF THE SPECIFIED EQUIPMENT IN ALL RESPECTS. ALTERNATE MANUFACTURERS SHALL REFER TO PRODUCT LITERATURE PUBLISHED BY THE MANUFACTURER OF THE EQUIPMENT SPECIFIED TO DETERMINE EQUIVALENCY OF THEIR PROPOSED ALTERNATE PRODUCT.

2. SCOPE OF WORK:

THIS SPECIFICATION CONTEMPLATES THE PROVISION BY THE ELECTRICAL CONTRACTOR OF ALL LABOR AND MATERIALS REQUIRED TO INSTALL A COMPLETE SYSTEM OF ELECTRICAL WORK AS HEREIN SPECIFIED AND AS SHOWN OF THE DRAWINGS. WITHOUT RESTRICTING THE GENERALITY OF THE FOREGOING, THE FOLLOWING SHALL BE INCLUDED:

- A. FEEDERS, SAFETY SWITCHES, BRANCH CIRCUIT WIRING, OUTLETS AND CONNECTIONS COMPLETE.
B. TELEPHONE CONDUITS, ALL GROUNDING, AND ALL TELEPHONE/DATA OUTLETS AND CONDUIT SYSTEMS AS REQUIRED.
C. GROUNDING OF COMPLETE ELECTRICAL SYSTEM PER ARTICLE 250 OF N.E.C. AND SPECIFICATIONS.
D. EMERGENCY EGRESS AND EXIT LIGHTING SYSTEMS COMPLETE.
E. SERVICES AND FINAL CONNECTIONS TO ALL ITEMS OF MECHANICAL EQUIPMENT AS REQUIRED.
F. DISCONNECT SWITCHES WHICH ARE NOT AN INTEGRAL PART OF EQUIPMENT.
G. INSTALLATION OF LIGHTING FIXTURES BY COMPLETE WITH LAMPS, HANGERS, SUPPORTS, AUXILIARIES AND FOUNDATIONS.

3. CHARACTER OF EQUIPMENT:

ALL EQUIPMENT SHALL BE NEW AND SHALL CONFORM IN ALL RESPECTS TO THE LATEST APPROVED STANDARDS OF THE IEEE, ANSI AND THE "UL" LABEL OR LISTING.

4. CODES AND ORDINANCES:

ALL ELECTRICAL WORK SHALL COMPLY WITH THE 2011 EDITION OF THE NATIONAL ELECTRICAL CODE, LOCAL CODES AND THE LATEST EDITION OF THE MICHIGAN BUILDING CODE, ALL ORDINANCES AND REGULATIONS, AND THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).

5. PERMITS AND FEES:

THE ELECTRICAL CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY ALL FEES, INCLUDING ALL COSTS ACCESSED BY THE UTILITY COMPANY, AND ARRANGE FOR ALL INSPECTIONS FOR HIS WORK. BEFORE SUBMITTING HIS BID, THE ELECTRICAL CONTRACTOR SHALL CHECK WITH EACH UTILITY COMPANY SUPPLYING SERVICE TO THE PROJECT AND DETERMINE FROM THEM ALL OF THEIR REQUIREMENTS AND CHARGES. ALL SUCH REQUIREMENTS AND CHARGES SHALL BE INCLUDED IN THE BASE BID PROPOSAL. AT THE COMPLETION OF ELECTRICAL WORK, THE ELECTRICAL CONTRACTOR SHALL FURNISH THE OWNER WITH ALL CERTIFICATES OF FINAL INSPECTION AND APPROVALS.

6. SITE VISIT BY CONTRACTOR:

THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE CONDITIONS UNDER WHICH HIS WORK MUST BE CONDUCTED BEFORE SUBMITTING HIS PROPOSAL. THE SUBMITTING OF A PROPOSAL IMPLIES THAT THE CONTRACTOR HAS VISITED THE SITE, IS CONVERSANT WITH ALL SITE CONDITIONS, INCLUDING EXISTING SERVICES AND EQUIPMENT, OBSTRUCTIONS AND ALL CONDITIONS, WHICH WILL BE ENCOUNTERED IN THE REMOVAL AND/OR RELOCATION OF PRESENT MATERIALS AND EQUIPMENT, INSTALLATION OF NEW MATERIALS AND CUTTING AND PATCHING, ETC., FOR A COMPLETE ELECTRICAL INSTALLATION. IF ANY INTERFERENCES OR VIOLATIONS APPEAR AND DEPARTURE FROM THE DESIGN INTENT OF THE BID DOCUMENTS IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO ENTERING INTO CONTRACT WITH THE OWNER. FAILURE TO PROVIDE THE ARCHITECT WITH THE AFOREMENTIONED NOTIFICATION WILL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE DESIGN INTENT OF THE BID DOCUMENTS WITH NO ADDITIONAL EXPENSES ('EXTRAS') BEING INCURRED BY THE OWNER, ARCHITECT, OR ENGINEER.

7. SUBSTITUTIONS:

A. ANY EQUIPMENT PROPOSED AS EQUAL TO THAT SPECIFIED SHALL BE SO PROVEN BY THE CONTRACTOR WHO SHALL, PRIOR TO BIDDING, SUBMIT THE MANUFACTURER'S NAME, MODEL NUMBERS, VERIFICATION DATA SHEETS AND APPLICABLE WORKING DRAWINGS. THE ENGINEER SHALL REVIEW AND APPROVE OR DISAPPROVE SUCH PROPOSED SUBSTITUTIONS PRIOR TO BIDDING TIME. IF THIS PROCEDURE IS NOT FOLLOWED BY THE CONTRACTOR PRIOR TO OBTAINING PAYMENT FROM THE CONTRACTOR FOR THE ENGINEER'S TIME IN EVALUATING THE PROPOSED SUBSTITUTION.
B. IN THE EVENT SUBSTITUTIONS ARE PROPOSED TO THE ENGINEER AFTER THE CONTRACT HAS BEEN AWARDED, THE CONTRACTOR SHALL ISSUE A PURCHASE ORDER NUMBER TO THE ENGINEER ALONG WITH THE SHOP DRAWING SUBMITTAL FOR USE BY THE ENGINEER IN OBTAINING PAYMENT FROM THE CONTRACTOR FOR THE ENGINEER'S TIME IN EVALUATING THE PROPOSED SUBSTITUTION.
C. WHETHER OR NOT THE ENGINEER APPROVED THE PROPOSED SUBSTITUTION, THE CONTRACTOR SHALL PROMPTLY UPON RECEIPT OF THE ENGINEER'S BILLING, REIMBURSE THE ENGINEER AT THE RATE OF TWO AND THREE-QUARTER TIMES THE DIRECT COST TO THE ENGINEER FOR ALL TIME SPENT BY HIM IN EVALUATION OF THE PROPOSED SUBSTITUTION.

8. COOPERATION WITH OTHER CONTRACTORS:

A. ELECTRICAL CONTRACTOR SHALL ARRANGE ALL PARTS OF HIS WORK IN PROPER RELATION TO THE WORK OF OTHERS AND TO THE ARCHITECTURAL FINISH. WHERE INTERFERENCES OCCUR, THE ELECTRICAL CONTRACTOR SHALL, BEFORE INSTALLING THE WORK INVOLVED, CONSULT WITH THE ARCHITECT AS TO THE EXACT LOCATION AND LEVEL OF HIS WORK. THE ARCHITECT'S DECISION SHALL BE FINAL.
B. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE ARRANGEMENT OF HIS WORK AND EQUIPMENT, AND SHALL MAINTAIN PROPER HEADROOM UNDER HIS WORK. SHOULD WORK INSTALLED BY HIM REQUIRE MODIFICATION TO AVOID INTERFERENCE WITH OTHER WORK, AS DETERMINED BY THE ARCHITECT, SUCH CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST.

9. STANDARDS OF MATERIAL AND WORKMANSHIP:

- A. ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER AS WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS.
B. ALL MATERIALS AND EQUIPMENT SHALL BEAR THE LABEL OF APPROVAL OF THE NATIONAL BOARD OF FIRE UNDERWRITERS' LABORATORIES.
C. THE ELECTRICAL CONTRACTOR SHALL EFFECTIVELY PROTECT, AT HIS OWN EXPENSE, SUCH OF HIS WORK, MATERIALS OR EQUIPMENT AS IS LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD.
D. ALL OPENINGS INTO ANY PART OF THE CONDUIT SYSTEM AS WELL AS ASSOCIATED FIXTURES, EQUIPMENT, ETC., BOTH BEFORE AND AFTER BEING SET IN PLACE, MUST BE SECURELY COVERED OR OTHERWISE PROTECTED TO PREVENT OBSTRUCTION OF THE CONDUIT, OR INJURY DUE TO CARELESSNESS OR MALICIOUSLY DROPPED TOOLS OR MATERIALS, GRIT, DIRT OR ANY FOREIGN MATTER. THE ELECTRICAL CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL DAMAGE SO DONE UNTIL HIS WORK IS FULLY AND FINALLY ACCEPTED. CONDUIT ENDS SHALL BE COVERED WITH CAPPED BUSHINGS. ALL ELECTRICAL EQUIPMENT SHALL BE GROUNDED.
E. IT IS NOT INTENDED THAT THE DRAWINGS OR THIS SPECIFICATION INDICATE OR SPECIFY EACH PIECE OF CONDUIT, FITTINGS, ETC., REQUIRED FOR THE INSTALLATION. WHERE ITEMS ARE REQUIRED FOR THE SATISFACTORY OPERATION OF THE INSTALLATION AND ARE NOT INDICATED ON THE DRAWINGS, THEY SHALL BE CONSIDERED TO BE BOTH SPECIFIED AND INDICATED.
F. GENERAL REQUIREMENTS AND DETAILS OF EQUIPMENT ARE SHOWN. DIMENSIONS OR SCALES SHOWN ARE APPROXIMATE AND MUST BE CHECKED AT JOB PRIOR TO INSTALLATION OF EQUIPMENT OR ANY ORDER GIVEN FOR FABRICATION.
G. ELECTRICAL CONTRACTORS SHALL HAVE COMPETENT FOREMAN ON THE PREMISES AT ALL TIMES TO SUPERINTEND AND CHECK AND LAY OUT ALL WORK, GIVE INFORMATION TO GENERAL CONTRACTOR REGARDING CHASES AND OPENINGS, AND BE RESPONSIBLE FOR SUCH LOCATIONS. THIS CONTRACTOR SHALL COOPERATE WITH OTHER CONTRACTORS WHERE CHASES, OPENINGS, PIPES, FOUNDATIONS, ETC., ARE IN PROXIMITY TO THE WORK OF OTHER TRADES AND ARRANGE THE WORK TO FIT. THIS CONTRACTOR SHALL STUDY WHERE OTHER TRADES LEAVE CONNECTIONS AND OUTLETS TO BE CONNECTED, SO THAT ALL WORK AND APPLIANCES SHALL BE PROPERLY ARRANGED FOR AND CONNECTED READY FOR USE.

10. CUTTING AND PATCHING:

CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, ROOFS, ETC., SHALL BE DONE BY ARCHITECTURAL TRADES CONTRACTOR BUT PAID FOR BY THE ELECTRICAL CONTRACTOR. STRUCTURAL MEMBERS SHALL NOT BE CUT WITHOUT OBTAINING WRITTEN PERMISSION FROM THE ARCHITECT. CONDUITS PASSING THROUGH ROOFS OR OUTSIDE WALLS EXPOSED TO WEATHER SHALL BE CAREFULLY FLASHED. FIRE PROOFING OF HOLES SHALL BE PROVIDED AND SHALL BE OF A UL LISTED MATERIAL, AND APPROVED BY AUTHORITY HAVING JURISDICTION.

11. OBSTRUCTIONS:

SHOULD ANY STRUCTURAL DIFFICULTIES PREVENT SETTING OF CABINETS, RUNNING CONDUCTORS, ETC., AT POINTS SHOWN ON PLANS, THE NECESSARY MINOR DEVIATIONS THEREFROM, AS DETERMINED BY THE ARCHITECT, MAY BE PERMITTED AND MUST BE MADE WITHOUT ADDITIONAL COST.

12. DRAWINGS AND SPECIFICATIONS:

ANY ITEM APPEARING ON THE DRAWINGS AND NOT IN THE SPECIFICATION OR VICE VERSA, AND ANY ITEMS APPEARING IN NEITHER BUT NECESSARY TO ACCOMPLISH THE INTENT OF THESE SPECIFICATIONS, SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR.

13. PENETRATIONS AND FIRE PROOFING:

- A. ALL PENETRATIONS OF RATED FIRE AND SMOKE WALLS SHALL BE BY CONDUIT.
B. ALL PENETRATIONS OF FLOORS SHALL BE BY CONDUIT OR METAL SLEEVES.
C. ALL PENETRATION SLEEVES INCLUDING OPEN ENDED CONDUITS NOT TERMINATED IN JUNCTION BOXES SHALL BE FILLED WITH FIRE SAFING MATERIAL AS MANUFACTURED BY U. S. GYPSUM CO., OR ARCHITECT APPROVED EQUAL FOR 2" IN LENGTH FROM CONDUIT END.
D. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR COMPLETE FIRE STOPPING REQUIREMENTS AND LOCATIONS OF FIRE RATED WALLS, FLOORS AND PARTITIONS.

14. GROUNDING:

- A. FURNISH AND INSTALL A COMPLETE GROUNDING SYSTEM IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND LOCAL CODES AND ORDINANCES.
B. ALL BRANCH CIRCUIT CONDUCTORS SHALL INCLUDE A SEPARATE COPPER, INSULATED (GREEN), EQUIPMENT GROUNDING CONDUCTOR SIZED PER ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
C. GROUNDING PATH FROM CIRCUITS, EQUIPMENT, AND CONDUCTOR ENCLOSURES SHALL BE PERMANENT AND CONTINUOUS, AND SHALL HAVE A RESISTANCE TO GROUND OF LESS THAN 5 OHMS.
D. ALL CABINETS, MOTOR FRAMES, MOTOR STARTERS, CONTACTORS, CONDUIT SYSTEMS, PANELBOARDS, TRANSFORMERS, ETC., SHALL BE THOROUGHLY GROUNDED IN ACCORDANCE WITH THE NEC.

15. CONDUCTORS:

- A. ALL CONDUCTORS SHALL BE COPPER AND SHALL BE INSTALLED IN CONDUIT. EXCEPTION: MC CABLE SHALL BE ALLOWED IN CONCEALED SPACES WHERE PERMISSIBLE BY CODE.
B. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE MINIMUM SIZE #12 AWG, TYPE "THHN" INSULATED. ALL FEEDERS AND SECONDARY SERVICE CONDUCTORS SHALL BE COPPER, WITH 600 VOLT INSULATION. FEEDER INSULATION SHALL BE TYPE "THHN" OR "XHHW".
C. NO WIRING SMALLER THAN NO. 12 AWG SHALL BE USED UNLESS OTHERWISE NOTED, AND ALL WIRE NO. 10 AWG AND LARGER SHALL BE STRANDED, UNLESS OTHERWISE SPECIFIED.
D. HOME RUNS TO PANELBOARDS 75 FEET IN LENGTH OR OVER SHALL BE NOT LESS THAN NO. 10 AWG, OR LARGER AS NECESSARY TO MAINTAIN A MAXIMUM VOLTAGE DROP OF 3 PERCENT, WHETHER OR NOT SHOWN ON THE DRAWINGS.
E. CONDUCTORS SHALL BE COLOR CODED PER THE NATIONAL ELECTRICAL CODE.

16. CONDUITS:

- A. ALL CONDUITS SHALL BE RUN CONCEALED IN FINISHED AREAS UNLESS OTHERWISE NOTED. EXPOSING OF ANY CONDUIT IN UN-FINISHED AREAS SHALL BE ONLY DONE WITH THE WRITTEN APPROVAL OF THE ARCHITECT.
B. CONDUIT INSTALLED IN CONCEALED AREAS NOT SUBJECT TO DAMAGE MAY BE ELECTRIC METALLIC TUBING "EMT". CONDUIT INSTALLED EXPOSED AND SUBJECT TO DAMAGE SHALL BE RIGID GALVANIZED STEEL CONDUIT.
C. ALL CONDUIT SHALL BE 1/2" MINIMUM SIZE UNLESS OTHERWISE NOTED.
D. ALL CONDUITS INSTALLED AT EXTERIOR LOCATIONS BELOW GRADE SHALL BE SCHEDULE 40 PVC. CONDUITS INSTALLED IN THE CONCRETE SLAB SHALL BE RIGID GALVANIZED STEEL CONDUIT.
E. A GROUND WIRE SIZED PER ARTICLE 250 OF THE N.E.C. SHALL BE INCLUDED WITH ALL CIRCUIT CONDUCTORS.

17. DUPLEX RECEPTACLES:

DUPLEX RECEPTACLES SHALL BE SPECIFICATION GRADE, 120 VOLT, 20 AMPERE, GROUNDING TYPE, EQUAL TO HUBBELL #5362 SERIES, P&S, OR ARROW-HART. COLOR SHALL BE SELECTED BY ARCHITECT OR OWNER.

18. GROUND FAULT RECEPTACLES:

GROUND FAULT RECEPTACLES SHALL BE SPECIFICATION GRADE, 120 VOLT, 20 AMPERE, U.L. LISTED UNDER 498 RECEPTACLE REQUIREMENTS AND 943 CLASS A REQUIREMENTS, SHALL CONFORM TO NEC REQUIREMENTS, AND EQUAL TO HUBBELL SERIES #5260, P&S, OR ARROW-HART. COLOR TO BE SELECTED BY ARCHITECT OR OWNER.

19. TOGGLE SWITCHES:

TOGGLE WALL SWITCHES SHALL BE 20 AMPERE, 120/277 VOLT, SPECIFICATION GRADE, SINGLE, DOUBLE, ETC., AS INDICATED, EQUAL TO HUBBELL #1120 SERIES, P&S, OR ARROW HART. COLOR TO BE SELECTED BY ARCHITECT OR OWNER.

20. WEATHERPROOF BOXES AND COVERS:

WIRING DEVICES INSTALLED AT EXTERIOR LOCATIONS SHALL BE INSTALLED IN A SINGLE GANG, DEEP WEATHERPROOF BOX WITH WHILE-IN-USE COVER PER NEC SECTION 406.8(B)(1). BOXES AND COVERS SHALL BE CONSTRUCTED OF POLYCARBONATE AND SHALL BE FULLY GASKETED, THE TRANSLUCENT COVER SHALL INCLUDE A PAD-LOCKABLE, BREAK-RESISTANT BULLNOSE AND LATCH. PASS & SEYMOUR #WUC10-DC OR EQUAL.

21. DEVICE PLATES:

DEVICE PLATES SHALL BE STAINLESS STEEL TYPE 302, HUBBELL "S" SERIES, OR AS SELECTED BY ARCHITECT OR OWNER.

22. LIGHTING FIXTURES:

A. FLUORESCENT FIXTURES, UNLESS OTHERWISE INDICATED, SHALL BE SUITABLE FOR 120 VOLT, SINGLE PHASE, A.C., 60 HERTZ SERVICE AND SHALL BE EQUIPPED WITH THE QUANTITY AND TYPE OF T8 ENERGY SAVING FLUORESCENT LAMPS AS SPECIFIED IN THE LIGHT FIXTURE SCHEDULE PROVIDED ON THE DRAWINGS. FLUORESCENT LAMP BALLASTS SHALL BE ENERGY EFFICIENT, >85% POWER FACTOR, PARALLEL LAMP CONNECTION, CLASS "T" ELECTRONIC TYPE, WITH A BALLAST FACTOR OF >0.92, THD OF <10%, AND CREST FACTOR OF 1.7.

B. LIGHTING FIXTURE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL LIGHTING FIXTURES WITH THE ARCHITECTURAL REFLECTED CEILING PLANS. LIGHT FIXTURES AND SPRINKLER HEAD LOCATIONS SHALL, UNLESS OTHERWISE NOTED, TAKE PRECEDENCE OVER AIR DISTRIBUTION DEVICE LOCATIONS.

C. EXIT LIGHTS SHALL BE AS SCHEDULED ON THE DRAWINGS. UNITS SHALL BE SINGLE OR DOUBLE-FACED AND ARROWS SHALL BE PROVIDED AS INDICATED ON PLANS. MOUNTING SHALL BE AS INDICATED ON PLANS.

D. ALL FLUORESCENT BALLASTS SHALL BE PROVIDED WITH DISCONNECTING MEANS PER NEC.

23. EMERGENCY LIGHTING:

- A. THE ELECTRICAL CONTRACTOR SHALL INSTALL AN EMERGENCY LIGHTING SYSTEM AS SHOWN ON THE DRAWINGS, CONFORMING TO THE 2009 INTERNATIONAL FIRE CODE AND THE MICHIGAN BUILDING CODE.
B. BRANCH CIRCUIT CONDUCTORS FOR EMERGENCY LIGHTS SHALL NOT RUN IN RACEWAY WITH OTHER BRANCH CIRCUIT CONDUCTORS, NOR SHALL THEY ENTER AN OUTLET BOX WITH OTHER WIRE.

24. EMERGENCY LIGHTING UNITS:

- A. FURNISH AND INSTALL BATTERY OPERATED EMERGENCY LIGHTING UNITS AT LOCATIONS INDICATED ON THE PLANS OF TYPES SCHEDULED ON PLANS.
B. EMERGENCY LIGHTING UNITS SHALL INCLUDE A SUITABLE SHELF OR WALL MOUNTING BRACKET AND SHALL CONTAIN ALL NECESSARY MODULES, READY AND HIGH CHARGE INDICATOR PILOT LIGHTS, TEST SWITCH, LAMPS, AND SUITABLE TERMINAL BOARDS FOR CONNECTION OF NORMAL ELECTRICAL SUPPLY CABLES.
C. BATTERIES SHALL BE LEAD CALCIUM TYPE, OR NI-CAD TYPE, AS SCHEDULED.
D. BATTERY CHARGER SHALL BE DESIGNED AS TO MAINTAIN THE BATTERIES FULLY CHARGED ON THE TRICKLE RATE.
E. EMERGENCY LIGHTING UNITS UTILIZING INCANDESCENT LAMPS OR HALOGEN LAMPS RATED LESS THAN SCHEDULED ON THE DRAWINGS WILL NOT BE ACCEPTABLE. CONSULT LIGHTING FIXTURE SCHEDULE FOR MINIMUM ACCEPTABLE EQUIPMENT RATINGS. ANY EQUIPMENT SUBMITTED NOT MEETING THE MINIMUM REQUIREMENTS WILL BE REJECTED.

25. DISCONNECT SWITCHES:

DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE, NEMA 1 FOR INDOOR USE, AND NEMA 3R OUTDOOR USE RATED 600 VOLT. DISCONNECT SWITCHES SERVING MOTOR LOADS SHALL BE HORSEPOWER RATED. SQUARE D, CUTLER-HAMMER OR SIEMENS ENERGY AND AUTOMATION.

26. TELEPHONE RACEWAY SYSTEM:

THE ELECTRICAL CONTRACTOR SHALL INSTALL A COMPLETE SYSTEM OF SLEEVES, CONDUITS, OUTLET BOXES, CABINETS, ETC, AS SHOWN ON THE DRAWINGS. ALL CONDUITS SHALL BE PROVIDED WITH FISH WIRE.

27. MOTOR STARTERS:

- A. STARTERS FOR SINGLE PHASE MOTORS SHALL BE MANUAL TOGGLE SWITCH TYPE WITH THERMAL OVERLOADS, SURFACE OR FLUSH MOUNTED AS REQUIRED. SQUARE D CLASS 2510.
B. STARTERS FOR THREE PHASE MOTORS SHALL BE MAGNETICALLY OPERATED, MECHANICALLY-HELD TYPE WITH OVERLOADS. CONTROL TRANSFORMER AND 2 AUXILIARY CONTACTS, WITH HOA SELECTOR SWITCH AND RED & GREEN PILOT LIGHTS MOUNTED IN FRONT COVER. STARTERS SHALL BE MOUNTED IN NEMA 3R ENCLOSURES FOR USE IN KITCHEN AREAS, NEMA 1 IN INDOOR FINISHED AREAS, AND NEMA 4 FOR OUTDOOR INSTALLATION. SQUARE D CLASS 5536.

28. CONNECTION OF MECHANICAL EQUIPMENT:

- A. THE ELECTRICAL CONTRACTOR IS CAUTIONED TO NOTE CAREFULLY OTHER SECTIONS OF THESE SPECIFICATIONS DESCRIBING ELECTRICAL EQUIPMENT TO BE FURNISHED UNDER THOSE SECTIONS IN ORDER THAT HE MAY FULLY UNDERSTAND THE WIRING REQUIREMENTS.
B. ALL POWER WIRING AND FEEDERS FOR MECHANICAL EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. MOTOR STARTERS WHICH ARE NOT AN INTEGRAL PART OF EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. SAFETY OR DISCONNECT SWITCHES WHERE INDICATED OR REQUIRED SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. MOTOR CONTROL WIRING AND EQUIPMENT WILL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR UNLESS OTHERWISE NOTED OR INDICATED ON THE DRAWINGS.
C. COORDINATE ALL REQUIRED CONTROL WIRING AND LOW VOLTAGE WIRING WITH MECHANICAL EQUIPMENT SUPPLIER.



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THIS DRAWING IS DIAGRAMMATIC AND SHOULD BE USED TO DETERMINE THE DESIGN INTENT. THE CONTRACTOR SHALL FIELD VERIFY ALL WORK AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO WILL RESULT IN THE CONTRACTOR TAKING FULL RESPONSIBILITY AND LIABILITY FOR SAID DISCREPANCIES. NOTICE: THIS DRAWING AND THE DESIGN ARE THE PROPERTY OF MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, PC AND NO ALTERATIONS AND/OR TRANSFERS OF WORK ARE PERMITTED UNLESS WRITTEN APPROVAL IS GRANTED BY MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, PC.

