Evanston Animal Shelter

Bid # 22-70

ADDENDUM No. 2

January 3, 2023

Any and all changes to the Contract Document are valid only if they are included by written addendum to all potential respondents, which will be emailed prior to the proposal due date. Each respondent must acknowledge receipt of any addenda by indicating on the Bid Form. Each respondent, by acknowledging receipt of any addenda, is responsible for the contents of the addenda and any changes to the bid proposal therein. Failure to acknowledge receipt of any addenda may cause the proposal to be rejected. If any language or figures contained in this addendum are in conflict with the original document, this addendum shall prevail.

This addendum consists of the following:

1. Addendum Number Two (2) is attached and consists of a total of one hundred two (102) pages including this cover sheet. Any changes to the drawings or specifications noted within Addendum Number Two (2) will be reflected in subsequent drawing issues.

Please feel free to call (847-866-2971) or email (johngonzalez@cityofevanston.org) with any questions or comments.

Sincerely,

John Gonzalez
Purchasing Specialist

Evanston Animal Shelter

Bid # 22-70

ADDENDUM No. 2

January 3, 2023

This addendum forms a part of the Specifications and Bid Documents for Bid # 22-70 and modifies these documents. This addendum consists of this letter and the following re-issued drawings and specifications:

Drawings:

DRAWINGS RE-ISSUED WITH THIS ADDENDUM

G1-4 – LEED SCORECARD & ALTERNATE LIST
A2-1 – FLOOR PLAN
A2-3 – ROOF PLAN & DETAILS
A3-1 – REFLECTED CEILING PLAN
A4-2 – BUILDING SECTIONS
A9-2 – INTERIOR DETAILS - LOBBY RECEPTION COUNTER
ID2-1 – INTERIOR FINISH SCHEDULE & PLAN

S0.1 – GENERAL NOTES
S1.0 – FOUNDATION PLAN
S3.3 – CONCRETE SECTION AND DETAILS

Specifications:

01 21 00 – Allowances

1. 1.5 Schedule of Allowances – Base Bid Allowance 2, Material Allowances adjusted to indicate $180,000.00.

SPECIFICATIONS ISSUED WITH THIS ADDENDEM

06 1516 Wood Roof Decking

SPECIFICATIONS RE-ISSUED WITH THIS ADDENDEM

00 0010 Table of Contents
01 0000 Project Requirements
01 7419 Construction Waste Management and Disposal

06 4116 Plastic Laminate Clad Architectural Cabinets
07 5423 Thermoplastic-Polyolefin (TPO) Roofing
08 7100 Door Hardware
10 1419 Dimensional Letter Signage
12 3661.16 Solid Surfacing Countertops
13 1913 Kennel Enclosures and Gates
13 1920 Cages

Questions:

Per the Instructions to Bidders provided in bid document for Bid #22-70, all questions related to the bid document should be submitted in writing to John Gonzalez, Purchasing Specialist at JohnGonzalez@cityofevanston.org with a copy to Shane Cary, at SCary@cityofevanston.org.

Responses to remaining questions received by December 30, 2022 will be included on subsequent addenda.

Clarifications to Questions Received:

1. Question: Does the project require a new electric service?
   Response: Yes, the project requires a new electric service. The existing electric service is to be decommissioned and removed. ComEd has been contacted and the process has been initiated.

2. Question: What is the expected start date for construction, as it relates to the substantial completion and final completion deadlines?
   Response: The start date should be assumed to be March 6, 2023. If this date must be moved through no fault of the winning bidder, the deadline dates will be moved calendar day, by calendar day.

3. Question: Does the local employment requirement apply to office workers?
   Response: The local employment requirement applies to labor only. Hours spent working on the project in an office or supervising do not count toward the requirement nor against the requirement.

4. Question: Are there any environmental issues beyond the issues with soils?
   Response: An environmental assessment of the building was performed and the report is included in the bid documents as an attachment. To the best of my knowledge there are no asbestos containing materials in the building. If something is identified at a later date, owner will remediate as necessary.

5. Question: Can GAF Everguard 60 mil TPO, GAF Energyguard Polyisocyanurate insulation, GAF SA Vapor Retarder XL, and Everguard TPO Bonding Adhesive be added as approved products.

Response: GAF is an acceptable.manufacturer and will be added to the specifications. Spec section reissued in Addendum #2.

6. Question: Can Suburban Surgical Company, Inc. be added as approved products for the kennels and cages?
   Response: Yes. They have been added to the specifications. Spec section reissued in Addendum #2.

7. Question: Is this project LEEDs for Specification 064116 Plastic Laminate Clad Laminate Clad Architectural Cabinets?
   Response: Yes. Specifications edited accordingly. Spec section reissued in Addendum #2.

8. Question: If the project is LEEDs, specification 064116 does not call out FSC which per LEEDs documentation is needed. Should wood products be FSC?
   Response: Yes. Specifications will be edited accordingly. Spec section reissued in Addendum #2.

9. Question: Does the installer have to be an AWI Member?
   Response: We will accept a non AWI member, but the installer is required to follow AWI standards. Spec section reissued in Addendum #2.

10. Question: Corian solid surface thickness is ½" and not ¾" as reference in the specification 123661.16. Corian quartz comes in 2CM thickness which is closer to ¾". Which material is correct for the countertops and backsplashes?
    Response: ½" material is acceptable as long as the assembly dimensions conform to drawings (1/2" SS laminated to a substrate). Specifications edited to clarify. Spec section reissued in Addendum #2.

11. Question: Corian solid surface and quartz come in numerous colors and prices. Will an allowance be issued or a colors selected for the countertops and sills?
    Response: The ID sheet revised to include specific products. Drawing reissued in Addendum #2.

12. Question: Will a color and manufacturer or allowance be selected for the laminate? There is a large selection of colors, finishes, and prices?
    Response: The ID sheet will be revised to include specific products.. Drawing reissued in Addendum #2.

13. Question: Who is responsible for installation of the Healthcare Cabinets?
    Response: The Contractor is responsible for installation of the healthcare cabinets.

14. Question: Can the requirement for the steel fabricator to be AISC certified be waived?
    Response: No.

15. Question: Can the city advise as to the delivery status of the primary transformer that will be coming from ComEd?
    Response: The delivery status of the transformer is currently not available.

16. Question: What is the anticipated start date when will the drawings and permits be ready for construction?
    Response: See response to Question 3.

17. Question: Is the owner providing the new gas service for the building? Will the owner provide the applications and permits and fees for this work?
    Response: There is no gas service required for this project. Regarding permit, AE has submitted the permit application and the Contractor is expected to pull the permit and pay the fee.

18. Question: Does this project require us to use Groot for the waste management on this project?
    Response: The dumpsters must be provided by Lake Shore Recycling System (LRS). Spec section reissued in Addendum #2

19. Question: On the existing structure can you please confirm if the building has a basements and depths as well as type of construction (wood frame, brick and steel, concrete, Etc.)
    Response: The existing building is masonry with slab on grade and wood framed roof, and it does not have a basement.

20. Question: Was there a Spec for the Sealed Concrete or were either of these to be Polished?
    Response: Comply with spec section 03 3543 Polished Concrete Finishing for SC1 and SC2. Refer to revised ID sheet for finishes. Drawing reissued with Addendum #2

21. Question: I'm confused by the brick finish designations vs the elevations. The diagrams 1.1 & 1.2 on A5-8 show the bonding. However, some of the elevations show different/multiple patterns. The north elevation shows what appears to be a cascading pattern. There are (3) colored bricks that are set differently. It's important to be able to calculate the right quantity for each brick. Can we get a more defined/clearer detail on the brick patterns?
    Response: The diagrams 1.1, 1.2 on A5-8 are meant to illustrate in 3-dimensional view the color-coded protruding brick based of two brick bonds used – Flemish and Running. They do not reflect the actual pattern or formation of the bricks. See elevations and material schedule for brick

patterns. There are (3) colors and each is associated with one brick formation, e.g. the dark gray indicates brick with 2" projection. As shown on the drawings, Flemish bond, B2, is used on the north elevation, and between lines A & B on the west & east elevations. Running bond, B1, is used on the remaining elevations above the 7'H datum. The remaining areas below the 7'H datum use a standard running bond with no protruding bricks.

22. Question: Are Best lock and latchsets required for this project
    Response: Yes Specification reissued with Addendum #2.

23. Question: Can you confirm what the specifications are for SC1 and SC2 (sealed concrete)
    Response: Comply with spec section 03 3543 Polished Concrete Finishing for SC1 and SC2. Refer to revised ID sheet for finishes. Drawing reissued with Addendum #2.

24. Question: It looks like the ornamental fence they are calling out is Omega Elite and they're calling for a 7' height. That product comes in 6' or 8'. I am waiting on a response from the manufacturer whether or not 7' is doable but wanted to check with you if the answer is no. Also, the existing chain link on site is called out to be 8' tall, are we still sticking with 7' chain link for the new chain link portions?
    Response: Per the drawings, provide a 7' high fence at the GA yards on the northwest and east sides of the building. Omega Elite is a basis of design and other manufacturers providing the same product are acceptable. It is also noted that Omega notes custom sizes are available. 8' fence is acceptable in the remaining locations.

Attachments:

(List of drawings and specs noted at beginning)

Note: Acknowledgment of this Addendum is required in the Bid.

LEED v4 for BD+C: New Construction and Major Renovation

Project Checklist

Project Name: Evanston Animal Shelter
Date: 7/29/2022

Y	?	N			
1			Credit	Integrative Process	1

Y	?	N			
8	0	24	**Location and Transportation**		32
		16	Credit	LEED for Neighborhood Development Location	16
1			Credit	Sensitive Land Protection	1
2			Credit	High Priority Site	2
2		3	Credit	Surrounding Density and Diverse Uses	5
		5	Credit	Access to Quality Transit	5
1			Credit	Bicycle Facilities	1
1			Credit	Reduced Parking Footprint	1
1			Credit	Green Vehicles	1

Y	?	N			
5	3	2	**Sustainable Sites**		10
Y			Prereq	Construction Activity Pollution Prevention	Required
1			Credit	Site Assessment	1
		2	Credit	Site Development - Protect or Restore Habitat	2
1			Credit	Open Space	1
	3		Credit	Rainwater Management	3
2			Credit	Heat Island Reduction	2
1			Credit	Light Pollution Reduction	1

Y	?	N			
4	2	5	**Water Efficiency**		11
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
1	1		Credit	Outdoor Water Use Reduction	2
2	1	3	Credit	Indoor Water Use Reduction	6
		2	Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1

Y	?	N			
12	5	16	**Energy and Atmosphere**		33
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
4		2	Credit	Enhanced Commissioning	6
3	3	12	Credit	Optimize Energy Performance	18
1			Credit	Advanced Energy Metering	1
2			Credit	Demand Response	2
	2	1	Credit	Renewable Energy Production	3
		1	Credit	Enhanced Refrigerant Management	1
2			Credit	Green Power and Carbon Offsets	2

Y	?	N			
4	5	4	**Materials and Resources**		13
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
	4	1	Credit	Building Life-Cycle Impact Reduction	5
1		1	Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
1		1	Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1		1	Credit	Building Product Disclosure and Optimization - Material Ingredients	2
1	1		Credit	Construction and Demolition Waste Management	2

Y	?	N			
11	4	1	**Indoor Environmental Quality**		16
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
2			Credit	Enhanced Indoor Air Quality Strategies	2
3			Credit	Low-Emitting Materials	3
1			Credit	Construction Indoor Air Quality Management Plan	1
1	1		Credit	Indoor Air Quality Assessment	2
1			Credit	Thermal Comfort	1
1	1		Credit	Interior Lighting	2
2	1		Credit	Daylight	3
	1		Credit	Quality Views	1
		1	Credit	Acoustic Performance	1

Y	?	N			
4	2	0	**Innovation**		6
3	2		Credit	Innovation	5
1			Credit	LEED Accredited Professional	1

Y	?	N			
3	1	0	**Regional Priority**		4
1			Credit	Regional Priority: High Priority Site	1
1			Credit	Regional Priority: S Advanced Energy Metering	1
1			Credit	Regional Priority: S Enhanced Indoor Air Quality Strategies	1
	1		Credit	Regional Priority: Specific Credit	1

52	22	52	**TOTALS**	Possible Points: 126

Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

PROJECT ALTERNATE LIST:

ALT #1

ALTERNATE 1 (SEE SHEET A4-3)

BASE BID: PROVIDE NO CANOPY AT SOUTH-EAST CORNER OF BUILDING.

ADD/ALT 1: PROVIDE NEW CANOPY AT SOUTH-EAST CORNER OF BUILDING. PROVIDE STRUCTURALTIMBER FRAMING, FOOTING, UNINSULATED CANOPY ROOF, FASCIA, DOWNSPOUT AND GUTTER.

ALT #2

ALTERNATE 2 (SEE SHEET A4-3)

BASE BID: PROVIDE SCREENWALL TO EAST, WEST, AND NORTH OF RTU'S, NO SCREENWALL ON THE SOUTH.

ADD/ALT 2: PROVIDE SCREENWALL ON ALL SIDES OF ROOFTOP RTU'S. COORDINATE WITH STRUCTURE AND MECH..

ALT #3

ALTERNATE 3 (SEE SHEET AS1-1)

BASE BID: PROVIDE NO WORK WEST TO PROJECT SITE

ADD/ALT 3: PROVIDE NEW VEHICULAR ASPHALT PAVING EXTENDING INTO ADJACENT PARCEL, CURB, CHAINLINK FENCING, AND GATE. COORDINATE WITH CITY OF EVANSTON, LANDSCAPE AND CIVIL.

ALT #4

ALTERNATE 4 (SEE SHEET AS1-0)

BASE BID: TREES OUTSIDE OF PROJECT BOUNDARY TO REMAIN AND TO BE PROTECTED DURING CONSTRUCTION.

ADD/ALT 4: REMOVE EXISTING TREES OUTSIDE OF PROJECT BOUNDARY AS INDICATED. COORDINATE TREE REMOVAL WITH CITY OF EVANSTON.

Permit Stamp

HOLABIRD & ROOT

140 South Dearborn Chicago, IL 60603
Tel: 312 357 1771 Fax: 312 357 1909

www.holabird.com

STATE OF ILLINOIS
GREGORY B. COOK
001-011968
LICENSED ARCHITECT

No.	Date	Issue
2	12/29/2022	ADDENDUM #2
1	12/08/2022	ISSUE FOR BID / PERMIT

Project Number	16015
Drawn	E. STUDNEY
Checked	K. BOYER
Proj. Arch./Eng.	L. YUAN

EVANSTON ANIMAL SHELTER

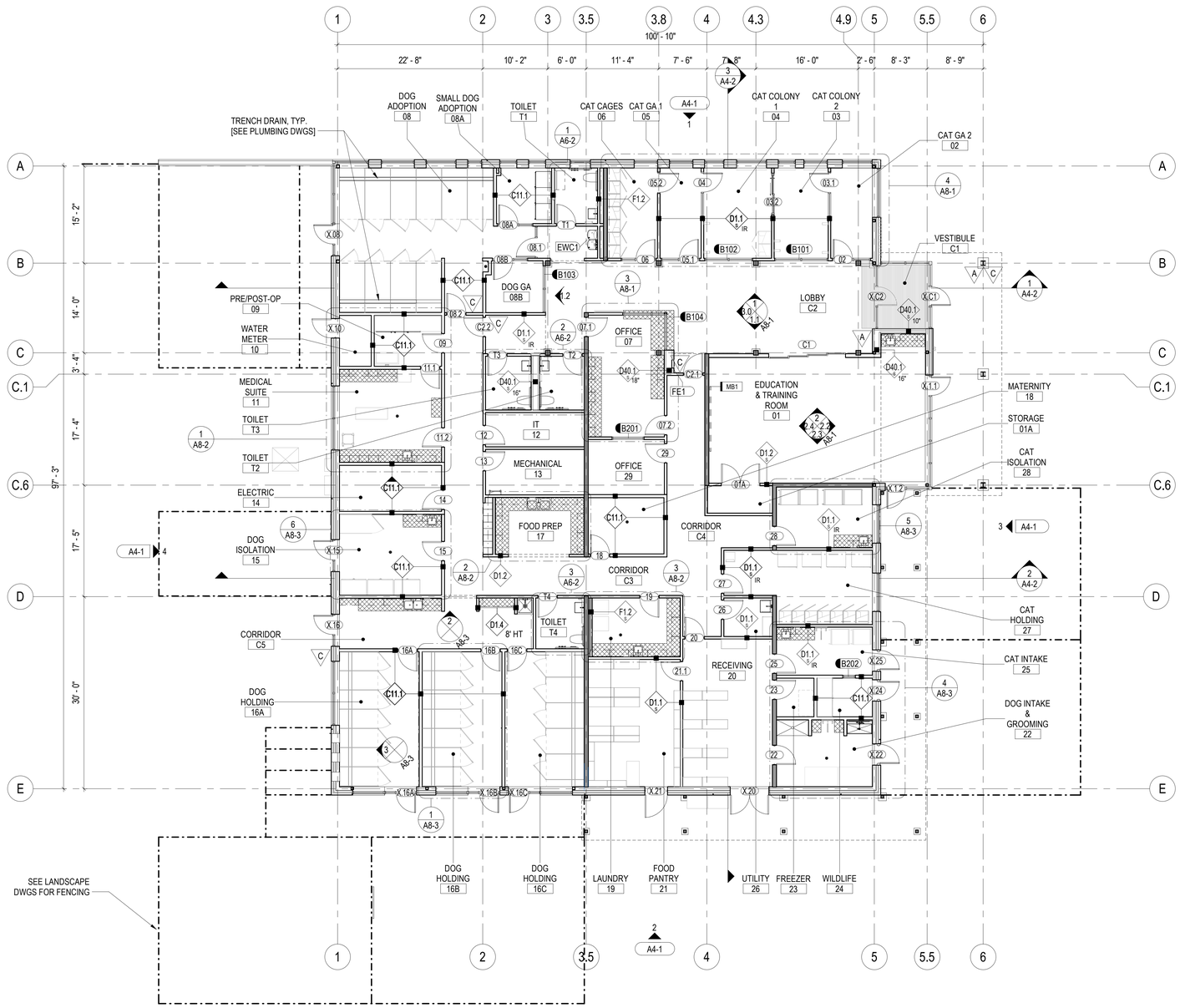
2310 Oakton St, Evanston, IL 60202

Project Name

LEED SCORECARD & ALTERNATE LIST

Sheet Name

Drawing No. **G1-4**



1 FLOOR PLAN
A2-1 1/8" = 1'-0"

GENERAL NOTES: FLOOR PLANS

1. SEE LS-SERIES DWGS FOR FIRE-RATED PARTITION LOCATIONS.
2. SEE SHEET A7-2 FOR DOOR SCHEDULE.
3. SEE SHEET A7-1 FOR PARTITION TYPES. ALL PARTITION TYPES TO BE TYPE D1.1/S PER DETAILS ON A7-1 U.N.O.
4. CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS FOR COORD. OF ALL TRADES & SUBS, AND REPORT ANY CONFLICTS OR DISCREPANCIES TO THE ARCHITECT.
5. ALL DIMENSIONS ARE TO FACE OF FINISH, U.N.O.
6. PROVIDE 18" MIN ON LATCH SIDE OF ALL DOORS. ALL DOOR FRAMES TO BE 4" FROM THE CLOSEST PERPENDICULAR PARTITION, U.N.O.
7. WALLS TO BE FLUSH WITH COLUMN FURRING, U.N.O.
8. PROVIDE BEVELED EDGE STEEL ANGLE PROTECTORS FOR ALL ITEMS PROJECTING FROM WALL.
9. MAINTAIN WALL RATING AT RECESSED ITEMS SUCH AS AT FIRE EXTINGUISER CABINETS, ETC.
10. FOR ALL EQUIP. AND EQUIP. BASES IN MECH ROOMS AND OTHER AREAS SEE THE SPECIFIC ENGINEERING DWGS & SPEC (COORD. SIZE OF BASES WITH SPECIFIC EQUIP. MFR).
11. PROVIDE FIBERGLASS FACED GPDW AT WET WALL LOCATIONS.
12. MOVABLE FURNITURE IS SHOWN HALF-TONED. FIXED OR BUILT-IN FURNITURE IS SHOWN SOLID.
13. PROVIDE GPDW TRIMLESS ACCESS PANELS (2'-0" X 2'-0") FOR GPDW CEILING AREAS. MINIMIZE NEED FOR ACCESS PANELS - COORD. LOCATION OF ACCESS PANELS WITH OTHER TRADES FOR ITEMS ABOVE CEILING.
14. FOR STEEL LINTELS AT INTERIOR MASONRY WALLS & PARTITIONS - SEE CMU LINTEL SCHEDULE. VERIFY MASONRY WALL WIDTH & CLEAR SPAN (OPENING WIDTH). PROVIDE APPROPRIATE LINTEL AND COORD. WITH OTHER TRADES.
15. COORDINATE ALL FIRE EXTINGUISER CABINETS INTO GPDW PARTITIONS.
16. SEE WINDOW SHADE LOCATIONS ON ID SHEET.
17. ALL H.M. DOORS & H.M. FRAMES TO BE PAINTED.
18. ALL UNFINISHED GPDW (NOT PTD. OR WITH WALLCOVERING) TO BE TAPED AND SANDED.
19. REFER TO CEILING PLANS FOR SPECIFIC CEILING LAYOUTS AND HEIGHTS.
20. ALL EXT. STEEL TO BE GALVANIZED AND PTD, U.N.O.
21. UNLESS NOTED SPECIFICALLY ON DWGS ALL WOOD BLOCKING, STEEL ANGLES, MISC. STEEL PLATES, ETC. ARE TO BE CONT.
22. GC TO COORD. WOOD BLOCKING FOR WALL-MOUNTED ITEMS SUCH AS MILLWORK, MARKERBOARDS, TOILET ACCESSORIES, HANDRAILS, ETC.
23. GC TO COORD. WOOD BLOCKING FOR CEILING-MOUNTED ITEMS SUCH AS PROJ. SCREENS, CURTAIN TRACK, ETC.
24. ALL EXTERIOR WALLS IN ANIMAL AREAS TO RECEIVE 5/8" IMPACT RESISTANT GPDW.
25. PROVIDE MOP HOLDER AT MOP / UTILITY SINK. SEE A6-1 FOR TYP. MOUNTING HEIGHT.

SYMBOLS: FLOOR PLAN

- NEW DOOR
- NEW GLASS PARTITION
- NEW PARTITION
- NEW MILLWORK / BUILT-IN FURNITURE
- MOVABLE FURNISHINGS / EQUIPMENT (HALFTONE) - SEE FFE2-1
- NEW FENCING - REFER TO LANDSCAPE DWGS
- LOAD BEARING WALL - REFER TO STRUCTURAL DWGS

Permit Stamp

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GREGORY B. COOK 001-011986 LICENSED ARCHITECT

No.	Date	Issue
2	12/29/2022	ADDENDUM #2
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Project Number	16015
Drawn	E. STUDNEY
Checked	K. BOYER
Proj. Arch./Eng.	L. YUAN

EVANSTON animal shelter

City of Evanston

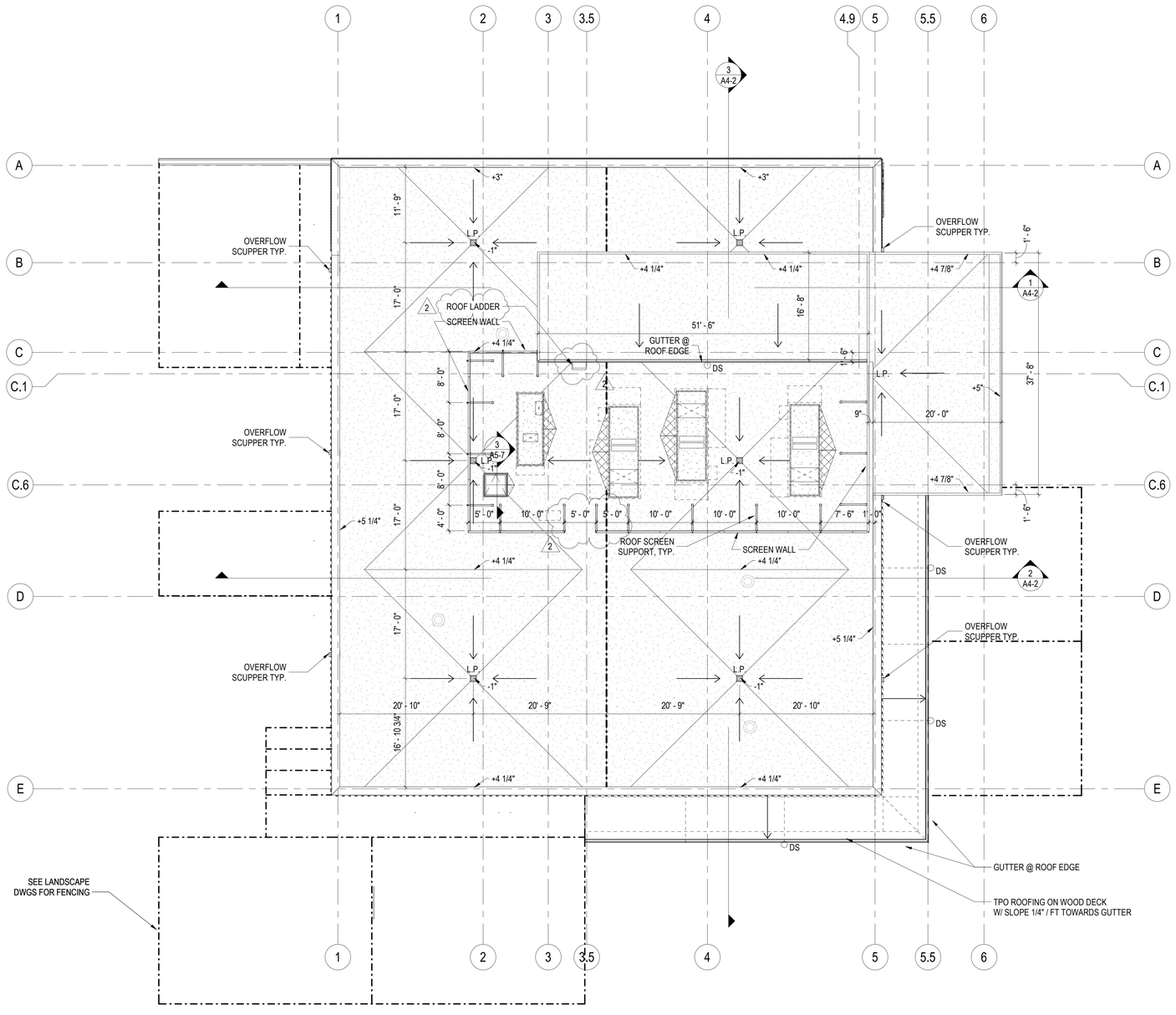
EVANSTON ANIMAL SHELTER
2310 Oakton St, Evanston, IL 60202

Project Name

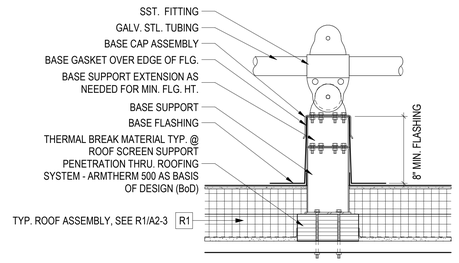
FLOOR PLAN

Sheet Name

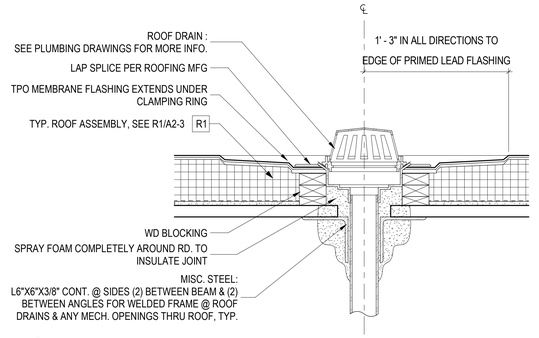
Drawing No. **A2-1**



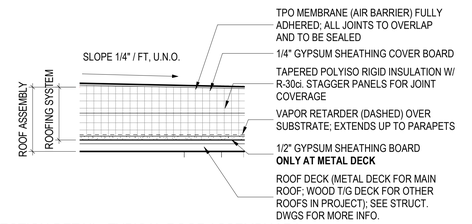
1 ROOF PLAN
A2-3 1/8" = 1'-0"



3 SECTION DETAIL -ROOF SCREEN SUPPORT TYP.
A2-3 1 1/2" = 1'-0"



2 SECTION DETAIL -ROOF DRAIN TYP.
A2-3 1 1/2" = 1'-0"



R1 SECTION DETAIL -TYPICAL ROOF ASSEMBLY R1
A2-3 1 1/2" = 1'-0"

GENERAL NOTES: ROOF PLAN

1. COORDINATE ALL OPENINGS AND PENETRATIONS WITH RELATED MECH. & STRUCT. DOCUMENTS. ROOFING AT OPENINGS & PENETRATIONS TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
2. INSULATION HEIGHT TO BE R-30.0 c.i. (PER IECC 2018 ENERGY CODE) ON ROOF STRUCTURE
3. VERIFY TOP OF INSUL. & PARAPET IN FIELD.
4. ALL SPOT ELEVATIONS ARE TAKEN FROM THE ROOF LEVEL (T.O. DECK AT LOW POINT).
5. ALL TAPERED INSULATION FINAL SLOPE 1/4" MINIMUM.
6. ALL WOOD MATERIAL FOR EXTERIOR USE TO BE FIRE-TREATED.

SYMBOLS: ROOF PLAN

- LOCATION OF EQUIPMENT CURB, COORDINATE W/ MECH. DWGS
- TAPERED INSULATION 1/4" / FT, TYP.
- ROOF CRICKETS 1/2" / FT. TAPERED INS., TYP.
- H.P. HIGH POINT
- L.P. LOW POINT
- RIDGELINE (RL)
- SLOPE 1/4" / FT, U.N.O.
- NEW ROOF DRAIN (SEE PLUMBING DWGS)
- DS DOWNSPOUT
- ROOF HATCH

Permit Stamp

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STATE OF ILLINOIS
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001-011968
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Drawn	E. STUDNEY / L. YUAN
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EVANSTON animal shelter
City of Evanston

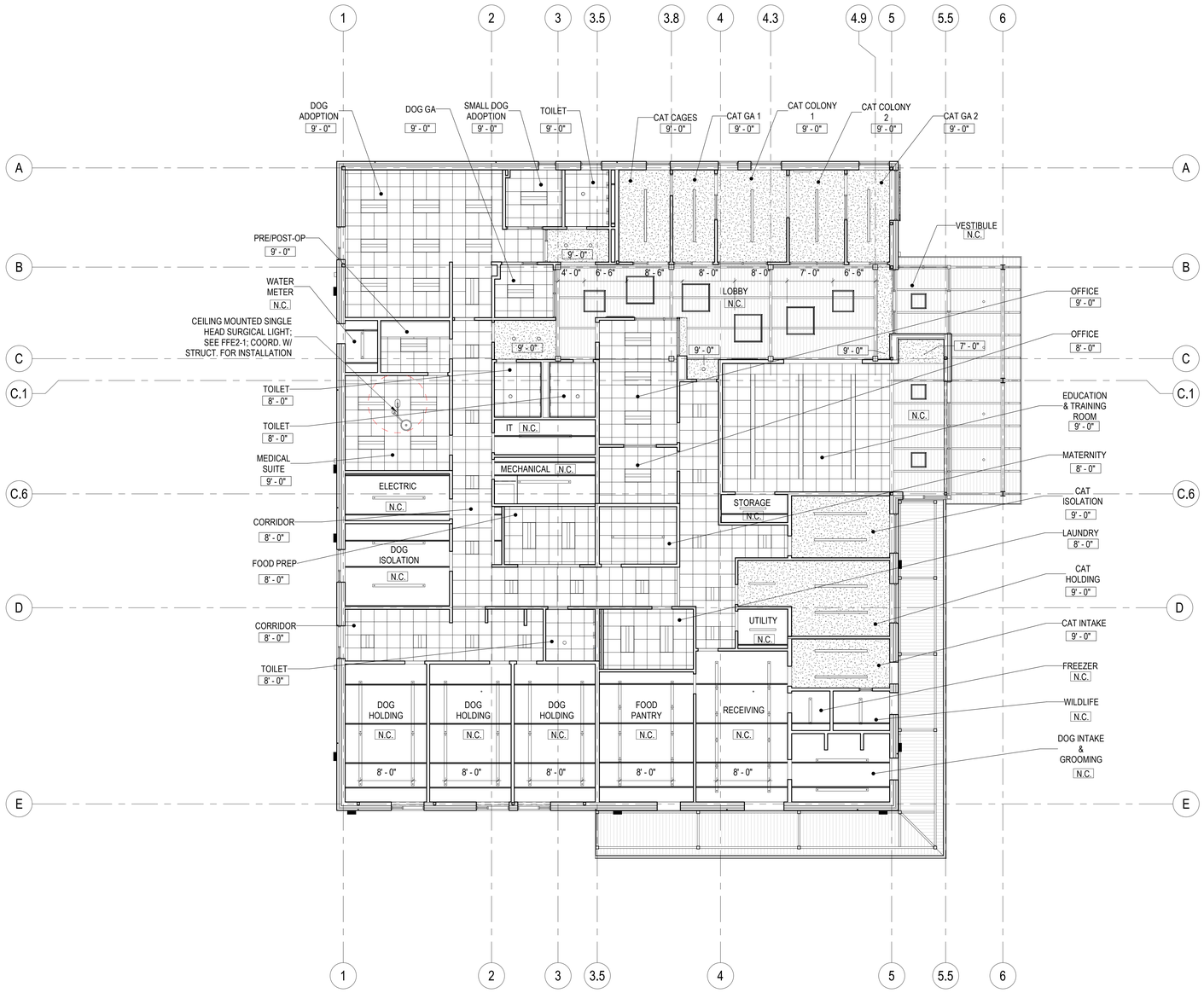
EVANSTON ANIMAL SHELTER
2310 Oakton St, Evanston, IL 60202

Project Name

ROOF PLAN & DETAILS

Sheet Name

Drawing No. **A2-3**



1 REFLECTED CEILING PLAN
A3-1 1/8" = 1'-0"

GENERAL NOTES: REFLECTED CEILING PLANS

NOTES BELOW APPLY TO ALL CEILING PLANS:

1. CEILING GRID TO BE CENTERED IN ROOMS AS SHOWN, U.N.O.
2. DOWNLIGHTS TO BE CENTERED IN CEILING PANELS.
3. ALL GPDW CEILINGS & SOFFITS ARE 5/8" GPDW, U.N.O. - ALL VERTICAL FACES OF SOFFITS ARE GPDW, U.N.O.
4. COORDINATE ALL MECH. DUCT WORK, PIPING, SPRINKLER LINES & CABLE TRAY TO AVOID CONFLICTS WITH LIGHTS & STRUCTURE.
5. PROVIDE GPDW TRIMLESS ACCESS PANELS (2'-0" X 2'-0") FOR GPDW CEILING AREAS. MINIMIZE NEED FOR ACCESS PANELS - COORD. LOCATION OF ACCESS PANELS WITH OTHER TRADES FOR ITEMS ABOVE GPDW CEILING.
6. SEE ELEC. DRAWINGS FOR SPECIFIC LIGHT FIXTURE TYPES, EXIT SIGNS, VISUAL ALARMS, ETC.
7. SEE MECH. DRAWINGS FOR SPECIFIC MECH. DIFFUSERS.
8. FOR CEILING HEIGHT CHANGES PROVIDE 5/8" GPDW FASCIA & SOFFIT (3 1/4" WIDE) U.N.O.
9. SEE MECH. DRAWINGS FOR SPECIFIC MECH. DIFFUSERS.
10. SEE FIRE ALARM DRAWINGS FOR SPRINKLER DATA.
11. ARCHITECTURAL DRAWINGS TAKE PRECEDENCE OVER ENGINEERING DRAWINGS FOR LOCATION OF LIGHT FIXTURE PLACEMENT.
12. COORDINATE PROJECTOR HANGER LOCATIONS W/ LIGHTS - OWNER TO APPROVE FINAL PROJECTOR LOCATIONS.
13. IN AREAS OF 2'x2' CEILING PANEL WHERE LESS THAN 4" WOULD BE REQUIRED TO FILL SPACE TO WALL, PROVIDE MATCHING 2'x4' PANEL & CUT DOWN TO TAKE UP 4" SPACE (DO NOT PROVIDE INTERVENING TEE GRID).
14. ALL EXTERIOR WALL-MOUNTED FIXTURES TO BE MOUNTED AT 8' HIGHT U.N.O.
15. SEE ID SHEET FOR FINISHES.
16. PROVIDE GPDW TRIMLESS ACCESS PANELS (2'-0" X 2'-0") FOR GPDW CEILING AREAS. MINIMIZE NEED FOR ACCESS PANELS - COORD. LOCATION OF ACCESS PANELS WITH OTHER TRADES FOR ITEMS ABOVE CEILING.

2

SYMBOLS: REFLECTED CEILING PLANS

- 2'x2' ACOUSTICAL LAY-IN PANELS
- GYPSUM DRYWALL CEILING
- N.C. — OPEN TO STRUCTURE/ NO CEILING
- N.C. — OPEN TO TONGUE & GROOVE DECK
- SQUARE PENDANT (DIRECT/INDIRECT)
- 96" STANDARD STRIP
- 48" STANDARD STRIP
- LINEAR BOX LIGHT 2'X4'
- LINEAR BOX LIGHT 2'X2'
- 24" RECESSED COVE LIGHT
- RECESSED DOWNLIGHT
- EXTERIOR WALL-MOUNTED LIGHT

*SEE ELEC. DWGS FOR MORE INFOMATION OF LIGHT FIXT.

Permit Stamp

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140 South Dearborn Chicago, IL 60603
Tel: 312 357 1771 Fax: 312 357 1909
www.holabird.com

STATE OF ILLINOIS
GREGORY B. COOK
001-011968
LICENSED ARCHITECT

No.	Date	Issue
2	12/29/2022	ADDENDUM #2
1	12/08/2022	ISSUE FOR BID / PERMIT

Project Number	16015
Drawn	E. STUDNEY
Checked	K. BOYER
Proj. Arch./Eng.	L. YUAN

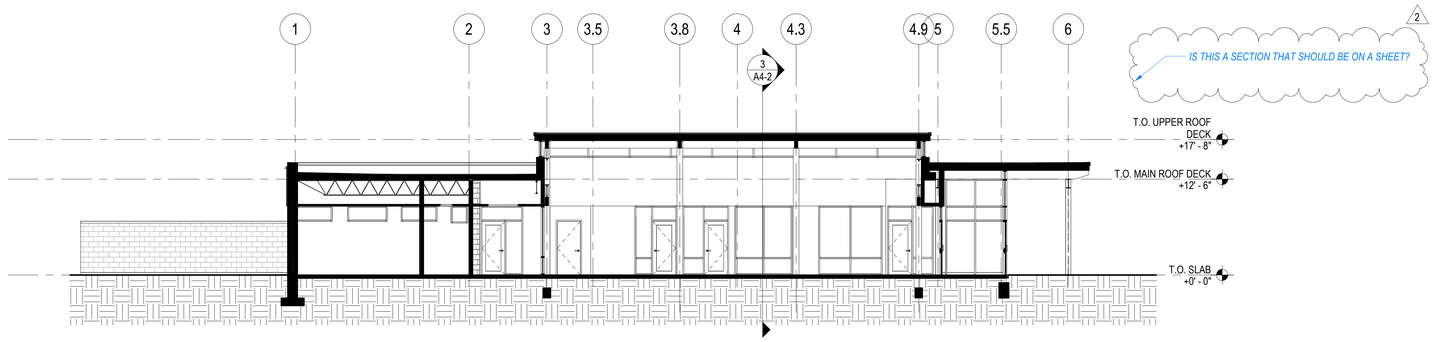
EVANSTON ANIMAL SHELTER
2310 Oakton St, Evanston, IL 60202

Project Name

REFLECTED CEILING PLAN

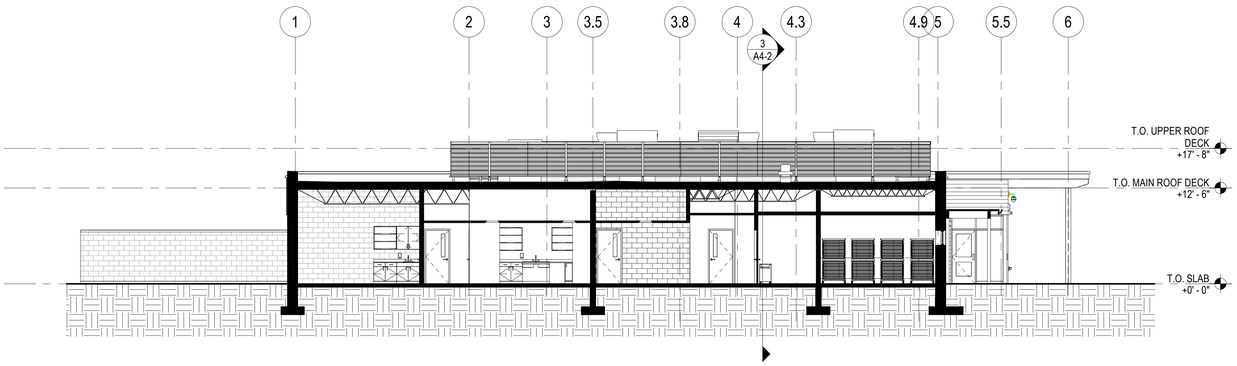
Sheet Name

Drawing No. **A3-1**



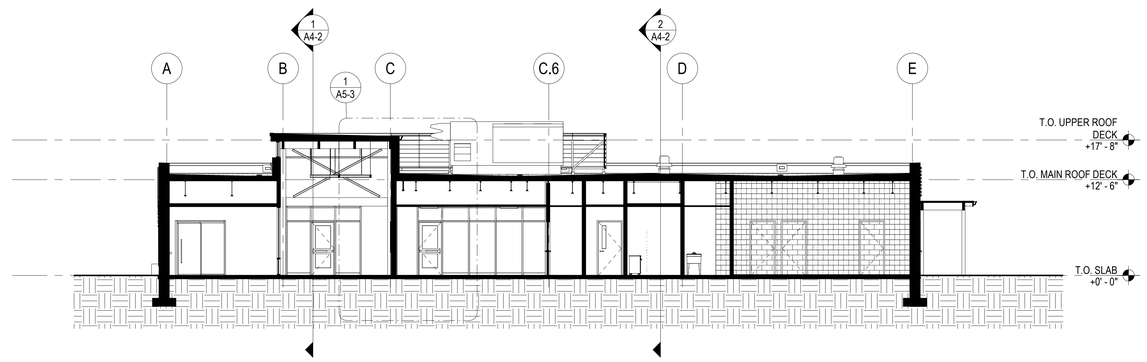
1 EAST-WEST SECTION 1

A4-2 1/8" = 1'-0" [REF: 1/ A2-1]



2 EAST-WEST SECTION 2

A4-2 1/8" = 1'-0" [REF: 1/ A2-1]



3 NORTH-SOUTH SECTION 1

A4-2 1/8" = 1'-0" [REF: 1/ A2-1]

1/4" = 1'-0" 1'- 0" 0'- 9" 0'- 6" 0'- 3" 0'- 0"

1" = 1'-0" 3'- 0" 2'- 0" 1'- 0" 0'- 0"

1/2" = 1'-0" 6'- 0" 4'- 0" 2'- 0" 0'- 0"

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

1/8" = 1'-0" 24'- 0" 16'- 0" 8'- 0" 0'- 0"

1/16" = 1'-0" 48'- 0" 32'- 0" 16'- 0" 0'- 0"

1" = 30'-0" 120'- 0" 90'- 0" 60'- 0" 30'- 0" 0'- 0"

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EVANSTON animal shelter

City of Evanston

EVANSTON ANIMAL SHELTER

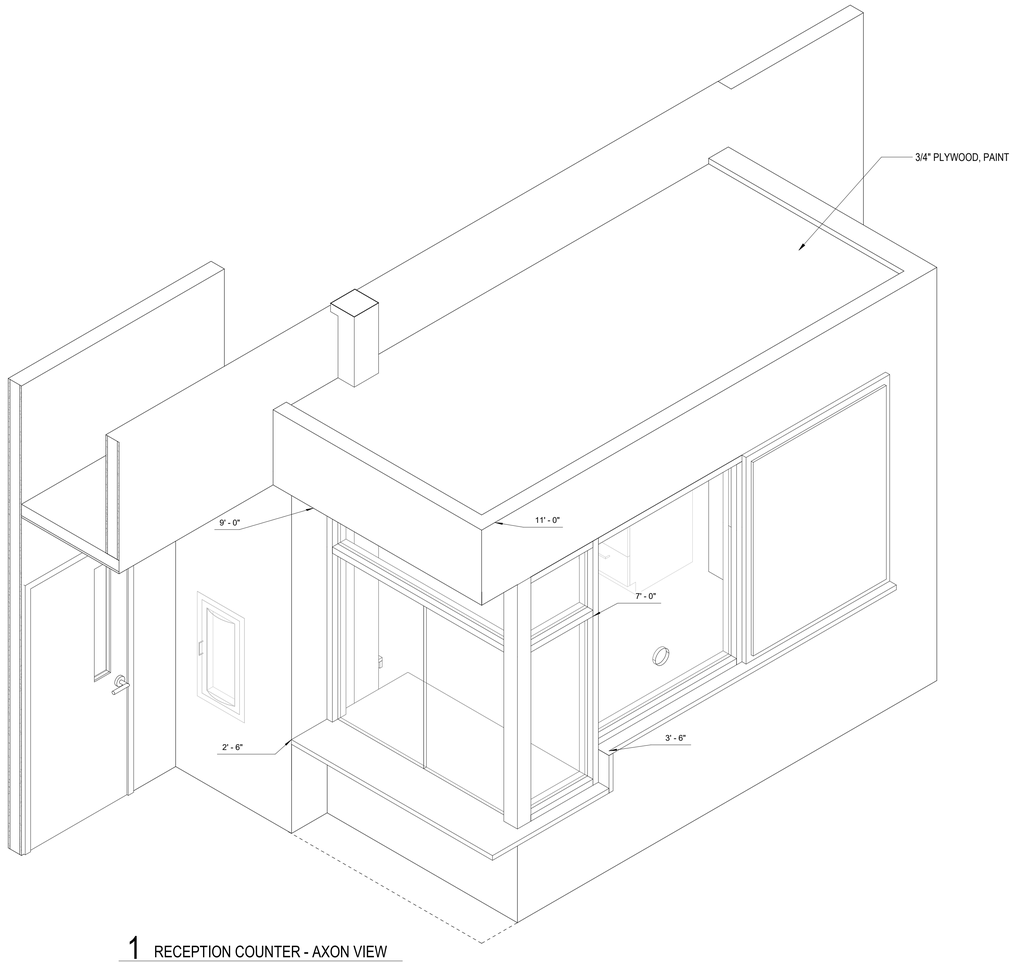
2310 Oakton St, Evanston, IL 60202

Project Name

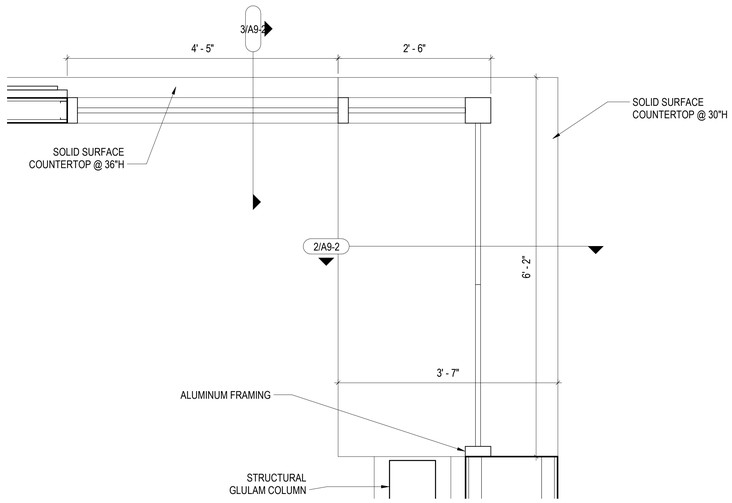
BUILDING SECTIONS

Sheet Name

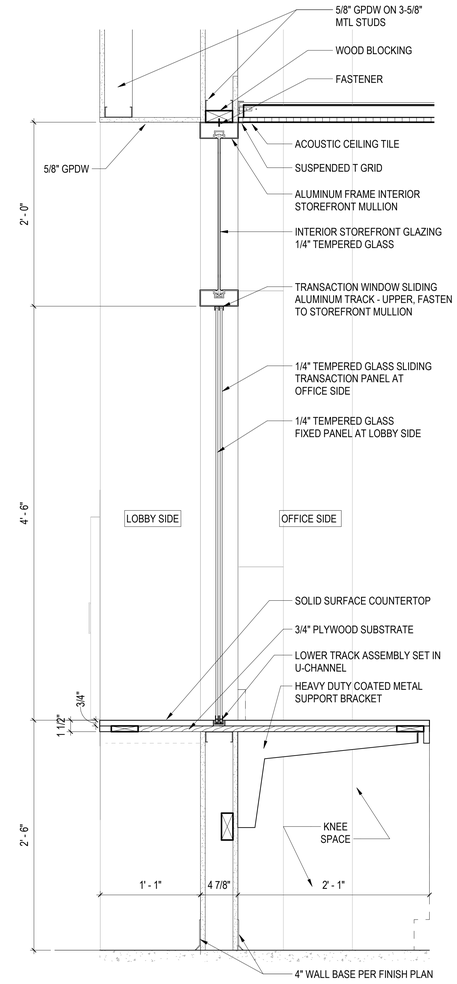
Drawing No. **A4-2**



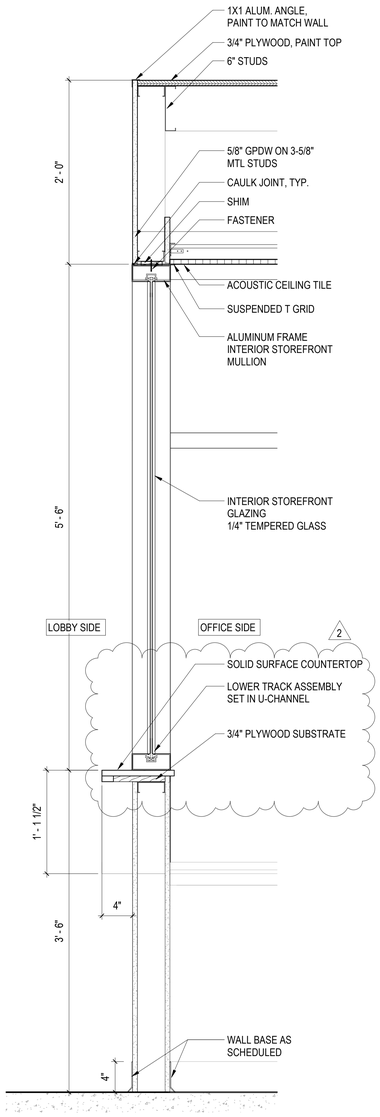
1 RECEPTION COUNTER - AXON VIEW
A9-2



4 PLAN DETAIL- OFFICE RECEPTION COUNTER
A9-2 1" = 1'-0" [REF: 3/ A8-1]



2 SECTION DETAIL - LOW TRANSACTION COUNTER
A9-2 1 1/2" = 1'-0" [REF: 1.1/ A8-1]



3 SECTION DETAIL - HIGH TRANSACTION COUNTER
A9-2 1 1/2" = 1'-0" [REF: 4/ A9-2]

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EVANSTON animal shelter

City of Evanston

EVANSTON ANIMAL SHELTER

2310 Oakton St, Evanston, IL 60202

Project Name

INTERIOR DETAILS - LOBBY RECEPTION COUNTER

Sheet Name

Drawing No. **A9-2**

INTERIOR FINISHES SCHEDULE

AC - ACOUSTICAL CEILINGS
CODE: AC1
SPEC#: 09 5113
MFR: ARMSTRONG
PRODUCT: ULTIMA HEALTH ZONE
SIZE: 24 X 24
GRID: SILHOUETTE 1/8" REVEAL, WHITE
NOTES: AT MEDICAL SUITE

CODE: AC2
SPEC#: 09 5113
MFR: ARMSTRONG
PRODUCT: TECTUM CEILING PANELS
SIZE: 24 X 24
GRID: SILHOUETTE 1/8" REVEAL, WHITE
NOTES: GENERAL, TYP.

EF - EPOXY RESINOUS FLOORING
CODE: EF1
SPEC#: 09 5113
MFR: STONHARD
PRODUCT:
COLOR: TBD
NOTES:

FRP - FIBER REINFORCED PLASTIC
CODE: FRP1
SPEC#:
MFR: TBD
PRODUCT:
TEXTURE:
COLOR:
NOTES: IN DOG SPACES

P - PAINT
CODE: P1
SPEC#: 09 9123
MFR: BENJAMIN MOORE
PRODUCT: EPOXY PAINT
COLOR: PALE OAK
CODE: OC-20
FINISH: SATIN
NOTES: IN ALL ANIMAL AREAS U.N.O.

CODE: P2
SPEC#: 09 9123
MFR: BENJAMIN MOORE
PRODUCT: ACRYLIC PAINT
COLOR: PALE OAK
CODE: OC-20
FINISH: SATIN
NOTES: GENERAL, TYP. U.N.O

CODE: P3
SPEC#: 09 9123
MFR: BENJAMIN MOORE
PRODUCT: ACRYLIC PAINT
COLOR: WHITE HERON
CODE: OC-57
FINISH: FLAT
NOTES: CEILINGS, TYP.

CODE: P4
SPEC#: 09 9123
MFR: BENJAMIN MOORE
PRODUCT: ACRYLIC PAINT
COLOR: WHITE HERON
CODE: OC-57
FINISH: FLAT
NOTES: OPEN TO STRUCTURE CEILINGS

NOTE: SEE INTERIOR ELEVATIONS FOR ACCENT PAINT LOCATION AS INDICATED

CODE: P5
SPEC#: 09 9123
MFR: BENJAMIN MOORE
PRODUCT: ACRYLIC PAINT
COLOR: SILKEN BLUE
CODE: CSP-670
FINISH: SATIN
NOTES: ACCENT COLOR, LOBBY

CODE: P6
SPEC#: 09 9123
MFR: BENJAMIN MOORE
PRODUCT: ACRYLIC PAINT
COLOR: TBD
FINISH: SATIN
NOTES: ACCENT COLOR TO BEST MATCH INTERIOR ALUM. STOREFRONT FINISH

CODE: P7.1
SPEC#: 09 9123
MFR: BENJAMIN MOORE
PRODUCT: ACRYLIC PAINT
COLOR: HERB GARDEN
CODE: 434
FINISH: SATIN
NOTES: ACCENT COLOR, CAT ADOPTION

CODE: P7.2
SPEC#: 09 9123
MFR: BENJAMIN MOORE
PRODUCT: ACRYLIC PAINT
COLOR: FOREST HILLS GREEN
CODE: 433
FINISH: SATIN
NOTES: ACCENT COLOR, CAT ADOPTION

CODE: P7.3
SPEC#: 09 9123
MFR: BENJAMIN MOORE
PRODUCT: ACRYLIC PAINT
COLOR: CENTRAL PARK
CODE: 431
FINISH: SATIN
NOTES: ACCENT COLOR, CAT ADOPTION

CODE: P7.4
SPEC#: 09 9123
MFR: BENJAMIN MOORE
PRODUCT: ACRYLIC PAINT
COLOR: LANDSCAPE
CODE: 430
FINISH: SATIN
NOTES: ACCENT COLOR, CAT ADOPTION

CODE: P7.5
SPEC#: 09 9123
MFR: BENJAMIN MOORE
PRODUCT: ACRYLIC PAINT
COLOR: GARLAND GREEN
CODE: 429
FINISH: SATIN
NOTES: ACCENT COLOR, CAT ADOPTION

SC - SEALED CONCRETE
CODE: SC1
SPEC#: 03 3543
FINISH: LEVEL 3 FINISH W/ FINE AGGREGATE EXPOSURE
NOTES: LOBBY, COMMUNITY ROOM, OFFICE

CODE: SC2
SPEC#: 03 3543
FINISH: LEVEL 1 FINISH W/ FINE AGGREGATE EXPOSURE
NOTES: BACK OF HOUSE

WB - WALL BASE
CODE: WB1
SPEC#: 09 6513
MFR:
PRODUCT:
COLOR:
SIZE:
NOTES: RUBBER BASE

CODE: WB2
SPEC#:
MFR:
PRODUCT:
COLOR:
NOTES: AT BOTTOM OF WALLS WITH FRP, SEE DETAIL 2/ID1-1

WT - WALK-OFF MAT
CODE: WT1
SPEC#: 12 4813
MFR: MILLIKEN
PRODUCT: TERGO 11C
SIZE: MODULAR GRID
COLOR: TBD
NOTES: VESTIBULE

SS - SOLID SURFACE
CODE: SS1
SPEC#: 12 36 61.16
MFR: CORIAN
COLOR: BONE WHITE
NOTES: OFFICE COUNTERTOP & CAT COLONY WINDOW SILL

CODE: SS2
SPEC#: 12 36 61.16
MFR: CORIAN
COLOR: LAGUNA
NOTES: EDUCATION & TRAINING ROOM COUNTERTOP

CODE: SS3
SPEC#: 12 36 61.16
MFR: CORIAN
COLOR: DEEP CLOUD
NOTES: ALL COUNTERTOPS IN BACK OF HOUSE, U.N.O.

WD - WOOD DOOR
CODE: WD1
SPEC#: 08 1416
MFR: EGGERS INDUSTRIES
SPECIES: QUARTER SAWN NATURAL BIRCH
COLOR: 01 CLEAR
NOTES: ALL WOOD DOORS

PL - PLASTIC LAMINATE
CODE: PL1
SPEC#: 06 41 16
MFR: FORMICA (BOD)
COLOR: WINTER SKY
FINISH: STANDARD
NOTES: OFFICE CASEWORK

CODE: PL2
SPEC#: 06 41 16
MFR: FORMICA (BOD)
COLOR: NAVY BLUE
FINISH: STANDARD
NOTES: EDUCATION & TRAINING ROOM CASEWORK

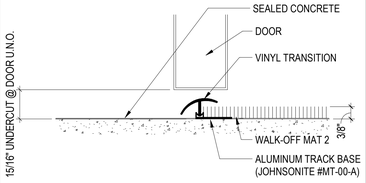
CODE: PL3
SPEC#: 06 41 16
MFR: FORMICA (BOD)
COLOR: FOG
FINISH: STANDARD
NOTES: BACK OF HOUSE (HEALTH CARE CASEWORK)

GENERAL NOTES: THRESHOLDS

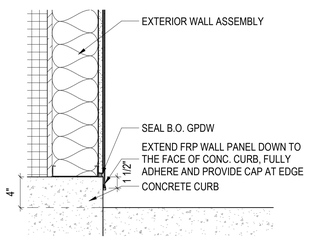
1. TYPICAL TRANSITION TYPE IS T1.0, U.N.O.
2. ALL ALUMINUM THRESHOLDS TO BE FIRE RATED(FR) & CONFORM TO LOCAL BUILDING CODES.
3. USE ALUMINUM THRESHOLD UNDER ALL RATED DOORS (UNLESS FLOOR IS EXPOSED CONCRETE.)
4. ALL ALUMINUM THRESHOLDS TO BE ANCHORED TO CONCRETE WITH FLAT HEAD METAL (FINISH TO MATCH ALUMINUM) EXPANSION ANCHORS.
5. RESILIENT = LVT OR SHEET VINYL FLOORING
6. CARPET = CARPET OR CARPET TILE
7. TILE = PORCELAIN OR CERAMIC TILE
8. EPOXY = POURED EPOXY OR URETHANE FLOORING
9. DOOR TYPE AND THRESHOLD DIMENSIONS WILL VARY. SEE DOOR SCHEDULE.

TRANSITION COLORS

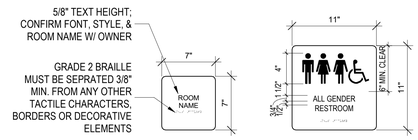
TX.0 - NO THRESHOLD
TX.1 - ALUMINUM WITH CLEAR COAT
TX.2 - VINYL - JOHNSONITE, COLOR TBD



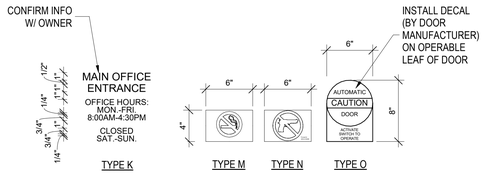
T3.2 SILL W/ VINYL THRESHOLD
SEALED CONCRETE → WALK-OFF MAT



2 WALL BASE DETAIL AT WALL W/ FRP PANEL
ID2-1 1 1/2" = 1'-0"



SIGN TYPE ELEVATIONS - SURFACE MOUNTED
1 1/2" = 1'-0"



SIGN TYPE ELEVATIONS - EXTERIOR FIELD-APPLIED VINYL
1 1/2" = 1'-0"

GENERAL NOTES: SIGNAGE

1. SIGN AND CHARACTERS TO COMPLY WITH ALL REQUIREMENTS OF 2018 ILLINOIS ACCESSIBILITY CODE & 2010 ADA / DOJ STANDARDS FOR ACCESSIBLE DESIGN.
2. REFER TO SPECIFICATIONS FOR ALL ADDITIONAL INFORMATION, MATERIAL AND MOUNTING METHODS FOR INTERIOR, EXTERIOR AND EMERGENCY SIGNAGE.
3. PROVIDE (1) TYPE A SIGN AT EACH INTERIOR ENTRANCE TO ALL ROOMS, EXCEPT FOR VESTIBULE, LOBBY, CORRIDOR OR RESTROOM. WHEN APPLYING TO GLASS, PROVIDE BLANK PANEL ON THE OTHER SIDE OF GLASS.
4. PROVIDE (1) TYPE A SIGN AT EXTERIOR ENTRANCE TO ROOMS LISTED AS FOLLOWING: CAT INTAKE, WILDLIFE, DOG INTAKE, RECEIVING, FOOD PANTRY, AND WATER METER.
5. PROVIDE (1) TYPE R SIGN AT ENTRANCE TO EACH RESTROOM.
6. PROVIDE TYPE K, M, N, & O SIGN ON GLASS AT MAIN BLDG ENTRANCE.
7. SEE 3/A6-1 FOR TYPICAL MOUNTING FOR SIGNAGE.
8. THE EXACT LOCATION OF ALL SIGNAGE WILL BE DETERMINED BY ACTUAL FIELD CONDITIONS. IF CONFLICTS OCCUR WITH THE PLACEMENT OF SIGNAGE SHOWN ON DRAWINGS AND EXISTING STRUCTURES AND APPURTENANCES, THE CONTRACTOR WILL COORDINATE WITH THE ARCHITECT AND OWNER BEFORE FINAL INSTALLATION. CONTRACTOR WILL OBTAIN AND VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE AND BE FULLY RESPONSIBLE FOR SAME.

GENERAL NOTES: FINISHES

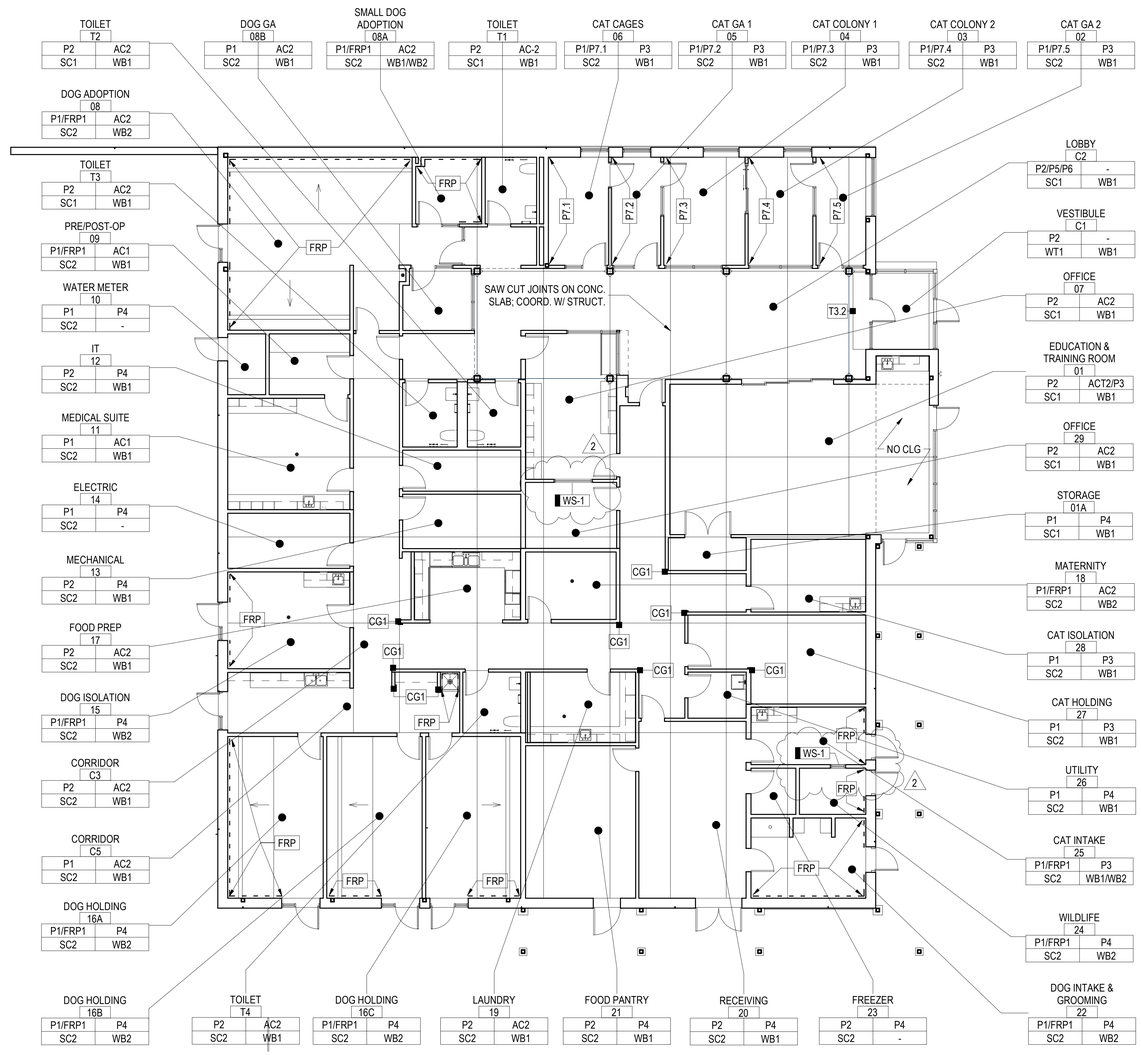
THE NOTES BELOW APPLY TO ID SERIES SHEETS ONLY.

1. FINISHES INDICATED IN FINISH SCHEDULE ARE BASIS OF DESIGN. SEE SPECIFICATIONS FOR PROJECT REQUIREMENTS.
2. ALL WALL FINISHES TO COMPLY OR SUPERCEDE CLASS I FIRE RATING.
3. REFER TO A3 SERIES FOR CEILING PATTERNS.
4. REFER TO A6 SERIES FOR RESTROOM ENLARGED PLANS AND ELEVATIONS.
5. REFER TO A7 SERIES FOR ALL DOOR TYPES AND FINISHES. ALL PAINTED FRAMES TO HAVE SEMI-GLOSS FINISH.
6. REFER TO A8 SERIES FOR ALL ELEVATIONS AND INTERIOR DETAILS.
7. ALL UNFINISHED GPDW (NOT PTD. OR WITH WALLCOVERING) TO BE TAPED AND SANDED.
8. ALL PAINTED WALL TO HAVE SATIN PAINT FINISH.
9. ALL PAINTED CEILINGS TO BE FLAT PAINT FINISH.
10. PAINT ALL STEEL STRUCTURAL ELEMENTS W/ COLOR SELECTED BY ARCHITECT.
11. NO WALL BASE AT CMU PARTITION, U.N.O.

SYMBOLS: FINISHES

THE NOTES BELOW APPLY TO ID SERIES SHEETS ONLY.

1. INDICATES ROOM FINISH. REFER TO FINISH SCHEDULE ON SHEET ID1-1 FOR FINISH INFORMATION.
   WALL | P1 | AC1 | CEILING
   FLOOR | C1 | WB1 | BASE
2. INDICATES TRANSITION DETAIL OR FINISH CHANGE. REFER TO SHEET ID1-1 FOR FINISH DETAIL.
   ■ T1.1
3. INDICATES LOCATION OF ACCENT MATERIAL. REFER TO SHEET ID1-1 FOR FINISH INFORMATION. FLOOR TO CEILING U.N.O.
   P5
4. INDICATES FRP WALL PANEL.
   FRP
5. INDICATES CORNER GUARD.
   ■ CG-1



1 INTERIOR FINISHES PLAN
ID2-1 1/8" = 1'-0"

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City of Evanston

EVANSTON ANIMAL SHELTER
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Project Name

INTERIOR FINISH SCHEDULE & PLAN

Sheet Name

Drawing No. **ID2-1**

GENERAL NOTES:

1. CODES: INTERNATIONAL BUILDING CODE, IBC 2012.
2. DIMENSIONS AND ELEVATIONS ON STRUCTURAL DRAWINGS ARE TO BE CHECKED AGAINST ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AS WELL AS AGAINST FIELD CONDITIONS BY ALL CONTRACTORS.
3. UNLESS NOTED OTHERWISE, TYPICAL DETAILS AND SECTIONS AND NOTES ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR CONDITIONS ELSEWHERE ON THE PROJECT EXCEPT WHERE DIFFERENT DETAIL IS INDICATED.
4. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, FIRE PROTECTION, PLUMBING, AND OTHER DISCIPLINES FOR LOCATION AND PLACEMENT OF OPENINGS, SLAB DEPRESSIONS, INSERTS, HANGERS, PIPE SLEEVES, CONCRETE PADS AND ANCHOR RODS, AND OTHER CONSTRUCTION REQUIREMENT.
5. IF DISCREPANCIES APPEAR ON THE CONTRACT DOCUMENTS, OR BETWEEN THE CONTRACT DOCUMENTS AND EXISTING CONDITIONS, THE CONTRACTOR SHALL REQUEST AN INTERPRETATION FROM THE OWNER BEFORE BIDDING. IF THE CONTRACTOR FAILS TO MAKE SUCH REQUEST, IT IS PRESUMED THAT BOTH PROVISIONS WERE INCLUDED IN THE BID AND THE OWNER SHALL DETERMINE WHICH OF THE CONFLICTING REQUIREMENTS SHALL GOVERN. THE CONTRACTOR SHALL PERFORM THE WORK AT NO ADDITIONAL COST TO THE OWNER IN ACCORDANCE WITH THE OWNER'S DETERMINATION.
6. IN CASES WHERE MECHANICAL OR ELECTRICAL EQUIPMENT LOADING LISTED ON THE MANUFACTURER'S PRODUCT DATA SHEET EXCEEDS DESIGN LOADS INDICATED ON THE PLANS, CONTRACTOR SHALL NOTIFY STRUCTURAL ENGINEER AND ARCHITECT PRIOR TO PROCEEDING WITH WORK.
7. IN ADDITION TO PROVISIONS OUTLINED IN THE STANDARD TERMS AND GENERAL CONDITIONS FOR SUBMITTALS, ALL RE-SUBMITTALS SHALL INCORPORATE COMMENTS MADE BY A/E ON PREVIOUS REVIEW(S). ANY CHANGES MADE FROM PREVIOUS SUBMITTAL MUST BE BUBBLED AND/OR CLEARLY IDENTIFIED. NON-COMPLIANT SUBMITTALS MAY BE REJECTED AT DISCRETION OF A/E.
8. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR LOCATING, PROTECTING AND MAINTAINING IN SERVICE ALL EXISTING UTILITIES. ANY DAMAGE TO THE EXISTING UTILITIES CAUSED BY CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION AND AT NO COST TO THE OWNER.
9. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID TO ASCERTAIN CONDITIONS WHICH MAY ADVERSELY AFFECT THE WORK OR THE COST THEREOF.
10. THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. BASED ON THE CONTRACTOR'S CONSTRUCTION METHODS AND SEQUENCING OF CONSTRUCTION, THE CONTRACTOR SHALL RETAIN A LICENSED PROFESSIONAL ENGINEER TO DESIGN THE LATERAL SUPPORT SYSTEM REQUIRED TO RESIST THE LATERAL LOADS AND FOR ALL STABILITY OF THE STRUCTURE UNTIL COMPLETION. THE CONTRACTOR SHALL FURNISH AND PROVIDE THE NECESSARY BRACING AND SUPPORTS DURING CONSTRUCTION AND IS RESPONSIBLE FOR THE OVERALL STABILITY OF THE STRUCTURE UNTIL COMPLETION.
11. NEITHER THE ARCHITECT NOR THE STRUCTURAL ENGINEER SHALL BE RESPONSIBLE OR HAVE CONTROL OR CHARGE OF CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES FOR THE SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTIONS WITH THE PROJECT. NEITHER THE ARCHITECT NOR THE STRUCTURAL ENGINEER SHALL BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURES TO CARRY OUT HIS/HER WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. NEITHER THE ARCHITECT NOR THE STRUCTURAL ENGINEER SHALL BE RESPONSIBLE OR HAVE CONTROL OVER THE ACTS OF OMISSIONS OF THE CONTRACTOR, SUBCONTRACTOR, ANY OF THE AGENTS, EMPLOYEES, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR FAILURE OF ANY OTHER PERSONS OUT OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

MINIMUM DESIGN LOADS:

FLOOR LIVE LOAD:

TYPICAL GROUND FLOOR ....100 PSF

SUPERIMPOSED LOADS

ALLOWANCE FOR ROOFING ....5 PSF
ALLOWANCE FOR M.E.P. ....4 PSF
ALLOWANCE FOR CEILING ....5 PSF
ALLOWANCE FOR PHOTOVOLTAIC SOLAR PANELS (FUTURE) ....4 PSF

2

ROOF SNOW LOADS

MINIMUM FLAT SNOW LOAD ....20 PSF
SNOW DRIFT AT ELEVATION CHANGES (PER ASCE-7)
GROUND SNOW, Pg ....25 PSF
IMPORTANCE FACTOR (BUILDING CATEGORY II), I 1.0
EXPOSURE FACTOR, Ce 1.1
THERMAL FACTOR, Ct 1.0

WIND CRITERIA

- ULTIMATE BASIC WIND SPEEDS FOR RISK CATEGORY II BUILDING = 115 MPH
(3-SEC GUST WIND SPEED AT 33 FEET ABOVE GROUND FOR EXPOSURE CATEGORY C)
- EXPOSURE CATEGORY C
- WIND PRESSURE USING ALTERNATIVE ALL-HEIGHTS METHODS PER ASCE 7-10.

EARTHQUAKE CRITERIA

- MAPPED MCER SPECTRAL RESPONSE ACCELERATION, SHORT PERIOD, Ss = 0.128
- MAPPED MCER SPECTRAL RESPONSE ACCELERATION, 1 SECOND, S1 = 0.060.
- RISK CATEGORY II
- IMPORTANCE FACTOR, Ie =1.0
- SITE CLASS = E
- SDS = 0.213, SD1 = 0.139
- SEISMIC DESIGN CATEGORY, SDC = C

THRUST ON HANDRAILS

SIMULTANEOUS VERTICAL & HORIZONTAL THRUST 50PLF
ALTERNATE CONCENTRATED LOAD ....200 LB

FOUNDATION NOTES:

1. FOUNDATION RECOMMENDATIONS ARE BASED ON THE GEOTECHNICAL EXPLORATION REPORT BY GSG CONSULTANTS, DATED APRIL 15, 2022. REFERENCE SOIL REPORT AND SPECIFICATIONS FOR FURTHER INFORMATION ABOUT EXCAVATION, SITE PREPARATION, AND FOUNDATION CONSTRUCTION.
2. FOR ANY DISCREPANCY BETWEEN STRUCTURAL DRAWINGS AND GEOTECHNICAL REPORT, THE GEOTECHNICAL REPORT SHALL TAKE PRECEDENCE. ANY SUCH DISCREPANCIES SHALL BE REPORTED TO ARCHITECT OF RECORD.
3. ALL EXISTING FOUNDATIONS, ABANDONED UTILITIES, AND ALL ORGANIC AND/OR OTHER UNSUITABLE MATERIALS SHALL BE REMOVED FROM SUBGRADE AND BACKFILL AREAS AND REPLACED WITH GRANULAR ENGINEERED FILL SUCH AS IDOT CA-6. PLACE FILL IN LIFTS NOT EXCEEDING 9", MOISTURE CONDITION TO WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT, AND COMPACT TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY OBTAINED IN ACCORDANCE WITH SPECIFICATION D1557, MODIFIED PROCTOR METHOD. SEE GEOTECHNICAL REPORT FOR SPECIFIC RECOMMENDATIONS.
4. THE SOIL SUBGRADE FOR ALL SLABS SHALL BE PREPARED AS PER GEOTECHNICAL REPORT, INSPECTED AND APPROVED BY THE OWNER'S TESTING LABORATORY IMMEDIATELY PRIOR TO PLACING CONCRETE.
5. ALL SLAB SUBGRADES SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY OBTAINED IN ACCORDANCE WITH ASTM SPECIFICATION D1557, MODIFIED PROCTOR METHOD, AND MOISTURE CONDITIONED TO WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT. SEE GEOTECHNICAL REPORT FOR ADDITIONAL RECOMMENDATIONS.
6. PLACE BACKFILL SIMULTANEOUSLY ON BOTH SIDES OF FOUNDATION WALLS.
7. NO MUD SLABS, BEAMS OR SLABS SHALL BE PLACED ONTO OR AGAINST SUBGRADE CONTAINING FREE WATER, FROST OR ICE. SHOULD WATER, FROST, OR ICE ENTER A FOOTING OR SLAB EXCAVATION AFTER SUBGRADE APPROVAL, THE SUBGRADE SHALL BE RE-INSPECTED BY THE OWNER'S TESTING LABORATORY.
8. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PREVENT ANY FROST OR ICE FROM PENETRATING ANY FOOTING OR SLAB SUBGRADE BEFORE AND AFTER PLACING OF CONCRETE UNTIL SUCH SUBGRADE IS FULLY PROTECTED BY THE PERMANENT BUILDING STRUCTURE.
9. ALL PERIMETER WALL AND COLUMN FOUNDATIONS SHALL BEAR A MINIMUM OF 3'-6" BELOW FINISHED GRADE.
10. THE CONTRACTOR SHALL USE CARE IN EXCAVATION AND GRADING NEAR EXISTING ITEMS TO REMAIN. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO TEMPORARILY SUPPORT EXISTING FOUNDATIONS TO REMAIN DURING CONSTRUCTION.
11. ALLOWABLE SOIL BEARING PRESSURE TO BE 1,800 PSF WITH EXISTING FILL AND SOFT CLAY REMOVAL. SOIL REMOVAL SHALL BE AS PER GEOTECH ENGINEER RECOMMENDATION CONSISTING OF OVERCUTTING EXISTING FILL AND SOFT CLAY AND REPLACING WITH COMPACTED STRUCTURAL FILL SUCH AS CA6.

CONCRETE NOTES:

1. CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318-14) BY AMERICAN CONCRETE INSTITUTE. WORK ON THIS PROJECT SHALL CONFORM TO THE REQUIREMENTS OF ACI301-16 SPECIFICATIONS FOR STRUCTURAL CONCRETE UNLESS MODIFIED BY THIS CONTRACT DOCUMENTS.
2. ALL CONCRETE PERMANENTLY EXPOSED TO WEATHER SHALL CONTAIN AN APPROVED AIR ENTRAINING ADMIXTURE.
3. NO CALCIUM CHLORIDE SHALL BE USED IN ANY CONCRETE.
4. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS ACCOMPANIED WITH RECENT FIELD TEST REPORT DATA OR TRIAL BATCH LAB REPORTS FOR ALL PROPOSED CONCRETE MIXES FOR APPROVAL PRIOR TO FIRST POUR.
5. VERTICAL WALL CONSTRUCTION JOINTS SHALL BE FORMED WITH VERTICAL BULKHEADS AND KEY-WAYS. WALL REINFORCING SHALL BE CONTINUOUS THROUGH THE JOINT OR SHALL BE DOWELED WITH AN EQUIVALENT AREA OF REINFORCEMENT.
6. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE LOCATION AND PLACEMENT OF INSERTS, EMBEDDED PLATES, MASONRY ANCHORS, REGLETS, SLEEVES, DUCTWORK, PADS AND ANCHOR RODS. THE INSERTS, EMBEDDED PLATES, ETC. SHALL NOT INTERFERE WITH CONCRETE REINFORCEMENT LOCATION. THE GENERAL CONTRACTOR SHALL VERIFY ALL OPENINGS THROUGH WALLS WITH SHOP DRAWINGS, SHOWING OPENINGS IN THE SLABS INCLUDING, BUT NOT LIMITED TO SLEEVE SIZES AND LOCATIONS, DUCT SIZE AND LOCATION, ETC.
7. NO OPENING SHALL BE MADE IN ANY STRUCTURAL MEMBER WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT.
8. SLABS ON GRADE SHALL BE PLACED IN ALTERNATE STRIPS WITH A MAXIMUM WIDTH OF 30'-0" OR AS SHOWN ON PLAN. CONTROL JOINTS SHALL BE CUT WITHIN 4 TO 12 HOURS AFTER FINISHING WITH CONVENTIONAL SAW. CONTROL JOINTS SHALL NOT EXCEED 15'-0" INTERVALS IN EACH DIRECTION, AND SHALL BE LOCATED TO CONFORM WITH BAY SPACING WHEREVER POSSIBLE (I.E. AT COLUMN CENTERLINES, HALF-BAYS, THIRD-BAYS).
9. DEPRESSED SLABS SHALL MAINTAIN FULL THICKNESS UNLESS NOTED OTHERWISE. DEPRESSED SLABS SHALL MAINTAIN FULL THICKNESS UNLESS NOTED OTHERWISE.
10. CHEMICAL ANCHORS SHALL BE "HIT-HY 200" AND EXPANSION ANCHORS SHALL BE "KWIK BOLT TZ" AS MANUFACTURED BY HILTI, OR EQUAL. ANY SUBSTITUTED PRODUCT MUST MEET ALL OF THE DESIGN VALUES OF HILTI, AND BE APPROVED BY THE ARCHITECT. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION. TEST 10% OF CHEMICAL AND EXPANSION ANCHORS AND MUST BE PROOF LOADED BY INDEPENDENT TESTING LABORATORY. TENSION TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH ASTM E488.
11. PITCH CONCRETE SLABS TO FLOOR DRAINS WHILE MAINTAINING THE SLAB THICKNESS AS INDICATED ON THE MECHANICAL AND ARCHITECTURAL DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR TYPE AND LOCATION OF ALL FLOOR FINISHES, FLOOR DEPRESSIONS, AND CURBS.
12. ALL STRUCTURAL CONCRETE AND CONCRETE FILL SHALL BE THOROUGHLY CONSOLIDATED WITH MECHANICAL VIBRATORS.
13. THE OWNER'S TESTING LABORATORY SHALL INSPECT THE PLACEMENT OF ALL CONCRETE, REINFORCEMENT, AND FORMWORK.
14. PROVIDE 3/4" CHAMFER ON ALL CORNERS OF EXPOSED CONCRETE, UNLESS NOTED OTHERWISE IN THE ARCHITECT'S DRAWINGS.
15. REFERENCE SPECIFICATION: SECTION 03 30 00 - CAST-IN-PLACE CONCRETE.
16. ALL CAST-IN-PLACE CONCRETE SHALL HAVE CEMENT TYPE I OR II, AND MINIMUM COMPRESSIVE STRENGTH AS INDICATED IN THE TABLE BELOW:

STRUCTURAL ELEMENT	28 DAY COMPRESSIVE STRENGTH	AGGREGATE TYPE	REMARKS
FOUNDATIONS (FOOTINGS, PIERS AND FOUNDATION WALLS)	4,000 PSI	145 PCF STONE	F1S0P0C1
SLABS ON GRADE	4,000 PSI	145 PCF STONE	F0S0P0C0
CAST IN PLACE WALLS	4,000 PSI	145 PCF STONE	F0S0P0C0

REINFORCEMENT NOTES:

1. ALL CONCRETE REINFORCEMENT SHALL BE DETAILED, FABRICATED, LABELED, SUPPORTED, SPACED IN FORMS, AND SECURED IN PLACE IN ACCORDANCE WITH THE PROCEDURES AND REQUIREMENTS OUTLINED IN THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE STRUCTURES", ACI 318-11, AND THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315.
2. UNLESS NOTED OTHERWISE, DEFORMED BAR REINFORCEMENT SHALL CONFORM TO ASTM SPECIFICATION A615, GRADE 60 AND ASTM A706 FOR WELDED DEFORMED BAR REINFORCEMENT.
3. ALL WELDED WIRE FABRIC SHALL CONFORM TO THE STANDARDS OF ASTM A185.
4. THE CONTRACTOR SHALL SUBMIT CHECKED SHOP DRAWINGS SHOWING REINFORCING DETAILS INCLUDING STEEL SIZES, SPACING, PLACEMENT AND SUPPORT DETAILS TO THE ARCHITECT FOR REVIEW PRIOR TO FABRICATION.
5. PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT REINFORCEMENT AT THE POSITIONS INDICATED. PLASTIC COATED OR STAINLESS STEEL ACCESSORIES SHALL BE USED IN ALL EXPOSED CONCRETE WORK.
6. ALL EMBEDMENT LENGTHS AND LAPS SHALL BE AS REQUIRED BY ACI 318. UNLESS NOTED OTHERWISE, MINIMUM LAP SHALL BE 36 BAR DIAMETERS. SEE TABLE 2.
7. UNLESS NOTED OTHERWISE ON PLANS, ALL CONCRETE FORMED SLAB OR WALL OPENINGS SHALL BE REINFORCED AT EACH CORNER WITH MINIMUM 2 NO. 5 BARS, PLACED ONE IN EACH FACE AT 45 DEGREES AND PROJECTING MINIMUM 2'-0" BEYOND CORNER.
8. DOWELS SHALL MATCH THE SIZE AND QUANTITY OF MAIN REINFORCING, UNLESS NOTED OTHERWISE.
9. THE OWNER'S TESTING AGENCY SHALL INSPECT THE PLACEMENT OF ALL REINFORCEMENT.
10. THE CONCRETE COVER PROVIDED FOR ALL REINFORCEMENT SHALL COMPLY WITH ACI, 318, LATEST EDITION. THE FOLLOWING CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT UNLESS NOTED OTHERWISE:

CONDITION OF CONCRETE PLACEMENT	REINFORCEMENT RANGE	CLEAR COVER
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	#3 THRU #18 BARS	3"
CONCRETE EXPOSED TO EARTH OR WEATHER	#6 THRU #18 BARS	2"
	WIRE, #5 BAR & SMALLER	1 1/2"
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND		
- SLABS, WALLS, JOISTS	#14 & #18 BARS	1 1/2"
	#11 BARS & SMALLER	3/4"
- BEAMS AND COLUMNS (PRIMARY REINF., TIES, STIRRUPS, SPIRALS)	#3 THRU #18 BARS	1 1/2"

METAL DECK NOTES:

1. METAL DECK SHALL BE FABRICATED, DETAILED, AND ERECTED IN ACCORDANCE WITH THE "STEEL DECK INSTITUTE (SDI) SPECIFICATIONS."
2. METAL DECK SECTION PROPERTIES SHALL BE COMPUTED IN ACCORDANCE WITH AISI "SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS". METAL DECKING SHALL BE FABRICATED FROM STEEL TYPE ASTM A653, STRUCTURAL QUALITY, HAVING A MINIMUM YIELD STRENGTH OF 33 KSI.
3. GALVANIZING SHALL CONFORM TO ASTM A653 WITH MINIMUM COATING CLASS OF G60.
4. PROVIDE ENGINEERED AND CHECKED SHOP DRAWINGS INDICATING LOCATION, GAGE AND SIZE OF EACH PIECE OF DECKING AND RELATED DECKING ACCESSORY. THE SHOP DRAWINGS SHALL CLEARLY SHOW WELDING DETAILS TO STRUCTURAL FRAMING, SIDE LAP CONNECTION DETAILS, DECK OPENINGS, EDGE CLOSURES, AND ANY REQUIRED SUPPLEMENTARY DECK REINFORCING.
5. STEEL ROOF DECK SHALL BE 1 1/2" DEEP WITH MINIMUM 18 GAGE, TYPE AS INDICATED ON PLANS.
6. THE METAL DECK SHALL BE DESIGNED TO BE CONTINUOUS OVER THREE (3) SPANS IN THE DIRECTION INDICATED. SINGLE AND DOUBLE SPANS, IF REQUIRED, SHALL SATISFY LOAD AND DEFLECTION REQUIREMENTS.
7. ALL DECKING SHALL BE WELDED TO STRUCTURAL STEEL BY QUALIFIED WELDERS USING PRE-QUALIFIED PROCEDURES.
8. METAL DECKING SHALL BE WELDED AT 12 INCHES MAXIMUM ON CENTER OR (AS REQUIRED BY SPECIFICATIONS) TO THE SUPPORTING STEEL, WITH 3/4 INCH DIAMETER PUDDLE WELDS. SIDE LAPS SHALL BE FASTENED BY WELDING OR WITH #10 TEK SCREWS AT 18 INCHES MAXIMUM ON CENTER.
9. PROVIDE, AS REQUIRED, RIDGE AND VALLEY PLATES, COLUMN CLOSURES, CANT STRIPS, SUMP PLATES AT PIPING PENETRATIONS AND RECESSED SUMP PANS AT ROOF DRAINS. PROVIDE SUPPLEMENTAL FRAMING AT OPENINGS AS REQUIRED FOR SUPPORT OF THE METAL DECK. OPENINGS SHALL BE COORDINATED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
10. ANY METAL DECK OPENING THAT IS 12-INCH DIAMETER OR LARGER OR ANY GROUP OF OPENINGS THAT PENETRATE MORE THAN ONE METAL DECK RIB SHALL BE FRAMED WITH SUPPLEMENTAL STEEL FRAMING AS INDICATED ON THE DRAWINGS.
11. ALL HANGERS FOR HIGH PRESSURE DUCTWORK, CONDUIT RACKS, PIPES LARGER THAN 4" DIAMETER, ETC. SHALL BE HUNG DIRECTLY FROM STRUCTURAL STEEL FRAMING OR SUPPLEMENTAL MEMBERS ACCEPTABLE TO THE ARCHITECT.
12. NO LOADS SHALL BE PERMITTED TO BE HUNG DIRECTLY FROM METAL ROOF DECK OR FORM DECK.
13. THE ASSUMED CONSTRUCTION LIVE LOAD IS 20 PSF. CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO ENSURE TEMPORARY CONSTRUCTION LOADINGS DO NOT EXCEED ALLOWABLE LOADING FOR THE TYPE AND GAGE OF DECK.
14. REFERENCE SPECIFICATION: SECTION 05 31 00 - STEEL DECKING.

STEEL JOISTS:

1. JOISTS SHALL MEET THE CRITERIA IN THE "STANDARD SPECIFICATIONS: LOAD TABLES AND WEIGHT TABLES FOR STEEL JOIST AND JOIST GIRDERS", INCLUDING THE MATERIAL TYPE AND LOAD CAPACITY FOR THE DEPTH AND SPAN OF THE STEEL JOISTS NOTED ON THE PLAN.
2. THE JOIST SUPPLIER SHALL SUBMIT ENGINEERING CALCULATIONS FOR JOIST DESIGNATED "SP" AND FOR BRIDGING TO RESIST WIND UPLIFT. CALCULATIONS SHALL BE PREPARED AND SEALED BY AN ILLINOIS-LICENSED STRUCTURAL ENGINEER AND SHALL BE SUBMITTED FOR THE PROJECT RECORD.
3. THE JOIST SUPPLIER SHALL SUBMIT DETAILED FABRICATION AND ERECTION DRAWINGS FOR ALL JOISTS, ANCHORAGE AND BRIDGING.
4. JOISTS SHALL REQUIRE CONTINUOUS BRIDGING MEMBERS FASTENED DIRECTLY TO EACH JOIST, BRIDGING SHALL BE DESIGNED IN ACCORDANCE WITH THE STEEL JOIST INSTITUTE'S "STANDARD SPECIFICATION".
5. JOISTS WITH ROUND MEMBERS FOR BOTTOM CHORDS ARE NOT ACCEPTABLE, USE ONLY DOUBLE ANGLE BOTTOM CHORDS.
6. UNLESS NOTED OTHERWISE, HANGING LOADS FORM JOISTS SHALL BE ONLY FROM DIAGONAL INTERSECTION POINTS AND ONLY WITH ACCEPTABLE JOIST HANGER DEVICES.
7. PROVIDE TEMPORARY BRACING, GUYS, OR OTHER DEVICES REQUIRED TO PROVIDE STABILITY FOR THE ERECTION OF STRUCTURAL STEEL LEAVE BRACING IN PLACE UNTIL ALL STEEL WORK AND DECKING IS IN FINAL POSITION. MAINTAIN ADEQUATE LATERAL SUPPORT THROUGHOUT CONSTRUCTION AS REQUIRED TO INSURE STABILITY.

STRUCTURAL STEEL NOTES:

1. ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL WORK SHALL CONFORM TO AISC STEEL CONSTRUCTION MANUAL, 15TH EDITION AND ANSI/AISC 360-16 SPECIFICATIONS AND AISC 303-16 CODE OF STANDARD PRACTICE.
2. STRUCTURAL STEEL WIDE FLANGE SHAPES SHALL CONFORM TO ASTM A992, UNLESS NOTED OTHERWISE. STRUCTURAL STEEL PLATES, ANGLES, CHANNELS AND MISCELLANEOUS MATERIAL SHALL CONFORM TO ASTM A36. HOLLOW STRUCTURAL SECTIONS SHALL CONFORM TO ASTM A500, GRADE B. STEEL PIPE SECTIONS SHALL CONFORM TO ASTM A53, GRADE B.
3. ANCHOR RODS SHALL BE ASTM F1554, GRADE 55, 3/4 INCH DIA. WITH 12 INCH EMBEDMENT, UNLESS NOTED OTHERWISE.
4. HIGH STRENGTH BOLTING SHALL BE DONE IN ACCORDANCE WITH AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR ASTM A490 BOLTS."
5. BOLTS, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325. BOLTS SHALL BE 3/4 INCH DIA. MINIMUM UNLESS OTHERWISE INDICATED.
6. WELDING SHALL BE DONE BY CERTIFIED WELDERS AND SHALL CONFORM TO AWS D1.1 STRUCTURAL WELDING CODE - STEEL", LATEST EDITION. ALL WELDING ELECTRODES SHALL BE E70XX.
7. THE FABRICATOR/ERECTOR SHALL SUBMIT TO THE ARCHITECT FOR REVIEW, ENGINEERED AND CHECKED SHOP DRAWINGS SHOWING FABRICATION DETAILS, FIELD ASSEMBLY DETAILS AND ERECTION DIAGRAMS FOR ALL STRUCTURAL STEEL.
8. UNLESS NOTED OTHERWISE, ALL CONNECTIONS SHALL BE DESIGNED AND DETAILED BY THE FABRICATOR, USING RATIONAL ENGINEERING DESIGN AND STANDARD PRACTICE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE TYPICAL DETAILS SHOWN ON THE DRAWINGS ARE CONCEPTUAL ONLY, AND, UNLESS SPECIFICALLY NOTED, DO NOT INDICATE THE REQUIRED NUMBER OF BOLTS OR WELD SIZES.
9. THE FABRICATOR SHALL SUBMIT CALCULATIONS FOR EACH CONNECTION TYPE AND MEMBER SIZE WITH DETAILS AND COORDINATED SHOP DRAWINGS. CALCULATIONS SHALL BE STAMPED AND SIGNED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF ILLINOIS.
10. STEEL BEAM AND GIRDER CONNECTIONS SHALL BE DESIGNED USING THE LOAD AND RESISTANCE FACTOR DESIGN METHOD FOR FORCES INDICATED ON THE TYPICAL BEAM CONNECTION SCHEDULE, FRAMING PLANS AND FRAMING ELEVATIONS. WHERE NO REACTION IS INDICATED, USE MINIMUM CONNECTION SHEAR FORCE OF 10 KIPS (FACTORED).
11. UNLESS NOTED OTHERWISE, CONNECTIONS SHALL BE EITHER AISC DOUBLE ANGLE OR SINGLE PLATE SIMPLE SHEAR CONNECTIONS PROVIDING ROTATIONAL DUCTILITY AS DEFINED BY AISC. ALL BOLTED COMPONENTS SHALL UTILIZE MINIMUM 2 BOLTS IN BEARING. CONNECTIONS SHALL EXTEND TO AT LEAST ONE HALF OF THE BEAM DEPTH.
12. FIELD CONNECTIONS, EXCEPT WHERE SHOWN TO BE WELDED, SHALL BE BOLTED.
13. BEAMS AND GIRDERS SHALL BE FABRICATED WITH THE NATURAL CAMBER UP. PROVIDE CAMBERS AS INDICATED ON THE DRAWINGS.
14. ALL STEEL SURFACES WHICH WILL BE PERMANENTLY EXPOSED TO ELEMENTS SHALL BE HOT-DIPPED GALVANIZED.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF ALL ERECTION PROCEDURES AND SEQUENCES WITH RELATION TO TEMPERATURE DIFFERENTIALS, ESPECIALLY WITH RESPECT TO STRUCTURAL STEEL FRAMING INTO CONCRETE WALLS, BEAMS OR COLUMNS.
16. THERE SHALL BE NO FIELD CUTTING OF STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ARCHITECT/ ENGINEER.
17. ERECT AND MAINTAIN TEMPORARY BRACING TO INSURE THE ALIGNMENT AND STABILITY OF THE STRUCTURE DURING ERECTION UNTIL PERMANENT CONNECTIONS HAVE BEEN COMPLETED. LATERAL SYSTEM ELEMENTS FOR THIS PROJECT CONSIST OF (BUT ARE NOT NECESSARILY LIMITED TO) THE FOLLOWING: PLYWOOD SHEAR WALLS AND STEEL BRACING, FLOOR & ROOF DIAPHRAGMS.
18. PROVIDE 1/4 INCH END PLATES SEAL WELDED TO ENDS OF ALL HSS MEMBERS UNO
19. SHOP AND FIELD TESTING AND INSPECTION OF STRUCTURAL STEEL FABRICATION AND ERECTION SHALL BE PERFORMED BY THE OWNER'S TESTING AGENCY AS OUTLINED IN THE SPECIFICATIONS.
20. REFERENCE SPECIFICATION: SECTION 051200 - STRUCTURAL STEEL FRAMING.

TYPICAL BEAM SHEAR CONNECTION SCHEDULE			
BEAM	REACTION	BEAM	REACTION
W36	240 KIPS	W16	60 KIPS
W33	200 KIPS	W14,C15	55 KIPS
W30	175 KIPS	W12,C12	45 KIPS
W27	120 KIPS	W10,C10	25 KIPS
W24	115 KIPS	W8,C8	25 KIPS
W21	90 KIPS	W6,C6	15 KIPS
W18,C18	75 KIPS	W5,C5	15 KIPS

REACTIONS ARE FACTORED LOADS.

COLD-FORMED STEEL FRAMING NOTES:

THE DESIGN AND CONNECTION DETAILING OF ALL COLD-FORMED STEEL MATERIAL INCLUDING, BUT NOT LIMITED TO EXTERIOR STUDS, BEARING STUDS, HEADERS, JAMBS, JOISTS, RAFTERS AND ANCHORAGE SHALL BE BY THE COLD-FORMED STEEL SUPPLIER. THIS IS A DEFERRED SUBMITTAL ITEM. THE MINIMUM DESIGN CRITERIA FOR ALL SYSTEMS OTHER THAN BEARING FRAMING SHALL MEET THE FOLLOWING CRITERIA:

1. STUD IN EXTERIOR WALLS SHALL BE MINIMUM 600S162-43 (6"-18 GAUGE) STUDS AT 16" OC.
2. STUDS SHALL BE COLD ROLLED STEEL, GALVANIZED, C SHAPE, WITH MINIMUM 1 5/8" FLANGE AND MINIMUM 1/2" RETURN. THEY ARE TO BE PUNCHED FOR UTILITY ACCESS AND GALVANIZED TO G60 COATING PER ASTM 525.
3. AT ALL OPENINGS IN EXTERIOR AND BEARING WALLS PROVIDE A MINIMUM TWO STUDS FULL WALL HEIGHT EACH SIDE OF OPENING AND A MINIMUM ONE ADDITIONAL STUD EACH SIDE FOR LINTEL BEARING.
4. ANCHOR BOTTOM TRACK TO CONCRETE OR MASONRY WITH MINIMUM 5/32" X 1 1/4" POWER DRIVEN FASTENERS AT 16" OC.
5. TOP AND BOTTOM TRACKS SHALL BE COLD ROLLED OR BREAK FORMED STEEL,GALVANIZED U SHAPED AND MINIMUM 16 OR 18 GAUGE AND AS NOTED ON THE DRAWINGS.
6. COLD-FORMED STEEL FRAMING FASTENERS SHALL BE MINIMUM #10 SELF-DRILLING SHEET METAL SCREWS, 16 THREADS PER INCH, WITH LOW PROFILE HEAD. PROVIDE A MINIMUM OF TWO SCREWS PER CONNECTION UNLESS NOTED OTHERWISE. PROVIDE A MINIMUM OF TWO SCREWS PER CONNECTION UNLESS NOTED OTHERWISE.
7. ALL FRAMING COMPONENTS SHALL BE SQUARELY CUT FOR ATTACHMENT TOPERPENDICULAR MEMBERS. STUD ENDS MUST SEAT TIGHTLY INTO TRACKS FOR ALL BEARING APPLICATIONS.
8. AT ALL WALL ELEMENTS, PROVIDE 1 1/2"-16 GAUGE HORIZONTAL CHANNEL BRIDGINGTO PREVENT STUD ROTATION. FOR ALL AXIAL LOADED WALLS, SPACE BRIDGING AT 4'-0" OC FOR ALL NON-LOAD BEARING EXTERIOR WALLS, SPACE BRIDGING AT 5'-0" OC
9. WALL STUD DEFLECTION CRITERIA:
- FOR WALL STUDS PROVIDING LATERAL SUPPORT TO MASONRY VENEER AND CEMENTITIOUS STUCCO, PROVIDE L/600.
- FOR WALL STUDS PROVIDING LATERAL SUPPORT TO OTHER MATERIALS, PROVIDE L/360.
10. THE COLD-FORMED STEEL SUPPLIER SHALL SUBMIT CERTIFIED SHOP DRAWINGS AND DESIGN CALCULATIONS PREPARED BY A QUALIFIED STRUCTURAL ENGINEER REGISTERED IN THE STATE OF ILLINOIS. SEE PROJECT SPECIFICATION MANUAL FOR ADDITIONAL SUBMITTAL REQUIREMENTS.
11. ALL COLD-FORMED DESIGNATIONS ARE IN ACCORDANCE WITH THE STEEL STUD MANUFACTURERS ASSOCIATION (SSMA).
12. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATION FOR SIZE, MINIMUM GAUGE, EXTENT, AND LOCATION OF INTERIOR NONBEARING
COLD-FORMED STEEL FRAMING NOT SHOWN ON THE STRUCTURAL DRAWINGS. INTERIOR COLD-FORMED STEEL FRAMING IS TO BE DESIGNED FOR 5 PSF LATERAL PRESSURE BY THE COLD-FORMED STEEL SUPPLIER.
13. TEMPORARY BRACING SHALL BE FURNISHED BY THE COLD-FORMED STEEL SUPPLIER AND FRAMING INSTALLER AND MAINTAINED UNTIL PERMANENT SYSTEMS PROVIDING LATERAL STABILITY ARE IN PLACE.
14. WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY (AWS) "STRUCTURAL WELDING CODE – SHEET STEEL, D1.3 – CURRENT EDITION." WELDERS SHALL BE QUALIFIED IN ACCORDANCE WITH AWS D1.3 AND SHALL BE EXPERIENCED IN COLD-FORMED WELDING.
15. ALL COLD-FORMED STEEL MATERIAL TO BE WELDED MUST BE NOMINAL 16 GAUGE OR THICKER.
16. TOUCH UP ALL COLD-FORMED MATERIAL AT WELDS WITH ZINC-RICH PAINT.
17. ALIGN LOAD BEARING WALL STUDS WITH FLOOR OR ROOF TRUSSES.
18. SPLICES IN STUDS, JOISTS, AND HEADERS, ARE NOT PERMITTED, UNLESS APPROVED IN WRITING BY THE STRUCTURAL ENGINEER.
19. FRAMING COMPONENTS MAY BE PRE-ASSEMBLED INTO PANELS PRIOR TO ERECTING. PREFABRICATED PANELS SHALL BE SQUARE, WITH COMPONENTS ATTACHED IN A MANNER THAT PREVENTS RACKING.
20. FRAMING SUPPORTING CONCRETE PANEL ROOF DECK SHALL BE MINIMUM 16 GAUGE AND HAVE A MINIMUM 1 5/8" FLANGE.
21. REFERENCE SPECIFICATION: SECTION 054000 - COLD-FORMED STEEL FRAMING.

DELEGATED DESIGN ITEMS:

1. THE CONTRACTOR SHALL EMPLOY OR RETAIN A STRUCTURAL ENGINEER LICENSED IN THE STATE OF ILLINOIS TO DESIGN AND DETAIL DELEGATED ITEMS TO MEET THE PERFORMANCE AND DESIGN CRITERIA ESTABLISHED AS PART OF THE BASE BUILDING STRUCTURE INDICATED IN THE CONTRACT DOCUMENTS INCLUDING BUT NOT LIMITED TO:
A. STRUCTURAL STEEL CONNECTIONS
B. COLD FORMED METAL FRAMING WALLS AND PARAPETS

Permit Stamp

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PARK RIDGE, IL
LICENSED STRUCTURAL ENGINEER

No.	Date	Issue
2	12/29/2022	ADDENDUM #2
1	12/08/2022	ISSUE FOR BID/PERMIT

Project Number	16015
Drawn	Author
Checked	Checker
Proj. Arch./Eng.	Approver

EVANSTON animal shelter
City of Evanston

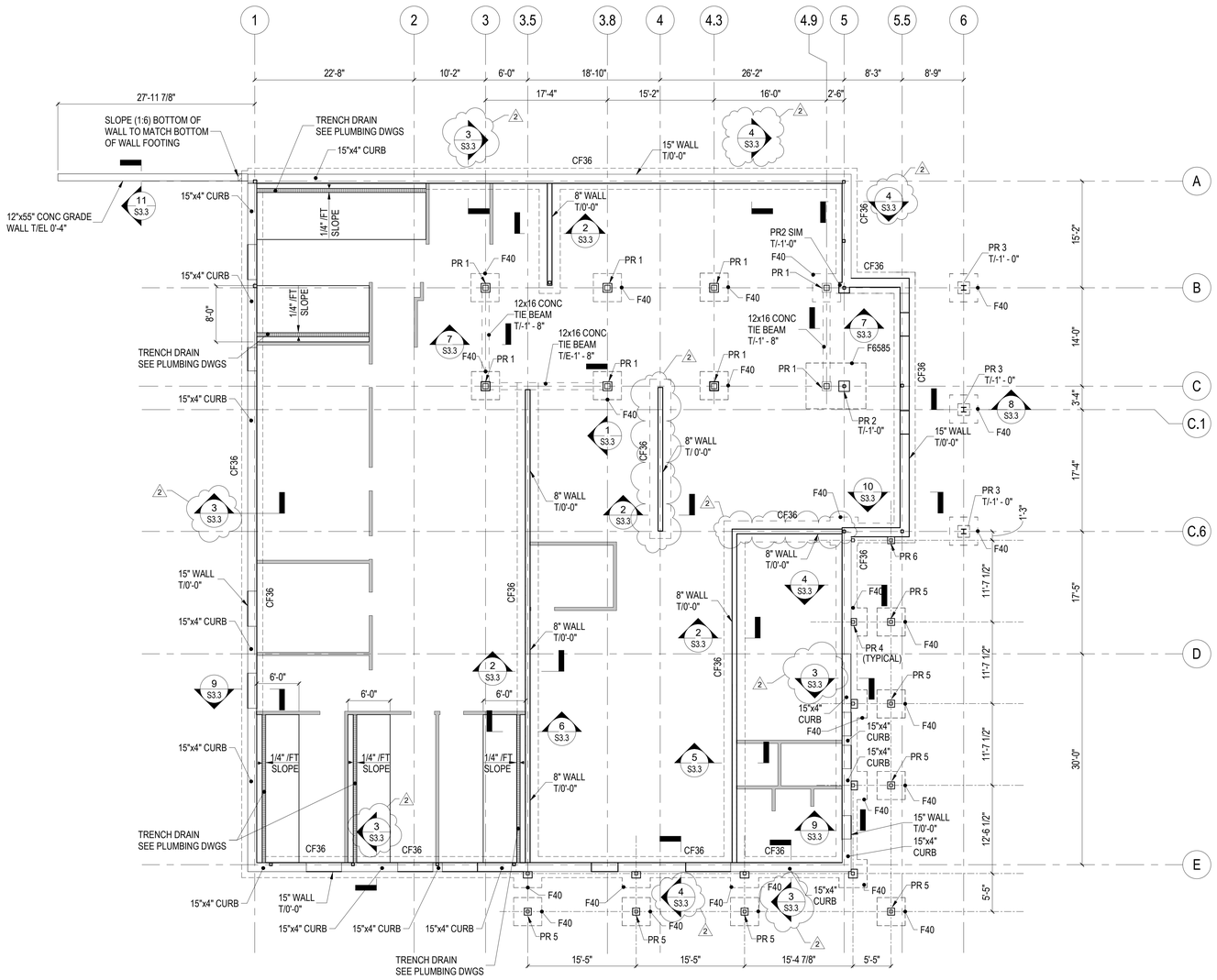
EVANSTON ANIMAL SHELTER
2310 Oakton St, Evanston, IL 60202

Project Name

GENERAL NOTES

Sheet Name

Drawing No. **S0.1**



1 GROUND FLOOR/FOUNDATION PLAN

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

PLAN NOTES:

1. SLAB-ON-GRADE WILL BE 5" THICK OVER 4" THICK FREE DRAINING STONE (CA7) ON WELL-COMPACTED BASE COURSE AND STRUCTURAL FILL AND DAMPROOF WITH NO LESS THAN 6-MIL POLYETHYLENE SHEET. REINFORCE WITH 6x6 - W2.9xW2.9 WELDED WIRE FABRIC WITH CONTROL JOINTS AT 10'-0" ON CENTERS. TOP OF SLAB-ON-GRADE = EL 0'-0".
2. TOP OF FOOTING ... EL (-)3'-0" UNO.
3. TOP OF CONCRETE PIER ...EL 0'-0", UNO.
4. REFER TO ARCH DRAWINGS FOR CONTROL JOINT LAYOUT.

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EVANSTON animal shelter

City of Evanston

EVANSTON ANIMAL SHELTER
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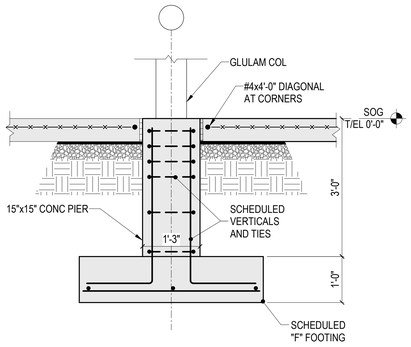
Project Name

FOUNDATION PLAN

Sheet Name

Drawing No. **S1.0**



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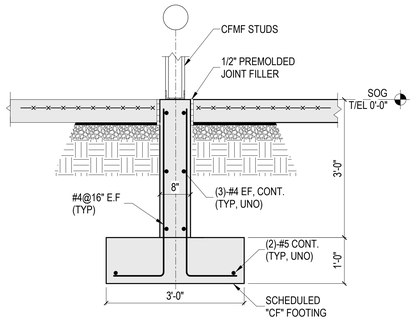

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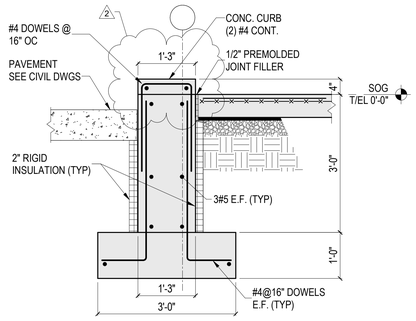

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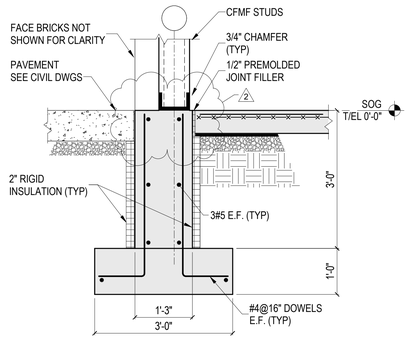

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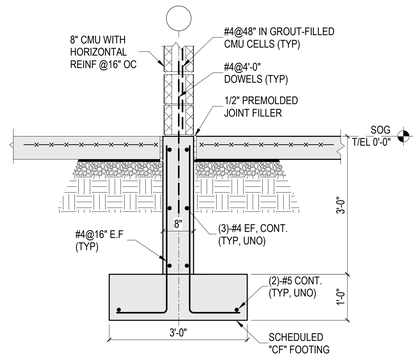

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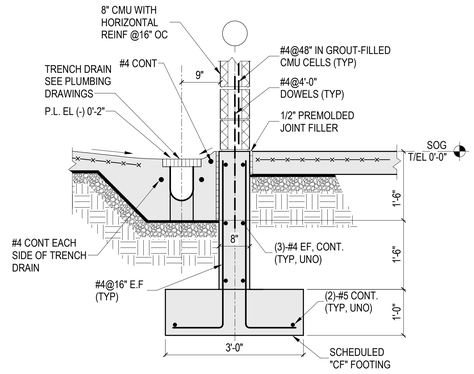

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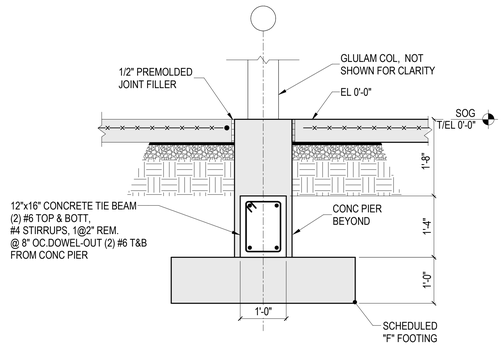

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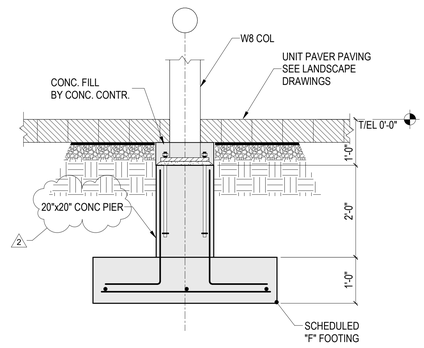

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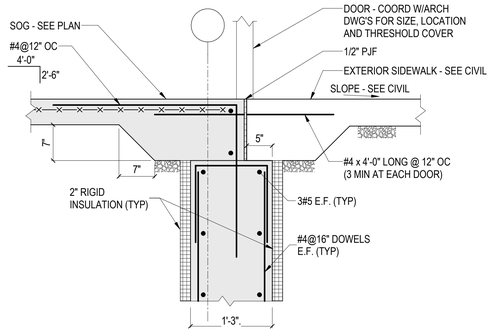

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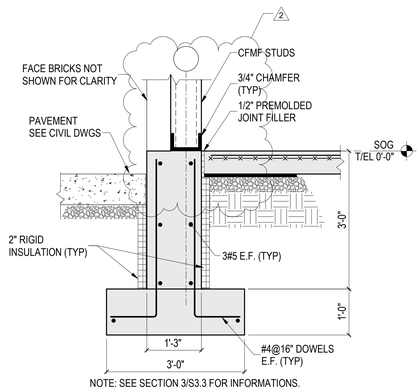

NOTE: SEE SECTION 3/S3.3 FOR INFORMATIONS.

10 **SECTION**
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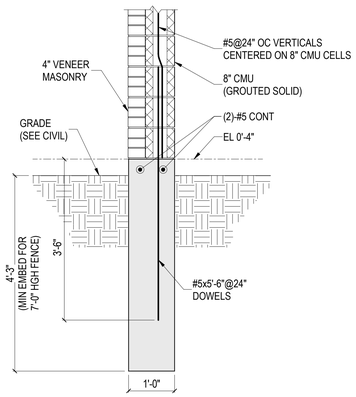

11 **SECTION**
SCALE: 3/4" = 1'-0"

Permit Stamp

HOLABIRD & ROOT

140 South Dearborn Chicago, IL 60603
Tel: 312 357 1771 Fax: 312 357 1909

www.holabird.com

RME Rubinos & Mesia Engineers, Inc.
200 S. Michigan Avenue, Suite 1500, Chicago, IL 60604-2482

STATE OF ILLINOIS
FARHAD REZAI
081-004991
PARK RIDGE, IL
LICENSED STRUCTURAL ENGINEER

No.	Date	Issue
2	12/29/2022	ADDENDUM #2
1	12/08/2022	ISSUE FOR BID/PERMIT

Project Number	16015
Drawn	Author
Checked	Checker
Proj. Arch./Eng.	Approver

EVANSTON animal shelter

City of Evanston

EVANSTON ANIMAL SHELTER
2310 Oakton St, Evanston, IL 60202

Project Name

CONCRETE SECTIONS AND DETAILS

Sheet Name

Drawing No. **S3.3**

SECTION 061516 - WOOD ROOF DECKING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes solid-sawn wood roof decking

B. Related Requirements:

1. Section 061000 "Rough Carpentry" for dimension lumber items associated with wood roof decking.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. For glued-laminated wood roof decking, include installation instructions and data on lumber, adhesives, and fabrication.
2. For preservative-treated wood products, include chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.

B. Sustainable Design Submittals:
1. Chain-of-Custody Certificates: For certified wood products. Include statement of costs.
2. Chain-of-Custody Qualification Data: For manufacturer and vendor.
3. Product Data: For installation adhesives, indicating VOC content.
4. Laboratory Test Reports: For installation adhesives, indicating compliance with requirements for low-emitting materials.

C. Samples: 24 inches (600 mm) long, showing the range of variation to be expected in appearance of wood roof decking.

1.4 INFORMATIONAL SUBMITTALS

A. Research/Evaluation Reports: For glued-laminated wood roof decking indicated to be of diaphragm design and construction, from ICC-ES.

1.5 QUALITY ASSURANCE

A. Certified Wood: Provide an invoice including vendor's chain-of-custody number, product cost, and entity being invoiced.

B. Vendor Qualifications: A vendor that is certified for chain of custody by an FSC-accredited certification body.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Schedule delivery of wood roof decking to avoid extended on-site storage and to avoid delaying the Work.

B. Store materials under cover and protected from weather and contact with damp or wet surfaces. Provide for air circulation within and around stacks and under temporary coverings. Stack wood roof decking with surfaces that are to be exposed in the final Work protected from exposure to sunlight.

PART 2 - PRODUCTS

2.1 WOOD ROOF DECKING, GENERAL

A. General: Comply with DOC PS 20 and with applicable grading rules of inspection agencies certified by ALSC's Board of Review.

B. Certified Wood: Certify wood products as "FSC Pure" or "FSC Mixed Credit" in accordance with FSC STD-01-001 and FSC STD-40-004.

2.2 SOLID-SAWN WOOD ROOF DECKING

A. Standard for Solid-Sawn Wood Roof Decking: Comply with AITC 112.

B. Roof Decking Species: As noted on the Drawings.

C. Roof Decking Nominal Size: 2 by 6 .

D. Roof Decking Grade: Select(ed) Decking.

E. Grade Stamps: Factory mark each item with grade stamp of grading agency. Apply grade stamp to surfaces that are not exposed to view.

F. Moisture Content: Provide wood roof decking with 15 percent maximum moisture content at time of dressing.

G. Face Surface: Smooth.

H. Edge Pattern: Vee grooved.

2.3 EXTERIOR FIRE-RETARDANT-TREATED WOOD

A. Provide fire-retardant-treated wood that complies with the following when tested in accordance with UL 723:
   1. A listed flame spread index of 25 or less.
   2. No evidence of significant progressive combustion when the test is continued for additional 20-minute period.
   3. A flame front that does not progress more than 10 1/2 feet beyond the centerline of the burners at any time during the 30-minute test period.

B. Provide fire-retardant-treated wood that is kiln dried after treatment (KDAT) to maximize moisture content of 19% for lumber.

C. Provide exterior fire-treated wood that has no increase in the listed classification when subjected to the Standard Rain Test, ASTM D2898.

D. Qualifications:
   1. Wood treatment qualified under MIL-L-1914E and listed on the Qualified Product List (QPL)
   2. Wood treatment plant with ongoing UL Classification and Follow-Up Service for fire-retardant treated wood.

E. Manufacturer: Any manufacturer listed in the UL Online Certification Directory for Treated Lumber (BPVV)
   1. Labeling: Fire retardant-treated wood shall be labeled as required by the code and shall bear the UL Classification Mark.

F. Finishing: Prepare fire-retardant-treated wood surfaces to be finished in accordance with manufacturer’s finishing recommendations.

2.4 ACCESSORY MATERIALS

A. Fasteners for Solid-Sawn Roof Decking: Provide fastener size and type noted on the drawings and complying with AITC 112 for thickness of deck used.

B. Nails: Common; complying with ASTM F 1667, Type I, Style 10.

C. Fastener Material: Hot-dip galvanized steel.

D. Penetrating Sealer: Clear sanding sealer complying with Section 099300 "Staining and Transparent Finishing" and compatible with topcoats specified for use over it.

2.5 FABRICATION

A. Seal Coat: After fabricating and surfacing roof decking, apply a saturation coat of penetrating sealer.

B. Apply indicated finish materials to comply with Section 099300 "Staining and Transparent Finishing" in fabrication shop.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine walls and support framing in areas to receive wood roof decking for compliance with installation tolerances and other conditions affecting performance of wood roof decking.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install solid-sawn wood roof decking as indicated on the drawings and to comply with AITC 112.

B. Apply joint sealant to seal roof decking at exterior walls at the following locations:

1. Between roof decking and supports located at exterior walls.
2. Between roof decking and exterior walls that butt against underside of roof decking.
3. Between tongues and grooves of roof decking over exterior walls and supports at exterior walls.

3.3 ADJUSTING

A. Repair damaged surfaces and finishes after completing erection. Replace damaged roof decking if repairs are not approved by Architect.

3.4 PROTECTION

A. Provide water-resistive barrier over roof decking as the Work progresses to protect roof decking until roofing is applied.

B. If, despite protection, roof decking becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061516

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EVANSTON ANIMAL SHELTER

The following listed documents comprise the project manual for the project listed above. Where numerical sequence of sections is interrupted, such interruptions are intentional.

The complete Project Manual for this project consists of these entire Volumes 1, 2 and 3, which must not be separated for any reason. The Architect and Owner disclaim any responsibility for any assumptions made by a contractor or subcontractor who does not receive a complete Project Manual, including all sections listed in the Table of Contents.

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01 0270	Applications for Payment	H&R	12/08/22
01 0280	Change Order Procedure	H&R	12/08/22
01 0450	Cutting and Patching	H&R	12/08/22
01 0510	Grades, Lines and Levels	H&R	12/08/22
01 0600	Regulatory Requirements	H&R	12/08/22
01 0950	Referenced Standards and Definitions	H&R	12/08/22
01 1050	Existing Utility Procedures	H&R	12/08/22
01 2000	Project Meetings	H&R	12/08/22
01 2100	Allowances	H&R	12/08/22
01 2300	Alternates	H&R	12/08/22
01 2700	Unit Prices	H&R	12/08/22
01 3000	Submittals	H&R	12/08/22
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01 5000	Temporary Facilities	H&R	12/08/22
01 5600	Temporary Environmental Controls	H&R	12/08/22
01 5639	Temporary Tree and Plant Protection	SDG	12/08/22
01 6000	Materials and Equipment	H&R	12/08/22
01 6300	Substitutions and Product Options	H&R	12/08/22
01 7000	Project Closeout	H&R	12/08/22

01 7100	Cleaning	H&R	12/08/22
01 7200	Project Record Documents	H&R	12/08/22
01 7300	Operating and Maintenance Data	H&R	12/08/22
01 7400	Warranties and Bonds	H&R	12/08/22
01 7419	Construction Waste Management and Disposal	H&R	**12/29/22**
01 8113	Sustainable Design Requirements – LEED v4 BD+C	H&R	12/08/22
01 9113	General Commissioning Requirements	dbHMS	12/08/22
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03 3543	Polished Concrete Finishing	H&R	12/08/22
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04 4100	Dry-Placed Stone	SDG	12/08/22
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05 2100	Steel Joist Framing	RME	12/08/22
05 3100	Steel Decking	RME	12/08/22
05 5000	Metal Fabrications	H&R, SDG	12/08/22
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06 1600	Sheathing	H&R	12/08/22
06 1800	Glued-Laminated Construction	RME	12/08/22
06 2013	Exterior Finish Carpentry	SDG	12/08/22
06 4116	Plastic-Laminate-Clad Architectural Cabinets	H&R	**12/29/22**
06 6400	Plastic Paneling	H&R	12/08/22
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07 2119	Foamed-In-Place Insulation	H&R	12/08/22
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07 5423	Thermoplastic-Polyolefin (TPO) Roofing	H&R	**12/29/22**
07 6200	Sheet Metal Flashing and Trim	H&R	12/08/22

07 7100	Roof Specialties	H&R	12/08/22
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07 8413	Penetration Firestopping	H&R	12/08/22
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10 1423	Panel Signage	H&R	12/08/22
10 2116	Solid Surface Shower and Dressing Compartments	H&R	12/08/22
10 2600	Wall and Door Protection	H&R	12/08/22
10 2800	Toilet, Bath, and Laundry Accessories	H&R	12/08/22
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10 8213	Roof Screens	H&R	12/08/22
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12 3570	Healthcare Casework	H&R	12/08/22
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12 3661.16	Solid Surfacing Countertops	H&R	**12/29/22**
12 4813	Entrance Floor Mats and Frames	H&R	12/08/22
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21 0529	Fire Suppression Supports and Anchors	IMEG	12/08/22
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32 3119	Metal Fences	SDG	12/08/22
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SECTION 01 00 00 – PROJECT REQUIREMENTS

PART 1 – GENERAL

1.01 GENERAL NOTE
A. The following requirements are a component part of all contract divisions and form a part of each specification section in so far as they may be in any way applicable thereto.

1.02 RELATED WORK
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this section.

1.03 SCHEDULE OF DRAWINGS
A. The following drawings form a component part of all contract documents for this project.

Title of the Drawings:

Sheet No.	Drawing Title
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G1-2	CODE INFORMATION
G1-3	LIFE SAFETY PLAN
G1-4	LEED SCORECARD, CURRENT PROGRAM & ALTERNATE LIST
CIVIL	
1 OF 1	CIVIL SURVEY (FOR REFERENCE)
C001	GENERAL NOTES
C002	EXISTING CONDITIONS
C100	SITE DEMOLITION PLAN
C200	SITE DIMENSION PLAN
C300	SITE GRADING PLAN
C301	SITE EROSION CONTROL PLAN
C302	SITE EROSION CONTROL DETAILS
C400	SITE UTILITY PLAN
C401	SITE UTILITY PROFILES
C500	DETAILS
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ARCHITECTURAL SITE	
AS1-0	ARCHITECTURAL SITE DEMOLITION PLAN
AS1-1	ARCHITECTURAL SITE PLAN
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L-008	TREE PRESERVATION AND REMOVAL PLAN
L-101	LANDSCAPE SITE PLAN
L-103	HARDSCAPE PLAN
L-104	SITE FURNISHINGS PLAN
L-105	SOILS PLAN
L-106	PLANTING PLAN
L-201	LANDSCAPE SITE ELEVATION
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L-501	PRESERVATION DETAILS

L-503	HARDSCAPE DETAILS
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L-504A	SITE FURNISHING DETAILS
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L-603	HARDSCAPE SCHEDULE
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A5-3	ENLARGED ELEVATIONS & EXTERIOR DETAILS
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FF&E

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M5-0	MECHANICAL DETAILS
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M6-0	MECHANICAL CONTROL DIAGRAMS
M6-1	MECHANICAL CONTROL DIAGRAMS
M6-2	MECHANICAL CONTROL DIAGRAMS
M6-3	MECHANICAL CONTROL DIAGRAMS
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P0-0	PLUMBING COVERSHEET
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P1-1	FIRST FLOOR - PLUMBING
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ELECTRICAL

E0-0	ELECTRICAL COVERSHEET
E0-1	SITE PLAN – ELECTRICAL
E0-2	SITE PLAN PHOTOMETRICS - ELECTRICAL
E1-1	FIRST FLOOR - LIGHTING
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E3-1	FIRST FLOOR - SYSTEMS
E5-0	ELECTRICAL DETAILS
E6-0	ELECTRICAL DIAGRAMS
E7-0	ELECTRICAL SCHEDULES
E7-1	ELECTRICAL SCHEDULES

TECHNOLOGY

T0-0	TECHNOLOGY COVERSHEET
T1-0	SITE PLAN - TECHNOLOGY
T1-1	FIRST FLOOR - TECHNOLOGY
T2-0	TECHNOLOGY ROOM ENLARGEMENTS
T3-0	TECHNOLOGY DETAILS
T4-0	TECHNOLOGY DETAILS
T5-0	TECHNOLOGY DIAGRAMS
T6-0	TECHNOLOGY SCHEDULES

1.04 PROJECT SUMMARY

A. Work on this project includes, but is not limited to demolishing the existing Animal Shelter, site preparation, constructing a new single story, approx. 8850 SF Animal Shelter Facility for the City of Evanston and associated site improvements.

1.05 SPECIAL PROCEDURES AND REQUIREMENTS

A. Fire Protection

1. Regulations: The Contractor shall comply with all federal, state and local fire regulations.
2. Fires: The Contractor shall prohibit the lighting of fires about the premises and use due diligence to see that such prohibition is enforced. Debris and waste materials shall not be burned at the construction site but shall be promptly removed to prevent the accumulation of combustibles on the site.
3. Smoking: Smoking shall be restricted to designated exterior locations. The Contractor shall furnish and post "NO SMOKING" signs at appropriate locations throughout the site where operations are conducted.
4. Flammables: Gasoline and other fuels shall be kept and handled from National Board of Fire underwriter's approved safety cans and shall be stored away from hazardous work areas.

B. Limit of Contractor's Operations

1. Work Areas: Work areas shall be confined to the limits of the construction site. The allotment of work areas within the site to Subcontractors shall be made by the Contractor. The general scheme of operations, work area assignments and use of the job site shall be subject to the Owner's approval.
2. Site Access: Uncontrolled or unrestricted site access will not be permitted for materials, debris or equipment. All access routes and methods shall be controlled by the Contractor so as to minimize the disruption of the Owner's operations and shall be subject to approval by the Owner. Walks, roads and other existing site features used in moving materials shall be properly protected to prevent damage thereto.

C. Hoists, Scaffolds and Ladders

1. Hoists: The Contractor shall furnish, erect, operate and maintain suitable hoisting equipment as may be necessary for constructing the work. Material hoists shall be constructed and maintained in accordance with all applicable federal, state and local laws, regulations and ordinances. Location of hoists shall be subject to approval by the Owner's representative.
2. Scaffolds and Ladders: The Contractor shall furnish, erect, maintain and move all scaffold and ladders required for his work. Scaffolds shall be constructed and maintained in accordance with all applicable federal, state and local laws, regulations and ordinances. Scaffolds and ladders shall be promptly removed after their purpose has been served.

D. Documentation of Existing Conditions

1. Before starting any work, the Contractor shall examine the site to be worked on and the grounds in the staging area and areas adjacent to the site that will be worked on for any existing damage. The Contractor should notify the City's representative of any damage found immediately. The City will photograph and note any existing damage that has been brought to his attention by the Contractor. After the Work has been completed the City will inspect the area used by the Contractor. If any damage is found that was not reported previously, this damage would be considered to have been done by the Contractor. The cost to repair said damage shall be solely borne by the Contractor.

1.06 TEMPORARY CONSTRUCTION FACILITIES

A. The following temporary utilities and facilities on the construction site shall be provided by the party indicated below:

ITEM	PROVIDER
Telephone	General Contractor
Electricity	~~Owner~~ **General Contractor**
Water	~~Owner~~ **General Contractor**
Toilets	General Contractor
Parking spaces for Contractor vehicles	Within job site only, no street parking
Parking spaces for workmen	Within job site only, no street parking
Storage areas & facilities	Limited unsecured space within job site
Temporary heat	General Contractor
Job-site trailers & offices	General Contractor

PART 2 – PRODUCTS
(NOT APPLICABLE)

PART 3 – EXECUTION
(NOT APPLICABLE)

END OF SECTION 01 00 00

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Salvaging nonhazardous demolition and construction waste.
2. Recycling nonhazardous demolition and construction waste.
3. Disposing of nonhazardous demolition and construction waste.

B. Related Requirements:
1. Section 024116 "Structure Demolition" for disposition of waste resulting from demolition of buildings, structures, and site improvements, and for disposition of hazardous waste.
2. Section 042000 "Unit Masonry" for disposal requirements for masonry waste.
3. Section 311000 "Site Clearing" for disposition of waste resulting from site clearing and removal of above- and below-grade improvements.

1.3 DEFINITIONS

A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 PERFORMANCE REQUIREMENTS

A. General: Achieve end-of-Project rates for salvage/recycling of 50 percent by weight of total non-hazardous solid waste generated by the Work. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials, including the following:

1. Demolition Waste:

a. Asphalt paving.
b. Concrete.
c. Concrete reinforcing steel.
d. Brick.
e. Concrete masonry units.
f. Wood studs.
g. Wood joists.
h. Plywood and oriented strand board.
i. Wood paneling.
j. Wood trim.
k. Structural and miscellaneous steel.
l. Rough hardware.
m. Roofing.
n. Insulation.
o. Doors and frames.
p. Door hardware.
q. Windows.
r. Glazing.
s. Metal studs.
t. Gypsum board.
u. Acoustical tile and panels.
v. Carpet.
w. Carpet pad.
x. Demountable partitions.
y. Equipment.
z. Cabinets.
aa. Plumbing fixtures.
bb. Piping.
cc. Supports and hangers.
dd. Valves.
ee. Sprinklers.
ff. Mechanical equipment.
gg. Refrigerants.
hh. Electrical conduit.
ii. Copper wiring.
jj. Lighting fixtures.
kk. Lamps.
ll. Ballasts.
mm. Electrical devices.
nn. Switchgear and panelboards.

oo. Transformers.

2. Construction Waste:

a. Masonry and CMU.
b. Lumber.
c. Wood sheet materials.
d. Wood trim.
e. Metals.
f. Roofing.
g. Insulation.
h. Carpet and pad.
i. Gypsum board.
j. Piping.
k. Electrical conduit.
l. Packaging: Regardless of salvage/recycle goal indicated in "General" Paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:

1) Paper.
2) Cardboard.
3) Boxes.
4) Plastic sheet and film.
5) Polystyrene packaging.
6) Wood crates.
7) Plastic pails.

1.5 ACTION SUBMITTALS

A. Waste Management Plan: Submit plan within 30 days of date established for the Notice to Proceed.

1.6 INFORMATIONAL SUBMITTALS

A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Use Form CWM-7 for construction waste and Form CWM-8 for demolition waste. Include the following information:

1. Material category.
2. Generation point of waste.
3. Total quantity of waste in tons (tonnes).
4. Quantity of waste salvaged, both estimated and actual in tons (tonnes).
5. Quantity of waste recycled, both estimated and actual in tons (tonnes).
6. Total quantity of waste recovered (salvaged plus recycled) in tons (tonnes).
7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

C. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.

D. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.

E. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

F. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

G. LEED Submittal: Submit documentation to USGBC, signed by Contractor, tabulating total waste material, quantities diverted and means by which it is diverted, and statement that requirements for the credit have been met. Respond to questions and requests from USGBC regarding construction waste management and disposal until the USGBC has made its determination on the Project's LEED certification application. Document correspondence with USGBC as informational submittals.

H. Qualification Data: For waste management coordinator and refrigerant recovery technician.

I. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.7 QUALITY ASSURANCE

A. Waste Management Coordinator Qualifications: Experienced firm, with a record of successful waste management coordination of projects with similar requirements.

1. Firm employs a LEED-Accredited Professional, certified by the USGBC, as waste management coordinator.
2. Waste management coordinator may also serve as LEED coordinator.

B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.

C. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

D. Waste Management Conference: Conduct conference at Project site. Review methods and procedures related to waste management including, but not limited to, the following:

1. Review and discuss waste management plan including responsibilities of waste management coordinator.
2. Review requirements for documenting quantities of each type of waste and its disposition.
3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
5. Review waste management requirements for each trade.

1.8 WASTE MANAGEMENT PLAN

A. General: Develop a waste management plan according to ASTM E 1609 and requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Distinguish between demolition and construction waste. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.

B. Waste Identification: Indicate anticipated types and quantities of demolition, site-clearing, and construction waste generated by the Work. Use Form CWM-1 for construction waste and Form CWM-2 for demolition waste. Include estimated quantities and assumptions for estimates.

C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Use Form CWM-3 for construction waste and Form CWM-4 for demolition waste. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
   1. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
   2. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
   3. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
   4. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
   5. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.

D. Cost/Revenue Analysis: Indicate total cost of waste disposal as if there was no waste management plan and net additional cost or net savings resulting from implementing waste management plan. Use Form CWM-5 for construction waste and Form CWM-6 for demolition waste. Include the following:

   1. Total quantity of waste.
   2. Estimated cost of disposal (cost per unit). Include hauling and tipping fees and cost of collection containers for each type of waste.
   3. Total cost of disposal (with no waste management).
   4. Revenue from salvaged materials.
   5. Revenue from recycled materials.

6. Savings in hauling and tipping fees by donating materials.
7. Savings in hauling and tipping fees that are avoided.
8. Handling and transportation costs. Include cost of collection containers for each type of waste.
9. Net additional cost or net savings from waste management plan.

PART 2 - PRODUCTS

2.1 VENDORS

A. Source Limitation: ~~Groot~~ **LRS** is the sole vendor for dumpsters and waste hauling allowed by Owner.

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

1. Comply with operation, termination, and removal requirements in Section 015000 "Temporary Facilities."

B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan.

C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.

1. Distribute waste management plan to everyone concerned within three days of submittal return.
2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
2. Comply with Section 015000 "Temporary Facilities" and Section 015600 “Temporary Environmental Controls” for controlling dust and dirt, environmental protection, and noise control.

3.2 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Sale and Donation: Permitted on Project site.

B. Salvaged Items for Owner's Use: Salvage items for Owner's use and handle as follows:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

C. Doors and Hardware: Brace open end of door frames. Except for removing door closers, leave door hardware attached to doors.

D. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.

E. Plumbing Fixtures: Separate by type and size.

F. Lighting Fixtures: Separate lamps by type and protect from breakage.

G. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.

3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

A. General: Recycle paper and beverage containers used by on-site workers.

B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.

C. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.

D. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.

1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.

a. Inspect containers and bins for contamination and remove contaminated materials if found.

2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste from Owner's property and transport to recycling receiver or processor.

3.4 RECYCLING DEMOLITION WASTE

A. Asphalt Paving: Break up and transport paving to asphalt-recycling facility.

B. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.
1. Crush concrete and screen to comply with requirements in Section 312000 "Earth Moving" for use as satisfactory soil for fill or subbase.

C. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.

D. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.

E. Metals: Separate metals by type.

1. Structural Steel: Stack members according to size, type of member, and length.
2. Remove and dispose of bolts, nuts, washers, and other rough hardware.

F. Asphalt Shingle Roofing: Separate organic and glass-fiber asphalt shingles and felts. Remove and dispose of nails, staples, and accessories.

G. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.

H. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.

I. Metal Suspension System: Separate metal members including trim, and other metals from acoustical panels and tile and sort with other metals.

J. Carpet and Pad: Roll large pieces tightly after removing debris, trash, adhesive, and tack strips.

1. Store clean, dry carpet and pad in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.

K. Carpet Tile: Remove debris, trash, and adhesive.

1. Stack tile on pallet and store clean, dry carpet in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.

L. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.

M. Conduit: Reduce conduit to straight lengths and store by type and size.

3.5 RECYCLING CONSTRUCTION WASTE

A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Polystyrene Packaging: Separate and bag materials.
3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Wood Materials:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

    a. Comply with requirements in Section 329300 "Plants" for use of clean sawdust as organic mulch.

C. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location.

1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

    a. Comply with requirements in Section 329300 "Plants" for use of clean ground gypsum board as inorganic soil amendment.

3.6 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

3.7 FORMS

A. Form CWM-1 for construction waste identification.

B. Form CWM-2 for demolition waste identification.

C. Form CWM-3 for construction waste reduction work plan.

D. Form CWM-4 for demolition waste reduction work plan.

E. Form CWM-5 cost/revenue analysis of construction waste reduction work plan.

F. Form CWM-6 cost/revenue analysis of demolition waste reduction work plan.

G. Form CWM-7 for construction waste

H. Form CWM-8 for demolition waste.

END OF SECTION 017419

SECTION 06 4116 - PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes plastic-laminate clad architectural cabinets in the following rooms:
   1. Office, Room 07
   2. Education & Training, Room 01
   3. Wood furring, blocking, shims, and hanging strips for installing plastic-laminate-clad architectural cabinets that are not concealed within other construction.

B. Related Requirements:

   1. Section 06 1053 "Miscellaneous Rough Carpentry" for wood furring, blocking, shims, and hanging strips required for installing cabinets that are concealed within other construction before cabinet installation.
   2. Section 12 3661 “Solid Surface Countertops” for countertops to be placed on plastic laminate cabinets

1.2 COORDINATION

A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to support loads imposed by installed and fully loaded cabinets.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

   1. Sustainable Design Submittals:
   2. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
   3. For adhesives, indicating compliance with requirements for low-emitting materials.
   4. Laboratory Test Reports: For composite wood products, indicating compliance with

B. Shop Drawings:

   1. Include plans, elevations, sections, and attachment details.
   2. Show large-scale details.
   3. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.

4. Show locations and sizes of cutouts and holes for items installed in plastic-laminate architectural cabinets.

C. Samples for Verification: For the following:

1. Plastic Laminates: 8 by 10 inches, for each type, color, pattern, and surface finish required.

a. Provide one sample applied to core material with specified edge material applied to one edge.

2. Exposed Cabinet Hardware and Accessories: One full-size unit for each type and finish.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer.

B. **Product Certificates: For the following:**

1. **Composite wood and agrifiber products.**
2. **Thermoset decorative panels.**
3. **High-pressure decorative laminate.**
4. **Adhesives.**

1.6 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Engage a qualified fabricator, acceptable to the Architect, ~~that is an AWI member firm~~; that has not less than 10 years' experience in the custom fabrication and installation of architectural woodwork comparable to that indicated, on not less than 5 projects, acceptable to the Architect, that are comparable in material, design, and extent to that indicated; that has production facility with capacity to produce required units without causing delay in the Work; and whose work has resulted in construction with a record of successful in-service performance. **The fabricator shall comply with AWI standards.**

B. Installer Qualifications: Manufacturer of products.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver cabinets until painting and similar finish operations that might damage architectural cabinets have been completed in installation areas. Store cabinets in installation areas or in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

1.8 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install cabinets until building is enclosed, wet- work is complete, and HVAC system is operating and maintaining temperature and relative humidity at levels planned for building occupants during the remainder of the construction period.

B. Field Measurements: Where cabinets are 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 cabinets by field measurements before being enclosed/concealed by construction, and indicate measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

A. Quality Standard: Unless otherwise indicated, comply with the Architectural Woodwork Standards for grades of cabinets indicated for construction, finishes, installation, and other requirements.

B. Architectural Woodwork Standards Grade: Custom.

C. **Certified Wood: Certify wood products as "FSC Pure" or "FSC Mixed Credit" in accordance with FSC STD-01-001 and FSC STD-40-004**.

D. Type of Construction: Frameless.

E. Door and Drawer-Front Style: Flush overlay.

F. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or if not indicated, as required by quality standard.

G. Laminate Cladding for Exposed Surfaces:

1. Horizontal Surfaces: Grade HGS.
2. Vertical Surfaces: Grade VGS.
3. Edges: Match Architect’s samples. Grade HGS.
4. Pattern Direction: As indicated.

H. Materials for Semiexposed Surfaces:

1. Surfaces Other Than Drawer Bodies: Thermoset decorative panels.
   a. Edges of Thermoset Decorative Panel Shelves: PVC or polyester edge banding.
   b. For semiexposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, NEMA LD 3, Grade CLS.

2. Drawer Sides and Backs: Thermoset decorative panels with PVC or polyester edge banding.
3. Drawer Bottoms: Thermoset decorative panels.

I. Concealed Backs of Panels with Exposed Plastic-Laminate Surfaces: High-pressure decorative

laminate, NEMA LD 3, Grade BKL.

J. Drawer Construction: Fabricate with exposed fronts fastened to subfront with mounting screws from interior of body.

1. Join subfronts, backs, and sides with glued rabbeted joints supplemented by mechanical fasteners or glued dovetail joints.

K. 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 indicated by laminate manufacturer's designations.

2.2 WOOD MATERIALS

A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.

1. Wood Moisture Content: 5 to 10 percent.

B. Composite Wood and Agrifiber Products: Verify products are made using ultra-low-emitting formaldehyde resins, as defined in the California Air Resources Board's "Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products," or are made with no added formaldehyde.
1. Medium-Density Fiberboard (MDF): ANSI A208.2, Grade 130.
2. Particleboard: ANSI A208.1, Grade M-2.
3. Softwood Plywood: DOC PS 1, medium-density overlay.
4. Thermoset decorative panels are frequently called "melamine." If retaining "Thermoset Decorative Panels" Subparagraph below, also retain "Medium-Density Fiberboard (MDF)" Subparagraph and applicable "Particleboard" Subparagraph.
5. Thermoset Decorative Panels: Particleboard or MDF finished with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for Test Methods 3.3, 3.4, 3.6, 3.8, and 3.10.

C. **Composite Wood Products: Verify products are made using ultra-low-emitting formaldehyde resins, as defined in the California Air Resources Board's "Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products," or are made with no added formaldehyde.**

1. **Medium-Density Fiberboard (MDF): ANSI A208.2, Grade 130.**
2. **Particleboard: ANSI A208.1, Grade M-2.**
3. **Straw-Based Particleboard: ANSI A208.1, Grade M-2, except for density.**
4. **Softwood Plywood: DOC PS 1, medium-density overlay.**
5. **Thermoset Decorative Panels: Particleboard or MDF finished with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for Test Methods 3.3, 3.4, 3.6, 3.8, and 3.10.**

2.3 CABINET HARDWARE AND ACCESSORIES

A. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 170 degrees of opening.

B. Back-Mounted Pulls: BHMA A156.9, B02011.

C. Wire Pulls: Back mounted, solid metal, 4 inches long, 5/16 inch in diameter.

D. Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081.

E. Shelf Rests: BHMA A156.9, B04013; metal.

F. Drawer Slides: BHMA A156.9.

1. Grade 1HD-100 and Grade 1HD-200: Side mounted; full-overtravel-extension type; zinc-plated-steel, ball-bearing slides.
2. For drawers not more than 3 inches high and not more than 24 inches wide, provide Grade 1.
3. For drawers more than 3 inches high, but not more than 6 inches high and not more than 24 inches wide, provide Grade 1HD-100.
4. For drawers more than 6 inches high or more than 24 inches wide, provide Grade 1HD-200.
5. For computer keyboard shelves, provide Grade 1HD-100.
6. For trash bins not more than 20 inches high and 16 inches wide, provide Grade 1HD-200.

G. Door Locks: BHMA A156.11, E07121.

H. Drawer Locks: BHMA A156.11, E07041.

I. Door and Drawer Silencers: BHMA A156.16, L03011.

J. Tempered Float Glass for Cabinet Doors: ASTM C 1048, Kind FT, Condition A, Type I, Class 1 (clear), Quality-Q3, 6 mm thick unless otherwise indicated.

K. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.

1. Finish: Match Architect’s sample.

L. 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.

B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.

2.5 FABRICATION

A. Fabricate architectural cabinets to dimensions, profiles, and details indicated.

B. 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.

C. Shop-cut openings to maximum extent possible to receive hardware, appliances, 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.

D. Install glass to comply with applicable requirements in Section 08 8000 "Glazing" and in GANA's "Glazing Manual."

1. For glass in frames, secure glass with removable stops.

PART 3 - EXECUTION

3.1 PREPARATION

A. Before installation, condition cabinets to humidity conditions in installation areas for not less than 72 hours.

3.2 INSTALLATION

A. Architectural Woodwork Standards Grade: Install cabinets to comply with quality standard grade of item to be installed.

B. Assemble cabinets and complete fabrication at Project site to extent that it was not completed in the shop.

C. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with wafer-head cabinet installation screws.

D. Install cabinets level, plumb, and true in line to a tolerance of 1/8 inch in 96 inches using concealed shims.

1. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
2. Install cabinets without distortion so doors and drawers fit openings 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.
3. If hanging cleats are not indicated, fasten wall cabinets through back, near top and bottom, and at ends not more than 16 inches o.c. with No. 10 wafer-head sheet metal screws through metal backing or metal framing behind wall finish.

3.3 ADJUSTING AND CLEANING

A. Repair damaged and defective cabinets, where possible, to eliminate functional and visual defects. Where not possible to repair, replace architectural cabinets. Adjust joinery for uniform appearance.

B. Clean, lubricate, and adjust hardware.

C. Clean cabinets on exposed and semiexposed surfaces.

END OF SECTION

SECTION 07 5423 - THERMOPLASTIC-POLYOLEFIN (TPO) ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Adhered thermoplastic polyolefin (TPO) roofing system.
2. Substrate board.
3. Vapor retarder.
4. Roof insulation.
5. Cover board.
6. Vector mapping grid.
7. Walkways.

B. Related Requirements:

1. Section 06 1053 "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking; and for wood-based, structural-use roof deck panels.
2. Section 07 6200 "Sheet Metal Flashing and Trim" for metal roof flashings and counterflashings.
3. Section 07 9200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.

1.2 DEFINITIONS

A. Roofing Terminology: Definitions in ASTM D 1079 and glossary in NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to Work of this Section.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Roofing Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.

7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Sustainable Design Submittals:

1. Product Test Reports: For roof materials, documentation indicating that roof materials comply with Solar Reflectance Index requirements.
2. Product Data: For adhesives and sealants, indicating VOC content.
3. Laboratory Test Reports: For adhesives and sealants, indicating compliance with requirements for low-emitting materials.
4. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
5. Environmental Product Declaration: For each product.
6. Health Product Declaration: For each product.
7. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.

C. Shop Drawings: Include roof plans, sections, details, and attachments to other work, including the following:

1. Layout and thickness of insulation.
2. Base flashings and membrane termination details.
3. Flashing details at penetrations.
4. Tapered insulation layout, thickness, and slopes.
5. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
6. Tie-in with adjoining air barrier.

D. Samples for Verification: For the following products:

1. Roof membrane and flashings, of color required.
2. Walkway pads or rolls, of color required.

E. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and manufacturer.

B. Manufacturer Certificates:

1. Performance Requirement Certificate: Signed by roof membrane manufacturer, certifying that roofing system complies with requirements specified in "Performance Requirements" Article.

a. Submit evidence of compliance with performance requirements.

2. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.

C. Product Test Reports: For roof membrane and insulation, for tests performed by a qualified testing agency, indicating compliance with specified requirements.

D. Evaluation Reports: For components of roofing system, from ICC-ES.

E. Field Test Reports:

1. Fastener-pullout test results and manufacturer's revised requirements for fastener patterns.
2. Leak-detection; submit EFVM (Electric Field Vector Mapping) test results.

F. Field quality-control reports.

G. Sample Warranties: For manufacturer's special warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For roofing system to include in maintenance manuals.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is UL listed or listed in FM Approvals' RoofNav for roofing system identical to that used for this Project.

B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation

manufacturer's written instructions for handling, storing, and protecting during installation.

D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.9 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.10 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.

1. Special warranty includes roof membrane, base flashings, roof insulation, fasteners, cover boards, vapor retarder, substrate board, and other components of roofing system.
2. Warranty Period: 20 years from date of Substantial Completion.
3. Leak Detection System: Contractor shall warrant system for a period of 5 years after final inspection

B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form acceptable to Owner, signed by Installer, covering the Work of this Section, including all components of roofing system such as roof membrane, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, and walkway products, for the following warranty period:

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Installed roofing system and flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roof system and flashings shall remain watertight.

1. Accelerated Weathering: Roof membrane shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
2. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D 3746, ASTM D 4272, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.

B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.

C. Wind Uplift Resistance: Design roofing system to resist the following wind uplift pressures

when tested according to FM Approvals 4474, UL 580, or UL 1897:

1. Wind Loads: The roofing assemblies shall be designed, fabricated, and installed to withstand the maximum inward and outward wind pressures as determined according to ASCE/SEI 7-10.

D. FM Approvals' RoofNav Listing: Roof membrane, base flashings, and component materials shall comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system, and shall be listed in FM Approvals' RoofNav for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals Certification markings.

1. Fire/Windstorm Classification: Class 1A-90.
2. Hail-Resistance Rating: SH .

E. Solar Reflectance Index (SRI): Three-year-aged SRI not less than 64 or initial SRI not less than 82 when calculated according to ASTM E 1980, based on testing identical products by a qualified testing agency.

F. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

2.2 THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

A. TPO Sheet: ASTM D 6878/D 6878M, internally fabric- or scrim-reinforced, TPO sheet.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

   a. Carlisle SynTec Incorporated.
   b. Firestone Building Products.
   c. Flex Membrane International Corp.
   d. Johns Manville; a Berkshire Hathaway company.
   e. **GAF Commercial Roofing Systems**

2. Source Limitations: Obtain components for roofing system from roof membrane manufacturer or manufacturers approved by roof membrane manufacturer.
3. Thickness: 60 mils, nominal, or as indicated.
4. Exposed Face Color: Light grey to meet SRI requirements.
5. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 5% percent.

2.3 AUXILIARY ROOFING MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.
   1. Verify adhesives and sealants comply with the following limits for VOC content:

      a. Plastic Foam Adhesives: 50 g/L.
      b. Gypsum Board and Panel Adhesives: 50 g/L.

c. Multipurpose Construction Adhesives: 70 g/L.
d. Fiberglass Adhesives: 80 g/L.
e. Contact Adhesives: 80 g/L.
f. PVC Welding Compounds: 510 g/L.
g. Other Adhesives: 250 g/L.
h. Single-Ply Roof Membrane Sealants: 450 g/L.
i. Nonmembrane Roof Sealants: 300 g/L.
j. Sealant Primers for Nonporous Substrates: 250 g/L.
k. Sealant Primers for Porous Substrates: 775 g/L.

2. Verify adhesives and sealants comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

B. Sheet Flashing: Manufacturer's standard unreinforced TPO sheet flashing, 55 mils thick, minimum, of same color as TPO sheet.

C. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.

D. Bonding Adhesive: Manufacturer's standard.

E. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.

F. Metal Battens: Manufacturer's standard, aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 1 inch wide by 0.05 inch thick, prepunched.

G. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roofing components to substrate, and acceptable to roofing system manufacturer.

H. Vector Mapping Grid: Roofing system manufacturer's standard stainless steel (Type 304) grid to serve as conductive medium.
1. Accessories: Provide EFVM Connection Kit and other accessories recommended by roofing system manufacturer for field quality control testing of installed roof membrane.

I. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

2.4 SUBSTRATE BOARDS

A. Substrate Board: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum board or ASTM C 1278/C 1278M, fiber-reinforced gypsum board.

1. Thickness: Type X, 1/2 inch thick.

B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening substrate board to roof deck.

2.5 VAPOR RETARDER

A. Self-Adhering-Sheet Vapor Retarder: ASTM D 1970/D 1970M, polyethylene film laminated to layer of rubberized asphalt adhesive, minimum 40-mil total thickness; maximum permeance rating of 0.1 perm; cold applied, with slip-resisting surface and release paper backing. Provide primer when recommended by vapor retarder manufacturer.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Carlise; VapAir Seal MD or comparable product as approved by Architect.

2.6 ROOF INSULATION

A. General: Preformed roof insulation boards manufactured or approved by TPO roof membrane manufacturer, approved for use in FM Approvals' RoofNav-listed roof assemblies.

B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 1, Grade 2, felt or glass-fiber mat facer on both major surfaces.

1. Size: 48 by 48 inches.
2. Thickness: As indicated on Drawings or if not indicated, 6 inches minimum.

a. Base Layer: 2 inches, minimum
b. Upper Layer: As indicated, or as required to provide indicated minimum total R Value.

C. Tapered Insulation: Provide factory-tapered insulation boards.

1. Material: Match roof insulation.
2. Minimum Thickness: 1/4 inch.
3. Slope:

a. Roof Field: 1/4 inch per foot unless otherwise indicated on Drawings.
b. Saddles and Crickets: 1/2 inch per foot unless otherwise indicated on Drawings.

2.7 INSULATION ACCESSORIES

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with other roofing system components.

B. Fasteners: Factory-coated steel fasteners with metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation to substrate, and acceptable to roofing system manufacturer.

C. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer, one of the following:

1. Bead-applied, low-rise, one-component or multicomponent urethane adhesive.
2. Full-spread, spray-applied, low-rise, two-component urethane adhesive.

3. Verify adhesives and sealants comply with the following limits for VOC content:

    a. Plastic Foam Adhesives: 50 g/L.
    b. Gypsum Board and Panel Adhesives: 50 g/L.
    c. Multipurpose Construction Adhesives: 70 g/L.
    d. Fiberglass Adhesives: 80 g/L.
    e. Contact Adhesives: 80 g/L.
    f. PVC Welding Compounds: 510 g/L.
    g. Other Adhesives: 250 g/L.
    h. Single-Ply Roof Membrane Sealants: 450 g/L.
    i. Nonmembrane Roof Sealants: 300 g/L.
    j. Sealant Primers for Nonporous Substrates: 250 g/L.
    k. Sealant Primers for Porous Substrates: 775 g/L.

4. Verify adhesives and sealants comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

D. Cover Board: Provide one of the following:

1. Glass-Mat: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum substrate, 1/2 inch thick.

    a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

        1) Georgia-Pacific Building Products.
        2) National Gypsum Company.

2. Gypsum-Fiber Board: ASTM C 1278/C 1278M, cellulosic-fiber-reinforced, water resistant gypsum substrate, 1/2 inch thick.

    a. Manufacturers: Subject to compliance with requirements, provide products by the following:

        1) United States Gypsum Company.

2.8 WALKWAYS

A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads or rolls, approximately 3/16 inch thick and acceptable to roofing system manufacturer.

1. Size: Approximately 24 by 24 inches.
2. Color: Contrasting with roof membrane.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
3. Verify that the roof deck is clean, dry, supported, and suitable for installation of the roofing system.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing system installation according to roofing system manufacturer's written instructions. Remove sharp projections.

B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

C. Perform fastener-pullout tests according to roof system manufacturer's written instructions.

1. Submit test result within 24 hours after performing tests.

a. Include manufacturer's requirements for any revision to previously submitted fastener patterns required to achieve specified wind uplift requirements.

3.3 ROOFING INSTALLATION, GENERAL

A. Install roofing system according to roofing system manufacturer's written instructions, FM Approvals' RoofNav assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.

B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning Work on adjoining roofing.

C. Install roof membrane and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition.

3.4 SUBSTRATE BOARD INSTALLATION

A. Install substrate board with long joints in continuous straight lines, with end joints staggered not less than 24 inches in adjacent rows.

1. At steel roof decks, install substrate board at right angle to flutes of deck.

a. Locate end joints over crests of steel roof deck.

2. Tightly butt substrate boards together.
3. Cut substrate board to fit tight around penetrations and projections, and to fit tight to intersecting sloping roof decks.
4. Fasten substrate board to top flanges of steel deck according to recommendations in FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification.

3.5 VAPOR-RETARDER INSTALLATION

A. Self-Adhering-Sheet Vapor Retarder: Prime substrate if required by manufacturer. Install self-adhering-sheet vapor retarder over area to receive vapor retarder, side and end lapping each sheet a minimum of 3-1/2 inches and 6 inches, respectively. Seal laps by rolling.

B. Completely seal vapor retarder at terminations, obstructions, and penetrations to prevent air movement into roofing system.

3.6 INSULATION INSTALLATION

A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.

B. Comply with roofing system and roof insulation manufacturer's written instructions for installing roof insulation.

C. Installation Over Metal Decking:

1. Install base layer of insulation with joints staggered not less than 24 inches in adjacent rows.

a. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
b. Make joints between adjacent insulation boards not more than 1/4 inch in width.
c. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.

1) Trim insulation so that water flow is unrestricted.

d. Fill gaps exceeding 1/4 inch with insulation.
e. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
f. Mechanically attach base layer of insulation through substrate board using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to metal decks.

1) Fasten insulation according to requirements in FM Approvals' RoofNav for specified Windstorm Resistance Classification.
2) Fasten insulation to resist specified uplift pressure at corners, perimeter, and field of roof.

2. Install upper layers of insulation and tapered insulation with joints of each layer offset not less than 12 inches from previous layer of insulation.

    a. Staggered end joints within each layer not less than 24 inches in adjacent rows.
    b. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
    c. Make joints between adjacent insulation boards not more than 1/4 inch in width.
    d. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.

        1) Trim insulation so that water flow is unrestricted.

    e. Fill gaps exceeding 1/4 inch with insulation.
    f. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
    g. Adhere each layer of insulation to substrate using adhesive according to FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:

        1) Set each layer of insulation in ribbons of bead-applied or uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

3.7 INSTALLATION OF COVER BOARDS

A. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction.

1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
2. At internal roof drains, conform to slope of drain sump.

    a. Trim cover board so that water flow is unrestricted.

3. Cut and fit cover board tight to nailers, projections, and penetrations.
4. Adhere cover board to substrate using adhesive according to FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:

    a. Set cover board in ribbons of bead-applied or uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

3.8 INSTALLATION OF VECTOR MAPPING GRID

A. Install vector mapping grid over cover board, overlapping at edges and ends according to roof manufacturer's and EFVM system manufacturer’s written instructions, and the roof manufacturer’s full system’s warranty.

3.9 ADHERED ROOFING INSTALLATION

A. Adhere roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.

B. Unroll roof membrane and allow to relax before installing.

C. Start installation of roofing in presence of roofing system manufacturer's technical personnel.

D. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

E. Bonding Adhesive: Apply to substrate and underside of roof membrane at rate required by manufacturer, and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.

F. Roof Membrane Adhesive: Apply to substrate at rate required by manufacturer, and install roof membrane.

G. In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeter of roofing.

H. Apply roof membrane with side laps shingled with slope of roof deck where possible.

I. Seams: Clean seam areas, overlap roof membrane, and hot-air weld side and end laps of roof membrane and sheet flashings, to ensure a watertight seam installation.

1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roof membrane and sheet flashings.
2. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
3. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.

J. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

3.10 BASE FLASHING INSTALLATION

A. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.

B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.

C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.

E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through

termination bars.

3.11 WALKWAY INSTALLATION

A. Flexible Walkways:

1. Install flexible walkways at the following locations:

   a. Perimeter of each rooftop unit.
   b. Between each rooftop unit location, creating a continuous path connecting rooftop unit locations.
   c. Between each roof hatch and each rooftop unit location or path connecting rooftop unit locations.
   d. As required by roof membrane manufacturer's warranty requirements.

2. Provide 6-inch clearance between adjoining pads.
3. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.
4. Coordinate location of walkway pads so that they are not installed directly on roof membrane seams.

3.12 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to inspect substrate conditions, surface preparation, membrane application, flashings, protection, and drainage components, and to furnish reports to Architect.

1. Electronic Leak-Detection Testing:

   a. Testing agency shall test each deck area for leaks using an electronic leak-detection method that locates discontinuities in the roofing membrane.
   b. Testing agency shall perform tests on abutting or overlapping smaller areas as necessary to cover entire test area.
   c. Testing agency shall create a conductive electronic field over the area of roofing to be tested and electronically determine locations of discontinuities or leaks, if any, in the roofing.
   d. Testing agency shall provide survey report indicating locations of discontinuities if any.

B. Manufacturer's Field Service: Engage roofing-membrane manufacturer's authorized service representative to provide periodic inspection of roof assembly installation and prepare inspection reports.

C. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.

D. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.

E. Additional testing and inspecting, at Contractor's expense, will be performed to determine if

replaced or additional work complies with specified requirements.

3.13 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing system, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Mechanical door hardware for the following:

    a. Swinging doors.
    b. Sliding doors.

2. Cylinders for door hardware specified in other Sections.
3. Electrified door hardware.

B. Related Requirements:

1. Section 081113 "Hollow Metal Doors and Frames" for door silencers provided as part of hollow-metal frames.
2. Section 081416 "Flush Wood Doors".
3. Section 083113 "Access Doors and Frames" for access door hardware, except cylinders.
4. Section 087113 "Automatic Door Operators" for low-energy power operators and low-energy power-assist operators.
5. Section 281300 "Access Control" for access control devices installed at door openings and provided as part of a security system.
6. Section 281600 "Intrusion Detection" for detection devices installed at door openings and provided as part of an intrusion-detection system.
7. Section 283111 "Digital, Addressable Fire-Alarm System" for connections to building fire-alarm system.

1.3 COORDINATION

A. Floor-Recessed Door Hardware: Coordinate layout and installation with floor construction.

1. Cast anchoring inserts into concrete.

B. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.

D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with Electrical Contractor for selection and connections to power supplies and building safety and security systems. Hardware supplier responsible to provide hardware required for a functional opening.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Conference participants shall include Installer's Architectural Hardware Consultant.

B. Keying Conference: Conduct conference at Project site.

1. Conference participants shall include Installer's Architectural Hardware Consultant, Architect, and Owner.
2. Incorporate conference decisions into keying schedule after reviewing door hardware keying system including, but not limited to, the following:

a. Flow of traffic and degree of security required.
b. Preliminary key system schematic diagram.
c. Requirements for key control system.
d. Requirements for access control.
e. Process for delivery of keys.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: For electrified door hardware.

1. Include diagrams for power, signal, and control wiring.
2. Include details of interface of electrified door hardware and building safety and security systems.

C. Samples for Initial Selection: For each type of exposed finish.

D. Door Hardware Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant. Coordinate door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware

schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.

2. Format: Use same scheduling sequence and format and use same door numbers as in door hardware schedule in the Contract Documents.
3. Content: Include the following information:

    a. Identification number, location, hand, fire rating, size, and material of each door and frame.
    b. Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
    c. Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
    d. Description of electrified door hardware sequences of operation and interfaces with other building control systems.
    e. Fastenings and other installation information.
    f. Explanation of abbreviations, symbols, and designations contained in door hardware schedule.
    g. Mounting locations for door hardware.
    h. List of related door devices specified in other Sections for each door and frame.

E. Keying Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Product Certificates: For each type of electrified door hardware.

1. Certify that door hardware for use on each type and size of labeled fire-rated doors complies with listed fire-rated door assemblies.

C. Field quality-control reports.

D. Sample Warranty: For special warranty.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of door hardware to include in maintenance manuals.

B. Schedules: Final door hardware and keying schedule.

C. Parts List.

1.8 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish Extra Material: Provide and label one of each hardware item to owner at substantial completion.

B. Special tools required for hardware maintenance.

1.9 QUALITY ASSURANCE

A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and of an Architectural Hardware Consultant who is available during the course of the Work to consult Contractor, Architect, and Owner about door hardware and keying.
   1. Scheduling Responsibility: Preparation of door hardware and keying schedule.
   2. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project. Coordinate to obtain final wiring diagrams prior to electrical rough-in.

1.10 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 coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.

C. Install final cores. Deliver keys and key control system to Owner.

1.11 WARRANTY

A. Special Warranty: 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 deflection, cracking, or breakage.
      b. Faulty operation of doors 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 unless otherwise indicated below:
      a. Exit Devices: Two years from date of Substantial Completion.
      b. Manual Closers: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain each type of door hardware from single manufacturer.

1. Provide electrified door hardware from same manufacturer as mechanical door hardware unless otherwise indicated. Manufacturers that perform electrical modifications and that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.

2.2 PERFORMANCE REQUIREMENTS

A. Fire-Rated Door Assemblies: Where fire-rated doors are indicated, provide door hardware complying with NFPA 80 that is listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.

B. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that complies with requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.

1. Air Leakage Rate: Maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at the tested pressure differential of 0.3-inch wg (75 Pa) of water.

C. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

D. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.

E. Accessibility Requirements: For door hardware on doors in an accessible route, comply with the DOJ's "2010 ADA Standards for Accessible Design", ICC A117.1, and 2018 Illinois Accessibility Code.

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 (22.2 N).
2. Comply with the following maximum opening-force requirements:

a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
b. Sliding or Folding Doors: 5 lbf (22.2 N) applied parallel to door at latch.
c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.

3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
4. Adjust door closer sweep periods so that, from an open position of 90 degrees, the door will take at least 5 seconds to move to a position of 12 degrees from the latch.

5. Adjust spring hinges so that, from an open position of 70 degrees, the door will take at least 1.5 seconds to move to the closed position.

2.3 FABRICATION

A. General:
   1. Hand of door: The Drawings show the direction of slide, swing, or hand of each door leaf. Provide each item of hardware for proper installation and operation of the door swing as shown.
   2. Manufacturer's Name Plate: Do not use manufacturer's products which have manufacturer's name or trade name displayed in a visible location (omit removable nameplates), except in conjunction with required UL labels.
   3. Base Metals: Produce hardware units of the basic metal and forming method indicated, using the manufacturer's standard metal alloy, composition, temper and hardness, but in no case of lesser (commercially recognized) quality than specified for the applicable hardware units by FS FF-H-106, FS FF-H-111, FS FF-H-116 and FS FF-H-121. Do not provide "optional" materials or forming methods for those indicated, except as otherwise specified.
   4. Fasteners: Manufacture hardware to conform to published templates, generally prepared for machine screw installation. Do not provide hardware that has been prepared for self-tapping sheet metal screws, except as specifically indicated.
   5. Provide screws for installation with each hardware item. Provide Phillips flat head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match the hardware finish or, if exposed in surfaces of other work, to match the finish of such other work as closely as possible, including "prepared for paint" in surfaces to receive painted finish.
   6. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
   7. Fire-Rated Applications:
      a. Steel Through Bolts: For the following unless door blocking is provided:
         1) Surface hinges to doors.
         2) Closers to doors and frames.
         3) Surface-mounted exit devices.
   8. Spacers or Sex Bolts: For through bolting of hollow-metal doors.
   9. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.4 FINISHES

A. Hardware Finish: Exposed surfaces of hardware shall have ANSI A 156.18 / BHMA finishes as specified.

B. In general, all items not otherwise indicated shall be finish BHMA 630 (satin stainless steel) in sets.

BHMA Code	Finish Description	Base Material	Nearest U.S. Equivalent
600	Primed for painting	Steel	USP
605	Bright Brass	Brass	US3
606	Satin Brass	Brass	US4
612	Satin Bronze	Bronze	US10
613	Oxidized Satin Bronze Oil Rubbed	Bronze	US10B
618	Bright Nickel Plated	Brass, Bronze	US14
619	Satin Nickel Plated	Brass, Bronze	US15
622	Flat Black Coated	Brass, Bronze	US19
624	Dark Oxidized Statuary Bronze	Bronze	US20A
625	Bright Chromium Plated	Brass, Bronze	US26
626	Satin Chromium Plated	Brass, Bronze	US26D
628	Satin Aluminum	Aluminum	US28
629	Bright Stainless Steel	Stainless Steel	US32
630	Satin Stainless Steel	Stainless Steel	US32D
633	Plated Satin Brass	Steel	US4
637	Flat Black	Steel	US19
639	Plated Satin Bronze	Steel	US10
640	Plated Oxidized Satin Bronze Oil Rubbed	Steel	US10B
650	Plated Dark Oxidized Statuary Bronze	Steel	US20A
651	Bright Chromium Plated	Steel	US26
652	Satin Chromium Plated	Steel	US26D
689	Painted	Plastic	AL
690	Painted	Plastic	STAT
691	Painted	Plastic	LTBRZ

C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

D. 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.

2.5 SCHEDULED DOOR HARDWARE

A. Provide products for each door that comply with requirements indicated in Part 2 and door hardware schedule.

1. Door hardware is scheduled in Part 3.

2.6 HINGES

A. Products shall meet or exceed requirements of the following types defined in ANSI /BHMA standard A156.1. The following types of butt hinges shall be used for the types of doors listed, except where otherwise specified.

1. Interior Doors: Type A8111 (Wrought steel, forged steel or malleable iron, full mortise, ball bearing, heavy weight) for doors. Out swinging corridor doors with lock sets shall have non-removable pins.
2. Templates: Except for hinges and pivots to be installed entirely (both leaves) into wooden doors and frames, provide only template-produced units.
3. Screws: Provide Phillips flat-head all-purpose or machine screws for installation of units, except provide Phillips flat-head all-purpose or wood screws for installation of units into wood. Use threaded-to-the-head type screws for installation onto fire rated wood doors. Finish screw heads shall match surface of hinges, butts or pivots.
4. Finish: ANSI A 156.18 / BHMA
    a. Non-rated Doors: BHMA 652, Satin Chromium Plated Steel
    b. Fire-rated Doors: BHMA 652, Satin Chromium Plated Steel
    c. Exterior Doors: BHMA 630, Satin Stainless Steel
5. Sizing Hinges:
    a. Height of Hinge:
        1) Door 36 inch (914.4 mm) Wide or Less: 4-1/2 inch (114.3 mm) tall hinge.
        2) Door Over 36 inch (914.4 mm) to 48 inch (1219.2 mm) Wide: 5 inch (127 mm) high hinge.
        3) Door Over 48 inch (1219.2 mm) wide: 6 inch (152.4 mm) high hinge.
            a) Width of Hinge:
            b) Hinge up to 5 inch (127 mm) High: 4-1/2 inch (114.3 mm) wide hinge.
            c) Hinge Over 5 inch (127 mm) High: 5 inch (127 mm) wide hinge.
6. Hinge Weight:
    1) Non-rated Doors: Standard weight.
    2) Fire-rated Doors up to 96 inch: Standard weight.
    3) Fire-rated Doors over 96 inch: Heavy weight.
7. Number of Hinges:
    a. Doors 60 inch (1524 mm) High or Less: 2 hinges
    b. Doors over 60 inch (1524 mm) not over 90 inch (2286 mm): 3 hinges
    c. One (1) additional hinge for each 30 inch (762 mm) over 90 inch (2286 mm).
8. Hinge Designation:
    a. Five (5) knuckle.
    b. Pin
    c. Non-rising.
    d. Button tip, except as otherwise noted in hardware sets.

A. Full Mortise Butt Type – Ball Bearing

1. Basis-of-Design Product: Subject to compliance with requirements, provide Hager Companies; BB1279 or a comparable product by one of the following:

a. Bommer Industries, Inc.
b. Lawrence Hardware Inc.
c. McKinney Products Company; an ASSA ABLOY Group company.

2.7 CONTINUOUS HINGES

A. Continuous, Gear-Type Hinges: Extruded-aluminum, pinless, geared hinge leaves joined by a continuous extruded-aluminum channel cap; with concealed, self-lubricating thrust bearings.

1. Basis-of-Design Product: Roton 780-112HD.

2.8 MECHANICAL LOCKS AND LATCHES

A. General:
1. Locksets and latch sets shall meet or exceed requirements and certified with ANSI/BHMA A156.13.
2. Tactile Surfaces: Where required by Code, provide tactile surfaces on levers to warn visually handicapped persons.
3. Mortise locksets shall meet or exceed requirements of series 1000 Grade 1 Operational, Grade 2 Security.
4. Strikes for mortise locks and latches (including dead locks) shall conform to ANSI A115.13. Provide beveled, armored fronts for all mortise locksets and latchsets.
5. **Manufacturers: All locksets and latch sets to be Best Access Systems. No substitutions allowed.**

B. Locks shall have all functions available in one size case, manufactured from heavy gauge steel. Cases are to be closed on all sides to protect internal parts. Locksets and latchsets shall have adjustable, beveled and armored fronts, standard 2-3/4 inch backset, convertible from one function to another, a full 3/4 inch throw anti-friction latch bolt, a 1 inch throw dead bolt with hardened steel insert.

C. All locksets with latch bolts, regardless of trim, shall be listed by Underwriters Laboratories for A and lesser labeled doors, single or pairs.

D. Locksets used with electric strikes shall have a solid one-piece stainless steel latch bolt.

E. Locksets to be used on exterior doors and doors in high humidity areas shall be of non-ferrous parts and case, brass, bronze or stainless steel.

F. Interior Lockset finish: BHMA 630 (satin stainless steel).

G. Exterior Lockset finish: BHMA 630 (satin stainless steel).

H. Lock trim lever, sectional type, shall be thru bolted through the lock case to assure correct alignment and proper operation.

I. Lock Functions: As indicated in door hardware schedule.

J. Lock Trim:

1. Description: Lever.
2. Levers: Cast.
3. Dummy Trim: Match lever lock trim and escutcheons.

K. Strikes: Provide manufacturer's standard strike for each lock bolt or latchbolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Aluminum-Frame Strike Box: Manufacturer's special strike box fabricated for aluminum framing.

L. Mortise Locks: BHMA A156.13; stamped steel case with steel or brass parts; Series 1000.

1. Basis-of-Design Product: Best Access Systems; Stanley Security Solutions, Inc., 40H Series Heavy Duty Mortise Lock, Lever and Trim style as selected by Owner.

2.9 ELECTRIC STRIKES

A. Electric Strikes: BHMA A156.31; Grade 1; with faceplate to suit lock and frame.

1. Basis-of-Design Product: Von Duprin, 6211 series.

2.10 MANUAL FLUSH BOLTS

A. General:
1. Flush bolts shall meet or exceed requirements of ANSI A156.16. Flush bolts shall be Type L24081 (ANSI A115) unless otherwise specified. Provide proper dustproof strikes conforming to ANSI A156.16, for flush bolts required on lower part of doors.
2. Face plates for cylindrical strikes shall be rectangular and not less than 1 inch (25.4 mm) by 2-1/2 inch (63.5 mm).
3. Provide in sets consisting of one top and one bottom bolt for each door. Bottom bolt shall have 12 inch (304.8 mm) long operating rod. Top bolt shall have 12 inch (304.8 mm) bolt for door heights up to 84 inch (2133.6 mm). For heights over 84 inch (2133.6 mm), increase bolt length so that operator is located no less than 73 inch (1828.8 mm) above floor.
4. Provide dust proof floor strikes for all floor bolts. Friction-fit cylindrical dustproof strikes with circular face plate may be used only where metal thresholds occur.
5. Finish: BHMA 652 (Satin chromium plated steel).
6. Provide pairs of non-rated pairs of doors with manual flushbolt and pairs of fire-rated pairs with automatic flushbolts and coordinators).
7. Provide one manufacturer for all flush bolts.

B. Manual Flush Bolts: BHMA A156.16; minimum 3/4-inch (19-mm) throw; designed for mortising into door edge.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Adams Rite Manufacturing Co; an ASSA ABLOY Group company.
b. Allegion plc.
c. Hiawatha, Inc; a division of the Activar Construction Products Group.
d. Trimco.

2.11 EXIT DEVICES

A. General:

1. Exit devices shall meet or exceed requirements and certified with ANSI/BHMA A156.3, Grade 1; functions for each opening are scheduled in hardware sets.
2. Provide flat bottom strikes for vertical rod exit devices in interior of building.
3. Finish: BHMA 630 (satin stainless steel)
4. Provide cylinder dogging for all non-rated exit devices.
5. Exit devices for fire doors shall comply with Underwriters Laboratories, Inc., requirements for Fire Exit Hardware. Submit proof of compliance.
6. Trim: Trim shall be through-bolted to the lock stile case. Levers on outside control shall match the lever design of locksets used on the Project.
7. Cylinders: To match Owner's existing System.
8. Basis of Design Product: Von Duprin "98 Series".

2.12 LOCK CYLINDERS

A. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver. Provide cylinder from same manufacturer of locking devices.

B. Standard Lock Cylinders: BHMA A156.5; Grade 1, 7-pin, permanent cores; face finished to match lockset.

1. Core Type: Interchangeable.

C. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide 10 construction master keys. **Owner to install permanent cores.**

2.13 KEYING

A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, appendix. Provide one extra key blank for each lock. Incorporate decisions made in keying conference.

1. Existing System:

a. Master key or grand master key locks to Owner's existing system.
b. Re-key Owner's existing master key system into new keying system.

B. Keys: Nickel silver.

1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:

a. Notation: "DO NOT DUPLICATE."

2.14 KEY CONTROL SYSTEM

A. Key Control Cabinet: BHMA A156.28; metal cabinet with baked-enamel finish; containing key-holding hooks, labels, two sets of key tags with self-locking key holders, key-gathering envelopes, and temporary and permanent markers; with key capacity of 150 percent of the number of locks.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Lund Equipment Co., Inc.
b. MMF Industries.
c. Telkee Inc.; Glen Riddle, PA

2. Wall-Mounted Cabinet: cabinet with hinged-panel door equipped with key-holding panels and pin-tumbler cylinder door lock.

B. Key Lock Boxes: Designed for storage of two keys.

1. Manufacturers: Subject to compliance with requirements, provide products by the following:
a. Knox Company.

2.15 ACCESSORIES FOR PAIRS OF DOORS

A. Coordinators: BHMA A156.3; consisting of active-leaf, hold-open lever and inactive-leaf release trigger; fabricated from steel with nylon-coated strike plates; with built-in, adjustable safety release; and with internal override.

B. Astragals: BHMA A156.22.

2.16 SURFACE CLOSERS

A. Surface Closers: BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm. Comply with manufacturer's written instructions for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

1. Basis-of-Design Product: LCN 4040XP Series.

2.17 MECHANICAL STOPS AND HOLDERS

A. Wall- and Floor-Mounted Stops: BHMA A156.16.

B. Convex Wall Stop:
   1. Finish: BHMA 626 (Satin chromium plated brass or bronze).
   2. Cast with convex bumper.
   3. Wood Blocking: Provide in walls for stops as specified in Division 6.
   4. Lead Expansion Shields: Provide in masonry and concrete walls for stops.
   5. Manufacturers: Subject to compliance with requirements, provide one of the following:
      a. Ives WS402
      b. Rockwood 400
      c. Trimco 1270cxcp

2.18 OVERHEAD STOPS AND HOLDERS

A. Overhead Stops and Holders: BHMA A156.8.
   1. Finish: BHMA 630 (Satin stainless steel).
   2. Non-friction hold open.
   3. Size stop to width of door.
   4. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

      a. Glynn-Johnson 900 series.
      b. Rixson 9 series.
      c. Sargent 590 series.

2.19 DOOR GASKETING

A. Door Gasketing: BHMA A156.22; with resilient or flexible seal strips that are easily replaceable and readily available from stocks maintained by manufacturer.

B. Maximum Air Leakage: When tested according to ASTM E 283 with tested pressure differential of 0.3-inch wg (75 Pa), as follows:

   1. Smoke-Rated Gasketing: 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) of door opening.
   2. Gasketing on Single Doors: 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) of door opening.
   3. Gasketing on Double Doors: 0.50 cfm per foot (0.000774 cu. m/s per m) of door opening.

C. Finish: Color as selected by Architect from manufacturer’s full line.

D. General:
   1. Provide continuous weather-strip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated or scheduled. Provide noncorrosive fasteners for exterior applications and elsewere as indicated.
      a. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
      b. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
      c. Door Bottoms: Apply to bottom of door, forming seal with floor when door is closed.
      d. Gasketing Materials: Comply with ASTM D 2000 and AAMA 701/702.
      e. Single doors: Provide gasketing at head and jambs, and bottom with threshold.

f. Pair of doors: Provide gasketing at head and jambs, meeting stiles, and bottom with threshold.
g. Smoke-Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated based on testing according to UL 1784.
h. Fire-Labeled Gasketing: 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 UL 10B or NFPA 252.
i. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency for sound ratings required, based on testing according to ASTM E 108.

E. Exterior Door Gasketing for hinge doors:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Head, Jambs, and Meeting Stiles:
1) National Guard 135N
2) Pemko 303AS
3) Reese 678C
4) Zero 8303A
b. Bottom:
1) National Guard 200NA
2) Pemko 315CN
3) Reese 772A
4) Zero 139AA
c. Threshold:
1) National Guard 8425
2) Pemko 253x3AFG
3) Reese S473A
4) Zero 626A

F. Fire / Smoke Door Gasketing:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Head, Jambs, and Meeting Stiles:
1) National Guard 5020B
2) Pemko S773
3) Reese 797
4) Zero 188S
b. Bottom – Brush Sweep:
1) National Guard 600A
2) Pemko 18061CNB
3) Reese 964C
4) Zero 8193AA

G. Sound Seal Gasketing:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Head and Jambs:
   1) National Guard 5050
   2) Pemko S88D
   3) Reese 797
   4) Zero 188S

H. Weather Sweeps: Manufacturer's standard exterior door bottom sweep with concealed fasteners on mounting strip.

2.20 THRESHOLDS

A. Thresholds: BHMA A156.21; fabricated to full width of opening indicated.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Furnished by storefront entrance manufacturer.
      b. National Guard.
      c. Reese.

2.21 SLIDING DOOR HARDWARE

A. Sliding Door Hardware: BHMA A156.14; consisting of complete sets including rails, hangers, supports, bumpers, floor guides, and accessories indicated.

   1. Furnished by sliding door manufacturer.

2.22 METAL PROTECTIVE TRIM UNITS (ARMOR PLATES, KICK PLATES, AND MOP PLATES)

A. Metal Protective Trim Units: BHMA A156.6; fabricated from 0.050-inch- (1.3-mm-) thick stainless steel; with manufacturer's standard machine or self-tapping screw fasteners.

   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

      a. Ives.
      b. Rockwood.
      c. Trimco.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance of the Work.

B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Steel Doors and Frames: For surface-applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.

B. Wood Doors: Comply with door and hardware manufacturers' written instructions.

3.3 INSTALLATION

A. Mounting Heights: Mount door hardware units at heights to comply with the following unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
2. Custom Steel Doors and Frames: HMMA 831.
3. Wood Doors: DHI's "Recommended Locations for Architectural Hardware for Wood Flush Doors."

B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.

1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

C. Hinges: Install types and in quantities indicated in door hardware schedule, but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

D. Lock Cylinders: Install construction cores to secure building and areas during construction period.

1. Replace construction cores with permanent cores as indicated in keying schedule.

E. Key Control System:

1. Key Control Cabinet: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.

2. Key Lock Boxes: Install where indicated or approved by Architect to provide controlled access for fire and medical emergency personnel.

F. Boxed Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings. Verify location with Architect.

1. Configuration: Provide one power supply for each door opening with electrified door hardware.

G. Thresholds: Set thresholds for exterior doors and other doors indicated in full bed of sealant complying with requirements specified in Section 079200 "Joint Sealants."

H. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.

3.4 FIELD QUALITY CONTROL

A. Independent Architectural Hardware Consultant: Engage a qualified independent Architectural Hardware Consultant to perform inspections and to prepare inspection reports.

1. Independent Architectural Hardware Consultant will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
2. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 70 degrees and so that closing time complies with accessibility requirements of authorities having jurisdiction.
3. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.

B. Occupancy Adjustment: Approximately six months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.6 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.7 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

3.8 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain door hardware.

3.9 DOOR HARDWARE SCHEDULE

C SERIES: Interior Control Doors

C1: Classroom, Card reader Egress fire alarm Release Non-Fire Rated
Hinges
Lockset (Classroom)
Electric Strike (tied to fire alarm Fail safe)
Closer
Wall stop
Kick plate
Card Reader
Electric Hookup
Sequence of Operation: Door secured from public side. Door unlocked in egress direction upon activation of fire alarm.

C2: Classroom, Card reader Non-Fire Rated
Hinges
Lockset (Classroom)
Electric Strike
Closer
Wall stop
Kick plate
Card Reader
Electric Hookup
Sequence of Operation: Door secured from public side. Egress is allowed at all times.

M SERIES: Manufacturers

M1: All Hardware by Manufacturer

M2: Provide cylinder core and keys

O SERIES: Office

O1: Office Non-Fire Rated
Hinges
Lockset (Office)
Wall stop

O2: Office Non-Fire Rated
Hinges
Lockset (Office)
Overhead stop
Kick plate

P SERIES: Interior Passage

P1 Classroom Sound, Non-Fire Rated
Hinges
Lockset (Classroom)
Wall stop
Sound gasketing
Automatic door bottom

P2 Classroom Sound, Non-Fire Rated
Hinges
Lockset (Classroom)
Closer
Wall stop
Sound gasketing
Automatic door bottom

P3 Classroom Sound, Non-Fire Rated
Hinges
Lockset (Classroom)
Closer
Overhead stop
Sound gasketing
Automatic door bottom
Armor Plate
Mop Plate

P4 Classroom Sound, Non-Fire Rated
Hinges
Lockset (Classroom)
Closer
Wall stop
Sound gasketing
Automatic door bottom
Armor plate
Mop Plate

P5 Deadbolt, Sound, Non-Fire Rated
Hinges
Latchset, deadbolt Lockset
Closer
Wall stop
Sound gasketing
Automatic door bottom
Kick plate

P6 Passage, Non-Fire Rated
Hinges
Latchset, passage
OH stop
Armor plate

S SERIES: Interior Storeroom

S1: Storeroom Sound, Non-Fire Rated
Hinges
Lockset (Storeroom)
Wall stop
Sound gasketing
Automatic door bottom

S2: Storeroom Sound, Fire Rated Opening
Hinges
Lockset (Storeroom)
Closer
Wall stop
Sound gasketing
Automatic door bottom

S3: Office Non-Fire Rated
Hinges
Lockset (Office)
Wall stop
Armor plate

S4: Storeroom Non-Fire Rated
Hinges
Lockset (Storeroom)
Wall stop
Kick Plate

S5: Double Storeroom Non-Fire Rated
Hinges
Lockset (Storeroom)
Manual flush bolts
2 Overhead stop (hold open)

T SERIES: Toilet Room

T1: Privacy Non-Fire Rated
Hinges
Lockset Privacy (occupancy indicator)
Wall stop
Kick plate
Mop plate
Coat hook

X SERIES: EXTERIOR Non-Fire Rated

X1: Power Opener Exit Device
Hinges
Electric Hinge
Rim Exit Device (Classroom) electric retract (cylinder dogging)
Power Opener Closer
Position indicator coordinator
Overhead stop
Push Pull
Card Reader
Threshold
Weatherstripping
Electric Hookup
Door Contact
Sequence of Operation: Operation electrically controlled. Door normally closed and locked. Entry authorization by card reader or key to activate outside door switch. Door switch activation retracts rim device and activates power opener. Egress is allowed at all times. Inside door switch always active. Upon loss of power, door remains locked (fail secure)

X2: Vestibule Power Opener
Hinges
Power Opener Closer
Push Pull
Electric Hookup
Door Contact

Sequence of Operation: Operation electrically controlled. Door normally closed. Door opened by switch or sequenced with exterior door. Egress is allowed at all times. Inside door switch always active.

X3 Aluminum Entrance
Hinges - continuous
Lockset (Entrance)
closer
Overhead stop
Threshold
Weatherstripping
Door Contact
Sweep

X4 HM Entrance
Hinges - continuous
Lockset (Entrance)
Closer
Overhead stop
Threshold
Weatherstripping
Door Contact

X5 HM Entrance Card Reader
Hinges - continuous
Electronic key pad lockset (Entrance)
Closer
Overhead stop
Threshold
Weatherstripping
Door Contact

X6 HM Double Entrance
(2) Hinges – continuous
Lockset (Entrance)
Manual flush bolts
(1) Closer
(2) Overhead stop (hold open)
Threshold
(2) Weatherstripping
(2) Armored plates
Door Contact
(2) Sweeps
Astragal

X7 Aluminum Entrance
Hinges - continuous
Latchset, Deadbolt
Closer
Overhead stop

Threshold
Weatherstripping
Kick Plate
Door Contact

X8 Aluminum Entrance Exit Device
Hinges - continuous
Rim Exit Device (Classroom) (cylinder dogging)
Closer
Overhead stop
Pull
Threshold
Weatherstripping
Door Contact

X9 HM Storeroom
Hinges
Lockset (Storeroom)
Overhead stop
Threshold
Weatherstripping
Door Contact

END OF SECTION 087100

SECTION 101419 - DIMENSIONAL LETTER SIGNAGE

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cutout dimensional characters.
2. **Illuminated,** fabricated channel dimensional characters.

1.2 **DEFINITIONS**

A. **Illuminated: Illuminated by lighting source integrally constructed as part of the sign unit.**

1.3 COORDINATION

A. Furnish templates for placement of electrical service embedded in permanent construction by other installers.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Sustainable Design Submittals:
1. Product Data: For adhesives, indicating VOC content.
2. Laboratory Test Reports: For adhesives, indicating compliance with requirements for low-emitting materials.

C. Shop Drawings: For signs.

1. Include fabrication and installation details and attachments to other work.
2. Show sign mounting heights, locations of supplementary supports to be provided by other installers, and accessories.
3. Show message list, typestyles, graphic elements, and layout for each sign at least half size.

D. Samples for Verification: For each type of sign assembly showing all components and with the required finish(es), in manufacturer's standard size unless otherwise indicated and as follows:

1. Dimensional Characters: Half-size Sample of each type of dimensional character.
2. Full-size Samples, if approved, will be returned to Contractor for use in the Project.

E. Product Schedule: For dimensional letter signs. Use same designations indicated on Drawings or specified.

F. Delegated-Design Submittal: For signs indicated in "Performance Requirements" Article.

1. Include structural analysis calculations for signs indicated to comply with design loads;

signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Sample Warranty: For special warranty.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For signs to include in maintenance manuals.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

1.8 FIELD CONDITIONS

A. Field Measurements: Verify locations of electrical service embedded in permanent construction by other installers by field measurements before fabrication, and indicate measurements on Shop Drawings.

1.9 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Deterioration of finishes beyond normal weathering.
b. Separation or delamination of sheet materials and components.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 – PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design sign structure and anchorage of dimensional character sign type(s) according to structural performance requirements.

B. Structural Performance: Signs and supporting elements shall withstand the effects of gravity and other loads within limits and under conditions indicated.

1. Uniform Wind Load: As indicated on Drawings.
2. Other Design Load: As indicated on Drawings

C. Thermal Movements: For exterior fabricated channel dimensional characters, allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

D. **Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.**

2.2 DIMENSIONAL CHARACTERS

A. Cutout Characters: Characters with uniform faces; square-cut, smooth, eased edges; precisely formed lines and profiles; and as follows:
1. Character Material: Sheet or plate aluminum.
2. Character Height: As indicated on Drawings.
3. Thickness: As indicated on Drawings.
4. Finishes:

a. Integral Aluminum Finish: Anodized color as selected by Architect from full range of industry colors and color densities

5. Mounting: As indicated on Drawings.

B. Fabricated Channel Characters: Metal face and side returns, formed free from warp and distortion; with uniform faces, sharp corners, and precisely formed lines and profiles; internally braced for stability, to meet structural performance loading without oil-canning or other surface deformation, and for securing fasteners; and as follows.

1. **Illuminated Characters: Lighted character construction with tube lighting, including transformers, insulators, and other accessories for operability, with provision for servicing and concealing connections to building electrical system. Use tight or sealed joint construction to prevent unintentional light leakage. Space lamps apart from each other and away from character surfaces as needed to illuminate evenly.**

a. **Power: 120 V, 60 Hz, 1 phase, 15 A.**
b. **Weeps: Provide weep holes to drain water at lowest part of exterior characters**

2. Character Material: Sheet or plate aluminum.
3. Material Thickness: Manufacturer's standard for size and design of character.
4. Character Height: As indicated on Drawings.
5. Character Depth: As indicated on Drawings.
6. Finishes:

a. Integral Aluminum Finish: Anodized color as selected by Architect from full range of industry colors and color densities.

7. Mounting: Manufacturer's standard for size and design of character.
a. Hold characters at manufacturer's recommended distance from wall surface.
8. Typeface: Helvetica

2.3 DIMENSIONAL CHARACTER MATERIALS

A. Aluminum Castings: ASTM B 26/B 26M, alloy and temper recommended by sign manufacturer for casting process used and for type of use and finish indicated.

B. Aluminum Sheet and Plate: ASTM B 209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

C. Aluminum Extrusions: ASTM B 221, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

2.4 ACCESSORIES

A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signs, noncorrosive and compatible with each material joined, and complying with the following:

1. Use concealed fasteners and anchors unless indicated to be exposed.
2. Exposed Metal-Fastener Components, General:

    a. Fabricated from same basic metal and finish of fastened metal unless otherwise indicated.

3. Sign Mounting Fasteners:

    a. Concealed Studs: Concealed (blind), threaded studs welded or brazed to back of sign material, screwed into back of sign assembly, or screwed into tapped lugs cast integrally into back of cast sign material, unless otherwise indicated.
    b. Projecting Studs: Threaded studs with sleeve spacer, welded or brazed to back of sign material, screwed into back of sign assembly, or screwed into tapped lugs cast integrally into back of cast sign material, unless otherwise indicated.

B. Adhesive: As recommended by sign manufacturer.

2.5 FABRICATION

A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.

1. Preassemble signs and assemblies in the shop to greatest extent possible. Disassemble signs and assemblies only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation; apply markings in locations concealed from view after final assembly.
2. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
3. Comply with AWS for recommended practices in welding and brazing. Provide welds and brazes behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded and brazed connections of flux, and dress exposed and contact surfaces.Conceal connections if possible; otherwise, locate connections where they are inconspicuous.
4. Internally brace dimensional characters for stability, to meet structural performance loading without oil-canning or other surface deformation, and for securing fasteners.
5. Provide rabbets, lugs, and tabs necessary to assemble components and to attach to

existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match sign finish.

6. **Conceal connections if possible; otherwise locate connections where they are inconspicuous**

B. Brackets: Fabricate brackets, fittings, and hardware for bracket-mounted signs to suit sign construction and mounting conditions indicated. Modify manufacturer's standard brackets as required.

1. Aluminum Brackets: Factory finish brackets with baked-enamel or powder-coat finish to match sign-background color color unless otherwise indicated.

2.6 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Directional Finishes: Run grain with long dimension of each piece and perpendicular to long dimension of finished trim or border surface unless otherwise indicated.

D. Organic, Anodic, and Chemically Produced Finishes: Apply to formed metal after fabrication but before applying contrasting polished finishes on raised features unless otherwise indicated.

2.7 ALUMINUM FINISHES

A. Clear Anodic Finish: AAMA 611, Class I, 0.018 mm or thicker.

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.

B. Verify that sign-support surfaces are within tolerances to accommodate signs without gaps or irregularities between backs of signs and support surfaces unless otherwise indicated.

C. **Verify that electrical service is correctly sized and located to accommodate signs.**

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.

1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
2. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.
3. Corrosion Protection: Coat concealed surfaces of exterior aluminum in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

B. Mounting Methods:

1. Concealed Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.

    a. Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place sign in position and push until flush to surface, embedding studs in holes. Temporarily support sign in position until adhesive fully sets.
    b. Thin or Hollow Surfaces: Place sign in position and flush to surface, install washers and nuts on studs projecting through opposite side of surface, and tighten.

2. Projecting Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.

    a. Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place spacers on studs, place sign in position, and push until spacers are pinched between sign and substrate, embedding the stud ends in holes. Temporarily support sign in position until adhesive fully sets.
    b. Thin or Hollow Surfaces: Place spacers on studs, place sign in position with spacers pinched between sign and substrate, and install washers and nuts on stud ends projecting through opposite side of surface, and tighten.

3. Through Fasteners: Drill holes in substrate using predrilled holes in sign as template. Countersink holes in sign if required. Place sign in position and flush to surface. Install through fasteners and tighten.
4. Back Bar and Brackets: Remove loose debris from substrate surface and install backbar or bracket supports in position, so that signage is correctly located and aligned.

3.3 ADJUSTING AND CLEANING

A. Remove and replace damaged or deformed characters and signs that do not comply with specified requirements. Replace characters with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.

B. Remove temporary protective coverings and strippable films as signs are installed.

C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION

SECTION 12 3661.16 - SOLID SURFACING COUNTERTOPS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Solid surface material countertops and backsplashes.
2. Solid surface window sills.

A. Sustainable Design Submittals:
1. Chain-of-Custody Certificates: For certified wood products. Include statement of costs.
2. Product Data: For adhesives, indicating VOC content.
3. Laboratory Test Reports: For adhesives, indicating compliance with requirements for low-emitting materials.
4. Laboratory Test Reports: For composite wood products, indicating compliance with requirements for low-emitting materials.

1.2 ACTION SUBMITTALS

A. Product Data: For countertop materials.

B. Shop Drawings: For countertops. Show materials, finishes, edge and backsplash profiles, methods of joining, and cutouts for plumbing fixtures.

1. Show locations and details of joints.
2. Show direction of directional pattern, if any.

C. Samples for Verification: For the following products:

1. Countertop material, 6 inches square.

1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For fabricator.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: For solid surface material countertops to include in maintenance manuals. Include Product Data for care products used or recommended by Installer and names, addresses, and telephone numbers of local sources for products.

1.5 QUALITY ASSURANCE

A. Fabricator's Qualifications: Engage a qualified fabricator, acceptable to the Architect, ~~that is an AWI member firm~~; that has not less than 10 years' experience in the custom fabrication and installation of architectural woodwork comparable to that indicated, on not less than 5 projects, acceptable to the Architect, that are comparable in material, design, and extent to that indicated; that has production facility with capacity to produce required units without causing delay in the Work; and whose work has resulted in construction with a record of successful in-service performance. **The fabricator shall comply with AWI standards**

B. Installer Qualifications: Fabricator of countertops.

C. Mockups: Build mockups to demonstrate aesthetic effects and to set quality standards for fabrication and execution.

1. Build mockup of typical countertop as shown on Drawings.
2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 FIELD CONDITIONS

A. Field Measurements: Verify dimensions of countertops by field measurements after base cabinets are installed but before countertop fabrication is complete.

1.7 COORDINATION

A. Coordinate locations of utilities that will penetrate countertops or backsplashes.

PART 2 - PRODUCTS

2.1 SOLID SURFACE COUNTERTOP MATERIALS, SS-1

A. Quality Standard: Unless otherwise indicated, comply with the Architectural Woodwork Standards for grades of countertops indicated for construction, finishes, installation, and other requirements.

B. Solid Surface Material: Homogeneous-filled plastic resin complying with IFSA 2-01.

1. Products and Manufacturers: Subject to compliance with requirements, provide solid surfacing materials matching Architect's samples, which have been selected from the product lines and manufacturers indicated in Finish Schedule on Drawings, or comparable products as approved by Architect.

C. Plywood: Exterior softwood plywood complying with DOC PS 1, Grade C-C Plugged, touch sanded.

D. Composite Wood Products: Verify products are made using ultra-low-emitting formaldehyde resins, as defined in the California Air Resources Board's "Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products," or are made with no added formaldehyde.

2.2 COUNTERTOP FABRICATION

A. Fabricate countertops according to solid surface material manufacturer's written instructions and to the AWI/AWMAC/WI's "Architectural Woodwork Standards."

1. Grade: Premium.

B. Countertops: **1/2**-inch-thick, solid surface material with front edge built up with same material.

C. Backsplashes: **1/2**-inch-thick, solid surface material.

D. Fabricate tops with shop-applied edges unless otherwise indicated. Comply with solid surface material manufacturer's written instructions for adhesives, sealers, fabrication, and finishing.

1. Fabricate with loose backsplashes for field assembly.

E. Joints: Fabricate countertops in sections for joining in field.

1. Joint Locations: Not within 18 inches of a sink and not where a countertop section less than 36 inches long would result, unless unavoidable.

F. Cutouts and Holes:

1. Undercounter Plumbing Fixtures: Make cutouts for fixtures in shop using template or pattern furnished by fixture manufacturer. Form cutouts to smooth, even curves.

a. Provide vertical edges, slightly eased at juncture of cutout edges with top and bottom surfaces of countertop and projecting 3/16 inch into fixture opening.

2. Fittings: Drill countertops in shop for plumbing fittings, undercounter soap dispensers, and similar items.

2.3 SOLID-SURFACE-MATERIAL WINDOW SILLS

A. Window sills: 1/2-inch thick, solid surface material **with the edge built up with the same material.**

B. Fabrication: Fabricate window sills in one piece unless otherwise indicated. Comply with solid-surface-material manufacturer’s written instructions for adhesives, sealers, fabrication, and finishing.

2.4 INSTALLATION MATERIALS

A. Adhesive: Product recommended by solid surface material manufacturer.
a. Verify adhesives have a VOC content of 70 g/L or less.
b. Verify adhesive complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

B. Sealant for Countertops: Comply with applicable requirements in Section 07 9200 "Joint Sealants."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates to receive solid surface material countertops and conditions under which countertops will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of countertops.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install countertops level to a tolerance of 1/8 inch in 8 feet, 1/4 inch maximum. Do not exceed 1/64-inch difference between planes of adjacent units.

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

C. Fasten subtops to cabinets by screwing through subtops into cornerblocks of base cabinets. Shim as needed to align subtops in a level plane.

D. Secure countertops to subtops with adhesive according to solid surface material manufacturer's written instructions. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.

E. Bond joints with adhesive and draw tight as countertops are set. Mask areas of countertops adjacent to joints to prevent adhesive smears.
   1. Clamp units to temporary bracing, supports, or each other to ensure that countertops are properly aligned and joints are of specified width.

F. Install backsplashes and end splashes by adhering to wall and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears.

G. Install aprons to backing and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears. Fasten by screwing through backing. Predrill holes for screws as recommended by manufacturer.

H. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while cutting. Make cutouts to accurately fit items to be installed, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.

I. Apply sealant to gaps at walls; comply with Section 07 9200 "Joint Sealants."

END OF SECTION

SECTION 13 19 13 – KENNEL ENCLOSURES AND GATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Include:

1. Kennel Enclosures and Gates.
2. Ceiling Mesh Panels
3. Resting Benches

B. Related Requirements:
1. Section 04 22 00 "Concrete Block Masonry" for wall-mounted support.
2. **Section 079200 - Joint Sealants**

1.2 ACTION SUBMITTALS

A. Submit Shop Drawings, including details and sample of each item of equipment and hardware for architect's approval.
B. Submit the product data, including complete manufacturer catalog and data sheet, complete parts list, and installation requirements for each accessory item specified.
C. Prior to fabrication, provide a sample kennel including partitions, guillotine door with operation mechanism, and gate.

1.3 QUALITY ASSURANCE

A. Installer’s responsibility includes verifying Shop Drawing measurements with as-built rough-in measurements.
1. **Note typical kennel floor slopes ¼” per foot. Maximum 1/8” between bottom of side panel frame and kennel floor.**
2. **Apply joint sealant beneath kennel side wall dividers to ensure no cross contamination between kennels.**
B. Installer to provide a letter from the manufacturer certifying that he is experienced in installing their materials.
C. Manufacturer to provide a letter certifying that the installation of their product on this project is consistent with their recommended installation procedures.
D. Necessary miscellaneous metal, means or methods not shown in the Drawings for complete installations per the scope of work in the Project.

1.3 DELIVERY, STORAGE AND HANDLING

A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURER'S

A. **Basis of Design** Per Schedule in Drawings.
   1. Mason Company, animalhealth@midmark.com, 260 Depot St., Leesburg, OH 45135 (800) 543-5567
   2. Shor-Line, ncentralterritory@shor-line.com, 511 Osage Avenue, Kansas City, Kansas 66105 (800) 444-1579
   3. KennelDoors.com, kenneldoors.com, 3170 Airport Rd, La Crosse, WI 54603, (800) 829-7876
   4. **Suburban Surgical Co. Inc., sales@ssciusa.com 275 12th Street, Wheeling, IL 60090, (847) 777-9800**

2.2 KENNEL EQUIPMENT

A. Kennel Doors

   1. Single stall fronts with full width door with one-way SSK latch. All gates shall be hinged by the pivotal method and swing 180 degrees.
   2. Transfer door to exterior: Locking, insulated guillotine door with weather baffles and pully mechanism to facilitate remote operation.

B. Ceiling Panels

   1. Galvanized steel wire mesh in Dog Isolation and exterior dog isolation runs.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates including ~~welded hollow metal frames~~, blocking and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

B. Examine equipment before installation. Reject equipment that is wet, moisture damaged, mechanically damaged, cosmetically damaged and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. In accordance with strict conformity with the manufacturer's recommendations, the layout shown on Drawings, **and in conformance with the Kennel Enclosure and Gate Schedule**.

B. Furnish necessary blocking, filler pieces, angles, moldings, and other finish items for complete installation and faultless operation of the equipment.

3.3 ADJUST AND CLEAN

A. Adjust and clean the operating hardware for each gate and guillotine door. Lubricate moving parts with lubricant recommended by manufacturer. Replace units which cannot be adjusted to operate freely and smoothly.

PART 4 - KENNEL ENCLOSURES AND GATES

A. Schedule
- **1. Dog Adoption 08 – all kennels**
  - **a. 3’ standard run clear glass door**
  - **b. 4’ FRP/2’ wire side panel**
- **2. Dog Holding 15 - 1) 3’x 5’ kennel**
  - **a. 3’ standard run wire mesh door**
  - **b. 4’ FRP/2’ wire side panel**
  - **c. Ceiling mesh panel**
- **3. Dog Holding 16A – 3) 3’x6’ kennels connected to exterior**
  - **a. 3’ standard run wire mesh door**
  - **b. 6’ FRP side panel**
  - **c. Ceiling mesh panel**
  - **d. 14” x 20” insulated guillotine door w/weather baffle and pulley system operable at kennel door**
- **4. Dog Holding 16A – 4) 3’x6’ kennels**
  - **a. 3’ standard run wire mesh door**
  - **b. 4’ FRP/2’ wire side panel/transfer door (2)**
  - **c. Ceiling mesh panel**
- **5. Dog Holding 16B – 7) 3’x 6’ kennels**
  - **a. 3’ standard run wire mesh door**
  - **b. 6’ FRP wire side panel/transfer door (3)**
  - **c. Ceiling mesh panel**
- **6. Large Dog Holding 16C – 5) 4’x 6’ kennels**
  - **a. 3’ standard run wire mesh door**
  - **b. 6’ FRP front panel**
  - **c. 6’ FRP side panel (2)**
  - **d. 6’ FRP side panel w/ transfer door (2)**
- **7. Dog Intake kennels 22 (2 - 3’ x 5’ kennels)**
  - **a. 3’ standard run frosted glass door**
  - **b. 6’ FRP front panel**
  - **c. 6’ FRP side panel**
  - **d. Ceiling mesh panel**

END OF SECTION 13 19 13

SECTION 13 19 20 – CAGES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Stainless Steel and Fiberglass Cages, including cage, viewing screen, gates, and accessories as required by Drawings and as specified in this section.

B. Related Requirements:

1. Section 04 22 00 "Concrete Block Masonry" for support wall-mounted support.
2. Section 09 29 00 "Gypsum Board" for wall-mounted support.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.
1. Submit Shop Drawings, including details and sample of each item of equipment and hardware for Architect's approval.
2. Submit the product data, including complete manufacturer catalog and data sheet, complete parts list, and installation requirements for each accessory item specified.

1.3 QUALITY ASSURANCE

A. Installer’s responsibility includes verifying Shop Drawing measurements with as-built rough-in measurements.

B. Manufacturer to provide a letter certifying that the installation of their product on this project is consistent with their recommended installation procedures.

1.3 DELIVERY, STORAGE AND HANDLING

A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURER’S

A. Per Schedule in Drawings.

1. Mason Company, animalhealth@midmark.com, 260 Depot St., Leesburg, OH 45135 (800) 543-5567
2. Midmark, animalhealth@midmark.com, 1001 Asbury Dr., Buffalo Grove, IL 60089 (847) 415 9800
3. **Suburban Surgical Co. Inc., sales@ssciusa.com 275 12th Street, Wheeling, IL 60090, (847) 777-9800**

2.2 CAGES

A. Per schedule in Drawings
B. Trim accessories for finished appearance between cages and surrounding wall.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates including welded hollow-metal frames, blocking and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

B. Examine equipment before installation. Reject equipment that is wet, moisture damaged, mechanically damaged, cosmetically damaged and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. In accordance with layout shown on Drawings and in strict conformity with the manufacturer's recommendations.

B. Furnish necessary blocking, filler pieces, angles, moldings, and other finish items for complete installation and faultless operation of the equipment.

END OF SECTION 13 19 20