

March 21, 2017

Robert Stein, Chairman  
Connecticut Siting Council  
Ten Franklin Square  
New Britain, CT 06051

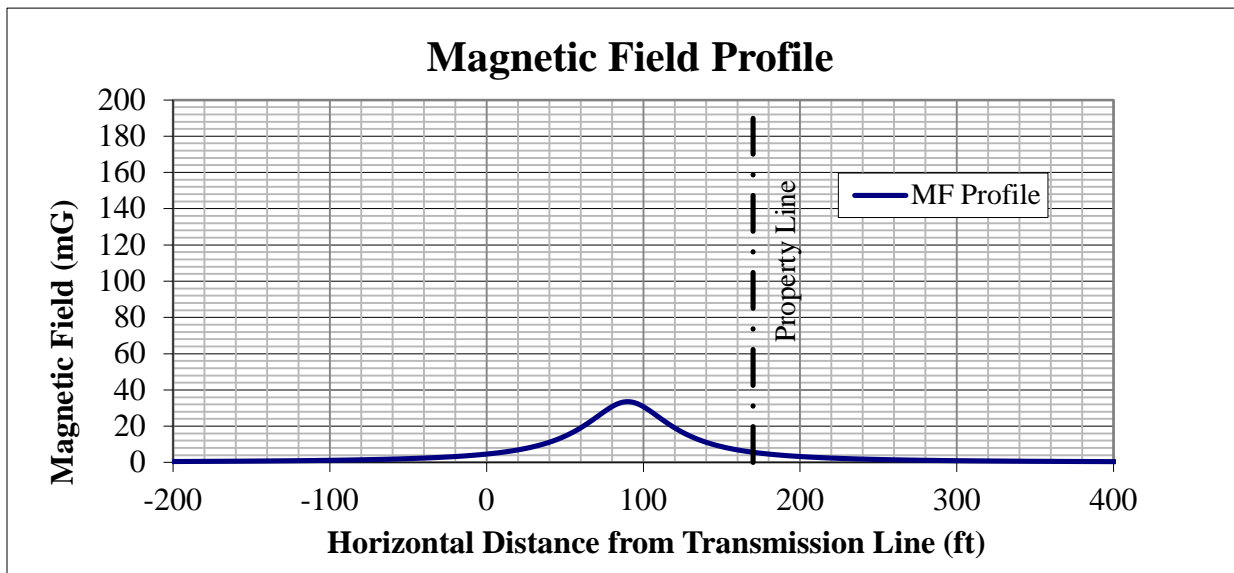
Re: Petition No. 1289: Green Hill Substation Project - Madison, Connecticut  
Response to Field Review Questions

Dear Chairman Stein:

On February 8, 2017, The Connecticut Light and Power Company doing business as Eversource Energy ("Eversource") filed a Petition with the Connecticut Siting Council ("Council") for a Declaratory Ruling that no Certificate of Environmental Compatibility and Public Need is required for the Green Hill Substation proposed modifications ("Petition"). On March 9, 2017 the Council held a field review of the proposed project. Eversource's responses to questions raised by the Council during the field review are as follows:

1. Magnetic Field Modeling at Green Hill Substation

Looking East towards Bokum Substation at the property edge near Line List 104, the magnetic field would be 5.6 milligauss ("mG"). At the home at Line List 104, the magnetic field would be 2.1 mG. See Petition 1289: Attachment A for the Line List.



2. The amount of cut for the hillside removal in cubic yards?

Approximately 6,000 cubic yards of cut will be generated and removed from the substation site.

3. Estimate number of truck trips to ship soil off-site based on amount of cut?

A standard dump truck load is approximately 15 cubic yards. There will be approximately 400 truck trips to ship soil off-site, based on 6,000 cubic yards of cut.

4. Map or site plan showing where laydown and soil stockpile areas are proposed

Since the excavations for the new retaining wall are outside of the existing substation fence, the contractor can load and truck out the excavated material, utilizing the unpaved existing access road. The foundation spoils, which will be generated inside of the substation fenced area will likely need to be stock piled and tested before disposal. See Attachment A for the marked-up map detailing the laydown and soil stockpile areas.

5. Retaining wall design information

Please see Attachment B for the preliminary drawing of the proposed retaining wall.

6. Land contour information (Erosion and Sediment Control Plan)

The Erosion and Sediment Control Plan (see Attachment C), part of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities ("Stormwater Plan") exhibits the requested land contour information. The Connecticut Department of Energy and Environmental Protection approved the Stormwater Plan on March 12, 2017.

7. Statement regarding landscape agreement with abutter (Mr. Roger Fortier)

Below recaps the commitments made to Mr. Roger Fortier by Eversource in conjunction with Eversource's proposed project to expand the Green Hill Substation:

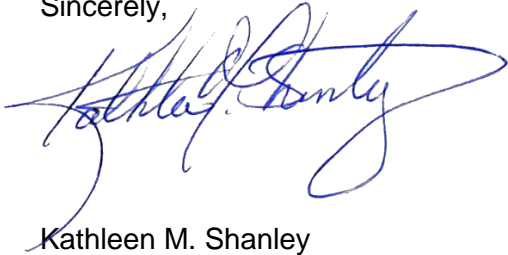
On the afternoon of 3/7/17, Eversource met with Mr. Roger Fortier at his home to review the Green Hill substation expansion project. Mr. Fortier's property abuts the south side of substation property. Mr. Fortier's main concern with the project is the loss of buffer

between his home and the substation due to the clearing required for the expansion. In order to mitigate Mr. Fortier's concern, Eversource committed to plant an evergreen buffer along Mr. Fortier's property line facing the substation. This was acceptable to Mr. Fortier.

Included with this original are fifteen (15) copies of Eversource's responses to the Council's questions raised during the March 9 field review.

Should you or other Council members have any questions regarding this submission, please do not hesitate to contact me via e-mail at [kathleen.shanley@eversource.com](mailto:kathleen.shanley@eversource.com) or telephone at (860) 728-4527.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Kathleen M. Shanley', with a large, stylized flourish extending from the bottom left.

Kathleen M. Shanley



## ATTACHMENT A





ES VER. 05/2015  
7/28/2017 12:52 PM - peter.furman - C:\E:\Workspaces\VERBOSCO\PROJECTS\CONTROLLED\N\BMS020\DWG\17605-11019.dwg - REV AD ADDITIONS  
Z:\2017\1252 PM - peter.furman - C:\E:\Workspaces\VERBOSCO\PROJECTS\CONTROLLED\N\BMS020\DWG\17605-11019.dwg - REV AD ADDITIONS

STORMWATER PIPE SCHEDULE						
PIPE	STR. UP	INVERT UP	STR. DOWN	INVERT DOWN	DIAMETER	LENGTH
1	CLEAN OUT 1	105.46	CLEAN OUT 2	105.25	6"	42'-0"
2	CLEAN OUT 2	105.15	CLEAN OUT 3	104.76	6"	78'-6"
3	CLEAN OUT 3	104.66	CLEAN OUT 4	104.32	6"	66'-10"
4	CLEAN OUT 4	104.22	END WALL	103.00	6"	244'-0"

STORMWATER STRUCTURE SCHEDULE			
STRUCTURE	NORTHING	EASTING	RIM ELEVATION
CLEAN OUT 1	677191.21	1042149.45	107.39
CLEAN OUT 2	677161.51	1042119.75	107.75
CLEAN OUT 3	677082.99	1042119.75	108.72
CLEAN OUT 4	677035.75	1042166.99	108.77
END WALL	677035.75	1042429.99	107.57

SOIL BORINGS		
BORING NUMBER	NORTHING	EASTING
B#7	677024.44	1042400.04
B#8	677062.74	1042342.36
B#9	677018.87	1042249.58
B#11	677111.62	1042141.24

RETAINING WALL			
POINT	NORTHING	EASTING	T.O.W. ELEVATION
A	677162.75	1042146.75	114
B	677162.75	1042116.75	120
C	677081.75	1042116.75	124
D	677032.75	1042165.75	124
E	677032.75	1042400.75	111

BENCHMARKS			
BM	NORTHING	EASTING	ELEVATION
SPIKE SET IN LIGHT POLE	677166.41	1042451.03	108.02
TOP OF CONC. MON	676973.89	1042357.31	119.44
BM1	677165.28	1042098.40	PRO
BM2	677165.28	1042440.87	PRO
BM3	677337.07	1042309.78	PRO
BM4	677014.76	1042309.78	PRO

#### SITE DEVELOPMENT NOTES:

- THIS PLAN BASED UPON EXISTING CONDITIONS SURVEY PROVIDED BY EVERSOURCE DATED MAY 10, 2016 BY ANCHOR ENGINEERING SERVICES.
- GENERAL ARRANGEMENT AND OVERHEAD COMPONENTS ARE FOR REFERENCE ONLY. REFER TO DRAWING 17605-33002.
- HORIZONTAL SURVEY DATUM REFERS TO THE CONNECTICUT STATE PLANE COORDINATE SYSTEM NAD83.
- VERTICAL SURVEY DATUM REFERS TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATION DEPICTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING AND OTHER DATA SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES, GOVERNMENTAL AGENCIES, AND/OR OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED APPROXIMATE IN THE NATURE, ADDITIONALLY, OTHER SUCH UNDERGROUND FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN, THE EXISTENCE, SIZE AND LOCATION OF ALL SUCH FEATURES MUST BE DETERMINED AND VERIFIED IN THE FIELD BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG 1-800-922-4455.
- THE CONTRACTOR SHALL CONDUCT ALL EARTH DISTURBING ACTIVITIES IN A MANNER TO MITIGATE SOIL EROSION AND SEDIMENT LOSS. THE LOSS, THE WORK, AND EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, AND THE NORTHEAST UTILITIES BEST MANAGEMENT PRACTICES MANUAL, CONNECTICUT, DATED DECEMBER 2001. ALL TEMPORARY EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED PRIOR TO ANY SITE DISTURBANCE AND SHALL BE LEFT IN PLACE UNTIL THE COMPLETION OF THE PROJECT, OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
- CONTRACTOR SHALL ADJUST EROSION AND SEDIMENTATION MEASURES TO MAINTAIN SEDIMENTATION AND EROSION CONTROL CONSISTENT WITH THE STORMWATER POLLUTION CONTROL PLAN PREPARED FOR THIS PROJECT.
- THE SITE DEVELOPMENT CONTRACTOR SHALL COORDINATE AND SCHEDULE HIS SITE GRADING ACTIVITIES WITH THE OWNER. THE CONSTRUCTION LIMIT OF THE PROJECT EXTENDS TO THE LIMIT OF DISTURBANCE LINE, GRADING AND EARTHWORK LIMIT OF DISTURBANCE (LOD) AREA TOTAL = 0.65 ACRES.
- AREAS WITHIN THE EXISTING SUBSTATION THAT ARE DISTURBED DURING CONSTRUCTION AND EXPANDED SUBSTATION AREA, INCLUDING AREAS 4-FT OUTSIDE THE NEW FENCE LINE, SHALL BE SURFACED WITH 4-INCH THICK LAYER OF TRAP ROCK (GRAVEL) ON PROPERLY PREPARED SUBGRADE PER EVERSOURCE STANDARDS.
- CONTRACTOR SHALL INSTALL 4-INCHES OF TOPSOIL AND SEED IN AREAS WITHIN THE LIMITS OF DISTURBANCE THAT ARE NOT OTHERWISE SURFACED WITH GRAVEL.
- PROPOSED CONTORUS AND SPOT ELEVATIONS INDICATED REFER TO TOP OF FINISHED GRAD, UNLESS OTHERWISE NOTED.
- ACCORDING TO FEMA FLOOD INSURANCE RATE MAP (FIRM) NUMBERS 09050503H DATED DECEMBER 17, 2010, THE PROJECT IS LOCATED WITHIN ZONE X: AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
- SOIL BORING LOCATIONS AND GEOTECHNICAL INFORMATION BASED UPON GEOTECHNICAL REPORT ENTITLED "GEOTECHNICAL REPORT GREENHILL SUBSTATION EXPANSION" BY FRESHOM COMPANIES, LLC MADISON, CONNECTICUT DATED JULY 25, 2016.
- CONTRACTOR SHALL NOT HAVE ANY PERMANENT IMPACTS TO WETLANDS OR ADJACENT PROPERTIES DURING CONSTRUCTION.
- CONTRACTOR SHALL INSTALL TURF REINFORCEMENT MATS ON NEW 3' H: 1' V EARTH SLOPES (NORTH AMERICAN GREEN SC250 OR APPROVED EQUAL).
- SUBSTATION EXPANSION SURFACE AREA SHALL BE GRADED TO DRAIN STORMWATER RUNOFF AWAY FROM THE PROPOSED RETAINING WALL SYSTEM.
- SITE DEVELOPMENT AS-BUILT SURVEY REQUIRED UPON COMPLETION OF SITE WORK CONSTRUCTION SCOPE. AS-BUILT DRAWINGS SHALL INCLUDE A NOTE TO REFERENCE THE FINAL RETAINING WALL DESIGN DRAWINGS AND CALCULATIONS.
- REFER TO DRAWINGS SERIES 17605-11013 FOR RETAINING WALL DESIGN AND FENCE DETAILS.
- SITE DEVELOPMENT WORK SHOULD ADHERE TO ES DESIGN STANDARD SUB010 - SUBSTATION SITE DEVELOPMENT AND CONSTRUCTION STANDARD SUB010.
- COORDINATES SHOULD BE USED AS LAST RESORT, DIMENSIONS SHOULD BE REFERENCED FROM PROPOSED BASE LINES.
- EXISTING SITE SURVEY NEEDS TO BE VERIFIED WITH EVERSOURCE SITE SURVEY BEFORE COMMENCING CONSTRUCTION.

#### SITE DEVELOPMENT LEGEND

PROPERTY LINE	---
LIMITS OF DISTURBANCE	---
EXISTING FENCE LINE	---
PROPOSED FENCE LINE	---
PROPOSED RETAINING WALL	---
LIMIT OF SUBSTATION GRAVEL	---
PROPOSED STORM UNDERDRAIN 10", 6" PIPE	---
PROPOSED SOLID STORM PIPE	---
PROPOSED STORM CLEANOUT	---
EXISTING CONTOUR	---
TOP OF WALL	---
BOTTOM OF WALL	---
EXISTING TREELINE	---
PROJECT BENCHMARK	---
GEOTECHNICAL BORING LOCATION	---
INFILTRATION TEST LOCATION	---
PROPOSED CONSTRUCTION ENTRANCE	---

#### ESTIMATED EXCAVATION QUANTITIES:

CLEAR AND GRUB APPROX	XXX	SY
TOPSOIL STRIPPED	XXX	CY
TOPSOIL PLACED	XXX	CY
EXCESS TOPSOIL	XXX	CY
TOTAL CUT	XXX	CY
TOTAL FILL REQ'D	XXX	CY
SHRINKAGE 15%	XXX	CY
ADDITIONAL FILL REQ'D	XXX	CY
REMOVE EXISTING ROAD SURFACE	XXX	SY
AGGREGATE BASE SURFACE COURSE	XXX	CY
ROAD BASE COURSE	XXX	CY
3/4" TRAP ROCK YARD SURFACE	XXX	CY

#### REFERENCE DRAWINGS:

17605-10001

17605-10002

17605-11000

17605-11021

SITE DEVELOPMENT PLAN  
SITE DEVELOPMENT PLAN  
YARD EXPANSION - GRADING CROSS SECTIONS  
YARD EXPANSION - CONSTRUCTION DETAILS

#### REV AD ADDITIONS NEW DRAWING

REVISIONS DURING CONSTRUCTION				
AD	01/17	RECONF. INTO A RING BUS W/ #404344SH (BY RUE)	ETC	IN

#### EVERSOURCE ENERGY

TITLE  
GREEN HILL 30R  
YARD EXPANSION - GRADING PLAN  
CIVIL PLAN & DETAILS  
MADISON, CT

BY	RUE	CHK	APP	DATE
	10/16			
H-SCALE	1" = 20'	SK	E	DATE
V-SCALE	1" = 20'	SK	E	DATE
REV. PROJ. NUMBER				
NO.	DATE	AS-BUILT REVISIONS	BY	CHK

17-05-11019

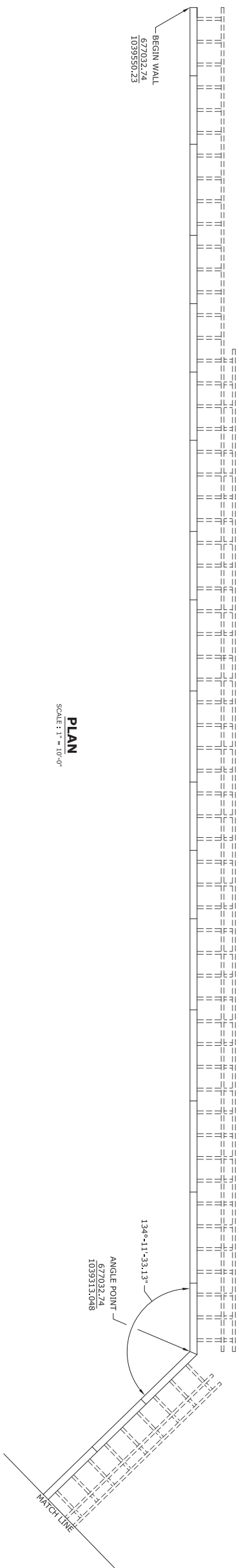






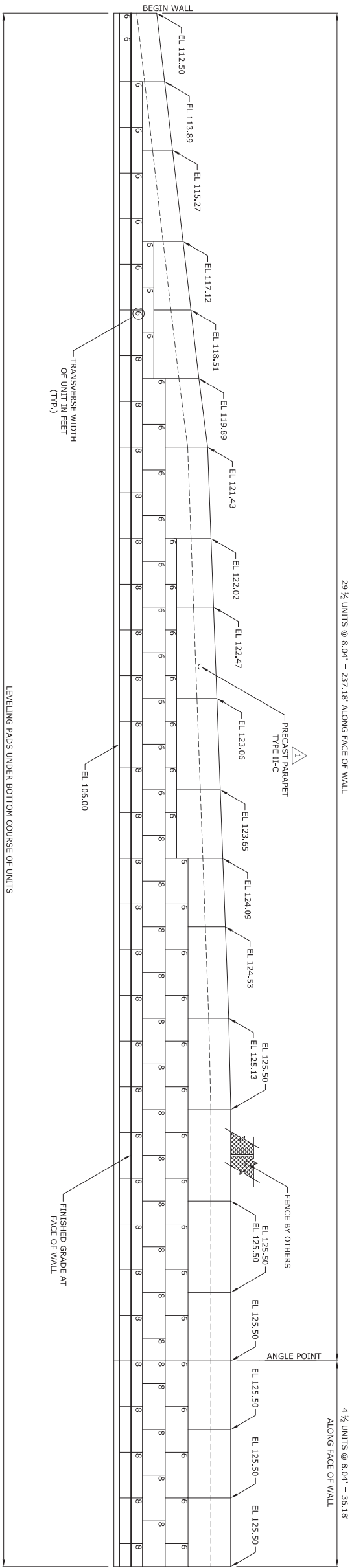
## ATTACHMENT B





**PLAN**  
SCALE: 1" = 10'-0"

SCALE : 1" = 10'-0"



## DEVELOPED ELEVATION

SCALE: 1" = 10'-0"

- ### DESIGN CHECK NOTES
1. INTERNAL STABILITY OF THE STRUCTURE IS DEFINED AS OVERTURNING AND SLIDING.
  2. THE OVERTURNING AND SLIDING FORCES PLUS SAFETY FACTORS FOR THE STRUCTURE ARE ONLY BASED ON THE LOADS AND SOIL CHARACTERISTICS SHOWN.
  3. THE ABILITY OF THE SOIL MASS BELOW THE STRUCTURE TO FULLY SUPPORT ALL OF THE EXCESS UPLIFT/ADDITIONAL SUPERIMPOSED LOADS IS THE RESPONSIBILITY OF OTHERS.
  4. THE INTEGRITY OF THE FOUNDATION IS BASED ON THE FORCES INDICATED FROM THE ANALYSIS OF THE LOADS PRODUCEING OVERTURNING AND SLIDING PLUS THE ALLOWABLE BEARING PRESSURES FURNISHED BY OTHERS.
  5. THE DESIGN SHOWN ON THESE DRAWINGS IS BASED ON ALIGNMENT AND TOPOGRAPHY INFORMATION PROVIDED BY OTHERS.
  6. DESIGN HAS BEEN CHECKED FOR CONFORMANCE TO "BASIS OF DESIGN", FURNISHED BY OTHERS.
  7. ONLY DRAWINGS WITH SIGNED SEAL ARE CERTIFIED.


### DESIGN CHECK NOTES

SEE DESIGN CHECK  
NOTES SHEET 1 OF 3

CERTIFIED ONLY WITH  
RESPECT TO INTERNAL  
STABILITY OF THE  
DOUBLE-BAY STRUCTURE  
BASED ON LOADS AND  
SOIL DATA INDICATED  
ON THE DRAWINGS

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DONALD VAN GERVE P. E.

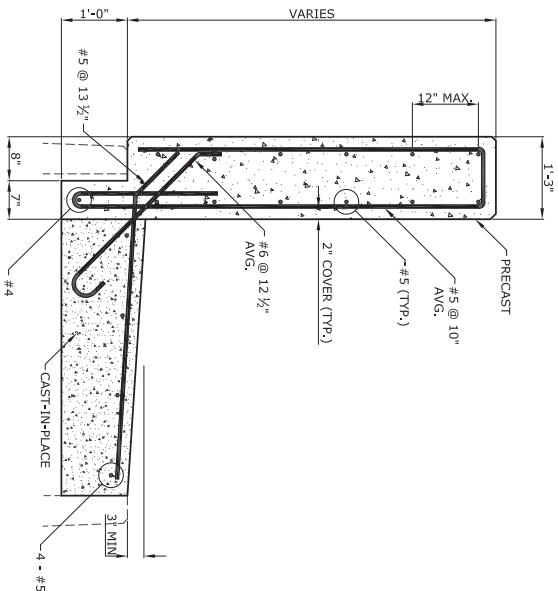


2/5/17

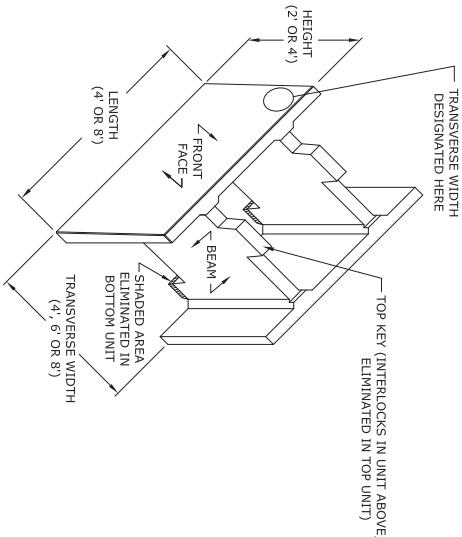
<b>UNITED</b>		<b>DOUBLELUMAL</b>	
<b>CONCRETE PRODUCTS, INC.</b>		<b>RETAINING WALL SYSTEM</b>	
173 CHURCH STREET YALEVILLE, CT 06492 TEL: (203) 269-3119 FAX: (203) 265-4941 WWW.UNITEDCONCRETE.COM		PROJECT SITE IMPROVEMENTS EVERSOURCE ENERGY GREEN HILL 30R YARD EXPANSION MADISON, CONNECTICUT	
TITLE		PROPOSED DOUBLEWAL RETAINING WALL PLAN & ELEVATION	
DATE 11-2-16		SCALE AS SHOWN	
DR. BY MMB		JOB NO.	
CHK. BY DCM		16061	
NO DATE BY REVISION		SHEET 1 of 3	



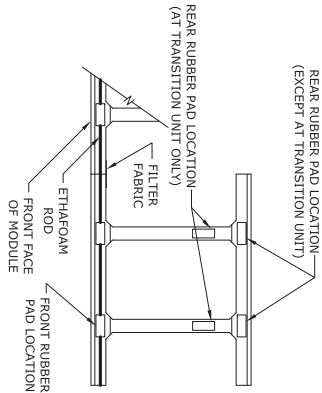




△ PRECAST PARAPET TYPE II-C  
SCALE: 3/4"=1'-0"

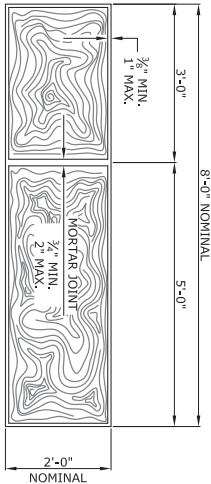


STANDARD DOUBLEWAL MODULE  
N.T.S.

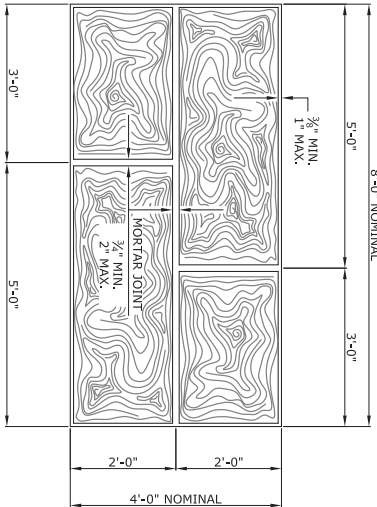


UNIT PLAN VIEW  
N.T.S.

- NOTES:
1. ALL RUBBER PADS SHALL BE 5"x8"x3/8" +/- PADS MAY BE USED IN COMBINATIONS OF 1/8", 1/4", AND 3/8". MAXIMUM TOTAL THICKNESS OF 3/4". PADS SHALL BE MANUFACTURED BY J.V.L. INC., SKEKIE, ILLINOIS.
  2. THE SPACE BETWEEN PADS IN FRONT FACE SHALL BE FILLED WITH ETHAFOAM ROD.
  3. ALL HALF UNITS SHALL HAVE THREE PADS AT FRONT FACE.



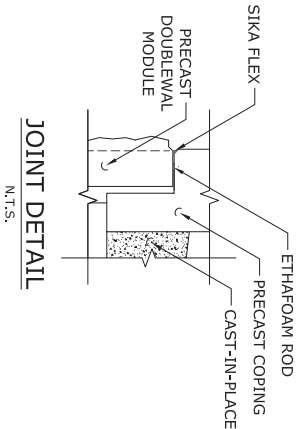
2 FOOT HIGH MODULE  
N.T.S.



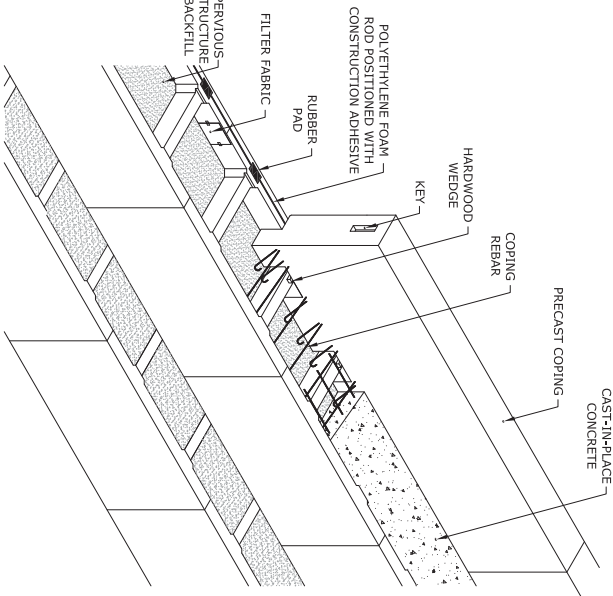
4 FOOT HIGH MODULE  
N.T.S.

## ARCHITECTURAL TREATMENTS

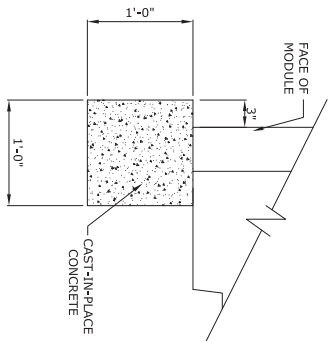
NOTE: FORMLINER FINISH TO BE "TWO FOOT HIGH RECTANGULAR CUT STONE" BY CUSTOM ROCK INTERNATIONAL, ST PAUL, MINNESOTA OR EQUAL AND ONLY BE USED FOR FRONT FACE OF DOUBLEWAL UNITS. COPINGS SHALL HAVE PLAIN STEEL FORM FINISH.



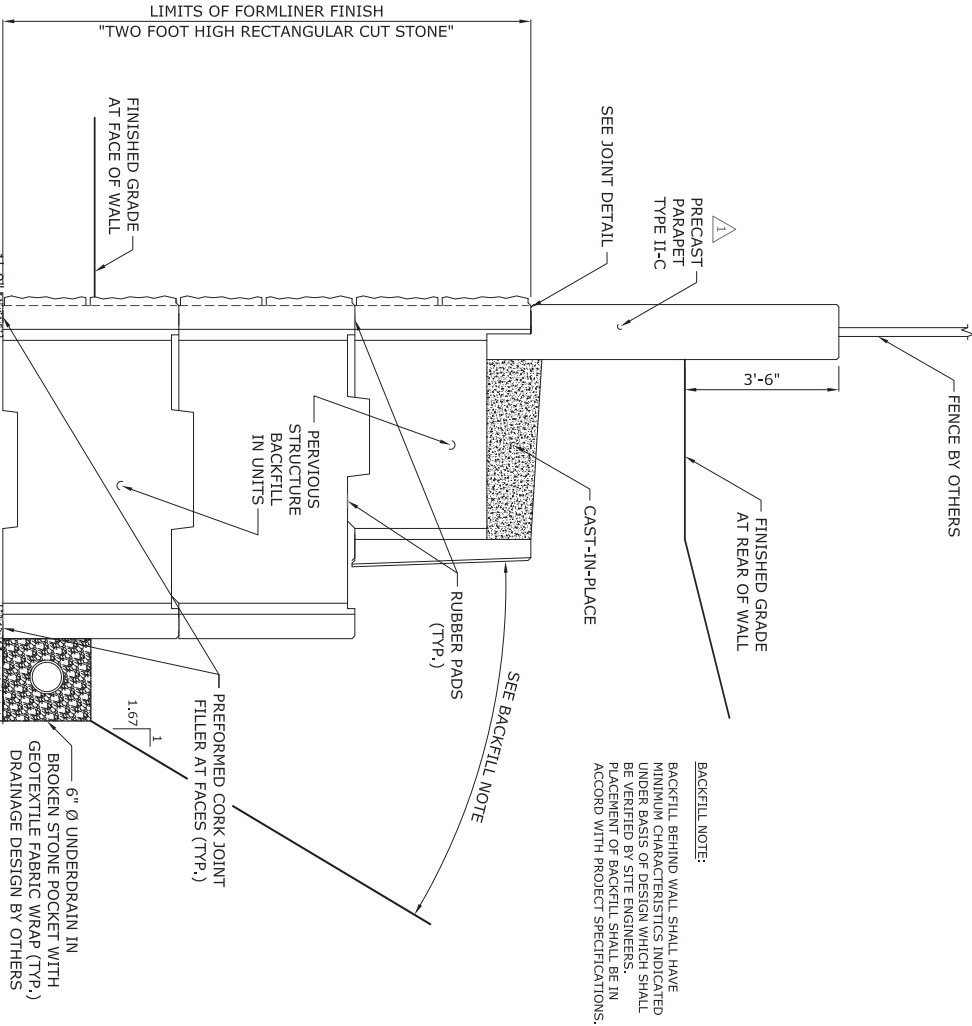
JOINT DETAIL  
N.T.S.



TYPICAL ISOMETRIC  
(REAR FACE OF WALL)  
N.T.S.



LEVELING PAD DETAIL  
N.T.S.

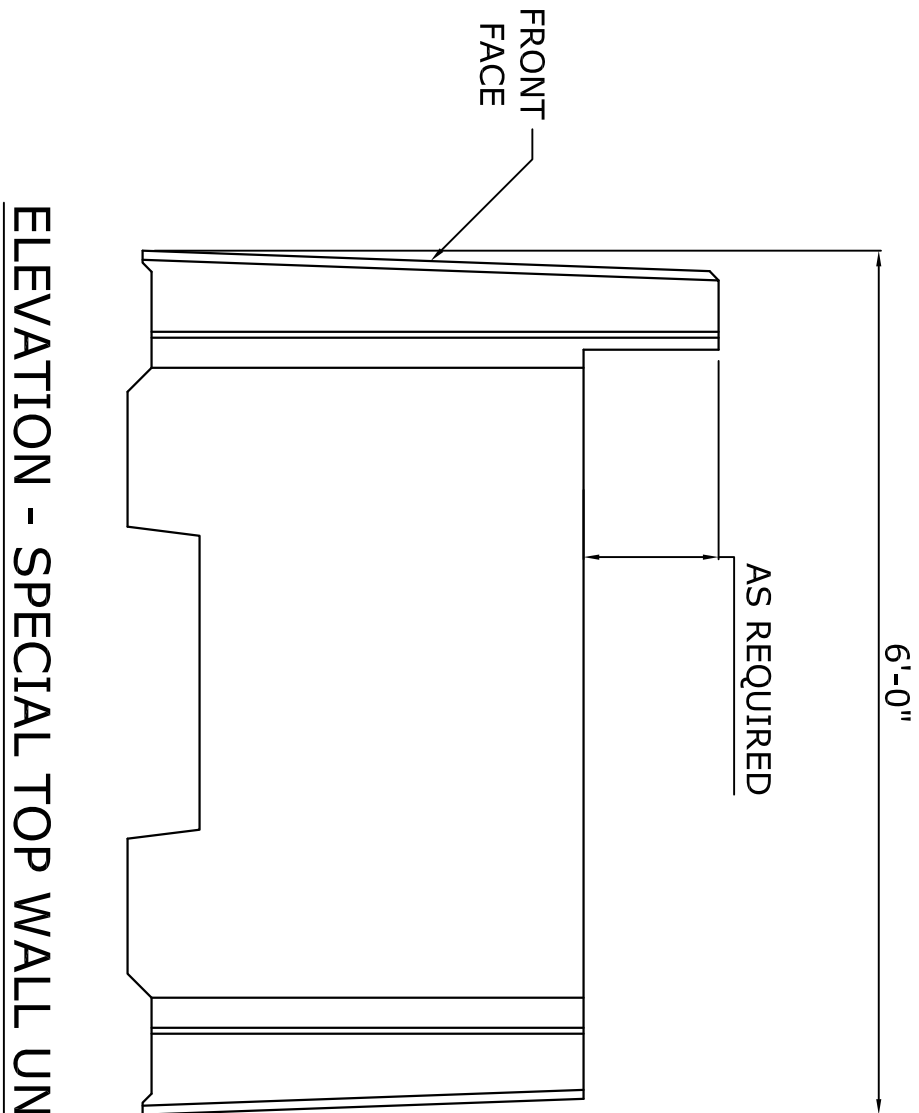
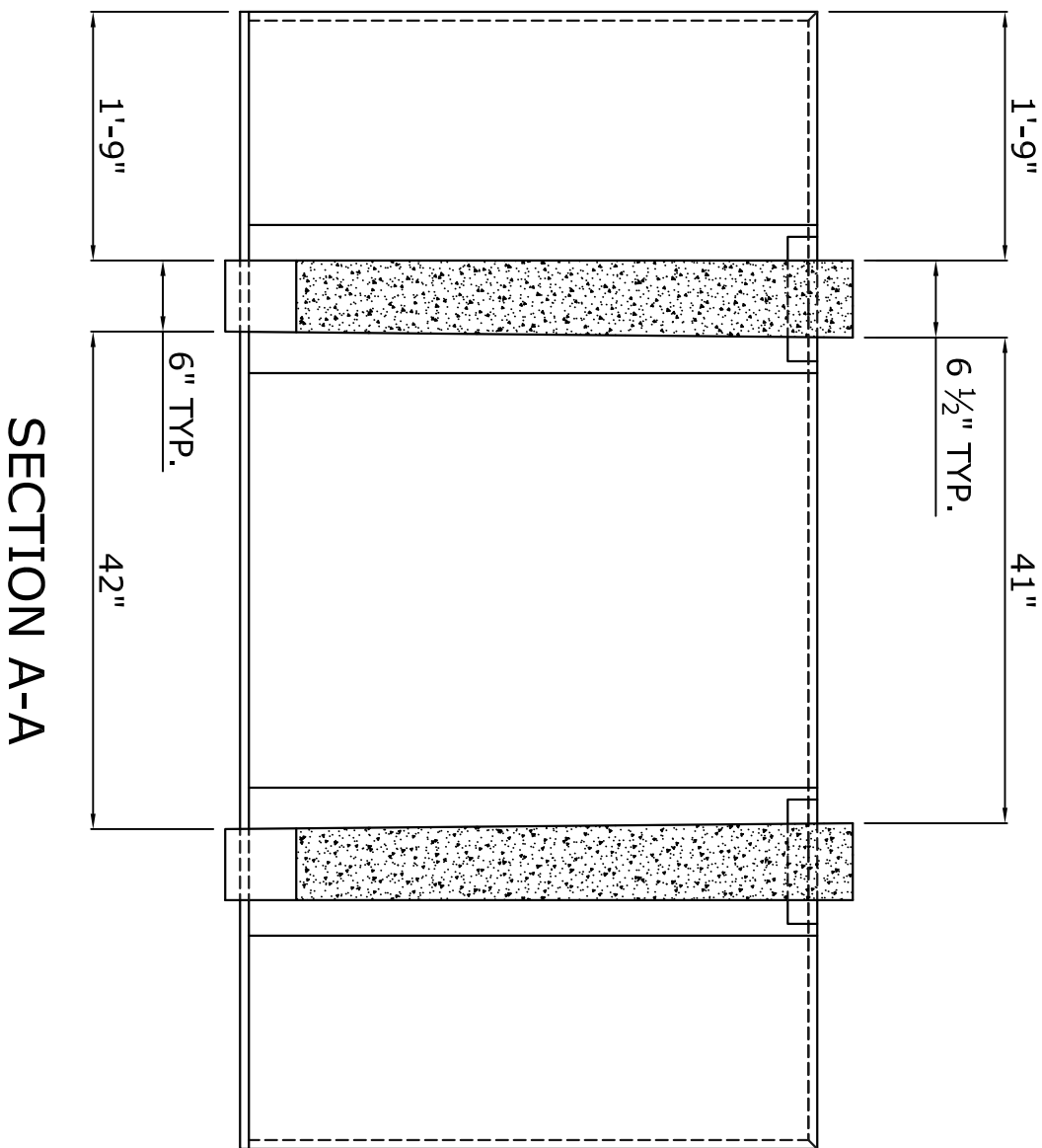
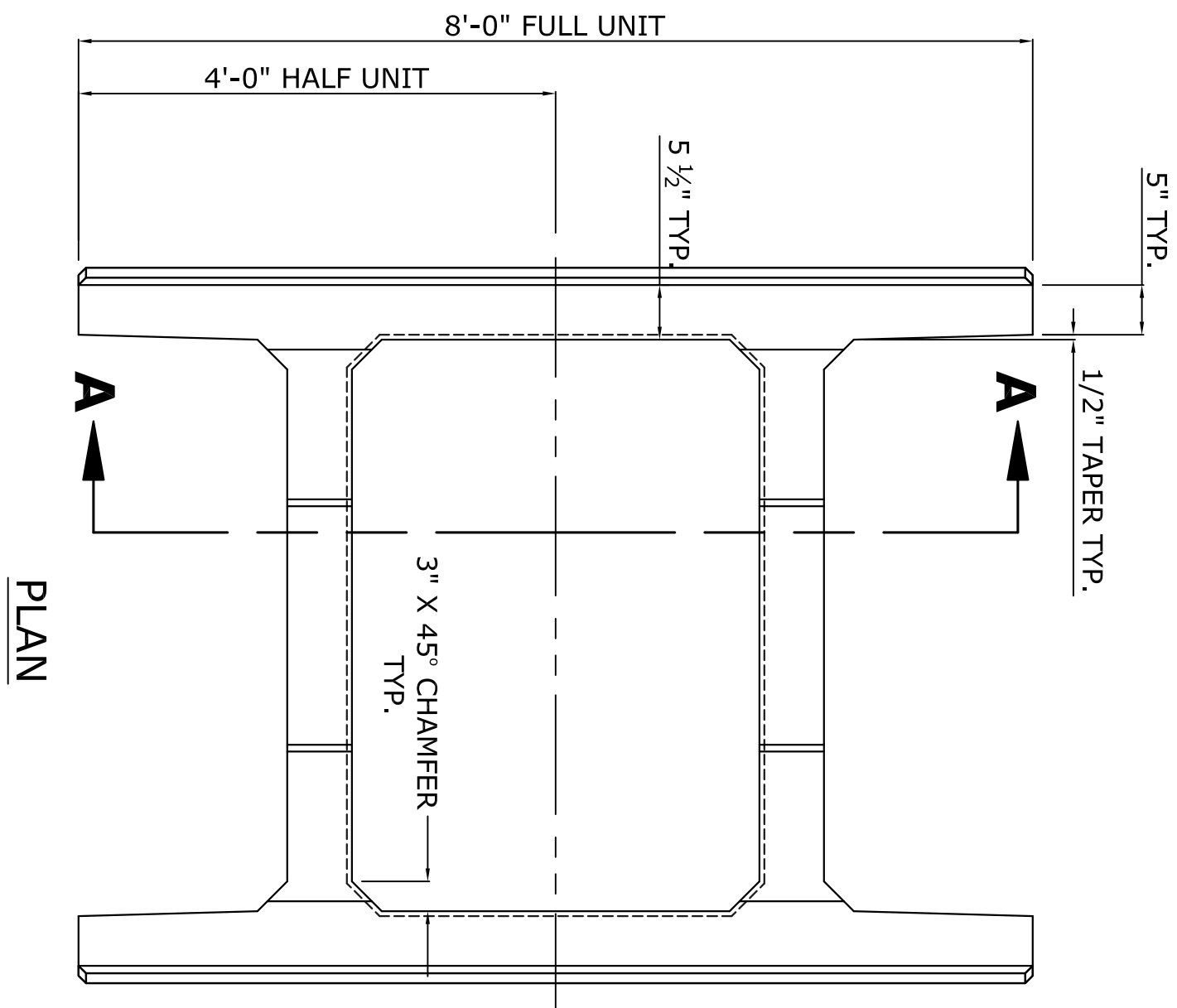


TYPICAL SECTION  
N.T.S.

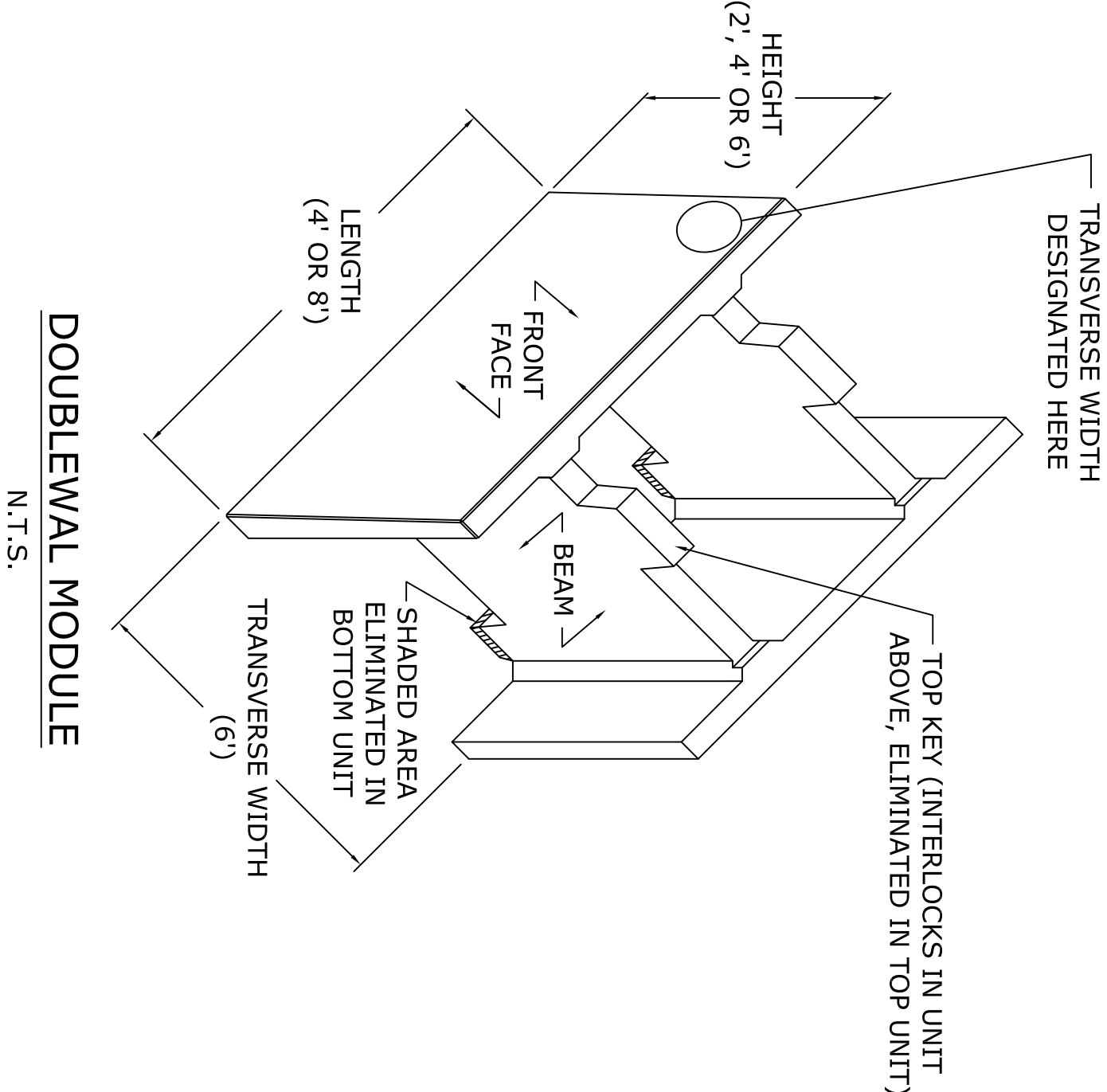
© COPYRIGHT 2017 CERTIFIED ONLY WITH RESPECT TO INTERNAL STABILITY OF THE DOUBLEWAL STRUCTURE BASED ON LOADS AND SOIL DATA INDICATED ON THE DRAWINGS SEE DESIGN CHECK NOTES SHEET 1 OF 3	DONALD VAN GERVE P.E. 2/5/17
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This drawing contains information proprietary to the Doublewall retaining wall system and is being furnished for the use of United Concrete Products, Inc. only in connection with this project and the information contained herein is not to be transmitted to any other organization unless specifically authorized in writing by Doublewall. The furnishing of this drawing does not constitute an expressed or implied license under U.S. Patent Numbers 4,196,161, 4,251,196, 4,351,507 and 4,372,091, Canadian Patent Numbers 1,084,246 and 1,104,296 or other Patents Pending.

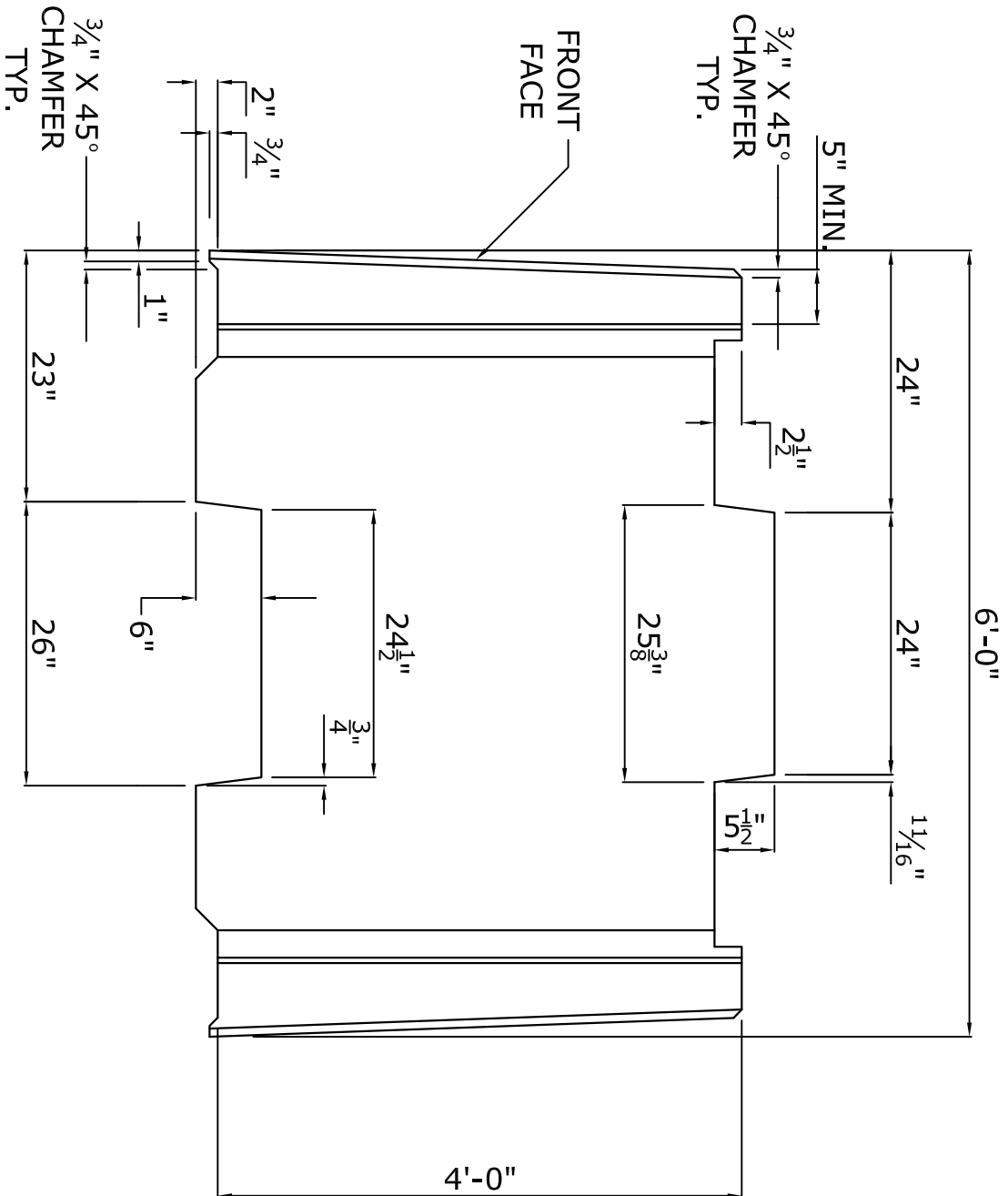
<b>UNITED</b> CONCRETE PRODUCTS, INC. 173 CHURCH STREET YALESVILLE, CT 06492 TEL: (203) 269-3119 FAX: (203) 265-4941 WWW.UNITEDCONCRETE.COM				<b>DOUBLEWAL</b> RETAINING WALL SYSTEM SITE IMPROVEMENTS EVERSOURCE ENERGY GREEN HILL 30R YARD EXPANSION MADISON, CONNECTICUT			
TITLE				PROPOSED DOUBLEWAL RETAINING WALL TYPICAL SECTION & DETAILS			
DATE	11-2-16	SCALE	AS SHOWN	TITIAN NO.			
DR. BY	MMB	JOB NO.		CONTRACTOR			
NO	DATE	BY	REVISION	CHK. BY	DCM	16061	SHEET 3 of 3



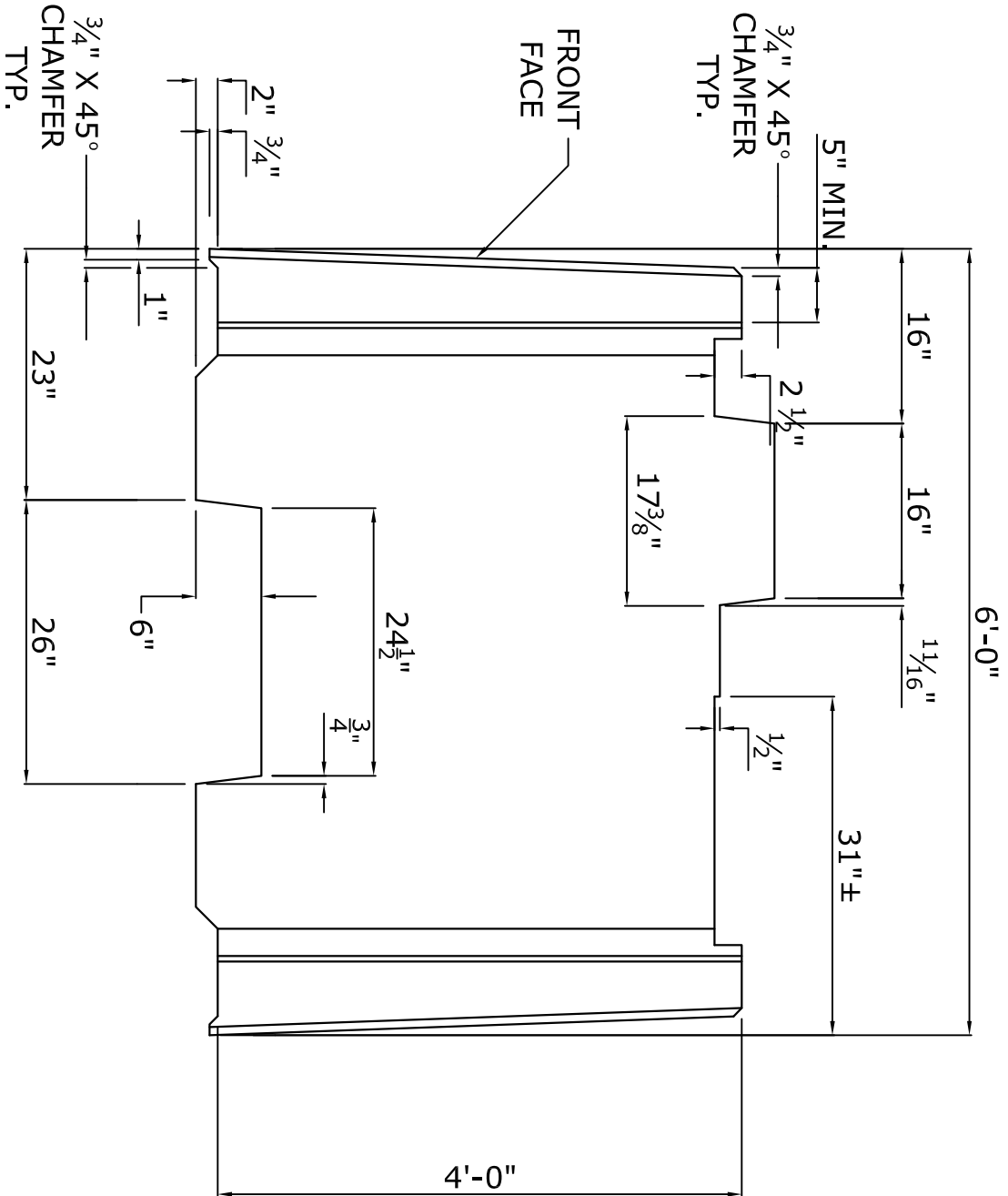
ELEVATION - SPECIAL TOP WALL UNIT



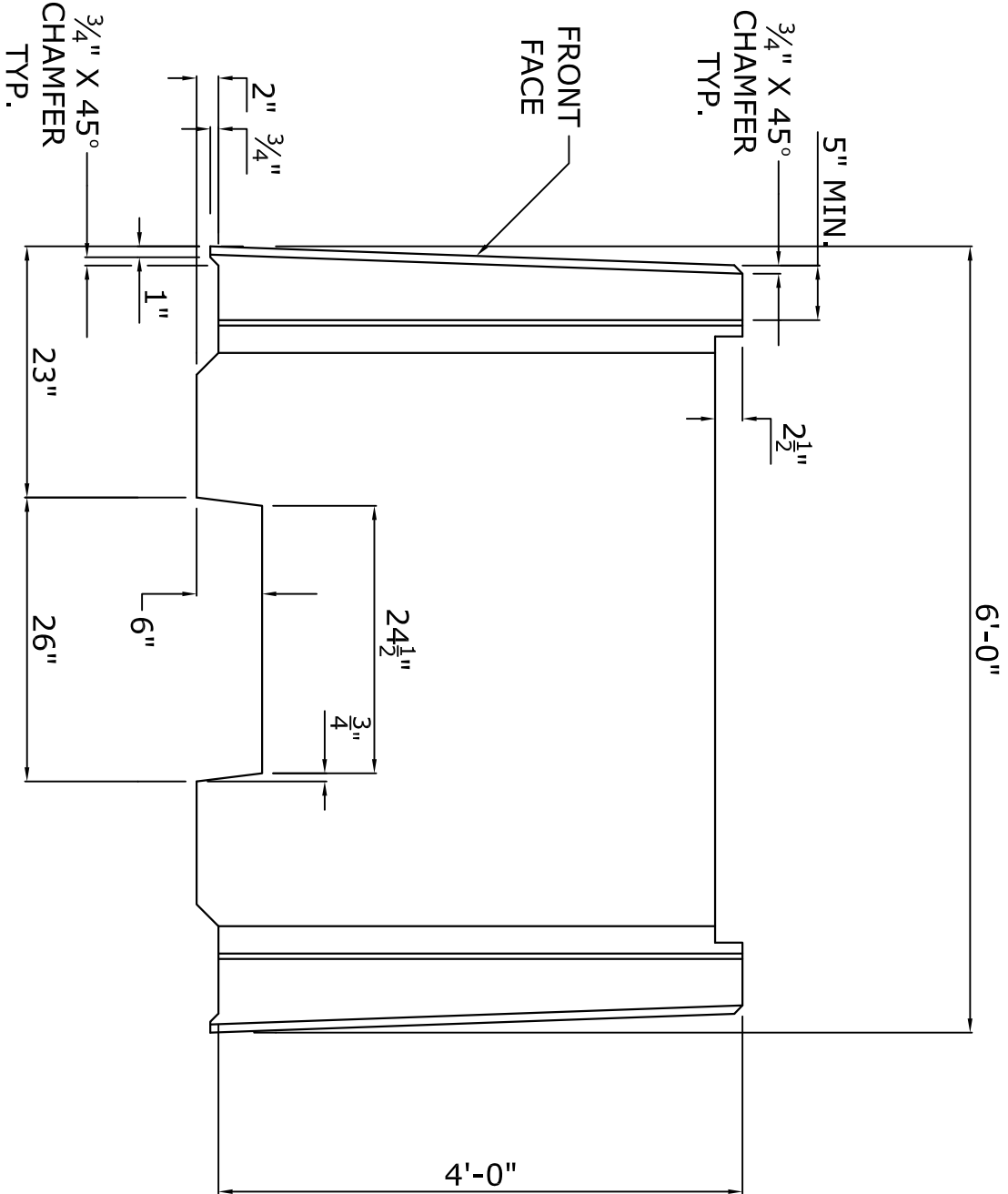
NOTE: 2 FOOT HIGH WALL UNITS ALSO AVAILABLE



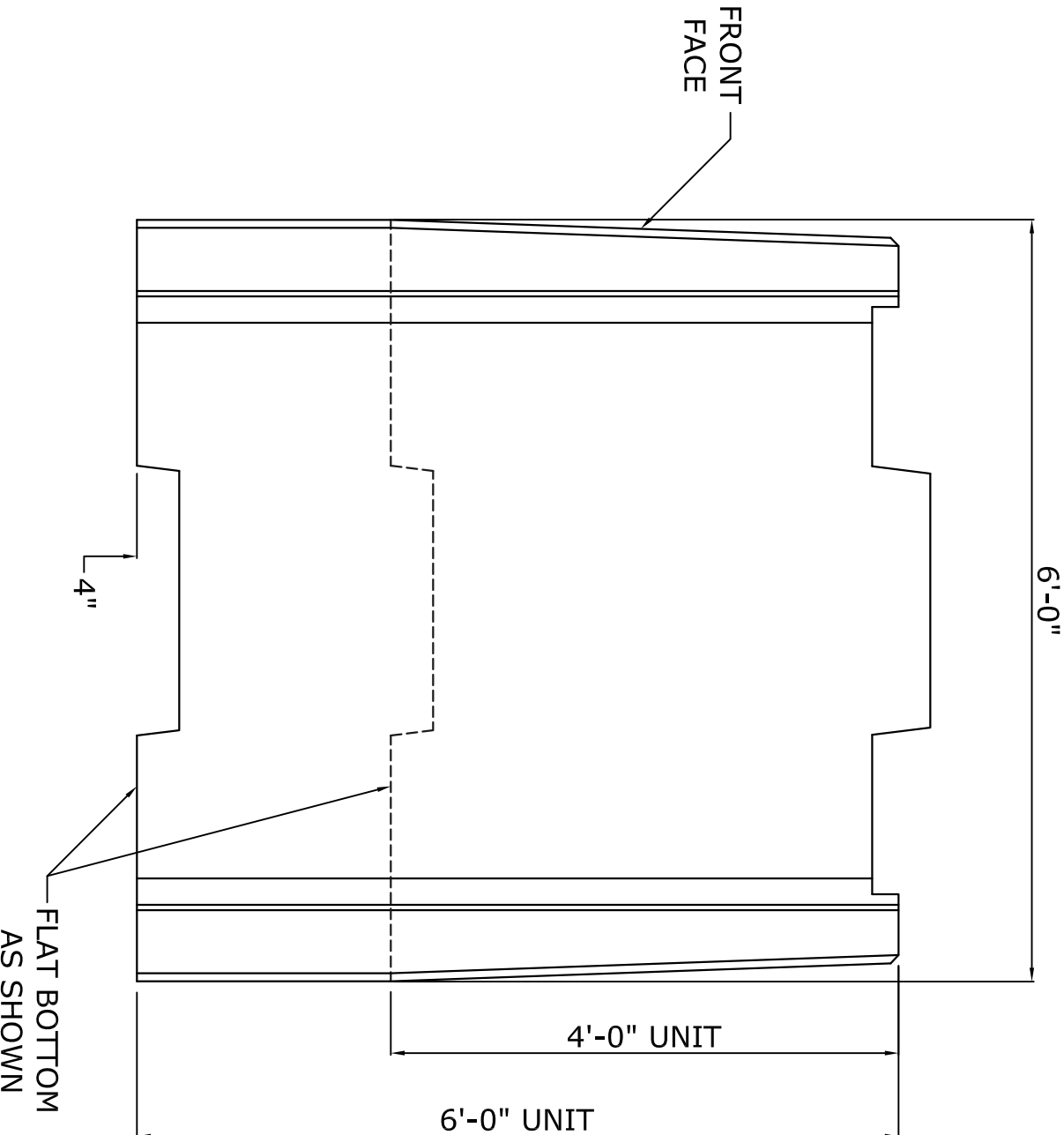
ELEVATION - STANDARD WALL UNIT



ELEVATION - TRANSITION WALL UNIT



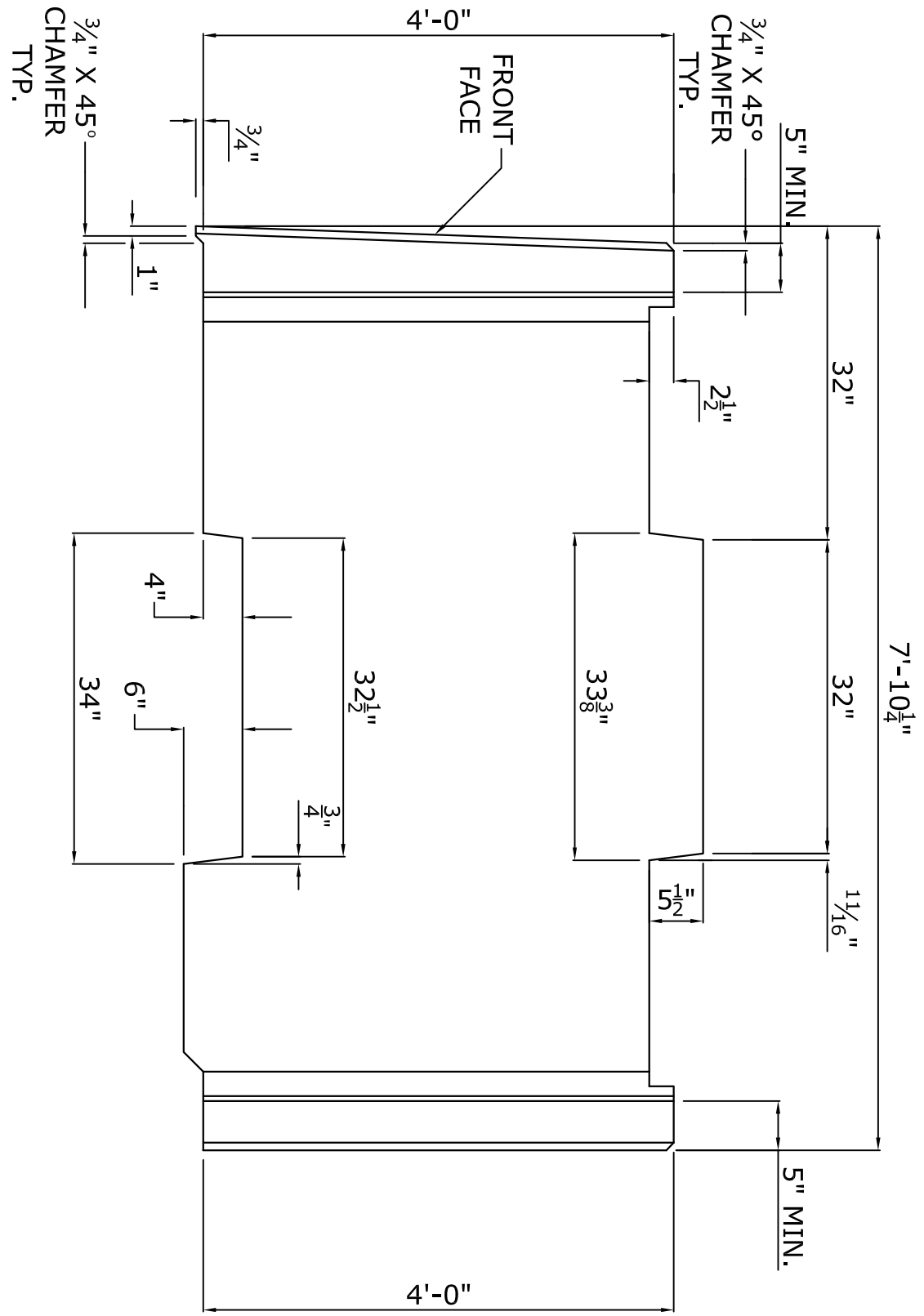
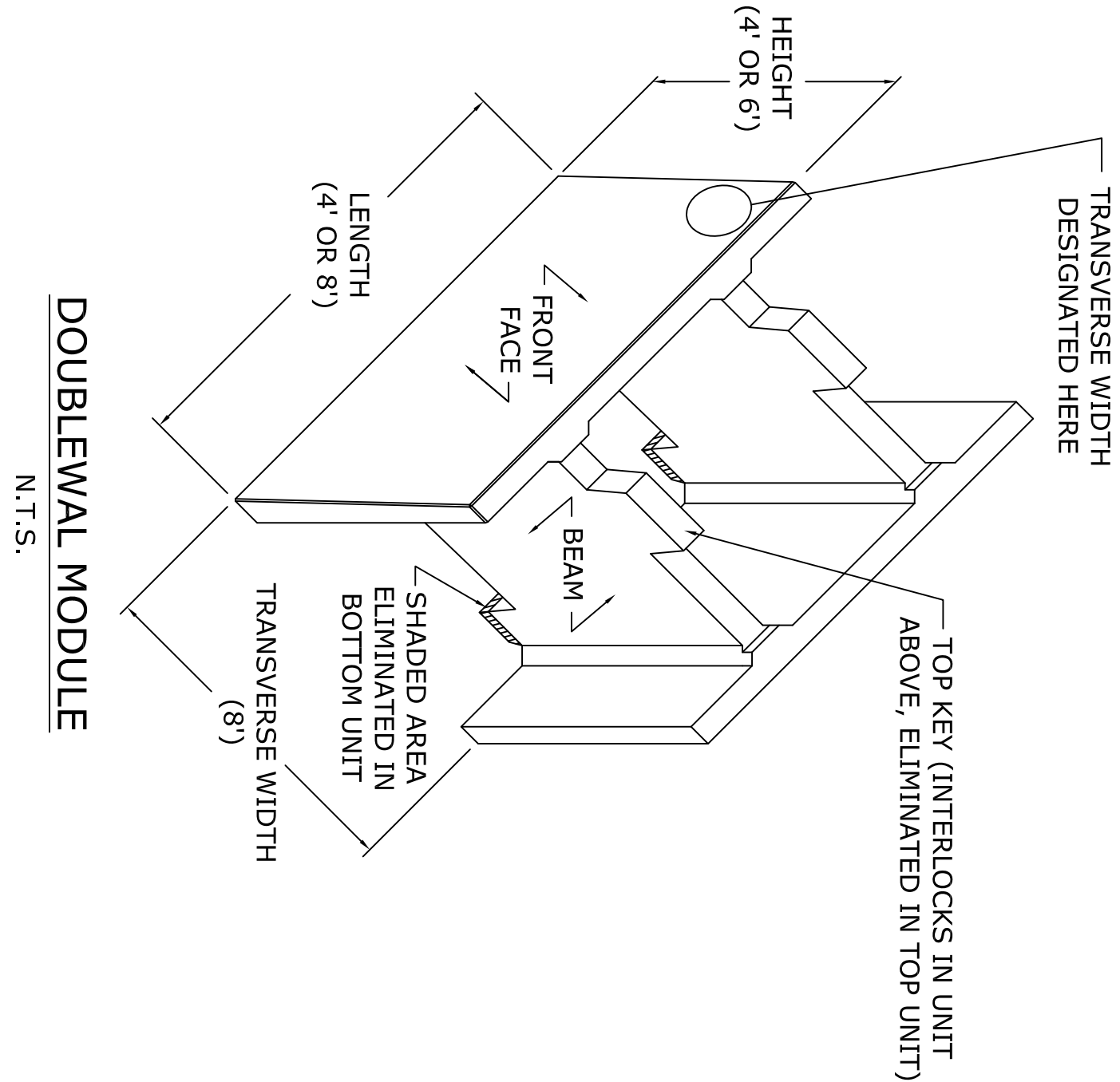
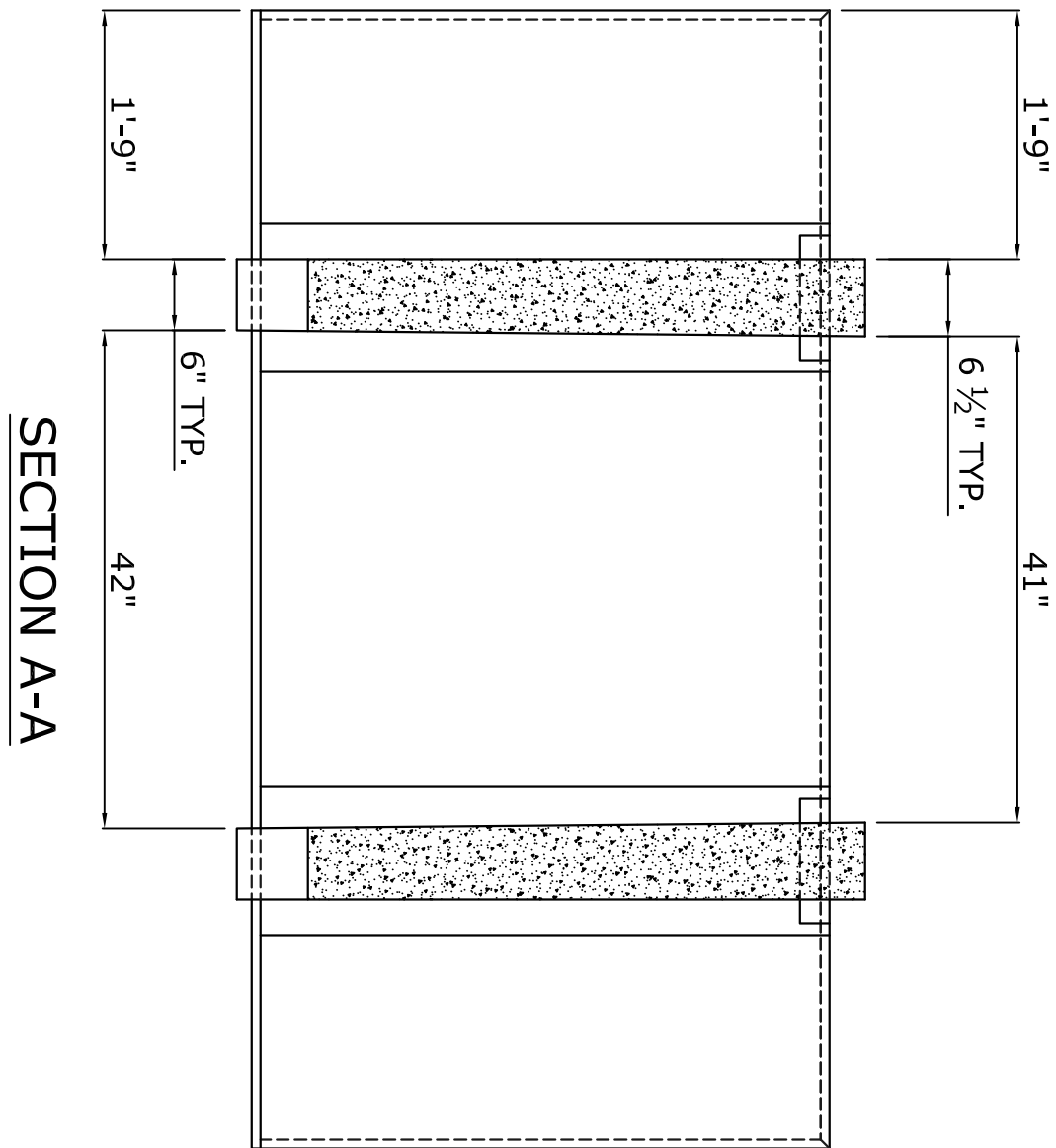
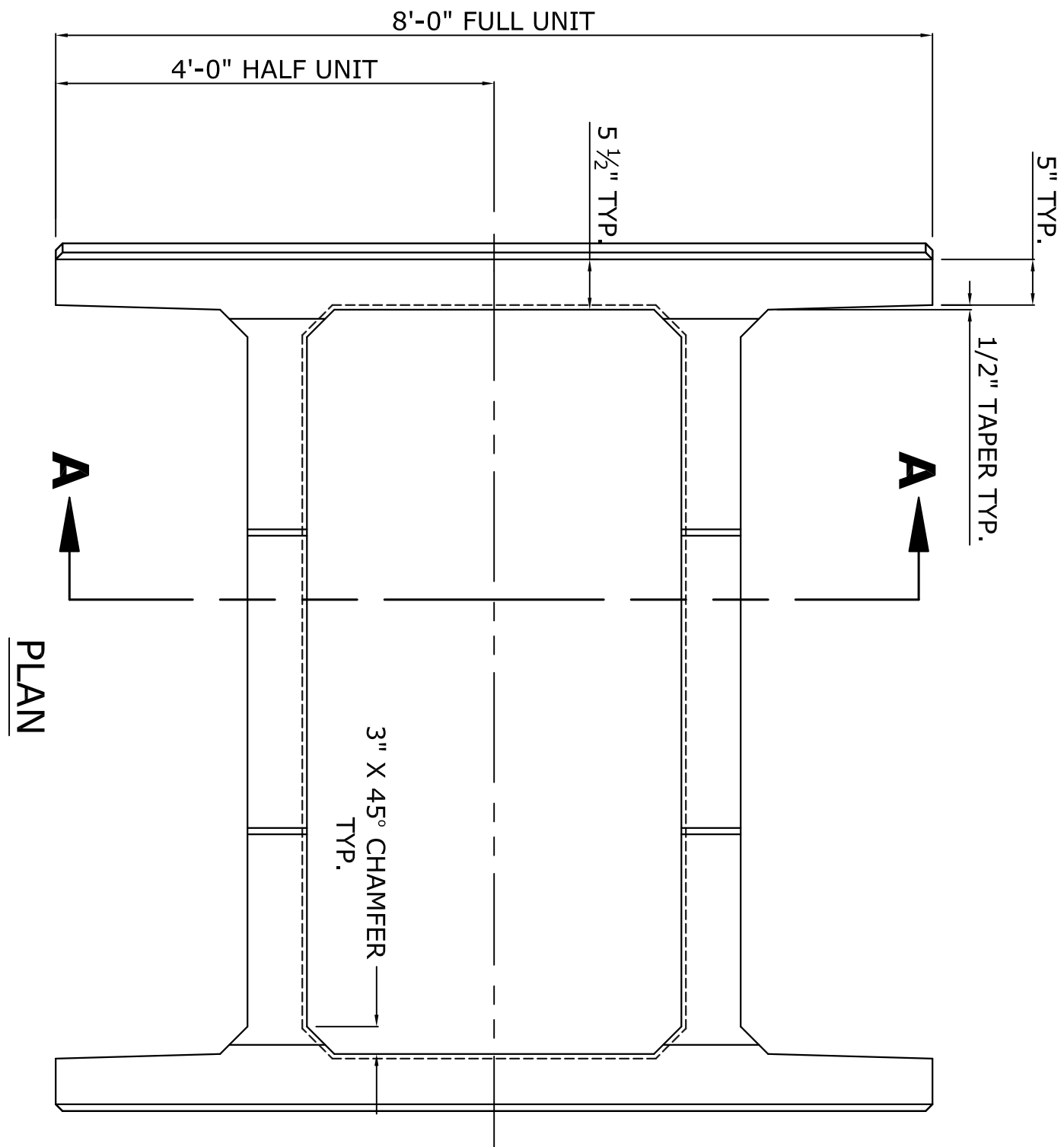
ELEVATION - TOP WALL UNIT



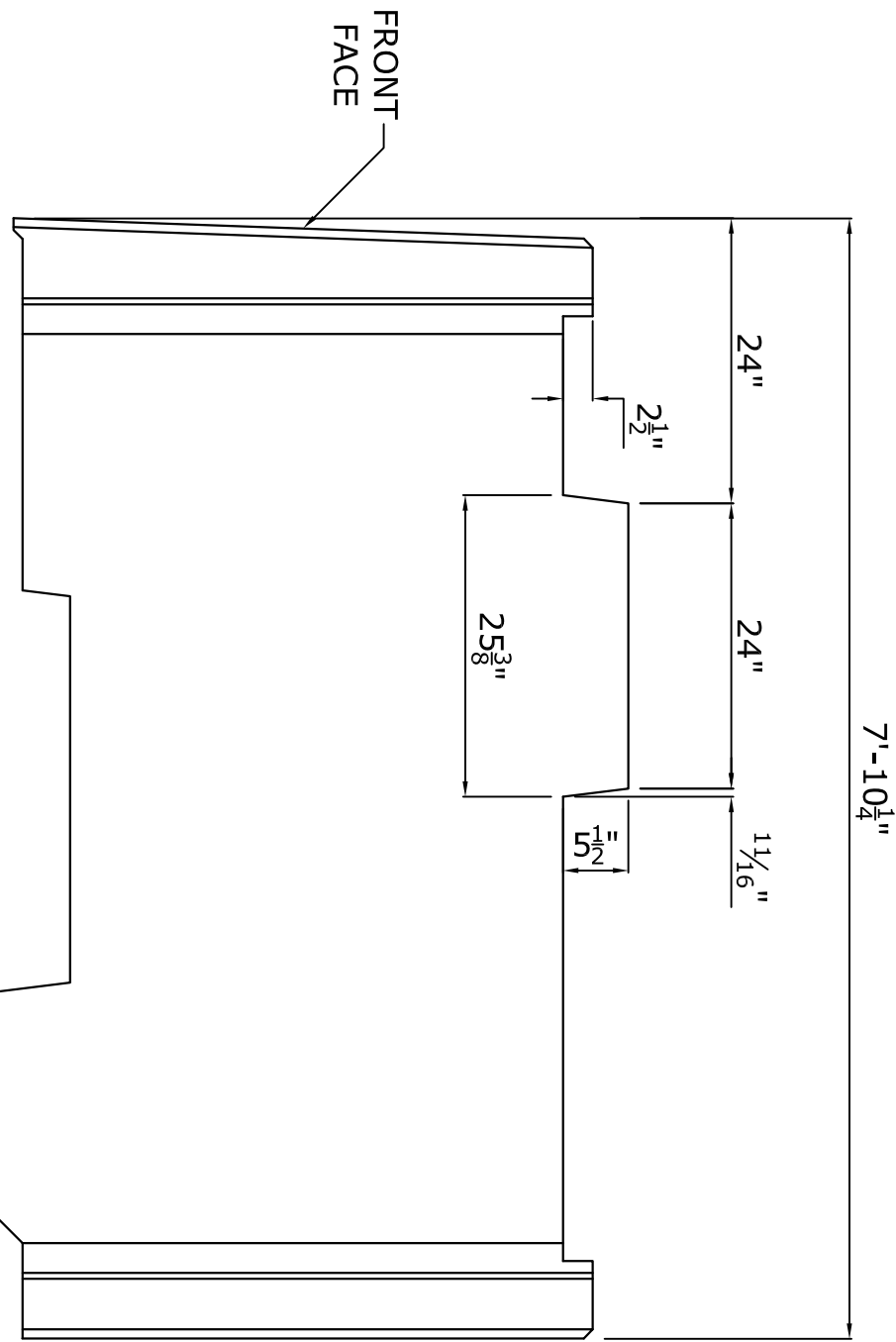
ELEVATION - BOTTOM WALL UNIT

This drawing contains information proprietary to the Doublewall retaining wall system and is being furnished for the use of United Concrete Products, Inc. only in connection with this project and the information contained herein is not to be transmitted to any other organization unless specifically authorized in writing by Doublewall. The furnishing of this drawing does not constitute an expressed or implied license under U.S. Patent Numbers 4,196,161, 4,251,196, 4,351,507 and 4,372,091, Canadian Patent Numbers 1,084,246 and 1,104,798 or other Patents Pending.

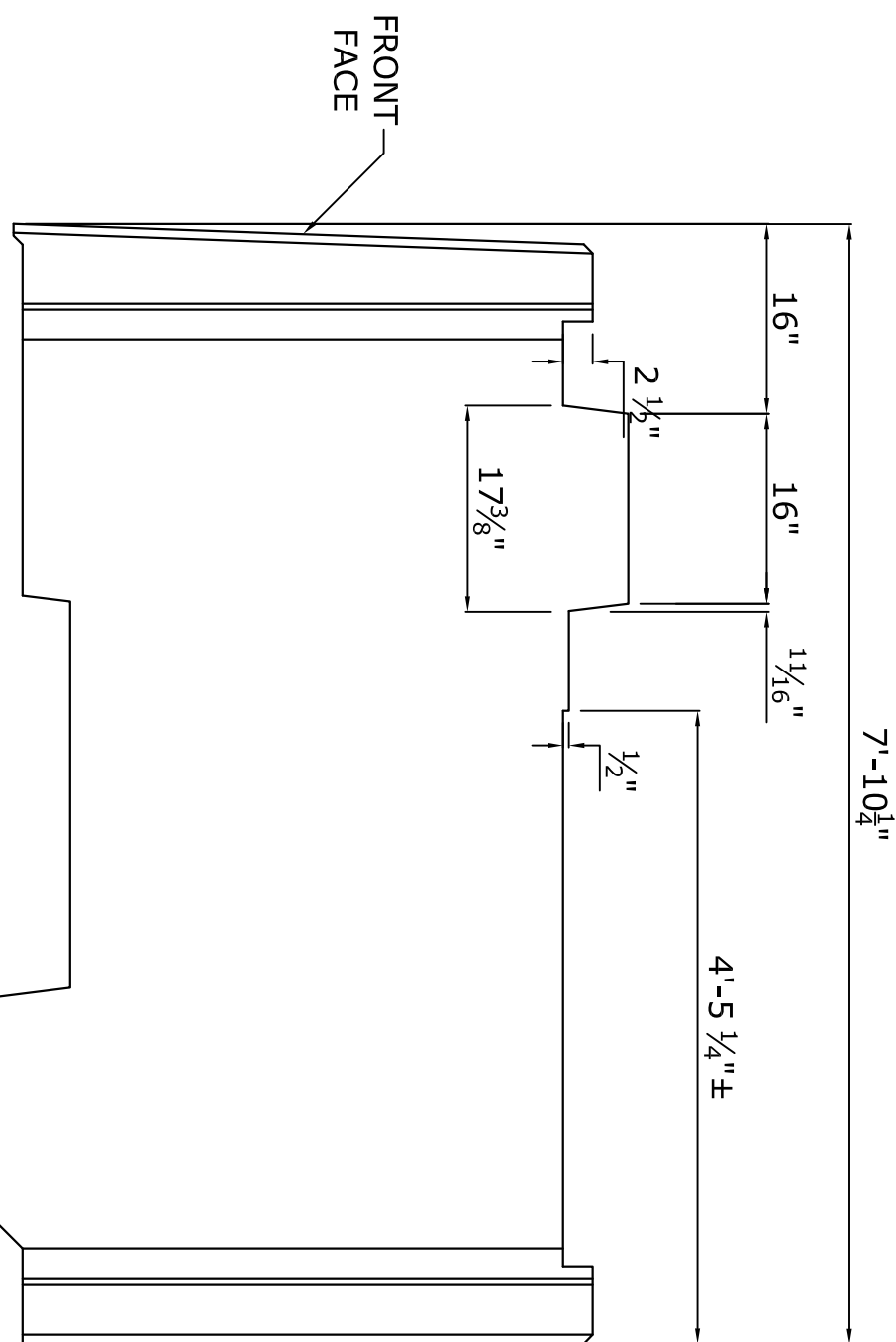
UNITED CONCRETE PRODUCTS, INC.				DOUBLEWALL RETAINING WALL SYSTEM			
PROJECT				SITE IMPROVEMENTS			
173 CHURCH STREET				EVERSOURCE ENERGY			
YALESVILLE, CT 06492				GREEN HILL 30R YARD EXPANSION			
TEL: (203) 269-3119				MADISON, CONNECTICUT			
FAX: (203) 265-4941							
WWW.UNITEDCONCRETE.COM							
TITLE				DIMENSIONAL PROPERTIES			
				6 FOOT WIDE			
				DOUBLEWAL MODULES			
DATE				SCALE			
1-31-17				3/4" = 1'-0"			
DR. BY				JOB NO.			
MMB							
NO. DATE				BY			
				REVISION			



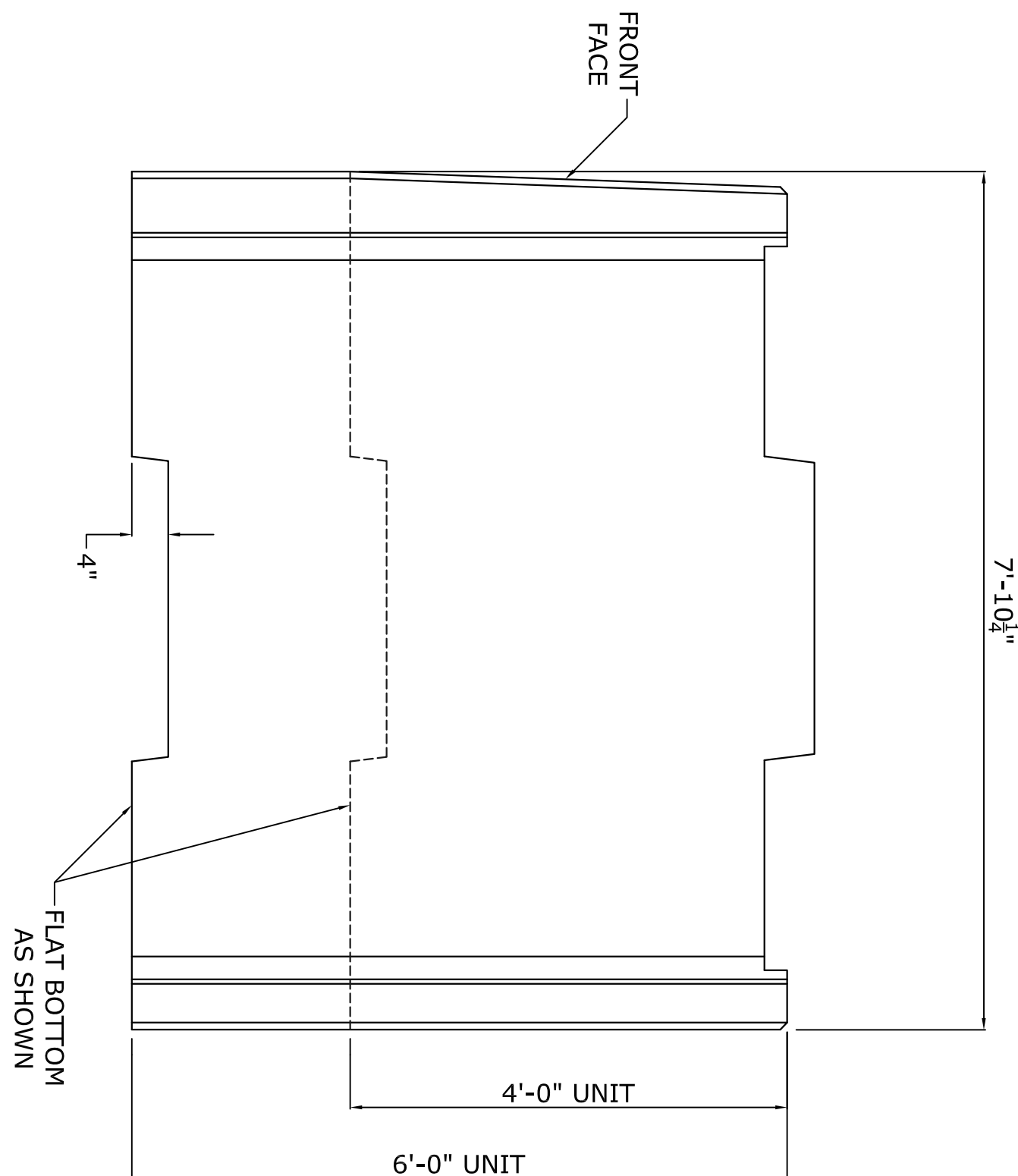
ELEVATION - STANDARD WALL UNIT



ELEVATION - TRANSITION WALL UNIT



ELEVATION - DOUBLE TRANSITION WALL UNIT

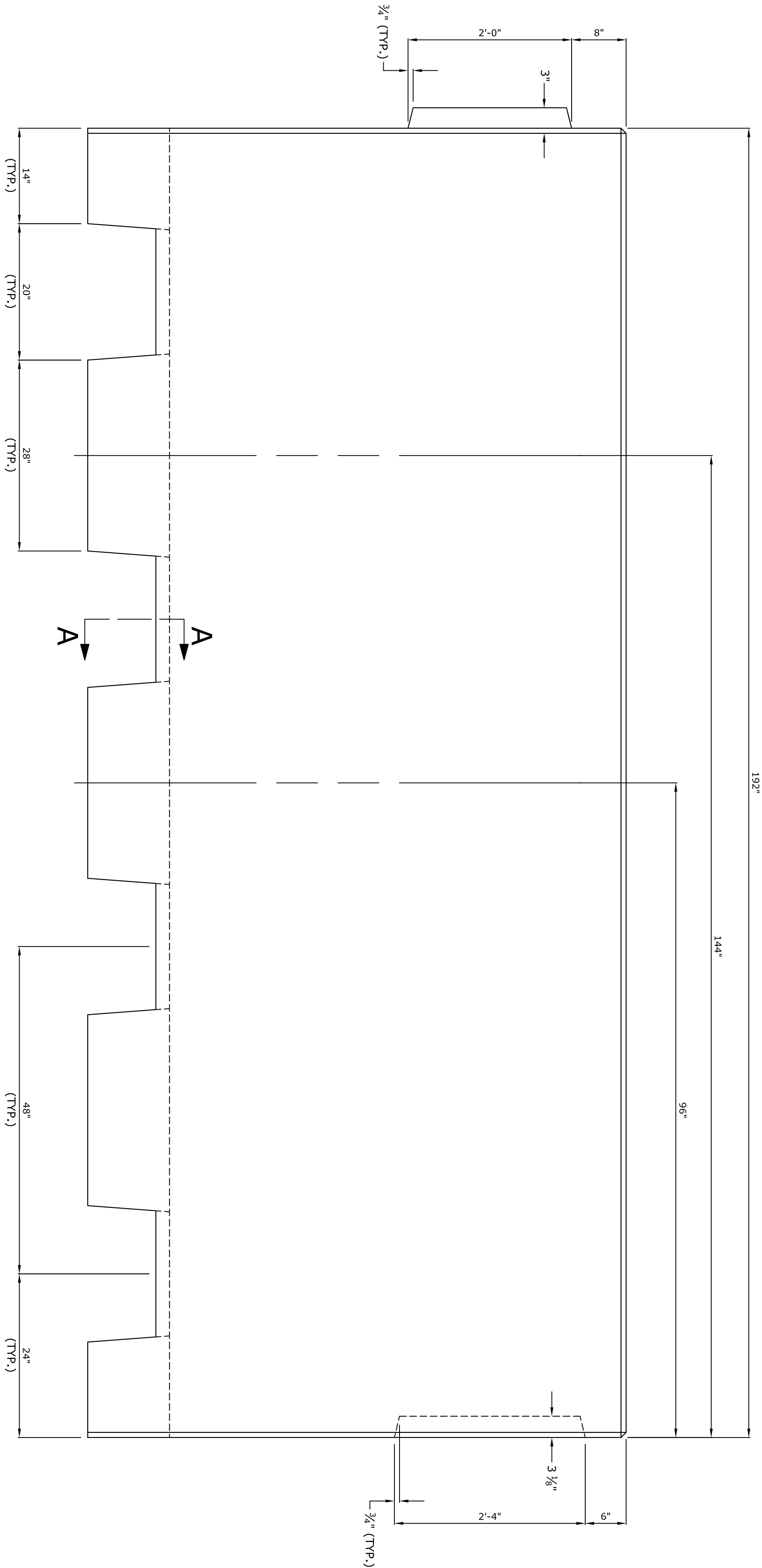


ELEVATION - BOTTOM WALL UNIT

This drawing contains information proprietary to the Doublewall retaining wall system and is being furnished for the use of United Concrete Products, Inc. only in connection with this project and the information contained herein is not to be transmitted to any other organization unless specifically authorized in writing by Doublewall. The furnishing of this drawing does not constitute an expressed or implied license under U.S. Patent Numbers 4,196,161, 4,251,196, 4,351,507 and 4,372,091, Canadian Patent Numbers 1,084,246 and 1,104,798 or other Patents Pending.

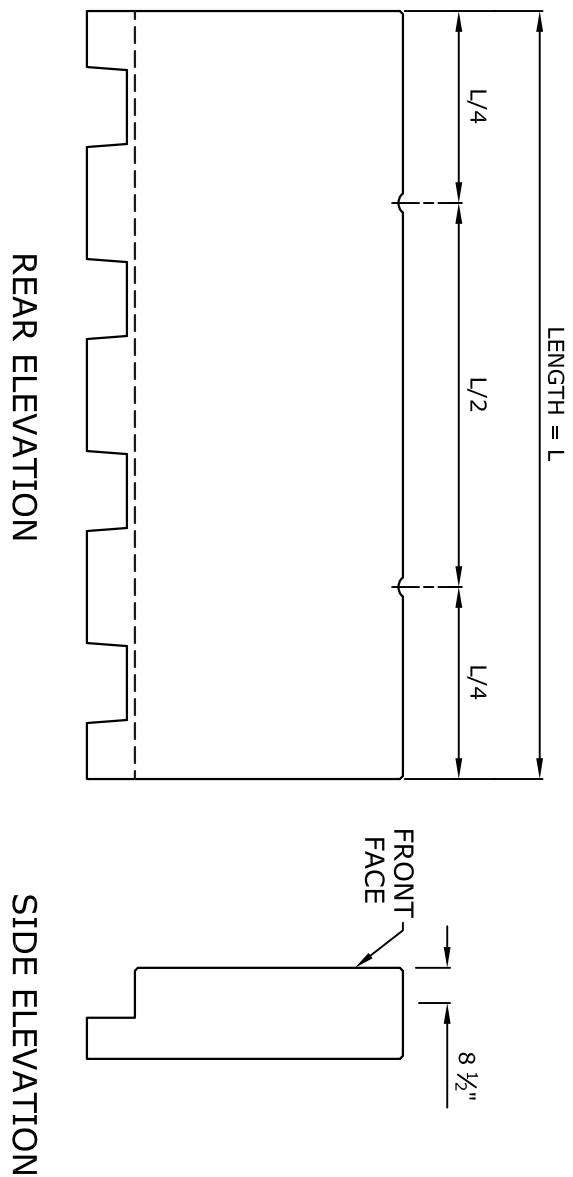
<b>UNITED</b> CONCRETE PRODUCTS, INC.				<b>DOUBLEWALL</b> RETAINING WALL SYSTEM			
173 CHURCH STREET VALESVILLE, CT 06492 TEL: (203) 269-3119 FAX: (203) 265-4941 WWW.UNITEDCONCRETE.COM				PROJECT SITE IMPROVEMENTS EVERSOURCE ENERGY GREEN HILL 30R YARD EXPANSION MADISON, CONNECTICUT			
TITLE DIMENSIONAL PROPERTIES 8 FOOT WIDE DOUBLEWALL MODULES				TITAN NO.			
DATE 1-31-17		SCALE 3/4" = 1'-0"		CONTRACTOR		SHEET	
DR. BY MMB		JOB NO. 14066		D2 of 3			
DCM							
NO. DATE BY		REVISION					

THE INFORMATION CONTAINED ON THIS DRAWING IS CONFIDENTIAL AND SHALL NOT BE TRANSMITTED, REPRODUCED, OR DISCLOSED TO ANY PERSONS OR ORGANIZATIONS. DETAILS AND DIMENSIONS PROPRIETARY TO THE DOUBLEVAL RETAINING WALL SYSTEM MAY BE REVISED WITHOUT NOTICE BY UNITED CONCRETE PRODUCTS, INC. PRIOR TO FABRICATION.



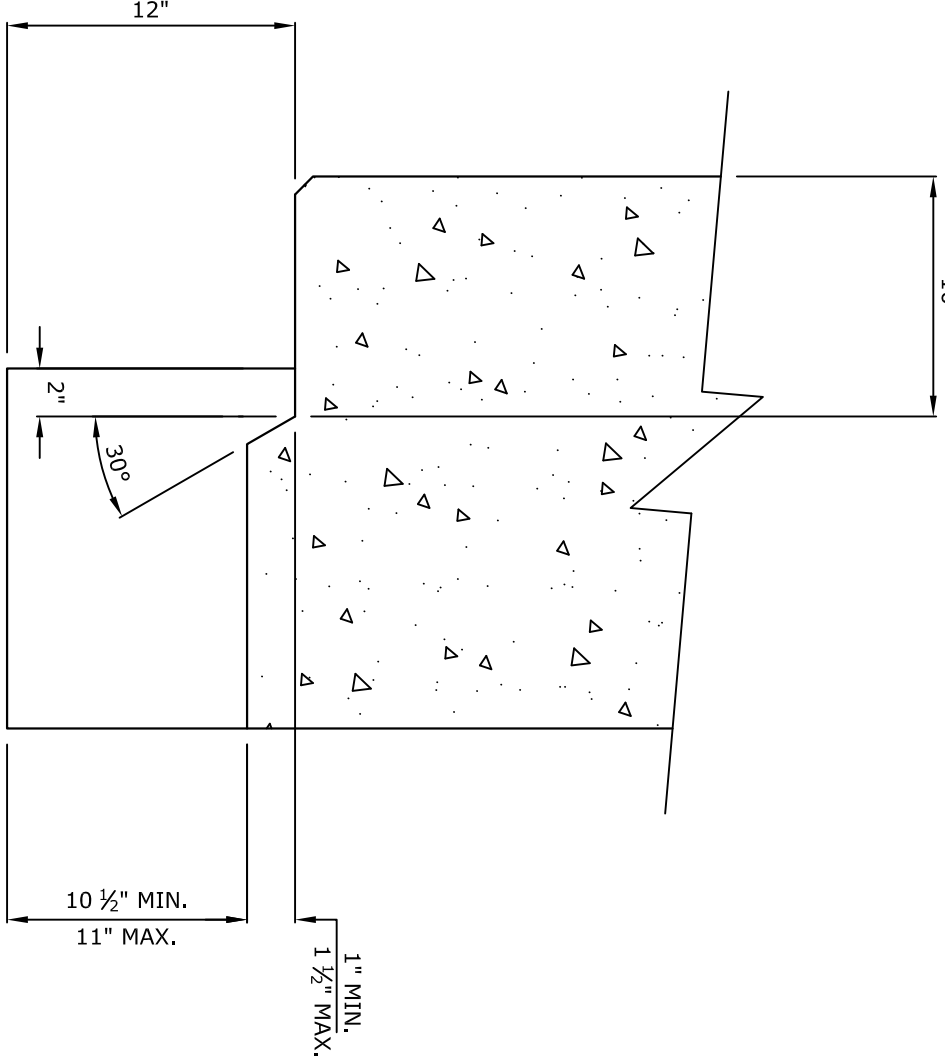
### REAR ELEVATION

SCALE: 1"=1'-0"



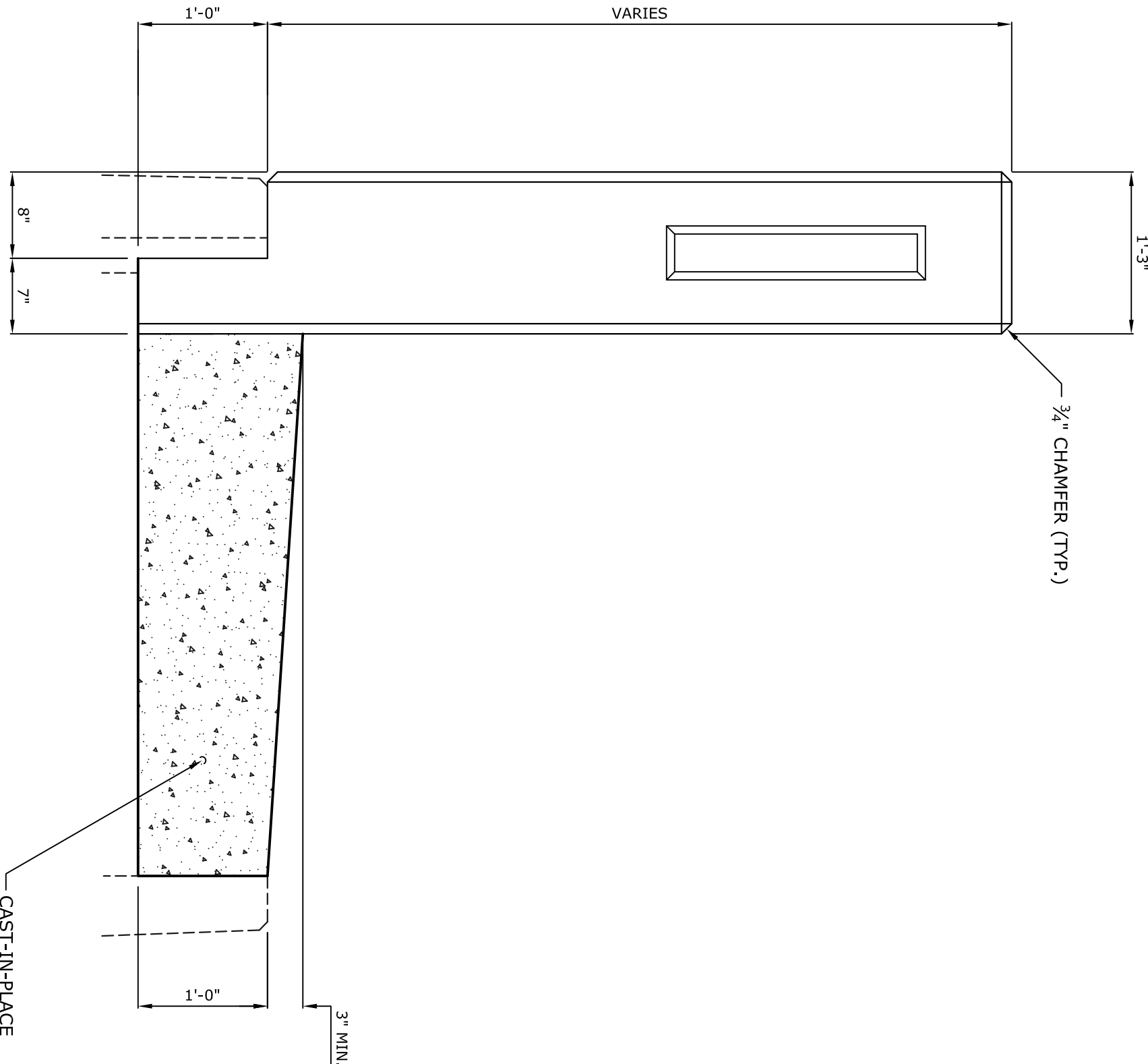
### LIFTING INSERT LOCATION

N.T.S.



### SECTION A-A

N.T.S.



### SIDE ELEVATION

SCALE: 1"=1'-0"

<b>UNITED</b> CONCRETE PRODUCTS, INC.				<b>DOUBLEVAL</b> RETAINING WALL SYSTEM			
173 CHURCH STREET VALESVILLE, CT 06492 TEL: (203) 269-3119 FAX: (203) 265-4941 WWW.UNITEDCONCRETE.COM				PROJECT SITE IMPROVEMENTS EVERSOURCE ENERGY GREEN HILL 30R YARD EXPANSION MADISON, CONNECTICUT			
TITLE				PRECAST TRAFFIC BARRIER TYPE II-C DIMENSIONAL PROPERTIES			
				DATE	1-31-17	SCALE	AS SHOWN
				DR. BY	MMB	JOB NO.	
				CHK. BY	DCM		
NO.	DATE	BY	REVISION	TITAN NO.			
				CONTRACTOR			
				SHEET			
				D3 of 3			

The drawing contains information proprietary to Doubleval Corporation and is being furnished for the use of Atlantic Pipe Corporation only in connection with this project and the information contained herein is not to be transmitted to any other organization unless specifically authorized in writing by Atlantic Pipe Corporation. Patent Numbers 4,496,161, 4,351,156, 4,351,507 and 4,372,091, Canadian Patent Number 1,084,246 and 1,104,798 or other Patents Pending.



<u>MARK</u>	<u>SIZE</u>
-------------	-------------

312 #3

441 #4

541 #4

542 #5

619 #6

A diagram of a rectangular box. The top edge is labeled "8\"", the front-left vertical edge is labeled "5\"", and the front-right vertical edge is labeled "5\"".

A diagram of a rectangular box. The top horizontal edge is labeled "8\"". The front vertical edge is labeled "5\"". The right vertical edge is labeled "5\"".

$$10 \times 10 = 100$$

10  
10

## REBAR SCHEDULE

SIZE	MARK	LENGTH	NUMBER REQUIRED	
			TOP	TOP/ BOTTOM
#3	STRAIGHT	1-3"	6	6
#4	STRAIGHT	7-6"	2	2
#4	STRAIGHT	5-5"	2	-
#4	441	6-7"	2	-
#5	STRAIGHT	6-5"	2	-
#5	541	6-6 $\frac{1}{2}$ "	-	2
#5	542	6-10 $\frac{1}{2}$ "	2	-
#6	312	2-5"	4	-
#6	619	6-10"	2	2
#6	STRAIGHT	7-6"	2	-

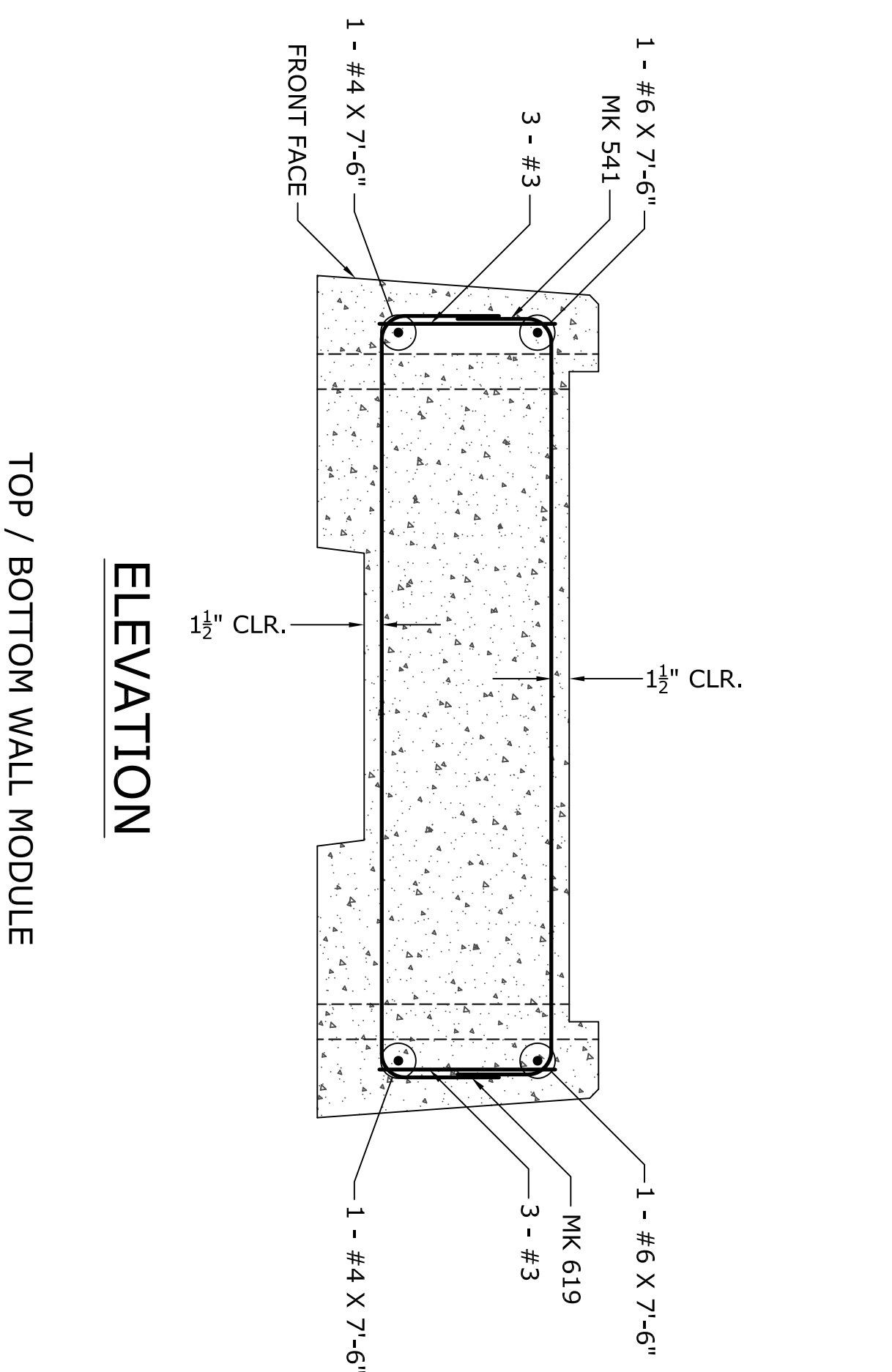
## GENERAL NOTES

CONCRETE:  $f'_c = 5000$  PSI (MIN.)

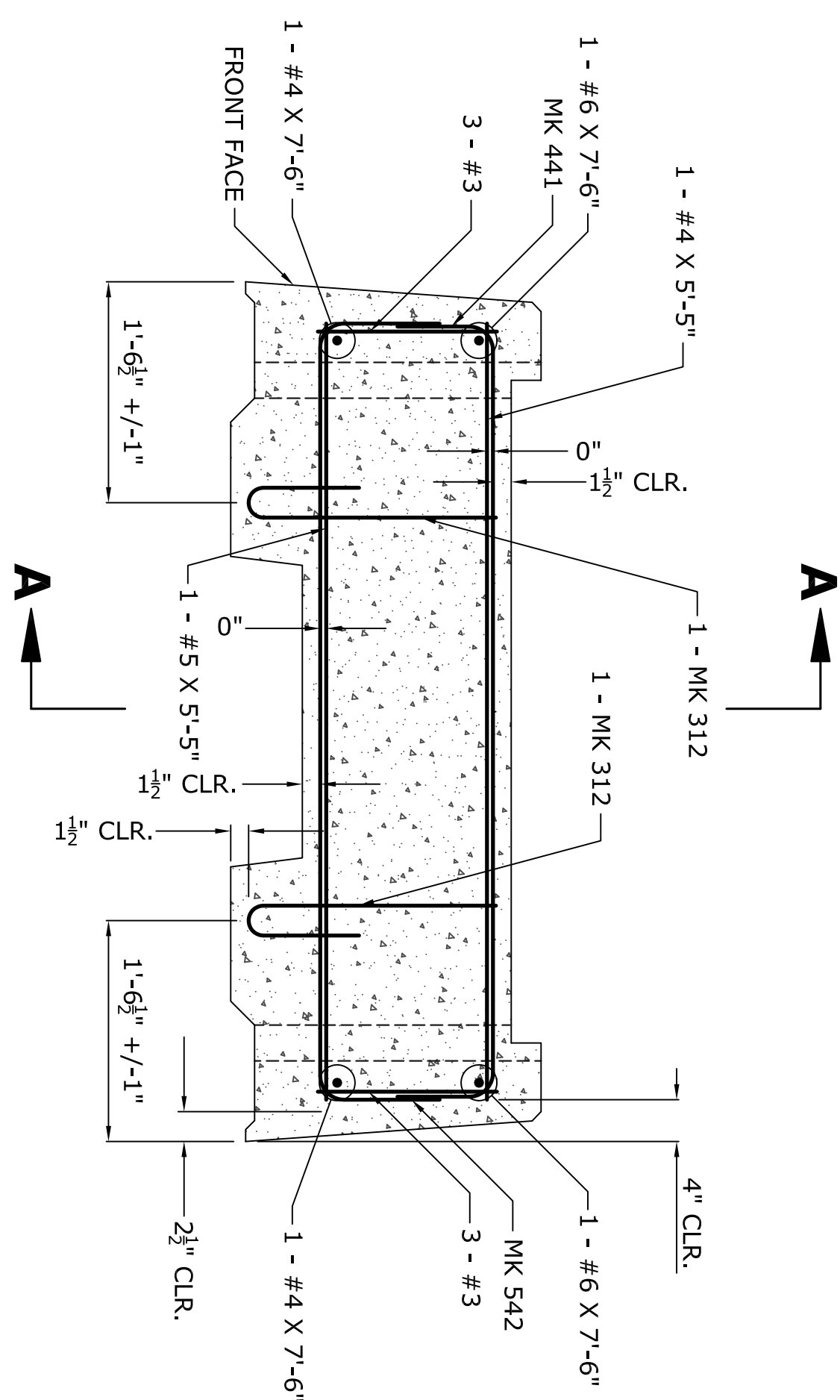
REINFORCING: #3 BARS - ASTM A-615, GRADE 60.

**CONNECTIONS: BARS TO BE TACK-WELDED FOR ASSEMBLY AND HANDLING PURPOSES ONLY.**

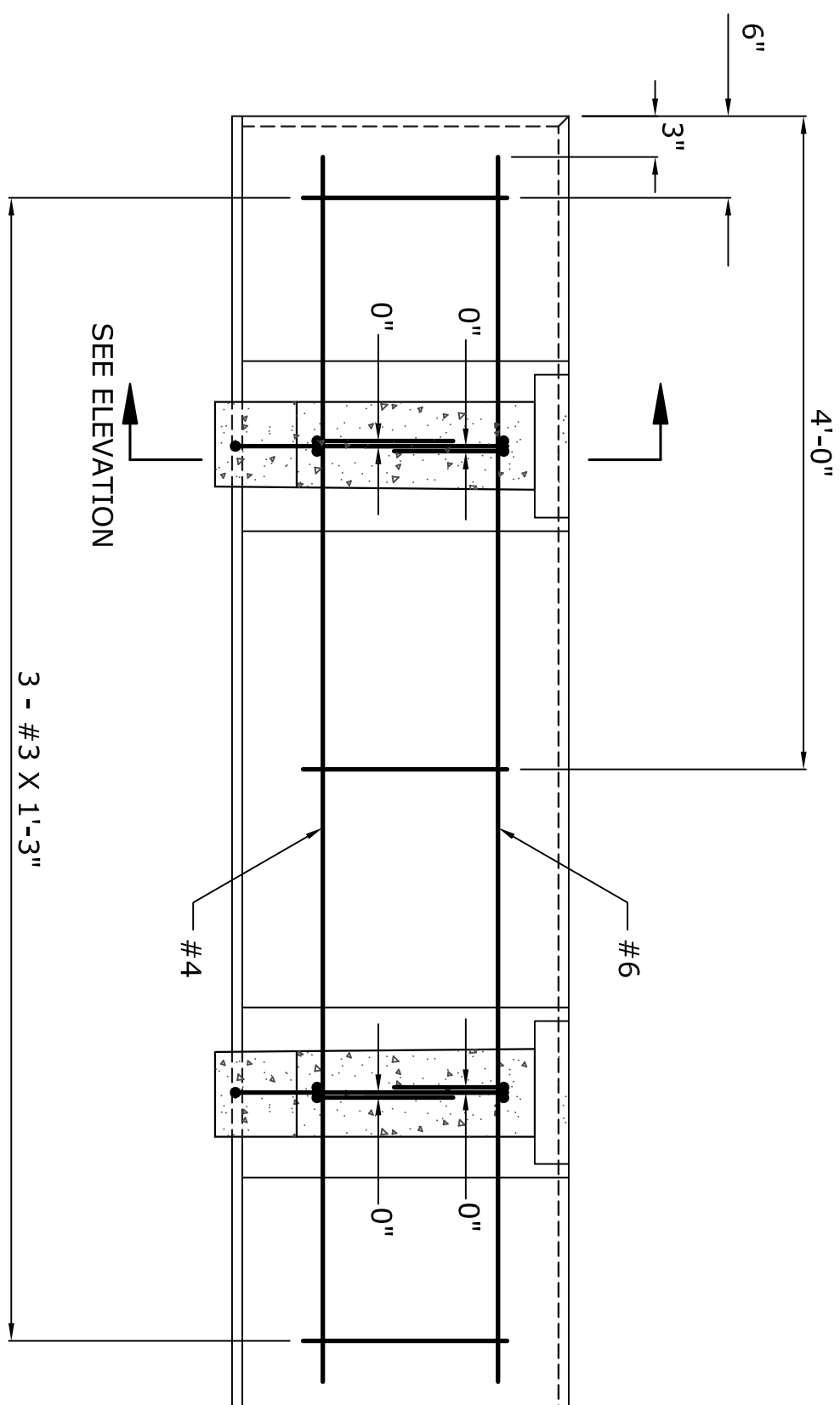
**DESIGN:** AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1996, WITH SUBSEQUENT INTERIM SPECIFICATIONS.



TOP / BOTTOM WALL MODULE



## TOP WALL MODULE



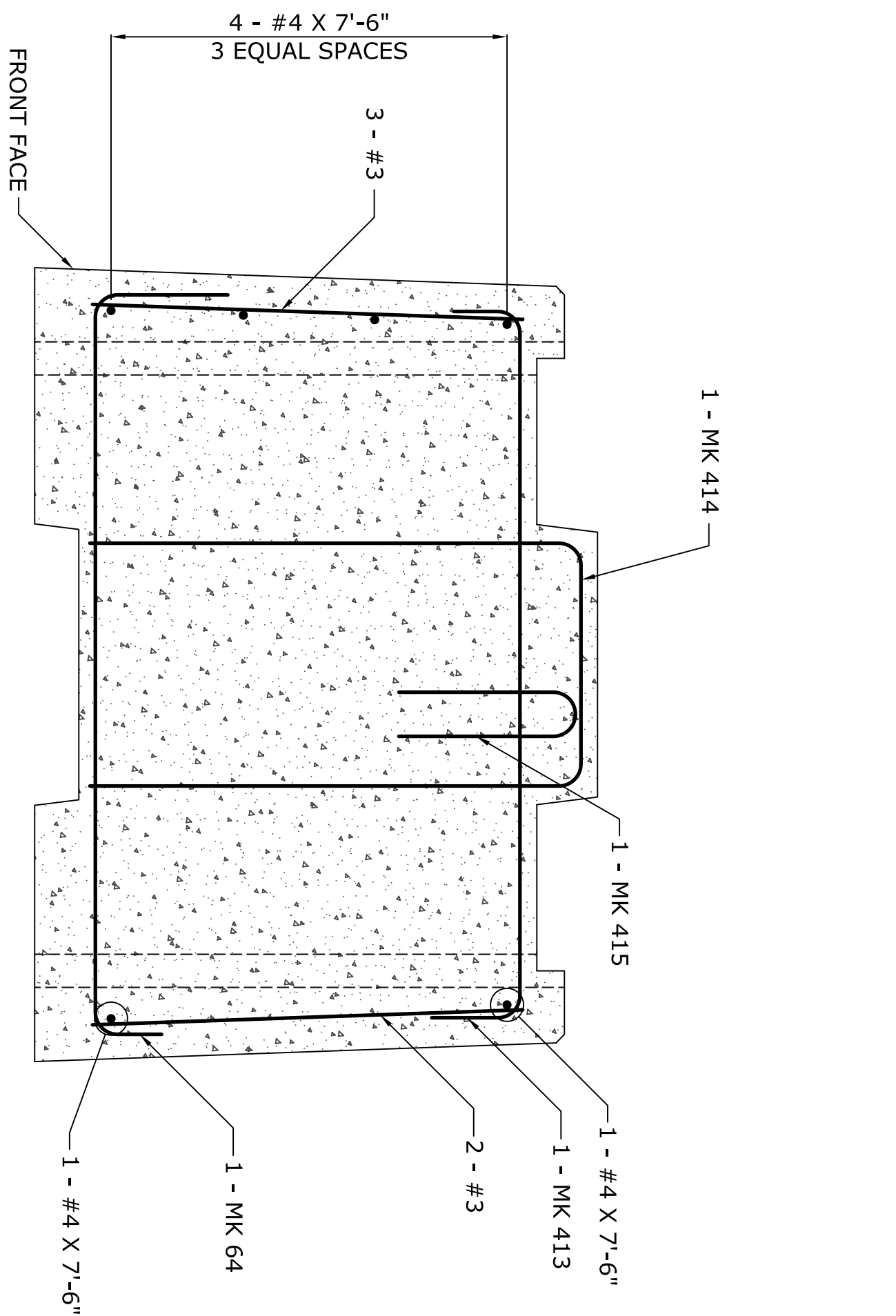
## SECTION A-A

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PRIOR TO FABRICATION

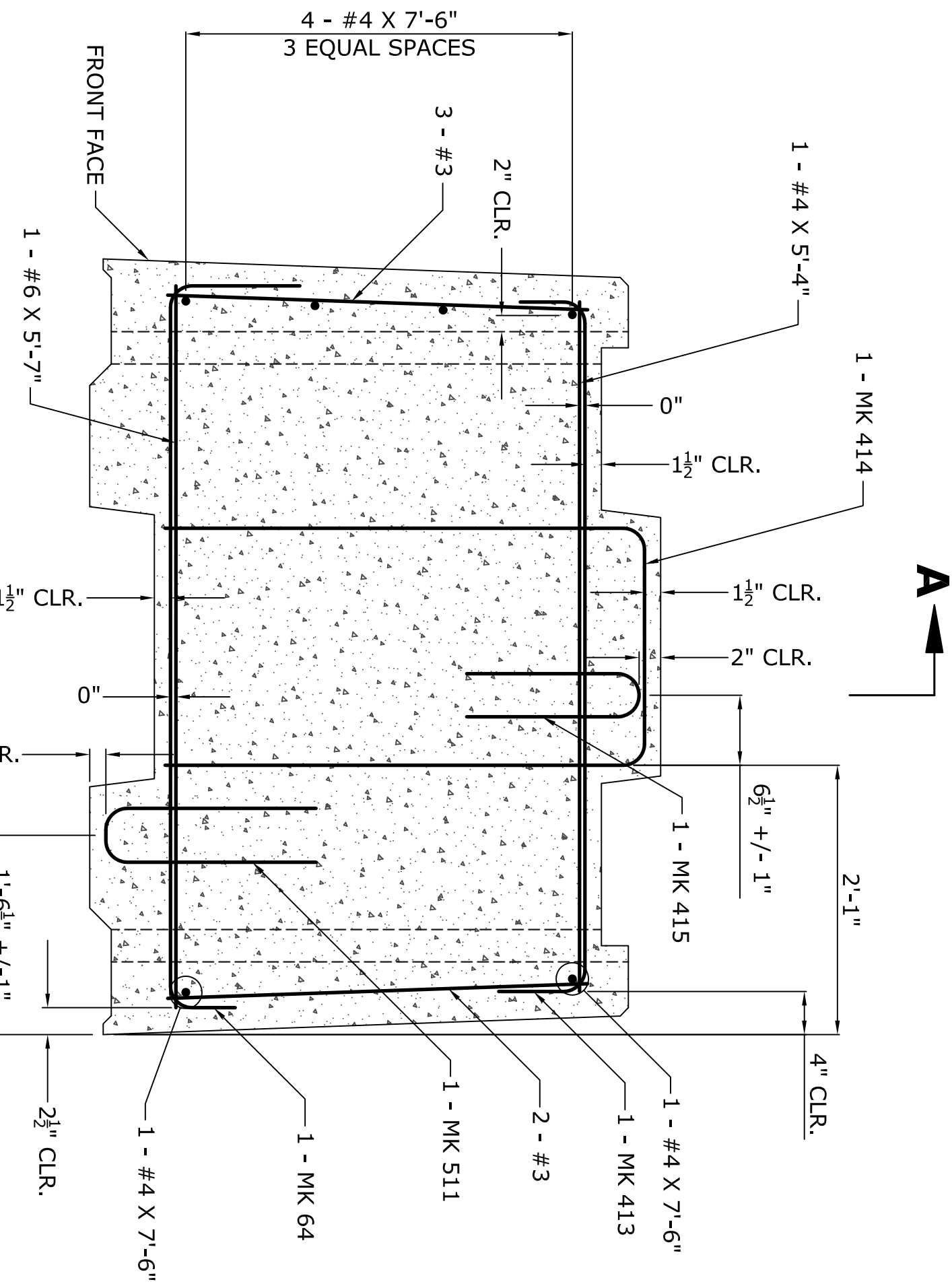
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<b>UNITED CONCRETE PRODUCTS, INC.</b>				<b>DOUBLEWALL</b> RETAINING WALL SYSTEM			
173 CHURCH STREET YALESVILLE, CT 06492 TEL: (203) 269-3119 FAX: (203) 265-4941 WWW.UNITEDCONCRETE.COM				PROJECT SITE IMPROVEMENTS EVERSOURCE ENERGY GREEN HILL 30R YARD EXPANSION MADISON, CONNECTICUT			
TITLE				REINFORCING FOR 2' X 8' X 6' DOUBLEWALL MODULES			
DATE	1-31-17			SCALE	1"=1'-0"		
DR. BY	MMB			JOB NO.	16061		
CHK. BY	DCM				SHEET	R1 of 4	



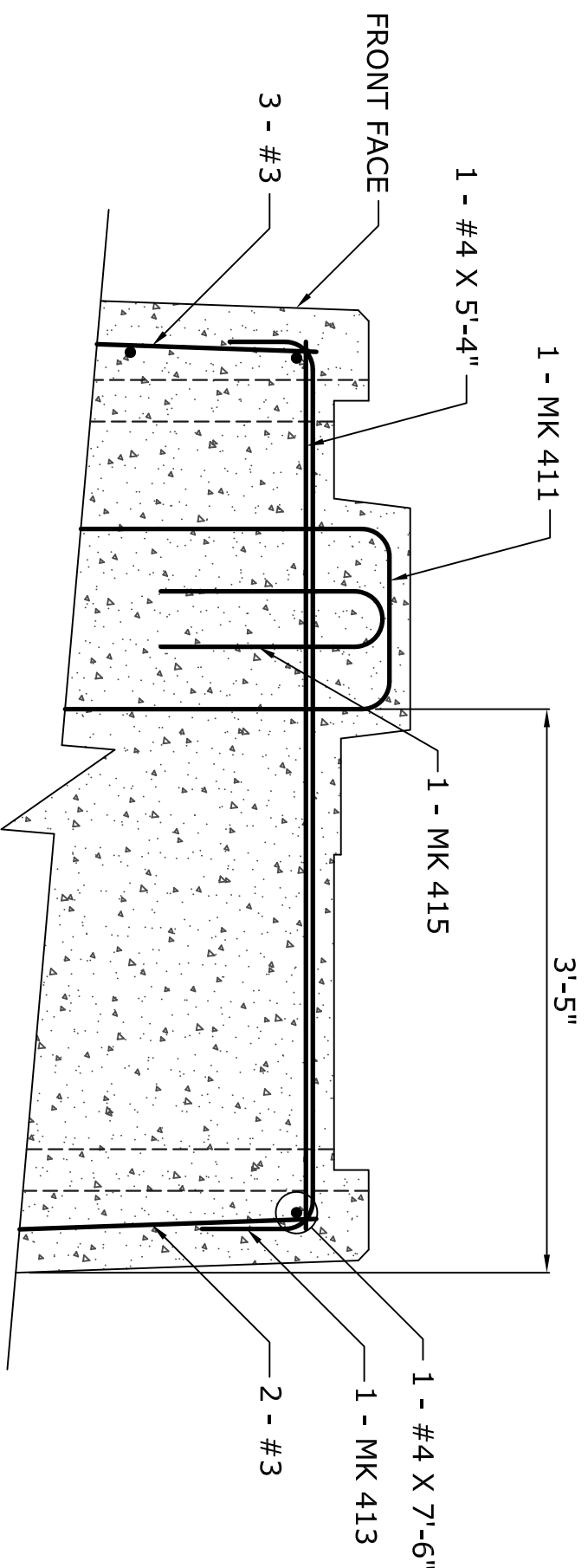
ELEVATION

BOTTOM WALL MODULE



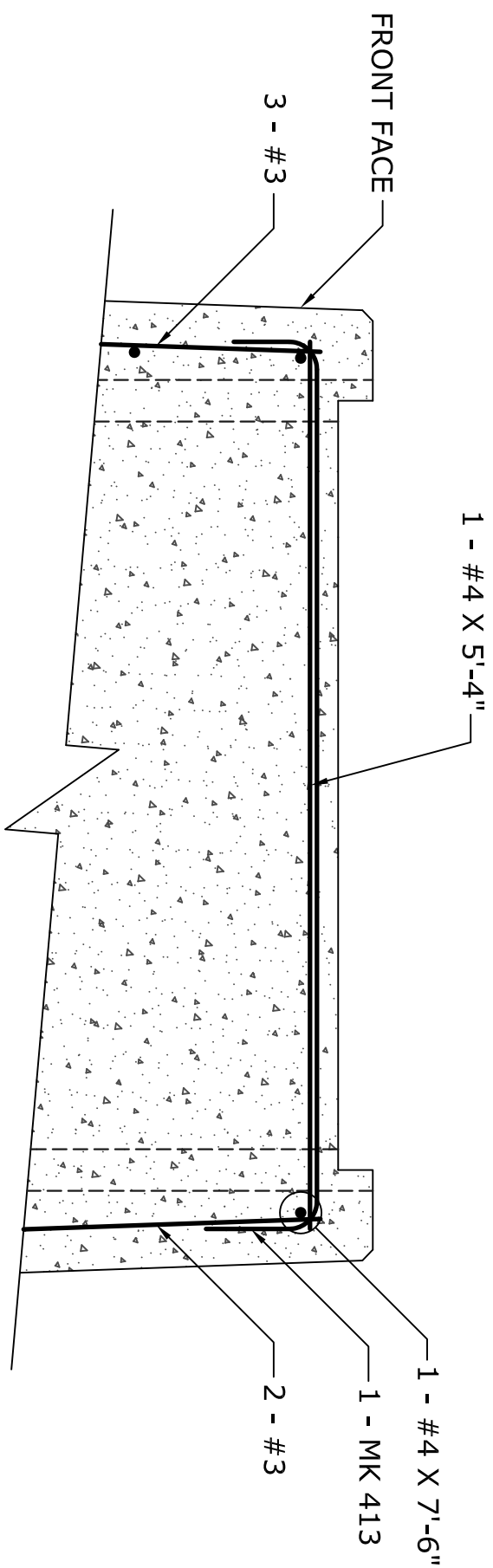
ELEVATION

STANDARD WALL MODULE



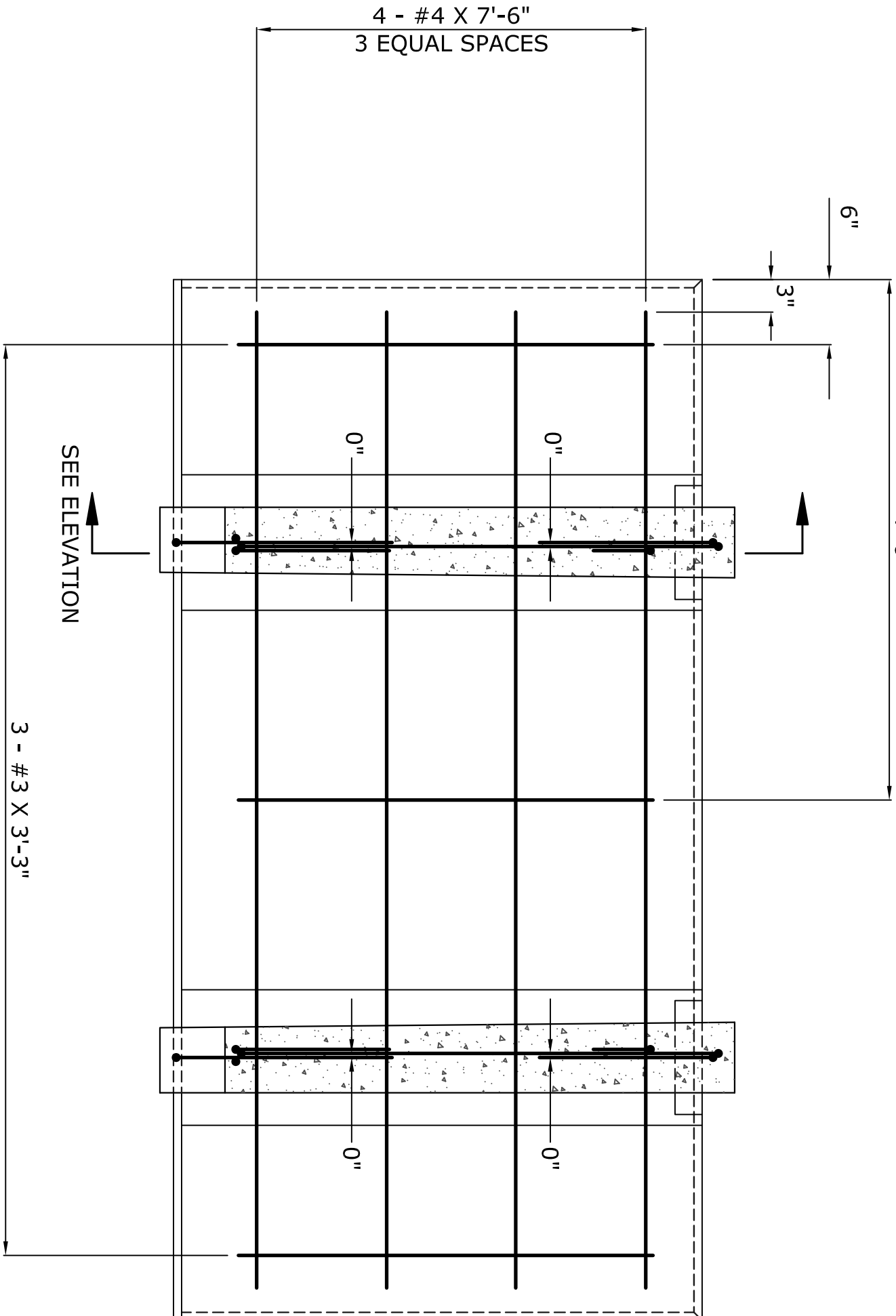
ELEVATION

TRANSITION WALL MODULE



ELEVATION

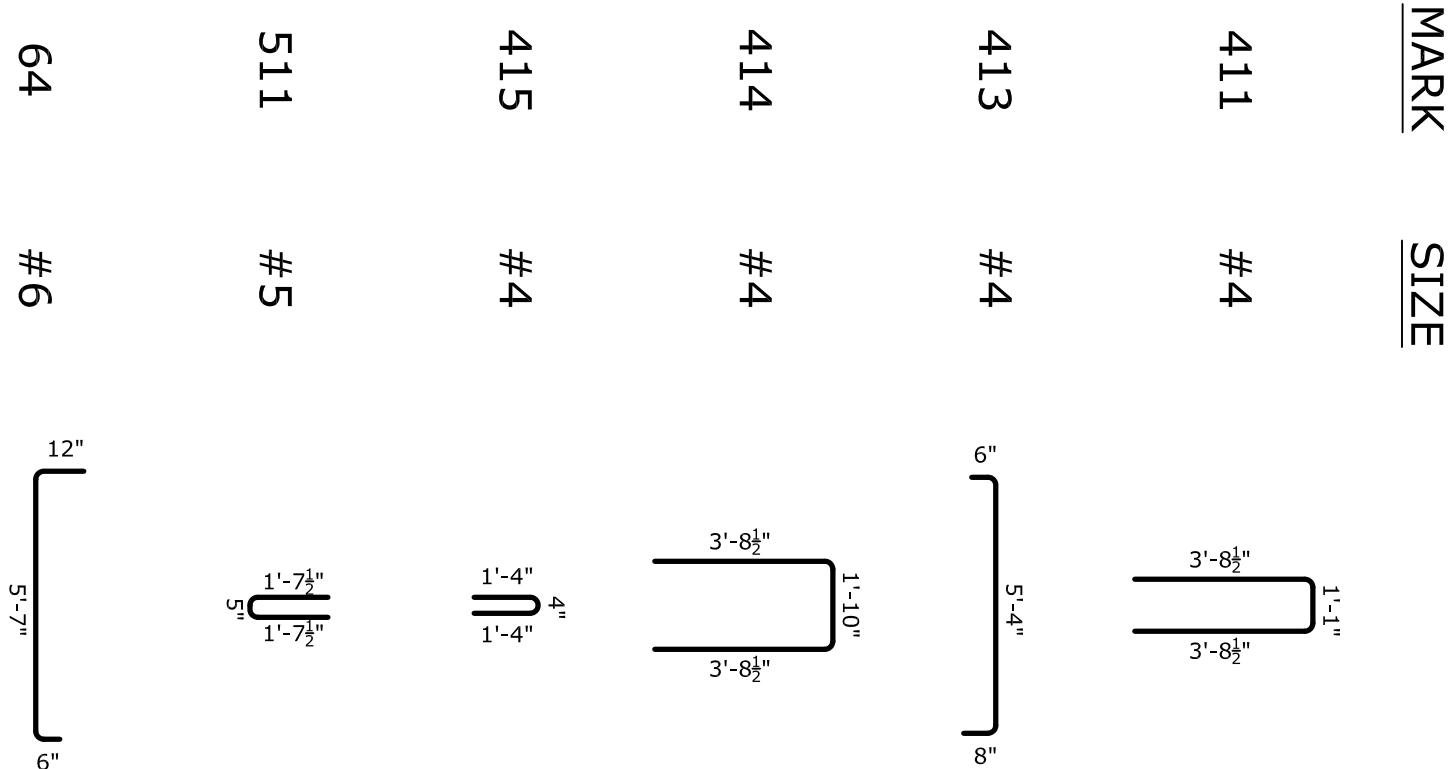
TOP WALL MODULE



SECTION A-A

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REBAR SCHEDULE									
SIZE	MARK	LENGTH	NUMBER REQUIRED						TRANSITION / BOTTOM
			STANDARD	TOP	BOTTOM	TRANSITION	TOP	BOTTOM	
#3	STRAIGHT	3'-3"	5	5	5	5	5	5	5
#4	STRAIGHT	7'-6"	6	6	6	6	6	6	6
#4	STRAIGHT	5'-4"	2	2	-	2	-	-	-
#6	STRAIGHT	5'-7"	2	2	-	2	-	-	-
#4	411	8'-4"	-	-	-	2	-	-	2
#4	413	6'-4"	2	2	2	2	2	2	2
#4	414	9'-1"	2	-	2	-	-	-	-
#4	415	2'-9 1/2"	2	-	2	2	-	-	2
#5	511	3'-2"	2	2	-	2	-	-	-
#6	64	6'-10"	2	2	2	2	2	2	2

**GENERAL NOTES**

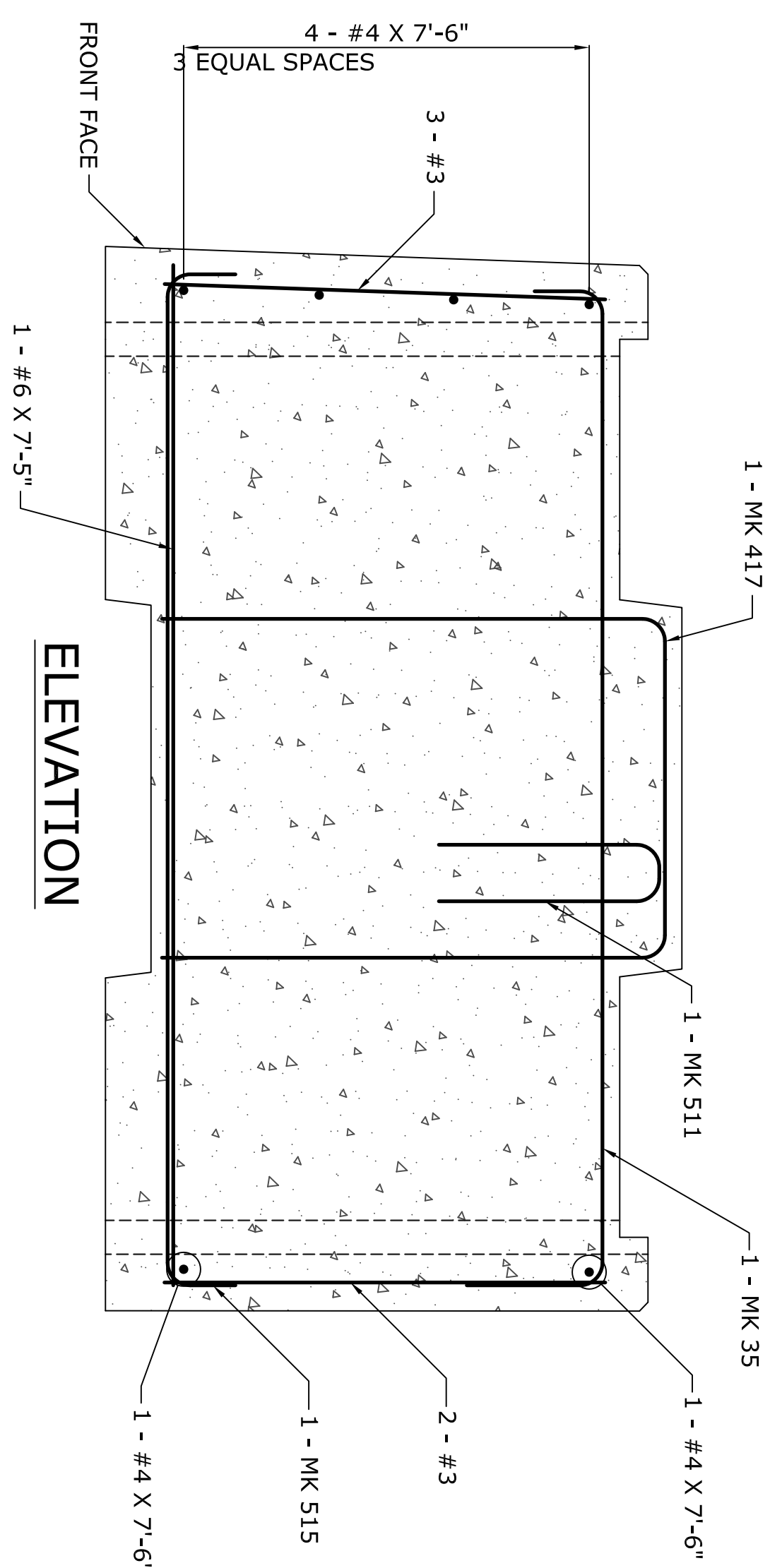
CONCRETE:  $f'_c = 5000$  PSI (MIN.)

REINFORCING: #3 BARS - ASTM A-706, GRADE 60.  
#4 BARS AND LARGER - ASTM A-706, GRADE 60

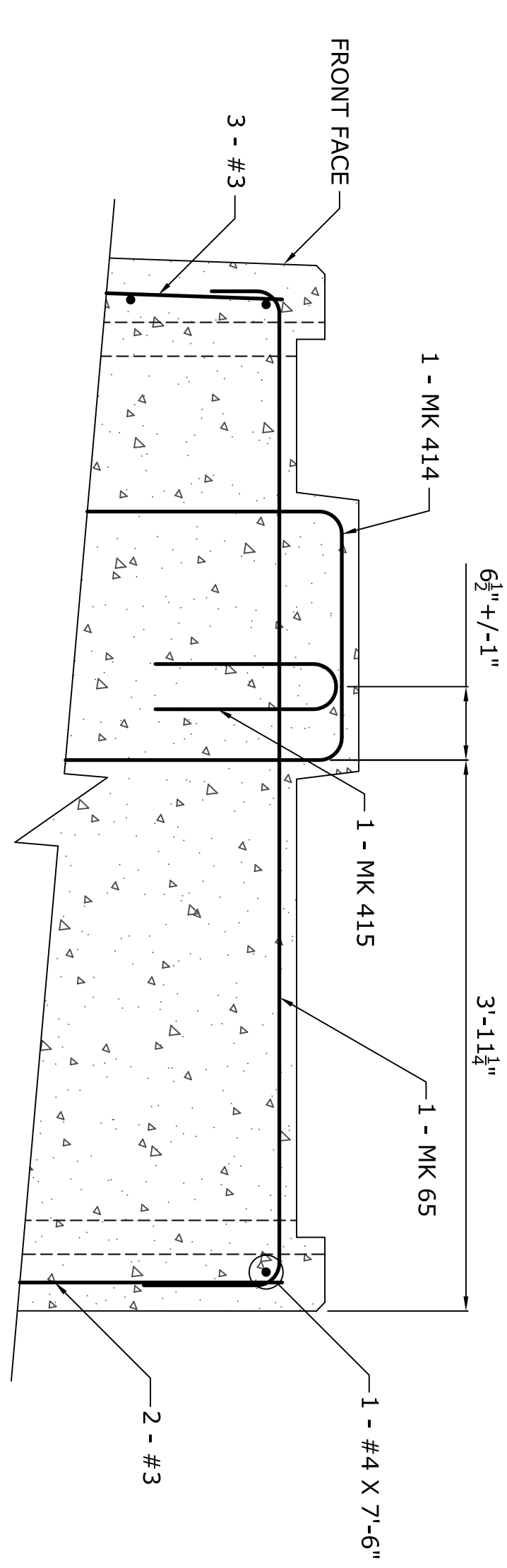
CONNECTIONS: BARS TO BE TACK-WELDED FOR ASSEMBLY AND HANDLING PURPOSES ONLY.

DESIGN: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1996, WITH SUBSEQUENT INTERIM SPECIFICATIONS.

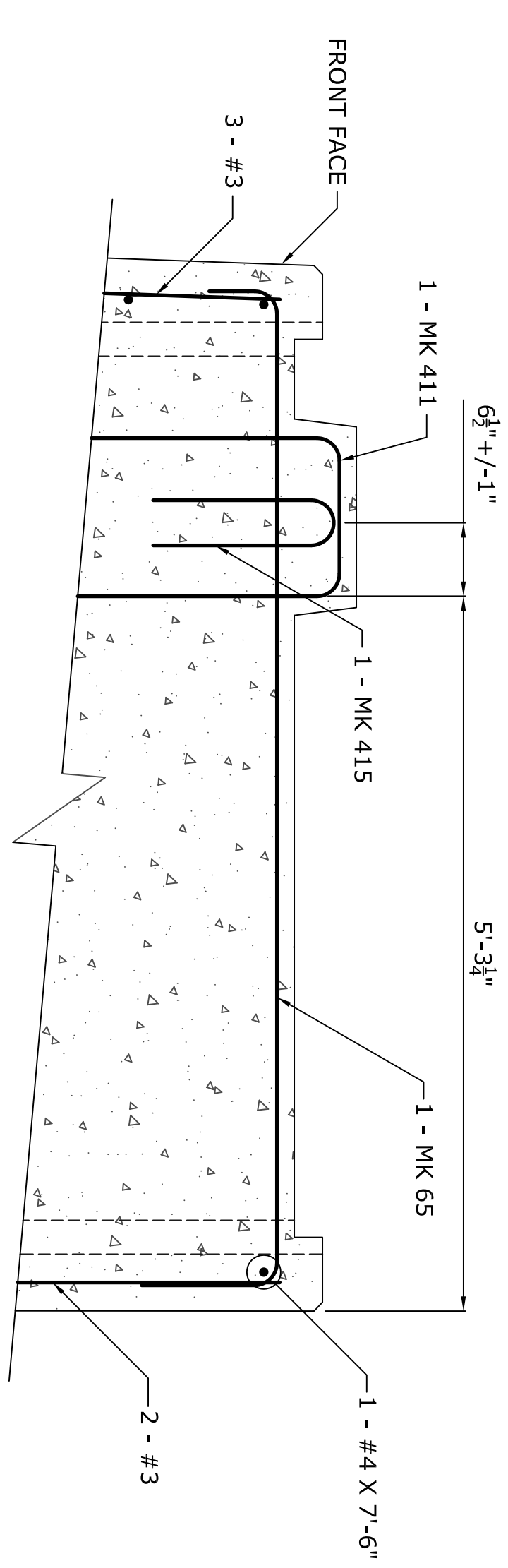
<b>UNITED</b> CONCRETE PRODUCTS, INC.		<b>Doublewal</b> RETAINING WALL SYSTEM	
PROJECT 173 CHURCH STREET VALESVILLE, CT 06492 TEL: (203) 269-3119 FAX: (203) 265-4941 WWW.UNITEDCONCRETE.COM		SITE IMPROVEMENTS EVERSOURCE ENERGY GREEN HILL 30R YARD EXPANSION MADISON, CONNECTICUT	
TITLE REINFORCING FOR 4' X 8' X 6' DOUBLEWAL MODULES		SCALE 1"=1'-0"	
DATE 1-31-17		TITAN NO.	
DR. BY MMB		CONTRACTOR	
CHK. BY DCM		JOB NO. 16061	
NO. DATE BY REVISION		SHEET R2 of 4	



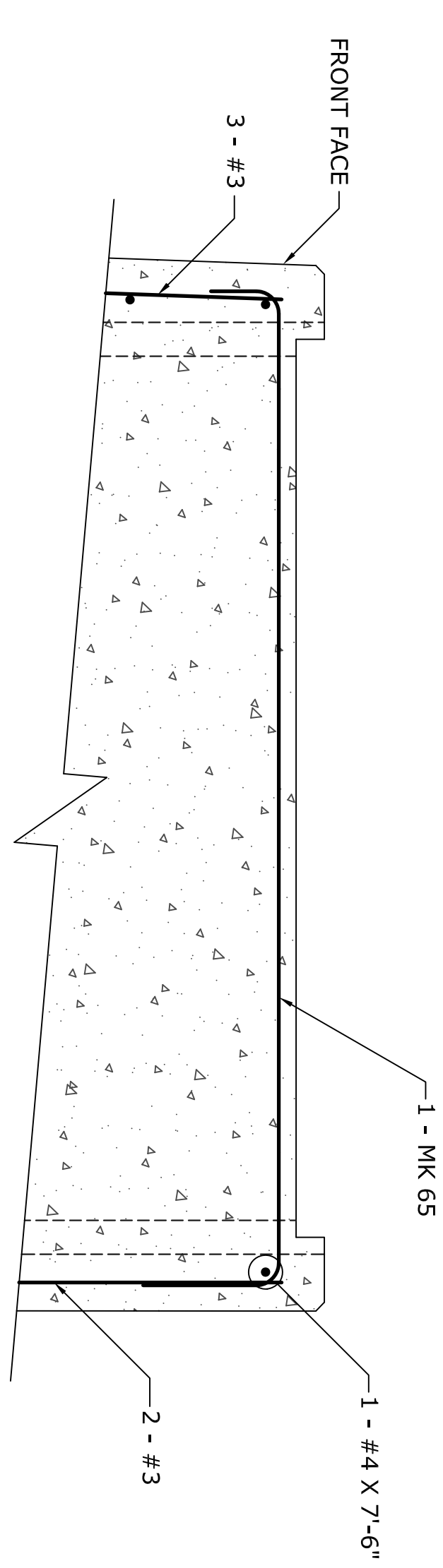
## ELEVATION



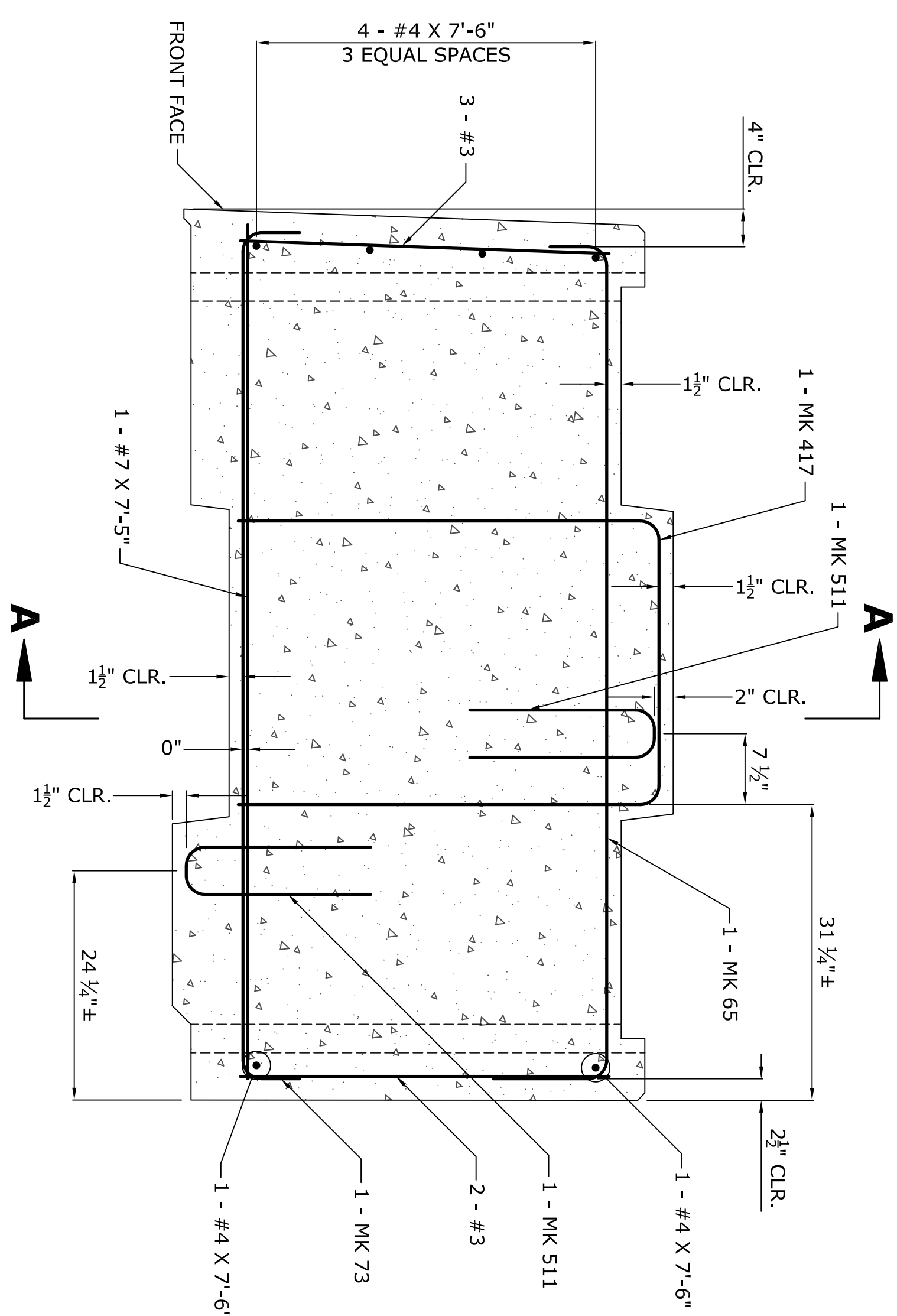
## ELEVATION



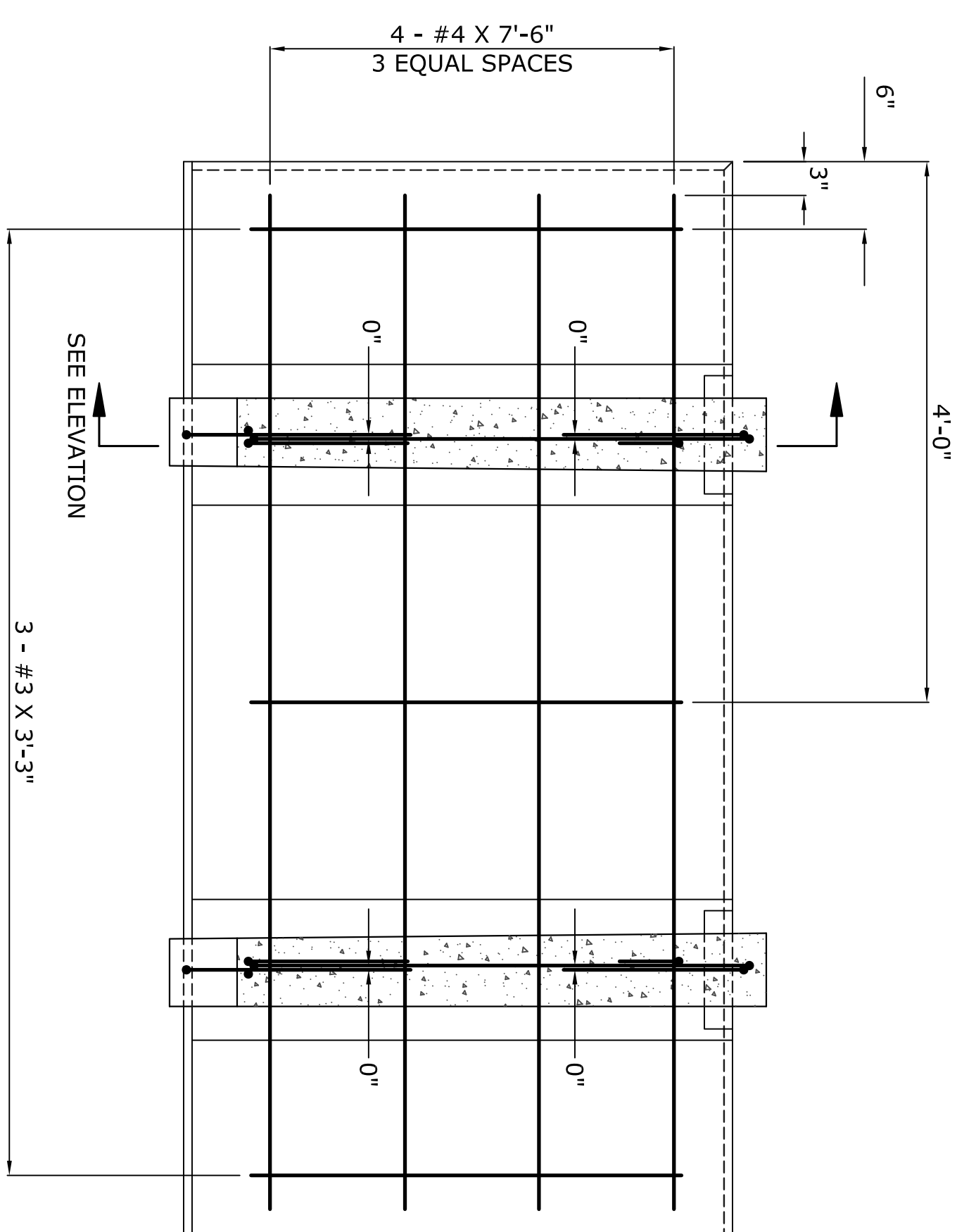
## ELEVATION



## ELEVATION



## ELEVATION



## SECTION A-A

REBAR SCHEDULE									
SIZE	MARK	LENGTH	NUMBER REQUIRED						
			STANDARD	TOP	BOTTOM	TRANSITION	DOUBLE TRANSITION	TOP / BOTTOM	TRANSITION / DEL. TRANS / BOTTOM
#3	STRAIGHT	3'-3"	5	5	5	5	5	5	5
#4	STRAIGHT	7'-6"	6	5	6	6	6	6	6
#6	STRAIGHT	-	-	2	-	-	2	2	2
#7	STRAIGHT	7'-5"	-	2	-	2	-	-	-
#3	35	8'-2 1/2"	-	-	2	-	2	2	2
#4	411	8'-4"	-	-	-	2	-	-	2
#4	414	9'-1"	-	-	2	-	2	-	2
#4	415	2'-9 1/2"	-	-	-	2	-	2	2
#4	417	9'-9"	2	-	2	-	-	-	-
#5	511	3'-5"	4	2	2	2	2	-	-
#5	515	8'-2"	-	2	-	-	2	2	2
#6	65	8'-6 1/2"	2	2	2	2	-	-	-
#7	73	8'-0 1/2"	2	2	-	2	2	-	-

MARK	SIZE	
35	#3	$\overbrace{\quad\quad\quad}^{7 \sim 3H^*}_{9 \sim}$
411	#4	$\overbrace{\quad\quad\quad}^{1 \sim 1^*}_{3 \sim}$ $\overbrace{\quad\quad\quad}^{1 \sim 10^*}_{3 \sim}$
414	#4	$\overbrace{\quad\quad\quad}^{1 \sim 10^*}_{3 \sim}$ $\overbrace{\quad\quad\quad}^{1 \sim 10^*}_{3 \sim}$
415	#4	$4^*$ $\overbrace{\quad\quad\quad}^{a \sim 4}_{1 \sim}$ $\overbrace{\quad\quad\quad}^{a \sim 1}_{1 \sim}$
417	#4	$2 \sim 5^*$ $\overbrace{\quad\quad\quad}^{a \sim 10 \sim 3}_{3 \sim}$ $\overbrace{\quad\quad\quad}^{a \sim 10 \sim 3}_{3 \sim}$
511	#5	$\overbrace{\quad\quad\quad}^{2 \sim 7}_{1 \sim}$ $\overbrace{\quad\quad\quad}^{2 \sim 7}_{1 \sim}$ $5^*$
515	#5	$9 \sim$ $\overbrace{\quad\quad\quad}^{7 \sim 4^*}_{7 \sim}$ $9 \sim$
65	#6	$9 \sim$ $\overbrace{\quad\quad\quad}^{7 \sim 3H^*}_{12 \sim}$
73	#7	$9 \sim$ $\overbrace{\quad\quad\quad}^{7 \sim 4^*}_{7 \sim}$ $9 \sim$

## GENERAL NOTES

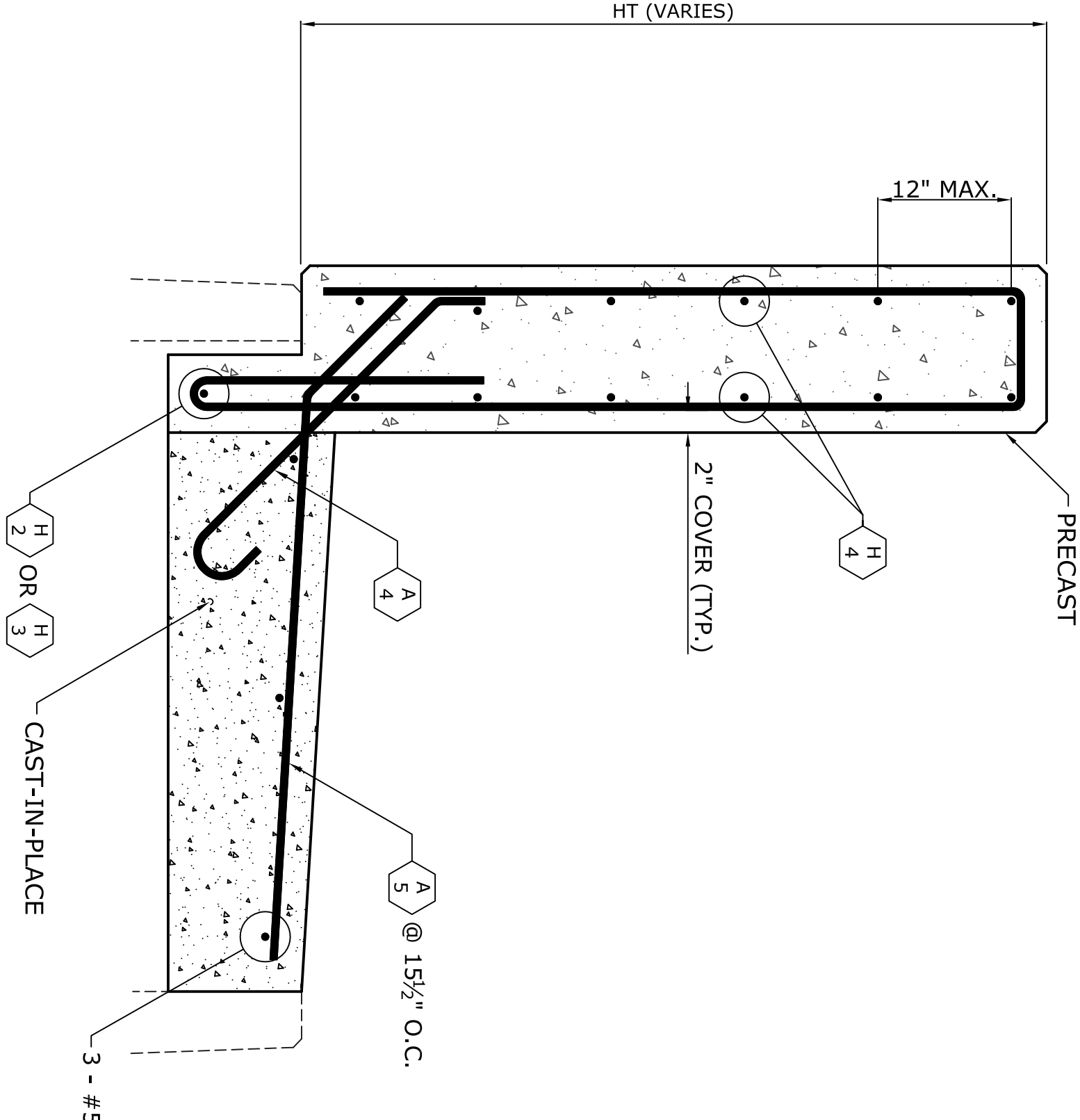
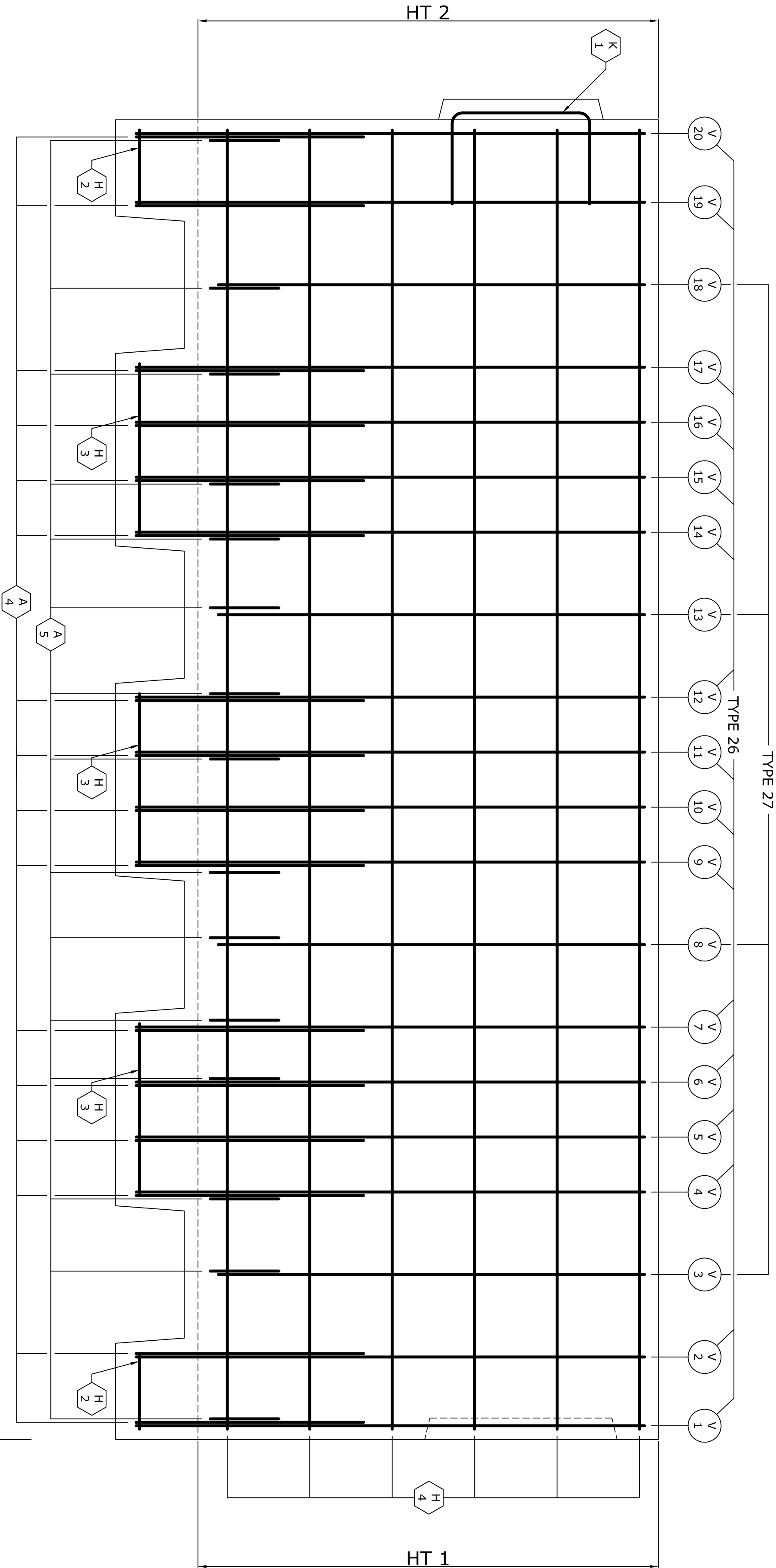
CONCRETE:  $f'_c = 5000$  PSI (MIN.)

REINFORCING: #3 BARS - ASTM A-706, GRADE 60.  
#4 BARS AND LARGER - ASTM A-706, GRADE 60

CONNECTIONS: BARS TO BE TACK-WELDED FOR ASSEMBLY  
AND HANDLING PURPOSES ONLY.

DESIGN: AASHTO STANDARD SPECIFICATIONS FOR  
HIGHWAY BRIDGES, 1996, WITH SUBSEQUENT  
INTERIM SPECIFICATIONS.

<b>UNITED</b> CONCRETE PRODUCTS, INC.		<b>DOUBLEWALL</b> RETAINING WALL SYSTEM	
PROJECT		SITE IMPROVEMENTS EVERSOURCE ENERGY GREEN HILL 30R YARD EXPANSION MADISON, CONNECTICUT	
173 CHURCH STREET YALESVILLE, CT 06492 TEL: (203) 265-3119 FAX: (203) 265-4941 WWW.UNITEDCONCRETE.COM		TITLE  REINFORCING FOR 4' X 8' X 8' DOUBLEWALL MODULES	
DATE		1-31-17	SCALE 1"=1'-0"
DR. BY		MMB	JOB NO.
CHK. BY		DCM	16061
REVISION			SHEET
NO. DATE		BY	R3 of 4



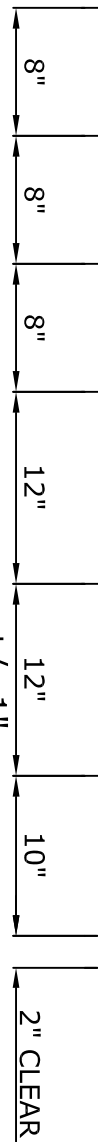
SECTION

SCALE: 1"=1'-0"

REAR ELEVATION

1" = 1'-0"

TYPICAL SPACING



TRAFFIC BARRIER TYPE II-C REINFORCING BAR DETAILS

LABEL	TYPE	SIZE	LENGTH		A		B		C		D						
			FT	IN	Q	FT	IN	Q	FT	IN	Q	FT	IN	Q			
A5	47	5	5	1	2	0	8	2	0	8	2	4	2	0			
A4	33	6	4	1	1	0	5	0	2	2	1	2	2	1	3	1	0
H4	STRAIGHT	5	RUN - 4"														
H2	STRAIGHT	4	0	10	0												
H3	STRAIGHT	4	2	0	0												
K1		46	5	3	8	0	1	1	1	1	8	0	1	1	1		
SEE REAR ELEVATION	26	5	VARIES		VARIES ①		0	11	0	VARIES ②		2	2	0			
	27	5	VARIES		VARIES ①		0	11	0	VARIES ①		0	5	0			

① HV - 4"      ② HV + 8"

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<b>UNITED</b> CONCRETE PRODUCTS, INC.				<b>Doublewal</b> RETAINING WALL SYSTEM			
PROJECT 173 CHURCH STREET VALESVILLE, CT 06492 TEL: (203) 269-3119 FAX: (203) 265-4941 WWW.UNITEDCONCRETE.COM				SITE IMPROVEMENTS EVERSOURCE ENERGY GREEN HILL 30R YARD EXPANSION MADISON, CONNECTICUT			
TITLE PRECAST CONCRETE TRAFFIC BARRIER TYPE II-C REINFORCING DETAILS				DATE 1-31-17			
				SCALE AS SHOWN			
				JOB NO. 16061			
				CONTRACTOR R4 of 4			
NO. DATE BY				REVISION			
				CHK. BY DCM			

GENERAL NOTES

CONCRETE: f'c = 5000 P.S.I. (MIN.)  
REINFORCING: #3 BARS - ASTM A-615, GRADE 40  
#4 BARS AND LARGER - ASTM A-615, GRADE 60  
CONNECTIONS: BARS TO BE TACK WELDED FOR ASSEMBLY AND HANDLING PURPOSES ONLY.  
DESIGN: ASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1996, WITH SUBSEQUENT INTERIM SPECIFICATIONS.



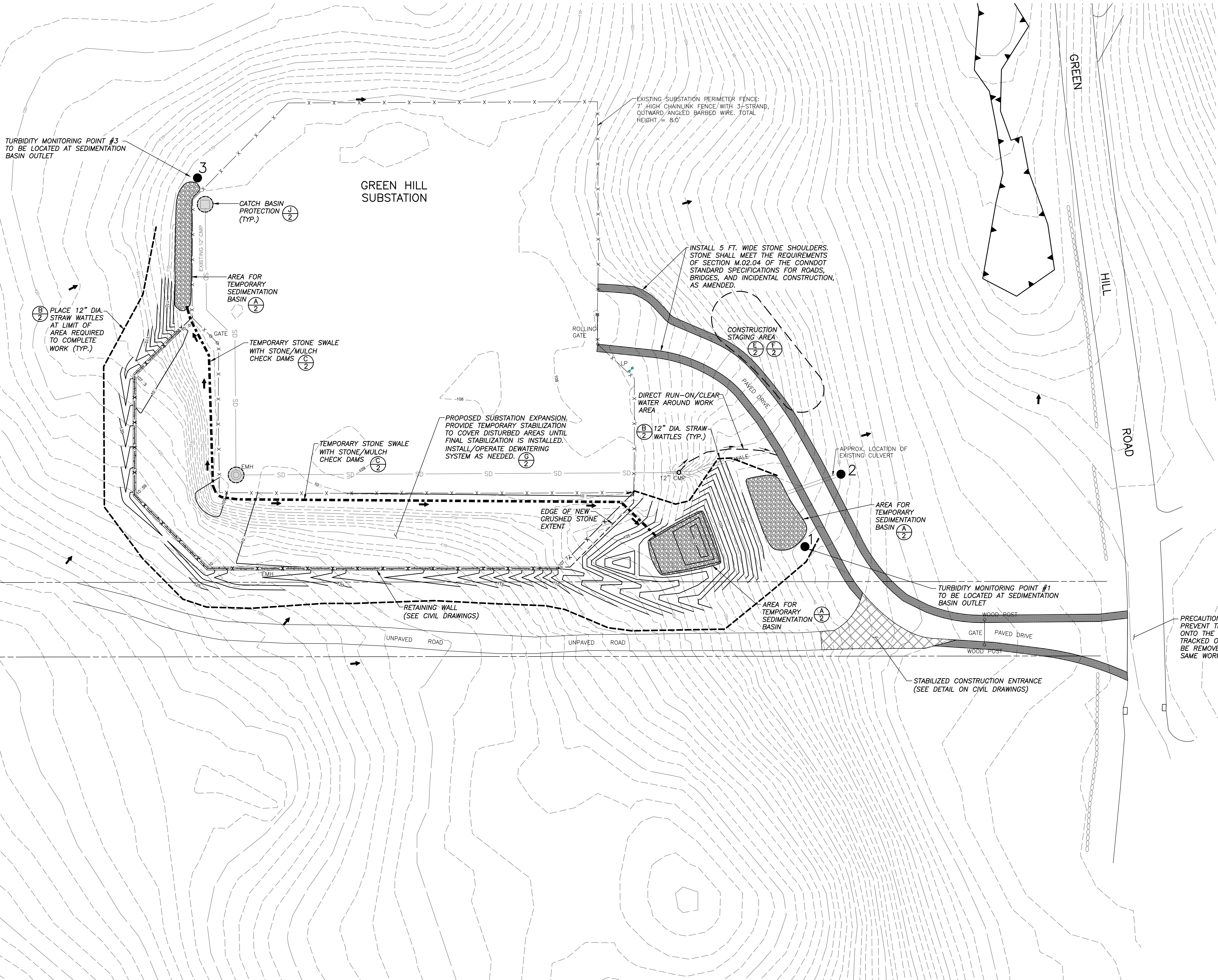


## ATTACHMENT C

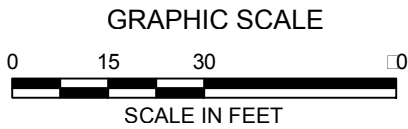






© 2017 - GZA GeoEnvironmental, Inc. GZA - 300 GZA INTERCOMPANY PROJECTS\15.0190507.15 Erosion Green Hill Substation\15.0190507.15 CAD\Drawings\GZA-BASE.dwg [GAS PLAN]



- NOTES:
1. BASE MAP AND PROPOSED WORK BY PROJECT CIVIL ENGINEER MONTGOMERY ASSOCIATES: RESOURCE SOLUTIONS, LLC FOR REALTIME UTILITY ENGINEERS, AS SHOWN ON PRELIMINARY GRADING PLAN, GREEN HILL SUBSTATION EXPANSION, MADISON, CT, 12/23/16.
  2. GZA IS NOT THE PROJECT CIVIL ENGINEER, REGISTRANT, OWNER, CONTRACTOR, OR PERMITTEE.
  3. EROSION AND SEDIMENT CONTROLS DEPICTED ON DRAWINGS 1 AND 2 HAVE BEEN DESIGNED BY GZA. THESE REPRESENT THE MINIMUM REQUIREMENTS. SHOULD ADDITIONAL OR MODIFIED EROSION CONTROL AND STABILIZATION MEASURES BE NECESSARY TO CONTROL THE TRANSPORT OF POLLUTANTS FROM THE SITE VIA STORMWATER, THE CONTRACTOR SHALL PROVIDE, INSTALL, MAINTAIN, AND INSPECT ADDITIONAL CONTROLS AS NEEDED.



1	CONSISTENCY W/UPDATED SITE PLAN		EDM	2/27/17
NO.	ISSUE/DESCRIPTION		BY	DATE
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GREEN HILL 30R SUBSTATION EXPANSION MADISON, CT				
EROSION AND SEDIMENT CONTROL PLAN				
PREPARED BY:  GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com			PREPARED FOR: 	
PROJ MGR: KC	REVIEWED BY: TEJ	CHECKED BY: RS	DRAWING	
DESIGNED BY: RS	DRAWN BY: EDM	SCALE: 1" = 30'	1	
DATE: JANUARY, 2017	PROJECT NO. 15.0190507.15	REVISION NO. -	SHEET NO. 1 OF 2	







BY	RUE	CHKD	APP	APP
DATE	10/16	DATE	DATE	DATE
H-SCALE	1" = 20'	SIZE	E	
V-SCALE	1" = 20'	V.S.	FIELD BOOK & PAGES	
R.E. PROJ. NUMBER		DWC NO.		17 05-11019