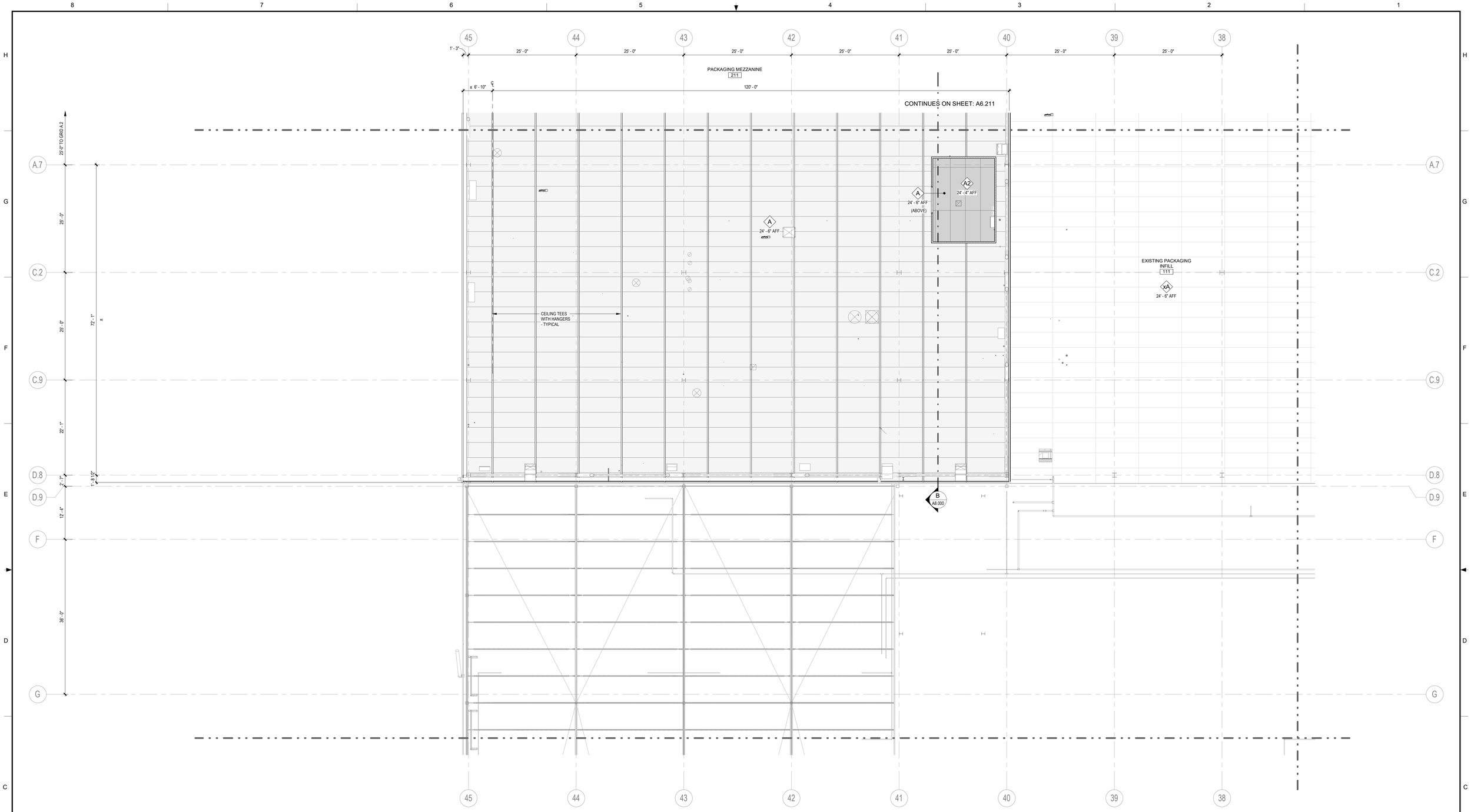


PARTIAL SECOND FLOOR REFLECTED CEILING PLAN - AREA 6

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

0' 4' 8' 12' 16'
1/8" = 1'-0"

TRUE NORTH PLAN NORTH

SYMBOLS LEGEND

INSULATED METAL CEILING PANEL (IMP) SYSTEM SHALL BE SUPPORTED AND BRACED PER CODES AND MANU. STANDARDS FOR WALK-ON RATED CEILING (25 psf)

GYPSUM BOARD CEILING

A — CEILING TYPE
10'-0" AFF — CEILING HEIGHT

INSULATED METAL LINER PANEL (IMP) SYSTEM WITH STAINLESS STEEL FACE ON ROOM SIDE. SHALL BE SUPPORTED AND BRACED PER CODES AND MANUFACTURER STANDARDS. NOT TO BE USED FOR WALK-ON RATED CEILING

24" X 48" ACOUSTIC CEILING TILES ON METAL SUSPENSION SYSTEM

EXPOSED PRECAST HOLLOW CORE SLAB (ON STEEL STRUCTURE)

EXPOSED METAL DECKING (ON STEEL STRUCTURE)

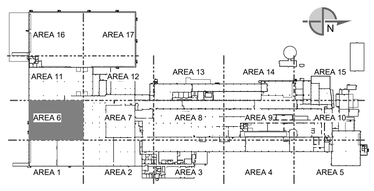
CEILING TYPES

SYMBOL	DESCRIPTION
A	4" THICK INSULATED METAL CEILING PANELS. WALK-ON RATED CEILING (25 PSF).
A2	2" THICK INSULATED METAL LINER PANELS WITH STAINLESS STEEL SKIN ON ROOM SIDE. (ATTACH / ADHERE TO WALK-ON CEILING PANELS ABOVE.)
XA	EXISTING INSULATED METAL CEILING PANELS. (WALK-ON RATED CEILING).
B	24" x 48" ACOUSTIC CEILING TILES ON METAL SUSPENSION SYSTEM WITH CONTINUOUS SOUND BATT INSULATION.
B	5/8" GYPSUM BOARD CEILING ON METAL STUD FRAMING @ 16" O.C.
E	EXPOSED TO STRUCTURE / METAL DECK / PRECAST DOUBLE TEE (ABOVE).
F	EXPOSED TO STRUCTURE / PRECAST CONCRETE HOLLOW CORE PLANKS (ABOVE).

CEILING NOTES

1. THE CEILING HEIGHTS INDICATED ARE TO THE BOTTOM OF THE CEILING.
2. ALL SUSPENDED CEILING SYSTEMS SHALL BE SEISMICALLY BRACED PER IBC 803.9.1.1 AND STATE AND LOCAL ORDINANCES.
3. REFER TO CEILING DETAILS SHEET A6.10 FOR TYPICAL SUSPENDED CEILING REQUIREMENTS.
4. WATER RESISTANT GYP. BOARD TO BE USED IN ALL RESTROOMS, LOCKER ROOMS, AND SHOWERS.
5. EQUIPMENT, STRUCTURE & ELECTRICAL SHOWN FOR INFORMATION ONLY, VERIFY WITH CORRESPONDING ENGINEERING DRAWINGS.

KEYPLAN



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DG PROJ: 7021 DG DWG: A6.206

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
DD	05/03/2023	MHW	RJS	PERMIT SET
AA	04/07/2023	SN	JHP	PROGRESS SET
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT

DRAWN	Author
DATE	01/23/23
APPROVED	Approver
DATE	05/03/2023
BUILDING	4013
PROJECT NO	11025607
PROJECT NAME	PROJECT FINN

SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
PARTIAL SECOND FLOOR REFLECTED CEILING PLAN - AREA 6

DRAWING NO. RIC-806943-06-A-8
REV. DD
DRAWING SIZE: ANSI E (44" x 34")
SHEET OF 193

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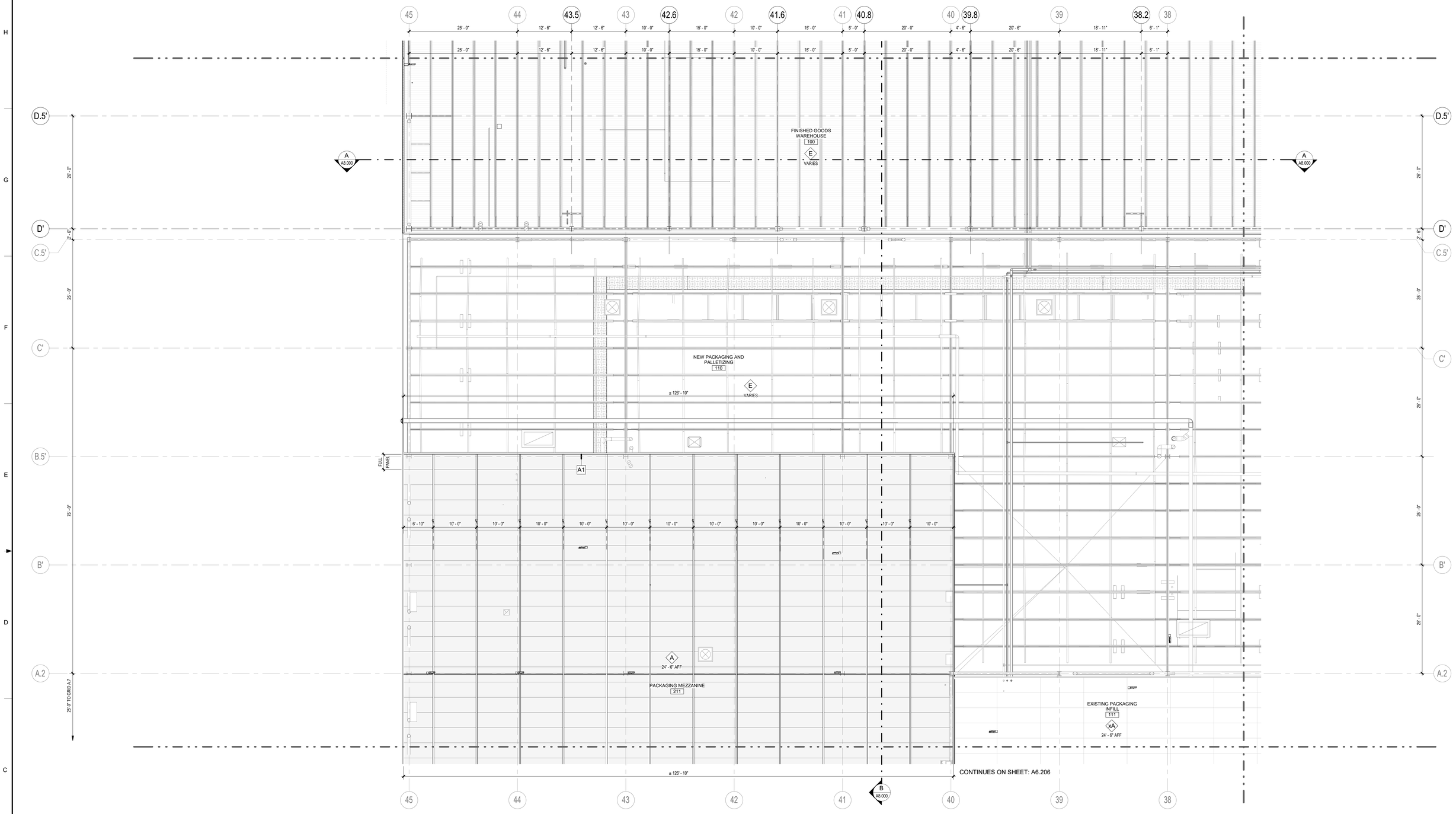


PARTIAL SECOND FLOOR REFLECTED CEILING PLAN - AREA 11

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

SYMBOLS LEGEND

- INSULATED METAL CEILING PANEL (IMP) SYSTEM SHALL BE SUPPORTED AND BRACED PER CODES AND MANU. STANDARDS FOR WALK-ON RATED CEILING (25 psf)
- GYPSUM BOARD CEILING
- CEILING TYPE (A) — 10'-0" AFF — CEILING HEIGHT
- INSULATED METAL LINER PANEL (IMP) SYSTEM WITH STAINLESS STEEL FACE ON ROOM SIDE. SHALL BE SUPPORTED AND BRACED PER CODES AND MANUFACTURER STANDARDS. NOT TO BE USED FOR WALK-ON RATED CEILING
- 24" X 48" ACOUSTIC CEILING TILES ON METAL SUSPENSION SYSTEM
- EXPOSED PRECAST HOLLOW CORE SLAB (ON STEEL STRUCTURE)
- EXPOSED METAL DECKING (ON STEEL STRUCTURE)

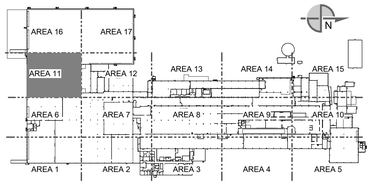
CEILING TYPES

SYMBOL	DESCRIPTION
A	4" THICK INSULATED METAL CEILING PANELS. WALK-ON RATED CEILING (25 PSF).
A2	2" THICK INSULATED METAL LINER PANELS WITH STAINLESS STEEL SKIN ON ROOM SIDE. (ATTACH / ADHERE TO WALK-ON CEILING PANELS ABOVE.)
xA	EXISTING INSULATED METAL CEILING PANELS. (WALK-ON RATED CEILING).
B	24" x 48" ACOUSTIC CEILING TILES ON METAL SUSPENSION SYSTEM WITH CONTINUOUS SOUND BATT INSULATION.
B	5/8" GYPSUM BOARD CEILING ON METAL STUD FRAMING @ 16" O.C.
E	EXPOSED TO STRUCTURE / METAL DECK / PRECAST DOUBLE TEE (ABOVE).
F	EXPOSED TO STRUCTURE / PRECAST CONCRETE HOLLOW CORE PLANKS (ABOVE).

CEILING NOTES

1. THE CEILING HEIGHTS INDICATED ARE TO THE BOTTOM OF THE CEILING.
2. ALL SUSPENDED CEILING SYSTEMS SHALL BE SEISMICALLY BRACED PER IBC 803.9.1.1 AND STATE AND LOCAL ORDINANCES.
3. REFER TO CEILING DETAILS SHEET A6.10 FOR TYPICAL SUSPENDED CEILING REQUIREMENTS.
4. WATER RESISTANT GYP. BOARD TO BE USED IN ALL RESTROOMS, LOCKER ROOMS, AND SHOWERS.
5. EQUIPMENT, STRUCTURE & ELECTRICAL SHOWN FOR INFORMATION ONLY, VERIFY WITH CORRESPONDING ENGINEERING DRAWINGS.

KEYPLAN



SEE DRAWING LIST ON TITLE SHEET A0.000 RIC-806832-01-A-0 FOR CORRESPONDING CSC SHEET NUMBER

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DG PROJ: 7021 | DG DWG: A6.211

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
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W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT

DRAWN	Author	DATE	01/23/23
APPROVED	Approver		05/03/2023
BUILDING	4013		
PROJECT NO.	11025607	PROJECT NAME	PROJECT FINN

SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
PARTIAL SECOND FLOOR REFLECTED CEILING PLAN - AREA 11

DRAWING NO. RIC-806943-11-A-8 REV. DD

DRAWING SIZE: ANSI E (44" x 34") SHEET OF 193

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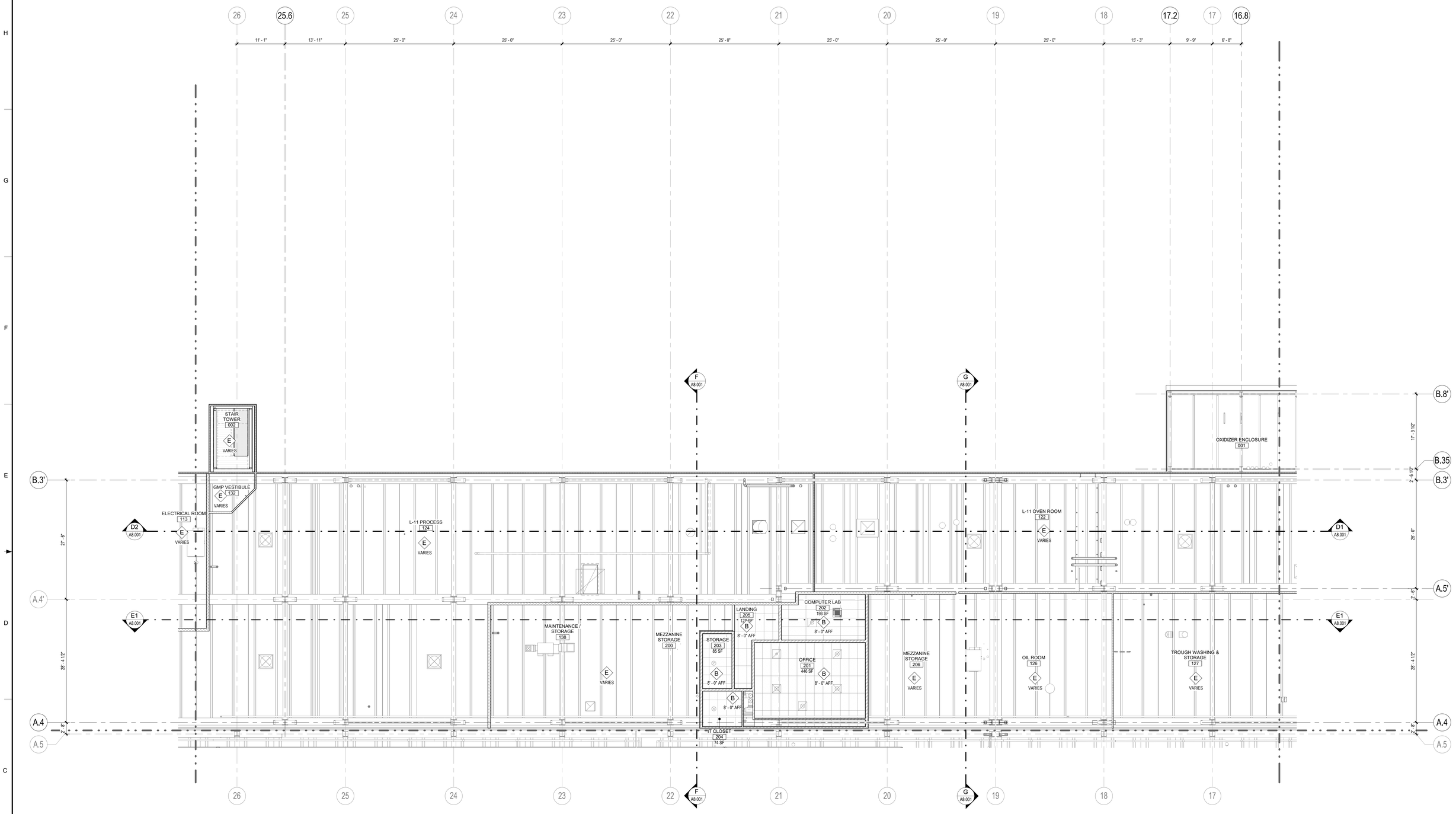


PARTIAL SECOND FLOOR REFLECTED CEILING PLAN - AREA 13

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

0' 4' 8' 12' 16'
1/8" = 1'-0"

TRUE NORTH

PLAN NORTH

SYMBOLS LEGEND

INSULATED METAL CEILING PANEL (IMP) SYSTEM SHALL BE SUPPORTED AND BRACED PER CODES AND MANU. STANDARDS FOR WALK-ON RATED CEILING (25 psf)

GYPSUM BOARD CEILING

A — CEILING TYPE
10'-0" AFF — CEILING HEIGHT

INSULATED METAL LINER PANEL (IMP) SYSTEM WITH STAINLESS STEEL FACE ON ROOM SIDE. SHALL BE SUPPORTED AND BRACED PER CODES AND MANUFACTURER STANDARDS. NOT TO BE USED FOR WALK-ON RATED CEILING

24" X 48" ACOUSTIC CEILING TILES ON METAL SUSPENSION SYSTEM

EXPOSED PRECAST HOLLOW CORE SLAB (ON STEEL STRUCTURE)

EXPOSED METAL DECKING (ON STEEL STRUCTURE)

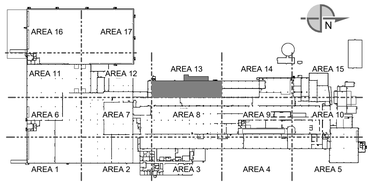
CEILING TYPES

SYMBOL	DESCRIPTION
A	4" THICK INSULATED METAL CEILING PANELS. WALK-ON RATED CEILING (25 PSF).
A2	2" THICK INSULATED METAL LINER PANELS WITH STAINLESS STEEL SKIN ON ROOM SIDE. (ATTACH / ADHERE TO WALK-ON CEILING PANELS ABOVE.)
xA	EXISTING INSULATED METAL CEILING PANELS. (WALK-ON RATED CEILING).
B	24" x 48" ACOUSTIC CEILING TILES ON METAL SUSPENSION SYSTEM WITH CONTINUOUS SOUND BATT INSULATION.
B	5/8" GYPSUM BOARD CEILING ON METAL STUD FRAMING @ 16" O.C.
E	EXPOSED TO STRUCTURE / METAL DECK / PRECAST DOUBLE TEE (ABOVE).
F	EXPOSED TO STRUCTURE / PRECAST CONCRETE HOLLOW CORE PLANKS (ABOVE).

CEILING NOTES

1. THE CEILING HEIGHTS INDICATED ARE TO THE BOTTOM OF THE CEILING.
2. ALL SUSPENDED CEILING SYSTEMS SHALL BE SEISMICALLY BRACED PER IBC 803.9.1.1 AND STATE AND LOCAL ORDINANCES.
3. REFER TO CEILING DETAILS SHEET A6.10 FOR TYPICAL SUSPENDED CEILING REQUIREMENTS.
4. WATER RESISTANT GYP. BOARD TO BE USED IN ALL RESTROOMS, LOCKER ROOMS, AND SHOWERS.
5. EQUIPMENT, STRUCTURE & ELECTRICAL SHOWN FOR INFORMATION ONLY, VERIFY WITH CORRESPONDING ENGINEERING DRAWINGS.

KEYPLAN



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RIC-806832-01-A-0 FOR CORRESPONDING CSC SHEET NUMBER

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DG PROJ: 7021 | DG DWG: A6.213

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
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AA	04/07/2023	SN	JHP	PROGRESS SET
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT

DRAWN	Author
DATE	01/23/23
APPROVED	Approver
DATE	05/03/2023
BUILDING	4013
PROJECT NO.	11025607
PROJECT NAME	PROJECT FINN

SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
PARTIAL SECOND FLOOR REFLECTED CEILING PLAN - AREA 13

DRAWING NO. RIC-806943-13-A-8
REV. DD
DRAWING SIZE: ANSI E (44" x 34")
SHEET 143 OF 193

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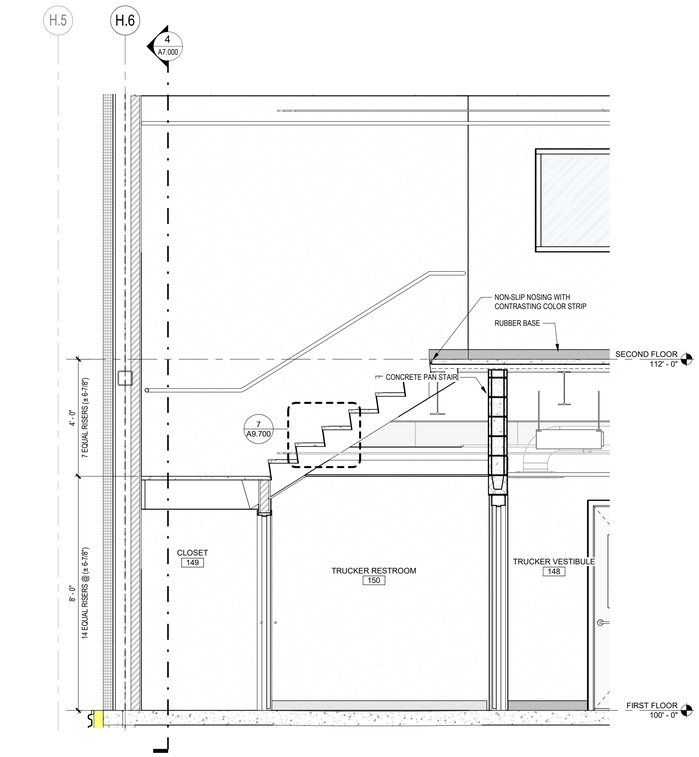
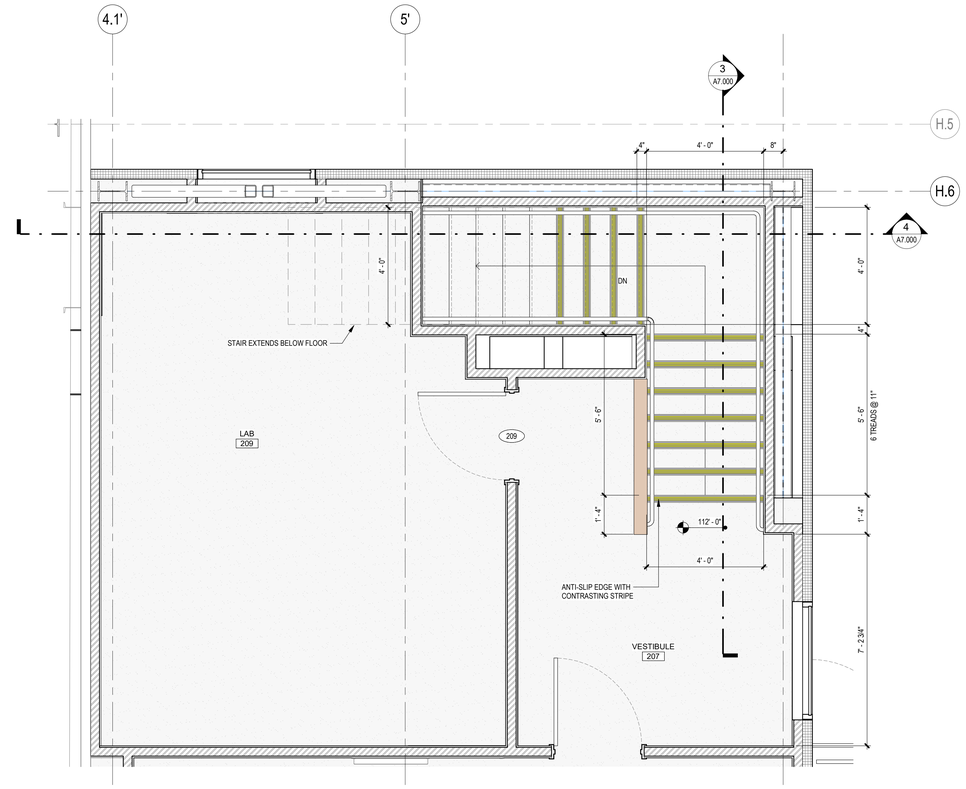


3 RECEIVING OFFICE STAIR - SECTION 2
SCALE: 1/2" = 1'-0"



2 RECEIVING OFFICE STAIR - SECOND FLOOR PLAN
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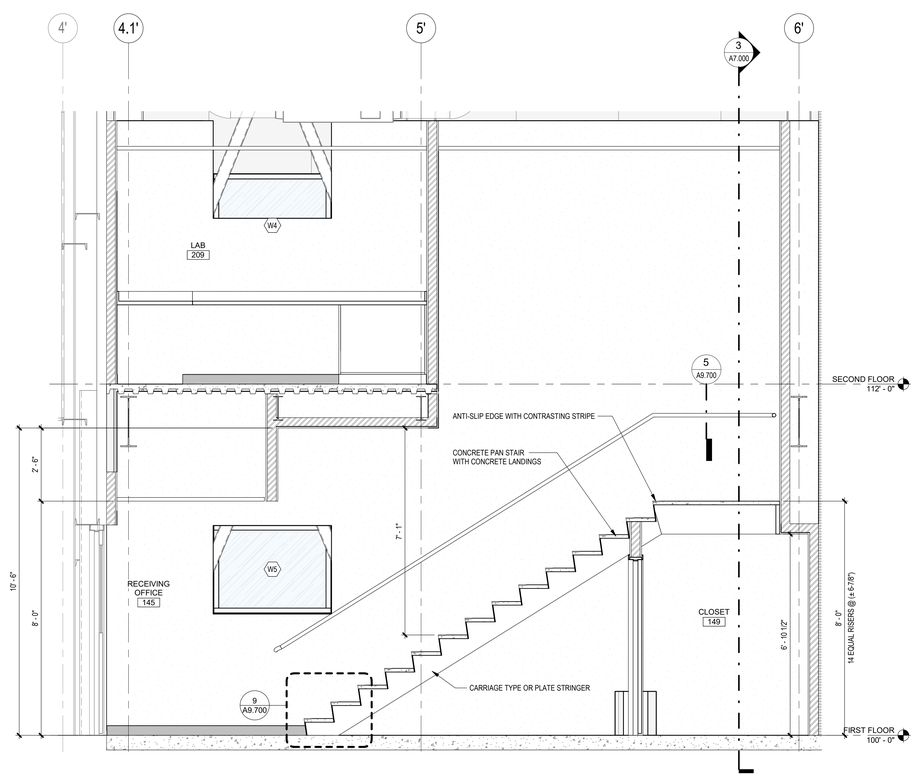
0' 1' 2' 3' 4'
1/2" = 1'-0"
TRUE NORTH PLAN NORTH



4 RECEIVING OFFICE STAIR - SECTION 1
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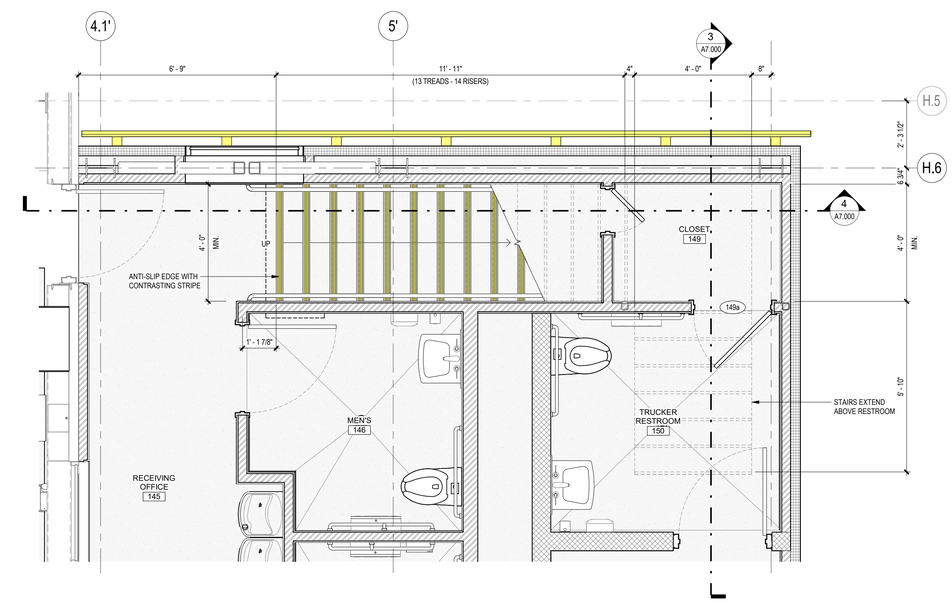

1 RECEIVING OFFICE STAIR - FIRST FLOOR PLAN
SCALE: 1/2" = 1'-0"

0' 1' 2' 3' 4'
1/2" = 1'-0"
TRUE NORTH PLAN NORTH

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U	02/24/2023	MHW	JHP	BUILDING PERMIT

DRAWN	MHW	DATE	02/09/2023
APPROVED	JHP		05/03/2023
BUILDING	4013		
PROJECT NO.	11025607	PROJECT NAME	PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)			

CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
INTERIOR STAIR PLANS AND SECTIONS - RECEIVING OFFICE

DRAWING NO. RIC-806950-01-A-4 REV. DD

DRAWING SIZE: ANSI E (44" x 34") SHEET OF 193

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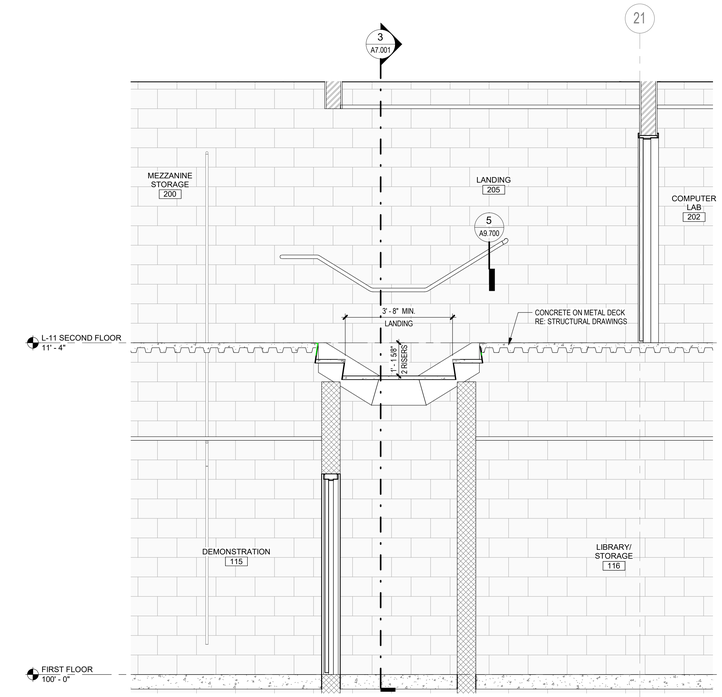
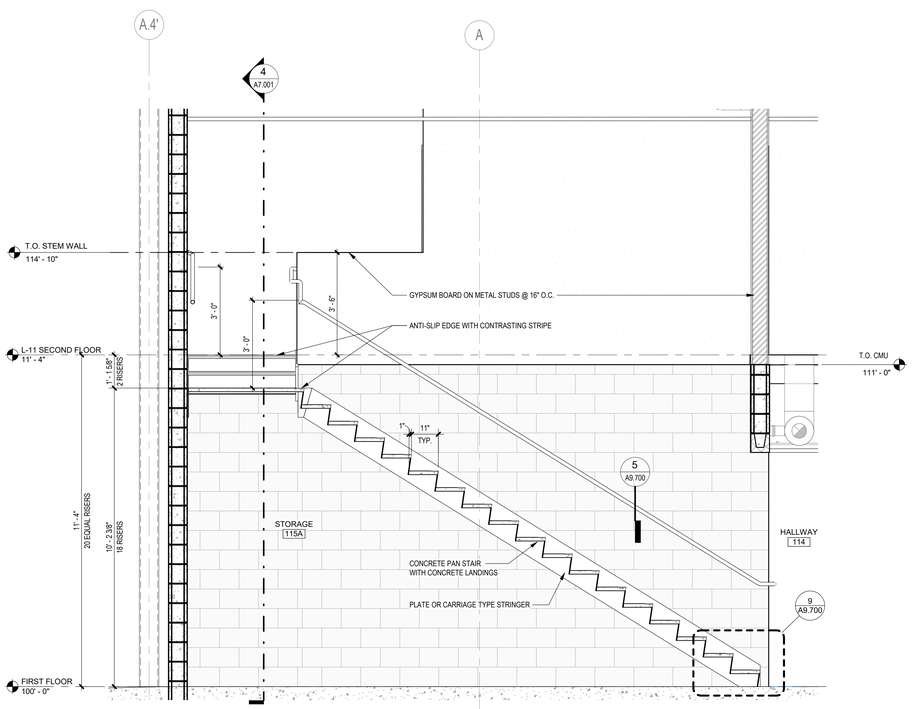


4 L11 OFFICE AND TRAINING AREA - SECTION 2
SCALE: 1/2" = 1'-0"



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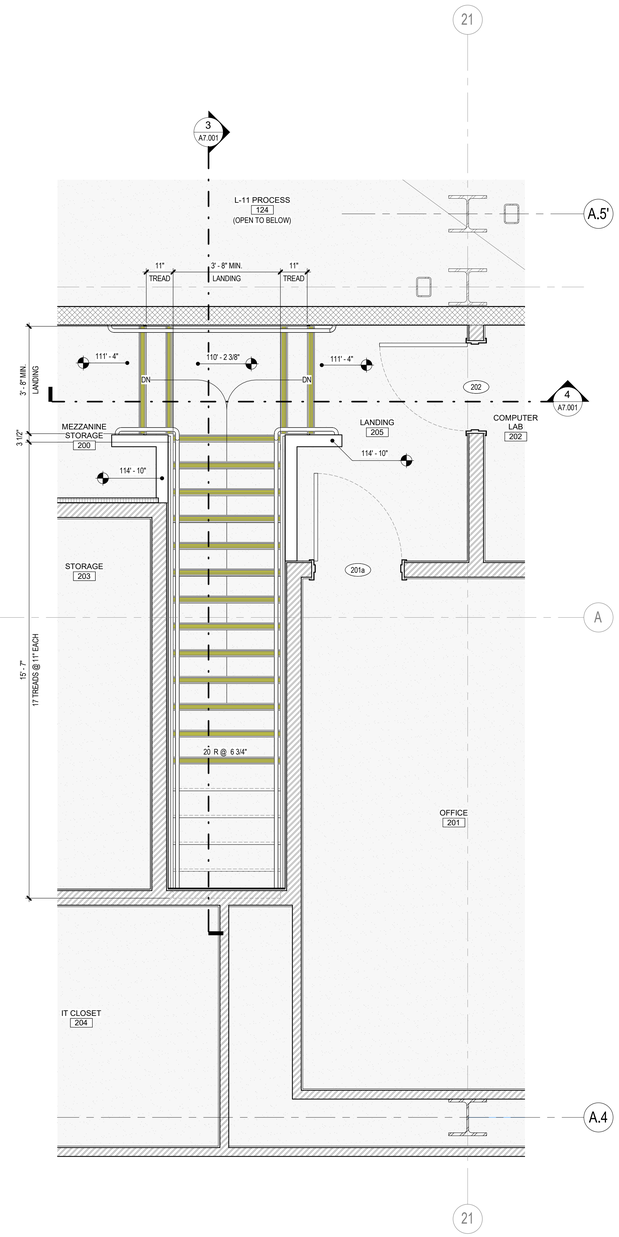

2 SECOND LEVEL STAIR PLAN
L11 OFFICE AND TRAINING AREA
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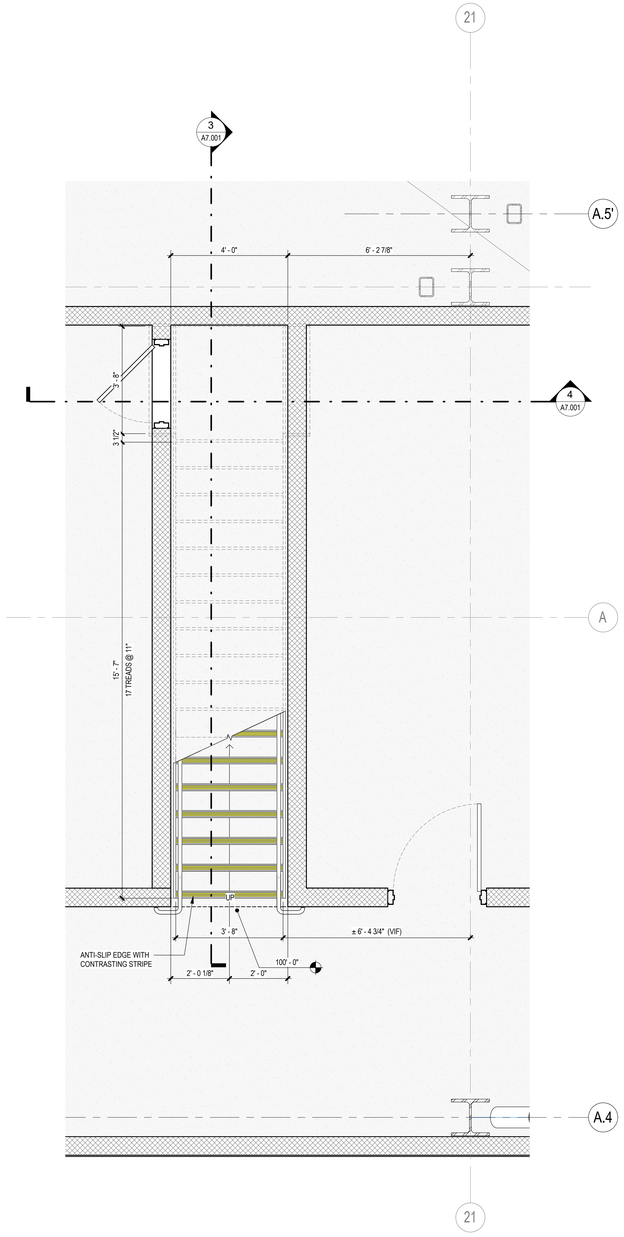

1 FIRST FLOOR STAIR PLAN
L11 OFFICE AND TRAINING AREA
SCALE: 1/2" = 1'-0"

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DG PROJ: 7021 DG DWG: A7.001

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
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U	02/24/2023	MHW	JHP	BUILDING PERMIT
M	01/06/2023	AE	JHP	60% DESIGN REVIEW

DRAWN	MHW
DATE	02/09/2023
APPROVED	JHP
DATE	05/03/2023
BUILDING	4013
PROJECT NO.	11025607
PROJECT NAME	PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)	

CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
INTERIOR STAIR PLANS AND SECTIONS - L11 OFFICE AND TRAINING

DRAWING NO. RIC-806950-02-A-4
REV. DD
DRAWING SIZE: ANSI E (44" x 34")
SHEET OF 193

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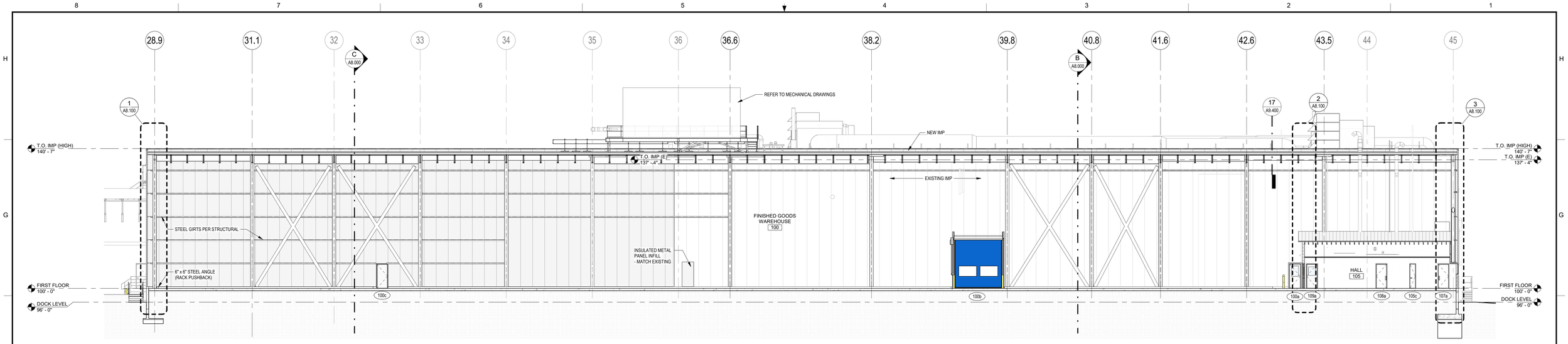

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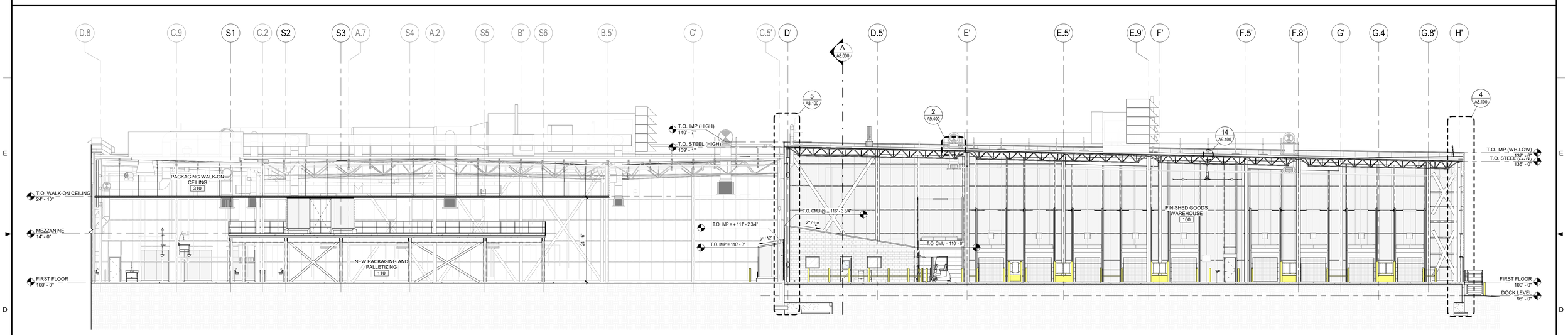

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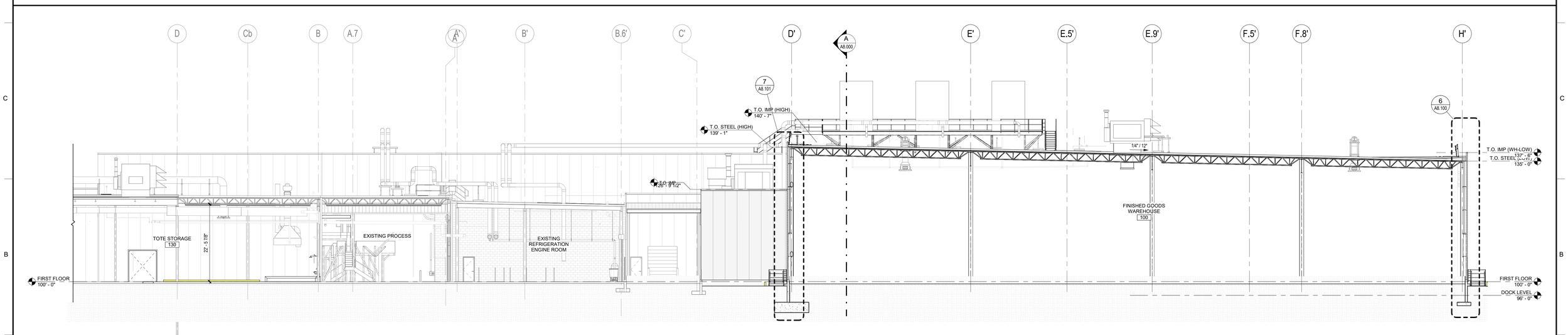

C BUILDING SECTION C
SCALE: 3/32" = 1'-0"

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RIC-806832-01-A-0 FOR CORRESPONDING CSC SHEET NUMBER

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DG PROJ: 7021
DG DWG: A8.000

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
	05/ /2023	SN		HIGH PERFORMANCE COATINGS
DD	05/03/2023	MHW	RJS	PERMIT SET
AA	04/07/2023	SN	JHP	PROGRESS SET
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT
T	02/21/2023	SN	JHP	IMP BID ADDENDUM 2

DRAWN	Author
DATE	06/06/19
APPROVED	Approver
DATE	05/03/2023
BUILDING	4013
PROJECT NO	11025607
PROJECT NAME	PROJECT FINN

SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
BUILDING SECTIONS A-C

DRAWING NO. RIC-806980-01-A-3
REV. DD
DRAWING SIZE: ANSI E (44" x 34")
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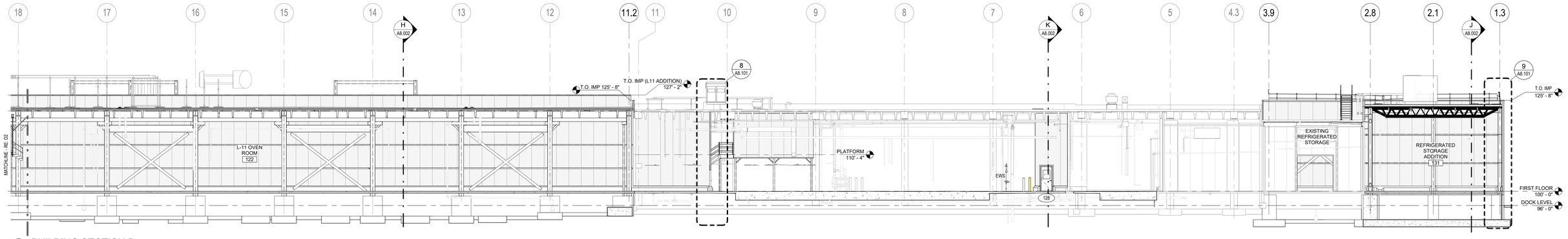
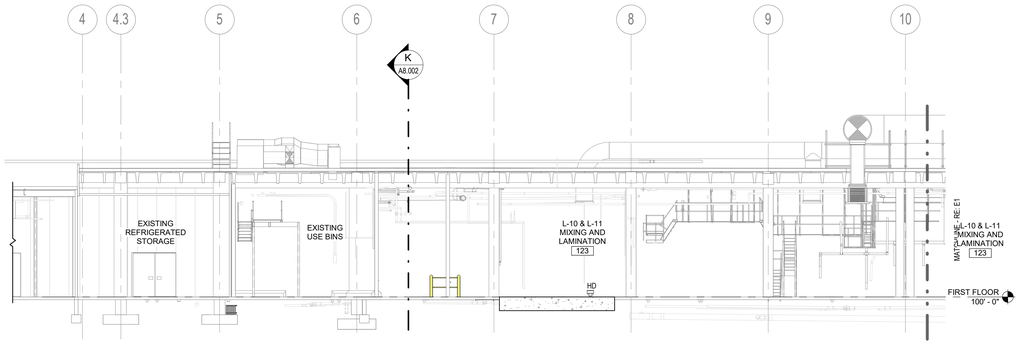


D1 BUILDING SECTION D
SCALE: 3/32" = 1'-0"



E2 BUILDING SECTION E (continued)
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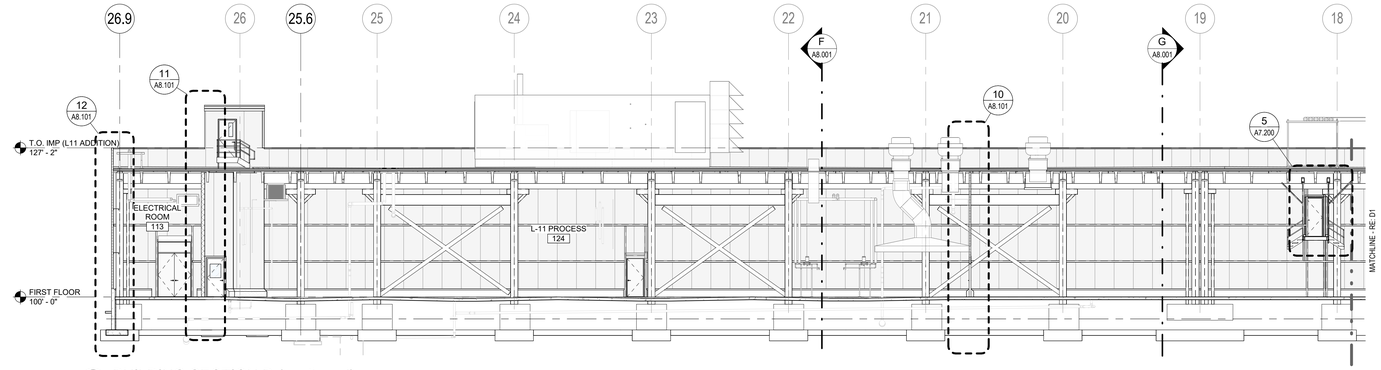

D2 BUILDING SECTION D (continued)
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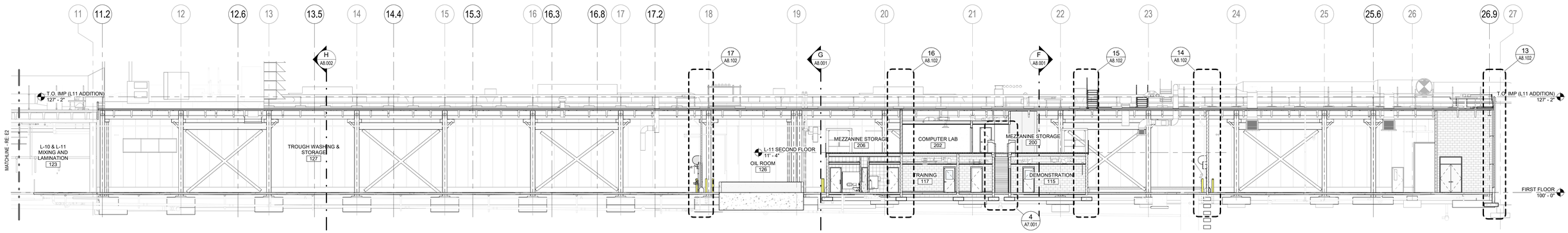

E1 BUILDING SECTION E
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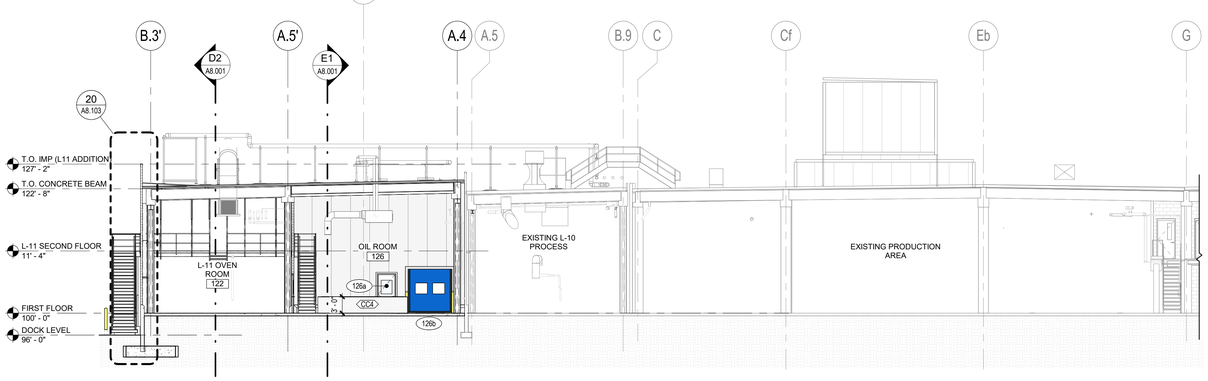
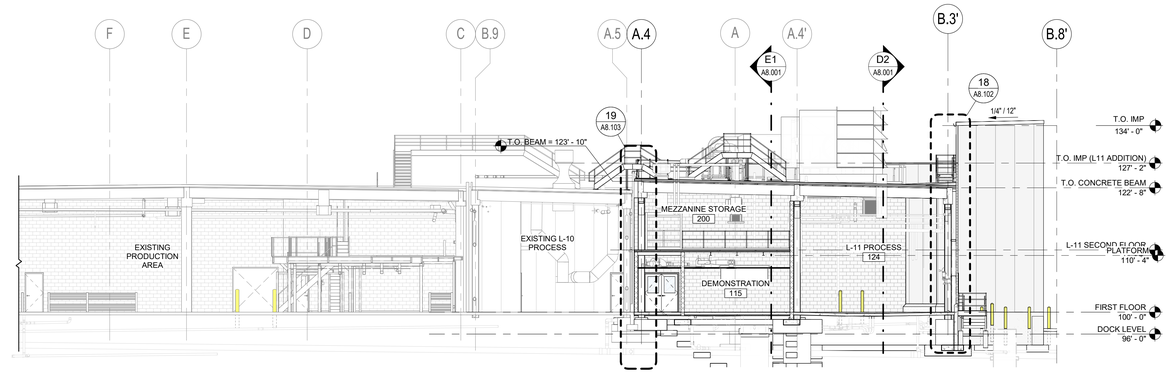


G BUILDING SECTION G
SCALE: 3/32" = 1'-0"



F BUILDING SECTION F
SCALE: 3/32" = 1'-0"

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DG PROJ: 7021 | DG DWG: A8.001

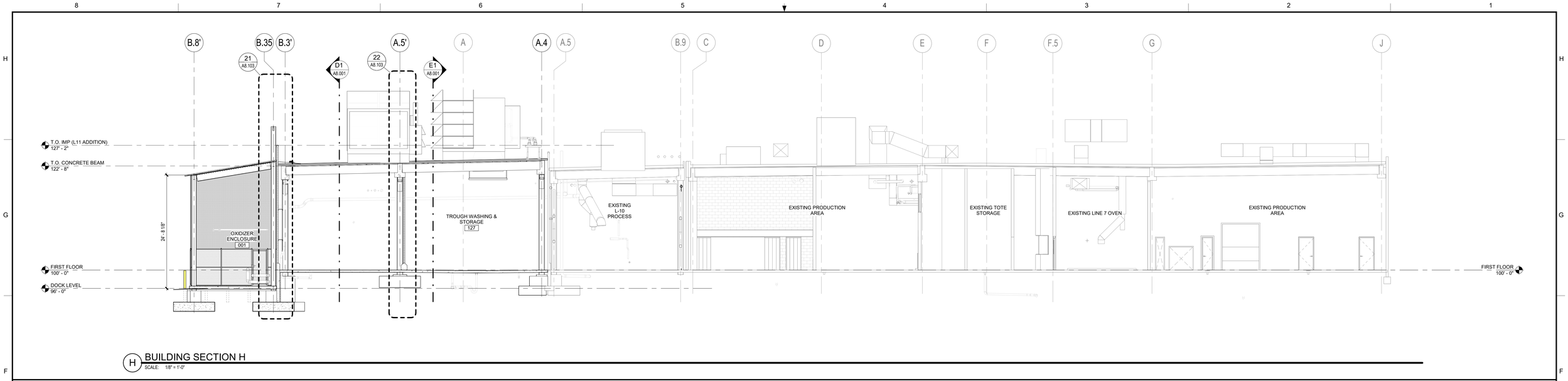
REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
	05/ /2023	SN		HIGH PERFORMANCE COATINGS
DD	05/03/2023	MHW	RJS	PERMIT SET
AA	04/07/2023	SN	JHP	PROGRESS SET
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT
M	01/06/2023	AE	JHP	60% DESIGN REVIEW

DRAWN: Author — DATE: 06/06/19
APPROVED: Approver — 05/03/2023
BUILDING: 4013
PROJECT NO.: 11025607
PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

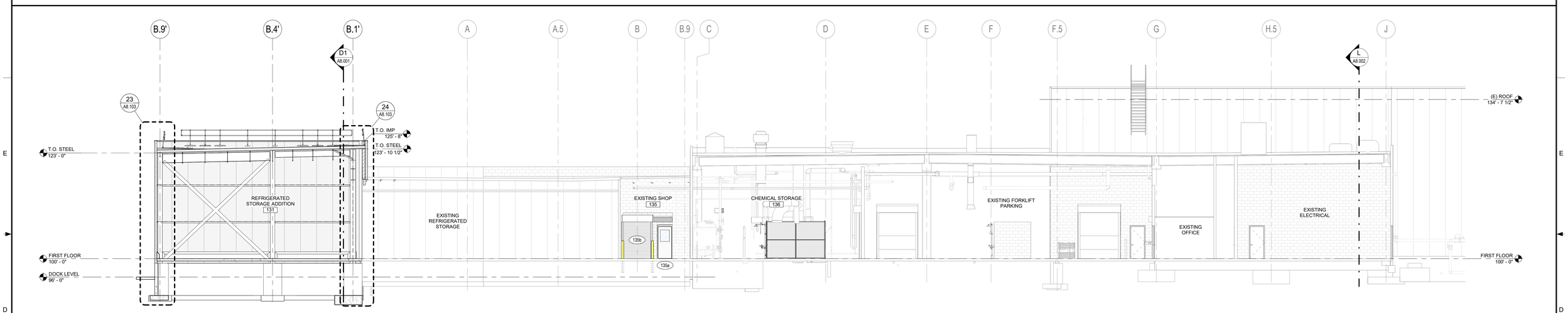
CAMPBELL SOUP COMPANY
RICHMOND, UT
ARCHITECTURE
BUILDING SECTIONS D-G

DRAWING NO.: RIC-806980-02-A-3 — REV.: DD
DRAWING SIZE: ANSI E (44" x 34") — SHEET OF 193

5/5/2023 9:31:46 PM
Autodesk Docs://7021 Project Pepperidge Farm Finn/7021_A_R22.rvt



H BUILDING SECTION H
SCALE: 1/8" = 1'-0"



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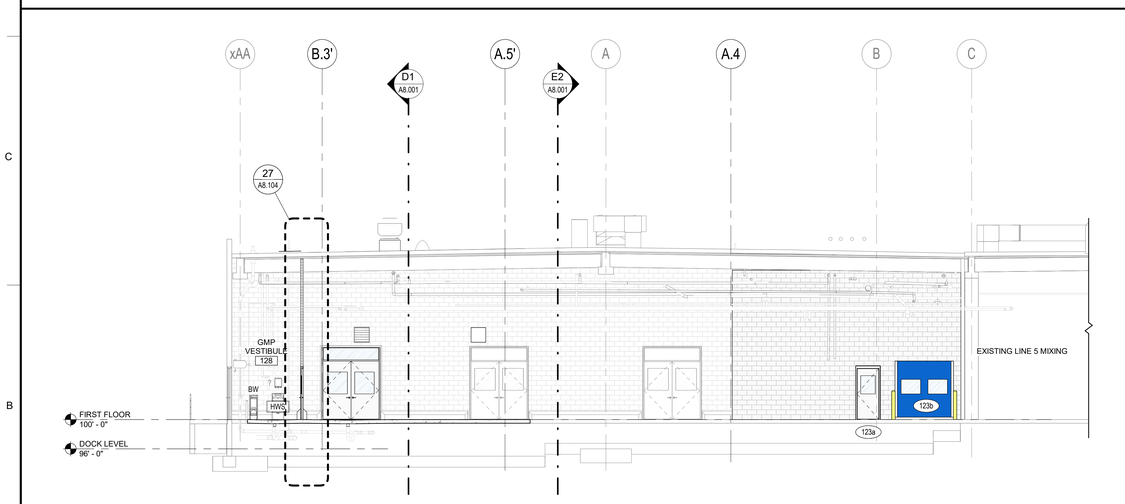
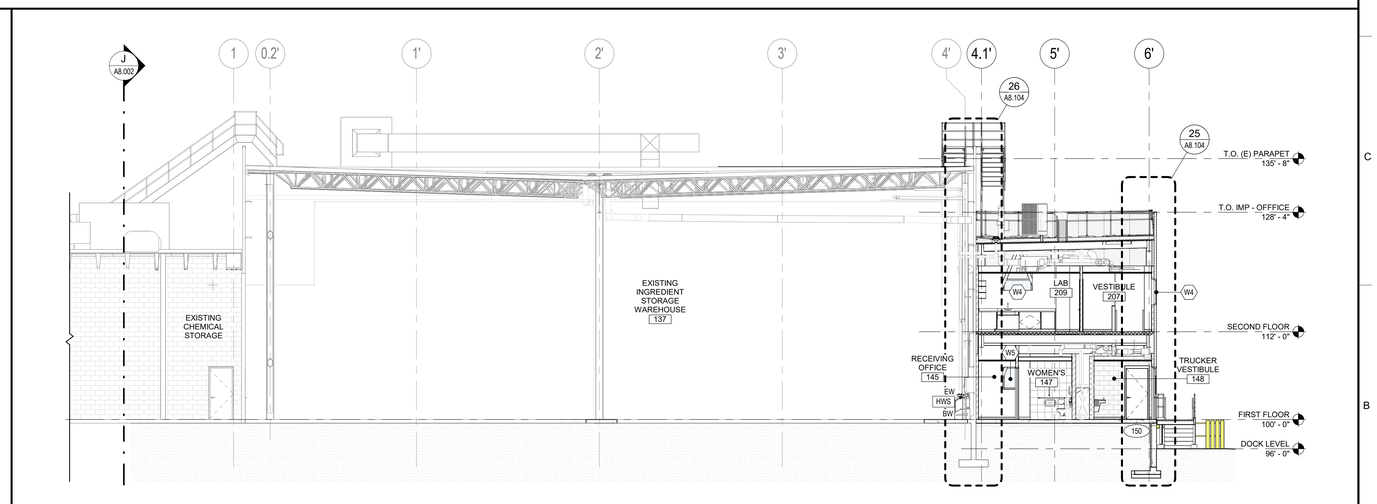


K BUILDING SECTION K
SCALE: 1/8" = 1'-0"



L BUILDING SECTION L
SCALE: 1/8" = 1'-0"

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DG PROJ: 7021 | DG DWG: A8.002

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
	05/ /2023	SN		HIGH PERFORMANCE COATINGS
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AA	04/07/2023	SN	JHP	PROGRESS SET
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT
H	12/02/2022	MHW	JHP	BID

DRAWN: MHW | DATE: 06/06/19
APPROVED: | 05/03/2023
BUILDING: 4013
PROJECT NO.: 11025607
PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
BUILDING SECTIONS H-L

DRAWING NO.: RIC-806980-03-A-3 | REV.: DD
DRAWING SIZE: ANSI E (44" x 34") | SHEET OF 193

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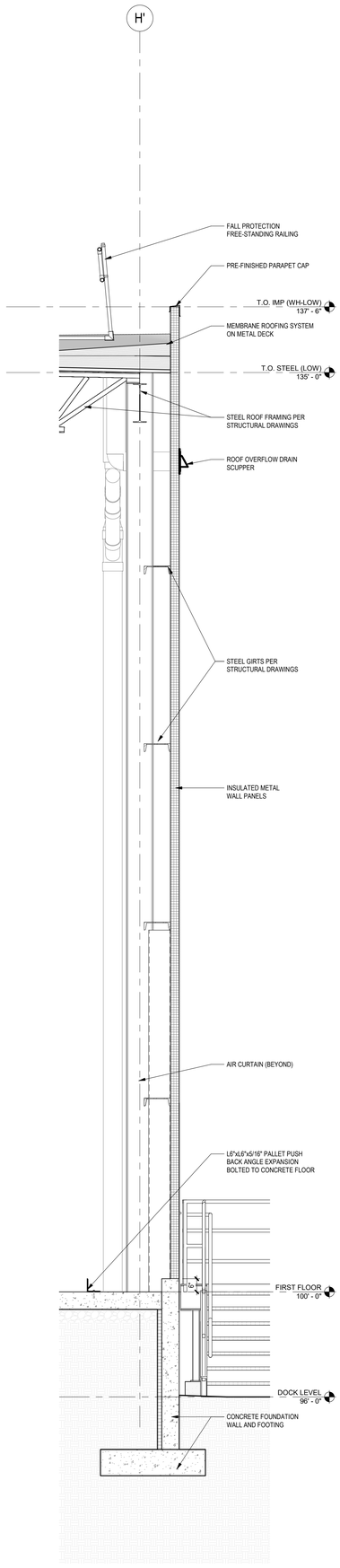
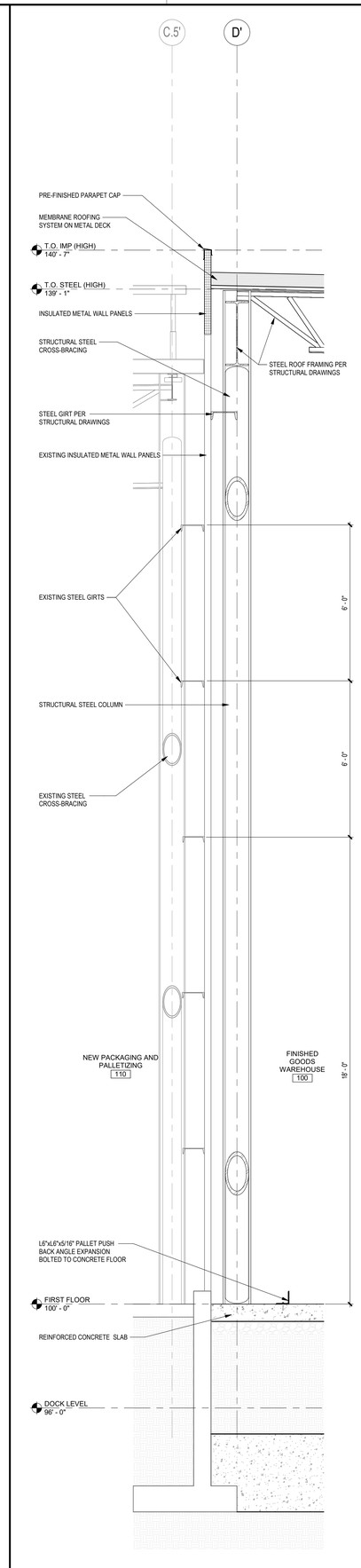


6 WALL SECTION 6
SCALE: 1/2" = 1'-0"



5 WALL SECTION 5
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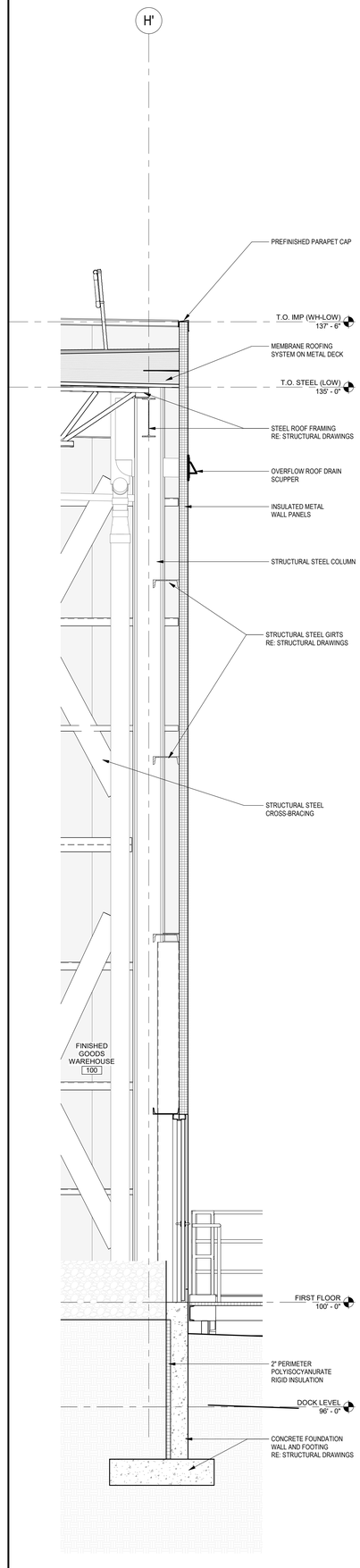

4 WALL SECTION 4
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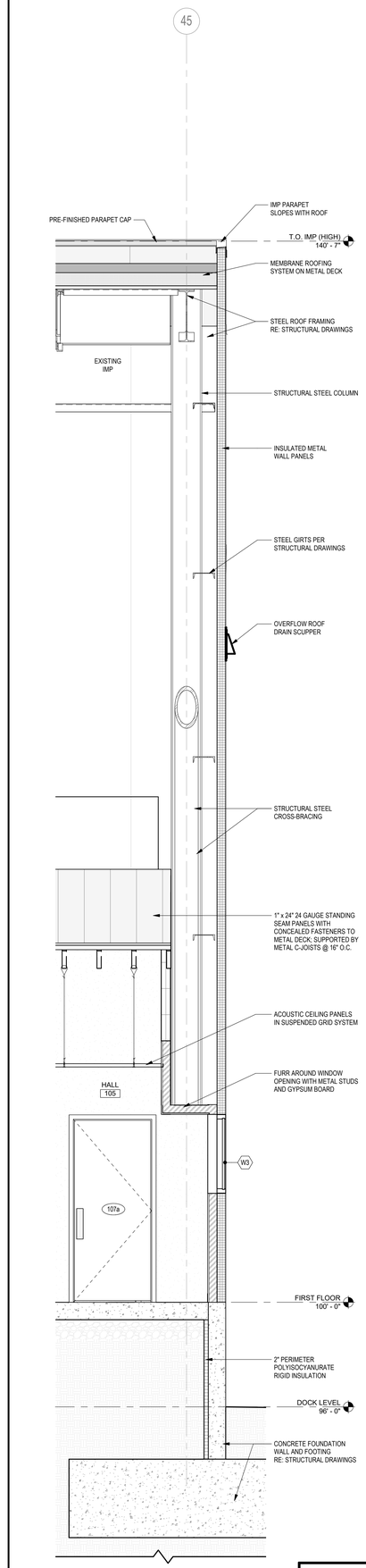

3 WALL SECTION 3
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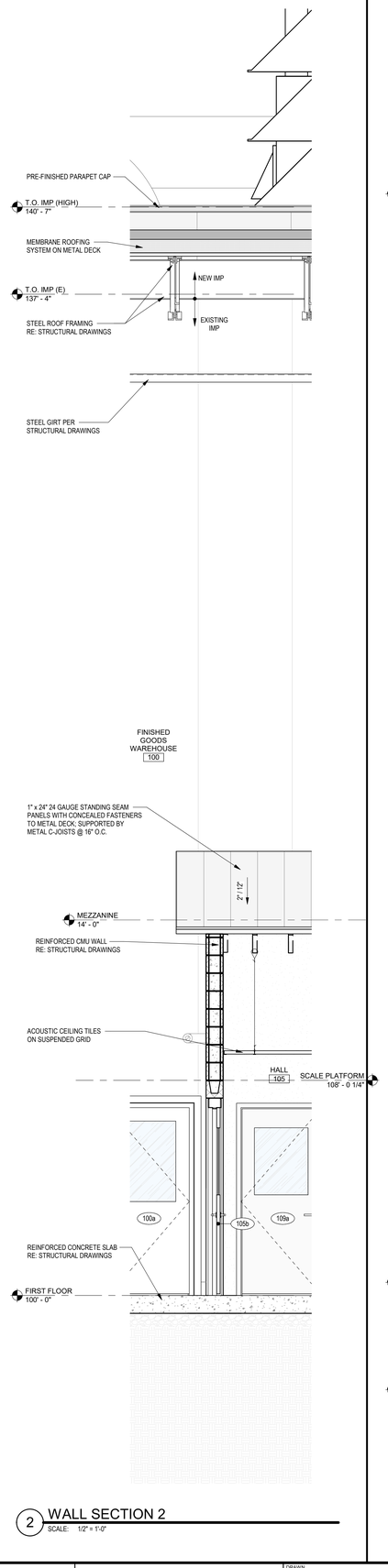

2 WALL SECTION 2
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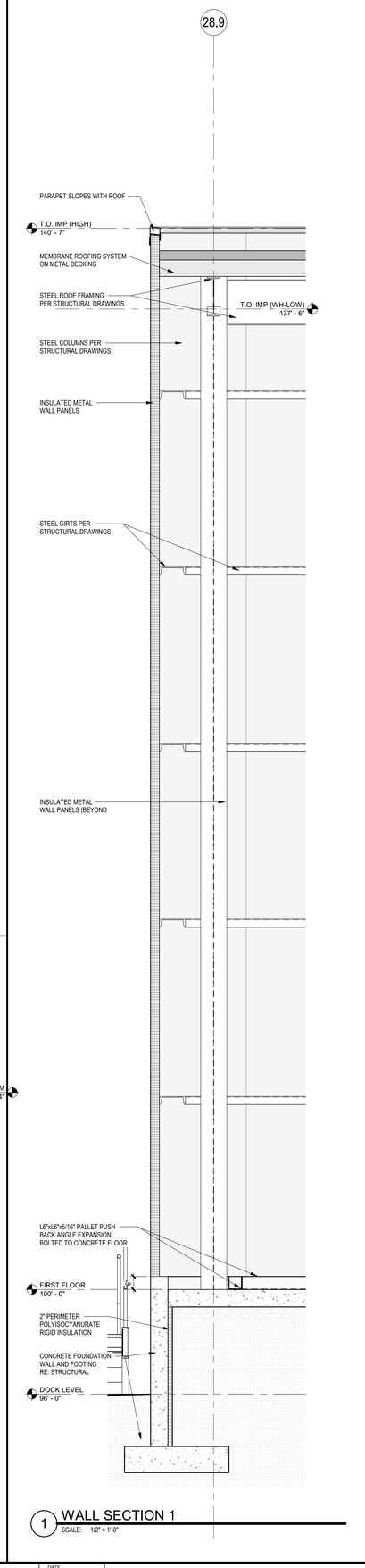

1 WALL SECTION 1
SCALE: 1/2" = 1'-0"

SEE DRAWING LIST ON TITLE SHEET A0.000 RIC-808832-01-A-0 FOR CORRESPONDING CSC SHEET NUMBER

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DG PROJ: 7021 | DG DWG: A8.100

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
DD	05/03/2023	MHW	RJS	PERMIT SET
AA	04/07/2023	SN	JHP	PROGRESS SET
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT
M	01/06/2023	AE	JHP	60% DESIGN REVIEW

DRAWN	MHW	DATE	01/28/20
APPROVED	JHP		05/03/2023
BUILDING	4013		
PROJECT NO.	11025607	PROJECT NAME	PROJECT FINN

SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
WALL SECTIONS 1-6

DRAWING NO. RIC-806981-01-A-3 | REV. DD

DRAWING SIZE: ANSI E (44" x 34") | SHEET OF 193

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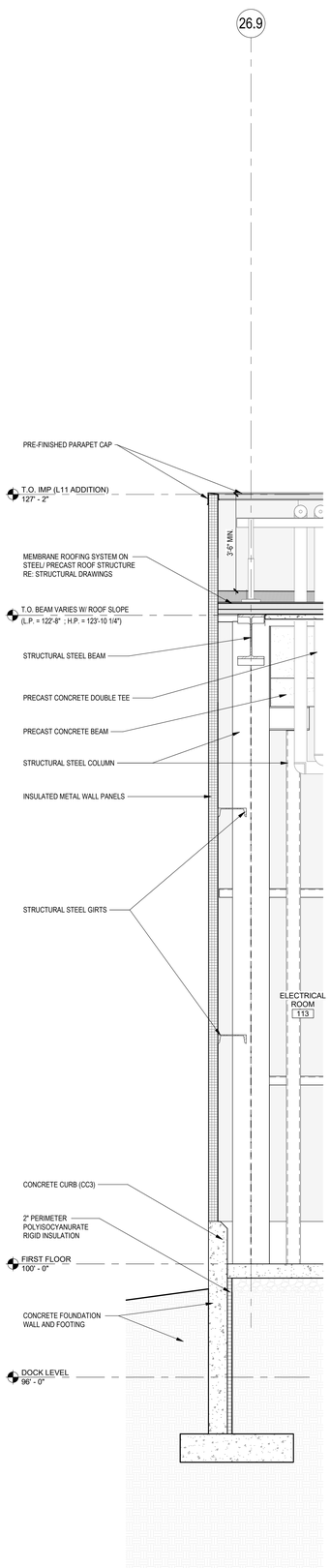
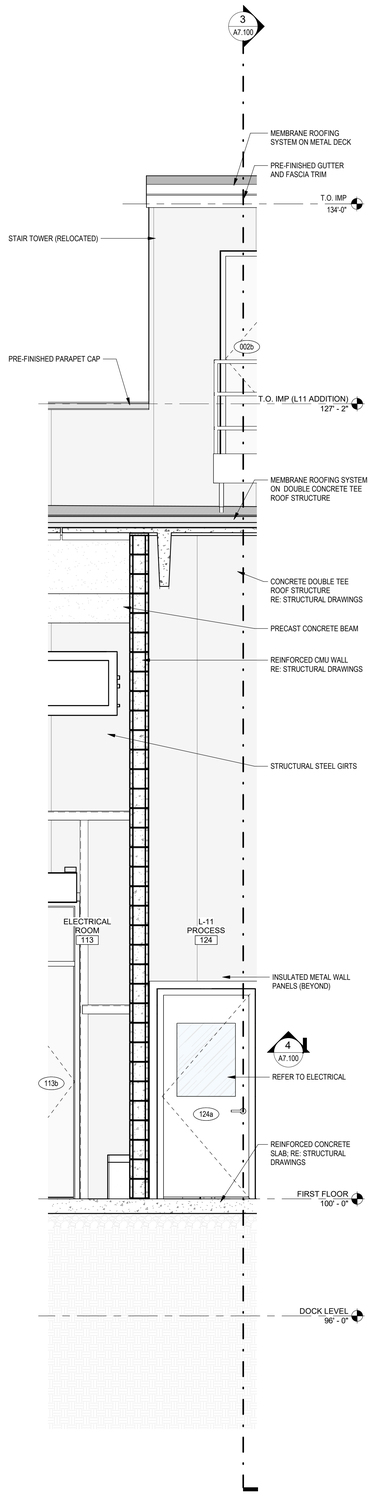


12 WALL SECTION 12
SCALE: 1/2" = 1'-0"



11 WALL SECTION 11
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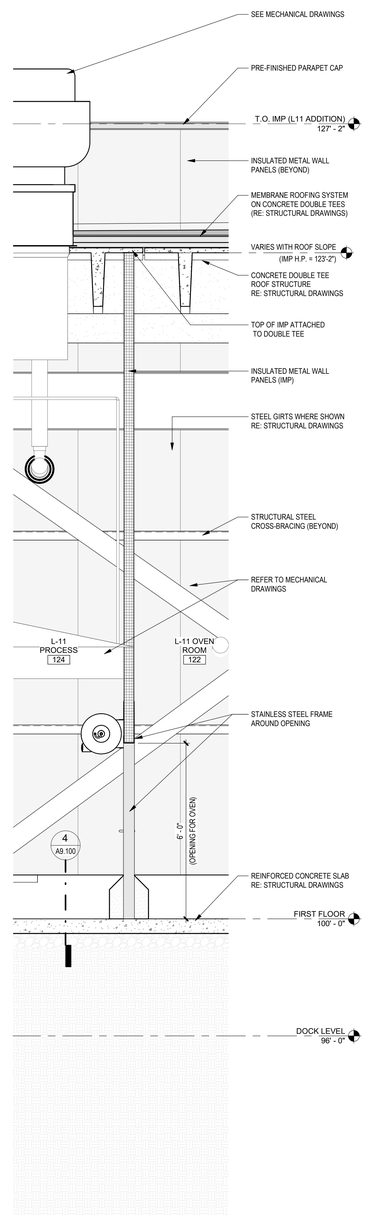

10 WALL SECTION 10
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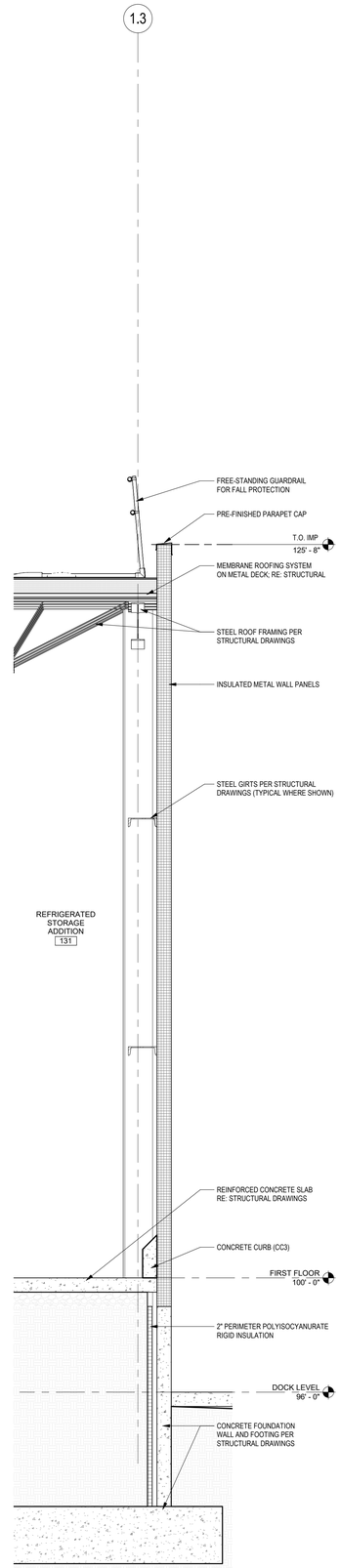
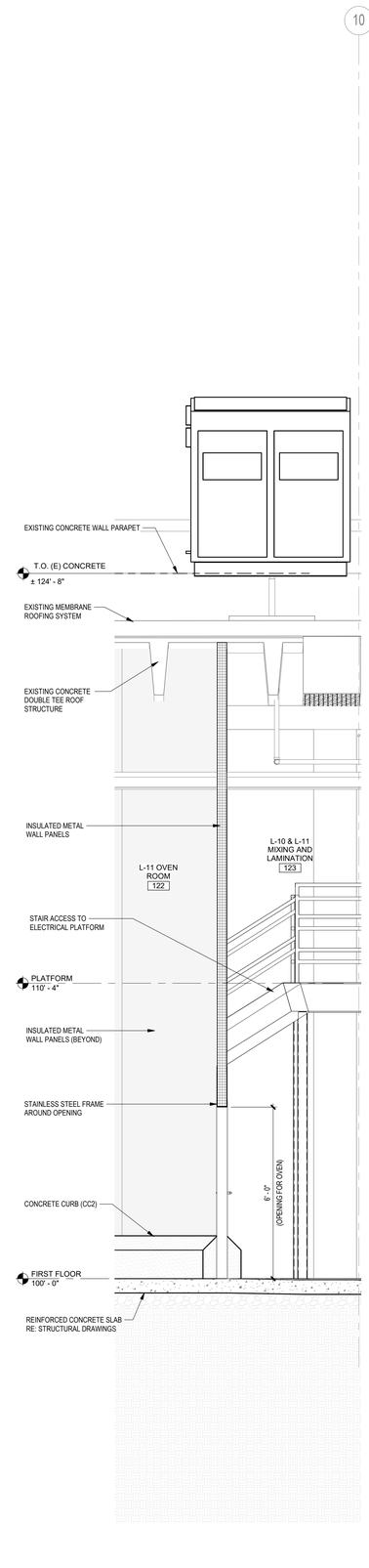
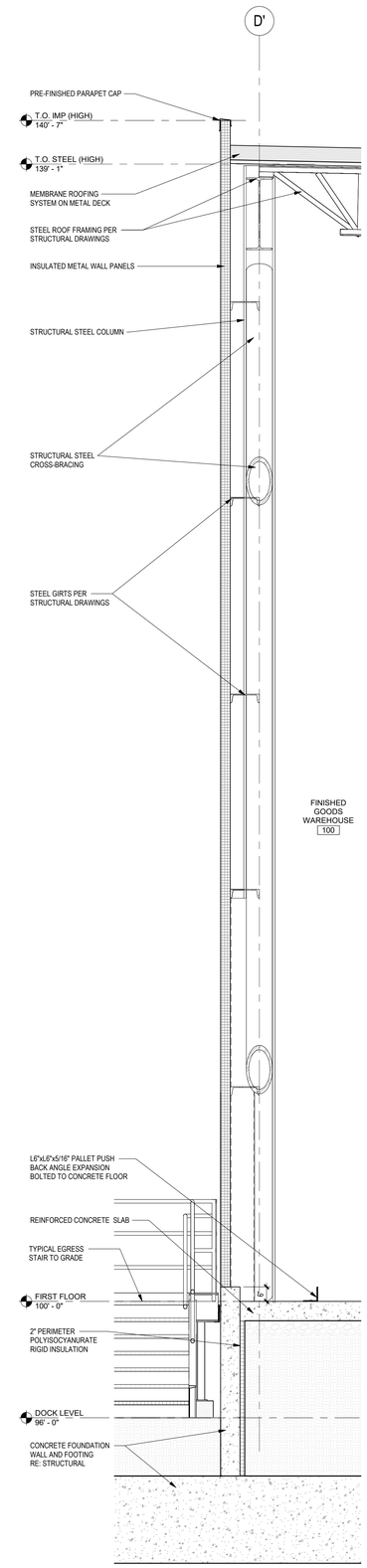


9 WALL SECTION 9
SCALE: 1/2" = 1'-0"



8 WALL SECTION 8
SCALE: 1/2" = 1'-0"



7 WALL SECTION 7
SCALE: 1/2" = 1'-0"

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DG PROJ: 7021 | DG DWG: A8.101

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
DD	05/03/2023	MHW	RJS	PERMIT SET
AA	04/07/2023	SN	JHP	PROGRESS SET
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT
M	01/06/2023	AE	JHP	60% DESIGN REVIEW

DRAWN	MHW
DATE	01/28/20
APPROVED	JHP
DATE	05/03/2023
BUILDING	4013
PROJECT NO.	11025607
PROJECT NAME	PROJECT FINN

SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT

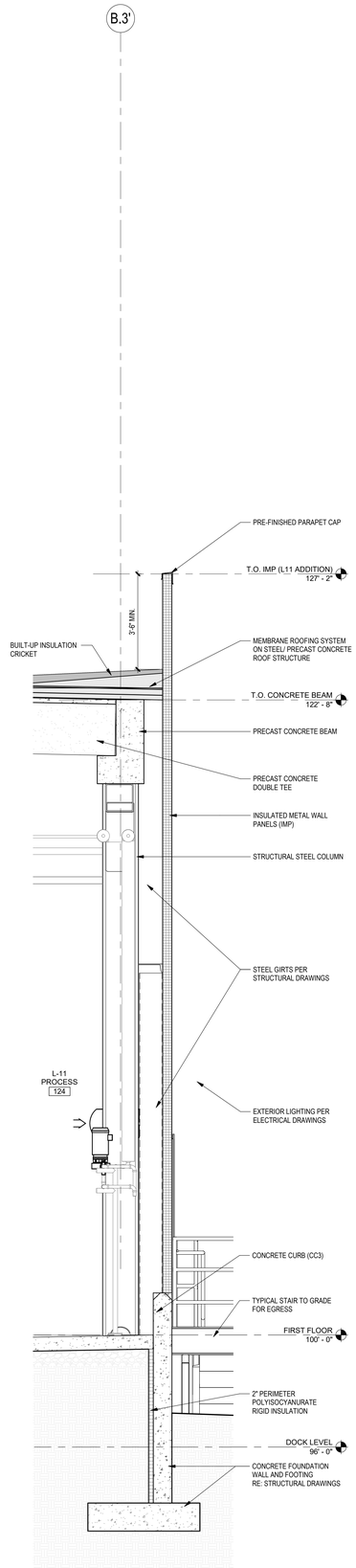
ARCHITECTURE
WALL SECTIONS 7-12

DRAWING NO. RIC-806981-02-A-3 REV. DD

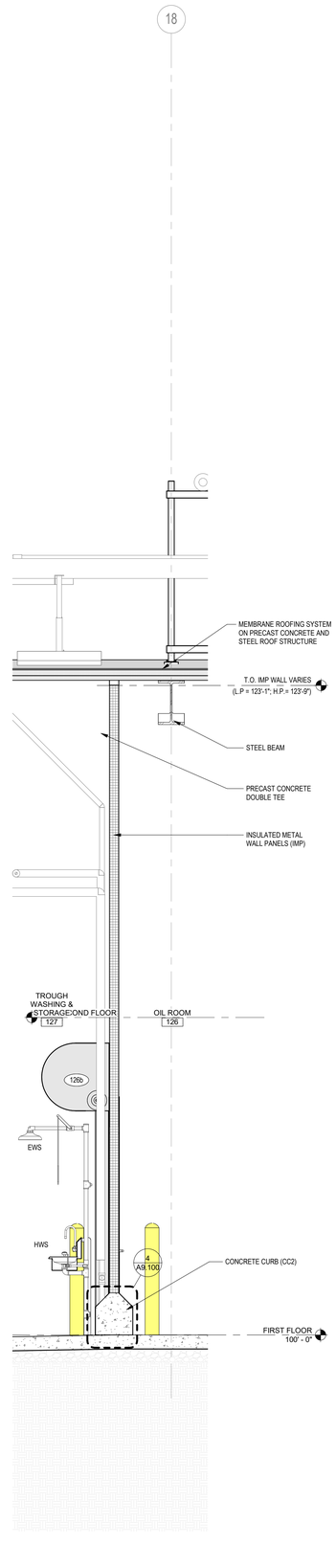
DRAWING SIZE: ANSI E (44" x 34") SHEET OF 193

5/3/2023 9:33:28 PM

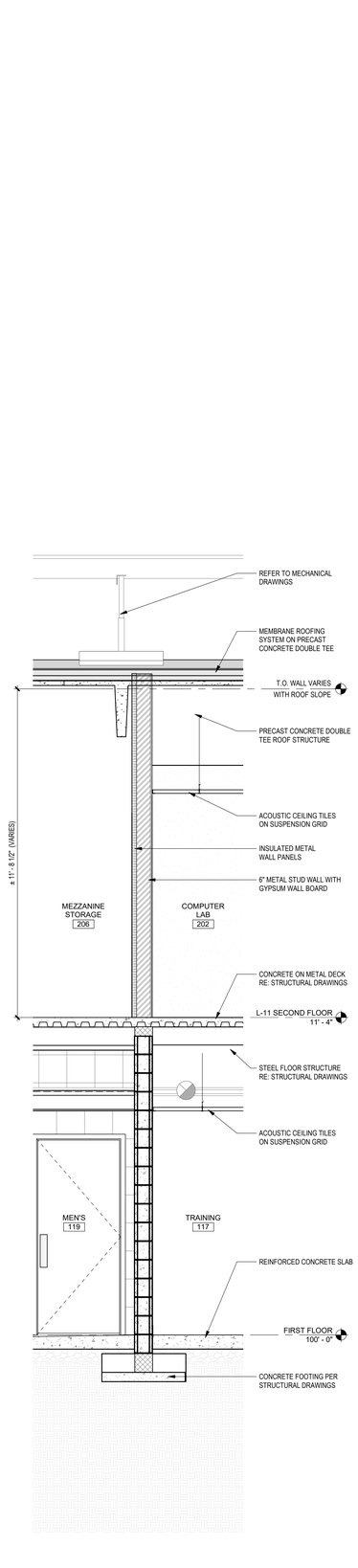
Autodesk Docs://7021 Project Pepperidge Farm Finn/7021_A_R22.rvt



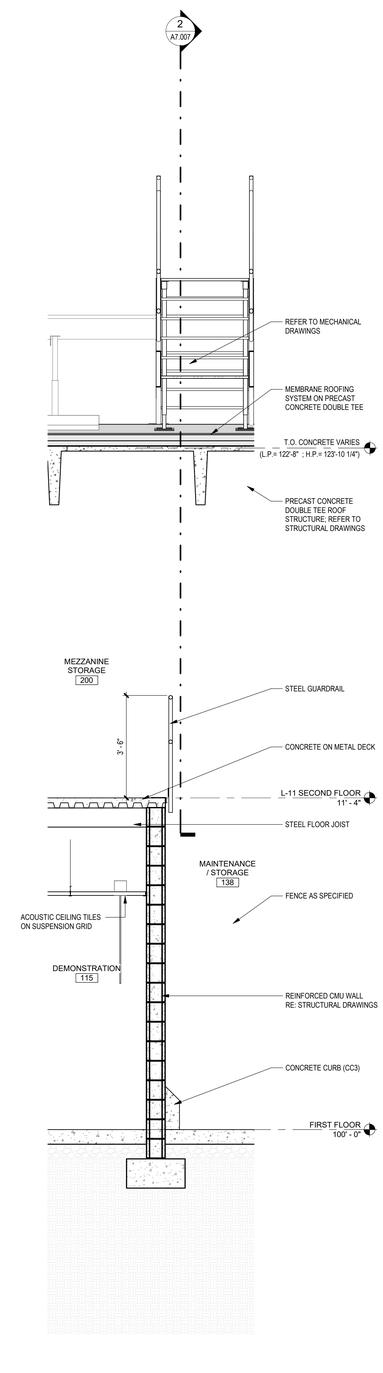
18 WALL SECTION 18
SCALE: 1/2" = 1'-0"



17 WALL SECTION 17
SCALE: 1/2" = 1'-0"



16 WALL SECTION 16
SCALE: 1/2" = 1'-0"



15 WALL SECTION 15
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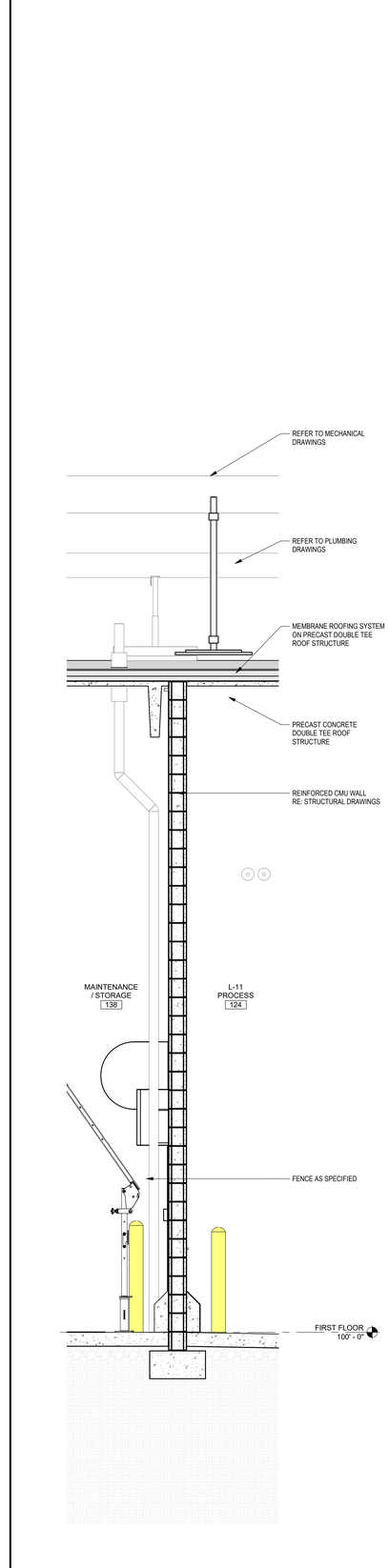

14 WALL SECTION 14
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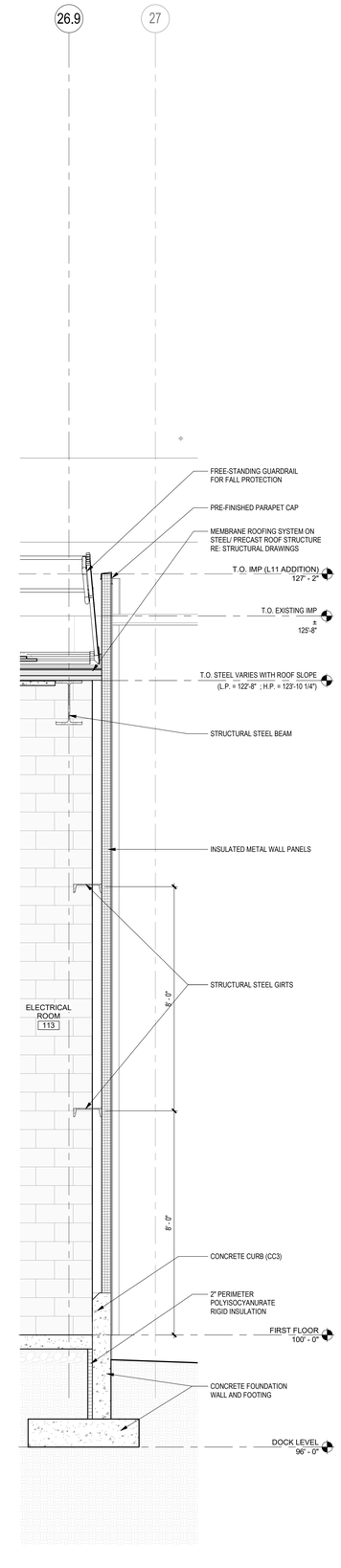

13 WALL SECTION 13
SCALE: 1/2" = 1'-0"

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DG PROJ: 7021 | DG DWG: A8.102

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
DD	05/03/2023	MHW	RJS	PERMIT SET
BB	04/13/2023	SN	JHP	OVERHEAD DOORS
AA	04/07/2023	SN	JHP	PROGRESS SET
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT

DRAWN: MHW | DATE: 01/16/23
APPROVED | 05/03/2023
BUILDING: 4013
PROJECT NO.: 11025607 | PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT
ARCHITECTURE
WALL SECTIONS 13-18

DRAWING NO.: RIC-806981-03-A-3 | REV.: DD
DRAWING SIZE: ANSI E (44" x 34") | SHEET | OF 193

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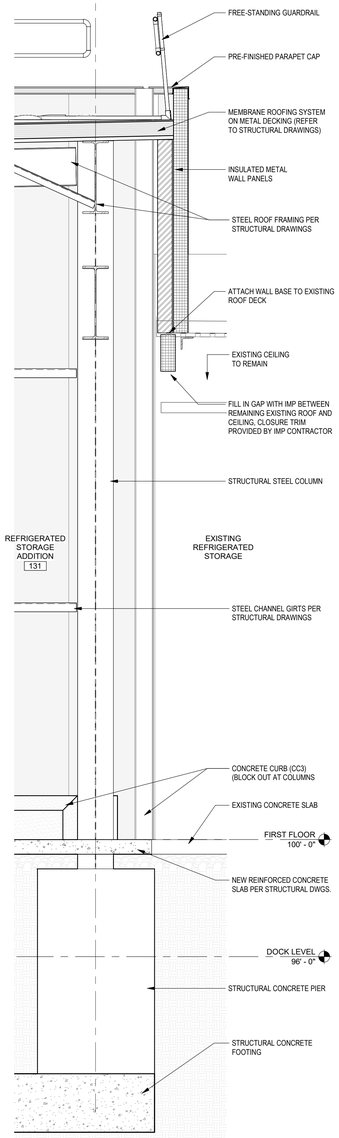
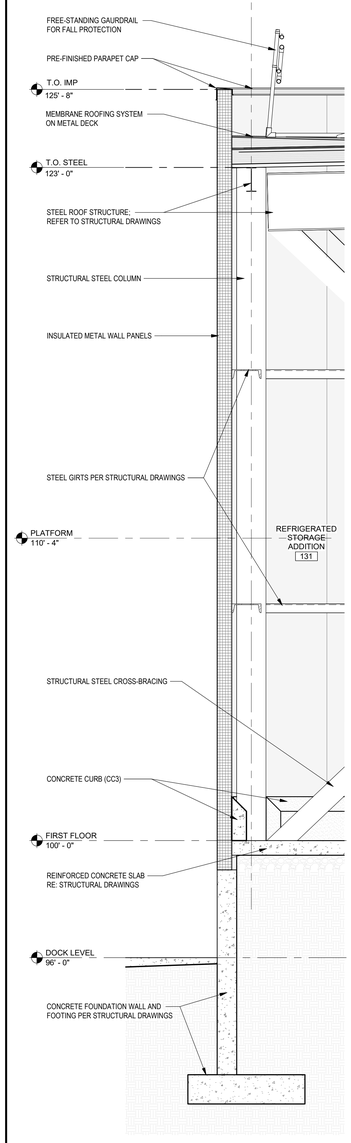


24 WALL SECTION 24
SCALE: 1/2" = 1'-0"



23 WALL SECTION 23
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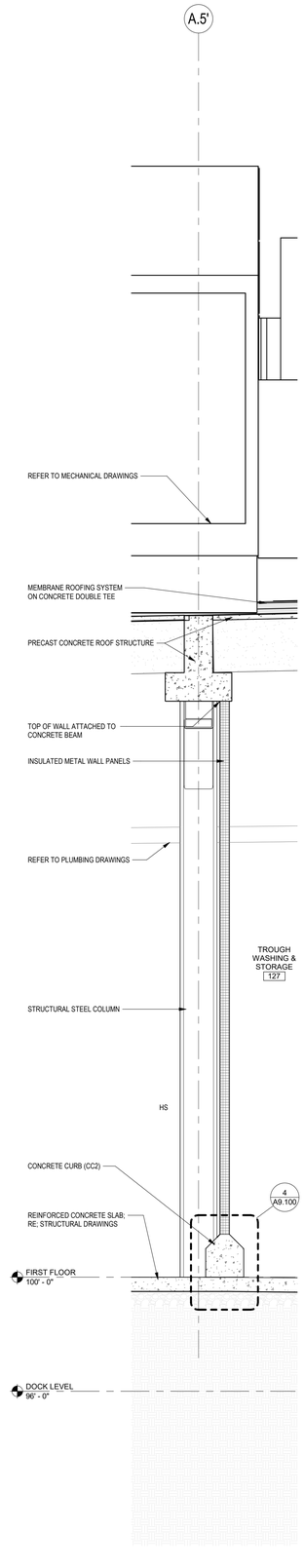
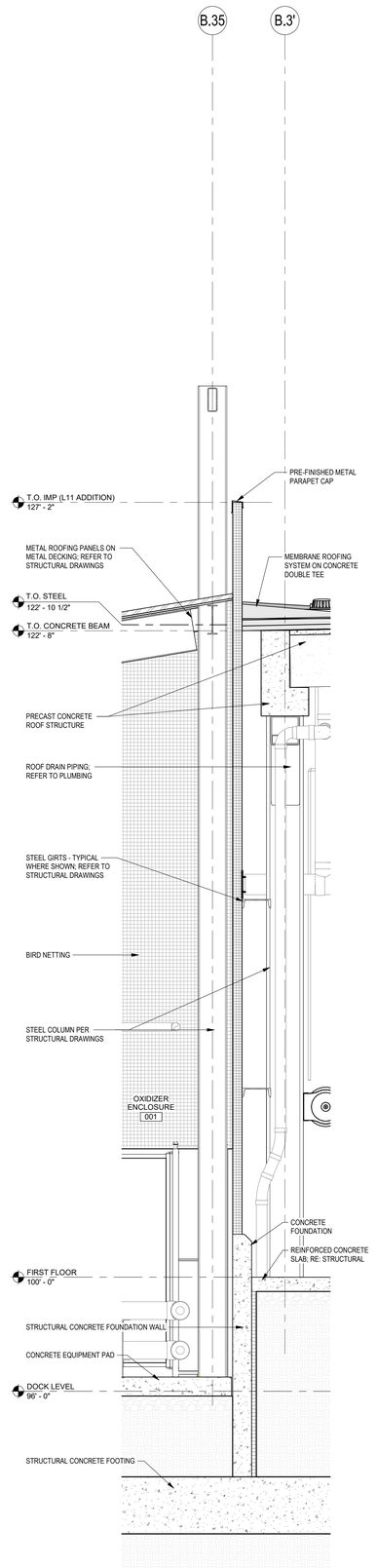


22 WALL SECTION 22
SCALE: 1/2" = 1'-0"



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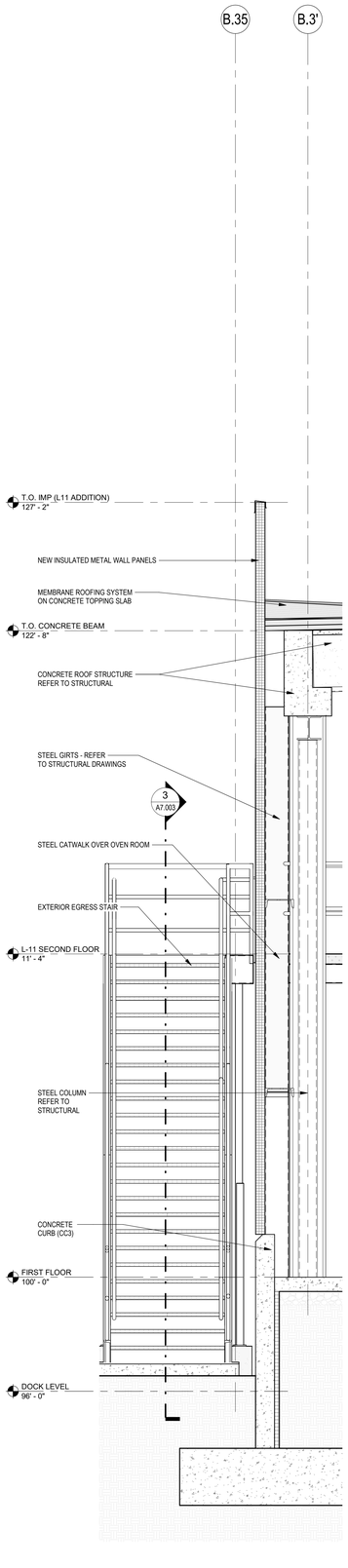

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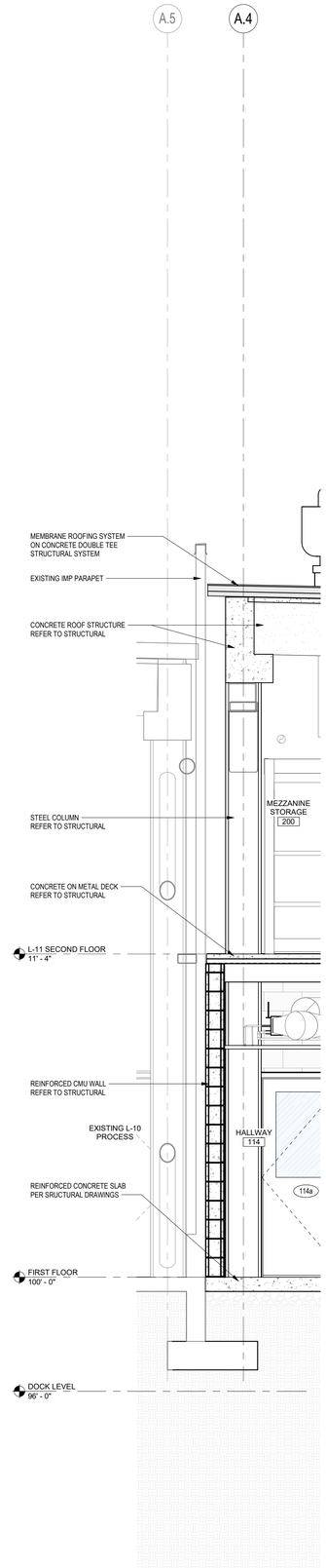

19 WALL SECTION 19
SCALE: 1/2" = 1'-0"

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DG PROJ: 7021 | DG DWG: A8.103

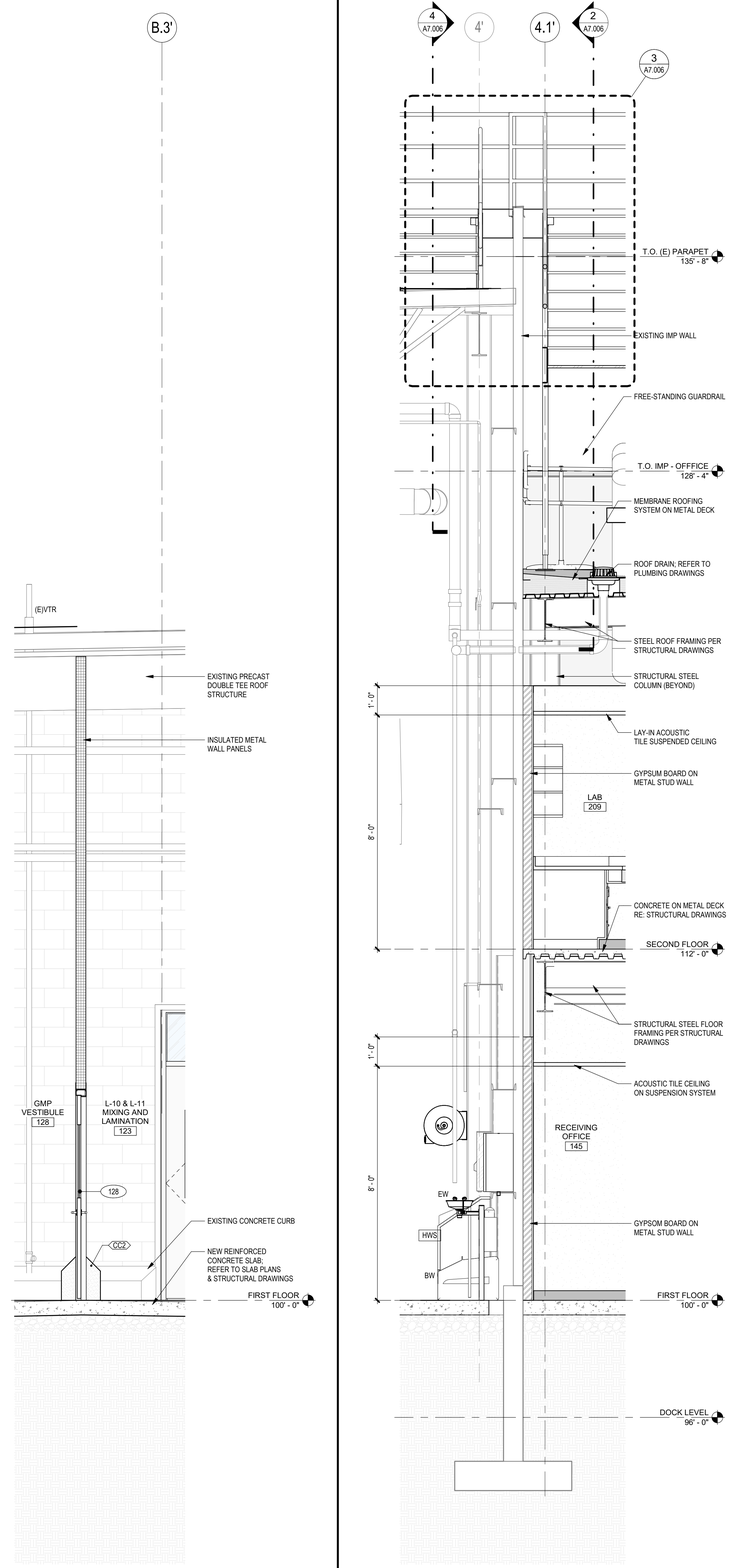
REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
DD	05/03/2023	MHW	RJS	PERMIT SET
AA	04/07/2023	SN	JHP	PROGRESS SET
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT

DRAWN: MHW | DATE: 01/16/23
APPROVED: | 05/03/2023
BUILDING: 4013
PROJECT NO.: 11025607
PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT
ARCHITECTURE
WALL SECTIONS 19-24

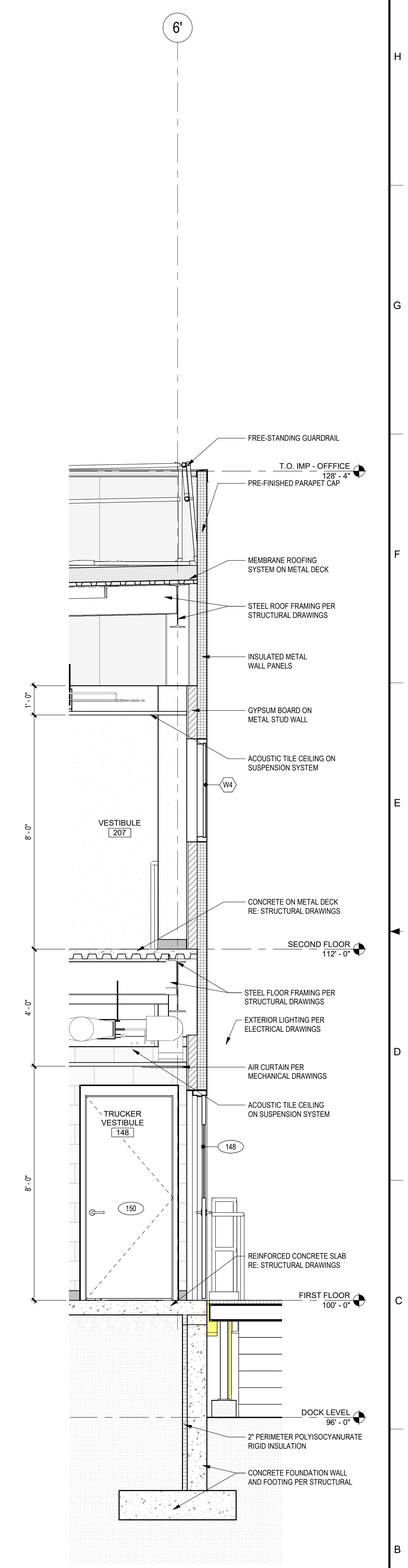
DRAWING NO.: RIC-806981-04-A-3 | REV: DD
DRAWING SIZE: ANSI E (44" x 34") | SHEET OF 193

5/3/2023 9:40:41 PM
Autodesk Docs://7021 Project Pepperidge Farm Finn/7021_A_R22.rvt



27 WALL SECTION 27
SCALE: 1/2" = 1'-0"

26 WALL SECTION 26
SCALE: 1/2" = 1'-0"



25 WALL SECTION 25
SCALE: 1/2" = 1'-0"

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SEE DRAWING LIST ON TITLE SHEET A0.000 RIC-806832-01-A-0 FOR CORRESPONDING CSC SHEET NUMBER

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DG PROJ: 7021
DG DWG: A8.104

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
DD	05/03/2023	MHW	RJS	PERMIT SET
AA	04/07/2023	SN	JHP	PROGRESS SET
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT

DRAWN: MHW	DATE: 01/16/23
APPROVED	05/03/2023
BUILDING: 4013	
PROJECT NO.: 11025607	PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)	

CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
WALL SECTIONS 25-26

DRAWING NO.: RIC-806981-05-A-3
REV.: DD
DRAWING SIZE: ANSI E (44" x 34")
SHEET 163 OF 193

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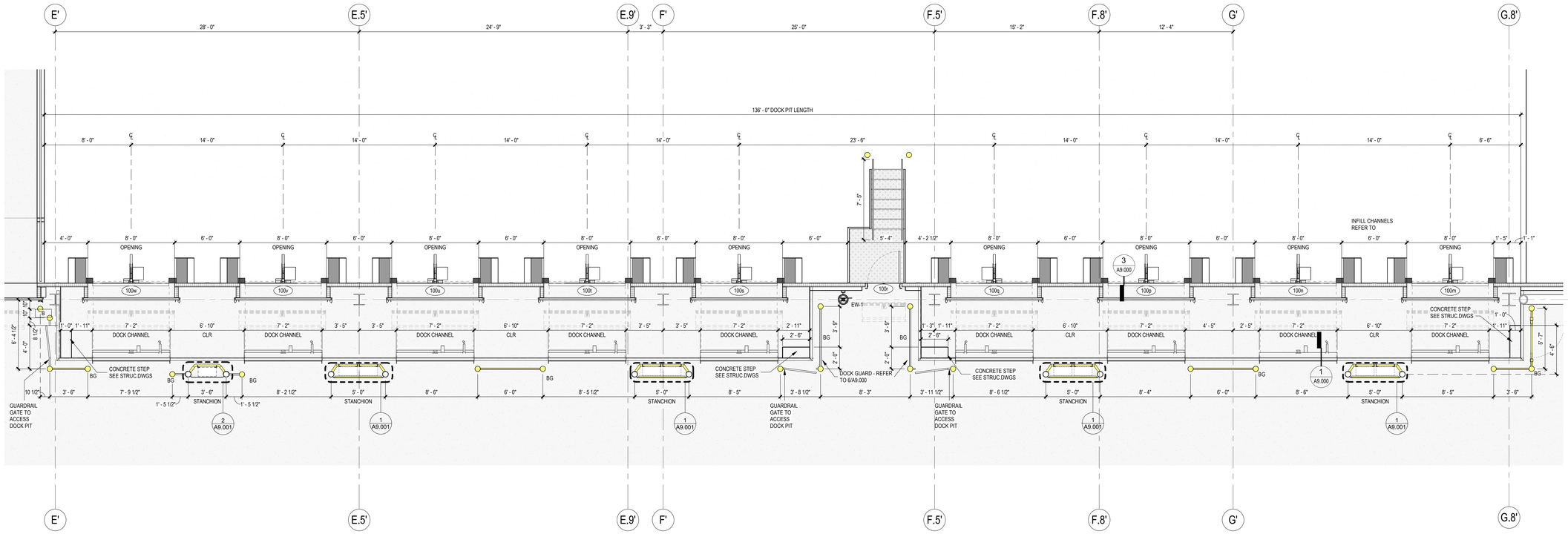
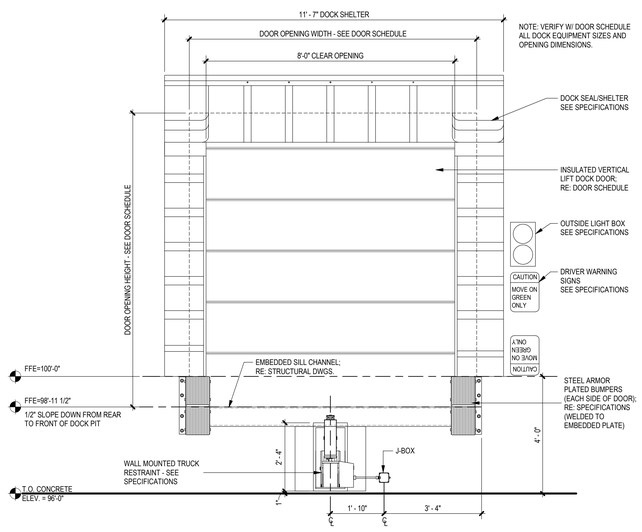
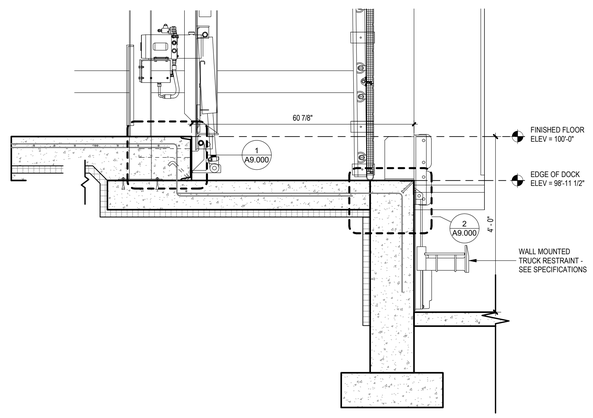
Autodesk Docs://7021 Project Pepperidge Farm Fire/7021_A_R22.rvt



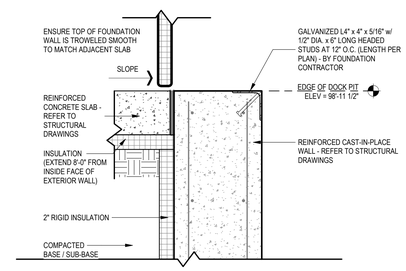
5 ENLARGED FIRST FLOOR PLAN - FINISHED GOODS WAREHOUSE DOCK
SCALE: 1/4" = 1'-0"



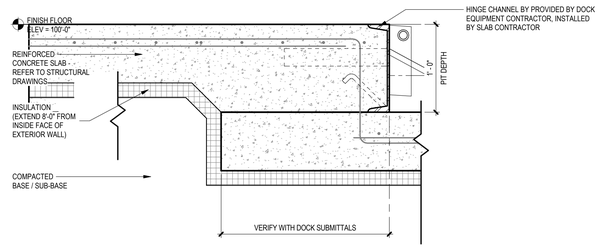
4 DOCK - ELEVATION - EXTERIOR
SCALE: 1/2" = 1'-0"



3 DOCK - PIT - SECTION WITH WALL MOUNTED RESTRAINT
SCALE: 3/4" = 1'-0"



2 DOCK - PIT - FRONT ANGLE
SCALE: 1 1/2" = 1'-0"



1 DOCK - PIT - REAR EMBED
SCALE: 1 1/2" = 1'-0"

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DG PROJ: 7021 DG DWG: A9.000

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
DD	05/03/2023	MHW	RJS	PERMIT SET
AA	04/07/2023	SN	JHP	PROGRESS SET
X	03/13/2023	AE	JHP	MISC. METAL & FLOORING BID
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT
P	02/06/2023	AE	JHP	DOCK EQUIPMENT BID

DRAWN: Author	DATE: 06/06/19	
APPROVED: Approver	05/03/2023	
BUILDING: 4013		
PROJECT NO.: 11025607	PROJECT NAME: PROJECT FINN	
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)		

CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
DETAILS - DOCK

DRAWING NO.: RIC-807000-01-A-5 REV: DD
DRAWING SIZE: ANSI E (44" x 34") SHEET OF 193

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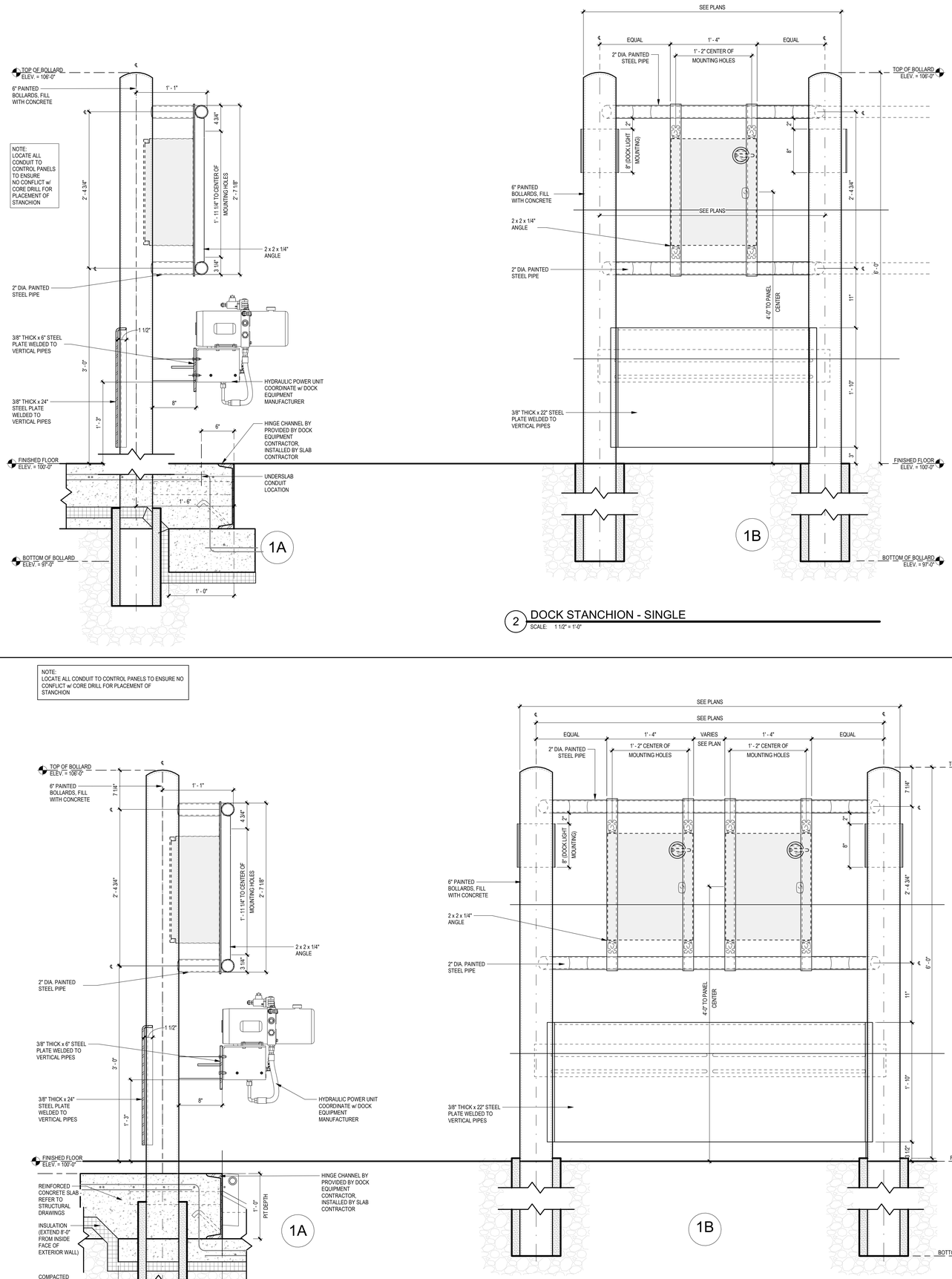

2 DOCK STANCHION - SINGLE
SCALE: 1 1/2" = 1'-0"

1 DOCK STANCHION - DOUBLE
SCALE: 1 1/2" = 1'-0"

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REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
	05/ /2023	SN		HIGH PERFORMANCE COATINGS
DD	05/03/2023	MHW	RJS	PERMIT SET
AA	04/07/2023	SN	JHP	PROGRESS SET
X	03/13/2023	AE	JHP	MISC. METAL & FLOORING BID
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT

DRAWN	Author	DATE	06/06/19
APPROVED	Approver		05/03/2023
BUILDING	4013		
PROJECT NO.	11025607	PROJECT NAME	PROJECT FINN

SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
DETAILS - DOCK MISC METALS

DRAWING NO. RIC-807000-02-A-5 REV. DD

DRAWING SIZE: ANSI E (44" x 34") SHEET OF 193

5/3/2023 3:48:17 PM

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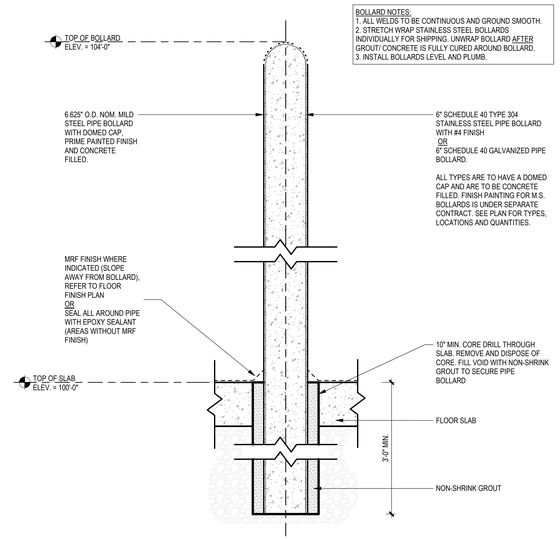
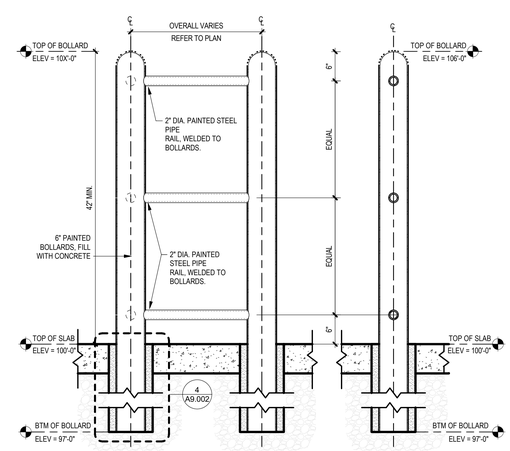
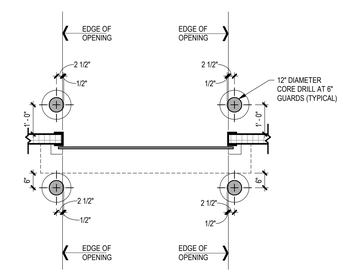
BOLLARD NOTES:
1. ALL WELDS TO BE CONTINUOUS AND GROUND SMOOTH.
2. STRETCH WRAP STAINLESS STEEL BOLLARDS INDIVIDUALLY FOR SHIPPING. UNWRAP BOLLARD AFTER GROUT/ CONCRETE IS FULLY CURED AROUND BOLLARD.
3. INSTALL BOLLARDS LEVEL AND PLUMB.



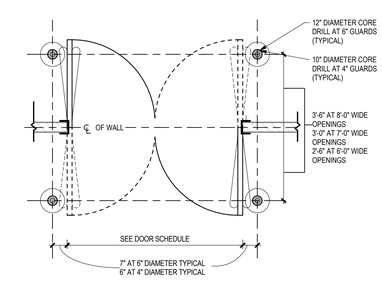
4 BOLLARD - CORE DRILLED - TYPICAL
SCALE: 1 1/2" = 1'-0"



3 BOLLARD - GUARDRAIL - CORE DRILLED - 6"
SCALE: 1" = 1'-0"



2 BOLLARD - RAPID ROLL/ OVERHEAD/ SECTIONAL DOORS
SCALE: 1/2" = 1'-0"



1 BOLLARD - TRAFFIC/ BUMP DOORS
SCALE: 1/2" = 1'-0"

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DD	05/03/2023	MHW	RJS	PERMIT SET
AA	04/07/2023	SN	JHP	PROGRESS SET
X	03/13/2023	AE	JHP	MISC. METAL & FLOORING BID
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT

DRAWN	Author	DATE	06/06/19
APPROVED	Approver		05/03/2023
BUILDING	4013		
PROJECT NO.	11025607	PROJECT NAME	PROJECT FINN

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CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
DETAILS - MISC. METALS

DRAWING NO. RIC-807000-03-A-5 REV. DD

DRAWING SIZE: ANSI E (44" x 34") SHEET OF 193

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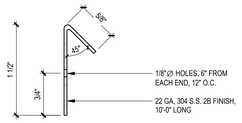

8 CURB - CONCRETE - SS SCREED STRIP
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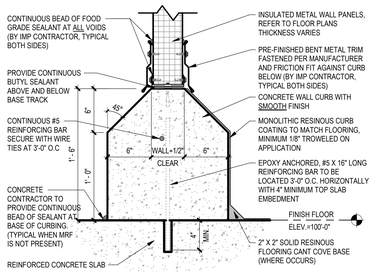
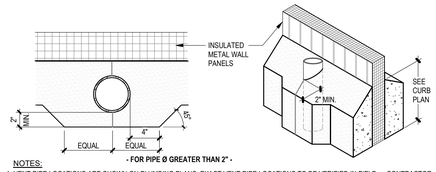
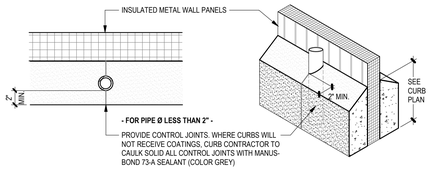


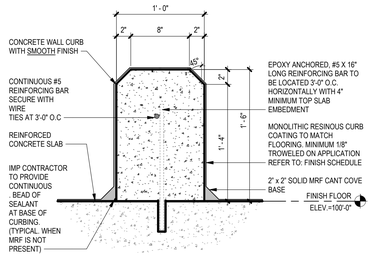
4 CURB - CONCRETE - ON TOP - DOUBLE
SCALE: 1 1/2" = 1'-0"



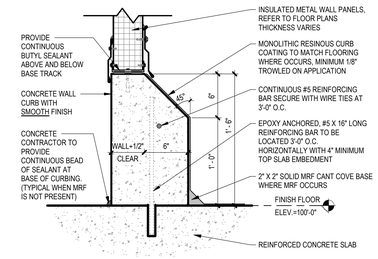
NOTES:
1. VENT PIPE LOCATIONS ARE SHOWN ON PLUMBING PLANS. EXACT VENT PIPE LOCATIONS TO BE VERIFIED IN FIELD. CONTRACTOR TO PROVIDE A MINIMUM 2" COVERAGE AT FACE OF EACH PIPE VENT WITH A 45° TURN BACK TO WALL CURBING.
2. CONTINUOUS WELD STAINLESS STEEL PIPE TO STAINLESS STEEL CURB. AT CONCRETE CURB, SEAL ALL AROUND PIPE WITH FOOD GRADE SEALANT.



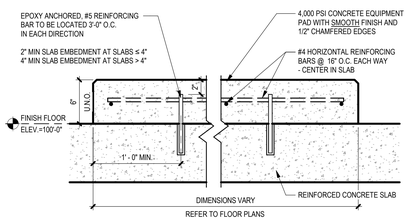
13 CURB - CONCRETE - PIPE PENETRATIONS
SCALE: 1 1/2" = 1'-0"



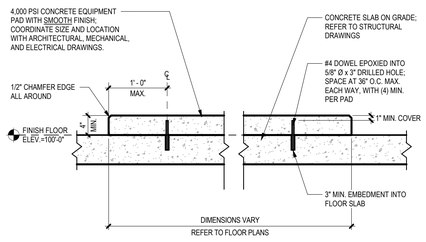
7 CURB - CONCRETE - CONTAINMENT
SCALE: 1 1/2" = 1'-0"



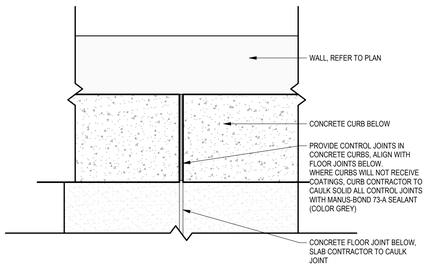
3 CURB - CONCRETE - ON TOP - SINGLE
SCALE: 1 1/2" = 1'-0"



12 CONCRETE - EQUIPMENT PAD
SCALE: 1 1/2" = 1'-0"



11 CONCRETE - TYPICAL HOUSEKEEPING PAD
SCALE: 1" = 1'-0"



6 CURB - CONCRETE - CONTROL JOINTS
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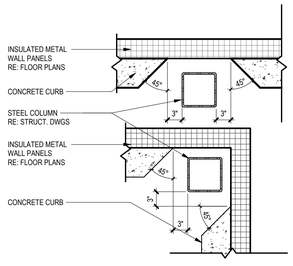

2 CURB - CONCRETE - COLUMNS - PLANS
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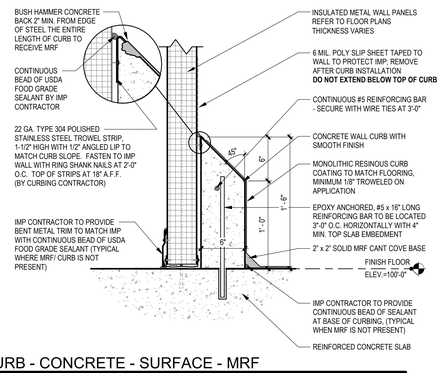
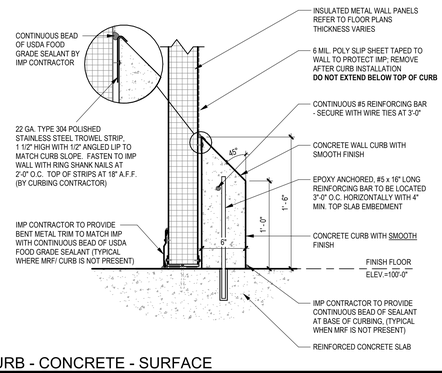
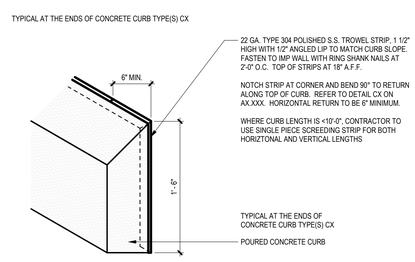


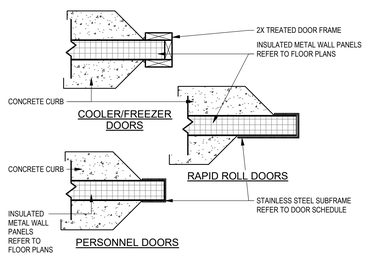
10 CURB - CONCRETE - SURFACE - MRF
SCALE: 1 1/2" = 1'-0"



9 CURB - CONCRETE - SURFACE
SCALE: 1 1/2" = 1'-0"



5 CURB - CONCRETE - VERTICAL EDGE
SCALE: 1 1/2" = 1'-0"



1 CURB - DOOR - HOLDBACK
SCALE: 1" = 1'-0"

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DRAWN: Author	DATE: 06/06/19
APPROVED: Approver	05/03/2023
BUILDING: 4013	
PROJECT NO.: 11025607	PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)	

CAMPBELL SOUP COMPANY
RICHMOND, UT
ARCHITECTURE
DETAILS - CONCRETE AND CURBS

DRAWING NO.: RIC-807001-01-A-5 | REV.: DD
DRAWING SIZE: ANSI E (44" x 34") | SHEET | OF 192

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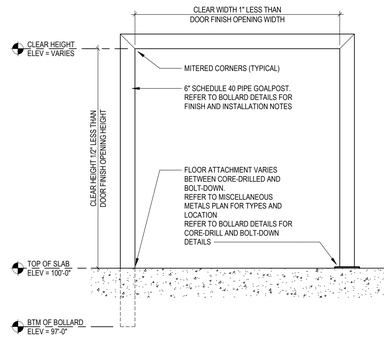
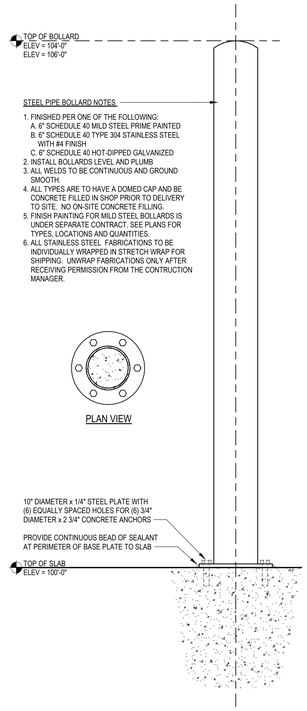
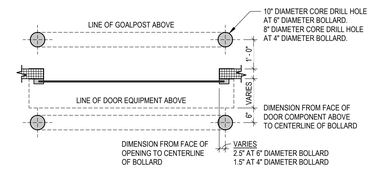


6 ELEVATION AT GOALPOST
SCALE: 1/2" = 1'-0"

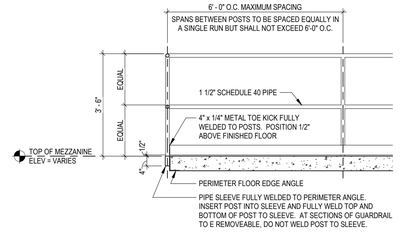


2 DETAIL AT BOLT-DOWN BOLLARD
SCALE: 1 1/2" = 1'-0"
SIMILAR @ GOALPOST

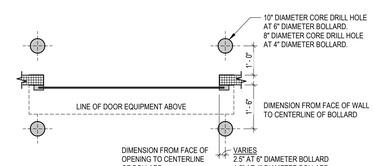


5 GOALPOST PLACEMENT AT OVERHEAD DOORS
SCALE: 1/2" = 1'-0"

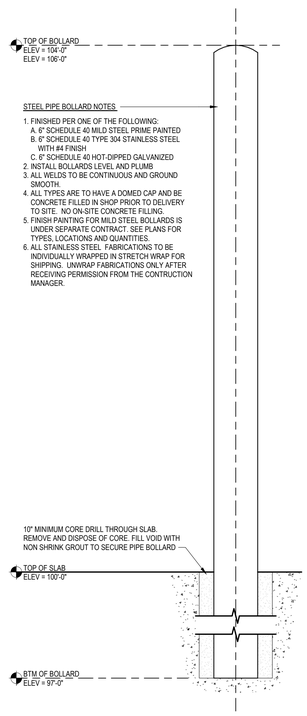
NOTES:
1. FINISHED PER ONE OF THE FOLLOWING:
A. MILD STEEL PRIME PAINTED
B. STAINLESS STEEL WITH #4 FINISH
C. HOT-DIPPED GALVANIZED
2. INSTALL LEVEL AND PLUMB
3. ALL WELDS TO BE CONTINUOUS AND GROUND SMOOTH.
4. FINISH PAINTING FOR MILD STEEL GUARDRAIL IS UNDER SEPARATE CONTRACT. SEE PLANS FOR TYPES, LOCATIONS AND QUANTITIES.
5. ALL STAINLESS STEEL FABRICATIONS TO BE INDIVIDUALLY WRAPPED IN STRETCH WRAP FOR SHIPPING. UNWRAP FABRICATIONS ONLY AFTER RECEIVING PERMISSION FROM THE CONTRUCTION MANAGER.



8 ELEVATION AT GUARDRAIL
SCALE: 1/2" = 1'-0"

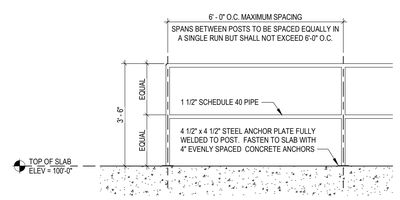


4 BOLLARD PLACEMENT AT OVERHEAD DOORS
SCALE: 1/2" = 1'-0"

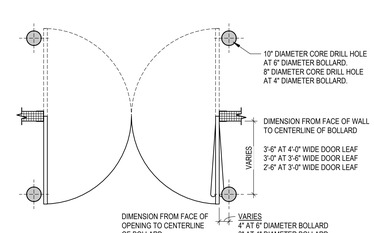


1 DETAIL AT CORE-DRILLED BOLLARD
SCALE: 1 1/2" = 1'-0"
SIMILAR @ GOALPOST

NOTES:
1. FINISHED PER ONE OF THE FOLLOWING:
A. MILD STEEL PRIME PAINTED
B. STAINLESS STEEL WITH #4 FINISH
C. HOT-DIPPED GALVANIZED
2. INSTALL LEVEL AND PLUMB
3. ALL WELDS TO BE CONTINUOUS AND GROUND SMOOTH.
4. FINISH PAINTING FOR MILD STEEL GUARDRAIL IS UNDER SEPARATE CONTRACT. SEE PLANS FOR TYPES, LOCATIONS AND QUANTITIES.
5. ALL STAINLESS STEEL FABRICATIONS TO BE INDIVIDUALLY WRAPPED IN STRETCH WRAP FOR SHIPPING. UNWRAP FABRICATIONS ONLY AFTER RECEIVING PERMISSION FROM THE CONTRUCTION MANAGER.



7 ELEVATION AT GUARDRAIL
SCALE: 1/2" = 1'-0"



3 BOLLARD PLACEMENT AT TRAFFIC DOORS
SCALE: 1/2" = 1'-0"

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SEE DRAWING LIST ON TITLE SHEET A0.000
RIC-806832-01-A-0 FOR CORRESPONDING CSC SHEET NUMBER

DENNIS GROUP
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DG PROJ: 7021 | DG DWG: A9.150

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
DD	06/03/2023	MHW	RJS	PERMIT SET
AA	04/07/2023	SN	JHP	PROGRESS SET
X	03/13/2023	AE	JHP	MISC. METAL & FLOORING BID
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT

DRAWN: Author	DATE: 02/17/22
APPROVED: Approver	05/03/2023
BUILDING: 4013	
PROJECT NO.: 11025607	PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)	

CAMPBELL SOUP COMPANY
RICHMOND, UT

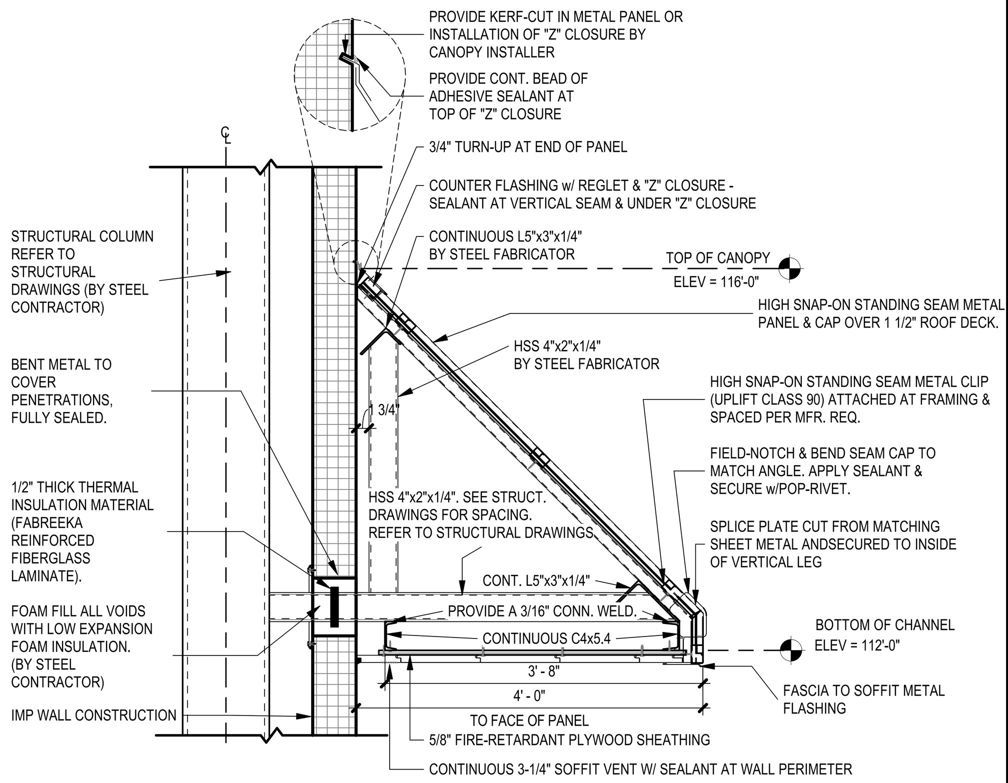
ARCHITECTURE
DETAILS - GUARDS

DRAWING NO.: RIC-807001-03-A-5 | REV.: DD

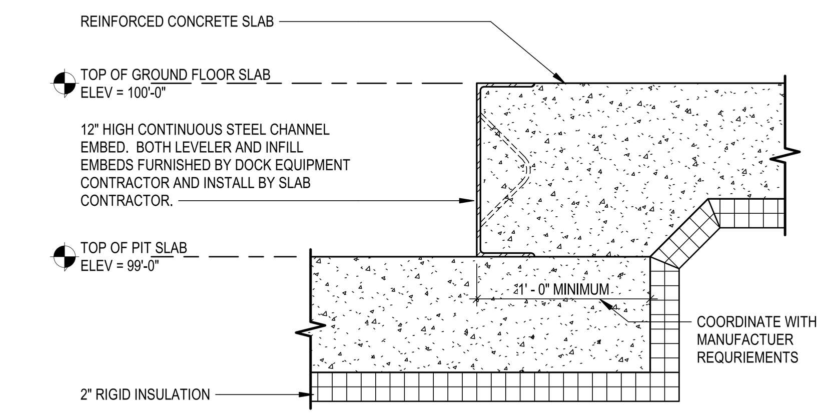
DRAWING SIZE: ANSI E (44" x 34") | SHEET OF 193

Autodesk Docs://7021 Project Pepperidge Farm Finn/7021_A_R22.rvt

5/3/2023 3:44:57 PM

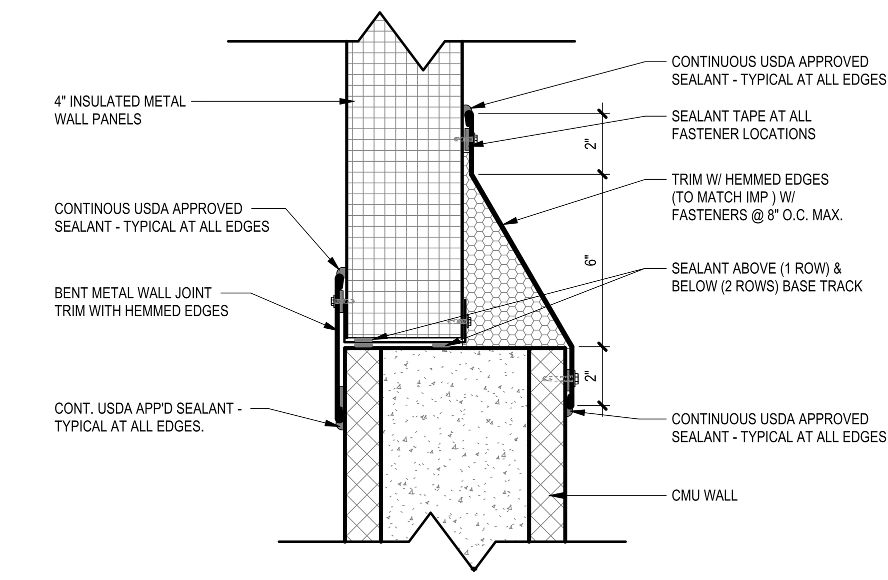


19 ROOF - AWNING - TYP
SCALE: 3/4" = 1'-0"

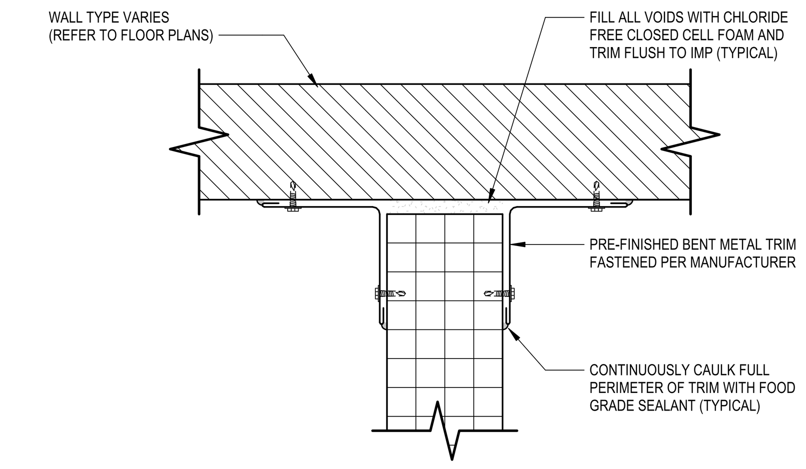


NOTES:
1. DOCK CONTRACTOR TO SUPERVISE AND VERIFY PLACEMENT AND ORIENTATION OF LEVELER EMBEDS PRIOR TO SLAB POUR.
2. DOCK CONTRACTOR TO VERIFY ALL REQUIRED REBAR TIEBACKS HAVE BEEN MADE PRIOR TO SLAB POUR.
3. DOCK CONTRACTOR TO PROVIDE WRITTEN VERIFICATION THE ABOVE TWO ITEMS HAVE BEEN COMPLETED.
4. INFILL CHANNELS TO HAVE 6" LONG HEADED STUDS AT 12" O.C.

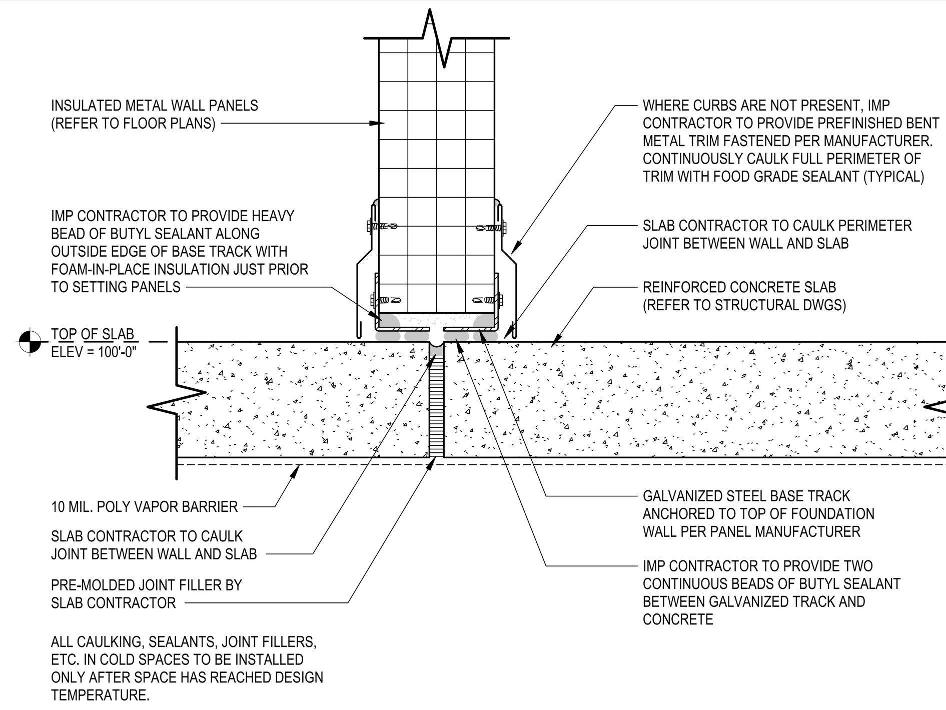
16 DETAIL AT BACK OF DOCK PIT
SCALE: 1 1/2" = 1'-0"



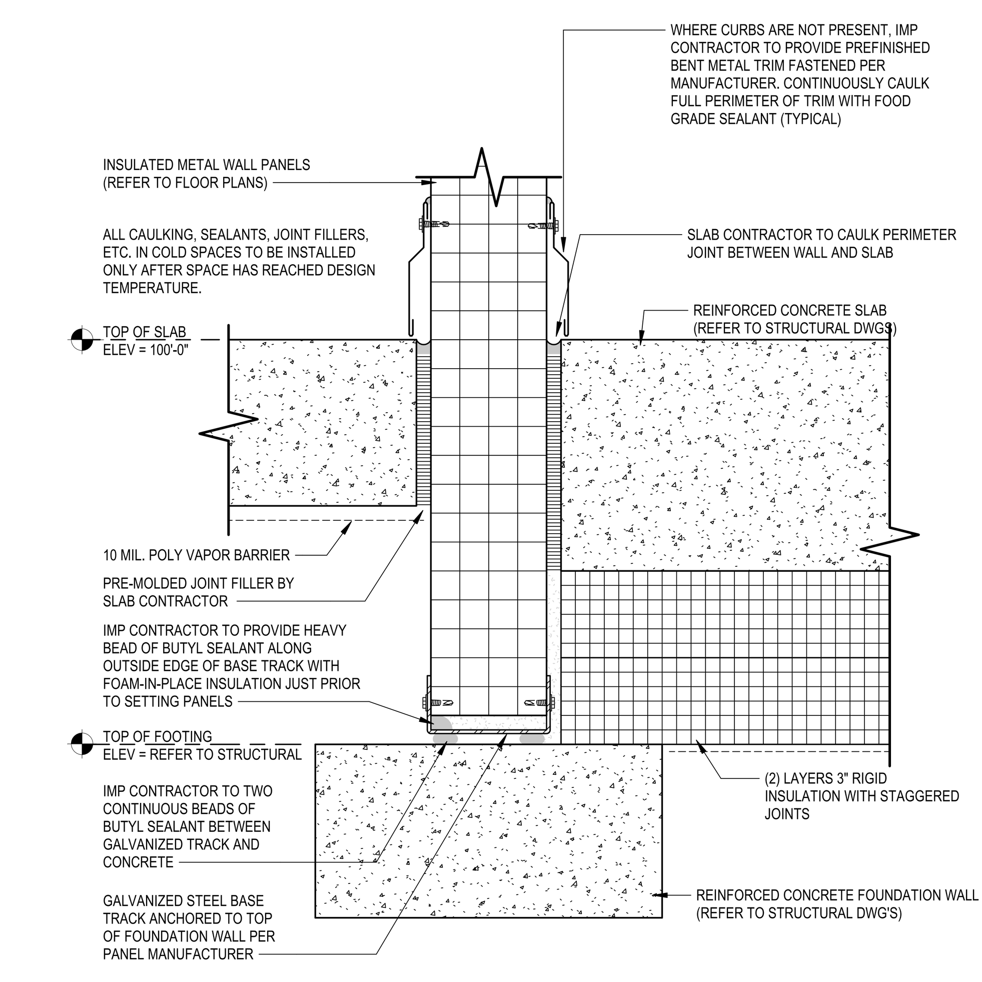
12 IMP - WALL TO CMU WALL CONNECTION
SCALE: 3" = 1'-0"



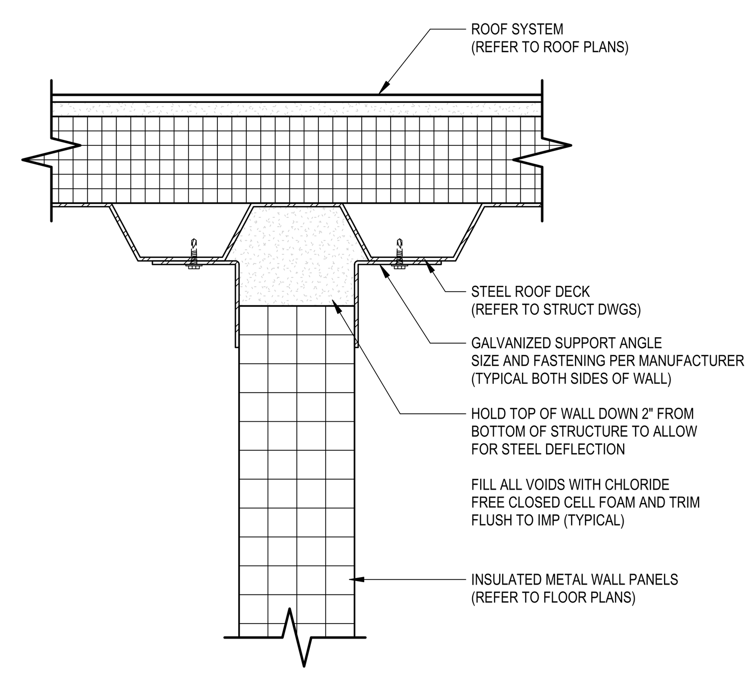
8 PLAN DETAIL AT IMP INTERSECTION
SCALE: 3" = 1'-0"



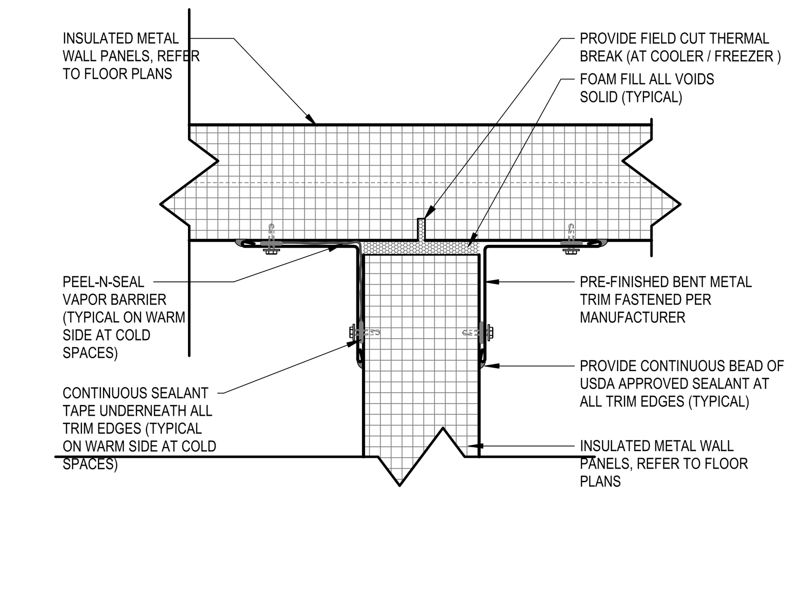
4 DETAIL AT IMP WALL WITH SLAB THERMAL BREAK
SCALE: 3" = 1'-0"



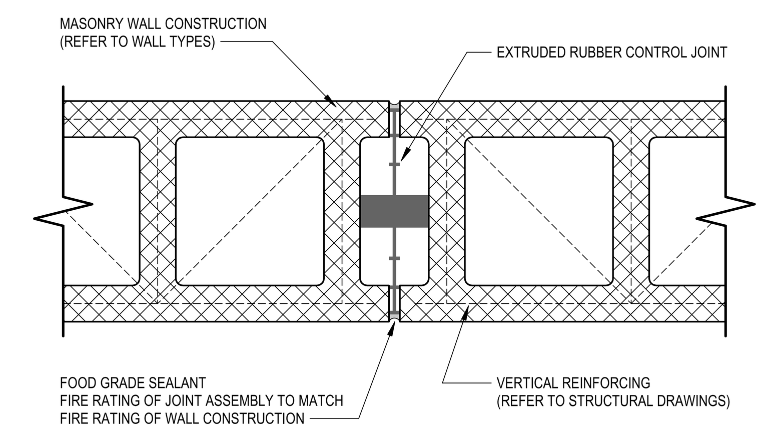
18 DETAIL AT IMP WALL THRU SLAB WITH INSULATION
SCALE: 3" = 1'-0"



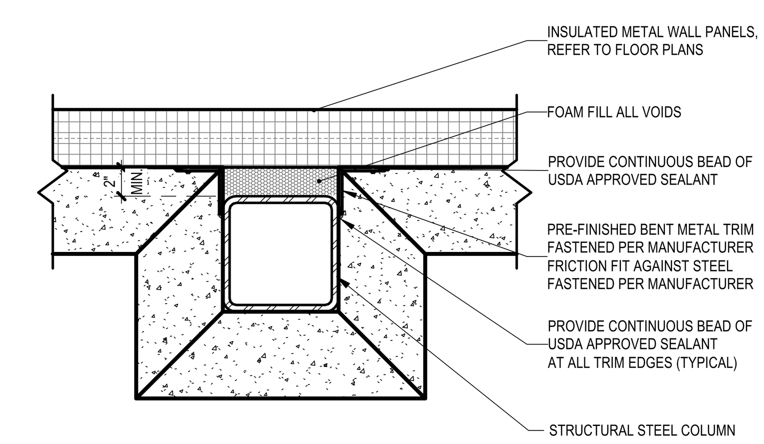
15 DETAIL AT TOP OF WALL - IMP
SCALE: 3" = 1'-0"



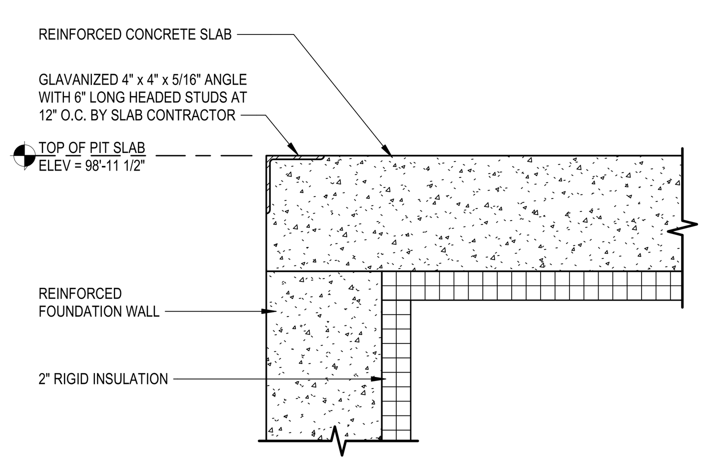
11 WALL - IMP - INTERSECTION - PLAN
SCALE: 3" = 1'-0"



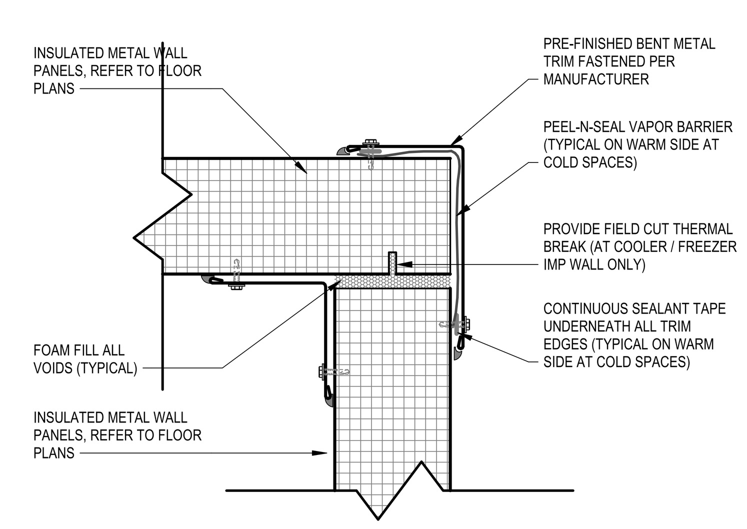
7 PLAN DETAIL AT MASONRY CONTROL JOINT
SCALE: 3" = 1'-0"



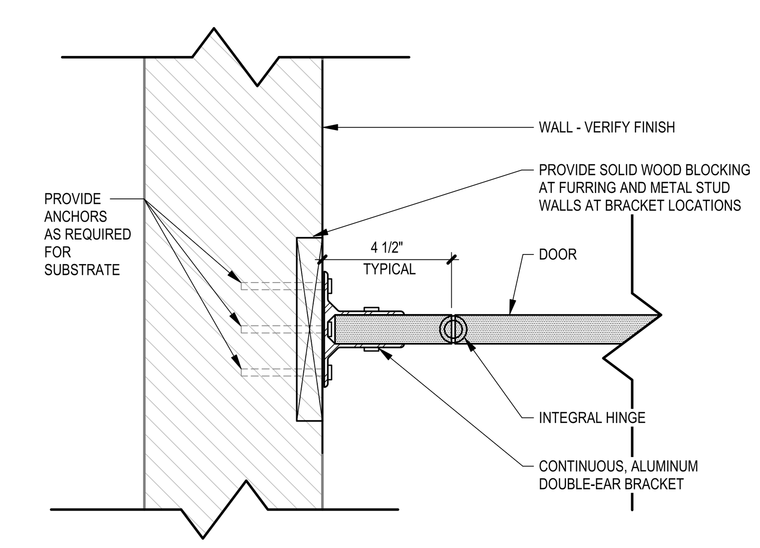
3 CURB - CONCRETE @ HHS
SCALE: 1 1/2" = 1'-0"



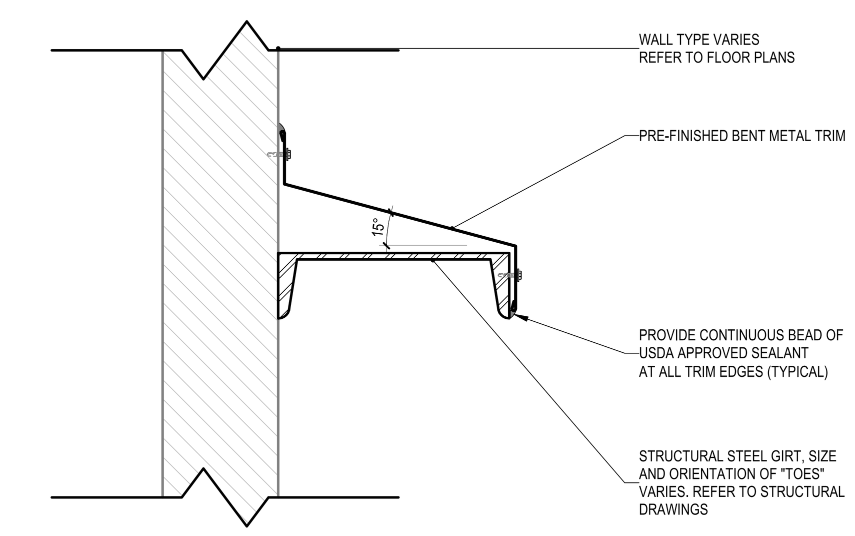
14 DETAIL AT FRONT OF DOCK PIT
SCALE: 1 1/2" = 1'-0"



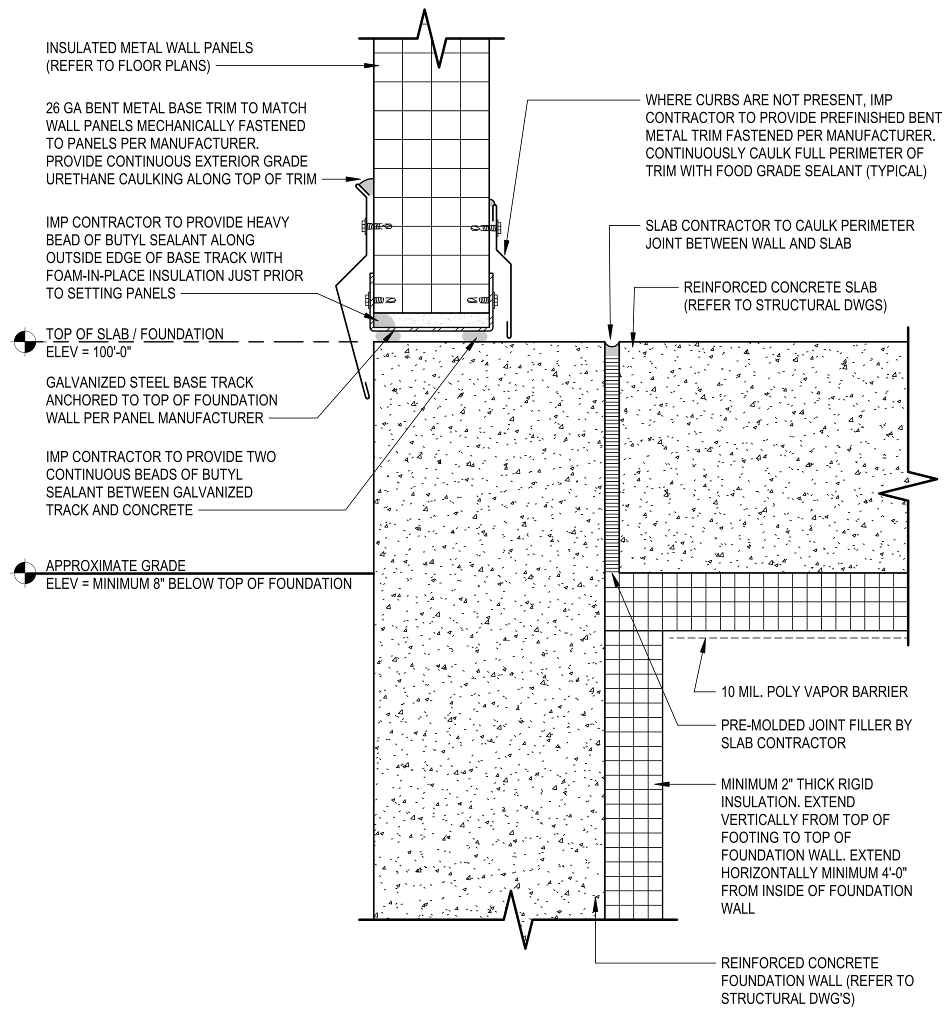
10 WALL - IMP - OUTSIDE CORNER - PLAN
SCALE: 3" = 1'-0"



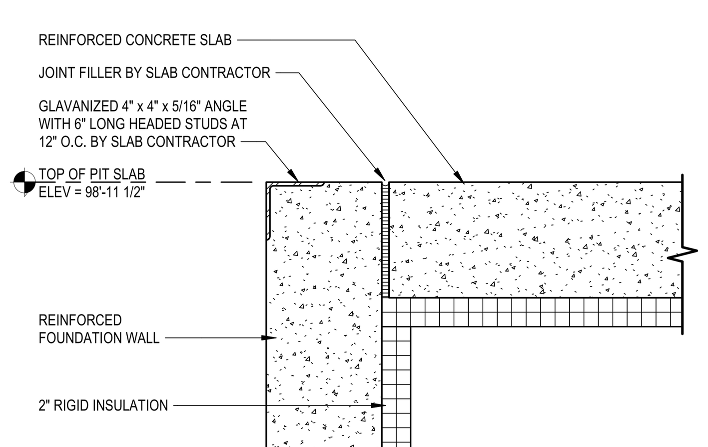
6 PARTITION AND DOOR - AT WALL
SCALE: 3" = 1'-0"



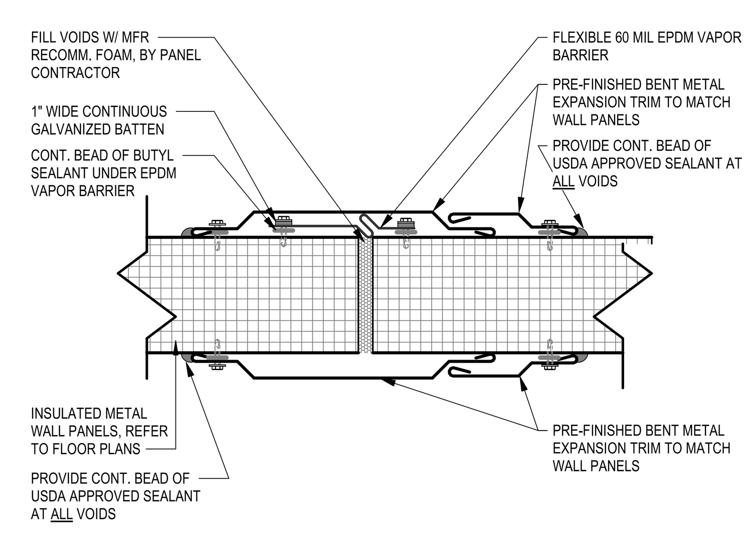
2 GIRT COVER
SCALE: 3" = 1'-0"



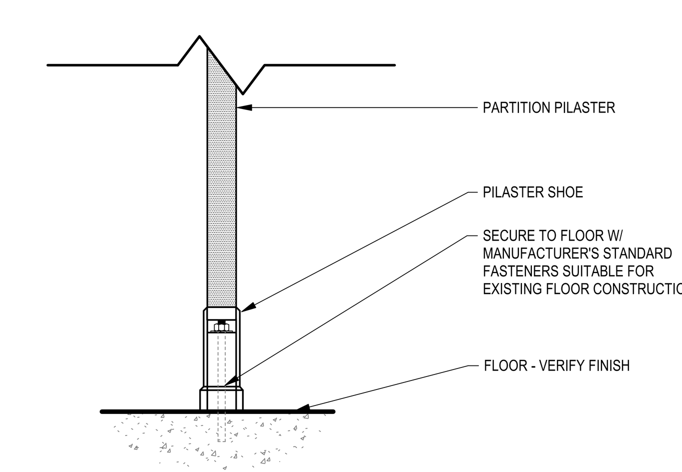
17 DETAIL AT FOUNDATION AND IMP WALL @ DOCK PIT
SCALE: 3" = 1'-0"



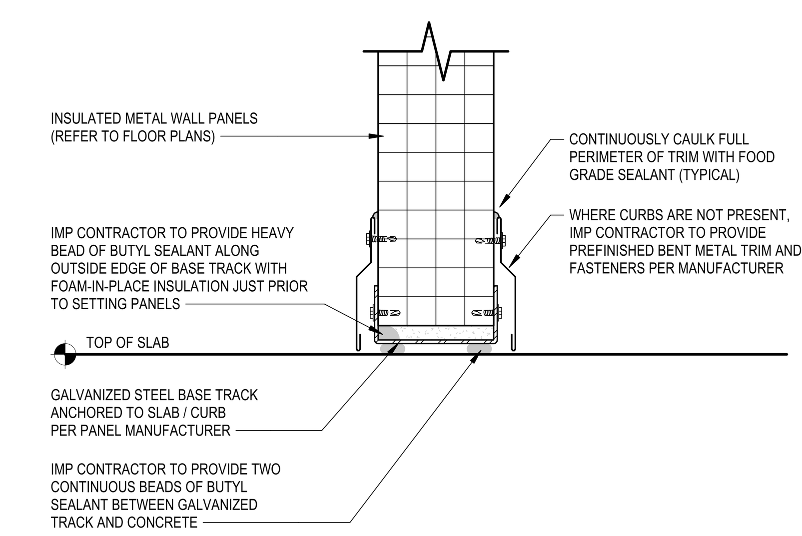
13 DETAIL AT FRONT OF DOCK PIT - COLD SPACES
SCALE: 1 1/2" = 1'-0"



9 WALL - EXPANSION JOINT
SCALE: 3" = 1'-0"



5 PARTITION - PILASTER - AT FLOOR
SCALE: 3" = 1'-0"



1 DETAIL AT BOTTOM OF IMP WALL
SCALE: 3" = 1'-0"

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SEE DRAWING LIST ON TITLE SHEET A0.000 RIC-806832-01-A-0 FOR CORRESPONDING CSC SHEET NUMBER

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DG PROJ: 7021 | DG DWG: A9.200

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
DD	05/03/2023	MHW	RJS	PERMIT SET
AA	04/07/2023	SN	JHP	PROGRESS SET
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT

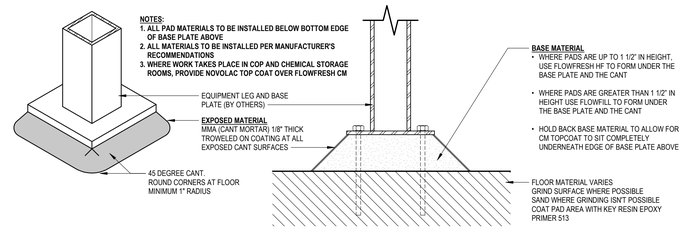
DRAWN: Author — DATE: 06/06/19
APPROVED: Approver — 05/03/2023
BUILDING: 4013
PROJECT NO.: 11025607 — PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT

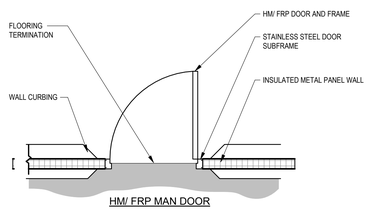
ARCHITECTURE
DETAILS - WALL

DRAWING NO.: RIC-807002-01-A-5 — REV.: DD
DRAWING SIZE: ANSI E (44" x 34") — SHEET OF 193

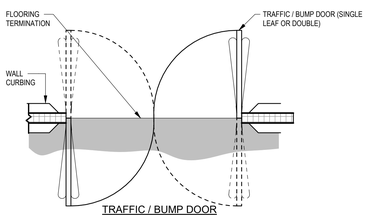
Autodesk Docs://7021 Project Pepperidge Farm Finn/7021_A_R22.rvt



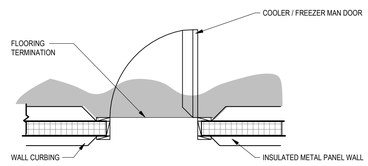
4 DETAIL AT MMA CANT - EQUIPMENT LEG
SCALE: 3" = 1'-0"



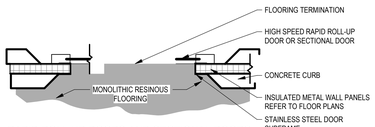
HM/ FRP MAN DOOR



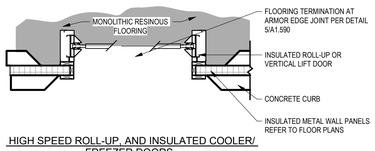
TRAFFIC / BUMP DOOR



COOLER / FREEZER MAN DOOR



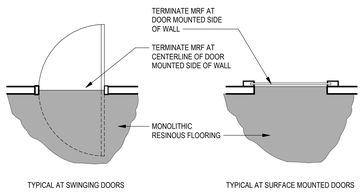
RAPID ROLL-UP DOORS AND SECTIONAL DOORS.



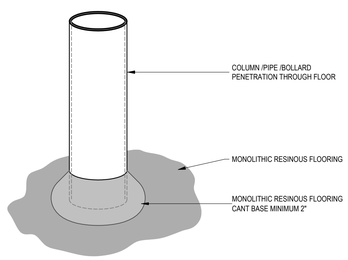
HIGH SPEED ROLL-UP, AND INSULATED COOLER/ FREEZER DOORS.

AT AREAS WHERE MONOLITHIC RESINOUS FLOORING (MRF) ABUTS AREAS WITHOUT MRF FLOORING, TERMINATE FLOORING AS SHOWN, OTHERWISE CARRY / CONTINUE FLOORING THROUGH OPENING.

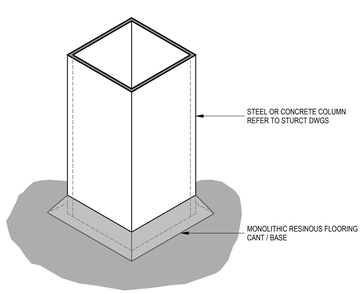
11 MRF - FLOORING TERMINATIONS AT DOORS
SCALE: 1/2" = 1'-0"



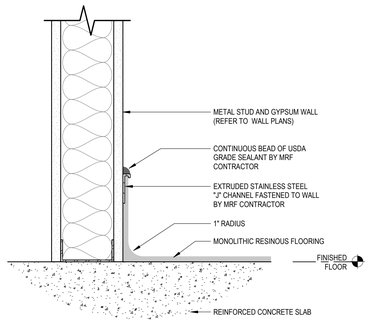
10 MRF - DOOR OPENINGS
SCALE: 1 1/2" = 1'-0"



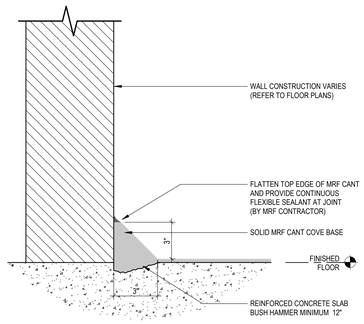
9 MRF - COLUMN / PIPE / BOLLARD
SCALE: 3" = 1'-0"



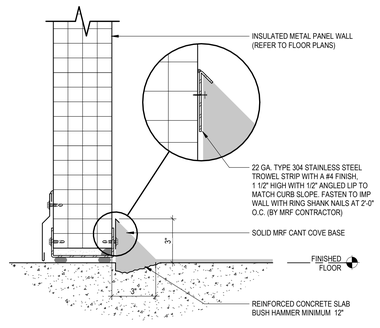
8 MRF - COLUMN BASE
SCALE: 3" = 1'-0"



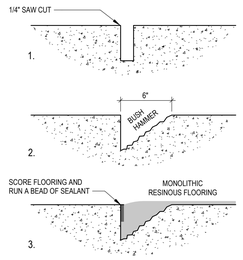
7 DETAIL AT MRF BASE - STUD WALL
SCALE: 3" = 1'-0"



6 DETAIL AT MRF BASE - MASS WALL
SCALE: 3" = 1'-0"

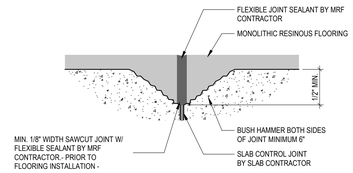


5 DETAIL AT MRF BASE - IMP WALL
SCALE: 3" = 1'-0"

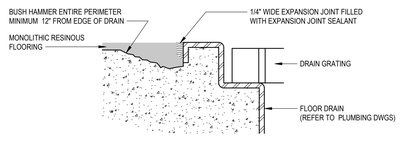


NOTE:
PREPARE SURFACE AND SAW CUT APPROXIMATELY 1/2" DEEP CHASE OR GROOVE INTO CONCRETE FLOOR. TROWEL FLOORING SMOOTH TO MEET ADJOINING FLOOR LEVEL OR FLOOR DRAIN

3 DETAIL AT FLOOR TRANSITION - MRF
SCALE: 1 1/2" = 1'-0"



2 DETAIL AT CONSTRUCTION JOINT - MRF
SCALE: 1 1/2" = 1'-0"



1 DETAIL AT FLOOR DRAIN - MRF
SCALE: 1 1/2" = 1'-0"

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DG PROJ: 7021 | DG DWG: A9.300

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
DD	05/03/2023	MHW	RJS	PERMIT SET
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Y	04/03/2023	AE	JHP	FLOORING BID ADDENDUM 1
X	03/13/2023	AE	JHP	MISC. METAL & FLOORING BID
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT

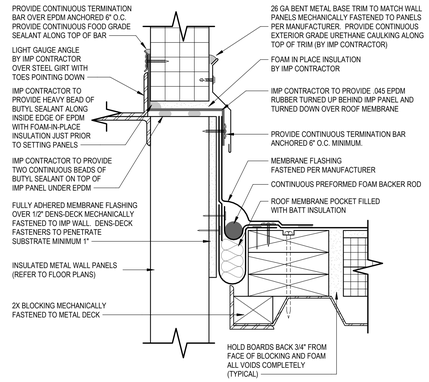
DRAWN: Author	DATE: 06/06/19
APPROVED: Approver	05/03/2023
BUILDING: 4013	
PROJECT NO.: 11025607	PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)	

CAMPBELL SOUP COMPANY
RICHMOND, UT

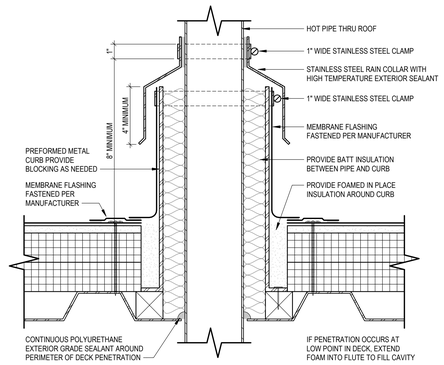
ARCHITECTURE
DETAILS - MRF & TILE

DRAWING NO.: RIC-807003-01-A-5 | REV.: DD

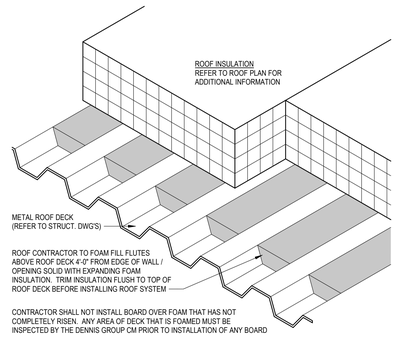
DRAWING SIZE: ANSI E (44" x 34") | SHEET | OF 193



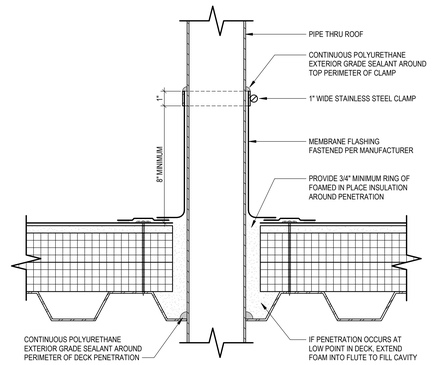
17 DETAIL AT EXPANSION JOINT
SCALE: 3" = 1'-0"



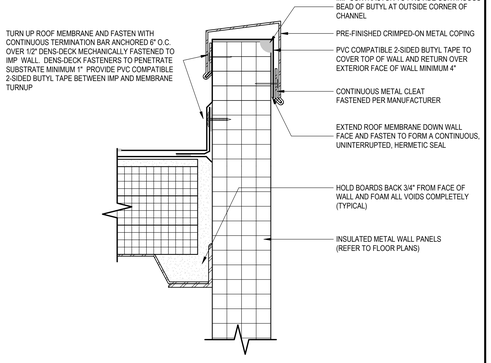
12 DETAIL AT PENETRATION - INSULATED PIPE
SCALE: 3" = 1'-0"



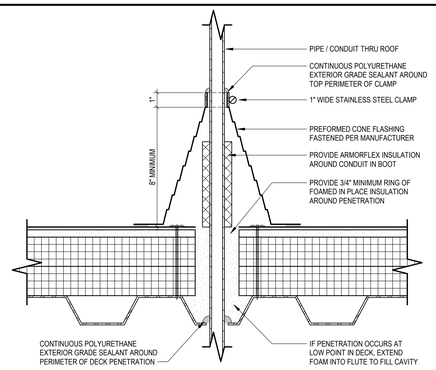
8 DETAIL AT FLUTE FOAMING
SCALE: 3" = 1'-0"



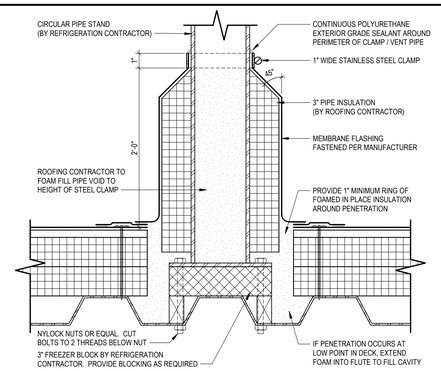
4 DETAIL AT PENETRATION - PIPE
SCALE: 3" = 1'-0"



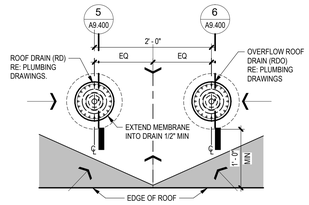
20 ROOF - MEMBRANE - PARAPET
SCALE: 3" = 1'-0"



15 DETAIL AT PENETRATION - CONDUIT
SCALE: 3" = 1'-0"

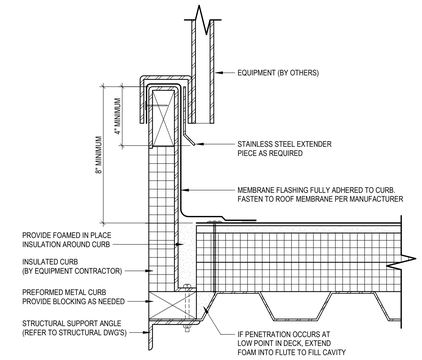


11 DETAIL AT PENETRATION - INSULATED PIPE STAND
SCALE: 3" = 1'-0"

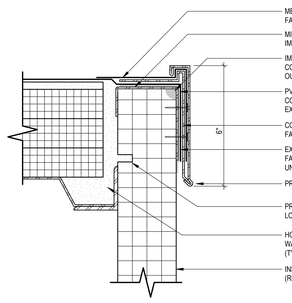


NOTES:
1. VERIFY LOCATION W/ ASSEMBLIES/STRUCTURE BELOW.
2. FING CONTRACTOR TO ENSURE POSITIVE DRAINAGE TO ROOF DRAIN.
3. PROVIDE 24" MIN. CLEAR OPENING FOR STRUCTURAL STEEL SUPPORT BELOW.

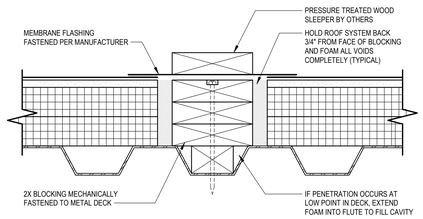
7 ROOF - MEMBRANE - DRAIN - LOCATIONS
SCALE: 1" = 1'-0"



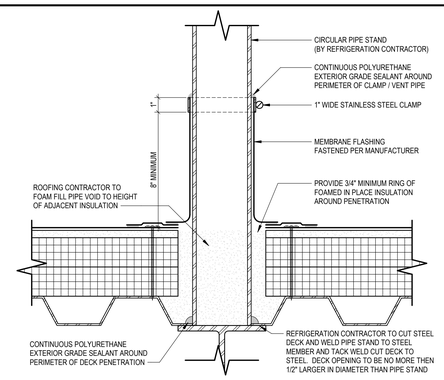
3 DETAIL AT PENETRATION - CURB
SCALE: 3" = 1'-0"



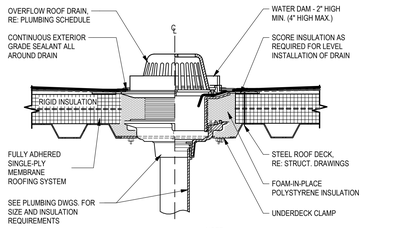
19 DETAIL AT EAVE
SCALE: 3" = 1'-0"



14 DETAIL AT SLEEPER
SCALE: 3" = 1'-0"

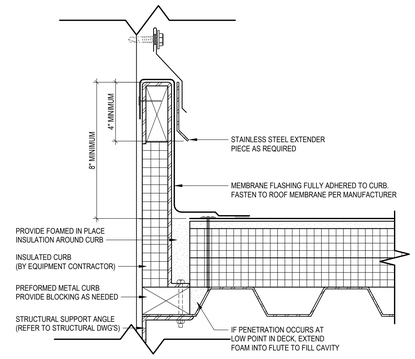


10 DETAIL AT PENETRATION - WELDED PIPE STAND
SCALE: 3" = 1'-0"

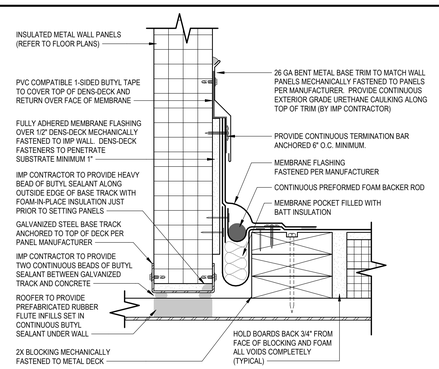


NOTE:
ROOF DRAIN TO BE SUPPLIED BY PLUMBING CONTRACTOR AND INSTALLED BY ROOFING CONTRACTOR

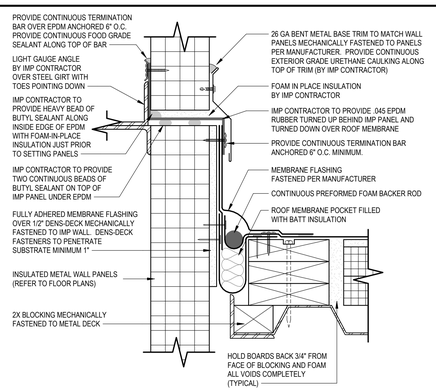
6 ROOF - MEMBRANE - DRAIN - OVERFLOW
SCALE: 1 1/2" = 1'-0"



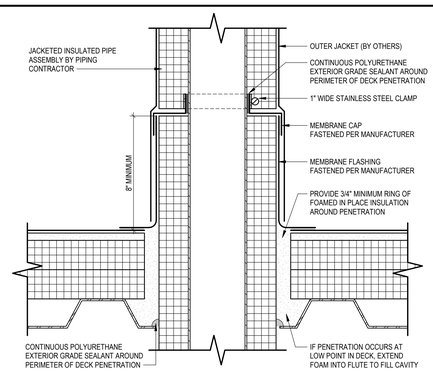
2 ROOF - MEMBRANE - PENETRATION -DUCT
SCALE: 3" = 1'-0"



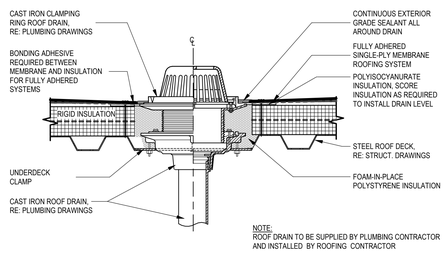
18 DETAIL AT EXPANSION JOINT
SCALE: 3" = 1'-0"



13 DETAIL AT EXPANSION JOINT
SCALE: 3" = 1'-0"



9 DETAIL AT PENETRATION - INSULATED PIPE
SCALE: 3" = 1'-0"



NOTE:
ROOF DRAIN TO BE SUPPLIED BY PLUMBING CONTRACTOR AND INSTALLED BY ROOFING CONTRACTOR

5 ROOF - MEMBRANE - PENETRATION - CONDUIT
SCALE: 1 1/2" = 1'-0"

SEE DRAWING LIST ON TITLE SHEET A0.000 RIC-806832-01-A-0 FOR CORRESPONDING CSC SHEET NUMBER

DENNIS GROUP
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DG PROJ: 7021 | DG DWG: A9.400

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
DD	05/03/2023	MHW	RJS	PERMIT SET
AA	04/07/2023	SN	JHP	PROGRESS SET
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT
R	02/15/2023	SN	JHP	ROOFING BID

DRAWN: Author	DATE: 06/06/19
APPROVED: Approver	05/03/2023
BUILDING: 4013	
PROJECT NO.: 11025607	PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)	

CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
DETAILS - ROOF

DRAWING NO.: RIC-807004-01-A-5 | REV.: DD

DRAWING SIZE: ANSI E (44" x 34") | SHEET | OF 193

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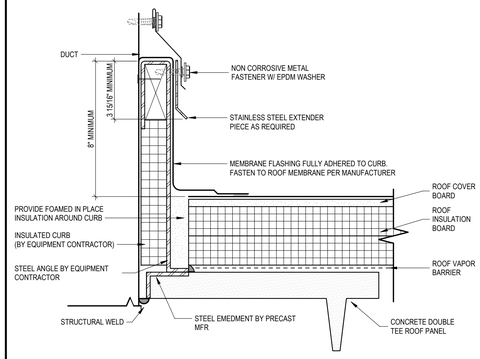
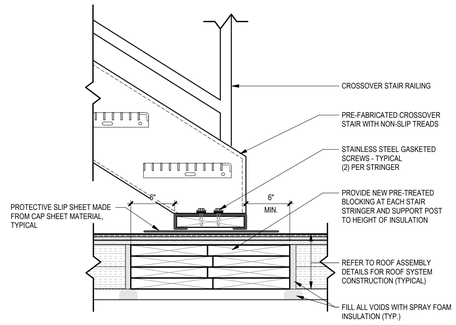
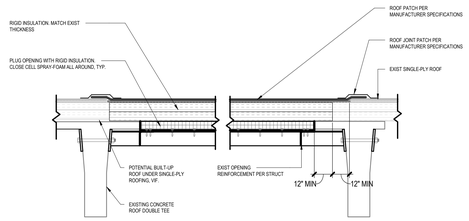


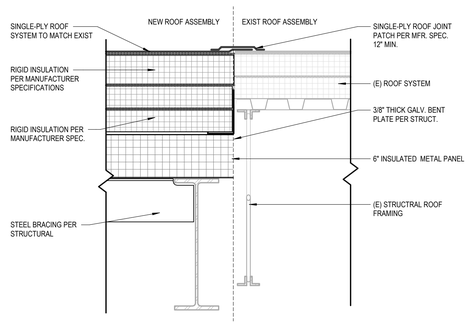
4 DETAIL AT PENETRATION - CURB
SCALE: 3" = 1'-0"



3 ROOF - SLEEPER - CROSS-OVER STAIR
SCALE: 1 1/2" = 1'-0"



2 ROOF - CONCRETE PATCH AT EXISTING ROOF
SCALE: 3/4" = 1'-0"



1 ROOF PATCH AT ROOF PENTHOUSE REMOVAL
SCALE: 1 1/2" = 1'-0"

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SEE DRAWING LIST ON TITLE SHEET A0.000 RIC-806832-01-A-0 FOR CORRESPONDING CSC SHEET NUMBER

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DG PROJ: 7021 | DG DWG: A9.401

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
DD	05/03/2023	MHW	RJS	PERMIT SET
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W	03/02/2023	AE	JHP	90% DESIGN REVIEW
V	03/01/2023	MHW	JHP	ROOF BID ADDENDUM 1
U	02/24/2023	MHW	JHP	BUILDING PERMIT
R	02/15/2023	SN	JHP	ROOFING BID

DRAWN: MHW	DATE: 01/18/22
APPROVED	05/03/2023
BUILDING: 4013	
PROJECT NO.: 11025607	PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)	

CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
DETAILS - ROOF

DRAWING NO.: RIC-807004-02-A-5 | REV.: DD

DRAWING SIZE: ANSI E (44" x 34") | SHEET 172 OF 193

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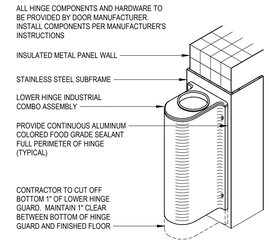
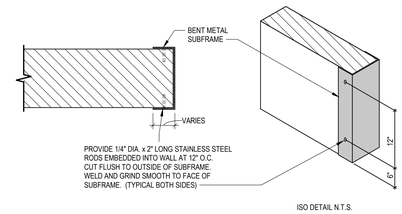
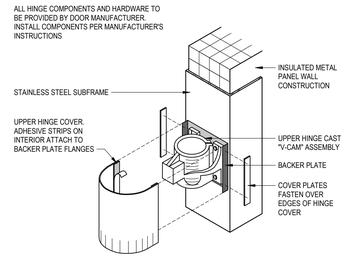


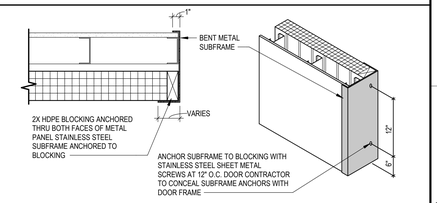
5 DOOR - BUMP - HINGE - LOWER - CUT
SCALE: 3" = 1'-0"



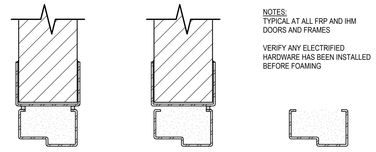
S6 SFRM - NO CURB - MASS
SCALE: 1 1/2" = 1'-0"



4 DOOR - BUMP - HINGE - UPPER
SCALE: 3" = 1'-0"



S5 SFRM - NO CURB - IMP/GYP
SCALE: 1 1/2" = 1'-0"



NOTES:
TYPICAL AT ALL FRP AND IHM DOORS AND FRAMES

VERIFY ANY ELECTRIFIED HARDWARE HAS BEEN INSTALLED BEFORE FOAMING

STEP 03: CLEAN ALL EXCESS FOAM FROM DOOR FRAME AND JAMB

CAULK REMAINING JOINT BETWEEN DOOR FRAME AND JAMB

STEP 02: INSTALL DOOR FRAME IN WALL OPENING

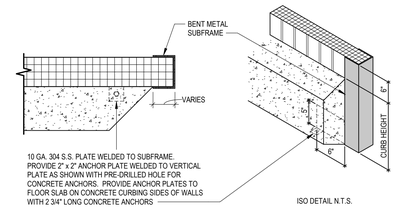
CAULK JOINT BETWEEN DOOR FRAME AND JAMB ON ONE SIDE OF WALL

FROM OPPOSITE SIDE OF WALL, FILL ANY REMAINING VOIDS WITH LOW EXPANSION FOAM

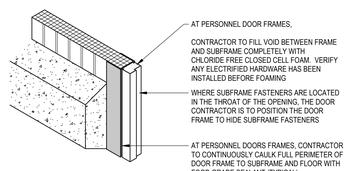
STEP 01: BEFORE INSTALLATION OF DOOR FRAME IN WALL OPENING, IF DOOR FRAME IS NOT FACTORY FOAMED, FILL ALL FRAME CAVATIES WITH CHLORIDE FREE CLOSED CELL FOAM.

CUT FOAM FLUSH TO OUTSIDE EDGE OF DOOR FRAME

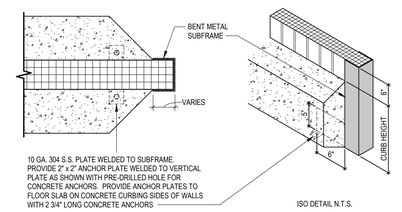
3 SFRM - FOAMING
SCALE: 3" = 1'-0"



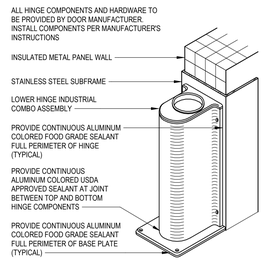
S4 SFRM - CURB - CONC - MAN - 1SIDE
SCALE: 1 1/2" = 1'-0"



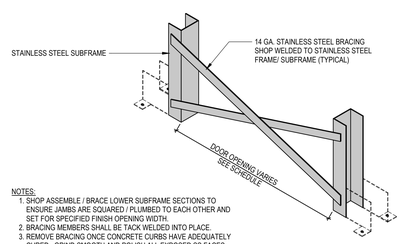
2 SFRM - CAULKING
SCALE: 1 1/2" = 1'-0"



S2 SFRM - CURB - CONC - MAN - 2SIDE
SCALE: 1 1/2" = 1'-0"

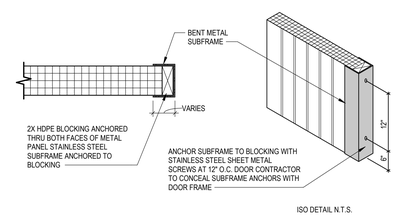


6 DOOR - BUMP - HINGE - LOWER
SCALE: 3" = 1'-0"



NOTES:
1. SHOP ASSEMBLE / BRACE LOWER SUBFRAME SECTIONS TO ENSURE JAMBS ARE SQUARED / PLUMBED TO EACH OTHER AND SET FOR SPECIFIED FINISH OPENING WIDTH.
2. BRACING MEMBERS SHALL BE TACK WELDED INTO PLACE.
3. REMOVE BRACING ONCE CONCRETE CURBS HAVE ADEQUATELY CURED. GRIND SMOOTH AND POLISH ALL EXPOSED SS FACES.

1 SFRM - BRACING
SCALE: 1" = 1'-0"



S1 SFRM - NO CURB - IMP
SCALE: 1 1/2" = 1'-0"

TYPICAL SUBFRAME NOTES

1. ALL SUBFRAMES TO BE 10 GA. 304 S.S. BENT METAL CHANNEL, PRE-FINISHED TO A NUMBER 4 FINISH UNLESS OTHERWISE NOTED.
2. ALL SUBFRAME CORNERS TO BE MITERED SEAM WELDS, GRIND SMOOTH AND POLISH ALL EXPOSED S.S. FACES. REMOVE ANY DISCOLORATION.
3. REFER TO DOOR SCHEDULE FOR SUBFRAME FINISH OPENING SIZE, JAMB RETURNS, AND THROAT WIDTH.

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SEE DRAWING LIST ON TITLE SHEET A0.000 RIC-806832-01-A-0 FOR CORRESPONDING CSC SHEET NUMBER

DENNIS GROUP
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DG PROJ: 7021 | DG DWG: A9.500

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
DD	05/03/2023	MHW	RJS	PERMIT SET
BB	04/13/2023	SN	JHP	OVERHEAD DOORS
AA	04/07/2023	SN	JHP	PROGRESS SET
X	03/13/2023	AE	JHP	MISC. METAL & FLOORING BID
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT

DRAWN	Author	DATE 03/25/21
APPROVED	Approver	05/03/2023
BUILDING	4013	
PROJECT NO.	11025607	PROJECT NAME: PROJECT FINN

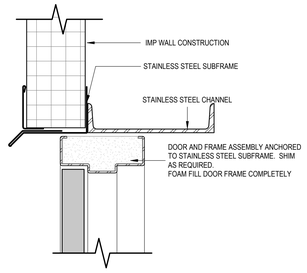
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT
ARCHITECTURE
DETAILS - DOORS / FRAMES / SUBFRAMES

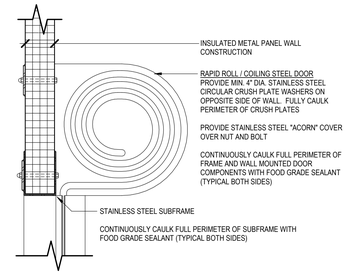
DRAWING NO. RIC-807005-01-A-5 REV. DD

DRAWING SIZE: ANSI E (44" x 34") SHEET OF 193

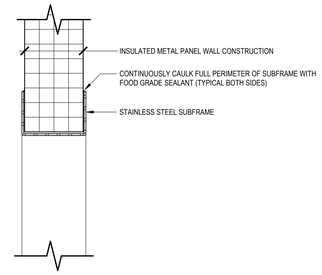
Autodesk Docs://7021 Project Pepperidge Farm FINN/7021_A_R22.rvt



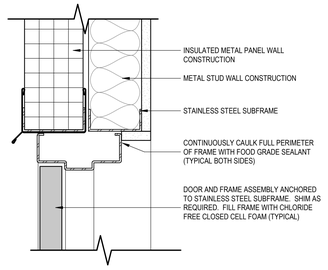
H15 DOOR - HF - IMP- HEAD
SCALE: 3" = 1'-0"



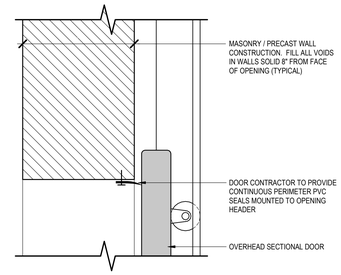
H10 DOOR - HIGH SPEED - IMP - SFRM - HEAD
SCALE: 1 1/2" = 1'-0"



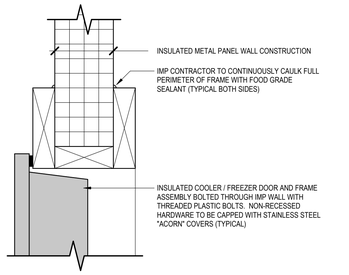
H5 DOOR - OPENING - IMP - SFRM - HEAD
SCALE: 3" = 1'-0"



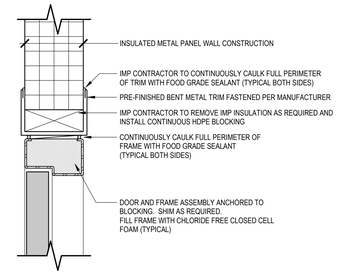
H24 DOOR - HF - IMP/STUD - HEAD
SCALE: 3" = 1'-0"



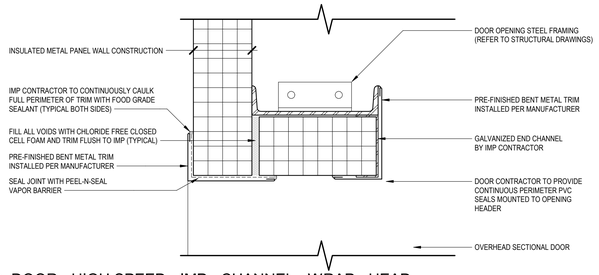
H14 DOOR - SECTIONAL - CMU - HEAD
SCALE: 3" = 1'-0"



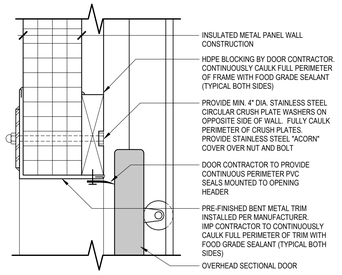
H9 DOOR - FRZ - IMP - HEAD
SCALE: 3" = 1'-0"



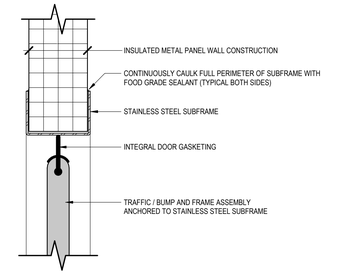
H4 DOOR - HF - IMP - TRIM - HEAD
SCALE: 3" = 1'-0"



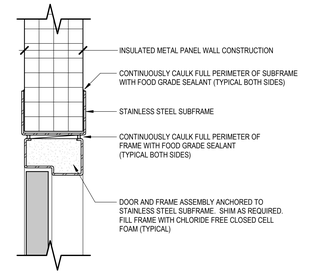
H23 DOOR - HIGH SPEED - IMP - CHANNEL - WRAP - HEAD
SCALE: 3" = 1'-0"



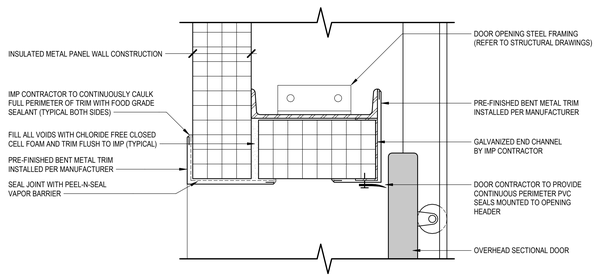
H13 DOOR - SECTIONAL - IMP - HEAD
SCALE: 3" = 1'-0"



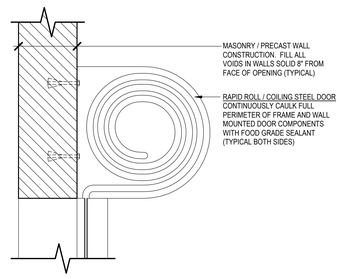
H8 DOOR - BUMP - IMP - SFRM - HEAD
SCALE: 3" = 1'-0"



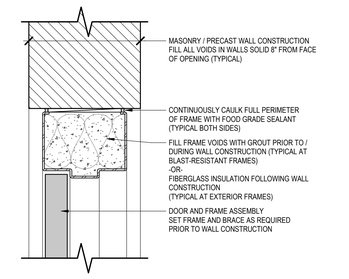
H3 DOOR - HF - IMP - SFRM - HEAD
SCALE: 3" = 1'-0"



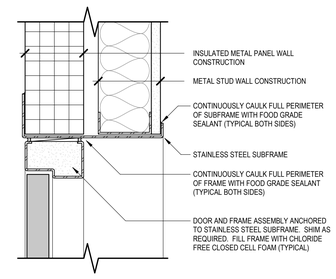
H22 DOOR - SECTIONAL - IMP - CHANNEL - WRAP - HEAD
SCALE: 3" = 1'-0"



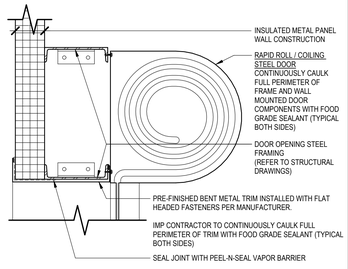
H12 DOOR - HIGH SPEED - CMU - HEAD
SCALE: 1 1/2" = 1'-0"



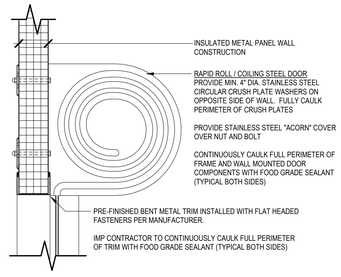
H7 DOOR - HF - CMU - HEAD
SCALE: 3" = 1'-0"



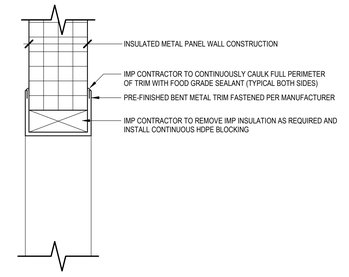
H2 DOOR - HF - GYP/IMP - SFRM - HEAD
SCALE: 3" = 1'-0"



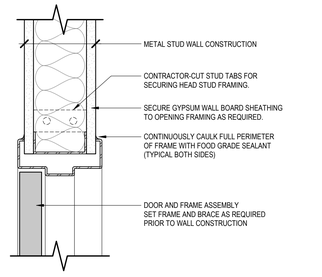
H16 DOOR - HIGH SPEED - IMP/STL - HEAD
SCALE: 1 1/2" = 1'-0"



H11 DOOR - HIGH SPEED - IMP - TRIM - HEAD
SCALE: 1 1/2" = 1'-0"



H6 DOOR - OPNG - IMP - TRIM - HEAD
SCALE: 3" = 1'-0"



H1 DOOR - HF - GYP - HEAD
SCALE: 3" = 1'-0"

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SEE DRAWING LIST ON TITLE SHEET A0.000 RIC-806832-01-A-0 FOR CORRESPONDING CSC SHEET NUMBER

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
DD	05/03/2023	MHW	RJS	PERMIT SET
BB	04/13/2023	SN	JHP	OVERHEAD DOORS
AA	04/07/2023	SN	JHP	PROGRESS SET
X	03/13/2023	AE	JHP	MISC. METAL & FLOORING BID
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT

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DG PROJ: 7021
DG DWG: A9.510

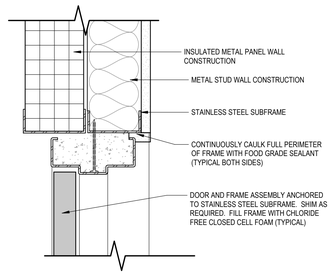
DRAWN	Author	DATE	11/05/21
APPROVED	Approver		05/03/2023
BUILDING	4013		
PROJECT NO.	11025607	PROJECT NAME	PROJECT FINN

SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

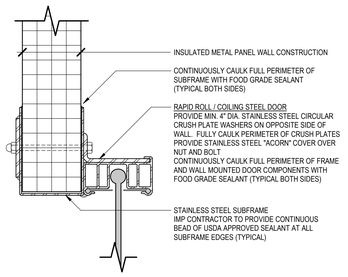
CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
DETAILS - DOOR - HEADS

DRAWING NO. RIC-807005-02-A-5
REV. DD
DRAWING SIZE: ANSI E (44" x 34")
SHEET OF 193



J15 DOOR - HF - IMP/STUD - JAMB
SCALE: 3" = 1'-0"



J10 DOOR - HIGH SPEED - IMP - SFRM - JAMB
SCALE: 3" = 1'-0"

J5 DOOR - OPNG - IMP - SFRM - JAMB
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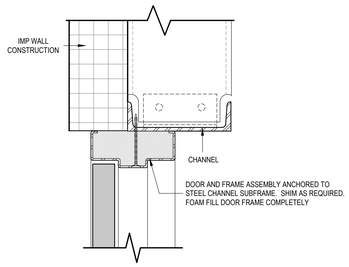

J19 DOOR - HF - IMP- JAMB
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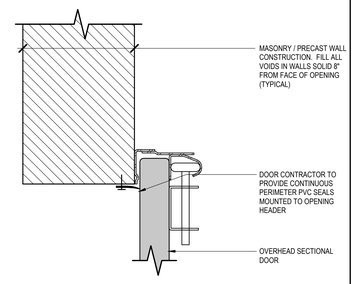
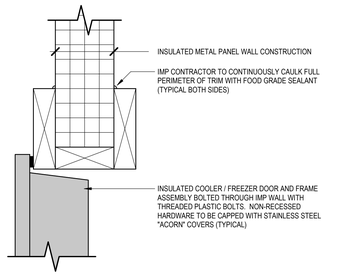


J14 DOOR - SECTIONAL - CMU - JAMB
SCALE: 3" = 1'-0"



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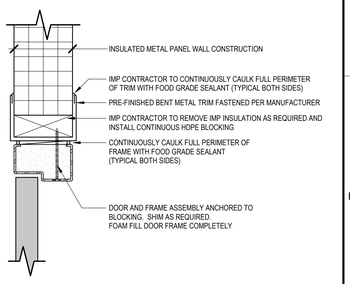
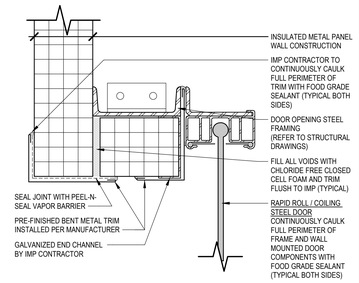
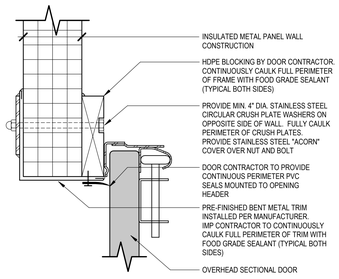
SCALE: 3" = 1'-0"



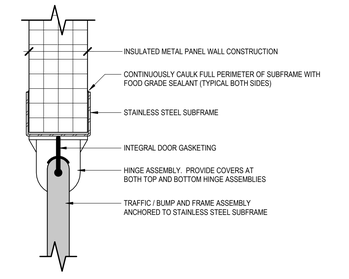
J4 DOOR - HF - IMP - TRIM - JAMB
SCALE: 3" = 1'-0"



J18 DOOR - HIGH SPEED - IMP/STL/IMP - JAMB
SCALE: 3" = 1'-0"



J13 DOOR - SECTIONAL - IMP - JAMB
SCALE: 3" = 1'-0"



J8 DOOR - BUMP - IMP - SFRM - JAMB
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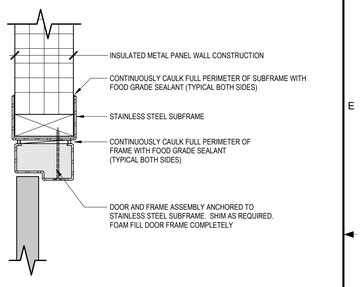
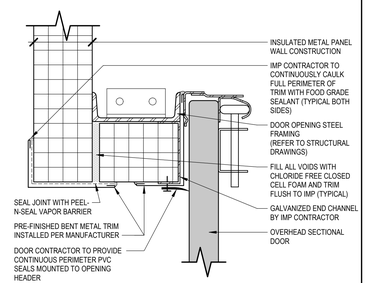
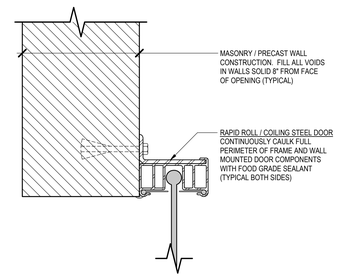


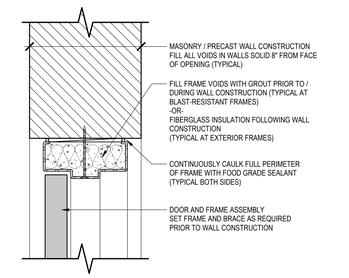
J3 DOOR - HF - IMP - SFRM - JAMB
SCALE: 3" = 1'-0"



J17 DOOR - SECTIONAL - IMP/STL/IMP - JAMB
SCALE: 3" = 1'-0"



J12 DOOR - HIGH SPEED - CMU - JAMB
SCALE: 3" = 1'-0"



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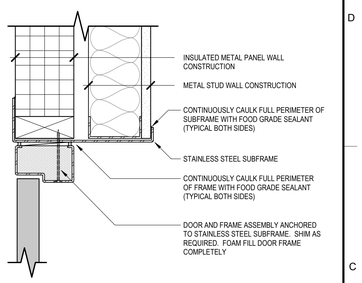
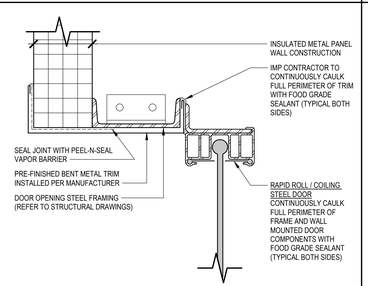
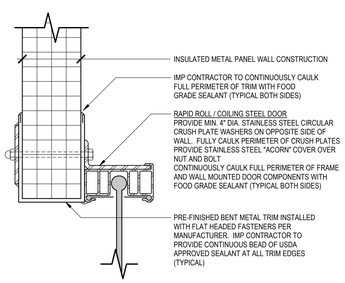
SCALE: 3" = 1'-0"



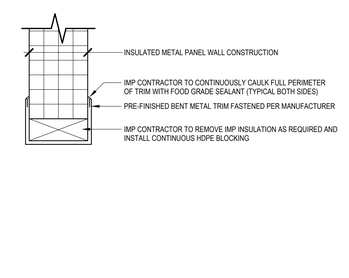
J2 DOOR - HF - GYP/IMP - SFRM - JAMB
SCALE: 3" = 1'-0"



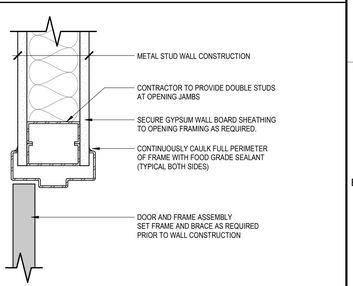
J16 DOOR - HIGH SPEED - IMP/STL - JAMB
SCALE: 3" = 1'-0"



J11 DOOR - HIGH SPEED - IMP - TRIM - JAMB
SCALE: 3" = 1'-0"



J6 DOOR - OPNG - IMP - TRIM - JAMB
SCALE: 3" = 1'-0"



J1 DOOR - HF - GYP - JAMB
SCALE: 3" = 1'-0"

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SEE DRAWING LIST ON TITLE SHEET A0.000 RIC-806832-01-A-0 FOR CORRESPONDING CSC SHEET NUMBER

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
DD	05/03/2023	MHW	RJS	PERMIT SET
BB	04/13/2023	SN	JHP	OVERHEAD DOORS
AA	04/07/2023	SN	JHP	PROGRESS SET
X	03/13/2023	AE	JHP	MISC. METAL & FLOORING BID
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT

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DG PROJ: 7021 | DG DWG: A9.511

DRAWN	Author
DATE	11/05/21
APPROVED	Approver
	05/03/2023
BUILDING	4013
PROJECT NO.	11025607
PROJECT NAME	PROJECT FINN

SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT

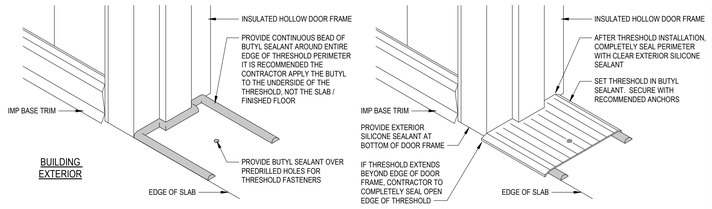
ARCHITECTURE
DETAILS - DOOR - JAMBS

DRAWING NO. RIC-807005-03-A-5 REV. DD

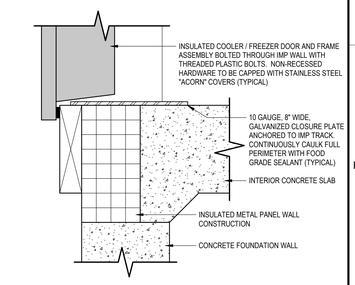
DRAWING SIZE: ANSI E (44" x 34") SHEET OF 193

5/3/2023 3:47:03 PM

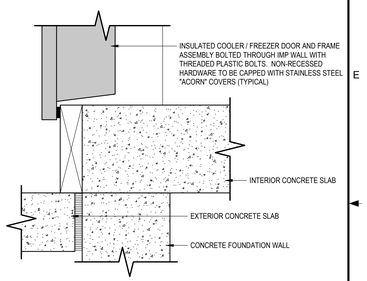
Autodesk Docs://7021 Project Pepperidge Farm Finn/7021_A_R22.rvt



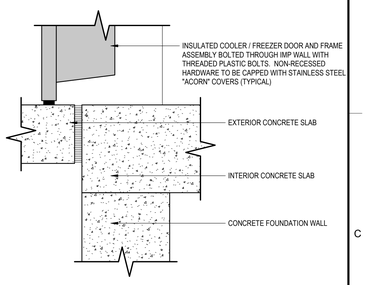
1 DETAIL AT DOOR THRESHOLD
SCALE: 3" = 1'-0"



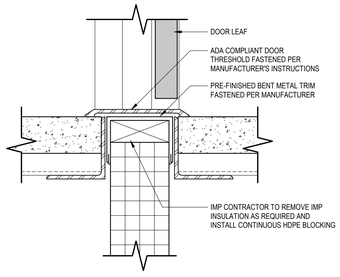
T4 DETAIL AT DOOR THRESHOLD
SCALE: 3" = 1'-0"



T3 DETAIL AT DOOR THRESHOLD
SCALE: 3" = 1'-0"



T2 DETAIL AT DOOR THRESHOLD
SCALE: 3" = 1'-0"



T1 DETAIL AT DOOR THRESHOLD
SCALE: 3" = 1'-0"

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SEE DRAWING LIST ON TITLE SHEET A0.000 RIC-806832-01-A-0 FOR CORRESPONDING CSC SHEET NUMBER

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
DD	05/03/2023	MHW	RJS	PERMIT SET
BB	04/13/2023	SN	JHP	OVERHEAD DOORS
AA	04/07/2023	SN	JHP	PROGRESS SET
X	03/13/2023	AE	JHP	MISC. METAL & FLOORING BID
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT

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DG PROJ: 7021 DG DWG: A9.512

DRAWN: Author DATE: 11/05/21
APPROVED: Approver 05/03/2023
BUILDING: 4013
PROJECT NO.: 11025607
PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT
ARCHITECTURE
DETAILS - DOOR - THRESHOLDS

DRAWING NO.: RIC-807005-04-A-5 REV.: DD
DRAWING SIZE: ANSI E (44" x 34") SHEET OF 193

5/3/2023 3:47:24 PM
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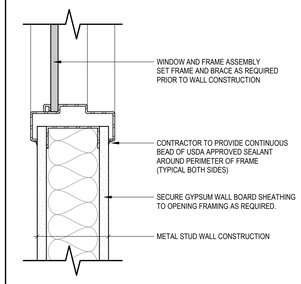
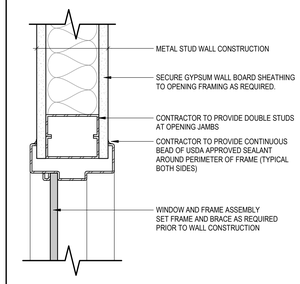
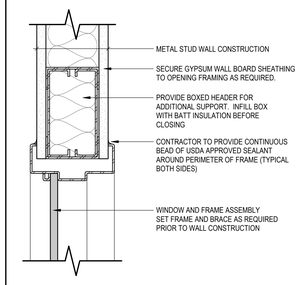


S5 DETAIL AT WINDOW SILL
SCALE: 3" = 1'-0"



J5 DETAIL AT WINDOW JAMB
SCALE: 3" = 1'-0"



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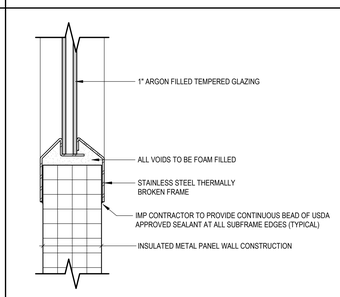

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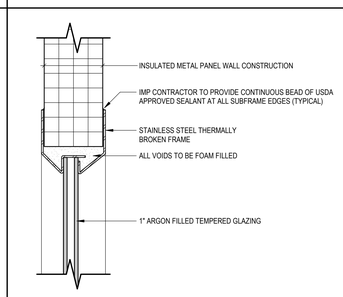

J4 DETAIL AT WINDOW JAMB
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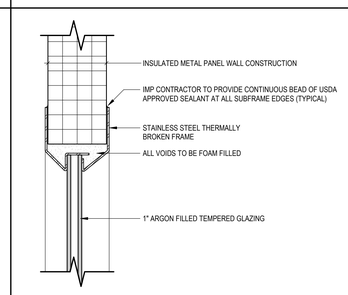

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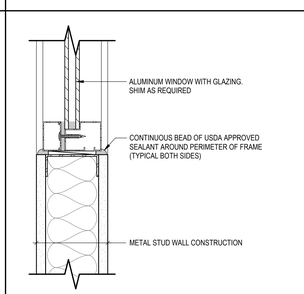

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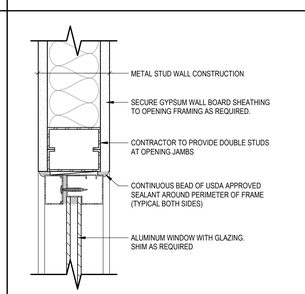

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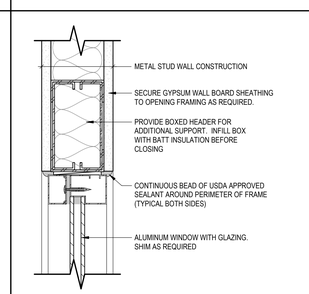

H3 DETAIL AT WINDOW HEAD
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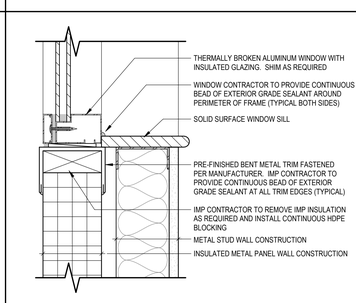

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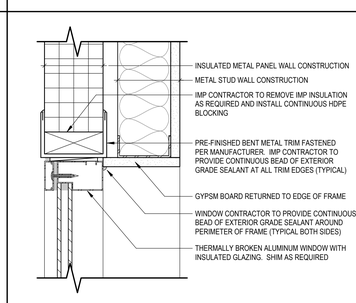

J2 DETAIL AT WINDOW JAMB
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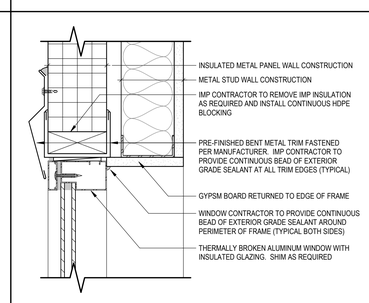
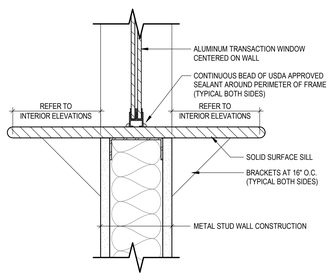


H2 DETAIL AT WINDOW HEAD
SCALE: 3" = 1'-0"



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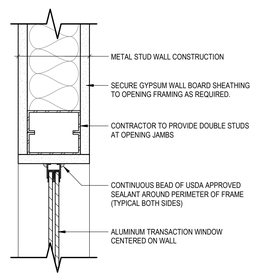

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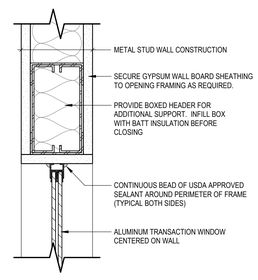

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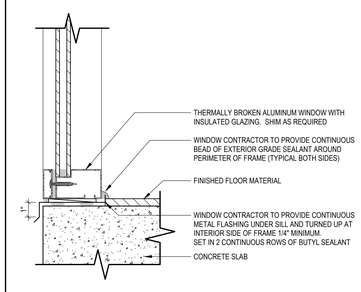

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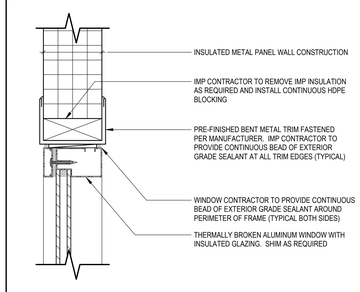

J1 DETAIL AT WINDOW JAMB
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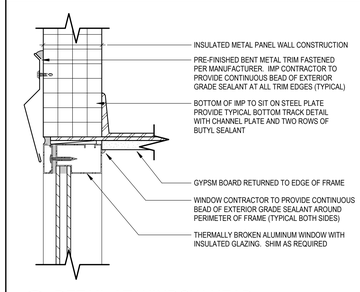

H1 DETAIL AT WINDOW HEAD
SCALE: 3" = 1'-0"

SEE DRAWING LIST ON
TITLE SHEET A0.000
RIC-806832-01-A-0 FOR
CORRESPONDING
CSC SHEET NUMBER

DENNIS GROUP
Plan • Design • Engineer • Build • Start-Up
dennisgroup.com
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DG PROJ: 7021 DG DWG: A9.520

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
DD	05/03/2023	MHW	RJS	PERMIT SET
AA	04/07/2023	SN	JHP	PROGRESS SET
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT

DRAWN: Author	DATE: 01/26/22	
APPROVED: Approver	05/03/2023	
BUILDING: 4013		
PROJECT NO.: 11025607	PROJECT NAME: PROJECT FINN	
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)		

CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
DETAILS - WINDOWS

DRAWING NO. RIC-807005-05-A-5 REV. DD

DRAWING SIZE: ANSI E (44" x 34") SHEET OF 193

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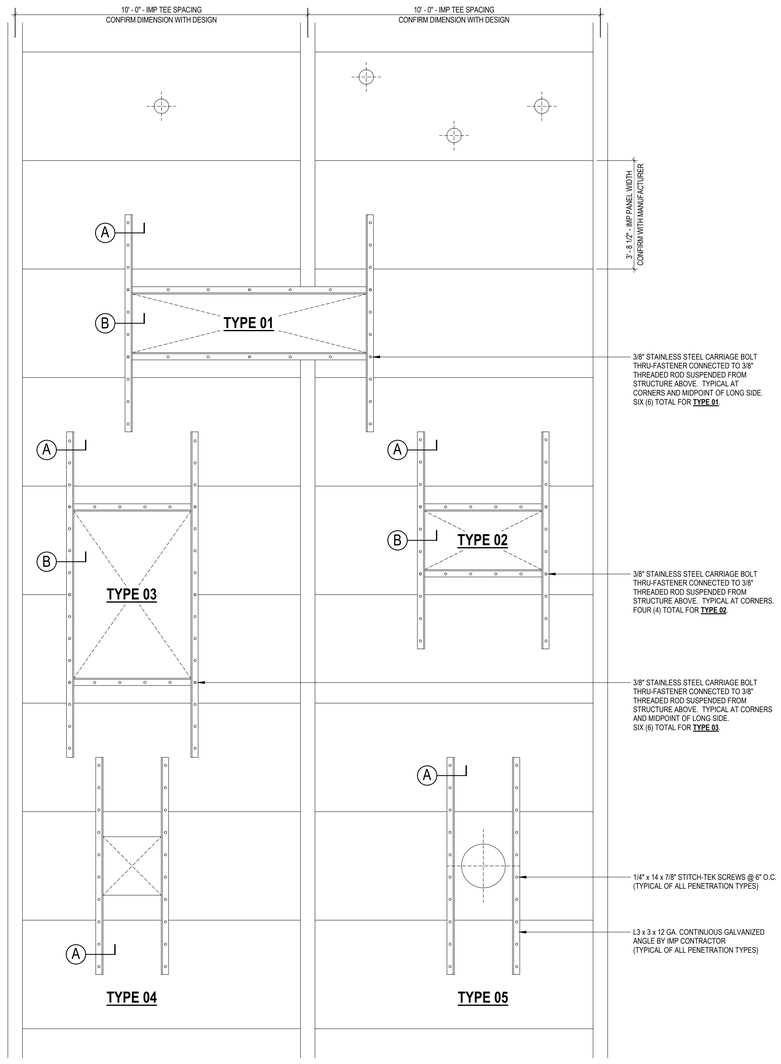
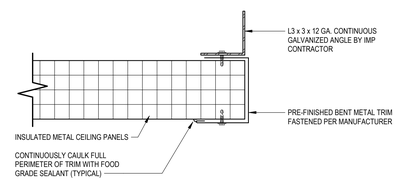


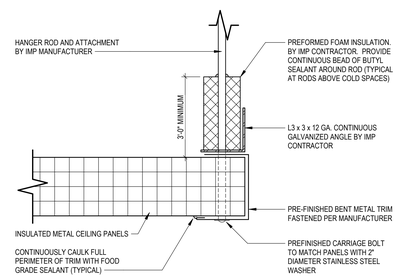
11 SAMPLE IMP CEILING PLAN
SCALE: 1/2" = 1'-0"

IMP CEILING PANEL PENETRATION DESIGN PROTOCOLS

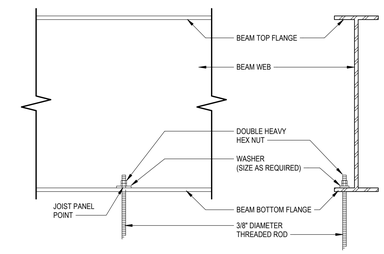
1. ALL EQUIPMENT LOADS (GRAVITY, LIVE, ETC.) MUST BE DIRECTLY SUPPORTED BY THE BUILDING STRUCTURE AND NOT THE CEILING PANEL.
2. REFER TO DETAILS ON THIS SHEET FOR HANGER ROD TOP AND TRAPEZE SUPPORT.
3. PENETRATION LAYOUT PARAMETERS:
   A. ANY SINGLE PENETRATION LESS THAN 6" DIAMETER IN AN INDIVIDUAL PANEL, NOT CLOSER THAN 4" FROM PANEL EDGE, DOES NOT REQUIRE ADDITIONAL STIFFENERS.
   B. UP TO (3) PENETRATIONS (AS DESCRIBED IN ITEM #1) CAN EXIST IN THE SAME PANEL, PROVIDED THE HOLES ARE NOT CO-LINEAR, AND HAVE AT LEAST 18" CLEAR DISTANCE BETWEEN PENETRATIONS.
   C. ALL PENETRATIONS WHICH EXCEED 6" DIAMETER OR DO NOT MEET THE ALLOWABLE CRITERIA DESCRIBED IN ITEMS "A" AND "B", SHALL BE SUPPORTED BY ANGLE STIFFINERS FASTENED TO THE PANEL AS FOLLOWS:
      a. AN ANGLE SHAPE (L3 x 3 x 12 GA. MINIMUM) STIFFENER SHALL BE PLACED ON EACH SIDE OF THE PENETRATION, AND MAY ALSO REQUIRE ADDITIONAL FRAMING (4 SIDES).
      b. EACH ANGLE SHAPE SHALL BE ATTACHED TO THE TOP SIDE PANEL FACE BY 1/4" STITCH-TEK SCREWS @ 6" O.C. FOR THE LENGTH OF THE ANGLE. THRU FASTENERS ALONG THE OPENING MAY ALSO BE REQUIRED.
      c. THE ANGLE SHAPE LENGTH SHALL BE ALIGNED PERPENDICULAR TO THE PANEL RIBS, AND RUN 21" PAST THE NEAREST PANEL JOINT OF AN UNMODIFIED PANEL.
4. ANY CEILING PENETRATIONS FOR DUCTS CARRYING EXTREME TEMPERATURES, RELATIVE TO THE CEILING PANEL OPERATING TEMPERATURE, MUST PROVIDE A 2" CLEAR DISTANCE BETWEEN THE OUTER DUCT WALL AND THE PANEL PENETRATION SURFACE.
5. DETAIL INTENDED TO CONVEY DESIGN INTENT. IMP CONTRACTOR TO SUBMIT STAMPED ENGINEERED DRAWINGS AND CALCULATIONS OF CEILING & SUSPENSION SYSTEM PREPARED BY AN ENGINEER LICENSED IN THE STATE HAVING JURISDICTION. CEILING ASSEMBLY SHALL BE DESIGNED TO SUPPORT A MINIMUM LIVE LOAD OF 20 PSF, A MINIMUM DEAD LOAD CAPACITY OF 5 PSF AND A MINIMUM OF 300 LBS CONCENTRATED LOAD.



A DETAIL AT IMP CEILING OPENING
SCALE: 3" = 1'-0"

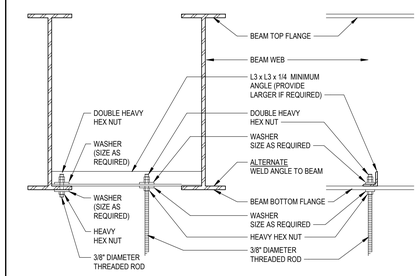


B DETAIL AT IMP CEILING OPENING
SCALE: 3" = 1'-0"



NOTES:
1. ALL THREADED RODS AND NUTS SHALL BE GALVANIZED ASTM A36 GRADE STEEL.
2. DETAIL INTENDED TO CONVEY DESIGN INTENT. IMP CONTRACTOR TO SUBMIT STAMPED ENGINEERED DRAWINGS AND CALCULATIONS OF CEILING & SUSPENSION SYSTEM PREPARED BY AN ENGINEER LICENSED IN THE STATE HAVING JURISDICTION. CEILING ASSEMBLY SHALL BE DESIGNED TO SUPPORT A MINIMUM LIVE LOAD OF 20 PSF, A MINIMUM DEAD LOAD OF 5 PSF & A MINIMUM OF 300 LBS CONCENTRATED LOAD.

8 HANGER ROD DETAIL AT "W" SECTION
SCALE: 1 1/2" = 1'-0"



NOTES:
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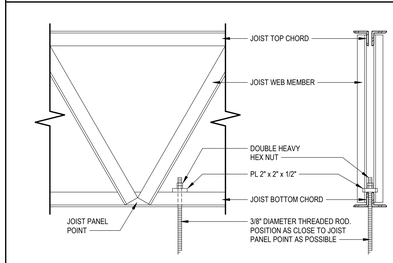
7 TRAPEZE DETAIL AT "W" SECTION
SCALE: 1 1/2" = 1'-0"



NOTES:
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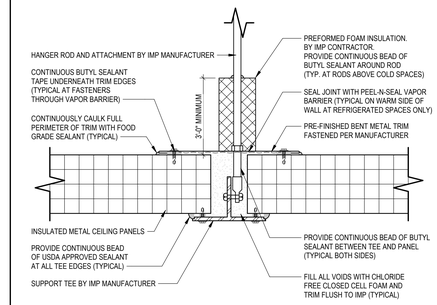
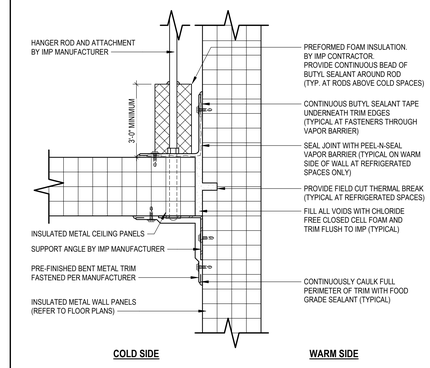
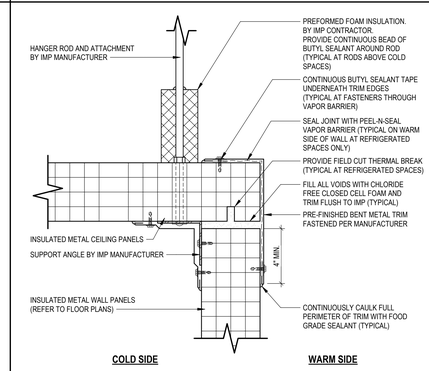
6 HANGER ROD DETAIL AT JOIST
SCALE: 1 1/2" = 1'-0"



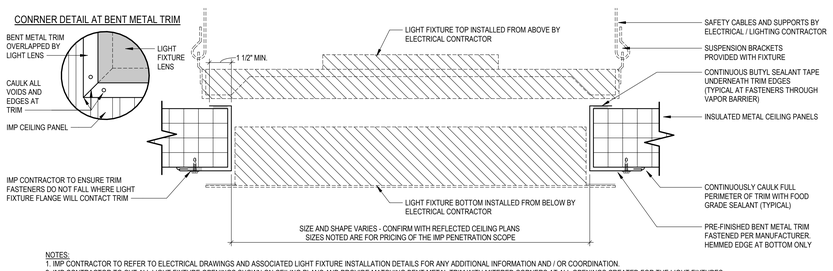
4 DETAIL AT IMP CEILING TEE
SCALE: 3" = 1'-0"



3 DETAIL AT IMP CEILING / WALL
SCALE: 3" = 1'-0"

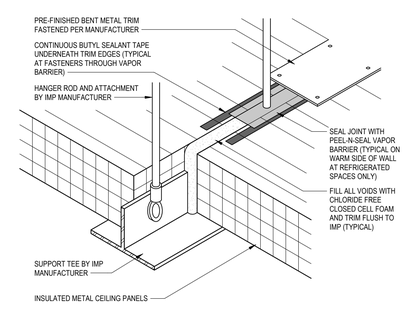


2 DETAIL AT IMP CEILING CORNER
SCALE: 3" = 1'-0"



NOTES:
1. IMP CONTRACTOR TO REFER TO ELECTRICAL DRAWINGS AND ASSOCIATED LIGHT FIXTURE INSTALLATION DETAILS FOR ANY ADDITIONAL INFORMATION AND / OR COORDINATION.
2. IMP CONTRACTOR TO CUT ALL LIGHT FIXTURE OPENINGS SHOWN ON CEILING PLANS AND PROVIDE MATCHING BENT METAL TRIM WITH MITERED CORNERS AT ALL OPENINGS CREATED FOR THE LIGHT FIXTURES.
3. IMP CONTRACTOR TO FASTEN TRIM TO BOTTOM OF IMP CEILING ONLY. TOP TO BE ANCHORED WHEN ELECTRICAL CONTRACTOR INSTALLS TOP PORTION OF LIGHT FIXTURE ASSEMBLY.
4. IMP CONTRACTOR TO PROVIDE AND INSTALL 3/4" PLYWOOD FALL PROTECTION AT ALL LIGHT PENETRATIONS IN INSULATED METAL PANEL CEILINGS. CONTRACTOR TO TEMPORARILY SECURE PLYWOOD IN PLACE AT EACH LOCATION. CONTRACTOR TO MARK EACH PLYWOOD COVER, AS A VISUAL FALL PROTECTION WARNING, WITH 4" MINIMUM RED LETTERING STATING "FLOOR HOLE COVER". CONTRACTOR TO NOTE THAT THESE PLYWOOD COVERS ARE TO REMAIN IN PLACE AND MAINTAINED BY THE IMP CONTRACTOR THROUGHOUT THE PROJECT UNTIL ACTUAL LIGHT FIXTURES ARE INSTALLED IN OPENINGS.
5. IMP CONTRACTOR TO PROVIDE CONTINUOUS BEADS OF USDA SEALANT AT ALL BENT METAL TRIM EDGES AND MITERS.
6. IMP CONTRACTOR TO CONFIRM EXACT FIXTURE TYPE, NUMBER OF LOCATIONS ON PLANS AND CLEAR OPENING REQUIREMENTS FOR BENT METAL TRIM, WITH ELECTRICAL DRAWINGS AND ELECTRICAL CONTRACTOR IN FIELD. DO NOT PROCEED WITH FABRICATION OF BENT METAL FRAMES UNTIL OPENING SIZES AND LOCATIONS ARE CONFIRMED.
7. IMP CONTRACTOR TO CONFIRM EXACT SIZES AND LOCATIONS WITH CONSTRUCTION MANAGER AND ELECTRICAL CONTRACTOR PRIOR TO CUTTING ANY OPENINGS.

10 DETAIL AT IMP CEILING LIGHT FIXTURE
SCALE: 3" = 1'-0"



9 DETAIL AT IMP CEILING TEE - ISOMETRIC
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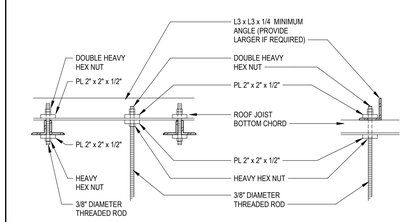

NOTES:
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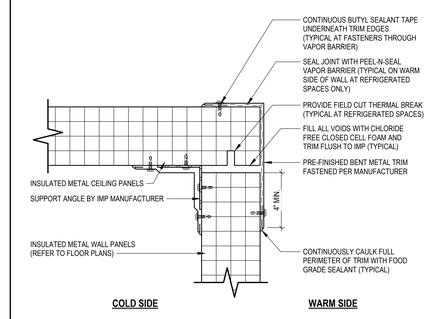
5 TRAPEZE DETAIL AT "W" SECTION
SCALE: 1 1/2" = 1'-0"



1 DETAIL AT IMP CEILING CORNER
SCALE: 3" = 1'-0"

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SEE DRAWING LIST ON TITLE SHEET A0.000
RIC-806832-01-A-0 FOR CORRESPONDING CSC SHEET NUMBER

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DG PROJ: 7021 | DG DWG: A9.600

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W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT

DRAWN	Author	DATE	01/24/22
APPROVED	Approver		05/03/2023
BUILDING	4013		
PROJECT NO.	11025607	PROJECT NAME	PROJECT FINN

SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT
ARCHITECTURE
DETAILS - CEILING - IMP

DRAWING NO. RIC-807006-01-A-5 | REV. DD
DRAWING SIZE: ANSI E (44" x 34") | SHEET OF 193

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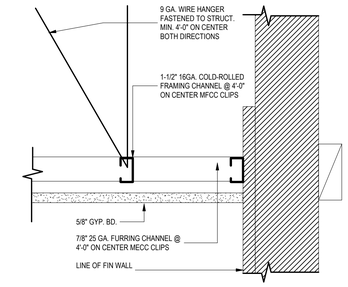
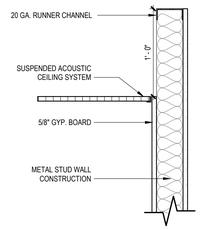


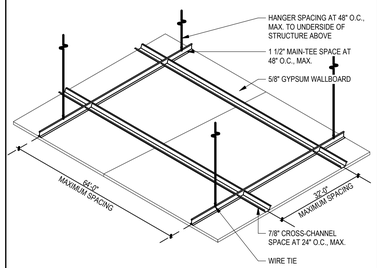
6 CEILING - SUSPENDED GYP - DETAIL

SCALE: 1" = 1'-0"



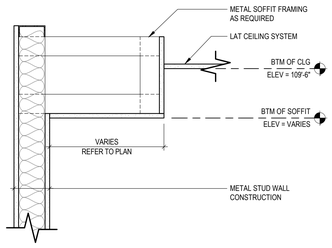
5 DETAIL AT SOFFIT

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



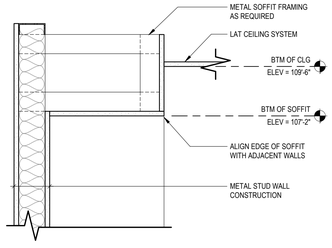
4 CEILING - GWB

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



2 DETAIL AT SOFFIT

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



1 DETAIL AT SOFFIT

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

NOTES FOR ACOUSTIC TILE CEILINGS:

1.THE SUSPENDED CEILING SYSTEM, MECHANICAL DUCTWORK AND LIGHTING FIXTURES SHALL BE POSITIVELY ATTACHED FROM THE STRUCTURE ABOVE.

2. HANGER WIRES ARE TO BE ATTACHED TO STRUCTURE ABOVE WITH AN APPROVED HANGER ATTACHMENT DEVICE.

3.ALL LIGHTING FIXTURES SHALL BE POSITIVELY ATTACHED TO THE SUSPENDED CEILING SYSTEM. THE ATTACHMENT DEVICE SHALL HAVE A CAPACITY OF 100% OF THE LIGHTING FIXTURE WEIGHT ACTING IN ANY DIRECTION.

4.HANGER WIRE SHALL ATTACH THE GRID MEMBER TO THE STRUCTURE ABOVE WITHIN 2" OF EACH CORNER OF EACH FIXTURE. TANDEM FIXTURES MAY UTILIZE COMMON WIRES.

5. LIGHT FIXTURES WEIGHING LESS THAN 56 LBS. SHALL HAVE (2) 12 GAUGE HANGER WIRES CONNECTED FROM THE FIXTURE HOUSING TO THE STRUCTURE ABOVE. THESE WIRES MAY BE SLACK. LIGHT FIXTURES WEIGHING 56 LBS. OR MORE SHALL BE SUPPORTED DIRECTLY FROM THE STRUCTURE ABOVE BY APPROVED HANGERS.

6.WHEN DIRECT ATTACHMENT TO STRUCTURAL MEMBER IS NOT FEASIBLE, PROVIDE APPROVED INTERMEDIATE UNISTRUT FRAMING.

7.COMPRESSION STRUTS: STEEL SECTION WITH L/R RATIO OF 200 MAXIMUM. ATTACH TO MAIN RUNNERS WITH 1/4" MACHINE BOLT AND TO STRUCTURE WITH 3/16" DIAMETER POWER DRIVEN STUD. COMPRESSION STRUT SHALL NOT REPLACE HANGER WIRE. SPACING AT 12'-0" O.C. IN EACH DIRECTION.

8.VERTICAL HANGER WIRES SHALL HAVE NOT LESS THAN 3 TIGHT TURNS. BRACING WIRES SHALL NOT HAVE LESS THAN 4 TIGHT TURNS. MAKE ALL TIGHT TURNS WITHIN A DISTANCE OF 1-1/2".

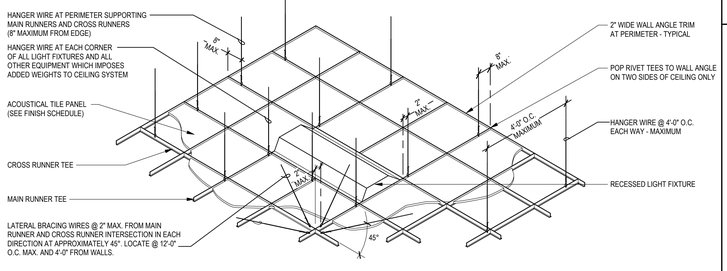
9. SUSPENDED CEILING SHALL COMPLY WITH THE REQUIREMENTS OF THE I.B.C. 803.9.1.1 FOR METAL SUSPENSION SYSTEMS FOR ACOUSTICAL TILE AND FOR LAY-IN PANEL CEILINGS (SECTION 803), AND INCLUDE AS A MINIMUM, CURRENT MOA REQUIREMENTS FOR LATERAL FRAME BRACING AND LIGHT FIXTURE SUPPORTS.

10. CEILING HEIGHTS INDICATED ON PLANS ARE TO THE BTM OF CLG.

11. SPLICES AND INTERSECTIONS OF RUNNERS. SHALL BE ATTACHED WITH MECHANICAL INTERLOCKING CONNECTORS SUCH AS POP RIVETS, SCREWS, PINS, PLATES WITH BENT TABS OR OTHER APPROVED CONNECTORS.

12. ALL CEILINGS SHALL BE SUPPORTED DIRECTLY FROM STRUCTURAL FRAMING MEMBERS - NOT THE DECK

HANGER WIRE ALLOWABLE TENSION	
#12	170 POUNDS
#11	225 POUNDS
#10	300 POUNDS



3 CEILING - LAT - ISOMETRIC & GENERAL NOTES

SCALE: 3" = 1'-0"

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REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
DD	05/03/2023	MHW	RJS	PERMIT SET
AA	04/07/2023	SN	JHP	PROGRESS SET
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT

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DG PROJ: 7021 DG DWG: A9.610

DRAWN	Author	DATE 03/03/22
APPROVED	Approver	05/03/2023
BUILDING	4013	
PROJECT NO. 11025607	PROJECT NAME PROJECT FINN	

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CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
DETAILS - CEILING - GYP / LAT

DRAWING NO. RIC-807006-02-A-5 REV. DD

DRAWING SIZE: ANSI E (44" x 34") SHEET OF 193

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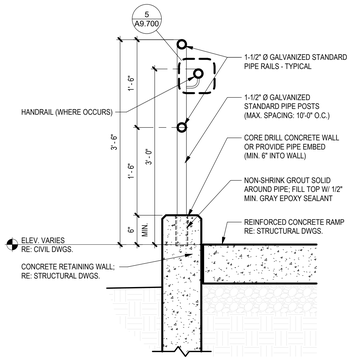

8 RAILING SECTION DETAIL AT RAMP
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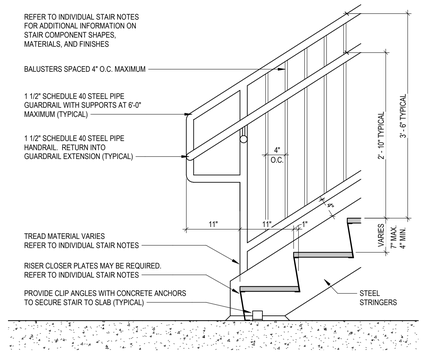
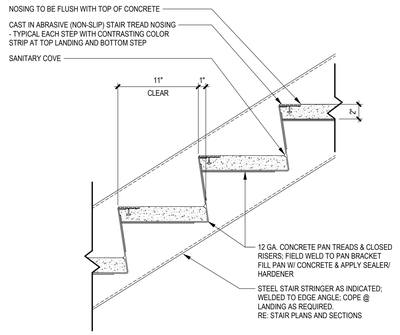
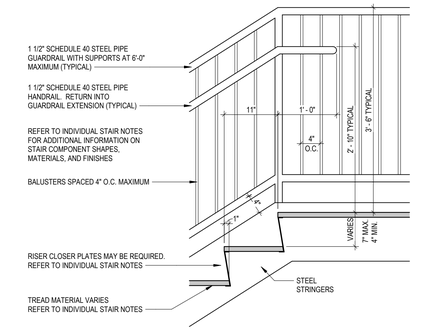


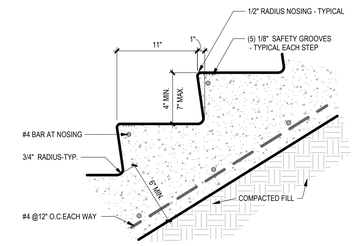
4 DETAIL AT BOTTOM OF STAIR - EXTERIOR
SCALE: 1" = 1'-0"



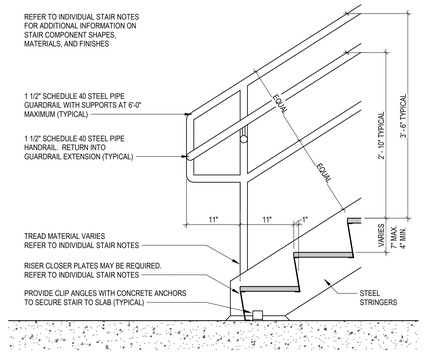
7 STAIR (CONCRETE PAN) BASE DETAIL @ LANDING
SCALE: 1 1/2" = 1'-0"



3 DETAIL AT TOP OF STAIR - EXTERIOR
SCALE: 1" = 1'-0"



6 DETAIL AT TREAD - CONCRETE
SCALE: 1 1/2" = 1'-0"



2 DETAIL AT BOTTOM OF STAIR - EXTERIOR
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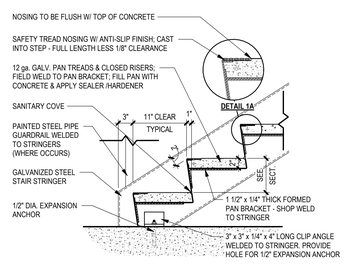
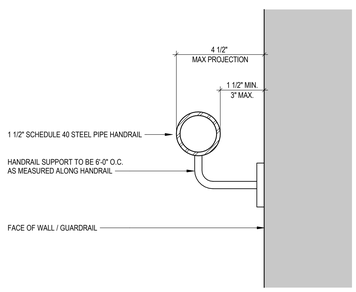
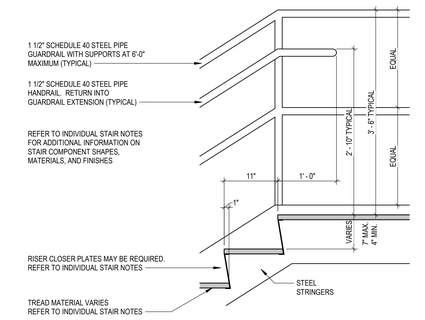


9 STAIR (CONCRETE PAN) BASE DETAIL
SCALE: 1" = 1'-0"



5 DETAIL AT HANDRAIL
SCALE: 6" = 1'-0"



1 DETAIL AT TOP OF STAIR - EXTERIOR
SCALE: 1" = 1'-0"

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X	03/13/2023	AE	JHP	MISC. METAL & FLOORING BID
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT

DRAWN	Author	DATE	02/16/22
APPROVED	Approver		05/03/2023
BUILDING	4013		
PROJECT NO.	11025607	PROJECT NAME	PROJECT FINN
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CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
DETAILS - STAIRS

DRAWING NO. RIC-807007-01-A-5 REV. DD

DRAWING SIZE: ANSI E (44" x 34") SHEET 180 OF 193

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00 00 00 - ARCHITECTURAL GENERAL NOTES

PART 1 - GENERAL
1.01 RELATED DOCUMENTS
A. CONSTRUCTION DRAWINGS, SPECIFICATIONS AND PROVISIONS OF THE CONTRACT INCLUDING GENERAL AND SUPPLEMENTAL CONDITIONS AND OTHER DIVISION 1 SPECIFICATION SECTIONS, ARE HEREBY MADE A PART OF THESE SPECIFICATIONS SHEETS / SECTIONS AS FULLY AND COMPLETELY AS IF REPEATED HEREIN.
1.02 ITEMS REQUIRED BUT NOT SPECIFIED
A. IF ITEMS OR MATERIALS; ASSOCIATED WITH SPECIFICATION SECTIONS, ARE INDICATED ON DRAWINGS, BUT NOT SPECIFICALLY LISTED IN THE ASSOCIATED SPECIFICATION SECTIONS, THE CONTRACTOR IS TO PROVIDE SUCH ITEMS OR MATERIALS AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.
1.03 EXECUTION, CORRELATION AND INTENT
A. IN THE CASE OF INCONSISTENCY BETWEEN DRAWINGS AND SPECIFICATION SECTIONS, OR WITHIN DOCUMENTS NOT CLARIFIED BY ADDENDUM, THE BETTER QUALITY OR GREATER QUANTITY OF WORK IS TO BE PROVIDED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.
1.04 DRAWING NOTES AND CLARIFICATIONS
A. ALL CONSTRUCTION METHODS AND MATERIALS SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.
B. ELECTRICAL, MECHANICAL, AND PLUMBING SYSTEMS SHALL BE AS PER DRAWINGS AND CALCULATIONS FURNISHED BY QUALIFIED ENGINEERS AND / OR CONTRACTORS LICENSED IN THE JURISDICTION WHERE THE PROJECT IS LOCATED.
C. ANY DISCREPANCY WITHIN THE CONSTRUCTION DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE COMMENCEMENT OF ANY WORK.
D. ALL DIMENSIONS ARE TO FACE OF STUD (F.O.S.), CENTERLINE OF BEAMS AND COLUMNS, AND FACE OF CONCRETE (F.O.C.) AS NOTED.
E. THE FIGURED DIMENSIONS ON THE DRAWINGS OR NOTES INDICATING DIMENSIONS SHALL BE USED INSTEAD OF MEASUREMENTS OF THE DRAWINGS BY SCALE AND SHALL BE STRICTLY COMPLIED WITH.
F. WHEREVER A DETAIL IS REFERENCED AND DEVELOPED FOR A SPECIFIC CONDITION, SAME OR SIMILAR DETAIL SHALL APPLY TO IDENTICAL OR SIMILAR CONDITIONS ELSEWHERE ON THE PROJECT EVEN THOUGH NOT SPECIFICALLY REFERENCED.
G. CONTRACTOR SHALL FIELD VERIFY ALL ELEVATIONS, DIMENSIONS, BUILDING LOCATIONS, CURBS, FLOW LINES, EXISTING CONDITIONS AND POINTS OF CONNECTIONS TO UTILITIES. IN THE EVENT OF CONFLICT, CONTACT THE ARCHITECT FOR INSTRUCTION PRIOR TO PROCEEDING.
H. CONTRACTOR SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS, PERMITS AND REGULATIONS.
I. ALL MATERIALS AND METHODS SHALL COMPLY WITH THE LOCAL TOWNSHIP REQUIREMENTS. ALL SYSTEMS SHALL BE APPROVED SYSTEMS AS DESIGNATED BY JURISDICTION OF THE PROJECT.
1.05 CONSTRUCTION MANAGEMENT
A. A MINIMUM OF FIFTY PERCENT (50%) OF ALL NON-HAZARDOUS CONSTRUCTION AND DEMOLITION WASTE SHALL BE RECYCLED AND OR SALVAGED FOR REUSE IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
B. CONSTRUCTION WASTE MANAGEMENT PLAN: SUBMIT A CONSTRUCTION WASTE MANAGEMENT PLAN THAT IDENTIFIES THE FOLLOWING:
1. WASTE MATERIALS TO BE DIVERTED FROM DISPOSAL BY RECYCLING, REUSE, SALVAGE OR OTHER METHODS.
2. SORTING OF WASTE MATERIALS ON SITE (SOURCE SEPARATED) OR BULK MIXED (SINGLE STREAM) FOR TRANSPORTATION OFF SITE.
3. FACILITIES WHERE WASTE MATERIALS WILL BE TAKEN.
4. SPECIFIES THAT THE AMOUNT OF WASTE MATERIALS SHALL BE CALCULATED BY EITHER WEIGHT OR VOLUME, BUT NOT BOTH.
5. WASTE MANAGEMENT COMPANY TO BE USED TO REMOVE DEBRIS FROM JOBSITE AND PROVIDE DOCUMENTATION OF PERCENTAGE OF MATERIAL DIVERTED FOR RECYCLING, REUSE OR SALVAGE.
C. DOCUMENTATION: PROVIDE DOCUMENTATION DEMONSTRATING COMPLIANCE WITH THE REQUIREMENTS FOR RECYCLING, REUSE OR SALVAGE.
D. ONE HUNDRED PERCENT (100%) OF TREES, STUMPS, ROOKS, VEGETATION AND SOILS RESULTING FROM LAND CLEARING SHALL BE REUSED OR RECYCLED.
1.06 POLLUTION CONTROLS
A. HVAC SYSTEMS
1. FILTERS IN SYSTEMS SERVING CONSTRUCTION AREAS SHALL BE REPLACED WITH RETURN AIR FILTERS WITH A MINIMUM RATING OF MERV 8, AT THE START OF DEMOLITION. AFTER CONSTRUCTION IS COMPLETE, FILTERS WILL BE REPLACED WITH THE SAME TYPE AND MERV RATING AS EXISTED PRIOR TO START OF CONSTRUCTION, UNLESS OTHERWISE SPECIFIED.
2. DUCT OPENINGS AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEET METAL OR OTHER ACCEPTABLE METHODS TO REDUCE DUST AND DEBRIS WHICH MAY ENTER THE SYSTEM.
B. FINISH MATERIALS
1. FINISH MATERIALS SHALL COMPLY WITH THE FOLLOWING VOC LIMITS:

VOC LIMITS (LESS WATER AND LESS EXEMPT COMPOUNDS) IN GRAMS PER LITER

APPLICATION	VOC LIMIT	APPLICATION	VOC LIMIT
ARCHITECTURAL ADHESIVES			
INDOOR CARPET ADHESIVES	50	CARPET PAD ADHESIVES	50
OUTDOOR CARPET ADHESIVES	150	WOOD FLOORING ADHESIVE	100
RUBBER FLOOR ADHESIVES	60	SUBFLOOR ADHESIVES	50
CERAMIC TILE ADHESIVES	65	VCT/ASPHALT TILE ADHESIVES	50
DRYWALL /PANEL ADHESIVES	50	COVE BASE ADHESIVES	50
MULTIPURPOSE ADHESIVES	70	STRUCTURAL GLAZING	100
SINGLE-PLY ROOF MEMBRANE ADHESIVES	250	OTHER ADHESIVES	50
	NOT LISTED		
SPECIALTY ADHESIVES			
PVC WELDING	510	CPVC WELDING	490
ABS WELDING	325	PLASTIC CEMENT WELDING	250
ADHESIVE PRIMER	550	CONTACT ADHESIVE	80
FOR PLASTIC		SPECIAL PURPOSE CONTACT	250
STRUCTURAL WOOD MEMBER ADHESIVE	140	TOP AND TRIM ADHESIVE	250
SUBSTRATE SPECIFIC ADHESIVES			
METAL TO METAL	30	PLASTIC FOAMS	50
POROUS MATERIAL	80	WOOD	30
FIBERGLASS	80		
SEALANTS			
ARCHITECTURAL	250	MARINE DECK	760
NONMEMBRANE ROOF	300	ROADWAY	250
SINGLE-PLY ROOF MEMBRANE	450	OTHER SEALANTS	420
SEALANT PRIMERS			
ARCHITECTURAL (POROUS)	775	ARCHITECTURAL (NONPOROUS)	250
MODIFIED BITUMINOUS	500	MARINE DECK	760
OTHER PRIMERS	750		
COATINGS			
FLAT COATINGS	50	NONFLAT COATINGS	100
NONFLAT HIGH GLOSS	150		
SPECIALTY COATINGS			
ALUMINUM ROOF COATINGS	400	BASEMENT SPECIALTY COATINGS	400
BITUMINOUS ROOF COATINGS	50	BITUMINOUS ROOF PRIMERS	350
BOND BREAKERS	350	CONCRETE CURING COMPOUNDS	350
CONCRETE/MASONRY SEALERS	100	DRIVEWAY SEALERS	50
DRY FOG COATINGS	150	FAUX FINISH COATINGS	350
FIRE RESISTIVE COATINGS	350	FLOOR COATINGS	100
FORM-RELEASE COMPOUNDS	250	GRAPHIC ARTS COATINGS	500
HIGH TEMPERATURE COATINGS	420	INDUSTRIAL MAINTENANCE	250
LOW SOLIDS COATINGS	120	COATINGS	

VOC LIMITS (LESS WATER AND LESS EXEMPT COMPOUNDS) IN GRAMS PER LITER

APPLICATION	VOC LIMIT	APPLICATION	VOC LIMIT
MAGNESITE CEMENT COATINGS	450	MASTIC TEXTURE COATING	100
METALLIC PIGMENTED COATINGS	500	MULTICOLOR COATINGS	250
PRETREATMENT WASH PRIMERS	420	PRIMERS, SEALERS AND	100
REACTIVE PENETRATING SEALERS	350	UNDERCOATERS	100
RECYCLED COATINGS	250	ROOF COATINGS	50
RUST PREVENTIVE COATINGS	250	SHELLAC (CLEAR)	730
SHELLAC (OPAQUE)	550	SPECIALTY PRIMERS, SEALERS	100
STAINS	250	AND UNDERCOATERS	
STONE CONSOLIDANTS	450	SWIMMING POOL COATINGS	340
TRAFFIC MARKINGS	100	TUB AND TILE REFINISH	420
WATERPROOFING MEMBRANES	250	WOOD	275
WOOD COATINGS	275	WOOD PRESERVATIVES	350
ZINC-RICH PRIMERS	340		

2. FINISH MATERIALS SHALL COMPLY WITH THE FOLLOWING FORMALDEHYDE LIMITS:

MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION	
PRODUCT	LIMIT
HARDWOOD PLYWOOD VENEER CORE	0.05
HARDWOOD PLYWOOD COMPOSITE CORE	0.05
PARTICLE BOARD	0.09
MEDIUM DENSITY FIBERBOARD	0.11
THIN MEDIUM DENSITY FIBERBOARD	0.13

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 00 00 00

01 52 20 - TEMPORARY PROTECTION

PART 1 - GENERAL
1.1 RELATED DOCUMENTS
A. REFERENCES
1. CPAI- CANVAS PROJECTS ASSOCIATION INTERNATIONAL
a. CPAI 84- CANVAS FABRIC FLAME TEST METHOD
2. NFPA- NATIONAL FIRE PROTECTION AGENCY
a. NFPA 701- FLAME TEST METHOD
3. SPS- SANITATION PERFORMANCE STANDARDS
a. SPS.001 - FOOD SAFETY FOR CONSTRUCTION AND MAJOR MAINTENANCE ACTIVITIES AND ALL RELATED DOCUMENTS
b. DESIGN STANDARD DRAWING L-107,S4 - SANITARY TEMPORARY ENCLOSURES
B. ABBREVIATIONS
1. HEPA - HIGH EFFICIENCY PARTICULATE AIR
2. HVAC - HEATING VENTILATION AIR CONDITIONING
3. MERV - MINIMUM EFFICIENCY REPORTING VALUE
4. VOC - VOLATILE ORGANIC COMPOUND
1.2 SUMMARY
A. THIS SPECIFICATION INCLUDES:
1. REQUIREMENTS TO PROVIDE FOR THE TEMPORARY PROTECTION OF KELLOGG FACILITIES DURING WORK CONDUCTED AT KELLOGG FACILITIES.
2. THE WORK INCLUDES, WITHOUT LIMITATION, FURNISHING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS REQUIRED TO PROVIDE COMPLETE INSTALLATION AND REMOVAL OF TEMPORARY PROTECTION. TEMPORARY PROTECTION IS DEFINED AS ALL TEMPORARY PARTITIONS, VESTIBULES, BARRICADES, WARNING LIGHTS, WARNING DEVICES, ENCLOSURES, TEMPORARY VENTILATION AND GUARDS NECESSARY TO PROTECT OWNER'S PERSONNEL OPERATIONS AND FACILITIES FROM CONTAMINATION BY ANY FOREIGN MATERIALS (INCLUDING DUST, VAPORS, AND MICROBIOLOGICAL CONTAMINANTS) AND OWNER'S FACILITIES FROM DAMAGE FROM CONTRACTOR'S OPERATIONS.
3. THE WORK COVERED IN THIS SECTION IS SUBJECT TO ALL THE REQUIREMENTS IN THE CONTRACT.
4. CONTRACTOR MUST COMPLY WITH ALL REQUIREMENTS OF SPS.001 - SANITATION PERFORMANCE STANDARDS: FOOD SAFETY FOR CONSTRUCTION AND MAJOR MAINTENANCE ACTIVITIES (LATEST EDITION) FOR WORK THAT OWNER DEFINES TO BE OF HYGIENIC CONTAMINATION RISK. REQUIREMENTS INCLUDE, BUT ARE NOT LIMITED TO, ALL ENCLOSURES, NEGATIVE AIR PRESSURE SYSTEMS, CONTAINMENT OF ALL DEBRIS AND SANITIZING OF TOOLS, EQUIPMENT AND PERSONNEL. OBTAIN LATEST VERSION OF SPS-001 FROM OWNER.
5. LOCATION OF ALL TEMPORARY PROTECTIONS SHALL BE COORDINATED WITH, AND APPROVED BY OWNER, PRIOR TO INSTALLATION. PROTECTIONS THAT COULD IMPAIR OWNER'S FIRE PROTECTION SYSTEM MUST BE SUBMITTED AND APPROVED BY OWNER'S LOSS PREVENTION CONSULTANT, GLOBAL RISK CONSULTANTS (GRC).
B. DEVIATION FROM THESE REQUIREMENTS SHALL BE CAUSE FOR IMMEDIATE STOPPAGE AND REJECTION OF THE WORK.
1.3 SUBMITTALS
A. DUST AND HVAC CONTROL PLAN: SUBMIT COORDINATION DRAWING AND NARRATIVE THAT INDICATES THE DUST AND HVAC CONTROL MEASURES PROPOSED FOR USE, PROPOSED LOCATIONS, AND PROPOSED TIME FRAME FOR THEIR OPERATION. IDENTIFY FURTHER OPTIONS IF PROPOSED MEASURES ARE LATER DETERMINED TO BE INADEQUATE. INCLUDE THE FOLLOWING:
1. LOCATIONS AND TYPE OF DUST-CONTROL PARTITIONS FOR EACH PHASE OF WORK.
2. HVAC SYSTEM ISOLATION SCHEMATIC DRAWING. (IF APPLICABLE)
3. LOCATION OF PROPOSED NEGATIVE AIR-FILTRATION SYSTEM DISCHARGE.(WHERE REQUIRED).
4. WASTE HANDLING PROCEDURES.
5. OTHER DUST AND FOREIGN MATERIAL (INCLUDING DUST, VAPORS, AND MICROBIOLOGICAL) CONTAMINATION CONTROL MEASURES.
1.4 QUALITY ASSURANCE
A. DESIGN STANDARD DRAWINGS
1. CONTRACTOR'S ATTENTION IS DIRECTED TO OWNER'S DESIGN STANDARD DRAWINGS. THESE DRAWINGS SHALL BE USED IN CONJUNCTION WITH ALL CONSTRUCTION AND INSTALLATION WORK PERFORMED AT OWNER'S PLANTS.
2. THESE DRAWINGS SUPPLEMENT THE SPECIFIC PROJECT DRAWINGS AND SPECIFICATIONS IN DETAILING MATERIAL, METHODS AND STANDARDS OF WORKMANSHIP AND OTHER REQUIREMENTS FOR THE WORK. UNLESS SPECIFICALLY NOTED OTHERWISE, IT IS MANDATORY THAT CONTRACTOR SHALL FURNISH ALL MATERIAL NECESSARY AND INSTALL ALL WORK COVERED UNDER THIS CONTRACT IN ACCORDANCE WITH THESE STANDARD DRAWINGS.
B. WORKMANSHIP
1. CONTRACTOR IS HEREBY ADVISED THAT OWNER'S PRODUCTS ARE MANUFACTURED IN ACCORDANCE WITH THE STRINGENT SANITARY REGULATIONS GOVERNING THE PROCESSING OF FOOD FOR HUMAN CONSUMPTION. THE DESIGN OF OWNER'S FACILITIES INCORPORATES AS A PRIMARY OBJECTIVE THE USE OF EQUIPMENT, METHODS, AND ASSEMBLY WHICH WILL ELIMINATE ALL POSSIBLE SOURCES OF FOOD CONTAMINATION.
2. THEREFORE, CONTRACTOR SHALL PERFORM THE WORK IN A MANNER TO MEET HIGHER STANDARDS OF QUALITY IN WORKMANSHIP AND CLEANLINESS THAN THOSE ACCEPTABLE AS NORMAL CONSTRUCTION REQUIREMENTS AND PRACTICE IN OTHER INDUSTRIES, TO INCLUDE CONTROLLING POTENTIAL CONTAMINATION FROM MICROBIOLOGICAL, VAPOROUS, PHYSICAL AND CHEMICAL HAZARDS THAT COULD OCCUR DURING CONSTRUCTION AND MAJOR MAINTENANCE ACTIVITIES.
C. SEQUENCING AND SCHEDULING
1. CONTRACTOR SHALL NOTE THAT CERTAIN PORTIONS OF THE WORK ARE SPECIFIED TO BE COMPLETED AND OPERATIONAL PRIOR TO COMPLETION OF ALL WORK.
2. CONTRACTOR SHALL SEQUENCE EQUIPMENT INSTALLATION AND PROPERLY PROTECT EQUIPMENT TO PREVENT CONTAMINATION OR DAMAGE TO EQUIPMENT IN ADJACENT WORK AREAS.
3. NO WORK SHALL BE STARTED UNTIL A RISK ASSESSMENT HAS BEEN PERFORMED AND A MUTUALLY AGREED UPON SCHEDULE HAS BEEN ESTABLISHED BETWEEN CONTRACTOR AND OWNER. ALL PROTECTION TYPES, WORKMANSHIP, LOCATIONS, AND SCHEDULES SHALL BE APPROVED BY OWNER BEFORE PROCEEDING WITH WORK IN ANY AREA.
D. PRE-INSTALLATION CONFERENCE.
1. A PRE-INSTALLATION CONFERENCE WITH OWNER MUST BE CONDUCTED.
1.5 DELIVERY, STORAGE, AND HANDLING
A. DELIVER MATERIALS IN ORIGINAL PACKAGES AND CONTAINERS, WITH SEALS UNBROKEN, BEARING MANUFACTURER'S LABELS INDICATING BRAND NAME AND DIRECTIONS FOR STORAGE AND MIXING WITH OTHER COMPONENTS.
PART 2 - PRODUCTS
2.1 MATERIALS
A. WOOD / PLYWOOD
1. NO WOOD OR PLYWOOD SHALL BE ALLOWED WITHIN KELLOGG FACILITIES WITHOUT PRIOR CONSENT FROM OWNER.
B. STUDS
1. STUDS SHALL BE MINIMUM 26 GAUGE METAL, GALVANIZED, NOMINAL 2X4 SIZE, OR LARGER.
C. FIRE RETARDANT SHEETING
1. SHEETING SHALL BE NEW, FIRE RETARDANT TREATED POLYETHYLENE, POLYOLEFIN, MINIMUM SIX(6)MIL THICKNESS. THIS MATERIAL SHALL MEET CPAI-84 SECTION 6 AND/OR SECTION 7; AND THE REQUIREMENTS OF NATIONAL FIRE PREVENTION ASSOCIATION STANDARD 701-LARGE SCALE TEST.
D. TAPE / ADHESIVE
1. TAPE SHALL BE THREE INCHES WIDE CLOTH BACKED DUCT SEALING TAPE, OF A COLOR WHICH DIFFERENTIATES IT FROM TAPE USED OR EQUIVALENT.
2. ADHESIVES THAT MAY BE USED ARE NASHUA TAPE PRODUCTS - 357 SA SPRAY ADHESIVE LOW VOC, OR OWNER APPROVED EQUAL.
E. TARPAULINS
1. TARPAULINS SHALL BE NEW, AT LEAST 6 MIL POLY, FIRE RETARDANT, ASBESTOS FREE, CLEAN AND ODORLESS. NEW TARPAULINS SHALL BE AIRED OUTSIDE OF KELLOGG FACILITIES TO THE APPROVAL OF AUTHORIZED KELLOGG PERSONNEL PRIOR TO THE USE OF THE TARPAULINS.
F. ZIPPER OPENING
1. ZIPPER SHALL BE SELF-ADHESIVE PROVIDING A DOOR OR PASS THROUGH FOR HUNG TARPS AND PLASTIC SHEETING. ALLOWING FOR ACCESS AND AN EFFECTIVE BARRIER FOR ENCLOSED WORK AREAS. THE ZIPPER MAY BE CONSTRUCTED OF HEAVY DUTY 950 DENIER POLY; FUNCTIONAL AT TEMPERATURES FROM -20° TO 150°F; OPEN FROM EITHER SIDE ALLOWING FOR EASE OF ENTRANCE AND EGRESS VIA THE OPENING; THE ZIPPER MUST BE ABLE TO ACCOMMODATE AND PROVIDE DOCUMENTATION OF PERCENTAGE OF MATERIAL DIVERTED FOR RECYCLING, REUSE OR SALVAGE.
G. PORTABLE VESTIBULES
1. PORTABLE VESTIBULES MAY BE USED AS IN-CORRIDOR ANTEROOMS FOR CONTROLLING ACCESS TO AND FROM WORK AREAS THAT OPEN INTO HYGIENIC AREAS. ZIPPERED ENTRANCE AND EGRESS DOORS AT EITHER END NEED TO BE LARGE ENOUGH FOR PASSAGE OF LARGE EQUIPMENT. LARGE PERIMETER FLANGES AT THE ENDS OF THE ENCLOSURE MUST PROVIDE A SEAL AROUND THE FRAME OF THE DOOR TO THE ROOM OR AREA. THE FOLLOWING, PRODUCT MAY BE USED: AIRE GUARDIAN AR ANTEROOM MODULE (AG3100ARK), OR WINNER APPROVED EQUAL.
H. SEALANTS
1. UTILIZE CAULKS OR SEALANTS PROVIDING FOR EASY WATER-BASED CLEANUP, CONTAINING MINERAL SPIRITS AND CALCIUM CARBONATE; SUCH AS SHERWIN WILLIAMS 850A ACRYLIC LATEX CAULK, OR OWNER APPROVED EQUAL.
I. ENCLOSURES
1. TUFFWRAP® MAY BE USED TO PROVIDE TEMPORARY ENCLOSURES / DUST AND DEBRIS CONTROL SYSTEMS FOR CONSTRUCTION AREAS. INSTALLATION AND REMOVAL OF TUFFWRAP® SYSTEMS MUST BE CONDUCTED BY AUTHORIZED TUFFWRAP PERSONNEL.
a. TUFFWRAP.: 2080 DETWILER ROAD, MIDWAY BUSINESS CENTER, HARLEYSVILLE, PA. 19438 CONTACT BILL TIERNEY 1-800-995-4566.
2. DUST & DEBRIS CONTROL SYSTEMS ARE DEFINED AS A COMBINATION OF METHODS, MATERIALS AND PROCEDURES, DESIGNED TO CATCH/CONTAIN LIGHTWEIGHT, SMALL PARTICULATE FALLING DUST & DEBRIS, TYPICALLY (BUT NOT LIMITED TO) EVIDENT DURING RE-ROOFING, CONSTRUCTION RELATED RENOVATION AND FLOOR RESURFACING PROJECTS. SPECIFIC MATERIALS AND METHODOLOGY MUST ALLOW FOR A VARIETY OF APPLICATIONS INCLUDING (BUT NOT LIMITED TO):
a. SUSPENDED COVER- A METHOD WHEREBY MATERIAL IS SUSPENDED ABOVE AN AREA, PROVIDING MAXIMUM FACILITY PROTECTION FOR DEBRIS OF LESS THAN 10LB PER 100 SQ. FT. IN ADDITION, SUPPLEMENTAL HEAVY DEBRIS MAY BE SUSPENDED UP TO 10 LBS PER 100 SQ. FT) CAN BE USED EITHER INDEPENDENTLY OR IN CONJUNCTION WITH LIGHTWEIGHT DUST & DEBRIS PROTECTION.
b. DRAPE & COVER - PROVIDES DUST & DEBRIS PROTECTION AT GROUND/EQUIPMENT LEVEL.
c. CLEAN/CONTAINMENT AREAS - MUST PROVIDE APPROPRIATE DUST & DEBRIS PROTECTION IN A DESIGNATED AREA/WORK SITE. CONTAINMENT AREAS WILL TYPICALLY INCORPORATE BOTH SUSPENDED COVER AND PARTITION WALL SYSTEMS.
d. TEMPORARY AREA ENCLOSURES - PROVIDE AN EFFECTIVE DUST & DEBRIS BARRICADE BETWEEN WORK SITE AND FACILITY AREAS PARTITION WALLS SHALL OFFER THE ABILITY TO PROVIDE ZIPPERED DOOR/PERSONNEL ACCESS AS WELL AS ROLL UP DOOR ACCESS FOR LARGER EQUIPMENT.
PART 3 - EXECUTION
3.1 GENERAL
A. CONTRACTOR SHALL PROVIDE PROTECTION FOR ALL FLOOR, WALL, CEILING, ROOFING, EQUIPMENT AND OTHER SURFACES FROM DAMAGE OR DISCOLORATION BY CONTRACTORS OPERATION. ERECTED TEMPORARY PROTECTION, PARTITIONS, VESTIBULES, BARRICADES, OR ENCLOSURES SHALL BE SUBJECT TO INSPECTION AND WRITTEN APPROVAL BY OWNER BEFORE ANY CONSTRUCTION OR DEMOLITION WORK IS STARTED. IF, IN THE OPINION OF OWNER, THE TEMPORARY STRUCTURES DO NOT PROVIDE PROTECTION REQUIRED, CONTRACTOR SHALL PROVIDE ADDITIONAL COVERING OR MAKE SUCH CHANGES AS DIRECTED TO PROVIDE THE QUALITY OF PROTECTION REQUIRED. CONTRACTOR SHALL REMOVE TEMPORARY PROTECTION AT THE COMPLETION OF A GIVEN SEGMENT OF THE WORK AND/OR WHEN DIRECTED BY OWNER.
1. WORK THAT PRESENTS POTENTIAL MICROBIOLOGICAL CONTAMINATION RISK HAZARD MUST BE CONDUCTED IN ACCORDANCE WITH SPS.001 - SANITATION PERFORMANCE STANDARDS: FOOD SAFETY FOR CONSTRUCTION AND MAJOR MAINTENANCE ACTIVITIES
B. CONTRACTOR SHALL NOTE THAT THE LOCATIONS OF CONTRACTOR EGRESS PATHS AND TEMPORARY PROTECTION SHOWN ON THE DRAWINGS ARE APPROXIMATE. ACTUAL LOCATIONS FOR PARTITIONS, EQUIPMENT, DOORS, ACCESS WAYS, ETC., SHALL BE DETERMINED IN THE FIELD TO SUIT THE EXISTING FACILITIES AND WORK TO BE PERFORMED. SAID WORK PATHS AND PROTECTION LOCATIONS SHALL BE APPROVED BY OWNER.
C. WHERE TEMPORARY PARTITIONS ARE TO BE IN PLACE FOR MORE THAN (07) DAYS, STRUCTURAL PARTITIONS SHALL BE INSTALLED.
3.2 MAINTENANCE OF ENCLOSED AREAS
A. SEGREGATE CONSTRUCTION AND MAJOR MAINTENANCE ACTIVITIES FROM OTHER ACTIVITIES WITHIN THE FACILITY. USE TEMPORARY PARTITION WALLS, SCREENS, BARRICADES AND VENTILATION SYSTEMS AS NECESSARY, TO PREVENT ANY CONTAMINATION TO FOOD PRODUCTS OR BUILDING SURFACES AND TO PROTECT SURROUNDING BUILDING SURFACES, FLOOR AREAS, ROOF AREAS AND EQUIPMENT FROM DAMAGE DUE TO CONSTRUCTION AND MAINTENANCE ACTIVITIES SUCH AS RIGGING, DEMOLITION, WELDING OR GRINDING OPERATIONS
B. IF WORK OR REPAIR PRODUCES A STANDING DUST OR WATER, OR IF THERE ARE VAPORS OR HARMFUL GASES GENERATED, IF WORK IS AS DESCRIBED IN SPS-001 AND OF A HYGIENIC NATURE (SUCH AS INVOLVING EXPOSED SOIL, KNOW CONTAMINANT AREAS, ROOF DRAINS, SEWAGE LINES, ETC.) THE ENCLOSURE MUST BE DUST TIGHT AND UNDER APPROPRIATELY FILTERED NEGATIVE PRESSURE WITH ADEQUATE VENTILATION. HEPA FILTERS, REQUIRED ON NEGATIVE EXHAUST SYSTEMS MUST BE INSPECTED DAILY AND REPLACED AS REQUIRED TO MAINTAIN THE REQUIRED DIFFERENTIAL PRESSURE.
C. SEGREGATED CONSTRUCTION AREAS, WHICH ARE TOTALLY ENCLOSED, MUST BE UNDER NEGATIVE PRESSURE WITH ADEQUATE VENTILATION, FILTERED TO 5 MICRONS OR AS DIRECTED BY RESPONSIBLE KELLOGG FOOD SAFETY AND QUALITY PERSONNEL. ADDITIONALLY, ALL PERSONNEL EGRESS, AND FIRE SAFETY STANDARDS MUST BE PROVIDED AND MAINTAINED. ANY AIR FROM THE CONSTRUCTION AREA THAT WILL EXHAUST INTO ADJACENT INTERIOR AREAS MUST UTILIZE HEPA FILTERS AT AIR DISCHARGE POINT. MINIMUM FILTER RATING SHALL BE MERV 14.
D. USE TEMPORARY OR PORTABLE VESTIBULES IN AREAS WHERE WORK AREAS EGRESS TO HYGIENIC PRODUCTION AREAS OR UNDER CONDITIONS REQUIRING PROTECTIVE MEASURES, AS DETERMINED BY RESPONSIBLE KELLOGG FOOD SAFETY AND QUALITY PERSONNEL. VESTIBULES SHALL BE UTILIZED, WHERE REQUIRED, TO ALLOW PROPER GMP STEPS TO BE TAKEN TO FOR PERSONNEL, TOOLS AND EQUIPMENT TO BE PREPARED FOR ENTRY OR EXIT FROM THE PROTECTED CONSTRUCTION AREA.
E. CONTINUAL MONITORING OF PERFORMANCE OF TEMPORARY PROTECTION IS REQUIRED TO PREVENT ANY CONTAMINATION POTENTIAL. ALL PROTECTIONS SHALL BE REPAIRED BY CONTRACTOR TO APPROVAL OF OWNER.
3.3 TEMPORARY VESTIBULES AND DUST TIGHT PARTITIONS
A. TEMPORARY VESTIBULES AND DUST TIGHT PARTITIONS SHALL BE INSTALLED IN ACCORDANCE WITH DRAWINGS AND DEFINED BY OWNER.
1. PARTITIONS AND VESTIBULES MAY INCLUDE, BUT ARE NOT LIMITED TO, MATERIALS OR PROCEDURES SUCH AS:
a. METAL STRAGULA PLATES
b. SELF-TAPPING SCREWS
c. SECURING TO CEILING OR FALSE CEILING. DO NOT USE MECHANICAL FASTENERS THAT PENETRATE ROOF DECK.
d. PROTECTION OF BOTTOM 4' WITH CONCRETE. JERSEY BARRIERS OR NON-SPLINTERING TYPES OR BOARD
e. BRACE STRUCTURES WITH VERTICAL METAL STUDS TO GUARANTEE STRUCTURAL STABILITY AND DUST TIGHT PERFORMANCE. DO NOT USE MECHANICAL FASTENERS THAT PENETRATE ROOF DECK.
B. THE FOLLOWING, ZONES SHALL BE SEALED WITH SPRAY ADHESIVE OR TAPE, APPLIED TO PREVENT THE PASSAGE OF DUST, FUMES, DEBRIS OR OTHER CONTAMINANTS.
1. JOINTS OR SEAMS BETWEEN ANY MATERIALS, INCLUDING BY NOT LIMITED TO:
a. FIRE RETARDANT SHEETING, FLOOR, CEILINGS, WALL JOINTS
b. PIPE, DUCT, CONDUIT AND ANY MISCELLANEOUS PENETRATIONS THROUGH THE TEMPORARY PROTECTION
2. ALL SEAMS SHALL BE TAPED OR SEALED ON BOTH SIDES.
3.4 HUNG PROTECTION
A. HUNG PROTECTION SHALL CONSIST OF CLEAN FIRE RETARDANT TARPAULINS OR NEW FIRE RETARDANT SHEETING HUNG FROM FLOOR TO CEILING UNLESS OTHERWISE SPECIFIED.
B. SHEETS SHALL BE LAPPED A MINIMUM OF 2-0" AND SHALL BE SECURELY FASTENED AT TOP AND BOTTOM.
C. SUPPORTING MEMBERS FOR HUNG PROTECTION SHALL NOT BE OF WOOD OR FIBROUS MATERIALS, AND SHALL BE CLEAN AND ADEQUATE TO SUPPORT THE LOADS IMPOSED.
3.5 PROTECTION IN AREAS EXPOSED TO SPARK PRODUCING ACTIVITIES
A. PROTECTION IN AREAS OF WELDING, BURNING, AND OPEN FLAMES SHALL BE WET, ASBESTOS-FREE FIREPROOF BLANKETS.
3.6 ROOF AND EXTERIOR OPENINGS - PROTECTION
A. PROTECTION FOR ALL ROOF AND EXTERIOR OPENINGS SHALL BE WEATHER TIGHT AND CONSTRUCTED TO WITHSTAND WIND GUSTS OF SEVENTY (70) MILES PER HOUR. ROOF OPENING PROTECTION SHALL BE CONSTRUCTED TO ALLOW DRAINAGE OF STORM WATER TO EXISTING ROOF DRAINS OR TEMPORARY DRAINS PROVIDED BY CONTRACTOR, WITHOUT POOLING. IF NECESSARY, SADDLES SHALL BE INSTALLED TO DIVERT RUN-OFF WATER TO ROOF DRAINS.
B. ROOF REPAIRS OR REPLACEMENT OF ROOF'S SHALL NOT BE DONE IN DIRECT AREAS OF PRODUCTION OF ANY OPEN FOOD THAT IS INTENDED FOR HUMAN CONSUMPTION WITHOUT ADEQUATE PROTECTION AND SEGREGATION.
C. BASIC MATERIALS FOR THESE CLOSURES SHALL BE WOOD FRAMING SUPPORTS COVERED WITH WATERPROOF TARPAULINS OR A DOUBLE LAYER OF NEW FIRE RETARDANT SHEETING SECURELY FASTENED SO AS TO BE WEATHER TIGHT. CARE SHALL BE TAKEN TO PREVENT LOOSENING OR FLAPPING OF PROTECTION DUE TO WIND. WHERE TEMPORARY ROOF CLOSURES MEET VERTICAL WALLS, CURBS, OR OTHER FEATURES, PROVISION SHALL BE MADE TO MAKE A WATERPROOF JOINT BY FASTENING BRACING AND SEALING WITH MATERIALS AND METHODS WHICH WILL NOT DAMAGE, MAR, OR STAIN NEW OR EXISTING SURFACES. ALL TEMPORARY PROTECTION FOR WORK SHALL BE IN PLACE AND APPROVED BY OWNER BEFORE WORK IS STARTED.
D. MATERIALS AND PROCEDURE THAT ARE SUITABLE REPLACEMENTS FOR PLYWOOD MAY BE USED SUCH AS, BUT NOT LIMITED TO, ACRYLONITRILE-BUTADIENE STYRENE (ABS) PLASTIC, REINFORCED FIBER BOARD (FRP), CORRUGATED METAL OR NON-FRACTURING PLASTIC PANELS

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K. CONCRETE CURING MATERIALS
1. MOISTURE-RETAINING COVER FOR MOIST CURE: PROVIDE ONE OF THE FOLLOWING, COMPLYING WITH ANSI-ASTM C171 FOR CONCRETE FLOORS THAT ARE TO BE EXPOSED OR TO RECEIVE FLOOR SEALER. AREAS TO RECEIVE RESINOUS FLOORING ARE REQUIRED TO BE WET CURED.
a. WATERPROOF PAPER
b. POLYETHYLENE FILM
c. WHITE BURLAP-POLYETHYLENE SHEET
d. ABSORPTIVE COVER: AASHTO M182, CLASS 2, BURLAP CLOTH MADE FROM JUTE OR KENAF, WEIGHING APPROXIMATELY 9 OZ./SQ.YD. DRY.
2. WATER BORNE LIQUID MEMBRANE-FORMING CURING COMPOUND: LIQUID TYPE MEMBRANE-FORMING LOW-VOC CURING COMPOUND, COMPLYING WITH ANSI/ASTM C309, TYPE I, CLASS B, DISSIPATING. IN ACCORDANCE WITH ACI 302.1R-96, "GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION," A LETTER OF COMPATIBILITY WITH APPLIED FINISHES MUST BE ISSUED BY THE COMPOUND MANUFACTURER. COMPOUNDS FOUND TO BE INCOMPATIBLE WITH FINISH SHALL BE ABRASIVELY REMOVED BY APPLICATOR AT NO COST TO THE OWNER OR FINISH TRADE. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING FOR CONCRETE FLOORS THAT ARE TO RECEIVE APPLIED FINISHED FLOOR MATERIALS.
a. MASTERKURE 100W; MASTER BUILDERS, CLEVELAND, OHIO.
b. KUREZ DR VOX; EUCLID CHEMICAL CO., CLEVELAND, OHIO.
c. SEALTIGHT GREEN LINE; W.R. MEADOWS, INC., ELGIN, ILLINOIS.
d. AQUA RESIN CURE; BURKE BY EDOCO, LONG BEACH, CALIFORNIA.
e. W.B. RESIN CURE; CONSPEC MARKETING & MANUFACTURING CO., KANSAS CITY, KANSAS.
f. DAY CHEM REZ CURE (J-11-W); DAYTON SUPERIOR CORP., OREGON, ILLINOIS.
g. L & M CURE R; L & M CONSTRUCTION CHEMICALS, OMAHA, NEBRASKA.
h. RESIN CURE E; NOX-CRETE PRODUCTS GROUP, OMAHA, NEBRASKA.
i. RESI-CHEM CLEAR CURE; SYMONS CORP., DES PLAINES, ILLINOIS.
3. CURING AND SEALING COMPOUND: THE COMPOUND SHALL CONFORM TO ASTM C309, TYPE 1 OR 1D, CLASS B, 30 PERCENT SOLIDS CONTENT MINIMUM, AND SHALL HAVE TEST DATA FROM AN INDEPENDENT LABORATORY INDICATING A MAXIMUM MOISTURE LOSS OF 0.030 GRAMS PER SQ.CM. WHEN APPLIED AT A COVERAGE RATE OF 300 SQ. FT. PER GALLON. MANUFACTURER'S CERTIFICATION IS REQUIRED. THE FOLLOWING ARE ACCEPTABLE:
a. SUPER REZ SEAL BY EUCLID CHEMICAL CO.
b. SUPER PLIOCURE BY EUCLID CHEMICAL CO.
c. SUPER DIAMOND CLEAR VOX BY EUCLID CHEMICAL CO. (USE FOR INTERIOR OR NON-VENTED AREAS)
d. KURE-N-SEAL 30 BY SONNEBORN.

L. MINERAL DRY-SHAKE HARDENER: FACTORY-PACKAGED DRY COMBINATION OF PORTLAND CEMENT, GRADED TRAP ROCK AGGREGATE, AND PLASTICIZING ADMIXTURE.
1. CONSULT WITH MANUFACTURER'S TRAINED TECHNICAL REPRESENTATIVE WHERE DRY-SHAKE FLOOR HARDENER WILL BE APPLIED OVER AIR-ENTRAINED CONCRETE.
2. TRAP ROCK BY L&M CONSTRUCTION CHEMICALS, INC.
3. SURFLEX TR BY THE EUCLID CHEMICAL COMPANY.

M. CHEMICAL LIQUID DENSIFIER AND SEALER: CLEAR, PENETRATING, WATER-BASED VOC COMPLIANT, BLEND OF SLICONATE POLYMERS. PRODUCT MUST BE USDA APPROVED.
1. EUCO DIAMOND HARD BY EUCLID CHEMICAL
2. ASHFORD FORMULA BY CURECRETE CHEMICAL CO.
3. SEALHARD BY L&M CONSTRUCTION CHEMICALS, INC.

N. SEMI-RIGID EPOXY JOINT FILLER FOR EXPOSED NON-COOLER/FREEZER FLOORS: 100 PERCENT SOLIDS, TWO-COMPONENT POURABLE EPOXY, MINIMUM SHORE D HARDNESS OF 80. THE FOLLOWING ARE ACCEPTABLE:
1. EUCO 700 BY EUCLID CHEMICAL CO.
2. BURKEPOXY REFLEX BY BURKE
3. MM-80 BY METZGER/MCGUIRE

O. JOINT FILLER FOR EXPOSED COOLER/FREEZER FLOORS: RAPID SETTING, TWO-COMPONENT POLYUREA POLYMER LIQUID OF 100% SOLIDS. SHORE "A" HARDNESS OF A92-94 AT 0 DEGREES F AND A88-92 AT 70 DEGREES F WHEN TESTED PER ASTM D2240. TENSILE STRENGTH OF 930 PSI, ASTM D638. ELONGATION OF 170% AT 70 DEGREES F, ASTM D638. ADHESION TO CONCRETE OF 380 PSI, ASTMD4541. USDA/FDA APPROVED FOR USE IN FOOD CONTACT AREAS.
1. AVAILABLE MANUFACTURER: SPAL-PRO RSF, METZGER/MCGUIRE.
2. OTHER PRODUCTS MEETING REQUIREMENTS ARE ACCEPTABLE SUBJECT TO REVIEW.

P. FLEXIBLE JOINT FILLER FOR EXPOSED NON-INDUSTRIAL FLOORS: ONE- OR TWO-PART SELF LEVELING POLYURETHANE. THE FOLLOWING AREA ACCEPTABLE:
1. MASTERFILL CJ BY MASTER BUILDERS
2. EULASTIC BY EUCLID CHEMICALS
3. SIKADURE 51 SL BY SIKA CORP.

Q. BITUMINOUS COATING FOR BELOW-GRADE STEEL: COLD-APPLIED ASPHALT MASTIC, SSPC-PS-9.01, COMPOUNDED FOR 15 MIL DRY FILM THICKNESS PER COAT. PROVIDE INERT TYPE, NONCORROSIVE COMPOUND FREE OF ASBESTOS FIBERS, SULFUR COMPONENTS AND OTHER DELETERIOUS IMPURITIES.

R. SUBGRADE DRAINAGE FILL: WASHED, NARROWLY GRADED MIXTURE OF CRUSHED STONE, OR CRUSHED OR UNCRUSHED GRAVEL: ASTM D448; COARSE AGGREGATE GRADING SIZE #57, WITH 100 PERCENT PASSING A 1 INCH SIEVE.

S. VAPOR BARRIER/RETARDER: MEMBRANE SHALL MEET THE FOLLOWING PROPERTIES:
1. PERMEANCE RATING: ASTM E-96; 0.05 PERMS OR LESS.
2. WATER VAPOR BARRIER: ASTM E-1745; MEETS OR EXCEEDS CLASS A
3. THICKNESS OF BARRIER: ACI 302.1R-96; NOT LESS THAN 20 MILS.

T. EPOXY CRACK INJECTION ADHESIVE (REPAIR): ASTM C881, TYPE I, GRADE 1, SOLVENT FREE.
1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
a. SIKADUR 35 HI-MOD LV; SIKA CORP., LYNDHURST, NEW JERSEY.
b. SURE-INJECT (J-56); DAYTON SUPERIOR CORP., OREGON, ILLINOIS.
c. EUCO #352 LV; EUCLID CHEMICAL CO., CLEVELAND, OHIO.

2.2 MIXES
The following classes of concrete are required (4.2.2.8):
A. PROVIDE CLASS OF CONCRETE SLABS FOR THE FOLLOWING AREAS:
1. FREEZER MUD SLAB: CLASS I.
2. OFFICE AREA: CLASS II.
3. ALL OTHER SLABS ON GRADE: CLASS VI.

Type	F'c(28 day)	Min. Cement Content	Maximum Water Cement Ratio	Air Content
Class I				
Mud slabs	3,000 PSI	--	--	--
Class II				
Non-industrial slabs on grade, TX	3,000 PSI	517 lbs.	0.50 --	
Type	F'c(28 day)	Min. Cement Content	Maximum Water Cement Ratio	Air Content
Class V				
Stair pan fill	3,000 PSI	--	--	--
Class VI				
Industrial slabs on grade	3,000 PSI 4,000 (56 day)	530 lbs (285# max. water/CY)	0.53	1.5% max.

1. SLUMP:
a. All Class VI concrete shall contain the high range water reducing admixture (superplasticizer). The concrete shall arrive at the job site at a slump of 2 to 3 inches, be verified, then the high range water reducing admixture added to increase the slump to 8" maximum. For the high range water reducing admixture added at the batch plant, verification is to be included on the delivery ticket which indicates that the water-to-cement ratio and the slump requirements have not been exceeded.
b. All other Classes shall have a maximum slump of 5".
2. ALL CONCRETE IS TO BE READY-MIXED (4.3.1.1 AND 4.3.1.2). ALL ADMIXTURES ARE TO BE ADDED AT THE BATCH PLANT, EXCEPT FOR SUPERPLASTICIZERS.
3. MIXES INTENDED TO BE PUMPED ARE TO BE SO IDENTIFIED ON THE MIX DESIGN SUBMITTED FOR APPROVAL.
4. FLY ASH OR GROUND-GRANULATED BLAST FURNACE SLAG IS ACCEPTABLE, AND SHALL BE INCLUDED IN THE WATER-TO-CEMENTITIOUS RATIO. REPLACEMENT OF CEMENT BY FLY ASH OR SLAG UP TO 25% OF TOTAL CEMENTITIOUS IS ACCEPTABLE.

PART 3 - EXECUTION
3.1 SURFACE CONDITIONS
A. SUBGRADE CONSTRUCTION TOLERANCE: THE SLAB CONTRACTOR SHALL BE RESPONSIBLE FOR THE FLATNESS OF THE SUBGRADE BASE CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE A LASER INSTRUMENT AND ONE LABORER TO ASSIST THE OWNER'S TESTING LABORATORY, WHO WILL PERFORM AN AUDIT OF SUBGRADE LEVELNESS PRIOR TO CONCRETE PLACEMENT. TOLERANCE LIMITS FOR BASE CONSTRUCTION SHALL BE + 1/4" (HIGH) TO - 1/2" (LOW). SUBGRADE READINGS SHALL BE MADE FOR THE ENTIRE AREA OVER WHICH CONCRETE IS TO BE PLACED, ON A GRID OF 10 FEET X 10 FEET. ANY PORTION OF THE BASE NOT MEETING THIS REQUIREMENT SHALL BE CORRECTED PRIOR TO CONCRETE PLACEMENT.
B. UPON COMPLETION OF THE SUBGRADE AUDIT, THE CONCRETE SUBCONTRACTOR SHALL SUBMIT CERTIFICATION THAT THE SUBGRADE MEETS THE SPECIFIED TOLERANCES. INCLUDE TEST REPORTS FROM THE OWNER'S INDEPENDENT TESTING LABORATORY. NO CONCRETE PLACEMENT SHALL BE MADE UNTIL THE REQUIRED CERTIFICATION HAS BEEN RECEIVED AND REVIEWED BY THE CONSTRUCTION MANAGER.
C. LEVEL AREA AND COMPACT SO THAT THE FINISHED SUBGRADE WILL PASS A 95% MODIFIED PROCTOR COMPACTION TEST, UNLESS OTHER PERCENT COMPACTION IS APPROVED BY THE OWNER'S ENGINEER. PLACE A 3" LEVELED LAYER OF COMPACTED (TO 95% MODIFIED PROCTOR) "CRUSHER RUN" BASE MATERIAL (1-1/2" TO ROCK DUST) FOLLOWED BY A THIN LAYER OF FINES (NO. 10 PER ASTM D448) ON THE SURFACE TO FILL-IN THE OPEN GRADED AREAS TO ACHIEVE A "SMOOTH" BASE. ADD JUST ENOUGH WATER FOR INITIAL COMPACTION IN ORDER TO MAXIMIZE THE "BLOTTING EFFECT" OF THE "CRUSHER RUN."
D. USE THE ASTM 1557, METHOD D, TO DETERMINE DENSITY AND USE A NUCLEAR DENSITY TEST DEVICE TO DETERMINE COMPLIANCE IN FIELD, BY OWNER'S INDEPENDENT TESTING LABORATORY.
E. VERIFY THAT THE SUBGRADE IS FREE OF WATER AND ICE, AND HAS BEEN APPROVED BY THE SOILS ENGINEER, PRIOR TO PLACING CONCRETE (5.3.1).
F. APPROVAL IS REQUIRED FROM THE OWNER'S ENGINEER OR DESIGNATED REPRESENTATIVE ON ALL BELOW SLAB PREPARATORY WORK BEFORE PROCEEDING WITH THE PLACEMENT OF CONCRETE.
G. NOTIFY ARCHITECT/ENGINEER AND TESTING LABORATORY NOT LESS THAN 24 HOURS IN ADVANCE OF PLACING CONCRETE. PLACE CONCRETE ONLY WHEN TESTING LABORATORY PERSONNEL ARE PRESENT, UNLESS THIS REQUIREMENT IS SPECIFICALLY WAIVED IN WRITING BY THE OWNER.

3.2 CONCRETE REINFORCEMENT:
A. INTERIOR: SUPPORT STEEL BY USING CONTINUOUS STEEL (OR APPROVED PLASTIC) SLAB BOLSTER UPPERS (SBU) OR UPPER CONTINUOUS STEEL (OR APPROVED PLASTIC) HIGH CHAIRS PLACED EVERY 3' – 0" O.C. CONCRETE BLOCK OR OTHER TYPE SUPPORT MATERIALS ARE NOT ACCEPTABLE. TIE WIRE TO BE USED AT EVERY CROSS BAR. BEND LOOSE WIRES DOWN INTO SLAB AREA. SEE DRAWINGS FOR SPECIFIC REQUIREMENTS.
B. NOTE: THE SUPPORT SLAB BOLSTERS OR HIGH CHAIRS SHOULD HAVE ADEQUATE BASE SUPPORT SO THAT WORKMEN STEPPING ON THE RE-BAR DO NOT CAUSE THE SUPPORT STEEL TO SINK INTO THE "CRUSHER RUN" BASE MATERIAL.
C. THE TEMPERATURE OF THE REINFORCING STEEL SHALL NOT BE MORE THAN 20°F ABOVE THE TEMPERATURE OF THE CONCRETE AT TIME OF POUR.
D. INTERIOR AND/OR EXTERIOR:
1. MARK CONTROL JOINT LOCATION ON SIDE SCREED FORMS IN BOTH DIRECTIONS AND CUT EVERY OTHER REINFORCING BAR THAT THE CONTROL JOINT WILL CROSS. (NOTE: THIS FURTHER ENHANCES THE ACTIVITY OF THE FUNCTION OF THE CONTROL JOINTS.)

3.3 DELIVERY, PLACEMENT, AND TOLERANCES
A. DELIVERY:
1. CONFORM TO ASTM C94.
2. DELIVERY TICKETS TO CONTAIN THE FOLLOWING, IN ADDITION TO THE INFORMATION REQUIRED BY C94:
a. READING OF REVOLUTION COUNTER AT FIRST ADDITION OF WATER.
b. TYPE AND BRAND OF CEMENT.
c. AMOUNT OF CEMENT.
d. TOTAL WATER CONTENT BY PRODUCER.
e. MAXIMUM SIZE OF AGGREGATE.
f. ADDITIONAL INFORMATION REQUIRED FOR BATCH PLANT ADDED SUPERPLASTIZER.
3. NON-AGITATING TYPE EQUIPMENT IS NOT TO BE USED FOR TRANSPORTATION.
B. WATER MAY NOT BE ADDED AT THE JOB SITE, EXCEPT AS AUTHORIZED BY THE TESTING LABORATORY IN ORDER TO ACHIEVE MINIMUM SLUMP. TESTING LABORATORY PERSONNEL WILL BE DIRECTED TO REJECT ANY CONCRETE TRUCK TO WHICH UNAUTHORIZED WATER HAS BEEN ADDED.
1. ASTM C94 REQUIRES DISCHARGE WITHIN 1-1/2 HOURS OR 300 REVOLUTIONS, WHICHEVER COMES FIRST, AFTER THE INTRODUCTION OF WATER TO CEMENT AND AGGREGATES, OR THE INTRODUCTION OF CEMENT TO THE AGGREGATES. ENGINEER OR TESTING LABORATORY MAY REQUIRE AN EARLIER DISCHARGE DURING HOT WEATHER.
C. PLACEMENT:
1. PLACE WITHIN 6 FEET OF FINAL POSITION. SPREADING WITH VIBRATORS IS PROHIBITED.
2. MAXIMUM FREE FALL SHALL BE 5 FEET.
3. THICKNESS TOLERANCE:
a. Concrete thickness shall be maintained within the following tolerances from the specified thickness:
1) Overthickness: maximum 1/2"
2) Underthickness: maximum 1/4"
b. Average thickness shall be not less than that specified on the drawings.
4. CONCRETE WHICH DOES NOT MEET THE ABOVE CRITERIA SHALL BE SUBJECT TO REJECTION AT THE OWNER'S SOLE DISCRETION.
5. POWER SCREED VIBRATOR IS TO BE USED WHENEVER POSSIBLE. WHEN POWER SCREED IS NOT AVAILABLE, USE ELECTRIC POWERED CONCRETE VIBRATOR (VERTICALLY APPLIED TO CONCRETE).
6. 100% CONSOLIDATION IS REQUIRED. DO NOT OVER VIBRATE OR ALLOW WATER IN MIX TO SURFACE.
7. CONCRETE SLABS WHICH ARE REJECTED DUE TO VARIANCE FROM ALLOWABLE TOLERANCE SHALL BE REMOVED AND REPLACED AT NO COST TO THE OWNER.
8. USE THE ALTERNATE "LONG" STRIP PATTERN LAYOUT AS RECOMMENDED BY ACI. DO NOT USE THE "CHECKERBOARD" PLACEMENT PATTERN.
9. POSTPONING EACH STEP OF FINISHING (AND THE INHERENT REWORKING OF THE SURFACE) AS LONG AS POSSIBLE WITHOUT ENDANGERING RESULTS.
D. RECORDS: KEEP A COMPLETE LOG OF POURS, INCLUDING DATE, LOCATION, QUANTITY, AND IDENTIFICATION OF TEST CYLINDERS FOR EACH POUR.

3.4 JOINTING
A. SAW CUT:
1. LOCATE CONTROL (CONTRACTION) JOINTS AS SHOWN ON THE DRAWINGS. A "SOFT-CUT" SAW SHALL BE USED IMMEDIATELY AFTER FINAL FINISHING WITHIN 1 TO 6 HOURS. SCHEDULE SLAB POURS AND SAW CUTTING OPERATIONS SUCH THAT SAWING IS COMPLETED PRIOR TO THE ONSET OF SHRINKAGE CRACKING (5.3.5). CUTTING MUST BE PERFORMED AS SOON AS THE CONCRETE SURFACE IS FIRM ENOUGH NOT TO BE TORN OR DAMAGED BY THE BLADES. VACUUM DUST FROM SAW CUT BEFORE APPLYING BURLAP OR CURING COMPOUND. CUTTING OF JOINTS SHALL NOT TO BE DELAYED UNTIL THE NEXT DAY.
a. DO NOT CUT JOINTS IN MUDSLABS ON GRADE.
2. PROVIDE ISOLATION JOINTS AT COLUMNS (1/2 INCH THICK) AND AT WALLS (1/8 INCH THICK). WHERE ISOLATION JOINT WILL BE EXPOSED TO VIEW, SET TOP OF JOINT FILLER BELOW TOP OF SLAB A DISTANCE EQUAL TO THE FILLER THICKNESS, TO RECEIVE SEALANT. WHERE NOT EXPOSED TO VIEW, SET TOP OF FILLER FLUSH WITH TOP OF SLAB. WHERE SHRINKAGE COMPENSATING CONCRETE IS USED, PROVIDE ISOLATION JOINTS AT COLUMNS AND WALLS (1" THICK).
3. JOINT DEPTH AND SPACING:
a. DEPTH OF SAW CUTS: ¼ OF TOTAL SLAB THICKNESS.
b. JOINT SPACING TO BE AS SHOWN ON THE DRAWINGS. ALTERNATE JOINT LAYOUT MAY BE PROPOSED BY CONTRACTOR, BUT MUST BE APPROVED IN WRITING BY ENGINEER PRIOR TO CONSTRUCTION.
c. CONTROL JOINTS INDICATED TO BE DOWELED SHALL HAVE SMOOTH, ROUND STEEL DOWELS CENTERED UNDER THE CONTROL JOINT LOCATION.
4. EXPANSION JOINTS:
a. PLACEMENT: FULL DEPTH OF CROSS SECTION, ALONG ADJACENT CONCRETE STRUCTURES, EQUIPMENT FOUNDATIONS, AND EXISTING SLABS.
b. MATERIAL: PRE-MOLDED ASPHALT, SPONGE RUBBER, FIBER, OR CORK, WITH REMOVABLE PLASTIC JOINT CAP AT TOPSIDE FOR FINAL JOINT FILLER SEALANT.
5. CONSTRUCTION JOINTS:
a. FORMS: OIL BEFORE PLACING CONCRETE.
b. TYPE: DOWELS – SMOOTH ROUND STEEL BARS, INSTALLED PERPENDICULAR TO THE PLANE OF THE JOINT BOTH HORIZONTALLY AND VERTICALLY, SAW CUT (NOT SHEARED) PER ASTM A615, PLACED AT MID-CROSS SECTION, AND LIGHTLY GREASE EVERY OTHER BAR ON LEFT AND JUST THE OPPOSITE ON RIGHT.
1) INTERIOR: PER DETAIL ON DRAWINGS.
2) NO DOWEL CLOSER THAN 12" FROM A CORNER
c. LOCATION: AS DEEMED NECESSARY PER JOB CONDITIONS.
1) STRAIGHTNESS: 0.075"
2) ± 1/8" HORIZONTAL AND VERTICAL OF PLACEMENT LOCATION
TO BE TOOLED AT TIME OF FINISH; FOLLOWED BY SAW CUT (USING TOOL OF 1/16 R OR LESS).
d. PROVIDE "DIAMOND DOWEL" SYSTEM AS ALTERNATE IN LIEU OF ROUND DOWEL.
B. SEMI-RIGID EPOXY AND POLYUREA JOINT SEALANTS AND FILLERS:
1. PLACEMENT OF JOINT FILLER IS TO BE DELAYED AS LONG AS POSSIBLE, AT LEAST 90 DAYS MINIMUM AFTER CONCRETE PLACEMENT BUT PREFERABLY AND RECOMMENDED AS A FINAL STEP OF CONSTRUCTION, TO ALLOW CONCRETE SHRINKAGE TO TAKE PLACE.
2. PRIOR TO FILLING JOINTS, ALL JOINTS SHALL BE COMPLETELY CLEANED OF ALL CONCRETE DUST AND LAITANCE, DIRT, AND OTHER FOREIGN MATERIALS. AFTER CLEANING, JOINTS ARE TO BLOWN OUT WITH HIGH PRESSURE WATER FOLLOWED BY COMPRESSED AIR. JOINT FILLING SHALL NOT COMMENCE UNTIL AN ON-SITE INSPECTION OF CLEANED JOINTS HAS BEEN MADE BY THE CONSTRUCTION MANAGER. CONCRETE CONTRACTOR SHALL COORDINATE INSPECTION WITH THE CONSTRUCTION MANAGER, AND SUPERVISOR IN CHARGE OF JOINT FILLING SHALL BE PRESENT DURING THE INSPECTION, TO ENSURE THAT JOINT FILLING REQUIREMENTS ARE FULLY UNDERSTOOD.
3. JOINTS SHALL BE FILLED FULL DEPTH. INITIAL FILLING OF JOINT IS TO BE APPROXIMATELY 2/3 OF JOINT DEPTH, FOLLOWED CLOSELY BY FINAL FILLING (AFTER SETTLEMENT OF INITIAL PLACEMENT) LEVEL WITH FINISHED FLOOR.
4. SEATING OF JOINT FILLER AT JOINT BOTTOM IS CRITICAL TO JOINT PERFORMANCE. SAND, BACKING ROD, OR OTHER JOINT FILLER MATERIALS ARE SPECIFICALLY PROHIBITED. FOR JOINTS WITH SIGNIFICANT SHRINKAGE CRACKS BELOW SAWN JOINTS, THE JOINTS SHALL BE SEALED WITH TAPE PRIOR TO INSTALLING FILLER, OR SILICA SAND MAY BE USED ONLY UP TO THE BOTTOM OF THE JOINT, SO AS TO PREVENT LOSS OF FILLER MATERIAL.
5. COOLER/FREEZER JOINTS SHALL NOT BE FILLED UNTIL SLAB HAS BEEN AT OPERATING TEMPERATURES FOR A MINIMUM OF 72 HOURS.

3.5 CONCRETE TESTING:
A. PRE-PROJECT TRIAL MIX DESIGN TEST:
1. CONTRACTOR IS RESPONSIBLE FOR PREPARING A PRE-PROJECT LABORATORY TRIAL MIX BASED ON ALL INGREDIENTS TO BE USED IN THE PROJECT.
B. TEST LAB TO TEST THE ACTUAL AGGREGATE SIEVE AND ANALYSIS AT BATCH PLANT FOR CONFORMANCE WITH THAT SPECIFIED AND VERIFY THAT THE SAME IS WHAT IS DELIVERED TO THE JOB SITE.
C. FIELD TESTS: THE OWNER WILL ENGAGE A TESTING FACILITY APPROVED BY THE ENGINEER FOR PERFORMING THE SPECIFIED TESTS AND ASSOCIATED LABORATORY WORK.
1. CLASS VI CONCRETE: THREE CYLINDERS, TAKEN FOR COMPRESSION TESTING, ON FIRST TRUCKLOAD AT SITE FOLLOWED BY FOUR CYLINDERS EVERY THIRD TRUCKLOAD (ON AVERAGE).
2. CLASS I, II AND V: THREE CYLINDERS, TAKEN FOR COMPRESSION TESTING ON FIRST TRUCKLOAD AT THE SITE FOLLOWED BY FOUR CYLINDERS FOR EVERY FIFTH TRUCKLOAD.
a. ONE CYLINDER TESTED AT 7 DAYS, TWO AT 28 DAYS, AND THE LAST ONE IS THE "HOLD" CYLINDER IN CASE THE 28 DAY CYLINDER FAILS TO MEET THE TEST VALUE.
b. NINETY PERCENT (90%) OF THE AVERAGE OF ALL THE 28-DAY COMPRESSION TESTS SHALL EQUAL OR EXCEED SPECIFIED PSI.
c. NO INDIVIDUAL TEST CYLINDER SHALL FALL BELOW SPECIFIED PSI FOR THE 28 DAY COMPRESSION TEST BY MORE THAN 10% ACCORDING TO ACI STANDARDS.
d. FAILURE OF THE TESTS TO MEET THE REQUIREMENTS STATED COULD RESULT IN NONPAYMENT FOR THE WORK IN PLACE OR REPLACEMENT OF DEFECTIVE WORK.
D. SLUMP TESTS TO BE MADE EVERY TRUCKLOAD, BEFORE AND AFTER THE ADDITION OF PLASTICIZER.
E. TOTAL AIR CONTENT TEST, PER ASTM C173, IS TO BE TAKEN IN CONJUNCTION WITH CYLINDER TEST SPECIMENS.
F. CONCRETE TEMPERATURE OF 85°F OR ABOVE IN TRUCK AT SITE WILL BE REJECTED.

3.6 FINISHES
A. FINISH ON FLATWORK IS TO BE AS FOLLOWS:
1. INTERIOR FLOOR AREAS TO REMAIN EXPOSED - TROWELED FINISH (5.3.4.2.C).
a. A MINIMUM OF THREE TROWELINGS SHALL BE USED, WITH A TIME LAPSE BETWEEN SUCCESSIVE TROWELINGS TO PERMIT CONCRETE TO BECOME HARDER. AS THE SURFACE STIFFENS, SMALLER TROWELS SHALL BE USED TO PROVIDE SUFFICIENT PRESSURE FOR PROPER FINISHING.
b. MUDSLABS SHALL BE FINISHED TO PROVIDE SMOOTH SURFACE, WITHOUT RIDGES OR DEPRESSIONS, SO THAT VAPOR BARRIER WILL NOT BE PUNCTURED. SMOOTH FLOAT OR SINGLE TROWEL FINISH SHALL BE APPLIED.
2. MAN-POWER:
a. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE NUMBER OF QUALIFIED CONCRETE FINISHES IN ORDER TO OBTAIN THE FINISH SPECIFIED WITHIN THE CONCRETE 'SET-UP' TIME PERIOD.
b. DO NOT SPRINKLE CEMENT ON SURFACE WATER ON THE CONCRETE SURFACE FOR FINISHING PURPOSES.
c. DO NOT PERFORM ANY FINISHING OPERATIONS WHILE WATER IS PRESENT ON THE SURFACES.
3. AREAS INDICATED ON DRAWINGS OR AS REQUIRED BY THESE SPECIFICATIONS:
a. SURFACES OF FLOOR SLABS SHALL BE FINISHED TO THE FOLLOWING TOLERANCES, PER ACI 117 (5.3.4.3):
1) MINIMUM FLATNESS AND LEVELNESS AS SPECIFIED ON THE DRAWINGS. PRECEDING VALUES ARE AVERAGE VALUES TO BE OBTAINED OVER A GIVEN AREA. MINIMUM LOCAL VALUES (ONE-HALF BAY) OF 75 PERCENT OF MINIMUM AVERAGE VALUES SHALL BE OBTAINED AT ALL LOCATIONS.
2) TESTING BY THE TESTING LABORATORY SHALL BE MADE ON THE DAY FOLLOWING PLACEMENT OF THE FIRST CONCRETE POUR. TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM E1155. AFTER IT IS ESTABLISHED THAT PROPER PROCEDURES ARE BEING UTILIZED TO OBTAIN THE DESIRED RESULTS, FLATNESS/LEVELNESS TESTS SHALL BE PERFORMED ONLY AS DIRECTED BY THE OWNER.
B. ANY BAY NOT CONFORMING TO THE ABOVE FLATNESS AND LEVELNESS REQUIREMENTS SHALL BE REMOVED, REPLACED, AND RETESTED, AT NO EXPENSE TO THE OWNER OR CONSTRUCTION MANAGER.
C. "F NUMBERS" SHALL BE SUBMITTED TO THE OWNER, CONSTRUCTION MANAGER AND STRUCTURAL ENGINEER IMMEDIATELY AFTER THEY ARE DETERMINED BY THE TESTING LABORATORY.

3.7 CURING AND PROTECTION
A. TEMPERATURE:
1. WHEN AIR TEMPERATURE DURING PLACEMENT IS LESS THAN 40 DEGREES, OR WILL BE WITHIN 24 HOURS, TEMPERATURE OF CONCRETE AS PLACED IS TO BE BETWEEN 55 AND 90 DEGREES. MAINTAIN CONCRETE TEMPERATURE WITHIN THESE LIMITS FOR THE FULL CURING PERIOD OF 7 DAYS. (4.2.2.7 AND 5.3.1.6).
2. WHEN AIR TEMPERATURE IS MORE THAN 80 DEGREES, ALL CONCRETE SHALL CONTAIN THE WATER-REDUCING RETARDER.
B. CURING:
1. ALL SLAB AREAS SHALL BE EITHER MOIST-CURED (5.3.6.4.A THROUGH 5.3.6.4.D) (WITH BURLAP OR BURLENE KEPT CONTINUOUSLY WET) OR RECEIVE AN APPLICATION OF CURING COMPOUND (5.3.6.4.E), SEE DRAWINGS FOR SPECIFIC INFORMATION REGARDING SLAB CURING REQUIREMENTS, EXCEPT THAT WHEN CONCRETE IS PLACED IN THE OPEN, AND THE AIR TEMPERATURE EXCEEDS 75 DEGREES, THE CONCRETE IS TO BE MOIST-CURED FOR THE FIRST 24 HOURS.
2. WHICHEVER CURING METHOD IS USED, IT IS TO COMMENCE IMMEDIATELY AFTER DISAPPEARANCE OF WATER SHEEN, AND CONTINUE FOR AT LEAST 7 DAYS (5.3.6.1). DO NOT ALLOW CURING TO BE DELAYED OVERNIGHT.
3. PREVENT EXCESSIVE MOISTURE LOSS FROM FORMED SURFACES (5.3.6.3). IF EDGE FORMS ARE REMOVED BEFORE 7 DAYS HAVE ELAPSED, CURE THE FORMED SURFACES BY MOIST-CURING OR APPLICATION OF CURING COMPOUND FOR THE REMAINDER OF THE CURING PERIOD.
C. PREVENTION OF PLASTIC SHRINKAGE CRACKING:
1. Plastic shrinkage cracking, caused by rapid loss of moisture before curing begins, shall be prevented by the following practices as necessary:
a. DAMPENING THE SUBGRADE.
b. ERECTION OF WINDBREAKS.
c. ERECTION OF SUNSHADES, OR SCHEDULING CONCRETE PLACEMENT AFTER THE ROOF DECK IS INSTALLED.
d. UTILIZING FOG SPRAYS BEFORE FINAL FINISHING AND THE START OF CURING; COVERING WITH DAMP BURLAP IMMEDIATELY AFTER SCREEDING AND FLOATING; AND THE USE OF MONO-MOLECULAR FILMS TO REDUCE EVAPORATION BETWEEN THE VARIOUS PLACING AND FINISHING OPERATIONS.
e. POSTPONING EACH STEP OF FINISHING (AND THE INHERENT REWORKING OF THE SURFACE) AS LONG AS POSSIBLE WITHOUT ENDANGERING RESULTS.
D. CURING AND SEALING COMPOUND: APPLY UNIFORMLY TO FLOORS AND SLABS INDICATED IN A CONTINUOUS OPERATION BY POWER SPRAY OR ROLLER ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. RECOAT AREAS SUBJECTED TO HEAVY RAINFALL WITHIN 3 HOURS AFTER INITIAL APPLICATION. REPEAT PROCESS 24 HOURS LATER AND APPLY A SECOND COAT. MAINTAIN CONTINUITY OF COATING AND REPAIR DAMAGE DURING CURING PERIOD.
E. DRY-SHAKE HARDENER: AFTER INITIAL FLOATING, APPLY DRY-SHAKE FLOOR HARDENER TO SURFACES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND AS FOLLOWS:
1. UNIFORMLY APPLY DRY-SHAKE FLOOR HARDENER AT A RATE OF 100 LB/100 SQ. FT. (49 KG/10 SQ. M) UNLESS GREATER AMOUNT IS RECOMMENDED BY MANUFACTURER.
2. UNIFORMLY DISTRIBUTE APPROXIMATELY TWO-THIRDS OF DRY-SHAKE FLOOR HARDENER OVER SURFACE BY HAND OR WITH MECHANICAL SPREADER, AND EMBED BY POWER FLOATING. FOLLOW POWER FLOATING WITH A SECOND DRY-SHAKE FLOOR HARDENER APPLICATION, UNIFORMLY DISTRIBUTING REMAINDER OF MATERIAL, AND EMBED BY POWER FLOATING.
3. AFTER FINAL FLOATING, APPLY A TROWEL FINISH. CURE CONCRETE WITH CURING COMPOUND RECOMMENDED BY DRY-SHAKE FLOOR HARDENER MANUFACTURER AND APPLY IMMEDIATELY AFTER FINAL FINISHING.
F. LIQUID CHEMICAL HARDENER AND DENSIFIER
1. MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2. CONCRETE MUST BE THOROUGHLY DRY AND CURED FOR A MINIMUM OF 14 DAYS. SURFACES MUST BE CLEAN, DRY AND FREE OF ALL LOOSE DIRT, OIL, WAX, SEALERS, CURING AND PARTING COMPOUNDS, AND OTHER FOREIGN MATTER OR CARBONATION.
3. APPLY A MINIMUM OF 2 COATS AT A RATE RECOMMENDED BY MANUFACTURER FOR HEAVY-DUTY OR DENSELY TROWELED FLOORS.

3.8 ACCEPTANCE
A. CONCRETE WORK WITH SERIOUS CRAZING, CRACKING, DEVIATION FROM TOLERANCES, OR OTHER VARIATION FROM CONTRACT REQUIREMENTS IS SUBJECT TO REJECTION (1.7.1.2).
B. WHEN OBSERVATIONS OR TESTS INDICATE THAT THE CONTRACT REQUIREMENTS HAVE NOT BEEN MET, THE CONTRACTOR IS TO BEAR THE COSTS OF ANY ADDITIONAL TESTING AND ANALYSIS TO DETERMINE ACCEPTABILITY, AND ALSO THE COST OF REMOVAL AND REPLACEMENT, IF SUCH IS REQUIRED (1.6.5.1, 1.7.1.5, 1.7.4, AND 1.7.5).

3.9 FIELD QUALITY CONTROL
A. PERFORM JOB SITE MONITORING OF CONCRETING OPERATIONS, INCLUDING SLUMP TESTING OF EACH TRUCK OF CLASS VI CONCRETE. CONCRETE WHICH ARRIVES AT THE JOB SITE WITH EXCESSIVE AIR CONTENT (GREATER THAN 3%) OR EXCESSIVE SLUMP, OR TO WHICH UNAUTHORIZED WATER HAS BEEN ADDED, SHALL BE REJECTED.
B. OBTAIN CONCRETE FOR REQUIRED TESTS AT POINT OF PLACEMENT. IF CONCRETE IS PUMPED, OBTAIN CONCRETE FOR TESTS AT DISCHARGE END (1.6.4.3).
C. PERFORM STRENGTH, SLUMP AND AIR TESTS PER SPECIFICATIONS.
D. DETERMINE CONCRETE TEMPERATURE FOR EACH STRENGTH TEST WHEN AIR TEMPERATURE IS LESS THAN 40 DEGREES, OR WILL BE WITHIN 24 HOURS (1.6.4.2.G).
E. DO NOT PLACE CONCRETE WHEN SLUMP, TEMPERATURE, OR TIME VARY FROM ALLOWABLE (1.6.8).
F. CONDUCT A SUBGRADE TOLERANCE SURVEY, PER THE REQUIREMENTS OF SECTION 3.01.A.
G. DETERMINATION OF THE FLATNESS AND LEVELNESS OF A CONCRETE SLAB SHALL BE MADE ON THE DAY FOLLOWING PLACEMENT OF EACH CONCRETE POUR. TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM E1155.
H. TEST CYLINDERS SHALL BE STORED AT THE JOBSITE FOR THE FIRST 20 HOURS, PLUS OR MINUS 4 HOURS, IN A PROTECTED LOCATION, WITH THE TEMPERATURE MAINTAINED BETWEEN 60 AND 80 DEGREES, OR RESULTS OF STRENGTHS TESTS SHALL BE CONSIDERED UNACCEPTABLE.
I. MAINTAIN RECORDS OF ALL TESTS, INDICATING EXACT LOCATION OF THE STRUCTURE REPRESENTED BY EACH TEST.
J. USAGE: DO NOT ALLOW ANY LOADING ON NEW CONCRETE SURFACES OTHER THAN LIGHT FOOT TRAFFIC FOR A PERIOD OF 7 DAYS AFTER PLACEMENT. LIGHT CONSTRUCTION TRAFFIC SUCH AS SMALL LIFTS CAN RESUME ON NEW SLABS AFTER A PERIOD OF 14 DAYS AFTER PLACEMENT. USE OF HEAVY CONSTRUCTION EQUIPMENT CONCRETE TRUCKS, BUGGIES, DUMP TRUCKS, CRANES , ETC., IS PROHIBITED AT ALL TIMES DURING CURING OPERATION OF 28 DAYS UNTIL CONCRETE HAS REACHED DESIGN VALUES ON INTERIOR AND EXTERIOR PAVED CONCRETE SURFACES.

END OF SECTION 03 3313

04 20 13 - UNIT MASONRY ASSEMBLIES

PART 1 - GENERAL
1.1 ITEMS REQUIRED BUT NOT SPECIFIED
A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.
1.2 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
1.3 SUMMARY
A. THIS SECTION INCLUDES UNIT MASONRY ASSEMBLIES CONSISTING OF THE FOLLOWING:
1. CONCRETE MASONRY UNITS (CMUS).
2. MORTAR AND GROUT.
3. REINFORCING STEEL.
4. MASONRY JOINT REINFORCEMENT.
5. TIES AND ANCHORS.
6. MISCELLANEOUS MASONRY ACCESSORIES.
B. RELATED SECTIONS INCLUDE THE FOLLOWING:
1. DIVISION 8 - STEEL DOORS AND FRAMES, TO BE INSTALLED DURING MASONRY INSTALLATION.
1.4 DEFINITIONS
A. REINFORCED MASONRY: MASONRY CONTAINING REINFORCING STEEL IN GROUTED CELLS.
1.5 PERFORMANCE REQUIREMENTS
A. PROVIDE STRUCTURAL UNIT MASONRY THAT DEVELOPS INDICATED NET-AREA COMPRESSIVE STRENGTHS 2,000 PSI (F'_M) MINIMUM AT 28 DAYS. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL STRUCTURAL REQUIREMENTS.
1.6 SUBMITTALS
A. REFER TO DIVISION 1 SECTIONS FOR SUBMITTAL REQUIREMENTS.
B. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
C. SHOP DRAWINGS: FOR THE FOLLOWING:
1. MASONRY UNITS: SHOW SIZES, PROFILES, COURSING, AND LOCATIONS OF SPECIAL SHAPES.
2. REINFORCING STEEL: DETAIL BENDING AND PLACEMENT OF UNIT MASONRY REINFORCING BARS. COMPLY WITH ACI 315, "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT."
D. QUALIFICATION DATA: FOR TESTING AGENCY.
E. MATERIAL CERTIFICATES: INCLUDE STATEMENTS OF MATERIAL PROPERTIES INDICATING COMPLIANCE WITH REQUIREMENTS INCLUDING COMPLIANCE WITH STANDARDS AND TYPE DESIGNATIONS WITHIN STANDARDS. PROVIDE FOR EACH TYPE AND SIZE OF THE FOLLOWING:
1. MASONRY UNITS.
a. INCLUDE MATERIAL TEST REPORTS SUBSTANTIATING COMPLIANCE WITH REQUIREMENTS.
b. FOR MASONRY UNITS USED IN STRUCTURAL MASONRY, INCLUDE DATA AND CALCULATIONS ESTABLISHING AVERAGE NET-AREA COMPRESSIVE STRENGTH OF UNITS.
2. CEMENTITIOUS MATERIALS. INCLUDE BRAND, TYPE, AND NAME OF MANUFACTURER.
3. PREBLENDED, DRY MORTAR MIXES. INCLUDE DESCRIPTION OF TYPE AND PROPORTIONS OF INGREDIENTS.
4. GROUT MIXES. INCLUDE DESCRIPTION OF TYPE AND PROPORTIONS OF INGREDIENTS.
5. REINFORCING BARS.
6. JOINT REINFORCEMENT.
7. ANCHORS, TIES, AND METAL ACCESSORIES.
F. MIX DESIGNS: FOR EACH TYPE OF MORTAR AND GROUT. INCLUDE DESCRIPTION OF TYPE AND PROPORTIONS OF INGREDIENTS.
1. INCLUDE TEST REPORTS, PER ASTM C 780, FOR MORTAR MIXES REQUIRED TO COMPLY WITH PROPERTY SPECIFICATION.
2. INCLUDE TEST REPORTS, PER ASTM C 1019, FOR GROUT MIXES REQUIRED TO COMPLY WITH COMPRESSIVE STRENGTH REQUIREMENT.
G. COLD-WEATHER PROCEDURES: DETAILED DESCRIPTION OF METHODS, MATERIALS, AND EQUIPMENT TO BE USED TO COMPLY WITH COLD-WEATHER REQUIREMENTS.
1.7 QUALITY ASSURANCE
A. SOURCE LIMITATIONS FOR MASONRY UNITS: OBTAIN EXPOSED MASONRY UNITS OF A UNIFORM TEXTURE AND COLOR, OR A UNIFORM BLEND WITHIN THE RANGES ACCEPTED FOR THESE CHARACTERISTICS, THROUGH ONE SOURCE FROM A SINGLE MANUFACTURER FOR EACH PRODUCT REQUIRED.
B. SOURCE LIMITATIONS FOR MORTAR MATERIALS: OBTAIN MORTAR INGREDIENTS OF A UNIFORM QUALITY, INCLUDING COLOR FOR EXPOSED MASONRY, FROM A SINGLE MANUFACTURER FOR EACH CEMENTITIOUS COMPONENT AND FROM ONE SOURCE OR PRODUCER FOR EACH AGGREGATE.
C. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE TO COMPLY WITH REQUIREMENTS IN DIVISION 1 SECTION "PROJECT MANAGEMENT AND COORDINATION."
1.8 DELIVERY, STORAGE, AND HANDLING
A. STORE MASONRY UNITS ON ELEVATED PLATFORMS IN A DRY LOCATION. IF UNITS ARE NOT STORED IN AN ENCLOSED LOCATION, COVER TOPS AND SIDES OF STACKS WITH WATERPROOF SHEETING, SECURELY TIED. IF UNITS BECOME WET, DO NOT INSTALL UNTIL THEY ARE DRY.
B. DELIVER PREBLENDED, DRY MORTAR MIX IN MOISTURE-RESISTANT CONTAINERS DESIGNED FOR LIFTING AND EMPTYING INTO DISPENSING SILO. STORE PREBLENDED, DRY MORTAR MIX IN DELIVERY CONTAINERS ON ELEVATED PLATFORMS, UNDER COVER, AND IN A DRY LOCATION OR IN A METAL DISPENSING SILO WITH WEATHERPROOF COVER.
C. STORE MASONRY ACCESSORIES, INCLUDING METAL ITEMS, TO PREVENT CORROSION AND ACCUMULATION OF DIRT AND OIL.
1.9 PROJECT CONDITIONS
A. PROTECTION OF MASONRY: DURING CONSTRUCTION, COVER TOPS OF WALLS, PROJECTIONS, AND SILLS WITH WATERPROOF SHEETING AT END OF EACH DAY'S WORK. COVER PARTIALLY COMPLETED MASONRY WHEN CONSTRUCTION IS NOT IN PROGRESS.
1. EXTEND COVER A MINIMUM OF 24 INCHES (600 MM) DOWN BOTH SIDES AND HOLD COVER SECURELY IN PLACE.
B. DO NOT APPLY UNIFORM FLOOR OR ROOF LOADS FOR AT LEAST 12 HOURS AND CONCENTRATED LOADS FOR AT LEAST 3 DAYS AFTER BUILDING MASONRY WALLS OR COLUMNS.
C. STAIN PREVENTION: PREVENT GROUT, MORTAR, AND SOIL FROM STAINING THE FACE OF MASONRY TO BE LEFT EXPOSED OR PAINTED. IMMEDIATELY REMOVE GROUT, MORTAR, AND SOIL THAT COME IN CONTACT WITH SUCH MASONRY.
1. PROTECT BASE OF WALLS FROM RAIN-SPLASHED MUD AND FROM MORTAR SPLATTER BY SPREADING COVERINGS ON GROUND AND OVER WALL SURFACE.
2. PROTECT SILLS, LEDGES, AND PROJECTIONS FROM MORTAR DROPPINGS.
3. PROTECT SURFACES OF WINDOW AND DOOR FRAMES, AS WELL AS SIMILAR PRODUCTS WITH PAINTED AND INTEGRAL FINISHES, FROM MORTAR DROPPINGS.
4. TURN SCAFFOLD BOARDS NEAR THE WALL ON EDGE AT THE END OF EACH DAY TO PREVENT RAIN FROM SPLASHING MORTAR AND DIRT ONTO COMPLETED MASONRY.
D. COLD-WEATHER REQUIREMENTS: DO NOT USE FROZEN MATERIALS OR MATERIALS MIXED OR COATED WITH ICE OR FROST. DO NOT BUILD ON FROZEN SUBSTRATES. REMOVE AND REPLACE UNIT MASONRY DAMAGED BY FROST OR BY FREEZING CONDITIONS. COMPLY WITH COLD-WEATHER CONSTRUCTION REQUIREMENTS CONTAINED IN ACI 530.1/ASCE 6/TMS 602.
1. COLD-WEATHER CLEANING: USE LIQUID CLEANING METHODS ONLY WHEN AIR TEMPERATURE IS 40 DEG F (4 DEG C) AND ABOVE AND WILL REMAIN SO UNTIL MASONRY HAS DRIED, BUT NOT LESS THAN 7 DAYS AFTER COMPLETING CLEANING.
E. HOT-WEATHER REQUIREMENTS: COMPLY WITH HOT-WEATHER CONSTRUCTION REQUIREMENTS CONTAINED IN ACI 530.1/ASCE 6/TMS 602.

PART 2 - PRODUCTS
2.1 MASONRY UNITS, GENERAL
A. DEFECTIVE UNITS: REFERENCED MASONRY UNIT STANDARDS MAY ALLOW A CERTAIN PERCENTAGE OF UNITS TO EXCEED TOLERANCES AND TO CONTAIN CHIPS, CRACKS, OR OTHER DEFECTS EXCEEDING LIMITS STATED IN THE STANDARD. DO NOT USES UNITS WHERE SUCH DEFECTS, INCLUDING DIMENSIONS THAT VARY FROM SPECIFIED DIMENSIONS BY MORE THAN STATED TOLERANCES, WILL BE EXPOSED IN THE COMPLETED WORK OR WILL IMPAIR THE QUALITY OF COMPLETED MASONRY.
2.2 CONCRETE MASONRY UNITS (CMUs)
A. SHAPES: PROVIDE SHAPES INDICATED AND AS FOLLOWS:
1. PROVIDE SPECIAL SHAPES FOR LINTELS, CORNERS, JAMBS, SASHES, MOVEMENT JOINTS, HEADERS, BONDING, AND OTHER SPECIAL CONDITIONS.
2. PROVIDE BULLNOSE UNITS FOR OUTSIDE CORNERS, UNLESS OTHERWISE INDICATED.
B. CONCRETE MASONRY UNITS: ASTM C 90.
1. WEIGHT CLASSIFICATION: LIGHTWEIGHT.
2. SIZE (WIDTH): MANUFACTURED TO DIMENSIONS 3/8 INCH LESS THAN NOMINAL DIMENSIONS.
2.3 MASONRY LINTELS
A. GENERAL: PROVIDE MASONRY LINTELS, COMPLYING WITH REQUIREMENTS BELOW.
B. MASONRY LINTELS: PREFABRICATED OR BUILT-IN-PLACE MASONRY LINTELS MADE FROM BOND BEAM CONCRETE MASONRY UNITS WITH REINFORCING BARS PLACED AS INDICATED AND FILLED WITH COARSE GROUT. CURE PRECAST LINTELS BEFORE HANDLING AND INSTALLING. TEMPORARILY SUPPORT BUILT-IN-PLACE LINTELS UNTIL CURED.
2.4 MORTAR AND GROUT MATERIALS
A. PORTLAND CEMENT-LIME MIX: PACKAGED BLEND OF PORTLAND CEMENT COMPLYING WITH ASTM C 150, TYPE I OR TYPE III, AND HYDRATED LIME COMPLYING WITH ASTM C 207, TYPE S.
B. MASONRY CEMENT: ASTM C 91.
1. AVAILABLE PRODUCTS:
a. HOLCIM (US) INC.; MORTAMIX MASONRY CEMENT.
b. LAFARGE NORTH AMERICA INC.; LAFARGE MASONRY CEMENT.
c. LEHIGH CEMENT COMPANY; LEHIGH MASONRY CEMENT.
d. NATIONAL CEMENT COMPANY, INC.; COOSA MASONRY CEMENT.
C. MORTAR CEMENT: ASTM C 1329.
1. AVAILABLE PRODUCTS:
a. LAFARGE NORTH AMERICA INC.; LAFARGE MORTAR CEMENT OR MAGNOLIA SUPERBOND MORTAR CEMENT.
b. <
D. AGGREGATE FOR MORTAR: ASTM C 144.
1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
E. AGGREGATE FOR GROUT: ASTM C 404.
F. COLD-WEATHER ADMIXTURE: NONCHLORIDE, NONCORROSIVE, ACCELERATING ADMIXTURE COMPLYING WITH ASTM C 494/C 494M, TYPE C, AND RECOMMENDED BY MANUFACTURER FOR USE IN MASONRY MORTAR OF COMPOSITION INDICATED.
1. AVAILABLE PRODUCTS:
a. ADDIMENT INCORPORATED; MORTAR KICK.
b. EUCLID CHEMICAL COMPANY (THE); ACCELGUARD 80.
c. GRACE CONSTRUCTION PRODUCTS, A UNIT OF W. R. GRACE & CO. - CONN.; MORSET.
d. SONNEBORN, DIV. OF CHEMREX; TRIMIX-NCA.
G. WATER: POTABLE.
2.5 REINFORCEMENT
A. UNCOATED STEEL REINFORCING BARS: ASTM A 615/A 615M OR ASTM A 996/A 996M, GRADE 60 (GRADE 420).
2.6 TIES AND ANCHORS
A. MATERIALS: PROVIDE TIES AND ANCHORS SPECIFIED IN SUBSEQUENT PARAGRAPHS THAT ARE MADE FROM MATERIALS THAT COMPLY WITH EIGHT SUBPARAGRAPHS BELOW, UNLESS OTHERWISE INDICATED.
1. HOT-DIP GALVANIZED, CARBON-STEEL WIRE: ASTM A 82; WITH ASTM A 153/A 153M, CLASS B-2 COATING.
2. STEEL SHEET, GALVANIZED AFTER FABRICATION: ASTM A 1008/A 1008M, COMMERCIAL STEEL, HOT-DIP GALVANIZED AFTER FABRICATION TO COMPLY WITH ASTM A 153/A 153M.
3. STEEL PLATES, SHAPES, AND BARS: ASTM A 36/A 36M.
2.7 MISCELLANEOUS ANCHORS
A. ANCHOR BOLTS: HEADED OR L-SHAPED STEEL BOLTS COMPLYING WITH ASTM A 307, GRADE A (ASTM F 568M, PROPERTY CLASS 4.6); WITH ASTM A 563 (ASTM A 563M) HEX NUTS AND, WHERE INDICATED, FLAT WASHERS; HOT-DIP GALVANIZED TO COMPLY WITH ASTM A 153/A 153M, CLASS C; OF DIMENSIONS INDICATED.
B. POSTINSTALLED ANCHORS: PROVIDE CHEMICAL OR TORQUE-CONTROLLED EXPANSION ANCHORS, WITH CAPABILITY TO SUSTAIN, WITHOUT FAILURE, A LOAD EQUAL TO SIX TIMES THE LOAD IMPOSED WHEN INSTALLED IN SOLID OR GROUTED UNIT MASONRY AND EQUAL TO FOUR TIMES THE LOAD IMPOSED WHEN INSTALLED IN CONCRETE, AS DETERMINED BY TESTING PER ASTM E 488 CONDUCTED BY A QUALIFIED INDEPENDENT TESTING AGENCY.
1. CORROSION PROTECTION: CARBON-STEEL COMPONENTS ZINC PLATED TO COMPLY WITH ASTM B 633, CLASS FE/ZN 5 (5 MICRONS) FOR CLASS SC 1 SERVICE CONDITION (MILD).
2.8 MISCELLANEOUS MASONRY ACCESSORIES
A. PREFORMED CONTROL-JOINT GASKETS: MADE FROM STYRENE-BUTADIENE-RUBBER COMPOUND, COMPLYING WITH ASTM D 2000, DESIGNATION M2AA-805 OR PVC, COMPLYING WITH ASTM D 2287, TYPE PVC-65406 AND DESIGNED TO FIT STANDARD SASH BLOCK AND TO MAINTAIN LATERAL STABILITY IN MASONRY WALL; SIZE AND CONFIGURATION AS INDICATED.
B. BOND-BREAKER STRIPS: ASPHALT-SATURATED, ORGANIC ROOFING FELT COMPLYING WITH ASTM D 226, TYPE I (NO. 15 ASPHALT FELT).
C. REINFORCING BAR POSITIONERS: WIRE UNITS DESIGNED TO FIT INTO MORTAR BED JOINTS SPANNING MASONRY UNIT CELLS WITH LOOPS FOR HOLDING REINFORCING BARS IN CENTER OF CELLS. UNITS ARE FORMED FROM 0.142-INCH (3.6-MM) STEEL WIRE, HOT-DIP GALVANIZED AFTER FABRICATION. PROVIDE UNITS WITH EITHER TWO LOOPS OR FOUR LOOPS AS NEEDED FOR NUMBER OF BARS INDICATED.
2.9 MASONRY CLEANERS
A. PROPRIETARY ACIDIC CLEANER: MANUFACTURER'S STANDARD-STRENGTH CLEANER DESIGNED FOR REMOVING MORTAR/GROUT STAINS, EFFLORESCENCE, AND OTHER NEW CONSTRUCTION STAINS FROM NEW MASONRY WITHOUT DISCOLORING OR DAMAGING MASONRY SURFACES. USE PRODUCT EXPRESSLY APPROVED FOR INTENDED USE BY CLEANER MANUFACTURER AND MANUFACTURER OF MASONRY UNITS BEING CLEANED.
1. AVAILABLE MANUFACTURERS:
a. DIEDRICH TECHNOLOGIES, INC.
b. EACO CHEM, INC.
c. PROSOCO, INC.
2.10 MORTAR AND GROUT MIXES
A. GENERAL: DO NOT USE ADMIXTURES, INCLUDING PIGMENTS, AIR-ENTRAINING AGENTS, ACCELERATORS, RETARDERS, WATER-REPELLENT AGENTS, ANTIFREEZE COMPOUNDS, OR OTHER ADMIXTURES, UNLESS OTHERWISE INDICATED.
1. DO NOT USE CALCIUM CHLORIDE IN MORTAR OR GROUT.
B. MORTAR FOR UNIT MASONRY: COMPLY WITH ASTM C 270, PROPERTY SPECIFICATION. PROVIDE THE FOLLOWING TYPES OF MORTAR FOR APPLICATIONS STATED UNLESS ANOTHER TYPE IS INDICATED OR NEEDED TO PROVIDE REQUIRED COMPRESSIVE STRENGTH OF MASONRY.
1. FOR REINFORCED MASONRY, USE TYPE S.
C. GROUT FOR UNIT MASONRY: COMPLY WITH ASTM C 476.
1. USE GROUT OF TYPE INDICATED OR, IF NOT OTHERWISE INDICATED, OF TYPE (FINE OR COARSE) THAT WILL COMPLY WITH TABLE 1.15.1 IN ACI 530.1/ASCE 6/TMS 602 FOR DIMENSIONS OF GROUT SPACES AND POUR HEIGHT.
2. PROVIDE GROUT WITH A SLUMP OF 8 TO 11 INCHES (200 TO 280 MM) AS MEASURED ACCORDING TO ASTM C 143/C 143M.

PART 3 - EXECUTION
3.1 EXAMINATION
A. EXAMINE CONDITIONS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES AND OTHER CONDITIONS AFFECTING PERFORMANCE OF WORK.
1. FOR THE RECORD, PREPARE WRITTEN REPORT, ENDORSED BY INSTALLER, LISTING CONDITIONS DETRIMENTAL TO PERFORMANCE OF WORK.
2. VERIFY THAT FOUNDATIONS ARE WITHIN TOLERANCES SPECIFIED.
3. VERIFY THAT REINFORCING DOWELS ARE PROPERLY PLACED.
B. BEFORE INSTALLATION, EXAMINE ROUGH-IN AND BUILT-IN CONSTRUCTION FOR PIPING SYSTEMS TO VERIFY ACTUAL LOCATIONS OF PIPING CONNECTIONS.
C. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
3.2 INSTALLATION, GENERAL
A. USE FULL-SIZE UNITS WITHOUT CUTTING IF POSSIBLE. IF CUTTING IS REQUIRED TO PROVIDE A CONTINUOUS PATTERN OR TO FIT ADJOINING CONSTRUCTION, CUT UNITS WITH MOTOR-DRIVEN SAWS; PROVIDE CLEAN, SHARP, UNCHIPPED EDGES. ALLOW UNITS TO DRY BEFORE LAYING UNLESS WETTING OF UNITS IS SPECIFIED. INSTALL CUT UNITS WITH CUT SURFACES AND, WHERE POSSIBLE, CUT EDGES CONCEALED.
B. SELECT AND ARRANGE UNITS FOR EXPOSED UNIT MASONRY TO PRODUCE A UNIFORM BLEND OF COLORS AND TEXTURES.
1. MIX UNITS FROM SEVERAL PALLETS OR CUBES AS THEY ARE PLACED.
C. COMPLY WITH CONSTRUCTION TOLERANCES IN ACI 530.1/ASCE 6/TMS 602 AND WITH THE FOLLOWING:
1. FOR CONSPICUOUS VERTICAL LINES, SUCH AS EXTERNAL CORNERS, DOOR JAMBS, REVEALS, AND EXPANSION AND CONTROL JOINTS, DO NOT VARY FROM PLUMB BY MORE THAN 1/4 INCH IN 20 FEET (6 MM IN 6 M) MAXIMUM.
2. FOR VERTICAL ALIGNMENT OF EXPOSED HEAD JOINTS, DO NOT VARY FROM PLUMB BY MORE THAN 1/4 INCH IN 10 FEET (6 MM IN 3 M) MAXIMUM.
3. FOR CONSPICUOUS HORIZONTAL LINES, SUCH AS LINTELS, SILLS, PARAPETS, AND REVEALS, DO NOT VARY FROM LEVEL BY MORE THAN 1/4 INCH IN 20 FEET (6 MM IN 6 M) MAXIMUM.
3.3 LAYING MASONRY WALLS
A. LAY OUT WALLS IN ADVANCE FOR ACCURATE SPACING OF SURFACE BOND PATTERNS WITH UNIFORM JOINT THICKNESSES AND FOR ACCURATE LOCATION OF OPENINGS, MOVEMENT-TYPE JOINTS, RETURNS, AND OFFSETS. AVOID USING LESS-THAN-HALF-SIZE UNITS, PARTICULARLY AT CORNERS, JAMBS, AND, WHERE POSSIBLE, AT OTHER LOCATIONS.
B. BOND PATTERN FOR EXPOSED MASONRY: UNLESS OTHERWISE INDICATED, LAY EXPOSED MASONRY IN RUNNING BOND DO NOT USE UNITS WITH LESS THAN NOMINAL 4-INCH (100-MM) HORIZONTAL FACE DIMENSIONS AT CORNERS OR JAMBS.
C. STOPPING AND RESUMING WORK: STOP WORK BY RACKING BACK UNITS IN EACH COURSE FROM THOSE IN COURSE BELOW; DO NOT TOOTH. WHEN RESUMING WORK, CLEAN MASONRY SURFACES THAT ARE TO RECEIVE MORTAR, REMOVE LOOSE MASONRY UNITS AND MORTAR, AND WET BRICK IF REQUIRED BEFORE LAYING FRESH MASONRY.
D. BUILT-IN WORK: AS CONSTRUCTION PROGRESSES, BUILD IN ITEMS SPECIFIED IN THIS AND OTHER SECTIONS. FILL IN SOLIDLY WITH MASONRY AROUND BUILT-IN ITEMS.
E. FILL SPACE BETWEEN STEEL FRAMES AND MASONRY SOLIDLY WITH MORTAR, UNLESS OTHERWISE INDICATED.
F. FILL CORES IN HOLLOW CONCRETE MASONRY UNITS WITH GROUT 24 INCHES (600 MM) UNDER BEARING PLATES, BEAMS, LINTELS, POSTS, AND SIMILAR ITEMS, UNLESS OTHERWISE INDICATED.
3.4 MORTAR BEDDING AND JOINTING
A. LAY HOLLOW CONCRETE MASONRY UNITS AS FOLLOWS:
1. WITH FACE SHELLS FULLY BEDDED IN MORTAR AND WITH HEAD JOINTS OF DEPTH EQUAL TO BED JOINTS.
2. WITH WEBS FULLY BEDDED IN MORTAR IN GROUTED MASONRY, INCLUDING STARTING COURSE ON FOOTINGS.
3. WITH ENTIRE UNITS, INCLUDING AREAS UNDER CELLS, FULLY BEDDED IN MORTAR AT STARTING COURSE ON FOOTINGS WHERE CELLS ARE NOT GROUTED.
B. TOOL EXPOSED JOINTS SLIGHTLY CONCAVE WHEN THUMBPRINT HARD, USING A JOINTER LARGER THAN JOINT THICKNESS, UNLESS OTHERWISE INDICATED.
3.5 ANCHORING MASONRY TO STRUCTURAL MEMBERS
A. ANCHOR MASONRY TO STRUCTURAL MEMBERS WHERE MASONRY ABUTS OR FACES STRUCTURAL MEMBERS TO COMPLY WITH THE FOLLOWING:
1. PROVIDE AN OPEN SPACE NOT LESS THAN 1/2 INCH (13 MM) IN WIDTH BETWEEN MASONRY AND STRUCTURAL MEMBER, UNLESS OTHERWISE INDICATED. KEEP OPEN SPACE FREE OF MORTAR AND OTHER RIGID MATERIALS.
2. ANCHOR MASONRY TO STRUCTURAL MEMBERS WITH ANCHORS EMBEDDED IN MASONRY JOINTS AND ATTACHED TO STRUCTURE.
3. SPACE ANCHORS AS INDICATED, BUT NOT MORE THAN 24 INCHES (610 MM) O.C. VERTICALLY AND 36 INCHES (915 MM) O.C. HORIZONTALLY.
3.6 CONTROL JOINTS
A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.
1. See structural notes for locations of control joints.
B. Form control joints in concrete masonry as follows:
1. Install preformed control-joint gaskets designed to fit standard sash block.
3.7 LINTELS
A. PROVIDE MASONRY LINTELS WHERE SHOWN AND WHERE OPENINGS OF MORE THAN 24 INCHES (610 MM) FOR BLOCK-SIZE UNITS ARE SHOWN WITHOUT STRUCTURAL STEEL OR OTHER SUPPORTING LINTELS.
B. PROVIDE MINIMUM BEARING OF 8 INCHES (200 MM) AT EACH JAMB, UNLESS OTHERWISE INDICATED.
3.8 REINFORCED UNIT MASONRY INSTALLATION
A. TEMPORARY FORMWORK AND SHORES: CONSTRUCT FORMWORK AND SHORES AS NEEDED TO SUPPORT REINFORCED MASONRY ELEMENTS DURING CONSTRUCTION.
1. CONSTRUCT FORMWORK TO PROVIDE SHAPE, LINE, AND DIMENSIONS OF COMPLETED MASONRY AS INDICATED. MAKE FORMS SUFFICIENTLY TIGHT TO PREVENT LEAKAGE OF MORTAR AND GROUT. BRACE, TIE, AND SUPPORT FORMS TO MAINTAIN POSITION AND SHAPE DURING CONSTRUCTION AND CURING OF REINFORCED MASONRY.
2. DO NOT REMOVE FORMS AND SHORES UNTIL REINFORCED MASONRY MEMBERS HAVE HARDENED SUFFICIENTLY TO CARRY THEIR OWN WEIGHT AND OTHER TEMPORARY LOADS THAT MAY BE PLACED ON THEM DURING CONSTRUCTION.
B. PLACING REINFORCEMENT: COMPLY WITH REQUIREMENTS IN ACI 530.1/ASCE 6/TMS 602.
C. GROUTING: DO NOT PLACE GROUT UNTIL ENTIRE HEIGHT OF MASONRY TO BE GROUTED HAS ATTAINED ENOUGH STRENGTH TO RESIST GROUT PRESSURE.
1. COMPLY WITH REQUIREMENTS IN ACI 530.1/ASCE 6/TMS 602 FOR CLEANOUTS AND FOR GROUT PLACEMENT, INCLUDING MINIMUM GROUT SPACE AND MAXIMUM POUR HEIGHT.
2. LIMIT HEIGHT OF VERTICAL GROUT POURS TO NOT MORE THAN 60 INCHES (1520 MM).
3.9 FIELD QUALITY CONTROL
A. INSPECTORS: THE OWNER WILL ENGAGE QUALIFIED INDEPENDENT INSPECTORS TO PERFORM INSPECTIONS AND PREPARE REPORTS. ALLOW INSPECTORS ACCESS TO SCAFFOLDING AND WORK AREAS, AS NEEDED TO PERFORM INSPECTIONS.
1. PLACE GROUT ONLY AFTER INSPECTORS HAVE VERIFIED COMPLIANCE OF GROUT SPACES AND GRADES, SIZES, AND LOCATIONS OF REINFORCEMENT.
B. TESTING AGENCY: THE OWNER WILL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO PERFORM FIELD TESTS AND INSPECTIONS INDICATED BELOW AND PREPARE TEST REPORTS:
1. RETESTING OF MATERIALS FAILING TO COMPLY WITH SPECIFIED REQUIREMENTS SHALL BE DONE AT CONTRACTOR'S EXPENSE.
C. TESTING FREQUENCY: ONE SET OF TESTS FOR EACH 5000 SQ. FT. (465 SQ. M) OF WALL AREA OR PORTION THEREOF.
D. CONCRETE MASONRY UNIT TEST: FOR EACH TYPE OF UNIT PROVIDED, PER ASTM C 140.
E. MORTAR TEST (PROPERTY SPECIFICATION): FOR EACH MIX PROVIDED, PER ASTM C 780. TEST MORTAR FOR COMPRESSIVE STRENGTH.
F. GROUT TEST (COMPRESSIVE STRENGTH): FOR EACH MIX PROVIDED, PER ASTM C 1019.
3.10 REPAIRING, POINTING, AND CLEANING
A. REMOVE AND REPLACE MASONRY UNITS THAT ARE LOOSE, CHIPPED, BROKEN, STAINED, OR OTHERWISE DAMAGED OR THAT DO NOT MATCH ADJOINING UNITS. INSTALL NEW UNITS TO MATCH ADJOINING UNITS; INSTALL IN FRESH MORTAR, POINTED TO ELIMINATE EVIDENCE OF REPLACEMENT.
B. POINTING: DURING THE TOOLING OF JOINTS, ENLARGE VOIDS AND HOLES, EXCEPT WEEP HOLES, AND COMPLETELY FILL WITH MORTAR. POINT UP JOINTS, INCLUDING CORNERS, OPENINGS, AND ADJACENT CONSTRUCTION, TO PROVIDE A NEAT, UNIFORM APPEARANCE. PREPARE JOINTS FOR SEALANT APPLICATION, WHERE INDICATED.
C. IN-PROGRESS CLEANING: CLEAN UNIT MASONRY AS WORK PROGRESSES BY DRY BRUSHING TO REMOVE MORTAR FINS AND SMEARS BEFORE TOOLING JOINTS.
D. FINAL CLEANING: AFTER MORTAR IS THOROUGHLY SET AND CURED, CLEAN EXPOSED MASONRY AS FOLLOWS:
1. REMOVE LARGE MORTAR PARTICLES BY HAND WITH WOODEN PADDLES AND NONMETALLIC SCRAPE HOES OR CHISELS.
2. TEST CLEANING METHODS ON SAMPLE WALL PANEL; LEAVE ONE-HALF OF PANEL UNCLEANED FOR COMPARISON PURPOSES. OBTAIN ARCHITECT'S APPROVAL OF SAMPLE CLEANING BEFORE PROCEEDING WITH CLEANING OF MASONRY.
3. PROTECT ADJACENT STONE AND NONMASONRY SURFACES FROM CONTACT WITH CLEANER BY COVERING THEM WITH LIQUID STRIPPABLE MASKING AGENT OR POLYETHYLENE FILM AND WATERPROOF MASKING TAPE.
4. WET WALL SURFACES WITH WATER BEFORE APPLYING CLEANERS; REMOVE CLEANERS PROMPTLY BY RINSING SURFACES THOROUGHLY WITH CLEAR WATER.
5. CLEAN MASONRY WITH A PROPRIETARY ACIDIC CLEANER APPLIED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
3.11 MASONRY WASTE DISPOSAL
A. SALVAGEABLE MATERIALS: UNLESS OTHERWISE INDICATED, EXCESS MASONRY MATERIALS ARE CONTRACTOR'S PROPERTY. AT COMPLETION OF UNIT MASONRY WORK, REMOVE FROM PROJECT SITE.
B. WASTE DISPOSAL AS FILL MATERIAL: DISPOSE OF CLEAN MASONRY WASTE, INCLUDING EXCESS OR SOIL-CONTAMINATED SAND, WASTE MORTAR, AND BROKEN MASONRY UNITS, BY CRUSHING AND MIXING WITH FILL MATERIAL AS FILL IS PLACED.
1. CRUSH MASONRY WASTE TO LESS THAN 4 INCHES (100 MM) IN EACH DIMENSION.
2. MIX MASONRY WASTE WITH AT LEAST TWO PARTS OF SPECIFIED FILL MATERIAL FOR EACH PART OF MASONRY WASTE. FILL MATERIAL IS SPECIFIED IN DIVISION 31 SECTION "EARTHWORK."
3. DO NOT DISPOSE OF MASONRY WASTE AS FILL WITHIN 18 INCHES (450 MM) OF FINISHED GRADE.
C. EXCESS MASONRY WASTE: REMOVE EXCESS CLEAN MASONRY WASTE THAT CANNOT BE USED AS FILL, AS DESCRIBED ABOVE, AND OTHER MASONRY WASTE, AND LEGALLY DISPOSE OF OFF OWNER'S PROPERTY.

END OF SECTION 04 2013

05 12 00 - STRUCTURAL STEEL FRAMING

PART 1 - GENERAL
1.1 ITEMS REQUIRED BUT NOT SPECIFIED
A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.
1.2 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
1.3 SUMMARY
A. SECTION INCLUDES:
1. STRUCTURAL STEEL FRAMING MEMBERS.
2. GROUTING BASE PLATES.
B. RELATED SECTIONS:
1. SECTION 05 2100; STEEL JOISTS.
2. SECTION 05 3123 STEEL ROOF DECK.
3. SECTION 05 5100 METAL STAIRS.
1.4 REFERENCES
A. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) () - SPECIFICATIONS FOR STRUCTURAL STEEL FOR BUILDINGS.
B. AMERICAN WELDING SOCIETY (AWS) () D1.1 - STRUCTURAL WELDING CODE - STEEL.
C. ASTM INTERNATIONAL (ASTM) ():
1. A36/A36M - STANDARD SPECIFICATION FOR CARBON STRUCTURAL STEEL.
2. A53/A53M - STANDARD SPECIFICATION FOR PIPE, STEEL, BLACK AND HOT-DIPPED, ZINC-COATED, WELDED AND SEAMLESS.
3. A108 - STANDARD SPECIFICATION FOR STEEL BARS, CARBON, COLD-FINISHED, STANDARD QUALITY.
4. A307 - STANDARD SPECIFICATION FOR LOW-CARBON STEEL EXTERNALLY AND INTERNALLY THREADED STANDARD FASTENERS.
5. A325 - STANDARD SPECIFICATION FOR HIGH-STRENGTH BOLTS FOR STRUCTURAL STEEL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS.
6. A500 - STANDARD SPECIFICATION FOR COLD-FORMED WELDED AND SEAMLESS CARBON STEEL STRUCTURAL TUBING IN ROUNDS AND SHAPES.
7. A501 - STANDARD SPECIFICATION FOR HOT-FORMED WELDED AND SEAMLESS CARBON STEEL STRUCTURAL TUBING.
8. A992 - STANDARD SPECIFICATION FOR STEEL FOR STRUCTURAL SHAPES FOR USE IN BUILDING FRAMING.
D. SOCIETY FOR PROTECTIVE COATINGS (SSPC) () - PAINTING MANUAL.
1.5 SUBMITTALS
A. SUBMITTALS FOR REVIEW:
1. SHOP DRAWINGS: INDICATE PROFILES, SIZES, SPACING, AND LOCATION OF STRUCTURAL MEMBERS, OPENINGS, ATTACHMENTS, AND FASTENERS, AND CONNECTIONS NOT DETAILED.
B. QUALITY CONTROL SUBMITTALS:
1. WELDER QUALIFICATIONS: AS REQUIRED BY AWS D1.1.
1.6 QUALITY ASSURANCE
A. WELDER QUALIFICATIONS: AWS D1.1.
B. DESIGN REQUIREMENTS: DESIGN CONNECTIONS NOT DETAILED ON DRAWINGS UNDER SUPERVISION OF A PROFESSIONAL STRUCTURAL ENGINEER EXPERIENCED IN THIS WORK AND REGISTERED IN THE STATE OF UTAH.
1.7 DELIVERY, STORAGE AND HANDLING
A. STORE STEEL ABOVE GROUND ON PLATFORMS, SKIDS, OR OTHER SUPPORTS; SEPARATE WITH WOODEN SEPARATORS.
B. PROTECT STEEL FROM CORROSION.
C. PREVENT DAMAGE TO PRIME COAT; USE WOODEN PROTECTORS TO PREVENT DAMAGE FROM CHAIN OR CABLE CINCHES.
PART 2 - PRODUCTS
2.1 MATERIALS
A. STEEL:
1. WIDE FLANGE SECTION: ASTM A992 (50 KSI)
2. SHAPES, BARS, AND PLATES: ASTM A36/A36M.
3. HOLLOW STRUCTURAL SECTIONS: ASTM A500, GRADE B.
4. PIPE: ASTM A53/A53M, GRADE B.
5. DEFORMED BAR ANCHORS (DBA): ASTM A496
6. SHEAR CONNECTORS: ASTM A108.
2.2 ACCESSORIES
A. ANCHOR BOLTS:
1. GRAVITY COLUMNS: ASTM F1554, GRADE 36 WITH ASTM A563 HEAVY HEX NUTS AND ASTM F436 HARDENED WASHERS GRADE A.
2. MOMENT FRAME COLUMNS: ASTM F1554, GRADE 55 (OR 105) WITH ASTM A563 HEAVY HEX NUTS AND ASTM F436 HARDENED WASHERS GRADE A
B. HIGH STRENGTH BOLTS: ASTM A325, TYPE 1, UNCOATED AND ASTM A563 NUTS AND ASTM F436 HARDENED WASHERS.
C. STANDARD BOLTS: ASTM A307, GRADE A.
D. PRIMER PAINT: SSPC PAINT 15, TYPE 1, RED OXIDE.
E. NON SHRINK GROUT: PREMIXED, CONSISTING OF NON-METALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICIZING AGENTS; MINIMUM 7,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
F. WELDING MATERIALS: AWS D1.1, TYPE REQUIRED FOR MATERIALS BEING WELDED.
2.3 FABRICATION
A. FABRICATE STRUCTURAL STEEL IN ACCORDANCE WITH AISC MANUAL.
B. WELDING: AWS D1.1. STRESS RELIEVE WELDED ASSEMBLIES BY HEAT TREATMENT.
C. WHERE COLLECTION OF WATER INSIDE STRUCTURAL TUBING COULD OCCUR, PROVIDE DRAIN HOLE AT LOWEST POINT.
D. CAP OPEN ENDS OF TUBES AND SEAL WELD. WHEREVER PRACTICAL, WELD CONNECTIONS ALL AROUND. SEAL SEAMS THAT CANNOT BE PRACTICALLY WELDED WITH JOINT SEALER.
E. SHOP PAINTING:
1. SHOP PRIME STEEL SURFACES EXCEPT:
a. SURFACES TO BE WELDED.
b. CONTACT SURFACES OF HIGH STRENGTH FRICTION TYPE BOLTED CONNECTIONS.
2. SURFACE PREPARATION: SSPC METHOD SP2 - HAND TOOL CLEANING OR METHOD SP3 - POWER TOOL CLEANING.
3. APPLICATION: ONE COAT; FOLLOW COATING MANUFACTURER'S INSTRUCTIONS.
4. MINIMUM DRY FILM THICKNESS: 2.0 MILS.
PART 3 - EXECUTION
3.1 ERECTION OF STRUCTURAL STEEL
A. ERECT STRUCTURAL STEEL IN ACCORDANCE WITH AISC SPECIFICATIONS.
B. ACCURATELY ASSEMBLE TO LINES AND ELEVATIONS INDICATED, WITHIN SPECIFIED ERECTION TOLERANCES.
C. ALIGN AND ADJUST MEMBERS FORMING PARTS OF COMPLETE FRAME OR STRUCTURE AFTER ASSEMBLY BUT BEFORE FASTENING.
D. PROVIDE TEMPORARY SHORING AND BRACING MEMBERS WITH CONNECTIONS OF SUFFICIENT STRENGTH TO RESIST IMPOSED LOADS.
E. ALIGN COLUMN BASES WITH LEVELING BOLTS.
F. ALIGN BEARING PLATES WITH WEDGES OR SHIMS.

05 12 00 - STRUCTURAL STEEL FRAMING (CONT.)

G. FASTEN SPLICES OF COMPRESSION MEMBERS AFTER ABUTTING SURFACES HAVE BEEN BROUGHT COMPLETELY INTO CONTACT.
H. CLEAN BEARING SURFACES AND SURFACES THAT WILL BE IN PERMANENT CONTACT BEFORE MEMBERS ARE ASSEMBLED.
I. LOCATE SPLICES ONLY WHERE INDICATED.
J. TIGHTEN ERECTION BOLTS AND LEAVE IN PLACE.
K. DO NOT CORRECT FABRICATION BY GAS CUTTING ON MAJOR MEMBERS.
L. REMOVE TEMPORARY SHORING AND BRACING MEMBERS AFTER PERMANENT MEMBERS ARE IN PLACE AND FINAL CONNECTIONS HAVE BEEN MADE.
M. INSTALLATION TOLERANCES:
1. MAXIMUM VARIATION FROM PLUMB: ¼ INCH PER STORY, NONCUMULATIVE.
2. MAXIMUM VARIATION FROM LEVEL: ¼ INCH IN 10 FEET, NONCUMULATIVE.
3. MAXIMUM OFFSET FROM ALIGNMENT OF ADJACENT MEMBERS: ¼ INCH.
3.2 PLACEMENT OF GROUT
A. REMOVE LOOSE AND FOREIGN MATTER FROM CONCRETE; LIGHTLY ROUGHEN BONDING SURFACE.
B. REMOVE FOREIGN MATERIALS FROM STEEL SURFACES; ALIGN AND LEVEL MEMBERS IN FINAL POSITION.
C. JUST PRIOR TO GROUTING, THOROUGHLY WET CONCRETE SURFACES; REMOVE EXCESS WATER.
D. MIX GROUT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. DO NOT RETEMPER.
E. PLACE GROUT CONTINUOUSLY, BY MOST PRACTICAL MEANS; AVOID ENTRAPPED AIR. DO NOT VIBRATE GROUT.
F. DO NOT REMOVE LEVELING SHIMS FOR AT LEAST 48 HOURS AFTER GROUTING. AFTER REMOVING SHIMS, FILL VOIDS WITH SAND-CEMENT GROUT.
3.3 FIELD QUALITY CONTROL
A. OWNER WILL ENGAGE A CERTIFIED TESTING AGENCY TO PERFORM FIELD TESTS.
B. TESTING AND INSPECTION SERVICES:
1. INSPECT STEEL ELEMENTS FOR CONFORMANCE TO SPECIFIED REQUIREMENTS INCLUDING:
a. LOCATION AND ADEQUACY OF BRACING.
b. LOCATION AND SET OF ANCHOR BOLTS AND OTHER INSERTS.
c. ALIGNMENT, PLUMB, CAMBER, AND OTHER REQUIRED ATTRIBUTES.
2. INSPECT HIGH STRENGTH BOLTED CONSTRUCTION IN ACCORDANCE WITH AISC SPECIFICATION AND AS FOLLOWS:
a. VISUALLY INSPECT HIGH STRENGTH BOLTED CONNECTIONS.
b. CHECK AT LEAST TWO BOLTS OF EVERY THIRD CONNECTION WITH CALIBRATED TORQUE WRENCH FOR PROPER TORQUE.
3. INSPECT FIELD WELDS IN ACCORDANCE WITH AWS D1.1 AND AS FOLLOWS:
a. VISUALLY INSPECT WELDS.
b. TEST FULL PENETRATION WELDS BY ULTRASONIC METHOD IN ACCORDANCE WITH ASTM E164.
4. MAKE ONE SET OF SIX TEST CUBES FOR EACH 1/3 CUBIC YARD OF GROUT PLACED OR FRACTION THEREOF:
a. MOLD AND TEST CUBES IN ACCORDANCE WITH ASTM C109; THREE AT 7 DAYS AND THREE AT 28 DAYS.
b. RESTRAIN GROUT FROM EXPANSION BY USE OF TOP PLATE.
3.4 ADJUSTING
A. TOUCH UP BOLT HEADS, NUTS, FIELD WELDS, AND ABRASIONS IN SHOP COATING WITH SAME PRIMER USED IN SHOP.

END OF SECTION 05 1200

05 50 00 - METAL FABRICATIONS

PART 1 - GENERAL
1.1 SUMMARY
A. SECTION INCLUDES:
1. SHOP FABRICATED METAL COMPONENTS.
2. GRATINGS.
3. LADDERS AND SAFETY CAGES.
4. GUARD RAILS AND HANDRAILS.
5. BOLLARDS.
B. RELATED SECTIONS:
1. DIVISION 01: ADMINISTRATIVE, PROCEDURAL, AND TEMPORARY WORK REQUIREMENTS.
1.2 REFERENCES
A. AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA) ():
1. 611 - VOLUNTARY SPECIFICATION FOR ANODIZED ARCHITECTURAL ALUMINUM.
2. 2603 - VOLUNTARY SPECIFICATION, PERFORMANCE REQUIREMENTS AND TEST PROCEDURES FOR PIGMENTED ORGANIC COATINGS ON ARCHITECTURAL EXTRUSIONS AND PANELS.
3. 2604 - VOLUNTARY SPECIFICATION, PERFORMANCE REQUIREMENTS AND TEST PROCEDURES FOR HIGH PERFORMANCE ORGANIC COATINGS ON ARCHITECTURAL EXTRUSIONS AND PANELS.
4. 2605 - VOLUNTARY SPECIFICATION, PERFORMANCE REQUIREMENTS AND TEST PROCEDURES FOR SUPERIOR PERFORMING ORGANIC COATINGS ON ARCHITECTURAL EXTRUSIONS AND PANELS.
B. AMERICAN WELDING SOCIETY (AWS) ():
1. D1.1 - STRUCTURAL WELDING CODE - STEEL.
2. D1.2 - STRUCTURAL WELDING CODE - ALUMINUM.
3. D1.6 - STRUCTURAL WELDING CODE - STAINLESS STEEL.
C. ASTM International (ASTM) ():
1. A36/A36M - STANDARD SPECIFICATION FOR CARBON STRUCTURAL STEEL.
2. A47/A47M - STANDARD SPECIFICATION FOR FERRITIC MALLEABLE IRON CASTINGS.
3. A48/A48M - STANDARD SPECIFICATION FOR GRAY IRON CASTINGS.
4. A108 - STANDARD SPECIFICATION FOR STEEL BARS, CARBON, COLD-FINISHED, STANDARD QUALITY.
5. A123/A123M - STANDARD SPECIFICATION FOR ZINC (HOT-GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS.
6. A167 - STANDARD SPECIFICATION FOR STAINLESS AND HEAT-RESISTING CHROMIUM-NICKEL STEEL PLATE, SHEET, AND STRIP.
7. A283 - STANDARD SPECIFICATION FOR LOW AND INTERMEDIATE TENSILE STRENGTH CARBON STEEL PLATES, SHAPES AND BARS.
8. A307 - STANDARD SPECIFICATION FOR CARBON STEEL EXTERNALLY THREADED STANDARD FASTENERS.
9. A354 - STANDARD SPECIFICATION FOR QUENCHED AND TEMPERED ALLOY STEEL BOLTS, STUDS, AND OTHER EXTERNALLY THREADED FASTENERS.
10. A500 - STANDARD SPECIFICATION FOR COLD-FORMED WELDED AND SEAMLESS CARBON STEEL STRUCTURAL TUBING IN ROUNDS AND SHAPES.
11. A501 - STANDARD SPECIFICATION FOR HOT-FORMED WELDED AND SEAMLESS CARBON STEEL STRUCTURAL TUBING.
12. A510 - STANDARD SPECIFICATION FOR GENERAL REQUIREMENTS FOR WIRE RODS AND COARSE ROUND WIRE, GALVANIZED STEEL.
13. A780 - STANDARD PRACTICE FOR REPAIR OF DAMAGED AND UNCOATED AREAS OF HOT-DIP GALVANIZED COATINGS.
14. A1008/A1008M - STANDARD SPECIFICATION FOR STEEL, SHEET, COLD-ROLLED, CARBON, STRUCTURAL, HIGH-STRENGTH LOW-ALLOY AND HIGH-STRENGTH LOW-ALLOY WITH IMPROVED FORMABILITY.
15. A1011/A1011M - STANDARD SPECIFICATION FOR STEEL, SHEET AND STRIP, HOT-ROLLED, CARBON, STRUCTURAL, HIGH-STRENGTH, LOW-ALLOY AND HIGH-STRENGTH LOW-ALLOY WITH IMPROVED FORMABILITY.
16. B209 - STANDARD SPECIFICATION FOR ALUMINUM AND ALUMINUM-ALLOY SHEET AND PLATE.
17. B221 - STANDARD SPECIFICATION FOR ALUMINUM AND ALUMINUM-ALLOY EXTRUDED BARS, RODS, WIRE, PROFILES, AND TUBES.
18. B241 - STANDARD SPECIFICATION FOR ALUMINUM-ALLOY SEAMLESS PIPE AND SEAMLESS EXTRUDED TUBE.
19. E985 - STANDARD SPECIFICATION FOR PERMANENT METAL RAILING SYSTEMS AND RAILS FOR BUILDINGS.
D. NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (NAAMM) ():
1. AMP 503 - FINISHES FOR STAINLESS STEEL.
2. MBG 531 - METAL BAR GRATING MANUAL.
E. SOCIETY FOR PROTECTIVE COATINGS (SSPC) () - PAINTING MANUAL
1.3 SYSTEM DESCRIPTION
A. MINIMUM DESIGN LOADS:
1. PEDESTRIAN LOADING:
a. UNIFORM LOAD OF [100] [__] PSF.
b. CONCENTRATED LOAD OF [300] [__] POUNDS.
c. MAXIMUM DEFLECTION UNDER LOADING: [L/180.] [L/240.]
2. VEHICULAR LOADING:
a. UNIFORM LOAD OF [500] [__] PSF.
b. CONCENTRATED LOAD OF [2000] [__] POUNDS.
c. MAXIMUM DEFLECTION UNDER LOADING: [L/180.] [L/240.]
3. GUARD RAILS AND HANDRAILS:
a. [50] [__] POUNDS PER LINEAR FOOT APPLIED IN ANY DIRECTION AT TOP, TRANSFERRED VIA ATTACHMENTS AND SUPPORTS TO BUILDING STRUCTURE.
b. CONCENTRATED [200] [__] POUND LOAD APPLIED IN ANY DIRECTION AT ANY POINT ALONG TOP, TRANSFERRED VIA ATTACHMENTS AND SUPPORTS TO BUILDING STRUCTURE.
c. MAXIMUM DEFLECTION UNDER LOADING: [L/120.] [__.]
4. CONCENTRATED AND UNIFORM LOADS DO NOT NEED TO BE APPLIED SIMULTANEOUSLY.
B. FABRICATE GUARD RAILS AND HANDRAILS IN ACCORDANCE WITH ASTM E985.
1.4 SUBMITTALS
A. SUBMITTALS FOR REVIEW:
1. SHOP DRAWINGS: SHOW DIMENSIONS, METAL THICKNESSES, FINISHES, JOINTS, ATTACHMENTS, AND RELATIONSHIP OF WORK TO ADJACENT CONSTRUCTION.
B. SUSTAINABLE DESIGN SUBMITTALS:
1. RECYCLED CONTENT.
2. REGIONAL MATERIALS.
1.5 QUALITY ASSURANCE
A. FABRICATOR QUALIFICATIONS: MINIMUM [__] YEARS [DOCUMENTED] EXPERIENCE IN WORK OF THIS SECTION.
B. MOCKUP:
1. PROVIDE MOCKUP OF [____].
2. SIZE: [____].
3. SHOW: [____].
4. LOCATE [WHERE DIRECTED.] [____.]
5. APPROVED MOCKUP MAY [NOT] REMAIN AS PART OF THE WORK.
PART 2 - PRODUCTS
2.1 MANUFACTURERS
A. ACCEPTABLE MANUFACTURERS - [____]:
1. [____].
2. [____].
3. [____].
B. SUBSTITUTIONS: [UNDER PROVISIONS OF DIVISION 01.] [NOT PERMITTED.]
2.2 MATERIALS - STEEL
A. SHAPES: ASTM A36/A36M.
B. PLATE: ASTM A283.
C. CHECKERED PLATE: ASTM A1011/A1011M, [DIAMOND] [____] PATTERN.
D. SHEET: ASTM A1008/A1008M.
E. PIPE: ASTM A501.
F. TUBE: ASTM A500.
G. BARS: ASTM A108.
H. RECYCLED CONTENT: MINIMUM [75] [__] PERCENT, WITH MINIMUM [40] [__] PERCENT CLASSIFIED AS POST CONSUMER.
2.3 MATERIALS - CAST IRON
A. CAST IRON: ASTM A48/A48M, CLASS 30, OR ASTM A47/A47M.
2.4 MATERIALS - ALUMINUM
A. EXTRUSIONS: ASTM B221, 6063-T5 ALLOY AND TEMPER.
B. SHEET: ASTM B209, ALLOY AND TEMPER BEST SUITED TO APPLICATION.
C. PIPE: ASTM B241, EXTRUDED, ANODIZING QUALITY, 6063 ALUMINUM PIPE, SCHEDULE 40.
D. RECYCLED CONTENT: MINIMUM [75] [__] PERCENT, WITH MINIMUM [40] [__] PERCENT CLASSIFIED AS POST CONSUMER.
2.5 MATERIALS - STAINLESS STEEL
A. STAINLESS STEEL: ASTM A167, TYPE [304] [OR] [316], ROLLABLE TEMPER.
B. BOLTS, NUTS AND WASHERS: ASTM A354.
C. RECYCLED CONTENT: MINIMUM [75] [__] PERCENT, WITH MINIMUM [40] [__] PERCENT CLASSIFIED AS POST CONSUMER.
2.6 MATERIALS - BAR GRATINGS
A. FORMED STEEL SHEET FOR [WELDING:] [RIVETING:] [PRESSURE LOCKING:] ASTM A1011/A1011M, [RECTANGULAR] [____] SHAPE.
B. STEEL ROD FOR CROSS BARS: ASTM A510.
C. ALUMINUM FOR [RIVETING] [PRESSURE LOCKING]: ASTM B221, [RECTANGULAR] [____] SHAPE.
D. RECYCLED CONTENT: MINIMUM [75] [__] PERCENT, WITH MINIMUM [40] [__] PERCENT CLASSIFIED AS POST CONSUMEr.
2.7 ACCESSORIES
A. EXPOSED SCREWS: SAME MATERIAL AS METAL BEING FASTENED; PHILLIPS FLAT HEAD, COUNTERSUNK, UNLESS NOTED OTHERWISE.
B. BOLTS: ASTM A307, HEXAGONAL HEAD TYPE.
C. PRIMER PAINT: SSPC PAINT 15, TYPE 1, RED OXIDE.
D. ANCHORING CEMENT: [NON-SHRINK CEMENTITIOUS] [TWO COMPONENT EPOXY] TYPE.
2.8 FABRICATION
A. FIT AND SHOP ASSEMBLE ITEMS IN LARGEST PRACTICAL SECTIONS, FOR DELIVERY TO SITE.
B. FABRICATE ITEMS WITH JOINTS TIGHTLY FITTED AND SECURED.
C. GRIND EXPOSED JOINTS FLUSH AND SMOOTH WITH ADJACENT FINISH SURFACE. MAKE EXPOSED JOINTS BUTT TIGHT, FLUSH, AND HAIRLINE. EASE EXPOSED EDGES TO SMALL UNIFORM RADIUS.
D. EXPOSED MECHANICAL FASTENINGS: FLUSH COUNTERSUNK SCREWS OR BOLTS, UNOBTRUSIVELY LOCATED, CONSISTENT WITH DESIGN OF COMPONENT EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE.
E. SUPPLY COMPONENTS REQUIRED FOR ANCHORAGE OF FABRICATIONS. FABRICATE ANCHORS AND RELATED COMPONENTS OF SAME MATERIAL AND FINISH AS FABRICATION, EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE.
F. CONCEAL FASTENINGS WHERE POSSIBLE.
G. WELDING TO CONFORM TO AWS [D1.1] [D1.2] [D1.6].
1. USE WELDS FOR PERMANENT CONNECTIONS WHERE POSSIBLE. GRIND EXPOSED WELDS SMOOTH.
2. TACK WELDS PROHIBITED ON EXPOSED SURFACES.
2.9 FINISHES
A. [EXTERIOR] FERROUS METAL: GALVANIZED; ASTM A123/A123M, TO [1.3] [2.0] [__] OUNCES PER SQUARE FOOT.
B. [INTERIOR] FERROUS METAL:
1. SHOP PAINTED EXCEPT STEEL TO BE ENCASED IN CONCRETE AND SURFACES TO BE WELDED.
2. SURFACE PREPARATION: SSPC SP2 - HAND TOOL CLEANING OR SP3 - POWER TOOL CLEANING.
3. APPLICATION: ONE COAT; FOLLOW COATING MANUFACTURER'S INSTRUCTIONS.
4. MINIMUM DRY FILM THICKNESS: [2.0] [__] MILS.
C. ALUMINUM: MILL FINISH.
D. ALUMINUM: AAMA 611; ARCHITECTURAL CLASS [I] [II] ANODIZED, CLEAR.
E. ALUMINUM: AAMA 611, ARCHITECTURAL CLASS [I] [II] ANODIZED, [LIGHT] [MEDIUM] [DARK] BRONZE] [BLACK] [____] COLOR.
F. ALUMINUM: AAMA 2605 FLUOROPOLYMER COATING CONTAINING MINIMUM [50] [70] PERCENT POLYVINYLIDENE RESINS, [TWO] [THREE] [FOUR] COAT SYSTEM, [CUSTOM] [____] COLOR [TO BE SELECTED FROM MANUFACTURER'S FULL COLOR RANGE].

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DD	05/03/2023	MHW	RJS	PERMIT SET
AA	04/07/2023	SN	JHP	PROGRESS SET
X	03/13/2023	AE	JHP	MISC. METAL & FLOORING BID
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT
L	01/04/2023	MHW	JHP	BID

DRAWN: Author — DATE: 01/28/20
APPROVED: Approver — 05/03/2023
BUILDING: 4013
PROJECT NO.: 11025607 — PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
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ARCHITECTURE
ARCHITECTURAL SPECIFICATIONS

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DRAWING SIZE: ANSI E (44" x 34") — SHEET OF 193

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05 50 00 - METAL FABRICATIONS (CONT.)

G. ALUMINUM: AAMA [2603 THERMOSETTING MODIFIED ACRYLIC ENAMEL] [2604 POLYESTER ENAMEL] COATING, [CUSTOM] [____] COLOR [TO BE SELECTED FROM MANUFACTURER'S FULL COLOR RANGE].
H. STAINLESS STEEL: NAAMM AMP 503; [NO. 4 SATIN.] [NO. 8 MIRROR POLISHED.] [____.]
PART 3 - EXECUTION
3.1 INSTALLATION
A. INSTALL ITEMS IN ACCORDANCE WITH APPROVED SHOP DRAWINGS.
B. INSTALL COMPONENTS PLUMB, LEVEL, AND RIGID.
C. WELDING: AWS [D1.1] [D1.2] [D1.6]. GRIND AND FILL EXPOSED WELDS; FINISH SMOOTH AND FLUSH.
D. INSTALL SLEEVED COMPONENTS WITH ANCHORING CEMENT.
E. PREVENT CONTACT OF [EXTERIOR] ALUMINUM AND DISSIMILAR METALS BY USE OF ZINC RICH PAINT, BITUMINOUS COATING, OR NON-ABSORPTIVE GASKETS.
3.2 ADJUSTING
A. CLEAN AND TOUCH UP DAMAGED PRIMER PAINT WITH SAME PRODUCT AS APPLIED IN SHOP.
B. CLEAN AND TOUCH UP GALVANIZED COATINGS AT WELDED AND ABRADED SURFACES IN ACCORDANCE WITH ASTM A780, ANNEX [A1.] [A2.] [A3.]
3.3 SCHEDULE
A. THIS SCHEDULE INCLUDES PRINCIPAL ITEMS ONLY; REFER TO DRAWINGS FOR ADDITIONAL ITEMS NOT LISTED.
B. GUARD RAILS AND HANDRAILS:
1. FABRICATE FROM [ALUMINUM] [STEEL] [STAINLESS STEEL] [PIPE] [OR] [TUBE] STOCK OF SIZES [AND TYPES] INDICATED.
2. MAKE BENDS UNIFORM AND FREE FROM BUCKLES AND OTHER DEFECTS.
3. CUT INTERSECTIONS SQUARE TO WITHIN [2] [__] DEGREES AND TO LENGTH WITHIN [1/8] [__] INCH. REMOVE BURRS FROM CUT ENDS.
4. MITER AND COPE INTERSECTIONS WITHIN [2] [__] DEGREES, FIT TO WITHIN [1/8] [__] INCH.
5. CONTINUOUSLY WELD CONNECTIONS.
6. WHERE LENGTH EXCEEDS THAT SUITABLE FOR SHIPPING AND HANDLING, FABRICATE IN SECTIONS WITH CONCEALED INTERNAL SLEEVES FORMING SLIP JOINTS. EXTEND SLEEVES MINIMUM [2] [__] INCHES ON BOTH SIDES OF JOINT; FIELD WELD AND GRIND SMOOTH.
C. LADDERS:
1. SIDE RAILS: CONTINUOUS STEEL FLAT BARS, [1/2 X 2-1/2] [__ X __] INCHES, EASED EDGES, SPACED [18] [__] INCHES APART.
2. RUNGS: ROUND STEEL BARS, [3/4] [__] INCH DIAMETER, SPACED [12] [__] INCHES ON CENTER. FIT RUNGS IN CENTERLINE OF SIDE RAILS AND PLUG WELD ON OUTER RAIL FACE.
3. SUPPORT LADDERS AT TOP, BOTTOM, AND AT INTERMEDIATE POINTS SPACED MAXIMUM [5'-0"] [__] ON CENTER WITH STEEL BRACKETS, WELDED OR BOLTED TO SUPPORTS.
D. LADDER SAFETY CAGES:
1. PRIMARY HOOPS: [5/16 X 4] [__ X __] INCH STEEL BARS AT TOP, BOTTOM, AND AT INTERMEDIATE HOOPS SPACED MAXIMUM [20'-0"] [__] ON CENTER.
2. SECONDARY INTERMEDIATE HOOPS: [5/16 X 2] [__ X __] INCH STEEL BARS SPACED MAXIMUM [48] [__] INCHES ON CENTER BETWEEN PRIMARY HOOPS.
3. VERTICAL BARS: [5/16 X 2 [__ X __] INCH STEEL BARS SECURED TO EACH HOOP, SPACED APPROXIMATELY [9] [__] INCHES ON CENTER.
E. BAR GRATING:
1. NAAMM MBG 531, [WELDED] [RIVETED] [PRESSURE LOCKED] TYPE.
2. FABRICATE SUPPORTING FRAME FOR OPENING SIZE AND CONFIGURATION.
3. BEARING BARS: [__] INCHES DEEP X [__] INCHES WIDE, SPACED [__] INCHES ON CENTER.
4. CROSS BARS: SPACED [__] INCHES ON CENTER.
5. TOP SURFACE: [NON SLIP.] [SERRATED.] [RAISED LUG.] [____.]
F. NOSINGS FOR EXTERIOR CONCRETE STEPS: CAST [IRON,] [ALUMINUM,] CROSS HATCHED [ABRASIVE] SURFACE, [1/4] [1] [__] INCH NOSING, [3] [4] [6] [__] INCHES DEEP X STEP WIDTH LESS [6] [__] INCHES.
G. BOLLARDS:
1. FABRICATE FROM STEEL PIPE OF SIZES INDICATED.
2. SET INTO CONCRETE FOOTING.
3. FILL PIPE WITH CONCRETE; ROD TO CONSOLIDATE. DOME TOP TO SHED WATER.
H. PERFORATED SHEET:
1. [__] INCH THICK [STEEL] [STAINLESS STEEL] [ALUMINUM] SHEET WITH [__] INCH [ROUND] [SQUARE] [____] HOLES AT [__] INCHES ON [STAGGERED] [STRAIGHT] CENTERS.
2. SOURCE: [____] BY [____] OR APPROVED SUBSTITUTE.

END OF SECTION 05 50 00

05 50 10 - METAL STAIRS

PART 1 - GENERAL
1.1 ITEMS REQUIRED BUT NOT SPECIFIED
A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.
1.2 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
1.3 SUMMARY
A. THIS SECTION INCLUDES THE FOLLOWING:
1. INDUSTRIAL-TYPE STAIRS WITH STEEL GRATING TREADS. INTERIOR AND EXTERIOR.
B. RELATED SECTIONS INCLUDE THE FOLLOWING:
1. DIVISION 5 SECTION "PIPE AND TUBE RAILINGS" FOR PIPE AND TUBE RAILINGS.
2. DIVISION 5 SECTION "PIPE AND TUBE RAILINGS" FOR PIPE AND TUBE RAILINGS NOT ATTACHED TO METAL STAIRS OR TO WALLS ADJACENT TO METAL STAIRS.
1.4 PERFORMANCE REQUIREMENTS
A. STRUCTURAL PERFORMANCE OF STAIRS: PROVIDE METAL STAIRS CAPABLE OF WITHSTANDING THE EFFECTS OF GRAVITY LOADS AND THE FOLLOWING LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED:
1. UNIFORM LOAD: 100 LBF/SQ. FT. (4.79 KN/SQ. M).
2. CONCENTRATED LOAD: 300 LBF (1.33 KN) APPLIED ON AN AREA OF 4 SQ. IN. (2580 SQ. MM).
3. UNIFORM AND CONCENTRATED LOADS NEED NOT BE ASSUMED TO ACT CONCURRENTLY.
4. STAIR FRAMING: CAPABLE OF WITHSTANDING STRESSES RESULTING FROM RAILING LOADS IN ADDITION TO LOADS SPECIFIED ABOVE.
5. LIMIT DEFLECTION OF TREADS, PLATFORMS, AND FRAMING MEMBERS TO L/240 OR 1/4 INCH (6.4 MM), WHICHEVER IS LESS.
B. SEISMIC PERFORMANCE: PROVIDE METAL STAIRS CAPABLE OF WITHSTANDING THE EFFECTS OF EARTHQUAKE MOTIONS DETERMINED ACCORDING TO ASCE 7, "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES": SECTION 9, "EARTHQUAKE LOADS.".
1. SEE DRAWING S0.01 FOR GENERAL DESIGN LOAD CRITERIA.
1.5 SUBMITTALS
A. PRODUCT DATA: SEE DIVISION 1 REQUIREMENTS. FOR METAL STAIRS AND THE FOLLOWING:
1. GROUT.
B. SHOP DRAWINGS: INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK.
C. WELDING CERTIFICATES.
1.6 QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS: FABRICATOR OF PRODUCTS.
B. NAAMM STAIR STANDARD: COMPLY WITH "RECOMMENDED VOLUNTARY MINIMUM STANDARDS FOR FIXED METAL STAIRS" IN NAAMM AMP 510, "METAL STAIRS MANUAL," FOR CLASS OF STAIR DESIGNATED, UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED.
1. INDUSTRIAL-TYPE STAIRS: INDUSTRIAL CLASS.
C. WELDING: QUALIFY PROCEDURES AND PERSONNEL ACCORDING TO THE FOLLOWING:
1. AWS D1.1, "STRUCTURAL WELDING CODE--STEEL."
2. AWS D1.3, "STRUCTURAL WELDING CODE--SHEET STEEL."
1.7 COORDINATION
A. COORDINATE INSTALLATION OF ANCHORAGES FOR METAL STAIRS. FURNISH SETTING DRAWINGS, TEMPLATES, AND DIRECTIONS FOR INSTALLING ANCHORAGES, INCLUDING SLEEVES, CONCRETE INSERTS, ANCHOR BOLTS, AND ITEMS WITH INTEGRAL ANCHORS, THAT ARE TO BE EMBEDDED IN CONCRETE OR MASONRY. DELIVER SUCH ITEMS TO PROJECT SITE IN TIME FOR INSTALLATION.
B. COORDINATE LOCATIONS OF HANGER RODS AND STRUTS WITH OTHER WORK SO THAT THEY WILL NOT ENCROACH ON REQUIRED STAIR WIDTH AND WILL BE WITHIN THE FIRE-RESISTANCE-RATED STAIR ENCLOSURE.
PART 2 - PRODUCTS
2.1 METALS, GENERAL
A. METAL SURFACES, GENERAL: PROVIDE MATERIALS WITH SMOOTH, FLAT SURFACES, UNLESS OTHERWISE INDICATED. FOR COMPONENTS EXPOSED TO VIEW IN THE COMPLETED WORK, PROVIDE MATERIALS WITHOUT SEAM MARKS, ROLLER MARKS, ROLLED TRADE NAMES, OR BLEMISHES.
2.2 FERROUS METALS
A. STEEL PLATES, SHAPES, AND BARS: ASTM A 36/A 36M.
B. STEEL TUBING: ASTM A 500 (COLD FORMED).
C. STEEL BARS FOR GRATING TREADS: ASTM A 36/A 36M.
D. WIRE ROD FOR GRATING CROSSBARS: ASTM A 510 (ASTM A 510M).
E. UNCOATED, COLD-ROLLED STEEL SHEET: ASTM A 1008/A 1008M, EITHER COMMERCIAL STEEL, TYPE B, OR STRUCTURAL STEEL, GRADE 25 (GRADE 170), UNLESS ANOTHER GRADE IS REQUIRED BY DESIGN LOADS; EXPOSED.
F. ROLLED-STEEL FLOOR PLATE: ASTM A 786/A 786M, ROLLED FROM PLATE COMPLYING WITH ASTM A 36/A 36M OR ASTM A 283/A 283M, GRADE C OR D.
2.3 FASTENERS
A. GENERAL: PROVIDE ZINC-PLATED FASTENERS WITH COATING COMPLYING WITH ASTM B 633, CLASS FE/ZN 25. SELECT FASTENERS FOR TYPE, GRADE, AND CLASS REQUIRED.
B. BOLTS AND NUTS: REGULAR HEXAGON-HEAD BOLTS, ASTM A 307, GRADE A (ASTM F 568M, PROPERTY CLASS 4.6); WITH HEX NUTS, ASTM A 563 (ASTM A 563M); AND, WHERE INDICATED, FLAT WASHERS.
C. ANCHOR BOLTS: ASTM F 1554, GRADE 36.
1. PROVIDE HOT-DIP OR MECHANICALLY DEPOSITED, ZINC-COATED ANCHOR BOLTS.
D. EXPANSION ANCHORS: ANCHOR BOLT AND SLEEVE ASSEMBLY WITH CAPABILITY TO SUSTAIN, WITHOUT FAILURE, A LOAD EQUAL TO SIX TIMES THE LOAD IMPOSED WHEN INSTALLED IN UNIT MASONRY AND FOUR TIMES THE LOAD IMPOSED WHEN INSTALLED IN CONCRETE, AS DETERMINED BY TESTING ACCORDING TO ASTM E 488, CONDUCTED BY A QUALIFIED INDEPENDENT TESTING AGENCY.
1. MATERIAL FOR ANCHORS: ALLOY GROUP 1 (A1) STAINLESS-STEEL BOLTS COMPLYING WITH ASTM F 593 (ASTM F 738M) AND NUTS COMPLYING WITH ASTM F 594 (ASTM F 836M).
2.4 MISCELLANEOUS MATERIALS
A. WELDING RODS AND BARE ELECTRODES: SELECT ACCORDING TO AWS SPECIFICATIONS FOR METAL ALLOY WELDED.
B. UNIVERSAL SHOP PRIMER: FAST-CURING, LEAD- AND CHROMATE-FREE, UNIVERSAL MODIFIED-ALKYD PRIMER COMPLYING WITH MPI#79.
1. USE PRIMER WITH A VOC CONTENT OF 420 G/L (3.5 LB/GAL.) OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).
C. BITUMINOUS PAINT: COLD-APPLIED ASPHALT EMULSION COMPLYING WITH ASTM D 1187.
D. NONSHRINK, NONMETALLIC GROUT: FACTORY-PACKAGED, NONSTAINING, NONCORROSIVE, NONGASEOUS GROUT COMPLYING WITH ASTM C 1107. PROVIDE GROUT SPECIFICALLY RECOMMENDED BY MANUFACTURER FOR INTERIOR AND EXTERIOR APPLICATIONS.
2.5 FABRICATION, GENERAL
A. PROVIDE COMPLETE STAIR ASSEMBLIES, INCLUDING METAL FRAMING, HANGERS, STRUTS, CLIPS, BRACKETS, BEARING PLATES, AND OTHER COMPONENTS NECESSARY TO SUPPORT AND ANCHOR STAIRS AND PLATFORMS ON SUPPORTING STRUCTURE.
1. JOIN COMPONENTS BY WELDING, UNLESS OTHERWISE INDICATED.
2. USE CONNECTIONS THAT MAINTAIN STRUCTURAL VALUE OF JOINED PIECES.
B. PREASSEMBLED STAIRS: ASSEMBLE STAIRS IN SHOP TO GREATEST EXTENT POSSIBLE. DISASSEMBLE UNITS ONLY AS NECESSARY FOR SHIPPING AND HANDLING LIMITATIONS. CLEARLY MARK UNITS FOR REASSEMBLY AND COORDINATED INSTALLATION.
C. CUT, DRILL, AND PUNCH METALS CLEANLY AND ACCURATELY. REMOVE BURRS AND EASE EDGES TO A RADIUS OF APPROXIMATELY 1/32 INCH (1 MM), UNLESS OTHERWISE INDICATED. REMOVE SHARP OR ROUGH AREAS ON EXPOSED SURFACES.
D. FORM BENT-METAL CORNERS TO SMALLEST RADIUS POSSIBLE WITHOUT CAUSING GRAIN SEPARATION OR OTHERWISE IMPAIRING WORK.
E. FORM EXPOSED WORK TRUE TO LINE AND LEVEL WITH ACCURATE ANGLES AND SURFACES AND STRAIGHT EDGES.
F. WELD CONNECTIONS TO COMPLY WITH THE FOLLOWING:
1. USE MATERIALS AND METHODS THAT MINIMIZE DISTORTION AND DEVELOP STRENGTH AND CORROSION RESISTANCE OF BASE METALS.
2. OBTAIN FUSION WITHOUT UNDERCUT OR OVERLAP.
3. REMOVE WELDING FLUX IMMEDIATELY.
4. WELD EXPOSED CORNERS AND SEAMS CONTINUOUSLY, UNLESS OTHERWISE INDICATED.
5. AT EXPOSED CONNECTIONS, FINISH EXPOSED WELDS AND SURFACES SMOOTH AND BLENDED SO NO ROUGHNESS SHOWS AFTER FINISHING AND CONTOUR OF WELDED SURFACE MATCHES THAT OF ADJACENT SURFACE.
G. FORM EXPOSED CONNECTIONS WITH HAIRLINE JOINTS, FLUSH AND SMOOTH, USING CONCEALED FASTENERS WHERE POSSIBLE. WHERE EXPOSED FASTENERS ARE REQUIRED, USE PHILLIPS FLAT- HEAD (COUNTERSUNK) SCREWS OR BOLTS UNLESS OTHERWISE INDICATED. LOCATE JOINTS WHERE LEAST CONSPICUOUS.
H. FABRICATE JOINTS THAT WILL BE EXPOSED TO WEATHER IN A MANNER TO EXCLUDE WATER. PROVIDE WEEP HOLES WHERE WATER MAY ACCUMULATE.
2.6 STEEL-FRAMED STAIRS
A. STAIR FRAMING:
1. FABRICATE STRINGERS OF STEEL PLATES OR CHANNELS.
a. PROVIDE CLOSURES FOR EXPOSED ENDS OF CHANNEL STRINGERS.
2. CONSTRUCT PLATFORMS OF STEEL PLATE OR CHANNEL HEADERS AND MISCELLANEOUS FRAMING MEMBERS AS NEEDED TO COMPLY WITH PERFORMANCE REQUIREMENTS.
3. WELD STRINGERS TO HEADERS; WELD FRAMING MEMBERS TO STRINGERS AND HEADERS.
B. METAL BAR-GRATING STAIRS: FORM TREADS AND PLATFORMS TO CONFIGURATIONS SHOWN FROM METAL BAR GRATING; FABRICATE TO COMPLY WITH NAAMM MBG 531, "METAL BAR GRATING MANUAL."
1. FABRICATE TREADS AND PLATFORMS FROM WELDED STEEL GRATING WITH 1-1/4-BY-3/16-INCH (32-BY-5-MM) BEARING BARS AT 15/16 INCH (24 MM) O.C. AND CROSSBARS AT 4 INCHES (100 MM) O.C., NAAMM DESIGNATION: W-15-4 (1-1/4 X 3/16) STEEL.
2. SURFACE: SERRATED.
3. FINISH: GALVANIZED.
4. FABRICATE GRATING TREADS WITH ABRASIVE SAFETY YELLOW COLORED NOSING AND WITH STEEL ANGLE OR STEEL PLATE CARRIER AT EACH END FOR STRINGER CONNECTIONS. SECURE TREADS TO STRINGERS WITH BOLTS.
5. FABRICATE GRATING PLATFORMS WITH NOSING MATCHING THAT ON GRATING TREADS. PROVIDE TOEPLATES AT OPEN-SIDED EDGES OF GRATING PLATFORMS. WELD GRATING TO PLATFORM FRAMING.
C. METAL FLOOR PLATE STAIRS: FORM TREADS AND PLATFORMS TO CONFIGURATIONS SHOWN FROM ROLLED-STEEL FLOOR PLATE OF THICKNESS NEEDED TO COMPLY WITH PERFORMANCE REQUIREMENTS BUT NOT LESS THAN 3/16 INCH (4.8 MM).
1. FORM TREADS WITH INTEGRAL NOSING AND BACK EDGE STIFFENER. FORM RISERS FROM STEEL SHEET NOT LESS THAN 0.0966 INCH (2.5 MM) THICK, WELDED TO TREAD NOSINGS AND STIFFENERS AND TO PLATFORMS.
2. WELD STEEL SUPPORTING BRACKETS TO STRINGERS AND WELD TREADS TO BRACKETS.
3. FABRICATE PLATFORMS WITH INTEGRAL NOSINGS MATCHING TREADS AND WELD TO PLATFORM FRAMING.
2.7 FINISHES
A. COMPLY WITH NAAMM'S "METAL FINISHES MANUAL FOR ARCHITECTURAL AND METAL PRODUCTS" FOR RECOMMENDATIONS FOR APPLYING AND DESIGNATING FINISHES.
B. FINISH METAL STAIRS AFTER ASSEMBLY.
C. GALVANIZING: HOT-DIP GALVANIZE ITEMS AS INDICATED TO COMPLY WITH APPLICABLE STANDARD LISTED BELOW:
1. ASTM A 123/A 123M, FOR GALVANIZING STEEL AND IRON PRODUCTS.

05 50 10 - METAL STAIRS (CONT.)

2. FILL VENT AND DRAIN HOLES THAT WILL BE EXPOSED IN FINISHED WORK, UNLESS INDICATED TO REMAIN AS WEEP HOLES, BY PLUGGING WITH ZINC SOLDER AND FILING OFF SMOOTH.
D. PREPARATION FOR SHOP PRIMING: PREPARE UNCOATED FERROUS-METAL SURFACES TO COMPLY WITH MINIMUM REQUIREMENTS INDICATED BELOW FOR SSPC SURFACE PREPARATION SPECIFICATIONS AND ENVIRONMENTAL EXPOSURE CONDITIONS OF INSTALLED PRODUCTS:
E. APPLY SHOP PRIMER TO UNCOATED SURFACES OF METAL STAIR COMPONENTS, EXCEPT THOSE WITH GALVANIZED FINISHES AND THOSE TO BE EMBEDDED IN CONCRETE OR MASONRY UNLESS OTHERWISE INDICATED. COMPLY WITH SSPC-PA 1, "PAINT APPLICATION SPECIFICATION NO. 1: SHOP, FIELD, AND MAINTENANCE PAINTING OF STEEL," FOR SHOP PAINTING.
1. STRIPE PAINT CORNERS, CREVICES, BOLTS, WELDS, AND SHARP EDGES.
PART 3 - EXECUTION
3.1 INSTALLATION, GENERAL
A. FASTENING TO IN-PLACE CONSTRUCTION: PROVIDE ANCHORAGE DEVICES AND FASTENERS WHERE NECESSARY FOR SECURING METAL STAIRS TO IN-PLACE CONSTRUCTION. INCLUDE THREADED FASTENERS FOR CONCRETE AND MASONRY INSERTS, THROUGH-BOLTS, LAG BOLTS, AND OTHER CONNECTORS.
B. CUTTING, FITTING, AND PLACEMENT: PERFORM CUTTING, DRILLING, AND FITTING REQUIRED FOR INSTALLING METAL STAIRS. SET UNITS ACCURATELY IN LOCATION, ALIGNMENT, AND ELEVATION, MEASURED FROM ESTABLISHED LINES AND LEVELS AND FREE OF RACK.
C. INSTALL METAL STAIRS BY WELDING STAIR FRAMING TO STEEL STRUCTURE, UNLESS OTHERWISE INDICATED.
D. PROVIDE TEMPORARY BRACING OR ANCHORS IN FORMWORK FOR ITEMS THAT ARE TO BE BUILT INTO CONCRETE, MASONRY, OR SIMILAR CONSTRUCTION.
E. FIT EXPOSED CONNECTIONS ACCURATELY TOGETHER TO FORM HAIRLINE JOINTS. WELD CONNECTIONS THAT ARE NOT TO BE LEFT AS EXPOSED JOINTS BUT CANNOT BE SHOP WELDED BECAUSE OF SHIPPING SIZE LIMITATIONS. DO NOT WELD, CUT, OR ABRADE SURFACES OF EXTERIOR UNITS THAT HAVE BEEN HOT-DIP GALVANIZED AFTER FABRICATION AND ARE FOR BOLTED OR SCREWED FIELD CONNECTIONS.
F. FIELD WELDING: COMPLY WITH THE FOLLOWING REQUIREMENTS:
1. USE MATERIALS AND METHODS THAT MINIMIZE DISTORTION AND DEVELOP STRENGTH AND CORROSION RESISTANCE OF BASE METALS.
2. OBTAIN FUSION WITHOUT UNDERCUT OR OVERLAP.
3. REMOVE WELDING FLUX IMMEDIATELY.
4. AT EXPOSED CONNECTIONS, FINISH EXPOSED WELDS AND SURFACES SMOOTH AND BLENDED SO NO ROUGHNESS SHOWS AFTER FINISHING AND CONTOUR OF WELDED SURFACE MATCHES THAT OF ADJACENT SURFACE.
3.2 INSTALLING METAL STAIRS WITH GROUTED BASEPLATES
A. CLEAN CONCRETE AND MASONRY BEARING SURFACES OF BOND-REDUCING MATERIALS, AND ROUGHEN TO IMPROVE BOND TO SURFACES. CLEAN BOTTOM SURFACE OF BASEPLATES.
B. SET STEEL STAIR BASEPLATES ON WEDGES, SHIMS, OR LEVELING NUTS. AFTER STAIRS HAVE BEEN POSITIONED AND ALIGNED, TIGHTEN ANCHOR BOLTS. DO NOT REMOVE WEDGES OR SHIMS BUT, IF PROTRUDING, CUT OFF FLUSH WITH EDGE OF BEARING PLATE BEFORE PACKING WITH GROUT.
1. USE NONMETALLIC, NONSHRINK GROUT, UNLESS OTHERWISE INDICATED.
2. PACK GROUT SOLIDLY BETWEEN BEARING SURFACES AND PLATES TO ENSURE THAT NO VOIDS REMAIN.
3.3 ADJUSTING AND CLEANING
A. TOUCHUP PAINTING: IMMEDIATELY AFTER ERECTION, CLEAN FIELD WELDS, BOLTED CONNECTIONS, AND ABRADED AREAS OF SHOP PAINT, AND PAINT EXPOSED AREAS WITH THE SAME MATERIAL AS USED FOR SHOP PAINTING TO COMPLY WITH SSPC-PA 1 FOR TOUCHING UP SHOP-PAINTED SURFACES.
1. APPLY BY BRUSH OR SPRAY TO PROVIDE A MINIMUM 2.0-MIL (0.05-MM) DRY FILM THICKNESS.
B. GALVANIZED SURFACES: CLEAN FIELD WELDS, BOLTED CONNECTIONS, AND ABRADED AREAS AND REPAIR GALVANIZING TO COMPLY WITH ASTM A 780.

END OF SECTION 05 5 11

05 55 21 - PIPE RAILNGS

PART 1 - GENERAL
1.1 ITEMS REQUIRED BUT NOT SPECIFIED
A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.
1.2 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
1.3 SUMMARY
A. THIS SECTION INCLUDES THE FOLLOWING:
1. GALVANIZED STEEL PIPE RAILINGS AND GUARDRAILS.
B. RELATED SECTIONS INCLUDE THE FOLLOWING:
1. DIVISION 5 SECTION "METAL STAIRS" FOR STAIR TO RECEIVE STEEL PIPE RAILINGS SPECIFIED IN THIS SECTION.
1.4 PERFORMANCE REQUIREMENTS
A. GENERAL: IN ENGINEERING RAILINGS TO WITHSTAND STRUCTURAL LOADS INDICATED, DETERMINE ALLOWABLE DESIGN WORKING STRESSES OF RAILING MATERIALS BASED ON THE FOLLOWING:
1. STEEL: 72 PERCENT OF MINIMUM YIELD STRENGTH.
B. STRUCTURAL PERFORMANCE: PROVIDE RAILINGS CAPABLE OF WITHSTANDING THE EFFECTS OF GRAVITY LOADS AND THE FOLLOWING LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED:
1. HANDRAILS:
a. UNIFORM LOAD OF 50 LBF/ FT. (0.73 KN/M) APPLIED IN ANY DIRECTION.
b. CONCENTRATED LOAD OF 200 LBF (0.89 KN) APPLIED IN ANY DIRECTION.
c. UNIFORM AND CONCENTRATED LOADS NEED NOT BE ASSUMED TO ACT CONCURRENTLY.
2. TOP RAILS OF GUARDS:
a. UNIFORM LOAD OF 50 LBF/ FT. (0.73 KN/M) APPLIED IN ANY DIRECTION.
b. CONCENTRATED LOAD OF 200 LBF (0.89 KN) APPLIED IN ANY DIRECTION.
c. UNIFORM AND CONCENTRATED LOADS NEED NOT BE ASSUMED TO ACT CONCURRENTLY.
3. INFILL OF GUARDS:
a. CONCENTRATED LOAD OF 50 LBF (0.22 KN) APPLIED HORIZONTALLY ON AN AREA OF 1 SQ. FT. (0.093 SQ. M).
b. UNIFORM LOAD OF 25 LBF/SQ. FT. (1.2 KN/SQ. M) APPLIED HORIZONTALLY.
c. INFILL LOAD AND OTHER LOADS NEED NOT BE ASSUMED TO ACT CONCURRENTLY.
C. THERMAL MOVEMENTS: PROVIDE RAILINGS THAT ALLOW FOR THERMAL MOVEMENTS RESULTING FROM THE FOLLOWING MAXIMUM CHANGE (RANGE) IN AMBIENT AND SURFACE TEMPERATURES BY PREVENTING BUCKLING, OPENING OF JOINTS, OVERSTRESSING OF COMPONENTS, FAILURE OF CONNECTIONS, AND OTHER DETRIMENTAL EFFECTS. BASE ENGINEERING CALCULATION ON SURFACE TEMPERATURES OF MATERIALS DUE TO BOTH SOLAR HEAT GAIN AND NIGHTTIME-SKY HEAT LOSS.
1. TEMPERATURE CHANGE (RANGE): 120 DEG F (67 DEG C), AMBIENT; 180 DEG F (100 DEG C), MATERIAL SURFACES.
D. CONTROL OF CORROSION: PREVENT GALVANIC ACTION AND OTHER FORMS OF CORROSION BY INSULATING METALS AND OTHER MATERIALS FROM DIRECT CONTACT WITH INCOMPATIBLE MATERIALS.
1.5 SUBMITTALS
A. PRODUCT DATA: FOR THE FOLLOWING:
1. GROUT AND PAINT PRODUCTS.
B. SHOP DRAWINGS: INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK.
C. WELDING CERTIFICATES.
1.6 QUALITY ASSURANCE
A. SOURCE LIMITATIONS: OBTAIN EACH TYPE OF RAILING THROUGH ONE SOURCE FROM A SINGLE MANUFACTURER.
B. WELDING: QUALIFY PROCEDURES AND PERSONNEL ACCORDING TO THE FOLLOWING:
1. AWS D1.1, "STRUCTURAL WELDING CODE--STEEL."
1.7 PROJECT CONDITIONS
A. FIELD MEASUREMENTS: VERIFY ACTUAL LOCATIONS OF WALLS AND OTHER CONSTRUCTION CONTIGUOUS WITH RAILINGS BY FIELD MEASUREMENTS BEFORE FABRICATION AND INDICATE MEASUREMENTS ON SHOP DRAWINGS.
1. ESTABLISHED DIMENSIONS: WHERE FIELD MEASUREMENTS CANNOT BE MADE WITHOUT DELAYING THE WORK, ESTABLISH DIMENSIONS AND PROCEED WITH FABRICATING RAILINGS WITHOUT FIELD MEASUREMENTS. COORDINATE WALL AND OTHER CONTIGUOUS CONSTRUCTION TO ENSURE THAT ACTUAL DIMENSIONS CORRESPOND TO ESTABLISHED DIMENSIONS.
2. PROVIDE ALLOWANCE FOR TRIMMING AND FITTING AT SITE.
1.8 COORDINATION AND SCHEDULING
A. COORDINATE INSTALLATION OF ANCHORAGES FOR RAILINGS. FURNISH SETTING DRAWINGS, TEMPLATES, AND DIRECTIONS FOR INSTALLING ANCHORAGES, INCLUDING SLEEVES, CONCRETE INSERTS, ANCHOR BOLTS, AND ITEMS WITH INTEGRAL ANCHORS, THAT ARE TO BE EMBEDDED IN CONCRETE OR MASONRY. DELIVER SUCH ITEMS TO PROJECT SITE IN TIME FOR INSTALLATION.
B. SCHEDULE INSTALLATION SO WALL ATTACHMENTS ARE MADE ONLY TO COMPLETED WALLS. DO NOT SUPPORT RAILINGS TEMPORARILY BY ANY MEANS THAT DO NOT SATISFY STRUCTURAL PERFORMANCE REQUIREMENTS.
PART 2 - PRODUCTS
2.1 METALS, GENERAL
A. METAL SURFACES, GENERAL: PROVIDE MATERIALS WITH SMOOTH SURFACES, WITHOUT SEAM MARKS, ROLLER MARKS, ROLLED TRADE NAMES, STAINS, DISCOLORATIONS, OR BLEMISHES.
B. BRACKETS, FLANGES, AND ANCHORS: CAST OR FORMED METAL OF SAME TYPE OF MATERIAL AND FINISH AS SUPPORTED RAILS, UNLESS OTHERWISE INDICATED.
2.2 STEEL AND IRON
A. PIPE: ASTM A 53/A 53M, TYPE F OR TYPE S, GRADE A, STANDARD WEIGHT (SCHEDULE 40), UNLESS ANOTHER GRADE AND WEIGHT ARE REQUIRED BY STRUCTURAL LOADS.
1. PROVIDE GALVANIZED FINISH FOR EXTERIOR INSTALLATIONS AND WHERE INDICATED.
B. PLATES, SHAPES, AND BARS: ASTM A 36/A 36M.
2.3 FASTENERS
A. GENERAL: PROVIDE THE FOLLOWING:
B. FASTENERS FOR ANCHORING RAILINGS TO OTHER CONSTRUCTION: SELECT FASTENERS OF TYPE, GRADE, AND CLASS REQUIRED TO PRODUCE CONNECTIONS SUITABLE FOR ANCHORING RAILINGS TO OTHER TYPES OF CONSTRUCTION INDICATED AND CAPABLE OF WITHSTANDING DESIGN LOADS.
C. ANCHORS: PROVIDE CHEMICAL OR TORQUE-CONTROLLED EXPANSION ANCHORS, FABRICATED FROM CORROSION-RESISTANT MATERIALS WITH CAPABILITY TO SUSTAIN, WITHOUT FAILURE, A LOAD EQUAL TO SIX TIMES THE LOAD IMPOSED WHEN INSTALLED IN UNIT MASONRY AND EQUAL TO FOUR TIMES THE LOAD IMPOSED WHEN INSTALLED IN CONCRETE, AS DETERMINED BY TESTING PER ASTM E 488 CONDUCTED BY A QUALIFIED INDEPENDENT TESTING AGENCY.
2.4 MISCELLANEOUS MATERIALS
A. WELDING RODS AND BARE ELECTRODES: SELECT ACCORDING TO AWS SPECIFICATIONS FOR METAL ALLOY WELDED.
B. GALVANIZING REPAIR PAINT: HIGH-ZINC-DUST-CONTENT PAINT FOR REGALVANIZING WELDS IN STEEL, COMPLYING WITH SSPC-PAINT 20.
C. NONSHRINK, NONMETALLIC GROUT: FACTORY-PACKAGED, NONSTAINING, NONCORROSIVE, NONGASEOUS GROUT COMPLYING WITH ASTM C 1107. PROVIDE GROUT SPECIFICALLY RECOMMENDED BY MANUFACTURER FOR INTERIOR AND EXTERIOR APPLICATIONS.
2.5 FABRICATION
A. GENERAL: FABRICATE RAILINGS TO COMPLY WITH REQUIREMENTS INDICATED FOR DESIGN, DIMENSIONS, MEMBER SIZES AND SPACING, DETAILS, FINISH, AND ANCHORAGE, BUT NOT LESS THAN THAT REQUIRED TO SUPPORT STRUCTURAL LOADS.
B. ASSEMBLE RAILINGS IN THE SHOP TO GREATEST EXTENT POSSIBLE TO MINIMIZE FIELD SPLICING AND ASSEMBLY. DISASSEMBLE UNITS ONLY AS NECESSARY FOR SHIPPING AND HANDLING LIMITATIONS. CLEARLY MARK UNITS FOR REASSEMBLY AND COORDINATED INSTALLATION. USE CONNECTIONS THAT MAINTAIN STRUCTURAL VALUE OF JOINED PIECES.
C. CUT, DRILL, AND PUNCH METALS CLEANLY AND ACCURATELY. REMOVE BURRS AND EASE EDGES TO A RADIUS OF APPROXIMATELY 1/32 INCH (1 MM), UNLESS OTHERWISE INDICATED. REMOVE SHARP OR ROUGH AREAS ON EXPOSED SURFACES.
D. FORM WORK TRUE TO LINE AND LEVEL WITH ACCURATE ANGLES AND SURFACES.
E. FABRICATE CONNECTIONS THAT WILL BE EXPOSED TO WEATHER IN A MANNER TO EXCLUDE WATER. PROVIDE WEEP HOLES WHERE WATER MAY ACCUMULATE.
F. CUT, REINFORCE, DRILL, AND TAP AS INDICATED TO RECEIVE FINISH HARDWARE, SCREWS, AND SIMILAR ITEMS.
G. WELDED CONNECTIONS: COPE COMPONENTS AT CONNECTIONS TO PROVIDE CLOSE FIT, OR USE FITTINGS DESIGNED FOR THIS PURPOSE. WELD ALL AROUND AT CONNECTIONS, INCLUDING AT FITTINGS.
1. USE MATERIALS AND METHODS THAT MINIMIZE DISTORTION AND DEVELOP STRENGTH AND CORROSION RESISTANCE OF BASE METALS.
2. OBTAIN FUSION WITHOUT UNDERCUT OR OVERLAP.
3. REMOVE FLUX IMMEDIATELY.
4. AT EXPOSED CONNECTIONS, FINISH EXPOSED SURFACES SMOOTH AND BLENDED SO NO ROUGHNESS SHOWS AFTER FINISHING AND WELDED SURFACE MATCHES CONTOURS OF ADJOINING SURFACES.
H. FORM CHANGES IN DIRECTION AS FOLLOWS:
1. BY FLUSH BENDS OR BY INSERTING PREFABRICATED FLUSH-ELBOW FITTINGS.
I. FORM SIMPLE AND COMPOUND CURVES BY BENDING MEMBERS IN JIGS TO PRODUCE UNIFORM CURVATURE FOR EACH REPETITIVE CONFIGURATION REQUIRED; MAINTAIN CROSS SECTION OF MEMBER THROUGHOUT ENTIRE BEND WITHOUT BUCKLING, TWISTING, CRACKING, OR OTHERWISE DEFORMING EXPOSED SURFACES OF COMPONENTS.
J. CLOSE EXPOSED ENDS OF RAILING MEMBERS WITH PREFABRICATED END FITTINGS.
K. PROVIDE WALL RETURNS AT ENDS OF WALL-MOUNTED HANDRAILS, UNLESS OTHERWISE INDICATED. CLOSE ENDS OF RETURNS UNLESS CLEARANCE BETWEEN END OF RAIL AND WALL IS 1/4 INCH (6 MM) OR LESS.
L. BRACKETS, FLANGES, FITTINGS, AND ANCHORS: PROVIDE WALL BRACKETS, FLANGES, MISCELLANEOUS FITTINGS, AND ANCHORS TO INTERCONNECT RAILING MEMBERS TO OTHER WORK, UNLESS OTHERWISE INDICATED.
M. PROVIDE INSERTS AND OTHER ANCHORAGE DEVICES FOR CONNECTING RAILINGS TO CONCRETE OR MASONRY WORK. FABRICATE ANCHORAGE DEVICES CAPABLE OF WITHSTANDING LOADS IMPOSED BY RAILINGS. COORDINATE ANCHORAGE DEVICES WITH SUPPORTING STRUCTURE.
N. FOR REMOVABLE RAILING POSTS, FABRICATE SLIP-FIT SOCKETS FROM STEEL TUBE OR PIPE WHOSE ID IS SIZED FOR A CLOSE FIT WITH POSTS; LIMIT MOVEMENT OF POST WITHOUT LATERAL LOAD, MEASURED AT TOP, TO NOT MORE THAN ONE-FORTIETH OF POST HEIGHT. PROVIDE SOCKET COVERS DESIGNED AND FABRICATED TO RESIST BEING DISLODGED.
1. PROVIDE CHAIN WITH EYE, SNAP HOOK, AND STAPLE ACROSS GAPS FORMED BY REMOVABLE RAILING SECTIONS AT LOCATIONS INDICATED. FABRICATE FROM SAME METAL AS RAILINGS.
O. TOE BOARDS: WHERE INDICATED, PROVIDE TOE BOARDS AT RAILINGS AROUND OPENINGS AND AT EDGE OF OPEN-SIDED FLOORS AND PLATFORMS. FABRICATE TO DIMENSIONS AND DETAILS INDICATED.
2.6 FINISHES, GENERAL
A. COMPLY WITH NAAMM'S "METAL FINISHES MANUAL FOR ARCHITECTURAL AND METAL PRODUCTS" FOR RECOMMENDATIONS FOR APPLYING AND DESIGNATING FINISHES.
B. APPEARANCE OF FINISHED WORK: VARIATIONS IN APPEARANCE OF ABUTTING OR ADJACENT PIECES ARE ACCEPTABLE IF THEY ARE WITHIN ONE-HALF OF THE RANGE OF APPROVED SAMPLES. NOTICEABLE VARIATIONS IN THE SAME PIECE ARE NOT ACCEPTABLE. VARIATIONS IN APPEARANCE OF OTHER COMPONENTS ARE ACCEPTABLE IF THEY ARE WITHIN THE RANGE OF APPROVED SAMPLES AND ARE ASSEMBLED OR INSTALLED TO MINIMIZE CONTRAST.
2.7 STEEL AND IRON FINISHES
A. GALVANIZED RAILINGS:
1. HOT-DIP GALVANIZE STEEL AND IRON RAILINGS, INCLUDING HARDWARE, AFTER FABRICATION.
2. COMPLY WITH ASTM A 123/A 123M FOR HOT-DIP GALVANIZED RAILINGS.
3. COMPLY WITH ASTM A 153/A 153M FOR HOT-DIP GALVANIZED HARDWARE.
B. FILL VENT AND DRAIN HOLES THAT WILL BE EXPOSED IN THE FINISHED WORK, UNLESS INDICATED TO REMAIN AS WEEP HOLES, BY PLUGGING WITH ZINC SOLDER AND FILING OFF SMOOTH.
C. FOR GALVANIZED RAILINGS, PROVIDE HOT-DIP GALVANIZED FITTINGS, BRACKETS, FASTENERS, SLEEVES, AND OTHER FERROUS COMPONENTS.
PART 3 - EXECUTION
3.1 INSTALLATION, GENERAL
A. FIT EXPOSED CONNECTIONS TOGETHER TO FORM TIGHT, HAIRLINE JOINTS.

05 55 21 - PIPE RAILNGS (CONT.)

B. PERFORM CUTTING, DRILLING, AND FITTING REQUIRED FOR INSTALLING RAILINGS. SET RAILINGS ACCURATELY IN LOCATION, ALIGNMENT, AND ELEVATION; MEASURED FROM ESTABLISHED LINES AND LEVELS AND FREE OF RACK.
1. DO NOT WELD, CUT, OR ABRADE SURFACES OF RAILING COMPONENTS THAT HAVE BEEN COATED OR FINISHED AFTER FABRICATION AND THAT ARE INTENDED FOR FIELD CONNECTION BY MECHANICAL OR OTHER MEANS WITHOUT FURTHER CUTTING OR FITTING.
2. SET POSTS PLUMB WITHIN A TOLERANCE OF 1/16 INCH IN 3 FEET (2 MM IN 1 M).
3. ALIGN RAILS SO VARIATIONS FROM LEVEL FOR HORIZONTAL MEMBERS AND VARIATIONS FROM PARALLEL WITH RAKE OF STEPS AND RAMPS FOR SLOPING MEMBERS DO NOT EXCEED 1/4 INCH IN 12 FEET (5 MM IN 3 M).
C. ADJUST RAILINGS BEFORE ANCHORING TO ENSURE MATCHING ALIGNMENT AT ABUTTING JOINTS.
D. FASTENING TO IN-PLACE CONSTRUCTION: USE ANCHORAGE DEVICES AND FASTENERS WHERE NECESSARY FOR SECURING RAILINGS AND FOR PROPERLY TRANSFERRING LOADS TO IN-PLACE CONSTRUCTION.
3.2 RAILING CONNECTIONS
A. WELDED CONNECTIONS: USE FULLY WELDED JOINTS FOR PERMANENTLY CONNECTING RAILING COMPONENTS. COMPLY WITH REQUIREMENTS FOR WELDED CONNECTIONS IN PART 2 "FABRICATION" ARTICLE WHETHER WELDING IS PERFORMED IN THE SHOP OR IN THE FIELD.
B. EXPANSION JOINTS: INSTALL EXPANSION JOINTS AT LOCATIONS INDICATED BUT NOT FARTHER APART THAN REQUIRED TO ACCOMMODATE THERMAL MOVEMENT. PROVIDE SLIP-JOINT INTERNAL SLEEVE EXTENDING 2 INCHES (50 MM) BEYOND JOINT ON EITHER SIDE, FASTEN INTERNAL SLEEVE SECURELY TO 1 SIDE, AND LOCATE JOINT WITHIN 6 INCHES (150 MM) OF POST.
3.3 ANCHORING POSTS
A. FORM OR CORE-DRILL HOLES NOT LESS THAN 5 INCHES (125 MM) DEEP AND 3/4 INCH (20 MM) LARGER THAN OD OF POST FOR INSTALLING POSTS IN CONCRETE. CLEAN HOLES OF LOOSE MATERIAL, INSERT POSTS, AND FILL ANNULAR SPACE BETWEEN POST AND CONCRETE WITH NONSHRINK, NONMETALLIC GROUT, MIXED AND PLACED TO COMPLY WITH ANCHORING MATERIAL MANUFACTURER'S WRITTEN INSTRUCTIONS.
B. LEAVE ANCHORAGE JOINT EXPOSED; WIPE OFF SURPLUS ANCHORING MATERIAL; AND LEAVE 1/8-INCH (3-MM) BUILDUP, SLOPED AWAY FROM POST.
C. ANCHOR POSTS TO METAL SURFACES WITH OVAL FLANGES, ANGLE TYPE, OR FLOOR TYPE AS REQUIRED BY CONDITIONS, CONNECTED TO POSTS AND TO METAL SUPPORTING MEMBERS AS FOLLOWS:
1. FOR STEEL PIPE RAILINGS, WELD FLANGES TO POST AND BOLT TO METAL SUPPORTING SURFACES.
D. INSTALL REMOVABLE RAILING SECTIONS, WHERE INDICATED, IN SLIP-FIT METAL SOCKETS CAST IN CONCRETE.
3.4 ANCHORING RAILING ENDS
A. ANCHOR RAILING ENDS TO CONCRETE AND MASONRY WITH ROUND FLANGES CONNECTED TO RAILING ENDS AND ANCHORED TO WALL CONSTRUCTION WITH ANCHORS AND BOLTS.
3.5 ATTACHING HANDRAILS TO WALLS
A. ATTACH HANDRAILS TO WALL WITH WALL BRACKETS. PROVIDE BRACKETS WITH 1-1/2-INCH (38-MM) CLEARANCE FROM INSIDE FACE OF HANDRAIL AND FINISHED WALL SURFACE.
1. USE TYPE OF BRACKET WITH FLANGE TAPPED FOR CONCEALED ANCHORAGE TO THREADED HANGER BOLT.
B. LOCATE BRACKETS AS INDICATED OR, IF NOT INDICATED, AT SPACING REQUIRED TO SUPPORT STRUCTURAL LOADS.
C. SECURE WALL BRACKETS TO BUILDING CONSTRUCTION AS FOLLOWS:
1. FOR CONCRETE AND SOLID MASONRY ANCHORAGE, USE DRILLED-IN EXPANSION SHIELDS AND HANGER OR LAG BOLTS.
3.6 ADJUSTING AND CLEANING
A. GALVANIZED SURFACES: CLEAN FIELD WELDS, BOLTED CONNECTIONS, AND ABRADED AREAS AND REPAIR GALVANIZING TO COMPLY WITH ASTM A 780.
3.7 PROTECTION
A. PROTECT FINISHES OF RAILINGS FROM DAMAGE DURING CONSTRUCTION PERIOD WITH TEMPORARY PROTECTIVE COVERINGS APPROVED BY RAILING MANUFACTURER. REMOVE PROTECTIVE COVERINGS AT TIME OF SUBSTANTIAL COMPLETION.
B. RESTORE FINISHES DAMAGED DURING INSTALLATION AND CONSTRUCTION PERIOD SO NO EVIDENCE REMAINS OF CORRECTION WORK. RETURN ITEMS THAT CANNOT BE REFINISHED IN THE FIELD TO THE SHOP; MAKE REQUIRED ALTERATIONS AND REFINISH ENTIRE UNIT, OR PROVIDE NEW UNITS.

END OF SECTION 05 5521

06 41 00 - INTERIOR ARCHITECTURAL CASEWORK

PART 1 - GENERAL
1.1 ITEMS REQUIRED BUT NOT SPECIFIED
A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.
1.2 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
1.3 SUMMARY
A. THIS SECTION INCLUDES THE FOLLOWING:
1. PLASTIC-LAMINATE CABINETS.
2. SOLID-SURFACING-MATERIAL COUNTERTOPS.
3. LAMINATED-PLASTIC LABORATORY TOPS.
4. SHOP FINISHING OF INTERIOR WOODWORK.
B. RELATED SECTIONS INCLUDE THE FOLLOWING:
1. DIVISION 6 SECTION "ROUGH CARPENTRY" FOR WOOD FURRING, BLOCKING, SHIMS, AND HANGING STRIPS REQUIRED FOR INSTALLING WOODWORK AND CONCEALED WITHIN OTHER CONSTRUCTION BEFORE WOODWORK INSTALLATION.
1.4 DEFINITIONS
A. INTERIOR ARCHITECTURAL WOODWORK INCLUDES WOOD FURRING, BLOCKING, SHIMS, AND HANGING STRIPS FOR INSTALLING WOODWORK ITEMS UNLESS CONCEALED WITHIN OTHER CONSTRUCTION BEFORE WOODWORK INSTALLATION.
1.5 SUBMITTALS
A. PRODUCT DATA: FOR HIGH-PRESSURE DECORATIVE LAMINATE, ADHESIVE FOR BONDING PLASTIC LAMINATE, SOLID-SURFACING MATERIAL, CABINET HARDWARE AND ACCESSORIES.
B. SHOP DRAWINGS: SHOW LOCATION OF EACH ITEM, DIMENSIONED PLANS AND ELEVATIONS, LARGE-SCALE DETAILS, ATTACHMENT DEVICES, AND OTHER COMPONENTS.
1. SHOW LOCATIONS AND SIZES OF FURRING, BLOCKING, AND HANGING STRIPS, INCLUDING CONCEALED BLOCKING AND REINFORCEMENT SPECIFIED IN OTHER SECTIONS.
2. SHOW LOCATIONS AND SIZES OF CUTOUTS AND HOLES FOR PLUMBING FIXTURES INSTALLED IN ARCHITECTURAL WOODWORK.
C. SAMPLES FOR INITIAL SELECTION:
1. PLASTIC LAMINATES.
2. THERMOSET DECORATIVE PANELS.
3. SOLID-SURFACING MATERIALS.
D. PRODUCT CERTIFICATES: FOR EACH TYPE OF PRODUCT, SIGNED BY PRODUCT MANUFACTURER.
E. WOODWORK QUALITY STANDARD COMPLIANCE CERTIFICATES: AWI QUALITY CERTIFICATION PROGRAM CERTIFICATES.
F. QUALIFICATION DATA: FOR INSTALLER AND FABRICATOR.
1.6 QUALITY ASSURANCE
A. FABRICATOR QUALIFICATIONS: SHOP THAT EMPLOYS SKILLED WORKERS WHO CUSTOM-FABRICATE PRODUCTS SIMILAR TO THOSE REQUIRED FOR THIS PROJECT AND WHOSE PRODUCTS HAVE A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE. SHOP IS A CERTIFIED PARTICIPANT IN AWI'S QUALITY CERTIFICATION PROGRAM.
B. INSTALLER QUALIFICATIONS: FABRICATOR OF PRODUCTS.
C. QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH AWI'S "ARCHITECTURAL WOODWORK QUALITY STANDARDS" FOR GRADES OF INTERIOR ARCHITECTURAL WOODWORK INDICATED FOR CONSTRUCTION, FINISHES, INSTALLATION, AND OTHER REQUIREMENTS.
1. PROVIDE WIC-CERTIFIED COMPLIANCE CERTIFICATES INDICATING THAT WOODWORK, INCLUDING INSTALLATION, COMPLIES WITH REQUIREMENTS OF GRADES SPECIFIED.
D. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE TO COMPLY WITH REQUIREMENTS IN DIVISION 1 SECTION "PROJECT MANAGEMENT AND COORDINATION."
1.7 DELIVERY, STORAGE, AND HANDLING
A. DO NOT DELIVER WOODWORK UNTIL PAINTING AND SIMILAR OPERATIONS THAT COULD DAMAGE WOODWORK HAVE BEEN COMPLETED IN INSTALLATION AREAS. IF WOODWORK MUST BE STORED IN OTHER THAN INSTALLATION AREAS, STORE ONLY IN AREAS WHERE ENVIRONMENTAL CONDITIONS COMPLY WITH REQUIREMENTS SPECIFIED IN "PROJECT CONDITIONS" ARTICLE.
1.8 PROJECT CONDITIONS
A. ENVIRONMENTAL LIMITATIONS: DO NOT DELIVER OR INSTALL WOODWORK UNTIL BUILDING IS ENCLOSED, WET WORK IS COMPLETE, AND HVAC SYSTEM IS OPERATING AND MAINTAINING TEMPERATURE AND RELATIVE HUMIDITY AT OCCUPANCY LEVELS DURING THE REMAINDER OF THE CONSTRUCTION PERIOD.
B. FIELD MEASUREMENTS: WHERE WOODWORK IS INDICATED TO FIT TO OTHER CONSTRUCTION, VERIFY DIMENSIONS OF OTHER CONSTRUCTION BY FIELD MEASUREMENTS BEFORE FABRICATION, AND INDICATE MEASUREMENTS ON SHOP DRAWINGS. COORDINATE FABRICATION SCHEDULE WITH CONSTRUCTION PROGRESS TO AVOID DELAYING THE WORK.
1. LOCATE CONCEALED FRAMING, BLOCKING, AND REINFORCEMENTS THAT SUPPORT WOODWORK BY FIELD MEASUREMENTS BEFORE BEING ENCLOSED, AND INDICATE MEASUREMENTS ON SHOP DRAWINGS.
1.9 COORDINATION
A. COORDINATE SIZES AND LOCATIONS OF FRAMING, BLOCKING, FURRING, REINFORCEMENTS, AND OTHER RELATED UNITS OF WORK SPECIFIED IN OTHER SECTIONS TO ENSURE THAT INTERIOR ARCHITECTURAL WOODWORK CAN BE SUPPORTED AND INSTALLED AS INDICATED.
PART 2 - PRODUCTS
2.1 WOODWORK FABRICATORS
A. FABRICATORS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE INTERIOR ARCHITECTURAL WOODWORK BY FABRICATORS ACCEPTABLE TO OWNER AND ARCHITECT.
1. SEE DIVISION 1 REQUIREMENTS FOR PRE-BID APPROVAL.
2.2 MATERIALS
A. GENERAL: PROVIDE MATERIALS THAT COMPLY WITH REQUIREMENTS OF WIC' QUALITY STANDARD FOR EACH TYPE OF WOODWORK AND QUALITY GRADE SPECIFIED, UNLESS OTHERWISE INDICATED.
B. WOOD PRODUCTS: COMPLY WITH THE FOLLOWING:
1. HARDBOARD: AHA A135.4.
2. MEDIUM-DENSITY FIBERBOARD: ANSI A208.2, GRADE MD, MADE WITH BINDER CONTAINING NO UREA FORMALDEHYDE.
3. PARTICLEBOARD: ANSI A208.1, GRADE M-2.
4. SOFTWOOD PLYWOOD: DOC PS 1, MEDIUM DENSITY OVERLAY.
C. HIGH-PRESSURE DECORATIVE LAMINATE: NEMA LD 3, GRADES AS INDICATED OR, IF NOT INDICATED, AS REQUIRED BY WOODWORK QUALITY STANDARD.
1. MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE HIGH-PRESSURE DECORATIVE LAMINATES BY ONE OF THE FOLLOWING:
a. FORMICA CORPORATION.
b. NEVAMAR COMPANY, LLC; DECORATIVE PRODUCTS DIV.
c. PANOLAM INDUSTRIES INTERNATIONAL INCORPORATED
d. WILSONART INTERNATIONAL; DIV. OF PREMARK INTERNATIONAL, INC.
D. CHEMICAL-RESISTANT, HIGH-PRESSURE DECORATIVE LAMINATE: NEMA LD 3, GRADE HGP, AND AS FOLLOWS:
1. LAMINATE HAS THE FOLLOWING RATINGS WHEN TESTED WITH INDICATED REAGENTS ACCORDING TO NEMA LD 3, TEST PROCEDURE 3.9.5:
a. NITRIC ACID (30 PERCENT): MODERATE EFFECT.
b. SULFURIC ACID (77 PERCENT): MODERATE EFFECT.
c. HYDROCHLORIC ACID (37 PERCENT): MODERATE EFFECT.
d. PHOSPHORIC ACID (75 PERCENT): NO EFFECT.
e. ACETIC ACID (98 PERCENT): NO EFFECT.
f. FORMALDEHYDE: NO EFFECT.
g. ETHYL ACETATE: NO EFFECT.
h. ETHYL ETHER: NO EFFECT.
i. PHENOL (85 PERCENT): MODERATE EFFECT.
j. BENZENE: NO EFFECT.
k. XYLENE: NO EFFECT.
l. BUTYL ALCOHOL: NO EFFECT.
m. FURFURAL: NO EFFECT.
n. METHYL ETHYL KETONE: NO EFFECT.
o. SODIUM HYDROXIDE (25 PERCENT): NO EFFECT.
p. SODIUM SULFIDE (15 PERCENT): NO EFFECT.
q. AMMONIUM HYDROXIDE (28 PERCENT): NO EFFECT.
r. ZINC CHLORIDE: NO EFFECT.
2. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
a. FORMICA CORPORATION; LAB GRADE 840 BLACK.
b. PANOLAM INDUSTRIES INTERNATIONAL INCORPORATED; PIONITE CHEMGUARD.
c. WILSONART INTERNATIONAL, DIV. OF PREMARK INTERNATIONAL, INC.; CHEMSURF.
E. SOLID-SURFACING MATERIAL: HOMOGENEOUS SOLID SHEETS OF FILLED PLASTIC RESIN COMPLYING WITH ISSFA-2.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
a. AVONITE, INC.
b. E. I. DU PONT DE NEMOURS AND COMPANY.
c. FORMICA CORPORATION.
d. MEGANITE INC.; A DIVISION OF THE PYROCHEM GROUP.
e. WILSONART INTERNATIONAL; DIV. OF PREMARK INTERNATIONAL, INC.
2. TYPE: STANDARD TYPE, UNLESS SPECIAL PURPOSE TYPE IS INDICATED.
3. COLORS AND PATTERNS: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.
2.3 CABINET HARDWARE AND ACCESSORIES
A. GENERAL: PROVIDE CABINET HARDWARE AND ACCESSORY MATERIALS ASSOCIATED WITH ARCHITECTURAL CABINETS, EXCEPT FOR ITEMS SPECIFIED IN DIVISION 8 SECTION "DOOR HARDWARE"
B. FRAMELESS CONCEALED HINGES (EUROPEAN TYPE): BHMA A156.9, B01602,170 DEGREES OF OPENING, SELF-CLOSING.
C. BACK-MOUNTED PULLS: BHMA A156.9, B02011.
1. WIRE PULLS: BACK MOUNTED, SOLID METAL 5 INCHES (127 MM) LONG, 2-1/2 INCHES (63.5 MM) DEEP, AND 5/16 INCH (8 MM) IN DIAMETER.
D. CATCHES: ROLLER CATCHES, BHMA A156.9, B03071.
E. ADJUSTABLE SHELF STANDARDS AND SUPPORTS: BHMA A156.9, B04071; WITH SHELF RESTS, B04081
F. DRAWER SLIDES: BHMA A156.9, B05091; SIDE MOUNTED AND EXTENDING UNDER BOTTOM EDGE OF DRAWER; FULL-EXTENSION TYPE; EPOXY-COATED-STEEL WITH STEEL BALL-BEARINGS; of the following grades:
1. BOX DRAWER SLIDES: GRADE 1HD-100.
2. FILE DRAWER SLIDES: GRADE 1HD-200.
3. PENCIL DRAWER SLIDES: GRADE 1.
G. GROMMETS FOR CABLE PASSAGE THROUGH COUNTERTOPS: 2-INCH (51-MM), BLACK MOLDED-PLASTIC GROMMETS AND MATCHING PLASTIC CAPS WITH SLOT FOR WIRE PASSAGE.
H. EXPOSED HARDWARE FINISHES: FOR EXPOSED HARDWARE, PROVIDE FINISH THAT COMPLIES WITH BHMA A156.18 FOR BHMA FINISH NUMBER INDICATED.
1. SATIN STAINLESS STEEL: BHMA 630.
I. FOR CONCEALED HARDWARE, PROVIDE MANUFACTURER'S STANDARD FINISH THAT COMPLIES WITH PRODUCT CLASS REQUIREMENTS IN BHMA A156.9.
2.4 MISCELLANEOUS MATERIALS
A. FURRING, BLOCKING, SHIMS, AND HANGING STRIPS: SOFTWOOD OR HARDWOOD LUMBER, KILN DRIED TO LESS THAN 15 PERCENT MOISTURE CONTENT.

06 41 00 - INTERIOR ARCHITECTURAL CASEWORK

B. ANCHORS: SELECT MATERIAL, TYPE, SIZE, AND FINISH REQUIRED FOR EACH SUBSTRATE FOR SECURE ANCHORAGE. PROVIDE NONFERROUS-METAL OR HOT-DIP GALVANIZED ANCHORS AND INSERTS ON INSIDE FACE OF EXTERIOR WALLS AND ELSEWHERE AS REQUIRED FOR CORROSION RESISTANCE. PROVIDE TOOTHED-STEEL OR LEAD EXPANSION SLEEVES FOR DRILLED-IN-PLACE ANCHORS.
C. ADHESIVES, GENERAL: DO NOT USE ADHESIVES THAT CONTAIN UREA FORMALDEHYDE.
D. VOC LIMITS FOR INSTALLATION ADHESIVES AND GLUES: USE INSTALLATION ADHESIVES THAT COMPLY WITH THE FOLLOWING LIMITS FOR VOC CONTENT WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24):
1. WOOD GLUES: 30 G/L.
2. CONTACT ADHESIVE: 250 G/L.
2.5 FABRICATION, GENERAL
A. INTERIOR WOODWORK GRADE: UNLESS OTHERWISE INDICATED, PROVIDE CUSTOM-GRADE INTERIOR WOODWORK COMPLYING WITH REFERENCED QUALITY STANDARD.
B. WOOD MOISTURE CONTENT: COMPLY WITH REQUIREMENTS OF REFERENCED QUALITY STANDARD FOR WOOD MOISTURE CONTENT IN RELATION TO AMBIENT RELATIVE HUMIDITY DURING FABRICATION AND IN INSTALLATION AREAS.
C. COMPLETE FABRICATION, INCLUDING ASSEMBLY AND HARDWARE APPLICATION, TO MAXIMUM EXTENT POSSIBLE BEFORE SHIPMENT TO PROJECT SITE. DISASSEMBLE COMPONENTS ONLY AS NECESSARY FOR SHIPMENT AND INSTALLATION. WHERE NECESSARY FOR FITTING AT SITE, PROVIDE AMPLE ALLOWANCE FOR SCRIBING, TRIMMING, AND FITTING.
D. SHOP-CUT OPENINGS TO MAXIMUM EXTENT POSSIBLE TO RECEIVE HARDWARE, APPLIANCES, PLUMBING FIXTURES, ELECTRICAL WORK, AND SIMILAR ITEMS. LOCATE OPENINGS ACCURATELY AND USE TEMPLATES OR ROUGHING-IN DIAGRAMS TO PRODUCE ACCURATELY SIZED AND SHAPED OPENINGS. SAND EDGES OF CUTOUTS TO REMOVE SPLINTERS AND BURRS.
1. SEAL EDGES OF OPENINGS IN COUNTERTOPS WITH A COAT OF VARNISH.
2.6 PLASTIC-LAMINATE CABINETS
A. AWI GRADE: CUSTOM AND LABORATORY.
B. AWI TYPE OF CABINET CONSTRUCTION: FLUSH OVERLAY.
C. REVEAL DIMENSION: 1/2 INCH (13 MM).
D. LAMINATE CLADDING FOR EXPOSED SURFACES: HIGH-PRESSURE DECORATIVE LAMINATE COMPLYING WITH THE FOLLOWING REQUIREMENTS: RETAIN GRADE DESIGNATIONS FROM OPTIONS IN SUBPARAGRAPHS BELOW. GRADE HGS IS 1.2 MM THICK, GRADES HGL AND HGP ARE 1.0 MM THICK, AND GRADE VGS IS 0.7 MM THICK. AWI AND WIC STANDARDS REQUIRE MINIMUM THICKNESS OF 0.028 INCH (0.7 MM) REGARDLESS OF SURFACE TYPE.
1. HORIZONTAL SURFACES OTHER THAN TOPS: GRADE HGL.
2. POSTFORMED SURFACES: GRADE HGP.
3. VERTICAL SURFACES: GRADE HGS.
4. EDGES: GRADE HGS.
E. MATERIALS FOR SEMIEXPOSED SURFACES:
1. SURFACES OTHER THAN DRAWER BODIES: HIGH-PRESSURE DECORATIVE LAMINATE, GRADE VGS RETAIN ONE EDGE CONSTRUCTION FROM SUBPARAGRAPH BELOW IF RETAINING HIGH-PRESSURE DECORATIVE LAMINATE IN SUBPARAGRAPH ABOVE.
a. EDGES OF PLASTIC-LAMINATE SHELVES: PVC T-MOLD MATCHING LAMINATE IN COLOR, PATTERN, AND FINISH.
b. FOR SEMIEXPOSED BACKS OF PANELS WITH EXPOSED PLASTIC-LAMINATE SURFACES, PROVIDE SURFACE OF HIGH-PRESSURE DECORATIVE LAMINATE, GRADE VGS.
2. DRAWER SIDES AND BACKS: SOLID-HARDWOOD LUMBER.
3. DRAWER BOTTOMS: HARDWOOD PLYWOOD.
F. CONCEALED BACKS OF PANELS WITH EXPOSED PLASTIC LAMINATE SURFACES: HIGH-PRESSURE DECORATIVE LAMINATE, GRADE BKL.
G. COLORS, PATTERNS, AND FINISHES: PROVIDE MATERIALS AND PRODUCTS THAT RESULT IN COLORS AND TEXTURES OF EXPOSED LAMINATE SURFACES COMPLYING WITH THE FOLLOWING REQUIREMENTS:
1. AS SELECTED BY ARCHITECT FROM LAMINATE MANUFACTURER'S FULL RANGE IN THE FOLLOWING CATEGORIES:
A. SOLID COLORS WITH CORE SAME COLOR AS SURFACE, MATTE FINISH.
H. PROVIDE DUST PANELS OF 1/4-INCH (6.4-MM) PLYWOOD OR TEMPERED HARDBOARD ABOVE COMPARTMENTS AND DRAWERS, UNLESS LOCATED DIRECTLY UNDER TOPS.
2.7 SOLID-SURFACING-MATERIAL COUNTERTOPS
A. GRADE: PREMIUM.
B. SOLID-SURFACING-MATERIAL THICKNESS: 1/2 INCH (13 MM)] [3/4 INCH (19 MM).
C. COLORS, PATTERNS, AND FINISHES: PROVIDE MATERIALS AND PRODUCTS THAT RESULT IN COLORS OF SOLID-SURFACING MATERIAL COMPLYING WITH THE FOLLOWING REQUIREMENTS:
1. AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.
D. FABRICATE TOPS IN ONE PIECE, UNLESS OTHERWISE INDICATED. COMPLY WITH SOLID-SURFACING-MATERIAL MANUFACTURER'S WRITTEN RECOMMENDATIONS FOR ADHESIVES, SEALERS, FABRICATION, AND FINISHING.
1. FABRICATE TOPS WITH SHOP-APPLIED EDGES OF MATERIALS AND CONFIGURATION INDICATED.
2. FABRICATE TOPS WITH SHOP-APPLIED BACKSPLASHES OR LOOSE BACKSPLASHES FOR FIELD APPLICATION.
E. DRILL HOLES IN COUNTERTOPS FOR PLUMBING FITTINGS AND SOAP DISPENSERS IN SHOP.
2.8 LAMINATED-PLASTIC LABORATORY TOPS
A. AWI GRADE: PREMIUM.
B. HIGH-PRESSURE DECORATIVE LAMINATE: CHEMICAL-RESISTANT, GRADE HGP.
C. COLORS AND PATTERNS: PROVIDE MATERIALS AND PRODUCTS THAT RESULT IN COLORS AND PATTERNS OF EXPOSED LAMINATE SURFACES COMPLYING WITH THE FOLLOWING REQUIREMENTS:
1. AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OF SOLID COLORS.
D. CORE MATERIAL: PARTICLEBOARD MADE WITH EXTERIOR GLUE.
PART 3 - EXECUTION
3.1 PREPARATION
A. BEFORE INSTALLATION, CONDITION WOODWORK TO AVERAGE PREVAILING HUMIDITY CONDITIONS IN INSTALLATION AREAS.
B. BEFORE INSTALLING ARCHITECTURAL WOODWORK, EXAMINE SHOP-FABRICATED WORK FOR COMPLETION AND COMPLETE WORK AS REQUIRED, INCLUDING REMOVAL OF PACKING AND BACKPRIMING.
3.2 INSTALLATION
A. 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. COMPLETE INSTALLATION OF HARDWARE AND ACCESSORY ITEMS AS INDICATED.
1. INSTALL CABINETS WITH NO MORE THAN 1/8 INCH IN 96-INCH (3 MM IN 2400-MM) SAG, BOW, OR OTHER VARIATION FROM A STRAIGHT LINE.
2. REVISE REQUIREMENTS IN SUBPARAGRAPH BELOW AS NECESSARY FOR SEISMIC RESTRAINT OF CABINETS. DELETE IF HANGING CLEATS ARE USED AND ARE DETAILED ON DRAWINGS.
3. FASTEN WALL CABINETS THROUGH BACK, NEAR TOP AND BOTTOM, AT ENDS AND NOT MORE THAN 16 INCHES (400 MM) O.C. WITH NO. 10 WAFER-HEAD SHEET METAL SCREWS THROUGH METAL BACKING OR METAL FRAMING BEHIND WALL FINISH AND/OR TOGGLE BOLTS THROUGH METAL BACKING OR METAL FRAMING BEHIND WALL FINISH.
B. COUNTERTOPS: ANCHOR SECURELY BY SCREWING THROUGH CORNER BLOCKS OF BASE CABINETS OR OTHER SUPPORTS INTO UNDERSIDE OF COUNTERTOP.
1. DELETE FIRST SUBPARAGRAPH BELOW IF NO SOLID-SURFACING-MATERIAL COUNTERTOPS.
2. ALIGN ADJACENT SOLID-SURFACING-MATERIAL COUNTERTOPS AND FORM SEAMS TO COMPLY WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS USING ADHESIVE IN COLOR TO MATCH COUNTERTOP. CAREFULLY DRESS JOINTS SMOOTH, REMOVE SURFACE SCRATCHES, AND CLEAN ENTIRE SURFACE.
3. INSTALL COUNTERTOPS WITH NO MORE THAN 1/8 INCH IN 96-INCH (3 MM IN 2400-MM) SAG, BOW, OR OTHER VARIATION FROM A STRAIGHT LINE.
4. DELETE FIRST SUBPARAGRAPH BELOW IF APPLIED BACKSPLASHES ARE NOT USED.
5. SECURE BACKSPLASHES TO TOPS WITH CONCEALED METAL BRACKETS AT 16 INCHES (400 MM) O.C. AND TO WALLS WITH ADHESIVE.
6. CALK SPACE BETWEEN BACKSPLASH AND WALL WITH SEALANT SPECIFIED IN DIVISION 7 SECTION "JOINT SEALANTS."
C. TOUCH UP FINISHING WORK SPECIFIED IN THIS SECTION AFTER INSTALLATION OF WOODWORK. FILL NAIL HOLES WITH MATCHING FILLER WHERE EXPOSED.
3.3 ADJUSTING AND CLEANING
A. REPAIR DAMAGED AND DEFECTIVE WOODWORK, WHERE POSSIBLE, TO ELIMINATE FUNCTIONAL AND VISUAL DEFECTS; WHERE NOT POSSIBLE TO REPAIR, REPLACE WOODWORK. ADJUST JOINERY FOR UNIFORM APPEARANCE.
B. CLEAN, LUBRICATE, AND ADJUST HARDWARE.
C. CLEAN WOODWORK ON EXPOSED AND SEMIEXPOSED SURFACES. TOUCH UP SHOP-APPLIED FINISHES TO RESTORE DAMAGED OR SOILED AREAS.

END OF SECTION 06 4100

07 11 13 - BITUMINOUS DAMPROOFING

PART 1 - GENERAL
1.1 ITEMS REQUIRED BUT NOT SPECIFIED
A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.
1.2 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
1.3 SUMMARY
A. INCLUDES BUT NOT LIMITED TO:
1. FURNISH AND APPLY BITUMINOUS DAMPPROOFING TO EXTERIOR FOUNDATION WALLS AND TOP OF FOOTINGS AS DESCRIBED IN CONTRACT DOCUMENTS.
1.4 SUBMITTALS
A. ACTION SUBMITTALS:
1. PRODUCT DATA:
B. MANUFACTURER'S PRODUCT LITERATURE OR CUT SHEET PRODUCTS PROVIDED.
1.5 DELIVERY, STORAGE, AND HANDLING
A. STORAGE AND HANDLING REQUIREMENTS:
1. MAINTAIN DAMPPROOFING AT 40 DEG F (4 DEG C) OR ABOVE BEFORE APPLICATION.
1.6 FIELD CONDITIONS
A. AMBIENT CONDITIONS:
1. DO NOT APPLY WHEN AMBIENT TEMPERATURE IS BELOW 40 DEG F (4 DEG C), SURFACE TEMPERATURE IS BELOW 33 DEG F (ONE DEG C), OR WHEN RAIN IS EXPECTED BEFORE APPLIED DAMPPROOFING WILL DRY.
PART 2 - PRODUCTS
2.1 MANUFACTURERS
A. BITUMINOUS DAMPROOFING:
1. TYPE TWO ACCEPTABLE PRODUCTS:
a. ECOMUL-11 BY EPRO WATERPROOFING SYSTEMS, DERBY, KS WWW.EPROSERV.COM.
b. HENRY 788 BY HENRY COMPANY, EL SEGUNDO, CA WWW.HENRY.COM.
c. KARNAK 100 BY KARNAK CHEMICAL CORP, CLARK, NJ WWW.KARNAKCORP.COM.
d. SEALMASTIC ASPHALT EMULSION DAMPPROOFING TYPE I BY W R MEADOWS, HAMPSHIRE, IL WWW.WRMEADOWS.COM.
e. EQUAL AS APPROVED BY ARCHITECT BEFORE APPLICATION. SEE SECTION 01 6200.
PART 3 - EXECUTION
3.1 APPLICATION
A. SPRAY APPLICATION:
1. SPRAY TO A THICKNESS OF 10 MILS (0.254 MM) MINIMUM.
B. Brush / Roller Application:
1. APPLY TWO COATS OF DAMPPROOFING AT RATE RECOMMENDED BY MANUFACTURER.
2. APPLY COATS IN CROSS HATCH METHOD SO COATS ARE APPLIED PERPENDICULAR TO EACH OTHER.
3. BEFORE APPLYING SECOND COAT ALLOW FIRST COAT TO DRY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
C. APPLY DAMPPROOFING TO COVER AREA FROM 6 INCHES (150 MM) BELOW FINISH GRADE LINE DOWN TO AND INCLUDING TOP OF FOOTINGS.
D. DO NOT BACKFILL AGAINST BITUMINOUS DAMPPROOFING FOR TWENTY FOUR (24) HOURS AFTER APPLICATION.

END OF SECTION 07 11 13

07 21 13 - BUILDING INSULATION

PART 1 - GENERAL
1.1 ITEMS REQUIRED BUT NOT SPECIFIED
A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.
1.2 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
1.3 SUMMARY
A. THIS SECTION INCLUDES THE FOLLOWING:
1. UNDER SLAB INSULATION IN FREEZER.
2. VAPOR RETARDERS.
3. SOUND ATTENUATION INSULATION.
4. BATT INSULATION.
B. RELATED SECTIONS INCLUDE THE FOLLOWING:
1. DIVISION 3 SECTION CONCRETE SLABS
2. DIVISION 7 SECTION INSULATED METAL PANELS
3. DIVISION 9 SECTION GYPSUM BOARD ASSEMBLIES
4. DIVISION 9 SECTION ACOUSTIC PANEL CEILINGS
1.4 DEFINITIONS
A. MINERAL-FIBER INSULATION: INSULATION COMPOSED OF ROCK-WOOL FIBERS, SLAG-WOOL FIBERS, OR GLASS FIBERS; PRODUCED IN BOARDS AND BLANKET WITH LATTER FORMED INTO BATTS (FLAT-CUT LENGTHS) OR ROLLS.
1.5 PERFORMANCE REQUIREMENTS
A. PLENUM RATING FOR SOUND ATTENUATION BLANKETS INSTALLED ABOVE CEILINGS: PROVIDE SLAG-WOOL-FIBER/ROCK-WOOL-FIBER INSULATION WHERE INDICATED IN CEILING PLENUMS WHOSE TEST PERFORMANCE IS RATED AS FOLLOWS FOR USE IN PLENUMS AS DETERMINED BY TESTING IDENTICAL PRODUCTS PER "EROSION TEST" AND "MOLD GROWTH AND HUMIDITY TEST" DESCRIBED IN UL 181, OR ON COMPARABLE TESTS FROM ANOTHER STANDARD ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
1. EROSION TEST RESULTS: INSULATION SHOWS NO VISIBLE EVIDENCE OF CRACKING, FLAKING, PEELING, OR DELAMINATION OF INTERIOR SURFACE OF DUCT ASSEMBLY, AFTER TESTING FOR 4 HOURS AT 2500-FPM (13-M/S) AIR VELOCITY.
2. MOLD GROWTH AND HUMIDITY TEST RESULTS: INSULATION SHOWS NO EVIDENCE OF MOLD GROWTH, DELAMINATION, OR OTHER DETERIORATION DUE TO THE EFFECTS OF HIGH HUMIDITY, AFTER INOCULATION WITH CHAETOMIUM GLOBOSIUM ON ALL SURFACES AND STORING FOR 60 DAYS AT 100 PERCENT RELATIVE HUMIDITY IN THE DARK.
1.6 SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
B. PRODUCT TEST REPORTS: BASED ON EVALUATION OF COMPREHENSIVE TESTS PERFORMED BY A QUALIFIED TESTING AGENCY FOR INSULATION PRODUCTS.

07 21 13 - BUILDING INSULATION

C. RESEARCH/EVALUATION REPORTS: FOR FOAM-PLASTIC INSULATION.
1.7 QUALITY ASSURANCE
A.
B. SOURCE LIMITATIONS: OBTAIN EACH TYPE OF BUILDING INSULATION THROUGH ONE SOURCE FROM A SINGLE MANUFACTURER.
C. FIRE-TEST-RESPONSE CHARACTERISTICS: PROVIDE INSULATION AND RELATED MATERIALS WITH THE FIRE-TEST-RESPONSE CHARACTERISTICS INDICATED, AS DETERMINED BY TESTING IDENTICAL PRODUCTS PER TEST METHOD INDICATED BELOW BY UL OR ANOTHER TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION. IDENTIFY MATERIALS WITH APPROPRIATE MARKINGS OF APPLICABLE TESTING AND INSPECTING AGENCY.
1. SURFACE-BURNING CHARACTERISTICS: ASTM E 84.
2. COMBUSTION CHARACTERISTICS: ASTM E 136.
1.8 DELIVERY, STORAGE, AND HANDLING
A. PROTECT INSULATION MATERIALS FROM PHYSICAL DAMAGE AND FROM DETERIORATION BY MOISTURE, SOILING, AND OTHER SOURCES. STORE INSIDE AND IN A DRY LOCATION. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR HANDLING, STORING, AND PROTECTING DURING INSTALLATION.
B. PROTECT PLASTIC INSULATION AS FOLLOWS:
1. DO NOT EXPOSE TO SUNLIGHT, EXCEPT TO EXTENT NECESSARY FOR PERIOD OF INSTALLATION AND CONCEALMENT.
2. PROTECT AGAINST IGNITION AT ALL TIMES. DO NOT DELIVER PLASTIC INSULATING MATERIALS TO PROJECT SITE BEFORE INSTALLATION TIME.
3. COMPLETE INSTALLATION AND CONCEALMENT OF PLASTIC MATERIALS AS RAPIDLY AS POSSIBLE IN EACH AREA OF CONSTRUCTION.
PART 2 - PRODUCTS
2.1 MANUFACTURERS
A. IN OTHER PART 2 ARTICLES WHERE TITLES BELOW INTRODUCE LISTS, THE FOLLOWING REQUIREMENTS APPLY TO PRODUCT SELECTION:
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE MANUFACTURERS SPECIFIED.
2.2 FOAM-PLASTIC BOARD INSULATION (UNDER SLAB)
A. EXTRUDED-POLYSTYRENE BOARD INSULATION: ASTM C 578, OF TYPE AND DENSITY INDICATED BELOW, WITH MAXIMUM FLAME-SPREAD INDEX OF 5 AND SMOKE-DEVELOPED INDEX OF 45 – 175:
1. MANUFACTURERS:
a. DIVERSIFOAM PRODUCTS.
b. DOW CHEMICAL COMPANY.
c. OWENS CORNING.
d. PACTIV BUILDING PRODUCTS DIVISION.
2. TYPE VI.
3. DENSITY: 3 PCF
4. COMPRESSIVE STRENGTH: 40 PSI
5. LONG TERM THERMAL RESISTANCE: R-VALUE OF 5.0/INCH MINIMUM.
6. WATER ABSORPTION, % BY VOLUME: 0.05.
7. WATER VAPOR PERMEANCE: 1.1.
2.3 SLAG-WOOL-FIBER/ROCK-WOOL-FIBER BLANKET INSULATION (SOUND ATTENUATION BLANKETS)
A. MANUFACTURERS:
1. FIBREX INSULATIONS INC.
2. OWENS CORNING.
3. THERMAFIBER.
B. UNFACED, SLAG-WOOL-FIBER/ROCK-WOOL-FIBER BLANKET INSULATION: ASTM C 665, TYPE I (BLANKETS WITHOUT MEMBRANE FACING); CONSISTING OF FIBERS; WITH MAXIMUM FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF 25 AND 50, RESPECTIVELY; PASSING ASTM E 136 FOR COMBUSTION CHARACTERISTICS.
2.4 VAPOR RETARDERS
A. REINFORCED-POLYETHYLENE VAPOR RETARDERS: 2 OUTER LAYERS OF POLYETHYLENE FILM LAMINATED TO AN INNER REINFORCING LAYER CONSISTING OF EITHER NYLON CORD OR POLYESTER SCRIM AND WEIGHING NOT LESS THAN 25 LB/1000 SQ. FT. (12 KG/100 SQ. M), WITH MAXIMUM PERMEANCE RATING OF 0.0507 PERM (2.9 NG/PA X S X SQ. M).
1. AVAILABLE PRODUCTS:
a. RAVEN INDUSTRIES INC.; DURA-SKRIM 6WW.
b. REEF INDUSTRIES, INC.; GRIFFOLYN T-65.
B. VAPOR-RETARDER TAPE: PRESSURE-SENSITIVE TAPE OF TYPE RECOMMENDED BY VAPOR-RETARDER MANUFACTURER FOR SEALING JOINTS AND PENETRATIONS IN VAPOR RETARDER.
2.5 AUXILIARY INSULATING MATERIALS
A. ADHESIVE FOR BONDING INSULATION: PRODUCT WITH DEMONSTRATED CAPABILITY TO BOND INSULATION SECURELY TO SUBSTRATES INDICATED WITHOUT DAMAGING INSULATION AND SUBSTRATES.
PART 3 - EXECUTION
3.1 EXAMINATION
A. EXAMINE SUBSTRATES AND CONDITIONS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS OF SECTIONS IN WHICH SUBSTRATES AND RELATED WORK ARE SPECIFIED AND FOR OTHER CONDITIONS AFFECTING PERFORMANCE.
1. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
3.2 PREPARATION
A. CLEAN SUBSTRATES OF SUBSTANCES HARMFUL TO INSULATION OR VAPOR RETARDERS, INCLUDING REMOVING PROJECTIONS CAPABLE OF PUNCTURING VAPOR RETARDERS OR OF INTERFERING WITH INSULATION ATTACHMENT.
3.3 INSTALLATION, GENERAL
A. COMPLY WITH INSULATION MANUFACTURER'S WRITTEN INSTRUCTIONS APPLICABLE TO PRODUCTS AND APPLICATION INDICATED.
B. INSTALL INSULATION THAT IS UNDAMAGED, DRY, AND UNSOILED AND THAT HAS NOT BEEN LEFT EXPOSED AT ANY TIME TO ICE, RAIN, AND SNOW.
C. EXTEND INSULATION IN THICKNESS INDICATED TO ENVELOP ENTIRE AREA TO BE INSULATED. CUT AND FIT TIGHTLY AROUND OBSTRUCTIONS AND FILL VOIDS WITH INSULATION. REMOVE PROJECTIONS THAT INTERFERE WITH PLACEMENT.
3.4 INSTALLATION OF UNDER-SLAB INSULATION
A. ON HORIZONTAL SURFACES, LOOSELY LAY INSULATION UNITS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. STAGGER END JOINTS AND TIGHTLY ABUT INSULATION UNITS.
1. FLOOR INSULATION AND UNDER-FLOOR VAPOR BARRIERS:
a. OVER UNDER-FLOOR VAPOR BARRIER, INSTALL TWO OR MORE LAYERS OF INSULATION TO THICKNESS CALLED FOR ON DRAWINGS.
b. LAY EACH LAYER DRY. STAGGER JOINTS BETWEEN LAYERS.
c. KEY TO WALL INSULATION AS SHOWN. EXERCISE CARE TO INSURE THAT NO VOIDS OR AIR POCKETS ARE LEFT BETWEEN INSULATION BOARDS AND ADJACENT SURFACES. ADHERE AND SEAL UNDERFLOOR VAPOR BARRIER TO WALL PANELS AS INDICATED ON DRAWINGS.
2. SLIP SHEET:
a. INSTALL SLIP SHEET AT CONCRETE CURB/WALL JUNCTURE.
b. HOLD SHEET IN POSITION BY SPOT-BONDING WITH CONSTRUCTION ADHESIVE
3.5 INSTALLATION OF INSULATION IN CEILINGS FOR SOUND ATTENUATION
A. INSTALL 3-INCH- (76-MM-) THICK, UNFACED SLAG-WOOL-FIBER/ROCK-WOOL FIBER BLANKET INSULATION OVER SUSPENDED CEILINGS AT PARTITIONS IN A WIDTH THAT EXTENDS INSULATION 48 INCHES (1219 MM) ON EITHER SIDE OF PARTITION.
B. INSTALL 1-1/2-INCH- (38-MM-) THICK, UNFACED SLAG-WOOL-FIBER/ROCK-WOOL-FIBER BLANKET INSULATION OVER SUSPENDED CEILINGS SO THAT INSULATION EXTENDS OVER ENTIRE CEILING.
3.6 PROTECTION
A. PROTECT INSTALLED INSULATION AND VAPOR RETARDERS FROM DAMAGE DUE TO HARMFUL WEATHER EXPOSURES, PHYSICAL ABUSE, AND OTHER CAUSES. PROVIDE TEMPORARY COVERINGS OR ENCLOSURES WHERE INSULATION IS SUBJECT TO ABUSE AND CANNOT BE CONCEALED AND PROTECTED BY PERMANENT CONSTRUCTION IMMEDIATELY AFTER INSTALLATION.

END OF SECTION 07 2113

07 21 19 - FOAMED - IN - PLACE BUILDING INSULATION

PART 1 – GENERAL
1.1 ITEMS REQUIRED BUT NOT SPECIFIED
A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.
1.2 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
1.3 SECTION INCLUDES
A. FURNISH AND INSTALL FOAMED-IN-PLACE INSULATION INSTALLED WHERE INDICATED.
1.4 SUBMITTALS
A. SUBMIT THE FOLLOWING UNDER PROVISIONS OF DIVISION 1:
1. LITERATURE: MANUFACTURER'S PRODUCT DATA SHEETS, SPECIFICATIONS, PERFORMANCE DATA, PHYSICAL PROPERTIES FOR EACH ITEM FURNISHED HEREUNDER.
1.5 RELATED SECTIONS
A. DIVISION 7 SECTION - INSULATED METAL PANELS.
B. DIVISION 7 SECTION - MEMBRANE ROOFING.
1.6 DELIVERY, STORAGE AND HANDLING
A. DELIVER MATERIALS IN ORIGINAL PACKAGES, CONTAINERS OR BUNDLES BEARING BRAND NAME AND IDENTIFICATION OF MANUFACTURER OR SUPPLIER.
PART 2 - PRODUCTS
2.1 MATERIALS
A. FOAMED-IN-PLACE INSULATION SHALL BE UL CLASS I, TWO COMPONENT URETHANE SELF FROTHING FOAM INSULATION.
1. BASF CORP., POLYMERS DIV., STYROPAR GROUP, PARSIPPANY NJ.
2. INSTA-FOAM PRODUCTS INC., JOLIET IL.
3. UNIVERSAL PROTECTIVE COATINGS, SAN RAFAEL CA
4. POLYMASTER INSULATING FOAMS, KNOXVILLE, TN.
PART 3 - EXECUTION
3.1 INSTALLATION
A. APPLY INSULATION IN FROTH METHOD TO A UNIFORM MONOLITHIC DENSITY WITHOUT VOIDS, IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
3.2 CLEANING
A. DAILY CLEAN WORK AREAS BY SWEEPING AND DISPOSING OF DEBRIS AND SCRAPS.
B. UPON COMPLETION OF THE WORK OF THIS SECTION IN ANY GIVEN AREA, REMOVE TOOLS, EQUIPMENT AND ALL RUBBISH AND DEBRIS FROM THE WORK AREA; LEAVE AREA IN BROOM-CLEAN CONDITION.

END OF SECTION 07 21 19

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SEE DRAWING LIST ON TITLE SHEET A0.000 RIC-806832-01-A-0 FOR CORRESPONDING CSC SHEET NUMBER

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REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
DD	05/03/2023	MHW	RJS	PERMIT SET
AA	04/07/2023	SN	JHP	PROGRESS SET
X	03/13/2023	AE	JHP	MISC. METAL & FLOORING BID
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT
R	02/15/2023	SN	JHP	ROOFING BID

DRAWN: Author	DATE: 01/28/20	CAMPBELL SOUP COMPANY RICHMOND, UT
APPROVED: Approver	05/03/2023	ARCHITECTURE ARCHITECTURAL SPECIFICATIONS
BUILDING: 4013		
PROJECT NO.: 11025607	PROJECT NAME: PROJECT FINN	DRAWING NO.: RIC-807100-03-A-0 / REV.: DD
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)		DRAWING SIZE: ANSI E (44" x 34") / SHEET OF 193

07 27 13 - SELF-ADHERED MEMBRANE AIR-VAPOR BARRIERS

PART 1 - GENERAL
1.01 SECTION INCLUDES
A. A 40 MIL THICKNESS, SELF-ADHERED MEMBRANE OF BURN AND UV RESISTANT COMPOSITION FOR USE AS AN AIR, WATER AND VAPOR BARRIER IN EXTERIOR WALLS.
B. FULLY-ADHERED SHEET AND ACCESSORY PRODUCTS INSTALLED AS A CONTINUOUS AIR, WATER AND VAPOR BARRIER ASSEMBLY OVER SUBSTRATES OF THE PROJECT'S OPAQUE WALLS AS INDICATED ON DRAWINGS.
C. AIR, WATER AND VAPOR BARRIER ASSEMBLY PROVIDING AIR AND WATER TIGHT COVERAGE OVER THESE CONDITIONS:
1. JOINTS BETWEEN BUILDING MATERIALS SUCH AS SHEATHING JOINTS, MORTAR JOINTS AND DISSIMILAR MATERIALS.
2. JOINTS AROUND WINDOWS, CURTAIN WALLS, LOUVERS, DOOR FRAMES AND OTHER SERVICE OPENINGS.
3. JUNCTIONS BETWEEN WALLS AND FLOORS, BETWEEN WALLS AT BUILDING CORNERS AND BETWEEN WALLS, ROOFS AND CEILINGS.
4. MECHANICAL AND ELECTRICAL PENETRATIONS
5. STRUCTURAL PENETRATIONS FOR ANCHORS, DECKS, WALKWAYS AND SIMILAR HORIZONTAL PROJECTIONS OR JUNCTIONS TO THE EXTERIOR WALLS WHILE ACCOMMODATING DESIGNED MOVEMENT AT EXPANSION AND CONTROL JOINTS.
6. FASTENER AND HARDWARE PENETRATIONS USED TO ATTACH INSULATION, CLADDING, TRIM OR OTHER OVERBURDEN
7. TERMINATION AT FOOTING, ROOF DECK AND EXISTING CONSTRUCTION.
8. JUNCTION TO AIR & WATER BARRIER IN ROOF, BELOW GRADE OR OTHER ADJACENT SYSTEMS
D. AIR, WATER AND VAPOR BARRIER ASSEMBLY PERFORMING AS A LIQUID WATER DRAINAGE PLANE FLASHED TO DISCHARGE TO THE EXTERIOR ANY INCIDENTAL CONDENSATION OR WATER PENETRATION.
1.02 PERFORMANCE REQUIREMENTS
A. INSTALLED PRODUCT AND ACCESSORIES SHALL EXHIBIT AN AIR LEAKAGE RATE, INFILTRATION AND EXFILTRATION MODES, MEASURED AFTER PRESSURE CYCLING, NOT TO EXCEED 0.2 L/S*M2 AT 75 PA (0.040 CFM/FT2 AT 1.57 PSF) ACCORDING TO ASTM E 2357.
B. FOR TYPE I, II, III AND IV CONSTRUCTION: INSTALLED PRODUCT AND ACCESSORIES SHALL BE TESTED TO NFPA 285 AND PASS IN WALL ASSEMBLIES OF THE PROJECT OR SHALL PASS BY ENGINEERING JUDGEMENT.
C. INSTALLED PRODUCT AND ACCESSORIES SHALL BE RECOMMENDED BY MANUFACTURER FOR AT LEAST 180 DAYS OF OUTDOOR EXPOSURE.
D. INSTALLED PRODUCT AND ACCESSORIES SHALL HAVE AN UPPER SERVICE TEMPERATURE LIMIT OF 150°F OR HIGHER.
E. MANUFACTURER SHALL PROVIDE PRODUCT AND ACCESSORIES WHICH HAVE A MINIMUM INSTALLATION TEMPERATURE OF 25°F OR LOWER.
F. PRODUCT SHALL BE A NOMINAL 0.040 INCH (40 MILS) THICKNESS COMPOSITE MEMBRANE CONSISTING OF A 5-MIL ALUMINUM-FACED POLYMER SHEET LAMINATED WITH 35 MILS OF STYRENE-BUTADIENE-STYRENE MODIFIED ASPHALT ADHESIVE. PRODUCT SHALL MEET THE FOLLOWING REQUIREMENTS:
1. AIR PERMEANCE: NOT MORE THAN 0.02 L/S*M2 AT 75 PA (0.004 CFM/FT2 AT 1.57 PSF) PER ASTM E-2178
2. TENSILE STRENGTH: NOT LESS THAN 40 LBF PER SQUARE INCH PER ASTM D-882
3. PUNCTURE RESISTANCE: NOT LESS THAN 50 LBF PER ASTM E 154
4. TEAR INITIATION AND PROPAGATION: NOT LESS THAN 30 LBF, MACHINE DIRECTION AND CROSS DIRECTION PER ASTM D 4073
5. LOW TEMPERATURE FLEXIBILITY: NO CRACKING AT MINUS 30 DEGREES F. 1 INCH MANDREL PER ASTM D 1970
6. FASTENER SEALABILITY: NO WATER LEAKING THROUGH FASTENER PENETRATION AFTER 24 H. PER ASTM D 1970
7. WATER RESISTANCE: MEMBRANE SPECIMEN INCLUDING A LAP SHALL RESIST A 55 CM (22 INCH) COLUMN OF WATER FOR 5 HOURS. NO LEAKING OR WET THROUGH, PER AASHTO-127, MODIFIED TEST METHOD WITH THE FOLLOWING EXCEPTIONS: 1) MEMBRANE PLY TO BE PRESSED TO SPECIMEN
8. PULL ADHESION: NOT LESS THAN 16 LBF PER SQUARE INCH (OR REPORT VALUE AT SUBSTRATE FAILURE) ON GLASS-FACED GYPSUM SHEATHING AND CONCRETE MASONRY UNIT, SUBSTRATE PREPARED WITH CONTACT ADHESIVE PER ASTM D 4541, MODIFIED 4 INCH PUCK
9. LAP ADHESION: NOT LESS THAN 5 LBF PER INCH OF WIDTH PER ASTM D 1876
10. WATER VAPOR PERMEANCE: NOT MORE THAN 0.1 PERM PER ASTM E-96, WATER METHOD (B)
11. SURFACE BURNING CHARACTERISTICS: FLAME SPREAD INDEX: NOT MORE THAN 25. SMOKE GENERATION INDEX: NOT MORE THAN 450 PER ASTM E 84. SAMPLE TESTED AT FULL COVERAGE, CEMENT BOARD SUBSTRATE, INCLUDING SURFACE PREPARATION. MEASUREMENT OF HEAT RELEASE RATE BY CONE CALORIMETER, EFFECTIVE HEAT OF COMBUSTION OF 0 MJ/KG OR LESS. PEAK HEAT RELEASE RATE OF 6.67 KW/M2 OR LESS. TOTAL HEAT RELEASE RATE OF 1.1 MJ/M2 OR LESS PER ASTM E 1354, MEMBRANE APPLIED TO GLASS-FACED GYPSUM SHEATHING, INCLUDING SURFACE PREPARATION. 50 KW/M2 HEAT FLUX.
1.05 SUBMITTALS
A. PROVIDE SUBMITTALS IN ACCORDANCE WITH DIVISION 1.
B. AT BID SUBMISSION, PROVIDE EVIDENCE TO THE ARCHITECT OF INSTALLER QUALIFICATION BY THE AIR & VAPOR BARRIER MANUFACTURER.
C. SHOP DRAWINGS SHOWING LOCATIONS AND EXTENT OF AIR & VAPOR BARRIER AND DETAILS OF ALL TYPICAL CONDITIONS.
D. VERTICAL AND LATERAL FIRE PROPAGATION EVALUATION OF THE PROJECT'S EXTERIOR WALL ASSEMBLIES CONTAINING THE PRODUCT, SUBMIT DOCUMENTATION OF ONE OF THE FOLLOWING:
1. NFPA 285 TEST AND PASS
2. NFPA 285 PASS THROUGH ENGINEERING JUDGEMENT
3. EXEMPTION FROM THE NFPA 285 REQUIREMENT
E. MANUFACTURER'S TECHNICAL DATA SHEETS AND MATERIAL SAFETY DATA SHEETS FOR PRODUCT AND ACCESSORIES.
F. MANUFACTURER'S INSTALLATION INSTRUCTIONS.
G. CERTIFICATION OF COMPATIBILITY BY MANUFACTURER, LISTING ALL MATERIALS ON THE PROJECT WITH WHICH THE PRODUCT AND ACCESSORIES MAY COME INTO CONTACT.
H. SAMPLE OF PRODUCT AND TRANSITION MEMBRANE, MINIMUM 2 INCH BY 3 INCH SIZE.
1.06 QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS: SHALL BE EXPERIENCED IN APPLYING THE SAME OR SIMILAR MATERIALS AND SHALL BE SPECIFICALLY APPROVED IN WRITING BY MANUFACTURER.
B. SINGLE-SOURCE RESPONSIBILITY: OBTAIN PRODUCT AND ACCESSORIES FROM SINGLE MANUFACTURER.
C. PRODUCT AND ACCESSORIES SHALL COMPLY WITH ALL STATE AND LOCAL REGULATIONS CONTROLLING USE OF VOLATILE ORGANIC COMPOUNDS (VOCS).
D. PRE-INSTALLATION MEETING: COORDINATE WITH CONSTRUCTION MANAGER.
E. COOPERATE AND COORDINATE WITH THE OWNER'S INSPECTION AND TESTING AGENCY. DO NOT COVER ANY INSTALLED PRODUCT UNLESS IT HAS BEEN INSPECTED, TESTED AND APPROVED.
1.07 DELIVERY, STORAGE AND HANDLING
A. DELIVER MATERIALS TO PROJECT SITE IN ORIGINAL PACKAGES WITH SEALS UNBROKEN, LABELED WITH MANUFACTURER'S NAME, PRODUCT, LOT NUMBER AND DIRECTIONS FOR STORAGE.
B. STORE MATERIALS IN THEIR ORIGINAL UNDAMAGED PACKAGES IN A CLEAN, DRY, PROTECTED LOCATION AND WITHIN TEMPERATURE RANGE REQUIRED BY MANUFACTURER.
C. AVOID SPILLAGE. IMMEDIATELY NOTIFY CONSTRUCTION MANAGER IF SPILLAGE OCCURS AND START CLEAN UP PROCEDURES. CLEAN SPILLS AND LEAVE AREA AS IT WAS PRIOR TO SPILL.
1.08 WASTE MANAGEMENT AND DISPOSAL
A. DUMPSTERS WILL BE SUPPLIED BY THE CONSTRUCTION MANAGER AND IT WILL BE THE CONTRACTORS' RESPONSIBILITY TO REMOVE ALL RUBBISH FROM THE BUILDING AND PLACE INTO DUMPSTERS ON A DAILY BASIS – NO EXCEPTIONS.
B. PLACE MATERIALS DEFINED AS HAZARDOUS OR TOXIC WASTE IN DESIGNATED CONTAINERS.
C. ENSURE EMPTIED CONTAINERS ARE STORED SAFELY FOR DISPOSAL AWAY FROM CHILDREN.
1.09 PROJECT CONDITIONS
A. DO NOT APPLY PRODUCT OR ACCESSORIES DURING RAIN OR ACCUMULATING SNOWFALL.
B. APPLY PRODUCT AND ACCESSORIES WITHIN APPROVED AMBIENT AND SUBSTRATE TEMPERATURE RANGE STATED IN MANUFACTURER'S LITERATURE.
C. DO NOT APPLY PRODUCT OR ACCESSORIES OVER INCOMPATIBLE MATERIALS.
D. OBSERVE SAFETY AND ENVIRONMENTAL MEASURES INDICATED IN MANUFACTURER'S MSDS, AND MANDATED BY FEDERAL, STATE AND LOCAL REGULATIONS.
1.010 WARRANTIES: PROVIDE THE MANUFACTURER'S MINIMUM FIVE YEAR MATERIAL WARRANTY UNDER PROVISIONS OF DIVISION 1.

PART 2 - PRODUCTS
2.01 PRODUCTS AND MANUFACTURERS:
A. VAPOR RETARDER PRIMER
1. SOLVENT BASED PRIMER COMPOSED OF RESINS AND SYNTHETIC RUBBER.
a. ELASTOCOL STICK PRIMER BY SOPREMA, INC.
B. VAPOR RETARDER
1. VAPOR RETARDER FOR FIELD OF ROOF, PERIMETER FLASHINGS, AND CURB FLASHINGS SHALL BE A SELF-ADHERING MEMBRANE COMPOSED OF SBS MODIFIED BITUMEN ADHESIVE ON THE BOTTOM SURFACE AND A TRI-LAMINATED WOVEN POLYETHYLENE ON THE TOP SURFACE. A SILICONE RELEASE FILM COVERS THE SELF-ADHESIVE UNDER SURFACE.
a. VAPORITE BY SEAMAN CORPORATION
C. VAPOR RETARDER FLASHINGS
1. UNCURED EPDM MEMBRANE AND ASSOCIATED PRIMER AND LAP SEALANT FOR FLASHING OF VENT PIPES,GAS PIPING, CONDUITS, AND OTHER SIMILAR PENETRATIONS TO THE VAPOR RETARDER.
a. EPDM PRIMER AND SURE-SEAL PRESSURE ELASTOFORM FLASHING BY CARLISLE SYNTEC INCORPORATED; AND VAPOR RETARDER MANUFACTURER'S ONE-PART, GUN GRADE URETHANE SEALANT.
D. VAPOR RETARDER SEAM PROTECTION
1. FTR #101 SEALANT BY SEAMAN CORPORATION.
E. VAPOR RETARDER SEAM PROTECTION
1. ALUMINUM FOIL DUCT TAPE.
F. OTHER EQUIVALENT PRODUCTS AND MANUFACTURERS AS APPROVED BY ARCHITECT.
2.02 ACCESSORIES: PROVIDE FROM SAME MANUFACTURER AS AIR BARRIER MEMBRANE.
A. DETAIL FLASHING: SIMILAR COMPOSITION TO AIR BARRIER MEMBRANE. FACTORY SLIT TO CONVENIENT SIZES.
1. CCW CCW-702 SOLVENT-BASED, CCW-702 LV VOC COMPLIANT, SOLVENT-BASED, CCW-702 WB WATER-BASED OR CAV-GRIP AEROSOL SPRAY
2. OTHERS: AS SPECIFIED BY AIR BARRIER MEMBRANE MANUFACTURER
B. CONTACT ADHESIVE: LIQUID OR SPRAY APPLIED FOR PREPARING SURFACES ACCEPTING AIR BARRIER MEMBRANE
1. CCW CCW-702 SOLVENT-BASED, CCW-702 LV VOC COMPLIANT, SOLVENT-BASED, CCW-702 WB WATER-BASED OR CAV-GRIP AEROSOL SPRAY
2. OTHERS: AS SPECIFIED BY AIR BARRIER MEMBRANE MANUFACTURER
C. DETAIL MASTIC: 1-PART MATERIAL FOR SEALING DETAILS. INSTALLATION OVER AIR BARRIER MEMBRANE.
1. CCW: BARRIBOND
2. OTHERS: AS SPECIFIED BY AIR BARRIER MEMBRANE MANUFACTURER
D. TRANSITION MEMBRANE: TOUGH, ELASTOMERIC SHEET CAPABLE OF BRIDGING A 1" GAP. MINIMUM 60 MILS THICKNESS
1. CCW: SURE-SEAL PRESSURE-SENSITIVE ELASTOFORM.
2. OTHERS: AS SPECIFIED BY AIR BARRIER MEMBRANE MANUFACTURER
2.03 RELATED MATERIALS BY OTHERS
A. SILICONE SEALANT: USED FOR SEALING FENESTRATION TO AIR BARRIER MEMBRANE, SURFACE DEFECTS AND PENETRATIONS
1. APPROVED BY CCW. DOW-CORNING 758, 790, 791 OR 795 OR PECORA AVB SILICONE, 890, 891 OR 895 OR GE SILPRUF OR SILPRUF LM
2. OTHERS: AS SPECIFIED BY AIR BARRIER MEMBRANE MANUFACTURER
B. POLYURETHANE FOAM SEALANT: USED FOR SEALING GAPS AROUND FENESTRATION AND OTHER PENETRATIONS
1. APPROVED BY CCW. GREAT STUFF PRO BY DOW BUILDING SOLUTIONS, FIREBLOCK GUN FOAM BY TVM BUILDING PRODUCTS OR FIREBLOCK FOAM SEALANT BY FOMO
2. OTHERS: AS SPECIFIED BY AIR BARRIER MEMBRANE MANUFACTURER
C. INSULATION ADHESIVE: USED FOR BONDING FOAM BOARD INSULATION TO AIR BARRIER MEMBRANE
1. APPROVED BY CCW FOR POLYISOCYANURATE AND EXTRUDED POLYSTYRENE INSULATION: LM 800 XL, BARRIBOND OR CAV-GRIP SPRAY CONTACT ADHESIVE BY CARLISLE COATINGS & WATERPROOFING INCORPORATED
2. APPROVED BY CCW FOR EXTRUDED POLYSTYRENE INSULATION: QB-300 MULTI-PURPOSE CONSTRUCTION ADHESIVE BY OSI OR PL-300 VOC FOAMBOARD ADHESIVE BY LOCTITE
3. OTHERS: AS SPECIFIED BY AIR BARRIER MEMBRANE MANUFACTURER

PART 3 - EXECUTION
3.01 EXAMINATION
A. EXAMINE SUBSTRATES, AREAS, AND CONDITIONS AFFECTING INSTALLATION OF THE AIR & VAPOR BARRIER AND ACCESSORY PRODUCTS FOR COMPLIANCE WITH REQUIREMENTS. VERIFY THAT SURFACES AND CONDITIONS ARE SUITABLE PRIOR TO COMMENCING WORK OF THIS SECTION. DO NOT PROCEED WITH INSTALLATION UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
B. VERIFY THAT WALL ASSEMBLIES ARE DRIED IN, SUCH THAT WATER INTRUSION WILL NOT OCCUR FROM ABOVE, BEHIND OR AROUND THE AIR BARRIER INSTALLATION.
C. CONCRETE SHALL BE CURED FOR A MINIMUM OF SEVEN DAYS. IT SHALL BE SMOOTH, WITH SHARP PROTRUSIONS SUCH AS FORM JOINTS GROUND FLUSH. HONEYCOMB AND HOLES/CRACKS EXCEEDING 1/4 INCH ACROSS SHALL BE FILLED WITH GROUT OR MORTAR.
D. SURFACES SHALL BE SOUND, DRY FREE OF OIL, GREASE, DIRT, EXCESS MORTAR OR OTHER CONTAMINANTS.
E. SURFACES SHALL BE SUPPORTED AND FLUSH AT JOINTS WITHOUT LARGE VOIDS OR SHARP PROTRUSIONS.
F. MORTAR JOINTS SHALL BE STRUCK FLUSH AND SHALL BE FREE OF VOIDS EXCEEDING 1/4 INCH ACROSS. MORTAR DROPPINGS SHALL BE REMOVED FROM BRICK TIES AND ALL OTHER SURFACES ACCEPTING AIR BARRIER.
G. SHEATHING BOARDS SHALL BE FLUSH AT JOINTS, WITH GAPS BETWEEN BOARDS ACCORDING TO BUILDING CODE AND SHEATHING MANUFACTURER'S REQUIREMENTS. SHEATHING BOARDS SHALL ALSO BE SECURELY FASTENED TO THE STRUCTURE WITH PROPER FASTENER TYPE, TECHNIQUE AND SPACING ACCORDING TO BUILDING CODE AND SHEATHING MANUFACTURER'S REQUIREMENTS. SHEATHING BOARDS SHALL BE REPAIRED OR REPLACED IF INSPECTION REVEALS MOISTURE DAMAGE, MECHANICAL DAMAGE OR IF SHEATHING BOARDS HAVE EXCEEDED THE EXPOSURE DURATION OR EXPOSURE CONDITIONS AS REQUIRED BY THE SHEATHING MANUFACTURER.
3.02 SURFACE PREPARATION
A. FILL CRACKS, GAPS AND JOINTS EXCEEDING 1/4 INCH WIDTH WITH FILL COMPOUND OR POLYURETHANE SEALANT.
B. FILL ROUGH GAPS AROUND PIPE, CONDUIT AND SIMILAR PENETRATIONS WITH MORTAR, NON-SHRINK GROUT, FILL COMPOUND OR POLYURETHANE FOAM SEALANT SHAVED FLUSH.
C. APPLY A 3/4 INCH CANT OF FILL COMPOUND AT THE INTERSECTION OF THE BASE OF THE WALL AND THE FOOTING.
3.03 INSTALLATION
A. PRODUCT SHALL BE APPLIED OVER OPAQUE WALL SURFACES AS INDICATED IN PROJECT DRAWINGS.
B. USE THE MANUFACTURER'S STANDARD OR LOW TEMPERATURE FORMULA PRODUCT AS REQUIRED BY THE PROJECT CONDITIONS.
C. ALLOW SEALANTS USED DURING SURFACE PREPARATION TO CURE FULLY BEFORE APPLYING PRODUCT.
D. APPLY CONTACT ADHESIVE TO ALL SURFACES ACCEPTING PRODUCT, ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
E. APPLY PRODUCT TO PREPARED SURFACES ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND DRAWINGS.
F. SEQUENCE INSTALLATION TO PROVIDE SHINGLED LAPS. LAP NEIGHBORING SHEETS 2 INCHES MINIMUM.
G. INSTALL DETAIL FLASHING OR TRANSITION MEMBRANE ACCORDING TO MANUFACTURER'S DRAWINGS AND INSTRUCTIONS AT EXPANSION JOINTS, SEISMIC JOINTS, MECHANICAL/ELECTRICAL PENETRATIONS AND SIMILAR CONDITIONS.
H. INSTALL DETAIL MASTIC OVER NON-WATER SHEDDING LAPS, PENETRATIONS AND SIMILAR SURFACE DEFECTS.
I. PRODUCT AND ACCESSORIES SHALL BE FULLY-ADHERED TO SUBSTRATES. DEFECTS SUCH AS HOLES, FISH-MOUTHS, BLISTERING, DE-LAMINATION OR BRIDGING SHALL BE REPAIRED ACCORDING TO AIR BARRIER MANUFACTURER'S INSTRUCTIONS.
3.04 SCHEDULE
A. SEAL PENETRATIONS MADE THROUGH INSTALLED PRODUCT ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND DRAWINGS.
B. THROUGH-WALL FLASHING MAY BE INSTALLED BEFORE OR AFTER PRODUCT. SEAL TERMINATION OF THROUGH-WALL FLASHING TO PRODUCT ACCORDING PRODUCT MANUFACTURER'S INSTRUCTIONS.
C. CLADDING SHALL BE INSTALLED AFTER PRODUCT.
D. RIGID OR SEMI-RIGID INSULATION INSTALLED OVER PRODUCT SHALL BE ATTACHED WITH INSULATION ADHESIVE AND MECHANICAL FASTENING ACCORDING TO INSULATION MANUFACTURER AND AIR BARRIER MANUFACTURER'S INSTRUCTIONS.
E. SEQUENCE WORK TO ENABLE AIR BARRIER CONTINUITY AT WALL-TO-FOUNDATION, SHELF ANGLE, WALL-TO-ROOF, FENESTRATION, DIFFERENT WALL ASSEMBLIES AND OTHER CONDITIONS PROVIDING CHALLENGES TO AIR BARRIER CONTINUITY.
F. COMPLY WITH MAXIMUM LENGTH OF TIME THE VAPOR RETARDER MANUFACTURER ALLOWS THE COMPLETED WORK TO BE EXPOSED TO THE ELEMENTS PRIOR TO INSTALLATION OF THE SUBSEQUENT COVERING.

END OF SECTION 07 27 13

07 41 11 - METAL ROOF PLANS

PART 1 - GENERAL
1.1 ITEMS REQUIRED BUT NOT SPECIFIED
A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.
1.2 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
1.3 SUMMARY
A. THIS SECTION INCLUDES THE FOLLOWING:
1. FACTORY-FORMED AND FIELD-ASSEMBLED, STANDING-SEAM METAL ROOF PANELS.
B. RELATED SECTIONS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
1. DIVISION 5 SECTION "STEEL DECK" FOR STEEL ROOF DECK SUPPORTING METAL ROOF PANELS.
2. DIVISION 7 SECTION "METAL WALL PANELS" FOR FACTORY-FORMED METAL SOFFIT PANELS.
3. DIVISION 7 SECTION "SHEET METAL FLASHING AND TRIM" FOR FLASHINGS AND OTHER SHEET METAL WORK NOT PART OF METAL ROOF PANEL ASSEMBLIES.
4. DIVISION 7 SECTION "JOINT SEALANTS" FOR FIELD-APPLIED SEALANTS NOT OTHERWISE SPECIFIED IN THIS SECTION.
1.4 DEFINITIONS
A. METAL ROOF PANEL ASSEMBLY: METAL ROOF PANELS, ATTACHMENT SYSTEM COMPONENTS, MISCELLANEOUS METAL FRAMING, THERMAL INSULATION, AND ACCESSORIES NECESSARY FOR A COMPLETE WEATHERTIGHT ROOFING SYSTEM.
B. SOLAR FLUX: DIRECT AND DIFFUSE RADIATION FROM THE SUN RECEIVED AT GROUND LEVEL OVER THE SOLAR SPECTRUM, EXPRESSED IN WATTS PER SQUARE METER.
C. SOLAR REFLECTANCE: FRACTION OF SOLAR FLUX REFLECTED BY A SURFACE, EXPRESSED AS A PERCENT OR WITHIN THE RANGE OF 0.00 AND 1.00.
D. STEEL SHEET THICKNESS: MINIMUM THICKNESS OF BASE METAL WITHOUT METALLIC COATINGS OR PAINTED FINISHES.
1.5 PERFORMANCE REQUIREMENTS
A. GENERAL: PROVIDE METAL ROOF PANEL ASSEMBLIES THAT COMPLY WITH PERFORMANCE REQUIREMENTS SPECIFIED AS DETERMINED BY TESTING MANUFACTURERS' STANDARD ASSEMBLIES SIMILAR TO THOSE INDICATED FOR THIS PROJECT, BY A QUALIFIED TESTING AND INSPECTING AGENCY.
B. WATER PENETRATION: NO WATER PENETRATION WHEN TESTED ACCORDING TO ASTM E 331 AT THE FOLLOWING TEST-PRESSURE DIFFERENCE:
1. TEST-PRESSURE DIFFERENCE: 2.86 LBF/SQ. FT. (137 PA)
C. FMG LISTING: PROVIDE METAL ROOF PANELS AND COMPONENT MATERIALS THAT COMPLY WITH REQUIREMENTS IN FMG 4471 AS PART OF A PANEL ROOFING SYSTEM AND THAT ARE LISTED IN FMG'S "APPROVAL GUIDE" FOR CLASS 1 OR NONCOMBUSTIBLE CONSTRUCTION, AS APPLICABLE, IDENTIFY MATERIALS WITH FMG MARKING.
1. FIRE/windSTORM CLASSIFICATION: CLASS 1A-90.
2. HAIL RESISTANCE: SH.
D. STRUCTURAL PERFORMANCE: PROVIDE METAL ROOF PANEL ASSEMBLIES CAPABLE OF WITHSTANDING THE EFFECTS OF GRAVITY LOADS AND THE FOLLOWING LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED, BASED ON TESTING ACCORDING TO ASTM E 330.
1. WIND LOADS: AS NOTED ON STRUCTURAL DRAWINGS.
2. SNOW LOADS: AS NOTED ON STRUCTURAL DRAWINGS.
E. THERMAL MOVEMENTS: PROVIDE METAL ROOF PANEL ASSEMBLIES THAT ALLOW FOR THERMAL MOVEMENTS RESULTING FROM THE FOLLOWING MAXIMUM CHANGES IN AMBIENT AND SURFACE TEMPERATURES RELATIVE TO AMBIENT TEMPERATURES, WITHOUT BUCKLING OF METAL PANELS, OVERSTRESSING OF COMPONENTS, FAILURE OF JOINT SEALANTS, FAILURE OF CONNECTIONS, AND OTHER DETRIMENTAL EFFECTS. BASE ENGINEERING CALCULATION ON SURFACE TEMPERATURES OF MATERIALS DUE TO BOTH SOLAR HEAT GAIN AND NIGHTTIME-SKY HEAT LOSS.
F. SOLAR REFLECTANCE FOR ROOFS WITH SLOPES OF 2:12 OR LESS: INITIAL SOLAR REFLECTANCE OF NOT LESS THAN 0.65 WHEN TESTED ACCORDING TO ASTM E 903, AND MAINTAINED, UNDER NORMAL CONDITIONS, SOLAR REFLECTANCE OF NOT LESS THAN 0.50 FOR 3 YEARS AFTER INSTALLATION.
1.6 SUBMITTALS
A. PRODUCT DATA: INCLUDE CONSTRUCTION DETAILS, MATERIAL DESCRIPTIONS, DIMENSIONS OF INDIVIDUAL COMPONENTS AND PROFILES, AND FINISHES FOR EACH TYPE OF METAL ROOF PANEL AND ACCESSORY.
B. SHOP DRAWINGS: SHOW FABRICATION AND INSTALLATION LAYOUTS OF METAL ROOF PANELS: DETAILS OF EDGE CONDITIONS, JOINTS, PANEL PROFILES, CORNERS, ANCHORAGES, TRIM, FLASHINGS, CLOSURES, AND ACCESSORIES; AND SPECIAL DETAILS. DISTINGUISH BETWEEN FACTORY- AND FIELD-ASSEMBLED WORK.
C. COORDINATION DRAWINGS: ROOF PLANS DRAWN TO SCALE AND COORDINATING PENETRATIONS AND ROOF-MOUNTED ITEMS. SHOW THE FOLLOWING:
1. METAL PANELS AND ATTACHMENTS.
D. SAMPLES FOR INITIAL SELECTION: FOR EACH TYPE OF METAL ROOF PANEL INDICATED WITH FACTORY-APPLIED COLOR FINISHES.
1. INCLUDE SIMILAR SAMPLES OF TRIM AND ACCESSORIES INVOLVING COLOR SELECTION.
E. EXECUTION PLAN: FOR INSTALLER.
F. WARRANTIES: SPECIAL WARRANTIES SPECIFIED IN THIS SECTION.
1.7 QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS: AN EMPLOYER OF WORKERS TRAINED AND APPROVED BY MANUFACTURER.
B. SOURCE LIMITATIONS: OBTAIN EACH TYPE OF METAL ROOF PANELS THROUGH ONE SOURCE FROM A SINGLE MANUFACTURER.
C. PRODUCT OPTIONS: DRAWINGS INDICATE SIZE, PROFILES, AND DIMENSIONAL REQUIREMENTS OF METAL ROOF PANELS AND ARE BASED ON THE SPECIFIC SYSTEM INDICATED. REFER TO DIVISION 1 SECTION "PRODUCT REQUIREMENTS".
1. DO NOT MODIFY INTENDED AESTHETIC EFFECTS, AS JUDGED SOLELY BY ARCHITECT, EXCEPT WITH ARCHITECT'S APPROVAL. IF MODIFICATIONS ARE PROPOSED, SUBMIT COMPREHENSIVE EXPLANATORY DATA TO ARCHITECT FOR REVIEW.
D. SURFACE-BURNING CHARACTERISTICS: PROVIDE METAL ROOF PANELS WHICH HAVE BEEN TESTED AS SUPPLIED PER MATERIAL WITH THE FOLLOWING SURFACE-BURNING CHARACTERISTICS AS DETERMINED BY TESTING IDENTICAL PRODUCTS PER ASTM E 84 BY UL OR ANOTHER TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION:
1. FLAME-SPREAD INDEX: 25 OR LESS, UNLESS OTHERWISE INDICATED.
2. SMOKE-DEVELOPED INDEX: 450 OR LESS, UNLESS OTHERWISE INDICATED.
E. PRELIMINARY ROOFING CONFERENCE: BEFORE STARTING ROOF DECK CONSTRUCTION, CONDUCT CONFERENCE AT PROJECT SITE. COMPLY WITH REQUIREMENTS FOR PREINSTALLATION CONFERENCES IN DIVISION 1 SECTION "PROJECT MANAGEMENT AND COORDINATION." REVIEW METHODS AND PROCEDURES RELATED TO ROOF DECK CONSTRUCTION AND METAL ROOF PANELS INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:
4. CLIPS: FLOATING TO ACCOMMODATE THERMAL MOVEMENT.
1. REVIEW AND FINALIZE CONSTRUCTION SCHEDULE AND VERIFY AVAILABILITY OF MATERIALS, INSTALLER'S PERSONNEL, EQUIPMENT, AND FACILITIES NEEDED TO MAKE PROGRESS AND AVOID DELAYS.
2. REVIEW METHODS AND PROCEDURES RELATED TO METAL ROOF PANEL INSTALLATION, INCLUDING MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. EXAMINE DECK SUBSTRATE CONDITIONS FOR COMPLIANCE WITH REQUIREMENTS, INCLUDING FLATNESS AND ATTACHMENT TO STRUCTURAL MEMBERS.
4. REVIEW FLASHINGS, SPECIAL ROOF DETAILS, ROOF DRAINAGE, ROOF PENETRATIONS, EQUIPMENT CURBS, AND CONDITION OF OTHER CONSTRUCTION THAT WILL AFFECT METAL ROOF PANELS.
5. REVIEW TEMPORARY PROTECTION REQUIREMENTS FOR METAL ROOF PANELS DURING AND AFTER INSTALLATION.
F. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE TO COMPLY WITH REQUIREMENTS IN DIVISION 1 SECTION "PROJECT MANAGEMENT AND COORDINATION." REVIEW METHODS AND PROCEDURES RELATED TO METAL ROOF PANEL ASSEMBLIES INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:
1. REVIEW AND FINALIZE CONSTRUCTION SCHEDULE AND VERIFY AVAILABILITY OF MATERIALS, INSTALLER'S PERSONNEL, EQUIPMENT, AND FACILITIES NEEDED TO MAKE PROGRESS AND AVOID DELAYS.
2. REVIEW METHODS AND PROCEDURES RELATED TO METAL ROOF PANEL INSTALLATION, INCLUDING MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. EXAMINE DECK SUBSTRATE CONDITIONS FOR COMPLIANCE WITH REQUIREMENTS, INCLUDING FLATNESS AND ATTACHMENT TO STRUCTURAL MEMBERS.
4. REVIEW FLASHINGS, SPECIAL ROOF DETAILS, ROOF DRAINAGE, ROOF PENETRATIONS, EQUIPMENT CURBS, AND CONDITION OF OTHER CONSTRUCTION THAT WILL AFFECT METAL ROOF PANELS.
5. DOCUMENT PROCEEDINGS, INCLUDING CORRECTIVE MEASURES AND ACTIONS REQUIRED, AND FURNISH COPY OF RECORD TO EACH PARTICIPANT.
1.8 DELIVERY, STORAGE, AND HANDLING
A. DELIVER COMPONENTS, SHEETS, METAL ROOF PANELS, AND OTHER MANUFACTURED ITEMS SO AS NOT TO BE DAMAGED OR DEFORMED. PACKAGE METAL ROOF PANELS FOR PROTECTION DURING TRANSPORTATION AND HANDLING.
B. UNLOAD, STORE, AND ERECT METAL ROOF PANELS IN A MANNER TO PREVENT BENDING, WARPING, TWISTING, AND SURFACE DAMAGE.
C. STACK METAL ROOF PANELS ON PLATFORMS OR PALLETS, COVERED WITH SUITABLE WEATHERTIGHT AND VENTILATED COVERING. STORE METAL ROOF PANELS TO ENSURE DRYNESS. DO NOT STORE METAL ROOF PANELS IN CONTACT WITH OTHER MATERIALS THAT MIGHT CAUSE STAINING, DENTING, OR OTHER SURFACE DAMAGE.
D. PROTECT STRIPPABLE PROTECTIVE COVERING ON METAL ROOF PANELS FROM EXPOSURE TO SUNLIGHT AND HIGH HUMIDITY, EXCEPT TO EXTENT NECESSARY FOR PERIOD OF METAL ROOF PANEL INSTALLATION.
1.9 PROJECT CONDITIONS
A. WEATHER LIMITATIONS: PROCEED WITH INSTALLATION ONLY WHEN EXISTING AND FORECASTED WEATHER CONDITIONS PERMIT ASSEMBLY OF METAL ROOF PANELS TO BE PERFORMED ACCORDING TO MANUFACTURERS' WRITTEN INSTRUCTIONS AND WARRANTY REQUIREMENTS.
B. FIELD MEASUREMENTS: VERIFY LOCATIONS OF ROOF FRAMING AND ROOF OPENING DIMENSIONS BY FIELD MEASUREMENTS BEFORE METAL ROOF PANEL FABRICATION AND INDICATE MEASUREMENTS ON

07 54 19 - THERMOPLASTIC MEMBRANE ROOFING

PART 1 GENERAL
1.01 RELATED SECTIONS
A. SECTION 06 10 00 – ROUGH CARPENTRY.
B. SECTION 07 71 00 – MANUFACTURED ROOF SPECIALTIES.
C. SECTION 07 92 00 – JOINT SEALANTS.
1.02 QUALITY ASSURANCE
A. THIS ROOFING SYSTEM SHALL BE APPLIED ONLY BY A ROOFING APPLICATOR AUTHORIZED BY SIKA SARNAFIL, FIBERTITE OR TREMCO PRIOR TO BID, UNLESS NOTED OTHERWISE.
B. UPON COMPLETION OF THE INSTALLATION AND THE DELIVERY TO ROOFING MANUFACTURER BY THE APPLICATOR OF CERTIFICATION THAT ALL WORK HAS BEEN DONE IN STRICT ACCORDANCE WITH THE CONTRACT SPECIFICATIONS AND ROOFING MANUFACTURER'S REQUIREMENTS, A ROOFING MANUFACTURER TECHNICAL SERVICE REPRESENTATIVE WILL REVIEW THE INSTALLED ROOF SYSTEM WHEREVER A STANDARD OR SYSTEM WARRANTY HAS BEEN SPECIFIED.
C. THERE SHALL BE NO DEVIATION MADE FROM THE PROJECT SPECIFICATION OR THE APPROVED SHOP DRAWINGS WITHOUT PRIOR WRITTEN APPROVAL BY THE OWNER, THE ARCHITECT AND ROOFING MANUFACTURER.
D. ALL WORK PERTAINING TO THE INSTALLATION OF ROOF MEMBRANE AND FLASHINGS SHALL ONLY BE COMPLETED BY APPLICATOR PERSONNEL TRAINED AND AUTHORIZED BY THE ROOFING MANUFACTURER IN THOSE PROCEDURES.
E. PRIOR TO AWARDING OF THE CONTRACT, THE SUCCESSFUL BIDDER SHALL SUBMIT TO ARCHITECT IN WRITING FOR HIS APPROVAL THE FOLLOWING:
1. WRITTEN APPROVAL AND CERTIFICATION OF THE BIDDER BY THE ROOFING SYSTEM MANUFACTURER.
2. WRITTEN DOCUMENTATION FROM THE ROOFING MANUFACTURER THAT THE PROPOSED ROOFING SYSTEM MEETS THE APPLICABLE REQUIREMENTS AND CODE APPROVALS AS REFERENCED IN THIS SPECIFICATION.
F. MATERIALS AND WORKMANSHIP TO BE PROVIDED SHALL BE IN STRICT CONFORMANCE WITH THE ROOFING MANUFACTURER'S SPECIFICATIONS.
1. THE ROOFING MANUFACTURER SHALL HAVE A FIELD TECHNICIAN ON-SITE AT LEAST ONCE A WEEK DURING THE INSTALLATION OF THE MEMBRANE AND FLASHING TO ASSURE COMPLIANCE WITH MANUFACTURER'S SPECIFICATION AND AT THE FINAL INSPECTIONS TO ASSURE COMPLIANCE WITH MANUFACTURER'S SPECIFICATION AND FURNISH WRITTEN REPORTS. ABSOLUTELY NO EXCEPTION WILL BE MADE TO THIS REQUIREMENT. UPON COMPLETION OF THE INSTALLATION THE MANUFACTURER'S TECHNICIAN SHALL FURNISH THE ARCHITECT WITH WRITTEN REPORT OF OBSERVATION OF THE INSTALLED ROOF SYSTEM AND WRITTEN CONFIRMATION THAT INSTALLATION IS IN COMPLIANCE.
G. UPON COMPLETION OF THE WORK AND RECEIPT OF FINAL PAYMENT, THE FOLLOWING WARRANTIES SHALL BE ISSUED:
1. ROOFING MANUFACTURER WARRANTY
2. ROOF APPLICATOR WARRANTY
1.03 CODE APPROVALS
A. THE PROPOSED ROOFING SYSTEM SHALL MEET THE REQUIREMENT OF THE FOLLOWING RECOGNIZED CODE APPROVAL OR TESTING AGENCIES. THESE REQUIREMENTS ARE MINIMUM STANDARDS AND NO ROOFING WORK SHALL COMMENCE WITHOUT WRITTEN DOCUMENTATION OF THE SYSTEMS COMPLIANCE FROM THE MANUFACTURER AND INSULATION MANUFACTURER.
1. FACTORY MUTUAL RESEARCH LABORATORIES, INC. WOOD, MASSACHUSETTS.
a. F.M. CLASS 1 SYSTEM APPROVAL
b. FM 1-90 WIND UPLIFT RESISTANCE FOR STEEL DECK
c. PERIMETER AND CORNER AREAS SHALL BE ENHANCED FOR FACTORY MUTUAL LOSS PREVENTION DATA SHEET 1-28 AND 1-29, BUT IN NO CASE SHALL PERIMETER AREAS BE LESS THAN 10 FEET IN WIDTH AND AS FURTHER DESCRIBED IN THE SPECIFICATIONS.
2. UNDERWRITER'S LABORATORIES, CHICAGO, ILLINOIS
a. U.L. CLASS A MEMBRANE APPROVAL
3. AMERICAN STANDARD TESTING AND MATERIALS, PHILADELPHIA, PENNSYLVANIA
a. ASTM CLASSIFICATION D 4434 (CURRENT REVISION), TYPE II, GRADE I POLYVINYL CHLORIDE.
4. FM APPROVALS LISTING:
a. PROVIDE MEMBRANE ROOFING, BASE FLASHINGS, AND COMPONENT MATERIALS THAT COMPLY WITH REQUIREMENTS IN FM APPROVALS 4450 AND FM APPROVALS 4470 AS PART OF A MEMBRANE ROOFING SYSTEM, AND THAT ARE LISTED IN FM APPROVALS "ROOFNAV" FOR CLASS 1 OR NONCOMBUSTIBLE CONSTRUCTION, AS APPLICABLE. IDENTIFY MATERIALS WITH FM APPROVALS MARKINGS.
i. FIREWINDSTORM CLASSIFICATION: CLASS 1A-90.
5. ROOFING SYSTEM, INCLUDING INSULATION AND SUBSTRATE, SHALL MEET THE OHIO BUILDING CODE, CURRENT EDITION; AND ALL OTHER APPLICABLE FEDERAL, STATE AND MUNICIPAL CODES, LAWS AND REGULATIONS FOR FIRE-RESISTANCE ROOF RATINGS.
6. NRCA ROOFING AND WATERPROOFING MANUAL, LATEST REVISION.
1.04 SUBMITTALS
A. PRODUCT DATA: WITHIN 15 CALENDAR DAYS AFTER AWARD OF CONTRACTOR, SUBMIT:
1. COMPLETE MATERIALS LIST OF ALL ITEMS PROPOSED TO BE FURNISHED AND INSTALLED UNDER THIS SECTION.
2. MANUFACTURER SPECIFICATIONS AND OTHER DATA REQUIRED TO DEMONSTRATE COMPLIANCE WITH SPECIFIED REQUIREMENTS.
3. SAMPLES OF EACH PRIMARY COMPONENT TO BE USED IN THE ROOF SYSTEM AND THE MANUFACTURER'S CURRENT LITERATURE FOR EACH COMPONENT.
4. MANUFACTURER'S RECOMMENDED METHOD OF INSTALLATION.
5. APPROVAL OF INSULATION MANUFACTURER FOR USE OF THEIR PRODUCT IN THE PROPOSED SYSTEM.
6. SPECIMEN COPY OF MEMBRANE MANUFACTURER'S WARRANTY.
7. SPECIMEN COPY OF APPLICATOR'S WARRANTY.
8. CERTIFICATION FROM THE APPLICATOR THAT THE SYSTEM SPECIFIED MEETS ALL IDENTIFIED CODE AND INSURANCE REQUIREMENTS AS REQUIRED BY THE SPECIFICATION.
B. WITHIN 30 CALENDAR DAYS AFTER AWARD OF CONTRACT SUBMIT:
1. DIMENSIONED SHOP DRAWINGS WHICH SHALL INCLUDE:
a. OUTLINE OF ROOF, ROOF SIZE AND ELEVATIONS SHOWN.
b. SETTING PLANS FOR ROOFING INSULATION, THICKNESSES, DIRECTION OF SLOPES AND TAPERED INSULATION PROFILE.
c. PROFILE DETAILS OF FLASHING METHODS FOR PENETRATIONS AND TERMINATIONS.
d. TYPICAL ROOF FASTENER PATTERNS AND LAYOUT APPROVED BY THE MEMBRANE MANUFACTURER.
e. WRITTEN AUTHORIZATION FROM MEMBRANE MANUFACTURER'S TECHNICAL DEPARTMENT.
2. DATA SHEETS INDICATING THE MANUFACTURER'S MEMBRANE HAS MET A MINIMUM 5,000 HOURS OF ACCELERATED WEATHER TESTING PER ASTM TEST METHOD G154.
3. LETTER FROM MEMBRANE MANUFACTURER CERTIFYING AND STATING THE NUMBER OF YEARS THAT THE CURRENT MEMBRANE FORMULATION HAS BEEN IN USE.
4. MSDS SHEETS.
5. SUBMIT MANUFACTURER'S FIELD QUALITY CONTROL REPORTS OF FIELD INSPECTIONS, INCLUDING, REVISED "AS-BUILT" SHOP DRAWINGS AND MANUFACTURER'S FINAL PUNCH LIST.
1.05 PRODUCT DELIVERY, STORAGE AND HANDLING
A. DELIVER MATERIALS IN MANUFACTURER'S ORIGINAL UNOPENED CONTAINERS OR PACKAGES WITH LABELS AND PACKAGE SEALS INTACT AND LEGIBLE.
B. STORE ALL MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. STORE ROLLED GOODS ON CLEAN, RAISED PLATFORMS. STORE OTHER MATERIALS IN DRY AREAS, PROTECTED FROM MOISTURE/WATER AND DIRECT SUNLIGHT.
C. DO NOT EXPOSE STORED CURABLE ROOFING MATERIALS AND ACCESSORIES, INCLUDING UNCURED FLASHING, ADHESIVES, SEALANT AND POURABLE SEALER, TO A CONSTANT TEMPERATURE IN EXCESS OF 90 DEGREES FAHRENHEIT OR LESS THAN 40 DEGREES FAHRENHEIT.
D. PROVIDE CONTINUOUS PROTECTION OF STORED MATERIALS AGAINST DETERIORATION FOR DURATION OF PROJECT.
E. STORE INSULATION ON DUNNAGE AND COMPLETELY COVER WITH A WATER-RESISTANT BREATHABLE MATERIAL. PROVIDE WEIGHTS TO PREVENT WIND DAMAGE TO MATERIALS.
F. DISTRIBUTE ANY MATERIALS STORED ON ROOF LEVELS FOR IMMEDIATE USE TO PREVENT CONCENTRATED LOADS THAT WOULD IMPOSE EXCESSIVE STRAIN ON DECK OR STRUCTURAL MEMBERS. PROTECT STORED MATERIALS TO PREVENT DISPLACEMENT BY THE WIND AND PROTECT FROM EXPOSURE TO INCLEMENT WEATHER AND SUN.
G. ALL FLAMMABLE MATERIALS SHALL BE STORED IN A COOL, DRY AREA AWAY FROM SPARKS AND OPEN FLAMES. FOLLOW PRECAUTIONS OUTLINED ON CONTAINERS OR SUPPLIED BY MATERIAL MANUFACTURER/SUPPLIER.
H. ALL MATERIALS WHICH ARE DETERMINED BY AND OR CONTAMINATED BY THE CONSTRUCTION MANAGER OR ROOFING MANUFACTURER ARE TO BE REMOVED FROM THE JOB SITE IMMEDIATELY AND REPLACED AT NO COST TO THE OWNER. THIS INCLUDES MATERIALS IN BROKEN PACKAGES, OR SHOWS OTHER EVIDENCE OF DAMAGE, UNLESS CONSTRUCTION MANAGER OR ROOFING MANUFACTURER SPECIFICALLY AUTHORIZES CORRECTION THEREOF AND USAGE ON PROJECT.
1.06 JOB CONDITIONS
A. ROOFING MATERIALS MAY BE INSTALLED UNDER CERTAIN ADVERSE WEATHER CONDITIONS BUT ONLY AFTER CONSULTATION AND APPROVAL FROM ROOFING MANUFACTURER, AS INSTALLATION TIME AND SYSTEM INTEGRITY MAY BE AFFECTED.
1. APPLY ROOFING IN DRY WEATHER; DO NOT INSTALL ROOFING IN INCLEMENT WEATHER OR WHEN PRECIPITATION IS PREDICTED WITHIN GREATER THAN 20 PERCENT POSSIBILITY.
2. DO NOT APPLY ROOFING MEMBRANE WHEN AMBIENT TEMPERATURE IS BELOW 40 DEGREES F OR ABOVE 120 DEGREES F.
3. DO NOT APPLY ROOFING MEMBRANE TO DAMP OR FROZEN DECK SURFACE OR WHEN PRECIPITATION IS EXPECTED OR OCCURRING.
4. DO NOT EXPOSE MATERIALS VULNERABLE TO WATER OR SUN DAMAGE IN QUANTITIES GREATER THAT CAN BE WEATHERPROOFED THE SAME DAY.
B. ONLY AS MUCH OF THE NEW ROOFING AS CAN BE MADE WEATHERTIGHT EACH DAY, INCLUDING ALL FLASHING AND DETAIL WORK, SHALL BE INSTALLED. ALL SEAMS SHALL BE CLEANED AND HEAT WELDED BEFORE LEAVING THE JOB SITE THAT DAY.
C. ALL WORK SHALL BE SCHEDULED AND EXECUTED WITHOUT EXPOSING THE INTERIOR BUILDING AREAS TO THE EFFECTS OF INCLEMENT WEATHER. THE EXISTING BUILDING AND ITS CONTENTS SHALL BE PROTECTED AGAINST ALL RISKS AND ANY DAMAGES SHALL BE REPAIRED OR REPLACED. ANY PAVED AREAS SHALL BE PROTECTED FROM DAMAGE.
D. ALL SURFACES TO RECEIVE NEW INSULATION, MEMBRANE OR FLASHINGS SHALL BE DRY. SHOULD SURFACE MOISTURE OCCUR, THE APPLICATOR SHALL PROVIDE THE NECESSARY EQUIPMENT TO DRY THE SURFACE PRIOR TO APPLICATION.
E. ALL NEW AND TEMPORARY CONSTRUCTION, INCLUDING EQUIPMENT AND ACCESSORIES, SHALL BE SECURED IN SUCH A MANNER AS TO PRECLUDE WIND BLOW-OFF AND SUBSEQUENT ROOF OR EQUIPMENT DAMAGE.
F. UNINTERRUPTED TEMPORARY WATERSTOPS SHALL BE INSTALLED AT THE END OF EACH DAY'S WORK AND SHALL BE COMPLETELY REMOVED BEFORE PROCEEDING WITH THE NEXT DAY'S WORK. WATERSTOPS SHALL NOT EMIT DANGEROUS OR UNSAFE FUMES AND SHALL NOT REMAIN IN CONTACT WITH THE FINISHED ROOF AS THE INSTALLATION PROGRESSES. CONTAMINATED MEMBRANE SHALL BE REPLACED AT NO COST TO THE OWNER.
G. THE APPLICATOR IS CAUTIONED THAT CERTAIN MEMBRANES ARE INCOMPATIBLE WITH ASPHALT, COAL TAR, HEAVY OILS, ROOFING CEMENTS, CREOSOTE AND SOME PRESERVATIVE MATERIALS. SUCH MATERIALS SHALL NOT REMAIN IN CONTACT WITH MEMBRANES. THE APPLICATOR SHALL CONSULT ROOFING MANUFACTURER REGARDING COMPATIBILITY, PRECAUTIONS AND RECOMMENDATIONS.
H. ARRANGE WORK SEQUENCE TO AVOID USE OF NEWLY CONSTRUCTED ROOFING AS A WALKING SURFACE OR FOR EQUIPMENT MOVEMENT AND STORAGE. WHERE SUCH ACCESS IS ABSOLUTELY REQUIRED, THE APPLICATOR SHALL PROVIDE ALL NECESSARY PROTECTION AND BARRIERS TO SEGREGATE THE WORK AREA AND TO PREVENT DAMAGE TO ADJACENT AREAS. A SUBSTANTIAL PROTECTION LAYER CONSISTING OF PLYWOOD OVER INSULATION BOARD SHALL BE PROVIDED FOR ALL NEW AND EXISTING ROOF AREAS THAT RECEIVE ROOFTOP TRAFFIC DURING CONSTRUCTION.
I. PRIOR TO AND DURING APPLICATION, ALL DIRT, DEBRIS AND DUST SHALL BE REMOVED FROM SURFACES BY VACUUMING, SWEEPING, BLOWING WITH COMPRESSED AIR OR SIMILAR METHODS.
J. THE APPLICATOR SHALL FOLLOW ALL SAFETY REGULATIONS AS REQUIRED BY OSHA AND ANY OTHER APPLICABLE AUTHORITY HAVING JURISDICTION.
K. ALL NEW ROOFING WASTE MATERIAL (I.E. SCRAP ROOF MEMBRANE INSULATION, FLASHING, METAL WORK, EMPTY CANS OF ADHESIVE) SHALL BE IMMEDIATELY PICKED UP AND DEPOSITED IN DUMPSTERS PROVIDED BY THE CONSTRUCTION MANAGER.
L. THE APPLICATOR SHALL TAKE PRECAUTIONS THAT STORAGE AND APPLICATION OF MATERIALS AND EQUIPMENT DOES NOT OVERLOAD THE ROOF DECK OR BUILDING STRUCTURE.
M. PRECAUTIONS SHALL BE TAKEN WHEN USING ADHESIVES AT OR NEAR ROOFTOP VENTS OR AIR INTAKES (NEW AND EXISTING BUILDINGS). ADHESIVE ODORS COULD ENTER THE BUILDING. COORDINATE THE OPERATION OF VENTS AND AIR INTAKES IN SUCH A MANNER AS TO AVOID THE INTAKE OF ADHESIVE ODOR WHILE VENTILATING THE BUILDING. KEEP LIDS ON UNUSED CANS AT ALL TIMES.
N. FLAMMABLE ADHESIVES AND DECK PRIMERS SHALL NOT BE STORED AND NOT BE USED IN THE VICINITY OF OPEN FLAMES, SPARKS AND EXCESSIVE HEAT.
O. ALL ROOFTOP CONTAMINATION THAT IS ANTICIPATED OR THAT IS OCCURRING SHALL BE REPORTED TO ROOFING MANUFACTURER TO DETERMINE THE CORRECTIVE STEPS TO BE TAKEN.
P. THE APPLICATOR SHALL VERIFY THAT ALL ROOF DRAIN LINES ARE FUNCTIONING CORRECTLY (NOT CLOGGED OR BLOCKED) BEFORE STARTING WORK. APPLICATOR SHALL REPORT ANY SUCH BLOCKAGES IN WRITING TO THE CONSTRUCTION MANAGER FOR CORRECTIVE ACTION PRIOR TO THE INSTALLATION OF THE ROOF SYSTEM.
Q. THE APPLICATOR SHALL CONDUCT FASTENER PULLOUT TESTS IN ACCORDANCE WITH THE LATEST VERSION OF THE SPRI/ANSI FASTENER PULLOUT STANDARD TO VERIFY CONDITION OF THE DECK/SUBSTRATE AND TO CONFIRM EXPECTED PULLOUT VALUES.
R. PROTECTIVE WEAR SHALL BE WORN WHEN USING SOLVENTS OR ADHESIVES OR AS REQUIRED BY JOB CONDITIONS.
S. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION AND BARRIERS TO SEGREGATE THE WORK AREA AND TO PREVENT DAMAGE TO ADJACENT AREAS. PLYWOOD PROTECTION SHALL BE PROVIDED FOR ALL NEW ROOF AREAS, WHICH RECEIVE TRAFFIC DURING CONSTRUCTION. PLYWOOD TO BE SAND BAGGED TO PREVENT WIND BLOW-OFF.
1.07 CLEAN-UP
A. SITE CLEAN-UP, INCLUDING INTERIOR AND EXTERIOR OF BUILDING AREAS BELOW OR ADJACENT TO, OR IN ANY WAY AFFECTED BY THE CONSTRUCTION SHALL BE COMPLETE TO THE CONSTRUCTION MANAGER'S SATISFACTION.
B. ALL LANDSCAPED AREAS SHALL BE RAKED CLEAN AND RESECT SUITABLE FOR PLANTING.
C. ANY PAVED AREAS SHALL BE SWEPT CLEAN, IF REQUIRED.
D. ALL AREAS STAINED, DIRTIED, AND DISCOLORED OTHERWISE DAMAGED DUE TO THE WORK SHALL BE CLEANED, RESTORED AND REPLACED AS REQUIRED AT NO COST TO THE OWNER OR CONSTRUCTION MANAGER.
1.08 WARRANTIES
A. MANUFACTURER'S 20 YEAR FULL SYSTEM WARRANTY. THE WARRANTY SHALL HAVE FULL REPLACEMENT VALUE.
B. UPON SUCCESSFUL COMPLETION OF THE WORK TO MANUFACTURER'S SATISFACTION AND RECEIPT OF FINAL PAYMENT, THE MANUFACTURER'S FULL SYSTEM WARRANTY SHALL BE ISSUED PROVIDING A 20 YEAR MATERIAL AND LABOR TOTAL SYSTEM WARRANTY TO COVER FAILURE AND PREVENT PENETRATION OF WATER.
C. APPLICATOR/ROOFING CONTRACTOR WARRANTY.
1. THE APPLICATOR SHALL SUPPLY THE OWNER WITH A SEPARATE WORKMANSHIP WARRANTY. IN THE EVENT ANY WORK RELATED TO ROOFING, FLASHING, OR METAL WORK FOUND TO BE WITHIN THE APPLICATOR WARRANTY TERM, DEFECTIVE OR OTHERWISE NOT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, THE APPLICATOR SHALL REPAIR THAT DEFECT AT NO COST TO THE OWNER. THE APPLICATOR'S WARRANTY OBLIGATION SHALL RUN DIRECTLY TO THE OWNER AND SHALL COVER A PERIOD OF 5 YEARS FROM THE DATE OF COMPLETION. A COPY OF 04 - 86 STM WILL FOR APPLICATOR.
D. OWNER RESPONSIBILITY.
1. OWNER SHALL NOTIFY BOTH THE MANUFACTURER AND THE APPLICATOR OF ANY LEAKS AS THEY OCCUR DURING THE TIME PERIOD WHEN BOTH WARRANTIES ARE IN EFFECT.
E. ROOF SYSTEM SHALL MEET MANUFACTURES REQUIREMENTS FOR AN FM 1-90 MINIMUM WIND SPEED.
F. CORRECT DEFECTIVE WORK WITHIN A FIVE- YEAR PERIOD AFTER DATE OF SUBSTANTIAL COMPLETION.
G. SEE SECTION 01 78 00 – CLOSEOUT SUBMITTAL, FOR ADDITIONAL WARRANTY REQUIREMENTS.

PART 2 PRODUCTS
2.01 MANUFACTURERS
A. MEMBRANE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH THE REQUIREMENTS SPECIFIED HEREIN, MANUFACTURERS OFFERING PRODUCTS WHICH MAY BE INCORPORATED IN THE WORK INCLUDE, AND LIMITED TO THE FOLLOWING:
1. SIKA SARNAFIL.
2. SEAMAN CORPORATION, FIBERTITE.
3. TREMCO CORPORATION.
B. COMPONENTS OF THE ROOF SYSTEM ARE TO BE PRODUCTS OF SARNAFIL, FIBERTITE OR TREMCO AS INDICATED ON THE DETAIL DRAWINGS AND SPECIFIED IN THE CONTRACT DOCUMENTS.
C. COMPONENTS TO BE USED THAT ARE OTHER THAN THOSE SUPPLIED OR MANUFACTURED BY SARNAFIL, FIBERTITE OR TREMCO MAY BE SUBMITTED FOR REVIEW AND ACCEPTANCE BY ROOFING MANUFACTURER. ROOFING MANUFACTURER ACCEPTANCE OF ANY OTHER PRODUCT IS ONLY FOR A DETERMINATION OF COMPATIBILITY WITH PRODUCTS AND NOT FOR INCLUSION IN THE MANUFACTURER WARRANTY. THE SPECIFICATIONS, INSTALLATION INSTRUCTIONS, LIMITATIONS, AND RESTRICTIONS OF THE RESPECTIVE MANUFACTURERS MUST BE REVIEWED BY THE OWNER'S REPRESENTATIVE FOR ACCEPTABILITY FOR THE INTENDED USE WITH MANUFACTURER PRODUCTS.
D. SPECIAL CONSIDERATION SHOULD BE GIVEN TO CONSTRUCTION RELATED MOISTURE. AN EXAMPLE IS THE SIGNIFICANT AMOUNT OF MOISTURE GENERATED WHEN CONCRETE FLOOR SLABS ARE POURED AFTER THE ROOF HAS BEEN INSTALLED. ROOFING MANUFACTURER IS NOT RESPONSIBLE FOR DAMAGE TO THE INSULATION WHEN EXPOSED TO CONSTRUCTION RELATED MOISTURE.
2.02 MEMBRANE
A. MEMBRANE SHALL CONFORM TO:
1. SIKA CORPORATION, SARNAFIL S327 THERMOPLASTIC (PVC) MEMBRANE, 60 MIL., ENERGY SMART WHITE.
A. PVC MEMBRANE: ASTM D4434 (LATEST VERSION), "STANDARD FOR POLYVINYL CHLORIDE SHEET ROOFING". CLASSIFICATION: TYPE III.
2. SEAMAN CORPORATION, FIBERTITE SM-45, 45 MIL., THERMOPLASTIC (KEE) MEMBRANE, WHITE.
A. KEE MEMBRANE: ASTM D6754 (LATEST VERSION), "STANDARD FOR KETONE ETHYLENE ESTER BASED SHEET ROOFING".
3. TREMCO CORPORATION, TREMCO PT 60, 60 MIL., THERMOPLASTIC (KEE) MEMBRANE, WHITE.
A. NSF/ANSI STANDARD 347, "SUSTAINABILITY ASSESSMENT FOR SINGLE PLY ROOFING MEMBRANES". CERTIFICATION LEVEL: PLATINUM.
2.03 FLASHING MATERIALS
A. WALL / CURB FLASHING: SUBSTITUTE EQUIVALENT MATERIALS FOR USE WITH APPLICABLE MEMBRANES
1. G410 FLASHING MEMBRANE - A FIBERGLASS REINFORCED MEMBRANE ADHERED TO APPROVED SUBSTRATES USING SARNACOL ADHESIVE. G410 COMES IN 8" AND 12" WIDTHS AND IS 60 MIL (1.5 MM) THICK. CONSULT PRODUCT DATA SHEETS FOR ADHESIVE OPTIONS AND ADDITIONAL INFORMATION.
2. G459 FLASHING MEMBRANE - A FIBERGLASS REINFORCED MEMBRANE ADHERED TO ASPHALT, OTHER CONTAMINATED SURFACES, OR APPROVED SUBSTRATES USING SARNACOL ADHESIVE. G459 COMES IN 6.5' AND 3.25' WIDTHS AND IS 60 MIL (1.5MM) THICK. THE STANDARD COLOR IS WHITE ON TAN. THE TAN SIDE OF THE MEMBRANE MUST BE THE SIDE EXPOSED TO THE CONTAMINATION. CONSULT PRODUCT DATA SHEET FOR ADHESIVE AND ADDITIONAL INFORMATION.
3. SARNACLAD - A PVC-COATED, HEAT-WELDABLE SHEET METAL CAPABLE OF BEING FORMED INTO A VARIETY OF SHAPES AND PROFILES. SARNACLAD IS A 24 GAUGE, G90 GALVANIZED METAL SHEET WITH A 20 MIL (0.5 MM) UNSUPPORTED SARNAFIL MEMBRANE LAMINATED ON ONE SIDE. THE DIMENSIONS OF SARNACLAD ARE 4 FT X 8 FT (1.2 M X 2.4 M) OR 4 FT X 10 FT (1.2 M X 3.0 M). CONSULT PRODUCT DATA SHEET FOR ADDITIONAL INFORMATION.
B. PERIMETER EDGE FLASHING: SUBSTITUTE EQUIVALENT MATERIALS FOR USE WITH APPLICABLE MEMBRANES
1. EDGE GRIP FASCIA - A PREFABRICATED PERIMETER EDGE SYSTEM PROVIDED BY SIKA SARNAFIL. THE SYSTEM HAS CONCEALED FASTENERS WITH NO PENETRATIONS ON THE HORIZONTAL ROOF SURFACE AND INCLUDES FASTENERS AND SPLICE PLATES. EDGE GRIP IS MADE FROM TWO DISTINCT PARTS. A RIGID RETAINER BASE PLATE AND A DECORATIVE SNAP-ON FASCIA COVER. THE RETAINER IS MADE FROM 20 GAUGE GALVANIZED STEEL IN 10 FOOT (3048 MM) STANDARD LENGTHS AND IS PROVIDED WITH 9/32 INCH (7 MM) SLOTTED PRE-PUNCHED HOLES FOR FASTENER SPACING AT 12 INCHES (152 MM) ON CENTER. AS AN OPTION THE RETAINER BASE PLATE IS ALSO AVAILABLE IN 0.05 INCH (1.3 MM) ALUMINUM. THE SNAP-ON FASCIA COVER IS AVAILABLE IN 10 FOOT (3048 MM) LENGTHS AND IN A VARIETY OF THICKNESS, COLORS, FINISHES, AND WIDTHS. KYNAR-500 COLORS ARE AVAILABLE FOR GALVANIZED STEEL AND NATURAL MILL FINISHED ALUMINUM. CLEAR AND ANODIZED COLORS ARE AVAILABLE FOR ANODIZED FINISHED ALUMINUM. MATCHING CORNERS, END CAPS, FASCIA SUMPS, SPILL OUTS, ETC. ARE AVAILABLE AS ACCESSORIES. CONSULT PRODUCT DATA SHEET FOR ADDITIONAL INFORMATION.
a. RETAINER BASE PLATE SHALL BE 20 GAUGE GALVANIZED STEEL IN 10 FT. LENGTHS.
b. SNAP-ON FASCIA COVER SHALL BE 24 GAUGE GALVANIZED STEEL IN 10 FT. LENGTHS.
c. SNAP-ON FASCIA COVER SHALL HAVE A KYNAR FINISH.
d. SNAP-ON FASCIA COVER COLOR SHALL BE
C. MISCELLANEOUS FLASHING: SUBSTITUTE EQUIVALENT MATERIALS FOR USE WITH APPLICABLE MEMBRANES
1. SARNAREGLET - HEAVY-DUTY, EXTRUDED ALUMINUM FLASHING TERMINATION REGLET USED AT WALLS AND LARGE CURBS. SARNAREGLET IS PRODUCED FROM 6063-T5, 0.10 INCH TO 0.12 INCH (2.5 MM TO 3.0 MM) THICK EXTRUDED ALUMINUM. SARNAREGLET HAS A 2-1/4 INCH (57 MM) DEEP PROFILE AND IS PROVIDED IN 10 FOOT (3 M) LENGTHS. USE PREFABRICATED SARNAREGLET MITERED INSIDE AND OUTSIDE CORNERS WHERE WALLS INTERSECT. CONSULT PRODUCT DATA SHEET FOR ADDITIONAL INFORMATION.
2. SARNASTOK UNIVERSAL - A 60 MIL (1.5 MM) THICK PREFABRICATED STACK/PIPE BOOT INJECTION MOLDED. CONSULT PRODUCT DATA SHEET FOR ADDITIONAL INFORMATION.
3. SARNACIRCLES - A 60 MIL (1.5MM) THICK PREFABRICATED 4 1/2 IN. ROUND CIRCLE PATCH INJECTION MOLDED. CONSULT PRODUCT DATA SHEET FOR ADDITIONAL INFORMATION.
4. SARNACORNERS – INSIDE - A 60 MIL (1.5 MM) THICK PREFABRICATED INSIDE CORNER INJECTION MOLDED. CONSULT PRODUCT DATA SHEET FOR ADDITIONAL INFORMATION.
5. SARNACORNERS – OUTSIDE - A 60 MIL (1.5 MM) THICK PREFABRICATED OUTSIDE CORNER INJECTION MOLDED. CONSULT PRODUCT DATA SHEET FOR ADDITIONAL INFORMATION.
6. SIKAFLEX-1A - A PROPRIETARY SEALANT USED AT WALL, CURB DRAIN TERMINATIONS, PIPE PENETRATIONS, AND UNDER CERTAIN METALS. IT CAN ALSO BE USED AS A PITCH POCKET SEALANT. CONSULT PRODUCT DATA SHEET FOR ADDITIONAL INFORMATION.
7. SARNAFILLER - A POURABLE TWO COMPONENT URETHANE SEALANT USED AS A PITCH POCKET FILLER FOR ROOFING APPLICATIONS. CONSULT PRODUCT DATA SHEET FOR ADDITIONAL INFORMATION.
8. SARNACOL 2170 ADHESIVE - A SOLVENT-BASED REACTIVATING ADHESIVE USED TO ATTACH MEMBRANE TO FLASHING SUBSTRATE. CONSULT PRODUCT DATA SHEETS FOR ADDITIONAL INFORMATION.
9. SARNACOL 2170 VOC COMPLIANT - A SOLVENT-BASED, VOC COMPLIANT, REACTIVATING ADHESIVE USED TO ATTACH MEMBRANE TO FLASHING SUBSTRATE. CONSULT PRODUCT DATA SHEETS FOR ADDITIONAL INFORMATION.
11. REFER TO TABLE #2 AT END OF SPEC FOR SARNACOL 2170 / 2170 VOC COVERAGE RATES FOR FLASHINH MEMBRANES.
12. SARNAFELT - A LEVELING AND/OR SEPARATION LAYER THAT IS NECESSARY BEHIND G410 OR G459 FLASHING MEMBRANE WHEN THE FLASHING SUBSTRATES ARE ROUGH OR INCOMPATIBLE WITH THE FLASHING MEMBRANE. CONSULT PRODUCT DATA SHEETS FOR ADDITIONAL INFORMATION.
13. S327 COVERSTRIP - 8 INCH (0.20 M) WIDE PRECUT FLASHING MADE FROM SARNAFIL S327 POLYESTER REINFORCED MEMBRANE. USED TO COVERSTRIP SARNABAR AND SARNADISC.
D. INSULATION
1. CLOSED CELL POLYISOCYANURATE FOAM INSULATION MANUFACTURED WITH HCFC 14 POUND BLOWING AGENT AND BONDED TO GLASS FIBER REINFORCED FACERS ON TOP AND BOTTOM SURFACES DURING THE MANUFACTURING PROCESS. INSULATION SHALL CONFORM TO PROPERTY REQUIREMENTS OF FS HH-I-1972/GEN AND FS HH-I-1972/2.
a. MINIMUM THICKNESS: (SEE ROOF PLAN FOR ACTUAL INSULATION THICKNESS REQUIRED FOR EACH ROOF AREA).
b. MAXIMUM SHEET SIZE: 4'-0" X 8'-0"
1.)MAXIMUM INSULATION BOARDS (PER LAYER): 3"
2.)DENSITY: 2.0 POUNDS PER CUBIC FOOT (ASTM D 1622).
3.)COMPRESSIVE STRENGTH: 25 PSI (ASTM D 1621).
c. MOISTURE VAPOR TRANSMISSION: LESS THAN 1 PERM (ASTM E 96).
d. WATER ABSORPTION: LESS THAN 1 PERCENT PER VOLUME (ASTM C 209).
2. PROVIDE TAPERED INSULATION SYSTEM AS REQUIRED TO MEET ELEVATIONS AND SLOPES SHOWN ON DRAWINGS OR AS REQUIRED BY MEMBRANE MANUFACTURER, WHICH EVER IS MORE STRINGENT. PROVIDE CANTS AND CRICKETS AT DRAINS AS NECESSARY.
3. ROOF INSULATION ATTACHMENT PER DRAWINGS. APPROVED FOR FM 1-90 SYSTEM.
4. TAPERED ROOF INSULATION: PROVIDE TAPERED ROOF INSULATION AT ALL ROOF DRAINS TO FORM A DRAIN SUMP AREA AND AS INDICATED ON DRAWINGS.
5. INSULATION R-VALUES SHALL BE MINIMUM LTTR R-30.0 AND MINIMUM 6.0-INCH-THICK, COMPRISED A DOUBLE LAYER OF 3.0 INCH INSULATION.
6. THE INSULATION MANUFACTURER SHALL SEND, IN WRITING TO ARCHITECT AND MEMBRANE MANUFACTURER SHALL RECEIVE A COPY OF HIS RECOMMENDATIONS FOR USE OF HIS PRODUCT, INCLUDING:
a. NAME OF SPECIFIC PROJECT.
b.RECOMMENDED PROCEDURES FOR ATTACHMENT OF INSULATION TO DECK, INCLUDING QUANTITY, DENSITY, AND/OR SPACING BASED ON THE ROOFING SYSTEM REQUIREMENTS.
c. IF ADHESIVE IS USED; APPROVAL FOR USE OF MEMBRANE MANUFACTURERS SOLVENT BASED ADHESIVES FOR BONDING MEMBRANE DIRECTLY TO INSULATION BOARD.
d. INSULATION SHALL MEET ALL IDENTIFIED CODE/INSURANCE REQUIREMENTS.
e. INSULATION SHALL BE APPROVED BY INSULATION MANUFACTURER FOR INTENDED USE IN THE ROOFING SYSTEM AND FOR USE WITH THE ROOFING MEMBRANE MANUFACTURER'S MATERIALS.
f. STATEMENTS WHICH EXPRESS THE WARRANTY CONDITIONS FOR THE SUCCESSFUL PERFORMANCE OF THEIR INSULATION FOR THE DURATION OF THE MEMBRANE MANUFACTURER'S WARRANTY.
E. DENS-DECK COVER BOARD / ROOF BOARD
1. GLASS-MAT FACED GYPSUM ROOF BOARD
a. ACCEPTABLE PRODUCTS:
1.)DENSDECK PRIME, GEORGIA-PACIFIC GYPSUM LLC
2.)ARCHIT

07 72 33 - ROOF ACCESSORIES

07 84 00 - THROUGH PENETRATION FIRESTOP SYSTEMS (CONT.)

07 92 13 - JOINT SEALANTS

PART 1 – GENERAL
1.1 ITEMS REQUIRED BUT NOT SPECIFIED
A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.
1.2 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
1.3 SECTION INCLUDES
A. PREPARE SEALANT SUBSTRATE SURFACES.
B. FURNISH AND INSTALL SEALANT AND BACKING.
1.4 RELATED SECTIONS
A. DIVISION 04 SECTION MASONRY
B. DIVISION 06 SECTION ARCHITECTURAL WOODWORK
C. DIVISION 07 SECTION INSULATED METAL WALL PANELS
D. DIVISION 07 SECTION METAL WALL AND ROOF PANELS
E. DIVISION 07 SECTION ROOF ACCESSORIES
F. DIVISION 08 SECTION GLASS AND GLAZING MATERIALS
G. DIVISION 08 SECTION STEEL DOORS AND FRAMES
H. DIVISION 08 SECTION STAINLESS STEEL DOORS AND FRAMES
I. DIVISION 08 SECTION INDUSTRIAL DOORS
J. DIVISION 08 SECTION COLD STORAGE DOORS
K. DIVISION 08 SECTION HIGH SPEED DOORS
L. DIVISION 08 SECTION ALUMINUM STOREFRONT AND ENTRANCES
M. DIVISION 08 SECTION ALUMINUM WINDOWS
N. DIVISION 08 SECTION STEEL WINDOWS
O. DIVISION 09 SECTION GYPSUM WALLBOARD ASSEBLIES
P. DIVISION 09 SECTION CERAMIC TILE
Q. DIVISION 09 SECTION ACOUSTICAL PANEL CEILINGS
R. DIVISION 10 SECTION METAL LOCKERS
1.5 REFERENCES
A. THE STANDARDS REFERENCED HEREIN ARE INCLUDED TO ESTABLISH RECOGNIZED QUALITY ONLY. EQUIVALENT QUALITY AND TESTING STANDARDS WILL BE ACCEPTABLE, SUBJECT TO THEIR TIMELY SUBMISSION, REVIEW AND ACCEPTANCE BY THE ARCHITECT.
B. COMPLY WITH APPLICABLE REQUIREMENTS OF THE FOLLOWING STANDARDS AND THOSE OTHERS REFERENCED IN THIS SECTION. WHERE THESE STANDARDS CONFLICT WITH OTHER SPECIFIED REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENTS SHALL GOVERN.
1. ASTM (American Society of Testing and Materials):
a. ASTM C 717 - TERMS RELATING TO BUILDING SEALS AND SEALANTS.
b. ASTM C 790 - USE OF LATEX SEALING COMPOUNDS.
c. ASTM C 834 - LATEX SEALING COMPOUNDS.
d. ASTM C 920 - ELASTOMERIC JOINT SEALANTS.
e. ASTM C 962 - USE OF ELASTOMERIC JOINT SEALANTS.
f. ASTM C 1193 - GUIDE FOR USE OF JOINT SEALANTS.
g. ASTM D 1056 - FLEXIBLE CELLULAR MATERIALS - SPONGE OR EXPANDED RUBBER.
2. FS (FEDERAL SPECIFICATIONS, GENERAL SERVICES ADMINISTRATION):
a. FS TT-S-00227E - SEALING COMPOUND: ELASTOMERIC TYPE, MULTI-COMPONENT.
b. FS TT-S-001543A - SEALING COMPOUND, SILICONE RUBBER BASE.
c. FS TT-S-001657 - SEALING COMPOUND, SINGLE COMPONENT, BUTYL RUBBER BASED, SOLVENT RELEASE TYPE.
C. THE FOLLOWING REFERENCE MATERIALS ARE HEREBY MADE A PART OF THIS SECTION BY REFERENCE THERETO:
1. SWRI (SEALANT, WATERPROOFING & RESTORATION INSTITUTE) – SEALANT AND CAULKING GUIDE SPECIFICATION.
1.6 SUBMITTALS
A. SUBMIT THE FOLLOWING UNDER PROVISIONS OF DIVISION 1:
1. LITERATURE: MANUFACTURER'S PRODUCT DATA SHEETS, SPECIFICATIONS, PERFORMANCE DATA, CHEMICAL AND PHYSICAL PROPERTIES AND INSTALLATION INSTRUCTIONS FOR EACH ITEM FURNISHED HEREUNDER.
2. MANUFACTURER'S CERTIFICATION: THE PRODUCTS SUPPLIED MEET OR EXCEED SPECIFIED REQUIREMENTS.
3. COMPATIBILITY AND ADHESION TEST REPORTS: TEST REPORTS FROM SEALANT MANUFACTURER INDICATING THAT SEALANT PROPOSED FOR USE HAVE BEEN TESTED FOR COMPATIBILITY AND ADHESION WITH ACTUAL SAMPLES OF SUBSTRATES TO BE USED ON THIS PROJECT. INCLUDE SEALANT MANUFACTURER'S INTERPRETATION OF TEST RESULTS, AND RECOMMENDATIONS FOR PRIMERS AND SUBSTRATE PREPARATION SPECIFIC TO THIS PROJECT
4. SELECTION SAMPLES: SAMPLE CARD INDICATING MANUFACTURER'S FULL RANGE OF COLORS AVAILABLE FOR SELECTION BY ARCHITECT
1.7 QUALITY ASSURANCE
A. APPLICATOR SPECIALIZING IN APPLYING THE WORK OF THIS SECTION WITH A MINIMUM OF 3 YEARS DOCUMENTED EXPERIENCE APPROVED BY SEALANT MANUFACTURER.
B. OBTAIN JOINT SEALERS FROM A SINGLE MANUFACTURER FOR EACH TYPE SPECIFIED.CONFORM TO SWRI REQUIREMENTS FOR INSTALLATION.
1.8 DELIVERY, STORAGE AND HANDLING
A. EACH CONTAINER AND PACKAGE MUST BEAR AN UNBROKEN SEAL, TEST NUMBER AND LABEL OF THE MANUFACTURER UPON DELIVERY TO THE SITE. FAILURE TO COMPLY WITH THESE REQUIREMENTS SHALL BE SUFFICIENT CAUSE FOR REJECTION OF THE MATERIAL IN QUESTION, BY THE ARCHITECT AND HIS REQUIRING ITS REMOVAL FROM THE SITE. NEW MATERIAL CONFORMING TO SAID REQUIREMENTS, SHALL BE PROMPTLY FURNISHED AT NO ADDITIONAL COST TO THE CONTRACT.
1.9 PROJECT CONDITIONS
A. DO NOT INSTALL SINGLE COMPONENT SOLVENT CURING SEALANT IN ENCLOSED BUILDING SPACES.
B. ENVIRONMENTAL REQUIREMENTS: MAINTAIN TEMPERATURE AND HUMIDITY RECOMMENDED BY THE SEALANT MANUFACTURER DURING AND 24 HOURS AFTER INSTALLATION. DO NOT PROCEED WITH INSTALLATION OF JOINT SEALERS UNDER THE FOLLOWING CONDITIONS:
1. WHEN AMBIENT AND SUBSTRATE TEMPERATURE CONDITIONS ARE BELOW 40 DEGREES F.
2. WHEN JOINT SUBSTRATES ARE WET DUE TO RAIN, FROST, CONDENSATION, OR OTHER CAUSES.
C. DO NOT PROCEED WITH INSTALLATION OF JOINT SEALERS UNTIL CONTAMINATES CAPABLE OF INTERFERING WITH THEIR ADHESION ARE REMOVED FROM SUBSTRATES.
PART 2 - PRODUCTS
2.1 SEALANT MATERIALS
A. JOINT SEALER TYPE AA (ACRYLIC ACOUSTICAL): ONE COMPONENT ACRYLIC LATEX, PERMANENTLY ELASTIC, NON-STAINING, NON-SHRINKING, NON-MIGRATING AND PAINTABLE.
1. TREMCO, BEACHWOOD OH.; PRODUCT, "ACOUSTICAL SEALANT"
2. UNITED STATES GYPSUM COMPANY, CHICAGO IL.; PRODUCT "USG ACOUSTICAL SEALANT".
B. JOINT SEALER TYPE AP (ACRYLIC PAINTERS CAULK): ONE COMPONENT ACRYLIC LATEX CAULKING COMPOUND, CONFORMING TO FS 19-TP-21M AND ASTM C 834, PAINTABLE WITHIN 24 HOURS AFTER APPLICATION, WITH A MINIMUM MOVEMENT CAPABILITY OF ±12.5 PERCENT, EQUAL TO ONE OF THE FOLLOWING:
1. SONNEBORN BUILDING PRODUCTS INC., MINNEAPOLIS MN.; PRODUCT, "SONOLAC".
2. TREMCO, BEACHWOOD OH.; PRODUCT, "TRIMFLEX 834".
3. BOSTIK; PRODUCT, "CHEM-CALK 600".
C. JOINT SEALER TYPE B (BUTYL): GUN-GRADE MODIFIED BUTYL AND POLYISOBUTYLENE SEALANT, CONFORMING TO FS TT-S-001657, TYPE I, AND ASTM C-834, WITH A MOVEMENT CAPABILITY OF ±10 PERCENT OR BETTER AND A SHORE A HARDNESS OF 24 TO 28, EQUAL TO ONE OF THE FOLLOWING:
1. TREMCO, BEACHWOOD OH.; PRODUCT, "BUTYL SEALANT".
2. PECORA CORPORATION, HARLEYSVILLE PA.; PRODUCT "BC-158".
D. JOINT SEALER TYPE BP2 (BITUMEN MODIFIED POLYURETHANE, MULTI-COMPONENT): POURING GRADE SELF-LEVELING BITUMEN MODIFIED TWO COMPONENT URETHANE SEALANT, CONFORMING TO ASTM C920, TYPE M, GRADE P, CLASS 25 AND FS SS-S-00227E, TYPE 1, CLASS A, WITH A MINIMUM MOVEMENT CAPABILITY OF -50/-25 PERCENT, EQUAL TO ONE OF THE FOLLOWING:
1. MAMECO INTERNATIONAL, INC., PRODUCT "VULKEM 202".
2. SONNEBORN BUILDING PRODUCTS INC., MINNEAPOLIS MN.; PRODUCT, "SONOMERIC 2".
3. PECORA CORPORATION, HARLEYSVILLE PA.; PRODUCT "URETHAN NR-300".
E. JOINT SEALER TYPE CP2 (POLYURETHANE, MULTI-COMPONENT): METZGER/MCGUIRE MM80.
F. JOINT SEALER TYPE HL2 (HORIZONTAL-SELF-LEVELING, 2-COMPONENT): POURING GRADE SELF-LEVELING MULTI-COMPONENT URETHANE SEALANT, CONFORMING TO FS TT-S-00022TE, TYPE I, CLASS A, AND ASTM C 920, WITH A MINIMUM MOVEMENT CAPABILITY OF ±25 PERCENT, EQUAL TO THE FOLLOWING:
1. MAMECO INTERNATIONAL, INC., PRODUCT "VULKEM 245/255".
2. SIKA CORP., LYNDHURST NJ.; PRODUCT, "SIKAFLEX 2CSL".
3. SONNEBORN BUILDING PRODUCTS INC., MINNEAPOLIS MN.; PRODUCT, "SL2".
4. TREMCO, BEACHWOOD OH.; PRODUCT, "THC-900".
G. JOINT SEALER TYPE SC (SILICONE, GENERAL CONSTRUCTION): ONE-PART MEDIUM MODULUS, NATURAL CURE, SYNTHETIC SEALANT, HAVING A USEFUL LIFE EXPECTANCY OF AT LEAST 20 YEARS, CONFORMING TO ASTM C 920, TYPE S, NS, CLASS 25, USE NT, G, A, M, O WITH A MINIMUM MOVEMENT CAPABILITY OF ±50 PERCENT, EQUAL TO THE FOLLOWING:
1. DOW CORNING CORPORATION, MIDLAND MI.; PRODUCT, "791".
2. GENERAL ELECTRIC COMPANY (GE SILICONES) WATERFORD NY.; PRODUCT, "SILPRUF".
3. SONNEBORN BUILDING PRODUCTS INC., MINNEAPOLIS MN.; PRODUCT, "SONOLASTIC - OMNISEAL".
4. TREMCO, BEACHWOOD OH.; PRODUCT, "SPECTRIM 2".
H. JOINT SEALER TYPE SF (SILICONE, FOOD CONTACT): ONE COMPONENT SILICONE RUBBER, ACCEPTABLE TO LOCAL HEALTH OFFICIALS, CONFORMING TO U.S. FOOD AND DRUG ADMINISTRATION REGULATION 21 CFR 175.105 AND 175.300, FS TT-S-001543A, TYPE NON-SAG, CLASS A, AND ASTM C 920, TYPE NS, CLASS 25, USE NT, G, O AND A WITH A MINIMUM MOVEMENT CAPABILITY OF ±25 PERCENT, AND A SHORE A MINIMUM HARDNESS OF 20, EQUAL TO THE FOLLOWING:

07 92 13 - JOINT SEALANTS (CONT.)

1. DOW CORNING CORPORATION, MIDLAND MI.; PRODUCT, "732".
2. GENERAL ELECTRIC COMPANY, WATERFORD NY.; PRODUCT, "SERIES SCS1000".
I. JOINT SEALER TYPE SM (SILICONE, MILDEW-RESISTANT): ONE COMPONENT ACETOXY SILICONE RUBBER, MILDEW RESISTANT, ACCEPTABLE TO LOCAL HEALTH OFFICIALS, FS TT-S-001543A, TYPE NON-SAG, CLASS A, AND FS TT-S-00230C, TYPE II, CLASS A AND ASTM C 920, TYPE S, CLASS 25, GRADE NS, USE NT,G AND A WITH A MINIMUM MOVEMENT CAPABILITY OF ±25 PERCENT, AND A SHORE A HARDNESS OF 20, EQUAL TO THE FOLLOWING:
1. DOW CORNING CORPORATION, MIDLAND MI.; PRODUCT, "786".
2. GENERAL ELECTRIC COMPANY, WATERFORD NY.; PRODUCT, "SANITARY 1700".
3. SONNEBORN BUILDING PRODUCTS INC., MINNEAPOLIS MN.; PRODUCT, "SONOLASTIC - OMNIPLUS".
4. TREMCO, BEACHWOOD OH.; PRODUCT, "PROGLAZE".
J. JOINT SEALER TYPE SP (SILICONE FOR PLASTIC FABRICATIONS): ONE-PART SILICONE SEALANT, HAVING A USEFUL LIFE EXPECTANCY OF AT LEAST 20 YEARS, CONFORMING TO ASTM C 920, TYPE S, NS, CLASS 25, WITH A MINIMUM MOVEMENT CAPABILITY OF ±50 PERCENT, HAVING A PSI STRESS AT 50% EXTENSION OF 35 PSI. PROVIDE IN MANUFACTURER'S STANDARD COLORS AS SELECTED BY THE CONTRACTOR. SEALANT SHALL BE DESIGNED FOR PRIMERLESS APPLICATION TO POLYCARBONATE, ACRYLICS, PVC AND CPVC MATERIALS EQUAL TO: GENERAL ELECTRIC COMPANY (GE SILICONES) WATERFORD NY., PRODUCT, "LEXSIL".
2.2 ACCESSORIES
A. COMPRESSIBLE JOINT BEAD BACK-UP: COMPRESSIBLE CLOSED CELL POLYETHYLENE, EXTRUDED POLYOLEFIN FOAM OR POLYURETHANE FOAM ROD, 1/3 GREATER IN DIAMETER THAN WIDTH OF JOINT, SHAPE AND SIZE OF COMPRESSIBLE BACK-UP SHALL BE AS RECOMMENDED BY MANUFACTURER FOR THE SPECIFIC CONDITION USED. PROVIDE ONE OF THE FOLLOWING, OR EQUAL. (ONLY CLOSED CELL RODS WILL BE CONSIDERED):
1. APPLIED EXTRUSION TECHNOLOGIES, INC., MIDDLETOWN DE, PRODUCT "SOF ROD".
2. BACKER ROD MANUFACTURING, INC., DENVER, CO, PRODUCT "DENVER FOAM".
3. SONNEBORN BUILDING PRODUCTS INC., MINNEAPOLIS MN. PRODUCT "SONOFOAM".
B. PRIMERS: FURNISH AND INSTALL JOINT PRIMERS OF THE TYPES, AND TO THE EXTENT, RECOMMENDED BY THE RESPECTIVE SEALANT MANUFACTURERS FOR THE SPECIFIC JOINT MATERIALS AND JOINT FUNCTION.
C. BOND-BREAKER TAPE, AND TEMPORARY MASKING TAPE: OF TYPES AS RECOMMENDED BY THE MANUFACTURER OF THE SPECIFIC SEALANT AND CAULKING MATERIAL USED AT EACH APPLICATION, AND COMPLETELY FREE FROM CONTAMINANTS WHICH WOULD ADVERSELY AFFECT THE SEALANT AND CAULKING MATERIALS.
PART 3 - EXECUTION
3.1 EXAMINATION
A. INSPECT ALL SURFACES
3.2 PREPARATION
A. WEATHER CONDITIONS MUST BE DRY AND OF THE TEMPERATURE, AS RECOMMENDED BY SEALANT MANUFACTURER, DURING APPLICATION OPERATIONS.
B. SURFACE RECEIVING WORK OF THIS SECTION MUST BE ABSOLUTELY DRY AND DUST FREE. ALL JOINTS RECEIVING SEALANT AND CAULKING MATERIALS AND BE SUBJECT TO THE APPROVAL OF THE MATERIAL MANUFACTURER FOR PROPER USE OF THE SPECIFIED MATERIALS.
C. THOROUGHLY CLEAN JOINTS, REMOVING ALL LOOSE MORTAR, OIL, GREASE, DUST, FROST, AND OTHER FOREIGN MATERIALS THAT WILL PREVENT PROPER ADHESION OF PRIMERS AND SEALANT MATERIALS.
1. CLEAN NON FERROUS METALS OF ALL RUST AND COATINGS BY WIRE BRUSH, GRINDING OR SANDBLASTING. REMOVE OIL, GREASE AND PROTECTIVE COATINGS WITH CLEANERS RECOMMENDED BY SEALANT MANUFACTURER.
D. IF SO RECOMMENDED AND FURNISHED BY THE SPECIFIC SEALANT MANUFACTURER, APPLY PRIMER TO ALL JOINT SURFACES, TAKING CARE NOT TO STAIN ADJACENT SURFACES.
E. VERIFY THAT JOINT BACKING AND RELEASE TAPES ARE COMPATIBLE WITH SEALANT.
F. PERFORM PREPARATION IN ACCORDANCE WITH ASTM C 804 AND C 790 FOR SOLVENT AND LATEX BASE SOLVENTS, RESPECTIVELY.
3.3 INSTALLATION
A. INSTALL JOINT BEAD BACK-UP IN ALL JOINTS IN EXCESS OF 5/8-INCH DEPTH, AND JOINTS THAT HAVE NO BACK-UP THEREIN, PLACING THE JOINT BEAD IN THE JOINT IN A MANNER THAT WILL ASSURE A CONSTANT DEPTH 1/8 INCH GREATER THAN THE SEALANT AND CAULKING MATERIAL DEPTH TOLERANCES.
1. SET BEADS INTO JOINTS CONTINUOUSLY, BY SLIGHTLY STRETCHING DURING PLACEMENT, TO PERMIT COMPRESSION AGAINST SIDES OF JOINT, WITHOUT SURFACE WRINKLES OR BUCKLES.
2. DO NOT STRETCH BACK-UP MATERIAL INTO JOINTS.
B. INSTALL BOND BREAKER IN JOINTS WHERE SHOWN IN THE DRAWINGS AND WHEREVER RECOMMENDED BY THE SEALANT MANUFACTURER TO PREVENT BOND OF THE SEALANT TO SURFACES WHERE SUCH BOND MIGHT IMPAIR THE WORK.
C. APPLY MASKING TAPE OR OTHER PRECAUTIONS TO PREVENT MIGRATION OR SPILLAGE OF MATERIALS ONTO ADJOINING SURFACES.
D. APPLY URETHANE SEALANT AND LATEX CAULKING MATERIALS INTO JOINTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, USING MECHANICAL OR POWER CAULKING GUN EQUIPPED WITH NOZZLE OF APPROPRIATE SIZE, WITH SUFFICIENT PRESSURE TO COMPLETELY FILL THE JOINTS.
1. THE DEPTH OF SEALANT AND CAULKING MATERIALS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS FOR THE SPECIFIC JOINT FUNCTION, BUT IN NO CASE EXCEED 1/2-INCH DEPTH, NOR LESS THAN 1/4-INCH DEPTH, NOR LESS THAN 1/4-INCH WIDTH.
2. MAINTAIN THE OUTER EDGE OF THE SEALANT AND CAULKING MATERIALS, WHERE SIDE FACES OF JOINTS ARE IN THE SAME PLANE, BACK 1/8-INCH FROM THE FACES.
3. APPLY SEALANT IN CONTINUOUS BEADS WITHOUT OPEN JOINTS, VOIDS OR AIR POCKETS SO AS TO PROVIDE A WATERTIGHT AND AIRTIGHT SEAL FOR THE ENTIRE JOINT LENGTH.
4. AFTER PLACEMENT OF THE SEALANT AND CAULKING MATERIALS, CONCAVE-TOOL THE SURFACES TO UNIFORM DENSITY, USING A WATER-WET TOOL. DO NOT USE DETERGENTS OR SOAPY WATER FOR THE TOOLING OPERATIONS.
5. REMOVE THE TEMPORARY MASKING TAPE IMMEDIATELY AFTER TOOLING, AND BEFORE THE SEALANT OR CAULKING MATERIAL HAS TAKEN INITIAL SET.
3.4 CLEANING
A. CLEAN ALL SURFACES OF ADJACENT SURFACES WHICH HAVE BEEN MARKED OR SOILED BY THE WORK OF THIS SECTION, REMOVING ALL EXCESS SEALANT AND CAULKING MATERIALS WITH SOLVENTS WHICH WILL NOT DAMAGE THE SURFACES IN ANY WAY.
3.5 PROTECTION
A. DURING THE OPERATION OF SEALANT WORK, PROTECT THE WORK OF OTHER TRADES AGAINST UNDUE SOILAGE AND DAMAGE BY THE EXERCISE OF REASONABLE CARE AND PRECAUTIONS. REPAIR OR REPLACE ANY WORK SO DAMAGED AND SOILED.
3.6 SCHEDULE
A. GENERAL: SEAL JOINTS INDICATED AND ALL INTERIOR JOINTS, SEAMS, AND INTERSECTIONS BETWEEN DISSIMILAR MATERIALS.
B. SEALANT COLORS:
1. COLORS FOR SEALANT TYPES "HL2", "SC", "SF", "SP", AND "SM": AS SELECTED BY THE ARCHITECT FROM MANUFACTURER'S STANDARD COLORS.
2. COLOR FOR SEALANT TYPES "AA" AND "AP": WHITE.
3. COLOR FOR SEALANT TYPE "B": BLACK
4. IN CONCEALED INSTALLATION, AND IN PARTIALLY OR FULLY EXPOSED INSTALLATION WHERE SO APPROVED BY THE ARCHITECT, STANDARD GRAY OR BLACK SEALANT MAY BE USED.
C. INTERIOR JOINTS (LISTED BY PRIMARY BUILDING MATERIAL ABUTTING SEALANT JOINTS):
1. INTERIOR CONCRETE:
2. INTERIOR JOINTS AT FOOD PROCESSING AREAS AND INSULATED FOOD STORAGE AREAS:
3. GYPSUM BOARD (NOT IN FOOD AREAS):
4. INTERIOR METAL (NOT IN FOOD AREAS):
5. ACOUSTICAL TILE (NOT IN FOOD AREAS):
6. INTERIOR PLASTIC (NOT IN FOOD AREAS):

END OF SECTION 07 92 13

08 13 00 - HOLLOW METAL DOORS & FRAMES

PART 1 – GENERAL
1.1 ITEMS REQUIRED BUT NOT SPECIFIED
A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.
1.2 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION
1.3 SECTION INCLUDES
A. FURNISH THE FOLLOWING PRODUCTS TO BE INSTALLED UNDER THE DESIGNATED SECTIONS:
1. FLUSH UL-LABELED AND NON-LABELED STEEL DOORS, COMPLETE WITH INTERNAL REINFORCING, HARDWARE CUT-OUTS, AND PROVIDED WITH GLAZING OPENINGS, WHERE SO INDICATED.
2. HOLLOW METAL FRAMES FOR DOORS, UL-LABELED AND NON-LABELED, COMPLETE WITH INTERNAL REINFORCING.
3. HOLLOW METAL FRAMES FOR WINDOWS.
1.4 RELATED SECTIONS
A. DIVISION 4 - UNIT MASONRY ASSEMBLIES.
B. DIVISION 7 - JOINT SEALERS.
C. DIVISION 8 - DOOR HARDWARE: FURNISHING FINISH HARDWARE, AND INSTALLATION TEMPLATES FOR HARDWARE CUT-OUTS AND REINFORCING.
D. DIVISION 8 – GLAZING: FOR GLASS PRODUCTS TO BE INSTALLED IN DOORS
E. DIVISION 9 - PAINTS: APPLIED FINISH COATINGS.
F. BUILDING-IN OF FRAME ANCHORS TO WALL AND PARTITION CONSTRUCTION: BY TRADE RESPONSIBLE FOR WALL AND PARTITION ERECTION.
1.5 REFERENCES
A. COMPLY WITH APPLICABLE REQUIREMENTS OF THE FOLLOWING STANDARDS AND THOSE OTHERS REFERENCED IN THIS SECTION. WHERE THESE STANDARDS CONFLICT WITH OTHER SPECIFIED REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENTS SHALL GOVERN.
1. SDI (STEEL DOOR INSTITUTE):
a. ANSI/SDI 100 - STANDARD STEEL DOORS AND FRAMES.
2. ASTM (AMERICAN SOCIETY OF TESTING AND MATERIALS):
a. ASTM E 152 - METHODS OF FIRE TESTS OF DOOR ASSEMBLIES.
b. ASTM A 366 - STEEL, CARBON, COLD ROLLED SHEET, COMMERCIAL QUALITY.
c. ASTM A 568 - STEEL, CARBON AND HIGH STRENGTH LOW ALLOY HOT ROLLED STRIP, AND COLD ROLLED SHEET.
d. ASTM A 525 - STEEL SHEET, ZINC-COATED BY THE HOT-DIP PROCESS.
e. ASTM A 526 - STEEL SHEET, ZINC COATED (GALVANIZED) BY THE HOT DIP PROCESS, COMMERCIAL QUALITY.
3. ALL APPLICABLE FEDERAL, STATE AND MUNICIPAL CODES, LAWS AND REGULATIONS FOR EXITS.
1.6 SUBMITTALS
A. SUBMIT THE FOLLOWING UNDER PROVISIONS OF DIVISION 1:
1. LITERATURE: MANUFACTURER'S PRODUCT DATA SHEETS, SPECIFICATIONS, FOR DOORS, FRAMES AND SHOP APPLIED FINISHES.
2. CERTIFICATION: MANUFACTURER'S WRITTEN CERTIFICATION STATING THAT DOORS, FRAMES, AND ALL RELATED ITEMS TO BE FURNISHED HEREUNDER, MEET OR EXCEED THE REQUIREMENTS SPECIFIED UNDER THIS SECTION; THAT SPECIFIED GALVANIZED AND SHOP PRIMING HAS BEEN PERFORMED.
3. SHOP DRAWINGS: A COMPLETE SCHEDULE OF DOORS AND FRAMES, TO BE FURNISHED HEREUNDER, COORDINATED WITH THE DOOR AND FRAME SCHEDULE CONTAINED IN THE CONTRACT DRAWINGS. LARGE SCALE DETAILS OF EACH TYPE DOOR AND FRAME CONSTRUCTION, INDICATING ALL GAGES, CUT-OUTS FOR GLAZING IN DOORS, REINFORCING, AND ANCHORAGE.
4. DETAILS OF CONDUIT AND PREPARATIONS FOR ELECTRIFIED DOOR HARDWARE AND CONTROLS.
1.7 SEQUENCING AND SCHEDULING
A. COORDINATE THE WORK OF THIS SECTION WITH THE RESPECTIVE TRADES RESPONSIBLE FOR FURNISHING HARDWARE AND INSTALLING DOORS AND FRAMES.
B. ENSURE THAT THE WORK PERFORMED HEREUNDER IS COORDINATED WITH ISSUED TEMPLATES AUTHORIZED BY THE HARDWARE SUPPLIER.
C. DO NOT FABRICATE DOORS OR FRAMES BEFORE RECEIVING A COPY OF THE APPROVED HARDWARE SCHEDULE, SUBMITTED BY THE HARDWARE SUPPLIER, REVIEWED BY THE SUBCONTRACTOR AND ACCEPTED BY THE CONTRACTOR AND THE ARCHITECT. VERIFY THAT ISSUED TEMPLATES ARE COORDINATED WITH THE APPROVED SCHEDULE; IMMEDIATELY NOTIFY THE ARCHITECT, IN WRITING, OF ANY CONFLICTS.
1.8 DELIVERY, STORAGE, AND HANDLING
A. PRIOR TO SHIPPING, IDENTIFY EACH FRAME AND DOOR WITH A REMOVABLE METAL OR PLASTIC LABEL WHICH CORRESPONDS WITH DOOR SCHEDULE IDENTIFYING OPENING NUMBER AND LOCATION.
B. DELIVER DOORS AND FRAMES BOXED OR CRATED TO PROVIDE PROTECTION DURING TRANSIT AND JOB STORAGE.
C. INSPECT DOORS AND FRAMES UPON DELIVERY FOR DAMAGE. MINOR DAMAGE MAY BE REPAIRED PROVIDED THE REFINISHED ITEMS ARE EQUAL IN RESPECTS TO NEW WORK AND ACCEPTABLE TO THE ARCHITECT; OTHERWISE REMOVE AND REPLACE DAMAGED ITEMS.
D. STORE DOORS AND FRAMES AT THE BUILDING SITE UPRIGHT AND UNDER COVER. PLACE THE UNITS ON WOOD DUNNAGE AND COVER IN A MANNER THAT WILL PREVENT RUST AND DAMAGE.
PART 2 - PRODUCTS
2.1 MANUFACTURERS
A. SUBJECT TO COMPLIANCE WITH THE REQUIREMENTS SPECIFIED HEREIN, MANUFACTURERS OFFERING PRODUCTS WHICH MAY BE INCORPORATED IN THE WORK INCLUDE THE FOLLOWING:
1. AMWELD BUILDING PRODUCTS, INC., GARRETTSVILLE OH.
2. CECO COMPANY, OAKBROOK TERRACE IL.
3. CURRIES COMPANY / ESSEX INDUSTRIES, MASON CITY IA.
4. REPUBLIC BUILDERS PRODUCTS CORPORATION, MCKENZIE TN.
5. STEELCRAFT; AN INGERSOLL-RAND COMPANY.
B. ALL DOORS AND FRAMES SHALL BE OF ONE MANUFACTURER.
2.2 DOORS
A. GENERAL: REFER TO THE DRAWINGS FOR DESIGN OF DOORS, SIZES, GLAZING CUT-OUTS IN DOORS, AND DETAILS.
B. CONSTRUCTION: FULL FLUSH COMMERCIAL TYPE, 1-3/4 INCHES THICK UNLESS NOTED OTHERWISE, MEETING OR EXCEEDING THE MATERIALS, GAGES, CONSTRUCTION, AND TESTING REQUIREMENTS OF THE REFERENCED ANSI AND SDI PUBLICATIONS.
1. ALL EDGES OF DOORS TO BE SEALED, FLUSH CONSTRUCTION.
C. DOORS: ANSI/SDI 100, GRADE II, HEAVY-DUTY (LEVEL B), MODEL 1, 18-GAGE STEEL FACES, WITH A MINIMUM STC RATING OF 32.
1. DOORS TO HAVE INSULATED CORE MATERIAL WITH A MINIMUM THERMAL RATED OF U = 0.67.
a. EXTERIOR FRAMES TO BE GALVANIZED METAL.
2. FIRE-RATED DOORS: MODIFY SPECIFIED CONSTRUCTION TO MEET ALL CONSTRUCTION REQUIREMENTS REQUIRED FOR FIRE-RESISTIVE RATING.
a. AFFIX APPROPRIATE UL, FM OR WARNOCK HERSEY LABELS TO EACH RATED DOOR, INDICATING APPLICABLE RATING.
D. GLAZING STOPS: RECTANGULAR CHANNEL SECTIONS, NOT LESS THAN 20 GAGE; PRE-DRILLED AND LOOSELY ATTACHED WITHIN THE GLAZING CUT-OUTS WITH COUNTERSUNK TAMPER-RESISTANT STAINLESS STEEL SCREWS; SIZED TO PROPERLY ACCOMMODATE THE DESIGNATED THICKNESSES OF GLASS AND GLAZING MATERIALS; AND EXTERNAL EDGES SET FLUSH WITH, OR SLIGHTLY BEHIND, DOOR FACE. MODIFY GLAZING STOPS ON ALL LABEL DOORS TO CONFORM WITH UL FIRE RATING REQUIREMENTS.
E. HARDWARE REINFORCING: WELDED IN PLACE STEEL REINFORCEMENT, HOT ROLLED PICKLED AND OILED STEEL PER ASTM A569, WITH THE FOLLOWING MINIMUM GAGES:
1. HINGES, 8 GAGE.
2. KICK PLATES, 18 GAGE.
3. CLOSERS, LOCKS, AND ALL OTHER HARDWARE: 10 GAGE.
4. LOCATIONS FOR REINFORCING SHALL BE DETERMINED FROM INFORMATION AND TEMPLATES PROVIDED UNDER SECTION 08710 - HARDWARE.
F. FABRICATION
1. FABRICATE DOORS WITH HARDWARE REINFORCEMENT WELDED IN PLACE.
2.3 HOLLOW METAL FRAMES
A. GENERAL: REFER TO THE DRAWINGS FOR VARIOUS TYPES OF FRAMES, SIZES, AND PROFILES, AND OTHER CHARACTERISTICS OF FRAMES AND RELATED ITEMS.
1. SHOP WELDED FRAMES WITH MITERED JOINTS ARC-WELDED, REINFORCED AND GROUND SMOOTH.

08 13 00 - HOLLOW METAL DOORS & FRAMES (CONT.)

B. MATERIALS FOR FRAMES, REINFORCEMENT, ANCHORS, ANCHOR CLIPS AND RELATED ITEMS: COMMERCIAL GRADE COLD-ROLLED STEEL CONFORMING TO ASTM A366 OR COMMERCIAL GRADE HOT-ROLLED AND PICKLED STEEL CONFORMING TO ASTM A569.
1. FRAME GAGE: 16 GAGE.
a. Exterior frames to be galvanized metal.
2. REINFORCING CHANNELS WITHIN FRAMES, EXCEPT WHERE STRUCTURAL STEEL CHANNELS ARE INDICATED, AND EXCEPT WHERE U.L. LABEL REQUIREMENTS PROHIBIT SAME: 12 GAGE.
3. HINGE, LOCK AND STRIKE REINFORCEMENT: 3/16 INCH THICK.
4. DOOR CLOSER REINFORCEMENT: 12 GAGE.
5. FLOOR CLIPS: 3/16 INCH THICK.
6. SPLICE PLATES OR CHANNELS: SAME GAGE AS DOOR FRAME.
7. PLASTER GUARDS: 26 GAGE.
C. FRAME CONSTRUCTION:
1. SHOP-FABRICATE FRAMES AS WHOLE SINGLE UNITS PER DOOR OPENING, EXCEPT WHEN FRAME SIZE IS TOO LARGE TO SHIP AS A SINGLE UNIT. OVERSIZED FRAMES MAY BE SHIPPED IN LARGE SECTIONS AS PRACTICABLE FOR FIELD ASSEMBLY WITH CONCEALED SPLICE PLATES OR CHANNELS.
2. FRAME CORNER CONSTRUCTION: AS SPECIFIED IN PARAGRAPH A, ABOVE.
3. REINFORCEMENTS, STIFFENERS, AND BASE ANGLE CLIPS: WELDED TO INTERIOR SURFACES OF FRAMES TO PROVIDE A STABLE BASE AND SO AS TO NOT INTERFERE WITH INSTALLATION OF HARDWARE.
4. PROVIDE PLASTER GUARDS WELDED TO FRAME, AT BACK OF HARDWARE CUT-OUTS WHERE MORTAR OR OTHER MATERIALS MAY OBSTRUCT HARDWARE OPERATION.
5. APPEARANCE OF FINISHED FRAMES: STRONG, RIGID, COMPLETELY FREE FROM WARP AND BUCKLE, WITH MITERS WELL-FORMED AND IN TRUE ALIGNMENT,

08 22 00 - GLASS FIBER DOORS WITH STAINLESS STEEL FRAMES

PART 1 – GENERAL
1.1 SECTION INCLUDES:
A. FURNISH AND INSTALL
1. GLASS FIBER REINFORCED POLYESTER (FRP) DOORS WITH STAINLESS STEEL FRAMES.
1.2 RELATED SECTIONS
A. DIVISION 4 - UNIT MASONRY ASSEMBLIES.
B. DIVISION 5 – METAL FABRICATIONS.
C. DIVISION 7 - JOINT SEALERS.
D. DIVISION 7 – INSULATED METAL PANELS.
E. DIVISION 8 - DOOR HARDWARE: FURNISHING FINISH HARDWARE, AND INSTALLATION TEMPLATES FOR HARDWARE CUT-OUTS AND REINFORCING.
F. DIVISION 8 – GLAZING: FOR GLASS PRODUCTS TO BE INSTALLED IN DOORS
G BUILDING-IN OF FRAME ANCHORS TO WALL AND UNITS: CONSTRUCTION: BY TRADE RESPONSIBLE FOR WALL AND PARTITION ERECTION.
1.3 SUBMITTALS
A. SUBMIT THE FOLLOWING UNDER PROVISIONS OF DIVISION 1:
1. LITERATURE: MANUFACTURER'S PRODUCT DATA SHEETS, SPECIFICATIONS, FOR DOORS, FRAMES AND SHOP APPLIED FINISHES.
2. CERTIFICATIONS: CERTIFICATES OF CONFORMANCE TO THE STANDARDS AND SPECIFICATIONS REFERENCED HEREUNDER.
3. SHOP DRAWINGS: A COMPLETE SCHEDULE OF DOORS AND FRAMES, TO BE FURNISHED HEREUNDER, COORDINATED WITH THE DOOR AND FRAME SCHEDULE CONTAINED IN THE CONTRACT DRAWINGS. LARGE SCALE DETAILS OF EACH TYPE DOOR AND FRAME CONSTRUCTION, INDICATING ALL GAGES, REINFORCING, ANCHORAGE, AND CUT-OUTS FOR GLAZING IN DOORS.
4. SELECTION SAMPLES: INTEGRALLY COLORED GLASS FIBER REINFORCED RESIN CHIPS OF MANUFACTURER'S STANDARD AVAILABLE COLORS FOR SELECTION BY THE ARCHITECT.
5. MOCK-UP SAMPLES: PROVIDE ONE COMPLETE CUT AWAY MANUFACTURED SAMPLE OF DOOR LEAF SHOWING FACE SHEET, CORE AND EDGE CONDITION. MINIMUM SIZE 6-INCH X 6-INCH.
1.4 QUALITY ASSURANCE
A. DOORS TO BE ACCEPTABLE BASED ON REVIEW OF CHEMICAL CONSTITUENTS AGAINST APPROPRIATE USDA AND FDA REGULATIONS, FOR INCIDENTAL FOOD CONTACT, IF APPLICABLE TO THIS PROJECT.
B. FABRICATOR, WITH A MINIMUM OF 15 YEARS DOCUMENTED EXPERIENCE DEMONSTRATING PREVIOUSLY SUCCESSFUL WORK OF THE TYPE SPECIFIED HEREIN, AND BE CAPABLE OF SUBMITTING A LIST OF RECENT INSTALLATIONS UPON REQUEST.
C. REFERENCE STANDARDS
1. DOOR PROPERTIES
a. STANDARD TEST METHOD FOR STEADY STATE THERMAL TRANSMISSION PROPERTIES BY MEANS OF THE HEAT FLOW METER APPARATUS.
b. SUCCESSFULLY COMPLETED 1,000,000 CYCLES TEST IN ACCORDANCE WITH:
1) AAMA 920-03 – SPECIFICATION FOR OPERATING CYCLE PERFORMANCE OF SIDE-HINGED EXTERIOR DOOR SYSTEMS.
2) ANSI A250.4-2001 – TEST PROCEDURE and ACCEPTANCE CRITERIA FOR PHYSICAL ENDURANCE FOR STEEL DOORS, FRAMES, FRAME ANCHORS AND HARDWARE REINFORCING.
3) NWWDA TM-7 TEST METHOD TO DETERMINE THE PHYSICAL ENDURANCE OF WOOD DOORS AND ASSOCIATED HARDWARE UNDER ACCELERATED OPERATING CONDITIONS.
D. AN EXPERIENCED INSTALLER WHO HAS COMPLETED FIBERGLASS DOOR AND FRAME INSTALLATIONS SIMILAR IN MATERIAL, DESIGN, AND EXTENT TO THOSE INDICATED AND WHOSE WORK HAS RESULTED IN CONSTRUCTION WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE.
E. SOURCE LIMITATIONS:
1. OBTAIN FIBERGLASS REINFORCED PLASTIC DOORS AND STAINLESS STEEL FRAMES THROUGH ONE SOURCE FABRICATED FROM A SINGLE MANUFACTURER.
2. HARDWARE AND ACCESSORIES FOR ALL FRP DOORS AS SPECIFIED IN SECTION 08710 SHOULD BE PROVIDED AND INSTALLED BY THE FIBERGLASS DOOR AND FRAME MANUFACTURER.
3. GLASS FOR WINDOWS IN DOORS SHALL BE FURNISHED AND INSTALLED BY DOOR AND FRAME MANUFACTURER IN ACCORDANCE WITH RELATED SECTION, DIVISION 8, GLAZING.
1.5 SEQUENCING AND SCHEDULING
A. COORDINATE THE WORK OF THIS SECTION WITH THE RESPECTIVE TRADES RESPONSIBLE FOR FURNISHING HARDWARE AND INSTALLING DOORS AND FRAMES.
1. ENSURE THAT THE WORK PERFORMED HEREUNDER IS COORDINATED WITH ISSUED TEMPLATES AUTHORIZED BY THE HARDWARE SUPPLIER.
B. DO NOT FABRICATE DOORS OR FRAMES BEFORE OBTAINING A COPY OF THE APPROVED HARDWARE SCHEDULE, SUBMITTED BY THE HARDWARE SUPPLIER, REVIEWED BY THE SUBCONTRACTOR AND ACCEPTED BY THE CONTRACTOR AND THE ARCHITECT. VERIFY THAT ISSUED TEMPLATES ARE COORDINATED WITH THE APPROVED SCHEDULE; IMMEDIATELY NOTIFY THE ARCHITECT, IN WRITING, OF ANY CONFLICTS.
1.6 DELIVERY, STORAGE, AND HANDLING
A. PRIOR TO SHIPPING, IDENTIFY EACH FRAME AND DOOR WITH A REMOVABLE METAL OR PLASTIC LABEL WHICH CORRESPONDS WITH DOOR SCHEDULE IDENTIFYING OPENING NUMBER.
B. DELIVER DOORS AND FRAMES BOXED OR CRATED IN MANUFACTURER'S STANDARD CONTAINERS TO PROVIDE PROTECTION AND PREVENT DAMAGE TO FACE, CORNERS AND EDGES DURING TRANSIT AND JOB STORAGE.
C. DOOR INSTALLER SHALL BE RESPONSIBLE TO PROPERLY STORE AND UNLOAD DOOR DELIVERY.
D. INSPECT DOORS AND FRAMES UPON DELIVERY FOR DAMAGE. MINOR DAMAGE MAY BE REPAIRED PROVIDED THE REFINISHED ITEMS ARE EQUAL IN RESPECTS TO NEW WORK AND ACCEPTABLE TO THE ARCHITECT; OTHERWISE REMOVE AND REPLACE DAMAGED ITEMS.
E. STORE DOORS AND FRAMES AT THE BUILDING SITE UPRIGHT AND UNDER COVER. PLACE THE UNITS ON WOOD DUNNAGE AND COVER IN A MANNER THAT WILL PREVENT RUST AND DAMAGE.
1.7 WARRANTY
A. ALL FIBERGLASS DOORS SHALL HAVE A LIFETIME GUARANTEE AGAINST FAILURE DUE TO CORROSION. ADDITIONALLY, FIBERGLASS DOORS AND FIBERGLASS FRAMES ARE GUARANTEED FOR TEN YEARS AGAINST FAILURE DUE TO MATERIALS AND WORKMANSHIP, INCLUDING WARP, SEPARATION OR DELAMINATION, AND EXPANSION OF THE CORE.
B. ON SITE ASSISTANCE AVAILABLE.

PART 2 - PRODUCTS
2.1 MANUFACTURERS
A. SUBJECT TO COMPLIANCE WITH THE REQUIREMENTS SPECIFIED HEREIN, MANUFACTURERS OFFERING PRODUCTS WHICH MAY BE INCORPORATED IN THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING, OR EQUAL:
1. CHEM-PRUF, SENNECA COMPANY
2. JAMOTUF, JAMISON DOOR
3. ENVIRO COLD STORAGE DOORS, ASI TECHNOLOGIES.
4. WEILAND INDUSTRIAL DOORS AND WINDOWS
5. APPROVED EQUAL.
2.2 GLASS FIBER DOORS
A. GENERAL: REFER TO THE DRAWINGS FOR DESIGN OF DOORS, SIZES, GLAZING CUT-OUTS IN DOORS, INTEGRAL LOUVERS, AND DETAILS. ALL REINFORCING RESINS SHALL CONTAIN A HALOGENATED ADDITIVE OR CO-REACTANT PLUS ANTIMONY TRIOXIDE TO ACHIEVE A FLAME SPREAD OF 25 OR LESS PER ASTM E 84 AND SHALL BE SELF-EXTINGUISHING PER ASTM D 635.
B. DOOR DESCRIPTION: FULL FLUSH, COMPLETE WITH TYPE-1, 3-4 INCH THICK WITH MINERAL GEL COAT COLOR:
1. CORE: CLOSED CELL INSULATING FOAM NON CFC AND HCFC FREE, FIRE RETARDANT FLAME SPREAD OF 25 OR LESS AND LOW SMOKE DEVELOPED 185 OR LESS PER ASTM E84. REINFORCED FOR THRU-BOLTING HARDWARE AS NECESSARY, PREPARED FOR PRESS MOLDING OF PLATES AND EDGES.
2. DOOR PLATES: MOLDED IN ONE CONTINUOUS PIECE, RESIN REINFORCED WITH LAID-LAID GLASS FIBER MATS AND OR WOVEN ROVING, NOMINAL 1/8" (3MM) THICK, UNPAINTED, 25 MIL MINIMUM GEL COAT SURFACE.
3. DOOR EDGES: MOLDED FIBERGLASS REINFORCED, MACHINE TOOLED EDGE, NOMINAL 3/8" (10 MM) THICK MOLDED TO PLATES TO CREATE A SEAMLESS MONOLITHIC PANEL. BONDING PLATES TO PULTRUSIONS OR USE OF METALLIC EDGES ARE NOT PERMITTED.
4. HARDWARE REINFORCING: STEEL PLATE BURIED IN GLASS FIBER MATRIX, FACTORY-INSTALLED FROM TEMPLATES AND INFORMATION PROVIDED BY THE HARDWARE SUPPLIERS RESPONSIBLE FOR FURNISHING THE SPECIFIC ITEMS TO BE APPLIED TO EACH DOOR.
2.3 STAINLESS STEEL FRAMES
A. DOOR FRAME DESCRIPTION: FRAMES TO BE FABRICATED FROM 16-GAUGE, MINIMUM, STAINLESS STEEL SHEET. ASTM A666, 304 #4 FINISH. FRAME TO BE FULLY WELDED.
B. HARDWARE REINFORCEMENT: FABRICATE REINFORCEMENT PLATES FROM STAINLESS STEEL ON STEEL, TO COMPLY WITH THE FOLLOWING MINIMUM SIZES:
1. HINGES: MINIMUM 0.167 INCH (4.2 MM) THICK BY 1-1/4 INCHES (32 MM) WIDE BY 10 INCHES (254 MM) LONG, SECURED BY NOT LESS THAN 6 SPOT WELDS.
2. STRIKES AND CLOSERS: MINIMUM 0.093 INCH (2.3 MM) THICK.
3. SURFACE-MOUNTED HARDWARE: MINIMUM 0.093 INCH (2.3 MM) THICK.
C. HEAD REINFORCEMENT: MINIMUM 0.093-INCH- (2.3-MM-) THICK, STEEL CHANNEL OR ANGLE STIFFENER.
D. JAMB ANCHORS: PROVIDE ANCHOR SUITABLE FOR WALL CONDITIONS.
1. WELD TO STAINLESS STEEL SUBFRAME.
2. MASONRY TYPE: ADJUSTABLE STRAP-AND-STIRRUP OR T-SHAPED ANCHORS TO SUIT FRAME SIZE, NOT LESS THAN 0.053 INCH (1.3 MM) THICK, WITH CORRUGATED OR PERFORATED STRAPS NOT LESS THAN 2 INCHES (50 MM) WIDE BY 10 INCHES (250 MM) LONG; OR WIRE ANCHORS NOT LESS THAN 0.156 INCH (4.0 MM) THICK
3. POSTINSTALLED EXPANSION TYPE FOR IN-PLACE CONCRETE OR MASONRY: MINIMUM 3/8-INCH- (9.5-MM-) DIAMETER BOLTS WITH EXPANSION SHIELDS OR INSERTS. PROVIDE PIPE SPACER FROM FRAME TO WALL, WITH THROAT REINFORCEMENT PLATE, WELDED TO FRAME AT EACH ANCHOR LOCATION.

PART 3 – EXECUTION
3.1 EXAMINATION
A. EXAMINE SUBSTRATES, AREAS, AND CONDITIONS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES AND OTHER CONDITIONS AFFECTING PERFORMANCE OF DOORS AND FRAMES.
B. EXAMINE ROUGHING-IN FOR EMBEDDED AND BUILT-IN ANCHORS TO VERIFY ACTUAL LOCATIONS OF STANDARD STEEL FRAME CONNECTIONS BEFORE FRAME INSTALLATION.
C. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
3.2 PREPARATION
A. REMOVE WELDED-IN SHIPPING FRAME SPREADERS INSTALLED AT FACTORY.
B. PRIOR TO INSTALLATION AND WITH INSTALLATION SPREADERS IN PLACE, ADJUST AND SECURELY BRACE DOOR FRAMES FOR SQUARENESS, ALIGNMENT, TWIST, AND PLUMB TO THE FOLLOWING TOLERANCES:
1. SQUARENESS: PLUS OR MINUS 1/16 INCH (1.6 MM), MEASURED AT DOOR RABBET ON A LINE 90 DEGREES FROM JAMB PERPENDICULAR TO FRAME HEAD.
2. ALIGNMENT: PLUS OR MINUS 1/16 INCH (1.6 MM), MEASURED AT JAMBS ON A HORIZONTAL LINE PARALLEL TO PLANE OF WALL.
3. TWIST: PLUS OR MINUS 1/16 INCH (1.6 MM), MEASURED AT OPPOSITE FACE CORNERS OF JAMBS ON PARALLEL LINES, AND PERPENDICULAR TO PLANE OF WALL.
4. PLUMNESS: PLUS OR MINUS 1/16 INCH (1.6 MM), MEASURED AT JAMBS ON A PERPENDICULAR LINE FROM HEAD TO FLOOR.
C. Drill and tap doors and frames to receive nontemplated mortised and surface-mounted door hardware.
3.3 INSTALLATION
A. INSTALL DOORS AND FRAMES ACCURATELY TO ESTABLISHED LINES AND LEVELS. PERFORM THE INSTALLATION WORK IN STRICT ACCORDANCE WITH THE APPROVED SHOP DRAWINGS AND WITH ACTUAL CONDITIONS AT THE BUILDING.
B. ANCHORAGE OF FRAMES IN STAINLESS STEEL SUBFRAMES:
1. STAINLESS STEEL FRAMES TO BE SET PLUMB WITH IN STAINLESS STEEL SUBFRAMES WHERE INDICATED ON DRAWINGS AND DETAILS.
2. WELD DOOR FRAME TO SUBFRAME AS NOTED IN DETAILS. MINIMUM OF 3 WELDS PER JAMB. FILL JOINT BETWEEN WELDS WITH SEALANT.
C. ANCHORAGE OF DOORS AND FRAMES IN MASONRY OR CONCRETE:
1. ANCHORAGE FOR FRAMES: FLAT HEAD COUNTERSUNK FASTENERS APPROPRIATE FOR SUBSTRATE, STAINLESS STEEL.
2. SPACING OF ANCHORAGE:
a. FOR FRAMES UP TO AND INCLUDING 3'-0" IN HEIGHT, PROVIDE NOT LESS THAN 2 ANCHORS, CLIPS, OR BOLTS, PER JAMB, AS APPLICABLE.
b. FOR FRAMES GREATER THAN 3'-0" BUT LESS THAN 7'-6" IN HEIGHT, PROVIDE NOT LESS THAN 4 ANCHORS, CLIPS, OR BOLTS, PER JAMB, AS APPLICABLE.
c. FOR FRAMES GREATER THAN 7'-6" IN HEIGHT, PROVIDE 5 ANCHORS, CLIPS, OR BOLTS, PER JAMB, AS APPLICABLE.
d. FOR FRAMES REQUIRING ONLY 2 ANCHORAGE ITEMS PER JAMB, LOCATE ANCHORS AT HEAD AND SILL OF FRAME. FOR FRAMES REQUIRING MORE THAN 2 ANCHORS PER JAMB, LOCATE ANCHORS OR CLIPS AT HEAD, 12 INCHES BELOW HEAD, AND SPACED EQUIDISTANT FROM THAT POINT TO FLOOR.
3.4 ADJUSTING AND CLEANING
A. FINAL ADJUSTMENTS: CHECK AND READJUST OPERATING HARDWARE ITEMS IMMEDIATELY BEFORE FINAL INSPECTION. LEAVE WORK IN COMPLETE AND PROPER OPERATING CONDITION. REMOVE AND REPLACE DEFECTIVE WORK, INCLUDING DOORS OR FRAMES THAT ARE WARPED, BOWED, OR OTHERWISE UNACCEPTABLE.
B. CLEAN GROUT AND OTHER BONDING MATERIAL OFF DOORS AND FRAMES IMMEDIATELY AFTER INSTALLATION.

END OF SECTION 08 2200

08 33 23 - OVERHEAD COILING DOORS

PART 1 - GENERAL
1.1 ITEMS REQUIRED BUT NOT SPECIFIED
A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.
1.2 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
1.3 SUMMARY
A. THIS SECTION INCLUDES THE FOLLOWING TYPES OF MANUALLY AND ELECTRIC-MOTOR-OPERATED OVERHEAD COILING DOORS:
1. INSULATED SERVICE DOORS.
2. FIRE-RATED SERVICE DOORS.
B. RELATED SECTIONS INCLUDE THE FOLLOWING:
1. DIVISION 26 SECTIONS FOR ELECTRICAL SERVICE AND CONNECTIONS FOR POWERED OPERATORS AND ACCESSORIES.
1.4 DEFINITIONS
A. OPERATION CYCLE: ONE CYCLE OF A DOOR IS COMPLETE WHEN IT IS MOVED FROM THE CLOSED POSITION TO THE FULLY OPEN POSITION AND RETURNED TO THE CLOSED POSITION.
1.5 PERFORMANCE REQUIREMENTS
A. STRUCTURAL PERFORMANCE: PROVIDE OVERHEAD COILING DOORS CAPABLE OF WITHSTANDING THE EFFECTS OF GRAVITY LOADS AND THE FOLLOWING LOADS AND STRESSES WITHOUT EVIDENCING PERMANENT DEFORMATION OF DOOR COMPONENTS:
1. WIND LOAD: UNIFORM PRESSURE (VELOCITY PRESSURE) OF 20 LBF/SQ. FT. (960 PA), ACTING INWARD AND OUTWARD.
B. OPERATION-CYCLE REQUIREMENTS: PROVIDE OVERHEAD COILING DOOR COMPONENTS AND OPERATORS CAPABLE OF OPERATING FOR NOT LESS THAN 10,000 CYCLES PER DAY.
1.6 SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE AND SIZE OF OVERHEAD COILING DOOR AND ACCESSORY. INCLUDE THE FOLLOWING:
1. FIRE-RATED DOORS: INCLUDE DESCRIPTION OF FIRE-RELEASE SYSTEM INCLUDING TESTING AND RESETTING INSTRUCTIONS.
B. SHOP DRAWINGS: FOR SPECIAL COMPONENTS AND INSTALLATIONS NOT DIMENSIONED OR DETAILED IN MANUFACTURER'S PRODUCT DATA.
C. SAMPLES FOR INITIAL SELECTION: MANUFACTURER'S COLOR CHARTS SHOWING FULL RANGE OF COLORS AVAILABLE FOR UNITS WITH FACTORY- APPLIED FINISHES.
D. QUALIFICATION DATA: FOR INSTALLER.
1.7 QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS: MANUFACTURER'S AUTHORIZED REPRESENTATIVE WHO IS TRAINED AND APPROVED FOR BOTH INSTALLATION AND MAINTENANCE OF UNITS REQUIRED FOR THIS PROJECT.
B. SOURCE LIMITATIONS: OBTAIN OVERHEAD COILING DOORS THROUGH ONE SOURCE FROM A SINGLE MANUFACTURER.
1. OBTAIN OPERATORS AND CONTROLS FROM OVERHEAD COILING DOOR MANUFACTURER.
C. FIRE-TEST-RESPONSE CHARACTERISTICS: PROVIDE ASSEMBLIES COMPLYING WITH NFPA 80 THAT ARE IDENTICAL TO DOOR AND FRAME ASSEMBLIES TESTED FOR FIRE-TEST-RESPONSE CHARACTERISTICS PER UL 10B AND NFPA 252, AND THAT ARE LISTED AND LABELED FOR FIRE RATINGS INDICATED BY UL, FM&, ITS, OR ANOTHER TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
D. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100.

PART 2 - PRODUCTS
2.1 MANUFACTURERS
A. MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
1. ATLAS DOOR; DIV. OF CLOPAY BUILDING PRODUCTS COMPANY, INC.
2. COOKSON COMPANY.
3. OVERHEAD DOOR CORP.
4. RAYNOR.
5. WAYNE-DALTON CORP.
2.2 DOOR CURTAIN MATERIALS AND CONSTRUCTION
A. DOOR CURTAINS: FABRICATE OVERHEAD COILING DOOR CURTAIN OF INTERLOCKING SLATS, DESIGNED TO WITHSTAND WIND LOADING INDICATED, IN A CONTINUOUS LENGTH FOR WIDTH OF DOOR WITHOUT SPLICES. UNLESS OTHERWISE INDICATED, PROVIDE SLATS OF THICKNESS AND MECHANICAL PROPERTIES RECOMMENDED BY DOOR MANUFACTURER FOR PERFORMANCE, SIZE, AND TYPE OF DOOR INDICATED, AND AS FOLLOWS:
1. STEEL DOOR CURTAIN SLATS: ZINC-COATED (GALVANIZED), COLD-ROLLED STRUCTURAL STEEL (SS) SHEET; COMPLYING WITH ASTM A 653/A 653M, GRADE 40 (275) COATING DESIGNATION.
a. MINIMUM BASE-METAL (UNCOATED) THICKNESS: 0.0209 INCH (0.65 MM).
b. FLAT PROFILE SLATS.
2. STAINLESS-STEEL DOOR CURTAIN SLATS: ASTM A 666, TYPE 304.
a. MINIMUM SPECIFIED THICKNESS: NOT LESS THAN 0.025 INCH (0.65 MM).
b. FLAT PROFILE SLATS.
3. INSULATION: FILL SLAT WITH MANUFACTURER'S STANDARD RIGID CELLULAR POLYSTYRENE OR POLYURETHANE-FOAM-TYPE THERMAL INSULATION COMPLYING WITH MAXIMUM FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF 75 AND 450, RESPECTIVELY, ACCORDING TO ASTM E 84. ENCLOSE INSULATION COMPLETELY WITHIN METAL SLAT FACES.
4. INSIDE CURTAIN SLAT FACE: TO MATCH MATERIAL OF OUTSIDE METAL CURTAIN SLAT.
B. ENDLOCKS AND WINDLOCKS FOR SERVICE DOORS: MALLEABLE-IRON CASINGS GALVANIZED AFTER FABRICATION, SECURED TO CURTAIN SLATS WITH GALVANIZED RIVETS OR HIGH-STRENGTH NYLON. MOUNT WINDLOCK ON NOT LESS THAN ALTERNATE CURTAIN SLATS FOR CURTAIN ALIGNMENT AND RESISTANCE AGAINST LATERAL MOVEMENT.
2.3 HOODS AND ACCESSORIES
A. HOOD: FORM TO ACT AS WEATHERSEAL AND ENTIRELY ENCLOSE COILED CURTAIN AND OPERATING MECHANISM AT OPENING HEAD. CONTOUR TO FIT END BRACKETS TO WHICH HOOD IS ATTACHED. ROLL AND REINFORCE TOP AND BOTTOM EDGES FOR STIFFNESS. PROVIDE CLOSED ENDS FOR SURFACE-MOUNTED HOODS AND PROVIDE FASCIA FOR ANY PORTION OF BETWEEN-JAMB MOUNTING PROJECTING BEYOND WALL FACE. PROVIDE INTERMEDIATE SUPPORT BRACKETS AS REQUIRED TO PREVENT SAGGING.
1. FABRICATE HOODS FOR STEEL DOORS OF MINIMUM 0.028-INCH- (0.7-MM-) THICK, HOT-DIP GALVANIZED STEEL SHEET WITH G90 (275) ZINC COATING, COMPLYING WITH ASTM A 653/A 653M.
2. FOR FIRE RATED DOOR, INCLUDE AUTOMATIC DROP BAFFLE TO GUARD AGAINST PASSAGE OF SMOKE OR FLAME.
3. SHAPE: ROUND.
4. EXTERIOR-MOUNTED DOOR: FABRICATE HOOD WITH SEALANT-JOINT BEAD PROFILE FOR APPLYING JOINT SEALANT.
B. SMOKE SEALS: PROVIDE UL-LISTED AND -TESTED SMOKE-SEAL PERIMETER GASKETS.
C. WEATHERSEALS: PROVIDE REPLACEABLE, ADJUSTABLE, CONTINUOUS, COMPRESSIBLE WEATHER-STRIPPING GASKETS FITTED TO BOTTOM AND TOP OF EXTERIOR DOORS, UNLESS OTHERWISE INDICATED. AT DOOR HEAD, USE 1/8-INCH- (3-MM-) THICK, REPLACEABLE, CONTINUOUS SHEET SECURED TO INSIDE OF HOOD.
1. PROVIDE MOTOR-OPERATED DOORS WITH COMBINATION BOTTOM WEATHERSEAL AND SENSOR EDGE.
D. PUSH-PULL HANDLES: WHERE INDICATED ON DRAWINGS AS MANUAL OPERATION, PROVIDE GALVANIZED STEEL LIFTING HANDLES ON EACH SIDE OF DOOR.
SLIDE BOLT: FABRICATE WITH SLIDE-LOCKING BOLTS TO ENGAGE THROUGH SLOTS IN TRACKS FOR LOCKING BY PADLOCK, LOCATED ON BOTH LEFT AND RIGHT JAMB SIDES, OPERABLE FROM COIL SIDE.
F. CHAIN LOCK KEEPER: SUITABLE FOR PADLOCK.
G. IF DOOR UNIT IS POWER OPERATED, PROVIDE SAFETY INTERLOCK SWITCH TO DISENGAGE POWER SUPPLY WHEN DOOR IS LOCKED.
H. PROVIDE AUTOMATIC-CLOSING DEVICE THAT IS INOPERATIVE DURING NORMAL DOOR OPERATIONS, WITH OSCILLATING GOVERNOR UNIT COMPLYING WITH REQUIREMENTS OF NFPA 80 AND WITH AN EASILY TESTED AND RESET RELEASE MECHANISM, AND DESIGNED TO BE ACTIVATED BY THE FOLLOWING:
1. REPLACEABLE FUSIBLE LINKS WITH TEMPERATURE RISE AND MELTING POINT OF 165 DEG F (74 DEG C); INTERCONNECTED AND MOUNTED ON BOTH SIDES OF DOOR OPENING.
2. BUILDING FIRE ALARM AND DETECTION SYSTEM AND DOOR-HOLDER-RELEASE DEVICES.
2.4 COUNTERBALANCING MECHANISM
A. GENERAL: COUNTERBALANCE DOORS BY MEANS OF ADJUSTABLE-TENSION, STEEL HELICAL TORSION SPRING MOUNTED AROUND A STEEL SHAFT AND CONTAINED IN A SPRING BARREL CONNECTED TO DOOR CURTAIN WITH BARREL RINGS. USE GREASE-SEALED BEARINGS OR SELF-LUBRICATING GRAPHITE BEARINGS FOR ROTATING MEMBERS.
B. COUNTERBALANCE BARREL: FABRICATE SPRING BARREL OF HOT-FORMED, STRUCTURAL-QUALITY, WELDED OR SEAMLESS CARBON-STEEL PIPE, OF SUFFICIENT DIAMETER AND WALL THICKNESS TO SUPPORT ROLLED-UP CURTAIN WITHOUT DISTORTION OF SLATS AND TO LIMIT BARREL DEFLECTION TO NOT MORE THAN 0.03 IN./FT. (2.5 MM/M) OF SPAN UNDER FULL LOAD.
C. PROVIDE SPRING BALANCE OF ONE OR MORE ZINC-COATED, HEAT-TREATED STEEL HELICAL TORSION SPRINGS. SIZE SPRINGS TO COUNTERBALANCE WEIGHT OF CURTAIN, WITH UNIFORM ADJUSTMENT ACCESSIBLE FROM OUTSIDE BARREL. PROVIDE CAST-STEEL BARREL PLUGS TO SECURE ENDS OF SPRINGS TO BARREL AND SHAFT.
D. FABRICATE TORSION ROD FOR COUNTERBALANCE SHAFT OF COLD-ROLLED STEEL, SIZED TO HOLD FIXED SPRING ENDS AND CARRY TORSIONAL LOAD.
E. BRACKETS: PROVIDE MOUNTING BRACKETS OF MANUFACTURER'S STANDARD DESIGN, EITHER CAST IRON OR COLD-ROLLED STEEL PLATE.
2.5 MANUAL DOOR OPERATORS
A. PUSH-UP OPERATION: DESIGN COUNTERBALANCE MECHANISM SO REQUIRED LIFT OR PULL FOR DOOR OPERATION DOES NOT EXCEED 25 LBF (111 N).
B. CHAIN-HOIST OPERATOR: PROVIDE MANUAL CHAIN-HOIST OPERATOR CONSISTING OF ENDLESS STEEL HAND CHAIN, CHAIN POCKET WHEEL AND GUARD, AND GEAR-REDUCTION UNIT WITH A MAXIMUM 35-LBF (155-N) FORCE FOR DOOR OPERATION. PROVIDE ALLOY STEEL HAND CHAIN WITH CHAIN HOLDER SECURED TO OPERATOR GUIDE.
2.6 ELECTRIC DOOR OPERATORS
A. GENERAL: PROVIDE ELECTRIC DOOR OPERATOR ASSEMBLY OF SIZE AND CAPACITY RECOMMENDED AND PROVIDED BY DOOR MANUFACTURER FOR DOOR AND OPERATION-CYCLE REQUIREMENTS SPECIFIED, WITH ELECTRIC MOTOR AND FACTORY-PREWIRED MOTOR CONTROLS, STARTER, GEAR-REDUCTION UNIT, SOLENOID-OPERATED BRAKE, CLUTCH, REMOTE-CONTROL STATIONS, CONTROL DEVICES, INTEGRAL GEARING FOR LOCKING DOOR, AND ACCESSORIES REQUIRED FOR PROPER OPERATION.
B. COMPLY WITH NFPA 70.
C. DISCONNECT DEVICE: HAND-OPERATED DISCONNECT DEVICE OR MECHANISM FOR AUTOMATICALLY ENGAGING CHAIN-AND-SPROCKET OPERATOR AND RELEASING BRAKE FOR EMERGENCY MANUAL OPERATION WHILE DISCONNECTING MOTOR WITHOUT AFFECTING TIMING OF LIMIT SWITCH. MOUNT DISCONNECT AND OPERATOR SO THEY ARE ACCESSIBLE FROM FLOOR LEVEL. INCLUDE INTERLOCK DEVICE TO AUTOMATICALLY PREVENT MOTOR FROM OPERATING WHEN EMERGENCY OPERATOR IS ENGAGED.
D. DESIGN OPERATOR SO MOTOR MAY BE REMOVED WITHOUT DISTURBING LIMIT-SWITCH ADJUSTMENT AND WITHOUT AFFECTING EMERGENCY AUXILIARY OPERATOR.
E. PROVIDE CONTROL EQUIPMENT COMPLYING WITH NEMA ICS 1, NEMA ICS 2, AND NEMA ICS 6, WITH NFPA 70, CLASS 2 CONTROL CIRCUIT, MAXIMUM 24-V, AC OR DC.
F. DOOR-OPERATOR TYPE: PROVIDE WALL-, HOOD-, OR BRACKET-MOUNTED, JACKSHAFT-TYPE DOOR OPERATOR UNIT CONSISTING OF ELECTRIC MOTOR, ENCLOSED GEAR-HEAD-REDUCTION DRIVE, AND CHAIN AND SPROCKET SECONDARY DRIVE.
G. ELECTRIC MOTORS: PROVIDE HIGH-STARTING TORQUE, REVERSIBLE, CONTINUOUS-DUTY, CLASS A INSULATED, ELECTRIC MOTORS COMPLYING WITH NEMA MG 1; WITH OVERLOAD PROTECTION, SIZED TO START, ACCELERATE, AND OPERATE DOOR IN EITHER DIRECTION FROM ANY POSITION, AT NOT LESS THAN 2/3 FPS (0.2 M/S) AND NOT MORE THAN 1 FPS (0.3 M/S), WITHOUT EXCEEDING NAMEPLATE RATINGS OR SERVICE FACTOR.
1. TYPE: POLYPHASE, MEDIUM-INDUCTION TYPE.
2. SERVICE FACTOR: ACCORDING TO NEMA MG 1, UNLESS OTHERWISE INDICATED.
3. COORDINATE WIRING REQUIREMENTS AND ELECTRICAL CHARACTERISTICS OF MOTORS WITH BUILDING ELECTRICAL SYSTEM.
4. PROVIDE OPEN DRIPPROOF-TYPE MOTOR, AND CONTROLLER WITH NEMA ICS 6, TYPE 1 ENCLOSURE.
H. DOOR CONTROL: DOOR TO BE ACTIVATED ON BOTH SIDES OF THE DOOR BY PUSH BUTTON. REMOTE CONTROL WHERE INDICATED ON DRAWINGS.
1. PUSH BUTTON: OPEN, STOP, CLOSE.
2. PROVIDE REMOTE CONTROL WITH SEPARATE CHANNELS OR CODES TO EACH DOOR INDEPENDENTLY
I. REFER TO ELECTRICAL DRAWINGS FOR NEMA CLASSIFICATIONS REQUIRED FOR EACH AREA WHERE DOOR IS LOCATED.
J. OBSTRUCTION DETECTION DEVICE: PROVIDE EACH MOTORIZED DOOR WITH INDICATED EXTERNAL AUTOMATIC SAFETY SENSOR CAPABLE OF PROTECTING FULL WIDTH OF DOOR OPENING. ACTIVATION OF SENSOR IMMEDIATELY STOPS AND REVERSES DOWNWARD DOOR TRAVEL.
1. PHOTOELECTRIC SENSOR: MANUFACTURER'S STANDARD SYSTEM DESIGNED TO DETECT AN OBSTRUCTION IN DOOR OPENING WITHOUT CONTACT BETWEEN DOOR AND OBSTRUCTION.
2. SENSOR EDGE: PROVIDE EACH MOTORIZED DOOR WITH AN ELECTRICALLY ACTUATED AUTOMATIC SAFETY SENSOR EDGE, LOCATED WITHIN ASTRAGAL OR WEATHER STRIPPING MOUNTED TO BOTTOM BAR. CONTACT WITH SENSOR IMMEDIATELY STOPS AND REVERSES DOWNWARD DOOR TRAVEL. CONNECT TO CONTROL CIRCUIT USING MANUFACTURER'S STANDARD TAKE-UP REEL OR SELF-COILING CABLE.
K. LIMIT SWITCHES: PROVIDE ADJUSTABLE SWITCHES, INTERLOCKED WITH MOTOR CONTROLS AND SET TO AUTOMATICALLY STOP DOOR AT FULLY OPENED AND FULLY CLOSED POSITIONS.
2.7 FINISHES, GENERAL
A. GENERAL: COMPLY WITH NAAMM'S "METAL FINISHES MANUAL FOR ARCHITECTURAL AND METAL PRODUCTS" FOR RECOMMENDATIONS FOR APPLYING AND DESIGNATING FINISHES.
B. APPEARANCE OF FINISHED WORK: VARIATIONS IN APPEARAN

08 51 00 - ALUMINUM FRAMED WINDOWS (CONT.)

7) TOLERANCES:
a) TOLERANCES FOR WALL THICKNESS AND OTHER CROSS-SECTIONAL DIMENSIONS OF STOREFRONT MEMBERS IN COMPLIANCE WITH AA ALUMINUM STANDARDS AND DATA.
b. FRAMING SYSTEM.
1) BRACKETS AND REINFORCEMENTS:
a) MANUFACTURER'S STANDARD HIGH-STRENGTH ALUMINUM WITH NON-STAINING, NONFERROUS SHIMS FOR ALIGNING SYSTEM COMPONENTS.
2) FASTENERS AND ACCESSORIES:
a) MANUFACTURER'S STANDARD CORROSION-RESISTANT, NON-STAINING, NON-BLEEDING FASTENERS AND ACCESSORIES COMPATIBLE WITH ADJACENT MATERIALS.
3) PERIMETER ANCHORS:
a) WHEN STEEL ANCHORS ARE USED, PROVIDE INSULATION BETWEEN STEEL MATERIAL AND ALUMINUM MATERIAL TO PREVENT GALVANIC ACTION.
c. FINISH:
1) MATCH STOREFRONT SYSTEM
d. FACTORY FINISHING:
1) FLUOROCARBON CARBON: COMPLY WITH AAMA 2605:
a) POLYVINYLEDENE FLUORIDE (PVDF) RESIN-BASE FINISH (KYNAR 500 OR HYLAR 5000) CONTAINING SEVENTY (70) PERCENT MINIMUM (PVDF) IN RESIN PORTION OF FORMULA AND PROVIDING PENCIL HARDNESS OF 3H. THERMO-CURED TWO-COAT SYSTEM CONSISTING OF CORROSION INHIBITING EPOXY PRIMER AND TOPCOAT FACTORY-APPLIED OVER PREPERTY PRE-TREATED METAL.
b) COLOR AS SELECTED BY ARCHITECT FROM STOREFRONT MANUFACTURER'S STANDARD COLORS:
c) CATEGORY FOUR APPROVED MANUFACTURERS. SEE SECTION 01 6200 FOR DEFINITIONS OF CATEGORIES:
1)BASF.
2)PPG INDUSTRIES, INC.
3)VALSPAR CORPORATION.
2) COLOR: MEDIUM ANODIZED BRONZE
e. CATEGORY FOUR APPROVED PRODUCTS. SEE SECTION 01 6200 FOR DEFINITIONS OF CATEGORIES:
1) ARCADIA.
2) KAWNEER.
f. CATEGORY FOUR APPROVED PRODUCTS. SEE SECTION 01 6200 FOR DEFINITIONS OF CATEGORIES:
1) THERMALLY BROKEN FRAMING.
a) 4G451T SERIES ARCADIA.
b) ENCORE FRAMING SYSTEM BY KAWNEER.
2. GLAZING:
a. GLAZING AS SPECIFIED IN SECTION 08 8100: 'GLASS GLAZING'.
b. GLAZING GASKETS:
1) COMPRESSION-TYPE DESIGN WITH REPLACEABLE EXTRUDED EPDM RUBBER.
c. SPACERS AND SETTING BLOCKS: ELASTOMERIC.
d. BOND-BREAKER (SEALER) TAPE: STANDARD TFE-FLUOROCARBON OR POLYETHYLENE MATERIAL TO WHICH SEALANTS WILL NOT DEVELOP ADHESION.
e. GLAZING SEALANT:
1) STRUCTURAL SEALANT MEETING REQUIREMENTS OF ASTM C1184:
a) PERMANENTLY ELASTIC, NON-SHRINKING, AND NON-MIGRATING TYPE FOR JOINT SIZE AND MOVEMENT.
b) SINGLE-COMPONENT NEUTRAL-CURING SILICONE FORMULATION COMPATIBLE WITH SYSTEM COMPONENTS SPECIFICALLY FORMULATED AND TESTED FOR USE AS STRUCTURAL SEALANT AND APPROVED BY STRUCTURAL-SEALANT MANUFACTURER FOR USE IN ALUMINUM-FRAMED SYSTEMS INDICATED.
c) COLOR: BLACK.
2) WEATHER SEALANT:
a) ASTM C 920 FOR TYPE S, GRADE NS, CLASS 25, USES NT, G, A, AND O; SINGLE-COMPONENT NEUTRAL-CURING FORMULATION THAT IS COMPATIBLE WITH STRUCTURAL SEALANT AND OTHER SYSTEM COMPONENTS WITH WHICH IT COMES IN CONTACT; RECOMMENDED BY STRUCTURAL-SEALANT, WEATHER SEAL SEALANT, AND ALUMINUM-FRAMED-SYSTEM MANUFACTURERS FOR THIS USE.
b) COLOR: MATCH STRUCTURAL SEALANT.
3) PROVIDE SEALANTS FOR USE INSIDE OF THE WEATHERPROOFING SYSTEM THAT HAVE A VOC CONTENT OF 250 G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).
E. FABRICATION:
1. CONSTRUCTION SHALL MEET MANUFACTURER'S RECOMMENDATIONS.
2. FABRICATE COMPONENTS THAT, WHEN ASSEMBLED, HAVE FOLLOWING CHARACTERISTICS:
a. PROFILES SHARP, STRAIGHT, AND FREE OF DEFECTS OR DEFORMATIONS.
b. ACCURATELY FIT JOINTS: MAKE JOINTS FLUSH, HAIRLINE AND WEATHERPROOF.
c. MEANS TO DRAIN WATER PASSING JOINTS, CONDENSATION WITHIN FRAMING MEMBERS, AND MOISTURE MIGRATING WITHIN SYSTEM TO EXTERIOR.
d. PHYSICAL AND THERMAL ISOLATION OF GLAZING FROM FRAMING MEMBERS.
e. ACCOMMODATIONS FOR THERMAL AND MECHANICAL MOVEMENTS OF GLAZING AND FRAMING TO MAINTAIN REQUIRED GLAZING EDGE CLEARANCES.
f. PROVISIONS FOR FIELD REPLACEMENT OF GLAZING.
g. FASTENERS, ANCHORS, AND CONNECTION DEVICES THAT ARE CONCEALED FROM VIEW TO GREATEST EXTENT POSSIBLE.
h. FRAMING MEMBERS SHALL BE INTERNALLY REINFORCED AND SECURED AT HEAD AND SILL AS NECESSARY FOR STRUCTURAL PERFORMANCE REQUIREMENTS AND FOR HARDWARE ATTACHMENT.
3. FABRICATE IN FACTORY TO DIMENSIONS REQUIRED TO FIT FRAMED OPENINGS DETAILED ON CONTRACT DOCUMENTS. JOINTS SHALL BE TIGHTLY CLOSED.
4. MORTISE IN MANNER TO GIVE MAXIMUM HARDWARE-DOOR CONNECTION STRENGTH AND NEATNESS OF APPEARANCE. ADEQUATELY REINFORCE WITH BACK PLATES OR RIVNUTS TO HOLD PIVOTS AND CLOSERS.
5. MECHANICALLY GLAZED FRAMING MEMBERS: FABRICATE FOR FLUSH GLAZING WITHOUT PROJECTING STOPS.
6. STRUCTURAL-SEALANT-GLAZED FRAMING MEMBERS: INCLUDE ACCOMMODATIONS FOR USING TEMPORARY SUPPORT DEVICE TO RETAIN GLAZING IN PLACE WHILE STRUCTURAL SEALANT CURES.
7. STOREFRONT FRAMING: FABRICATE STOREFRONT ASSEMBLY USING MANUFACTURERS STANDARD INSTALLATION INSTRUCTIONS.
8. AFTER FABRICATION, CLEARLY MARK COMPONENTS TO IDENTIFY THEIR LOCATIONS IN PROJECT ACCORDING TO SHOP DRAWINGS.

PART 3 - EXECUTION
3.1 INSTALLERS
A. PERFORMANCE STANDARD INSTALLERS: SEE SECTION 01 6200 FOR DEFINITIONS OF CATEGORIES. SEE SECTION 01 4301 AND 'QUALITY ASSURANCE' IN PART 1 'GENERAL' FOR INSTALLER QUALIFICATIONS OF THIS SPECIFICATION.
1. GENERAL CONTRACTOR RESPONSIBLE FOR INSTALLERS'; VERIFICATION OF QUALIFICATIONS, AND PERFORMANCE. CONTACT VMR APPROVED MANUFACTURER'S REPRESENTATIVE SPECIFIED IN PART 2 'PRODUCTS' OF THIS SPECIFICATION FOR POTENTIAL INSTALLERS IF DESIRED.
3.2 EXAMINATION
A. VERIFICATION OF CONDITIONS:
1. VERIFY THAT FRAMED OPENINGS COMPLY WITH CONTRACT DOCUMENT REQUIREMENTS.
2. VERIFY SILL CONDITIONS ARE LEVEL AND/OR SLOPED AWAY FROM OPENINGS AS SPECIFIED.
3. VERIFY WALL FRAMING IS DRY, CLEAN, SOUND, AND FREE OF VOIDS AND OFFSETS, CONSTRUCTION DEBRIS, SHARP EDGES OR ANYTHING THAT WILL PREVENT A SUCCESSFUL INSTALLATION OF STOREFRONT SYSTEM.
4. NOTIFY ARCHITECT IN WRITING IF FRAMED OPENINGS ARE INCORRECT.
a. DO NOT INSTALL WINDOW FRAMES UNTIL DEFICIENCIES IN FRAMED OPENINGS HAVE BEEN CORRECTED.
b. COMMENCEMENT OF WORK BY INSTALLER IN DESIGNATED AREAS IS CONSIDERED ACCEPTANCE OF SUBSTRATE.
3.3 INSTALLATION
A. GENERAL:
1. INSTALLATION SHALL MEET OR EXCEED ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS, REFERENCED STANDARDS AND CONFORM TO CODES AND ORDINANCES OF AUTHORITIES HAVING JURISDICTION.
2. ALL INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED RECOMMENDATIONS AND IN ACCORDANCE WITH APPROVED SHOP DRAWINGS.
3. DO NOT INSTALL DAMAGED COMPONENTS. FIT FRAME JOINTS TIGHT, FREE OF BURRS AND DISTORTION. RIGIDLY SECURE NON-MOVEMENT JOINTS.
4. ISOLATE METAL SURFACES IN CONTACT WITH INCOMPATIBLE METAL OR CORROSIVE SUBSTRATES, INCLUDING WOOD, BY APPLYING SEALER TAPE TO PREVENT ELECTROLYTIC ACTION.
B. SET PLUMB, SQUARE, LEVEL, AND IN CORRECT ALIGNMENT AND SECURELY ANCHOR TO FOLLOWING TOLERANCES:
1. VARIATION FROM PLANE: LIMIT TO 1/8 INCH (3 MM) IN 12 FEET (3.6 METERS); 1/4 INCH (6 MM) OVER TOTAL LENGTH.
2. OFFSET FROM ALIGNMENT: FOR SURFACES ABUTTING IN LINE, LIMIT OFFSET TO 1/16 INCH (1.6 MM).
3. OFFSET AT CORNERS: FOR SURFACES MEETING AT CORNER, LIMIT OFFSET TO 1/32 INCH (0.8 MM).
4. DIAGONAL MEASUREMENTS: LIMIT DIFFERENCE BETWEEN DIAGONAL MEASUREMENTS TO 1/8 INCH (3 MM).
5. SIDELITES: LINE UP HORIZONTAL RAIL WITH ADJACENT WINDOW RAIL.
6. INSTALL DOORS WITHOUT WARP OF RACK. ADJUST DOORS AND HARDWARE TO PROVIDE 90 DEGREE OPERATION, TIGHT FIT AT CONTACT POINTS AND SMOOTH OPERATION.
7. INSTALL EXTERIOR WINDOW UNITS WITH THROUGH WALL SILL FLASHING.
C. SEALANTS:
1. APPLY IN ACCORDANCE WITH SECTION 07 9213 'ELASTOMERIC JOINT SEALANT' REQUIREMENTS.
2. CAULK JOINTS BETWEEN FRAMES AND WALLS, BOTH INTERIOR AND EXTERIOR TO PROVIDE WEATHER TIGHT INSTALLATION.
D. GLAZING CHARACTERISTICS:
1. EXTERIOR WINDOWS:
a. CLEAR INTERIOR PANE AND TINTED EXTERIOR PANE WITH LOW E TREATMENT ON SURFACE 2.
3.4 FIELD QUALITY CONTROL
A. NON-CONFORMING WORK: NON-CONFORMING WORK AS COVERED IN THE GENERAL CONDITIONS APPLIES, BUT IS NOT LIMITED TO THE FOLLOWING:
1. CORRECT ANY WORK FOUND DEFECTIVE OR NOT COMPLYING WITH CONTRACT DOCUMENT REQUIREMENTS INCLUDING REMOVAL AND REPLACEMENT OF GLASS THAT HAS BEEN BROKEN, CHIPPED, CRACKED, ABRADED, OR DAMAGED DURING CONSTRUCTION PERIOD AT NO ADDITIONAL COST TO THE OWNER.
3.5 PROTECTION
A. DURING INSTALLATION:
1. INSTALLER'S RESPONSIBILITY:
a. DURING INSTALLATION, ALL ADJACENT WORK SHALL BE PROTECTED FROM DAMAGE.
B. AFTER INSTALLATION:
1. GENERAL CONTRACTOR'S RESPONSIBILITY:
a. INSTITUTE PROTECTIVE MEASURES REQUIRED THROUGHOUT REMAINDER OF CONSTRUCTION PERIOD TO ENSURE THAT ALUMINUM ENTRANCES AND STOREFRONTS WILL BE WITHOUT DAMAGE OR DETERIORATION, OTHER THAN NORMAL WEATHERING, AT TIME OF ACCEPTANCE.
3.6 CLEANING
A. GENERAL:
1. INSTALLER'S RESPONSIBILITY:
a. FOLLOW MANUFACTURER'S WRITTEN RECOMMENDATIONS FOR CLEANING AND MAINTENANCE OR GUIDELINES OF AAMA 609 & 610 'CLEANING AND MAINTENANCE GUIDE FOR ARCHITECTURALLY FINISHED ALUMINUM' (COMBINED DOCUMENTS). AVOID DAMAGING PROTECTIVE COATINGS AND FINISHES.
b. CLEAN GLASS AND ALUMINUM SURFACES, INSIDE AND OUT, PROMPTLY AFTER INSTALLATION. REMOVE EXCESS GLAZING AND SEALANT COMPOUNDS, DIRT, AND OTHER SUBSTANCES. EXERCISE CARE TO AVOID DAMAGE TO COATINGS.
c. REMOVE NONPERMANENT LABELS, PROTECTIVE FILMS, AND CLEAN SURFACES FOLLOWING RECOMMENDED PROCEDURES.
1) DO NOT REMOVE PERMANENT ANODAMARK OR NFRC LABELS.
B. WASTE MANAGEMENT:
1. UPON COMPLETION AND VERIFICATION OF PERFORMANCE OF INSTALLATION, REMOVE SURPLUS MATERIALS, EXCESS MATERIALS, RUBBISH, TOOLS AND EQUIPMENT.

END OF SECTION 08 51 00

08 71 00 - HARDWARE

PART 1 - GENERAL
1.1 ITEMS REQUIRED BUT NOT SPECIFIED
A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.
1.2 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
1.3 SUMMARY
A. THIS SECTION INCLUDES THE FOLLOWING:
1. COMMERCIAL DOOR HARDWARE FOR THE FOLLOWING:
a. SWINGING DOORS.
b. FIRE-RATED DOORS.
B. RELATED SECTIONS INCLUDE THE FOLLOWING:
1. DIVISION 8 SECTION "STANDARD STEEL DOORS AND FRAMES".
2. DIVISION 8 SECTION "STAINLESS-STEEL DOORS AND FRAMES".
3. DIVISION 8 SECTION "ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS".
C. PRODUCTS FURNISHED, BUT NOT INSTALLED, UNDER THIS SECTION INCLUDE THE FOLLOWING: COORDINATING, PURCHASING, DELIVERING, AND SCHEDULING REMAIN REQUIREMENTS OF THIS SECTION.
1. PERMANENT CORES TO BE INSTALLED BY OWNER.
1.4 SUBMITTALS
A. PRODUCT DATA: INCLUDE CONSTRUCTION AND INSTALLATION DETAILS, MATERIAL DESCRIPTIONS, DIMENSIONS OF INDIVIDUAL COMPONENTS AND PROFILES, AND FINISHES.
B. MAINTENANCE DATA: FOR EACH TYPE OF DOOR HARDWARE TO INCLUDE IN MAINTENANCE MANUALS. INCLUDE FINAL HARDWARE SCHEDULE.
C. WARRANTY: SPECIAL WARRANTY SPECIFIED IN THIS SECTION.
D. DOOR HARDWARE SETS: PREPARED BY OR UNDER THE SUPERVISION OF ARCHITECTURAL HARDWARE CONSULTANT, DETAILING FABRICATION AND ASSEMBLY OF DOOR HARDWARE, AS WELL AS PROCEDURES AND DIAGRAMS. COORDINATE THE FINAL DOOR HARDWARE SETS WITH DOORS, FRAMES, AND RELATED WORK TO ENSURE PROPER SIZE, THICKNESS, HAND, FUNCTION, AND FINISH OF DOOR HARDWARE.
1. FORMAT: USE SAME SCHEDULING SEQUENCE AND FORMAT AND USE SAME DOOR NUMBERS AS IN THE CONTRACT DOCUMENTS.
2. CONTENT: INCLUDE THE FOLLOWING INFORMATION:
a. IDENTIFICATION NUMBER, LOCATION, HAND, FIRE RATING, AND MATERIAL OF EACH DOOR AND FRAME.
b. TYPE, STYLE, FUNCTION, SIZE, QUANTITY, AND FINISH OF EACH DOOR HARDWARE ITEM. INCLUDE DESCRIPTION AND FUNCTION OF EACH LOCKSET AND EXIT DEVICE.
c. COMPLETE DESIGNATIONS OF EVERY ITEM REQUIRED FOR EACH DOOR OR OPENING INCLUDING NAME AND MANUFACTURER.
d. EXPLANATION OF ABBREVIATIONS, SYMBOLS, AND CODES CONTAINED IN SCHEDULE.
e. MOUNTING LOCATIONS FOR DOOR HARDWARE.
f. DOOR AND FRAME SIZES AND MATERIALS.
E. SUBMITTAL SEQUENCE: SUBMIT THE FINAL DOOR HARDWARE SETS AT EARLIEST POSSIBLE DATE, PARTICULARLY WHERE APPROVAL OF THE DOOR HARDWARE SETS MUST PRECEDE FABRICATION OF OTHER WORK THAT IS CRITICAL IN PROJECT COORDINATION SCHEDULE. INCLUDE PRODUCT DATA, SAMPLES, SHOP DRAWINGS OF OTHER WORK AFFECTED BY DOOR HARDWARE, AND OTHER INFORMATION ESSENTIAL TO THE COORDINATED REVIEW OF THE DOOR HARDWARE SETS.
1.5 QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS: AN EMPLOYER OF WORKERS TRAINED AND APPROVED BY LOCK MANUFACTURER.
1. INSTALLERS RESPONSIBILITIES INCLUDE SUPPLYING AND INSTALLING DOOR HARDWARE AND PROVIDING A QUALIFIED ARCHITECTURAL HARDWARE CONSULTANT AVAILABLE DURING THE COURSE OF THE WORK TO CONSULT WITH CONTRACTOR, ARCHITECT, AND OWNER ABOUT DOOR HARDWARE AND KEYING.
2. INSTALLER SHALL HAVE WAREHOUSING FACILITIES IN PROJECT'S VICINITY.
3. SCHEDULING RESPONSIBILITY: PREPARATION OF DOOR HARDWARE AND KEYING SCHEDULES.
B. SOURCE LIMITATIONS: OBTAIN EACH TYPE AND VARIETY OF DOOR HARDWARE FROM A SINGLE MANUFACTURER, UNLESS OTHERWISE INDICATED.
C. FIRE-RATED DOOR ASSEMBLIES: ASSEMBLIES COMPLYING WITH NFPA 80 THAT ARE LISTED AND LABELED BY A TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, FOR FIRE RATINGS INDICATED, BASED ON TESTING ACCORDING TO NFPA 252.
1.6 DELIVERY, STORAGE, AND HANDLING
A. INVENTORY DOOR HARDWARE ON RECEIPT AND PROVIDE SECURE LOCK-UP FOR DOOR HARDWARE DELIVERED TO PROJECT SITE.
B. TAG EACH ITEM OR PACKAGE SEPARATELY WITH IDENTIFICATION RELATED TO THE FINAL DOOR HARDWARE SETS, AND INCLUDE BASIC INSTALLATION INSTRUCTIONS, TEMPLATES, AND MOUNTING SCREWS OR FASTENERS WITH EACH ITEM OR PACKAGE.
C. DELIVER KEYS AND PERMANENT CORES TO OWNER BY REGISTERED MAIL OR OVERNIGHT PACKAGE SERVICE.
1.7 COORDINATION
A. TEMPLATES: DISTRIBUTE DOOR HARDWARE TEMPLATES FOR DOORS, FRAMES, AND OTHER WORK SPECIFIED TO BE FACTORY PREPARED FOR INSTALLING DOOR HARDWARE. CHECK SHOP DRAWINGS OF OTHER WORK TO CONFIRM THAT ADEQUATE PROVISIONS ARE MADE FOR LOCATING AND INSTALLING DOOR HARDWARE TO COMPLY WITH INDICATED REQUIREMENTS.
B. ELECTRICAL SYSTEM ROUGHING-IN: COORDINATE LAYOUT AND INSTALLATION OF ELECTRIFIED DOOR HARDWARE WITH CONNECTIONS TO SECURITY SYSTEM.
1.8 WARRANTY
A. SPECIAL WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE COMPONENTS OF DOOR HARDWARE THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.
1. FAILURES INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
a. STRUCTURAL FAILURES INCLUDING EXCESSIVE OVERLOCKING, CRACKING, OR BREAKAGE.
b. FAULTY OPERATION OF OPERATORS AND DOOR HARDWARE.
c. DETERIORATION OF METALS, METAL FINISHES, AND OTHER MATERIALS BEYOND NORMAL WEATHERING AND USE.
2. WARRANTY PERIOD: THREE YEARS FROM DATE OF SUBSTANTIAL COMPLETION, EXCEPT AS FOLLOWS:
a. EXIT DEVICES: TWO YEARS FROM DATE OF SUBSTANTIAL COMPLETION.
b. MANUAL CLOSERS: 10 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.
1.9 MAINTENANCE SERVICE
A. MAINTENANCE TOOLS AND INSTRUCTIONS: FURNISH A COMPLETE SET OF SPECIALIZED TOOLS AND MAINTENANCE INSTRUCTIONS AS NEEDED FOR OWNER'S CONTINUED ADJUSTMENT, MAINTENANCE, AND REMOVAL AND REPLACEMENT OF DOOR HARDWARE.
B. MAINTENANCE SERVICE: BEGINNING AT SUBSTANTIAL COMPLETION, PROVIDE SIX MONTHS' FULL MAINTENANCE BY SKILLED EMPLOYEES OF DOOR HARDWARE INSTALLER. INCLUDE QUARTERLY PREVENTIVE MAINTENANCE, REPAIR OR REPLACEMENT OF WORN OR DEFECTIVE COMPONENTS, LUBRICATION, CLEANING, AND ADJUSTING AS REQUIRED FOR PROPER DOOR HARDWARE OPERATION. PROVIDE PARTS AND SUPPLIES SAME AS THOSE USED IN THE MANUFACTURE AND INSTALLATION OF ORIGINAL PRODUCTS.

PART 2 - Products
2.1 SCHEDULE OF DOOR HARDWARE
A. DOOR HARDWARE SETS: PROVIDE QUANTITY, ITEM, SIZE, FINISH OR COLOR INDICATED COMPLYING WITH BHMA STANDARD REFERENCED.
B. DESIGNATIONS: REQUIREMENTS FOR DESIGN, GRADE, FUNCTION, FINISH, SIZE, AND OTHER DISTINCTIVE QUALITIES OF EACH TYPE OF DOOR HARDWARE ARE INDICATED IN PART 3 "DOOR HARDWARE SETS" ARTICLE. PRODUCTS ARE IDENTIFIED BY USING DOOR HARDWARE DESIGNATIONS, AS FOLLOWS:
1. REFERENCES TO BHMA STANDARDS: PROVIDE PRODUCTS COMPLYING WITH THESE STANDARDS FOR DESCRIPTION, QUALITY, AND FUNCTION.
C. IN OTHER PART 2 ARTICLES WHERE TITLES BELOW INTRODUCE LISTS, THE FOLLOWING REQUIREMENTS APPLY TO PRODUCT SELECTION:
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY THE MANUFACTURERS SPECIFIED.
2.2 HINGES, GENERAL
A. QUANTITY: PROVIDE THE FOLLOWING, UNLESS OTHERWISE INDICATED:
1. TWO HINGES: FOR DOORS WITH HEIGHTS UP TO 60 INCHES (1524 MM).
2. THREE HINGES: FOR DOORS WITH HEIGHTS 61 TO 90 INCHES (1549 TO 2286 MM).
3. FOUR HINGES: FOR DOORS WITH HEIGHTS 91 TO 120 INCHES (2311 TO 3048 MM).
B. TEMPLATE REQUIREMENTS: EXCEPT FOR HINGES AND PIVOTS TO BE INSTALLED ENTIRELY (BOTH LEAVES) INTO WOOD DOORS AND FRAMES, PROVIDE ONLY TEMPLATE-PRODUCED UNITS.
C. HINGE WEIGHT: UNLESS OTHERWISE INDICATED, PROVIDE THE FOLLOWING:
1. ENTRANCE DOORS: HEAVY-WEIGHT HINGES.
2. ALL OTHER DOORS WITH CLOSERS: ANTIFRICTION-BEARING HINGES.
D. HINGE BASE METAL: UNLESS OTHERWISE INDICATED, PROVIDE THE FOLLOWING:
1. EXTERIOR HINGES: STAINLESS STEEL, WITH STAINLESS-STEEL PIN.
2. INTERIOR HINGES: STAINLESS STEEL, WITH STAINLESS-STEEL PIN.
3. HINGES FOR FIRE-RATED ASSEMBLIES: STAINLESS STEEL, WITH STAINLESS-STEEL PIN.
E. HINGE OPTIONS: WHERE INDICATED IN DOOR HARDWARE SETS OR ON DRAWINGS:
1. NONREMOVABLE PINS: PROVIDE SET SCREW IN HINGE BARREL THAT, WHEN TIGHTENED INTO A GROOVE IN HINGE PIN, PREVENTS REMOVAL OF PIN WHILE DOOR IS CLOSED; FOR OUTSWINGING EXTERIOR DOORS.
2. CORNERS: SQUARE.
F. FASTENERS: COMPLY WITH THE FOLLOWING:
1. MACHINE SCREWS: FOR METAL DOORS AND FRAMES. INSTALL INTO DRILLED AND TAPPED HOLES.
2. SCREWS: PHILLIPS FLAT-HEAD; MACHINE SCREWS (DRILLED AND TAPPED HOLES) FOR METAL DOORS FINISH SCREW HEADS TO MATCH SURFACE OF HINGES.
2.3 HINGES
A. BUTTS AND HINGES: BHMA A156.1.
B. TEMPLATE HINGE DIMENSIONS: BHMA A156.7.
C. MANUFACTURERS:
1. CAL-ROYAL PRODUCTS, INC. (CRP).
2. HAGER COMPANIES (HAG).
3. MCKINNEY PRODUCTS COMPANY: AN ASSA ABLOY GROUP COMPANY (MCK).
4. STANLEY COMMERCIAL HARDWARE; DIV. OF THE STANLEY WORKS (STH).
2.4 LOCKS AND LATCHES, GENERAL
A. ACCESSIBILITY REQUIREMENTS: WHERE INDICATED TO COMPLY WITH ACCESSIBILITY REQUIREMENTS, COMPLY WITH ANSI A117.1.
1. PROVIDE OPERATING DEVICES THAT DO NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST AND THAT OPERATE WITH A FORCE OF NOT MORE THAN 5 LBF (22 N).
B. LATCHES AND LOCKS FOR MEANS OF EGRESS DOORS: EXCEPT FOR ACCESSIBLE OPENINGS, LATCHES SHALL NOT REQUIRE MORE THAN 15 LBF (67 N) TO RELEASE THE LATCH. LOCKS SHALL NOT REQUIRE USE OF A KEY, TOOL, OR SPECIAL KNOWLEDGE FOR OPERATION.
C. LOCK TRIM:
1. LEVERS: WROUGHT OR CAST.
a. BASIS OF DESIGN: BEST LOCK MANUFACTURING SERIES 9K15D WITH FUNCTION AS LISTED ON THE HARDWARE SET.
2. escutcheons (ROSES): WROUGHT OR CAST.
3. LOCK THROW: COMPLY WITH TESTING REQUIREMENTS FOR LENGTH OF BOLTS REQUIRED FOR LABELED FIRE DOORS, AND AS FOLLOWS:
a. BORED LOCKS: MINIMUM 1/2-INCH (13-MM) LATCHBOLT THROW.
b. MORTISE LOCKS: MINIMUM 3/4-INCH (19-MM) LATCHBOLT THROW.
c. DEADBOLTS: MINIMUM 1-INCH (25-MM) BOLT THROW.
D. BACKSET: 2-3/4 INCHES (70 MM), UNLESS OTHERWISE INDICATED.
E. STRIKES: MANUFACTURER'S STANDARD STRIKE WITH STRIKE BOX FOR EACH LATCHBOLT OR LOCK BOLT, WITH CURVED LIP EXTENDED TO PROTECT FRAME, FINISHED TO MATCH DOOR HARDWARE SET, AND AS FOLLOWS:
1. STRIKES FOR BORED LOCKS AND LATCHES: BHMA A156.2.
2. STRIKES FOR MORTISE LOCKS AND LATCHES: BHMA A156.13.
2.5 MECHANICAL LOCKS AND LATCHES
A. LOCK FUNCTIONS: SEE HARDWARE SETS ON DRAWINGS FOR LOCK FUNCTIONS.
B. BORED LOCKS: BHMA A156.2, GRADE 1 UNLESS GRADE 2 IS INDICATED; SERIES 4000.
1. MANUFACTURERS:
a. BEST ACCESS SYSTEMS; DIV. OF THE STANLEY WORKS (BAS).
b. SARGENT MANUFACTURING COMPANY; AN ASSA ABLOY GROUP COMPANY (SGT).
c. SCHLAGE COMMERCIAL LOCK DIVISION; AN INGERSOLL-RAND COMPANY (SCH).
d. YALE COMMERCIAL LOCKS AND HARDWARE; AN ASSA ABLOY GROUP COMPANY (YAL).
2.6 DOOR BOLTS
A. BOLT THROW: COMPLY WITH TESTING REQUIREMENTS FOR LENGTH OF BOLTS REQUIRED FOR LABELED FIRE DOORS, AND AS FOLLOWS:
1. HALF-ROUND SURFACE BOLTS: MINIMUM 7/8-INCH (22-MM) THROW.
B. DUSTPROOF STRIKES: BHMA A156.16, GRADE 1.
C. SURFACE BOLTS: BHMA A156.16, GRADE 1.
1. FLUSH BOLT HEADS: MINIMUM OF 1/2-INCH (13-MM-) DIAMETER RODS OF BRASS, BRONZE, OR STAINLESS STEEL WITH MINIMUM 12-INCH- (305-MM-) LONG ROD FOR DOORS UP TO 84 INCHES (2134 MM) IN HEIGHT. PROVIDE LONGER RODS AS NECESSARY FOR DOORS EXCEEDING 84 INCHES (2134 MM).
D. MANUFACTURERS:
1. GLYNN-JOHNSON; AN INGERSOLL-RAND COMPANY (GJ).
2. HAGER COMPANIES (HAG).
3. IVES HARDWARE; AN INGERSOLL-RAND COMPANY (IVS).
4. STANLEY COMMERCIAL HARDWARE; DIV. OF THE STANLEY WORKS (STH).
2.7 LOCK CYLINDERS
A. STANDARD LOCK CYLINDERS: BHMA A156.5, GRADE 1A.
B. CYLINDERS: MANUFACTURER'S STANDARD TUMBLER TYPE, CONSTRUCTED FROM BRASS OR BRONZE, STAINLESS STEEL, OR NICKEL SILVER, AND COMPLYING WITH THE FOLLOWING:
1. NUMBER OF PINS: SEVEN.
2. MORTISE TYPE: THREADED CYLINDERS WITH RINGS AND STRAIGHT- OR CLOVER-TYPE CAM.
C. PERMANENT CORES: MANUFACTURER'S STANDARD, FINISH FACE TO MATCH LOCKSET; COMPLYING WITH THE FOLLOWING:
1. INTERCHANGEABLE CORES: CORE INSERT, REMOVABLE BY USE OF A SPECIAL KEY; USABLE WITH OTHER MANUFACTURERS' CYLINDERS.
D. CONSTRUCTION KEYING: COMPLY WITH THE FOLLOWING:
1. CONSTRUCTION MASTER KEYS: PROVIDE CYLINDERS WITH FEATURE THAT PERMITS VOIDING OF CONSTRUCTION KEYS WITHOUT CYLINDER REMOVAL. PROVIDE 10 CONSTRUCTION MASTER KEYS.
2. FURNISH PERMANENT CORES TO OWNER FOR INSTALLATION.
E. MANUFACTURER: SAME MANUFACTURER AS FOR LOCKS AND LATCHES.
2.8 KEYING
A. KEYING SYSTEM: FACTORY REGISTERED, COMPLYING WITH GUIDELINES IN BHMA A156.28, APPENDIX A. INCORPORATE DECISIONS MADE IN KEYING CONFERENCE, AND AS FOLLOWS:
B. MASTER KEY SYSTEM: CYLINDERS ARE OPERATED BY A CHANGE KEY AND A MASTER KEY.
1. KEYED ALIKE: KEY ALL CYLINDERS TO SAME CHANGE KEY.
C. KEYS: NICKEL SILVER.
1. STAMPING: PERMANENTLY INSCRIBE EACH KEY WITH A VISUAL KEY CONTROL NUMBER AND INCLUDE THE FOLLOWING NOTATION:
a. NOTATION: INFORMATION TO BE FURNISHED BY OWNER.
2. QUANTITY: IN ADDITION TO ONE EXTRA KEY BLANK FOR EACH LOCK, PROVIDE THE FOLLOWING:
a. CYLINDER CHANGE KEYS: THREE.
b. MASTER KEYS: FIVE.
2.9 KEY CONTROL SYSTEM
A. KEY LOCK BOXES: DESIGNED FOR STORAGE OF 5 KEYS, WITH TAMPER SWITCHES TO CONNECT TO INTRUSION DETECTION SYSTEM.
B. MANUFACTURERS:
1. ABLOY SECURITY, INC.; AN ASSA ABLOY GROUP COMPANY (ABL).
2. KNOX COMPANY (KNX).
2.10 ELECTRIC STRIKES
A. STANDARD: BHMA A156.31, GRADE 1. SURFACE MOUNTED ON DOOR FRAMES.
B. MANUFACTURERS:
1. ADAMS RITE MANUFACTURING CO. (ARM).
2. FOLGER ADAM SECURITY INC.; AN ASSA ABLOY GROUP COMPANY (FAS).
3. VON DUPRIN; AN INGERSOLL-RAND COMPANY (VD).
2.11 CLOSERS
A. ACCESSIBILITY REQUIREMENTS: WHERE HANDLES, PULLS, LATCHES, LOCKS, AND OTHER OPERATING DEVICES ARE INDICATED TO COMPLY WITH ACCESSIBILITY REQUIREMENTS, COMPLY WITH ANSI A117.1.
B. COMPLY WITH THE FOLLOWING MAXIMUM OPENING-FORCE REQUIREMENTS:
1. INTERIOR, NON-FIRE-RATED HINGED DOORS: 5 LBF (22.2 N) APPLIED PERPENDICULAR TO DOOR.
a. FIRE DOORS: MINIMUM OPENING FORCE ALLOWABLE BY AUTHORITIES HAVING JURISDICTION.
C. DOOR CLOSERS FOR MEANS OF EGRESS DOORS: COMPLY WITH NFPA 101. DOOR CLOSERS SHALL NOT REQUIRE MORE THAN 30 LBF (133 N) TO SET DOOR IN MOTION AND NOT MORE THAN 15 LBF (67 N) TO OPEN DOOR TO MINIMUM REQUIRED WIDTH.
D. SIZE OF UNITS: UNLESS OTHERWISE INDICATED, COMPLY WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS FOR SIZE OF DOOR CLOSERS DEPEN

09 22 00 - GYPSUM BOARD ASSEMBLIES

1. ACOUSTICAL SEALANT FOR EXPOSED AND CONCEALED JOINTS:
   a. PECORA CORP.; AC-20 FTR ACOUSTICAL AND INSULATION SEALANT.
   b. UNITED STATES GYPSUM CO.; SHEETROCK ACOUSTICAL SEALANT.
2. ACOUSTICAL SEALANT FOR CONCEALED JOINTS:
   a. OHIO SEALANTS, INC.; PRO-SERIES SC-170 RUBBER BASE SOUND SEALANT.
   b. PECORA CORP.; BA-98.
   c. TREMCO, INC.; TREMCO ACOUSTICAL SEALANT.

2.9 AUXILIARY MATERIALS
A. GENERAL: PROVIDE AUXILIARY MATERIALS THAT COMPLY WITH REFERENCED INSTALLATION STANDARDS AND MANUFACTURER'S WRITTEN RECOMMENDATIONS.
B. STEEL DRILL SCREWS: ASTM C 1002, UNLESS OTHERWISE INDICATED.
1. USE SCREWS COMPLYING WITH ASTM C 954 FOR FASTENING PANELS TO STEEL MEMBERS FROM 0.033 TO 0.112 INCH (0.84 TO 2.84 MM) THICK.
C. ISOLATION STRIP AT EXTERIOR WALLS:
1. ASPHALT-SATURATED ORGANIC FELT: ASTM D 226, TYPE I (NO. 15 ASPHALT FELT), NONPERFORATED.
2. FOAM GASKET: ADHESIVE-BACKED, CLOSED-CELL VINYL FOAM STRIPS THAT ALLOW FASTENER PENETRATION WITHOUT FOAM DISPLACEMENT, 1/8 INCH (3.2 MM) THICK, IN WIDTH TO SUIT STEEL STUD SIZE.
D. SOUND ATTENUATION BLANKETS: ASTM C 665, TYPE I (BLANKETS WITHOUT VAPOR-RETARDANT FACING) PRODUCED BY COMBINING THERMOSETTING RESINS WITH MINERAL FIBERS MANUFACTURED FROM GLASS, SLAG WOOL, OR ROCK WOOL.
E. THERMAL INSULATION: AT EXTERIOR WALLS IN "Z CHANNEL" FURRING INSTALL RIGID BOARD EXPANDED POLYSTYRENE BETWEEN FURRING MEMBERS.
F. POLYETHYLENE VAPOR RETARDER: 10 MIL UNREINFORCED POLY SHEET.

PART 3 - EXECUTION
3.1 EXAMINATION
A. EXAMINE AREAS AND SUBSTRATES, WITH INSTALLER PRESENT, AND INCLUDING WELDED HOLLOW-METAL FRAMES, CAST-IN ANCHORS, AND STRUCTURAL FRAMING, FOR COMPLIANCE WITH REQUIREMENTS AND OTHER CONDITIONS AFFECTING PERFORMANCE. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
3.2 PREPARATION
A. SUSPENDED CEILINGS: COORDINATE INSTALLATION OF CEILING SUSPENSION SYSTEMS WITH INSTALLATION OF OVERHEAD STRUCTURE TO ENSURE THAT INSERTS AND OTHER PROVISIONS FOR ANCHORAGES TO BUILDING STRUCTURE HAVE BEEN INSTALLED TO RECEIVE CEILING HANGERS AT SPACING REQUIRED TO SUPPORT CEILINGS AND THAT HANGERS WILL DEVELOP THEIR FULL STRENGTH.
1. FURNISH CONCRETE INSERTS AND OTHER DEVISES INDICATED TO OTHER TRADES FOR INSTALLATION IN ADVANCE OF TIME NEEDED FOR COORDINATION AND CONSTRUCTION.

3.3 INSTALLING STEEL FRAMING, GENERAL
A. INSTALLATION STANDARDS: ASTM C 754, AND ASTM C 840 REQUIREMENTS THAT APPLY TO FRAMING INSTALLATION.
B. INSTALL SUPPLEMENTARY FRAMING, BLOCKING, AND BRACING AT TERMINATIONS IN GYPSUM BOARD ASSEMBLIES TO SUPPORT FIXTURES, EQUIPMENT SERVICES, HEAVY TRIM; GRAB BARS, TOILET ACCESSORIES, FURNISHINGS, OR SIMILAR CONSTRUCTION. COMPLY WITH DETAILS INDICATED AND WITH GYPSUM BOARD MANUFACTURER'S WRITTEN RECOMMENDATIONS OR, IF NONE AVAILABLE, WITH UNITED STATES GYPSUM'S "GYPSUM CONSTRUCTION HANDBOOK."
C. ISOLATE STEEL FRAMING FROM BUILDING STRUCTURE AT LOCATIONS INDICATED TO PREVENT TRANSFER OF LOADING IMPOSED BY STRUCTURAL MOVEMENT:
1. ISOLATE PARTITION FRAMING AND WALL FURRING WHERE IT ABUTS STRUCTURE, EXCEPT AT FLOOR. INSTALL SLIP-TYPE JOINTS AT HEAD OF ASSEMBLIES THAT AVOID AXIAL LOADING OF ASSEMBLIES AND LATERALLY SUPPORT ASSEMBLY.
a. USE DEEP-LEG DEFLECTION TRACK WHERE INDICATED.
D. DO NOT BRIDGE BUILDING CONTROL AND EXPANSION JOINTS WITH STEEL FRAMING OR FURRING MEMBERS. FRAME BOTH SIDES OF JOINTS INDEPENDENTLY.

3.4 INSTALLING STEEL SUSPENDED CEILING FRAMING
A. SUSPEND CEILING HANGERS FROM BUILDING STRUCTURE AS FOLLOWS:
1. INSTALL HANGERS PLUMB AND FREE FROM CONTACT WITH INSULATION OR OTHER OBJECTS WITHIN CEILING PLENUM THAT ARE NOT PART OF SUPPORTING STRUCTURAL OR CEILING SUSPENSION SYSTEM. SPLAY HANGERS ONLY WHERE REQUIRED TO MISS OBSTRUCTIONS AND OFFSET RESULTING HORIZONTAL FORCES BY BRACING, COUNTERSPLAYING, OR OTHER EQUALLY EFFECTIVE MEANS.
2. WIRE DIVIDER OF DUCTS AND OTHER CONSTRUCTION WITHIN CEILING PLENUM PRODUCES HANGER SPACINGS THAT INTERFERE WITH THE LOCATION OF HANGERS REQUIRED TO SUPPORT STANDARD SUSPENSION SYSTEM MEMBERS, INSTALL SUPPLEMENTAL SUSPENSION MEMBERS AND HANGERS IN FORM OF TRAPEZES OR EQUIVALENT DEVICES. SIZE SUPPLEMENTAL SUSPENSION MEMBERS AND HANGERS TO SUPPORT CEILING LOADS WITHIN PERFORMANCE LIMITS ESTABLISHED BY REFERENCED STANDARDS.
3. SECURE WIRE HANGERS BY LOOPING AND WIRE-TYING, EITHER DIRECTLY TO STRUCTURES OR TO INSERTS, EYESCREWS, OR OTHER DEVICES AND FASTENERS THAT ARE SECURE AND APPROPRIATE FOR SUBSTRATE, AND IN A MANNER THAT WILL NOT CAUSE THEM TO DETERIORATE OR OTHERWISE FAIL.
4. DO NOT ATTACH HANGERS TO STEEL DECK TABS.
5. DO NOT ATTACH HANGERS TO STEEL ROOF DECK. ATTACH HANGERS TO STRUCTURAL MEMBERS.
6. DO NOT CONNECT OR SUSPEND STEEL FRAMING FROM DUCTS, PIPES, OR CONDUIT.
B. INSTALLATION TOLERANCES: INSTALL STEEL FRAMING COMPONENTS FOR SUSPENDED CEILINGS SO MEMBERS FOR PANEL ATTACHMENT ARE LEVEL TO WITHIN 1/8 INCH IN 12 FEET (3 MM IN 3.6 M) MEASURED LENGTHWISE ON EACH MEMBER AND TRANSVERSELY BETWEEN PARALLEL MEMBERS.
C. SWAY-BRACE SUSPENDED STEEL FRAMING WITH HANGERS USED FOR SUPPORT.
D. WIRE-TIE OR CLIP FURRING CHANNELS TO SUPPORTS.
E. INSTALL SUSPENDED STEEL FRAMING COMPONENTS IN SIZES AND SPACINGS INDICATED, BUT NOT LESS THAN THAT REQUIRED BY THE REFERENCED STEEL FRAMING AND INSTALLATION STANDARDS.
1. HANGERS: 48 INCHES (1219 MM) O.C.
2. CARRYING CHANNELS (MAIN RUNNERS): 48 INCHES (1219 MM) O.C.
3. FURRING CHANNELS (FURRING MEMBERS): 24 INCHES (610 MM) O.C.

3.5 INSTALLING STEEL PARTITION FRAMING
A. INSTALL TRACKS (RUNNERS) AT FLOORS, CEILINGS, AND STRUCTURAL WALLS AND COLUMNS WHERE GYPSUM BOARD ASSEMBLIES ABUT OTHER CONSTRUCTION.
1. WHERE STUDS ARE INSTALLED DIRECTLY AGAINST EXTERIOR WALLS, INSTALL FOAM-GASKET ISOLATION STRIP BETWEEN STUDS AND WALL.
B. INSTALLATION TOLERANCE: INSTALL EACH STEEL FRAMING AND FURRING MEMBER SO FASTENING SURFACES VARY NOT MORE THAN 1/8 INCH (3 MM) FROM THE PLANE FORMED BY THE FACES OF ADJACENT FRAMING.
C. EXTEND PARTITION FRAMING FULL HEIGHT TO STRUCTURAL SUPPORTS OR SUBSTRATES ABOVE SUSPENDED CEILINGS, EXCEPT WHERE PARTITIONS ARE INDICATED TO TERMINATE AT SUSPENDED CEILINGS. CONTINUE FRAMING OVER FRAMES FOR DOORS AND OPENINGS AND FRAME AROUND DUCTS PENETRATING PARTITIONS ABOVE CEILING TO PROVIDE SUPPORT FOR GYPSUM BOARD.
1. FOR STC-RATED PARTITIONS THAT EXTEND TO THE UNDERSIDE OF FLOOR/ROOF SLABS AND DECKS OR OTHER CONTINUOUS SOLID-STRUCTURE SURFACES TO OBTAIN RATINGS, INSTALL FRAMING AROUND STRUCTURAL AND OTHER MEMBERS EXTENDING BELOW FLOOR/ROOF SLABS AND DECKS, AS NEEDED TO SUPPORT GYPSUM BOARD CLOSURES AND TO MAKE PARTITIONS CONTINUOUS FROM FLOOR TO UNDERSIDE OF SOLID STRUCTURE.
D. SPACING OF STEEL STUDS AND FURRING TO BE AS INDICATED ON DRAWINGS.
E. INSTALL STEEL STUDS SO FLANGES POINT IN THE SAME DIRECTION AND LEADING EDGE OR END OF EACH PANEL CAN BE ATTACHED TO OPEN (UNSUPPORTED) EDGES OF STUD FLANGES FIRST.
F. FRAME DOOR OPENINGS TO COMPLY WITH GYPSUM BOARD MANUFACTURER'S APPLICABLE WRITTEN RECOMMENDATIONS, UNLESS OTHERWISE INDICATED. SCREW VERTICAL STUDS AT JAMBS TO JAMB ANCHOR CLIPS ON DOOR FRAMES; INSTALL RUNNER TRACK SECTION (FOR CRIPPLE STUDS) AT HEAD AND SECURE TO JAMB STUDS.
1. INSTALL TWO STUDS AT EACH JAMB, UNLESS OTHERWISE INDICATED.
G. FRAME OPENINGS OTHER THAN DOOR OPENINGS THE SAME AS REQUIRED FOR DOOR OPENINGS, UNLESS OTHERWISE INDICATED. INSTALL FRAMING BELOW SILLS OF OPENINGS TO MATCH FRAMING REQUIRED ABOVE DOOR HEADS.
H. FURRING MEMBERS:
1. ERECT INSULATION VERTICALLY AND HOLD IN PLACE WITH Z-FURRING MEMBERS SPACED 24 INCHES (610 MM) O.C.
2. EXCEPT AT EXTERIOR CORNERS, SECURELY ATTACH NARROW FLANGES OF FURRING MEMBERS TO WALL WITH CONCRETE STUB NAILS, SCREWS DESIGNED FOR MASONRY ATTACHMENT, OR POWDER-DRIVEN FASTENERS SPACED 24 INCHES (600 MM) O.C.
3. AT EXTERIOR CORNERS, ATTACH WIDE FLANGE OF FURRING MEMBERS TO WALL WITH SHORT FLANGE EXTENDING BEYOND CORNER; ON ADJACENT WALL SURFACE, SCREW THROUGH SHORT FLANGE OF FURRING CHANNEL TO WEB OF ATTACHED CHANNEL. AT INTERIOR CORNERS, SPACE SECOND MEMBER NO MORE THAN 12 INCHES (300 MM) FROM CORNER AND CUT INSULATION TO FIT.
4. UNTIL GYPSUM BOARD IS INSTALLED, HOLD INSULATION IN PLACE WITH 10-INCH (250-MM) STAPLES FABRICATED FROM 0.0625-INCH- (1.59-MM-) DIAMETER, TIE WIRE AND INSERTED THROUGH SCUT IN WEB OF MEMBER.
I. POLYETHYLENE VAPOR RETARDER: INSTALL TO COMPLY WITH REQUIREMENTS SPECIFIED IN DIVISION 7 SECTION "BUILDING INSULATION."

3.6 APPLYING AND FINISHING PANELS, GENERAL
A. GYPSUM BOARD APPLICATION AND FINISHING STANDARDS: ASTM C 840 AND GA-216.
B. INSTALL SOUND ATTENUATION BLANKETS BEFORE INSTALLING GYPSUM PANELS, UNLESS BLANKETS ARE READILY INSTALLED AFTER PANELS HAVE BEEN INSTALLED ON ONE SIDE.
C. INSTALL CEILING BOARD PANELS ACROSS FRAMING TO MINIMIZE THE NUMBER OF ABUTTING END JOINTS AND TO AVOID ABUTTING END JOINTS I N THE CENTRAL AREA OF EACH CEILING. STAGGER ABUTTING END JOINTS OF ADJACENT PANELS NOT LESS THAN ONE FRAMING MEMBER.
D. INSTALL GYPSUM PANELS WITH FACE SIDE OUT. BUTT PANELS TOGETHER FOR A LIGHT CONTACT AT EDGES AND ENDS WITH NOT MORE THAN 1/16 INCH (1.5 MM) OF OPEN SPACE BETWEEN PANELS. DO NOT FORCE INTO PLACE.
E. LOCATE EDGE AND END JOINTS OVER SUPPORTS, EXCEPT IN CEILING APPLICATIONS WHERE INTERMEDIATE SUPPORTS OR GYPSUM BOARD BACK- BLOCKING IS PROVIDED BEHIND END JOINTS. DO NOT PLACE TAPERED EDGES AGAINST CUT EDGES OR ENDS. STAGGER VERTICAL JOINTS ON OPPOSITE SIDES OF PARTITIONS. DO NOT MAKE JOINTS OTHER THAN CONTROL JOINTS AT CORNERS OF FRAMED OPENINGS.
F. ATTACH GYPSUM PANELS TO STEEL STUDS SO LEADING EDGE OR END OF EACH PANEL IS ATTACHED TO OPEN (UNSUPPORTED) EDGES OF STUD FLANGES FIRST.
G. ATTACH GYPSUM PANELS TO FRAMING PROVIDED AT OPENINGS AND CUTOUTS.
H. FORM CONTROL AND EXPANSION JOINTS WITH SPACE BETWEEN EDGES OF ADJOINING GYPSUM PANELS.
I. COVER BOTH FACES OF STEEL STUD PARTITION FRAMING WITH GYPSUM PANELS IN CONCEALED SPACES (ABOVE CEILINGS, ETC.), EXCEPT IN CHASES BRACED INTERNALLY.
1. UNLESS CONCEALED APPLICATION IS INDICATED OR REQUIRED FOR SOUND, FIRE, AIR, OR SMOKE RATINGS, COVERAGE MAY BE ACCOMPLISHED WITH SCRAPS OF NOT LESS THAN 5.0 SQ. FT. (0.7 SQ. M) IN AREA.
2. FIT GYPSUM PANELS AROUND DUCTS, PIPES, AND CONDUITS.
J. ISOLATE PERIMETER OF NON-LOAD-BEARING GYPSUM BOARD PARTITIONS AT STRUCTURAL ABUTMENTS, EXCEPT FLOORS. PROVIDE 1/4- TO 1/2-INCH- (6.4- TO 12.7-MM-) WIDE SPACES AT THESE LOCATIONS, AND TRIM EDGES WITH U-BEAD EDGE TRIM WHERE EDGES OF GYPSUM PANELS ARE EXPOSED. SEAL JOINTS BETWEEN EDGES AND ABUTTING STRUCTURAL SURFACES WITH ACOUSTICAL SEALANT.
K. STC-RATED ASSEMBLIES: SEAL CONSTRUCTION AT PERIMETERS, BEHIND CONTROL AND EXPANSION JOINTS, AND AT OPENINGS AND PENETRATIONS WITH A CONTINUOUS BEAD OF ACOUSTICAL SEALANT. INSTALL ACOUSTICAL SEALANT AT BOTH FACES OF PARTITIONS AT PERIMETERS AND THROUGH PENETRATIONS. COMPLY WITH ASTM C 919 AND MANUFACTURER'S WRITTEN RECOMMENDATIONS FOR LOCATING EDGE TRIM AND CLOSING OFF SOUND-FLANKING PATHS AROUND OR THROUGH GYPSUM BOARD ASSEMBLIES, INCLUDING SEALING PARTITIONS ABOVE ACOUSTICAL CEILINGS.
L. SPACE FASTENERS IN GYPSUM PANELS ACCORDING TO REFERENCED GYPSUM BOARD APPLICATION AND FINISHING STANDARD AND MANUFACTURER'S WRITTEN RECOMMENDATIONS:
1. SPACE SCREWS A MAXIMUM OF 12 INCHES (304.8 MM) O.C. FOR VERTICAL APPLICATIONS.
M. SPACE FASTENERS IN PANELS THAT ARE TILE SUBSTRATES A MAXIMUM OF 8 INCHES (203.2 MM) O.C.

3.7 PANEL APPLICATION METHODS
A. SINGLE-LAYER APPLICATION:
1. ON CEILINGS, APPLY GYPSUM PANELS BEFORE WALL/PARTITION BOARD APPLICATION TO THE GREATEST EXTENT POSSIBLE AND AT RIGHT ANGLES TO FRAMING, UNLESS OTHERWISE INDICATED.
2. ON PARTITIONS/WALLS, APPLY GYPSUM PANELS HORIZONTALLY (PERPENDICULAR TO FRAMING), UNLESS OTHERWISE INDICATED OR REQUIRED BY FIRE-RESISTANCE-RATED ASSEMBLY, AND MINIMIZE END JOINTS.
a. STAGGER ABUTTING END JOINTS NOT LESS THAN ONE FRAMING MEMBER IN ALTERNATE COURSES OF BOARD.
3. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
B. SINGLE-LAYER FASTENING METHODS: APPLY GYPSUM PANELS TO SUPPORTS WITH STEEL DRILL SCREWS.
C. TILE BACKING PANELS:
1. GLASS-MAT, WATER-RESISTANT BACKING PANEL: COMPLY WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS AND INSTALL AT [SHOWERS, TUBS, AND WHERE INDICATED] [LOCATIONS INDICATED TO RECEIVE TILE]. INSTALL WITH 1/4-INCH (6.4-MM) GAP WHERE PANELS ABUT OTHER CONSTRUCTION OR PENETRATIONS.
2. WHERE TILE BACKING PANELS ABUT OTHER TYPES OF PANELS IN THE SAME PLANE, SHIM SURFACES TO PRODUCE A UNIFORM PLANE ACROSS PANEL SURFACES.

3.8 INSTALLING TRIM ACCESSORIES
A. GENERAL: FOR TRIM WITH BACK FLANGES INTENDED FOR FASTENERS, ATTACH TO FRAMING WITH SAME FASTENERS USED FOR PANELS. OTHERWISE, ATTACH TRIM ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
B. CONTROL JOINTS: INSTALL CONTROL JOINTS ACCORDING TO ASTM C 840 AND IN SPECIFIC LOCATIONS APPROVED BY ARCHITECT FOR VISUAL EFFECT.

3.9 FINISHING GYPSUM BOARD ASSEMBLIES
A. GENERAL: TREAT GYPSUM BOARD JOINTS, INTERIOR ANGLES, EDGE TRIM, CONTROL JOINTS, PENETRATIONS, FASTENER HEADS, SURFACE DEFECTS, AND ELSEWHERE AS REQUIRED TO PREPARE GYPSUM BOARD SURFACES FOR DECORATION. PROMPTLY REMOVE RESIDUAL JOINT COMPOUND FROM ADJACENT SURFACES.
B. PREFILL OPEN JOINTS AND DAMAGED SURFACE AREAS.
C. APPLY JOINT TAPE OVER GYPSUM BOARD JOINTS, EXCEPT THOSE WITH TRIM HAVING FLANGES NOT INTENDED FOR TAPE.
D. GYPSUM BOARD FINISH LEVELS: FINISH PANELS TO LEVELS INDICATED BELOW, ACCORDING TO ASTM C 840, FOR LOCATIONS INDICATED:
1. LEVEL 1: EMBED TAPE AT JOINTS IN CEILING PLENUM AREAS, CONCEALED AREAS, AND WHERE INDICATED.
2. LEVEL 5: EMBED TAPE AND APPLY SEMI-RIGID FINISH COATS OF JOINT COMPOUND TO TAPE, FASTENERS, AND TRIM FLANGES, AND APPLY SKIM COAT OF JOINT COMPOUND OVER ENTIRE SURFACE.
E. GLASS-MAT, WATER-RESISTANT BACKING PANELS: FINISH ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

3.10 FIELD QUALITY CONTROL
A. ABOVE-CEILING OBSERVATION: BEFORE CONTRACTOR INSTALLS GYPSUM BOARD CEILINGS, ARCHITECT WILL CONDUCT AN ABOVE-CEILING OBSERVATION AND REPORT DEFICIENCIES IN THE WORK OBSERVED. DO NOT PROCEED WITH INSTALLATION OF GYPSUM BOARD TO CEILING SUPPORT FRAMING UNTIL DEFICIENCIES OVER REMEDIATED.
1. NOTIFY ARCHITECT SEVEN DAYS IN ADVANCE OF DATE AND TIME WHEN PROJECT, OR PART OF PROJECT, WILL BE READY FOR ABOVE-CEILING OBSERVATION.

END OF SECTION 09 22 00

09 30 00 - CERAMIC TILE

PART 1 - GENERAL
1.1 ITEMS REQUIRED BUT NOT SPECIFIED
A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.
1.2 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
1.3 SUMMARY
A. THIS SECTION INCLUDES THE FOLLOWING:
1. GLAZED WALL TILE.
a. SOLID FIELD WALL TILE WITH ACCENT STRIPE.
2. GLAZED COVE BASE.

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09 30 00 - CERAMIC TILE (CONT.)

B. RELATED SECTIONS INCLUDE THE FOLLOWING:
1. DIVISION 7 SECTION "JOINT SEALANTS" FOR SEALING OF EXPANSION, CONTRACTION, CONTROL, AND ISOLATION JOINTS IN TILE SURFACES.

1.4 REFERENCES
A. ASSOCIATION PUBLICATIONS:
1. AMERICAN NATIONAL STANDARD SPECIFICATION (ANSI) FOR THE INSTALLATION OF CERAMIC TILE.
a. ANSI A108/A118/A136.1, "AMERICAN NATIONAL STANDARDS SPECIFICATIONS FOR THE INSTALLATION OF CERAMIC TILE'; VERSION 2013.1 (COMPILATION OF STANDARDS):
2. INTERNATIONAL STANDARDS ORGANIZATION (ISO) 13007, 'CLASSIFICATION FOR ADHESIVES AND GROUT'.
3. TILE COUNCIL OF NORTH AMERICA:
a. TCNA HANDBOOK, 'HANDBOOK FOR CERAMIC TILE INSTALLATION, 2011'.

1.5 DEFINITIONS
A. MODULE SIZE: ACTUAL TILE SIZE (MINOR FACIAL DIMENSION AS MEASURED PER ASTM C 499) PLUS JOINT WIDTH INDICATED.
B. FACIAL DIMENSION: ACTUAL TILE SIZE (MINOR FACIAL DIMENSION AS MEASURED PER ASTM C 499).
C. FACIAL DIMENSION: NOMINAL TILE SIZE AS DEFINED IN ANSI A137.1.
D. DRY-SET MORTAR: WATER-RETENTIVE HYDRAULIC CEMENT MORTAR SUITABLE WITH OR WITHOUT SAND. WHEN THIS MORTAR IS USED, NEITHER TILE NOR WALLS HAVE TO BE SOAKED DURING INSTALLATION.
E. GROUT: RICH OR STRONG CEMENTITIOUS OR CHEMICALLY SETTING MIX USED FOR FILLING TILE JOINTS.
1. LATEX/POLYMER MODIFIED PORTLAND CEMENT MORTAR: LATEX/POLYMER MODIFIED PORTLAND CEMENT MORTAR IS A MIXTURE OF PORTLAND CEMENT, SAND, AND SPECIAL LATEX/POLYMER ADDITIVE THAT IS USED AS A BOND COAT FOR SETTING TILE.

1.6 SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
B. SAMPLES FOR INITIAL SELECTION: FOR EACH TYPE OF TILE AND GROUT INDICATED. INCLUDE SAMPLES OF ACCESSORIES INVOLVING COLOR SELECTION.
C. SAMPLES FOR VERIFICATION:
1. FULL-SIZE UNITS OF EACH TYPE AND COMPOSITION OF TILE AND FOR EACH COLOR AND FINISH REQUIRED.
2. ASSEMBLED SAMPLES WITH GROUTED JOINTS FOR EACH TYPE AND COMPOSITION OF TILE AND FOR EACH COLOR AND FINISH REQUIRED, AT LEAST 12 INCHES (300 MM) SQUARE AND MOUNTED ON RIGID PANEL. USE GROUT OF TYPE AND IN COLOR OR COLORS APPROVED FOR COMPLETED WORK.
3. FULL-SIZE UNITS OF EACH TYPE OF TRIM AND ACCESSORY.
D. PRODUCT CERTIFICATES: FOR EACH TYPE OF PRODUCT, SIGNED BY PRODUCT MANUFACTURER.
E. QUALIFICATION DATA: FOR INSTALLER.

1.7 QUALITY ASSURANCE
A. SOURCE LIMITATIONS FOR TILE: OBTAIN ALL TILE OF SAME TYPE AND COLOR OR FINISH FROM ONE SOURCE OR PRODUCER.
1. OBTAIN TILE FROM SAME PRODUCTION RUN AND OF CONSISTENT QUALITY IN APPEARANCE AND PHYSICAL PROPERTIES FOR EACH CONTIGUOUS AREA.
B. SOURCE LIMITATIONS FOR SETTING AND GROUTING MATERIALS: OBTAIN INGREDIENTS OF A UNIFORM QUALITY FOR EACH MORTAR, ADHESIVE, AND GROUT FROM A SINGLE MANUFACTURER AND EACH AGGREGATE FROM ONE SOURCE OR PRODUCER.
C. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE TO COMPLY WITH REQUIREMENTS IN DIVISION 1 SECTION "PROJECT MANAGEMENT AND COORDINATION."

1.8 DELIVERY, STORAGE, AND HANDLING
A. DELIVER AND STORE PACKAGED MATERIALS IN ORIGINAL CONTAINERS WITH SEALS UNBROKEN AND LABELS INTACT UNTIL TIME OF USE. COMPLY WITH REQUIREMENTS OF ASTM A137.1 FOR LABELING SEALED TILE PACKAGES.
B. STORE TILE AND CEMENTITIOUS MATERIALS ON ELEVATED PLATFORMS, UNDER COVER, AND IN A DRY LOCATION.
C. STORE AGGREGATES WHERE GRADING AND OTHER REQUIRED CHARACTERISTICS CAN BE MAINTAINED AND CONTAMINATION AVOIDED.
D. STORE LIQUID LATEXES IN UNOPENED CONTAINERS AND PROTECTED FROM FREEZING.

1.9 PROJECT CONDITIONS
A. ENVIRONMENTAL LIMITATIONS: DO NOT INSTALL TILE UNTIL CONSTRUCTION IN SPACES IS COMPLETE AND AMBIENT TEMPERATURE AND HUMIDITY CONDITIONS ARE MAINTAINED AT THE LEVELS INDICATED IN REFERENCED STANDARDS AND MANUFACTURER'S WRITTEN INSTRUCTIONS.

1.10 EXTRA MATERIALS
A. FURNISH EXTRA MATERIALS DESCRIBED BELOW THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.
1. TILE AND TRIM UNITS: FURNISH QUANTITY OF FULL-SIZE UNITS EQUAL TO 3 PERCENT OF AMOUNT INSTALLED, FOR EACH TYPE, COMPOSITION, COLOR, PATTERN, AND SIZE INDICATED.

PART 2 - PRODUCTS
2.1 MATERIALS, GENERAL
A. MANUFACTURERS:
1. MANUFACTURER'S CONTACT LIST:
a. CUSTOM BUILDING PRODUCTS, SEAL BEACH, CA HYPERLINK "HTTP://WWW.CUSTOMBUILDINGPRODUCTS.COM" WWW.CUSTOMBUILDINGPRODUCTS.COM.
1) CONTACT INFORMATION: JOHN GALLUP (206) 718.6024 HYPERLINK "MAILTO:JOHNG@CBPMAIL.NET" JOHNG@CBPMAIL.NET.
b. DAL-TILE CORP., DIV. OF MOHAWK INDUSTRIES, DALLAS, TX HYPERLINK "HTTP://WWW.DALTILE.COM" WWW.DALTILE.COM.
c. LATICRETE INTERNATIONAL INC., BETHANY, CT HYPERLINK "HTTP://WWW.LATICRETE.COM" WWW.LATICRETE.COM.
d. MAPEI AMERICAS HEADQUARTERS, DEERFIELD BEACH, FL HYPERLINK "HTTP://WWW.MAPEI.COM" WWW.MAPEI.COM.
1) CONTACT INFORMATION: BART A. WILDE (801) 467-2060 HYPERLINK "HTTP://WWW.BWILDE@MAPEI.COM" WWW.BWILDE@MAPEI.COM.
e. MERKRETE, BY PAREX USA, INC., ANAHEIM, CA HYPERLINK "HTTP://WWW.MERKRETE.COM" WWW.MERKRETE.COM.
1) CONTACT INFORMATION: ANDY TOWNES (505) 873-1181 HYPERLINK "MAILTO:ANDY.TOWNES@PAREXUSA.COM" ANDY.TOWNES@PAREXUSA.COM.

B. CATEGORY TWO NATIONAL CONTRACT SUPPLIERS. SEE SECTION 01 6200 FOR DEFINITIONS OF CATEGORIES:
1. CONTACT FOLLOWING SUPPLIERS TO PROCURE COMPONENTS OF TILE ASSEMBLY:
a. DALTILE AND STONE, SALT LAKE CITY, UT: LDS PROJECT COORDINATORS: RUSS GREEN AND LARRY MCCLEARY, (801) 487-9901, CELL (801) 301 1461, FAX (801) 487-0345 HYPERLINK "MAILTO:LARRY.MCCLEARY@DALTILE.COM" LARRY.MCCLEARY@DALTILE.COM - HYPERLINK "HTTP://WWW.DALTILEPRODUCTS.COM" WWW.DALTILEPRODUCTS.COM OR HYPERLINK "HTTP://WWW.DALTILEGREENWORKS.COM" WWW.DALTILEGREENWORKS.COM.

C. DESIGN CRITERIA:
1. GENERAL:
a. CERAMIC TILE:
1) TILE SHALL BE STANDARD QUALITY, WHITE OR OFF-WHITE BODY, SQUARE OR CUSHION EDGE, GRADED IN ACCORDANCE WITH ANSI A137.1.
2) SQUARE EDGE: WHITE BODY, LUG TYPE WALL TILE. FIELD WALL TILE SHALL HAVE TWO LUGS ON EACH EDGE TO ASSURE UNIFORM JOINT, APPROXIMATELY 0.040 INCH (ONE MM).
3) EXTERNAL AND INTERNAL CORNER PIECES SHALL BE STANDARD GRADE.
2. CERAMIC WALL TILE: SEMI-GLOSS FINISH.
a. WALL TILE:
1) WALLS: 6 INCHES BY 6 INCHES (152 MM BY 152 MM).
2) CERAMIC TILE BASE: 6 INCH (152 MM) HIGH. A3401 COVE BASE. MATCH ACCENT STRIPE.
3) APPROVED FIELD COLOR: 0135 ALMOND BY DALTILE.
4) ACCENT STRIPE, 6 INCHES BY 6 INCHES (152 MM BY 152 MM). COLOR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OF COLORS.

2.2 PRODUCTS, GENERAL
A. ANSI CERAMIC TILE STANDARD: PROVIDE TILE THAT COMPLIES WITH ANSI A137.1, "SPECIFICATIONS FOR CERAMIC TILE," FOR TYPES, COMPOSITIONS, AND OTHER CHARACTERISTICS INDICATED.
B. ANSI STANDARDS FOR TILE INSTALLATION MATERIALS: PROVIDE MATERIALS COMPLYING WITH ANSI STANDARDS REFERENCED IN "SETTING AND GROUTING MATERIALS" ARTICLE.
C. FACTORY BLENDING: FOR TILE EXHIBITING COLOR VARIATIONS WITHIN RANGES SELECTED DURING SAMPLE SUBMITTALS, BLEND TILE IN FACTORY AND PACKAGE SO TILE UNITS TAKEN FROM ONE PACKAGE SHOW SAME RANGE IN COLORS AS THOSE TAKEN FROM OTHER PACKAGES AND MATCH APPROVED SAMPLES.
D. MOUNTING: FOR FACTORY-MOUNTED TILE, PROVIDE BACK- OR EDGE-MOUNTED TILE ASSEMBLIES AS STANDARD WITH MANUFACTURER, UNLESS OTHERWISE INDICATED.

2.3 SETTING AND GROUTING MATERIALS
A. MORTAR BED:
1. PORTLAND CEMENT: MEET REQUIREMENTS OF ASTM C150/C150M, TYPE 1, DESIGNATION SHALL APPEAR ON BAG.
2. HYDRATED LIME:
a. MEET REQUIREMENTS OF ONE OF FOLLOWING:
1) ASTM C206.
2) ASTM C207, TYPE S (DESIGNATION SHALL APPEAR ON BAG).
3. SAND: CLEAN, WASHED, WELL-GRADED, MEETING REQUIREMENTS OF ASTM C144 WITH GRADATION OF 100 PERCENT PASSING NO. 8 SIEVE WITH NOT OVER FIVE (5) PERCENT PASSING NO. 100 SIEVE.
4. LATEX ADDITIVE; IN LIEU OF ALL WATER:
a. MEET WARRANTY REQUIREMENTS.
b. MEET REQUIREMENTS OF ANSI A118.4.
c. TYPE TWO ACCEPTABLE PRODUCTS:
1) CUSTOM: THIN-SET MORTAR ADMIX.
2) LATICRETE: LATEX ADMIXTURE.
3) MAPEI: PLANICRETE AC.
4) MERKRETE: 150 LATEX ADMIXTURE.
B. WALL GROUT (MODIFIED POLYMER):
1. MEET OF ANSI A118.6 OR ANSI A118.6 AND ISO 13007.
2. COLOR:
a. CUSTOM: NO. 381 BRIGHT WHITE.
b. LATICRETE: NO. 44 BRIGHT WHITE.
c. MAPEI: NO. 00 WHITE.
d. MERKRETE: D-11 SNOW WHITE.
3. CATEGORY FOUR APPROVED PRODUCTS. SEE SECTION 01 6200 FOR DEFINITIONS OF CATEGORIES:
a. CUSTOM: POLYBLEND NON-SANDED GROUT OR PRISM SURECOLOR GROUT.
b. LATICRETE: 1600 SERIES UNSANDED DRY SET WALL GROUT WITH 1776 GROUT ADMIX PLUS ADDITIVE.
c. MAPEI: KERACOLOR-U UNSANDED POLYMER-MODIFI

09 67 23 - MONOLITHIC RESINOUS FLOORING (CONT.)

6. APPLY SECOND UV STABLE EPOXY RECEIVING COAT AND BROADCAST APPLICATION TO ACHIEVE NECESSARY MINIMUM THICKNESS OF 1/8 INCH.
7. AFTER OVERNIGHT CURE, VACUUM EXCESS AGGREGATE AND APPLY CLEAR UV STABLE EPOXY GROUT COAT.
8. APPLY SECOND UV STABLE EPOXY CLEAR FINISH COAT TO ACHIEVE DESIRED FINISH AND TEXTURE SELECTED.

3.04 FIELD QUALITY CONTROL
A. THE RIGHT IS RESERVED TO INVOKE THE FOLLOWING MATERIAL TESTING PROCEDURE AT ANY TIME, AND ANY NUMBER OF TIMES DURING PERIOD OF FLOORING APPLICATION.
B. THE CONTRACTOR MAY ENGAGE SERVICE OF AN INDEPENDENT TESTING LABORATORY TO SAMPLE MATERIALS BEING USED ON THE JOB SITE. SAMPLES OF MATERIAL WILL BE TAKEN, IDENTIFIED, SEALED, AND CERTIFIED IN PRESENCE OF CONTRACTOR.
C. TESTING LABORATORY WILL PERFORM TESTS FOR ANY OF CHARACTERISTICS SPECIFIED, USING APPLICABLE TESTING PROCEDURES REFERENCED HEREIN, OR IF NONE REFERENCED, IN MANUFACTURER'S PRODUCT DATA.
D. IF TEST RESULTS SHOW MATERIALS BEING USED DO NOT COMPLY WITH SPECIFIED REQUIREMENTS, SUBCONTRACTOR MAY BE DIRECTED TO STOP WORK; REMOVE NON-COMPLYING MATERIALS; PAY FOR TESTING; REAPPLY FLOORING MATERIALS TO PROPERLY PREPARED SURFACES WHICH HAD PREVIOUSLY BEEN COATED WITH UNACCEPTABLE MATERIALS.

3.05 CURING, PROTECTION AND CLEANING
A. CURE RESINOUS FLOORING MATERIALS IN COMPLIANCE WITH MANUFACTURER'S DIRECTIONS, TAKING CARE TO PREVENT CONTAMINATION DURING STAGES OF APPLICATION, PRIOR TO COMPLETION OF CURING PROCESS. PROTECT THE COMPLETED WORK FROM RAIN, MOISTURE, AIRBORNE PARTICLES OR OTHER SURFACE CONTAMINANTS UNTIL CURED, TACK FREE, APPROXIMATELY 18-24 HOURS AFTER APPLICATION.
B. PROTECT RESINOUS FLOORING MATERIALS FROM DAMAGE AND WEAR DURING CONSTRUCTION OPERATION. WHERE TEMPORARY COVERING IS REQUIRED FOR THIS PURPOSE, COMPLY WITH MANUFACTURER'S RECOMMENDATIONS FOR PROTECTIVE MATERIALS AND METHOD OF APPLICATION.
C. CLEANING: REMOVE TEMPORARY COVERING AND CLEAN RESINOUS FLOORING JUST PRIOR TO FINAL INSPECTION. USE CLEANING MATERIALS AND PROCEDURES RECOMMENDED BY RESINOUS FLOORING MANUFACTURER.
D. REMOVE WASTE MATERIALS, RUBBISH AND DEBRIS AND DISPOSE OF THEM OFF-SITE. LEAVE WORK AREAS IN A CLEAN CONDITION.
E. PROTECT COMPLETED FLOORING SYSTEM FROM IMMERSION AND CHEMICAL EXPOSURE UNTIL THOROUGHLY CURED, APPROXIMATELY 7 DAYS BEFORE EXPOSURE TO CHEMICALS OR CLEANING COMPOUNDS.
F. PROTECT FLOORING SYSTEM FROM UV LIGHT, WHICH MAY CAUSE A CHANGE IN COLOR HUE BUT WILL NOT AFFECT THE PHYSICAL PROPERTIES OF THE SYSTEM.
G. PROTECT THE FINISHED FLOORS FROM DAMAGE BY OTHER TRADES.

END OF SECTION 09 67 23

09 90 00 - PAINTING

PART 1 - GENERAL
1.1 ITEMS REQUIRED BUT NOT SPECIFIED
A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.
1.2 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
1.3 SUMMARY
A. THIS SECTION INCLUDES SURFACE PREPARATION AND FIELD PAINTING OF EXPOSED [EXTERIOR] [AND] [INTERIOR] ITEMS AND SURFACES.
1. SURFACE PREPARATION, PRIMING, AND FINISH COATS SPECIFIED IN THIS SECTION ARE IN ADDITION TO SHOP PRIMING AND SURFACE TREATMENT SPECIFIED IN OTHER SECTIONS.
B. PAINT EXPOSED SURFACES, EXCEPT WHERE THESE SPECIFICATIONS INDICATE THAT THE SURFACE OR MATERIAL IS NOT TO BE PAINTED OR IS TO REMAIN NATURAL. IF AN ITEM OR A SURFACE IS NOT SPECIFICALLY MENTIONED, PAINT THE ITEM OR SURFACE THE SAME AS SIMILAR ADJACENT MATERIALS OR SURFACES. IF A COLOR OF FINISH IS NOT INDICATED, ARCHITECT WILL SELECT FROM STANDARD COLORS AND FINISHES AVAILABLE.
1. PAINTING INCLUDES FIELD PAINTING OF EXPOSED BARE AND COVERED PIPES AND DUCTS (INCLUDING COLOR CODING), HANGERS, EXPOSED STEEL AND IRON SUPPORTS, AND SURFACES OF MECHANICAL AND ELECTRICAL EQUIPMENT THAT DO NOT HAVE A FACTORY-APPLIED FINAL FINISH.
C. DO NOT PAINT PREFINISHED ITEMS, CONCEALED SURFACES, FINISHED METAL SURFACES, OPERATING PARTS, AND LABELS.
1. PREFINISHED ITEMS INCLUDE THE FOLLOWING FACTORY-FINISHED COMPONENTS:
a. ARCHITECTURAL WOODWORK.
b. ACOUSTICAL WALL PANELS.
c. METAL TOILET ENCLOSURES.
d. METAL LOCKERS.
e. FINISHED MECHANICAL AND ELECTRICAL EQUIPMENT.
f. LIGHT FIXTURES.
2. CONCEALED SURFACES INCLUDE WALLS OR CEILINGS IN THE FOLLOWING GENERALLY INACCESSIBLE SPACES:
a. FOUNDATION SPACES.
b. FURRED AREAS.
c. CEILING PLENUMS.
d. UTILITY TUNNELS.
e. PIPE SPACES.
f. DUCT SHAFTS.
g. ELEVATOR SHAFTS.
3. Finished metal surfaces include the following:
a. ANODIZED ALUMINUM.
b. STAINLESS STEEL.
c. CHROMIUM PLATE.
d. COPPER AND COPPER ALLOYS.
e. BRONZE AND BRASS.
4. OPERATING PARTS INCLUDE MOVING PARTS OF OPERATING EQUIPMENT AND THE FOLLOWING:
a. VALVE AND DAMPER OPERATORS.
b. LINKAGES.
c. SENSING DEVICES.
d. MOTOR AND FAN SHAFTS.
5. LABELS: DO NOT PAINT OVER UL, FMG, OR OTHER CODE-REQUIRED LABELS OR EQUIPMENT NAME, IDENTIFICATION, PERFORMANCE RATING, OR NOMENCLATURE PLATES.
D. Related Sections include the following:
1. DIVISION 5 SECTION "STRUCTURAL STEEL" FOR SHOP PRIMING STRUCTURAL STEEL.
2. DIVISION 5 SECTION "METAL FABRICATIONS" FOR SHOP PRIMING FERROUS METAL.
3. DIVISION 8 SECTION "STEEL DOORS AND FRAMES" FOR FACTORY PRIMING STEEL DOORS AND FRAMES.
4. DIVISION 9 SECTION "GYPSUM BOARD ASSEMBLIES" FOR SURFACE PREPARATION OF GYPSUM BOARD.
5. DIVISION 9 SECTION "HIGH-PERFORMANCE COATINGS" FOR INDUSTRIAL PAINTS AND MAINTENANCE AND FOR SPECIAL COATINGS.
1.4 DEFINITIONS
A. GENERAL: STANDARD COATING TERMS DEFINED IN ASTM D 16 APPLY TO THIS SECTION.
B. GLOSS RANGES USED IN THIS SECTION INCLUDE THE FOLLOWING:
1. FLAT REFERS TO A LUSTERLESS OR NEAR LUSTERLESS FINISH WITH A GLOSS RANGE BELOW 15 WHEN MEASURED AT AN 85-DEGREE METER.
2. EGGSHELL REFERS TO LOW-SHEEN FINISH WITH A GLOSS RANGE BETWEEN 20 AND 35 WHEN MEASURED AT A 60-DEGREE METER.
3. SEMI-GLOSS REFERS TO MEDIUM-SHEEN FINISH WITH A GLOSS RANGE BETWEEN 35 AND 70 WHEN MEASURED AT A 60-DEGREE METER.
4. FULL GLOSS REFERS TO HIGH-SHEEN FINISH WITH A GLOSS RANGE MORE THAN 70 WHEN MEASURED AT A 60-DEGREE METER.
1.5 SUBMITTALS
A. PRODUCT DATA: FOR EACH PAINT SYSTEM INDICATED. INCLUDE BLOCK FILLERS AND PRIMERS.
1. MATERIAL LIST: AN INCLUSIVE LIST OF REQUIRED COATING MATERIALS. INDICATE EACH MATERIAL AND CROSS-REFERENCE SPECIFIC COATING, FINISH SYSTEM, AND APPLICATION. IDENTIFY EACH MATERIAL BY MANUFACTURER'S CATALOG NUMBER AND GENERAL CLASSIFICATION.
2. MANUFACTURER'S INFORMATION: MANUFACTURER'S TECHNICAL INFORMATION, INCLUDING LABEL ANALYSIS AND INSTRUCTIONS FOR HANDLING, STORING, AND APPLYING EACH COATING MATERIAL.
3. PRODUCT DATA FOR CREDIT EQ 4.2: FOR PAINTS AND COATINGS, INCLUDING PRINTED STATEMENT OF VOC CONTENT.
4. LABORATORY TEST REPORTS FOR CREDIT EQ 4.2: FOR PAINTS AND COATINGS, DOCUMENTATION INDICATING THAT THEY MEET THE TESTING AND PRODUCT REQUIREMENTS OF THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES' "STANDARD PRACTICE FOR THE TESTING OF VOLATILE ORGANIC EMISSIONS FROM VARIOUS SOURCES USING SMALL-SCALE ENVIRONMENTAL CHAMBERS."
B. CERTIFICATION BY MANUFACTURER THAT PRODUCTS SUPPLIED COMPLY WITH REQUIREMENTS INDICATED THAT LIMIT THE NUMBER OF VOCS IN COATING PRODUCTS.
C. SAMPLES FOR INITIAL SELECTION: FOR EACH TYPE OF FINISH COAT MATERIAL INDICATED.
D. SAMPLES FOR VERIFICATION: FOR EACH COLOR AND MATERIAL TO BE APPLIED, WITH TEXTURE TO SIMULATE ACTUAL CONDITIONS, ON REPRESENTATIVE SAMPLES OF THE ACTUAL SUBSTRATE.
1. PROVIDE STEPPED SAMPLES, DEFINING EACH SEPARATE COAT, INCLUDING BLOCK FILLERS AND PRIMERS. USE REPRESENTATIVE COLORS WHEN PREPARING SAMPLES FOR REVIEW. RESUBMIT UNTIL REQUIRED SHEEN, COLOR, AND TEXTURE ARE ACHIEVED.
2. PROVIDE A LIST OF MATERIALS AND APPLICATIONS FOR EACH COAT OF EACH SAMPLE. LABEL EACH SAMPLE FOR LOCATION AND APPLICATION.
E. QUALIFICATION DATA: FOR FIRMS AND PERSONS SPECIFIED IN "QUALITY ASSURANCE" ARTICLE TO DEMONSTRATE THEIR CAPABILITIES AND EXPERIENCE. INCLUDE LISTS OF COMPLETED PROJECTS WITH PROJECT NAMES AND ADDRESSES, NAMES AND ADDRESSES OF ARCHITECTS AND OWNERS, AND OTHER INFORMATION SPECIFIED.
F. COATING MAINTENANCE MANUAL: PROVIDE COATING MAINTENANCE MANUAL INCLUDING AREA SUMMARY WITH FINISH SCHEDULE, AREA DETAIL DESIGNATING LOCATION WHERE EACH PRODUCT/COLOR/FINISH WAS USED, PRODUCT DATA PAGES, MATERIAL SAFETY DATA SHEETS, CARE AND CLEANING INSTRUCTIONS, TOUCH-UP PROCEDURES, AND COLOR SAMPLES OF EACH COLOR AND FINISH USED.
1.6 QUALITY ASSURANCE
A. APPLICATOR QUALIFICATIONS: A FIRM OR INDIVIDUAL EXPERIENCED IN APPLYING PAINTS AND COATINGS SIMILAR IN MATERIAL, DESIGN, AND EXTENT TO THOSE INDICATED FOR THIS PROJECT, WHOSE WORK HAS RESULTED IN APPLICATIONS WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE.
B. SOURCE LIMITATIONS: OBTAIN BLOCK FILLERS AND PRIMERS FOR EACH COATING SYSTEM FROM THE SAME MANUFACTURER AS THE FINISH COATS.
C. BENCHMARK SAMPLES (MOCKUPS): PROVIDE A FULL-COAT BENCHMARK FINISH SAMPLE FOR EACH TYPE OF COATING AND SUBSTRATE REQUIRED. COMPLY WITH PROCEDURES SPECIFIED IN PDCA P5. DUPLICATE FINISH OF APPROVED SAMPLE SUBMITTALS.
1. ARCHITECT WILL SELECT ONE ROOM OR SURFACE TO REPRESENT SURFACES AND CONDITIONS FOR APPLICATION OF EACH TYPE OF COATING AND SUBSTRATE.
a. WALL SURFACES: PROVIDE SAMPLES ON AT LEAST [100 SQ. FT. (9 SQ. M)].
b. SMALL AREAS AND ITEMS: ARCHITECT WILL DESIGNATE ITEMS OR AREAS REQUIRED.
2. APPLY BENCHMARK SAMPLES, ACCORDING TO REQUIREMENTS FOR THE COMPLETED WORK, AFTER PERMANENT LIGHTING AND OTHER ENVIRONMENTAL SERVICES HAVE BEEN ACTIVATED. PROVIDE REQUIRED SHEEN, COLOR, AND TEXTURE ON EACH SURFACE.
a. AFTER FINISHES ARE ACCEPTED, ARCHITECT WILL USE THE ROOM OR SURFACE TO EVALUATE COATING SYSTEMS OF A SIMILAR NATURE.
3. SPRAY EQUIPMENT: USE MECHANICAL METHODS TO APPLY COATING IF PERMITTED BY MANUFACTURER'S WRITTEN INSTRUCTIONS AND GOVERNING REGULATIONS.
a. USE SPRAY EQUIPMENT WITH ORIFICE SIZE RECOMMENDED BY MANUFACTURER FOR MATERIAL AND TEXTURE REQUIRED.
b. APPLY EACH COAT TO PROVIDE THE EQUIVALENT HIDING OF BRUSH-APPLIED COATS.
c. DO NOT DOUBLE BACK WITH SPRAY EQUIPMENT BUILDING-UP FILM THICKNESS OF TWO COATS IN ONE PASS, UNLESS RECOMMENDED BY MANUFACTURER.
D. MINIMUM COATING THICKNESS: APPLY EACH MATERIAL NO THINNER THAN MANUFACTURERS RECOMMENDED SPREADING RATE. PROVIDE TOTAL DRY FILM THICKNESS OF THE ENTIRE SYSTEM AS RECOMMENDED BY MANUFACTURER.
E. BLOCK FILLERS: APPLY BLOCK FILLERS TO CONCRETE MASONRY BLOCK AT A RATE TO ENSURE COMPLETE COVERAGE WITH PORES FILLED.
F. PRIME COATS: BEFORE APPLYING FINISH COATS, APPLY A PRIME COAT OF MATERIAL, AS RECOMMENDED BY MANUFACTURER, TO MATERIAL REQUIRED TO BE COATED OR FINISHED THAT HAS NOT BEEN PRIME COATED BY OTHERS.
1. RECOAT PRIMED AND SEALED SUBSTRATES IF THERE IS EVIDENCE OF SUCTION SPOTS OR UNSEALED AREAS IN FIRST COAT, TO ENSURE A FINISH COAT WITH NO BURN-THROUGH OR OTHER DEFECTS CAUSED BY INSUFFICIENT SEALING.
G. COMPLETED WORK: MATCH APPROVED SAMPLES FOR COLOR, TEXTURE, AND COVERAGE. REMOVE, REFINISH, OR RECOAT WORK THAT DOES NOT COMPLY WITH SPECIFIED REQUIREMENTS.
3.4 FIELD QUALITY CONTROL
A. OWNER RESERVES THE RIGHT TO INVOKE THE FOLLOWING PROCEDURE AT ANY TIME AND AS OFTEN AS OWNER DEEMS NECESSARY DURING THE PERIOD WHEN COATINGS ARE BEING APPLIED:
1. OWNER WILL ENGAGE THE SERVICES OF A QUALIFIED TESTING AGENCY TO SAMPLE COATING MATERIAL BEING USED. SAMPLES OF MATERIAL DELIVERED TO PROJECT SITE WILL BE TAKEN, IDENTIFIED, SEALED, AND CERTIFIED IN PRESENCE OF CONTRACTOR.
2. OWNER MAY DIRECT CONTRACTOR TO STOP APPLYING COATINGS IF TEST RESULTS SHOW MATERIALS BEING USED DO NOT COMPLY WITH SPECIFIED REQUIREMENTS. CONTRACTOR SHALL REMOVE NONCOMPLYING COATING MATERIALS FROM PROJECT SITE, PAY FOR TESTING, AND RECOAT SURFACES COATED WITH REJECTED MATERIALS. IF NECESSARY, CONTRACTOR MAY BE REQUIRED TO REMOVE REJECTED MATERIALS FROM PREVIOUSLY COATED SURFACES IF, ON RECOATING WITH SPECIFIED MATERIALS, THE TWO COATINGS ARE NOT COMPATIBLE.
3.5 CLEANING
A. CLEANUP: AT END OF EACH WORKDAY, REMOVE RUBBISH, EMPTY CANS, RAGS, AND OTHER DISCARDED MATERIALS FROM PROJECT SITE.
1. AFTER COMPLETING COATING APPLICATION, CLEAN SPATTERED SURFACES. REMOVE SPATTERED COATINGS BY WASHING, SCRAPING, OR OTHER METHODS. DO NOT SCRATCH OR DAMAGE ADJACENT FINISHED SURFACES.
3.6 PROTECTION
A. PROTECT WORK OF OTHER TRADES, WHETHER BEING COATED OR NOT, AGAINST DAMAGE FROM COATING OPERATION. CORRECT DAMAGE BY CLEANING, REPAIRING, REPLACING, AND RECOATING, AS APPROVED BY ARCHITECT, AND LEAVE IN AN UNDAMAGED CONDITION.
B. PROVIDE "WET PAINT" SIGNS TO PROTECT NEWLY COATED FINISHES. AFTER COMPLETING COATING OPERATIONS, REMOVE TEMPORARY PROTECTIVE WRAPPINGS PROVIDED BY OTHERS TO PROTECT THEIR WORK.
C. AT COMPLETION OF CONSTRUCTION ACTIVITIES OF OTHER TRADES, TOUCH UP AND RESTORE DAMAGED OR DEFACED COATED SURFACES. COMPLY WITH PROCEDURES SPECIFIED IN PDCA P1.
3.7 HIGH-PERFORMANCE COATING SCHEDULE
A. CONCRETE, MASONRY & PRECAST – EXTERIOR:
1. MODERATE ENVIRONMENT (SEMIGLOSS FINISH):
a. PREPARATION:
1) REMOVE ALL LOOSE SCALE AND MORTAR, DIRT, SALT OR ALKALI POWDER AND ANY OTHER SURFACE CONTAMINATE, USING A DETERGENT EXPRESSLY FORMULATED FOR CLEANING OF CONCRETE AND MASONRY.
2) REMOVE OIL AND GREASE WITH A SOLUTION OF TRI-SODIUM PHOSPHATE.
3) THOROUGHLY RINSE THE CLEANED SURFACES WITH CLEAR WATER, AND ALLOW THE SURFACES TO COMPLETELY DRY, ALLOW A MINIMUM OF 4 HOURS BEFORE COMMENCING APPLICATION OF COATINGS.
b. BLOCK FILLER: ACRYLIC OR EPOXY BLOCK FILLER APPLIED AT SPREADING RATE RECOMMENDED BY MANUFACTURER AS SUFFICIENT TO FILL PORES.
1) CARBOLINE:
2) R-O:
3) S-W: LOXON PRIMER
4) TNEMEC: SERIES 151-1051 ELASTO-GRIP FC.

09 90 00 - PAINTING (CONT.)

c. INTERMEDIATE COAT: EPOXY APPLIED AT SPREADING RATE RECOMMENDED BY MANUFACTURER, UNLESS OTHERWISE INDICATED.
1) CARBOLINE:
2) R-O:
3) S-W: CONFLEX XL
4) TNEMEC: SERIES 156 – ENVIRO-CRETE.
d. TOPCOAT: SEMIGLOSS EPOXY APPLIED AT SPREADING RATE RECOMMENDED BY MANUFACTURER TO ACHIEVE A DRY FILM THICKNESS OF 2.0 TO 5.0 MILS (0.051 TO 0.127 MM), UNLESS OTHERWISE INDICATED.
1) CARBOLINE:
2) R-O:
3) S-W: CONFLEX XL
4) TNEMEC: SERIES 156 – ENVIRO-CRETE.
B. CONCRETE, MASONRY & PRECAST – INTERIOR:
1. WET ENVIRONMENT (SEMIGLOSS FINISH):
a. PREPARATION:
1) REMOVE ALL LOOSE SCALE AND MORTAR, DIRT, SALT OR ALKALI POWDER AND ANY OTHER SURFACE CONTAMINATE, USING A DETERGENT EXPRESSLY FORMULATED FOR CLEANING OF CONCRETE AND MASONRY.
2) REMOVE OIL AND GREASE WITH A SOLUTION OF TRI-SODIUM PHOSPHATE.
3) THOROUGHLY RINSE THE CLEANED SURFACES WITH CLEAR WATER, AND ALLOW THE SURFACES TO COMPLETELY DRY, ALLOW A MINIMUM OF 4 HOURS BEFORE COMMENCING APPLICATION OF COATINGS.
b. BLOCK FILLER: ACRYLIC OR EPOXY BLOCK FILLER APPLIED AT SPREADING RATE RECOMMENDED BY MANUFACTURER AS SUFFICIENT TO FILL PORES.
1) CARBOLINE: CARBOGUARD 954 HB PART A.
2) R-O:
3) S-W: KEM CATI-COAT EPOXY BLOCKFILLER, B42-400 SERIES
4) TNEMEC:
a) MASONRY PRIMER/FILLER: SERIES 130 ENVIROFILL WATERBORNE CEMENTITIOUS ACRYLIC.
b) CONCRETE PRIMER/FILLER: SERIES 151-1051 ELASTO-GRIP FC.
c. INTERMEDIATE COAT: EPOXY APPLIED AT SPREADING RATE RECOMMENDED BY MANUFACTURER, UNLESS OTHERWISE INDICATED TO ENSURE ALL PIN HOLES ARE FILLED.
1) CARBOLINE: CARBOCOAT 30 TOP COAT
2) R-O:
3) S-W: PRO INDUSTRIAL HIGH PERFORMANCE EPOXY, B67-200 SERIES.
a) ALT: PRO INDUSTRIAL WATERBASED CATALYZED EPOXY SEMI-GLOSS, B73-300 SERIES, 2.0-4.0 MILS DFT
4) TNEMEC:
a) ALT: H.G. TNEME-TUFCOAT SERIES 113 AT 4.0 – 6.0 MILS DFT
d. PINHOLES: FILL ALL INCONSISTENCES OR VARIATIONS IN THE FINISHED SURFACE WITH THE APPROPRIATE FILLER.
1) S-W: SEAL BEAM FT910.
2) TNEMEC: EPOXOLINE SERIES FC22.
e. TOPCOAT: SEMIGLOSS EPOXY APPLIED AT SPREADING RATE RECOMMENDED BY MANUFACTURER, UNLESS OTHERWISE INDICATED.
1) CARBOLINE: CARBOCOAT 30 DOORS ON TOPS, BOTTOMS, AND SIDES THE SAME AS EXTERIOR FACES.
2) R-O:
3) S-W: PRO INDUSTRIAL HIGH PERFORMANCE EPOXY, B67-200 SERIES.
a) ALT: PRO INDUSTRIAL WATERBASED CATALYZED EPOXY SEMI-GLOSS, B73-300 SERIES, 2.0-4.0 MILS DFT
4) TNEMEC: SERIES 1081 ENDURASHIELD.
a) ALT: H.B. TNEME-TUFCOAT SERIES 113 AT 4.0 – 6.0 MILS DFT
C. CONCRETE, MASONRY & PRECAST – INTERIOR:
1. DRY ENVIRONMENT – REFER TO SECTION 09 90 00 PAINTING.
D. CONCRETE, MASONRY & PRECAST – INTERIOR:
1. PENETRATING SEALER:
a. PREPARATION:
1) REMOVE ALL LOOSE SCALE AND MORTAR, DIRT, SALT OR ALKALI POWDER AND ANY OTHER SURFACE CONTAMINATE, USING A DETERGENT EXPRESSLY FORMULATED FOR CLEANING OF CONCRETE AND MASONRY.
2) REMOVE OIL AND GREASE WITH A SOLUTION OF TRI-SODIUM PHOSPHATE.
3) THOROUGHLY RINSE THE CLEANED SURFACES WITH CLEAR WATER, AND ALLOW THE SURFACES TO COMPLETELY DRY, ALLOW A MINIMUM OF 4 HOURS BEFORE COMMENCING APPLICATION OF COATINGS.
b. BASE COAT:
1) TNEMEC: SERIES 633 PRIME-A-PELL H20, TWO COATS SPRAY.
c. FINISH:
1) DAYTON-SUPERIOR DAY-CHEM SURE HARD.
1.7 DELIVERY, STORAGE, AND HANDLING
A. DELIVER MATERIALS TO PROJECT SITE IN MANUFACTURER'S ORIGINAL, UNOPENED PACKAGES AND CONTAINERS BEARING MANUFACTURER'S NAME AND LABEL AND THE FOLLOWING INFORMATION:
1. PRODUCT NAME OR TITLE OF MATERIAL.
2. PRODUCT DESCRIPTION (GENERIC CLASSIFICATION OR BINDER TYPE).
3. MANUFACTURER'S STOCK NUMBER AND DATE OF MANUFACTURE.
4. CONTENTS BY VOLUME, FOR PIGMENT AND VEHICLE CONSTITUENTS.
5. THINNING INSTRUCTIONS.
6. APPLICATION INSTRUCTIONS.
7. COLOR NAME AND NUMBER.
8. HANDLING INSTRUCTIONS AND PRECAUTIONS.
9. VOC CONTENT.
B. STORE MATERIALS NOT IN USE IN TIGHTLY COVERED CONTAINERS IN A WELL-VENTILATED AREA AT A MINIMUM AMBIENT TEMPERATURE OF 45 DEG F (7 DEG C). MAINTAIN STORAGE CONTAINERS IN A CLEAN CONDITION, FREE OF FOREIGN MATERIALS AND RESIDUE.
1. PROTECT FROM FREEZING. KEEP STORAGE AREA NEAT AND ORDERLY.
2. REMOVE OILY RAGS AND WASTE DAILY. TAKE NECESSARY MEASURES TO ENSURE THAT WORKERS AND WORK AREAS ARE PROTECTED FROM FIRE AND HEALTH HAZARDS RESULTING FROM HANDLING, MIXING, AND APPLYING COATINGS.
C. DO NOT USE THE SANITARY SYSTEM FOR MIXING OR DISPOSAL OF REFUSE MATERIAL. CARRY WATER TO MIXING ROOMS AND DUMP WASTE MATERIAL IN A SUITABLE REFUSE RECEPTACLE.
1.8 PROJECT CONDITIONS
A. APPLY WATERBORNE PAINTS ONLY WHEN TEMPERATURES OF SURFACES TO BE PAINTED AND SURROUNDING AIR ARE BETWEEN 50 AND 90 DEG F (10 AND 32 DEG C).
B. APPLY SOLVENT-THINNED PAINTS ONLY WHEN TEMPERATURES OF SURFACES TO BE PAINTED AND SURROUNDING AIR ARE BETWEEN 45 AND 95 DEG F (7 AND 35 DEG C).
C. DO NOT APPLY PAINT IN SNOW, RAIN, FOG, OR MIST; OR WHEN RELATIVE HUMIDITY EXCEEDS 85 PERCENT; OR AT TEMPERATURES LESS THAN 5 DEG F (3 DEG C) ABOVE THE DEW POINT; OR TO DAMP OR WET SURFACES.
1. PAINTING MAY CONTINUE DURING INCLEMENT WEATHER IF SURFACES AND AREAS TO BE PAINTED ARE ENCLOSED AND HEATED WITHIN TEMPERATURE LIMITS SPECIFIED BY MANUFACTURER DURING APPLICATION AND DRYING TIME.
D. HAZARDOUS MATERIALS: IT IS NOT EXPECTED THAT HAZARDOUS MATERIALS WILL BE ENCOUNTERED IN THE WORK.
1. IF SUSPECTED HAZARDOUS MATERIALS ARE ENCOUNTERED, DO NOT DISTURB; IMMEDIATELY NOTIFY ARCHITECT AND OWNER.
1.9 SEQUENCING AND SCHEDULING
A. IMMEDIATELY NOTIFY THE ARCHITECT AND CONSTRUCTION MANAGER IN WRITING OF CONDITIONS WHICH MAY REQUIRE A CHANGE IN THE SPECIFICATIONS OF THIS SECTION BEFORE PROCEEDING WITH THE WORK. FAILURE TO DO SO, IN A TIMELY FASHION, SO AS NOT TO INTERFERE WITH THE SCHEDULE OF WORK OF THIS CONTRACT, SHALL BE CONSTRUED AS ACCEPTANCE OF THE COATINGS SPECIFIED. PERFORM ALL CORRECTIVE MEASURES, AT NO ADDITIONAL COST, FOR ANY DEFECTS IN THE WORK, RESULTING FROM THE USE OF SUCH MATERIALS.
B. DO NOT ORDER MATERIALS UNTIL ALL REQUIRED SCHEDULES HAVE BEEN PROPERLY SUBMITTED, REVIEWED AND APPROVED BY ARCHITECT.
C. SEQUENCING, SCHEDULING OF WORK IN SENSITIVE AREAS: DO NOT BLOCK AIR INTAKE OR EXHAUST LOUVERS AND GRILLES IN ORDER TO PREP OR FINISH THESE ITEMS. NOTIFY CONSTRUCTION MANAGER AND OBTAIN TIMES WHEN THESE AREAS CAN BE SHUT DOWN TO ALLOW WORK TO PROCEED. DO NOT BLOCK AIR EXHAUST OR AIR INTAKES OR ALLOW THEM TO DRAW IN DUST OR FUMES FROM WORK OPERATIONS.
1.10 EXTRA MATERIALS
A. FURNISH EXTRA PAINT MATERIALS FROM THE SAME PRODUCTION RUN AS THE MATERIALS APPLIED AND IN THE QUANTITIES DESCRIBED BELOW. PACKAGE WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFY WITH LABELS DESCRIBING CONTENTS. DELIVER EXTRA MATERIALS TO OWNER.
1. QUANTITY: FURNISH OWNER WITH AN ADDITIONAL 3 PERCENT, BUT NOT LESS THAN 1 GAL. (3.8 L) OR 1 CASE, AS APPROPRIATE, OF EACH MATERIAL AND COLOR APPLIED.

PART 2 - PRODUCTS
2.1 MANUFACTURERS
A. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE SHERWIN-WILLIAMS COMPANY PRODUCTS INDICATED OR COMPARABLE PRODUCT FROM ONE OF THE FOLLOWING:
1. BENJAMIN MOORE & CO.
2. PPG ARCHITECTURAL FINISHES, INC.
3. THE SHERWIN-WILLIAMS CO.
B. SOURCE LIMITATIONS: OBTAIN PAINT MATERIALS FROM SINGLE SOURCE FROM SINGLE LISTED MANUFACTURER.
1. MANUFACTURER'S DESIGNATIONS LISTED ON A SEPARATE COLOR SCHEDULE ARE FOR COLOR REFERENCE ONLY AND DO NOT INDICATE PRIOR APPROVAL.
2.2 PAINT MATERIALS, GENERAL
A. MATERIAL COMPATIBILITY: PROVIDE BLOCK FILLERS, PRIMERS, AND FINISH-COAT MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH THE SUBSTRATES INDICATED UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED BY MANUFACTURER BASED ON TESTING AND FIELD EXPERIENCE.
B. MATERIAL QUALITY: PROVIDE MANUFACTURER'S BEST-QUALITY PAINT MATERIAL OF THE VARIOUS COATING TYPES SPECIFIED THAT ARE FACTORY FORMULATED AND RECOMMENDED BY MANUFACTURER FOR APPLICATION INDICATED. PAINT-MATERIAL CONTAINERS NOT DISPLAYING MANUFACTURER'S PRODUCT IDENTIFICATION WILL NOT BE ACCEPTABLE.
1. PROPRIETARY NAMES: USE OF MANUFACTURER'S PROPRIETARY PRODUCT NAMES TO DESIGNATE COLORS OR MATERIALS IS NOT INTENDED TO IMPLY THAT PRODUCTS NAMED ARE REQUIRED TO BE USED TO THE EXCLUSION OF EQUIVALENT PRODUCTS OF OTHER MANUFACTURERS. FURNISH MANUFACTURER'S MATERIAL DATA AND CERTIFICATES OF PERFORMANCE FOR PROPOSED SUBSTITUTIONS.
C. CHEMICAL COMPONENTS OF INTERIOR PAINTS AND COATINGS: PROVIDE PRODUCTS THAT COMPLY WITH THE FOLLOWING LIMITS FOR VOC CONTENT BY THE AUTHORITIES HAVING JURISDICTION WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24) AND THE FOLLOWING CHEMICAL RESTRICTIONS:
1. FLAT PAINTS AND COATINGS: VOC CONTENT OF NOT MORE THAN 50 G/L.
2. NON-FLAT PAINTS AND COATINGS: VOC CONTENT OF NOT MORE THAN 150 G/L.
3. ANTICORROSIVE COATINGS: VOC CONTENT OF NOT MORE THAN 250 G/L.
4. VARNISHES AND SANDING SEALERS: VOC CONTENT OF NOT MORE THAN 350 G/L.
5. STAINS: VOC CONTENT OF NOT MORE THAN 250 G/L.
6. AROMATIC COMPOUNDS: PAINTS AND COATINGS SHALL NOT CONTAIN MORE THAN 1.0 PERCENT BY WEIGHT OF TOTAL AROMATIC COMPOUNDS (HYDROCARBON COMPOUNDS CONTAINING ONE OR MORE BENZENE RINGS).
7. RESTRICTED COMPONENTS: PAINTS AND COATINGS SHALL NOT CONTAIN ANY OF THE FOLLOWING:
a. ACROLEIN.
b. ACRYLONITRILE.
c. ANTIMONY.
d. BENZENE.
e. BUTYL BENZYL PHTHALATE.
f. CADMIUM.
g. DI (2-ETHYLHEXYL) PHTHALATE.
h. DI-N-BUTYL PHTHALATE.
i. DI-N-OCTYL PHTHALATE.
j. 1,2-DICHLOROBENZENE.
k. DIETHYL PHTHALATE.
l. DIMETHYL PHTHALATE.
m. ETHYLBENZENE.
n. FORMALDEHYDE.
o. HEXAVALENT CHROMIUM.
p. ISOPHORONE.
q. LEAD.
r. MERCURY.
s. METHYL ETHYL KETONE.
t. METHYL ISOBUTYL KETONE.
u. METHYLENE CHLORIDE.
v. NAPHTHALENE.
w. TOLUENE (METHYLBENZENE).
x. 1,1,1-TRICHLOROETHANE.
y. VINYL CHLORIDE.
2.3 COLORS:
A. AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.

PART 3 - EXECUTION
3.1 EXAMINATION
A. WITH APPLICATOR PRESENT, EXAMINE SUBSTRATES, AREAS AND CONDITIONS UNDER WHICH COATINGS WILL BE APPLIED, FOR COMPLIANCE WITH COATING APPLICATION REQUIREMENTS.
1. PROCEED WITH PAINT APPLICATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED AND SURFACES RECEIVING PAINT ARE THORO

09 96 00 - HIGH - PERFORMANCE COATINGS (CONT.)

1) CARBOLINE:
2) R-O:
3) S-W: CONFLEX.XL
4) TNEMEC: SERIES 156 – ENVIRO-CRETE.

B. CONCRETE, MASONRY & PRECAST – INTERIOR:
1. WET ENVIRONMENT (SEMIGLOSS FINISH):
a. PREPARATION:
1) REMOVE ALL LOOSE SCALE AND MORTAR, DIRT, SALT OR ALKALI POWDER AND ANY OTHER SURFACE CONTAMINATE, USING A DETERGENT EXPRESSLY FORMULATED FOR CLEANING OF CONCRETE AND MASONRY.
2) REMOVE OIL AND GREASE WITH A SOLUTION OF TRI-SODIUM PHOSPHATE.
3) THOROUGHLY RINSE THE CLEANED SURFACES WITH CLEAR WATER, AND ALLOW THE SURFACES TO COMPLETELY DRY, ALLOW A MINIMUM OF 4 HOURS BEFORE COMMENCING APPLICATION OF COATINGS.
b. BLOCK FILLER: ACRYLIC OR EPOXY BLOCK FILLER APPLIED AT SPREADING RATE RECOMMENDED BY MANUFACTURER AS SUFFICIENT TO FILL PORES.
1) CARBOLINE: CARBOGUARD 954 HB PART A.
2) R-O:
3) S-W: KEM CATI-COAT EPOXY BLOCKFILLER, B42-400 SERIES
4) TNEMEC:
a) MASONRY PRIMER/FILLER: SERIES 130 ENVIROFILL WATERBORNE CEMENTITIOUS ACRYLIC.
b) CONCRETE PRIMER/FILLER: SERIES 115 H-051 ELASTO-GRIP FC.
c. INTERMEDIATE COAT: EPOXY APPLIED AT SPREADING RATE RECOMMENDED BY MANUFACTURER, UNLESS OTHERWISE INDICATED TO ENSURE ALL PIN HOLES ARE FILLED.
1) CARBOLINE: CARBOCOAT 30 TOP COAT.
2) R-O:
3) S-W: *PRO INDUSTRIAL WATERBASED CATALYZED EPOXY SEMI-GLOSS, B73-300 SERIES, 2.0-4.0 MILS DFT*
4) TNEMEC: SERIES 27WB TYPOXY.
a) ALT: H.G. TNEME-TUFCOAT SERIES 113 AT 4.0 – 6.0 MILS DFT
d. PINHOLES: FILL ALL INCONSISTENCES OR VARIATIONS IN THE FINISHED SURFACE WITH THE APPROPRIATE FILLER.
1) S-W: STEAL SEAM F1910.
2) TNEMEC: EPOXOLINE SERIES FC22.
e. TOPCOAT: SEMIGLOSS EPOXY APPLIED AT SPREADING RATE RECOMMENDED BY MANUFACTURER, UNLESS OTHERWISE INDICATED.
1) CARBOLINE: CARBOCOAT 30 SANITILE
2) R-O:
3) S-W: *PRO INDUSTRIAL WATERBASED CATALYZED EPOXY SEMI-GLOSS, B73-300 SERIES, 2.0-4.0 MILS DFT*
4) TNEMEC: SERIES 1081 ENDURASHIELD.
a) ALT: H.B. TNEME-TUFCOAT SERIES 113 AT 4.0 – 6.0 MILS DFT
C. CONCRETE, MASONRY & PRECAST – INTERIOR:
1. DRY ENVIRONMENT – REFER TO SECTION 09 90 00 PAINT
D. CONCRETE, MASONRY & PRECAST – INTERIOR:
1. PENETRATING SEALER:
a. PREPARATION:
1) REMOVE ALL LOOSE SCALE AND MORTAR, DIRT, SALT OR ALKALI POWDER AND ANY OTHER SURFACE CONTAMINATE, USING A DETERGENT EXPRESSLY FORMULATED FOR CLEANING OF CONCRETE AND MASONRY.
2) REMOVE OIL AND GREASE WITH A SOLUTION OF TRI-SODIUM PHOSPHATE.
3) THOROUGHLY RINSE THE CLEANED SURFACES WITH CLEAR WATER, AND ALLOW THE SURFACES TO COMPLETELY DRY, ALLOW A MINIMUM OF 4 HOURS BEFORE COMMENCING APPLICATION OF COATINGS.
b. BASE COAT:
1) TNEMEC: SERIES 633 PRIME-A-PELL H20, TWO COATS SPRAY.
c. FINISH:
1) DAYTON-SUPERIOR DAY-CHEM SURE HARD.
2) S-W: CEMLACK DENSIFIER
3) TNEMEC: SERIES 617 CONFORMAL STAIN WB.
E. GALVANIZED STEEL/METAL - INTERIOR:
1. MODERATE ENVIRONMENT (SEMIGLOSS FINISH):
a. PREPARATION: SSPC-SP16 "BRUSH-OFF BLAST CLEANING OF NON-FERROUS METALS."
b. PRIMER/FIRST COAT: EPOXY PRIMER APPLIED AT SPREADING RATE RECOMMENDED BY MANUFACTURER.
1) CARBOLINE:
2) R-O:
3) S-W: MACROPOXY 646-100 EPOXY, B58 SERIES AT 3.0 – 5.0 MILS DFT.
a) ALT: PRO INDUSTRIAL WATERBASED CATALYZED EPOXY SEMI-GLOSS, B73-300 SERIES, 2.0-4.0 MILS DFT
4) TNEMEC: SERIES 27WB TYPOXY.
a) H.B. TNEME-TUFCOAT SERIES 113 AT 4.0 – 6.0 MILS DFT
c. TOPCOAT: SEMIGLOSS EPOXY APPLIED AT SPREADING RATE RECOMMENDED BY MANUFACTURER UNLESS OTHERWISE INDICATED.
1) CARBOLINE:
2) R-O:
3) S-W: PRO-INDUSTRIAL WATERBASED CATALYZED EPOXY, B73-300 SERIES AT 2.0 – 4.0 MILS DFT.
4) TNEMEC: SERIES 1081 ENDURASHIELD.
a) H.B. TNEME-TUFCOAT SERIES 113 AT 4.0 – 6.0 MILS DFT
F. FERROUS METAL – INTERIOR (NEW UNCOATED & SHOP PRIMED):
1. MODERATE FOOD PROCESSING & NON-FOOD ENVIRONMENT (SEMIGLOSS FINISH):
a. PREPARATION: SSPC-SP6 "COMMERCIAL BLAST CLEAN."
b. PRIMER: EPOXY PRIMER APPLIED AT SPREADING RATE RECOMMENDED BY MANUFACTURER (AT SURFACES PREVIOUSLY PRIMED, TOUCH UP BARE STEEL).
1) CARBOLINE:
2) R-O:
3) S-W: MACROPOXY 646-100 EPOXY, B58 SERIES AT 4.0 – 6.0 MILS DFT.
4) TNEMEC: SERIES 27WB TYPOXY.
c. INTERMEDIATE COAT: EPOXY APPLIED AT SPREADING RATE RECOMMENDED BY MANUFACTURER, UNLESS OTHERWISE INDICATED.
1) CARBOLINE:
2) R-O:
3) S-W: MACROPOXY 646-100 EPOXY, B58 SERIES AT 4.0 – 6.0 MILS DFT.
4) TNEMEC: SERIES 27WB TYPOXY.
d. TOPCOAT: SEMIGLOSS EPOXY APPLIED AT SPREADING RATE RECOMMENDED BY MANUFACTURER, UNLESS OTHERWISE INDICATED.
1) CARBOLINE:
2) R-O:
3) S-W: HI-SOLIDS POLYURETHANE 250 AT 2.0 - 3.0 MILS DFT.
4) TNEMEC: SERIES 1081 ENDURASHIELD.
G. FERROUS METAL – INTERIOR (EXISTING, LOW VOC AND FIELD APPLIED):
1. MODERATE FOOD PROCESSING & NON-FOOD ENVIRONMENT (SEMIGLOSS FINISH):
a. PREPARATION: SSPC-SP6 "COMMERCIAL BLAST CLEAN."
b. PRIMER: EPOXY PRIMER APPLIED AT SPREADING RATE RECOMMENDED BY MANUFACTURER (AT SURFACES PREVIOUSLY PRIMED, TOUCH UP BARE STEEL).
1) CARBOLINE:
2) R-O:
3) S-W: MACROPOXY 646-100 EPOXY, B58 SERIES AT 4.0 – 6.0 MILS DFT.
4) TNEMEC:
c. INTERMEDIATE COAT: EPOXY APPLIED AT SPREADING RATE RECOMMENDED BY MANUFACTURER, UNLESS OTHERWISE INDICATED.
1) CARBOLINE:
2) R-O:
3) S-W: MACROPOXY 646-100 EPOXY, B58 SERIES AT 4.0 – 6.0 MILS DFT.
4) TNEMEC:
d. TOPCOAT: SEMIGLOSS EPOXY APPLIED AT SPREADING RATE RECOMMENDED BY MANUFACTURER, UNLESS OTHERWISE INDICATED.
1) CARBOLINE:
2) R-O:
3) S-W: HI-SOLIDS POLYURETHANE 250 AT 2.0 - 3.0 MILS DFT.
4) TNEMEC:

END OF SECTION 09 96 00

10 28 13 - TOILET COMPARTMENTS

PART 1 - GENERAL
1.1 ITEMS REQUIRED BUT NOT SPECIFIED
A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.
1.2 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
1.3 SUMMARY
A. THIS SECTION INCLUDES STAINLESS-STEEL UNITS AS FOLLOWS:
1. TOILET ENCLOSURES: OVERHEAD BRACED.
2. URINAL SCREENS: FLOOR ANCHORED.
B. RELATED SECTIONS INCLUDE THE FOLLOWING:
1. DIVISION 10 "TOILET AND BATH ACCESSORIES" FOR TOILET TISSUE DISPENSERS, GRAB BARS AND SIMILAR ACCESSORIES.
1.4 SUBMITTALS
A. SEE DIVISION 1 SECTION FOR SUBMITTAL PROCEDURE REQUIREMENTS.
B. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED. INCLUDE CONSTRUCTION DETAILS, MATERIAL DESCRIPTIONS, DIMENSIONS OF INDIVIDUAL COMPONENTS AND PROFILES, AND FINISHES.
C. SHOP DRAWINGS: INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK.
1. SHOW LOCATIONS OF REINFORCEMENTS FOR COMPARTMENT-MOUNTED GRAB BARS.
D. SAMPLES FOR VERIFICATION: OF EACH TYPE OF COLOR AND FINISH REQUIRED FOR UNITS, PREPARED ON 6-INCH- (150-MM-) SQUARE SAMPLES OF SAME THICKNESS AND MATERIAL INDICATED FOR WORK.
1.5 QUALITY ASSURANCE
A. OBTAIN ALL TOILET COMPARTMENTS AND SCREENS FROM THE SAME MANUFACTURER. COORDINATE COMPARTMENTS AND SCREEN LAYOUT WITH PLUMBING FIXTURE LOCATIONS.
B. ALL COMPARTMENTS AND SCREENS TO COMPLY WITH ANSI A117.1.
1.6 PROJECT CONDITIONS
A. FIELD MEASUREMENTS: VERIFY ACTUAL LOCATIONS OF WALLS, COLUMNS, CEILINGS, AND OTHER CONSTRUCTION CONTIGUOUS WITH TOILET COMPARTMENTS BY FIELD MEASUREMENTS BEFORE FABRICATION AND INDICATE MEASUREMENTS ON SHOP DRAWINGS.
1. ESTABLISHED DIMENSIONS: WHERE FIELD MEASUREMENTS CANNOT BE MADE WITHOUT DELAYING THE WORK, ESTABLISH DIMENSIONS AND PROCEED WITH FABRICATING TOILET COMPARTMENTS WITHOUT FIELD MEASUREMENTS. COORDINATE WALL, FLOOR, CEILINGS, AND OTHER CONTIGUOUS CONSTRUCTION TO ENSURE THAT ACTUAL DIMENSIONS CORRESPOND TO ESTABLISHED DIMENSIONS.

PART 2 - PRODUCTS
2.1 METAL UNITS
A. AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
1. ACCURATE PARTITIONS CORPORATION.
2. BRADLEY CORPORATION; MILLS PARTITIONS.
3. GLOBAL STEEL PRODUCTS CORP
4. KNOCKERBOCKER PARTITIONS CORP.
5. METPAR CORP.
6. SANYMETAL: A CRANE PLUMBING COMPANY.
B. STAINLESS-STEEL UNITS: FACING SHEETS AND CLOSURES FABRICATED FROM ASTM A 666, TYPE 302 OR 304, STAINLESS-STEEL SHEET, LEVELED TO STRETCHER-LEVELED FLATNESS.
1. STAINLESS-STEEL FACING SHEET THICKNESSES: SPECIFIED THICKNESSES AS FOLLOWS:
a. PILASTERS, BRACED AT BOTH ENDS: MANUFACTURER'S STANDARD THICKNESS, BUT NOT LESS THAN 0.0375 INCH (0.95 MM).
b. PILASTERS, UNBRACED AT ONE END: MANUFACTURER'S STANDARD THICKNESS, BUT NOT LESS THAN 0.050 INCH (1.3 MM).
c. PANELS: MANUFACTURER'S STANDARD THICKNESS, BUT NOT LESS THAN 0.0312 INCH (0.8 MM).
d. DOORS: MANUFACTURER'S STANDARD THICKNESS, BUT NOT LESS THAN 0.0312 INCH (0.8 MM).
2. FINISH: MANUFACTURER'S STANDARD TEXTURED FINISH ON EXPOSED FACES. EXPOSED SURFACES ARE PROTECTED FROM DAMAGE BY APPLICATION OF STRIPPABLE, TEMPORARY PROTECTIVE COVERING BEFORE SHIPMENT.
C. DOOR, PANEL, AND PILASTER CONSTRUCTION: SEAMLESS, METAL FACING SHEETS ARE PRESSURE LAMINATED TO CORE MATERIAL. UNITS HAVE CONTINUOUS, INTERLOCKING MOLDING STRIP ON LAPPED AND FORMED EDGE CLOSURES. EXPOSED SURFACES ARE FREE OF PITTING, SEAM MARKS, ROLLER MARKS, STAINS, DISCOLORATION, OR OTHER IMPERFECTIONS. CORNERS ARE SEALED BY WELDING OR CLIPS. EXPOSED WELDS ARE GROUND SMOOTH.
1. CORE MATERIAL: MANUFACTURER'S STANDARD SOUND-DEADENING HONEYCOMB OF RESIN-IMPREGNATED KRAFT PAPER IN THICKNESS REQUIRED TO PROVIDE FINISHED THICKNESS OF 1 INCH (25 MM) FOR DOORS AND PANELS AND 1-1/4 INCHES (32 MM) FOR PILASTERS.
2. GRAB-BAR REINFORCEMENT: PROVIDE CONCEALED INTERNAL REINFORCEMENT FOR GRAB BARS MOUNTED ON UNITS.
3. TAPPING REINFORCEMENT: PROVIDE CONCEALED REINFORCEMENT FOR TAPPING (THREADING) AT LOCATIONS WHERE MACHINE SCREWS ARE USED FOR ATTACHING ITEMS TO UNITS.
4. URINAL-SCREEN CONSTRUCTION: MATCHING PANELS.
D. PILASTER SHOES AND SLEEVES (CAPS): STAINLESS STEEL, ASTM A 666, TYPE 302 OR 304, NOT LESS THAN 0.0312 INCH (0.8 MM) SPECIFIED THICKNESS AND 3 INCHES (75 MM) HIGH, FINISHED TO MATCH HARDWARE.
E. BRACKETS (FITTINGS):
1. STIRRUP TYPE: EAR OR U-BRACKETS, CHROME-PLATED, NONFERROUS, CAST ZINC ALLOY (ZAMAC) OR CLEAR ANODIZED ALUMINUM.
2.2 ACCESSORIES
A. HARDWARE AND ACCESSORIES: MANUFACTURER'S STANDARD DESIGN, HEAVY-DUTY OPERATING HARDWARE AND ACCESSORIES.
1. MATERIAL: CHROME-PLATED, NONFERROUS, CAST ZINC ALLOY (ZAMAC) OR CLEAR ANODIZED ALUMINUM.
B. OVERHEAD BRACING: MANUFACTURER'S STANDARD CONTINUOUS, EXTRUDED-ALUMINUM HEAD RAIL WITH ANTIGRIP PROFILE AND IN MANUFACTURER'S STANDARD FINISH.
C. SUPPORT POSTS FOR URINAL SCREENS: MANUFACTURER'S STANDARD ALUMINUM POST WITH FLOOR SHOE FOR ANCHORING TO FLOOR CONSTRUCTION.
D. ANCHORAGES AND FASTENERS: MANUFACTURER'S STANDARD EXPOSED FASTENERS OF STAINLESS STEEL OR CHROME-PLATED STEEL OR BRASS, FINISHED TO MATCH HARDWARE, WITH THEFT-RESISTANT-TYPE HEADS. PROVIDE SEX-TYPE BOLTS FOR THROUGH-BOLT APPLICATIONS. FOR CONCEALED ANCHORS, USE HOT-DIP GALVANIZED OR OTHER RUST-RESISTANT, PROTECTIVE-COATED STEEL.
2.3 FABRICATION
A. OVERHEAD-BRACED UNITS: PROVIDE MANUFACTURER'S STANDARD CORROSION-RESISTANT SUPPORTS, LEVELING MECHANISM, FASTENERS, AND ANCHORS AT PILASTERS TO SUIT FLOOR CONDITIONS. MAKE PROVISIONS FOR SETTING AND SECURING CONTINUOUS HEAD RAIL AT TOP OF EACH PILASTER. PROVIDE SHOES AT PILASTERS TO CONCEAL SUPPORTS AND LEVELING MECHANISM.
B. DOORS: UNLESS OTHERWISE INDICATED, PROVIDE 24-INCH- (610-MM-) WIDE IN-SWINGING DOORS FOR STANDARD TOILET COMPARTMENTS AND 36-INCH- (914-MM-) WIDE OUT-SWINGING DOORS WITH A MINIMUM 32-INCH- (813-MM-) WIDE CLEAR OPENING FOR COMPARTMENTS INDICATED TO BE ACCESSIBLE TO PEOPLE WITH DISABILITIES.
1. HINGES: MANUFACTURER'S STANDARD SELF-CLOSING TYPE THAT CAN BE ADJUSTED TO HOLD DOORS OPEN AT ANY ANGLE UP TO 90 DEGREES.
2. LATCH AND KEEPER: MANUFACTURER'S STANDARD SURFACE-MOUNTED LATCH UNIT DESIGNED FOR EMERGENCY ACCESS AND WITH COMBINATION RUBBER-FACED DOOR STRIKE AND KEEPER. PROVIDE UNITS THAT COMPLY WITH ACCESSIBILITY REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION IF COMPARTMENTS INDICATED TO BE ACCESSIBLE TO PEOPLE WITH DISABILITIES.
3. COAT HOOK: MANUFACTURER'S STANDARD COMBINATION HOOK AND RUBBER-TIPPED BUMPER, SIZED TO PREVENT DOOR FROM HITTING COMPARTMENT-MOUNTED ACCESSORIES.
4. DOOR BUMPER: MANUFACTURER'S STANDARD RUBBER-TIPPED BUMPER AT OUT-SWINGING DOORS.
5. DOOR PULL: MANUFACTURER'S STANDARD UNIT AT OUT-SWINGING DOORS THAT COMPLIES WITH ACCESSIBILITY REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. PROVIDE UNITS ON BOTH SIDES OF DOORS AT COMPARTMENTS INDICATED TO BE ACCESSIBLE TO PEOPLE WITH DISABILITIES.

PART 3 - EXECUTION
3.1 INSTALLATION
A. GENERAL: COMPLY WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS. INSTALL UNITS RIGID, STRAIGHT, LEVEL, AND PLUMB. SECURE UNITS IN POSITION WITH MANUFACTURER'S RECOMMENDED ANCHORING DEVICES.
1. MAXIMUM CLEARANCES:
a. PILASTERS AND PANELS: 1/2 INCH (13 MM).
b. PANELS AND WALLS: 1 INCH (25 MM).
2. STIRRUP BRACKETS: SECURE PANELS TO WALLS AND TO PILASTERS WITH NOT LESS THAN THREE BRACKETS ATTACHED AT MIDPOINT AND NEAR TOP AND BOTTOM OF PANEL.
a. LOCATE WALL BRACKETS SO HOLES FOR WALL ANCHORS OCCUR IN MASONRY OR TILE JOINTS.
b. ALIGN BRACKETS AT PILASTERS WITH BRACKETS AT WALLS.
B. OVERHEAD-BRACED UNITS: SECURE PILASTERS TO FLOOR AND LEVEL, PLUMB, AND TIGHTEN. SECURE CONTINUOUS HEAD RAIL TO EACH PILASTER WITH NOT LESS THAN TWO FASTENERS. HANG DOORS TO ALIGN TOPS OF DOORS WITH TOPS OF PANELS AND ADJUST SO TOPS OF DOORS ARE PARALLEL WITH OVERHEAD BRACE WHEN DOORS ARE IN CLOSED POSITION.
C. POST-SUPPORTED URINAL SCREENS: ATTACH WITH ANCHORING DEVICES TO SUIT SUPPORTING STRUCTURE. SET UNITS LEVEL AND PLUMB AND TO RESIST LATERAL IMPACT.
3.2 ADJUSTING
A. HARDWARE ADJUSTMENT: ADJUST AND LUBRICATE HARDWARE ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS FOR PROPER OPERATION. SET HINGES ON IN-SWINGING DOORS TO HOLD DOORS OPEN APPROXIMATELY 30 DEGREES FROM CLOSED POSITION WHEN UNLATCHED. SET HINGES ON OUT-SWINGING DOORS TO RETURN DOORS TO FULLY CLOSED POSITION.

END OF SECTION 10 21 13

10 28 13 - TOILET AND BATH ACCESSORIES

PART 1 - GENERAL
1.1 ITEMS REQUIRED BUT NOT SPECIFIED
A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.
1.2 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
1.3 SUMMARY
A. THIS SECTION INCLUDES THE FOLLOWING:
1. WASHROOM ACCESSORIES.
a. TOILET TISSUE DISPENSERS, TOILET SEAT COVERS, PAPER TOWEL DISPENSERS AND SOAP DISPENSERS PROVIDED AND INSTALLED BY OWNER VENDOR. COORDINATE MOUNTING LOCATIONS AND HEIGHTS AS NOTED ON DRAWINGS.
1) PROVIDE BACKING AND BLOCKING FOR VENDOR PRODUCTS.
2. MIRRORS.
3. UNDERLAVATORY GUARDS.
4. CUSTODIAL ACCESSORIES.
B. RELATED SECTIONS INCLUDE THE FOLLOWING:
1. DIVISION 10 SECTION – TOILET COMPARTMENTS.
1.4 SUBMITTALS
A. COMPLY WITH REQUIREMENTS OF DIVISION 1.
B. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED. INCLUDE THE FOLLOWING:
1. CONSTRUCTION DETAILS AND DIMENSIONS.
2. ANCHORING AND MOUNTING REQUIREMENTS, INCLUDING REQUIREMENTS FOR CUTOUTS IN OTHER WORK AND SUBSTRATE PREPARATION.
3. MATERIAL AND FINISH DESCRIPTIONS.
4. MANUFACTURER'S WARRANTY.
C. PRODUCT SCHEDULE: INDICATING TYPES, QUANTITIES, SIZES, AND INSTALLATION LOCATIONS BY ROOM OF EACH ACCESSORY REQUIRED.
1. IDENTIFY LOCATIONS USING ROOM DESIGNATIONS INDICATED ON DRAWINGS.
D. MAINTENANCE DATA: FOR TOILET AND BATH ACCESSORIES TO INCLUDE IN MAINTENANCE MANUALS.
1.5 QUALITY ASSURANCE
A. SOURCE LIMITATIONS: FOR PRODUCTS LISTED TOGETHER IN THE SAME ARTICLES IN PART 2, PROVIDE PRODUCTS OF SAME MANUFACTURER UNLESS OTHERWISE APPROVED BY ARCHITECT.
1.6 COORDINATION
A. COORDINATE ACCESSORY LOCATIONS WITH OTHER WORK TO PREVENT INTERFERENCE WITH CLEARANCES REQUIRED FOR ACCESS BY PEOPLE WITH DISABILITIES, AND FOR PROPER INSTALLATION, ADJUSTMENT, OPERATION, CLEANING, AND SERVICING OF ACCESSORIES.
B. DELIVER INSERTS AND ANCHORING DEVICES SET INTO CONCRETE OR MASONRY AS REQUIRED TO PREVENT DELAYING THE WORK.
1.7 WARRANTY
A. SPECIAL MIRROR WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPLACE MIRRORS THAT DEVELOP VISIBLE SILVER SPOILAGE DEFECTS AND THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.
1. WARRANTY PERIOD: 15 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

PART 2 - PRODUCTS
2.1 MATERIALS
A. STAINLESS STEEL: ASTM A 666, TYPE 304, 0.0312-INCH (0.8-MM) MINIMUM NOMINAL THICKNESS, UNLESS OTHERWISE INDICATED.
B. BRASS: ASTM B 19 FLAT PRODUCTS; ASTM B 16 (ASTM B 16M), RODS, SHAPES, FORGINGS, AND FLAT PRODUCTS WITH FINISHED EDGES; OR ASTM B 30, CASTINGS.
C. STEEL SHEET: ASTM A 1008/A 1008M, DESIGNATION CS (COLD ROLLED, COMMERCIAL STEEL), 0.0359-INCH (0.9-MM) MINIMUM NOMINAL THICKNESS.
D. GALVANIZED STEEL SHEET: ASTM A 653/A 653M, WITH G60 (Z180) HOT-DIP ZINC COATING.
E. GALVANIZED STEEL MOUNTING DEVICES: ASTM A 153/A 153M, HOT-DIP GALVANIZED AFTER FABRICATION.
F. FASTENERS: SCREWS, BOLTS, AND OTHER DEVICES OF SAME MATERIAL AS ACCESSORY UNIT AND TAMPER-AND-THEFT RESISTANT WHERE EXPOSED, AND OF GALVANIZED STEEL WHERE CONCEALED.
G. CHROME PLATING: ASTM B 456, SERVICE CONDITION NUMBER SC 2 (MODERATE SERVICE).
H. MIRRORS: ASTM C 1503, MIRROR GLAZING QUALITY, CLEAR-GLASS MIRRORS, NOMINAL 6.0 MM THICK.
I. ABS PLASTIC: ACRYLONITRILE-BUTADIENE-STYRENE RESIN FORMULATION.
2.2 WASHROOM ACCESSORIES
A. AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
1. A & J WASHROOM ACCESSORIES, INC.
2. AMERICAN SPECIALTIES, INC.
3. BOBRICK WASHROOM EQUIPMENT, INC.
4. BRADLEY CORPORATION.
B. TOILET TISSUE (ROLL) DISPENSER: BY OWNER VENDOR.
C. PAPER TOWEL (ROLL) DISPENSER: BY OWNER VENDOR. AUTOMATIC DISPENSING, BATTERY POWERED.
D. LIQUID-SOAP DISPENSER: BY OWNER VENDOR.
E. TOILET SEAT COVER DISPENSER: BY OWNER VENDOR.
F. WASTE RECEPTACLE: BY OWNER.
G. GRAB BAR:
1. BASIS-OF-DESIGN PRODUCT: BOBRICK B5806 SERIES.
2. MOUNTING: FLANGES WITH CONCEALED FASTENERS.
3. MATERIAL: 18-8 S, 304 STAINLESS STEEL.
a. FINISH: SMOOTH, NO. 4, SATIN FINISH
4. OUTSIDE DIAMETER: 1-1/4 INCHES (32 MM).
5. CONFIGURATION AND LENGTH: STRAIGHT SINGLE BAR, 36-INCH (915 MM) AND 42-INCH (1067 MM) AS INDICATED ON DRAWINGS.
H. SANITARY-NAPKIN DISPOSAL UNIT:
1. BASIS-OF-DESIGN PRODUCT: B-270 SERIES
2. MOUNTING: SURFACE MOUNTED.
3. DOOR OR COVER: SELF-CLOSING DISPOSAL-OPENING COVER.
4. RECEPTACLE: REMOVABLE.
5. MATERIAL AND FINISH: STAINLESS STEEL, NO. 4 FINISH (SATIN).
I. MIRROR UNIT:
1. BASIS-OF-DESIGN PRODUCT: BOBRICK B-165 SERIES.
2. FRAME: STAINLESS-STEEL CHANNEL.
a. CORNERS: MANUFACTURER'S STANDARD.
3. Hangers: Provide non-rusting hangers for installation, using method indicated below.
a. WALL BRACKET OF GALVANIZED STEEL, EQUIPPED WITH CONCEALED LOCKING DEVICES REQUIRING A SPECIAL TOOL TO REMOVE.
4. SIZE: 18-INCH X 36-INCH (457 MM X 915 MM).
5. HANGERS: PRODUCE RIGID, TAMPER- AND THEFT-RESISTANT INSTALLATION, USING METHOD INDICATED BELOW.
a. ONE-PIECE, GALVANIZED STEEL, WALL-HANGER DEVICE WITH SPRING-ACTION LOCKING MECHANISM TO HOLD MIRROR UNIT IN POSITION WITH NO EXPOSED SCREWS OR BOLTS.
J. SHOWER CURTAIN ROD:
1. DESCRIPTION: 1-1/4-INCH (32-MM) OD, FABRICATED FROM NOMINAL 0.05-INCH- (1.3-MM-) THICK STAINLESS STEEL.
2. MOUNTING FLANGES: STAINLESS-STEEL FLANGES DESIGNED FOR EXPOSED FASTENERS
3. FINISH: NO. 4 (SATIN).
K. SHOWER CURTAIN:
1. SIZE: MINIMUM 6 INCHES (152 MM) AT SHOWER STALLS AND 12 INCHES (305 MM) WIDER THAN OPENING AT DRESSING AREA BY 72 INCHES (1828 MM) HIGH.
2. MATERIAL: NYLON-REINFORCED VINYL, MINIMUM 10-OZ. (284-G) OR 0.008-INCH- (0.2-MM-) THICK VINYL, WITH INTEGRAL ANTIBACTERIAL AGENT.
3. COLOR: WHITE.
4. GROMMETS: CORROSION RESISTANT AT MINIMUM 6 INCHES (152 MM) O.C. THROUGH TOP HEM.
5. SHOWER CURTAIN HOOKS: CHROME-PLATED OR STAINLESS-STEEL, SPRING WIRE CURTAIN HOOKS WITH SNAP FASTENERS, SIZED TO ACCOMMODATE SPECIFIED CURTAIN ROD. PROVIDE ONE HOOK PER CURTAIN GROMMET.
L. ROBE HOOK:
1. DESCRIPTION: DOUBLE-PRONG UNIT.
2. MATERIAL AND FINISH: STAINLESS STEEL, NO. 4 FINISH (SATIN).
2.3 UNDERLAVATORY GUARDS
A. AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
1. PLUMBEREX SPECIALTY PRODUCTS, INC.
2. TCI PRODUCTS
3. TRUEBRO, INC.
B. UNDERLAVATORY GUARD:
1. DESCRIPTION: INSULATING PIPE COVERING FOR SUPPLY AND DRAIN PIPING ASSEMBLIES, THAT PREVENT DIRECT CONTACT WITH AND BURNS FROM PIPING, AND ALLOW SERVICE ACCESS WITHOUT REMOVING COVERINGS.
2. MATERIAL AND FINISH: ANTIMICROBIAL, MOLDED-PLASTIC, WHITE.
2.4 CUSTODIAL ACCESSORIES
A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
1. A & J WASHROOM ACCESSORIES, INC.
2. AMERICAN SPECIALTIES, INC.
3. BOBRICK WASHROOM EQUIPMENT, INC.
4. BRADLEY CORPORATION.
B. UTILITY SHELF:
1. DESCRIPTION: WITH EXPOSED EDGES TURNED DOWN NOT LESS THAN 1/2 INCH (12.7 MM) AND SUPPORTED BY TWO TRIANGULAR BRACKETS WELDED TO SHELF UNDERSIDE.
2. SIZE: 16 INCHES (406 MM) LONG BY 6 INCHES (152 MM) DEEP.
3. MATERIAL AND FINISH: NOT LESS THAN NOMINAL 0.05-INCH- (1.3-MM-) THICK STAINLESS STEEL, NO. 4 FINISH (SATIN).
C. MOP AND BROOM HOLDER:
1. DESCRIPTION: UNIT WITH HOOKS AND HOLDERS.
2. LENGTH: 36 INCHES (914 MM).
3. HOOKS: THREE.
4. MOP/BROOM HOLDERS: FOUR, SPRING-LOADED, RUBBER HAT, CAM TYPE.
5. MATERIAL AND FINISH: STAINLESS STEEL, NO. 4 FINISH (SATIN).
2.5 FABRICATION
A. GENERAL: FABRICATE UNITS WITH TIGHT SEAMS AND JOINTS, AND EXPOSED EDGES ROLLED. HANG DOORS AND ACCESS PANELS WITH FULL-LENGTH, CONTINUOUS HINGES. EQUIP UNITS FOR CONCEALED ANCHORING WHERE ANCHORAGE IS NOT PROVIDED IN ADJACENT WORK.
B. KEYS: PROVIDE UNIVERSAL KEYS FOR INTERNAL ACCESS TO ACCESSORIES FOR SERVICING AND RESUPPLYING. PROVIDE MINIMUM OF 4 KEYS TO CONSTRUCTION MANAGER AS PART OF PROJECT CLOSE-OUT.

PART 3 - EXECUTION
3.1 INSTALLATION
A. INSTALL ACCESSORIES ACCORDING TO MANUFACTURERS' WRITTEN INSTRUCTIONS, USING FASTENERS APPROPRIATE TO SUBSTRATE INDICATED AND RECOMMENDED BY UNIT MANUFACTURER. INSTALL UNITS LEVEL, PLUMB, AND FIRMLY ANCHORED IN LOCATIONS AND AT HEIGHTS INDICATED.
B. GRAB BARS: INSTALL TO WITHSTAND A DOWNWARD LOAD OF AT LEAST 250 LBF (1112 N), WHEN TESTED ACCORDING TO METHOD IN ASTM F 446.
3.2 ADJUSTING AND CLEANING
A. ADJUST ACCESSORIES FOR UNENCUMBERED, SMOOTH OPERATION. REPLACE DAMAGED OR DEFECTIVE ITEMS.
B. REMOVE TEMPORARY LABELS AND PROTECTIVE COATINGS.
C. CLEAN AND POLISH EXPOSED SURFACES ACCORDING TO MANUFACTURER'S WRITTEN RECOMMENDATIONS.
3.3 SCHEDULE OF ACCESSORIES
A. WOMENS RESTROOM 107
1. 3-EACH, TOILET TISSUE DISPENSER. (BY VENDOR)
2. 3-EACH, PAPER TOWEL DISPENSER, AUTOMATIC. (BY VENDOR)
3. 2-EACH, SOAP DISPENSER. (BY VENDOR)
4. 1-EACH, GRA

11 13 00 - LOADING DOCK EQUIPMENT (CONT.)

2. ASTM A 153/A 153M FOR IRON AND STEEL HARDWARE FOR LOADING DOCK EQUIPMENT.

PART 3 - EXECUTION
3.1 EXAMINATION
A. EXAMINE AREAS AND CONDITIONS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES AND OTHER CONDITIONS AFFECTING PERFORMANCE OF LOADING DOCK EQUIPMENT.
B. EXAMINE ROUGHING-IN FOR ELECTRICAL SYSTEMS FOR LOADING DOCK EQUIPMENT TO VERIFY ACTUAL LOCATIONS OF CONNECTIONS BEFORE EQUIPMENT INSTALLATION.
C. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
3.2 PREPARATION
A. COORDINATE SIZE AND LOCATION OF LOADING DOCK EQUIPMENT INDICATED TO BE ATTACHED TO OR RECESSED INTO CONCRETE OR MASONRY, AND FURNISH ANCHORING DEVICES WITH TEMPLATES, DIAGRAMS, AND INSTRUCTIONS FOR THEIR INSTALLATION.
B. PRIOR TO CONCRETE POUR OF DOCK EQUIPMENT MANUFACTURERS REPRESENTATIVE TO CONDUCT SITE VISIT SURVEY TO VERIFY EMBEDDED STEEL PLATES, ANGLES AND CHANNELS SIZES AND LOCATIONS. VERIFY ROUTING OF CONDUITS
3.3 INSTALLATION
A. GENERAL: INSTALL LOADING DOCK EQUIPMENT, INCLUDING MOTORS PUMPS CONTROL STATIONS WIRING SAFETY DEVICES AND ACCESSORIES AS REQUIRED FOR A COMPLETE INSTALLATION.
B. DOCK BUMPERS: ATTACH DOCK BUMPERS TO FACE OF LOADING DOCK IN A MANNER THAT COMPLIES WITH REQUIREMENTS INDICATED FOR SPACING, ARRANGEMENT, AND POSITION RELATIVE TO TOP OF PLATFORM AND ANCHORAGE.
1. WELDED ATTACHMENT: PLUG-WELD ANCHOR HOLES IN CONTACT WITH STEEL INSERTS AND FILLET WELD AT OTHER LOCATIONS.
2. BOLTED ATTACHMENT: ATTACH DOCK BUMPERS TO PRESET ANCHOR BOLTS IMBEDDED IN CONCRETE OR CAST-IN-PLACE INSERTS OR THREADED STUDS WELDED TO EMBEDDED-STEEL PLATES OR ANGLES. IF PRESET ANCHOR BOLTS, CAST-IN-PLACE INSERTS, OR THREADED STUDS WELDED TO EMBEDDED-STEEL PLATES OR ANGLES ARE NOT PROVIDED, ATTACH DOCK BUMPERS BY DRILLING AND ANCHORING WITH EXPANSION ANCHORS AND BOLTS.
C. TRUCK RESTRAINTS: ATTACH TRUCK RESTRAINTS IN A MANNER THAT COMPLIES WITH REQUIREMENTS FOR ARRANGEMENT AND HEIGHT REQUIRED FOR DEVICE TO ENGAGE VEHICLE REAR-IMPACT GUARD.
3.4 ADJUSTING AND CLEANING
A. ADJUST LOADING DOCK EQUIPMENT FOR PROPER, SAFE, EFFICIENT OPERATION.
B. TEST DOCK LEVELERS FOR VERTICAL TRAVEL, OPERATING, AND MAINTENANCE CLEARANCES INDICATED.
C. RESTORE MARRED, ABRADED SURFACES TO THEIR ORIGINAL CONDITION.
3.5 DEMONSTRATION
A. ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO TRAIN OWNER'S MAINTENANCE PERSONNEL TO ADJUST, OPERATE, AND MAINTAIN LOADING DOCK EQUIPMENT. REFER TO DIVISION 1 SECTION "CLOSEOUT PROCEDURES."

END OF SECTION 11 16 30

12 31 00 - MANUFACTURED METAL CASEWORK

PART 1 - GENERAL
1.1 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
1.2 SUMMARY
A. THIS SECTION INCLUDES THE FOLLOWING:
1. METAL LABORATORY CASEWORK.
2. UTILITY-SPACE FRAMING AT BACKS OF BASE CABINETS AND BETWEEN BACKS OF BASE CABINETS.
3. UTILITY-SPACE CLOSURE PANELS BETWEEN BASE CABINETS AND AT EXPOSED ENDS OF UTILITY SPACES.
4. LABORATORY COUNTERTOPS.
5. SHELVES.
6. METAL LABORATORY CASEWORK SYSTEM THAT INCLUDES SUPPORT FRAMING, FILLER AND CLOSURE PANELS, WALL PANELS, UNDERCABINET LIGHTING, AND MODULAR COUNTERTOPS.
7. LABORATORY SINKS AND TROUGHS.
8. ACCESSORIES.
9. WATER, LABORATORY GAS, AND ELECTRICAL SERVICE FITTINGS.
B. RELATED SECTIONS INCLUDE THE FOLLOWING:
1. DIVISION 1, 6, 9, 11, 22, & 23.
1.3 PERFORMANCE REQUIREMENTS
A. STRUCTURAL PERFORMANCE: PROVIDE METAL LABORATORY CASEWORK AND SUPPORT FRAMING CAPABLE OF WITHSTANDING THE EFFECTS OF THE FOLLOWING GRAVITY LOADS AND STRESSES PER SUPPORT FRAMING MODULE WITHOUT PERMANENT DEFORMATION, EXCESSIVE DEFLECTION, OR BINDING OF DRAWERS AND DOORS:
1. TOP OF SUPPORT FRAMING SYSTEM: 180 LB.
2. WALL CABINETS: 300 LB.
3. SHELVES (UP TO 12 INCHES (300 MM) DEEP): 180 LB.
4. REAGENT SHELF: 180 LB.
5. WORK SURFACE (INCLUDING SUSPENDED BASE CABINETS): 600 LB.
6. SUSPENDED BASE CABINETS: 300 LB.
7. TOTAL FOR ISLAND UNIT: 3000 LB.
8. TOTAL FOR WALL UNIT: 1800 LB.
9. TOP OF SUPPORT FRAMING SYSTEM: 500 LB.
10. SHELVES: 200 LB.
11. REAGENT SHELF: 500 LB.
12. WORK SURFACE (INCLUDING SUSPENDED BASE CABINETS): 600 LB.
13. SUSPENDED BASE CABINETS (EACH): 300 LB.
14. TOTAL FOR ISLAND UNIT: 3400 LB.
15. TOTAL FOR WALL UNIT: 2600 LB.
B. SEISMIC PERFORMANCE: PROVIDE METAL LABORATORY CASEWORK AND SUPPORT FRAMING CAPABLE OF WITHSTANDING THE EFFECTS OF EARTHQUAKE MOTIONS DETERMINED ACCORDING TO ASCE 7, "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES". SECTION 9, "EARTHQUAKE LOADS."
1.4 SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
B. SHOP DRAWINGS: FOR METAL LABORATORY CASEWORK. INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK.
1. INDICATE LOCATIONS OF BLOCKING AND REINFORCEMENTS REQUIRED FOR INSTALLING LABORATORY CASEWORK.
2. INDICATE LOCATIONS AND TYPES OF SERVICE FITTINGS, TOGETHER WITH ASSOCIATED SERVICE SUPPLY CONNECTION REQUIRED.
3. INCLUDE DETAILS OF UTILITY SPACES SHOWING SUPPORTS FOR CONDUITS AND PIPING.
4. INCLUDE DETAILS OF SUPPORT FRAMING SYSTEM.
5. INCLUDE DETAILS OF EXPOSED CONDUITS, IF REQUIRED, FOR SERVICE FITTINGS.
6. INDICATE LOCATIONS OF AND CLEARANCES FROM ADJACENT WALLS, DOORS, WINDOWS, OTHER BUILDING COMPONENTS, AND OTHER LABORATORY EQUIPMENT.
7. INCLUDE COORDINATED DIMENSIONS FOR LABORATORY EQUIPMENT SPECIFIED IN OTHER SECTIONS.
C. SAMPLES FOR INITIAL SELECTION: FOR FACTORY-APPLIED FINISHES, PLASTIC-LAMINATE COUNTERTOPS, EPOXY SINKS, EPOXY COUNTERTOPS AND TROUGHS, AND PHENOLIC-COMPOSITE COUNTERTOPS.
D. SAMPLES FOR VERIFICATION: FOR EACH TYPE OF FINISH, INCLUDING COUNTERTOP MATERIAL, IN MANUFACTURER'S STANDARD SIZES.
E. SAMPLES FOR VERIFICATION: UNLESS OTHERWISE DIRECTED, APPROVED SAMPLE UNITS IN AN UNDISTURBED CONDITION AT TIME OF SUBSTANTIAL COMPLETION MAY BECOME PART OF THE CONSTRUCTION IN THEIR ORIGINAL INSTALLED LOCATIONS IF NOT INCORPORATED INTO THE WORK, RETAIN ACCEPTABLE SAMPLE UNITS AT PROJECT SITE AND REMOVE WHEN DIRECTED BY ARCHITECT.
1. 6-INCH- (150-MM-) SQUARE SAMPLES FOR EACH TYPE OF COUNTERTOP MATERIAL.
2. ONE FULL-SIZE, FINISHED BASE CABINET COMPLETE WITH HARDWARE, DOORS, AND DRAWERS, BUT WITHOUT COUNTERTOP.
3. ONE FULL-SIZE, FINISHED WALL CABINET COMPLETE WITH HARDWARE, DOORS, AND ADJUSTABLE SHELVES.
4. ONE SAMPLE EACH OF HINGED AND SLIDING DOORS.
5. ONE OF EACH SERVICE FITTING SPECIFIED, COMPLETE WITH ACCESSORIES AND SPECIFIED FINISH.
6. ONE OF EACH TYPE OF SINK AND ACCESSORY ITEM SPECIFIED.
F. QUALIFICATION DATA: FOR TESTING AGENCY.
G. PRODUCT TEST REPORTS: BASED ON EVALUATION OF COMPREHENSIVE TESTS PERFORMED BY A QUALIFIED TESTING AGENCY, INDICATING COMPLIANCE OF LABORATORY CASEWORK FINISHES AND COUNTERTOPS WITH REQUIREMENTS SPECIFIED FOR CHEMICAL AND PHYSICAL RESISTANCE.
1.5 QUALITY ASSURANCE
A. TESTING AGENCY QUALIFICATIONS: AN INDEPENDENT AGENCY QUALIFIED FOR TESTING INDICATED, AS DOCUMENTED ACCORDING TO ASTM E 548.
B. SOURCE LIMITATIONS: OBTAIN LABORATORY CASEWORK, INCLUDING COUNTERTOPS, SINKS, SERVICE FITTINGS, AND ACCESSORIES, THROUGH ONE SOURCE FROM A SINGLE MANUFACTURER.
1. OBTAIN THROUGH SAME SOURCE FROM SAME MANUFACTURER AS FUME HOODS SPECIFIED IN DIVISION 11 SECTION "LABORATORY FUME HOODS."
C. PRODUCT DESIGNATIONS: DRAWINGS INDICATE SIZES AND CONFIGURATIONS OF LABORATORY CASEWORK BY REFERENCING DESIGNATED MANUFACTURER'S CATALOG NUMBERS. OTHER MANUFACTURERS' LABORATORY CASEWORK OF SIMILAR SIZES, SIMILAR DOOR AND DRAWER CONFIGURATIONS, AND COMPLYING WITH THE SPECIFICATIONS MAY BE CONSIDERED. REFER TO DIVISION 1 SECTION "PRODUCT REQUIREMENTS."
D. PRODUCT STANDARD: COMPLY WITH SEFA 8, "LABORATORY FURNITURE--CASEWORK, SHELVING AND TABLES--RECOMMENDED PRACTICES."
E. FLAMMABLE LIQUID STORAGE: WHERE CABINETS ARE USED FOR FLAMMABLE LIQUID STORAGE, PROVIDE UNITS THAT ARE LISTED AND LABELED AS COMPLYING WITH REQUIREMENTS OF NFPA 30 BY UL OR ANOTHER TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
1. CABINETS THAT ARE NOT LISTED AND LABELED BUT ARE CONSTRUCTED ACCORDING TO NFPA 30, PARAGRAPH 4-3.3(B) MAY BE USED IF ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
F. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND FOR THE USE INTENDED USE.
G. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE TO COMPLY WITH REQUIREMENTS IN DIVISION 1 SECTION "PROJECT MANAGEMENT AND COORDINATION."
1.6 DELIVERY, STORAGE, AND HANDLING
A. PROTECT FINISHED SURFACES DURING HANDLING AND INSTALLATION WITH PROTECTIVE COVERING OF POLYETHYLENE FILM OR OTHER SUITABLE MATERIAL.
1.7 PROJECT CONDITIONS
A. ENVIRONMENTAL LIMITATIONS: DO NOT DELIVER OR INSTALL METAL LABORATORY CASEWORK UNTIL BUILDING IS ENCLOSED, WET WORK AND UTILITY ROUGHING-IN ARE COMPLETE, AND WEATHER-STRIPPING AND MAINTAINING TEMPERATURE AND RELATIVE HUMIDITY AT OCCUPANCY LEVELS DURING THE REMAINDER OF THE CONSTRUCTION PERIOD.
1.8 COORDINATION
A. COORDINATE LAYOUT AND INSTALLATION OF FRAMING AND REINFORCEMENTS FOR SUPPORT OF METAL LABORATORY CASEWORK.
B. COORDINATE INSTALLATION OF METAL LABORATORY CASEWORK WITH INSTALLATION OF FUME HOODS AND OTHER LABORATORY EQUIPMENT.
1.9 EXTRA MATERIALS
A. FURNISH COMPLETE TOUCHUP KIT FOR EACH TYPE AND COLOR OF METAL LABORATORY CASEWORK PROVIDED. INCLUDE FILLERS, PRIMERS, PAINTS, AND OTHER MATERIALS NECESSARY TO PERFORM PERMANENT REPAIRS TO DAMAGED LABORATORY CASEWORK FINISH.
B. FURNISH EXTRA MATERIALS DESCRIBED BELOW THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.
1. CABINET MOUNTING CLIPS AND RELATED HARDWARE: QUANTITY EQUAL TO 5 PERCENT OF AMOUNT INSTALLED, BUT NO FEWER THAN 20 OF EACH TYPE.
2. MODULAR COUNTERTOP UNITS: TWO EXTRA UNITS OF EACH LENGTH AND MATERIAL INSTALLED.

PART 2 - PRODUCTS
2.1 MANUFACTURERS
A. AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
B. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
1. METAL LABORATORY CASEWORK:
a. AIR MASTER SYSTEMS CORPORATION.
b. BEDCOLAB LTD.
c. BMC INDUSTRIAL EDUCATIONAL SERVICES, INC.
d. DURALAB EQUIPMENT CORP.; DIV. OF ICE-CAP INC.
e. FISHER HAMILTON L.L.C.
f. HANSON LAB FURNITURE.
g. JAMESTOWN METAL PRODUCTS, INC.
h. KEUR INDUSTRIES, INC.
i. KEWAUNEE SCIENTIFIC CORPORATION; LABORATORY DIVISION.
j. LAB FABRICATORS CO.
k. LABORATORY DESIGN & SUPPLY.
l. MOHON INTERNATIONAL, INC.
m. MOTT MANUFACTURING LTD.
n. NORLAB, INC.
o. APPROVED BRAND OR EQUIVALENT TO THE PROJECT MANUAL.
2. CHEMICAL-RESISTANT PLASTIC LAMINATE:
a. ARBORITE; DIVISION OF PREMARK CANADA INC.
b. FORMICA CORPORATION.
c. INTERNATIONAL PAPER; DECORATIVE PRODUCTS DIVISION.
d. PANOLAM INDUSTRIES INTERNATIONAL INCORPORATED; PIONITE DECORATIVE SURFACES.
e. WILSONART INTERNATIONAL.
f. APPROVED BRAND OR EQUIVALENT TO THE PROJECT MANUAL.
3. Epoxy Countertops, Sinks, and Troughs:
a. DURCON COMPANY, INC. (THE).
b. EPOXYN PRODUCTS.
c. LABORATORY TOPS, INC.
d. PRIME INDUSTRIES, INC.
e. APPROVED BRAND OR EQUIVALENT TO THE PROJECT MANUAL.
4. Phenolic-Composite Countertops:
a. ARBORITE; DIVISION OF PREMARK CANADA INC.
b. H.T.C., INCORPORATED.
c. NULAB FURNITURE CORPORATION.
d. PANOLAM INDUSTRIES INTERNATIONAL INCORPORATED; PIONITE DECORATIVE SURFACES.
e. TRESPA NORTH AMERICA, LTD.
f. APPROVED BRAND OR EQUIVALENT TO THE PROJECT MANUAL.
2.2 CABINET MATERIALS
A. METAL: COLD-ROLLED COMMERCIAL STEEL SHEET, COMPLYING WITH ASTM A 1008/A 1008M; MATTE FINISH; SUITABLE FOR EXPOSED APPLICATIONS.
B. MINIMUM METAL THICKNESS:
1. SIDES, ENDS, FIXED BACKS, BOTTOMS, TOPS, SOFFITS, AND ITEMS NOT OTHERWISE INDICATED: 0.0428 INCH (1.1 MM). EXCEPT FOR FLAMMABLE LIQUID-STORAGE CABINETS, BOTTOMS MAY BE 0.0329 INCH (0.85 MM) IF REINFORCED.
2. BACK PANELS, DOORS, DRAWER FRONTS AND BODIES, AND SHELVES: 0.0329 INCH (0.85 MM) EXCEPT 0.0428 INCH (1.1 MM) FOR BACK PANELS AND DOORS OF FLAMMABLE LIQUID-STORAGE CABINETS AND FOR UNREINFORCED SHELVES MORE THAN 36 INCHES (900 MM) LONG.
3. INTERMEDIATE HORIZONTAL RAILS, TABLE APRONS AND CROSS RAILS, CENTER POSTS, AND TOP GUSSETS: 0.0528 INCH (1.35 MM).
4. DRAWER RUNNERS, SINK SUPPORTS, AND HINGE REINFORCEMENTS: 0.0677 INCH (1.7 MM).
5. LEVELING AND CORNER GUSSETS: 0.0966 INCH (2.5 MM).
C. ACID STORAGE-CABINET LINING: 1/4-INCH- (6-MM-) THICK, POLYETHYLENE, POLYPROPYLENE, EPOXY, OR PHENOLIC-COMPOSITE LINING MATERIAL.
D. GLASS FOR GLAZED DOORS: CLEAR FLOAT GLASS COMPLYING WITH ASTM C 1036, TYPE I, CLASS 1, QUALITY Q3; NOT LESS THAN [3.0 MM] [5.5 MM] THICK.
E. GLASS FOR GLAZED DOORS: CLEAR TEMPERED GLASS COMPLYING WITH ASTM C 1048, KIND FT, CONDITION A, TYPE I, CLASS 1, QUALITY Q3; NOT LESS THAN 5.5 MM THICK.
F. GLASS FOR GLAZED DOORS: CLEAR LAMINATED GLASS COMPLYING WITH ASTM C 1172, KIND LT, CONDITION A, TYPE I, CLASS 1, QUALITY Q3; WITH 2 LITES NOT LESS THAN 3.0 MM THICK AND WITH CLEAR, POLYVINYL BUTYRAL INTERLAYER.
2.3 CABINET FABRICATION
A. GENERAL: ASSEMBLE AND FINISH UNITS AT POINT OF MANUFACTURE. USE PRECISION DIES FOR INTERCHANGEABILITY OF LIKE-SIZE DRAWERS, DOORS, AND SIMILAR PARTS. PERFORM ASSEMBLY ON PRECISION JIGS TO PROVIDE UNITS THAT ARE SQUARE. REINFORCE UNITS WITH ANGLES, GUSSETS, AND CHANNELS. INTEGRALLY FRAME AND WELD TO FORM A DRIP AND VERMIN-RESISTANT ENCLOSURE. WHERE APPLICABLE, REINFORCE BASE CABINETS FOR SINK SUPPORT. MAINTAIN UNIFORM CLEARANCE AROUND DOOR AND DRAWER FRONTS OF 1/16 TO 3/32 INCH (1.5 TO 2.4 MM).
B. FLUSH DOORS: OUTER AND INNER PANS THAT NEST INTO BOX FORMATION, WITH FULL-HEIGHT CHANNEL REINFORCEMENTS AT CENTER OF DOOR. FILL DOORS WITH NONCOMBUSTIBLE, SOUND-DEADENING MATERIAL.
C. GLAZED DOORS: HOLLOW-METAL STILES AND RAILS OF SIMILAR CONSTRUCTION AS FLUSH DOORS, WITH GLASS HELD IN RESILIENT CHANNELS OR GASKET MATERIAL.
D. HINGED DOORS: MORTISE FOR HINGES AND REINFORCE WITH ANGLES WELDED INSIDE INNER PANS AT HINGE EDGE.
E. DRAWERS: FRONTS MADE FROM OUTER AND INNER PANS THAT NEST INTO BOX FORMATION, WITH NO RAW METAL EDGES AT TOP SIDES, BACK, AND BOTTOM FABRICATED IN ONE PIECE WITH ROLLED OR FORMED TOP OF SIDES FOR STIFFENING AND COMFORTABLE GRASP FOR DRAWER REMOVAL. WELD DRAWER FRONT TO SIDES AND BOTTOM TO FORM A SINGLE, INTEGRAL UNIT. PROVIDE DRAWERS WITH RUBBER BUMPERS, BALL-BEARING SLIDES, AND POSITIVE STOPS TO PREVENT METAL-TO-METAL CONTACT OR ACCIDENTAL REMOVAL.
F. ADJUSTABLE SHELVES: FRONT, BACK, AND ENDS FORMED DOWN, WITH EDGES RETURNED HORIZONTALLY AT FRONT AND BACK TO FORM REINFORCING CHANNELS.
G. TOE SPACES: FULLY ENCLOSED, 4 INCHES (100 MM) HIGH BY 3 INCHES (75 MM) DEEP, WITH NO OPEN GAPS OR POCKETS.
H. TABLE LEGS: WELDED TUBING, NOT LESS THAN 2 INCHES (50 MM) SQUARE WITH STRETCHERS WHERE NEEDED TO COMPLY WITH PRODUCT STANDARD. WELD OR BOLT LEG STRETCHERS TO LEGS AND CROSS-STRETCHERS AND BOLT LEGS TO TABLE APRONS. PROVIDE LEVELING DEVICE WELDED TO BOTTOM OF EACH LEG.
I. LEG SHOES: BLACK VINYL OR RUBBER, SATIN-FINISHED STAINLESS STEEL, OPEN-BOTTOM, SLIP-ON TYPE.
J. UTILITIES: PROVIDE SPACE, CUTOUTS, AND HOLES FOR PIPES, CONDUITS, AND FITTINGS IN CABINET BODIES TO ACCOMMODATE UTILITY SERVICES AND THEIR SUPPORT-STRUT ASSEMBLIES.
K. UTILITY-SPACE FRAMING: LABORATORY CASEWORK MANUFACTURER'S STANDARD STEEL FRAMING UNITS CONSISTING OF 2 STEEL SLOTTED CHANNELS COMPLYING WITH MFMA-2, NOT LESS THAN 1-5/8 INCHES (41 MM) SQUARE BY 0.0966 INCH (2.5 MM) THICK, AND CONNECTED TOGETHER AT TOP AND BOTTOM BY U-SHAPED BRACKETS MADE FROM 1-1/4-BY-1/4-INCH (32-BY-6-MM) STEEL FLAT BARS. FRAMING UNITS MAY BE MADE BY WELDING SPECIFIED CHANNEL MATERIAL INTO RECTANGULAR FRAMES INSTEAD OF USING U-SHAPED BRACKETS.
L. BASE MOUNTING: ADJUST TOP RAILS AND SUBTOPS WITHIN 1/16 INCH (1.5 MM) OF A SINGLE PLANE. FASTEN CABINETS TO UTILITY-SPACE FRAMING, PARTITION FRAMING, WOOD BLOCKING, OR REINFORCEMENTS IN PARTITIONS WITH FASTENERS SPACED NOT MORE THAN 24 INCHES (600 MM) O.C. BOLT ADJACENT CABINETS TOGETHER WITH JOINTS FLUSH, TIGHT, AND UNIFORM. ALIGN SIMILAR ADJOINING DOORS AND DRAWERS TO A TOLERANCE OF 1/16 INCH (1.5 MM).
1. WHERE BASE CABINETS ARE INSTALLED AWAY FROM WALLS, FASTEN TO FLOOR AT TOE SPACE AT NOT MORE THAN 24 INCHES (600 MM) O.C. AND AT SIDES OF CABINETS WITH NOT LESS THAN 2 FASTENERS PER SIDE.
D. WALL CABINETS: ADJUST FRONTS AND BOTTOMS WITHIN 1/16 INCH (1.5 MM) OF A SINGLE PLANE. FASTEN TO HANGING STRIPS, MASONRY, PARTITION FRAMING, BLOCKING, OR REINFORCEMENTS IN PARTITIONS. FASTEN EACH CABINET THROUGH BACK, NEAR TOP, AT NOT LESS THAN 24 INCHES (600 MM) O.C. ALIGN SIMILAR ADJOINING DOORS TO A TOLERANCE OF 1/16 INCH (1.5 MM).
E. INSTALL HARDWARE UNIFORMLY AND PRECISELY. SET HINGES SNUG AND FLAT IN MORTISES.
F. ADJUST LABORATORY CASEWORK AND HARDWARE SO DOORS AND DRAWERS ALIGN AND OPERATE SMOOTHLY WITHOUT WARP OR BIND AND CONTACT POINTS MEET ACCURATELY. LUBRICATE OPERATING HARDWARE AS RECOMMENDED BY MANUFACTURER.
2.3 INSTALLATION OF COUNTERTOPS
A. ABUTTOP AND EDGE SURFACES IN ONE TRUE PLANE WITH FLUSH HAIRLINE JOINTS AND WITH INTERNAL SUPPORTS PLACED TO PREVENT DEFLECTION. LOCATE JOINTS ONLY WHERE SHOWN ON SHOP DRAWINGS.
B. FIELD JOINTING: WHERE POSSIBLE, MAKE IN THE SAME MANNER AS SHOP JOINTING USING DOWELS, SPLINES, ADHESIVES, AND FASTENERS RECOMMENDED BY MANUFACTURER. PREPARE EDGES TO BE JOINED IN SHOP.
1. USE CONCEALED CLAMPING DEVICES FOR FIELD JOINTS IN PLASTIC-LAMINATE COUNTERTOPS. LOCATE CLAMPING DEVICES WITHIN 6 INCHES (150 MM) OF FRONT AND BACK EDGES AND AT INTERVALS NOT EXCEEDING 24 INCHES (600 MM). TIGHTEN ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS TO EXERT A UNIFORM HEAVY PRESSURE AT JOINTS.
C. FASTENING:
1. SECURE COUNTERTOPS, EXCEPT FOR EPOXY COUNTERTOPS, TO CABINETS WITH Z-TYPE FASTENERS OR EQUIVALENT, USING TWO OR MORE FASTENERS AT EACH EDGE: FRONT, END, AND BACK.
2. SECURE EPOXY COUNTERTOPS TO CABINETS WITH EPOXY CEMENT, APPLIED AT EACH CORNER AND ALONG PERIMETER EDGES AT NOT MORE THAN 48 INCHES (1200 MM) O.C.
3. WHERE NECESSARY TO PENETRATE COUNTERTOPS WITH FASTENERS, COUNTERSINK HEADS APPROXIMATELY 1/8 INCH (3 MM) AND PLUG HOLE FLUSH WITH MATERIAL EQUAL TO COUNTERTOP IN CHEMICAL RESISTANCE, HARDNESS, AND APPEARANCE.
D. PROVIDE REQUIRED HOLES AND CUTOUTS FOR SERVICE FITTINGS.
E. SEAL UNFINISHED EDGES AND CUTOUTS IN PLASTIC-LAMINATE COUNTERTOPS WITH HEAVY COAT OF POLYURETHANE VARNISH.
F. PROVIDE SCRIBE MOLDINGS FOR CLOSURES AT JUNCTURES OF COUNTERTOP, CURB, AND SPLASH. WITH WALLS AS RECOMMENDED BY MANUFACTURER FOR MATERIALS INVOLVED. MATCH MATERIALS AND FINISH TO ADJACENT LABORATORY CASEWORK. USE CHEMICAL-RESISTANT, PERMANENTLY ELASTIC SEALING COMPOUND WHERE RECOMMENDED BY MANUFACTURER.
G. CAREFULLY DRESS JOINTS SMOOTH, REMOVE SURFACE SCRATCHES, AND CLEAN ENTIRE SURFACE.
2.4 INSTALLATION OF SINKS
A. UNDERSIDE INSTALLATION OF EPOXY SINKS: USE LABORATORY CASEWORK MANUFACTURER'S RECOMMENDED ADJUSTABLE SUPPORT SYSTEM FOR TABLE- AND CABINET-TYPE INSTALLATIONS. SET TOP EDGE OF SINK UNIT IN SINK AND COUNTERTOP MANUFACTURERS' RECOMMENDED CHEMICAL-RESISTANT SEALING COMPOUND OR ADHESIVE AND FINISH TO PROVIDE A TIGHT AND FULLY LEAKPROOF JOINT. ADJUST SINK AND SECURELY SUPPORT TO PREVENT MOVEMENT. REMOVE EXCESS SEALANT WHILE STILL WET AND FINISH JOINT FOR NEAT APPEARANCE.
B. SEMIFLUSH INSTALLATION OF STAINLESS-STEEL SINKS: BEFORE SETTING, APPLY SINK AND COUNTERTOP MANUFACTURERS' RECOMMENDED SEALANT UNDER RIM LIP AND ALONG TOP. REMOVE EXCESS SEALANT WHILE STILL WET AND FINISH JOINT FOR NEAT APPEARANCE.
C. DROP-IN INSTALLATION OF EPOXY SINKS: ROUT GROOVE IN COUNTERTOP TO RECEIVE SINK RIM IF NOT PREPARED IN SHOP. SET SINK IN ADHESIVE AND FILL REMAINDER OF GROOVE WITH SEALANT OR ADHESIVE. USE PROCEDURES AND PRODUCTS RECOMMENDED BY SINK AND COUNTERTOP MANUFACTURERS. REMOVE EXCESS ADHESIVE AND SEALANT WHILE STILL WET AND FINISH JOINT FOR NEAT APPEARANCE.
2.5 INSTALLATION OF ACCESSORIES
A. INSTALL ACCESSORIES ACCORDING TO SHOP DRAWINGS AND MANUFACTURER'S WRITTEN INSTRUCTIONS.
B. SECURELY FASTEN ADJUSTABLE SHELVING SUPPORTS, STAINLESS-STEEL SHELVES, AND PEGBOARDS TO PARTITION FRAMING, WOOD BLOCKING, OR REINFORCEMENTS IN PARTITIONS.
C. INSTALL SHELF STANDARDS PLUMB AND AT HEIGHTS TO ALIGN SHELF BRACKETS FOR LEVEL SHELVES. INSTALL SHELVING LEVEL AND STRAIGHT, CLOSELY FITTED TO OTHER WORK WHERE INDICATED.
2.6 INSTALLATION OF SERVICE FITTINGS
A. COMPLY WITH REQUIREMENTS IN DIVISIONS 15 AND 16 SECTIONS FOR INSTALLING WATER AND LABORATORY GAS SERVICE FITTINGS, PIPING, ELECTRICAL DEVICES, AND WIRING.
B. INSTALL FITTINGS ACCORDING TO SHOP DRAWINGS AND MANUFACTURER'S WRITTEN INSTRUCTIONS. SET BASES AND FLANGES OF SINK- AND COUNTERTOP-MOUNTED FITTINGS IN SEALANT RECOMMENDED BY MANUFACTURER OF SINK OR COUNTERTOP MATERIAL. SECURELY ANCHOR FITTINGS, PIPING, AND CONDUIT TO LABORATORY CASEWORK, UNLESS OTHERWISE INDICATED.
2.7 CLEANING AND PROTECTING
A. CLEAN FINISHED SURFACES, TOUCH UP AS REQUIRED, AND REMOVE OR REFINISH DAMAGED OR SOILED AREAS TO MATCH ORIGINAL FACTORY FINISH, AS APPROVED BY ARCHITECT.
B. PROTECT COUNTERTOP SURFACES DURING CONSTRUCTION WITH 6-MIL (0.15-MM) PLASTIC OR OTHER SUITABLE WATER-RESISTANT COVERING. TAPE TO UNDERSIDE OF COUNTERTOP AT MINIMUM OF 48 INCHES (1200 MM) O.C.

END OF SECTION 12 31 00

12 31 00 - MANUFACTURED METAL CASEWORK (CONT.)

SCRATCHES. WHEN POLISHING IS COMPLETED, PASSIVATE AND RINSE SURFACES. REMOVE EMBEDDED FOREIGN MATTER AND LEAVE SURFACES CHEMICALLY CLEAN.
7. WHERE FIELD-MADE JOINTS ARE REQUIRED, PROVIDE HAIRLINE BUTT-JOINTS MECHANICALLY BOLTED THROUGH CONTINUOUS CHANNELS WELDED TO UNDERSIDE AT EDGES OF JOINED ENDS. KEEP FIELD JOINTING TO A MINIMUM.
8. WHERE STAINLESS-STEEL SINKS OR CUP SINKS OCCUR IN STAINLESS-STEEL COUNTERTOPS, FACTORY WELD INTO ONE INTEGRAL UNIT, GRIND WELDS SMOOTH, POLISH, PASSIVATE, AND RINSE USUALLY SELECT "DOWN" OPTION IN PARAGRAPH BELOW; "UP" OPTION WILL RETAIN LIQUIDS AND WILL HELP RETAIN CONTAINERS IN SEISMICALLY ACTIVE AREAS.
G. STAINLESS-STEEL SHELVES: MADE FROM STAINLESS-STEEL SHEET, ASTM A 666, NOT LESS THAN 0.050-INCH (1.3-MM) NOMINAL THICKNESS, WITH NO. 4 SATIN FINISH. PROVIDE WELD-MADE JOINTS, GRIND SMOOTH, AND FINISH. FOLD UNDER UP FRONT EDGE 3/4 INCH (19 MM); FOLD UP BACK EDGE 3 INCHES (75 MM). PROVIDE UNDERCUT FOR EASY REMOVAL. PROVIDE INTEGRAL STIFFENING BRACKETS, FORMED BY FOLDING UP ENDS 3/4 INCH (19 MM) AND WELDING TO UPTURNED FRONT AND BACK EDGES.
SELECT TYPE 316 IN PARAGRAPH ABOVE AND FIRST PARAGRAPH BELOW IF CONTENT WETTING BY ACIDS IS LIKELY.TYPE 304 IS TYPICAL MATERIAL, COSTS SIGNIFICANTLY LESS THAN TYPE 316, AND CANNOT EASILY BE DISTINGUISHED FROM TYPE 316.
H. STAINLESS-STEEL SINKS: MADE FROM STAINLESS-STEEL SHEET, ASTM A 666, TYPE [304] [316], NOT LESS THAN 0.050-INCH (1.3-MM) NOMINAL THICKNESS. FABRICATE WITH CORNERS ROUNDED AND COVED TO AT LEAST 5/8-INCH (16-MM) RADIUS. SLOPE SINK BOTTOMS TO OUTLET. PROVIDE DOUBLE-WALL CONSTRUCTION FOR SINK PARTITIONS WITH TOP EDGE ROUNDED TO AT LEAST 1/2-INCH (13-MM) DIAMETER. PROVIDE CONTINUOUS BUTT-WELDED JOINTS, GRIND SMOOTH, AND POLISH SURFACES TO PRODUCE NONDIRECTIONAL FINISH. FREE OF SCRATCHES. WHEN POLISHING IS COMPLETED, PASSIVATE AND RINSE SURFACES. REMOVE EMBEDDED FOREIGN MATTER AND LEAVE SURFACES CHEMICALLY CLEAN.
1. PROVIDE FACTORY PUNCHINGS FOR FITTINGS.
2. PROVIDE WITH STAINLESS-STEEL STRAINERS AND TAILPIECES.
3. PROVIDE WITH INTEGRAL RIMS EXCE

E. GROUND-KEY COCKS: TAPERED CORE AND HANDLE OF ONE-PIECE FORGED BRASS, GROUND AND LAPPED, AND HELD IN PLACE UNDER CONSTANT SPRING PRESSURE. PROVIDE UNITS DESIGNED FOR WORKING PRESSURE UP TO 40 PSIG (280 KPA), WITH SERRATED OUTLETS.
F. BALL VALVES: CHROME-PLATED BALL AND PTFE SEALS. HANDLE REQUIRES NO MORE THAN 5 LBF (22 N) TO OPERATE. PROVIDE UNITS DESIGNED FOR WORKING PRESSURE UP TO 75 PSIG (520 KPA), WITH SERRATED OUTLETS.
G. STEAM VALVES: STAINLESS-STEEL SEAT AND PTFE SEAT DISC. PROVIDE UNITS DESIGNED FOR STEAM WORKING PRESSURE UP TO 20 PSIG (140 KPA), WITH SERRATED OUTLETS.
H. NEEDLE VALVES: PROVIDE UNITS WITH RENEWABLE, SELF-CENTERING, FLOATING CONES AND RENEWABLE SEATS OF STAINLESS STEEL OR MONEL METAL, WITH REMOVABLE SERRATED OUTLETS.
1. PROVIDE UNITS DESIGNED FOR WORKING PRESSURE UP TO 125 PSIG (860 KPA).
I. HAND OF FITTINGS: FURNISH RIGHT-HAND FITTINGS UNLESS FITTING DESIGNATION IS FOLLOWED BY "L."
J. REMOTE-CONTROL VALVES: PROVIDE NEEDLE VALVES, STRAIGHT-THROUGH OR ANGLE TYPE AS INDICATED FOR FUME HOODS AND WHERE INDICATED.
K. HANDLES: PROVIDE THREE- OR FOUR-ARM, FORGED-BRASS HANDLES FOR VALVES, UNLESS OTHERWISE INDICATED.
1. PROVIDE LEVER-TYPE HANDLES FOR GROUND-KEY COCKS.
2. PROVIDE LEVER-TYPE HANDLES FOR BALL VALVES.
3. PROVIDE HEAT-RESISTANT PLASTIC HANDLES FOR STEAM VALVES.
4. PROVIDE KNURLED NYLON HANDLES FOR NEEDLE VALVES.
L. SERVICE-OUTLET IDENTIFICATION: PROVIDE COLOR-CODED PLASTIC DISCS WITH EMBOSSED IDENTIFICATION, SECURED TO EACH SERVICE-FITTING HANDLE TO BE TAMPER-RESISTANT.

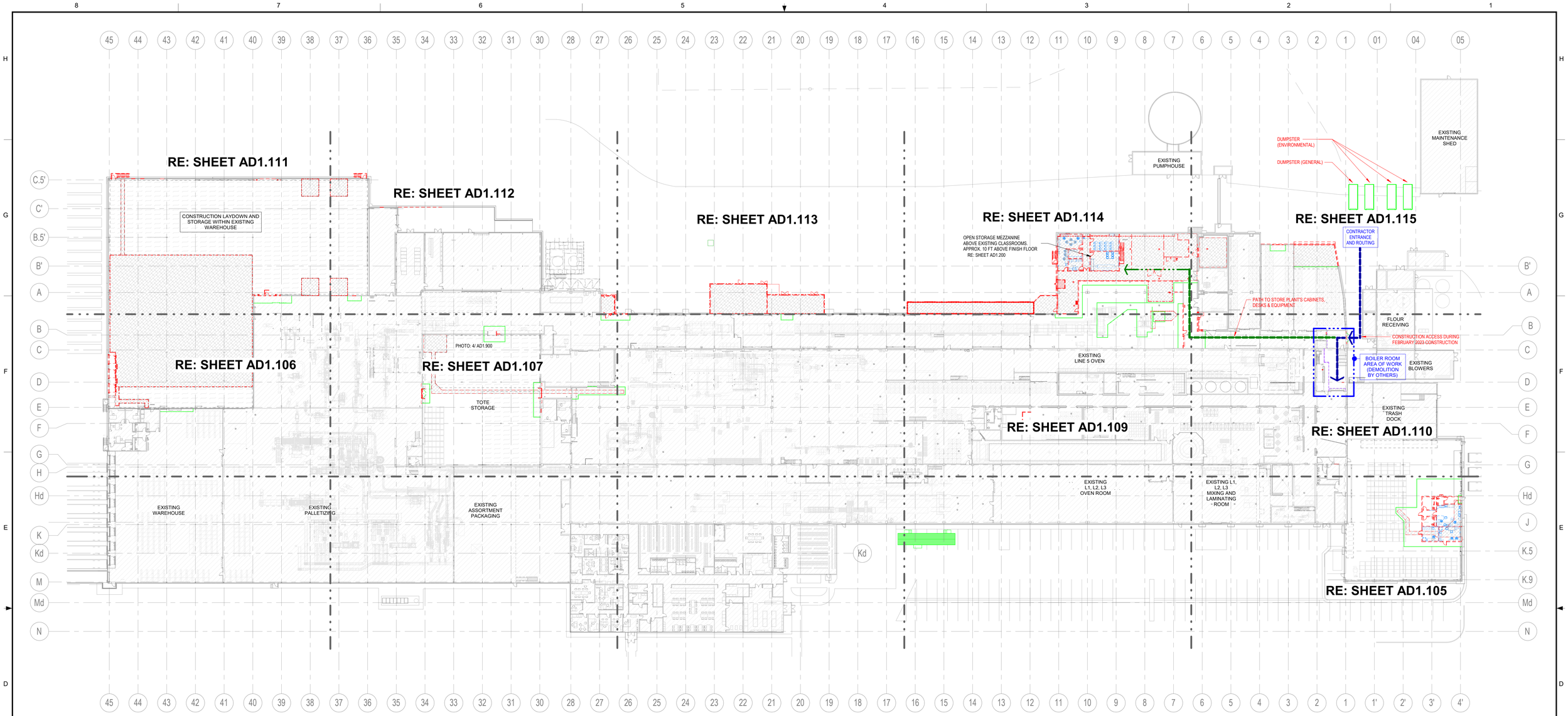
2.10 ELECTRICAL SERVICE FITTINGS
A. SERVICE FITTINGS, GENERAL: PROVIDE UNITS COMPLETE WITH METAL HOUSINGS, RECEPTACLES, TERMINALS, SWITCHES, PILOT LIGHTS, DEVICE PLATES, ACCESSORIES, AND GASKETS REQUIRED FOR MOUNTING ON LABORATORY CASEWORK.
B. RECEPTACLES: COMPLY WITH NEMA WD 1, NEMA WD 6, FS W-C-596, AND UL 498. DUPLEX TYPE, CONFIGURATION 5 20R.
1. RECEPTACLE GRADE: GENERAL GRADE, UNLESS OTHERWISE INDICATED.
2. GFCI RECEPTACLES: COMPLY WITH UL 943, GENERAL GRADE.
3. TVSS RECEPTACLES: UNITS WITH INTEGRAL TVSS IN LINE TO GROUND, LINE TO NEUTRAL, AND NEUTRAL TO GROUND.
a. TVSS COMPONENTS: MULTIPLE METAL-OXIDE VARISTORS; WITH A NOMINAL CLAMP LEVEL RATING OF 500 V AND MINIMUM SINGLE TRANSIENT PULSE ENERGY DISSIPATION OF 140 J LINE TO NEUTRAL, AND 70 J LINE TO GROUND AND NEUTRAL TO GROUND.
b. ACTIVE TVSS INDICATION: VISUAL AND AUDIBLE WITH LIGHT VISIBLE IN FACE OF DEVICE TO INDICATE DEVICE IS "ACTIVE" OR "NO LONGER IN SERVICE."
c. RECEPTACLE TYPE: GENERAL GRADE, WITH ISOLATED-GROUND TERMINAL.
d. IDENTIFICATION: DISTINCTIVE MARKING ON FACE OF DEVICE TO DENOTE TVSS-TYPE UNIT.
C. SWITCHES: COMPLY WITH FS W-C-896 AND UL 20. PROVIDE SINGLE-POLE, DOUBLE-POLE, OR 3-WAY SWITCHES AS REQUIRED; RATED 120 TO 277-V AC; AND IN AMPERAGE CAPACITIES TO SUIT UNITS SERVED.
1. PROVIDE PILOT LIGHTS ADJACENT TO TOGGLE SWITCHES WHERE NOTED AS "PL" NEXT TO SWITCH IDENTIFICATION.
2. PROVIDE THERMAL-OVERLOAD SWITCHES, SINGLE OR DOUBLE POLE, AS REQUIRED, WITH MAXIMUM OVERCURRENT TRIP SETTING TO SUIT PARTICULAR MOTOR CONTROLLED.
D. PEDESTAL-TYPE FITTINGS: CAST-ALUMINUM HOUSINGS WITH SLOPED SINGLE FACE OR TWO FACES, AS INDICATED, WITH NEOPRENE GASKET UNDER BASE AND WITH CONCEALED MOUNTING HOLES IN BASE FOR ATTACHING TO LABORATORY CASEWORK. PROVIDE HOLES TAPPED FOR CONDUITS.
E. LINE-TYPE FITTINGS: PROVIDE WITH CAST-METAL BOXES WITH THREADED HOLES FOR MOUNTING ON RIGID STEEL CONDUIT. PROVIDE COVER PLATES THE SAME SIZE AS BOXES.
F. RECESSED-TYPE FITTINGS: PROVIDE WITH GALVANIZED STEEL BOXES.
G. FINISHES FOR SERVICE-FITTING COMPONENTS: PROVIDE HOUSINGS OR BOXES FOR PEDESTAL- AND LINE-TYPE FITTINGS WITH MANUFACTURER'S STANDARD BAKED-ON, CHEMICAL-RESISTANT ENAMEL IN COLOR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.
1. COLOR OF RECEPTACLES AND SWITCHES: AS SELECTED BY ARCHITECT, UNLESS OTHERWISE INDICATED OR REQUIRED BY NFPA 70.
2. COLOR OF TVSS RECEPTACLES: BLUE.
H. COVER PLATES: PROVIDE CHROME-PLATED, OR TYPE 304, STAINLESS-STEEL COVER PLATES WITH FORMED, BEVELED EDGES DEPENDS ON ROOM TYPE.
I. COVER-PLATE IDENTIFICATION: USE 1/4-INCH- (6-MM-) HIGH LETTERS, UNLESS OTHERWISE INDICATED. ON STAINLESS STEEL OR CHROME-PLATED METAL, STAMP OR ETCH PLATE AND FILL IN LETTERS WITH BLACK ENAMEL. PROVIDE AT THE FOLLOWING LOCATIONS:
1. RECEPTACLES OTHER THAN STANDARD 125-V DUPLEX, GROUNDING TYPE. INDICATE VOLTAGE AND PHASE.
2. SWITCHES AND THERMAL-OVERLOAD SWITCHES. INDICATE EQUIPMENT BEING CONTROLLED.
3. PILOT LIGHTS WHEN LOCATED REMOTELY FROM ASSOCIATED EQUIPMENT OR SWITCH, WHERE FUNCTION IS NOT OBVIOUS. INDICATE EQUIPMENT BEING CONTROLLED.
4. RECEPTACLES, SWITCHES, AND OTHER LOCATIONS INDICATED.

PART 3 - EXECUTION
3.1 EXAMINATION
A. EXAMINE AREAS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES, LOCATION OF REINFORCEMENTS, AND OTHER CONDITIONS AFFECTING PERFORMANCE OF WOOD LABORATORY CASEWORK.
1. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
3.2 INSTALLATION OF CABINETS
A. INSTALL LEVEL, PLUMB, AND TRUE; SHIM AS REQUIRED. USING CONCEALED SHIMS. WHERE LABORATORY CASEWORK ABUTS OTHER FINISHED WORK, APPLY FILLER STRIPS AND SCRIBE FOR ACCURATE FIT. WITH FASTENERS CONCEALED WHERE PRACTICAL.
B. UTILITY-SPACE FRAMING: SECURE TO FLOOR WITH TWO FASTENERS AT EACH FRAME. FASTEN TO PARTITION FRAMING, WOOD BLOCKING, OR METAL REINFORCEMENTS IN PARTITIONS AND TO BASE CABINETS.
C. BASE CABINETS: ADJUST TOP RAILS AND SUBTOPS WITHIN 1/16 INCH (1.5 MM) OF A SINGLE PLANE. FASTEN CABINETS TO UTILITY-SPACE FRAMING, PARTITION FRAMING, WOOD BLOCKING, OR REINFORCEMENTS IN PARTITIONS WITH FASTENERS SPACED NOT MORE THAN 24 INCHES (600 MM) O.C. FASTEN ADJACENT CABINETS TOGETHER WITH JOINTS FLUSH, TIGHT, AND UNIFORM. ALIGN SIMILAR ADJOINING DOORS AND DRAWERS TO A TOLERANCE OF 1/16 INCH (1.5 MM).
1. WHERE BASE CABINETS ARE INSTALLED AWAY FROM WALLS, FASTEN TO FLOOR AT TOE SPACE AT NOT MORE THAN 24 INCHES (600 MM) O.C. AND AT SIDES OF CABINETS WITH NOT LESS THAN 2 FASTENERS PER SIDE.
D. WALL CABINETS: ADJUST FRONTS AND BOTTOMS WITHIN 1/16 INCH (1.5 MM) OF A SINGLE PLANE. FASTEN TO HANGING STRIPS, MASONRY, PARTITION FRAMING, BLOCKING, OR REINFORCEMENTS IN PARTITIONS. FASTEN EACH CABINET THROUGH BACK, NEAR TOP, AT NOT LESS THAN 24 INCHES (600 MM) O.C. ALIGN SIMILAR ADJOINING DOORS TO A TOLERANCE OF 1/16 INCH (1.5 MM).
E. INSTALL HARDWARE UNIFORMLY AND PRECISELY. SET HINGES SNUG AND FLAT IN MORTISES.
F. ADJUST LABORATORY CASEWORK AND HARDWARE SO DOORS AND DRAWERS ALIGN AND OPERATE SMOOTHLY WITHOUT WARP OR BIND AND CONTACT POINTS MEET ACCURATELY. LUBRICATE OPERATING HARDWARE AS RECOMMENDED BY MANUFACTURER.
3.3 INSTALLATION OF COUNTERTOPS
A. ADJUST TOP AND EDGE SURFACES IN ONE TRUE PLANE WITH FLUSH HAIRLINE JOINTS AND WITH INTERNAL SUPPORTS PLACED TO PREVENT DEFLECTION. LOCATE JOINTS ONLY WHERE SHOWN ON SHOP DRAWINGS.
B. FIELD JOINING: WHERE POSSIBLE, MAKE IN THE SAME MANNER AS SHOP JOINTING USING DOWELS, SPLINES, ADHESIVES, AND FASTENERS RECOMMENDED BY MANUFACTURER. PREPARE EDGES FOR FIELD JOINTS IN PLASTIC-LAMINATE COUNTERTOPS.
1. USE CONCEALED CLAMPING DEVICES FOR FIELD JOINTS IN PLASTIC-LAMINATE COUNTERTOPS. LOCATE CLAMPING DEVICES WITHIN 6 INCHES (150 MM) OF FRONT AND BACK EDGES AND AT INTERVALS NOT EXCEEDING 24 INCHES (600 MM). TIGHTEN AC
C. FASTENING:
1. SECURE COUNTERTOPS, EXCEPT FOR EPOXY COUNTERTOPS, TO CABINETS WITH Z-TYPE FASTENERS OR EQUIVALENT, USING TWO OR MORE FASTENERS AT EACH CABINET FRONT, END, AND BACK.
2. SECURE EPOXY COUNTERTOPS TO CABINETS WITH EPOXY CEMENT, APPLIED AT EACH CORNER AND along PERIMETER EDGES AT NOT MORE THAN 48 INCHES (1200 MM) O.C.
3. WHERE NECESSARY TO PENETRATE COUNTERTOPS WITH FASTENERS, COUNTERSINK HEADS APPROXIMATELY 1/8 INCH (3 MM) AND PLUG HOLE FLUSH WITH MATERIAL EQUAL TO COUNTERTOP IN CHEMICAL RESISTANCE, HARDNESS, AND APPEARANCE.
D. PROVIDE REQUIRED HOLES AND CUTOUTS FOR SERVICE FITTINGS.
E. SEAL UNFINISHED EDGES AND CUTOUTS IN PLASTIC-LAMINATE COUNTERTOPS WITH A HEAVY COAT OF POLYURETHANE VARNISH.
F. PROVIDE SCRIBE MOLDINGS OR CLOSURES AT JUNCTIONS OF COUNTERTOP, CURB, AND SPLASH, WITH WALLS AS RECOMMENDED BY MANUFACTURER FOR MATERIALS INVOLVED. MATCH MATERIALS AND FINISH TO ADJACENT LABORATORY CASEWORK. USE CHEMICAL-RESISTANT, PERMANENTLY ELASTIC SEALING COMPOUND WHERE RECOMMENDED BY MANUFACTURER.
E. CAREFULLY DRESS JOINTS SMOOTH, REMOVE SURFACE SCRATCHES, AND CLEAN ENTIRE SURFACE.
3.4 INSTALLATION OF SINKS
A. UNDERSIDE INSTALLATION OF EPOXY SINKS: USE CASEWORK MANUFACTURER'S RECOMMENDED ADJUSTABLE SUPPORT SYSTEM FOR TABLE- AND CABINET-TYPE INSTALLATIONS. SET TOP EDGE OF SINK UNIT IN SINK AND COUNTERTOP MANUFACTURERS' RECOMMENDED CHEMICAL-RESISTANT SEALING COMPOUND OR ADHESIVE AND FIRMLY SECURE TO PRODUCE A TIGHT AND FULLY LEAKPROOF JOINT. ADJUST SINK AND SECURELY SUPPORT TO PREVENT MOVEMENT. REMOVE EXCESS SEALANT WHILE STILL WET AND FINISH JOINT FOR NEAT APPEARANCE.
B. SEMIFLUSH INSTALLATION OF STAINLESS-STEEL SINKS: BEFORE SETTING, APPLY SINK AND COUNTERTOP MANUFACTURERS' RECOMMENDED SEALANT UNDER RIM LIP AND ALONG TOP. REMOVE EXCESS SEALANT WHILE STILL WET AND FINISH JOINT FOR NEAT APPEARANCE.
C. DROP-IN INSTALLATION OF EPOXY SINKS: ROUT GROOVE IN COUNTERTOP TO RECEIVE SINK RIM IF NOT PREPARED IN SHOP. SET SINK IN ADHESIVE AND FILL REMAINDER OF GROOVE WITH SEALANT OR ADHESIVE. USE PROCEDURES AND PRODUCTS RECOMMENDED BY SINK AND COUNTERTOP MANUFACTURERS. REMOVE EXCESS ADHESIVE AND SEALANT WHILE STILL WET AND FINISH JOINT FOR NEAT APPEARANCE.
3.5 INSTALLATION OF ACCESSORIES
A. INSTALL ACCESSORIES ACCORDING TO SHOP DRAWINGS AND MANUFACTURER'S WRITTEN INSTRUCTIONS.
B. SECURELY FASTEN ADJUSTABLE SHELVING SUPPORTS, STAINLESS-STEEL SHELVES, AND PEGBOARDS TO PARTITION FRAMING, WOOD BLOCKING, OR REINFORCEMENTS IN PARTITIONS.
C. INSTALL SHELF STANDARDS PLUMB AND AT HEIGHTS TO ALIGN SHELF BRACKETS FOR LEVEL SHELVES. INSTALL SHELVING LEVEL AND STRAIGHT, CLOSELY FITTED TO OTHER WORK WHERE INDICATED.
3.6 INSTALLATION OF SERVICE FITTINGS
A. COMPLY WITH REQUIREMENTS IN DIVISIONS 15 AND 16 SECTIONS FOR INSTALLING WATER AND LABORATORY GAS SERVICE FITTINGS, PIPING, ELECTRICAL DEVICES, AND WIRING.
B. INSTALL FITTINGS ACCORDING TO SHOP DRAWINGS AND MANUFACTURER'S WRITTEN INSTRUCTIONS. SET BASES AND FLANGES OF SINK- AND COUNTERTOP-MOUNTED FITTINGS IN SEALANT RECOMMENDED BY ON THE MANUFACTURER OF SINK OR COUNTERTOP MATERIAL. SECURELY ANCHOR FITTINGS, PIPING, AND CONDUIT TO LABORATORY CASEWORK, UNLESS OTHERWISE INDICATED.
1.5 CLEANING AND PROTECTING
A. CLEAN FINISHED SURFACES, TOUCH UP AS REQUIRED, AND REMOVE OR REFINISH DAMAGED OR SOILED AREAS TO MATCH ORIGINAL FACTORY FINISH, AS APPROVED BY ARCHITECT.
B. PROTECT COUNTERTOP SURFACES DURING CONSTRUCTION WITH 6-MIL (0.15-MM) PLASTIC OR OTHER SUITABLE WATER-RESISTANT COVERING. TAPE TO UNDERSIDE OF COUNTERTOP AT MINIMUM OF 48 INCHES (1200 MM) O.C.

END OF SECTION 12 32 00

PART 1 - GENERAL
1.1 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
1.2 SUMMARY
A. THIS SECTION INCLUDES THE FOLLOWING:
1. PLASTIC-LAMINATE LABORATORY CASEWORK.
2. UTILITY-SPACE FRAMING.
3. UTILITY-SPACE CLOSURE PANELS BETWEEN BASE CABINETS AND AT EXPOSED ENDS OF UTILITY SPACES.
4. LABORATORY COUNTERTOPS.
5. SHELVES.
6. LABORATORY SINKS.
7. ACCESSORIES.
8. WATER, LABORATORY GAS, AND ELECTRICAL SERVICE FITTINGS.
1.3 DEFINITIONS
A. EXPOSED PORTIONS OF CASEWORK: SURFACES VISIBLE WHEN DOORS AND DRAWERS ARE CLOSED, INCLUDING BOTTOMS OF CABINETS MORE THAN 48 INCHES (1200 MM) ABOVE FLOOR, AND VISIBLE SURFACES IN OPEN CABINETS OR BEHIND GLASS DOORS.
1. ENDS OF CABINETS, INCLUDING those INSTALLED DIRECTLY AGAINST WALLS OR OTHER CABINETS, SHALL BE CONSIDERED EXPOSED.
2. ENDS OF CABINETS INDICATED TO BE INSTALLED DIRECTLY AGAINST AND completely CONCEALED BY WALLS OR OTHER CABINETS AFTER INSTALLATION SHALL NOT BE CONSIDERED EXPOSED.
B. SEMIEXPOSED PORTIONS OF CASEWORK: SURFACES BEHIND OPAQUE DOORS, SUCH AS INTERIORS OF CABINETS, SHELVES, DIVIDERS, INTERIORS AND SIDES OF DRAWERS, AND INTERIOR FACES OF DOORS. TOPS OF CASES 78 INCHES (1980 MM) OR MORE ABOVE FLOOR ARE DEFINED AS SEMIEXPOSED.
C. CONCEALED PORTIONS OF CASEWORK INCLUDE SLEEPERS, WEB FRAMES, DUST PANELS, AND OTHER SURFACES NOT USUALLY VISIBLE AFTER INSTALLATION.
1.4 SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
B. SHOP DRAWINGS: FOR PLASTIC-LAMINATE LABORATORY CASEWORK. INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK.
1. INDICATE LOCATIONS OF BLOCKING AND REINFORCEMENTS REQUIRED FOR INSTALLING LABORATORY CASEWORK.
2. INDICATE LOCATIONS AND TYPES OF SERVICE FITTINGS, TOGETHER WITH ASSOCIATED SERVICE SUPPLY CONNECTION REQUIRED.
3. INCLUDE DETAILS OF UTILITY-SPACE SHOWING SUPPORTS FOR CONDUITS AND PIPING.
4. INCLUDE DETAILS OF EXPOSED CONDUITS, IF REQUIRED, FOR SERVICE FITTINGS.
5. INDICATE LOCATIONS OF AND CLEARANCES FROM ADJACENT WALLS, DOORS, WINDOWS, OTHER BUILDING COMPONENTS, AND OTHER LABORATORY EQUIPMENT.
6. INCLUDE COORDINATED DIMENSIONS FOR LABORATORY EQUIPMENT SPECIFIED IN OTHER SECTIONS.
C. SAMPLES FOR INITIAL SELECTION: FOR PLASTIC-LAMINATE CABINETS, PLASTIC-LAMINATE COUNTERTOPS, EPOXY SINKS, EPOXY COUNTERTOPS AND TRIGLYCERIDE-MODIFIED CONCRETE COUNTERTOPS.
D. SAMPLES FOR VERIFICATION: FOR EACH TYPE OF FINISH, INCLUDING COUNTERTOP MATERIAL, IN MANUFACTURER'S STANDARD SIZES.
E. SAMPLES FOR VERIFICATION: UNLESS OTHERWISE DIRECTED, APPROVED SAMPLE UNITS IN ALL MANUFACTURED CONFORMANCE TO THE SUBSTANTIAL COMPLETION MAY BECOME PART OF THE COMPLETED WORK. NOTIFY ARCHITECT OF THEIR EXACT LOCATIONS. IF NOT INCORPORATED INTO THE WORK, RETAIN ACCEPTABLE SAMPLE UNITS AT PROJECT SITE AND REMOVE WHEN DIRECTED BY ARCHITECT.
1. 6-INCH- (150-MM-) SQUARE SAMPLES FOR EACH TYPE OF COUNTERTOP MATERIAL.
2. ONE FULL-SIZE, FINISHED BASE CABINET COMPLETE WITH HARDWARE, DOORS, AND DRAWERS, BUT WITHOUT COUNTERTOP.
3. ONE FULL-SIZE, FINISHED WALL CABINET COMPLETE WITH HARDWARE, DOORS, AND ADJUSTABLE SHELVES.
4. ONE SAMPLE EACH OF HINGED AND SLIDING DOORS.
5. ONE OF EACH SERVICE FITTING SPECIFIED, COMPLETE WITH ACCESSORIES AND SPECIFIED FINISH.
6. ONE OF EACH TYPE OF SINK AND ACCESSORY ITEM SPECIFIED.
1.5 QUALITY ASSURANCE
A. TESTING AGENCY QUALIFICATIONS: AN INDEPENDENT AGENCY QUALIFIED FOR TESTING INDICATED, AS DOCUMENTED ACCORDING TO ASTM E 548.
B. SOURCE LIMITATIONS: OBTAIN LABORATORY CASEWORK, INCLUDING COUNTERTOPS, SINKS, SERVICE FITTINGS, AND ACCESSORIES, THROUGH ONE SOURCE FROM A SINGLE MANUFACTURER.
1. OBTAIN THROUGH SAME SOURCE FROM SAME MANUFACTURER AS FUME HOODS SPECIFIED IN DIVISION 11 SECTION "LABORATORY FUME HOODS."
C. PRODUCT DESIGNATIONS: DRAWINGS INDICATE SIZES AND CONFIGURATIONS OF LABORATORY CASEWORK BY REFERENCING DESIGNATED MANUFACTURER'S CATALOG NUMBERS. OTHER MANUFACTURERS' LABORATORY CASEWORK OF SIMILAR DESIGN, SIMILAR DOOR AND DRAWER CONFIGURATIONS, AND COMPLYING WITH THE SPECIFICATIONS MAY BE CONSIDERED. REFER TO DIVISION 1 SECTION "PRODUCT REQUIREMENTS."
D. PRODUCT STANDARD: COMPLY WITH SEFA 8, "LABORATORY FURNITURE--CASEWORK, SHELVING AND TABLES--RECOMMENDED PRACTICES."
E. FLAMMABLE LIQUID STORAGE: WHERE CABINETS ARE INDICATED FOR SOLVENT OR FLAMMABLE LIQUID STORAGE, PROVIDE UNITS THAT ARE LISTED AND LABELED AS COMPLYING WITH REQUIREMENTS OF NFPA 30 BY UL OR ANOTHER TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
1. CABINETS THAT ARE NOT LISTED AND LABELED BUT ARE CONSTRUCTED ACCORDING TO NFPA 30, PARAGRAPH 4-3.3(C) MAY BE USED IF ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
F. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED USE.
1.6 COORDINATION
A. COORDINATE LAYOUT AND INSTALLATION OF FRAMING AND REINFORCEMENTS FOR SUPPORT OF PLASTIC-LAMINATE LABORATORY CASEWORK.
B. COORDINATE INSTALLATION OF PLASTIC-LAMINATE LABORATORY CASEWORK WITH INSTALLATION OF FUME HOODS AND OTHER LABORATORY EQUIPMENT.

PART 2 - PRODUCTS
2.1 MANUFACTURERS
A. AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
B. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
1. PLASTIC-LAMINATE-FACED CASEWORK:
a. BMC INDUSTRIAL EDUCATIONAL SERVICES, INC.
b. CASE IS CORNER INC.
c. COLLEGEDALE CASEWORK, L.L.C.
d. FISHER HAMILTON L.L.C.
e. LSI CORPORATION OF AMERICA, INC.
f. MOHON INTERNATIONAL, INC.
g. NORLAB, INC.
h. SHELDON LABORATORY SYSTEMS.
i. TERRILL MANUFACTURING COMPANY.
j. TMI SYSTEMS DESIGN CORP.
k. APPROVED BRAND OR EQUIVALENT TO THE PROJECT MANUAL.
2. CHEMICAL-RESISTANT PLASTIC LAMINATES:
a. ARBORITE-DIVISION OF PREMARK CANADA INC.
b. FORMICA CORPORATION.
c. INTERNATIONAL PAPER; DECORATIVE PRODUCTS DIVISION.
d. PANOLAM INDUSTRIES INTERNATIONAL INCORPORATED; PIONITE DECORATIVE SURFACES.
e. WILSONART INTERNATIONAL.
f. APPROVED BRAND OR EQUIVALENT TO THE PROJECT MANUAL.
3. EPOXY COUNTERTOPS, SINKS, AND TROUGHS:
a. DURCON COMPANY, INC. (THE).
b. EPOXYN PRODUCTS.
c. LABORATORY TOPS, INC.
d. PRIME INDUSTRIES, INC.
e. APPROVED BRAND OR EQUIVALENT TO THE PROJECT MANUAL.
4. PHENOLIC-COMPOSITE COUNTERTOPS:
a. ARBORITE; DIVISION OF PREMARK CANADA INC.
b. H.T.I., INCORPORATED.
c. NULAB FURNITURE CORPORATION.
d. PANOLAM INDUSTRIES INTERNATIONAL INCORPORATED; PIONITE DECORATIVE SURFACES.
e. TRESPA NORTH AMERICA, LTD.
f. APPROVED BRAND OR EQUIVALENT TO THE PROJECT MANUAL.
2.2 CABINET MATERIALS
A. GENERAL:
1. CERTIFIED WOOD MATERIALS: PROVIDE CABINETS MADE FROM WOOD AND WOOD-BASED MATERIALS THAT ARE PRODUCED FROM WOOD OBTAINED FROM FORESTS CERTIFIED BY AN FSC-ACCREDITED CERTIFICATION BODY TO COMPLY WITH FSC 1.2, "PRINCIPLES AND CRITERIA."
2. ADHESIVES: DO NOT USE ADHESIVES THAT CONTAIN UREA FORMALDEHYDE.
3. HARDWOOD PLYWOOD: HPVA HP-1, EITHER VENEER CORE OR PARTICLE CORE, UNLESS OTHERWISE INDICATED.
4. PARTICLEBOARD: ANSI A208.1, GRADE M-2.
5. MEDIUM-DENSITY FIBERBOARD: ANSI A208.2, GRADE MD.
6. PLASTIC LAMINATE: HIGH-PRESSURE DECORATIVE LAMINATE COMPLYING WITH NEMA LD 3.
7. EDGEBANDING FOR PLASTIC LAMINATE:
a. COLORS: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.
B. EXPOSED MATERIALS:
1. PLASTIC LAMINATE: TYPE VGS.
a. COLORS: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.
C. SEMIEXPOSED MATERIALS:
1. PLASTIC LAMINATE: TYPE [VGS] [CLS].
a. COLORS: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.
2. MELAMINE-FACED PARTICLEBOARD: PARTICLEBOARD WITH DECORATIVE SURFACE OF THERMALLY FUSED, MELAMINE-IMPREGNATED WEB AND COMPLYING WITH LMA SAT-1.
a. PROVIDE MELAMINE-FACED PARTICLEBOARD FOR SEMIEXPOSED SURFACES, UNLESS OTHERWISE INDICATED.
b. COLORS: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.
3. METAL FOR STEEL DRAWER PANS: COLD-ROLLED, CARBON-STEEL SHEET COMPLYING WITH ASTM A 1008/A 1008M; MATTE FINISH; SUITABLE FOR EXPOSED APPLICATIONS.
D. CONCEALED MATERIALS:
1. SOLID WOOD: ANY HARDWOOD OR SOFTWOOD SPECIES, WITH NO DEFECTS AFFECTING STRENGTH OR UTILITY.
2. PLYWOOD: HARDWOOD PLYWOOD.
3. PLASTIC LAMINATE: TYPE BKL.
4. PARTICLEBOARD.
5. MEDIUM-DENSITY FIBERBOARD.
6. HARDBOARD: AHA A135.4, CLASS 1 TEMPERED.
E. ACID STORAGE-CABINET LINING: 1/4-INCH- (6-MM-) THICK, GLASS-FIBER CEMENT BOARD COMPLYING WITH ASTM C 1186.
F. GLASS FOR GLAZED DOORS: CLEAR FLOAT GLASS COMPLYING WITH ASTM C 1036, TYPE I, CLASS 1, QUALITY Q1; NOT LESS THAN 3/16" THICK.
G. GLASS FOR GLAZED DOORS: CLEAR TEMPERED GLASS COMPLYING WITH ASTM C 1048, KIND FT, CONDITION A, TYPE I, CLASS 1, QUALITY Q3; NOT LESS THAN 5.5 MM THICK.
H. GLASS FOR GLAZED DOORS: CLEAR LAMINATED GLASS COMPLYING WITH ASTM C 1172, KIND LT, CONDITION A, TYPE I, CLASS I, QUALITY Q3; WITH 2 LITES NOT LESS THAN 3.0 MM THICK AND WITH CLEAR, POLYVINYL BUTYRAL INTERLAYER.
2.3 CABINET DESIGN
A. REVEAL OVERLAY.
B. FLUSH OVERLAY.
2.4 CABINET FABRICATION
A. CONSTRUCTION: PROVIDE PLASTIC-LAMINATE-FACED LABORATORY CASEWORK OF THE FOLLOWING MINIMUM CONSTRUCTION:
1. BOTTOMS AND ENDS OF CABINETS, SHELVES, AND TOPS OF WALL CABINETS AND TALL CABINETS: 1/2-INCH (19-MM-) THICK MDF, PLASTIC-LAMINATE FACED.
2. BACKS OF CABINETS: 1/2-INCH (12.7-MM-) THICK PARTICLEBOARD, PLASTIC-LAMINATE FACED.
3. DRAWER FRONTS: 3/4-INCH (19-MM-) THICK SOLID WOOD.
4. DRAWER SIDES AND BACKS: 1/2-INCH- (12.7-MM-) THICK SOLID WOOD , WITH GLUED DOVETAIL.
5. DRAWER BOTTOMS: 1/4-INCH- (6.4-MM-) THICK PLYWOOD GLUED AND DADOED INTO FRONT, BACK, AND SIDES OF DRAWERS. USE 1/2-INCH- (12.7- MM-) THICK MATERIAL FOR DRAWERS MORE THAN 24 INCHES (600 MM) IN WIDTH.
6. DRAWER BODIES: STEEL DRAWER PANS FORMED FROM 0.0359-INCH- (0.9-MM-) THICK METAL, METALLIC PHOSPHATE TREATED, AND FINISHED WITH MANUFACTURER'S STANDARD 2-COAT, BAKED-ENAMEL FINISH CONSISTING OF PRIME COAT AND THERMOSETTING TOPCOAT WITH A MINIMUM DRY FILM THICKNESS OF 1 MIL (0.025 MM) FOR TOPCOAT AND 2 MILS (0.05 MM) FOR SYSTEM.
7. DOORS 48 INCHES (1200 MM) OR LESS IN HEIGHT: 3/4 INCH (19 MM) THICK, WITH PARTICLEBOARD OR MEDIUM-DENSITY FIBERBOARD CORES. SOLID WOOD STILES AND RAILS, AND PLASTIC-LAMINATE FACED ON BOTH SIDES.
8. DOORS MORE THAN 48 INCHES (1200 MM) IN HEIGHT: 1-1/16 INCHES (27 MM) THICK, WITH HONEYCOMB CORES, SOLID HARDWOOD STILES AND RAILS, AND PLASTIC-LAMINATE FACED ON BOTH SIDES.
9. DOORS MORE THAN 48 INCHES (1200 MM) IN HEIGHT: 1-1/8 INCHES (29 MM) THICK, WITH PARTICLEBOARD CORES, PLASTIC-LAMINATE FACED ON BOTH SIDES.
10. STILES AND RAILS OF GLAZED DOORS: 3/4-INCH- (19-MM-) THICK PARTICLEBOARD, PLASTIC-LAMINATE FACED ON BOTH SIDES.
B. LEG SHOES: VINYL OR RUBBER, BLACK, OPEN-BOTTOM TYPE.
C. UTILITY-SPACE FRAMING: LABORATORY CASEWORK MANUFACTURER'S STANDARD STEEL FRAMING UNITS CONSISTING OF 2 STEEL SLOTTED CHANNELS COMPLYING WITH MFMA-2, NOT LESS THAN 1-5/8 INCHES (41 MM) SQUARE BY 0.0966 INCH (2.5 MM) THICK, AND CONNECTED TOGETHER AT TOP AND BOTTOM BY U-SHAPED BRACKETS MADE FROM 1-1/4-BY-1/4-INCH (32-BY-6-MM) STEEL FLAT BARS. FRAMING UNITS MAY BE MADE BY WELDING SPECIFIED CHANNEL MATERIAL INTO RECTANGULAR FRAMES INSTEAD OF USING U-SHAPED BRACKETS.
D. BASE MOLDING: ASTM F 1861, TYPE TS, TP, TV, 4 INCHES (100 MM) IN HEIGHT. PROVIDE ON FRONTS AND EXPOSED SIDES OF FLOOR-MOUNTED CASEWORK.
E. FILLER STRIPS AND UTILITY-SPACE CLOSURE PANELS: PROVIDE AS NEEDED TO CLOSE SPACES BETWEEN CABINETS AND WALLS, CEILINGS, AND INDICATED EQUIPMENT. FABRICATE FROM SAME MATERIAL AND WITH SAME FINISH AS CABINET FRONTS.
2.5 CABINET HARDWARE
A. GENERAL: PROVIDE LABORATORY CASEWORK MANUFACTURER'S STANDARD SATIN-FINISH, COMMERCIAL-QUALITY, HEAVY-DUTY HARDWARE COMPLYING WITH REQUIREMENTS INDICATED FOR EACH TYPE.
B. HINGES: STAINLESS-STEEL, 5-KNUCKLE HINGES COMPLYING WITH BHMA A156.9, GRADE 1, WITH ANTIFRICTION BEARINGS AND ROUNDED TIPS. PROVIDE 2 FOR DOORS 48 INCHES (1200 MM) OR LESS IN HEIGHT; 3 FOR DOORS MORE THAN 48 INCHES (1200 MM) IN HEIGHT.
C. HINGES: FRAMELESS CONCEALED HINGES (EUROPEAN TYPE) COMPLYING WITH BHMA A156.9, TYPE B01602, SELF-CLOSING, SOFT-CLOSING.
D. PULLS: SOLID ALUMINUM, STAINLESS STEEL, OR CHROME-PLATED BRASS; FASTENED FROM BACK WITH TWO S



OVERALL FIRST FLOOR DEMOLITION PLAN

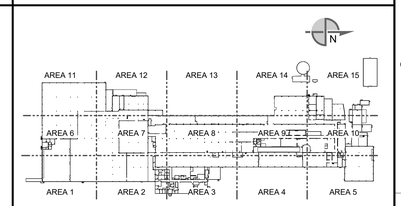
SCALE: 1/32" = 1'-0"

0' 10' 20' 30' 40' 60' 80'
1" = 40'-0"

TRUE NORTH PLAN NORTH

DEMOLITION KEY

KEYPLAN



CONTAINMENT NOTES

ALL CONTAINMENT WALLS SHALL BE METAL STUD FRAMED (24" O.C.) WITH PLASTIC ON EACH SIDE WITH 4'x8'x5/8" OSB SHEATHING FASTENED TO BOTTOM 8'-0" OF WALL FOR PROTECTION. OSB SHEATHING TO BE WRAPPED WITH POLY. DOORS SHALL BE ZIPPERED OPENINGS. VESTIBULE DOOR LEADING TO PROCESS AREA TO BE CONSTRUCTED IN A WAY TO ALLOW FOR DOOR TO BE LOCKED AT THE END OF EACH SHIFT.

WALL SHEETING:

ALL SCRIM REINFORCED POLYTHEYLENE SHEETING SHALL BE RATED 'FIRE RETARDANT' FOR USE AND AS MANUFACTURED BY:

RAVEN INDUSTRIES-FLEXIBLE FILMS DEPARTMENT
P.O. BOX 5107
SIOUX FALLS, SOUTH DAKOTA 57117
(605) 335-0174 TEL.
800-635-3456

PRODUCT NO. 'DURA-SKRIM 2FR'
COLOR: WHITE

HEAVY DUTY WALL ZIPPERS AS MANUFACTURED BY:

ZipWall, LLC
37 BROADWAY
ARLINGTON, MA 02474
Phone: (800) 718-2255
Fax: (781) 648-8806

SEALANT:

EACH SIDE OF BOTTOMS OF ALL CONTAINMENT WALLS SHALL BE CONTINUOUSLY SEALED WITH:

"DAP" 100% SILICONE SEALANT -SEALANT SHALL MEET ASTM C920,
CLASS 25, TYPE S, GRADE NS, AND HAVE A 50 YEAR DURABILITY
GUARANTEE. SEALANT SHALL MEET FDA REGULATION NO. 21 CFR 177.2600 WHEN FULLY CURED.

DEMOLITION LEGEND

TYPICAL EXTERIOR DOORS @ CONTAINMENT
POLYTHEYLENE SHEETING COVERED PLYWOOD WITH HINGES LATCH AND CODABLE LOCKS; 6'-0" x 8'-0" UNLESS NOTED OTHERWISE ON PLAN.

SLIDING/ POCKET DOOR @ CONTAINMENT
POLYTHEYLENE SHEETING COVERED PLYWOOD WITH LATCH AND CODABLE LOCKS; SIZE AND TYPE NOTED ON PLAN.

TYPICAL INTERIOR DOORS @ CONTAINMENT
POLYTHEYLENE SHEETING WITH ZIPPERS; 6'-0" x 8'-0" UNLESS NOTED OTHERWISE ON PLAN.

SANITIZING FOOT BATH MAT 24" X32"
WEARWELL TALL WALL

TEMPORARY CONTAINMENT WALLS
AS DESCRIBED IN CONTAINMENT NOTES. REFER TO DETAIL:

TEMPORARY PLASTIC CONTAINMENT
AS DESCRIBED IN CONTAINMENT NOTES. REFER TO DETAIL:

TEMPORARY CONTAINMENT PROTECTION OVERHEAD; REFER TO APPLICABLE NOTES

CAMPBELL'S TEMPORARY TRAILER FOR TRAINING

ITEMS TO BE DEMOLISHED AND REMOVED

CONCRETE SLAB TO BE DEMOLISHED AND REMOVED

FURNITURE TO BE REMOVED AND SAVED FOR RELOCATION

EXISTING BUILDING TO REMAIN

AREAS REQUIRING FLOOR SLAB REPAIR AFTER RACKING REMOVAL. REFER TO PM DRAWINGS FOR MORE INFORMATION ON RACKING DEMOLITION.

DEMOLITION NOTES

1. THE INTENT OF TEMPORARY ENCLOSURE IS TO MAINTAIN NEGATIVE AIR PRESSURE RELATIVE TO PRODUCTION SPACE. SEAL ALL EDGES AND SEAMS AIR TIGHT AS REQUIRED TO ACCOMMODATE THE PRESSURE DIFFERENTIAL.
2. DEMOLITION CONTRACTOR TO VISUALLY INSPECT ALL EXISTING CONDITIONS AND SHALL COORDINATE ANY OUTSTANDING DEMOLITION ISSUES WITH THE CONSTRUCTION MANAGER PRIOR TO COMMENCING WORK.
3. CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT OR REPAIR OF ALL BASE BUILDING FINISHES THAT ARE DAMAGED AS A RESULT OF DEMOLITION. CONTRACTOR TO INCLUDE IN THE PRICING A CONTINGENCY FOR ALL BASE BUILDING REPAIRS THAT MAY OCCUR.
4. PROVIDE TEMPORARY ENCLOSURES/ CONTAINMENT PROTECTION TO WALLS, ROOFS, DOORS, ETC. WHERE DEMOLITION HAS RESULTED IN EXPOSED OPENINGS WITHIN THE OPERATIONAL BUILDING.
5. COORDINATE OPENING DIMENSIONS WITH THE CONSTRUCTION MANAGER, DOOR SCHEDULE & DOOR MANUFACTURER PRIOR TO COMMENCING DEMOLITION WORK.
6. EXISTING BUILDING TO REMAIN OPERATIONAL THROUGHOUT DEMOLITION AND CONSTRUCTION. CONTRACTOR SHALL NOT IMPACT DAILY BUILDING OPERATIONS AND SHALL COORDINATE SCHEDULE WITH THE CONSTRUCTION MANAGER AND OWNER SO AS TO MAINTAIN UNINTERRUPTED BUILDING OPERATIONS.
7. DEMOLITION CONTRACTOR TO PROVIDE A DUMPSTER FOR DEBRIS REMOVAL. COORDINATE LOCATION AND CONTAINER TYPE WITH THE CONSTRUCTION MANAGER.
8. THERE IS NO PRESENCE OF ASBESTOS AND/OR LEAD BASED PAINT IN THE EXISTING BUILDINGS AREA OF WORK TO THE BEST KNOWLEDGE OF THE OWNER AND ARCHITECT. IF A MATERIAL IS FOUND WHICH MAY BE SUSPECTED OF CONTAINING HAZARDOUS MATERIAL WORK SHALL STOP AND THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER IMMEDIATELY. IF IT IS DETERMINED THAT THE MATERIALS ARE HAZARDOUS, THE MATERIAL SHALL BE FULLY ABATED ACCORDING TO APPLICABLE LAWS.
9. **REFER TO SHEET AD1.900 FOR PHOTO REFERENCES.**

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RIC-806832-01-A-0 FOR CORRESPONDING CSC SHEET NUMBER

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	05/ /2023	MHW		Changes
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AA	04/07/2023	SN	JHP	PROGRESS SET
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U	02/24/2023	MHW	JHP	BUILDING PERMIT
Q	02/13/2023	AE	JHP	IMP AND DEMOLITION BID

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DG PROJ: 7021 DG DWG: AD1.100

DRAWN: MHW DATE: 06/06/19
APPROVED: 05/03/2023
BUILDING: 4013
PROJECT NO.: 11025607 PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT
ARCHITECTURE
OVERALL FIRST FLOOR DEMOLITION PLAN

DRAWING NO.: RIC-806840-01-A-1 REV.: DD
DRAWING SIZE: ANSI E (44" x 34") SHEET 6 OF 193

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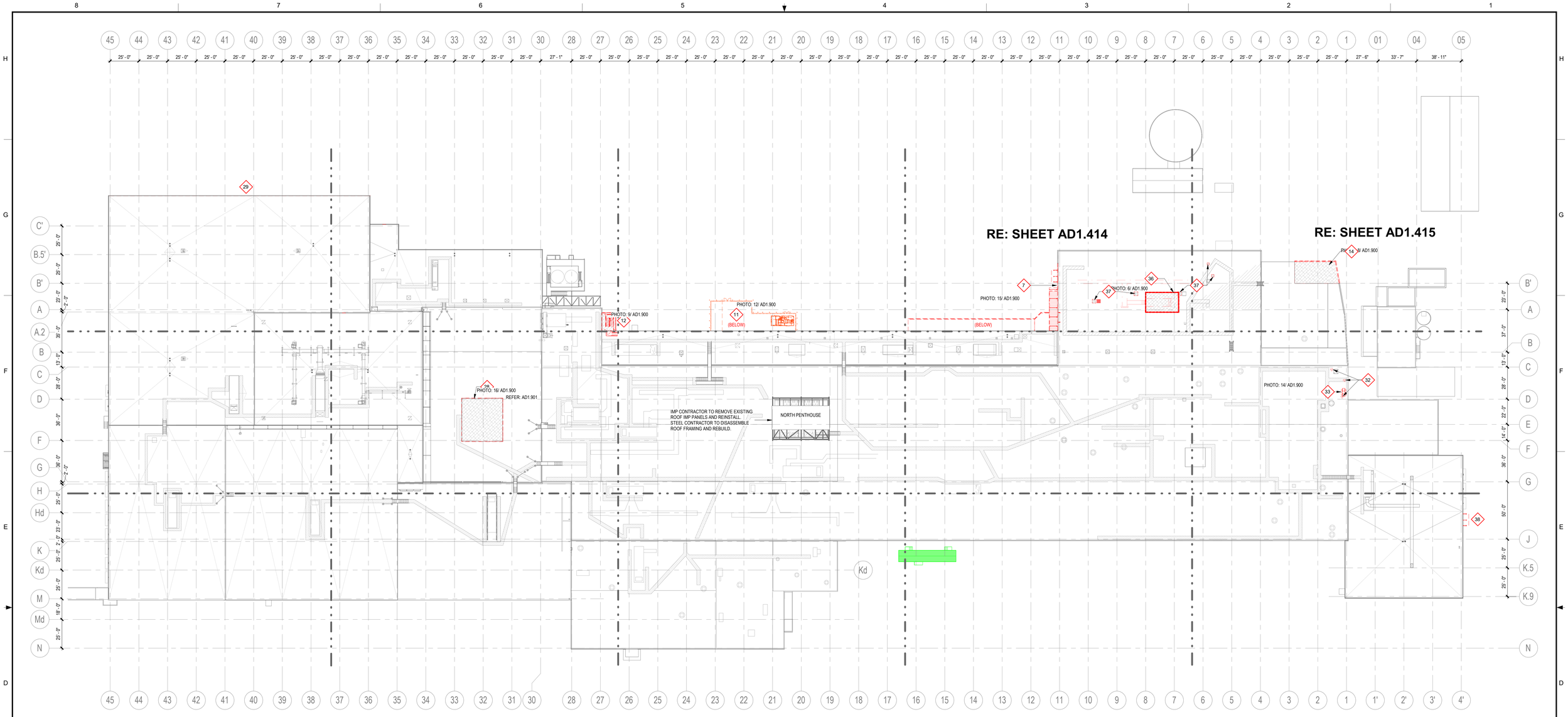
Autodesk Docs://7021 Project Pepperidge Farm Finn/7021_A_R22.rvt



OVERALL ROOF DEMOLITION PLAN

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

0' 4' 8' 16' 32' 48' 64'
1/32" = 1'-0"

TRUE NORTH

PLAN NORTH

DEMOLITION KEY

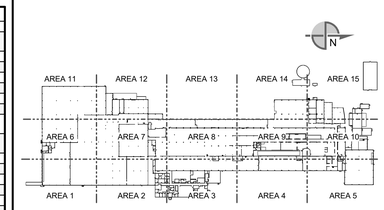
MARK	DEMOLITION DESCRIPTION
1	REMOVE METAL STAIRS TO ALLOW FOR NEW CONSTRUCTION. SAVE FOR RE-USE.
2	SAWCUT OPENING IN EXISTING WALL (AND CURB WHERE OCCURS) FOR NEW 3'-0" x 7'-0" EGRESS DOOR. REMOVE ALL OBSTRUCTIONS (WHERE OCCURS) IN CLEAR FLOOR SPACE REQUIRED AT DOOR - BOTH SIDES.
3	SAWCUT OPENING IN EXISTING WALL (AND CURB WHERE OCCURS) FOR INSTALLATION OF NEW HIGH SPEED ROLL-UP DOOR. REFER TO FLOOR PLANS AND DOOR SCHEDULE.
4	REMOVE EXISTING WALL (INCLUDING DOORS, CURBS, ETC.) UP TO EXISTING STEEL BEAM (@ ± 21'-0" AFF). PROTECT STEEL TO REMAIN (COLUMNS, BRACING, ETC.). ADD SUPPORTS FOR PORTION OF WALL TO REMAIN ABOVE TO ROOF DECK. REPAIR FLOOR AND FINISHES AS NEEDED AFTER REMOVAL.
5	CROSS-BRACING TO BE RELOCATED PER STRUCTURAL DRAWINGS AND SPECIFICATIONS. REFER TO STRUCTURAL DRAWINGS FOR MORE INFORMATION.
6	REMOVE EXISTING DOOR AND SAVE FOR RE-USE AS REQUESTED BY OWNER (VERIFY WITH ARCHITECT). REMOVE STEEL CHANNELS, GUARDS AND BOLLARDS WHERE APPLICABLE.
7	REMOVE ENTIRE EXISTING WALL UP TO ROOF STRUCTURE AS SHOWN (INCLUDING DOORS, FRAMED OPENINGS, WINDOWS, CURBS, ROOF CANOPIES & ETC. WHERE APPLICABLE). REPAIR FLOOR AND FINISHES AS NEEDED AFTER REMOVAL. REFER TO OTHER DISCIPLINE DRAWINGS FOR RELOCATION OF FIXTURES, PIPING, EQUIPMENT, ETC. (WHERE OCCURS).
8	REMOVE EXISTING STAIR AND SAVE FOR REUSE. (TO BE ALTERED FOR USE AT NEW ELECTRICAL PLATFORM.) REFER TO FLOOR PLANS FOR MORE INFORMATION.
9	SAWCUT AND REMOVE EXISTING SLAB AS NEEDED FOR NEW PLUMBING INSTALLATION. LAYOUT TO BE MARKED BY PLUMBER AND CONFIRMED WITH CONSTRUCTION MANAGER. REFER TO PLUMBING DRAWINGS FOR MORE INFORMATION.

MARK	DEMOLITION DESCRIPTION
10	DEMOLISH AND REMOVE ENTIRE CONCRETE RAMP (INCLUDING CURBS, RAILING AND LANDING). REFER TO CIVIL DRAWINGS FOR MORE INFORMATION.
11	DEMOLISH AND REMOVE EXISTING CONCRETE EQUIPMENT PADS AS INDICATED ON CIVIL AND PROCESS DRAWINGS.
12	REMOVE ENTIRE STAIR TOWER INCLUDING WALLS, SLAB, STEEL, AND ETC. STAIRS TO BE REMOVED AND REINSTALLED IN NEW LOCATION. REFER TO FLOOR PLANS FOR MORE INFORMATION.
13	SAWCUT AND REMOVE CURB AS NEEDED FOR NEW WALL INSTALLATION. REPAIR WALLS AND SLAB (TO REMAIN) AS NEEDED.
14	SAWCUT AND REMOVE LOW PORTION OF REFRIGERATED STORAGE BUILDING AS SHOWN (INCLUDING WALLS, STEEL FRAMING, ROOF, ETC.) REFER TO PROCESS DRAWINGS FOR RELOCATION OF RACKING DURING CONSTRUCTION.
15	DEMOLISH DOCK: REMOVE DOCK EQUIPMENT, RAILS, BOLLARDS, DOORS, ROOF CANOPY, ETC. REPAIR/ REPLACE DAMAGED SLAB (MATCH EXISTING MATERIALS). DOCK PIT TO BE FILLED IN WITH CONCRETE SLAB. REFER TO FLOOR PLAN FOR MORE INFORMATION.
16	DEMOLISH (3) DOCKS: REMOVE DOCK EQUIPMENT, STANCHIONS, BOLLARDS AND DOORS. REPAIR/ REPLACE DAMAGED SLAB (MATCH EXISTING MATERIALS). DOCK PIT TO BE FILLED IN WITH CONCRETE SLAB. REFER TO FLOOR PLANS AND STRUCTURAL DRAWINGS FOR MORE INFORMATION.
17	SAWCUT AND REMOVE EXISTING SLAB AS SHOWN. REMOVE DRAINS, CLEANOUTS, ETC. AND CAP OR REROUTE PER PLUMBING DRAWINGS. PROTECT DRAINS, SLAB, STEEL AND WALLS TO REMAIN. REFER TO PLUMBING AND STRUCTURAL DRAWINGS FOR MORE INFORMATION.
18	SAWCUT OPENING IN EXISTING WALL FOR NEW 10'-0" x 10'-0" FRAMED OPENING (SEE FLOOR PLANS).
19	SAWCUT EXISTING CMU WALL FOR 10'-8" X 10'-0" CONSTRUCTION ACCESS OPENING. PROVIDE TEMPORARY DOOR WITH LOCK.

MARK	DEMOLITION DESCRIPTION
20	SAWCUT EXISTING WALL TO INCREASE OPENING SIZE TO 11'-0" WIDE x 10'-0" HIGH; ALTER SS FRAME TO FIT NEW OPENING; REMOVE BOLLARD GUARD AND REINSTALL AS SHOWN ON FLOOR PLANS. REFER TO ELECTRICAL DRAWINGS FOR RELOCATION OF CONDUIT.
21	SAWCUT AND REMOVE EXISTING SLAB AS SHOWN FOR NEW STRUCTURAL FOOTING INSTALLATION. REFER TO STRUCTURAL DRAWINGS FOR MORE INFORMATION.
22	REMOVE EXISTING RAILING AS NEEDED TO ALLOW FOR NEW BUILDING CONSTRUCTION.
23	ENTIRE EXISTING INGREDIENT STORAGE OFFICE STRUCTURE TO BE REMOVED, INCLUDING WALLS, DOORS, FIXTURES, CASEWORK, AND ETC. (CASEWORK AND FURNISHINGS TO BE RELOCATED TO NEW OFFICE STRUCTURE.) PROTECT EXISTING BUILDING STEEL AND SLAB TO REMAIN. REFER TO PLUMBING AND MECHANICAL DEMOLITION FOR REMOVAL OF EQUIPMENT AND FIXTURES.
24	SAWCUT EXISTING WALL AND CURB FOR NEW 19'-4 1/2" wide x 14'-0" high SS FRAMED OPENING. REFER TO OTHER DISCIPLINE DEMOLITION DRAWINGS FOR RELOCATION OF STRUCTURE, EQUIPMENT, PIPING, ETC. (WHERE OCCURS). REPAIR EXISTING BUILDING TO REMAIN AS NEEDED.
25	SAWCUT EXISTING CMU WALL TO WIDEN EXISTING OPENING. (MAKE CUT AT JOINT CLOSEST TO WEST END OF WALL.) ALTER EXISTING METAL FRAME TO FIT NEW OPENING.
26	ENTIRE EXISTING TRAINING AREA AND OFFICE STRUCTURE TO BE REMOVED, INCLUDING WALLS, DOORS,EQUIPMENT, FURNISHINGS, AND ETC. (FURNISHINGS AND EQUIPMENT TO BE RELOCATED TO NEW L11 OFFICE AREA.) PROTECT EXISTING BUILDING STEEL AND SLAB TO REMAIN. REFER TO ELECTRICAL AND MECHANICAL DEMOLITION FOR REMOVAL/RELOCATION OF EQUIPMENT AND FIXTURES.
27	REMOVE PENTHOUSE ABOVE. REFER TO ROOF PLANS FOR MORE INFORMATION.
28	DEMOLISH AND REMOVE SOUTHFIELD FREEZER PENTHOUSE; REPAIR/ REPLACE ROOF AT OPENINGS; MATCH EXISTING MATERIALS AND FINISHES.

MARK	DEMOLITION DESCRIPTION
29	REMOVE EXISTING PARAPET FLASHING. WALL TO BE EXTENDED WITH STACKED JOINT FLASHING AND NEW INSULATED METAL PANELS.
30	TEMPORARY CONTAINMENT WALL. TUFF WRAP CONTAINMENT SYSTEM OR TEMPORARY HARD WALL PER 1/A9.000
31	PROVIDE CONSTRUCTION ACCESS SLIDING DOOR (TUFFWRAP) OR CONSTRUCTION ACCESS SWING DOOR (AD9.000)
32	PENETRATION REPAIR UP TO 8"
33	PENETRATION REPAIR LARGER THAN 8"
34	SAWCUT OPENING IN EXISTING WALL FOR NEW 3'-0" x 7'-0" FRAMED OPENING (SEE FLOOR PLANS).
35	TEMPORARY CONTAINMENT WALL BY ABATEMENT CONTRACTOR OR BY OTHERS.
36	DEMOLISH AND REMOVE DUNNAGE UNDER MECHANICAL EQUIPMENT. REFER TO MECHANICAL DRAWINGS FOR MORE INFORMATION.
37	CUT OPENING IN ROOF AND SAWCUT THROUGH EXISTING CONCRETE TEE TO ALLOW FOR NEW MECHANICAL DUCTING INSTALLATION. REFER TO MECHANICAL DRAWINGS FOR MORE INFORMATION.
38	REMOVE ROOF CANOPY OVER EXISTING DOOR. (DOOR TO REMAIN.)
39	REMOVE FENCING / GUARDRAIL. PROTECT EXISTING BUILDING TO REMAIN. REPAIR ANY DAMAGE TO FLOOR.
40	DEMOLISH EXISTING AIR CURTAIN AND ASSOCIATED FRAME, HOUSING AND HARDWARE.
41	DEMOLISH EXISTING FREEZER DOOR AND ASSOCIATED FRAME, SUBFRAME, AND HARDWARE.
42	REMOVE EXISTING WINDOW WITH ASSOCIATED FRAME AND HARDWARE.
43	SAWCUT AND REMOVE EXISTING DAIRY BRICK FLOORING AND SLAB AS NEEDED FOR NEW PLUMBING INSTALLATION. LAYOUT TO BE MARKED BY PLUMBER AND CONFIRMED WITH CONSTRUCTION MANAGER. REFER TO PLUMBING DRAWINGS FOR MORE INFORMATION.

KEYPLAN



CONTAINMENT NOTES

ALL CONTAINMENT WALLS SHALL BE METAL STUD FRAMED (24" O.C.) WITH PLASTIC ON EACH SIDE WITH 4'x8'x5/8" OSB SHEATHING FASTENED TO BOTTOM 8'-0" OF WALL FOR PROTECTION. OSB SHEATHING TO BE WRAPPED WITH POLY. DOORS SHALL BE ZIPPERED OPENINGS. VESTIBULE DOOR LEADING TO PROCESS AREA TO BE CONSTRUCTED IN A WAY TO ALLOW FOR DOOR TO BE LOCKED AT THE END OF EACH SHIFT.

WALL SHEETING:

ALL SCRIM REINFORCED POLYTHEYLENE SHEETING SHALL BE RATED 'FIRE RETARDANT' FOR USE AND AS MANUFACTURED BY:

RAVEN INDUSTRIES-FLEXIBLE FILMS DEPARTMENT
P.O. BOX 5107
SIOUX FALLS, SOUTH DAKOTA 57117
(605) 335-0174 TEL.
800-635-3456

PRODUCT NO. 'DURA-SKRIM 2FR'
COLOR: WHITE

HEAVY DUTY WALL ZIPPERS AS MANUFACTURED BY:

ZipWall, LLC
37 BROADWAY
ARLINGTON, MA 02474
Phone: (800) 718-2255
Fax: (781) 648-8806

SEALANT:

EACH SIDE OF BOTTOMS OF ALL CONTAINMENT WALLS SHALL BE CONTINUOUSLY SEALED WITH:

"DAP' 100% SILICONE SEALANT -SEALANT SHALL MEET ASTM C920,
CLASS 25, TYPE S, GRADE NS, AND HAVE A 50 YEAR DURABILITY
GUARANTEE. SEALANT SHALL MEET FDA REGULATION NO. 21 CFR
177.2600 WHEN FULLY CURED.

DEMOLITION LEGEND

TYPICAL EXTERIOR DOORS @ CONTAINMENT
POLYTHEYLENE SHEETING COVERED PLYWOOD WITH HINGES LATCH AND CODABLE LOCKS;
6'-0" x 6'-0" UNLESS NOTED OTHERWISE ON PLAN.

SLIDING/ POCKET DOOR @ CONTAINMENT
POLYTHEYLENE SHEETING COVERED
PLYWOOD WITH LATCH AND CODABLE LOCKS;
SIZE AND TYPE NOTED ON PLAN.

TYPICAL INTERIOR DOORS @ CONTAINMENT
POLYTHEYLENE SHEETING WITH ZIPPERS;
6'-0" x 8'-0" UNLESS NOTED OTHERWISE ON PLAN.

SANITIZING FOOT BATH MAT 24" X32"
WEARWELL TALL WALL

TEMPORARY CONTAINMENT WALLS
AS DESCRIBED IN CONTAINMENT NOTES. REFER TO DETAIL;

TEMPORARY PLASTIC CONTAINMENT
AS DESCRIBED IN CONTAINMENT NOTES. REFER TO DETAIL;

TEMPORARY CONTAINMENT PROTECTION OVERHEAD; REFER TO APPLICABLE NOTES

CAMPBELL'S TEMPORARY TRAILER FOR TRAINING

ITEMS TO BE DEMOLISHED AND REMOVED

CONCRETE SLAB TO BE DEMOLISHED AND REMOVED

FURNITURE TO BE REMOVED AND SAVED FOR RELOCATION

EXISTING BUILDING TO REMAIN

AREAS REQUIRING FLOOR SLAB REPAIR AFTER RACKING REMOVAL. REFER TO PM DRAWINGS FOR MORE INFORMATION ON RACKING DEMOLITION.

DEMOLITION NOTES

1. THE INTENT OF TEMPORARY ENCLOSURE IS TO MAINTAIN NEGATIVE AIR PRESSURE RELATIVE TO PRODUCTION SPACE. SEAL ALL EDGES AND SEAMS AIR TIGHT AS REQUIRED TO ACCOMMODATE THE PRESSURE DIFFERENTIAL.
2. DEMOLITION CONTRACTOR TO VISUALLY INSPECT ALL EXISTING CONDITIONS AND SHALL COORDINATE ANY OUTSTANDING DEMOLITION ISSUES WITH THE CONSTRUCTION MANAGER PRIOR TO COMMENCING WORK.
3. CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT OR REPAIR OF ALL BASE BUILDING FINISHES THAT ARE DAMAGED AS A RESULT OF DEMOLITION. CONTRACTOR TO INCLUDE IN THE PRICING A CONTINGENCY FOR ALL BASE BUILDING REPAIRS THAT MAY OCCUR.
4. PROVIDE TEMPORARY ENCLOSURES/ CONTAINMENT PROTECTION TO WALLS, ROOFS, DOORS, ETC. WHERE DEMOLITION HAS RESULTED IN EXPOSED OPENINGS WITHIN THE OPERATIONAL BUILDING.
5. COORDINATE OPENING DIMENSIONS WITH THE CONSTRUCTION MANAGER, DOOR SCHEDULE & DOOR MANUFACTURER PRIOR TO COMMENCING DEMOLITION WORK.
6. EXISTING BUILDING TO REMAIN OPERATIONAL THROUGHOUT DEMOLITION AND CONSTRUCTION. CONTRACTOR SHALL NOT IMPACT DAILY BUILDING OPERATIONS AND SHALL COORDINATE SCHEDULE WITH THE CONSTRUCTION MANAGER AND OWNER SO AS TO MAINTAIN UNINTERRUPTED BUILDING OPERATIONS.
7. DEMOLITION CONTRACTOR TO PROVIDE A DUMPSTER FOR DEBRIS REMOVAL. COORDINATE LOCATION AND CONTAINER TYPE WITH THE CONSTRUCTION MANAGER.
8. THERE IS NO PRESENCE OF ASBESTOS AND/OR LEAD BASED PAINT IN THE EXISTING BUILDINGS AREA OF WORK TO THE BEST KNOWLEDGE OF THE OWNER AND ARCHITECT. IF A MATERIAL IS FOUND WHICH MAY BE SUSPECTED OF CONTAINING HAZARDOUS MATERIAL WORK SHALL STOP AND THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER IMMEDIATELY. IF IT IS DETERMINED THAT THE MATERIALS ARE HAZARDOUS, THE MATERIAL SHALL BE FULLY ABATED ACCORDING TO APPLICABLE LAWS.
9. **REFER TO SHEET AD1.900 FOR PHOTO REFERENCES.**

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Q	02/13/2023	AE	JHP	IMP AND DEMOLITION BID
N	02/03/2023	MHW	JHP	DEMOLITION AND TEMPORARY WALL BID

DRAWN: Author	DATE: 06/06/19	
APPROVED: Approver	05/03/2023	
BUILDING: 4013		
PROJECT NO: 11025607	PROJECT NAME: PROJECT FINN	
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)		

CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
OVERALL ROOF DEMOLITION PLAN

DRAWING NO. RIC-806846-01-A-1 REV. DD

DRAWING SIZE: ANSI E (44" x 34") SHEET 20 OF 193

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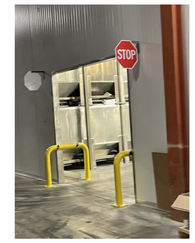
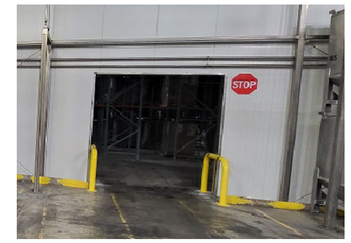
1 STAIR DEMOLITION 1

2 STAIR DEMOLITION 2

3 REFRIGERATED STORAGE EXTERIOR

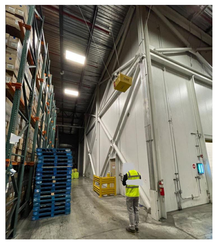




4 TOTE STORAGE OPENING (BOTH SIDES OF WALL)

5 RECEIVING OFFICE DEMOLITION

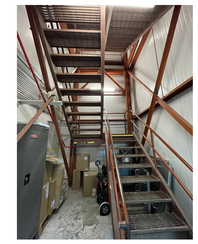
6 ROOF DEMOLITION - DUNNAGE



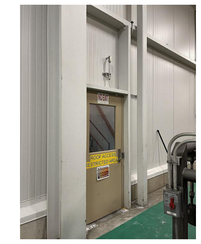
7 STRUCTURAL BRACING RELOCATION

8 NORTHWEST BUILDING EXTERIOR

9 STAIR TOWER EXTERIOR



10 STAIR TOWER INTERIOR



11 COLUMN RELOCATION

12 DEMOLITION - EQUIPMENT PADS

13 EXTERIOR STAGING AREA

14 BOILER ROOM ROOF

15 BUILDING EXTERIOR AT DOCK

16 ROOF DEMOLITION - FREEZER PENTHOUSE

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AA	04/07/2023	SN	JHP	PROGRESS SET
W	03/02/2023	AE	JHP	90% DESIGN REVIEW
U	02/24/2023	MHW	JHP	BUILDING PERMIT
N	02/03/2023	MHW	JHP	DEMOLITION AND TEMPORARY WALL BID
M	01/06/2023	AE	JHP	60% DESIGN REVIEW

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BUILDING: 4013
PROJECT NO.: 11025607
PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT

ARCHITECTURE
DEMOLITION PHOTO REFERENCES

DRAWING NO.: RIC-806848-01-A-8
REV.: DD
DRAWING SIZE: ANSI E (44" x 34")
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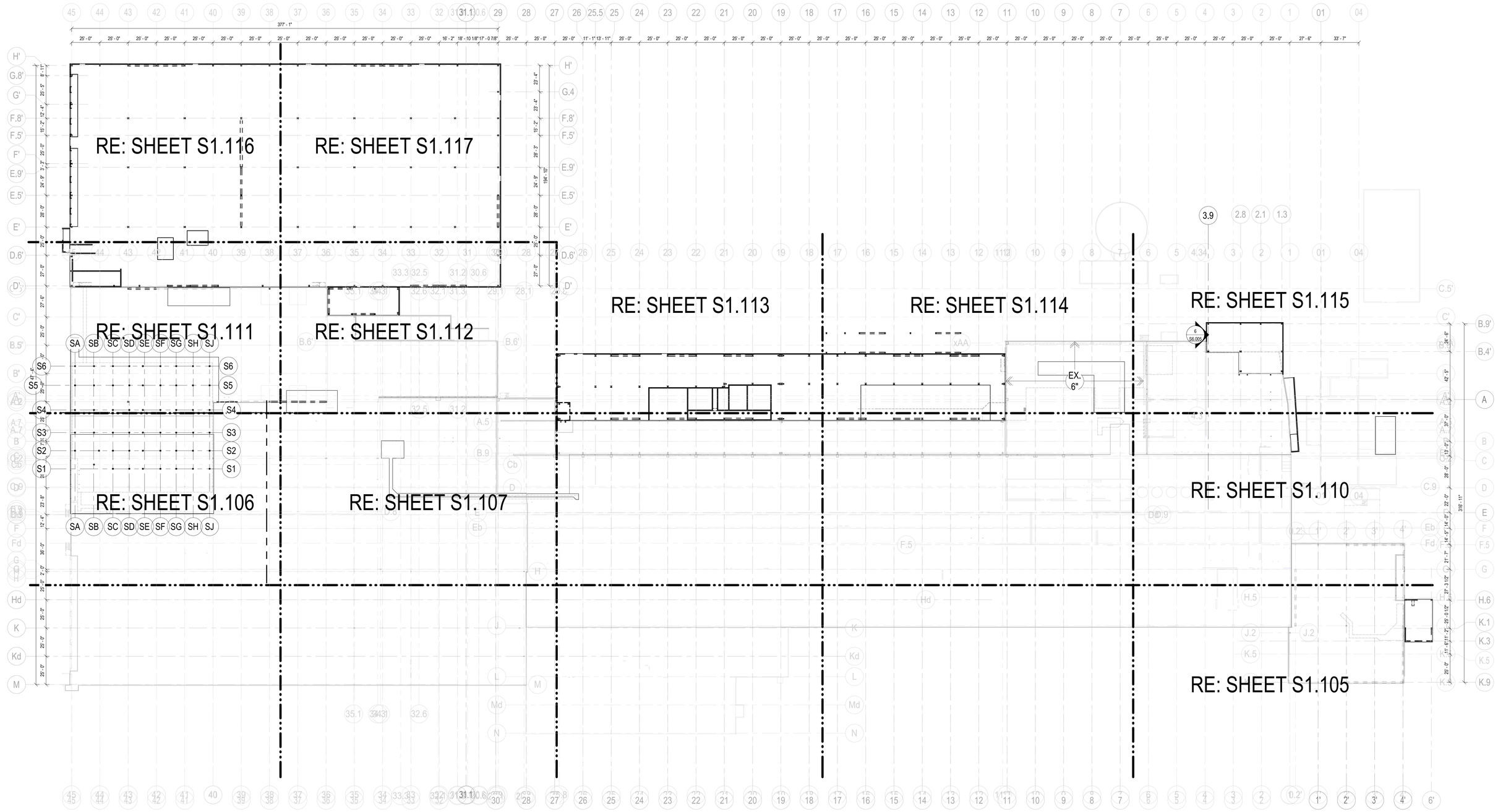

1 OVERALL SLAB PLAN

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

TRUE NORTH PLAN NORTH

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REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
T	05/03/2023	MCF	MYW	PERMIT
S	04/07/2023	BGB	MYW	L11 STEEL AND CONCRETE COORDINATION
R	04/07/2023	MCF	MYW	PERMIT RESUBMISSION
N	02/28/2023	BGB	MYW	90% RELEASE
K	02/27/2023	BGB	MYW	WAREHOUSE, PACKAGING, RECEIVING CONCRETE BID
H	02/03/2023	MLO	MYW	WAREHOUSE, PACKAGING, RECEIVING STEEL BID

DRAWN: Author DATE: 01/09/23
APPROVED: Approver 01/09/23
BUILDING
PROJECT NO.: 11025607
PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

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OVERALL SLAB PLAN

DRAWING NO.: RIC-806736-01-S-1 REV.: T
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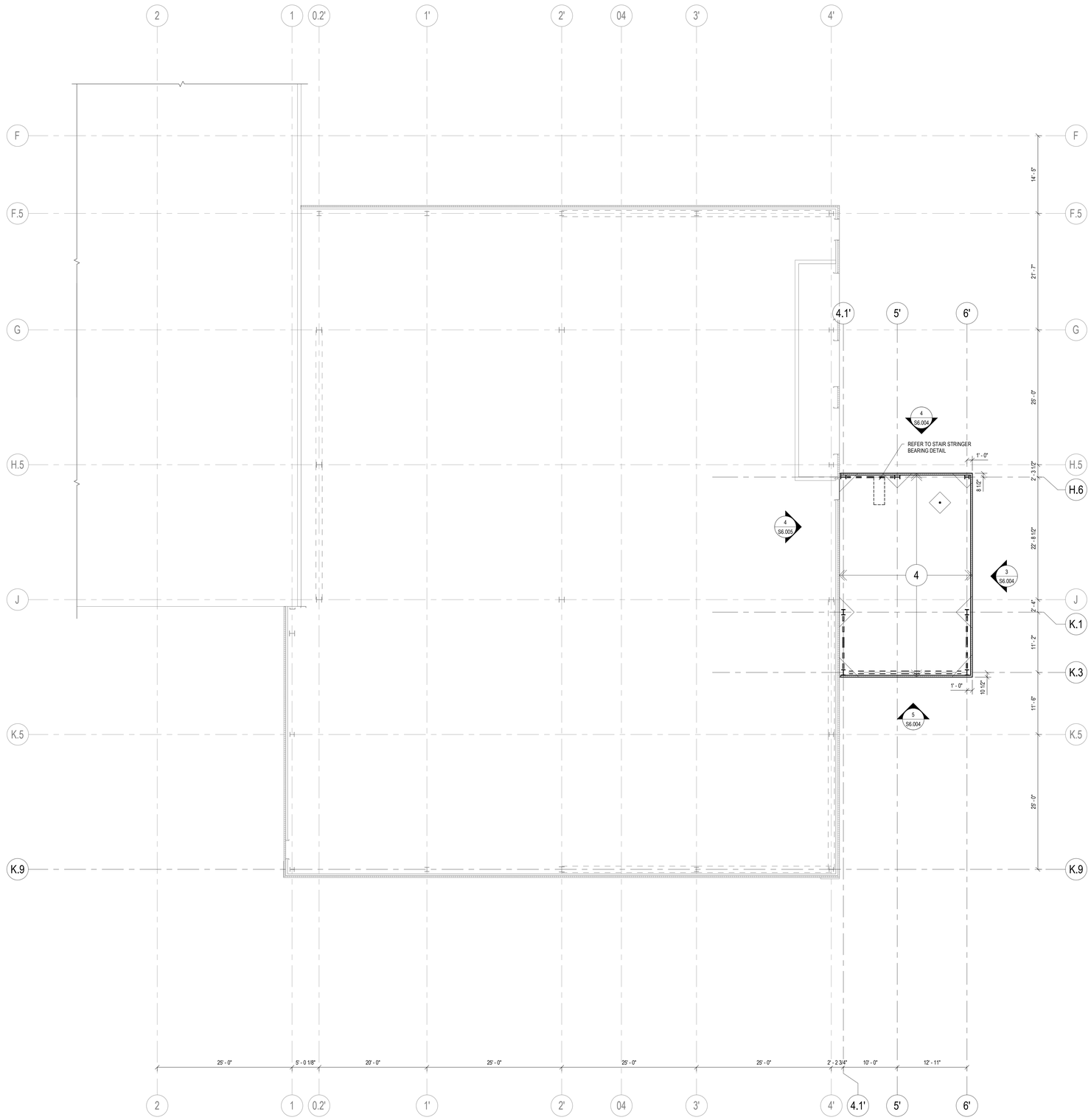


1 SLAB PLAN AREA 5- RECEIVING OFFICE

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

TRUE NORTH PLAN NORTH

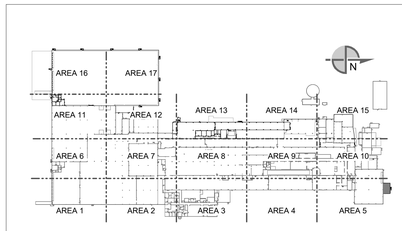
SLAB PLAN NOTES:

1. FOR GENERAL NOTES, REFER TO SHEETS S0.001 AND S0.002.
2. TOP OF CONCRETE SLAB ON GRADE ELEVATION = REFERENCE ELEVATION = 100'-0" HP, UNLESS OTHERWISE NOTED.
3. FLOOR CONSTRUCTION: REFER TO LEGEND, THIS SHEET, AND SLAB SCHEDULE ON SHEET S2.002.
4. PROVIDE ARMOR EDGE CONSTRUCTION JOINTS AS INDICATED HERE AND IN THE ARCHITECTURAL DRAWINGS.
5. COORDINATE ALL PITS, TRENCHES, POCKETS, SLEEVES, PADS, PENETRATIONS, DEPRESSIONS, FLOOR SLOPES, AND CONCRETE INSERTS WITH ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS.
6. CONTRACTOR SHALL SUBMIT FULL CONTROL AND CONSTRUCTION JOINT LAYOUT FOR APPROVAL PRIOR TO POURING SLABS.

LEGEND:

- "CJ" APPROXIMATE LOCATION OF CONTROL JOINTS IN SLABS ON GRADE. FOR DETAILS REFER TO SHEETS S2.001 AND S2.002 WHERE NO JOINTS ARE SHOWN, REFER TO SHEET S0.001 SLAB NOTE 8
- "FD" FLOOR DRAIN. REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- "AJ" ARMOR JOINT. REFER TO DETAIL 11/S2.002
- 1t INDICATES SLAB THICKNESS, REFER TO SHEET S2.002
- INDICATES IMP WALL
- INDICATES CMU WALL
- INDICATES CONCRETE WALL

KEY PLAN



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U	05/03/2023			MCF tinkering
T	05/03/2023	MCF	MYW	PERMIT
R	04/07/2023	MCF	MYW	PERMIT RESUBMISSION
N	02/28/2023	BGB	MYW	90% RELEASE
K	02/27/2023	BGB	MYW	WAREHOUSE, PACKAGING, RECEIVING CONCRETE BID
H	02/03/2023	MLO	MYW	WAREHOUSE, PACKAGING, RECEIVING STEEL BID

DRAWN: Author DATE: 08/30/22
APPROVED: Approver 08/30/22
BUILDING
PROJECT NO.: 11025607
PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT
STRUCTURAL
SLAB PLAN AREA 5

DRAWING NO.: RIC-806736-05-S-1 REV.: U
DRAWING SIZE: ANSI E (44" x 34") SHEET OF

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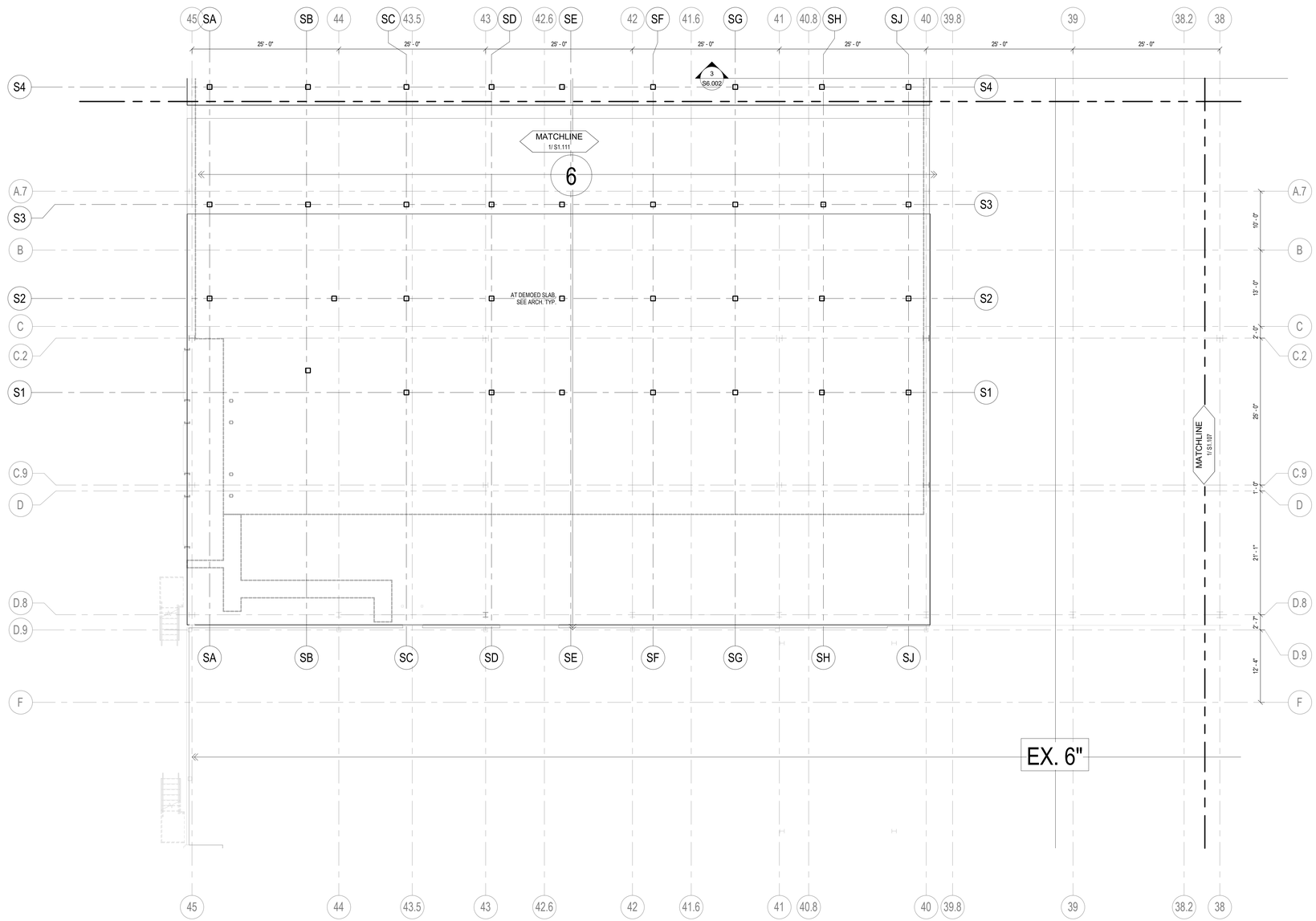


1 SLAB PLAN AREA 6- PACKAGING AREA

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

TRUE NORTH PLAN NORTH

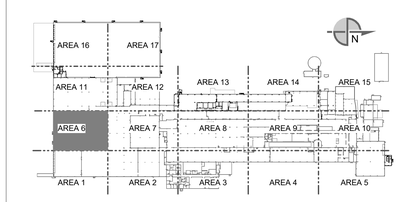
SLAB PLAN NOTES:

1. FOR GENERAL NOTES, REFER TO SHEETS S0.001 AND S0.002.
2. TOP OF CONCRETE SLAB ON GRADE ELEVATION = REFERENCE ELEVATION = 100'-0" HP, UNLESS OTHERWISE NOTED.
3. FLOOR CONSTRUCTION: REFER TO LEGEND, THIS SHEET, AND SLAB SCHEDULE ON SHEET S2.002.
4. PROVIDE ARMOR EDGE CONSTRUCTION JOINTS AS INDICATED HERE AND IN THE ARCHITECTURAL DRAWINGS.
5. COORDINATE ALL PITS, TRENCHES, POCKETS, SLEEVES, PADS, PENETRATIONS, DEPRESSIONS, FLOOR SLOPES, AND CONCRETE INSERTS WITH ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS.
6. CONTRACTOR SHALL SUBMIT FULL CONTROL AND CONSTRUCTION JOINT LAYOUT FOR APPROVAL PRIOR TO POURING SLABS.

LEGEND:

- "CJ" APPROXIMATE LOCATION OF CONTROL JOINTS IN SLABS ON GRADE. FOR DETAILS REFER TO SHEETS S2.001 AND S2.002 WHERE NO JOINTS ARE SHOWN, REFER TO SHEET S0.001 SLAB NOTE 8
- "FD" FLOOR DRAIN. REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- "AJ" ARMOR JOINT. REFER TO DETAIL 11/S2.002
- 1t INDICATES SLAB THICKNESS, REFER TO SHEET S2.002
- INDICATES IMP WALL
- INDICATES CMU WALL
- INDICATES CONCRETE WALL

KEY PLAN



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U	05/03/2023			MCF tinkering
T	05/03/2023	MCF	MYW	PERMIT
R	04/07/2023	MCF	MYW	PERMIT RESUBMISSION
N	02/28/2023	BGB	MYW	90% RELEASE
K	02/27/2023	BGB	MYW	WAREHOUSE, PACKAGING, RECEIVING CONCRETE BID
H	02/03/2023	MLO	MYW	WAREHOUSE, PACKAGING, RECEIVING STEEL BID

DRAWN: Author DATE: 08/30/22
APPROVED: Approver 08/30/22
BUILDING
PROJECT NO.: 11025607
PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT

STRUCTURAL
SLAB PLAN AREA 6

DRAWING NO.: RIC-806736-06-S-1 REV: U
DRAWING SIZE: ANSI E (44" x 34") SHEET OF

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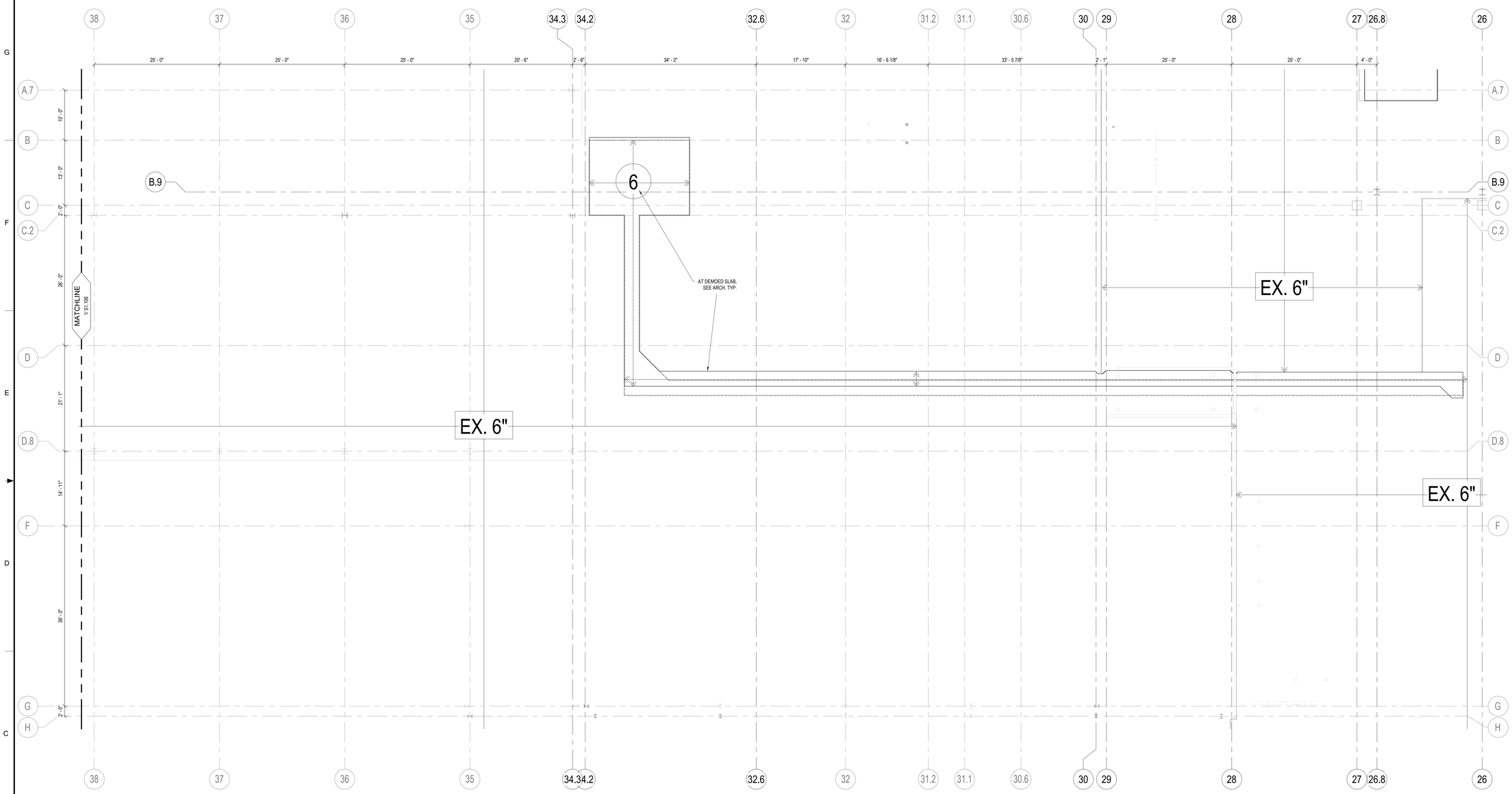
SLAB PLAN NOTES:

1. FOR GENERAL NOTES, REFER TO SHEETS S0.001 AND S0.002.
2. TOP OF CONCRETE SLAB ON GRADE ELEVATION = REFERENCE ELEVATION = 100'-0" HP, UNLESS OTHERWISE NOTED.
3. FLOOR CONSTRUCTION: REFER TO LEGEND, THIS SHEET, AND SLAB SCHEDULE ON SHEET S2.002.
4. PROVIDE ARMOR EDGE CONSTRUCTION JOINTS AS INDICATED HERE AND IN THE ARCHITECTURAL DRAWINGS.
5. COORDINATE ALL PITS, TRENCHES, POCKETS, SLEEVES, PADS, PENETRATIONS, DEPRESSIONS, FLOOR SLOPES, AND CONCRETE INSERTS WITH ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS.
6. CONTRACTOR SHALL SUBMIT FULL CONTROL AND CONSTRUCTION JOINT LAYOUT FOR APPROVAL PRIOR TO POURING SLABS.

LEGEND:

- "CJ" APPROXIMATE LOCATION OF CONTROL JOINTS IN SLABS ON GRADE. FOR DETAILS REFER TO SHEETS S2.001 AND S2.002. WHERE NO JOINTS ARE SHOWN, REFER TO SHEET S0.001 SLAB NOTE 8
- "FD" FLOOR DRAIN. REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- "AJ" ARMOR JOINT. REFER TO DETAIL 11/S2.002
- 1t INDICATES SLAB THICKNESS, REFER TO SHEET S2.002
- INDICATES IMP WALL
- INDICATES CMU WALL
- INDICATES CONCRETE WALL

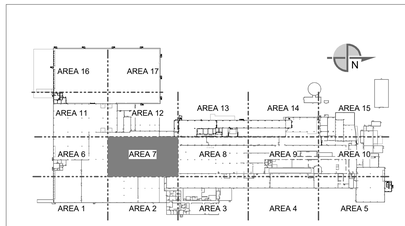


1 SLAB PLAN AREA 7

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

TRUE NORTH PLAN NORTH

KEY PLAN



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T	05/03/2023	MCF	MYW	PERMIT
R	04/07/2023	MCF	MYW	PERMIT RESUBMISSION
N	02/28/2023	BGB	MYW	90% RELEASE

DRAWN: Author DATE: 03/01/23
APPROVED: Approver 03/01/23
BUILDING
PROJECT NO. 11025607
PROJECT NAME PROJECT FINN
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CAMPBELL SOUP COMPANY
RICHMOND, UT
STRUCTURAL
SLAB PLAN AREA 7

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SLAB PLAN NOTES:

1. FOR GENERAL NOTES, REFER TO SHEETS S0.001 AND S0.002.
2. TOP OF CONCRETE SLAB ON GRADE ELEVATION = REFERENCE ELEVATION = 100'-0" HP, UNLESS OTHERWISE NOTED.
3. FLOOR CONSTRUCTION: REFER TO LEGEND, THIS SHEET, AND SLAB SCHEDULE ON SHEET S2.002.
4. PROVIDE ARMOR EDGE CONSTRUCTION JOINTS AS INDICATED HERE AND IN THE ARCHITECTURAL DRAWINGS.
5. COORDINATE ALL PITS, TRENCHES, POCKETS, SLEEVES, PADS, PENETRATIONS, DEPRESSIONS, FLOOR SLOPES, AND CONCRETE INSERTS WITH ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS.
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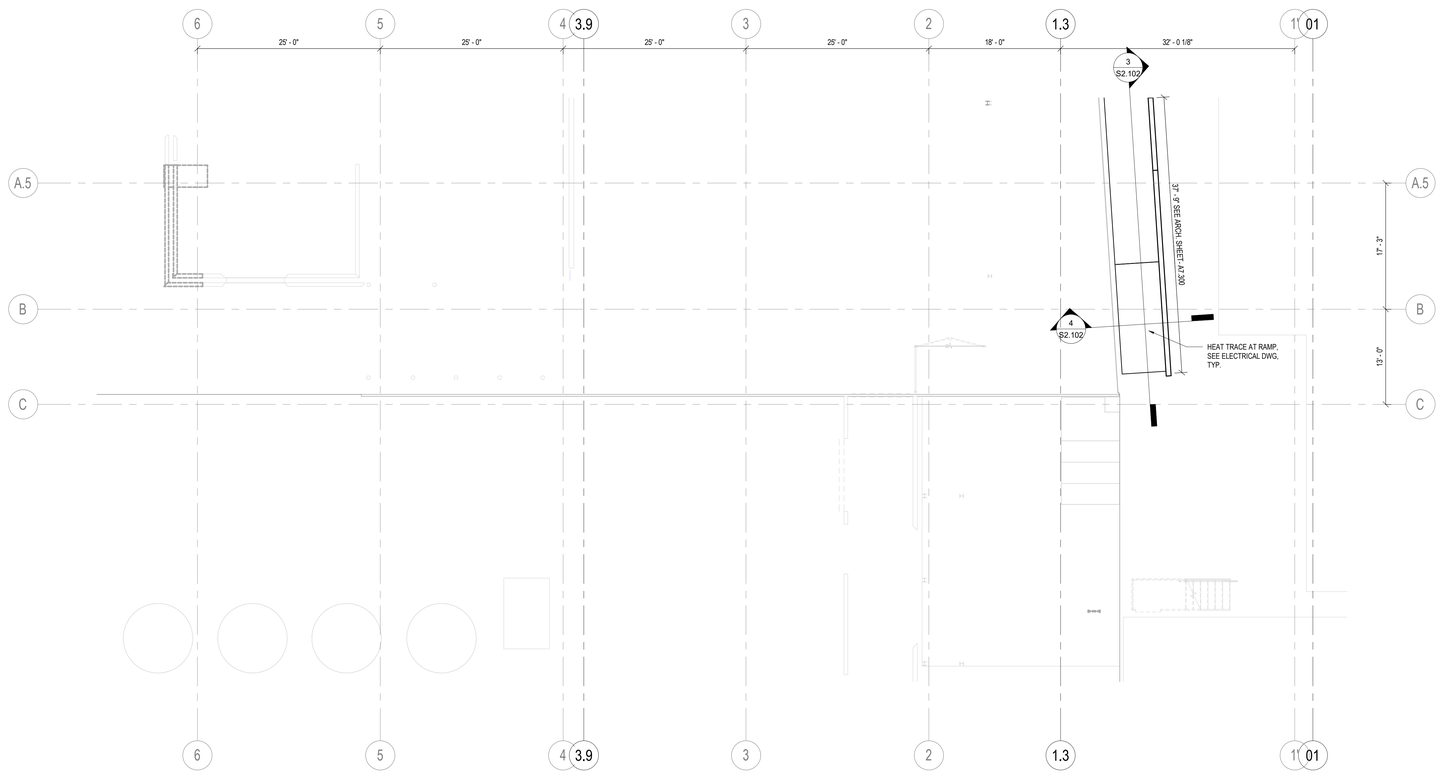
LEGEND:

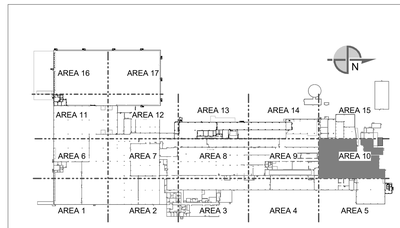
- "CJ" APPROXIMATE LOCATION OF CONTROL JOINTS IN SLABS ON GRADE. FOR DETAILS REFER TO SHEETS S2.001 AND S2.002 WHERE NO JOINTS ARE SHOWN, REFER TO SHEET S0.001 SLAB NOTE 8
- "FD" FLOOR DRAIN. REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- "AJ" ARMOR JOINT. REFER TO DETAIL 11/S2.002
- 1t INDICATES SLAB THICKNESS, REFER TO SHEET S2.002
- INDICATES IMP WALL
- INDICATES CMU WALL
- INDICATES CONCRETE WALL



1 SLAB PLAN AREA 10-BOILER ROOM RAMP
SCALE: 1/8" = 1'-0"

TRUE NORTH PLAN NORTH

KEY PLAN



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T	05/03/2023	MCF	MYW	PERMIT
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N	02/28/2023	BGB	MYW	90% RELEASE
K	02/27/2023	BGB	MYW	WAREHOUSE, PACKAGING, RECEIVING CONCRETE BID
H	02/03/2023	MLO	MYW	WAREHOUSE, PACKAGING, RECEIVING STEEL BID

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APPROVED: Approver 01/27/23
BUILDING
PROJECT NO.: 11025607
PROJECT NAME: PROJECT FINN
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CAMPBELL SOUP COMPANY
RICHMOND, UT
STRUCTURAL
SLAB PLAN AREA 10

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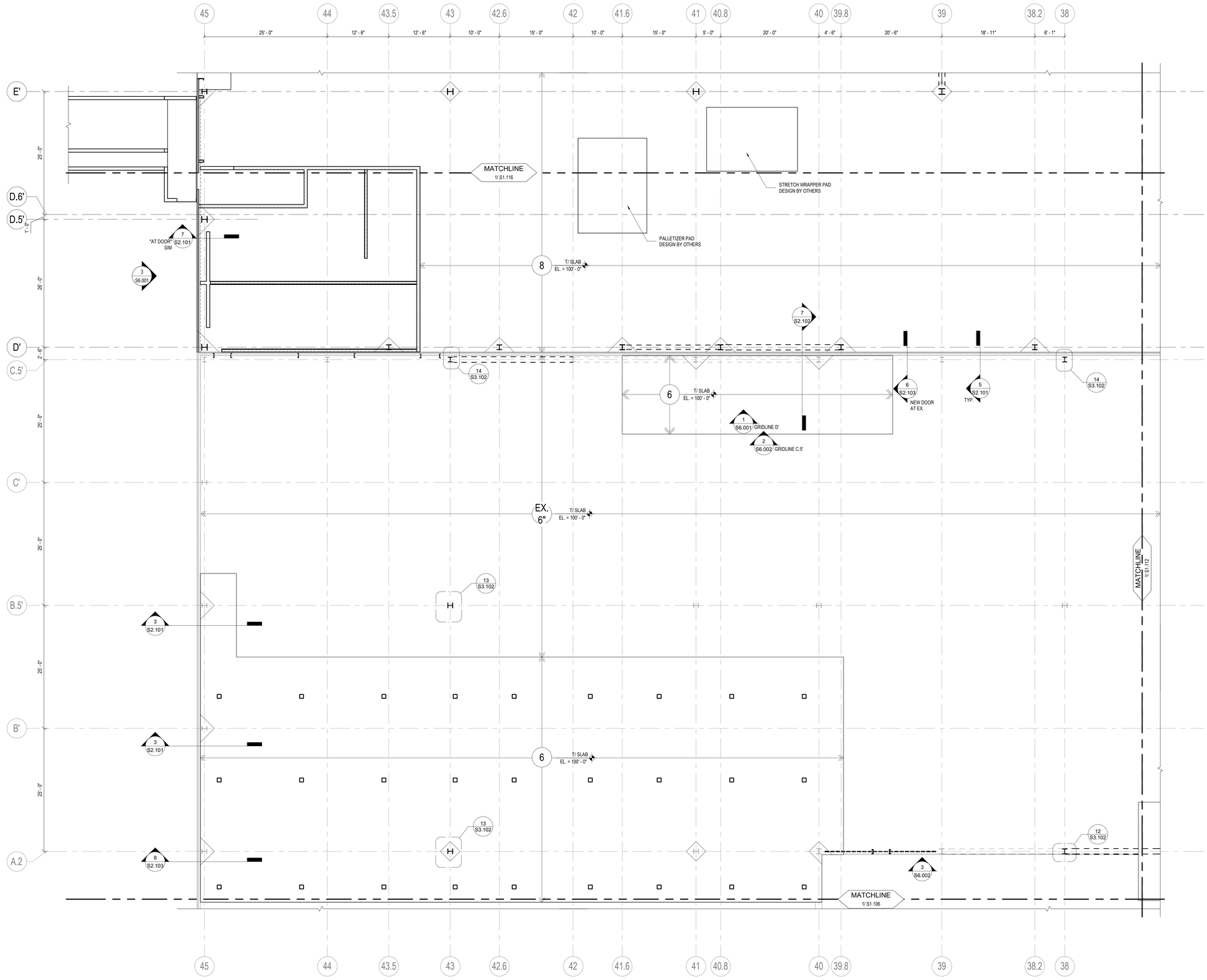


1 SLAB PLAN AREA 11- PACKAGING AREA

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

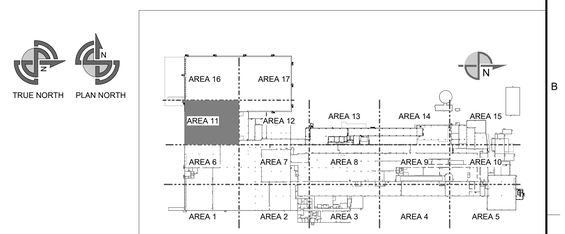
SLAB PLAN NOTES:

1. FOR GENERAL NOTES, REFER TO SHEETS S0.001 AND S0.002.
2. TOP OF CONCRETE SLAB ON GRADE ELEVATION = REFERENCE ELEVATION = 100'-0" HP, UNLESS OTHERWISE NOTED.
3. FLOOR CONSTRUCTION. REFER TO LEGEND, THIS SHEET, AND SLAB SCHEDULE ON SHEET S2.002.
4. PROVIDE ARMOR EDGE CONSTRUCTION JOINTS AS INDICATED HERE AND IN THE ARCHITECTURAL DRAWINGS.
5. COORDINATE ALL PITS, TRENCHES, POCKETS, SLEEVES, PADS, PENETRATIONS, DEPRESSIONS, FLOOR SLOPES, AND CONCRETE INSERTS WITH ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS.
6. CONTRACTOR SHALL SUBMIT FULL CONTROL AND CONSTRUCTION JOINT LAYOUT FOR APPROVAL PRIOR TO POURING SLABS.

LEGEND:

- "CJ" APPROXIMATE LOCATION OF CONTROL JOINTS IN SLABS ON GRADE. FOR DETAILS REFER TO SHEETS S2.001 AND S2.002 WHERE NO JOINTS ARE SHOWN, REFER TO SHEET S0.001 SLAB NOTE 8
- "FD" FLOOR DRAIN. REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- "AJ" ARMOR JOINT. REFER TO DETAIL 11/S2.002
- 1t INDICATES SLAB THICKNESS, REFER TO SHEET S2.002
- INDICATES IMP WALL
- INDICATES CMU WALL
- INDICATES CONCRETE WALL

KEY PLAN



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R	04/07/2023	MCF	MYW	PERMIT RESUBMISSION
N	02/28/2023	BGB	MYW	90% RELEASE
K	02/27/2023	BGB	MYW	WAREHOUSE, PACKAGING, RECEIVING CONCRETE BID
H	02/03/2023	MLO	MYW	WAREHOUSE, PACKAGING, RECEIVING STEEL BID

DRAWN: Author DATE: 08/08/22
APPROVED: Approver 08/08/22
BUILDING
PROJECT NO. 11025607
PROJECT NAME PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT
STRUCTURAL
SLAB PLAN AREA 11

DRAWING NO. RIC-806736-11-S-1 REV. U
DRAWING SIZE: ANSI E (44" x 34") SHEET OF

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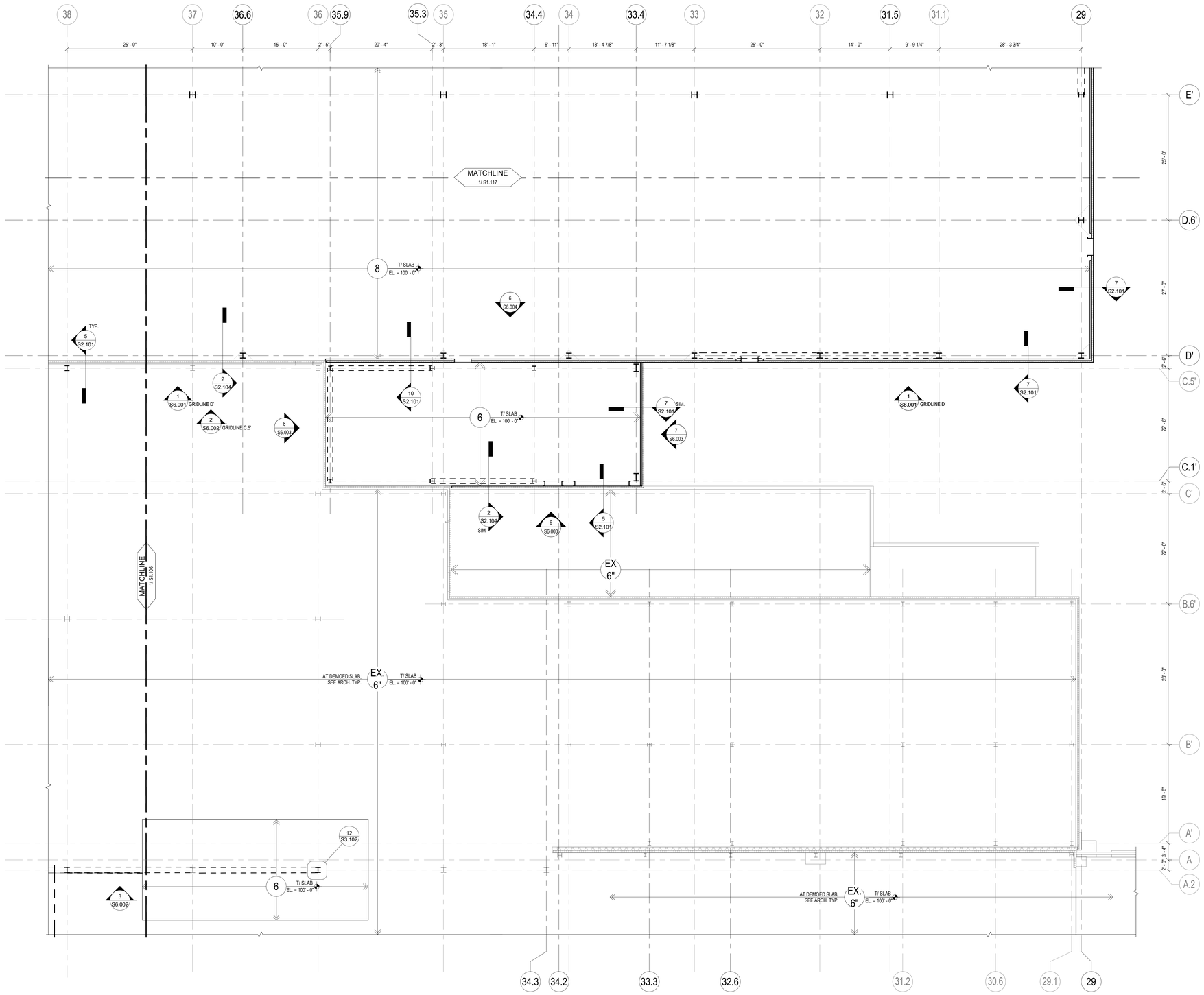

1 SLAB PLAN AREA 12-PUMP ROOM

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

TRUE NORTH PLAN NORTH

SLAB PLAN NOTES:

1. FOR GENERAL NOTES, REFER TO SHEETS S0.001 AND S0.002.
2. TOP OF CONCRETE SLAB ON GRADE ELEVATION = REFERENCE ELEVATION = 100'-0" HP, UNLESS OTHERWISE NOTED.
3. FLOOR CONSTRUCTION: REFER TO LEGEND, THIS SHEET, AND SLAB SCHEDULE ON SHEET S2.002.
4. PROVIDE ARMOR EDGE CONSTRUCTION JOINTS AS INDICATED HERE AND IN THE ARCHITECTURAL DRAWINGS.
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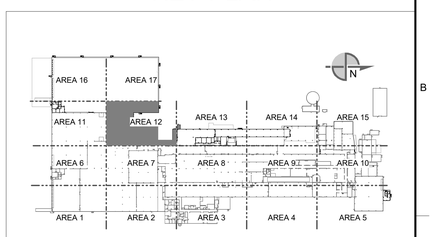
- "AJ" ARMOR JOINT. REFER TO DETAIL 11/S2.002
- 1t INDICATES SLAB THICKNESS, REFER TO SHEET S2.002
- INDICATES IMP WALL
- INDICATES CMU WALL
- INDICATES CONCRETE WALL

KEY PLAN



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U	05/03/2023			MCF tinkering
T	05/03/2023	MCF	MYW	PERMIT
R	04/07/2023	MCF	MYW	PERMIT RESUBMISSION
N	02/28/2023	BGB	MYW	90% RELEASE
K	02/27/2023	BGB	MYW	WAREHOUSE, PACKAGING, RECEIVING CONCRETE BID
H	02/03/2023	MLO	MYW	WAREHOUSE, PACKAGING, RECEIVING STEEL BID

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DG PROJ: 7021 DG DWG: S1.112

DRAWN: Author DATE: 08/08/22
APPROVED: Approver DATE: 08/08/22
BUILDING
PROJECT NO.: 11025607
PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT
STRUCTURAL
SLAB PLAN AREA 12

DRAWING NO.: RIC-806736-12-S-1
REV.: U
DRAWING SIZE: ANSI E (44" x 34")
SHEET OF

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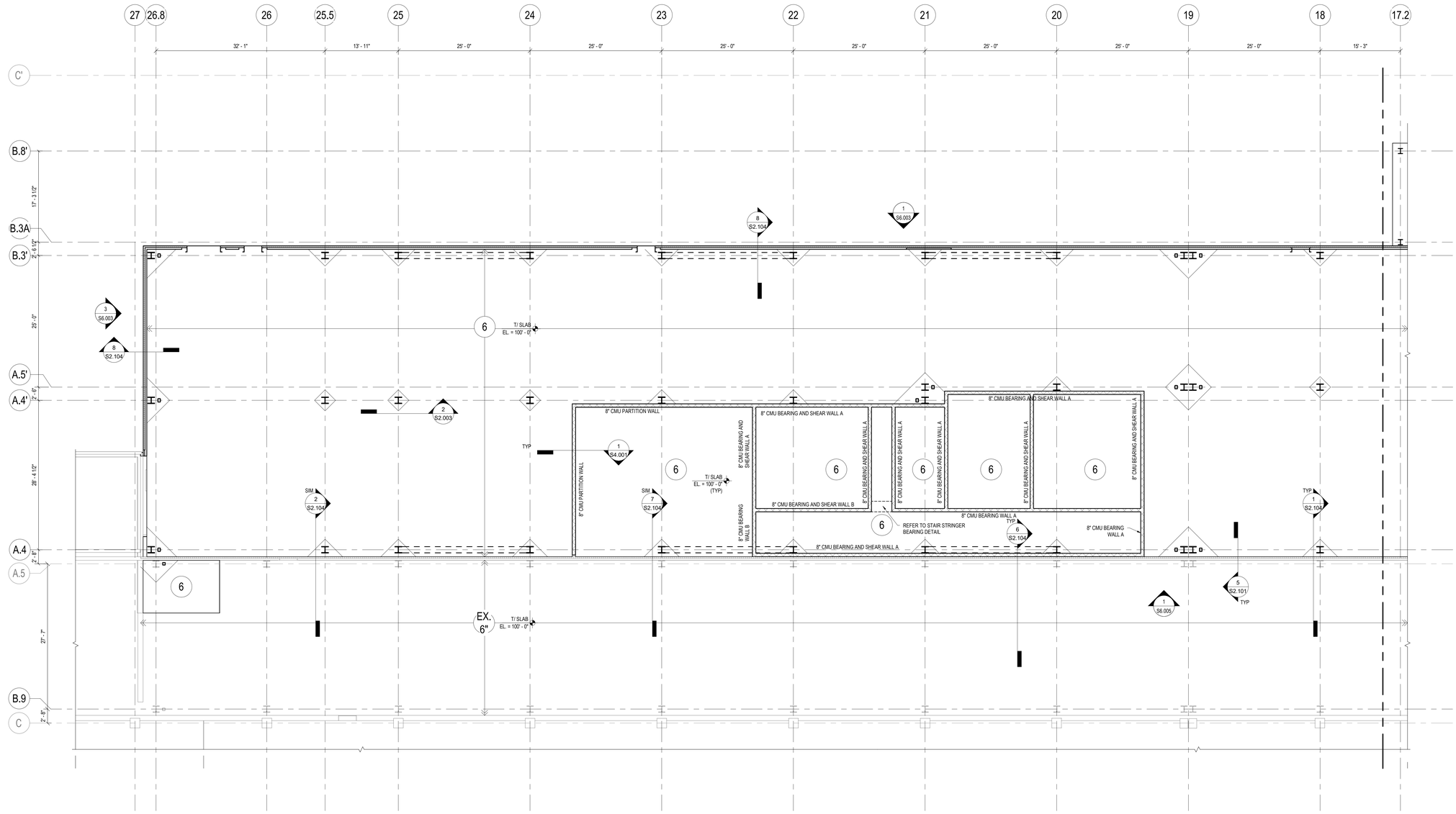

SLAB PLAN NOTES:

1. FOR GENERAL NOTES, REFER TO SHEETS S0.001 AND S0.002.
2. TOP OF CONCRETE SLAB ON GRADE ELEVATION = REFERENCE ELEVATION = 100'-0" HP, UNLESS OTHERWISE NOTED.
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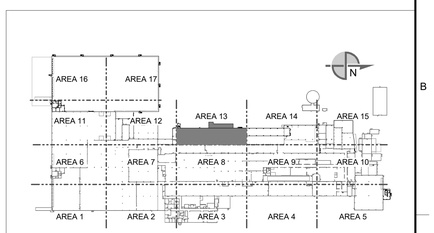
- "AJ" ARMOR JOINT. REFER TO DETAIL 11/S2.002
- 1t INDICATES SLAB THICKNESS, REFER TO SHEET S2.002
- INDICATES IMP WALL
- INDICATES CMU WALL
- INDICATES CONCRETE WALL

1 SLAB PLAN AREA 13 - L11

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

TRUE NORTH PLAN NORTH

KEY PLAN



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U	05/03/2023			MCF linkerling
T	05/03/2023	MCF	MYW	PERMIT
S	04/07/2023	BGB	MYW	L11 STEEL AND CONCRETE COORDINATION
R	04/07/2023	MCF	MYW	PERMIT RESUBMISSION
P	03/06/2023	BGB	MYW	ADDENDUM #2
N	02/28/2023	BGB	MYW	90% RELEASE

DRAWN: Author DATE: 11/21/22
APPROVED: Approver 11/21/22
BUILDING:
PROJECT NO.: 11025607
PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT
STRUCTURAL
SLAB PLAN AREA 13

DRAWING NO.: RIC-806736-13-S-1
REV.: U
DRAWING SIZE: ANSI E (44" x 34")
SHEET OF

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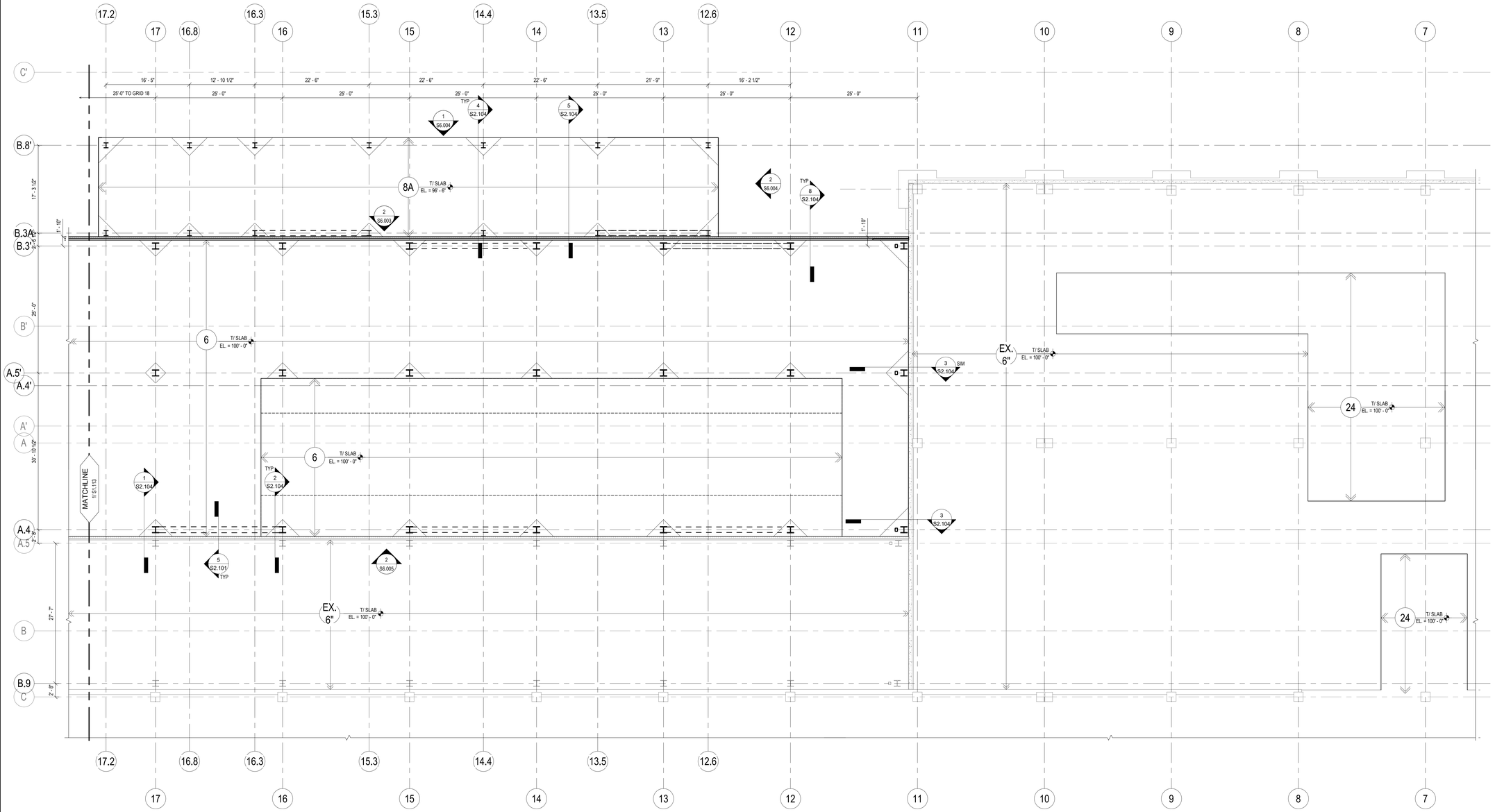


1 SLAB PLAN AREA 14 - L11

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

TRUE NORTH PLAN NORTH

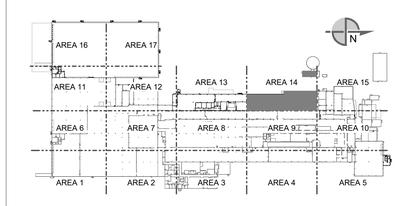
SLAB PLAN NOTES:

1. FOR GENERAL NOTES, REFER TO SHEETS S0.001 AND S0.002.
2. TOP OF CONCRETE SLAB ON GRADE ELEVATION = REFERENCE ELEVATION = 100'-0" HP, UNLESS OTHERWISE NOTED.
3. FLOOR CONSTRUCTION: REFER TO LEGEND, THIS SHEET, AND SLAB SCHEDULE ON SHEET S2.002.
4. PROVIDE ARMOR EDGE CONSTRUCTION JOINTS AS INDICATED HERE AND IN THE ARCHITECTURAL DRAWINGS.
5. COORDINATE ALL PITS, TRENCHES, POCKETS, SLEEVES, PADS, PENETRATIONS, DEPRESSIONS, FLOOR SLOPES, AND CONCRETE INSERTS WITH ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS.
6. CONTRACTOR SHALL SUBMIT FULL CONTROL AND CONSTRUCTION JOINT LAYOUT FOR APPROVAL PRIOR TO POURING SLABS.

LEGEND:

- "C.J" APPROXIMATE LOCATION OF CONTROL JOINTS IN SLABS ON GRADE. FOR DETAILS REFER TO SHEETS S2.001 AND S2.002 WHERE NO JOINTS ARE SHOWN, REFER TO SHEET S0.001 SLAB NOTE 8
- "FD" FLOOR DRAIN. REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- "A.J" ARMOR JOINT. REFER TO DETAIL 11/S2.002
- 1t INDICATES SLAB THICKNESS, REFER TO SHEET S2.002
- INDICATES IMP WALL
- INDICATES CMU WALL
- INDICATES CONCRETE WALL

KEY PLAN



SEE DRAWING LIST ON TITLE SHEET DWG. NO. RIC-806732-01-S-0 FOR CORRESPONDING CSC SHEET NUMBER

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DG PROJ: 7021 DG DWG: S1.114

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
U	05/03/2023			MCF linkerting
T	05/03/2023	MCF	MYW	PERMIT
S	04/07/2023	BGB	MYW	L11 STEEL AND CONCRETE COORDINATION
R	04/07/2023	MCF	MYW	PERMIT RESUBMISSION
N	02/28/2023	BGB	MYW	90% RELEASE
M	02/27/2023	BGB	MYW	PERMIT

DRAWN: Author DATE: 11/21/22
APPROVED: Approver 11/21/22
BUILDING:
PROJECT NO.: 11025607
PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT

STRUCTURAL
SLAB PLAN AREA 14

DRAWING NO.: RIC-806736-14-S-1 REV.: U
DRAWING SIZE: ANSI E (44" x 34") SHEET OF

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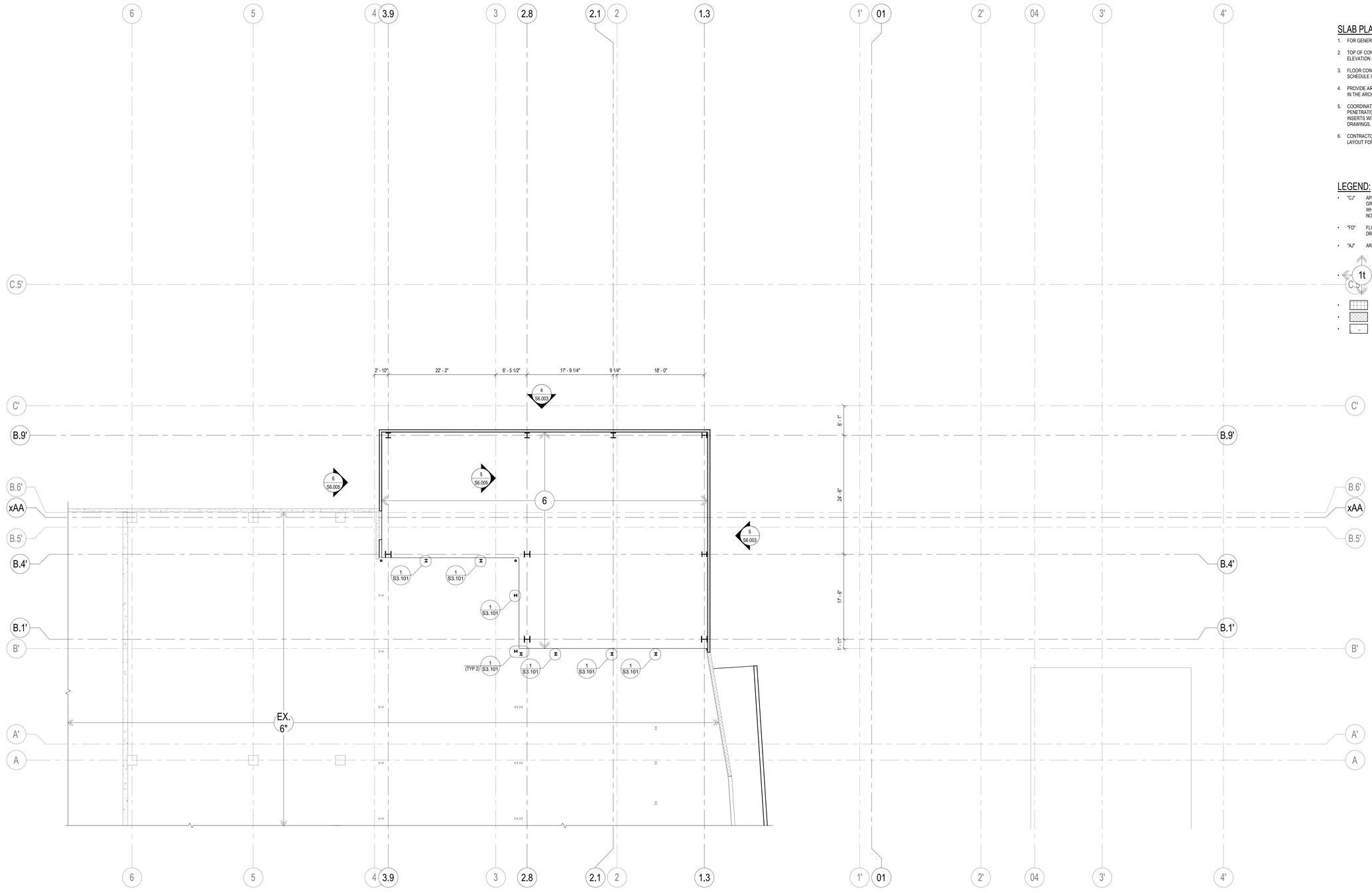


1 SLAB PLAN AREA 15- REFRIGERATED STORAGE AREA

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

SLAB PLAN NOTES:

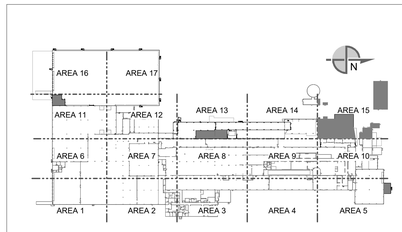
1. FOR GENERAL NOTES, REFER TO SHEETS S0.001 AND S0.002.
2. TOP OF CONCRETE SLAB ON GRADE ELEVATION = REFERENCE ELEVATION = 100'-0" HP, UNLESS OTHERWISE NOTED.
3. FLOOR CONSTRUCTION: REFER TO LEGEND, THIS SHEET, AND SLAB SCHEDULE ON SHEET S2.002.
4. PROVIDE ARMOR EDGE CONSTRUCTION JOINTS AS INDICATED HERE AND IN THE ARCHITECTURAL DRAWINGS.
5. COORDINATE ALL PITS, TRENCHES, POCKETS, SLEEVES, PADS, PENETRATIONS, DEPRESSIONS, FLOOR SLOPES, AND CONCRETE INSERTS WITH ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS.
6. CONTRACTOR SHALL SUBMIT FULL CONTROL AND CONSTRUCTION JOINT LAYOUT FOR APPROVAL PRIOR TO POURING SLABS.

LEGEND:

- "CJ" APPROXIMATE LOCATION OF CONTROL JOINTS IN SLABS ON GRADE. FOR DETAILS REFER TO SHEETS S2.001 AND S2.002 WHERE NO JOINTS ARE SHOWN, REFER TO SHEET S0.001 SLAB NOTE 8
- "FD" FLOOR DRAIN. REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- "AJ" ARMOR JOINT. REFER TO DETAIL 11/S2.002
- 1t / C.5 INDICATES SLAB THICKNESS, REFER TO SHEET S2.002
- INDICATES IMP WALL
- INDICATES CMU WALL
- INDICATES CONCRETE WALL

TRUE NORTH PLAN NORTH

KEY PLAN



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DG PROJ: 7021 | DG DWG: S1.115

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
V	05/03/2023	BGB	MYW	FM RESUBMITTAL
U	05/03/2023			MCF tinkering
T	05/03/2023	MCF	MYW	PERMIT
S	04/07/2023	BGB	MYW	L11 STEEL AND CONCRETE COORDINATION
R	04/07/2023	MCF	MYW	PERMIT RESUBMISSION
N	02/28/2023	BGB	MYW	90% RELEASE

DRAWN	Author	DATE	08/08/22
APPROVED	Approver		08/08/22
BUILDING			
PROJECT NO.	11025607	PROJECT NAME	PROJECT FINN

SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT

STRUCTURAL
SLAB PLAN AREA 15

DRAWING NO. RIC-806736-15-S-1 REV. V

DRAWING SIZE: ANSI E (44" x 34") SHEET OF

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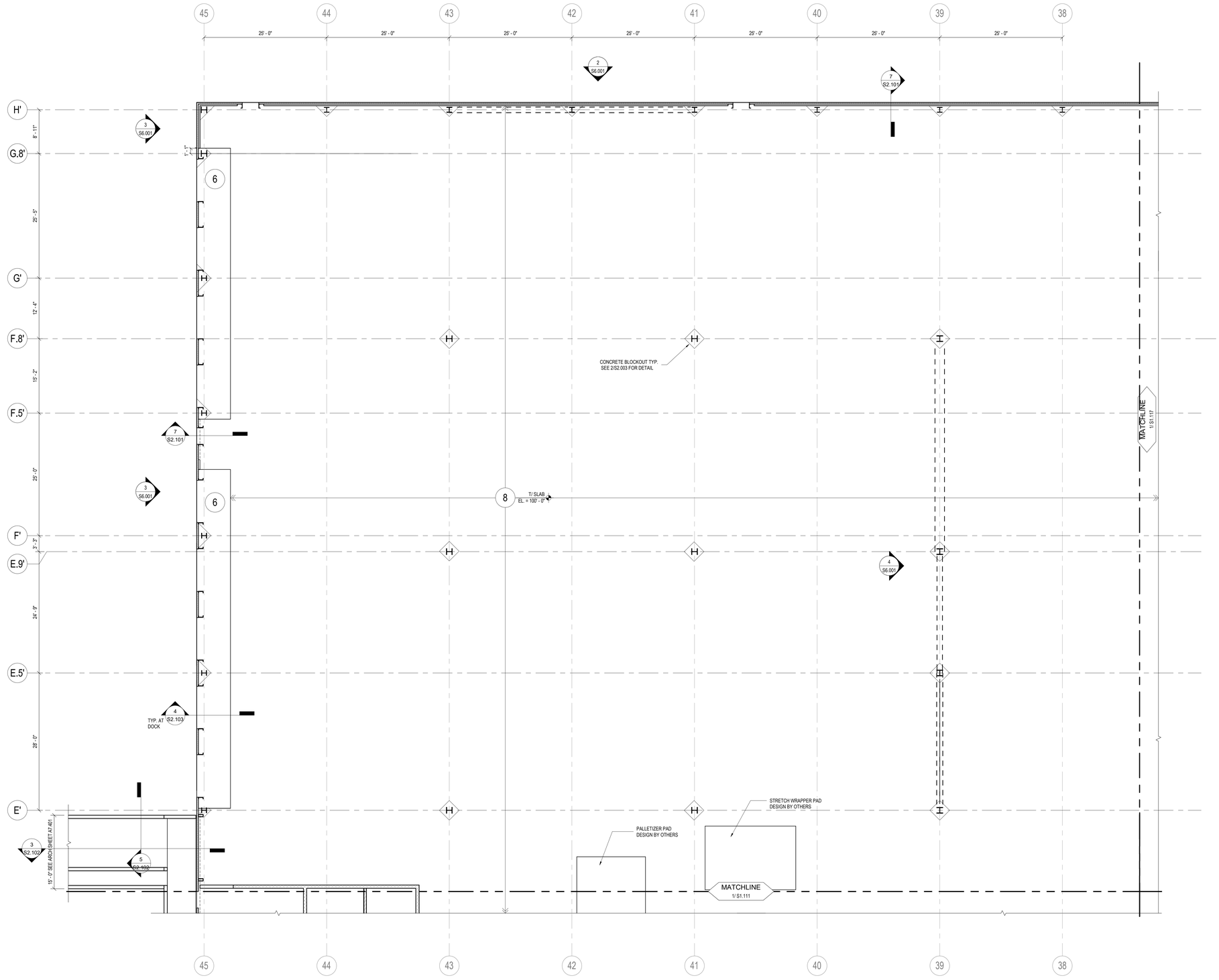


1 SLAB PLAN AREA 16- FINISHED GOODS WAREHOUSE

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

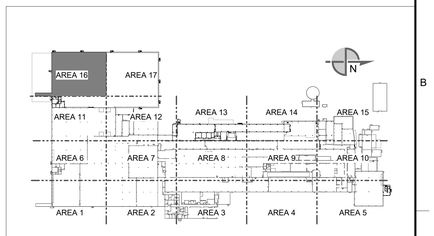
SLAB PLAN NOTES:

1. FOR GENERAL NOTES, REFER TO SHEETS S0.001 AND S0.002.
2. TOP OF CONCRETE SLAB ON GRADE ELEVATION = REFERENCE ELEVATION = 100'-0" HP, UNLESS OTHERWISE NOTED.
3. FLOOR CONSTRUCTION: REFER TO LEGEND, THIS SHEET, AND SLAB SCHEDULE ON SHEET S2.002.
4. PROVIDE ARMOR EDGE CONSTRUCTION JOINTS AS INDICATED HERE AND IN THE ARCHITECTURAL DRAWINGS.
5. COORDINATE ALL PITS, TRENCHES, POCKETS, SLEEVES, PADS, PENETRATIONS, DEPRESSIONS, FLOOR SLOPES, AND CONCRETE INSERTS WITH ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS.
6. CONTRACTOR SHALL SUBMIT FULL CONTROL AND CONSTRUCTION JOINT LAYOUT FOR APPROVAL PRIOR TO POURING SLABS.

LEGEND:

- "CJ" APPROXIMATE LOCATION OF CONTROL JOINTS IN SLABS ON GRADE. FOR DETAILS REFER TO SHEETS S2.001 AND S2.002 WHERE NO JOINTS ARE SHOWN, REFER TO SHEET S0.001 SLAB NOTE 8
- "FD" FLOOR DRAIN. REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- "AJ" ARMOR JOINT. REFER TO DETAIL 11/S2.002
- 1t INDICATES SLAB THICKNESS, REFER TO SHEET S2.002
- INDICATES IMP WALL
- INDICATES CMU WALL
- INDICATES CONCRETE WALL

KEY PLAN



TRUE NORTH PLAN NORTH

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DG PROJ: 7021 DG DWG: S1.116

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
U	05/03/2023			MCF tinkering
T	05/03/2023	MCF	MYW	PERMIT
R	04/07/2023	MCF	MYW	PERMIT RESUBMISSION
N	02/28/2023	BGB	MYW	90% RELEASE
K	02/27/2023	BGB	MYW	WAREHOUSE, PACKAGING, RECEIVING CONCRETE BID
H	02/03/2023	MLO	MYW	WAREHOUSE, PACKAGING, RECEIVING STEEL BID

DRAWN	Author	DATE 08/08/22
APPROVED	Approver	08/08/22
BUILDING		
PROJECT NO. 11025607	PROJECT NAME PROJECT FINN	

SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT

STRUCTURAL
SLAB PLAN AREA 16

DRAWING NO. RIC-806736-16-S-1 REV. U

DRAWING SIZE: ANSI E (44" x 34") SHEET OF

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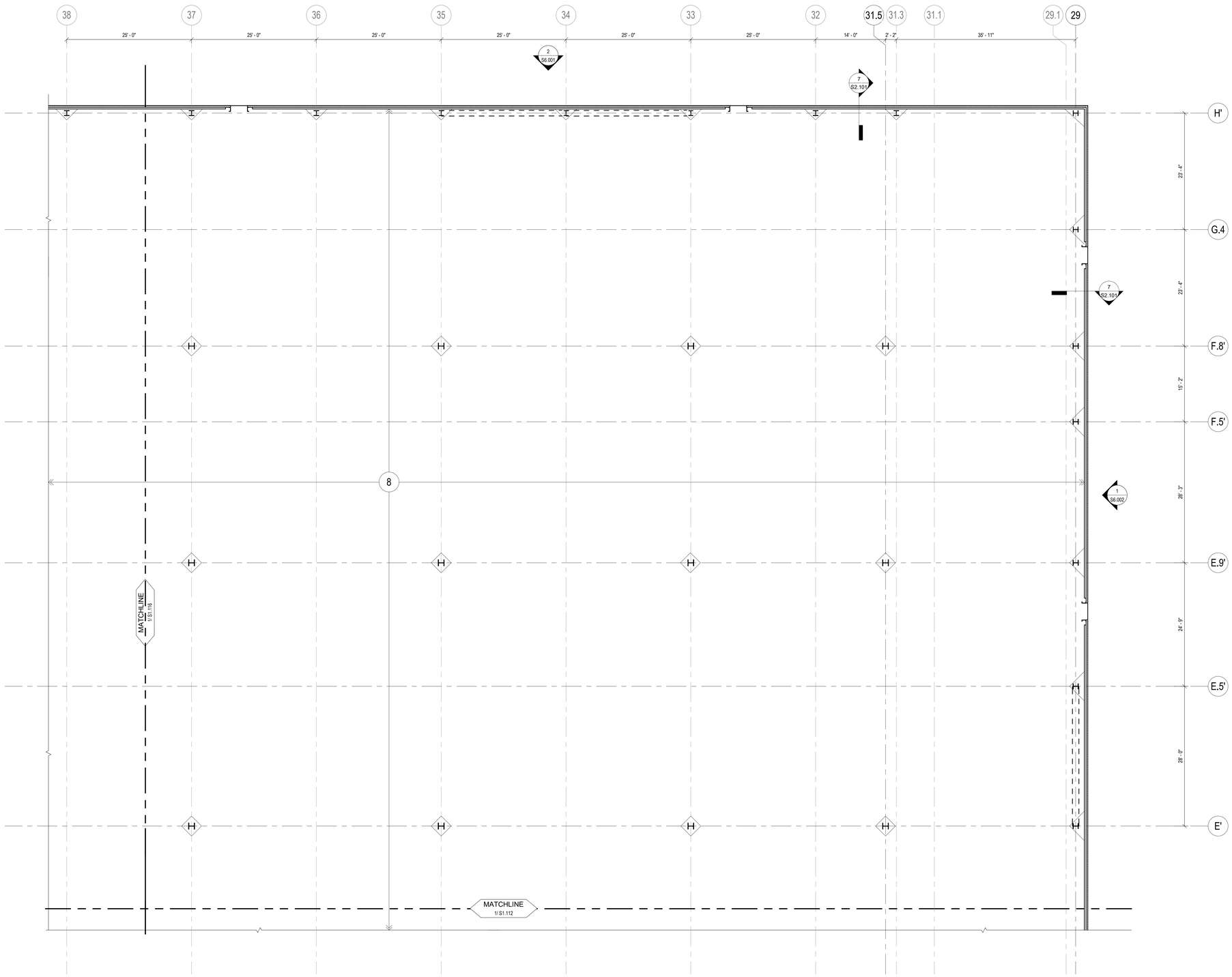


1 SLAB PLAN AREA 17- FINISHED GOODS WAREHOUSE

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

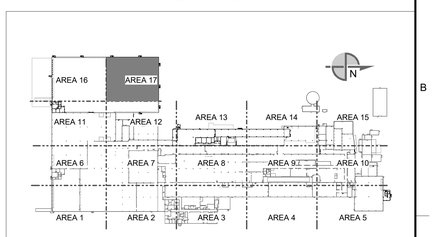
SLAB PLAN NOTES:

1. FOR GENERAL NOTES, REFER TO SHEETS S0.001 AND S0.002.
2. TOP OF CONCRETE SLAB ON GRADE ELEVATION = REFERENCE ELEVATION = 100'-0" HP, UNLESS OTHERWISE NOTED.
3. FLOOR CONSTRUCTION: REFER TO LEGEND, THIS SHEET, AND SLAB SCHEDULE ON SHEET S2.002.
4. PROVIDE ARMOR EDGE CONSTRUCTION JOINTS AS INDICATED HERE AND IN THE ARCHITECTURAL DRAWINGS.
5. COORDINATE ALL PITS, TRENCHES, POCKETS, SLEEVES, PADS, PENETRATIONS, DEPRESSIONS, FLOOR SLOPES, AND CONCRETE INSERTS WITH ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS.
6. CONTRACTOR SHALL SUBMIT FULL CONTROL AND CONSTRUCTION JOINT LAYOUT FOR APPROVAL PRIOR TO POURING SLABS.

LEGEND:

- "CJ" APPROXIMATE LOCATION OF CONTROL JOINTS IN SLABS ON GRADE. FOR DETAILS REFER TO SHEETS S2.001 AND S2.002 WHERE NO JOINTS ARE SHOWN, REFER TO SHEET S0.001 SLAB NOTE 8
- "FD" FLOOR DRAIN. REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- "AJ" ARMOR JOINT. REFER TO DETAIL 11/S2.002
- 1t INDICATES SLAB THICKNESS, REFER TO SHEET S2.002
- INDICATES IMP WALL
- INDICATES CMU WALL
- INDICATES CONCRETE WALL

KEY PLAN



TRUE NORTH PLAN NORTH

SEE DRAWING LIST ON TITLE SHEET DWG. NO. RIC-806732-01-S-0 FOR CORRESPONDING CSC SHEET NUMBER

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DG PROJ: 7021 DG DWG: S1.117

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T	05/03/2023	MCF	MYW	PERMIT
R	04/07/2023	MCF	MYW	PERMIT RESUBMISSION
N	02/28/2023	BGB	MYW	90% RELEASE
K	02/27/2023	BGB	MYW	WAREHOUSE, PACKAGING, RECEIVING CONCRETE BID
H	02/03/2023	MLO	MYW	WAREHOUSE, PACKAGING, RECEIVING STEEL BID

DRAWN	Author	DATE	08/08/22
APPROVED	Approver		08/08/22
BUILDING			
PROJECT NO. 11025607	PROJECT NAME PROJECT FINN		

SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT

STRUCTURAL
SLAB PLAN AREA 17

DRAWING NO. RIC-806736-17-S-1 REV. U

DRAWING SIZE: ANSI E (44" x 34") SHEET OF

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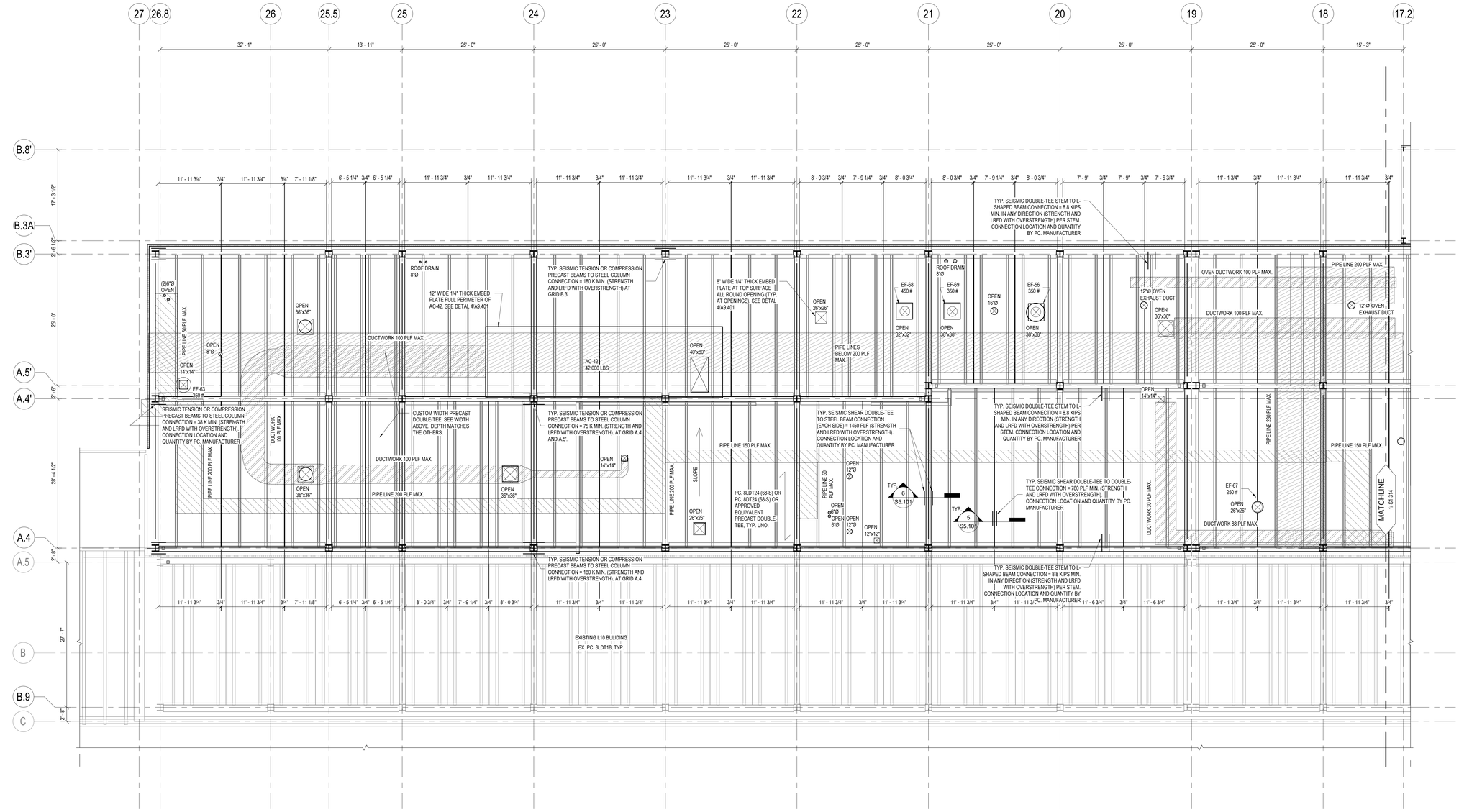


1 ROOF FRAMING PLAN AREA 13 - L11 PRECAST DOUBLE TEES

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

TRUE NORTH PLAN NORTH

PRECAST DOUBLE TEE PLAN NOTES:

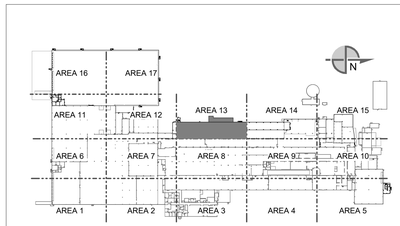
1. REFER TO GENERAL NOTES, SHEETS S0.001 AND S0.002.
2. REFER TO TYPICAL DETAILS, SHEETS S3.001 TO S3.005
3. TOP OF PRECAST CONCRETE AND STEEL BEAM ELEVATION AS BELOW, UNLESS OTHERWISE NOTED.
   = 123'-10 1/8" (AT GL. A.4)
   = 123'-3" (AT GL. A.1)
   = 122'-8" (AT GL. B.2)

   TOP OF ROOF STRUCTURAL STEEL COLUMN ELEVATION AS BELOW, UNLESS OTHERWISE NOTED.
   = 123'-11 3/4" (AT GL. A.4)
   = 123'-4 5/8" (AT GL. A.1)
   = 122'-9 5/8" (AT GL. B.2)
5. ALL FRAMING SHALL BE EQUALLY SPACED BETWEEN COLUMN LINES, UNLESS NOTED OTHERWISE.
6. COORDINATE SIZE OF ALL FLOOR PENETRATIONS WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS. ALL FLOOR PENETRATIONS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO FABRICATION AND INSTALLATION OF PENETRATION FRAMING ELEMENTS. PROVIDE FRAMING AS INDICATED IN TYPICAL DETAIL. DO NOT SCALE OPENINGS.
7. THESE PLANS DO NOT SHOW THE FULL SCOPE OF OPENINGS; COORDINATE SIZE AND LOCATIONS OF ALL FLOOR PENETRATIONS WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS. PROVIDE FRAMING AS INDICATED IN TYPICAL DETAIL. DO NOT SCALE OPENINGS.

LEGEND:

- INDICATES IMP WALL
- INDICATES CMU WALL
- INDICATES PRECAST CONCRETE WALL
- a=xxK xxK STEEL BEAM (XX) a=xxK xxK; (xx) (xx)
- (XX) INDICATES NUMBER OF COMPOSITE SHEAR STUDS. (IF NOT SHOWN BEAM IS NOT COMPOSITE).
- xxK INDICATES SHEAR REACTION (KIPS)(FACTORED)
- a=xxK INDICATES AXIAL REACTION (KIPS)(FACTORED)(T/C)
- (xx) INDICATES MOMENT REACTION (KIP-FT)(FACTORED). MOMENT FORCES INDICATED ARE REVERSIBLE.
  FC = FULL BEAM CAPACITY
  FP = FULL PENETRATION WELD FLANGE TO COLUMN. SEE DETAIL X/S3.XXX
  FBS = 5/16" FILLET WELD BOTH SIDES OF EACH FLANGE TO COLUMN
- CANT INDICATES CANTILEVER (DESIGN CONNECTION FOR BEAM CAPACITY, UON)
- BFB INDICATES BOTTOM FLANGE BRACING. REFER TO 8/S3.003.
- INDICATES DECK SPAN DIRECTION
- MFB-x INDICATES MOMENT FRAME BEAM AND CONNECTIONS, SEE S6.103

KEY PLAN



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DG PROJ: 7021 DG DWG: S1.313

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
T	05/03/2023	MCF	MYW	PERMIT
S	04/07/2023	BGB	MYW	L11 STEEL AND CONCRETE COORDINATION
R	04/07/2023	MCF	MYW	PERMIT RESUBMISSION
Q	03/20/2023	BGB	MYW	PRECAST CONCRETE COORDINATION
N	02/28/2023	BGB	MYW	90% RELEASE
M	02/27/2023	BGB	MYW	PERMIT

DRAWN: Author DATE: 12/05/2022
APPROVED: Approver 12/05/2022
BUILDING:
PROJECT NO.: 11025607
PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT
STRUCTURAL
ROOF FRAMING PLAN AREA 13 - L11 PRECAST DOUBLE TEES
DRAWING NO.: RIC-806738-13-S-1 REV.: T
DRAWING SIZE: ANSI E (44" x 34") SHEET OF

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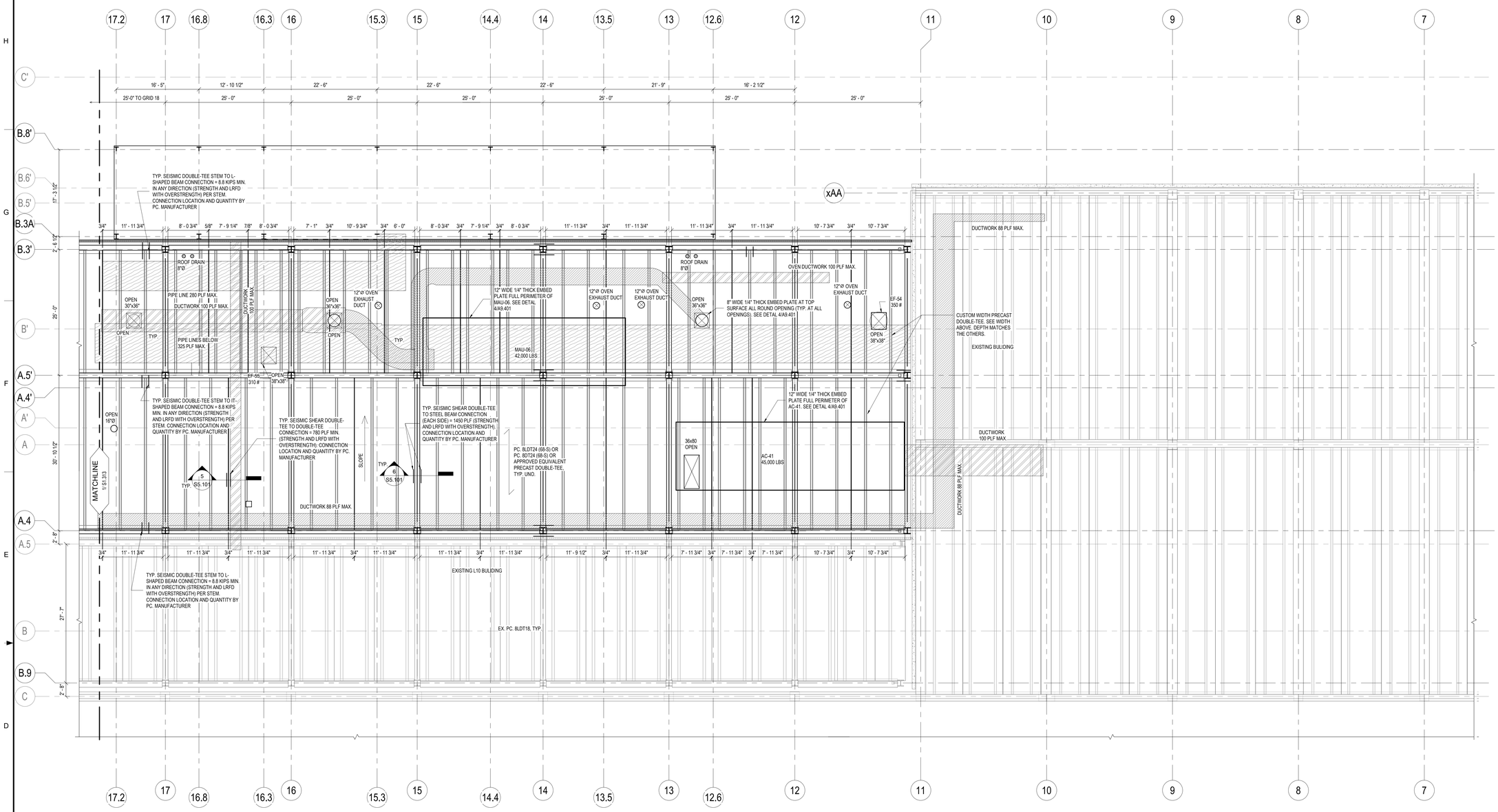


1 ROOF FRAMING PLAN AREA 14 - L11 PRECAST DOUBLE TEES

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

PRECAST DOUBLE TEE PLAN NOTES:

1. REFER TO GENERAL NOTES, SHEETS S0.001 AND S0.002.
2. REFER TO TYPICAL DETAILS, SHEETS S3.001 TO S3.005
3. TOP OF PRECAST CONCRETE AND STEEL BEAM ELEVATION AS BELOW, UNLESS OTHERWISE NOTED.
   = 123'-10 1/8" (AT GL. A.4)
   = 123'-3" (AT GL. A.1)
   = 122'-8" (AT GL. B.2)

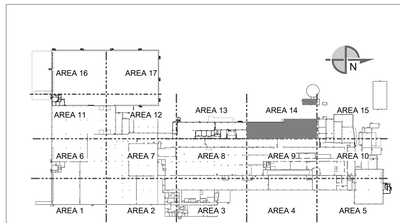
   TOP OF ROOF STRUCTURAL STEEL COLUMN ELEVATION AS BELOW, UNLESS OTHERWISE NOTED.
   = 123'-11 3/4" (AT GL. A.4)
   = 123'-4 5/8" (AT GL. A.1)
   = 122'-9 5/8" (AT GL. B.2)
5. ALL FRAMING SHALL BE EQUALLY SPACED BETWEEN COLUMN LINES, UNLESS NOTED OTHERWISE.
6. COORDINATE SIZE OF ALL FLOOR PENETRATIONS WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS. ALL FLOOR PENETRATIONS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO FABRICATION AND INSTALLATION OF PENETRATION FRAMING ELEMENTS. PROVIDE FRAMING AS INDICATED IN TYPICAL DETAIL. DO NOT SCALE OPENINGS.
7. THESE PLANS DO NOT SHOW THE FULL SCOPE OF OPENINGS; COORDINATE SIZE AND LOCATIONS OF ALL FLOOR PENETRATIONS WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS. PROVIDE FRAMING AS INDICATED IN TYPICAL DETAIL. DO NOT SCALE OPENINGS.

LEGEND:

- INDICATES IMP WALL
- INDICATES CMU WALL
- INDICATES PRECAST CONCRETE WALL
- a=xxK xxK STEEL BEAM (XX) a=xxK xxK (xx) (xx)
- (XX) INDICATES NUMBER OF COMPOSITE SHEAR STUDS. (IF NOT SHOWN BEAM IS NOT COMPOSITE).
- xxK INDICATES SHEAR REACTION (KIPS)(FACTORED)
- a=xxK INDICATES AXIAL REACTION (KIPS)(FACTORED)(T/C)
- (xx) INDICATES MOMENT REACTION (KIP-FT)(FACTORED). MOMENT FORCES INDICATED ARE REVERSIBLE.
  FC = FULL BEAM CAPACITY
  FP = FULL PENETRATION WELD FLANGE TO COLUMN. SEE DETAIL X/S3.XXX
  FBS = 5/16" FILLET WELD BOTH SIDES OF EACH FLANGE TO COLUMN
- CANT INDICATES CANTILEVER (DESIGN CONNECTION FOR BEAM CAPACITY, UON)
- BFB INDICATES BOTTOM FLANGE BRACING. REFER TO 8/S3.003.
- INDICATES DECK SPAN DIRECTION
- MFB-x INDICATES MOMENT FRAME BEAM AND CONNECTIONS, SEE S6.103

TRUE NORTH PLAN NORTH

KEY PLAN



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REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
T	05/03/2023	MCF	MYW	PERMIT
S	04/07/2023	BGB	MYW	L11 STEEL AND CONCRETE COORDINATION
R	04/07/2023	MCF	MYW	PERMIT RESUBMISSION
Q	03/20/2023	BGB	MYW	PRECAST CONCRETE COORDINATION
N	02/28/2023	BGB	MYW	90% RELEASE
M	02/27/2023	BGB	MYW	PERMIT

DRAWN: Author DATE: 12/05/2022
APPROVED: Approver 12/05/2022
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PROJECT NO.: 11025607
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CAMPBELL SOUP COMPANY
RICHMOND, UT

STRUCTURAL
ROOF FRAMING PLAN AREA 14 - L11 PRECAST DOUBLE TEES

DRAWING NO.: RIC-806738-14-S-1 REV.: T
DRAWING SIZE: ANSI E (44" x 34") SHEET OF

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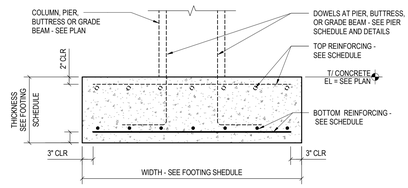


TYPICAL COLUMN FOOTING

NOTE: REFER TO SHEET S6.103 FOR ADDITIONAL REINFORCING REQUIREMENTS AT MOMENT FRAMES.

COLUMN FOOTING SCHEDULE - CONT.

(ALLOWABLE BEARING PRESSURE: 4,000 PSF)

MARK	PLAN SIZE		THICKNESS	BOTTOM REINF		TOP REINF		NOTES
	N-S	E-W		N-S	E-W	N-S	E-W	
F-4.5x6.0	4'-6"	6'-0"	1'-0"	(5)-#6	(7)-#6			
F-6.0x11.5	6'-0"	11'-6"	2'-0"	(12)-#7	(5)-#8	(12)-#7	(5)-#8	DRILL AND EPOXY TO EX. FTG
F-6.0x41.5	6'-0"	41'-6"	2'-0"	(42)-#7	(7)-#7	(42)-#7	(7)-#7	DRILL AND EPOXY TO EX. FTG
F-7.0x9.0	7'-0"	9'-0"	2'-0"	(9)-#7	(6)-#7	(9)-#7	(8)-#7	DRILL AND EPOXY TO EX. FTG
F-9.0x16.0	9'-0"	16'-0"	2'-6"	(16)-#8	(9)-#8	(16)-#8	(9)-#8	
F-10.0x109.0	10'-0"	109'-0"	3'-0"	(112)-#8	(11)-#8	(112)-#8	(11)-#8	
F-56.0x8.0	56'-0"	8'-0"	3'-0"	(14)-#8	(70)-#8	(14)-#8	(70)-#8	DRILL AND EPOXY TO EX. FTG

COLUMN FOOTING SCHEDULE

(ALLOWABLE BEARING PRESSURE: 4,000 PSF)

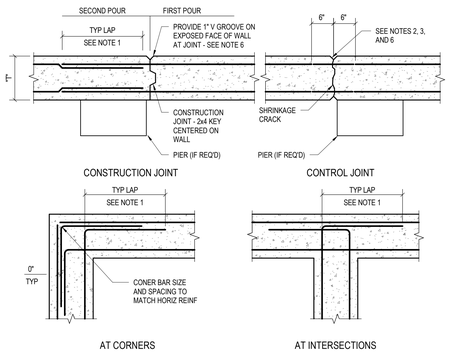
MARK	PLAN SIZE		THICKNESS	BOTTOM REINF		TOP REINF		NOTES
	N-S	E-W		N-S	E-W	N-S	E-W	
F-3.0	3'-0"	3'-0"	1'-0"	(4)-#4	(4)-#4			
F-4.0	4'-0"	4'-0"	1'-0"	(5)-#5	(5)-#5			
F-4.0A	4'-0"	4'-0"	2'-3"	(5)-#7	(6)-#6	(5)-#7	(6)-#6	DRILL AND EPOXY TO EX. FTG
F-4.0B	4'-0"	4'-0"	1'-3"	(5)-#5	(5)-#5			
F-4.0x16.5	4'-0"	16'-6"	2'-0"	(23)-#6	(6)-#6	(23)-#6	(6)-#6	DRILL AND EPOXY TO EX. FTG
F-5.0x26.0	5'-0"	26'-0"	2'-0"	(36)-#6	(7)-#6	(36)-#6	(7)-#6	DRILL AND EPOXY TO EX. FTG
F-5.0x28.0	5'-0"	28'-0"	2'-0"	(28)-#7	(5)-#7	(28)-#7	(5)-#7	
F-5.0	5'-0"	5'-0"	1'-0"	(6)-#5	(6)-#5			
F-5.0A	5'-0"	5'-0"	2'-4"	(6)-#7	(6)-#7	(6)-#7	(6)-#7	DRILL AND EPOXY TO EX. FTG
F-5.5A	5'-6"	5'-6"	2'-0"	(6)-#7	(6)-#7	(6)-#7	(6)-#7	DRILL AND EPOXY TO EX. FTG
F-6.0	6'-0"	6'-0"	1'-0"	(7)-#5	(7)-#5			
F-6.0A	6'-0"	6'-0"	2'-4"	(7)-#7	(7)-#7	(7)-#7	(7)-#7	DRILL AND EPOXY TO EX. FTG
F-7.0	7'-0"	7'-0"	1'-6"	(8)-#6	(8)-#6			
F-7.0A	7'-0"	7'-0"	1'-6"	(8)-#6	(8)-#6	(8)-#6	(8)-#6	
F-8.0	8'-0"	8'-0"	1'-10"	(7)-#7	(7)-#7			
F-8.0A	8'-0"	8'-0"	1'-10"	(7)-#7	(7)-#7	(7)-#7	(7)-#7	
F-6.0x8.0	6'-0"	8'-0"	2'-0"	(7)-#7	(5)-#8	(7)-#7	(5)-#8	DRILL AND EPOXY TO EX. FTG
F-6.0x12.0	6'-0"	12'-0"	2'-0"	(14)-#7	(7)-#7	(14)-#7	(7)-#7	DRILL AND EPOXY TO EX. FTG
F-6.0x24.0	6'-0"	24'-0"	2'-6"	(25)-#8	(7)-#7	(25)-#8	(7)-#7	DRILL AND EPOXY TO EX. FTG
F-6.0x28.0	6'-0"	28'-0"	2'-6"	(28)-#8	(7)-#7	(28)-#8	(7)-#7	
F-8.0x6.0	8'-0"	6'-0"	2'-0"	(8)-#6	(9)-#6	(8)-#6	(9)-#6	DRILL AND EPOXY TO EX. FTG
F-8.5x7.0	8'-6"	7'-0"	2'-0"	(7)-#7	(11)-#7	(7)-#7	(11)-#7	
F-9.0x8.0	9'-0"	8'-0"	2'-0"	(9)-#7	(10)-#7	(9)-#7	(10)-#7	
F-9.0	9'-0"	9'-0"	1'-6"	(10)-#6	(10)-#6			
F-9.0A	9'-0"	9'-0"	2'-6"	(10)-#7	(10)-#7	(10)-#7	(10)-#7	
F-10.0	10'-0"	10'-0"	1'-9"	(11)-#6	(11)-#6			
F-12A	12'-0"	12'-0"	2'-0					
F-10B	10'-0"	10'-0"	2'-0					
F-10C	10'-0"	10'-0"	2'-0					
F-10.0x106.0	10'-0"	106'-0"	3'-0	(106)-#8	(14)-#8	(106)-#8	(14)-#8	
F-10.0x115.0	10'-0"	115'-0"	3'-0	(115)-#8	(12)-#8	(115)-#8	(12)-#8	
F-11.0	11'-0"	11'-0"	1'-9"	(12)-#7	(12)-#7			
F-11.0A	11'-0"	11'-0"	1'-9"					
F-12.0	12'-0"	12'-0"	2'-0"	(13)-#7	(13)-#7			
F-13.0	13'-0"	13'-0"	2'-3"	(14)-#7	(14)-#7			
F-14.0	14'-0"	14'-0"	2'-6"	(15)-#8	(15)-#8			
F-14.0x62.5	14'-0"	62'-6"	3'-4"	(85)-#8	(22)-#9	(85)-#8	(22)-#9	DRILL AND EPOXY TO EX. FTG
F-21.5x4.5	21'-6"	4'-6"	2'-0"	(5)-#8	(25)-#8	(5)-#8	(25)-#8	
F-28.0x5.0	28'-0"	5'-0"	2'-0"	(5)-#7	(28)-#7	(5)-#7	(28)-#7	DRILL AND EPOXY TO EX. FTG
F-28.0x6.0	28'-0"	6'-0"	2'-0"	(6)-#7	(28)-#7	(6)-#7	(28)-#7	DRILL AND EPOXY TO EX. FTG
F-32.0x7.0	32'-0"	7'-0"	2'-6"	(8)-#7	(35)-#7	(8)-#7	(35)-#7	DRILL AND EPOXY TO EX. FTG
F-44.0x10.0	44'-0"	10'-0"	3'-0"	(21)-#9	(37)-#9	(12)-#9	(37)-#9	
F-57.0x8.0	57'-0"	8'-0"	3'-0"	(14)-#9	(46)-#9	(8)-#9	(45)-#9	DRILL AND EPOXY TO EX. FTG
F-108.0x11.0	108'-0"	11'-0"	3'-6"	(17)-#9	(108)-#9	(12)-#9	(106)-#9	
F-110.0x12.0	110'-0"	12'-0"	3'-6"	(23)-#9	(120)-#9	(12)-#9	(120)-#9	

REMARKS:

1. REFER TO FOOTING DETAILS AND FOUNDATION NOTES IN USING THIS SCHEDULE.

1 TYPICAL COLUMN FOOTING DETAIL & SCHEDULE

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

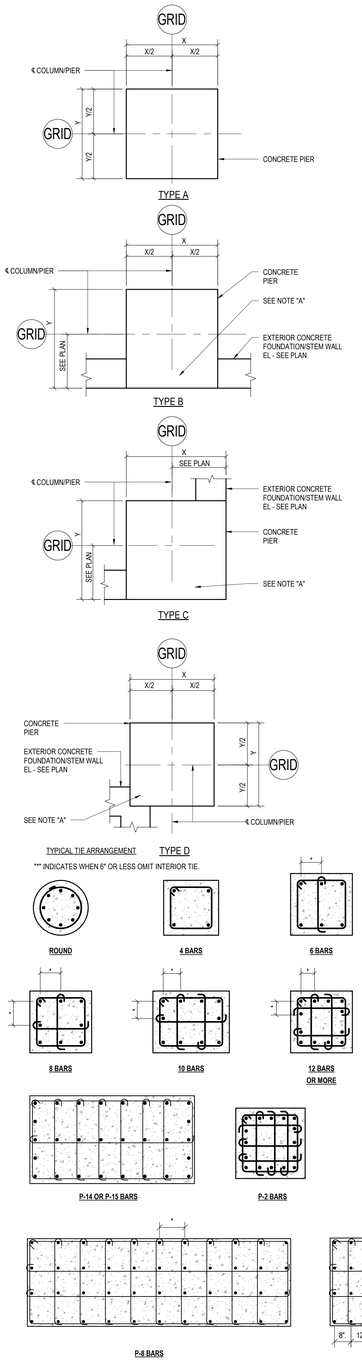


NOTES:

1. ALL BAR SPLICES SHALL BE CLASS "B" LAP SPLICES WITH 56 BAR DIAMETERS MINIMUM.
2. PROVIDE CONSTRUCTION/CONTROL JOINTS AT THE MAXIMUM SPACING OF 20 FEET. CONTROL JOINTS SHALL ALSO BE PROVIDED WHERE CHANGES IN WALL HEIGHT AND WALL THICKNESS OCCUR. VERIFY LOCATION OF CONTROL JOINTS WITH ARCH. PROVIDE CONSTRUCTION/CONTROL JOINTS AT FACE OF PIERS UNLESS OTHERWISE NOTED ON PLAN.
3. AT CONTROL JOINT, PROVIDE BEVEL JOINT "T"1/10 INTO WALL SURFACE BOTH SIDES. STOP ALTERNATING HORIZONTAL REINFORCING BARS 6" SHORT OF CONTROL JOINT.
4. SEE APPROPRIATE SECTION FOR WALL REINFORCEMENT.
5. VERTICAL REINFORCING AND/OR SUPPORT BARS NOT SHOWN FOR CLARITY.
6. PROVIDE CAULKING AT JOINT IF REQ'D. SEE ARCH DRAWINGS.

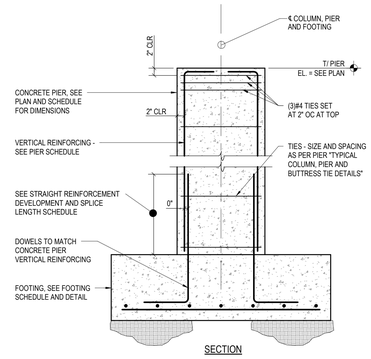
2 TYPICAL CONCRETE WALL CONSTRUCTION DETAIL

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



3 TYPICAL CONCRETE PIER DETAIL

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



PIER SCHEDULE

MARK	PIER TYPE	"X"	"Y"	VERTICAL REINFORCING	REMARKS
P-1	D	4'-0"	4'-0"	(16) - #8	
P-2	C	6'-0"	6'-0"	(32) - #8	
P-3	D	4'-0"	6'-0"	(22) - #8	
P-4	B/C	4'-0"	4'-0"	(16) - #8	AT EX. FTG. AND WALL, DRILL AND EPOXY TO EX.
P-5	B	4'-0"	5'-0"	(18) - #8	
P-6	B	8'-0"	4'-0"	(24) - #9	AT EX. FTG. AND WALL, DRILL AND EPOXY TO EX.
P-7	B	5'-6"	4'-0"	(20) - #8	
P-8	B	12'-0"	4'-0"	(44) - #8	AT EX. FTG. AND WALL, DRILL AND EPOXY TO EX.
P-9	C	4'-0"	3-6"	(14) - #8	
P-10	B/C	3'-0"	3-0"	(8) - #8	
P-11	B/C	2'-0"	2-0"	(10) - #5	AT EX. FTG. AND WALL, DRILL AND EPOXY TO EX.
P-12	C	5'-0"	5'-0"	(24) - #8	(6) #5 TIES AT TOP (F'c=6000 psi), DRILL AND EPOXY TO EX.
P-13	B	5'-0"	5-0"	(24) - #8	(6) #5 TIES AT TOP, (F'c=6000 psi)
P-14	B	4'-0"	7'-6"	(26) - #8	(6) #5 TIES AT TOP (F'c=6000 psi)
P-15	C	5'-0"	6'-6"	(30) - #8	(6) #5 TIES AT TOP (F'c=6000 psi)
P-16	B/C	3'-0"	2'-0"	(6) - #8	
P-17	B/C	4'-0"	3'-0"	(12) - #8	AT EX. FTG. AND WALL, DRILL AND EPOXY TO EX.
P-18	B/C	6'-0"	4'-0"	(22) - #8	AT EX. FTG. AND WALL, DRILL AND EPOXY TO EX.
P-19	B/C	2'-1"	2'-1"	(8) - #7	#4 TIES
P-20	B	8'-0"	4'-0"	(16) - #8 (24) - #6	AT EX. FTG. AND WALL, DRILL AND EPOXY TO EX.
P-21	B	12'-0"	4'-0"	(24) - #5 (40) - #6	AT EX. FTG. AND WALL, DRILL AND EPOXY TO EX.

NOTES:

A. NOTE "A" - PROVIDE BLOCK-OUT IN FOUNDATION WALL AS REQUIRED TO ALLOW FOR PIER AND COLUMN BASE PLATE INSTALLATION. DO NOT INTERRUPT FOUNDATION WALL REINFORCING. INFILL BLOCK-OUT WITH CONCRETE AFTER COLUMN INSTALLATION, TYPICAL.
B. X DIMENSION PARALLEL TO PLAN EAST/WEST DIRECTION.
C. Y DIMENSION PARALLEL TO PLAN NORTH/SOUTH DIRECTION.

MAXIMUM SPACING OF TIES (UNO)

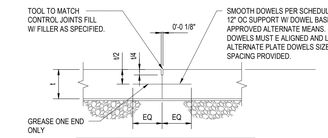
VERTICAL BAR SIZE	SIZE AND SPACING OF TIES		
	#3	#4	#5
#3	6"	-	-
#4	8"	-	-
#5	10"	-	-
#6	11"	11"	-
#7	12"	12"	-
#8	16"	16"	-
#9	†	22"	22"
#10	†	24"	26"
#11	†	24"	30"

*** INDICATES MAXIMUM SPACING NOT TO EXCEED LEAST DIMENSION OF COMPRESSION MEMBER

† INDICATES #3 TIES NOT PERMITTED

REMARKS:

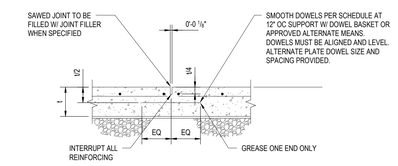
1. THE VERTICAL BARS SHALL BE SPACED AROUND THE PERIMETER SO AS TO ACHIEVE APPROXIMATELY EQUAL SPACING.
2. THE MINIMUM VERTICAL BAR SPACING SHALL BE 1.5 X THE BAR DIAMETER, BUT NOT LESS THAN 1".
3. TIES SHALL BE ARRANGED SUCH THAT EVERY CORNER AND ALTERNATE VERTICAL BAR SHALL HAVE LATERAL SUPPORT PROVIDED BY THE CORNER OF A TIE WITH AN INCLUDED ANGLE OF NOT MORE THAN 135 DEGREES AND NO BAR SHALL BE FURTHER THAN 6" CLEAR ON EACH SIDE ALONG THE TIE FROM SUCH A LATERALLY SUPPORTED BAR.
4. TIES SHALL BE LOCATED VERTICALLY NOT MORE THAN ONE-HALF A TIE SPACING ABOVE THE TOP OF FOOTING OR SLAB IN ANY STORY, AND SHALL BE SPACED AS PROVIDED HEREIN TO NOT MORE THAN ONE-HALF A TIE SPACING BELOW THE LOWEST HORIZONTAL REINFORCEMENT IN SLAB OR DROP PANEL ABOVE.
5. WHERE BEAMS OR BRACKETS FRAME FROM FOUR DIRECTIONS INTO A COLUMN, PIER OR BUTTRESS, TERMINATION OF TIES NOT MORE THAN 3" BELOW REINFORCEMENT IN SHALLOWEST OF SUCH BEAMS OR BRACKETS SHALL BE PERMITTED.
6. SEE THE GENERAL NOTES ON DRAWING S1 FOR THE MINIMUM CONCRETE COVER REQUIREMENTS FOR REINFORCEMENT.
7. WHERE PIERS ARE ADJACENT TO FOUNDATION WALLS, PIERS ARE TO BE POURED MONOLITHICALLY WITH WALLS. PIER REINFORCING SHALL EXTEND WITHIN 2" OF OPPOSITE FACE OF WALL.



SLAB "T"	ROUND DOWEL SIZE	PLATE DOWEL SIZE
6"	¾" Ø x 16"	¼" x 4.5" AT 18" OC
8"	1" x 18"	⅜" x 4.5" AT 18" OC

6 TYPICAL CONSTRUCTION JOINT DETAIL

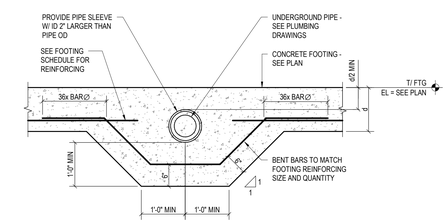
SCALE: 3/4" = 1'-0"



SLAB "T"	ROUND DOWEL SIZE	PLATE DOWEL SIZE
6"	¾" Ø x 16"	¼" x 4.5" AT 18" OC
8"	1" x 18"	⅜" x 4.5" AT 18" OC

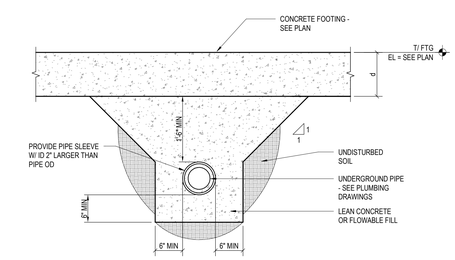
7 TYPICAL DOWELED CONTROL JOINT DETAIL

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



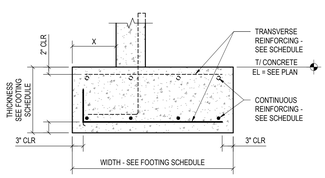
8 TYPICAL PIPE SLEEVE THROUGH FOOTING DETAIL

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

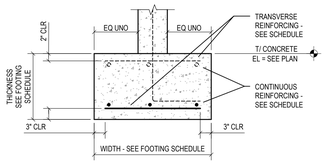


9 TYPICAL PIPE UNDER FOOTING DETAIL

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



TYPICAL RETAINING WALL FOOTING



TYPICAL WALL FOOTING

WALL FOOTING SCHEDULE

(ALLOWABLE BEARING PRESSURE: 4,000 PSF)

MARK	WIDTH	THICKNESS	BOTTOM REINFORCING		TOP REINFORCING		X	NOTES
			CONT	TRANS	CONT	TRANS		
WF1.3	1'-4"	*	(2) - #4	#4 @ 18" OC	(2) - #4	#4 @ 18" OC	-	*SEE 6/S2.104
WF2.0	2'-0"	12"	(3) - #4	#5 @ 12" OC	-	-	-	
WF2.0A	2'-0"	27"	(3) - #6	#7 @ 12" OC	(2) - #4	#4 @ 48" OC	-	
WF3.0	3'-0"	12"	(4) - #5	#5 @ 12" OC	(4) - #5	#5 @ 12" OC	-	
WF4.0	4'-0"	15"	(5) - #5	#5 @ 10" OC	-	-	-	
RF4.0	4'-0"	15"	(5) - #5	#5 @ 10" OC	(5) - #5	#5 @ 10" OC	1'-0"	*SEE 8/S2.104
RF6.0	6'-0"	15"	(7) - #5	#5 @ 10" OC	(7) - #5	#5 @ 10" OC	1'-0"	*SEE 7/S2.101

REMARKS:

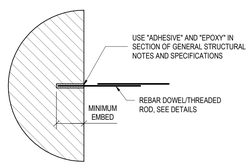
1. REFER TO FOOTING DETAILS AND FOUNDATION NOTES IN USING THIS SCHEDULE

4 TYPICAL WALL FOOTING DETAIL & SCHEDULE

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

STANDARD ADHESIVE EMBEDMENT SCHEDULE

REBAR DOWEL (THREADED ROD SIZE)	MINIMUM EMBEDMENT INTO CONCRETE OR GROUTED MASONRY
#3 (3/8")	4.1/2"
#4 (1/2")	6"
#5 (5/8")	7.1/2"
#6 (3/4")	9"
#7 (7/8")	10.1/2"
#8 (1")	12"



STANDARD ADHESIVE EMBEDMENT NOTES:

1. SPECIFIC EMBEDMENTS, NOTES AND DETAILS IN DRAWINGS SHALL GOVERN OVER THIS SCHEDULE.
2. HOLE DIAMETER SHALL BE DOWEL/ROD DIAMETER PLUS 1/8" FOLLOW MANUFACTURER'S INSTRUCTIONS FOR HOLE PREPARATION.
3. PROVICE A 3" MINIMUM EDGE DISTANCE TO CENTER OF HOLE
4. CONTACT STRUCTURAL ENGINEER IF MIMIMUM EMBEDMENTS INDICATED ABOVE ARE NOT ACHIEVABLE.
5. SEE "CHEMICAL ANCHORS" IN THE STRUCTURAL STEEL SECTION SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

10 STANDARD ADHESIVE EMBEDMENT SCHEDULE

SCALE: 1" = 1'-0"

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SEE DRAWING LIST ON TITLE SHEET DWG. NO. RIC-806732-01-S-0 FOR CORRESPONDING CSC SHEET NUMBER

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DG PROJ: 7021 DG DWG: S2.001

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
V	05/03/2023	BGB	MYW	FM RESUBMITTAL
T	05/03/2023	MCF	MYW	PERMIT
S	04/07/2023	BGB	MYW	L11 STEEL AND CONCRETE COORDINATION
R	04/07/2023	MCF	MYW	PERMIT RESUBMISSION
N	02/28/2023	BGB	MYW	90% RELEASE
K	02/27/2023	BGB	MYW	WAREHOUSE, PACKAGING, RECEIVING CONCRETE BID

DRAWN	Author	DATE 08/05/22
APPROVED	Approver	08/05/22
BUILDING		
PROJECT NO. 11025607	PROJECT NAME PROJECT FINN	
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)		

CAMPBELL SOUP COMPANY
RICHMOND, UT

STRUCTURAL
TYPICAL CONCRETE DETAILS

DRAWING NO. RIC-806741-01-S-5 REV. V

DRAWING SIZE: ANSI E (44" x 34") SHEET OF

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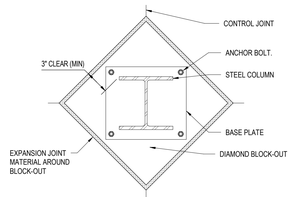
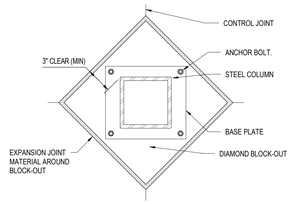


1 TYPICAL SLAB CONTROL JOINT DETAIL AT W-SHAPE COLUMNS
SCALE: 3/4" = 1'-0"



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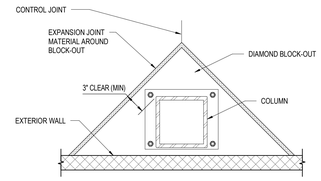
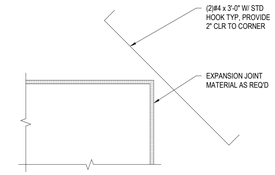


3 TYPICAL CONTROL JOINT DETAIL AS EXTERIOR WALL
SCALE: 3/4" = 1'-0"



4 SLAB CONTROL JOINT DETAIL AT REENTRANT CORNER
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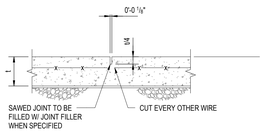
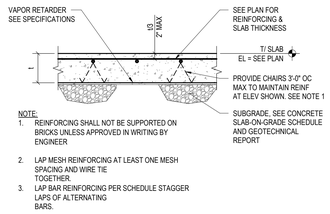


5 TYPICAL CONTROL JOINT DETAIL W/ WWF
SCALE: 3/4" = 1'-0"



6 TYPICAL SLAB-ON-GRADE DETAIL
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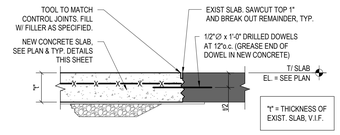
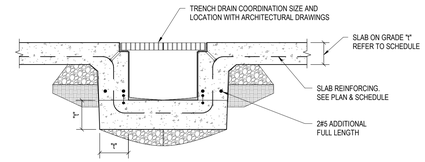


7 TYPICAL SLAB REPAIR DETAIL
SCALE: 3/4" = 1'-0"



8 TYPICAL TRENCH DRAIN DETAIL
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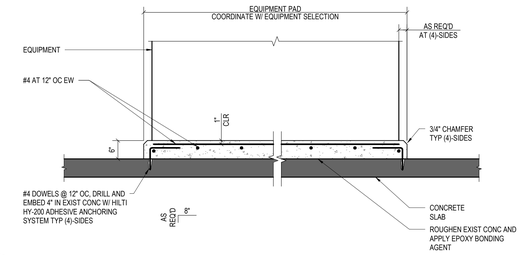
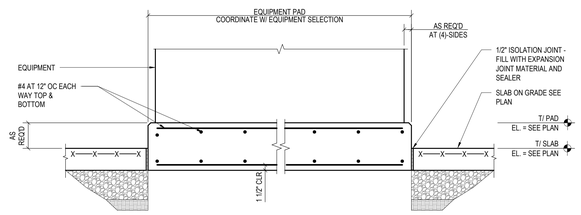


9 TYPICAL CONCRETE PAD
SCALE: 3/4" = 1'-0"



10 TYPICAL EQUIPMENT PAD DETAIL
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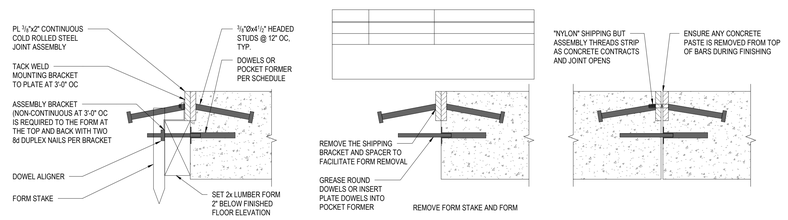
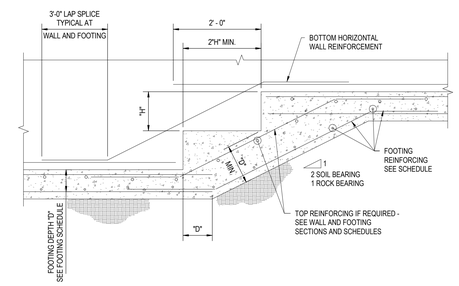


FORM AND PLACE CONCRETE | STRIP FORM; PREPARE DOWELS | PLACE 2ND CONCRETE SLAB

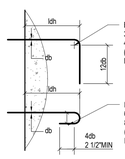
11 TYPICAL ARMORED JOINT DETAIL
SCALE: 3/4" = 1'-0"



12 TYPICAL STEPPED WALL FOOTING DETAIL
SCALE: 3/4" = 1'-0"

HOOKED REINFORCEMENT TENSION DEVELOPMENT LENGTH SCHEDULE

BAR SIZE	TENSION DEVELOPMENT LENGTH (ldh) INCHES		
	f'c (psi)	f'c (psi)	f'c (psi)
	3000	4000	4500
#3	9	8	7
#4	11	10	9
#5	14	12	12
#6	17	15	14
#7	20	17	16
#8	22	19	18
#9	25	22	21
#10	28	24	23
#11	31	27	26



REMARKS:

1. TABULATED DEVELOPMENT LENGTHS ARE BASED ON REINFORCING YIELD STRENGTH 60 KSI AND NORMAL WEIGHT CONCRETE.
2. ALL TABULATED VALUES ARE MINIMUM LENGTHS. IN CASE OF CONFLICT WITH THE PLANS, SECTIONS OR DETAILS USE THE LONGER LENGTH.
3. FOR LIGHTWEIGHT CONCRETE, MULTIPLY THE TABULATED VALUES BY 1.3.
4. FOR EPOXY COATED REINFORCING, MULTIPLY TABULATED VALUES BY 1.2

13 TYPICAL PIPE UNDER FOOTING DETAIL
SCALE: 3/4" = 1'-0"

STRAIGHT REINFORCEMENT DEVELOPMENT AND SPLICE LENGTH SCHEDULE

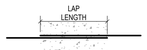
BAR SIZE	TENSION DEVELOPMENT LENGTH (ld) INCHES						COMPRESSION DEVELOPMENT LENGTH (ld) INCHES			TENSION LAP LENGTH - INCHES						COMPRESSION LAP LENGTH - INCHES
	TOP BARS			OTHER BARS			ALL BARS			TOP BARS			OTHER BARS			ALL BARS
	f'c (psi)	f'c (psi)	f'c (psi)	f'c (psi)	f'c (psi)	f'c (psi)	f'c (psi)	f'c (psi)	f'c (psi)	f'c (psi)	f'c (psi)	f'c (psi)	f'c (psi)	f'c (psi)	f'c (psi)	f'c (psi)
	3000	4000	4500	3000	4000	4500	3000	4000	4500	3000	4000	4500	3000	4000	4500	>3000
#3	22	19	18	17	15	14	9	8	7	28	24	23	22	19	18	12
#4	29	25	24	22	19	18	11	10	9	37	32	31	29	25	24	15
#5	36	31	29	28	24	23	14	12	12	47	40	38	36	31	29	19
#6	43	37	35	33	29	27	17	15	14	56	48	46	43	37	35	23
#7	63	54	51	48	42	40	20	17	16	81	71	67	63	54	51	27
#8	72	62	59	55	48	45	22	19	18	93	81	76	72	62	59	30
#9	81	70	66	62	54	51	25	22	21	105	91	86	81	70	66	34
#10	91	79	74	70	61	57	28	24	23	118	102	96	91	79	74	39
#11	101	87	87	78	67	63	31	27	26	131	113	107	101	87	82	43

REMARKS:

1. ALWAYS USE TENSION DEVELOPMENT LENGTH AND TENSION LAP SPLICE LENGTH VALUES EXCEPT WHEN THE PLANS OR DETAILS NOTE SPECIFICAL COMPRESSION LENGTHS.
2. TABULATED DEVELOPMENT AND LAP SPLICE LENGTHS ARE BASED ON REINFORCING YIELD STRENGTH Fy=60 KSI. NORMAL WEIGHT CONCRETE AND CLASS B LAPS.
3. TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 12 INCHES OF FRESH CONCRETE CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICE.
4. WHEN BARS OF DIFFERENT SIZE ARE LAP SPLICED IN TENSION, SPLICE LENGTH SHALL BE THE LARGER OF ld OF LARGER BAR AND TENSION SPLICE LENGTH OF THE SMALLER BAR.
5. ALL TABULATED VALUES ARE MINIMUM LENGTHS. IN CASE OF CONFLICT WITH THE PLANS SECTIONS OR DETAILS, USE THE LONGER LENGTH.
6. WELDED AND/OR MECHANICAL SPLICES MAY BE USED AT THE GENERAL CONTRACTOR'S OPTION PROVIDED THAT THE SPLICE IS CAPABLE OF DEVELOPING AT LEAST 125 PERCENT OF THE YIELDSTRENGTH OF THE LARGER BAR IN TENSION. THE GENERAL CONTRACTOR SHALL USE WELDED AND/OR MECHANICAL SPLICES WHERE LAP SPLICED WOULD CREATE BAR CONGESTION THAT WOULDINTERFERE WITH THE PLACING AND FINISHING OF THE CONCRETE. SPLICES IN "TENSION-TIE" MEMBERS SHALL BE FULL WELDED FOR MECHANICAL SPLICES. WHERE WELDED AND/OR MECHANICAL SPLICES ARE TO BE USED, THE GENERAL CONTRACTOR SHALL SUBMIT FULL DATA ON THE PROPOSED MATERIALS, PROCEDURES AND INSTALLATION INSTRUCTIONS TO THE ENGINEER FOR REVIEW AS A SHOP DRAWING SUBMISSION.
7. ALL STRAIGHT BAR DEVELOPMENTS AND SPLICES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 318. ALL WELDED SPLICES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF AWS D1.4.
8. FOR LIGHTWEIGHT CONCRETE, MULTIPLY THE TABULATED VALUES BY 1.3.
9. FOR EPOXY COATED REINFORCING, MULTIPLY TABULATED VALUES BY 1.2

DEVELOPMENT

REFER TO "HOOKED REINFORCEMENT TENSION DEVELOPMENT LENGTH SCHEDULE" WHEN THE STRAIGHT DEVELOPMENT LENGTH IN TENSION CANNOT BE ACCOMMODATED IN THE CONCRETESECTION



LAP SPLICE

LAP SPLICES IN ADJACENT BARS SHALL BE STAGGERED A MINIMUM OF 24 INCHES. WELDED OR MECHANICAL SPLICES IN ADJACENT BARS SHALL BE STAGGERED A MINIMUM OF 30 INCHES

14 TYPICAL PIPE UNDER FOOTING DETAIL
SCALE: 3/4" = 1'-0"

TYPE	DESCRIPTION	CURING AND SEALING	FINISH REQUIREMENTS	JOINTS/JOINT TREATMENT	CONCRETE CLASS
4	4" THICK SLAB ON GRADE, REINFORCED WITH 6x6 W1.4xW1.4 WOVEN WIRE FABRIC (WWF) OVER 10 MIL VAPOR BARRIER AND 4" COMPACTED GRAVEL	MOIST CURE, OR CHEMICAL CURE REFER TO NOTE 1	Ff 25/Fl 20	SAW CUT CONTROL JOINTS - DETAIL 5/S2.002 CONSTRUCTION JOINTS - DETAIL 6/S2.001 FILL WITH POLYURETHANE	CLASS V
6	6" THICK SLAB ON GRADE, REINFORCED WITH #4 AT 12" OC EW OVER 10 MIL VAPOR BARRIER AND 4" COMPACTED GRAVEL	MOIST CURE, OR CHEMICAL CURE REFER TO NOTE 1	Ff 35/Fl 25 Ff 35 AT SLOPED AREAS	SAW CUT CONTROL JOINTS - DETAIL 7/S2.001 CONSTRUCTION JOINTS - DETAIL 6/S2.001 FILLER BY FLOORING CONTRACTOR	CLASS V
8	8" THICK SLAB ON GRADE, REINFORCED WITH #5 AT 12" OC EW OVER 10 MIL VAPOR BARRIER AND 4" COMPACTED GRAVEL	CHEMICAL CURE WITH LIQUID CHEMICAL HARDENER/DENSIFIER	Ff 35/Fl 25	SAW CUT CONTROL JOINTS - DETAIL 7/S2.001 CONSTRUCTION JOINTS - DETAIL 6/S2.001 FILL WITH POLYURETHANE	CLASS V
8A	8" THICK SLAB ON GRADE, REINFORCED WITH #5 AT 12" OC EW OVER 10 MIL VAPOR BARRIER AND 4" COMPACTED GRAVEL	CHEMICAL CURE WITH LIQUID CHEMICAL HARDENER/DENSIFIER	Ff 50/Fl 35	SAW CUT CONTROL JOINTS - DETAIL 7/S2.001 CONSTRUCTION JOINTS - DETAIL 6/S2.001 FILL WITH SEMI-RIGID EPOXY	CLASS II
8B	8" THICK SLAB ON GRADE, REINFORCED WITH #4 AT 12" OC EW OVER 6" RIGID INSULATION, 4" UNHEATED CONCRETE MUD MAT, 10 MIL VAPOR BARRIER, AND 4" COMPACTED GRAVEL	CHEMICAL CURE WITH LIQUID CHEMICAL HARDENER/DENSIFIER	Ff 35/Fl 25	SAW CUT CONTROL JOINTS - DETAIL "G" ON S/X.X.XXX CONSTRUCTION JOINTS - DETAIL "H" ON S/X.X.XXX FILL WITH SEMI-RIGID EPOXY	CLASS V
8C	8" THICK SLAB ON GRADE, REINFORCED WITH #4 AT 12" OC EW OVER 10 MIL VAPOR BARRIER AND 4" COMPACTED GRAVEL	CHEMICAL CURE WITH LIQUID CHEMICAL HARDENER/DENSIFIER	Ff 50/Fl 35	SAW CUT CONTROL JOINTS - DETAIL "G" ON S/X.X.XXX CONSTRUCTION JOINTS - DETAIL "H" ON S/X.X.XXX FILL WITH POLYURETHANE	CLASS V

15 S2.002-15 CONCRETE SLAB SCHEDULE
SCALE: 12" = 1'-0"

SEE DRAWING LIST ON TITLE SHEET DWG. NO. RIC-806732-01-S-0 FOR CORRESPONDING CSC SHEET NUMBER

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REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
T	05/03/2023	MCF	MYW	PERMIT
S	04/07/2023	BGB	MYW	L11 STEEL AND CONCRETE COORDINATION
R	04/07/2023	MCF	MYW	PERMIT RESUBMISSION
N	02/28/2023	BGB	MYW	90% RELEASE
K	02/27/2023	BGB	MYW	WAREHOUSE, PACKAGING, RECEIVING CONCRETE BID
H	02/03/2023	MLO	MYW	WAREHOUSE, PACKAGING, RECEIVING STEEL BID

DRAWN: Author	DATE: 08/15/22	
APPROVED: Approver	08/15/22	
BUILDING		
PROJECT NO: 11025607	PROJECT NAME: PROJECT FINN	
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)		

CAMPBELL SOUP COMPANY
RICHMOND, UT
STRUCTURAL
TYPICAL CONCRETE DETAILS

DRAWING NO. RIC-806741-02-S-5 REV. T
DRAWING SIZE: ANSI E (44" x 34") SHEET OF

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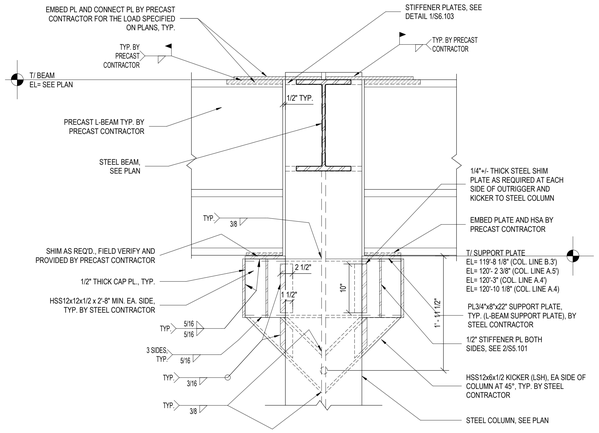

NOTE:
A. STIFFENER PLATES AT COLUMN FLANGES NOT SHOWN. FOR CLARITY, SEE SECTION 3/SS.101.
B. PRECAST L-BEAMS ARE 20LB36 (20" WIDE @BASE, 36" DEEP), PRECAST INVERTED T-BEAMS ARE 28IT36 (28" WIDE@BASE, 36" DEEP).
C. DO NOT ERECT DOUBLE-TEES UNTIL AFTER ALL L-SHAPED AND INVERTED T-SHAPED BEAMS ARE FULLY CONNECTED / WELDED (INCLUDING BEAMS TO STEEL COLUMN CONNECTIONS) TO MINIMIZE THE PRECAST CONSTRUCTION UNBALANCE LOAD TO THE STEEL STRUCTURE.

1 SECTION (TYP)
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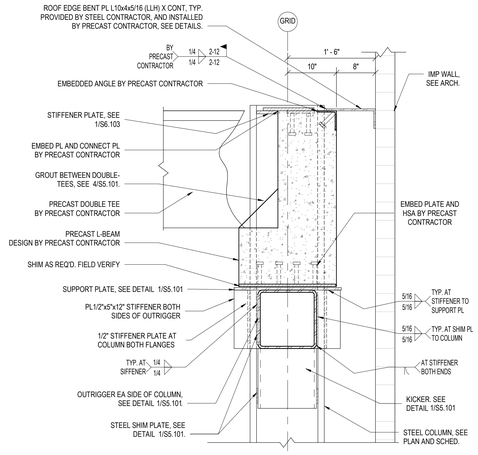

2 SECTION (TYP AT GRID B.3')
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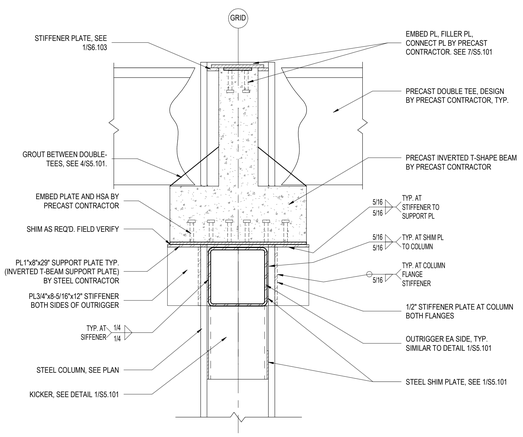

3 SECTION (TYP AT GRID A.4' & A.5')
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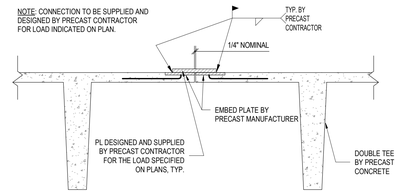

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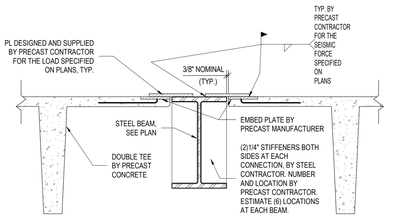

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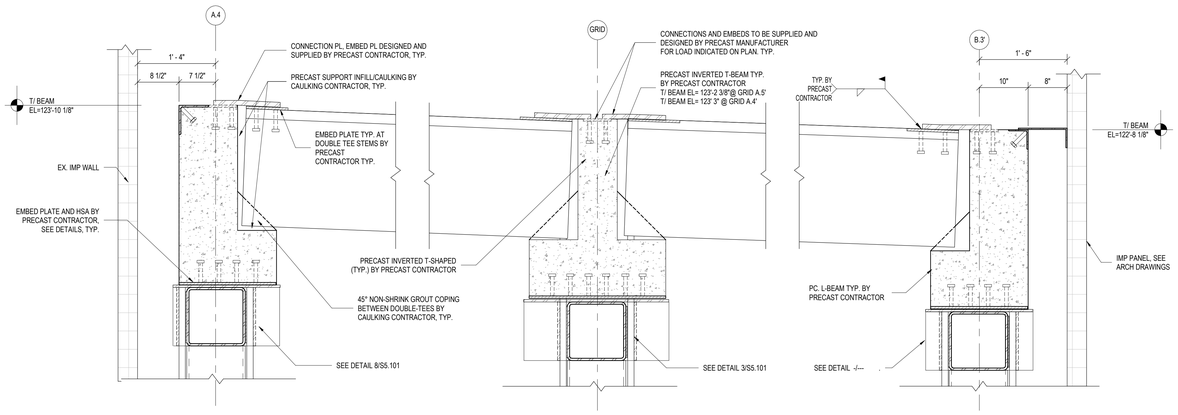

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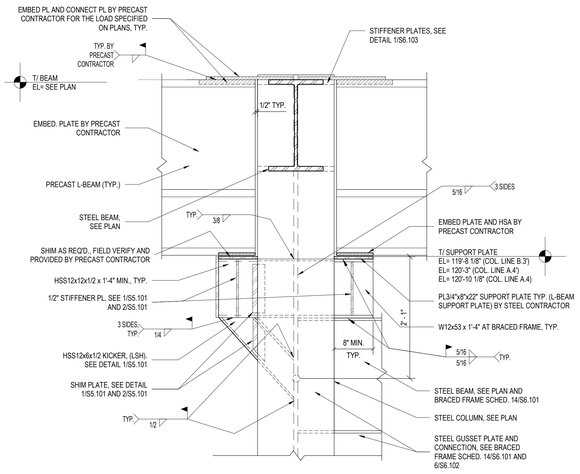

NOTE:
A. PRECAST L-BEAMS ARE 20LB36 (20" WIDE @BASE, 36" DEEP), PRECAST INVERTED T-BEAMS ARE 28IT36 (28" WIDE@BASE, 36" DEEP).
B. DO NOT ERECT DOUBLE-TEES UNTIL AFTER ALL L-SHAPED AND INVERTED T-SHAPED BEAMS ARE FULLY CONNECTED / WELDED (INCLUDING BEAMS TO STEEL COLUMN CONNECTIONS) TO MINIMIZE THE PRECAST CONSTRUCTION UNBALANCE LOAD TO THE STEEL STRUCTURE.

7 SECTION (TYP. AT BRACED FRAME)
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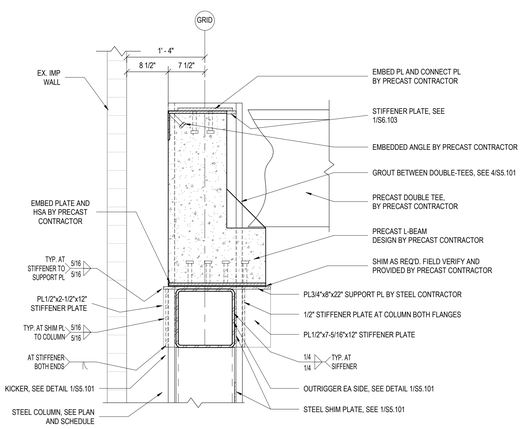

8 SECTION (TYP AT GRID A.4)
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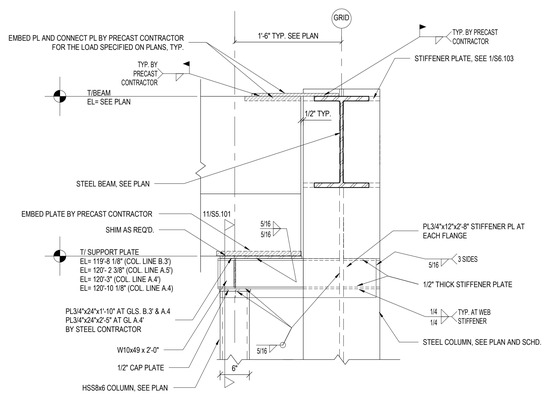

NOTE:
A. PRECAST L-BEAMS ARE 20LB36 (20" WIDE @BASE, 36" DEEP), PRECAST INVERTED T-BEAMS ARE 28IT36 (28" WIDE@BASE, 36" DEEP).
B. DO NOT ERECT DOUBLE-TEES UNTIL AFTER ALL L-SHAPED AND INVERTED T-SHAPED BEAMS ARE FULLY CONNECTED / WELDED (INCLUDING BEAMS TO STEEL COLUMN CONNECTIONS) TO MINIMIZE THE PRECAST CONSTRUCTION UNBALANCE LOAD TO THE STEEL STRUCTURE.

9 SECTION (TYP. AT END HSS POST)
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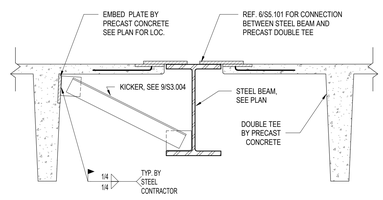

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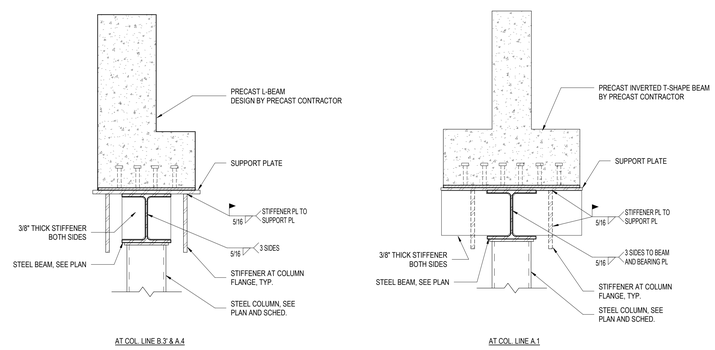

11 SECTION
SCALE: 1" = 1'-0"

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
V	05/03/2023	BGB	MYW	FM RESUBMITTAL
U	05/03/2023			MCF tinkering
T	05/03/2023	MCF	MYW	PERMIT
S	04/07/2023	BGB	MYW	L11 STEEL AND CONCRETE COORDINATION
R	04/07/2023	MCF	MYW	PERMIT RESUBMISSION
Q	03/20/2023	BGB	MYW	PRECAST CONCRETE COORDINATION

SEE DRAWING LIST ON TITLE SHEET DWG. NO. RIC-806732-01-S-0 FOR CORRESPONDING CSC SHEET NUMBER

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DG PROJ: 7021 | DG DWG: S5.101

DRAWN: Author | DATE: 12/05/2022
APPROVED: Approver | DATE: 12/05/2022
BUILDING
PROJECT NO.: 11025607
PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT
STRUCTURAL
PRECAST CONCRETE SECTIONS

DRAWING NO.: RIC-806747-01-S-5 | REV: V
DRAWING SIZE: ANSI E (44" x 34") | SHEET | OF

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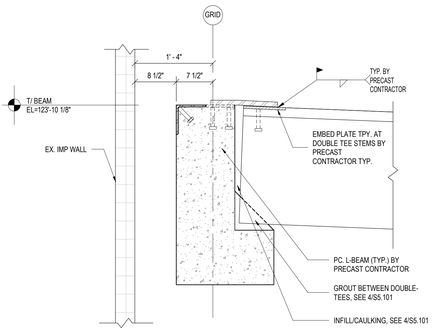

NOTE: SEE S1.313 AND S1.314 FOR MIN. EMBED. DESIGN LOAD SPECIFIED ON PLANS.

1 SECTION
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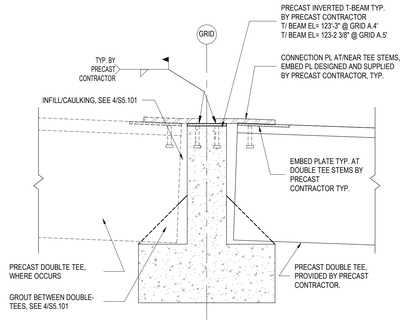

NOTE: SEE S1.313 AND S1.314 FOR MIN. EMBED. DESIGN LOAD SPECIFIED ON PLANS.

2 SECTION
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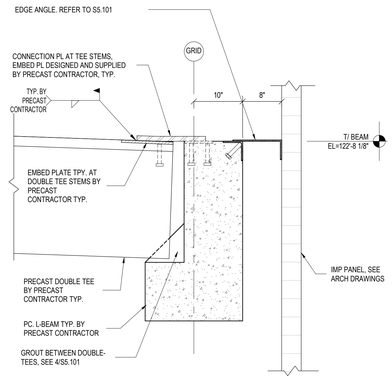

NOTE: SEE S1.313 AND S1.314 FOR MIN. EMBED. DESIGN LOAD SPECIFIED ON PLANS.

3 SECTION
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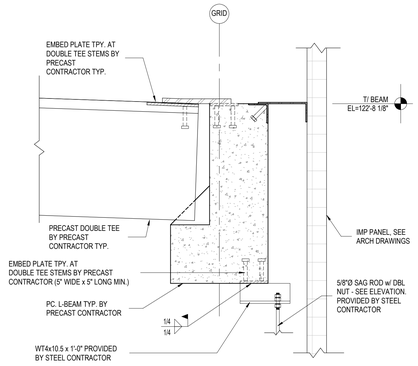

NOTE: SEE 3/S5.102 FOR INFORMATION NOT SHOWN.

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

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SEE DRAWING LIST ON TITLE SHEET DWG. NO. RIC-806732-01-S-0 FOR CORRESPONDING CSC SHEET NUMBER

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DG PROJ: 7021 | DG DWG: S5.102

REV.	DATE	BY	CHECKED	REVISION DESCRIPTION
T	05/03/2023	MCF	MYW	PERMIT
S	04/07/2023	BGB	MYW	L11 STEEL AND CONCRETE COORDINATION
R	04/07/2023	MCF	MYW	PERMIT RESUBMISSION
Q	03/20/2023	BGB	MYW	PRECAST CONCRETE COORDINATION
N	02/28/2023	BGB	MYW	90% RELEASE
K	02/27/2023	BGB	MYW	WAREHOUSE, PACKAGING, RECEIVING CONCRETE BID

DRAWN: Author | DATE: 12/05/2022
APPROVED: Approver | 12/05/2022
BUILDING
PROJECT NO.: 11025607
PROJECT NAME: PROJECT FINN
SCALE: AS NOTED (DO NOT SCALE THIS DRAWING)

CAMPBELL SOUP COMPANY
RICHMOND, UT
STRUCTURAL
PRECAST CONCRETE SECTIONS

DRAWING NO.: RIC-806747-02-S-5
REV.: T
DRAWING SIZE: ANSI E (44" x 34")
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03300 CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. CONSTRUCTION DRAWINGS, SPECIFICATIONS AND PROVISIONS OF THE CONTRACT INCLUDING GENERAL AND SUPPLEMENTAL CONDITIONS AND OTHER DIVISION 1 SPECIFICATION SECTIONS, ARE HEREBY MADE A PART OF THIS SECTION AS FULLY AND COMPLETELY AS IF REPEATED HEREIN.

1.02 ITEMS REQUIRED BUT NOT SPECIFIED

A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARDS ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.

1.03 EXECUTION, CORRELATION AND INTENT

A. IN CASE OF AN INCONSISTENCY BETWEEN DRAWINGS AND SPECIFICATIONS, OR WITHIN EITHER DOCUMENT NOT CLARIFIED BY ADDENDUM, THE BETTER QUALITY OR GREATER QUANTITY OF WORK IS TO BE PROVIDED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.

1.04 DESCRIPTION

A. BASIC SPECIFICATION: PERFORM WORK OF THIS SECTION ACCORDING TO ACI 301-16, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", EXCEPT AS SPECIFICALLY MODIFIED HEREIN. NUMBERS IN PARENTHESES (0.00) INDICATE A RELATED PARAGRAPH OF ACI 301.

B. WORK INCLUDED: ALL CAST-IN-PLACE CONCRETE FOUNDATION WORK SHOWN ON THE DRAWINGS AND REQUIRED BY THESE SPECIFICATIONS. ALLOW FOR THE INSTALLATION OF CAST-IN ITEMS FURNISHED UNDER OTHER SECTIONS.
1. CONCRETE COLUMN AND WALL FOOTINGS, INCLUDING EXCAVATION.
2. CONCRETE COLUMN PIERS AND FOUNDATION WALLS, INCLUDING EXCAVATION AND COMPACTED BACKFILL.
3. INSTALLING EMBEDDED ITEMS, ADHESIVE TYPE COLUMN ANCHOR BOLTS, PROVIDED BY OTHERS.
4. GROUTING OF COLUMN BASE PLATES.
5. COATING PORTION OF STRUCTURAL STEEL COLUMNS AND BASE PLATES BELOW FLOOR WITH BITUMINOUS COATING.
6. GRADING WORK ASSOCIATED WITH FOUNDATION EXCAVATIONS TO BRING ADJACENT AREAS INTO COMPLIANCE WITH SUBGRADE CONSTRUCTION TOLERANCE.
7. FOUNDATION INSULATION.

C. WORK NOT INCLUDED:
1. INTERIOR SLABS ON GRADE & SLABS ON METAL DECK (SPECIFIED IN 033100).
2. FIELD INSPECTION AND TESTING SERVICES.

D. COOPERATE WITH OTHER TRADES WHO WILL PROVIDE AND INSTALL ITEMS OF WORK (SLEEVES, PIPING, CONDUIT, INSERTS, ETC.) TO BE CAST IN THE CONCRETE. PLACE NO CONCRETE UNTIL ALL SUCH ITEMS ARE IN PLACE.

E. INSPECTION AND TESTING SERVICES REQUIRED BY THIS SECTION TO ESTABLISH MIX DESIGNS ARE TO BE PERFORMED BY AN AGENCY RETAINED BY THE CONTRACTOR (1.6.3). INSPECTION AND TESTING SERVICES REQUIRED BY THIS SECTION FOR ALL FIELD SAMPLING AND TESTING REQUIRED ARE TO BE PERFORMED BY AN AGENCY RETAINED BY THE OWNER/CONSTRUCTION MANAGER (1.6.4).

1.05 QUALITY ASSURANCE

A. REFERENCE STANDARDS: COMPLY WITH THE FOLLOWING ACI PUBLICATIONS EXCEPT WHERE MORE STRINGENT REQUIREMENTS ARE SHOWN OR SPECIFIED:
1. ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE.
2. ACI 318, BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.

1.06 SUBMITTALS

A. SUBMIT A MIX DESIGN FOR EACH CLASS OF CONCRETE REQUIRED (1.6.3). CONCRETE PROPORTIONS SHALL BE ESTABLISHED ON THE BASIS OF PREVIOUS FIELD EXPERIENCE OR TRIAL MIXTURES (4.2.3).

B. SUBMIT SHOP DRAWINGS FOR ALL REINFORCING. INDICATE STRENGTH, SIZE, AND DETAILS OF ALL BAR REINFORCING, AND STYLE AND SPECIFICATION OF ALL WELDED WIRE FABRIC (3.1.1).

C. SUBMIT PRODUCT LITERATURE FOR ADMIXTURES AND CURING COMPOUNDS PROPOSED FOR USE.

D. SUBMIT REPORTS OF ALL REQUIRED TESTING AND INSPECTION.

1.07 FIELD REFERENCE MANUALS

A. PROVIDE AT LEAST ONE COPY OF THE ACI FIELD REFERENCE MANUAL, SP-15, AND ONE COPY OF CRSI'S "PLACING REINFORCING BARS", IN THE FIELD OFFICE AT ALL TIMES (1.4.3).

PART 2 - PRODUCTS

2.01 MATERIALS

A. CEMENT (4.2.1.1): PORTLAND CEMENT, ASTM C150, TYPE I. TYPE II OR III (HIGH EARLY STRENGTH) MAY BE USED WITH WRITTEN APPROVAL AND AT THE CONTRACTOR'S EXPENSE. ALL CEMENT FOR CONCRETE EXPOSED TO VIEW TO BE FROM THE SAME MILL.

B. WATER: POTABLE.

C. AGGREGATES: ASTM C33, (4.2.1.2). USE SIZE NO. 57 FOR ALL CLASSES.

D. ADMIXTURES (WHERE REQUIRED OR PERMITTED):
1. WATER-REDUCING: ASTM C494, TYPE A OR D (4.2.1.4).
2. MID-RANGE WATER-REDUCING ADMIXTURE: ASTM C494, TYPE A (4.2.1.4).
3. AIR-ENTRAINING: ASTM C260.
4. HIGH-RANGE WATER-REDUCING ADMIXTURE (SUPERPLASTICIZER): ASTM C494, TYPE F OR G (4.2.1.4).
5. NON-CHLORIDE, NON-CORROSIVE ACCELERATOR: ASTM C494, TYPE C OR E (4.2.1.4).
6. CALCIUM CHLORIDE IS NOT PERMITTED (4.2.2.6).
7. USE OF ADMIXTURES OTHER THAN THOSE LISTED WILL BE PERMITTED ONLY WHEN APPROVED PRIOR TO BID.

E. REINFORCING (3.2.1):
1. RECYCLED CONTENT OF STEEL PRODUCTS: PROVIDE PRODUCTS WITH AN AVERAGE RECYCLED CONTENT OF STEEL PRODUCTS SO POST-CONSUMER RECYCLED CONTENT PLUS ONE-HALF OF PRECONSUMER RECYCLED CONTENT IS NOT LESS THAN 25 PERCENT.
2. DEFORMED BARS: ASTM A615, A616, A617, OR A706. MINIMUM YIELD STRENGTH TO BE 60 KSI.

F. PERIMETER INSULATION: POLYSTYRENE RIGID BOARD INSULATION BY DOW CHEMICAL FORMS THE BASIS OF DESIGN. COMPARABLE MATERIALS BY OWENS CORNING AND TENNECO ARE ACCEPTABLE:
1. RIGID INSULATION: "STYROFOAM SQUARE EGE (SE)"
2. THERMAL VALUE: R = 5.0 PER INCH.
3. COMPRESSIVE STRENGTH: 25 PSI MINIMUM.
4. THICKNESS: 2 INCHES UNLESS NOTED.
5. COMPLIANCE: ASTM C-578, TYPE IV.

G. BLOWN DRAFT BITUMINOUS COATING ON STRUCTURAL STEEL:
1. SSPC PAINTING SYSTEM 9.01, COLD APPLIED ASPHALT MASTIC.

2.02 MIXES

THE FOLLOWING CLASSES OF CONCRETE ARE REQUIRED (4.2.2.8):

TYPE	F'c(28 DAY)	WEIGHT	MAX. WATER CEMENT RATIO	AIR CONTENT
CLASS I FOUNDATIONS, INTERIOR WALLS, INTERIOR PIERS, MUD SLABS				
	4000 PSI	NORMAL	0.45	-
CLASS II EXPOSED FOUNDATION, WALLS, PIERS, AND ALL OTHER EXTERIOR CONCRETE				
	4,500 PSI	NORMAL	0.40	5 - 7% MAX.
CLASS III WALL CURBING				
	4,000 PSI	NORMAL	0.38	5 -7% MAX.
CLASS IV LEAN	1500 PSI		-	OPTIONAL
CLASS V INTERIOR SLABS ON GRADE		(SEE SPECIFICATION 033100)		
CLASS VI INTERIOR SLABS ON DECK		(SEE SPECIFICATION 033100)		
CLASS VII STAIR PAN FILL				
	3500 PSI	NORMAL	-	-

1. SLUMP: 5" MAXIMUM, EXCEPT FOR CLASS III SLUMP SHALL NOT EXCEED 2". IF A SUPERPLASTICIZER IS USED, INITIAL SLUMP TO BE 2" TO 3", INCREASED TO 8" MAXIMUM AFTER ADDITION (AT THE JOB SITE) OF THE SUPERPLASTICIZER.
2. MIXES TO BE PUMPED ARE TO BE SO IDENTIFIED ON THE MIX DESIGN SUBMITTAL. ALL PUMPED MIXES AND CLASS III ARE TO HAVE A MID-RANGE OR HIGH-RANGE WATER REDUCER.
3. ALL ADMIXTURES (OTHER THAN SUPERPLASTICIZER) ARE TO BE ADDED AT THE BATCH PLANT. SUPERPLASTICIZERS, DESIGNED FOR ADDITION TO THE MIX AT THE PLANT, MAY BE ADDED AT THE BATCH PLANT WITH VERIFICATION FROM THE STRUCTURAL ENGINEER AND VERIFICATION THAT THE WATER-TO-CEMENT RATIO HAS NOT BEEN EXCEEDED..
4. CLASS III AND VII SHALL HAVE MAXIMUM 3/8" AGGREGATE (#8) SIZE

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. VERIFY THAT FOOTING EXCAVATIONS ARE FREE OF WATER AND ICE, ARE OF THE REQUIRED DIMENSIONS, AND HAVE BEEN APPROVED BY THE SOILS ENGINEER, PRIOR TO PLACING CONCRETE (5.3.1).

B. DETERMINE FIELD CONDITIONS BY ACTUAL MEASUREMENT.

C. NOTIFY ENGINEER AND TESTING LABORATORY NOT LESS THAN 24 HOURS IN ADVANCE OF PLACING CONCRETE. PLACE CONCRETE ONLY WHEN TESTING LABORATORY PERSONNEL ARE PRESENT, UNLESS THIS REQUIREMENT IS SPECIFICALLY WAIVED IN WRITING BY THE OWNER.

3.02 FORMWORK

A. FOOTINGS MAY BE CAST AGAINST EARTH CUTS WHEN SOIL CONDITIONS PERMIT.

B. REMOVAL OF FORMS AND SHORING:
1. REMOVE NO FORMS WITHIN 24 HOURS AFTER PLACEMENT.
2. SHORING IS TO REMAIN IN PLACE UNTIL CONCRETE REACHES ITS DESIGN STRENGTH. WINDSOR PENETROMETER IS TO BE USED TO VERIFY IN-PLACE STRENGTH IF FORMS ARE REMOVED PRIOR TO 28 DAYS AFTER CASTING CONCRETE.

C. CHAMFER EXPOSED CORNERS AND EDGES OF PERMANENTLY EXPOSED CONCRETE, UNLESS NOTED OTHERWISE.

3.03 JOINTING

A. EXPOSED CONCRETE FOUNDATION WALLS:
1. LOCATE CONTROL (CONTRACTION) JOINTS IN THE EXPOSED FACE OF FOUNDATION WALLS, AS SHOWN ON THE DRAWINGS. IN THE ABSENCE OF INFORMATION ON DRAWINGS, LOCATE AT A MAXIMUM SPACING OF 20'-0.

3.04 FINISHES

A. CAST-IN-PLACE CONCRETE WALLS SHALL HAVE A SMOOTH FORM FINISH (5.3.3.3.B).
1. CLASS A, 1/8 INCH FOR SMOOTH-FORMED FINISHED SURFACES, WHERE EXPOSED TO VIEW.
2. CLASS C, 1/2 INCH FOR ROUGH-FORMED FINISHED SURFACES, UNLESS NOTED

3.05 CURING AND PROTECTION

A. TEMPERATURE:
1. WHEN AIR TEMPERATURE DURING PLACEMENT IS LESS THAN 40 DEGREES, OR WILL BE WITHIN 24 HOURS, TEMPERATURE OF CONCRETE AS PLACED IS TO BE BETWEEN 50 AND 70 DEGREES (65 AND 75 DEGREES FOR SECTIONS LESS THAN 12 INCHES THICK) AND A NON-CHLORIDE ACCELERATOR SHALL BE USED. MAINTAIN CONCRETE TEMPERATURE WITHIN THESE LIMITS FOR THE FULL CURING PERIOD OF 7 DAYS. (4.2.2.7 AND 5.3.1.6).
2. WHEN AIR TEMPERATURE DURING PLACEMENT IS GREATER THAN 80 DEGREES, A WATER-REDUCING RETARDER SHALL BE USED.

B. CURING:
1. CURE CONCRETE IN ACCORDANCE WITH 5.3.6.

3.06 FIELD QUALITY CONTROL

A. OBTAIN CONCRETE FOR REQUIRED TESTS AT POINT OF PLACEMENT. IF CONCRETE IS PUMPED, OBTAIN CONCRETE FOR TESTS AT DISCHARGE END. (1.6.4.3)

B. FOR EACH CONCRETE CLASS OTHER THAN LEAN CONCRETE, PERFORM ONE STRENGTH TEST FOR EACH 50 YARDS OR FRACTION THEREOF, FOR ONE DAY PLACEMENT OF UP TO 300 YARDS (1.6.4.2.D). PERFORM ONE STRENGTH TEST FOR EACH 100 YARDS OR FRACTION THEREOF, FOR ONE DAY PLACEMENTS OF GREATER THAN 300 YARDS.

IN ADDITION, AT LEAST SIX 6x12 CYLINDER SAMPLES SHALL BE MADE FOR EACH 50 CUBIC FEET CONCRETE CLASS, BUT NOT LESS THAN ONE SET OF SIX SPECIMEN PER DAY'S REPLACEMENT.
-TEST TWO CYLINDERS AT SEVEN DAYS.
-TEST TWO CYLINDERS AT 28 DAYS.
-HOLD TWO CYLINDERS IN RESERVE.

C. DETERMINE SLUMP FOR EACH STRENGTH TEST (1.6.4.3.F).

D. DETERMINE AIR CONTENT FOR EACH STRENGTH TEST OF CLASS II & CLASS III CONCRETE (1.6.4.2.H).

E. DETERMINE CONCRETE TEMPERATURE FOR EACH STRENGTH TEST (1.6.4.2.G).

F. DO NOT PLACE CONCRETE WHEN SLUMP, AIR CONTENT, OR TEMPERATURE VARY FROM ALLOWABLE.

G. MAINTAIN RECORDS OF ALL TESTS, INDICATING EXACT LOCATION OF THE STRUCTURE REPRESENTED BY EACH TEST.

H. TEST CYLINDERS SHALL BE STORED AT THE JOBSITE FOR THE FIRST 20 HOURS, PLUS OR MINUS 4 HOURS, IN A PROTECTED LOCATION, WITH THE TEMPERATURE MAINTAINED BETWEEN 60 AND 80 DEGREES, OR RESULTS SHALL BE CONSIDERED UNACCEPTABLE.

I. ALL FIELD TESTING AND INSPECTIONS SHALL BE PERFORMED BY AN ACI CONCRETE FIELD TESTING TECHNICIAN GRADE 1, OR EQUIVALENT (16.2).

END OF SECTION

033100 INDUSTRIAL FLOOR SLABS

PART 1 - GENERAL

1.01 ITEMS REQUIRED BUT NOT SPECIFIED

A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.

1.02 EXECUTION, CORRELATION, AND INTENT

A. IN CASE OF AN INCONSISTENCY BETWEEN DRAWINGS AND SPECIFICATIONS, OR WITHIN EITHER DOCUMENT NOT CLARIFIED BY ADDENDUM, THE BETTER QUALITY OR GREATER QUANTITY OF WORK IS TO BE PROVIDED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.

1.03 DESCRIPTION

A. BASIC SPECIFICATION: PERFORM WORK OF THIS SECTION ACCORDING TO ACI 301_10, "SPECIFICATIONS FOR STRUCTURAL CONCRETE", EXCEPT AS SPECIFICALLY MODIFIED HEREIN. NUMBERS IN PARENTHESES (0.00) INDICATE A RELATED PARAGRAPH OF ACI 301.

B. WORK INCLUDED: ALL CAST-IN-PLACE CONCRETE FOUNDATION WORK SHOWN ON THE DRAWINGS AND REQUIRED BY THESE SPECIFICATIONS. ALLOW FOR THE INSTALLATION OF CAST_IN ITEMS FURNISHED UNDER OTHER SECTIONS.

C. ALL WORK OF THIS SECTION SHALL BE CONSIDERED A SINGLE SOURCE RESPONSIBILITY, AND SHALL BE WHOLLY PROVIDED AND PERFORMED ONLY BY CONCRETE SUBCONTRACTORS. SINGLE SOURCE RESPONSIBILITY SHALL INCLUDE ACCEPTANCE OF THE SUBGRADE.

D. PROVIDE ASSISTANCE TO THE OWNER'S TESTING LABORATORY TO VERIFY THE ACCURACY OF SUBGRADE PRIOR TO CONCRETE PLACEMENT. SEE SUBGRADE AND FLOOR SLAB THICKNESS TOLERANCE REQUIREMENTS.

E. COOPERATE WITH OTHER TRADES WHO WILL PROVIDE AND INSTALL ITEMS OF WORK (SLEEVES, PIPING, CONDUIT, INSERTS, ETC.) TO BE CAST IN THE CONCRETE. PLACE NO CONCRETE UNTIL ALL SUCH ITEMS ARE IN PLACE.

F. INSPECTION AND TESTING SERVICES REQUIRED TO ESTABLISH MIX DESIGNS ARE TO BE PERFORMED BY AN AGENCY RETAINED BY THE CONTRACTOR (1.6.2). OTHER SERVICES REQUIRED BY THIS SECTION ARE TO BE PERFORMED BY AN AGENCY RETAINED BY THE CONSTRUCTION MANAGER (1.6.3). THE CONTRACTOR SHALL PROVIDE SPACE AND SOURCE OF ELECTRICAL POWER ON THE PROJECT SITE FOR FACILITIES TO BE USED FOR INITIAL CURING OF CONCRETE TEST SPECIMENS AS REQUIRED BY ASTM C31 / C31M (1.6.2.2.D). THE OWNER'S TESTING AGENCY SWILL CONDUCT CONCRETE STRENGTH TESTS DURING CONSTRUCTION BY MAKING AND CURING TEST SPECIMENS IN ACCORDANCE WITH ASTM C39/C39M AND TESTING THEM ACCORDINT TO ASTM C39/C39M (1.6.3.2.E). THE OWNER'S TESTING AGENCY SHALL PROVIDE THE FACILITIES FOR CURING CONCRETE TEST SPECIMENS.

G. RELATED WORK SPECIFIED ELSEWHERE: THE GENERAL PROVISIONS OF THE CONTRACT APPLY TO THE WORK OF THIS SECTION, AS THOUGH REPRODUCED HEREIN. CAREFULLY EXAMINE ALL OTHER SECTIONS AND ALL DRAWINGS FOR RELATED WORK.

1.04 QUALITY ASSURANCE

A. REFERENCE STANDARDS (LATEST EDITION): COMPLY WITH THE FOLLOWING ACI PUBLICATIONS EXCEPT WHERE MORE STRINGENT REQUIREMENTS ARE SHOWN OR SPECIFIED:
1. ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE.
2. ACI 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY.
3. SP-66, ACI DETAILING MANUAL.
4. ACI 302.1R, GUIDE TO CONCRETE FLOOR AND SLAB CONSTRUCTION
5. ACI 117, SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS AND COMMENTARY.
6. ACI 223R, GUIDE FOR THE USE OF SHRINKAGE-COMPENSATING CONCRETE.
7. "PLACING REINFORCING BARS", CRSI
8. ACI 305.1 SPECIFICATION FOR HOT WEATHER CONCRETING.
9. ACI 306.1 STANDARD SPECIFICATION FOR COLD WEATHER CONCRETING.
10. ACI 308.1 SPECIFICATION FOR CURING CONCRETE.
11. LEED REFERENCE GUIDE FOR BUILDING DESIGN AND CONSTRUCTION (LEED V4) US GREEN BUILDING COUNCIL

B. A PRE-CONSTRUCTION MEETING TO ESTABLISH QUALITY CONTROL SHALL BE SCHEDULED BY THE CONSTRUCTION MANAGER, AT LEAST 10 WORKING DAYS PRIOR TO THE SCHEDULED DATE OF CONCRETE PLACEMENT FOR THE FIRST SECTION OF FLOOR SLAB. THE MEETING SHALL BE FOR THE PURPOSE OF REVIEWING, IN DETAIL, THE DESIGN OF CONCRETE MIXES; HOW THE CONCRETE FLOORS WILL BE PLACED, FINISHED, CURED, AND PROTECTED; AND PLACEMENT SCHEDULES. THE CONTRACTOR SHALL INVITE A RESPONSIBLE REPRESENTATIVE OF ALL FIELD PERSONNEL AND MATERIAL SUPPLIERS DIRECTLY INVOLVED WITH THE PLACEMENT AND FINISHING OF THE SLAB TO BE PRESENT SO THAT THEY CAN ESTABLISH A PROCEDURE WHICH WILL ENABLE THEM TO MEET THE PROJECT SPECIFICATIONS. ATTENDANCE BY THE CONCRETE SUPPLIER, THE CONCRETE SUBCONTRACTOR, AND THE OWNER'S TESTING LABORATORY IS MANDATORY. THE STRUCTURAL ENGINEER AND ARCHITECT SHOULD ALSO BE PRESENT. IT SHALL BE ASCERTAINED DURING THE MEETING THAT ALL PARTIES ARE FAMILIAR WITH THE REQUIREMENTS APPLICABLE TO THEM, AND ANY POTENTIAL DIFFICULTIES WITH THESE REQUIREMENTS SHALL BE RESOLVED. MINUTES OF THIS MEETING SHALL BE PREPARED BY THE GENERAL CONTRACTOR, AND SUBMITTED WITHIN 3 WORKING DAYS TO ALL PRESENT, AND TO THE CONSTRUCTION MANAGER.

C. INSTALLER QUALIFICATIONS: A QUALIFIED INSTALLER WHO EMPLOYS ON PROJECT PERSONNEL QUALIFIED AS ACI-CERTIFIED FLATWORK TECHNICIAN AND FINISHER AND A SUPERVISOR WHO IS AN ACI-CERTIFIED CONCRETE FLATWORK TECHNICIAN.

D. MANUFACTURER QUALIFICATIONS: A FIRM EXPERIENCED IN MANUFACTURING READY-MIXED CONCRETE PRODUCTS AND THAT COMPLIES WITH ASTM C 94/C 94M REQUIREMENTS FOR PRODUCTION FACILITIES AND EQUIPMENT.
1. MANUFACTURER-CERTIFIED ACCORDING TO NRMCA'S "CERTIFICATION OF READY MIXED CONCRETE PRODUCTION FACILITIES."

E. TESTING AGENCY QUALIFICATIONS: AN INDEPENDENT AGENCY, ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, QUALIFIED ACCORDING TO ASTM C 1077 AND ASTM E 329 FOR TESTING INDICATED, AS DOCUMENTED ACCORDING TO ASTM E 548.
1. PERSONNEL CONDUCTING FIELD TESTS SHALL BE QUALIFIED AS ACI CONCRETE FIELD TESTING TECHNICIAN, GRADE 1, ACCORDING TO ACI CP-01 OR AN EQUIVALENT CERTIFICATION PROGRAM.
2. PERSONNEL PERFORMING LABORATORY TESTS SHALL BE ACI-CERTIFIED CONCRETE STRENGTH TESTING TECHNICIAN AND CONCRETE LABORATORY TESTING TECHNICIAN - GRADE 1. TESTING AGENCY LABORATORY SUPERVISOR SHALL BE AN ACI-CERTIFIED CONCRETE LABORATORY TESTING TECHNICIAN - GRADE II.

1.05 SUBMITTALS

A. COORDINATE WITH THE CONSTRUCTION MANAGER TO ENSURE THAT THE MIX DESIGNS ARE ESTABLISHED AND SUBMITTED TO THE ENGINEER FOR APPROVAL. ALLOW SUFFICIENT TIME TO ESTABLISH MIX DESIGNS, SO AS NOT TO UNDULY AFFECT THE SCHEDULE. SUBMIT FOR APPROVAL A MIX DESIGN FOR ALL CLASSES OF CONCRETE (1.6.2). CONCRETE PROPORTIONS SHALL BE ESTABLISHED ON THE BASIS OF PREVIOUS FIELD EXPERIENCE OR TRIAL MIXTURES (4.2.3).

B. SUBMIT SHOP DRAWINGS FOR ALL REINFORCING. INDICATE STRENGTH, SIZE, AND DETAILS OF ALL BAR REINFORCING, AND STYLE AND SPECIFICATION OF ALL WELDED WIRE FABRIC (3.3.1).

C. SUBMIT PRODUCT LITERATURE FOR THE FOLLOWING:
1. ADMIXTURES
2. CURING COMPOUNDS AND SEALERS.
3. JOINT FILLERS
4. VAPOR BARRIER
5. UNDERSLAB INSULATION
6. JOINT DOWELS

D. SUBMIT REPORTS OF ALL REQUIRED TESTING AND INSPECTION.

E. SUBMIT TEST DATA FOR AGGREGATES PROPOSED FOR USE, INCLUDING AGGRGATE GRADATIONS, INDICATING SOURCE AND COMPLIANCE WITH SPECIFICATION REQUIREMENTS. DATE OF TEST TO BE NO MORE THAN 90 DAYS PRIOR TO SUBMITTAL. RESUBMIT IN ADVANCE OF ANY PROPOSED CHANGE IN SOURCE.

F. SUBMIT A PROPOSED SCHEDULE OF POURS AND A DRAWING INDICATING THE PROPOSED SEQUENCE OF FLOOR SLAB PLACEMENT. CONSTRUCTION JOINTS AND CONTROL/CONTRACTION JOINTS SHALL BE INDICATED THEREON.

G. SUBMIT PROPOSED MATERIAL FOR SUBGRADE DRAINAGE FILL AND BASE MATERIALS, INDICATING SOURCE AND GRADATION.

H. CERTIFICATION OF EXPERIENCE: SUBMIT, ON REQUEST ONLY, WRITTEN DESCRIPTION OF PERSONNEL, PROJECTS, AND EQUIPMENT WHICH DOCUMENT THE EXPERIENCE AND QUALIFICATIONS REQUIRED OF THE FLOOR SLAB CONTRACTOR. UPON REQUEST, SUBMIT ACI CERTIFICATES FOR CONCRETE FLATWORK FINISHERS AND/OR SPECIALTY COMMERCIAL/INDUSTRIAL FLATWORK FINISHERS TO VERIFY PERSONNEL QUALIFICATIONS.

1.06 FIELD REFERENCE MANUALS

A. PROVIDE AT LEAST ONE COPY OF THE ACI FIELD REFERENCE MANUAL, SP_15 (1.3.3), AND ONE COPY OF CRSI'S "PLACING REINFORCING BARS", IN THE FIELD OFFICE AT ALL TIMES (1.4.3).

PART 2 - PRODUCTS

2.01 MATERIALS

A. CEMENT (4.2.1.1, 11.2.1.1):
1. PORTLAND CEMENT, ASTM C150, TYPE I OR II. ALL CEMENT TO BE FROM THE SAME MILL. ASTM C150 TYPE III, HIGH EARLY STRENGTH CEMENT SHALL NOT BE USED.
2. EXPANSIVE PORTLAND CEMENT, ASTM C845, TYPE E-1 (K) (10.1.1); OR ASTM C150 TYPE I OR II WITH EXPANSIVE TYPE-K COMPONENT.

B. WATER: POTABLE.

C. AGGREGATES: NORMAL WEIGHT CONFORMING TO ASTM C33. USE A SINGLE SOURCE OF UNIFORM QUALITY THROUGHOUT THE WORK
1. CLASS 5 (INDUSTRIAL) AND 6 (HEAVY INDUSTRIAL) FLOORS: FOR SLABS 5-1/2" THICK OR THICKET, USE SIZE NO 467 COARSE AGGREGATE (1 ½" MAXIMUM SIZE) (11.2.1.2.A). FOR 4" THICK SLABS, USE 1" NOMINAL MAXIMUM COARSE AGGREGATE (NO 57 COARSE AGGREGATE).
a. THE COMBINED AGGREGATE PARTICLE DISTRIBUTION SHALL BE ANALYZED USING THE "COARSENESS FACTOR CHART" (FIGURE 8.9.2.2) IN ACI 301.1R-15 "GUIDE TO CONCRETE FLOOR AND SLAB CONSTRUCTION". THE COMBINED COARSE AND FINE AGGREGATE CHART FALL IN ZONE II
b. ADJUSTED WORKABILITY FACTOR SHALL BE BETWEEN 32% AND 42%. THE COARSE FACTOR SHALL BE BETWEEN 55% AND 75%.
c. SUBMIT PROPOSED AGGREGATE GRADATION WITH MIX DESIGN.

D. GROUND GRANULATED BLAST-FURNACE, GGBF, SLAG: ASTM C989 (4.2.1.1.E).

E. FLY ASH: ASTM C618, TYPE C OR F (4.2.1.1.D).

F. ADMIXTURES (WHERE REQUIRED, PERMITTED AND APPROVED BY ENGINEER):
1. WATER_REDUCING ADMIXTURE: THE ADMIXTURE SHALL CONFORM TO ASTM C494, TYPE A (4.2.1.4). THE FOLLOWING ARE ACCEPTABLE:
a. EUCON WR 75 BY THE EUCLID CHEMICAL CO.
b. POZZOLITH 80 BY BASF (MASTER BUILDERS)/CONST. CHEMICALS
c. PLASTOCRETE 161 BY SIKA CHEMICAL CORP.
d. DARACEM 55, 65 BY W.R. GRACE CO.
e. WRDA SERIES BY W.R. GRACE CO.
2. WATER REDUCING, RETARDING ADMIXTURE: THE ADMIXTURE SHALL CONFORM TO ASTM C_494, TYPE D (4.2.1.4). THE FOLLOWING ARE ACCEPTABLE:
a. EUCON RETARDER_75 BY EUCLID CHEMICAL CO.
b. POZZOLITH 100XR BY BASF (MASTER BUILDERS)
c. PLASTIMENT BY SIKA CHEMICAL CORP.
d. DARATARD-17 BY W.R. GRACE CO.
3. HIGH RANGE WATER REDUCING ADMIXTURE (SUPERPLASTICIZER): THE ADMIXTURE SHALL CONFORM TO ASTM C_494, TYPE F OR G (4.2.1.4). THE FOLLOWING ARE ACCEPTABLE:
a. EUCON 37 BY EUCLID CHEMICAL CO.
b. SIKAMENT 300 BY SIKA CHEMICALS CORP.
THE FOLLOWING ARE ACCEPTABLE FOR ADDITION TO THE MIX AT THE BATCH PLANT:
c. DARCEM SERIES BY W.R. GRACE CO.
d. RHEOBUILD 1000 BY BASF (MASTER BUILDERS)
4. ACCELERATING ADMIXTURES: THE ADMIXTURE SHALL CONFORM TO ASTM C-494 TYPE C OR E (4.2.1.4). THE FOLLOWING ARE ACCEPTABLE:
a. ACCELGUARD 80 BY EUCLID CHEMICAL CO.
b. POZZOLITH, POZZUTEC BY BASF (MASTER BUILDERS)
c. PLASTOCRETE 161FL, PLATOCRETE 161HE, SIKAST NC, SIKASET BY SIKA CHEMICAL CORP
d. DARASET SERIES, GILCO, LUBRICON, POLARSET, DCI BY WR GRACE
5. CALCIUM CHLORIDE: CALCIUM CHLORIDE OR ADMIXTURES CONTAINING MORE THAN 0.05% CHLORIDE IONS ARE NOT PERMITTED (4.2.2.5, 11.2.1.3.A).
6. AIR ENTRAINING ADMIXTURES ARE PROHIBITED IN CONCRETE MIXTURES FOR USE IN SLABS TO RECEIVE A HARD-TROWELED FINISH (11.2.1.3.B)
7. CERTIFICATION: WRITTEN CONFORMANCE TO ABOVE MENTIONED REQUIREMENTS WILL BE REQUIRED FROM THE ADMIXTURE MANUFACTURER PRIOR TO MIX DESIGN REVIEW BY THE ENGINEER
8. UPON REQUEST ONLY, PROVIDE A QUALIFIED FULL_TIME REPRESENTATIVE TO ASSURE PROPER USE OF ADMIXTURES.
9. USE OF ADMIXTURES OTHER THAN THOSE LISTED WILL BE PERMITTED ONLY WHEN APPROVED PRIOR TO MIX DESIGN APPROVAL.

G. REINFORCING (3.2.1):
1. DEFORMED BARS: ASTM A615 OR A706. MINIMUM YIELD STRENGTH TO BE 60 KSI.
2. WELDED WIRE FABRIC: ASTM A185/A185M. WHERE THIS IS USED, PROVIDE IN SHEET FORM (NOT ROLLS).
3. REINFORCING SUPPORTS ARE REQUIRED FOR ALL REINFORCING IN SLABS ON GRADE. SUPPORTS SHALL BE OF SUFFICIENT QUALITY AND STRENGTH TO HOLD REINFORCEMENT AT THE PROPER ELECATION WHILE PLACING CONCRETE.
4. FIBER REINFORCEMENT: PROVIDE ONE OF THE FOLLOWING WHERE REQUIRED:
a. FORTA CR - 1 ½ LONG, 1.5#/CY BY FORTA CORP.
b. FIBERMESH - GRADE SIZE, 1.5#/CY BY FIBERMESH CORP.

H. PREMOLDED EXPANSION JOINT FILLER: ASTM D1751 (2.2.1.4).

I. VAPOR BARRIER/RETARDER (11.2.4): MEMBRANE SHALL MEET THE FOLLOWING PROPERTIES:
1. CONFORM TO ASTM E1745 "STANDARD SPECIFICATION OF PLASTIC WATER VAPOR RETARDERS USED IN CONTACT WITH SOIL OR GRANULAR FILL UNDER CONCRETE SLABS", MEET OR EXCEED CLASS A.
2. MINIMUM THICKNESS OF VAPOR RETARDER SHALL BE 10 MILS.
3. PERMEANCE RATING: ASTM E-96 OR ASTM F1249; 0.01 PERMS OR LESS.
4. SEAM/TRANSITION TAPE: TAP WITH PRESSURE SENSITIVE ADHESIVE OR DOUBLE SIDED ADHESIVE. MINIMUM 4" WIDE. CONSTRUCT PIPE BOOTS FROM VAPOR RETARDER MATERIAL AND PRESSURE SENSITIVE TAPE PER MANUFACTURERS RECOMMENDATIONS.
5. WHERE SPECIFIED, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
a. STEGO WRAP (10 MIL) VAPOR BARRIER; STEGO INDUSTRIES, SAN JUAN CAPISTRANO, CALIFORNIA.
b. VAPOR GUARD; REEF INDUSTRIES, HOUSTON, TEXAS

J. CONTROL JOINT DOWELS (11.2.6)
1. SMOOTH ROUND DOWELS CUT FROM HOT ROLLED BAR PER ASTM A36 TO WITHIN 3/16" OF SPECIFIED LENGTH.
2. DOWELS SHALL BE SET IN DOWEL BASKETS WITH SIDE FRAME SUPPORTS FABRICATED FROM ¼ DIAMETER COLD DRAWN WIRE
3. DOWELS SHALL BE WELDED ON ONE END, INTO THE SIDE FRAMES.
4. EIGHT GAGE WIRES WILL BE WELDED, ACROSS THE SIDE FRAMES AT APPROXIMATELY 3'-0" O/C TO KEEP THE ASSEMBLY STABLE DURING SHIPPING AND INSTALLATION.
5. THE FINISHED ASSEMBLY SHALL HOLD THE DOWELS STRAIGHT AND LEVEL TO WITHIN 1/8" OF THE MID-DEPT

033100 INDUSTRIAL FLOOR SLABS (CONT)

4. JOINTS SHALL BE FILLED FULL DEPTH. INITIAL FILLING OF JOINT IS TO BE APPROXIMATELY 2/3 OF JOINT DEPTH, FOLLOWED CLOSELY BY FINAL FILLING (AFTER SETTLEMENT OF INITIAL PLACEMENT) LEVEL WITH FINISHED FLOOR. SEATING OF JOINT FILLER AT JOINT BOTTOM IS CRITICAL TO JOINT PERFORMANCE. SAND, BACKING ROD, OR OTHER JOINT FILLER MATERIALS ARE SPECIFICALLY PROHIBITED. FOR JOINTS WITH SIGNIFICANT SHRINKAGE CRACKS BELOW SAWN JOINTS, THE JOINTS SHALL BE SEALED WITH TAPE PRIOR TO INSTALLING FILLER, OR SILICA SAND MAY BE USED ONLY UP TO THE BOTTOM OF THE JOINT, SO AS TO PREVENT LOSS OF FILLER MATERIAL.
5. FREEZER JOINTS SHALL NOT BE FILLED UNTIL SLAB HAS BEEN AT OPERATING TEMPERATURES FOR A MINIMUM OF 72 HOURS.

3.05 FINISHES

A. FINISH ON FLATWORK IS TO BE AS FOLLOWS:
1. INTERIOR FLOOR AREAS TO REMAIN EXPOSED _ TROWELED FINISH (5.3.4.2.C, 11.3.5).
a. A MINIMUM OF THREE TROWELINGS SHALL BE USED, WITH A TIME LAPSE BETWEEN SUCCESSIVE TROWELINGS TO PERMIT CONCRETE TO BECOME HARDER. AS THE SURFACE STIFFENS, SMALLER TROWELS SHALL BE USED TO PROVIDE SUFFICIENT PRESSURE FOR PROPER FINISHING.
2. MAN-POWER:
a. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE NUMBER OF QUALIFIED CONCRETE FINISHES IN ORDER TO OBTAIN THE FINISH SPECIFIED WITHIN THE CONCRETE "SET-UP" TIME PERIOD.
b. DO NOT SPRINKLE CEMENT ON SURFACE WATER ON THE CONCRETE SURFACE FOR FINISHING PURPOSES.
3. DO NOT PERFORM ANY FINISHING OPERATIONS WHILE WATER IS PRESENT ON THE SURFACES.
4. AREAS INDICATED ON DRAWINGS OR AS REQUIRED BY THESE SPECIFICATIONS:

B. SURFACES OF FLOOR SLABS SHALL BE FINISHED TO THE FOLLOWING TOLERANCES, PER ACI 117 (5.3.4.3):
1. INDUSTRIAL FLOOR SLABS: REFER TO SLAB SCHEDULE ON SHEET S2.03 FOR FLATNESS AND LEVELNESS REQUIREMENTS.
2. MINIMUM FLATNESS AND LEVELNESS AS SPECIFIED ON THE DRAWING. PRECEDING VALUES ARE AVERAGE VALUES TO BE OBTAINED OVER A GIVEN AREA. MINIMUM LOCAL VALUES (ONE - HALF BAY) OF 75 PERCENT OF MINIMUM AVERAGE VALUES SHALL BE ALL LOCATIONS.
3. UNLESS OTHERWISE SPECIFIED, THE MINIMUM OVERALL SURFACE FLATNESS SHALL BE FF35, LEVELNESS SHALL BE FL25, AND LOCAL AREA MINIMUMS SHALL BE FF23, FL17, AS DETERMINED BY ASTM E1155 (11.3.5.1).
4. TESTING BY THE TESTING LABORATORY SHALL BE MADE ON THE DAY FOLLOWING PLACEMENT OF THE FIRST CONCRETE POUR. TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM E1155. AFTER IT IS ESTABLISHED THAT PROPER PROCEDURES ARE BEING UTILIZED TO OBTAIN THE DESIRED RESULTS, FLATNESS/LEVELNESS TESTS SHALL BE PERFORMED ONLY AS DIRECTED BY THE OWNER.

C. ANY BAY NOT CONFORMING TO THE ABOVE FLATNESS AND LEVELNESS REQUIREMENTS SHALL BE REMOVED, REPLACED, AND RETESTED, AT NO EXPENSE TO THE OWNER OR CONSTRUCTION MANAGER.

D. "F NUMBERS" SHALL BE SUBMITTED TO THE CONSTRUCTION MANAGER AND ENGINEER IMMEDIATELY AFTER THEY ARE DETERMINED BY THE TESTING LABORATORY.

3.06 CURING AND PROTECTION

A. TEMPERATURE:
1. WHEN AIR TEMPERATURE DURING PLACEMENT IS LESS THAN 40 DEGREES, OR WILL BE WITHIN 24 HOURS, TEMPERATURE OF CONCRETE AS PLACED IS TO BE BETWEEN 55 AND 75 DEGREES. MAINTAIN CONCRETE TEMPERATURE WITHIN THESE LIMITS FOR THE FULL CURING PERIOD OR 7 DAYS. (5.2.7 AND 5.3.1.6).
a. DO NOT PLACE CONCRETE IN CONTACT WITH SURFACES LESS THAN 35F (5.3.2.1.b).
b. FOR SLABS PLACED ON GROUND, THE MAXIMUM TEMPERATURE DIFFERENCE BETWEEN THE BASE OR AMBIENT TEMPERATURE AND FRESH CONCRETE TEMPERATURE SHALL BE 30F.
2. WHEN AIR TEMPERATURE IS MORE THAN 80 DEGREES, ALL CONCRETE SHALL CONTAIN AT LEAST ONE OF THE FOLLOWING: TYPE B RETARDED; TYPE D WATER-REDUCING AND RETARDER; OR HYDRATION CONTROLLING ADMIXTURE MEETING THE REQUIREMENTS OF ASTM C494 / C494M.

B. CURING (11.3.7):
1. WHEN MOIST CURING IS REQUIRED, ALL SLAB AREAS SHALL BE MOIST_CURED USING ONE OR MORE OF THE METHODS LISTED IN ACI 301, SECTION 5.3.6.4.A THROUGH 5.3.6.4.D. WHEN CHEMICAL CURING IS INDICATED, SLAB AREAS SHALL RECEIVE AN APPLICATION OF CURING COMPOUND (5.3.6.4.E), EXCEPT THAT WHEN CONCRETE IS PLACED IN THE OPEN, AND THE AIR TEMPERATURE EXCEEDS 75 DEGREES, THE CONCRETE IS TO BE MOIST_CURED FOR THE FIRST 24 HOURS.
2. WHICHEVER CURING METHOD IS USED, IT IS TO COMMENCE IMMEDIATELY AFTER DISAPPEARANCE OF WATER SHEEN, AND CONTINUE FOR AT LEAST 7 DAYS (5.3.6.1). DO NOT ALLOW CURING TO BE DELAYED OVERNIGHT.
3. PREVENT EXCESSIVE MOISTURE LOSS FROM FORMED SURFACES (5.3.6.3). IF EDGE FORMS ARE REMOVED BEFORE 7 DAYS HAVE ELAPSED, CURE THE FORMED SURFACES BY MOIST_CURING OR APPLICATION OF CURING COMPOUND FOR THE REMAINDER OF THE CURING PERIOD.
4. SLABS SCHEDULE TO RECEIVE SPECIFIED LIQUID CHEMICAL HARDENER/DENSIFIER SHALL BE CURED AND PREPARED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS:
a. MOIST CURE
b. CHEMICAL CURING COMPOUND SHALL BE REMOVED BEFORE THE APPLICATION OF THE HARDENER/DENSIFIER.

C. PREVENTION OF PLASTIC SHRINKAGE CRACKING:
1. PLASTIC SHRINKAGE CRACKING, CAUSED BY RAPID LOSS OF MOISTURE BEFORE CURING BEGINS, SHALL BE PREVENTED BY THE FOLLOWING PRACTICES AS NECESSARY:
a. ERECTION OF WINDBREAKS.
b. ERECTION OF SUNSHADES, OR SCHEDULING CONCRETE PLACEMENT AT NIGHT OR AFTER THE ROOF DECK IS INSTALLED.
c. UTILIZING FOG SPRAYS BEFORE FINAL FINISHING AND THE START OF CURING; COVERING WITH POLYETHYLENE SHEETING OR DAMP BURLAP IMMEDIATELY AFTER SCREEDING AND FLOATING; AND THE USE OF MONO-MOLECULAR FILMS TO REDUCE EVAPORATION BETWEEN THE VARIOUS PLACING AND FINISHING OPERATIONS.
d. POSTPONING EACH STEP OF FINISHING (AND THE INHERENT REWORKING OF THE SURFACE) AS LONG AS POSSIBLE WITHOUT ENDANGERING RESULTS.

D. CURING COMPOUND: APPLY UNIFORMLY TO FLOORS AND SLABS INDICATED IN A CONTINUOUS OPERATION BY POWER SPRAY OR ROLLER ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. RECOAT AREAS SUBJECTED TO HEAVY RAINFALL WITHIN 3 HOURS AFTER INITIAL APPLICATION. REPEAT PROCESS 24 HOURS LATER AND APPLY A SECOND COAT. MAINTAIN CONTINUITY OF COATING AND REPAIR DAMAGE DURING CURING PERIOD.

3.07 ACCEPTANCE (1.7)

A. CONCRETE WORK WITH SERIOUS CRAZING, CRUSTING, AGGREGATE SHADOWING, MORTAR FLUXING, TROWEL MARKS, CRACKING, DEVIATION FROM TOLERANCES, OR OTHER VARIATION FROM CONTRACT REQUIREMENTS IS SUBJECT TO REJECTION (1.7.1.2).

B. WHEN OBSERVATIONS OR TESTS INDICATE THAT THE CONTRACT REQUIREMENTS HAVE NOT BEEN MET, THE CONTRACTOR IS TO BEAR THE COSTS OF ANY ADDITIONAL TESTING AND ANALYSIS TO DETERMINE ACCEPTABILITY, AND ALSO THE COST OF REMOVAL AND REPLACEMENT, IF SUCH IS REQUIRED (1.6.5.1, 1.7.1.5, 1.7.4, AND 1.7.5).

3.08 FIELD QUALITY CONTROL

A. TESTING AND INSPECTING: OWNER WILL ENGAGE A SPECIAL INSPECTOR TO PERFORM FIELD TESTS AND INSPECTIONS AND PREPARE TEST REPORTS.

B. INSPECTIONS:
1. STEEL REINFORCEMENT PLACEMENT.
2. STEEL REINFORCEMENT WELDING.
3. HEADED BOLTS AND STUDS.
4. VERIFICATION OF USE OF REQUIRED DESIGN MIXTURE.
5. CONCRETE PLACEMENT, INCLUDING CONVEYING AND DEPOSITING.
6. CURING PROCEDURES AND MAINTENANCE OF CURING TEMPERATURE.
7. VERIFICATION OF CONCRETE STRENGTH BEFORE REMOVAL OF SHORES AND FORMS FROM BEAMS AND SLABS.

C. CONCRETE TESTS: TESTING OF COMPOSITE SAMPLES OF FRESH CONCRETE OBTAINED ACCORDING TO ASTM C 172 SHALL BE PERFORMED ACCORDING TO THE FOLLOWING REQUIREMENTS:
1. TESTING FREQUENCY: PER STATEMENT OF SPECIAL INSPECTION
2. SLUMP: ASTM C 143; ONE TEST AT POINT OF PLACEMENT FOR EACH COMPOSITE SAMPLE (EACH STRENGTH TEST SPECIMEN FOR EACH 50 CUBIC YARDS OR FRACTIONS THEREOF FROM EACH MIX DESIGN OF CONCRETE PLACED IN ANY ONE DAY). PERFORM ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY APPEARS TO CHANGE.
3. AIR CONTENT: ASTM C 231, PRESSURE METHOD, FOR NORMAL-WEIGHT CONCRETE; ASTM C 173, VOLUMETRIC METHOD, FOR STRUCTURAL LIGHTWEIGHT CONCRETE; ONE TEST FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIXTURE.
4. CONCRETE TEMPERATURE: ASTM C 1064; ONE TEST HOURLY WHEN AIR TEMPERATURE IS 40 DEG F AND BELOW AND WHEN 80 DEG F AND ABOVE, AND ONE TEST FOR EACH COMPOSITE SAMPLE.
5. UNIT WEIGHT: ASTM C 567, FRESH UNIT WEIGHT OF STRUCTURAL LIGHTWEIGHT CONCRETE; ONE TEST FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIXTURE.
6. COMPRESSION TEST SPECIMENS: ASTM C 31.
a. CAST AND LABORATORY CURE TWO SETS OF TWO STANDARD CYLINDER SPECIMENS FOR EACH COMPOSITE SAMPLE.
7. COMPRESSIVE-STRENGTH TESTS: PERFORM ONE STRENGTH TEST FOR EACH 50 CUBIC YARDS OR FRACTIONS THEREOF FROM EACH MIX DESIGN OF CONCRETE PLACED IN ANY ONE DAY.
8. STRENGTH OF EACH CONCRETE MIXTURE WILL BE SATISFACTORY IF EVERY AVERAGE OF ANY THREE CONSECUTIVE COMPRESSIVE-STRENGTH TESTS EQUALS OR EXCEEDS SPECIFIED COMPRESSIVE STRENGTH AND NO COMPRESSIVE-STRENGTH TEST VALUE FALLS BELOW SPECIFIED COMPRESSIVE STRENGTH BY MORE THAN 500 PSI.
9. TEST RESULTS SHALL BE REPORTED IN WRITING TO ARCHITECT, CONCRETE MANUFACTURER, AND CONTRACTOR WITHIN 48 HOURS OF TESTING. REPORTS OF COMPRESSIVE-STRENGTH TESTS SHALL CONTAIN PROJECT IDENTIFICATION NAME AND NUMBER, DATE OF CONCRETE PLACEMENT, NAME OF CONCRETE TESTING AND INSPECTING AGENCY, LOCATION OF CONCRETE BATCH IN WORK, DESIGN COMPRESSIVE STRENGTH AT 28 DAYS, CONCRETE MIXTURE PROPORTIONS AND MATERIALS, COMPRESSIVE BREAKING STRENGTH, AND TYPE OF BREAK FOR BOTH 7- AND 28-DAY TESTS.
10. NONDESTRUCTIVE TESTING: IMPACT HAMMER, SONOSCOPE, OR OTHER NONDESTRUCTIVE DEVICE MAY BE PERMITTED BY ARCHITECT BUT WILL NOT BE USED AS SOLE BASIS FOR APPROVAL OR REJECTION OF CONCRETE.
11. ADDITIONAL TESTS: TESTING AND INSPECTING AGENCY SHALL MAKE ADDITIONAL TESTS OF CONCRETE WHEN TEST RESULTS INDICATE THAT SLUMP, AIR ENTRAINMENT, COMPRESSIVE STRENGTHS, OR OTHER REQUIREMENTS HAVE NOT BEEN MET, AS DIRECTED BY ARCHITECT. TESTING AND INSPECTING AGENCY MAY CONDUCT TESTS TO DETERMINE ADEQUACY OF CONCRETE BY CORED CYLINDERS COMPLYING WITH ASTM C 42 OR BY OTHER METHODS AS DIRECTED BY ARCHITECT.
12. ADDITIONAL TESTING AND INSPECTING, AT CONTRACTOR'S EXPENSE, WILL BE PERFORMED TO DETERMINE COMPLIANCE OF REPLACED OR ADDITIONAL WORK WITH SPECIFIED REQUIREMENTS.
13. CORRECT DEFICIENCIES IN THE WORK THAT TEST REPORTS AND INSPECTIONS INDICATE DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS.

D. CONCRETE TEMPERATURE OF 90F OR ABOVE IN TRUCK AT SITE WILL BE REJECTED.

E. CONCRETE WHICH ARRIVES AT THE JOB SITE WITH EXCESSIVE AIR CONTENT (GREATER THAN 3%) OR EXCESSIVE SLUMP, OR TO WHICH UNAUTHORIZED WATER HAS BEEN ADDED, SHALL BE REJECTED.

F. DO NOT PLACE CONCRETE WHEN SLUMP, TEMPERATURE, OR TIME VARY FROM ALLOWABLE (1.6.8).

G. CONDUCT A SUBGRADE TOLERANCE SURVEY, PER THE REQUIREMENTS OF SECTION 3.01.A.

H. DETERMINATION OF THE FLATNESS AND LEVELNESS OF A CONCRETE SLAB SHALL BE MADE ON THE DAY FOLLOWING PLACEMENT OF EACH CONCRETE POUR. TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM E1155.

I. TEST CYLINDERS SHALL BE STORED AT THE JOBSITE FOR THE FIRST 20 HOURS, PLUS OR MINUS 4 HOURS, IN A PROTECTED LOCATION AND ENVIRONMENT PREVENTING MOISTURE LOSS FROM TEST CYLINDERS, WITH THE TEMPERATURE MAINTAINED BETWEEN 60 AND 80 DEGREES, OR RESULTS OF STRENGTHS TESTS SHALL BE CONSIDERED UNACCEPTABLE.

J. MAINTAIN RECORDS OF ALL TESTS, INDICATING EXACT LOCATION OF THE STRUCTURE REPRESENTED BY EACH TEST.

K. USAGE: UNLESS APPROVED BY THE ARCHITECT / ENGINEER DO NOT ALLOW ANY LOADING ON NEW CONCRETE SURFACES OTHER THAN LIGHT FOOT TRAFFIC FOR A PERIOD OF 7 DAYS AFTER PLACEMENT. LIGHT CONSTRUCTION TRAFFIC SUCH AS SMALL LIFTS CAN RESUME ON NEW SLABS AFTER A PERIOD OF 14 DAYS AFTER PLACEMENT. USE OF HEAVY CONSTRUCTION EQUIPMENT CONCRETE TRUCKS, BUGGIES, DUMP TRUCKS, CRANES, ETC., IS PROHIBITED AT ALL TIMES DURING CURING OPERATION OF 28 DAYS UNTIL CONCRETE HAS REACHED DESIGN VALUES ON INTERIOR AND EXTERIOR PAVED CONCRETE SURFACES.

L. PERFORM JOB SITE MONITORING OF CONCRETING OPERATIONS, INCLUDING SLUMP TESTING OF EACH TRUCK OF CLASS VI CONCRETE. CONCRETE WHICH ARRIVES AT THE JOB SITE WITH EXCESSIVE AIR CONTENT (GREATER THAN 3%) OR EXCESSIVE SLUMP, OR TO WHICH UNAUTHORIZED WATER HAS BEEN ADDED, SHALL BE REJECTED.

M. OBTAIN CONCRETE FOR REQUIRED TESTS AT POINT OF PLACEMENT. IF CONCRETE IS PUMPED, OBTAIN CONCRETE FOR TESTS AT DISCHARGE END (1.6.3.3).

N. PERFORM STRENGTH, TEMPERATURE, SLUMP AND AIR TESTS PER SPECIFICATIONS.

O. DETERMINE CONCRETE TEMPERATURE FOR EACH STRENGTH TEST (1.6.3.2.d).

END OF SECTION

034100 STRUCTURAL PRECAST CONCRETE

PART 1 - GENERAL

1.01 ITEMS REQUIRED BUT NOT SPECIFIED

A. IF ANY ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION. 3

1.02 EXECUTION, CORRELATION, AND INTENT

A. IN CASE OF AN INCONSISTENCY BETWEEN DRAWINGS AND SPECIFICATIONS OR WITHIN EITHER DOCUMENT NOT CLARIFIED BY ADDENDUM, THE BETTER QUALITY OR GREATER QUANTITY OF WORK IS TO BE PROVIDED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.

1.03 DESCRIPTION

A. SECTION INCLUDES:
1. PRECAST STRUCTURAL CONCRETE.

B. RELATED SECTIONS:
1. DIVISION 03 SECTION "CAST-IN-PLACE CONCRETE" & "INDUSTRIAL FLOOR SLABS" FOR CONCRETE TOPPING AND PLACING CONNECTION ANCHORS IN CONCRETE.
2. DIVISION 05 SECTION "STRUCTURAL STEEL FRAMING" FOR FURNISHING AND INSTALLING CONNECTIONS ATTACHED TO STRUCTURAL-STEEL FRAMING.
3. DIVISION 05 SECTION "METAL FABRICATIONS" FOR KICKERS AND OTHER MISCELLANEOUS STEEL SHAPES.
4. DIVISION 07 SECTION "SHEET METAL FLASHING AND TRIM" FOR FLASHING RECEIVERS AND REGLETS.
5. DIVISION 07 SECTION "PENETRATION FIRESTOPPING" FOR JOINT-FILLER MATERIALS FOR FIRE-RESISTANCE-RATED CONSTRUCTION.
6. DIVISION 07 SECTION "JOINT SEALANTS" FOR ELASTOMERIC JOINT SEALANTS AND SEALANT BACKINGS.

1.04 DEFINITION

A. DESIGN REFERENCE SAMPLE: SAMPLE OF APPROVED PRECAST STRUCTURAL CONCRETE COLOR, FINISH, AND TEXTURE, PREAPPROVED BY ARCHITECT.

1.05 PERFORMANCE REQUIREMENTS

A. DELEGATED DESIGN: DESIGN PRECAST STRUCTURAL CONCRETE, INCLUDING COMPREHENSIVE ENGINEERING ANALYSIS BY A QUALIFIED PROFESSIONAL ENGINEER, USING PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA INDICATED. DESIGN MUST BE COMPLETED UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT.

B. STRUCTURAL PERFORMANCE: PRECAST STRUCTURAL CONCRETE UNITS AND CONNECTIONS SHALL WITHSTAND DESIGN LOADS INDICATED WITHIN LIMITS AND UNDER CONDITIONS INDICATED.

C. STRUCTURAL PERFORMANCE: PROVIDE PRECAST STRUCTURAL CONCRETE UNITS AND CONNECTIONS CAPABLE OF WITHSTANDING THE FOLLOWING DESIGN LOADS WITHIN LIMITS AND UNDER CONDITIONS INDICATED:
1. DEAD LOADS: SELF WEIGHT OF PRECAST, PLUS ANY SUPERIMPOSED LOADS INDICATED.
2. CONCRETE TOPPING LOAD: THICKNESS AS NOTED ON DRAWINGS.
3. LIVE LOADS: SEE STRUCTURAL DRAWINGS.
4. ROOF AND SNOW LOADS: SEE STRUCTURAL DRAWINGS.
5. WIND AND SEISMIC LOADS: SEE STRUCTURAL DRAWINGS.
6. DESIGN PRECAST STRUCTURAL CONCRETE FRAMING SYSTEM AND CONNECTIONS TO MAINTAIN CLEARANCES AT OPENINGS, TO ALLOW FOR FABRICATION AND CONSTRUCTION TOLERANCES, TO ACCOMMODATE LIVE-LOAD DEFLECTION, SHRINKAGE AND CREEP OF PRIMARY BUILDING STRUCTURE, AND TO ACCOMMODATE MOVEMENTS. MAINTAIN PRECAST STRUCTURAL CONCRETE DEFLECTIONS WITHIN LIMITS OF ACI 318.
a. THERMAL MOVEMENTS: ALLOW FOR IN-PLANE THERMAL MOVEMENTS RESULTING FROM ANNUAL AMBIENT TEMPERATURE CHANGES OF 50 DEG F.
7. FIRE-RESISTANCE RATING: SELECT MATERIAL AND MINIMUM THICKNESSES TO PROVIDE INDICATED FIRE RATING.
8. BLAST LOADING: DESIGN THE STRUCTURE AND ALL CONNECTIONS FOR AN INTERNAL PRESSURE BLAST LOAD AS INDICATED ON THE DRAWINGS.
a. DESIGN SHALL BE IN ACCORDANCE WITH FM GLOBAL PROPERTY LOSS PREVENTION DATA SHEET . "DAMAGE LIMITING CONSTRUCTION" 1-44

1.06 SUBMITTALS

A. SHOP DRAWINGS: INCLUDE MEMBER LOCATIONS, PLANS, ELEVATIONS, DIMENSIONS, SHAPES AND SECTIONS, OPENINGS, SUPPORT CONDITIONS, AND TYPES OF REINFORCEMENT, INCLUDING SPECIAL REINFORCEMENT. DETAIL FABRICATION AND INSTALLATION OF PRECAST STRUCTURAL CONCRETE UNITS.
1. INDICATE JOINTS, REVEALS, AND EXTENT AND LOCATION OF EACH SURFACE FINISH.
2. INDICATE WELDED CONNECTIONS BY AWS STANDARD SYMBOLS. SHOW SIZE, LENNGTH, AND TYPE OF EACH WELD.
3. DETAIL LOOSE AND CAST-IN HARDWARE, LIFTING AND ERECTION INSERTS, CONNECTIONS, AND JOINTS.
4. INDICATE LOCATIONS, TOLERANCES, AND DETAILS OF ANCHORAGE DEVICES TO BE EMBEDDED IN OR ATTACHED TO STRUCTURE OR OTHER CONSTRUCTION.
5. INCLUDE AND LOCATE OPENINGS LARGER THAN 8Y 10 INCHES (250 MM).
6. INDICATE LOCATION OF EACH PRECAST STRUCTURAL CONCRETE UNIT BY SAME IDENTIFICATION MARK PLACED ON PANEL.
7. INDICATE RELATIONSHIP OF PRECAST STRUCTURAL CONCRETE UNITS TO ADJACENT MATERIALS.
8. INDICATE ESTIMATED CAMBER FOR PRECAST FLOOR SLABS WITH CONCRETE TOPPINGS.
9. INDICATE SHIM SIZES AND GROUTING SEQUENCE.
10.DESIGN MODIFICATIONS: IF DESIGN MODIFICATIONS ARE PROPOSED TO MEET PERFORMANCE REQUIREMENTS AND FIELD CONDITIONS, SUBMIT DESIGN CALCULATIONS AND SHOP DRAWINGS. DO NOT ADVERSELY AFFECT THE APPEARANCE, DURABILITY, OR STRENGTH OF UNITS WHEN MODIFYING DETAILS OR MATERIALS AND MAINTAIN THE GENERAL DESIGN CONCEPT.

B. DELEGATED-DESIGN SUBMITTAL: FOR PRECAST STRUCTURAL CONCRETE INDICATED TO COMPLY WITH PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA, INCLUDING ANALYSIS DATA SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION.

C. QUALIFICATION DATA: FOR FABRICATOR AND INSTALLER.

D. WELDING CERTIFICATES.

E. MATERIAL CERTIFICATES: FOR THE FOLLOWING, FROM MANUFACTURER:
1. CEMENTITIOUS MATERIALS.
2. REINFORCING MATERIALS AND PRESTRESSING TENDONS.
3. ADMIXTURES.
4. BEARING PADS.
5. STRUCTURAL-STEEL SHAPES AND HOLLOW STRUCTURAL SECTIONS.

F. MATERIAL TEST REPORTS: FOR AGGREGATES.

G. SOURCE QUALITY-CONTROL REPORTS.

H. FIELD QUALITY-CONTROL AND SPECIAL INSPECTION REPORTS.

1.07 QUALITY ASSURANCE

A. FABRICATOR QUALIFICATIONS: A FIRM THAT ASSUMES RESPONSIBILITY FOR ENGINEERING PRECAST STRUCTURAL CONCRETE UNITS TO COMPLY WITH PERFORMANCE REQUIREMENTS. RESPONSIBILITY INCLUDES PREPARATION OF SHOP DRAWINGS AND COMPREHENSIVE ENGINEERING ANALYSIS BY A QUALIFIED PROFESSIONAL ENGINEER.
1. PARTICIPATES IN PCI'S PLANT CERTIFICATION PROGRAMAND IS DESIGNATED A PCI-CERTIFIED PLANT AS FOLLOWS:
2. GROUP C, CATEGORY C3 - PRESTRESSED STRAIGHT STRAND STRUCTURAL MEMBERS.

B. INSTALLER QUALIFICATIONS: A PRECAST CONCRETE ERECTOR QUALIFIED, AS EVIDENCED BY PCI'S CERTIFICATE OF COMPLIANCE, TO ERECT CATEGORY S1 - SIMPLE STRUCTURAL SYSTEMS.

C. DESIGN STANDARDS: COMPLY WITH ACI 318 AND DESIGN RECOMMENDATIONS IN PCI MNL 120, "PCI DESIGN HANDBOOK - PRECAST AND PRESTRESSED CONCRETE," APPLICABLE TO TYPES OF PRECAST STRUCTURAL CONCRETE UNITS INDICATED.

D. QUALITY-CONTROL STANDARD: FOR MANUFACTURING PROCEDURES AND TESTING REQUIREMENTS, QUALITY-CONTROL RECOMMENDATIONS, AND DIMENSIONAL TOLERANCES FOR TYPES OF UNITS REQUIRED, COMPLY WITH PCI MNL 116, "MANUAL FOR QUALITY CONTROL FOR PLANTS AND PRODUCTION OF STRUCTURAL PRECAST CONCRETE PRODUCTS."

E. WELDING QUALIFICATIONS: QUALIFY PROCEDURES AND PERSONNEL ACCORDING TO THE FOLLOWING:
1. AWS D1.1/D1.1:1M, "STRUCTURAL WELDING CODE - STEEL."
2. AWS D1.4, "STRUCTURAL WELDING CODE - REINFORCING STEEL."

F. FIRE-RESISTANCE CALCULATIONS: WHERE INDICATED, PROVIDE PRECAST STRUCTURAL CONCRETE UNITS WHOSE FIRE RESISTANCE MEETS THE PRESCRIPTIVE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION OR HAS BEEN CALCULATED ACCORDING TO PCI MNL 124, "DESIGN FOR FIRE RESISTANCE OF PRECAST PRESTRESSED CONCRETE," AND IS ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

1.08 DELIVERY, STORAGE, AND HANDLING

A. SUPPORT UNITS DURING SHIPMENT ON NONSTAINING SHOCK-ABSORBING MATERIAL IN SAME POSITION AS DURING STORAGE.

B. STORE UNITS WITH ADEQUATE BRACING AND PROTECT UNITS TO PREVENT CONTACT WITH SOIL, TO PREVENT STAINING, AND TO PREVENT CRACKING, DISTORTION, WARPING OR OTHER PHYSICAL DAMAGE.
1. STORE UNITS WITH DUNNAGE ACROSS FULL WIDTH OF EACH BEARING POINT UNLESS OTHERWISE INDICATED.
2. PLACE ADEQUATE DUNNAGE OF EVEN THICKNESS BETWEEN EACH UNIT.
3. PLACE STORED UNITS SO IDENTIFICATION MARKS ARE CLEARLY VISIBLE, AND UNITS CAN BE INSPECTED.

C. HANDLE AND TRANSPORT UNITS IN A POSITION CONSISTENT WITH THEIR SHAPE AND DESIGN IN ORDER TO AVOID EXCESSIVE STRESSES THAT WOULD CAUSE CRACKING OR DAMAGE.

D. LIFT AND SUPPORT UNITS ONLY AT DESIGNATED POINTS SHOWN ON SHOP DRAWINGS.

1.09 COORDINATION

A. FURNISH LOOSE CONNECTION HARDWARE AND ANCHORAGE ITEMS TO BE EMBEDDED IN OR ATTACHED TO OTHER CONSTRUCTION BEFORE STARTING THAT WORK. PROVIDE LOCATIONS, SETTING DIAGRAMS, TEMPLATES, INSTRUCTIONS, AND DIRECTIONS, AS REQUIRED, FOR INSTALLATION.

PART 2 - PRODUCTS

2.01 2.01 FORM MATERIALS

A. FORMS: RIGID, DIMENSIONALLY STABLE, NON-ABSORPTIVE MATERIAL, WARP AND BUCKLE FREE, THAT WILL PROVIDE CONTINUOUS AND TRUE PRECAST CONCRETE SURFACES WITHIN FABRICATION TOLERANCES INDICATED; NONREACTIVE WITH CONCRETE AND SUITABLE FOR PRODUCING REQUIRED FINISHES.
1. FORM-RELEASE AGENT: COMMERCIALLY PRODUCED LIQUID-RELEASE AGENT THAT WILL NOT BOND WITH, STAIN OR ADVERSELY AFFECT PRECAST CONCRETE SURFACES AND WILL NOT IMPAIR SUBSEQUENT SURFACE OR JOINT TREATMENTS OF PRECAST CONCRETE.

B. SURFACE RETARDER: CHEMICAL SET RETARDER, CAPABLE OF TEMPORARILY DELAYING FINAL HARDENING OF NEWLY PLACED CONCRETE MIXTURE TO DEPTH OF REVEAL SPECIFIED.

2.02 REINFORCING MATERIALS

A. REINFORCING BARS: ASTM A 615 GRADE 60 DEFORMED.

B. SUPPORTS: SUSPEND REINFORCEMENT FROM BACK OF MOLD OR USE BOLSTERS, CHAIRS, SPACERS, AND OTHER DEVICES FOR SPACING, SUPPORTING, AND FASTENING REINFORCING BARS AND WELDED WIRE REINFORCEMENT IN PLACE ACCORDING TO PCI MNL 116.

2.03 PRESTRESSING TENDONS

A. PRETENSIONING STRAND: ASTM A 416, GRADE 250 OR GRADE 270), UNCOATED, 7-WIRE ORASTM A 886, GRADE 270, INDENTED, 7-WIRE, LOW-RELAXATION STRAND.

2.04 CONCRETE MATERIALS

A. PORTLAND CEMENT: ASTM C 150, TYPE I OR TYPE III, GRAY, UNLESS OTHERWISE INDICATED.

B. SUPPLEMENTARY CEMENTITIOUS MATERIALS:
1. FLY ASH: ASTM C 618, CLASS C OR F, WITH MAXIMUM LOSS ON IGNITION OF 3 PERCENT.
2. METAKAOLIN ADMIXTURE: ASTM C 618, CLASS N.
3. SILICA FUME ADMIXTURE: ASTM C 1240, WITH OPTIONAL CHEMICAL AND PHYSICAL REQUIREMENT. 4. GROUND GRANULATED BLAST-FURNACE SLAG: ASTM C 989, GRADE 100 OR 120.

C. NORMAL-WEIGHT AGGREGATES: EXCEPT AS MODIFIED BY PCI MNL 116, ASTM C 33, WITH COARSE AGGREGATES COMPLYING WITH CLASS 4S. STOCKPILE FINE AND COARSE AGGREGATES FOR EACH TYPE OF EXPOSED FINISH FROM A SINGLE SOURCE (PIT OR QUARRY) FOR PROJECT.

D. WATER: POTABLE; FREE FROM DELETERIOUS MATERIAL THAT MAY AFFECT COLOR STABILITY, SETTING, OR STRENGTH OF CONCRETE AND COMPLYING WITH CHEMICAL LIMITS OF PCI MNL 116.

E. CHEMICAL ADMIXTURES: CERTIFIED BY MANUFACTURER TO BE COMPATIBLE WITH OTHER ADMIXTURES AND TO NOT CONTAIN CALCIUM CHLORIDE, OR MORE THAN 0.15 PERCENT CHLORIDE IONS OR OTHER SALTS BY WEIGHT OF ADMIXTURE.
1. AIR ENTRAINING ADMIXTURES: ASTM C260
2. WATER-REDUCING ADMIXTURES: ASTM C 494/C 494M, TYPE A.
3. RETARDING ADMIXTURE: ASTM C 494/C 494M, TYPE B.
4. WATER-REDUCING AND RETARDING ADMIXTURE: ASTM C 494/C 494M, TYPE D.
5. WATER-REDUCING AND ACCELERATING ADMIXTURE: ASTM C 494/C 494M, TYPE E.
6. HIGH-RANGE, WATER-REDUCING ADMIXTURE: ASTM C 494/C 494M, TYPE F.
7. HIGH-RANGE, WATER-REDUCING AND RETARDING ADMIXTURE: ASTM C 494/C 494M, TYPE G.
8. PLASTICIZING AND RETARDING ADMIXTURE: ASTM C 1017/C 1017M.

F. CORROSION-INHIBITING ADMIXTURE: COMMERCIALLY FORMULATED, ANODIC INHIBITOR OR MIXED CATHODIC AND ANODIC INHIBITOR; CAPABLE OF FORMING A PROTECTIVE BARRIER AND MINIMIZING CHLORIDE REACTIONS WITH STEEL REINFORCEMENT IN CONCRETE.

2.05 STEEL CONNECTION MATERIALS

A. CARBON-STEEL SHAPES AND PLATES: ASTM A 36, UNLESS OTHERWISE NOTED.

B. CARBON-STEEL CASTINGS: ASTM A 27/A 27M, GRADE 60-30.

E. CARBON-STEEL BOLTS AND STUDS: ASTM A 307, GRADE A; CARBON-STEEL, HEX-HEAD BOLTS AND STUDS; CARBON-STEEL NUTS, ASTM A 563; AND FLAT, UNHARDENED ST

034100 STRUCTURAL PRECAST CONCRETE (C0NT)

3.06 CLEANING

A. CLEAN MORTAR, PLASTER, FIREPROOFING, WELD SLAG, AND OTHER DELETERIOUS MATERIAL FROM CONCRETE SURFACES AND ADJACENT MATERIALS IMMEDIATELY.

B. CLEAN EXPOSED SURFACES OF PRECAST CONCRETE UNITS AFTER ERECTION AND COMPLETION OF JOINT TREATMENT TO REMOVE WELD MARKS, OTHER MARKINGS, DIRT, AND STAINS.

1. PERFORM CLEANING PROCEDURES, IF NECESSARY, ACCORDING TO PRECAST CONCRETE FABRICATOR'S WRITTEN RECOMMENDATIONS. CLEAN SOILED PRECAST CONCRETE SURFACES WITH DETERGENT AND WATER, USING STIFF FIBER BRUSHES AND SPONGES, AND RINSE WITH CLEAN WATER. PROTECT OTHER WORK FROM STAINING OR DAMAGE DUE TO CLEANING OPERATIONS.
2. DO NOT USE CLEANING MATERIALS OR PROCESSES THAT COULD CHANGE THE APPEARANCE OF EXPOSED CONCRETE FINISHES OR DAMAGE ADJACENT MATERIALS.

END OF SECTION

042000 - UNIT MASONRY ASSEMBLIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. CONSTRUCTION DRAWINGS, SPECIFICATIONS AND PROVISIONS OF THE CONTRACT INCLUDING GENERAL AND SUPPLEMENTAL CONDITIONS AND OTHER DIVISION 01 SPECIFICATION SECTIONS, ARE HEREBY MADE A PART OF THIS SECTION AS FULLY AND COMPLETELY AS IF REPEATED HEREIN.

1.02 ITEMS REQUIRED BUT NOT SPECIFIED

A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.

1.03 EXECUTION, CORRELATION AND INTENT

A. IN CASE OF AN INCONSISTENCY BETWEEN DRAWINGS AND SPECIFICATIONS, OR WITHIN EITHER DOCUMENT NOT CLARIFIED BY ADDENDUM, THE BETTER QUALITY OR GREATER QUANTITY OF WORK IS TO BE PROVIDED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.

1.04 SECTION INCLUDES

A. FURNISH AND INSTALL:

B. REINFORCED UNIT MASONRY CONSTRUCTION AS SHOWN ON THE DRAWINGS AND DESCRIBED HEREIN.
1. CONCRETE MASONRY UNITS.
   a. STANDARD UNITS.
   b. GROUND FACE UNITS.
2. PRECAST LINTELS.
3. MORTAR AND GROUT.
4. GROUT FILL FOR HOLLOW METAL STEEL FRAMES, AND WHEREVER TIES OR ANCHORAGE ITEMS OCCUR, AND AS FURTHER INDICATED IN THE DRAWINGS.
5. VERTICAL AND HORIZONTAL REINFORCING, TIES, ANCHORS, AND OTHER METAL ACCESSORIES, FOR ANCHORING UNIT MASONRY TOGETHER AND TO OTHER MATERIALS.
6. COMPRESSIBLE JOINT FILLERS FOR CONTROL JOINTS IN UNIT MASONRY WORK AND JOINTS WITH STRUCTURAL STEEL.
7. METAL / FLEXIBLE SHEET FLASHING.

C. INSTALL THE FOLLOWING FURNISHED UNDER THE INDICATED SECTIONS:
1. PLACEMENT AND BUILDING-IN OF, AS WORK PROGRESSES, ANCHOR BOLTS, WOOD BLOCKING, AND ANCHORAGE FOR ITEMS FURNISHED OR SET BY OTHER TRADES AS SPECIFIED IN INDIVIDUAL SECTIONS.
2. CLEAN AND POINT EXPOSED TO VIEW SURFACE MASONRY.

1.05 RELATED SECTIONS

A. SECTION 06 1000 - ROUGH CARPENTRY: SETTING AND TEMPORARY BRACING OF HOLLOW METAL FRAMES OCCURRING IN MASONRY, AND REMOVAL OF TEMPORARY CENTERING WHEN FRAMES HAVE BEEN BUILT INTO THE MASONRY.

B. SECTION 07 9200 - JOINT SEALERS: SEALANT, CAULKING MATERIALS, AND COMPRESSIBLE JOINT BEAD BACK-UP, IN CONJUNCTION WITH MASONRY WORK.

1.06 REFERENCES

A. COMPLY WITH APPLICABLE REQUIREMENTS OF THE FOLLOWING STANDARDS AND THOSE OTHERS REFERENCED IN THIS SECTION.
1. AMERICAN CONCRETE INSTITUTE (ACI) AND AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE): ACI 530.1/ASCE 6 - "SPECIFICATIONS FOR MASONRY STRUCTURES"
2. ASTM (AMERICAN SOCIETY OF TESTING AND MATERIALS)
   a. ASTM A 123 - ZINC (HOT-DIP GALVANIZED) COATING ON IRON AND STEEL PRODUCTS.
   b. ASTM A 153 - ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE.
   c. ASTM A 615 - DEFORMED AND PLAIN BILLET-STEEL BAR FOR CONCRETE REINFORCEMENT.
   d. ASTM C 90 - LOAD-BEARING CONCRETE MASONRY UNITS.
   e. ASTM C 144 - AGGREGATE FOR MASONRY MORTAR.
   f. ASTM C 150 - PORTLAND CEMENT.
   g. ASTM C 270 - MORTAR FOR UNIT MASONRY.
   h. ASTM C 404 - AGGREGATES FOR MASONRY GROUT.
   i. ASTM C 476 - GROUT FOR MASONRY.
   j. ASTM C 1142 - READY-MIX MORTAR FOR UNIT MASONRY
   k. ASTM E 119 - FIRE TESTS OF BUILDING CONSTRUCTION AND MATERIALS.
3. AMERICAN NATIONAL STANDARDS INSTITUTE BUILDING CODE REQUIREMENTS.
4. IMIAC (INTERNATIONAL MASONRY INDUSTRY ALL-WEATHER COUNCIL)
   a. IMIAC - RECOMMENDED PRACTICES AND GUIDE SPECIFICATIONS FOR HOT/COLD WEATHER MASONRY CONSTRUCTION

B. THE FOLLOWING REFERENCE MATERIALS ARE HEREBY MADE A PART OF THIS SECTION BY REFERENCE THERETO:
1. UL FIRE RESISTANCE DIRECTORY
2. IMI: MASONRY CONSTRUCTION GUIDE MANUAL.
3. PCA, "CONCRETE MASONRY HANDBOOK".
4. NCMA (NATIONAL CONCRETE MASONRY ASSOCIATION)
   a. NCMA APPLICABLE TEK BULLETINS.

1.07 SUBMITTALS

A. SUBMIT THE FOLLOWING UNDER PROVISIONS OF DIVISION 1:
1. LITERATURE: MANUFACTURER'S PRODUCT DATA SHEETS, SPECIFICATIONS, PERFORMANCE DATA, PHYSICAL PROPERTIES FOR EACH ITEM FURNISHED HEREUNDER.
2. MATERIAL CERTIFICATES: PROVIDE FOR THE FOLLOWING, SIGNED BY MANUFACTURER AND SUBCONTRACTOR CERTIFYING THAT EACH MATERIAL COMPLIES WITH REQUIREMENTS.
   a. EACH DIFFERENT CEMENT PRODUCT REQUIRED FOR MORTAR AND GROUT, INCLUDING NAME OF MANUFACTURER, BRAND, TYPE, AND WEIGHT SLIPS AT TIME OF DELIVERY.
   b. EACH MATERIAL AND GRADE INDICATED FOR REINFORCING BARS.
   c. EACH TYPE AND SIZE OF JOINT REINFORCEMENT.
   d. EACH TYPE AND SIZE OF ANCHORS, TIES, AND METAL ACCESSORIES.
3. MATERIAL TEST REPORTS FROM A QUALIFIED INDEPENDENT LABORATORY EMPLOYED AND PAID BY SUBCONTRACTOR INDICATING AND INTERPRETING TEST RESULTS RELATIVE TO COMPLIANCE OF THE FOLLOWING PROPOSED MASONRY MATERIALS WITH REQUIREMENTS INDICATED:
   a. MORTAR COMPLYING WITH PROPERTY REQUIREMENTS OF ASTM C 270.
   b. GROUT MIXES: INCLUDE DESCRIPTION OF TYPE AND PROPORTIONS OF GROUT INGREDIENTS.
   c. MASONRY UNITS; REPORT FOR TESTS PERFORMED WITHIN THE PREVIOUS SIX MONTHS.
4. SAMPLES:
   a. SAMPLES OF EACH MASONRY ACCESSORY OR ANCHORAGE ITEM REQUIRED.
5. SUBCONTRACTOR'S COLD WEATHER AND HOT WEATHER PROCEDURES: SHOW EVIDENCE OF COMPLIANCE WITH REQUIREMENTS SPECIFIED IN REFERENCED UNIT MASONRY STANDARD.
6. REINFORCING SHOP DRAWINGS.

1.08 QUALIFICATIONS

A. INSTALLER: COMPANY SPECIALIZING IN PERFORMING THE MASONRY WORK OF THIS SECTION WITH MINIMUM OF 10 YEARS DOCUMENTED EXPERIENCE. WORK SHALL BE DONE BY SKILLED WORKMEN, FULLY INSTRUCTED AS TO THE REQUIREMENTS OF THE SPECIFICATIONS AND ADEQUATELY SUPERVISED DURING THE WORK.

1.09 QUALITY ASSURANCE

A. SINGLE-SOURCE RESPONSIBILITY FOR CONCRETE MASONRY UNITS: OBTAIN CONCRETE MASONRY UNITS FOR THE PROJECT FROM A SINGLE MANUFACTURER.

B. SINGLE-SOURCE RESPONSIBILITY FOR MORTAR MATERIALS: OBTAIN MORTAR INGREDIENTS OF UNIFORM QUALITY, INCLUDING COLOR FOR EXPOSED MASONRY, FROM ONE MANUFACTURER FOR EACH CEMENTITIOUS COMPONENT AND FROM ONE SOURCE AND PRODUCER FOR EACH AGGREGATE.

1.10 REGULATORY REQUIREMENTS

A. FIRE PERFORMANCE CHARACTERISTICS: WHERE INDICATED, PROVIDE MATERIALS AND CONSTRUCTION IDENTICAL TO THOSE OF ASSEMBLIES WHOSE FIRE RESISTANCE HAS BEEN DETERMINED PER ASTM E119 BY A TESTING AND INSPECTING ORGANIZATION, BY EQUIVALENT CONCRETE MASONRY THICKNESS, OR BY ANOTHER MEANS, AS ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

1.11 DELIVERY, STORAGE, AND HANDLING

A. GENERAL: DO NOT DELIVER CEMENT, LIME, AND SIMILAR PERISHABLE MATERIALS TO THE SITE UNTIL SUITABLE STORAGE IS AVAILABLE. STORE SUCH MATERIALS IN WEATHERPROOF STRUCTURES, AND ENSURE THAT MATERIALS ARE IN PERFECTLY FRESH CONDITION WHEN BROUGHT FOR USE. PROTECT MASONRY UNITS AND MANUFACTURED PRODUCTS OF ALL TYPES FROM WETTING BY RAIN OR SNOW, AND KEEP COVERED WHEN NOT IN USE.

B. MASONRY FACE UNITS: HANDLE ALL MASONRY UNITS CAREFULLY IN TRANSIT AND ON THE SITE, SO AS TO KEEP UNITS WHOLE, WITH EDGES SHARP, AND FACES CLEAN AND UNDAMAGED. DELIVER ALL MASONRY UNITS ON PALLETS; OR HANDLE UNITS INDIVIDUALLY, AND PROPERLY STACK SAME.

C. AGGREGATES: DELIVER, STORE AND HANDLE AGGREGATE MATERIALS SO AS TO PREVENT CONTAMINATION WITH EARTH OR OTHER FOREIGN MATERIALS.

D. STORE CEMENT, LIME AND SIMILAR PRODUCTS UNDER COVER AND FROM DIRECT CONTACT WITH EARTH OR FLOOR SLABS.

E. MANUFACTURED ITEMS: DELIVER MANUFACTURED PRODUCTS IN ORIGINAL CONTAINERS PLAINLY MARKED WITH PRODUCT IDENTIFICATION AND MANUFACTURER'S NAME.

F. STORE METAL ACCESSORIES AND THE LIKE UNDER COVER AND FROM DIRECT CONTACT WITH GROUND, AND IN MANNER TO PREVENT RUST.

G. DAMAGED MATERIAL: REMOVE ANY DAMAGED OR CONTAMINATED MATERIALS FROM JOB SITE IMMEDIATELY, INCLUDING MATERIALS IN BROKEN PACKAGES, PACKAGES CONTAINING WATER MARKS, OR WHICH SHOW OTHER EVIDENCE OF DAMAGE. UNLESS ARCHITECT SPECIFICALLY AUTHORIZES CORRECTION THEREOF AND USAGE ON PROJECT.

1.12 ENVIRONMENTAL CONDITIONS

A. HOT AND COLD WEATHER REQUIREMENTS AS SPECIFIED BY THE IMIAC (INTERNATIONAL MASONRY INDUSTRY ALL-WEATHER COUNCIL).
1. HOT WEATHER REQUIREMENTS SHALL BE ENFORCED WHEN AMBIENT TEMPERATURES ARE ABOVE 90 DEGREES FAHRENHEIT (32 DEGREES CELSIUS).
2. COLD WEATHER REQUIREMENTS SHALL BE ENFORCED WHEN AMBIENT TEMPERATURES BELOW 40 DEGREES FAHRENHEIT (5 DEGREES CELSIUS).

1.13 COORDINATION AND SEQUENCING

A. COORDINATE WORK WITH THAT OF OTHER TRADES WHICH REQUIRE PLACEMENT AND BUILDING-IN OF, AS WORK PROGRESSES, ANCHOR BOLTS, WOOD BLOCKING, HOLLOW METAL FRAMES, AND ANCHORAGE ITEMS.

B. EXAMINE ALL DRAWINGS AS TO REQUIREMENTS FOR THE ACCOMMODATION OF WORK OF OTHER TRADES. PROVIDE ALL REQUIRED RECESSES, CHASES, SLOTS, AND CUTOUTS. PLACE ANCHORS, BOLTS, SLEEVES AND OTHER ITEMS OCCURRING IN THE MASONRY WORK. TAKE EVERY PRECAUTION TO MINIMIZE FUTURE CUTTING AND PATCHING. CLOSELY COORDINATE THE LOCATION AND PLACEMENT OF SUCH ITEMS.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

A. LOAD BEARING HOLLOW AND SOLID, LIGHT WEIGHT CONCRETE MASONRY UNITS: CONFORM TO ASTM C90, TYPE 1, CLASS 1, LIGHT WEIGHT, 2-CORE, 58 PERCENT SOLID FOR 2 HOUR FIRE RESISTANT CONSTRUCTION:
1. PLAIN-FACED UNITS OF NOMINAL THICKNESS INDICATED ON THE DRAWINGS, LIGHT GRAY COLOR WITH UNIFORM MEDIUM-FINE TEXTURE, SOUND, TRUE TO PLANE AND LINE, AND FREE FROM CHIPS, CRACKS, AND OTHER DEFECTS. NOMINAL DIMENSIONS AS FOLLOWS:
   a. NOMINAL 8 X 16 FACE DIMENSIONS.
2. SPECIAL SHAPES: PROVIDE SPECIAL BLOCK TYPES WHERE REQUIRED FOR CORNERS, CONTROL JOINTS AND OTHER SPECIAL CONDITIONS, WHETHER OR NOT SPECIFICALLY INDICATED ON THE DRAWINGS AS "SPECIAL".
   a. BULLNOSE CORNERS AT OUTSIDE CORNERS
   b. DOUBLE BULLNOSE AT DOOR AND WINDOW ROUGH OPENINGS.
   c. BOND BEAMS.
3. U.L. FIRE RATED CONCRETE MASONRY UNITS: PROVIDE IN ALL FIRE WALL LOCATIONS AS INDICTED ON THE DRAWINGS.
4. AGGREGATE: SAND AND GRAVEL. CONFORM TO ASTM C 331.
5. MINIMUM ALLOWABLE COMPRESSIVE STRENGTH F'm = 2,000 PSI WHEN TESTED IN ACCORDANCE WITH ASTM C 140.
6. OVEN DRY DENSITY: 105 POUNDS PER CUBIC FOOT.
7. MOISTURE CONTENT FOR AVERAGE OF 3 UNITS, WHEN DELIVERED, NOT EXCEEDING 35 PERCENT OF THE TOTAL ABSORPTION, WHEN TESTED IN ACCORDANCE WITH ASTM C 140.

2.02 MORTAR

A. MORTAR: SITE-MIXED PORTLAND CEMENT MORTAR COMPLYING WITH ASTM C 270 AS SPECIFIED HEREIN.
1. ADMIXTURES ARE NOT PERMITTED EXCEPT WHERE EXPRESSLY SPECIFIED HEREIN OR AS OTHERWISE APPROVED BY THE ARCHITECT FOR SPECIFIC FIELD CONDITIONS.

B. MORTAR MATERIALS FOR SITE MIXED MORTAR:
1. PORTLAND CEMENT FOR MASONRY CONFORMING TO ASTM C 150, TYPE I. NON-STAINING, WITHOUT AIR ENTRAINMENT. USE TYPE III AS NECESSARY FOR LAYING MASONRY IN COLD WEATHER.
2. FOR CONCRETE MASONRY, USE GRAY COLOR PORTLAND CEMENT.
3. AGGREGATES FOR GROUT: CONFORMING TO ASTM C 144 FOR FINE AGGREGATE AND ASTM C 404, SIZE 8 OR 89.

END OF SECTION

051200 STRUCTURAL STEEL

PART 1 - GENERAL

1.01 ITEMS REQUIRED BUT NOT SPECIFIED

A. IF AN ITEM OR MATERIAL OF THIS TRADE IS INDICATED ON THE DRAWINGS BUT NOT SPECIFICALLY LISTED IN THIS SECTION, PROVIDE SUCH ITEM OR MATERIAL AT A STANDARD OF QUALITY EQUAL TO THE STANDARD ESTABLISHED FOR THE BALANCE OF THE WORK SPECIFIED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.

1.02 EXECUTION, CORRELATION, AND INTENT

A. IN CASE OF AN INCONSISTENCY BETWEEN DRAWINGS AND SPECIFICATIONS OR WITHIN EITHER DOCUMENT NOT CLARIFIED BY ADDENDUM, THE BETTER QUALITY OR GREATER QUANTITY OF WORK IS TO BE PROVIDED, IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.

1.03 DESCRIPTION

A. WORK INCLUDED: ALL LABOR AND MATERIALS REQUIRED TO FURNISH AND INSTALL THE STRUCTURAL STEEL WORK SHOWN ON THE DRAWINGS AND REQUIRED BY THESE SPECIFICATIONS.
1. PROVIDE SPECIAL PREPARATION AND PRIMER AS SPECIFIED.

B. RELATED WORK SPECIFIED ELSEWHERE: THE GENERAL PROVISIONS OF THE CONTRACT APPLY TO THE WORK OF THIS SECTION, AS THOUGH REPRODUCED HEREIN. CAREFULLY EXAMINE ALL OTHER SECTIONS AND ALL DRAWINGS FOR RELATED WORK, WHICH INCLUDES BUT IS NOT LIMITED TO:

1. METAL DECKING: SECTION 053100
2. STEEL JOISTS: SECTION 052100

C. WORK FURNISHED BUT INSTALLED UNDER OTHER SECTIONS:
1. CAST-IN-PLACE ANCHOR BOLTS FOR COLUMNS
2. EMBEDDED ARMORING ANGLES & CHANNELS AT LOADING DOCKS AND OTHER LOCATIONS INDICATED.

D. WORK SPECIFICALLY EXCLUDED, TO BE PERFORMED BY OTHERS:
1. GROUTING UNDER COLUMN BASE PLATES
2. COATING OF STRUCTURAL STEEL COLUMNS AND BASE PLATES BELOW FLOOR WITH BITUMINOUS COATING.

E. WORK AFFECTED BY OTHERS: FRAMING, LOADS, OPENINGS, AND STRUCTURE IN ANY WAY RELATED TO MECHANICAL, ELECTRICAL OR REFRIGERATION REQUIREMENTS IS SHOWN FOR BIDDING PURPOSES ONLY. RESPONSIBILITY FOR COORDINATING THE WORK OF THIS SECTION WITH THESE REQUIREMENTS IS SOLELY THAT OF THE CONTRACTOR. CONTRACTOR'S REVIEW OF SHOW DRAWINGS WILL BE TAKEN TO INDICATE THAT THIS COORDINATION HAS BEEN ACCOMPLISHED.

F. INSPECTION AND TESTING REQUIRED BY THIS SECTION ARE TO BE PERFORMED BY AN AGENCY RETAINED BY THE CONSTRUCTION MANAGER/OWNER.

1.04 QUALITY ASSURANCE

A. COMPLY WITH THE PROVISIONS OF THE FOLLOWING REFERENCE STANDARDS:
1. BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC):
   a. SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
   b. SPECIFICATION FOR STRUCTURAL JOISTS USING ASTM A325 OR A490 BOLTS.
   c. CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.
2. BY THE AMERICAN WELDING SOCIETY (AWS):
   a. STRUCTURAL WELDING CODE - STEEL (D1.1).
   b. SYMBOLS FOR WELDING AND NON-DESTRUCTIVE TESTING (A2.4).
3. BY THE STEEL STRUCTURES PAINTING COUNCIL (SSPC):
   a. STEEL STRUCTURES PAINTING MANUAL SYSTEMS AND SPECIFICATIONS.

B. FABRICATOR'S QUALIFICATIONS:
1. MINIMUM FIVE YEARS CONTINUOUS EXPERIENCE IN THE FABRICATION OF STEEL FOR PROJECTS OF SIMILAR QUALITY AND SCOPE.
2. MEMBERSHIP IN THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, OR SHALL BE CERTIFIED BY AN APPROVED INDEPENDENT PROFESSIONAL TESTING AGENCY AS BEING QUALIFIED FOR CATEGORY I CONVENTIONAL STEEL STRUCTURES IN CONFORMANCE TO THE REQUIREMENTS OF THE AISC QUALITY CERTIFICATION PROGRAM.

C. ERECTOR'S QUALIFICATIONS: A QUALIFIED INSTALLER WHO PARTICIPATES IN THE AISC QUALITY CERTIFICATION PROGRAM AND IS DESIGNATED AN AISC-CERTIFIED ERECTOR, CATEGORY CSE.

D. WELDERS' QUALIFICATIONS: PERSONNEL AND PROCEDURES ARE TO BE QUALIFIED IN ACCORDANCE WITH AWS D1.1.

E. STRUCTURAL FASTENERS SHALL BE MANUFACTURED IN THE UNITED STATES. FABRICATOR SHALL FURNISH PROOF OF U.S. MANUFACTURER. IF IT BECOMES NECESSARY TO USE IMPORTED FASTENERS, EACH SIZE, TYPE, AND EACH LARGE QUANTITY PACKAGE (500 PCS. OR MORE) SHALL UNDERGO A RANDOM SAMPLING OF A MINIMUM OF 3 PIECES FOR TESTING, AND THE TEST RESULTS SHALL BE PROVIDED TO THE A/E. TESTS SHALL BE PERFORMED BY AN INDEPENDENT TESTING AGENCY, AND THE COST SHALL BE INCLUDED IN THE BASE BID. IF INFERIOR FASTENERS ARE DISCOVERED, ALL FASTENERS OF THAT TYPE SHALL BE REMOVED AND REPLACED WITH ACCEPTABLE FASTENERS AT NO COST TO THE OWNER.

1.05 SUBMITTALS

A. CERTIFICATION OF EXPERIENCE: SUBMIT, ON REQUEST ONLY, WRITTEN DESCRIPTIONS OF PERSONNEL, PROJECTS, AND EQUIPMENT WHICH DOCUMENT THE EXPERIENCE AND QUALIFICATIONS REQUIRED OF THE FABRICATOR, ERECTOR, WELDERS, AND INSPECTION AGENCY.

B. SHOP DRAWINGS:
1. INDICATE ALL SHOP AND ERECTION DETAILS, INCLUDING CUTS, COPES, CONNECTIONS, HOLES, THREADED FASTENERS, AND WELDS.
2. INDICATE ALL MATERIAL SPECIFICATIONS AND FINISHES.
3. INDICATE SHOP AND FIELD WELDS WITH SYMBOLS PER AWS A2.4.
4. FOR STRUCTURAL-STEEL CONNECTIONS INDICATED TO COMPLY WITH DESIGN LOADS, INCLUDE STRUCTURAL ANALYSIS DATA SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION.

C. PROOF OF COMPLIANCE FOR MATERIALS: SUBMIT, ON REQUEST ONLY, THE FOLLOWING:
1. MILL REPORTS FOR PROPERLY IDENTIFIED MATERIAL.
2. CERTIFICATES ON COMPLIANCE FOR:
   a. STRUCTURAL STEEL SHAPES
   b. HIGH STRENGTH THREADED FASTENERS
   c. SHEAR STUDS.

D. WELDING CERTIFICATES.

1.06 PRODUCT DELIVERY AND STORAGE

A. DELIVERY:
1. COMPLY WITH ASTM A6. NON-COMPLIANCE WILL BE CAUSE FOR REJECTIONS.
2. DELIVER ANCHOR BOLTS AND OTHER ITEMS TO BE EMBEDDED IN CAST-IN-PLACE CONCRETE PRIOR TO THE START OF THAT WORK. PROVIDE SETTING DRAWINGS, TEMPLATES, OR INSTRUCTIONS REQUIRED FOR THE INSTALLATION OF SUCH ITEMS.

B. STORAGE:
1. STORE STEEL AT SITE ABOVE GROUND ON PLATFORMS, SKIDS, OR OTHER SUPPORTS.
2. PROTECT STEEL FROM CORROSION.
3. STORE PACKAGED MATERIALS IN THEIR ORIGINAL UNBROKEN PACKAGES.
4. STORE FASTENERS IN A PROTECTED PLACE. CLEAN AND RELUBRICATE BOLTS AND NUTS THAT BECOME DRY OR RUSTY BEFORE USE.
5. DO NOT STORE MATERIALS ON STRUCTURE IN A MANNER THAT MIGHT CAUSE DISTORTION, DAMAGE, OR OVERLOAD TO MEMBERS OR SUPPORTING STRUCTURES. REPAIR OR REPLACE DAMAGED MATERIALS OR STRUCTURES AS DIRECTED.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. STRUCTURAL STEEL SPECIFIED HEREIN OR ON THE DRAWINGS SHALL CONTAIN THE HIGHEST RECYCLED CONTENT AVAILABLE (A MINIMUM OF 95% WHERE POSSIBLE).

B. STRUCTURAL STEEL SHAPES, PLATES, BARS, ETC.:
1. WIDE FLANGE SHAPES: ASTM A992 FY =50 KSI.
2. ANGLES, CHANNELS, PLATES, RODS, ETC: ASTM A36, FY=36 KSI.

C. STRUCTURAL STEEL TUBING:
1. SQUARE AND RECTANGULAR TUBING: ASTM A500, GRADE B (FY = 46 KSI).
2. ROUND STEEL PIPE: ASTM A53, TYPE E OR S, GRADE B (FY = 35 KSI).

D. THREADED RODS, UNFINISHED BOLTS AND NUTS: ASTM A307 OR A36. PROVIDE HEAVY WASHERS FOR ANCHOR BOLTS.

E. ANCHOR BOLTS: ASTM F1554 GRADE 36, 55, OR 105. PROVIDE HEAVY WASHERS FOR ANCHOR BOLTS.

F. HIGH STRENGTH THREADED FASTENERS: ASTM A325 OR A490.
1. USE 3/4 INCH DIAMETER BOLTS UNLESS NOTED OR REQUIRED TO DEVELOP CONNECTION CAPACITY.
2. BOLTS SHALL HAVE A SUITABLE IDENTIFYING MARK PLACED ON TOP OF THE HEAD BEFORE LEAVING THE FACTORY.

G. WELDING ELECTRODES: CONFORM TO REQUIREMENTS OF AWS D1.1, USING SERIES E70 ELECTRODES, APPROPRIATE FOR THE MATERIALS BEING WELDED.

H. HEADED STUD SHEAR CONNECTORS: CONFORM TO THE REQUIREMENTS OF ANSI/AWS D1.1, CHAPTER 7, TYPE B, AND ASTM A108, MINIMUM 60 KSI.

I. CHEMICAL ANCHORS:
1. ADHESIVE: SHALL BE TWO-COMPONENT EPOXY OR OTHER ADHESIVE MORTAR COMBINING RESIN AND HARDENER COMPONENTS. COMPONENTS SHALL BE FURNISHED IN SEPARATE CONTAINERS, DESIGNED TO ACCEPT A STATIC MIXING NOZZLE THAT THOROUGHLY BLENDS THE COMPONENTS AND ALLOWS INJECTION DIRECLY INTO A DRILLED HOLE. MANUFACTURER'S INSTALLATION INSTRUCTIONS MUST BE FOLLOWED. PROVIDE THE FOLLOWING, OR APPROVED EQUAL:
   a. HIT HY 200 BY HILTI FASTENING SYSTEMS
2. ANCHOR RODS: ALL-THREAD ROD; ASTM A36 MINIMUM.

J. EXPANSION ANCHORS:
1. WEDGE ANCHORS SHALL HAVE A ONE PIECE ANCHOR BODY WITH AN EXPANSION MECHANISM OF INTERLOCKING WEDGES. CARBON STEEL COMPONENTS SHALL BE ZINC PLATED ACCORDING TO ASTM B633. GALVANIZED ACCORDING TO ASTM B695, OR STAINLESS STEEL CONFORMING TO ASTM A276 OR ASTM A493 OF MATERIAL MEETING AISI 304 OR 316. THE FOLLOWING ARE ACCEPTABLE:
   a. KWIK BOLT TZ2 BY HILTI FASTENING SYSTEMS
   b. RAWL-STUD BY RAWLPLUG COMPANY
2. SLEEVE ANCHORS SHALL BE FLUSH OR SHELL TYPE THAT MEET FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 3 CARBON STEEL COMPONENTS SHALL BE ZINC PLATED ACCORDING TO ASTM B633. GALVANIZED ACCORDING TO ASTM B695, OR STAINLESS STEEL CONFORMING TO ASTM A276 OR ASTM A493 OF MATERIAL MEETING AISI 304 OR 316. THE FOLLOWING ARE ACCEPTABLE:
   a. SLEEVE ANCHOR BY HILTI FASTENING SYSTEMS
   b. LOK / BOLT BY RAWLPLUG COMPANY

K. COLUMN FREEZER BLOCKS: UNDER COLUMNS IN FREEZER AREAS (BELOW 32 DEGREES F) AND AS SHOWN IN THE DRAWINGS, PROVIDE HIGH DENSITY RIGID CELLULAR POLYURETHANE BLOCKS. BLOCKS SHALL BE PREFABRICATED WITH ANCHOR BOLT HOLES PREDRILLED TO MATCH BOLT PATTERN. MINIMUM COMPRESSIVE STRENGTH 1500 PSI. PROVIDE ONE OF THE FOLLOWING, OR AN APPROVED EQUAL:
1. GENERAL PLASTICS MANUFACTURING
2. AVE SHADCO INC
3. DOW CHEMICAL COMPANY

2.02 FABRICATION

A. CONFORM TO APPLICABLE PROVISIONS OF THE REFERENCE STANDARDS LISTED IN PART 1 OF THIS SECTION, AS MODIFIED HEREIN.

B. CONNECTION DESIGN:
1. DESIGN CONNECTIONS PER AISC STANDARDS FOR FORCES, MOMENTS AND AXIAL REACTIONS GIVEN ON THE DRAWINGS.
2. BEAMS WITH REACTIONS NOT SHOWN SHALL BE DESIGNED FOR 60% OF THE AISC MAXIMUM TOTAL UNIFORM LOAD (FACTORED).
3. WIND GIRTS WITH REACTIONS NOT SHOWN SHALL BE DESIGNED FOR A 15 KIP HORIZONTAL REACTION (FACTORED).

C. FOR COMPOSITE MEMBERS WITH SHEAR STUDS, USE 1.4 TIMES THE NON-COMPOSITE CAPACITY OF THE BEAM UNLESS REACTION IS GIVEN ON DRAWINGS.
1. CONNECTION DETAILS ON DRAWINGS ARE TO ILLUSTRATE LOCATION, TYPE, GENERAL ARRANGEMENT ONLY, AND TO ESTABLISH MINIMUM REQUIREMENTS.
2. SHOP CONNECTIONS MAY BE WELDED OR BOLTED, UNLESS SHOWN OTHERWISE.
3. FIELD CONNECTIONS SHALL BE BOLTED, UNLESS SHOWN OTHERWISE.
4. STANDARD BOLTS AND NUTS ARE PERMITTED ONLY FOR CONNECTIONS OF SECONDARY MEMBERS, SUCH AS PURLINS AND GIRTS, UNLESS NOTED OTHERWISE. HIGH STRENGTH THREADED FASTENERS ARE REQUIRED FOR ALL OTHER BOLTED CONNECTIONS.

D. FINISHING: ENDS OF MEMBERS IN DIRECT CONTACT BEARING, SUCH AS COLUMNS AT THEIR BASES AND SPLICES, ARE TO BE "FINISHED", AS DEFINED IN THE CODE OF STANDARD PRACTICE.

E. BEARING AND BASE PLATES: COLUMN BASE PLATES ARE TO BE SHOP ATTACHED.

F. CLEANING:
1. REMOVE OIL, DIRT, LOOSE MILL SCALE, OR THEIR MATERIAL WHICH WOULD IMPAIR WELDING, PERFORMANCE OF FRICTION-TYPE CONNECTIONS, OR ADHERENCE OF CONCRETE.
2. FOR STEEL THAT IS TO BE PAINTED, CLEANING TECHNIQUES ARE TO BE AS REQUIRED BY THE APPROPRIATE SSPC PAINT SPECIFICATION LISTED BELOW.

G. SHOP PAINTING:
1. GENERAL: SHOP PAINT STRUCTURAL STEEL WORK, EXCEPT THOSE MEMBERS OR PORTIONS OF MEMBERS TO BE EMBEDDED IN CONCRETE OR MORTAR. DO NOT PAINT CONTACT SURFACES THAT ARE TO BE WELDED OR HIGH STRENGTH BOLTED WITH FRICTION-TYPE CONNECTIONS.

2. ALL STRUCTURAL STEEL SHALL BE PREPARED AND PRIMED.
   a. SURFACE PREPARATION: CLEAN STEEL IN ACCORDANCE WITH SSPC SP-6 "POWER TOOL CLEANING".
   b. PAINTING: USE PAINTING METHODS THAT WILL RESULT IN FULL COVERAGE OF JOINTS, CORNERS, EDGES AND EXPOSED SURFACE, AT RATE TO PROVIDE A UNIFORM DRY FILM THICKNESS OF 3 TO 5 MILS. APPLY SHOP COAT(S) IN ACCORDANCE WITH SSPC-PS 2.01, 2.02, 2.03, OR 2.04.
   c. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE THE FOLLOWING:
      1) TNEMEC PERIMEPRIME SERIES 394.
      2) ARCHITECT APPROVED EQUAL.
3. ALL STEEL MEMBERS EXPOSED INSIDE THE PLANT NEED TWO FINISH COASTS OVER PRIMER AND SHOULD BE USDA APPROVED PAINT. SEE ARCHITECTURAL.
4. ALL STEEL MEMBERS EXPOSED TO WEATHER SHALL BE GALVANIZED.
   a. SURFACE PREPARATION: CLEAN STEEL IN ACCORDANCE WITH SSPC SP-3 "POWER TOOL CLEANING".
   b. GALVANIZING IS TO CONFORM TO ASTM A153. EXCEPT FOR BOLTS, NUTS, AND ANCHORS, ALL GALVANIZING IS TO BE DONE AFTER FABRICATION

H. CAMBER: PROVIDE CAMBER IN BEAMS AS INDICATED ON THE DRAWINGS.

2.03 SOURCE QUALITY CONTROL

A. OWNER/CONSTRUCTION MANAGER WILL ENGAGE AN INDEPENDENT TESTING AND INSPECTING AGENCY TO PERFORM SHOP TESTS AND INSPECTIONS AND PREPARE TEST REPORTS.
1. PROVIDE TESTING AGENCY WITH ACCESS TO PLACES WHERE STRUCTURAL-STEEL WORK IS BEING FABRICATED OR PRODUCED TO PERFORM TESTS AND INSPECTIONS.

B. CORRECT DEFICIENCIES IN WORK THAT TEST REPORTS INSPECTIONS INDICATE DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS