

# Plan Review Only



## Commercial Building Permit Application

Laramie County Planning and Development Office

Building Division  
3966 Archer Pkwy Cheyenne, WY 82009  
Phone: 307-633-4512 | Fax: 307-633-4519  
building@laramiecounty.com

INCOMPLETE APPLICATIONS CAN NOT BE ACCEPTED

Rcvd By ALP Rcvd Date 12/14/15 PR # 15-00973 BP # \_\_\_\_\_

Address of Project		TBD South Ave B-6, Cheyenne, WY 82007			New Address?	yes	YES	no
Name of Business		Crow Creek Apartments, LLC			<u>20005897</u>			
Land Owner Information								
If there are additional owners (such as a Business Owner), please list on separate sheet and attach								
Name	Crow Creek Apartments, LLC			Phone				
Address	2345 E. 2nd Street			City	Casper			
Email				State	Wyoming	Zip	82609	
Contractor Information								
Name	NONE: Project will be out to bid 11/30/15			Phone				
Address				City				
Email				State		Zip		
Primary Contact Person				Phone				
Electrician				Phone				
Property Information								
Legal Description (Subdivision, Block and Lot or Tract)								
All of track 12, Wallick and Murray Gardens, Laramie County, WY								
Zone District	MU	Township		Range		Section		Map Page
Project Information								
Structure Use	Multiresidential (Buildings A & B)			Prior Use	None			
Check all that apply and fill in square footage areas specific to this project								
Purpose of Permit	New	yes	Addition		Renovation			
	Other		Demolish		Move			
	Fire Sprinklers?		yes					
Foundation Type	slab on grade		crawl space	yes	block / pier / caisson		basement	
Bldg area square footage	1st floor	A: 12,092 sf B: 11,478 sf	2nd floor	A: 12,092 sf B: 11,478 sf	other	3rd floor A: 8,212 sf B: 4,332 sf	mech/entry A: 3,711 sf B: 3,414 sf	
Design Occupancy Load	A: 178 B: 154			Project Includes: <input checked="" type="checkbox"/> Building <input checked="" type="checkbox"/> Plumbing <input checked="" type="checkbox"/> Mechanical <input checked="" type="checkbox"/> Electrical <input checked="" type="checkbox"/> Gas				
Description of Work: Complete description of the work done including any plumbing, mechanical (Heating, ventilation or air conditioning), electrical, fire sprinkler or alarm. (Work is not included in the permit unless description in this scope of work.)								
32 Unit (Building A) and 28 Unit (Building B) multi-residential buildings. 124 parking spaces provided. 6 lower units are ADA compliant.								
By my signature and under penalty of perjury, I hereby certify that I am the owner of the referenced property, or the owner's authorized agent. I have read and examined this application and know the same to be true and correct. All provisions or laws and ordinances governing this type of work will be complied with, whether specified herein or not. The issuance of a permit does not presume to give authority to violate or cancel the provisions of any state or local law regulating construction, or guarantee issuance of a well or septic permit, this permit becomes null and void if work or construction authorized is not commenced within 180 days, unless prior authorization has been issued by this office. This permit expires 1 year from the date of issuance providing the 1st inspection has occurred within the initial 180 day period. I understand that occupying this structure prior to obtaining a Certificate of Occupancy is against the law. Failure to comply may result in a \$750 fine with each day of occupancy being a								
Signature of Owner / Agent		<u>James O. Grenfell</u>			Date	<u>Nov. 24, 15</u>		
Printed Name		James Grenfell						
Valuation (cost of project)		\$7,870,000			Approved			
Fees	BP Fee		PR Fee					
Check #		Cash		Credit Card		Total Fees		

















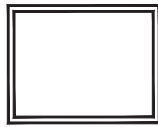
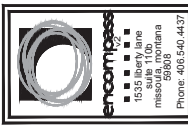








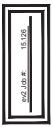




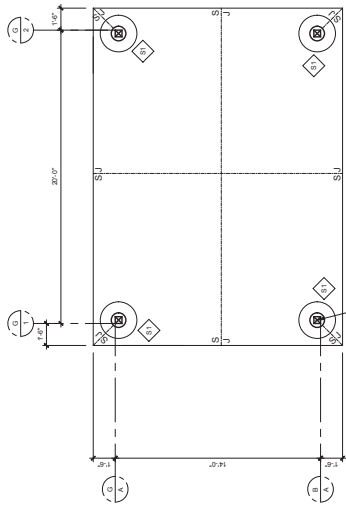
MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
 CHEYENNE, WYOMING



DATE: 11.25.20  
 SHEET: 11.25.20  
 SITE PLAN  
 DETAILS



A1.2

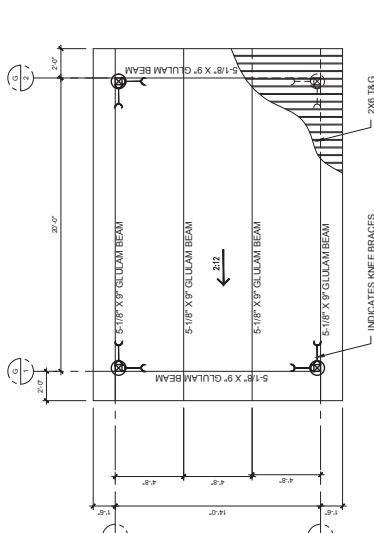


6x6 COLUMN SHOWN FOR CLARITY  
 EXPANSION JOINT REQUIRED AT ALL SLAB TO COLUMN JOINTS

3 Pavilion Foundation Plan  
 SCALE: 1/4" = 1'-0"

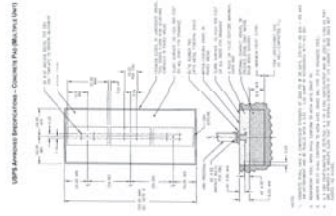
Sonotube Schedule

- SONOTUBE W/B F28 Pavilion
- 12" dia. W/ (3) #4'S VERT & #7 TIES @ 10" O.C. W/ (3) @ 4" O.C.
- DEPTH IS 3'-6" MIN. BELOW GRADE
- USE 6x6 POST IS TO SET AT TOP WITH SIMPSON POST BASE AND CAP

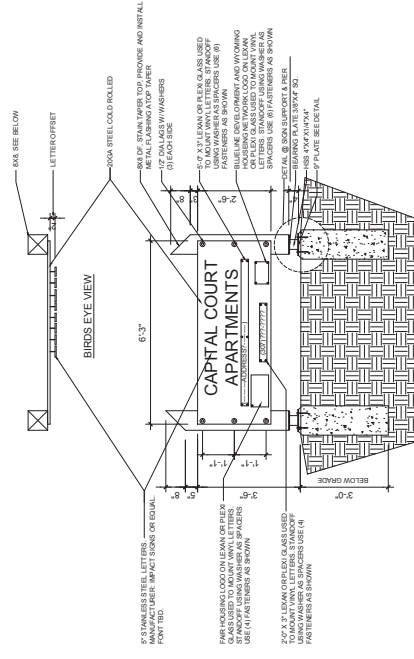


INDICATES KNEE BRACES  
 2 PER COLUMN TYPICAL

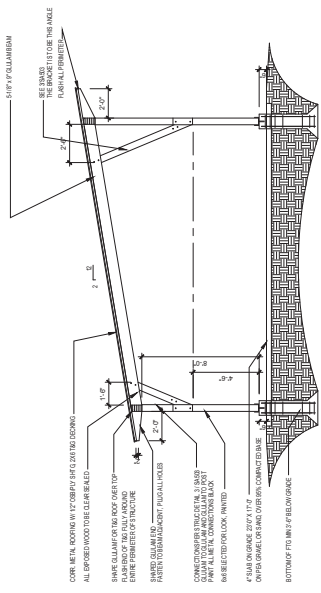
2 Pavilion Roof Framing Plan  
 SCALE: 1/4" = 1'-0"



7 USPS MailBox Detail  
 See Site Plan for location



8 Monument Sign Detail  
 SCALE: NTS



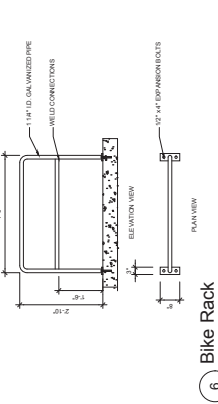
1 Pavilion Section  
 See Site Plan for location  
 SCALE: 1/4" = 1'-0"



4 Pavilion Detail  
 See Site Plan for location  
 Wood frame and Corrugated Metal Roofing, Concrete Slab



5 Play Equipment  
 See Site Plan for location  
 Commercial Equipment, See cutsheet



6 Bike Rack  
 See Site Plan for location











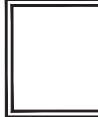












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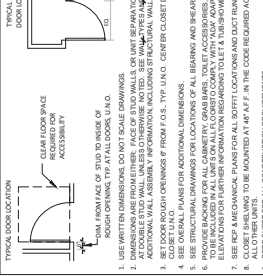
DATE: 11.25.23  
 SHEET: 11.25.23

THIRD FLOOR PLAN  
 BUILDING B

15.10.23

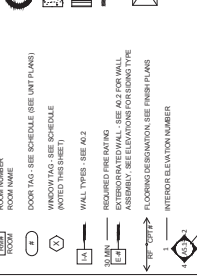
A2.8

**General Notes - Building Plan**



1. USE WRITTEN DIMENSIONS. DO NOT SCALE DRAWINGS.
2. AT DOUBLE STUD WALLS, UNLESS OTHERWISE NOTED, SEE ARCHITECTURAL DRAWINGS FOR FINISHES.
3. SEE DOOR SCHEDULE FOR FINISHES, TYPES, AND OPERATIONS. SEE SCHEDULE FOR ADDITIONAL DIMENSIONS.
4. SEE STRUCTURAL DRAWINGS FOR LOCATIONS OF ALL BEARINGS AND BEAR WALLS.
5. PROVIDE BACKING FOR ALL CABINETS, COUNTERS, TOILET ACCESSORIES, TRANSFER BENCHES, ETC. BACKING SHALL BE 2x4 OR 2x6 UNLESS OTHERWISE NOTED. SEE ARCHITECTURAL DRAWINGS FOR FINISHES.
6. PROVIDE MECHANICAL PLANS FOR ALL SUPPORT LOCATIONS AND DUCT RUNS. TYP. MECHANICAL PLANS FOR ALL OTHER ITEMS.
7. SEE SCHEDULE FOR FINISHES, TYPES, AND OPERATIONS. SEE SCHEDULE FOR ADDITIONAL DIMENSIONS.
8. ALL OTHER ITEMS.
9. PROVIDE MECHANICAL PLANS FOR ALL SUPPORT LOCATIONS AND DUCT RUNS. TYP. MECHANICAL PLANS FOR ALL OTHER ITEMS.
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13. VERIFY WITH MANUFACTURER FOR WALL LOCATIONS WITH ARCHITECT.
14. VERIFY WITH MANUFACTURER FOR WALL LOCATIONS WITH ARCHITECT.
15. PROVIDE PIPING AT ALL WALLS ADJACENT TO CEMENTitious MATERIALS.
16. PROVIDE GARAGE DOOR OPENS @ ALL VEHICLES.
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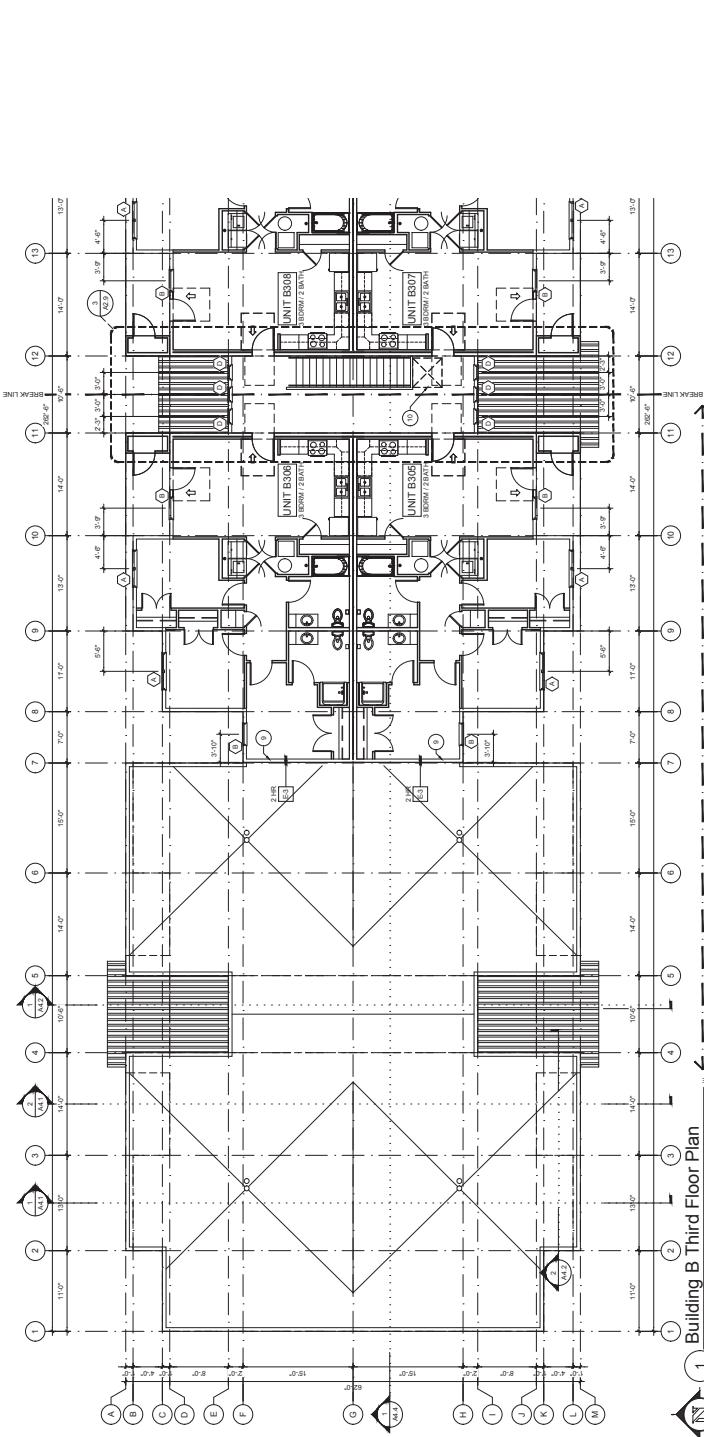
**Legend - Building Plan**



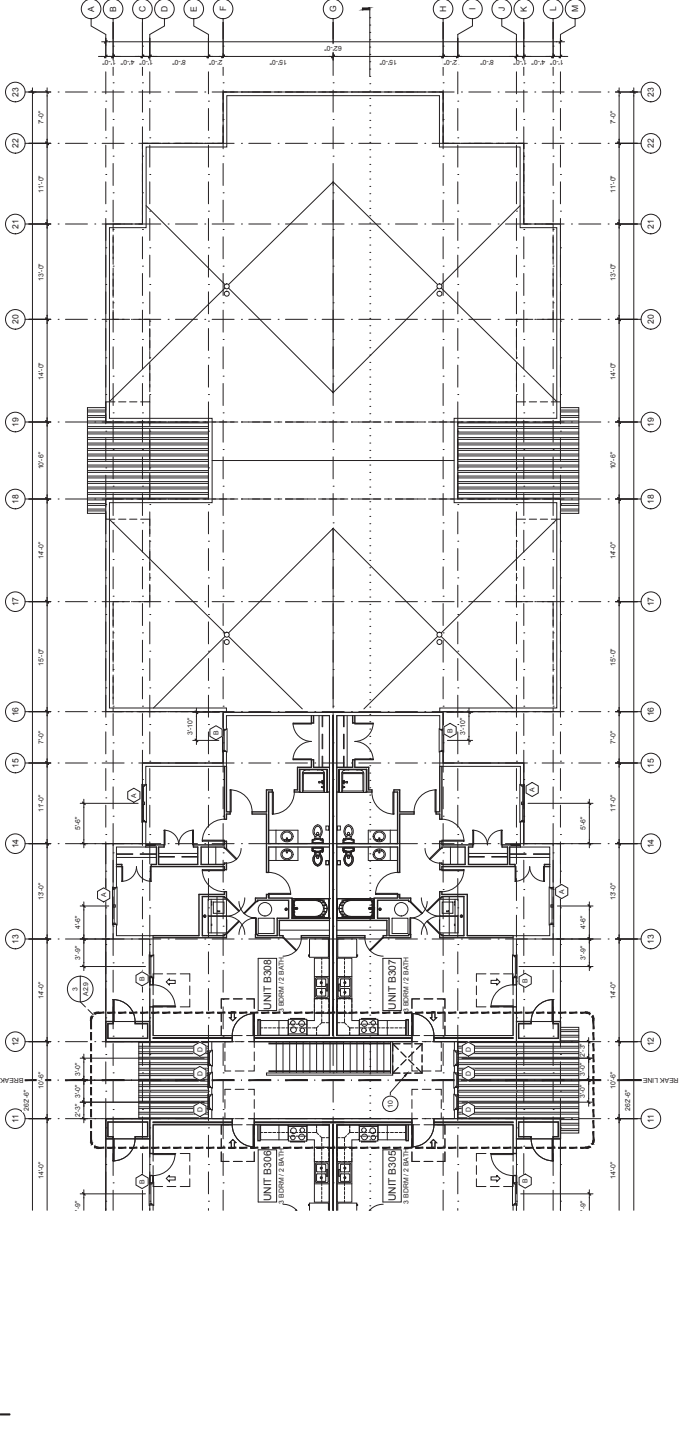
- ROOM NUMBER  
 ROOM NAME  
 DOOR TAG - SEE SCHEDULE (SEE UNIT PLANS)  
 WINDOW TAG - SEE SCHEDULE (SEE UNIT PLANS)  
 WALL TYPES - SEE A2.2  
 REQUIRED FRAMING  
 EXTRUDED INSULATION - SEE A2.2 FOR WALL ASSEMBLY. SEE ELEVATIONS FOR SLOPE TYPE  
 FLOOR ELEVATION NUMBER  
 SHEET NUMBER  
 EGRESS WINDOW. SEE WINDOW SCHEDULE  
 TEMPERED GLASS. SEE WINDOW SCHEDULE  
 FLOOR DRAIN. SEE MECH  
 SLAB JOINT PROVIDE BELT  
 2" DEEP WIRE SHELF IN CLOSET KNOCK. 3/4" LONG ADJUSTABLE WALL MOUNTED STANDARDS.  
 SECTION/CUT  
 GRID LINE

**Keyed Notes - Building Plan**

1. FIRE RATED ASSEMBLY - ACTIVE. SEE SECTIONS.
2. CONCRETE ACCESS LOCATION. SEE DETAILS.
3. CONCRETE WALLS TO BE INSULATED. SEE DETAILS.
4. ACTIVE LOCKER SYSTEMS REQUIRED. SEE DETAILS.
5. ACTIVE LOCKER SYSTEMS REQUIRED. SEE DETAILS.
6. FIRE RISER & WATER SERVICES LOCATION. SEE MECHANICAL AND CIVIL.
7. ROOF TO WALL FLASHING REQUIRED PER MANUFACTURER.
8. GUTTERS REQUIRED @ ALL DOWNSPOUT ROOF EDGES.
9. 2" R/W WALL LOCATION. SEE PLAN AND SECTION DETAILS A4.1.2.4.3.
10. MEMBRANE ROOFING. SEE SECTIONS.
11. CONCRETE PAD 4" x 4" x 8" WITH FIRE RESISTIVE THICKENED EDGE AT PERIMETER MEET CONNECTION AND UNDERLAY MATERIAL PER PERSONAL REPORT.
12. COVER 3" ROOF WITH ICE & WATER BARRIER WITH ENTRY.



1 Building B Third Floor Plan

























MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
 CHEYENNE, WYOMING



FORMULEEET 11.15.18  
 BUILDING  
 ELEVATIONS  
 BUILDING A

022.006.00 10.10.18

**A3.1**

- Keyed Notes - Exterior Elevations**
- 1 4" HIGHWOOD RAILING STAIN TYP.
  - 2 BRINKLE COVER RIGID VERT. SIEE
  - 3 VALLEY FLASHING SEE DETAIL TAB 3.1
  - 4 DECORATIVE WOOD BRACKET
  - 5 APPOINT 1/8" SHIMMEL INDICATING
  - 6 2" METAL CLIP
  - 7 4" HIGHWOOD RAILING STAIN TYP.
  - 8 BRINKLE COVER RIGID VERT. SIEE
  - 9 VALLEY FLASHING SEE DETAIL TAB 3.1
  - 10 DECORATIVE WOOD BRACKET
  - 11 APPOINT 1/8" SHIMMEL INDICATING
  - 12 2" METAL CLIP
  - 13 4" HIGHWOOD RAILING STAIN TYP.
  - 14 BRINKLE COVER RIGID VERT. SIEE
  - 15 VALLEY FLASHING SEE DETAIL TAB 3.1
  - 16 DECORATIVE WOOD BRACKET
  - 17 APPOINT 1/8" SHIMMEL INDICATING
  - 18 2" METAL CLIP

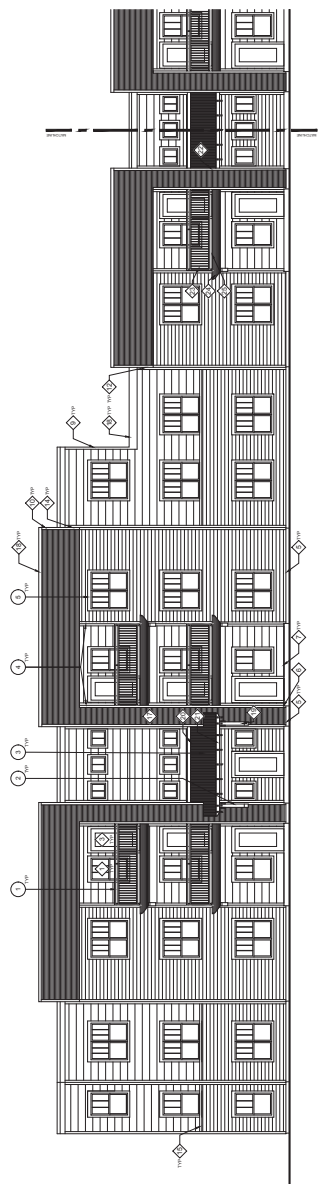
- Paint Schedule**
- 191 PAINT TO BE SELECTED BY OWNER
  - 192 PAINT TO BE SELECTED BY OWNER
  - 193 PAINT TO BE SELECTED BY OWNER
  - 194 PAINT TO BE SELECTED BY OWNER
  - 195 PAINT TO BE SELECTED BY OWNER

- Stain Schedule**
- 196 STAIN TO BE SELECTED BY OWNER
  - 197 STAIN TO BE SELECTED BY OWNER
  - 198 STAIN TO BE SELECTED BY OWNER
  - 199 STAIN TO BE SELECTED BY OWNER

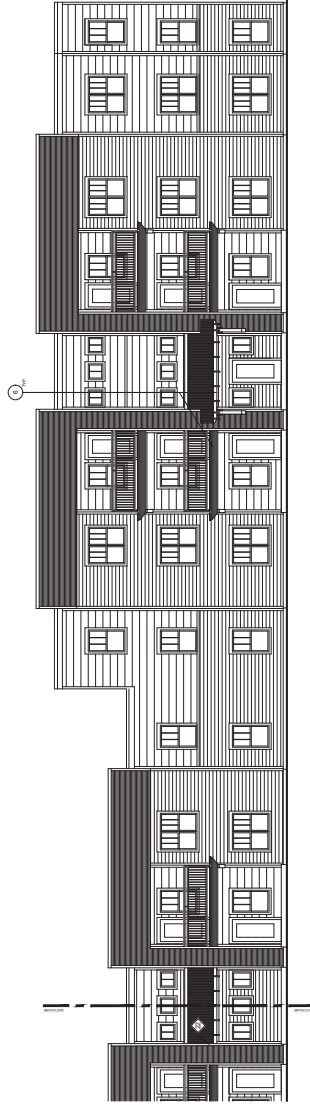
- Material Legend**
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**Detail Reference Schedule**

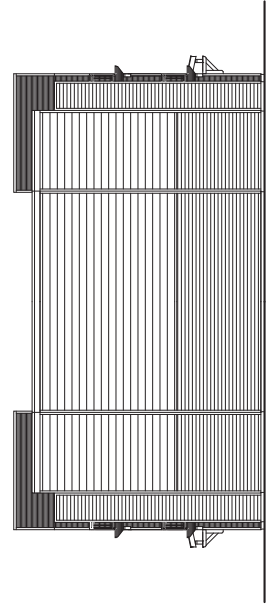
TAG	DESCRIPTION	REFERENCE
1/1	WINDOW DETAILS @ HORIZONTAL LAP SIDING	2.1, 3.1, 4.8, 5.1, 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1, 13.1, 14.1, 15.1, 16.1, 17.1, 18.1, 19.1, 20.1, 21.1, 22.1, 23.1, 24.1, 25.1, 26.1, 27.1, 28.1, 29.1, 30.1, 31.1, 32.1, 33.1, 34.1, 35.1, 36.1, 37.1, 38.1, 39.1, 40.1, 41.1, 42.1, 43.1, 44.1, 45.1, 46.1, 47.1, 48.1, 49.1, 50.1, 51.1, 52.1, 53.1, 54.1, 55.1, 56.1, 57.1, 58.1, 59.1, 60.1, 61.1, 62.1, 63.1, 64.1, 65.1, 66.1, 67.1, 68.1, 69.1, 70.1, 71.1, 72.1, 73.1, 74.1, 75.1, 76.1, 77.1, 78.1, 79.1, 80.1, 81.1, 82.1, 83.1, 84.1, 85.1, 86.1, 87.1, 88.1, 89.1, 90.1, 91.1, 92.1, 93.1, 94.1, 95.1, 96.1, 97.1, 98.1, 99.1, 100.1
1/2	WINDOW DETAILS @ METAL SIDING	2.1, 3.1, 4.8, 5.1, 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1, 13.1, 14.1, 15.1, 16.1, 17.1, 18.1, 19.1, 20.1, 21.1, 22.1, 23.1, 24.1, 25.1, 26.1, 27.1, 28.1, 29.1, 30.1, 31.1, 32.1, 33.1, 34.1, 35.1, 36.1, 37.1, 38.1, 39.1, 40.1, 41.1, 42.1, 43.1, 44.1, 45.1, 46.1, 47.1, 48.1, 49.1, 50.1, 51.1, 52.1, 53.1, 54.1, 55.1, 56.1, 57.1, 58.1, 59.1, 60.1, 61.1, 62.1, 63.1, 64.1, 65.1, 66.1, 67.1, 68.1, 69.1, 70.1, 71.1, 72.1, 73.1, 74.1, 75.1, 76.1, 77.1, 78.1, 79.1, 80.1, 81.1, 82.1, 83.1, 84.1, 85.1, 86.1, 87.1, 88.1, 89.1, 90.1, 91.1, 92.1, 93.1, 94.1, 95.1, 96.1, 97.1, 98.1, 99.1, 100.1
1/3	WOOD DETAILS @ HORIZONTAL LAP SIDING	2.1, 3.1, 4.8, 5.1, 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1, 13.1, 14.1, 15.1, 16.1, 17.1, 18.1, 19.1, 20.1, 21.1, 22.1, 23.1, 24.1, 25.1, 26.1, 27.1, 28.1, 29.1, 30.1, 31.1, 32.1, 33.1, 34.1, 35.1, 36.1, 37.1, 38.1, 39.1, 40.1, 41.1, 42.1, 43.1, 44.1, 45.1, 46.1, 47.1, 48.1, 49.1, 50.1, 51.1, 52.1, 53.1, 54.1, 55.1, 56.1, 57.1, 58.1, 59.1, 60.1, 61.1, 62.1, 63.1, 64.1, 65.1, 66.1, 67.1, 68.1, 69.1, 70.1, 71.1, 72.1, 73.1, 74.1, 75.1, 76.1, 77.1, 78.1, 79.1, 80.1, 81.1, 82.1, 83.1, 84.1, 85.1, 86.1, 87.1, 88.1, 89.1, 90.1, 91.1, 92.1, 93.1, 94.1, 95.1, 96.1, 97.1, 98.1, 99.1, 100.1
1/4	WOOD DETAILS @ METAL SIDING	2.1, 3.1, 4.8, 5.1, 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1, 13.1, 14.1, 15.1, 16.1, 17.1, 18.1, 19.1, 20.1, 21.1, 22.1, 23.1, 24.1, 25.1, 26.1, 27.1, 28.1, 29.1, 30.1, 31.1, 32.1, 33.1, 34.1, 35.1, 36.1, 37.1, 38.1, 39.1, 40.1, 41.1, 42.1, 43.1, 44.1, 45.1, 46.1, 47.1, 48.1, 49.1, 50.1, 51.1, 52.1, 53.1, 54.1, 55.1, 56.1, 57.1, 58.1, 59.1, 60.1, 61.1, 62.1, 63.1, 64.1, 65.1, 66.1, 67.1, 68.1, 69.1, 70.1, 71.1, 72.1, 73.1, 74.1, 75.1, 76.1, 77.1, 78.1, 79.1, 80.1, 81.1, 82.1, 83.1, 84.1, 85.1, 86.1, 87.1, 88.1, 89.1, 90.1, 91.1, 92.1, 93.1, 94.1, 95.1, 96.1, 97.1, 98.1, 99.1, 100.1
1/5	METAL SIDING TO GRADE	1.8, 1.7, 1.6, 1.5, 1.4, 1.3, 1.2, 1.1, 1.0, 0.9, 0.8, 0.7, 0.6, 0.5, 0.4, 0.3, 0.2, 0.1
1/6	METAL SIDING TO EXTERIOR BAR	1.8, 1.7, 1.6, 1.5, 1.4, 1.3, 1.2, 1.1, 1.0, 0.9, 0.8, 0.7, 0.6, 0.5, 0.4, 0.3, 0.2, 0.1
1/7	HORIZONTAL LAP SIDING TO EXTERIOR BAR (FRAME SPACE)	1.8, 1.7, 1.6, 1.5, 1.4, 1.3, 1.2, 1.1, 1.0, 0.9, 0.8, 0.7, 0.6, 0.5, 0.4, 0.3, 0.2, 0.1
1/8	HORIZONTAL LAP SIDING TO EXTERIOR BAR (ON GRADE)	1.8, 1.7, 1.6, 1.5, 1.4, 1.3, 1.2, 1.1, 1.0, 0.9, 0.8, 0.7, 0.6, 0.5, 0.4, 0.3, 0.2, 0.1
1/9	HORIZONTAL LAP TO HORIZONTAL LAP SIDING	6.7, 6.8, 6.9, 7.0, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 8.0, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 9.0, 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 9.8, 9.9, 10.0
1/10	METAL SIDING TO METAL SIDING	7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 8.0, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 9.0, 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 9.8, 9.9, 10.0
1/11	HORIZONTAL LAP SIDING TO METAL SIDING	9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 9.8, 9.9, 10.0
1/12	METAL SIDING TO METAL SIDING	10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7, 10.8, 10.9, 11.0
1/13	HORIZONTAL LAP SIDING TO METAL SIDING	11.1, 11.2, 11.3, 11.4, 11.5, 11.6, 11.7, 11.8, 11.9, 12.0
1/14	HORIZONTAL LAP TO HORIZONTAL LAP SIDING	12.1, 12.2, 12.3, 12.4, 12.5, 12.6, 12.7, 12.8, 12.9, 13.0
1/15	HORIZONTAL LAP SIDING TO METAL SIDING	13.1, 13.2, 13.3, 13.4, 13.5, 13.6, 13.7, 13.8, 13.9, 14.0
1/16	TYPICAL ENTRY VERT. DETAIL	14.1, 14.2, 14.3, 14.4, 14.5, 14.6, 14.7, 14.8, 14.9, 15.0
1/17	PARAPET DETAIL	15.1, 15.2, 15.3, 15.4, 15.5, 15.6, 15.7, 15.8, 15.9, 16.0
1/18	ENTRY BRACKET DETAIL	16.1, 16.2, 16.3, 16.4, 16.5, 16.6, 16.7, 16.8, 16.9, 17.0
1/19	STAIR VENT DETAIL @ METAL SIDING	17.1, 17.2, 17.3, 17.4, 17.5, 17.6, 17.7, 17.8, 17.9, 18.0
1/20	RAVE & GUTTER DETAIL	18.1, 18.2, 18.3, 18.4, 18.5, 18.6, 18.7, 18.8, 18.9, 19.0
1/21	LAP SIDING TO ROOF @ SIDE	19.1, 19.2, 19.3, 19.4, 19.5, 19.6, 19.7, 19.8, 19.9, 20.0
1/22	TYPICAL GROUND LEVEL	2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 3.0
1/23	SHARP 90° CORNER	4.8, 4.9, 5.0, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 6.0
1/24	UNIT DECK SECTION	6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 7.0
1/25	UNIT DECK UPPER FLOOR SPINNER RAILING @ 6" & 8" DECK HEIGHT	7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 8.0



1 Building A North Elevation  
 SCALE: 1/8" = 1'-0"  
 NOTE: ALL NOTES SHOWN HERE ARE RELATIVE TO CONDITIONS @ ALL BUILDING ELEVATIONS TYP.



2 Building A East Elevation  
 SCALE: 1/8" = 1'-0"











MULTIFAMILY APARTMENT COMPLEX FOR  
**CAPITAL COURT**  
 CHEYENNE, WYOMING



FORMULEEET 11.05.22  
 BUILDING  
 ELEVATIONS  
 BUILDING B

022.008.00 10.5.2022

**A3.4**

- Keyed Notes - Exterior Elevations**
- 1 4" HIGHWOOD RAILING STAIN 1/P
  - 2 1/2" VALLEY FLASHING SEE DETAIL TAB 3
  - 3 BRIMBLE LEAFER RIVET SEE
  - 4 VALLEY FLASHING SEE DETAIL TAB 3
  - 5 DECORATIVE WOOD BRACKET
  - 6 ASPHALT SHINGLE END CAPPING
  - 7 IMPERMEABLE TRIM PAINT SEE
  - 8 DETAIL 3
  - 9 42" HIGHWOOD RAILING STAIN 1/P
  - 10 1/2" VALLEY FLASHING SEE DETAIL TAB 3
  - 11 BRIMBLE LEAFER RIVET SEE
  - 12 VALLEY FLASHING SEE DETAIL TAB 3
  - 13 DECORATIVE WOOD BRACKET
  - 14 ASPHALT SHINGLE END CAPPING
  - 15 IMPERMEABLE TRIM PAINT SEE
  - 16 DETAIL 3
  - 17 42" HIGHWOOD RAILING STAIN 1/P
  - 18 1/2" VALLEY FLASHING SEE DETAIL TAB 3
  - 19 BRIMBLE LEAFER RIVET SEE
  - 20 VALLEY FLASHING SEE DETAIL TAB 3
  - 21 DECORATIVE WOOD BRACKET
  - 22 ASPHALT SHINGLE END CAPPING
  - 23 IMPERMEABLE TRIM PAINT SEE
  - 24 DETAIL 3

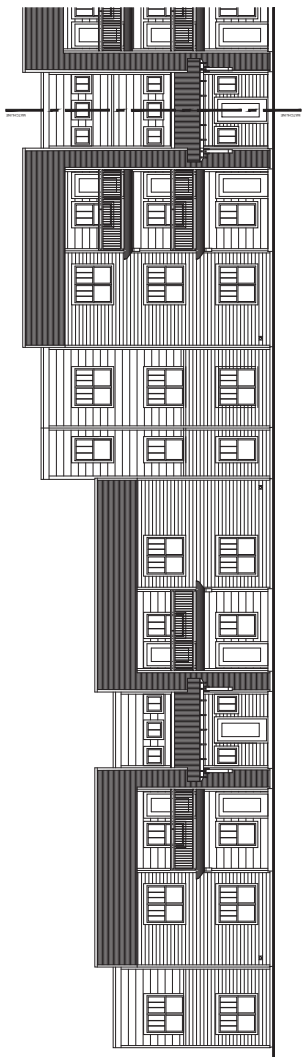
- Paint Schedule**
- 1 PAINT 1 TO BE SELECTED BY OWNER
  - 2 PAINT 2 TO BE SELECTED BY OWNER
  - 3 PAINT 3 TO BE SELECTED BY OWNER
  - 4 PAINT 4 TO BE SELECTED BY OWNER
  - 5 PAINT 5 TO BE SELECTED BY OWNER
  - 6 PAINT 6 TO BE SELECTED BY OWNER
  - 7 PAINT 7 TO BE SELECTED BY OWNER
  - 8 PAINT 8 TO BE SELECTED BY OWNER
  - 9 PAINT 9 TO BE SELECTED BY OWNER
  - 10 PAINT 10 TO BE SELECTED BY OWNER
  - 11 PAINT 11 TO BE SELECTED BY OWNER
  - 12 PAINT 12 TO BE SELECTED BY OWNER
  - 13 PAINT 13 TO BE SELECTED BY OWNER
  - 14 PAINT 14 TO BE SELECTED BY OWNER
  - 15 PAINT 15 TO BE SELECTED BY OWNER
  - 16 PAINT 16 TO BE SELECTED BY OWNER
  - 17 PAINT 17 TO BE SELECTED BY OWNER
  - 18 PAINT 18 TO BE SELECTED BY OWNER
  - 19 PAINT 19 TO BE SELECTED BY OWNER
  - 20 PAINT 20 TO BE SELECTED BY OWNER
  - 21 PAINT 21 TO BE SELECTED BY OWNER
  - 22 PAINT 22 TO BE SELECTED BY OWNER
  - 23 PAINT 23 TO BE SELECTED BY OWNER
  - 24 PAINT 24 TO BE SELECTED BY OWNER

- Stain Schedule**
- 1 STAIN 1 TO BE SELECTED BY OWNER
  - 2 STAIN 2 TO BE SELECTED BY OWNER
  - 3 STAIN 3 TO BE SELECTED BY OWNER
  - 4 STAIN 4 TO BE SELECTED BY OWNER
  - 5 STAIN 5 TO BE SELECTED BY OWNER
  - 6 STAIN 6 TO BE SELECTED BY OWNER
  - 7 STAIN 7 TO BE SELECTED BY OWNER
  - 8 STAIN 8 TO BE SELECTED BY OWNER
  - 9 STAIN 9 TO BE SELECTED BY OWNER
  - 10 STAIN 10 TO BE SELECTED BY OWNER
  - 11 STAIN 11 TO BE SELECTED BY OWNER
  - 12 STAIN 12 TO BE SELECTED BY OWNER
  - 13 STAIN 13 TO BE SELECTED BY OWNER
  - 14 STAIN 14 TO BE SELECTED BY OWNER
  - 15 STAIN 15 TO BE SELECTED BY OWNER
  - 16 STAIN 16 TO BE SELECTED BY OWNER
  - 17 STAIN 17 TO BE SELECTED BY OWNER
  - 18 STAIN 18 TO BE SELECTED BY OWNER
  - 19 STAIN 19 TO BE SELECTED BY OWNER
  - 20 STAIN 20 TO BE SELECTED BY OWNER
  - 21 STAIN 21 TO BE SELECTED BY OWNER
  - 22 STAIN 22 TO BE SELECTED BY OWNER
  - 23 STAIN 23 TO BE SELECTED BY OWNER
  - 24 STAIN 24 TO BE SELECTED BY OWNER

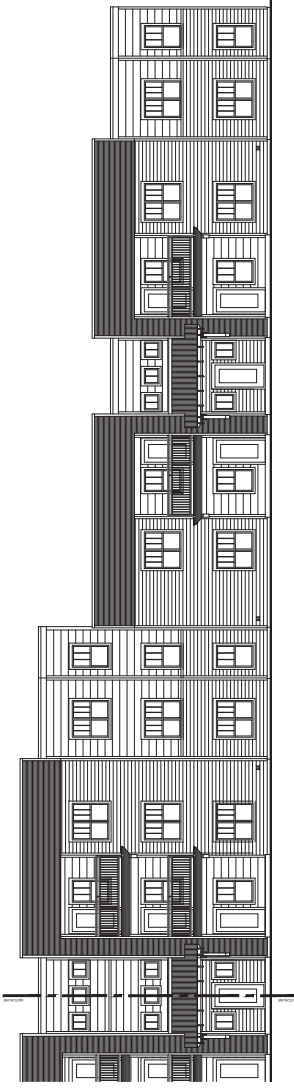
- Material Legend**
- 1 FIRE BRICK CERAMIC TILE
  - 2 FIRE BRICK CERAMIC TILE
  - 3 FIRE BRICK CERAMIC TILE
  - 4 FIRE BRICK CERAMIC TILE
  - 5 FIRE BRICK CERAMIC TILE
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  - 21 FIRE BRICK CERAMIC TILE
  - 22 FIRE BRICK CERAMIC TILE
  - 23 FIRE BRICK CERAMIC TILE
  - 24 FIRE BRICK CERAMIC TILE

**Detail Reference Schedule**

TAB	DESCRIPTION	REFERENCE
1	WINDOW DETAIL	1/1
2	WINDOW DETAIL	2/1
3	WINDOW DETAIL	3/1
4	WINDOW DETAIL	4/1
5	WINDOW DETAIL	5/1
6	WINDOW DETAIL	6/1
7	WINDOW DETAIL	7/1
8	WINDOW DETAIL	8/1
9	WINDOW DETAIL	9/1
10	WINDOW DETAIL	10/1
11	WINDOW DETAIL	11/1
12	WINDOW DETAIL	12/1
13	WINDOW DETAIL	13/1
14	WINDOW DETAIL	14/1
15	WINDOW DETAIL	15/1
16	WINDOW DETAIL	16/1
17	WINDOW DETAIL	17/1
18	WINDOW DETAIL	18/1
19	WINDOW DETAIL	19/1
20	WINDOW DETAIL	20/1
21	WINDOW DETAIL	21/1
22	WINDOW DETAIL	22/1
23	WINDOW DETAIL	23/1
24	WINDOW DETAIL	24/1



1 Building B South Elevation  
 SCALE: 1/8" = 1'-0"



2 Building B West Elevation  
 SCALE: 1/8" = 1'-0"



MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
 CHEYENNE, WYOMING



DATE: 11.23.17  
 BUILDING SECTIONS  
 BUILDING A & B

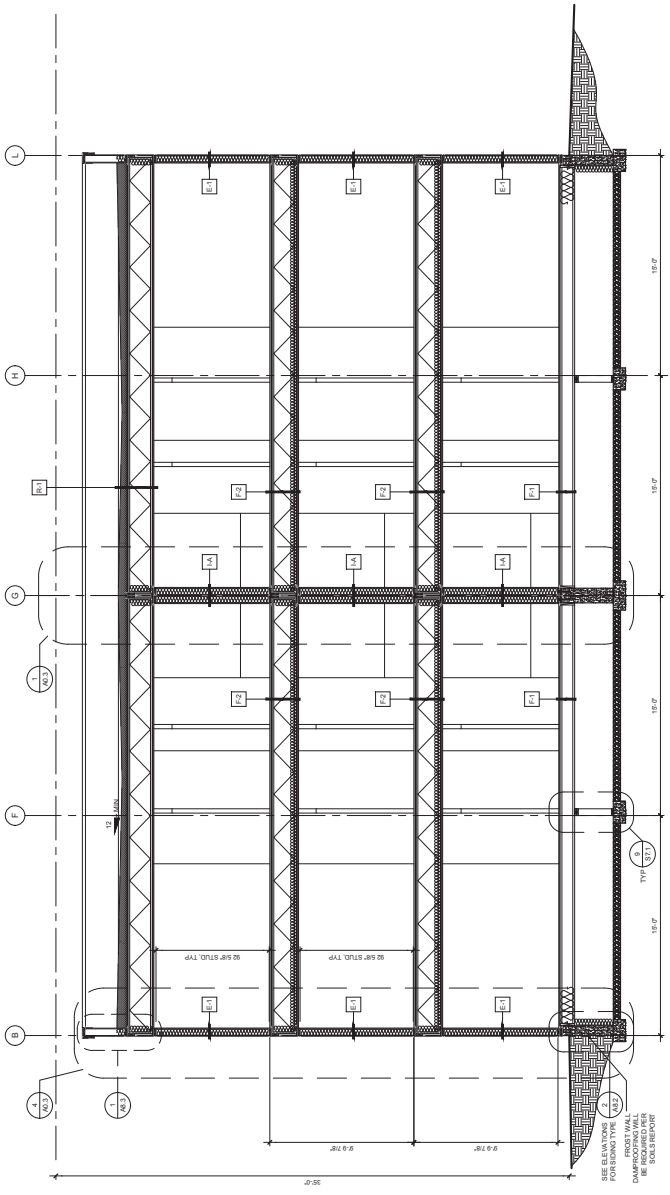


**A4.1**

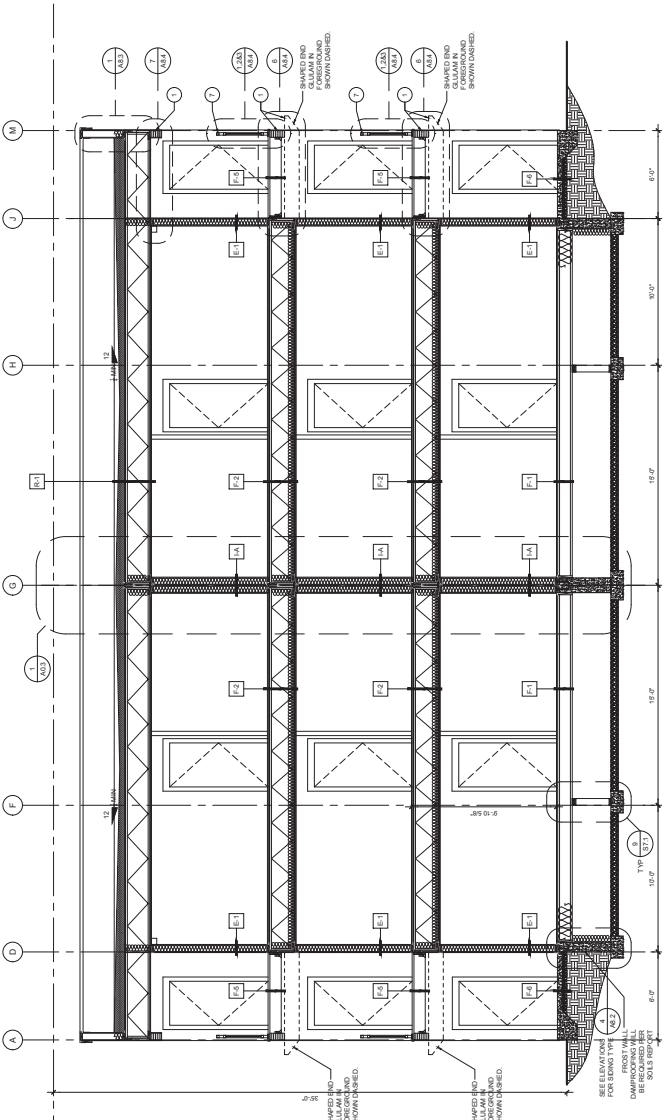
**Air Barrier**  
 REFER TO CHAPTER 12 FOR WEATHER RESISTIVE ASSEMBLY REQUIREMENTS.  
 REFER TO CHAPTER 13 FOR WEATHER RESISTIVE ASSEMBLY REQUIREMENTS.  
 SEE 2018 ICC CHAPTER 4.  
 CLIMATE ZONE (AL EXHIBIT A SHALL APPLY): R-2  
 WIND LOAD: AS PER LOCAL CODES  
 FLOOR: R-20  
 CEILING: R-20  
 ROOF: R-30  
 CHIMNEY: R-20  
 THE FOLLOWING SHALL BE CALCULATED, GASKETED, WATERRESISTED OR SEALED WITH AN APPROVED MATERIAL, UPGRADE FLOOR BOARD MATERIAL.  
 SEE ALSO: WEATHER AND DRAINAGE  
 - EXTERIOR WINDOWS, DOORS AND SKYLIGHTS  
 - EXTERIOR WALLS AND FOUNDATIONS  
 - RESTRICTIVE JAMBS AND FRAMING  
 - EXTERIOR WALLS AND FOUNDATIONS  
 - DROPPED CEILING OR CHASES ADJACENT TO THE THERMAL ENVELOPE  
 - WALLS AND CEILING SEPARATING A GARAGE FROM CONDITIONED SPACES  
 - WALLS AND CEILING SEPARATING UNCONDITIONED ATTIC FROM CONDITIONED SPACES  
 - COMMON WALLS BETWEEN DWELLING UNITS  
 - ALL JOINTS, PENETRATIONS AND ADJUSTMENT POINTS  
 - ALL OTHER SOURCES OF INFILTRATION

**Keyed Notes - Building Sections**

1. GULLIMBERAL. SEE STRUCTURAL.
2. RETURN HORIZONTAL TO WALL.
3. STRINGERS. SEE STRUCTURAL.
4. FLOOR FRAMING. SEE STRUCTURAL.
5. HANDRAILS TO EXTEND 4" FROM THE NOSE OF TOP AND BOTTOM RISER.
6. WOOD HANDRAILS BOTH SIDES OF STAIRS. PER CODE.
7. GUARDRAIL. SEE A4.4.
8. NOT USED.
9. 4" TALL HALF WALL WITH SAFETY CAP.
10. ROOF LADDERS WITH SAFETY CAPS.



1 Building Section @ Units



2 Building Section @ Units and Decks

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









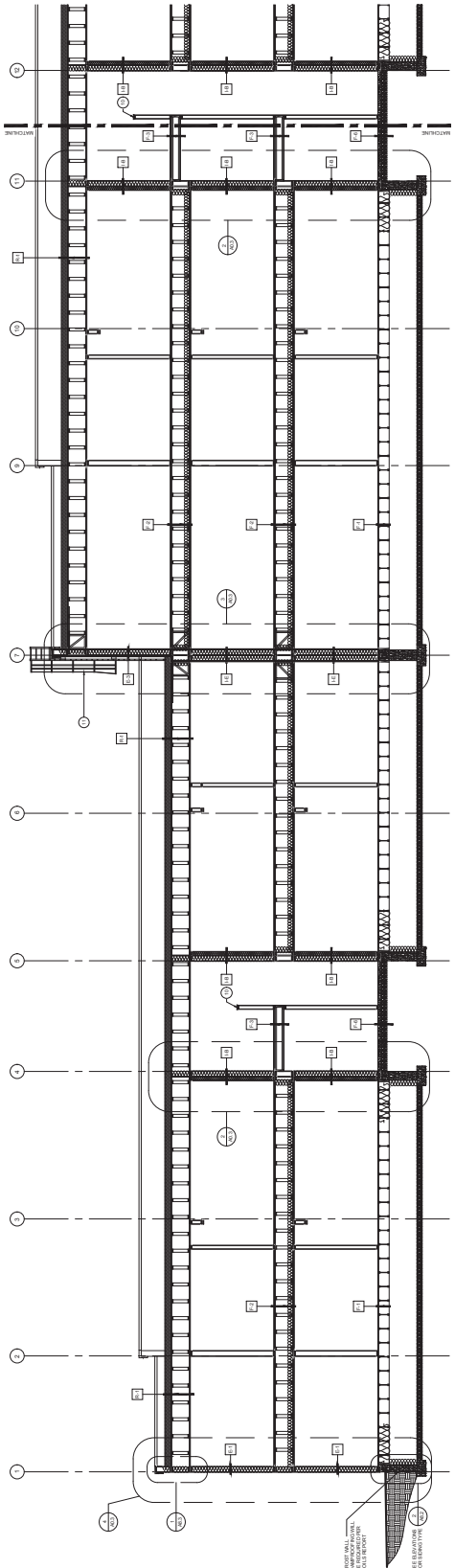
MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
 CHEYENNE, WYOMING



PERMITSHEET: 11.03.20  
**BUILDING SECTIONS**  
**BUILDING B**

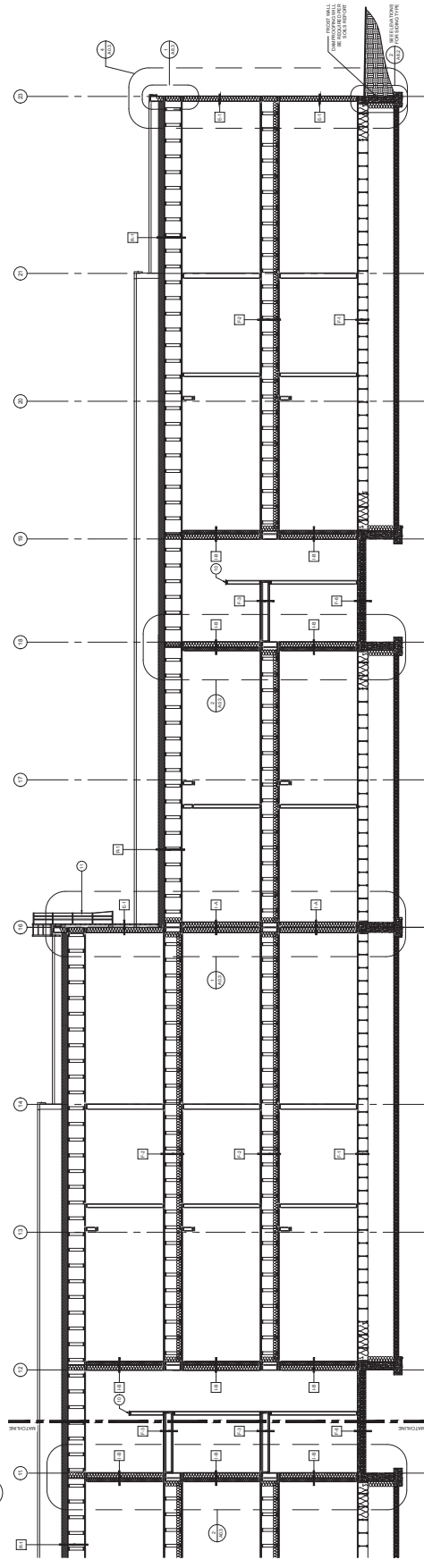


**A4.4**



1 Building Section - Building B

SCALE: 3/8" = 1'-0"



**Keyed Notes - Building Sections**

- 1 COLUMN BEAM, SEE STRUCTURAL
- 2 RETURN HANDRAIL TO WALL
- 3 FINISHES, SEE STRUCTURAL
- 4 FLOOR FINISHES, SEE STRUCTURAL
- 5 HANDRAILS TO EXTEND 1'-0" FROM THE NOSE OF TOP AND BOTTOM RISER
- 6 WOOD HANDRAIL, BOTH SIDES OF STAIRS, PER CODE
- 7 GUARDRAIL, SEE A4.4
- 8 NOT USED
- 9 NOT USED
- 10 4" FT. HALF WALL WITH MFP CAP
- 11 ROOF FLOOR WITH SAFETY CAGE

**Air Barrier**

BLOWER DOOR TESTING IS REQUIRED FOR GREEN COMMUNITIES CREDIT.

SEE 2015 ICC CHAPTER 4.

GLAZING ZONE (AS DIVIDE) WALLS: 60 U VALUE

CEILING: R-20

FLOOR: R-20

CHALK SPACE: R-20

THE FOLLOWING SHALL BE CASINGS, GASKETS, SEALED JOINTS, OR OTHERWISE SEALED WITH AN AIR BARRIER MATERIAL, SUITABLE FLOOR OR CEILING MATERIAL.

ALL JOINTS, SEAMS AND PENETRATIONS SHALL BE SEALED WITH AN AIR BARRIER MATERIAL.

OPENINGS BETWEEN WINDOW AND DOOR ASSEMBLIES AND THEIR UTILITY PENETRATIONS SHALL BE SEALED WITH AN AIR BARRIER MATERIAL.

ATTIC ACCESS OPENINGS SHALL BE SEALED WITH AN AIR BARRIER MATERIAL.

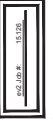
ALL OTHER SOURCES OF INFILTRATION SHALL BE SEALED WITH AN AIR BARRIER MATERIAL.









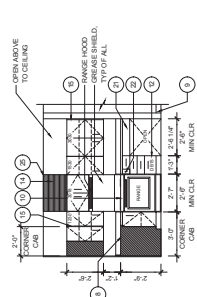


**General Notes - Interior Elevations**

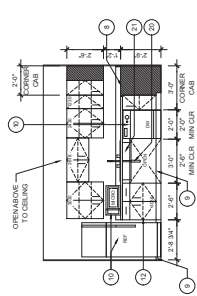
1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND APPOINTMENT CONDITIONS.
2. ALL BASE CABINETS TO BE 24" DEEP AND ALL TOPS TO BE 12" DEEP, TYPICAL UNLESS NOTED OTHERWISE.
3. ALL CABINETS TO BE 3/4" GAP BETWEEN CABINETS AND WALLS UNLESS NOTED OTHERWISE.
4. PROVIDE BLOCKING FOR FUTURE GRAB BARS AND FOR GRAB BARS SHOWN AT BATHTUBS UNLESS NOTED OTHERWISE.
5. PROVIDE BLOCKING FOR FUTURE GRAB BARS AND FOR GRAB BARS SHOWN AT WATER CLOSETS UNLESS NOTED OTHERWISE.
6. CONTINUE FLOORING WALL BARS, AND WALL FINISHES UNDER OPEN COUNTERTOPS, UNLESS NOTED OTHERWISE.
7. ALL DIMENSIONS ARE TO THE FACE OF WALL UNLESS NOTED OTHERWISE. SEE FLOOR PLANS WALL TYPES AND STRUCTURAL DRAWINGS FOR WALL ASSEMBLIES.

**Keyed Notes - Interior Elevations**

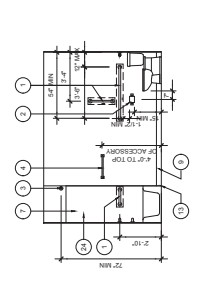
1. BLOCKING 2x6 MINIMUM AND GRAB BARS.
2. TOILET PAPER HOLDER. SEE SPECIFICATIONS.
3. SHOWER CURTAIN ROD. SEE SPECIFICATIONS.
4. 24" TOWEL BAR. SEE SPECIFICATIONS.
5. LIGHT FIXTURE. CENTER OVER MIRROR. COORDINATE WITH ELECTRICAL.
6. MIRROR. CENTERED. SEE SPECIFICATIONS.
7. TUB / SHOWER UNIT. SEE FLUERING DRAWINGS.
8. PART CLIMATE CONTROL UNIT. WORKS LAB TYPICAL.
9. WALL BASE. SEE FLOOR PLANS AND FLOOR FINISH NOTES.
10. GCH PLUMBING. COORDINATE INSTALLATION, VERIFY CLEARANCES AND SWINGS WITH OWNER. SEE FLUERING DRAWINGS FOR TUB / SHOWER UNIT. VERIFY TUB / SHOWER UNIT CLEARANCE AS SHOWN. COVER BASE AS SHOWN. SEE SPEC.
11. FINISHED END PANEL @ OPEN WORKSPACE.
12. CAULK ALL TUBS / SHOWERS TO FLOORING.
13. PAINTED BASE SMOOTH TO COMPLETELY CONCEAL VENT DUCT FOR RANGE HOOD. SEE DETAIL FOR TUBS / SHOWERS TO FLOORING. SEE INT-1.
14. FILLER STRIP.
15. BLOCKING 2x6 MINIMUM FOR FUTURE GRAB BARS AT MAIN LEVEL. TYPE B UNITS ONLY. SEE A.3 FOR GRAB BAR BLOCKING LOCATIONS.
16. NOT USED.
17. METAL SHELVES. SEE SPEC.
18. GCH PLUMBING. COORDINATE INSTALLATION, VERIFY CLEARANCES AND SWINGS WITH OWNER. SEE FLUERING DRAWINGS FOR TUB / SHOWER UNIT. VERIFY TUB / SHOWER UNIT CLEARANCE AS SHOWN. COVER BASE AS SHOWN. SEE SPEC.
19. INSULATED PIPES IN PIPING SPACE.
20. CABINET VALANCE AT ADA OPENINGS UNDER COUNTERTOPS.
21. RANGE HOOD SWITCH.
22. TRANSFER SHOWER LINE. SHARED GRAB BAR LOCATIONS. WHITE CURB-NOED L-SHAPED GRAB BARS AND HANDS SHOWER INCLUDED BY SHOWER UNIT MANUFACTURER.
23. WATER RESISTANT GWB REQUIRED WITHIN 6" WALL DIRECTIONS OF ALL TUBS / SHOWERS LOCATIONS.
24. SEE A.4 & A.11 FOR CEILING PENETRATIONS AND DUCT PIPING INSULATION DETAILS.



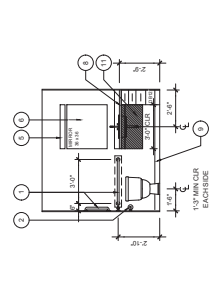
1 Kitchen 3 - Sink SCALE: 1/4" = 1'-0"



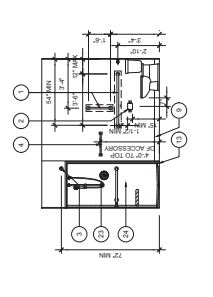
2 Kitchen 3 - Range SCALE: 1/4" = 1'-0"



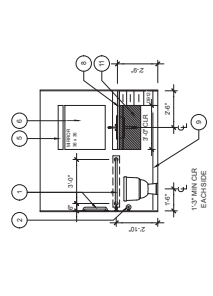
4 Bath 7 - Toilet / Tub SCALE: 1/4" = 1'-0"



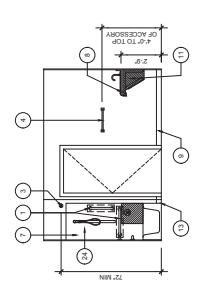
3 Bath 7 - Toilet / Sink SCALE: 1/4" = 1'-0"



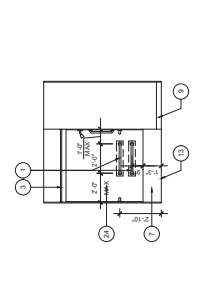
8 Bath 10 - Shower / Toilet SCALE: 1/4" = 1'-0"



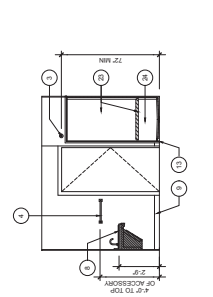
7 Bath 10 - Toilet / Sink SCALE: 1/4" = 1'-0"



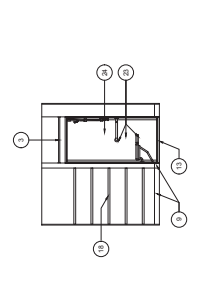
6 Bath 7 - Tub / Sink SCALE: 1/4" = 1'-0"



5 Bath 7 - Tub SCALE: 1/4" = 1'-0"



10 Bath 10 - Shower / Sink SCALE: 1/4" = 1'-0"



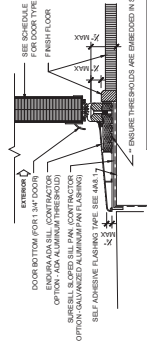
9 Bath 10 - Shower SCALE: 1/4" = 1'-0"







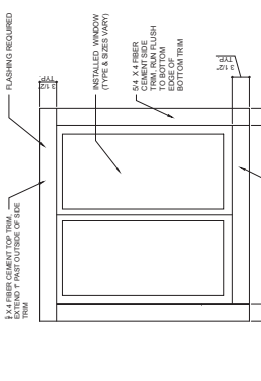
### TYPICAL OF ALL DOOR CONDITIONS



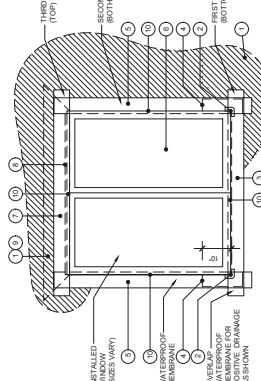
- FINISH FLASHERS (DOOR THRESHOLD ASSEMBLY):**
1. Remove weatherstripping from threshold and set in place.
  2. Apply adhesive to the back of the flasher and press into place.
  3. Press the flasher into the threshold with appropriate solvent (recommended prior to installation of thresholds).
  4. Apply adhesive to the back of the flasher and press into place.
  5. Install the flasher into the threshold with appropriate solvent (recommended prior to installation of thresholds).
  6. Remove the flasher to confirm proper adhesion and application with door on top of the threshold.
  7. Apply the flasher to the threshold and confirm proper adhesion and application with door on top of the threshold.

1 EXTERIOR DOOR SILL SCALE: 3/4" = 1'-0"

### TYPICAL OF ALL WINDOW CONDITIONS



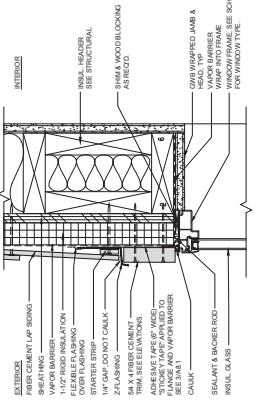
2 EXTERIOR WINDOW TRIM DETAIL (DOOR SIM) SCALE: 3/4" = 1'-0"



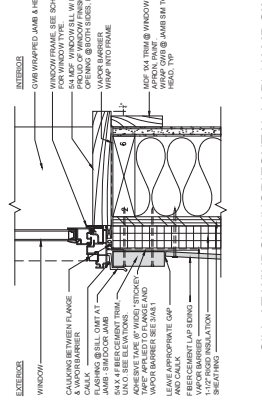
- WINDOW WATERPROOF MEMBRANE ASSEMBLY:** USING THE MODIFIED T-CUT MAKE HORIZONTAL CUT @ TOP TRIM 4\"/>
  1. TOP TRIM 4\"/>
  - 2. APPLY SELF-ADHESIVE WATERPROOF MEMBRANE TO BOTTOM OF WINDOW WITH OVERLAP OVER
  - 3. APPLY A SQUARE PIECE OF SELF-ADHESIVE WATERPROOF MEMBRANE CUT TO FIT AND COVER EACH SIDE AND TRIM TOP ON BOTH SIDES TO SEAL. IN COLD WEATHER APPLICATION, APPLY SPRAY ADHESIVE TO IMPROVE TAPES ADHESION. ADHESIVE PERMANENTLY REMAINS INSTRUCTIONS.
  - 4. INSTALL WINDOW CONTINUOUS BEAD OF CALK AROUND PERIMETER. ONCE FASTENERS ARE IN BOTTOM REMOVE EXCESS CALKING @ TOP TO ENSURE DRY SURFACE FOR APPLYING SUBSEQUENT WATERPROOFING MEMBRANE.
  - 5. FOLD DOWN BULKING WARP AND TOP OF WINDOW AND TAP 4\"/>
  - 6. PERMANENTLY REMAINS INSTRUCTIONS.
  - 7. APPLY SELF-ADHESIVE WATERPROOF MEMBRANE AT TOP OF WINDOW.
  - 8. PERMANENTLY REMAINS INSTRUCTIONS.
  - 9. FOLD DOWN BULKING WARP AND TOP OF WINDOW AND TAP 4\"/>
  - 10. INSULATION IS NOT ALLOWED.
  - 11. CALK A TOOL INTERFERES WITH WINDOW.

3 WINDOW & DOOR FLASHING DETAIL SCALE: N/A

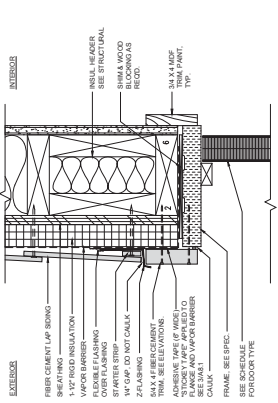
### LAP SIDING CONDITIONS



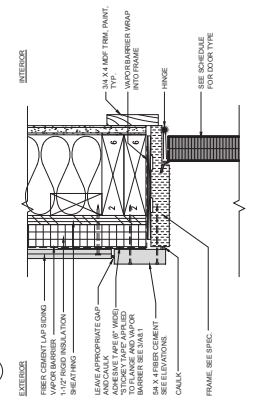
4 HEAD AT WINDOW (HORIZONTAL LAP) SCALE: 3/4" = 1'-0"



5 SILL AT WINDOW (HORIZONTAL LAP) (JAMB SIM) SCALE: 3/4" = 1'-0"

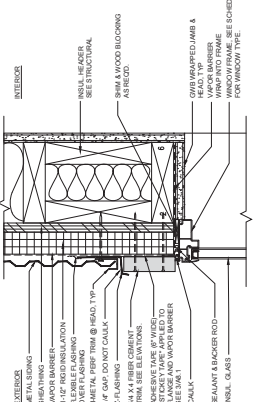


6 HEAD AT EXTERIOR DOOR (HORIZONTAL LAP) SCALE: 3/4" = 1'-0"

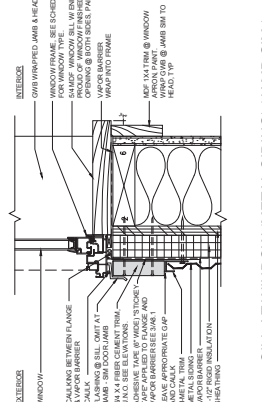


7 JAMB AT EXTERIOR DOOR (HORIZONTAL LAP) SCALE: 3/4" = 1'-0"

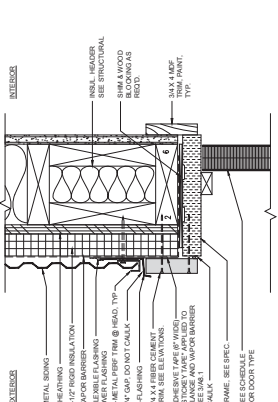
### METAL SIDING CONDITIONS



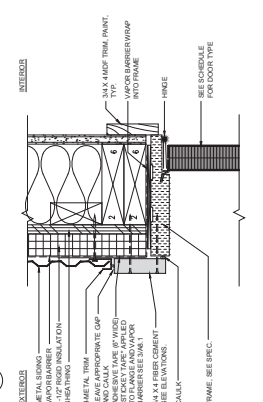
8 HEAD AT WINDOW (METAL SIDING) SCALE: 3/4" = 1'-0"



9 SILL AT WINDOW (METAL SIDING) (JAMB SIM) SCALE: 3/4" = 1'-0"



10 HEAD AT EXTERIOR DOOR (METAL SIDING) SCALE: 3/4" = 1'-0"



11 JAMB AT EXTERIOR DOOR (METAL SIDING) SCALE: 3/4" = 1'-0"











**PROJECT MANUAL**

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**Developer: Capital Court Apartments LLC**

**1004 South Ave West**

**Missoula, Montana 59801**



encompass

v2 llc

**Capital Court Apartments**

Cheyenne Wyoming

Issue Date: November 25, 2015

SET \_\_\_\_\_

Reviewed and  
Approved:

*Don Cooley, PE*

Chief Building Official  
Date: 12-30-15  
BP-15-00973



Please note: The Reviewed and Approved plans  
are required onsite

# Capital Court Apartments – Cheyenne Wyoming, ENCOMPASS V2 LLC

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SOILS REPORT	1 PAGE
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## DIVISION 1 – GENERAL REQUIREMENTS

- Section 01010 – Summary of Work and Basic Requirements
- Section 01021 – Construction Staking
- Section 01025 – Schedule of Values
- Section 01027 – Applications for Payment
- Section 01035 – Modification Procedures
- Section 01060 – Applicable Codes (Regulatory Requirements)
- Section 01100 – Construction Procedures
- Section 01153 – Change Order and RFI Procedures
- Section 01200 – Project Meetings
- Section 01300 – Submittals
- Section 01530 – Protection and Safety
- Section 01700 – Contract Closeout
- Section 01730 – Operation and Maintenance Data
- Section 01740 – Warranties and Bonds
- Section 01800 – Site Maintenance and Clean up

## DIVISION 2 - SITE WORK

- Section 02005 – EXCAVATION
- Section 02100 – SITE CLEARING (SITE PREPARATION)
- Section 02200 – EARTHWORK
- Section 02221 – TRENCH EXCAVATION & BACKFILL
- Section 02500 – PAVING AND SURFACING
- Section 02510 – CONCRETE WALKS
- Section 02600 – UTILITIES
- Section 02900 – IRRIGATION
- Section 02910 – LANDSCAPE EARTHWORK AND GRADING
- Section 02920 – SODDING
- Section 02930 – PLANTS

## DIVISION 3 - CONCRETE

- Section 03100 – CONCRETE FORMWORK
- Section 03200 – CONCRETE REINFORCEMENT
- Section 03250 – CONCRETE ACCESSORIES
- Section 03300 – CAST IN PLACE CONCRETE
- Section 03315 – SITE CONCRETE SIDEWALK & SLABS

## DIVISION 4 - MASONRY

- Section 04700 – NONE

## DIVISION 5 - METALS

- Section 05050 – METAL FASTENING BOLTING

## Capital Court Apartments – Cheyenne Wyoming, ENCOMPASS V2 LLC

Section 05520 – HANDRAILS AND RAILINGS

### **DIVISION 6 - WOOD AND PLASTICS**

Section 06010 - LUMBER  
Section 06050 – FASTENERS AND ADHESIVES  
Section 06100 – ROUGH CARPENTRY  
Section 06160 - SHEATHING  
Section 06170 – I-JOISTS AND FLOOR TRUSSES  
Section 06181 – GLUE LAMINATED STRUCTURAL UNITS  
Section 061753 – SHOP FABRICATED WOOD TRUSSES  
Section 06192 – ROOF TRUSSES  
Section 06200 – FINISH CARPENTRY AND MILL WORK  
Section 06300 – WOOD TREATMENT

### **DIVISION 7 - THERMAL AND MOISTURE PROTECTION**

Section 07150 – DAMP PROOFING  
Section 07155 – BUILDING PAPER  
Section 07190 – AIR INFILTRATION BARRIERS (VAPOR AND AIR RETARDERS)  
Section 07210 – BUILDING INSULATION  
Section 07400 – EXTERIOR SIDING AND TRIM  
Section 07411 – METAL SIDING AND ROOFING  
Section 07540 – TPO ROOFING  
Section 07600 – FLASHING  
Section 07631 – GUTTERS & DOWNSPOUTS  
Section 07900 – SEALANTS

### **DIVISION 8 - WINDOWS AND DOORS**

Section 08117 – PREFINISHED STEEL DOOR FRAMES  
Section 08200 – WOOD AND METAL DOORS  
Section 08600 – VINYL WINDOWS AND WINDOW/DOOR BLINDS  
All Windows and Patio Doors to have Aluminum Blinds per performance specification in this section.  
Section 08700 – DOOR HARDWARE  
All door hardware is contained in Construction Document

### **DIVISION 9 - FINISHES**

Section 09250 – GYPSUM WALLBOARD  
Section 09660 – RESILIENT FLOORING  
Section 09680 - CARPET  
Section 09900 – PAINTING  
Section 09922 – GYPSUM BOARD TEXTURED FINISH  
See Vinyl Windows for Blinds required on all windows and all patio doors.

### **DIVISION 10 - SPECIALITIES**

Section 10400 – IDENTIFYING DEVICES  
Section 10520– FIRE PROTECTION SPECIALTIES  
Section 10521 – MAILBOX  
Section 10670 – STORAGE SHELVING  
Section 10800 – BATHROOM ACCESSORIES

### **DIVISION 11 - EQUIPMENT**

Section 11110 – LAUNDRY EQUIPMENT  
11110A – APPLIANCES  
Section 11450 – RESIDENTIAL EQUIPMENT



**Capital Court Apartments – Cheyenne Wyoming, ENCOMPASS V2 LLC**

Section 11455 - CABINETS

**DIVISION 12 – CONVEYING SYSTEMS**

NONE

**DIVISION 13 – SPECIAL CONSTRUCTION**

Section 13925 – FIRE SUPPRESSION SPRINKLERS

**Specified Play equipment and Play Surface, SEE DRAWINGS**

**DIVISION 15 - MECHANICAL**

Section 15010 – General Provisions

Section 15043 – Testing and Balancing

Section 15060 – Pipe and Pipe Fittings

Section 15080 – Piping Specialties

Section 15100 – Valves

Section 15180 – Insulation

Section 15400 – Plumbing Piping

Section 15450 – Plumbing Fixtures and Trim

Section 15705 – FUEL GAS PIPING

Section 15810 – Primary Heating and Cooling Equipment

Section 15830 – Exhaust Fans

Section 15840 – Ductwork

Section 15860 – Air Distribution Specialties

**DIVISION 16 - ELECTRICAL**

SECTION 16010 - BASIC ELECTRICAL GENERAL REQUIREMENTS

SECTION 16028 – CODES AND STANDARDS

SECTION 16030 – TESTS AND DEMONSTRATION OF THE COMPLETE ELECTRICAL SYSTEM

SECTION 16030 - ELECTRICAL SYSTEM

SECTION 16900 – CATALOG SHEETS

END OF TABLE OF CONTENTS

# Signatories

**Developer:** Capital Court Apartments, LLC

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Architect:** encompass v2, llc

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Mortgagee:**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Contractor:**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Surety:**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

# Capital Court Apartments Cheyenne Wyoming

## Solicitation Description

REQUEST FOR SEALED BIDS: Capital Court Apartments LLC, Wyoming Housing Network and Blueline Development as the developer are requesting Sealed Bids for the construction of two buildings for a 60 unit affordable rental housing project, Park Pavilion and Playground Equipment on a site in Cheyenne, Wyoming. The project is partially funded with Low Income Housing Tax Credits allocated by the Wyoming Development Community Authority ("WCDA"). This is not a HUD Project, no Davis Bacon is required. The owner is Capital Court Apartments, LLC . The tax credit equity investor is to be determined.

Construction Drawings and Specifications are currently available via the Dropbox.

Architect Contact: office number 406-540-4437

Jenn Clary and Marie Wilson

Encompass V2

1535 Liberty Lane

Suite 110 B

Missoula, Mt 59808

Phone: 406.880.2841

Phone: 406.579.9092

Email: [Jenn@encompassv2.com](mailto:Jenn@encompassv2.com); [marie@encompassv2.com](mailto:marie@encompassv2.com)

Owner Contact:

Nate Richmond and Jason Boal

Blueline Development.

1004 South Avenue West

Missoula Montana 59801

Phone: 406-214-8145

Phone: 503-313-5177

[nate@bluelinedevelopment.net](mailto:nate@bluelinedevelopment.net) ; [jason@bluelinedevelopment.net](mailto:jason@bluelinedevelopment.net)

Bids are due no later than 2 p.m. on Friday, December 15, 2015. All proposals shall be submitted via email to:

To: [nate@bluelinedevelopment.net](mailto:nate@bluelinedevelopment.net) ; [jason@bluelinedevelopment.net](mailto:jason@bluelinedevelopment.net), [jenn@encompassv2.com](mailto:jenn@encompassv2.com), [marie@encompassv2.com](mailto:marie@encompassv2.com)

Subject: Capital Court Apartments

In the body of the email please list the following information:

Name of Project: Capital Court Apartments

Location: Cheyenne Wyoming

Name of Bidder:

Contractor's Registration Number:

Addendum Number: , , if applicable

Blueline and Wyoming Housing Network intends to begin this project in January of 2016, depending on Closing Approval. See Bid Submittal Form for further timelines.

In addition to the Construction Drawings and Project Manual, all bidders are required to review the enclosed documents:

1. Owner's general design requirements are described in Building Features document
2. Attachment A
3. Attachment B
4. Warranties
5. Insurance Requirements
6. Geotechnical Report

As questions are asked new addenda will be issued and required to be acknowledged.

# **INSTRUCTIONS TO BIDDERS**

1. Viewing of Contract Documents
  - 1.1. The Contract Documents may be viewed at the following locations:  
**Drop Box via the Internet as per encompass Invitation**  
**Contact both Jenn Clary and Marie Wilson at encompass v2 for all project inquires, questions or clarifications.**

2. Borrowing of Documents
  - 2.1. Contract Documents may be secured (at bidder's expense) from:

Jenn Clary or Marie Wilson  
Encompass V2  
1535 Liberty Lane  
Suite 110 B  
Missoula, Mt 59808  
Phone: 406.880.2841  
Email: [Jenn@encompassv2.com](mailto:Jenn@encompassv2.com); [marie@encompassv2.com](mailto:marie@encompassv2.com)

3. Visits to Site
  - 3.1. Prospective bidders are allowed to perform an inspection of the site on their own but this is not mandatory.
  - 3.2. Failure to visit site will not relieve the Contractor of the conditions of the contract.

4. **Pre-Bid Conference**
  - 4.1 **There WILL NOT BE a Pre Bid Conference. To be scheduled.**

5. Questions
  - 5.1 Questions regarding the attached Solicitation should be directed to: Must use Substitution Request Form provided herein

Jenn Clary or Marie Wilson  
Encompass V2  
1535 Liberty Lane  
Suite 110 B  
Missoula, Mt 59808  
Phone: 406.880.2841  
Email: [Jenn@encompassv2.com](mailto:Jenn@encompassv2.com); [marie@encompassv2.com](mailto:marie@encompassv2.com)

6. Requests for Substitution
  - 6.1. Any requests for product substitution must be made to the Architect by **December 10, 2015**. Any request for substitution made after this time restriction, including those made after award or during project construction may be rejected without consideration by either the Architect or the Owner. SEE FORM, Addendum 1 will be distributed December 4, 2015.

7. Bids/Proposals  
**DEADLINE FOR SUBMITTING A BID IS 2pm December 15, 2015**

- 7.1. The bidder shall submit his/her bid on the **Bid Submittal Form Attachment A** attached hereto. The bidder shall also submit a schedule of values which is also included in the



bid package as Exhibit 1. The schedule of values will need to break out the construction cost through each division and will need to have a materials cost and a labor cost for each division.

- 7.2. The bidder shall submit with his/her bid the **Bid Certification Form, Attachment B** attached hereto.
- 7.3. **The bidder shall acknowledge in the bid form, Building Features provided by Blueline Development and Construction contracts shall override any corresponding information contained within the project manual and specifications that is in discrepancy of these requirements.**
- 7.4. No bids will be considered that do not carry the bidder's Contractor's Registration Number in the body of the email.
- 7.5. A total base bid shall be in written form and based in strict accordance to the contract documents. Alternative bids shall correspond with line item number of alternative schedule. Also, contractors are invited to suggest deviations or alternatives, **but must** qualify them on their bid and reflect any credits or additions to the base bid. Deviations and/or alternatives, must be itemized separately from the base bid which is based on the Contract Documents.
- 7.6. **Copies of the following documents need to be provided at the time of the bid:**
  - i) Commercial general liability insurance in the amount of \$1,000,000.00 for each occurrence and \$2,000,000.00 aggregate, including products/completed operations, and consistent with the requirements of Article 11 of the General Conditions. OR if Investor requires other insurance requirements they will override.
  - ii) Vehicle liability insurance for owned and non-owned vehicles used to complete the work.
  - iii) Contractor's License, if the contractor has employees or a letter of exemption.
  - iv) Any Licensing required by the City / County of Cheyenne. – Can be provided after award of the project.
  - v) Wyoming contractor's license.
  - v) Evidence of Worker's Compensation insurance or a letter of exemption. *In addition, the business will establish and verify the status of all entities and individuals subcontracting under the business and verify subcontractors' liability insurance prior to admitting them to work sites. Subcontractor insurance certificates and Worker's Compensation exemption letters will be made available for inspection by the Owner's contact person during normal business hours at the contractor's place of business.*
  - vi) The contractor will establish and verify the independent contractor status of all entities and individuals subcontracting under him and that those entities/individuals are not a "debarred" contractor by the federal government.
  - vii) References: The contractor will provide THREE references. Include a brief (one or two sentence) description of work provided to the client, along with contact information. References need to demonstrate contractor's experience in performing similar work to what is stated in these Instructions to Bidders. By submitting a response to these Instructions to Bidders, each firm agrees that Wyoming Housing Network and Blueline Development may

contact any company, person or client to whom references are within the response.

viii) The contractor will provide a short resume/narrative describing their experience with the following:

- multi-family construction, number of units built, largest multi-family project constructed as the general contractor
- Low Income Housing Tax Credit projects

7.7. The project MUST have a sign erected at a prominent location near the major portion of the work in plain view of the general public prior to construction. See specifications.

**7.8. EVALUATION RATING FACTOR, SEE ATTACHED SHEET FOR DESCRIPTION**

All proposals received by the specified date will be tabulated and evaluated by the Wyoming Housing Network and Blueline Development selection committee. A tabulation of the quotes received will be available within a reasonable time after the Date Due. Results will be emailed to interested parties upon request.

Wyoming Housing Network and Blueline Development will evaluate the bids based both on price and the bidder's experience in constructing affordable multi-family housing. No single criteria will be the determining factor in the selection of offerors with whom Wyoming Housing Network and Blueline Development commence negotiation of the agreements or in the final selection of which proposal best responds to all the needs of Wyoming Housing Network and Blueline Development.

7.9. All proposals shall be submitted via email to:

**To:** [jenn@encompassv2.com](mailto:jenn@encompassv2.com),  
[marie@encompassv2.com](mailto:marie@encompassv2.com),  
[nate@bluelinedevelopment.net](mailto:nate@bluelinedevelopment.net);  
[Jason@bluelinedevelopment.net](mailto:Jason@bluelinedevelopment.net)

**Subject:** Rock Creek Apartments

7.10. In the body of the email please list the following information:

Name of Project: Capital Court Apartments

Location: Cheyenne Wyoming

Name of Bidder: \_\_\_\_\_

Contractor's Registration Number: \_\_\_\_\_

Acknowledge Addendum Number: \_\_\_\_\_, if applicable

7.11. It is the bidder's responsibility to deliver or ensure delivery of the bid proposal to the office of the Owner set forth in Sec. 7.11. Proposals received after the scheduled closing time for bids by either the bidder or a delivery service (e.g. Federal Express, U.S. Postal Service, United Parcel Service, etc.) will be rejected. Proposals entitled for consideration must be time-stamped in the Owner's office prior to the closing time for receipt of bids. The official time clock for receipt of bids is the Owner's time clock. No other clocks, calendars or timepieces are recognized. All bidders are responsible to ensure all bids are received in the owner's office prior to the scheduled closing time.

7.12. Bid Proposals entitled to consideration shall be made in accordance with the following instructions:

7.13.1. Made upon form provided;

7.13.2. All blank spaces properly filled;

7.13.3. All numbers stated in both writing and in figures;

7.13.4. The construction documents should be priced as drawn with no additions, conditional bids, erasures or other irregularities. The bidder may add alternates or

possible cost saving measures separate, but must qualify them in a cover letter as part of the bid.

7.13.5. Shall acknowledge receipt of all addenda issued.

7.13. Bid Proposals entitled to consideration shall be signed by the proper representative of the firm submitting the proposal as follows:

7.14.1. The principal of a single owner firm;

7.14.2. A principal of a partnership firm;

7.14.3. An officer of an incorporated firm, or an agent whose signature is accompanied by a certified copy of the resolution of the Board of Directors authorizing that agent to sign; or,

7.14.4. Other persons signing for a single-owner firm or a partnership shall attach a power-of-attorney evidencing his authority to sign for that firm.

## 8. Bid Security

8.1. Not applicable.

8.2. Execution of and entering into a contract includes providing all necessary insurance certificates, bonds, signed contract and current copy of the construction contractor registration certificate or registration number and satisfaction of the **TBD Investor** due diligence requests.

## 9. Withdrawal of Bids

9.1. Any bidder may withdraw his bid proposal at any time prior to the scheduled closing time for the receipt of bids.

9.2. Once the closing time for the receipt of bids is reached, a bid may not be withdrawn for a period of ninety (90) calendar days.

## 10. Interpretation of Contract Documents

10.1. Bidders shall promptly notify the Architect/Engineer of any ambiguity, inconsistency, or error which they may discover upon examination of the Contract Documents or of the site and local conditions.

10.2. Bidders requiring clarification or interpretation of the Contract Documents shall request, in writing, clarification from the Architect/Engineer at least seven (7) calendar days prior to the date set for receipt of bids.

10.3. Any interpretations, corrections, or change in the Contract Documents prior to the bid opening will be made by written addendum issued by the Architect/Engineer. The Architect/Engineer will endeavor to notify all plan holders of any addenda issued but it shall be the responsibility of the individual bidders to insure they have received all addenda prior to the submission of their bid.

10.4. All written addenda issued by the Architect/Engineer will become part of the Contract Documents and all bidders shall be bound by such addenda whether or not received and/or acknowledged by the bidder. No oral or telephone modifications of the Contract Documents will be considered or allowed.

## 11. Award of Bids

11.1. All bids received by the stated hour will be publically opened.

11.2. **The Owner reserves the right to reject any and all bids and to waive any informality or irregularity in any bid received. Owner reserves the right to determine what constitutes material and/or immaterial informalities and/or irregularities.**

## 12. Contract

12.1. Upon request, Owner will provide a specimen Form of Contract between Contractor and Owner, as issued by the Owner, which will be used as the contracting instrument.

12.2. The form shall be signed by a proper representative of the bidder as defined above in these instructions.

13. Performance, Labor and Material Payment Security

13.1. THE CONTRACTOR SHALL PROVIDE A PAYMENT AND PERFORMANCE BOND FOR THIS PROJECT AS SPECIFIED BELOW.

13.2. The Owner shall require the successful bidder to furnish a Payment and Performance Bond in the amount of 100% of the contract price as security for the faithful performance of the contract.

13.3. The bond shall be executed on forms as required by **TBD Investor**. No other form or the forms will be acceptable.

13.4. The bond shall be signed in compliance with state statutes and shall name **TBD Investor** and the Owner's construction lender as additional obligees.

13.5. The bond shall be secured from a State licensed bonding company.

13.6. Power of Attorney

13.6.1. Attorneys-in-fact who sign contract bonds must file with each bond a certified and effectively dated copy of their power of attorney;

13.6.2. One original copy shall be furnished with each set of bonds.

13.6.3. Others furnished with a set of bonds may be copies of that original.

14. Notice To Proceed

14.1. The successful bidder who is awarded the contract for construction will not be issued a Notice to Proceed until there is a signed Contract, the specified insurance certificates, a Payment and Performance Bond, compliance with **TBD Investor** due diligence requirements, and a copy of the bidder's current Construction Contractor Registration Certificate are in the Owner's possession. The successful bidder will provide all required Due Diligence materials in a timeframe that will not delay the closing of the project.

15. *Other Information*

i) Nate Richmond and Jason Boal will be the owner contact for any and all questions or inquires about the owner/contractor contract for the Capital Creek Apartments.

ii) Work is to be performed Monday through Friday between the hours of 8am and 6pm, and Saturday between the hours of 10am and 4pm. Unless the city has other rules or regulations.

iii) The job site is to be left clean and neat at the end of each day.

Contractor needs to abide by environmental protection laws and to clean and dispose of all waste in an environmentally safe manner daily.

iv) All equipment, tools, and materials are to be secured daily in a manner that will prevent children and adults from access. Contractor is also responsible for any destruction or theft of all equipment, tools, and materials on site during the construction period.

v) The job site is subject to inspection from the Architect, Owner, City, Funding Agencies and their representatives without notice.

vi) The contract is subject to immediate cancellation for inappropriate behavior and work failing

inspection.

- vii) Contractor's employees are on the Owner's property at their own risk.
- viii) Crew members are to conduct themselves in a professional manner, refrain from use of inappropriate language and be considerate of area residents' privacy.
- ix) Owner will provide Builder's Risk insurance policy.

**x) Contractor's fees are limited to: Profit – 6%; Overhead – 2%; and General Conditions – 6%**

- a. General Requirements is an allowance for the General Contractor's job overhead for a specific project. At no time will this General Requirements be greater than 6% of the total cost of land improvements and structures.
  - 1) Items will vary due to project type, location and site conditions, including:
    - a) Supervision and Job site engineering.
    - b) Job office expenses including clerical wages, whether on-site or off-site, if for the project.
    - c) Temporary buildings, tool sheds, shops and toilets.
    - d) Temporary heat, water, light and power for construction.
    - e) Temporary walkways, fences, roads, siding and docking facilities, sidewalk and street rental.
    - f) Construction equipment rental not in trade item costs.
    - g) Clean-up and disposal of construction debris.
    - h) Medical and first aid supplies and temporary facilities.
    - i) Watchmen's wages, security cost, and theft and vandalism insurance.
  - 2) Salaries of owners, partners or officers of the general contracting firm are not part of the requirements. Actual work on the job in a trade or supervision is allowable.
- b. Builder's Fee is the profit and overhead of the General Contractor.
  - 1) General overhead is the cost of continuing operations of a building construction firm.
  - 2) Profit is the return anticipated for providing building construction services under competitive conditions. For specific project consider:
    - a) On-site construction time.
    - b) Work performed by the General Contractor.
    - c) Number of Subcontractors and extent of subcontract work.
    - d) Risk and responsibility.
  - 3) In processing, estimate the builder's fee from data as a percentage.
    - a) At no time will Profit be greater than 6% of the total cost of land improvements, structures, and general requirements.
    - b) At no time will Overhead be greater than 2% of the total cost of land improvements, structures, and general requirements.
    - c) Apply the remaining percentage to the same total cost to determine profit.

16. Laws and Regulations

**16.1. The bidders' attention is directed to the fact that all applicable federal and state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over the project shall apply to the contract throughout and will be deemed to be included in this contract as if bound herein in full.**

17. PAYMENTS

17.1. Per AIA 101-2007

18. Additional Due Diligence Documentation

18.1 The final selected General Contractor will be required to provide the following



information to encompass and Wyoming Housing Network and Blueline Development.

1. Builder Resume
  2. Builder Questionnaire – to be provided after selection is made
  3. Construction Contract
  4. Construction Schedule
  5. Construction Budget / Trade Breakdown (Schedule of Values)
  6. Notice to Proceed (at or prior to closing)
  7. Payment and Performance Bond
  8. A letter from the Builder stating that construction will be performed in compliance with recommendations made within the Geotechnical/ Soils Report
  9. Builder Financial Statements. Must be dated within 6 months of anticipated Partnership closing
  10. Contractor's Liability Insurance
- Additional Insured's on the Liability Insurance should include:

- WILL BE DISTRIBUTED BY Wyoming Housing Network and Blueline Development.

19. Additional General Contractor Requirements:

RECORD DRAWINGS

- a. *The General Contractor shall maintain a white-print set (blue-line or red-line) of Contract Drawings and Shop Drawings in clean, undamaged condition, with mark-up of actual installations which vary substantially from the work as originally shown. Mark whichever drawing is most capable of showing "field" condition fully and accurately; however, where Shop Drawings are used for mark-up, record a cross reference at corresponding location on working drawings. Mark with red erasable pencil and, where feasible, use other colors to distinguish between variations in separate categories of work. Mark-up new information which is recognized to be of importance to Owner, but was for some reason not shown on either Contract Drawings or Shop Drawings. Give particular attention to concealed work, which would be difficult to measure and record at a later date. Note related change order numbers where applicable. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates, and other identification on cover of each set.*
- b. *Responsibility for Markup: Where feasible, the individual or entity who obtained record data, whether the individual or entity is the installer, Subcontractor, or similar entity, is required to prepare the mark-up on Record Drawings.*
- c. *At time of Substantial Completion, submit Record Drawings to Owner for Owner's records in accordance with General Conditions.*
- d. *Three (3) copies will be required.*

RECORD SPECIFICATIONS

- a. *The General Contractor shall maintain one copy of specifications, including addenda, change orders, and similar modifications issued in printed form during construction, and mark-up variations (of substance) in actual work in comparison with text of specifications and modifications as issued. Give particular attention to substitutions, selection of option, and similar information on work where it is concealed or cannot otherwise be readily discerned at a later date by direct observation. Note related record drawing information and product data, where applicable. Upon completion of mark-up, submit to Architect and Owner's Representative.*
- b. *The General Contractor is responsible for collecting marked-up record Sections from each of the other Subcontractors, and for collating these Sections in proper numeric order with its own Sections to form a complete set of record Specifications. Submit to the Owner.*
- c. *Three (3) copies will be required.*

# PRODUCT SUBSTITUTION REQUEST FORM

CAPITAL COURT APARTMENTS

<b>To:</b>
<b>Attn:</b>
<b>Specified Item:</b>

<b>Project:</b>
<b>Proposed Substitute:</b>

1. The following are attached (Mark all that apply):
2. This substitution will have the following effects on dimensions. etc:
3. This substitution will have the following effects on other trades:
4. This substitution will have the following effect on construction Schedules:
5. The proposed substitute(s) differs from the specified product(s) in quality and performance as follows:
6. Manufacturers guarantees for the substitute(s) and the specified product(s) are (check one):  
 **the same**       **different** (if different, explain below)

7. If the proposed substitution is accepted, it will result in:

no cost impact

a cost increase of

a cost decrease of \_\_\_\_\_

8. The undersigned or the firm represented shall pay for additional studies, investigations, submittals, redesign, and analysis by the Designer necessitated by this substitution request.

Substitutions must be requested in accordance with applicable Contract requirements. After bidding, substitutions are to be submitted only by the Successful General Contractor. Substitute products should not be ordered or installed without written acceptance.

**Submitted by:**

**Date:**

Sign here: \_\_\_\_\_

**Name:**

**Telephone:**

type or print: \_\_\_\_\_

**for:**

Name of firm: \_\_\_\_\_

**Address:**

Street address: \_\_\_\_\_

and mailing address

if different: \_\_\_\_\_

City, State,  
and Zip Code: \_\_\_\_\_

**Architect's Review Comments:**

Accepted

Accepted as noted

Rejected

Rejected (received too late)

Rejected (submittal incomplete)

**Additional comments:**

**For the Architect:**

**Date:**

Signature here: \_\_\_\_\_

**Attachment A**

**BID SUBMITTAL FORM**

The bidder hereby proposes to perform all work for the construction of the new Capital Court Apartments in strict accordance with the contract documents, within the time set forth therein, and at the prices stated herein.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in the NOTICE TO PROCEED, Owner INTENDS TO BEGIN THIS PROJECT in January of 2016 depending on Closing Approval. If construction has not begun within 30 days of signing of the contract, Owner will amend the contract and adjust the contract amount if necessary. Conversely if the closing does not occur on or before January 1<sup>st</sup>, 2015 the owner will amend the contract to allow for a contract period that both the General Contractor and Owner agree upon.

Bidder further agrees to pay liquidated damages each calendar month for each building that does not have a Temporary Certificate of Occupancy by October of 2016. The liquidated damages will be negotiated with the Contractor awarded the project. Bidder agrees to obtain a Final Certificate of Occupancy by November of 2016. The dates set forth above will be adjusted if the closing does not occur on or before December of 2015.

The undersigned, having familiarized themselves with the plans and with the local conditions affecting the work, and with the Specifications (including Bid Solicitation, Instructions to Bidders, form of the Bid Bond, Non Collusion Affidavit, form of the Contract, form of the Performance and Payment Bonds, the General Conditions, Drawings, Addenda as prepared by Encompass , has become thoroughly familiar with the terms and conditions affecting performance and costs of the Work at the place where the work is to be done, and hereby proposes and agrees to fully perform the Work within the time stated and in strict accordance with the Contract Documents, for the following bid.

**PROVIDE A PROPOSED CONSTRUCTION SCHEDULE & SCHEDULE OF VALUES AS PART OF YOUR BID. - ALL OTHER INFORMATION AS LISTED WITHIN Instructions to Bidders**

**BID AMOUNT**

BASE BID for construction Two Apartment Buildings, Pavilion and Play Equipment and all associated work for a 60-Unit Affordable Housing Project in Cheyenne, Wyoming, Capital Court Apartments.

**TOTAL BASE BID \$** \_\_\_\_\_  
\_\_\_\_\_ (\$ \_\_\_\_\_ )

In submitting this bid, it is understood that the right is reserved by Wyoming Housing Network and Blueline Development to reject any and all bids; the contractor is to hold bid amount for a minimum of ninety (90) days. If written notice of the acceptance is mailed, telegraphed, or delivered to the undersigned within the period specified above, the undersigned agrees to execute and deliver a contract in the prescribed form and furnish the required bond within ten (10) days after the contract is presented to him/her (themselves) for signature.

Security in the sum of \_\_\_\_\_ dollars (\$ \_\_\_\_\_), in the form of \_\_\_\_\_ is submitted herewith in accordance with the specifications. SEE NEXT PAGE

\*Bidder acknowledges receipt of the following ADDENDA.

\_\_\_\_\_  
\*Bidder acknowledges Building Features by Blueline.  
\_\_\_\_\_

**Change Order Fee: Includes overhead (2%) and profit (6%), expressed as a percentage of the Change Order cost – 8%.**

Respectfully Submitted

Name of Firm: \_\_\_\_\_

Name and Title of Contact Person: \_\_\_\_\_

Billing Address of Firm: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_  
Seal (if BID is by a corporation)

Fax: \_\_\_\_\_



**Attachment B**

**Bid Certification Form**

**Please complete and return with bid forms.**

I, \_\_\_\_\_ (print name), certify that I am the  
\_\_\_\_\_ (print title) of the firm or partnership named as Bidder  
herein;

that \_\_\_\_\_ (print name), who signed this Bid Submittal Form,  
was then \_\_\_\_\_ (print title) of said firm or partnership; that  
said Bid Submittal Form was duly signed for and in behalf of said firm or partnership by authority of its  
governing body, and is within the scope of its powers.

**Contractor Department of Labor and Industry License Number** \_\_\_\_\_

*(if applicable Corporate Seal)*

By:  
\_\_\_\_\_  
\_\_\_\_\_

Date:  
\_\_\_\_\_

# Crow Creek Apartments-

Cheyenne, Wyoming

## Unit Mix and Square Footage

Units	Number	Baths	Min Sq Ft
1 Bed	8	1	750
2 Bed	26	2	950
3 Bed	26	2	1050

## Project Description

- 2 Buildings
- Number of Floors in the tallest building: 3
- No Elevator
- Manager's office
- Parking: 124 spaces
- ADA for 6 lower level units

## Building Features

### Insulation

- Exterior Wall - Above Required R-Value to be provided R-27 vs. R-19
- Ceiling - Above Required R-Value to be provided R-50 vs. R-38

### Sound

- Floor to Ceiling Sound Transmission Class - 50
- Unit to Unit (common wall) Sound Transmission Class – 56

### Windows

- All windows will exceed IECC standards and will provide the following features:  
U Value U-.30, SHGC 0.40, Air Infiltration Rate 0.05 (Slider Window), U Value U-.30, SHGC 0.40, Air Infiltration Rate 0.11 (Single Hung Window)

### Health and Maintenance

- Active fan radon venting system
- Vented crawlspaces or slab-on-grade to reduce moisture and mold/mildew issues.
- Low maintenance landscaping including native drought resistant plants with efficient irrigation systems
- Extra storage space in units
- Low VOC paints and adhesives
- Hard Wired CO Detector for each sleeping area

- Cement Board siding or EIFS-Exterior Insulation and Finishing System (bumps R Value up approximately an additional R-6)
- Both products come with a 50 year warranty and are cementitious siding which will reduce rot potential.
- 30 year roofing shingle
- Children's play area with playground equipment

### **Unit Features**

#### **Appliances**

- Low water consumption toilets
- Efficient gas furnace (Energy Star or equivalent)
- Air conditioning - electric
- Dishwasher (Energy Star or equivalent)
- Microwave oven (Energy Star or equivalent)
- Frost free refrigerator/freezer (Energy Star or equivalent)
- Garbage disposals
- Stove hood exterior vented fan
- Self-cleaning ovens- electric
- Washers (Energy Star or equivalent) and dryers
- Gas hot water heater
- Extra Storage space
- High speed internet and TV wiring

#### **Design for Accessibility**

- Levered handles for exterior and interior doors
- Outlets mounted not less than 15 inches above floor covering
- Light switches, control boxes and/or thermostats mounted no more than 48 inches above floor covering
- Walls adjacent to toilets, bath tubs and shower stalls will have reinforcement for later installation of grab bars (on all floors)

#### **Energy Efficiency**

- Built above 100 year floodplain defined by FEMA (Tab 17 of Application)
- Drought resistant plants and landscaping
- Keep all exterior wood at least 12" above soil
- Seal external cracks, joints, etc. with caulking and install pest proof screens
- Average flow rate of lavatory faucets is <2.00 gpm
- Average flow rate of all showers is <2.00 gpm per stall
- Average flow rate of all toilets is <1.30 gpf
- No unvented combustion appliances
- Active fan radon venting system

- Energy Star labeled bathroom exhaust fans
- Insulation meets R-value requirements of IECC
- At least R-6 insulation around ducts in unconditioned spaces
- At least R-3 insulation around pipes in unconditioned spaces
- Install efficient heating and cooling equipment
- Install Energy Star programmable thermostat
- Energy Star refrigerator, dishwasher, ceiling fans and washer and dryer.

## **Building / Component Warranties**

The following is a list of building / component warranties that the Contractor / sub-contractor would be responsible for presenting specific warranty information or registering with the manufacturer of the product. The Warranty Manual should provide proof of registration of said warranty. In addition, Warranty Manual needs to have clear but brief description on the lead page of each section on the warranties submitted and the scope of warranty provided by mfg.

### **Building**

- Acoustical ceiling tile (IF APPLICABLE)
- Alarm system
- Asphalt paving, parking lot painting
- Building Security systems: Access control system, Telephone Entry system, Surveillance camera sys., rapid entry systems (i.e., Knox Box)
- Building material – composite decking, other man-made material, soffit, fascia, insulation
- Building signage
- Cabinets /countertops
- Carport Structures – framing, roof, gutters, downspouts
- Concrete foundation, flat work
- Construction blocks – concrete block, retaining walls
- Electrical – lights (exterior/interior), panels, switches, outlets, smoke detector, CO2 detector, other fixtures
- Elevator (IF APPLICABLE)
- Fencing
- Fireplace (IF APPLICABLE)
- Flagpole (IF APPLICABLE)
- Fire Suppression system
- Flooring – carpet, vinyl, tile
- Garage overhead doors and controls (IF APPLICABLE)
- Handrails (fabricated), banisters
- Hardware: shelving, mirrors,
- HVAC system – heating and cooling
- Hot Water Heater sys.
- Interior finish items: trim
- Landscaping – irrigation system, control panel, trees, shrubs, sod, seeding
- Locks & keys
- Playground structures and surface
- Plumbing: fixtures (sink, shower, tub, toilet, utility sink), faucets,
- Roof and floor trusses
- Roof: asphalt shingles, elastomeric rubber coat, flashing, or other material



- Siding - Fiber cement siding, EIFS siding, Hardie plank siding, vinyl or aluminum siding, cultured stone, metal siding etc.
- Trash chute system
- Wall covering: paint, wallpaper
- Water drainage: gutters, downspouts, French drains, culverts
- Windows, doors (exterior / interior)

### **Components**

- Appliances: refrigerator, range, hood vent, dishwasher, washer, dryer
- Window coverings: blinds
- Community room furnishings: couch, loveseat, chairs, dining sets, lamps, outdoor furniture  
(ONLY IF PROVIDED BY CONTRACTOR)

## RATING FACTORS TO BE USED IN EVALUATION OF

All proposals received by the specified date will be tabulated and evaluated by Wyoming Housing Network and Blueline Development selection committee. A tabulation of the quotes received will be available within a reasonable time after the Date Due. Results will be e-mailed to interested parties upon request.

Although the following criteria will be used in making the selection, no single one of the criteria will be the determining factor in the selection of offerors with whom Wyoming Housing Network and Blueline Development may commence negotiation of the agreements or in the final selection of which proposal best responds to all the needs of Wyoming Housing Network and Blueline Development.

Proposals will be evaluated in the following manner:

<u>NO.</u>	<u>ITEM DESCRIPTION</u>	<u>POINTS</u>
1.	Proposed Price	35
2.	Ability to complete projects in a reasonable timeframe	20
3.	Ability to provide all services listed in this Request For price Quotes.	20
4.	Similar or Past Experiences Providing Listed Services	15
5.	References	10
POSSIBLE TOTAL		100

## **DIVISION 1 – GENERAL REQUIREMENTS**

Sections included:

- Section 01010 – Summary of Work and Basic Requirements
- Section 01021 – Construction Staking
- Section 01025 – Schedule of Values
- Section 01027 – Applications for Payment
- Section 01035 – Modification Procedures
- Section 01060– Applicable Codes (Regulatory Requirements)
- Section 01100 – Construction Procedures
- Section 01153 – Change Order & Request for Information Procedures
- Section 01200 – Project Meetings
- Section 01300– Submittals
- Section 01530– Protection and Safety
- Section 01700– Contract Closeout
- Section 01730 – Operation and Maintenance Data
- Section 01740– Warranties and Bonds
- Section 01800– Site Maintenance and Clean up

**01010 - SUMMARY OF WORK**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Project Name: Capital Court Apartments LLC
  - Client Name: Blueline Development and Wyoming Housing Network
  - Project Location: Address:
    - Building A
    - Building B
    - Pavilion
  - Cheyenne Wyoming
- B. Project summary:
  - 1. Project type and size.

This project consists of constructing 2 apartment unit buildings, two and three-story with 60 apartments, Pavilion and Playground Equipment
  - 2. Occupancy type: Type R-2, 2012 I.B.C., see code plans  
Construction type: Type V-B non-rated, see code plans
  - 3. Work to be done under this bid includes the furnishing of all labor, material, equipment and supervision to perform all work for the construction of the 60 total Unit Affordable Housing Apartment including site work as indicated on the Contract Drawings and as specified herein including, but not limited to:
    - a. See Specifications for Owner provided permitting.
    - b. Site Work Including:
      - 1) Demolition and removal or stockpiling
      - 2) Excavation and backfill
      - 3) Site grading – Finish Grading
      - 4) Site improvements
      - 5) Landscaping and Sprinkler System Complete
    - c. General Construction Including:
      - 1) Excavation and backfill
      - 2) Concrete and Paving, Striping work
      - 3) Building construction complete
        - 2 Main Buildings, Pavilion Play area, and Garbage Enclosures
      - 4) Interior finishes complete
      - 5) IECC 2012 must be followed as per the construction documents.
    - d. Plumbing, heating and ventilation complete, including temporary heat.

- e. Electrical complete, including temporary facilities.
- f. Full Fire Sprinkler – NFPA 13R

1) Performance requirements for completed work: Contractors to reference Instruction to Bidders

C. Project requirements:

1. Existing site conditions: See Contract Drawings.
  2. Requirements for construction schedule, and sequence of work: The construction schedule starts on the date the Notice to Proceed is dated. From that date the contractor shall have the number of CALENDAR days indicated on the schedule to complete the project, obtain an occupancy permit and be issued a Certificate of Substantial Completion from the Architect. The date of the Notice to Proceed shall be negotiated with the owner and the first apparent qualified low bidder.
- D. Apply, obtain, and pay for all permits required for the work as described herein. Submit two copies each of all permits to Owner and to Architect. Fire Sprinkler is a deferred submittal required to be submitted by the General Contractors Sub Contractor. All drawings and forms and permit fees shall be completed and paid by the contractor.
- E. The General Contractor shall be responsible in providing all temporary utilities needed for construction to the site. This includes, but is not limited to, temporary power, trenching, installation of electrical cables/wires, backfilling, installation of temporary transformer, and removing, if required, temporary cables/wires.
- F. The General Contractor and responsible Subcontractors shall be responsible for providing temporary heat as necessary to complete their contractual duties and to protect all work and materials from damage caused by dampness and freezing.
- G. Comply with all applicable building codes and rules of other governing regulatory agencies. Submit two copies each of permits, inspection reports, and certificates of compliance to Owner and Architect.
- H. Verify field dimensions before ordering fabrications or products to fit in place. Notify Architect of existing conditions and dimensions that differ from those shown in the Drawings.
- I. Unless noted otherwise, the subject of all imperative sentences in the Specifications is the Contractor. For example, "Provide and install . . ." means "Contractor shall provide and install . "
- J. Provide project sign and locate on site where directed by the Architect. The sign shall be 8 x 8 feet in size by 2" exterior grade plywood and supported and braced as required. Paint all surfaces of sign with 2 coats of exterior house paint. Design and lettering to be as directed by the Architect. The Project Sign shall be installed within (3) weeks of project commencement.

## 1.2 RELATED SECTIONS

- A. Drawings and General Provisions of the Contract Documents, including General and



MULTI FAMILY HOUSING, encompass v2 IIc.

Supplementary Conditions apply to this section.

- B. Other Division 01 - Specifications Sections - apply to this section.

**1.3 PROTECTION**

- A. The contractor will be held responsible for all damages and/or claims resulting out of this contract.
- B. Contractor shall take every precaution necessary for protection of all persons and property on or about the construction site.

END OF SECTION

## **SECTION 01021 –CONSTRUCTION STAKING**

### **PART 1:GENERAL**

#### **1.1 CONSTRUCTION STAKING**

- A. Basic horizontal and vertical control shall be provided by the Civil Engineer of Record, hired by the General Contractor. Further the site supervisor shall protect any supplementary stakes which may be necessary to control work and meet the accuracy requirements of this contract.

### **PART 2:PRODUCTS – NOT USED**

### **PART 3:EXECUTION**

#### **3.1 CONSTRUCTION STAKING**

- A. The following construction staking will be required to be bid as part of the overall Base Bid required to perform this work. All other construction staking and layout is the responsibility of the Contractor (such as blue-topping and additional building layout).
  - 1. Rough Grading / Construction limits / Slope limits – at intervals determined adequate by Engineer to perform the work.
  - 2. Building Foundation Layout – Layout for building at major foundation corners, jogs, and associated gridlines. Cuts and fills to finish grade elevation will be given as necessary for construction.
  - 3. Storm sewer to include staking of storm drain Two offset stakes will be given for each storm drain inlet to either the center of the storm drain inlet or back of curb with finish grade cuts and fills.
  - 4. Sanitary Sewer Main and Services – Offset line with grade at 25-foot stations, with 2 offset stakes to manholes, bends cleanouts and any appurtenances deemed necessary.
  - 5. Water Line - Staking will be required from the point of connection to the location entering the buildings.
  - 6. Lighting and Dry Utilities - Two offset stakes with grade for structures associated with new or relocated utilities and appurtenances. Two offset stakes with grade for new lighting pole foundations. Offset stakes will also be provided for major joint, dry utility trenches, pedestals, and transformers with cuts and fills to finish grade. Minor dry utility services lines are not anticipated to be staked and will be the contractor's responsibility.
  - 7. Curb – offset line down edge of curb and gutter and to include PC, PT, radius points and grade break points, at 25' spacing typical, or closer as determined by the Engineer.
- E. Prior to commencing work, the Contractor shall carefully compare and check all drawings, each with the other that in any way affects the location or elevation of the work to be executed by him, and should any discrepancy be found, he shall immediately report the same to the Civil Engineer for verification and adjustment. Any duplication of work made necessary by failure

and neglect on Contractor's part to comply with this function shall be done at Contractor's sole expense.

- F. The Contractor shall be responsible to protect and preserve the established construction staking provided by Civil Eng as part of the successful bid, until such staking is determined, by both Civil Eng and Contractor, to no longer be necessary to complete the work. Any re-staking required due to Contractor destroying or disturbing construction staking shall be replaced by Engineer at the General Contractors cost.

**PART 4: MEASUREMENT AND PAYMENT**

**4.1 CONSTRUCTION STAKING**

- A. The Costs associated with the engineering certifications and construction staking as described above shall be bid for Construction Staking.

END OF SECTION

MULTI FAMILY HOUSING, encompass v2 IIc.

## **01025 - SCHEDULE OF VALUES (Measurement and Payment)**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Unless otherwise stated in the Agreement, provide a detailed breakdown of the Contract Sum as a Schedule of Values that are allocated to each part of the Work.
- B. Before submitting the first application for payment, submit a proposed Schedule of Values to the Owner.
- C. Provide copies of subcontracts and other data acceptable to the Owner to substantiate the sums described.

END OF SECTION

**01027 – APPLICATION FOR PAYMENT**

**PART 1 – GENERAL**

**1.1 SUMMARY**

- A. Scope of Work:
  - 1. This section specifies administrative and procedural requirements governing the contractor’s application for payment.
  - 2. The contractor’s Construction Schedule and Submittal Schedule are included in Section 01300 “Submittals”.
  
- C. Schedule of Values:
  - 1. Coordinate preparation of the Schedule of Values with preparation of the contractor’s Construction Schedule.
    - a. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:
      - 1) Capital Court Apartments Project
      - 2) Encompass v2 Ilc
      - 3) List of subcontractors
      - 4) List of products
      - 5) List of principal suppliers and fabricators.
      - 6) Schedule of submittals
    - b. Submit the Schedule of Values to the architect at the earliest feasible date.
  - 2. Format and Content: Use the Project Manual Index including the sections under each Division as a guide to establish the format for the Schedule of Values.
    - a. Identification: Include the following project identification on the Schedule of Values:
      - 1) Capital Court Apartments Project
      - 2) Encompass v2 Ilc
      - 3) Contractor’s name and address
      - 4) Date of submittal
    - b. Arrange the Schedule of Values in a tabular form with separate columns to indicate the following for each item listed:
      - 1) Generic name.
      - 2) Related specification sec
      - 3) Name of subcontractor
      - 4) Name of manufacturer or fabricator
      - 5) Name of supplier
      - 6) Change Orders (numbers) that have affected values
      - 7) Dollar value
      - 8) Percentage of contract sum to the nearest one-hundredth percent, adjusted to total 100 percent
    - c. Provide a breakdown of the contract sum in sufficient detail to facilitate

continued evaluation of applications for payment and progress reports.  
Break principal subcontract amounts down into several line items.

d. Round amounts off to the nearest whole dollar; the total shall equal the contract sum.

e. For each part of the work where an application for payment may include materials or equipment, purchased or fabricated and stored, but not yet installed, provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent state of completion, and for total installed value of that part of the work.

f. Margins of Cost:

- 1) Show limited items for indirect costs, and margins on actual costs, only to the extent that such items will be listed individually in applications for payment. Each item in the Schedule of Values and applications for payment shall be complete including its total cost and proportional share of general overhead and profit margin.
- 2) At the contractor's options, temporary facilities and other major cost items that are not direct cost of actual work-in-place may not be shown as separate limited items in the Schedule of Values of distributed as general overhead expense.

g. Schedule Updating: Update and resubmit the Schedule of Values when Change Orders or Construction Change Directly result in a change in the contract sum.

## 1.2 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by the architect and paid for by the owner. The initial application for payment, the application for payment at time of substantial completion, and the final application for payment involved additional requirements.
- B. Payment Application Times: Applications for payment shall be submitted on the 1st of each month in order for the contractor to receive payment by the 1st of the following month. Applications received after the 1st will be processed in the next billing cycle. The period of construction work covered by each application for payment is the previous month. See 7(c) of the Standard Form of Agreement.
- C. Payment Application Forms: Unless otherwise authorized, use forms provided by the owner for applications for payment; sample copies as found in the project manual.
- D. Application Preparations: Complete every entry in the form, including notarization and execution by person authorized to sign legal documents on behalf of the contractor. Incomplete applications will be returned without action.
  1. Entries shall match data on the Schedule of Values and contractor's Construction Schedule. Use updated schedules if revisions have been made.



2. Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.
  3. **Include 5% retainage.**
- E. Transmittal: Submit 3 executed copies of each application for payment to the architect by means ensuring receipt within 24 hours; one copy shall be complete, including waivers of lien and similar attachments, when required. Transmit each copy with a transmittal form listing attachments, and recording appropriate information related to the application in a manner acceptable to the architect,
- F. Waivers of Mechanics Lien: With each application for payment, submit waivers of mechanics lien from every entity who may lawfully be entitled to file a mechanics lien arising out of the contract, and related to the work covered by the payment.
- G. Waivers of Mechanics Lien: With each application for payment submit waivers of mechanics lines from subcontractors or sub- subcontractors and suppliers for the construction period covered by the previous application.
1. Submit partial waivers on each item for the amount requested, prior to deduction for retainage, on each item.
  2. When an application shows completion of an item, submit final or full waivers.
  3. The owner reserves the right to designate which entities involved in the work must submit waivers.
  4. Waiver Delays: Submit each application for payment with the contractor's waiver of mechanics line for the period of construction covered by the application.
    - a) Submit final application for payment with or preceded by final waivers from every entity involved with performance of work covered by the application who could lawfully be entitled to a lien.
  5. Waiver Forms: Submit waivers of lien on forms, and executed in a manner, acceptable to owner.
- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of the first application for payment include the following:
1. List of subcontractors.
  2. List of principal suppliers and fabricators.
  3. Schedule of Values.
  4. Contractor's Construction Schedule (bar chart).
  5. Schedule of principal products.
  6. Schedule of unit prices.
  7. Submittal Schedule (preliminary if not final).
  8. List of contractor's staff assignments.
  9. Copies of building permits.
  10. Copies of authorization and licenses from governing authorities for performance of this work.
  11. Report of pre-construction meeting.
  12. Certificates of insurance and insurance policies.

13. Performance and payment bonds (if required).
- I. Application for payment and Substantial Completion: Following issuance of the Certificate of substantial completion, submit an application for payment; this application shall reflect any certificates of partial substantial completion issued previously for owner occupancy of designated portions of the work.
    1. Warranties (guarantees) and maintenance agreements.
    2. Maintenance instructions.
    3. Change-over information related to owner's occupancy, use, operation and maintenance.
    4. Final cleaning.
    5. Application for reduction or retainage, and consent of surety.
    6. Advice on shifting insurance coverages.
    7. Contractor's construction schedule for completion of remaining work.
    8. Occupancy permits and similar approvals.
  - J. Final Payment Application: Administrative action and submittals which must precede or coincide with submittal of the final payment application for payment include the following:
    1. Completion of project closeout requirements.
    2. Completion of items specified for completion after substantial completion.
    3. Assurance that unsettled claims will be settled.
    4. Assurance that work not complete and accepted will be completed without undue delay.
    5. Transmittal of required project construction records to owner.
    6. Proof that taxes, fees and similar obligations have been paid.
    7. Removal of surplus materials, rubbish and similar elements.
    8. Affidavit on behalf of contractor.
  - K. All other applications for payment: Administrative actions and submittals that must coincide with submittals for application for payment shall include the following:
    1. Updated construction schedules as required.
    2. Minutes of on site safety meetings held by the general contractor and his subcontractors.
    3. Applications for payment which do not include these items will be considered incomplete and will not be processed. This may result in the delay of payment.

END OF SECTION

## 01035 - MODIFICATION PROCEDURES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This section specifies administrative and procedural requirements for handling and processing contract modifications.
- B. Related Sections: The following sections contain requirements that related to this section:
  - 1. Division 1 Section 01300 "Submittals" for requirements for the contractor's Construction Schedule.
  - 2. Division 1 Section 01027 "Applications for Payment" for administrative procedures governing applications for payment.
  - 3. **Division 1 Section 01153 "Change Order & RFI Procedures"**
- C. Related Documents:
  - 1. Drawings and general provisions of contract, including Division 1 Specifications Sections, apply to this section.
  - 2. A201.

#### 1.2 MINOR CHANGES IN WORK

- A. Supplemental instructions authorizing minor changes in the work, not involving an adjustment to the contract sum or contract time, will be issued by the architect as required.

#### 1.3 CHANGE ORDER PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Proposed changes in the work that will require adjustment to the contract sum or contract time will be issued by the architect, with a detailed description of the proposed change and supplemental or revised drawings and specifications, if necessary.
  - 1. Proposal requests issued by the architect are for information only. Do not consider them an instruction either to stop work in progress, or to execute the proposed change.
  - 2. Unless otherwise indicated in the proposal request, within 10 days of receipt of the proposal request, submit to the architect for the owner's review and estimate of cost necessary to execute the proposed change.
  - 3. Include a list of quantities of products to be purchased and unit costs, along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
  - 4. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
  - 5. Include a statement indicating the effect the proposed changes in the work will have on the contract time.
- B. Contractor-Initiated Change Order Proposal Requests: When latent or other unforeseen conditions require modifications to the contract, the contractor may propose changes by submitting a request for a change to the architect.
  - 1. Include a statement outlining the reasons for the change and the effect of the

- change on the work. Provide a complete description of the proposed change on the contract sum and contract time.
2. Include a list of quantities of products to be purchased and unit costs along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
  3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
- C. Proposal Request Form: Use forms provided by the owner for Change Order Proposals; sample copies are included at the end of this section.
1. Change Orders not justifiably impacting critical path items, resulting in an effect on the end date, will then result in approval for an extension of time.
- D. Allowances:
1. Allowance Adjustment: Base each Change Order Proposal Request for an allowance cost adjustment solely on the difference between the actual purchase amount and the allowance, multiplied by the final measurement of work-in-place, with reasonable allowances, where applicable, for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
    - a. Include installation costs in the purchase amount only where indicated as part of the allowance.
    - b. When requested, prepare explanations and documentation to substantiate the margins claimed.
    - c. Submit substantiation of a change in scope of work claimed in the Change Orders related to unit-cost allowances.
    - d. The owner reserves the right to establish the actual quantity of work-in-place by independent quantity survey, measure, or count.
  2. Submit claims for increased costs because of a change in scope or mature of the allowance described in the contract documents, whether for the purchase order amount or contractor's handling, labor, installation, overhead, and profit, within 10 days of receipt of the change order or construction change directive authorizing work to proceed. Claims submitted later than 10 days will be rejected.
- E. Construction Change Directive:
1. Construction Change Directive: When the owner and contractor are not in total agreement on the terms of a Change Order Proposal Request, the engineer may issue a Construction Change Directive, instructing the contractor to proceed with a change in the work, for subsequent inclusion in a Change Order.
    - a. The Construction Change Directive will contain a complete description of the change in the work and designate the method to be followed to determine change in the contract sum or contract time.

2. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
  - a. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the contract.

F. Change Order Procedures:

1. Upon the owner's approval of a Change Order Proposal Request, the Architect will issue a Change Order for signatures of the owner and contractor on forms provided by the owner as provided in the conditions of the contract.
2. If, upon pursuing change order work, it becomes evident that there is going to be less cost required to implement any given change order, then the owner is entitled to a credit for same, minus the contractor's overhead and profit.
3. Neither the owner nor architect/engineer will allow a time extension for delay of performance of functions that do not impact the critical path where a prudent course of action is available to the contractor or subcontractors
4. Requests for changes are not official or recognized unless it is in writing and signed by the architect or the owner's representative. No action on the part of the Architectural firm or the owner's representative shall be construed or interpreted as a "constructive change" unless in writing and signed by an authorized party as noted.

G. Change Order Procedures

1. Upon the owner's approval of a Change Order Proposal Request, the architect will issue a Change Order for signatures of the owner and contractor.

END OF SECTION

## **01060-APPLICABLE CODES (REGULATORY REQUIREMENTS)**

### **PART 1 - GENERAL**

#### Compliance with Codes and Standards:

Comply with the latest editions of all applicable national and state codes, standards, and Local Fire Protection Authority:

International Building Code as amended and adopted by the State of Wyoming or the City/County of Cheyenne

International Energy Conservation Code, as amended and adopted by the City/County of Cheyenne

International Mechanical Code, latest edition

National Electrical Code (NEC-NFPA), latest edition

National Fire Protection Association (NFPA)

Model Energy Code

Uniform Plumbing Code

Occupational Safety and Health Act (OSHA)

American National Standards Institute (ANSI)

AMERICANS WITH DISABILITIES ACT (ADA)

ADA ACCESSIBILITY GUIDELINES (ADAAG)

FAIR HOUSING ACT

ANSI

SECTION 504, WHEN APPLICABLE PER FUNDING

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#### Contractor Responsibility:

Protection of life, health, and public welfare as it relates to the execution of the construction contract is the responsibility of the Contractor. Neither the Owner, nor the A/E will provide observation, inspection, supervision, or any comment on plans, procedures, or actions employed at the project as they relate to safety of life, health, or public welfare. If conditions are imposed by the A/E, or Owner, which interfere with or imply actions detrimental to safety, written notice shall be issued by the Contractor to the Owner and a decision shall be returned to the Contractor for action prior to affecting any unsafe condition.

In case of a conflict between referenced applicable codes, the code with the more stringent requirements will govern.

Where governing Codes indicate that the Drawings or Specifications do not comply with the requirements of the codes, the Contractor, Sub-Contractor, or Supplier who discovers the non-compliance item shall be responsible for notifying the A/E in writing of the non-compliance item or items during the bidding stage. If such an item is not discovered until construction is in progress, notify the A/E immediately, so that the item may be resolved with no project delay.

Drawings and Specifications shall be followed where they are superior to code requirements.

END OF SECTION



**01100 - CONSTRUCTION PROCEDURES (Special Project Procedures)**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Provide administrative coordination of all work, including trained, qualified employees and subcontractors, and supervisory personnel to the Architect/Engineer and owner after contract award and before commencing work.
- B. Arrange and conduct preconstruction and construction and inspections with design principals, consultants, and construction trades when required by the Architect.
- C. Submit progress schedule, bar-chart type, updated monthly. Provide submittal schedule, coordinated with progress schedule. Submit schedule of required tests including payment and responsibility.
- D. Submit schedule of values.
- E. Submit payment request procedures.
- F. Provide to the Architect and post at the construction site, a phone and address list of individuals to be contacted in case of emergency.
- G. Maintain and update record drawings and specifications as work progresses. Submit a complete, updated set of record documents upon conclusion of the work.
- H. Keep all work clean and well protected from dirt, weather, theft, and damage.
- I. A list of subcontractors and suppliers will also be submitted before commencing work with amounts of their interest in the contract.

END OF SECTION

## **01153 –CHANGE ORDER AND REQUEST FOR INFORMATION PROCEDURES**

### **PART 1 – GENERAL**

#### **1.1 SUMMARY**

- A. Changes in the work may be required which will be authorized by a Change Order.
- B. Change Orders, signed by the Owner and Architect, to authorize changes in the work will include equivalent changes in the Contract Sum and/or Time of Completion.
- C. Change orders will be numbered in sequence and dated.
  - 1. In addition to the provisions in A201-2007 "General Conditions to the Construction Contract" the following procedures for Change Orders shall be included:
    - a. All Change Orders shall be preceded by a Change Order Request (COR) or Proposed Change Order (PCO) scope of work, a complete breakdown of the materials cost for the change of scope of work in CSI format, and a cost for the labor.
    - b. Following the submission of the COR or PCO, and after a thorough review of the items listed within the COR or PCO is agreed upon by the Owner, a formal Change Order (CO) will be issued.
    - c. The CO shall contain all of the information included with the COR and shall contain: the Original Contract Sum; the Net change by previously authorized Change Orders; the Contract Sum prior to the Change Order; the amount by which the Contract will be increased; the new Contract Sum including this Change Order; and the extension to the Contract Time caused by the Change Order.
- D. A request for estimates for possible changes is not a Change Order or a direction to proceed with the proposed changes. That can only be authorized through a signed Change Order.
- E. Request for Information (RFI) Procedure - All requests for information sent to the design team by Subcontractors and General Contractor shall follow the procedural guidelines listed below: ((Some items require Owner review and approval. Proper time shall be allowed for this process to occur. Unless directly stated the Architect has fourteen (14) days to respond. Any RFI that creates a monetary or construction timeline change to the contract must be made into a formal Change Order.))
  - a. RFI's will be submitted by the General Contractor to the Architect
  - b. State "Request for Information" at the top of the page.
  - c. Include the following information: RFI Number, Project Name, Project Architect, Project Owner, and Project Location.
  - d. Subject line: state the specific item or component requiring additional information.
  - e. Date of request.
  - f. State to whom the RFI is directed (name of Architect).
  - g. State from whom the RFI is being sent (name of G.C. or Subcontractor).
  - h. Include the following information: Date Submitted; Cost Impact; Schedule Impact; Drawing Number; Drawing Detail, CSI Code; Spec Section; and Reference.
  - i. State the question (reason for the RFI).
  - j. State the proposed solution. This is required or the RFI shall remain unanswered.
  - k. State the agreed upon solution from the Architect, the name of the Architect, and the date the RFI was completed.

- I. Questions about the project from the General Contractor and Subcontractors to the Architect and design team are encouraged inasmuch as they foment constructive communication between all parties for the betterment of the project.
- m. All RFIs shall be recorded into an RFI log whose purpose is to track the RFI number, the date sent to the Architect and Owner, and the question and proposed solution.
- n. The Architect and the General Contractor shall be responsible for maintaining their own RFI logs. The Owner shall require digital copies of these logs to be submitted to them on a bi-monthly basis.
- o. RFIs are to be used only for the express purposes of addressing items or areas of the drawings that are unclear in their design intent. They shall not be used to deliberately change or alter the drawings, criticize the drawings, Architect, or design, or reduce or alter the scope of work. As such, the number of RFIs shall be monitored by the Owner and Architect throughout the construction process. If the number of RFIs is excessive, the Owner and/or Architect may ask for the RFIs to be addressed through an analog process, i.e., three copies sent to Owner and the Architect delivered via an agreed upon parcel service.

END OF SECTION

## **01200 - PROJECT MEETINGS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. This Section specifies administrative and procedural requirements for project meetings including but not limited to:
  - 1. Pre-Construction Conference.
  - 2. Pre-Installation Conferences.
  - 3. Progress Meetings.

#### **1.3 PRE-CONSTRUCTION CONFERENCE**

- A. Schedule a pre-construction conference and organizational meeting at the Project site or other convenient location no later than 7 days after execution of the Agreement and prior to commencement of construction activities. Conduct the meeting to review responsibilities and personnel assignments.
- B. Attendees: The Owner, Architect and their consultants, the Contractor and its superintendent, major subcontractors, manufacturers, suppliers and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the Work.
- C. Agenda: Discuss items of significance that could affect progress including such topics as:
  - 1. Tentative construction schedule.
  - 2. Critical Work sequencing.
  - 3. Designation of responsible personnel.
  - 4. Procedures for processing field decisions and Change Orders.
  - 5. Procedures for processing Applications for Payment.
  - 6. Distribution of Contract Documents.
  - 7. Submittal of Shop Drawings, Product Data and Samples.
  - 8. Preparation of record documents.
  - 9. Use of the premises.
  - 10. Office, Work and storage areas.
  - 11. Equipment deliveries and priorities.
  - 12. Safety procedures.
  - 13. First aid.
  - 14. Security.
  - 15. Housekeeping.
  - 16. Working hours.

#### **1.4 PRE-INSTALLATION CONFERENCES**

- A. Conduct a pre-installation conference at the site before each construction activity that requires coordination with other construction. The Installer and representatives of manufacturers and fabricators involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise the Architect of scheduled meeting dates.
  - 1. Review the progress of other construction activities and preparations for the particular activity under consideration at each pre-installation conference, including requirements for:
    - a. Contract Documents, including change orders.
    - b. Options.
    - c. Deliveries.
    - d. Shop Drawings, Product Data and quality control Samples.
    - e. Possible conflicts.
    - f. Compatibility problems.
    - g. Time schedules.
    - h. Weather limitations.
    - i. Manufacturer's recommendations.
    - j. Compatibility of materials.
    - k. Acceptability of substrates.
    - l. Temporary facilities.
    - m. Space and access limitations.
    - n. Inspection and testing requirements.
    - o. Required performance results.
    - p. Recording requirements.
    - q. Protection.
  - 2. Record significant discussions and agreements and disagreements of each conference, along with the approved schedule. Distribute the record of the meeting to everyone concerned, promptly, including the Owner and Architect.
  - 3. Do not proceed if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene the conference at the earliest feasible date.

## 1.5 PROGRESS MEETINGS

- A. Conduct progress meetings on Conference Calls at regularly scheduled intervals. Owner and Architect will notify General of scheduled meeting dates. Coordinate dates of meetings with preparation of the payment request.
- B. Attendees: Contractors, project manager and superintendents, Architect, Engineers, and each subcontractor, supplier or other entity concerned with current progress or involved in planning, coordination or performance of future activities shall be represented at these meetings by persons familiar with the Project and authorized to conclude matters relating to progress. A representative of the Owner will attend.
- C. Agenda: Review and correct or approve minutes of the previous progress meeting. Include topics discussion as appropriate to progress and the current status of the Project.
  - 1. Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule. Determine

how construction behind schedule will be expedited.

2. Review the present and future needs of each entity present, including such items as:
  - a. Site utilization, deliveries, working hours, access.
  - b. Housekeeping.
  - c. Quality and Work standards.
  - d. Change Orders and construction change directives or field instructs.
  - e. Unresolved field changes and cost changes.
  
- D. Reporting: No later than 3 days after each progress meeting date, Owner shall distribute copies of minutes of the meeting to each party present and to other parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report action items and party responsible, unresolved items, resolution of problems.
  1. Schedule Updating: Revise the construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

END OF SECTION



## **01300 – SUBMITTALS**

### **PART 1 – GENERAL**

#### **1.1 SUMMARY**

- A. Provide all submittals as specified. Provide three copies where multiple copies are specified but the number is not stated. The General Contractor shall be responsible for the initial review of all submittal drawings. Only after this review occurs shall he send the submittals to the Architect and the Owner for review.
  - a. A submittal log created by the General Contractor shall be sent to the Owner and the Architect monthly throughout the duration of the project for review and coordination.
- B. Provide re-submittals when submittals are not approved.
- C. Provide warranties as specified. Warranties shall be signed by supplier or installer responsible for performance. Warranties shall not limit liability for negligence or non-compliance with documents.
  - 1. Submit the following within 15 calendar days after receiving the Notice to Proceed.
  - 2. Submit list of materials to be provided for this work.
  - 3. Submit manufacturer's specifications required to prove compliance with these specifications.
  - 4. Submit manufacturer's installation instructions.
  - 5. Submit Shop Drawings as required with complete details and assembly instructions.
  - 6. Submit Shop Drawings showing relationship and interface with adjacent or related work.
  - 7. Submit samples of proposed exposed finishes and hardware for approval by the Architect.

#### **1.2 QUALITY ASSURANCE**

- A. Coordination of submittals:
  - 1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
  - 2. Verify that each item and the submittal for it conform in all respects with the specified requirements.
  - 3. By affixing the Contractor's signature to each submittal, certify that this coordination has been performed.
- B. Substitutions:
  - 1. The Contract is based on the standard of quality established in the Contract Documents. Architect and Owner will review any substitutions submitted by Contractors. Contractor must deliver samples and specification data to the Architect a minimum of ten (10) days prior to bid opening.
  - 2. The following products do not require further approval except for interface with the Work:
    - a. Products specified by reference to standard specifications such as ASTM and similar standards.

- b. Products specified by manufacturer's name and catalog model number
- 3. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved in writing for this Work by the Architect.

### **1.3 SUBMITTALS**

- A. Make submittals of Shop Drawings, Samples, substitution requests, and other items in accordance with the provisions of this Section.

## **PART 2 - PRODUCTS**

### **2.1 SHOP DRAWINGS**

- A. Scale and measurements: Make Shop Drawings accurately to a scale sufficiently large to show all pertinent aspects of the items and it's method of connection to the Work.
- B. Provide drawings 8-½"x11" or foldable to that size to facilitate filing. Complete title blocks required on all drawings, identification of job, and name and address of submitting firm. Make all information complete and legible.
- C. Submit three (3) sets of prints. One (1) set will be retained by Architect and two (2) sets will be stamped and returned to Contractor.
- D. Do not fabricate or install without stamped, approved submittals. Liability for costs of changes to Work not so approved will be that of Contractor.

### **2.2 MANUFACTURER'S LITERATURE**

- A. Submit three (3) copies of manufacturer's catalog cut sheets and technical information, as may be required in some Sections of these Specifications.
- B. Where contents of submitted literature from manufacturers includes data not pertinent to the submittal, clearly show which portions of the contents are being submitted for review.

### **2.3 SAMPLES**

- A. Provide Sample or Samples identical to the precise article proposed to be provided. Identify as described under "Identification of Submittals" below.

### **2.4 COLORS AND PATTERNS**

- A. Unless the precise color and pattern is specifically called out in the Contract Documents, and whenever a choice of color or pattern is available in the specified products, submit accurate color and pattern charts to the Architect for selection.

## **PART 3 - EXECUTION**

### **3.1 IDENTIFICATION OF SUBMITTALS**

- A. Consecutively number all submittals.
  - 1. When material is resubmitted for any reason, transmit under a new letter of transmittal and with a new transmittal number.
  - 2. On resubmittals, cite the original submittal number for reference.
- B. Accompany each submittal with a letter of transmittal showing all information required for identification and checking.
- C. On at least the first page of each submittal, and elsewhere as required for positive identification, show the submittal number in which the item was included.
- D. Maintain an accurate submittal log for the duration of the Work, showing current status of all submittals at all times. Make the submittal log available to the Architect for his review upon request.

### **3.2 GROUPING AND SUBMITTALS**

- A. Unless otherwise specified, make submittals in groups containing all associated items to assure that information is available for checking each item when it is received.
  - 1. Partial submittals may be rejected as not complying with the provisions of the Contract.
  - 2. The Contractor may be held liable for delays so occasioned.

### **3.3 TIMING OF SUBMITTALS**

- A. Make submittals far enough in advance of scheduled dates for installation to provide time required for reviews, for securing necessary approval, for possible revisions and resubmittals, and for placing orders and securing delivery.
- B. In scheduling, allow at least ten (10) working days for review by the Architect following the receipt of the submittal.

### **3.4 ARCHITECT'S REVIEW**

- A. Review by the Architect does not relieve the Contractor from responsibility for errors which may exist in the submitted data.
- B. Revisions:
  - 1. Make revisions required by the Architect.
  - 2. If the Contractor considers any required revision be a change, he shall so notify the Architect as provided for in the General Conditions.
  - 3. Make only those revisions directed or approved by the Architect.

### **3.5 MAINTENANCE MANUALS**

- A. Furnish two (2) bound copies of Maintenance /Operating Manuals for the Owner's use.

MULTI FAMILY HOUSING, encompass v2 llc.

END OF SECTION

## **01530 – PROTECTION AND SAFETY**

### **PART 1 – GENERAL**

#### General Statement:

All work shall be carried out in a safe manner in accordance with all current local and State codes, standards, ordinances, and regulations, including safety requirements of the Wyoming State Division of Labor and OSHA.

Provide adequate measures for the protection and safety of workmen, adjacent public and private property, the general public and Wyoming Housing Network and Blueline Development representatives and users.

Provide shoring, sheeting and bracing to prevent caving, erosion, and gulling of sides of excavation and existing construction.

Provide for surface drainage during the construction period in a manner to avoid creating a nuisance to adjacent properties.

Prior to completion of the work, remove from the job site all tools, surplus material, scrap, equipment, debris, and waste.

Site equipment shall be left after the completion of the daily work in a condition where it poses no hazards or safety concerns to the general public and Wyoming Housing Network and Blueline Development representatives and users.

END OF SECTION

**01700 - CONTRACT CLOSEOUT**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. The following are prerequisites to substantial completion. Provide the following:
  - 1. Completed punch list and supporting documentation
  - 2. Signed warranties
  - 3. Certifications as specified
  - 4. Occupancy permit from governing agencies and utility companies as required
  - 5. Testing and start up of building systems
  - 6. Change and transfer of locks and keys as specified
  
- B. Provide the following prior to final acceptance:
  - 1. Final payment request with supporting affidavits.
  - 2. Completed punch list and supporting documentation.
  
- C. Provide sets of record drawings showing original design and all changes made during construction.
  
- D. Provide the following closeout procedures:
  - 1. Submit record documents.
  - 2. Submit maintenance manuals.
  
- E. Complete all repairs, call-backs, corrections, re-adjustments of equipment, final cleaning, and final touch-up. Remove all temporary facilities, equipment, tools and supplies.

END OF SECTION



## **01730 – OPERATION AND MAINTENANCE DATA**

### **PART 1 – GENERAL**

- A. Quality Assurance:
  - 1. Prepare instructions and data by personnel experienced in maintenance and operation of described products.
  
- B. Format:
  - 1. Prepare data in the form of an instructional manual.
  
- C. Binders:
  - 1. Commercial quality, 8-1/2" x 11" three-ring binders with hardback, cleanable, plastic covers. When multiple binders are used, correlate data into related consistent groupings.
  
- D. Cover:
  - 1. Identify each binder with typed or printed title - OPERATION AND MAINTENANCE INSTRUCTIONS; list title of Project and identify subject matter of contents.
  
- E. Organization:
  - 1. Arrange content by process flow under section numbers and sequence of Table of Contents of the Project Manual.
  - 2. Provide tabbed flyleaf for each separate product and system, with typed description of the product and major component parts of the equipment.
  
- F. Text:
  - 1. Manufacturer's printed data, or typewritten data.
  
- G. Drawings:
  - 1. Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
  
- H. Contents, Each Volume:
  
- I. Table of Contents:
  - 1. Provide title of Project, names, addresses, and telephone numbers of the Engineer, Subconsultants, and the Contractor with the names of responsible parties, schedule of products and systems, indexed to content of the volume.
  
- J. For Each Product or System:
  - 1. List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
  
- K. Product Data:
  - 1. Mark each sheet to clearly identify specific products and component parts and data applicable to installation. Delete inapplicable information.

- L. Drawings:
  - 1. Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
  
- M. Type Text:
  - 1. As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
  
- N. Warranties and Bonds:
  - 1. Bind in copy of each
  
- O. Manual for Materials and Finishes:
  - 1. Building Products, Applied Materials, and Finishes:
    - a. Include product data, with a catalog number, size, composition, and color and texture designations. Provide information for re-ordering custom manufactured products.
  - 2. Instructions for Care and Maintenance:
    - a. Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
  - 3. Moisture Protection and Weather Exposed Products:
    - a. Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
  - 4. Additional Requirements:
    - a. As specified in individual product specification Sections.
  
- P. Manual for Equipment and Systems:
  - 1. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and test, and complete nomenclature and commercial number of replaceable parts.
    - a. Panelboard Circuit Directories:
      - 1) Provide electrical service characteristics, controls and communications. Include color-coded wiring diagrams as installed.
    - b. Operating Procedures:
      - 1) Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut down, and emergency instructions. Include summer, winter, and any special operating instructions.

- c. Maintenance Requirements:
  - 1) Include routine procedures and guide for trouble-shooting; disassembly, repair, and reassemble instructions; and alignment, adjusting, balancing, and checking instructions.
- d. Additional Manuals:
  - 1) Provide servicing and lubrication schedule, and list of lubricants required.
  - 2) Include manufacturer's printed operation and maintenance instructions.
  - 3. Include sequence of operation by controls manufacturer. Provide original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- Q. Additional Requirements:

As specified in individual product specification Sections.
- R. Instruction of Owner Personnel:
  - 1. Before final inspection, instruct Owner's designated personnel in operation, adjustment, and maintenance of products, equipment, and systems, at agreed upon times.
  - 2. Use operation and maintenance manuals as basis for instruction. Review contents of manual writer personnel in detail to explain all aspects of operation and maintenance.
  - 3. Prepare and insert additional data in Operation and Maintenance Manual when the need for such data becomes apparent during instruction.
- S. Submittals:
  - 1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of work. A/E will review draft and return one copy with comments.
  - 2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.
  - 3. Submit one copy of completed volumes in final form 15 days prior to final inspection. Copy will be returned after final inspection, with the Engineer's comments. Revise content of documents as required prior to final submittal.
  - 4. Submit 3 copies, 2 for the Owner, 1 for the A/E, of revised volumes of data in final form within ten days after final inspection.

END OF SECTION

## **01740 – WARRANTIES AND BONDS**

### **PART 1 – GENERAL**

#### **1.1 SUMMARY**

- A. This section specifies administrative and procedural requirements for warranties and bonds required by the contract documents, including manufacturers standard warranties on products and special warranties.
  - 1. Refer to the Supplement of the contract for terms of the contractor’s special warranty of workmanship and materials.
  - 2. General closeout requirements are included in section “Project Closeout.”
  - 3. Specific requirements for warranties for the work and products and installations that are specified to be warranted, are included in the individual section of Divisions 1 through 16.
  - 4. Certifications and other commitments and agreements for continuing services to owner are specified elsewhere in the contract documents.

#### **1.2 DISCLAIMERS AND LIMITATIONS**

- A. Manufacturers disclaimers and limitations on product warranties do not relieve the contractor of the warranty on the work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the contractor.

#### **1.3 DEFINITIONS**

- A. Standard product warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the owner.
- B. Special warranties are written warranties required by or incorporated in the contract documents, either to extend time limits provided by standard warranties or to provide greater rights for the owner.

#### **1.4 WARRANTY REQUIREMENTS**

- A. All labor, materials, and systems shall be expressly warranted by the contractor for one (1) year from substantial completion except those items warranted by the manufacturer for longer periods shall carry that warranty.
- B. Related Damages and Losses: When correcting warranted work that has failed, remove and replace other work that has been damaged as a result of such failure of that must be removed and replaced to provide access for correction of warranted work.
- C. Reinstatement of Warranty: When work covered by a warranty has failed corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- D. Replacement Cost: Upon determination that work covered by a warranty has failed, replace or rebuild the work to an acceptable condition complying with requirements of contract documents. The contractor is responsible for the cost of replacing or rebuilding defective work regardless of whether the owner has benefited from use of the work through a portion of its anticipated useful service life.
- E. Owner’s Recourse: Written warranties made to the owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the owner can enforce such other duties, obligations, rights, or remedies.

1. Rejection of Warranties: The owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the contract documents.
- F. The owner reserves the right to refuse work for the project where a special warranty, certification, or similar commitment is required to countersign such commitments are willing do to so.
- G. WARRANTY MANUAL:** A complete and organized Warranty Manual shall be delivered to the Owner no more than 21 days after Final Completion of the project.
- H. WARRANTY REQUEST PROCESS**
1. All defects, malfunctions, omissions, and errors in the materials and/or labor included in the project construction contract shall be covered by the General Contractor Warranty.
  2. The process of making a claim on the aforementioned Warranty shall be:
    - a. Property Manager is notified or identifies the issue(s). If it is determined that the issue(s) are a result in deficiency of materials or construction the Manager shall complete a Warranty Request Form (WRF).
    - b. The WRF shall be sent to the General Contractor by the Property Manager.
    - c. The General Contractor shall have 72 hours to respond to the WRF by means of a written solution to the issue. This does not require that the issue be resolved, but rather requires that the issue be acknowledged and a suitable solution recommended.
    - d. All Warranty items shall be repaired within 21 working days of submission of the proposed solution, or, if matter cannot be reasonably resolved within 21 days, the General Contractor shall notify the Owner with the anticipated timeline for resolution.
- I. Building / Component Warranties SEE FRONT END SPECIFICATIONS.**

#### **1.4 SUBMITTALS**

- A. Submit written warranties to the architect prior to the date certified for substantial completion. If the architect's certificate of substantial completion designates a commencement date for warranties other than the date of substantial completion for the work, or a designated portion of the work, submit written warranties upon request of the architect.
- B. When a designated portion of the work is completed and occupied or used by the owner, by separate agreement with the contractor during the construction period, submit properly executed warranties to the architect within fifteen (15) days of completion of that designated portion of the work.
- C. When a special warranty is required to be executed by the contractor, or the contractor and a subcontractor, supplies or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the owner through the architect for approval prior to final execution.
  1. Refer to individual sections of Divisions 2 through 16 for specific content requirements, and particular requirements for submittal of special warranties.
- D. Form of Submittal: At Final Completion compile two (2) copies of each required warranty and bond properly executed by the contractor, or by the contractor, subcontractor, supplies or manufacturer. Organize the warranty documents into an

orderly sequence based on the table of contents of the Project Manual.

**1.5 EXECUTION**

- A. The need for warranty period corrections, adjustments, modifications, repairs and/or replacement shall be reported by the owner to the architect. The architect shall provide “verification of warranty” responsibility to the owner. The architect will then contact the general contractor for the performance of warranty period responsibilities.
- B. Performance of warranty period responsibilities shall be performed in such a manner as to not cause expense or inconvenience to the owner. This warranty period work shall be performed to the owner’s satisfaction and in conformity with the contract documents as they relate to original contractor performance.

END OF SECTION

## **01800 - SITE MAINTENANCE AND CLEAN UP**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Keep the buildings and site well organized and clean throughout the construction period.
- B. Provide general clean up daily and complete weekly pickup and removal of all scrap and debris from the site. Exception: Reusable scrap shall be stored in a neatly maintained, designated storage area.
- C. At completion of the Work, remove all tools and equipment, surplus materials, equipment, scrap and debris from the job site.
- D. Exterior of building: Inspect exterior surfaces and remove all waste materials, paint droppings, spots, stains or dirt. If necessary to achieve a uniform degree of cleanliness, hose down the exterior of the structure.
- E. Interior of building: Visually inspect interior surfaces and revoke all traces of soil, waste materials, smudges, and other foreign matter. Remove all traces of splashed material from adjacent surfaces. Remove paint drippings, spots, stains, and dirt from finished surfaces.
- F. Schedule final cleaning as approved by the Owner to enable Owner to accept a completely clean Work.
- G. Final cleaning will be comparable to that provided by professional, skilled cleaners using commercial grade cleaning materials. Cleaning materials will be used with care and will be compatible with building materials and finishes. Final cleaning will include removal of scraps or waste in landscaped areas and thorough cleaning of walkways, desks, paved areas and public paved areas adjacent to the site.
  - 1. After installation, inspect all work for improper installation or damage.
  - 2. Operating hardware must perform smoothly. Repair or replace any defective work. Repair work will be undetectable. Redo repairs if work is still defective, as directed by the Architect. Clean the work area and remove all scrap and excess materials from the site.

END OF SECTION



MULTI FAMILY HOUSING, encompass v2 IIc.

## DIVISION 2 – SITE WORK

Sections included:

Section 02005 – EXCAVATION

Section 02100 – SITE CLEARING (SITE PREPARATION)

Section 02200 – EARTHWORK

Section 02221 – TRENCH EXCAVATION & BACKFILL

Section 02500 – PAVING AND SURFACING

Section 02510 – CONCRETE ROADS & WALKS

Section 02600 – UTILITIES

Section 02900 – IRRIGATION

Section 02910 – LANDSCAPE EARTHWORK AND GRADING

Section 02920 – SODDING

Section 02930 – PLANTS

## **02005 - EXCAVATION**

### **PART 1 – GENERAL**

- 1.1 This item shall consist of all labor, equipment and materials necessary to excavate materials encountered of whatever character below the finished subgrades elevations as shown on the drawings.

### **PART 2 - MATERIALS**

- 2.1 Suitable Materials. Existing gravel, sand and rock less than 6 inches in diameter that the requirements of the Geotechnical Report prepared by **Inberg Miller Engineering** and are determined by the Architect/Engineer to be suitable for embankment material.
- 2.2 Unsuitable Material. Shall consist of silts clays, rocks or boulders over 6 inches in average dimension, wood, bark, roots, other landfill materials and other similar materials not suitable for use in the preparation of an embankment.

### **PART 3 - EXECUTION**

- 3.1 Shaping. The site shall be excavated according to the finished elevations and section details shown on the drawings.
- 3.2 Drainage. During the grading of the site, the subgrade shall be maintained in such condition that it will be well-drained at all times.
- 3.3 Night Work. Night work shall be permitted, if approved by the **Neighborhood, City Of Wheatland** through Owner/Architect/Engineer.
- 3.4 Grades. All excavations shall be done to the lines and grades as shown on the drawings or as set by the Architect/Engineer. All unauthorized additional excavations shall not be paid for.
- 3.5 Subexcavations. When unacceptable subgrade material is encountered below the surface, the Architect/Engineer shall order the subexcavation of an area for a specified depth. Replacement material shall be excess suitable material excavated from other portions of this site or new base gravels in accord with the geotechnical report. The measurement and cost of subexcavation and replacing the material into a subexcavated area, to include placement and compaction, shall be paid for through a negotiated change order. The Contractor shall not begin any subexcavation without prior approval.
- 3.6 Workmanship. All work shall be conducted in a professional manner with reasonable care taken not to leave the project in a state of disarray and to create an undue nuisance. The Contractor shall maintain traffic on the adjacent roadways with delays or traffic stoppages not exceeding a reasonable duration as allowed by the Architect/Engineer.
- 3.7 Safety. The Contractor shall provide all barricades, signing and any other safety devices which might be necessary to adequately safeguard the public during the performance of the work

END SECTION

## **02100 – SITE CLEARING (Site Preparation) (Onsite & in Right of Way)**

### **PART 1 – GENERAL**

#### **1.1 SUMMARY**

- A. The Section includes but is not limited to:
  - 1. Protection of existing trees indicated to remain.
  - 2. Removal of trees and other vegetation.
  - 3. Topsoil stripping.
  - 4. Clearing and grubbing.
  - 5. Removing above-grade improvements.
  - 6. Removing below-grade improvements.

#### **1.2 GENERAL**

- 1. Requirements of Regulatory Agencies - Demolition operations shall be performed in accordance with all local and national codes with regard to safety, protection of property, pollution and pest control, and encroachment of streets and sidewalks. The General Contractor shall secure all necessary permits and permission from appropriate governing agencies. The General Contractor shall also provide required notifications and secure necessary permissions from the all agencies for erection of barricades and restriction of traffic when required.
- 2. Safety - The General Contractor shall be solely responsible for the implementation and enforcement of safe working conditions and methods of operation and shall provide all precautions, warnings, barriers and devices necessary for the protection of the general public, his workers, and inspectors having rightful access to the job site. When demolition or removal operations require work in )or the use of) exterior areas, yards, sidewalks and streets, the General Contractor shall erect suitable barriers, guard rails, warning signs, and lights if necessary, particularly at excavations, to provide adequate protection to the general public.
- 3. Pollution Control – Sprinkle debris and install temporary enclosures as necessary to limit dust to lowest practicable level. During removal of dust-generating materials, particularly plaster, from upper level windows and roofs to trucks or dumpsters below, provide dust screens or chutes, or provide constant spray of materials during removal. Remove all debris from streets and adjoining sidewalks and properties at the end of each workday. Do not store or burn materials on site.
- 4. Selective demolition -
  - a. Selective demolition of interior partitions, systems, and building components designated to be removed is indicated on the contract drawings.
  - b. Selective demolition of exterior facade, structures, and components designated to be removed - including below-grade footings, foundations, utilities, and site improvements to depth necessary to avoid conflict with new construction or sitework is indicated on the contract drawings.
  - c. Protect all portions of building, site improvements, and adjoining properties adjacent to or affected by selective demolition.

5. Abandoned utilities and wiring - Remove and/or cap off abandoned utilities and wiring systems. If there is a preference, the contract drawings will indicate removal or capping.
6. Shut-off notification - Notify all responsible utility agencies of schedule of utility shut-off that serve any occupied areas.
7. Using clean fill, free of organic matter, provide backfilling and filling of basement and subgrade areas where required. Remove all rocks, brickbats and other matter exceeding 3 inches in any dimension. Backfill in 12 inch lifts, compacting by machine tamping. Hand tamping is permitted only when filling voids less than 12 inches in depth.
8. Demolish as required for new work, free of nails, hooks, brackets, screws, pads, mounts, and other obstructions to the installation of new material.
9. The General Contractor shall be responsible for ensuring that all utilities, waterways, public works, sidewalks (public and private), and roadways (public and private) are constructed in accordance with the standards of the agencies having jurisdiction.

### 1.3 PROJECT CONDITIONS

- A. Building site is ungraded and unbuilt. Protect existing sidewalks currently in place. It will be at the contractor's expense if any damage occurs during construction to replace to City of Wheatland Standards.

### 1.4 EXISTING SERVICES

- A. General: Indicated locations are approximate; determine exact locations before commencing Work.
- B. Arrange and pay for disconnecting, removing, capping, and plugging utility services. Notify affected utility companies in advance and obtain approval before starting with Work.
- C. Place markers to indicate location of disconnected services. Identify services lines and capping locations on Project Record Documents.

## PART 2 – MATERIALS (NOT APPLICABLE)

## PART 3 – EXECUTION

### 3.1 SITE CLEARING

- A. General: Remove trees, shrubs, grass, and other vegetation, improvements, or obstructions, as required, to permit installation of new construction. Remove similar items elsewhere on site or premises as specifically indicated. Removal includes digging out and off-site disposal of stumps and roots.

- B. Topsoil: Topsoil is defined as friable clay loam surface soil found in a depth of not less than 4 inches. Satisfactory topsoil is reasonable free of subsoil, clay lumps, stones, and other objects over 2 inches in diameter, and without weeds, roots, and other objectionable material.
  - 1. Strip topsoil to whatever depths encountered in a manner to prevent intermingling with underlying subsoil or other objectionable material.
  - 2. Stockpile topsoil in storage piles in areas indicated or directed. Construct storage piles to provide free drainage of surface water. Cover storage piles, if required, to prevent wind erosion.
  - 3. Dispose of unsuitable or excess topsoil as specified for disposal of waste material.
- C. Removal of Improvements: Remove existing above-grade and below-grade improvements as indicated and as necessary to facilitate new construction.
- D. Stockpiling of Improvements: Stockpile existing above grade and below grade improvements as indicated on the plans.

### **3.2 DISPOSAL OF WASTE MATERIALS**

- A. Burning on Owner's Property: Burning is not permitted on Owner's property
- B. Removal from Owner's Property: Remove waste materials and unsuitable of excess topsoil from Owner's property.

END OF SECTION

## **02200 – EARTHWORK**

### **PART 1 – GENERAL**

#### **1.1 SUMMARY**

- A. This Section includes but is not limited to:
  - 1. Preparing and grading subgrades for slabs-on-grade, walks, pavements, and landscaping.
  - 2. Excavating and backfilling for buildings and structures.
  - 3. Excavating and backfilling trenches within building lines.
  - 4. Excavating and backfilling for underground mechanical and electrical utilities and appurtenances.

#### **1.2 DEFINITIONS**

- A. Excavation consists of the removal of material encountered to subgrade elevations and the reuse or disposal of materials removed.
- B. Subgrade: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- C. Structures: Buildings, footing, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below ground surface.
- D. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within building lines.

#### **1.3 PROJECT CONDITIONS**

- A. Existing Utilities: do not interrupt existing utilities serving facilities occupied by the Owner or others except when permitted in writing by the Architect and then only after acceptable temporary utility services have been provided.
  - 1. Provide a minimum 48-hours' notice to the Architect and receive written notice to proceed before interrupting any utility.
- B. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shutoff services if lines are active.

### **PART 2 – MATERIALS**

#### **2.1 SOIL MATERIALS**

- A. General: Provide approved borrow soil materials from off-site when sufficient approved soil materials are not available from excavations.

- B. Satisfactory Soil Materials: ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, and SM; free of rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter.
- C. Backfill and Fill Materials: Satisfactory soil materials.

### **PART 3 – EXECUTION**

#### **3.1 PREPARATION**

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.
- C. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

#### **3.2 DEWATERING**

- A. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades and foundation soils from softening and damage by rain or water accumulations.

#### **3.3 EXCAVATION**

- A. Explosives: Do not use explosives
- B. Unclassified Excavation: Excavation is unclassified and includes excavation to required subgrade elevations regardless of the character of materials and obstruction encountered.

#### **3.4 STABILITY OF EXCAVATIONS**

- A. Comply with local codes, ordinances, and requirements of authorities having jurisdiction to maintain stable excavations.

#### **3.5 EXCAVATION FOR STRUCTURES**

- A. Excavated to indicated elevations and dimensions within a tolerance of plus or minus 0.10 foot. Extend excavation a sufficient distance from structures for placing and removing concrete formwork, installing services and other construction, and for inspections.
  - 1. Excavation for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.



2. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Appurtenances: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 0.10 foot. Do not disturb bottom of excavation intended for bearing surface.

### **3.6 EXCAVATION FOR UTILITY TRENCHES**

- A. Excavate trenches to indicated slopes, lines, depths, and invert elevations.
  1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.
- B. Excavate trenches to uniform widths to provide a working clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, unless otherwise indicated
  1. Clearance: 12 inches each side of pipe or conduit.
- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove stones and sharp objects to avoid point loading.
  1. For pipes or conduit less than 6 inches in nominal diameter and flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
  2. For pipes and conduit 6 inches or longer in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe circumference. Fill depressions with tamped sand backfill.
  3. Where encountering rock or another unyielding bearing surface, carry trench excavation 6 inches below invert elevation to receive bedding course.

### **3.7 STORAGE OF SOIL MATERIALS**

- A. Stockpile excavated materials acceptable for backfill and fill soil materials, including acceptable borrow materials on-site, in location directed by Owner. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent wind-blown dust.
  1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

### **3.8 BACKFILL**

- A. Backfill excavations promptly, but not before completing the following:
  1. Acceptance of construction below finish grade including, where applicable, damproofing, waterproofing, and perimeter insulation.
  2. Surveying locations of underground utilities for record documents.
  3. Testing, inspecting, and approval of underground utilities.
  4. Concrete formwork removal.
  5. Removal of trash and debris from excavation.
  6. Removal of temporary shoring and bracing, and sheeting.
  7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

### **3.9 UTILITY TRENCH BACKFILL**

- A. Place and compact bedding course on rock and other unyielding bearing surfaces and to fill unauthorized excavations. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- B. Concrete backfill trenches that carry below or pass under footings and that are excavated within 18 inches of footings. Place concrete to level of bottom of footings.
- C. Place and compact initial backfill of satisfactory soil material or subbase material, free of particles larger than 1 inch, to a height of 12 inches over the utility pipe or conduit.
- D. Fill voids with approved backfill materials as shoring and bracing, and sheeting is removed.
- E. Place and compact final backfill of satisfactory soil material to final subgrade.

### **3.10 FILL**

- A. Preparation: Remove vegetation, topsoil, debris, wet, and unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placing fills.
- B. When subgrade or existing ground surface to receive fill has a density less than that required for fill, break up ground surface to depth required, pulverize, moisture-condition or aerate soil and recompact to required density as specified in the geotechnical report.
- C. Place fill material in layers to required elevations for each location listed below.
  - 1. Under grass, use satisfactory excavated or borrow soil material.
  - 2. Under walks and pavements, use subbase or base material, or satisfactory excavated or borrow soil materials as specified in the geotechnical report.
  - 3. Under steps and ramps, use engineered fill materials.
  - 4. Under building slabs, use engineered fill material as specified in the geotechnical report.
  - 5. Under footings and foundations, use engineered fill as specified in the geotechnical report I.

### **3.11 MOISTURE CONTROL**

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction as specified in the geotechnical report.
  - 1. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
  - 2. Remove and replace, or scarify and air-dry satisfactory soil material that is too wet to compact to specified density.
    - a. Stockpile or spread and dry removed wet satisfactory soil material.

### **3.12 COMPACTION**

- A. Place backfill, fill subbase and base materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill, fill, subbase and base materials evenly on all structures to required elevations. Place backfill and fill uniformly along the full length of each structure.
- C. Percentage of Maximum Dry Density Requirements: Compact soil to not less than the following percentages of maximum dry density according to ASTM D 1557:
  - 1. Under structures, building slabs, steps, and pavements, compact the top 12 inches below subgrade and each layer of backfill or fill material at 95 percent maximum dry density.
  - 2. Under walkways, compact the top 6 inches below subgrade and each layer of backfill or fill material at 95 percent maximum dry density.
  - 3. Under lawn or unpaved areas, compact the top 6 inches below subgrade and each layer of backfill or fill materials at 90 percent maximum dry density.

### **3.13 GRADING**

- A. General: Uniformly grade areas to a smooth surface free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevation indicated.
  - 1. Provide a smooth transition between existing adjacent grades and new grades.
  - 2. Cut out soft spots, fill low spots, and trim high spots to conform to required surface tolerances.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
  - 1. Lawn or Unpaved Areas: Plus or minus 0.10 foot.
  - 2. Walks: Plus or minus 0.10 foot.
  - 3. Pavements: Plus or minus ½ inch.

### **3.14 PROTECTION**

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction operations or weather conditions.
- C. Settling: Where settling occurs during the Project correction period, remove finished surfacing, backfill with additional approved material, compact and reconstruct surfacing.
  - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.

### **3.15 DEFINITIONS/PRODUCTS/MATERIALS**

1. Submissions - Submit the following according to the Conditions of the Contract and Division 1 Specifications Sections: Test Reports required under field quality control; Laboratory analysis of each soil material proposed for fill and backfill from on-site and borrow sources; One optimum moisture-maximum density curve for each soil material; Report of actual unconfined compressive strength and/or results of bearing tests of each stratum tested.
2. Codes and Standards - Perform earthwork complying with requirements of authorities having jurisdiction.
3. Existing Utilities - Do not interrupt existing utilities serving facilities occupied by the Owner or others except when permitted in writing by the Architect and then only after acceptable temporary utility services have been provided. Provide a minimum 48-hours notice to the Architect and receive written notice to proceed before interrupting any utility. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shutoff services if lines are active.
4. Use of Explosive - Use of explosives is not permitted.
5. Protection of Facilities - Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
6. Freeze protection - Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.
7. Erosion control - Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water run-off or airborne dust to adjacent properties and walkways. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.
8. Unclassified Excavation - Excavation is unclassified and includes excavation to required subgrade elevations regardless of the character of materials and obstructions encountered.
9. Earth excavation - Includes excavation of pavements and other obstructions visible on surface; of underground structures, utilities, and other items indicated to be demolished and removed; and of soil and other materials encountered.
10. Open excavations - Excavations more than 10 feet in width and pits more than 30 feet in either length or width.
11. Regulatory compliance - Comply with local codes, ordinances, and requirements or authorities having jurisdiction to maintain stable excavations.

12. Excavations for Footings and Foundations - Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
13. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Appurtenances - Excavate to elevations and dimensions indicated within a tolerance of plus or minus 0.10 feet. Do not disturb bottom of excavations intended for bearing surface.
14. Excavation under walks and pavements - Excavate surfaces under walks and pavements to indicate cross sections, elevations, and grades.
15. Excavation of utility trenches -
  - a. Excavate utility trenches to indicated slopes, lines, depths, and invert elevations.
  - b. Beyond building perimeter, excavate trenches to allow insulation of top of pipe below frost line.
  - c. Excavate trenches to uniform widths to provide a working clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 in higher than top of pipe or conduit, unless otherwise indicated. Clearance: 12 inches each side of pipe or conduit.
  - d. Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove stones and sharp objects to avoid point loading.
  - e. For pipes or conduit less than 6 inches in nominal diameter and flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
16. Notification - Notify Architect when excavations have reached required subgrade.
17. Additional excavation - When Architect determines that unforeseen unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed. Unforeseen additional excavation and replacement material will be paid according to the Contract provisions for changes in Work.
18. Restoration of subgrades - Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the Architect.
19. Filling unauthorized excavation -
  - a. Fill unauthorized excavation under foundations or wall footings by extending indicated bottom elevation of concrete foundation or footing to excavation bottom, without altering required top elevation. When acceptable to the Architect, lean concrete fill may be used to bring elevation to proper position.

- b. Fill unauthorized excavations under other construction as directed by the Architect.
20. Where indicated widths of utility trenches are exceeded, provide stronger pipe, or special installation procedures, as required by the Architect.
21. Stockpile excavated materials acceptable for backfill and fill soil materials, including acceptable borrow materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent wind-blown dust. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.
22. Backfill excavations promptly, but not before completing the following -
- a. Acceptance of construction below finish grade including, where applicable, dampproofing, waterproofing, and perimeter insulation.
  - b. Surveying locations of underground utilities for record documents.
  - c. Testing, inspecting, and approval of underground utilities.
  - d. Concrete formwork removal.
  - e. Removal of trash and debris from excavation.
  - f. Removal of temporary shoring and bracing, and sheeting.
  - g. Installing permanent or temporary horizontal bracing on horizontally supported walls.

### **3.16 DISPOSAL OF SURPLUS AND WASTE MATERIALS**

- A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off the Owner's property.

END OF SECTION

## **02221 – TRENCHING, BACKFILLING, and COMPACTION**

### **PART 1 - GENERAL**

- A. Description:  
This section includes excavation, trenching, preparation of subgrades, pipe bedding, backfilling, compacting, and finish grading for elevator pit, exterior stairs, and ramp. Excavated material shall remain unclassified. Excavation and trenching includes the removal and subsequent handling of all materials excavated or otherwise removed in performance of the work, regardless of the type, character, composition, or condition thereof.
- B. Regulatory Requirements:  
Conform to applicable federal, state and county codes, rules and regulations for work of this section.
- D. Field Measurements:  
Verify that field measurements and elevations are as indicated.
- E. Product Delivery, Storage and Handling:
1. Handling:
    - Pipe shall not be handled in a manner, which will cause damage to the pipe.
  2. Pipe or fittings shall not be dropped.
  3. Care must be taken to prevent damage to the pipe and fittings by impact, bending, compression, or abrasion.
  4. Damaged pipe or fittings shall not be installed.
  5. Storage:
    - Lubricant shall not be stored or handled in a manner, which will cause contamination to the lubricant.
    - 6. Rubber gaskets shall be stored in a location, which protects them from deterioration.
    - 7. Solvent and cement shall be stored in accordance to Manufacturer's instructions.
    - 8. Pipe shall be stored in accordance with the Manufacturer's specifications.
    - 9. Pipe shall be stored on a surface which provides even support for the pipe barrel.
      - a.. Pipe shall not be stored in such a way as to be supported by the bell.
      - b.. Pipe which has a longitudinal deflection of greater than 1/8 inch per foot of pipe shall not be used.
    - 10. Pipe which exhibits any signs of ultraviolet degradation shall not be used.

### **PART 2 - MATERIALS**

- A. Trench Backfill Material:  
Trench backfill material shall consist of soils removed from the trench and are free of frozen material, stumps, roots, brush, and other organic matter, cinders, or other corrosive material, debris, rocks, or stones greater than two (2) inches in diameter and materials with excess moisture content.



- B. Water Pipe:  
All water pipe shall be made from PVC components which conform to ASTM D-1784 and to ***City of Wheatland*** Standard Specifications for Public Works Construction and Infrastructure Improvements. The water service line from the water main to the building shall be of PVC pipe.

### **PART 3 -EXECUTION**

- A. Preparation:
1. Identify required lines, levels, contours, and datum.
  2. Protect plant life, lawns, rock outcropping and other features remaining as a portion of final landscaping.
  3. Protect bench marks, existing building, fences, sidewalks, paving, and curbs from excavation equipment and vehicular traffic.
  4. Maintain and protect above and below grade utilities which are to remain.
  5. Remove soft areas of subgrade not capable of in site compaction. Backfill with job excavated material and compact to density equal to or greater than requirements for subsequent backfill material.
  6. Remove topsoil from the area as to excavate and stockpile topsoil and keep segregated from backfill materials for top soil replacement after final grading and backfill.
- B. Excavation:  
Excavate subsoil required for utilities.  
Excavate trenches by open cut methods, except where boring or tunneling is indicated in the Contract Documents. Cut trenches sufficiently wide to maintain 12 inches minimum from the edge of the trench to the edge of pipe to enable installation and allow inspection of pipe.  
Use mechanical equipment so designed and operated that the rough trench excavation bottom elevation can be controlled with uniform trench widths and vertical sidewalls from an elevation one foot above the top of the installed pipe to the bottom of the trench, and trench alignment sufficiently accurate to permit pipe to be aligned properly with adequate clearance between the pipe and sidewalls of the trench. Do not undercut the trench sidewall to obtain clearance.
- C. Sheeting and Shoring. Except where banks are cut back on a stable slope, excavation for structures and trenches shall be sheeted, braced, and shored, as necessary, to prevent caving or sliding, to provide protection for workmen and the work, and to provide protection for existing structures and facilities. Sheeting, bracing, and shoring shall be designed and built to withstand all loads that might be caused by earth movement or pressure, and shall be rigid, maintaining shape and position

under all circumstances. Follow applicable OSHA rules and regulations for excavation.

Stockpile excavated material in area designated on site but so as not to permanently harm existing vegetation.

D. Rock Excavation:

Rock excavation will be considered when the excavator (Cat 235 or equivalent) cannot loosen or rip material from the trench bottom using a 12-inch rock bucket and making several passes over the trench bottom.

When rock is encountered in the trench and the A/E has approval in writing for rock excavation, the Contractor may use methods available to the Contractor to remove the rock in a timely and safe manner, verify with A/E prior to removal.

E. Dewatering:

The Contractor shall provide and maintain adequate dewatering equipment to remove and dispose of all surface and groundwater entering excavations, trenches, or other parts of the work. Each excavation shall be kept dry during subgrade preparation and continually thereafter until the structure to be built, or the pipe to be installed, therein is completed to the extent that no damage from hydrostatic pressure, flotation, or other cause will result. All excavations for concrete structures or trenches which extend down to or below ground groundwater shall be dewatered by lowering and keeping the groundwater level beneath such excavations 12-inches or more below the bottom of the excavation. Surface water shall be diverted or otherwise prevented from entering excavated areas or trenches to the greatest extent practicable without causing damage to adjacent property. New storm runoff retention basin or new drainage facilities may be used for disposal of surface and groundwater during dewatering operations subject to prior approval of the A/E. The Contractor shall be responsible for all damages incurred to the drainage facilities as a result of the dewatering operations. All pipes or conduits shall be left clean and free of sediment.

F. Preparation of Trench Bottom:

1. Grade trench bottoms uniformly to provide clearance for each section of pipe.
2. Remove loose water and foreign materials.
3. If the existing soil in the trench bottom is judged to be unstable by the A/E, the subgrade shall be removed and replaced with stabilization material.
4. Excavation in rock
  - a. Over excavate a minimum of six (6) inches below the bottom of the pipe for a pipe 24 inches in diameter or less, and nine (9)

inches for pipe larger than 24 inches, whenever the trench bottom is rock, shale, or other hard or semi-hard material.

b. Backfill with granular bedding.

- G. Pipe Bedding:  
Bedding shall conform to City of Casper Standard Specifications for Public Works Construction and Infrastructure Improvements. Material shall be deposited in six (12) inch loose layers and compacted with approved methods. Care shall be taken to ensure thorough compaction of the fill under the pipe haunches. Bedding shall consist of select granular material.
- H. Backfilling and Compaction:
1. Backfill trenches to contours and elevations with suitable backfill materials removed while trenching.
  2. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.
  3. Place and compact material in continuous layers, not exceeding six (6) inches compacted depth.
  4. Employ a placement method that does not disturb or damage pipe in trench or use equipment or methods that will transmit damaging shocks to the pipe.
  5. Do not perform compaction by jetting or pounding.
  6. Leave fill material stockpile areas completely free of excess fill materials when all backfilling is completed.
  7. Replace topsoil after backfilling and compaction operations are complete.
- I. Field Quality Control:  
Moisture Density Tests ASTM D-698, ASTM D-4253, and ASTM D-4254 shall be performed on representative samples of each type of material encountered or utilized and will be used as a basis for compaction control. Representative samples will be classified in accordance to ASTM D-2487.
- J. Compaction Control:  
Field tests will be conducted to determine compliance of compaction methods using ASTM D-1556 or ASTM 2922 and ASTM 3017.
- K. Compaction Densities:  
Compact soils within  $\pm 2\%$  of optimum moisture content.

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- L. Trench Backfill:
  - 1. Sodded or lawn area: 90%
  - 2. Under footings, foundations, or structures: 95%, see structural drawings.
  - 3. Sidewalks, and other areas to receive pavements:
    - Top 4 feet: 95%
    - Remainder of trench: 95%
  - 4. Fields and all other areas: 90% or equal to the density of undisturbed adjacent material, whichever is greater unless otherwise indicated.
  - 5. Pipe bedding: 90%

END OF SECTION

## **02500 – PAVING AND SURFACING (Onsite & in Right of Way)**

### **PART 1 - GENERAL**

#### **1.1 WORK**

- A. Provide and install paving materials as shown on the Drawings and specified herein .
- B. Provide all related materials, equipment, and labor required to complete the work specified.
- C. Other related work includes grading and compaction as required and excavation, trenching, and utilities work required to be completed before paving.

#### **1.2 QUALITY STANDARDS**

- A. Provide experienced, well-trained workers competent to complete the work as specified.
- B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.
- C. Use materials from manufacturer and suppliers specified or approved by the Architect. **(see Soils Report, it governs)**
- D. All work shall comply with governing building and safety codes.
- E. All off site work within public right-of-way to comply with ***City of Wheatland*** Standard Specifications for Public Works Construction and Infrastructure Improvements.

#### **1.3 EXECUTION**

1. Obtain permits for pouring of footways and curbs from agency having jurisdiction.
2. All new paving shall be sloped away from structures to provide proper drainage and to meet existing adjacent paved surfaces.
3. Repair paving by removal of damaged areas to nearest whole joint, block, rebate or return and installation of new concrete sections required.
4. Repair portions of neighboring sidewalks, curbs, and paving damaged during demolition.
5. All new footways, walkways, and drainage pads shall be minimum 4 inch thick unreinforced concrete. Lay out new paved areas to provide straight edges, smooth turnings and grade transitions, and proper alignment with walls, steps and property lines.
6. Edges of all paving areas not adjacent to existing paving, curbing or building walls, shall be formed using straight pieces of clean lumber or plywood, staked adequately to hold the wet concrete without buckling or tipping, and having tops set at smooth finish grade suitable for use as a screed in pouring and leveling the concrete. Forms shall be set straight and true and shall not be removed until a minimum of 24 hours following the pour.

7. At all paved walkways and other concrete paving within yard areas, provide tooled joints in evenly spaced arrangements with maximum twenty square feet between joints. At sidewalks at street frontages, provide joints to match existing or adjoining joint lay out, but in no case shall joint layout exceed twenty square feet between joints. Tool all formed edges with radius edging tool. All paved patios, footways and driveways to be wood float finished leaving smooth surface without float markings. Sidewalks and driveways shall be broom finished.
8. Provide expansion joints in all paving and curbing at distances not to exceed twenty-five feet in any direction. Install 1/2 inch bituminous fill material at all expansion, construction or curb relief joints and at all locations where new concrete abuts existing concrete or building structure.
9. Lines where paving meets building shall be level unless conditions such as drainage or existing paving require otherwise.

#### **1.4 MATERIALS HANDLING**

- A. Provide all materials required to complete the work as shown on the Drawings and specified herein.
- B. Deliver, store, and transport materials to avoid damage to the product or to any other work and return any products or materials delivered in an unsatisfactory condition.
- C. Materials and products delivered will be certified by the manufacturer to be as specified.
- C. Store materials in a safe, secure location, protected from weather.
- D. **HOT MIXED ASPHALT PAVING**

**The General Conditions of the contract and Division 1 - General Requirements are hereby made a part of this section of the specifications.**

#### **1. GENERAL**

- i. Hot-Mixed Asphalt Paving Over Prepared Subbase for:
  - a. Patching or repair of existing asphalt surfaces which are intended to remain in service and which are damaged or have been damaged or disturbed as a result of new construction activities for this project. Replace damaged or disturbed areas with new materials of equal thickness.
  - b. The addition of new asphalt surfaces as indicated on the drawings. New surfaces shall be over compacted fill and appropriate subbase.

#### **2. QUALITY ASSURANCE**

1. Construction Tolerances:
  - a. Base Course Thickness: 1/2 inch.

- b. Surface Thickness: 1/4 inch.
- c. Base Course Surface Smoothness: 1/4 inch.
- d. Surface Course Surface Smoothness: 3/16 inch.
- e. Crowned Surfaces: 1/4 inch variance from template.

**3. PRODUCTS**

- 1. Asphalt-Aggregate Mixture - Plant-mixed, hot-laid asphalt-aggregate mixture, ASTM D 3515, complying with local DOT and other agencies having jurisdiction regulations.
- 2. Prime Coat - Cut-back asphalt, ASTM D 2027
- 3. Tack Coat - Emulsified asphalt, ASTM D 977.
- 4. Herbicide Treatment - Commercial chemical for weed control registered by Environmental Protection Agency and acceptable to authorities having jurisdiction.
- 5. Lane and Parking Area Marking Paint, White Color - Alkyd-resin type, ready-mixed, AASHTO M 248, Type I.

**E. PORTLAND CEMENT CONCRETE PAVING**

**The General Conditions of the contract and Division 1 - General Requirements are hereby made a part of this section of the specifications.**

**1. GENERAL**

Cast-in-Place Concrete Paving Over Prepared Subbase for:

- a. New and replacement walkways/curbs where indicated on drawings.
- b. Repair/replacement of existing surfaces damaged during construction.

**2. PRODUCTS**

- 1. Concrete - ASTM C 150, Type I, Portland Cement; ASTM C 33, normal weight aggregates; potable water:
  - a. Design Mix: ASTM C 94, 3000 psi, 28 day minimum compressive strength.
  - b. Slump Limits: 8 inches minimum with superplasticizer, 3 inches otherwise.
  - c. Air Content: 5 to 8 percent.
  - d. Finish: Broom finish, unless noted otherwise.
- 2. Wire Mesh - Welded plain steel wire fabric, ASTM A 185.



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3. Reinforcing Bars - Deformed steel bars, ASTM A 615, Grade 60.
4. Joint Dowel Bars - Plain steel bars, ASTM A 615, Grade 60.
5. Liquid-Membrane Forming and Sealing Curing Compound - ASTM C 309, Type I, Class A.
6. Bonding Compound - Polyvinyl acetate or acrylic base.
7. Expansion Joints - Premolded bituminous filler strip; 1/2 inch thick.

#### **1.4 PRECONSTRUCTION AND PREPARATION**

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work.
- B. Confirm there are no conflicts between this work and work of other trades, and that work of other trades that must precede this work has been completed.
- C. Notify Architect when work is scheduled to be started and completed.

END OF SECTION

## **02510 - CONCRETE WALKS (Onsite & in Right of Way)**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Provide and install all required formwork, reinforcing, formwork accessories, and cast-in-place concrete.

#### **1.2 QUALITY CONTROL, STANDARDS AND TOLERANCES**

- A. Follow these standards: Place concrete according to ACI 301. Reinforcing to comply with ACI 301 and related ACI, CRSI, and ASTM standards. Formwork to comply with ACI 301, 318, and ACI 347. Tolerance standards for level, plumb, and aligned construction shall be as per ACI 117.
- B. All offsite work within public right-of-way to comply with *City of Wheatland* Standard Specifications for Public Works Construction and Infrastructure Improvements.

### **PART 2 - MATERIALS**

#### **2.1 CONCRETE PAVING (see Soils Report, it governs)**

- A. Concrete mixing and tests to assure compliance with standards as per CI 301. Provide concrete ready-mixed in compliance with ASTM C 94. On-site mixed concrete will conform to ASTM C 685. Concrete strength will conform to ACI 301, 318, and applicable building code requirements.
- B. Add air-entraining admixture as required to protect concrete exposed to exterior weather which shall be 6% ±1.5%. Admixture proportions as per ACI 301, ACI 318, and manufacturer's instructions.
- C. Provide metal or wood formwork for borders and curbs with profiles to match detail Drawings. Earth forms are not allowed for paving.
- D. Reinforcing shall comply with ACI 301 and related ACI, CRSI, and ASTM standards. Deformed bars for number 3 and larger unless shown otherwise on Drawings. No. 10 welded wire mesh, plain type in coiled rolls, unfinished.
- E. Sub-base aggregate to depth shown in Drawings. Maximum size is 3/4", compacted to 95%.

### **PART 3 - CONSTRUCTION AND INSTALLATION**

#### **3.1 PREPARATION(see Soils Report, it governs)**

- A. Examine site conditions and correct any conditions detrimental to the work.
- B. Install related work before concrete pour, and protect from damage.
- C. Keep pour area free of scraps, trash, and organic matter.
- D. Secure screed boards against displacement during pour. Install screed boards at correct height for paving thickness. Use redwood or preservative-treated wood for screeds, border boards, and joint boards. Brace formwork to maintain work at the lines and grades shown on the Drawings.

#### **3.2 CONCRETE MIX AND PLACEMENT (see Soils Report, it governs)**

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- A. Place concrete according to ACI 301. Don't allow trucks to wait beyond time limits before pour. Don't allow unauthorized watering; do not over-water. Don't permit segregation. Verify that visual slump is correct. Keep pour area free of scraps, trash, and organic matter.
- B. Construct reinforcing as detailed with clearances to allow concrete flow. Reinforcing must be free of loose scale, clean of dirt or grease, and secure against dislocation during concrete pour. Don't allow reinforcing to be in contact with dissimilar metals.
- C. Provide movement and relief joints in locations, depths, and widths as detailed. Make joint lines straight and uniform, coordinated and aligned with other work.
- D. Do not trowel until bleed water is gone, do not over-trowel, do not apply dust to cement to speed up troweling start time.
- E. Use approved coverings and curing and wetting methods and protect fresh pavement from foot or traffic damage.
- F. Repair or replace defective work as directed by the Architect.

END OF SECTION

**02600 - UTILITIES**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Gas and Electrical Service: Coordinate service locations with Civil Plans
- B. Sewer Service: Per drawings provided by City of Cheyenne per Civil Plans
- C. Water Service: Per drawings provided by City of Cheyenne per Civil Plans
- D. Provide everything required to complete the work as shown on the drawings and specified herein.

**1.2 QUALITY STANDARDS**

- A. Provide experienced, well-trained workers competent to complete the Work as specified.
- B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.
- C. Use products and accessories from a manufacturer specified or approved by the Architect.
- D. All work shall comply with manufacturer's instructions and governing building and safety codes.

**1.3 SUBMITTALS**

- A. Submit the following within 30 calendar days after receiving the Notice to Proceed:
  - 1. Plans for electrical and gas line locations as coordinated with utility company.
  - 2. Water and sewer materials.

**PART 2 - PRODUCTS**

- A. Provide all materials required to complete the Work as shown on Drawings and specified herein.
- B. Deliver, store, and transport materials to avoid damage to the product or to any other work. Return any products or materials delivered in a damaged or unsatisfactory condition. Materials and products delivered will be certified by the manufacturer to be as specified.
- C. Store materials in a safe, secure location, protected from dirt, moisture, contaminants, and weather.

**PART 3 - EXECUTION**

**3.1 PREPARATION AND COORDINATION**

- A. Identify work to be completed by project subcontractors, local utility companies and any special work to be provided by the Owner.
- B. Coordinate utility trenching to keep open trenchwork to a minimum, avoid duplicate trenching, and avoid potentially damaging crossover trenching.
- C. Install sanitary sewer drainage first, followed by storm sewers, water supply and other utilities.

- D. Check utility company or subcontractor plans to assure their work is coordinated with other work, trees and planting that are to be protected, and existing construction.
- E. Examine and verify that job conditions are satisfactory for speedy and acceptable work. Confirm there is no conflict between this work and governing building and safety codes, or between this work and work of other trades. Confirm that work of other trades that must precede has been completed. Meet all requirements to secure any applicable warranty.
- F. Notify and receive approval from the Architect as to when the work is to be started and completed.

### **3.2 INSTALLATION -- GENERAL INSTRUCTIONS FOR ALL UTILITIES**

- A. Install pipe and cable work as per instructions of manufacturers, utility Companies and in accordance with City of Cheyenne Standard Specifications for Public Works Construction and Infrastructure Improvements
- B. Protect trenches against bulging soil and cave-ins in accord with appropriate OSHA regulations. Seal openings of uncompleted pipe work closed during off-work hours.
- C. Protect pipe by installing coated or wrapped pipe with care to avoid damage. Repair any damaged portions of coated or wrapped pipe to match the protection of the original. Provide thorough caulking of pipe thread connections.
- D. Place valve and meter boxes on compacted soil, level with final elevation of finish pavement or landscaping in accordance with City of Cheyenne Standard Specifications for Public Works Construction and Infrastructure Improvements. Do not allow any part of valve and meter boxes to rest on piping or valves.
- E. Verify connection point to building service lines. Excavation and pressure tests must comply with City of Cheyenne Standard Specifications for Public Works Construction and Infrastructure Improvements. Slope gas lines to main lines, and slope main lines to drip catchers, to avoid water accumulation. Do not allow gas lines to make contact with other piping or conduit. Keep gas lines beyond code minimum distance from water lines.
- F. Pipe depth to comply with City of Cheyenne Standard Specifications for Public Works Construction and Infrastructure Improvements requirements and local regulations. Do not permit heavy equipment traffic over or near gas line trenches. Clearly mark backfilled gas line trenches as warning to other excavators.
- G. Test and connect as required by governing agency and utility company: Repair or replace defective work as directed by the Architect.

END OF SECTION

## 02900 – IRRIGATION

- A. Install Rain Bird – Rain Sensing irrigation system:**
1. Pressure Pipe and main lines outside of building up to zone valves: PVC plastic pipe complying with ASTM-D 1785, Schedule 40.
  2. Circuit Pipe (downstream from circuit valves): with PVC plastic pipe, ASTM D 2241, SDR, 26, 160 psi or ASTM-D1785, Schedule 40.
  3. Valves: Toro 252 Series solenoid valves, flow range 5.0 to 180.0 gpm.
  4. Sprinkler heads: manufacturers standard, to provide uniform coverage at available water pressure.
  5. Drip Tubing/Accessories: manufacturers standard, self cleaning, self flushing pressure compensating components and polyethylene tubing with 12” or 18” dripper spacing.
  6. Automatic Controls: Provide exterior/interior boxes with locking covers. Install per manufactures written specifications. Coordinate timing device with landscaper’s requirements.
- B. Install back flow preventer as required. Coordinate location and design with General Contractor and plumbing sub contractor.
- C. Indicate irrigation head locations. Do not spray fences, buildings, or sidewalks / patios.
- D. Provide minimum water coverage as follows:
1. Lawn Area: 100%
  2. Other Planting Areas: 100%
- E. Run under pavements and walks. Do not cut pavements or walks. All water lines under sidewalks or paving shall be sleeved. All wiring under paving shall be installed in conduit.
- F. Use dielectric fittings whenever dissimilar metals are joined.
- G. All wiring shall be installed using proper, code compliant practice and all wiring between controller and zone valves shall be continuous. All required splices, connections and terminations shall occur within water tight boxes with watertight connections.
- H. Zone valves shall not be located within 3 feet of any driveway, traffic aisle, island, etc., where they could be damaged by vehicles driving over the curbs.
- I. Testing: perform operational testing and train Owners personnel on proper use.
- J. Place copy of zone map, with all zone valve locations shown and approved irrigation plan, in protective jacket, with the main control panel.
- K. Use pressure compensating dripper systems or pressure compensating low trajectory nozzles only in locations where water has high iron content and only at areas adjacent to buildings to prevent water spray and rust from staining buildings.
- L. Provide a 3.4” dia. blow down drain tee to allow water to be blown from irrigation system.
- M. If Irrigation System is installed at a time before first freeze, General Contractor to pay to blow out system to protect new work. As well, General Contractor to then to turn system on once weather allows prior to 100% project landscape turnover.

END OF SECTION

## 02910 – LANDSCAPE EARTHWORK AND GRADING

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Fill and/or shape grade areas indicated on plan and excavation of material to prepare subgrade.
- B. Topsoil, soil amendments and finish grading in preparation for planting and seeding or sodding.
- C. Finish grading for planting and seeding or sodding.

#### 1.02 RELATED SECTIONS

- A. Section 02900 – Irrigation.
- B. Section 02920 – Sodding.
- C. Section 02930 - Plants.

#### 1.03 TESTS

- A. Topsoil Test: Provide soil test analysis of imported topsoil indicating NPK, pH, cation exchange capacity, salt content, textural classification (percent sand, silt, clay) and percent organic matter. Test to include *recommended fertilization and amendments to provide ideal conditions to grow turf.*

#### 1.05 PROJECT CONDITIONS

- A. Protect above- and below-grade utilities that remain.
- B. Protect bench marks, survey control points, existing structures, and fences from grading equipment and vehicular traffic.
- C. Protect existing trees from grading equipment and vehicular traffic.

### PART 2 PRODUCTS

#### 2.01 MATERIALS

- A. Topsoil for landscape work is not available at site and must be furnished as specified:
  - 1. Provide ¾ inch screened, new topsoil that is fertile, friable, natural loam, surface soil, that is capable of producing satisfactory agricultural crops and shall be free of matter that may be harmful to plant growth or a hindrance to grading, seeding, and maintenance.
- B. Topsoil, shall meet, or shall be improved to meet, the following mechanical requirements by adding sand and/or compost and incorporating into the topsoil:

1. Component	Maximum Percentage
2. Sand	30 percent
3. Silt	40 percent
4. Clay	15 percent
- C. Compost: 'Eko Compost', 'Glacier Gold' or approved equivalent – Prior Approval required.
- D. Subsoil Fill Material: Use clean material to provide fill soil with the similar properties as the native soil.
  - 1. Material excavated during landscape work may be used.
  - 2. Additional fill material shall be imported. Imported fill shall be free draining, clean soils, free of lumps and debris and any material that may be harmful to plant growth.



3. Provide sample or soil test for imported fill material to Architect for approval.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that intended elevations for the Work are as indicated.

#### **3.02 PREPARATION**

- A. Identify required lines, levels, contours, and datum.
- B. Stake and flag locations of known utilities.
- C. Locate, identify, and protect utilities that remain, from damage.
- D. Clean site area to remove debris, trash, rubble and items that can interfere with future mowing.

#### **3.03 ROUGH GRADING**

- A. Grade existing site at structures and walkways to maintain positive drainage away from structures and to depth at adjacent built elements to accept topsoil in areas to receive topsoil
- B. Scarify all areas to be sodded to 6 inch depth.
- C. Clear and grub all areas to be sodded.
- D. Do not remove wet subsoil, unless it is subsequently processed to obtain optimum moisture content.
- E. Fill areas to be placed in 6 inch lifts and compacted to 80% in planting areas and 95% in areas to receive hard paving or building with equipment between each lift.
- F. Stability: Replace damaged or displaced subsoil to same requirements as for specified fill.

#### **3.04 SOIL REMOVAL**

- A. Stockpile subsoil to be re-used on site; remove and dispose of excess subsoil off site.

#### **3.05 FINISH GRADING**

- A. Before Finish Grading:
  1. Verify subgrade has been contoured.
  2. Verify subgrade provides positive drainage.
- B. Remove debris, roots, branches, stones, in excess of 1 inch in size. Remove soil contaminated with petroleum products.
- C. In areas where vehicles or equipment have compacted soil, scarify surface to depth of 6 inches.
- D. Place topsoil over prepared subgrade and compact to 80%.
- E. Place topsoil to the following compacted thicknesses: 6 inches in all planting and sodding areas.
- F. Place compost to the following thickness: ½ inch in all planting and sodding areas.
- G. Remove stones 1 inch and greater in size.
- H. Fine grade to eliminate uneven areas and low spots. Maintain profiles and contour of subgrade.

#### **3.06 TOLERANCES**

- A. Top Surface of Subgrade: Plus or minus 1/10 foot from required elevation.
- B. Top Surface of Finish Grade:

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- 1 Sodded Areas: Plus minus ½ inch.
  2. Planting Bed Areas: Plus or minus 1 inch.
- C. All finish grade to paved walking surfaces shall be flush.

### **3.07 CLEANING AND PROTECTION**

- A. Leave site clean and raked, ready to receive landscaping.

**END OF SECTION**

## **02920 – SODDING**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Fertilizing.
- B. Sod installation.
- C. Maintenance.

#### **1.02 RELATED SECTIONS**

- A. Section 02910 - Earthwork: Preparation of subsoil and providing and placement of topsoil in preparation for the work of this section.

#### **1.03 REFERENCES**

- A. TPI (SPEC) - Guideline Specifications to Turfgrass Sodding; Turfgrass Producers International; 1995.

#### **1.04 DEFINITIONS**

- A. Weeds: Includes Dandelion, Knapweed, Spurge, Toadflax, Mustard, Medic, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

#### **1.05 SUBMITTALS**

- A. Certification: Submit certification of grass species and location of sod source.

#### **1.06 QUALITY ASSURANCE**

- A. Sod Producer: Company specializing in sod production and harvesting with minimum five years experience, and certified by the *State of Wyoming.*
- B. Installer Qualifications: Company approved by the sod producer.
- C. Pesticide Applicators: Certified by authorities having jurisdiction.
- D. Herbicide Applicators: Certified by authorities having jurisdiction.

#### **1.07 REGULATORY REQUIREMENTS**

- A. Comply with regulatory agencies for fertilizer and herbicide composition.

#### **1.08 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver sod on pallets. Protect exposed roots from dehydration.
- B. Do not deliver more sod than can be laid within 24 hours.

#### **1.09 MAINTENANCE SERVICE**

- A. Maintain sodded areas immediately after placement for a minimum of one cutting and maximum of two cuttings until the end of the growing season - approximately October 15.

### **PART 2 PRODUCTS**

## 2.01 MATERIALS

- A. Sod: TPI, Certified Turfgrass Sod quality; cultivated grass sod; type indicated below; with strong fibrous root system, free of stones, burned or bare spots; containing no more than 5 weeds per 1000 sq ft. Minimum age of 18 months, with root development that will support its own weight without tearing, when suspended vertically by holding the upper two corners.
  - 1. Fine Fescue 90-10; 90% Fine Fescue Blend-10% Kentucky Bluegrass Blend: blended for the regions climatic conditions.
  - 2. Bluegrass Blend: 100% Bluegrass, 5-way species mix, grown in this Wyoming region.
  - 3. Roll size: up to 400 square feet, big roll.
- B. Fertilizer: 25-10-10 blend with iron; recommended for grass, with fifty percent of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil, as indicated by analysis.

## 2.02 ACCESSORIES

- A. Herbicide: in conformance with State and Federal laws to eliminate perennial weeds present prior to placing sod.

## 2.03 HARVESTING SOD

- A. Machine cut sod and load on pallets in accordance with TPI Guidelines.
- B. Cut sod with minimum 1/2 inch and maximum 1 inch topsoil base.

## 2.04 TESTS

- A. Testing is not required if recent tests are available for imported topsoil. Adjust fertilizer in accordance with testing lab recommendations.
- B. Provide soil test for imported topsoil not previously tested. Adjust fertilizer in accordance with testing lab recommendations.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that prepared soil base is ready to receive the work of this section.
- B. Notify General Contractor of observed conflicts and required action before beginning Work.

### 3.02 PREPARATION

- A. Verify subgrade prepared in accordance with Section 02300.
- B. Verify topsoil placed in accordance with Section 02300.
- C. Fine grade topsoil, tilling as required to produce uniform texture, maintaining rough grade contours and slopes. Roll to firm and settle the surface and reveal any low spots. Fill low spots to match surrounding grade surface and roll to firm.
- D. Sodded Areas to have minimum 2%, 1 foot in 50 feet, slope to drain.

### 3.03 FERTILIZING

- A. Apply fertilizer in accordance with manufacturer's instructions.
- B. Apply after smooth raking of topsoil and prior to installation of sod.
- C. Apply fertilizer no more than 48 hours before laying sod.

- D. Lightly water to aid the dissipation of fertilizer, prior to laying sod.

### **3.04 LAYING SOD**

- A. Moisten prepared surface immediately prior to laying sod.
- B. Lay sod immediately after delivery to site to prevent deterioration.
- C. Lay sod tight with no open joints visible, and no overlapping; stagger end joints 12 inches minimum. Do not stretch or overlap sod pieces.
- D. Lay smooth. Align with adjoining grass areas.
- E. Place top elevation of sod flush with adjacent hard surfaces.
- F. Water sodded areas immediately after installation. Saturate sod to 4 inches of soil.
- G. After sod and soil have dried, roll sodded areas to ensure good bond between sod and soil and to remove minor depressions and irregularities.

### **3.05 MAINTENANCE**

- A. Mow grass at regular intervals to maintain at a maximum height of four (4) inches. Do not cut more than 1/3 of grass blade at any one mowing.
- B. Neatly trim edges and hand clip where necessary.
- C. Immediately remove clippings that are greater than four (4) inches long after mowing and trimming. Clippings shorter than (4) inches may be left to biodegrade providing mulch and organic matter to the turf.
- D. Water to prevent grass and soil from drying out.
- E. Roll surface to remove irregularities.
- F. Control growth of weeds with mechanical and chemical methods. Remove weed vegetation from site that has mature flower heads and seeds. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.
- G. Immediately replace sod to areas which show deterioration or bare spots.
- H. Protect sodded areas with warning signs during establishment period.

**END OF SECTION**

## **02930 – PLANTS**

### **PART 1 - GENERAL**

#### **1.01 SECTION INCLUDES**

- A. The work of this section consists of all labor, equipment, and materials for planting trees, shrubs, and ground covers.
- B. Placing and preparation of Topsoil, Soil Amendment and Planting Bed Soil.
- C. Preparation of subsoil.
- D. Installation of Landscape Accessories.
- E. Browse Control.
- F. Maintenance.
- G. Tree Pruning.
- H. Plant Schedules are on plans.

#### **1.02 RELATED SECTIONS**

- A. Section 02900 – Irrigation.
- B. Section 02920 – Sodding.

#### **1.03 REFERENCES**

- A. ANSI Z60.1 - American Standard for Nursery Stock; 2004.

#### **1.04 DEFINITIONS**

- A. Weeds: Any plant life not specified or scheduled.
- B. Plants: Living trees, plants, and ground cover specified in this Section, and described in ANSI Z60.1.

#### **1.05 SUBMITTALS**

- A. Installer Qualifications: Include project references, name, phone number, address and contact person for 3 projects successfully completed within the last 10 years of similar size and scope of this project.
- B. Topsoil Test: Provide soil test analysis of imported topsoil indicating NPK, pH, cation exchange capacity, salt content, textural classification (percent sand, silt, clay) and percent organic matter. Test to include *recommended fertilization and amendments to provide ideal conditions to grow turf*
- C. Submit list of plant life sources. Before any planting materials are delivered to the job site, submit a list of all plants and materials proposed to be installed. Include all applicable data on source, size and quantity, demonstrating conformance with the requirements of this section. Written permission is required in advance by the Landscape Architect for substitution of specific items described in the plans or these special provisions.
- D. Certificates and schedules: Provide all certificates required by law and delivery schedules as specified with this Special Provision. Upon delivery of the trees, give all certificates to Architect.
- E. Provide list of seed and plant source geographic location for all plants used in the landscape.

#### **1.06 QUALITY ASSURANCE**

- A. Nursery Qualifications: Company specializing in growing and cultivating the plants with three years documented experience.
- B. Installer Qualifications: Company specializing in installing and planting the plants with 3 years experience and previous experience on projects of similar scope to this project. Provide one person to act as supervisor at all times during execution of this portion of the work. This person shall be thoroughly familiar with the type of materials being installed and best methods for their installation, and direct all work performed under this section.
- C. Plant Material: Furnish required plant materials, including trees, shrubs, and perennials of all descriptions, for the project in accordance with the plans and specifications. All plant materials must be true to name, which shall conform to the Standardized Plant Names of the American Joint Committee on Horticultural Nomenclature and be legibly tagged with the name and size of the of the plant material as recommended by the American Association of Nurserymen.
  - 1. Provide first class representatives of normal species or varieties with good branch systems and vigorous, healthy root systems. Provide plants free from insects and diseases, sun-scald injuries, abrasions of the bark, or other objectionable blemishes. Weak and/or disfigured plants will not be accepted. Plants must show appearance of normal health and vigor in strict accordance with these specifications. Nursery grown stock will be provided unless otherwise specified.
    - a. Balled & Burlapped, B&B, Trees and Shrubs: Field grown nursery plants, dug with a ball of earth still intact in which they are growing, wrapped in burlap or other suitable material to completely cover the root ball with a lacing or other ball supporting device on the outside to hold the ball in a firm, rigid condition. The ball size will be of a diameter and depth to encompass enough of the fibrous and feeding root system as necessary for the full recovery of the plant. The recommended minimum ball sizes, with the stem of the plant in the center of the ball, are:
      - 1) TREES:  
  
SEE LANDSCAPE PLAN
      - 2) SHRUBS:  
  
SEE LANDSCAPE PLAN
    - b. Container grown plants shall be healthy, vigorous, well rooted, and established in the container in which they are growing. They shall have tops of good quality and be in a healthy growing condition. The plants shall have a well-established root system reaching the sides of the container to maintain a firm root ball.
    - c. Plugs shall be healthy, vigorous, well rooted, and established in the container in which they are growing. They shall have tops of good quality and be in a healthy growing condition. The plants shall have a well-established root system reaching the sides of the container to maintain a firm root ball. By mass the roots shall be greater than the tops.
    - d. Top Branching for trees and shrubs shall be true to the species but not less than:
      - 1) TREES:  
  
SEE LANDSACPE PLAN



2) SHRUBS:

SEE LANDSCAPE PLAN

2. Provide plant material in conformance with state and federal laws with respect to inspection for plant disease and infections. Provide inspection certificates required by law with each shipment, invoice, or order of stock to the **City of Cheyenne**, materials grown under artificial climatic conditions promoting soft succulent growth will not be accepted. Plants scheduled for spring planting will be over-wintered, exposed to natural conditions. Failure to comply with this hardening off requirement shall be reason for rejection of plant material. All plant materials must be obtained from a nursery within the USDA Hardening Zone 1-4.
  3. Seed Source for the Native Grasses and the Planting Ring plants must be from **Wyoming**. Use seed collected in advance of scheduled planting date sufficient to grow plants to size specified and in conformance with quality requirements of this specification.
- D. Inspection: Plant material for projects are subject to inspection before, during, and post planting. Damaged plant material, containers, or loose, torn, and broken root balls will not be approved by the Architect and will be replaced at the Contractors cost and must be removed from the storage area or project.
- E. Maintenance Services: Performed by installer. Furnish service and maintenance of planted areas through Final Completion of Project OR as required in the Maintenance Service Section of this specification.

**1.07 REGULATORY REQUIREMENTS**

- A. Comply with regulatory agencies for fertilizer and herbicide composition.
- B. Plant Materials: Certified by state department of agriculture; free of disease or hazardous insects.

**1.08 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.
- B. Deliver all plant material to the site in their original containers with all labels intact and legible at the time of inspection. If necessary, designate a storage area and provide access to the Architect.
- C. Protect and maintain plant life until planted.
- D. Deliver plant life materials immediately prior to placement. Keep plants moist. Plant nursery stock immediately upon delivery to the site and approval by the Architect. If this is not feasible, heal-in all balled and burlaped material in damp soil and mulch mix and protect from the sun and wind. Regularly water all nursery containers and place in a cool area protected from the sun and drying wind. Approval of off site storage is required by the Architect. The Contractor is responsible for all maintenance and watering of trees until Final Acceptance.

**1.09 ENVIRONMENTAL REQUIREMENTS**

- A. Do not install plant life when ambient temperatures may drop below 35 degrees F or rise above 90 degrees F.
- B. Do not install plant life when wind velocity exceeds 30 mph.

**1.10 WARRANTY**

- A. Provide one year warranty.

- B. Warranty: Include coverage for one continuous growing season; replace dead or unhealthy plants.
- C. Replacements: Plants of same size and species as specified, planted in the next growing season, with a new warranty commencing on date of replacement.

**1.11 MAINTENANCE SERVICE**

- A. Maintain plant life for eight (8) weeks after Final Completion.
- B. Maintenance to include:
  - 1. Cultivation and weeding mulched tree pits and planting beds and native grass plantings.
  - 2. Applying herbicides for weed control in accordance with manufacturer's instructions. Remedy damage resulting from use of herbicides.
  - 3. Irrigating sufficient to saturate root system.
  - 4. Maintaining browse protection, wrapping, tree ties, and stakes. Repair or replace accessories when required.
  - 5. Replacement of mulch.
  - 6. Apply deer repellent for browse control.

**PART 2 - PRODUCTS**

**2.01 TREES, PLANTS, AND GROUND COVER**

- A. Trees and Plants: Species and size identifiable in plant schedule, grown in climatic conditions similar to those in locality of the Work.

**2.02 SOIL MATERIALS**

- A. Planting Backfill: All soil backfill will be free of rocks larger than 1.5 inches, sticks, roots and other debris.
- B. Topsoil: Provide sterile, weed free, processed topsoil that has been passed through a ¾ inch screen. Texture to be a maximum of 30% sand, 75% silt and 27% clay with a pH range of 6.0-7.5. Provide in all new site landscape areas, Native Grass plantings and Planting Rings.

**2.03 SOIL AMENDMENT MATERIALS**

- A. Compost: 'EKO Compost', 'Glacier Gold', 'Soil Pep' .
- B. Fertilizer: Transplant root stimulator, 100% organic: 'BioPlex Transplant Concentrate' .

**2.04 MULCH MATERIALS**

- A. Mulching Material:
  - Organic Mulch: none allowed on this project.
  - 1. Stone Mulch:
    - a. Gravel Mulch: 3 TO 4 INCHES OF - ¾ inch to 2" washed rock.

**2.05 BOULDERS: NOT APPLICABLE**

- A. Use boulders encountered during excavation for project. Wash to clean before placing. Place as directed by Architect. Handle boulder to prevent scarring.

**2.06 GRAVEL BASECOURSE:**

- A. Use ¾ inch minus gravel.

2.06 DECOMPOSED GRANITE: *NOT APPLICABLE*

- A. Use 3/8" minus decomposed granite with the following sieve analysis specifications:
  - 1. 3/8 inch sieve - 100% passing
  - 1/4 inch sieve - 65% passing
  - 3/16 inch sieve - 50% passing
  - 1/8 inch sieve - 35% passing
  - 1/16 inch sieve - 25% passing
- B. Granite Crusher Fines meeting same sieve analysis specifications are an acceptable substitute.

2.07 ACCESSORIES

- A. Edging at Granite Pathway: *NOT APPLICABLE*
  - 1. Product: PermaLoc StructurEdge, 1/8 inch (3.2 mm) x 2-1/4" (57 mm) high, extruded aluminum, 6063 alloy, T6 hardness, paver restraint edging for straight-line and curvilinear applications in corrugated L-shaped profile, as manufactured by PermaLoc Corporation, Holland MI 49424, telephone (800) 356-9660 or (616) 399-9600 or approved equal. Horizontal base shall have holes spaced 4 inches (102 mm) apart along its length to receive spikes.
  - 2. Thickness: 1/8 inch (3.2 mm) gage section shall have 0.190 inch (4.83 mm) thick exposed top lip.
  - 3. Length: 8 feet (2.44 meters).
  - 4. Connection Method: Section ends shall splice together with horizontal 0.060 inch (1.52 mm) thick x 1 inch (25 mm) wide x 4 inches (102 mm) long aluminum sliding connector.
  - 5. Anchoring: 3/8 inch x 10 inches (9.5 mm x 254 mm) bright spiral steel spike. Use plastic washers if desired.
  - 6. Finish: Natural Mill Aluminum.
- B. **Weed Barrier Fabric:** Woven Polypropylene fabric, 4.75oz. sq./yd. or heavier with metal landscape pins.
- C. **Landscape Bed Edging:** PRO EDGE STEEL /aluminum edging; 1/8" x 4", selected from manufacturer's full range of colors.
- D. **Stakes & Anchoring: Stake:** 1.5 inch diameter round posts with tapered end, 8-foot length or duckbill anchors, 3 per deciduous and 4 coniferous tree. Contractor to remove all staking after one year. Anchoring: webbing or rubber tree ties manufactured specially for use on trees.
- E. **Browse Protection:**
  - 1. 'Deer Away' big game repellent or approved equal.
  - 2. Tree Protectors: Polyethylene corrugated protectors, 'Corrigard' 4 inch x 3 foot size, grey color or approved equal.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that prepared subsoil are ready to receive work.
- B. Prepare subgrade and Finish Grade as specified

- C. Saturate soil with water to test drainage. Correct drainage problems before proceeding.

### **3.02 PREPARATION OF SUBSOIL**

- A. Modify preparation in Tree Protection Zones (TPZ) to conform with tree protection requirements.
- B. Prepare subgrade and Finish Grade as specified in Section 02 300 – Earthwork.
- C. Completely clean site of existing ground surface vegetation, weeds and turf grasses, before proceeding with finish grade, topsoil placement and planting. Remove vegetation by applying general herbicide to live plants, allow time for herbicide to be effective, water during this period to promote growth of dormant vegetation and seeds. Repeat process again, two total herbicide treatments are anticipated. Continue until no regrowth occurs. Allow herbicide manufacturer's recommended time period to pass before planting with new vegetation. Cut dead vegetation short, leave in place, remove large woody portions and portions that will interfere with final landscape planting.

### **3.03 GRANITE PATHWAY , NOT APPLICABLE FOR PRA, CASPER**

- A. Layout line of pathway and verify location with Architect.
- B. Place and compact the subbase material to 95% proctor density to grades required.
- C. Set edging into trench with the horizontal base resting on compacted subbase. Loops for stakes are to be placed on the turf side. Drive stakes through edging loops until locked in place. Requires 8 stakes evenly spaced for each 16 feet (4.88 meters) section, or 3 stakes evenly spaced for each 8 feet (2.44 meters) section. Provide longer stakes, heavier gage stakes, or any combination of previously mentioned as necessary to firmly secure edging for permanent intended use.
- D. Place Decomposed Granite/Granite Crusher Fines over prepared subgrade inside of edging. Place in maximum 4 inch deep lifts, (2 inch depth required for this project) water to assist with compaction. Compact with vibratory roller or plate compactor to provide firm, uniform ADA accessible walking surface. Place additional material until top of pathways are flush with top of edging. Repeat compaction until finished pathway is level with edging and adjacent walkway finish grades.

### **3.04 PLANTING BEDS & MAINTENANCE STRIP**

- A. Lay weed barrier fabric, smooth side down, in all Planting Beds and Maintenance Strip areas. Overlap edges by 6 inches and pin at 2 feet on center throughout with wire staples. Finish cut edges by trenching 6 inches deep and burying approximately 8 inches of excess fabric by tucking securely adjacent to curbing, steel edging or other material.
- B. Plant specified plant materials where shown. Cut an 'X' in fabric where plants are to be planted and fold corners under. Keep fabric clear of dirt and debris. Wet fabric to break tension.
- C. Apply specified mulch to required depth and hand rake and smooth to provide uniform finished appearance.

### **3.05 FERTILIZING**

- A. Apply fertilizer in accordance with manufacturer's instructions.

### **3.06 PLANTING**

- A. Place plants as indicated for review and final orientation by Landscape Architect.
- B. Set plants vertical.
- C. Remove non-biodegradable root containers.

- D. Amend backfill soil with compost at a rate of 1 part compost to 3 parts excavated subsoil and mix thoroughly before backfilling.
- E. Apply Organic Mulch to 3 inch thickness in all tree wells, base of existing trees and planting beds except where noted.
- F. Apply Gravel Mulches to 4 inch depth where indicated over Weed Barrier Fabric.

### **3.07 INSTALLATION OF ACCESSORIES**

- A. Apply the browse repellent to all plant materials immediately upon delivery to the site, before planting.
- B. Install browse protection materials immediately after planting.

### **3.08 PLANT SUPPORT**

- A. Brace plants vertically with tree ties and stakes to the following:
  - 1. Deciduous Trees: 3 stakes with 3 ties
  - 2. Coniferous Trees; 4 stakes with 3 ties.

### **3.09 TREE PRUNING**

- A. Prune newly planted trees and shrubs as required to remove dead, broken, and split branches.

### **3.10 FIELD QUALITY CONTROL**

- A. Plants will be rejected if a ball of earth surrounding roots has been disturbed or damaged prior to or during planting.

### **3.11 CLEANUP AND PROTECTION**

- A. During landscape work, keep pavements clean and work area in an orderly condition.
- B. Protect landscape work and materials from damage due to landscape operations, operations by other contractors and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged landscape work as directed.

### **3.13 MAINTENANCE**

- A. Provide maintenance of all plantings, planting beds, and mulched areas, for a period of eight (8) weeks after Final Completion.
- B. Water to prevent soil from drying out.
- C. Control growth of weeds. Mechanically remove weeds and/or use herbicides safe for plants materials. Herbicides application in accordance with manufacturer's instructions by licensed applicator.
- D. Pesticides in accordance with manufacturer's instructions by licensed applicator.
- E. Re-apply browse control, deer repellent as conditions warrant to prevent damage by deer during maintenance period.

### **3.14 INSPECTION AND ACCEPTANCE**

- A. When landscape work is completed, including maintenance, Landscape Architect/Owner will, upon request, make an inspection to determine acceptability.

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1. Landscape work may be inspected for acceptance in portions as agreeable to Architect/Owner, provided each portion of work offered for inspection is complete, including maintenance.
- B. When inspected landscape work does not comply with requirements, replace rejected work and continue specified maintenance until re-inspected by Architect and found to be acceptable. Remove rejected plants and materials promptly from project site.

END OF SECTION 02930

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### DIVISION 3 - CONCRETE

Sections included:

Section 03100 – CONCRETE FORMWORK

Section 03250 – CONCRETE ACCESSORIES

Section 03300 – CAST IN PLACE CONCRETE

Section 03313 –GYPSUM CEMENT UNDERLAYMENT

Section 03315 – SITE CONCRETE SIDEWALK & SLABS



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## **03100 – CONCRETE FORMWORK**

### **PART 1 - GENERAL**

**1.1** Related work specified elsewhere:

A. Cast-in-Place Concrete – Section 03300

### **PART 2 - MATERIALS**

**2.1** Forms. Plywood, lumber or metal, free of defects which would cause blemishes. Other materials shall be used only on approval of the A&E.

**2.2** Nonstaining type form oil.

### **PART 3 - EXECUTION**

**3.1** Design and construct forms so that they may be removed without injuring the concrete.

**3.2** Chamfer or bullnose with tool all exposed corners.

**3.3** Oil or saturate with water the interior surfaces of forms to ensure non-adhesion of mortar. take care to keep oil off reinforcing bars. Use water only if temperature is above 40°F.

**3.4** Concrete shall not be placed until forms and reinforcing have been checked and accepted by the A&E.

**3.5** Remove forms a minimum of 72 hours after pouring or when approved by the A&E.

END OF SECTION

## 03250-CONCRETE ACCESSORIES

### PART 1 – GENERAL

#### 1.1 THE REQUIREMENT

- A. The contractor shall furnish all tools, equipment, materials, and supplies to install all concrete accessories to complete the work including cast-in-place anchor bolts(also known as anchor rods), epoxy grouted anchor bolts or dowels and, expansion or adhesive anchors, in accordance with the requirements of the Contract Documents.

#### 1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 03300 Cast-in-Place Concrete.

#### 1.3 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Comply with the reference standards and Standard Specifications of the GENERAL REQUIREMENTS.
- B. Comply with the current provisions of the following Codes and Standards, as applicable.
1. Commercial Standards:
    - AISC Code of Standard Practice for Steel Buildings and Bridges
    - AISC Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings
    - ASTM A 36 Specifications for Carbon Structural Steel
    - ASTM A 153 Specifications for Zinc Coating (Hot Dip) on Iron and Steel Hardware
    - ASTM A 193 Specifications for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service
    - ASTM A 194 Specifications for Carbon and Alloy Steel Nuts for Bolts for High-Pressure and High-Temperature Service
    - ASTM A 307 Specifications for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
    - ASTM A 449 Specifications for Quenched and Tempered Steel Bolts and Studs
    - ASTM A 615 Specifications for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
    - ASTM B 633 Specifications for Electrodeposited Coatings of Zinc on Iron and Steel
    - ASTM B 695 Specifications for Coatings of Zinc Mechanically Deposited on Iron and Steel
    - ASTM F 436 Specifications for Hardened Steel Washers
    - ASTM F 1554 Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength

#### 1.4 CONTRACTOR SUBMITTALS

- A. Submittals shall be made in accordance with the GENERAL REQUIREMENTS.
- B. The following submittals and specific information shall be provided.

1. High Strength Anchor Bolts: The CONTRACTOR shall provide mill certificates and certified compliance with ASTM [F 1554; A 449 with F 436].
2. The CONTRACTOR shall submit shop drawings for all welded or fabricated items for use as anchors.
3. The CONTRACTOR shall submit catalog cuts and manufacturer's recommendations, for all expansion and adhesive anchors, and anti-seize thread lubricants.

**PART 2 – PRODUCTS**

**2.1 GENERAL**

- A. Anchor Size: Anchor size shall be as specified or shown on plans.
- B. Anchor Material:
  1. Water-containment or sanitary structures, immersion service, or exposed exterior locations: Stainless steel.
  2. Other location: Galvanized steel as permitted by the corresponding ASTM except as listed in the contract drawings.
- C. Anchor Length: Sufficient to extend through the nut(s) and not more than ¼ inch beyond the nut when exposed while meeting the required embedment.

**2.2 ANCHOR GRADES**

- A. Anchor Bolts and Nuts:
  1. High Strength: ASTM F 1554 Grade 105; A 449, galvanized. Provide with corresponding galvanized hardened washers.
  2. Stainless steel: ASTM A 193 and A 194, Type 316N, Grade 8MN.
  3. Unspecified: ASTM F 1554 Grade 36; A 36 or A 307, galvanized.
  4. Galvanizing: Hot dipped as required per ASTM F 1554; 1.25 ounces per square foot per ASTM A 153 or B 633; When protected from the atmosphere, moisture and sewage gases, ASTM B 695 is also acceptable.
  5. Other Coatings: None; As specified in the contract drawings.
- B. Flat Washers: Same material and finish as nut and bolt. For high strength bolts, use ASTM F 1554 F 436
- C. Anti-Seize Thread Lubricant for use with stainless steel anchors:
  1. Jet-Lube "Nikal"
  2. Never-Seez "Pure Nickel Special"
- D. Reinforcing Steel Dowels: ASTM A 615, Grade 60. Same diameter as spliced rebar, or #4 minimum.

- E. Expansion and Adhesive Anchors: Provided by the following suppliers or equal.
  - 1. Simpson, Hi Hi, and Powers.

### **PART 3 – EXECUTION**

#### **3.1 PROJECT CONDITIONS**

- A. Examine the areas and conditions under which the work will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until detrimental conditions are corrected.

#### **3.2 CAST-IN-PLACE ANCHOR BOLTS**

- A. Provide templates or other means to ensure accurate placement. Provide sufficient threads to allow for a nut to be placed on the concrete side of the template.
- B. Anchor bolts shall be clean and free of all coatings which may impair bonding with concrete.
- C. Provide two nuts and a washer with each anchor bolt. Provide an additional locknut when indicated on the Drawings.
- D. High Strength Bolts: Install such that ASTM Grade markings are visible after casting into concrete.

#### **3.3 EPOXY-GROUTED ANCHOR BOLTS OR DOWELS**

- A. Provide templates or other means to ensure accurate placement.
- B. Anchor bolts or dowels shall be clean and free of all coatings which may impair bonding with epoxy.
- C. Provide a nut and a washer with each anchor bolt. Provide an additional locknut when indicated on the Drawings.
- D. High Strength Bolts: Install such that ASTM Grade markings are visible after casting into concrete.
- E. Do not disturb bolt or dowel until epoxy grout has cured and reached full strength.

#### **3.4 STAINLESS STEEL ANCHORS.**

- A. After installation of stainless steel anchor bolts or expansion anchors, lubricate threads before fastening.

END OF SECTION

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SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes.
- B. Related Sections:
  - 1. Section 312000 "Earth Moving" for drainage fill under slabs-on-grade.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture.
- C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement.
- D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.

1.3 INFORMATIONAL SUBMITTALS

- A. Welding certificates.
- B. Material certificates.
- C. Material test reports.
- D. Floor surface flatness and levelness measurements.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
  - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

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- B. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
- C. Welding Qualifications: Qualify procedures and personnel according to AWS D1.4/D 1.4M, "Structural Welding Code - Reinforcing Steel."
- D. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
  - 1. ACI 301, "Specifications for Structural Concrete," Sections 1 through 5. Sections 1 through 5 and Section 7, "Lightweight Concrete."
  - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- E. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
- F. Preinstallation Conference: Conduct conference at Project site.

## PART 2 - PRODUCTS

### 2.1 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

### 2.2 STEEL REINFORCEMENT

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 60 percent.
- B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.
- C. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, plain, fabricated from as-drawn steel wire into flat sheets.
- D. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice."

### 2.3 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:

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1. Portland Cement: ASTM C 150, Type I/II, gray. It is acceptable to supplement with the following:
  - a. Fly Ash: ASTM C 618, Class F or C.
  - b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- B. Normal-Weight Aggregates: ASTM C 33, graded.
  1. Maximum Coarse-Aggregate Size: 1 inch nominal.
  2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Lightweight Aggregate: ASTM C 330, 3/4-inch nominal maximum aggregate size.
- D. Water: ASTM C 94/C 94M and potable.

### 2.4 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
  1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
  2. Retarding Admixture: ASTM C 494/C 494M, Type B.
  3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
  4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
  5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
  6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

### 2.5 FIBER REINFORCEMENT

- A. Synthetic Micro-Fiber: Monofilament polypropylene micro-fibers engineered and designed for use in concrete, complying with ASTM C 1116/C 1116M, Type III, 1/2 to 1-1/2 inches long.

### 2.6 WATERSTOPS

- A. Flexible Rubber Waterstops: CE CRD-C 513, with factory-installed metal eyelets, for embedding in concrete to prevent passage of fluids through joints. Factory fabricate corners, intersections, and directional changes.
- B. Chemically Resistant Flexible Waterstops: Thermoplastic elastomer rubber waterstops with factory-installed metal eyelets, for embedding in concrete to prevent passage of fluids through joints; resistant to oils, solvents, and chemicals. Factory fabricate corners, intersections, and directional changes.

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- C. Flexible PVC Waterstops: CE CRD-C 572, with factory-installed metal eyelets, for embedding in concrete to prevent passage of fluids through joints. Factory fabricate corners, intersections, and directional changes.
- D. Self-Expanding Butyl Strip Waterstops: Manufactured rectangular or trapezoidal strip, butyl rubber with sodium bentonite or other hydrophilic polymers, for adhesive bonding to concrete, 3/4 by 1 inch (19 by 25 mm).
- E. Self-Expanding Rubber Strip Waterstops: Manufactured rectangular or trapezoidal strip, bentonite-free hydrophilic polymer modified chloroprene rubber, for adhesive bonding to concrete, 3/8 by 3/4 inch (10 by 19 mm).

### 2.7 VAPOR RETARDERS

- A. Sheet Vapor Retarder: ASTM E 1745, Class A. Include manufacturer's recommended adhesive or pressure-sensitive tape.
- B. Sheet Vapor Retarder: Polyethylene sheet, ASTM D 4397, not less than 10 mils (0.25 mm) thick.

### 2.8 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) when dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
- F. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, nondissipating, certified by curing compound manufacturer to not interfere with bonding of floor covering.
- G. Clear, Solvent-Borne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.
  - 1. VOC Content: Curing and sealing compounds shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- H. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.



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1. VOC Content: Curing and sealing compounds shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.9 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork.

2.10 CONCRETE MIXTURES

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
- B. Cementitious Materials: Use fly ash, pozzolan, ground granulated blast-furnace slag, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.
- C. Admixtures: Use admixtures according to manufacturer's written instructions.
  1. Use water-reducing, high-range water-reducing, or plasticizing admixture in concrete, as required, for placement and workability.
  2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
  3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
- D. Proportion normal-weight concrete mixture as follows:
  1. Minimum Compressive Strength: See Drawings.
  2. Maximum Water-Cementitious Materials Ratio: See Drawings.
  3. Slump Limit: See Drawings.
  4. Air Content: See Drawings. Do not allow air content of trowel-finished floors to exceed 3 percent.
  5. Synthetic Micro-Fiber: Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than 1.5 lb/cu. yd.
- E. Proportion structural lightweight concrete mixture as follows:
  1. Minimum Compressive Strength: See Drawings.
  2. Calculated Equilibrium Unit Weight: 110 lb/cu. ft. maximum weight, plus or minus 3 lb/cu. ft. as determined by ASTM C 567.
  3. Slump Limit: See Drawings.
  4. Air Content: 6 percent, plus or minus 2 percent at point of delivery for nominal maximum aggregate size greater than 3/8 inch.
  5. Air Content: 7 percent, plus or minus 2 percent at point of delivery for nominal maximum aggregate size 3/8 inch or less.

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6. Air Content: Do not allow air content of trowel-finished floors to exceed 3 percent.

2.11 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.12 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116/C 1116M and furnish batch ticket information.
  1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Chamfer exterior corners and edges of permanently exposed concrete, unless shown otherwise on the drawings.

3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

3.3 VAPOR RETARDERS

- A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder according to ASTM E 1643 and manufacturer's written instructions.
  1. Lap joints 6 inches (150 mm) and seal with manufacturer's recommended tape.

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### 3.4 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
  - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

### 3.5 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:
  - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch (3.2 mm). Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
  - 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3.2-mm-) wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
- E. Waterstops: Install in construction joints and at other joints indicated according to manufacturer's written instructions.

### 3.6 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
  - 1. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
- C. Cold-Weather Placement: Comply with ACI 306.1.
- D. Hot-Weather Placement: Comply with ACI 301.

### 3.7 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
  - 1. Apply to concrete surfaces not exposed to public view.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
  - 1. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, and to be covered with a coating or covering material applied directly to concrete.
- C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:
  - 1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
  - 2. Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.
  - 3. Cork-Floated Finish: Wet concrete surfaces and apply a stiff grout. Mix one part portland cement and one part fine sand with a 1:1 mixture of bonding agent and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Compress grout into voids by grinding surface. In a swirling motion, finish surface with a cork float.
- D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

### 3.8 FINISHING FLOORS AND SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch (6 mm) in one direction.

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1. Apply scratch finish to surfaces indicated, to receive concrete floor toppings, and to receive mortar setting beds for bonded cementitious floor finishes.
- C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.
  1. Apply float finish to surfaces indicated to receive trowel finish.
- D. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
  1. Apply a trowel finish to surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system.
  2. Finish and measure surface so gap at any point between concrete surface and an unveled, freestanding, 10-ft.- long straightedge resting on two high spots and placed anywhere on the surface does not exceed 3/16 inch.
- E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces indicated and where ceramic or quarry tile is to be installed by either thickset or thin-set method. While concrete is still plastic, slightly scarify surface with a fine broom.
  1. Comply with flatness and levelness tolerances for trowel-finished floor surfaces.
- F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.

### **3.9 CONCRETE PROTECTING AND CURING**

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
  1. Moisture Curing: Keep surfaces continuously moist for not less than seven days.
  2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less

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than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
  - a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound will not interfere with bonding of floor covering used on Project.
4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

**3.10 CONCRETE SURFACE REPAIRS**

- A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

**3.11 FIELD QUALITY CONTROL**

- A. Testing and Inspecting: Owner will engage a qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

END OF SECTION 033000

**03313 – GYPSUM CEMENT UNDERLAYMENT**

RECOMMENDED SPECIFICATION FOR GYP-CRETE<sup>®</sup> FLOOR UNDERLAYMENT IN MULTIFAMILY HOUSING

PART 1 GENERAL

1.01 SUMMARY

- A. Description of Work: Work of this section includes underlayment for interior finish flooring and is not limited to the following:
1. Maxxon Gyp-Crete Floor Underlayment covering normal project conditions and applications.
  2. Division 3 Section-Concrete: "Cast Underlayment" and "Gypsum Cement Underlayment"
  3. Division 9 Section-Finishes: "Acoustic Treatment"

1.02 REFERENCES

- A. Underwriters Laboratory      Fire Resistance Volume 1  
[www.ul.com](http://www.ul.com)
- B. GREENGUARD Certified GREENGUARD and GREENGUARD Gold Certified  
[www.greenguard.org](http://www.greenguard.org)
- C. ASTM E336 and E1007      Field Sound Transmission Class (F-STC), Field Impact Insulation Class (F-IIC)
- D. ASTM E90 and E492      Sound Transmission Class (STC), Impact Insulation Class (IIC)
- E. ASTM C472M      Compressive strength of gypsum concrete
- F. ASTM F2170      Standard Test Method for Determining Relative Humidity in Concrete Floor Slab
- G. ASTM F2419      Standard Test Method for Installation of Thick Poured Gypsum Concrete and Preparation of Surface to Receive Resilient Flooring
- H. ASTM F2678      Standard Practice for Preparing Panel Underlayments, Thick Poured Lightweight Cellular Concrete Underlayments, and Concrete Subfloors with Underlayment Patching Compounds to Receive Resilient Flooring

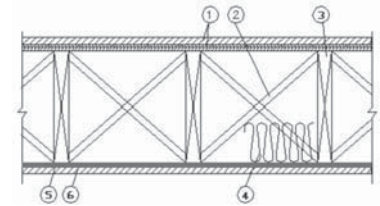
**MULTI FAMILY HOUSING**, encompass v2 IIC.

- I. TCNA F 180 Tile Council of North America Installation Handbook  
[www.tileusa.com](http://www.tileusa.com)
- J. NWFA National Wood Flooring Association Instructions  
[www.nwfa.org](http://www.nwfa.org)
- K. Finished Floor Goods Procedures Maxxon Procedures for Attaching Finished Floor Goods to Maxxon Underlayments  
[www.maxxon.com](http://www.maxxon.com)

1.03 SUBMITTALS

- A. Product Data: Submit sale sheets *Gyp-Crete Sales Sheet*, *Acousti-Mat Ultimate Sound Control Systems*, *Procedures for Attaching Finished Floor Goods to Maxxon Underlayments*, and *Maxxon’s Building Conditions Guide* with project materials clearly identified for each required product or system.
- B. UL Directory Fire Resistance Volume 1 -

Rating	Underwriters Laboratory File Number
1 Hr Fire Rating	L593



Example: [L593](#)

- C. Acoustical Data: Submit sound tests according to IBC code criteria ASTM E492 (IIC) and ASTM E90 (STC) or ASTM E1007 (F-IIC) and E336 (F-IIC).
- D. Code Approvals: See [www.maxxon.com](http://www.maxxon.com) for the current list of code approvals.

1.04 SYSTEM REQUIREMENTS

- A. Performance Requirements:
  - 1. Gyp-Crete Floor Underlayment (Always a “Green” building material)
    - i) Compressive strength up to 2,200 psi (up to 15 MPa)
    - ii) Density 110 pounds per cubic foot (1,762 kg/m<sup>3</sup>)
  - 2. Sound Control – per documents

1.05 QUALITY ASSURANCE

- A. Performance Standards:
  - 1. All materials, unless otherwise indicated, shall be manufactured by Maxxon Corporation and shall be installed in accordance with its current printed directions and by a Maxxon Corporation Authorized Applicator.



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2. Underlayment mix shall be tested for a slump using a 2" (i.d.) x 4" (50 mm x 101 mm) cylinder resulting in a patty size of 8 1/2" (216 mm) plus or minus 1 inch (25 mm) diameter.
3. Compressive strength tested in accordance with ASTM C 472M.

1.06 DELIVERY, STORAGE AND HANDLING

- A. All materials shall be delivered in their original unopened packages and protected from damage and exposure from the elements. Damaged or deteriorated materials shall be removed from the premises.

1.07 PROJECT CONDITIONS

- A. Before, during and after installation of product, building interior shall be enclosed, with adequate ventilation and heat maintained at a temperature above 50 °F (10 °C) to allow for drying of product.

PART 2 GENERAL

2.01 PRODUCTS AND MANUFACTURERS

- A. Manufacturer: Maxxon Corporation, Hamel, MN. Telephone: (800) 356-7887

2.02 MATERIALS

- A. Proprietary products/systems: Poured flooring underlayment and topping products, including the following:
  1. Gyp-Crete Floor Underlayment
- B. Maxxon Floor Primer:
  1. Material Standard: Comply with specifications outlined in manufacturer's Design and Installation Guide for wood.
- C. Mix Water:
  1. Material Standard: Potable, free from impurities and from a domestic source.
- D. Sand Aggregate:
  1. Sand shall meet Maxxon Sand Specification 101.
- E. Maxxon Overspray Primer Sealer:
  1. Seal all areas that receive glue down floor goods with Maxxon Overspray according to manufacturer's specifications.
- F. Maxxon Acrylic Primer Sealer (Alternate to Overspray):
  1. Seal all areas that receive glue down floor goods with Maxxon Acrylic according to manufacturer's specifications.
- G. Maxxon Reinforcement or Maxxon CSM (Crack Suppression Mat):
  1. Install approved reinforcement as per manufacturer recommendations. For reinforcement requirements see page 5.

PART 3 EXECUTION

3.01 EXAMINATION

LIGHTWEIGHT CONCRETE

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- A. Site Verification of Conditions:
  - 1. Installation shall not begin until the building is enclosed, including roof, windows, doors, and any other apertures.
  - 2. Wood substrate shall be structurally sound, properly fastened, and dry. Contractor shall clean subfloor to remove mud, oil, grease, and other contaminating factors before arrival of the authorized applicator.
  - 3. Wood substrate:
    - i) The wood subfloor must be adequate to withstand live and dead loads with a deflection limitation of L/360.
    - ii) Wood should be agency approved 23/32" (1.8cm) T & G subfloor sheathing.

**3.02 REQUIREMENTS**

- A. Leak Prevention:
  - 1. Fill cracks and voids in subfloor where leakage of slurry could occur.
- B. Priming subfloor:
  - 1. Prime substrate according to manufacturer's recommendations.
- C. Application:
  - 1. Install in accordance with reference standards and manufacturer's instructions.

**3.03 GENERAL INSTALLATION REQUIREMENTS**

- A. Mixing Proportions:
  - 1. General Requirements: Mix proportions and methods shall be in strict accordance with product manufacturer recommendations.
- B. Application:
  - 1. Pour floor topping to recommended thickness. Immediately spread and screed product to a smooth surface. Expansion joints in all types of work shall be brought through the underlayment.
    - i) Minimum Maxxon Underlayment Depth:

Substrate	Depth of Pour
Wood	¾" (1.9 cm)
- C. Drying:
  - 1. The general contractor must provide and maintain correct environmental conditions to keep the building clean and dry, and protect against infestation of moisture from a variety of potential sources. The general contractor must supply mechanical ventilation and heat if necessary to remove moisture from the area until the Gyp-Crete is dry.
  - 2. Protection from Heavy Loads: During construction, place temporary wood planking over Gyp-Crete wherever it will be subject to heavy wheeled or concentrated loads.

**3.04 PREPARATION FOR INSTALLATION OF GLUE DOWN FLOOR GOODS**

- A. Sealing:
  - 1. Seal all areas that receive glue down floor goods with Maxxon Overspray or Maxxon Acrylic according to the Maxxon Corporation's specifications. Any floor areas where the surface has been damaged shall be cleaned and sealed regardless of floor covering to be used. Where floor goods manufacturers require special adhesive or installation systems, their requirements supersede these recommendations.

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2. Maxxon UWR can be used over Maxxon underlayments in low traffic areas such as utility rooms, storage rooms and closets, as a protective surface.
- B. Moisture Testing:
1. Follow the respective floor goods manufacturers' recommendations for relative humidity requirements. When manufacturer does not have a relative humidity requirement, refer to Maxxon's *Procedures for Attaching Finished Floor Goods to Maxxon Underlayments* brochure.
- C. Finished Floor Goods:
1. There are many reference standards for the installation procedures and recommendations for finished flooring applications over gypsum underlayments. These include instructions of the manufacturers of the finished flooring, adhesives and thin-set as well as national agency reference standards. The national standards are listed below:

Flooring Type	Reference Standard
Resilient	ASTM F2419
Ceramic Tile	TCNA F180
Wood	NWFA Instructions

See Maxxon Corporation's *Procedures for Attaching Finished Floor Goods to Maxxon Underlayments* brochure for guidelines for installing finished floor goods. This procedure is not a warranty and is to be used as a guideline only.

END OF SECTION

**03315 – SITE CONCRETE SIDEWALK & SLABS**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. This section covers concrete curbs and sidewalks/slabs.

**PART 2 - PRODUCTS**

**2.1 CONCRETE**

- A. Concrete shall conform with Section 03300 – Cast –in –Place Concrete.

**2.2 FORMS**

- A. Forms shall conform to Section 03100 – concrete formwork.

**PART 3 - EXECUTION**

**3.1 SUBGRADE (see Soils Report, it governs)**

- A. Subgrade shall be prepared true to grade and alignment as required by the typical section, the plans and as staked on the ground. The subgrade shall be prepared with a 2" thick leveling course or surfacing material and compacted to a minimum of 95% proctor density as determined by AASHTO T-99.
- B. The subgrade and forms shall be moistened with water prior to the placement of concrete.
- C. Reference 02010 – Subsurface Investigations.

**3.2 JOINTS**

- A. Expansion Joints. Provide ½" minimum expansion joints in curb and sidewalk. Expansion joints are to be filled with a pre-formed filler which complies with Section applicable of the Idaho Highway Department Standard Specifications.
- B. Cold Joints. All cold joints or joints ending concrete placement for more than 30 minutes shall be expansion joints and shall be placed on an equal interval with contraction joints.
- C. Saw Cutting For Bands and Control Joints. All control joints shall be a minimum of 25% depth of concrete. Decorative scoring will be 1/4" plus or minus.
  - a. Saw cutting layout shall be specified to included control joints in the pattern established by the architect. Saw cuts shall be beveled at the surface to prevent spalling.

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- D. Contraction Joints. Divide into sections using contraction joints formed by a jointing tool or other approved methods. Extend the contraction joints into the concrete for at least one-fourth of its depth and be approximately 1/8-inch wide. Unless otherwise directed, space contraction joints at maximum 10-foot intervals or at a distance equal to the sidewalk width, whichever is less. In continuous sidewalk runs, install isolation joints at the location of a regular contraction joint if the distance between isolation joints does not exceed 300 feet.

**3.3 FINISH**

- A. Sidewalks and concrete curbs shall have all exposed faces finished as shown on the plans. If no finish appears on the plans the exposed faces shall receive a broomed finish which is uniform in a direction transverse to the direction of the sidewalk or curb.
- B. All exposed edges shall be chamfered or bull nosed. When shown on the plans the chamfer shall be as indicated. If no dimension is shown a 1" radius tool shall be used.

**3.4 PROTECTION**

- A. The Contractor shall take reasonable precautions in the protection of his work. Protection shall include but shall not be limited to the following:
  - 1. Protection from rain by use of coverings. The Contractor shall not place more concrete than that which he has adequate covering for on the job and ready for use.
  - 2. Protect from freezing as required in Section 03312 – Ready Mix Concrete.
  - 3. Protect fresh concrete from vandals by use of barricades or by timing of work and, if necessary, guarding concrete until adequately set.
  - 4. Protect from traffic for a minimum of four (4) days unless otherwise approved by the A&E.

END OF SECTION

**MULTI FAMILY HOUSING**, encompass v2 Ilc.

DIVISION 5 - METALS

Sections included:

Section 05050 – METAL FASTENING BOLTING

Section 05520 – HANDRAILS AND RAILINGS

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**05050 – METAL FASTENING: BOLTING**

**PART 1 – GENERAL**

**1.1 SUMMARY**

- A. Provide bolted connections as shown on the Drawings and as specified herein.

**1.2 QUALITY STANDARDS**

- A. All work must comply with applicable codes and regulations.
- B. Provide experienced, well-trained workers to complete the work as specified.
- C. Work must follow manufacturer's standards and instructions.

**PART 2 – PRODUCTS**

**2.1 BOLTS**

- A. Anchor Bolts: ASTM A307 5/8" anchor bolts are not required to be galvanized.
- B. High Strength Bolts: ASTM A325

**PART 3 – EXECUTION**

**3.1 BOLTED FASTENING**

- A. Make bolt holes as detailed. Align and temporarily secure matched bolt holes at connections before bolting.
- B. Replace all components damaged during installation. Retighten all bolts before work is closed in. Verify that there are no missing nuts and bolts in out-of-view areas.
- C. Reopen any work that has been closed in prior to inspection by the Architect. Repair defective work as directed by the Architect.

END OF SECTION

## **05520 – HANDRAILS AND RAILINGS**

### **PART 1- GENERAL**

#### **1.01 SUMMARY**

- A. Section Includes: Handrails and Guardrails. (Stairs handrails are all wood) Guardrails required to be powder coated. Color to be selected by Architect.

#### **1.02 SYSTEM DESCRIPTION**

- A. Performance Requirements:  
Structural performance of handrails and railing systems: Comply with ASTM E985 based on testing in accordance with ASTM E894 and E935.
- B. Design Requirements:  
Comply with ASTM E985 and 2006 IBC Section 1009.11 and 1607.7.

#### **1.03 SUBMITTALS**

- A. Shop Drawings: Submit details and erection diagrams showing construction methods and dimensions for connection with other Work and materials.

#### **1.04 DELIVERY, STORAGE AND HANDLING**

- A. Packing and Shipping: Deliver materials to site in manufacturer's original unopened packaging with labels intact. Protect finished surfaces with removable wrapping or coating which will not bond when exposed to sunlight.
- B. Storage: Adequately protect against damage while stored at the site.
- C. Handling: Comply with manufacturer's instructions.

#### **1.05 PROJECT/SITE CONDITIONS**

- A. Field Measurements: Verify existing conditions by taking field measurements.

### **PART 2 - PRODUCTS**

#### **2.01 MATERIALS**

- A. Structural Steel Shapes and Plates: ASTM A36.
- B. Steel Pipe: ATM A53, type as selected, Grade A standard weight (Schedule 40).
- C. Wall Bracket for Guard Railings: See drawings. Provide appropriate fastener and anchor plate.
- D. Guard Railings: See drawings.
- E. Wood Handrail, see drawings and as designed and fabricated as required to fasten .

#### **2.02 FABRICATION**

- A. Shop Assembly:



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1. Conform with AISC Standard Specifications, Rules and Practice in the "Steel Construction Manual."
  2. Form and fabricate the Work to meet installation conditions.
  3. Include accessories to adequately secure the Work in place.
  4. Make provisions to connect with or to receive abutting construction.
- B. Shop/Factory/Finishing: Clean surfaces of grease, rust, mill scale, and other foreign matter per SSPC-SP10, and apply coat of primer, except galvanized surfaces.
- C. Powder Coating exterior railing, sleeves, brackets and flanges after fabrication.
- D. Make connections between members, unless otherwise indicated, with welds or bolts. Conceal connections in finished Work where possible.
- E. Where exposed, use Phillips oval head screws.
- F. Accurately member or miter exposed joints with hairline joints.
- G. Grind welds, projections and corners in finished surfaces smooth. No identifying marks shall remain exposed.
- H. Welds shall be flush type, with fillets dressed to uniform radius, using the shielded arc method.

### **PART 3 - EXECUTION**

#### **3.01 EXAMINATION**

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
- B. Coordination: Coordinate with other work which affects, connects with, or will be concealed by this Work.

#### **3.02 INSTALLATION**

- A. Install steel railings and handrails at locations indicated.
- B. Install items anchored in concrete in the formwork, where practicable.
- C. Install posts and vertical members plumb within 1/8 inch (3mm) of vertical. Install longitudinal members parallel with each other and to floor surfaces or slope of stairs to within 1/8 inch per 10 running feet (3mm per 3000 running millimeters).
- D. Securely anchor wall brackets.

#### **3.03 CLEANING**

- A. During the course of the Work and on completion of the Work, remove and dispose of excess materials, equipment and debris away from premises.

END OF SECTION

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**DIVISION 6 – WOOD AND PLASTICS**

Sections included:

Section 06010 - LUMBER

Section 06050 – FASTENERS AND ADHESIVES

Section 06100 – ROUGH CARPENTRY

Section 06160 - SHEATHING

Section 06170 – I-JOISTS AND FLOOR TRUSSES

Section 061753 – SHOP FABRICATED

Section 06181 – GLUE LAMINATED STRUCTURAL UNITS

Section 06192 – SHOP FABRICATED ROOF WOOD TRUSSES

Section 06200 – FINISH CARPENTRY AND MILL WORK

Section 06300 – WOOD TREATMENT

**06010 - LUMBER**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Provide and install wood framing and finish carpentry as shown on the Drawings and as specified herein. Work includes all connectors, and related hardware and materials.
- B. Where additional instructions are required, work shall be as directed by the Architect.

**1.2 SUBMITTALS**

- A. Provide all tests, certificates, and affidavits necessary to verify materials are as specified.

**1.3 QUALITY STANDARDS AND TOLERANCES**

- A. Provide a work force that is sufficient in number for the quantity of work and time schedule. Workers shall be skilled, trained, experienced, and competent to do the work as specified.
- B. Unless otherwise directed by the Architect, all work shall be as per building code and the Manual for Wood Frame Construction, American Forest and Paper Association (NFPA), National Design Specifications for Wood Construction of the NFPA, Plywood Specifications and Grade guide of the American Plywood Association.
- C. Tolerances: Vertical framing shall be plumb within 1/4" per 10 linear feet and horizontal framing shall be level within 1/4" per 10 linear feet.
- D. Moisture content of framing lumber shall be 19% or less by weight. Tests will be conducted on all newly shipped lumber to confirm moisture content. Kiln-dried or other lumber requiring lower moisture content shall be as specified.
- E. Follow applicable lumber grading agency standards in accepting or rejecting delivered lumber. Reject special, required lumber that is not marked and certified as preservative-treated or kiln-dried.

**1.4 MATERIALS HANDLING AND STORAGE**

- A. Reject any delivered framing lumber that is not grade-stamped and certified by a bona fide grading agency. Identify framing lumber by grade, and store each grade separately.
- B. Do not accept or use lumber that deviates from grade standards or has excessive moisture content or other defects. Remove unstamped or defective lumber from the job site.
- C. Handle lumber to avoid damage during transport, unloading, and moving on the job site. Handle chemically treated lumber and panels strictly according to manufacturer's instructions.
- D. Store framing lumber and wood panels to prevent damage and moisture absorption. Store metal connectors that are subject to damage in weathertight wrapping and in safe locations

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away from traffic or other sources of damage. Store chemically treated lumber and wood panels outdoors until installation. Keep chemically treated lumber and wood panels well ventilated if moved indoors.

### **PART 2 - MATERIALS**

#### **2.1 FASTENERS, CONNECTORS, AND SUPPORTS**

- A. Use hot-dip galvanized steel for exterior, high humidity, and treated wood locations.
- B. Nails shall be common wire or spike nails as shown on nailing schedule. Follow all nail size requirements and nail spacings required by the governing building code.
- C. Power-driven nailing: Comply with standards of the International Staple, Nail and Tool Association.
- D. Machine bolts shall comply with ASTM A307. Lag bolts to comply with Federal Spec FF-N-1. Drill holes 1/16" larger than bolt diameters. Use washers under all nuts and bolt heads.

#### **2.2 LUMBER**

- A. S4S, S-Dry unless otherwise indicated, grade marked complying with the following: **SEE STRUCTURAL GENERAL NOTES REQUIRED FOR THIS PROJECT.**
  - 1. Girder framing species and grade: 24F - V4/V8 GLU-LAMS
  - 2. Joist framing species and grade: Engineer wood members as designated on the drawings
  - 3. Studs (2 to 6 inches thick or wide, 10 feet in length or shorter) Grade: "Stud" or No. 3 Structural Light Framing Douglas Fir/Larch
  - 4. Rafter framing species and grade: #2 or better, Douglas Fir/Larch
  - 5. Non-structural light framing species and grade:  
Grade: Standard or better. No Utility grade.
  - 6. Sill boards: Pressure treated or redwood sill grade.
  - 7. Structural light framing: No. 2 or better.
  - 8. Lumber for miscellaneous applications shall be Standard grade unless noted otherwise.
  - 9. Redwood Lumber shall be Clear of Heart Grade.

#### **2.3 SHEATHING AND UNDERLAYMENT: MATERIALS**

- A. Sheathing and underlayment:
  - 1. Plywood sheathing: Use APA rated, PS-1 or APA PRP-108.
  - 2. Particleboard: Exterior Type 2-M.
  - 3. Hardboard: ANSI/AHA A135.6.
  - 4. Oriented Strand Board (OSB).
  - 5. Subflooring: APA rated plywood sheathing, Exterior Grade.
  - 6. Roof sheathing: APA rated plywood, Exterior Grade.
  - 7. Underlayment: APA rated underlayment, Exterior; or Particleboard, Oriented Strand Board, or waferboard with waterproof resin binder.
- B. Related construction and materials:
  - 1. Sill gasket atop foundation wall: Glass fiber strip with width equal to plate.

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2. Sill flashing: Galvanized steel or aluminum.
3. Subfloor glue: APA AFG-01, solvent base, waterproof.
4. Building paper: No. 15 asphalt felt (or spun-bonded polyethylene).
5. Vapor barrier: 6 mil polyethylene.

**PART 3 - EXECUTION**

**3.1 WOOD FRAMING: PREPARATION AND PRECONSTRUCTION**

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work.
- B. Maintain and refer to the latest trade standards. Coordinate and complete rough plumbing before starting framing. Cross-coordinate plumbing, electrical, and HVAC requirements with framing plan.
- C. Identify actual dimensions of all required rough openings in framing.

**3.2 ROUGH CARPENTRY, WOOD FRAMING - AT GRADE AND FOUNDATIONS**

- A. Use foundation grade or preservative-treated lumber near soil or where otherwise potentially exposed to moisture.
- B. Completed mudsills shall be straight with a side variation tolerance of 1/4" per 10 linear feet and level within 1/4" per 10 linear feet.

**3.3 ROUGH CARPENTRY, FRAMING MEMBERS**

- A. Install all framing members as per framing plan, details, and building code requirements.
- B. Install joist hangers as per Drawings, manufacturer's instructions, and building code requirements.

**3.4 SUBFLOOR SHEATHING**

- A. Install plywood subflooring as per framing drawings and building code requirements.
- B. Glue and secure subflooring to floor joists with screw-type nails. Subfloor-to-joist connections must be sufficient to totally prevent any squeaking of flooring. Floor squeaking will be remedied as directed by the architect at the contractor's expense.
- C. Completed subflooring shall be level within 1/4" per 10 linear feet. Free of depressions or humps and patched to repair holes, splits, or construction damage.

**3.5 SHEATHING, SIDING, AND FINISH-UP WORK**

- A. Install plywood shear wall construction as per the Drawings and as required by building code. Install wall sheathing panels so that edges have full bearing on framing. Include 1/8" expansion joints between sheathing panels.

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- B. Prepare plywood surfaces for paint or stain according to paint or stain manufacturer's instructions.

**3.6 WOOD FRAMING: COORDINATION**

- A. Coordinate electrical stub-ups with the framing plan. Coordinate girders, floor joists, and stud walls with plumbing, HVAC ducts and vents. Recess floor joists to allow for changes in floor elevations and surfaces.
- B. Supply and coordinate in-wall fixture and equipment supports such as in-wall blocking, anchors, brackets, grounds, curbs, and other supports.
- C. Install plaster grounds as detailed and as per trade association standards.\
- D. Provide joints and connectors at non-wood construction to allow for shrinkage, expansion and other movement of the wood. Provide clearances between framing and other construction that may be subject to differential movement.
- E. Set and prepare framing as required for tile or other waterproof wall finishes. Provide waterproofing sealing as detailed. Prepare framing for waterproof finishes where waterproofing required.
- F. Combine thermal insulation with framing as shown on Drawings.
- G. Combine soundproofing with framing as shown on Drawings. Install sound barrier materials, gaskets, and clips as per manufacturers' instructions. Do not allow any sound transfer connections within soundproof party wall construction.

**3.7 FASTENERS, CONNECTORS, AND SUPPORTS: INSTALLATION**

- A. Where not shown on nailing schedule, nails shall penetrate not less than 1/2 the length of nail. Exception: 16d nails may connect two pieces of 2" thickness. Remove and replace split framing members.
- B. Use nailing machines or power hammers according to manufacturer's requirements. Provide correct sizes and types of nails for use in nail guns.
- C. Check and tighten all bolt connections after they're installed. Recheck and retighten all bolt connections before final construction is completed.
- D. Install joist hangers and bridging as per Drawings and manufacturer's instructions.

END OF SECTION

## **06050 – FASTENERS AND ADHESIVES**

### **PART 1 - GENERAL**

#### **1.1 GENERAL**

A. All adhesives employed on the project including, but not limited to, adhesives for carpet, cove base, carpet tile, plastic laminate, wood adhesive, or sealants are to be those with the lowest possible Volatile Organic Compound "VOC" content and which meet requirements of the manufacturer of the products involved or adhered.

### **PART 2 – MATERIALS**

#### **2.2 Acceptable Products**

1. Milliken Pressure Sensitive Adhesive for modular carpet tiles.
2. Safecoat 3 in 1 Adhesive, a low-odor, non-toxic, water-based adhesive designed for hard composition wall and floor tiles. Recommended for adhering hard composition floor and wall tiles and carpet.
3. Envirotech Adhesive #2045, an acrylic clear-set, pressure-sensitive adhesive used to adhere padding to substrate.
4. Envirotech Adhesive #2055, used to adhere carpet to padding. It is a high-solids, high tack, fast drying adhesive formulated for Bond 'N Peel installation of a wide variety of carpets.
5. Envirotech Adhesive #2058 is a latex-based economy grade floor covering adhesive developed for the installation of many types of carpets and sheet goods destined for direct glue down, excluding those with vinyl backings. Envirotech is a low VOC adhesive.

#### **2.3 Performance criteria**

1. Total VOC below 50g/L.
2. Contains no formaldehyde

### **PART 3 – EXECUTION**

#### **3.1 APPLICATION**

A. Install in accordance with all manufacturer's recommendations and requirements.

END OF SECTION

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SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Framing with dimension lumber.
2. Framing with engineered wood products.
3. Shear wall panels.
4. Rooftop equipment bases and support curbs.
5. Wood blocking, cants, and nailers.
6. Wood furring and grounds.
7. Wood sleepers.
8. Plywood backing panels.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements
2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements.

1.3 INFORMATIONAL SUBMITTALS

A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.

B. Evaluation Reports: For the following, from ICC-ES:

1. Wood-preservative-treated wood.
2. Fire-retardant-treated wood.
3. Engineered wood products.
4. Shear panels.
5. Power-driven fasteners.
6. Powder-actuated fasteners.
7. Expansion anchors.
8. Metal framing anchors.



**PART 2 - PRODUCTS**

**2.1 WOOD PRODUCTS, GENERAL**

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
  - 1. Factory mark each piece of lumber with grade stamp of grading agency.
  - 2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece or omit grade stamp and provide certificates of grade compliance issued by grading agency.
  - 3. Provide dressed lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.
- C. Engineered Wood Products: Provide engineered wood products acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.
  - 1. Allowable Design Stresses: Provide engineered wood products with allowable design stresses, as published by manufacturer that meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

**2.2 WOOD-PRESERVATIVE-TREATED LUMBER**

- A. Preservative Treatment by Pressure Process: AWP A U1; Use Category UC2 for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground.
  - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium. Do not use inorganic boron (SBX) for sill plates.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat items indicated on Drawings, and the following:
  - 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.

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2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
4. Wood framing members that are less than 18 inches (460 mm) above the ground in crawlspaces or unexcavated areas.
5. Wood floor plates that are installed over concrete slabs-on-grade.

### 2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
- B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet (3.2 m) beyond the centerline of the burners at any time during the test.
  1. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
  2. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.
- C. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.
- D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.
- E. Application: Treat items indicated on Drawings, and the following:
  1. Plywood backing panels.

### 2.4 DIMENSION LUMBER FRAMING

- A. Non-Load-Bearing Interior Partitions: Construction, Stud or No. 2 grade.
  1. Application: Interior partitions not indicated as load-bearing.
  2. Species:
    - a. Western woods; WCLIB or WWPA.
- B. Framing Other Than Non-Load-Bearing Interior Partitions: No. 2 or better grade.

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1. Application: Framing indicated as load-bearing.
  2. Species:
    - a. Douglas fir-larch; WCLIB or WWPA.
- C. Framing Other Than Non-Load-Bearing Interior Partitions: Any species and grade with a modulus of elasticity of at least 1,600,000 psi for 2-inch nominal thickness and 12-inch nominal width for single-member use.
1. Application: Framing indicated as load-bearing.
- D. Exposed Framing: Provide material hand-selected for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.
1. Species and Grade: As indicated above for load-bearing construction of same type.

## 2.5 ENGINEERED WOOD PRODUCTS

- A. Engineered Wood Products, General: Products shall contain no urea formaldehyde.
- B. Laminated-Veneer Lumber: Structural composite lumber made from wood veneers with grain primarily parallel to member lengths, evaluated and monitored according to ASTM D 5456 and manufactured with an exterior-type adhesive complying with ASTM D 2559.
1. Extreme Fiber Stress in Bending, Edgewise: 2600 psi for 12-inch nominal depth members.
  2. Modulus of Elasticity, Edgewise: 1,900,000 psi.
- C. Wood I-Joists: Prefabricated units, I-shaped in cross section, made with solid or structural composite lumber flanges and wood-based structural panel webs, let into and bonded to flanges. Provide units complying with material requirements of and with structural capacities established and monitored according to ASTM D 5055.
1. Web Material: Either oriented strand board or plywood, complying with DOC PS 1 or DOC PS 2, Exposure 1.
  2. Structural Properties: Provide units with depths and design values not less than those indicated.
  3. Provide units complying with APA PRI-400, factory marked with APA trademark indicating nominal joist depth, joist class, span ratings, mill identification, and compliance with APA standard.
- D. Rim Boards: Product designed to be used as a load-bearing member and to brace wood I-joists at bearing ends, complying with research/evaluation report for I-joists.
1. Material: Product made from any combination solid lumber, wood strands, and veneers.
  2. Thickness: 1-1/8 inches.
  3. Provide performance-rated product complying with APA PRR-401, rim board plus grade, factory marked with APA trademark indicating thickness, grade, and compliance with APA standard.

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**2.6 MISCELLANEOUS LUMBER**

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
  - 1. Blocking.
  - 2. Nailers.
  - 3. Rooftop equipment bases and support curbs.
  - 4. Cants.
  - 5. Furring.
  - 6. Grounds.
- B. For items of dimension lumber size, provide Standard, Stud, or No. 3 grade lumber of any species.
- C. For concealed boards, provide lumber with 19 percent maximum moisture content and any of the following species and grades:
  - 1. Western woods; Standard or No. 3 Common grade; WCLIB or WWPA.

**2.7 PLYWOOD BACKING PANELS**

- A. Equipment Backing Panels: DOC PS 1, Exterior, C-C Plugged, fire-retardant treated, in thickness indicated or, if not indicated, not less than 3/4-inch nominal thickness.
  - 1. Plywood shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

**2.8 FASTENERS**

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
  - 1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M] [of Type 304 stainless steel.
- B. Power-Driven Fasteners: NES NER-272.
- C. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.

2.9 METAL FRAMING ANCHORS

- A. **Basis-of-Design Product:** Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
1. [Cleveland Steel Specialty Co.](#)
  2. [KC Metals Products, Inc.](#)
  3. [Phoenix Metal Products, Inc.](#)
  4. [Simpson Strong-Tie Co., Inc.](#)
  5. [USP Structural Connectors.](#)
- B. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer, that meet or exceed those indicated on the drawings. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.
- C. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation.
1. Use for interior locations unless otherwise indicated.
- D. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A 653/A 653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 (Z550) coating designation; and not less than 0.036 inch (0.9 mm) thick.
1. Use for wood-preserved-treated lumber and where indicated.

2.10 MISCELLANEOUS MATERIALS

- A. Sill-Sealer Gaskets: Glass-fiber-resilient insulation, fabricated in strip form, for use as a sill sealer; 1-inch (25-mm) nominal thickness, compressible to 1/32 inch (0.8 mm); selected from manufacturer's standard widths to suit width of sill members indicated.
- B. Sill-Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch (6.4 mm) thick, selected from manufacturer's standard widths to suit width of sill members indicated.
- C. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber or rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025 inch (0.6 mm).

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- B. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- C. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.
- D. Install fire-retardant treated plywood backing panels with classification marking of testing agency exposed to view.
- E. Shear Wall Panels: Install shear wall panels to comply with manufacturer's written instructions.
- F. Metal Framing Anchors: Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- G. Do not splice structural members between supports unless otherwise indicated.
- H. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- I. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- J. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
  - 1. NES NER-272 for power-driven fasteners.
  - 2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
  - 3. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.

3.2 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

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- B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes sufficiently wet that moisture content exceeds that specified, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061000

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SECTION 061600 - SHEATHING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Wall sheathing.
2. Roof sheathing.
3. Subflooring.
4. Underlayment.
5. Sheathing joint and penetration treatment.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements.
2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements.

1.3 INFORMATIONAL SUBMITTALS

A. Evaluation Reports: For following products, from ICC-ES:

1. Preservative-treated plywood.
2. Fire-retardant-treated plywood.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For assemblies with fire-resistance ratings, provide materials and construction identical to those of assemblies tested for fire resistance per ASTM E 119 by a testing and inspecting agency acceptable to authorities having jurisdiction.

1. Fire-Resistance Ratings: Indicated by design designations from UL's "Fire Resistance Directory."



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### 2.2 WOOD PANEL PRODUCTS

- A. Emissions: Products shall meet the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- B. Plywood: Either DOC PS 1 or DOC PS 2 unless otherwise indicated.
- C. Oriented Strand Board: DOC PS 2.

### 2.3 PRESERVATIVE-TREATED PLYWOOD

- A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 for interior construction, Use Category UC3b for exterior construction.
- B. Mark plywood with appropriate classification marking of an inspection agency acceptable to authorities having jurisdiction.
- C. Application: Treat items indicated on Drawings and plywood in contact with masonry or concrete.

### 2.4 FIRE-RETARDANT-TREATED PLYWOOD

- A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article that are acceptable to authorities having jurisdiction and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
- B. Fire-Retardant-Treated Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet (3.2 m) beyond the centerline of the burners at any time during the test.
  - 1. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
  - 2. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.
  - 3. Design Value Adjustment Factors: Treated lumber plywood shall be tested according ASTM D 5516 and design value adjustment factors shall be calculated according to ASTM D 6305. Span ratings after treatment shall be not less than span ratings specified.
- C. Kiln-dry material after treatment to a maximum moisture content of 15 percent.

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- D. Identify fire-retardant-treated plywood with appropriate classification marking of qualified testing agency.
- E. Application: Treat plywood indicated on Drawings.

### 2.5 WALL SHEATHING

- A. Plywood Wall Sheathing: Exposure 1, Structural I sheathing.
- B. Oriented-Strand-Board Wall Sheathing: Exposure 1, Structural I sheathing.
- C. Paper-Surfaced Gypsum Wall Sheathing: ASTM C 1396/C 1396M, gypsum sheathing; with water-resistant-treated core and with water-repellent paper bonded to core's face, back, and long edges.
  - 1. Type and Thickness: Regular, 1/2 inch or Type X, 5/8 inch thick, as noted on plan.
- D. Cementitious Backer Units: ASTM C 1325, Type A.
  - 1. Thickness: As indicated.

### 2.6 ROOF SHEATHING

- A. Plywood Roof Sheathing: Exposure 1, Structural I sheathing.
- B. Oriented-Strand-Board Roof Sheathing: Exposure 1, Structural I sheathing.

### 2.7 SUBFLOORING AND UNDERLAYMENT

- A. Oriented-Strand-Board Combination Subfloor-Underlayment: Exposure 1 single-floor panels.
- B. Plywood Subflooring: Exposure 1, Structural I single-floor panels or sheathing.
- C. Oriented-Strand-Board Subflooring: Exposure 1[, **Structural I sheathing**] [**single-floor panels or sheathing**].
- D. Plywood Underlayment for Resilient Flooring: DOC PS 1, [**Exterior A-C**] [**Exterior B-C**] [**Exterior, C-C Plugged**] [**Exposure 1 Underlayment**] with fully sanded face.
- E. Plywood Underlayment for Ceramic Tile: DOC PS 1, Exterior, C-C Plugged, not less than **5/8-inch (15.9-mm)** nominal thickness, for ceramic tile set in [**organic adhesive**] [**epoxy adhesive**] [**EGP (exterior glue plywood) latex-portland cement mortar**].
- F. Plywood Underlayment for Carpet: DOC PS 1, [**Exterior, C-C Plugged**] [**Exposure 1, Underlayment**] [**Interior, Underlayment**].

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- G. Particleboard Underlayment: ANSI A208.1, [**Grade PBU**] [**Grade M-2, made with binder containing no urea formaldehyde**].
- H. Hardboard Underlayment: ANSI A135.4, Class 4 (Service), Surface S1S; with back side sanded.

### 2.8 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
  - 1. For roof and wall sheathing, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

### 2.9 SHEATHING JOINT-AND-PENETRATION TREATMENT MATERIALS

- A. Sealant for Paper-Surfaced Gypsum Sheathing: Elastomeric, medium-modulus, neutral-curing silicone joint sealant compatible with joint substrates formed by gypsum sheathing and other materials, recommended by sheathing manufacturer for application indicated and complying with requirements for elastomeric sealants specified in Section 079200 "Joint Sealants."

### 2.10 MISCELLANEOUS MATERIALS

- A. Adhesives for Field Gluing Panels to Framing: Formulation complying with APA AFG-01 that is approved for use with type of construction panel indicated by manufacturers of both adhesives and panels.
  - 1. Adhesives shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
  - 2. Adhesives shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.
- B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.
- C. Securely attach to substrate by fastening as indicated, complying with the following:

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1. NES NER-272 for power-driven fasteners.
  2. Table 2304.9.1, "Fastening Schedule," in ICC's "International Building Code."
  3. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's "International Residential Code for One- and Two-Family Dwellings."
- D. Coordinate wall and roof sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.
- E. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.

### 3.2 WOOD STRUCTURAL PANEL INSTALLATION

- A. General: Comply with applicable recommendations in APA Form No. E30, "Engineered Wood Construction Guide," for types of structural-use panels and applications indicated.
- B. Fastening Methods: Fasten panels as indicated below:
1. Subflooring:
    - a. Glue and nail to wood framing.
    - b. Screw to cold-formed metal framing.
    - c. Space panels 1/8 inch (3 mm) apart at edges and ends.
  2. Wall and Roof Sheathing:
    - a. Nail to wood framing.
    - b. Screw to cold-formed metal framing.
    - c. Space panels 1/8 inch (3 mm) apart at edges and ends.
  3. Underlayment:
    - a. Nail or staple to subflooring.
    - b. Space panels 1/32 inch (0.8 mm) apart at edges and ends.
    - c. Fill and sand edge joints of underlayment receiving resilient flooring immediately before installing flooring.

### 3.3 GYPSUM SHEATHING INSTALLATION

- A. Comply with GA-253 and with manufacturer's written instructions.
1. Fasten gypsum sheathing to wood framing with screws.
  2. Fasten gypsum sheathing to cold-formed metal framing with screws.
  3. Install boards with a 3/8-inch (9.5-mm) gap where non-load-bearing construction abuts structural elements.

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4. Install boards with a 1/4-inch (6.4-mm) gap where they abut masonry or similar materials that might retain moisture, to prevent wicking.

B. Seal sheathing joints according to sheathing manufacturer's written instructions.

1. Apply elastomeric sealant to joints and fasteners and trowel flat. Apply sufficient amount of sealant to completely cover joints and fasteners after troweling. Seal other penetrations and openings.
2. Apply glass-fiber sheathing tape to glass-mat gypsum sheathing joints and apply and trowel silicone emulsion sealant to embed entire face of tape in sealant. Apply sealant to exposed fasteners with a trowel so fasteners are completely covered. Seal other penetrations and openings.

3.4 CEMENTITIOUS BACKER UNIT INSTALLATION

- A. Install panels and treat joints according to ANSI A108.11 and manufacturer's written instructions for type of application indicated.

3.5 PARTICLEBOARD UNDERLAYMENT INSTALLATION

- A. Comply with CPA's recommendations for type of subfloor indicated. Fill and sand gouges, gaps, and chipped edges. Sand uneven joints flush.

1. Fastening Method: Nail or staple underlayment to subflooring.

3.6 HARDBOARD UNDERLAYMENT INSTALLATION

- A. Comply with CPA's recommendations and hardboard manufacturer's written instructions for preparing and applying hardboard underlayment.

1. Fastening Method: Nail or staple underlayment to subflooring.

END OF SECTION 061600

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## **06170 – I-JOISTS AND FLOOR TRUSSES**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- a. Section includes wood chord and plywood web joists for roof and floor framing; bridging, bracing and anchorage; framing for openings.

#### **1.2 QUALITY ASSURANCE**

- a. Perform Work in accordance with the following agencies:
  - 1) I-Joist Quality Assurance Agency.
  - 2) See Sheet S1.0 General Notes for floor tolerances and required loads.

#### **1.3 QUALIFICATIONS**

- a. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

### **PART 2 - PRODUCTS**

#### **2.1 PLYWOOD I JOISTS and FLOOR TRUSSES**

Manufacturers:

- 1) Georgia Pacific Corp.
- 2) Louisiana-Pacific Corp.
- 3) Trus Joist MacMillan
- 4. Boise-Cascade
- 5) TrimJoist
- 6) Mid West manufacturing

#### **2.2 MATERIALS**

- A. Lumber Grading Rules: AF and PA. , WWPA.
- B. Joist Bridging: Type, size and spacing recommended by joist manufacturer or as shown on the Drawings.
- C. TRUSSED FLOOR JOISTS SHALL BE ENGINEERED AND DESIGNED FOR SPANS AS SHOWN ON STRUCTURAL SHEETS WOOD SHALL BE DOUGLAS FIR, SUBMITTAL REQUIRED FOR REVIEW BY STRUCTURAL ENGINEER.

#### **2.3 ACCESSORIES**

- A. Adhesive: ASTM D2559.
- B. Wood Blocking, Plating, Framing for Openings: In accordance with Section 06100 – Rough Carpentry.
- C. Fasteners and Anchors:
  - 1. Fasteners: Hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
  - 2. Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolt or ballistic

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fastener for anchorages to steel.

- D. Bearing Plates: Electro-galvanized.

**2.4 FABRICATION**

- A. Fabricate joists to achieve structural requirements specified.
- B. Brace members for support during transit.
- C. Provide chord extensions as indicated.
- D. Frame special sized openings in web as detailed.

**PART 3 EXECUTION**

**3.1 EXAMINATION**

- A. Verify that supports and openings are ready to receive joists.

**3.2 PREPARATION**

- B. Coordinate placement of bearing support items.

**3.3 ERECTION**

- A. Set structural members level and plumb, in correct position.
- B. Make provisions for erection loads, and for sufficient temporary bracing to maintain structure plumb, and in true alignment until completion of erection and installation of permanent bracing.
- C. Do not field cut or alter structural members without approval of Architect/Engineer.
- D. Place headers and supports to frame openings.
- E. Frame openings between joists with lumber in accordance with Section 06100 – Rough Carpentry.
- F. Coordinate placement of decking sheathing with work of this section.

**3.4 ERECTION TOLERANCES**

- A. Framing Members: ½ inch maximum, from true position.

END OF SECTION

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SECTION 06180 - GLUED-LAMINATED CONSTRUCTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes framing using structural glued-laminated timber.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.3 INFORMATIONAL SUBMITTALS

- A. Certificates of Conformance: Issued by a qualified testing and inspecting agency indicating that structural glued-laminated timber complies with requirements in AITC A190.1.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: An AITC- or APA-EWS-licensed firm.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. General: Comply with provisions in AITC 111.
- B. Individually wrap members using plastic-coated paper covering with water-resistant seams.

PART 2 - PRODUCTS

2.1 STRUCTURAL GLUED-LAMINATED TIMBER

- A. General: Provide structural glued-laminated timber that complies with AITC A190.1 and AITC 117 or research/evaluation reports acceptable to authorities having jurisdiction.
  - 1. Factory mark each piece of structural glued-laminated timber with AITC Quality Mark or APA-EWS trademark. Place mark on surfaces that are not exposed in the completed Work.
  - 2. Provide structural glued-laminated timber made with wet-use adhesive complying with AITC A190.1.
  - 3. Adhesive shall not contain urea-formaldehyde resins.



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4. Adhesives shall comply with the testing and product requirements of the California Department of Public Health's (formerly, the California Department of Health Services') "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- B. Species and Grades for Structural Glued-Laminated Timber: Douglas fir-larch that complies with combination symbols indicated.
- C. Species and Grades for Beams and Purlins:
  1. Species and Beam Stress Classification:
    - a. Simple Span: DF-L 24F-V4
    - b. Continuous Span: DF-L 24F-V8
- D. Species and Grades for Columns:
  1. Species and Combination Symbol: 2-DF-L2
- E. Appearance Grade: Complying with AITC 110.
  1. Exposed to view: Architectural
  2. Hidden from view: Framing

**2.2 TIMBER CONNECTORS**

- A. Manufacturers: Subject to compliance with requirements, provide products by the following:
- B. Basis-of-Design Products: Subject to compliance with requirements, provide products indicated on Drawings or comparable product by one of the following:
  1. Cleveland Steel Specialty Co.
  2. Simpson Strong-Tie Co., Inc.
  3. USP Structural Connectors.
- C. Materials: Unless otherwise indicated, fabricate from the following materials:
  1. Structural-steel shapes, plates, and flat bars complying with ASTM A 36/A 36M.
  2. Round steel bars complying with ASTM A 575, Grade M 1020.
  3. Hot-rolled steel sheet complying with ASTM A 1011/A 1011M, Structural Steel, Type SS, Grade 33.
- D. Finish steel assemblies and fasteners with rust-inhibitive primer, 2-mil (0.05-mm) dry film thickness.
  1. Primer shall comply with the testing and product requirements of the California Department of Public Health's (formerly, the California Department of Health Services') "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

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- E. Hot-dip galvanize steel assemblies and fasteners after fabrication to comply with ASTM A 123/A 123M or ASTM A 153/A 153M.

### 2.3 MISCELLANEOUS MATERIALS

- A. End Sealer: Manufacturer's standard, transparent, colorless wood sealer that is effective in retarding the transmission of moisture at cross-grain cuts and is compatible with indicated finish.
- B. Penetrating Sealer: Manufacturer's standard, transparent, penetrating wood sealer that is compatible with indicated finish.
- C. Sealers shall comply with the testing and product requirements of the California Department of Public Health's (formerly, the California Department of Health Services') "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

### 2.4 FABRICATION

- A. Shop fabricate for connections to greatest extent possible, including cutting to length and drilling bolt holes.
- B. Camber: Fabricate horizontal and inclined members of less than 1:1 slope with either circular or parabolic camber equal to 1/500 of span.
- C. End-Cut Sealing: Immediately after end cutting each member to final length, apply a saturation coat of end sealer to ends and other cross-cut surfaces, keeping surfaces flood coated for not less than 10 minutes.
- D. Seal Coat: After fabricating, sanding, and end-coat sealing, apply a heavy saturation coat of penetrating sealer on surfaces of each unit.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. General: Erect structural glued-laminated timber true and plumb and with uniform, close-fitting joints. Provide temporary bracing to maintain lines and levels until permanent supporting members are in place.
  - 1. Handle and temporarily support glued-laminated timber to prevent surface damage, compression, and other effects that might interfere with indicated finish.
- B. Cutting: Avoid extra cutting after fabrication. Where field fitting is unavoidable, comply with requirements for shop fabrication.

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C. Fit structural glued-laminated timber by cutting and restoring exposed surfaces to match specified surfacing.

1. Predrill for fasteners using timber connectors as templates.
2. Finish exposed surfaces to remove planing or surfacing marks.
3. Coat cross cuts with end sealer.

3.2 ADJUSTING

A. Repair damaged surfaces after completing erection. Replace damaged structural glued-laminated timber if repairs are not approved by Architect.

3.3 PROTECTION

A. Do not remove wrappings on individually wrapped members until they no longer serve a useful purpose, including protection from weather, sunlight, soiling, and damage from work of other trades.

1. Slit underside of wrapping to prevent accumulation of moisture inside the wrapping.

END OF SECTION 061800

**06200 - FINISH CARPENTRY AND MILLWORK**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Provide and install wood framing and finish carpentry as shown on the Drawings and as specified herein. Work includes all connectors, and related hardware and materials.
- B. Where additional instructions are required, work shall be as directed by the Architect.

**1.2 SUBMITTALS**

- A. Provide all tests, certificates, and affidavits necessary to verify materials are as specified.

**1.3 QUALITY STANDARDS AND TOLERANCES**

- A. Provide a work force that is sufficient in number for the quantity of work and time schedule. Workers shall be skilled, trained, experienced, and competent to do the work as specified.
- B. Unless otherwise directed by the Architect, all work shall be as per building code and the Manual for Wood Frame Construction, American Forest and Paper Association (NFPA), National Design Specifications for Wood Construction of the NFPA, Plywood Specifications and Grade guide of the American Plywood Association.
- C. Tolerances: Vertical framing shall be plumb within 1/4" per 10 linear feet and horizontal framing shall be level within 1/4" per 10 linear feet.
- D. Moisture content of framing lumber shall be 19% or less by weight. Tests will be conducted on all newly shipped lumber to confirm moisture content. Kiln-dried or other lumber requiring lower moisture content shall be as specified.
- E. Follow applicable lumber grading agency standards in accepting or rejecting delivered lumber. Reject special, required lumber that is not marked and certified as preservative-treated or kiln-dried.

**1.4 MATERIALS HANDLING AND STORAGE**

- A. Reject any delivered framing lumber that is not grade-stamped and certified by a bona fide grading agency. Identify framing lumber by grade, and store each grade separately.
- B. Do not accept or use lumber that deviates from grade standards or has excessive moisture content or other defects. Remove unstamped or defective lumber from the job site.
- C. Handle lumber to avoid damage during transport, unloading, and moving on the job site. Handle chemically treated lumber and panels strictly according to manufacturer's instructions.
- D. Store framing lumber and wood panels to prevent damage and moisture absorption. Store metal connectors that are subject to damage in weathertight wrapping and in safe locations

## SECTION 006192 - PREFABRICATED METAL-PLATE-CONNECTED WOOD TRUSSES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. All Prefabricated Wood Trusses per drawings.
- B. Roof sheathing is specified in Division 6 Section "Rough Carpentry."

#### 1.3 DEFINITIONS

- A. Prefabricated metal-plate-connected wood trusses include planar structural units consisting of metal-plate-connected members that are fabricated from dimension lumber and that have been cut and assembled prior to delivery to the project site.

#### 1.4 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Product data for lumber, metal connector plates, hardware, fabrication process, and fasteners.
- C. Shop drawings indicating species, species group, sizes, and stress grades of lumber to be used; pitch, span, camber, configuration, and spacing for each type of truss required; type, size, material, finish, design values, and location of metal connector plates; and bearing details.
  - 1. To the extent engineering design considerations are indicated as fabricator's responsibility, include design analysis indicating loading, assumed allowable stress, stress diagrams and calculations, and other information needed for review that have been signed and sealed by a qualified professional engineer responsible for their preparation.
  - 2. Provide shop drawings that have been signed and stamped by a qualified professional engineer registered in the State of Wyoming.
- D. Product certificate, signed by officer of fabricating firm, certifying that metal-plate-connected wood trusses supplied for Project comply with specified requirements.

- E. Research reports or evaluation reports of the model code organization acceptable to authorities having jurisdiction evidencing compliance of fire-retardant-treated wood with specified requirements and building code in effect for Project.

## 1.5 QUALITY ASSURANCE

- A. TPI Standards: Comply with applicable requirements and recommendations of the following Truss Plate Institute (TPI) publications:
  - 1. "Design Specification for Metal Plate Connected Wood Trusses."
  - 2. "Design Specification for Metal Plate Connected Parallel Chord Wood Trusses."
  - 3. "Commentary and Recommendations for Handling and Erecting Wood Trusses."
  - 4. "Commentary and Recommendations for Bracing Wood Trusses."
  - 5. "Quality Standard for Metal Plate Connected Wood Trusses."
- B. Connector Plate Manufacturer's Qualifications: A manufacturer that is a member of TPI and that complies with TPI quality control procedures for manufacture of connector plates published in TPI "Quality Standard for Metal Connector Plate Manufacture."
- C. Wood Structural Design Standard: Comply with applicable requirements of N.F.P.A. "National Design Specification for Wood Construction."
- D. Single-Source Engineering Responsibility: Provide trusses engineered by the metal plate connector manufacturer to support superimposed dead and live loads indicated, with design approved and certified by a qualified professional engineer.
- E. Engineer Qualifications: A professional engineer legally authorized to practice in the State of Montana and experienced in providing engineering services of the kind indicated that have resulted in the installation of metal-plate-connected wood trusses similar to those of this Project and with a record of successful in-service performance.
- F. Fabricator's Qualifications: A firm that complies with the following requirements for quality control and is experienced in prefabricating metal-plate-connected wood trusses similar to those of this Project that have a record of successful in-service performance:
  - 1. Fabricator participates in a recognized quality assurance program that involves inspection by SPIB; Timber Products Inspection, Inc.; Truss Plate Institute; or other independent inspection and testing agency acceptable to Architect and authorities having jurisdiction.
- G. Single Source Responsibility for Connector Plates: Provide metal connector plates from a single manufacturer.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Handle and store trusses with care and comply with manufacturer's instructions and TPI recommendations to avoid damage from bending, overturning, or other cause which trusses are not designed to resist or endure.

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## 1.7 SEQUENCING AND SCHEDULING

- A. Time delivery and erection of trusses to avoid extended on-site storage and to avoid delaying work of other trades whose work must follow erection of trusses.

## PART 2 - PRODUCTS

### 2.1 CONNECTOR PLATE MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering metal connector plates that may be incorporated in the Work include, but are not limited to, the following:
  - 1. Alpine Engineered Products, Inc.
  - 2. Bemax of Florida, Inc.
  - 3. Clary Corporation.
  - 4. Computrus, Inc.
  - 5. Gang-Nail Systems, Inc.
  - 6. Hydro-Air Engineering, Inc.
  - 7. Inter-Lock Steel Co., Inc.
  - 8. Metal-Lock, Inc.
  - 9. Robbins Manufacturing Co.
  - 10. TEE-Lok Corp.
  - 11. Truss Connectors of America.
  - 12. Truswal Systems Corporation.
- B. Manufacturers: Subject to compliance with requirements, provide metal connector plates by one of the following:
  - 1. Alpine Engineered Products, Inc.
  - 2. Bemax of Florida, Inc.
  - 3. Clary Corporation.
  - 4. Computrus, Inc.
  - 5. Gang-Nail Systems, Inc.
  - 6. Hydro-Air Engineering, Inc.
  - 7. Inter-Lock Steel Co., Inc.
  - 8. Metal-Lock, Inc.
  - 9. Robbins Manufacturing Co.
  - 10. TEE-Lok Corp.
  - 11. Truss Connectors of America.
  - 12. Truswal Systems Corporation.

### 2.2 LUMBER

- A. Factory mark each piece of lumber with type, grade, mill, and grading agency.
- B. Lumber Standard: Manufacture lumber to comply with PS 20 "American Softwood Lumber Standard" and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee's (ALSC) Board of Review.
- C. Inspection Agencies: Inspection agencies and the abbreviations used to reference them to lumber grades and species include the following:
  - 1. NLGA - National Lumber Grades Authority (Canadian).
  - 2. SPIB - Southern Pine Inspection Bureau.
  - 3. WCLIB - West Coast Lumber Inspection Bureau.
  - 4. WWPA - Western Wood Products Association.
- D. Nominal sizes are indicated, except as shown by detail dimensions.
- E. Provide dressed lumber, S4S, manufactured to actual sizes required by PS 20 to comply with requirements indicated below:

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1. Moisture Content: Seasoned, with 19 percent maximum moisture content at time of dressing and shipment for sizes 2 inches or less in nominal thickness, unless otherwise indicated.
2. Any species and grade that complies with the following requirements for species group as defined in Table 8.1a of N.F.P.A National Design Specification, for extreme fiber stress in bending "Fb" for single and repetitive members, and for modulus of elasticity "E":

### 2.3 METAL CONNECTOR PLATES

- A. General: Fabricate connector plates from metal complying with requirements indicated in this article.
- B. Hot-Dip Galvanized Steel Sheet: Structural (physical) quality steel sheet complying with ASTM A 446, Grade A; zinc coated by hot-dip process to comply with ASTM A 525, Designation G60; minimum coated metal thickness indicated but not less than 0.036 inch.

### 2.4 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
  1. Where truss members are exposed to weather or to high relative humidities, provide fasteners with a hot-dip zinc coating per ASTM A 153 or of AISI Type 304 stainless steel.
- B. Nails, Wire, Brads, and Staples: FS FF-N-105.
- C. Power Driven Fasteners: National Evaluation Report NER-272.
- D. Wood Screws: ANSI B18.6.1.
- E. Lag Bolts: ANSI B18.2.1.
- F. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and where indicated, flat washers.

### 2.5 METAL FRAMING ANCHORS

- A. General: Provide metal framing anchors of type, size, metal, and finish indicated that comply with requirements specified including the following:
  1. Current Evaluation/Research Reports: Provide products for which reports exist from a model code organization acceptable to authorities having jurisdiction that evidence compliance of metal framing anchors for application indicated with the building code in effect for this Project.
  2. Allowable Design Loads: Provide products for which manufacturer publishes allowable design loads that are determined from empirical data or by rational engineering analysis and that are demonstrated by comprehensive testing performed by a qualified independent testing laboratory.
- B. Galvanized Steel Sheet: Steel sheet zinc-coated by hot-dip process on continuous lines prior



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to fabrication to comply with ASTM A 525 for Coating Designation G60 and with ASTM A 446, Grade A (structural quality); ASTM A 526 (commercial quality); or ASTM A 527 (lock-forming quality); as standard with manufacturer for type of anchor indicated.

## 2.7 FABRICATION

- A. Cut truss members to accurate lengths, angles, and sizes to produce close-fitting joints with wood-to-wood bearing in assembled units.
- B. Fabricate metal connector plates to size, configuration, thickness, and anchorage details required to withstand design loadings for types of joint designs indicated.
- C. Assemble truss members in design configuration indicated using jigs or other means to ensure uniformity and accuracy of assembly with joints closely fitted to comply with tolerances specified in TPI "Quality Standard for Metal Plate Connected Wood Trusses." Position members to produce design camber indicated.
- D. Connect truss members by means of metal connector plates accurately located and securely fastened to each side of wood members by means indicated or approved.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. General: Erect and brace trusses to comply with applicable requirements of referenced TPI standards.
- B. Where trusses do not fit, return them to fabricator and replace with trusses of correct size; do not alter trusses in the field.
- C. Erect trusses with plane of truss webs vertical (plumb) and parallel to each other, located accurately at design spacings indicated.
- D. Hoist trusses in place by means of lifting equipment suited to sizes and types of trusses required, exercising care not to damage truss members or joints by out-of-plane bending or other causes.
- E. Anchor trusses securely at all bearing points to comply with methods and details indicated.
- F. Install permanent bracing and related components to enable trusses to maintain design spacing, withstand live and dead loads including lateral loads, and to comply with other indicated requirements.
- G. Do not cut or remove truss members.

END OF SECTION 06192

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away from traffic or other sources of damage. Store chemically treated lumber and wood panels outdoors until installation. Keep chemically treated lumber and wood panels well ventilated if moved indoors.

### PART 2 - MATERIALS AND PRODUCTS

#### 2.1 WOOD AND ACCESSORIES

- A. Provide and install materials as per detail drawings, applicable trade standards, or approved samples. Provide wood free of significant defects or deviations from grade standards.
- B. **All Interior trim** to be as per drawings finish plans and notes.
  - 1. Windows to include to be as per construction document finish plans and notes.
  - 2. Doors to include Head and Sides to be as per construction document finish plans and notes.
- C. **Trim Schedule**: See drawings for door trim, window trim, window sill and window apron sizes.
- D. **All Exterior Decking** to be as noted on plans. Must be installed per manufacturer's instruction. Color to be selected by Architect.
- E. **All Exterior Trim** at Corners, Transition Trim, Fascia, Windows and Doors as per drawings and notes, see also Exterior Siding.

### PART 3 - CONSTRUCTION AND INSTALLATION

#### 3.1 PREPARATION

- A. Reject any wood that is not certified as to grade. Test and certify moisture content. Provide all tests, certificates, and affidavits as required to verify quality of materials. Do not have finish materials delivered until after the building is closed in.
- B. Do not install finish panels with defects or deviations from grade standards.
- C. Handle and store wood with care to avoid damage. Store wood as required to prevent damage and moisture absorption.
- D. Properly ventilate wood treated with preservatives; store away from work areas.
- E. Store kiln-dry materials to assure compliance with temperature and humidity restrictions.

#### 3.2 FINISH CARPENTRY: EXTERIOR WORK

- A. Protect newly cut wood with prime coat or preservative treatment. Protect with preservative, wood in contact with masonry or concrete.
- B. Install siding so that joints are square, staggered/patterned exactly as per Drawings and include expansion space at edges as required by manufacturers.

- C. Remove all wood scraps, sawdust, and related debris from the site.

### **3.3 CONSTRUCTION: INTERIOR FINISH WORK**

- A. Coordinate with finish carpentry, furnishings, fixtures, and equipment to be installed by others. Protect finish work from damage by other trades. Prepare sub-surfaces to receive finish materials.
- B. Keep working environment clean, free of airborne construction dust, dry, and at comfortable working temperature.
- C. Make wood joints so as to minimize or conceal shrinkage.
- D. Perform all work per details and applicable trade standards; saw cuts straight and clean, tight fits without gaps, splices tight and staggered (never side by side). Align and exactly match miter joints at edges and corners. Install running trim in maximum lengths; do not use short pieces or splicing of scraps.
- E. Keep number of joints to a minimum by consistently using maximum size material. Install tight joints without gaps. Thoroughly sand finish work smooth.
- F. Fasten all pieces straight, true, and secure. Coordinate backing and blocking with other trades with interfacing work. Nail exterior trim with galvanized nails.
- G. Where sanding is required, sand with grain to totally smooth, unblemished surface. Set finish nails before painting or staining.
- H. Reject as nonconforming any work showing visible damage or defects. Protect finish work from construction damage. Make repairs so they are undetectable.
- I. Vacuum clean all work surfaces where sawdust accumulates. Remove scraps frequently. Completely vacuum clean the work area frequently and upon completion of final work.

END OF SECTION

**06300 – WOOD TREATMENT**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to Work of this Section.

**1.2 SECTION INCLUDES**

- A. Preservative treated wood for furring, blocking and miscellaneous lumber.

**1.3 RELATED WORK OF OTHER SECTIONS**

- A. Coordinate Work of this Section with work of other sections, including Division 1 Sections, as required to properly execute the work and as necessary to maintain satisfactory progress of the work.

**1.4 QUALITY ASSURANCE**

- A. This section outlines only the minimum standards and requirements for this project. Refer to Drawings for additional requirements. Bring all conflicts and discrepancies to the attention of the Architect and do not start work until such conflicts and discrepancies are clarified and corrected. Failure to do so will not relieve the Contractor from performing the work correctly at no additional expense to the Owner.

**1.5 CONTRACTOR'S RESPONSIBILITIES**

- A. As scope and performance documents, the Drawings and Specifications do not necessarily indicate or describe all the work requiring preservative treated wood and plywood and medium density fiberboard (MDF) required on the Project. The Contractor shall ensure that the properly treated wood is installed for all items whether indicated or not. In general, items requiring wood treatment are those specified herein, indicated on the Drawings as Preservative Treated.

**1.6 SUBMITTALS**

- A. Product Data: Manufacturer's data on wood treatment materials.
  - 1. Include data for wood preservative treatment and fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements.
  - 2. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

**1.5 REFERENCE STANDARDS**

- A. American Wood Preservers' Association (AWPA)

1. Specified Standards, as they apply

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

#### **A. Wood Treatment:**

1. General: The Use Category System (UCS) of the American Wood Preserver's Association (AWPA) designates what preservative systems and retentions have been determined to be effective in protecting wood products under specified exposure conditions.

The strength of the UCS and its focus is that all wood uses can be placed into one of five major Use Categories that clearly describe the exposure conditions that specific wood products can be subjected to in service. The major Use Categories are further broken down into sub-categories to define the associated degree of biodegradation hazard and product service life expectations for specific products and exposure conditions. In addition to the five Use Categories for biodeterioration, there is a sixth and separate Use Category for fire retardant applications.

The Use Category system is designed to help specifiers and product users to locate the appropriate AWPA Standards that provide listing of preservatives deemed acceptable for specific products and end-use environments.

For exposed items indicated to receive a stoned or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

2. Preservative Treatment Use Category:
  - a. AWPA UC2: Wood and wood-based materials used for interior construction that are not in contact with ground, but may be subject to dampness. These products are continuously protected from the weather, but may be exposed to occasional sources of moisture. Examples are interior beams, timbers, flooring, framing, millwork, and sill plates.
  - b. AWPA UC3B: Wood and wood-based materials used in exterior construction and not in contact with the ground. Materials do not require an exterior coating, but may be finished to achieve a desired aesthetic appearance.
  - c. AWPA UC4A: Wood and wood-based materials used in contact with the ground, fresh water or other situations favorable to deterioration.
3. Preservative Treatment: Refer to Table below for intended use, AWPA UCS Standards, and Preservative retention.
  - a. Preservative Abbreviation: CA-B
  - b. P Standard Reference: P5
  - c. Preservative: Copper Azole Type B
  - d. Retention Basis, as: Cu + azole
  - e. Preservative Carrier: Water
  - f. Approved Product/Manufacturer: Wolmanized Outdoor Wood by Arch Treatment Technologies, Inc., Smyrna, GA.

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<b>Intended End Use</b>	<b>AWPA Standard S UCS</b>	<b>Preservative Retention (lbs. per cubic foot)</b>
Floor Plate	2	.10
Framing, interior Lumber	2	
Interior, above ground	2	.10
Exterior above ground	3B	.10
Ground contact and fresh Water use	4A	.21
Plywood		
Sub-floor, damp above ground	2	.10
Exterior, above ground	3B	.10
Ground contact and fresh Water use	4A	.21

Retentions above the minimum specified above for materials in the use category may be required for individual products or components which are difficult to maintain, repair or replace and are critical to the performance and safety of the entire system.

4. Fire Protection Treatment
  - a. Interior Applications:
    - i. Wood:
      1. Approved Product/Manufacturer: Dricon FRT by Arch Treatment Technologies, Inc., Smyrna, GA.
    - ii. Particleboard:
      1. Approved Product/Manufacturer: Duraflake Fire Rated Particleboard manufactured by SierraPine, Roseville, CA.
    - iii. Medium Density Fiberboard (MDF):
      1. Approved Product/Manufacturer: Medite FR medium density fiberboard MDF manufactured by SierraPine, Roseville, CA.
  - b. Exterior Wood Applications:
    - i. Approved Product/Manufacturer: FRX Fire retardant Treated Wood by Arch Treatment technologies, Inc., Smyrna, GA.

**PART 3 - EXECUTION**

**3.1 INSTALLATION**

- A. Provide materials that are Preservative Treated for the Use Category specified in other Division 6 sections in accordance with Part 2 repeated below:
  1. AWPA UC2: wood and wood-based materials used for interior construction that are not

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in contact with the ground, but may be subject to dampness. These products are continuously protected from the weather, but may be exposed to occasional sources of moisture. Examples are interior beams, timbers, flooring, framing, millwork, and sill plates.

2. AWPA UC3B: Wood and wood-based materials used in exterior construction and not in contact with the ground. Materials do not require an exterior coating, but may be finished to achieve a desired aesthetic appearance.
3. AWPA UC4A: Wood and wood-based materials used in contact with the ground, fresh water, or other situations favorable to deterioration.

END OF SECTION

SECTION 061753 - SHOP-FABRICATED WOOD TRUSSES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Wood roof trusses.
2. Wood floor trusses.
3. Wood girder trusses.
4. Wood truss bracing.
5. Metal truss accessories.

- B. Allowances: Provide wood truss bracing under the Metal-Plate-Connected Truss Bracing Allowance as specified in Section 012100 "Allowances."

1.2 ACTION SUBMITTALS

- A. Product Data: For metal-plate connectors, metal truss accessories, and fasteners.

- B. Shop Drawings: Show fabrication and installation details for trusses.

1. Show location, pitch, span, camber, configuration, and spacing for each type of truss required.
2. Indicate sizes, stress grades, and species of lumber.
3. Indicate locations of permanent bracing required to prevent buckling of individual truss members due to design loads.
4. Indicate locations, sizes, and materials for permanent bracing required to prevent buckling of individual truss members due to design loads.
5. Indicate type, size, material, finish, design values, orientation, and location of metal connector plates.
6. Show splice details and bearing details.

- C. Delegated-Design Submittal: For metal-plate-connected wood trusses indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.3 INFORMATIONAL SUBMITTALS

- A. Product certificates.

- B. Evaluation Reports: For the following, from ICC-ES:

1. Metal-plate connectors.
2. Metal truss accessories.



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### 1.4 QUALITY ASSURANCE

- A. Metal Connector-Plate Manufacturer Qualifications: A manufacturer that is a member of TPI and that complies with quality-control procedures in TPI 1 for manufacture of connector plates.
  - 1. Manufacturer's responsibilities include providing professional engineering services needed to assume engineering responsibility.
  - 2. Engineering Responsibility: Preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.
- B. Fabricator Qualifications: Shop that participates in a recognized quality-assurance program that complies with quality-control procedures in TPI 1 and that involves third-party inspection by an independent testing and inspecting agency acceptable to Architect and authorities having jurisdiction.

### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Handle and store trusses to comply with recommendations in TPI BCSI, "Building Component Safety Information: Guide to Good Practice for Handling, Installing, Restraining, & Bracing Metal Plate Connected Wood Trusses."

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design metal-plate-connected wood trusses.
- B. Structural Performance: Provide metal-plate-connected wood trusses capable of withstanding design loads within limits and under conditions indicated. Comply with requirements in TPI 1 unless more stringent requirements are specified below.

### 2.2 DIMENSION LUMBER

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
  - 1. Provide dry lumber with 15 percent maximum moisture content at time of dressing.
- B. Permanent Bracing: Provide wood bracing that complies with requirements for miscellaneous lumber in Section 061000 "Rough Carpentry."

### 2.3 METAL CONNECTOR PLATES

- A. Manufacturers: Subject to compliance with requirements, provide products by the following:
  - 1. MiTek Industries, Inc.; a subsidiary of Berkshire Hathaway Inc.

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2. Approved Equal

- B. General: Fabricate connector plates to comply with TPI 1.
- C. Hot-Dip Galvanized-Steel Sheet: ASTM A 653/A 653M; Structural Steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G60 (Z180) coating designation; and not less than 0.036 inch (0.9 mm) thick.

2.4 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
  - 1. Provide fasteners for use with metal framing anchors that comply with written recommendations of metal framing manufacturer.
  - 2. Where trusses are exposed to weather, in ground contact, made from pressure-preservative treated wood, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Nails, Brads, and Staples: ASTM F 1667.

2.5 METAL FRAMING ANCHORS AND ACCESSORIES

- A. Manufacturers: Subject to compliance with requirements, provide products by the following:
- B. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
  - 1. Cleveland Steel Specialty Co.
  - 2. KC Metals Products, Inc.
  - 3. Phoenix Metal Products, Inc.
  - 4. Simpson Strong-Tie Co., Inc.
  - 5. USP Structural Connectors.
- C. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer, that meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.
- D. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation.

2.6 FABRICATION

- A. Assemble truss members in design configuration indicated; use jigs or other means to ensure uniformity and accuracy of assembly with joints closely fitted to comply with tolerances in TPI 1. Position members to produce design camber indicated.
  - 1. Fabricate wood trusses within manufacturing tolerances in TPI 1.

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- B. Connect truss members by metal connector plates located and securely embedded simultaneously in both sides of wood members by air or hydraulic press.

**PART 3 - EXECUTION**

**3.1 INSTALLATION**

- A. Install wood trusses only after supporting construction is in place and is braced and secured.
- B. If trusses are delivered to Project site in more than one piece, assemble trusses before installing.
- C. Hoist trusses in place by lifting equipment suited to sizes and types of trusses required, exercising care not to damage truss members or joints by out-of-plane bending or other causes.
- D. Install and brace trusses according to TPI recommendations and as indicated.
- E. Anchor trusses securely at bearing points; use metal truss tie-downs or floor truss hangers as applicable. Install fasteners through each fastener hole in metal framing anchors according to manufacturer's fastening schedules and written instructions.
- F. Securely connect each truss ply required for forming built-up girder trusses.
- G. Install and fasten permanent bracing during truss erection and before construction loads are applied. Anchor ends of permanent bracing where terminating at walls or beams.
  - 1. Install bracing to comply with Section 061000 "Rough Carpentry." [Section 061053 "Miscellaneous Rough Carpentry."
  - 2. Install and fasten strongback bracing vertically against vertical web of parallel-chord floor trusses at centers indicated.
- H. Install wood trusses within installation tolerances in TPI 1.
- I. Do not alter trusses in field. Do not cut, drill, notch, or remove truss members.
- J. Replace wood trusses that are damaged or do not meet requirements.

END OF SECTION 061753

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DIVISION 7 – THERMAL AND MOISTURE PROTECTION

Sections included:

Section 07150 – DAMP PROOFING

Section 07190 – AIR INFILTRATION BARRIERS (VAPOR AND AIR RETARDERS)

Section 07210 – BUILDING INSULATION

Section 07400 – EXTERIOR SIDING AND TRIM

Section 07411 – METAL SIDING AND ROOFING

Section 07540 – TPO ROOFING

Section 07600 – FLASHING

Section 07631 – GUTTERS & DOWNSPROUTS

Section 07900 – SEALANTS

**07150 - DAMP PROOFING**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Provide everything required to complete the work as shown on the Drawings and specified herein.

**1.2 QUALITY STANDARDS**

- A. Provide experienced, well-trained workers competent to complete the work as specified.
- B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.

**1.3 SUBMITTALS**

- A. Submit the following within 30 calendar days after receiving the Notice to Proceed.
  - 1. Submit list of materials to be provided for this work; manufacturer's data required to prove compliance with these Specifications, manufacturer's installation instructions; shop drawings as required with complete details and assembly instructions.
  - 2. Submit samples as required for approval by the Architect.

**1.4 MATERIALS HANDLING**

- A. Provide all materials required to complete the work as shown on drawings and specified herein. Deliver, store, and transport materials to avoid damage to the products or to any other work and as per the General Conditions.
- B. Have on hand and ready for installation in coordination with roofing, all accessories such as skylights, hatches, relief vents, expansion joints, etc.

**1.5 PRECONSTRUCTION AND PREPARATION**

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work.

**PART 2 - MATERIALS**

**2.1 DAMPPROOFING**

- A. Provide and install: Hydrocide 600 as Manufactured by Sonneborn Building Products Inc. or approved equal- 2 Coats. As required by Soils Report.

**PART 3 – EXECUTION**

**3.1 APPLICATION**

- A. Strictly follow manufacturer's instructions to control application and guide inspection of the work. Provide certification of compliance as directed by the Architect.
- B. Maintain work environment for best working conditions: Dry and above 50 degrees in temperature, with enough room for worker safety and convenience.
- C. Surface for application shall be smooth, without bumps, bulges, or holes; clean, dry, and clear of protruding materials.
- D. Upon completion, clean the work area and remove all scrap and excess materials from the site. Allow convenient access for inspection of work and repair or replace defective work as directed by the Architect.

END OF SECTION

**07190 - AIR INFILTRATION BARRIERS & VAPOR RETARDER**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Includes but not limited to -
  - 1. Furnish and install air infiltration barriers on exterior side of exterior wall sheathing as described in Contract Documents, and vapor retarders on the inside, hot side, of interior wall as described in Contract Documents.
- B. Related Sections -
  - 1. General Conditions and Division 01 apply to this Section

**PART 2 - MATERIALS**

**2.1 AIR INFILTRATION BARRIER**

- A. Approved Manufacturers -
  - 1. Tyvek Stuccowrap or Tyvek Drain Wrap by Du Pont Company, Wilmington, DE, install on sheathing UNDER RIGID WALL insulation.

**2.2 SEALING TAPE**

- A. Approved Manufacturer -
  - 1. Air Retarder Tape by 3M, St. Paul, MN

**2.3 VAPOR RETARDER**

- A. Approved Manufacturer - Perm less than or equal to 0.1: class 1.
  - 1. Certainteed, MemBrain, SMART Vapor Retarder and Air Barrier Film (interior walls and ceiling (under truss) where noted in plans)
  - 2. Stego Crawl Wrap and Crawl Tape, 15Mil vapor retarder, at all crawlspaces. (Not in this project)
  - 3. Stego Wrap, 15 Mil vapor retarder, at Slab on Grade applications & used for radon .
  - 4. Tape all seams per manufacturer instructions.
- B. Must be installed @ building envelope, not between units.

**PART 3 - EXECUTION**

**3.1 INSTALLATION**

- A. Install in accordance with Manufacturer's instructions over exterior wall sheathing. Seal joints and penetrations through air infiltration barrier prior to installation of finish material.

**3.2 FIELD QUALITY CONTROL**

- A. Air infiltration barrier is to be air tight and free from holes, tears, and punctures.
  - 1. At completion of installation, inspect exposed air infiltration barrier for holes, tears, and punctures and repair damaged areas.

END OF SECTION

## **07210 - BUILDING INSULATION**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Provide everything required to complete the work as shown on the Drawings and specified herein.
- B. Provide Insulation at all insulative areas shown in plans and per building code requirements for draftstopping.

#### **1.2 QUALITY STANDARDS**

- A. Provide experienced, well-trained workers competent to complete the work as specified.
- B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.

#### **1.3 SUBMITTALS**

- A. Submit the following within 30 calendar days after receiving the Notice to Proceed.
  - 1. Submit list of materials to be provided for this work; manufacturer's data required to prove compliance with these Specifications, manufacturer's installation instructions; shop drawings as required with complete details and assembly instructions.
  - 2. Submit samples as required for approval by the Architect. See Section 01300 - Submittals

#### **1.4 MATERIALS HANDLING**

- A. Provide all materials required to complete the work as shown on drawings and specified herein. Deliver, store, and transport materials to avoid damage to the products or to any other work and as per the General Conditions.
- B. Have on hand and ready for installation in coordination with roofing, all accessories such as skylights, hatches, relief vents, expansion joints, etc.

#### **1.5 PRECONSTRUCTION AND PREPARATION**

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work.

### **PART 2 - MATERIALS**

#### **2.1 INSULATION**

- A. Install insulation by "R" factor rather than "U" factor, rating, or thickness and in accordance with ASTM C 665-88, "Specification for Mineral-Fiber Thermal Insulation for Light Frame Construction and Manufactured Housing," Type 1.
  - 1. See plans for Closed Cell spray Foam insulation at all windows and doors, per construction plan details and requirements for air sealing.

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B. Approved Manufacturers -

1. Certainteed Corp, Valley Forge, PA
2. Johns Manville Corp Fiberglass, Denver, CO
3. Owens-Corning Fiberglass Corporation, Toledo, OH
4. Pabco, Houston, TX
5. Rockwool Insulation Division, Englewood, CO
6. U S Gypsum "Thermafiber", Chicago, IL
7. Western Fiberglass, Inc, Salt Lake City, UT
8. Insul-Safe III blown-in by Certainteed
9. Foamular 150, Owens Corning, 1" XPS

C. "R" Factors Where Thermal Insulation Required –

1. Roof/Ceilings – 2 REQUIRED PRODUCTS; R30 MIN BATT (STAPELED UP TO UNDERSIDE OF ROOF SHEATHING WITHIN ROOF FRAMING AND TAPERED XPS INSULATION R20 MIN (SEE TPO SPEC SECTION) ATOP ROOF SHEATHING, MECHANICALLY FASTENED.

INSUL-DRAIN® Extruded Polystyrene (XPS) Insulation Board

ASTM C578 Type IV, 25 psi, 1.55 pcf density

OWENS CORNING: INSUL-DRAIN® is a FOAMULAR® extruded polystyrene product that incorporates the features of insulation, drainage and protection board in a single product. It's easy to install, without the need for special tools or equipment, and the product's compressive strength and long-term moisture resistance properties mean years of reliable performance on below grade foundation walls even under extremely harsh conditions. Some of the main characteristics of FOAMULAR® INSUL-DRAIN® extruded polystyrene insulation are:

- Precision-cut channels drain water from vertical foundation walls while completing total insulation envelope.
- Durable filtration fabric prevents soil from clogging channels.
- 48" x 84" and 48" x 96" sizes cover more square footage faster and minimizes joints between boards.
- Acts as protection course for waterproofing membrane.
- Tongue & groove edges provide proper board alignment and helps seal joints.
- Top-edge horizontal channel permits unobstructed water flow between vertical courses of boards.
- High R-value, exceptional moisture resistance and high compressive strength of FOAMULAR® extruded polystyrene insulation.
- UL Classified foam core meets ASTM C578 Type IV specifications.

2. Exterior - 2 x 6 Walls, 19 BATT and R7.5 min cont rigid – MIN R27 TOTAL assembly REQUIRED RIGID IS REQUIRED BY 2012 IECC WYOMING ENERGY CODE, CANNOT BE REMOVED.

3. Crawlspace – R21 (JM FSK-25 FOIL FACED)

3. Sound Insulation – as noted in plans, Rock Wool

4. Attic Access hatches – 50 overtop ; must be weatherstripped or sealed and baffled to prevent loose insulation from spilling into the living space. See detail provided in Construction Documents. IF NOTED IN DRAWINGS.



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- D. Provide tapes, fastenings, and other related materials as instructed by insulation manufacturer.

### **PART 3 - EXECUTION**

#### **3.1 PREPARATION AND MATERIALS HANDLING**

- A. Obtain manufacturer affidavit that materials delivered are as specified.
- B. Keep insulation materials totally dry at all times in storage and during installation.

#### **3.2 APPLICATION**

- A. Keep areas to be insulated clean and dry. Do not install insulation where it might be exposed to water.
- B. Install as per manufacturer's instructions and building code requirements. Keep ventilation space unobstructed.
- C. Upon completion, clean the work area and remove all scrap and excess materials from the site. Allow convenient access for inspection of work and repair or replace defective work as directed by the Architect.

END OF SECTION

## **07400 – EXTERIOR SIDING AND TRIM**

### **PART 1 – GENERAL**

#### **1.1 SUMMARY**

- A. Provide everything required to complete the work as shown on the Drawings and specified herein.
- B. Composite = cementitious board for Lap and Board and Batt Siding and trim.
- C. See also Metal Siding Section 07411.

#### **1.2 QUALITY STANDARDS**

- A. Provide experienced, well-trained workers competent to complete the work as specified.
- B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.

#### **1.3 SUBMITTALS**

- A. Submit the following within 30 calendar days after receiving the Notice to Proceed.
  - 1. Submit list of materials to be provided for this work; manufacturer's data required to prove compliance with these Specifications, manufacturer's installation instructions; shop drawings as required with complete details and assembly instructions.
  - 2. Submit samples as required for approval by the Architect.

#### **1.4 MATERIALS HANDLING**

- A. Provide all materials required to complete the work as shown on drawings and specified herein. Deliver, store, and transport materials to avoid damage to the products or to any other work and as per the General Conditions.
- B. Have on hand and ready for installation in coordination with roofing, all exterior doors, windows, and soffit materials.

#### **1.5 PRECONSTRUCTION AND PREPARATION**

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work.

### **PART 2 - PRODUCTS**

#### **2.1 SIDING**

- A. Cement Siding or Fiber Cement Siding. Fiber Cement Board Panels consist of cement, fly ash and cellulose fiber formed under high pressure into boards with integral surface texture; complying with ASTM C 1186 Type A Grade II; machined edges; for nail attachment. **(NO LP SIDING ALLOWED)**
  - 1. Surface Burning Characteristics: Flame spread index of 0, smoke developed index of 6, maximum; when tested in accordance with ASTM E 84 (Class I/A).
  - 2. Flammability: Noncombustible, when tested in accordance with ASTM E 136.
  - 3. Flexural Strength: At least 1450 psi (10 MPa) when in equilibrium condition, and at least 1015 psi (7 MPa) when in wet condition, tested in accordance with ASTM C 1185.
  - 4. Coefficient of Thermal Expansion: Less than  $1 \times 10^{-5}$ /inch/inch/degree F ( $0.5 \times 10^{-5}$ /degree C), when tested in accordance with ASTM E 228.
  - 5. Water Vapor Transmission: Less than 7.0 perm-inch (10 ng/(Pa s m), when tested in

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accordance with ASTM E 96.

6. Freeze Thaw Resistance: At least 80 percent flexural strength retained, when tested in accordance with ASTM C 1185.
  7. UV Resistance: No cracking, checking, or erosion, when tested for 2000 hours in accordance with ASTM G 26.
  8. Water Tightness: No water droplets on underside, when tested in accordance with ASTM C 1185.
- B. Provide Fastenings and other related materials as instructed by siding manufacturer.
  - C. Composite Lap siding, Smooth side, Hardi or EQUIVALENT 6" and 10.75" to weather exposure Lap Siding. Per Drawings.
  - D. Composite Board and Batt at underside of short overhang, see drawings. Detail must maintain the continuous insulation detail. Batts at seams.

**2.2 CORNER TRIM AND FACIA BOARDS**

- A. Composite Trim, Prime Trim, Mira Tec or Smart Trim, see drawings.
- B. Painted Color as determined by Architect.

**2.3 SOFFIT**

- A. Continuous perforated Composite Soffit ONLY WHERE NOTED.
- B. Color as determined by Architect.

**PART 3 – EXECUTION**

**3.1 APPLICATION**

- A. Install in accordance with all manufacturer's recommendations and requirements.

END OF SECTION

**07411 – METAL SIDING AND ROOFING**

**PART 1 – GENERAL**

**1.1 SUMMARY**

- A. Provide everything required to complete the work as shown on the Drawings and specified herein.

**1.2 QUALITY STANDARDS**

- A. Provide experienced, well-trained workers competent to complete the work as specified.
- B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.

**1.3 SUBMITTALS**

- A. Submit the following within 30 calendar days after receiving the Notice to Proceed.
  - 1. Submit list of materials to be provided for this work; manufacturer's data required to prove compliance with these Specifications, manufacturer's installation instructions; shop drawings as required with complete details and assembly instructions.
  - 2. Submit samples as required for approval by the Architect.

**1.4 MATERIALS HANDLING**

- A. Provide all materials required to complete the work as shown on drawings and specified herein. Deliver, store, and transport materials to avoid damage to the products or to any other work and as per the General Conditions.
- B. Have on hand and ready for installation in coordination with roofing, all exterior doors, windows, and soffit materials.

**1.5 PRECONSTRUCTION AND PREPARATION**

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work.

**PART 2 - MATERIALS**

**2.1 SIDING AND ROOFING**  
**SIDING:**

- A. Provide Metal Sales 7/8" Corrugated Wall Siding, 22 ga. as manufactured by Metal Sales, OR EQUIVALENT. As noted in drawings.
- B. Exposed Fasteners.
- C. Other Trim and Flashing Material as shown on drawings.
- D. Color:
  - i. Corrugated Siding - Manufacturer's standard selection of not less than 12 Kynar

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colors.

- ii. Trim as noted in drawings- Manufacturer's standard selection of not less than 12 Kynar colors.

**ROOFING:**

- A. Provide Metal Sales Vertical Seam Roof, 24 ga. Magna Loc 180 Aluminum 18" panel coverage, rib height 2". All flashing shall be metal. as manufactured by Metal Sales, "AN EQUAL OR BETTER PRODUCT" CAN BE SUBSTITUTED
- B. Standing Seam, concealed Fastners.
- C. Other Trim and Flashing Material as shown on drawings.
- D. Color:
  - i. Roofing - Manufacturer's standard selection of not less than 12 Kynar colors.
  - ii. Trim - Manufacturer's standard selection of not less than 12 Kynar colors.

**2.2 MATERIALS**

- A. Fabrication
  - 1. Unless otherwise shown on drawings or specified herein, fabricate panels in continuous one-piece lengths and fabricate flashing and accessories in longest practical lengths.

**PART 3 – EXECUTION**

**3.1 EXAMINATION**

- A. Existing Conditions
  - 1. Inspect installed work of other trades and verify that such work is complete to a point where this work may continue.
  - 2. Verify that installation may be made in accordance with approved shop drawings and manufacturer's instruction.

**3.2 PREPARATION**

- A. Field Measurements
  - 1. Verify prior to installation
  - 2. If field measurements differ from drawing dimensions, notify Architect/Engineer prior to fabrication.
- B. Protection
  - 1. Treat, or isolate with protective material, any contacting surfaces of dissimilar materials to prevent electrolytic corrosion.
  - 2. Require workmen who will be walking on roofing panels to wear clean, soft-soled shoes

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that will not pick up stones or other abrasive material which could cause damage and discoloration.

3. Protect work of other trades against damage and discoloration.

C. Surface Preparation

1. Clean and dry surfaces to applying sealant.

**3.3 INSTALLATION**

A. Corrugated Panels (Walls are Horizontal)

1. Follow panel manufacturer's directions.
2. Install panel seams vertically.
3. Install wall panel seams (choose one): vertically or horizontally.
4. Lap panels away from prevailing wind direction.
5. Do not stretch or compress panel side-lap interlocks.
6. Secure panels without warp or deflection.

B. Allowable Erection Tolerance

1. Maximum Alignment Variation: ¼ inch in 40 feet.

C. Flashing

1. Follow manufacturer's directions and architect-approved shop drawings.
2. Install flashings to allow for thermal movement. See Details.
3. Remove any strippable protective film, if used, immediately preceding flashing installation.

D. Cutting and Fitting

1. Neat, square and true. Torch cutting is prohibiting where cut is exposed to final view.
2. Openings 6 inches and larger in any direction: Shop fabricate and reinforce to maintain original load capacity.
3. Where necessary to saw cut panels, debur and treat with galvanic paint.

**3.4 CLEAN UP AND CLOSE OUT**

A. Panel Damage and Finish Scratches

1. Do not apply touch-up paint to damaged paint areas that involve minor scratches.
2. Panels or flashings that have severe paint and/or substrate damage shall be replaced as directed by the Architect's or Owner's representative.

B. Cleaning and Repairing

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1. At completion of each day's work and at work completion, sweep panels, flashing and gutters clean. Do not allow fasteners, cuttings, filings or scraps to accumulate.
2. Remove debris from project site upon work completion or sooner, if directed.

END OF SECTION

## **SECTION 07540 – TPO ROOFING**

### **PART 1 – GENERAL**

#### 1.01 SUMMARY

- A. Section Includes
  - 1. Thermoplastic Polyolefin Single-Ply Roofing Membrane- Fully Adhered
  - 2. Thermoplastic Polyolefin Flashings
  - 3. Thermoplastic Polyolefin Accessories
  - 4. Roof Insulation- SEE BUILDING INSULATION SECTION 07210
- B. Related Sections
  - 1. Section 06100: Rough Carpentry
  - 2. Section 07210: Building Insulation
  - 3. Section 07620: Sheet Metal Flashing and Trim
  - 4. Section 15430: Plumbing Specialties

#### 1.02 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D1079 and the glossary of the National Roofing Contractors Association (NRCA) *Roofing and Waterproofing Manual* for definitions of roofing terms related to this section.

#### 1.03 SUBMITTALS

- A. Product Data: Provide product data sheets for each type of product indicated in this section.
- B. Shop Drawings: Provide manufacturers standard details and approved shop drawings for the roof system specified.
- C. Samples: Provide samples of insulations, fasteners, membrane materials and accessories for verification of quality.
- D. Certificates: Installer shall provide written documentation from the manufacturer of their authorization to install the roof system, and eligibility to obtain the warranty specified in this section.

#### 1.04 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: GAF® shall provide a roofing system that meets or exceeds all criteria listed in this section.
- B. Installer's Qualifications:
  - 1. Installer shall be classified as an **Authorized** contractor as defined and certified by GAF®.
- C. Source Limitations: All components listed in this section shall be provided by a single manufacturer or approved by the primary roofing manufacturer.
- D. Final Inspection  
Manufacturer's representative shall provide a comprehensive final inspection after completion of the roof system. All application errors must be addressed and final punch list completed.



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### 1.05 PRE-INSTALLATION CONFERENCE

- A. Prior to scheduled commencement of the roofing installation and associated work, conduct a meeting at the project site with the installer, architect, owner, GAF<sup>®</sup> representative and any other persons directly involved with the performance of the work. The installer shall record conference discussions to include decisions and agreements reached (or disagreements), and furnish copies of recorded discussions to each attending party. The main purpose of this meeting is to review foreseeable methods and procedures related to roofing work.

### 1.06 PERFORMANCE REQUIREMENTS

- A. Provide an installed roofing membrane and base flashing system that does not permit the passage of water, and will withstand the design pressures calculated in accordance with the most current revision of ASCE 7.
- B. GAF<sup>®</sup> shall provide all primary roofing materials that are physically and chemically compatible when installed in accordance with manufacturers current application requirements.

### 1.07 REGULATORY REQUIREMENTS

- A. All work shall be performed in a safe, professional manner, conforming to all federal, state and local codes.
- B. Exterior Fire Test Exposure: Provide a roofing system achieving a UL Class **B** rating for roof slopes indicated.
- C. Windstorm Classification: Provide a roofing system which will achieve a Factory Mutual **1-60 1-75 1-90 1-120** wind uplift rating, as listed in the current FM Approval Guide.

### 1.08 DELIVERY, STORAGE AND HANDLING

- A. Deliver all roofing materials to the site in original containers, with factory seals intact. All products are to carry either a GAFMC or GAF<sup>®</sup> label.
- B. Store all pail goods in their original undamaged containers in a clean, dry location within their specified temperature range. Reference data sheets for product storage requirements.
- C. Do not expose materials to moisture in any form before, during or after delivery to the site. Reject delivery of materials that show evidence of contact with moisture.
- D. Use "breathable" type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Cover and protect materials at the end of each work day. Do not remove any protective tarpaulins until immediately before the material will be installed.

### 1.09 PROJECT CONDITIONS

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A. Weather

1. Proceed with roofing only when existing and forecasted weather conditions permit.
2. Ambient temperatures must be above 45°F (7.2°C) when applying hot asphalt or water based adhesives.

1.10 WARRANTY/GUARANTEE Provide manufacturers standard **WeatherStopper® Diamond Pledge™ Guarantee**

Guarantees are available up to 30 years when using EverGuard Extreme® TPO 60 mil Membrane\*

1. **Single source coverage** and no monetary limitation where the manufacturer agrees to repair or replace components in the roofing system, which cause a leak due to a failure in materials or workmanship.
  - a) Duration: Contractor to submit with product submittal all warranties.

B. Provide manufacturers **EverGuard® TPO Puncture Resistance Limited Warranty**

1. The manufacturer warrants to the original building owner, that the EverGuard® TPO roof membrane will provide puncture and tear resistance when installed and maintained in accordance with GAF®'s requirements.

C. Provide manufacturers **EverGuard® TPO Reflectivity Limited Warranty**

1. The manufacturer warrants to the original building owner, that the EverGuard® TPO white roof membrane will meet or exceed the initial and "aged" ENERGY STAR® reflectivity requirements for low slope roofing membranes (65% initial, 50% aged) when installed and maintained in accordance with GAF®'s requirements. The aged reflectivity shall meet or exceed these requirements when measured after cleaning the membrane in accordance with GAF® recommendations.

## **PART 2 PRODUCTS**

2.01 ACCEPTABLE MANUFACTURER

A. GAF® **T-BA-N-I-60/60FB**

2.02 INSULATION *SEE SECTION 07210 FOR MULTI PURPOSE INSULATION AND ROOF BOARD PROTECTION OR USE THE FOLLOWING:*

- A. Rigid polyisocyanurate board, with a strong white or black fibrous glass facer conforming to or exceeding the requirements of ASTM C 1289 / FS HH-I-1972. **EnergyGuard™ Tapered Polyiso**, with the following characteristics:
  1. Board Thickness: tapered MIN LAYERS FOR R VALUE
  2. Thermal Resistance (LTTR value) of: varies NO LESS THAN R 20
- B. ROOF BOARD *SEE SECTION 07210 FOR MULTI PURPOSE INSULATION AND ROOF BOARD PROTECTION OR USE THE FOLLOWING:* Underlayment or overlayment board with a water-resistant and silicone treated gypsum core with glass fiber facers embedded on both sides. **GP Dens-Deck® Roof Board**, distributed by GAF®
  1. Board Thickness:
  2. Thermal Resistance (R value) of:

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2.03 SEPARATION SHEET

- A. Fire resistant glass fiber mat used as a separation sheet over polystyrene foam insulation or beneath insulation over wood substrates. Each roll contains ten (10) squares (1,000 sq. ft.) of material, 4' x 250' (1.2m x 76.9m), 80 lbs. (36.4 kg), **Fiberglass Fire Sheet 10** by GAF®.

2.04 MEMBRANE MATERIALS

- A. A smooth type, polyester scrim reinforced thermoplastic polyolefin membrane with a nominal 0.060 inch (60 mil) thickness, for use as a single ply roofing membrane. Meets or exceeds the minimum requirements of ASTM D-6878. UL Listed, FM Approved, Dade County Product Approval, Florida Building Code Approved. **White membrane is Energy Star Listed, CRRC Listed and Title 24 Compliant.** Each full roll contains approximately 1000 sq.ft. of roofing material, 10' X 100', weighing 322 lbs. Each half sheet roll contains approximately 500 sq.ft. of roofing material, 5' X 100', weighing 162 lbs. **\*\*\*half sheet roll required for roof perimeter use in mechanically attached systems\*\*\*** EverGuard® TPO 60 mil thermoplastic single-ply roofing membrane by GAF®.

2.05 FLASHING MATERIALS

- A. A smooth type, polyester scrim reinforced thermoplastic polyolefin membrane with a nominal 0.060 inch (60 mil) thickness, for use as a single ply roofing membrane. Meets or exceeds the minimum requirements of ASTM D-6878. UL Listed, FM Approved, Dade County Product Approval, Florida Building Code Approved. **White membrane is Energy Star Listed, CRRC Listed and Title 24 Compliant.** Each full roll contains approximately 1000 sq.ft. of roofing material, 10' X 100', weighing 322 lbs. Each half sheet roll contains approximately 500 sq.ft. of roofing material, 5' X 100', weighing 162 lbs. **\*\*\*half sheet roll required for roof perimeter use in mechanically attached systems\*\*\*** EverGuard® TPO 60 mil thermoplastic single-ply roofing membrane by GAF®.

2.06 ADHESIVES, SEALANTS and PRIMERS

- A. Water-based Bonding Adhesive: Water based rubberized adhesive for use with EverGuard® TPO membranes, **EverGuard® WB181 Bonding Adhesive**, by GAF®.  
**\*It is the responsibility of those involved with the design of the building to obtain indemnification for the attachment and integrity of the Insta-Stik Product. GAF® assumes no responsibility for the Insta-Stik product or its performance within the system.**

2.07 PLATES & FASTENERS

**AS REQUIRED BY APPLICATION PER MANUFACTURERS INSTRUCTIONS**

2.08 NAILS & SPIKES

**AS REQUIRED BY APPLICATION PER MANUFACTURERS INSTRUCTIONS**

2.09 ACCESSORIES

A. FLASHING ACCESSORIES

1. An 8 inch (203 mm) wide smooth type, polyester scrim reinforced thermoplastic polyolefin membrane strip for use as a cover strip over coated metal and stripping-in coated metal flanges and general repairs: 0.045 inches (45 mils) nominal thickness with 100 foot length, available in White, Tan, Gray, Regal Red, Regal Blue, and Hartford Green **EverGuard® TPO Flashing Membrane**, by GAF®.

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2. Extruded aluminum termination bar with angled lip caulk receiver and lower leg bulb stiffener. Pre-punched slotted holes at 6" on center or 8" on center.  $\frac{3}{4}$ " x 10' with 0.090" cross section, **EverGuard® Lip Termination Bar**, by GAF®.

**B. WALL & CURB ACCESSORIES**

1. .060" thick reinforced TPO membrane fabricated corners. Available in four standard sizes to flash curbs that are 24", 36", 48", and 60" in size. Four corners are required to flash the curb, **EverGuard® Corner Curb Wraps**, by GAF®.

**C. PENETRATION ACCESSORIES**

1. 0.075" thick molded TPO membrane sized to accommodate most common pipe and conduits, (1" (25.4 mm) to 6" diameter pipes), including square tube. Hot-air welded directly to EverGuard® TPO membrane, supplied with stainless steel clamping rings, **EverGuard® TPO Preformed Vent Boots** by GAF®.
2. 0.045" or 0.60" thick molded TPO membrane preformed boots are split to accommodate most common pipes and conduits and available in three standard sizes, **EverGuard® TPO Split Pipe Boots**, by GAF®.
3. 0.045" or 0.60" thick molded TPO membrane preformed square boots are split to accommodate most common square penetrations and conduits and available in three standard sizes, **EverGuard® TPO Square Tube Wraps**, by GAF®.
4. .070 thick molded penetration pocket to provide structure and foundation for the application of a pourable sealant for a variety of roof penetrations, weldable and 9" x 6" x 4" (l x w x h). **EverGuard® TPO Pourable Sealer Pocket**
5. .055" thick smooth type, unreinforced thermoplastic polyolefin membrane designed for use as a conforming membrane seal over T-joints in 60 and 80 mil membrane applications. **EverGuard® TPO Drain** by GAF®

**D. FIELD OF ROOF ACCESSORIES**

1. Pre-manufactured expansion joint covers used to bridge expansion joint openings in a roof structure. Fabricated to accommodate all roof to wall and roof to roof applications, made of .060" reinforced TPO membrane, available in 5 standard sizes for expansion joint openings up to 8" wide. **EverGuard® TPO Expansion Joint Covers**, by GAF®
2. .055" thick smooth type, unreinforced thermoplastic polyolefin membrane designed for use as a conforming membrane seal over T-joints in 60 and 80 mil membrane applications. **EverGuard® T-Joint Patches**, by GAF®.
3. 1/8" thick extruded and embossed TPO roll 30" x 50', heat welds directly to roofing membrane. Unique herringbone traction surface. Gray in color, **EverGuard® TPO Walkway Rolls**, GAF®.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that the surfaces and site conditions are ready to receive work.
- B. Verify that the deck is supported and secured.
- C. Verify that the deck is clean and smooth, free of depressions, waves, or projections, and properly sloped to drains, valleys, eaves, scuppers or gutters.
- D. Verify that the deck surfaces are dry and free of ice or snow.
- E. Verify that all roof openings or penetrations through the roof are solidly set, and that all flashings are tapered.

#### **3.02 SUBSTRATE PREPARATION**

- A. Plywood Deck
  - 1. Plywood sheathing must be exterior grade, minimum 4 ply, and not less than 15/32" (12 mm) 19/32" (dade county) thick .
  - 2. Preservatives or fire retardants used to treat the decking must be compatible with roofing materials.
  - 3. The deck must be installed over joists that are spaced 24" (610 mm) o.c. or less.
  - 4. The deck must be installed so that all four sides of each panel bear on and are secured to joist and cross blocking. "H" clips are not acceptable.
  - 5. Panels must be installed with a 1/8" to 1/4" (3mm – 6mm) gap between panels and must match vertically at joints to within 1/8" (3mm).
  - 6. Decking should be kept dry and roofed promptly after installation.
- B. Oriented Strand Board (OSB) Deck
  - 1. Oriented Strand Board must carry a Structural 1 rating if it is to be used as a decking material.
  - 2. Preservatives or fire retardants used to treat decking must be compatible with roofing materials.
  - 3. The deck must be installed over joists that are spaced 24" (610 mm) o.c. or less.
  - 4. The deck must be installed so that all four sides of each panel bear on and are secured to joist and cross blocking; the APA/Engineered Wood Association (APA) recommendations. "H" clips are not acceptable.
  - 5. Panels must be installed with a 1/8" to 1/4" (3mm – 6mm) gap between panels and must match vertically at joints to within (1/8" (3mm).
  - 6. Decking should be kept dry and roofed promptly after installation.
  - 7. Where the mean January temperature (Reference current ASHRAE Fundamentals Handbook) is below 40° F (4.4°C), lightweight insulating concrete decks must be poured and roofed between April 1<sup>st</sup> and October 31<sup>st</sup>; This type of deck is unacceptable in Alaska.
  - 8. Lightweight insulating concrete decks are acceptable only on slopes up to 1" per foot (8.3 cm/m).

#### **3.03 INSTALLATION - GENERAL**

**MULTI FAMILY HOUSING**, encompass v2 Ilc.

- A. Install GAF®'s EverGuard® TPO roofing system according to all current application requirements in addition to those listed in this section.
- B. GAF® EverGuard® TPO Specification #: **T-BA-N-I-60/60FB**
- C. Start the application of membrane plies at the low point of the roof or at the drains, so that the flow of water is over or parallel to, but never against the laps.

**3.04 AIR/VAPOR BARRIER**

**A. GENERAL**

- 1. Air/vapor barrier sheet shall typically be installed when required by design professional to address internal air pressure or humidity conditions.
- 2. Insulation must be installed over the air/vapor barrier sheet and mechanically attached to the deck.

**B. APPLICATION**

- 1. Install air/vapor barrier sheet loose-applied to the deck or fire board so that wrinkles and buckles are not formed.
- 2. Overlap air/vapor barrier sheets a minimum of 6" for side and end laps. Tape laps together with duct tape or double sided tape.
- 3. Seal perimeter and penetration areas with foam sealant.

**3.05 INSULATION**

**A. GENERAL**

- 1. Do not apply roof insulation or roofing until all other work trades have completed jobs that require them to traverse the deck on foot or with equipment. A vapor retarder coated lightly with asphalt may be applied to protect the inside of the structure prior to the insulation and final roofing installation. Before the application of the insulation, any damage or deterioration to the vapor retarder must be repaired.
- 2. Do not install wet, damaged or warped insulation boards.
- 3. Install insulation boards with staggered board joints in one direction (unless taping joint).
- 4. Install insulation boards snug. Gaps between board joints must not exceed ¼" (6 mm). All gaps in excess of ¼" (6 mm) must be filled with like insulation material.
- 5. Wood nailers must be 3-1/2" (89 mm) minimum width or 1" (25.4 mm) wider than metal flange. They shall be of equal thickness as the insulation, and be treated for rot resistance. All nailers must be securely fastened to the deck.
- 6. Do not kick insulation boards into place.
- 7. Miter and fill the edges of the insulation boards at ridges, valleys and other changes in plane to prevent open joints or irregular surfaces. Avoid breaking or crushing of the insulation at the corners.
- 8. Insulation should not be installed over new lightweight insulating concrete.
- 9. Roof tape, if required over insulation joints, must be laid evenly, smoothly and embedded in a uniform coating of hot steep asphalt with 4" (102 mm) end laps. Care must be taken to assure smooth application of tape, and full embedment of the tape in the asphalt.
- 10. Do not install any more insulation than will be completely waterproofed each day.

**B. INSULATION – BASE LAYER APPLICATION**

1. The insulation must be securely attached to the roof deck. A minimum FMRC 1-60 attachment is recommended. Refer to FMRC Approval Guide for FM fastening patterns. Factory Mutual requires fastener density increased in corner areas for FM 1-60 as well as perimeter and corner area fastener density increases for FM 1-90 or greater. Refer to FM Loss Prevention Data Sheets 1-7, 1-28, and 1-49.
2. Use only fasteners with a minimum 3 inch (76 mm) stress plate when mechanically attaching insulation. Do not attach insulation with nails.
3. Apply LRF O Adhesive directly to the substrate using a ribbon pattern. Space beads as required by job specification, typically 6" or 12" (152 mm or 305 mm) o.c.
4. LRF O Adhesive should be approximately 70°F (22°C) when being dispensed. As adhesive is applied, allow the adhesive to begin rising, then place board.
5. Install insulation layers, maximum 4' x 4' (1.22m x 1.22m) board size, in a full and uniform mopping of hot asphalt applied at the rate of 25 lbs./square (1.2 kg/m<sup>2</sup>) ±20%. Press each board firmly into place. Stagger the joints of additional layers in relation to the insulation joints in the layer(s) below by a minimum of 6" (152 mm) to eliminate continuous vertical gaps.
6. The substrate must be free of and debris, dust, dirt, oil, grease, and standing water before applying the adhesive.
7. OlyBond 500 must be applied using the specially designed PaceCart dispenser. OlyBond 500 SpotShot shall be applied using one of the specially designed dual cartridge dispensers.
8. Install insulation layers applied with bands of OlyBond 500 spaced 12" o.c. Approximate coverage rate is ½ to 1 gallon per 100 square feet, depending on the substrate. Allow the foam to rise ¾" to 1" (25.4 mm). Walk each board firmly into place. Stagger the joints of additional layers in relation to the insulation joints in the layer(s) below by a minimum of 6" (152 mm) to eliminate continuous vertical gaps.
9. The substrate must be free of debris, dust, dirt, oil, grease, and standing water before applying the adhesive.
10. Install insulation layers applied with 3/4" beads of Insta-Stik spaced 12" o.c. Press each board firmly into place. Stagger the joints of additional layers in relation to the insulation joints in the layer(s) below by a minimum of 6" (152 mm) to eliminate continuous vertical gaps.
11. Loose apply the base layer of insulation for subsequent layers to be simultaneously attached or for ballast applications. Minimal fastening should be performed to avoid movement of the boards.
12. Fill all flutes with a loose applied base layer of insulation. Insulation must be of equal height as metal ribs, seams or flutes to allow for subsequent layers to be applied without interference. Minimal fastening should be performed to avoid movement of the boards.
13. If subsequent layers of insulation are to be attached with insulation adhesive, the base layer must be mechanically attached with a minimum fastener density of 1 fastener every 2 square feet.

**C. INSULATION – SUBSEQUENT LAYERS APPLICATION**

1. The insulation must be securely attached to the roof deck. A minimum FMRC 1-60 attachment is recommended. Refer to FMRC Approval Guide for FM fastening patterns. Factory Mutual requires fastener density increases in corner areas for FM 1-60 as well as perimeter, and corner area fastener density increases for FM 1-90 or greater. Refer to FM Loss Prevention Data Sheets 1-7, 1-28, and 1-49.



2. Multiple layers of insulation of the same, non-tapered insulation material may be simultaneously mechanically fastened with approved fasteners and plates through the top layer of insulation to the structural deck. Individual layers of insulation must not exceed 3" (76 mm) in thickness nor total thickness of all layers should not exceed 5" (127 mm) without written approval of GAF® Contractor Services. FM Type attachments may differ
3. Use only fasteners with a minimum 3 inch (76 mm) stress plate when mechanically attaching insulation. Do not attach insulation with nails.
4. The substrate must be free of debris, dust, dirt, oil, grease, and standing water before applying the adhesive.
5. Apply LRF O Adhesive directly to the substrate using a ribbon pattern. Space beads as required by job specification, typically 6" or 12" (152 mm or 305 mm) o.c.
6. Install insulation layers, maximum 4' x 4' (1.22m x 1.22m) board size, in a full and uniform mopping of hot asphalt applied at the rate of 25 lbs./square (1.2 kg/m<sup>2</sup>) ±20%. Press each board firmly into place. Stagger the joints of additional layers in relation to the insulation joints in the layer(s) below by a minimum of 6" (152 mm) to eliminate continuous vertical gaps.
7. The substrate must be free of and debris, dust, dirt, oil, grease, and standing water before applying the adhesive.
8. OlyBond 500 must be applied using the specially designed PaceCart dispenser. OlyBond 500 SpotShot shall be applied using one of the specially designed dual cartridge dispensers.
9. Install insulation layers applied with bands of Oly Bond 500 spaced 12" o.c. Approximate coverage rate is ½ to 1 gallon per 100 square feet, depending on the substrate. Allow the foam to rise ¾" to 1" (25.4 mm). Walk each board firmly into place. Stagger the joints of additional layers in relation to the insulation joints in the layer(s) below by a minimum of 6" (152 mm) to eliminate continuous vertical gaps.
10. The substrate must be free of debris, dust, dirt, oil, grease, and standing water before applying the adhesive.
11. Install insulation layers applied with 3/4" beads of Insta-Stik spaced 12" (152 mm) o.c. Press each board firmly into place. Stagger the joints of additional layers in relation to the insulation joints in the layer(s) below by a minimum of 6" (152 mm) to eliminate continuous vertical gaps.
12. Do not install any more insulation than will be completely waterproofed each day.

### 3.06 PROTECTION LAYER

#### A. GENERAL

1. The protection layer shall be installed between the roofing membrane and the substrate.
2. Fire resistant fiberglass sheet protection layer shall typically be installed when required by design professionals or code authority to address code or approval requirements or as a separator layer.
3. Install fiberglass sheet or polymat protection layer loose-applied over substrate surface so that wrinkles and buckles are not formed.
4. Overlap sheets a minimum of 6" (152 mm) for side and end laps.

### 3.07 FLASHINGS

#### A. GENERAL



## MULTI FAMILY HOUSING, encompass v2 Ilc.

1. All penetrations must be at least 24" (610 mm) from curbs, walls, and edges to provide adequate space for proper flashing.
2. Flash all perimeter, curb, and penetration conditions with coated metal, membrane flashing, and flashing accessories as appropriate to the site condition.
3. All coated metal and membrane flashing corners shall be reinforced with preformed corners or non-reinforced membrane.
4. Heat-weld all flashing membranes, accessories, and coated metal. A minimum 2" (52 mm) wide hand weld or minimum 1-1/2" (39 mm) automatic machine weld is required
5. All cut edges of reinforced membrane must be sealed with EverGuard® TPO Cut Edge Sealant.
6. Consult the EverGuard® *Application and Specifications Manual* or GAF® Contractor Services for more information on specific construction details, or those not addressed in this section.

### B. UN-REINFORCED MEMBRANE FLASHINGS

1. Un-reinforced membrane is used to field-fabricate penetration or reinforcement flashings in locations where preformed corners and pipe boots cannot be properly installed.
2. Penetration flashings constructed of un-reinforced membrane are typically installed in two sections, a horizontal piece that extends onto the roofing membrane and a vertical piece that extends up the penetration. The two pieces are overlapped and hot-air welded together.
3. The un-reinforced membrane flashing shall be adhered to the penetration surface. Apply bonding adhesive at a rate resulting in 60 square feet/gallon of finished roofing material for solvent-based bonding adhesives, and at a rate of 125 square feet/gallon of finished roofing material for water-borne bonding adhesive. Apply bonding adhesive to both the underside of the membrane and the substrate surface at 120 square feet per gallon (Solvent Based) and 250 square feet per gallon (Water Based). A greater quantity of bonding adhesive may be required based upon the substrate surface condition. The bonding adhesive must be allowed to dry until tacky to the touch before flashing membrane application.

### C. ROOF EDGES

1. Roof edge flashings are applicable for gravel stop and drip edge conditions as well as for exterior edges of parapet walls.
2. Flash roof edges with coated metal flanged edging with a minimum 3" (76 mm) wide flange nailed 4" (102 mm) on center to wood nailers, and heat weld roof membrane to metal flanges.
3. When the fascia width exceeds 4" (102 mm), coated metal roof edging must be attached with a continuous cleat to secure the lower fascia edge. The cleat must be secured to the building no less than 12" (305 mm) o.c.
4. Flash roof edge scuppers with a coated metal insert that is mechanically attached to the roof edge and integrated as a part of the metal edging.
5. Alternatively, roof edges may be flashed with a 2-piece snap on fascia system, adhering the roof membrane to a metal cant and face nailing the membrane 8" (152 mm) on center prior to installing a snap-on fascia.
  - a) Submit design drawings for review and approval to Architect or Specifier before fabrication.
  - b) Installing contractor shall check as-built conditions and verify the manufacturer's roof edging details for accuracy to fit the wall assembly prior to fabrication. The installer shall comply with the roof edging manufacturer's installation guide when setting edging.

### D. PARAPET AND BUILDING WALLS

## MULTI FAMILY HOUSING, encompass v2 Ilc.

1. Flash walls with EverGuard® TPO membrane adhered to the substrate with bonding adhesive, loose applied (Less than 24" (610 mm) in height) or with coated metal flashing nailed 4" (102 mm) on center to pressure-treated wood nailers.
2. Secure membrane flashing at the top edge with a termination bar. EverGuard® Water Block shall be applied between the wall surface and membrane flashing underneath all exposed termination bars. Exposed termination bars shall be mechanically fastened 8" on center; termination bars that are counter flashed shall be fastened 12" on center.
3. Roof membrane must be mechanically attached along the base of walls with screws and plates (deck securement) or screws and inverted termination bar (wall securement) at the following rate:
  - a) Mechanically Attached Systems Use side lap o.c. spacing, with a 12" (305 mm) maximum
  - b) Fully Adhered System 12" (305 mm) on center
4. All coated metal wall flashings and loose applied membrane flashings must be provided with separate metal counterflashings, or metal copings.
5. Metal counterflashings may be optional with fully adhered flashings depending on guarantee requirements. Exposed termination bars must be sealed with TOPCOAT® Flexseal™ Roofing Cement or TOPCOAT® Flexseal™ Caulk Grade.
6. Flash wall scuppers with a coated metal insert that is mechanically attached to the wall and integrated as part of the wall flashing.

### E. CURBS AND DUCTS

1. Flash curbs and ducts with EverGuard® TPO membrane adhered to the curb substrate with bonding adhesive, loose applied (Less than 24" (610 mm) in height) or with coated metal flashing nailed 4" on center to pressure-treated wood nailers.
2. Secure membrane flashing at the top edge with a termination bar. Water Block shall be applied between the curb/duct surface and membrane flashing underneath all termination bars. Exposed termination bars shall be mechanically fastened every 8" (203 mm) o.c.; termination bars that are counter flashed shall be fastened 12" (305 mm) on center.
3. Roof membrane must be mechanically attached along the base of walls with screws and plates (deck securement) or screws and inverted termination bar (wall securement) at the following rate:
  - a) Mechanically Attached Systems Use side lap o.c. spacing, with a 12" (305 mm) maximum
  - b) Fully Adhered System 12" (305 mm) on center
4. All coated metal curb flashings and loose applied membrane flashings must be provided with separate metal counterflashings, or metal copings.
5. Metal counterflashings may be optional with fully adhered flashings depending on guarantee requirements. Exposed termination bars must be sealed with TOPCOAT® Flexseal™ Roofing Cement.

### F. ROOF DRAINS

1. Roof drains must be fitted with compression type clamping rings and strainer baskets. Original-type cast iron and aluminum drains, as well as retrofit-type cast iron, aluminum or molded plastic drains are acceptable.
2. Roof drains must be provided with a minimum 36" x 36" (914 mm x 914 mm) sump if applicable. Slope of tapered insulation within the sump shall not exceed 4" in 12".

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3. Extend the roofing membrane over the drain opening. Locate the drain and cut a hole in the roofing membrane directly over the drain opening. Provide a ½" (13 mm) of membrane flap extending past the drain flange into the drain opening. Punch holes through the roofing membrane at drain bolt locations.
4. For cast iron and aluminum drains, the roofing membrane must be set in a full bed of water block on the drain flange prior to securement with the compression clamping ring. Typical water block application is one 10.5 ounce cartridge per drain.
5. Lap seams shall not be located within the sump area. Where lap seams will be located within the sump area, a separate roof membrane drain flashing a minimum of 12" (305 mm) larger than the sump area must be installed. The roof membrane shall be mechanically attached 12" (305 mm) on center around the drain with screws and plates. The separate roof drain flashing shall be heat welded to the roof membrane beyond the screws and plates, extended over the drain flange, and secured as above.
6. Tighten the drain compression ring in place.

**G. EXPANSION JOINTS**

1. The membrane shall be mechanically fastened (or fully adhered based on system) along edge of expansion joint opening with appropriate Drill-Tec® fasteners and plates within ¼" to ½" of the membrane edge 12" (305 mm) o.c.
2. When expansion joint is on curbs, the reinforced flashing must be bonded to curb face with EverGuard® Bonding Adhesive and membrane on top of curb face must be nailed 12" (305 mm) o.c. with deformed shank roofing nail with 3/8" wide head..
3. The expansion joint cover bellows shall be at least 1.5 times the expansion joint opening.
4. Alternately, expansion joints may be field fabricated.

**3.08 TRAFFIC PROTECTION**

- A. Install walkway pads at all roof access locations and other designated locations including roof-mounted equipment work locations and areas of repeated rooftop traffic.
- B. Walkway rolls can be cut into pads and must be spaced 2" (52 mm) apart to allow for drainage between the pads.
- C. Fully adhere walkway pads/rolls to the roof membrane with solvent-based bonding adhesive, applied at the rate of 1 gal. per 100 sq. ft. to both the walkway and roof membrane surfaces. Press walkway in position once adhesive is tacky to the touch.
- D. Alternatively, walkway pads/rolls may be heat-welded to the roof membrane surface continuously around the perimeter of the pad/roll.

**3.09 ROOF PROTECTION**

- A. Protect all partially and fully completed roofing work from other trades until completion.

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- B. Whenever possible, stage materials in such a manner that foot traffic is minimized over completed roof areas.
- C. When it is not possible to stage materials away from locations where partial or complete installation has taken place, temporary walkways and platforms shall be installed in order to protect all completed roof areas from traffic and point loading during the application process.
- D. Temporary tie-ins shall be installed at the end of each workday and removed prior to commencement of work the following day.

**3.10 CLEAN-UP**

- A. All work areas are to be kept clean, clear and free of debris at all times.
- B. Do not allow trash, waste, or debris to collect on the roof. These items shall be removed from the roof on a daily basis.
- C. All tools and unused materials must be collected at the end of each workday and stored properly off of the finished roof surface and protected from exposure to the elements.
- D. Dispose of or recycle all trash and excess material in a manner conforming to current EPA regulations and local laws.
- E. Properly clean the finished roof surface after completion, and make sure the drains and gutters are not clogged.
- F. Clean and restore all damaged surfaces to their original condition.

**3.11 MAINTENANCE**

- A. An annual roofing system maintenance program shall be performed by a **Master Select™** contractor in accordance with GAF®'s 10 Point Maintenance Program provided with your Diamond Pledge™ guarantee.
- B. Submit copies of the roof inspection form, accompanying photographs (a minimum of 6 photos showing the condition of the roof and critical details), and a record of all roofing system maintenance to the GAF® Contractor Services Department within sixty (60) days of the anniversary date of the completion of the roofing system. Annual roof inspections must be started within the first two (2) years of the guarantee term.

END OF SECTION

**07600 – FLASHING**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Includes But Not Limited To -
  - 1. All labor and material necessary and incidental to the execution and installation of sheet metal work and flashing as specified herein and indicated on the Contract Drawings.
- B. Related Sections -
  - 1. General Conditions and Division 01 apply to this section
  - 2. Sealants, Painting, Masonry, Roofing, Siding, Gutters

**1.2 QUALITY STANDARDS**

- A. Provide experienced, well-trained workers competent to complete the work with best methods; lines, moldings, edges sharp and true.
- B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.

**1.3 SUBMITTALS**

- A. Submit the following within 30 calendar days after receiving the Notice to Proceed.
  - 1. Submit list of materials to be provided for this work; manufacturer's data required to prove compliance with these Specifications, manufacturer's installation instructions; shop drawings as required with complete details and assembly instructions.
  - 2. Submit samples as required for approval by the Architect.

**1.4 MATERIALS HANDLING**

- A. Provide all materials required to complete the work as shown on drawings and specified herein. Deliver, store, and transport materials to avoid damage to the products or to any other work and as per the General Conditions.
- B. Have on hand and ready for installation in coordination with roofing, all accessories such as skylights, hatches, relief vents, expansion joints, etc.

**1.5 PRECONSTRUCTION AND PREPARATION**

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work.
- B. Provide walks or runways to protect roofing if there is to be continued construction work.

**PART 2 - PRODUCTS**

**2.1 MATERIALS**

## **MULTI FAMILY HOUSING**, encompass v2 Ilc.

- A. General: Materials of best commercial quality, thickness not less than specified below or called for in item Specifications or noted on Drawings.
- B. Nails, screws and rivets shall be material matched to the flashing.

### **2.2 FABRICATION**

- A. Form accurately to details
- B. Profiles, bends, and intersections shall be even and true to line
- C. Fold exposed edges ½ inch to provide stiffness.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- A. Flashing and Sheet Metal, to be ***BROWN***
  - 1. Strictly follow manufacturer's instructions. Reinforce as required for stiffness.
  - 2. Joints and seams neatly formed and finished. Surfaces free from waves and buckles.
  - 3. Provide flashing connections and fabrications as detailed. Use non-corrosive fastenings. Keep dissimilar metals well separated to avoid corrosion. Lap and lock seams; solder seam joints where necessary to guarantee watertightness. Install flashing inserts in walls deeply as detailed, secured and caulked. All flashing to be installed in strict accordance with the details indicated on the Contract Drawings and practices shown in the SMACNA Architectural Manual.
  - 4. For roof flashing, integrate and embed edge flashing within roofing membrane as detailed. Apply and mop additional plies of felt as detailed and as per manufacturer's instructions. Provide and install flashing with widths and laps as detailed. Caulk and paint hip, ridge, and other exposed flashing. Cover all edges of metal laps with adhesive. Fill joints between flashing and the edges of shingles with adhesive. Caulk all reglets.
  - 5. Provide and install flashing, cement, and caulking for all roof accessories.
  - 6. **Aluminum gutters:** see Gutters and Downspouts section in the specifications;
    - a. 6" seamless style K aluminum gutters and downspouts, 26 ga.
    - b. Baked enamel finish, color selected by Architect

### **3.2 CLEAN UP AND REPAIR**

- A. Upon completion, clean the work area and remove all scarp and excess materials from the site. Allow convenient access for inspection of work and repair or replace defective work as directed by the Architect. Minor scratches and abrasions may be touched up. Damaged material that may affect the integrity of the roofing must be replaced. Leave drains and other openings clear and clean of debris.

END OF SECTION

## **07631 – GUTTERS AND DOWNSPOUTS**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY OF WORK**

- A. Includes But Not Limited To-Furnish and install gutters and downspouts as described in Contract Documents. Install on building ENTRY roof overhangs as noted in plans.
- B. Related Sections
  - 1. General Conditions and Division 01 apply to this section

#### **1.2 QUALITY STANDARDS**

- A. Provide experienced, well-trained workers competent to complete the work as specified.
- B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.

#### **1.3 SUBMITTALS**

- B. Submit the following within 30 calendar days after receiving the Notice to Proceed.  
  
Submit list of materials to be provided for this work; manufacturer's data required to prove compliance with these Specifications, manufacturer's installation instructions; shop drawings as required with complete details and assembly instructions.  
  
Submit samples as required for approval by the Architect.

#### **1.4 MATERIALS HANDLING**

- A. Provide all materials required to complete the work as shown on drawings and specified herein. Deliver, store, and transport materials to avoid damage to the products or to any other work and as per the General Conditions.
- B. Have on hand and ready for installation in coordination with roofing, all accessories such as skylights, hatches, relief vents, expansion joints, etc.
- C. Coordinate all downspout locations with architect.

#### **1.5 PRECONSTRUCTION AND PREPARATION**

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work.

### **PART 2 – MATERIALS**

#### **2.1 ALUMINUM GUTTERS**

**MULTI FAMILY HOUSING**, encompass v2 Ilc.

- A. Steel gutters -
  - a. 6" seamless style K aluminum gutters, 26 ga
  - b. Baked enamel finish, color selected by Architect – match existing color
  - c. Downspouts – 3"x4", 29 ga.

**PART 3 – CONSTRUCTION AND INSTALLATION**

**3.1 APPLICATION**

- A. Strictly follow manufacturer's instructions.
- B. Provide connections and fabrications as detailed.
- C. Install to provide ample support and proper drainage. Provide at least one expansion/contraction joint midway between each gutter downspout. Provide movement slip joints on downspouts. Protect building surfaces from damage from hanger and strap connectors. Provide screens, strainers, and covers, to prevent debris from accumulating in drains. Keep downspouts and gutters separated from wall surfaces to avoid staining and corrosion.
- D. Clean the work area and remove all scrap and excess materials from the site. Leave drains clean, and free of debris. Repair or replace defective work as directed by the Architect.

END OF SECTION



**07900 - SEALANTS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

A. Includes But Not Limited To-

1. Furnish and install sealants as described in Contract Documents.
2. General Contractor to coordinate with all sub contractors so that one brand of sealant product is used through out the project. Pay special attention to Fire Barrier sealants and installation specifications per manufacturer. More that one brand may be permitted with architect approval and coordination with local building inspector.

- B. Related Sections
1. General Conditions and Division 01 apply to this section
  2. Division 08 - Caulking thresholds at aluminum entries
  3. Division 09 - Acoustical sealants in gypsum board

**1.2 QUALITY STANDARDS**

- A. Provide experienced, well-trained workers competent to complete the work as specified.
- B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.

**1.3 SUBMITTALS**

- A. Submit the following within 30 calendar days after receiving the Notice to Proceed.
1. Submit list of materials to be provided for this work; manufacturer's data required to prove compliance with these Specifications, manufacturer's installation instructions; shop drawings as required with complete details and assembly instructions.
  2. Submit samples as required for approval by the Architect.
  3. Submit to architect all through wall fire penetration assemblies for all mechanical, electrical installations.

**PART 2 – PRODUCTS**

**2.1 APPROVED MANUFACTURERS**

- A. Other manufacturer's products may be used provided they are approved as equal.
1. Backer Rod Manufacturing and Supply Company, Denver, Colorado.
  2. Dow Chemical Company, Midland, Michigan.
  3. Dow Corning Corporation, Midland, Michigan.
  4. General Electric Company, Waterford, New York.
  5. Pecora Corporation, Harleysville, Pennsylvania.
  6. Sika Chemical Corporation, Lyndhurst, New Jersey.
  7. Sonneborn-Contech, Minneapolis, Minnesota.
  8. Tremco, Cleveland, Ohio.
  9. Williams Products, Inc., Troy, Michigan.

**1.2 MATERIALS**

- A. Exterior Sealants.
1. Vertical Surfaces: Silicone or urethane. ASTM C920, Type S, Grade NS, Class 25, Use M, A, or O, as applicable.
  2. Horizontal Surfaces in Traffic Areas: Urethane. ASTM C920, Type S or M, Grade P, Class 25, Use T. Grade NS, Use T, in areas with slopes exceeding 1 percent.

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- B. Interior Sealants. **LOW VOC PER EXHIBIT A**
  - 1. Vertical Surfaces, Movement Anticipated: Silicone or urethane. ASTM C920, Type S, Grade NS, Class 25, Use M, A, or O, as applicable.
  - 2. Horizontal Surfaces in Traffic Areas: Urethane. ASTM C920, Type S or M, Grade P, Class 25, Use T. Grade NS, Use T, in areas with slopes exceeding 1 percent.
  - 3. Horizontal Surfaces in Nontraffic Areas: ASTM C920, Type S, Grade P, Class 25, Use NT. Grade NS, Use NT, in areas with slopes exceeding 1 percent.
  - 4. Vertical and Horizontal Surfaces in Humid Areas: ASTM C920, Type S, Grade NS, Class 12-1/2, Use O.
  - 5. Vertical and Horizontal Surfaces, Dry Areas Only, No Movement Anticipated: Single component water-based latex, paintable, ASTM C834.
- C. Joint Fillers. **LOW VOC PER EXHIBIT A**
  - 1. ASTM C962, Type A, rod stock closed cell polyethylene foam, closed cell neoprene foam, or open cell urethane foam, recommended by sealant manufacturer for compatibility with sealant and primer.
    - a. Polyethylene: Ethafoam SB by Dow Chemical.
    - b. Neoprene: Neocord by Williams Products.
    - c. Urethane: Denverfoam by Backer Rod Manufacturing and Supply.
- D. Bond Breaker Tape.
  - 1. Colored polyethylene pressure sensitive tape, minimum thickness 0.012 inch.
- E. Primer.
  - 1. Use primer if sealant manufacturer recommends it for anticipated substrates and environmental conditions. If manufacturer or COR decides that adhesion tests are necessary to determine primer use, send substrate samples to sealant manufacturer with copy of transmittal to COR. Testing will not be at Contractor's expense.
- F. Fire Barrier sealants – per manufactures recommended installation specifications, Select fire barrier sealant, pipe sleeves, etc.. to comply with fire rated assemblies as described on the drawings.

**2.1 HANDLING**

- A. Provide all materials required to complete the work as shown on drawings and specified herein. Deliver, store, and transport materials to avoid damage to the products or to any other work and as per the General Conditions.
- B. Have on hand and ready for installation in coordination with roofing, all accessories such as relief vents, expansion joints, etc.

**PART 3 – EXECUTION**

**3.1 APPLICATION**

- A. Install in accordance with all manufacturer’s recommendations and requirements.

END OF SECTION

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DIVISION 8 – WINDOWS AND DOORS

Sections included:

Section 08117 – Prefinished STEEL DOOR Frames

Section 08200 – WOOD and METAL DOORS

Section 08600– VINYL WINDOWS AND WINDOW/DOOR BLINDS

Section 08700 - HARDWARE

**08117 – PREFINISHED STEEL DOOR FRAMES**

**PART 1 – GENERAL**

**1.1 SECTION INCLUDES**

- A. Non-rated and fire rated shop pre-finished, site assembled steel frames.

**1.2 RELATED SECTIONS**

- A. Section 01040 – Project Coordination.
- B. Section 01600 – Materials and Equipment
- C. Section 08100 – Metal Doors.  
Section 08200 - Wood Doors.
- D. Section 08700 - Hardware.
- E. Section 08800 – Glazing.

**1.3 REFERENCES**

- A. ASTM A1008M – Standard for cold rolled material
- B. 2006 IBC Positive Pressure
- C. ASTM D2197 - Standard Test Method for Adhesion of Organic Coatings by Scrape Adhesion.
- D. ASTM D2247 - Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.
- E. ASTM D2794 - Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
- F. ASTM D3361 - Standard Practice for Unfiltered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.
- G. ASTM E152 - Methods of Fire Tests of Door Assemblies.
- H. ASTM B117 – Standard test for salt spray testing
- I. NFPA 80 - Fire Doors and Windows.
- J. NFPA 252 – 1995 Fire Tests for Door Assemblies.
- K. ITS (WH) - Fire Tests of Door Assemblies.
- L. UL 10B – Fire Tests of Door Assemblies.

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- M. UL 10C – Positive Pressure Fire Tests of Door Assemblies.

**1.4 SUBMITTALS FOR REVIEW**

- A. Section 01300 - Submittals
- B. Product Data: Indicate frame configuration and finishes.
- C. Shop Drawings: Indicate frame elevations, reinforcement required, and spacing, location of embosses for hardware, and finish.
- D. Samples: Submit three standard frame samples, illustrating factory finished frame colors and surface texture.
- E. Manufacturer's Installation Instructions: Indicate special installation instructions.
- F. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

**1.5 QUALITY ASSURANCE**

- A. Installers:
  - 1. Individuals that are “Certified Prefinished Frame Installers” for the installation of site assembled door frames.
  - 2. Refer to manufacturer’s Internet web site for listing of Certified installers.

**1.6 REGULATORY REQUIREMENTS**

- A. Fire Rated Frame Construction: Conform to ASTM E152 NFPA 252 UL 10B and 10C.
- B. Installed Frame Assembly: Conform to NFPA 80 for fire rated class same as fire door.

**1.7 DELIVERY, STORAGE, AND PROTECTION**

- A. Section 01600: Transport, handle, store, and protect products in a dry area off the ground.
- B. Accept frames on site in manufacturer's box packaging with identification labels intact. Inspect for damage.
- C. Do not open individual boxes until installation is to begin.

**1.8 PROJECT CONDITIONS**

- A. Section 01040 - Project Coordination.
- B. Verify actual measurements/openings by field measurement prior to fabrication.
- C. Coordinate the work with frame opening construction, door and hardware installation.

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- D. Sequence installation to ensure concealed electric wire connections are achieved in an orderly and expeditious manner.

**PART 2 PRODUCTS**

**2.1 FRAME MANUFACTURERS**

- A. Timely Industries, A Division of SDS Industries, Inc., 10241 Norris Avenue, Pacoima, CA, 91331-2292; Phone toll free: 800-247-6242 or local at 818-492-3500; Fax: 818-492-3530. Web site: [www.timelyframes.com](http://www.timelyframes.com). **OR**
- B. RediFrame Door Frames: Contact: 1101 Technology Drive, Dothan, AL 36303; Telephone: (800) 633-7553, (334) 794-0661; Fax: (334) 793-9184; E-mail: [sales@dunbarton.com](mailto:sales@dunbarton.com); website: [www.dunbarton.com](http://www.dunbarton.com).
- C. Frames: Provide all frames for project from same manufacturer.
  - 1. Fire Rated Standard Frames as noted in Door Schedule.
  - 2. Coordinate with Door Hardware Schedule for other related Weatherstripping and Smoke Gasketing
  - 3. Colors to be selected from Manufacturer's Standard Colors.

**2.2 FRAMES – RATING PER DRAWINGS DOOR SCHEDULE**

- A. Frame Material: Header and Jamb Members: Form interior door frames of ASTM A366 commercial quality cold rolled steel. Form exterior door frames of galvanized steel (A40) per ASTM A653. Provide frames in the following gages:
- B. Provide metal frames as per Drawings and Door Schedule. Welded frames with mitered corners. 20 gauge steel for exterior doors. Reinforced for finish hardware.
- C. Frame Throat Opening: to suit finished wall thickness.
- D. Frame Profile: Non-rated and fire rated.
- E. Frame Casings:
  - 1. Material: Steel casings with corner alignment clips.
  - 2. Type
    - a. Standard Steel Type: Model TA-8 with 6 mm (1/4 inch) reveal, on steel frames OR Standard Steel. Fit factory assembled units with MiterGard corner alignment clips.

**2.3 ACCESSORIES**

- A. Reinforcement Bracket for Closer: Regular arm closer, Model TA-10.
- B. Reinforcement Brackets for Rim Exit Device: Model TA-12
- C. Reinforcement Brackets for Door Guards: Model TA-10

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- D. Weatherstripping: [Specified in Section 08700 Adhesive backed fire-rated seal, self-extinguishing rubber. Model TA-51, Blackcolor and/or Adhesive backed fire-rated Intumescent seal, high volume multi-directional expandable graphite. Model TA-50, can be painted to match any door jamb color.
- E. Silencers: Specified in Section 08700. vinyl, clear stick-on type.
- F. Glass Stops: Model TA-14 removable rolled steel, shape, butted ends, countersink style and screws.
- G. Fasteners:
  - 1. Interior Frames: Drywall type.
  - 2. Exterior Frames: Drywall type, corrosion resistant coating at exterior frames.
  - 3. Site Applied Wood Trim: Finish type.

### **2.4 FABRICATION**

- A. Openings for single swing frame, pair framed for 20 minutes.
- B. Casing Clips: Fabricate frames with factory applied heated treated clips.
- C. Transom Bars: Fixed type same profiles as jamb and head.
- D. Fabricate frames with hinge reinforcement plates secured in place.
- E. Attach fire rated label to each fire-rated frame.
- F. Silencers:
  - 1. Install clear stick on silencers on the header and strike jamb. Single door opening, 1 per header, 2 per strike jamb. Pair door opening, 2 per header.
- G. Configure exterior frames with special profile to receive recessed weatherstripping.

### **2.5 FINISH**

- A. Frame Units: Prefinished with factory applied impact resistant, polyester baked enamel finish.
- B. Frames for Exterior Units: Electro Galvanized Prefinished with factory applied impact resistant, polyester baked enamel finish.
- C. Casing:
  - 1. Steel: Prefinished with factory applied impact resistant, polyester baked enamel finish.
- D. Primer: Primer Electro Galvanized.
- E. Colors:

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1. Owner and Architect to select, see 01300 – Submittals

**PART 3 EXECUTION**

**3.1 EXAMINATION**

- A. Verify acceptability of existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.

**3.2 INSTALLATION**

- A. Install frames in accordance with manufacturer's requirements.
- B. Install Prefinished frames near end of the project after completing wall painting and wall coverings.
- C. Install frames using Certified Installers.
- D. Coordinate installation of glass and glazing in glazed units.
- E. Coordinate installation of frames with installation of hardware specified in Section 08700 - Hardware and doors in Section 08100 and 08200.
- F. Touch-up blemishes on finished frames.

END OF SECTION



**08200 – WOOD and STEEL (MTL CLAD)**

**PART 1 – GENERAL**

**1.1 SUMMARY**

- A. Provide wood and metal doors complete with hardware where shown on the Drawings and as specified herein. Provide and install all door hardware as shown on schedules and as specified herein.

**1.2 QUALITY STANDARDS**

- A. Provide experienced well-trained workers competent to complete the work as specified.
- B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.
- C. Comply with standards of the Architectural Woodwork Institute for the grades specified.

**1.3 SUBMITTALS**

- A. Submit the following within 30 calendar days after receiving the Notice to Proceed.
  - 1. Submit list of materials to be provided for this work.

**1.4 MATERIALS HANDLING**

- A. Provide all materials required to complete the work as shown on Drawings and specified herein. Deliver and transport materials to avoid damage to the product or to any other work. Return any products or materials delivered in a damaged or unsatisfactory condition. Materials and products delivered will be certified by the manufacturer to be as specified.
- B. Comply with recommendations and standards of the Architectural Woodwork Institute.

**PART 2 - MATERIALS –as noted in schedules in Construction Document**

**2.1 Hollow Core BEDROOM, CLOSETS, BATH, PANTRY, LAUNDRY, LINEN, STORAGE, FURNACE/WATER HEATER ROOM**

**Solid Core PATIO DOORS, STORAGE**

- A. Interior Doors: Jeld Wen, Masonite, Georgia Pacific, Weyerhaeuser, Curtis
  - 1. Style per drawings. Entry with Lite and ¾ lite
  - 2. Doors to be Smooth Pro, Fiberglass, Jeld Wen Model Craftsman or equal
- B. Doors must be factory primed.
- C. Doors to be available in 1-3/8" and 1-3/4", see Door Schedule for requirement.

**2.2 Metal Clad UNIT ENTRY DOORS, COORIDOR ENTRY DOORS AND INTERIOR MECH DOORS**

- A. Primed 24 Ga. Steel construction
  - a. See door schedule for style.
  - b. U.N.O., Doors to be Smooth Pro, Jeld Wen Model Panel Craftsman or equal
  - c. To be painted.
- B. Doors must be factory primed.
- C. Doors to be 1-3/4", see Door Schedule for requirement.

**PART 3 - EXECUTION**

**3.1 PRECONSTRUCTION AND PREPARATION**

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work.
- B. Do not allow door swings to conflict with electrical switches or outlets, wall guards or rails.

**3.2 INSTALLATION**

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- A. Mount frames and doors plumb, straight, and securely braced.
- B. Mounting tolerances: Bottom clearance, 1/2" maximum; top clearance, 1/8" maximum; lock and hinge edge, bevel at 1/8" in 2" maximum.
- C. Hang doors straight, plumb, smooth in opening and closing. Provide clearances below doors as necessary to allow for thresholds, weatherstripping, etc.
- D. Install fastenings and hardware as per Hardware Schedule and instructions of manufacturer.

**3.3 INSPECTION, REPAIR, AND TOUCH-UP**

- A. After installation, inspect all doors and frames to find and repair damaged surfaces. Repair or replace any damaged materials or improperly hung doors as directed by the Architect. Repair or replace any other materials damaged during installation. Any costs for replacing doors for non-compliance will be paid by the Contractor.
- B. Final door mounts shall be square, smooth operating, and plumb when doors are closed, partially open, and fully open.

END OF SECTION

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## **08600 – VINYL WINDOWS and WINDOW/DOOR BLINDS**

### **PART 1 – GENERAL**

#### **1.1 SUMMARY**

- A. This section includes all labor and material necessary and incidental to the installation of all Vinyl Windows and Sliding Doors.

#### **1.2 SUBMITTAL**

- A. See Division 01, General Requirements, for general shop drawing and submittal requirements
- B. Submit shop drawings showing elevations, sections, dimensions, details of construction, methods of anchorage and installation, and other pertinent information.

### **PART 2 - PRODUCTS**

#### **2.1 MANUFACTURED UNIT**

- A. Vinyl units as manufactured by Ply Gem or Jeld Wen. Alpine is not acceptable. COLOR: ALMOND. required U=.30.
- 1) ALL WINDOWS and patio / deck DOORS REQUIRE aluminium BLINDS, COLOR LIGHT ALABASTER. Provide on all exterior windows within Living Units the following; 1” Aluminum Mini Blinds from manufacturer’s full range of colors. The following performance specification must be met.
  - A. 1" x 1" metal headrail
  - B. 1" x 6 gauge curved aluminum slats
  - C. Clear lucite wand and color coordinated tassels
  - D. Standard braided cord ladders
  - E. Choice of right or left side controls
  - F. Includes mounting hardware
  - G. Conforms with C.P.S.C. child safety guidelines
  - H. Limited lifetime warranty
- B. **Safety Glazing: ALL locations as required per IBC 2012 Section Safety Glazing. EGRESS: see plans**

#### **2.2 COMPONENTS, HARDWARE, AND FINISH**

- A. Components, including but not limited to Screens for all windows, Hardware and Finish per Owner and Architect. Provide shop drawings and submittals. Owner to select.

### **PART 3 - EXECUTION**

#### **3.1 INSTALLATION**

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- A. Install windows and doors in accordance with manufacturer's recommendations and approved shop drawings to achieve weathertight and freely operating installation.
- B. Maintain alignment with adjacent work. Secure assembly to framed openings, plumb and square, without distortion.
- C. Place insulation in shim spaces around unit perimeter to maintain continuity of building thermal barrier.
- D. Install sealant and related backing materials at perimeter of assembly.
- E. Leave window units closed and locked.

**3.2 FIELD TESTING**

- A. Windows shall be field-tested in accordance with AAMA 502, using Test Method A.

**3.3 FINAL CLEANING**

- A. Clean window frames and glass in accordance with Division 1 requirements.
- B. Remove labels and visible markings.

END OF SECTION

**08700 - HARDWARE**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Submit (5) copies of hardware schedule and keying information. Prepared by or under the supervision of AHC, supplier, detailing fabrication and assembly of door hardware, as well as procedures. Coordinate the final Door Hardware Schedule with doors, frames and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
- B. Provide and install finish hardware where shown on the Drawings and as specified herein.
- C. Provide and deliver finish hardware as required to be factory installed. Unless approved by the Architect, provide all products from one manufacturer.

**1.2 QUALITY STANDARDS**

- A. Provide experienced, well-trained workers competent to complete the work as specified.
- B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.

**1.3 SUBMITTALS**

- A. Submit the following within 30 calendar days after receiving the Notice to Proceed.
  - 1. Submit list of materials to be provided for this work.
  - 2. Submit manufacturer's data required to prove compliance with these Specifications.
  - 3. Submit manufacturer's installation instructions.
  - 4. Submit Shop Drawings with complete details and assembly instructions.

**1.4 MATERIALS HANDLING**

- A. Provide all materials required to complete the work as shown on Drawings and specified herein. Deliver and transport materials to avoid damage to the product or to any other work. Return any products or materials delivered in a damaged or unsatisfactory condition. Materials and products delivered will be certified by the manufacturer to be as specified.
- B. Store materials safely to avoid damage or exposure to dust or moisture and locate to expedite the work.

**PART 2 - MATERIALS**

**2.1 HARDWARE**

- A. Door Hardware: As indicated in the Schedule at the end of this section.
- B. Contractor is to install new key-ways in door hardware.

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- C. Abbreviations: (ST) Stanley, (LC) LCN, (GJ) Glynn Johnson, (TR) Trimco, (PE) Pemko, (HA) Hager, (FA) Falcon,
- D. Hardware to comply with all ADA Standards
- E. Provide hardware as shown on the Drawings. All finishes being satin chrome.

**DOOR HARDWARE SCHEDULE or APPROVED EQUAL**

See Construction Drawings, Schedule Sheet for all Hardware.

**2.2 KEYING**

- A. Provide complete locks and key system as shown on Hardware Schedule and specified herein.
- B. Common Locks to be individual key for each resident room with master key for all common locks
- C. See drawings for Magnetic Lock details and Locations.
- E. Provide factory key and masterkey locks and cylinders.
  - 1. Number of keys for each lock: 4
  - 2. Number of masterkeys: 4
  - 3. Coordinate keys with Guardian Angel Homes' requirements.
- F. Provide construction masterkey system. Upon Substantial Completion, change all construction locks, and install finish keying. Factory stamp keys: DO NOT DUPLICATE. Tag permanent keys, and provide certified delivery to the Owner. Provide a complete set of tools and maintenance manuals for all locks and operable hardware.

**2.4 CYLINDERS AND KEYING**

- A. Cylinders and Keying – Factory Master System cylinders and keys necessary for this project will be part of this specification per owner and Architect approved keying schedule provided by hardware supplier. Supplier to meet with owner, architect to review final keying requirements  
Applications:  
  
Residential single- and multi-family doors  
  
Certifications: ANSI A156.2, 1996, Series 4000 Grade 2  
  
U.L. Listed: Locks for up to three-hour fire doors available  
  
Exposed trim: Wrought brass. Levers are zinc based, plated to match finishes indicated  
  
Keying: 6-pin tumbler C keyway with two nickel silver keys  
  
Door thickness range: 1-3/8" to 1-3/4" (35mm-44mm) standard  
  
Backset: Coordinate latch standard of 2 ¾" backsets. 5", 2 3/8" backset available  
  
ADA compliant: Yes all locksets, clear openings, & thresholds.
- B. The General Contractor is to coordinate the work of his door and hardware supplier with the local locksmith to properly schedule and install cylinders and keying. The cost of the cylinders

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and keys shall be included in the Bid and in the Work provided by the General Contractor.

- B. Manufacturers: Subject to compliance with requirements, provide products by:
  - 1. Cylinders: BY LOCK MANUFACTURER
- C. Cylinders: Manufacturer's standard tumbler type, constructed from brass, stainless steel, or nickel silver, and complying with the following:
  - 1. Number of Pins: Six
  - 2. Mortise Type: Threaded cylinders with rings and straight- or clover-type cam as required.
  - 3. Rim Type: Cylinders with back plate, flat type vertical or horizontal tailpiece, and raised trim ring as required.
  - 4. Bored-Lock Type: Cylinders with tailpieces to suit locks.
- D. Permanent Cores: Manufacturer's standard; finish face to match lockset, complying with the following:
- E. Keying System: Unless otherwise indicated, provide a factory-registered keying system complying with the following requirements.
- F. Keys: Provide nickel-silver keys complying with the following:
  - 1. Stamping: Permanently inscribe key with visual key control number and include the following notation:
    - a. Notation: "DO NOT DUPLICATE."
  - 2. Quantity: In addition to one extra blank key for each lock, provide the following:
    - a. Master Keys: Five.

**PART 3 - EXECUTION**

**3.1 PRECONSTRUCTION**

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work.
- B. Store materials safely to avoid damage or loss.
- C. Temporarily remove or cover exposed hardware when painting or cleaning adjacent materials.
- D. Attach all hardware securely with fasteners made specifically for that hardware, without damage to hardware or fasteners.
- E. Match hardware type, size, and finish, all sets of fastenings, such as screws on hinge butts. Match all required screws to all screw-attached hardware, such as hinges.
- F. Set all flush-set hardware such as hinge butts so they are truly flush without any protrusion.

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- G. Install doors to open and close easily, without binding, quietly, with secure fit at latches and tight fit at frames.

**3.3 INSTALLATION - BUTTS AND HINGES**

- A. Provide and install butt hinges as shown in Hardware Schedule and as specified herein. Plain bearing 3.5 x 3.5 for HC doors 1 3/8", & ball bearing 4.5 x 4.5 for 1 3/4" doors.
- B. Install as per manufacturer's instructions. Where butt hinges will swing 180 degrees, use hinges with adequate throw to clear the door trim.

**3.4 INSTALLATION - LOCKSETS, LATCHES, AND KEYS**

- A. Install locksets as per manufacturer's instructions. Install cylinder cores with tumblers set upward.
- B. Carefully guard master keys during construction. Remove construction locks, and install permanent locks. Match up locks and tagged keys after installing all units. Verify that all keys and locks operate smoothly without effort.
- C. Deliver keys and instructions to owner, all checked with door locks.

**3.5 INSTALLATION - DOOR CLOSERS**

- A. Install per manufacturer's instructions, with special attachments as required for wood or metal doors. Install closer fasteners straight, true, and undamaged.
- B. After adjustment, verify that door closers operate smoothly at correct speed, without noise, firmly to close and latch doors. Verify that door arms of closers are straight out when doors are closed.

**3.6 INSTALLATION - PLATES, DOOR STOPS, AND HOLDERS**

- A. Install door stops as per manufacturer's instructions. Install stops of correct type and in correct positions to fully protect adjacent surfaces.
- B. Install push-, pull-, and kickplates according to door manufacturer's instructions.

**3.7 INSTALLATION - MISCELLANEOUS HARDWARE AND ACCESSORIES**

- A. Install weatherstripping as per manufacturer's instructions to create a secure seal against air infiltration. Provide and install acoustic strips to create a secure sound seal.
- B. Keep hardware clean. After installation, protect finishes from physical and chemical damage. Clean and protect all hardware as recommended by manufacturers. Replace or make undetectable repairs to damaged materials or finishes.

END OF SECTION



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DIVISION 9 - FINISHES

Sections included:

Section 09250 – GYPSUM WALLBOARD

Section 09660 – RESILIENT FLOORING

Section 09680 – CARPET

Section 09900 – PAINTING

Section 09922 – GYPSUM BOARD TEXTURED FINISH

## **09250 - GYPSUM WALLBOARD**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Includes But Not Limited To -
  - 1. Furnish and install gypsum wallboard on interior walls and ceilings to receive applied finishes as described in Contract Documents.
  - 2. Furnish and install gypsum backer board with fire taping for acoustical tile or in unexposed areas.
  - 3. Furnish and install RC-1 Channel (Resilient Sound Channel) to sound walls / ceilings per the construction plans.
  
- B. Related Sections -
  - 1. General Conditions and Division 01 apply to this section

#### **1.2 QUALITY STANDARDS**

- A. Provide experienced, well-trained workers competent to complete the work as specified.
  
- B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.
  
- C. All work shall comply with manufacturer's instructions and governing building and safety codes.

#### **1.3 MATERIALS HANDLING**

- A. Provide all materials required to complete the work as shown on Drawings and specified herein.
  
- B. Deliver, store, and transport materials to avoid damage to the product or to any other work. Return any products or materials delivered in a damaged or unsatisfactory condition. Materials and products delivered will be certified by the manufacturer to be as specified.

#### **1.5 PRECONSTRUCTION AND PREPARATION**

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work. Confirm there is no conflict between this work and governing building and safety codes. Confirm there are no conflicts between this work and work of other trades. Confirm that work of other trades that must precede this work has been completed. Meet all requirements to secure any applicable warranty.

### **PART 2 - MATERIALS**

#### **2.1 GYPSUM WALLBOARD**

- A. Gypsum wallboard shall meet requirements of ASTM C 36-85 (1988), "Specification for Gypsum Wallboard", Type X, UL one-hour rated. 5/8 inch thick tapered edge. Face paper suitable for

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painting. NOTE It is acceptable to use ½" thick drywall at all locations "not required" to be a fire rated assembly.

1. Provide boards in 8 foot or other lengths to minimize construction joints.
- B. Use Grade X, Class 1, 5/8" thick Fire Retardant wallboard unless otherwise specified in the Drawings or below IN C.
- C. For walls in contact with Bathrooms
1. Meet requirements of ASTM C 630-85, "Specification for Water-Resistant Gypsum Backing Board", Type "X"
  2. Install pre rock on fire walls prior to install of tubs / showers.
- D. Water-resistant wallboard: Type VII, Grade W or X as required, Class 2, 5/8" thick.
- E. Provide seals for sound and thermal insulation at: floor plates, top plates, connection to adjacent walls/pilasters/columns, and all cutouts.
- F. Provide and install RC-1 Channel to sound walls as indicated in the plans per manufacturer installation guidelines. RC-1 Channel will be visually inspected by the Architect prior to covering the work.

### **Applicable Standards and References**

ASTM C754 Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products

ASTM C840 Standard Specification for Application and Finishing of Gypsum Board  
Gypsum Association GA-216

### **Job Compliance Considerations**

Framing and furring members shall be installed as required to meet design or building code loading requirements.

Where a rated system is specified for the project, the rated system must be followed.

### **Ceiling Installation**

#### **General Guidelines**

RC-1 resilient Channel should be installed at right angles to the joists or trusses 16" (406 mm) center on center when the joists or trusses are 24" (610 mm) on center. When the joists or trusses are 16" (406 mm) on center the resilient channel can be installed up to 24" (610 mm) center on center. See Table 1 on Page 2 from Gypsum Association GA-216-2007 for Maximum Framing Spacing For Single-Layer Gypsum Panel Product.

Start applying the resilient channel with the center a maximum of 6" (150 mm) from the wall. On ending at the other side stop the last course of resilient channel a maximum of 6" (150 mm) from the wall. When using RC-1 resilient channel on the ceiling have the open side all going the same direction. On ending at the other side stop the last course of resilient channel a maximum of 6" (150 mm) from the wall. This may require the spacing between the last two rows to be less than 16" (406 mm) or 24"

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(610 mm) whichever is being used. Stop the resilient channel at least 1" (25 mm) from the adjacent wall.

### **Fastening Guidelines**

To fasten the resilient channel to wood studs use 1-1/4" (32 mm) Type W or 1-1/4" (32 mm) Type S screws. For steel joists or trusses 3/8" (9.5 mm) Type S pan head screws should be used. Nails are not recommended. To fasten the drywall board to the resilient channel use 1" (25 mm) Type S Buglehead screws every 12" (305 mm). Screws should not come in contact with the stud, joist or truss. A maximum of two 5/8" (15.9 mm) boards should ever be fastened to resilient channel.

### **Splicing Guidelines**

Splice channels directly over a joist or truss by nesting the two channels at least 4" together prior to driving screws through the flanges of both channels.

### **Wall Installation**

#### **General Guidelines**

RC-1 resilient channel should be installed at right angles to the studs spaced no more than 24" (610 mm) center to center. The mounting flange should be down as this allows the board to keep the resilient channel open on top permitting the resilient channel to do the best job possible. A layer of gypsum board 1/2" (12.7 mm) x 3" (76 mm) can be installed instead of the RC-1 at the bottom of the wall. The row closest to the floor should be no further from the floor than 2" (50 mm) and it may be installed flange up for ease of installation. The row of resilient channel closest to the ceiling should be no further than 6" (150 mm) away from the ceiling. All of the resilient channel needs to be 1" (25 mm) away from the adjoining wall. See Table 1 on Page 2 from Gypsum Association GA-216-2007 for Maximum Framing Spacing For Single-Layer Gypsum Panel Product.

#### **Fastening Guidelines**

To fasten the resilient channel to wood studs use 1-1/4" (32 mm) Type W or 1-1/4" (32 mm) Type S screws. For steel joists or trusses 3/8" (9.5 mm) Type S pan head screws should be used. Nails are not recommended. To fasten the drywall board to the resilient channel use 1" (25 mm) Type S Buglehead screws every 12" (305 mm). Screws should not come in contact with the stud, joist or truss. A maximum of two 5/8" (15.9 mm) boards should ever be fastened to resilient channel.

#### **Splicing Guidelines**

Splice channels directly over a joist or truss by nesting the two channels at least 4" together prior to driving screws through the flanges of both channels.

## **2.2 METAL TRIM AND ACCESSORIES**

- A. Metal Trim: Zinc-coated steel 26-gauge min., as per Federal Specification QQ-S-775, Class d or e.
- B. Casing beads: Channel-shapes with exposed wing, and concealed wing not less than 7/8" wide.
- C. Corner beads: Angle shapes with wings not less than 7/8" wide: Perforated for nailing and joint treatment. Or use paper/metal combination bead suitable for joint treatment.
- D. Edge beads at ceiling perimeter: Angle shapes with wings 3/4" wide minimum.

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Concealed wing perforated for nailing, exposed wing edge folded flat.

### **2.3 JOINTING**

- A. Jointing system with reinforcing tape and compound as supplied or recommended by the gypsum wallboard manufacturer.

### **2.4 FASTENINGS**

- A. For gypsum wallboard attached to metal framing and channels: Flat-head screws, 1" long minimum. Self-tapping threads and self-drilling points. Specifically designed for use with power-driven tools.
- B. For gypsum wallboard attached to wood: 1-1/4" type W bugle-head screws.
  - 1. Alternate: Annular ring nails complying with ASTM C514.
- C. Nail sizes as required by governing building code.

### **2.5 ACCESS DOORS AND PANELS**

- A. Install access doors and panels where shown on Drawings and approved by the Architect. Install as necessary for maintenance access to mechanical and electrical work.

## **PART 3 - EXECUTION**

### **3.1 PREPARATION**

- A. Preparation and coordination: Install blocking and backups to support all edges of wallboard. Verify that wood framing to receive wallboard is dry and not subject to shrinkage.
- B. Keep wallboard materials dry and protected from moisture. Store wallboard materials so they are protected from damage to surfaces and edges. Maintain interior work environment closed in, not exposed to weather, clean, dry, well-ventilated, well-lighted, and comfortable in temperature.
- C. Keep work of trades such as conduit, pipe, and ducts clear of the inside faces of wall panels.

### **3.2 INSTALLATION**

- A. Install as per manufacturer's instructions, trade association standards, and governing building code.
- B. If there is a conflict between instructions, standards, code, etc., install as instructed by the Architect.
- C. For walls and ceilings: Hold wallboard 3/8 inch to 1/2 inch up from floor. Install wall panels horizontally unless otherwise required. Stagger panel joints vertically.

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- D. Nailing and screw attachment as per manufacturer's instructions. Do not position conduit and piping where it can be damaged by nailing. Do not proceed with nailing into wood framing that has over 19% of moisture content.
- E. Thoroughly seal penetrations in fire-rated walls. Box in recesses in fire-rated walls. Make cutouts for electrical outlets, switch boxes, pipe, etc., tightly to size.
- F. Taping and spackling must follow applicable trade standards and manufacturer's instructions throughout. Keep temperature above specified minimum (usually 55 degrees). Do not track gypsum and spackle dust to clean areas.
- G. Joint treatment must follow applicable trade standards and manufacturer's instructions throughout. Gypsum wallboard must fit completely snugly against supporting framework. Joint work shall be at a minimum of 55 degrees F. for 24 hours prior to work.

**3.3 ACCESS DOORS**

- A. Install access doors in coordination with other work and as approved by the Architect. Anchor access doors firmly into position. Install access doors to be completely straight, flush, and aligned with finished surface.

**3.4 METAL TRIM**

- A. Provide all metal trim as required to complete the work. Securely nail corner beads with required type and size nails starting 2 inches from each end. Space and stagger as required by wallboard system manufacturer.

**3.5 CLEANING AND REPAIR**

- A. Do not allow tracking of gypsum and finishing compounds onto floor surfaces. At completion of each segment of work in a room, clean thoroughly and remove all debris. Frequently remove all debris from site. Make a final check to determine that there are no penetrations through fire-rated walls.
- B. Recheck work for necessary repairs that may be required before painting or other added work. Complete repairs as directed by the Architect.

END OF SECTION

**09660 - RESILIENT FLOORING**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Includes all labor and material necessary and incidental to the execution and installation of all resilient floor covering and resilient base, as detailed and specified herein.
- B. Standard Specifications: All work to be done in strict accordance with manufacturer's printed specifications in the best practice of the industry.

**1.2 QUALITY STANDARDS**

- A. Provide experienced, well-trained workers competent to complete the work as specified.
- B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.
- C. All work shall comply with manufacturer's instructions and governing building and safety codes.

**1.3 SUBMITTALS**

- A. Submit the following within 30 calendar days after receiving the Notice to Proceed.
  - 1. Submit list of materials to be provided for this work.
  - 2. Submit manufacturer's specifications required to prove compliance with these specifications.
  - 3. Submit manufacturer's installation instructions.
  - 4. Submit Shop Drawings as required with complete details and assembly instructions.
  - 5. Submit Shop Drawings showing relationship and interface with adjacent or related work.
  - 6. Submit samples of proposed exposed finishes and hardware for approval by the Architect.

**1.4 MATERIALS HANDLING**

- A. Provide all materials required to complete the work as shown on Drawings and specified herein.
- B. Deliver, store, and transport materials to avoid damage to the product or to any other work. Return any products or materials delivered in a damaged or unsatisfactory condition. Materials and products delivered will be certified by the manufacturer to be as specified.
- C. Store materials in a safe, secure location, protected from dirt, moisture, contaminants, and weather.

**1.5 PRECONSTRUCTION AND PREPARATION**

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work. Confirm there is no conflict between this work and governing building and safety codes. Confirm there are no conflicts between this work and work of other trades. Confirm that work of other trades that must precede this work has been completed. Meet all requirements to secure any applicable warranty.

**PART 2 - MATERIALS**

## **2.1 FLOORING AND ACCESSORIES**

- A. **RF1,**
  - a. See Construction Document Finish Plans for information.
  - b. ¼" Underlayment required. Per Manufacturers Instructions. If not on Lightweight concrete topping or slab on grade.
    - 1. Maintenance Products: Per Manufacturer recommendations
    - 2. Do not install seams over expansion joints.
    - 3. Warranty: Manufacturers Full Warranty
  - c. Rubber Base: 4" rubber base cove molding. ONLY Where noted in Drawings.
    - 1. Conform to Federal Specification SS-W-40a approved manufacturers. Johnsonite or "equal" as approved by architect prior to bidding. Provide in 4" heights unless otherwise shown on contract Drawing. See details for condition of installation
    - 2. Provide and install in as long a length as is practical. Short lengths will not be accepted.
    - 3. Color: Color selections will be made from the manufacturer's standard color.
- B. **RF2,**
  - a. See Construction Document Finish Plans for information.
  - b. ¼" Underlayment required. Per Manufacturers Instructions. If not on Lightweight concrete topping or slab on grade.
    - 1. Maintenance Products: Per Manufacturer recommendations.
    - 2. Do not install seams over expansion joints.
    - 3. Warranty: Manufacturers Full Warranty
  - c. Color: Color selections will be made from the manufacturer's standard color.
- C. **RF3,**
  - a. See Construction Document Finish Plans for information.
  - b. ¼" Underlayment required. Per Manufacturers Instructions. If not on Lightweight concrete topping or slab on grade.
    - 1. Maintenance Products: Per Manufacturer recommendations.
    - 2. Do not install seams over expansion joints.
    - 3. Warranty: Manufacturers Full Warranty
  - c. Rubber Base: 4" rubber base cove molding. ONLY Where noted in Drawings.
    - 1. Conform to Federal Specification SS-W-40a approved manufacturers. Johnsonite or "equal" as approved by architect prior to bidding. Provide in 4" heights unless otherwise shown on contract Drawing. See details for condition of installation
    - 2. Provide and install in as long a length as is practical. Short lengths will not be accepted.
    - 3. Color: Color selections will be made from the manufacturer's standard color.

## **PART 3 - EXECUTION**

### **3.1 PREPARATION**

- A. Subfloor or substrate shall be smooth and at required finish elevation. No more than 1/8" in 10'-0" deviation from level or slopes shown on Drawings. Sweep or vacuum clean substrate and inspect for smoothness and any needed repairs.

### **3.2 INSTALLATION**

- A. Provide adhesives, primers, crack sealers, and latex underlayment as recommended by manufacturer of material to be installed.



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- B. Install flooring after other finish work such as painting is completed and the building's heating system is operational.
- C. Provide edging, thresholds, and other accessories as required and detailed on the Contract Drawings. See details for special conditions. If other material is not indicated on the Contract Drawings, provide resilient edge strip at all locations where change in floor covering is made of resilient flooring to exposed concrete.
- D. Resilient Flooring:
  - 1. Immediately prior to installation, thoroughly clean base of dirt, grease, oil, paint, curing compounds, or any other material, which will adversely affect a first-class installation. Remove hardeners unless manufacturer's specifications clearly indicate that hardener material is acceptable for receiving adhesive applied floor covering.
  - 2. Install true, level, and even with tight joints parallel to main walls of structure, starting from center line of room to pattern.
  - 3. Fit accurately to edges and in closets, corners, and around permanent fixtures, fitting to breaks and recesses, against bases, around pipes, and under saddles.
  - 4. Install edging material where resilient flooring terminates and a neutral dividing strip at doors where different colors occur in adjoining rooms, if required.
  - 5. Clean.
- E. Rubber Base:
  - 1. Prior to installation of base, carefully examine wall for any voids between wall surface and floor. Fill any existing voids completely with hard surface material to provide solid backing for full height of base.
  - 2. Set base firmly to wall with recommended adhesive, applied full surface to back in accordance with the manufacturer's printed instructions. Install in as long a length as practical. Form in and out angles tightly, neatly, and accurately to door jambs and casings. Apply where shown on Drawings and at all fixed casework.

**3.3. CLEANING AND FINISHING**

- A. Only use cleaner recommended by the flooring manufacturer. Remove excess adhesive and other marks or stains from finish flooring. Remove all stains and excess adhesive immediately after installation.
- B. Leave factory finish unless otherwise required. Do new finishing such as waxing strictly according to manufacturer's instructions.

END OF SECTION

**09680 – CARPET**

**PART 1 – GENERAL**

**1.1 SUMMARY**

- A. Includes But Not Limited To -
  - 1. All labor and material necessary and incidental to the installation of all carpeting as specified herein and indicated on the contract drawings.

**1.2 QUALITY STANDARDS**

- A. Provide experienced, well-trained workers competent to complete the work as specified.
- B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.
- C. All work shall comply with manufacturer's instructions and governing building and safety codes.

**1.3 SUBMITTALS**

- A. Submit the following within 30 calendar days after receiving the Notice to Proceed.
  - 1. See Division 01, General Requirements, for general shop drawing and submittal requirements.
  - 2. Submit list of materials to be provided for this work.
  - 3. Submit manufacturer's specifications required to prove compliance with these specifications.
  - 4. Submit manufacturer's installation instructions.
  - 5. Submit Shop Drawings as required with complete details and assembly instructions.
  - 6. Submit Shop Drawings showing relationship and interface with adjacent or related work.
  - 7. Submit samples of proposed exposed finishes and hardware for approval by the Architect.

**1.4 MATERIALS HANDLING**

- A. Provide all materials required to complete the work as shown on Drawings and specified herein.
- B. Deliver, store, and transport materials to avoid damage to the product or to any other work. Return any products or materials delivered in a damaged or unsatisfactory condition. Materials and products delivered will be certified by the manufacturer to be as specified.
- C. Store materials in a safe, secure location, protected from dirt, moisture, contaminants, and weather.

**1.5 PRECONSTRUCTION AND PREPARATION**

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work. Confirm there is no conflict between this work and governing building and safety codes. Confirm there are

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no conflicts between this work and work of other trades. Confirm that work of other trades that must precede this work has been completed. Meet all requirements to secure any applicable warranty.

- B. Notify Architect when work is scheduled to be started and completed.

**PART 2 – MATERIALS – LOW VOC PAD AND ADHESIVES.**

**2.1 CARPET (CPT1, CPT2)**

- 1. CPT 1: with pad, see also note #3 below  
See Finish Plans in the Construction Document for locations.
  - Include Pad for all main level units except ADA unit
  - Color to be selected from full range
  - Backing by Manufacturer
  - a. **Manufacturer's Warranties**  
as allowed for Multi-Family Housing
- 2. CPT 2: no pad  
See Finish Plans in the Construction Document for locations.
  - Color to be selected from full range
  - Backing by Manufacturer
  - a. **Manufacturer's Warranties**  
as allowed for Multi-Family Housing
- 3. ADA Units to use direct Glue Down, no pad.

**PART 3 - EXECUTION**

**3.1 PREPARATION**

- A. Order carpet in ample time for scheduled installation.
- B. Verify that materials are delivered undamaged. Store well protected from weather, moisture and construction dirt and damage.
- C. Inspection and Cleaning of Subfloors:
  - 1. This carpet subcontractor shall inspect the subflooring before commencement of work, and shall notify general contractor in writing, with a copy to Architect, of any conditions that will prevent him from producing satisfactory finished work.
  - 2. Carpet subcontractor shall broom clean and prepare floor for satisfactory condition to receive carpet. The installation of carpet shall be an indication of his acceptance of the subfloors.

**3.2 INSTALLATION**

- A. Install carpet so that all portions are laid in the same direction unless specifically directed by the Architect. There are no fill strips less than 6" wide.

- B. Seaming: Seams on carpet used in wall to wall installation shall be made a follows:
1. Adhere to floor using good quality carpet adhesive. **LOW VOC ADHESIVES**
  2. Apply a good quality seam adhesive to the edge of the carpet at the seam. The edges shall then be brought together to insure good contact. The carpet adhesive and seam adhesive shall be those recommended by the carpet manufacturer.
  3. Cross joints necessary due to length of rolls received shall be placed, in the cutting, to avoid occurrence at conspicuous locations, near doors, or at pivot points and must be approved by Architect prior to seaming.

### **3.3 CLEANING AND PROTECTION**

- A. Clean Up: Upon completion of the installation, contractor shall remove all waste and excess materials, all tools and equipment, and shall carefully and thoroughly vacuum clean the entire floor surface with an upright beater bar type vacuum cleaner to Architect's satisfaction.
- B. Protect all work from weather or moisture. Provide heavy duty non-staining paper, plastic, or board walkways as directed by the architect. Allow no damage to the carpet from traffic, spills, or other work. Damaged work will be replaced by the Contractor at no cost to the Owner. Replaced or repaired carpet will be undetectable.

### **3.4 REPAIR AND SURPLUS MATERIAL**

- A. Owner shall be supplied with a minimum of 5% of total yards of carpet for maintenance purposes. Maintenance carpet may be from scraps, but must meet the following minimum criteria:
1. No one piece shall be less than one square yard in area
  2. Minimum dimension in one direction shall not be less than 18"
  3. Pieces shall be rolled and clearly marked with size on back
- B. If more than one color is selected for the project, the square yard requirement shall be divided in a direct relationship to the amount of carpet and particular color which was installed.
- C. Repair or replace all defective and non-conforming work as directed by the Architect. Make repairs so they are undetectable.
- D. The carpet manufacturer shall submit to the owner three copies of complete manual of the manufacturer's maintenance recommendations for this particular carpet.
- E. Contractor shall, at his own expense, upon written notice form Architect, promptly and properly replace any and all improper work and material that may become apparent within 12 months after final approval as evidenced by the date of final completion.

END OF SECTION

**09900 - PAINTING**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Includes But Not Limited To -
  - 1. All labor and material necessary and incidental to the execution of all painting and finishing indicated on the Contract Drawings and specified herein
- B. The intent of the Section is to provide finish for all materials factory primed or unfinished unless specifically stated as not requiring finish. Omission of specific surfaces from "Schedule of Finishes" or "Room Finish Schedule" is not to be interpreted to mean that finish is not required and clarification should be requested from the Architect.
- C. No finish required on the following unless specifically called for on the Contract Drawings or in the "Schedule of Finishes" of this Section:
  - 1. Item having complete factory finish
  - 2. Copper, aluminum, stainless steel, bronze, or brass
- D. The Contractor shall be held responsible for the finished appearance and satisfactory completion of his work and therefore he shall not commence any painting until surface to be painted is in proper condition in every respect.
- E. All surfaces shall be cleaned, free of dirt, grease, and any foreign matter that would adversely affect the finished appearance or protective properties of the paint applied.

**1.2 QUALITY STANDARDS**

- A. Provide experienced, well-trained workers competent to complete the work as specified.
- B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.
- C. All work shall comply with manufacturer's instructions and governing building and safety codes.

**1.3 SUBMITTALS**

- A. Submit the following within 30 calendar days after receiving the Notice to Proceed.
  - 1. See Division 01, General Requirements, for general shop drawing and submittal requirements.
  - 2. Complete materials listing and manufacturer's printed information showing complete conformance to this Specification. Proposed substitution must show a direct comparison between the specified product and the proposed substitution.

**1.4 MATERIALS HANDLING**

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- A. Provide all materials required to complete the work as shown on Drawings and specified herein.
- B. Deliver, store, and transport materials to avoid damage to the product or to any other work. Return any products or materials delivered in a damaged or unsatisfactory condition. Materials and products delivered will be certified by the manufacturer to be as specified.
- C. Store materials in a safe, secure location, protected from dirt, moisture, contaminants, and weather.

**1.5 PRECONSTRUCTION AND PREPARATION**

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work. Confirm there is no conflict between this work and governing building and safety codes. Confirm there are no conflicts between this work and work of other trades. Confirm that work of other trades that must precede this work has been completed. Meet all requirements to secure any applicable warranty.

**PART 2 - MATERIALS**

**2.1 PAINT AND RELATED MATERIALS**

- A. BID shall be based on using first line products as manufactured by the following company for the following classifications of finish. Manufacturer and product listed and Schedule of Finish is for standard of quality and any manufacturer listed within the specific classification of finish will be approved. Where Schedule of Finish includes a classification of finish not listed below, substitution will be allowed only after submission to the Architect for approval a direct comparison of the specified finish with the proposed substitution.
  - 1. As manufactured ***Sherwin Williams*** OR approved equal if it can be locally purchased.  
Interior Paint Harmony Interior Acrylic Latex paint and primer  
Exterior Paint Super paint Exterior Acrylic Latex Paint and primer  
Concrete Sealer H&C Concrete Masonry Waterproofing Sealer
  - 2. **Project requires Low VOC paints, stains, finishes, adhesives, sealants and carpets.**  
**VOC Levels: Flats 50 g/l, non flats 50 g/l, floor 100 g/l**
  - 3. **All paint specified is required to be applied per manufactures recommendation for the material to be applied to.**
- B. All materials shall be applied in strict accordance with manufacturer’s printed instructions and any thinning required shall be done only in the manner prescribed by the manufacturer and exclusively with the type of reducer recommended by the manufacturer.
- C. Colors for all finish coats of paint shall be selected by the Architect. Color samples do not imply grade, type, or quality of product.

**PAINT COLOR CHART**

**INTERIOR – UP#**

- PAINT COLOR #1 Typical Dwelling Unit Interior Walls and All Ceilings
- PAINT COLOR #2 Typical Dwelling Unit Building Interior Door and Window Trim
- PAINT COLOR #3 Typical Corridor Walls and Ceilings

**EXTERIOR**

- PT1, PT2, PT3, PT4 See elevations for paint numbering and locations.

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ST 1                      Stain, See elevations for location of all wood brackets and beams

Interior CONCRETE SEALER

Per drawing locations.

WOOD HANDRAILS,

Per drawing locations, SEAL WOOD.

STEEL DOOR FRAMES

Public Areas P2 (color) or as noted in the elevations.

METAL GUARDRAILS

Must be powder coated, black.

**2.2 WORKING CONDITIONS**

- A. Maintain a proper work environment, dry, clean, well ventilated, free of airborne construction dust, well lighted, in temperature and humidity ranges required by paint manufacturer. Keep humidity low enough to prevent moisture condensation on work surfaces. Never apply paint to damp or wet surfaces.

**2.3 SPECIAL SURFACE PREPARATION**

- A. Ferrous metal surfaces:
  - 1. All rust and mill scale shall be removed by power tool cleaning as specified by the Steel Structures Painting Council.
  - 2. All weld fluxes shall be power tool cleaned as specified by the Steel Structures Painting council and washed thoroughly with water to remove all weld flux spatters and alkali contaminants.
  - 3. Shop primer coats that have been ruptured or marred shall be wire brushed to bare metal and repriced with primer specified
- B. Galvanized metal surfaces: Wash thoroughly with mineral spirits.
- C. Wallboard surfaces: Tape joints shall be sanded smooth and dusted. No paint shall be applied to any surface where the moisture content exceeds that recommended by the paint manufacturer. Moisture content shall be determined by a reliable electronic moisture meter.
- D. Wood surfaces: Sand smooth and apply primer as specified, holes, splits, and scratches shall be puttied or spackled smooth after applying the prime coat.

**PART 3 - EXECUTION**

**3.1 PREPARATION AND COORDINATION**

- A. Provision shall be made by the Contractor for a secure space for the storage of all paint materials and equipment. It will be the responsibility of both the General Contractor and the

Painting Subcontractor to maintain this space free from fire hazards due to improperly stored materials, rags, and equipment. If room used for storage is to have concrete as finished floor, extreme care must be taken to protect surface from paint materials.

- B. Drop cloths shall be provided to prevent paint material from falling on or marring any adjacent surface. Any damage resulting from the neglect of this provision will be corrected at the expense of the Contractor. In the case of factory finished or prefinished surfaces, if painting material cannot be removed without marring the prefinished surface, the surface will be replaced. The Contractor is to take particular care at suspended ceiling systems to avoid and paint material on the prefinished surfaces.
- C. Before painting, remove hardware, accessories, plates, lighting fixtures, and similar items to provide ample protection of such items.

### **3.2 PAINT APPLICATION**

- A. Mix and apply materials strictly as per manufacturer's instructions. Apply paint to thoroughly cover undercoat, and do not allow show-through, lap or brush marks or any other defects. Vary the hue of succeeding coats slightly to clearly show coats are applied as required. Only coats of paint inspected and approved by the Architect will be counted as completed. Sand defects smooth between coats. Defects are defined as irregularities visible to the unaided eye at a five foot distance.
- B. Keep approved samples on hand for comparison with work.
- C. Allow drying time between coats as instructed by the paint manufacturer. Work and smooth out brush coats onto surface in an even film. Where spraying, apply each coat to provide the hiding equivalent of brush coats. Do not double back with spray equipment to build up film thickness of two coats in one pass. Match applied work with approved samples as to texture, color, and coverage.
- D. Basic application procedures: It is the intent of this Specification to require procedures, which are within the accepted standards of the industry and conform to the recommendations of the manufacturer of the product which will result in a first-class finished application from an appearance, maintenance, and durability standpoint. The following is intended as a general guide for the application of painting materials and is to be followed unless it is in conflict with the best practices of the industry and/or the recommendations of the manufacturer.
  - 1. Flat wall and ceiling surfaces: To be roller applied with edges and corners neatly cut in by brush. Workmanship standard shall be such that there is no apparent variation between the rolled surfaces and cutting in required by brushing.
  - 2. Interior finish surfaces finished prior to final installation: To be sprayed or brushed for uniform flat texture without stipple effect or brush marks.
  - 3. Interior trim finished after installation: Sprayed if practical; brushed if spraying not practical; end result desired is flat smooth finish without stipple or brush marks.
- E. During the actual application and drying of the paint, and until normal occupancy of the building occurs, a minimum temperature of 60 degrees F. shall be maintained. This temperature shall be held as constant as possible to prevent condensations. Adequate ventilation shall be provided at all times so that humidity cannot raise above the dew point at the coldest wall.



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- F. Enamel and varnish undercoats shall be sanded smooth prior to recoating.
- G. All edges and top and bottom of doors, both metal and wood, and wood sash shall be finished in the same manner as the remainder of the door and sash surfaces.
- H. No exterior painting shall be undertaken at temperatures under 50 degrees F. or immediately following rain, frost, or dew. Safe levels for painting shall be determined by use of an electronic moisture meter.
- I. Any work which does not meet with the approval of the Architect shall be immediately corrected.

### **3.3 SCHEDULE OF FINISHES, INTERIOR and EXTERIOR SURFACES**

- A. General: It is not the intent of this schedule to state in detail each surface to receive finish; it is intended only as a guide. Omission of any surface from this list shall not relieve Contractor from responsibility of providing finish. Any further clarification required shall be brought to the attention of the Architect.
- B. Interior Walls and Ceilings and Trim and Exterior Siding and Soffit, Fascia and Trim:
  - 1. One (1) coat Primer as recommended by manufacturer ( Interior Walls and Ceilings shall be primed before Texture and again after Texture)
  - 2. Two (2) coats Interior or Exterior Paint (locations per dwgs)
  - 3. NOTE: Use paint per manufacturer's recommendation for wet area rooms.
- C. Exterior Doors: Pre Primed, Require Two (2) Coats
- D. Interior Doors: Pre Primed, Require Two (2) Coats
- E. Concrete Sealer to be applied in (2) Coats
- F. General: It is not the intent of this schedule to state in detail each surface to receive finish; it is intended only as a guide.
  - 1. Omission of any surface from this list shall not relieve the Contractor from providing finish. Any further clarification required shall be brought to the attention of the Architect.

### **3.5 CLEANING AND EXTRA STOCK**

- A. Maintain thorough dust and dirt control throughout the painting process. Thoroughly protect all surfaces that won't be painted with clean, undamaged drop cloths and masking tape. Immediately clean any spilled materials and do not allow dirt or spilled materials to be tracked in a work area or to other work areas. Allow absolutely no paint smears or splatters to remain on adjacent surfaces.
- B. Upon completion of painting work, deliver to the Owner an extra stock of **10%** or more of each color, type, and gloss of paint used in the work. Tightly seal and clearly label each container with notes on contents and location used.

### **3.6 INSPECTION, TOUCH UP AND REPAIRS**

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- A. Remove, refinish, or repaint work not in compliance with specified requirements. Replace or repair all non-conforming work as directed by the Architect. Do repairs and touch-ups so they are undetectable.

END OF SECTION

**09922 – GYPSUM BOARD TEXTURED FINISH**

**PART 1 – GENERAL**

**1.1 SUMMARY**

- A. Includes But Not Limited To-
  - 1. Furnish and install texturing on ceilings as described in Contract Documents.
- B. Related Sections -
  - 1. General Conditions and Division 01 apply to this Section

**1.2 QUALITY STANDARDS**

- A. Provide experienced, well-trained workers competent to complete the work as specified.
- B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.
- C. Use products and accessories:
  - 1. From a manufacturer who specializes in making, installing, and servicing systems of this type. From a manufacturer specified or approved by the Architect.
- D. All work shall comply with manufacturer's instructions and governing building and safety codes.

**1.3 SUBMITTALS**

- A. Submit the following within 30 calendar days after receiving the Notice to Proceed.
  - 1. Submit list of materials to be provided for this work
  - 2. Submit manufacturer's specifications required to prove compliance with these specifications
  - 3. Submit manufacturer's installation instructions
  - 4. Submit Shop Drawings as required with complete details and assembly instructions
  - 5. Submit Shop Drawings showing relationship and interface with adjacent or related work
  - 6. Submit samples of proposed exposed finishes and hardware for approval by the Architect.

**1.4 MATERIALS HANDLING**

- A. Provide all materials required to complete the work as shown on Drawings and specified herein.
- B. Deliver, store, and transport materials to avoid damage to the product or to any other work. Return any products or materials delivered in a damaged or unsatisfactory condition. Materials and products delivered will be certified by the manufacturer to be as specified.
- C. Store materials in a safe, secure location, protected from dirt, moisture, contaminants, and

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weather.

## **1.5 PRECONSTRUCTION AND PREPARATION**

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work. Confirm there is no conflict between this work and governing building and safety codes. Confirm there are no conflicts between this work and work of other trades. Confirm that work of other trades that must precede this work has been completed. Meet all requirements to secure any applicable warranty.
- B. Notify Architect when work is scheduled to be started and completed.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- A. Light Orange Peel equal to U S Gypsum texture
  - 1. Walls
  - 2. Ceilings

## **PART 3 - EXECUTION**

### **3.1 APPLICATION**

- A. After gypsum board is primed, apply ceiling texture in accordance with Manufacturer's direction and closely match sample accepted by Architect

END OF SECTION

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**DIVISION 10 - SPECIALITIES**

Sections included:

Section 10400 – IDENTIFYING DEVICES

Section 10520– FIRE PROTECTION SPECIALTIES

Section 10521 – MAILBOX

Section 10670 – STORAGE SHELVING

Section 10800 – BATHROOM ACCESSORIES

## **10400 – IDENTIFYING DEVICES**

### **PART 1 GENERAL**

#### **1.1 SECTION INCLUDES**

- A. Interior signage of the following types:
  - 1. Impressions
  - 2. HC300 ADA SYSTEM

#### **1.2 REFERENCES**

- A. ICC/ANSI A117.1 - Accessible and Useable Buildings and Facilities.
- B. USATBCB - Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG).

#### **1.3 SUBMITTALS**

- A. Shop Drawings: List sign styles, lettering, locations and dimensions of each interior sign.
- B. Selection Samples: One complete set of color chips representing manufacturer's full range of available colors.

#### **1.4 QUALITY ASSURANCE**

- A. Regulatory Requirements: Comply with requirements of ICC/ANSI A117.1 and ADAAG.

#### **1.5 DELIVERY, STORAGE, AND HANDLING**

- A. Inspect products upon receipt. Store products in manufacturer's packaging until ready for installation.

#### **1.6 PROJECT CONDITIONS**

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results.

### **PART 2 PRODUCTS**

#### **2.1 MANUFACTURERS**

- A. IF MEETS EQUAL QUALITY, CAN BE AT THE BIDDERS RISK TO MEET QUALITY STANDARD

#### **2.2 SIGNS**

- A. ADA-Compliant Interior Signage, per below schedule.
- B. Building Exterior Address mounted on walls. 14" X 24" ADDRESS, mounted on main face of each building for Building A and B. To be verified, as far as placement with Fire Marshal. Quantity: will be (2) per apartment building; totals (4).

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- C. At each main floor entry corridor, wayfinding signage to locate each dwelling unit. Provide and install 14" x 24" with each unit labeled.
- D. At each entry stair location, each floor, wayfinding signage for each level to indicate floor and units at each floor.
- E. (1) Exterior Monument Signs, per Drawings, provide allowance. Architect and Developer will work together to select colors and provide logos to the sign company. Sign is a deferred submittal to the **County of Cheyenne**, by architect and owner.

2.3 INTERIOR SIGNAGE SCHEDULE

- A. Manufacturer's standard monolithic tactile plaque constructed utilizing a thermoforming process, which provides a fully homogeneous plaque sign. The sign body, face, raised text and Braille are compression molded to form a single dimensional component that results in a sign surface that exhibits a toughness that resists scratching, cracking, gouging and graffiti.  
Material: Extruded Engineered PVC/Acrylic alloy with Integral background colors and high impact resistance.  
Sign Thickness: 1/4 inch (6mm)  
Tactile Characters/Symbols: Raised 1/32 inch (1 mm) from sign plate face  
Construction: One-piece; added on or engraved characters not acceptable  
Lettering Style and size: Typeface as selected from the manufacturer's standard sans serif or simple serif typefaces, upper case letter height 2" for exterior Unit signs, and min 1-1/2" for interior community building signage  
Braille: Grade 2 braille, placed directly below last line of letters or numbers  
Contrast: Letters, numbers and symbols shall contrast with background.  
Profiles: Standard Rectangular  
Profiles: Custom  
Color of Background: As selected from manufacturer's standard fourteen (14) background colors  
Color of Text and Raised Characters: As selected from 73 standard colors  
Surface Texture: Stipple

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine installation areas to ensure that conditions are suitable for installation.
- B. Examine signage for defects prior to installation. Do not install damaged signage.

3.2 PREPARATION

- A. Verify mounting heights and locations for interior signage will comply with referenced standards.
- B. Clean mounting locations of dirt, dust, grease or similar conditions that would prevent proper installation.

3.3 INSTALLATION

- A. Install signs level, plumb, without distortion, and in proper relationship with adjacent surfaces using manufacturer's recommended standard mounting system.
  - 1. Mount with screws.
- B. Remove adhesive from exposed sign surfaces as recommended by manufacturer.

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- C. Clean signs after installation as recommended by manufacturer.
- D. Replace damaged products before Substantial Completion.

3.4 SIGNAGE SCHEDULE

<u>QUANTITY EACH</u>	<u>AREA</u>	<u>DESCRIPTION ON SIGN</u>
(1)	<u>Each</u> corridor way finding signage	ie" sign will identify the Unit # of all units in the corridor area, will be mounted in the corridor main level of each breezeway each building, this is for the fire department to find units
(1)	Common Area's - <u>EACH LOCATION BOTH BLDGS</u>	"MECHANICAL ROOM"
(1)	OUTSIDE OF <u>EACH</u> Corridor Entry	"Unit #'s per corridor"
(1)	OUTSIDE OF <u>EACH</u> Unit	"Unit #"
(1)	Manager Office (to be mounted inside)	"UNISEX RESTROOM" ada compliant
(1)	Manager Office (to be mounted Outside of door)	"OFFICE"
(1)	Exterior Monument Sign	see plans

**NOTE: SIGN MANUFACTURER TO COUNT SIGNS PER PLANS!**

END OF SECTION



**10520 - FIRE PROTECTION SPECIALTIES**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Includes all labor and material necessary and incidental to the execution and installation of fire extinguisher cabinets complete with fire extinguishers at locations to be determined by the Fire Marshal. For the bid, each level each corridor shall have (1) cabinet and extinguisher.

**1.2 QUALITY STANDARDS**

- A. Provide experienced, well-trained workers competent to complete the work as specified.
- B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.
- C. All work shall comply with manufacturer's instructions and governing building and safety codes.

**1.3 SUBMITTALS**

- A. Submit the following within 30 calendar days after receiving the Notice to Proceed.
- B. See Division 1, General Requirements, for general shop drawing and submittal requirements.
- C. Complete manufacturer's detailed drawings of all units.
- D. Fire extinguisher submittals must show certificate of conformance to U/L requirements.

**1.4 MATERIALS HANDLING**

- A. Provide all materials required to complete the work as shown on Drawings and specified herein. Deliver, store, and transport materials to avoid damage to the product or to any other work. Return any products or materials delivered in a damaged or unsatisfactory condition. Materials and products delivered will be certified by the manufacturer to be as specified.
- B. Store materials in a safe, secure location, protected from dirt, moisture, contaminants, and weather.

**1.5 PRECONSTRUCTION AND PREPARATION**

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work. Maintain and use up-to-date trade standards and manufacturer's instructions. Confirm there is no conflict between this work and governing building and safety codes. Meet all requirements to secure warranty.
- B. Confirm there are no conflicts between this work and work of other trades. Confirm that work of other trades that must precede this work has been completed.

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- C. Notify Architect when work is scheduled to be installed. If required by the Architect, a preconstruction meeting will be held with all concerned parties. Use agreed schedule for installation and for field observation by Architect.

**PART 2 - PRODUCTS**

**2.1 GENERAL**

- A. Fire Extinguisher Cabinet: JL Industries to be submitted to architect. Cabinet to be surface mounted on First, Second and Third Floors of each breezeway. Verify locations and quantity totals with local authorities and the latest edition of the International Fire Code.
- B. Fire Extinguishers: To be Cosmic 10E as manufactured by J.L. Industries with a 4A-80BC U/L rating. Verify locations and quantity totals with local authorities and the latest edition of the International Fire Code.

**PART 3 - EXECUTION**

**3.1 WORK CONDITIONS**

- A. Correct any conditions not in compliance with Section 1.5.A. noted above.
- B. Correct any conditions that might interfere with speedy, well-coordinated execution of the work.
- C. All work conditions shall be as per manufacturer's instructions, trade association standards, and governing building and safety codes.

**3.2 INSTALLATION**

- A. Install products as per Drawings and these Specifications.
- B. Upon completion, secure all required tests, inspections, and approvals of the completed system. Make all required adjustments and corrections at no added cost to the Owner.
- C. Provide for maintenance of this work for one year following final acceptance by Owner. Maintenance includes all work required in manufacturer's instructions including inspection and adjustment, and repair and replacement of parts as required.

**3.3 REPAIR AND CLEANUP**

- A. After installation, inspect all work for improper installation or damage.
- B. Operating hardware must perform smoothly. Repair or replace any defective work. Repair work will be undetectable. Redo repairs if work is still defective, as directed by the Architect.
- C. Clean the work area and remove all scrap and excess materials from the site.=

END OF SECTION

**10521 - MAILBOX**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Includes all labor and material necessary and incidental to the execution and installation of mailboxes at locations indicated on contract drawings.

**1.2 QUALITY STANDARDS**

- A. Provide experienced, well-trained workers competent to complete the work as specified.
- B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.
- C. All work shall comply with manufacturer's instructions and governing building and safety codes.

**1.3 SUBMITTALS**

- A. Submit the following within 30 calendar days after receiving the Notice to Proceed.
- B. See Division 1, General Requirements, for general shop drawing and submittal requirements.
- C. Complete manufacturer's detailed drawings of all units. To be mounted at ADA compliant height.

**1.4 MATERIALS HANDLING**

- A. Provide all materials required to complete the work as shown on Drawings and specified herein. Deliver, store, and transport materials to avoid damage to the product or to any other work. Return any products or materials delivered in a damaged or unsatisfactory condition. Materials and products delivered will be certified by the manufacturer to be as specified.
- B. Store materials in a safe, secure location, protected from dirt, moisture, contaminants, and weather.

**1.5 PRECONSTRUCTION AND PREPARATION**

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work. Maintain and use up-to-date trade standards and manufacturer's instructions. Confirm there is no conflict between this work and governing building and safety codes. Meet all requirements to secure warranty.
- B. Confirm there are no conflicts between this work and work of other trades. Confirm that work of other trades that must precede this work has been completed.
- C. Notify Architect when work is scheduled to be installed. If required by the Architect, a preconstruction meeting will be held with all concerned parties. Use agreed schedule for installation and for field observation by Architect.

## **PART 2 - PRODUCTS**

### **2.1 GENERAL**

- A. Total Cabinets to contain a minimum of 20 Tenant Doors for each to provide for each DWELLING UNIT, provide and install (3) 4C16D-24-P Front Loading with Parcel Lockers per **The Mailbox Works** as a performance Specification. See plans for locations, General Contractor to review with Architect, Owner and Postal Officer. Mailbox's will be reviewed as per Submittal Process with the US Postal Service for exact location.

## **PART 3 - EXECUTION**

### **3.1 WORK CONDITIONS**

- A. Correct any conditions not in compliance with Section 1.5.A. noted above.
- B. Correct any conditions that might interfere with speedy, well-coordinated execution of the work.
- C. All work conditions shall be as per manufacturer's instructions, trade association standards, and governing building and safety codes.

### **3.2 INSTALLATION**

- A. Install products as per Drawings and these Specifications.
- B. Upon completion, secure all required tests, inspections, and approvals of the completed system. Make all required adjustments and corrections at no added cost to the Owner.
- C. Provide for maintenance of this work for one year following final acceptance by Owner. Maintenance includes all work required in manufacturer's instructions including inspection and adjustment, and repair and replacement of parts as required.

### **3.3 REPAIR AND CLEANUP**

- A. After installation, inspect all work for improper installation or damage.
- B. Operating hardware must perform smoothly. Repair or replace any defective work. Repair work will be undetectable. Redo repairs if work is still defective, as directed by the Architect.
- C. Clean the work area and remove all scrap and excess materials from the site.

END OF SECTION

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## **SECTION 10670 - STORAGE SHELVING**

### **PART 1 - GENERAL**

#### **1.1 WORK OF THIS SECTION**

- A. The WORK of this Section includes providing wire metal adjustable storage shelving, and all appurtenant work.

#### **1.2 SHOP DRAWINGS AND SAMPLES**

- A. The following shall be submitted in compliance with Section 01300 - Submittals
  1. Shop drawings of all shelving, storage bins, and revolving bins.
  2. Samples of all the materials and manufacturer's standard colors proposed for use on the WORK. The samples shall be clearly marked to show the manufacturer's name and product identification.

### **PART 2 - PRODUCTS**

#### **2.1 GENERAL**

- A. Provide Wire Metal adjustable shelving.
- B. Each unit shall be provided as a complete unit with all accessories as required for construction.
- C. Color: White

#### **2.2 WIRE METAL SHELVING**

- A. Wire Metal shelving shall be as follows:

1. Bedroom and Coat Closet - Materials: (1) Wire Shelf and Rod, see plans for size. Adjustable wall mounted standards (number to be determined by size), Brackets (number to be determined by size), Rod hangers (number to be determined by size), Rod. Size to be as wide as finished closet.
2. Linen nooks marked in plans - Materials, provide and install Wire Shelves for linen storage with full length adjustable wall mounted standards (number to be determined by size), Brackets (number to be determined by size), see plans for size and number of shelves.
3. Laundry - Materials: (1) Wire Shelf with 24" long adjustable wall mounted standards, (number to be determined by size), Brackets (number to be determined by size), Rod hangers (number to be determined by size), Rod. Size to be as wide as finished closet.hangers (number to be determined by size), Rod. Size to be as wide as finished closet, see plans. Set ADA shelf just above front loading units.

INSTALL PER ADA MOUNTING HEIGHT DESCRIBED IN DWGS.

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## **2.4 MANUFACTURERS**

A. Metal storage shelving and storage bins shall be products of the following manufacturers:

1. Schulte, RubberMaid OR Approved Equal

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

A. The shelving units shall be installed in groups as indicated. They shall be fastened to the wall, to sides of each other and to the rear where back to back. The CONTRACTOR shall secure the units to the floor with galvanized steel angles and stainless steel expansion bolts. Units shall be provided with all necessary seismic bracing required by the latest edition of the International Building Code.

END OF SECTION

## **10800 – BATHROOM ACCESSORIES**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Includes all labor and material necessary and incidental to the execution and installation of toilet room accessories as indicated on the contract drawings and specified herein.

#### **1.2 QUALITY STANDARDS**

- A. Provide experienced, well-trained workers competent to complete the work as specified.
- B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.
- C. All work shall comply with manufacturer's instructions and governing building and safety codes.

#### **1.3 SUBMITTALS**

- A. Submit the following within 30 calendar days after receiving the Notice to Proceed.
- B. See Division 01, General Requirements, for general shop drawing and submittal requirements.
- C. Complete manufacturer's printed information with listing of all items to be furnished. Supply catalog cuts on all stock items.
- D. Items listed are for Bobrick Washroom Equipment, except as noted.

#### **1.4 MATERIALS HANDLING**

- A. Provide all materials required to complete the work as shown on Drawings and specified herein. Deliver, store, and transport materials to avoid damage to the product or to any other work. Return any products or materials delivered in a damaged or unsatisfactory condition. Materials and products delivered will be certified by the manufacturer to be as specified.
- B. Store materials in a safe, secure location, protected from dirt, moisture, contaminants, and weather.

#### **1.5 PRECONSTRUCTION AND PREPARATION**

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work. Maintain and use up-to-date trade standards and manufacturer's instructions. Confirm there is no conflict between this work and governing building and safety codes. Meet all requirements to secure warranty.
- B. Confirm there are no conflicts between this work and work of other trades. Confirm that work of other trades that must precede this work has been completed.

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- C. Notify Architect when work is scheduled to be installed. If required by the Architect, a preconstruction meeting will be held with all concerned parties. Use agreed schedule for installation and for field observation by Architect.

**PART 2 - PRODUCTS**

**2.1 GENERAL**

- A. Anchors and Fasteners:
  - 1. Provide anchors and fasteners capable of developing a retaining force commensurate with the strength of the accessory to be mounted, and well suited for use with the supporting construction.
  - 2. Where exposed fasteners are permitted, provide oval head fasteners with finish matching the accessory.
- B. Provide stainless steel with satin finish on all items of this section.
- C. Approved Manufacturers
  - 1. The following are from Bobrick Washroom Accessories or ASI – American Specialties, Inc.  
  
To be installed in Each Unit Bathroom
    - a. Mirror size per drawings, ASI  
Stainless steel channel frame
    - b. recessed Medicine Cabinet 14" x 20" (1) each bathroom, Bobrick
    - c. Toilet Paper Holder B6857
    - d. Towel Bar see plan for size, B6747xsize
    - e. Shower Curtain Rod ALL UNITS mounted to wall both sides  
must be permanently afixed.
    - f. Tub Grab Bars and Seat (ADA Units)  
to be supplied with tub per mech drawings
    - g. All ADA Units to provide options for soap dish and curtain rod
    - h. Grab Bars  
ALL where noted in plans for all units and community building, see plans
  - 2. The following is the spec for the accessible countertop bracket per the interior elevations. **RAKKS EHV-Vanity Support**, ADA compliant aluminum vanity brackets. Rakks.com. Install per manufacturer instruction, provide proper blocking. As per drawings laminate face(s) and sides for a fully enclosed complete cover is required to be achieved. Be sure to install to cover all seams completely. Provide all means necessary to fasten laminate to rakks brackets.

**PART 3 - EXECUTION**

**3.1 WORK CONDITIONS**

- A. Correct any conditions not in compliance with Section 1.5.A. noted above.
- B. Correct any conditions that might interfere with speedy, well-coordinated execution of the work.



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- C. All work conditions shall be as per manufacturer's instructions, trade association standards, and governing building and safety codes.

**3.2 INSTALLATION**

- A. Install products as per Drawings and these Specifications.
- B. Contractor shall provide solid blocking at all wall mounted items.
- C. Mounting heights and locations as directed by Architect
- D. Upon completion, secure all required tests, inspections, and approvals of the completed system. Make all required adjustments and corrections at no added cost to the Owner.
- E. Provide for maintenance of this work for one year following final acceptance by Owner. Maintenance includes all work required in manufacturer's instructions including inspection and adjustment, and repair and replacement of parts as required.

**3.3 REPAIR AND CLEANUP**

- A. After installation, inspect all work for improper installation or damage.
- B. Operating hardware must perform smoothly. Repair or replace any defective work. Repair work will be undetectable. Redo repairs if work is still defective, as directed by the Architect.
- C. Clean the work area and remove all scrap and excess materials from the site.

END OF SECTION

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DIVISION 11 - EQUIPMENT

Sections included:

Section 11110 – RESIDENTIAL LAUNDRY EQUIPMENT

Section 11110A appliance attachment

Section 11450 – RESIDENTIAL EQUIPMENT

Section 11455 - CABINETS

**11110 - RESIDENTIAL LAUNDRY EQUIPMENT**

**PART 1 - GENERAL**

**1.1 SECTION INCLUDES**

- A. Washer extractors.
- B. Drying tumblers.

**1.2 RELATED SECTIONS**

- A. Division 15 Sections for supply and exhaust fans; exhaust ductwork; service roughing-ins; drain traps; valves, pipes, and fittings; and other materials required to complete commercial laundry equipment installation.
- B. Division 16 Sections for wiring disconnect switches, and other electrical materials required to complete commercial laundry equipment installation.

**1.3 REFERENCES**

- A. UL Certification: Provide electric equipment and components that are evaluated by UL for fire, and electric shock according to applicable safety standards and that are UL certified for compliance and labeled for intended use.
- B. NFPA 54 - National Fuel Gas Code.
- C. NFPA 70 - National Electrical Code.

**1.4 SUBMITTALS**

- A. Product Data: Manufacturer's data sheets on each product to be used, including: Preparation instructions and recommendations.  
Storage and handling requirements and recommendations.
- B. Operation and Maintenance Data: For laundry equipment to include in emergency, operation, and maintenance manuals. Include a schedule with the following:
  - 1. Designation indicated on Drawings.
  - 2. Manufacturer's name and model number.
  - 3. List of factory-authorized service agencies including their addresses and telephone numbers.

**1.5 DELIVERY, STORAGE, AND HANDLING**

- A. Store equipment on site protected from weather, direct sunlight and temperature extremes. Do not remove packaging prior to storage.
- B. Consult manufacturer if machines are to be stored for an extended period of

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time.

**1.6 PROJECT CONDITIONS**

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

**1.7 WARRANTY**

A. Washer Extractors: Manufacturer's standard form in which manufacturer agrees to repair or replace any part of the equipment assembly that fails within specified warranty period.

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

B. Washer Extractors - Mainframe and Cylinder Shaft Assembly Warranty.: Manufacturer's standard form in which manufacturer agrees to repair or replace main frame, bearing, cylinder or cylinder shaft assembly that fails within specified warranty period.

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

C. Dryer Tumblers: Manufacturer's standard form in which manufacturer agrees to repair or replace any part of the equipment assembly that fails within specified warranty period.

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

**PART 2 - PRODUCTS**

**2.1 MANUFACTURERS**

- A. Acceptable Manufacturer: GE / Kenmore / Sears / LG, must be locally available for maintenance, provide proof in the submittal.
- B. NOTE: All Living Units provide clothes washers (**Energy Star labeled**) and clothes dryers.
- C. Color: White
- D. Model Numbers are provided as the baseline and required salient features:
  - a. PER ATTACHMENT TO THIS SPEC SECTION

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

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### **3.2 PREPARATION**

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

### **3.3 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. System Startup and Commissioning: Arrange for a local manufacturer's representative to inspect machines prior to startup and operation.

### **3.4 PROTECTION**

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION



GE Appliances

ALL MODEL NUMBERS ARE TO BE VERIFIED WITH MANUFACTURER. THESE ARE TO SET THE STANDARD FOR THE REQUIREMENTS.

ALL UNITS



**Model#: GTH17DBDWW**



**GE® ENERGY STAR® 16.5 Cu. Ft. Top-Freezer Refrigerator**

Approx Dimensions (HxDxW):  
64 3/4 in X 31 in X 28 in

- Adjustable wire shelves - Moveable racks can handle a variety of foods
- Upfront temperature controls - Easy-to-use controls regulate both fresh food and freezer sections
- Gallon door storage - Larger items are easily accommodated in the door
- Clear drawers - Transparent drawers make finding your favorite items quick and easy
- Wire freezer shelf - Provides additional storage for frozen foods
- Never Clean condenser - Sealed compartment keeps coils clean and simplifies maintenance

**Warranty Information:**

- Parts Warranty : Limited 1-year entire appliance
- Labor Warranty : Limited 1-year entire appliance
- Warranty Notes : See written warranty for full details

**Also Available in:**

- GTH17DBDBB - Black
- GTH17DBDCC - Bisque



GE Appliances

# Standard Units Range



**Model#: JB620DRWW**

## **GE® 30" Free-Standing CleanDesign™ Electric Range**

Approx Dimensions (HxDxW):  
46 7/8 in X 27 3/4 in X 29 7/8 in

- Self-Clean Oven - Cleans the oven cavity without the need for scrubbing
- 5.3 cu. ft. Oven Capacity - Enough room to cook an entire meal at once
- QuickSet III oven controls - Electronic touch pads make operation simple
- Ceramic Glass Cooktop - Smooth cooktop easily wipes clean
- Big hearth window - Makes monitoring of foods easy
- Dual Element Bake - Upper and lower elements produce even heat and great results

### **Warranty Information:**

- Parts Warranty : Limited 1-year entire appliance
- Labor Warranty : Limited 1-year entire appliance
- Warranty Notes : See written warranty for full details

### **Also Available in:**

- JB620DRBB - Black
- JB620SRSS - Stainless Steel
- JB620GRSA - Silver





## GE Appliances Standard Units Micro/Hood

**Model#: JVM1540DMWW**

### **GE Spacemaker® Over-the-Range Microwave Oven**



Approx Dimensions (HxDxW):  
16 1/2 in X 15 1/4 in X 29 7/8 in

- 1.5 cu. ft. capacity - 950 watts (IEC-705 test procedure)
- Convenience cooking controls - Operating made quick and easy
- Auto and time defrost - Defrosting times and power levels are programmed automatically or manually for optimal results
- Turntable on/off - Controls turntable operation
- Two-speed, 300-CFM venting system - Removes smoke, steam and odors
- Removable oven rack - Allows you to cook large quantities of your family's favorites

#### **Warranty Information:**

- Parts Warranty : Limited 1-year entire appliance
- Labor Warranty : Limited 1-year entire appliance

#### **Also Available in:**

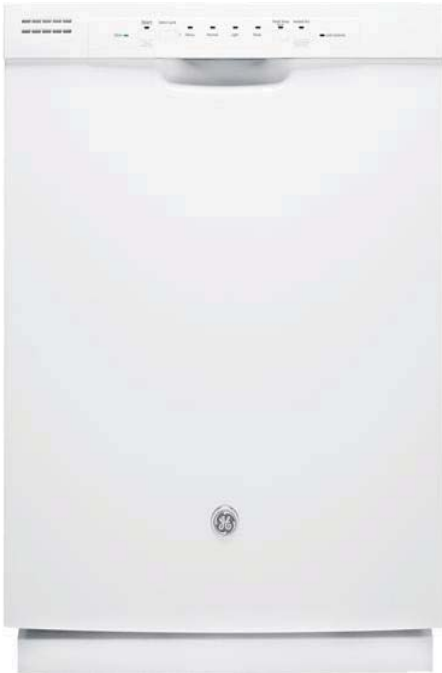
JVM1540DMBB - Black  
JVM1540DMCC - Bisque  
JVM1540LMCS - CleanSteel™  
JVM1540SMSS - Stainless Steel/Black





GE Appliances

# Standard Units Dishwasher



**Model#: GDF510PGDWW**



**GE® Dishwasher with Front Controls**

Approx Dimensions (HxDxW):  
34 in X 24 in X 23 3/4 in

- GE's most advanced wash system - Consistently clean, dry and sanitized dishes are ensured with GE's most advanced wash system, combining 65% more wash power\* with advanced performance features \*Wash power delivered to each rack. Compared to previous GE models.
- Piranha™ Hard Food Disposer with Removable Filter - To ensure consistently clean items, this stainless steel blade rotates at 3,600 RPM to pulverize food particles and helps to prevent large particles from clogging the wash arms
- 3 Pressurized, Full-Coverage Wash Arms - Expect exceptionally clean and table-ready dishes with powerful wash arms that deliver 65% more wash power to the top and bottom racks compared to previous GE models\* (\*Wash power delivered to each rack)
- Dedicated Silverware Jets - Get table-ready silverware thanks to powerful jets that focus on silverware baskets in multiple locations

**Warranty Information:**

- Parts Warranty : Limited 1-year entire appliance
- Labor Warranty : Limited 1-year entire appliance
- Warranty Notes : See written warranty for full details

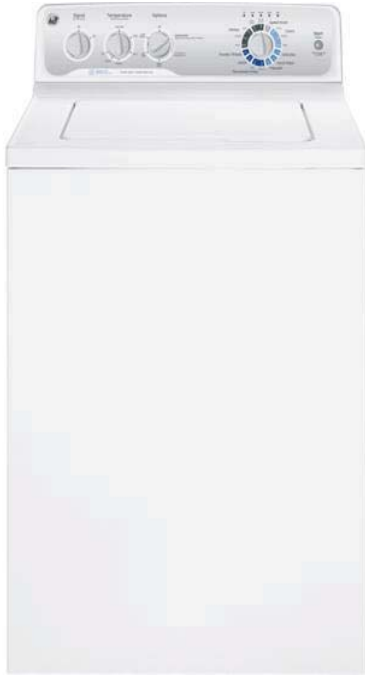
**Also Available in:**

- GDF510PGDBB - Black
- GDF510PMDSA - Silver
- GDF510PSDSS - Stainless Steel



GE Appliances

# Standard Units Washer



**Model#: GCWN4950DWS**



**GE® 4.0 DOE cu. ft. stainless steel capacity washer**

Approx Dimensions (HxDxW):  
42 in X 25 1/2 in X 27 in

- ENERGY STAR® qualified and CEE Tier II - Meets or exceeds federal guidelines for energy efficiency for year-round energy and money savings
- Infusor wash system - Uses HE detergent, requiring less water than a traditional topload washer
- Rotary electronic controls with cycle status lights - Provide accurate cycle times
- 16 wash cycles - Handle various fabrics and soils
- PreciseFill - Washer will automatically measure the load size and add just the right amount of water
- Bleach and fabric softener dispensers - Automatically operate with wash cycle
- 700 RPM Spin Speed - Fast spin speeds remove water efficiently and minimize dry time

### **Warranty Information:**

- Labor Warranty : Limited 1-year entire appliance
- Parts Warranty : Limited 1-year entire appliance
- Warranty Notes : See written warranty for full details



GE Appliances

# Standard Units Dryer



**Model#: GTDX400EDWS**

**GE® 6.0 cu. ft. capacity DuraDrum™ electric dryer**

Approx Dimensions (HxDxW):  
42 in X 25 3/4 in X 27 in

- DuraDrum™ interior - Provides long-lasting dependability
- 4 heat selections - Provide the right temperatures for your clothes-drying needs
- Quick Fluff - Delivers ready-to-go results in minutes without heat
- Variable End-Of-Cycle Signal - Adjustable volume offers added flexibility
- Auto Dry - Monitors air temperature to set dry times
- Dewrinkle - Reduces creasing and wrinkling

### **Warranty Information:**

- Labor Warranty : Limited 1-year entire appliance
- Parts Warranty : Limited 1-year entire appliance
- Warranty Notes : See written warranty for full details



**Model#: JBP15DMWW**

**GE® 30" Free-Standing Electric Range**

Approx Dimensions (HxDxW):  
46 7/8 in X 27 1/8 in X 29 7/8 in

- Self-Clean Oven - Cleans the oven cavity without the need for scrubbing
- Upfront controls - Controls are within easy reach
- 5.0 cu. ft. oven capacity - Enough room to cook an entire meal at once
- Coil Heating Elements - Provide even heat and easy cleanup
- Big hearth window - Makes monitoring of foods easy

**Warranty Information:**

- Parts Warranty : Limited 1-year entire appliance
- Labor Warranty : Limited 1-year entire appliance
- Warranty Notes : See written warranty for full details

**Also Available in:**

- JBP15DMBB - Black on Black
- JBP15DMCC - Bisque on Bisque





GE Appliances

# ADA Units Hood

SEE PLANS FOR  
SWITCH LOCATIONS

**Model#: JVE40DTWW**



**GE® 30" ENERGY STAR Qualified  
Ventilation Hood**



Approx Dimensions (HxDxW):  
5 15/16 in X 19 1/2 in X 29 7/8 in

- Convertible venting - Offers vented or non-vented installation options
- Vertical and rear exhaust - Exhausts from the top or rear of the hood
- Variable two-speed fan control - Helps draw smoke, grease, odors and moisture out of the kitchen air
- Cooktop light - Brightens the cooktop surface
- Removable grease filter - Collects grease and removes for easy cleaning
- Round or rectangular ducting - Fits round and rectangular duct work

### **Warranty Information:**

- Labor Warranty : Limited 1-year entire appliance
- Parts Warranty : Limited 1-year entire appliance
- Warranty Notes : See written warranty for full details

### **Also Available in:**

JVE40DTBB - Black  
JVE40STSS - Stainless Steel



# GE Appliances ADA Units & Community Microwave

**Model#: JEB1860DMWW**

**GE® 1.8 Cu. Ft. Countertop Microwave  
Oven**



Approx Dimensions (HxDxW):  
13 3/4 in X 19 1/4 in X 23 7/8 in

- 1.8 cu. ft. capacity - 1100 watts (IEC-705 test procedure)
- Sensor cooking controls - Automatically adjusts time and power
- Optional built-in trim kit - Custom appearance and built-in convenience
- Auto and time defrost - Defrosting times and power levels are programmed automatically or manually for optimal results
- Turntable on/off - Controls turntable operation
- Instant on controls - One-touch instant operation
- Control lockout - Helps prevent accidental activation

### **Warranty Information:**

- Parts Warranty : Limited 1-year entire appliance
- Labor Warranty : Limited 1-year entire appliance
- Warranty Notes : See written warranty for full details

### **Also Available in:**

- JEB1860DMBB - Black on Black
- JEB1860SMSS - Stainless Steel



GE Appliances

# ADA Units Dishwasher



**Model#: GLDT690DWW**



**GE® Built-In Dishwasher with Hidden Controls**

Approx Dimensions (HxDxW):  
32 11/32 in X 24 in X 24 in

- Bright annealed stainless steel interior - Attractive interior provides long-lasting durability
- Low profile installation - Great for raised sub-floors and 34" countertop heights
- Gray racks - Long-lasting, durable racks resist rusting, chipping and peeling
- Two utility shelves in upper rack with Stem Safe - Conveniently flip down to handle tall items and protect stemware
- 2-digit countdown display with 1-24 hour Delay Start - Wash dishes at your convenience and monitor the progress
- Audible end-of-cycle signal - Alert signals when cycle is complete
- 5 wash levels - Eliminates the central wash tower to accommodate more items

### **Warranty Information:**

- Parts Warranty : Limited 1-year entire appliance
- Labor Warranty : Limited 1-year entire appliance
- Warranty Notes : See written warranty for full details

### **Also Available in:**

- GLDT690DBB - Black
- GLDT696DSS - Stainless Steel



GE Appliances

# ADA Units Washer



**Model#: GFWN1100DWW**



**GE® ENERGY STAR® 3.6 DOE Cu. Ft. Capacity Frontload Washer**

Approx Dimensions (HxDxW):  
39 4/5 in X 32 in X 27 in

- Stain Wash Cycle - Tackles the toughest stains, from fresh grass marks to food spills
- eWash option - Energy-saving option uses a cold water wash on select cycles without sacrificing performance
- ENERGY STAR® qualified and CEE Tier III - Meets or exceeds federal guidelines for energy efficiency for year-round energy and money savings
- Vibration Control - Adjusts spin patterns for each floor type for a smoother wash without walking or shaking
- 1000 RPM spin speed - Fast speeds remove more water during the spin cycle to minimize drying time
- Speed Wash - Provides a quick wash for lightly soiled items that are needed in a hurry
- 6 wash cycles - Handle various fabrics and soils

### **Warranty Information:**

- Labor Warranty : Limited 1-year entire appliance
- Parts Warranty : Limited 1-year entire appliance
- Warranty Notes : See written warranty for full details





GE Appliances

# ADA Units Dryer



**Model#: GFDN110EDWW**

**GE® 7.0 Cu. Ft. Capacity DuraDrum™ Electric Dryer**

Approx Dimensions (HxDxW):  
39 31/100 in X 32 187/1000 in X 27 in

- DuraDrum™ interior - Provides long-lasting dependability
- HE SensorDry™ with dual thermistors - Continually monitors moisture and temperature to prevent clothing wear and tear due to over-drying and inconsistent heat
- Speed Dry - Quickly dries items and small loads for families on the go
- eDry™ option - Energy-saving option reduces dry temperatures on select cycles without sacrificing performance
- 4 heat selections - Provide the right temperatures for your clothes-drying needs
- 6 dry cycles - Additional cycles for your clothes drying needs

**Warranty Information:**

- Labor Warranty : Limited 1-year entire appliance
- Parts Warranty : Limited 1-year entire appliance
- Warranty Notes : See written warranty for full details



## **11450-RESIDENTIAL EQUIPMENT**

### **PART 1 – GENERAL**

#### **1.1 WORK INCLUDED**

- A. Extent of residential equipment required and locations for the installation of furnished equipment are indicated on the drawings.
- B. Types of residential equipment required include, but are not limited to, the following:
  - 1. ESTAR Dishwasher, all units U.N.O.
  - 2. ESTAR ADA Dishwasher, ADA units as noted in plans
  - 3. Microwave Oven and Hood Combination, all units U.N.O.
  - 4. 30" Electric Oven – smooth top, self cleaning
  - 5. Range Hood for ADA Unit only, must be energy star, all ADA units as noted in plans
  - 6. ADA Microwave – countertop, ADA units as noted in plans
  - 7. ESTAR ADA Compliant Refrigerator – all units
  - 8. ADA Compliant Electric Oven, self cleaning, ADA units

#### **1.2 SUBMITTALS**

- A. Product Data: Submit manufacturer's specifications and installation instructions for each type of residential equipment, including data indicating compliance with requirements. Submit operating and maintenance instructions for each item of residential equipment. See 01300 Submittals.
- B. Submit manufacturer's standard written warranty for each item of residential equipment.

#### **1.2 Quality Assurance**

- A. Provide units with UL labels and energy guide labels containing energy cost analysis (annual operating costs) and efficiency information required by Federal Trade Commission. See 01400 Quality Control Services.
- B. Provide residential equipment by single manufacturer to the greatest extent possible for the entire project unless specified or indicated otherwise.

### **PART 2 – PRODUCTS**

#### **2.1 MANUFACTURERS**

- A. Subject to compliance with requirements, provide residential appliances from one of the following: Must have local provider, provide information in submittal.
  - 1. Sears/Kenmore
  - 2. Whirlpool
  - 3. LG
  - 4. Frigidaire

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- B. Basis of Design: As indicated for each piece of residential equipment specified.

## **2.2 RESIDENTIAL EQUIPMENT**

- C. Model Numbers are provided as the baseline ONLY as model numbers change yearly and required salient features:
  - 1. SEE SECTION 11110A

## **2.3 MATERIALS AND FABRICATION**

- A. Color: Provide manufacturer's standard white exterior finish unless otherwise indicated.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- C. General: Comply with manufacturer's instructions and recommendations.
- D. Freestanding Equipment: Place units in final locations after finishes have been completed in each area. Verify that clearances are adequate for proper operation of equipment.
- E. Utilities: Refer to the Drawings and Divisions 15 and 16 for plumbing, mechanical and electrical requirements.

END OF SECTION

**11455 - CABINETS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Includes But Not Limited To -
  - 1. All labor and materials necessary and incidental to the installation and execution of cabinets and countertops as specified herein and indicated on Contract Drawings.

**1.2 QUALITY STANDARDS**

- A. Cabinet manufacturer must have five (5) years experience in the manufacturing of custom cabinetry and must be approved by the owner/architect prior to bidding.
- B. Cabinet manufacturer shall have the ability to prefinish all wood surfaces in his/her shop.
- C. Exact door design may vary slightly from the shown design but must be approved in writing by the Architect.
- D. Successful bidder shall furnish a full-size sample for approval.
- E. Cabinet Workmanship:
  - 1. All parts machined to accurately fit and be assembled with appropriate fastenings and adhesives to result in true, square, level, plumb, rigid and durable units.
  - 2. Verify dimensions of work of other trades to be built into cabinet work.
  - 3. Verify dimensions of all cabinet locations in building before fabrication.
  - 4. Scribe all tops and backsplashes to walls and adjoining vertical surfaces.
  - 5. Provide a minimum scribe with all cabinets at end wall unless shown otherwise.
- F. All work shall comply with manufacturer's instructions and governing building and safety codes.

**1.3 SUBMITTALS**

- A. Submit the following within 30 calendar days after receiving the Notice to Proceed.
  - 1. Submit list of materials to be provided for this work.
  - 2. Submit manufacturer's specifications required to prove compliance with these specifications.
  - 3. Submit manufacturer's installation instructions.
  - 4. Submit Shop Drawings as required with complete details and assembly instructions.
  - 5. Submit Shop Drawings showing relationship and interface with adjacent or related work.
  - 6. Submit samples of proposed exposed finishes and hardware for approval by the Architect.
- B. See Division 01, General Requirements for general shop drawings and submittal requirements.
- C. Sample cabinet and drawer unit showing finish, quality and workmanship. Cabinet may be one which can be used on the project.

#### **1.4 MATERIALS HANDLING**

- A. Provide all materials required to complete the work as shown on Drawings and specified herein. Deliver, store, and transport materials to avoid damage to the product or to any other work. Return any products or materials delivered in a damaged or unsatisfactory condition. Materials and products delivered will be certified by the manufacturer to be as specified.
- B. Store materials in a safe, secure location, protected from dirt, moisture, contaminants, and weather.

#### **1.5 PRECONSTRUCTION AND PREPARATION**

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work. Maintain and use up-to-date trade standards and manufacturer's instructions. Confirm there is no conflict between this work and governing building and safety codes. Meet all requirements to secure warranty.
- B. Confirm there are no conflicts between this work and work of other trades. Confirm that work of other trades that must precede this work has been completed.
- C. Notify Architect when work is scheduled to be installed. If required by the Architect, a preconstruction meeting will be held with all concerned parties. Use agreed schedule for installation and for field observation by Architect.

### **PART 2 - MATERIALS**

#### **2.1 GENERAL Performance Specification based off Kountry Cabinets, kountrywood.com, Saco is also acceptable.**

- A. Cabinet Faces: Doors and faces shall be wood. Style per Georgetown
- B. Wood COLOR: see construction drawings, finish plans
- C. Wood Cabinets: Construction shall comply with AWI Standards
- D. Cabinets sizes are per size increment standard to manufacturer, not custom.
- E. Drawer Construction: ½" Fiberboard Four sided with standard construction.
- F. Toekicks: internal toekick
- G. Blum one piece, six way adjustable concealed hinges.
- H. Finish: Per Manufacturer, standard. One coat of conversion varnish as a sealer and one top coat of conversion varnish.
- I. Kitchen Countertops: ¾" Particleboard tops with 1-1/2" x min 1/2" edging. Countertop shall have laminate wrap at edge face. Square Edge.
- J. Bathroom Countertops: ¾" Particleboard tops with 1-1/2" x min 1/2" edging. Countertop shall have laminate wrap at edge face. Square Edge.

No POSTFORM.

- K. Back Splash: ¾" x 4" particle board. Wrap face and edge with laminate.
- L. Laminate shall be from standard color line of Wilsonart or Formica laminates or equal as approved by Architect prior to bidding. One color for kitchen and one color for bathroom. See construction drawings, finish plans.
- M. ADA Units require wire pulls on all doors and drawers.

**PART 3 – EXECUTION**

**3.1 WORK CONDITIONS**

- A. Correct any conditions not in compliance with Section 1.5.A. noted above.
- B. Correct any conditions that might interfere with speedy, well-coordinated execution of the work.
- C. All work conditions shall be as per manufacturer's instructions, trade association standards, and governing building and safety codes.

**3.3 INSTALLATION**

- A. All on-the-job assembly, installation and trimming of cabinet work shall be at least supervised by a competent cabinetmaker, representative of the manufacturer.
- B. Set all cabinet work accurately in place, level, scribe and secure to floor or walls.
- C. Provide connecting and attaching devices, closures and trim members as required
- D. Install items complete; adjust moving parts to operate perfectly.
- E. All joints in countertops to be perfectly aligned, free from any irregularities. Provide clamps at all butt joints of counter tops for tight fit.
- F. Finishing: All cabinetry shall be prefinished by the cabinet manufacturer.
- G. Provide for maintenance of this work for one year following final acceptance by Owner. Maintenance includes all work required in manufacturer's instructions including inspection and adjustment, and repair and replacement of parts as required.

**3.4 REPAIR AND CLEANUP**

- A. After installation, inspect all work for improper installation or damage.
- B. Operating hardware must perform smoothly. Repair or replace any defective work. Repair work will be undetectable. Redo repairs if work is still defective, as directed by the Architect.
- C. Clean the work area and remove all scrap and excess materials from the site.

END OF SECTION

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**DIVISION 13 – SPECIAL CONSTRUCTION**

Sections included:

Section 13925 – FIRE SUPPRESSION SPRINKLERS  
Specified Play Equipment and Play Surface, SEE DRAWINGS

## **13925 - FIRE SUPPRESSION SPRINKLERS**

### **PART 1 - GENERAL**

#### **1.01 SECTION INCLUDES**

- A. System design, installation, and certification.

#### **1.02 RELATED REQUIREMENTS**

- A. Fire Alarm System.
- B. Mechanical Identification.

#### **1.03 REFERENCE STANDARDS**

- A. FM P7825 - Approval Guide; Factory Mutual Research Corporation; current edition.
- B. NFPA 13R - Standard for the Installation of Sprinkler Systems; National Fire Protection Association.
- C. UL (FPED) - Fire Protection Equipment Directory; Underwriters Laboratories Inc.; current edition.

#### **1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Pre installation Meeting: Convene one week before starting work of this section.

#### **1.05 SUBMITTALS**

- A. See Section 01300 - Submittals.
- B. Product Data: Provide data on sprinklers, valves, and specialties, including manufacturers catalog information. Submit performance ratings, rough-in details, weights, support requirements, and piping connections.
- C. **Deferred Submittal by sub-contractor to City for permit and Shop Drawings: REQUIRED!**
  - 1. Submit preliminary layout of finished ceiling areas indicating only sprinkler locations coordinated with ceiling installation.
  - 2. Indicate hydraulic calculations, detailed pipe layout, hangers and supports, sprinklers, components and accessories. Indicate system controls.
  - 3. Submit shop drawings to authority having jurisdiction for approval. Submit proof of approval to Architect.
- D. Project Record Documents: Record actual locations of sprinklers and deviations of piping from drawings. Indicate drain and test locations.
- E. Manufacturer's Certificate: Certify that system has been tested and meets or exceeds specified requirements and code requirements.
- F. Operation and Maintenance Data: Include components of system, servicing requirements, record drawings, inspection data, replacement part numbers and availability, and location and numbers of service depot.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. Extra Sprinklers: Type and size matching those installed, in quantity required by



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- referenced NFPA design and installation standard.
2. Sprinkler Wrenches: For each sprinkler type.

### **1.06 QUALITY ASSURANCE**

- A. Maintain one copy of referenced design and installation standard on site.
- B. Conform to UL requirements.
- C. Designer Qualifications: Design system under direct supervision of a Professional Fire Protection Engineer experienced in design of this type of work and licensed in the State in which the Project is located.
- D. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- E. Installer Qualifications: Company specializing in performing the work of this section with minimum three years experience approved by manufacturer.
- F. Equipment and Components: Provide products that bear UL label or marking.
- G. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Store products in shipping containers and maintain in place until installation. Provide temporary inlet and outlet caps. Maintain caps in place until installation.

## **PART 2 PRODUCTS**

### **2.01 SPRINKLER SYSTEM**

- A. Sprinkler System: Provide coverage for entire building.
- B. Occupancy: Light hazard; comply with NFPA 13R for the Building.
- C. Water Supply: Determine volume and pressure from water flow test data.
- D. Provide fire department connections.
- E. Storage Cabinet for Spare Sprinklers and Tools: Steel, located adjacent to alarm valve.

### **2.02 SPRINKLERS**

- A. Suspended Ceiling Type: Concealed pendant type with matching push on escutcheon plate. NOT REQUIRED THIS PROJECT
  1. Finish: Enamel, color as selected.
  2. Escutcheon Plate Finish: Enamel, color as selected.
  3. Fusible Link: Fusible solder link type temperature rated for specific area hazard.
- B. Exposed Area Type: Standard upright type with guard.
  1. Finish: Brass.
  2. Fusible Link: Fusible solder link type temperature rated for specific area hazard.

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- C. Sidewall Type: Standard horizontal sidewall type with matching push on escutcheon plate and guard.
  - 1. Finish: Enamel, color as selected.
  - 2. Escutcheon Plate Finish: Enamel, color as selected.
  - 3. Fusible Link: Fusible solder link type temperature rated for specific area hazard.
  
- D. Guards: Finish to match sprinkler finish.

**2.03 PIPING SPECIALTIES**

- A. Fire Department Connections:
  - 1. Type: Flush mounted wall type with brass finish.
  - 2. Outlets: Two way with thread size to suit fire department hardware; threaded dust cap and chain of matching material and finish.
  - 3. Drain: 3/4 inch automatic drip, outside.
  - 4. Label: "Sprinkler - Fire Department Connection".

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Install in accordance with referenced NFPA design and installation standard.
- B. Install equipment in accordance with manufacturer's instructions.
- C. Locate fire department connection with sufficient clearance from walls, obstructions, or adjacent siamese connectors to allow full swing of fire department wrench handle.
- D. Place pipe runs to minimize obstruction to other work.
- E. Place piping in concealed spaces above finished ceilings.
- F. Apply masking tape or paper cover to ensure concealed sprinklers, cover plates, and sprinkler escutcheons do not receive field paint finish. Remove after painting. Replace painted sprinklers.
- G. Flush entire piping system of foreign matter.
- H. Install guards on sprinklers where indicated.
- I. Hydrostatically test entire system.
- J. Require test be witnessed by Fire Marshal.

**3.02 INTERFACE WITH OTHER PRODUCTS**

- A. Ensure required devices are installed and connected as required to fire alarm system.

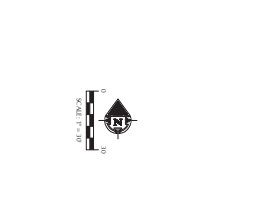
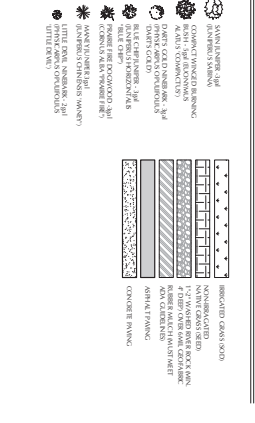
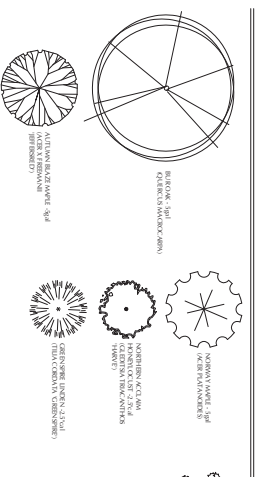
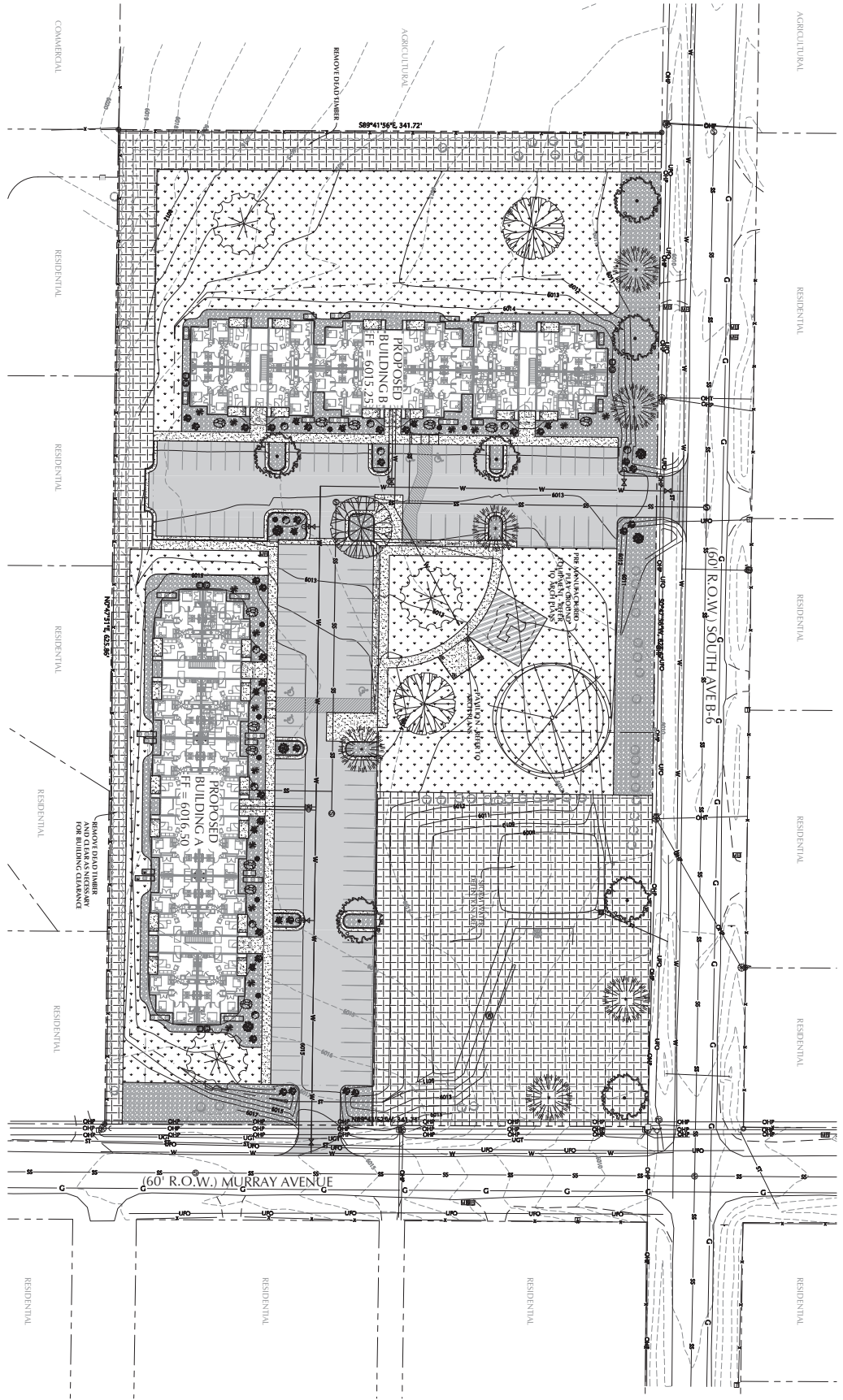
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NOT FOR CONSTRUCTION

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Sheet No.  
**C3.1**

Scale  
1" = 32'

LANDSCAPING PLAN

DATE: 11/25/15

MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
CHEYENNE, WYOMING

**J.K.C. ENGINEERING**  
ENGINEERING, ARCHITECTURE, INTERIOR DESIGN, LANDSCAPE ARCHITECTURE, PLANNING, SURVEYING, AND ENVIRONMENTAL CONSULTING  
1111 W. WYOMING STREET  
LITTLETON, WYOMING 80120  
Phone: 307.266.4622

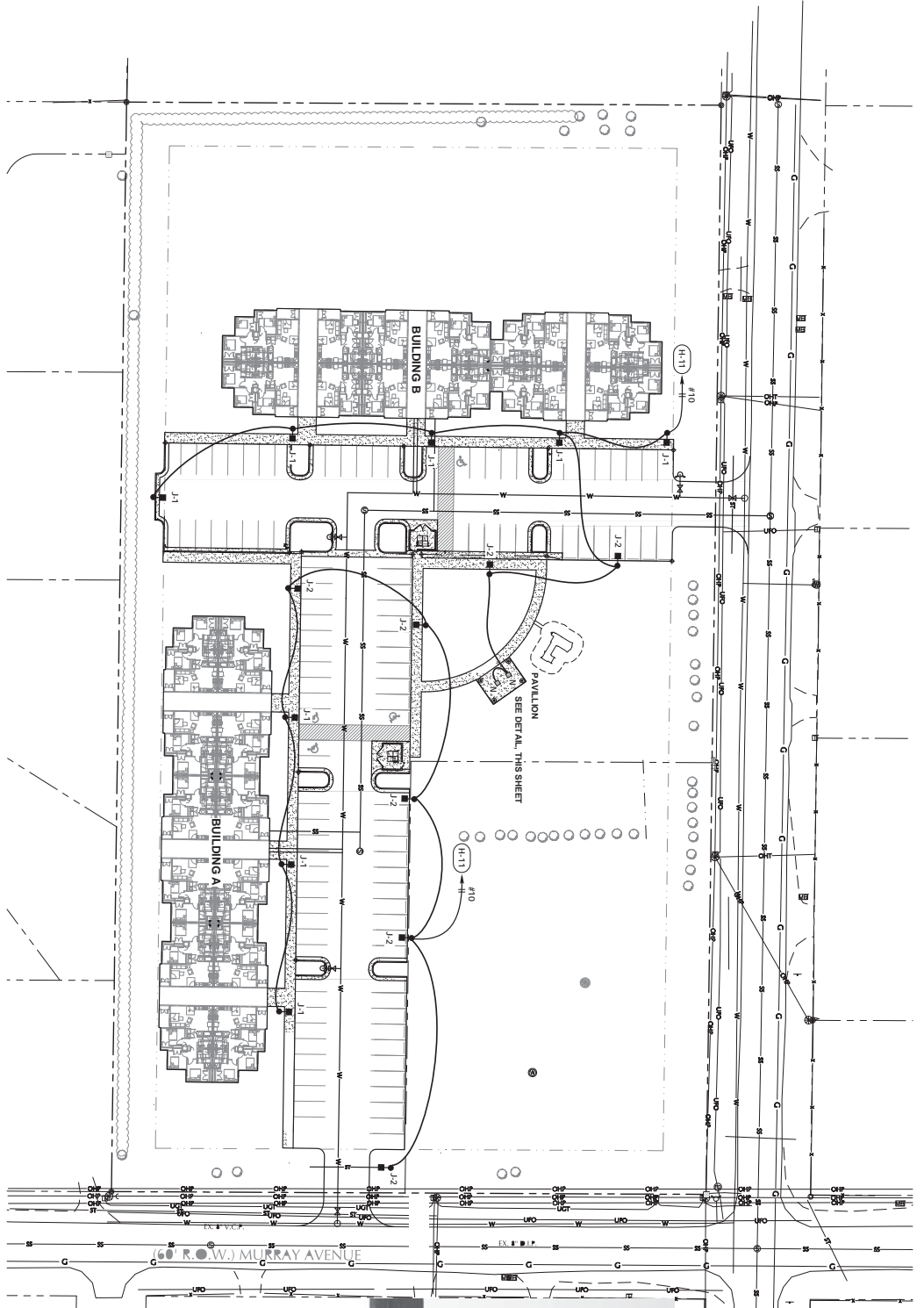
**encompass**  
1553 1/2 Main Street  
Suite 1110  
Cheyenne, WY 82001  
Phone: 307.634.4327





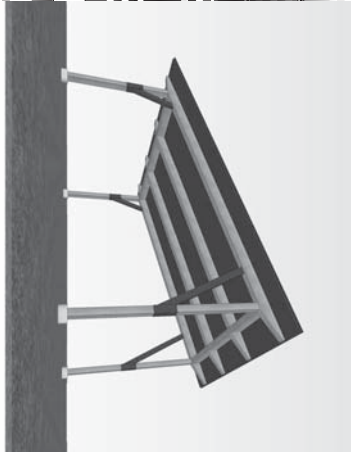






Complete 2015  
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**ELECTRICAL SITE PLAN**



- PAVILION ELECTRICAL**
1. FURNISH AND INSTALL FIXTURE 'N' BETWEEN THE CENTER TWO BEAMS SPACE TO PROVIDE EVEN LIGHT DISTRIBUTION.
  2. USE GALVANIZED UNSTRUT PERPENDICULAR TO BEAMS. PAINT TO MATCH THE BOTTOM OF THE ROOF. MOUNT FIXTURE 'N' TO THE UNSTRUT SUCH THAT THE FACE OF THE FIXTURE 'N' IS FLUSH WITH THE BOTTOM OF THE BEAM.
  3. FURNISH AND INSTALL PHOTOCELL AS REQUIRED. PROGRAM DIMMING SYSTEM SO THAT THERE IS 25% LIGHT AT NIGHT UNLESS THE PAVILION IS OCCUPIED.
  4. SUPPLY FIXTURE 'N' USING PVC CONDUIT BELOW GRADE AND GALVANIZED 1/2" RIGID CONDUIT ABOVE GRADE. OTHER GALVANIZED THREADED CONDUIT IS ACCEPTABLE AS APPEARANCE IS THE GOAL. FURNISH TRAIL STRAP WITH RUN CONDUIT. SURFACE MOUNTED ON TRAIL STRAP. PAINT TO MATCH SUPPLY.

		<b>MULTIFAMILY APARTMENT COMPLEX FOR:</b> <b>CAPITAL COURT</b> CHEYENNE, WYOMING		<b>Fussell Engineering</b> 2435 Dixon Missoula, MT 59801 Phone: (406) 721-6586		ENCOMPASS 1335 N. W. 10th Suite 1100 Missoula, MT 59801 Phone: 406.540.4437
		<b>Electrical Site Plan</b> E0.1	Scale: 1" = 20'-0" Date: 11/28/15			



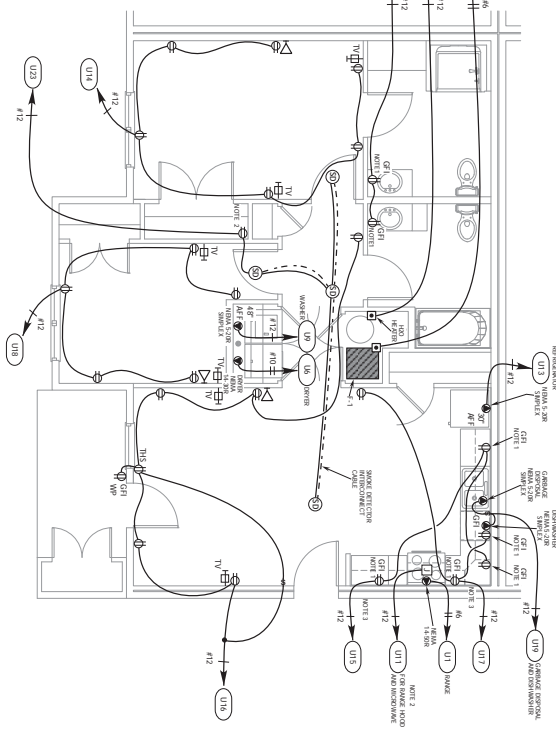
**Fussell Engineering**  
 2435 Dixon  
 Cheyenne, WY 82001  
 Phone: (406) 721-6586

MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
 CHEYENNE, WYOMING

Project No: 1125143  
 Date: 02/09/24  
 Scale: 1/8"=1'-0"

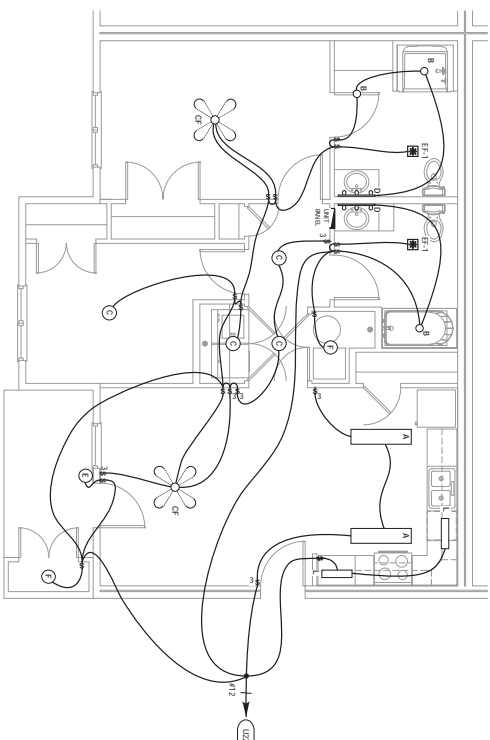
**Electrical Plans**  
**Units**

**E1.10**



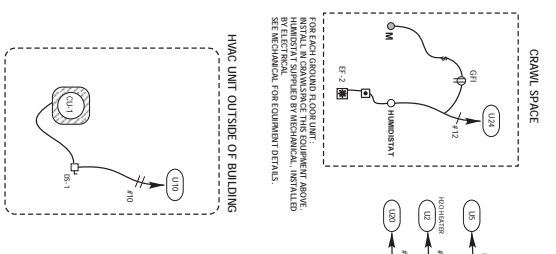
**2 BEDROOM UNIT POWER PLAN**

SEE NOTES THIS SHEET FOR SPECIFIC ADA REQUIREMENTS



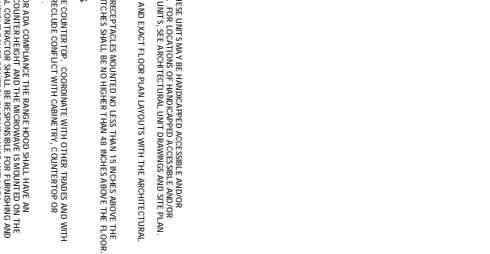
**2 BEDROOM UNIT LIGHTING PLAN**

SEE NOTES THIS SHEET FOR SPECIFIC ADA REQUIREMENTS



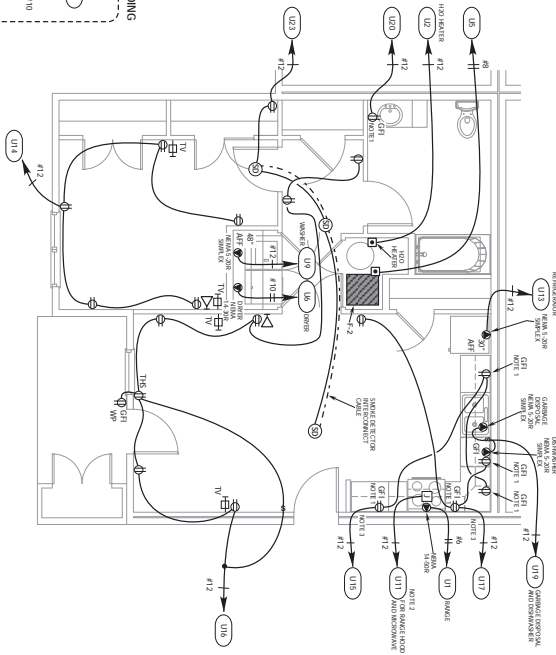
**2 BEDROOM UNIT POWER PLAN**

SEE NOTES THIS SHEET FOR SPECIFIC ADA REQUIREMENTS



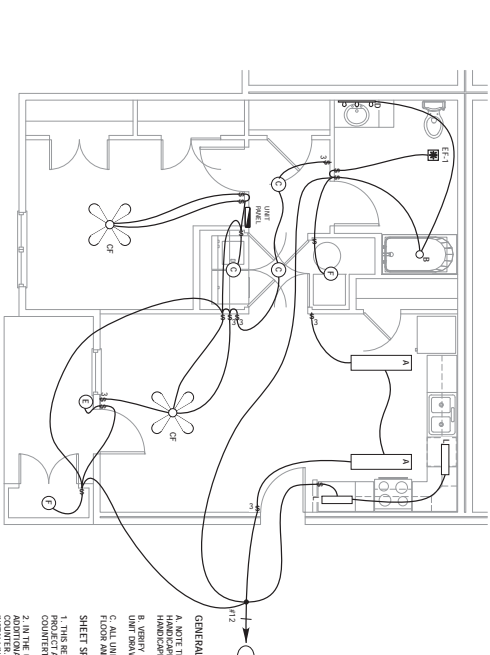
**2 BEDROOM UNIT LIGHTING PLAN**

SEE NOTES THIS SHEET FOR SPECIFIC ADA REQUIREMENTS



**1 BEDROOM UNIT POWER PLAN**

SEE NOTES THIS SHEET FOR SPECIFIC ADA REQUIREMENTS



**1 BEDROOM UNIT LIGHTING PLAN**

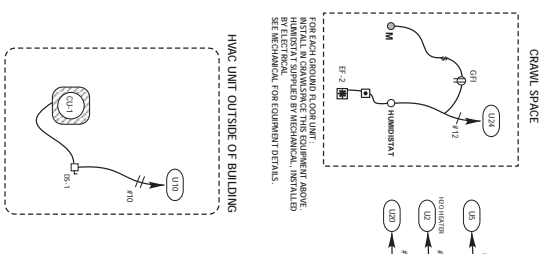
SEE NOTES THIS SHEET FOR SPECIFIC ADA REQUIREMENTS

**GENERAL NOTES**

1. THE RECEPTACLE ABOVE COUNTERTOP, COMPLIANT WITH OTHER TRADES AND WITH HANDICAPPED ACCESSIBLE, FOR LOCATIONS OF HANDICAPPED ACCESSIBLE AND/OR HANDICAPPED ADAPTABLE. FOR LOCATIONS OF HANDICAPPED ACCESSIBLE AND/OR HANDICAPPED ADAPTABLE UNITS, SEE ARCHITECTURAL UNIT DRAWINGS AND SET PLAN.
  2. VERIFY ALL DIMENSIONS AND EXACT FLOOR PLAN LAYOUTS WITH THE ARCHITECTURAL UNIT DRAWINGS.
  3. ALL DIMENSIONS HAVE BEEN TAKEN TO THE MAIN 15' SPACES ABOVE THE FLOOR AND THE LIGHT SWITCHES SHALL BE NOTICED FROM 48" HEIGHTS ABOVE THE FLOOR.
- SHEET SPECIFIC NOTES**
1. THE RECEPTACLE ABOVE COUNTERTOP, COMPLIANT WITH OTHER TRADES AND WITH HANDICAPPED ACCESSIBLE, FOR LOCATIONS OF HANDICAPPED ACCESSIBLE AND/OR HANDICAPPED ADAPTABLE. FOR LOCATIONS OF HANDICAPPED ACCESSIBLE AND/OR HANDICAPPED ADAPTABLE UNITS, SEE ARCHITECTURAL UNIT DRAWINGS AND SET PLAN.
  2. IN THE UNIT SPECIFIC FOR ADA COMPLIANCE THE RANGE HOOD SHALL HAVE AN ELECTRICAL CONTROL AND THE RECEPTACLE SHALL BE INSTALLED IN COMPLIANCE WITH ADA REQUIREMENTS. THE COUNTER HEIGHT RANGE CONTROL IN COMPLIANCE WITH ADA REQUIREMENTS. COMPLIANCE DETAILS SHALL BE SET PROJECT'S SET THROUGH OPTION REMOVE OR RECEPTACLE TO PROTECT DOWNSTREAM RECEPTACLES ACCEPTABLE.

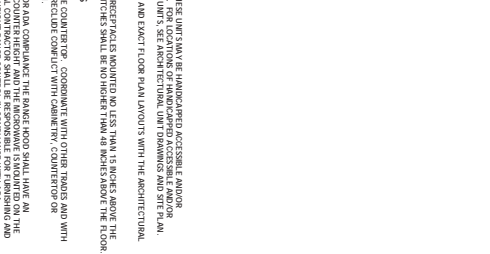
**GENERAL NOTES**

1. THE RECEPTACLE ABOVE COUNTERTOP, COMPLIANT WITH OTHER TRADES AND WITH HANDICAPPED ACCESSIBLE, FOR LOCATIONS OF HANDICAPPED ACCESSIBLE AND/OR HANDICAPPED ADAPTABLE. FOR LOCATIONS OF HANDICAPPED ACCESSIBLE AND/OR HANDICAPPED ADAPTABLE UNITS, SEE ARCHITECTURAL UNIT DRAWINGS AND SET PLAN.
  2. VERIFY ALL DIMENSIONS AND EXACT FLOOR PLAN LAYOUTS WITH THE ARCHITECTURAL UNIT DRAWINGS.
  3. ALL DIMENSIONS HAVE BEEN TAKEN TO THE MAIN 15' SPACES ABOVE THE FLOOR AND THE LIGHT SWITCHES SHALL BE NOTICED FROM 48" HEIGHTS ABOVE THE FLOOR.
- SHEET SPECIFIC NOTES**
1. THE RECEPTACLE ABOVE COUNTERTOP, COMPLIANT WITH OTHER TRADES AND WITH HANDICAPPED ACCESSIBLE, FOR LOCATIONS OF HANDICAPPED ACCESSIBLE AND/OR HANDICAPPED ADAPTABLE. FOR LOCATIONS OF HANDICAPPED ACCESSIBLE AND/OR HANDICAPPED ADAPTABLE UNITS, SEE ARCHITECTURAL UNIT DRAWINGS AND SET PLAN.
  2. IN THE UNIT SPECIFIC FOR ADA COMPLIANCE THE RANGE HOOD SHALL HAVE AN ELECTRICAL CONTROL AND THE RECEPTACLE SHALL BE INSTALLED IN COMPLIANCE WITH ADA REQUIREMENTS. THE COUNTER HEIGHT RANGE CONTROL IN COMPLIANCE WITH ADA REQUIREMENTS. COMPLIANCE DETAILS SHALL BE SET PROJECT'S SET THROUGH OPTION REMOVE OR RECEPTACLE TO PROTECT DOWNSTREAM RECEPTACLES ACCEPTABLE.



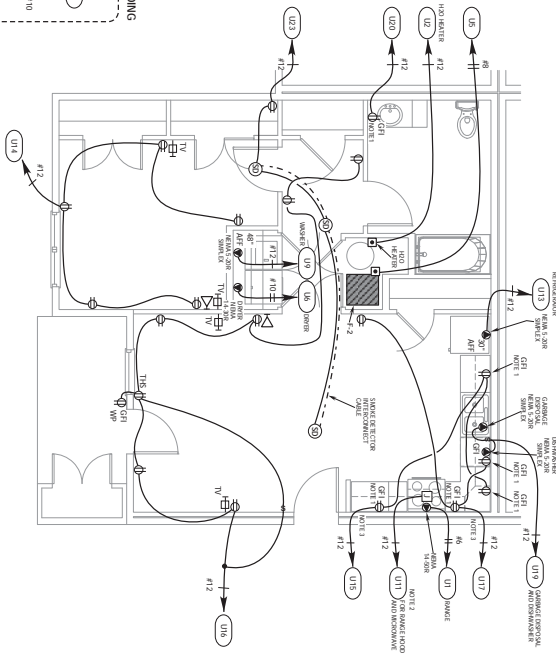
**1 BEDROOM UNIT POWER PLAN**

SEE NOTES THIS SHEET FOR SPECIFIC ADA REQUIREMENTS



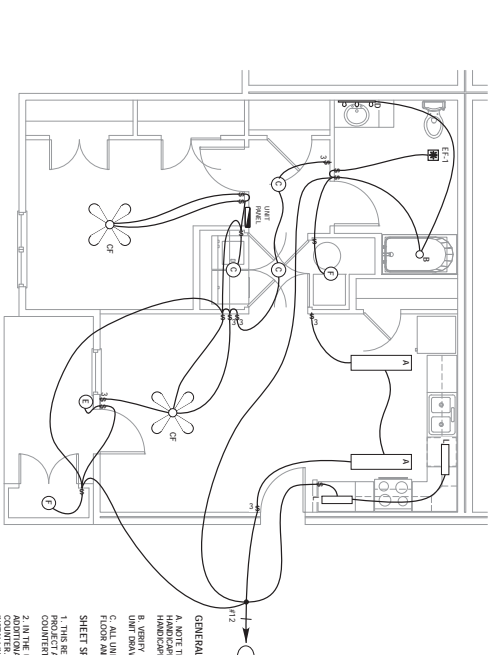
**1 BEDROOM UNIT LIGHTING PLAN**

SEE NOTES THIS SHEET FOR SPECIFIC ADA REQUIREMENTS



**1 BEDROOM UNIT POWER PLAN**

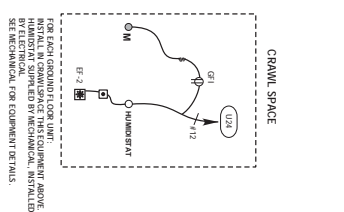
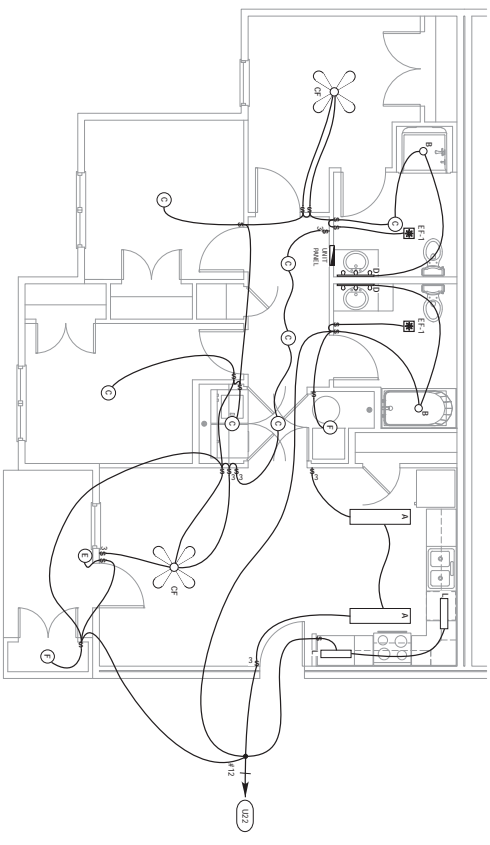
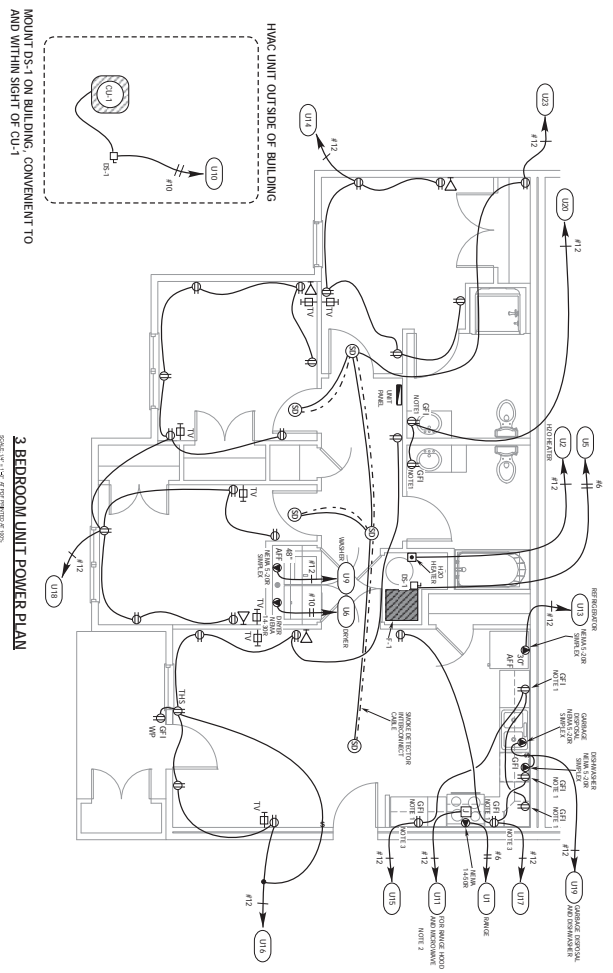
SEE NOTES THIS SHEET FOR SPECIFIC ADA REQUIREMENTS



**1 BEDROOM UNIT LIGHTING PLAN**

SEE NOTES THIS SHEET FOR SPECIFIC ADA REQUIREMENTS

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**GENERAL NOTES**

1. A NOT THAT NONE OF THESE UNITS HAVE HANDICAPPED ACCESSIBLE AND/OR HANDICAPPED ADAPTABLE FOR LOCATIONS OF HANDICAPPED ACCESSIBLE AND/OR HANDICAPPED ADAPTABLE UNITS. SEE ARCHITECTURAL UNIT DRAWINGS AND SITE PLAN.
2. VERIFY ALL DIMENSIONS AND EXACT FLOOR PLAN LAYOUTS WITH THE ARCHITECTURAL UNIT DRAWINGS.
3. ALL UNIT SHALL HAVE RECEPTACLE MOUNTED NO LESS THAN 15 INCHES ABOVE THE FINISHED FLOOR SURFACE. SHALL BE IN 5' SPACES FROM SIDE WALLS AND 1' FROM CORNER.
4. ALL UNIT SHALL HAVE RECEPTACLE MOUNTED NO LESS THAN 15 INCHES ABOVE THE FINISHED FLOOR SURFACE. SHALL BE IN 5' SPACES FROM SIDE WALLS AND 1' FROM CORNER.
5. ALL UNIT SHALL HAVE RECEPTACLE MOUNTED NO LESS THAN 15 INCHES ABOVE THE FINISHED FLOOR SURFACE. SHALL BE IN 5' SPACES FROM SIDE WALLS AND 1' FROM CORNER.

**SHEET SPECIFIC NOTES**

1. THE RECEPTACLE ABOVE COUNTERTOP, COMPLIANT WITH OTHER TRADES AND WITH COUNTERTOP BACKLASH.
2. IN THE UNIT SPECIFIC FOR ADA COMPLIANCE THE RANGE HOOD SHALL HAVE AN ADJUSTABLE CONTROL IN COOKTOP AREA AND THE RECEPTACLE IS MOUNTED ON THE ADJUSTABLE CONTROL. THE COUNTER HEIGHT RANGE CONTROL IN COMPLIANCE WITH ADA REQUIREMENTS.
3. ALL FROM THE COUNTERTOP RECEPTACLE SHALL BE SET PROTECTED FEET THROUGHOUT THE UNIT.
4. ALL FROM THE COUNTERTOP RECEPTACLE SHALL BE SET PROTECTED FEET THROUGHOUT THE UNIT.

**MAIN 150 AMP MAIN LOGS**

BLK. 150 AMP'S

NO.	DESCRIPTION	AMP	TYPE	NO.	DESCRIPTION	AMP	TYPE
1000	3	100	3P	1000	3	100	3P
1001	3	100	3P	1001	3	100	3P
1002	3	100	3P	1002	3	100	3P
1003	3	100	3P	1003	3	100	3P
1004	3	100	3P	1004	3	100	3P
1005	3	100	3P	1005	3	100	3P
1006	3	100	3P	1006	3	100	3P
1007	3	100	3P	1007	3	100	3P
1008	3	100	3P	1008	3	100	3P
1009	3	100	3P	1009	3	100	3P
1010	3	100	3P	1010	3	100	3P
1011	3	100	3P	1011	3	100	3P
1012	3	100	3P	1012	3	100	3P
1013	3	100	3P	1013	3	100	3P
1014	3	100	3P	1014	3	100	3P
1015	3	100	3P	1015	3	100	3P
1016	3	100	3P	1016	3	100	3P
1017	3	100	3P	1017	3	100	3P
1018	3	100	3P	1018	3	100	3P
1019	3	100	3P	1019	3	100	3P
1020	3	100	3P	1020	3	100	3P
1021	3	100	3P	1021	3	100	3P
1022	3	100	3P	1022	3	100	3P
1023	3	100	3P	1023	3	100	3P
1024	3	100	3P	1024	3	100	3P
1025	3	100	3P	1025	3	100	3P
1026	3	100	3P	1026	3	100	3P
1027	3	100	3P	1027	3	100	3P
1028	3	100	3P	1028	3	100	3P
1029	3	100	3P	1029	3	100	3P
1030	3	100	3P	1030	3	100	3P

**UNIT PANEL**

SQUARE D, CENTER HAMMER, OR GE LOAD CENTER OR EQUIPMENT

NO.	DESCRIPTION	AMP	TYPE	NO.	DESCRIPTION	AMP	TYPE
1000	3	100	3P	1000	3	100	3P
1001	3	100	3P	1001	3	100	3P
1002	3	100	3P	1002	3	100	3P
1003	3	100	3P	1003	3	100	3P
1004	3	100	3P	1004	3	100	3P
1005	3	100	3P	1005	3	100	3P
1006	3	100	3P	1006	3	100	3P
1007	3	100	3P	1007	3	100	3P
1008	3	100	3P	1008	3	100	3P
1009	3	100	3P	1009	3	100	3P
1010	3	100	3P	1010	3	100	3P
1011	3	100	3P	1011	3	100	3P
1012	3	100	3P	1012	3	100	3P
1013	3	100	3P	1013	3	100	3P
1014	3	100	3P	1014	3	100	3P
1015	3	100	3P	1015	3	100	3P
1016	3	100	3P	1016	3	100	3P
1017	3	100	3P	1017	3	100	3P
1018	3	100	3P	1018	3	100	3P
1019	3	100	3P	1019	3	100	3P
1020	3	100	3P	1020	3	100	3P
1021	3	100	3P	1021	3	100	3P
1022	3	100	3P	1022	3	100	3P
1023	3	100	3P	1023	3	100	3P
1024	3	100	3P	1024	3	100	3P
1025	3	100	3P	1025	3	100	3P
1026	3	100	3P	1026	3	100	3P
1027	3	100	3P	1027	3	100	3P
1028	3	100	3P	1028	3	100	3P
1029	3	100	3P	1029	3	100	3P
1030	3	100	3P	1030	3	100	3P

**NOTES:**

1. ALL RECEPTACLES SHALL BE ONE NEUTRAL AND ONE GROUND CONDUCTOR.
2. CONDUCTIVE SURFACES SHALL BE COPPER FINISH CONDUCTORS.
3. BREAKER SET FOR CDA UNITS ARE 25 AMP'S FOR CDA-1 AND 20 AMP'S FOR CDA-2.

**PACKAGE LISTING:**

17-710 118

13-94 118



**encompass**  
 ENGINEERING  
 1350 S. STATE 1100  
 SPOKANE, IDAHO 83402  
 PHONE: 408.540.4437

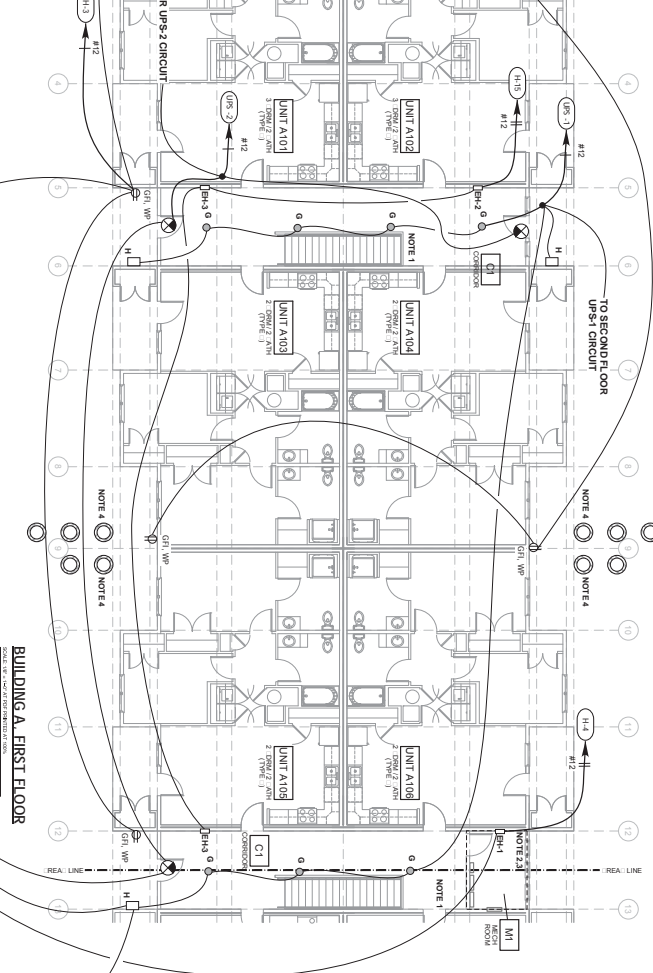
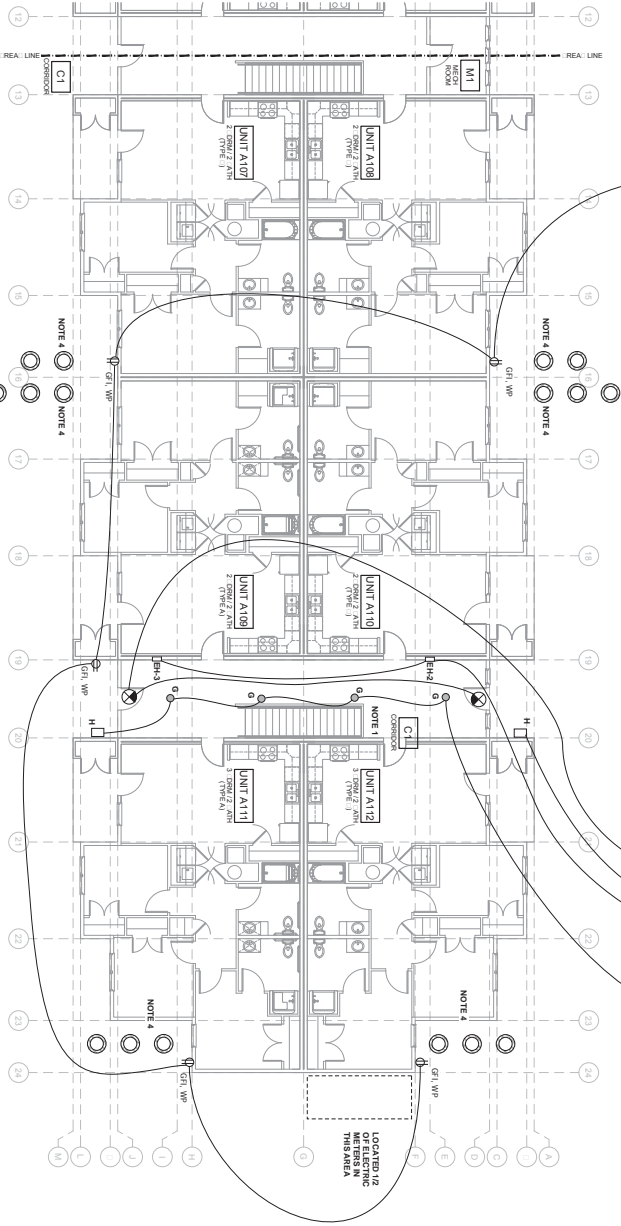
**Fussell Engineering**  
 2435 Dixon  
 Moscow, MT 59801  
 Phone: (409) 724-6986

MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
 CHEYENNE, WYOMING

Electrical Plans Units

**E1.1**

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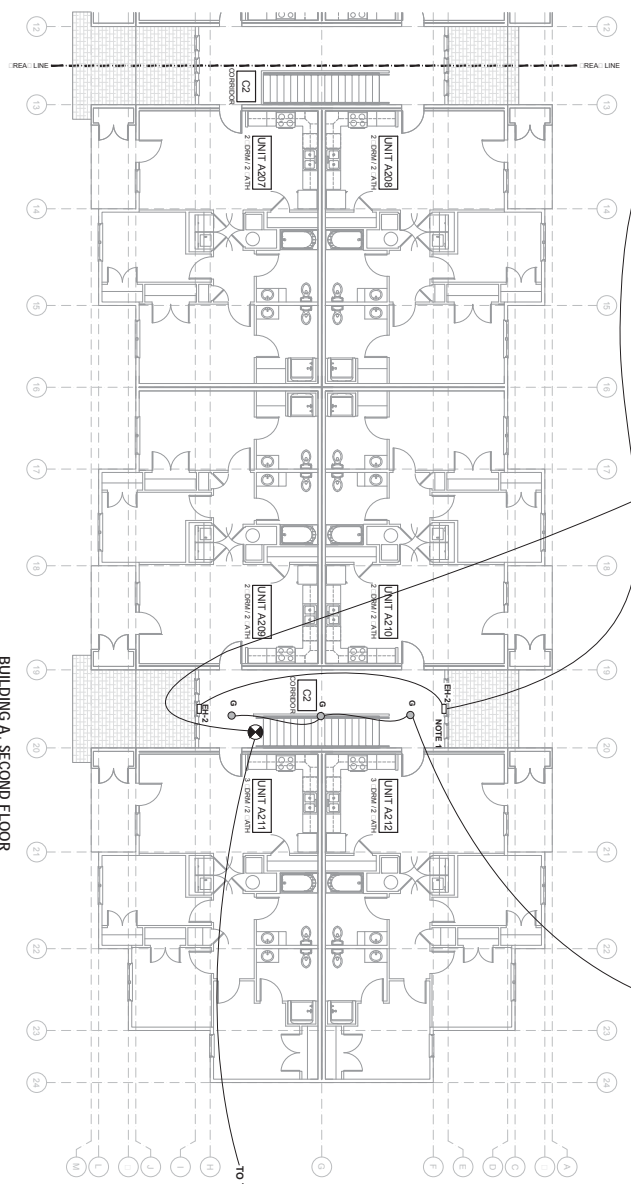
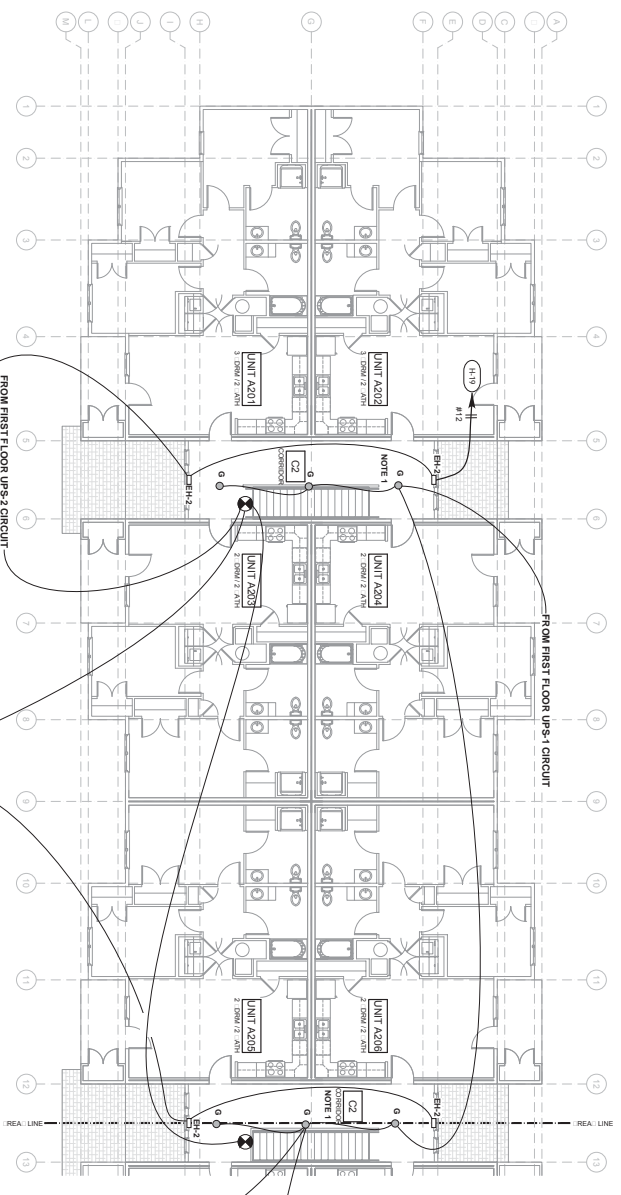


- GENERAL NOTES**
- VERIFY ALL DIMENSIONS AND EXACT FLOOR PLAN LAYOUTS WITH THE ARCHITECTURAL UNIT DRAWINGS.
  - ALL ELECTRIC HEATERS HAVE A SEPARATE LINE VOLTAGE THERMOSTAT. THE MECHANICAL CONTRACTOR PROVIDES THE THERMOSTAT AND THE ELECTRICAL CONTRACTOR INSTALLS IT IN THE LOCATION INDICATED BY THE MECHANICAL CONTRACTOR.
- SHEET SPECIFIC NOTES**
- FURNISH AND INSTALL FIRE ALARM SYSTEM IN THE CORRIDOR AREA. SEE SHEET E-0 FOR FIRE ALARM REQUIREMENTS.
  - IN THE MECHANICAL ROOM FURNISH AND INSTALL THE FOLLOWING:
    - FIRETRUCK - CHARGE HOIST; FURNISH AND INSTALL A WALL SWITCH AT THE ENTRY DOOR.
    - FIRE ALARM CONTROL PANEL POWERED FROM A DEDICATED RECEPTACLE.
    - A TELEPHONE BOARD WITH A DEDICATED RECEPTACLE. PROVIDE 60AL TONE FOR ONE LINE FOR THE FIRE ALARM PANEL.
    - A DEDICATED RECEPTACLE FOR CITY/VAN END EQUIPMENT.
    - A WALL HEATER. SEE MECHANICAL DRAWINGS FOR HEATER SPECIFICATIONS.
    - HOUSE PANEL, SURFACE MOUNTED ON THE WALL. MAINTAIN WORKING SPACE.
    - EMERGENCY LIGHT RECEPTACLE.
  - FURNISH AND INSTALL EMERGENCY POWER CONDUITS FROM THE MECHANICAL ROOM UNDERGROUND TO THE CITY RECEPTACLE AND TELEPHONE RECEPTACLE DRAINAGE LOCATION.
  - SEE UNIT PLANS FOR COMPRESSION ELECTRICAL SUPPLY.

	<b>Electrical Plans</b> Building A	MULTIFAMILY APARTMENT COMPLEX FOR: <b>CAPITAL COURT</b> CHEYENNE, WYOMING	<b>Fussell Engineering</b> 2435 Dixon Madison, WI 53701 Phone: (408) 721-6566		
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**GENERAL NOTES**  
 A. VERIFY ALL DIMENSIONS AND EXACT FLOOR PLAN LAYOUTS WITH THE ARCHITECTURAL UNIT DRAWINGS.  
 B. LOCATE FEATURE 'G' SO THAT BOTH THE CORRIDOR AND THE STAIRS ARE ILLUMINATED.

**SHEET SPECIFIC NOTES**  
 1. FINISH AND INITIAL FIRE ALARMS SYSTEM IN THE CORRIDOR AREA. SEE SHEET E-0 FOR FIRE ALARM REQUIREMENTS.



**BUILDING A, SECOND FLOOR**

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MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
 CHEYENNE, WYOMING

Project No. 112518  
 Electrical Plans  
 Building A

**E2.1**





**Fussell Engineering**  
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 Moorpark, WI 53001  
 Phone: (408) 724-6586

MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
 CHEYENNE, WYOMING

Electrical Plans  
 Building A

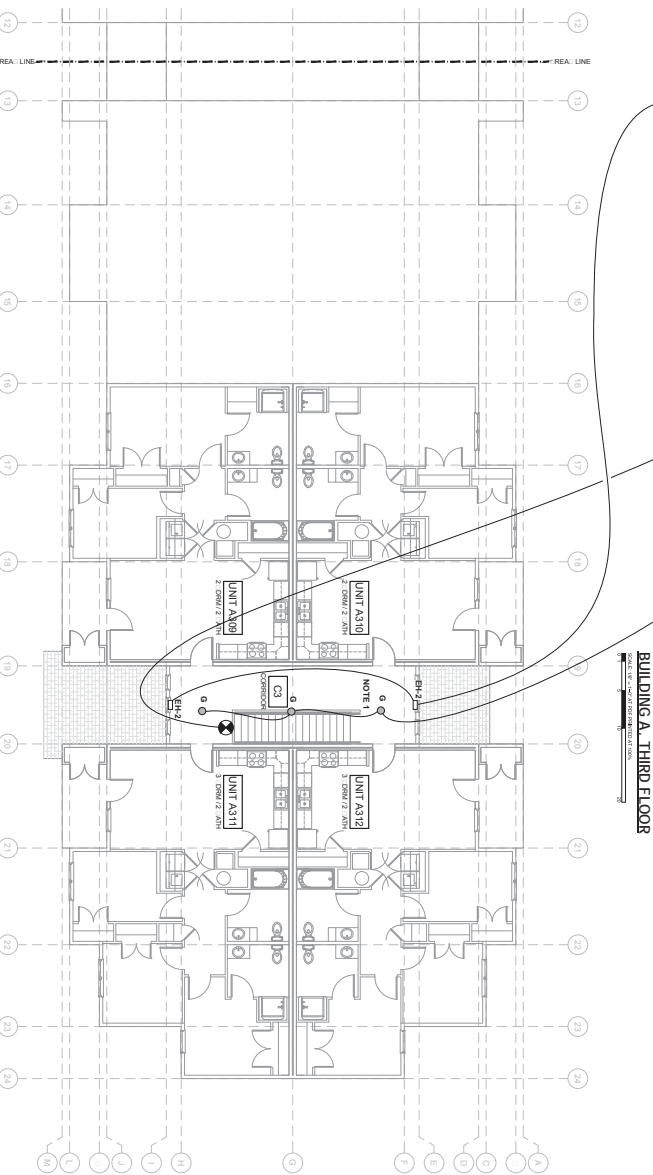
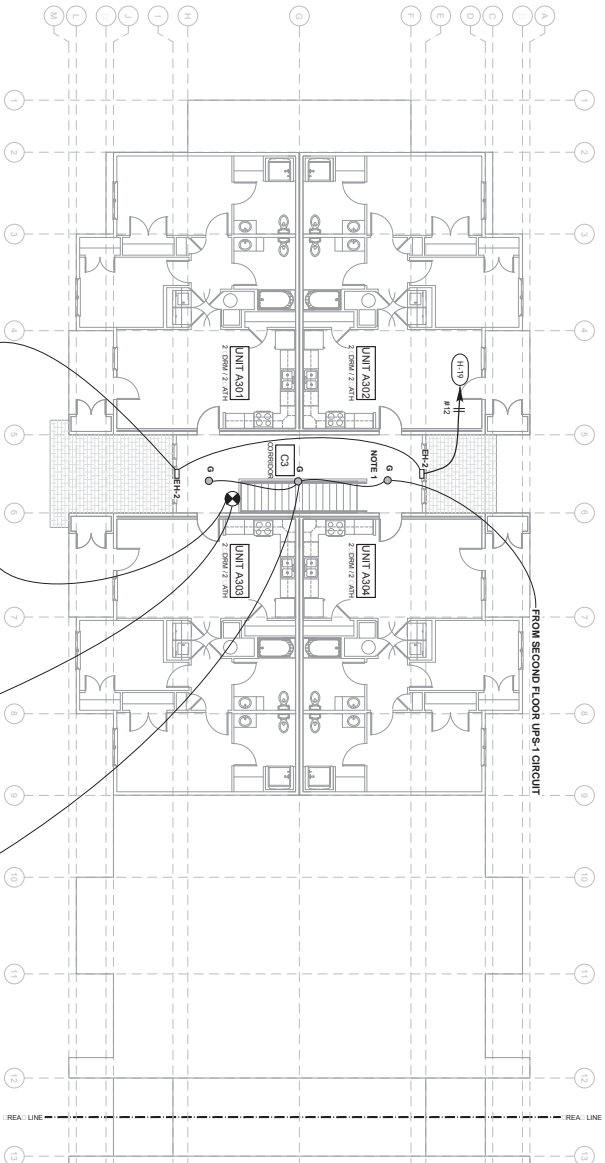


- GENERAL NOTES**
- VERIFY ALL DIMENSIONS AND EXACT FLOOR PLAN LAYOUTS WITH THE ARCHITECTURAL UNIT DRAWINGS.
  - LOCATE ENTIRE 'G' SO THAT BOTH THE CORRIDOR AND THE STAIRS ARE ILLUMINATED.
- SHEET SPECIFIC NOTES**
- FURNISH AND INSTALL FIRE ALARM SYSTEM IN THIS CORRIDOR AREA. SEE SHEET 10 OF FIRE ALARM REQUIREMENTS.

**HOUSE PANEL**  
 SQUARE D OR CE LOCOCENTER OR EQUIVALENT

NO.	WIRE #	CIRCUIT	WIRE TYPE	SIZE	WIRE	NUMBER	AMPS	WIRE TYPE	SIZE	WIRE	NUMBER	AMPS	WIRE TYPE	SIZE	WIRE	NUMBER	AMPS
1	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
2	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102
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5	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
6	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106
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50	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150

NOTES:  
 1. WIRING SHALL BE TWO HOT, ONE NEUTRAL AND ONE GROUND CONDUCTORS.  
 2. CONDUCTORS SHALL BE COPPER UNLESS OTHERWISE NOTED.



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PROJECT NO. 11-2018  
 SHEET NO. 15-001



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 Cheyenne, WY 82001  
 Phone: (408) 721-6566

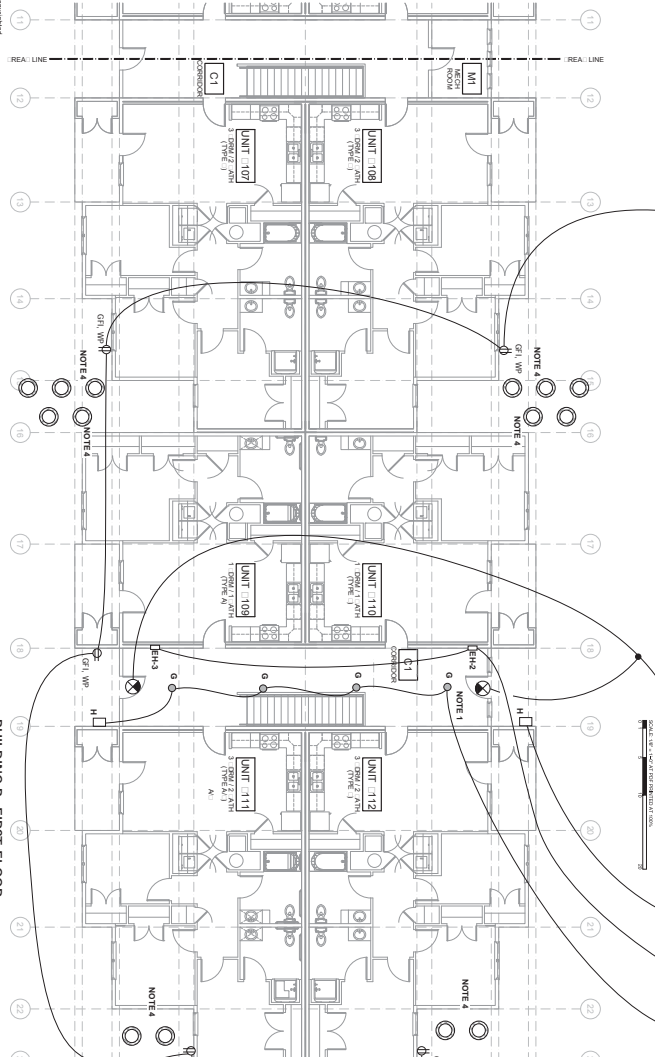
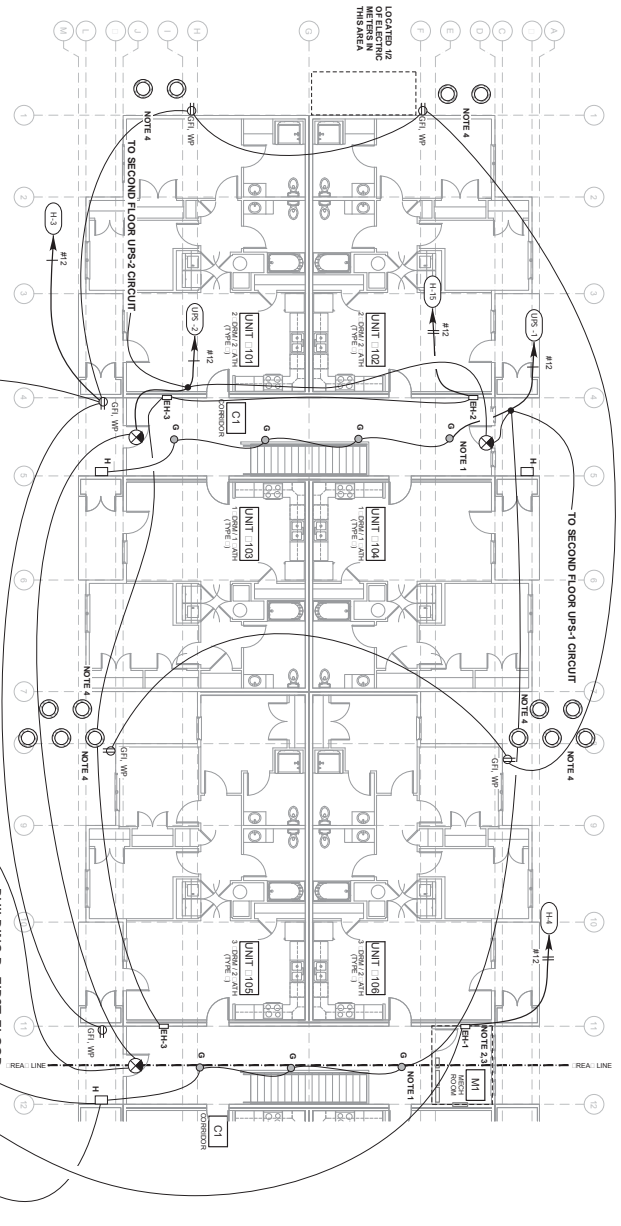
MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
 CHEYENNE, WYOMING

Electrical Plans  
 Utility

Scale: 1/8" = 1'-0"  
 1/4" = 1'-0"

**E2.3**

- GENERAL NOTES**
- A. VERIFY ALL DIMENSIONS AND EXACT FLOOR-PLAN LAYOUTS WITH THE ARCHITECTURAL UNIT DRAWINGS.
  - B. ALL ELECTRICAL METERS HAVE A REMOTE LINE VOLTAGE TRANSFORMER. THE MECHANICAL CONTRACTOR PROVIDES THE TRANSFORMER AND THE ELECTRICAL CONTRACTOR INSTALLS IT IN THE LOCATION INDICATED BY THE MECHANICAL CONTRACTOR.
- SHEET SPECIFIC NOTES**
1. RUSHION AND INSTALL THE ALARM SYSTEM IN THIS CORRIDOR AREA. SEE SHEET 01 OR RIE ALARM REQUIREMENTS.
  2. IN THE MECHANICAL ROOM FINISH AND INSTALL THE FOLLOWING:
    - a. FUTURE 'C' CHASE HANG PROTECTING WITH A WALL SWITCH AT THE ENTRY DOOR.
    - b. FIRE ALARM CONTROL PANEL POWERED FROM A DEDICATED RECEPTACLE.
    - c. A TELEPHONE BOARD WITH A DEDICATED RECEPTACLE. PROVIDE DUAL TONE FOR ONE LINE FOR THE FIRE ALARM PANEL.
    - d. A DEDICATED RECEPTACLE FOR CATHY HEAD END EQUIPMENT.
    - e. A WALL LIGHTER. SEE MECHANICAL DRAWINGS FOR HEATER SPECIFICATIONS.
    - f. HOUSE PANEL SURFACE MOUNTED ON THE WALL. MAINTAIN WORKING SPACE.
    - g. EMERGENCY LIGHT FIXTURES.
- COORDINATE WITH OTHER TRADES REGARDING THE INSTALLATION OF THIS EQUIPMENT. SEE MECHANICAL DRAWINGS FOR MECHANICAL ROOM FINISH AND INSTALLATION OF THIS EQUIPMENT.**
3. RUSHION AND INSTALL ENTRY PROTECTORS FROM THE MECHANICAL ROOM UNDERGROUND TO THE CITY/POSTAL AND TELEPHONE RECEIVING DRAWER LOCATION.
  4. SEE UNIT PLANS FOR COMPRESSOR ELECTRICAL SUPPLY.



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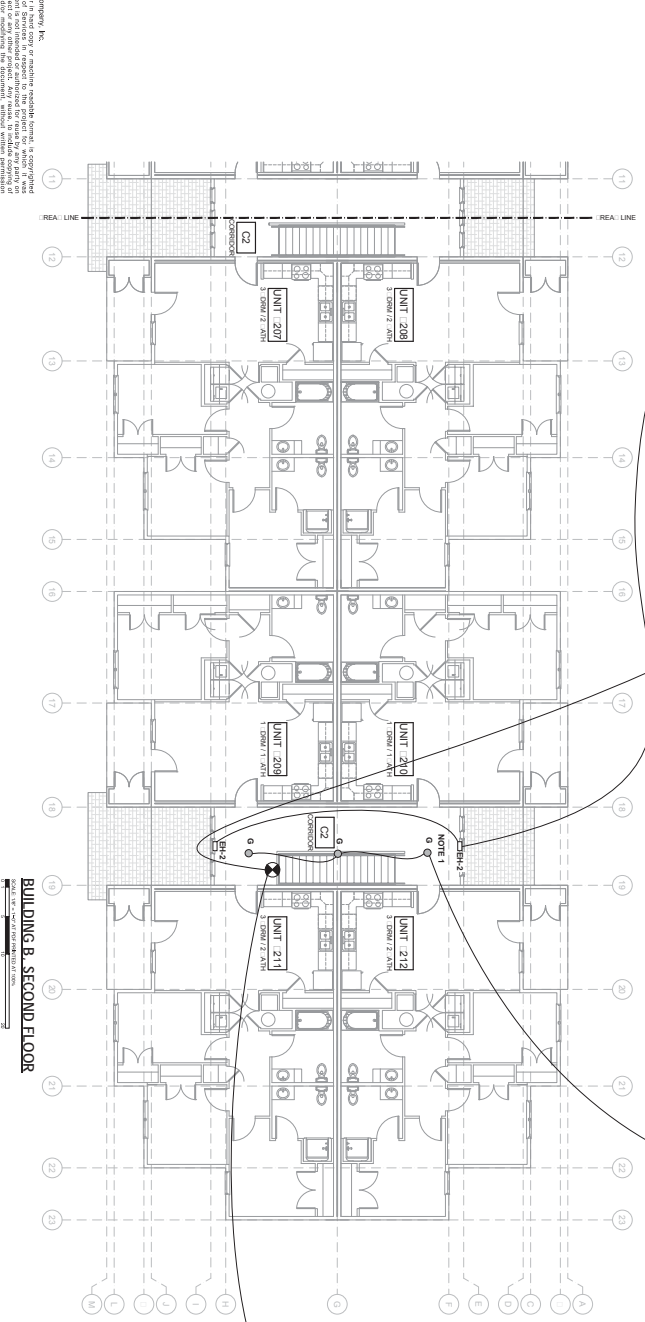
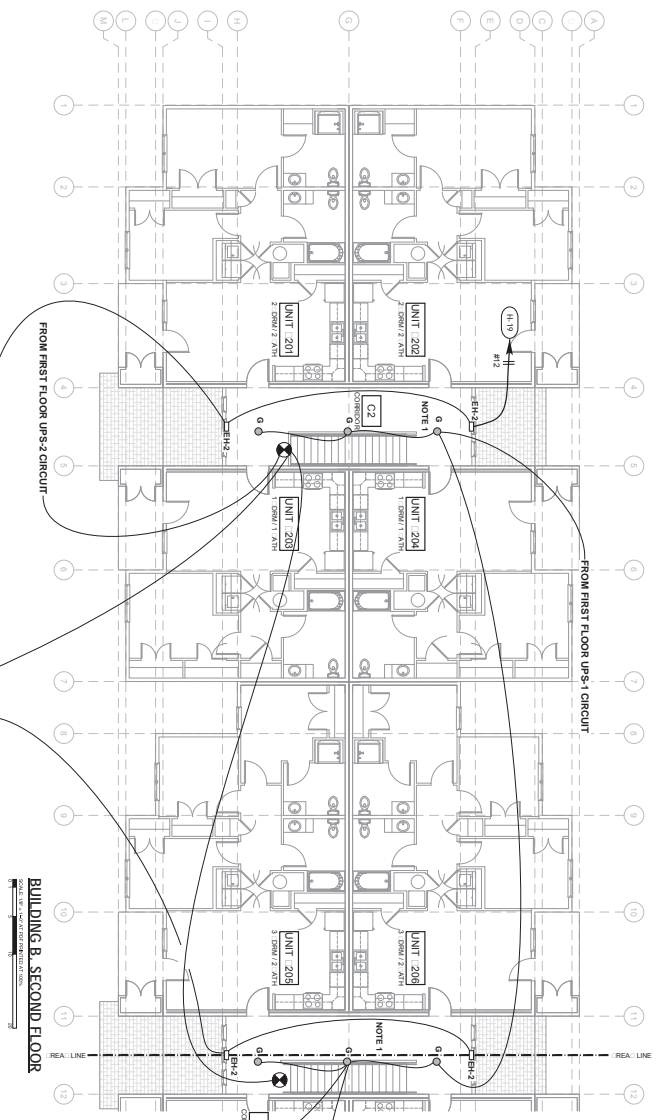
**GENERAL NOTES**

A. VERIFY ALL DIMENSIONS AND EXACT FLOOR FINISH LOCATIONS WITH THE ARCHITECTURAL UNIT DRAWINGS.

B. LOCATE FLOORING SO THAT BOTH THE CONDORES AND THE STAIRS ARE ILLUMINATED.

**SHEET SPECIFIC NOTES**

1. TURNKEY AND INSTALL THE ALARMS SYSTEM IN THE CONDORES AREA. SEE SHEET 10 FOR THE ALARM REQUIREMENTS.



FROM FIRST FLOOR UPS-1 CIRCUIT

TO THIRD FLOOR UPS-1 CIRCUIT

FROM FIRST FLOOR UPS-2 CIRCUIT

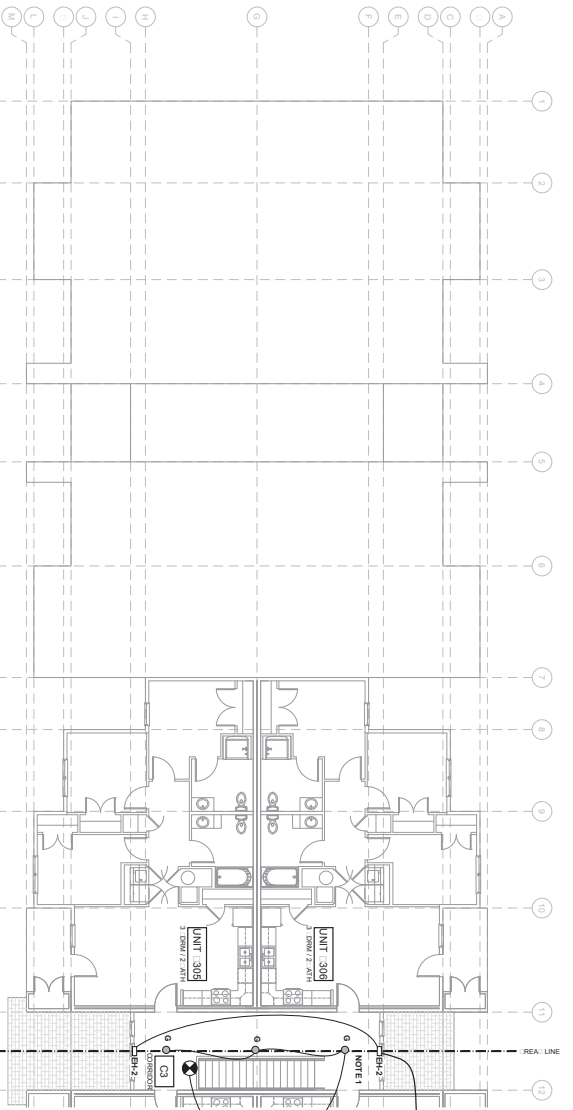
TO THIRD FLOOR UPS-2 CIRCUIT

	<p>encompass Engineering 1325 West State 1100 Mason City, Wyoming Phone: 406.540.4437</p>	<p><b>Fussell Engineering</b></p> <p>2435 Dixon Mesa, WI 58011 Phone: (408) 724-6586</p>	<p>MULTIFAMILY APARTMENT COMPLEX FOR: <b>CAPITAL COURT</b></p> <p>CHEYENNE, WYOMING</p>	<p>Project No. 1125116</p> <p><b>Electrical Plans</b></p> <p>Utility</p>	<p>2023.09.14 10:50</p>	<p><b>E2.4</b></p>
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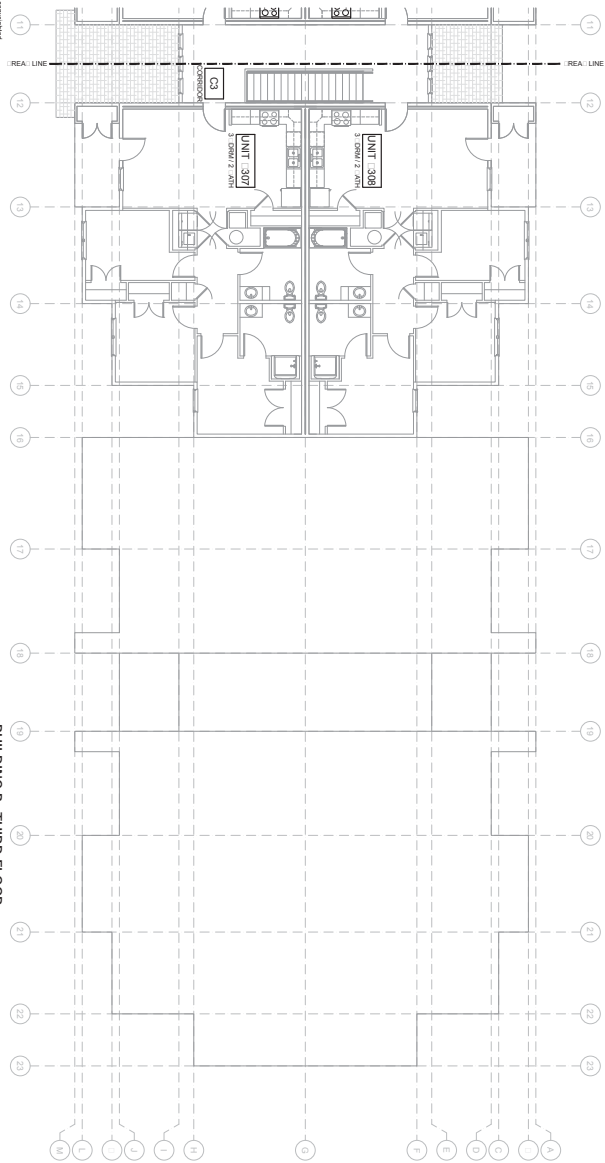


- GENERAL NOTES**
- A. VERIFY ALL DIMENSIONS AND EXACT FIT ON PLAN UNITS WITH THE ARCHITECTURAL UNIT DRAWINGS.
  - B. LOCATE EXTINGUISHERS BOTH IN THE COMMON AND THE STAIRS ARE ILLUSTRATED.
- SHEET SPECIFIC NOTES**
- 1. FURNISH AND INSTALL FIRE ALARM SYSTEM IN THE COMMON AREA. SEE SHEET E-03 FOR THE ALARM REQUIREMENTS.



NO.	SYMBOL #	UNIT	AMPS	MIN.	MAX.	TYPE	CONDUCTORS	TYPE	CONDUCTORS	TYPE	CONDUCTORS	TYPE	CONDUCTORS	TYPE	CONDUCTORS	TYPE	CONDUCTORS	TYPE	CONDUCTORS
100	3	10	20	100	120	120	2	120	2	120	2	120	2	120	2	120	2	120	2
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102	3	10	20	100	120	120	2	120	2	120	2	120	2	120	2	120	2	120	2
103	3	10	20	100	120	120	2	120	2	120	2	120	2	120	2	120	2	120	2
104	3	10	20	100	120	120	2	120	2	120	2	120	2	120	2	120	2	120	2
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120	3	10	20	100	120	120	2	120	2	120	2	120	2	120	2	120	2	120	2

**BUILDING B - THIRD FLOOR**



**BUILDING B - THIRD FLOOR**

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Moose, WY 82401  
Phone: (408) 724-6986

MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
CHEYENNE, WYOMING

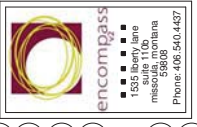
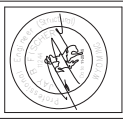
Electrical  
Plans  
utilizing

2023.004 - 1/15/20

**E2.5**







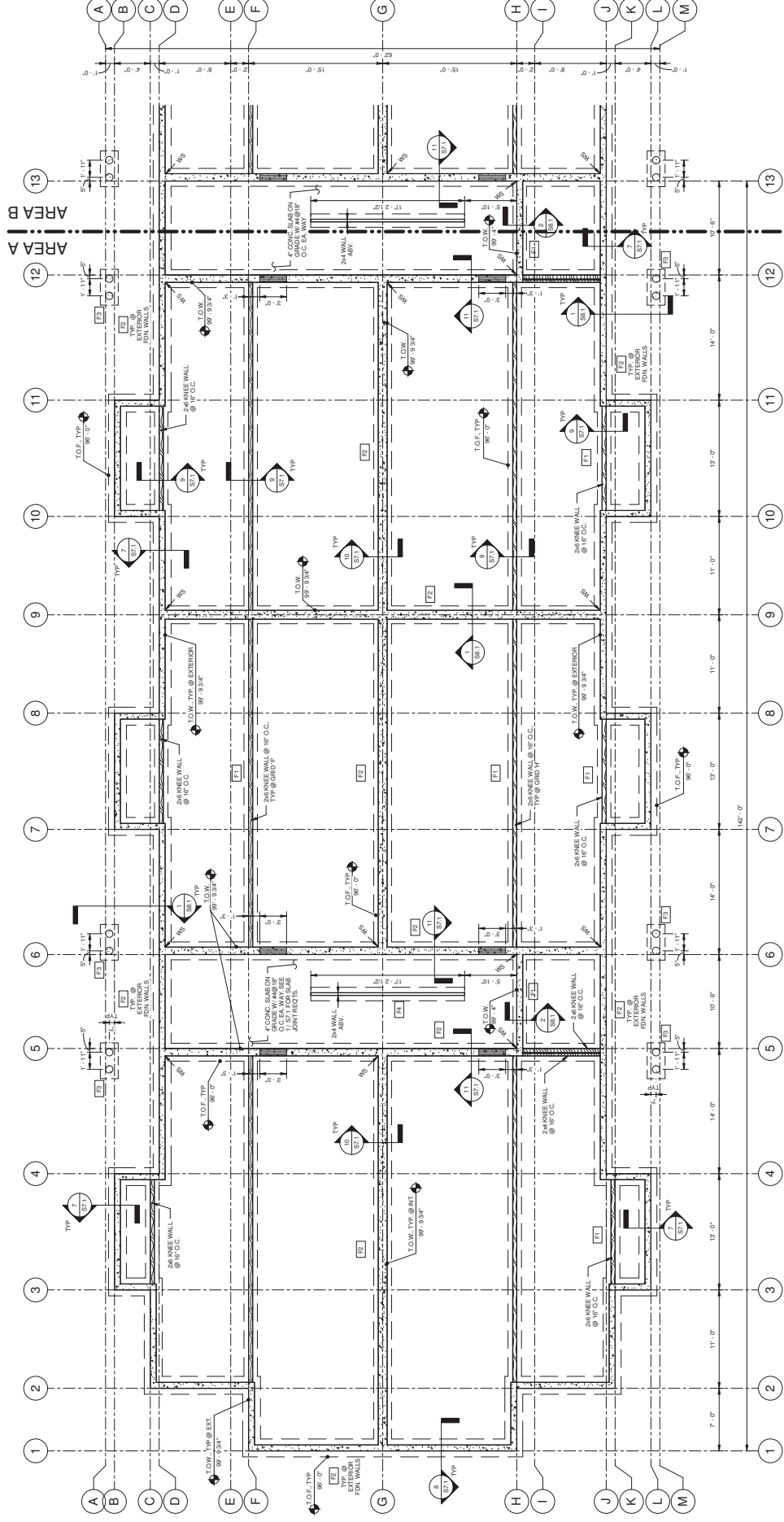
MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
CHEYENNE, WYOMING

FOUNDATION PLAN AREA A

FOUNDATION PLAN AREA A

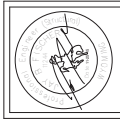
15.038  
11/26/13

S2.1  
BUILDING A



- FOOTING MARKS:**
1. FOOTING MARK. SEE FOOTING SCHEDULE FOR ADD'L INFO.
  2. T.O.F. TOP OF FOOTING ELEVATION
  3. T.O.W. TOP OF CONC. WALL ELEVATION
  4. W.S. TOP OF CONC. WALL STEP
  5. CONC. SUB JOINT SEE
  6. CONC. WALL BLOCKOUT @ DOOR/OPNG. SEE 41 S71
  7. SEE ARCHT. FOR OPNG. LOCATIONS IN CONC. FDN. WALL. SEE 131 S71

FOOTING SCHEDULE	
TYPE MARK	DIMENSIONS
F1	1'-6" WIDE @ 10'-0" TYP. @ EXT.
F2	2'-0" WIDE @ 10'-0" TYP. @ INT.
F3	1'-6" WIDE @ 10'-0" TYP. @ INT.
F4	1'-6" WIDE @ 10'-0" TYP. @ INT.
F5	1'-6" WIDE @ 10'-0" TYP. @ INT.
F6	1'-6" WIDE @ 10'-0" TYP. @ INT.
F7	1'-6" WIDE @ 10'-0" TYP. @ INT.
F8	1'-6" WIDE @ 10'-0" TYP. @ INT.
F9	1'-6" WIDE @ 10'-0" TYP. @ INT.
F10	1'-6" WIDE @ 10'-0" TYP. @ INT.
F11	1'-6" WIDE @ 10'-0" TYP. @ INT.
F12	1'-6" WIDE @ 10'-0" TYP. @ INT.
F13	1'-6" WIDE @ 10'-0" TYP. @ INT.
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F16	1'-6" WIDE @ 10'-0" TYP. @ INT.
F17	1'-6" WIDE @ 10'-0" TYP. @ INT.
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F20	1'-6" WIDE @ 10'-0" TYP. @ INT.
F21	1'-6" WIDE @ 10'-0" TYP. @ INT.
F22	1'-6" WIDE @ 10'-0" TYP. @ INT.
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F99	1'-6" WIDE @ 10'-0" TYP. @ INT.
F100	1'-6" WIDE @ 10'-0" TYP. @ INT.



MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
 CHEYENNE, WYOMING



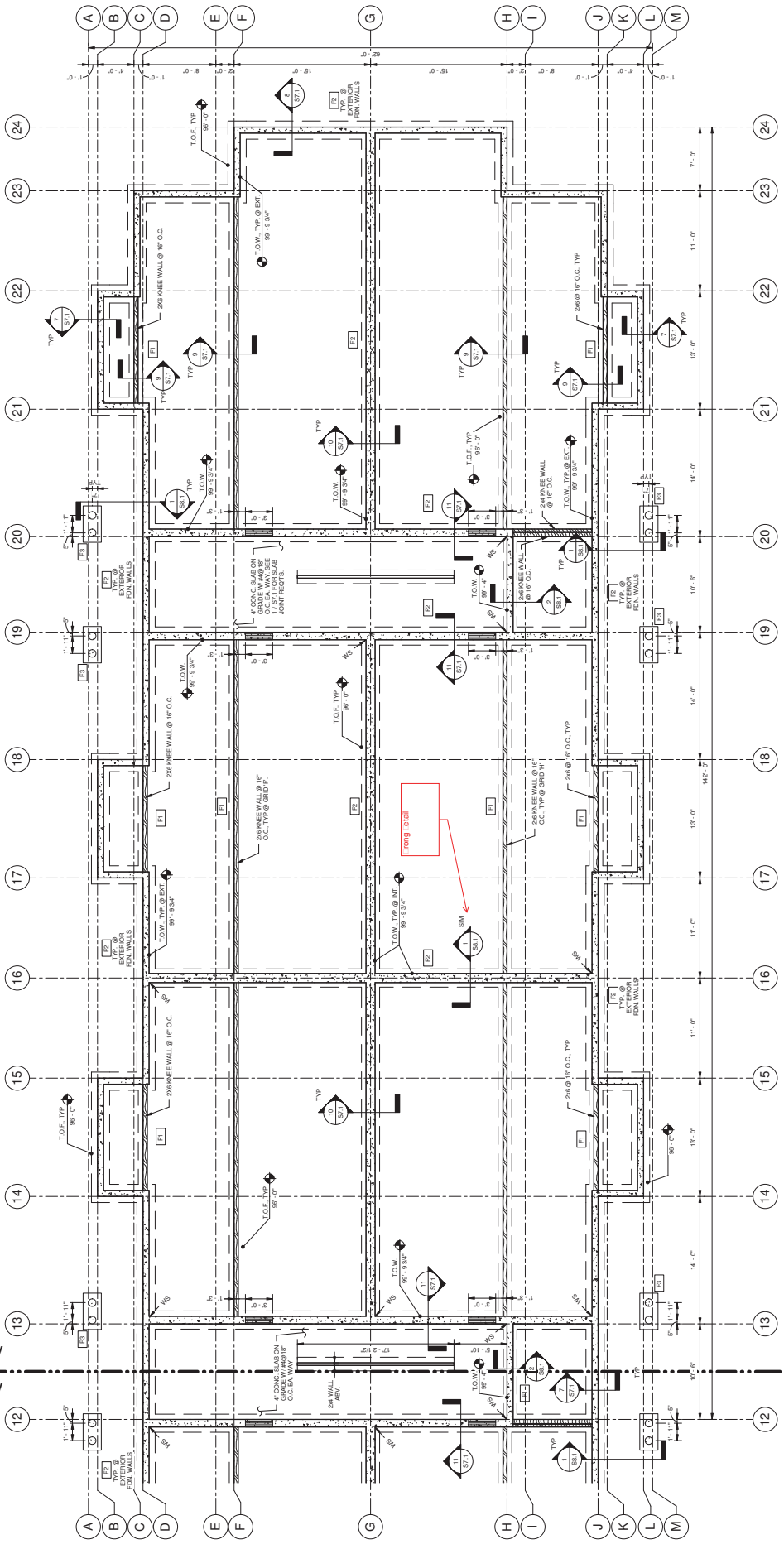
FOUNDATION  
 PLAN AREA B

15.5.00  
 02.2024

S2.2  
 BUILDING A

PLAN NOTES:  
 1. SEE SHEET S2.1 FOR PLAN NOTES & FTG. SCHEDULE

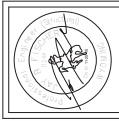
AREA A  
 AREA B



Reviewed and  
 Approved  
 Date: 12.15.23  
 BP-15-0023

Please note: This Reviewed and Approved stamp  
 is required on all

FOUNDATION PLAN AREA B



MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
CHEYENNE, WYOMING



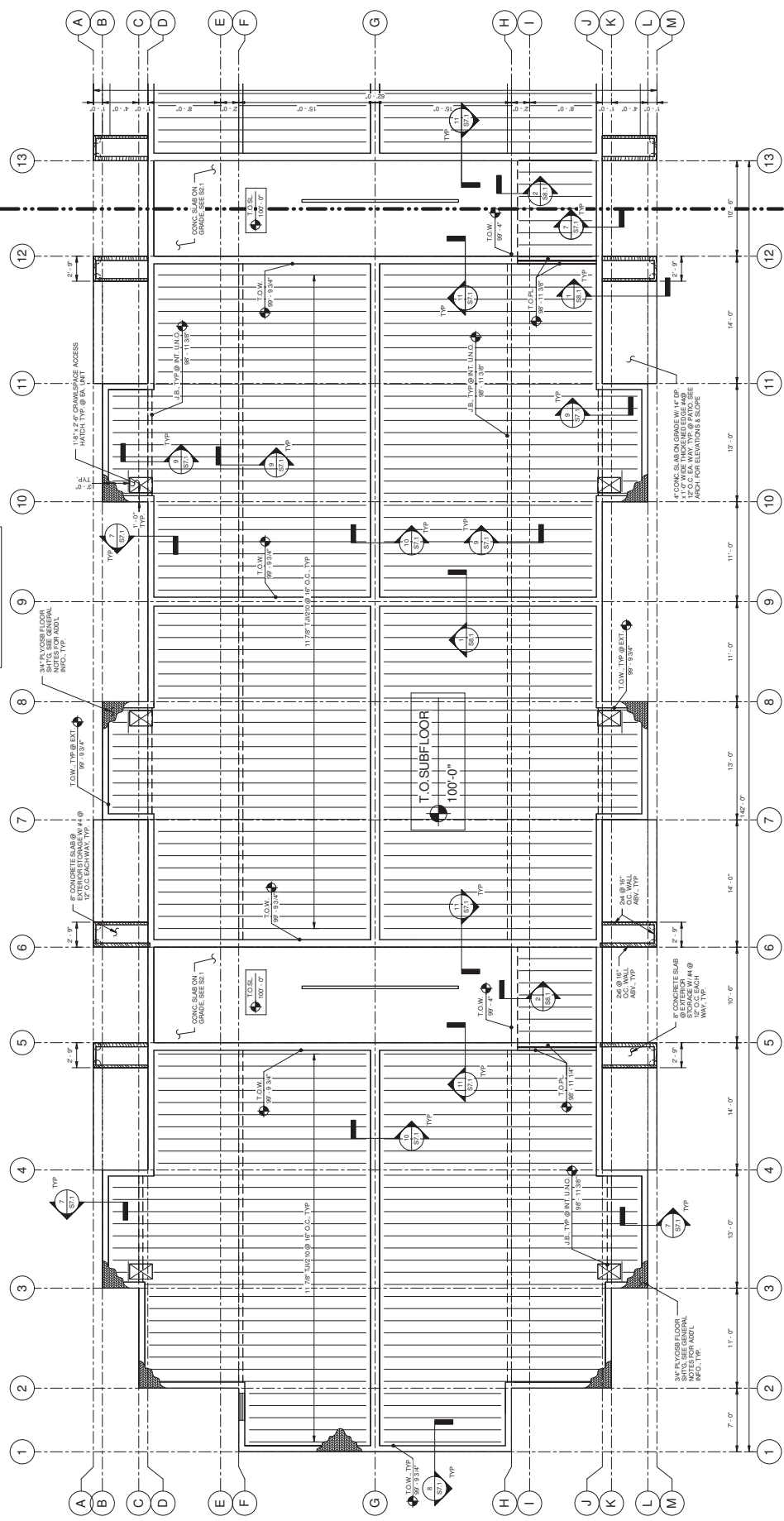
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**MAIN FLOOR  
PLAN AREA A**

NO. 2, 2018 - 15.5.19

**S2.3**  
BUILDING A

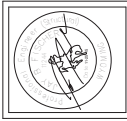
AREA B  
AREA A

LEVELS:  
T.O.P. TOP OF WOOD WALL PLATE  
T.O.W. TOP OF WOOD WALL  
X-X' TOP OF CONC. EDW. WALL  
L.O.W. TOP OF CONC. EDW. WALL  
X-X' TOP OF CONC. EDW. WALL



1 MAIN FLOOR PLAN AREA A  
3/16" = 1'-0"





MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
CHEYENNE, WYOMING

PROJECT NUMBER: 15.108

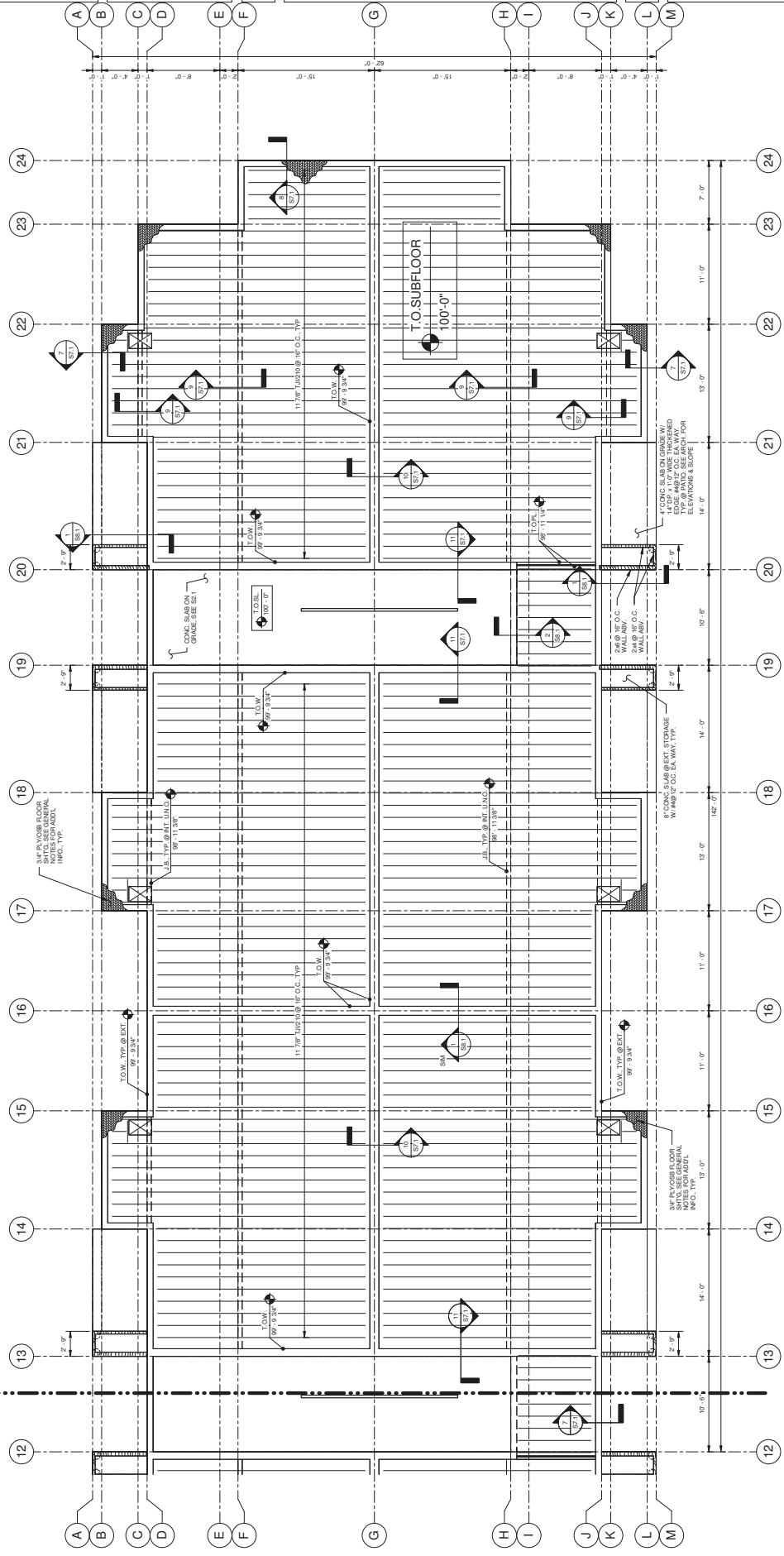
MAIN FLOOR  
PLAN AREA B

15.108  
15.108.P.1

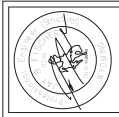
S2.4  
BUILDING A

AREA A  
AREA B

- SEAL NOTES:
- T.O.P. TOP OF WOOD WALL FLUTE
  - X-X' TOP OF CONC. ION WALL
  - T.O.W. TOP OF CONC. ION WALL
  - X-X' TOP OF CONC. ION WALL



1 MAIN FLOOR PLAN AREA B  
3/16" = 1'-0"



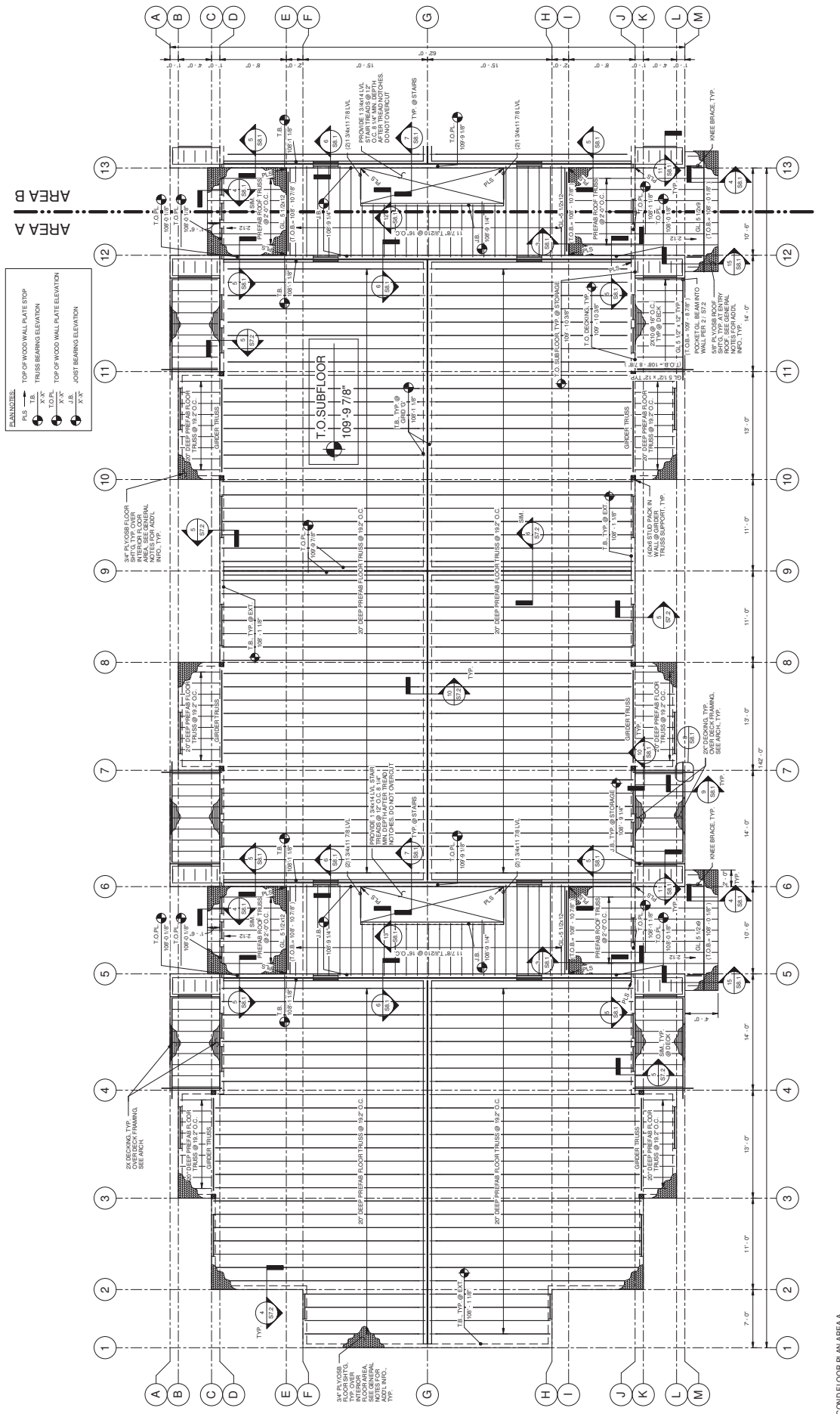
# MULTIFAMILY APARTMENT COMPLEX FOR: CAPITAL COURT CHEYENNE, WYOMING

9500 PERM. SET. 11.26.18

## SECOND FLOOR FLOOR FRAMING PLAN AREA A

15.539  
9500 PERM. SET. 11.26.18

S2.5  
BUILDING A



- EXPLANATIONS:**
- PLS TOP OF WOOD WALL PLATE STOP
  - T.B. TRUSS BEARING ELEVATION
  - X'X' TOP OF WOOD WALL PLATE ELEVATION
  - T.O.P. TOP OF WOOD WALL PLATE ELEVATION
  - X'X' JOIST BEARING ELEVATION
  - X'X' JOIST BEARING ELEVATION

1 SECOND FLOOR PLAN AREA A  
3/16" = 1'-0"





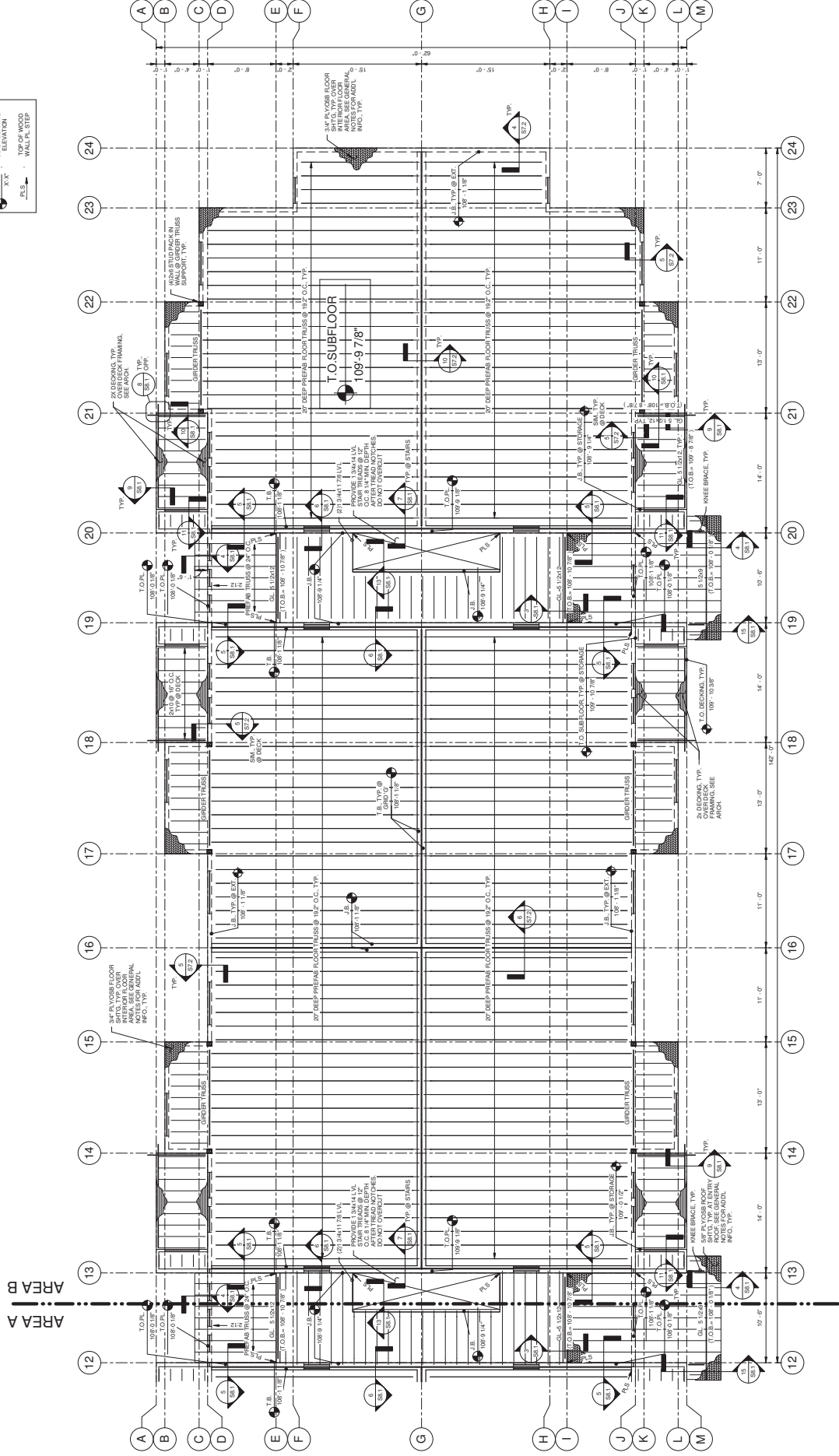
MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
CHEYENNE, WYOMING

SECOND FLOOR  
FLOOR  
FRAMING  
PLAN AREA B

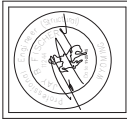
SCALE: 3/8" = 1'-0"

S2.6  
BUILDING A

- EXPLANATION:**
- I.B. TRUSS BEARING ELEVATION
  - X'X' WALL ON RISE
  - O.C. WALL ON RISE ELEV.
  - J.O.S. BEARING ELEVATION
  - J.B. TOP OF WOOD WALL/P.L. STEP



1 SECOND FLOOR PLAN AREA B  
3/16" = 1'-0"



MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
 CHEYENNE, WYOMING

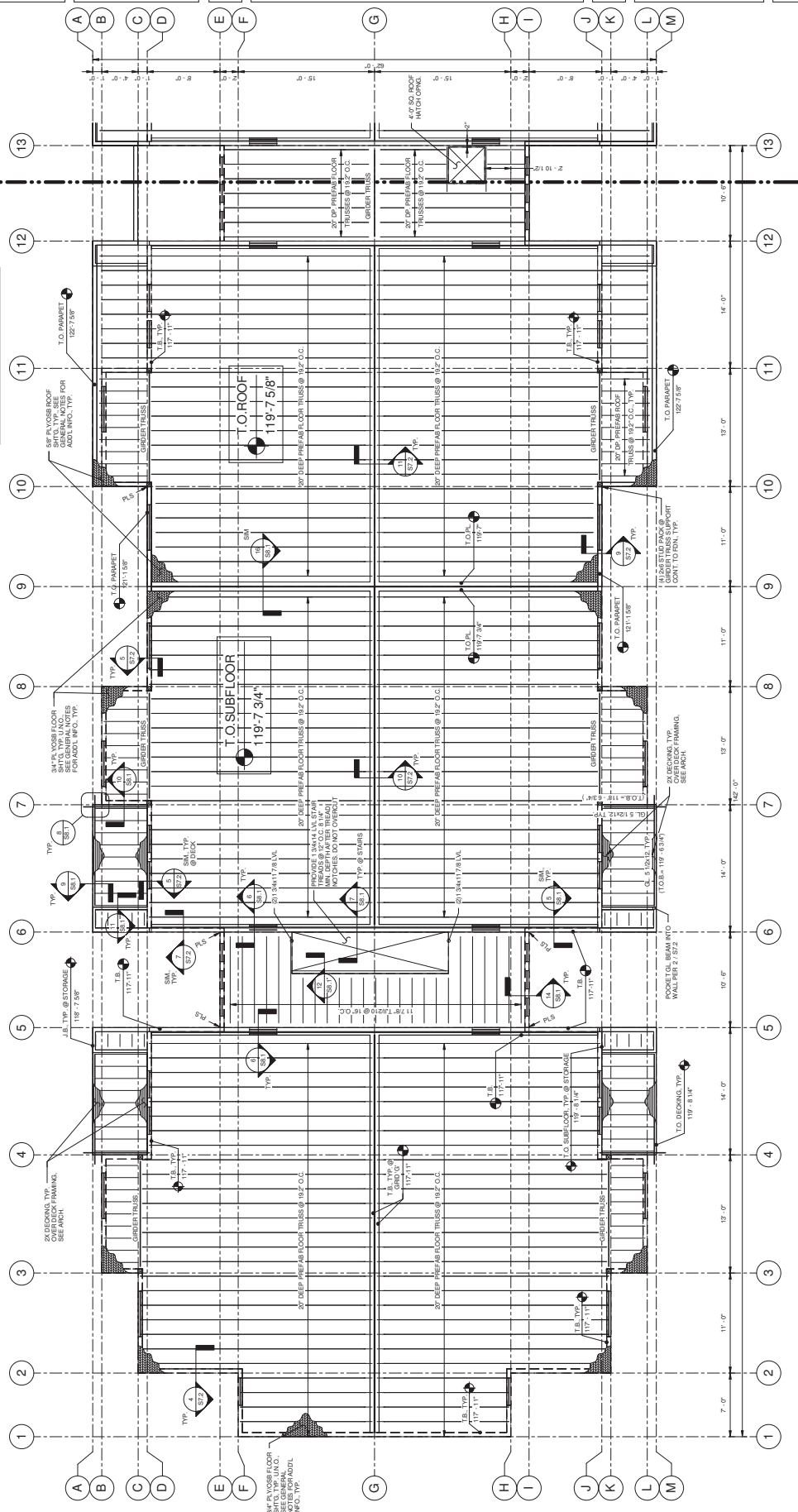
3RD FLOOR FRAMING  
 PLAN AREA A

15.00' - 15.00'

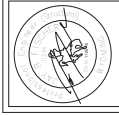
S2.7  
 BUILDING A

AREA B  
 AREA A

- LEGEND:**
- TOP OF WOOD WALL PLATE STOP
  - TRUSS BEARING ELEVATION
  - TOP OF WOOD WALL PLATE ELEVATION
  - JOIST BEARING ELEVATION



1 THIRD FLOOR PLAN AREA A  
 3/16" = 1'-0"



# MULTIFAMILY APARTMENT COMPLEX FOR: CAPITAL COURT CHEYENNE, WYOMING

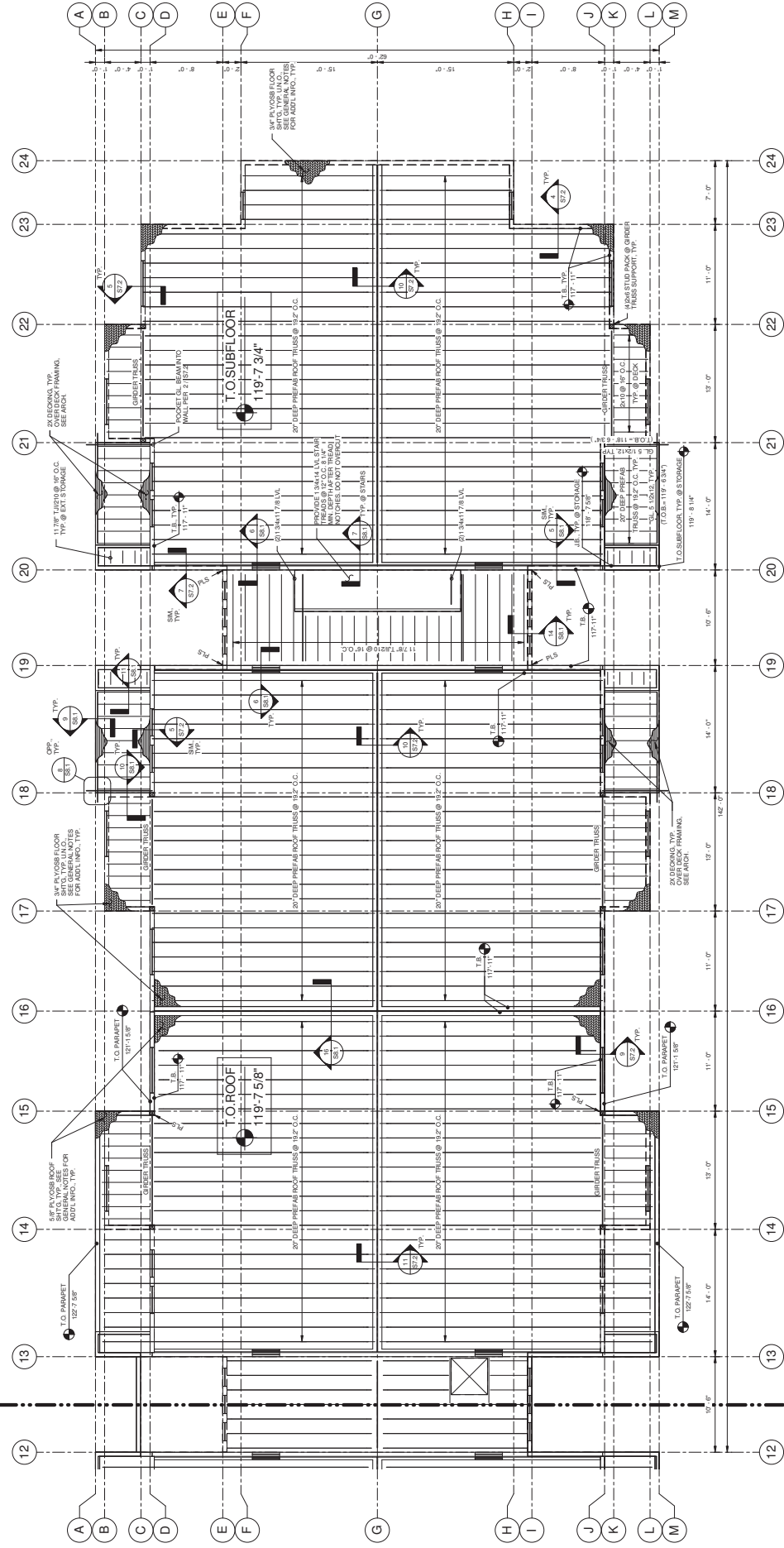
WELLS FARGO BANK

THIRD FLOOR FRAMING  
PLAN AREA B

15.50'

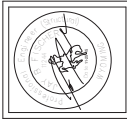
S2.8  
BUILDING A

AREA A  
AREA B



1 THIRD FLOOR PLAN AREA B  
1/316" = 1'-0"





encompass  
 1500 Liberty Lane  
 Missoula, Montana  
 Phone: 406.540.4437



MORRISON ENGINEERING & ARCHITECTURE  
 3011 Prairie Dr.  
 Missoula, MT 59808  
 Phone: 406.540.4437

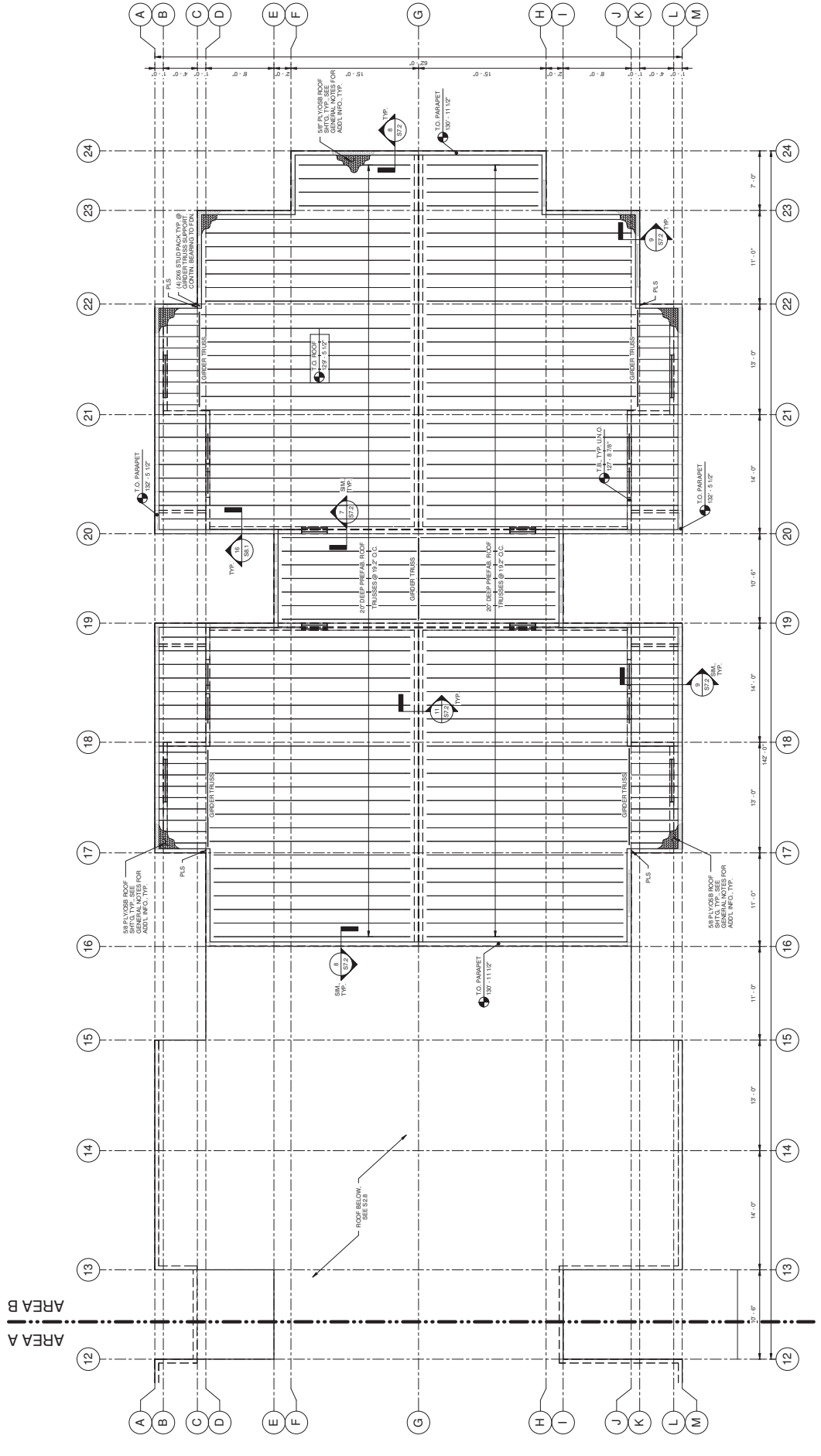
MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
 CHEYENNE, WYOMING



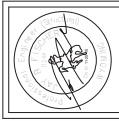
ROOF FRAMING  
 PLAN AREA B

SCALE: PER SEE SET 11.18.19  
 1/8" = 1'-0"

S2.10  
 BUILDING A



1 ROOF PLAN AREA B  
 3/16" = 1'-0"

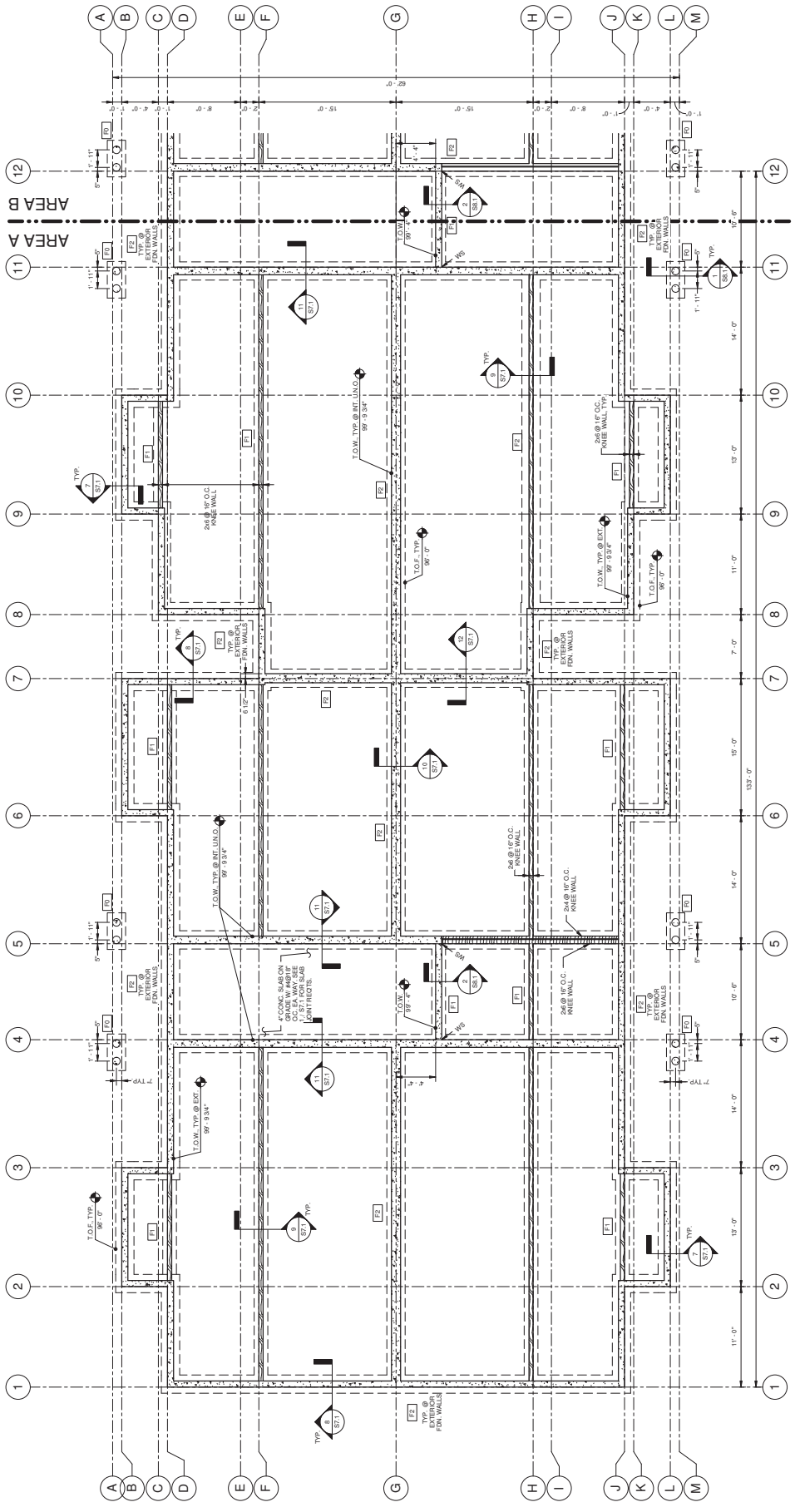


MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
 CHEYENNE, WYOMING

FOUNDATION  
 PLAN A

REVISION SET 11.25.18

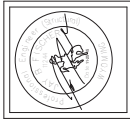
S2.11  
 BUILDING B



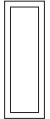
FOOTING SCHEDULE	
TYPE MARK	REINFORCEMENT
F1	3#4 @ 12\"/>
F2	3#4 LONGITUDINAL, #4 @ 24\"/>

Reviewed and Approved  
 Chief Building Official  
 DR-15-00973  
 DR-12-30-15  
 Please note: The Reviewed and Approved plans are required onsite

FOUNDATION PLAN AREA A  
 3/16" = 1'-0"



MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
CHEYENNE, WYOMING



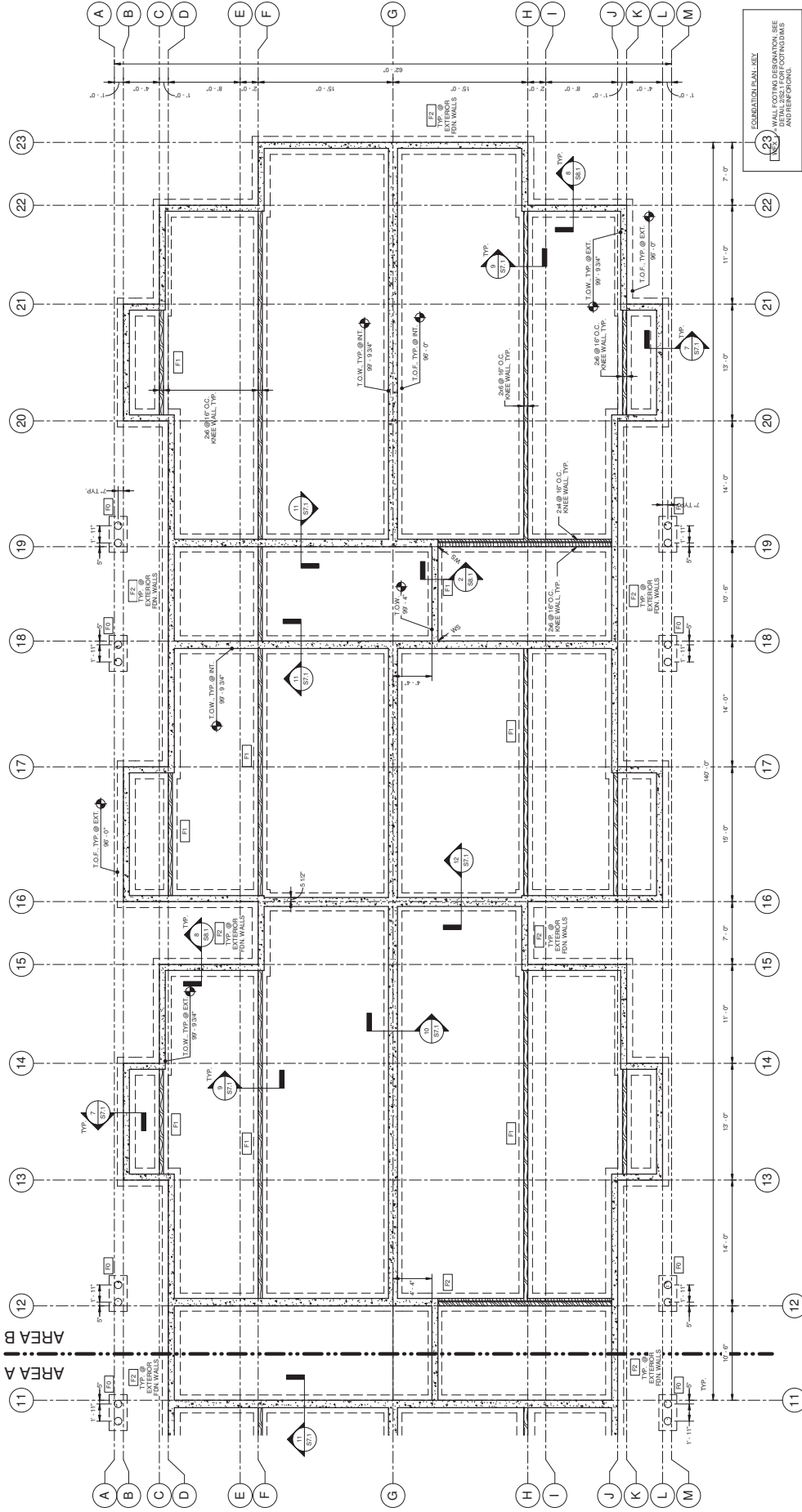
FOUNDATION PLAN SET  
WALL FOOTING DESIGNATION, SEE FOUNDING AND DIMENSIONS

REMARK SET: 11.25.15  
15.50'

**\$2.12**  
BUILDING B

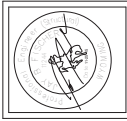
Approved and  
Reviewed by  
*Chris B. [Signature]*  
Chief Building Official  
Date: 12-30-15  
BP-15-00973  
Please note: The Reviewed and Approved plans  
are required onsite.

NOTES:  
1. SEE SHEET S21 FOR FOOTING DETAILS AND REINFORCING.



FOUNDATION PLAN AREA B  
3/16" = 1'-0"





MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
CHEYENNE, WYOMING

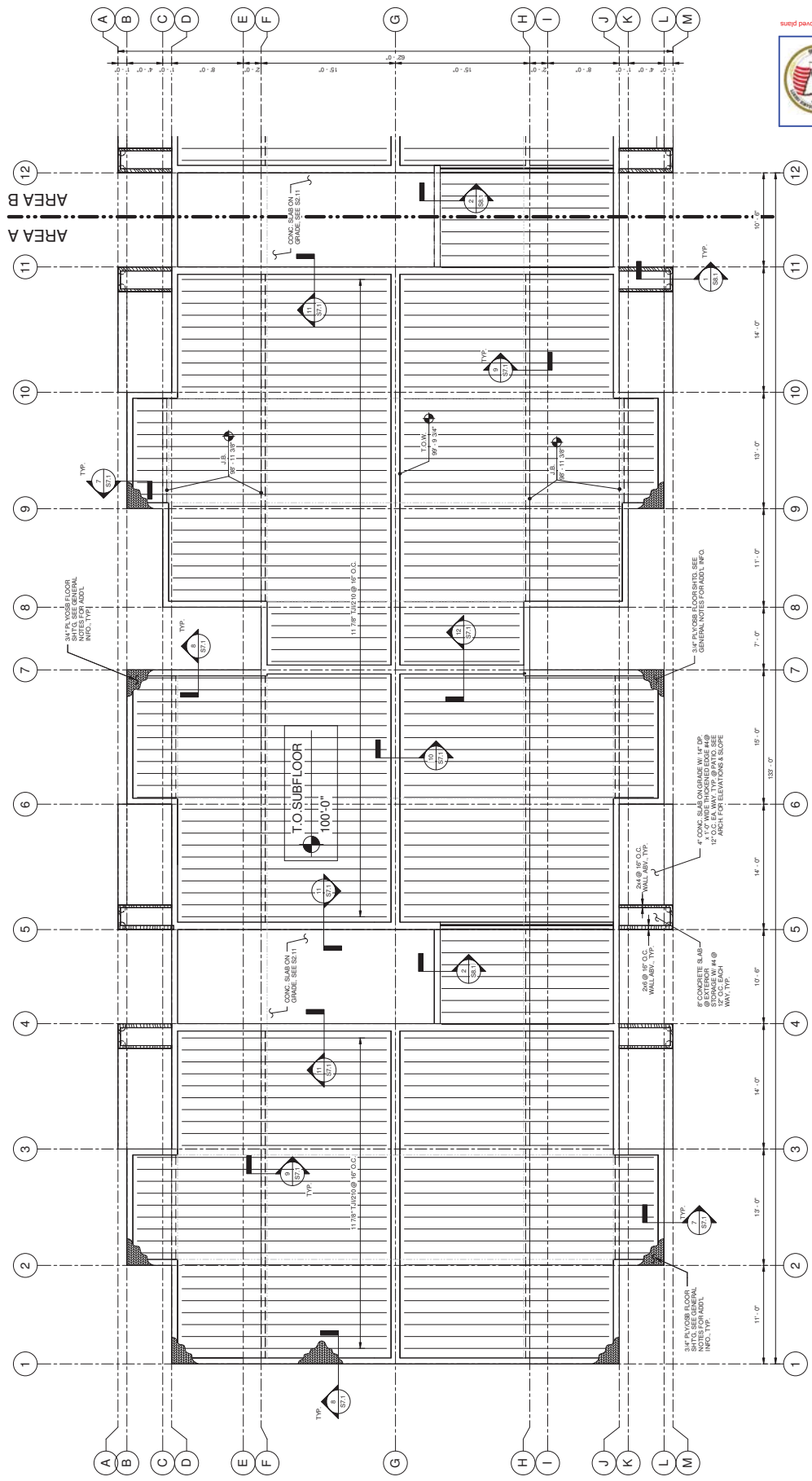
REVISION SET: 11.25.15

MAIN FLOOR  
PLAN AREA A

NO. 2015-015  
11.25.15

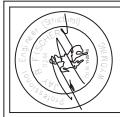
S2.13  
BUILDING B

Reviewed and Approved:  
*[Signature]*  
Chief Building Official  
BP-15-00973  
Date: 12-20-15  
Please note: This Reviewed and Approved stamp is required on-site.



① MAIN FLOOR PLAN AREA A  
3/16" = 1'-0"





MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
CHEYENNE, WYOMING

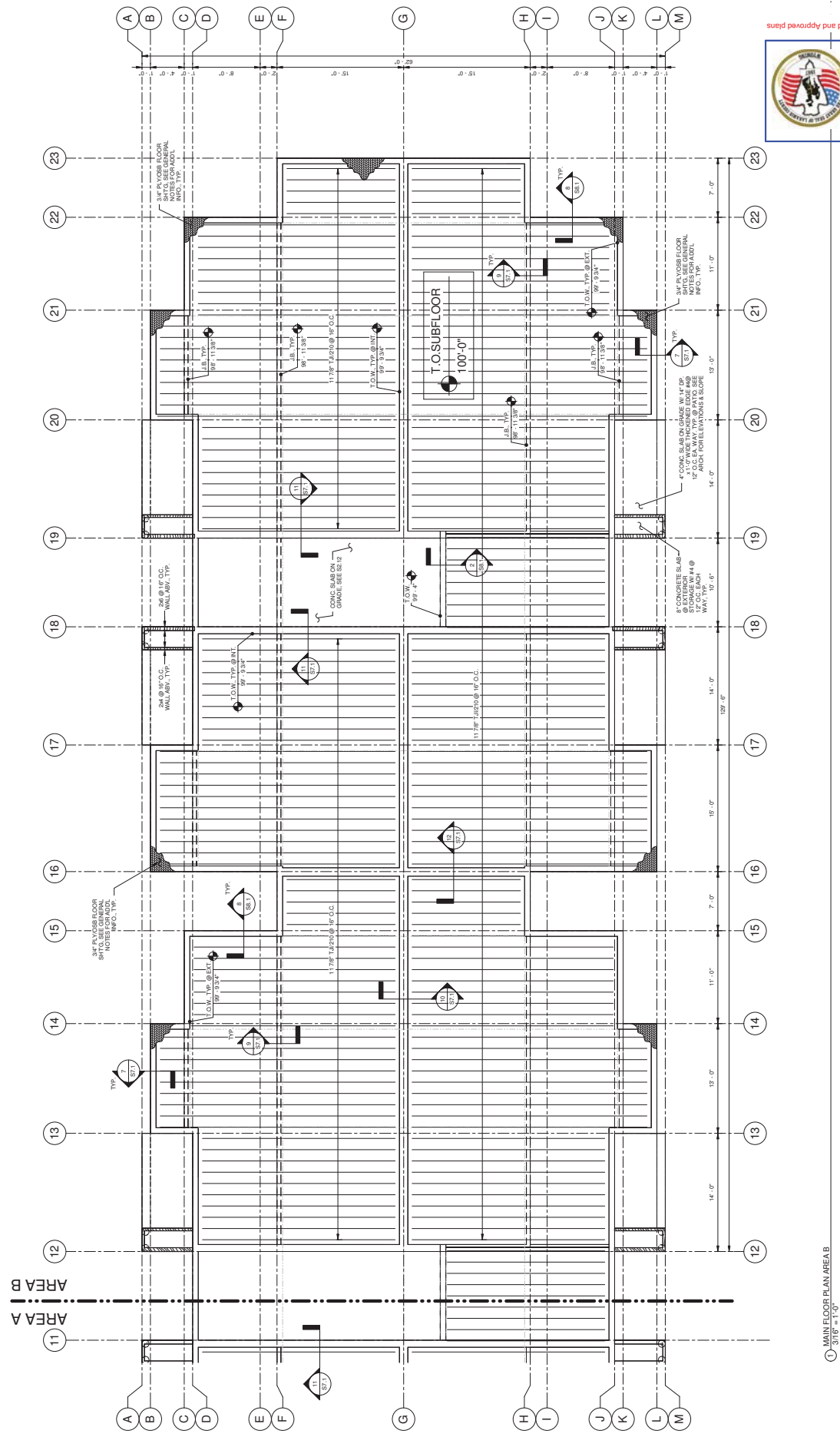
REVISION SET: 11.25.15

MAIN FLOOR  
PLAN AREA B

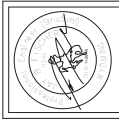
NO. 2308.A 15.5.00

S2.14  
BUILDING B

Reviewed and Approved  
  
 Chief Building Official  
 BP-15-00973  
 Date: 12-30-15  
 Please note: The Reviewed and Approved plans are required onsite.



1 MAIN FLOOR PLAN AREA B  
3/16" = 1'-0"



MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
CHEYENNE, WYOMING

REVISION SET: 11.25.15

SECOND FLOOR FRAMING PLAN AREA A

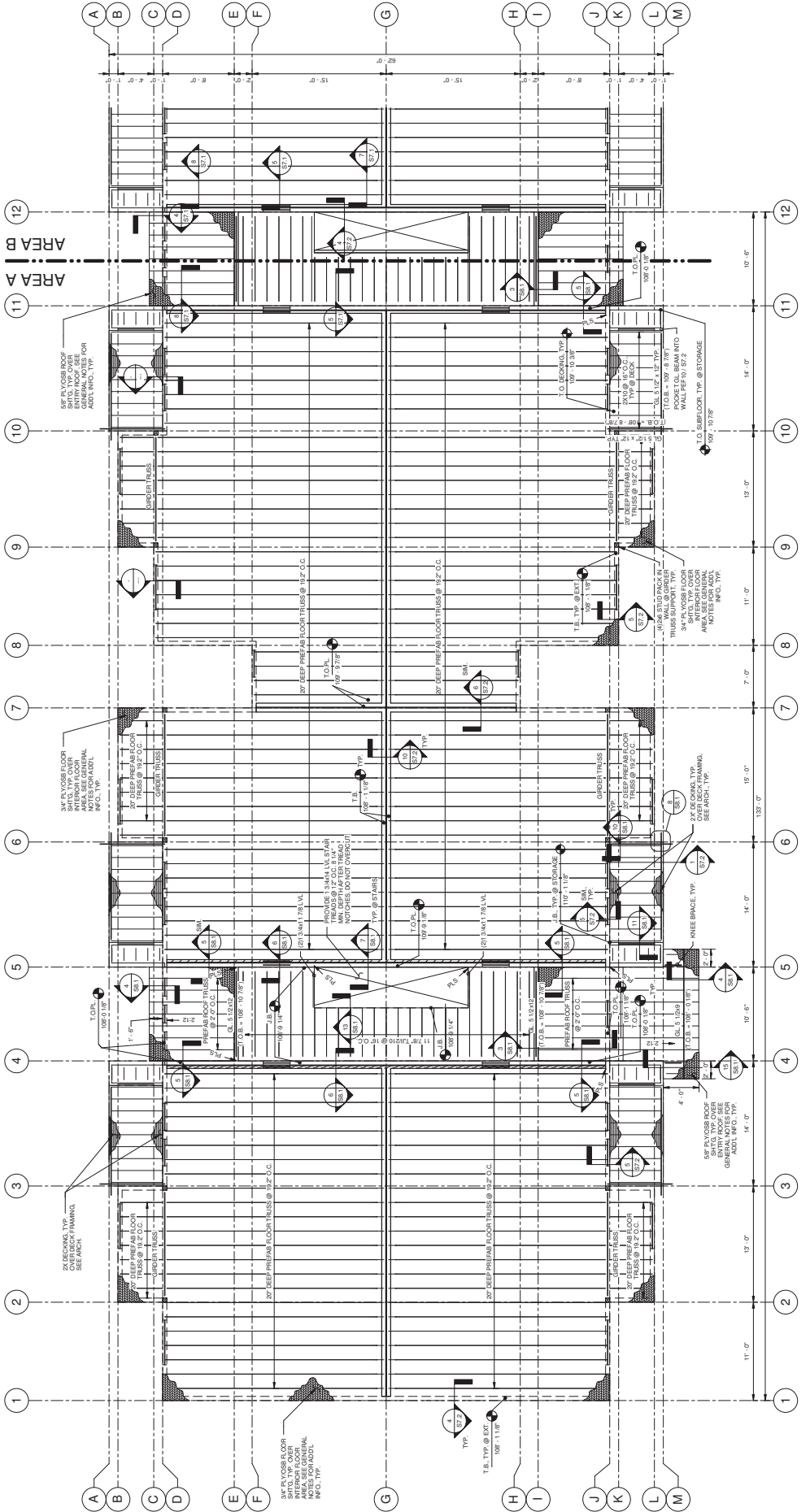
NO. 2008.P. 15.539

\$2.15  
BUILDING B

Approved and  
Reviewed by  
*[Signature]*  
Chief Building Official  
Date: 12-30-15  
RP-15-00973

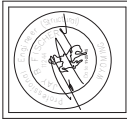


Please note: The Reviewed and Approved Plans are required onsite.



① SECOND FLOOR PLAN AREA A  
3/16" = 1'-0"





# MULTIFAMILY APARTMENT COMPLEX FOR: CAPITAL COURT CHEYENNE, WYOMING

REVISION SET 11.25.15

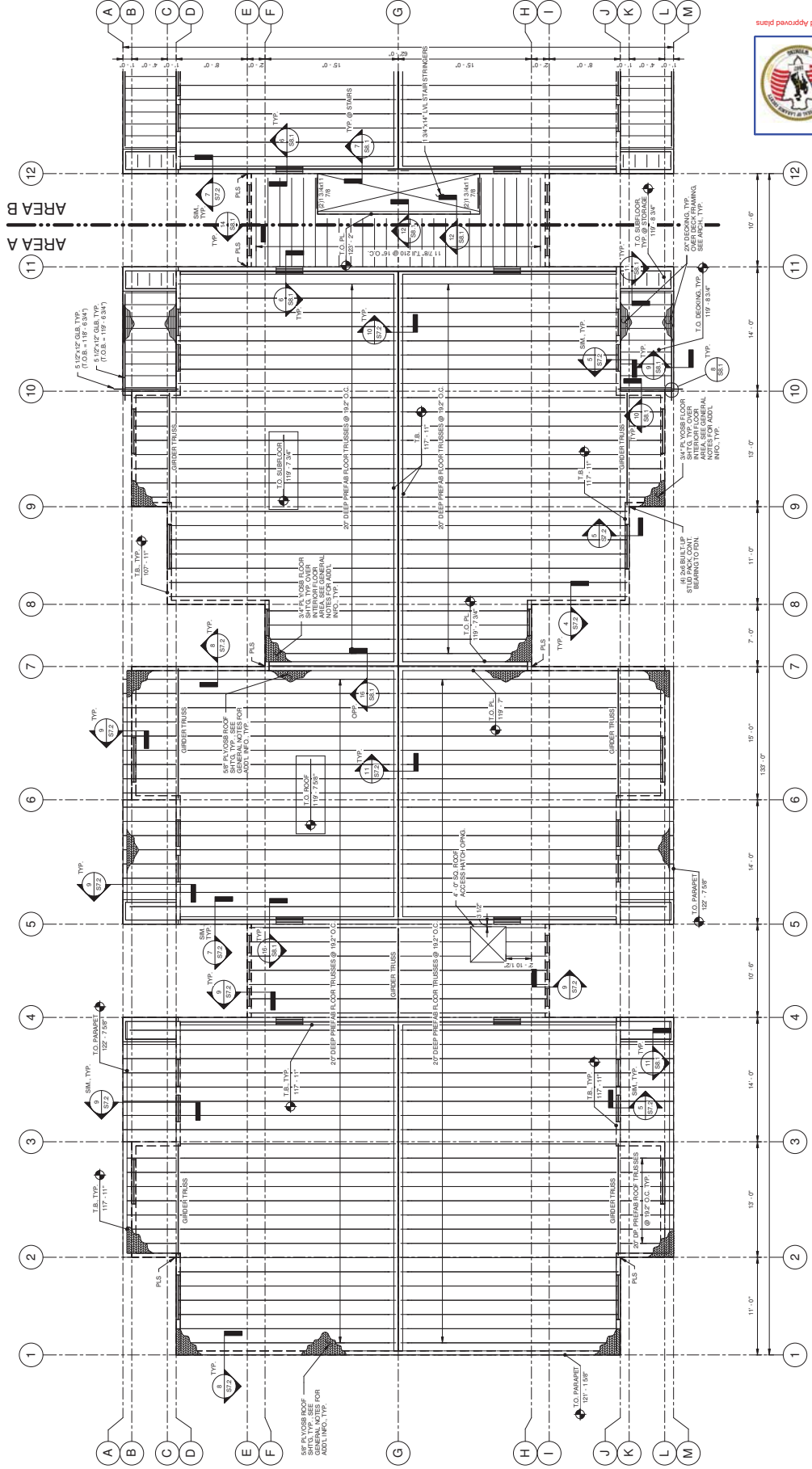
## THIRD FLOOR FRAMING PLAN AREA A

NO. 2008.A 11.25.15

S2.17  
BUILDING B

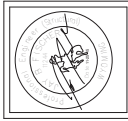
Approved and  
Checked by  
*David G. Gandy, P.E.*  
City Building Official  
BP-15-00973  
Date: 12-30-15  
Please note: The Reviewed and Approved plans  
are required onsite.

- BLANDISHES:**
- PLS — TOP OF WOODWALL PLATE STOP
  - T.B. — TRUSS BEARING ELEVATION
  - X-X' — TOP OF WOODWALL PLATE ELEVATION
  - J.B. — JOIST BEARING ELEVATION
  - K-K' —



1 THIRD FLOOR PLAN AREA A  
3/16\"/>





MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
CHEYENNE, WYOMING

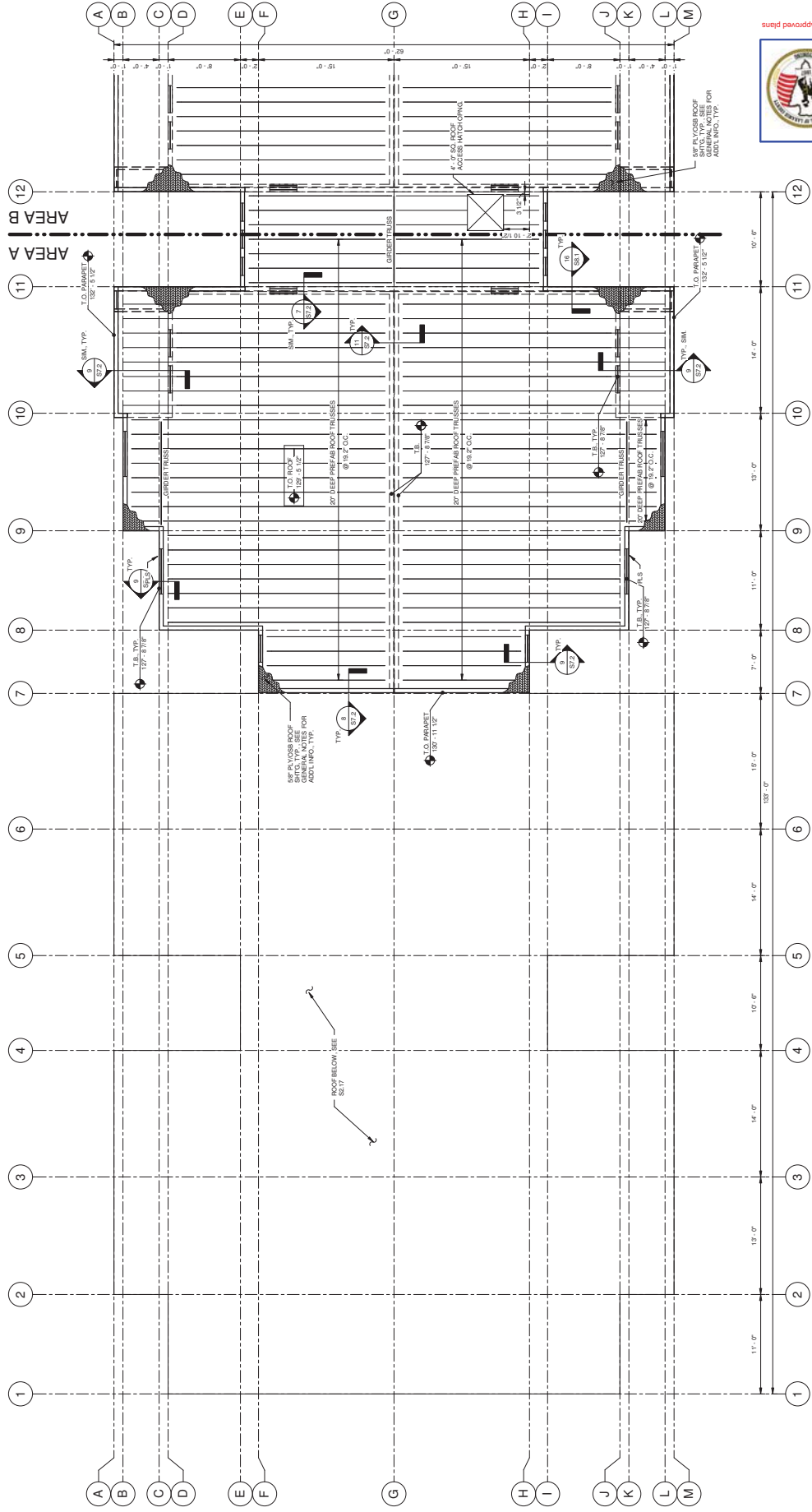
REVISION SET: 11.25.15

**ROOF FRAMING PLAN AREA A**

NO. 2008.P. 15.539

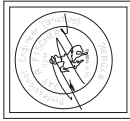
**\$2.19**  
BUILDING B

- SYMBOLS:**
- TOP OF WOOD WALL/PLATE STOP
  - T.B. TRUSS BEARING ELEVATION
  - X'X' TOP OF WOOD WALL/PLATE ELEVATION
  - T.O.P. TOP OF WOOD WALL/PLATE ELEVATION
  - X'X' JOIST BEARING ELEVATION



Approved and  
Reviewed  
Chief Building Official  
Date: 12-20-15  
BP-15-00973

Please note: This Reviewed and Approved plans are required on-site.



MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
CHEYENNE, WYOMING

REVISION SET: 11.25.15

**ROOF FRAMING PLAN AREA B**

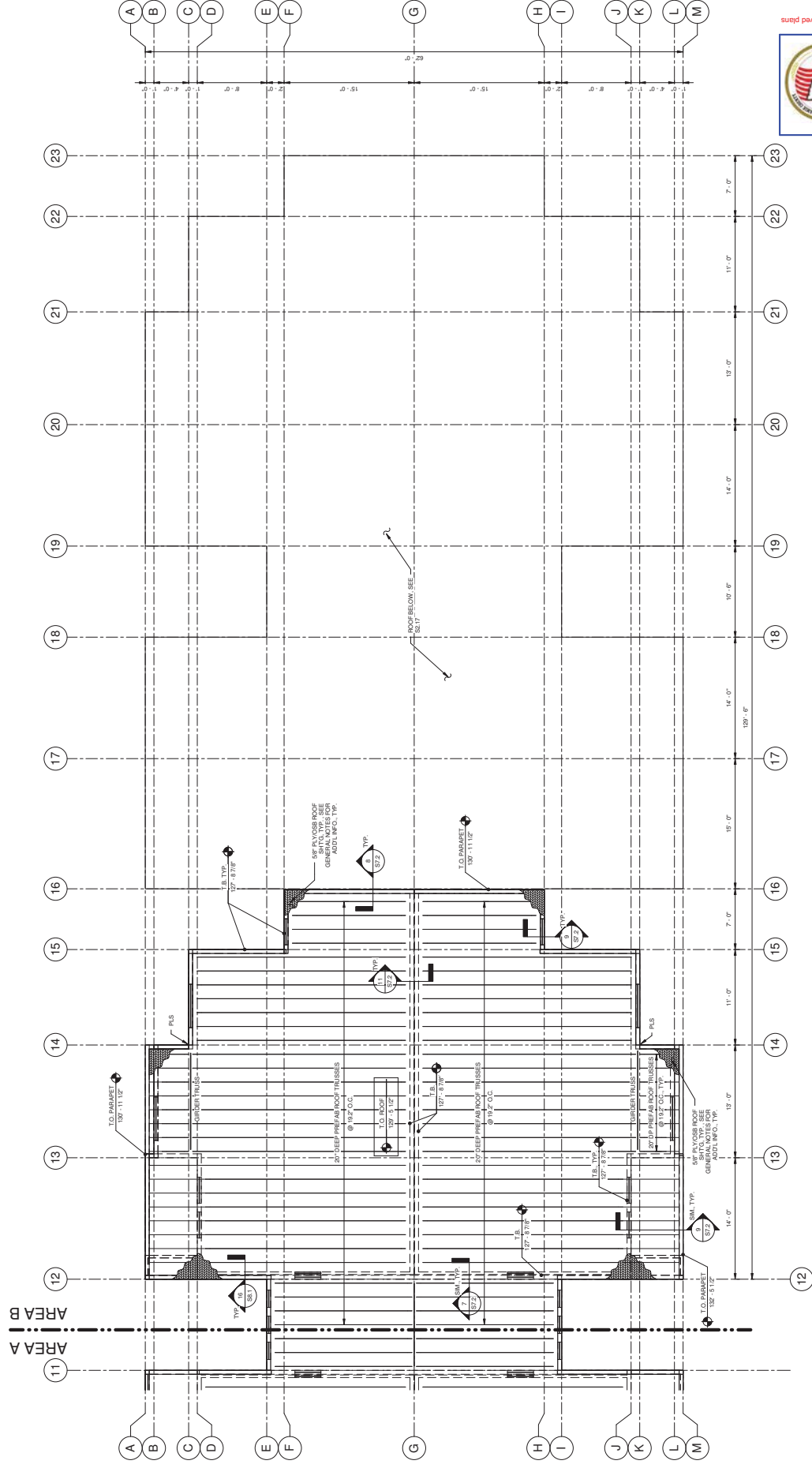
NO. 2308.P 15.539

**\$2.20**  
BUILDING B

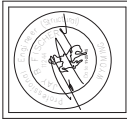
Approved and Reviewed by: *Robert J. Peltz*  
 Chief Building Official  
 Date: 12-30-15  
 BP-15-00973

Please note: The Reviewed and Approved plans are required on-site.

- REMARKS:**
- TOP OF WOOD WALL PLATE STOP
  - PLS
  - T.B. TRUSS BEARING ELEVATION
  - L.O.P.L. JOIST BEARING ELEVATION
  - X'X' TOP OF WOOD WALL PLATE ELEVATION
  - J.B. JOIST BEARING ELEVATION
  - X'X'



ROOF PLAN AREA B  
3/16" = 1'-0"



MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
 CHEYENNE, WYOMING

15.06.15

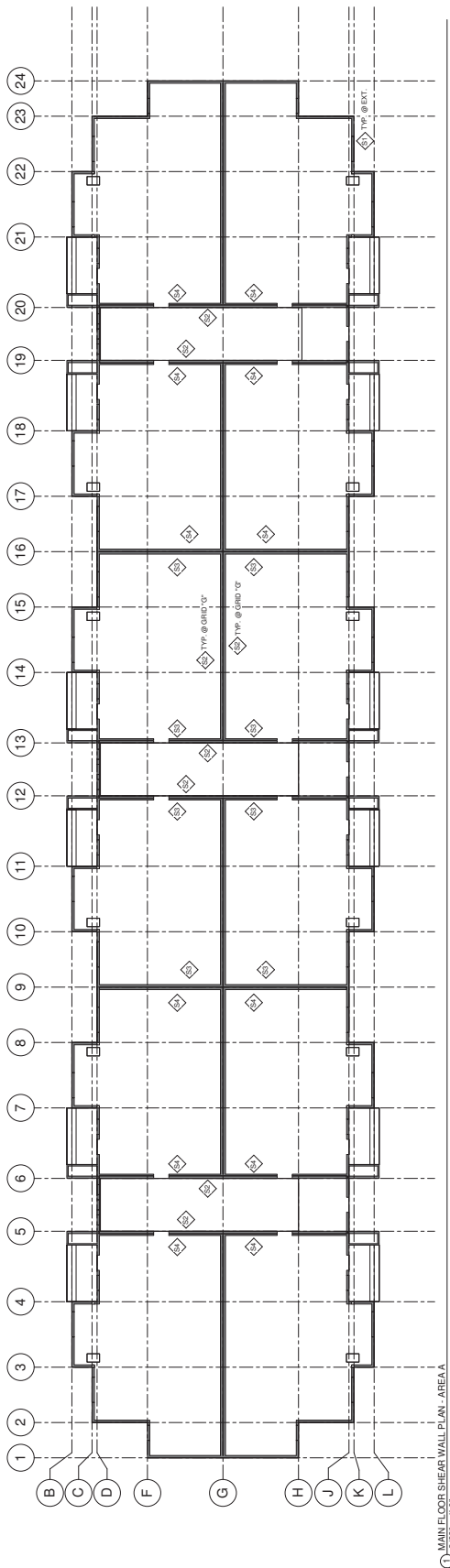
BLDG. A  
 MAIN FLOOR  
 SHEAR WALL  
 PLAN AND  
 DETAILS

15.06.15

S3.1  
 BUILDING A



Approved and  
 Reviewed  
 Chief Building Official  
 Date: 12/20/15  
 BP-15-00973  
 Please note: The Reviewed and Approved plans  
 are required on site.

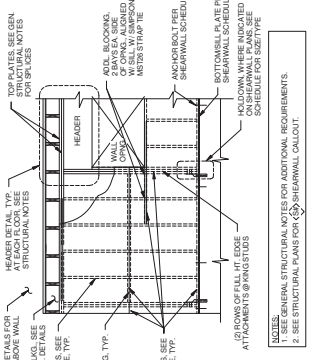


① MAIN FLOOR SHEAR WALL PLAN - AREA A  
 3/32" = 1'-0"

### SHEARWALL SCHEDULE 1234

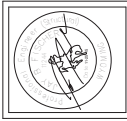
MARK	SHEATHING	SHEATHING ATTACHMENT	ANCHORAGE SILL PLATE/CONCRETE	ANCHORAGE SILL PL FLOOR/FLOOR	REMARKS
①	SINGLE SHEATHING ON WOOD SHEATHING	WOOD SHEATHING	5/8" DIA. X 7' EMBED A.B. @ 4'-0" O.C.	① 1/4" @ 1' O.C. U.N.O.	BLOCKY ALL PANEL EDGES
②	SINGLE SHEATHING ON OPYSAM BOARD SHEATHING	OPYSAM BOARD SHEATHING	5/8" DIA. X 7' EMBED A.B. @ 4'-0" O.C.	① 1/4" @ 1' O.C. U.N.O.	PANEL EDGE BLAG. NOT RECD.
③	SINGLE SHEATHING ON OPYSAM BOARD SHEATHING	OPYSAM BOARD SHEATHING	5/8" DIA. X 7' EMBED A.B. @ 4'-0" O.C.	① 1/4" @ 1' O.C. U.N.O.	BLOCKY ALL PANEL EDGES
④	SINGLE SHEATHING ON OPYSAM BOARD SHEATHING	OPYSAM BOARD SHEATHING	5/8" DIA. X 7' EMBED A.B. @ 4'-0" O.C.	① 1/4" @ 1' O.C. U.N.O.	BLOCKY ALL PANEL EDGES

**NOTES:**  
 1. ALL ATTACHMENTS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS AND THE WYOMING U.N.O. SEE DETAIL S3.1 FOR ATTACHMENT REQUIREMENTS.  
 2. WHERE ISKATING DIMENSIONS NOT SHOWN @ INTERSECTIONS, PROVIDE SHEATHING AND ATTACHMENT PER TYPE SET ABOVE.  
 3. PROVIDE SILL PLATE WALLS WITH ANCHORS AT ALL PLATE FOR ALL ANCHORS, BOLTS, LAG BOLTS, AND DOWNS BOLTS.  
 4. PROVIDE SILL PLATE WALLS WITH ANCHORS AT ALL PLATE FOR ALL ANCHORS, BOLTS, LAG BOLTS, AND DOWNS BOLTS.



② SHEARWALL DETAILS & SCHEDULES  
 1/2" = 1'-0"





MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
CHEYENNE, WYOMING

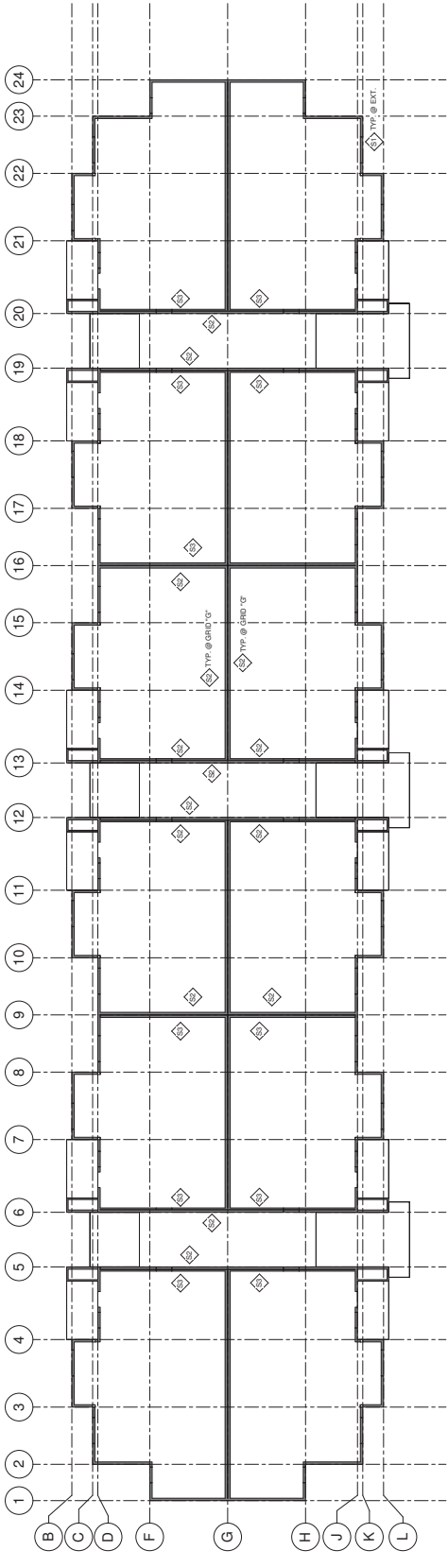


BUILDING A  
SHEAR WALL  
PLANS

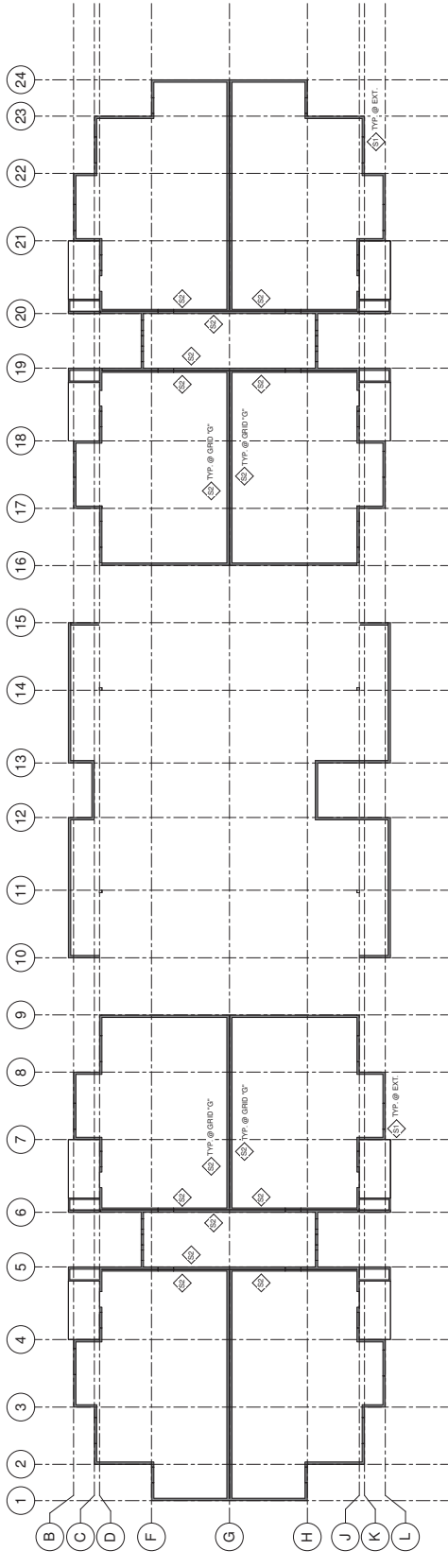


S3.2  
BUILDING A

NOTES:  
1. SEE SHEET S3.1 FOR SHEAR WALL AND FOLD-DOWN SCHEDULES.



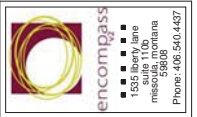
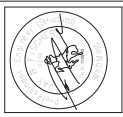
1 SECOND FLOOR SHEAR WALL PLAN  
3/32" = 1'-0"



2 THIRD FLOOR SHEAR WALL PLAN  
3/32" = 1'-0"

Reviewed and Approved:  
*Robert J. Smith*  
Chief Building Official  
Date: 12-30-15  
BP-15-0073

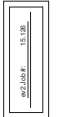
Please note: The Reviewed and Approved Plans are required on all.



MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
CHEYENNE, WYOMING

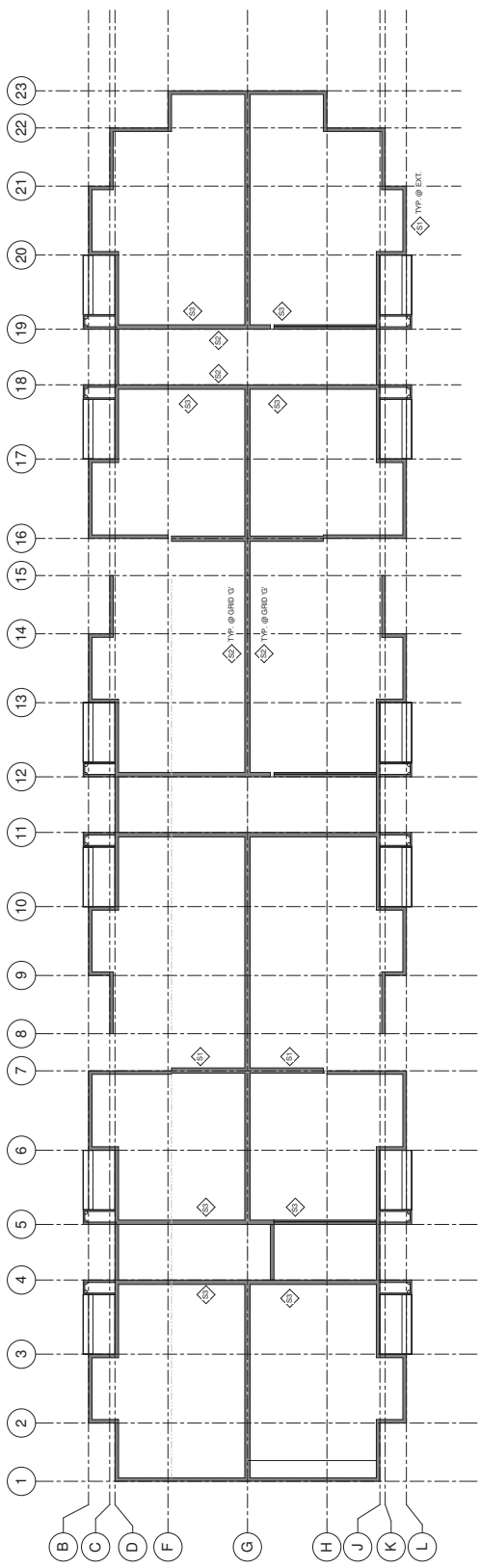


REVISION SET: 11.25.15  
**BUILDING B  
SHEAR WALL  
PLANS**

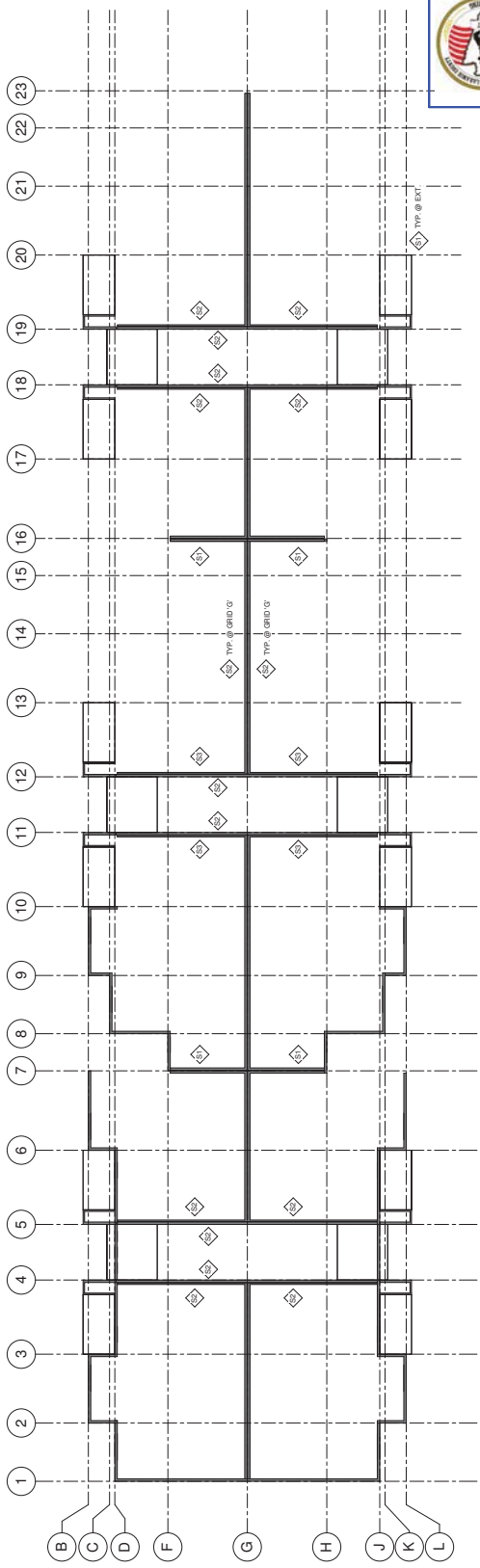


**S3.3**  
**BUILDING B**

**NOTES:**  
1. SEE SHEET S3.1 FOR BEAR WALL AND HOLD-DOWN SCHEDULES.



1 MAIN FLOOR SW PLAN  
3/32" = 1'-0"



2 SECOND FLOOR SW PLAN  
3/32" = 1'-0"

Approved and  
Reviewed  
*[Signature]*  
Chief Building Official  
BP-15-00573  
Please note: The Reviewed and Approved plans  
are required onsite.



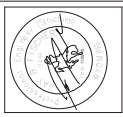
Approved  
 Checked and  
 Date: 12-30-15  
 BP-15-00973  
 Please note: The Reviewed and Approved plans are required onsite

BUILDING B  
 S3.4

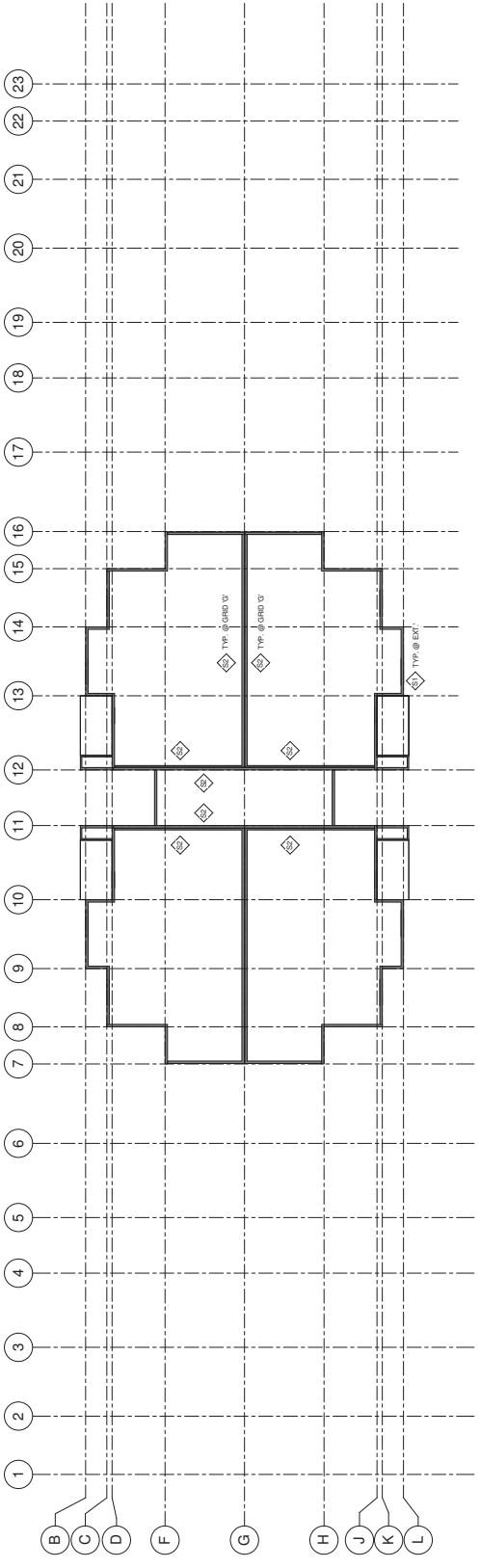
15.500  
 002.2.000.00

REVISION SET 11.25.15  
 BUILDING B  
 3RD FLOOR  
 SHEAR WALL  
 PLAN

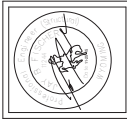
MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
 CHEYENNE, WYOMING



**NOTES:**  
 1. SEE SHEET S3.1 FOR BEAR WALL AND HOLD-DOWN SCHEDULES.



① THIRD FLOOR SW PLAN  
 3/32" = 1'-0"

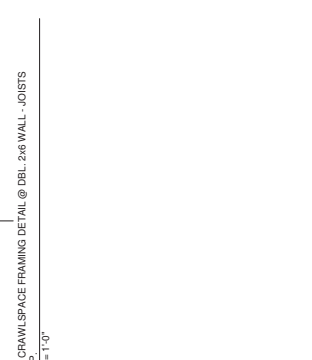
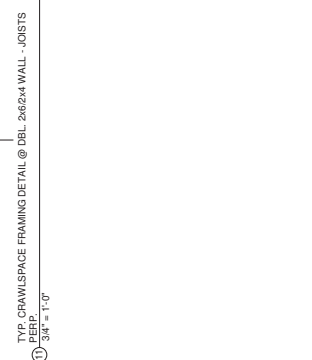
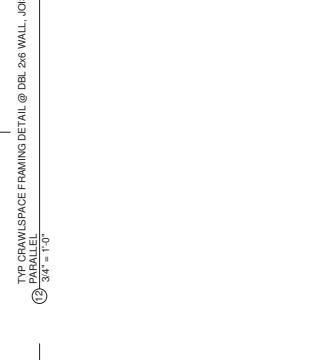
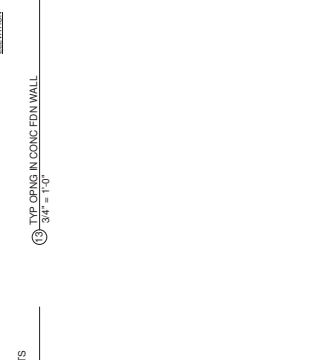
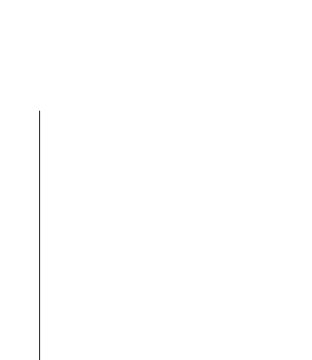
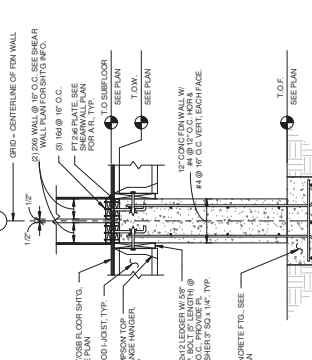
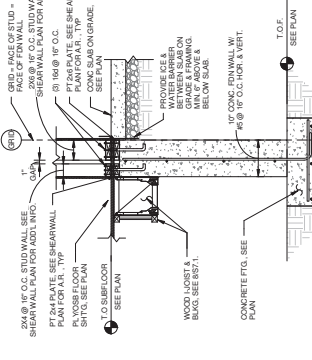
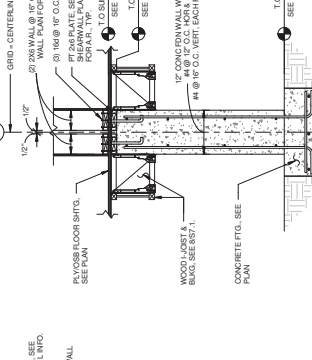
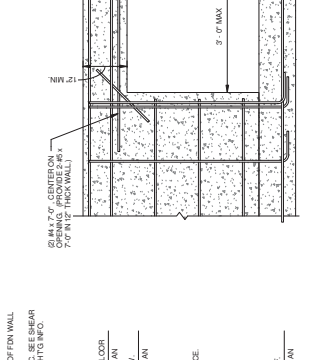
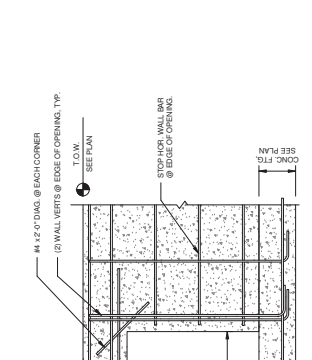
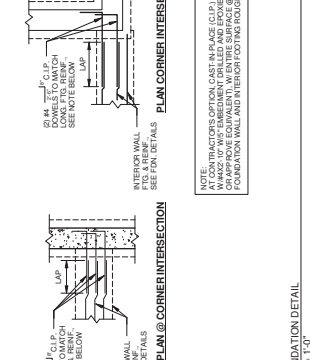
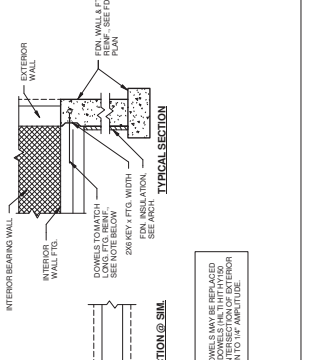
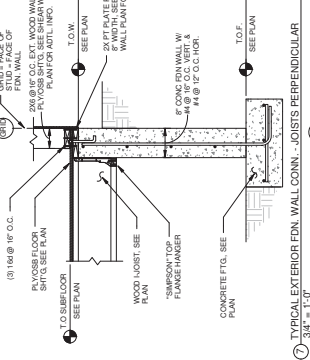
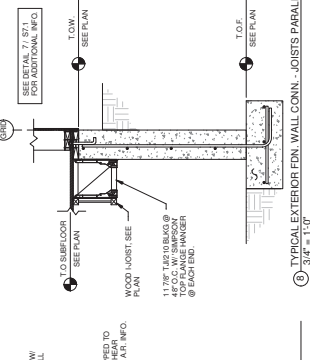
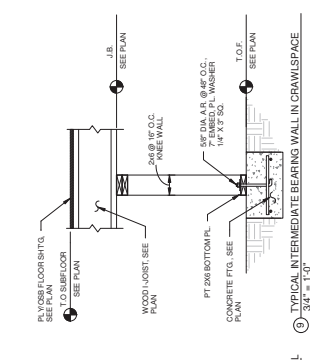
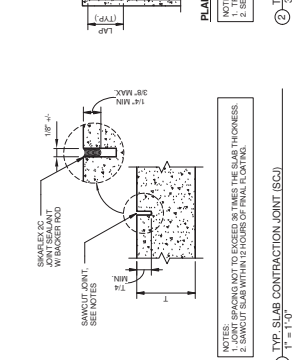
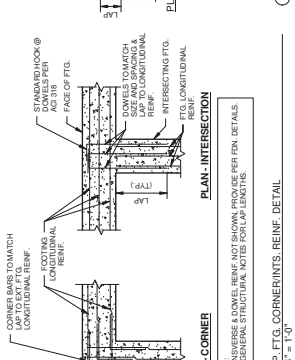
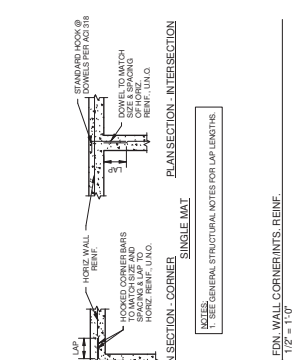
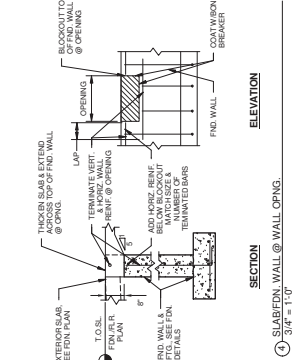
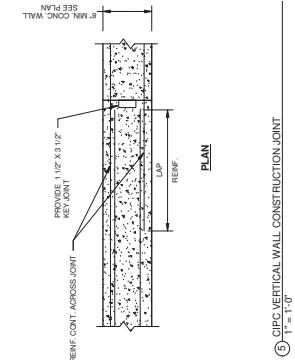


MULTIFAMILY APARTMENT COMPLEX FOR:  
**CAPITAL COURT**  
CHEYENNE, WYOMING

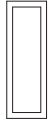
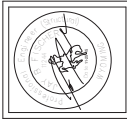
CONCRETE  
TYPICAL  
DETAILS

NO. 208.P. 15.09

S7.1  
BUILDING A



NOTES:  
1. ALL REINFORCING SHALL BE PROVIDED WITH PROPER BENDS AND LAP LENGTHS.  
2. SEE GENERAL NOTES FOR LAP LENGTHS.  
3. SEE GENERAL NOTES FOR REINFORCING.  
4. SEE GENERAL NOTES FOR CONCRETE.  
5. SEE GENERAL NOTES FOR FINISHES.  
6. SEE GENERAL NOTES FOR JOISTS.  
7. SEE GENERAL NOTES FOR WALLS.  
8. SEE GENERAL NOTES FOR FLOORS.  
9. SEE GENERAL NOTES FOR ROOFS.  
10. SEE GENERAL NOTES FOR FOUNDATIONS.  
11. SEE GENERAL NOTES FOR UTILITIES.  
12. SEE GENERAL NOTES FOR MECHANICAL.  
13. SEE GENERAL NOTES FOR ELECTRICAL.  
14. SEE GENERAL NOTES FOR PIPING.  
15. SEE GENERAL NOTES FOR INTERIORS.  
16. SEE GENERAL NOTES FOR EXTERIORS.  
17. SEE GENERAL NOTES FOR LANDSCAPE.  
18. SEE GENERAL NOTES FOR SIGNAGE.  
19. SEE GENERAL NOTES FOR FURNITURE.  
20. SEE GENERAL NOTES FOR EQUIPMENT.  
21. SEE GENERAL NOTES FOR STORAGE.  
22. SEE GENERAL NOTES FOR TRAFFIC.  
23. SEE GENERAL NOTES FOR SAFETY.  
24. SEE GENERAL NOTES FOR SECURITY.  
25. SEE GENERAL NOTES FOR ACCESSIBILITY.

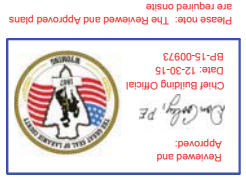


CHEYENNE, WYOMING  
**CAPITAL COURT**  
 MULTIFAMILY APARTMENT COMPLEX FOR:

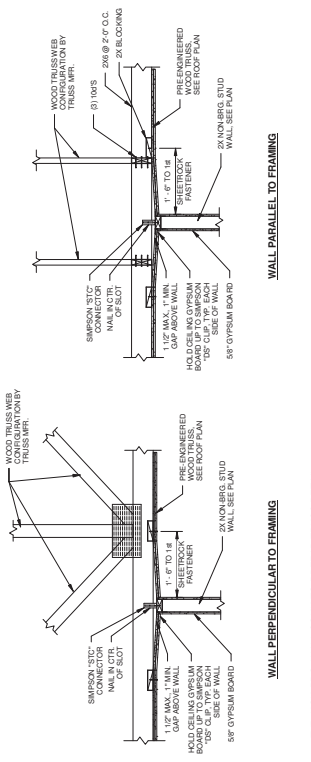
WOOD  
 TYPICAL  
 DETAILS

W2.208.P  
 15.09

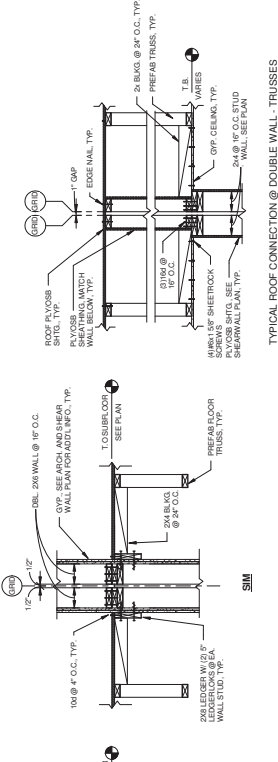
S7.2  
 BUILDING A



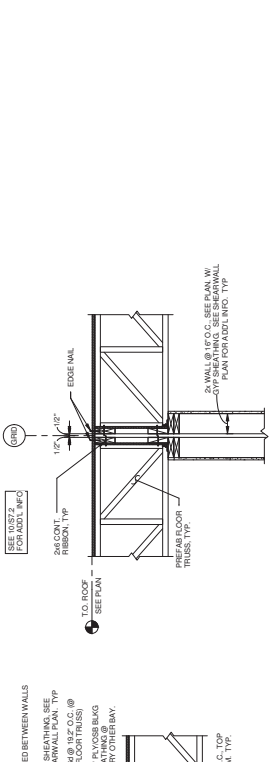
Approved and  
 Chief Building Official  
 BR-15-00973  
 DM- 12-30-15  
 Please note: The Reviewed and Approved plans  
 are required onsite



1 TYP. NON-BRG. WALL CONN. TO PREFAB TRUSS DETAIL  
 3/4" = 1'-0"



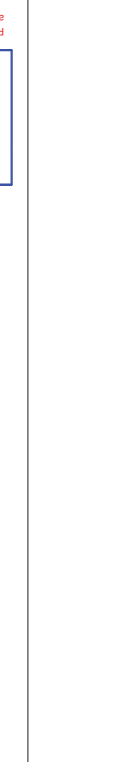
2 TYP. DOUBLE WALL CONN. @ FLOOR LEVEL  
 3/4" = 1'-0"



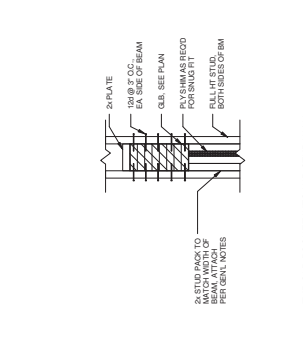
3 TYP. DBL WALL CONN. @ FLOOR LEVEL - PERPENDICULAR  
 3/4" = 1'-0"



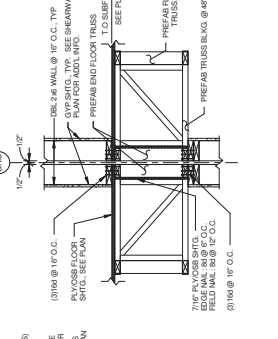
4 TYP. DBL WALL CONN. @ FLOOR LEVEL - TRUSSES PARALLEL  
 3/4" = 1'-0"



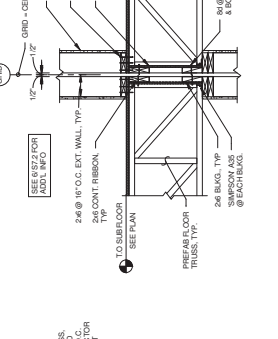
5 TYP. FLOOR CONN. @ EXT. WALL - JOISTS PARALLEL  
 3/4" = 1'-0"



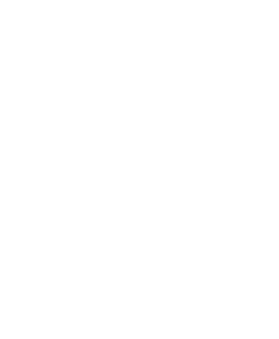
6 TYP. WOOD-HEADER DETAIL  
 3/4" = 1'-0"



7 TYP. FLOOR CONN. @ EXT. WALL - JOISTS PERPENDICULAR  
 3/4" = 1'-0"



8 TYP. ROOF CONN. @ EXT. WALL - TRUSSES PERPENDICULAR  
 3/4" = 1'-0"

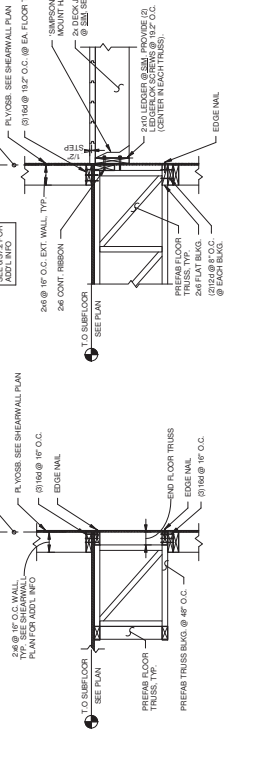


9 TYP. ROOF CONN. @ EXT. WALL - TRUSSES PARALLEL  
 3/4" = 1'-0"

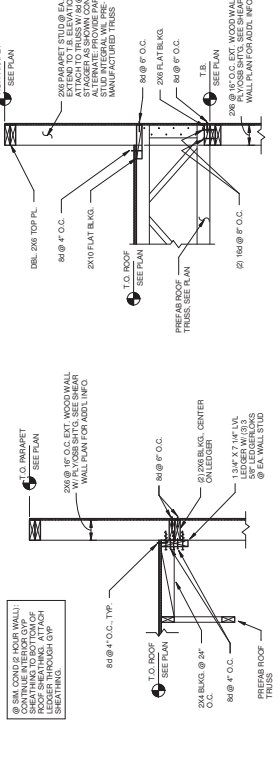
HEADER SCHEDULE			
OPENING WIDTH	HEADER SIZE	BEARING STUDS (STUDS)	COMMENTS
± 3'-0"	(1)2x6	(1)2x6	
> 3'-0" & 4'	(2)2x6	(2)2x6	

NOTES:  
 1. SEE GENERAL CONTRACT NOTES FOR ADDITIONAL REQUIREMENTS.  
 2. TABLE SIZES APPLY UNLESS NOTED OTHERWISE ON PLANS.

10 TYP. WOOD-HEADER DETAIL  
 3/4" = 1'-0"



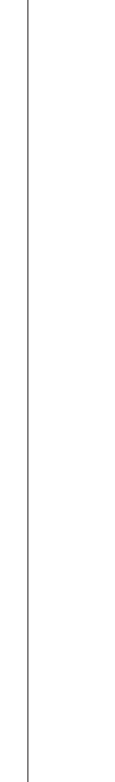
11 TYP. FLOOR CONN. @ EXT. WALL - JOISTS PERPENDICULAR  
 3/4" = 1'-0"



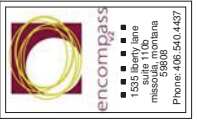
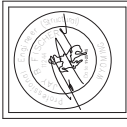
12 TYP. ROOF CONN. @ EXT. WALL - TRUSSES PERPENDICULAR  
 3/4" = 1'-0"



13 TYP. ROOF CONN. @ EXT. WALL - TRUSSES PARALLEL  
 3/4" = 1'-0"



14 TYP. ROOF CONN. @ EXT. WALL - TRUSSES PARALLEL  
 3/4" = 1'-0"

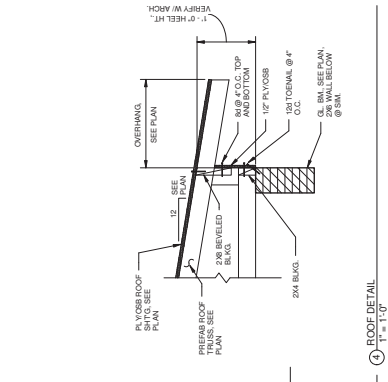


# MULTIFAMILY APARTMENT COMPLEX FOR: CHEYENNE, WYOMING

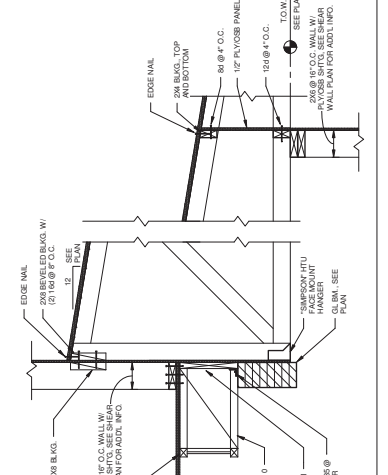
## CAPITAL COURT

DETAILS

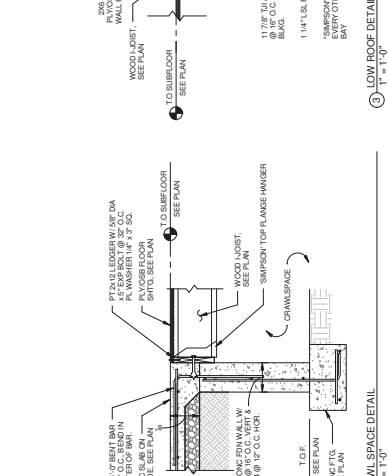
S8.1  
BUILDING A



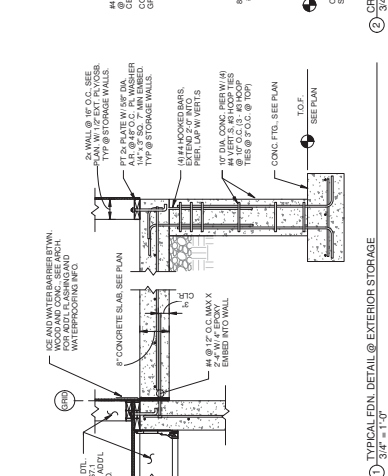
1 TYPICAL FDN. DETAIL @ EXTERIOR STORAGE  
3/4" = 1'-0"



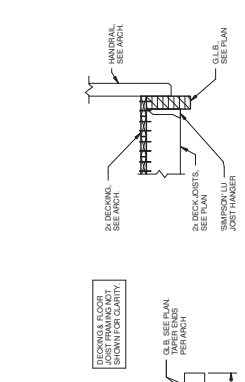
2 GDN. SPACE DETAIL  
3/4" = 1'-0"



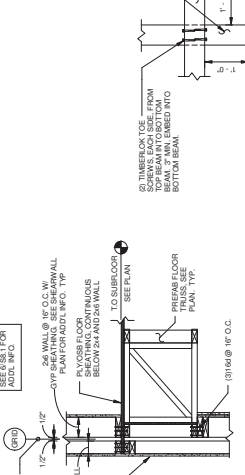
3 LOW ROOF DETAIL  
1" = 1'-0"



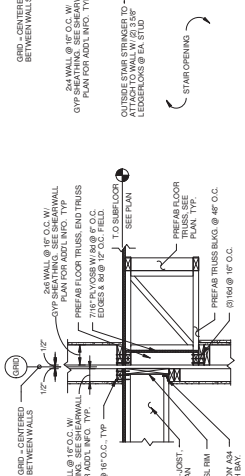
4 ROOF DETAIL  
1" = 1'-0"



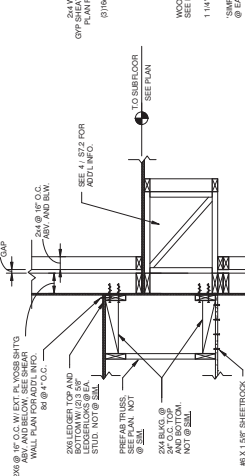
5 TOP LOW ROOF FRAMING DETAIL @ DBL. WALL - JOISTS PEEP  
3/4" = 1'-0"



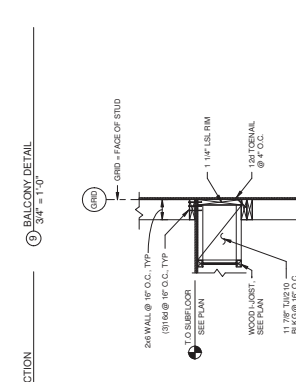
6 FLOOR FRAMING DETAIL  
3/4" = 1'-0"



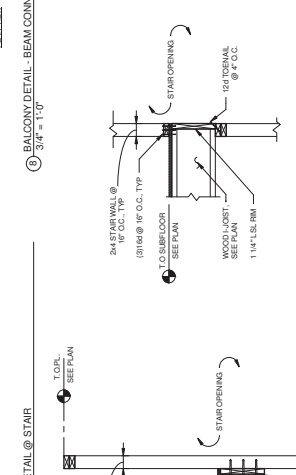
7 FLOOR FRAMING DETAIL @ STAIR  
3/4" = 1'-0"



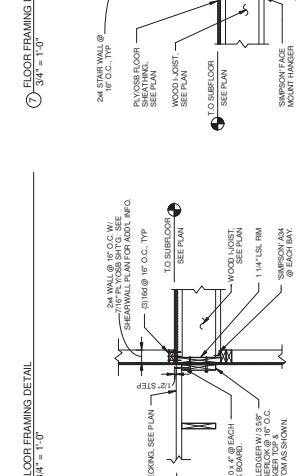
8 BALCONY DETAIL  
3/4" = 1'-0"



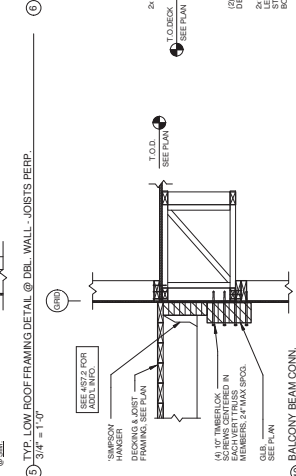
9 BALCONY DETAIL - BEAM CONNECTION  
3/4" = 1'-0"



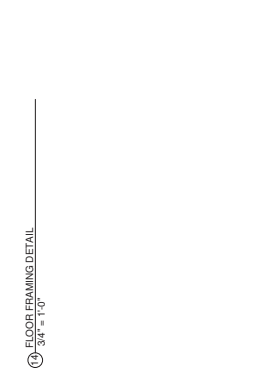
10 STAR DETAIL  
3/4" = 1'-0"



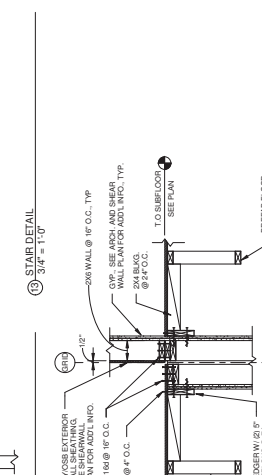
11 BALCONY DETAIL  
3/4" = 1'-0"



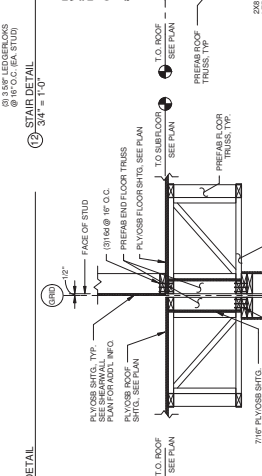
12 KNEE BRACE DETAIL  
3/4" = 1'-0"



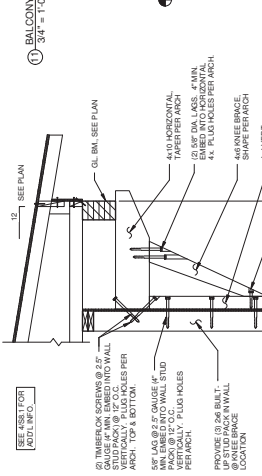
13 FLOOR FRAMING DETAIL  
3/4" = 1'-0"



14 STAR DETAIL  
3/4" = 1'-0"



15 ROOF DETAIL  
3/4" = 1'-0"



16 KNEE BRACE DETAIL  
3/4" = 1'-0"



# MULTIFAMILY APARTMENT COMPLEX FOR: CHEYENNE, WYOMING

## CAPITAL COURT

DETAILS

S8.1  
BUILDING A

Laramie County  
Planning and Development Office

**Customer Receipt**

Operator: Amber Dancliff

Date: 12/02/2015  
Tender Detail

Receipt no: 9696

Item	Description	Payment	Reference	Paid
PR-15-00973 0 NO ST	PLAN REVIEW FEE	CHECK	4758	\$14,151.91
<b>Total:</b>				<b>\$14,151.91</b>

Transaction Date: 12/14/2015

Time: 10:35:04 MST