

March 21, 2017

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

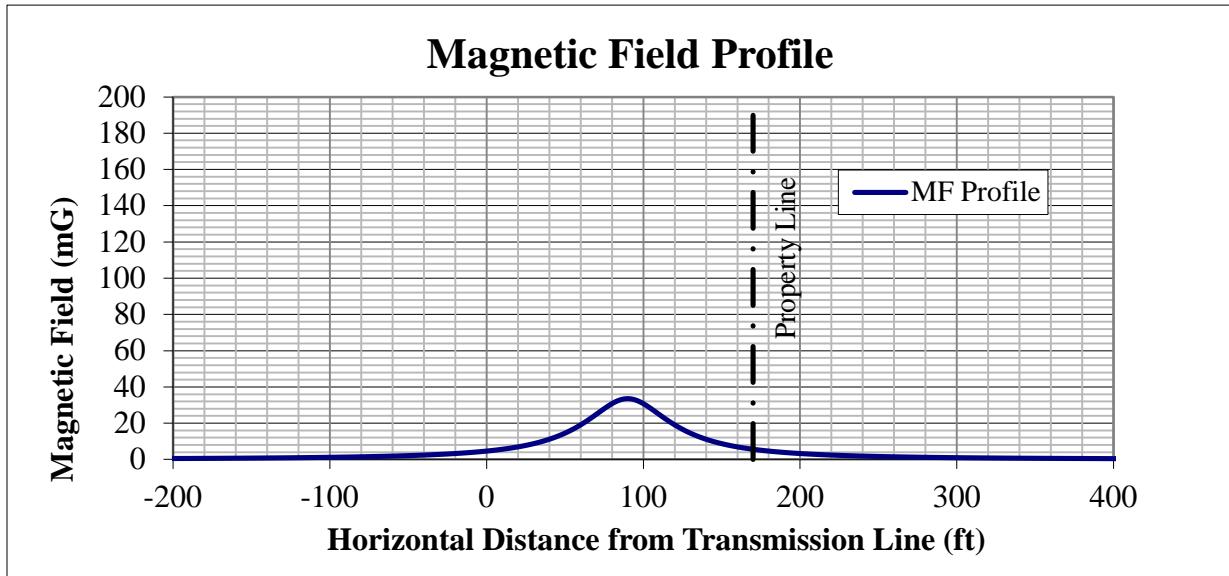
Re: Petition No. 1289: Green Hill Substation Project - Madison, Connecticut
Response to Field Review Questions

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:

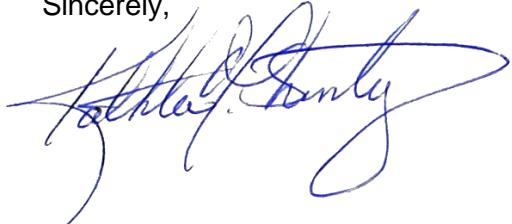
On the afternoon of 3/7/17, Eversource met with Mr. Roger Fortier at his home to review the Green Hill substation expansion project. Mr. Fortier's property abuts the south side of substation property. Mr. Fortier's main concern with the project is the loss of buffer

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 or telephone at (860) 728-4527.

Sincerely,



Kathleen M. Shanley

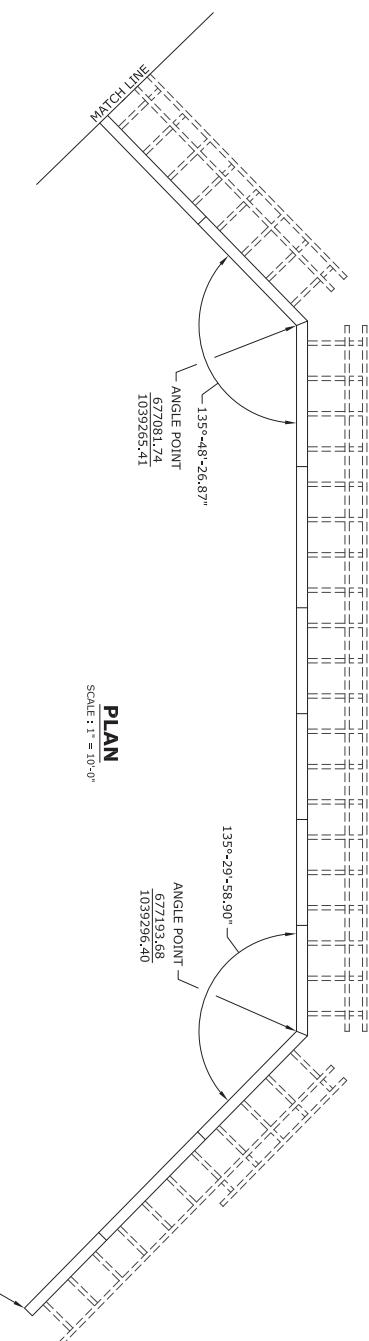
ATTACHMENT A

ATTACHMENT B

GENERAL NOTES

CONSTRUCTION METHODS

1. THE FOUNDATION BED FOR THE DOUBLEWAL PRECAST CONCRETE RETAINING WALL SHALL BE EXCAVATED AS REQUIRED AND SHALL BE APPROVED BY THE OWNERS/ENGINEER BEFORE ERECTION IS STARTED.
2. IF UNSUITABLE MATERIAL IS ENCOUNTERED AT BOTTOM OF LEVELING PAD ELEVATION, IT SHALL BE REMOVED AND REPLACED WITH COMPACTED CRUSHED STONE.
3. LEVELING PADS SHALL BE CAST TO THE DIMENSIONS AND DETAILS INDICATED. WHEN TESTED WITH A 10 FOOT STRAIGHT EDGE, THE SURFACES SHALL NOT VARY MORE THAN $\frac{1}{8}$ IN TO FEET AND BE LEVEL.
4. THE PRECAST CONCRETE MODULAR UNITS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS AS SHOWN ON THE APPROVED SHOP DRAWINGS. SPECIAL CARE SHALL BE TAKEN IN SETTING THE BOTTOM COURSE OF UNITS TO TRUE LINE AND GRADE, WHILE ERECTING EACH SUBSEQUENT COURSE, LINE AND GRADE SHALL BE CORRECTED AND DEVIATIONS SHALL BE CORRECTED TO PREVENT ACCUMULATIVE INACCURACIES IN ALIGNMENT.
5. CLOSED-CELL POLYETHYLENE FOAM ROD SHALL BE INSTALLED IN THE HORIZONTAL JOINTS OF THE FRONT FACE, PREFORMED CORK JOINT FILLER CONFORMING TO ASTM D752 TYPE II OR EQUAL AND SHALL BE INSTALLED IN THE HORIZONTAL JOINTS AT LEVELING PADS.
6. ALL MODULAR UNITS ABOVE THE FIRST COURSE SHALL INTERLOCK WITH LOWER COURSES. VERTICAL JOINTS SHALL BE STaggerED WITH EACH SUCCESSIVE COURSE. THE VERTICAL JOINT OPENING IN THE FRONT FACE OF THE WALL SHALL NOT EXCEED 3/4" A 1/8" STRIP OF HIGH SURVIVABILITY FILTER CLOTH (AMOCO PROPEX 4552 OR EQUAL) SHALL BE INSTALLED INSIDE THE UNITS AT THE VERTICAL JOINTS OF THE FRONT FACE.
7. PREVIOUS STRUCTURE BACKFILL SHALL BE CLEAN SAND AND GRAVEL BE MINUS 6 INCH SIZE, AND SHALL NOT CONTAIN MORE THAN 15 % PASSING A NO 200 SIEVE. 3/4" CRUSHED STONE MAY BE USED AS BACKFILL.
8. DOUBLEWAL UNITS SHALL BE FILLED, ONE COURSE AT A TIME, WITH PERVIOUS STRUCTURE BACKFILL. UNITS SHALL BE FILLED IN APPROXIMATELY 2 FOOT LAYERS AND THEN THOROUGHLY CONSOLIDATED WITH A VIBRATORY TAMPING DEVICE TO 95% OF PROCTOR.
9. PLACEMENT OF BACKFILL BEHIND THE WALL SHALL FOLLOW ERECTION AND FILLING OF THE UNITS. AT NO TIME SHALL THE DIFFERENCE IN BACKFILL ELEVATION BETWEEN THE INTERIOR AND EXTERIOR OF THE WALL EXCEED SIX FEET.



PLAN

SCALE: 1" = 10'-0"

DEVELOPED ELEVATION

SCALE: 1" = 10'-0"

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CERTIFIED ONLY WITH
RESPECT TO INTERNAL
STABILITY OF THE STRUCTURE
DOUBLEWAL STRUCTURE
BASED ON LOADS AND
SOIL DATA INPUTTED
ON THE DRAWINGS
SEE DESIGN CHECK
NOTES SHEET 1 OF 3



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Doublewäl
RETAINING WALL SYSTEM

PROJECT: SITE IMPROVEMENTS
EVERSOURCE ENERGY
GREEN HILL 30' YARD EXPANSION
MADISON, CONNECTICUT

BASIS OF DESIGN
THE DESIGN OF THE DOUBLEWAL PRECAST WALL IS BASED ON THE FOLLOWING ASSUMED DESIGN LOADS AND SOIL DATA. THE ALLOWABLE BEARING CAPACITIES WERE FURNISHED BY FREEMAN COMPANIES.
MINIMUM FACTORS OF SAFETY USED IN THE ANALYSIS ARE:
F.S. OVERTURNING = 2.0
F.S. SLIDING = 1.5

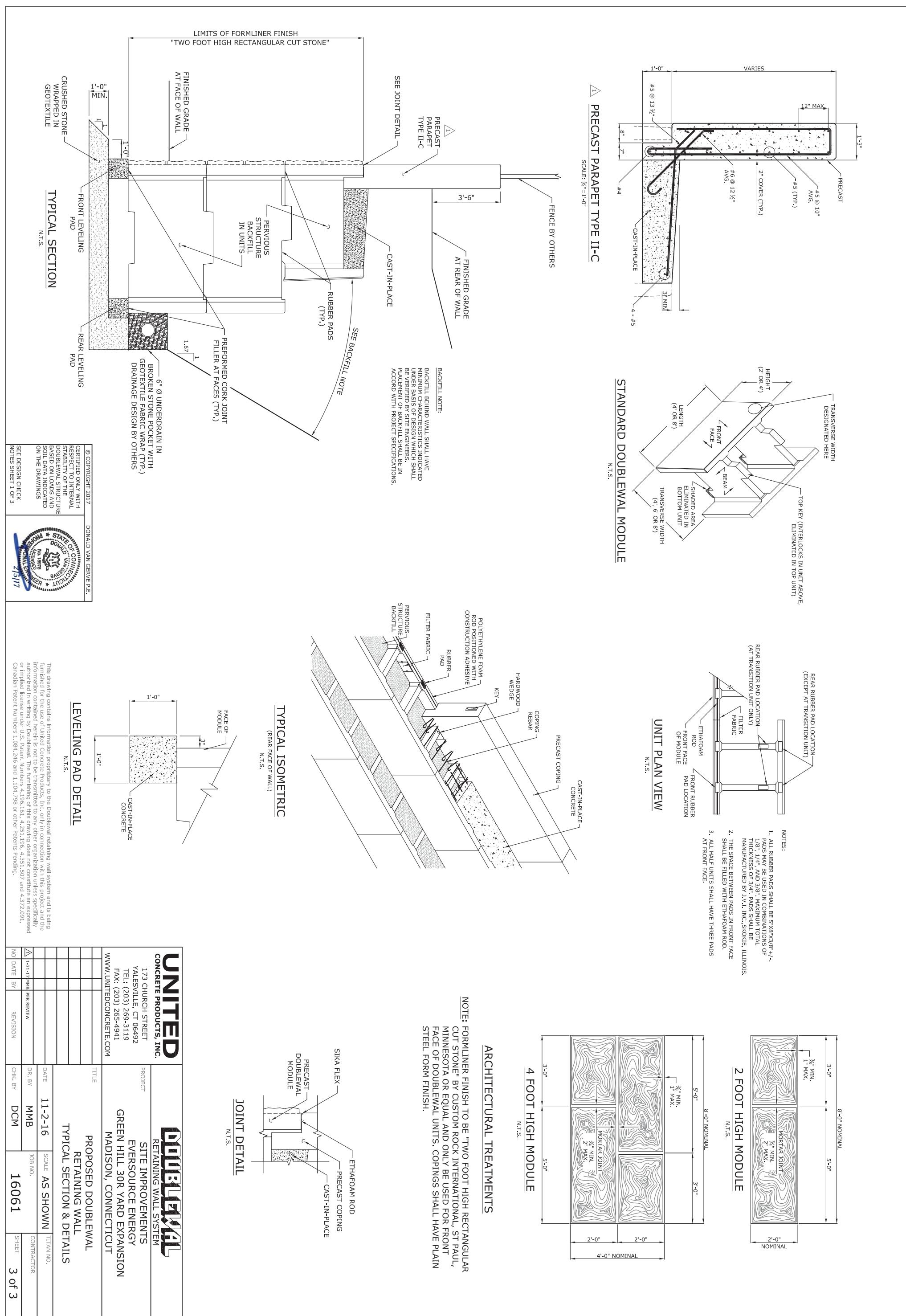
1. LATERAL EARTH PRESSURE:
THE WALL HAS BEEN DESIGNED USING THE COULOMB METHOD AND THE FOLLOWING SOIL CHARACTERISTICS:
125 PCF = SOIL UNIT WEIGHT OF BACKFILL MATERIAL
125 PCF = SOIL UNIT WEIGHT OF INSIDE PARTIAL MATERIAL
34 DEGREES = ANGLE OF INTERNAL FRICTION
20 DEGREES = ANGLE OF FRICTION BETWEEN WALL AND BACKFILL
0 PSF = C. COHESION
0.50 = COEFFICIENT OF SLIDING FRICTION (SOIL ON SOIL)
0.50 = COEFFICIENT OF SLIDING FRICTION (CONC. ON SOIL)

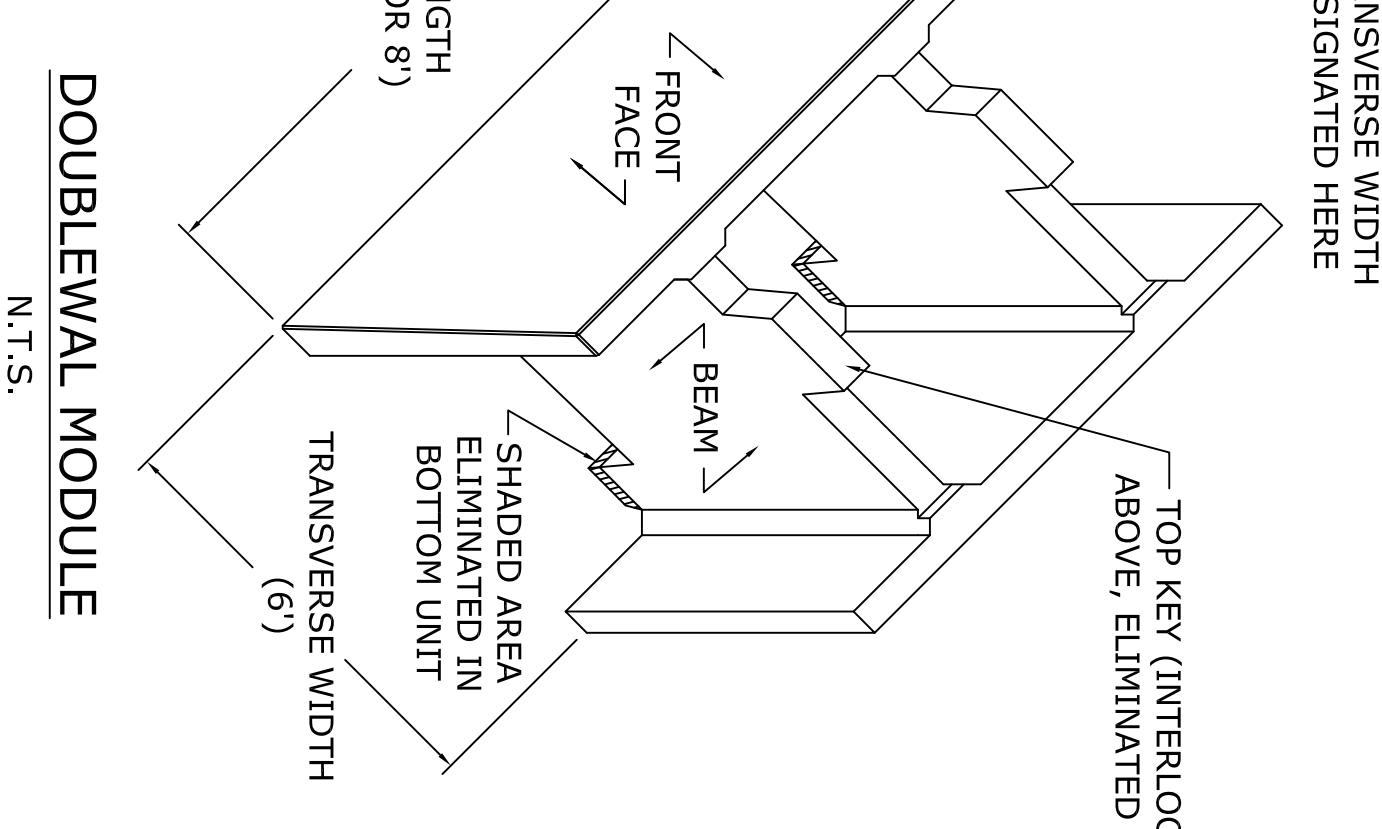
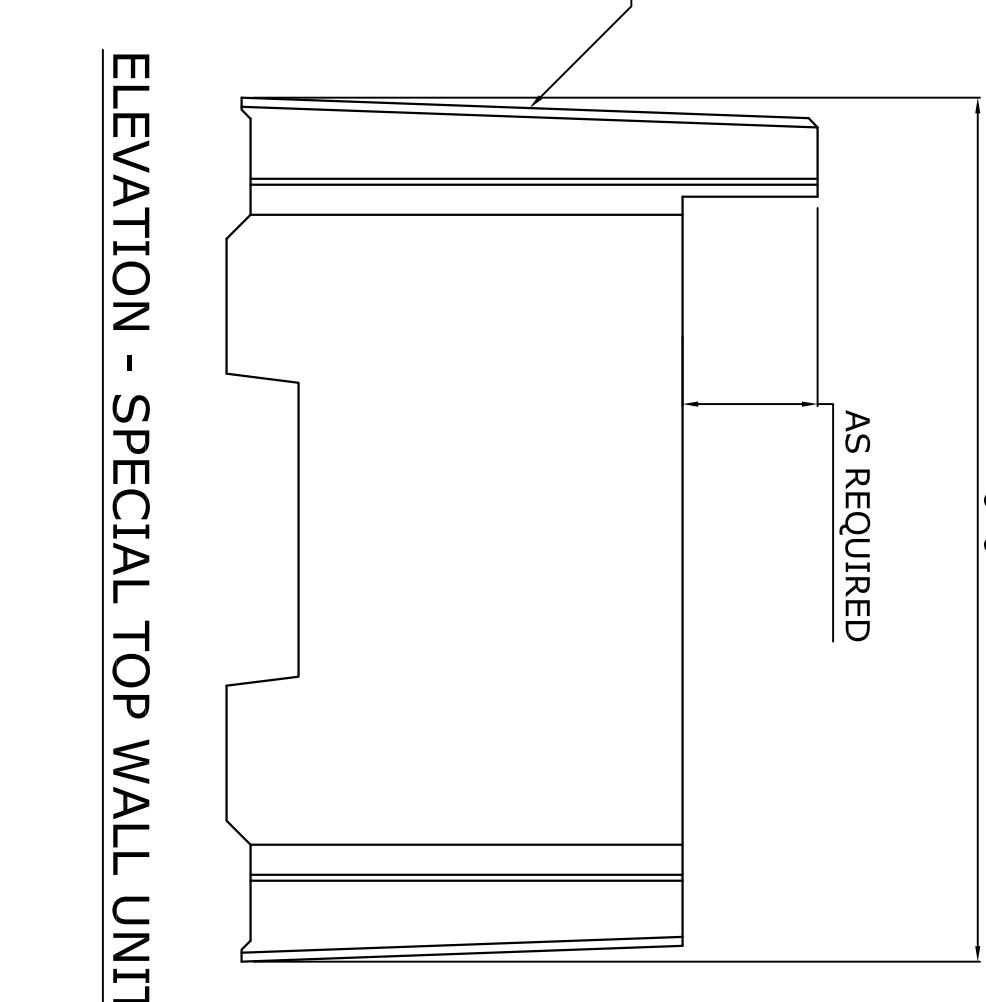
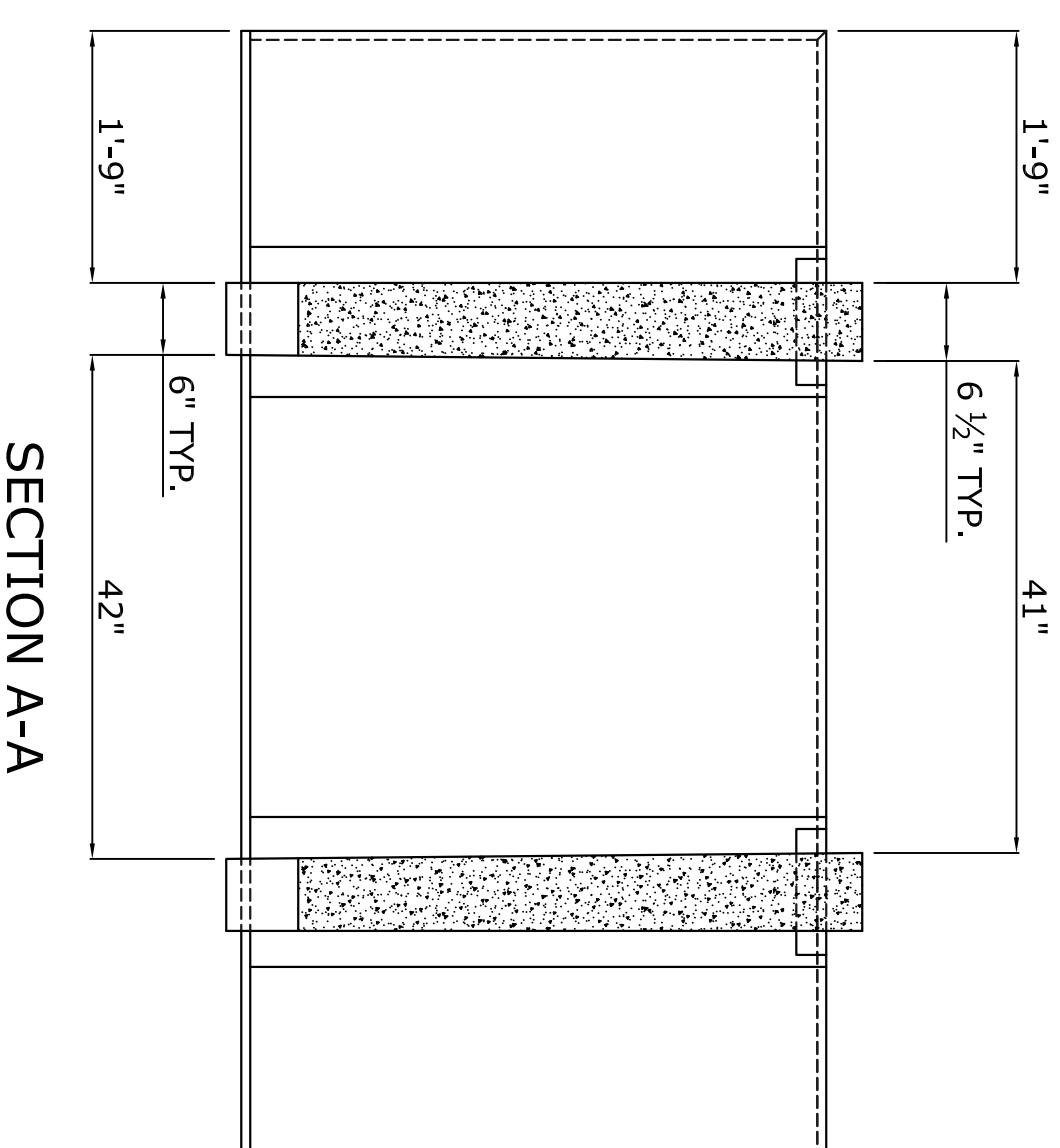
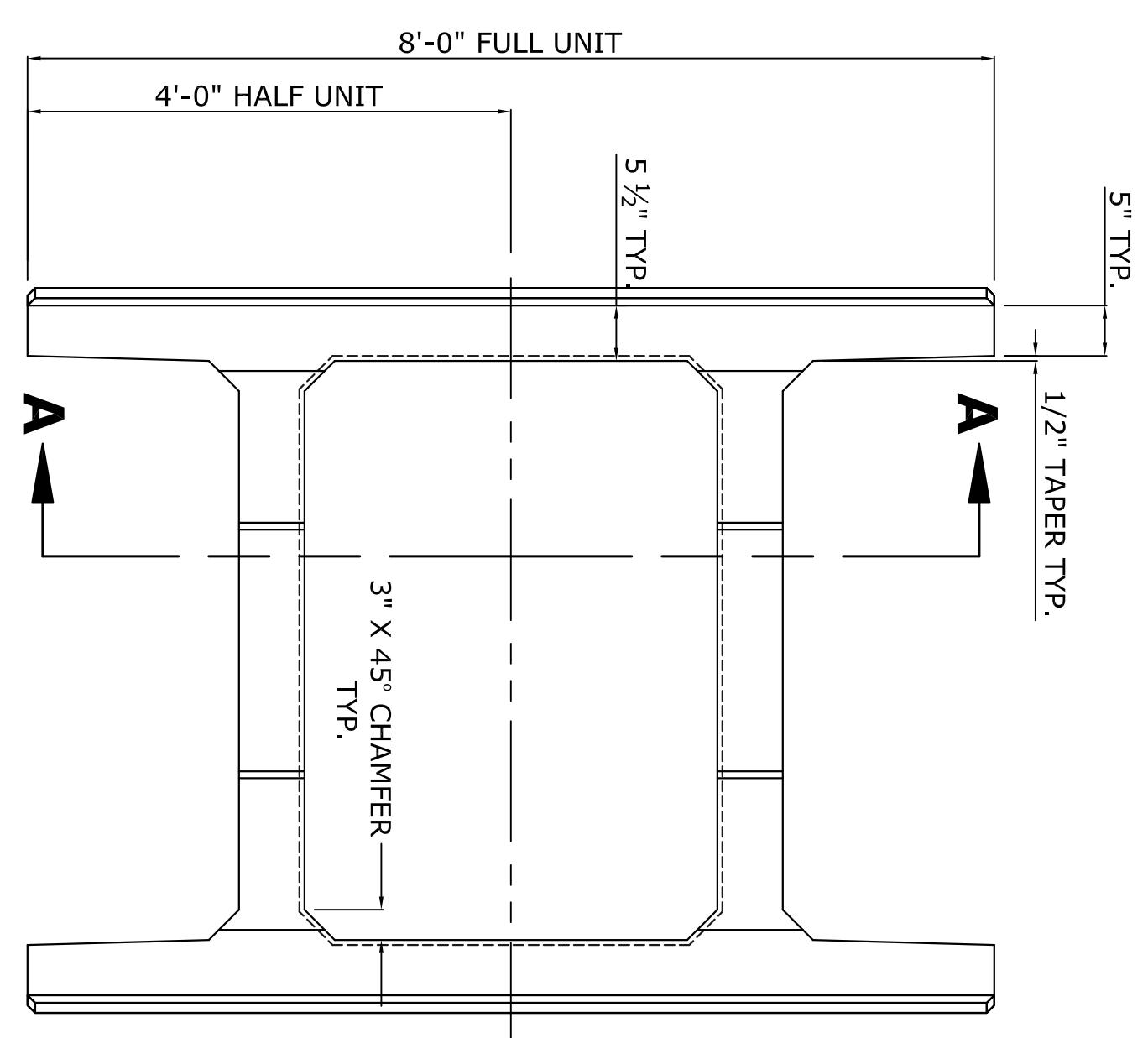
2. SURFACE LIVE LOADS:
AN EQUIVALENT HEIGHT OF 2.0' OF SOIL, 0.250 KSF, AS A ROADWAY SURCHARGE, WHERE APPLICABLE.

3. HORIZONTAL IMPACT LOAD:
HORIZONTAL IMPACT LOAD AT TOP OF PARAPET 10 KIPS, WHERE APPLICABLE.

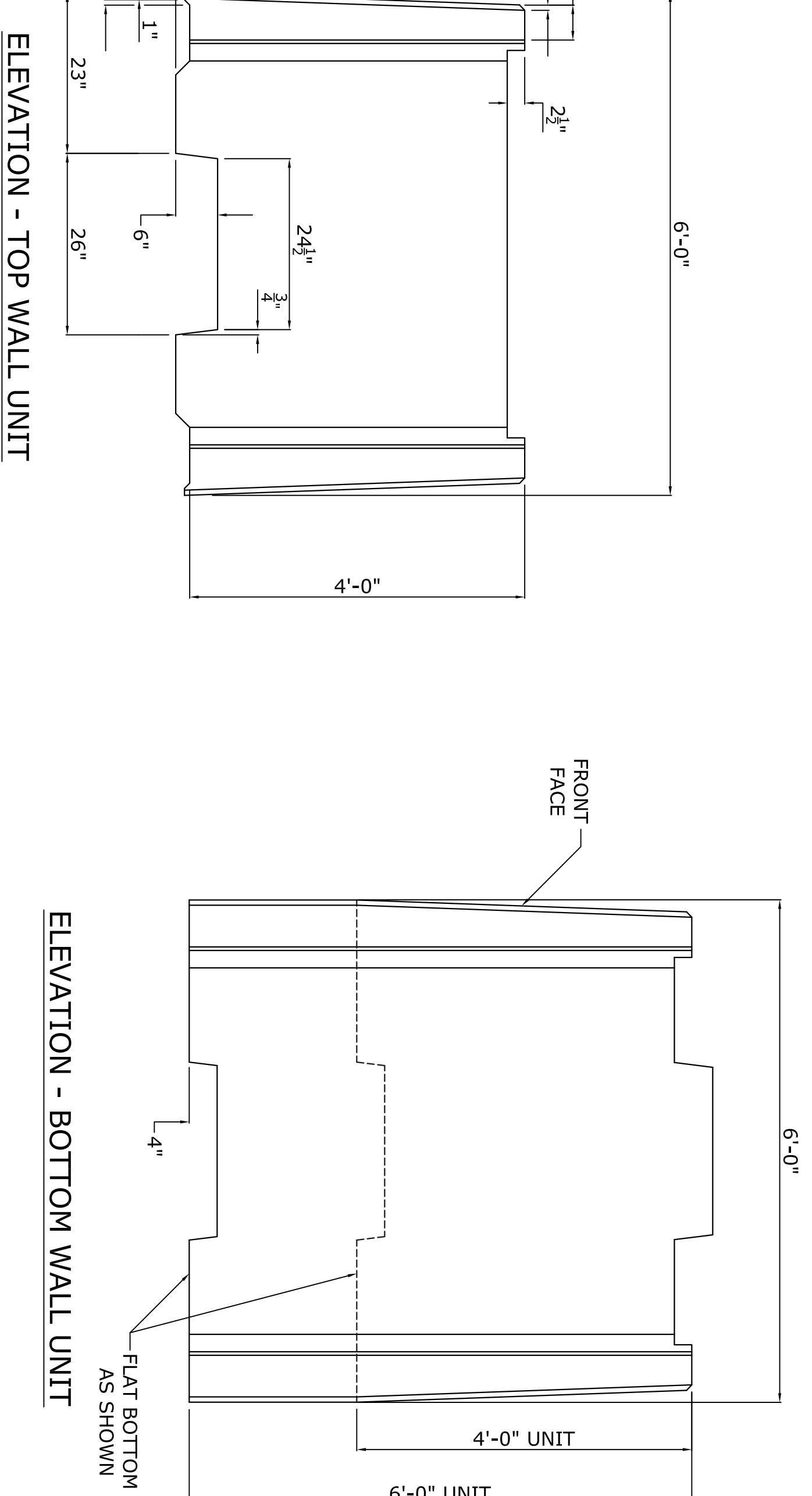
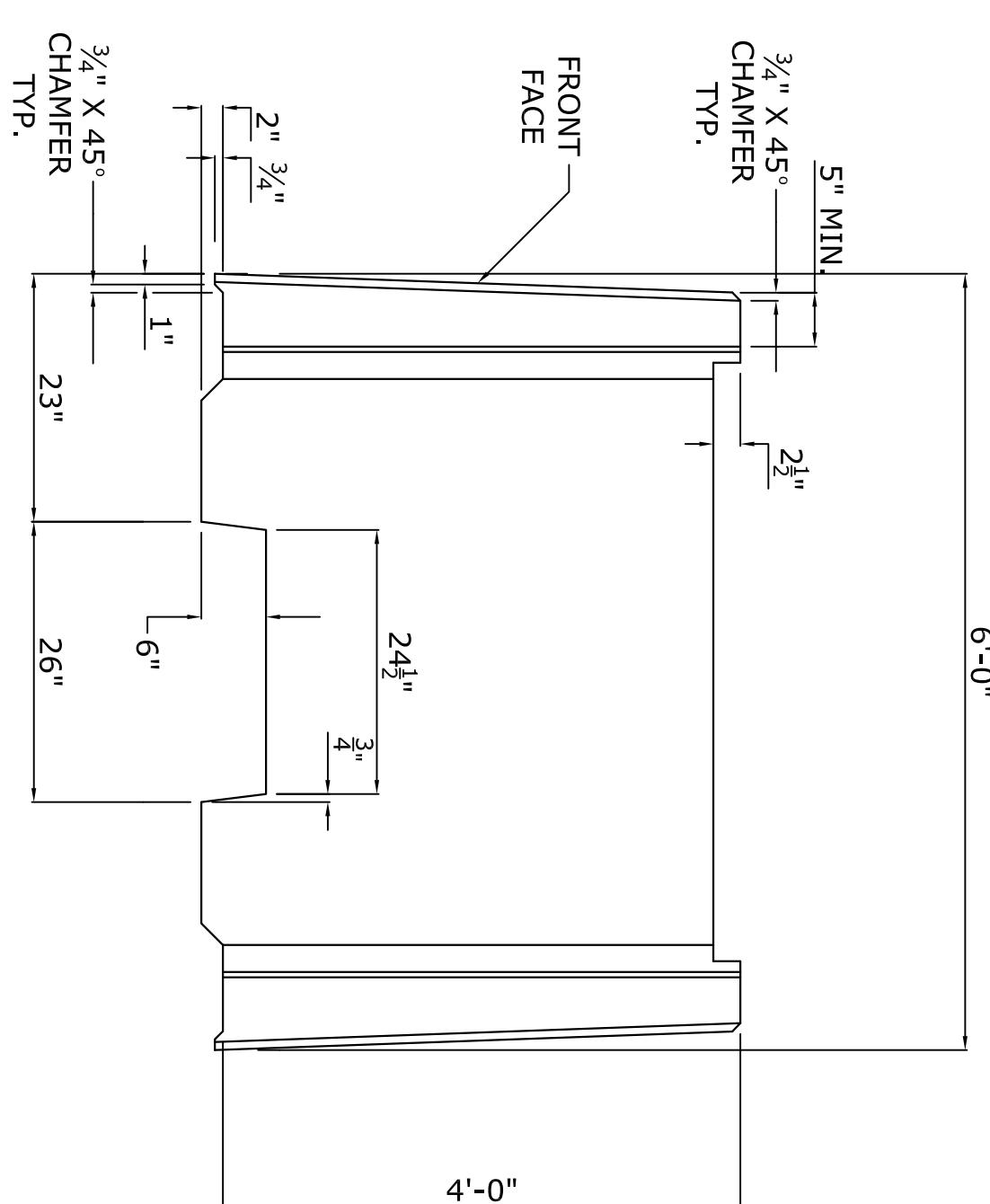
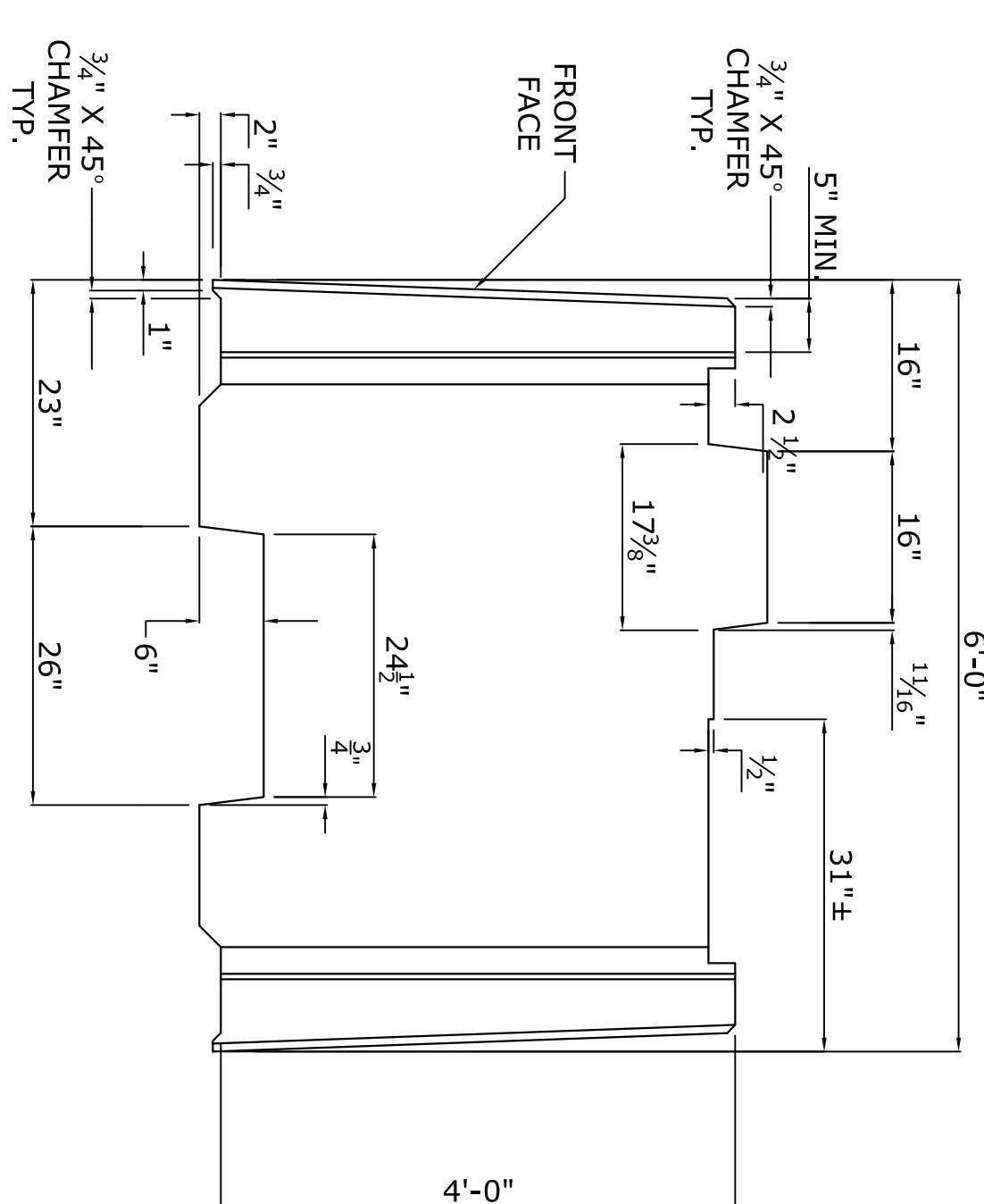
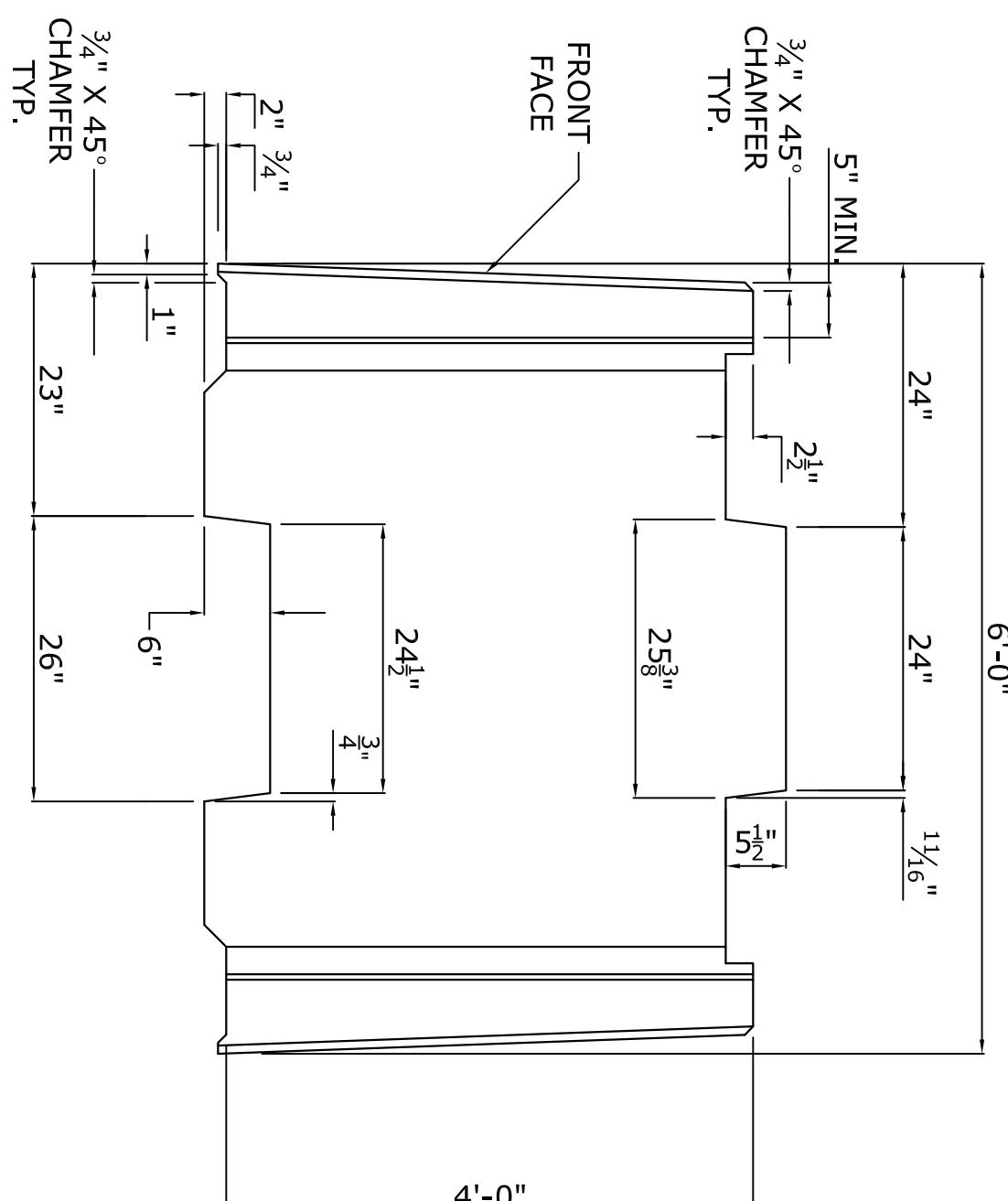
4. ALLOWABLE BEARING CAPACITY:
ALL FOUNDATIONS DESIGNED FOR A MAXIMUM ALLOWABLE BEARING CAPACITY OF 6.0 KSF.

DATE: 11-2-16 SCALE: AS SHOWN TITAN NO.
TITLE: PROPOSED DOUBLEWAL RETAINING WALL PLAN & ELEVATION
CONTRACTOR:
△ 1-31-17 MMB PER REVIEW DR. BY MMB JOB NO.
NO. DATE BY REVISION CHK. BY DCM 16061 SHEET 2 of 3





NOTE: 2 FOOT HIGH WALL UNITS ALSO AVAILABLE



ELEVATION - STANDARD WALL UNIT

ELEVATION - TRANSITION WALL UNIT

ELEVATION - TOP WALL UNIT

ELEVATION - BOTTOM WALL UNIT

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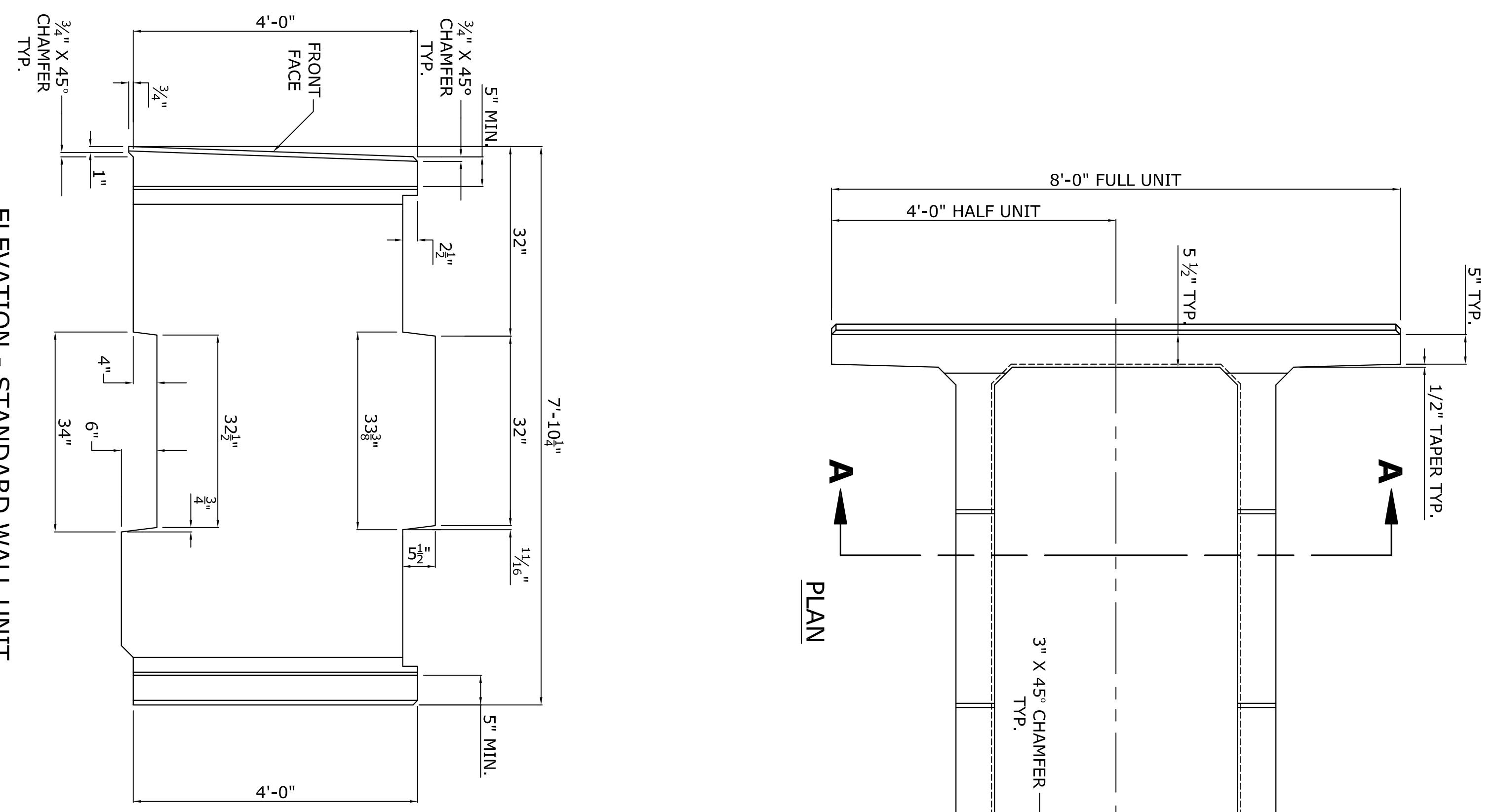
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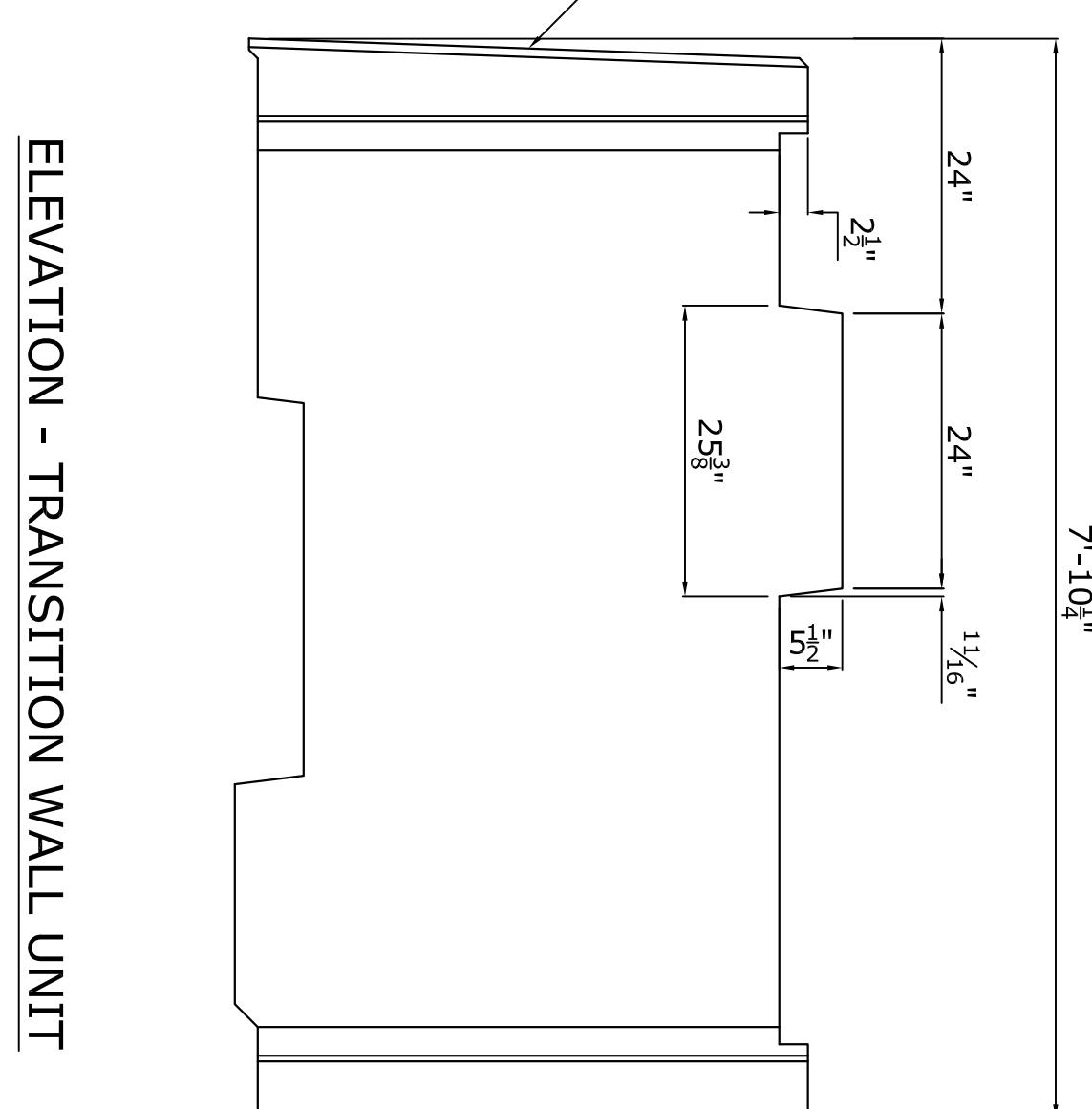
DoubleWal
RETAINING WALL SYSTEM
PROJECT SITE IMPROVEMENTS
EVERSOURCE ENERGY
GREEN HILL 30R YARD EXPANSION
MADISON, CONNECTICUT

TITLE DIMENSIONAL PROPERTIES
6 FOOT WIDE
DOUBLEWAL MODULES

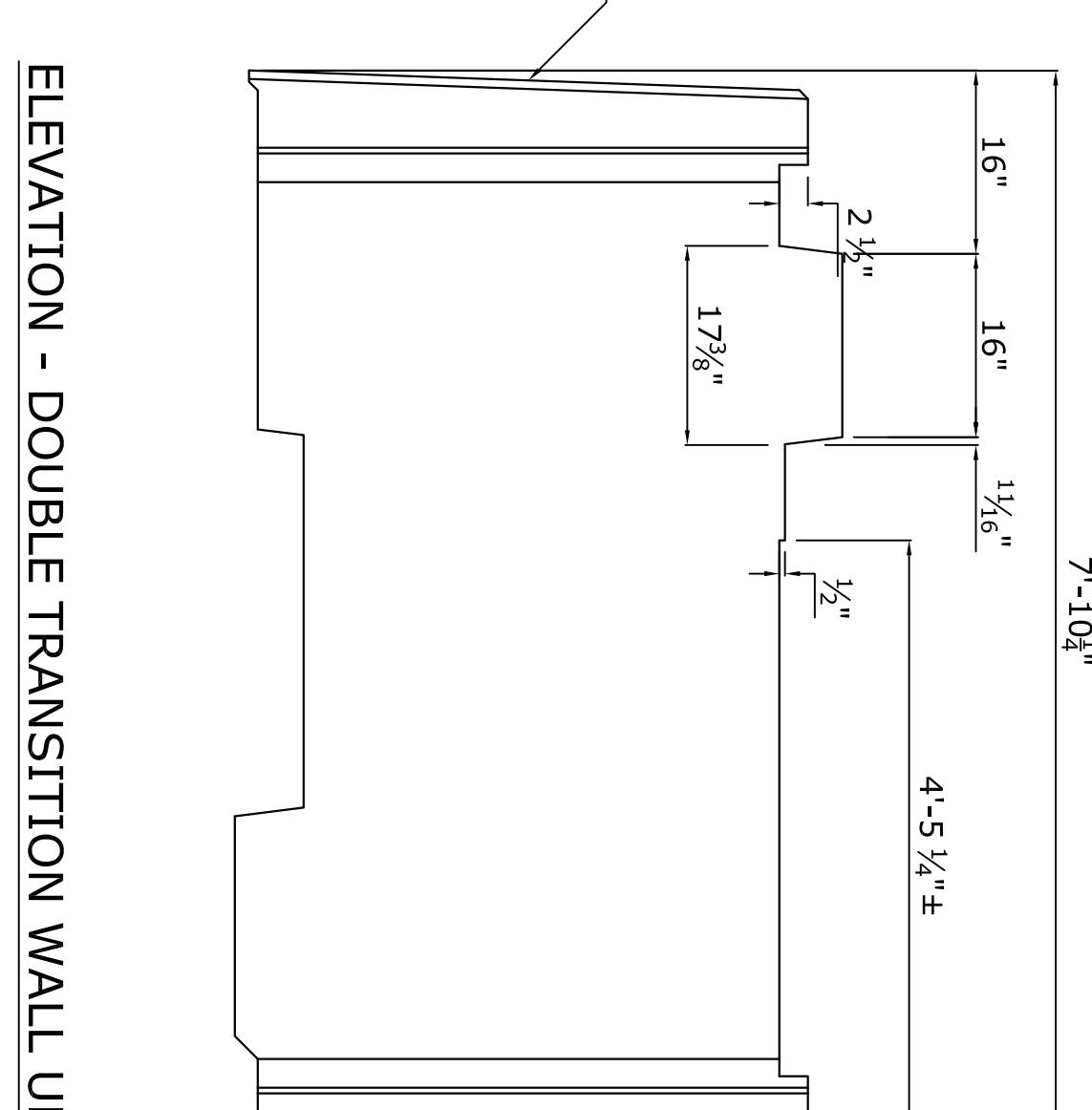
DATE 1-31-17 SCALE 3/4"=1'-0" TITAN NO.
DR. BY MMB JOB NO. CONTRACTOR
DCM 14066 SHEET D1 of 3



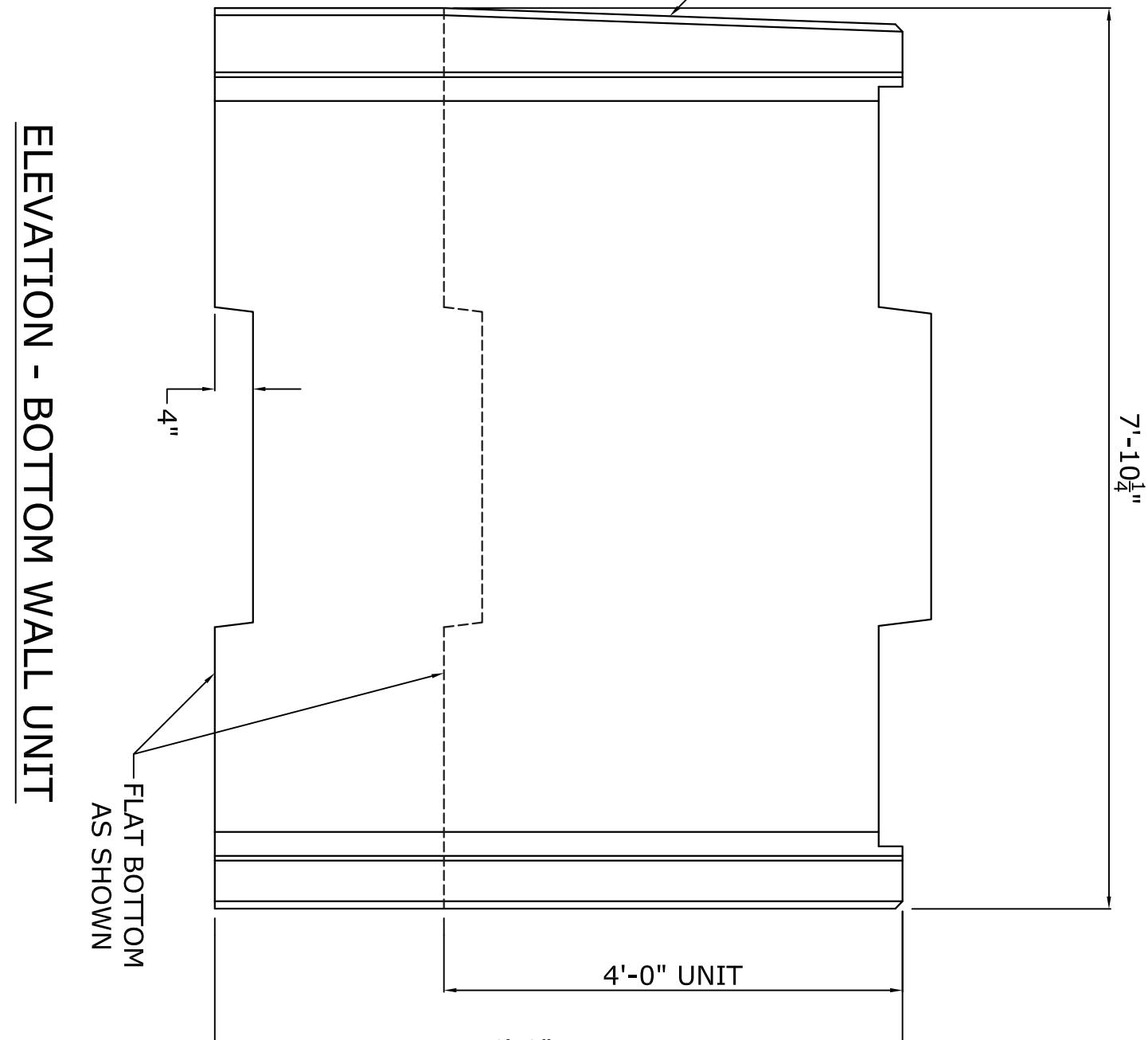
ELEVATION - STANDARD WALL UNIT



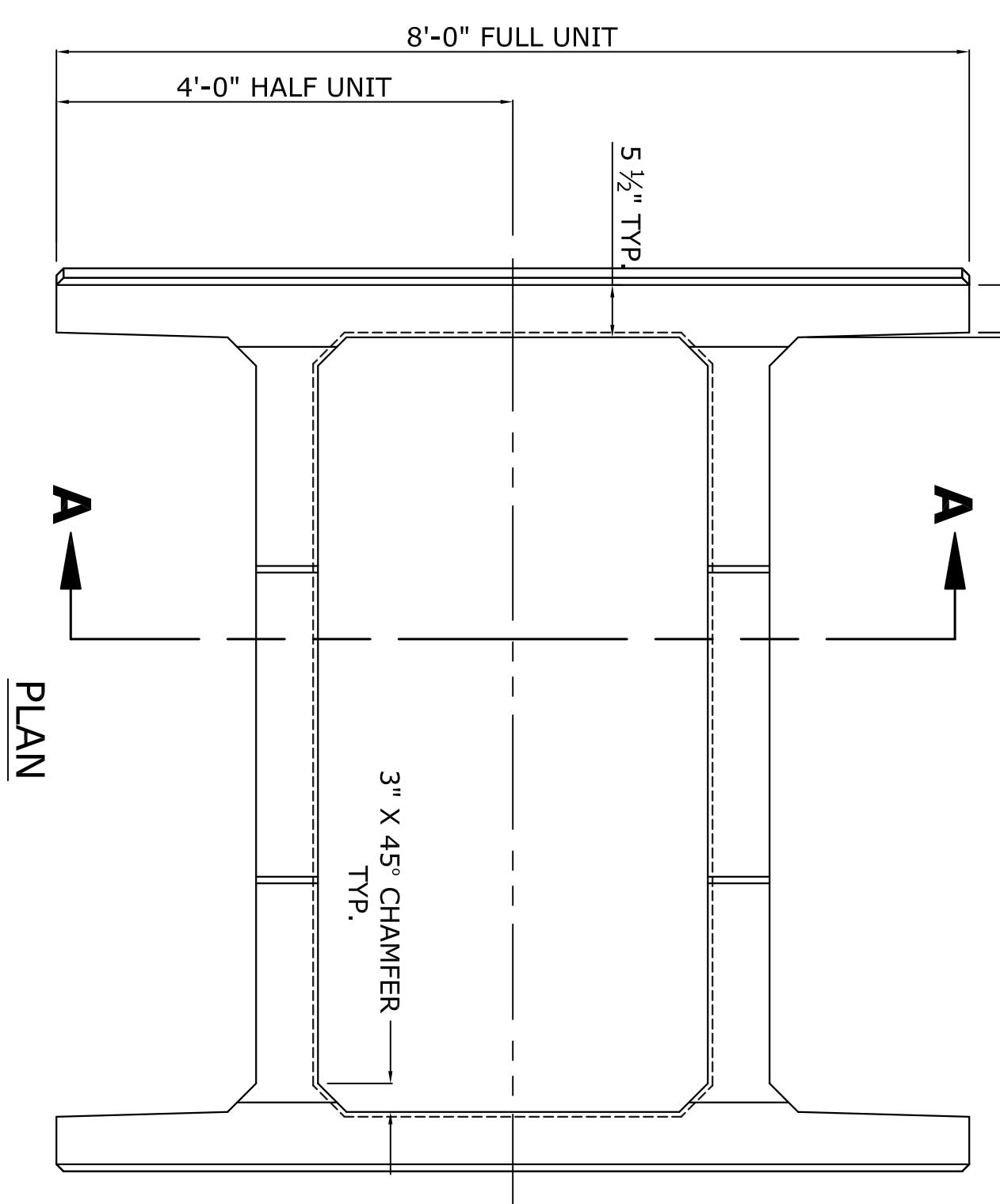
ELEVATION - DOUBLE TRANSITION WALL UNIT



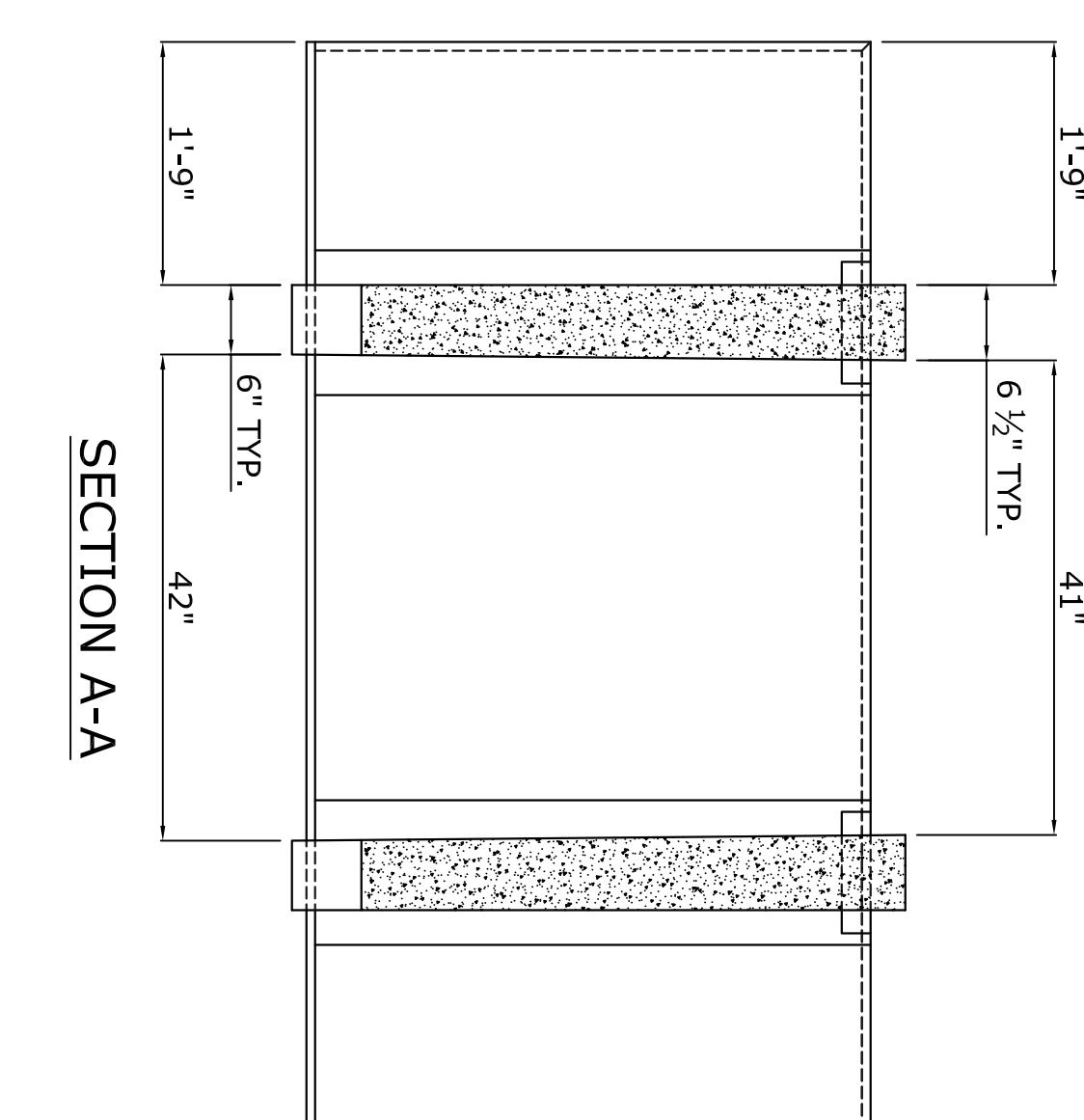
ELEVATION - BOTTOM WALL UNIT



ELEVATION - STANDARD WALL UNIT

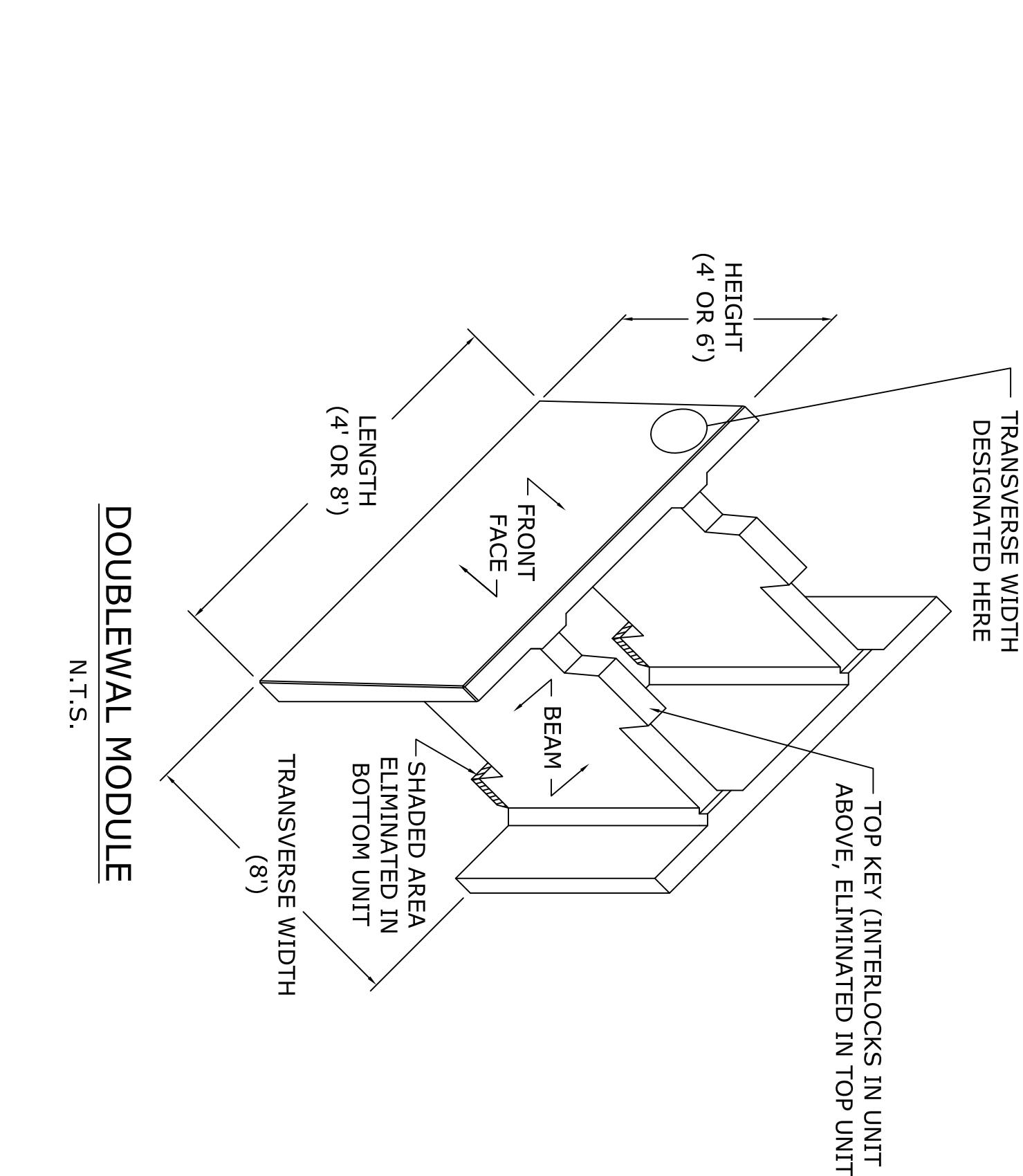


PLAN



SECTION A-A

DOUBLEWAL MODULE
N.T.S.



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DOUBLEWAL
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PROJECT SITE IMPROVEMENTS
EVERSOURCE ENERGY
GREEN HILL 30R YARD EXPANSION
MADISON, CONNECTICUT

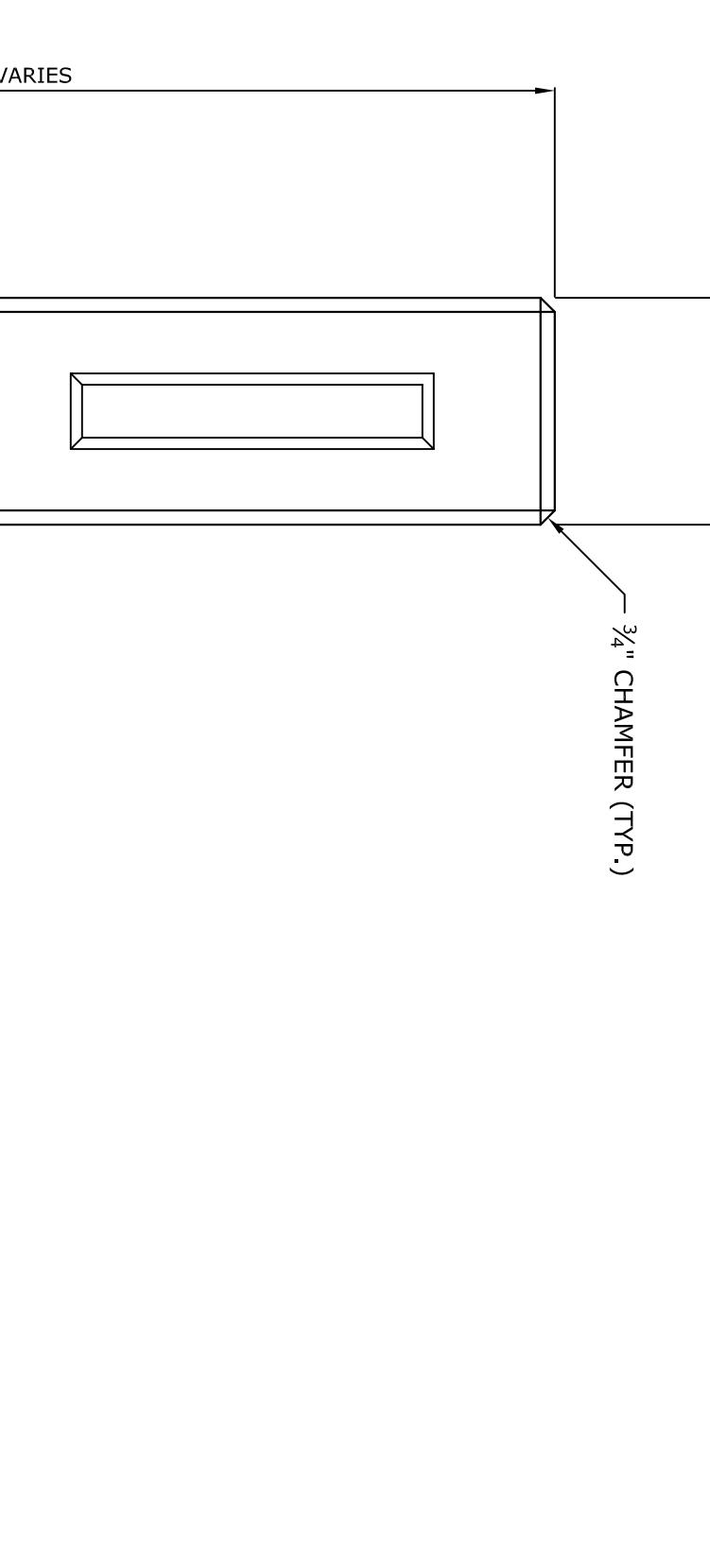
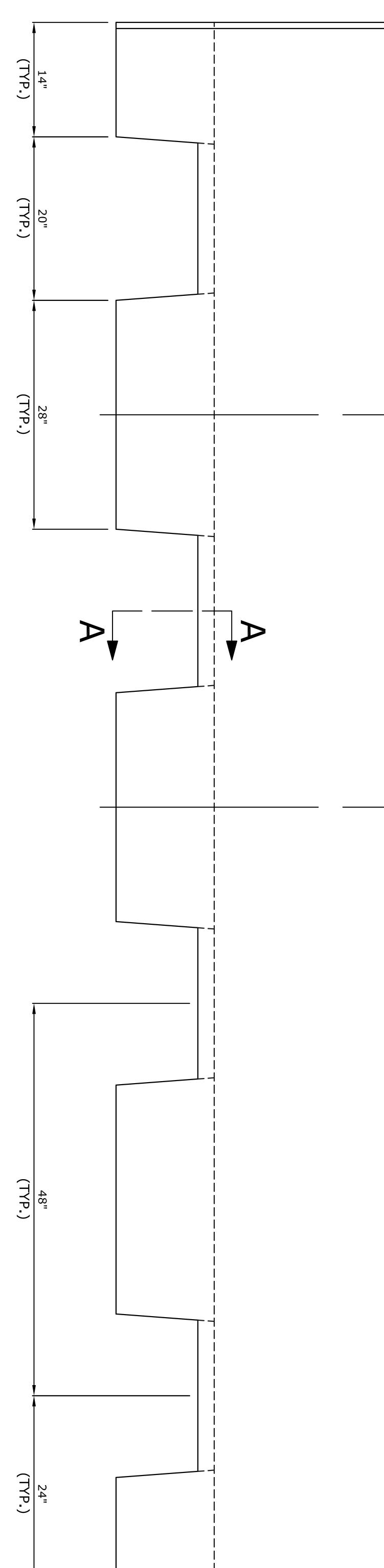
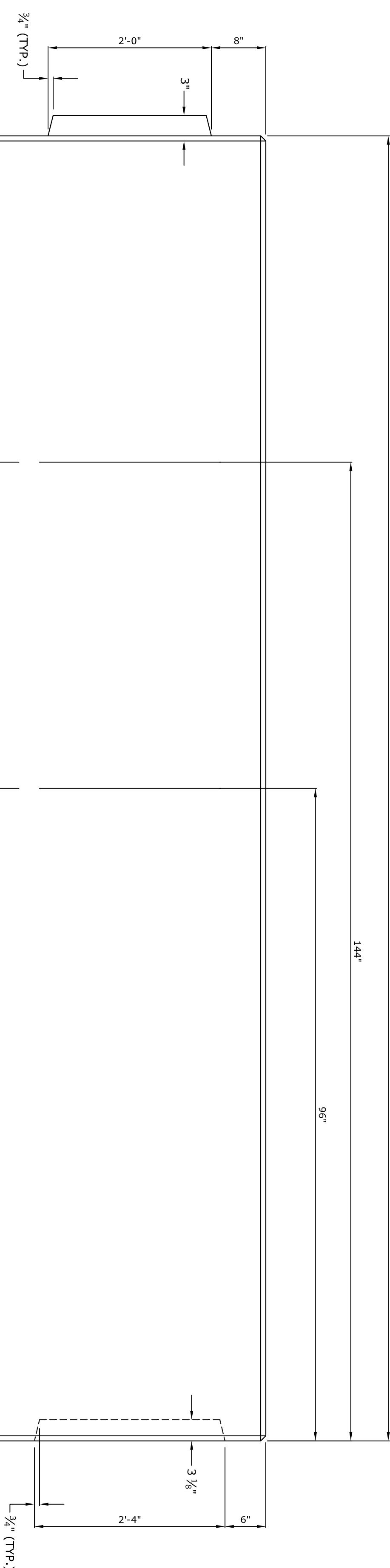
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NO	REVISION	DR. BY	MMB	14066
				SHEET D2 of 3

192"

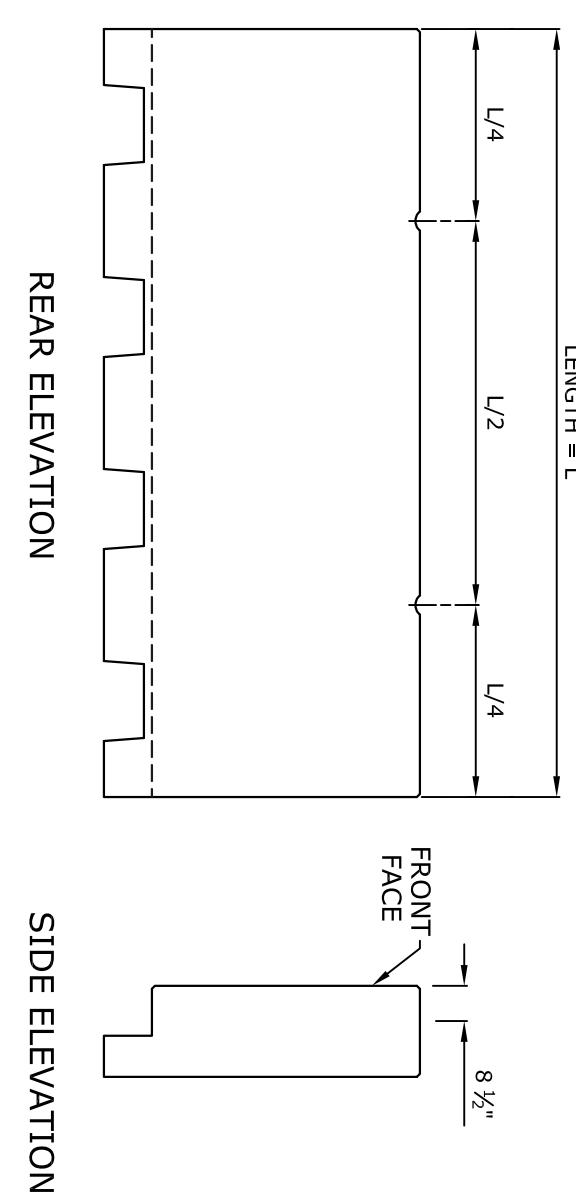
144"

96"

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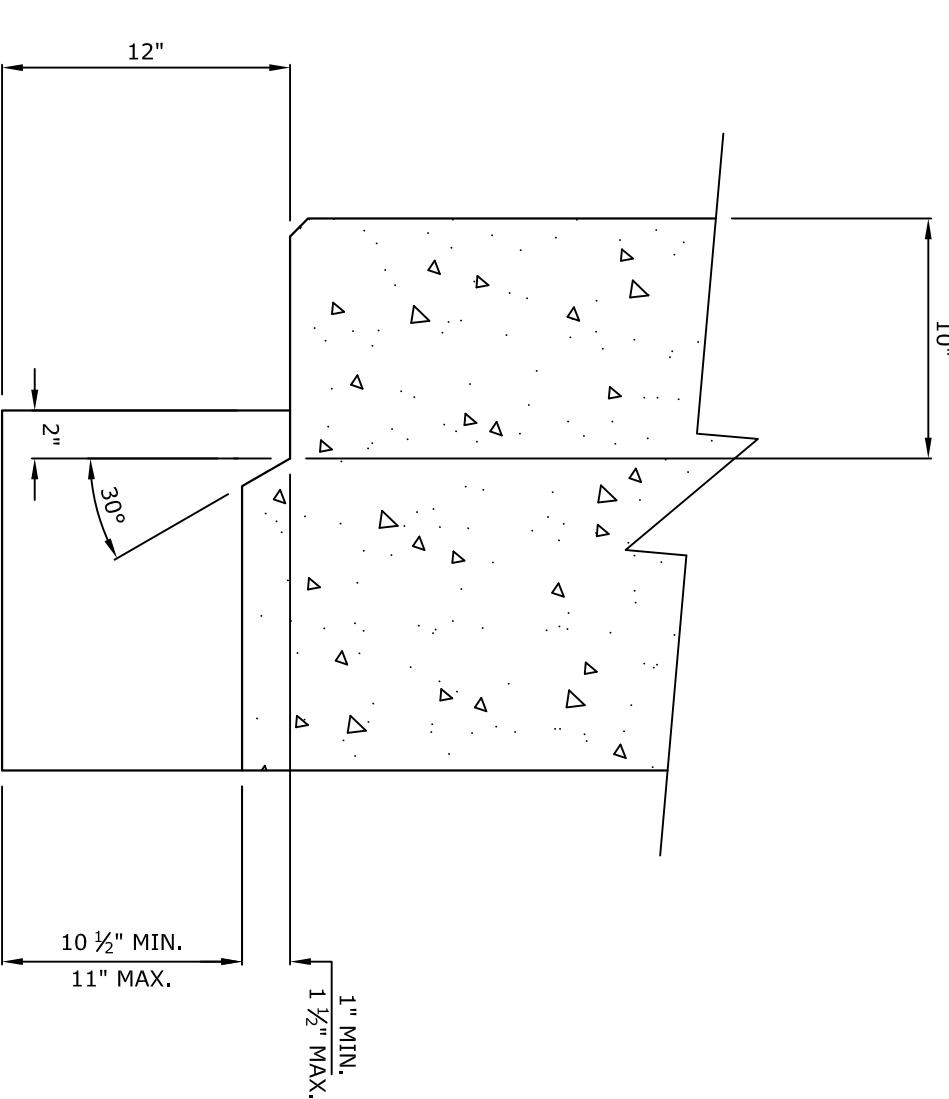
REAR ELEVATION
SCALE: 1"=1'-0"



REAR ELEVATION

SIDE ELEVATION

SIDE ELEVATION
SCALE: 1"=1'-0"



SECTION A-A
N.T.S.

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QUELLEWAL
RETAINING WALL SYSTEM

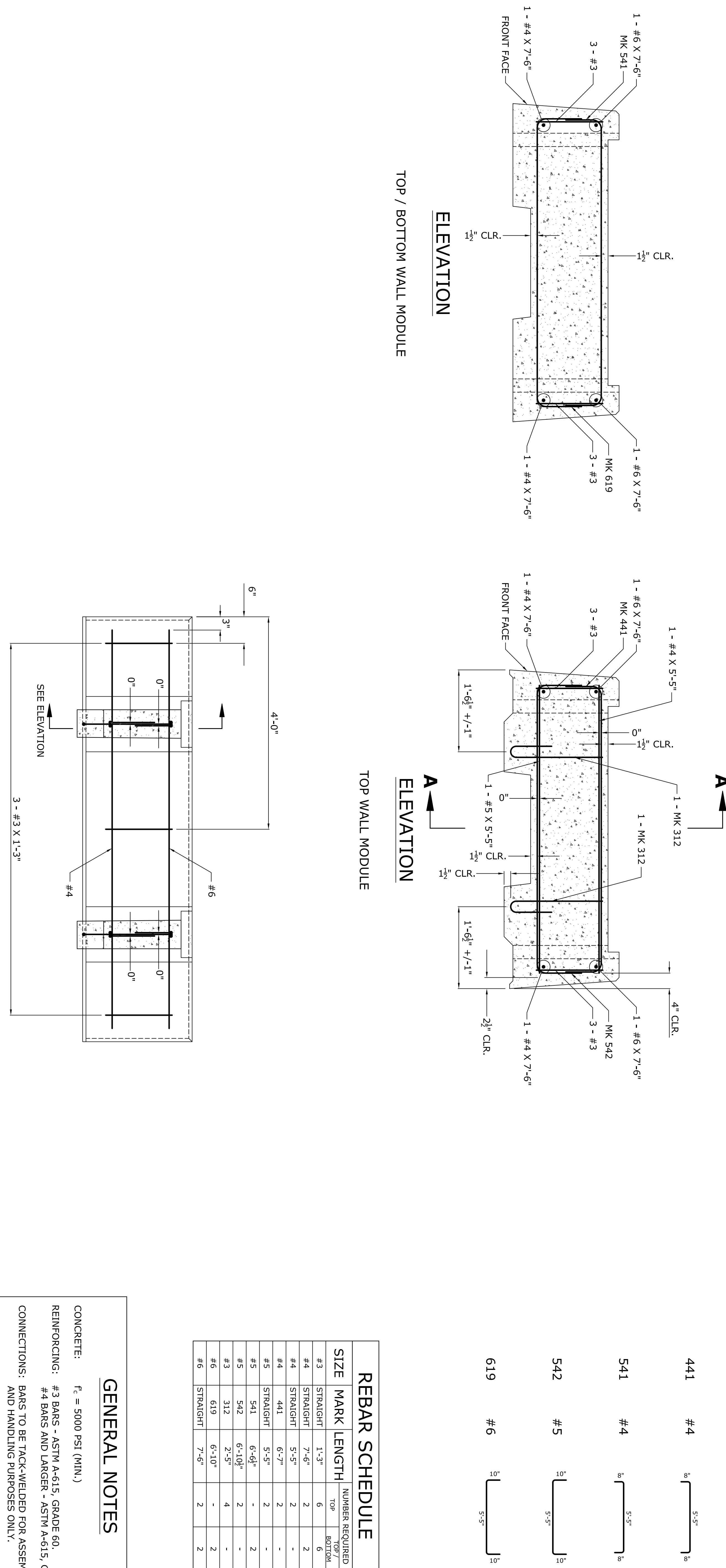
PROJECT SITE IMPROVEMENTS
EVERSOURCE ENERGY
GREEN HILL 30R YARD EXPANSION
MADISON, CONNECTICUT

TITLE: PRECAST TRAFFIC BARRIER TYPE II-C
DIMENSIONAL PROPERTIES

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DR. BY	MMB	JOB NO.	CONTRACTOR
NO. DATE BY	REVISION	DCM	SHEET

16061 D3 of 3



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UNITED CONCRETE PRODUCTS, INC.

DOUBLERW4 RETAINING WALL SYSTEM

GENERAL NOTES

CONCRETE: $f_c' = 5000$ PSI (MIN.)

REINFORCING: #3 BARS - ASTM A-615, GRADE 60.
#4 BARS AND LARGER - ASTM A-615, GRADE 6

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

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

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	5'-5"	2	-
#5	541	6'-6 $\frac{1}{2}$ "	-	2
#5	542	6'-10 $\frac{1}{2}$ "	2	-
#3	312	2'-5"	4	-
#6	619	6'-10"	-	2
#6	Straight	7'-6"	2	2

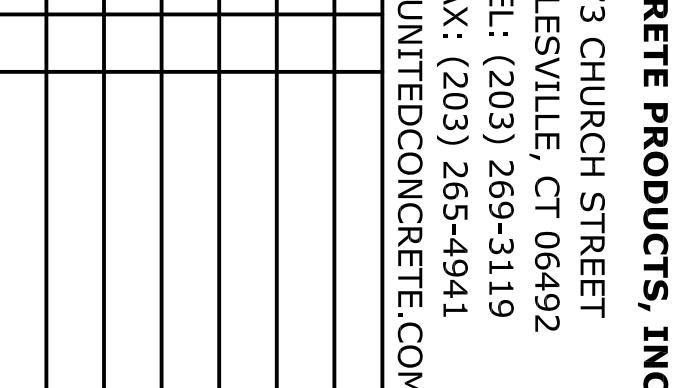
GENERAL NOTES

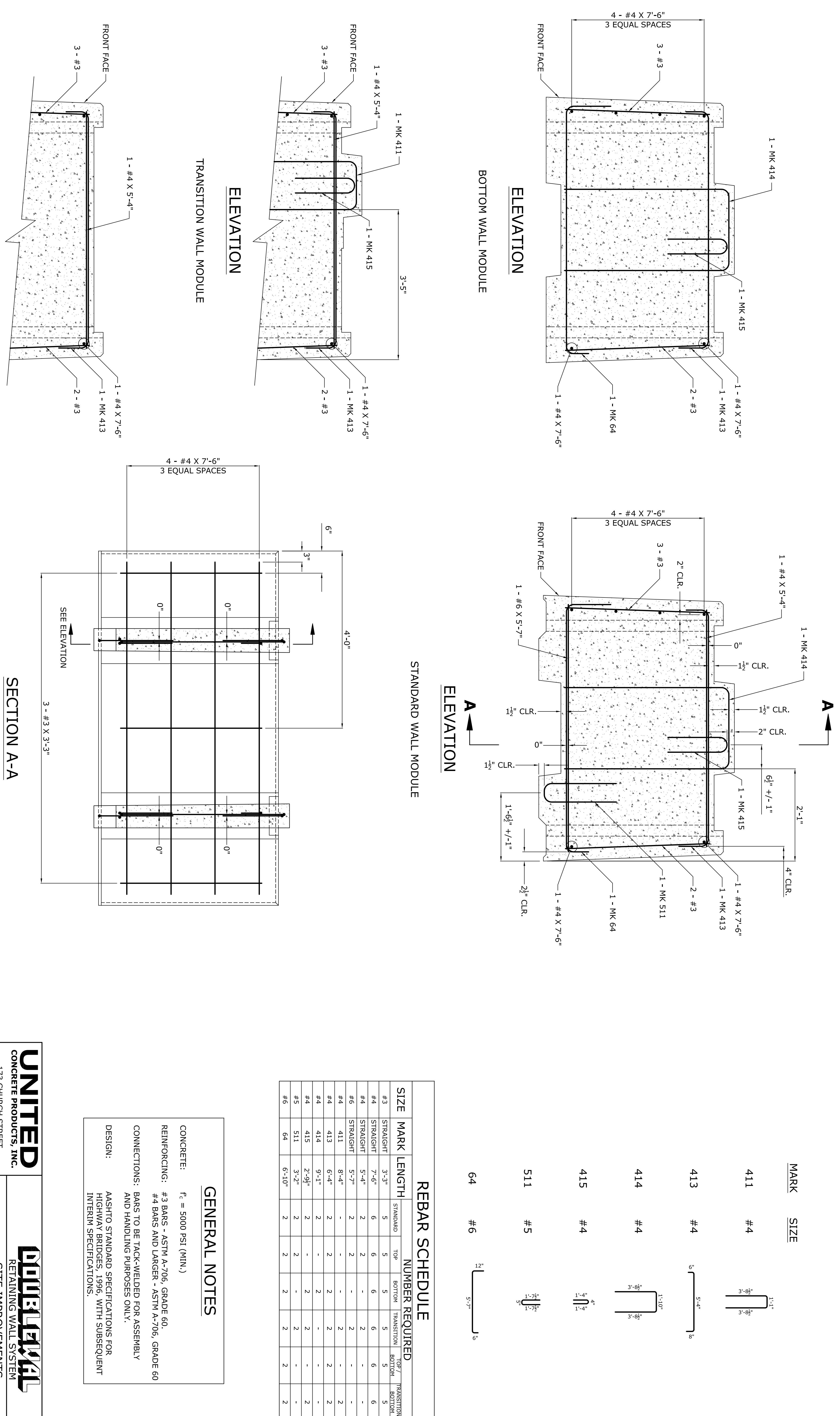
RETE: $f_c = 5000$ PSI (MIN.)

FORCING: #3 BARS - ASTM A-615, GRADE 60.
#4 BARS AND LARGER - ASTM A-615, GRADE 60.

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

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

	
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PROJECT	
SITE IMPROVEMENTS EVERSOURCE ENERGY GREEN HILL 30R YARD EXPANSION MADISON, CONNECTICUT	
TITLE	
REINFORCING FOR 2' X 8' X 6' DOUBLEWAL MODULES	
DATE	SCALE
1-31-17	1"=1'-0"
DR. BY	JOB NO.
MMB	16061
NO. DATE	CHK. BY
BY	DCM
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R1 of 4	



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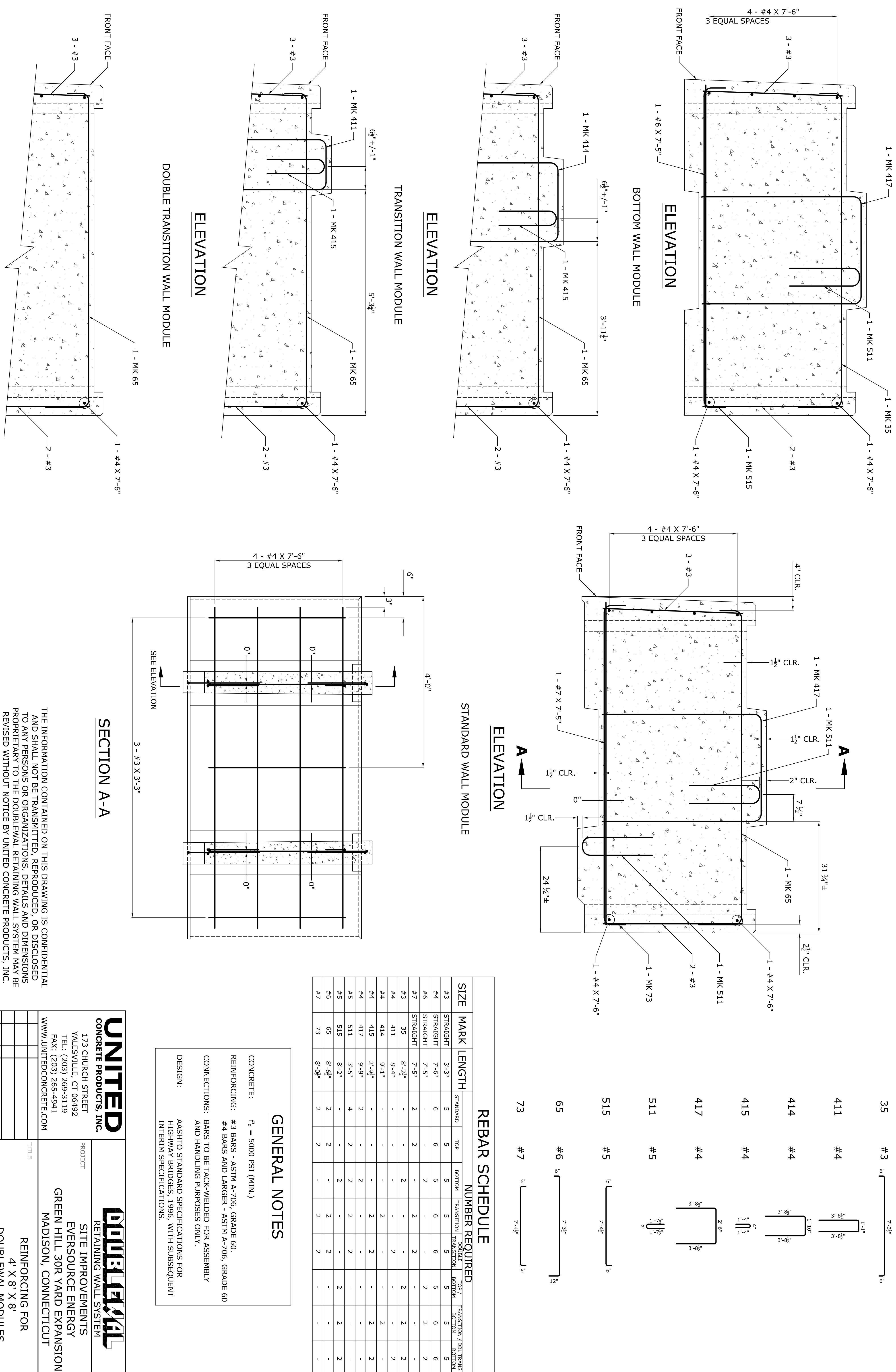
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DoubleWal
RETAINING WALL SYSTEM

PROJECT SITE IMPROVEMENTS
EVERSOURCE ENERGY
GREEN HILL 30R YARD EXPANSION
MADISON, CONNECTICUT

TITLE REINFORCING FOR
4' X 8' X 6'
DOUBLEWAL MODULES

DATE 1-31-17 SCALE 1"=1'-0" TITAN NO.
DR. BY MMB JOB NO. CONTRACTOR
CICK. BY DCM SHEET R2 of 4



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ELEVATION

TOP WALL MODULE

UNITED
CONCRETE PRODUCTS, INC.

Doublewall
RETAINING WALL SYSTEM

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PRIOR TO FABRICATION.

GENERAL NOTES

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

REINFORCING: #3 BARS - 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.

SECTION A-A

**REINFORCING FOR
4' X 8' X 8'
DOUBLEWALL MODULES**

DATE	1-31-17	SCALE	1"=1'-0"	TITAN NO.
NO. DATE BY	MMB	JOB NO.	CONTRACTOR	SHEET
				R3 of 4

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

① HV - 4" ② HV + 8"



TYPE 26

TYPE 27

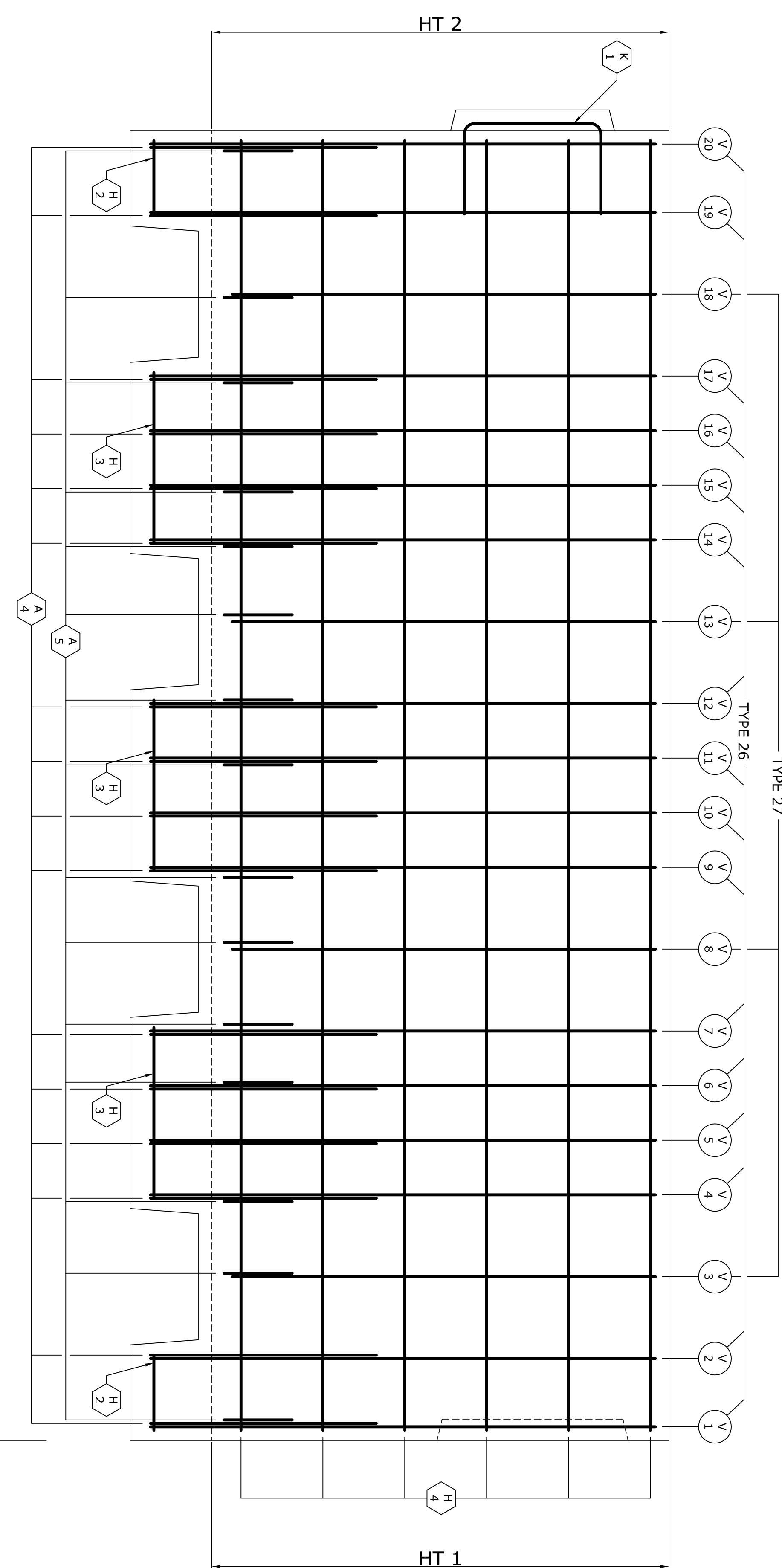
TYPE 33

TYPE 46

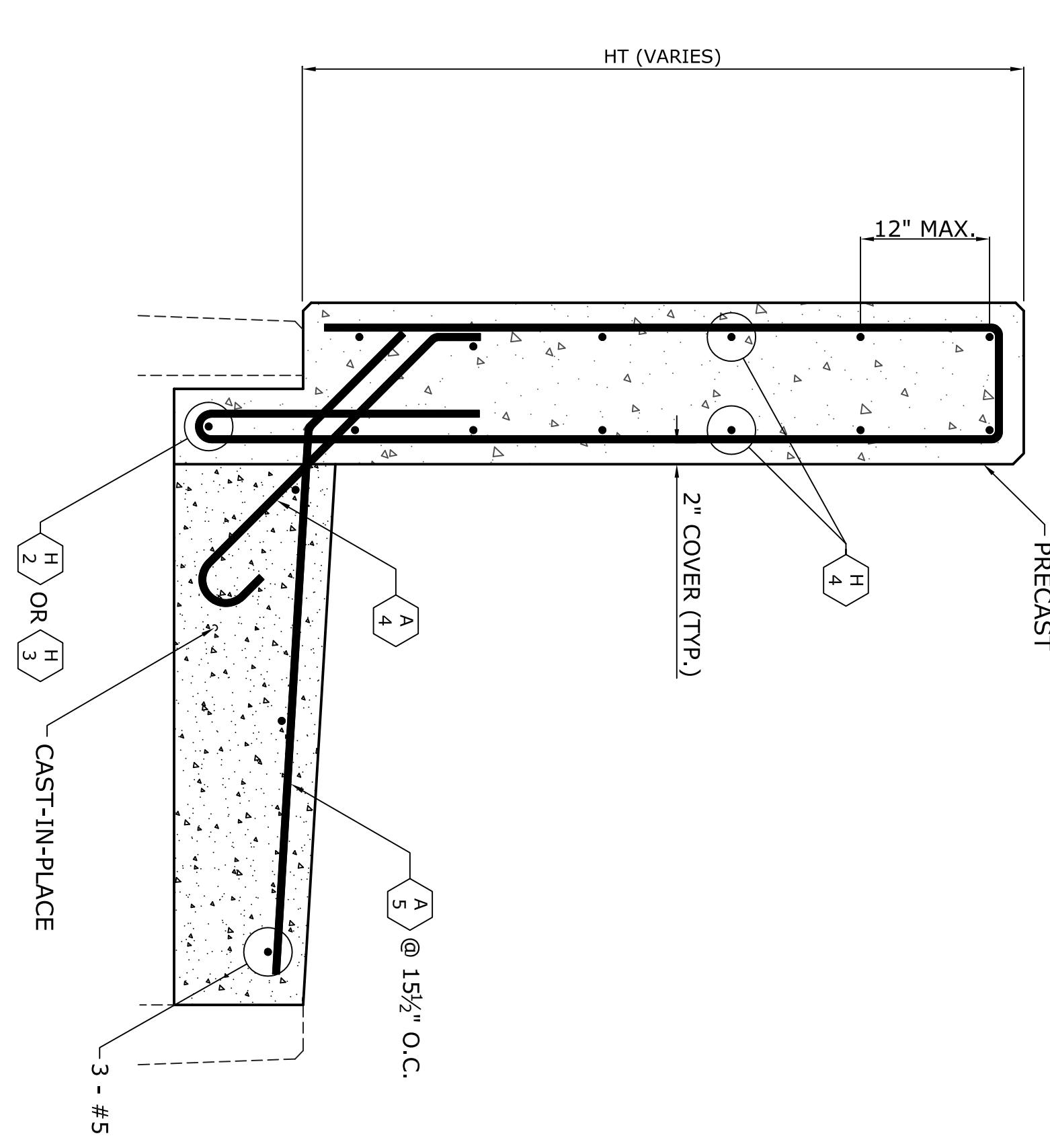
TYPE 47

REAR ELEVATION
1" = 1'-0"

TYPICAL SPACING



SECTION
SCALE: 1" = 1'-0"



UNITED
CONCRETE PRODUCTS, INC.

173 CHURCH STREET
YALESVILLE, CT 06492
TEL: (203) 269-3119
FAX: (203) 265-4941
WWW.UNITEDCONCRETE.COM

QUELLEWAL
RETAINING WALL SYSTEM
SITE IMPROVEMENTS
EVERSOURCE ENERGY
GREEN HILL 30R YARD EXPANSION
MADISON, CONNECTICUT

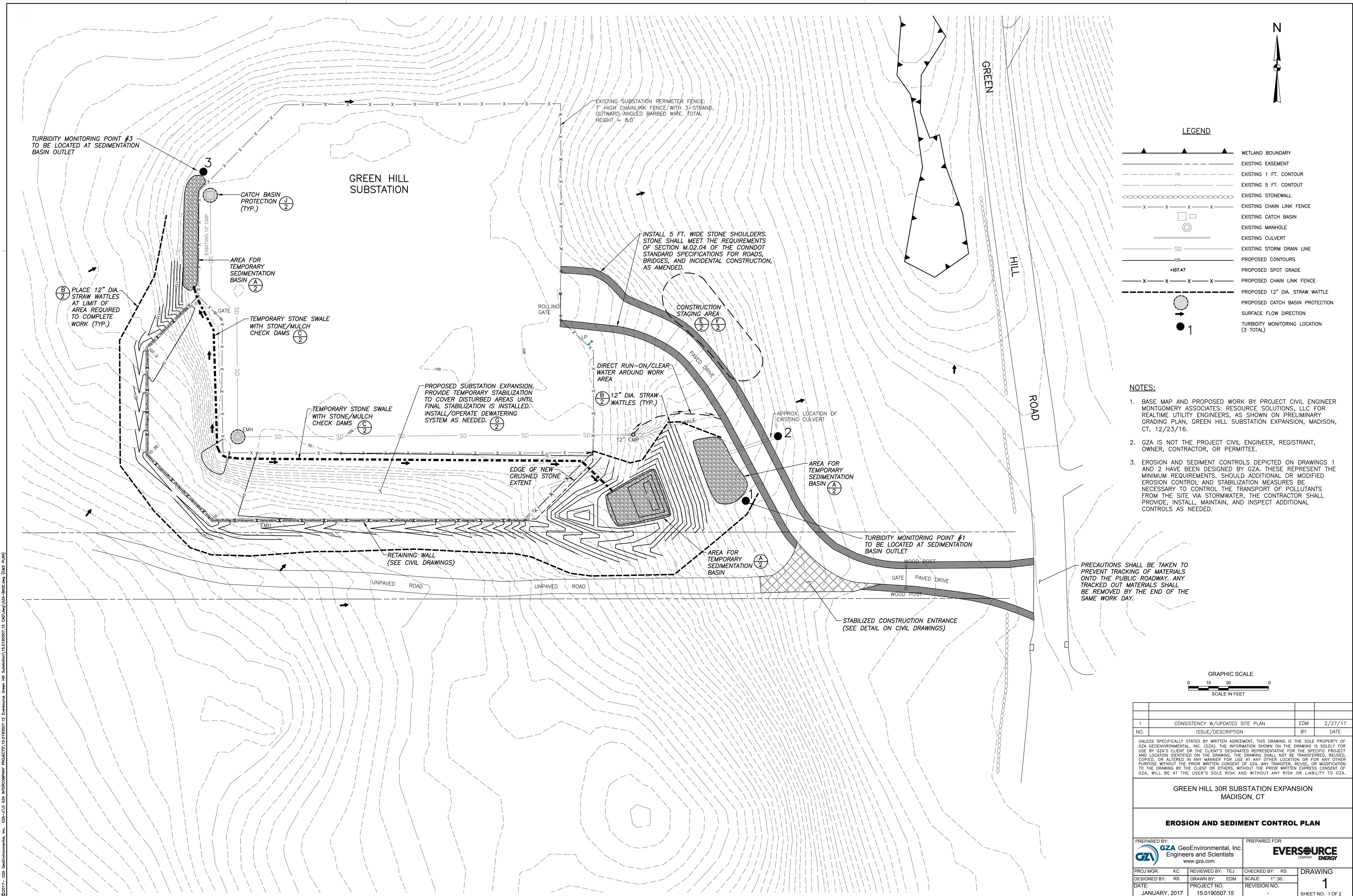
GENERAL NOTES											
CONCRETE:											$f'_c = 5000$ P.S.I. (MIN.)
REINFORCING:											#3 BARS - ASTM A-615, GRADE 40
CONNECTIONS:											#4 BARS AND LARGER - ASTM A-615, GRADE 60
DESIGN:											BARS TO BE TACK WELDED FOR ASSEMBLY AND HANDLING PURPOSES ONLY.
NOTES:											AASHTO STANDARD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

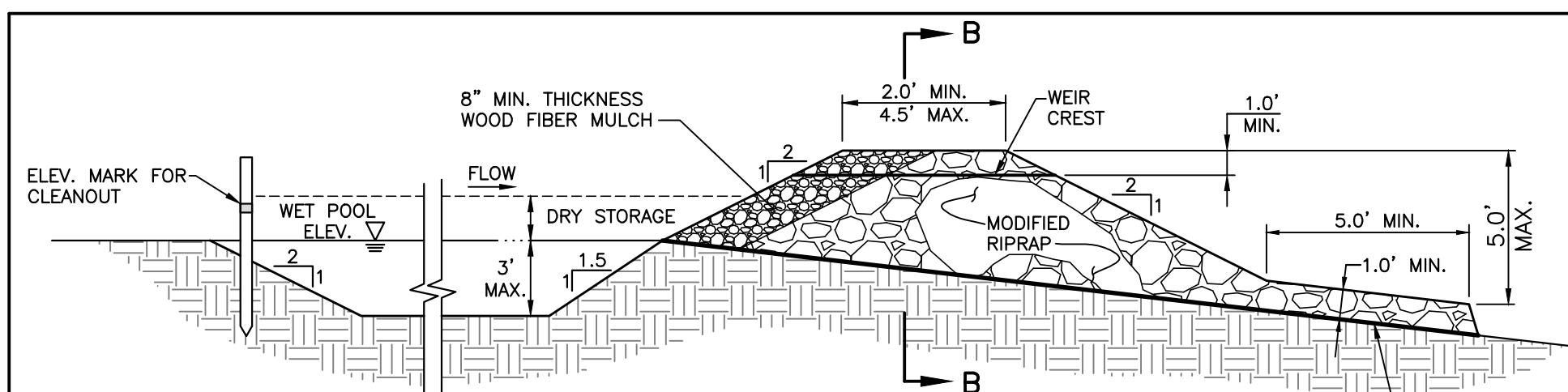
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Canadian Patent Numbers 1,084,246 and 1,104,798 or other Patents Pending.

DATE	1-31-17	SCALE	AS SHOWN	TITAN NO.
NO	BY	MMB	JOB NO.	CONTRACTOR
		DCM	16061	SHEET
				R4 of 4

ATTACHMENT C



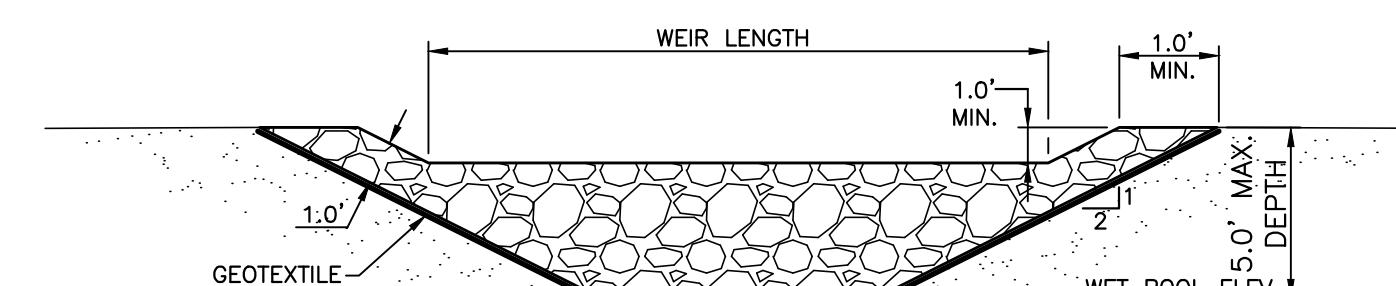


TYPICAL SECTION THROUGH WEIR

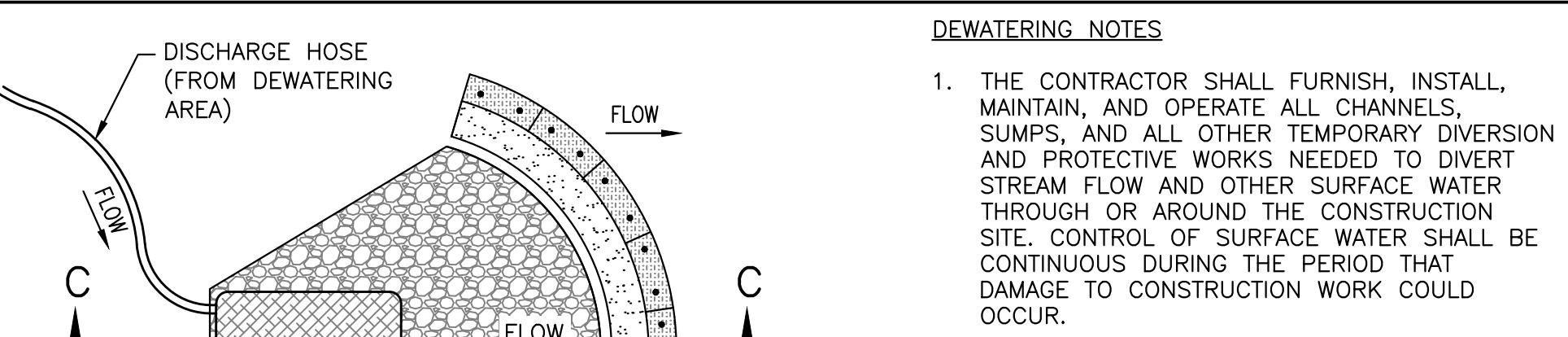
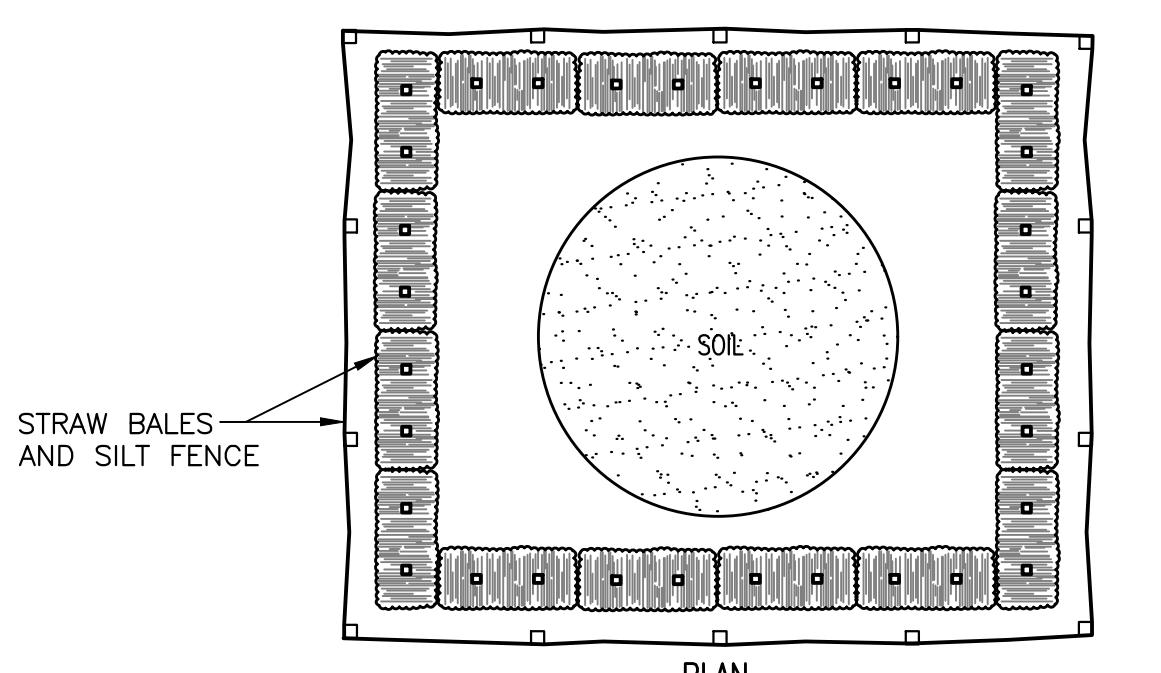
NOTES:
 1. PREVIOUS STONE DIKE SHALL BE CONSTRUCTED OF CT DOT MODIFIED RIPRAP (M.12.02) WITH WOOD FIBER MULCH ON UPSTREAM FACE.
 2. NON-OVERFLOW PORTIONS AND ABUTMENTS OF TEMPORARY SEDIMENT TRAPS MAY BE CONSTRUCTED OF COMPACTED EARTHFILL.

TOP WIDTH VS. HEIGHT
 H=HEIGHT OF EMBANKMENT
 W=TOP WIDTH OF EMBANKMENT

H (ft)	W (ft)
1.0	2.0
2.0	2.0
2.5	2.5
3.0	2.5
3.5	3.0
4.0	3.0
4.5	4.0
5.0	4.5



A TEMPORARY SEDIMENTATION BASIN
 NTS
 2

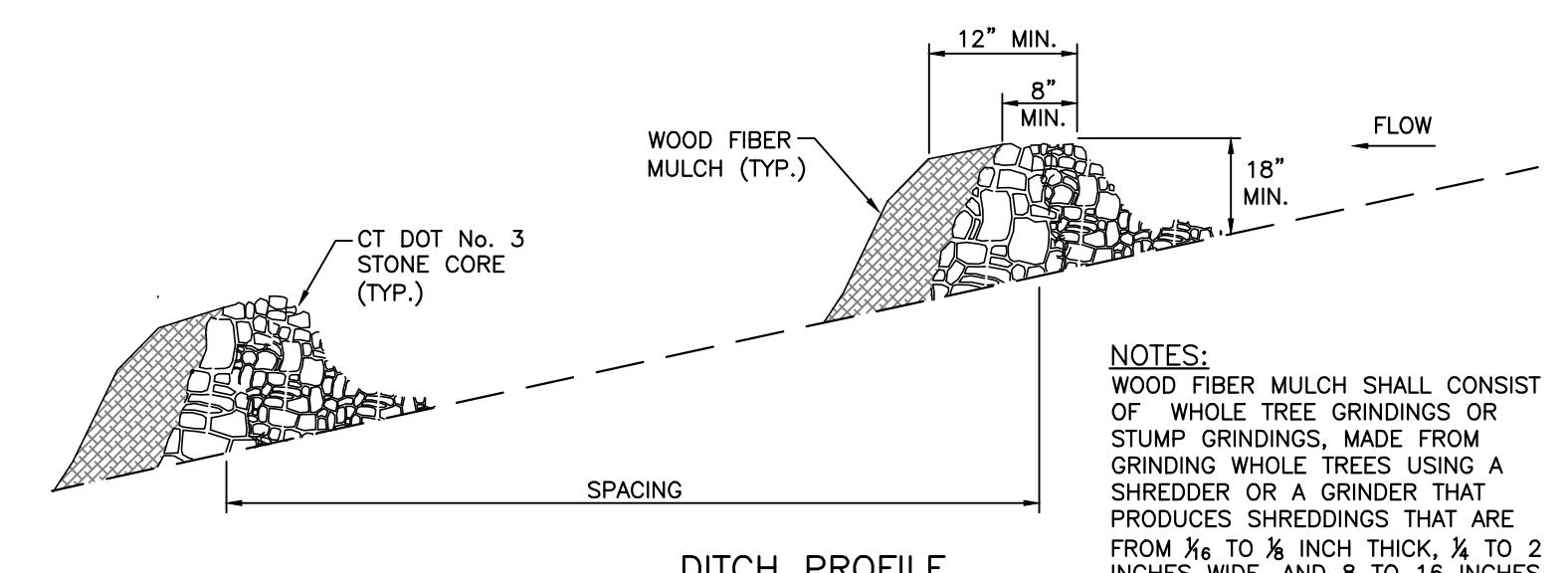


DEWATERING NOTES

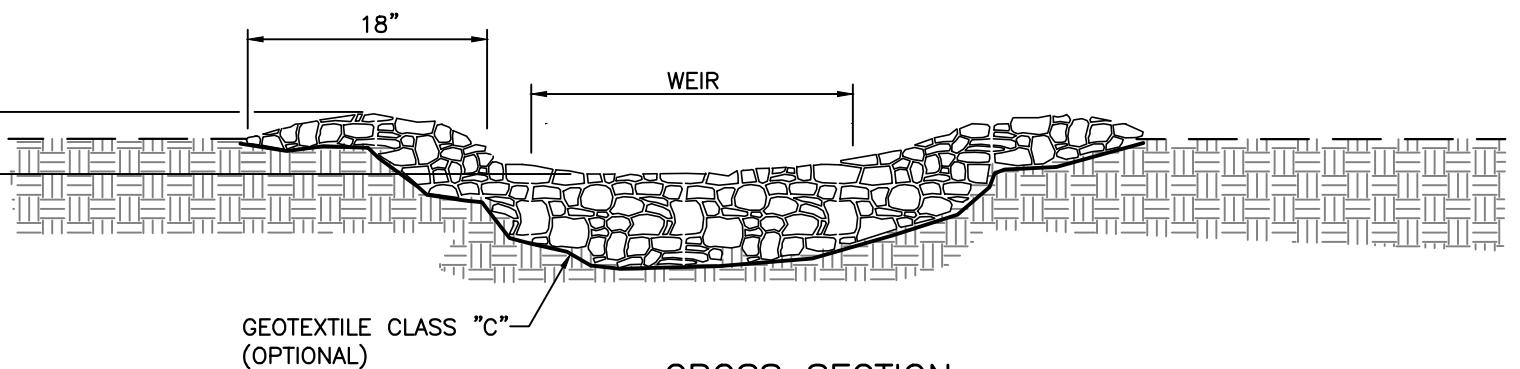
1. THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, AND OPERATE ALL CHANNELS, SUMPS, AND ALL OTHER TEMPORARY DIVERSION AND PROTECTIVE WORKS NEEDED TO DIVERT STREAM FLOW AND OTHER SURFACE WATER THROUGH OR AROUND THE CONSTRUCTION SITE. CONTROL OF SURFACE WATER SHALL BE CONTINUOUS DURING THE PERIOD THAT DAMAGE TO CONSTRUCTION WORK COULD OCCUR.
2. THE CONTRACTOR SHALL FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL DRAINS, SUMPS AND ALL OTHER EQUIPMENT REQUIRED TO PROPERLY Dewater THE SITE. DewaterING SYSTEMS THAT CAUSE A LOSS OF SOIL LINES FROM THE FOUNDATION AREAS SHALL NOT BE PERMITTED.
3. INSTALL DIVERSION DITCHES OR BERMS IF NECESSARY TO MINIMIZE THE AMOUNT OF CLEAN STORM WATER RUN-ON ALLOWED INTO THE EXCAVATED AREA.
4. REMOVAL OF WATER FROM THE CONSTRUCTION SITE SHALL BE ACCOMPLISHED SO THAT EROSION AND THE TRANSPORTING OF SEDIMENT AND OTHER POLLUTANTS ARE MINIMIZED. ALL DewaterING DISCHARGES SHALL BE OUTSIDE OF RESOURCE AREAS.
5. Dewatering effluent discharge shall be in sheet flow.
6. Dewatering in periods of intense, heavy rain, when the infiltrative capacity of the soil is exceeded, shall be avoided.
7. Flow to the sediment control device may not exceed the device capacity to settle and filter flow or the device volume capacity.
8. When temporary works are no longer needed, the contractor shall remove and return the area to a condition similar to that which existed before construction. Areas where temporary works were located shall be graded for slightly appearance with no obstruction to natural surface water flows or the proper functioning and access to the works of improvement installed. The contractor shall exercise extreme care during the removal stages to minimize the loss of soil sediment and debris that was trapped during construction.



B TYPICAL STRAW WATTLE USAGE
 NTS
 2



NOTES:
 WOOD FIBER MULCH SHALL CONSIST OF WHOLE TREE GRINDINGS OR STUMP GRINDINGS, MADE FROM GRINDING WHOLE TREES USING A SHREDDER OR A GRINDER THAT PRODUCES SHREDDINGS THAT ARE FROM $\frac{1}{16}$ TO $\frac{1}{8}$ INCH THICK, $\frac{1}{4}$ TO 2 INCHES WIDE, AND 8 TO 16 INCHES LONG.



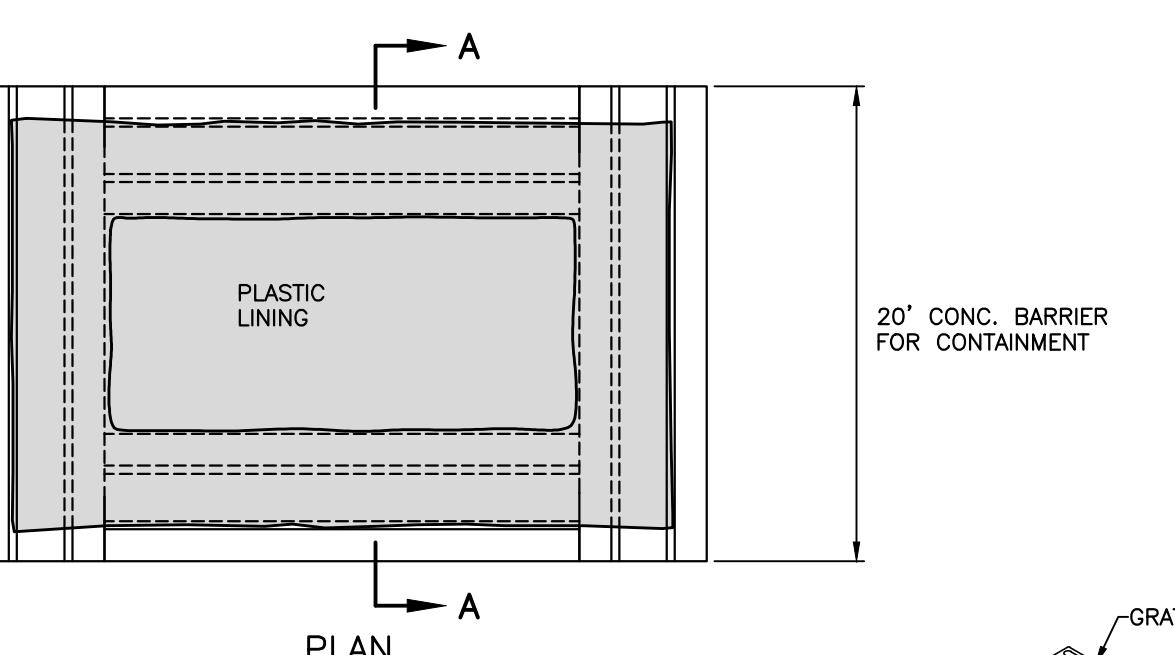
C STONE/MULCH CHECK DAM DETAIL
 NTS
 2

STANDARD STONE CHECK DAM DESIGN

SLOPE	SPACING
2% or less	80'
2.12 to 4%	40'
4.12 to 7%	25'
7.12 to 10%	15'
over 10%	use lined waterway design

CONSTRUCTION SPECIFICATIONS

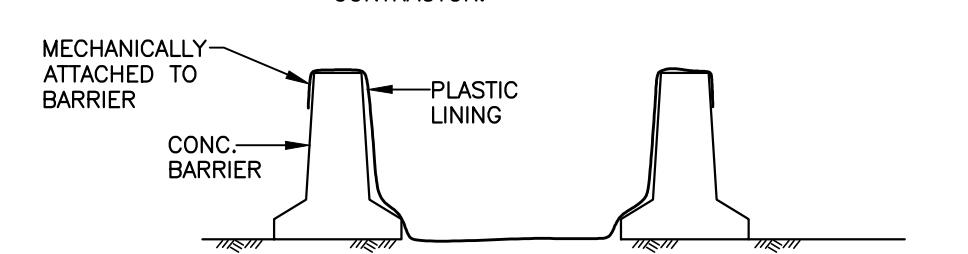
1. THE CHECK DAM SHALL BE CONSTRUCTED OF CT DOT No. 3 STONE OR MODIFIED RIPRAP (M.12.02). THE STONE SHALL BE PLACED SO THAT IT COMPLETELY COVERS THE WIDTH OF THE CHANNEL AND SHALL BE KEYED INTO THE CHANNEL BANKS.
2. THE TOP OF THE CHECK DAM SHALL BE CONSTRUCTED SO THE CENTER IS APPROXIMATELY 6" LOWER THAN THE OUTER EDGES, FORMING A WEIR THAT WATER CAN FLOW ACROSS.
3. THE MAXIMUM HEIGHT OF THE CHECK DAM AT THE CENTER SHALL NOT EXCEED 3 FT.



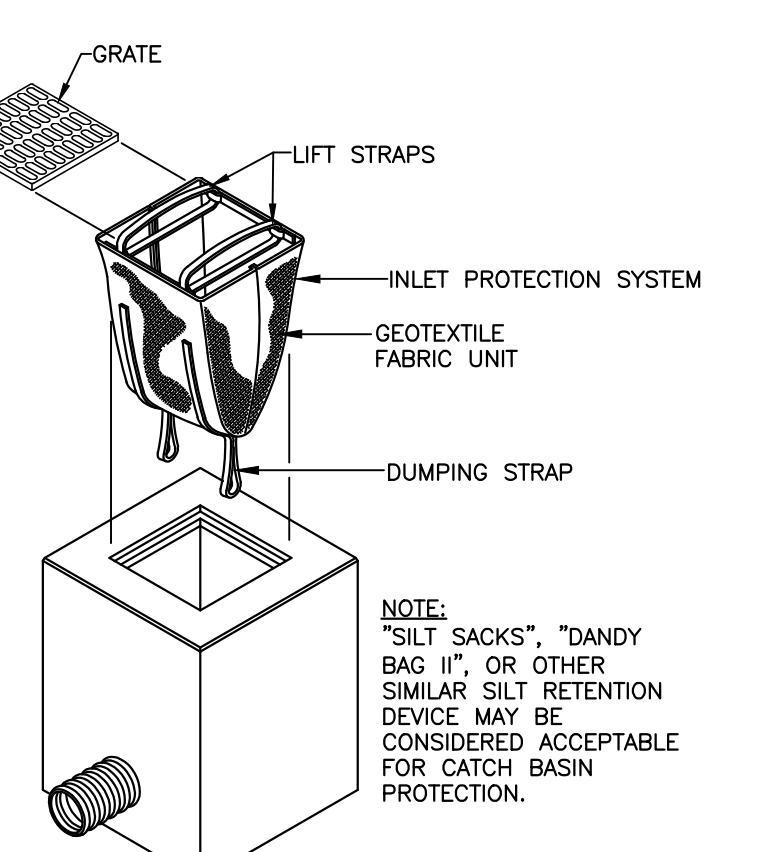
NOTES:
 1. WHEN FULL, THE CONCRETE WASHOUT SHALL BE DISPOSED OF AT LOCAL RECYCLING FACILITY.

2. ALL APPLICABLE PERSONNEL SHALL BE TRAINED IN THE WASHOUT PROCEDURE PRIOR TO CONCRETE WORK BEING PERFORMED.

3. REDDY MIX TRUCK DRIVERS SHALL BE DIRECTED TO THE WASHOUT BIN BY CONTRACTOR.



F CONCRETE WASHOUT BIN DETAIL
 NTS
 2



NOTE:
 "DANDY BAG" OR OTHER SIMILAR SILT RETENTION DEVICE MAY BE CONSIDERED ACCEPTABLE FOR CATCH BASIN PROTECTION.

INSTALLATION: REMOVE THE GRATE FROM CATCH BASIN. IF USING OPTIONAL OIL ABSORBENTS, PLACE ABSORBENT PILLOW IN UNIT. STAND THE GRATE ON END. MOVE THE TOP LIFTING STRAPS OUT OF THE WAY AND PLACE THE GRATE INTO THE GEOTEXTILE FABRIC UNIT SO THAT THE GRATE IS BELOW THE TOP STRAPS AND ABOVE THE LOWER STRAPS. HOLDING THE LIFTING DEVICES, INSERT THE GRATE INTO THE INLET.

MAINTENANCE: REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM VICINITY OF UNIT AFTER EACH STORM EVENT. AFTER EACH STORM EVENT AND AT REGULAR INTERVALS, LOOK INTO THE CATCH BASIN. IF THE CONTAINMENT AREA IS MORE THAN 1/3 FULL OF SEDIMENT, THE UNIT MUST BE EMPTIED. TO EMPTY UNIT, LIFT THE UNIT OUT OF THE INLET USING THE LIFTING STRAPS AND REMOVE THE GRATE. IF USING OPTIONAL OIL ABSORBENTS, REPLACE ABSORBENT WHEN NEAR SATURATION.

J CATCH BASIN PROTECTION
 NTS
 2

EROSION AND SEDIMENT CONTROL NOTES:

1. EROSION & SEDIMENT CONTROLS SHOWN ON PLANS ARE MINIMUM REQUIREMENTS. CONTRACTOR SHALL IMPLEMENT ADDITIONAL EROSION & SEDIMENT CONTROLS AS NECESSARY TO FULLY COMPLY WITH THE REQUIREMENTS OF THE CT DEEP BASED REQUIREMENTS AND ALL APPLICABLE PERMITS.

2. SEDIMENT BASINS AND TRAPS (WHERE REQUIRED), PERIMETER BERMS, SEDIMENT BARRIERS, CATCH BASIN PROTECTION AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPGRADE LAND DISTURBANCE TAKES PLACE.

3. THE CONTRACTOR SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE EROSION AND SEDIMENT CONTROL PLAN AND PROJECT PLANS AND SPECIFICATIONS. CT DEEP REQUIREMENTS AND ALL APPLICABLE PERMITS, AS MAY BE NECESSARY PRIOR TO BEGINNING ANY LAND DISTURBING ACTIVITIES, SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES, AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURES UNTIL THE AREAS DRAINING TO THEM ARE FINAL STABILIZED. THE CONTRACTOR SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN EFFECTIVE OPERATING CONDITION ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIME AS THEY ARE REMOVED. CONTRACTOR AND OWNER'S REPRESENTATIVE SHALL CONDUCT INSPECTIONS AND REPORTING IN ACCORDANCE WITH ALL PERMITS.

4. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE CONTRACTOR SHALL IMPLEMENT APPROPRIATE CONTROLS OR BEST MANAGEMENT PRACTICES (BMPs) TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY FOR PERMIT COMPLIANCE.

5. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH APPLICABLE PUBLISHED STANDARDS AND SPECIFICATIONS AND THE "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENTATION CONTROL" (THE GUIDELINES).

6. DISTURBED AREAS SHALL HAVE SOD, SEED, MULCH, OR OTHER APPROVED STABILIZATION MEASURES APPLIED TO DISTURBED AREAS WITHIN SEVEN (7) CALENDAR DAYS AFTER ACTIVITIES ON THAT AREA HAVE CEASED. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. ACTIVE CONSTRUCTION AREAS MAY BE EXEMPTED, PROVIDED THAT PROPER CONTROLS ARE IN PLACE AND MAINTAINED.

7. STOCKPILES WHICH HAVE NOT BEEN USED FOR SEVEN (7) CALENDAR DAYS SHALL BE STABILIZED THROUGH COVERING, OR THE APPLICATION OF SOD, SEED, AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES. ALL STOCKPILES SHALL BE IN UPLAND AREAS.

8. ALL CATCH BASINS OR OTHER DRAIN INLETS WHICH MAY RECEIVE STORMWATER FROM DISTURBED AREAS OR WITHIN 50 FEET OF THE ACTIVE WORK AREA (WHICHEVER IS GREATER) SHALL BE PROVIDED WITH CATCH BASIN INLET PROTECTION (E.G., SILT SACKS OR EQUIVALENT INLET PROTECTION) TO FILTER SEDIMENT-LADEN STORMWATER.

9. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE PUMPED EITHER TO SEDIMENT TANKS AND/OR SEDIMENT TRAPS, WITH OUTFLOW TO DEWATERING BAGS AND STONE OR HAYBALE ENERGY DISSIPATOR AREA FOR SEDIMENT REMOVAL. FLOCCULANT MAY BE REQUIRED. DEWATERING SHALL BE PERFORMED IN ACCORDANCE WITH THE GUIDELINES AND PROJECT SPECIFICATIONS IN UPLAND AREAS AND IN A MANNER THAT DOES NOT ADVERSELY AFFECT AREAS OUTSIDE OF THE LIMIT OF WORK.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF DUST AND DIRT SCATTERING AND RISING IN THE AIR DURING CONSTRUCTION AND SHALL PROVIDE APPROPRIATE CONTROLS IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

11. ALL REGULATED WASTE MATERIALS GENERATED AT THE SITE SHALL BE IMMEDIATELY REMOVED AND DISPOSED OF PROPERLY OR STORED IN A SECURELY COVERED CONTAINER IN ACCORDANCE WITH LOCAL AND STATE REGULATIONS. CONTAINER SHALL BE EMPTIED ON A REGULAR BASIS AND AS NECESSARY. NO CONSTRUCTION WASTE OR DEBRIS SHALL BE BURIED ONSITE.

12. PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES THE CONTRACTOR SHALL STABILIZE ALL CONTRIBUTORY AREAS USING PAVEMENT, SOD, OR AN APPROVED PERMANENT SEED MIXTURE WITH REQUIRED SOIL AMENDMENTS AND AN APPROVED MULCH.

13. AREAS NOT OTHERWISE SURFACED SHALL BE RESTORED WITH 4 INCHES OF LOAM AND SEDED. AREAS WITH SLOPES STEEPER THAN 3:1 (H:V) SHALL BE FURTHER PROTECTED WITH EROSION CONTROL MATTING THAT IS IN CONFORMANCE WITH THE CONDOT QUALIFIED PRODUCTS LIST.

14. ALL MATERIAL STAGING AND STORAGE AREAS SHALL BE IN UPLAND AREAS. AREAS SHALL BE ADDED TO PLANS BY CONTRACTOR AND COORDINATED WITH ENVIRONMENTAL MONITOR AND /OR OWNER.

NO.	ISSUE/DESCRIPTION	BY	DATE

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GREEN HILL 30R SUBSTATION EXPANSION
 MADISON, CT

DETAILS

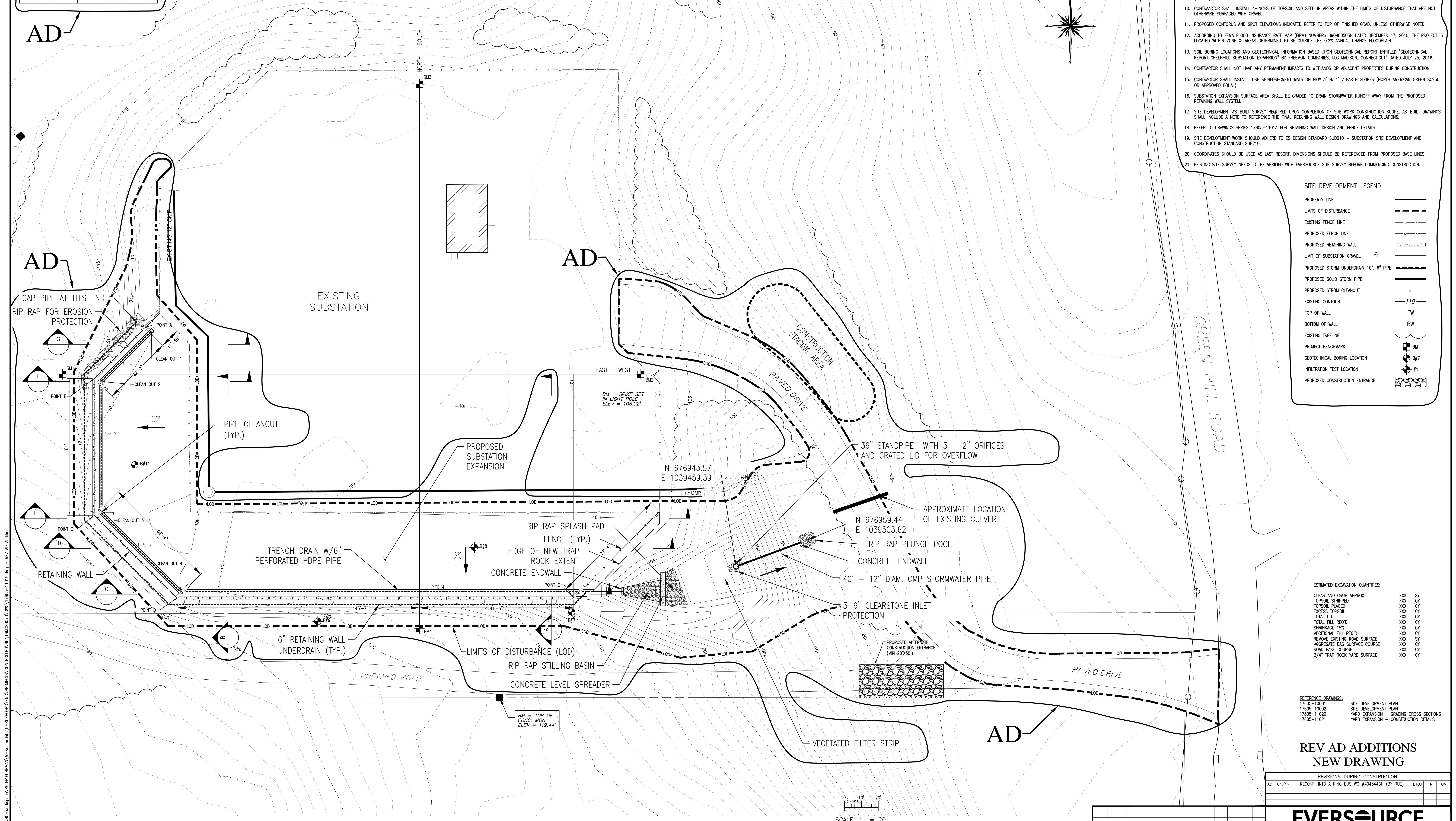
PREPARED BY:	GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR:	EVERSOURCE ENERGY
PROJ. MGR:	KC	REVIEWED BY:	TEJ
DESIGNED BY:	RS	DRAWN BY:	EDM
DATE:	JANUARY, 2017	SCALE:	AS NOTED
PROJECT NO.:	15.0190507.15	REVISION NO.:	-
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STORMWATER PIPE SCHEDULE					
	STR. DOWN	INVERT DOWN	DIAMETER	MATERIAL	LENGTH
	CLEAN OUT 2	105.25	6"	HDPE	42'-0"
	CLEAN OUT 3	104.76	6"	HDPE	78'-6"
	CLEAN OUT 4	104.32	6"	HDPE	66'-10"
	END WALL	103.00	6"	HDPE	244'-0"

EVATION
99
75
72
77
57

SOIL BORINGS		
BORING NUMBER	NORTHING	EASTING
B#7	677024.44	1042400.04
B#8	677062.74	1042342.36
B#9	677018.87	1042249.56
B#11	677111.62	1042141.24

RETAINING WALL			
POINT	NORTHING	EASTING	T.O.W. ELEVATION
A	677192.75	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



REV AD ADDITIONS NEW DRAWING

REVISIONS DURING CONSTRUCTION				
RECONF. INTO A RING BUS WO #404344GH (BY RUE)	ETGJ	TN	GM	

EVERSOURCE

ENERGY

CIVIL PLAN & DETAILS
MADISON, CT

DATE	DATE	DATE
SIZE	E	FIELD BOOK & PAGES
V.S.	R.E. DWG	

DWG NO. 17□05-11019