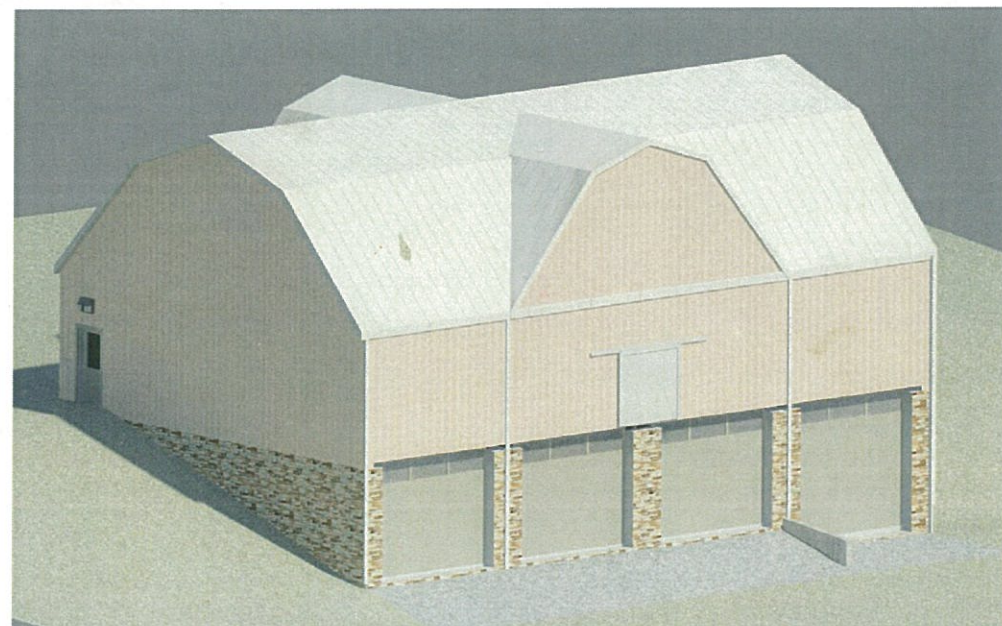




OTIS' BARN



BUILDING SUMMARY

NAME OF PROJECT:	OTIS' BARN	BUILDING AREA FOOTPRINT:	40 (WIDE) BY 60' (DEEP)
LOCATION:	PITTSBURGH, PA	BUILDING AREA PER LEVEL:	LEVEL 1: 2400 SF LEVEL 2: 2400 SF LEVEL 3: 600 SF
DESIGNER:	CM SERVICES, LLC 506 VALLEYBROOK ROAD MCMURRAY, PA 15317	CONDITIONED FLOOR SPACE:	5400 SF
APPLICABLE CODES:	2009 INTERNATIONAL BUILDING CODE W/ AMENDMENTS	DESIGN LOADS	OCCUPANCY CATEGORY = I ROOF LIVE LOAD = 40.0 PSF FLOOR LIVE LOAD = 125 PSF SUPPORT LOAD = 75.0 PLF GROUND SNOW LOAD, pg = 20.0 (Ce=1.0, Is=1.2, Ct=1.1) ROOF SNOW LOAD = 25 PSF
OCCUPANCY TYPE:	U-UTILITY		
CONSTRUCTION TYPE:	TYPE VB		
NUMBER OF STORIES:	2 ½		

DESCRIPTION: Traditional Western Pennsylvania Timber Frame Bank Barn with Double-Dutch Gambrel Roof with Hay Lofts. This barn is designed to be built into gently sloping terrain allowing direct access to the First Level (Basement) as well as the Second Level (Main Floor).

FIRST LEVEL (BASEMENT): Concrete slab (not sized in this Energy Model) with four bays, 15' long by 40' deep. Walls are 10" Poured concrete w/ 2" rigid insulation (exterior) R=11, Second Level floor is supported with a longitudinal center beam supported by the concrete walls and three interior posts at the ¼ points. Main Floor joists, support beam and beam support posts are not sized in this Energy Model.

SECOND LEVEL (MAIN FLOOR): 40' x 60' clear span with no interior posts necessary to support lofts or roof. Walls are formed by 8"x8" Hemlock posts (or material of your choice) supported by the concrete basement walls. 2"x4" wooden girts with 1 ½" polystyrene rigid insulation, with tyvek house wrap form the Main Floor walls, R=9. Ceilings are formed with 4' x 8' x 2" foil faced (to the inside) polystyrene rigid insulation, R=10. Roof trusses are NOT sized on these plans.

THIRD LEVEL (LOFTS): Two 15' x 20' loft rooms formed by the dutch gambrel roof trusses. Wall insulation is 1 ½" foil faced (inside) rigid insulation, R=9; ceiling is 2" foil faced rigid insulation R=10.

FOUNDATION: 10" Poured concrete w/ 2" rigid exterior insulation, Stone Veneer or siding of your choice, R=11.
SIDING: Full batten, 1' x 8" Rough cut Poplar, or material of your choice w/ 1 ½" rigid insul, R=9.

ROOFING: 22 ga. x 16" (structural) Standing seam Structural roofing Panels over purlins. Ceiling insulation, 2" foil faced rigid R=10.

HEATING/COOLING LOAD CALCULATIONS: Performed IAW Manual J, are for the Locale Pittsburgh, PA. and reflect an interior temperature of 50 degrees. Infiltration is specified as semi-loose.

HEATING: Primary heating system is Hydronic (hot water) consisting of 8 - 200' ½" loops, positioned into 4 zones (each bay). Hot water is provided by a Water to Water Ground Source Heat Pump.

COOLING: Air conditioning is provided via an air handler with hydronic (water) coil. cold water is provided by the same Water to Water GSHP.

ENERGY ESTIMATE: Use/ Occupancy is based on 40 Hrs/week 2 persons operating the building as a wood shop or automotive shop.



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F: 412.281.4877
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OTIS' BARN
PITTSBURGH, PA
CONSTRUCTION SET

JOB NO:	
DRAWN:	BS
CHECKED:	FJC
ISSUED:	1-1-15
REVISIONS:	
TITLE: Coversheet	
SHEET: 1 OF 18	

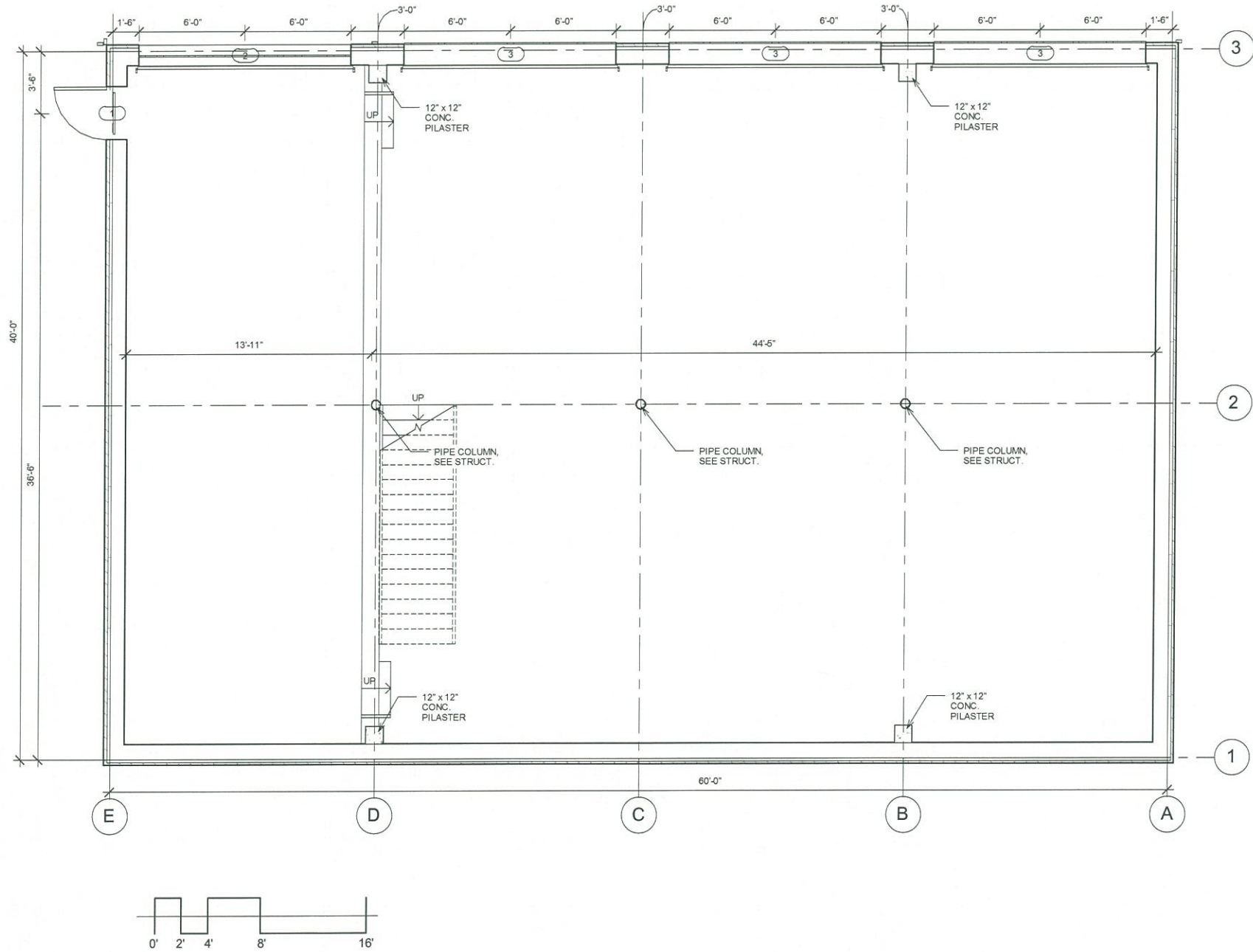
OTIS' BARN

PITTSBURGH, PA

CONSTRUCTION SET

DOOR SCHEDULE		SYMBOL 101		
MARK	SIZE	DESCRIPTION	QUAN.	MATERIAL
1	3'-0" x 8'-0"	EXT. DOOR HALF GLASS	2	Half-Lite, Steel Door
2	12'-0" x 10'-0"	GARAGE DOOR	1	Insulated, Flush w/ High Lites
3	10'-0" x 10'-0"	GARAGE DOOR	3	Insulated, Flush w/ High Lites
4	12'-0" x 10'-0"	BARN DOOR	1	Wooden on Sliding Track

WINDOW SCHEDULE		SYMBOL 101	
MARK	SIZE	DESCRIPTION	QTY.
A	8'-0" x 4'-0"	BARN WINDOW	1



JOB NO:

DRAWN: BS

CHECKED: FJC

ISSUED: 1-1-15

REVISIONS:

TITLE: BASEMENT

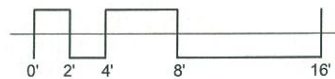
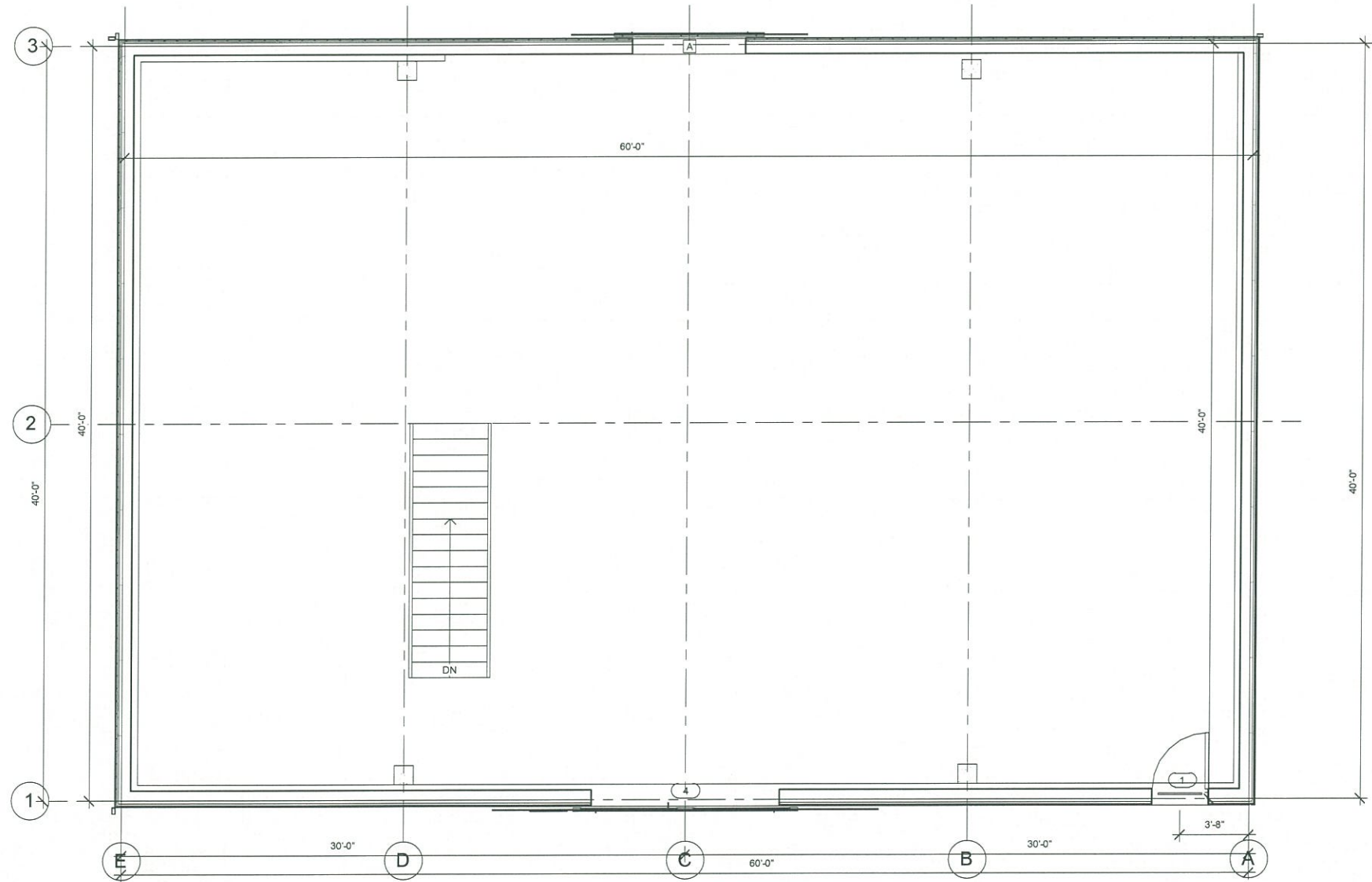
SHEET: 2 OF 18

DOOR SCHEDULE			SYMBOL 101	
MARK	SIZE	DESCRIPTION	QUAN.	Material
1	3'-0" x 8'-0"	EXT. DOOR HALF GLASS	2	Half-Lite, Steel Door
2	12'-0" x 10'-0"	GARAGE DOOR	1	Insulated, Flush w/ High Lites
3	10'-0" x 10'-0"	GARAGE DOOR	3	Insulated, Flush w/ High Lites
4	12'-0" x 10'-0"	BARN DOOR	1	Wooden on Sliding Track

WINDOW SCHEDULE			SYMBOL 101
MARK	SIZE	DESCRIPTION	QTY.
A	8'-0" x 4'-0"	BARN WINDOW	1



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OTIS' BARN

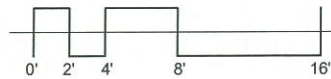
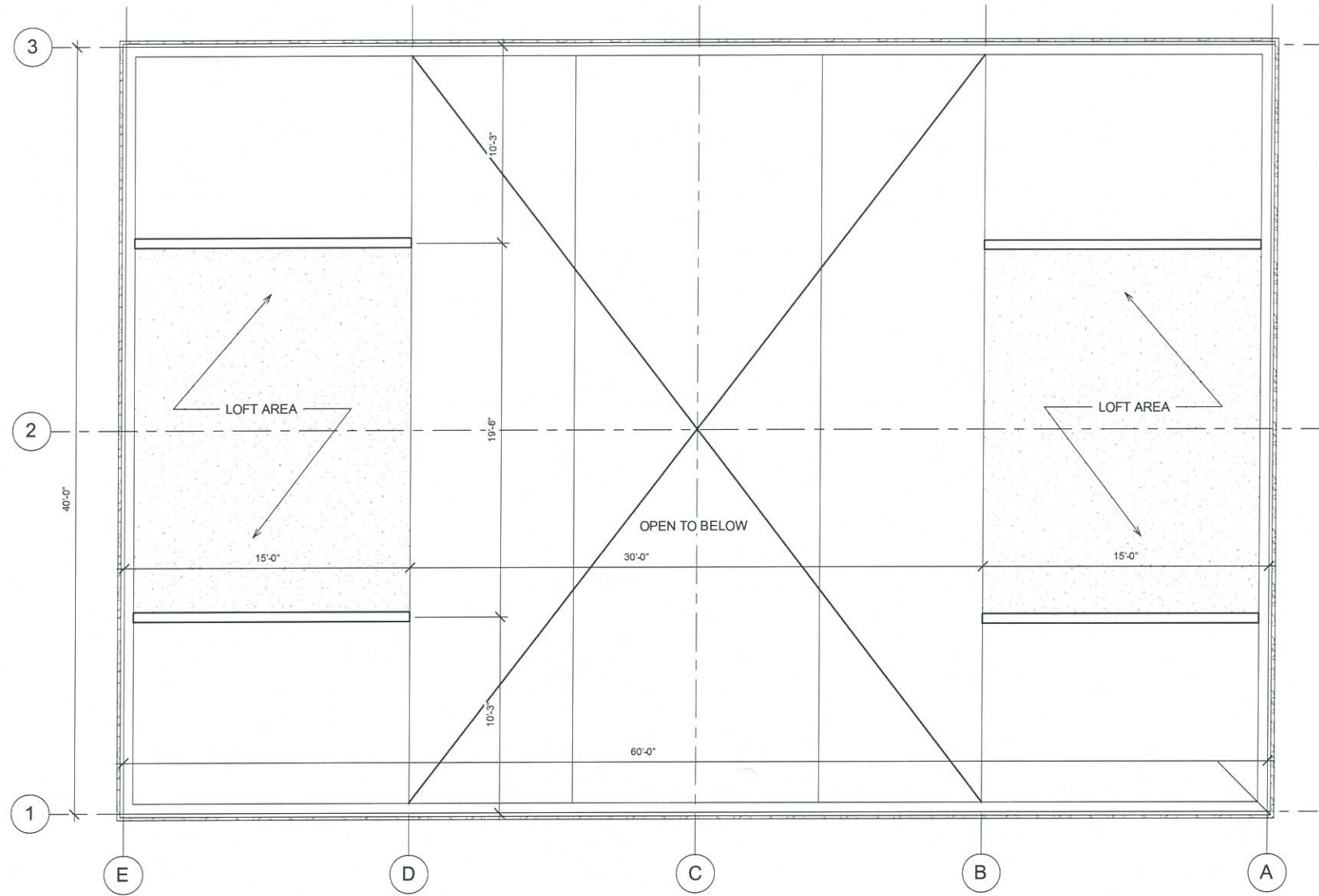
PITTSBURGH, PA
CONSTRUCTION SET

JOB NO:		
DRAWN:	BS	
CHECKED:	FJC	
ISSUED:	1-1-15	
REVISIONS:		
TITLE: FIRST FLOOR PLAN		
SHEET: 3 OF 18		

OTIS' BARN

PITTSBURGH, PA

CONSTRUCTION SET



JOB NO:

DRAWN:	BS	
CHECKED:	FJC	
ISSUED:	1-1-15	
REVISIONS:		
TITLE: LOFT PLAN		
SHEET:		
4 OF 18		

ROOF MATERIALS LEGEND

1. ITEM:

ROOFING
- MATL:

24 GAUGE STANDING SEAM ROOF, 16" PANELS
- MANUF:

ATAS, ENGLERT, OR EQUAL
- COLOR/
- FINISH:

GALVALUME
2. ITEM:

GUTTERS AND DOWNSPOUTS
- TYPE:

HALF ROUND w/ ROUND D.S.
- MATL:

GALVALUME
- MANUF:

GUTTER SUPPLY OR EQUAL
3. ITEM:

EXTERIOR DOORS
- TYPE:

HALF-LITE, STEEL DOOR
- MATL:

RELIABILT, THERMA-TRU OR EQUAL
- MANUF:

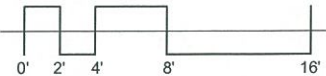
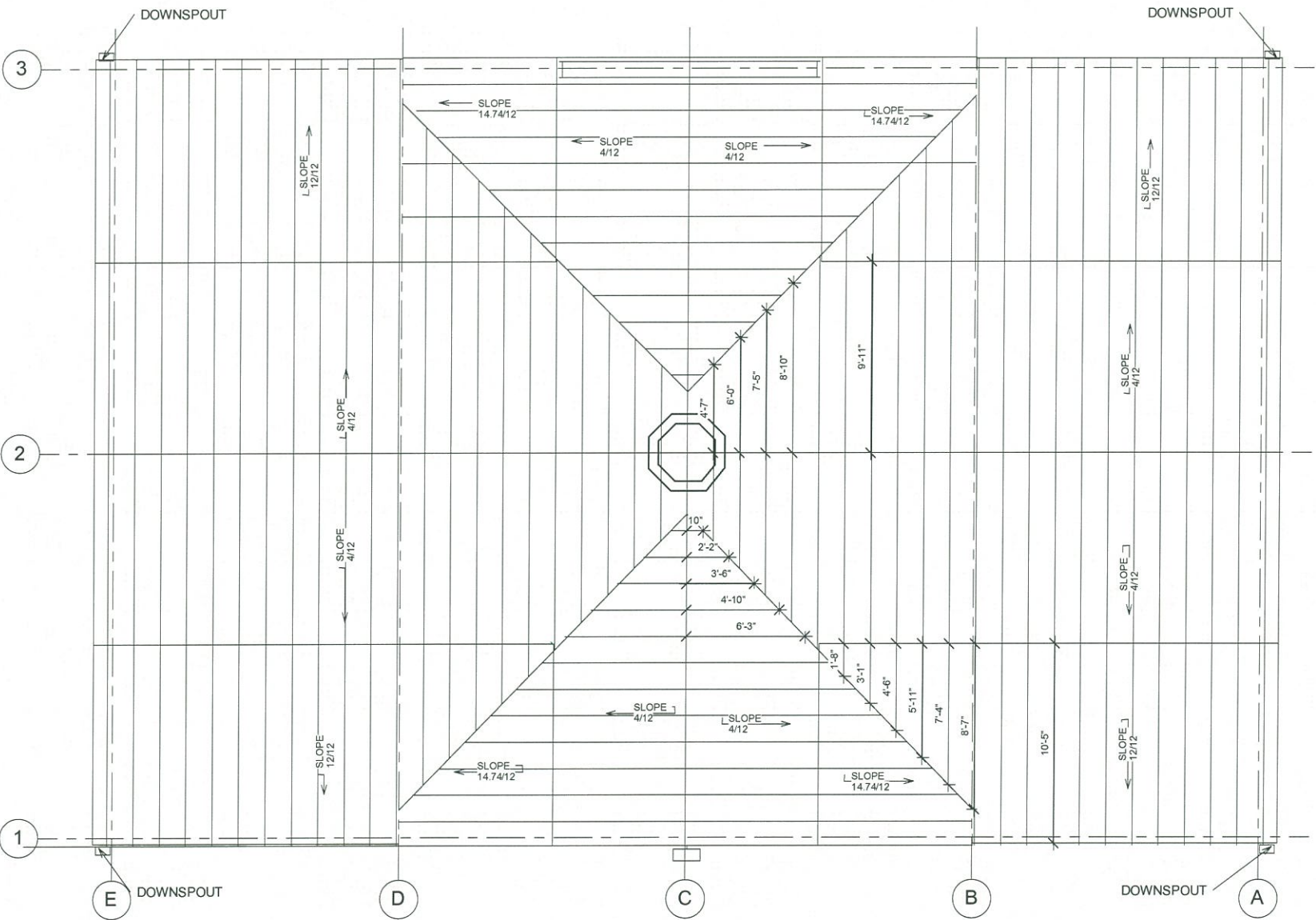
DARK SAND OR SAND TONE
4. ITEM:

BARN DOORS
- TYPE:

WOODEN ON SLIDING TRACK
- MATL:

SITE BUILT
- MANUF:

NATURAL OILED FINISH



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OTIS' BARN
PITTSBURGH, PA
CONSTRUCTION SET

JOB NO:		
DRAWN:	BS	
CHECKED:	FJC	
ISSUED:	1-1-15	
REVISIONS:		
TITLE: ROOF PLAN		
SHEET: 5 OF 18		

EXTERIOR FINISH LEGEND

ITEM: STONE VENEER
TYPE: SUSQUEHANA
COLOR: COBBLESTONE
MANUF: QUALITY STONE OR EQUAL

ITEM: SIDING
MATL: POPLAR OR OAK w/ MARINE OIL TREATMENT
MANUF: DENOON LUMBER WINTERSVILLE, OH
COLOR: NATURAL OILED FINISH

ITEM: ROOFING
MATL: 24 GAUGE STANDING SEAM ROOF, 16" PANELS
MANUF: ATAS, ENGLERT, OR EQUAL
COLOR/ FINISH: GALVALUME

ITEM: GUTTERS AND DOWNSPOUTS
TYPE: HALF ROUNDED w/ ROUND D.S.
MATL: GALVALUME
MANUF: GUTTER SUPPLY OR EQUAL

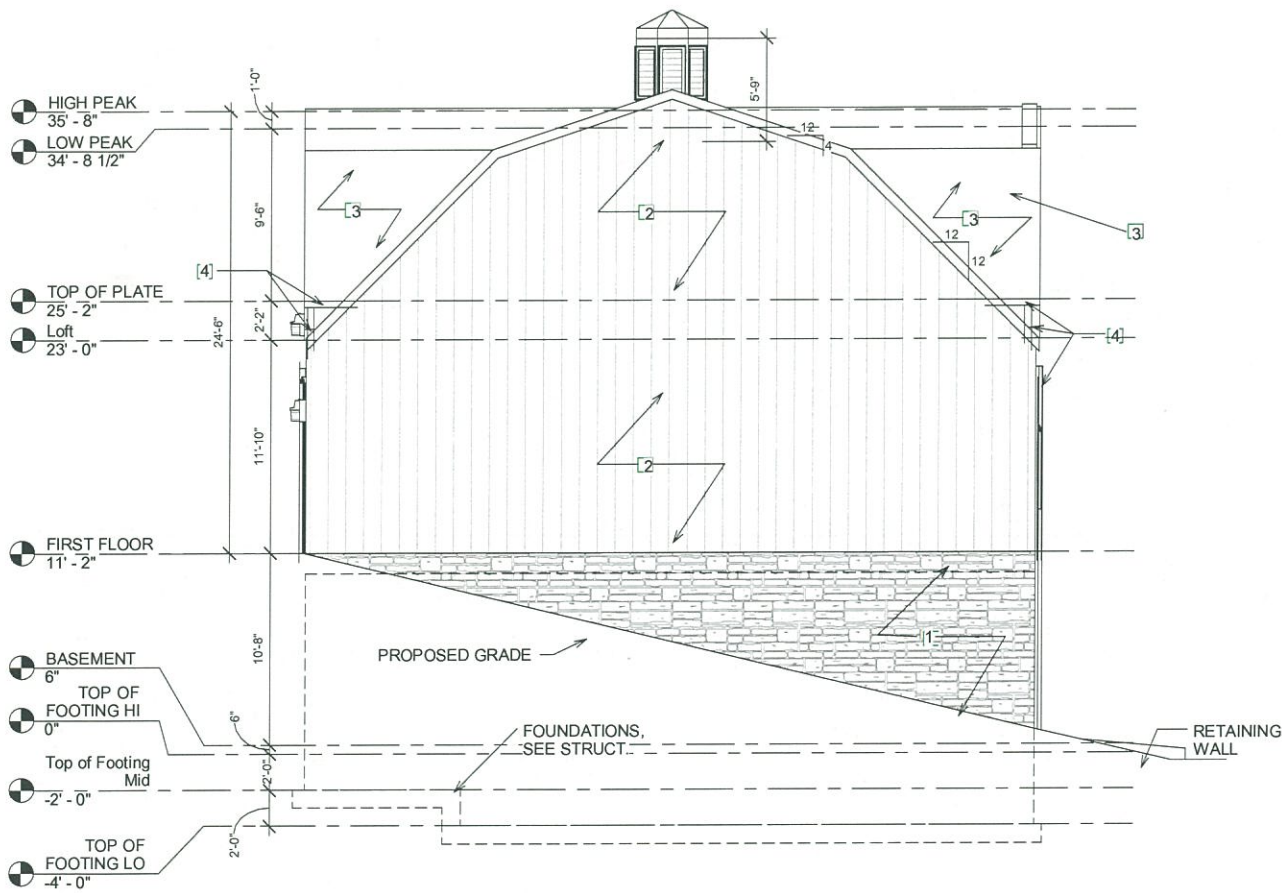
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SERVICES

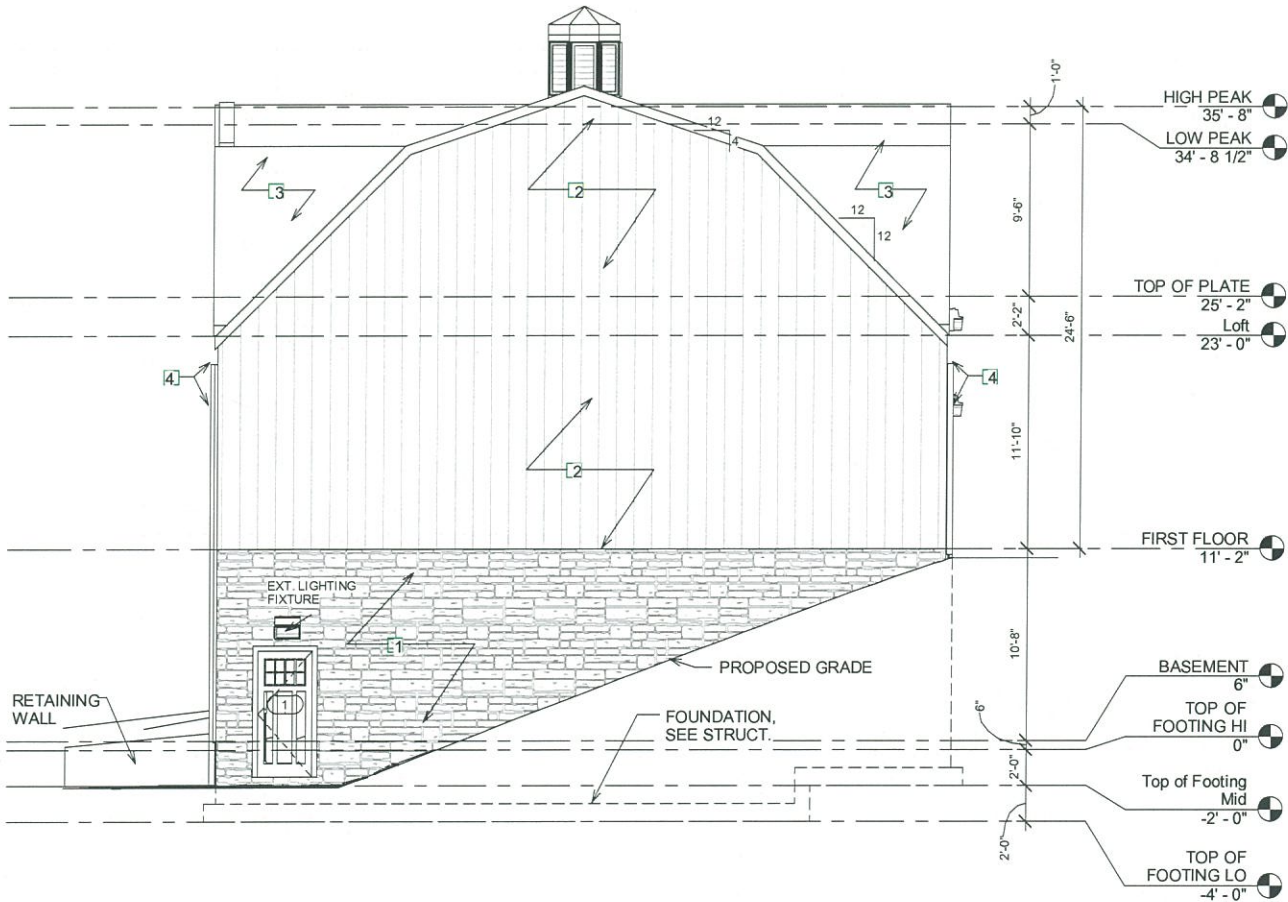
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CONSTRUCTION MANAGEMENT

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MCMURRAY, PA 15317

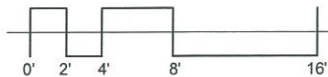
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1 East



2 West



OTIS' BARN
PITTSBURGH, PA
CONSTRUCTION SET

JOB NO:		
DRAWN:	BS	
CHECKED:	FJC	
ISSUED:	1-1-15	
REVISIONS:		
TITLE: SIDE ELEVATIONS (EAST & WEST)		
SHEET:		

EXTERIOR FINISH LEGEND

1. ITEM:

STONE VENEER
- TYPE:

SUSQUEHANA
- COLOR:

COBBLESTONE
- MANUF:

QUALITY STONE OR EQUAL
2. ITEM:

SIDING
- MATL:

POPLAR OR OAK w/ MARINE OIL TREATMENT
- MANUF:

DENOON LUMBER WINTERSVILLE, OH
- COLOR:

NATURAL OILED FINISH
3. ITEM:

ROOFING
- MATL:

24 GAUGE STANDING SEAM ROOF, 16" PANELS
- MANUF:

ATAS, ENGLERT, OR EQUAL
- COLOR/

FINISH:

GALVALUME
4. ITEM:

GUTTERS AND DOWNSPOUTS
- TYPE:

HALF ROUNDED w/ ROUND D.S.
- MATL:

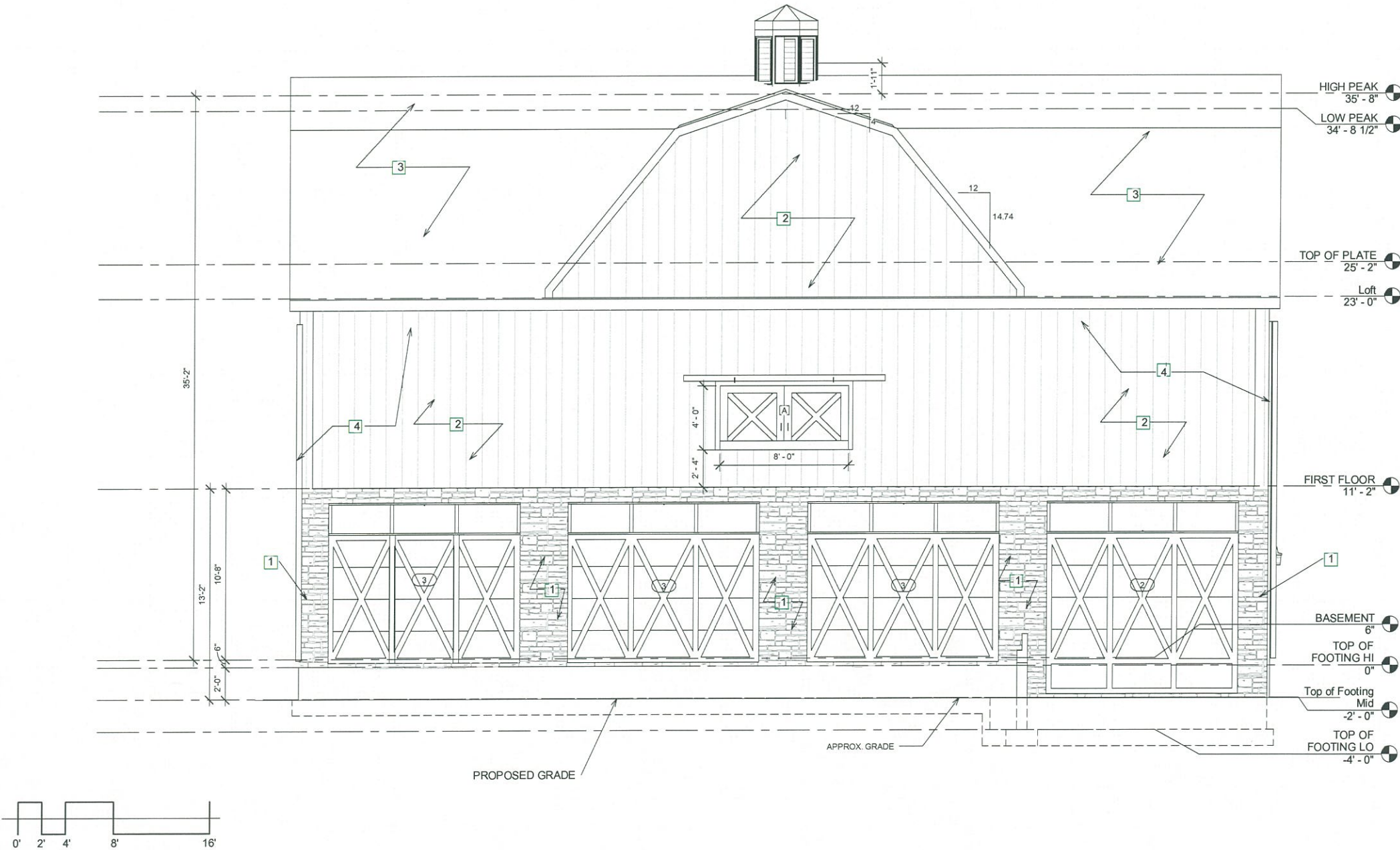
GALVALUME
- MANUF:

GUTTER SUPPLY OR EQUAL



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OTIS' BARN
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CONSTRUCTION SET

JOB NO:		
DRAWN:	BS	
CHECKED:	FJC	
ISSUED:	1-1-15	
REVISIONS:		
TITLE: REAR ELEVATION (NORTH)		
SHEET:		
7 OF 18		

EXTERIOR FINISH LEGEND

1. ITEM:

STONE VENEER
- TYPE:

SUSQUEHANA
- COLOR:

COBBLESTONE
- MANUF:

QUALITY STONE OR EQUAL
2. ITEM:

SIDING
- MATL:

POPLAR OR OAK w/ MARINE OIL TREATMENT
- MANUF:

DENOON LUMBER WINTERSVILLE, OH
- COLOR:

NATURAL OILED FINISH
3. ITEM:

ROOFING
- MATL:

24 GAUGE STANDING SEAM ROOF, 16" PANELS
- MANUF:

ATAS, ENGLERT, OR EQUAL
- COLOR/

FINISH:

GALVALUME
4. ITEM:

GUTTERS AND DOWNSPOUTS
- TYPE:

HALF ROUNDED w/ ROUND D.S.
- MATL:

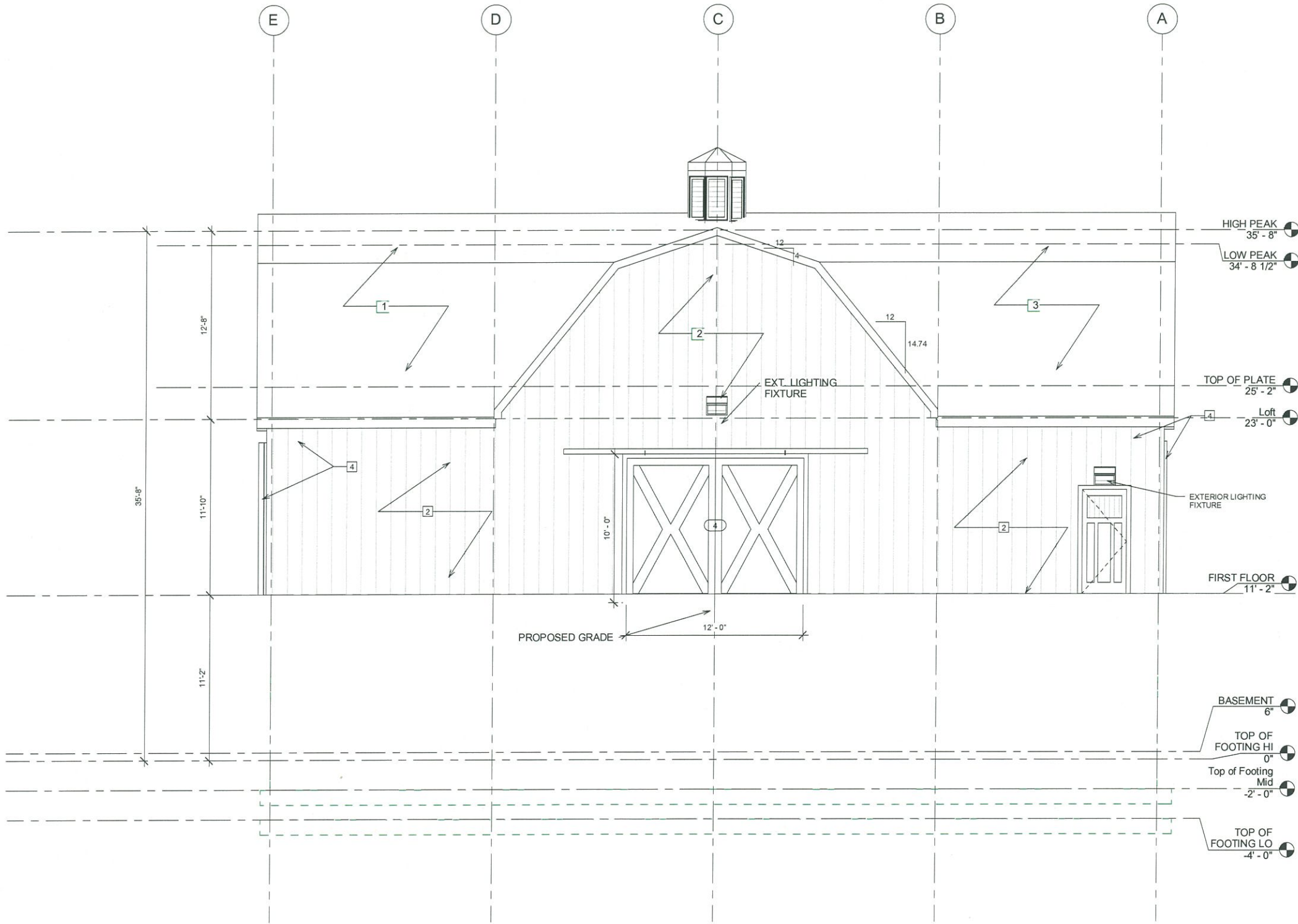
GALVALUME
- MANUF:

GUTTER SUPPLY OR EQUAL



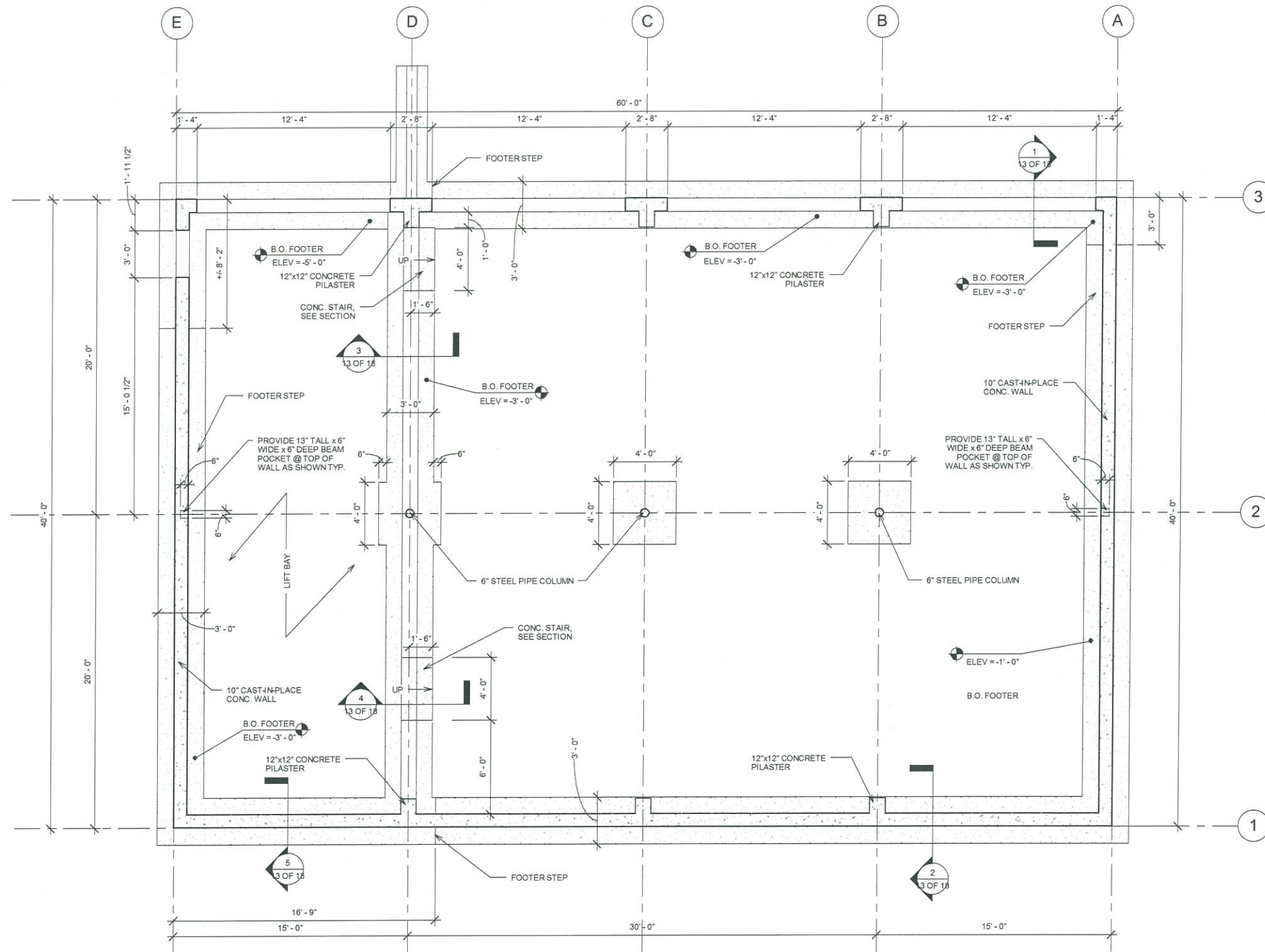
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OTIS' BARN
PITTSBURGH, PA
CONSTRUCTION SET

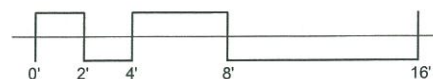


JOB NO:		
DRAWN:	BS	
CHECKED:	FJC	
ISSUED:	1-1-15	
REVISIONS:		
		FJC
TITLE: FRONT ELEVATION (SOUTH)		
SHEET: 1/4" = 1'-0"		
8 OF 18		

OTIS' BARN
PITTSBURGH, PA
CONSTRUCTION SET



1 Foundation Plan



JOB NO:

DRAWN: BS

CHECKED: FJC

ISSUED: 1-1-15

REVISIONS:

TITLE:
FOUNDATION PLAN

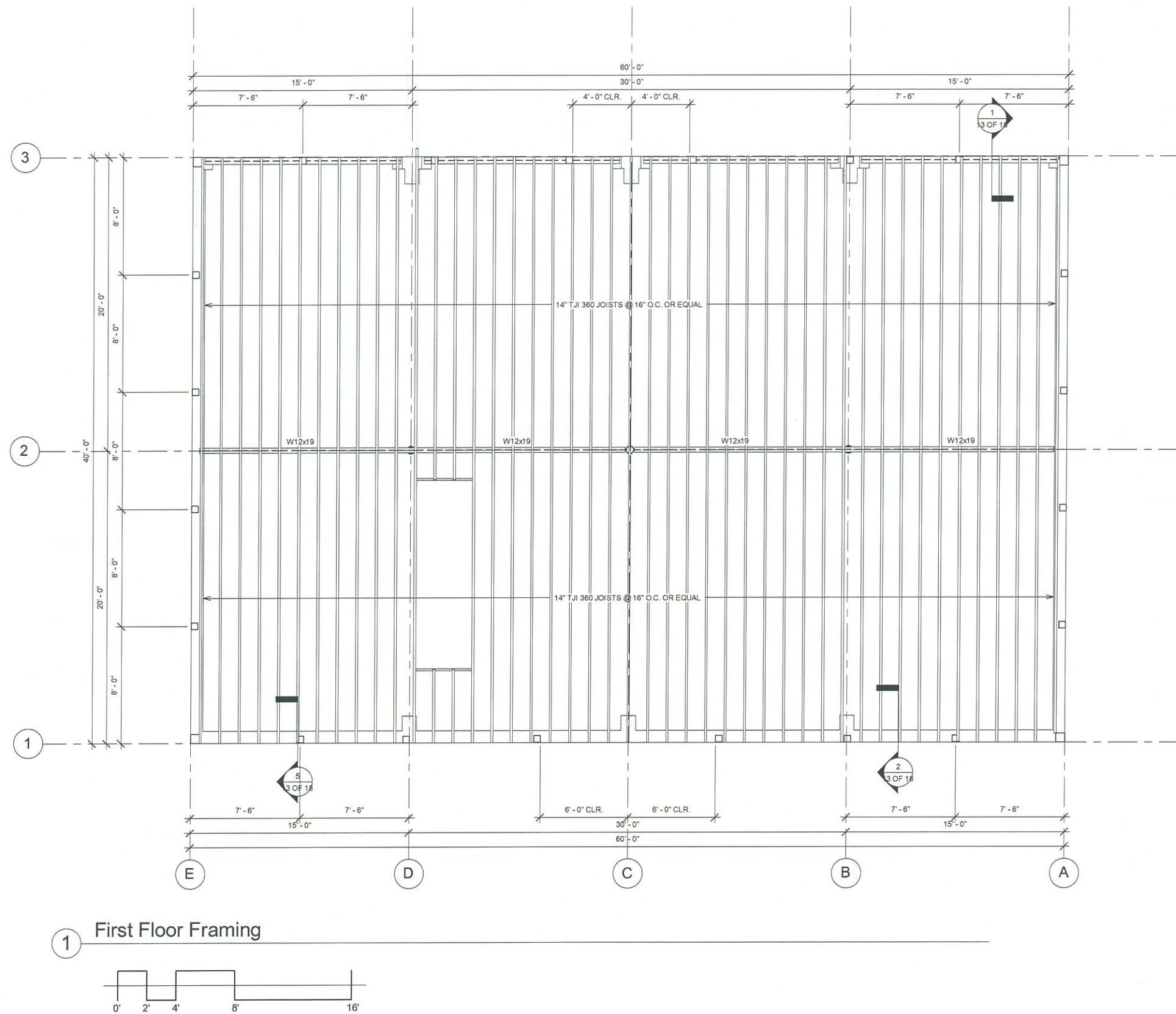
SHEET:

9 OF 18



OTIS' BARN
PITTSBURGH, PA
CONSTRUCTION SET

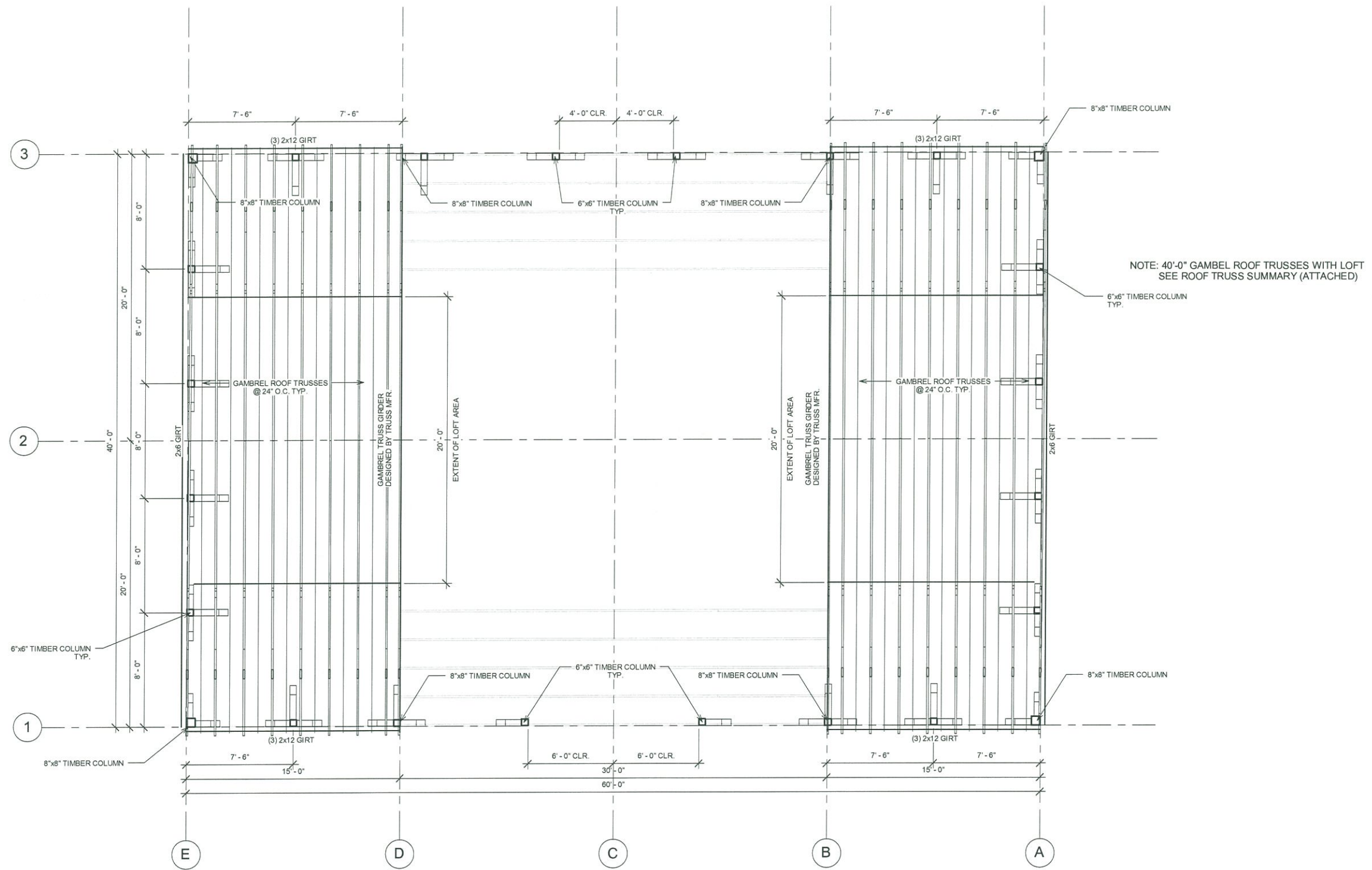
10 OF 18



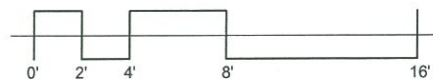
OTIS' BARN

PITTSBURGH, PA

CONSTRUCTION SET



1 Loft Framing Plan



JOB NO:

DRAWN: BS

CHECKED: FJC

ISSUED: 1-1-15

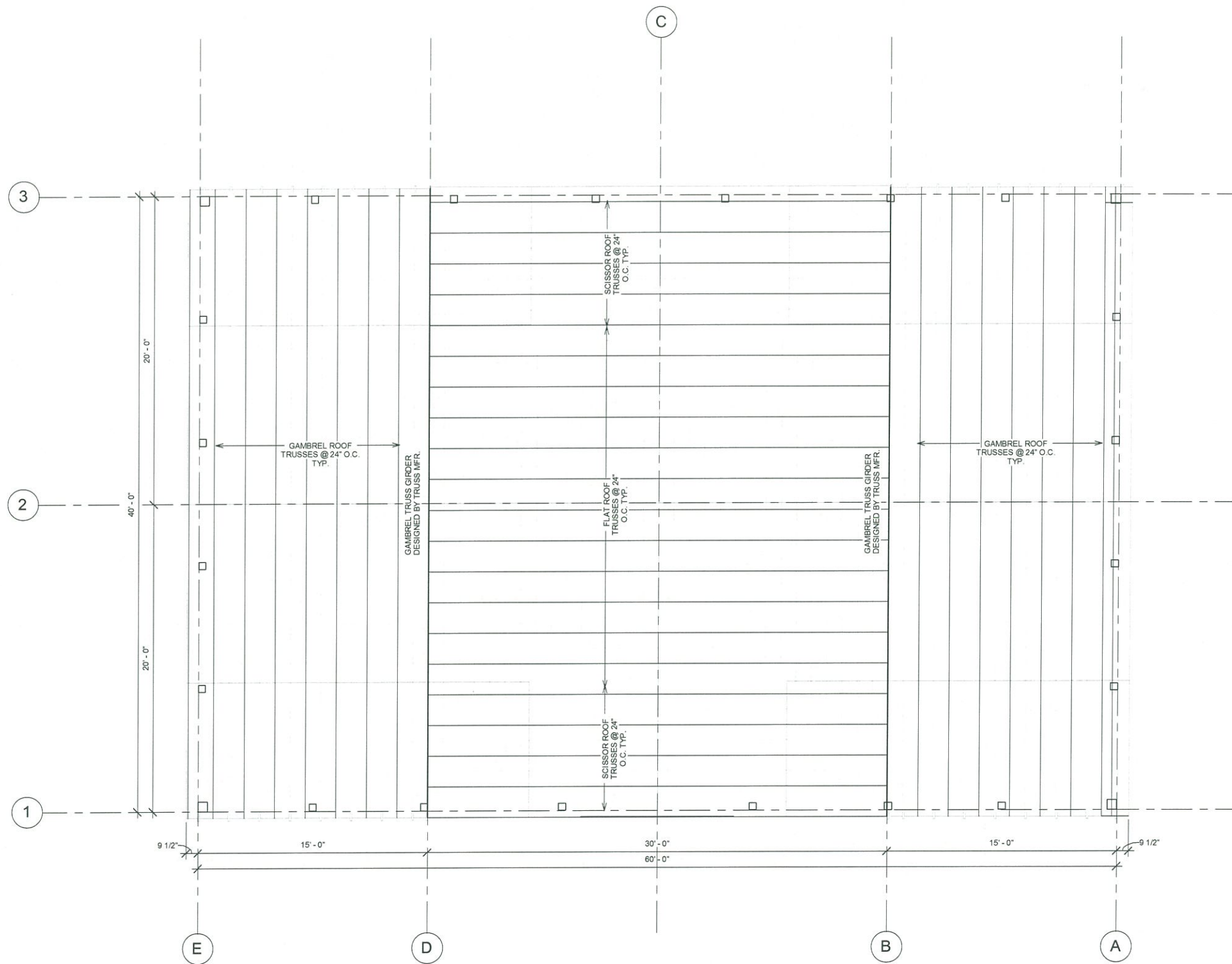
REVISIONS:

TITLE:
LOFT FRAMING PLAN

SHEET:

11 OF 18

OTIS' BARN
PITTSBURGH, PA
CONSTRUCTION SET



1 Roof Framing Plan

JOB NO:

DRAWN: BS

CHECKED: FJC

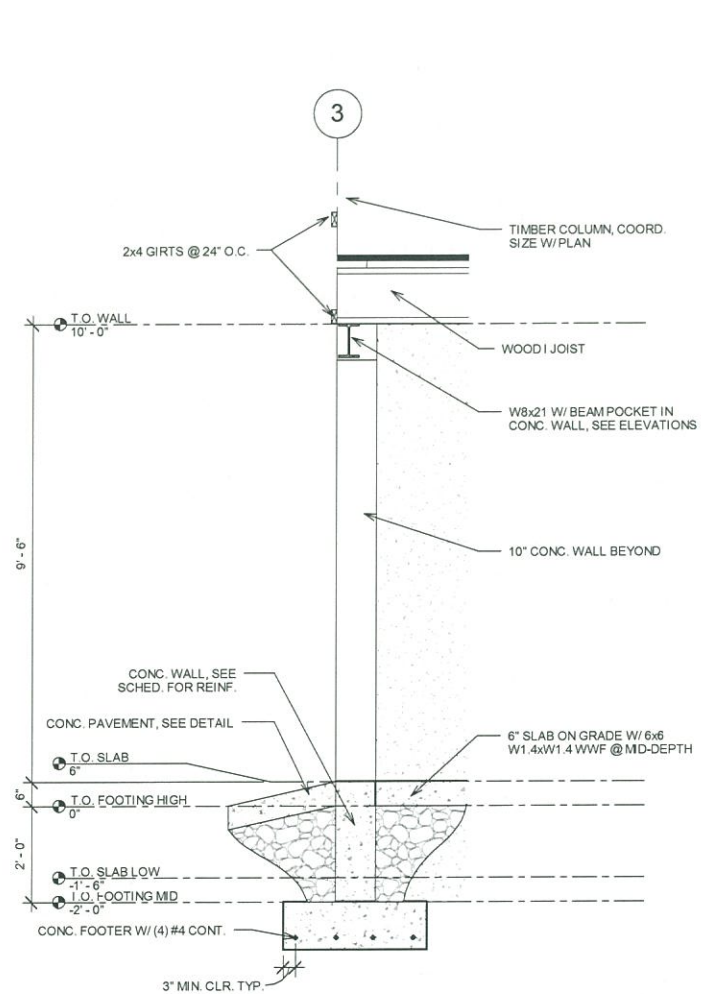
ISSUED: 1-1-15

REVISIONS:

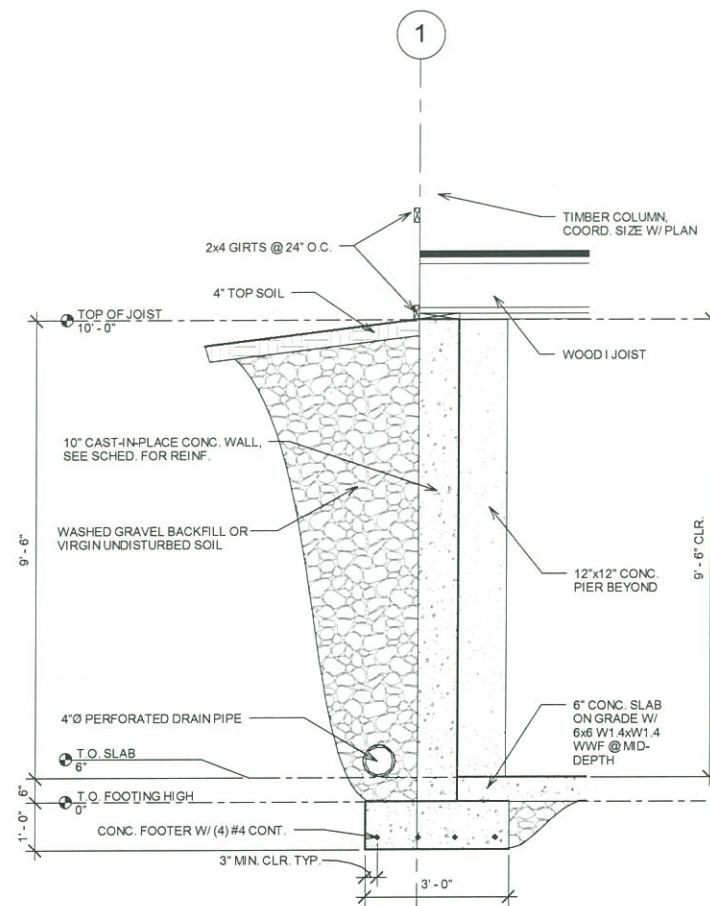
TITLE:
ROOF FRAMING PLAN

SHEET:

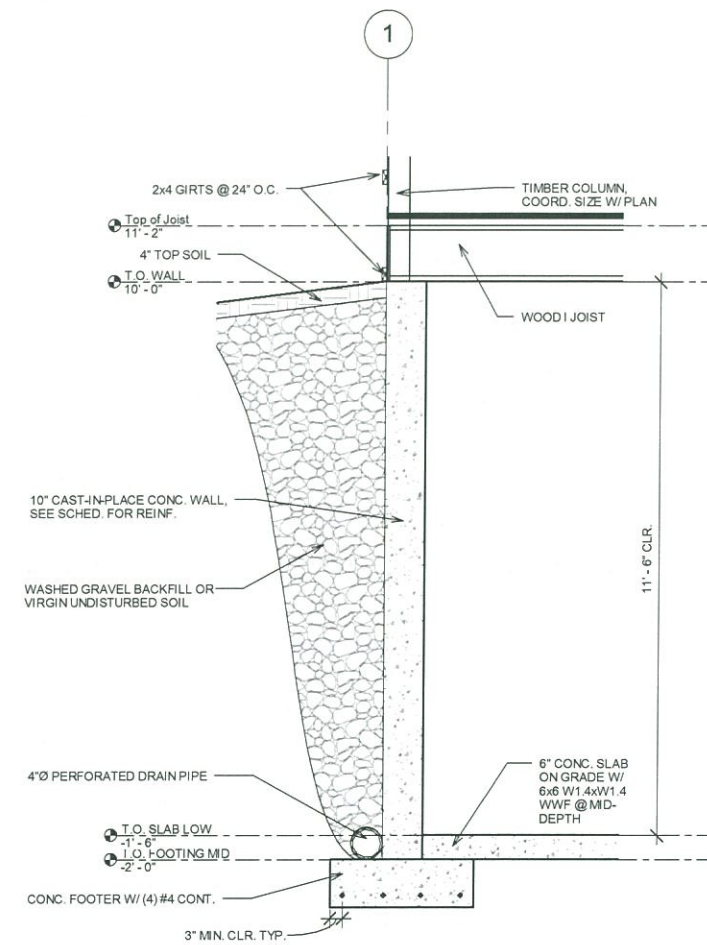
12 OF 18



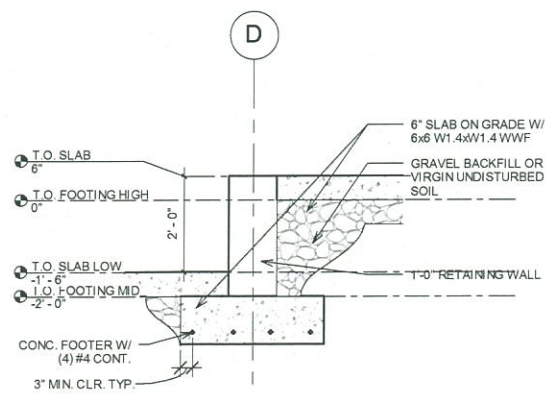
1 Garage Door Section



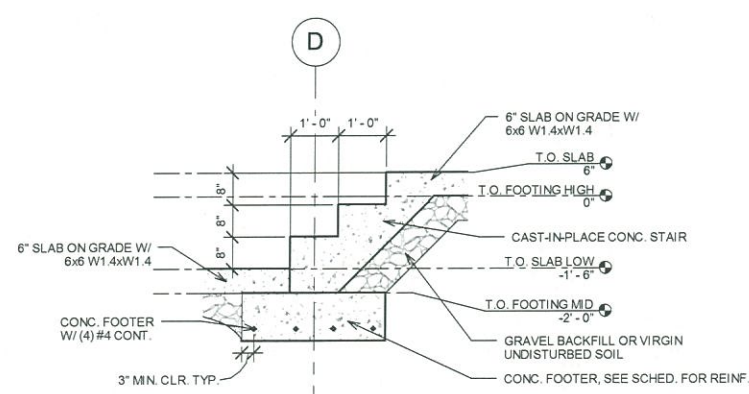
2 Retaining Basement Wall Section



5 Retaining Basement Wall Section 2



3 Interior Grade Wall Section

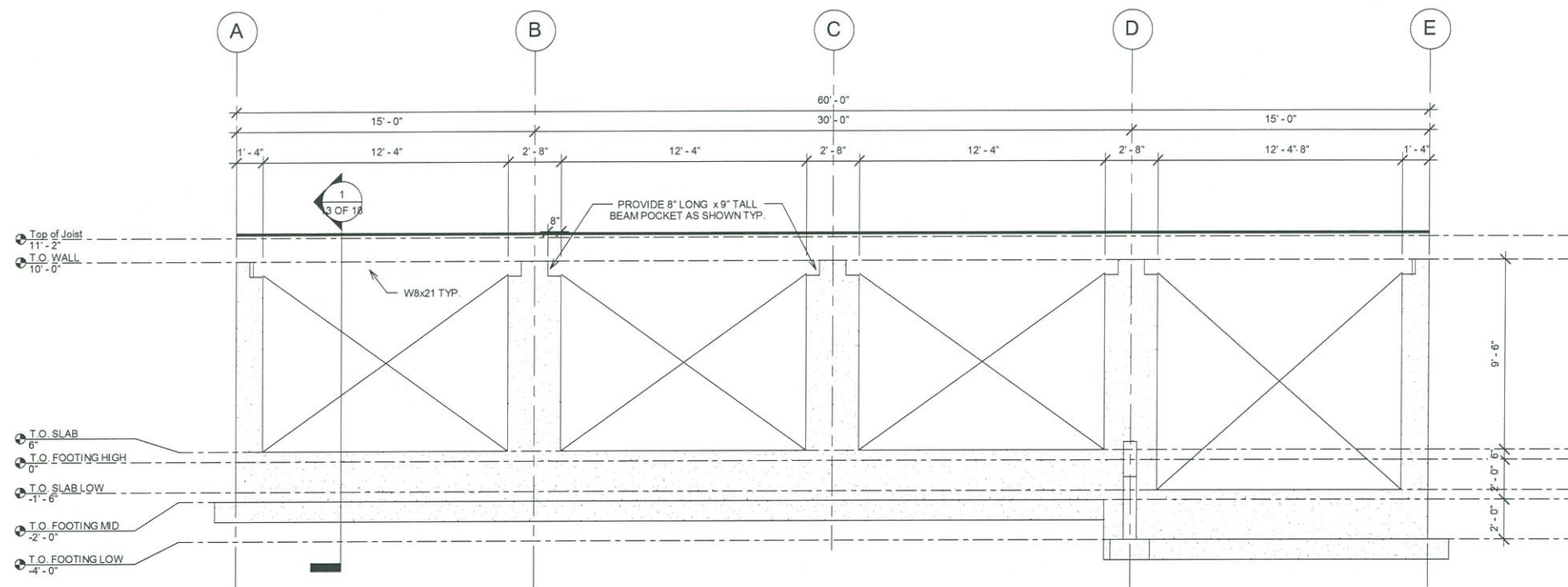


4 Interior Concrete Stair

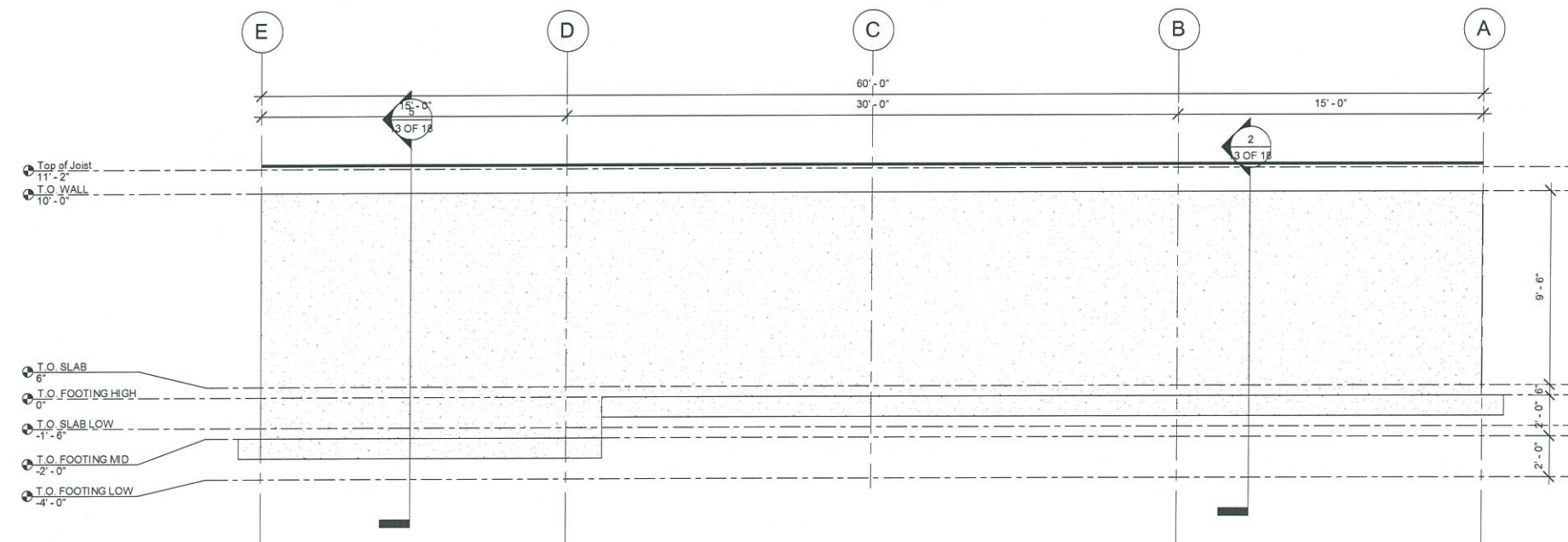
OTIS' BARN
PITTSBURGH, PA
CONSTRUCTION SET

JOB NO:		
DRAWN:	BS	
CHECKED:	FJC	
ISSUED:	1-1-15	
REVISIONS:		
TITLE: SECTIONS & DETAILS		
SHEET: 13 OF 18		

OTIS' BARN
PITTSBURGH, PA
CONSTRUCTION SET



1 EAST STRUCTURAL

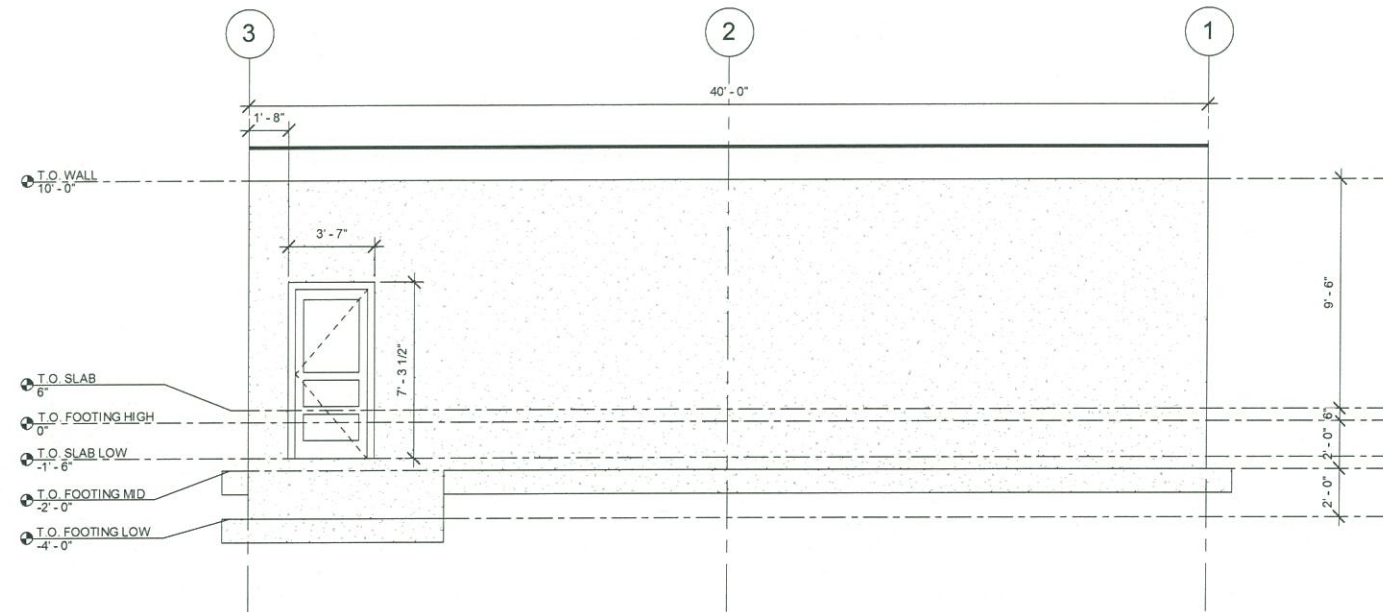


2 WEST STRUCTURAL

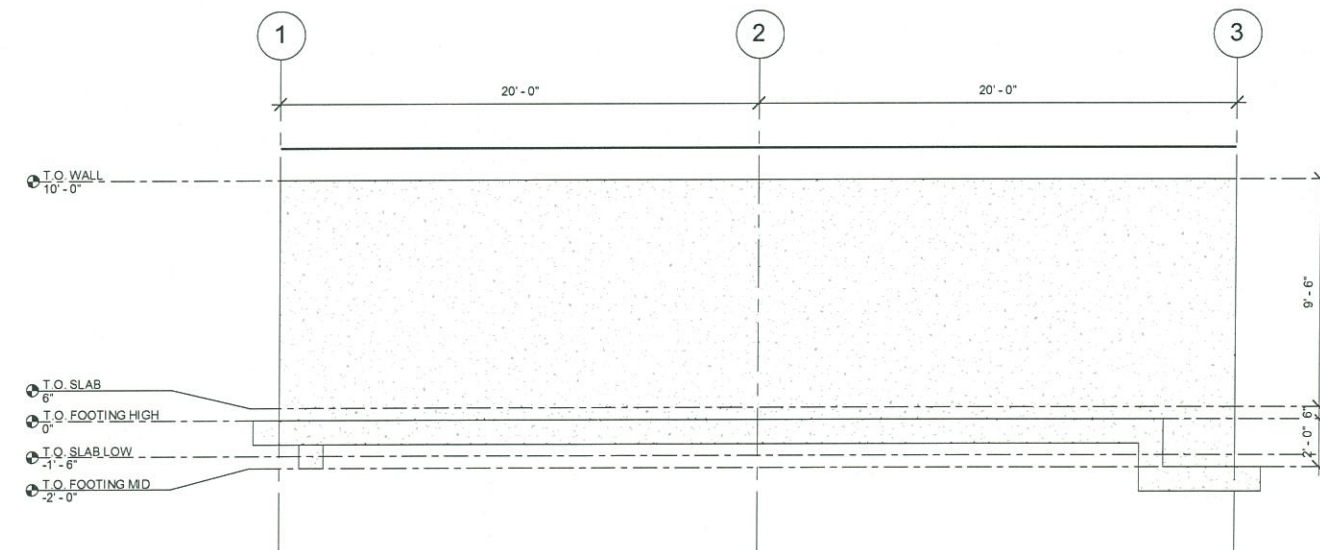
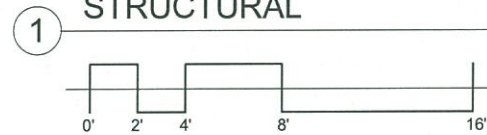
JOB NO:

DRAWN:	BS	
CHECKED:	FJC	
ISSUED:	1-1-15	
REVISIONS:		
TITLE: STRUCTURAL ELEVATIONS		
SHEET: 14 OF 18		

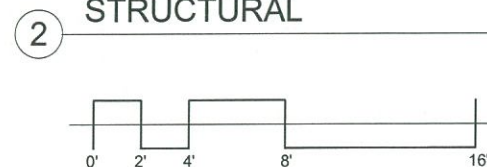
OTIS' BARN
PITTSBURGH, PA
CONSTRUCTION SET



**SOUTH
STRUCTURAL**

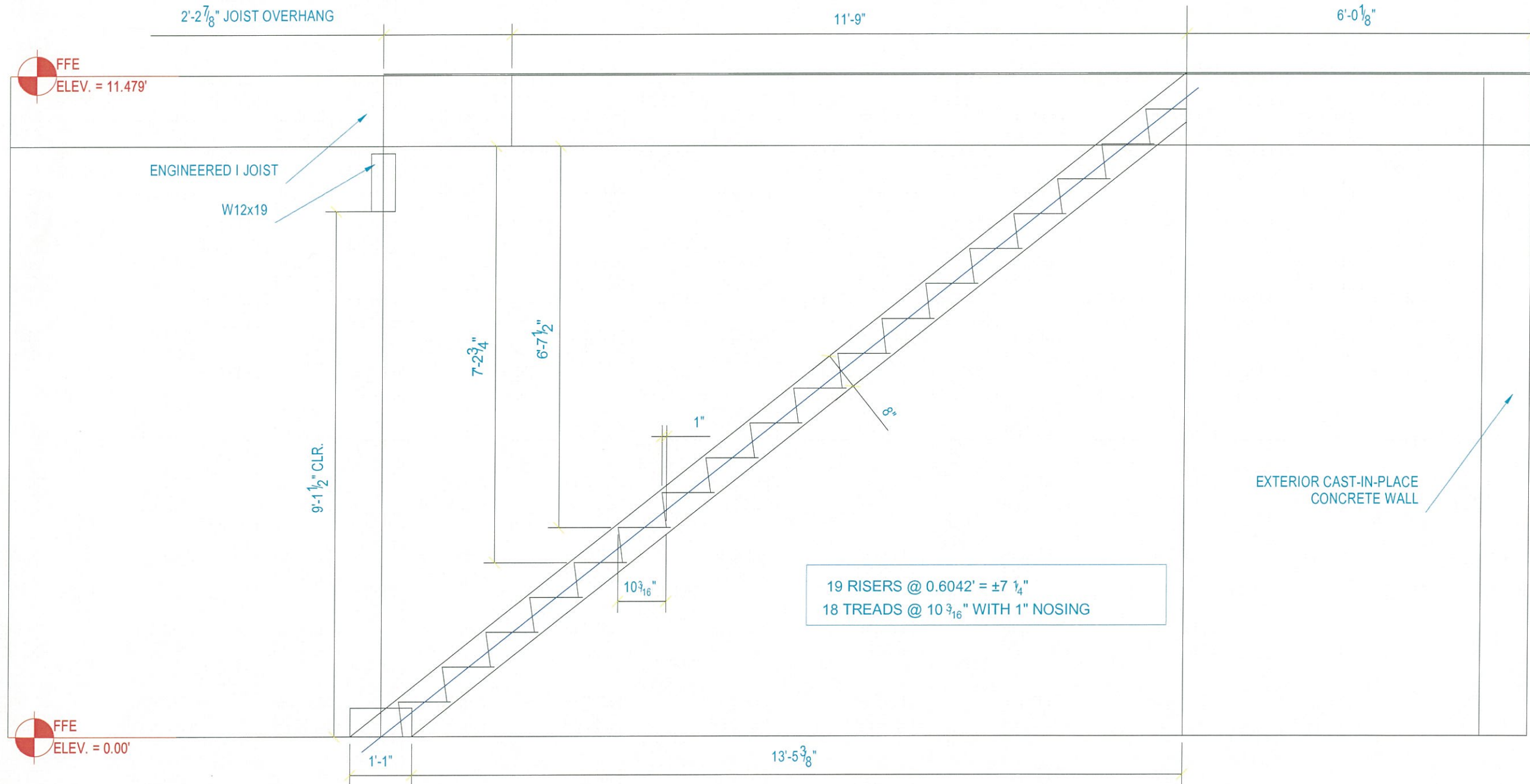


**NORTH
STRUCTURAL**



JOB NO:		
DRAWN:	BS	
CHECKED:	FJC	
ISSUED:	1-1-15	
REVISIONS:		
TITLE: STRUCTURAL ELEVATIONS		
SHEET:		
15 OF 18		

OTIS' BARN
 PITTSBURGH, PA
 CONSTRUCTION SET



JOB NO:

DRAWN: BS

CHECKED: FJC

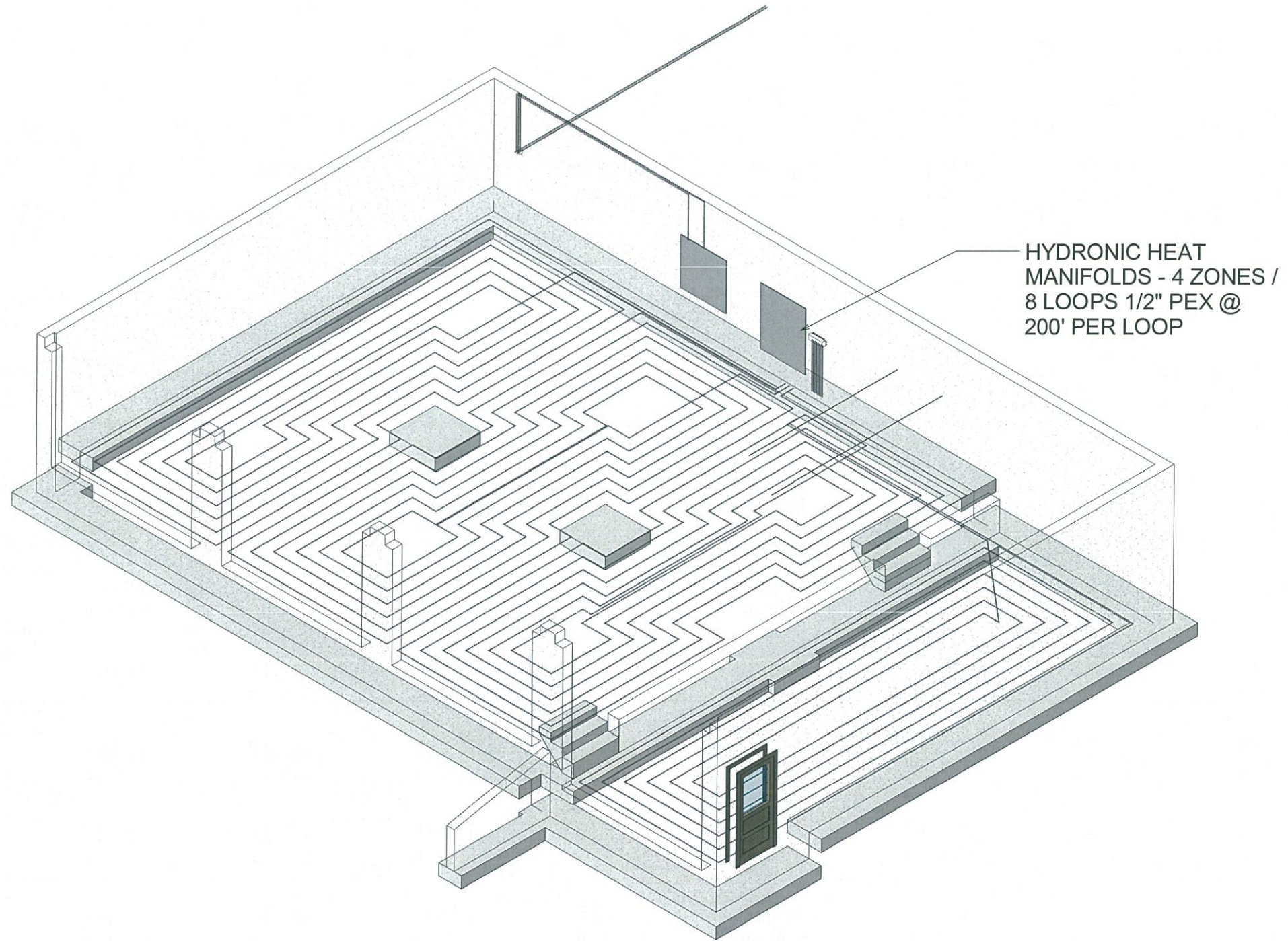
ISSUED: 1-1-15

REVISIONS:

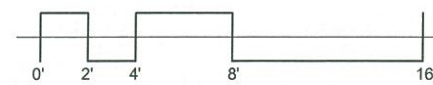
TITLE:
STAIR SECTION

SHEET:

16 OF 18



① HYDRONIC 3D PLAN



OTIS' BARN
PITTSBURGH, PA
CONSTRUCTION SET

JOB NO:

DRAWN: BS

CHECKED: FJC

ISSUED: 1-1-15

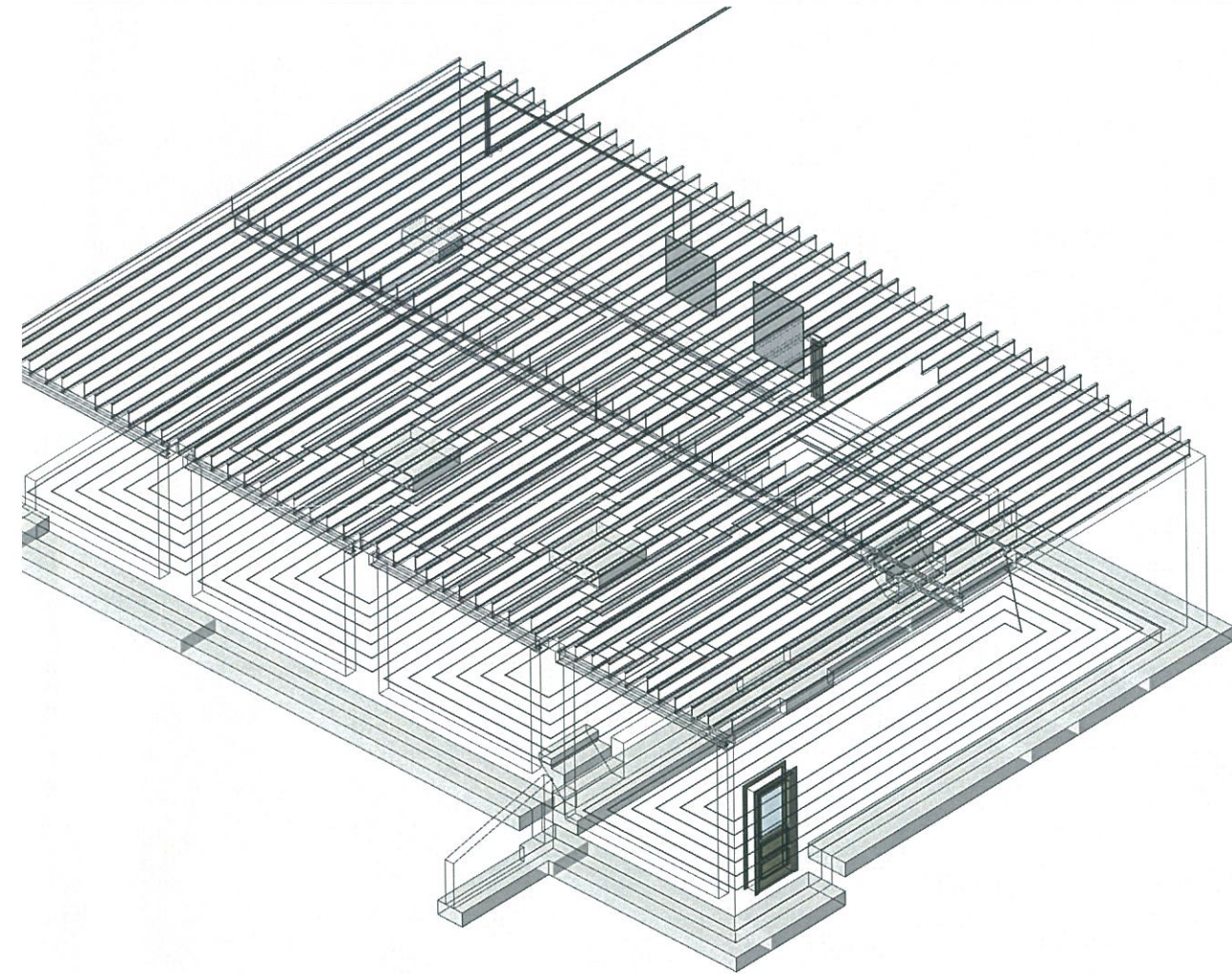
REVISIONS:

TITLE:
HYDRONIC 3D PLAN

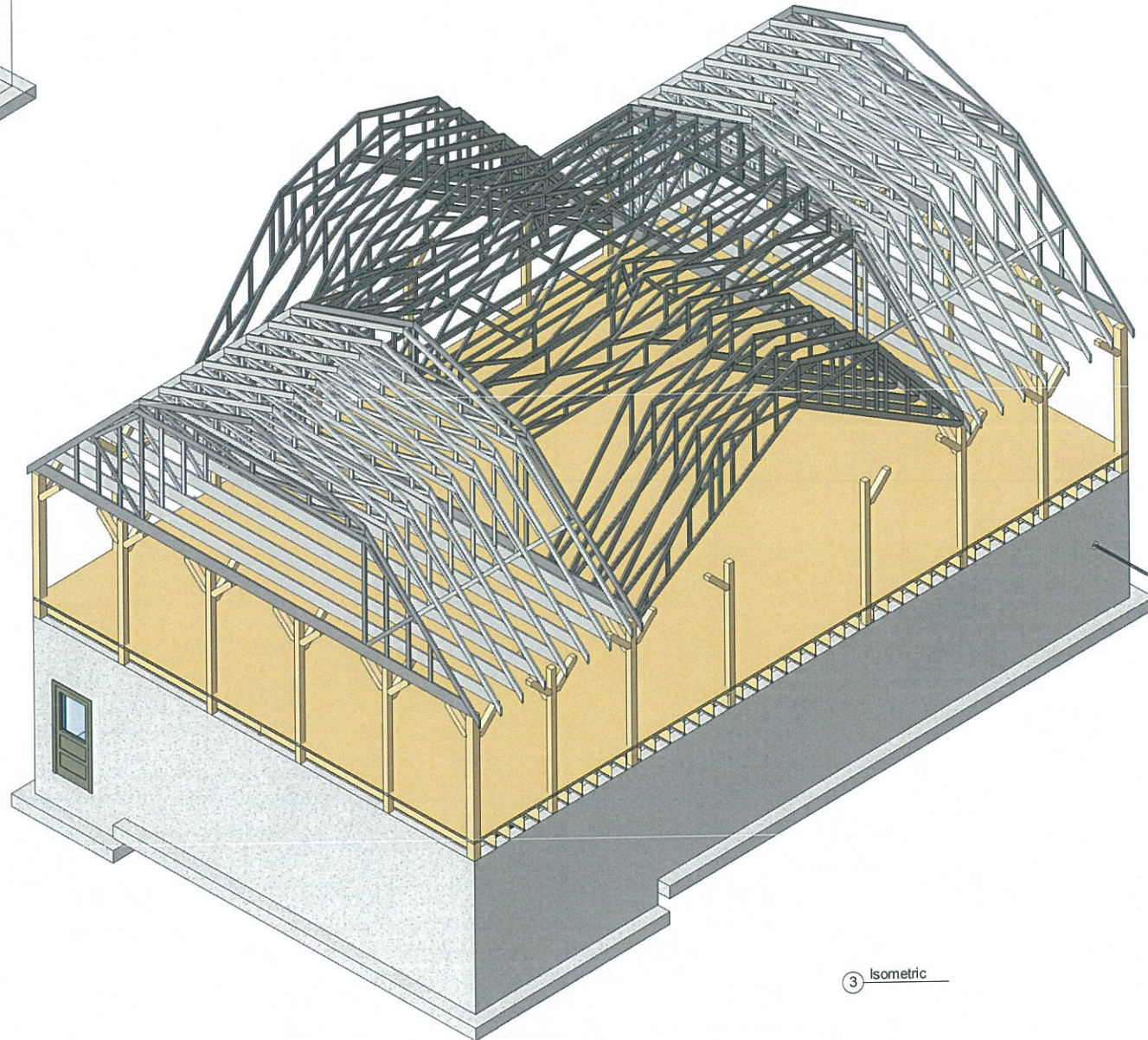
SHEET:

17 OF 18

OTIS' BARN
 PITTSBURGH, PA
 CONSTRUCTION SET



② BASEMENT ISOMETRIC



③ Isometric

JOB NO:

DRAWN:	BS	
CHECKED:	FJC	
ISSUED:	1-1-15	
REVISIONS:		

TITLE:
 ISOMETRIC

SHEET:

18 OF 18