

**DRYWELL SIZE CHART**

DW#	LOT	DRAINAGE AREA	VOLUME REQUIRED	PROPOSED DIMENSIONS	VOLUME PROVIDED
19A	4	848 SF	335 CF	9.2'x9.2'x4'	339 CF
19B	4	792 SF	313 CF	8.9'x8.9'x4'	317 CF
19C	4	1,008 SF	400 CF	9'x9'x5'	405 CF
19D	4	1,142 SF	453 CF	30.2'x3'x5'	453 CF

**DRYWELL #19A**  
 $ESD_v = (0.95)(2.0)(848)/12 = 134 \text{ CF}$   
 $134/0.4 = 335 \text{ CF (REQ.)}$   
 $9.2'x9.2'x4' = 339 \text{ CF (PROV.)}$

**DRYWELL #19B**  
 $ESD_v = (0.95)(2.0)(792)/12 = 125 \text{ CF}$   
 $125/0.4 = 313 \text{ CF (REQ.)}$   
 $8.9'x8.9'x4' = 317 \text{ CF (PROV.)}$

**DRYWELL #19C**  
 $ESD_v = (0.95)(2.0)(1,008)/12 = 160 \text{ CF}$   
 $160/0.4 = 400 \text{ CF (REQ.)}$   
 $9'x9'x5' = 405 \text{ CF (PROV.)}$

**DRYWELL #19D**  
 $ESD_v = (0.95)(2.0)(1,142)/12 = 181 \text{ CF}$   
 $181/0.4 = 453 \text{ CF (REQ.)}$   
 $30.2'x3'x5' = 453 \text{ CF (PROV.)}$

**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER INFILTRATION TRENCHES (I-1) AND DRY WELLS (M-5)**

1. THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS, AND AFTER EVERY LARGE STORM EVENT.
2. THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE.
3. THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
4. WHEN THE FACILITY BECOMES CLOGGED, SO THAT IT DOES NOT DRAIN DOWN WITHIN A SEVENTY-TWO (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
5. THE MAINTENANCE LOGBOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
6. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS, UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (N-1) AND DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)**

1. MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

**OWNER**  
 ESTATES AT RIVER HILL, LLC  
 MICHAEL PFAU, MEMBER  
 3675 PARK AVENUE, SUITE 301  
 ELLICOTT CITY, MD 21043  
 (410) 480-0023

**DEVELOPER**  
 TRINITY HOMES MARY LAND, LLC  
 3675 PARK AVENUE, SUITE 301  
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 (410) 480-0023

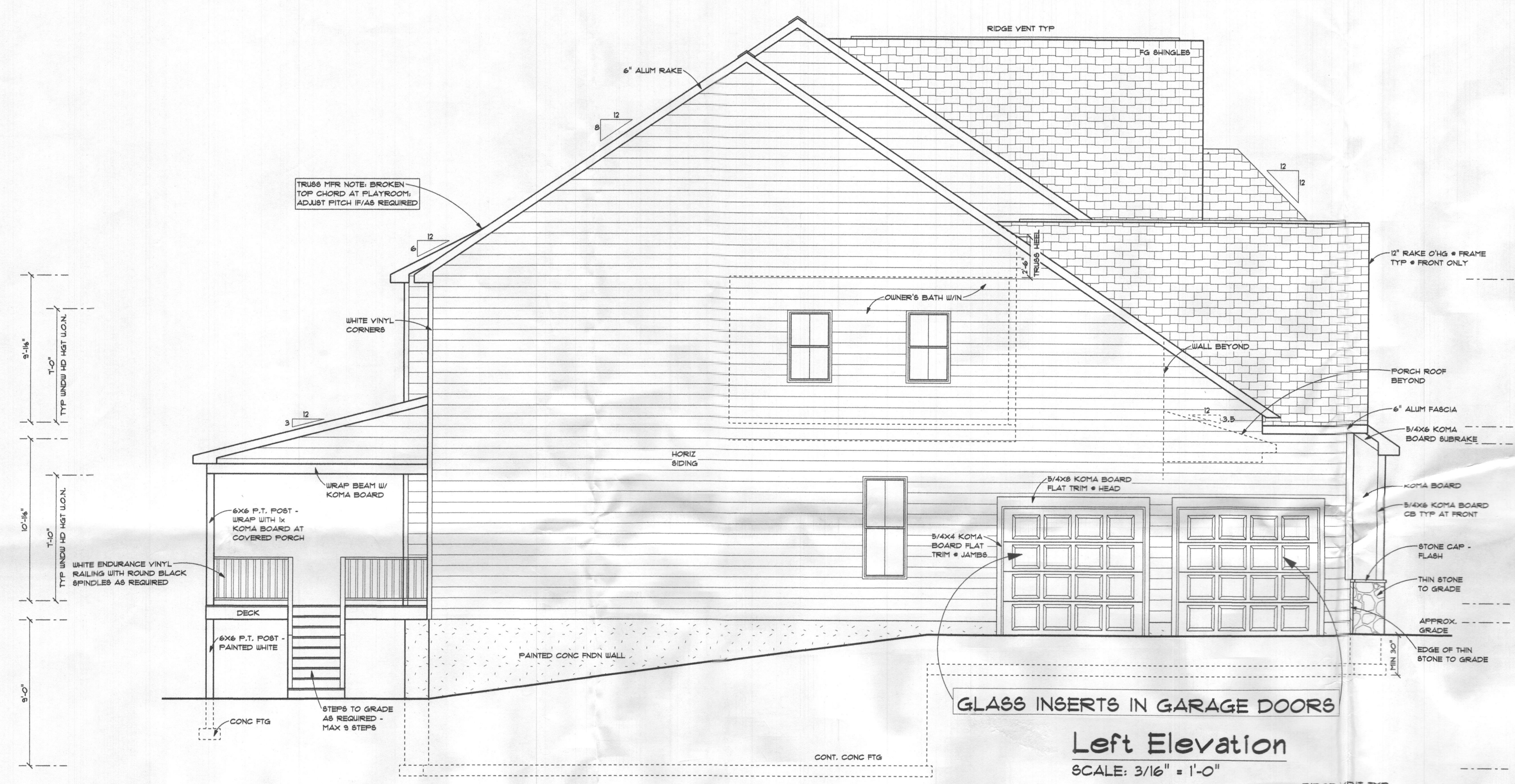
**VOGEL ENGINEERING**  
  
**TIMMONS GROUP**  
 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043  
 P: 410.461.7666 F: 410.461.8961 www.timmons.com

SCALE AS SHOWN  
 DRAWN BY JMR  
 CHECKED BY RHV  
 DATE JUNE 24, 2021  
 W. O. # 15-39  
 SHEET# 3 OF 3

**PLOT PLAN**  
**THE ESTATES AT RIVER HILL - LOT 4**  
 13621 NOBLE WAY  
 HIGHLAND, MD 20777

5TH ELECTION DISTRICT  
 TAX MAP: 34 PARCEL: 389  
 DPZ REF'S: ECP:16-064, WP-17-034,  
 WP-17-128, SP-17-007, F-18-064

BLOCK: 23  
 ZONED: RR-DEO  
 HOWARD COUNTY, MARYLAND



GLASS INSERTS IN GARAGE DOORS  
**Left Elevation**  
 SCALE: 3/16" = 1'-0"



**Front Elevation #805**  
 SCALE: 1/4" = 1'-0"

**LOT 4 ESTATES AT RIVER HILL**

NOTE: BLACK COLOR FRAME WINDOWS AT FRONT ONLY

NOTE: FRONT, SIDES & REAR. WHITE ALUM. SOFFIT & FASCIA.

NOTE: INSULATOR  
 ANTI-AIR INFILTRATION SYSTEM: CAULKING AT EXTERIOR JOINTS, BEAMS, AND OPENINGS AROUND DOOR AND WINDOW JAMBS, FOAM SEALER AT OPENINGS ON EXTERIOR WALLS.

NOTE: CARPENTER  
 TYVEK HOUSE WRAP ALL 4 SIDES

UNITED DOUBLE-HUNG WINDOWS  
 5900 DOUBLE HUNG, LOW-E TILT & WASH WINDOWS W/ GRILLES, SCREENS, WOOD EXTENSIONS & CASINGS EXCEPT GARAGE  
 NOTE: USE WINDOW DEVICES WHERE REQUIRED PER IRC 2018 R312.2

NOTE: HERITAGE 30 YEAR LAYERED ARCHITECTURAL SHINGLE BY TAMKO

INTERIOR SPRINKLER  
 STANDARD HEADS EXPOSED

**The Berkshire III**

REVISIONS	
DATE	06-17-2021
SHEET NO.	A-1
	© 2021

**2018 CODE**



**Right Elevation**  
SCALE: 3/16" = 1'-0"



**Rear Elevation**  
SCALE: 3/16" = 1'-0"

**2018 IECC ENERGY CODE COMPLIANCE REQUIREMENTS**

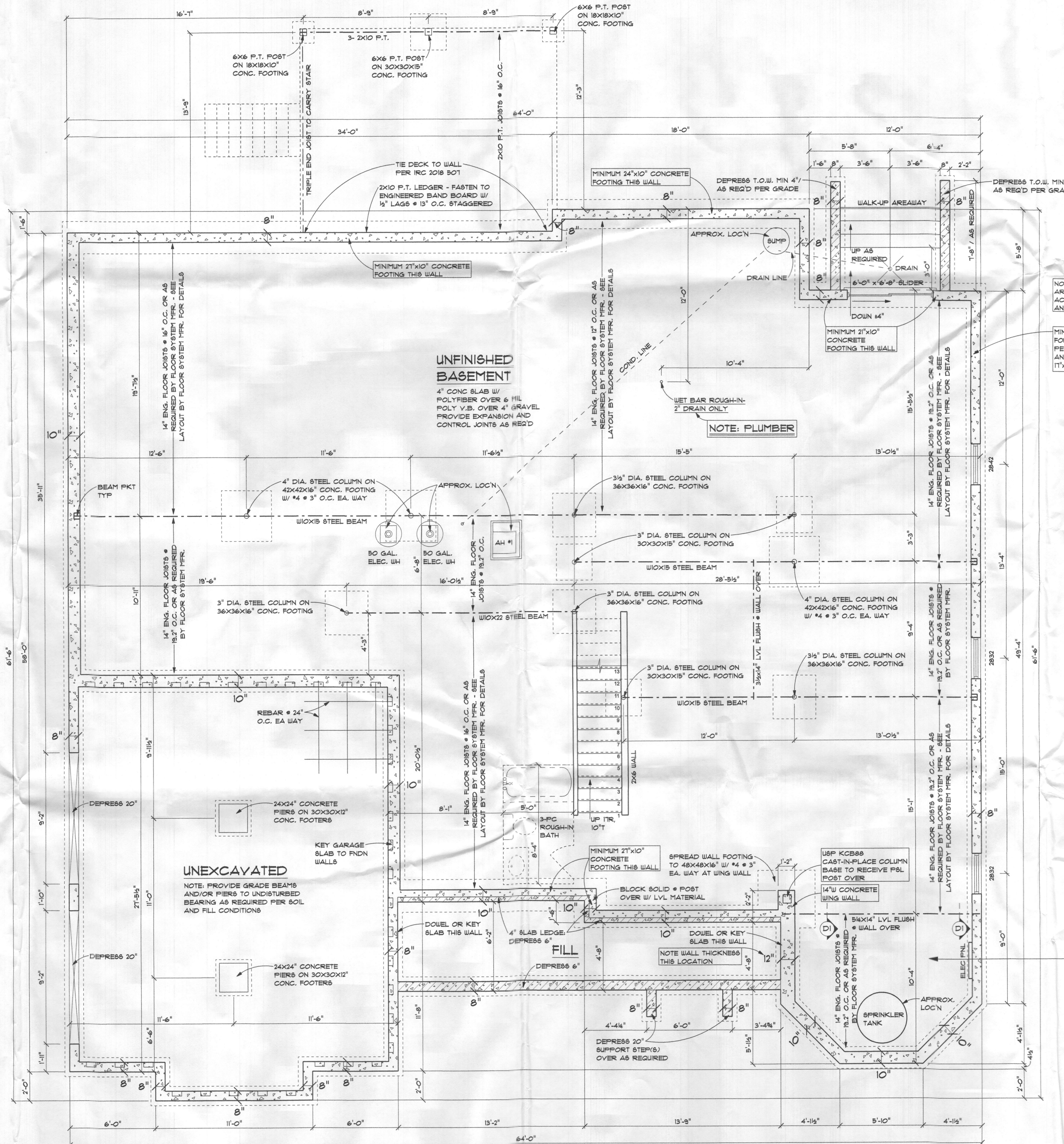
THE BUILDING SHALL CONFORM TO THE FOLLOWING MANDATORY REQUIREMENTS PER THE 2018 INTERNATIONAL ENERGY CONSERVATION CODE:

COMPLIANCE CERTIFICATE	A PERMANENT CERTIFICATE APPROVED BY THE LOCAL JURISDICTION DESCRIBING THE R-VALUES, U-FACTORS, AND SHGC OF THE BUILDING COMPONENTS AND BUILDING AIR LEAKAGE TEST RESULTS SHALL BE AFFIXED TO THE ELECTRICAL DISTRIBUTION PANEL OR ANOTHER LOCATION APPROVED BY THE LOCAL JURISDICTION, PER IECC R401.3 (IRC N1101.14).
AIR LEAKAGE	ALL NEW CONSTRUCTION BUILDINGS SHALL BE CONSTRUCTED TO LIMIT THE THERMAL ENVELOPE AIR LEAKAGE TO 3 AIR CHANGES PER HOUR AT 50 PASCALS OF PRESSURE AND TESTED VIA A BLOWER DOOR TEST PER IECC R402.4 (IRC N1102.4).
MAXIMUM FENESTRATION U-FACTOR AND SHGC	THE MAXIMUM U-FACTOR ALLOWED USING EITHER THE TOTAL UA ALTERNATIVE METHOD PER IECC R402.1.5 (IRC N1102.1.5) OR THE SIMULATED PERFORMANCE ALTERNATIVE PER IECC R405 (IRC N1105) SHALL BE 0.48 FOR VERTICAL FENESTRATION AND 0.75 FOR SKYLIGHTS PER IECC R402.5 (IRC N1102.5).
HVAC CONTROLS	EACH HEATING AND COOLING SYSTEM SHALL HAVE AT LEAST ONE THERMOSTAT PER IECC R403.1 (IRC N1103.1). THE THERMOSTAT CONTROLLING THE PRIMARY HEATING AND COOLING SYSTEM SHALL BE A PROGRAMMABLE THERMOSTAT PER IECC R403.1.1 (IRC N1103.1.1).
HEAT PUMP SUPPLEMENTARY HEAT	HEAT PUMPS WITH SUPPLEMENTARY ELECTRIC RESISTANCE HEAT SHALL HAVE CONTROLS THAT, EXCEPT DURING DEFROST, PREVENT SUPPLEMENTAL HEAT FROM OPERATING WHEN THE HEAT PUMP COMPRESSOR CAN MEET THE HEATING LOAD PER IECC R403.1.2 (IRC N1103.1.2).
DUCT SEALING	WHEN NEW FORCED AIR SYSTEMS ARE PROVIDED, ALL DUCTS, AIR HANDLERS, AND FILTER BOXES SHALL BE SEALED PER IRC M1601.4.1. DUCT TIGHTNESS SHALL BE VERIFIED BY EITHER A ROUGH-IN OR POSTCONSTRUCTION TEST PER IECC R403.3.3 (IRC N1103.3.3) UNLESS DUCTS AND AIR HANDLERS ARE LOCATED ENTIRELY WITHIN THE BUILDING THERMAL ENVELOPE.
BUILDING CAVITIES AS DUCTS OR PLENUMS	BUILDING FRAMING CAVITIES SHALL NOT BE USED AS DUCTS OR PLENUMS PER IECC R403.3.5 (IRC N1103.3.5).
MECHANICAL SYSTEM PIPING INSULATION	MECHANICAL SYSTEM PIPING CAPABLE OF CARRYING FLUIDS ABOVE 105°F OR BELOW 55°F SHALL BE INSULATED TO R-3 MINIMUM PER IECC R403.4 (IRC N1103.4). PIPING INSULATION EXPOSED TO WEATHER SHALL BE PROTECTED FROM DEGRADATION AND DECAY PER IECC R403.4.1 (IRC N1103.4.1).
CIRCULATING HOT WATER SYSTEMS	CIRCULATING HOT WATER SYSTEMS SHALL BE PROVIDED WITH AN AUTOMATIC OR READILY ACCESSIBLE MANUAL SWITCH TO TURN OFF THE CIRCULATING PUMP WHEN THE SYSTEM IS NOT IN USE PER IECC R403.5.1 (IRC N1103.5.1).
MECHANICAL VENTILATION	THE BUILDING SHALL BE PROVIDED WITH VENTILATION PER IRC M1505 OR OTHER APPROVED MEANS OF VENTILATION PER IECC R403.6 (IRC N1103.6). WHOLE-HOUSE VENTILATION FANS SHALL MEET EFFICIENCY STANDARDS PER IECC TABLE R403.6.1 (IRC TABLE N1103.6.1).
EQUIPMENT SIZING	HEATING AND COOLING EQUIPMENT SHALL BE SIZED IN ACCORDANCE WITH ACCA MANUAL J BASED ON BUILDING LOADS CALCULATED IN ACCORDANCE WITH ACCA MANUAL J OR OTHER APPROVED HEATING AND COOLING CALCULATION METHODOLOGIES PER IECC R403.7 (IRC N1103.7).
SYSTEMS SERVING MULTIPLE DWELLING UNITS	SYSTEMS SERVING MULTIPLE DWELLING UNITS SHALL CONFORM TO IECC SECTIONS C403 AND C404.
SNOW MELT SYSTEMS CONTROLS	SNOW AND ICE MELT SYSTEMS SUPPLIED THROUGH ENERGY SERVICE TO THE BUILDING SHALL INCLUDE AUTOMATIC CONTROLS CAPABLE OF SHUTTING OFF THE SYSTEM WHEN THE PAVEMENT TEMPERATURE IS ABOVE 50°F AND NO PRECIPITATION IS FALLING, AND AUTOMATIC OR MANUAL CONTROLS CAPABLE OF SHUTTING OFF THE SYSTEM WHEN THE OUTDOOR TEMPERATURE IS ABOVE 40°F PER IECC R403.9 (IRC N1103.9).
POOLS AND INGROUND PERMANENTLY INSTALLED SPAS	POOLS AND INGROUND SPA HEATERS SHALL HAVE AN ACCESSIBLE ON-OFF SWITCH MOUNTED ON THE OUTSIDE OF THE HEATER THAT ALLOWS SHUT-OFF WITHOUT AFFECTING THE THERMOSTAT SETTING PER IECC R403.10.1 (IRC N1103.10.1); GAS-FIRED HEATERS SHALL NOT HAVE CONSTANT BURNING PILOT LIGHTS. HEATERS SHALL HAVE TIME SWITCHES OR OTHER CONTROL METHODS TO AUTOMATICALLY TURN ON AND OFF PER A PRESET SCHEDULE PER IECC R403.10.2 (IRC N1103.10.2). HEATED POOLS AND INGROUND SPAS SHALL BE PROVIDED WITH A VAPOR-RETARDANT COVER PER IECC R403.10.3 (IRC N1103.10.3).
LIGHTING EQUIPMENT	A MINIMUM OF 90% OF THE LAMPS IN PERMANENTLY INSTALLED LIGHTING FIXTURES SHALL BE HIGH-EFFICACY LAMPS PER IECC R404.1 (IRC N1104.1).
FUEL GAS LIGHTING EQUIPMENT	FUEL GAS SYSTEMS SHALL NOT HAVE CONTINUOUSLY BURNING PILOT LIGHT SYSTEMS PER IECC R404.1.1 (IRC N1104.1.1).

THE BUILDING SHALL ALSO CONFORM TO THE FOLLOWING PRESCRIPTIVE REQUIREMENTS:

THE BUILDING CONFORMS TO THE PRESCRIPTIVE REQUIREMENTS DETAILED IN THE CHART BELOW PER IECC R402.1.2 & R402.1.3 (IRC N1102.1.2 & N1102.1.3). EQUIVALENT U-FACTORS MAY BE SUBSTITUTED FOR REQUIRED R-VALUES PER IECC R402.1.4 (IRC N1102.1.4). THE BUILDING SHALL ALSO CONFORM TO THE DETAILED REQUIREMENTS OF IECC R402.2 (IRC N1102.2).

COMPONENT	REQUIRED VALUE
CEILING/ROOF	R-49 (COMPRESSED OVER WALL TOP PLATE AT EAVES) OR R-38 (UNCOMPRESSED OVER WALL TOP PLATE AT EAVES)
WALLS	R-20 CAVITY OR R-13 CAVITY PLUS R-5 CONTINUOUS
BASEMENT WALLS	R-10 CONTINUOUS OR R-13 CAVITY
SLAB	R-10, 2" DEPTH
CRAWL SPACE WALLS	R-10 CONTINUOUS OR R-13 CAVITY
FLOORS OVER UNCONDITIONED SPACE	R-19
DUCTS OUTSIDE CONDITIONED SPACE	R-8 FOR SUPPLY DUCTS IN ATTICS R-6 FOR ALL OTHER DUCTS
HOT WATER PIPES	R-3 UNLESS OTHERWISE ALLOWED BY IECC R403.5.3 (IRC N1103.5.3)
FENESTRATION	U-FACTOR = 0.32 MAX; SHGC = 0.40 MAX
SKYLIGHTS	U-FACTOR = 0.55 MAX; SHGC = 0.40 MAX



**NOTE: PLUMBER**  
**PASSIVE RADON SYSTEM**  
 3" PVC PIPE VENTED THROUGH ROOF (LOCATION PER PLUMBER)

**HVAC: EQUIPMENT - GOODMAN**  
 ZONE 1: 92% EFFICIENCY PROPANE GAS FURNACE WITH 14 SEER A/C UNIT 4 TON  
 ZONE 2: 14 SEER HEAT PUMP 4 TON  
 \* VENT RANGE HOOD TO EXTERIOR

NOTE: FOOTING SIZES CALLED ARE CALCULATED BASED ON ACTUAL BUILDING WEIGHTS AND DESIGN LOADS

MINIMUM 8" REINFORCED CONCRETE FOUNDATION WALL - THICKNESS PER GRADE & SOIL CONDITIONS AND LOCAL CODES - ON MINIMUM 17"x8" CONCRETE FOOTING U.O.N.

NOTE: PLUMBER

**UNEXCAVATED**  
 NOTE: PROVIDE GRADE BEAMS AND/OR PIERS TO UNDISTURBED BEARING AS REQUIRED PER SOIL AND FILL CONDITIONS

NOTE: 9'-0" FOUNDATION WALLS  
 APPROX. 2,731 SF UNFINISHED BASEMENT  
**Foundation Plan**  
 SCALE: 1/4" = 1'-0"

**HYAC**  
 C.F.A. = 5,670

- NOTES**
- 2000 PBF SOIL BEARING CAPACITY ASSUMED.
  - BEAMS, JOISTS, HEADERS AND RAFTERS TO BE 8-F-2 #1/2 OR EQUAL TYPICAL THROUGHOUT UNLESS OTHERWISE NOTED
  - VERIFY SIZE AND LOCATIONS OF DOORS AND WINDOWS THIS PLAN PER GRADE AND BUILDER

NOTE: 9'-0" FOUNDATION WALLS

NOTE: ENGINEERED FLOOR JOISTS TO BE MINIMUM WEYERHAEUSER TJ 210 SERIES OR EQUAL UNLESS OTHERWISE NOTED; FLOOR JOISTS TO BE DESIGNED FOR L/480 MAX DEFLECTION (L/400 TILE/BRITTLE FINISH) TYPICAL THROUGHOUT.

**2018 CODE**

# The Berkshire III