

CONCRETE WALL CONSTRUCTION NOTES

- ALL FILL THAT SHALL HAVE CONCRETE PLACED ON IT SHALL BE CLASS II COMPACTION AS SPECIFIED IN CONSTRUCTION SPECIFICATION #11, "EARTHWORK".
- ALL CONCRETE FORMWORK & REINFORCEMENT SHALL BE INSPECTED BY A REPRESENTATIVE OF THE NRCS PRIOR TO THE PLACEMENT OF CONCRETE. A MINIMUM OF 1 DAY NOTICE IS REQUIRED.
- ALL CONCRETE & REINFORCING SHALL BE INSTALLED ACCORDING TO NRCS CONSTRUCTION SPECIFICATION #31, "STRUCTURAL CONCRETE, NONSTRUCTURAL CONCRETE BASE SLABS & STEEL REINFORCEMENT". CONCRETE SHALL BE DELIVERED BY READY MIX METHODS, MEETING ASTM C94.
- ALL REINFORCING STEEL SHALL BE GRADE 60.
- ALL REINFORCING SHALL BE IN PLACE PRIOR TO CONCRETE PLACEMENT. (NO PLUNKING)
- ALL REINFORCING SHALL HAVE THE MINIMUM CLEAR COVER AS SHOWN ON THE DRAWINGS.
- ALL CONCRETE SHALL BE AN NRCS APPROVED MIX, WITH 5 TO 7 PERCENT AIR CONTENT AND PLACED AT A SLUMP BETWEEN 3 TO 5 INCHES. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE **28 DAY STRENGTH OF 4000 PSI**. THE MAXIMUM **WATER CEMENT RATIO OF THE PLACED CONCRETE SHALL BE 0.45**. CONCRETE MIX DESIGN SHALL BE THE RESPONSIBILITY OF THE SUPPLIER IN ACCORDANCE WITH ASTM C94 SECTION 6.5 OPTION C.
- CONCRETE SHALL BE DISCHARGED WITHIN 90 MINUTES OF CEMENT ADDITION TO THE MIX. OTHERWISE A SET RETARDING ADMIXTURE SHALL BE USED. **DRY MIXING WILL NOT BE ALLOWED**.
- NO ADDITIONAL WATER SHALL BE ADDED TO THE CONCRETE ON SITE. CONCRETE SHALL BE DELIVERED AT THE DESIRED PLACEMENT SLUMP.
- A MIDRANGE OR HIGH RANGE WATER REDUCER SHALL BE USED FOR THE WALL AND FOR THE SLAB. SEE CONSTRUCTION SPECIFICATION #31. MAXIMUM PLACEMENT SLUMP SHALL BE 7.5".
- BENTONITE OR PVC TYPE WATERSTOP SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS. MINIMUM CONCRETE COVER OVER WATERSTOP SHALL BE 3" OR MANUFACTURER'S RECOMMENDED MINIMUM COVER, WHICHEVER IS GREATER.
- ALL COLD JOINTS SHALL BE AS SHOWN ON PAGE 5 OF 6 AND SHALL HAVE PRIOR APPROVAL OF THE NRCS. ALL COLD JOINTS SHALL HAVE AN APPROVED WATERSTOP.
- CONCRETE FORM OIL SHALL BE APPLIED TO THE FORMS PRIOR TO ERECTION. FORM OIL SHALL NOT BE APPLIED TO THE FORMS ONCE REINFORCING IS IN PLACE. (NO FORM OIL ON REINFORCING)
- NO CONCRETE SHALL BE PLACED WHEN THE NATIONAL WEATHER SERVICE FORECASTS THE MINIMUM DAILY ATMOSPHERIC TEMPERATURE WILL BE LESS THAN 40° FAHRENHEIT THE DAY OF THE PLACEMENT OR EITHER OF THE FOLLOWING 2 DAYS. UNLESS COLD WEATHER CONCRETING PRACTICES ARE FOLLOWED:
 - TEMPERATURE FORECASTED TO BE LESS THAN 40° F BUT GREATER THAN 32° F
- CONCRETE SHALL BE COMPLETELY COVERED WITH PLASTIC SHEATHING AND BE MAINTAINED FOR A MINIMUM OF 3 DAYS.
 - TEMPERATURE FORECASTED TO BE LESS THAN 31° F BUT GREATER THAN 25° F
- CONCRETE SHALL BE COMPLETELY COVERED WITH INSULATING BLANKETS AND A MINIMUM OF ONE THERMOMETER WITH MAX/MIN TEMPERATURE STORAGE, PER 1500 SF OF PLACEMENT, SHALL BE PLACED AT THE NRCS INSPECTORS DISCRETION. IF THE MIN. TEMPERATURE RECORDED IS BELOW 40° F, IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ENCLOSE AND HEAT THE PLACEMENT TO A MIN. OF 50° F AND MAINTAIN IT FOR A MINIMUM OF THREE DAYS.
 - TEMPERATURE FORECASTED TO BE LESS THAN 24° F
-NO PLACEMENT WITHOUT SUPPLEMENTAL HEAT TO MAINTAIN A MINIMUM CONCRETE SURFACE TEMPERATURE OF 50° F.
- CONCRETE SHALL NOT BE PLACED WHEN THE DAILY MAXIMUM TEMPERATURE IS EXPECTED TO BE GREATER THAN 90 DEGREES.
- CONCRETE FORMS SHALL BE REMOVED ONLY AFTER A MINIMUM OF 12 HOURS HAVE ELAPSED SINCE THE COMPLETION OF THE CONCRETE PLACEMENT. BACKFILLING OPERATIONS SHALL NOT COMMENCE UNTIL A MINIMUM OF 14 DAYS AFTER THE LAST PORTION OF THE WALL HAS BEEN PLACED. THIS TIME MAY BE REDUCED IF NON DESTRUCTIVE TESTING INDICATES THE LAST WALL PLACEMENT HAS REACHED 67% OF ITS 28 DAY STRENGTH OR A CONCRETE ACCELERANT IS USED.
- CONCRETE SHALL BE CURED FOR A MINIMUM OF 7 DAYS BY THE USE OF A **CURING COMPOUND (ASTM C309 TYPE 1-D FUGITIVE DYE OR TYPE 2 WHITE PIGMENTED)**, SATURATED COVER MATERIAL OR FREQUENT APPLICATION OF WATER. CURING COMPOUND SHALL BE APPLIED WITHIN 12 HOURS OF THE COMPLETION OF THE CONCRETE PLACEMENT OR WHEN THE INITIAL SET OCCURS. CURING COMPOUND SHALL BE ONSITE PRIOR TO CONCRETE PLACEMENT. APPLICATION RATE SHALL NOT BE LESS THAN 1 GALLON PER 175 SQUARE FEET. REQUIRED QUANTITIES: **FOOTING – 17 GALLONS, WALL – 34 GALLONS, SLAB/RAMP – 28 GALLONS**. TOTAL 71 GALLONS REQUIRED. CURING COMPOUND SHALL BE APPLIED IMMEDIATELY AFTER INITIAL SET OR WITHIN 12 HOURS.
- TIEHOLES ON BOTH SIDES OF THE WALL SHALL BE FILLED WITH A DENSE, WELL BONDED, NON SHRINK PATCHING MATERIAL SUCH AS HYDRAULIC CEMENT.
- THE SLAB AND RAMP SHALL BE SEPARATE PLACEMENTS AS SHOWN. EACH SHALL BE A SINGLE CONCRETE PLACEMENT WITHOUT COLD JOINTS. CURING OF THE CONCRETE FIRST PLACED MAY BE REQUIRED BEFORE THE PLACEMENT IS COMPLETE. FULL 2x4x8 CONCRETE BLOCK SHALL BE SPACED AT A MAXIMUM OF 4' O.C. EACH WAY TO SUPPORT REINFORCING.
- FOOTING FORMS SHALL BE CONSTRUCTED SO THAT A UNIFORM FOOTING WIDTH OF 96" IS MAINTAINED. THERE SHALL NOT BE JOGS IN THE FINISHED WIDTH OF THE FOOTING.
- HOOP ROOF STRUCTURE SHALL BE A VT PE STAMPED DESIGN, MEETING VT NRCS 367, "ROOFS AND COVERS" & THE CURRENT VERSION OF ASCE 7, "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES".

STEEL SCHEDULE

BEND TYPE	LOCATION	BAR SIZE	SPACING	LENGTH FT-IN	QUANTITY	TOTAL LENGTH FT-IN	TOTAL WEIGHT LBS
STR.	(F1)	#6	12"	—	8	2,730'	4,103#
STR.	(F2)	#6	12"	7'-6"	270	2010'	3,021#
STR.	(F3)	#6	—	6'-0"	28	168'	253#
STD. HOOK	(W1)	#5	12"	3'-7"	300	1,075'	1,122#
STD. HOOK	(W2)	#4	12"	3'-2"	304	947'	633#
STR.	(W3)	#5	12"	7'-9" 5'-9"	284 18	2,305'	2,405#
STR.	(W4)	#4	12"	7'-9" 5'-9"	284 18	2,305'	1,540#
STR.	(W5)	#5	12" E.F.	—	88	5,385'	5,617#
2	(W6)	#5	VARIES	5'-0"	38	190'	198#
STD. HOOK	(W7)	#5	12"	3'-7"	60	216'	225#
17	(W8)	#4	7-1/2"	4'-10"	77	373'	250#
STD. HOOK	(C1)	#5	12"	3'-7"	56	201'	210#
STR.	(C2)	#5	12"	7'-9"	56	434'	453#
STD. HOOK	(C3)	#5	12"	5'-2"	112	558'	582#
STR.	(S1)	#4	8"	VARIES	—	10,781'	7,202#
STR.	(R1)	#4	8"	VARIES	—	3,826'	2,556#
						30,370#	

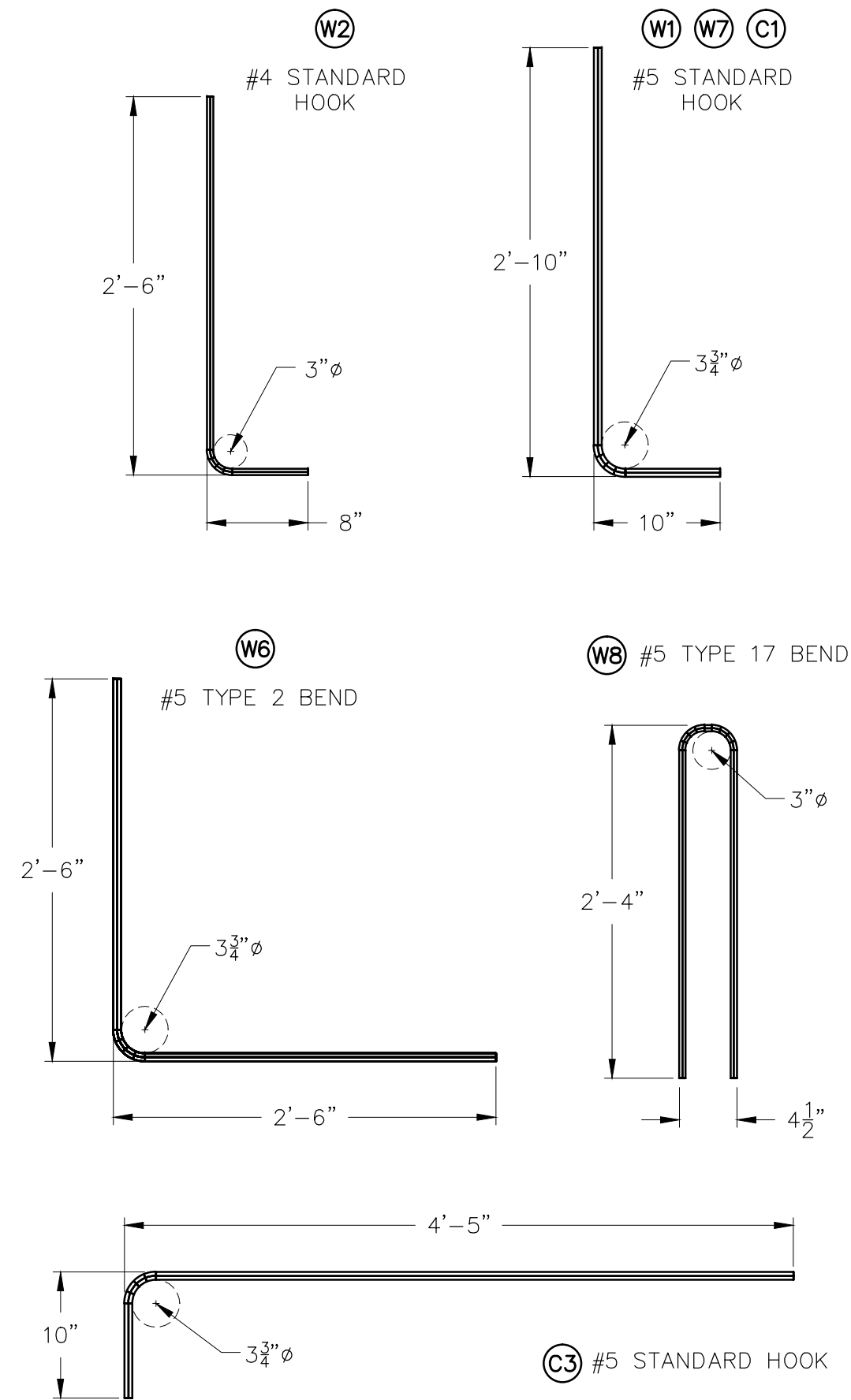
APPROXIMATE SPLICE LENGTHS ARE INCLUDED IN TOTAL LENGTH.
BASED ON 40' BAR LENGTHS

USE 16" SPLICE LENGTH FOR #4 BARS
USE 20" SPLICE LENGTH FOR #5 BARS
USE 24" SPLICE LENGTH FOR #6 BARS

DESIGN ASSUMPTIONS

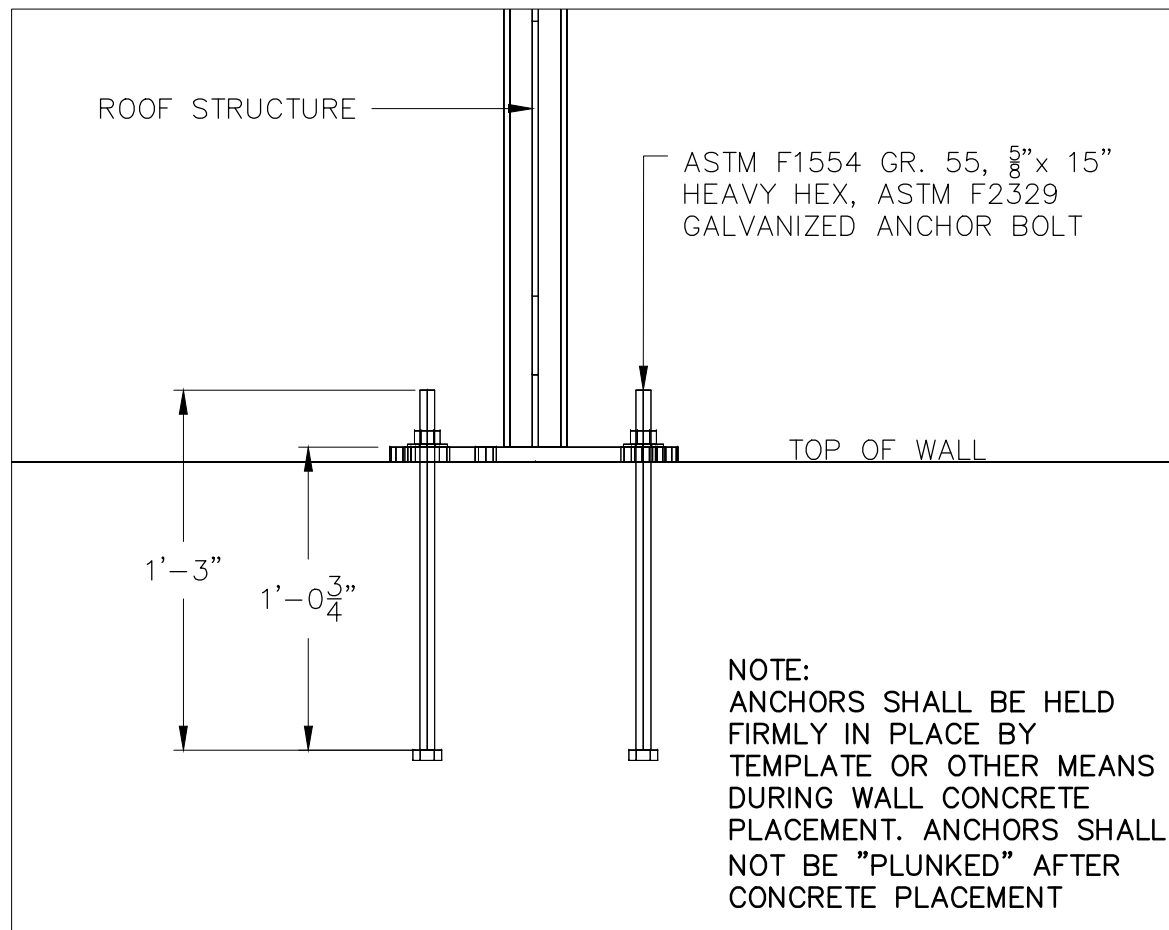
- DESIGN BASED ON FINITE ELEMENT ANALYSIS
- MEETS NRCS NEH 636 '10
- MINIMUM ALLOWABLE SOIL BEARING STRENGTH 2,000 PSF
- BACKFILL IS SILTY SANDS OR SILTY GRAVELS, LESS THAN 50% FINES, LOW PLASTIC FINES
- EQUIVALENT FLUID PRESSURE = 75 PSF (FRAME TANK)
- SURCHARGE OF 100 PSF INCLUDED
- MAX. BACKFILL FULL HEIGHT
- GRADE 60 STEEL FOR REBAR
- 4000 PSI CONCRETE STRENGTH

BAR TYPES



ESTIMATED CONCRETE QUANTITIES

CONCRETE FOOTING	88.6 CY
CONCRETE WALL	85.9 CY
CONCRETE FLOOR	55.1 CY
CONCRETE RAMP & SLOPE	20.0 CY



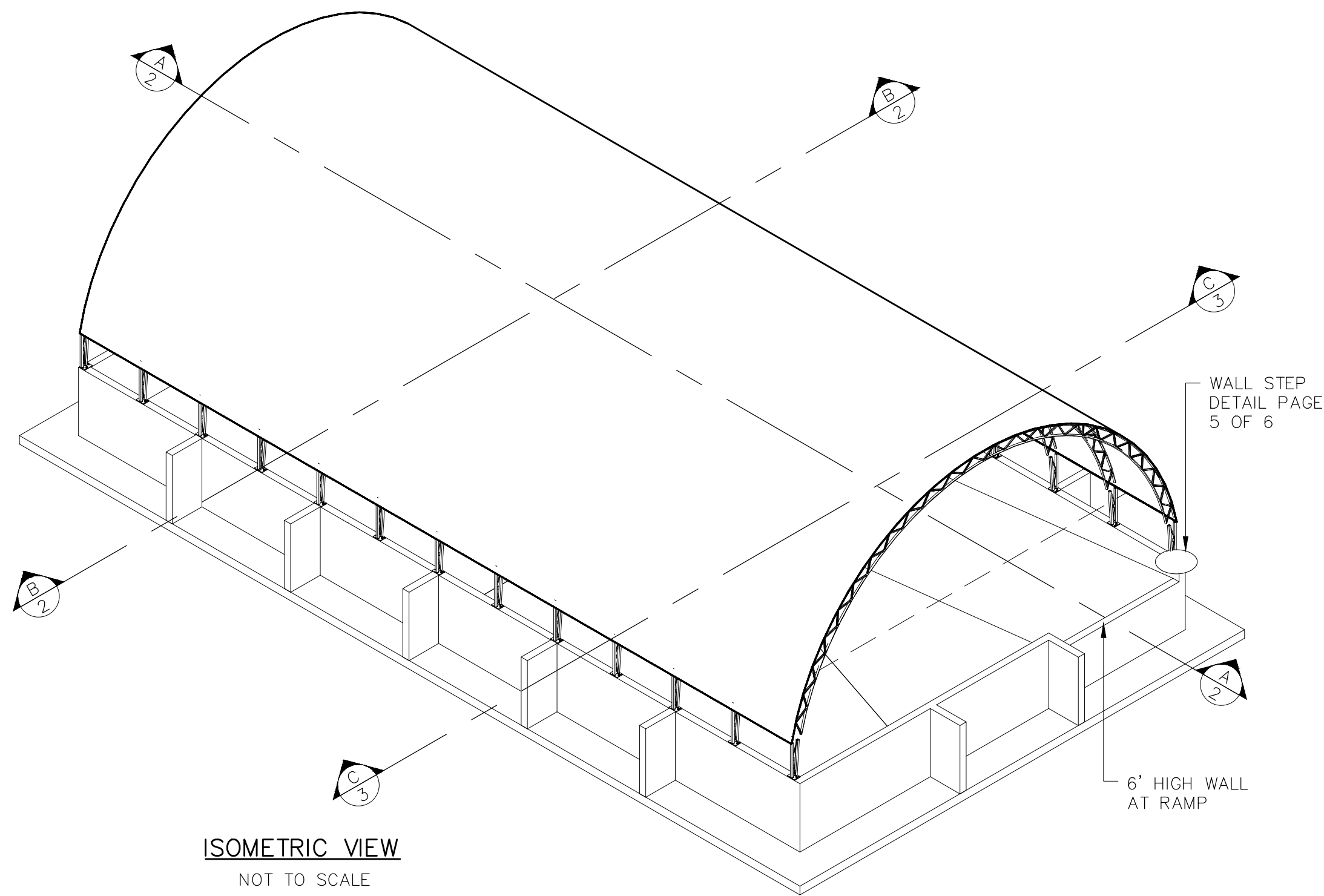
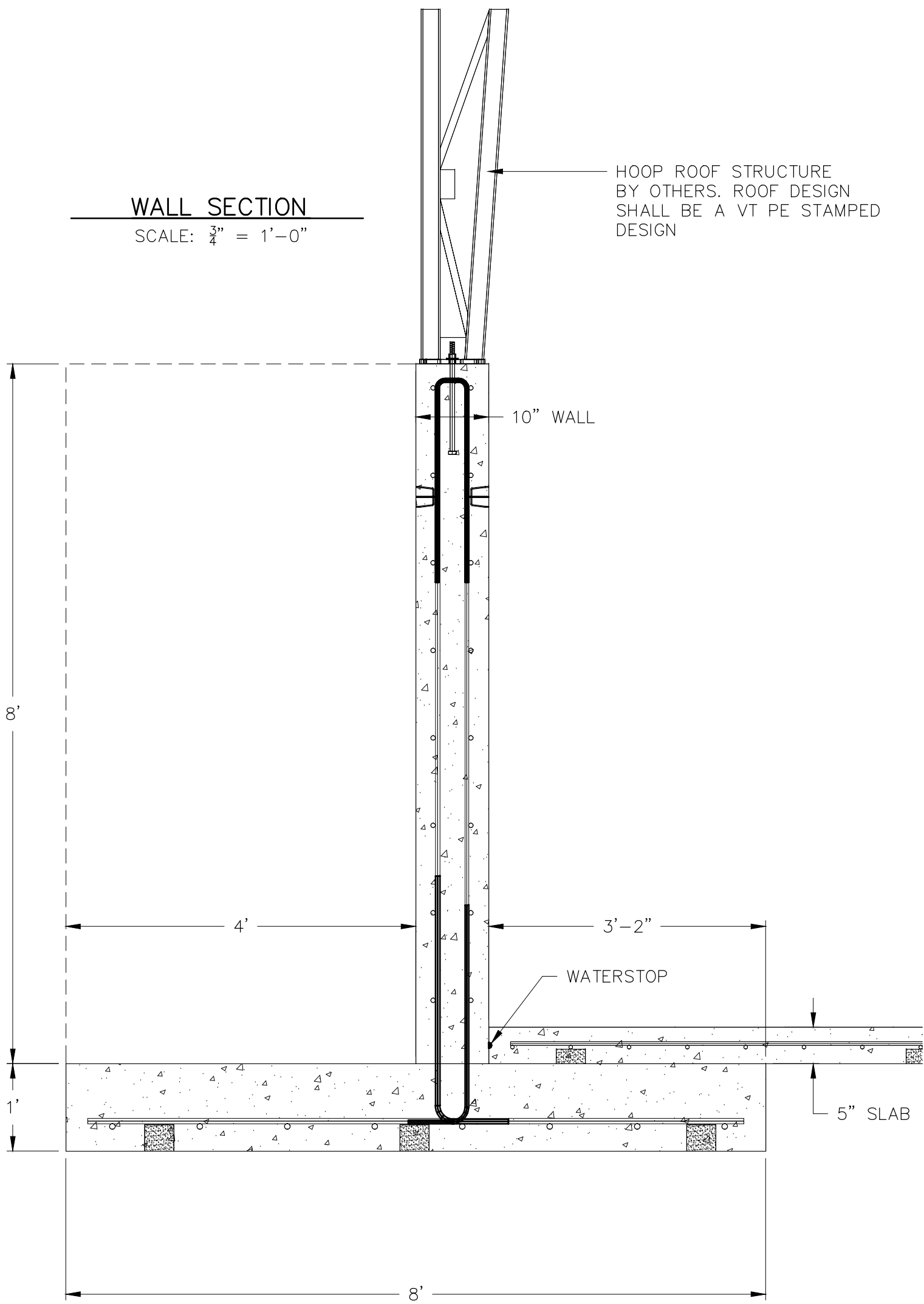
ROOF STRUCTURE ANCHOR DETAIL

SCALE 1 1/2" = 1'-0"

NO.	DATE	DESCRIPTION	BY
1	3-11-16	INITIAL DRAWING	TkJ
2	3-28-16	CONC & REBAR QTY CORRECTED	TkJ
3	3-30-16	ANCHOR SPEC TO GRADE 55	TkJ
4	4-1-16	CORRECTIONS - CHECKING	TkJ
5	4-4-16	PG #3 CORRECTIONS	TkJ
6	4-6-16	NARROWED RAMP	TkJ
7	4-25-16	CORRECTIONS - CHECKING	TkJ

WALL SECTION

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



Date	3/16
Designed	TATE JEFFREY
Drawn	TATE JEFFREY
Checked	JRC
Approved by	4/1/16

United States
Department of
Agriculture

USDA

Natural Resources
Conservation Service

HAZARD CLASS
LOW

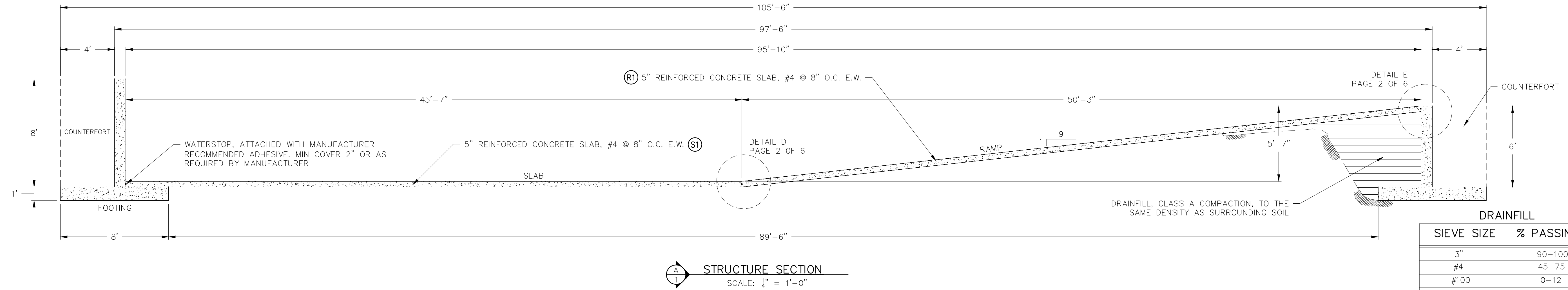
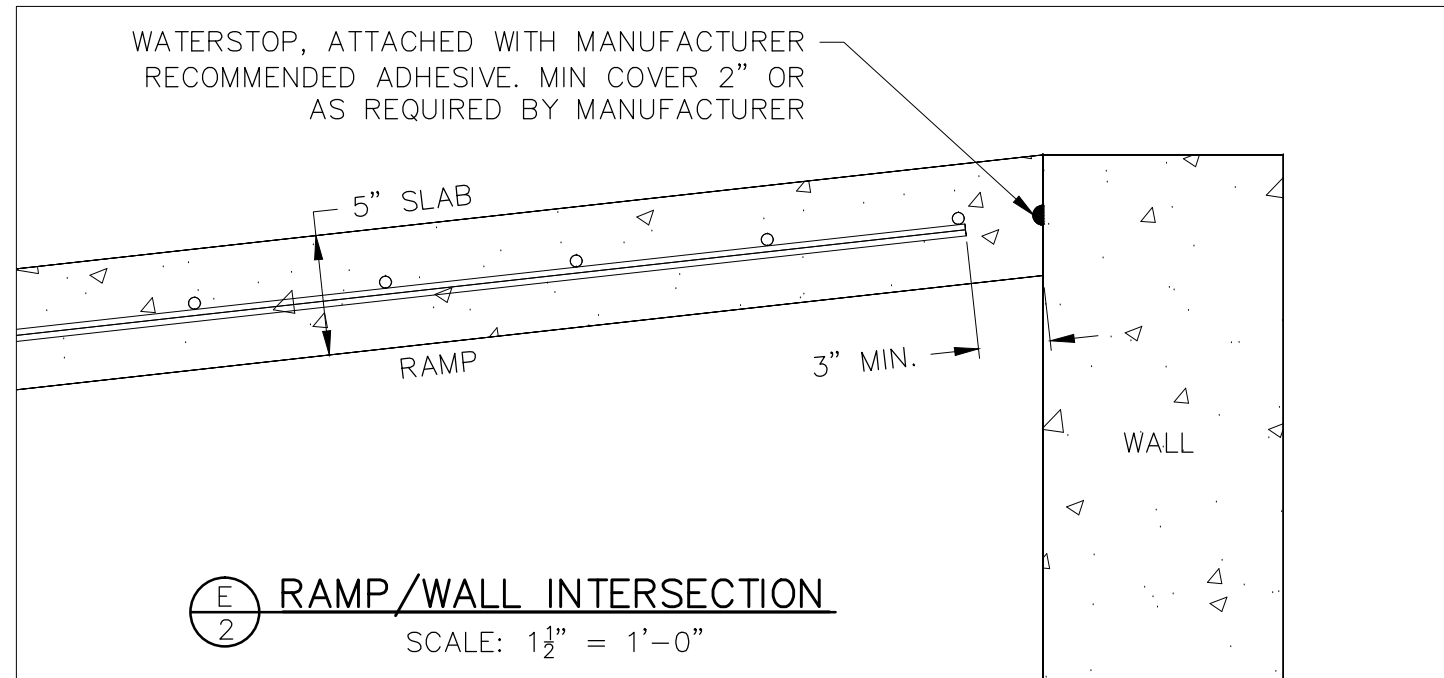
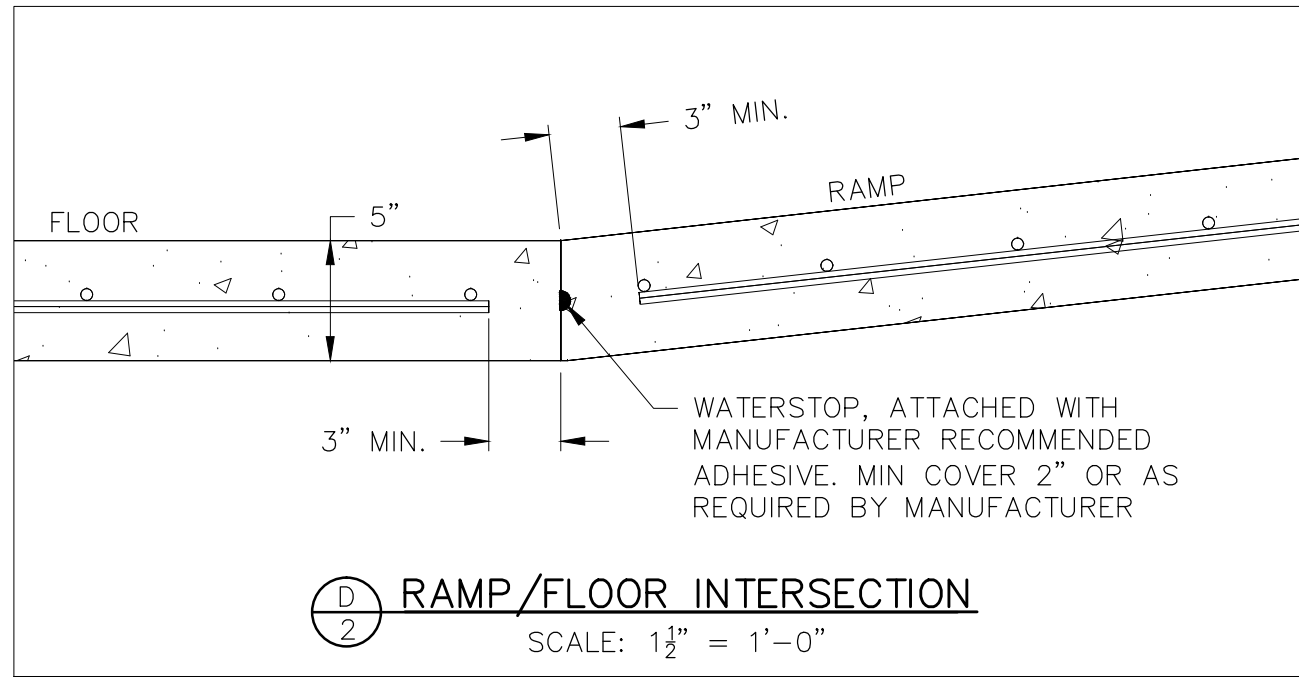
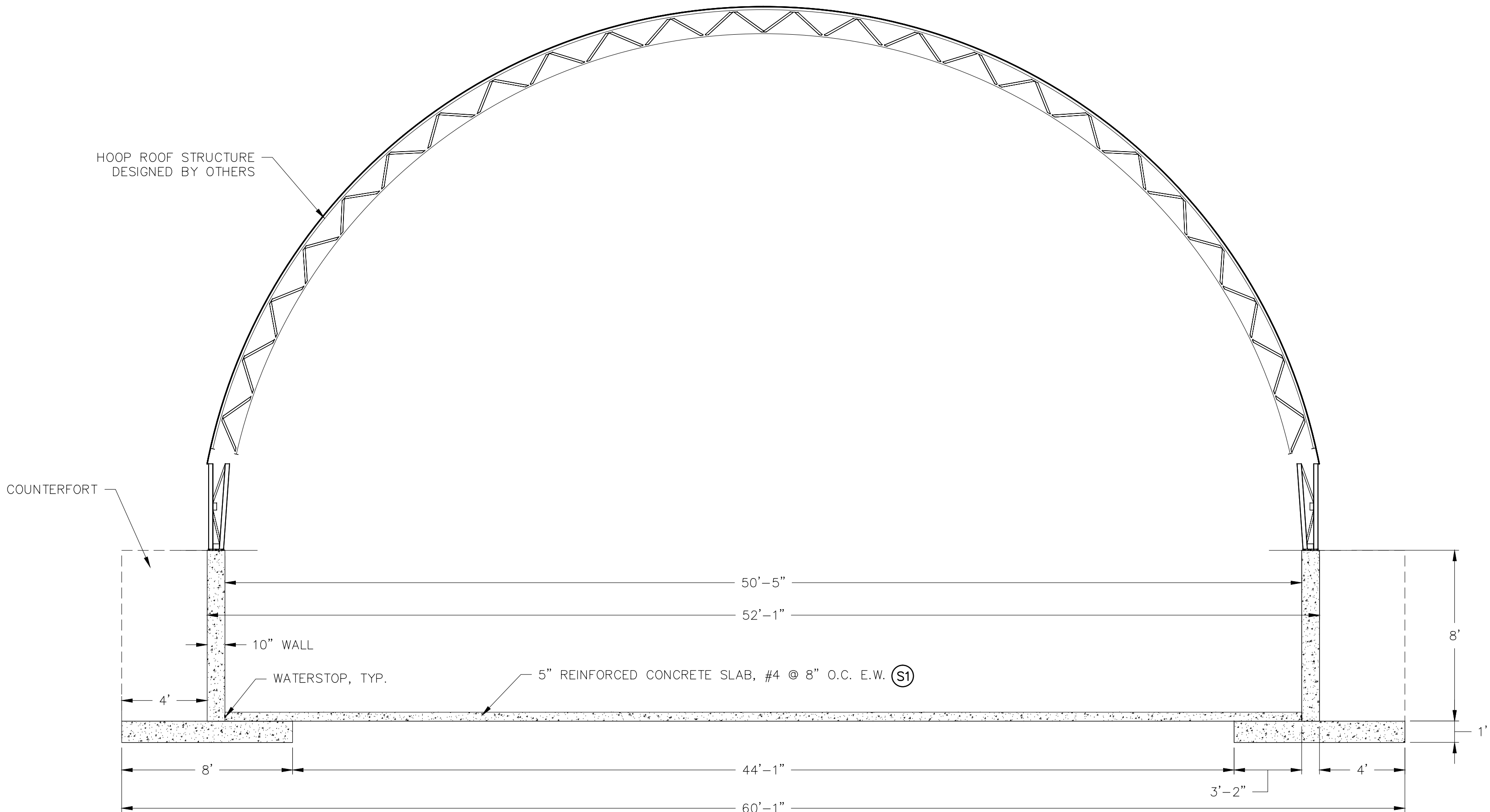
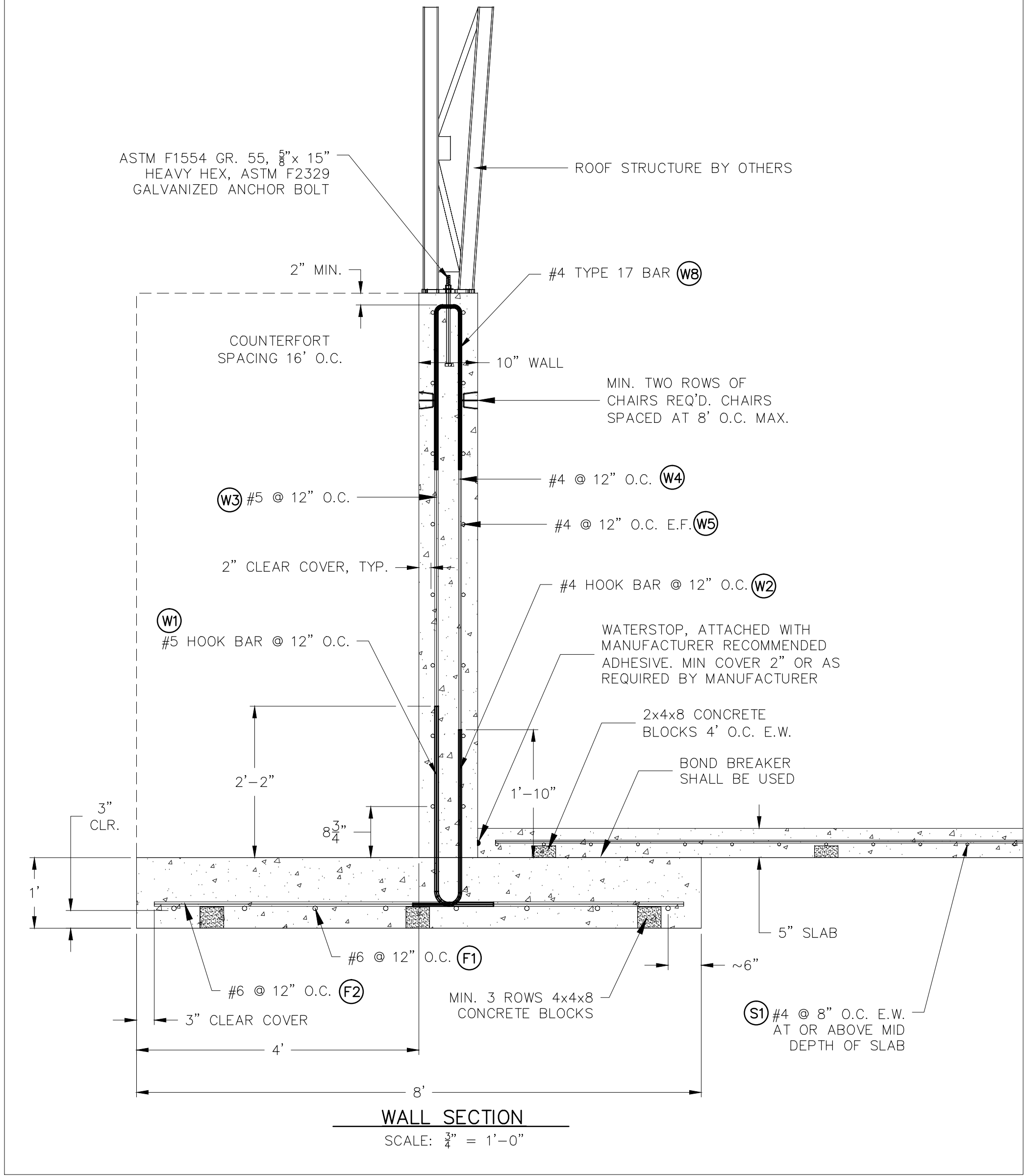
JOB CLASS
V

VERMONT STANDARD DRAWING
8' x 50' x 100' ROOFED MANURE STORAGE
PARTIAL WIDTH RAMP
COVER SHEET
VERMONT

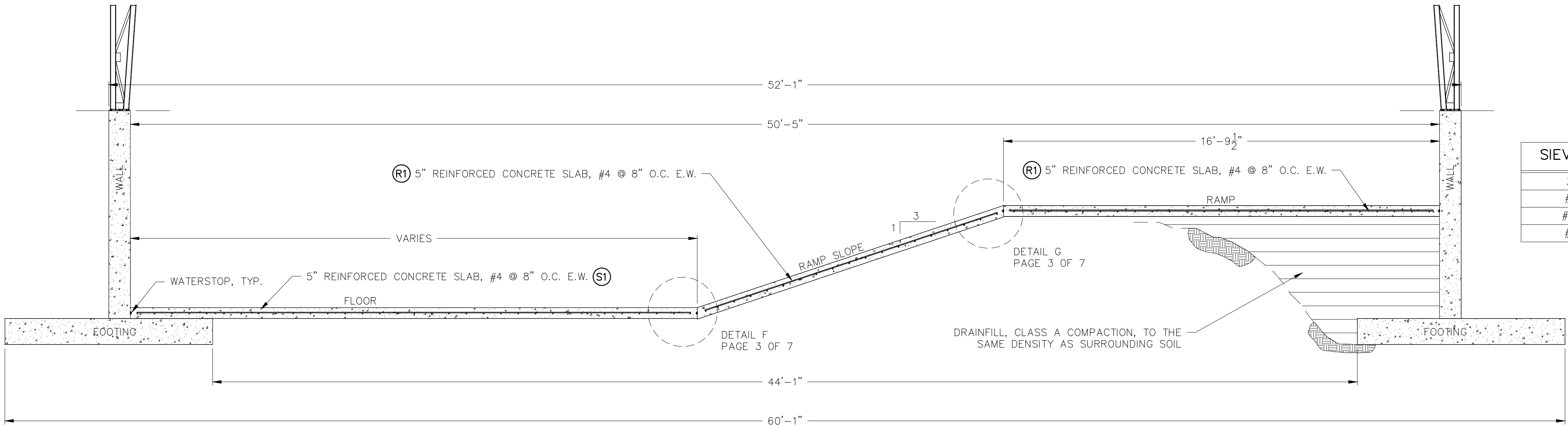
File Name

Drawing Name
VT850100ROOF(2)

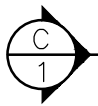
** REINFORCING PLACEMENT TOLERANCE IS $\pm \frac{1}{2}$ " **

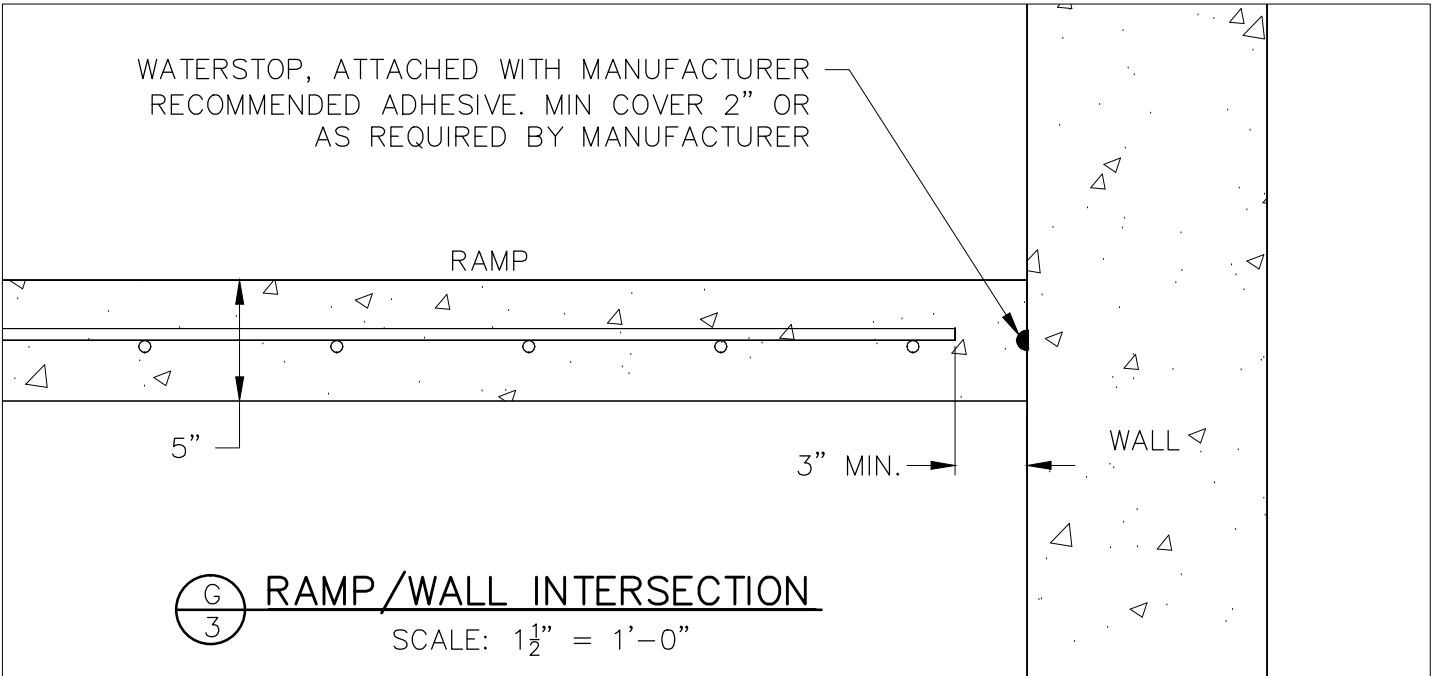
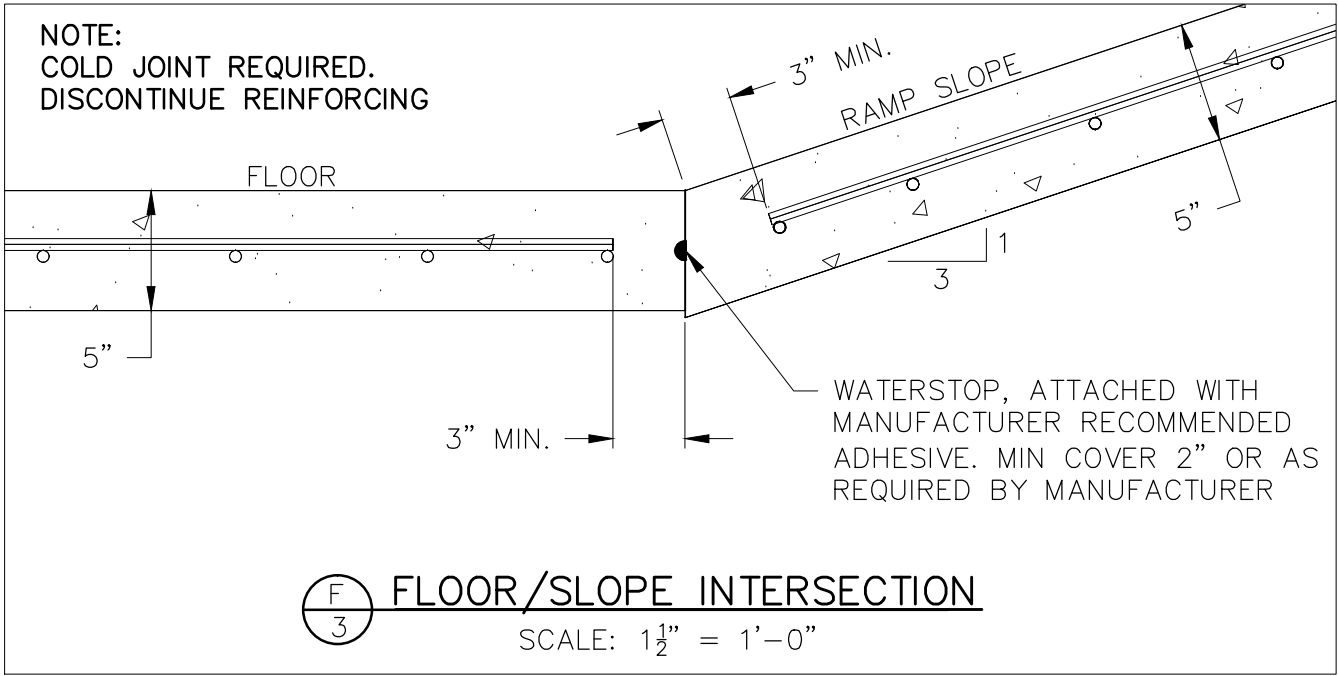


DRAINFILL	
SIEVE SIZE	% PASSING
3"	90-100
#4	45-75
#100	0-12
#200	0-5

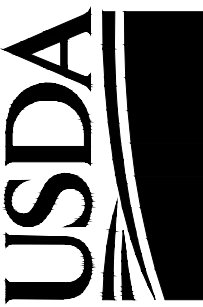


DRAINFILL	
SIEVE SIZE	% PASSING
3"	90-100
#4	45-75
#100	0-12
#200	0-5

 **STRUCTURE SECTION**
SCALE: $\frac{3}{8}$ " = 1'-0"



Designed TATE JEFFREY Date 3/16
Drawn TATE JEFFREY Date 3/16
Checked JRC Date 3/16
Approved by  Date 4/1/16

 **United States
Department of
Agriculture**
**Natural Resources
Conservation Service**

HAZARD CLASS
LOW

JOB CLASS
V

VERMONT STANDARD DRAWING
8' x 50' x 100' ROOFED MANURE STORAGE
PARTIAL WIDTH RAMP
CROSS SECTIONS (2)

VERMONT

File Name

Drawing Name
VT850100R00F(2)

Sheet 3 of 7

