West Birch Apartments

W Branch Street, Princeton, MN

TITLE SHEET — **DATE**

T	TITLE	08/24/18

CIVIL

C1	SITE AND UTILITY PLAN	08/23/18
C2	GRADING AND EROSION CONTROL PLAN	08/23/18

ARCHITECTURAL

A001	CODE DATA	08/24/18
A002	CODE PLAN	08/24/18
A101	SITE PLAN	08/24/18
A102	SITE DETAIL	08/24/18
A103	SITE DETAIL	08/24/18
A111	FIRST FLOOR PLAN	08/24/18
A112	SECOND FLOOR PLAN	08/24/18
A113	THIRD FLOOR PLAN	08/24/18
A114	ATTIC PLAN	08/24/18
A121	ROOF PLAN	08/24/18
A130	FLOOR FINISH PLAN	08/24/18
A201	BUILDING ELEVATIONS	08/24/18
A202	BUILDING ELEVATIONS	08/24/18
A301	BUILDING SECTIONS	08/24/18
A310	WALL SECTIONS	08/24/18
A320	STAIR & ELEVATOR SECTIONS	08/24/18
A401	ENLARGED PLANS - COMMON AREA	08/24/18
A402	ENLARGED PLANS - STAIRS & ELEVATOR	08/24/18
A410	ENLARGED PLANS - UNIT TYPES A, A.1, B, & E	08/24/18
A411	ENLARGED PLANS - UNIT TYPES C & D	08/24/18
A412	ENLARGED PLANS - UNIT TYPES E.1 (ADA) & F	08/24/18
A501	RELFECTED CEILING PLANS	08/24/18
A502	RELFECTED CEILING PLANS - COMMON AREA	08/24/18
A601	BUILDING ENTRY	08/24/18
A602	EXTERIOR DETAILS	08/24/18
A603	EXTERIOR DETAILS	08/24/18
A604	EXTERIOR OPENINGS	08/24/18
A605	EXTERIOR DETAILS - ROOF	08/24/18
A701	INTERIOR ELEVATIONS - STANDARD AND H/V UNITS	08/24/18
A702	INTERIOR ELEVATIONS - COMMON AREAS AND ADA UNIT	08/24/18
A801	INTERIOR DETAILS - VERTICAL CIRCULATION	08/24/18
A802	INTERIOR DETAILS	08/24/18
A803	INTERIOR DETAILS	08/24/18
A901	TYPES & SCHEDULES	08/24/18
A902	WALL TYPES	08/24/18

STRUCTURAL

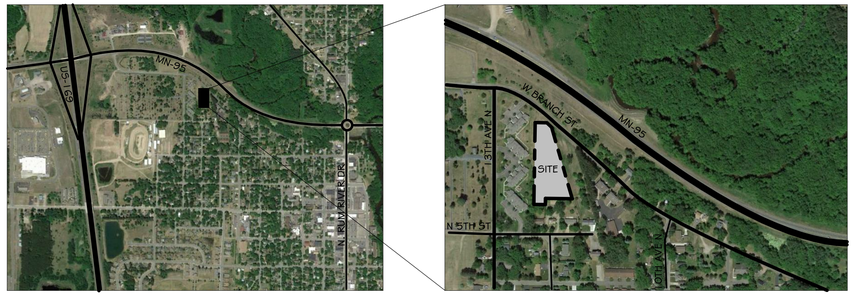
S000	STRUCTURAL COVER SHEET	08/24/18
S001	GENERAL STRUCTURAL NOTES	08/24/18
S002	GENERAL STRUCTURAL NOTES	08/24/18
S003	TYPICAL DETAILS - FOUNDATION SCHEDULES	08/24/18
S004	TYPICAL DETAILS - FOUNDATION	08/24/18
S005	TYPICAL DETAILS - CMU	08/24/18
S006	TYPICAL DETAILS - CONCRETE	08/24/18
S007	TYPICAL DETAILS - PRECAST PODIUM	08/24/18
S008	TYPICAL DETAILS - WOOD SCHEDULES	08/24/18
S009	TYPICAL DETAILS - WOOD SCHEDULES	08/24/18
S010	TYPICAL DETAIPS - WOOD STAIR FRAMING	08/24/18
S111	FIRST FLOOR FOUNDATION PLAN	08/24/18
S112	SECOND FLOOR FRAMING PLAN	08/24/18
S112a	SECOND FLOOR LOADING PLAN	08/24/18
S113	THIRD FLOOR FRAMING PLAN	08/24/18
S121	ROOF FRAMING PLAN	08/24/18
S601	FOUNDATION / FRAMING DETAILS	08/24/18
S602	PRECAST FRAMING DETAILS	08/24/18
S603	WOOD FRAMING DETAILS	08/24/18

MECHANICAL

M111	PLUMBING PLANS	08/24/18
M112	PLUMBING PLANS	08/24/18
M211	HVAC PLANS	08/24/18
M212	HVAC PLANS	08/24/18
M311	UNIT HVAC PLANS	08/24/18
M312	UNIT HVAC PLANS	08/24/18
M411	PLUMBING RISERS	08/24/18
M412	MECHANICAL DETAILS	08/24/18
M413	MECHANICAL DETAILS	08/24/18
M414	MECHANICAL DETAILS	08/24/18
M511	MECHANICAL EQUIPMENT SCHEDULES	08/24/18
M512	MECHANICAL EQUIPMENT SCHEDULES	08/24/18

ELECTRICAL

E111	SITE ELECTRICAL PLAN	08/24/18
E112	SITE PHOTOMETRIC PLAN	08/24/18
E211	LIGHTING PLANS	08/24/18
E212	LIGHTING PLANS	08/24/18
E311	POWER & SYSTEMS PLANS	08/24/18
E312	POWER & SYSTEMS PLANS	08/24/18
E411	UNIT ELECTRICAL PLANS	08/24/18
E412	UNIT ELECTRICAL PLANS	08/24/18
E511	ELECTRICAL RISER DIAGRAM AND SCHEDULES	08/24/18
E611	MECHANICAL EQUIPMENT SCHEDULES	08/24/18
E612	MECHANICAL EQUIPMENT SCHEDULES	08/24/18



VICINITY MAP

N

W Branch Street, Princeton, MN



REFERENCE VIEW

UNIT TYPE	A	A.1	B	C	D	E	E.1	F	
# OF BEDROOMS	3	3	1	2	4	3	3	3	
# OF BATHROOMS	2	2	1	1	2	2	2	2	
ACCESSIBLE							X		
H/V IMPAIRED		X							
FLOOR LEVEL									TOTAL UNITS/BLDG.
2ND FLOOR	--	1	2	2	1	--	1	1	8
3RD FLOOR	1	--	2	2	1	1	--	1	8
BUILDING/UNIT TOTALS	1	1	4	4	2	1	1	1	16
UNIT SF (GROSS)	1,471	1,471	719	1,006	1,616	1,467	1,467	1,401	
TOTAL UNIT SF (GROSS)	1,471	1,471	2,876	4,024	3,232	1,467	1,467	1,401	17,409

*REFER TO CODE PLAN FOR FIRST FLOOR COMMON SPACE SF AND PARKING LAYOUT

STALL LOCATION	STANDARD STALLS	ACCESSIBLE STALLS	OTHER STALLS	TOTAL STALLS
PARKING GARAGE	16	2	-	18
SURFACE PARKING	17	1	1 (DELIVERY)	19
TOTAL STALLS	33	3	1	37

BUILDING/UNIT/GARAGE/PARKING TABULATION

PROJECT DIRECTORY

OWNER

WEST BIRCH ESTATES OF PRINCETON LP
c/o CENTRAL MINNESOTA HOUSING PARTNERSHIP
37 28TH AVENUE NORTH, SUITE 102
ST. CLOUD, MN 56303

CONTACT: DEANNA HEMMESCH
PHONE: (320)259-0393
FAX: (320)259-9590
EMAIL: DEANNA@CMHP.NET

ARCHITECT

BLUMENTALS ARCHITECTURE INC.
1600 MARSHALL ST. NE, SUITE 1
MINNEAPOLIS, MN 55413

PRINCIPAL & ARCHITECT: JIM MOY
SENIOR PROJECT MANAGER: RYAN DAY
PHONE: (612) 331-2222
FAX: (612) 331-2224
EMAIL: JIMM@BLUMENTALS.COM
RYAND@BLUMENTALS.COM

SURVEYOR

KLD
13 NORTH 11TH AVENUE
ST. CLOUD, MN 56303

CONTACT: SAM DELEO
PHONE: (320) 259-1266
FAX: (320) 259-8811
EMAIL: DELEO@KLDLAND.COM

CIVIL ENGINEER

STARK ENGINEERING
320 2ND AVE N
SAUK RAPIDS, MN 56379

CONTACT: WAYNE STARK
PHONE: (320) 249-2611
EMAIL: WAYNE5@STARKENGINEER.COM

STRUCTURAL ENGINEER

ERICKSEN ROED & ASSOCIATES
2550 UNIVERSITY AVE W # 201-S,
ST PAUL, MN 55114

CONTACT: BILL BULLER
PHONE: (651) 251-7570
EMAIL: WBULLER@ERAENG.COM

MEP ENGINEER

STEEN ENGINEERING
5430 DOUGLAS DRIVE NORTH
MINNEAPOLIS, MN 55429-3106
CONTACT: DENELL LANNING
PHONE: (763) 585-6742
EMAIL: DENELL@STEENENG.COM

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA

08/24/18 sign date

JAMES L. MOY 27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
LH, HD
Issue Date
08/24/18

SUBMITTALS / REVISIONS

	02/16/18	MHFA REVIEW - SD
	04/20/18	50% CD
	06/21/18	90% CD
	08/24/18	100% MHFA REVIEW

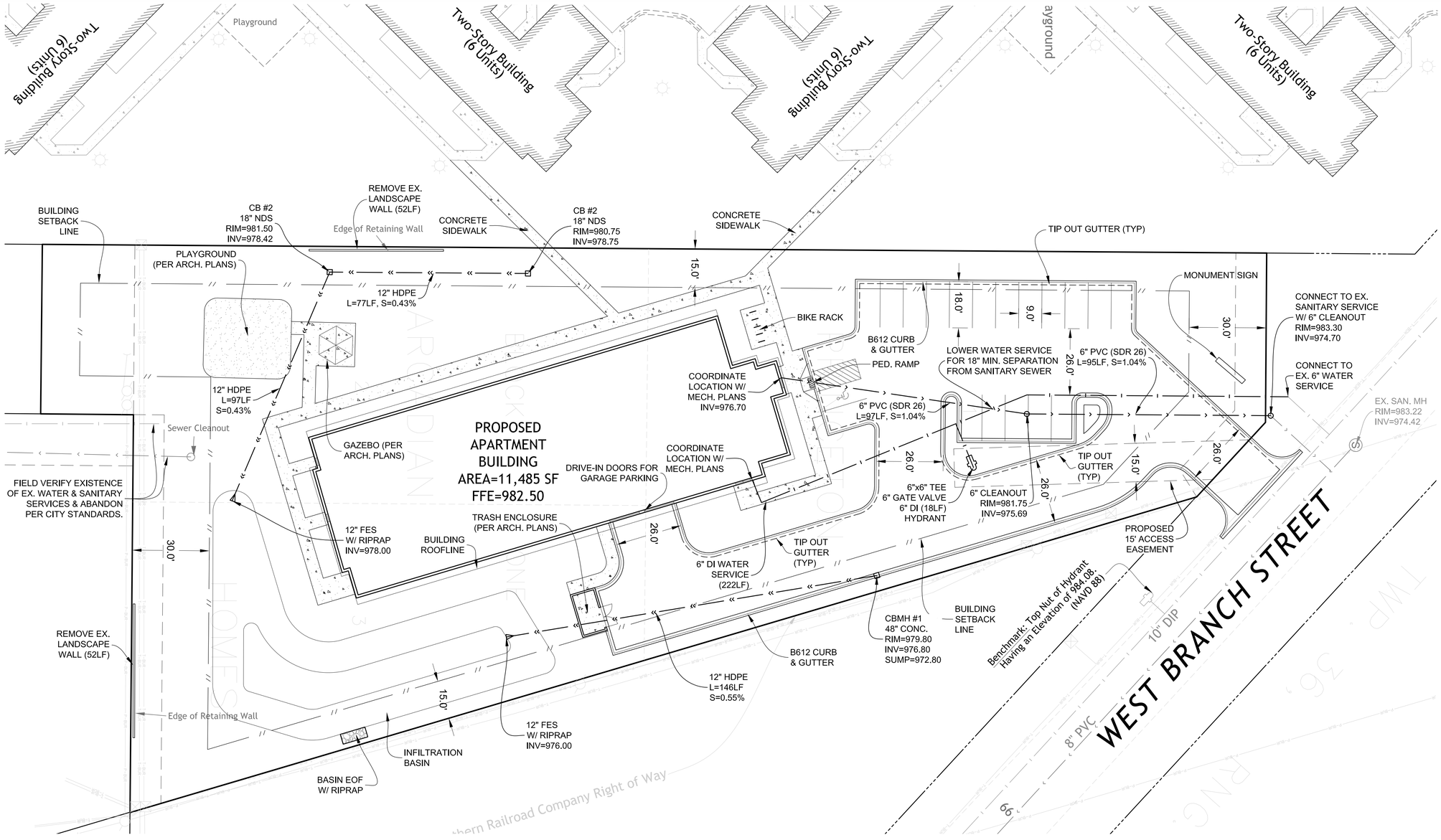
SCALE
12" = 1'-0"

West Birch Apartments

W Branch Street
Princeton, MN

TITLE

T



GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

NOTES:

1. BASE PLAN USED IS A SURVEY PREPARED BY KRAMER LEAS DELEO, P.A.
2. ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS SHOWN ARE APPROXIMATE ONLY. CONTRACTOR SHALL CONFIRM ALL LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL CONTACT UTILITY COMPANIES VIA GOPHER STATE ONE-CALL ONLINE OR BY CALLING 811 OR 1-800-252-1166.
3. ALL CONSTRUCTION SHALL CONFORM TO THE MOST RESTRICTIVE OF THE PROJECT SPECIFICATIONS, THE STANDARD SPECIFICATIONS OF THE CITY OF PRINCETON AND THE LATEST EDITION OF MNDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
4. TOTAL LOT AREA = 70,072 SF (1.61 ACRES)
   PROPOSED IMPERVIOUS SURFACE AREA = 32,908 SF (47.0%)

REVIEW PLAN
NOT FOR CONSTRUCTION

STARK ENGINEERING
www.starkengineer.com
320-249-2611
Sauk Rapids, Minnesota

REVISIONS

8/1/18	CITY REVIEW
8/10/18	ARCH. REV.
8/23/18	ADD HYD.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

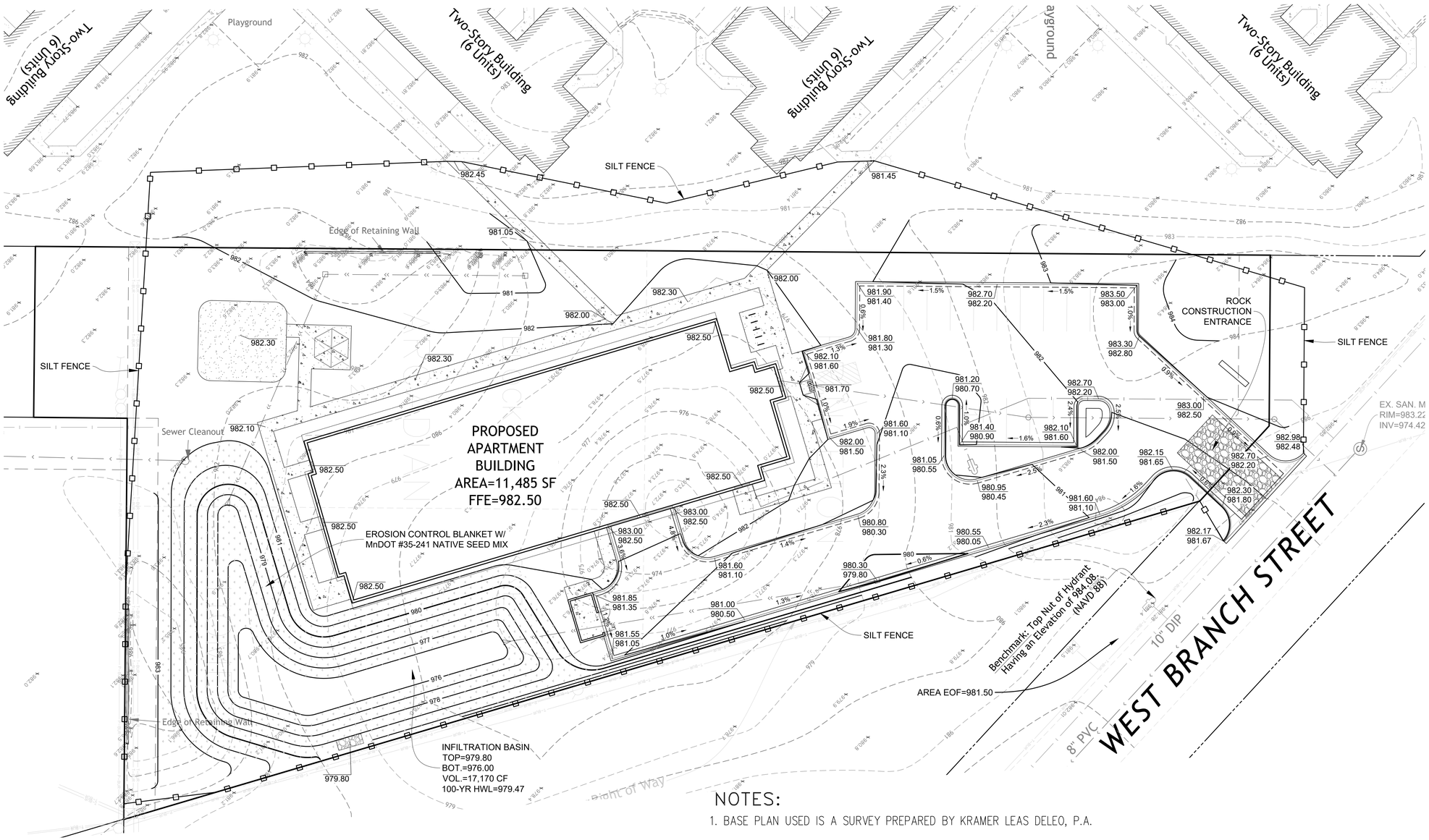
Date: 8/23/18

Wayne C.B. Stark, P.E.
Registration No. 26093

SITE AND UTILITY PLAN

WEST BIRCH APARTMENTS
PRINCETON, MINNESOTA
for:
CENTRAL MN HOUSING PARTNERSHIP

SHEET
C-1



GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

NOTES:

1. BASE PLAN USED IS A SURVEY PREPARED BY KRAMER LEAS DELEO, P.A.
2. ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS SHOWN ARE APPROXIMATE ONLY. CONTRACTOR SHALL CONFIRM ALL LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL CONTACT UTILITY COMPANIES VIA GOPHER STATE ONE-CALL ONLINE OR BY CALLING 811 OR 1-800-252-1166.
3. ALL CONSTRUCTION SHALL CONFORM TO THE MOST RESTRICTIVE OF THE PROJECT SPECIFICATIONS, THE STANDARD SPECIFICATIONS OF THE CITY OF PRINCETON AND THE LATEST EDITION OF MNDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
4. THE FOLLOWING SEQUENCE AND PROTOCOLS SHALL BE FOLLOWED FOR EROSION AND SEDIMENT CONTROL DURING THE SITE DEVELOPMENT PROCESS:
   A. INSTALL PERIMETER CONTROLS (SILT FENCE & ROCK CONSTRUCTION ENTRANCE) AS SHOWN ON THE PLANS PRIOR TO START OF WORK.
   B. SOIL STOCKPILES OR CONCRETE WASHOUTS ARE NOT ALLOWED ON THE PROJECT SITE.
   C. MAINTAIN ALL TEMPORARY EROSION CONTROL DEVICES IN PLACE UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED. INSPECT TEMPORARY EROSION CONTROL DEVICES ON A WEEKLY BASIS AND AFTER EACH 1/2" OR MORE RAIN EVENT. CLEAN OR MAINTAIN THESE DEVICES AS NEEDED TO BE EFFECTIVE. REPLACE DETERIORATED, DAMAGED OR ROTTED EROSION CONTROL DEVICES IMMEDIATELY.
   D. REMOVE ALL SOILS AND SEDIMENTS DEPOSITED ONTO PUBLIC AND/OR PRIVATE PAVEMENT AREAS WITHIN 24 HOURS OF DEPOSITION. REMOVAL OF TRACKING MATERIALS SHALL BE COMPLETED AT THE END OF EACH WORK DAY WHEN IT OCCURS. SWEEPING MAY BE ORDERED AT ANY TIME IF CONDITIONS WARRANT.
   E. PERFORM SITE REMOVALS, GRADING, EXCAVATION AND EMBANKMENT. SEED AND MULCH ALL DISTURBED AREAS OUTSIDE OF PROPOSED PAVEMENT AND BUILDING AREAS WITHIN 72 HOURS OF THIS WORK.
   F. INSTALL BUILDING AND BITUMINOUS PAVEMENT SECTION. FINE GRADE SITE AND RESTORE GREEN AREAS WITH PERMANENT VEGETATION PER LANDSCAPE PLANS.
   G. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER SITE HAS UNDERGONE FINAL STABILIZATION AND PERMANENT VEGETATION HAS BEEN ESTABLISHED WITH AT LEAST 70% COVERAGE.

REVIEW PLAN
NOT FOR CONSTRUCTION

STARK ENGINEERING
www.starkengineer.com
320-249-2611
Sauk Rapids, Minnesota

I hereby certify that this plan, specification, or report was prepared by me and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Date: 8/23/18

Wayne C.B. Stark, P.E.
Registration No. 26093

REVISIONS	
8/1/18	CITY REVIEW
8/10/18	ARCH. REV.
8/23/18	ADD HYD.

GRADING AND EROSION CONTROL PLAN

WEST BIRCH APARTMENTS
PRINCETON, MINNESOTA
for:
CENTRAL MN HOUSING PARTNERSHIP

SHEET
C-2

BUILDING CODE DATA

APPLICABLE CODES

BUILDING CODES: 2015 MINNESOTA STATE BUILDING CODE (MNSBC)
CITY OF PRINCETON, MN: CODE OF ORDINANCES

ELECTRICAL CODE:
MECHANICAL CODE: 2015 INTERNATIONAL MECHANICAL CODE
LIFE SAFETY: 2015 NFPA 101
FIRE CODE: 2015 NFPA 1
ENERGY: 2015 MINNESOTA ENERGY CODE, 2015 IECC, INTERNATIONAL ENERGY CONSERVATION CODE,

ELEVATOR: 2015 IBC, CHAPTER 30, INTERNATIONAL BUILDING CODE,

ACCESSIBILITY CODES: COMAR 05.02.02 AND 2010 ADA STANDARDS
2015 MINNESOTA STATE ACCESSIBILITY CODE
ANSI 117.1-2009
FAIR HOUSING

OCCUPANCY (Chapters 3 & 5)

OCCUPANCY CLASSIFICATION:

RESIDENTIAL	R-2
LOW-HAZARD STORAGE	S-2
BUSINESS	B

BASIC ALLOWABLE HEIGHT AND FLOOR AREA:
(TABLE 503)

	ALLOWED	PROVIDED	ALLOWED	PROVIDED
R-2 (TYPE V-B)	2 STORIES	2 STORIES	7,000 SF PER STORY*	0 SF - 1ST FLOOR
				11,160 SF - 2ND FLOOR
				11,160 SF - 3RD FLOOR
B (TYPE V-B)	2 STORIES	1 STORY	9,000 SF PER STORY	2,822 SF - 1ST FLOOR
S-2 (TYPE I-B)	2 STORIES	1 STORY	13,500 SF PER STORY	8,607 SF- 1ST FLOOR

* AREA MODIFICATIONS:
(MNSBC 506) ALLOWABLE AREA PER STORY = [A + (A x I(bf)) + (A x I(s)]

A = AREA PER STORY (PER TABLE 503) = 7,000 SF

I(bf) = AREA INCREASE DUE TO FRONTAGE
[BF / AP - 0.25] NW/30
BF = BUILDING PERIMETER THAT FRONTS A PUBLIC WAY OR OPEN SPACE WITH MIN. 20' WIDTH = 455'
AP = TOTAL BUILDING PERIMETER = 370'
NW = WIDTH OF PUBLIC SPACE, MAX. OF 30' = 36'
I(bf) = [455 / 455 - 0.25] 27/30
I(bf) = 0.675

I(s) = PER 506.3, WHERE A BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1 AND HAS MORE THAN ONE STORY ABOVE GRADE PLANE, I(s) = 2

ALLOWABLE AREA PER STORY = [7,000 + (7,000 x 0.675) + (7,000 x 2)]
ALLOWABLE AREA PER STORY = 25,725 SF

SPECIAL REQUIREMENTS (Chapter 4)

SEPARATION WALLS
ALL WALLS SEPARATING DWELLING AND/OR SLEEPING UNITS, AND DWELLING OR SLEEPING UNITS FROM OTHER OCCUPANCIES ARE FIRE PARTITIONS.

OPEN PARKING GARAGES: CLASSIFIED AS GROUP S-2 UNDER THE FOLLOWING PROVISIONS: (IBC SEC. 406)
AREA PER TIER: 50,000
HEIGHT (IN TIERS): MAX 12 TIERS - MIN. CLEAR HEIGHT: 7 FT
OPENING: THE BUILDING (PARKING AREA) MUST HAVE OPENINGS ON AT LEAST TWO SIDES - THE OPENINGS MUST BE UNIFORMLY DISTRIBUTED ALONG EACH SIDE . THE AREA OF THE OPENING MUST BE NOT LESS THAN 20 PERCENT OF THE TOTAL PERIMETER WALL AREA.

EXCEPTION: OPENINGS ARE NOT REQUIRED TO BE DISTRIBUTED OVER 40 PERCENT OF THE BUILDING PERIMETER WHERE THE REQUIRED OPENINGS ARE UNIFORMLY DISTRIBUTED OVER TWO OPPOSING SIDES OF THE BUILDING.

SEPARATION (406.4.6 / 508.1)
PARKING GARAGES SHALL BE SEPARATED FROM OTHER OCCUPANCIE

EXCEPTION:(711.3)
DWELLING UNIT AND SLEEPING UNIT SEPARATIONS IN BUILDINGS OF TYPE IIB, IIIB AND VB CONSTRUCTION SHALL HAVE FIRE-RESISTANCE RATINGS OF NOT LESS THAN 1/2 HOURS IN UILDINGS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1.

FIRE ALARM SYSTEM (907.2.9)
A FIRE ALARM SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH SECTIONS 907.2.9 THROUGH 907.2.9.2 IN GROUP R-2 OCCUPANCIES WHERE THE BUILDING CONTAINS MORE THAN 16 *DWELLING UNITS* OR *SLEEPING UNITS*

AUTOMATIC SPRINKLER SYSTEM (IBC 903.2.8)
BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM.

TYPES OF CONSTRUCTION (Chapter 6)

TYPE: V-B

STRUCTURAL FRAME:	0 HR
BEARING WALLS	
EXTERIOR:	0 HR
INTERIOR:	0 HR
NONBEARING WALLS & PARTITIONS	
EXTERIOR:	TABLE 602
INTERIOR:	0 HR
FLOOR CONSTRUCTION:	0 HR
ROOF CONSTRUCTION:	0 HR

TYPE: II-B

STRUCTURAL FRAME:	0 HR
BEARING WALLS	
EXTERIOR:	0 HR
INTERIOR:	0 HR
NONBEARING WALLS & PARTITIONS	
EXTERIOR:	TABLE 602
INTERIOR:	0 HR
FLOOR CONSTRUCTION:	0 HR
ROOF CONSTRUCTION:	0 HR

FIRE PROTECTION (Chapters 7 & 9)

FIRE PARTITIONS:
GENERAL - 708.1
WALLS SEPARATING DWELLING UNITS IN THE SAME BUILDING SHALL COMPLY WITH THE FIRE PARTITION SECTION.

FIRE-RESISTANCE RATING - 708.3
FIRE PARTITIONS SHALL HAVE A FIRE-RESISTANCE RATING OF NOT LESS THAN 1 HOUR. 1/2 HOUR PERMITTED WITH APPROVED SPRINKLER SYSTEM.
PROVIDED - SEE WALL TYPES

CONTINUITY - 708.4
FIRE PARTITIONS SHALL EXTEND FROM THE TOP OF THE FOUNDATION TO THE FIRE-RESISTANCE RATED ROOF/CEILING ASSEMBLY.
PROVIDED - WALLS EXTEND TO BOTTOM SIDE OF 1 HR ROOF/CEILING ASSEMBLY

DRAFTSTOPPING - 718.3 / 718.4.2
DRAFTSTOPPING IN ATTICS
DRAFTSTOPPING SHALL BE PROVIDED IN CONCEALED ROOF SPACES OF GROUP R-2 BUILDINGS AND SHALL BE INSTALLED ABOVE, AND IN LINE WITH UNIT SEPARATION WALLS. IN GROUP R-2 OCCUPANCIES NOT EXCEEDING FOUR STORIES, THE ATTIC SPACE SHALL BE SUBDIVIDED IN TO AREAS NOT EXCEEDING 3,000 SF OR ABOVE EVERY TWO DWELLING UNITS, WHICHEVER IS SMALLER.
PROVIDED - SEE ROOF PLANS FOR LOCATIONS OF DRAFT STOPPING.
- MAXIMUM AREA SHOWN IS 2 UNITS @ 2,160 SF

FIRE SUPPRESSION SYSTEM:
GROUP R - 903.2.8
AN AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH SECTION 903.3 SHALL BE PROVIDED THROUGH ALL BUILDINGS WITH A GROUP R FIRE AREA

NFPA 13 SPRINKLER SYSTEM - 903.3.1.2
WHERE ALLOWED IN BUILDINGS OF GROUP R, UP TO AND INCLUDING 4 STORIES IN HEIGHT, AUTOMATIC SPRINKLER SYSTEMS SHALL BE INSTALLED THROUGHOUT IN ACCORDANCE WITH NFPA 13.
PROVIDED - SPRINKLERS THROUGHOUT UNIT

PROJECTIONS - 705.2
EXCEPTION: TYPE VB CONSTRUCTION SHALL BE ALLOWED FOR COMBUSTIBLE PROJECTIONS IN GROUP R-3 AND U OCCUPANCIES WITH A FIRE SEPARATION DISTANCE GREATER THAN OR EQUAL TO 5 FEET (1524 MM).

ACCESSIBILITY (MN Accessibility Code)

ACCESSIBLE PARKING AND PASSENGER LOADING FACILITIES:
ACCESSIBLE PARKING SPACES - 1106.1
PROVIDE 2% (QTY MIN.1) ACCESSIBLE PARKING SPACE
PROVIDED - 2 SPACES PROVIDED

DWELLING AND SLEEPING UNITS:
GROUP R-2 - 1107.6.2
TYPE A UNITS: ≥5% REQUIRED
PROVIDED - 16 UNITS = 1 UNIT IS TYPE A

HEARING AND VISUALLY IMPAIRED UNITS: ≥ 2% (MIN. 1) REQUIRED
PROVIDED - 16 UNITS = 1 UNIT

PUBLIC ACCOMMODATIONS
AREAS OF BUSINESS AND GENERAL PUBLIC ACCOMMODATIONS SHALL COMPLY WITH THE APPLICABLE DESIGN GUIDELINES OF THE AMERICANS WITH DISABILITIES ACT (ADA).

OCCUPANT LOAD & EGRESS (Chapter 10)

OCCUPANT LOAD:
(TABLE 1004.1.2)

RESIDENCES R-2	13,754 SF	1 OCC./200 GROSS SF	69 OCCUPANTS
BUSINESS B	473 SF	1 OCC./100 GROSS SF	5 OCCUPANTS
UNCONCENTRATED (B)	667 SF	1 OCC./15 NET SF	45 OCCUPANTS
ACCESSORY (B)	531 SF	1 OCC./300 GROSS SF	2 OCCUPANTS
PARKING (S2)	7,820 SF	1 OCC./200 NET SF	40 OCCUPANTS
STORAGE (S2)	143 SF	1 OCC./300 NET SF	1 OCCUPANT
WORKROOM (S2)	182 SF	1 OCC./300 NET SF	1 OCCUPANT

MEANS OF EGRESS:
EGRESS ILLUMINATION - 1006.1
PROVIDED: SEE PLANS

EGRESS DOORS - 1006.1.1
32" MIN. CLEAR OPENING WIDTH
PROVIDED - SEE DOOR TYPES & SCHEDULES: SHEET A901

EXIT ACCESS TRAVEL DISTANCE - TABLE 1016 .2
250' WITH SPRINKLERS
PROVIDED - MAXIMUM DISTANCE 227', SEE CODE PLANS

STAIRWAYS:
STAIRWAY WIDTH - 1009.4, EXCEPTION 1
36" MINIMUM
PROVIDED - SEE PLANS

HEADROOM - 1009.5
80" MINIMUM
PROVIDED - SEE SHEET A803

STAIR TREADS AND RISERS 1009.7.2, EXCEPTION 5
7" MAXIMUM RISER HEIGHT
10" MINIMUM TREAD DEPTH
PROVIDED - SEE SHEET A803

STAIRWAY LANDINGS 1009.8
NOT LESS THAN THE WIDTH OF THE STAIRWAY THEY SERVE
PROVIDED - SEE SHEET A803

HANDRAILS - 1009.15, EXCEPTION 2
ONLY REQUIRED ON ONE SIDE IN DWELLING UNIT
PROVIDED - SEE SHEET A803

HANDRAILS:
HEIGHT - 1012.2
BETWEEN 34" AND 38" ABOVE STAIR NOSING
PROVIDED - SEE SHEET A803

EMERGENCY ESCAPE AND RESCUE:
GENERAL - 1029.1
SLEEPING ROOMS BELOW THE FOURTH STORY ABOVE GRADE SHALL HAVE AT LEAST ONE EXTERIOR EMERGENCY ESCAPE AND RESCUE OPENING
PROVIDED - SEE ELEVATIONS

INTERIOR ENVIRONMENT (Chapter 12)

NATURAL VENTILATION:
(1203.4.1)
MIN. 4% OF FLOOR AREA BEING VENTILATED (TO BE OPENABLE) OR MECHANICAL VENTILATION
PROVIDED PER UNIT 6% TO 4%

NATURAL LIGHT:
(1205.2)
MIN. NET GLAZED AREA ≥ 8% OF FLOOR AREA BEING SERVED OR ARTIFICIAL LIGHT
PROVIDED PER UNIT 10% TO 8%

SOUND TRANSMISSION:
(1207.2)
WALLS SEPARATING DWELLING UNITS SHALL HAVE AN STC NOT LESS THAN 50.
PROVIDED - STC 61 - SEE WALL TYPES

INTERIOR SPACE DIMENSIONS:
(1208.1)
HABITABLE ROOMS SHALL NOT BE LESS THAN 7 FEET IN ANY PLAN DIMENSIONS.
PROVIDED - LEAST DIMENSION SHOWN IS 9'-6"

EVERY DWELLING UNIT SHALL HAVE NO FEWER THAN ONE ROOM THAT SHALL HAVE NOT LESS THAN 120 SQUARE FEET.
PROVIDED - LEAST AREA SHOWN IS 124.25 SQ. FT.

TABLE R402.1.1 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

CLIMATE ZONE	FENESTRATION U-FACTOR[b]	SKYLIGHT[b] U-FACTOR	GLAZED FENESTRATION SHGC[b,f]	CEILING R-VALUE	WOOD FRAME WALL R-VALUE[i]	MASS WALL R-VALUE[i,k,l]	FLOOR R-VALUE	BASEMENT WALL R-VALUE[c,i]	SLAB R-VALUE AND DEPTH[d]	CRAWL SPACE WALL R-VALUE[c,i]
6	0.32	0.55	NR	49	20, 13+5	15/20	30[g]	15	10, 3.5ft	15

OCCUPANT LOAD CALCULATIONS
(TABLE 2902.1)

GROUP	TYPE	AREA(SF)	SF/OC	OCC.
GROUP B	OFFICE (COMMUNITY)	934	100	10

ALL OTHER OCCUPANCIES ARE ASSUMED FOR RESIDENT USE. REQUIRED PLUMBING FACILITIES SHALL BE PROVIDED IN THE DWELLING UNITS.

GROUP	TYPE	OCCUPANTS	LAV 1:40	W. C. 1:20
GROUP B	OFFICE	6 MEN/ 4 WOMEN	M: 0.15 F: 0.1	M: 0.3 F: 0.2
TOTAL FIXTURES PROVIDED			LAV = 1	W.C. = 1

	REQUIRED	PROVIDED
SERVICE SINK:	1	1

*DRINKING FOUNTAIN IS NOT REQUIRED WITH OCCUPANT LOADS OF LESS THAN 50 PERSONS.
PROVIDED - 1 - EWC

PLUMBING FIXTURE COUNTS (Chapter 29)

ABBREVIATIONS

#	Pound OR Number
&	And
@	At
A/C	Air Conditioner
AB	Air Barner
ABV	Above
ACC	Accessible
ACT	Acoustic Ceiling Tile
ACM	Asbestos Containing Maternal
AD	Area Drain
ADA	Americans with Disabilities Act
ADAAG	ADA Architectural Guidelines
ADD	Addendum
ADDL	Additional
ADH	Adhesive
ADJ	Adjust, Adjustable, Adjacent
AFF	Above Finished Floor
AFG	Above Finished Grade
AG	Above Grade
AGGR	Aggregate
AIA	Amencan Institute of Architects
ALM	Alarm
ALT	Alternate
ALUM	Aluminum
AMT	Amount
ANOD	Anodized
ANT	Antenna
AP	Access Panel
APT	Apartment
APPROX	Approximate
ARCH	Architect, Architectural
ASPH	Asphalt
ASSY	Assembly
AUTO	Automatic
AVG	Average
B&B	Balled and Burlapped
BDRM	Bedroom
BIT	Bituminous
BLDG	Building
BLK	Block
BLKG	Blocking
BLT-IN	Built-In
BSMT	Basement
BYND	Beyond
BO	Bottom of
BOF	Bottom of footing
BOW	Bottom of wall
BOT	Bottom
BRG	Beaning
BSMT	Basement
BTU	British Thermal Units
BTUH	British Thermal Units per Hour
BUR	Built-up Roof
CAB	Cabinet
CAD	Computer-Aided Drafting
CB	Catch Basin
CCTV	Closed Circuit TV
CCW	Counter Clockwise
CD	Construction Document
CF	Cubic Feet
CFM	Cubic Feet per Minute
CIP	Cast In Place
CHNL	Channel
CJ	Control Joint
CL	Center Line
CLG	Ceiling
CLKG	Caulking
CLR	Clear
CLR OPG	Clear Opening
CMU	Concrete Masonry Unit
CO	Clean Out
COD	Carbon Monoxide Detector
COL	Column
COMPR	Compressible
CONC	Concrete
CONSTR	Construction
CONT	Continuous
CONTR	Contractor
CPT	Carpet
CT	Ceramic Tile
CTYD	Courtyard
CW	Clockwise
CY	Cubic Yard
DW	Dishwasher
d	Penny
DBL	Double
DEG	Degree
DEMO	Demolish or Demolition
DEPT	Department
DET	Detail
DIA	Diameter
DIAG	Diagonal
DIM	Dimension
DIMS	Dimensions
DISL	Disposal
DISP	Dispenser
DF	Drinking Fountain
DN	Down
DR	Door
DS	Downspout
DWG	Drawing
DWGS	Drawings
EA	Each
EF	Exhaust Fan
EIFS	Exterior Insulation and Finish System
EJ	Expansion Joint
EL	Elevation
ELEC	Electncal
ELEV	Elevator or Elevation
EMER	Emergency
ENCL	Enclosure
ENGR	Engineer
ENTR	Entrance
EP	Electncal Panel Board
EPDM	Ethylene Propylene Diene M-Class (Roofing)
EQ	Equal
EQUIP	Equipment
EW	Each way
EWC	Electnc Water Cooler
EXIST	Existing
EXT	Exterior
FA	Fire alarm
FAB	Fabncate
FACP	Fire Alarm Control Panel
FAR	Floor Area Ratio
FD	Floor Drain or Fire Department
FDC	Fire Department Connection
FDN	Foundation
FE	Fire Extinguisher
FEC	Fire Extinguisher Cabinet
FFE	Finished Floor Elevation
FF&E	Fixtures, Furnishings, & Equipment
FHA	Fair Housing Act
FHY	Fire Hydrant
FIN	Finish, Finished
FIXT	Fixture
FLASH	Flashing
FLG	Flooring
FLR	Floor
FLUOR	Fluorescent
FO	Face Of
FOF	Face of Finish
FOM	Face of Masonry
FOS	Face of Stud
FP	Fireproof
FPL	Fireplace
FTG	Footing
FURN	Furnace
FURR	Furning
FV	Field Venfy
GA	Gauge
GALV	Gallon
GALV	Galvanized
GAR	Garage
GB	Grab Bar
GC	General Contractor
GFCI	Ground Fault Circuit Interrupt
GL	Glass
GWB	Gypsum Wall Board
GYP	Gypsum
HB	Hose Bib
HC	Hollow Core
HDW	Hardware
HGT	Height
HI	High
HM	Hollow Metal
HORIZ	Horizontal
HPS	High Pressure Sodium
HR	Hour
HUD	Department of Housing and Urban Development
HVI	Hearing and Visual Impaired
HVAC	Heating, Ventilating, And Air Conditioning
HW	Hot Water
IBC	International Building Code
ICF	Insulated Concrete Form
ID	Inside Diameter
IF	Inside Face
INFO	Information
INCL	Inclusive, Including
IRGWB	Impact Resistant Gypsum Wall Board
ILO	In Lieu Of
INST	Install
INSUL	Insulated or Insulation
INT	Interior
JAN	Janitor
JBOX	Junction Box
JCT	Junction
KO	Knock Down
LAM	Laminate
LAT	Lateral
LAV	Lavatory
LB	Pounds
LCD	Liquid Crystal Diode
LF	Linear Feet
LH	Left Hand
LIN	Linear
LO	Low
LT	Light
LTG	Lighting
LVL	Laminated Veneer Lumber
MAINT	Maintenance
MATL	Matenal
MAX	Maximum
MECH	Mechanical
MED	Medium
MED CAB	Medicine Cabinet
MEMBR	Membrane
MFG	Manufactured
MH	Metal Halide
MIN	Minimum
MISC	Miscellaneous
MO	Masonry Opening
MRGWB	Moisture-Resistant Gypsum Wall Board
MTL	Metal
NFC	Not for Construction
NIC	Not In Contract
NO	Number
NOM	Nominal
NRC	Noise Reduction Coefficient
NTS	Not to Scale
OC	On Center
OD	Outside Diameter
OH	Opposite Hand
OPNG	Opening
OPP	Opposite
OR	Outside Radius
OZ	Ounce
PARTN	Partition
PCC	Pre-Cast Concrete
PERF	Perforated
PFN	Prefinished
PKG	Parking
PL	Property Line
PLAM	Plastic Laminate
PLAS	Plastic
PLBG	Plumbing
PLYWD	Plywood
PNT	Paint or Painted
PORC	Porcelain
PSF	Pounds per Square Foot
PSI	Pounds per Square Inch
PT	Pressure Treated
PVC	Polyvinyl Chloride
PWR	Power
QT	Quarry Tile
QTY	Quantity
RAD	Radius
RBR	Rubber
RCP	Reflected Ceiling Plan
RD	Roof Drain
REBAR	Reinforcing Bar
REF	Reference
REFG	Refngerator
REINF	Reinforced
REQD	Required
RESIL	Resilient
RET	Return
REV	Revision
RFG	Roofing
RH	Right Hand
RHR	Right Hand Reverse
RM	Room
RMV	Remove
RO	Rough Opening
ROW	Right of Way
SAN	Sanitary
SC	Solid Core
SCHED	Schedule
SCUP	Scupper
SD	Smoke Detector
SD/CO	Smoke/Carbon Monoxide Combo Detector
SECT	Section
SHT	Sheet
SHTG	Sheathing
SIM	Similar
SPEC	Specified OR Specification
SPK	Sprinkler or Speaker
SQFT	Square Feet
SQIN	Square Inches
SQYD	Square Yards
SSK	Service Sink
SSTL	Stainless Steel
STC	Sound Transmission Class
STD	Standard
STL	Steel
STRUCT	Structure or Structural
SUSP	Suspended
SYM	Symmetncal
SYN	Synthetic
SYS	System
T&G	Tongue And Groove
TB	Towel Bar
TELE	Telephone
TEMP	Temporary
TLT	Toilet
TO	Top Of
TOB	Top of Beam
TOC	Top Of Concrete, Top of Curb
TOF	Top of Footing
TOJ	Top of Joist
TOM	Top of Masonry
TOS	Top Of Steel
TOW	Top of Wall
TPD	Toilet Paper Dispenser
TS	Tube Steel
TSTAT	Thermostat
TD	Telephone/Data
TYP	Typcal
UFAS	Uniform Federal Accessibility Act
UNF	Unfinished
UNO	Unless Noted Otherwise
U/S	Underside
VB	Vapor Barner
VCT	Vinyl Composition Tile
VERT	Vertical
VIF	Venify In Field
VP	Vision Panel
W/	With
W/O	Without
WC	Water Closet (Toilet)
WD	Wood
WDW	Window
WH	Water Heater
WIC	Walk In Closet
WP	Waterproof
WRB	Weather Resistive Barner
WT	Weight
WWF	Welded Wire Fabnc
YD	Yard
YR	Year

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA — 08/24/18 sign date
JAMES L. MOY — 27036 reg. no.
6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
HD, LH
Issue Date
08/24/18

SUBMITTALS / REVISIONS

02/16/18	MHFA REVIEW - SD
04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

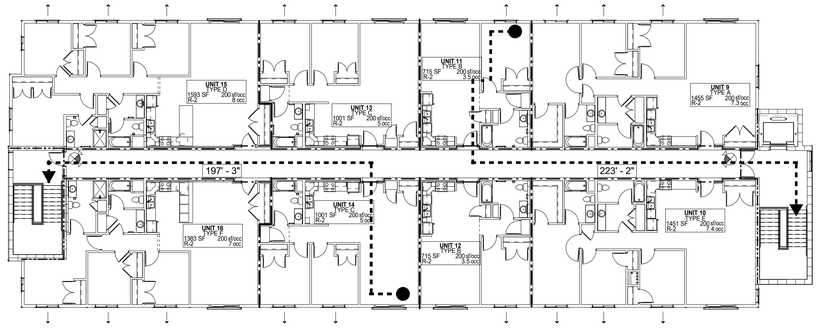
SCALE
As indicated

West Birch Apartments

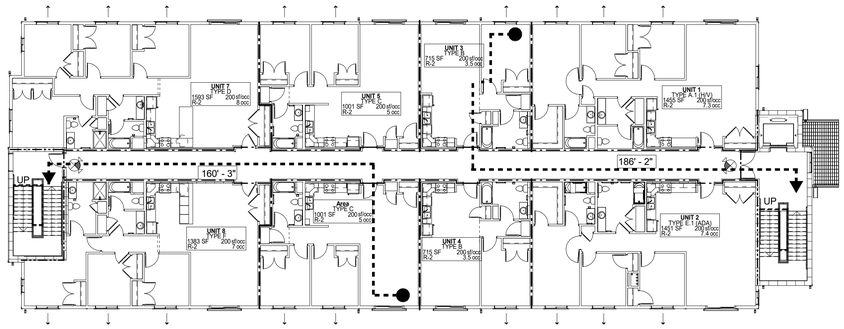
W Branch Street
Princeton, MN

CODE DATA

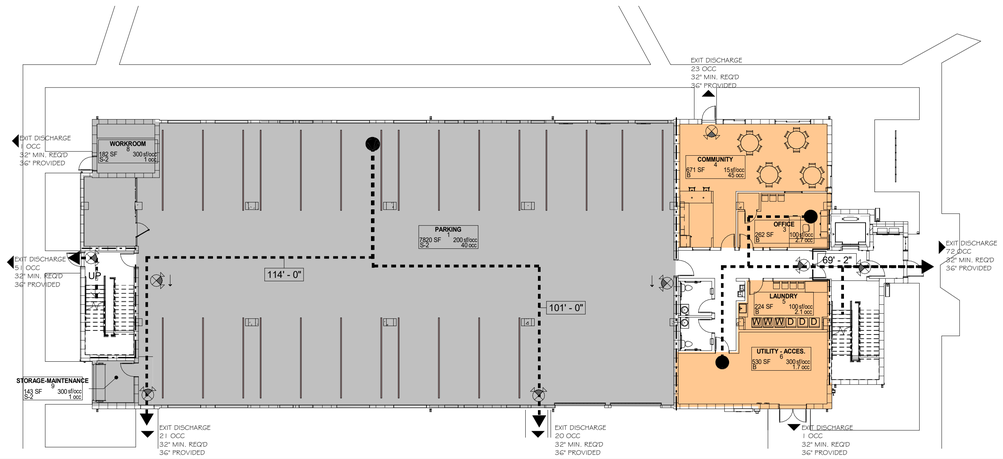
A001



3 THIRD FLOOR
1/16" = 1'-0"



2 SECOND FLOOR
1/16" = 1'-0"



1 FIRST FLOOR
1/16" = 1'-0"

CODE PLAN LEGEND

OCCUPANCY CLASSIFICATION.....
- R-2
- B
- S-2

1-HOUR FIRE PARTITION.....

SMOKE DETECTOR.....
(SEE ELECTRICAL FOR LOCATIONS)

SMOKE/CARBON MONOXIDE DETECTOR.....
(SEE ELECTRICAL FOR LOCATIONS)

EGRESS WINDOW.....

UNIT TYPE 'X'
###
SF
SF/OCC
OCC

- ACTUAL SQUARE FOOTAGE OF ROOM
- ROOM NUMBER
- ALLOWABLE AREA PER OCCUPANT
- OCCUPANCY LOAD
- OCCUPANCY CLASSIFICIATION

OCC
#" MIN. REQD
#" PROVIDED

- NUMBER OF EXITING OCCUPANTS PER CODE
- MINIMUM REQUIRED OPENING PER CODE
- ACTUAL OPENING SIZE

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA

08/24/18 sign date

JAMES L. MOY

27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18

Drawn By:
HD, LH

Issue Date
08/24/18

SUBMITTALS / REVISIONS

02/16/18	MHFA REVIEW - SD
04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

SCALE
As indicated

West Birch Apartments

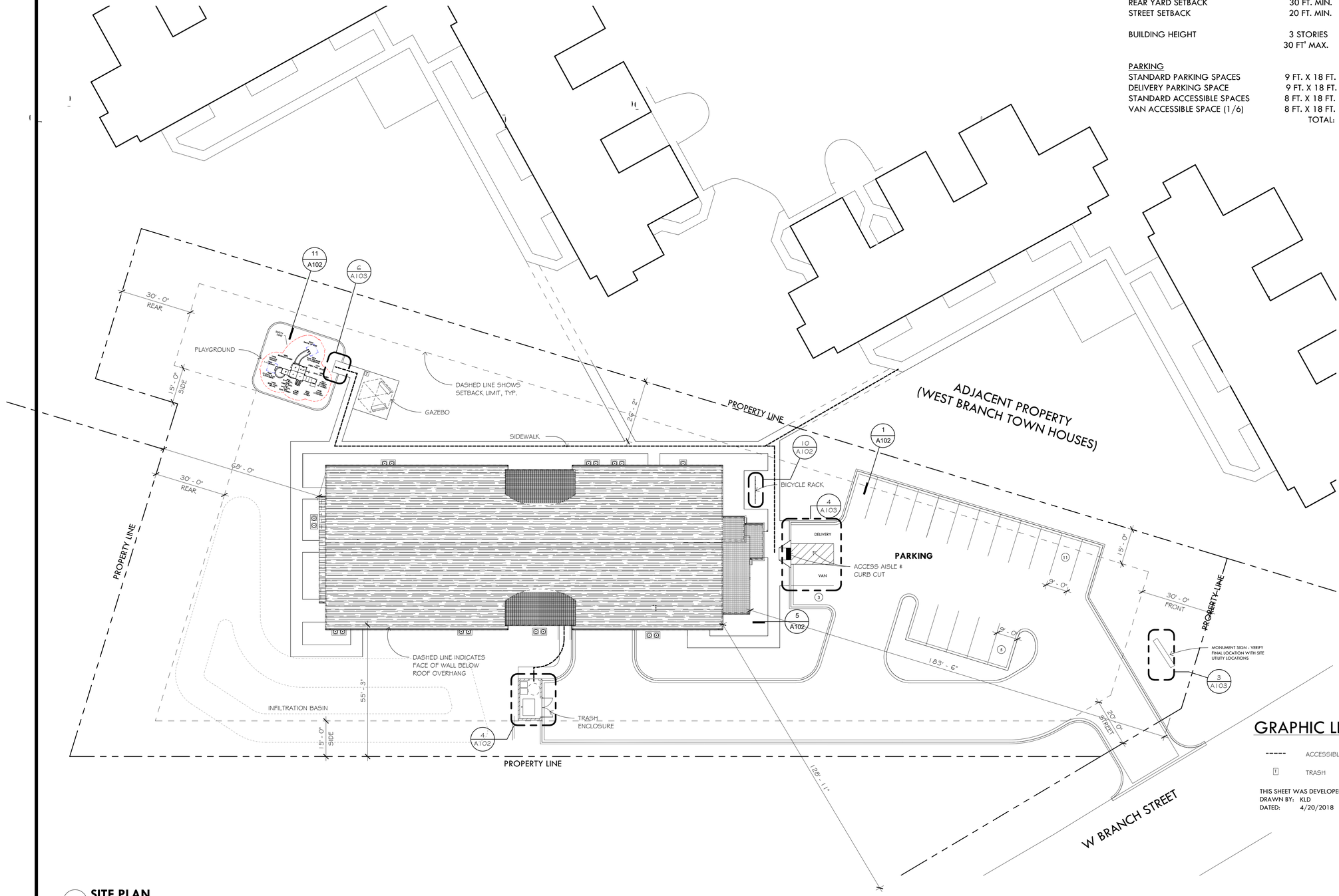
W Branch Street
Princeton, MN

CODE PLAN

A002

LOT & BUILDING DATA

ITEM:	REQUIRED	PROVIDED
LOT AREA	(16 x 2,000) + (22 x 200) = 36,400 SF MIN.	67,027 SQ. FT.
LOT WIDTH	100 FT MIN.	+/- 457 FT.
LOT COVERAGE	60% MAX.	44 %
FRONT YARD SETBACK	30 FT. MIN.	183'-6"
SIDE YARD SETBACK	15 FT. MIN.	55'-3" / 20'-2"
REAR YARD SETBACK	30 FT. MIN.	68'-0"
STREET SETBACK	20 FT. MIN.	126'-10"
BUILDING HEIGHT	3 STORIES 30 FT' MAX.	3 STORIES 48'-10"
PARKING		
STANDARD PARKING SPACES	9 FT. X 18 FT.	33 STALLS
DELIVERY PARKING SPACE	9 FT. X 18 FT.	1 STALL
STANDARD ACCESSIBLE SPACES	8 FT. X 18 FT.	2 STALLS
VAN ACCESSIBLE SPACE (1/6)	8 FT. X 18 FT.	1 STALL
	TOTAL:	37 STALLS



GRAPHIC LEGEND - SITE PLAN

----- ACCESSIBLE ROUTE

T TRASH

THIS SHEET WAS DEVELOPED FROM THE PLAN PROVIDED BY THE OWNER
DRAWN BY: KLD
DATED: 4/20/2018

1 SITE PLAN
1" = 20'-0"

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA

08/24/18 sign date

JAMES L. MOY

27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
SW, HD
Issue Date
08/24/18

SUBMITTALS / REVISIONS

02/16/18	MHFA REVIEW - SD
04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

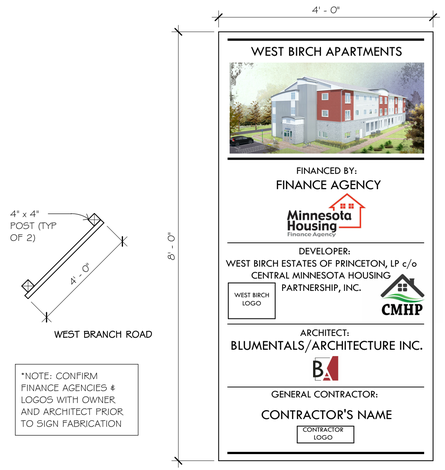
SCALE
As indicated

West Birch Apartments

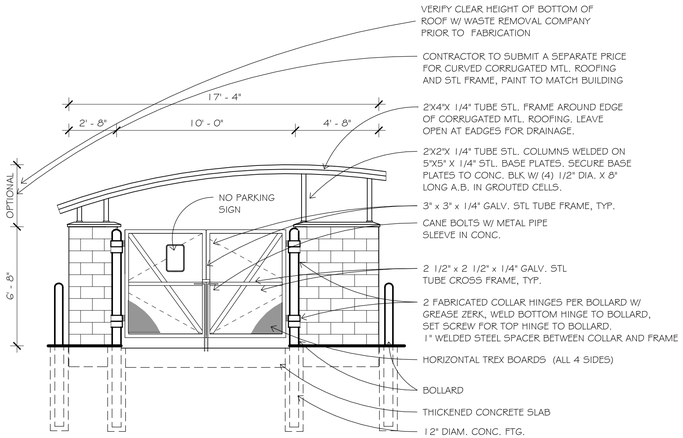
W Branch Street
Princeton, MN

SITE PLAN

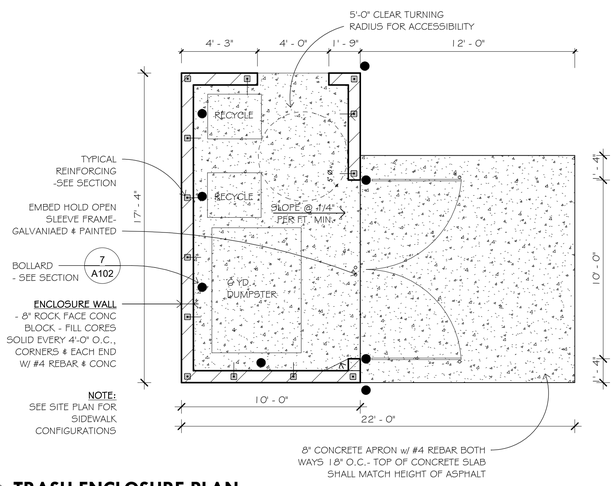
A101



13 PROJECT SIGN
3/4" = 1'-0"

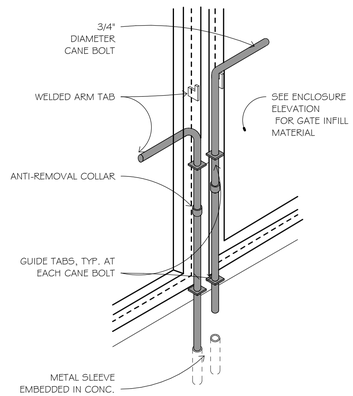


8 TRASH ENCLOSURE @ GATE
1/4" = 1'-0"

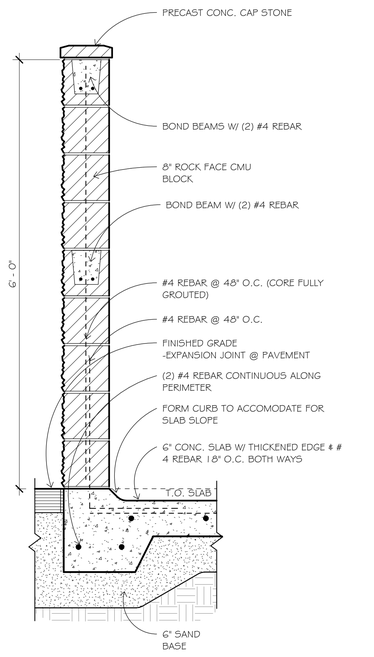


4 TRASH ENCLOSURE PLAN
1/4" = 1'-0"

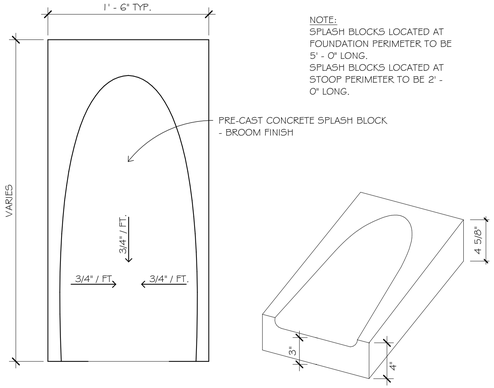
7 BOLLARD DETAIL
1" = 1'-0"



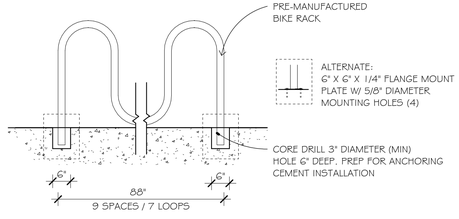
3 CANE BOLT DETAIL
1" = 1'-0"



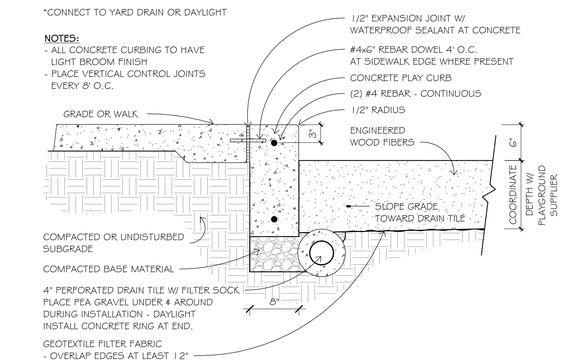
2 TRASH ENCLOSURE SECTION
1" = 1'-0"



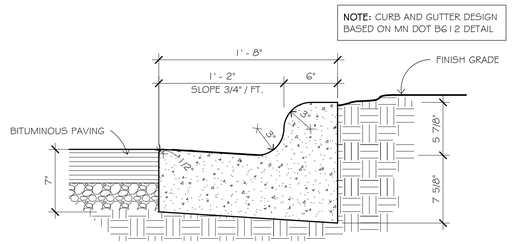
12 SPLASH BLOCKS
1 1/2" = 1'-0"



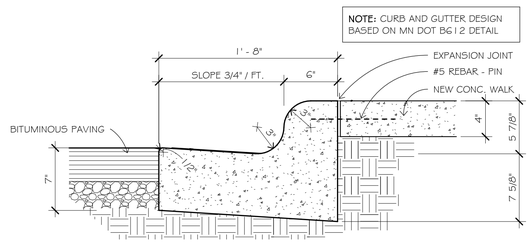
10 BIKE RACK DETAIL
1/2" = 1'-0"



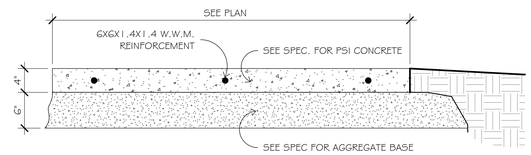
11 CURB DETAIL @ PLAYGROUND
1" = 1'-0"



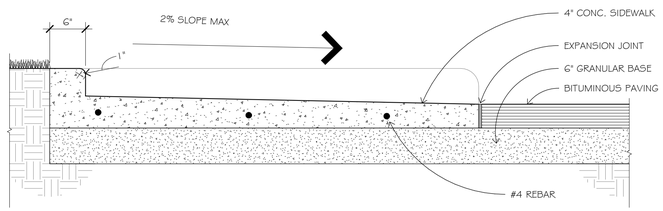
9 CURB & GUTTER DETAIL @ BITUMINOUS PAVING (NO WALK)
1 1/2" = 1'-0"



6 CURB & GUTTER @ BITUMINOUS PAVING (CONC. WALK)
1 1/2" = 1'-0"



5 CONCRETE SIDEWALK SECITON
1" = 1'-0"



1 CURB & GUTTER CROSS SECTION
1" = 1'-0"

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA
08/24/18 sign date
JAMES L. MOY
27036 reg. no.
6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
HD
Issue Date
08/24/18

SUBMITTALS / REVISIONS

04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

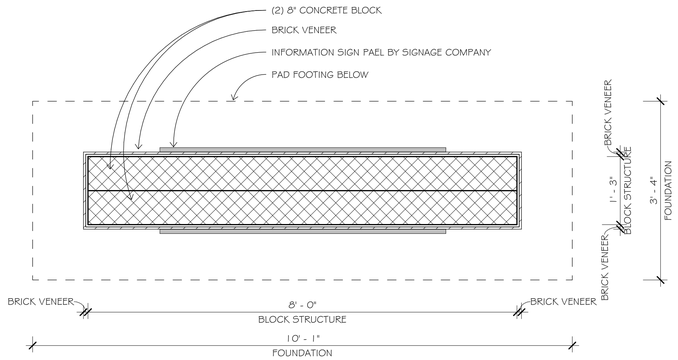
SCALE
As indicated

West Birch Apartments

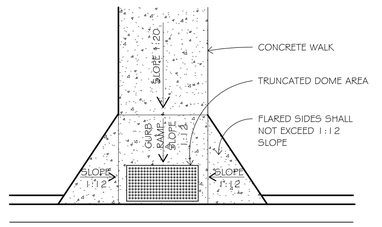
W Branch Street
Princeton, MN

SITE DETAIL

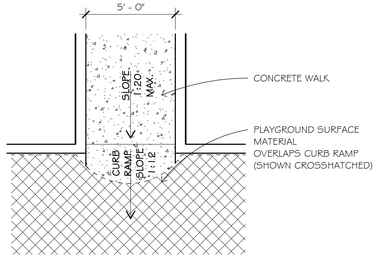
A102



10 MONUMENT SIGN - PLAN .1
3/4" = 1'-0"

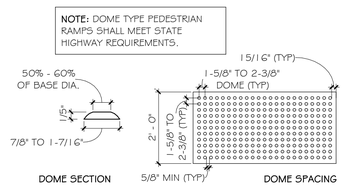


9 CURB CUT PLAN
1/4" = 1'-0"



6 CURB CUT @ PLAYGROUND
1/4" = 1'-0"

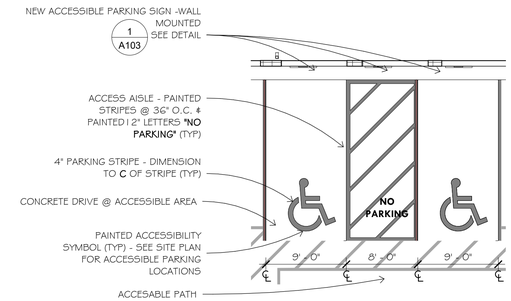
NOTE: DOME TYPE PEDESTRIAN RAMPS SHALL MEET STATE HIGHWAY REQUIREMENTS.



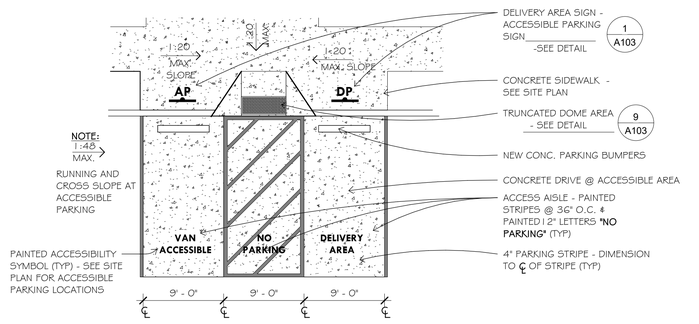
NOTES:

1. 6" TO 8" IS THE REQUIRED OFFSET OF THE DETECTABLE WARNINGS/TRUNCATED DOME AREA FROM THE FRONT FACE OF CURB, OR PLACE THE DETECTABLE WARNINGS AT THE BACK OF CURB.
2. ADA REQUIRED TRUNCATED DOME AREA SHALL BE 2'-0" MIN. IN DIRECTION OF TRAVEL AND SHALL EXTEND THE FULL WIDTH (3'-0" OR 4'-0" TYP.) OF THE CURB RAMP. THIS 2'-0" BY 3'-0" OR 4'-0" WIDTH (TYP.) TRUNCATED DOME AREA SHALL CONTRAST VISUALLY WITH THE ADJACENT WALKING SURFACE. THE ENTIRE TRUNCATED DOME AREA SHALL BE A LIGHT COLOR (LIGHT GRAY, WHITE, OR YELLOW) WHEN THE ADJACENT SIDEWALK IS A DARK COLOR. THE ENTIRE TRUNCATED DOME AREA SHALL BE A DARK COLOR (RED, BLACK, DARK GRAY, OR BRIGHT YELLOW) WHEN THE ADJACENT SIDEWALK IS A "WHITE" OR LIGHT GRAY CEMENT COLOR.

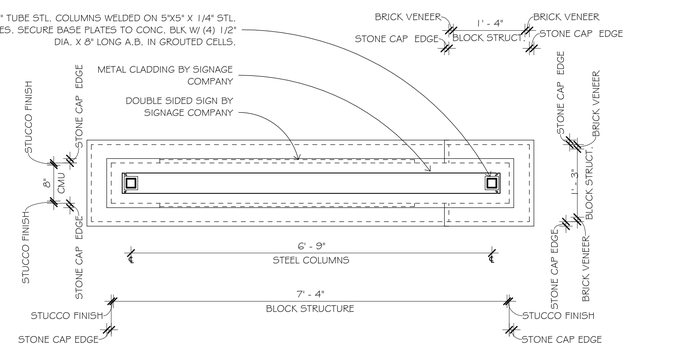
8 TRUNCATED DOME DETAIL
6" = 1'-0"



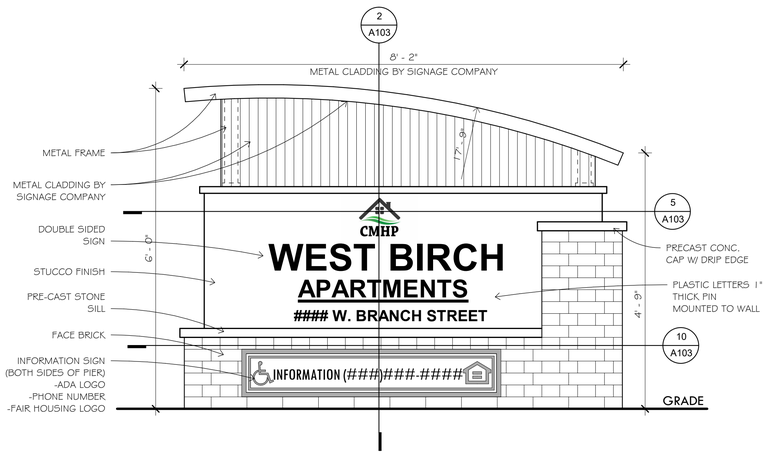
7 ACCESSIBLE PARKING @ PARKING GARAGE
1/8" = 1'-0"



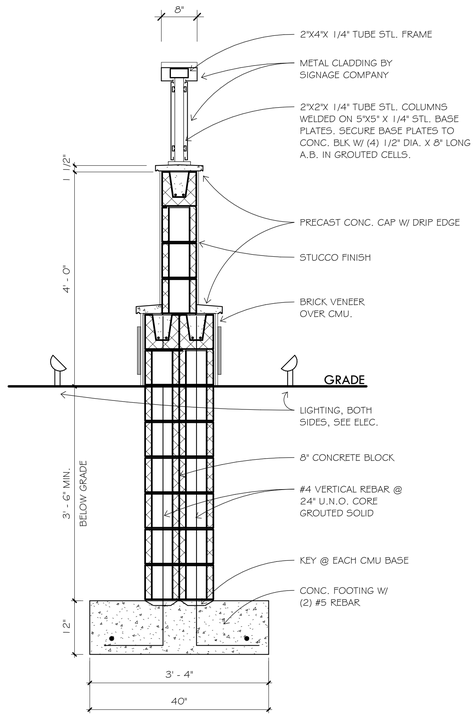
4 PLAN @ TYPICAL ACCESSIBLE PARKING
1/8" = 1'-0"



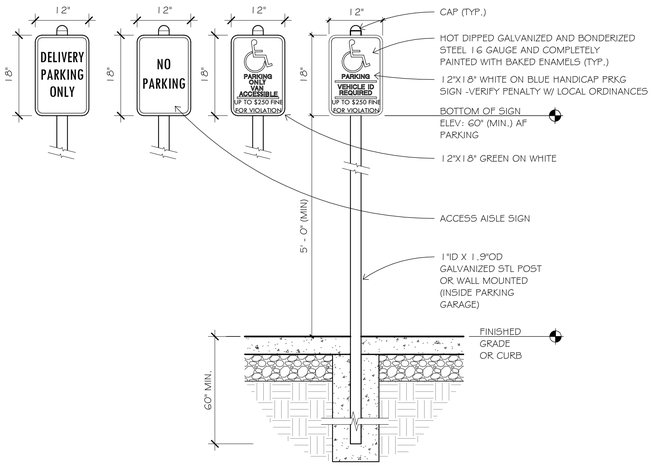
5 MONUMENT SIGN - PLAN .2
3/4" = 1'-0"



3 MONUMENT SIGN ELEVATION
3/4" = 1'-0"



2 MONUMENT SIGN - SECTION
3/4" = 1'-0"



1 SITE SIGNAGE
3/4" = 1'-0"

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA — 08/24/18 sign date
JAMES L. MOY — 27036 reg. no.
6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
HD
Issue Date
08/24/18

SUBMITTALS / REVISIONS

04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

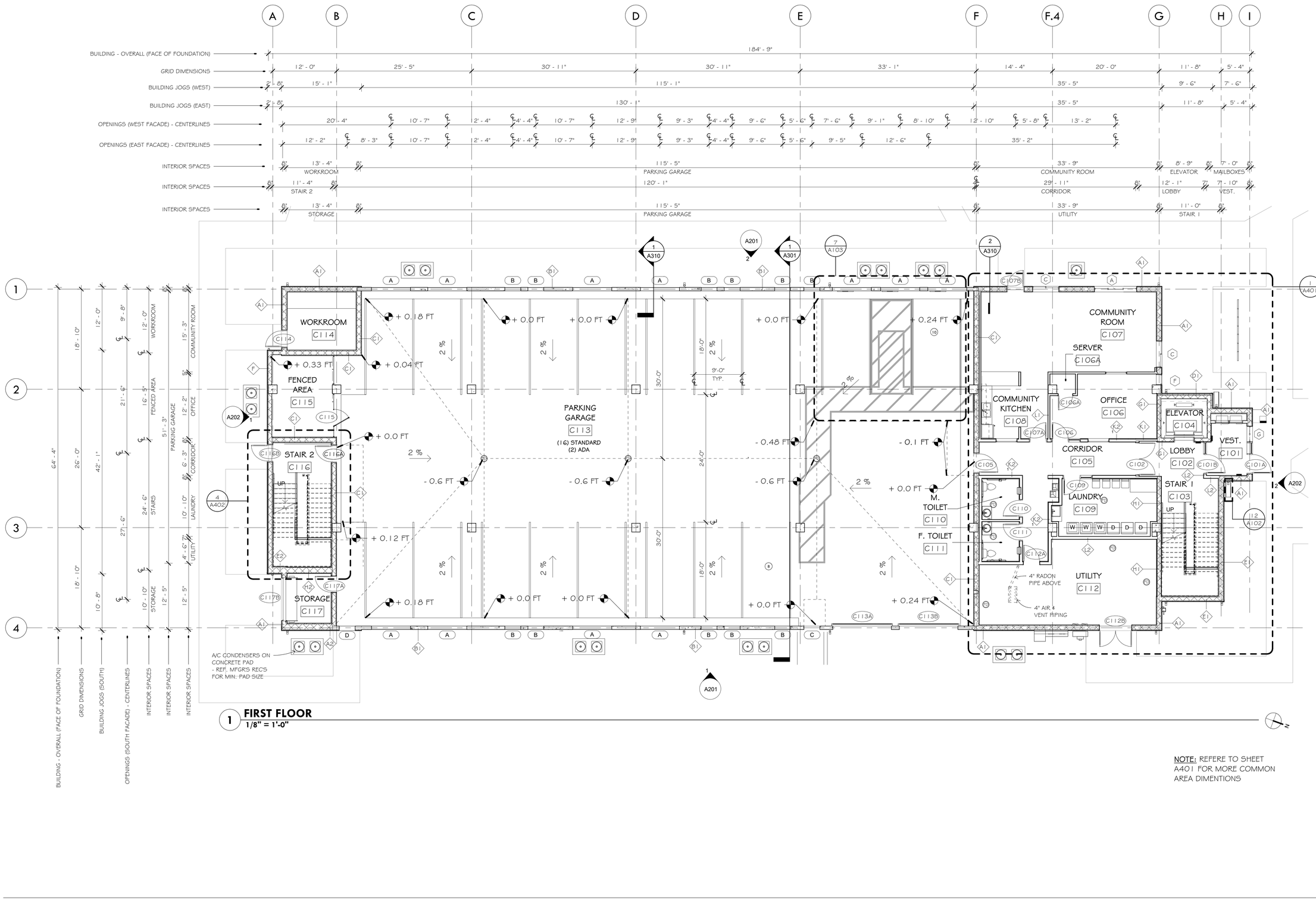
SCALE
As indicated

West Birch Apartments

W Branch Street
Princeton, MN

SITE DETAIL

A103



1 FIRST FLOOR
1/8" = 1'-0"

NOTE: REFERE TO SHEET A401 FOR MORE COMMON AREA DIMENTIONS

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA

08/24/18 sign date

JAMES L. MOY

27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18

Drawn By:
LH, HD

Issue Date
08/24/18

SUBMITTALS / REVISIONS

02/16/18	MHFA REVIEW - SD
03/27/18	MHFA COMMENTS
04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

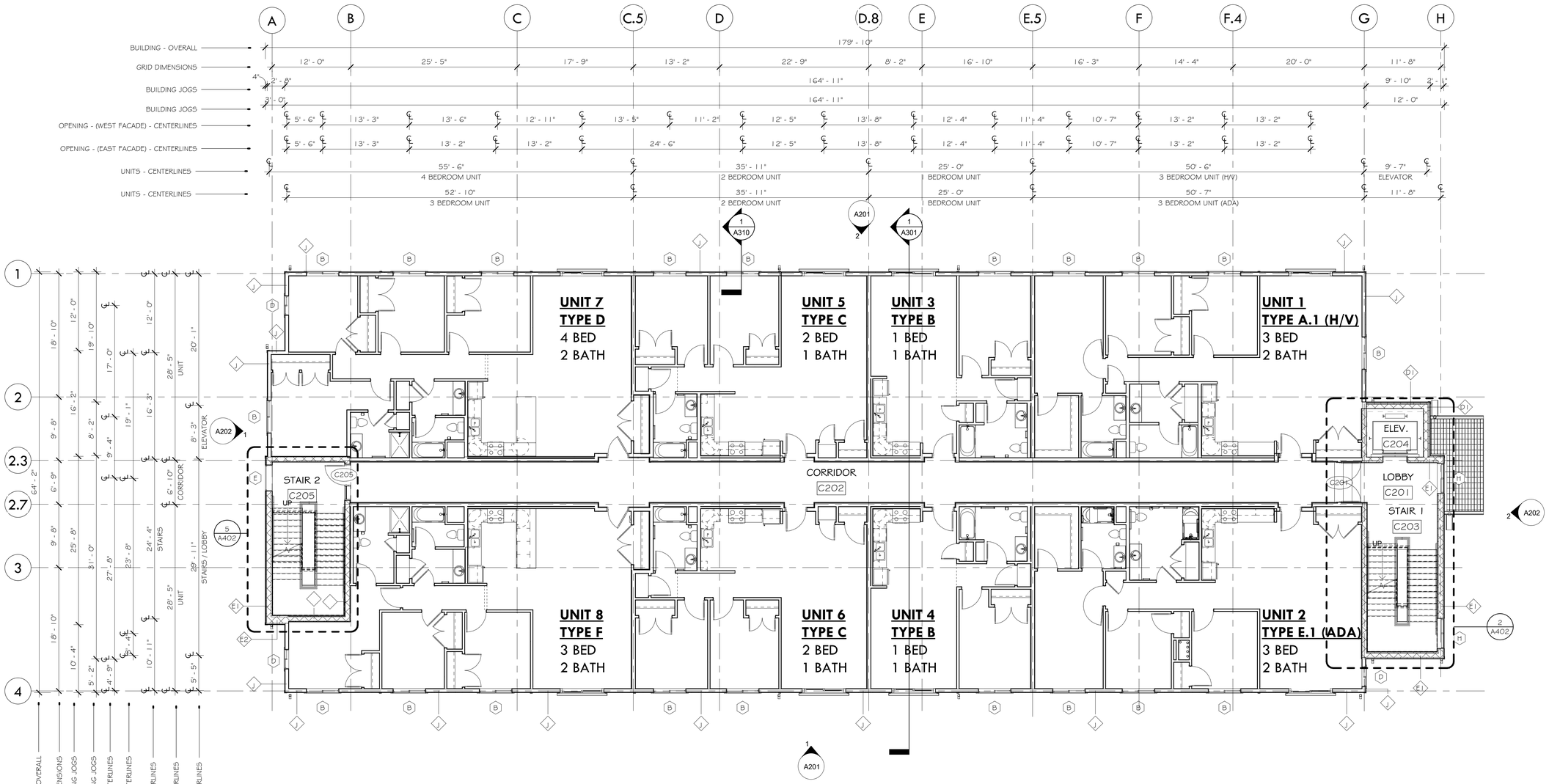
SCALE
1/8" = 1'-0"

West Birch Apartments

W Branch Street
Princeton, MN

FIRST FLOOR PLAN

A111



1 SECOND FLOOR
1/8" = 1'-0"

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA

08/24/18 sign date

JAMES L. MOY

27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18

Drawn By:
SW, HD

Issue Date
08/24/18

SUBMITTALS / REVISIONS	
02/16/18	MHFA REVIEW - SD
04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

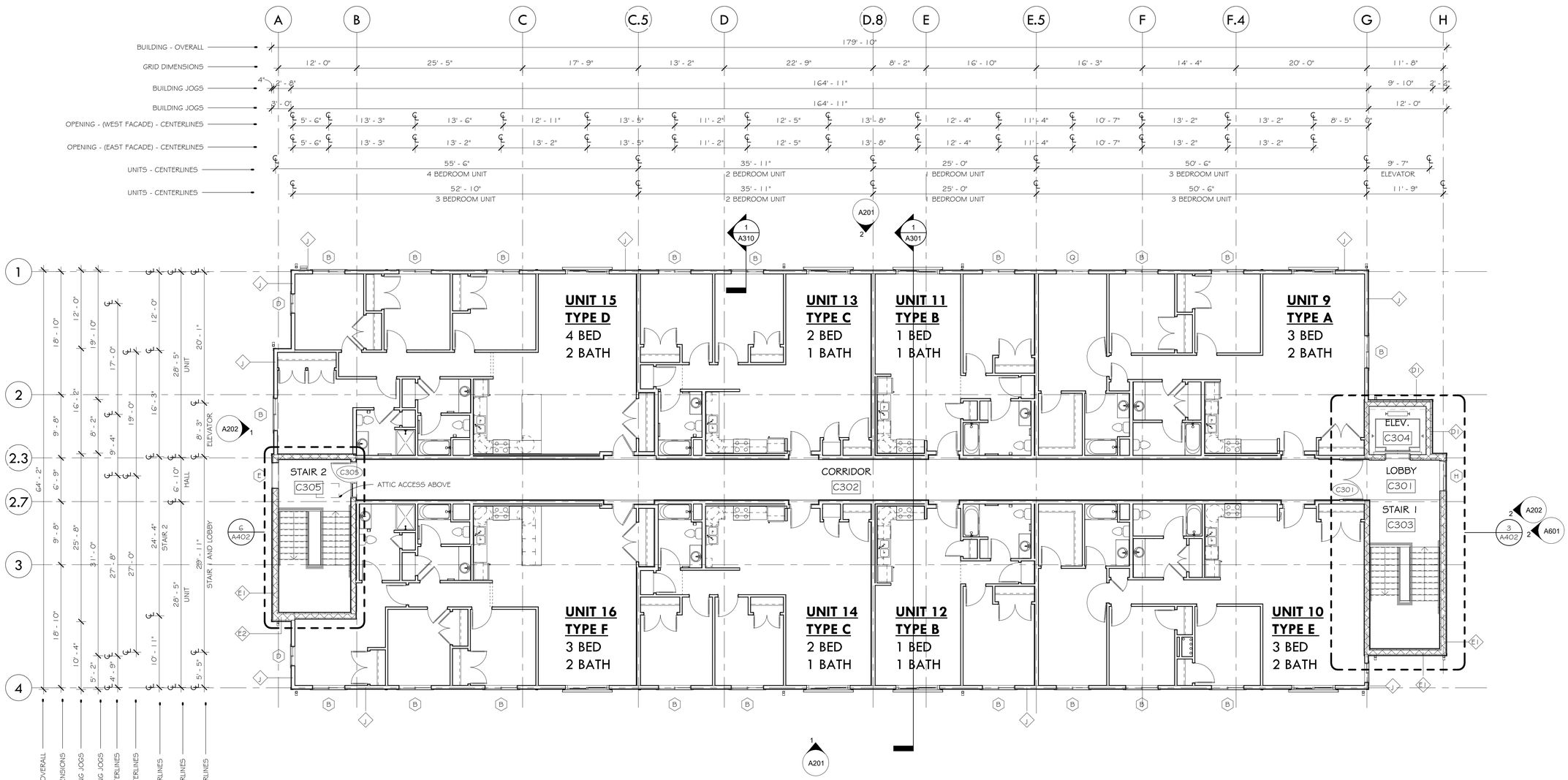
SCALE
1/8" = 1'-0"

West Birch Apartments

W Branch Street
Princeton, MN

SECOND FLOOR PLAN

A112



1 THIRD FLOOR
1/8" = 1'-0"

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA

08/24/18 sign date

JAMES L. MOY

27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
LH, HD
Issue Date
08/24/18

SUBMITTALS / REVISIONS

04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

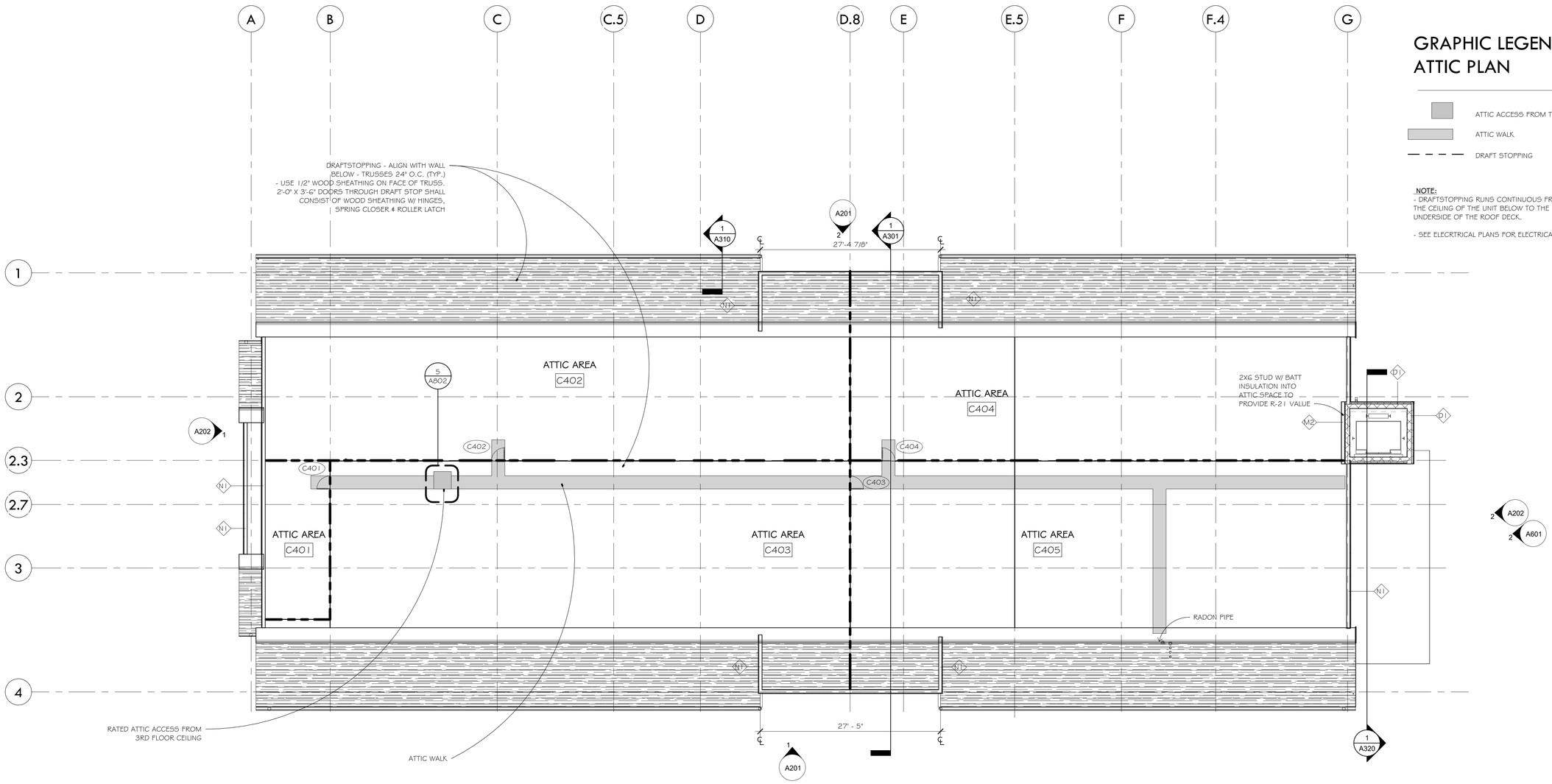
SCALE
1/8" = 1'-0"

West Birch Apartments

W Branch Street
Princeton, MN

THIRD FLOOR PLAN

A113



1 ATTIC
1/8" = 1'-0"

GRAPHIC LEGEND - ATTIC PLAN

ATTIC ACCESS FROM THIRD FLOOR CEILING

ATTIC WALK

DRAFT STOPPING

NOTE:
- DRAFTSTOPPING RUNS CONTINUOUS FROM THE CEILING OF THE UNIT BELOW TO THE UNDERSIDE OF THE ROOF DECK.

- SEE ELECRTRICAL PLANS FOR ELECTRICAL.

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA

08/24/18 sign date

JAMES L. MOY 27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
Author
Issue Date
08/24/18

SUBMITTALS / REVISIONS

06/21/18	90% CD
08/24/18	100% MHFA REVIEW

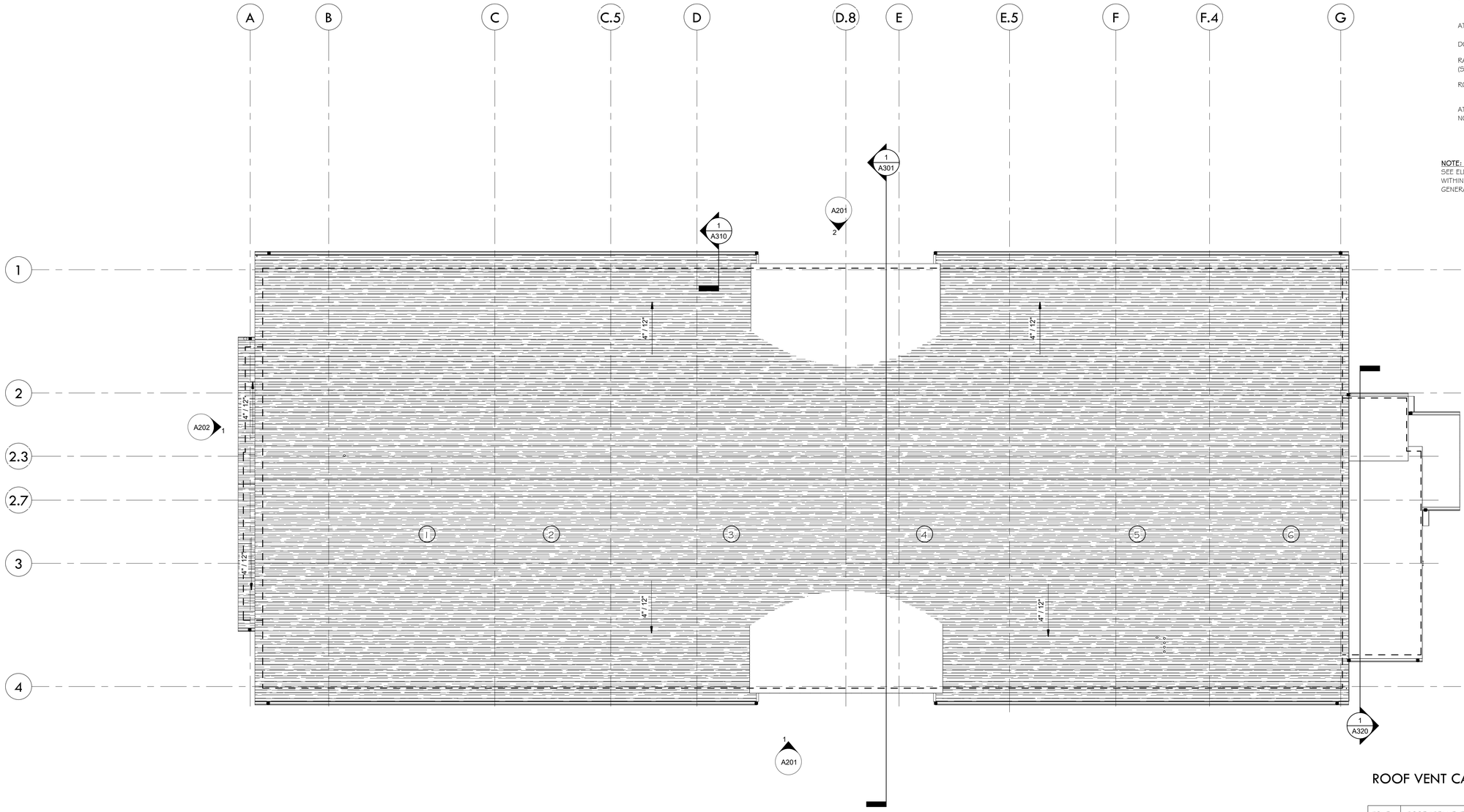
SCALE
As indicated

West Birch Apartments

W Branch Street
Princeton, MN

ATTIC PLAN

A114



ROOF PLAN LEGEND

- DRAFT STOPPING
- ATTIC WALK
- DOWNSPOUT
- RADON MITIGATION - (SEE MECH.)
- ROOF VENT ZONE (#)
- ATTIC VENT, SEE PLAN NOTES

NOTE:
SEE ELECTRIC PLANS FOR ELECTRICAL REQUIREMENTS WITHIN THE ATTIC, INCLUDING BUT NOT LIMITED TO GENERAL LIGHTING, POWER AND RADON EQUIPMENT.

ROOF VENT CALCULATIONS

ZONE	ROOF AREA/VENT FACTOR	REQ'D FREE AIR CAPACITY
1	2431 SF / 300 = 8.10 SF	1167 SQ. IN.
2	983 SF / 300 = 3.27 SF	471 SQ. IN.
3	2306 / 300 = 7.68 SF	1106 SQ. IN.
4	1605 / 300 = 5.35 SF	771 SQ. IN.
5	2216 / 300 = 7.38 SF	1063 SQ. IN.
6	1026 / 300 = 3.42 SF	493 SQ. IN.

NOTE:
VENTILATION FREE AIR CAPACITY SHALL BE EQUALLY SPACED OVER ENTIRE ZONE.

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

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA

08/24/18 sign date

JAMES L. MOY

27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18

Drawn By:
HD

Issue Date
08/24/18

SUBMITTALS / REVISIONS

04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

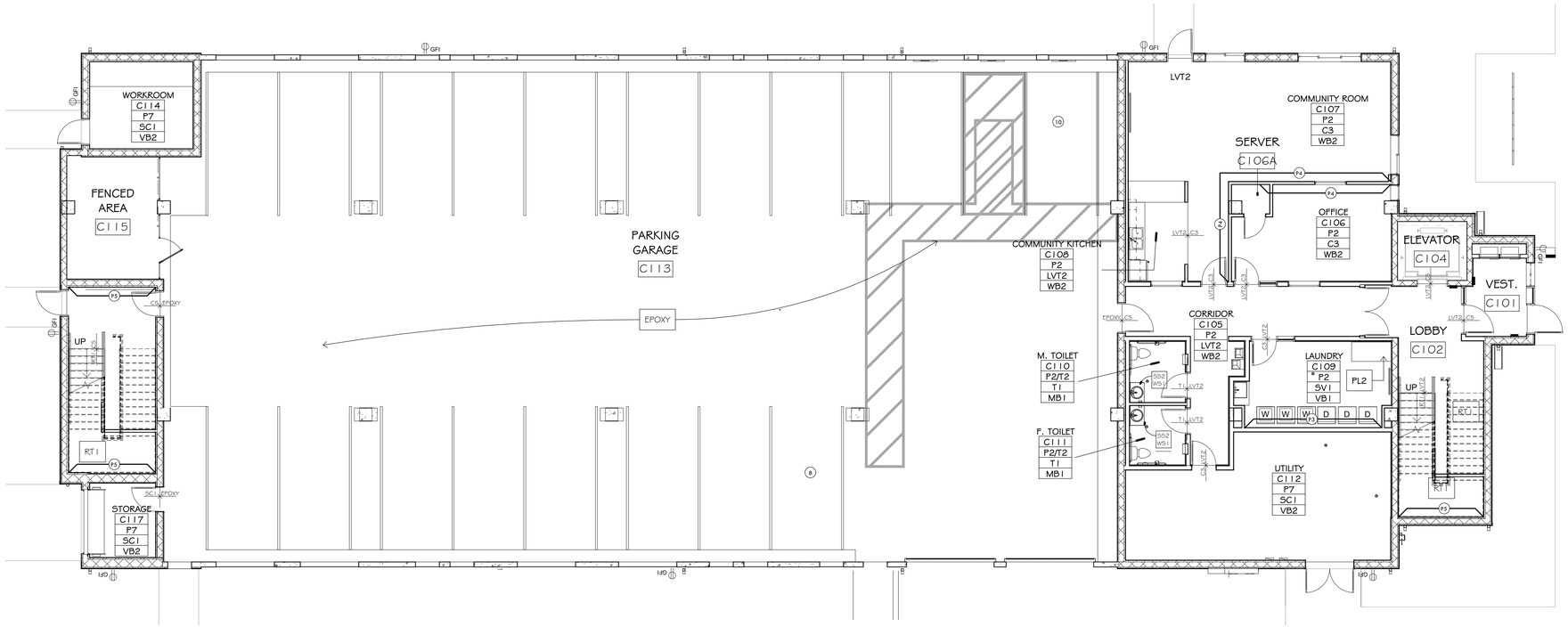
SCALE
As indicated

West Birch Apartments

W Branch Street
Princeton, MN

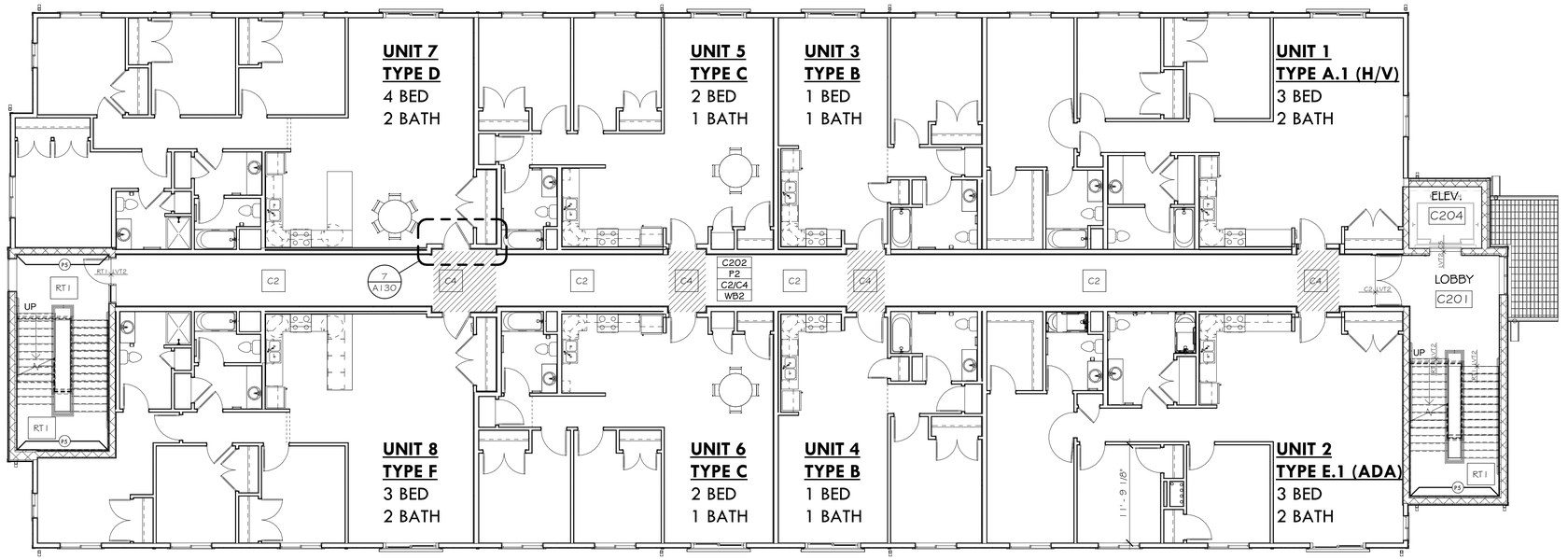
ROOF PLAN

A121



2 FIRST FLOOR FINISH PLAN
1/8" = 1'-0"

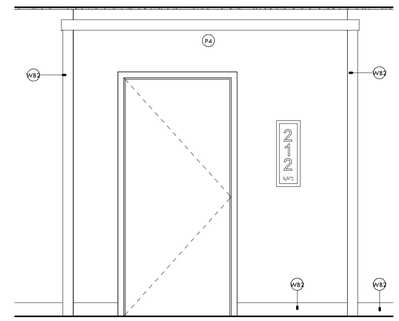
NOTE: ALL WALLS P2 UNLESS OTHER USE NOTED.



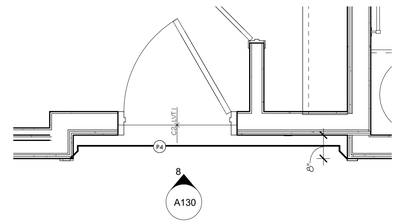
1 SECOND FLOOR FINISH PLAN
1/8" = 1'-0"

(TYP. THIRD FLOOR)

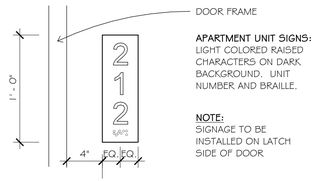
NOTE: ALL WALLS P2 UNLESS OTHER USE NOTED.



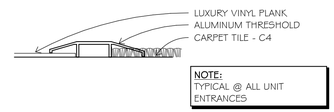
8 UNIT ENTRY ELEVATION (TYP)
1/2" = 1'-0"



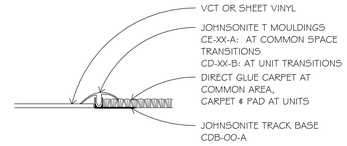
7 FINISHES @ UNIT ENTRY (TYP.)
1/2" = 1'-0"



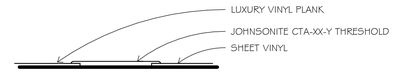
6 DETAIL @ UNIT SIGNAGE
1 1/2" = 1'-0"



5 DETAIL AT UNIT ENTRY DOOR
6" = 1'-0"



4 CARPET TRANSITION
6" = 1'-0"



3 SHEET VINYL TRANSITION
6" = 1'-0"

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA — 08/24/18 sign date

JAMES L. MOY — 27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
HD, JH
Issue Date
08/24/18

SUBMITTALS / REVISIONS	
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

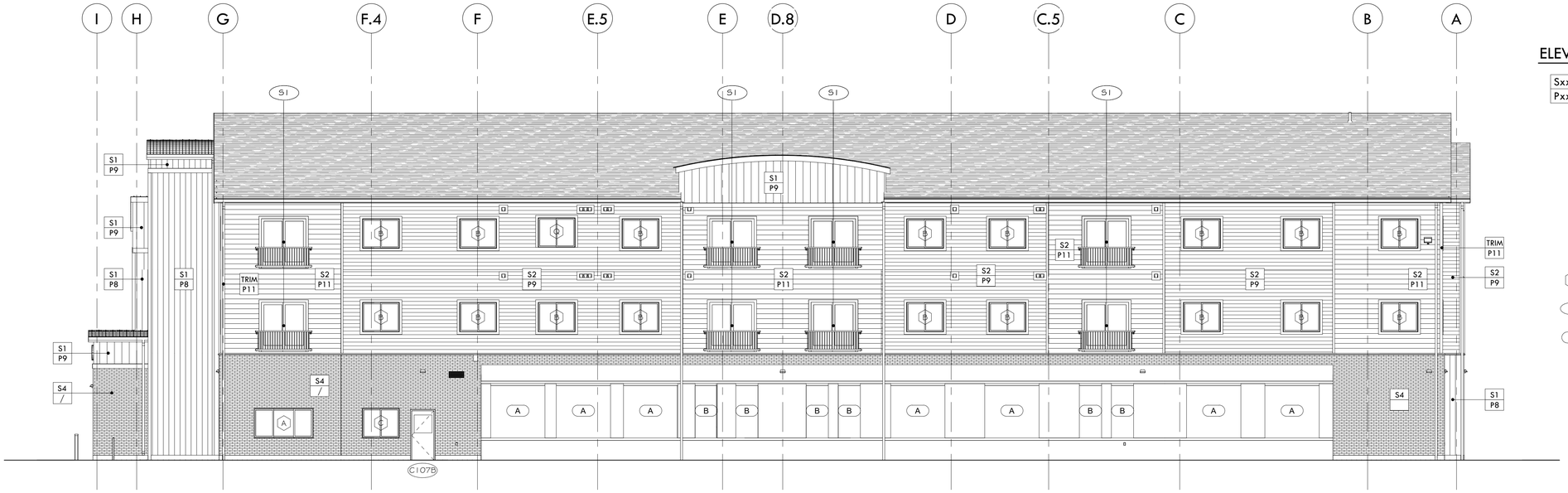
SCALE
As indicated

West Birch Apartments

W Branch Street
Princeton, MN

FLOOR FINISH PLAN

A130



2 WEST ELEVATION
1/8" = 1'-0"



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

ELEVATION LEGEND

Sxx / Pxx — EXTERIOR MATERIAL TAG
- SIDING / PANEL TYPE - SEE BELOW
- PAINT COLOR - SEE FINISH SCHEDULE

S1 SIDING TYPE 1 - VERTICAL PANEL SIDING - SEE SPECIFICATIONS

S2 SIDING TYPE 2 - HORIZONTAL SIDING - SEE SPECIFICATIONS

S3 SIDING TYPE 3 - VERTICAL PANEL SIDING W/ BATTEN BOARDS- SEE SPECIFICATIONS

S4 FIBER CEMENT PANEL TYPE 4 - " BRICK LOOK " - SEE SPECIFICATIONS

(X) WINDOW TAG - SEE WINDOW TYPES

(X) DOOR TAG - SEE DOOR TYPES

(X) OPENING TAG - SEE DOOR TYPES

TYP. ALL TRIM, FASCIA, DECORATIVE VENTS - PAINT P9 " UNO " UNLESS OTHER USE NOTED.

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA — 08/24/18 sign date

JAMES L. MOY — 27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
HD
Issue Date
08/24/18

SUBMITTALS / REVISIONS

02/16/18	MHFA REVIEW - SD
04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

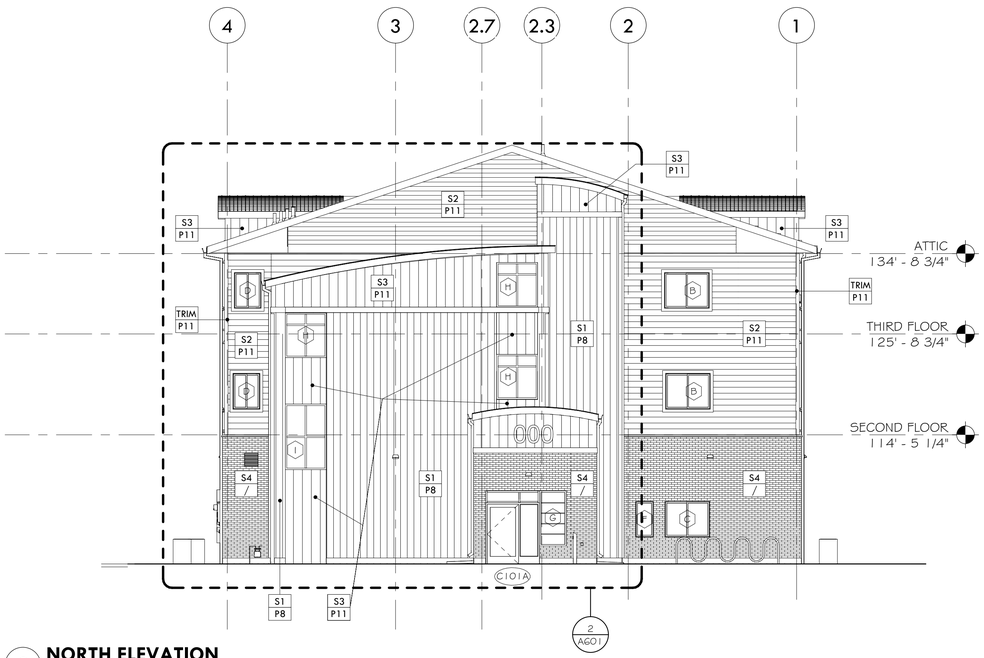
SCALE
As indicated

West Birch Apartments

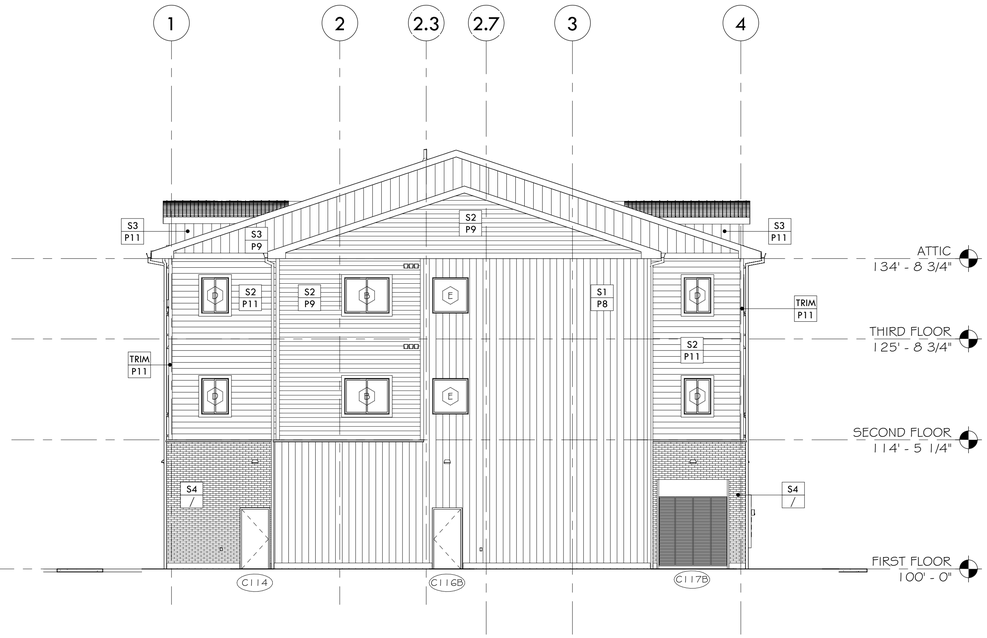
W Branch Street
Princeton, MN

BUILDING ELEVATIONS

A201



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



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

Blumentals
Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of
MINNESOTA — 08/24/18 sign date
JAMES L. MOY — 27036 reg. no.
6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
LH, HD
Issue Date
08/24/18

SUBMITTALS / REVISIONS

02/16/18	MHFA REVIEW - SD
04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

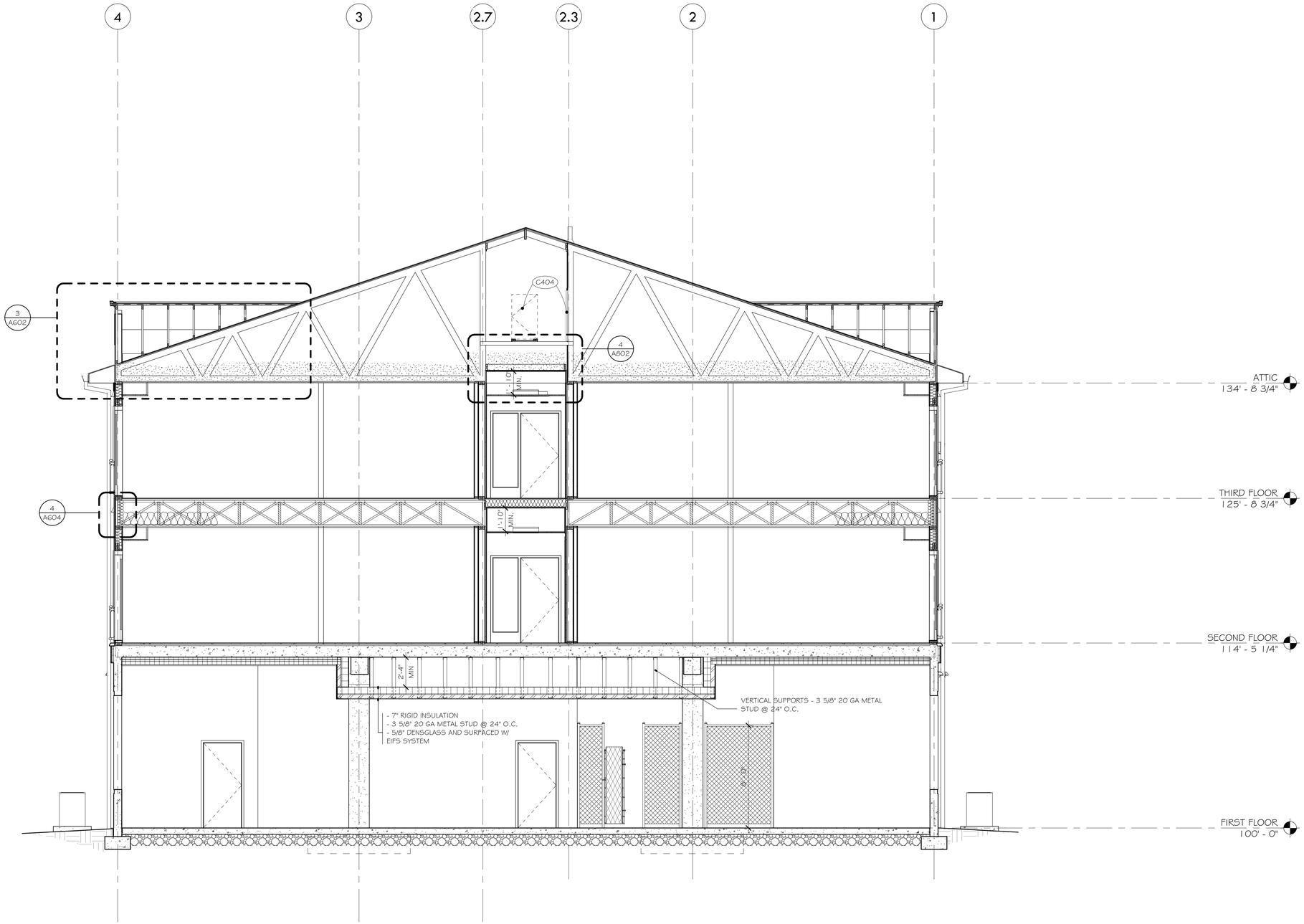
SCALE
1/8" = 1'-0"

West Birch Apartments

W Branch Street
Princeton, MN

BUILDING ELEVATIONS

A202



1 SECTION
1/4" = 1'-0"

Blumentals
Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA — 08/24/18 sign date

JAMES L. MOY — 27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18

Drawn By:
HD

Issue Date
08/24/18

SUBMITTALS / REVISIONS

1	02/16/18	MHFA REVIEW - SD
2	04/20/18	50% CD
3	06/21/18	90% CD
4	08/24/18	100% MHFA REVIEW

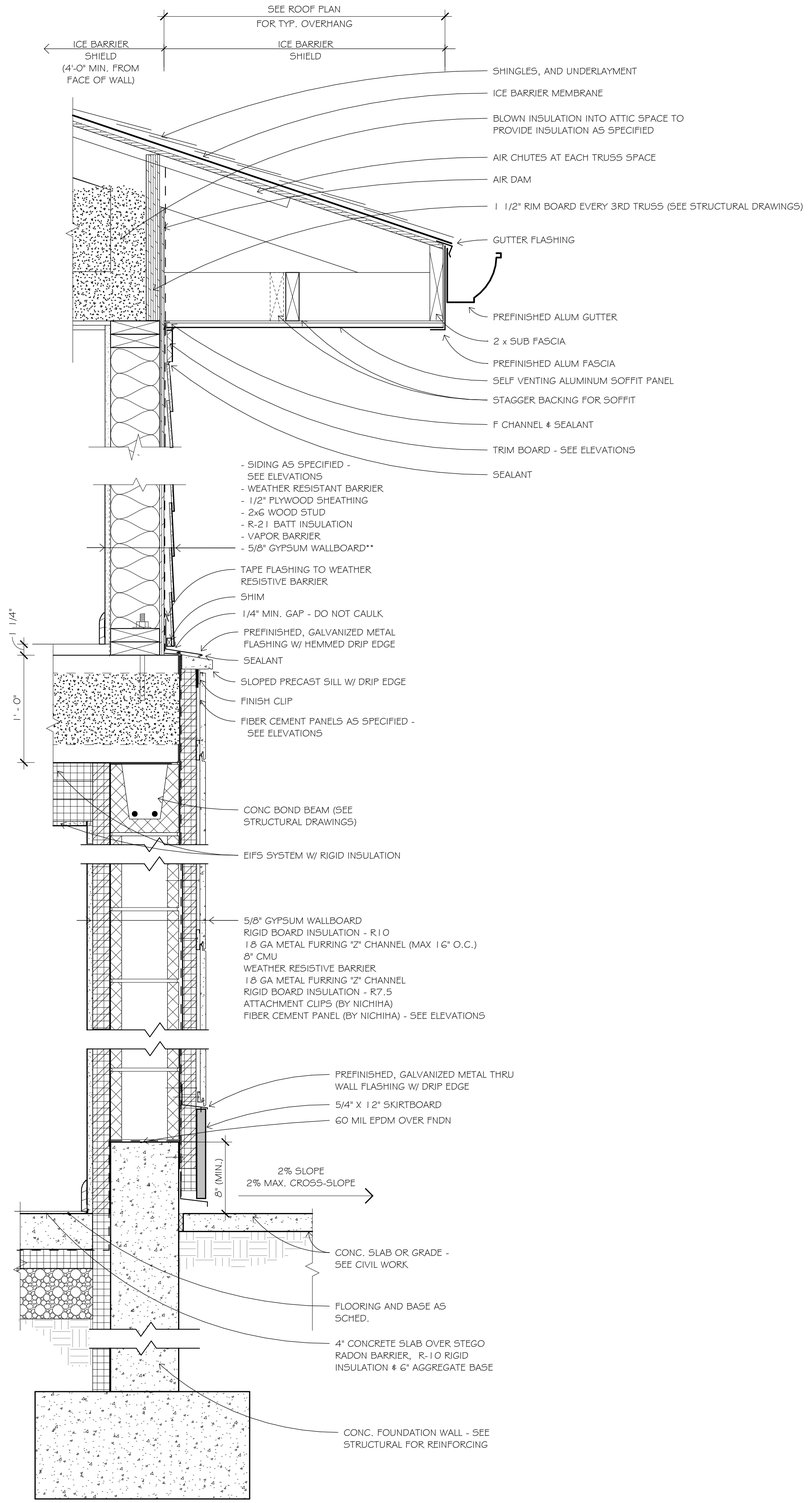
SCALE
1/4" = 1'-0"

West Birch Apartments

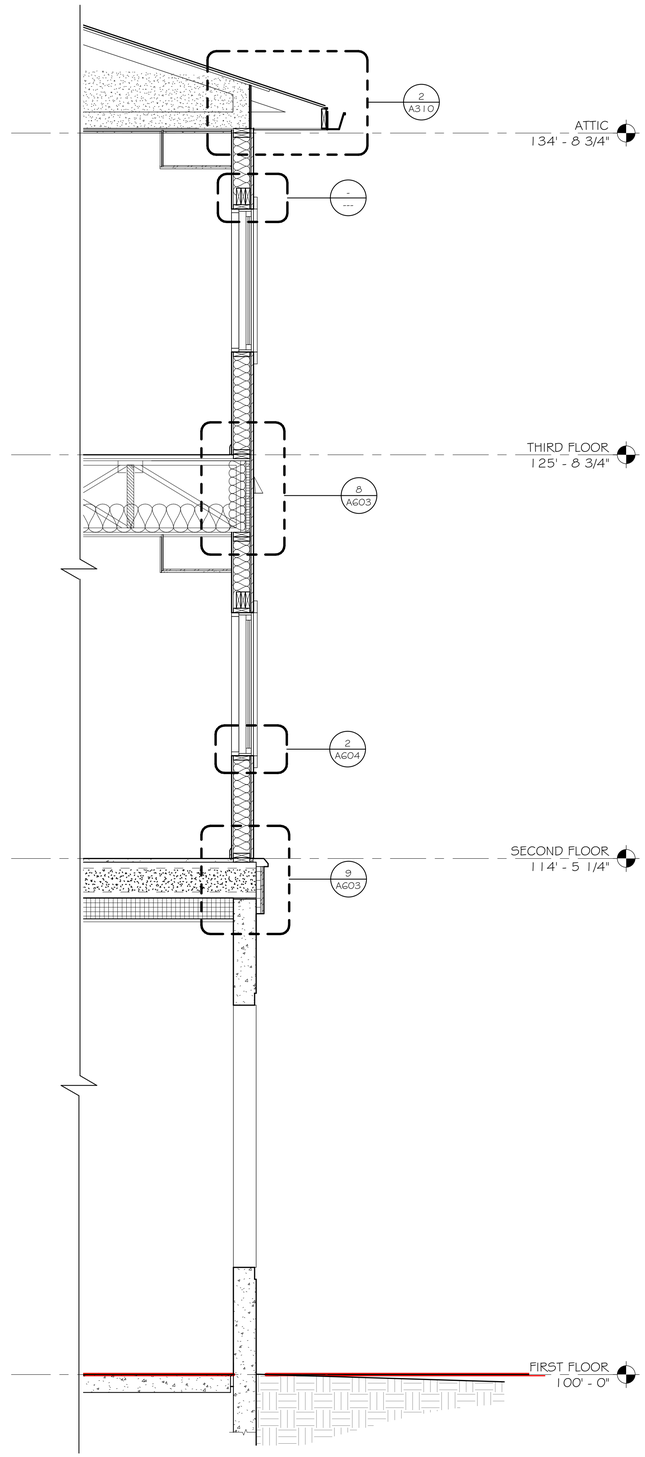
W Branch Street
Princeton, MN

BUILDING SECTIONS

A301



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



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

Blumentals
Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA — 08/24/18 sign date

JAMES L. MOY — 27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
HD
Issue Date
08/24/18

SUBMITTALS / REVISIONS

04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

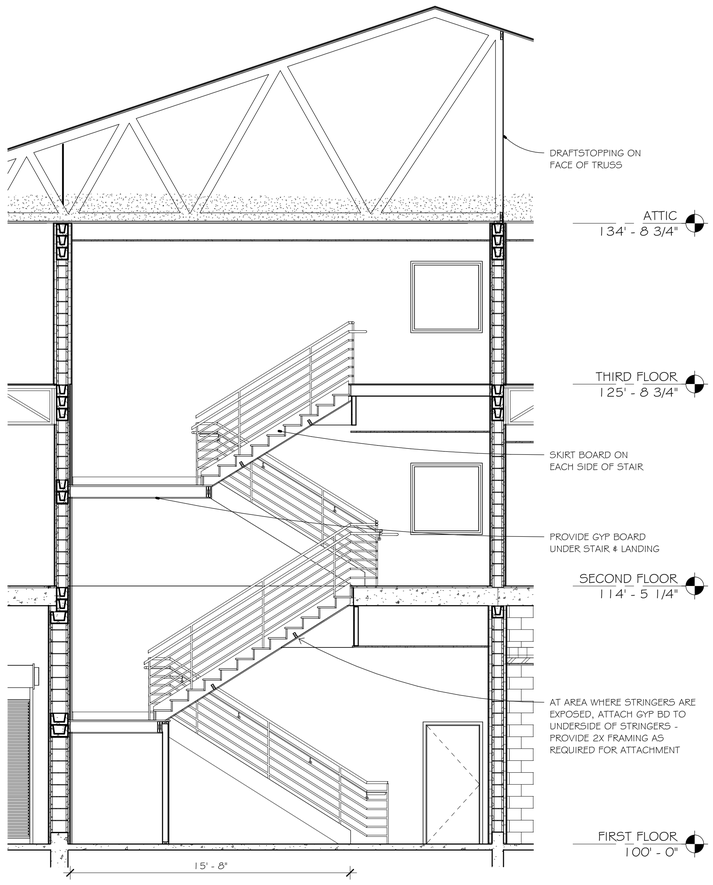
SCALE
As indicated

West Birch Apartments

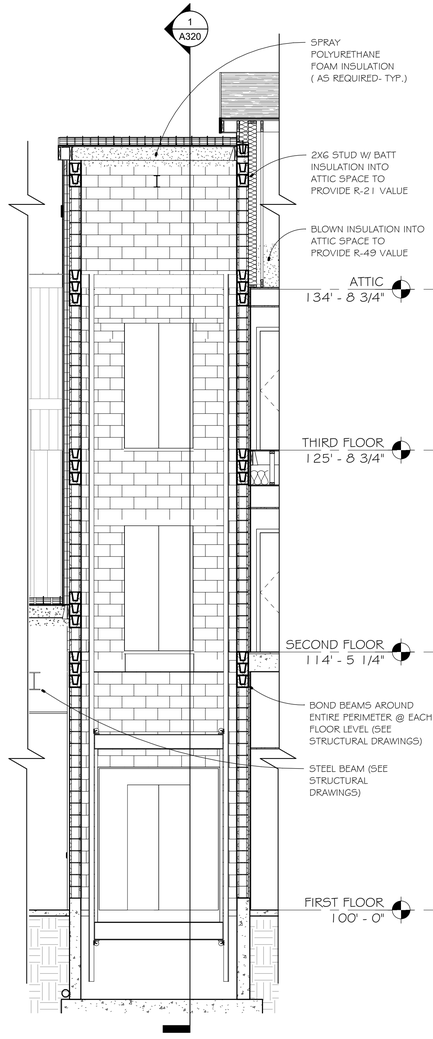
W Branch Street
Princeton, MN

WALL SECTIONS

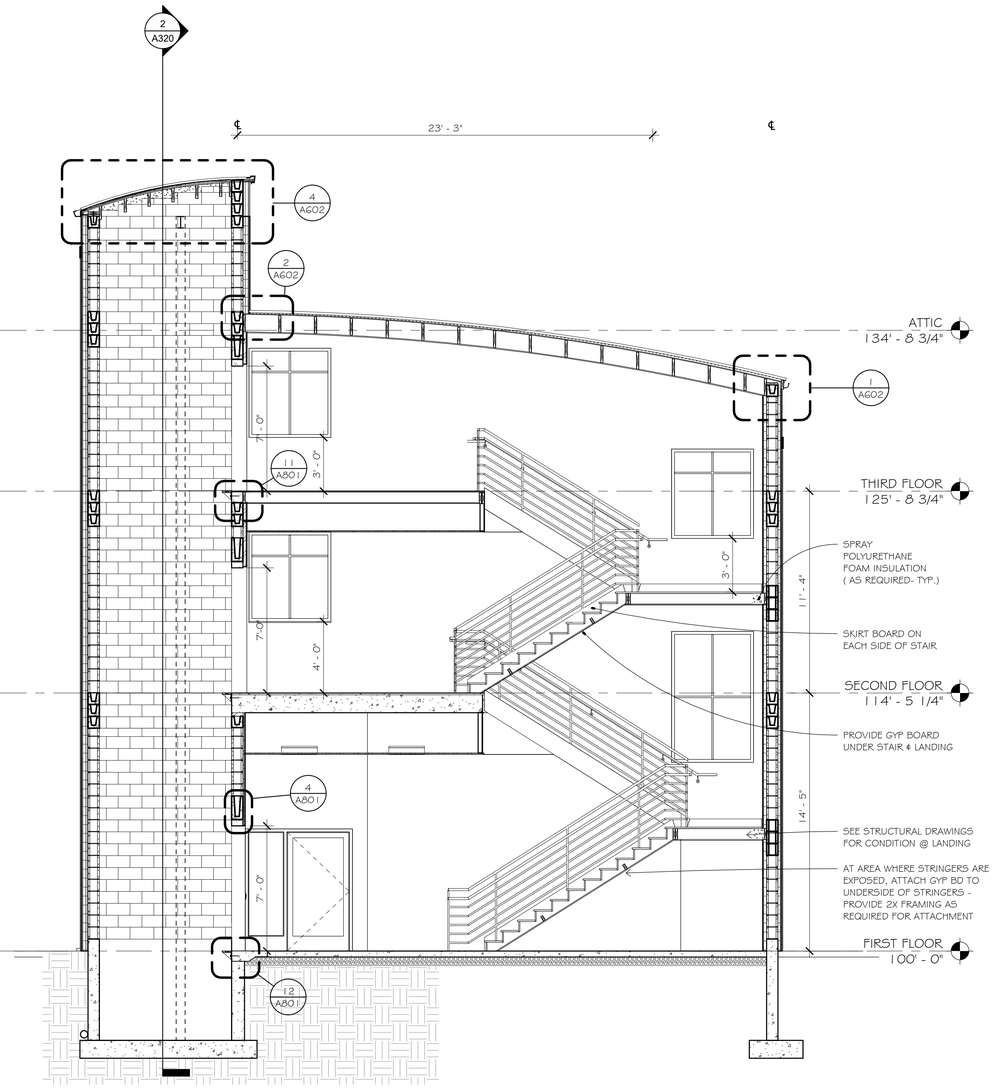
A310



3 **SECTION AT STAIR 2**
1/4" = 1'-0"



2 **SECTION AT ELEVATOR**
1/4" = 1'-0"



1 **SECTION AT STAIR-1 AND ELEVATOR**
1/4" = 1'-0"

Blumentals
Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of
MINNESOTA — 08/24/18 sign date
JAMES L. MOY — 27036 reg. no.
6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
HD
Issue Date
08/24/18

SUBMITTALS / REVISIONS

04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

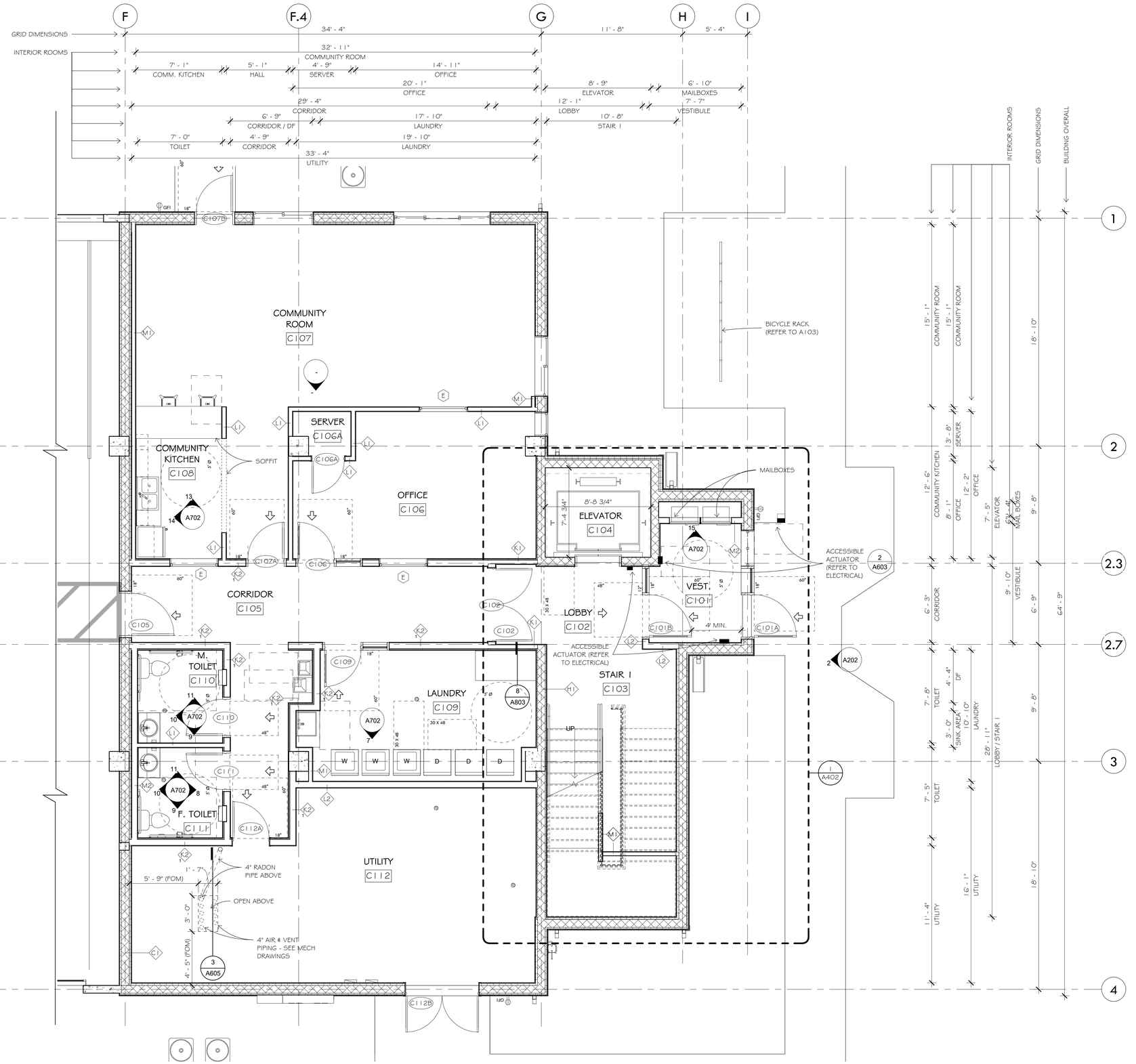
SCALE
1/4" = 1'-0"

West Birch Apartments

W Branch Street
Princeton, MN

STAIR & ELEVATOR SECTIONS

A320



1 ENLARGED PLAN AT FIRST FLOOR COMMON AREAS
1/4" = 1'-0"

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA

08/24/18 sign date

JAMES L. MOY

27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18

Drawn By:
HD

Issue Date
08/24/18

SUBMITTALS / REVISIONS

04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

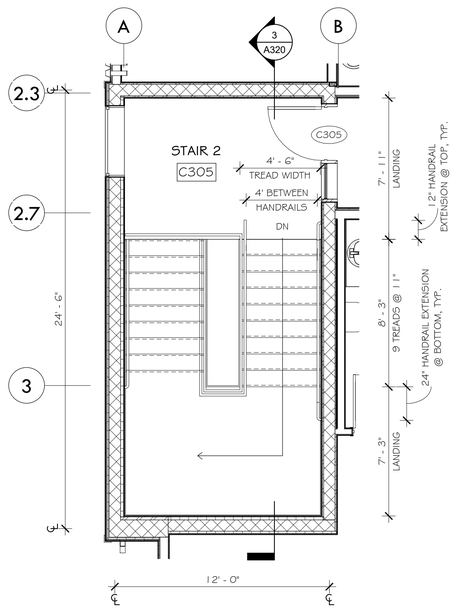
SCALE
As indicated

West Birch Apartments

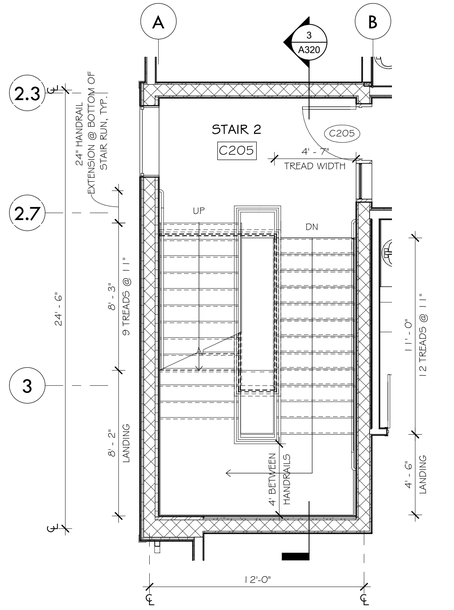
W Branch Street
Princeton, MN

ENLARGED PLANS - COMMON AREA

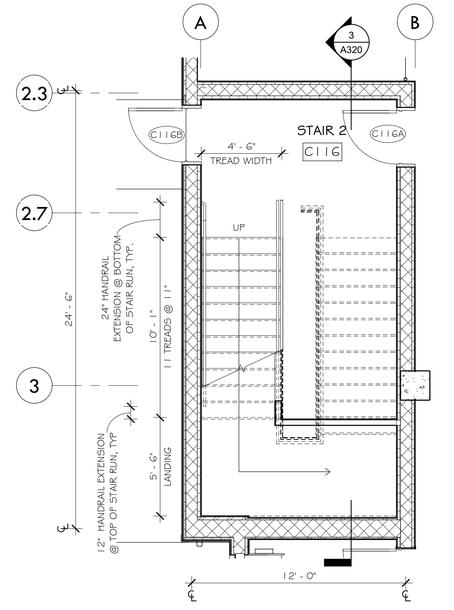
A401



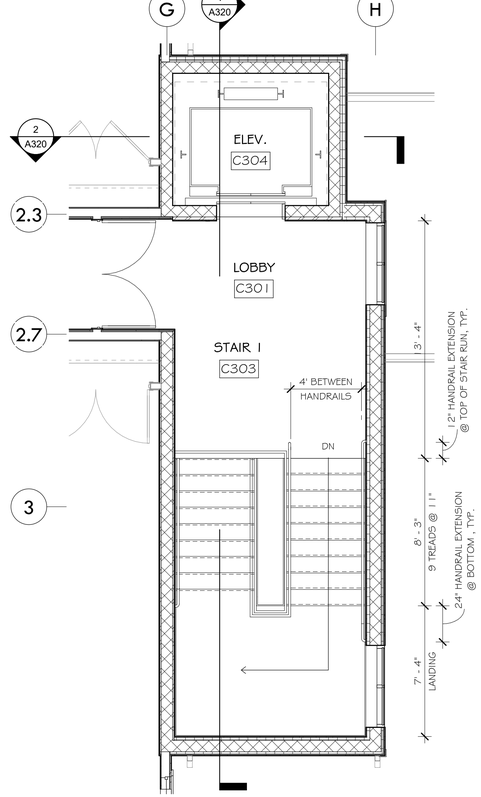
6 ENLARGED PLAN AT STAIR 2 - THIRD FLOOR
1/4" = 1'-0"



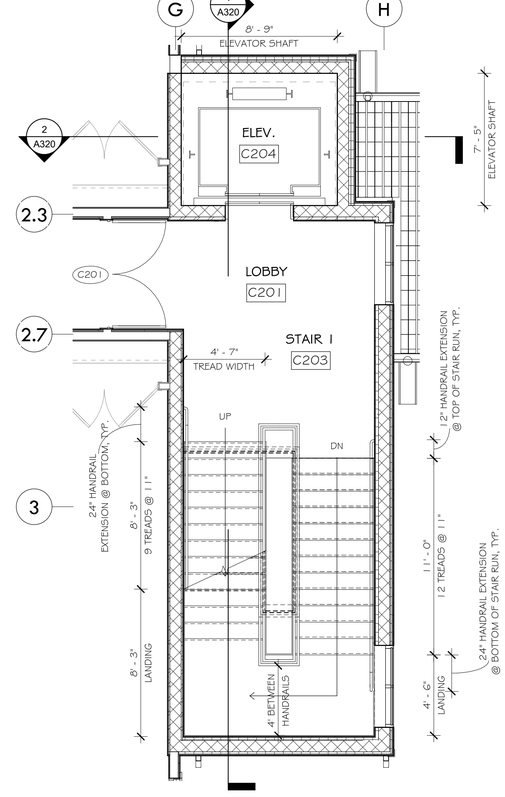
5 ENLARGED PLAN AT STAIR 2 - SECOND FLOOR
1/4" = 1'-0"



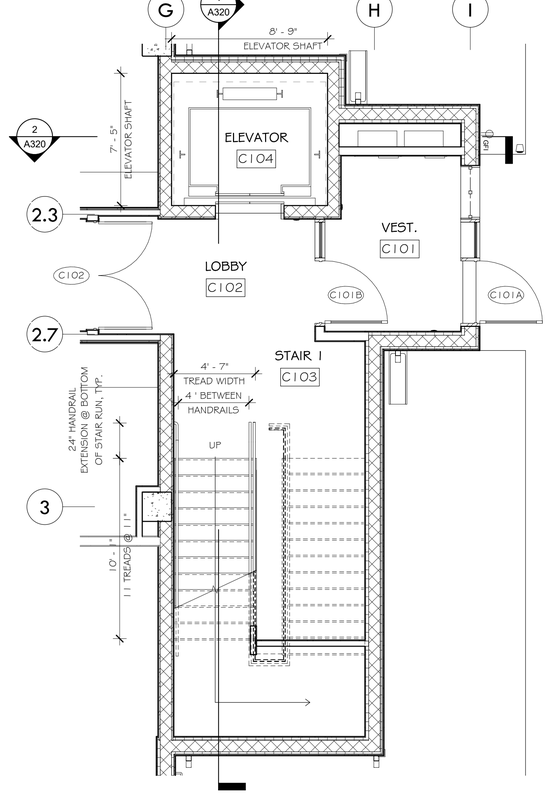
4 ENLARGED PLAN AT STAIR 2 - FIRST FLOOR
1/4" = 1'-0"



3 ENLARGED PLAN AT STAIR 1 AND ELEVATOR - THIRD FLOOR
1/4" = 1'-0"



2 ENLARGED PLAN AT STAIR 1 AND ELEVATOR - SECOND FLOOR
1/4" = 1'-0"



1 ENLARGED PLAN AT STAIR 1 AND ELEVATOR - FIRST FLOOR
1/4" = 1'-0"

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA

08/24/18 sign date

JAMES L. MOY

27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18

Drawn By:
SB, HD

Issue Date
08/24/18

SUBMITTALS / REVISIONS

04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

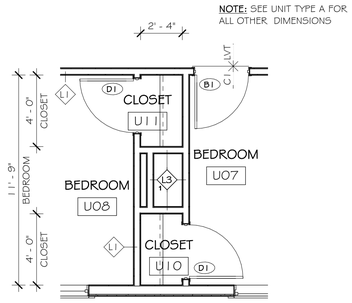
SCALE
1/4" = 1'-0"

West Birch Apartments

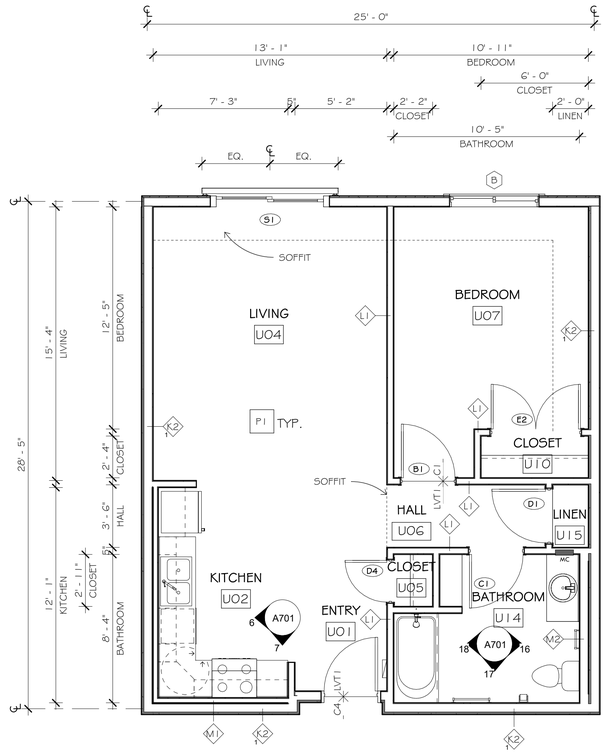
W Branch Street
Princeton, MN

ENLARGED PLANS - STAIRS & ELEVATOR

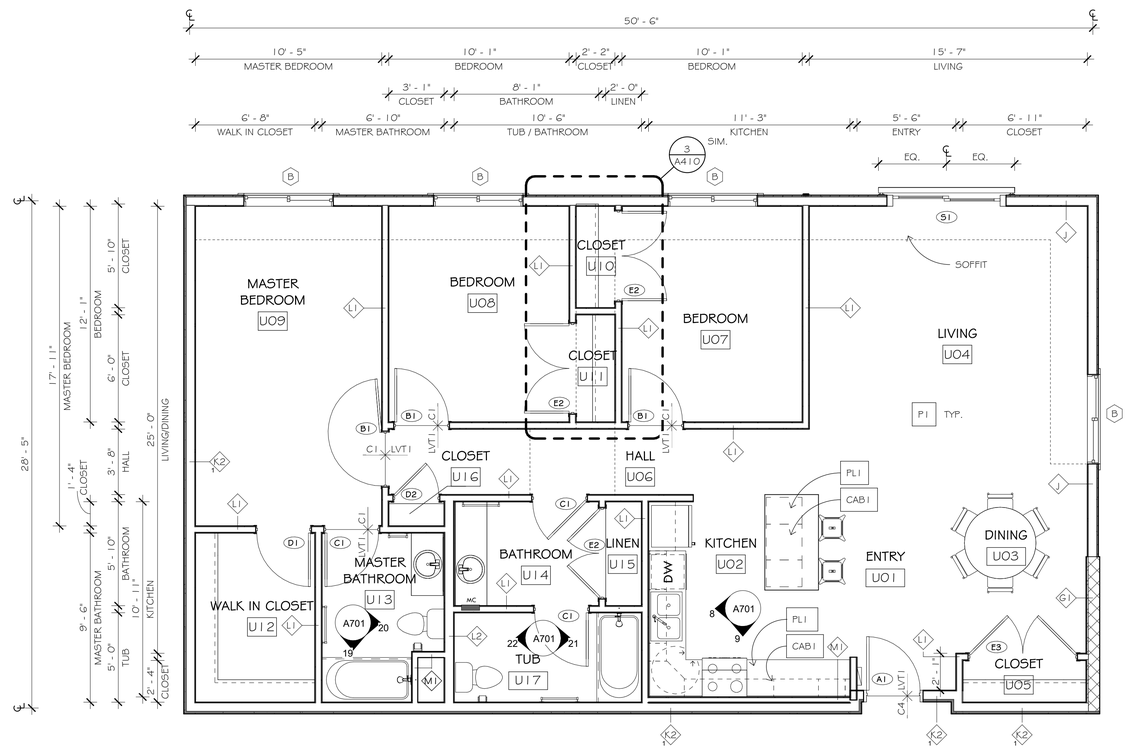
A402



3 UNIT TYPE E - 3 BED 2 BATH
1/4" = 1'-0"



2 UNIT TYPE B - 1 BED 1 BATH
1/4" = 1'-0"



1 UNIT TYPE A/A.1 - 3 BED 2 BATH
1/4" = 1'-0"

Blumentals
Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA — 08/24/18 sign date

JAMES L. MOY — 27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
HD
Issue Date
08/24/18

SUBMITTALS / REVISIONS

02/16/18	MHFA REVIEW - SD
04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

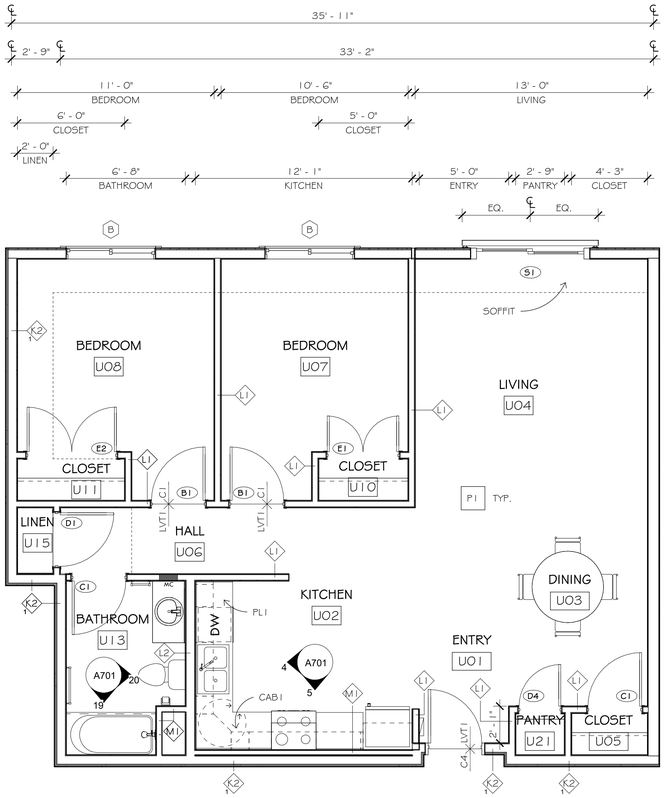
SCALE
As indicated

West Birch Apartments

W Branch Street
Princeton, MN

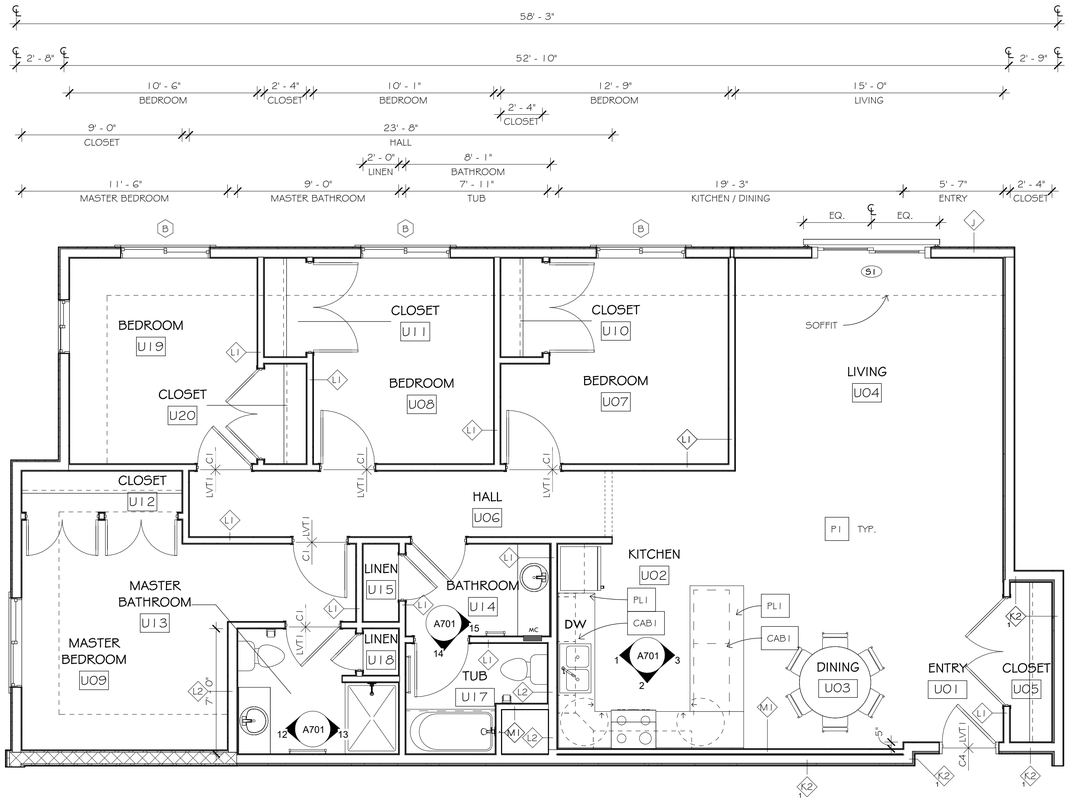
ENLARGED PLANS - UNIT TYPES A, A.1, B, & E

A410



2 UNIT TYPE C - 2 BED 1 BATH

1/4" = 1'-0"



1 UNIT TYPE D - 4 BED 2 BATH

1/4" = 1'-0"

Blumentals
Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of

MINNESOTA — 08/24/18 (sign date)

JAMES L. MOY — 27036 (reg. no.)

6/30/2020 (reg. exp. date)

PROJECT INFO

Commission No.
B/A: 616-18

Drawn By:
LH, HD

Issue Date
08/24/18

SUBMITTALS / REVISIONS

02/16/18	MHFA REVIEW - SD
04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

SCALE
As indicated

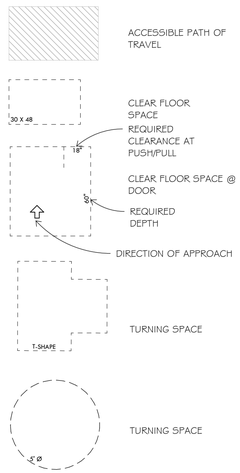
West Birch Apartments

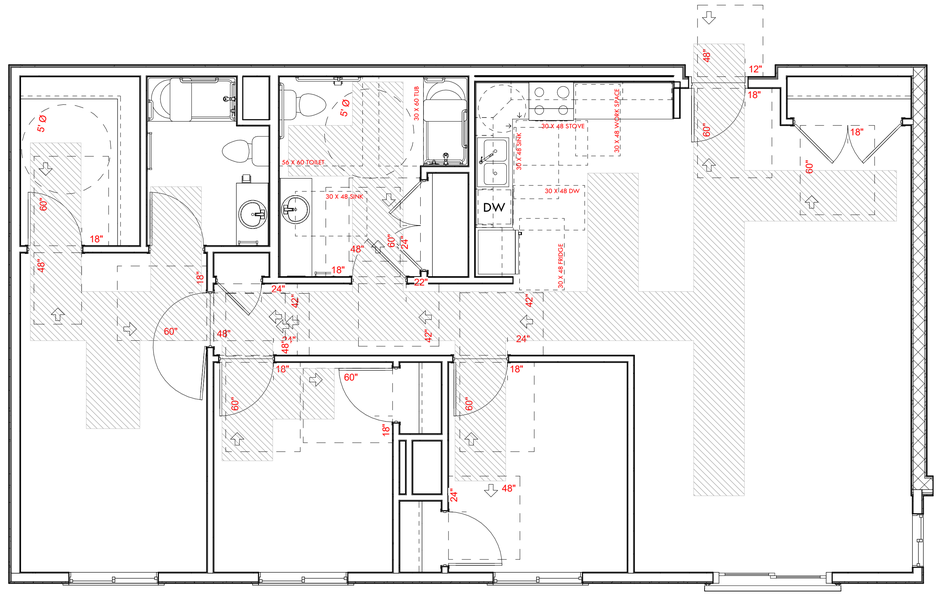
W Branch Street
Princeton, MN

ENLARGED PLANS - UNIT TYPES C & D

A411

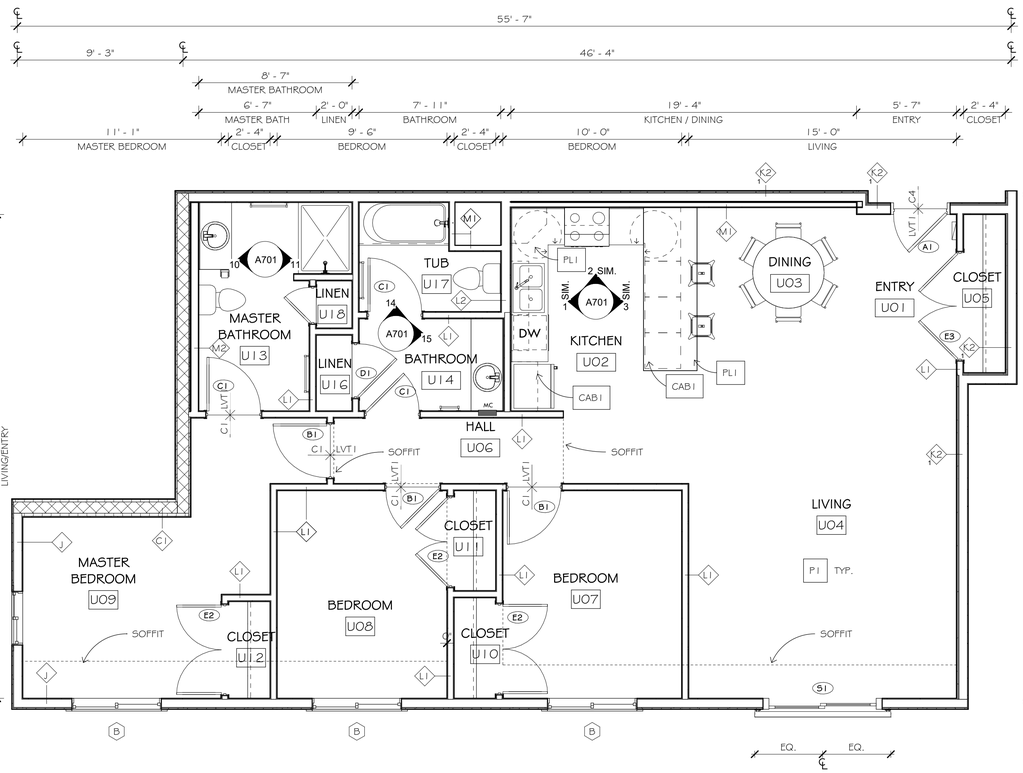
GRAPHIC LEGEND - CLEARANCE PLAN

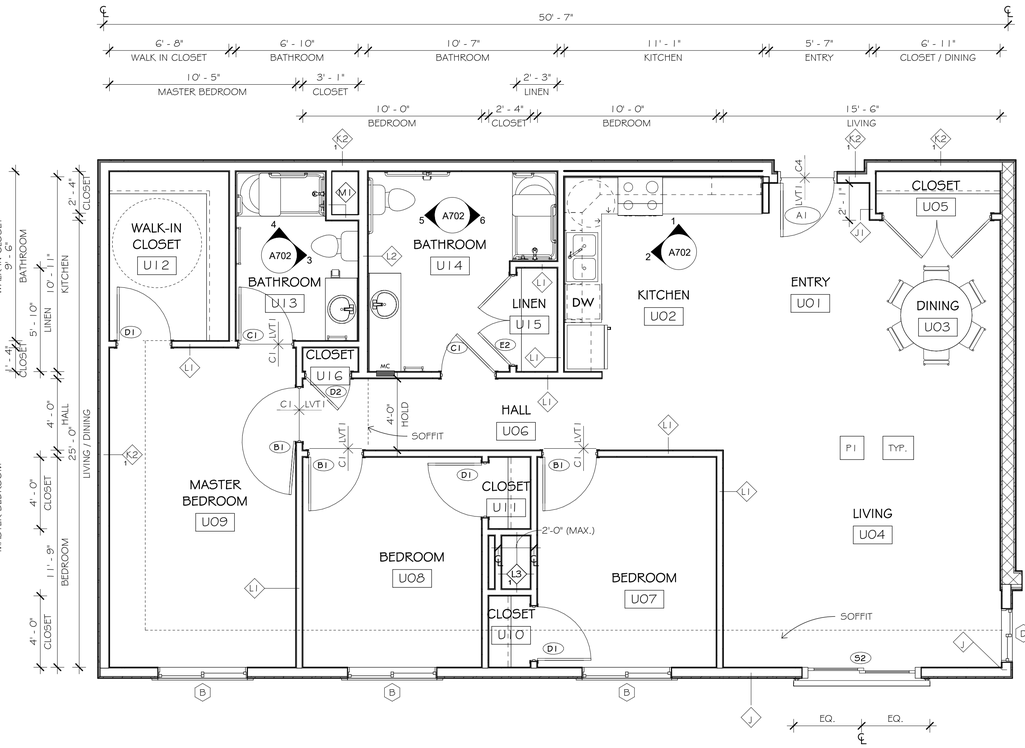




3 UNIT TYPE E.1 - 3 BED 2 BATH - ADA CLEARNCE PLAN

1/4" = 1'-0"





2 UNIT TYPE F - 3 BED 2 BATH

1/4" = 1'-0"

1 UNIT TYPE E.1 - 3 BED 2 BATH ADA

1/4" = 1'-0"

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA

08/24/18 sign date

JAMES L. MOY 27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18

Drawn By:
LH, HD

Issue Date
08/24/18

SUBMITTALS / REVISIONS

02/16/18	MHFA REVIEW - SD
04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

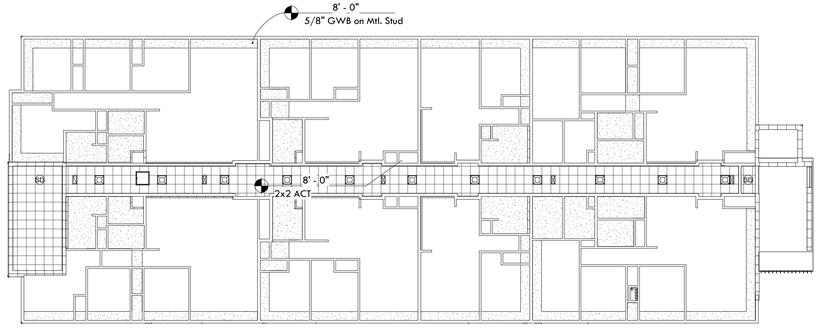
SCALE
As indicated

West Birch Apartments

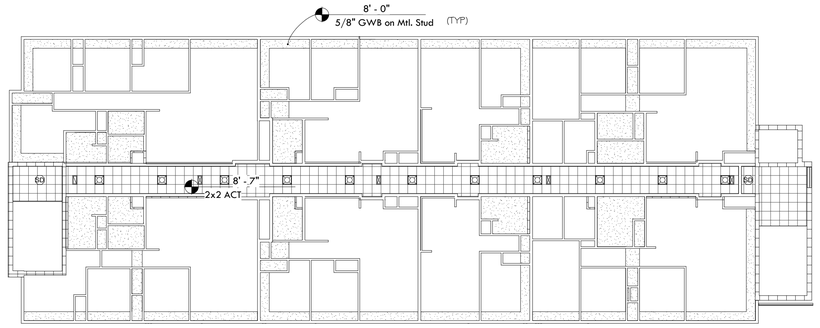
W Branch Street
Princeton, MN

ENLARGED PLANS - UNIT TYPES E.1 (ADA) & F

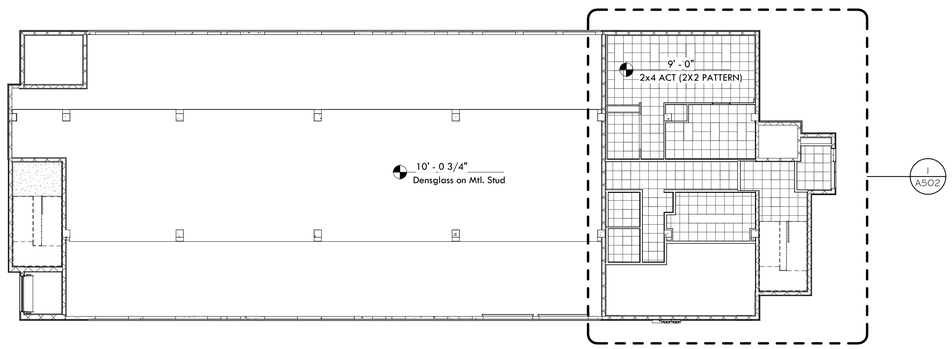
A412



3 THIRD FLOOR
1/16" = 1'-0"



2 SECOND FLOOR
1/16" = 1'-0"



1 FIRST FLOOR
1/16" = 1'-0"

GRAPHIC LEGEND - CEILING PLAN

- 2x4 ACOUSTIC CEILING TILES & GRID (BLACK LINES) - SEE SPECIFICATIONS
- 2x2 ACOUSTIC CEILING TILES & GRID - SEE SPECIFICATIONS
- NEW GYPSUM WALL BOARD
- DASHED WALLS BELOW FOR REFERENCE
- 2X2 SUPPLY
- 2X2 RETURN
- 2X1 RETURN
- EF 2X2 CEILING EXHAUST FAN
- 2X2 LIGHTING FIXTURE
- 2X4 LIGHTING FIXTURE
- PE PHOTOELECTRIC DETECTOR
- DT DIALING DETECTOR
- OS OCCUPANCY SENSOR

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA

08/24/18 sign date

JAMES L. MOY

27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18

Drawn By:
HD

Issue Date
08/24/18

SUBMITTALS / REVISIONS

06/21/18	90% CD
08/24/18	100% MHFA REVIEW

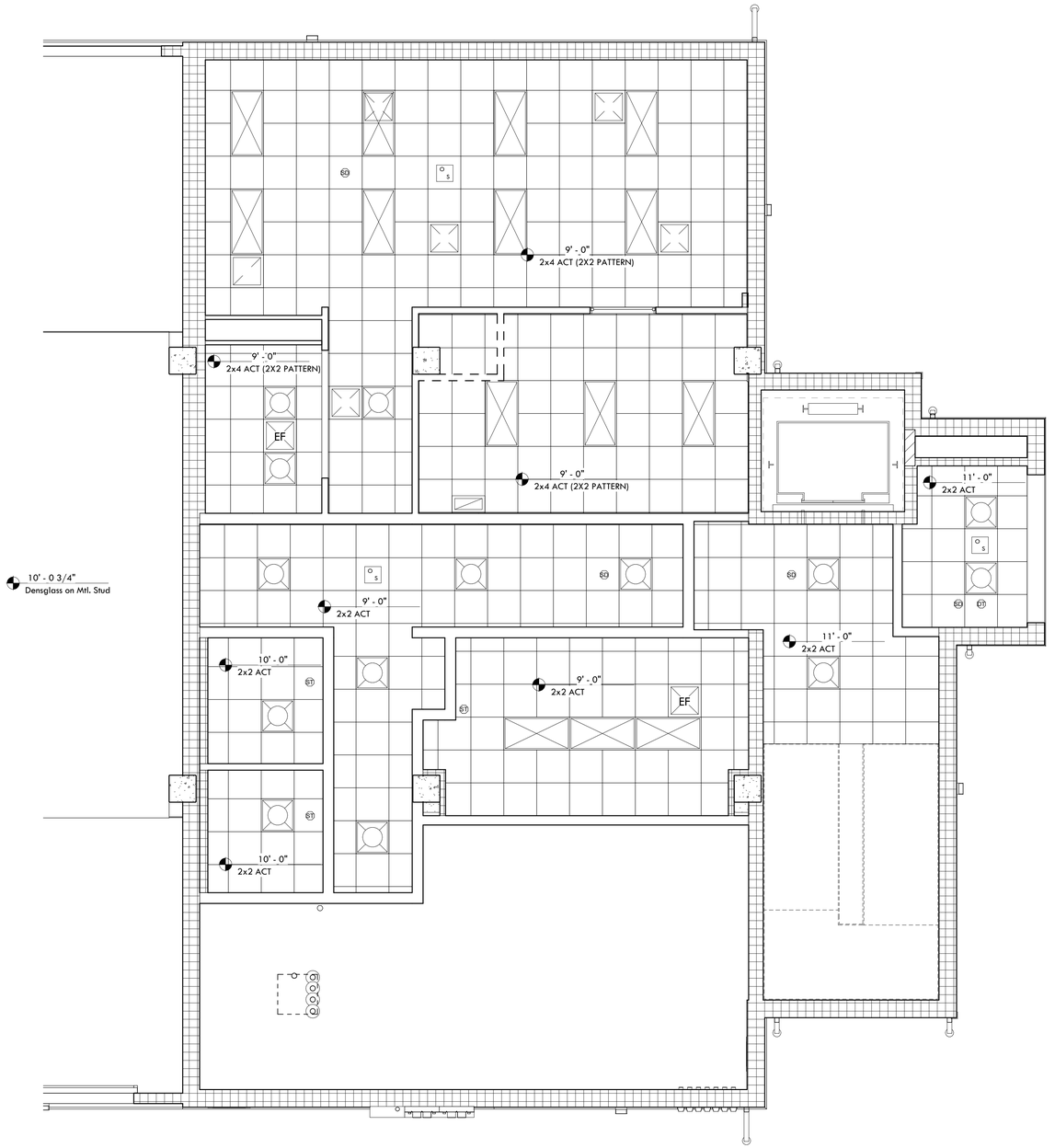
SCALE
As indicated

West Birch Apartments

W Branch Street
Princeton, MN

RELFECTED CEILING PLANS

A501



1 **FIRST FLOOR1**
1/4" = 1'-0"

GRAPHIC LEGEND - CEILING PLAN

- 2x4 ACOUSTIC CEILING TILES & GRID (BLACK LINES) - SEE SPECIFICATIONS
- 2x2 ACOUSTIC CEILING TILES & GRID - SEE SPECIFICATIONS
- NEW GYPSUM WALL BOARD
- DASHED WALLS BELOW FOR REFERENCE
- 2X2 SUPPLY
- 2X2 RETURN
- 2X1 RETURN
- EF — 2X2 CEILING EXHAUST FAN
- 2X2 LIGHTING FIXTURE
- 2X4 LIGHTING FIXTURE
- PHOTOELECTRIC DETECTOR
- DIALING DETECTOR
- OCCUPANCY SENSOR

Blumentals
Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of
MINNESOTA — 08/24/18 sign date
JAMES L. MOY — 27036 reg. no.
6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
HD
Issue Date
08/24/18

	SUBMITTALS / REVISIONS
04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

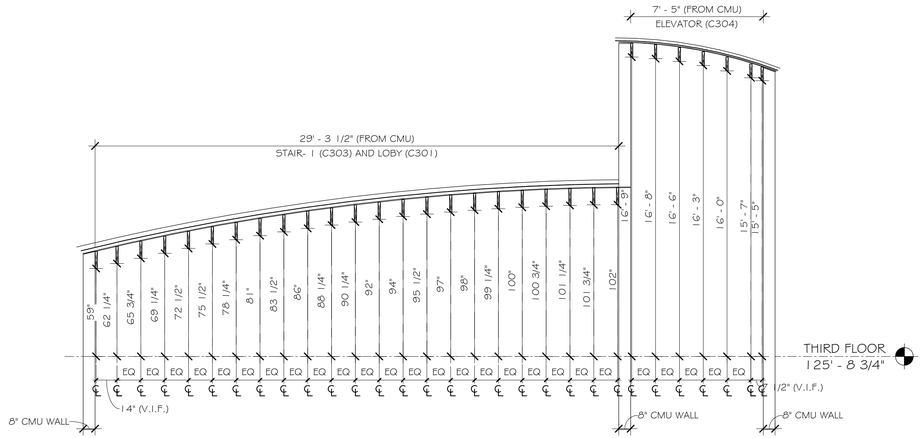
SCALE
As indicated

West Birch Apartments

W Branch Street
Princeton, MN

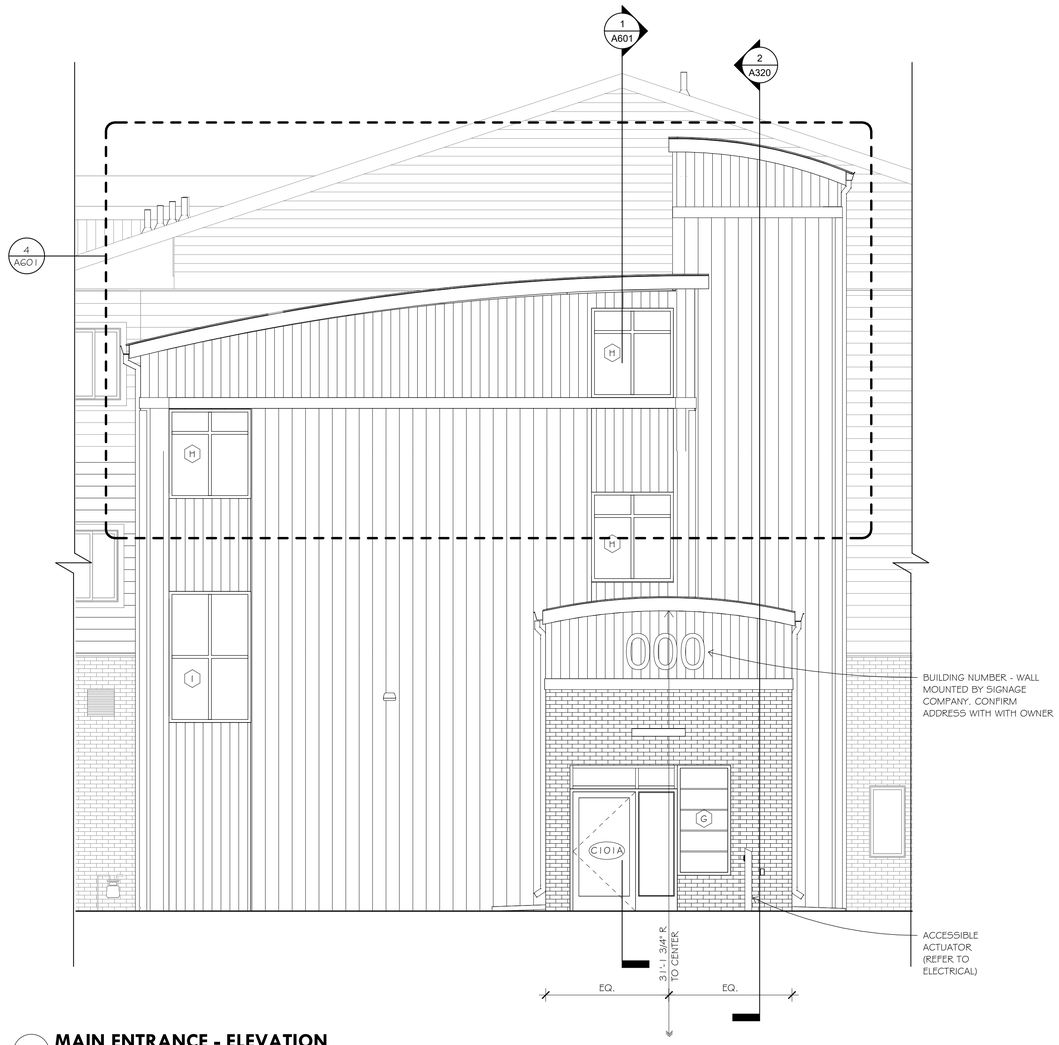
RELFECTED CEILING PLANS - COMMON AREA

A502



4 STAIR-1/ LOBBY AND ELEVATOR ROOF DETAIL

1/4" = 1'-0"

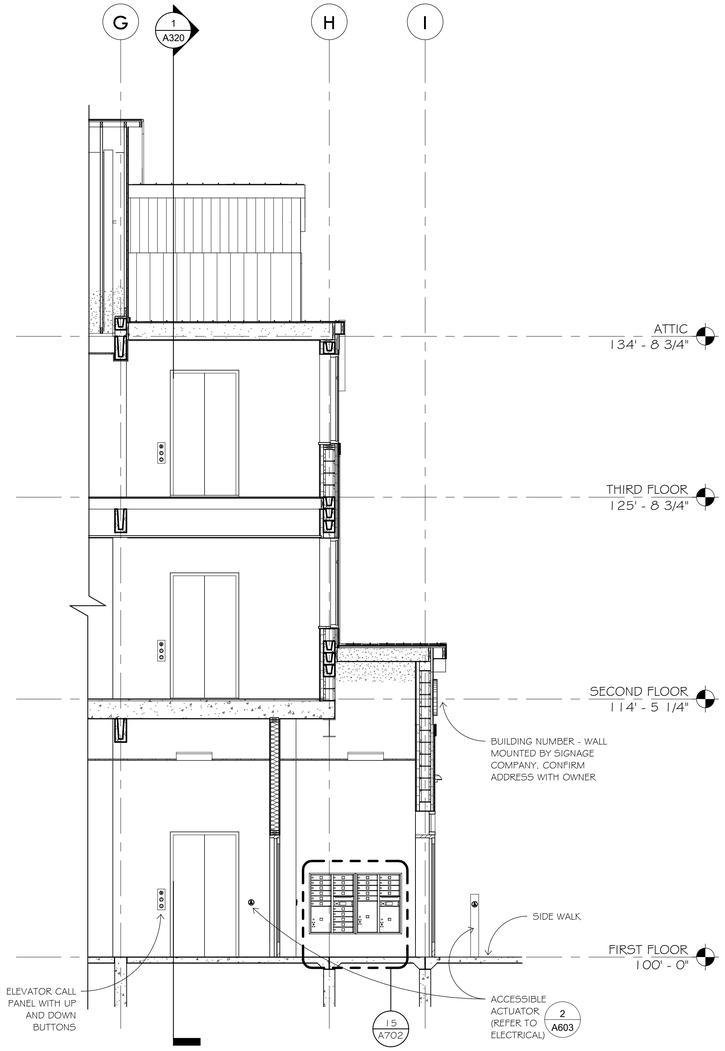


2 MAIN ENTRANCE - ELEVATION

1/4" = 1'-0"



3 ENTRANCE 3D PERSPECTIVE



1 MAIN ENTRANCE - SECTION

1/4" = 1'-0"

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA

08/24/18 sign date

JAMES L. MOY

27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18

Drawn By:
HD

Issue Date
08/24/18

	SUBMITTALS / REVISIONS
04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

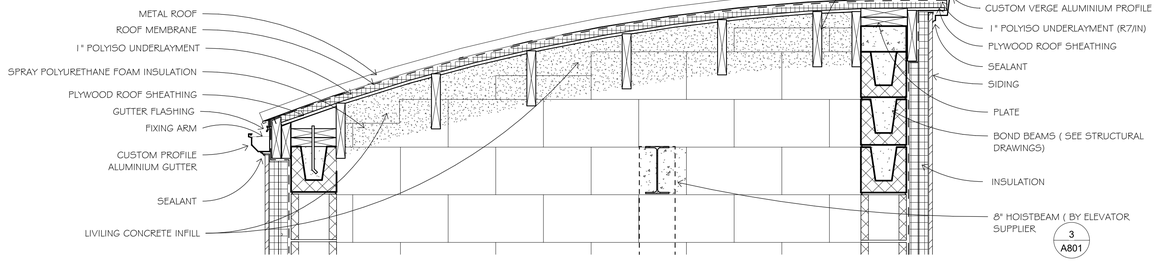
SCALE
1/4" = 1'-0"

West Birch Apartments

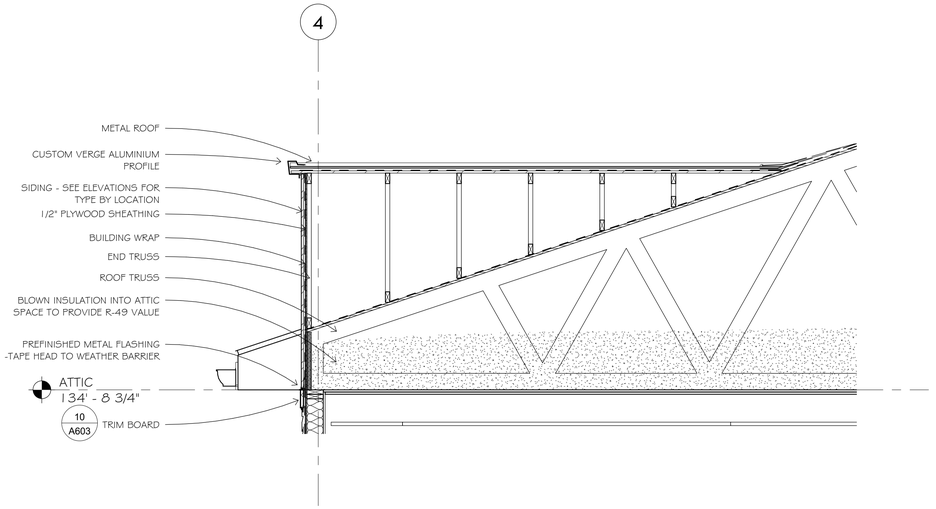
W Branch Street
Princeton, MN

BUILDING ENTRY

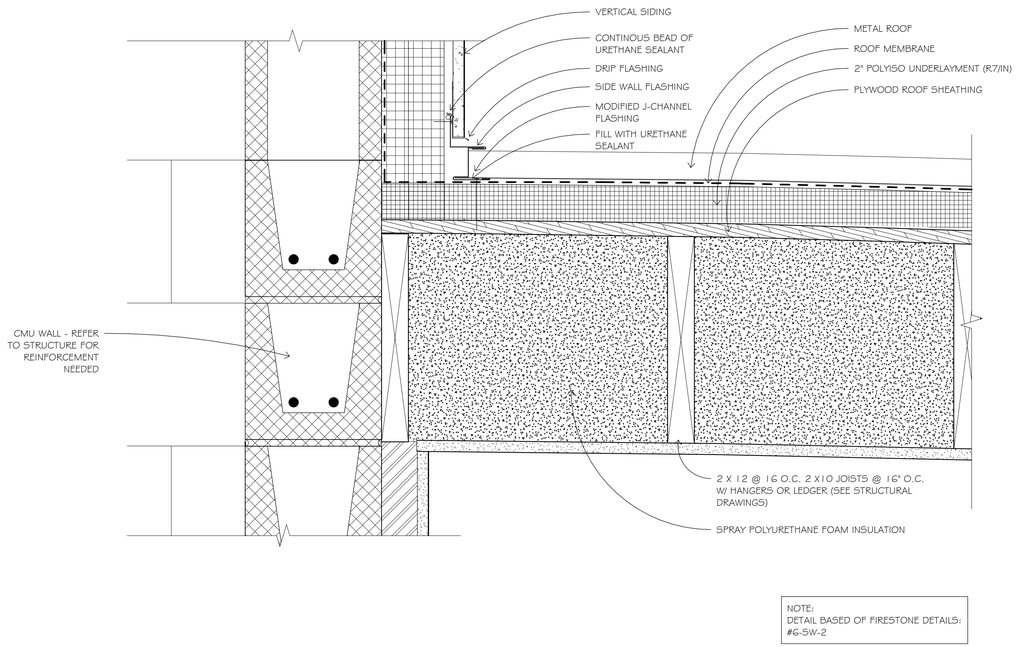
A601



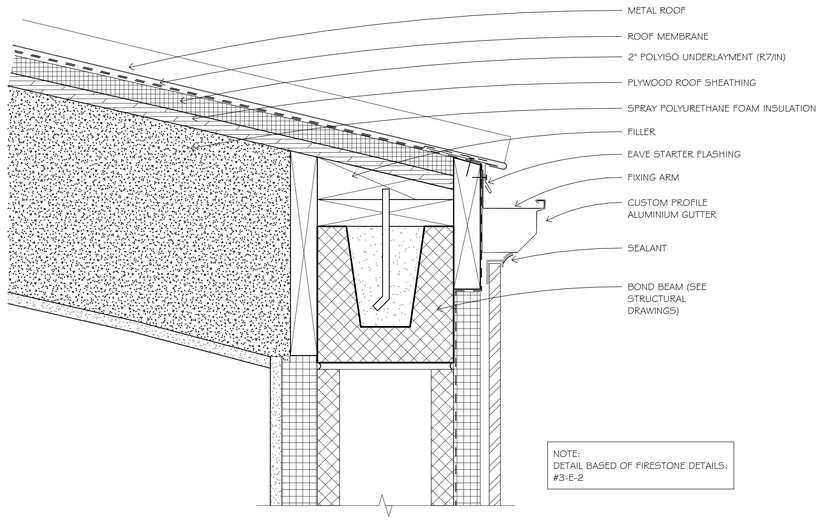
4 ELEVATOR ROOF DETAIL
1" = 1'-0"



3 SECTION - Callout 1
1/2" = 1'-0"



2 Section 7 - Callout 1
3" = 1'-0"



1 ROOF DETAIL AT GUTTER
3" = 1'-0"

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA — 08/24/18 sign date

JAMES L. MOY — 27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18

Drawn By:
HD

Issue Date
08/24/18

SUBMITTALS / REVISIONS

	06/21/18	90% CD
	08/24/18	100% MHFA REVIEW

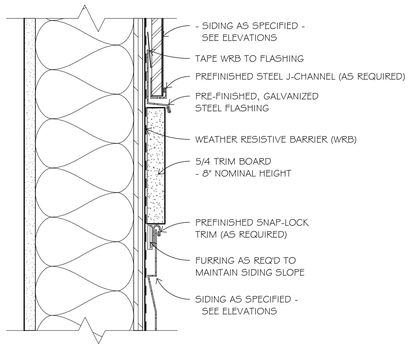
SCALE
As indicated

West Birch Apartments

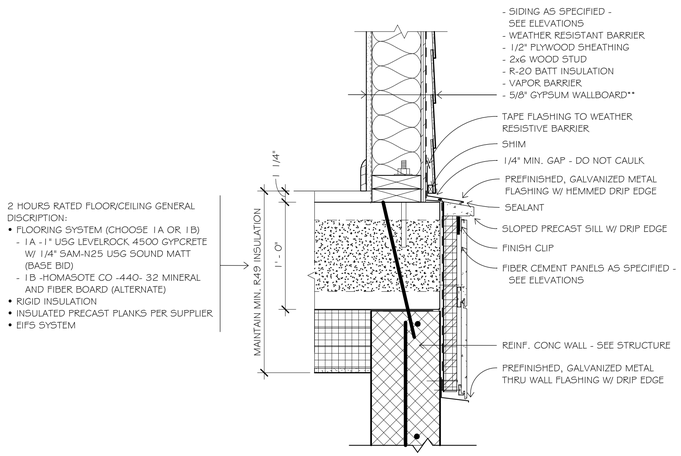
W Branch Street
Princeton, MN

EXTERIOR DETAILS

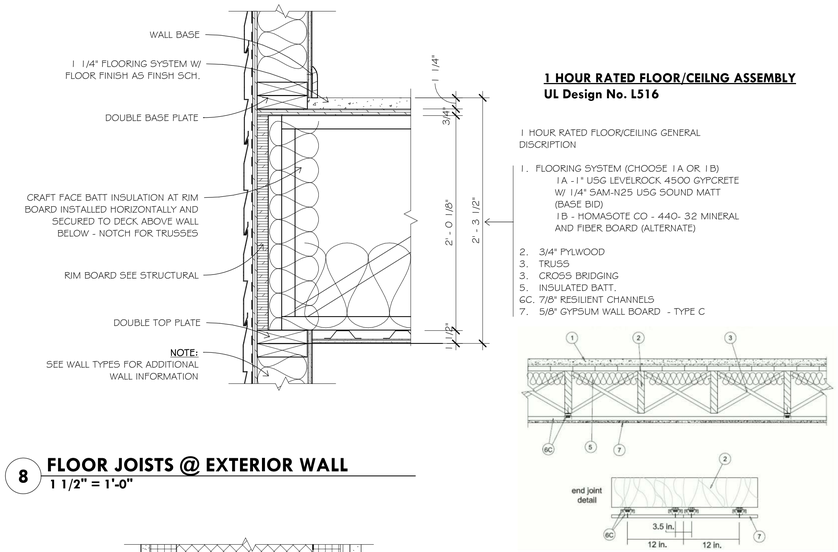
A602



10 SIDING TRANSITION @ TRIM (STEEL SIDING)
3" = 1'-0"

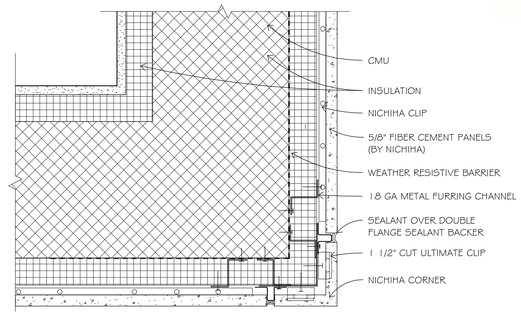


9 PRECAST PLANKS @ EXTERIOR WALL
1 1/2" = 1'-0"

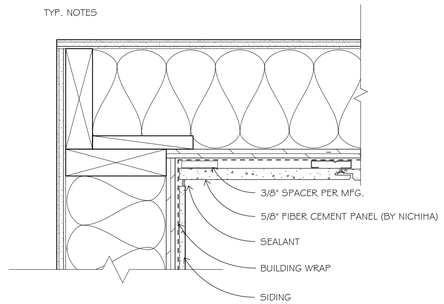


1 HOUR RATED FLOOR/CEILNG ASSEMBLY
UL Design No. L516

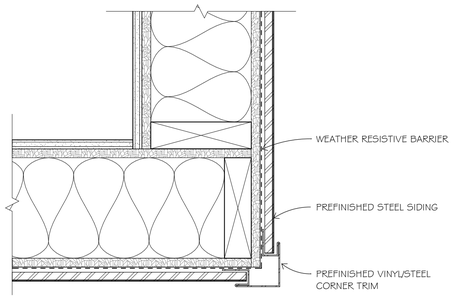
8 FLOOR JOISTS @ EXTERIOR WALL
1 1/2" = 1'-0"



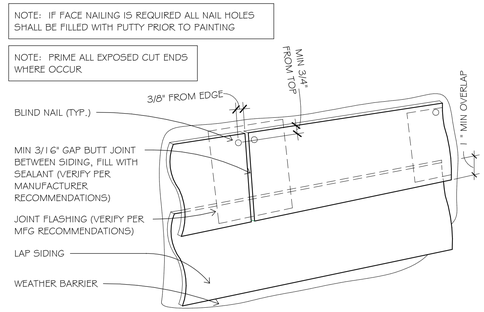
5 CORNER DETAIL @ CEMENT PANEL
3" = 1'-0"



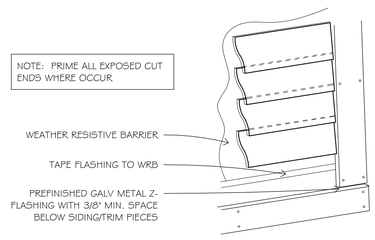
7 TRIM DETAIL @ SIDING (INSIDE CORNER, TYP.)
3" = 1'-0"



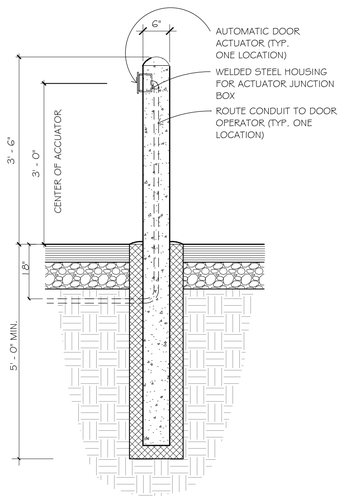
6 CORNER DETAIL @ VINYL/ STEEL TRIM
3" = 1'-0" (OPTIONAL)



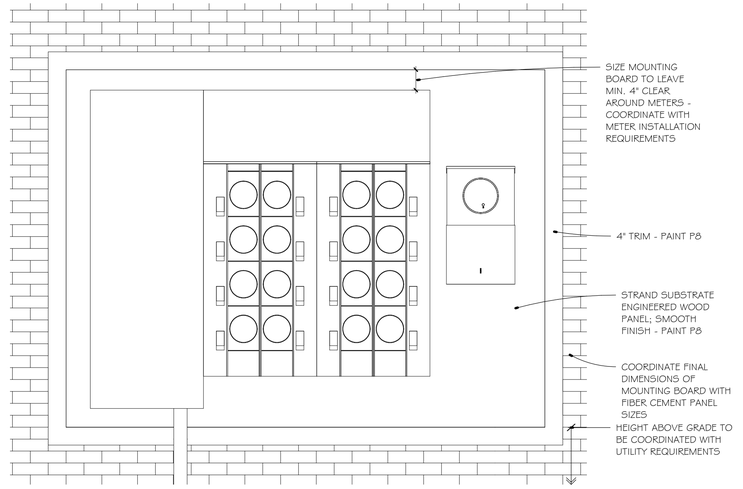
4 LAP SIDING INSTALLATION GUIDE
1/8" = 1'-0"



3 VERTICAL TRIM @ HORIZONTAL TRIM, TYP.
1" = 1'-0"



2 STEEL BOLLARD DETAIL W/ ACTUATOR
3/4" = 1'-0"



1 METER MOUNTING BOARD DETAIL @ FIBER CEMENT
3/4" = 1'-0"

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA

08/24/18 sign date

JAMES L. MOY

27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18

Drawn By:
HD

Issue Date
08/24/18

SUBMITTALS / REVISIONS

1	04/20/18	50% CD
2	06/21/18	90% CD
3	08/24/18	100% MHFA REVIEW

SCALE
As indicated

West Birch Apartments

W Branch Street
Princeton, MN

EXTERIOR DETAILS

A603

STEP 1

1. CUT A PIECE OF ADHESIVE BACKED FLEXWRAP MEMBRANE 12" LONGER THAN THE WINDOW OPENING (NOTE: USE 7" WIDE MEMBRANE FOR 2"X4" CONSTRUCTION; USE 9" WIDE MEMBRANE FOR 2"X6" CONSTRUCTION)
2. PEEL BACKING OFF MEMBRANE AND INSTALL ON SILL, CAREFUL TO NOT STRETCH MEMBRANE DURING INSTALLATION. MEMBRANE SHOULD BE FLUSH WITH INSIDE EDGE OF FRAMING. CONTINUE MEMBRANE UP A MINIMUM OF 6" ON JAMB FRAMING OVERLAPPING WEATHER BARRIER AND VERTICAL LEGS OF SILL FLASHING.
3. INSTALL MEMBRANE FLASHING VERTICALLY OVER JAMB FRAMING OVERLAPPING WEATHER BARRIER AND VERTICAL LEGS OF SILL FLASHING.
4. APPLY A CONTINUOUS BEAD OF ELASTOMERIC SEALANT AT TOP AND SIDES OF WINDOW OPENING IMMEDIATELY PRIOR TO INSTALLATION OF WINDOW. DO NOT APPLY SEALANT TO SILL.

STEP 2

5. INSTALL WINDOW PER MANUFACTURER'S RECOMMENDATIONS.

STEP 3

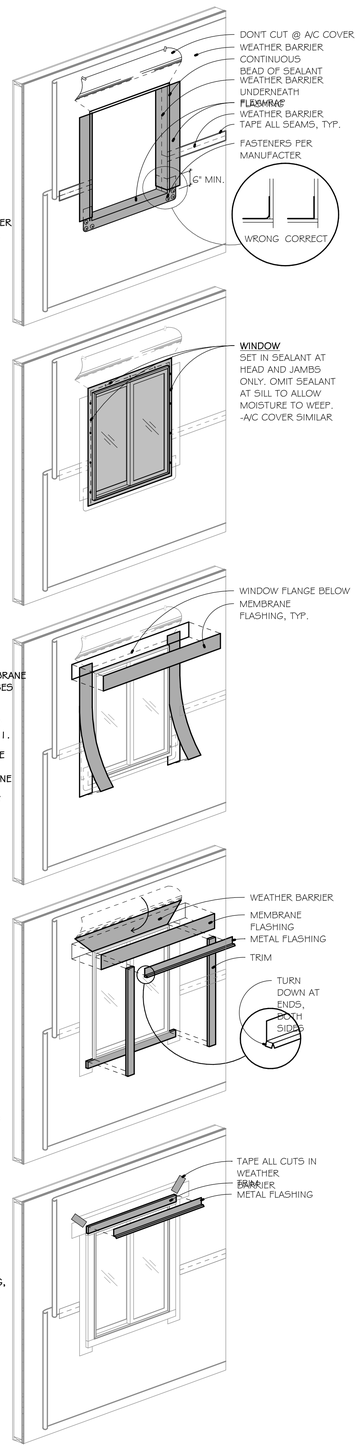
6. INSTALL VERTICAL STRIPS OF ADHESIVE MEMBRANE OVER THE WEATHER BARRIER AND NAILING FLANGES TO FOLD UP AND ONTO THE WINDOW JAMB. MEMBRANE SHOULD EXTEND PAST THE NAILING FLANGES AT THE HEAD AND SILL AND COVER THE JAMB FLASHING PREVIOUSLY INSTALLED IN STEP 1.
7. INSTALL ANOTHER LAYER OF MEMBRANE FLASHING HORIZONTALLY OVER THE BACK FLANGE OF THE DRIP CAP. MEMBRANE FLASHING AT THE HEAD SHOULD EXTEND AND COVER THE MEMBRANE PREVIOUSLY INSTALLED AT THE JAMBS.
8. IF THE DRIP CAP IS INTEGRAL TO THE WINDOW UNIT, APPLY THE MEMBRANE FLASHING OVER THE HEAD SIMILAR TO WHAT HAS BEEN DESCRIBED ABOVE.

STEP 4

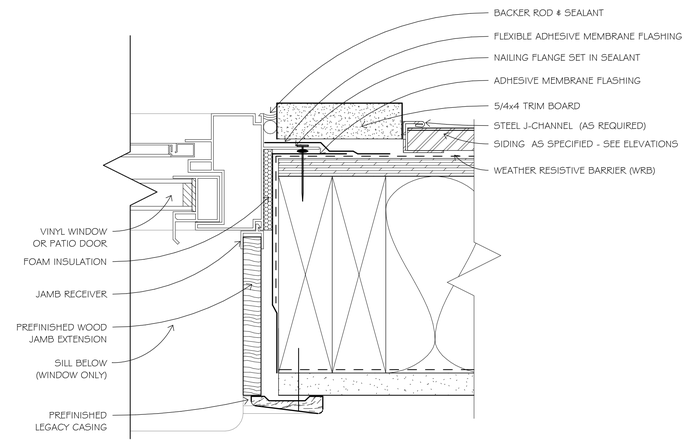
9. FLIP DOWN UPPER FLAP OF WEATHER BARRIER SO IT LAYS FLAT ACROSS HEAD FLASHING.
10. INSTALL ANOTHER PIECE OF CONTINUOUS ADHESIVE MEMBRANE OVER FLAP. MEMBRANE SHALL EXTEND BEYOND END CUTS IN BOTH SIDES OF WEATHER BARRIER. COMPLETELY CONCEAL ALL OTHER CUTS IN WEATHER BARRIER WITH TAPE.
11. INSTALL DECORATIVE TRIM BOARDS AS OCCUR (SEE ELEVATIONS AND DETAILS FOR LOCATIONS) BEGINNING AT THE SILL OF THE WINDOW, FOLLOWED BY THE JAMBS.
12. PRIOR TO INSTALLING THE TRIM AT THE WINDOW HEAD, INSTALL A CONTINUOUS PREFINISHED METAL HEAD FLASHING WITH DRIP EDGE. FLASHING SHALL EXTEND OVER THE ENDS OF JAMB TRIM AND SHALL BE BENT TO CREATE DRIP EDGES AT ENDS.

STEP 5

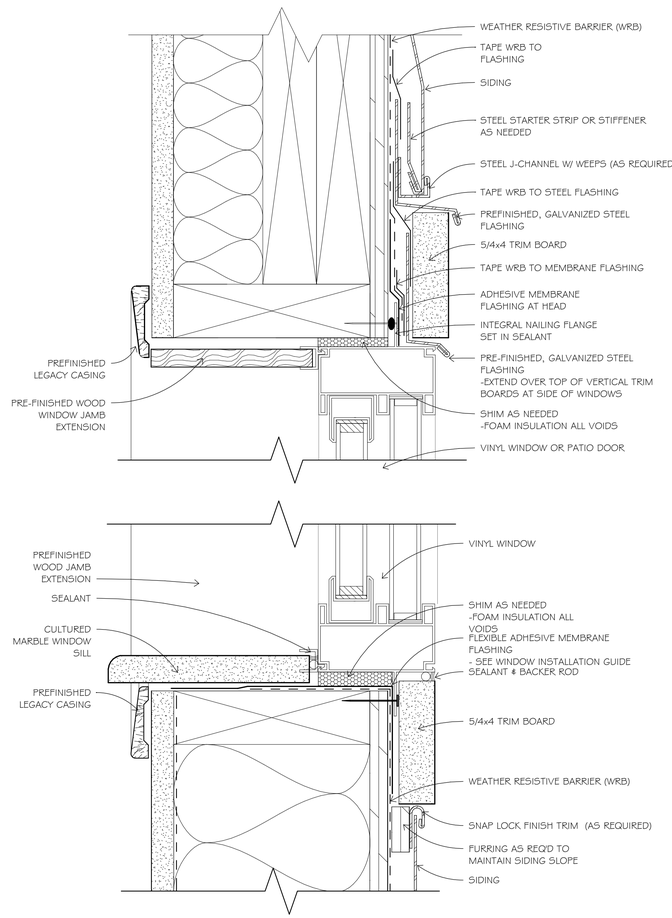
13. AFTER HEAD TRIM HAS BEEN INSTALLED, INSTALL AN ADDITIONAL PIECE OF CONTINUOUS PREFINISHED METAL HEAD FLASHING WITH DRIP EDGE OVER ENTIRE LENGTH OF TRIM BEFORE INSTALLING FINAL BUILDING MATERIAL (I.E. SIDING, ETC.) NAIL AT TOP EDGE AND TAPE TO WEATHER BARRIER WITH WEATHER BARRIER TAPE.



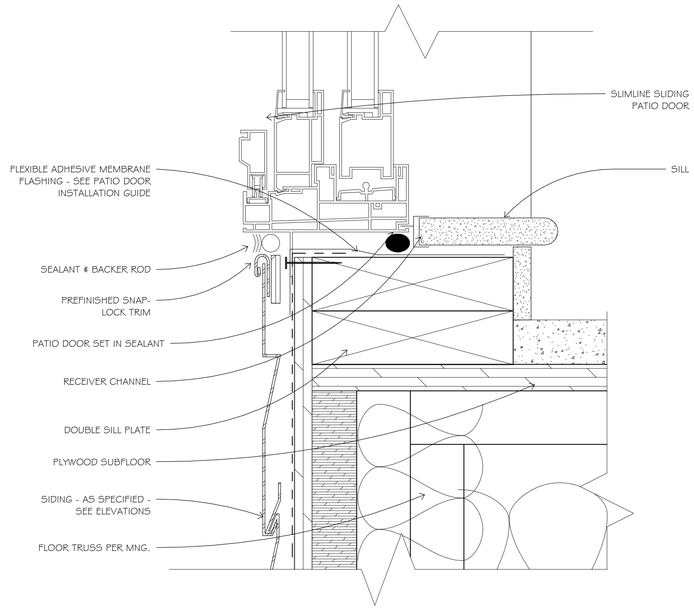
3 WINDOW INSTALLATION GUIDE
3/8" = 1'-0"



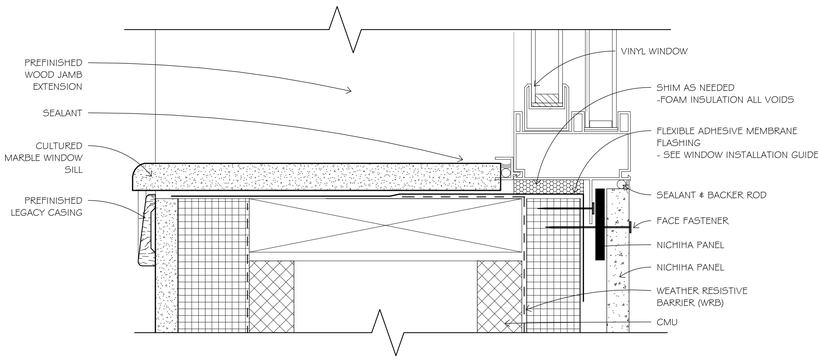
5 WINDOW & PATIO DOOR JAMB DETAIL (PLAN VIEW)
6" = 1'-0"



2 WINDOW HEAD & SILL DETAIL @ STUD (SECTION VIEW)
6" = 1'-0"



4 PATIO DOOR SILL DETAIL
6" = 1'-0"



1 WINDOW HEAD & SILL DETAIL (SECTION VIEW)
6" = 1'-0"

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA

08/24/18 sign date

JAMES L. MOY

27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
HD
Issue Date
08/24/18

SUBMITTALS / REVISIONS

06/21/18	90% CD
08/24/18	100% MHFA REVIEW

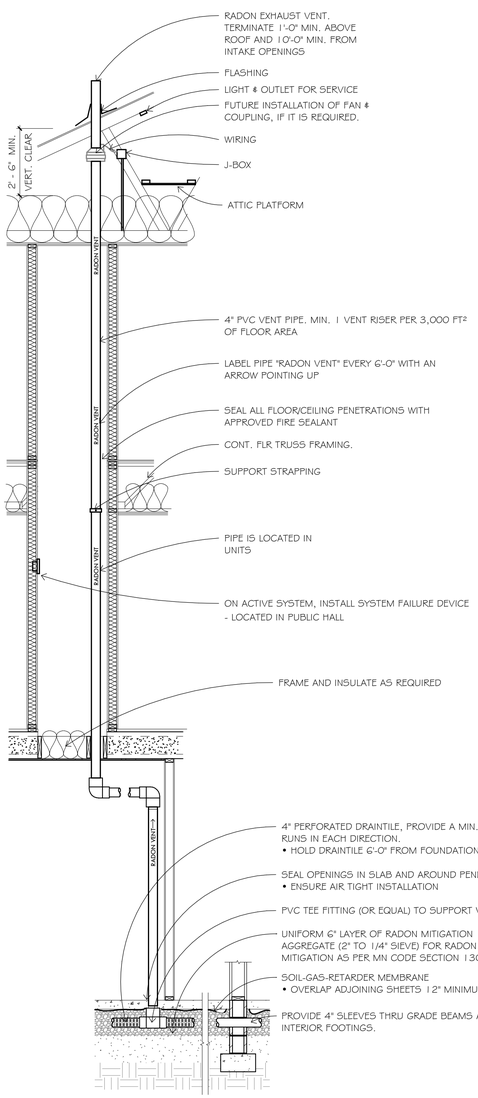
SCALE
As indicated

West Birch Apartments

W Branch Street
Princeton, MN

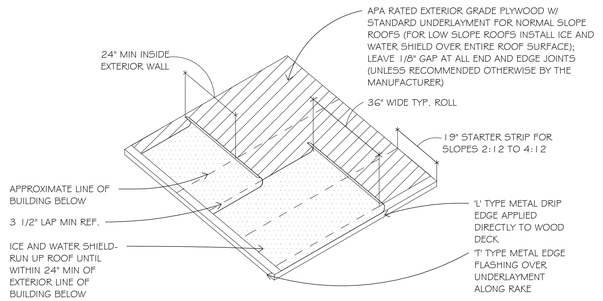
EXTERIOR OPENINGS

A604

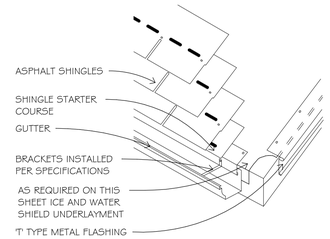


NOTES:
- VENT PIPES SHALL BE INSTALLED SO THAT ANY RAINWATER OR CONDENSATION DRAINS DOWNWARD INTO THE GROUND BENEATH THE SLAB OR MEMBRANE
- CIRCUITS SHOULD BE A MINIMUM 15 AMP, 115 VOLT BY ELECTRICAL CONTRACTOR
- INSTALL THE VENT FAN IN THE VERTICAL RUN OF THE VENT PIPE SUCH THAT IT MAINTAINS A LOWER PRESSURE UNDER THE SLAB/MEMBRANE THAN ABOVE.
- ALL POSITIVELY PRESSURED PORTIONS OF THE VENT PIPE AND FAN ON ACTIVE SYSTEM SHALL BE LOCATED OUTSIDE THE HABITABLE SPACE OF THE BUILDING.
- ON ACTIVE SYSTEM PROVIDE A VISIBLE OR AUDIBLE WARNING SYSTEM TO ALERT THE BUILDING OCCUPANT IF THERE IS A LOSS OF PRESSURE OR AIR FLOW IN THE VENT PIPE.

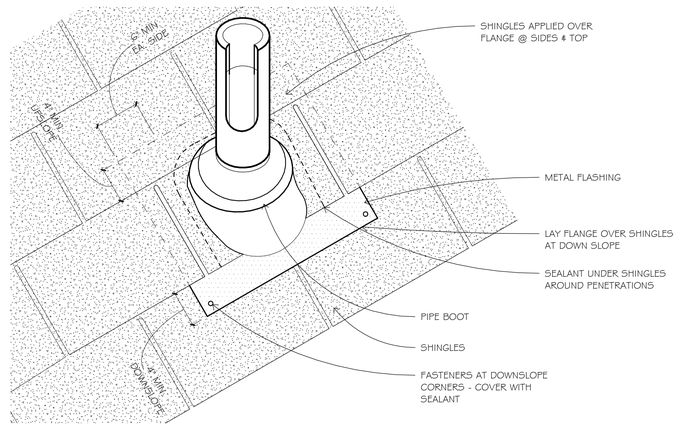
3 RADON - ACTIVE MITIGATION SYSTEM - NEW STRUCTURE
3/8" = 1'-0"



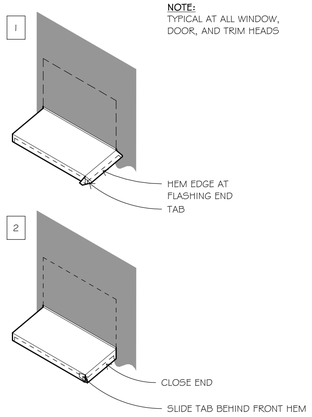
7 EAVE UNDERLAYMENT
3/4" = 1'-0"



6 EDGE FLASHING & GUTTER
3/4" = 1'-0"

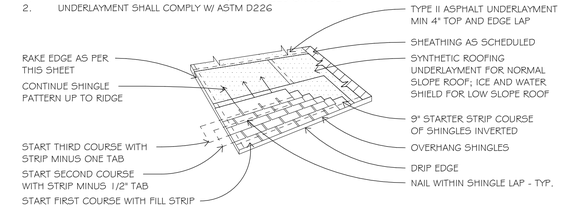


5 ROOF DETAIL AT PIPE BOOT
1 1/2" = 1'-0"

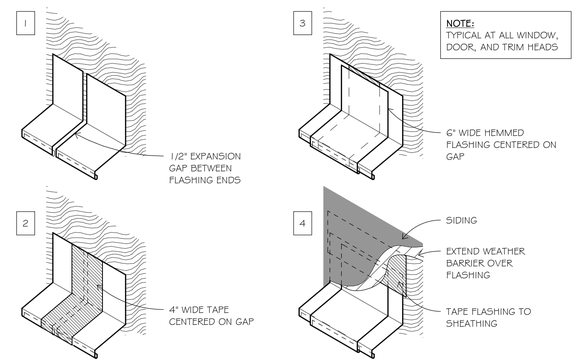


2 Z FLASHING DETAILS - END CONDITION
1 1/2" = 1'-0"

NOTES:
1. ASPHALT SHINGLES SHALL COMPLY W/ ASTM D225 OR D3462
2. UNDERLAYMENT SHALL COMPLY W/ ASTM D226



4 SHINGLE/UNDERLAYMENT LAYOUT
3/4" = 1'-0"



1 Z FLASHING DETAILS - JOINT CONDITION
1 1/2" = 1'-0"

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA — 08/24/18 (sign date)
JAMES L. MOY — 27036 (reg. no.)
6/30/2020 (reg. exp. date)

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
HD
Issue Date
08/24/18

SUBMITTALS / REVISIONS

06/21/18	90% CD
08/24/18	100% MHFA REVIEW

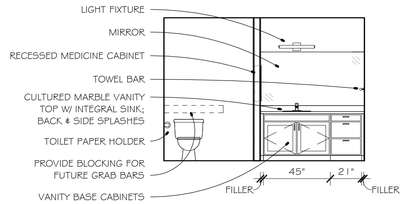
SCALE
As indicated

West Birch Apartments

W Branch Street
Princeton, MN

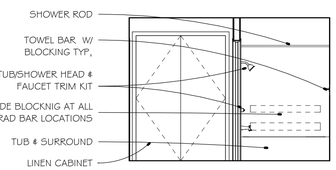
EXTERIOR DETAILS - ROOF

A605



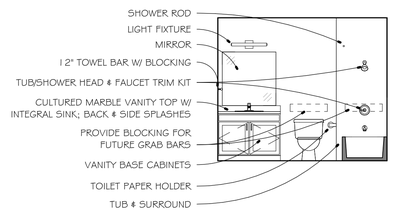
22 BATH ELEVATION @ VANITY/WC (TYP. A)
1/4" = 1'-0"

(A.1 & E SIMILAR)



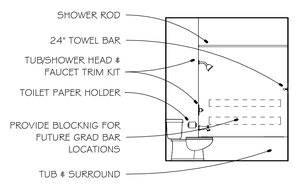
21 BATH ELEVATION @ TUB (TYP. A)
1/4" = 1'-0"

(A.1 & E SIMILAR)



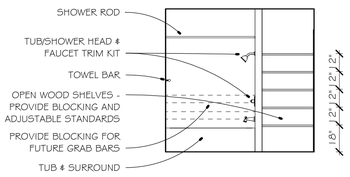
20 MASTER BATH ELEVATION @ VANITY/WC (TYP. A)
1/4" = 1'-0"

(A.1, C, E & E.1 SIMILAR)

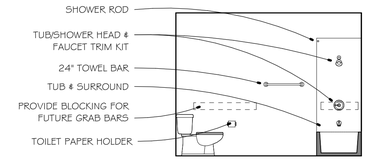


19 MASTER BATH ELEVATION @ TUB (TYP. A)
1/4" = 1'-0"

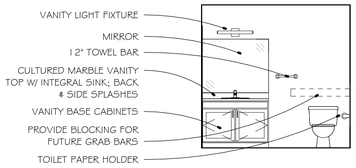
(A.1, C, E & E.1 SIMILAR)



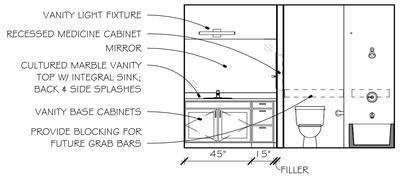
18 BATH ELEVATION @ TUB (TYP. B)
1/4" = 1'-0"



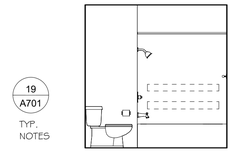
17 BATH ELEVATION @ TUB/WC (TYP. B)
1/4" = 1'-0"



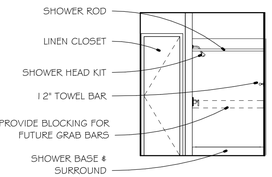
16 BATH ELEVATION @ VANITY/WC (TYP. B)
1/4" = 1'-0"



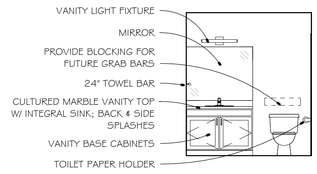
15 BATH ELEV 2 @ UNIT TYPE D (F SIM.)
1/4" = 1'-0"



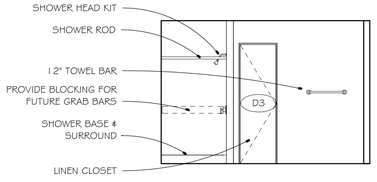
14 BATH ELEV 1 @ UNIT TYPE D (F SIM.)
1/4" = 1'-0"



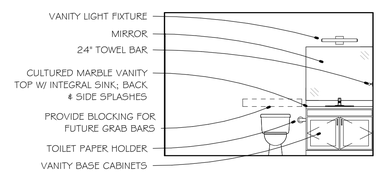
13 MASTER BATH ELEV 1 @ UNIT TYPE D
1/4" = 1'-0"



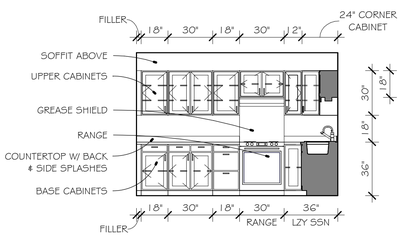
12 MASTER BATH ELEV 2 @ UNIT TYPE D
1/4" = 1'-0"



11 MASTER BATH ELEV 1 @ UNIT TYPE F
1/4" = 1'-0"

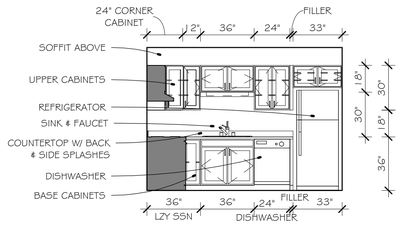


10 MASTER BATH ELEV 2 @ UNIT TYPE F
1/4" = 1'-0"



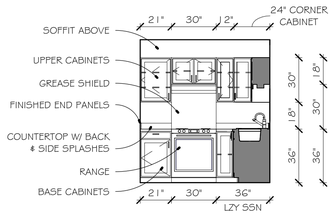
9 KITCHEN ELEVATION @ RANGE (TYP. A)
1/4" = 1'-0"

(A.1, C, & E SIMILAR)

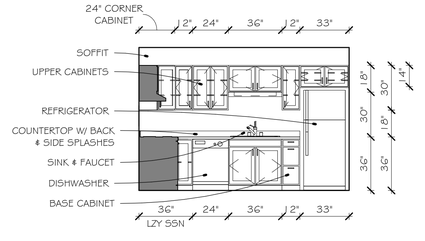


8 KITCHEN ELEVATION @ SINK (TYP. A)
1/4" = 1'-0"

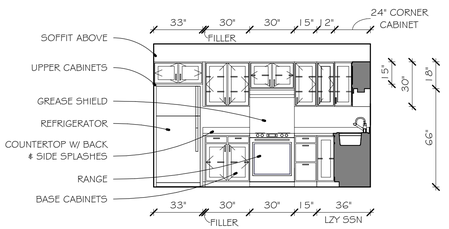
(A.1, C, & E SIMILAR)



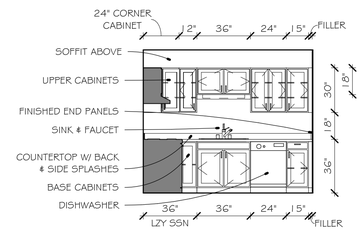
7 KITCHEN ELEVATION @ RANGE (TYP. B)
1/4" = 1'-0"



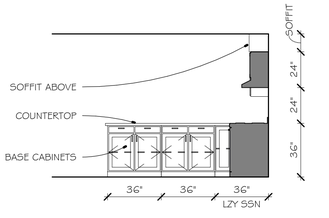
6 KITCHEN ELEVATION @ SINK (TYP. B)
1/4" = 1'-0"



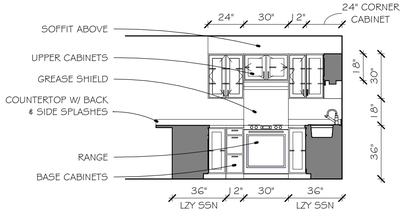
5 KITCHEN ELEVATION @ RANGE (TYP. C)
1/4" = 1'-0"



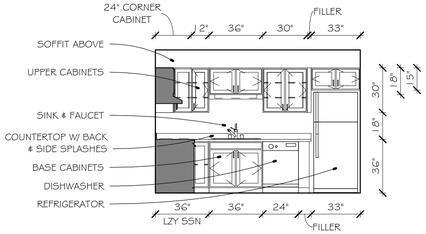
4 KITCHEN ELEVATION @ SINK (TYP. C)
1/4" = 1'-0"



3 KITCHEN ELEV 3 @ UNIT TYPE D (F SIM.)
1/4" = 1'-0"



2 KITCHEN ELEV 2 @ UNIT TYPE D (F SIM.)
1/4" = 1'-0"



1 KITCHEN ELEV 1 @ UNIT TYPE D (F SIM.)
1/4" = 1'-0"

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA — 08/24/18 sign date

JAMES L. MOY — 27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18

Drawn By:
SB, HD

Issue Date
08/24/18

SUBMITTALS / REVISIONS

02/16/18	MHFA REVIEW - SD
04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

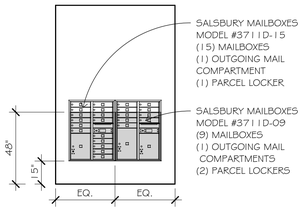
SCALE
1/4" = 1'-0"

West Birch Apartments

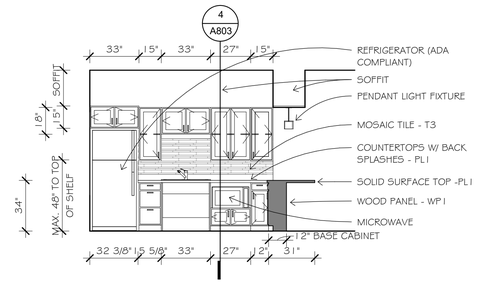
W Branch Street
Princeton, MN

INTERIOR ELEVATIONS - STANDARD AND H/V UNITS

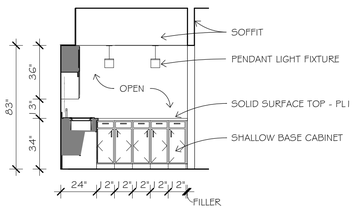
A701



15 ELEVATION @ MAILBOXES
1/4" = 1'-0"



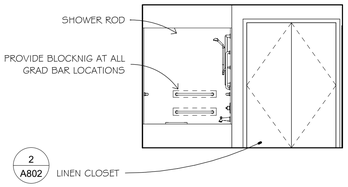
14 KITCHENETTE ELEV. @ SINK -COMMON AREA
1/4" = 1'-0"



13 KITCHENETTE ELEV. @ COUNTER - COMMON AREA
1/4" = 1'-0"



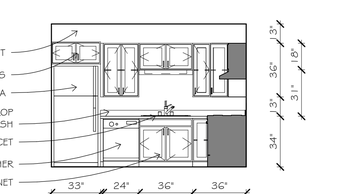
12 KITCHENETTE 3D VIEW - COMMON AREA



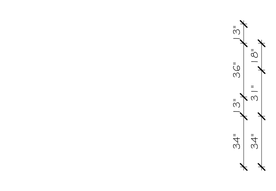
11 ELEV 1 @ TOILET C111
1/4" = 1'-0" (TOILET C110 MIRRORED)



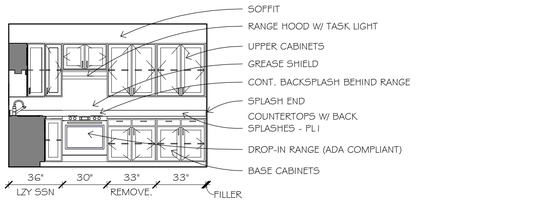
10 ELEV 2 @ TOILET C111
1/4" = 1'-0" (TOILET C110 MIRRORED)



9 ELEV 3 @ TOILET C111
1/4" = 1'-0" (TOILET C110 MIRRORED)



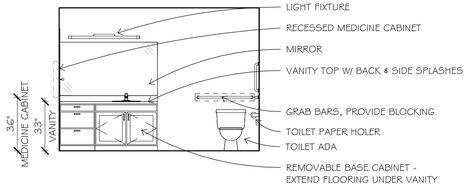
8 ELEV 4 @ TOILET C111
1/4" = 1'-0" (TOILET C110 MIRRORED)



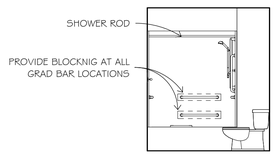
7 LAUNDRY ELEVATION (ADA) @ COMMON AREA
1/4" = 1'-0"

COMMON AREA ELEVATIONS

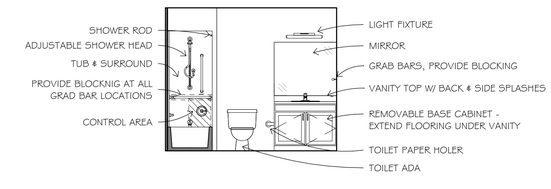
6 BATH ELEVATION @ TUB (TYP. E.1)
1/4" = 1'-0"



5 BATH ELEVATION @ TOILET (TYP. E.1)
1/4" = 1'-0"



4 MASTER BATH ELEV 2 @ UNIT TYPE E.1
1/4" = 1'-0"



3 MASTER BATH ELEV 1 @ UNIT TYPE E.1
1/4" = 1'-0"

2 KITCHEN ELEVATION @ SINK (TYP. E.1)
1/4" = 1'-0"

1 KITCHEN ELEVATION @ RANGE (TYP. E.1)
1/4" = 1'-0"

ADA UNIT ELEVATIONS

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA — 08/24/18 sign date

JAMES L. MOY — 27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
SB, HD
Issue Date
08/24/18

SUBMITTALS / REVISIONS

04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

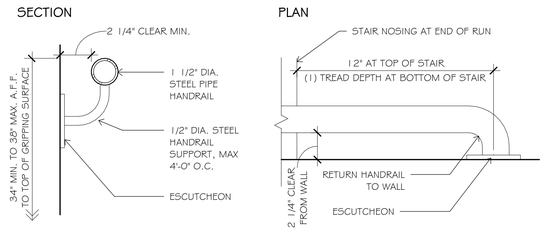
SCALE
1/4" = 1'-0"

West Birch Apartments

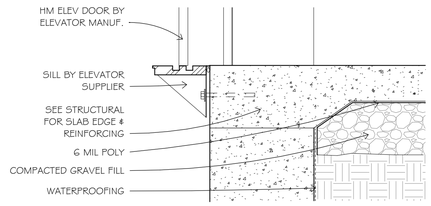
W Branch Street
Princeton, MN

INTERIOR ELEVATIONS - COMMON AREAS AND ADA UNIT

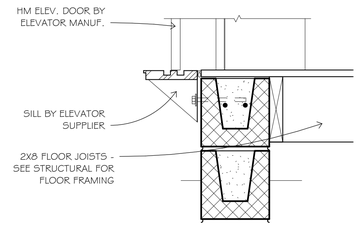
A702



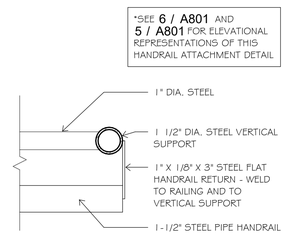
13 WALL MOUNTED HANDRAILS
3" = 1'-0"



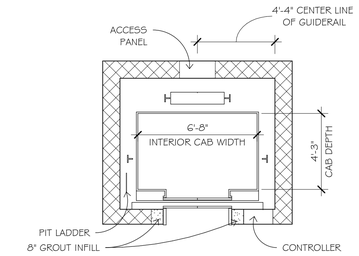
12 ELEVATOR HOISTWAY SILL @ FIRST FLOOR
1 1/2" = 1'-0"



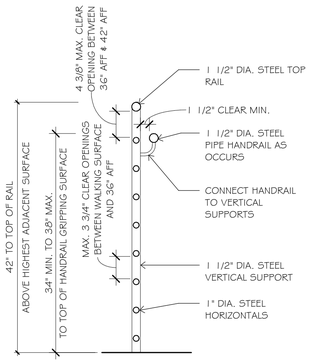
11 ELEV. HOISTWAY SILL @ SECOND FLOOR
1 1/2" = 1'-0"



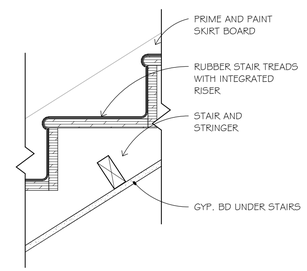
10 HANDRAIL RETURN
3" = 1'-0"



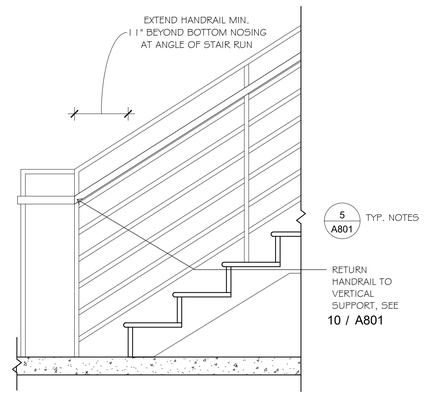
9 HOISTWAY PLAN VIEW - ELEVATOR
1/4" = 1'-0"



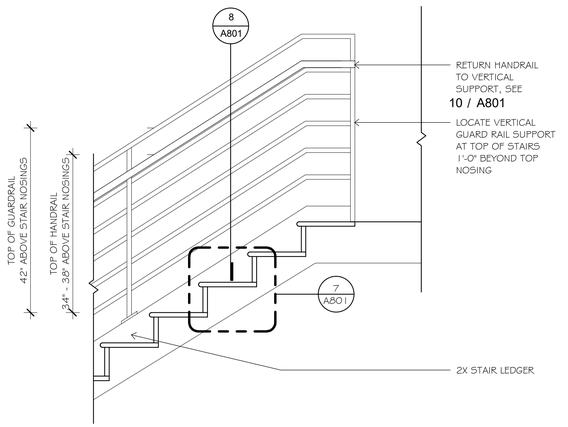
8 GUARDRAIL SECTION
1" = 1'-0"



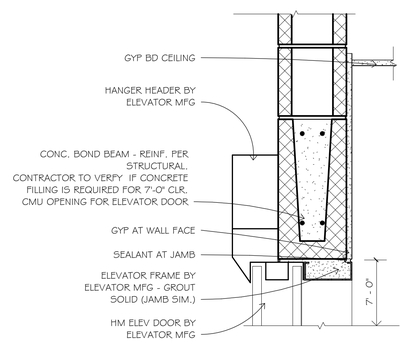
7 DETAIL AT STAIR TREADS
1 1/2" = 1'-0"



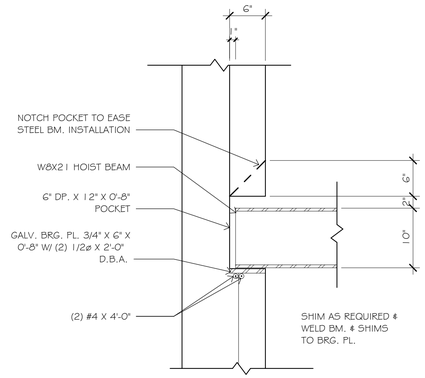
6 GUARDRAIL AT BOTTOM OF STAIR
3/4" = 1'-0"



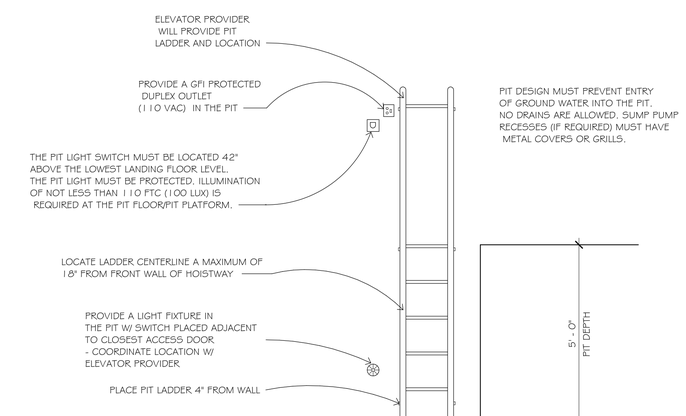
5 GUARDRAIL AT TOP OF STAIR
3/4" = 1'-0"



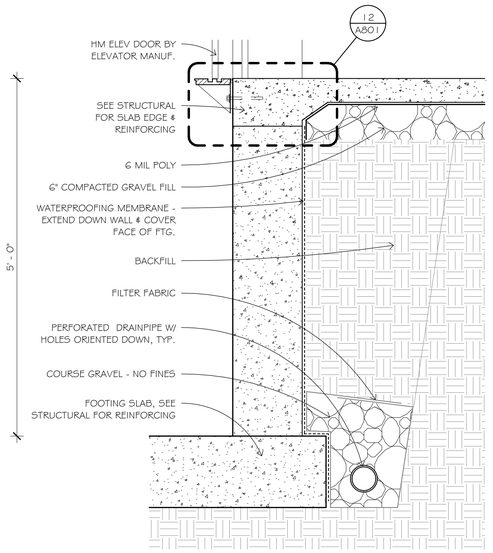
4 ELEVATOR DOOR HEAD
1 1/2" = 1'-0"



3 HOIST BEAM CONNECTION
1" = 1'-0"



2 PIT LADDER ELEVATION
1/2" = 1'-0"



1 ELEVATOR HOISTWAY PIT
1" = 1'-0"

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA — 08/24/18 sign date

JAMES L. MOY — 27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18

Drawn By:
SB, HD

Issue Date
08/24/18

SUBMITTALS / REVISIONS

04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

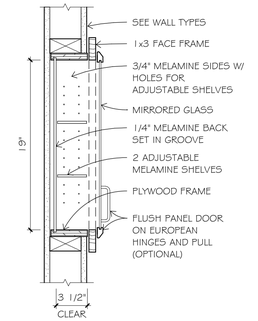
SCALE
As indicated

West Birch Apartments

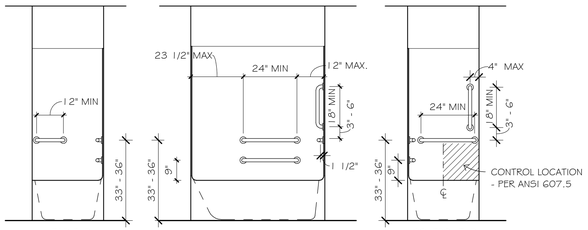
W Branch Street
Princeton, MN

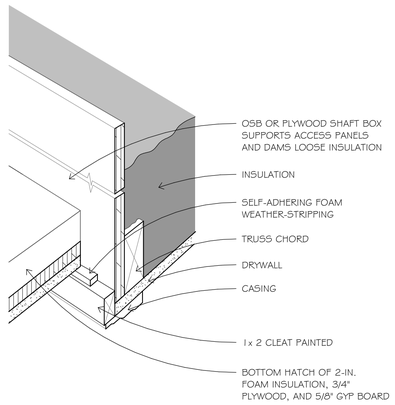
INTERIOR DETAILS - VERTICAL CIRCULATION

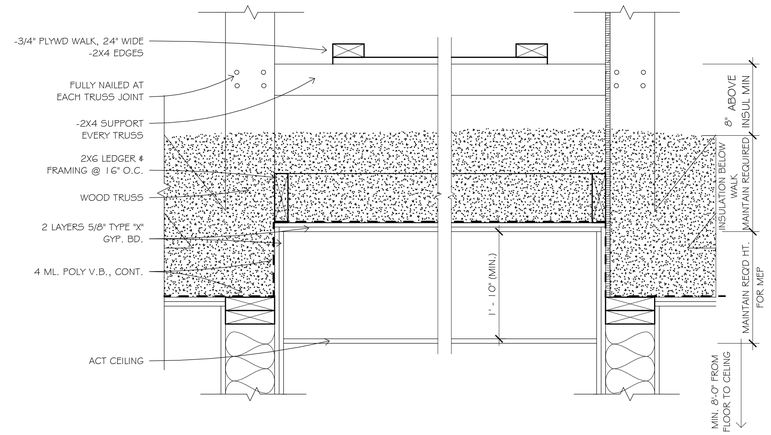
A801



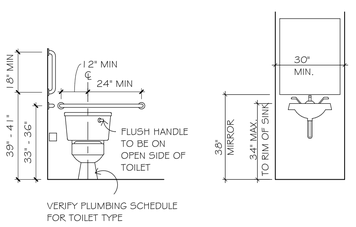
7 MEDICINE CABINET DETAIL
1 1/2" = 1'-0"



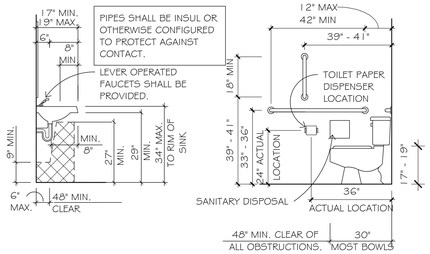




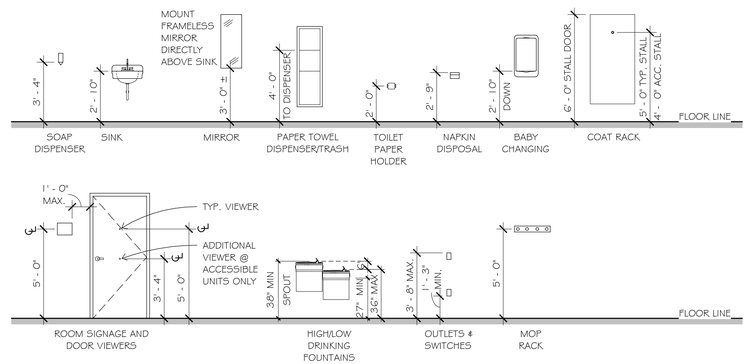
6 ELEVATION @ TUB GRAB BARS
3/8" = 1'-0"



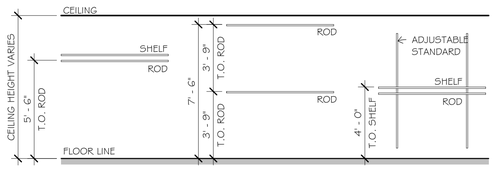
5 ATTIC HATCH DETAIL
3" = 1'-0"

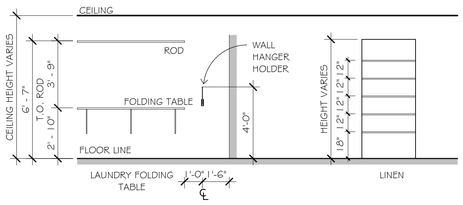


4 ATTIC WALK DETAIL
1 1/2" = 1'-0"



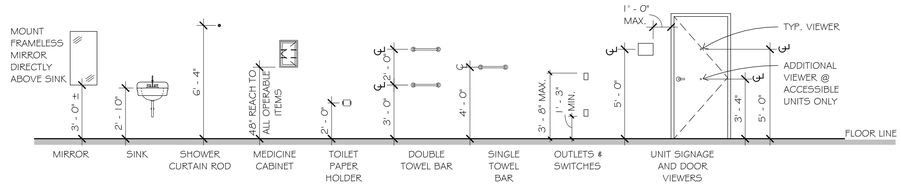
3 ACCESSIBLE FIXTURE ELEVATIONS
3/8" = 1'-0"





2 TYPICAL MOUNTING HEIGHTS - SHELF AND ROD
1/4" = 1'-0"

RESIDENTIAL MOUNTING HEIGHTS



1 TYPICAL MOUNTING HEIGHTS
1/4" = 1'-0"

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA — 08/24/18 sign date

JAMES L. MOY — 27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18

Drawn By:
HD

Issue Date
08/24/18

SUBMITTALS / REVISIONS

02/16/18	MHFA REVIEW - SD
04/20/18	50% CD
06/21/18	90% CD
08/24/18	100% MHFA REVIEW

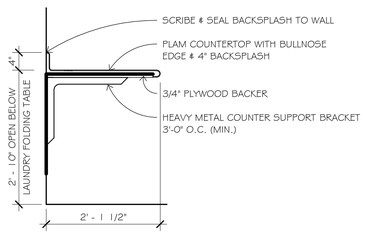
SCALE
As indicated

West Birch Apartments

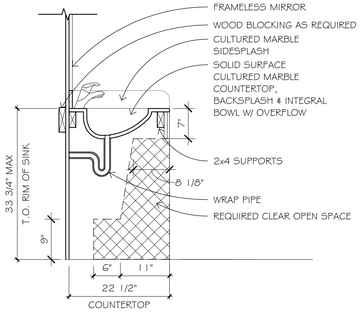
W Branch Street
Princeton, MN

INTERIOR DETAILS

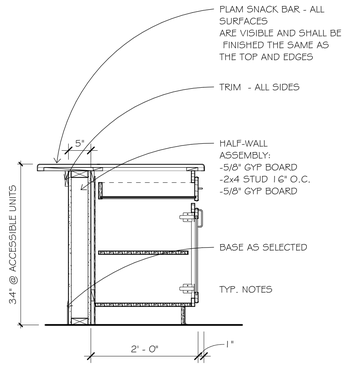
A802



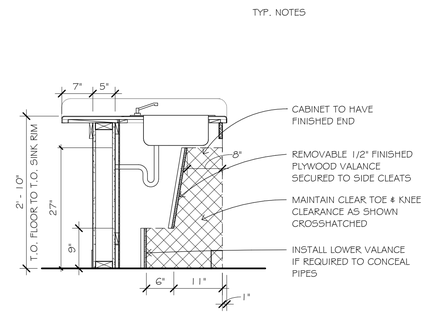
8 LAUNDRY TABLE FOLDING SECTION
3/4" = 1'-0"



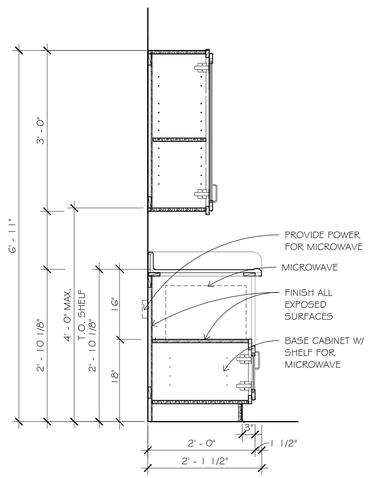
7 ACC. VANITY SECTION
3/4" = 1'-0"



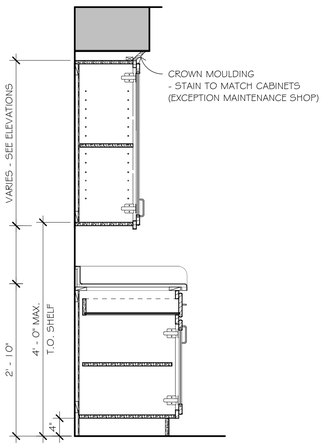
6 ACC. KITCHEN CABINET @ PENINSULA
3/4" = 1'-0"



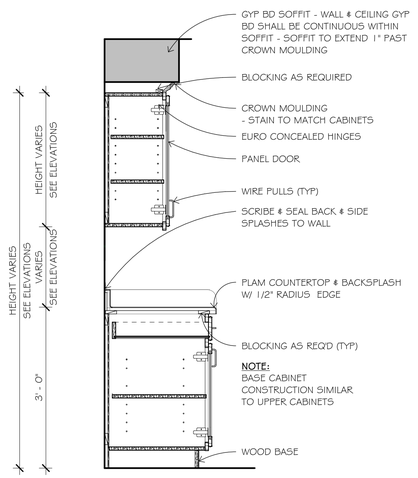
5 ACC. KITCHEN CABINET SECTION - SINK
3/4" = 1'-0"



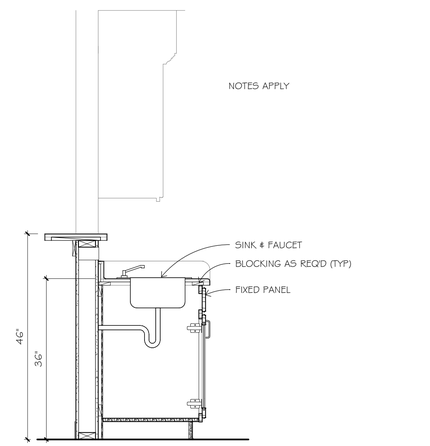
4 ACCESIICLBE CABINET SECTION @ MICROWAVE
3/4" = 1'-0"



3 ACC. KITCHEN CABINET SECTION
3/4" = 1'-0"



2 TYPICAL KITCHEN CABINET SECTION
3/4" = 1'-0"



1 TYPICAL KITCHEN CABINET SECTION @ SINK
3/4" = 1'-0"

Blumentals
Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of
MINNESOTA — 08/24/18 sign date
JAMES L. MOY — 27036 reg. no.
6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
HD
Issue Date
08/24/18

SUBMITTALS / REVISIONS

06/21/18	90% CD
08/24/18	100% MHFA REVIEW

SCALE
3/4" = 1'-0"

West Birch Apartments

W Branch Street
Princeton, MN

INTERIOR DETAILS

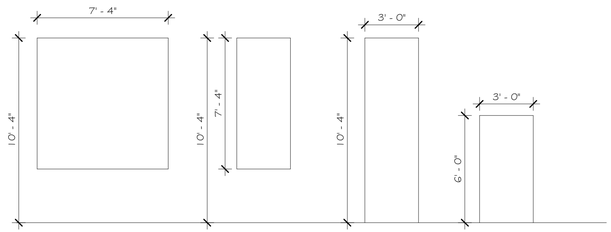
A803

DOOR SCHEDULE - COMMON AREA

MARK	DESCRIPTION	WIDTH	HEIGHT	DOOR TYPE	FRAME TYPE	FIRE RATING	HARDWARE GROUP	STC	COMMENTS
C101A	VESTIBULE	3' - 6"	6' - 8"	1	5		8		
C101B	VESTIBULE	3' - 6"	6' - 8"	1	5		5		
C102	LOBBY	6' - 0"	6' - 8"	11	3		7		
C105	CORRIDOR	3' - 6"	6' - 8"	8	3	90-min	6		
C106	OFFICE	3' - 0"	6' - 8"	3	3		1		
C106A	OFFICE	2' - 8"	6' - 8"	3	2		4		
C107A	COMMUNITY ROOM	3' - 0"	6' - 8"	3	3		1		
C107B	COMMUNITY ROOM	3' - 0"	6' - 8"	9	1		9		
C109	LAUNDRY	3' - 0"	6' - 8"	3	3		1		
C110	M. TOILET	3' - 0"	6' - 8"	3	3		3		
C111	F. TOILET	3' - 0"	6' - 8"	3	3		3		
C112A	UTILITY	3' - 0"	6' - 8"	8	3		2		
C112B	UTILITY	6' - 0"	6' - 8"	10	1		10		
C113A	PARKING GARAGE	11' - 5"	10' - 0"						
C113B	PARKING GARAGE	11' - 5"	10' - 0"						
C114	WORKROOM	3' - 0"	6' - 8"	7	1		9		
C115	FENCED AREA	5' - 0"	7' - 0"				12		CHAIN LINK FENCE GATE
C116A	STAIR 2	3' - 0"	6' - 8"	8	3		6		
C116B	STAIR 2	3' - 0"	6' - 8"	8	3		9		
C117A	STORAGE	3' - 0"	6' - 8"	8	3		2		
C117B	STORAGE	8' - 0"	10' - 0"						
C201	STAIR 1	6' - 0"	6' - 8"	11	3		7		
C205	STAIR 2	3' - 0"	6' - 8"	3	6		6		
C301	STAIR 1	6' - 0"	6' - 8"	11	3		7		
C305	STAIR 2	3' - 0"	6' - 8"	3	6		6		
C401	ATTIC WALK	2' - 0"	4' - 0"	12			11		
C402	ATTIC WALK	2' - 0"	4' - 0"	12			11		
C403	ATTIC WALK	2' - 0"	4' - 0"	12			11		
C404	ATTIC WALK	2' - 0"	4' - 0"	12			11		

DOOR SCHEDULE - UNITS

MARK	DOOR DESCRIPTION	WIDTH	HEIGHT	DOOR TYPE	FRAME TYPE	FIRE RATING	HARDWARE GROUP	COMMENTS	STC
A1	UNIT ENTRY	3' - 0"	6' - 8"	3	3	1/3	1		
B1	BEDROOM	3' - 0"	6' - 8"	4	4		2		
C1	BATHROOM	3' - 0"	6' - 8"	4	4		2		
D1	CLOSET	3' - 0"	6' - 8"	4	4		4		
D2	CLOSET	2' - 6"	6' - 8"	4	4		4		
D3	CLOSET	2' - 0"	6' - 8"	4	4		4		
D4	CLOSET	2' - 4"	6' - 8"	4	4		4		
E1	CLOSET - DBL	4' - 0"	6' - 8"	5	4		3		
E2	CLOSET - DBL	5' - 0"	7' - 0"	5	4		3		
E3	CLOSET - DBL	6' - 0"	6' - 8"	5	4		3		
S1	SLIDER	6' - 0"	6' - 8"	6				LOCKING HARDWARE BY MFR	
S2	SLIDER	6' - 0"	6' - 8"	6				LOCKING HARDWARE BY MFR	
S3	CLOSET - DBL	6' - 0"	6' - 8"	5	4		3		



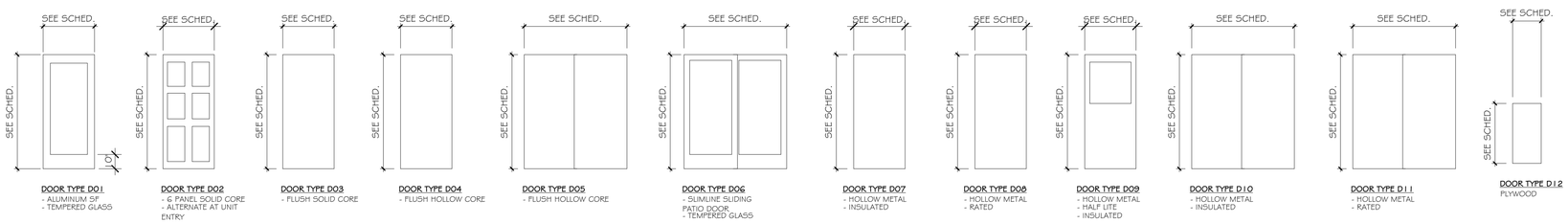
OPENING TYPE A

OPENING TYPE B

OPENING TYPE C
- EGRESS OPENING

OPENING TYPE D
- EGRESS OPENING

OPENING TYPES
1/4" = 1'-0"



DOOR TYPE D01
- ALUMINUM SF
- TEMPERED GLASS

DOOR TYPE D02
- 6 PANEL SOLID CORE
- ALTERNATE AT UNIT ENTRY

DOOR TYPE D03
- FLUSH SOLID CORE

DOOR TYPE D04
- FLUSH HOLLOW CORE

DOOR TYPE D05
- FLUSH HOLLOW CORE

DOOR TYPE D06
- SLIMLINE SLIDING PATIO DOOR
- TEMPERED GLASS

DOOR TYPE D07
- HOLLOW METAL
- INSULATED

DOOR TYPE D08
- HOLLOW METAL
- RATED

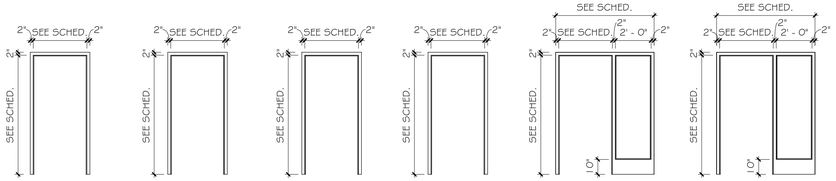
DOOR TYPE D09
- HOLLOW METAL
- HALF LITE
- INSULATED

DOOR TYPE D10
- HOLLOW METAL
- INSULATED

DOOR TYPE D11
- HOLLOW METAL
- RATED

DOOR TYPE D12
PLYWOOD

DOOR TYPES
1/4" = 1'-0"



FRAME TYPE F1
- INTERIOR
- HOLLOW METAL

FRAME TYPE F2
- INTERIOR
- HOLLOW METAL

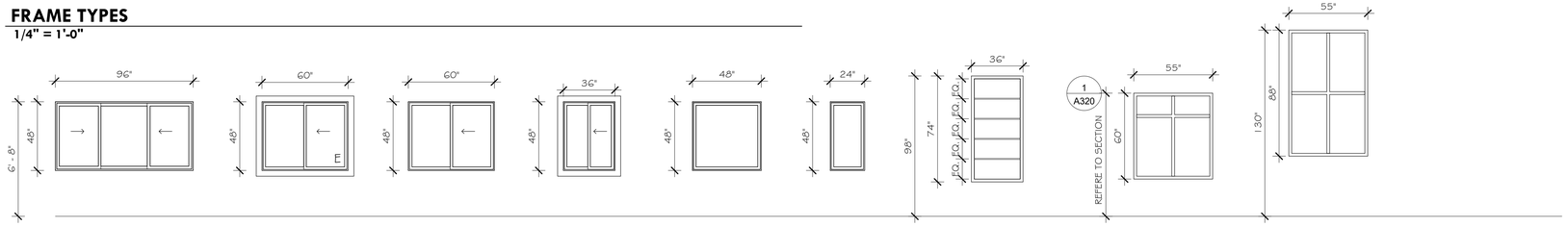
FRAME TYPE F3
- INTERIOR
- HOLLOW METAL
- RATED

FRAME TYPE 4
- INTERIOR
- WOOD FRAME
- PRE HUNG W/ TRIM

FRAME TYPE 5
- ALUMINUM STOREFRONT

FRAME TYPE F6
- INTERIOR
- HOLLOW METAL
- RATED

FRAME TYPES
1/4" = 1'-0"



WINDOW TYPE 'A'
VINYL GLIDING THREE PANE

WINDOW TYPE 'B'
VINYL GLIDING EGRESS

WINDOW TYPE 'C'
VINYL GLIDING

WINDOW TYPE 'D'
VINYL GLIDING

WINDOW TYPE 'E'
VINYL FIXED

WINDOW TYPE 'F'
VINYL FIXED

WINDOW TYPE 'G'
VINYL FIXED

WINDOW TYPE 'H'
VINYL FIXED

WINDOW TYPE 'I'
VINYL FIXED

WINDOW TYPES
1/4" = 1'-0"

BUILDING MATRIX
SEE SPECIFICATION SECTION XX XX XX FOR BUILDING MATRIX OR MATRICES

FINISH SCHEDULE
SEE SPECIFICATION SECTION 09 90 05 FOR ALL FINISHES RELATED TO THE PROJECT

DOOR HARDWARE SCHEDULE
SEE SPECIFICATION SECTION 08 71 00 FOR DOOR HARDWARE GROUPS

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA — 08/24/18 sign date

JAMES L. MOY — 27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18

Drawn By:
HD

Issue Date
08/24/18

SUBMITTALS / REVISIONS

1	06/21/18	90% CD
2	08/24/18	100% MHFA REVIEW

SCALE
As indicated

West Birch Apartments

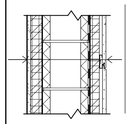
W Branch Street
Princeton, MN

TYPES & SCHEDULES

A901

WALL TYPES

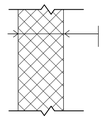
A WALL TYPE 'A'



- 5/8" GYPSUM WALLBOARD
- 2" RIGID BOARD INSULATION - R10
- 18 GA METAL FURRING "Z"CHANNEL (MAX 16" O.C.)
- CMU
- WEATHER RESISTIVE BARRIER
- 18 GA METAL FURRING "Z" CHANNEL
- 1-1/2" RIGID BOARD INSULATION - R 7.5
- 1/2" ATTACHMENT CLIPS BY PANEL MFR.
- 5/8" FIBER CEMENT PANEL AS SPEC'D - SEE ELEVATIONS

SUB TYPE	CMU WIDTH	ASSEMBLY WIDTH	STC RATING	FIRE RATING / UL CODE NOTES
A1	7 5/8"	1'-1 1/4"		
A2	11 5/8"	1'-5 1/4"		

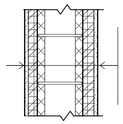
B WALL TYPE 'B'



- STAINED CAST-IN PLACE CONCRETE

SUB TYPE	STUD WIDTH	ASSEMBLY WIDTH	STC RATING	FIRE RATING / UL CODE NOTES
B1	7 5/8"	10 5/8"		

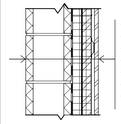
C WALL TYPE 'C'



- 5/8" GYPSUM WALLBOARD
- 1-1/2" RIGID BOARD INSULATION - R7.5
- METAL FURRING "Z" CHANNEL
- CMU
- 2" RIGID BOARD INSULATION - R10
- METAL FURRING "Z" CHANNEL
- 5/8" GYPSUM WALLBOARD

SUB TYPE	CMU WIDTH	ASSEMBLY WIDTH	STC RATING	FIRE RATING / UL CODE NOTES
C1	7 5/8"	1'-0 1/4"		
C2	11 5/8"	1'-4 1/4"		

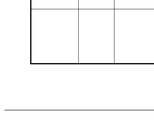
D WALL TYPE 'D'



- CMU
- WEATHER RESISTIVE BARRIER
- 11-1/2" RIGID BOARD INSULATION - R 10
- METAL FURRING "Z" CHANNEL
- 1-1/2" RIGID BOARD INSULATION - R 7.5
- HORIZONTAL FURRING
- VERTICAL SIDING AS SPEC'D - SEE ELEVATIONS

SUB TYPE	CMU WIDTH	ASSEMBLY WIDTH	STC RATING	FIRE RATING / UL CODE NOTES
D1	7 5/8"	1'-0 1/4"		

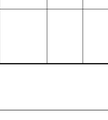
E WALL TYPE 'E'



- 5/8" GYPSUM WALLBOARD
- 2" RIGID BOARD INSULATION - R10
- METAL FURRING "Z"CHANNEL (MAX 16" O.C.)
- CMU
- WEATHER RESISTIVE BARRIER
- METAL FURRING "Z" CHANNEL
- 1-1/2" RIGID BOARD INSULATION - R 7.5
- HORIZONTAL FURRING
- VERTICAL PANEL SIDING AS SPEC'D - SEE ELEVATIONS

SUB TYPE	CMU WIDTH	ASSEMBLY WIDTH	STC RATING	FIRE RATING / UL CODE NOTES
E1	7 5/8"	1'-1 3/4"		
E2	11 5/8"	1'-5 3/4"		

F WALL TYPE 'F'



- CMU
- WEATHER RESISTIVE BARRIER
- METAL FURRING "Z" CHANNEL
- HORIZONTAL FURRING
- VERTICAL SIDING AS SPEC'D - SEE ELEVATIONS

SUB TYPE	CMU WIDTH	ASSEMBLY WIDTH	STC RATING	FIRE RATING / UL CODE NOTES
F1	7 5/8"	9 5/8"		

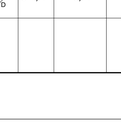
G WALL TYPE 'G'



CMU
2" RIGID BOARD INSULATION - R10
METAL FURRING "Z" CHANNEL
5/8" GYPSUM WALLBOARD

SUB TYPE	CMU WIDTH	ASSEMBLY WIDTH	STC RATING	FIRE RATING / UL CODE NOTES
G1	7 5/8"	9 1/8"		
G2	11 5/8"	1'-1 1/8"		

H WALL TYPE 'H'



5/8" GYPSUM WALL BOARD
METAL FURRING "Z" CHANNEL
CMU
METAL FURRING "Z" CHANNEL
5/8" GYPSUM WALL BOARD

SUB TYPE	CMU WIDTH	ASSEMBLY WIDTH	STC RATING	FIRE RATING / UL CODE NOTES
H1	7 5/8"	10 5/8"		
H2	11 5/8"	1'-2 5/8"		

I WALL TYPE 'I'

- VERTICAL PANEL SIDING AS SPEC'D - SEE ELEVATIONS
- HORIZONTAL FURRING
- WEATHER RESISTANT BARRIER
- 1/2" PLYWOOD SHEATHING
- 2x WOOD STUD @ 16" O.C.
- R-20 BATT INSULATION
- VAPOR BARRIER
- 5/8" GYPSUM WALLBOARD**

SUB TYPE	STUD WIDTH	ASSEMBLY WIDTH	STC RATING	FIRE RATING / UL CODE NOTES
I1	3 1/2"	4 3/4"		
I2	5 1/2"	6 3/4"		

J WALL TYPE 'J' - WALL FURRING

- SIDING AS SPECIFIED - SEE ELEVATIONS
- WEATHER RESISTANT BARRIER
- 1/2" PLYWOOD SHEATHING
- 2x WOOD STUD @ 16" O.C.
- R-20 BATT INSULATION
- VAPOR BARRIER
- 5/8" GYPSUM WALLBOARD**

SUB TYPE	STUD WIDTH	ASSEMBLY WIDTH	STC RATING	FIRE RATING / UL CODE NOTES
J1	5 1/2"	7 3/4"		

K WALL TYPE 'K'

5/8" GYPSUM WALLBOARD
2x WOOD STUD @ 16" O.C.
3 1/2" GLASS FIBER INSULATION
1/2" RESILIENT CHANNEL
5/8" GYPSUM WALLBOARD**
5/8" GYPSUM WALLBOARD**

SUB TYPE	STUD WIDTH	ASSEMBLY WIDTH	STC RATING	FIRE RATING / UL CODE NOTES
K1 1	3 1/2"	5 7/8"	50-54	UL FILE NO. U311 FIRE RATING 1 HR
K2 1	5 1/2"	7 7/8"	50-54	UL FILE NO. U311 FIRE RATING 1 HR

L WALL TYPE 'L'

- 5/8" GYPSUM WALLBOARD**
- 2x WOOD STUD @ 16" O.C.
- 5/8" GYPSUM WALLBOARD

**NOTE: AT ALL WALL TYPES, PROVIDE MOLD RESISTANT PAPER-FACED GYPSUM BOARD AT ALL WET LOCATIONS.

SUB TYPE	STUD WIDTH	ASSEMBLY WIDTH	STC RATING	FIRE RATING / UL CODE NOTES
L1 D	3 1/2"	4 3/4"		
L2 D	5 1/2"	6 3/4"		
L3 1 D	3 1/2"	4 3/4"		GA FILE NO. WP 3640 FIRE RATING 1 HR- INSULATION R15

M WALL TYPE 'M' - WALL FURRING

- 5/8" GYPSUM WALLBOARD**
- 2x WOOD STUD @ 16" O.C.

SUB TYPE	STUD WIDTH	ASSEMBLY WIDTH	STC RATING	FIRE RATING / UL CODE NOTES
M1 D	3 1/2"	4 1/8"		
M2 D	5 1/2"	6 1/8"		

N WALL TYPE 'N'

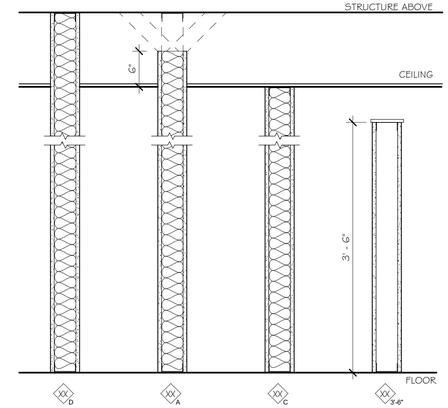
- COMPOSITE SIDING AS SPECIFIED - SEE ELEVATIONS
- WEATHER RESISTANT BARRIER
- 1/2" PLYWOOD SHEATHING
- WOOD STUD @ 16" O.C.

SUB TYPE	STUD WIDTH	ASSEMBLY WIDTH	STC RATING	FIRE RATING / UL CODE NOTES
N1	3 1/2"	5"		

WALL TYPE NOTES

1. PARTITION TYPE SHALL BE J1 D UNLESS NOTED OTHERWISE
2. AT ALL WALL TYPES, PROVIDE MOLD RESISTANT PAPER-FACED GYPSUM BOARD AT ALL WET WALL LOCATIONS
3. PROVIDE 5/8" TYPE "X" FIRE RATED GYP BD AT ALL FIRE RATED WALLS UNLESS NOTED OTHERWISE
4. PROVIDE ABUSE-RESISTANT GYP BD TO 4' 0" A.F.F AT COMMON AREAS AND HALLWAYS UNLESS NOTED OTHERWISE
5. PROVIDE FIRE SEALING AT ALL OPENINGS & PENETRATIONS THAT ARE FIRE RATED WALLS TO MEET THE REQUIRED FIRE RATINGS
6. DIMENSIONS TO FINISH FACE OF GYPSUM BOARD UNLESS NOTED OTHERWISE
7. PROVIDE SOLID BLOCKING WITHIN PARTITIONS AT ALL WALL HUNG OR SUPPORTED EQUIPMENT
8. ELEMENTS OF ACOUSTIC RATED PARTITIONS SHALL EXTEND TO FLOOR OR ROOF DECK; ALL JOINTS AND PENETRATIONS SHALL BE FILLED AND SEALED TO MAINTAIN THE ACOUSTIC RATING
9. SEE STRUCTURAL FOR ADDITIONAL REQUIREMENTS.

WALL TERMINATION TYPES



XX D — D SUBSCRIPT: EXTEND PARTITION TO STRUCTURE ABOVE

XX A — A SUBSCRIPT: EXTEND ENTIRE PARTITION TO 6" ABOVE FINISHED CEILING; EXTEND STUDS OR DIAGONAL BRACE TO STRUCTURE ABOVE

XX C — C SUBSCRIPT: EXTEND PARTITION TO CEILING

XX 3'-6" — DIMENSION SUBSCRIPT: REFER TO DIMENSION FOR PARTITION HEIGHT

WALL FIRE RATING TYPES

XX R — R SUBSCRIPT: SMOKE RESISTIVE CONSTRUCTION

XX 1 — 1 SUBSCRIPT: 1 HOUR FIRE RATING; SEE WALL TYPE NOTES

XX 2 — 2 SUBSCRIPT: 2 HOUR FIRE RATING; SEE WALL TYPE NOTES

XX 3 — 3 SUBSCRIPT: 3 HOUR FIRE RATING; SEE WALL TYPE NOTES

WALL ACOUSTICAL TYPES

XX S — S SUPERSCRIPT: FILL STUD CAVITY WITH ACOUSTICAL INSULATION

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of MINNESOTA — 08/24/18 sign date

JAMES L. MOY — 27036 reg. no.

6/30/2020 reg. exp. date

PROJECT INFO

Commission No.
B/A: 616-18

Drawn By:
HD

Issue Date
08/24/18

SUBMITTALS / REVISIONS

06/21/18	90% CD
08/24/18	100% MHFA REVIEW

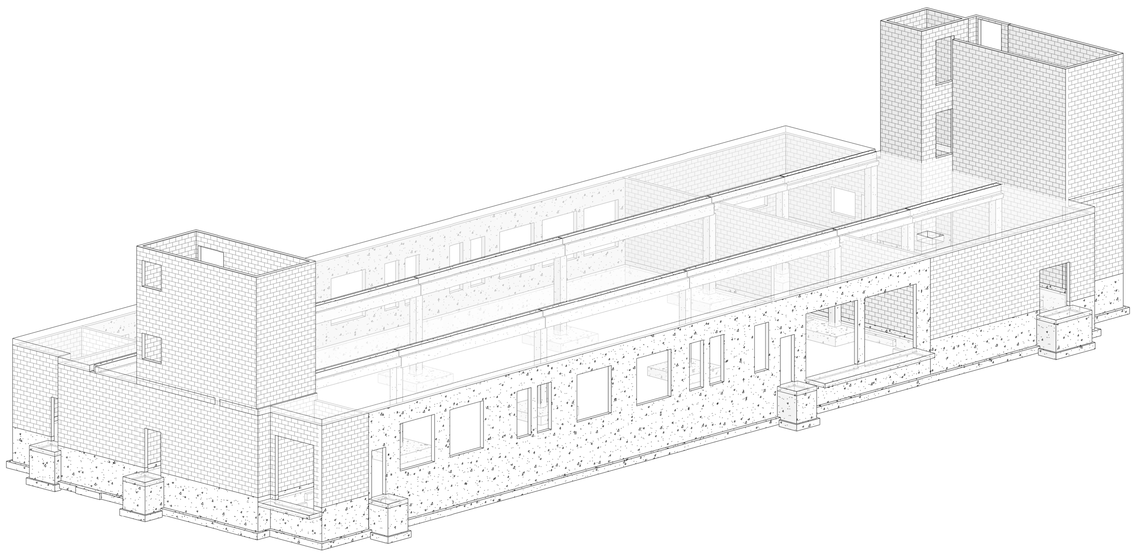
SCALE
1" = 1'-0"

West Birch Apartments

W Branch Street
Princeton, MN

WALL TYPES

A902

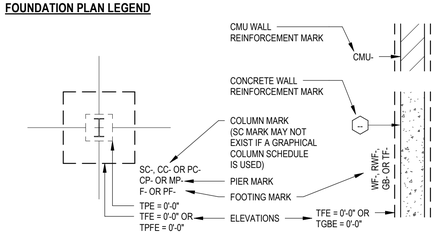


STRUCTURAL SHEET INDEX

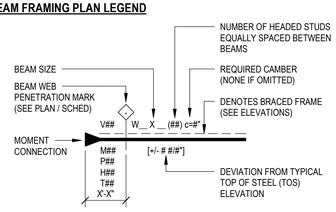
- • INDICATES DRAWINGS ARE BEING ISSUED
- •S INDICATES DRAWINGS ARE BEING ISSUED AND SIGNED FOR THE FIRST TIME
- ▲ INDICATES DRAWINGS ARE BEING ISSUED ON SMALL SHEETS OR WRITE UP
- R INDICATES DRAWINGS ARE BEING ISSUED FOR REFERENCE ONLY (NOT FOR CONSTRUCTION)

SHEET #	ISSUE: 8.24.2018 - 100% MHFA REVIEW						SHEET TITLE
S000	•						STRUCTURAL COVER SHEET
S001	•						GENERAL STRUCTURAL NOTES
S002	•						GENERAL STRUCTURAL NOTES
S003	•						TYPICAL DETAILS - FOUNDATION SCHEDULES
S004	•						TYPICAL DETAILS - FOUNDATION
S005	•						TYPICAL DETAILS - CMU
S006	•						TYPICAL DETAILS - CONCRETE
S007	•						TYPICAL DETAILS - PRECAST PODIUM
S008	•						TYPICAL DETAILS - WOOD SCHEDULES
S009	•						TYPICAL DETAILS - WOOD SCHEDULES
S010	•						TYPICAL DETAILS - WOOD STAIR FRAMING
S111	•						FIRST FLOOR FOUNDATION PLAN
S112	•						SECOND FLOOR FRAMING PLAN
S112a	•						SECOND FLOOR LOADING PLAN
S113	•						THIRD FLOOR FRAMING PLAN
S121	•						ROOF FRAMING PLAN
S601	•						FOUNDATION / FRAMING DETAILS
S602	•						PRECAST FRAMING DETAILS
S603	•						WOOD FRAMING DETAILS

FOUNDATION PLAN LEGEND



STEEL BEAM FRAMING PLAN LEGEND



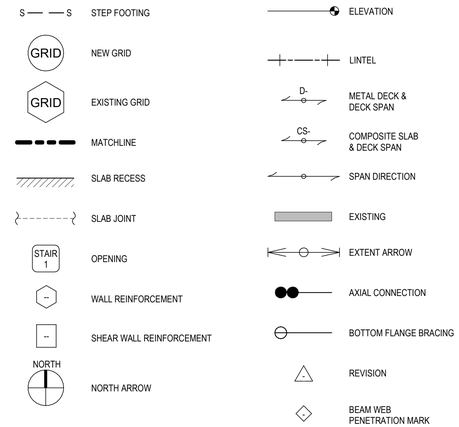
V - INDICATES FACTORED VERTICAL SHEAR FORCE IN KIPS (SEE SCHEDULE IF OMITTED)
M - INDICATES FACTORED END MOMENT FORCE IN KIP-FEET (SEE SCHEDULE IF OMITTED)
P - INDICATES FACTORED END AXIAL FORCE IN KIPS (FORCES ARE FULLY REVERSIBLE UNO)
H - INDICATES FACTORED HORIZONTAL SHEAR FORCE IN KIPS, PERPENDICULAR TO BEAM AXIS
T - INDICATES TORSIONAL MOMENT FORCE IN KIP-FEET

OVERALL PROJECT NOTES

1. 3D VIEWS SHOWN ON THE CONTRACT DOCUMENTS ARE FOR REFERENCE ONLY.

TYPICAL SYMBOLS

- FOR ADDL SYMBOLS SEE PLAN LEGENDS.



STRUCTURAL ABBREVIATIONS

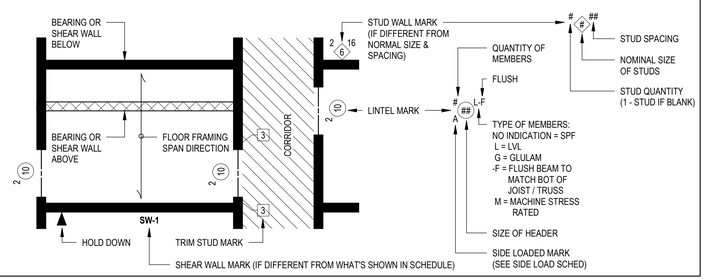
ADD	ADDENDUM
ADDL	ADDITIONAL
ALT	ALTERNATE
ANCH	ANCHOR (ANCHORAGE)
ARCH	ARCHITECT, ARCHITECTURAL
@	AT
BSMT	BASEMENT
BM	BEAM
BRG	BEARING
BTWN	BETWEEN
BLK	BLOCK
BB	BOND BEAM
BOT,BO,B/	BOTTOM
BFE	BOTTOM FOOTING ELEVATION
BLKG	BLOCKING
BLDG	BUILDING
CANT	CANTILEVER
CIP	CAST IN PLACE
CLG	CEILING
CTR	CENTER
CL	CENTERLINE
CLR	CLEAR
COL	COLUMN
COMP	COMPOSITE
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT
CONN	CONNECTION(S)
CONST	CONSTRUCTION
CONST JT	CONSTRUCTION JOINT
CONT	CONTINUOUS
db	REINFORCING BAR DIAMETER
DBL	DOUBLE
DEFL	DEFLECTION
DEG	DEGREES
DL	DEAD LOAD
D, d	DEPTH
DET	DETAIL
DIAG	DIAGONAL
DIA	DIAMETER
DIM	DIMENSION
DWL(S)	DOWEL(S)
DN	DOWN
DWG	DRAWING
EA	EACH
EF	EACH FACE
ELEC	ELECTRICAL
ENGR	ENGINEER
EL	ELEVATION
ELEV	ELEVATOR
EOD	EDGE OF DECK
EOR	ENGINEER OF RECORD
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
ERECT	ERECTION
EW	EACH WAY
EXIST, (E)	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FD	FLOOR DRAIN
FDN/FND	FOUNDATION
FL/FLR	FLOOR
FRMG	FRAMING
FS	FAR SIDE
FT	FOOT (FEET)
FTG	FOOTING
GALV	GALVANIZED
GA	GAGE
GC	GENERAL CONTRACTOR
GB	GRADE BEAM
HD	HEADED
HDR	HEADER
HK	HOOK
HT	HEIGHT
HS	HIGH STRENGTH
HSS	HOLLOW STRUCTURAL TUBE
HORIZ	HORIZONTAL
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH(S)
INFO	INFORMATION
INT	INTERIOR
JT OR JNT	JOINT
JST	JOIST
JBE	JOIST BEARING ELEVATION
JSD	JOIST SEAT DEPTH
K	KIP (1,000 POUNDS)
K/FT	KIPS PER FOOT
KLF	KIPS PER LINEAL FOOT
K/SF	KIPS PER SQUARE FOOT
L	ANGLE
LB	POUND
LG	LENGTH, LONG
LL	LIVE LOAD
LOC	LOCATION
LONG	LONGITUDINAL
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LWT	LIGHT WEIGHT
MAX	MAXIMUM
MCJ	MASONRY CONTROL JOINT
MEP / MECH	MECHANICAL, ELECTRICAL PLUMBING
MEZZ	MEZZANINE
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MTL	METAL
(N)	NEW
NEC	NECESSARY
NO	NUMBER
NOM	NOMINAL
NS	NEAR SIDE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NWT	NORMAL WEIGHT
OC	ON CENTER
OPNG	OPENING
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
/	PER
PC	PRECAST
PERP	PERPENDICULAR
PL	PLATE
PROJ	PROJECTION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POST-TENSIONED
PVC	POLYVINYL CHLORIDE
R	RADIUS
REF	REFERENCE
REINF	REINFORCEMENT
REQD	REQUIRED
REV	REVERSE/REVISION
RD	ROOF DRAIN
RO	ROUGH OPENING
SCHED	SCHEDULE
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SIP	STRUCTURAL INSULATED PANEL
SJI	SJI STEEL JOIST INSTITUTE
SOG	SLAB ON GRADE
SPA	SPACES
SPEC	SPECIFICATIONS
SQ	SQUARE
STD	STANDARD
STL	STEEL
STIFF	STIFFENER
STIR	STIRRUPS
STRUCT	STRUCTURAL
TBE	TOP OF BEAM ELEVATION
TDE	TOP OF DECK ELEVATION
TEMP	TEMPORARY
TEMP STL	TEMPERATURE STEEL
TFE	TOP OF FOOTING ELEVATION
THK	THICK
T & B	TOP AND BOTTOM
TO, T/	TOP OF
TOS	TOP OF STEEL
TOSL	TOP OF SLAB
TRANSV	TRANSVERSE
TWE	TOP OF WALL ELEVATION
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W, w	WIDTH
W/	WITH
W/O	WITH OUT
WP	WORK POINT
WT	WEIGHT
WWF	WELDED WIRE FABRIC

TYPICAL MARKS

BP-	=	BASE PLATE
BRP-	=	BEARING PLATE
B0 OR B0-000 =		CONCRETE BEAM
CC-	=	CONCRETE COLUMN
CCB-	=	CONCRETE COUPLING BEAM
J0 OR J0-000 =		CONCRETE JOIST
CP-	=	CONCRETE PIER
DP-	=	DRILLED PIER
DPC-	=	DRILLED PIER CAP
EP-	=	EMBED PLATE
GB-	=	GRADE BEAM
F-	=	ISOLATED FOOTING
L-	=	LINTEL
MP-	=	MASONRY PIER
PF-	=	PILE FOUNDATIONS
PB-	=	POST-TENSION BEAM
PC-	=	PRECAST COLUMN
RWF-	=	RETAINING WALL FOOTING
SC-	=	STEEL COLUMN
SH-	=	STEEL HANGER
SP-	=	STEEL POST
WF-	=	WALL FOOTING

WOOD FRAMING PLAN LEGEND

- DENOTES 2X FLOOR OR ROOF FRAMING
- DENOTES BEARING OR SHEAR WALLS FROM LEVEL BELOW.
- DENOTES BEARING OR SHEAR WALLS FROM LEVEL ABOVE.



Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

NOT FOR CONSTRUCTION

THESE DOCUMENTS REPRESENT CURRENT PROGRESS AND SHALL NOT BE CONSTRUED AS COMPLETE. USE OF THESE DOCUMENTS FOR PURPOSES OTHER THAN GENERAL REVIEW IS DONE AT THE USER'S OWN RISK.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of MINNESOTA

WILLIAM T. BULLER — 20995 reg. no.

06.30.2020 reg. exp. date

ERA ERICKSEN ROED & ASSOCIATES
Structural Engineers
2550 University Avenue West
Suite 201-S
Saint Paul, MN 55114-1904
651.251.7570
www.eraeng.com

ERA Commission #2018-273

Copyright © ERA

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
MDS/TMR
Issue Date
8.24.2018

SUBMITTALS / REVISIONS
8.24.2018 100% MHFA REVIEW

SCALE
As Indicated

West Birch Apartments

W Branch Street
Princeton, MN

STRUCTURAL COVER SHEET

S000

8/27/2018 9:56:13 AM

GENERAL STRUCTURAL NOTES

These notes supplement the Specifications. Refer to the Specifications for additional requirements.

1. DESIGN CRITERIA:

1.1. BUILDING CODES USED FOR DESIGN:

1.1.1. IBC 2012 with Minnesota amendments.

1.2. STRUCTURAL TESTS AND SPECIAL INSPECTIONS:

1.2.1. Special inspections shall be performed by an independent testing agency according to IBC Chapter 17.

Section 1704.2.5 - Fabricators
Section 1705.2 and Table 1705.2.2 - Steel Construction
Table 1705.3 - Concrete Construction
Section 1705.4 - Masonry Construction
Table 1705.6 - Soils
Table 1705.3 - Post-installed Anchors

1.2.2. Qualifications of special inspectors and frequency of tests and inspections shall be as defined in "Guideline Program for Structural Testing and Special Inspections," 5th Edition, Council of American Structural Engineers of Minnesota (available at http://www.mn-sea.org/).

1.2.3. The Engineer will provide periodic observation to assure conformance with design intent of the construction documents. These observations are not meant to fulfill the requirements of special inspections.

1.2.4. Special inspections of the following items are not within the scope of the structural drawings. Contact the Architect or design professionals with these responsibilities for information about these items.

Sprayed Fire-resistant Materials
Mastic and Intumescent Fire-resistant Coatings
EIFS
Smoke Control

1.2.5. In addition to the special inspections required elsewhere in these drawings, the project specifications, and contract documents, camber shall be verified in a minimum of 10% of all members requiring camber. If, in the opinion of the EOR and Testing Agency, this testing discloses a large ratio (10% or more) of unacceptable cambers, the required percentage of tested cambers may be increased by the EOR to 100% at no expense to the owner. For steel beams and trusses, the fabrication tolerances for camber shall be as defined in AISC 303 "Code of Standard Practice for Steel Buildings and Bridges" (latest edition).

1.3. FUTURE CONSTRUCTION:

1.3.1. VERTICAL: None.

1.3.2. HORIZONTAL: None.

1.4. DESIGN LOADS:

1.4.1. Risk Category:

From IBC Table 1604.5

Risk Category II

1.4.2. DESIGN LIVE LOADS:

Public Areas . . . . . 100 PSF
Residential Areas . . . . . 40 PSF

1.4.3. WIND LOAD:

Ultimate Design Wind Speed: . . . 115 MPH
Exposure Classification: . . . . . B
Internal Pressure Coeff: . . . . . +0.18
. . . . . -0.18
Wind pressures used for the design of exterior components and cladding shall be calculated by a professional engineer registered in the state where the project is located. Calculations shall be submitted for review.

1.4.4. SNOW LOAD:

Ground Snow Load: . . . . . 60 PSF
Flat Roof Snow Load: . . . . . 42 PSF
Snow Exposure Factor: 1.0
Snow Load Importance Factor: . . . 1.0
Roof Thermal Factor: 1.1
Roof Slope Factor: 1.0

1.5. DEFLECTION AND DRIFT

1.5.1. Horizontal framing members are designed for deflections as tabulated. Deflections of horizontal to horizontal framing members are additive. Subcontractors shall make allowance for installation and operation of their systems to accommodate these deflections.

TYPICAL FRAMING MEMBERS
Roof Live Load span/360
Floor Live + Superimposed Dead Load span/480
Construction Load span/180

FRAMING MEMBER SUPPORTING EXTERIOR WALL
Ext wall + live + superimposed dead load . . span/600
(3/8" max)

PREFABRICATED WOOD TRUSSES AND I-JOISTS
Roof Live Load span/360
Roof Total Load span/240
Floor Live Load span/480
Floor Total Load span/360

1.5.2. Story drifting criteria:

Wind: H/400
Seismic: . . . . . 0.020 hx

2. DESIGN STRENGTHS:

2.1. CONCRETE:

2.1.1. All concrete shall be stone aggregate unless noted. See Specifications for additional durability requirements.

2.1.2. Minimum concrete 28-day compressive strength shall be as follows:

Class	f'c (PSI)	Type	Add'l Remarks	Location
A	4000	NWT		Interior Slabs and Walls
B	4500	NWT, Air	Note 1	Exterior Slabs and Walls
C	3000	NWT		Footings

Note 1: Limit Water to Cement Ratio to 0.45

2.2. CONCRETE REINFORCEMENT:

Deformed Bars:	FY =	60 KSI	ASTM A615
Weldable Deformed Bars:	FY =	60 KSI	ASTM A706
Welded Wire Fabric:	FY =	70 KSI	ASTM A185
Micro/Macro Synthetic Fibers:			ASTMC1116

2.3. COLD-FORMED STEEL: See ASTM A1003.

54 mil (16 Gage) and Heavier:	FY =	50 KSI
43 mil (18 Gage) and Lighter:	FY =	33 KSI

2.4. MASONRY:

Assembly Compressive Strength:	f'm =	2,000 PSI	
Masonry Grout:	f'g =	3,000 PSI	
Deformed Bars:	FY =	60 KSI	ASTM A615

2.5. DIMENSIONAL LUMBER:

2.5.1. Structural Framing (beams, joists, studs, plates): Spruce-Pine-Fir #1/#2

Fb = 875 PSI
Fv = 135 PSI
Fc parallel = 1,150 PSI
E = 1,400 KSI

2.5.2. Wood Posts (5x5 and larger): Spruce-Pine-Fir #1 or better

Fb = 850 PSI
Fv = 125 PSI
Fc parallel = 700 PSI
E = 1,300 KSI

2.6. LAMINATED VENEER LUMBER (LVL): Grade 2.0 E

Fb = 2,950 PSI
Fv = 290 PSI
E = 2,000 KSI

2.7. PARALLEL STRAND LUMBER (PSL):

2.7.1. Posts: Grade 1.8 E

Fb = 2,400 PSI
Fv = 190 PSI
Fc parallel = 2,500 PSI
E = 1,800 KSI

2.7.2. Beams 18" deep or less: Grade 2.0 E

Fb = 2,900 PSI
Fv = 290 PSI
Fc perp = 625 PSI
E = 2,000 KSI

2.7.3. Beams deeper than 18": Grade 2.2 E

Fb = 2,900 PSI
Fv = 290 PSI
Fc perp = 625 PSI
E = 2,200 KSI

2.8. LAMINATED STRAND LUMBER (LSL): Grade 1.3 E

Fb = 1,700 PSI
Fv = 425 PSI
Fc perp = 710 PSI
E = 1,300 KSI

2.9. GLUED LAMINATED LUMBER:

Fb = 2,400 PSI
Fv = 265 PSI
E = 1,800 KSI

2.10. PARKING AREAS / STRUCTURE EXPOSED TO WEATHER:

2.10.1. All structural steel and embed plates exposed to weather or located in parking areas shall be hot-dip galvanized unless noted otherwise.

2.10.2. Field welds shall be touched up with 2 coats of zinc rich paint.

3. FOUNDATIONS AND EARTHWORK:

3.1. SOILS AND FOUNDATION ENGINEERING REPORT:

3.1.1. Reference the project's geotechnical report prepared by Braun Intertec, number B1800529, dated February 13, 2018, for additional information and requirements.

3.1.2. This report is for informational purposes only and shall not be considered part of the contract documents. Furthermore, no warranty is made by the owner with regard to the completeness and accuracy of the subsurface investigation data, soil test data, statements and interpretations given in the report.

3.2. GROUND WATER:

3.2.1. Water levels indicated on the boring logs are subject to seasonal and/or annual variations. If necessary, a dewatering system of sufficient capacity shall be installed and operated to maintain the construction area free of water at all times.

3.3. EXCAVATIONS:

3.3.1. Should any questionable conditions be encountered during excavation, notify Owner's Representative immediately.

3.3.2. No engineered fill shall be placed until excavation bottoms have been inspected and approved by the Geotechnical Engineer.

3.3.3. Water shall not be permitted to accumulate in footing excavations.

3.3.4. Provide a minimum of 6 inches of granular fill below all interior slabs-on-grade.

3.3.5. The slab-on-grade design is based on a modulus of subgrade reaction of 150 PCI.

3.4. FOOTINGS:

3.4.1. The foundation design is based on a total load net soil pressure of:

Spread Footings	3000 PSF
Wall Footings	3000 PSF

3.4.2. Foundations are assumed to be supported on native material or properly compacted structural fill. All footing excavations shall be inspected, prior to concrete placement, by the Geotechnical Engineer to verify suitable bearing material of capacity as specified.

3.4.3. Notify the Owner's representative when additional excavation is required to reach suitable bearing material.

3.4.4. Footing steps shall be located generally where indicated on the plan, and shall be installed as detailed.

3.4.5. Bottom of exterior building footings surrounding heated areas are to be at least 60 inches below final outside grade unless dimensioned otherwise. Bottom of exterior building footings at stoops or other unheated areas are to be at least 60 inches below final outside grade unless dimensioned otherwise.

3.4.6. Contractor shall provide frost protection for all footings when footings may be exposed to freezing conditions. Frost protection may include insulating blankets or at least 60 inches of soil above the bottom of footing.

3.4.7. All continuous footings shall be centered under walls unless dimensioned otherwise.

3.5. NON-FROST SUSCEPTIBLE FILL

3.5.1. Where non-frost susceptible fill is required, fill should consist of clean, open graded crushed stone. See the geotechnical report for additional requirements.

3.5.2. Non-frost susceptible fill shall extend below the freeze zone.

3.6. BACKFILLING:

3.6.1. No backfilling and compacting of earth shall be permitted against retaining walls until walls and footings have reached 100% of their design strength, or unless adequate bracing is provided. Bracing must be reviewed by the Engineer.

3.6.2. No backfilling and compacting of earth shall be permitted against basement or other foundation walls until all slabs that support the wall against lateral earth pressure have been poured and have reached 75% of their design strength, or unless adequate bracing is provided. Bracing must be reviewed by the Engineer.

3.6.3. Material used for backfill shall be free draining engineered backfill unless noted otherwise. See the Geotechnical Report for additional information.

3.6.4. Both sides of foundation walls shall be backfilled simultaneously so as to prevent overturning or lateral movement of walls. All grade beams shall be adequately braced to prevent lateral movement during backfilling and compaction.

3.6.5. No fill or backfill shall be settled by the use of water.

3.7. SHEET PILING AND EARTH RETENTION SYSTEMS:

3.7.1. Sheet piling and earth retention systems shall be designed by the Contractor. Design calculations and drawings shall be submitted for review for conformance to the drawings and construction sequences before installation. See Specifications.

4. CONCRETE:

4.1. REFERENCES:

ACI 315	ACI Detailing Manual
ACI 318	Building Code Requirements for Reinforced Concrete
CRSI MSP	Manual of Standard Practice
AWS D1.4	Structural Welding Code - Reinforcing Steel
CRSI	Recommended Practice for Placing Reinforcing Bars
PCI Design Handbook:	Precast and Prestressed Concrete

4.2. REINFORCING STEEL:

4.2.1. The reinforcing steel Contractor shall fabricate all reinforcement and furnish all accessories, chairs, spacer bars and supports necessary to secure the reinforcement unless shown otherwise on the plans and/or details.

4.2.2. Concrete reinforcement shall be placed according to ACI and CRSI "Recommended Practice for Placing Reinforcing Bars".

4.2.3. Reinforcement Placing Tolerances

Clear Distance From Bars To:

A. Soffit on Earth	+/- 1/2"
B. Formed Soffit	+/- 1/4"
C. Formed Side or Vertical Surface	+/- 3/8"
D. Top Surface	
Depth 8" or Less	+/- 1/4"
Depth More than 8", Not More Than 24"	+/- 1/2"
Depth More Than 24"	+/- 1"

Spacing of Bars:

A. Longitudinal Bars in Columns, Girders, and Beams	+/- 1/4"
B. Ties and Stirrups	+/- 1"
C. In Slab Walls	+/- 2"

Longitudinal Location of Bends and Bar Ends:

A. At Discontinuous End of Member	+/- 1/2"
B. All Other Locations	+/- 2"

4.2.4. Minimum Clear Cover For Concrete Reinforcement:

Footings	2" Sides, 3" Bottom, 2" Top
Foundation Walls	
Exterior Face	2"
Interior Face	2" Against Soil
Slabs on Grade	Center of Slab

4.2.5. See typical detail for required bar development lengths and lap splice lengths.

4.2.6. All welded wire fabric shall have one full space plus 2" at splices and wire together.

4.2.7. Continuous top and bottom bars in walls, beams, and grade beams shall be spliced as follows:

1. Top bars - at mid-span
2. Bottom bars - over supports.

4.2.8. Slabs, beams and joists shall not have joints in a horizontal plane. Any stop in concrete work must be made at center of span or at center of support with vertical bulkheads and horizontal keys, unless otherwise shown. All construction joints shall be as detailed unless reviewed by Architect and Structural Engineer.

4.2.9. No welding of reinforcement shall be permitted unless specifically called for or reviewed by the Structural Engineer. Where welding is permitted, all welding of reinforcing bars shall conform to: "Structural Welding Code - Reinforcing Steel". A chemical analysis of the reinforcing bars to be welded shall be submitted for review.

4.3. ANCHORING TO CONCRETE

4.3.1. Headed studs shall be Nelson H4L or S3L with Fu = 65 ksi, or approved equal, unless noted otherwise.

4.3.2. Deformed bar anchors shall be Nelson D2L with FY = 70 ksi or approved equal, unless noted otherwise.

4.3.3. Post-installed anchors shall be installed by qualified personnel in accordance with the Manufacturer's Printed Installation Instructions.

4.3.4. Expansion anchors shall not be loaded until concrete has achieved a minimum age of 7 days. Adhesive anchors shall not be loaded until concrete achieved a minimum age of 21 days.

4.3.5. Expansion anchors shall be Hilti Kwik Bolt TZ or approved equal, unless noted otherwise. Embedment shall be as follows unless noted otherwise:

Diameter	Embedment	Diameter	Embedment
3/8"	2"	5/8"	4"
1/2"	3 1/4"	3/4"	4 3/4"

4.3.6. Adhesive anchors shall be Hilti HIT-RE 500 V3 or HIT-HY 200 with HAS Standard rods or approved equal, unless noted otherwise. Embedment shall be as follows unless noted otherwise:

Diameter	Embedment	Diameter	Embedment
3/8"	3 3/8"	5/8"	5 5/8"
1/2"	4 1/2"	3/4"	6 3/4"

4.3.7. Epoxy for dowels drilled into concrete shall be Hilti HIT-RE 500 V3, HIT-HY 200, or approved equal, unless noted otherwise. Embedment shall be as follows unless noted otherwise:

Bar	Embedment	Bar	Embedment
# 3	3 1/4"	# 5	5 3/4"
# 4	4 3/8"	# 6	6"

4.3.8. Anchor capacity is dependent upon spacing between adjacent anchors and proximity of anchors to edge of concrete. Install anchors in accordance with spacing and edge clearances indicated on the drawings.

4.3.9. Contractor shall verify the location of reinforcing bars and/or prestressing tendons via GPR, X-Ray, or other means before drilling anchor holes. Reinforcing steel shall not be damaged.

5. MASONRY:

5.1. REFERENCES:

IBC 2012	
ACI 530	Building Code Requirements for Concrete Masonry Structures
ACI 530.1	Specification for Concrete Masonry Construction

5.2. CONCRETE MASONRY UNITS:

5.2.1. Concrete masonry units shall conform to ASTM C 90, normal weight.

5.2.2. Structural walls shall be comprised of Plain Double Corner units, Open End ('A' shaped) units, or Double Open End ('H' shaped) units. Stretcher units shall not be used in structural walls.

5.2.3. Store concrete masonry units off the ground, under cover, and in a dry location.

5.2.4. Autoclave Aerated Concrete (AAC) masonry shall not be used.

5.3. MORTAR:

5.3.1. Mortar shall conform to the requirements of ASTM C 270.

5.3.2. Mortar for structural walls below grade shall be Type M. Mortar for other structural walls shall be Type M or S.

5.3.3. Face shells and webs of bed joints shall be fully mortared for all starter courses, columns, pilasters, and cells to be grouted.

5.3.4. Head joints shall be mortared a minimum distance from each face equal to the face shell thickness of the unit.

5.3.5. Do not wet concrete masonry before laying up or grouting.

5.4. GROUT:

5.4.1. Vertical cells to be grouted shall be aligned, and unobstructed openings for grout provided.

5.4.2. Grout shall conform to the requirements of ASTM C 476 and have a slump between 8 and 11 inches.

5.4.3. Masonry walls shall be grouted with 1ift heights not exceeding 5 feet. Pour heights shall not exceed 5 feet unless cleanouts are provided, and 24 feet when cleanouts are provided per ACI 530. Consolidate lifts exceeding 1 foot in height by mechanical vibration and reconsolidate after initial water loss and settlement have occurred.

5.5. REINFORCEMENT:

5.5.1. Masonry walls shall have ladder type horizontal bed joint reinforcement consisting of W1.7 (9 gage) hot-dipped galvanized wire conforming to ASTM A 951. Bed joint reinforcement shall be spaced at 16" OC vertically.

5.5.2. Provide 5/8" cover to bed joint reinforcement for exterior walls or walls below grade. Provide 1/2" cover to bed joint reinforcement for other walls.

5.5.3. Secure vertical reinforcement with bar positioners at bar splices, top and bottom of walls, and at intervals not exceeding 192 bar diameters.

5.5.4. Lap splices shall be in accordance with the table shown in the drawings unless noted otherwise.

5.5.5. Provide a minimum of 1 1/2" cover to deformed bar reinforcement.

5.5.6. When using fine grout, provide a minimum of 1/4" clear distance between reinforcing bars and the face of any masonry unit. When using course grout, provide 1/2" clear distance.

5.5.7. Contractor shall provide Shop Drawings showing lengths, sizes, bending details, and locations of reinforcing steel, wall elevations, and setting diagrams for embedded items.

5.6. LINTELS:

5.6.1. Provide 24" deep minimum solid masonry below all lintel bearing locations.

5.6.2. Masonry lintels shall be comprised of Lintel Block. Reinforcing bars shall be chaired and tied.

5.6.3. Steel lintels and loose lintels shall be galvanized.

5.7. ANCHORING TO MASONRY:

5.7.1. Headed studs shall be Nelson H4L or S3L with FY = 50 ksi, or approved equal, unless noted otherwise.

5.7.2. Deformed bar anchors shall be Nelson D2L with FY = 70 ksi or approved equal, unless noted otherwise.

Anchors installed into grouted cells or bond beams shall be Hilti Kwik Bolt 3 Masonry Anchors or approved equal, unless noted otherwise. Anchors shall not be installed in head joints unless approved by the Engineer. No more than one anchor shall be installed per cell unless approved by the Engineer. Embedment shall be as follows unless noted otherwise:

Diameter	Embedment	Diameter	
Embedment			
1/4"	2"	5/8"	4"
3/8"	2 1/2"	3/4"	4
3/4"			
1/2"	3 1/2"		

5.7.3. Anchors installed into hollow cells shall be Hilti HIT-HY 270 with threaded HAS rods with 2" embedment in HIT-SC screen tubes or approved equal, unless noted otherwise. No more than two anchors shall be installed per cell, and anchors shall not be installed in CMU mortar joints, flange, or cell web.

6. STRUCTURAL WOOD:

6.1. REFERENCES:

IBC 2012	
NFPA	National Design Specification for Wood Construction
NFPA	Design Values for Wood Construction

6.2. DIMENSION LUMBER:

6.2.1. All member sizes given on plan are nominal dimensions.

6.2.2. Spacing of bridging for floor and roof joists shall not exceed 8' or 6 times the nominal joist depth (whichever is greater).

6.2.3. Wood lintels shall bear the full length on all trim studs, columns, posts or other supporting members indicated on plan.

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

NOT FOR CONSTRUCTION

THESE DOCUMENTS REPRESENT CURRENT PROGRESS AND SHALL NOT BE CONSTRUED AS COMPLETE. USE OF THESE DOCUMENTS FOR PURPOSES OTHER THAN GENERAL REVIEW IS DONE AT THE USER'S OWN RISK.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of MINNESOTA

WILLIAM T. BULLER — 20995 reg. no.

06.30.2020 reg. exp. date

ERA ERICKSEN ROED & ASSOCIATES Structural Engineers
2550 University Avenue West
Suite 201-S
Saint Paul, MN 55114-1904
651.251.7570
www.eraeng.com

ERA Commission #2018-273
Copyright © ERA

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
MDS/TMR
Issue Date
8.24.2018

SUBMITTALS / REVISIONS
8.24.2018 100% MHFA REVIEW

SCALE
As Indicated

West Birch Apartments

W Branch Street
Princeton, MN

GENERAL STRUCTURAL NOTES

S001

8/27/2018 9:56:33 AM

6.2.4. All beams and joists not bearing on supporting members shall be framed with "Simpson" joist hangers or equal. Use Type LUSXX for single 2x's and Type LUSXX-2 for double 2x's.

6.2.5. All nailing shall be in accordance with IBC Table No. 2304.10.1 unless noted otherwise.

6.2.6. Bolt nailers and blocking to steel members with 1/2" diameter bolts spaced at 32 inches on center unless noted otherwise.

6.2.7. Roof and ceiling joists are shown as a general layout only. Consider joist spacing shown as the maximum spacing with incidental framing, bracing and blocking added as needed for standard wood frame construction.

6.3. PREFABRICATED ROOF AND FLOOR TRUSSES:

6.3.1. Trusses shall be designed to meet all loading and spans as indicated on the plans. Design trusses for concentrated loads and cantilevers as indicated on architectural and structural plans.

6.3.2. Typical Floor Truss Design Loads:

Top Chord Live Load . . . . See DESIGN LIVE LOADS above
Top Chord Dead Load . . . . 17 psf
Bottom Chord Dead Load . . 8 psf

6.3.3. Typical Roof Truss Design Loads:

Top Chord Live Load . . . . See DESIGN LIVE LOADS and SNOW LOADS above
Top Chord Dead Load . . . . 12 psf
Bottom Chord Dead Load . . 8 psf

6.3.4. Trusses shall be designed and fabricated in accordance with the latest edition of ANSI/TPI 1.

6.3.5. The prefabricated wood truss fabricator is responsible for the design of the trusses, truss connections, etc. Trusses shall be designed and certified by a professional engineer registered in the State where the project is located.

6.3.6. Truss supplier shall furnish all necessary blocking, bracing and connection material to provide a completed installation. This information shall be clearly shown on erection plan.

6.3.7. Contractor shall be responsible for bracing and/or bridging required during construction.

6.3.8. Permanent bracing required by the truss supplier for web members shall be designed and provided by the truss supplier.

6.3.9. Permanent lateral restraint and diagonal bracing shall be installed in accordance with the Structural Building Components Association (SBCA)BCSI B3: "Permanent Restraint / Bracing of Chords and Web Members".

6.3.10. All lumber used in the fabrication of trusses shall be stress graded. Connector plates shall be made of Grade "A" galvanized steel, minimum 20 gage, per TIP Specification.

6.4. LAMINATED VENEER LUMBER:

6.4.1. Laminated Veneer Lumber (indicated LVL on plans) to be supplied and manufactured according to the specification of the Truss Joist Corporation. See Section 1 of these notes for material strength information.

6.5. PARALLEL STRAND LUMBER:

6.5.1. Parallel Strand Lumber (indicated PSL on plans) to be supplied and manufactured according to the specification of the Truss Joist Corporation. See Section 1 of these notes for material strength information.

6.6. LAMINATED STRAND LUMBER:

6.6.1. Laminated Strand Lumber (indicated LSL on plans) to be supplied and manufactured according to the specification of the Truss Joist Corporation. See Section 1 of these notes for material strength information.

6.7. GLUED LAMINATED LUMBER:

6.7.1. Glued laminated members (indicated GL on plans) to be supplied and manufactured according to the specification of the American Institute of Timber Construction. See Section 1 of these notes for material strength information.

7. MISCELLANEOUS:

7.1. DEFERRED STRUCTURAL SUBMITTALS

7.1.1. The design and documentation of some components defined using performance-based specifications may be deferred until after a building permit is obtained.

7.1.2. Deferred submittals include, but are not limited to, the items listed below.

7.1.3. For the following deferred submittals, the Contractor shall submit shop drawings and calculations signed and stamped by a professional engineer registered in the state where components are installed. These shall be submitted for review prior to fabrication.

Stairs
Exterior Cold-Formed Framing
Guardrails and Handrails
Structural Precast
Architectural Precast
Wood Truss Systems

7.1.4. For the following deferred submittals, the Contractor shall submit shop drawings for review prior to fabrication.

Elevators
Window Washing Davits/Supports
Fall Protection Systems
Specialty Retaining Walls
Awnings

7.2. ANCHOR RODS:

7.2.1. All anchor rods for mechanical and electrical equipment shall be furnished and located by the respective Subcontractors and set by the General Contractor except where the other Subcontractors furnish their own concrete pads.

7.3. NON LOAD BEARING PARTITION WALLS:

7.3.1. Non load bearing partition walls are generally not shown on the structural drawings. Care shall be taken by the Contractor to maintain a deflection space between the top of partition walls and floor or roof structure above.

7.3.2. See Typical Details and deflection requirements of horizontal framing members in Section 1 of these Notes for minimum deflection space between top of non load bearing partition walls and overhead structure.

7.4. VERIFICATIONS:

7.4.1. The General Contractor shall verify all openings sizes, pad sizes, and locations with the respective Subcontractors.

7.4.2. Structural steel supplier and erector are responsible for providing deck reinforcement or framing as shown on typical structural details for mechanical roof openings. See mechanical drawings for quantities, sizes and locations. The cost of structural redesign fees shall be borne by the Mechanical Contractor for equipment and/or opening changes made after structural documents have been issued.

7.5. GENERAL:

7.5.1. These drawings do not include necessary components for construction safety.

7.5.2. The structural design is based only on the building in its completed state. Contractors and their subs shall take whatever precautions are necessary to withstand all horizontal and vertical loadings that may be encountered during the construction prior to completion of the building.

7.5.3. During construction, the Contractor may encounter existing conditions which are not now known or are at variance with project documentation (Discovery). Such conditions may interfere with new construction or required protection and/or support of existing Work during construction, or may consist of damage or deterioration to structural materials or components which could jeopardize the structural integrity of the building(s).

7.5.4. The Contractor shall notify the Engineer of all Discoveries that the Contractor believes may interfere with proper execution of the Work or jeopardize the structural integrity of the building(s) prior to proceeding with Work related to such Discoveries.

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

NOT FOR CONSTRUCTION

THESE DOCUMENTS REPRESENT CURRENT PROGRESS AND SHALL NOT BE CONSTRUED AS COMPLETE. USE OF THESE DOCUMENTS FOR PURPOSES OTHER THAN GENERAL REVIEW IS DONE AT THE USER'S OWN RISK.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of MINNESOTA

WILLIAM T. BULLER — 20995 reg. no.

06.30.2020 reg. exp. date

ERA ERICKSEN ROED & ASSOCIATES Structural Engineers
2550 University Avenue West
Suite 201-S
Saint Paul, MN 55114-1904
651.251.7570
www.eraeng.com

ERA Commission #2018-273
Copyright © ERA

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
MDS/TMR
Issue Date
8.24.2018

SUBMITTALS / REVISIONS

8.24.2018 100% MHFA REVIEW

SCALE
As Indicated

West Birch Apartments

W Branch Street
Princeton, MN

GENERAL STRUCTURAL NOTES

S002

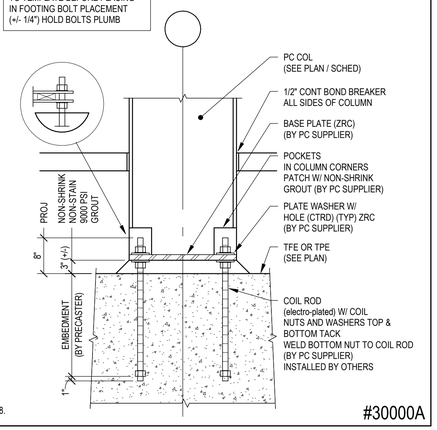
8/27/2018 9:56:36 AM

WALL FOOTING SCHEDULE				
	SIZE			
MARK	WIDTH	THICKNESS	REINFORCEMENT	COMMENTS
WF2-0	2' - 0"	1' - 0"	2 - #5 CONT BOT	

COLUMN FOOTING SCHEDULE					
	SIZE				
MARK	LENGTH	WIDTH	THICKNESS	REINFORCEMENT	COMMENTS
F5-0	5' - 0"	5' - 0"	1' - 0"	5 - #5 EW BOT	
F7-0	7' - 0"	7' - 0"	1' - 2"	7 - #6 EW BOT	
F8-0	8' - 0"	8' - 0"	1' - 4"	8 - #6 EW BOT	
F9-0	9' - 0"	9' - 0"	1' - 6"	9 - #7 EW BOT	

PRECAST COLUMN SCHEDULE			
	SIZE		
MARK	WIDTH	LENGTH	COMMENTS
PC16	1' - 4"	1' - 4"	

GC NOTE: ATTACH ANCHOR BOLTS TO TEMPLATE BEFORE PLACING IN FOOTING BOLT PLACEMENT (+/- 1/4") HOLD BOLTS PLUMB



NOTES:
1. CONNECTION FROM COLUMN TO FOOTING TO MEET CONECTIVITY REQUIREMNTS OF THE ACI 318.

#30000A

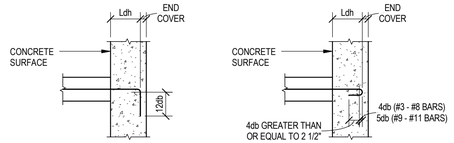
CONCRETE REINFORCEMENT EMBEDMENT LENGTHS FOR STANDARD HOOKS								
BAR SIZE	f'c ≥ 3,000 PSI	f'c ≥ 4,000 PSI	f'c ≥ 5,000 PSI	f'c ≥ 6,000 PSI	f'c ≥ 7,000 PSI	f'c ≥ 8,000 PSI	f'c ≥ 9,000 PSI	f'c ≥ 10,000 PSI
#3	6"	6"	6"	6"	6"	6"	6"	6"
#4	8"	7"	6"	6"	6"	6"	6"	6"
#5	10"	9"	8"	7"	7"	6"	6"	6"
#6	12"	10"	9"	9"	8"	8"	7"	7"
#7	14"	12"	11"	10"	9"	9"	8"	8"
#8	16"	14"	12"	11"	11"	10"	9"	9"
#9	18"	15"	14"	13"	12"	11"	10"	10"
#10	20"	17"	16"	14"	13"	12"	12"	11"
#11	22"	19"	17"	16"	15"	14"	13"	12"

NOTES

Ldh = DEVELOPMENT LENGTH OF HOOK
db = BAR DIAMETER

1. MULTIPLY LENGTHS BY 1.5 WHERE ANY OF THE FOLLOWING OCCUR:
   - SIDE COVER ≤ 2 1/2".
   - END COVER ≤ 2".
2. FOR LIGHT WEIGHT CONCRETE, MULTIPLY LENGTHS BY 1.3.
3. FOR EPOXY BARS, MULTIPLY LENGTHS BY 1.2.

DETAILS



90 DEGREE HOOK **180 DEGREE HOOK**

#00600G

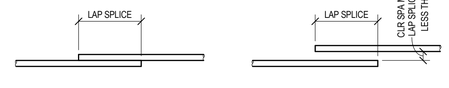
CONCRETE REINFORCEMENT DEVELOPMENT LENGTHS & LAP SPLICE LENGTHS																	
BAR SIZE	f'c ≥ 3,000 PSI		f'c ≥ 4,000 PSI		f'c ≥ 5,000 PSI		f'c ≥ 6,000 PSI		f'c ≥ 7,000 PSI		f'c ≥ 8,000 PSI		f'c ≥ 9,000 PSI		f'c ≥ 10,000 PSI		f'c = ALL
	Ld	Ls	Ld	Ls	Ld	Ls	Ld	Ls	Ld	Ls	Ld	Ls	Ld	Ls	Ld	Ls	Lc
#3	17"	22"	15"	20"	13"	17"	12"	16"	12"	16"	12"	16"	12"	16"	12"	16"	12"
#4	22"	29"	19"	25"	17"	22"	16"	21"	15"	20"	14"	18"	13"	17"	12"	16"	15"
#5	28"	36"	24"	31"	22"	29"	20"	26"	18"	23"	17"	22"	16"	21"	15"	20"	19"
#6	33"	43"	29"	38"	26"	34"	24"	31"	22"	29"	21"	27"	19"	25"	18"	23"	23"
#7	48"	62"	42"	55"	38"	49"	34"	44"	32"	42"	30"	39"	28"	36"	27"	35"	27"
#8	55"	72"	48"	62"	43"	56"	39"	51"	36"	47"	34"	44"	32"	42"	30"	39"	30"
#9	62"	81"	54"	70"	48"	62"	44"	57"	41"	53"	38"	49"	36"	47"	34"	44"	34"
#10	70"	91"	61"	79"	54"	70"	50"	65"	46"	60"	43"	56"	41"	53"	39"	51"	39"
#11	78"	101"	61"	87"	60"	78"	55"	72"	51"	66"	48"	62"	54"	59"	43"	56"	43"

NOTES

Ld = CLASS 'A' LAP SPLICE / DEVELOPMENT LENGTH
Ls = CLASS 'B' LAP SPLICE
Lc = COMPRESSION LAP SPLICE
db = BAR DIAMETER

1. WHERE SPLICES ARE NOT CALLED OUT ON THE DRAWINGS, PROVIDE CLASS B LAP SPLICE (Ls)
2. FOR LIGHT WEIGHT CONCRETE, MULTIPLY LENGTHS BY 1.3.
3. FOR EPOXY BARS, MULTIPLY LENGTHS BY 1.5.
4. FOR HORIZONTAL BARS WITH 12" OF FRESHLY PLACED CONCRETE BELOW, MULTIPLY LENGTHS BY 1.3.
5. WHERE NOTE 3 AND NOTE 4 BOTH APPLY, MULTIPLY LENGTHS BY 1.7.
6. MECHANICAL SPLICES WITH 125% OF BAR YIELD STRENGTH MAY BE USED IN LIEU OF LAPS.

DETAILS



CONTACT LAP SPLICE (PREFERRED) **NON-CONTACT LAP SPLICE**

#00600F

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

NOT FOR CONSTRUCTION

THESE DOCUMENTS REPRESENT CURRENT PROGRESS AND SHALL NOT BE CONSTRUED AS COMPLETE. USE OF THESE DOCUMENTS FOR PURPOSES OTHER THAN GENERAL REVIEW IS DONE AT THE USER'S OWN RISK.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of MINNESOTA

WILLIAM T. BULLER — 20995 reg. no.

06.30.2020 reg. exp. date

ERA ERICKSEN ROED & ASSOCIATES Structural Engineers
2550 University Avenue West
Suite 201-S
Saint Paul, MN 55114-1904
651.251.7570
www.eraeng.com

ERA Commission #2018-273
Copyright © ERA

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
MDS/TMR
Issue Date
8.24.2018

SUBMITTALS / REVISIONS
8.24.2018 100% MHFA REVIEW

SCALE
As Indicated

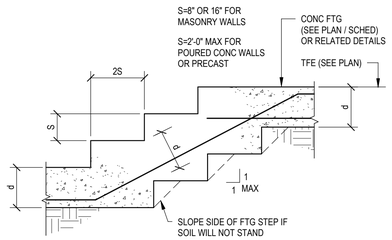
West Birch Apartments

W Branch Street
Princeton, MN

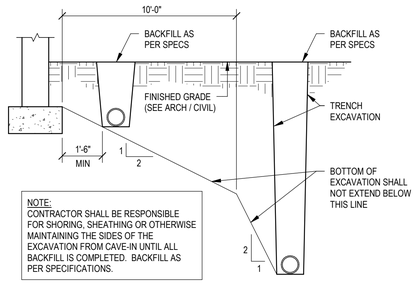
TYPICAL DETAILS - FOUNDATION SCHEDULES

S003

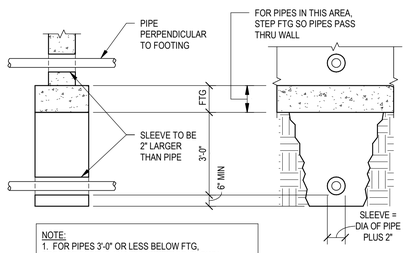
8/27/2018 9:56:40 AM



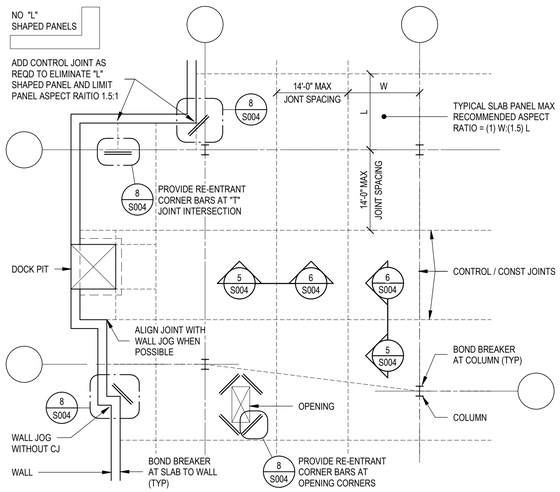
1 S004 STEPPED FOOTING DETAIL
#00701 NO SCALE



2 S004 UTILITIES PARALLEL TO FOOTINGS DETAIL
#00702 NO SCALE



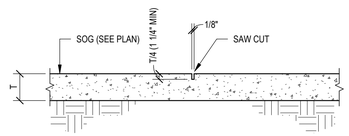
3 S004 PIPES PERPENDICULAR TO FOOTINGS DETAIL
#00703 NO SCALE



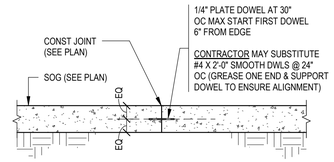
SLAB ON GRADE JOINTING AND ADDITIONAL REINFORCEMENT NOTES
1. MAX CONTROL JOINT SPACING TO BE 14'-0" OC EACH WAY.
2. CONTRACTOR TO SUBMIT SLAB ON GRADE JOINT PLAN THREE WEEKS PRIOR TO SLAB POUR.
3. LIMIT SLAB PANEL ASPECT RATIO TO 1.5:1.
4. MINIMIZE "L" SHAPED PANELS WHEN AT ALL POSSIBLE OR PROVIDE ADDITIONAL JOINTING OR RE-ENTRANT CORNER BARS.
5. WHENEVER POSSIBLE LOCATE JOINTS UNDER WALL AND FIXTURES.
6. SAW CUTTING SHALL BE DONE AS SOON AS THE CONCRETE HAS HARDENED SUFFICIENTLY TO PERMIT CUTTING WITHOUT CHIPPING, SPALLING OR TEARING BUT NOT MORE THAN 12 HOURS AFTER POURING.

4 S004 SOG - JOINTING AND ADDITIONAL REINFORCEMENT REQUIREMENTS
#01901 NO SCALE

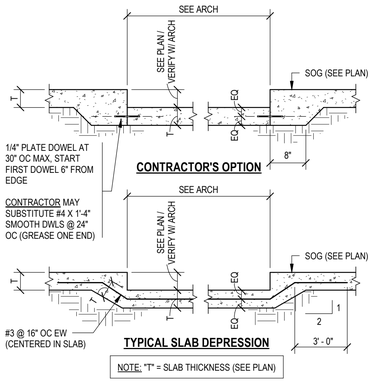
NOTE:
SAW CUTTING SHALL BE DONE AS SOON AS THE CONCRETE HAS HARDENED SUFFICIENTLY TO PERMIT CUTTING WITHOUT CHIPPING, SPALLING OR TEARING BUT NOT MORE THAN 12 HOURS AFTER POURING



5 S004 SOG - CONTROL JOINT
#01902 NO SCALE

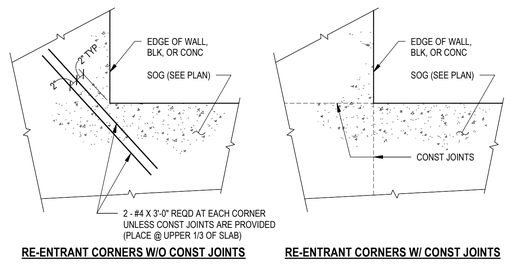


6 S004 SOG - CONSTRUCTION JOINT
#01903 NO SCALE



NOTE: "T" = SLAB THICKNESS (SEE PLAN)

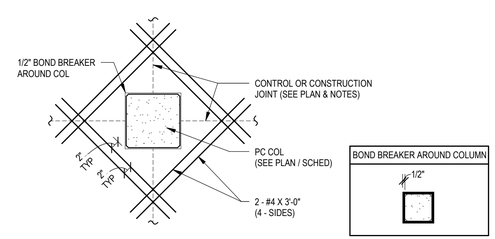
7 S004 SOG - RECESS / DEPRESSION
#01905 NO SCALE



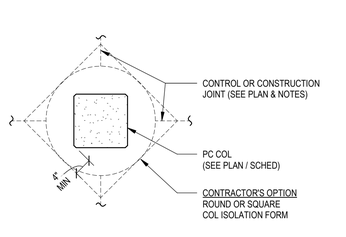
RE-ENTRANT CORNERS W/O CONST JOINTS

RE-ENTRANT CORNERS W/ CONST JOINTS

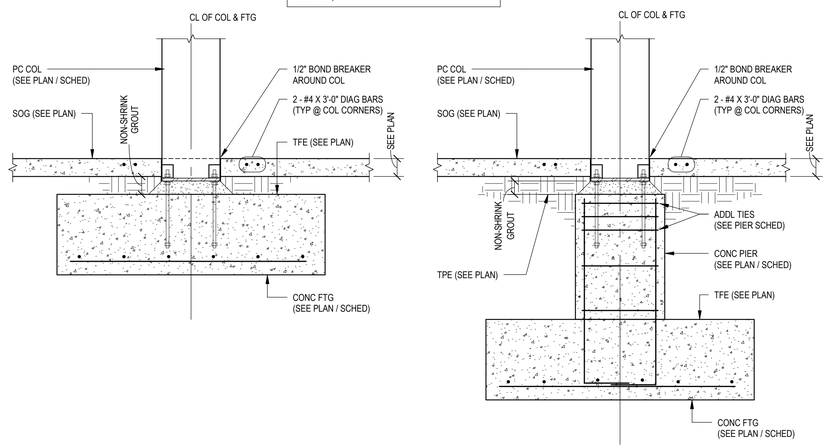
8 S004 SOG - RE-ENTRANT CORNERS
#01904 NO SCALE



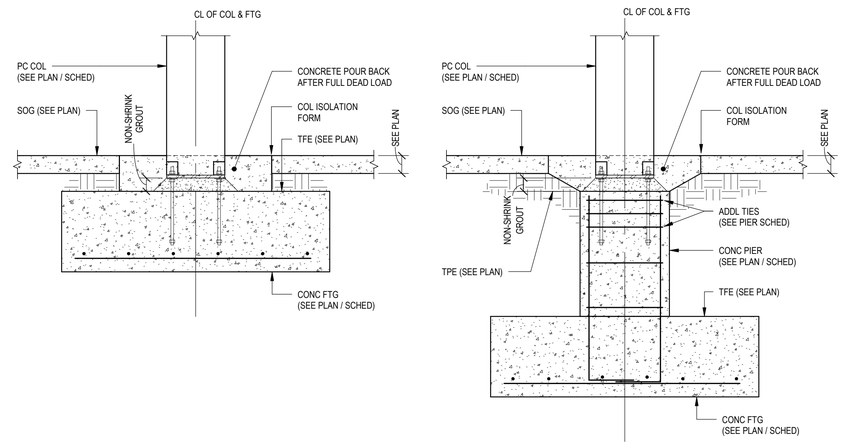
NOTE:
1. USE THIS DETAIL WHEN THE SLAB ON GRADE IS POURED AFTER COLUMNS CARRY THEIR FULL DEAD LOAD OR IF VINYL OR CERAMIC TILE FLOORING IS USED (SEE ARCH FOR FLOORING MATERIAL)



NOTE:
1. USE THESE DETAILS WHEN THE SLAB ON GRADE IS POURED BEFORE COLUMNS CARRY THEIR FULL DEAD LOAD



9 S004 PRECAST - COLUMN WITHOUT ISOLATION JOINT
#30108 NO SCALE



10 S004 PRECAST - COLUMN WITH ISOLATION JOINT
#30109 NO SCALE

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

NOT FOR CONSTRUCTION

THESE DOCUMENTS REPRESENT CURRENT PROGRESS AND SHALL NOT BE CONSTRUED AS COMPLETE. USE OF THESE DOCUMENTS FOR PURPOSES OTHER THAN GENERAL REVIEW IS DONE AT THE USER'S OWN RISK.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of MINNESOTA

WILLIAM T. BULLER 20995 reg. no.

06.30.2020 reg. exp. date

ERA ERICKSEN ROED & ASSOCIATES
Structural Engineers
2550 University Avenue West
Suite 201-S
Saint Paul, MN 55114-1904
651.251.7570
www.eraeng.com

ERA Commission #2018-273
Copyright © ERA

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
MDS/TMR
Issue Date
8.24.2018

SUBMITTALS / REVISIONS
8.24.2018 100% MHFA REVIEW

SCALE
As Indicated

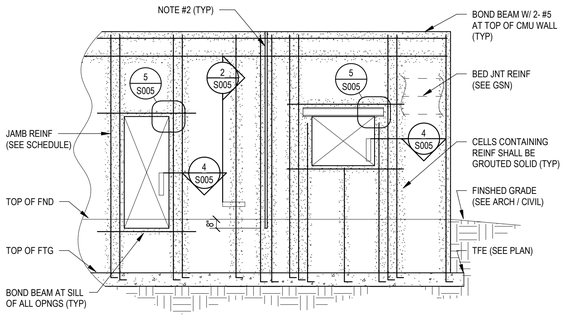
West Birch Apartments

W Branch Street
Princeton, MN

TYPICAL DETAILS - FOUNDATION

S004

8/27/2018 9:56:43 AM



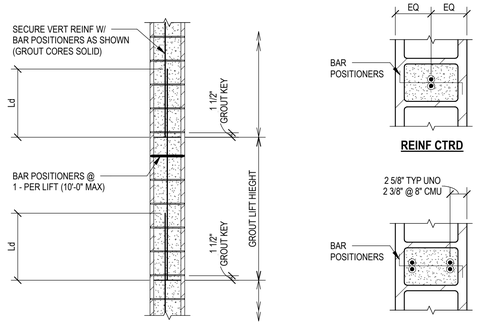
CMU SHAPE REQUIREMENTS			
USE FOR REINFORCED WALLS			USE FOR UNREINFORCED WALLS ONLY
PLAIN DOUBLE CORNER	SINGLE OPEN END ('A' SHAPED)	DOUBLE OPEN END ('H' SHAPED)	STRETCHER

CMU BEARING WALL REINFORCEMENT SCHEDULE				
MARK	REINFORCEMENT		PLACEMENT IN WALL	COMMENTS
	DOWELS	VERTICAL		
CMU-1	#5 @ 48" OC	#5 @ 48" OC	CENTERED	ALL WALLS (UNO)

NOTES:
1. PROVIDE VERTICAL WALL REINFORCING IN FIRST CELL NEXT TO CONTROL JOINTS TYP.
2. MASONRY CONTROL JOINTS SHALL OCCUR A MIN OF 24" AWAY FROM ANY OPENING, AND TERMINATE 8" BELOW TOP OF FOUNDATION WALL. REFER TO JAMB SCHEDULE FOR SPECIFIC REQUIREMENTS BASED ON OPNG SIZE..
3. REINFORCE ALL NON-LOAD BEARING WALLS WITH #5 @ 48" OC VERTICAL. NON-LOAD BEARING CMU WALLS MAY NOT BE SHOWN ON STRUCTURAL DRAWINGS, SEE ARCH FOR SIZE AND LOCATION.

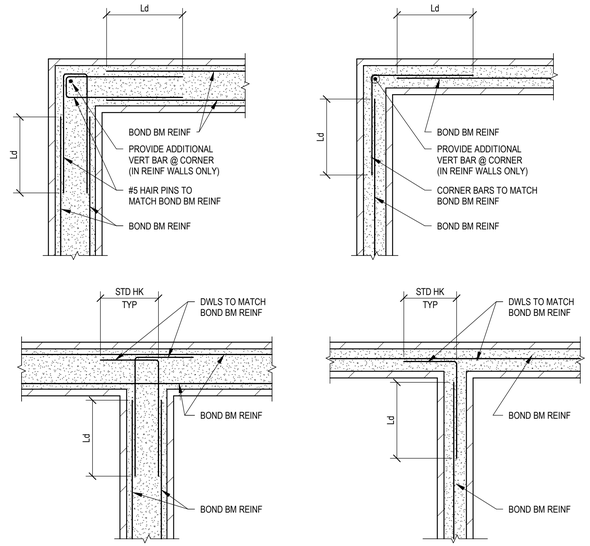
1 S005 CMU - REINFORCING SCHEDULE AND DIAGRAM #00201 NO SCALE

f'm = 2,000 PSI	MASONRY (CMU) REINFORCEMENT DEVELOPMENT LENGTHS & LAP SPLICE LENGTHS (Ld)						
BAR SIZE	CENTERED						EACH FACE
	6" BLOCK	8" BLOCK	10" BLOCK	12" BLOCK	14" BLOCK	16" BLOCK	ALL
#3	12"	12"	12"	12"	12"	12"	12"
#4	17"	12"	12"	12"	12"	12"	22"
#5	27"	19"	19"	19"	19"	19"	34"
#6	52"	37"	29"	23"	20"	19"	54"
#7	-	51"	40"	32"	27"	24"	63"
#8	-	72"	61"	49"	41"	36"	72"
#9	-	-	78"	63"	53"	46"	81"



NOTES:
1. LOCATE BAR POSITIONERS AT SPLICES, TOP AND BOTTOM OF WALLS, AND AT INTERVALS NOT EXCEEDING 8'-0".

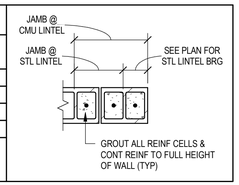
2 S005 CMU - LAP SPLICE SCHEDULE #00200D NO SCALE



3 S005 CMU - REINFORCEMENT AT WALL INTERSECTIONS #00205 NO SCALE

CMU JAMB REINFORCEMENT SCHEDULE		
CLEAR OPNG WIDTH	# OF GROUTED CORES @ JAMB	REINFORCEMENT AT EA CORE
≤ 2'-8"	1 CORE	1- #5 CENTERED
≤ 6'-8"	2 CORE	1- #5 CENTERED
≤ 10'-4"	3 CORE	1- #5 CENTERED
≤ 12'-8"	4 CORE	1- #5 CENTERED

NOTE:
WHERE OPNG SIZE IS NOT A MASONRY (CMU) DIMENSION SUCH THAT UNITS MUST BE CUT, DO NOT COUNT PARTIAL UNITS AS PART OF JAMB.



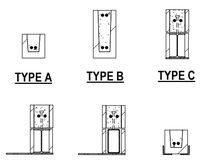
4 S005 CMU - JAMB REINFORCEMENT SCHEDULE #00202 NO SCALE

LINTEL SCHEDULE					
MARK	TYPE	LINTEL SIZE	BEARING PLATE SIZE	BEARING	COMMENTS
L1	A	8" X 8"d BOND BEAM W/ 2 - #5 CONT (BOT)			
L2	B	8" X 16"d BOND BEAM W/ 2 - #6 CONT (T & B)	-	8"	-
L3	B	8" X 24"d BOND BEAM W/ 2 - #6 CONT (BOT)	-	8"	-
L4	B	8" X 32"d BOND BEAM W/ 2 - #6 CONT (BOT)	-	8"	-

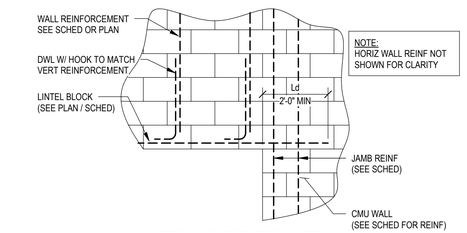
NOTES

1. VERIFY ALL OPENING SIZES AND LOCATIONS W/ ARCH.
2. PROVIDE 8" MIN BEARING EACH END OF STEEL LINTELS.
3. WIDTH OF BOTTOM PLATE TO BE 1/2" LESS THAN TOTAL WALL THICKNESS.
4. BOTTOM PLATES MAY BE OFFSET FROM BEAM CENTER LINE. (VERIFY WITH WALL CONSTRUCTION).
5. PROVIDE LINTELS IN NON-STRUCTURAL BLOCK PARTITION WALLS AS FOLLOWS:
   a) OPENINGS LESS THAN 5'-0" WIDE, USE 8"d BOND BEAM W/ 2 - #5 CONT BOT.
   b) OPENINGS 5'-0" WIDE TO 12'-0" WIDE, USE 16"d BOND BEAM W/ 2 - #5 CONT BOT.
   c) OPENINGS 12'-0" TO 14'-0" WIDE, USE 24"d BOND BEAM W/ 2 - #5 CONT BOT.
6. NO MASONRY VERTICAL CONTROL JOINTS ARE TO BE LOCATED WITHIN 24" OF AN OPENING.
7. MASONRY LINTELS SHALL BE SHORED UNTIL GROUT HAS REACHED 75% OF DESIGN STRENGTH AND WALL HAS BEEN INSTALLED TO DECK ABOVE.
8. PROVIDE LOOSE BRICK SUPPORT LINTELS AS FOLLOWS:
   - L4 X 4 X 5/16 (LLV) FOR OPENINGS UP TO 4'-0" WIDE.
   - L6 X 4 X 3/8 (LLV) FOR OPENINGS GREATER THAN 4'-0" TO 6'-4" WIDE.
   - L8 X 4 X 1/2 (LLV) FOR OPENINGS GREATER THAN 6'-4" TO 8'-8" WIDE.
   a) LOOSE LINTELS TO BE PLACED WITH VERTICAL LEG OF ANGLE TIGHT AGAINST BACK OF BRICK.
   b) PROVIDE 4" MIN BEARING EACH END OF LOOSE LINTEL.

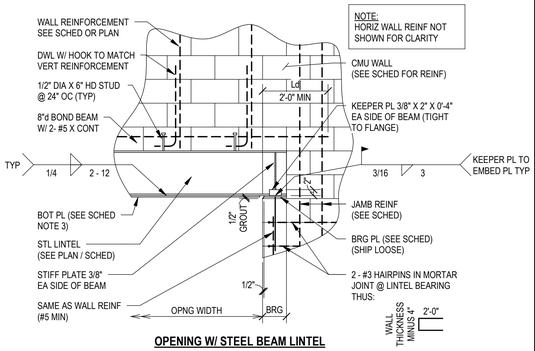
TYPES



DETAILS

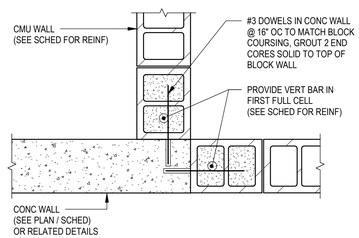


OPENING W/ BOND BEAM LINTEL

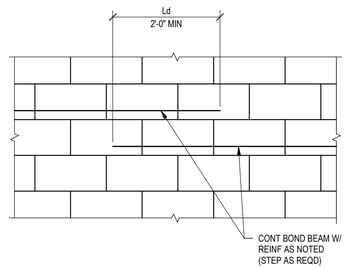


OPENING W/ STEEL BEAM LINTEL

5 S005 CMU - LINTEL SCHEDULE #00200B NO SCALE



6 S005 CMU - PLAN AT CMU TO CONCRETE WALL TRANSITION #00211 NO SCALE



7 S005 CMU - BOND BEAM STEP #00206 NO SCALE

8/27/2018 9:56:47 AM

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

NOT FOR CONSTRUCTION

THESE DOCUMENTS REPRESENT CURRENT PROGRESS AND SHALL NOT BE CONSTRUED AS COMPLETE. USE OF THESE DOCUMENTS FOR PURPOSES OTHER THAN GENERAL REVIEW IS DONE AT THE USER'S OWN RISK.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of MINNESOTA

WILLIAM T. BULLER 20995 reg. no.

06.30.2020 reg. exp. date

ERA ERICKSEN ROED & ASSOCIATES Structural Engineers
2550 University Avenue West
Suite 201-S
Saint Paul, MN 55114-1904
651.251.7570
www.eraeng.com

ERA Commission #2018-273
Copyright © ERA

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
MDS/TMR
Issue Date
8.24.2018

SUBMITTALS / REVISIONS
8.24.2018 100% MHFA REVIEW

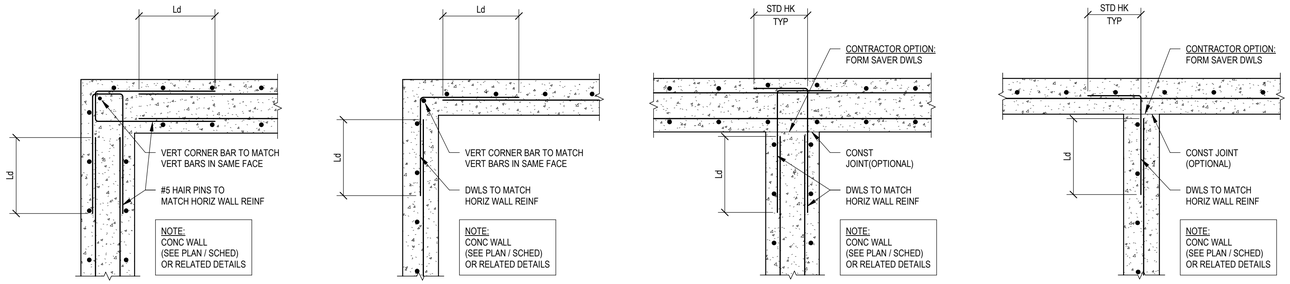
SCALE
As Indicated

West Birch Apartments

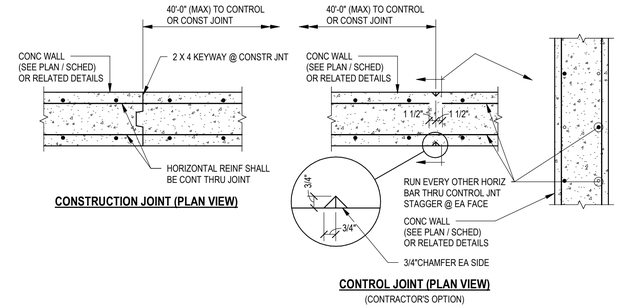
W Branch Street
Princeton, MN

TYPICAL DETAILS - CMU

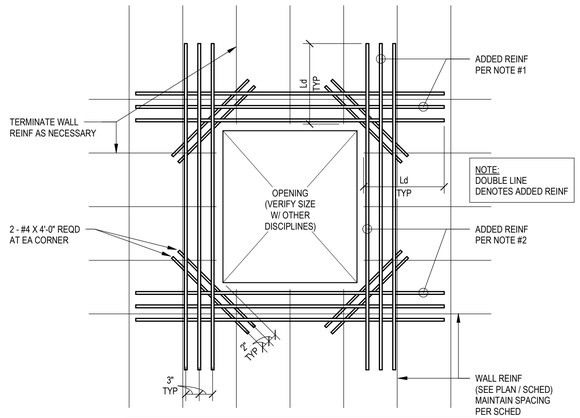
S005



1 S006 CONCRETE - REINFORCING AT WALL INTERSECTIONS
#00704 NO SCALE



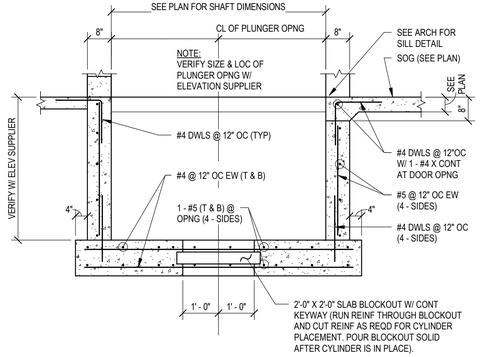
2 S006 CONCRETE WALL - CONSTRUCTION / CONTROL JOINT
#00705 NO SCALE



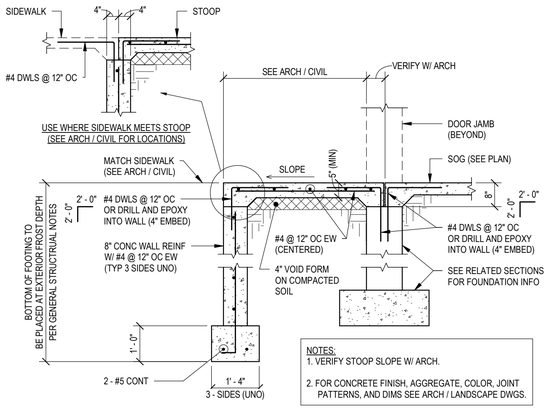
NOTES:

1. ALL BARS INTERRUPTED BY THE OPENING SHALL BE REPLACED WITH ADDITIONAL REINFORCEMENT TO MATCH THE BARS THAT ARE INTERRUPTED. PLACE HALF OF THE ADDITIONAL REINFORCEMENT ON EACH SIDE OF OPENING. IF AN ODD NUMBER OF BARS ARE INTERRUPTED ROUND UP A BAR TO HAVE EQUAL ADDITIONAL BARS ON ALL SIDES.
2. PROVIDE ONE ADDITIONAL BAR TO MATCH WALL REINFORCEMENT ON ALL SIDES OF THE OPENING IN ADDITION TO THE INTERRUPTED BARS.
3. AT OPENINGS LESS THAN 12", REINFORCEMENT AS DETAILED MAY BE ADJUSTED TO BOTH SIDES OF OPENING.

3 S006 CONCRETE - ADDL REINF AT WALL OPENINGS
#00707 NO SCALE



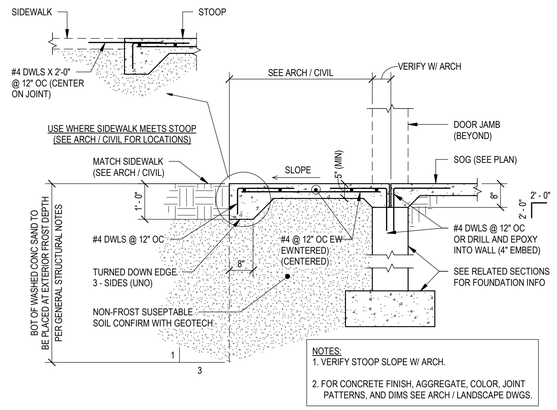
4 S006 ELEVATOR PIT DETAIL
1/2" = 1'-0"



NOTES:
1. VERIFY STOOP SLOPE W/ ARCH.
2. FOR CONCRETE FINISH, AGGREGATE, COLOR, JOINT PATTERNS, AND DIMS SEE ARCH / LANDSCAPE DWGS.

5 S006 CONCRETE - STOOP
#00708 NO SCALE

REQUIRED SPLICE LENGTHS FOR UNCOATED REINFORCEMENT CONCRETE STRENGTH f'c = 4,000 psi								
BAR SIZE	NORMAL WEIGHT				LIGHT WEIGHT			
	TOP BARS		OTHER BARS		TOP BARS		OTHER BARS	
	CLASS A	CLASS B	CLASS A	CLASS B	CLASS A	CLASS B	CLASS A	CLASS B
#3	1'-7"	2'-1"	1'-3"	1'-7"	2'-1"	2'-8"	1'-7"	2'-1"
#4	2'-1"	2'-9"	1'-7"	2'-1"	2'-9"	3'-6"	2'-1"	2'-9"
#5	2'-7"	3'-5"	2'-0"	2'-7"	3'-5"	4'-5"	2'-7"	3'-5"
#6	3'-1"	4'-1"	2'-5"	3'-1"	4'-1"	5'-3"	3'-1"	4'-1"
#7	4'-6"	5'-11"	3'-6"	4'-6"	5'-11"	7'-8"	4'-6"	5'-11"
#8	5'-2"	6'-9"	4'-0"	5'-2"	6'-9"	8'-9"	5'-2"	6'-9"
#9	5'-10"	7'-7"	4'-6"	5'-10"	7'-7"	9'-10"	5'-10"	7'-7"
#10	6'-7"	8'-6"	5'-1"	6'-7"	8'-6"	11'-1"	6'-7"	8'-6"
#11	7'-3"	9'-6"	5'-7"	7'-3"	9'-6"	12'-3"	7'-3"	9'-6"



NOTES:
1. VERIFY STOOP SLOPE W/ ARCH.
2. FOR CONCRETE FINISH, AGGREGATE, COLOR, JOINT PATTERNS, AND DIMS SEE ARCH / LANDSCAPE DWGS.

6 S006 CONCRETE - STOOP
#00709 NO SCALE

8/27/2018 9:56:50 AM

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

NOT FOR CONSTRUCTION

THESE DOCUMENTS REPRESENT CURRENT PROGRESS AND SHALL NOT BE CONSTRUED AS COMPLETE. USE OF THESE DOCUMENTS FOR PURPOSES OTHER THAN GENERAL REVIEW IS DONE AT THE USER'S OWN RISK.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of MINNESOTA

WILLIAM T. BULLER — 20995 reg. no.

06.30.2020 reg. exp. date

ERA ERICKSEN ROED & ASSOCIATES
Structural Engineers
2550 University Avenue West
Suite 201-S
Saint Paul, MN 55114-1904
651.251.7570
www.eraeng.com

ERA Commission #2018-273
Copyright © ERA

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
MDS/TMR
Issue Date
8.24.2018

SUBMITTALS / REVISIONS
8.24.2018 100% MHFA REVIEW

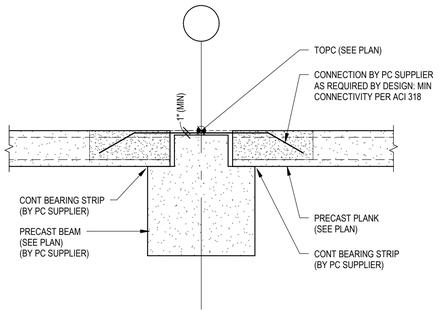
SCALE
As Indicated

West Birch Apartments

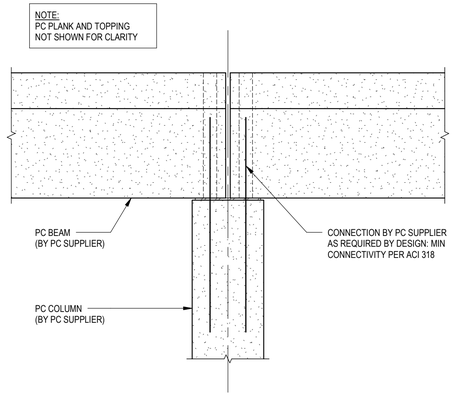
W Branch Street
Princeton, MN

TYPICAL DETAILS - CONCRETE

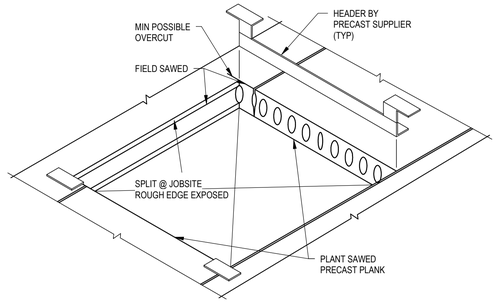
S006



1 S007 PRECAST - PLANK BEARING ON BEAM #30201 NO SCALE



2 S007 PRECAST - BEAM BEARING ON COLUMN #30207 NO SCALE



3 S007 PRECAST - OPENING IN PLANK HEADER #30101 NO SCALE

PRECAST DETAILS INDICATE GENERAL PRECAST FRAMING INTENT. FINAL PRECAST DETAILING MAY VARY FROM WHAT IS INDICATED ON THE CONTRACT DOCUMENTS, SEE APPROVED PRECAST SHOP DRAWINGS FOR ACTUAL CONDITIONS.

ALL PRECAST CONNECTIONS ARE THE RESPONSIBILITY OF THE PRECAST SPECIALTY ENGINEER, NOT ALL PRECAST CONNECTIONS ARE SHOWN NOR DETAILED IN THE CONTRACT DOCUMENTS. ALL PRECAST CONNECTIONS TO BE DESIGNED PER STRUCTURAL DRAWINGS AND TO MEET CODE MINIMUM CONNECTIVITY REQUIREMENTS.

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

NOT FOR CONSTRUCTION

THESE DOCUMENTS REPRESENT CURRENT PROGRESS AND SHALL NOT BE CONSTRUED AS COMPLETE. USE OF THESE DOCUMENTS FOR PURPOSES OTHER THAN GENERAL REVIEW IS DONE AT THE USER'S OWN RISK.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of MINNESOTA

WILLIAM T. BULLER — 20995 reg. no.

06.30.2020 reg. exp. date

ERA ERICKSEN ROED & ASSOCIATES
Structural Engineers
2550 University Avenue West
Suite 201-S
Saint Paul, MN 55114-1904
651.251.7570
www.eraeng.com

ERA Commission #2018-273
Copyright © ERA

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
MDS/TMR
Issue Date
8.24.2018

SUBMITTALS / REVISIONS
8.24.2018 100% MHFA REVIEW

SCALE
As Indicated

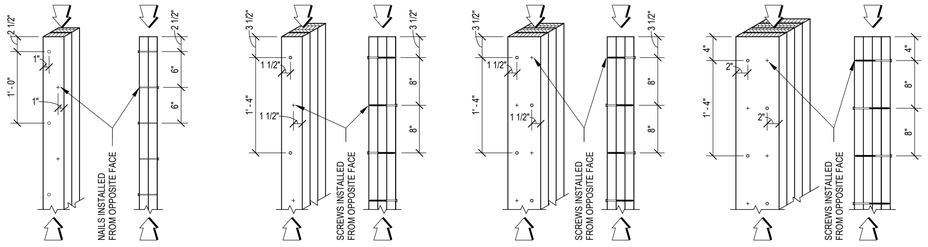
West Birch Apartments

W Branch Street
Princeton, MN

TYPICAL DETAILS - PRECAST PODIUM

S007

8/27/2018 9:56:54 AM



TWO 2" X 4" LAMINATIONS WITH ONE ROW OF STAGGERED 10d COMMON WIRE NAILS (D = 0.148", L = 3")

THREE 2" X 4" LAMINATIONS WITH ONE ROW OF STAGGERED SIMPSON SDW SCREWS (L = 4 3/8")

THREE 2" X 6" LAMINATIONS WITH TWO ROWS OF STAGGERED SIMPSON SDW SCREWS (L = 4 3/8")

FOUR 2" X 6" OR FOUR 2" X 8" LAMINATIONS (SOFTWOODS) WITH TWO ROWS OF STAGGERED SIMPSON SDW SCREWS (L = 6")

1 S008 WOOD - STUD PACK CONNECTION REQUIREMENTS
#10001 NO SCALE

WOOD SHEAR WALL LOCATION SCHEDULE					
FLOOR	PARTY WALLS		CORRIDOR WALLS	EXTERIOR WALLS	STAIR / ELEVATOR SHAFT WALLS
ROOF - LEVEL 3	SW-6		SW-4	SW-6	CMU
LEVEL 3 - LEVEL 2	SW-6		SW-4	SW-6	CMU
LEVEL 2 - LEVEL 1	-		-	-	CMU

WOOD SHEAR WALL TYPE SCHEDULE

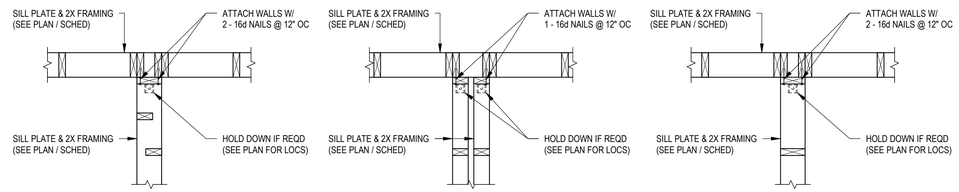
MARK	WALL DESCRIPTION	FASTENING PATTERN				BLOCKED	ANCHOR BOLT SPACING	SILL PLATE CONNECTION THROUGH FLOOR SHEATHING
		FASTENER SIZE	SPACING		FASTENER LENGTH PENETRATION			
			EDGE	FIELD				
SW-1	1 - LAYER 5/8" GYP BD ONE SIDE	NO. 6 SCREW	8" OC	12" OC	DEPTH 1 1/4" LONG	NO	48" OC	(3) 16d NAILS PER STUD SPACE
SW-2	1 - LAYER 5/8" GYP BD ONE SIDE	6d	7" OC	7" OC	1 7/8" LONG	NO	48" OC	(3) 16d NAILS PER STUD SPACE
SW-3	1 - LAYER 5/8" GYP BD ONE SIDE	6d	4" OC	4" OC	1 7/8" LONG	NO	48" OC	(3) 16d NAILS PER STUD SPACE
SW-4	1 - LAYER 5/8" GYP BD ONE SIDE	6d	4" OC	4" OC	1 7/8" LONG	YES	48" OC	(3) 16d NAILS PER STUD SPACE
SW-5	1 - LAYER 5/8" GYP BD TWO SIDES	6d	7" OC	7" OC	1 7/8" LONG	NO	48" OC	(3) 16d NAILS PER STUD SPACE
SW-6	1 - LAYER 5/8" GYP BD TWO SIDES	6d	4" OC	4" OC	1 7/8" LONG	NO	48" OC	(6) 16d NAILS PER STUD SPACE
SW-7	1 - LAYER 5/8" GYP BD TWO SIDES	6d	4" OC	4" OC	1 7/8" LONG	YES	40" OC	(6) 16d NAILS PER STUD SPACE
SW-8	2 - LAYERS 5/8" GYP BD ONE SIDE	6d (BASE LAYER)	9" OC	9" OC	1 7/8" LONG	YES	48" OC	(3) 16d NAILS PER STUD SPACE
		8d (FACE LAYER)	7" OC	7" OC	2 3/8" LONG			
SW-9	2 - LAYERS 5/8" GYP BD TWO SIDES	6d (BASE LAYER)	9" OC	9" OC	1 7/8" LONG	YES	24" OC	(6) 16d NAILS PER STUD SPACE
		8d (FACE LAYER)	7" OC	7" OC	2 3/8" LONG			
SW-10	1 - LAYER 1/2" OSB PLYWOOD ONE SIDE	10d	6" OC	12" OC	1 1/2" PENETRATION INTO STUD (MIN)	YES	40" OC	(6) 16d NAILS PER STUD SPACE
SW-11	1 - LAYER 1/2" OSB PLYWOOD ONE SIDE	10d	4" OC	12" OC	1 1/2" PENETRATION INTO STUD (MIN)	YES	24" OC	(9) 16d NAILS PER STUD SPACE
SW-12	1 - LAYER 1/2" OSB PLYWOOD ONE SIDE	10d	3" OC	12" OC	1 1/2" PENETRATION INTO STUD (MIN)	YES	16" OC	(9) 16d NAILS PER STUD SPACE
SW-13	1 - LAYER 1/2" OSB PLYWOOD ONE SIDE	10d	2" OC	12" OC	1 1/2" PENETRATION INTO STUD (MIN)	YES	16" OC	(12) 16d NAILS PER STUD SPACE

NOTES - GENERAL:
1. SHEATHING SHOWN IS FOR SHEAR STRENGTH OF WALLS ONLY. ADDITIONAL LAYERS OF MATERIAL MAY BE REQUIRED FOR SOUND, FIRE RATING, WEATHER RESISTANCE OR OTHER ARCHITECTURAL REASONS. SEE ARCHITECTURAL WALL TYPES FOR ADDITIONAL INFORMATION.
2. ANY SHEATHING LAYERS APPLIED OUTSIDE OF RESILIENT CHANNEL DO NOT COUNT TOWARD MEETING THE REQUIREMENTS OF THIS SCHEDULE.
3. AT DOUBLE WALL LOCATIONS, THE DESIGNATION APPLIES TO EACH WALL WITHIN THE UNIT SEPARATION WALL ASSEMBLY.
4. ALL WALLS ABOVE ARE TYPICAL UNO ON PLAN.
5. ALL ANCHORS TO BE 5/8" DIA X 3" MIN EMBED SIMPSON TITEN HD SCREW ANCHOR OR APPROVED EQUAL.

NOTES - GYP PANEL SHEAR WALLS:
1. WHERE BLOCKED WALLS ARE NOTED, BLOCKING SHALL BE 2" NOMINAL OR GREATER. ALL JOINTS IN SHEATHING SHALL OCCUR OVER AND BE FASTENED TO COMMON FRAMING MEMBERS OR COMMON BLOCKING.
2. 6D COOLER NAILS SHALL HAVE A DIAMETER OF 0.092", BE 1 7/8" LONG AND HAVE A 1/4" HEAD. ALTERNATE FASTENERS: WALLBOARD NAIL - 0.0915" DIAMETER X 1 7/8" LONG WITH 19/64" HEAD; 0.120 NAIL X 1 3/4" LONG WITH 3/8" HEAD.
3. 8D COOLER NAILS SHALL HAVE A DIAMETER OF 0.113", BE 2 3/8" LONG AND HAVE A 0.281" HEAD. ALTERNATE FASTENERS: WALLBOARD NAIL - 0.113" DIAMETER X 2 3/8" LONG WITH 3/8" HEAD; 0.120 NAIL X 2 3/8" LONG WITH 3/8" HEAD.
4. #6 SCREWS, WHERE NOTED ABOVE IN THE FASTENER SIZE COLUMN, SHALL BE TYPE S OR W DRYWALL SCREWS AND SHALL CONFORM TO ASTM C 1002.

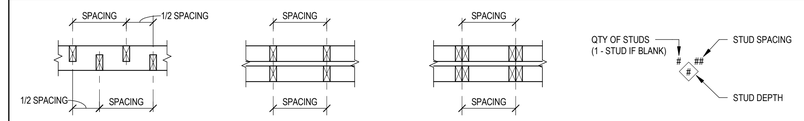
NOTES - WOOD PANEL SHEAR WALLS:
1. PANELS SHALL NOT BE LESS THAN 4'X 8' EXCEPT AT BOUNDARIES AND CHANGES IN FRAMING.
2. NAILS SHALL BE LOCATED AT LEAST 3/8" FROM THE PANEL EDGES. MAX NAIL SPACING AT PANEL EDGES SHALL BE 6" O.C.
3. ALL WOOD PANEL SHEAR WALLS ARE TO BE BLOCKED. ALL EDGES AND/OR JOINTS OF ALL PANELS SHALL BE SUPPORTED BY AND FASTENED TO COMMON FRAMING MEMBERS OR 2X NOMINAL (MIN) BLOCKING EXCEPT AS NOTED BELOW.
4. PROVIDE 3X NOMINAL WIDTH OF FRAMING MEMBERS OR BLOCKING AT LOCATIONS OF ADJOINING PANEL EDGES FOR SHEAR WALLS WITH NAILING AT 2" O.C.
5. WHERE WOOD PANELS ARE APPLIED ON BOTH FACES OF A SINGLE WALL AND NAIL SPACING IS LESS THAN 6" ON CENTER ON EITHER SIDE, EITHER PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS OR THE WIDTH OF THE NAILED FACE OF THE FRAMING MEMBERS SHALL BE 3" NOMINAL MINIMUM AND NAILING AT ADJOINING PANEL EDGES SHALL BE STAGGERED.
6. WOOD STRUCTURAL PANELS SHALL CONFORM TO THE REQUIREMENTS FOR ITS TYPE IN DOC PS1 OR PS2.

#10002



2 S008 WOOD - CONNECTION AT WALL INTERSECTION
#10434 NO SCALE

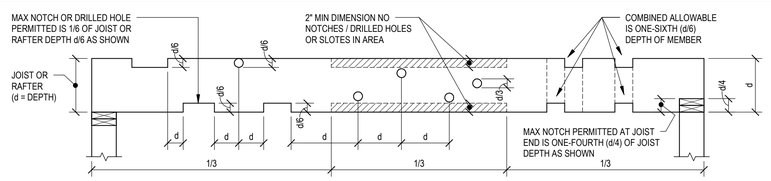
WOOD WALL FRAMING SCHEDULE					
FLOOR	PARTY WALLS		CORRIDOR WALLS	EXT WALLS	STAIR / ELEV SHAFT WALLS
ROOF - LEVEL 3	2 X 4 @ 16" OC		2 X 6 @ 16" OC	2 X 6 @ 16" OC	CMU
LEVEL 3 - LEVEL 2	2 X 4 @ 16" OC		2 X 6 @ 16" OC	2 X 6 @ 16" OC	CMU
LEVEL 2 - LEVEL 1	-		-	-	-



NOTES:
1. STRUCTURAL DRAWINGS INDICATE THE STRUCTURE IN ITS COMPLETED STATE. LOAD BEARING STUDS ARE DESIGNED ASSUMING WALL SHEATHING (GYPSUM, PLYWOOD, OSB) BRACES STUDS FROM IN-PLANE BUCKLING (LOSS OR REDUCTION OF LOAD CARRYING CAPACITY). TEMPORARY CONDITIONS MAY ARISE DUE TO THE SEQUENCING OF CONSTRUCTION IN WHICH THE LOWER LEVEL STUD WALLS ARE NOT SHEATHED AND ARE AT RISK OF BUCKLING UNTIL SHEATHING IS INSTALLED. THE CONTRACTOR AND THEIR SUBS SHALL TAKE PRECAUTIONS TO PREVENT THE WALL STUDS FROM BUCKLING PRIOR TO THE INSTALLATION OF SHEATHING. THIS IS TYPICALLY ACCOMPLISHED BY BLOCKING AT-RISK WALLS.
2. WHEN MULTIPLE STUDS AT A SPACING ARE REQUIRED BY THE SCHEDULE, THE STUDS MUST BE FASTENED TOGETHER USING THE STUD PACK NAILING REQUIREMENTS.
3. PARTY WALLS DESIGNATIONS REFER TO EACH WALL WITHIN THE UNIT SEPARATION WALL ASSEMBLY.

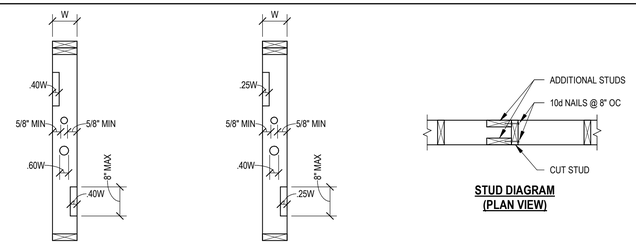
#10003

WOOD ALLOWABLE NOTCH & BORED HOLE DIMENSIONS								
JOIST & RAFTERS					BEARING STUDS		NON-BEARING STUDS	
NOMINAL	ACTUAL	d/6	d/4	d/3	.25W	.40W	.40W	.60W
4"	3 1/2"	5/8"	7/8"	1 1/8"	7/8"	1 3/8"	1 3/8"	2 1/8"
6"	5 1/2"	7/8"	1 3/8"	1 7/8"	1 3/8"	2 1/4"	2 1/4"	3 1/4"
8"	7 1/4"	1 1/4"	1 7/8"	2 3/8"	1 7/8"	2 7/8"	2 7/8"	4 3/8"
10"	9 1/4"	1 1/2"	2 3/8"	3 1/8"	N/A	N/A	N/A	N/A
12"	11 1/4"	1 7/8"	2 7/8"	3 3/4"	N/A	N/A	N/A	N/A
14"	13 1/4"	2 1/4"	3 3/8"	4 3/8"	N/A	N/A	N/A	N/A



JOIST OR RAFTER DIAGRAM (ELEVATION VIEW)

NOTES:
1. HOLES / NOTCHES / SLOTS ARE NOT TO BE LOCATED ADJACENT TO UNSOUND OR LOOSE KNOTS.
2. NOT TO BE USED AT MICRO LAM, PSL, GLULAM BEAMS OR ANY OTHER MANUFACTURED PRODUCTS.
3. PREFERRED LOCATION OF NOTCH IS AT TOP OF MEMBER.
4. INSTALL PLATE PROTECTION OVER ALL ELECTRICAL & PLASTIC PIPE NOTCHES OR BORING.



NON-BEARING STUDS DIAGRAM (SECTION VIEW)

BEARING STUDS DIAGRAM (SECTION VIEW)

STUD DIAGRAM (PLAN VIEW)

NOTES:
1. HOLES UP TO 60% ARE ALLOWED IN BEARING WALLS AT DOUBLE STUD CONDITIONS PROVIDED NOT MORE THAN TWO SUCCESSIVE DOUBLE STUDS ARE SO BORED.
2. AT BEARING AND NON-BEARING WALL LOCATIONS WHERE THE HOLE SIZE THROUGH THE STUDS EXCEEDS THE ABOVE ALLOWABLE LIMITS (40% AND 60% RESPECTIVELY) PROVIDE TWO ADDITIONAL STUDS PERPENDICULAR TO CUT STUD, SEE STUD DIAGRAM (PLAN VIEW) ABOVE.

#10004

8/27/2018 9:56:57 AM

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

NOT FOR CONSTRUCTION

THESE DOCUMENTS REPRESENT CURRENT PROGRESS AND SHALL NOT BE CONSTRUED AS COMPLETE. USE OF THESE DOCUMENTS FOR PURPOSES OTHER THAN GENERAL REVIEW IS DONE AT THE USER'S OWN RISK.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of MINNESOTA

WILLIAM T. BULLER — 20995 reg. no.

06.30.2020 reg. exp. date

ERA ERICKSEN ROED & ASSOCIATES
Structural Engineers
2550 University Avenue West
Suite 201-S
Saint Paul, MN 55114-1904
651.251.7570
www.eraeng.com

ERA Commission #2018-273
Copyright © ERA

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
MDS/TMR
Issue Date
8.24.2018

SUBMITTALS / REVISIONS
8.24.2018 100% MHFA REVIEW

SCALE
As Indicated

West Birch Apartments

W Branch Street
Princeton, MN

TYPICAL DETAILS - WOOD SCHEDULES

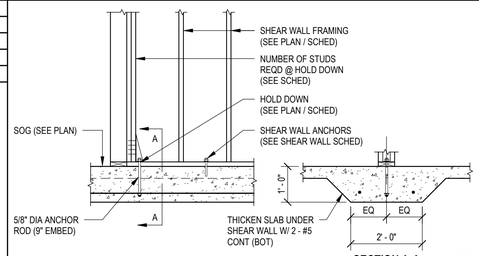
S008

SHEAR WALL HOLD DOWN SCHEDULE & DETAILS

SCHEDULE

MARK	MODEL NO.	ANCHOR BOLT	SDS SCREWS	NO. OF STUDS
A	HDU2-SDS2.5	5/8"	6 - 1/4" X 2 1/2"	2
B	HDU4-SDS2.5	5/8"	10 - 1/4" X 2 1/2"	2
C	HDU5-SDS2.5	5/8"	14 - 1/4" X 2 1/2"	2
D	HDU8-SDS2.5	7/8"	20 - 1/4" X 2 1/2"	3

DETAILS



SECTION A-A

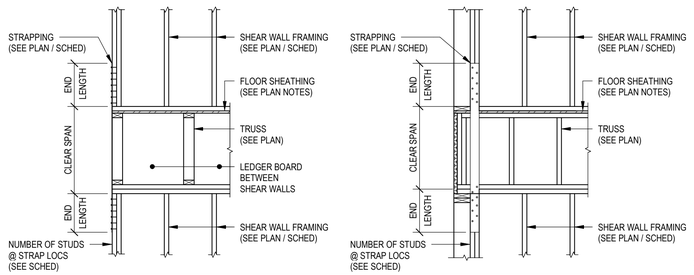
#10702

SHEAR WALL STRAPPING SCHEDULE & DETAILS

SCHEDULE

MARK	MODEL NO.	FASTENERS	END LENGTH	NO. OF STUDS	COMMENTS
1	CS16	22 - 10d NAILS	13"	2	-
2	CS14	30 - 10d NAILS	16"	2	-
3	CMST14	76 - 10d NAILS	34"	2	-
4	CMST12	98 - 10d NAILS	44"	2	-

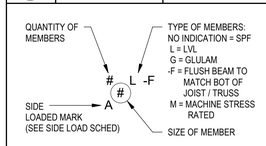
DETAILS



#10704

WOOD BEAM / HEADER SCHEDULE

MARK	SIZE	COMMENTS
2-(6)	2 - 2 X 6	-
2-(8)	2 - 2 X 8	-
3-(8)	3 - 2 X 8	-
2-(10)	2 - 2 X 10	-
3-(10)	3 - 2 X 10	-
2-(12)	2 - 2 X 12	-
3-(12)	3 - 2 X 12	-
2-L-(8)	2 - 1 3/4 X 7 1/4 LVL	-
3-L-(8)	3 - 1 3/4 X 7 1/4 LVL	-
2-L-(10)	2 - 1 3/4 X 9 1/4 LVL	-
3-L-(10)	3 - 1 3/4 X 9 1/4 LVL	-
4-L-(10)	4 - 1 3/4 X 9 1/4 LVL	-
2-L-(12)	2 - 1 3/4 X 11 1/4 LVL	-
3-L-(12)	3 - 1 3/4 X 11 1/4 LVL	-
4-L-(12)	4 - 1 3/4 X 11 1/4 LVL	-
2-L-(14)	2 - 1 3/4 X 14 LVL	-
3-L-(14)	3 - 1 3/4 X 14 LVL	-
4-L-(14)	4 - 1 3/4 X 14 LVL	-
2-L-(16)	2 - 1 3/4 X 16 LVL	-
3-L-(16)	3 - 1 3/4 X 16 LVL	-
4-L-(16)	4 - 1 3/4 X 16 LVL	-
2-L-(18)	2 - 1 3/4 X 18 LVL	-
3-L-(18)	3 - 1 3/4 X 18 LVL	-
4-L-(18)	4 - 1 3/4 X 18 LVL	-
4-L-(20)	4 - 1 3/4 X 20 LVL	-
3-M-(10)	3 - 1 3/4 X 9 1/4 MSR	



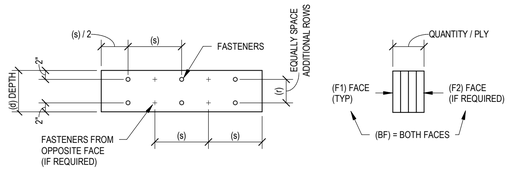
WOOD BEAM / HEADER KEY



TRIM STUD / POST TAG NOT COVERED BY NOTE 1

NOTES:
1. AT ALL LOCATIONS NOT INDICATED ON PLAN OR PER NOTE 2, PROVIDE 2 - 2X TRIM STUDS AND 1 - 2X KING STUD.
2. AT EXTERIOR WALL OPENINGS PROVIDE THE FOLLOWING KING STUDS:
   OPNGS 4'-0" OR LESS = 1 - 2X KING STUD
   OPNGS GREATER THAN 4'-0" TO 8'-0" = 2 - 2X KING STUDS
   OPNGS GREATER THAN 8'-0" TO 12'-0" = 3 - 2X KING STUDS
   OPNGS GREATER THAN 12'-0" =NOTIFY ENGINEER OF RECORD

MULTIPLE-PLY 2X / LVL FASTENING REQUIREMENTS



FASTENER REQUIREMENTS AT A TOP LOAD

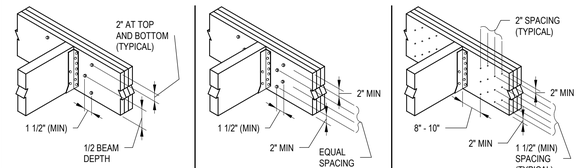
	2X / LVL DEPTH (d)	QUANTITY = 2 ROWS (r)	QUANTITY = 2 SPACING (s)	QUANTITY = 3 ROWS (r)	QUANTITY = 3 SPACING (s)	QUANTITY = 4 ROWS (r)	QUANTITY = 4 SPACING (s)
10d NAILS (0.128"x3")	EQUAL TO 7 1/4" OR LESS THAN 14"	3	12"	3 (F1)	12" (F1)		
				3 (F2)	12" (F2)		
	EQUAL TO OR GREATER THAN 14"	4	12"	4 (F1)	12" (F1)		
				4 (F2)	12" (F2)		
5" SCREWS	EQUAL TO OR GREATER THAN 7 1/4"			2	24"		
6" SCREWS	EQUAL TO OR GREATER THAN 7 1/4"					2 (F1)	24" (F1)
						2 (F2)	24" (F2)

FASTENER REQUIREMENTS AT A SIDE LOAD

MARK	FASTENER TYPE	ROWS (r)	SPACING (s)	NOTES
A	SDS25312 (1 1/4" X 3 1/2")	2	16"	3 PLY : (F1) & (F2) REQUIRED
B	SDS25600 (1 1/4" X 6")	2 (F1)	16" (F1)	
		2 (F2)	16" (F2)	
C	SDW22338 (3 3/8")	2	16"	3 PLY : (F1) & (F2) REQUIRED
D	SDW22500 (5")	2	16"	
E	SDW22634 (6 3/4")	2	16"	

NOTES:
1. "(F1)" AND "(F2)" SHOWN IN SCHEDULE INDICATES THE MULTIPLE-PLY FACES THAT ARE REQUIRED PER THE SCHEDULE.
2. ALL FASTENERS MUST HAVE FULL EMBEDMENT OF THE SHANK, BUT MUST NOT BE OVER-DRIVEN, OVER-TIGHTENED, OR COUNTERSUNK.
3. SPACING CLOSER THAN THOSE INDICATED MAY BE ACCEPTABLE, BUT REQUIRE EVALUATION, PLEASE CONTACT ENGINEER OF RECORD.
4. SDS AND SDWS STRUCTURAL SCREWS ARE SIMPSON PRODUCTS. CONTACT ENGINEER OF RECORD FOR APPROVAL OF OTHER FASTENERS.

ADDITIONAL FASTENER REQUIREMENTS AT A CONCENTRATED SIDE LOAD



4 OR 6 SCREW CONNECTION | **8 SCREW CONNECTION** | **NAIL CONNECTION**

MARK	TYPE	NUMBER OF FASTNERS EACH SIDE OF LOAD
CSL-1	10d NAIL	6
CSL-2	SDS25312 (1 /4" X 3 1/2")	4
CSL-3	SDW25600 (1/4" X 6")	4

#10005

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

NOT FOR CONSTRUCTION

THESE DOCUMENTS REPRESENT CURRENT PROGRESS AND SHALL NOT BE CONSTRUED AS COMPLETE. USE OF THESE DOCUMENTS FOR PURPOSES OTHER THAN GENERAL REVIEW IS DONE AT THE USER'S OWN RISK.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of MINNESOTA

WILLIAM T. BULLER 20995
reg. no.

06.30.2020
reg. exp. date

ERA ERICKSEN ROED & ASSOCIATES
Structural Engineers
2550 University Avenue West
Suite 201-S
Saint Paul, MN 55114-1904
651.251.7570
www.eraeng.com

ERA Commission #2018-273
Copyright © ERA

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
MDS/TMR
Issue Date
8.24.2018

SUBMITTALS / REVISIONS
8.24.2018 100% MHFA REVIEW

SCALE
As Indicated

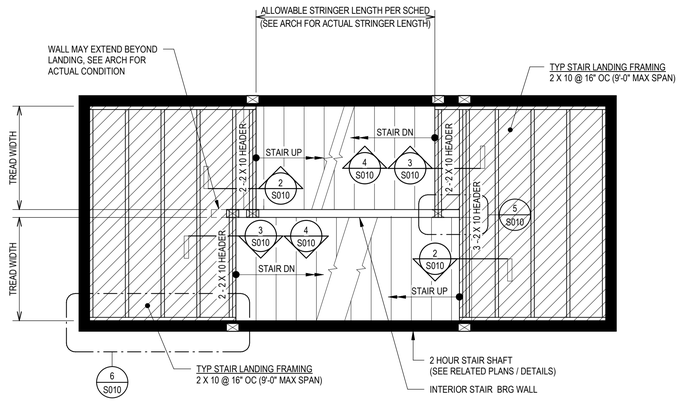
West Birch Apartments

W Branch Street
Princeton, MN

TYPICAL DETAILS - WOOD SCHEDULES

S009

8/27/2018 9:57:00 AM



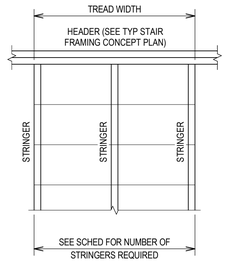
TYPICAL STAIR FRAMING CONCEPT PLAN - SEE ARCH FOR ACTUAL STAIR CONFIGURATION

ALLOWABLE WOOD STAIR STRINGER LENGTH TABLE

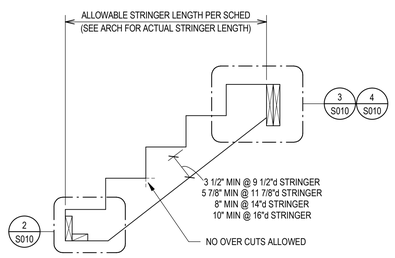
42" TREAD WIDTH AND LESS	ALLOWABLE STRINGER LENGTH	LSL SIZE TO BE USED TO CUT STRINGER	NUMBER OF STRINGERS REQUIRED
	5'-10"	1 3/4" X 9 1/2"	3
	9'-2"	1 3/4" X 11 7/8"	3
	12'-6"	1 3/4" X 14"	3
	14'-0"	1 3/4" X 16"	3

ALLOWABLE WOOD STAIR STRINGER LENGTH TABLE

48" TREAD WIDTH AND LESS	ALLOWABLE STRINGER LENGTH	LSL SIZE TO BE USED TO CUT STRINGER	NUMBER OF STRINGERS REQUIRED
	6'-8"	1 3/4" X 9 1/2"	4
	11'-8"	1 3/4" X 11 7/8"	4
	14'-10"	1 3/4" X 14"	4
	16'-8"	1 3/4" X 16"	4



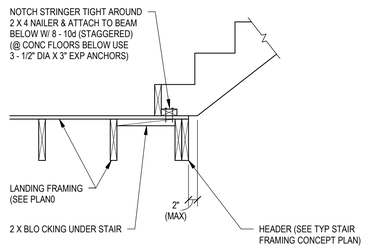
STAIR STRINGER PLAN VIEW REFERENCE



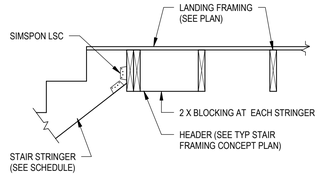
STAIR STRINGER SECTION VIEW REFERENCE

NOTES:
1. ALL STRINGERS TO BE CUT FROM TRUS-JOIST 1 3/4" TIMBERSTRAND 1.55E LSL.
2. FOR LONGER RUNS CONTACT ENGINEER OF RECORD.
3. DO NOT OVER CUT STAIR STRINGERS.
4. PLACE ONE STRINGER AT EACH END OF TREAD AND PLACE THE THIRD STRINGER AT CENTER OF TREAD.

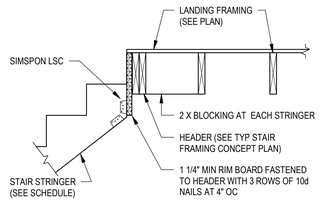
1 S010 TYPICAL STAIR FRAMING PLAN AND DETAILS #10101 NO SCALE



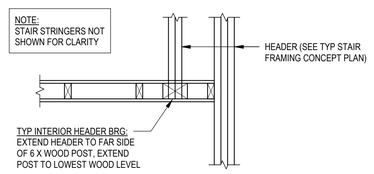
2 S010 STAIR STRINGER AT BOTTOM OF LANDING #10102 NO SCALE



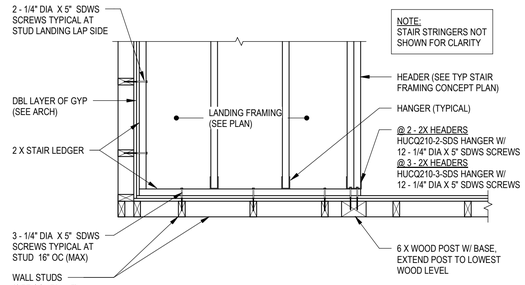
3 S010 STAIR STRINGER FLUSH WITH TOP OF LANDING #10103 NO SCALE



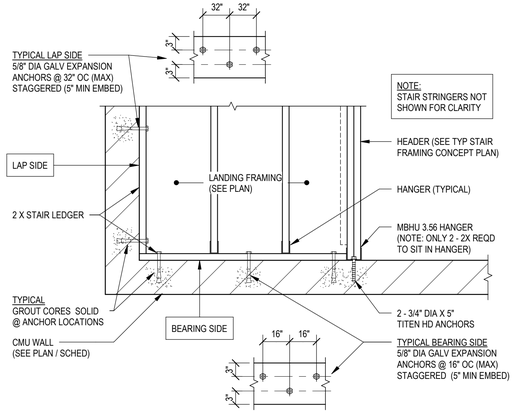
4 S010 STAIR STRINGER DROPPED AT TOP OF LANDING #10104 NO SCALE



5 S010 STAIR LANDING FRAMING #10108 NO SCALE



6 S010 STAIR LANDING FRAMING AT WOOD SHAFT WALLS #10105 NO SCALE



7 S010 STAIR LANDING FRAMING AT CMU SHAFT WALLS #10106 NO SCALE

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

NOT FOR CONSTRUCTION

THESE DOCUMENTS REPRESENT CURRENT PROGRESS AND SHALL NOT BE CONSTRUED AS COMPLETE. USE OF THESE DOCUMENTS FOR PURPOSES OTHER THAN GENERAL REVIEW IS DONE AT THE USER'S OWN RISK.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of MINNESOTA

WILLIAM T. BULLER — 20995 reg. no.

06.30.2020 reg. exp. date

ERICKSEN ROED & ASSOCIATES — Structural Engineers

2550 University Avenue West
Suite 201-S
Saint Paul, MN 55114-1904
651.251.7570
www.eraeng.com

ERA Commission #2018-273
Copyright © ERA

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
MDS/TMR
Issue Date
8.24.2018

SUBMITTALS / REVISIONS
8.24.2018 100% MHFA REVIEW

SCALE
As Indicated

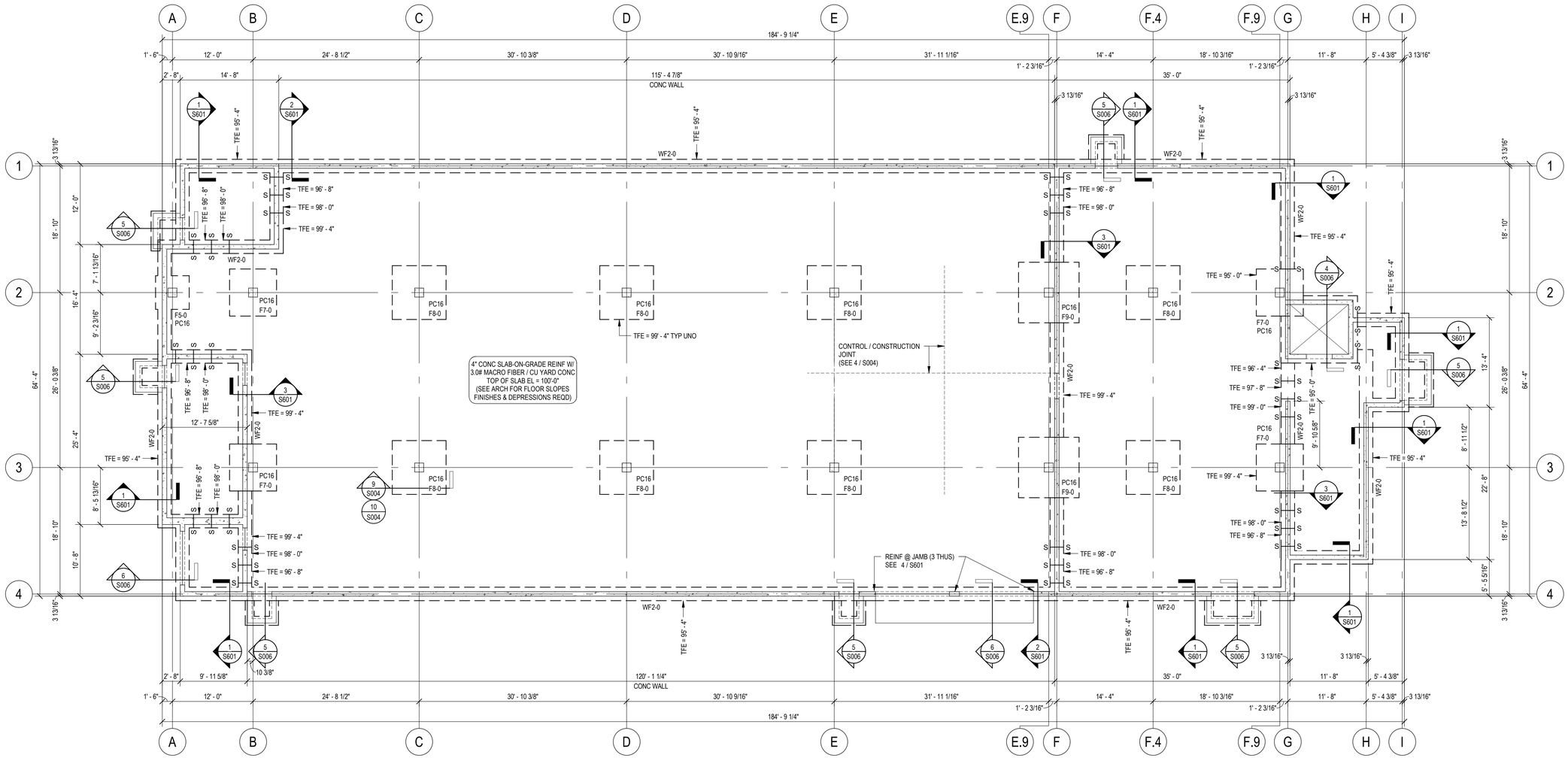
West Birch Apartments

W Branch Street
Princeton, MN

TYPICAL DETAILS - WOOD STAIR FRAMING

S010

8/27/2018 9:57:04 AM



1 S111 FIRST FLOOR FOUNDATION PLAN
1/8" = 1'-0"

NORTH

FOUNDATION PLAN SHEET NOTES

A. General

1. See Cover Sheet for structural sheet index defining sheet name, sheet number and issue status.
2. See Cover Sheet for Structural Abbreviations, Typical Marks & Symbols and Plan Legends.
3. Review General Structural Notes and typical details in conjunction with applicable plans. See sheet index on Cover Sheet.
4. Elevation 100'-0" on these drawings matches elevation 981.7' on Civil drawings.
5. Coordinate stoop sizes and locations with Architectural and Civil. See typical details for stoop construction.
6. If present, coordinate the sizes and locations of tunnels, electrical cells, pits, pipes, floor drains, trenches and floor recesses with Architectural, Structural, Mechanical, Civil, and Electrical drawings.
7. Frost protection is required for all foundations if winter conditions are present.
8. Contractor shall coordinate all embedded items required for precast connections. Embedded items shall be provided by precast supplier and installed by concrete contractor.
9. PARKING AREAS / STRUCTURE EXPOSED TO WEATHER: All structural steel and embed plates exposed to weather or located in parking areas shall be hot-dip galvanized unless noted otherwise.

   Field welds to be touched up with 2 coats of zinc rich paint.
10. Dimensions shown with +/- indicate dimensions that have been rounded to the nearest 1/16 of an inch.

B. Footings

1. "F-" denotes footing mark. See schedule for size and reinforcing.

   "WF-" denotes wall footing mark See schedule for size and reinforcing.
2. Top of footing elevation (TFE) is shown on plan. See typical detail sheets for stepped footing detail.
3. Locations of footing steps on plan are approximate. Contractor shall verify all step locations with Civil grade elevations to maintain minimum frost depths and all Mechanical, Electrical and Plumbing pipe elevations prior to pouring footings. Coordinate footing step locations with precaster if applicable. See typical detail sheets for pipes perpendicular and parallel to footing.
4. All footings shall be centered below walls, columns and piers unless dimensioned otherwise.
5. Provide dowels to walls, columns and piers above. Hooked dowels shall be tied to footing reinforcing prior to pouring concrete.

D. Slab On Grade

1. Top of slab elevation (TOSL =) is shown on plan.
2. See Architectural drawings for depressions, slab slopes, finishes and drains.
3. Concrete slab thickness shall be as noted on plan. See Architectural drawings for vapor barrier requirements and geotech report for slab sub-base thickness and material specification.
4. Unless noted otherwise, reinforce slab with 3.0 pounds of macro fiber per cubic yard of concrete. Coordinate finishing requirements with owner. Contractor may substitute 6 x 6 – W1.4 x W1.4 WWF chaired in place 1" below top of slab in lieu of macro fiber.
5. Provide control joints(CJ) and construction joints (CONST JT) in slab. See typical foundation details.
6. Concrete Contractor shall submit location of slab control joints (CJ) and construction joints (CONST JT) for review three weeks minimum prior to slab pour.

E. Precast Columns

1. "PC-" denotes precast column mark. See column schedule for size and connection to footing.
2. All concrete columns shall be centered on grid intersections unless dimensioned otherwise on plan.

F. CMU Walls

1. "CMU-" denotes CMU wall reinforcing mark. See schedule and typical detail sheets for additional reinforcing requirements.
2. See Architectural for masonry control joint spacing. Locate control joints a minimum of 24" from the edges of all openings.
3. See Architectural drawings for non-load bearing CMU wall thickness and locations. See typical detail sheets for non-load bearing CMU details.
4. Coordinate all exterior wall finish ledge elevations for brick, stone, etc. with architectural drawings.

G. Concrete Walls

1. See wall schedule for reinforcing. Provide additional reinforcing per typical details.
2. See typical details for concrete wall construction joint spacing requirements.
3. See shear wall elevation sheets and details for reinforcing required.
4. Coordinate all exterior wall finish ledge elevations for brick, stone, etc. with architectural drawings.

H. Precast General

1. Precast details indicate general precast framing intent. Final precast detailing may vary from what is indicated on the contract documents, see approved precast shop drawings for actual conditions.
2. All precast connections are the responsibility of the precast specialty engineer, not all precast connections are shown nor detailed in the contract documents. All precast connections to be designed per structural drawings and to meet code minimum connectivity requirments.
3. Parking Areas

   a. All precast connections in parking areas to be galvanized. Field welds to be touched up with 2 coats of zinc rich paint.

   b. Provide a minimum of 7'-2" clear at all locations. Provide a mimimum clearance of 8'-4" at all ADA Van Accessible parking.

8/27/2018 9:57:07 AM

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

NOT FOR CONSTRUCTION

THESE DOCUMENTS REPRESENT CURRENT PROGRESS AND SHALL NOT BE CONSTRUED AS COMPLETE. USE OF THESE DOCUMENTS FOR PURPOSES OTHER THAN GENERAL REVIEW IS DONE AT THE USER'S OWN RISK.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of MINNESOTA

WILLIAM T. BULLER — 20995 reg. no.

06.30.2020 reg. exp. date

ERA ERICKSEN ROED & ASSOCIATES — Structural Engineers

2550 University Avenue West
Suite 201-S
Saint Paul, MN 55114-1904
651.251.7570
www.eraeng.com

ERA Commission #2018-273
Copyright © ERA

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
MDS/TMR
Issue Date
8.24.2018

SUBMITTALS / REVISIONS
8.24.2018 100% MHFA REVIEW

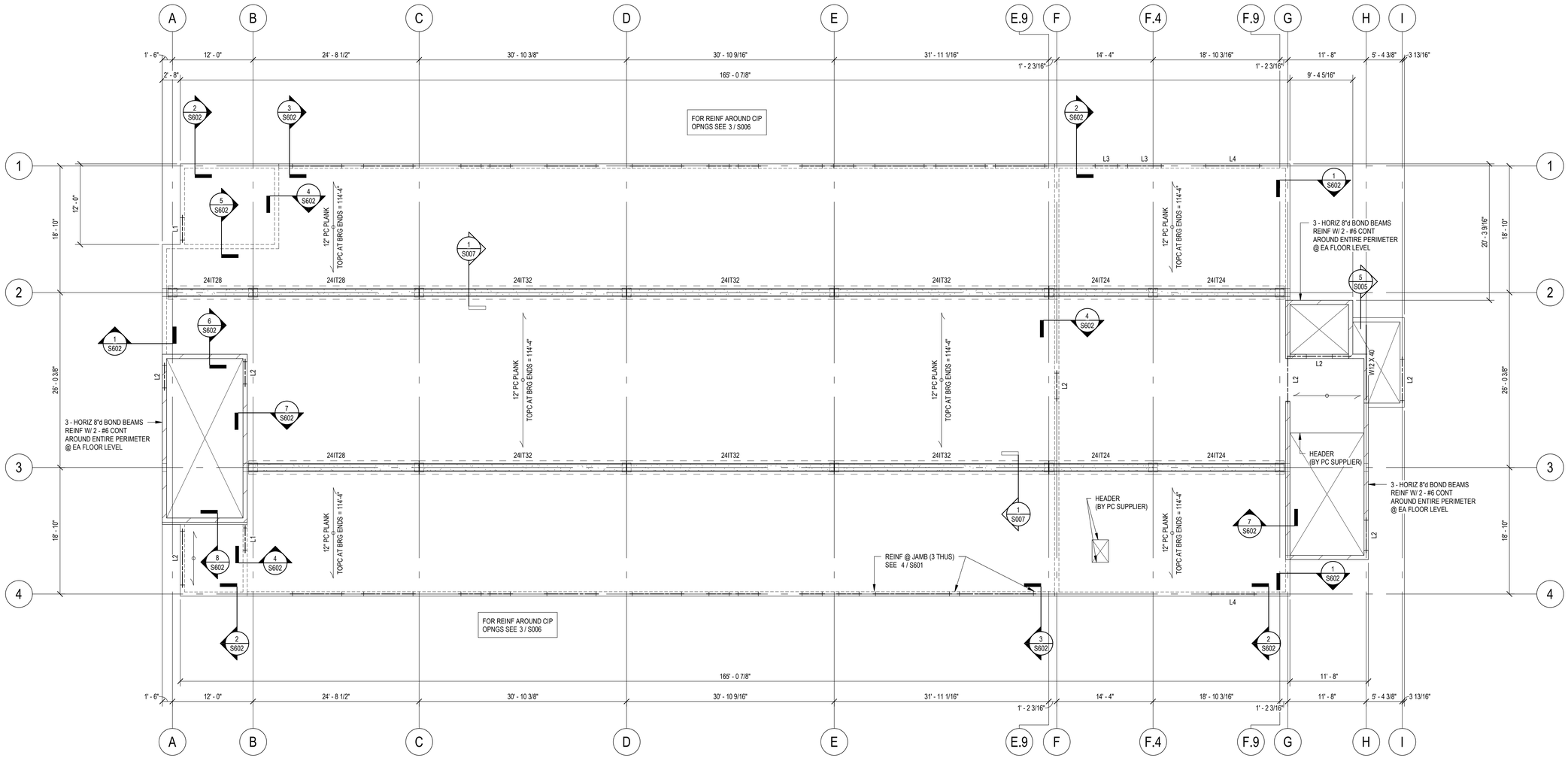
SCALE
As Indicated

West Birch Apartments

W Branch Street
Princeton, MN

FIRST FLOOR FOUNDATION PLAN

S111



1 S112 SECOND FLOOR FRAMING PLAN

1/8" = 1'-0"

NORTH

FRAMING PLAN SHEET NOTES

A. General

1. See Cover Sheet for structural sheet index defining sheet name, sheet number and issue status.
2. See Cover Sheet for Structural Abbreviations, Typical Marks & Symbols and Plan Legends.
3. Review General Structural Notes and typical details in conjunction with applicable plans. See sheet index on Cover Sheet.
4. Elevation 100'-0" on these drawings matches elevation 981.7' on Civil drawings.
5. If present, coordinate the sizes and locations of tunnels, electrical cells, pits, pipes, floor drains, trenches and floor recesses with Architectural, Structural, Mechanical, Civil, and Electrical drawings.
6. Contractor shall coordinate all embedded items required for precast connections. Embedded items to be provided by precast supplier and installed by concrete contractor.
7. PARKING AREAS / STRUCTURE EXPOSED TO WEATHER: All structural steel and embed plates exposed to weather or located in parking areas shall be hot-dip galvanized unless noted otherwise.
8. Dimensions shown with +/- indicate dimensions that have been rounded to the nearest 1/16 of an inch.

B. CMU Walls

1. "CMU-" denotes CMU wall reinforcing mark. See schedule and typical detail sheets for additional reinforcing requirements.
2. See Architectural for masonry control joint spacing. Locate control joints a minimum of 24" from the edges of all openings.
3. See Architectural drawings for non-load bearing CMU wall thickness and locations. See typical detail sheets for non-load bearing CMU details.
4. Coordinate all exterior wall finish ledge elevations for brick, stone, etc. with architectural drawings.

C. Concrete Walls

1. See wall schedule for reinforcing. Provide additional reinforcing per typical details.
2. See typical details for concrete wall construction joint spacing requirements.
3. See shear wall elevation sheets and details for reinforcing required.
4. Coordinate all exterior wall finish ledge elevations for brick, stone, etc. with architectural drawings.

D. Lintels

1. See lintel schedule for lintel types and notes.

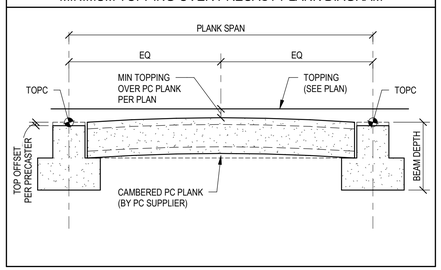
E. Precast General

1. Precast details indicate general precast framing intent. Final precast detailing may vary from what is indicated on the contract documents, see approved precast shop drawings for actual conditions.
2. All precast connections are the responsibility of the precast specialty engineer, not all precast connections are shown nor detailed in the contract documents. All precast connections to be designed per structural drawings and to meet code minimum connectivity requirments.
3. Parking Areas
   a. All precast connections in parking areas to be galvanized. Field welds to be touched up with 2 coats of zinc rich paint.
   b. Provide a minimum of 7'-2" clear at all locations. Provide a mimimum clearance of 8'-4" at all ADA Van Accessible parking.

F. Precast Concrete Plank

1. Top of plank elevation at bearing (TOPC =) is shown on plan.
2. Gypcrete Topping is not shown or detailed in structural drawings, see architectural drawings for all Gypcrete Topping information.
3. Precast manufacturer shall design precast plank for loads noted in General Structural Notes and / or as noted on plans, loading plan and details.
4. Contractor shall verify all equipment weights, sizes, locations and openings required. Openings shown are the only locations known to Structural at the time of issue. Contractor shall coordinate any changes with precast plank supplier.
5. See typical details for precast header. Precast plank supplier shall provide headers as required at openings.

MINIMUM TOPPING OVER PRECAST PLANK DIAGRAM



Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

NOT FOR CONSTRUCTION

THESE DOCUMENTS REPRESENT CURRENT PROGRESS AND SHALL NOT BE CONSTRUED AS COMPLETE. USE OF THESE DOCUMENTS FOR PURPOSES OTHER THAN GENERAL REVIEW IS DONE AT THE USER'S OWN RISK.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of MINNESOTA

WILLIAM T. BULLER — 20995 reg. no.

06.30.2020 reg. exp. date

ERA ERICKSEN ROED & ASSOCIATES Structural Engineers

2550 University Avenue West
Suite 201-S
Saint Paul, MN 55114-1904
651.251.7570
www.eraeng.com

ERA Commission #2018-273
Copyright © ERA

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
MDS/TMR
Issue Date
8.24.2018

SUBMITTALS / REVISIONS

8.24.2018 100% MHFA REVIEW

SCALE
As Indicated

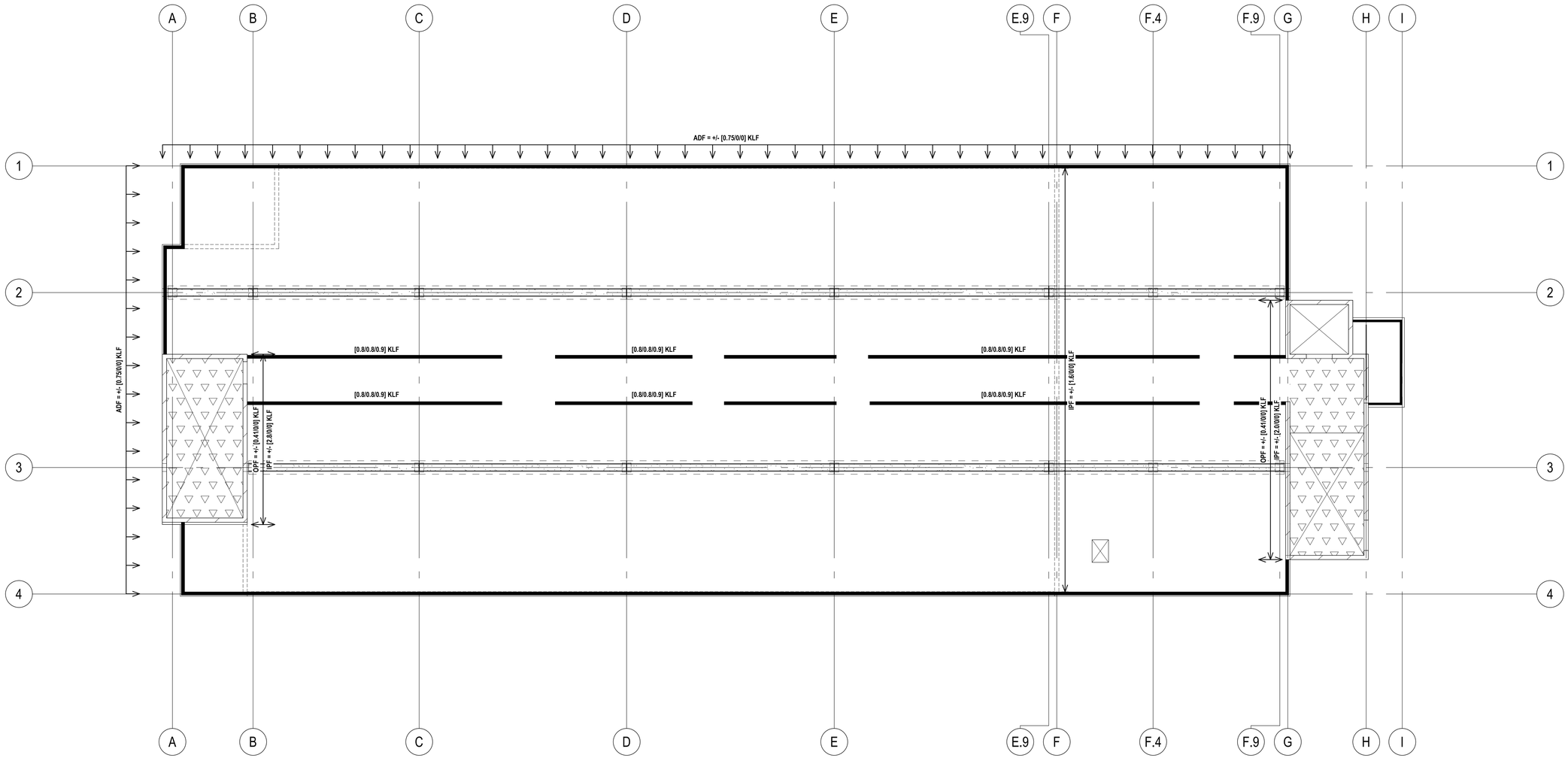
West Birch Apartments

W Branch Street
Princeton, MN

SECOND FLOOR FRAMING PLAN

S112

8/27/2018 9:57:10 AM



1 S112a 1/8" = 1'-0"

SECOND FLOOR LOADING PLAN

NORTH

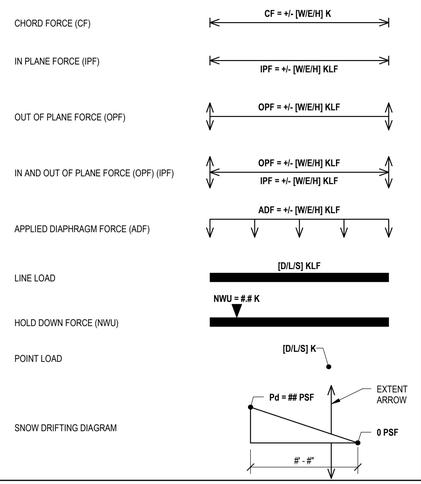
LOADING PLAN SHEET NOTES

A. General

1. All loads have been calculated in accordance with ASCE 7-10 without modifications. Wind and earthquake loading is reported as ultimate. All other loading is reported as a service load. Use load combinations per applicable Code.
2. See Architectural drawings for wood wall dimensioning.
3. Line loads from structure:
   - A) Line loads have not been reduced based on tributary area.
   - B) Line loads are from structure above and to be applied to the full length specified on loading plan.
   - C) Apply point loads at each side of wall openings equal to the line load multiplied by 1/2 the opening width. See Architectural drawings for opening sizes and locations.
4. See loading plan for any additional non-typical loading.
5. SEOR has defined the major diaphragm chords and collectors. Precaster to design diaphragm and sub-diaphragms to distribute applied forces into resisting elements.

MINIMUM DIAPHRAGM CONNECTIVITY (TYP UNO)
TENSION = 0.5 KLF
SHEAR = 1.0 KLF

TYPICAL SYMBOLS



TYPICAL ABBREVIATIONS

ADF	=	APPLIED DIAPHRAGM FORCE	Pd	=	MAXIMUM SNOW DRIFT INTENSITY
CF	=	CHORD FORCE	OPF	=	OUT OF PLANE FORCE
D	=	DEAD LOAD	PSF	=	POUNDS PER SQUARE FOOT
E	=	EARTHQUAKE LOAD	Lr	=	ROOF LIVE LOAD
IPF	=	IN PLANE FORCE	S	=	SNOW LOAD
K	=	KIPS (1,000 POUNDS)	Dsi	=	SUPERIMPOSED DEAD LOAD
KLF	=	KIPS PER LINEAR FOOT	UR	=	UNREDUCIBLE
H	=	LATERAL EARTH PRESSURE	T	=	WEIGHT FROM TOPPING - THICKNESS MAY VARY (SEE PLAN)
L	=	LIVE LOAD	W	=	WIND LOAD
NWU	=	NET WIND UPLIFT			

LOADING FORCES

TYP UNO	D	SELF WEIGHT
	Dsi	10 PSF + T
	L	40 PSF UR
	S	0 PSF
STAIRS	D	SELF WEIGHT
	Dsi	10 PSF + T
	L	100 PSF UR
	S	0 PSF

8/27/2018 9:57:13 AM

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

NOT FOR CONSTRUCTION

THESE DOCUMENTS REPRESENT CURRENT PROGRESS AND SHALL NOT BE CONSTRUED AS COMPLETE. USE OF THESE DOCUMENTS FOR PURPOSES OTHER THAN GENERAL REVIEW IS DONE AT THE USER'S OWN RISK.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of MINNESOTA

WILLIAM T. BULLER — 20995 reg. no.

06.30.2020 reg. exp. date

ERA ERICKSEN ROED & ASSOCIATES — Structural Engineers
2550 University Avenue West
Suite 201-S
Saint Paul, MN 55114-1904
651.251.7570
www.eraeng.com

ERA Commission #2018-273
Copyright © ERA

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
MDS/TMR
Issue Date
8.24.2018

SUBMITTALS / REVISIONS
8.24.2018 100% MHFA REVIEW

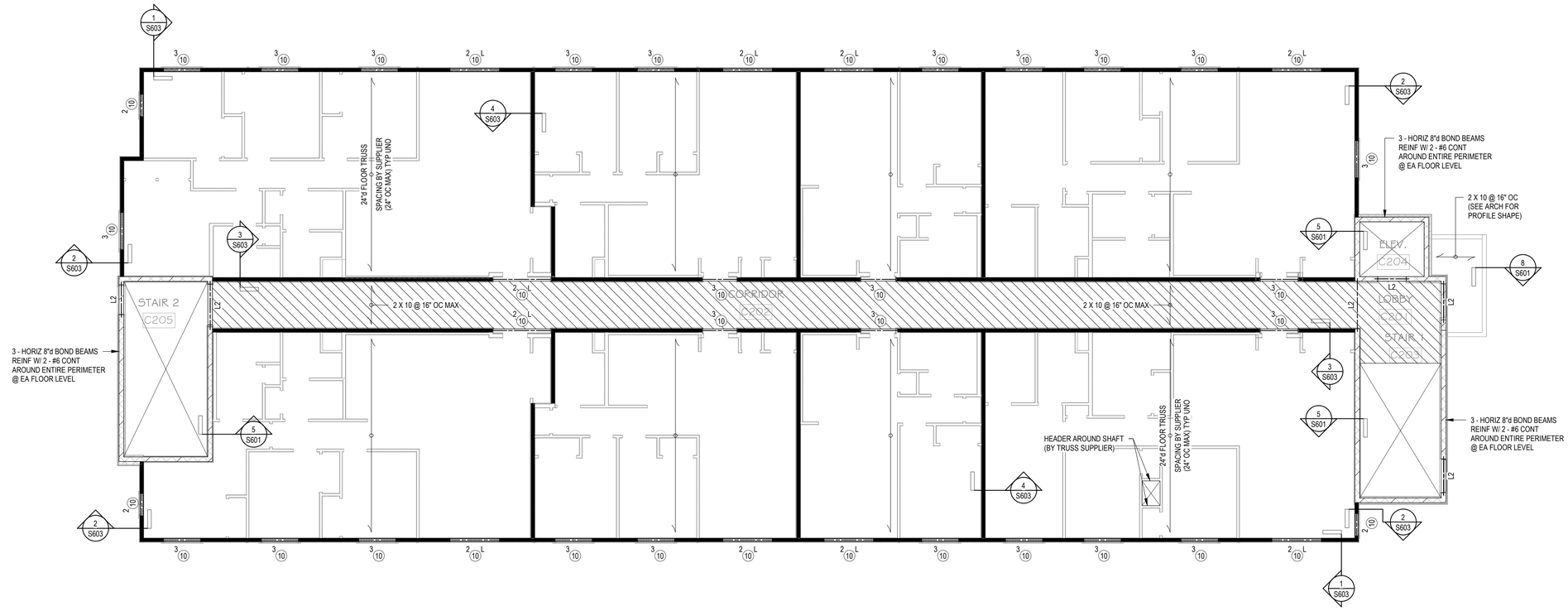
SCALE
As Indicated

West Birch Apartments

W Branch Street
Princeton, MN

SECOND FLOOR LOADING PLAN

S112a



1 S113 THIRD FLOOR FRAMING PLAN

1/8" = 1'-0"

NORTH

FRAMING PLAN SHEET NOTES

A. General

1. See Cover Sheet for structural sheet index defining sheet name, sheet number and issue status.
2. See Cover Sheet for Structural Abbreviations, Typical Marks & Symbols and Plan Legends.
3. Review General Structural Notes and typical details in conjunction with applicable plans. See sheet index on Cover Sheet.
4. Elevation 100'-0" on these drawings matches elevation 981.7' on Civil drawings.
5. If present, coordinate the sizes and locations of tunnels, electrical cells, pits, pipes, floor drains, trenches and floor recesses with Architectural, Structural, Mechanical, Civil, and Electrical drawings.
6. Contractor shall coordinate all embedded items required for precast connections. Embedded items to be provided by precast supplier and installed by concrete contractor.
7. PARKING AREAS / STRUCTURE EXPOSED TO WEATHER: All structural steel and embed plates exposed to weather or located in parking areas shall be hot-dip galvanized unless noted otherwise.
8. Dimensions shown with +/- indicate dimensions that have been rounded to the nearest 1/16 of an inch.

B. Prefabricated Wood Trusses

1. See Architectural for truss bearing elevations.
2. Prefabricated wood trusses shall be designed to resist all loads indicated on plans, notes and details. Supplier shall submit calculations signed and stamped by a registered engineer in the state of the project for review and approval prior to fabrication. See General Structural Notes and specifications for other requirements.
3. Truss spacing by truss supplier. Spacing not to exceed 24" oc max.

C. Wood I-Joist

1. See Architectural for joist bearing elevations.
2. I-joist roof memebers shall be designed to resist all loads indicated on plans, notes and details. Supplier shall submit calculations signed and stamped by a registered engineer in the state of the project for review and approval prior to fabrication. See General Structural Notes and specifications for other requirements.
3. I-joist spacing by joist supplier. Spacing not to exceed 24" oc max.
4. Bearing requirements:
   a. 1 3/4" minimum bearing on ends.
   b. 3 1/2" at intermediate.
5. see Manufacturer for allowable notch & bored hole dimensions for openings through I-joist.
6. See Manufacturer for conditions that are NOT permitted.
7. Follow all Manufacturer's recommended framing details and framing configurations.
8. Supply all required filler blocks, web stiffeners, blocking, hangers, squash blocking, and backer blocks as required.

D. Floor & Roof Sheathing Diaphragms

1. See Architectural for top of sheathing elevations.
2. Floor sheathing shall be 3/4" APA rated plywood / OSB. Attach sheathing to floor framing members with 10d nails (0.128" diameter x 3" long) at 6" OC at panel edges and 12" OC at intermediate supports.
3. Roof sheathing shall be 5/8" APA rated plywood / OSB. Attach sheathing to roof framing members with 10d nails (0.128" diameter x 3" long) at 6" OC at panel edges and 12" OC at intermediate supports.
4. All diaphragm nailing shall be done with common nails and shall be driven flush but not fracture the surface of the sheathing. Box or sinker nails must be approved prior to use.
5. As an alternate to hand nailing the contractor shall submit for approval the size and type of nail used for automatic nailing with the approved technical data for its use in nailing horizontal diaphragms.

E. Wood framed Construction

1. See General Structural Notes for additional wood construction information.
2. See schedules for load bearing walls, shear walls, beam / header information, etc.
3. All bottom plates or other wood in contact with precast, concrete or masonry shall be treated.
4. Anchors, hangers and other metal connectors in contact with pressure treated lumber shall be hot dipped galvanized, G185 treated or approved for use with pressure treated lumber by EOR.
5. Provide a minimum of 2 studs (3" length of bearing) at all beam, header and girder truss bearing unless noted otherwise on plan. Full width of beam, header and girder truss must be supported by an equal width of 2X or PSL post. Where posts / stud packs consisting of 3 or more studs occur on a level, identical posts / stud packs shall be constructed on all floors below to final supporting level unless noted otherwise on plan. Solid blocking shall be placed in floor framing space between upper and lower post / stud packs.
6. All wood beams connected to 4 x 4 posts or larger to use Simpson PC/EPC caps or equivalent unless noted otherwise. All wood beams connected to PSL or glulam posts to use CC/ECC caps or equivalent unless noted otherwise.
7. Mechanical and electrical contractors to design their systems to accommodate 3/8" vertical shrinkage of the structure per floor, from lowest floor to roof.

8/27/2018 9:57:17 AM

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

NOT FOR CONSTRUCTION

THESE DOCUMENTS REPRESENT CURRENT PROGRESS AND SHALL NOT BE CONSTRUED AS COMPLETE. USE OF THESE DOCUMENTS FOR PURPOSES OTHER THAN GENERAL REVIEW IS DONE AT THE USER'S OWN RISK.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of MINNESOTA

WILLIAM T. BULLER — 20995 reg. no.

06.30.2020 reg. exp. date

ERA ERICKSEN ROED & ASSOCIATES Structural Engineers

2550 University Avenue West
Suite 201-S
Saint Paul, MN 55114-1904
651.251.7570
www.eraeng.com

ERA Commission #2018-273
Copyright © ERA

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
MDS/TMR
Issue Date
8.24.2018

SUBMITTALS / REVISIONS

8.24.2018 100% MHFA REVIEW

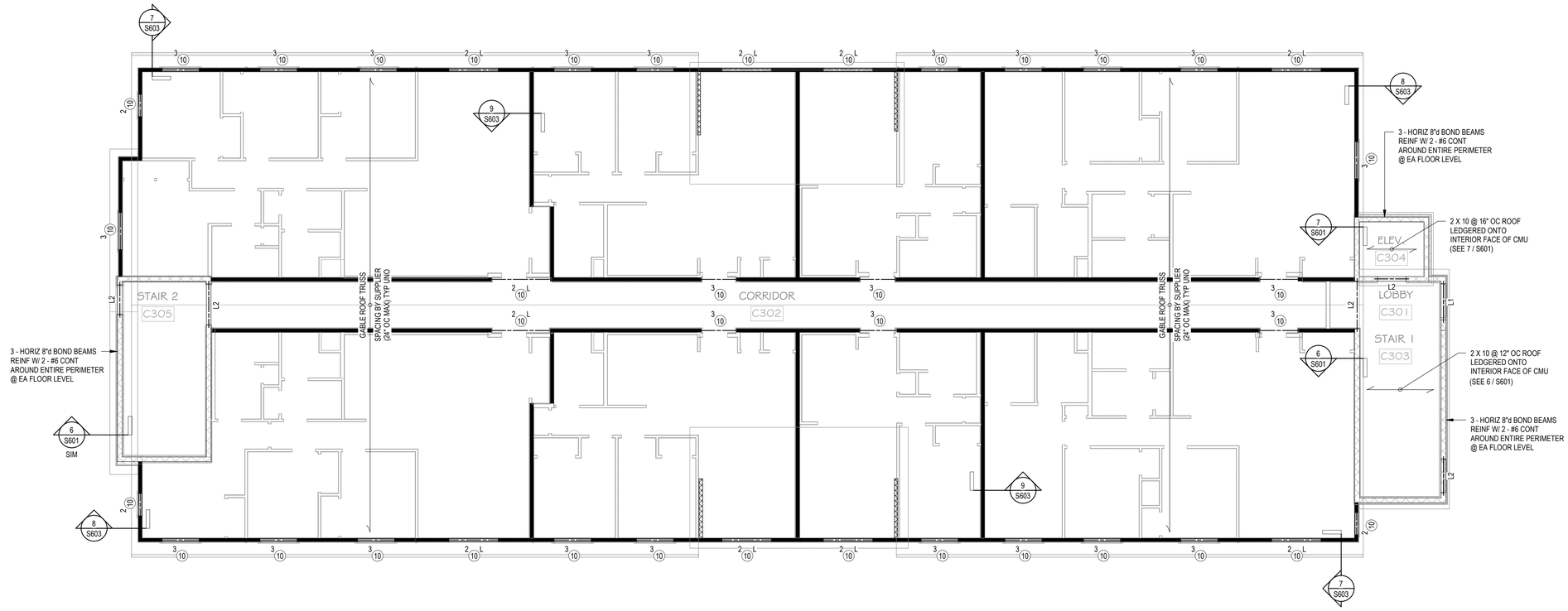
SCALE
As Indicated

West Birch Apartments

W Branch Street
Princeton, MN

THIRD FLOOR FRAMING PLAN

S113



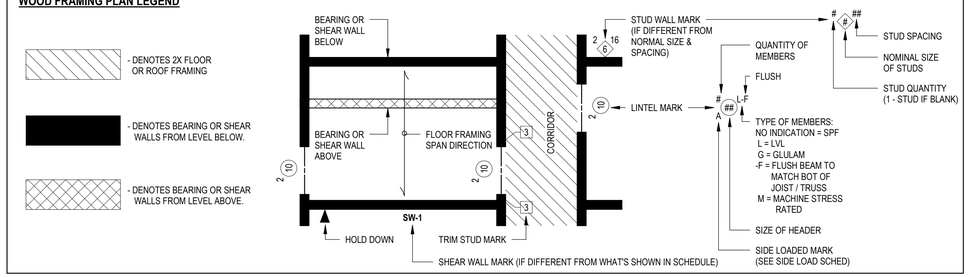
ROOF FRAMING PLAN

1/8" = 1'-0"

NORTH

SEE SHEET S113 FOR FRAMING PLAN NOTES

WOOD FRAMING PLAN LEGEND



8/27/2018 9:57:21 AM

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

NOT FOR CONSTRUCTION

THESE DOCUMENTS REPRESENT CURRENT PROGRESS AND SHALL NOT BE CONSTRUED AS COMPLETE. USE OF THESE DOCUMENTS FOR PURPOSES OTHER THAN GENERAL REVIEW IS DONE AT THE USER'S OWN RISK.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of MINNESOTA

WILLIAM T. BULLER — 20995 reg. no.

06.30.2020 reg. exp. date

ERA ERICKSEN ROED & ASSOCIATES
Structural Engineers

2550 University Avenue West
Suite 201-S
Saint Paul, MN 55114-1904
651.251.7570
www.eraeng.com

ERA Commission #2018-273
Copyright © ERA

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
MDS/TMR
Issue Date
8.24.2018

SUBMITTALS / REVISIONS

8.24.2018 100% MHFA REVIEW

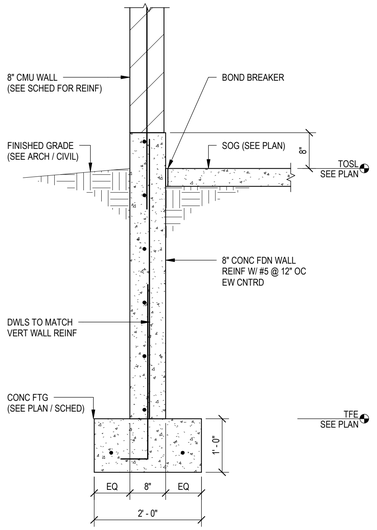
SCALE
As Indicated

West Birch Apartments

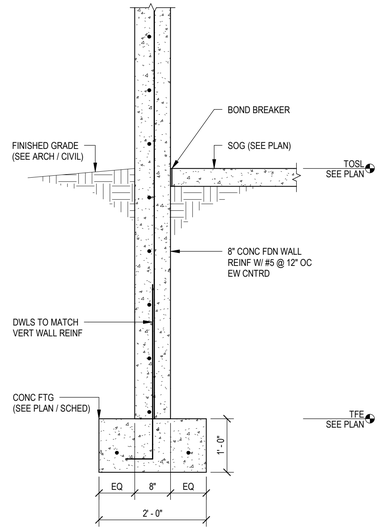
W Branch Street
Princeton, MN

ROOF FRAMING PLAN

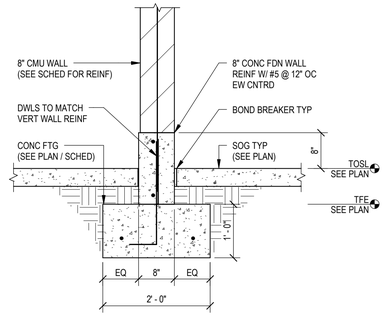
S121



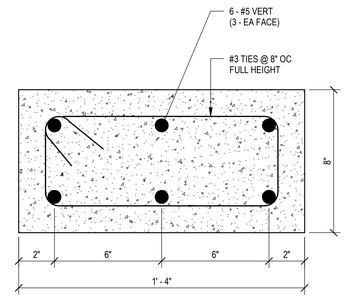
1 S601 FOUNDATION DETAIL
3/4" = 1'-0"



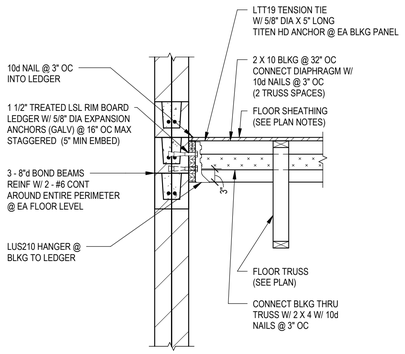
2 S601 FOUNDATION DETAIL
3/4" = 1'-0"



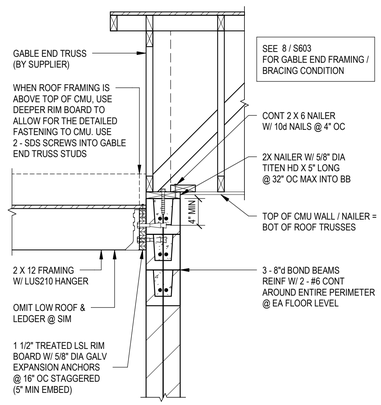
3 S601 FOUNDATION DETAIL
3/4" = 1'-0"



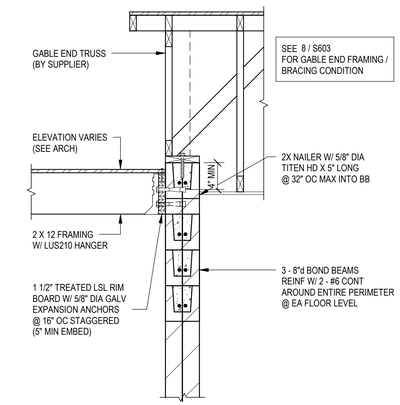
4 S601 PLAN DETAIL
3" = 1'-0"



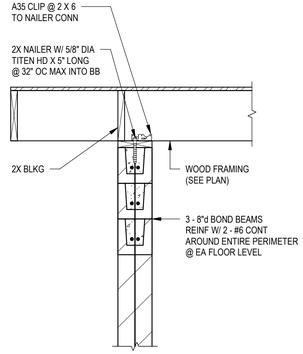
5 S601 FRAMING DETAIL
3/4" = 1'-0"



6 S601 FRAMING DETAIL
3/4" = 1'-0"



7 S601 FRAMING DETAIL
3/4" = 1'-0"



8 S601 FRAMING DETAIL
3/4" = 1'-0"

8/27/2018 9:57:24 AM

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

NOT FOR CONSTRUCTION

THESE DOCUMENTS REPRESENT CURRENT PROGRESS AND SHALL NOT BE CONSTRUED AS COMPLETE. USE OF THESE DOCUMENTS FOR PURPOSES OTHER THAN GENERAL REVIEW IS DONE AT THE USER'S OWN RISK.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of MINNESOTA

WILLIAM T. BULLER — 20995 reg. no.

06.30.2020 reg. exp. date

ERICKSEN ROED & ASSOCIATES — Structural Engineers

2550 University Avenue West
Suite 201-S
Saint Paul, MN 55114-1904
651.251.7570
www.eraeng.com

ERA Commission #2018-273
Copyright © ERA

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
MDS/TMR
Issue Date
8.24.2018

SUBMITTALS / REVISIONS
8.24.2018 100% MHFA REVIEW

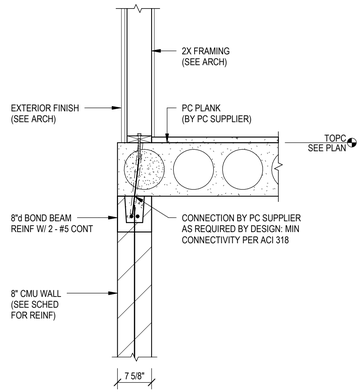
SCALE
As Indicated

West Birch Apartments

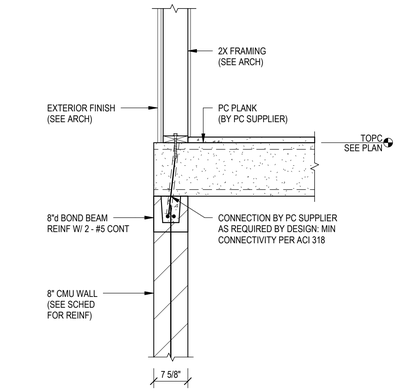
W Branch Street
Princeton, MN

FOUNDATION / FRAMING DETAILS

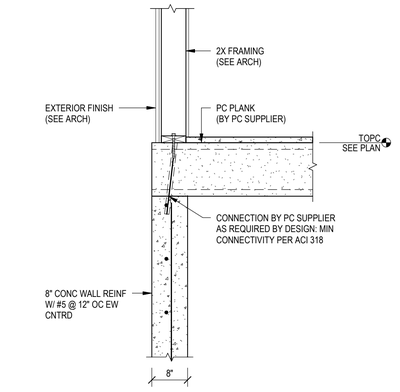
S601



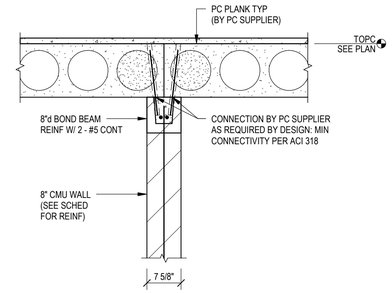
1 S602 PRECAST FRAMING DETAIL
3/4" = 1'-0"



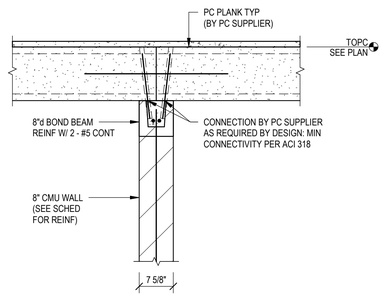
2 S602 PRECAST FRAMING DETAIL
3/4" = 1'-0"



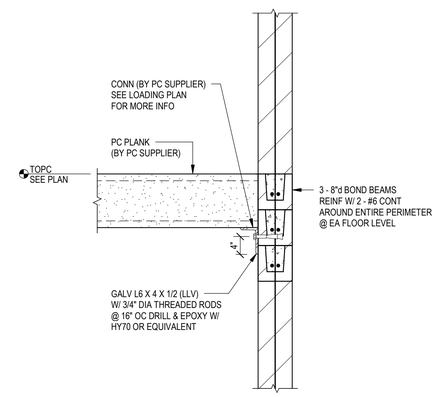
3 S602 PRECAST FRAMING DETAIL
3/4" = 1'-0"



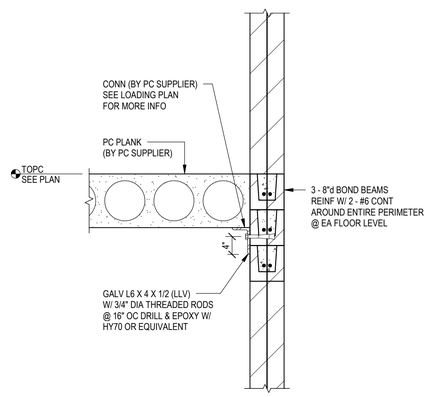
4 S602 PRECAST FRAMING DETAIL
3/4" = 1'-0"



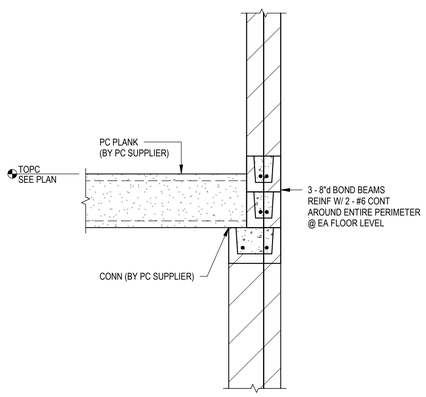
5 S602 PRECAST FRAMING DETAIL
3/4" = 1'-0"



6 S602 PRECAST FRAMING DETAIL
3/4" = 1'-0"



7 S602 PRECAST FRAMING DETAIL
3/4" = 1'-0"



8 S602 FRAMING DETAIL
3/4" = 1'-0"

PRECAST DETAILS INDICATE GENERAL PRECAST FRAMING INTENT. FINAL PRECAST DETAILING MAY VARY FROM WHAT IS INDICATED ON THE CONTRACT DOCUMENTS, SEE APPROVED PRECAST SHOP DRAWINGS FOR ACTUAL CONDITIONS.

ALL PRECAST CONNECTIONS ARE THE RESPONSIBILITY OF THE PRECAST SPECIALTY ENGINEER, NOT ALL PRECAST CONNECTIONS ARE SHOWN NOR DETAILED IN THE CONTRACT DOCUMENTS. ALL PRECAST CONNECTIONS TO BE DESIGNED PER STRUCTURAL DRAWINGS AND TO MEET CODE MINIMUM CONNECTIVITY REQUIREMENTS.

8/27/2018 9:57:27 AM

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

NOT FOR CONSTRUCTION

THESE DOCUMENTS REPRESENT CURRENT PROGRESS AND SHALL NOT BE CONSTRUED AS COMPLETE. USE OF THESE DOCUMENTS FOR PURPOSES OTHER THAN GENERAL REVIEW IS DONE AT THE USER'S OWN RISK.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of MINNESOTA

WILLIAM T. BULLER — 20995 reg. no.

06.30.2020 reg. exp. date

ERA ERICKSEN ROED & ASSOCIATES
Structural Engineers
2550 University Avenue West
Suite 201-S
Saint Paul, MN 55114-1904
651.251.7570
www.eraeng.com

ERA Commission #2018-273
Copyright © ERA

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
MDS/TMR
Issue Date
8.24.2018

SUBMITTALS / REVISIONS
8.24.2018 100% MHFA REVIEW

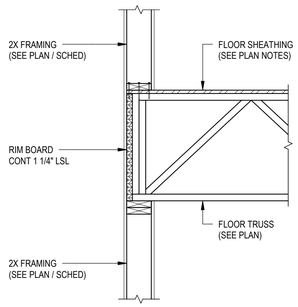
SCALE
As Indicated

West Birch Apartments

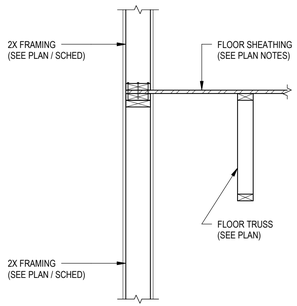
W Branch Street
Princeton, MN

PRECAST FRAMING DETAILS

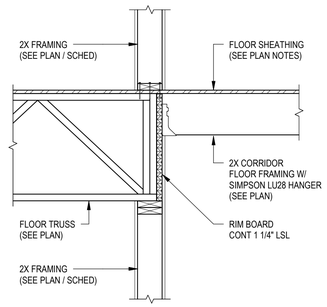
S602



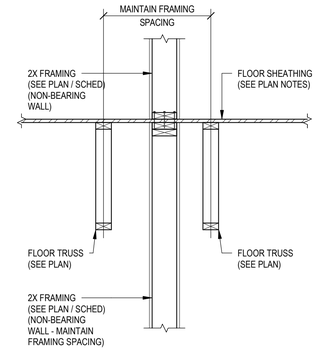
1 S603 FRAMING DETAIL #10201 NO SCALE



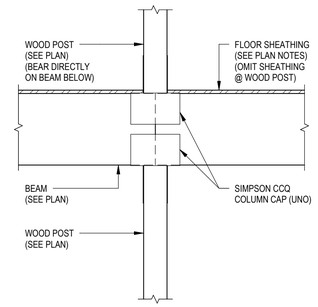
2 S603 FRAMING DETAIL #10203 NO SCALE



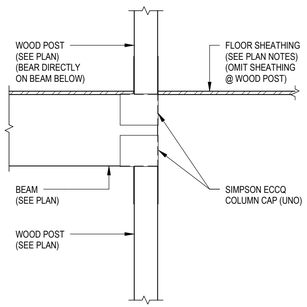
3 S603 FRAMING DETAIL #10405 NO SCALE



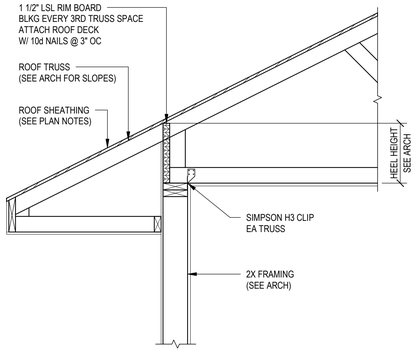
4 S603 FRAMING DETAIL #10426 NO SCALE



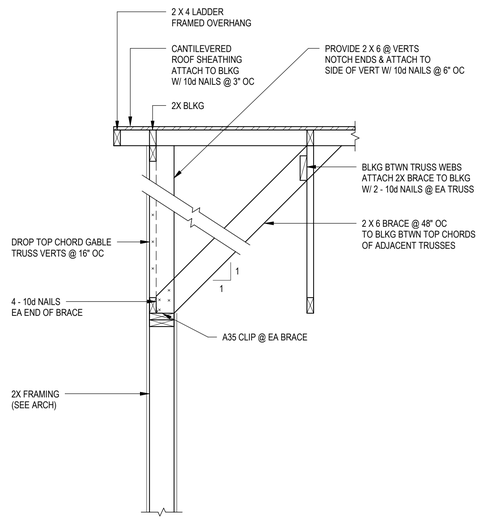
5 S603 FRAMING DETAIL #10446 NO SCALE



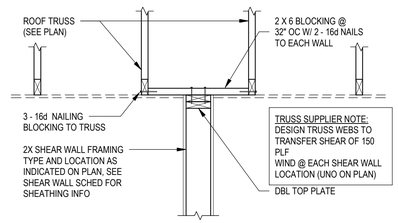
6 S603 FRAMING DETAIL #10447 NO SCALE



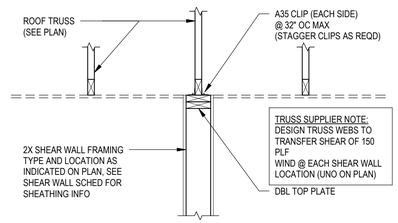
7 S603 3/4" = 1'-0" FRAMING DETAIL



8 S603 3/4" = 1'-0" FRAMING DETAIL

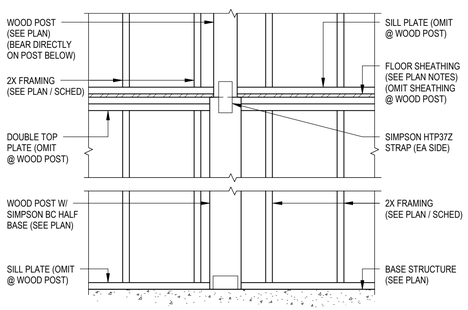


CONNECTION AT TRUSS NOT ALIGNING WITH SHEAR WALL



CONNECTION AT TRUSS ALIGNING WITH SHEAR WALL

9 S603 FRAMING DETAIL #10702 NO SCALE



10 S603 FRAMING ELEVATION #10448 NO SCALE

8/27/2018 9:57:31 AM

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

NOT FOR CONSTRUCTION

THESE DOCUMENTS REPRESENT CURRENT PROGRESS AND SHALL NOT BE CONSTRUED AS COMPLETE. USE OF THESE DOCUMENTS FOR PURPOSES OTHER THAN GENERAL REVIEW IS DONE AT THE USER'S OWN RISK.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of MINNESOTA

WILLIAM T. BULLER — 20995 reg. no.

06.30.2020 reg. exp. date

ERA ERICKSEN ROED & ASSOCIATES
Structural Engineers

2550 University Avenue West
Suite 201-S
Saint Paul, MN 55114-1904
651.251.7570
www.eraeng.com

ERA Commission #2018-273
Copyright © ERA

PROJECT INFO

Commission No.
B/A: 616-18
Drawn By:
MDS/TMR
Issue Date
8.24.2018

SUBMITTALS / REVISIONS

8.24.2018 100% MHFA REVIEW

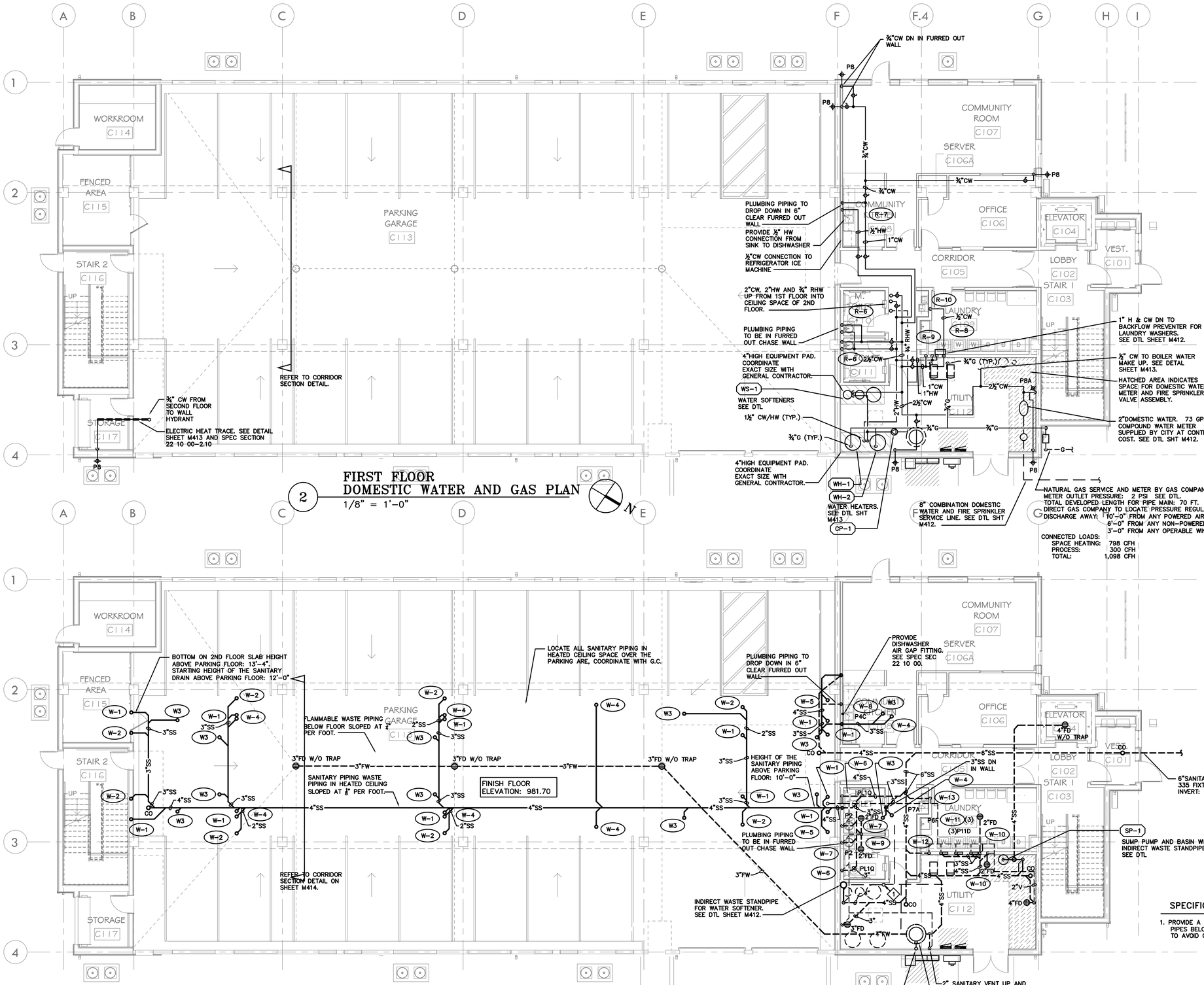
SCALE
As Indicated

West Birch Apartments

W Branch Street
Princeton, MN

WOOD FRAMING DETAILS

S603



2 FIRST FLOOR DOMESTIC WATER AND GAS PLAN
1/8" = 1'-0"

1 FIRST FLOOR WASTE AND VENT PLAN
1/8" = 1'-0"

GENERAL FIRE SPRINKLER NOTES

A. PROVIDE A COMPLETE FIRE SPRINKLER SYSTEM FOR THE ENTIRE FACILITY. PROVIDE DRY FIRE SPRINKLER PROTECTION IN UNHEATED SPACES AS REQUIRED. REFER TO SPECIFICATION SECTION 21 00 10–FIRE SPRINKLER SYSTEM (PERFORMANCE BASED)

B. ROUTE ALL SPRINKLER MAIN AND BRANCHES IN SUCH MANNER AS TO MINIMIZE EXPOSED PIPING WHERE REQUIRED THRU A LONGER ROUTE TO MINIMIZE EXPOSURE.

C. THIS CONTRACTOR SHALL REMOVE AND RELOCATE ALL EQUIPMENT AND PIPING WHICH INTERFERES WITH THE WORK OF OTHER TRADES AT THIS CONTRACTOR'S SOLE EXPENSE.IF THIS CONTRACTOR'S WORK IS NOT COORDINATED PRIOR TO THE BEGINNING OF WORK.

D. SUBMIT PRELIMINARY PIPE ROUTING PLAN TO ARCHITECT AND ENGINEER AS SOON AS POSSIBLE. CONTRACTOR TO RECEIVE APPROVAL OF PIPE ROUTING FROM ARCHITECT PRIOR TO FABRICATION OF PIPE.

E. REMOVE MANUFACTURER'S LABELS, UNION LABELS AND RESIDE GLUE FROM PIPING IN EXPOSED AREAS.

F. SPRINKLER CONTROL VALVES, FLOW ALARM AND TAMPER SWITCHES SHALL BE LOCATED IN SECURE LOCATION WITHIN STAIRWELLS OR CORRIDORS.

G. VERIFY NEED TO PROVIDE FIRE SPRINKLER PROTECTION IN WOOD CONSTRUCTION CEILING SPACE WITH LOCAL INSPECTOR.

GENERAL PLUMBING NOTES

A. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH THE MECHANICAL AND PLUMBING DRAWINGS AND SPECIFICATIONS. NEITHER THE DRAWINGS NOR THE SPECIFICATIONS SHALL BE COMPLETE WITHOUT THE OTHER..

B. DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO SHOW APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL THOROUGHLY REVIEW ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS AND SPECIFICATIONS.

C. PLACEMENT OF EQUIPMENT AND DEVICES SHALL NOT INTERFERE WITH LOCATION NOR CLEARANCES OF OTHER TRADE'S MATERIALS OR EQUIPMENT.

D. CONTRACTOR SHALL PROVIDE PIPE OFFSETS AND TRANSITIONS AS REQUIRED TO ACCOMMODATE STRUCTURE AND ARCHITECTURE.

E. COORDINATE LOCATION AND ELEVATION OF ALL EXTERIOR WALL AND ROOF PENETRATIONS WITH ARCHITECT.

F. PRIOR TO INSTALLING PLUMBING VENTS THRU ROOF, COORDINATE WITH ARCHITECT TO MEET APPEARANCE REQUIREMENTS.

G. ALL BRANCH TAKE-OFFS SHALL HAVE ISOLATION SHUT-OFF VALVES.

H. RESIDENTIAL UNDERCOUNTER DISHWASHER DISCHARGE LINE SHALL HAVE AIR-GAP DEVICE. INSTALL ON COUNTER-TOP. LOCATE TO THE REAR OF THE COUNTER-TOP AND COORDINATE WITH GENERAL CONTR. REFER TO SPEC SEC 22 10 00-2.6-J.

I. PROVIDE A PLASTIC FLOOR DRAIN IN AREAS WHERE CONDENSATE DISCHARGES FROM HIGH EFFICIENCY EQUIPMENT, SUCH AS SEALED COMBUSTION WATER HEATERS.

J. THIS CONTRACTOR TO PROVIDE COMBINATION HOT AND COLD FAUCETS THAT HAVE THREADED OUTLETS WITH INTERNAL CHECK VALVES OR IN-LINE CHECK VALVES INSTALLED UPSTREAM IN THE BRANCH LINES SERVING THIS TYPE OF FAUCET. THIS INCLUDES THE COMBINATION FAUCETS SUPPLIED BY FOOD SERVICE EQUIPMENT SUPPLIERS.

K. ALL FLOOR DRAINS AND PLUMBING FIXTURES LOCATED BELOW STREET CURB ELEVATION AT SANITARY SEWER EXIT LOCATION SHALL HAVE BACKWATER CHECK VALVES.

L. ALL DOMESTIC HOT AND COLD WATER PEX PIPING SHALL MAINTAIN A 2" SPACING AND HAVE INDIVIDUAL FLOOR AND WALL PENETRATIONS.

M. FLOOR MOUNTED PLUMBING EQUIPMENT SHALL BE PROVIDED WITH A 4" HIGH CONCRETE PAD BY THIS CONTRACTOR. EXTEND A MINIMUM OF 2" BEYOND THE EDGE OF THE EQUIPMENT.

SPECIFIC PLUMBING NOTES

1. PROVIDE A 4" DIA PVC VERTICAL PIPE WITH 4" HORIZONTAL 10 FT LONG PERFORATED PIPES BELOW GRADE. SEE DETAIL ON SHT. M413. PIPING CAN ADJUSTED AS NEEDED TO AVOID OTHER PIPING BELOW GRADE.

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

PROJECT INFO

Project No.
BLA201802
Drawn By:
GGH/SDK
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

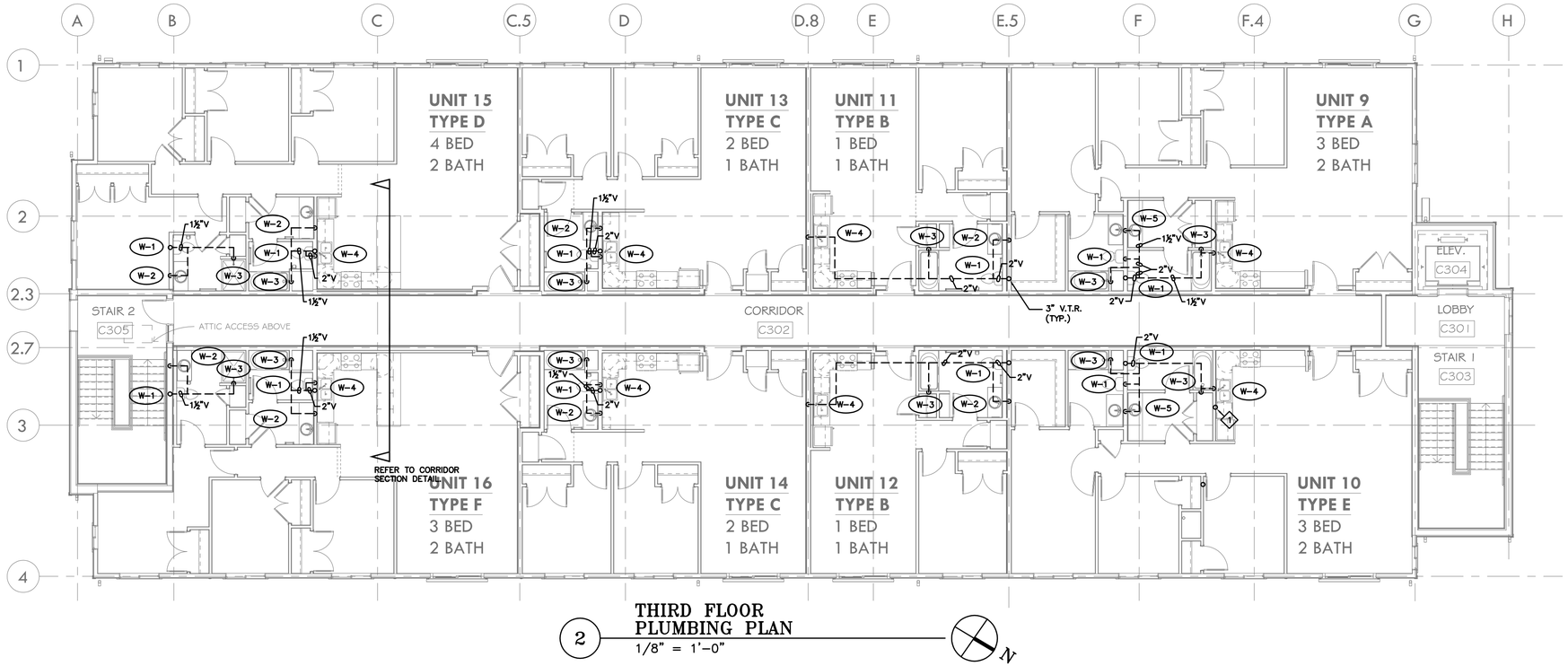
SCALE
AS NOTED

West Birch Apartments

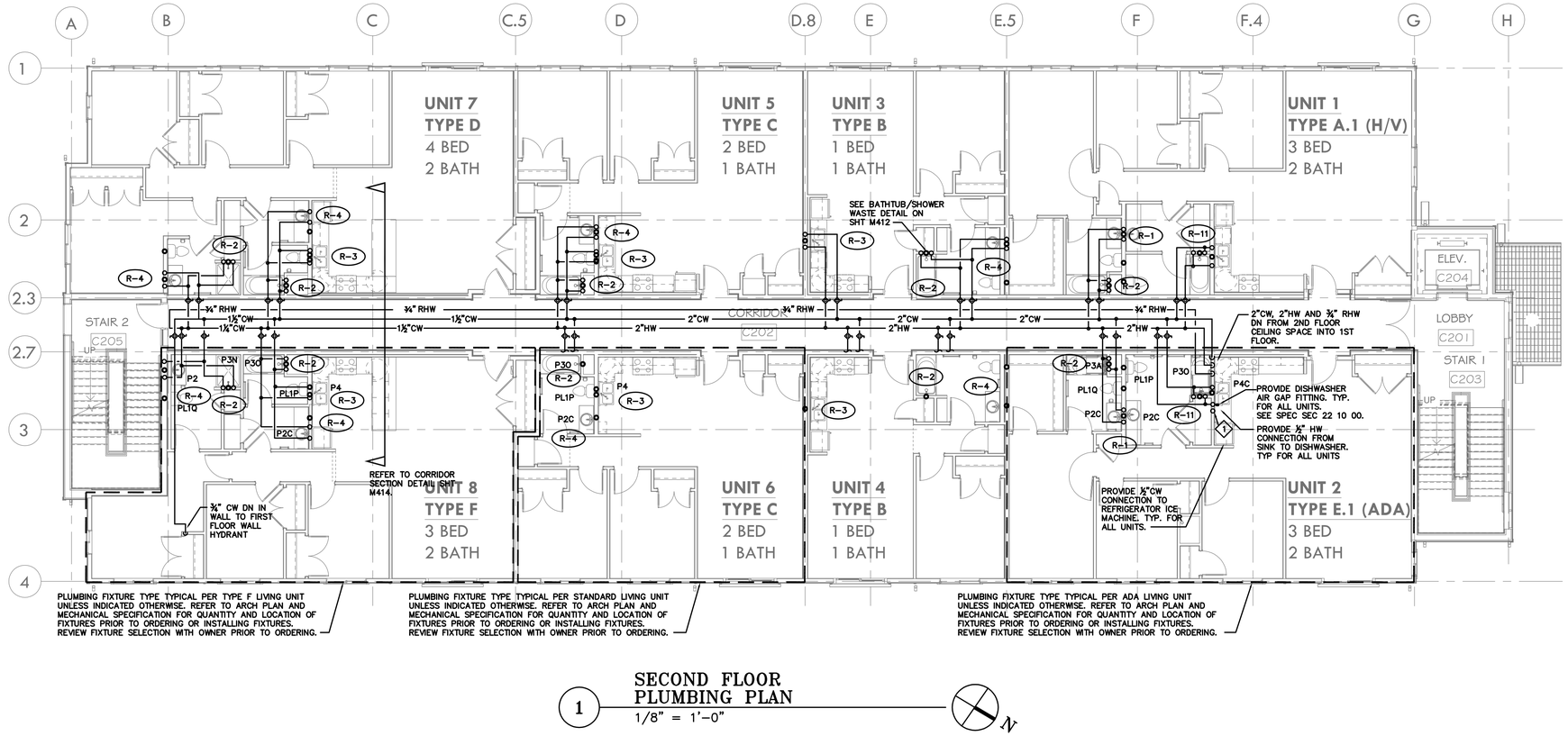
W Branch Street
Princeton, MN

PLUMBING PLANS

M111



2 THIRD FLOOR PLUMBING PLAN
1/8" = 1'-0"



PLUMBING FIXTURE TYPE TYPICAL PER TYPE F LIVING UNIT UNLESS INDICATED OTHERWISE. REFER TO ARCH PLAN AND MECHANICAL SPECIFICATION FOR QUANTITY AND LOCATION OF FIXTURES PRIOR TO ORDERING OR INSTALLING FIXTURES. REVIEW FIXTURE SELECTION WITH OWNER PRIOR TO ORDERING.

PLUMBING FIXTURE TYPE TYPICAL PER STANDARD LIVING UNIT UNLESS INDICATED OTHERWISE. REFER TO ARCH PLAN AND MECHANICAL SPECIFICATION FOR QUANTITY AND LOCATION OF FIXTURES PRIOR TO ORDERING OR INSTALLING FIXTURES. REVIEW FIXTURE SELECTION WITH OWNER PRIOR TO ORDERING.

PLUMBING FIXTURE TYPE TYPICAL PER ADA LIVING UNIT UNLESS INDICATED OTHERWISE. REFER TO ARCH PLAN AND MECHANICAL SPECIFICATION FOR QUANTITY AND LOCATION OF FIXTURES PRIOR TO ORDERING OR INSTALLING FIXTURES. REVIEW FIXTURE SELECTION WITH OWNER PRIOR TO ORDERING.

1 SECOND FLOOR PLUMBING PLAN
1/8" = 1'-0"

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
GGH/SDK
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

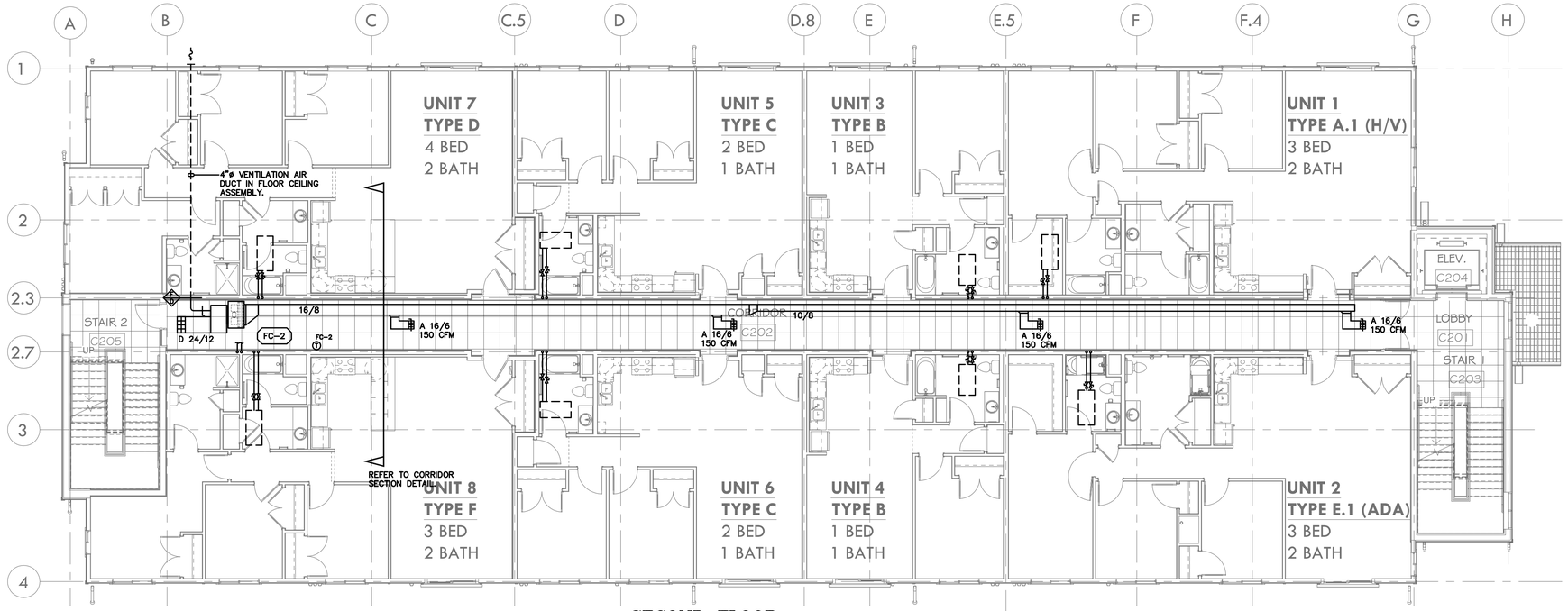
SCALE
AS NOTED

West Birch Apartments

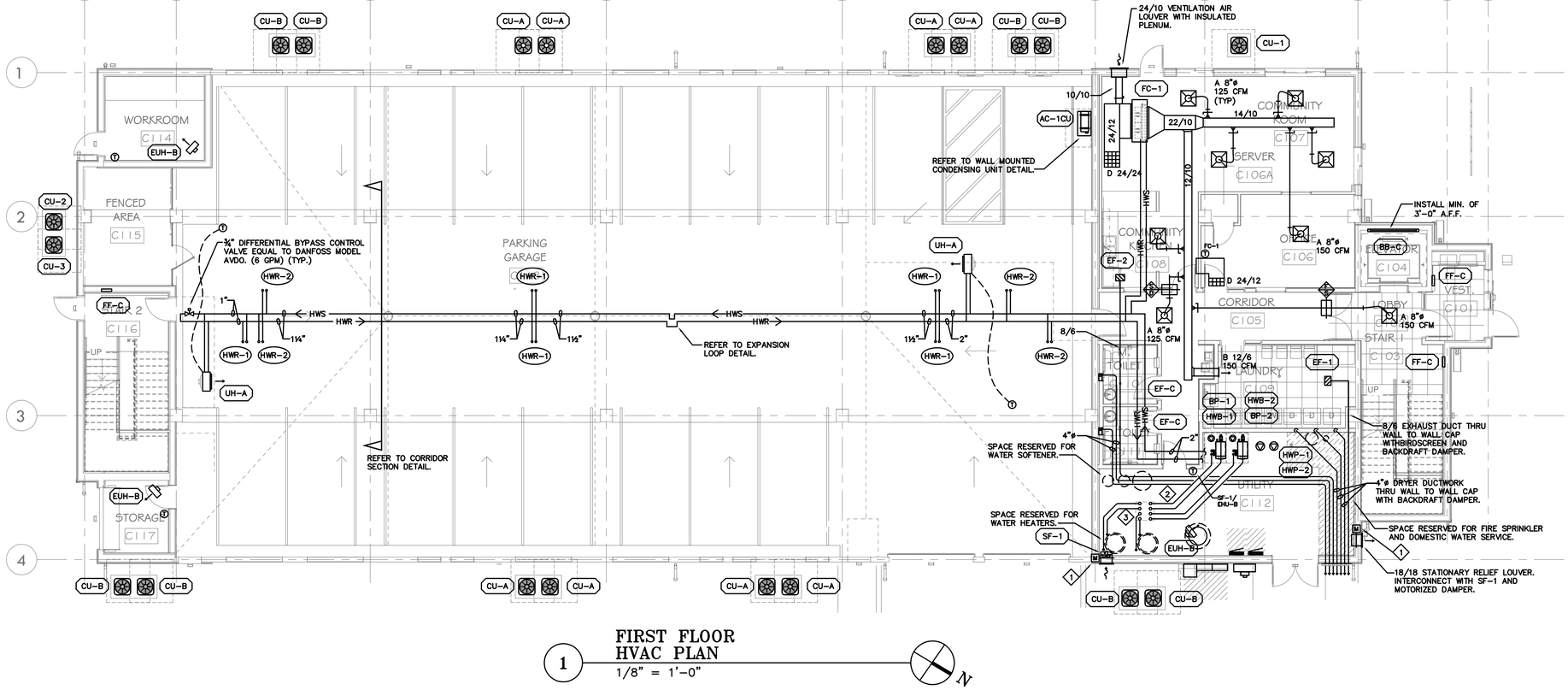
W Branch Street
Princeton, MN

PLUMBING PLANS

M112



2 SECOND FLOOR HVAC PLAN
1/8" = 1'-0"



1 FIRST FLOOR HVAC PLAN
1/8" = 1'-0"

RUN-OUTS TO EQUIPMENT

GPM	PIPE SIZE
0 – 3.5	¾"
3.6 – 6.7	1"
6.8 – 13.9	1¼"
14.0 – 24.0	1½"

REFER TO SHEET M212 FOR NOTES.

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
SAD
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

SCALE
AS NOTED

West Birch Apartments

W Branch Street
Princeton, MN

HVAC PLANS

M211

GENERAL HVAC NOTES 0216

A. DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO SHOW APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL THOROUGHLY REVIEW ALL ARCHITECTURAL, STRUCTURAL, PLUMBING, AND ELECTRICAL PLANS AND SPECIFICATIONS. PLACEMENT OF EQUIPMENT AND DEVICES SHALL NOT INTERFERE WITH LOCATIONS OR CLEARANCES OF OTHER TRADE'S MATERIALS OR EQUIPMENT.

B. ALL SYSTEMS, MATERIAL AND INSTALLATION SHALL MEET STATE AND LOCAL CODES.

C. CONTRACTOR SHALL PROVIDE PIPE AND DUCT OFFSETS AND TRANSITIONS AS REQUIRED TO ACCOMMODATE STRUCTURE AND ARCHITECTURE.

D. RETURN GRILLES SHALL BE PROVIDED WITH LINED BOOT AND ELBOW FITTINGS.

E. FLOOR MOUNTED HVAC EQUIPMENT SHALL BE PROVIDED WITH A 4" HIGH CONCRETE PAD THAT EXTENDS A MINIMUM 2" BEYOND EDGE OF EQUIPMENT. PADS SHALL BE PROVIDED BY THIS CONTRACTOR.

F. DUCT SIZES SHOWN ARE FREE AREA. INCREASE DUCT SIZE AS REQUIRED TO ACCOMMODATE INTERNAL INSULATION.

G. KITCHEN HOODS ARE FURNISHED BY OTHERS AND INSTALLED BY MECHANICAL CONTRACTOR. VERIFY EXACT NECK SIZES AND MAKE ALL NECESSARY CONNECTIONS TO HOOD(S) AS SHOWN.

H. PROVIDE ¾" CONDENSATE RUNOUT FOR EACH FAN COIL SHOWN. PITCH PIPING ⅛" PER FOOT. SEE HVAC PLANS AND RISERS FOR ROUTING AND ADDITIONAL SIZING.

I. COORDINATE SPACE SENSOR/THERMOSTAT LOCATIONS WITH OTHER TRADES AND ARCHITECT PRIOR TO ROUGH-IN AND INSTALLATION.

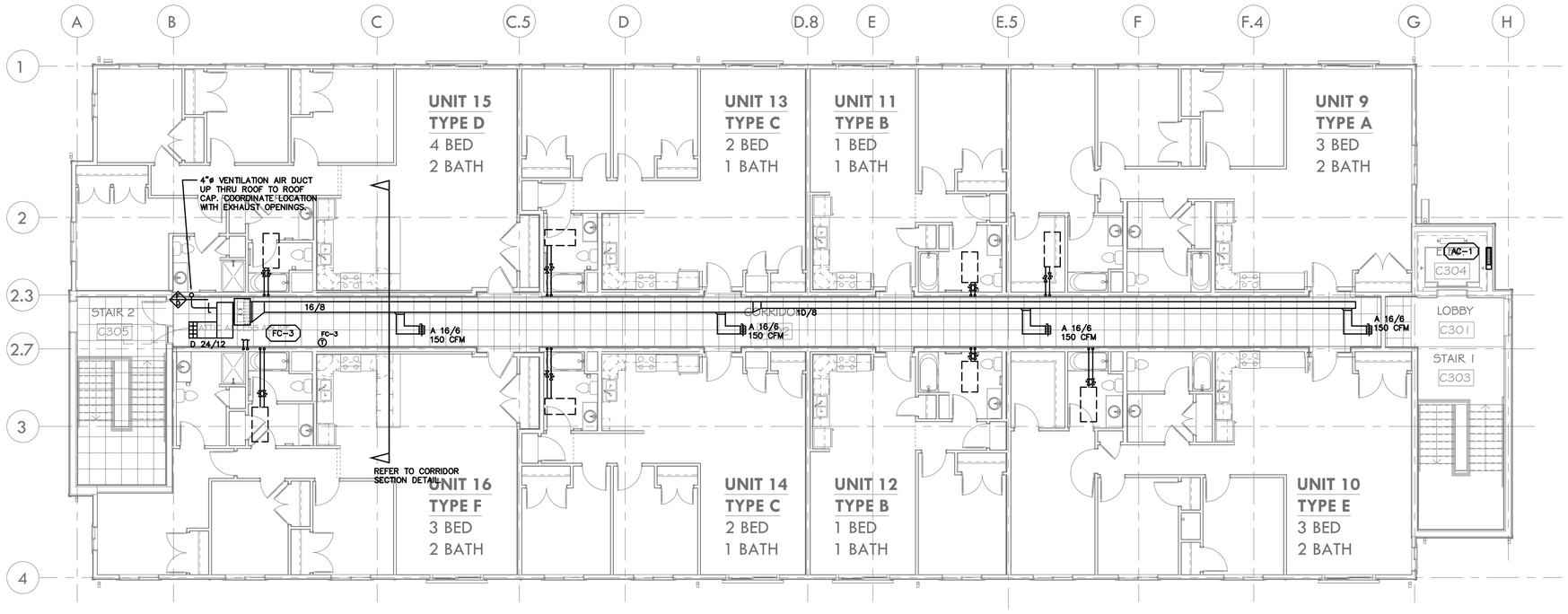
J. TAKE-OFFS TO ALL SUPPLY DIFFUSERS AND GRILLES SHALL HAVE MANUAL BALANCING DAMPERS.

K. DUCT RUNOUTS ARE EQUAL TO GRILLE AND DIFFUSER NECK SIZES SHOWN UNLESS INDICATED OTHERWISE.

L. PROVIDE ISOLATION VALVES AT EACH PIECE OF EQUIPMENT AND AT EACH BRANCH TAKE OFF FROM PIPING MAINS.

◇SPECIFIC MECHANICAL NOTES

1. PROVIDE SF-1 AS SPECIFIED COMPLETE WITH 120 VOLT LOW LEAK MOTORIZED DAMPER. PROVIDE LINE VOLTAGE REVERSE ACTING THERMOSTAT AND ALL 120 VOLT WIRING REQUIRED TO INTERCONNECT TO RELIEF LOUVER AND LOW LEAK MOTORIZED DAMPER.
2. 4"ø BOILER COMBUSTION AIR AND VENT PIPING UP THRU ROOF. REFER TO BOILER VENTING DETAIL.
3. 4"ø WATER HEATER COMBUSTION AIR AND VENT PIPING UP THRU ROOF. REFER TO WATER HEATER VENTING DETAIL.



1 THIRD FLOOR HVAC PLAN
1/8" = 1'-0"

RUN-OUTS TO EQUIPMENT	
GPM	PIPE SIZE
0 – 3.5	¾"
3.6 – 6.7	1"
6.8 – 13.9	1¼"
14.0 – 24.0	1½"

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
SAD
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

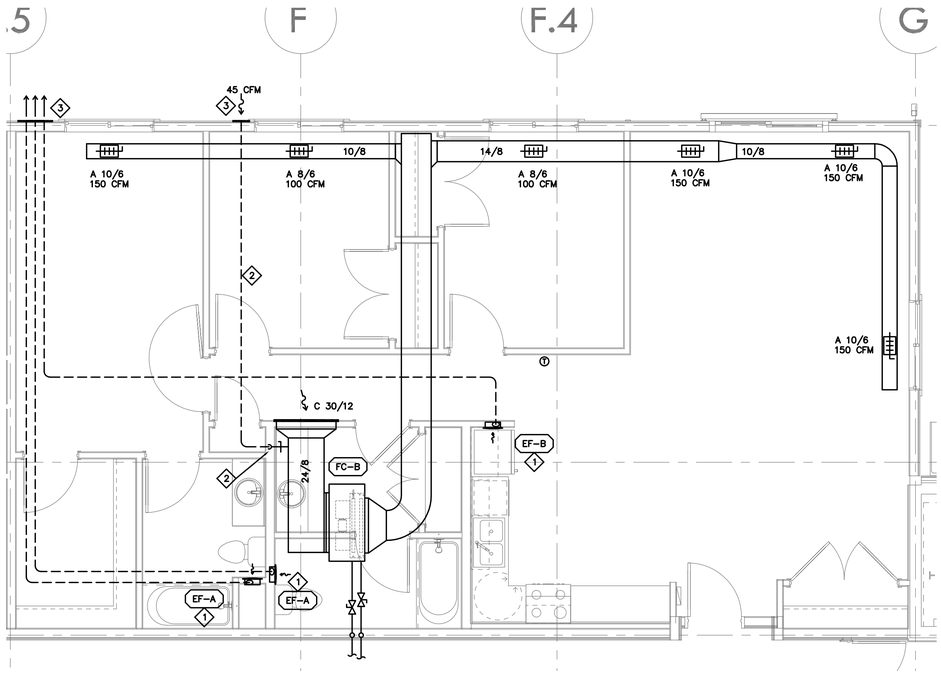
SCALE
AS NOTED

West Birch Apartments

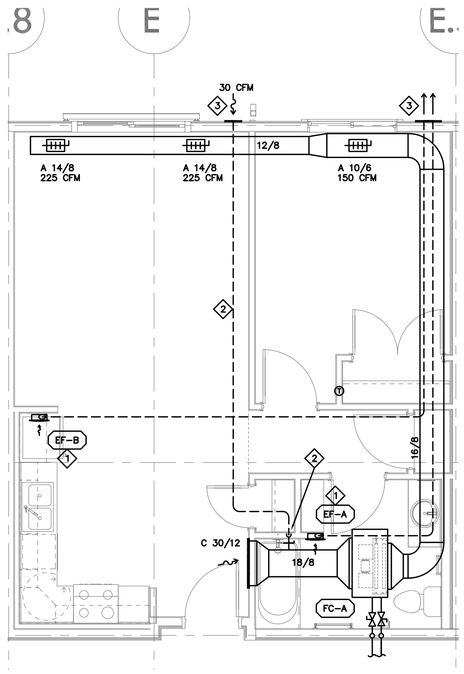
W Branch Street
Princeton, MN

HVAC PLANS

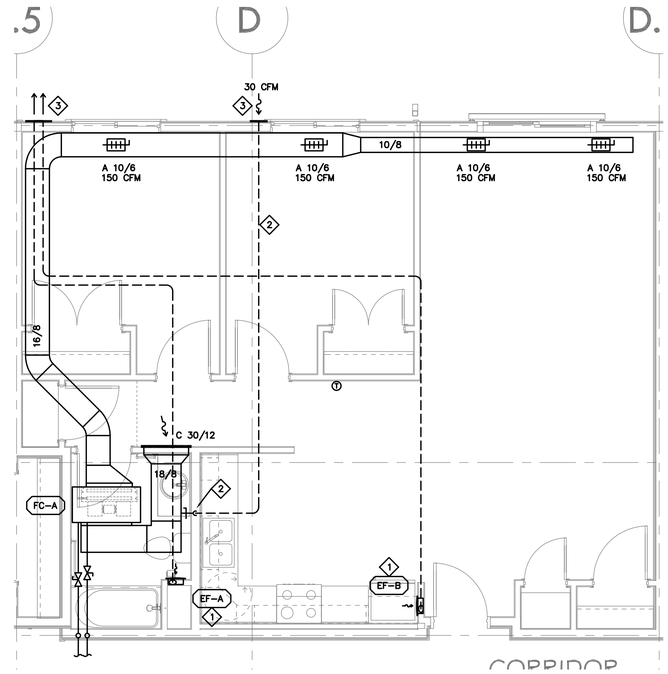
M212



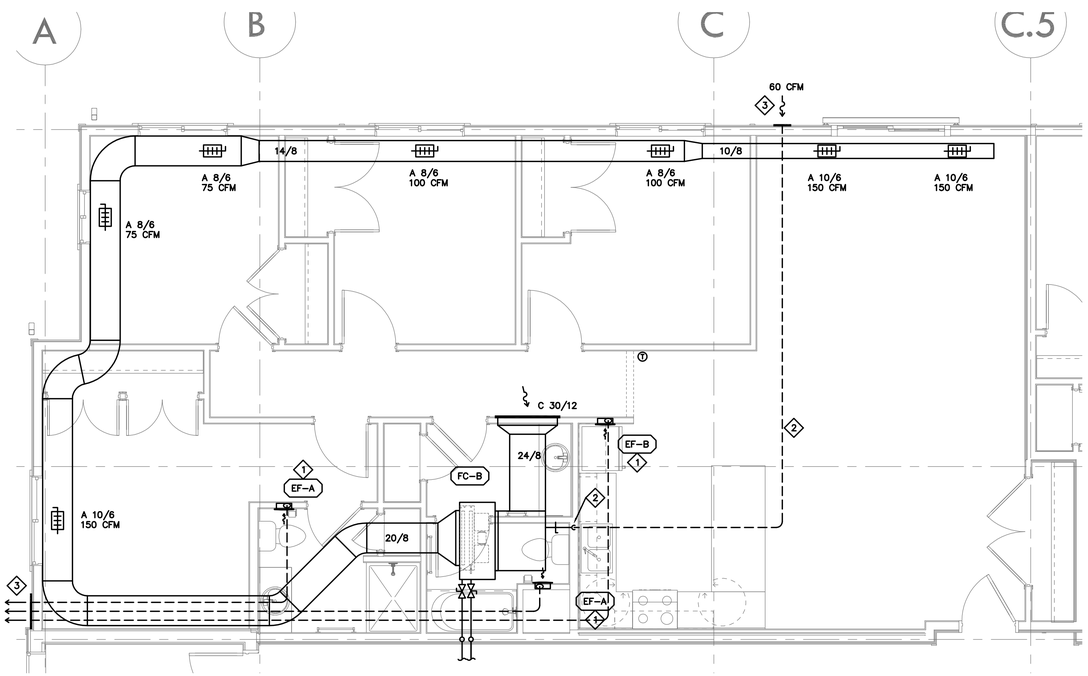
1 UNIT A HVAC PLAN
1/4" = 1'-0"



2 UNIT B HVAC PLAN
1/4" = 1'-0"



3 UNIT C HVAC PLAN
1/4" = 1'-0"



4 UNIT D HVAC PLAN
1/4" = 1'-0"

GENERAL MECHANICAL UNIT PLAN NOTES

A. COORDINATE DUCT AND SOFFIT LOCATIONS AND HEIGHTS WITH GENERAL CONTRACTOR.

B. PROVIDE OUTSIDE/FRESH AIR LOUVER AND 4"ø CONNECTION WITH MANUAL BALANCING DAMPER TO RETURN AIR DUCT. PROVIDE CODE REQUIRED MINIMUM CLEARANCE BETWEEN FRESH AIR AND EXHAUST/VENT PENETRATIONS AND OPERABLE WINDOWS.

C. PROVIDE 4" ROUND TOILET EXHAUST SIDEWALL TO WALL CAP ON LOWER FLOORS. TOILETS SHALL BE EXHAUSTED UP THRU ROOF TO ROOF CAPS FOR TOP FLOOR ONLY.

D. PROVIDE WALL THERMOSTAT. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH OWNER AND ARCHITECT.

E. DOORS SHALL BE UNDERCUT TO ALLOW RETURN AIR BACK TO HVAC UNIT.

F. ROUTE 3/4" CONDENSATE FROM FAN COILS DN IN WALL TO SINK TAILPIECE.

◇SPECIFIC MECHANICAL UNIT PLAN NOTES

1. ROUTE 4"ø EXHAUST DUCT IN FLOOR/CEILING ASSEMBLY AND OUT THRU SIDEWALL TO WALLCAP WITH BACKDRAFT DAMPER FOR LOWER FLOOR UNITS. ROUTE UP THRU ROOF TO ROOF CAP FOR TOP FLOOR UNITS ONLY. REFER TO BATHROOM EXHAUST DETAIL. COORDINATE WALL MOUNTED FAN LOCATION/HEIGHT WITH CABINETS AND PIPING.
2. ROUTE 4"ø INSULATED VENTILATION AIR DUCT IN FLOOR/CEILING ASSEMBLY AND OUT THRU SIDEWALL TO WALLCAP FOR LOWER FLOOR UNITS. ROUTE UP THRU ROOF TO ROOF CAP FOR TOP FLOOR UNITS ONLY. ROUTE DUCT DOWN IN WALL FROM FLOOR/CEILING ASSEMBLY AND CONNECT TO RETURN DUCT WITH BALANCING DAMPER. PROVIDE FIRE CAULKING AT PENETRATION OF TOP PLATE.
3. CENTER DUCT PENETRATION AT 12" BELOW TOP OF TOP PLATE. (TYP)

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
SAD
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

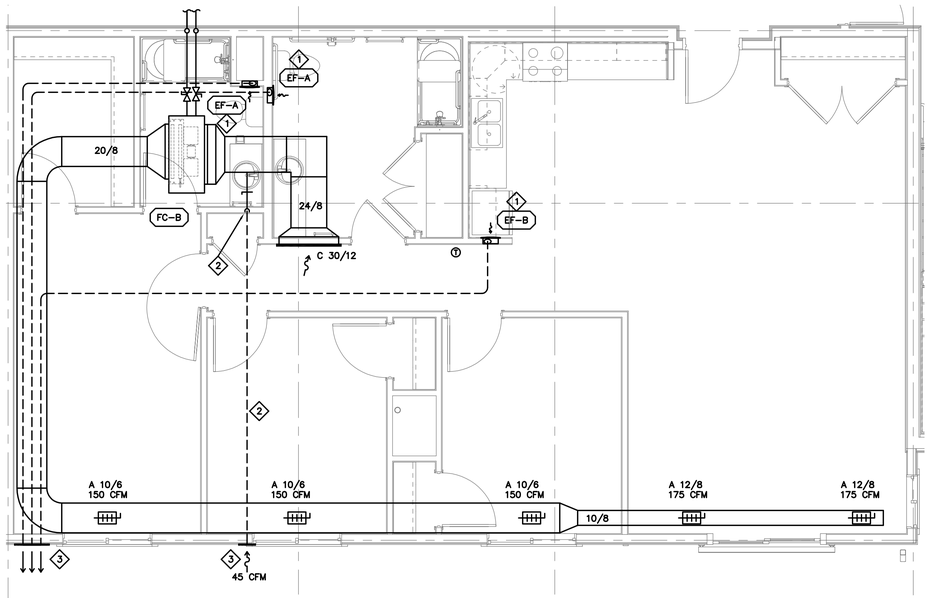
SCALE
AS NOTED

West Birch Apartments

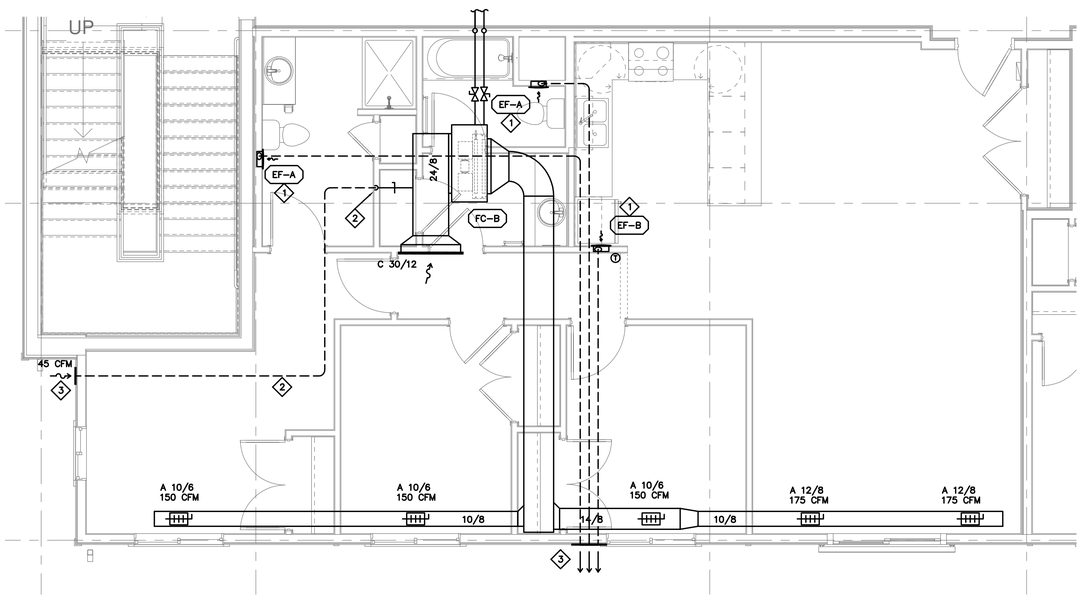
W Branch Street
Princeton, MN

UNIT HVAC PLANS

M311



1 UNIT E ADA
HVAC PLAN
1/4" = 1'-0"



2 UNIT F
HVAC PLAN
1/4" = 1'-0"

Blumentals
Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

STEEN
ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com

5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
SAD
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

SCALE
AS NOTED

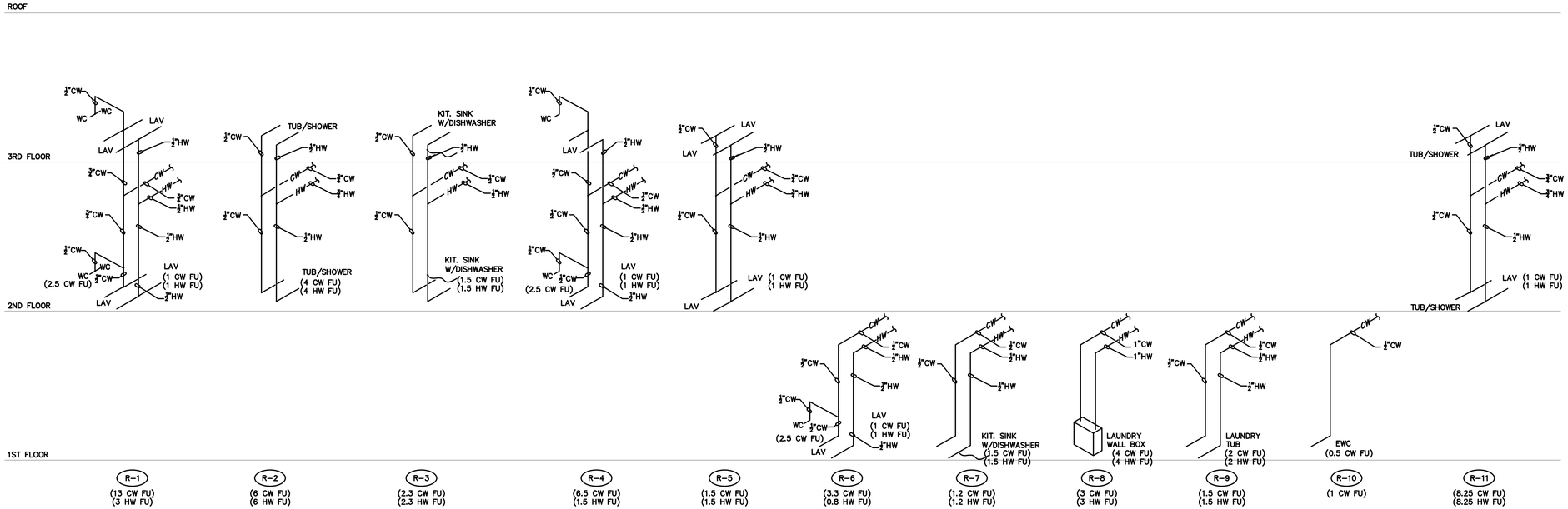
West Birch Apartments

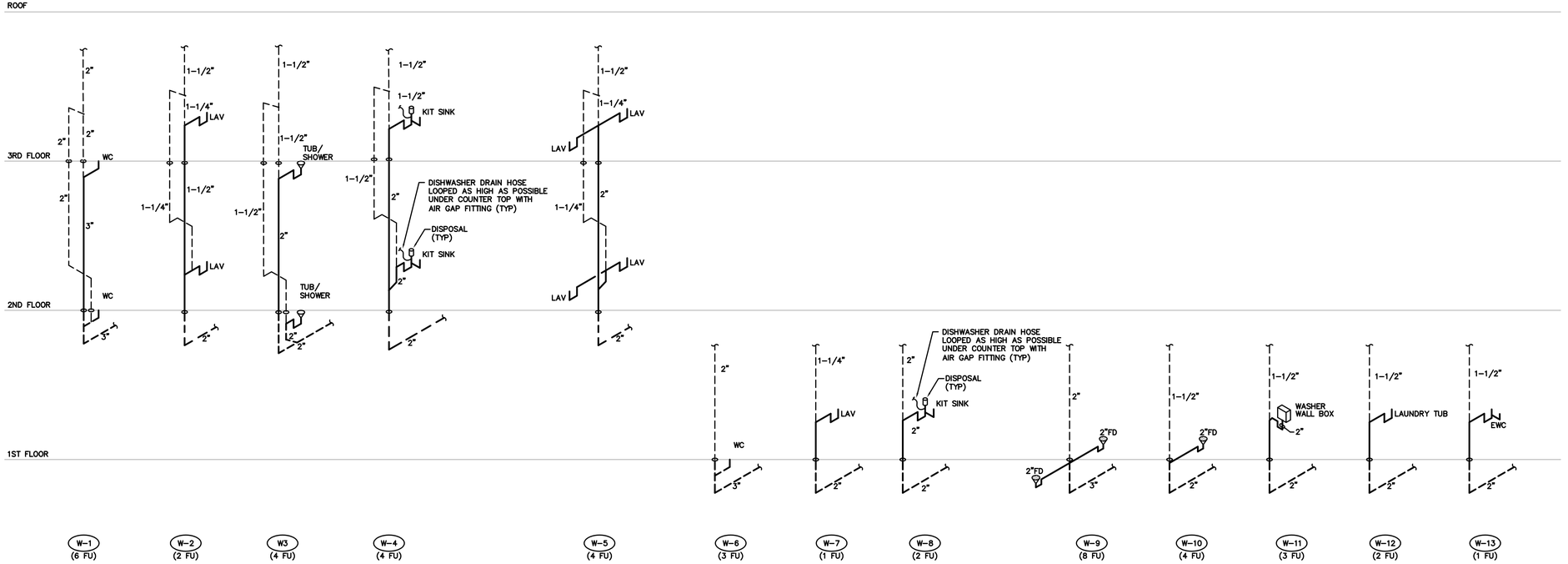
W Branch Street
Princeton, MN

UNIT HVAC PLANS

REFER TO SHEET M311 FOR NOTES.

M312





Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
GGH/SDK
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

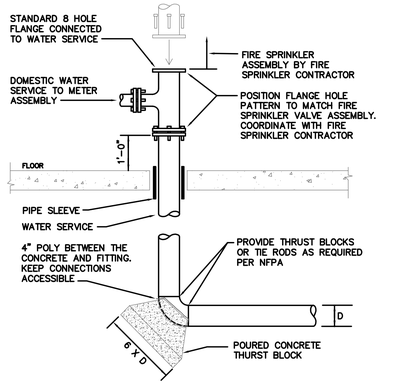
SCALE
AS NOTED

West Birch Apartments

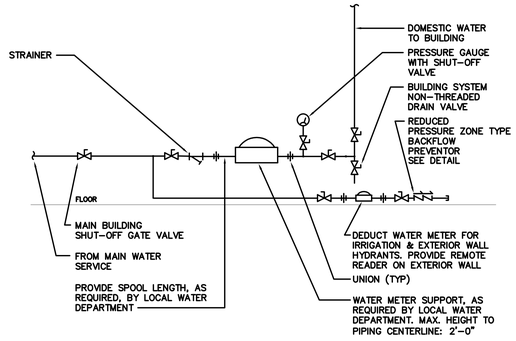
W Branch Street
Princeton, MN

PLUMBING RISERS

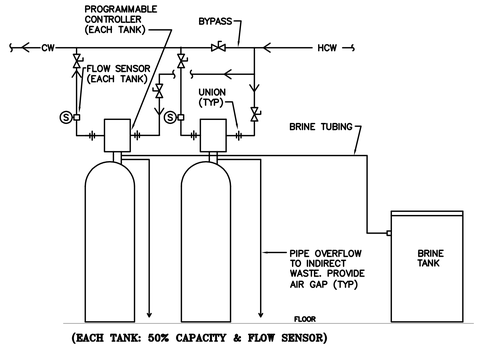
M411



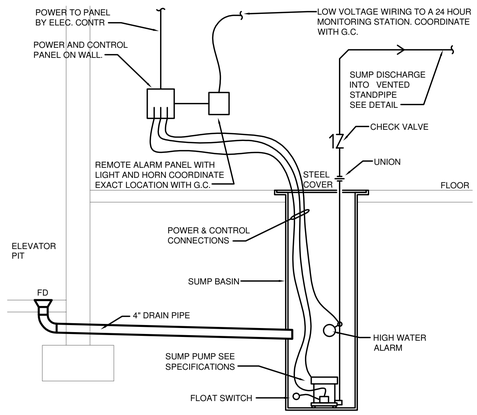
1 FIRE SPRINKLER WATER SERVICE
NO SCALE 1302 P4005.DWG



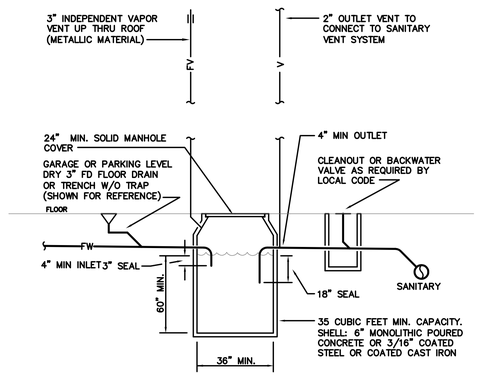
2 DOMESTIC WATER SERVICE
NO SCALE 0205 P4003.DWG



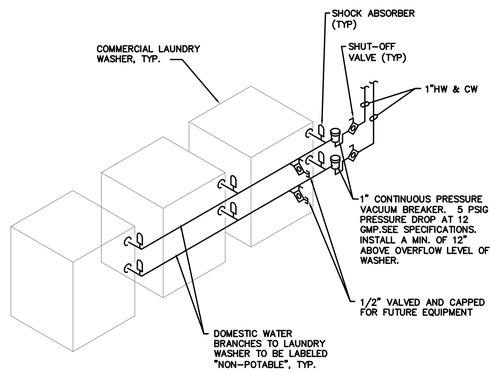
3 WATER SOFTENER (PARALLEL ALTER.DUPLEX)
NO SCALE P40015a.DWG



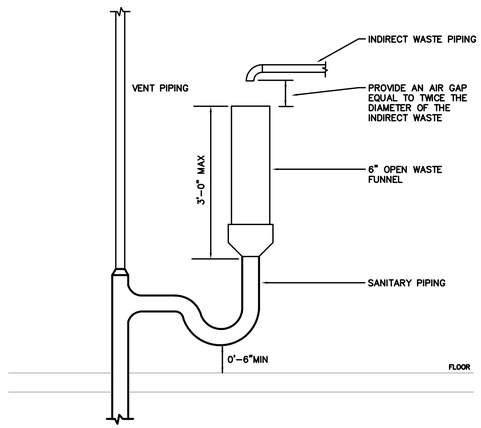
4 ELEVATOR PIT SUMP PUMP DETAIL
NO SCALE 1802 221431-03.dwg



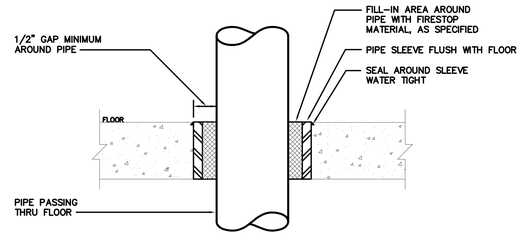
5 FLAMMABLE WASTE TRAP PIPING DETAIL
NO SCALE 0617 P40023.DWG



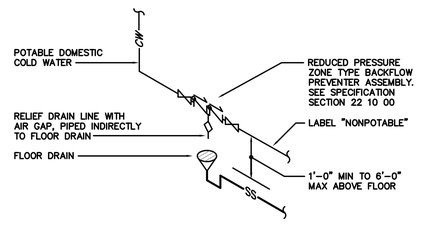
6 COMMERCIAL LAUNDRY WATER CONNECTION (3 MACHINES)
NO SCALE 0315 P40034A.DWG



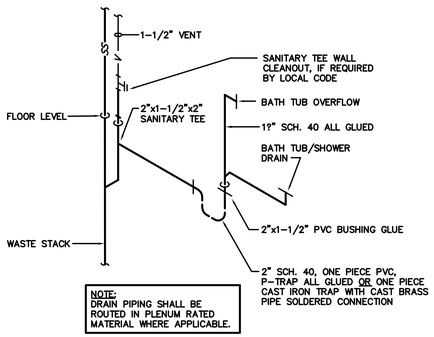
7 INDIRECT WASTE STAND PIPE
NO SCALE 0612 P40047.DWG



8 PIPE SLEEVE
NO SCALE 0414 P40057.DWG



9 REDUCED PRESSURE ZONE BACKFLOW PREVENTER
NO SCALE 0614 P40058.DWG

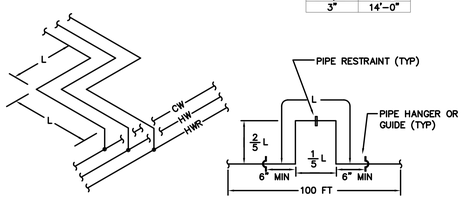


10 BATH TUB/SHOWER WASTE (NO ACCESS PANEL)
NO SCALE 0115 P40060.DWG

COPPER

DOMESTIC WATER BRANCH TAKE-OFFS	
MINIMUM OFFSET LENGTH	
PIPE SIZE	L FEET
UP TO 1-1/2"	2'-0"
2" TO 4"	3'-0"

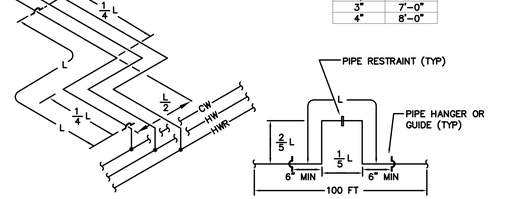
DOMESTIC HOT WATER MAINS	
L FEET PER 100 FT AT 80°F. DELTA T	
PIPE SIZE	L FEET
3/4"	7'-0"
1"	8'-0"
1-1/4"	9'-0"
1-1/2"	10'-0"
2"	11'-0"
2-1/2"	12'-0"
3"	14'-0"



PLASTIC

DOMESTIC WATER BRANCH TAKE-OFFS	
MINIMUM OFFSET LENGTH	
PIPE SIZE	L FEET
UP TO 1-1/2"	4'-6"
2" TO 4"	6'-0"

DOMESTIC HOT WATER MAINS	
L FEET PER 100 FT AT 80°F. DELTA T	
PIPE SIZE	L FEET
3/4"	3'-0"
1"	4'-0"
1-1/4"	4'-6"
1-1/2"	5'-6"
2"	6'-0"
2-1/2"	6'-6"
3"	7'-0"
4"	8'-0"



11 PIPING EXPANSION TABLES
NO SCALE 0112 P40068.DWG

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

PROJECT INFO

Project No.
BLA201802
Drawn By:
GGH/SDK
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

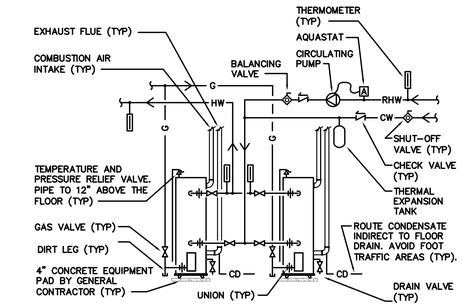
SCALE
AS NOTED

West Birch Apartments

W Branch Street
Princeton, MN

MECHANICAL DETAILS

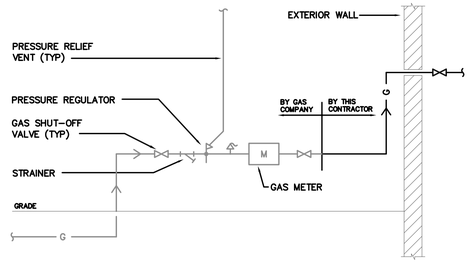
M412



NOTES
A. ALL MANIFOLDING MUST BE EQUAL LENGTH AND HEATERS BE IDENTICAL
B. PROVIDE 8 FEET OF GAS PIPING BETWEEN PRESSURE REGULATOR VALVE AND GAS BURNER VALVE
C. PROVIDE EACH INDIVIDUAL HEATER WITH A CORRECTLY SIZED PRESSURE REGULATOR TO MATCH THE GAS BURNER SIZE. REGULATOR MUST BE RATED/CERTIFIED TO SUPPLY (AT MINIMUM) MAXIMUM BTUH/HR INPUT OF HEATER WHEN PIPED AS AN INDIVIDUAL APPLIANCE.
D. PROVIDE DEDICATED ELECTRICAL CIRCUIT TO EACH INDIVIDUAL WATER HEATER. SEE ELECTRICAL SPECIFICATIONS.

1 GAS WATER HEATER – 2 SEALED COMBUSTION

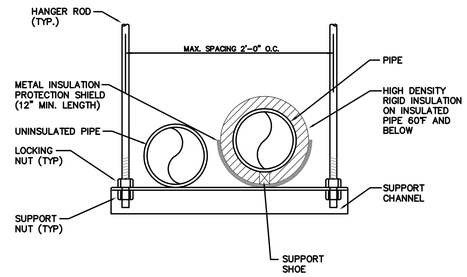
NO SCALE 0712 P40078b.DWG



NOTE:
NATURAL GAS SERVICE, VALVES, PRESSURE REGULATOR, METER & PRESSURE RELIEF VALVE BY GAS COMPANY

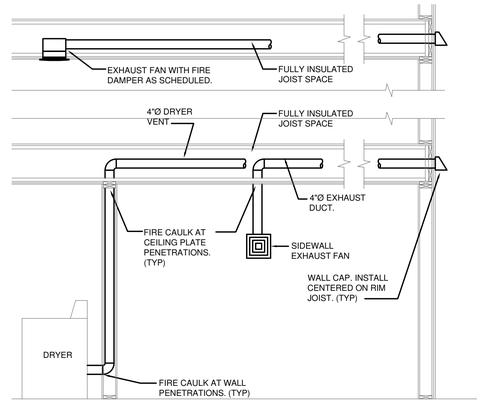
2 GAS SERVICE DIAGRAM

NO SCALE 0806 P40086.DWG



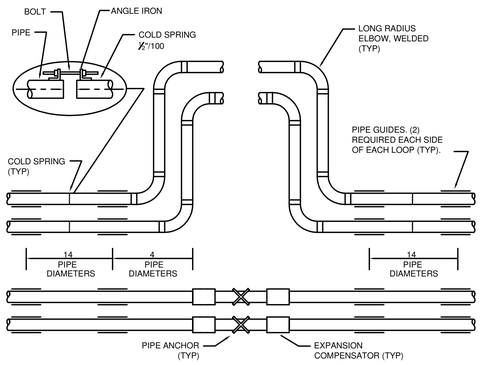
3 PIPE TRAPEZE HANGER

NO SCALE 1014 P40108.DWG



4 DRYER AND BATHROOM EXHAUST DETAIL

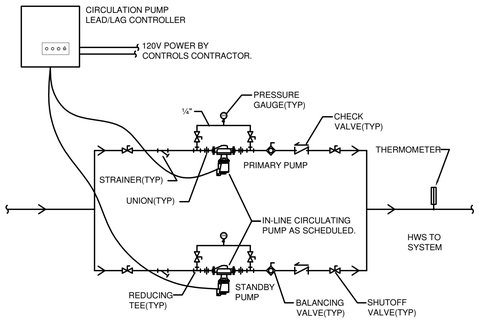
NO SCALE 1712 230500-05.dwg



NOTE: PROVIDE PIPING EXPANSION LOOP OR EXPANSION COMPENSATORS. MANUFACTURER'S RECOMMENDATIONS FOR GUIDE SPACING SHALL TAKE PRECEDENCE.

5 EXPANSION LOOP/COMPENSATOR DETAIL

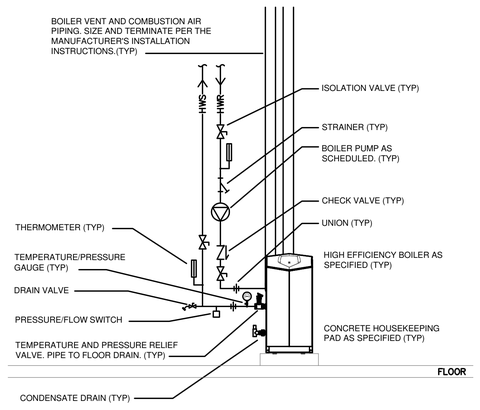
NO SCALE 1712 230516-01.dwg



NOTE:
PROVIDE SPRING ISOLATORS WHEN MOUNTING PIPING AND PUMPS TO STRUCTURAL MEMBERS.

6 IN-LINE PARALLEL PUMP DETAIL

NO SCALE 1712 232123-03.dwg

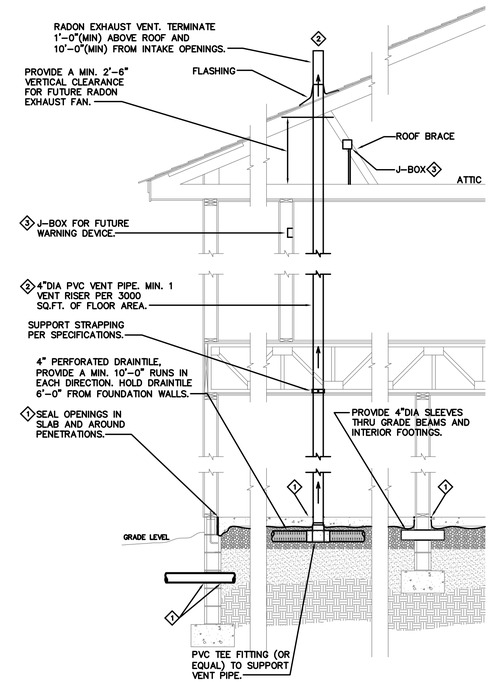


7 CONDENSING BOILER INSTALLATION DETAIL

NO SCALE 1712 235216-01.dwg

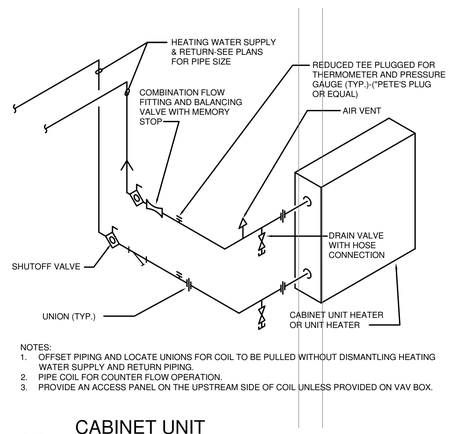
SPECIFIC DETAIL NOTES

1. ALL OPENINGS, GAPS AND JOINTS IN FLOOR AND WALL ASSEMBLIES IN CONTACT WITH SOIL OR GAPS AROUND PIPES, TOILETS, BATHTUBS OR DRAINS PENETRATING THESE ASSEMBLIES SHALL BE FILLED OR CLOSED WITH MATERIALS THAT PROVIDE A PERMANENT AIR-TIGHT SEAL. SEAL LARGE OPENINGS WITH NON-SHRINK MORTAR, GROUTS OR EXPANDING FOAM MATERIALS AND SMALLER GAPS WITH AN ELASTOMERIC JOINT SEALANT, AS DEFINED IN ASTM C920-87.
2. VENT PIPES SHALL BE INSTALLED SO THAT ANY RAINWATER OR CONDENSATION DRAINS DOWNWARD INTO THE GROUND BENEATH THE SLAB OR SOIL-GAS-RETARDER MEMBRANE.
3. CIRCUITS SHOULD BE A MINIMUM 20 AMP, 120 VOLT, BY ELECTRICAL CONTRACTOR.



11 PASSIVE RADON MITIGATION SYSTEM

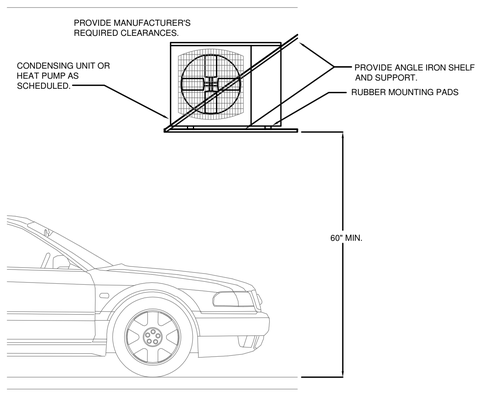
NO SCALE (09/12) P40094-B



NOTES:
1. OFFSET PIPING AND LOCATE UNIONS FOR COIL TO BE PULLED WITHOUT DISMANTLING HEATING WATER SUPPLY AND RETURN PIPING.
2. PIPE COIL FOR COUNTER FLOW OPERATION.
3. PROVIDE AN ACCESS PANEL ON THE UPSTREAM SIDE OF COIL UNLESS PROVIDED ON VAV BOX.

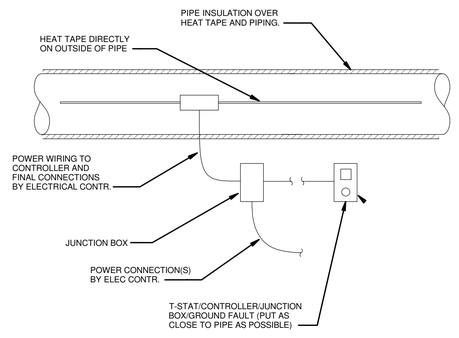
8 CABINET UNIT OR UNIT HEATER DETAIL

NO SCALE 1712 238239-01.dwg



9 WALL MOUNTED CONDENSING UNIT DETAIL

NO SCALE 1712 236213-01.dwg



10 HEAT TAPE SYSTEM DETAIL (OUTSIDE OF PIPING)

NO SCALE

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS NOT FOR CONSTRUCTION

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
GGH/SDK
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

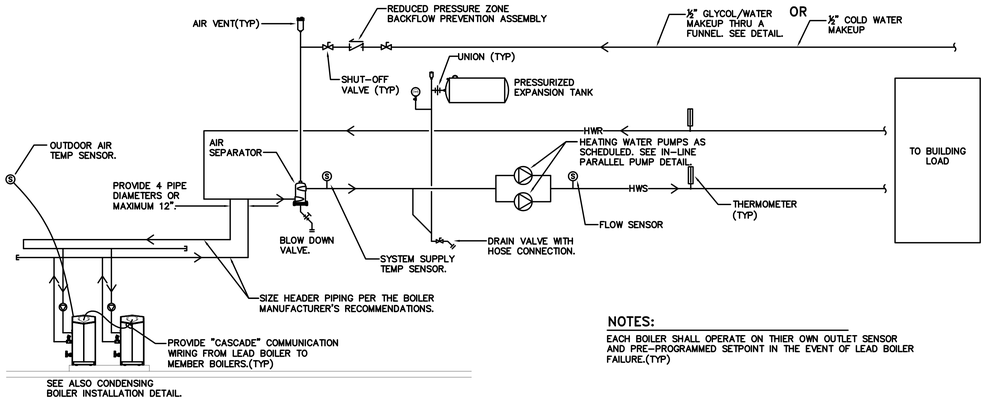
SCALE
AS NOTED

West Birch Apartments

W Branch Street
Princeton, MN

MECHANICAL DETAILS

M413



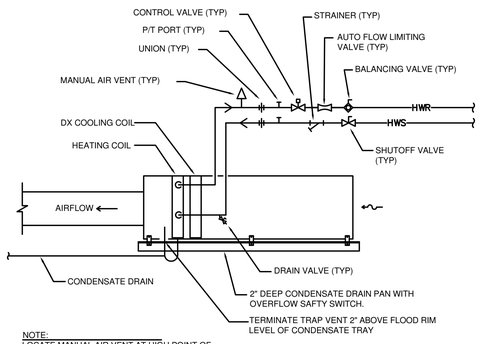
NOTES:

EACH BOILER SHALL OPERATE ON THIER OWN OUTLET SENSOR AND PRE-PROGRAMMED SETPOINT IN THE EVENT OF LEAD BOILER FAILURE.(TYP)

1 CONDENSING BOILER PIPING SCHEMATIC

NO SCALE

1712 235216-02.dwg

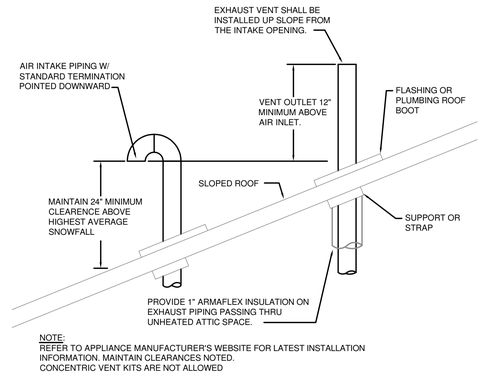


NOTE:
LOCATE MANUAL AIR VENT AT HIGH POINT OF BRANCH PIPING SERVING UNIT.

2 HYDRONIC FAN COIL PIPING DETAIL

NO SCALE

1712 238220-01.dwg

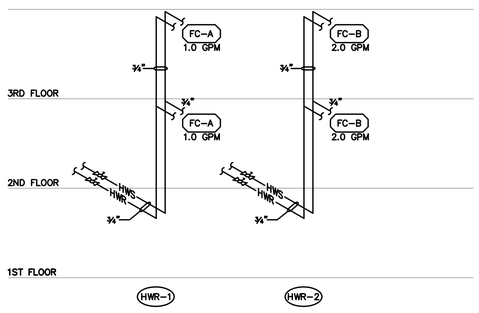


NOTE:
REFER TO APPLIANCE MANUFACTURER'S WEBSITE FOR LATEST INSTALLATION INFORMATION. MAINTAIN CLEARANCES NOTED.
CONCENTRIC VENT KITS ARE NOT ALLOWED

3 BOILER INTAKE & EXHAUST ROOF VENT PIPING DETAIL

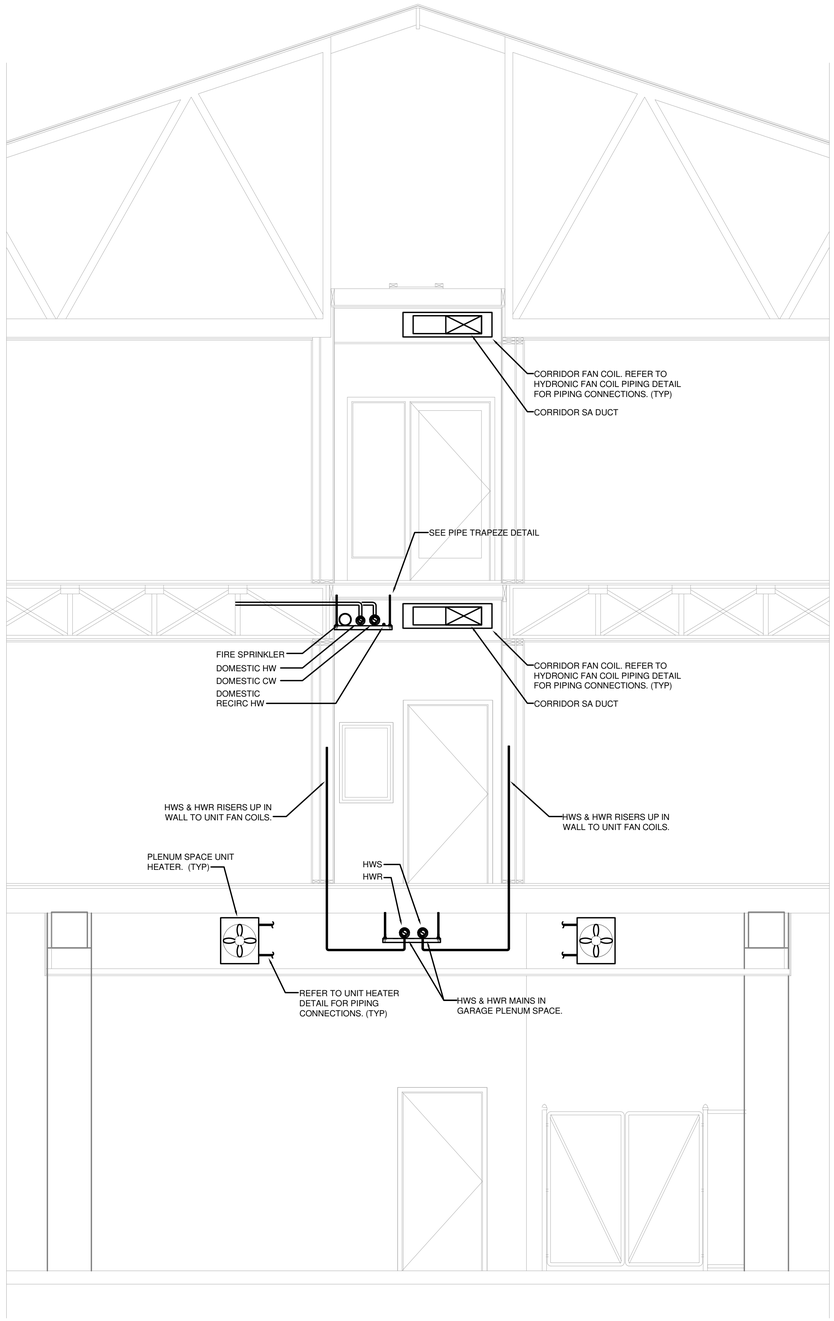
NO SCALE

1712 235100-01.dwg



4 HYDRONIC RISERS

NO SCALE



5 CORRIDOR/PLENUM SECTION

3/8" = 1'-0"

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

STEEN ENGINEERING INC.

763-585-6742
763-585-6757 fax
Email: steen@steeneng.com

5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
GGH/SDK
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

SCALE
AS NOTED

West Birch Apartments

W Branch Street
Princeton, MN

MECHANICAL DETAILS

M414

MECHANICAL SYMBOL SCHEDULE

MISCELLANEOUS

SYMBOL	DESCRIPTION
	CONNECT TO EXISTING
	FLOOR ELEVATION POINT
1	KEY NOTE
P2A	PLUMBING FIXTURE ID
R–XX	DOM. WATER RISER SYMBOL
W–XX	WASTE RISER SYMBOL
H–XX	HYDRONIC RISER SYMBOL
XXX	MECHANICAL EQUIPMENT
XX	EQUIPMENT BY OTHERS
	IN–LINE PUMP
X	REVISION

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BCW	BOOSTED COLD WATER
BHW	BOOSTED HOT WATER
BOB	BOTTOM OF BEAM
BOP	BOTTOM OF PIPE
BOFA	BOTTOM OF FLOOR ABOVE
CA	COMBUSTION AIR
CONT	CONTINUATION
CO	CLEAN OUT
CS	COUNTER SINK
CW	COLD WATER
CWB	CONDENSATE WALL BOX
DN	DOWN
DIA	DIAMETER
DSN	DOWN SPOUT NOZZLE
DTL	DETAIL
EA	EXHAUST AIR
ECM	ELECTRONICALLY COMMUTATED MOTOR
FSEC	FOOD SERVICE EQUIP. CONTR.
FFE	FINISHED FLOOR ELEVATION
FCW	FILTERED COLD WATER
FU	FIXTURE UNITS
GC	GENERAL CONTRACTOR
HW	HOT WATER
HCW	HARD COLD WATER
KS	KITCHEN SINK
LAV	LAVATORY
INV	INVERT ELEVATION
MS	MOP SINK
NIC	NOT IN CONTRACT
NP	NON–POTABLE
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR
SD	STORM DRAINAGE SYSTEM
SF	SQUARE FEET
SHR	SHOWER
SHT	SHEET
SS	SANITARY SEWER SYSTEM
SV	STACK VENT
TTFD	TELL–TALE FLOOR DRAIN
UNO	UNLESS NOTED OTHERWISE
V	VENT
VFD	VARIABLE FREQUENCY DRIVE
VS	VENT STACK
VTR	VENT THRU ROOF
WC	WATER CLOSET
WCO	WALL CLEAN OUT
WS	SANITARY WASTE STACK

VALVES AND PIPE FITTINGS

SYMBOL	DESCRIPTION
	SHUT–OFF VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	DOUBLE CHECK VALVE OR RPZ
	FLOW FITTING
RHW	DOMESTIC RECIRCULATING HOT WATER BALANCING ASSEMBLY
	CHECK VALVE
	BALANCING FULL PORT BALL VALVE
	VALVE IN VERTICAL
	BALL/BALANCING VALVE
	HOSE BIB OR WALL HYDRANT
	ELBOW UP
	ELBOW DOWN
	TEE UP
	TEE DOWN
	PIPE CAP
	UNION
	STRAINER
	PIPE ANCHOR
	EXPANSION JOINT
	PIPE GUIDE
CO	FLOOR CLEAN OUT
WCO	WALL CLEAN OUT
	GAS PRESSURE REGULATOR
	WATER PRESSURE REGULATOR
	FLOW DIRECTION
	CONTROL VALVE
	3 WAY CONTROL VALVE
S	SOLENOID VALVE
3" 4"	INCREASER OR REDUCER
M	WATER OR GAS METER

PLUMBING AND PIPE LABELS

SYMBOL	DESCRIPTION
(C)RD	ROOF DRAIN (CONTROL FLOW)
OFD	OVERFLOW DRAIN
	DOWNSPOUT DISCHARGE
	FLOOR DRAIN
FS	FLOOR SINK
BWV	BACK WATER CHECK VALVE
	SHOCK ARRESTOR
	PIPE BREAK
SS	SAN SEWER–ABOVE GRADE
SS	SAN SEWER–BELOW GRADE
GW	GREASE WASTE
FW	FLAMMABLE WASTE
FV	FLAMMABLE WASTE VENT
V	SANITARY VENT
CW	DOMESTIC COLD WATER
HCW	HARD COLD WATER
HW	DOMESTIC HOT WATER
RHW	DOMESTIC RECIRCULATING HOT WATER
180	DOMESTIC HOT WATER 180°F
O_2	OXYGEN
VAC	MEDICAL VAC
IG	NATURAL INTERRUPTABLE GAS
G	NATURAL FIRM GAS
HG	NATURAL GAS – HOUSE METER
PG	PROPANE GAS
DT	BUILDING DRAIN TILE
SD	STORM DRAIN – ABOVE GRADE
SD	STORM DRAIN – BELOW GRADE
OSD	OVERFLOW STORM DRAIN –ABOVE GRADE

HEATING

SYMBOL	DESCRIPTION
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
HWRR	HOT WATER REVERSE RETURN
GWS	GLYCOL WATER SUPPLY
GWR	GLYCOL WATER RETURN

AIR CONDITIONING

SYMBOL	DESCRIPTION
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
CWS	CONDENSER WATER SUPPLY
CWR	CONDENSER WATER RETURN
CD	CONDENSATE DRAIN PIPE

TEMPERATURE CONTROL AND SENSORS

SYMBOL	DESCRIPTION
T	THERMOSTAT
H	HUMIDISTAT
S	SPACE TEMPERATURE SENSOR
CO	CARBON MONOXIDE SENSOR
CO NO2	CARBON MONOXIDE & NITROGEN DIOXIDE SENSOR
CO2	CARBON DIOXIDE SENSOR
PS	PRESSURE SENSOR
	THERMOMETER

SHEET METAL

SYMBOL	DESCRIPTION
	AIR SUPPLY
	RETURN OR EXHAUST AIR
24/12	DUCT, WIDTH/DEPTH
12"ø	DUCT, DIAMETER
	DUCT, FLEXIBLE TO RIGID
	DUCT AIR SUPPLY, UP
	DUCT AIR RETURN OR EXHAUST, UP
	DUCT AIR SUPPLY, DOWN
	DUCT AIR RETURN OR EXHAUST, DOWN
	DUCT BREAK
	CEILING DIFFUSER
	LINEAR DIFFUSER
	WALL/SOFFIT REGISTER
	RETURN/EXHAUST AIR GRILLE
F S	FIRE/SMOKE DAMPER
S D	SMOKE DAMPER
F D	FIRE DAMPER
R D	CEILING RADIATION DAMPER
B	GRAVITY BACKDRAFT DAMPER
M	MOTORIZED DAMPER
	BALANCING DAMPER
	CAPPED DUCT
	FLEXIBLE CONNECTION
A 24/12 250	REGISTER/DIFFUSER A (TYPE) 24/12 (SIZE) 250 (CFM)
H 10 400	DIFFUSER H (TYPE) 10"(NECK DIA.) 400 (CFM)
C 24/24	RETURN AIR GRILLE C (TYPE) 24/24 (SIZE)
C1–2–10 250	LINEAR DIFFUSER C1 (TYPE) 2 (# SLOTS) 10" (NECK DIA.), 250 (CFM)

NOTE: NOT ALL SYMBOLS MAY APPEAR ON DRAWINGS.

F:\JB\SCHEDULES\MECH\MSYMSCH.DWG 10/18/17

MECHANICAL AND ELECTRICAL EQUIPMENT SCHEDULE GENERAL NOTES

A. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL EQUIPMENT SCHEDULED.

B. THE ELECTRICAL CONTRACTOR SHALL PROVIDE POWER WIRING AND MAKE FINAL CONNECTION TO EACH PIECE OF EQUIPMENT SCHEDULED.

C. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL STARTERS AND DISCONNECTS.

D. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL CONTROL DEVICES AS WELL AS ALL 120/208/240 VOLT POWER REQUIREMENTS AND LOW VOLTAGE WIRING NECESSARY TO INSTALL AND MAKE FULLY OPERATIONAL SPECIFIED CONTROL SYSTEMS, UNLESS NOTED OTHERWISE.

E. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SINGLE PHASE LINE VOLTAGE CONTROL DEVICES, SUCH AS 120/208/240 VOLT THERMOSTATS, SWITCHES AND TIME CLOCKS DIRECTLY CONTROLLING EXHAUST FANS, UNIT HEATERS, ETC., INCLUDING ALL ELECTRICAL MATERIALS AND FINAL CONNECTIONS.

F. THE ELECTRICAL CONTRACTOR SHALL PROVIDE RECEPTACLES ADJACENT TO WATER HEATERS, SUMP PUMPS AND WATER SOFTENERS.

G. MECHANICAL CONTRACTOR SHALL PROVIDE EQUIPMENT AFFIXED WITH A VISIBLE NAMEPLATE MARKED WITH SHORT CIRCUIT CURRENT RATING (SCCR) TO COMPLY WITH SECTION 440.4(B) OF THE 2017 NEC. MINIMUM EQUIPMENT SCCR SHALL BE 5,000 AIC, UNLESS NOTED OTHERWISE.

WATER SOFTENER SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVES	MANIFOLD CONN. SIZE	PEAK FLOW 15 PSI P.D.	PEAK FLOW 25 PSI P.D.	EXIST WATER HARDNESS	DESIGN WATER HARDNESS	BACKWASH GPM	MOTOR DATA KVA	MOTOR DATA V/PH	PANEL PANEL/CIRCUIT	PANEL CONDUIT	PANEL WIRE SIZE	PANEL BREAKER	NOTES MECH	NOTES ELEC
WS–1	CULLIGAN HE–060	UTILITY. RM	DOMESTIC HW	1½"	25	31	10	0	6	0.5	120/1	MP11 3	1/2"	#12	20/1	1	–

MECHANICAL NOTES
1. REFER TO PLUMBING SPECIFICATIONS SECTION 22 30 00 FOR FURTHER DETAILS.

DOMESTIC WATER HEATER SCHEDULE (GAS COMBINATION INTERNAL HEAT SOURCE & STORAGE TANK)

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVES	MAX. TEMP. RISE (deg. F)	GALLON STORAGE	RECOVERY (GPH)	CFH INPUT	MOTOR DATA KVA	MOTOR DATA V/PH	PANEL PANEL/CIRCUIT	PANEL CONDUIT	PANEL WIRE SIZE	PANEL BREAKER	NOTES MECH	NOTES ELEC
WH–1	AO SMITH Mxl BTH 150	UTILITY. RM	ENTIRE FACILITY	90	100	198	150	0.7	120/1	MP11 7	1/2"	#12	20/1	1	1
WH–2	AO SMITH Mxl BTH 150	UTILITY. RM	ENTIRE FACILITY	90	100	198	150	0.7	120/1	MP11 9	1/2"	#12	20/1	1	1

MECHANICAL NOTES
1. REFER TO PLUMBING SPECIFICATIONS SECTION 22 30 00 FOR FURTHER DETAILS.

ELECTRICAL NOTES
1. PROVIDE DEDICATED CIRCUIT AND DEDICATED NEUTRAL.

DOMESTIC HOT WATER CIRC PUMP AND SUMP PUMP SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	AREA SERVED	GPM	HEAD ('HD)	MOTOR DATA WATTS	MOTOR DATA HP	MOTOR DATA RPM	MOTOR DATA V/PH	PANEL PANEL/CIRCUIT	PANEL COND.	PANEL WIRE SIZE	PANEL BRKR	NOTES MECH	NOTES ELEC
SP–1	WEIL 1453– 1¼	UTILITY. RM	ELEVATOR PIT	50	15	–	1/2	3450	120/1	MP11 1	1/2"	#12	20/1	1	–
CP–1	TACO VR3452	UTILITY. RM	DOMESTIC HW CIRC	5	20	–	1/4	–	120/1	MP11 5	1/2"	#12	15/1	1,2	–

MECHANICAL NOTES
1. REFER TO PLUMBING SPECIFICATIONS SECTION 22 30 00 FOR FURTHER DETAILS.
2. BUILT IN SELFSENSING VARIABLE SPEED PUMP.

EXHAUST FAN SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	AREA SERVED	FAN DATA CFM	FAN DATA ESP ("WC)	FAN DATA FAN RPM	MOTOR DATA DRIVE TYPE	MOTOR DATA HP	MOTOR DATA RPM	MOTOR DATA V/PH	VIBR. ISO. SPEC	VIBR. ISO. DEFL. (in.)	PANEL PANEL/CIRCUIT	PANEL COND.	PANEL WIRE SIZE	PANEL BRKR	NOTES MECH	NOTES ELEC
EF–A	PANASONIC FV–05VS	WALL	UNITS	50	0.1	759	DIRECT	FRAC	–	120/1	–	–	– –	1/2"	14	15/1	–	2,3
EF–B	PANASONIC FV–10VS	WALL	UNITS	100	0.1	840	DIRECT	FRAC	–	120/1	–	–	– –	1/2"	14	15/1	–	1
EF–C	PANASONIC FV–08VS	WALL	PUB RR	60	0.2	1026	DIRECT	FRAC	–	120/1	–	–	– –	1/2"	12	20/1	–	2
EF–1	COOK GC–342	CEILING	LAUNDRY	200	.25	1725	DIRECT	FRAC	–	120/1	–	–	– –	1/2"	12	20/1	–	2
EF–2	COOK GC–342	CEILING	COM ROOM	200	.25	1725	DIRECT	FRAC	–	120/1	–	–	– –	1/2"	12	20/1	–	2

ELECTRICAL NOTES
1. OBTAIN POWER FROM NEARBY NON–SWITCHED LIGHTING CIRCUIT.
2. OBTAIN POWER FROM ROOM SWITCHED LIGHTING CIRCUIT.
3. PROVIDE 120 VOLT TIME DELAY OFF AND PERIODIC VENTILATION SWITCH SETTABLE FROM 0–60 MINUTES BY ADJUSTMENT SCREWS BEHIND COVERPLATE. CONNECT FIXTURE TO INSTANTANEOUS CONTACTS AND FAN TO TIME DELAY/PERIODIC VENTILATION CONTACTS. SET TIME DELAY TO 15 MINUTES. SET VENTILATION TO 10 MINUTES PER HOUR. PANASONIC #FV–WCD02–X OR EQUAL. VERIFY COLOR WITH ARCHITECT PRIOR TO SUBMITTING SHOP DRAWINGS.

SUPPLY FAN SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	AREA SERVED	FAN DATA CFM	FAN DATA ESP ("WC)	FAN DATA FAN RPM	MOTOR DATA DRIVE TYPE	MOTOR DATA HP	MOTOR DATA RPM	MOTOR DATA V/PH	VIBR. ISO. SPEC	VIBR. ISO. DEFL. (in.)	PANEL PANEL/CIRCUIT	PANEL COND.	PANEL WIRE SIZE	PANEL BRKR	NOTES MECH	NOTES ELEC
SF–1	COOK 10XWS24D15	WALL	MECHANICAL	400	.125	1550	DIRECT	FRAC	–	120/1	–	–	MP11 32	1/2"	12	20/1	1	–

MECHANICAL NOTES
1. FURNISH AUTO CHANGEOVER THERMOSTAT: EUH–B ON < 60°F, SF–1 ON > 75°F. NORMALLY CLOSED DAMPERS SHALL OPEN UPON ANY CALL FOR COOLING.

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
GGH/SDK
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

SCALE
AS NOTED

West Birch Apartments

W Branch Street
Princeton, MN

MECHANICAL EQUIPMENT SCHEDULES

M511

BOILER SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	AREA SERVED	HEATING DATA			MOTOR DATA		PANEL				NOTES	
				INPUT MBH	OUTPUT MBH	EDR (SQ.FT.)	MCA	V/PH	PANEL/ CIRCUIT	COND.	WIRE SIZE	BRKR	MECH	ELEC
HWB-1	LOCHINVAR KBN400	MECH	BUILDING	399	376	–	FRAC	120/1	MP11 27	1/2"	#12	15/1	–	1
HWB-2	LOCHINVAR KBN400	MECH	BUILDING	399	376	–	FRAC	120/1	MP11 29	1/2"	#12	15/1	–	1

ELECTRICAL NOTES

1. PROVIDE DEDICATED CIRCUIT AND DEDICATED NEUTRAL.

COMPRESSION TANK/AIR SEPARATOR SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SYSTEM SERVED	TANK VOLUME (GAL)	ACCEPT. VOLUME (GAL)	BLADDER PRESSURE (PSI)	CONN. SIZE	AIR SEPARATOR MODEL #	NOTES
									MECH
ET-1	WESSELS NTA-15	MECH –	BUILDING –	7.8	6.3	–	3/4"	–	–

MECHANICAL AND ELECTRICAL EQUIPMENT SCHEDULE GENERAL NOTES

A. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL EQUIPMENT SCHEDULED.

B. THE ELECTRICAL CONTRACTOR SHALL PROVIDE POWER WIRING AND MAKE FINAL CONNECTION TO EACH PIECE OF EQUIPMENT SCHEDULED.

C. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL STARTERS AND DISCONNECTS.

D. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL CONTROL DEVICES AS WELL AS ALL 120/208/240 VOLT POWER REQUIREMENTS AND LOW VOLTAGE WIRING NECESSARY TO INSTALL AND MAKE FULLY OPERATIONAL SPECIFIED CONTROL SYSTEMS, UNLESS NOTED OTHERWISE.

E. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SINGLE PHASE LINE VOLTAGE CONTROL DEVICES, SUCH AS 120/208/240 VOLT THERMOSTATS, SWITCHES AND TIME CLOCKS DIRECTLY CONTROLLING EXHAUST FANS, UNIT HEATERS, ETC., INCLUDING ALL ELECTRICAL MATERIALS AND FINAL CONNECTIONS.

F. THE ELECTRICAL CONTRACTOR SHALL PROVIDE RECEPTACLES ADJACENT TO WATER HEATERS, SUMP PUMPS AND WATER SOFTENERS.

G. MECHANICAL CONTRACTOR SHALL PROVIDE EQUIPMENT AFFIXED WITH A VISIBLE NAMEPLATE MARKED WITH SHORT CIRCUIT CURRENT RATING (SCCR) TO COMPLY WITH SECTION 440.4(B) OF THE 2017 NEC. MINIMUM EQUIPMENT SCCR SHALL BE 5,000 AIC, UNLESS NOTED OTHERWISE.

FAN COIL UNIT SCHEDULE (HW/DX)

UNIT NO.	MANUFACTURER & MODEL NO.	DESCRIPT.	AREA SERVED	FAN DATA				HEATING COIL DATA										DX COOLING COIL DATA						VIBR. ISOLATION		MOTOR DATA					PANEL					NOTES	
				CFM	O.A. CFM	ESP ("WC)	TSP ("WC)	GPM	ROWS	PD (FT)	APD ("WC)	MBH	GLY (%)	EWT (°F)	LWT (°F)	EAT (°F)	LAT (°F)	EAT DB	EAT WB	LAT DB	LAT WB	MBH SENS.	MBH TOTAL	SPEC	DEFL. (in.)	HP	AMPS	KVA	RPM	V/PH	PANEL/ CIRCUIT	COND.	WIRE SIZE	BRKR	MECH	ELEC
FC-A	1ST COMPANY 19CDX-HW-C	HORIZONTAL RECESSED	UNITS	600	–	.25	–	1.0	–	0.9	–	17.0	30	160	130	–	–	80	67	–	–	–	–	–	–	FRAC	3.0	–	1550	120/1	– –	1/2"	14	15/1	1,2	1
FC-B	1ST COMPANY 25CDX-HW-C	HORIZONTAL RECESSED	UNITS	800	–	.25	–	2.0	–	2.6	–	24.4	30	160	130	–	–	80	67	–	–	–	–	–	–	FRAC	5.0	–	1550	120/1	– –	1/2"	14	15/1	1,2	1
FC-1	1ST COMPANY 37CDX-HW-C	HORIZONTAL RECESSED	COMMUNITY	1200	300	.25	–	2.0	–	3.5	–	35.5	30	160	130	–	–	80	67	–	–	–	–	–	–	FRAC	6.0	–	1550	120/1	MP11 14	1/2"	12	15/1	1,2	–
FC-2	1ST COMPANY 19CDX-HW-C	HORIZONTAL RECESSED	CORRIDOR	600	60	.25	–	1.0	–	0.9	–	17.0	30	160	130	–	–	80	67	–	–	–	–	–	–	FRAC	3.0	–	1550	120/1	MP11 16	1/2"	12	15/1	1,2	–
FC-3	1ST COMPANY 19CDX-HW-C	HORIZONTAL RECESSED	CORRIDOR	600	60	.25	–	1.0	–	0.9	–	17.0	30	160	130	–	–	80	67	–	–	–	–	–	–	FRAC	3.0	–	1550	120/1	MP11 18	1/2"	12	15/1	1,2	–

MECHANICAL NOTES

1. HEATING CAPACITY AND PRESSURE DROP HAVE BEEN ADJUSTED FOR 30% GLYCOL.
2. PROVIDE DUCTED RETURN WITH FILTER RETURN GRILLE AS SHOWN.

ELECTRICAL NOTES

1. REFER TO PLANS FOR CIRCUITING.

UNIT HEATER SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	AREA SERVED	CFM	HEATING COIL DATA					MOTOR DATA			PANEL					NOTES	
					GPM	MBH	EWT (°F)	LWT (°F)	WPD ("WC)	HP	RPM	V/PH	PANEL/ CIRCUIT	CONDUIT	WIRE SIZE	BREAKER		MECH	ELEC
UH-A	AIRTHERM HA-60	GARAGE	PLENUM	900	2.6	28.1	160	130	.07	FRAC	1000	120/1	– –	1/2"	#12	15/1		1,2	1

MECHANICAL NOTES

1. SUPPORTED FROM STRUCTURE.
2. HEATING CAPACITY AND PRESSURE DROP HAVE BEEN ADJUSTED FOR 30% ETHYLENE GLYCOL.

ELECTRICAL NOTES

1. REFER TO PLAN FOR CIRCUITING.

CONDENSING UNIT SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVES	COOLING DATA			MOTOR DATA		VIBR. ISO.		PANEL				NOTES	
				TONS	MBH	SEER	MCA	V/PH	SPEC	DEFL. (in.)	PANEL/ CIRCUIT	COND.	WIRE SIZE	BRKR	MECH	ELEC
CU-A	CARRIER 24ABB318	GRADE	FC-A	1.5	17.4	13.0	11.8	208/1	–	–	– –	1/2"	#12	15/2	–	1
CU-B	CARRIER 24ABB324	GRADE	FC-A	2.0	22.4	13.0	17.6	208/1	–	–	– –	1/2"	#12	20/2	–	1
CU-1	CARRIER 24ABB336	GRADE	FC-1	3.0	33.2	13.0	21.5	208/1	–	–	MP11 2,4	1/2"	#12	25/2	–	–
CU-2	CARRIER 24ABB318	GRADE	FC-2	1.5	17.4	13.0	11.8	208/1	–	–	MP11 6,8	1/2"	#12	15/2	–	–
CU-3	CARRIER 24ABB318	GRADE	FC-3	1.5	17.4	13.0	11.8	208/1	–	–	MP11 10,12	1/2"	#12	15/2	–	–

ELECTRICAL NOTES

1. REFER TO PLANS FOR CIRCUITING.

PUMP SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	AREA SERVED	GPM	HEAD ('HD)	ΔT (°F)	VIBR. ISO.		MOTOR DATA				PANEL				NOTES	
							SPEC	DEFL. (in.)	WATTS	HP	RPM	V/PH	PANEL/ CIRCUIT	COND.	WIRE SIZE	BRKR	MECH	ELEC
HWP-1	B & G ECOCIRC XL 70-145	MECH	HEATING WATER	55.0	36.0	30.0	–	–	–	2.0	2744	208/1	MP11 11,13	1/2"	12	30/2	1,2	1
HWP-2	B & G ECOCIRC XL 70-145	MECH	HEATING WATER	55.0	36.0	30.0	–	–	–	2.0	2744	208/1	MP11 15,17	1/2"	12	30/2	1,2	1
BP-1	B & G ECOCIRC XL 36-45	MECH	HEATING WATER	26.0	11.0	30.0	–	–	–	FRAC	3040	120/1	MP11 23	1/2"	12	20/1	2,3	–
BP-2	B & G ECOCIRC XL 36-45	MECH	HEATING WATER	26.0	11.0	30.0	–	–	–	FRAC	3040	120/1	MP11 23	1/2"	12	20/1	2,3	–

MECHANICAL NOTES

1. EACH PUMP IS SELECTED AT 100% OF REQUIRED FLOW, WITH ONE PUMP ON STANDBY. PROVIDE LEAD/LAG CONTROL.
2. SELECTION IS BASED ON 30% PROPYLENE GLYCOL.
3. WIRE EACH BOILER PUMP TO ITS CORRESPONDING BOILER CONTROL PANEL.

ELECTRICAL NOTES

1. ECM MOTOR. PROVIDE NEUTRAL CONDUCTOR WITH PHASE CONDUCTORS.

ELECTRIC HEATER SCHEDULE

UNIT NO.	MANUFACTURER MODEL NO.	DESCRIP.	AREA SERVED	HEATING COIL DATA				PANEL				NOTES	
				LENGTH (ft.)	TOTAL WATTS	TOTAL (Btuh)	V/PH	PANEL/ CIRCUIT	CONDUIT	WIRE SIZE	BREAKER	MECH	ELEC
BB-C	BERKO CSLAS-6-250	COMMERCIAL BASEBOARD	SEE PLANS	6.0	1500	5,120	208/1	– –	1/2"	#12	15/2	1,2	1,2
FF-C	BERKO FRC-4820	COMMERCIAL WALL CABINET	SEE PLANS	–	4800	16,382	208/1	– –	1/2"	#10	30/2	1,2	1,2
EUH-B	BERKO HUHAA-520	HORIZONTAL UTILITY	SEE PLANS	–	5000	–	208/1	– –	1/2"	#10	30/2	1,3	1,2,3

MECHANICAL NOTES

1. EQUIPMENT FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR.
2. PROVIDE INTEGRAL THERMOSTAT AND DISCONNECT SWITCH.
3. FURNISH REMOTE THERMOSTAT. BERKO #M602W OR EQUAL.

ELECTRICAL NOTES

1. EQUIPMENT FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR. COORDINATE LOCATIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
2. REFER TO PLAN FOR CIRCUITING.
3. INSTALL THERMOSTAT FURNISHED BY MECHANICAL. REFER TO MECHANICAL PLANS FOR LOCATION.

DUCTLESS AIR CONDITIONER AND CONDENSING UNIT SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	TYPE/ SERVES	AIR HANDLING DATA			HEATING DATA			COOLING DATA				MOTOR DATA			PANEL					NOTES	
				CFM	O.A.	"ESP	MBH	COP	HSPF	MBH	SEER	EER	TONS	WATTS	MCA	V/PH	PANEL/ CIRCUIT	COND.	WIRE SIZE	BRKR		MECH	ELEC
AC-1	CARRIER 40MAQB12B	ELEV	HI-WALL	210	–	–	12.0	3.22	10.0	12.0	21.5	13.0		–	–	120/1		1/2"	#12				1
AC-1CU	CARRIER 38MAQB12B	GRADE	AC-1										1.0	–	15.0	120/1	PNL CCT	1/2"	#12	20/1		–	–

ELECTRICAL NOTES

1. PROVIDE POWER AND CONTROL CONNECTIONS FROM CU TO AC.
2. REFER TO PLANS FOR CIRCUITING.
3. PROVIDE FUSED DISCONNECT WITHIN ELEVATOR EQUIPMENT ROOM.

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
GGH/SDK
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

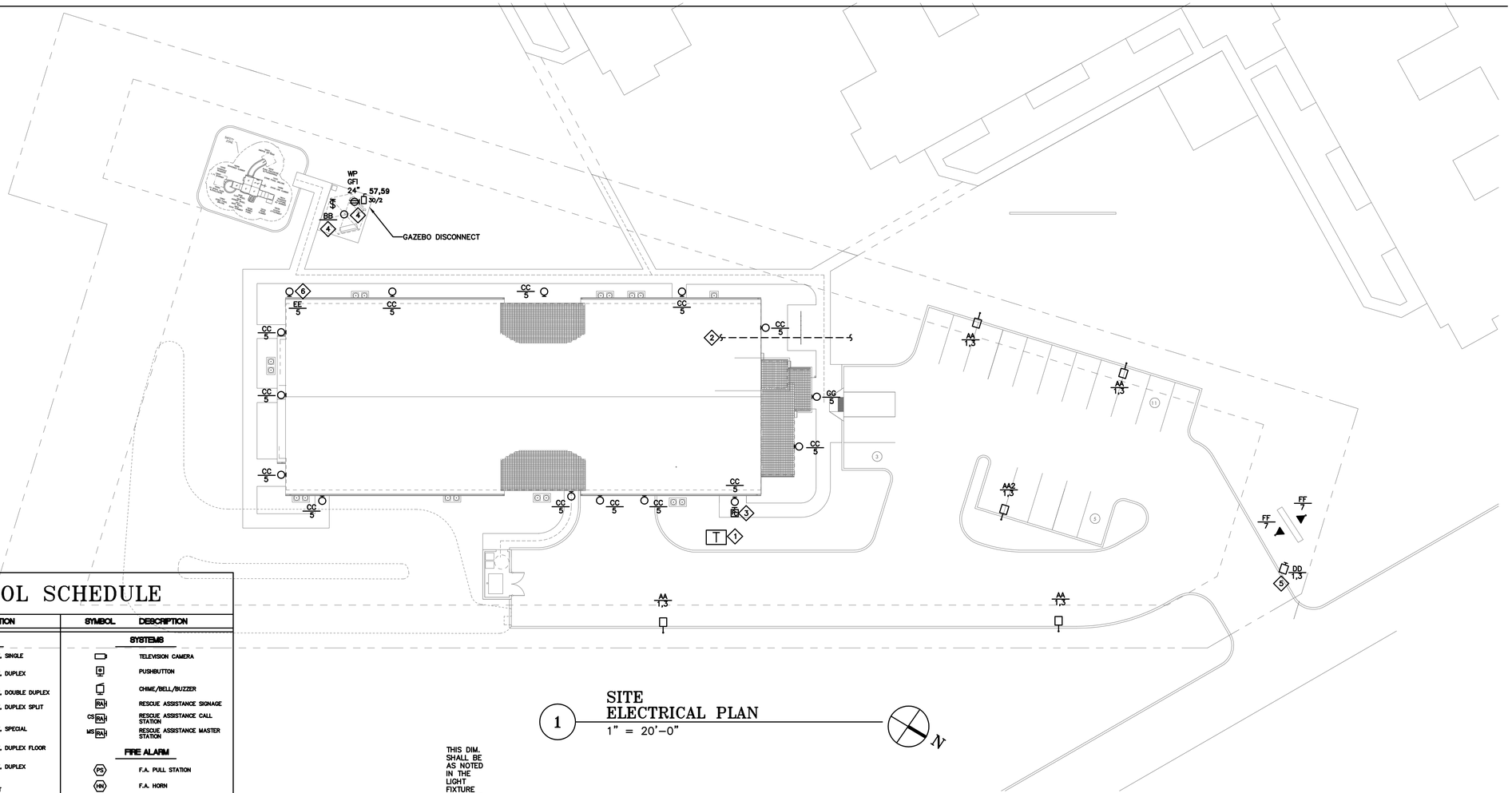
SCALE
AS NOTED

West Birch Apartments

W Branch Street
Princeton, MN

MECHANICAL EQUIPMENT SCHEDULES

M512



ELECTRICAL SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
LIGHTING	
	LIGHTING FIXTURES (TYPICAL OF MANY, NOT ALL SYMBOLS ARE SHOWN).
	NOTE: SLASH MARK INDICATES RECESSED. SIDE BRACKET INDICATES WALL MOUNT. SOLID FILL INDICATES EMERGENCY OR NIGHT EGRESS. SOLID FILL IN EXIT FIXTURE INDICATES FACE. ARROW INDICATES DIRECTION.
	EMERGENCY BATTERY PACK
	EXTERIOR POLE MOUNTED DOUBLE HEAD
	EXTERIOR FLOOD LIGHT GROUND MOUNT
	BOLLARD LIGHT
	BUILDING MOUNT LIGHT
A	LIGHT FIXTURE TYPE
1	CIRCUIT NUMBER
	CEILING FAN
SWITCHES	
$	SWITCH, SINGLE, DOUBLE, THREE OR FOUR POLE
$K	SWITCH, KEYED
$M	SWITCH, MOMENTARY CONTACT
$PL	SWITCH W/ PILOT LIGHT
$D	SWITCH, DIMMER
$M10	SWITCH, MOTOR CONTROL
$T	SWITCH, TIMER
$_1	GANGED SWITCH, SPACE
PC	PHOTO CONTROL
OS	OCCUPANCY SENSOR
DS	DAY-LIGHT SENSOR
TC-X	TIME CLOCK
LC-X	LIGHTING CONTACTOR
MISC.	
1	DRAWING CHANGE
1	SPECIFIC NOTE
XXX	M/E EQUIPMENT TAG
16	KITCHEN EQUIPMENT TAG

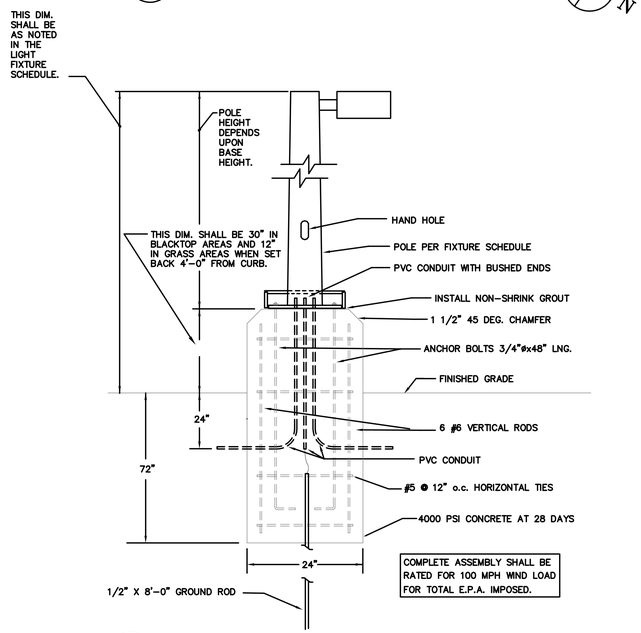
SYMBOL	DESCRIPTION
POWER	
	RECEPTACLE, SINGLE
	RECEPTACLE, DUPLEX
	RECEPTACLE, DOUBLE DUPLEX
	RECEPTACLE, DUPLEX SPLIT WIRED
	RECEPTACLE, SPECIAL
	RECEPTACLE, DUPLEX FLOOR
	RECEPTACLE, DUPLEX SWITCHED
T	THERMOSTAT
T RA	THERMOSTAT, REVERSE ACTING
	CLOCK OUTLET
	GANGED DUPLEX RECEPTACLE, SPACE
	277/480V PANELBOARD
	120/208V PANELBOARD
	TERMINAL CABINET
T	TRANSFORMER
PS-A	PLUGSTRIP, TYPE AS SPEC'D
	DISCONNECT
	MOTOR STARTER
	COMBINATION MOTOR STARTER
	ENCLOSED CIRCUIT BREAKER
FF-X 1	ELECTRIC HEAT CIRCUIT NUMBER
COMMUNICATIONS	
	OUTLET, TELEPHONE
	OUTLET, VOICE/DATA
	OUTLET, INTERCOM
	OUTLET, TELEPHONE – FLOOR
M	OUTLET, MICROPHONE
V	OUTLET, VOLUME CONTROL
TV	OUTLET, TELEVISION
S	OUTLET, SPEAKER – WALL
S	OUTLET, SPEAKER – CEILING
GENERAL	
J	JUNCTION BOX

SYMBOL	DESCRIPTION
SYSTEMS	
	TELEVISION CAMERA
	PUSHBUTTON
	CHIME/BELL/BUZZER
RAH	RESCUE ASSISTANCE SIGNAGE
CS RAH	RESCUE ASSISTANCE CALL STATION
MS RAH	RESCUE ASSISTANCE MASTER STATION
FIRE ALARM	
PS	F.A. PULL STATION
HN	F.A. HORN
ST	F.A. STROBE
HS	F.A. HORN/STROBE
SP	F.A. SPEAKER
SS	F.A. SPEAKER/STROBE
CH	F.A. CHIME
CS	F.A. CHIME/STROBE
SD I	F.A. IONIZATION DETECTOR
SD P	F.A. PHOTOELECTRIC DETECTOR
S SD P	PHOTOELECTRIC DETECTOR WITH SOUNDER BASE
HD	F.A. HEAT DETECTOR
SD CO	F.A. COMBINATION SMOKE/CO DETECTOR
S SD CO	COMBINATION SMOKE/CO DETECTOR WITH SOUNDER BASE
CO	F.A. CO DETECTOR
SD D	F.A. DUCT SMOKE DETECTOR
DH	F.A. DOOR HOLDER
DT	F.A. DIALING TERMINAL
HS WP	F.A. WEATHER PROOF HORN/STROBE
TS	F.A. SPRINKLER TAMPER SWITCH
FS	F.A. SPRINKLER FLOW SWITCH
AS	F.A. AIR PRESSURE SWITCH
SD	F.A. SMOKE/FIRE DAMPER
SD	F.A. SMOKE DAMPER
	F.A. PANEL
EMERGENCY CALL	
N	CALL STATION
N A	ANNUNCIATOR
N C	CHIME
N D	DOME LIGHT
N E	CALL STATION, EMERGENCY
N M	MASTER STATION

NOT ALL SYMBOLS APPEAR ON DRAWINGS.

1 SITE ELECTRICAL PLAN

1" = 20'–0"



2 POLE BASE DETAIL

NO SCALE

GENERAL ELECTRICAL SITE NOTES

A. CIRCUIT NUMBERS SHOWN ARE FOR REFERENCE ONLY. PROVIDE #10 CONDUCTORS MINIMUM.

B. OBTAIN POWER FROM PANEL LP11, UNLESS NOTED OTHERWISE.

C. EXTERIOR LIGHTING TO BE CONTROLLED WITH TIME CLOCK, PHOTOCELL & CONTACTOR CONTACTOR, SEE SPECIFICATIONS.

◇SPECIFIC ELECTRICAL SITE NOTES

1. UTILITY TRANSFORMER. PROVIDE CONCRETE PAD & CONDUIT STUB OUTS. INSTALL PER LOCAL UTILITY REQUIREMENTS.
2. PROVIDE SEPARATE 4" CONDUIT FROM TELEPHONE BACKBOARD & CATV BACKBOARD TO PROPERTY LINE OR AS REQUIRED BY UTILITY.
3. PHOTO CONTROL FOR EXTERIOR LIGHTS. MOUNT AS HIGH AS POSSIBLE ON WALL AT AN ACCESSIBLE LOCATION.
4. ROUTE POWER THROUGH GAZEBO DISCONNECT (ALTERNATE).
5. MAKE CONNECTION TO BLUE LIGHT INDICATING SNOW REMOVAL IN PROCESS. SEE MECHANICAL ROOM FOR PILOT SWITCH. VERIFY LOCATION WITH ARCHITECT/OWNER.
6. SECURITY FLOOD LIGHT. VERIFY LOCATION & CONTROL WITH ARCHITECT/OWNER. PROVIDE SEPARATE CIRCUIT FOR CONTROL IF REQUIRED.

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
DJL
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

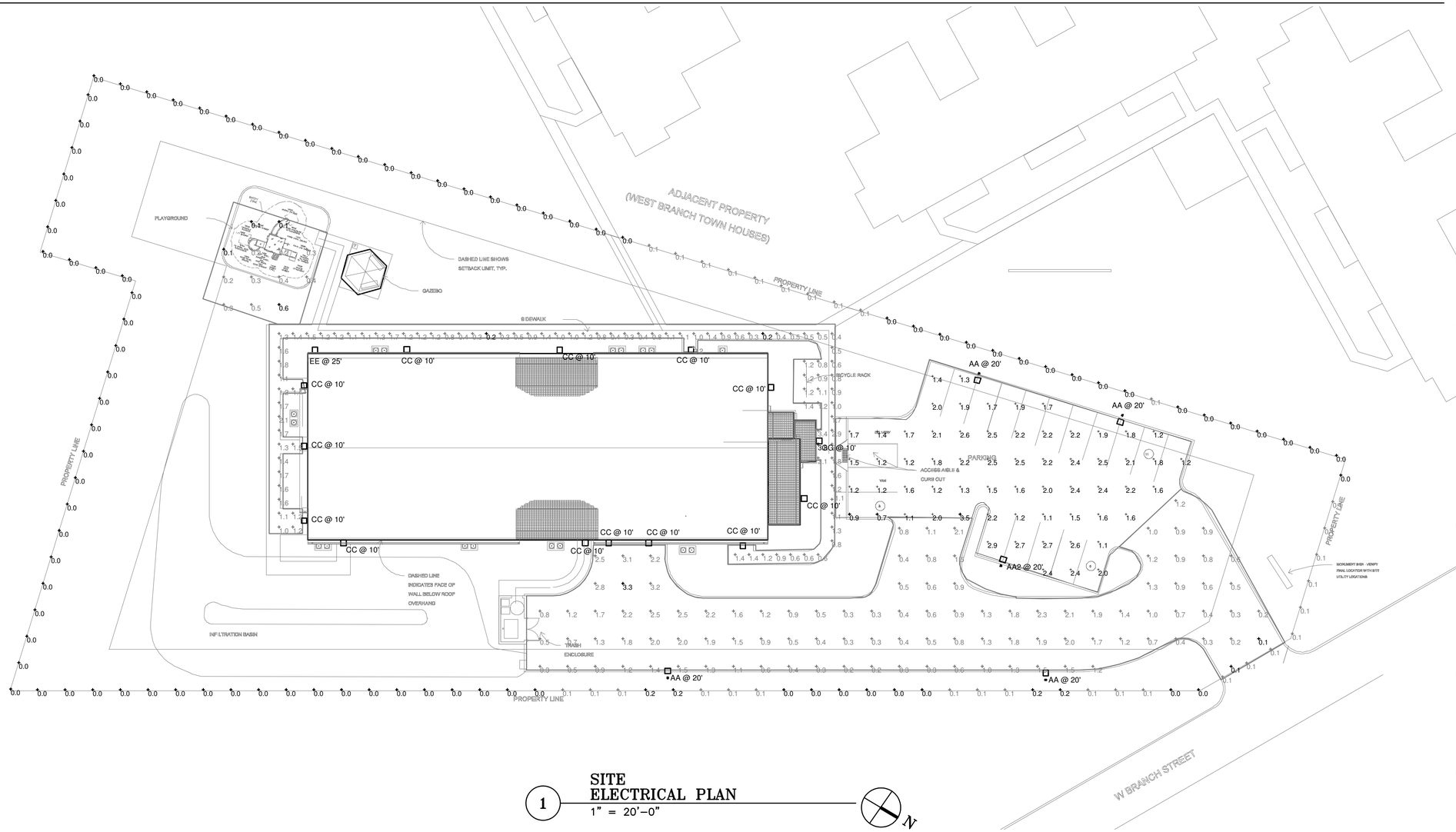
SCALE
AS NOTED

West Birch Apartments

W Branch Street
Princeton, MN

SITE ELECTRICAL PLAN

E111



1 SITE ELECTRICAL PLAN
1" = 20'-0"

N

Schedule										
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Filename	Lumens	Wattage	MOUNTING HEIGHT
	AA	4	SPAULDING LIGHTING	CL1-30L-4K-3-BC	CIMARRON CL1	30 LEDs - 4000K - 70 CRI	CL1-30L-4K-3-BC.ies	5132	70	20
	AA2	1	SPAULDING LIGHTING	CL1-30L-4K-2-BC	CIMARRON CL1	30 LEDs - 4000K - 70 CRI	CL1-30L-4K-2-BC.ies	5634	70	20
	CC	13	HUBBELL OUTDOOR	LNC-5LU-4K-4-X	WALLMOUNT LED TYPE 4	5- NICHIA 4K LEDS	LNC-5LU-4K-4-X.ies	1053	12.9	12
	EE	1	HUBBELL OUTDOOR LIGHTING	WGH-81L-4K-U-S	WGH Small		WGH-81L-4K--U-S.ies	3338	28.9	25
	GG	1	Hubbell Outdoor	JI1203728	ALF6LU5KBZ		GG-JI1203728.ies	567	10.71	

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Drive	+	1.1 fc	3.3 fc	0.1 fc	33.0:1	11.0:1
Parking	+	1.9 fc	3.5 fc	0.7 fc	5.0:1	2.7:1
Playground	+	0.3 fc	0.6 fc	0.1 fc	6.0:1	3.0:1
Property Line	+	0.0 fc	0.2 fc	0.0 fc	N/A	N/A
Sidewalk	+	1.2 fc	3.8 fc	0.2 fc	19.0:1	6.0:1

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
DJL
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

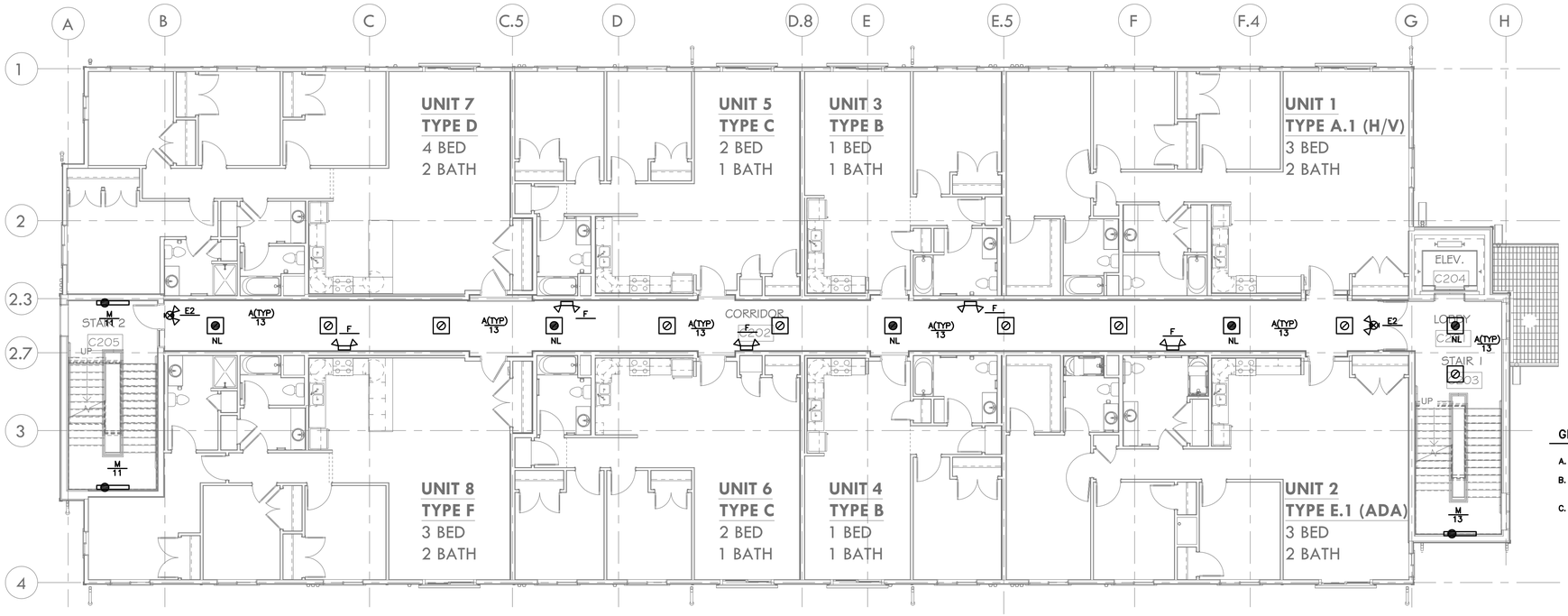
SCALE
AS NOTED

West Birch Apartments

W Branch Street
Princeton, MN

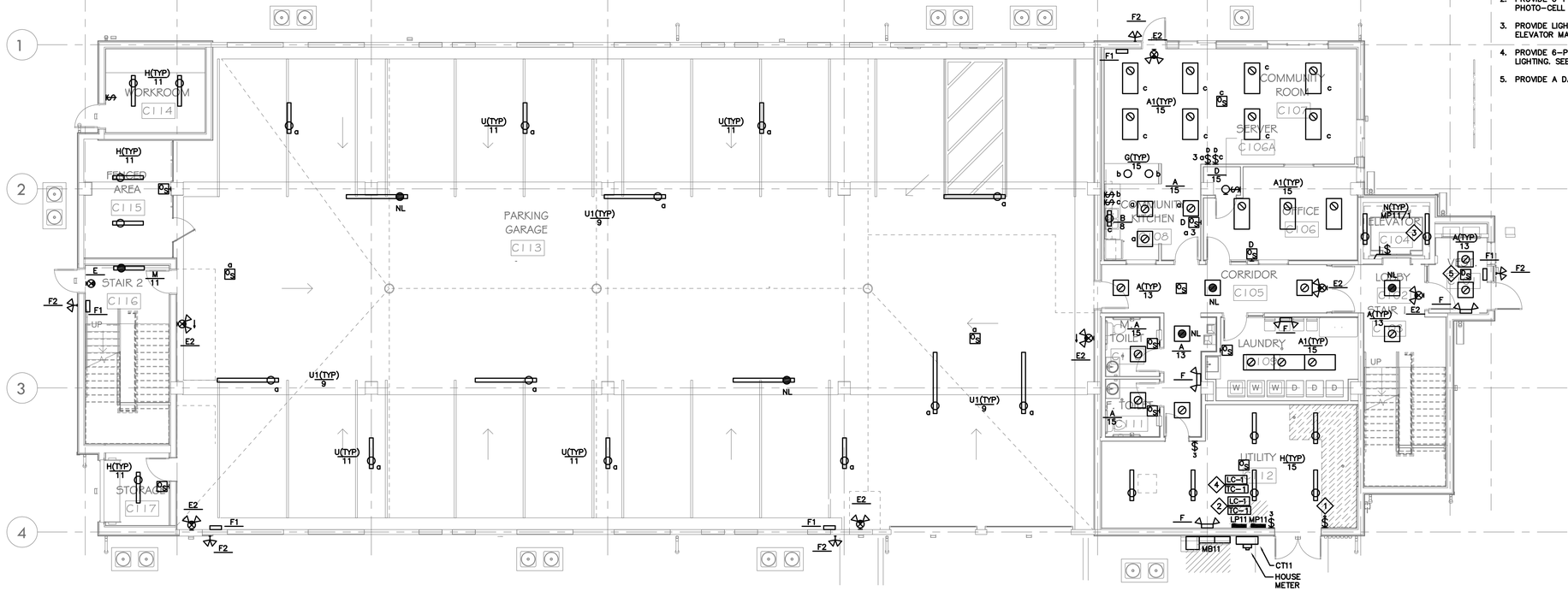
SITE PHOTOMETRIC PLAN

E112



SECOND FLOOR
LIGHTING PLAN
2
1/8" = 1'-0"

N



FIRST FLOOR
LIGHTING PLAN
1
1/8" = 1'-0"

N

GENERAL ELECTRICAL NOTES:

A. VERIFY LOCATION OF ALL FIXTURES WITH ARCHITECT PRIOR TO INSTALLATION.

B. REFER TO UNIT PLANS FOR TYPICAL UNIT CONFIGURATIONS. CONTRACTOR SHALL COMPLETE ALL UNITS BASED ON TYPICAL UNITS.

C. OBTAIN POWER FROM PANEL LP11, UNLESS NOTED OTHERWISE.

SPECIFIC ELECTRICAL NOTES:

1. PROVIDE JELLY-JAR (BLUE LAMP) INDICATING LIGHT FOR 'PARKING LOT BEING PLOWED' ON SITE. COORDINATE LOCATION & EXACT REQUIREMENTS WITH OWNER.
2. PROVIDE 6-POLE LIGHTING CONTACTOR WITH TIME CLOCK FOR CONTROL WITH PHOTO-CELL OF CORRIDOR LIGHTING. VERIFY TIME SETTINGS WITH OWNER.
3. PROVIDE LIGHTING IN ELEVATOR HOISTWAY & PIT. VERIFY LOCATION WITH ELEVATOR MANUFACTUER & INSPECTOR.
4. PROVIDE 6-POLE LIGHTING CONTACTOR WITH TIMECLOCK FOR CONTROL OF SITE LIGHTING. SEE SHEET E111 FOR CIRCUITS TO CONTROL.
5. PROVIDE A DAY-LIGHTING SENSOR FOR CONTROL OF VESTIBULE LIGHTING.

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
DJL
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

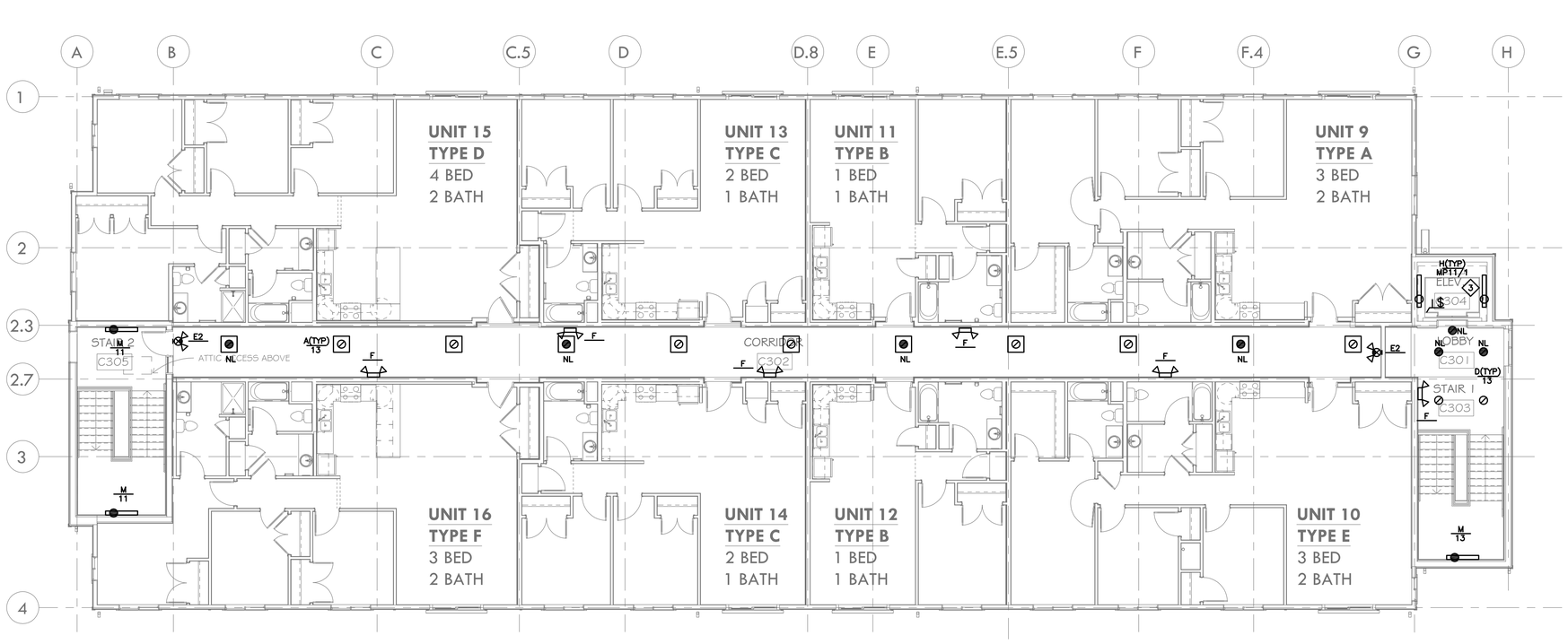
SCALE
AS NOTED

West Birch Apartments

W Branch Street
Princeton, MN

LIGHTING PLANS

E211



1 THIRD FLOOR LIGHTING PLAN

1/8" = 1'-0"

N

Blumentals Architecture

1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com

5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
DJL
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

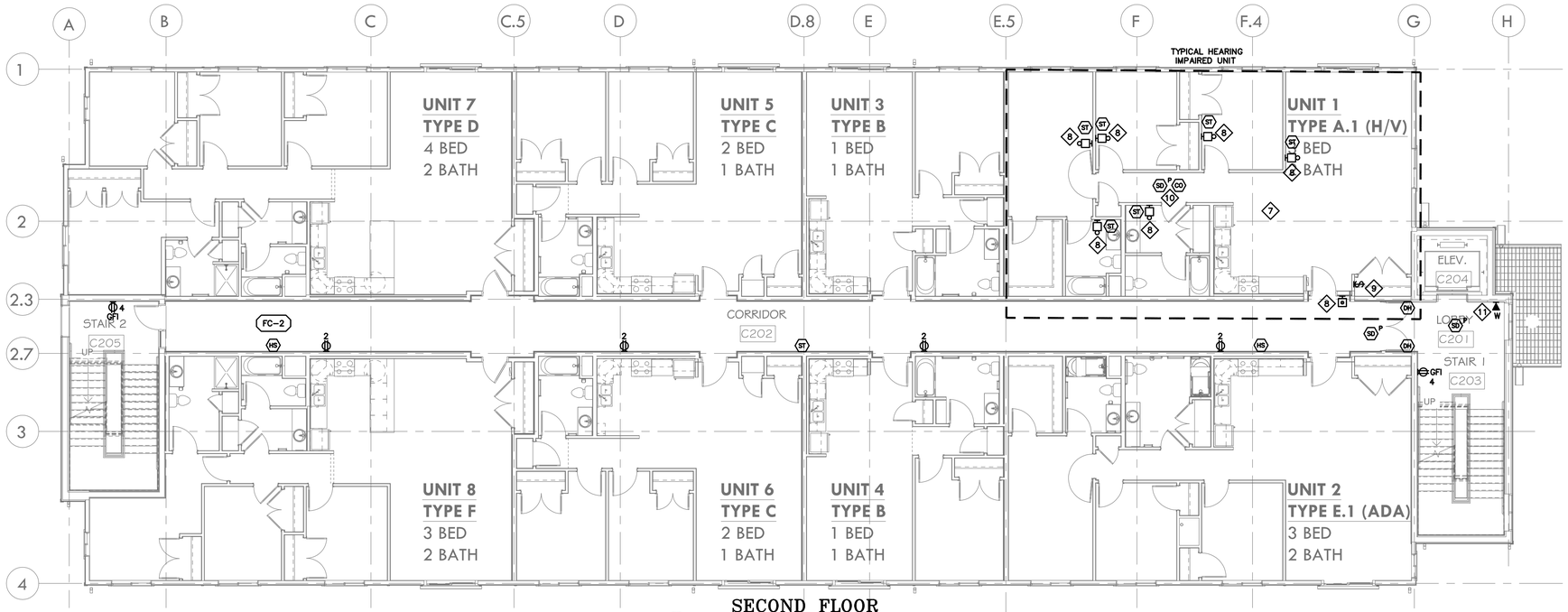
SCALE
AS NOTED

West Birch Apartments

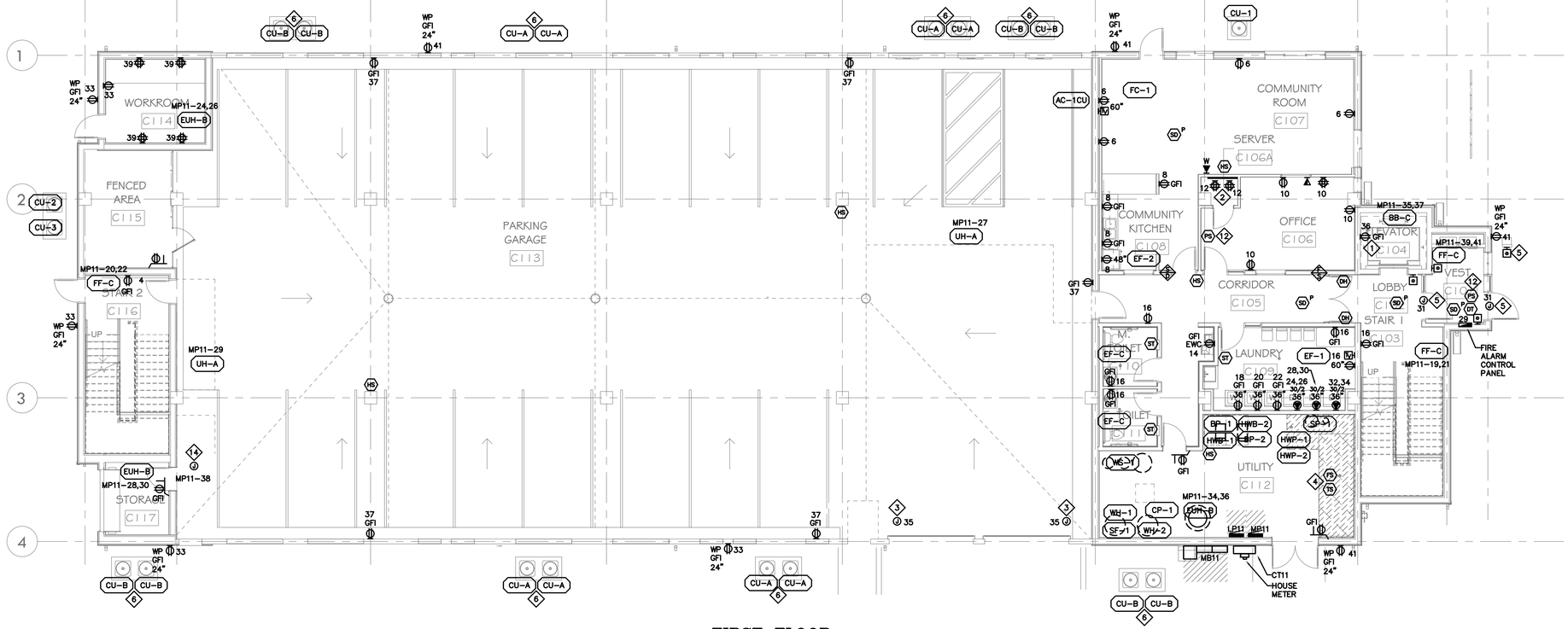
W Branch Street
Princeton, MN

LIGHTING PLANS

E212



2 SECOND FLOOR POWER & SYSTEMS PLAN
1/8" = 1'-0"



1 FIRST FLOOR POWER & SYSTEMS PLAN
1/8" = 1'-0"

GENERAL ELECTRICAL NOTES

A. REFER TO UNIT PLANS FOR TYPICAL UNIT CONFIGURATIONS. CONTRACTOR SHALL COMPLETE ALL UNITS BASED ON TYPICAL UNITS.

B. OBTAIN POWER FROM PANEL LP11, UNLESS NOTED OTHERWISE.

C. ELECTRICAL CONTRACTOR TO COORDINATE COMMON AREA DEVICE LOCATION WITH OWNER.

◇SPECIFIC ELECTRICAL NOTES

1. PROVIDE ELEVATOR DEVICES AS REQUIRED. COORDINATE WITH ELEVATOR INSPECTOR FOR LOCATIONS.
2. PROVIDE 3/4" FIRE RATED PLYWOOD FOR COMMUNICATIONS. PROVIDE DEDICATED RECEPTACLES AS REQUIRED BY LOW VOLTAGE SUPPLIER.
3. PROVIDE CONNECTION TO POWER OVERHEAD DOOR OPERATOR AS REQUIRED. VERIFY WITH SUPPLIER.
4. AREA DEDICATED FOR INCOMING WATER & SPRINKLER SERVICE. PROVIDE CONNECTION TO FIRE ALARM FLOW & DAMPER SWITCHES, VERIFY QUANTITY& LOCATION WITH FIRE SPRINKLER CONTRACTOR.
5. PROVIDE J-BOXES FOR POWERED DOOR CONTROLS PROVIDED BY OTHERS). PROVIDE POWER & CONTROL CONNECTIONS BETWEEN PUSHBUTTONS, KEYED SWITCH & ACCESS CONTROL SYSTEM AS REQUIRED FOR PROPER OPERATION.
6. OBTAIN POWER FROM UNIT LOAD CENTER.
7. HEARING IMPAIRED UNIT. PROVIDE AUDIO/VISUAL SIGNALING DEVICES, SYSTEM STROBES, SYSTEM HORN/STROBES, RESIDENTIAL DETECTORS WITH STROBES & RESIDENTIAL CO DETECTOR. TYPICAL, REFER TO ARCHITECTURAL PLANS FOR ALL LOCATIONS.
8. PROVIDE AUDIO/VISUAL SIGNALING DEVICE WITH HORN/STROBE, LIGHTED PUSHBUTTON WITH ENGRAVED PLATE & TRANSFORMER. MINIMUM TONE SHALL BE 82 dBA AT 10 FEET WITH A HIGH INTENSITY 110 CANDELA VISUAL SIGNAL. EDWARDS SIGNALING DIVISION TYPE 7005-GS HOTEL ROOM ANNUNCIATOR KIT OR EQUAL.
9. PROVIDE ON/OFF SWITCH FOR AUDIO/VISUAL SYSTEM. PROVIDE PERMANENT LABEL.
10. CONNECT CO DETECTOR TO SMOKE DETECTOR. CO DETECTOR ACTIVATION SHALL CAUSE SMOKE DETECTOR TO ALARM.
11. AREA OF RESCUE (TWO-WAY COMMUNICATION). PROVIDE A CODE COMPLIANT SYSTEM, PER IBC. VERIFY QUANTITY & LOCATIONS WITH AHJ.
12. PROVIDE FIRE ALARM PULL STATIONS PER FIRE MARSHAL REQUIREMENTS, VERIFY.
13. DEDICATED FOR RADON SYSTEM EXHAUST FAN. PROVIDE CIRCUIT FROM PANEL MP11 AS REQUIRED. MOUNT J-BOX WITHIN ATTIC ADJACENT TO FAN LOCATION. COORDINATE WITH MECHANICAL CONTRACTOR.
14. PROVIDE SELF-REGULATING HEAT TRACE TAPE.

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
DJL
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

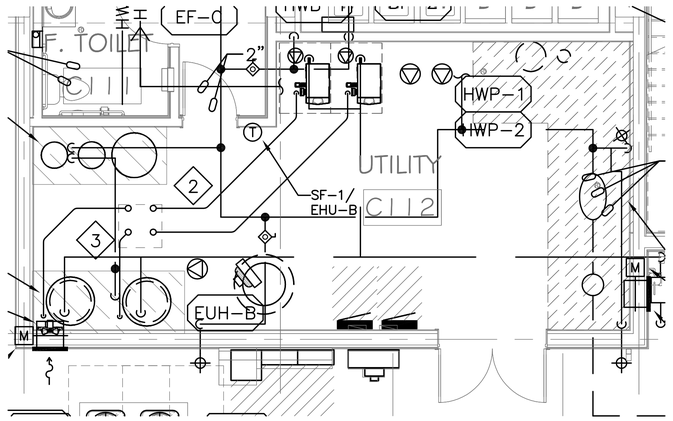
SCALE
AS NOTED

West Birch Apartments

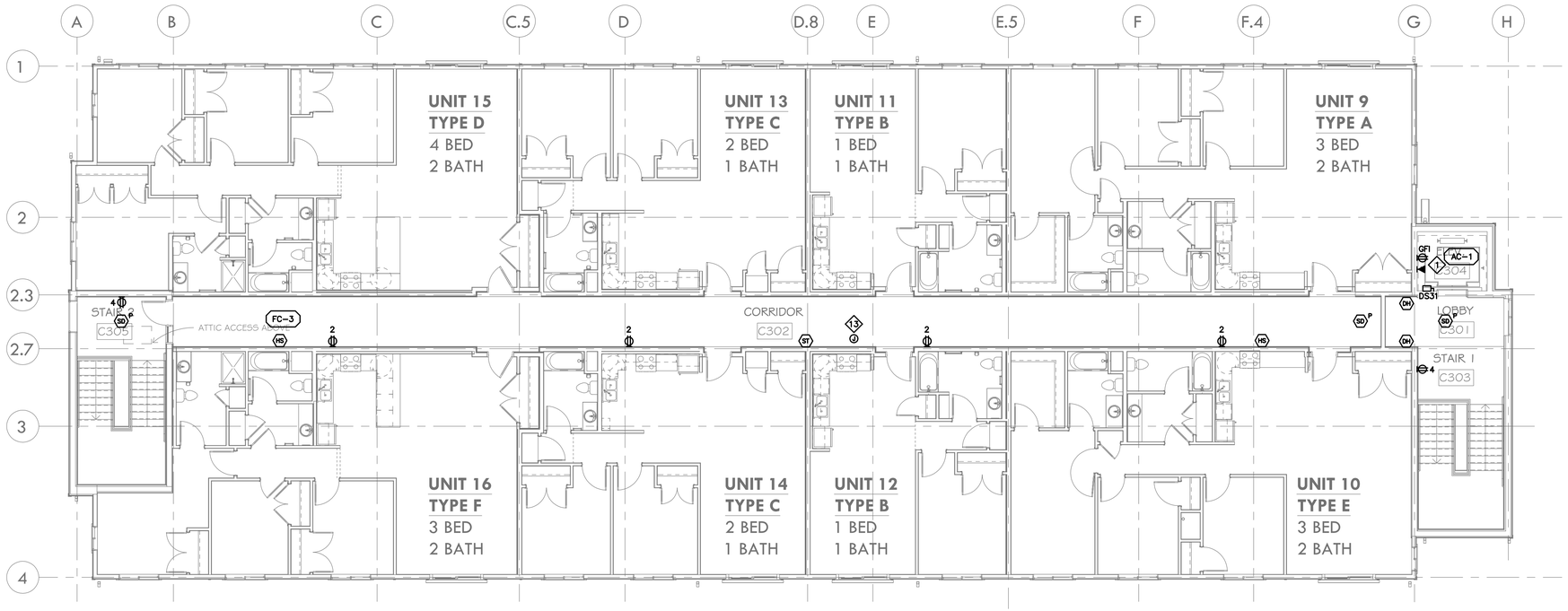
W Branch Street
Princeton, MN

POWER & SYSTEMS PLANS

E311



2 MECHANICAL ROOM COORDINATION PLAN
1/4" = 1'-0"



1 THIRD FLOOR POWER & SYSTEMS PLAN
1/8" = 1'-0"

REFER TO SHEET E311 FOR NOTES

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
DJL
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

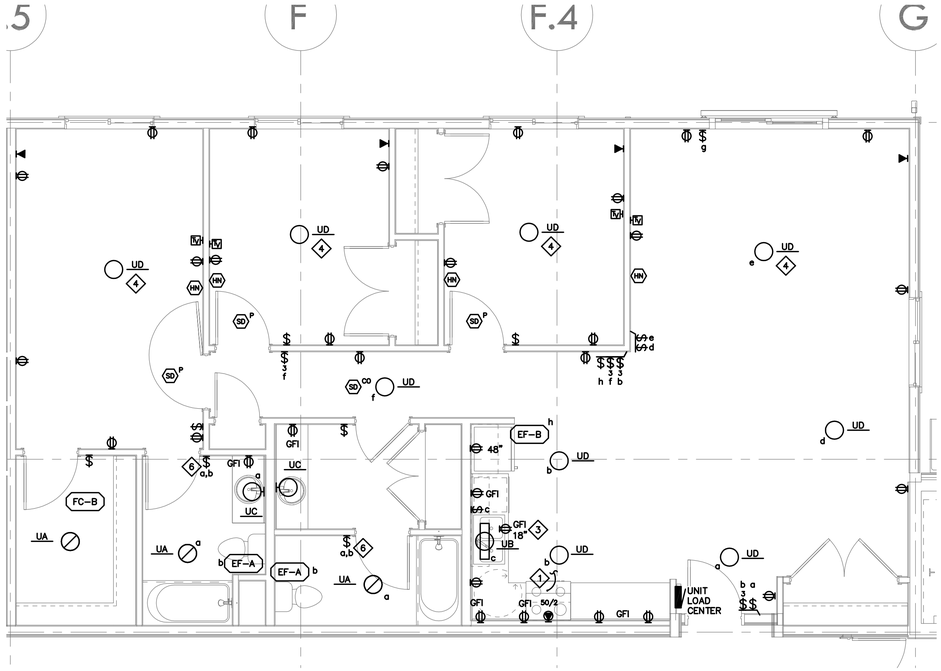
SCALE
AS NOTED

West Birch Apartments

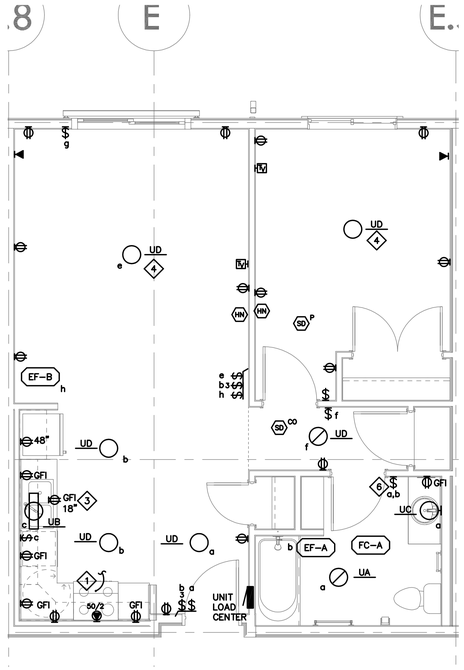
W Branch Street
Princeton, MN

POWER & SYSTEMS PLANS

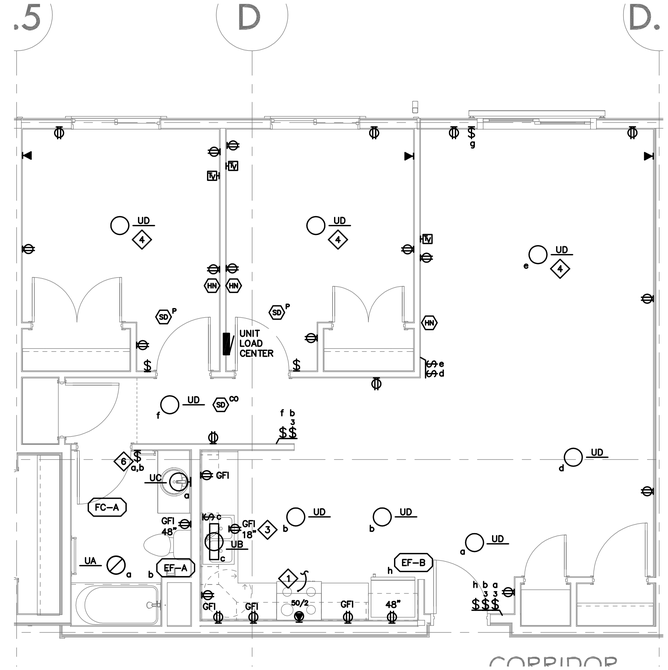
E312



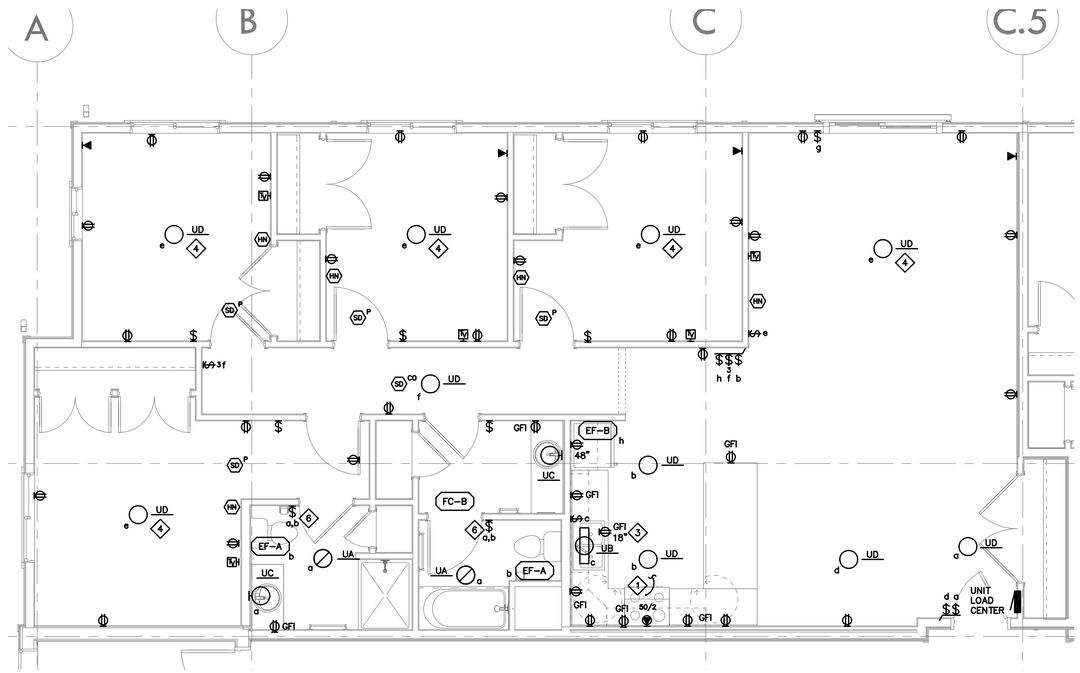
1 UNIT A ELECTRICAL PLAN
1/4" = 1'–0"



2 UNIT B ELECTRICAL PLAN
1/4" = 1'–0"



3 UNIT C ELECTRICAL PLAN
1/4" = 1'–0"



4 UNIT D ELECTRICAL PLAN
1/4" = 1'–0"

GENERAL ELECTRICAL UNIT NOTES

A. CONTRACTOR SHALL COMPLETE ALL UNITS BASED ON TYPICAL UNIT DESIGNS.

B. CONTRACTOR SHALL VERIFY QUANTITY & LOCATIONS OF ALL ANSI 'A' & HEARING IMPAIRED UNITS PRIOR TO BID. REFER TO ARCHITECTURAL PLANS.

C. PROVIDE RESIDENTIAL SMOKE DETECTORS WITHIN UNITS. REFER TO SPECIFICATIONS.

D. CONTRACTOR SHALL COMPARE TYPICAL UNIT DESIGNS WITH ARCHITECTURAL REFLECTED CEILING PLANS PRIOR TO BID. THE QUANTITY & CONDITION OF LIGHT FIXTURES MOST FAVORABLE TO THE OWNER SHALL BE BID.

◇SPECIFIC ELECTRICAL UNIT NOTES

1. CONNECT RANGE HOOD TO NON–SWITCHED GENERAL LIGHTING CIRCUIT.
2. PROVIDE FLUSH MOUNTED SWITCHES FOR RANGEHOOD/LIGHT.
3. DEDICATED FOR DISHWASHER. MOUNT BELOW SINK TO ALLOW FOR PLUG CONNECTION.
4. PROVIDE FLUSH J–BOX WITH SUPPORT TO ALLOW FOR FUTURE REPLACEMENT OF PROVIDED FIXTURE WITH COMBINATION CEILING FAN/FIXTURE. PROVIDE 3–WIRE CONDUCTOR FROM J–BOX TO SWITCH BOX FOR FUTURE CEILING FAN/FIXTURE CONTROLS.
5. ACCESSIBLE UNIT. PROVIDE SWITCHES AS NOTED.
6. TIMER SWITCH. REFER TO MECHANICAL EQUIPMENT SCHEDULE.

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
DJL
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

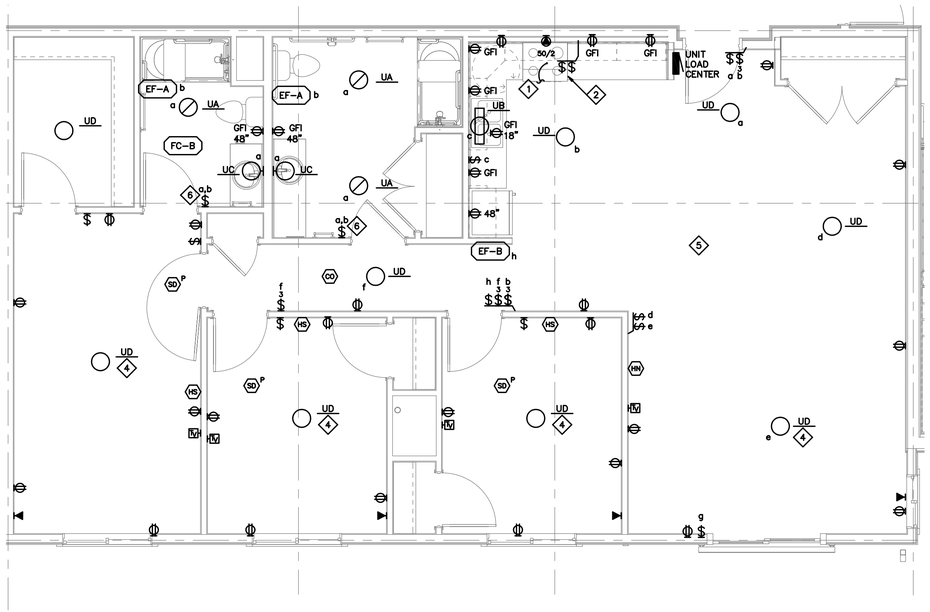
SCALE
AS NOTED

West Birch Apartments

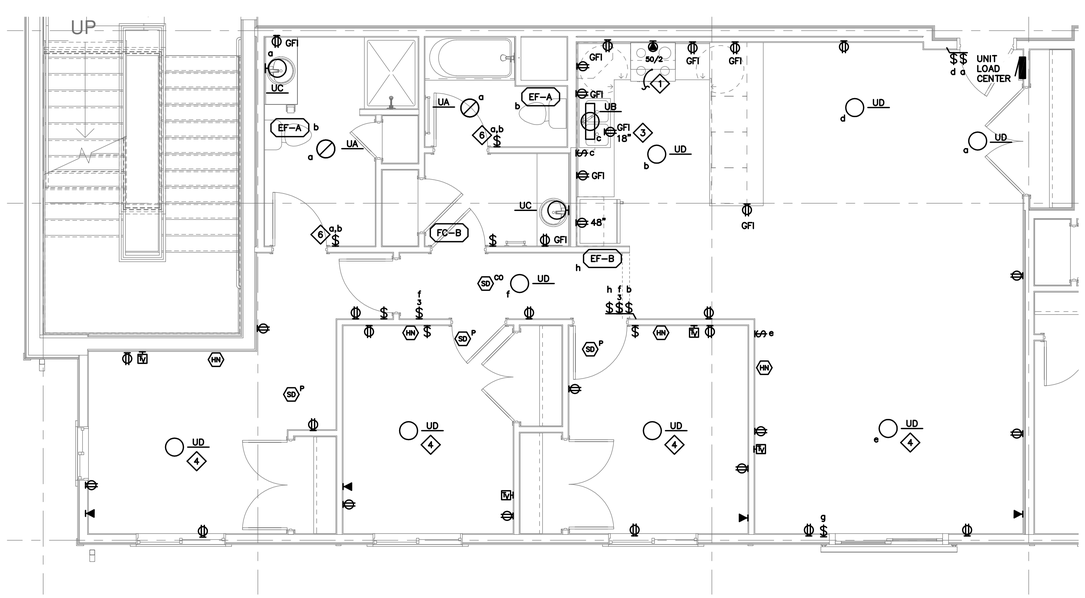
W Branch Street
Princeton, MN

UNIT ELECTRICAL PLANS

E411



1 UNIT E ADA
ELECTRICAL PLAN
1/4" = 1'-0"



2 UNIT F
ELECTRICAL PLAN
1/4" = 1'-0"

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

STEEN
ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
DJL
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

SCALE
AS NOTED

West Birch Apartments

W Branch Street
Princeton, MN

UNIT ELECTRICAL PLANS

E412

UNIT LOAD CENTER – 1 BEDROOM

SERVICE: 120/208V, 1PH, 3W — BUS: 100A
A.I.C. RATING: 22K — SPACES: 16
FEEDER FROM: PER SCHEDULE MB11 — MTG: FLUSH

CCT	CB	WIRE	LOAD DESCRIPTION
1	20/1	#12	SMALL APPLIANCE
3	20/1	#12	SMALL APPLIANCE
5	20/1	#12	BATHROOM RECEPTACLE
7	15	#12	CU–A
9	2	–	–
11	15/1	#14	GENERAL LIGHTING
13	–	–	SPACE
15	–	–	SPACE
2	50	#8	RANGE
4	2	–	–
6	15/1	#14	GENERAL LIGHTING
8	20/1	#12	DISHWASHER
10	15/1	#14	FC–A
12	–	–	SPACE
14	–	–	SPACE
16	–	–	SPACE

CONTRACTOR SHALL WIRE ALL INDIVIDUAL UNITS PER THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE. VERIFY THAT THE CONTRACTOR ROUGH–IN, LAYOUT AND UNIT PANEL CIRCUIT BREAKER COUNT MATCH. PROVIDE CIRCUIT BREAKERS IN UNIT PANELS PER CODE FOR GENERAL LIGHTING, APPLIANCE LOADS AND SPECIFIC APPLIANCES AND MECHANICAL EQUIPMENT.

PROVIDE ARC–FAULT PROTECTIVE DEVICES FOR ALL 125 VOLT, SINGLE PHASE BRANCH CIRCUITS IN ALL ROOMS, EXCEPT FOR BATHROOMS, GARAGES AND UNFINISHED BASEMENTS PER 2014 NEC. PROVIDE GFI PROTECTIVE DEVICES OR COMBINATION ARC–FAULT/GFI PROTECTIVE DEVICES WHERE GFI PROTECTION IS NOTATED OR REQUIRED BY CODE.

REFER TO SPECIFICATIONS FOR SER CABLE INSTALLATION RESTRICTIONS.

UNIT LOAD CENTER – 2/3 BEDROOM

SERVICE: 120/208V, 1PH, 3W — BUS: 100A
A.I.C. RATING: 22K — SPACES: 16
FEEDER FROM: PER SCHEDULE MB11 — MTG: FLUSH

CCT	CB	WIRE	LOAD DESCRIPTION
1	20/1	#12	SMALL APPLIANCE
3	20/1	#12	SMALL APPLIANCE
5	20/1	#12	BATHROOM RECEPTACLE
7	20	#12	CU–B
9	2	–	–
11	15/1	#14	GENERAL LIGHTING
13	15/1	#14	GENERAL LIGHTING
15	–	–	SPACE
2	50	#8	RANGE
4	2	–	–
6	20/1	#12	BATHROOM RECEPTACLE
8	20/1	#12	DISHWASHER
10	15/1	#14	FC–A
12	20/1	#12	GENERAL LIGHTING
14	–	–	SPACE
16	–	–	SPACE

CONTRACTOR SHALL WIRE ALL INDIVIDUAL UNITS PER THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE. VERIFY THAT THE CONTRACTOR ROUGH–IN, LAYOUT AND UNIT PANEL CIRCUIT BREAKER COUNT MATCH. PROVIDE CIRCUIT BREAKERS IN UNIT PANELS PER CODE FOR GENERAL LIGHTING, APPLIANCE LOADS AND SPECIFIC APPLIANCES AND MECHANICAL EQUIPMENT.

PROVIDE ARC–FAULT PROTECTIVE DEVICES FOR ALL 125 VOLT, SINGLE PHASE BRANCH CIRCUITS IN ALL ROOMS, EXCEPT FOR BATHROOMS, GARAGES AND UNFINISHED BASEMENTS PER 2014 NEC. PROVIDE GFI PROTECTIVE DEVICES OR COMBINATION ARC–FAULT/GFI PROTECTIVE DEVICES WHERE GFI PROTECTION IS NOTATED OR REQUIRED BY CODE.

REFER TO SPECIFICATIONS FOR SER CABLE INSTALLATION RESTRICTIONS.

UNIT LOAD CENTER – 4 BEDROOM

SERVICE: 120/208V, 1PH, 3W — BUS: 100A
A.I.C. RATING: 22K — SPACES: 16
FEEDER FROM: PER SCHEDULE MB11 — MTG: FLUSH

CCT	CB	WIRE	LOAD DESCRIPTION
1	20/1	#12	SMALL APPLIANCE
3	20/1	#12	SMALL APPLIANCE
5	20/1	#12	BATHROOM RECEPTACLE
7	20	#12	CU–B
9	2	–	–
11	15/1	#14	GENERAL LIGHTING
13	15/1	#14	GENERAL LIGHTING
15	–	–	SPACE
2	50	#8	RANGE
4	2	–	–
6	20/1	#12	BATHROOM RECEPTACLE
8	20/1	#12	DISHWASHER
10	15/1	#14	FC–A
12	20/1	#12	GENERAL LIGHTING
14	–	–	SPACE
16	–	–	SPACE

CONTRACTOR SHALL WIRE ALL INDIVIDUAL UNITS PER THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE. VERIFY THAT THE CONTRACTOR ROUGH–IN, LAYOUT AND UNIT PANEL CIRCUIT BREAKER COUNT MATCH. PROVIDE CIRCUIT BREAKERS IN UNIT PANELS PER CODE FOR GENERAL LIGHTING, APPLIANCE LOADS AND SPECIFIC APPLIANCES AND MECHANICAL EQUIPMENT.

PROVIDE ARC–FAULT PROTECTIVE DEVICES FOR ALL 125 VOLT, SINGLE PHASE BRANCH CIRCUITS IN ALL ROOMS, EXCEPT FOR BATHROOMS, GARAGES AND UNFINISHED BASEMENTS PER 2014 NEC. PROVIDE GFI PROTECTIVE DEVICES OR COMBINATION ARC–FAULT/GFI PROTECTIVE DEVICES WHERE GFI PROTECTION IS NOTATED OR REQUIRED BY CODE.

REFER TO SPECIFICATIONS FOR SER CABLE INSTALLATION RESTRICTIONS.

DISTRIBUTION EQUIPMENT SCHEDULE

PANEL NO.	VOLTAGE	MOUNTING	AIC	MAIN / RATING	# OF CCTS	BREAKERS DISC REQUIRED	FEEDER FROM	NOTES
CT11	120/208V 3PH, 4W	SURFACE	35K	400A MLO	---	---	3"PVC,4#500 FROM UTILITY TRANSFORMER	3
MB11	120/208V 3PH, 4W	SURFACE	35K	400A MLO		(16) 100/2	3–1/2"PVC,4#500, #3 G. FROM UTILITY XFMR	3
LP11	120/208V 3PH, 4W	SURFACE	31K	400A MCB	60	(1) 60/3 (4) 30/2 (1) 20/2	3 1/2"C,4#500 #3 G. FROM CT11	1,4
MP11	120/208V 3PH, 4W	SURFACE	26K	200A MLO	42	(9) 30/2 (1) 20/2	2"C, 4#3/0 #6G. FROM LP11	1
DS31	120/208V 3PH, 3W	SURFACE	5K	60A DISC.	---	---	1"C, 3#6, #10G. FROM LP11	2

SPECIFIC DISTRIBUTION SCHEDULE NOTES

1. FILL REMAINDER OF PANEL WITH 20/1 POLE BREAKERS.
2. MAKE CONNECTION TO ELEVATOR EQUIPMENT. COORDINATE WITH ELEVATOR EQUIPMENT PROVIDER FOR ALL ELECTRICAL REQUIREMENTS AND MOTOR HORSEPOWER. ADJUST ELECTRICAL EQUIPMENT SIZES AND RATINGS FOR ASSEMBLY BEING PROVIDED. FUSE PER MANUFACTURERS RECOMMENDATIONS.
3. EQUIPMENT SHALL BE PRE–APPROVED BY LOCAL UTILITY.
4. PROVIDE SERVICE ENTRANCE RATED PANELBOARD FOR COMMON AREA.

UNIT LOAD CENTER FEEDER SCHEDULE (2.0% VD, AL)

UNIT AMP LOAD	0–50 FEET	51–100 FEET	101–150 FEET	151–200 FEET	201–250 FEET
100	#1	#1/0	#3/0	#4/0	#300

NOTES:

A. SIZES SHOWN ARE MINIMUM REQUIRED FOR INDICATED DISTANCE RANGE.
B. SCHEDULE BASED ON ALUMINUM SER CABLE AT 0.9 PF AND 208 VOLTS.
C. SER CABLE RATED AT 75'C SHALL NOT BE INSTALLED IN INSULATED WALLS, CEILINGS, FIXED OPEN WEB TRUSSES, 2 BY X FRAMING OR OTHER INSULATED AREAS. PROVIDE 60'C SER CABLE OR 75'C M/C CABLE WITHIN INSULATED AREAS, INCREASING CONDUCTOR SIZE TO ACCOUNT FOR LOAD VARIATIONS AND TO NOT EXCEED MAXIMUM VOLTAGE DROP.
D. PROVIDE CONDUIT AND WIRE FOR FEEDERS LARGER THAN #300 OR FOR PARALLEL FEEDERS.
E. CONTRACTOR SHALL PROVIDE AN APPROPRIATELY SIZED GUTTER ADJACENT TO THE EQUIPMENT WHENEVER THE CONDUCTOR SIZE NECESSARY TO MAINTAIN THE REQUIRED VOLTAGE DROP IS TOO LARGE TO PROPERLY FORM AND TERMINATE IN THE EQUIPMENT. SPLICE PHASE AND NEUTRAL CONDUCTORS TO CORRECTLY SIZED PIGTAILS AND TERMINATE PER MANUFACTURER'S RECOMMENDATIONS WITHIN THE EQUIPMENT.

AVAILABLE FAULT CURRENT SCHEDULE

EQUIPMENT IDENT	SOURCE AIC (AMPS)	FEEDER LENGTH (FT)	AVAILABLE AIC (AMPS)
UTILITY TRANS.	---	---	52,000
CT11	52,000	30	34,984
MB11	52,000	30	34,984
LP11	34,984	10	30,923
MP11	30,923	10	25,759
DS31	30,923	75	3,450

NOTES:

A. CALCULATIONS BASED UPON FEEDERS SHOWN IN THE DISTRIBUTION EQUIPMENT SCHEDULE & APPROXIMATE EQUIPMENT LOCATIONS. CONTRACTOR SHALL RECALCULATE BASED UPON ANTICIPATED FIELD CONDITIONS PRIOR TO SUBMITTING SHOP DRAWINGS.
B. PRIOR TO FINAL ELECTRICAL INSPECTION, CONTRACTOR SHALL PROVIDE LABELS ON ALL DISTRIBUTION EQUIPMENT, PER CODE, INDICATING CALCULATED AVAILABLE FAULT CURRENT BASED UPON ACTUAL FIELD CONDITIONS.

SPECIFIC ELECTRICAL RISER NOTES:

1. ELEVATOR FEEDER, SEE DISTRIBUTION SCHEDULE.

SINGLE METER GAS PIPING BONDING GENERAL NOTES

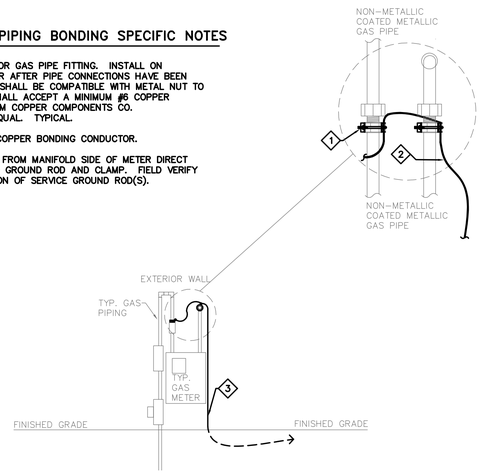
A. COMPLETE BONDING INSTALLATION SHALL CONFORM TO NFPA–70, NEC–250 AND UL467.

B. CLAMPS SHALL NOT BE INSTALLED ON NON–METALLIC COATED GAS PIPING.

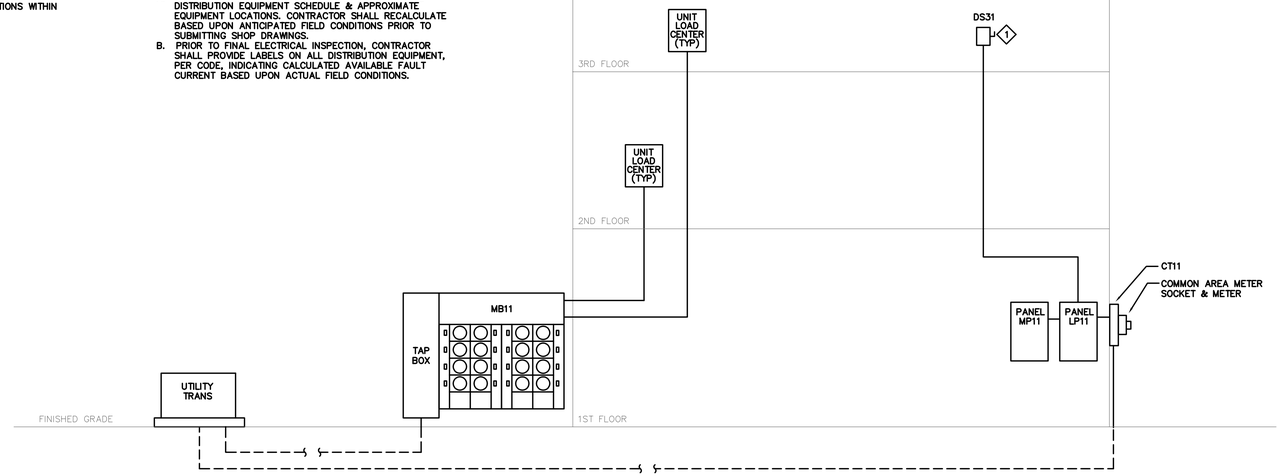
C. THE #6 BONDING CONDUCTOR SHALL BE ONE CONTINUOUS PIECE WITH NO SPLICES.

◇SINGLE METER GAS PIPING BONDING SPECIFIC NOTES

1. PROVIDE BONDING CLAMPS FOR GAS PIPE FITTING. INSTALL ON METALLIC NUT OF CONNECTOR AFTER PIPE CONNECTIONS HAVE BEEN MADE AND TESTED. CLAMP SHALL BE COMPATIBLE WITH METAL NUT TO PREVENT CORROSION AND SHALL ACCEPT A MINIMUM #6 COPPER BONDING CONDUCTOR. STORM COPPER COMPONENTS CO. #NAED–UPC–GVN–JRD OR EQUAL. TYPICAL.
2. PROVIDE MINIMUM #6 BARE COPPER BONDING CONDUCTOR.
3. ROUTE BONDING CONDUCTOR FROM MANIFOLD SIDE OF METER DIRECT BURIED TO BUILDING SERVICE GROUND ROD AND CLAMP. FIELD VERIFY EXACT ROUTING AND LOCATION OF SERVICE GROUND ROD(S).



2 SINGLE METER GAS PIPING BONDING DETAIL
NO SCALE



1 RISER DIAGRAM
NO SCALE

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS NOT FOR CONSTRUCTION

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
DJL
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

SCALE
AS NOTED

West Birch Apartments

W Branch Street
Princeton, MN

ELECTRICAL RISER DIAGRAM AND SCHEDULES

E511

MECHANICAL AND ELECTRICAL EQUIPMENT SCHEDULE GENERAL NOTES

A. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL EQUIPMENT SCHEDULED.

B. THE ELECTRICAL CONTRACTOR SHALL PROVIDE POWER WIRING AND MAKE FINAL CONNECTION TO EACH PIECE OF EQUIPMENT SCHEDULED.

C. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL STARTERS AND DISCONNECTS.

D. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL CONTROL DEVICES AS WELL AS ALL 120/208/240 VOLT POWER REQUIREMENTS AND LOW VOLTAGE WIRING NECESSARY TO INSTALL AND MAKE FULLY OPERATIONAL SPECIFIED CONTROL SYSTEMS, UNLESS NOTED OTHERWISE.

E. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SINGLE PHASE LINE VOLTAGE CONTROL DEVICES, SUCH AS 120/208/240 VOLT THERMOSTATS, SWITCHES AND TIME CLOCKS DIRECTLY CONTROLLING EXHAUST FANS, UNIT HEATERS, ETC., INCLUDING ALL ELECTRICAL MATERIALS AND FINAL CONNECTIONS.

F. THE ELECTRICAL CONTRACTOR SHALL PROVIDE RECEPTACLES ADJACENT TO WATER HEATERS, SUMP PUMPS AND WATER SOFTENERS.

G. MECHANICAL CONTRACTOR SHALL PROVIDE EQUIPMENT AFFIXED WITH A VISIBLE NAMEPLATE MARKED WITH SHORT CIRCUIT CURRENT RATING (SCCR) TO COMPLY WITH SECTION 440.4(B) OF THE 2017 NEC. MINIMUM EQUIPMENT SCCR SHALL BE 5,000 AIC, UNLESS NOTED OTHERWISE.

WATER SOFTENER SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVES	MANIFOLD CONN. SIZE	PEAK FLOW 15 PSI P.D.	PEAK FLOW 25 PSI P.D.	EXIST WATER HARDNESS	DESIGN WATER HARDNESS	BACKWASH GPM	MOTOR DATA		PANEL				NOTES	
										KVA	V/PH	PANEL/ CIRCUIT	CONDUIT	WIRE SIZE	BREAKER	MECH	ELEC
WS-1	CULLIGAN HE-060	UTILITY. RM	DOMESTIC HW	1½"	25	31	10	0	6	0.5	120/1	MP11 3	1/2"	#12	20/1	1	–

MECHANICAL NOTES

1. REFER TO PLUMBING SPECIFICATIONS SECTION 22 30 00 FOR FURTHER DETAILS.

DOMESTIC WATER HEATER SCHEDULE (GAS COMBINATION INTERNAL HEAT SOURCE & STORAGE TANK)

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVES	MAX. TEMP. RISE (deg. F)	GALLON STORAGE	RECOVERY (GPH)	CFH INPUT	MOTOR DATA		PANEL				NOTES	
								KVA	V/PH	PANEL/ CIRCUIT	CONDUIT	WIRE SIZE	BREAKER	MECH	ELEC
WH-1	AO SMITH Mxl BTH 150	UTILITY. RM	ENTIRE FACILITY	90	100	198	150	0.7	120/1	MP11 7	1/2"	#12	20/1	1	1
WH-2	AO SMITH Mxl BTH 150	UTILITY. RM	ENTIRE FACILITY	90	100	198	150	0.7	120/1	MP11 9	1/2"	#12	20/1	1	1

MECHANICAL NOTES

1. REFER TO PLUMBING SPECIFICATIONS SECTION 22 30 00 FOR FURTHER DETAILS.

ELECTRICAL NOTES

1. PROVIDE DEDICATED CIRCUIT AND DEDICATED NEUTRAL.

DOMESTIC HOT WATER CIRC PUMP AND SUMP PUMP SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	AREA SERVED	GPM	HEAD ('HD)	MOTOR DATA				PANEL				NOTES	
						WATTS	HP	RPM	V/PH	PANEL/ CIRCUIT	COND.	WIRE SIZE	BRKR	MECH	ELEC
SP-1	WEIL 1453- 1¼	UTILITY. RM	ELEVATOR PIT	50	15	–	1/2	3450	120/1	MP11 1	1/2"	#12	20/1	1	–
CP-1	TACO VR3452	UTILITY. RM	DOMESTIC HW CIRC	5	20	–	1/4	–	120/1	MP11 5	1/2"	#12	15/1	1,2	–

MECHANICAL NOTES

1. REFER TO PLUMBING SPECIFICATIONS SECTION 22 30 00 FOR FURTHER DETAILS.
2. BUILT IN SELFSENSING VARIABLE SPEED PUMP.

EXHAUST FAN SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	AREA SERVED	FAN DATA			MOTOR DATA				VIBR. ISO.		PANEL				NOTES	
				CFM	ESP ("WC)	FAN RPM	DRIVE TYPE	HP	RPM	V/PH	SPEC	DEFL. (in.)	PANEL/ CIRCUIT	COND.	WIRE SIZE	BRKR	MECH	ELEC
EF-A	PANASONIC FV-05VS	WALL	UNITS	50	0.1	759	DIRECT	FRAC	–	120/1	–	–	–	1/2"	14	15/1	–	2,3
EF-B	PANASONIC FV-10VS	WALL	UNITS	100	0.1	840	DIRECT	FRAC	–	120/1	–	–	–	1/2"	14	15/1	–	1
EF-C	PANASONIC FV-08VS	WALL	PUB RR	60	0.2	1026	DIRECT	FRAC	–	120/1	–	–	–	1/2"	12	20/1	–	2
EF-1	COOK GC-342	CEILING	LAUNDRY	200	.25	1725	DIRECT	FRAC	–	120/1	–	–	–	1/2"	12	20/1	–	2
EF-2	COOK GC-342	CEILING	COM ROOM	200	.25	1725	DIRECT	FRAC	–	120/1	–	–	–	1/2"	12	20/1	–	2

ELECTRICAL NOTES

1. OBTAIN POWER FROM NEARBY NON-SWITCHED LIGHTING CIRCUIT.
2. OBTAIN POWER FROM ROOM SWITCHED LIGHTING CIRCUIT.
3. PROVIDE 120 VOLT TIME DELAY OFF AND PERIODIC VENTILATION SWITCH SETTABLE FROM 0-60 MINUTES BY ADJUSTMENT SCREWS BEHIND COVERPLATE. CONNECT FIXTURE TO INSTANTANEOUS CONTACTS AND FAN TO TIME DELAY/PERIODIC VENTILATION CONTACTS. SET TIME DELAY TO 15 MINUTES. SET VENTILATION TO 10 MINUTES PER HOUR. PANASONIC #FV-WCD02-X OR EQUAL. VERIFY COLOR WITH ARCHITECT PRIOR TO SUBMITTING SHOP DRAWINGS.

SUPPLY FAN SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	AREA SERVED	FAN DATA			MOTOR DATA				VIBR. ISO.		PANEL				NOTES	
				CFM	ESP ("WC)	FAN RPM	DRIVE TYPE	HP	RPM	V/PH	SPEC	DEFL. (in.)	PANEL/ CIRCUIT	COND.	WIRE SIZE	BRKR	MECH	ELEC
SF-1	COOK 10XWS24D15	WALL	MECHANICAL	400	.125	1550	DIRECT	FRAC	–	120/1	–	–	MP11 32	1/2"	12	20/1	1	–

MECHANICAL NOTES

1. FURNISH AUTO CHANGEOVER THERMOSTAT: EUH-B ON < 60°F, SF-1 ON > 75°F. NORMALLY CLOSED DAMPERS SHALL OPEN UPON ANY CALL FOR COOLING.

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
DJL
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

SCALE
AS NOTED

West Birch Apartments

W Branch Street
Princeton, MN

MECHANICAL EQUIPMENT SCHEDULES

E611

BOILER SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	AREA SERVED	HEATING DATA			MOTOR DATA		PANEL				NOTES	
				INPUT MBH	OUTPUT MBH	EDR (SQ.FT.)	MCA	V/PH	PANEL/ CIRCUIT	COND.	WIRE SIZE	BRKR	MECH	ELEC
HWB-1	LOCHINVAR KBN400	MECH	BUILDING	399	376	–	FRAC	120/1	MP11 27	1/2"	#12	15/1	–	1
HWB-2	LOCHINVAR KBN400	MECH	BUILDING	399	376	–	FRAC	120/1	MP11 29	1/2"	#12	15/1	–	1

ELECTRICAL NOTES

1. PROVIDE DEDICATED CIRCUIT AND DEDICATED NEUTRAL.

COMPRESSION TANK/AIR SEPARATOR SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SYSTEM SERVED	TANK VOLUME (GAL)	ACCEPT. VOLUME (GAL)	BLADDER PRESSURE (PSI)	CONN. SIZE	AIR SEPARATOR MODEL #	NOTES
									MECH
ET-1	WESSELS NTA-15	MECH –	BUILDING –	7.8	6.3	–	3/4"	– –	–

MECHANICAL AND ELECTRICAL EQUIPMENT SCHEDULE GENERAL NOTES

A. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL EQUIPMENT SCHEDULED.

B. THE ELECTRICAL CONTRACTOR SHALL PROVIDE POWER WIRING AND MAKE FINAL CONNECTION TO EACH PIECE OF EQUIPMENT SCHEDULED.

C. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL STARTERS AND DISCONNECTS.

D. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL CONTROL DEVICES AS WELL AS ALL 120/208/240 VOLT POWER REQUIREMENTS AND LOW VOLTAGE WIRING NECESSARY TO INSTALL AND MAKE FULLY OPERATIONAL SPECIFIED CONTROL SYSTEMS, UNLESS NOTED OTHERWISE.

E. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SINGLE PHASE LINE VOLTAGE CONTROL DEVICES, SUCH AS 120/208/240 VOLT THERMOSTATS, SWITCHES AND TIME CLOCKS DIRECTLY CONTROLLING EXHAUST FANS, UNIT HEATERS, ETC., INCLUDING ALL ELECTRICAL MATERIALS AND FINAL CONNECTIONS.

F. THE ELECTRICAL CONTRACTOR SHALL PROVIDE RECEPTACLES ADJACENT TO WATER HEATERS, SUMP PUMPS AND WATER SOFTENERS.

G. MECHANICAL CONTRACTOR SHALL PROVIDE EQUIPMENT AFFIXED WITH A VISIBLE NAMEPLATE MARKED WITH SHORT CIRCUIT CURRENT RATING (SCCR) TO COMPLY WITH SECTION 440.4(B) OF THE 2017 NEC. MINIMUM EQUIPMENT SCCR SHALL BE 5,000 AIC, UNLESS NOTED OTHERWISE.

FAN COIL UNIT SCHEDULE (HW/DX)

UNIT NO.	MANUFACTURER & MODEL NO.	DESCRIPT.	AREA SERVED	FAN DATA				HEATING COIL DATA										DX COOLING COIL DATA						VIBR. ISOLATION		MOTOR DATA					PANEL				NOTES	
				CFM	O.A. CFM	ESP ("WC)	TSP ("WC)	GPM	ROWS	PD (FT)	APD ("WC)	MBH	GLY (%)	EWT (°F)	LWT (°F)	EAT (°F)	LAT (°F)	EAT DB	EAT WB	LAT DB	LAT WB	MBH SENS.	MBH TOTAL	SPEC	DEFL. (in.)	HP	AMPS	KVA	RPM	V/PH	PANEL/ CIRCUIT	COND.	WIRE SIZE	BRKR	MECH	ELEC
FC-A	1ST COMPANY 19CDX-HW-C	HORIZONTAL RECESSED	UNITS	600	–	.25	–	1.0	–	0.9	–	17.0	30	160	130	–	–	80	67	–	–	–	–	–	–	FRAC	3.0	–	1550	120/1	– –	1/2"	14	15/1	1,2	1
FC-B	1ST COMPANY 25CDX-HW-C	HORIZONTAL RECESSED	UNITS	800	–	.25	–	2.0	–	2.6	–	24.4	30	160	130	–	–	80	67	–	–	–	–	–	–	FRAC	5.0	–	1550	120/1	– –	1/2"	14	15/1	1,2	1
FC-1	1ST COMPANY 37CDX-HW-C	HORIZONTAL RECESSED	COMMUNITY	1200	300	.25	–	2.0	–	3.5	–	35.5	30	160	130	–	–	80	67	–	–	–	–	–	–	FRAC	6.0	–	1550	120/1	MP11 14	1/2"	12	15/1	1,2	–
FC-2	1ST COMPANY 19CDX-HW-C	HORIZONTAL RECESSED	CORRIDOR	600	60	.25	–	1.0	–	0.9	–	17.0	30	160	130	–	–	80	67	–	–	–	–	–	–	FRAC	3.0	–	1550	120/1	MP11 16	1/2"	12	15/1	1,2	–
FC-3	1ST COMPANY 19CDX-HW-C	HORIZONTAL RECESSED	CORRIDOR	600	60	.25	–	1.0	–	0.9	–	17.0	30	160	130	–	–	80	67	–	–	–	–	–	–	FRAC	3.0	–	1550	120/1	MP11 18	1/2"	12	15/1	1,2	–

MECHANICAL NOTES

1. HEATING CAPACITY AND PRESSURE DROP HAVE BEEN ADJUSTED FOR 30% GLYCOL.
2. PROVIDE DUCTED RETURN WITH FILTER RETURN GRILLE AS SHOWN.

ELECTRICAL NOTES

1. REFER TO PLANS FOR CIRCUITING.

UNIT HEATER SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	AREA SERVED	CFM	HEATING COIL DATA					MOTOR DATA			PANEL					NOTES	
					GPM	MBH	EWT (°F)	LWT (°F)	WPD ("WC)	HP	RPM	V/PH	PANEL/ CIRCUIT	CONDUIT	WIRE SIZE	BREAKER		MECH	ELEC
UH-A	AIRTHERM HA-60	GARAGE	PLENUM	900	2.6	28.1	160	130	.07	FRAC	1000	120/1	– –	1/2"	#12	15/1		1,2	1

MECHANICAL NOTES

1. SUPPORTED FROM STRUCTURE.
2. HEATING CAPACITY AND PRESSURE DROP HAVE BEEN ADJUSTED FOR 30% ETHYLENE GLYCOL.

ELECTRICAL NOTES

1. REFER TO PLAN FOR CIRCUITING.

CONDENSING UNIT SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVES	COOLING DATA			MOTOR DATA		VIBR. ISO.		PANEL				NOTES	
				TONS	MBH	SEER	MCA	V/PH	SPEC	DEFL. (in.)	PANEL/ CIRCUIT	COND.	WIRE SIZE	BRKR	MECH	ELEC
CU-A	CARRIER 24ABB318	GRADE	FC-A	1.5	17.4	13.0	11.8	208/1	–	–	– –	1/2"	#12	15/2	–	1
CU-B	CARRIER 24ABB324	GRADE	FC-A	2.0	22.4	13.0	17.6	208/1	–	–	– –	1/2"	#12	20/2	–	1
CU-1	CARRIER 24ABB336	GRADE	FC-1	3.0	33.2	13.0	21.5	208/1	–	–	MP11 2,4	1/2"	#12	25/2	–	–
CU-2	CARRIER 24ABB318	GRADE	FC-2	1.5	17.4	13.0	11.8	208/1	–	–	MP11 6,8	1/2"	#12	15/2	–	–
CU-3	CARRIER 24ABB318	GRADE	FC-3	1.5	17.4	13.0	11.8	208/1	–	–	MP11 10,12	1/2"	#12	15/2	–	–

ELECTRICAL NOTES

1. REFER TO PLANS FOR CIRCUITING.

PUMP SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	AREA SERVED	GPM	HEAD ('HD)	ΔT (°F)	VIBR. ISO.		MOTOR DATA				PANEL					NOTES	
							SPEC	DEFL. (in.)	WATTS	HP	RPM	V/PH	PANEL/ CIRCUIT	COND.	WIRE SIZE	BRKR		MECH	ELEC
HWP-1	B & G ECOCIRC XL 70-145	MECH	HEATING WATER	55.0	36.0	30.0	–	–	–	2.0	2744	208/1	MP11 11,13	1/2"	12	30/2		1,2	1
HWP-2	B & G ECOCIRC XL 70-145	MECH	HEATING WATER	55.0	36.0	30.0	–	–	–	2.0	2744	208/1	MP11 15,17	1/2"	12	30/2		1,2	1
BP-1	B & G ECOCIRC XL 36-45	MECH	HEATING WATER	26.0	11.0	30.0	–	–	–	FRAC	3040	120/1	MP11 23	1/2"	12	20/1		2,3	–
BP-2	B & G ECOCIRC XL 36-45	MECH	HEATING WATER	26.0	11.0	30.0	–	–	–	FRAC	3040	120/1	MP11 23	1/2"	12	20/1		2,3	–

MECHANICAL NOTES

1. EACH PUMP IS SELECTED AT 100% OF REQUIRED FLOW, WITH ONE PUMP ON STANDBY. PROVIDE LEAD/LAG CONTROL.
2. SELECTION IS BASED ON 30% PROPYLENE GLYCOL.
3. WIRE EACH BOILER PUMP TO ITS CORRESPONDING BOILER CONTROL PANEL.

ELECTRICAL NOTES

1. ECM MOTOR. PROVIDE NEUTRAL CONDUCTOR WITH PHASE CONDUCTORS.

ELECTRIC HEATER SCHEDULE

UNIT NO.	MANUFACTURER MODEL NO.	DESCRIP.	AREA SERVED	HEATING COIL DATA				PANEL				NOTES	
				LENGTH (ft.)	TOTAL WATTS	TOTAL (Btuh)	V/PH	PANEL/ CIRCUIT	CONDUIT	WIRE SIZE	BREAKER	MECH	ELEC
BB-C	BERKO CSLAS-6-250	COMMERCIAL BASEBOARD	SEE PLANS	6.0	1500	5,120	208/1	– –	1/2"	#12	15/2	1,2	1,2
FF-C	BERKO FRC-4820	COMMERCIAL WALL CABINET	SEE PLANS	–	4800	16,382	208/1	– –	1/2"	#10	30/2	1,2	1,2
EUH-B	BERKO HUHAA-520	HORIZONTAL UTILITY	SEE PLANS	–	5000	–	208/1	– –	1/2"	#10	30/2	1,3	1,2,3

MECHANICAL NOTES

1. EQUIPMENT FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR.
2. PROVIDE INTEGRAL THERMOSTAT AND DISCONNECT SWITCH.
3. FURNISH REMOTE THERMOSTAT. BERKO #M602W OR EQUAL.

ELECTRICAL NOTES

1. EQUIPMENT FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR. COORDINATE LOCATIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
2. REFER TO PLAN FOR CIRCUITING.
3. INSTALL THERMOSTAT FURNISHED BY MECHANICAL. REFER TO MECHANICAL PLANS FOR LOCATION.

DUCTLESS AIR CONDITIONER AND CONDENSING UNIT SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	TYPE/ SERVES	AIR HANDLING DATA			HEATING DATA			COOLING DATA				MOTOR DATA			PANEL					NOTES	
				CFM	O.A.	"ESP	MBH	COP	HSPF	MBH	SEER	EER	TONS	WATTS	MCA	V/PH	PANEL/ CIRCUIT	COND.	WIRE SIZE	BRKR		MECH	ELEC
AC-1	CARRIER 40MAQB12B	ELEV	HI-WALL	210	–	–	12.0	3.22	10.0	12.0	21.5	13.0		–	–	120/1		1/2"	#12				1
AC-1CU	CARRIER 38MAQB12B	GRADE	AC-1										1.0	–	15.0	120/1	PNL CCT	1/2"	#12	20/1		–	–

ELECTRICAL NOTES

1. PROVIDE POWER AND CONTROL CONNECTIONS FROM CU TO AC.
2. REFER TO PLANS FOR CIRCUITING.
3. PROVIDE FUSED DISCONNECT WITHIN ELEVATOR EQUIPMENT ROOM.

Blumentals Architecture
1600 Marshall Steet NE, Suite 1
Minneapolis, MN 55413
612/331-2222
612/331-2224 FAX
info@blumentals.com

SIGNATURES

PRELIMINARY DRAWINGS
NOT FOR CONSTRUCTION

STEEN ENGINEERING INC.
763-585-6742
763-585-6757 fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
DJL
Issue Date
04/20/18

SUBMITTALS / REVISIONS

04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% MHFA REVIEW

SCALE
AS NOTED

West Birch Apartments

W Branch Street
Princeton, MN

MECHANICAL EQUIPMENT SCHEDULES

E612