

X **Approved** _____ **Approved As Noted**
 _____ **Rejected**

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Date 5/5/2014

By T. Traver

RIGIDIFIED TUBE FRP ARCH (RTFA) PROJECT

FAIRFIELD, VT

T-WALL® RETAINING WALL SYSTEM

DESIGNER



THE NEEL COMPANY

8328-D TRAFORD LANE
 SPRINGFIELD, VIRGINIA 22152
 PH: (703) 913-7858
 FX: (703) 913-7859
 WEB: WWW.NEELCO.COM

PRECASTER

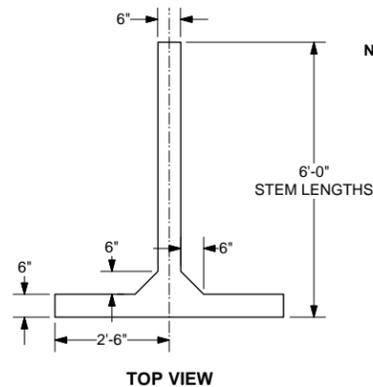
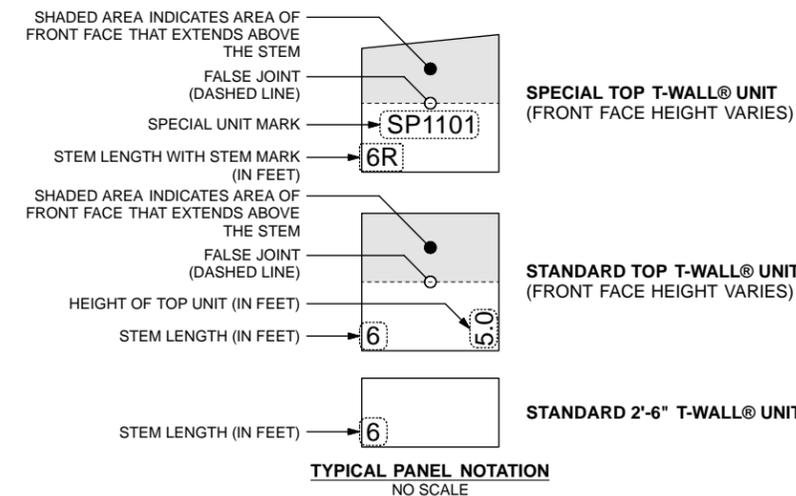


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INDEX OF DRAWINGS

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12	REBAR - NARROW RIGHT BEVELED UNITS		5/24/13

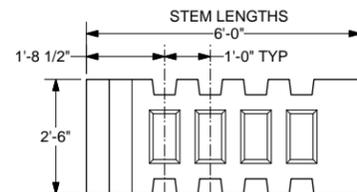
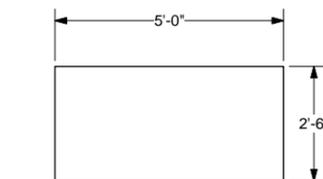
LEGEND



NOTES:
 • UNIT STEM LENGTHS RANGE FROM 4'-0" TO 20'-0", IN 2'-0" INCREMENTS

T-WALL® UNIT WEIGHTS

PANEL TYPES	WEIGHTS
2.5x5.0x08 Std	2088 lbs
2.5x5.0x10 Std	2349 lbs
2.5x5.0x12 Std	2610 lbs
SLOPED-TOP (MIN)	2198 lbs
SLOPED-TOP (MAX)	3164 lbs



TOP VIEW

FRONT VIEW

SIDE VIEW

TYPICAL 2'-6" x 5'-0" x 6'-0" STEM T-WALL® UNIT



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PRECASTER: CONCRETE SYSTEMS, INC. CSI

PROJECT #: T21882

CONTRACTOR: A.L. ST. ONGE CONTRACTORS

PROJECT #:

DESIGNER



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PROJECT #: TW4301

CERTIFIED WITH RESPECT TO INTERNAL STABILITY OF T-WALL® STRUCTURES ONLY



REVISIONS

NO.	DESCRIPTION	DATE

RIGIDIFIED TUBE FRP ARCH (RTFA) PROJECT

FAIRFIELD, VT

SHOP DRAWINGS
 COVER SHEET

T-WALL® RETAINING WALL SYSTEM

SCALE: NO SCALE

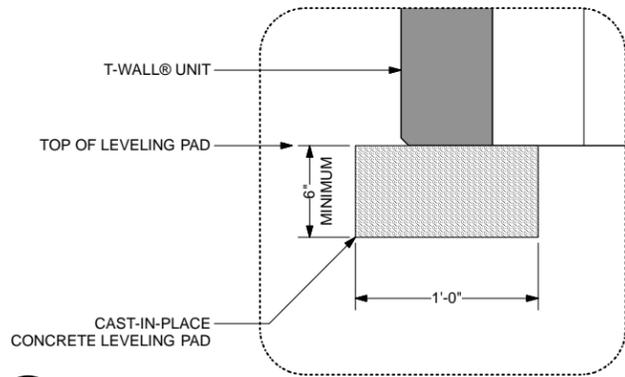
DATE: 4/21/14

DESIGNED BY: KD

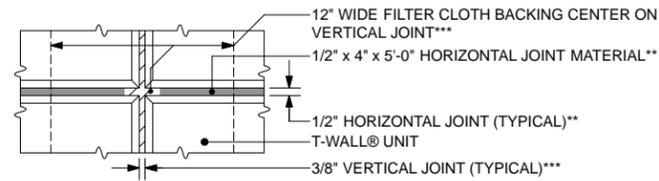
DRAWN BY: ABC

CHECKED BY: CCG

SHEET: 1



4 LEVELING PAD DETAIL
Scale: 2" = 1'-0"



3 HORIZONTAL AND VERTICAL JOINT DETAIL
Scale: 2" = 1'-0"
** SEE GENERAL NOTE 4 ON SHEET 3 FOR ADDITIONAL DETAILS
*** SEE GENERAL NOTE 5 ON SHEET 3 FOR ADDITIONAL DETAILS

NOMENCLATURE NOTE:

THIS SHEET IS PROVIDED FOR GENERAL INFORMATION PURPOSES ONLY, REFERENCING STANDARD DETAILS APPLICABLE TO ANY T-WALL@ STRUCTURE. THIS SHEET IS NOT INTENDED TO PROVIDE DETAILS SPECIFIC TO THE WALL STRUCTURES CONTAINED IN THIS DRAWING PACKAGE. FOR INFORMATION SPECIFIC TO THESE WALLS, SEE THE APPLICABLE DRAWING SHEETS.

SHEAR KEY NOTES:

1. WALL IS DESIGNED FOR SPECIFIC NUMBER OF SHEAR KEYS AS SHOWN IN "TYPICAL SECTION AT MAXIMUM HEIGHT" ON SHEET 4. LOCATION OF SHEAR KEYS CAN BE ADJUSTED IF NECESSARY AT A SPECIFIC LEVEL.

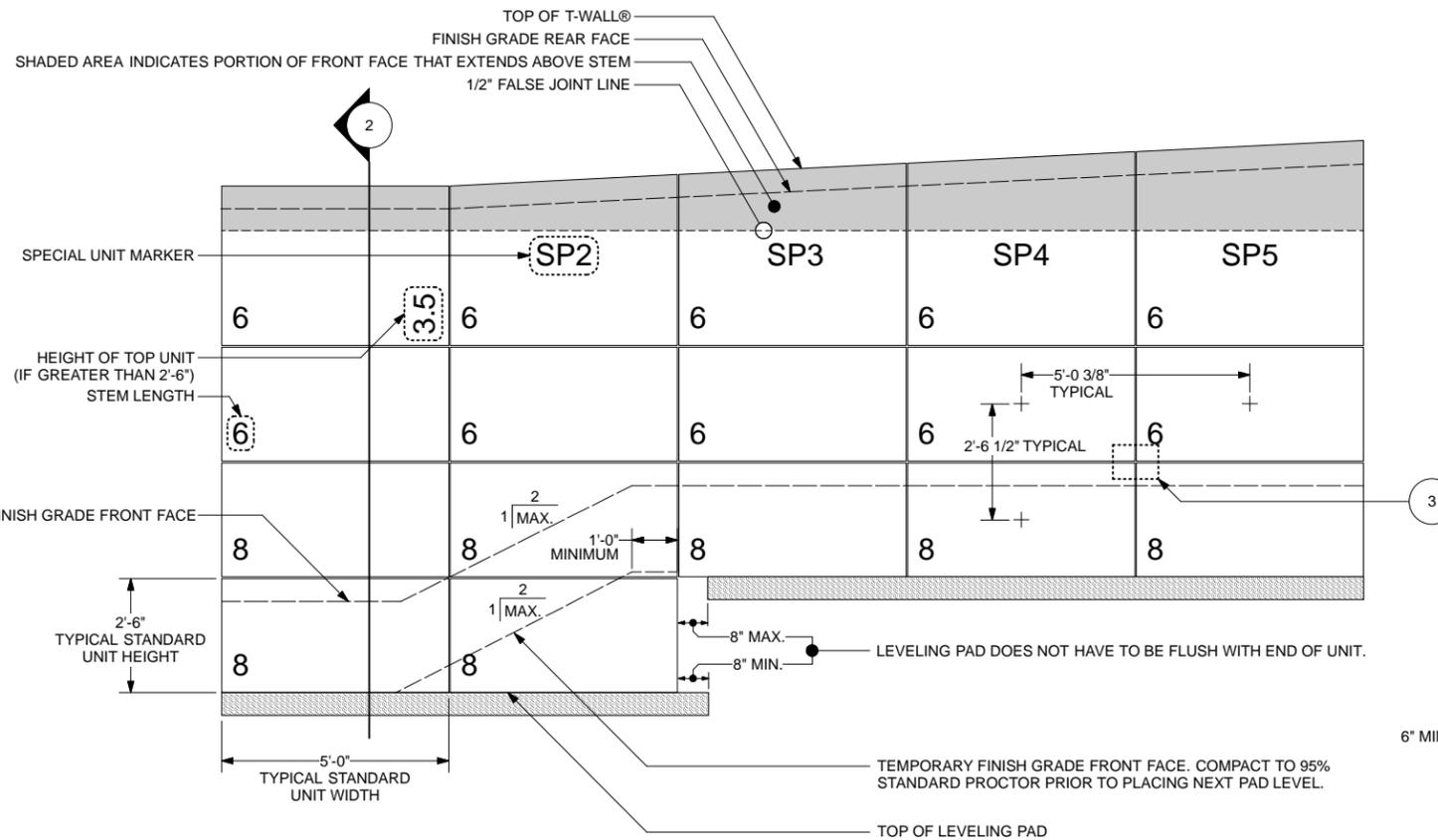
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_____ **Rejected**

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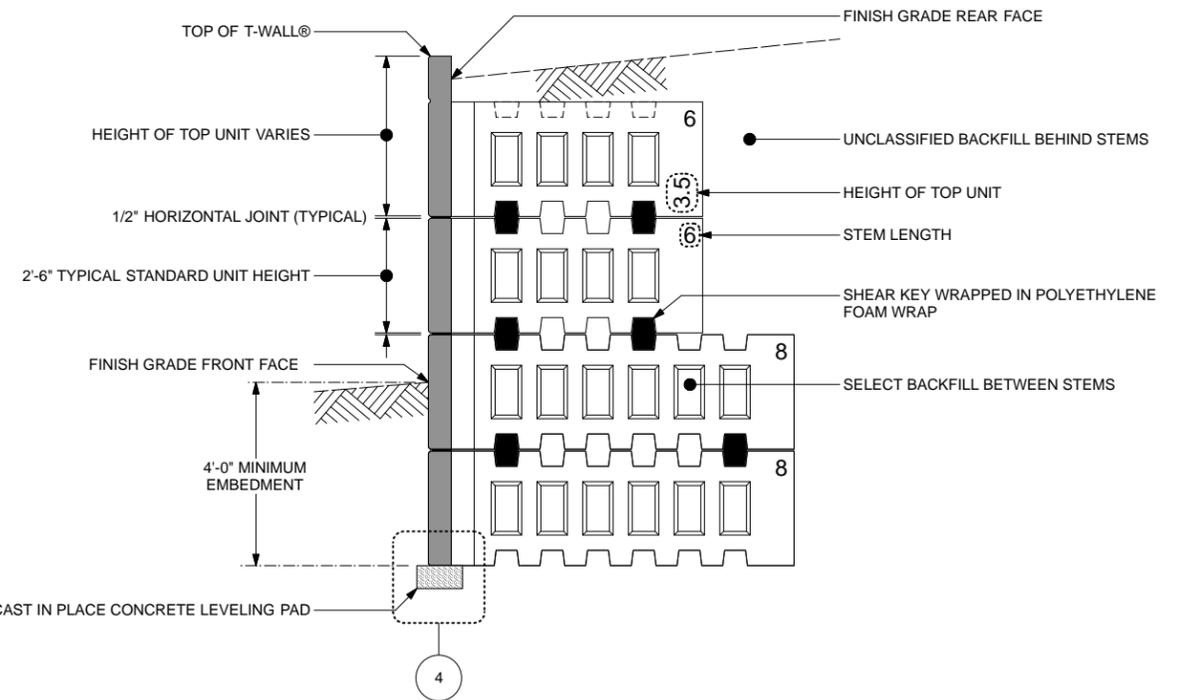
Date 5/5/2014

By T. Traver



1 PARTIAL ELEVATION SHOWN - TYPICAL DETAILS
Scale: 1/2" = 1'-0"

NOT ALL DETAILS APPLY. SEE SPECIFIC WALL ELEVATIONS



2 PARTIAL ELEVATION SHOWN - TYPICAL DETAILS
Scale: 1/2" = 1'-0"

NOT ALL DETAILS APPLY. SEE SPECIFIC WALL ELEVATIONS



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PROJECT #:

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PROJECT #: TW4301



REVISIONS	

RIGIDIFIED TUBE FRP ARCH (RTFA) PROJECT

FAIRFIELD, VT

SHOP DRAWINGS
TYPICAL T-WALL@ NOMENCLATURE

T-WALL@ RETAINING WALL SYSTEM

SCALE:	AS NOTED
DATE:	4/21/14
DESIGNED BY:	KD
DRAWN BY:	ABC
CHECKED BY:	CCG
SHEET:	2

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Date 5/5/2014

By T. Traver

SPECIAL NOTES:

- THESE DRAWINGS WERE PREPARED BASED ON INFORMATION GIVEN IN THE FOLLOWING:
 - CONTRACT DRAWINGS:**
 - STATE OF VERMONT AGENCY OF TRANSPORTATION CONTRACT PLANS DATED 10/30/2013. PREPARED BY MCFARLAND JOHNSON.
- REPORT DISCREPANCIES BETWEEN CONTRACT INFORMATION AND ACTUAL CONDITIONS AS SITE WORK PROGRESSES TO THE NEEL COMPANY FOR REDESIGN. NO LIABILITY IS ACCEPTED FOR INACCURATE INFORMATION SUPPLIED BY OTHERS.
- THE FOLLOWING ASSUMPTIONS WERE MADE:
 - FOUNDATION IS ABLE TO SUPPORT BEARING PRESSURE SHOWN IN SPECIAL NOTES 4 WITH AN ACCEPTABLE FACTOR OF SAFETY.
- APPLIED BEARING PRESSURE AT MAXIMUM HEIGHT:
 - WINGWALL MAXIMUM PRESSURE: 4,475 psf STR I MAX
 - DESIGN IS BASED ON AASHTO LRFD METHOD.
- THE DESIGN CONTAINED ON THESE DRAWINGS IS BASED UPON INFORMATION PROVIDED BY THE OWNER. ON THE BASIS OF THIS INFORMATION, THE NEEL COMPANY HAS DESIGNED, AND IS RESPONSIBLE FOR, THE INTERNAL STABILITY OF THE STRUCTURE ONLY. EXTERNAL STABILITY, INCLUDING FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER.**
- THE NEEL COMPANY HAS NOT PERFORMED GLOBAL STABILITY SETTLEMENT AND BEARING CAPACITY ANALYSIS FOR THE WALL FOUNDATION. THESE ANALYSES WILL BE THE RESPONSIBILITY OF OTHERS.**
- DRAINAGE:**
 - THE NEEL COMPANY HAS NOT PERFORMED A DRAINAGE ANALYSIS FOR THIS WALL SITE. IT IS THE OWNER'S RESPONSIBILITY TO ASSURE THAT SURFACE RUN-OFF IS DIVERTED AWAY FROM THE WALL.**
- SELECT BACKFILL GRADATION AND COMPACTION:**
 - BACKFILL GRADATION AND COMPACTION BETWEEN STEMS AND AROUND PIPES ARE IMPORTANT TO THE WALL STABILITY. THE OWNER'S GEOTECHNICAL ENGINEER SHOULD PROVIDE SUFFICIENT TESTING TO INSURE COMPLIANCE WITH THE SELECT BACKFILL GRADATION AND COMPACTION SPECIFICATIONS NOTED ON THIS SHEET. PLACEMENT OF LOOSE LIFT OF BACKFILL SHALL NOT EXCEED 12 INCHES.**
- T-WALL® FACE FORM FINISH:
 - PLAIN STEEL FORM FINISH

GENERAL NOTES:

- PRIMARY REFERENCE:
 - AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 5TH EDITION 2010 AND INTERIMS.
- SELECT BACKFILL BETWEEN STEMS:
 - ANGLE OF INTERNAL FRICTION - 34°
 - DENSITY - 120 pcf
 - 10% MAXIMUM PASSING #200 SIEVE
 - 100% PASSING 3" SIEVE
 - 95% STANDARD COMPACTION (ASTM D-698)
- UNCLASSIFIED BACKFILL BEHIND STEMS:
 - ANGLE OF INTERNAL FRICTION - 30°
 - DENSITY - 120 pcf
 - 95% STANDARD COMPACTION (ASTM D-698)
- HORIZONTAL JOINT:
 - 1/2 INCH ASPHALT JOINT MATERIAL PER ASTM D-994 AS SHOWN ON DEVELOPED ELEVATIONS.
- VERTICAL JOINT:
 - 3/8 INCH SPACE
 - 12 INCHES WIDE FILTER CLOTH BACKING CENTERED AT JOINT, UNLESS OTHERWISE NOTED.
 - FILTER CLOTH BACKING: MIRAFI 160N OR EQUAL
- OVERALL DIMENSIONAL TOLERANCES FOR FINISHED WALL:
 - VERTICAL ALIGNMENT (PLUMPTNESS) - 3/4 INCH IN 10 FEET
 - HORIZONTAL ALIGNMENT (LINE) - 3/4 INCH IN 10 FEET
- FOUNDATION:
 - PROOF-ROLL THE FOUNDATION SUBGRADE ALONG THE ENTIRE WALL LENGTH PRIOR TO CONSTRUCTION OF THE T-WALL®. A GEOTECHNICAL ENGINEER MUST INSPECT THE EXCAVATED FOUNDATION SUBGRADE AND PROOF-ROLLING ACTIVITIES. ANY SOFT OR UNSUITABLE MATERIALS IDENTIFIED BY INSPECTION SHALL BE REMOVED AND REPLACED WITH COMPACTED STRUCTURAL BACKFILL AS DIRECTED BY THE ENGINEER. CONTRACTOR TO PROVIDE SUFFICIENT DEWATERING SO THAT THE EXCAVATIONS ARE DRY ENOUGH FOR INSPECTION, TESTING AND CONSTRUCTION.
- CAST-IN-PLACE CONCRETE LEVELING PAD:
 - 6 INCHES MINIMUM x 12 INCHES
 - CONCRETE STRENGTH: 2500 psi (MINIMUM) @ 28 DAYS
 - NO REBAR
 - GRADE TOLERANCE - 1/4 INCH IN 10 FEET
- T-WALL® UNIT REBAR:
 - ASTM A615/ASTM A185
 - Fy = 60 ksi (GRADE 60)
 - BLACK
 - WELDING IS NOT PERMITTED**
- T-WALL® UNIT CONCRETE :
 - 5000 psi (MINIMUM) @ 28 DAYS
- SHEAR KEYS:
 - NO REBAR
 - CONCRETE STRENGTH: 4000 psi (MINIMUM) @ 28 DAYS
 - WALL IS DESIGNED FOR SPECIFIC NUMBER OF SHEAR KEYS AS SHOWN IN TYPICAL SECTION ON SHEET 4. LOCATION OF SHEAR KEYS CAN BE ADJUSTED IF NECESSARY AT A SPECIFIC LEVEL.
 - SHEAR KEY WRAP:
 - 1/4 INCH POLYETHYLENE FOAM WRAP TWO TIMES AROUND THE SHEAR KEY.
 - SHEAR KEY WRAP: AF250 POLYETHYLENE FOAM
- CONSTRUCTION:
 - TO BE IN ACCORDANCE WITH T-WALL® CONSTRUCTION MANUAL (v07.04) AND TYPICAL T-WALL® NOMENCLATURE ON SHEET 2.
 - T-WALL® CONSTRUCTION MANUAL (v07.04) CAN BE DOWNLOADED FROM OUR WEB SITE AT www.neelco.com, UNDER "Downloads".
 - CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF ALL EXCAVATED SLOPES. DESIGN AND CONSTRUCTION OF ANY REQUIRED TEMPORARY SUPPORT OF EXCAVATION SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR.
 - ALL SURFACE RUNOFF IS TO BE DIVERTED AWAY FROM EXCAVATIONS TO AVOID THE DETERIORATION OF THE SUBGRADE SOILS DUE TO EXPOSURE TO MOISTURE.



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PROJECT #: T21882

CONTRACTOR: A.L. ST. ONGE CONTRACTORS

PROJECT #:

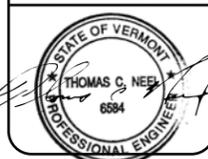
DESIGNER



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 WEB: WWW.NEELCO.COM

PROJECT #: TW4301

CERTIFIED WITH RESPECT TO INTERNAL STABILITY OF T-WALL® STRUCTURES ONLY



REVISIONS

NO.	DESCRIPTION	DATE

RIGIDIFIED TUBE FRP ARCH (RTFA) PROJECT

FAIRFIELD, VT
 SHOP DRAWINGS
 NOTES

T-WALL® RETAINING WALL SYSTEM

SCALE: NO SCALE

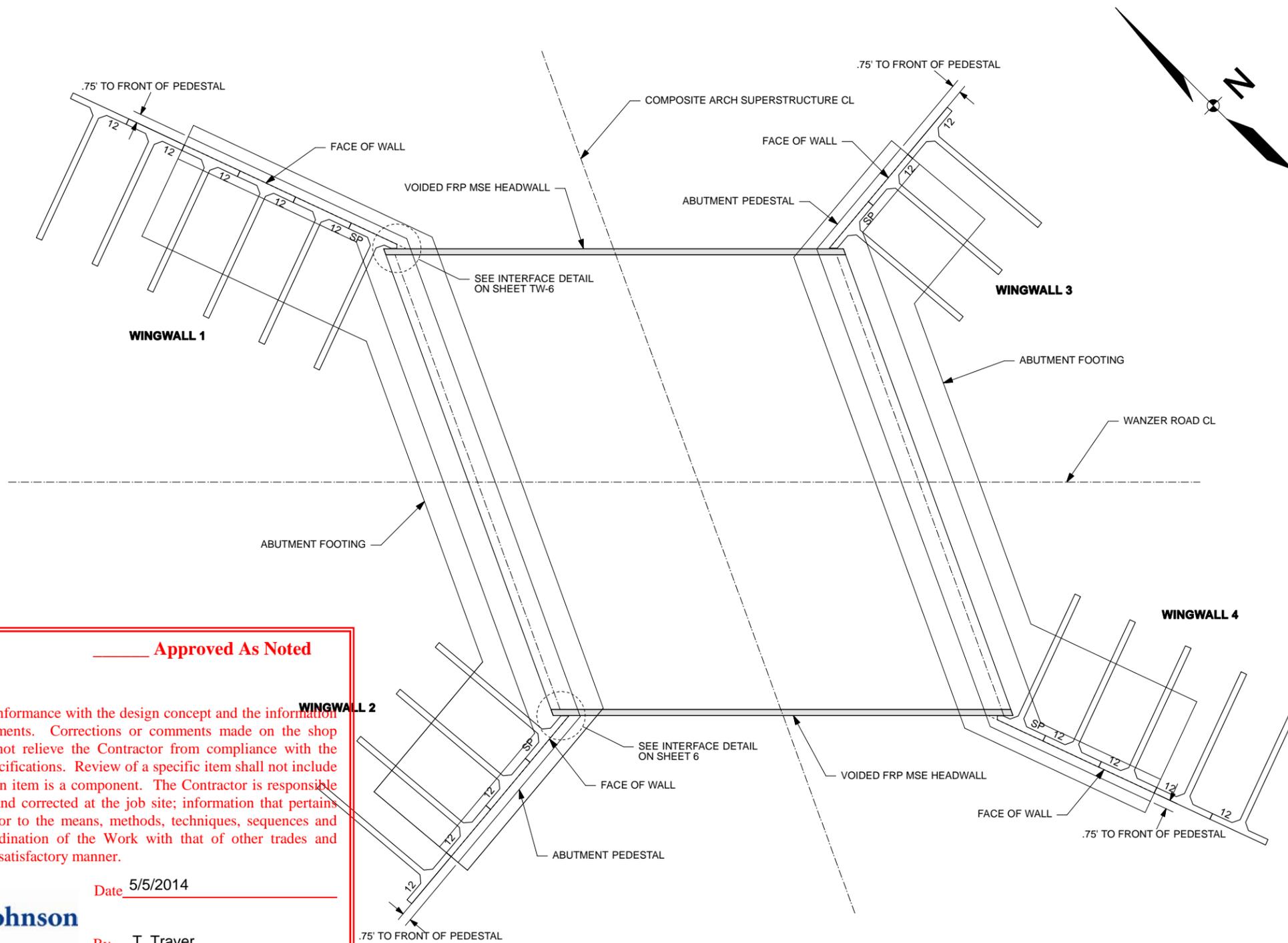
DATE: 4/21/14

DESIGNED BY: KD

DRAWN BY: ABC

CHECKED BY: CCG

SHEET: 3



X	Approved	_____	Approved As Noted
_____	Rejected		

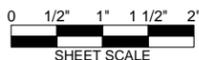
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By T. Traver



1 PLAN
1" = 5 ft



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PROJECT #: T21882

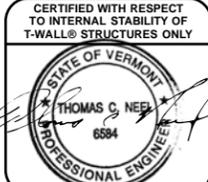
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PROJECT #:

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PROJECT #: TW4301



REVISIONS	

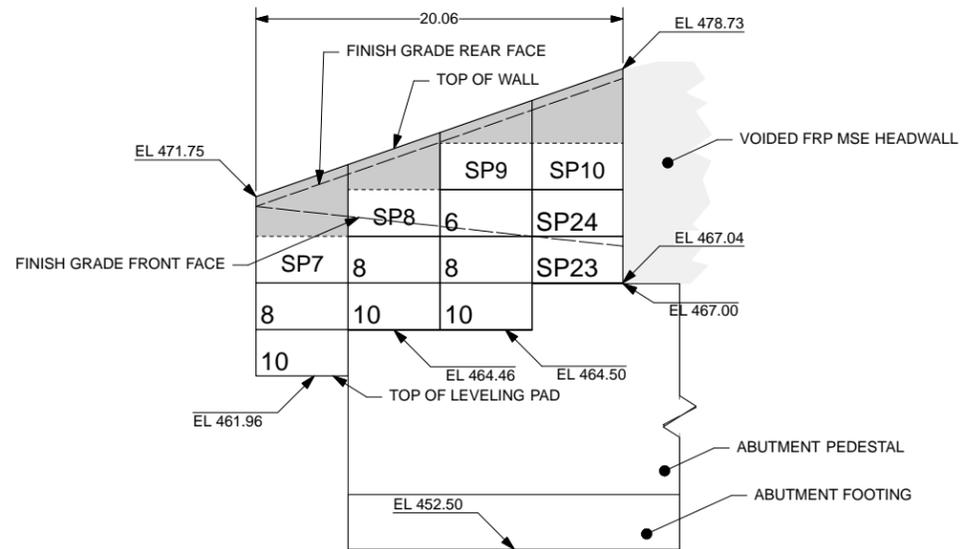
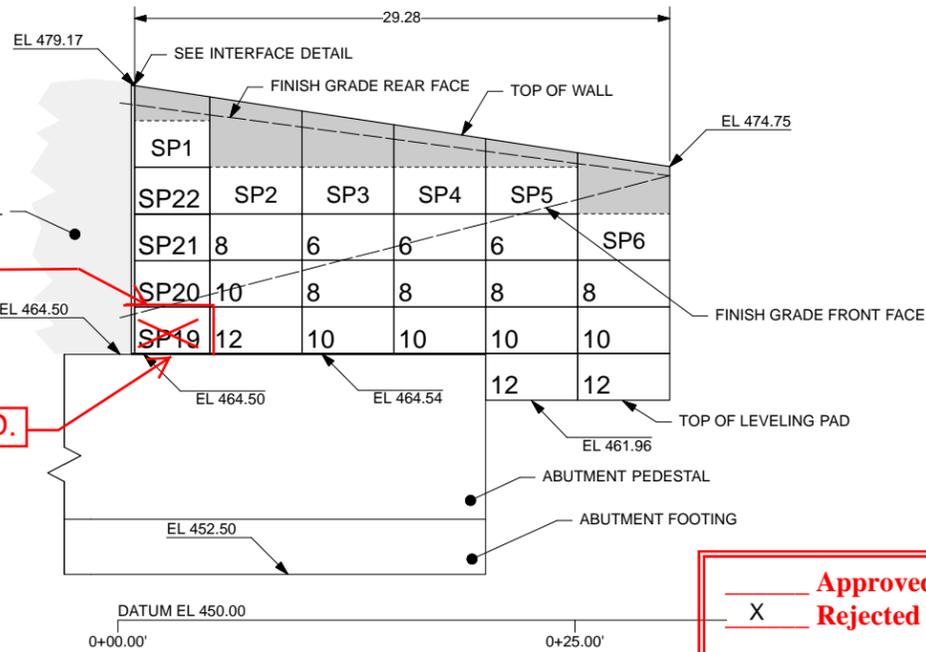
RIGIDIFIED TUBE FRP ARCH (RTFA) PROJECT

FAIRFIELD, VT

SHOP DRAWINGS
WALL DRAWINGS
PLAN VIEW

T-WALL® RETAINING WALL SYSTEM

SCALE:	AS NOTED
DATE:	4/21/14
DESIGNED BY:	KD
DRAWN BY:	ABC
CHECKED BY:	CCG
SHEET:	4

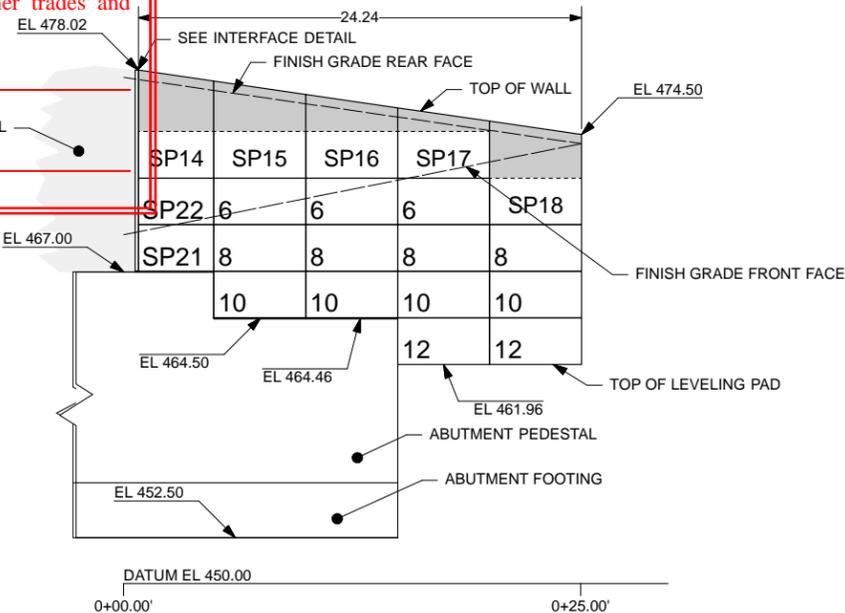
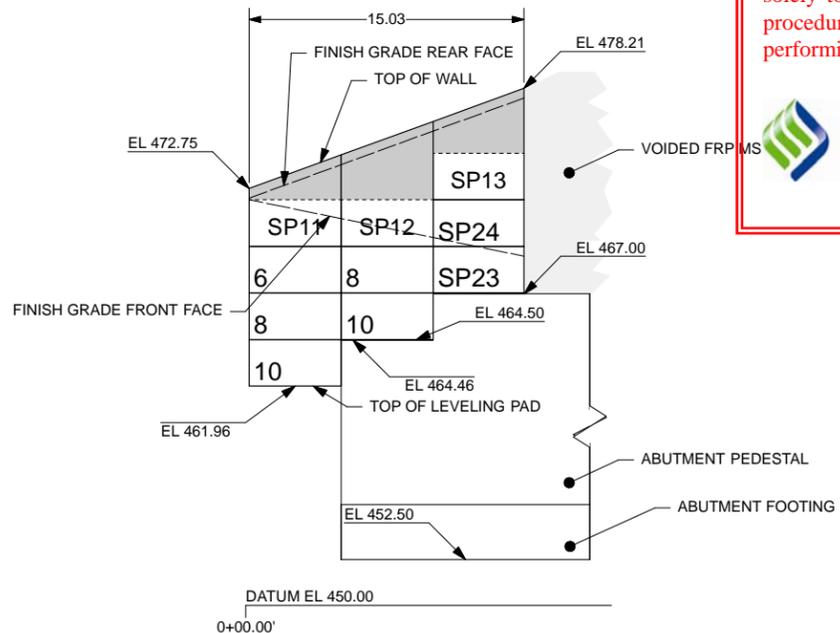


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McFarland Johnson



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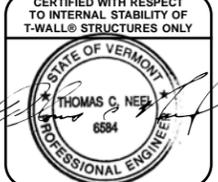
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PROJECT #: TW4301



REVISIONS

RIGIDIFIED TUBE FRP ARCH (RTFA) PROJECT

FAIRFIELD, VT

SHOP DRAWINGS
 WALL DRAWINGS
 DEVELOPED ELEVATIONS
 T-WALL® RETAINING WALL SYSTEM

SCALE: AS NOTED

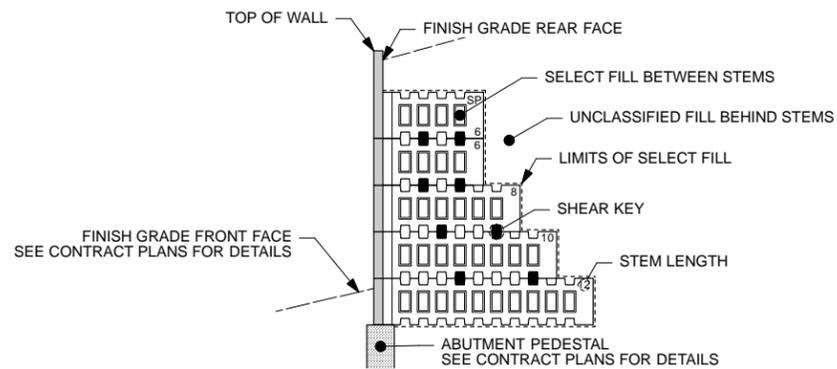
DATE: 4/21/14

DESIGNED BY: KD

DRAWN BY: ABC

CHECKED BY: CCG

SHEET: 5



1 TYPICAL SECTION AT MAXIMUM HEIGHT
1" = 5 ft

T-WALL Unit Count for Wingwall 1 4/21/14 1:59:16 PM

PANEL TYPE	QNTY (ea)	AREA (sf)	SELECT FILL (cy)
2.5 x 5.0 x 06 Std	3	37.50	7
2.5 x 5.0 x 08 Std	5	62.50	16
2.5 x 5.0 x 10 Std	5	62.50	20
2.5 x 5.0 x 12 Std	3	37.50	15
Special Units	10	183.86	25
TOTALS:	20 ea	383.86 sf	83 cy

NOTE: Select backfill quantities are between stems only.

T-WALL Unit Count for Wingwall 2 4/16/14 10:33:47 AM

PANEL TYPE	QNTY (ea)	AREA (sf)	SELECT FILL (cy)
2.5 x 5.0 x 06 Std	1	12.50	2
2.5 x 5.0 x 08 Std	3	37.50	10
2.5 x 5.0 x 10 Std	3	37.50	12
Special Units	6	124.99	15
TOTALS:	13 ea	212.49 sf	39 cy

NOTE: Select backfill quantities are between stems only.

T-WALL Unit Count for Wingwall 3 4/16/14 10:34:08 AM

PANEL TYPE	QNTY (ea)	AREA (sf)	SELECT FILL (cy)
2.5 x 5.0 x 06 Std	1	12.50	2
2.5 x 5.0 x 08 Std	2	25.00	6
2.5 x 5.0 x 10 Std	2	25.00	8
Special Units	5	100.20	12
TOTALS:	10 ea	162.70 sf	29 cy

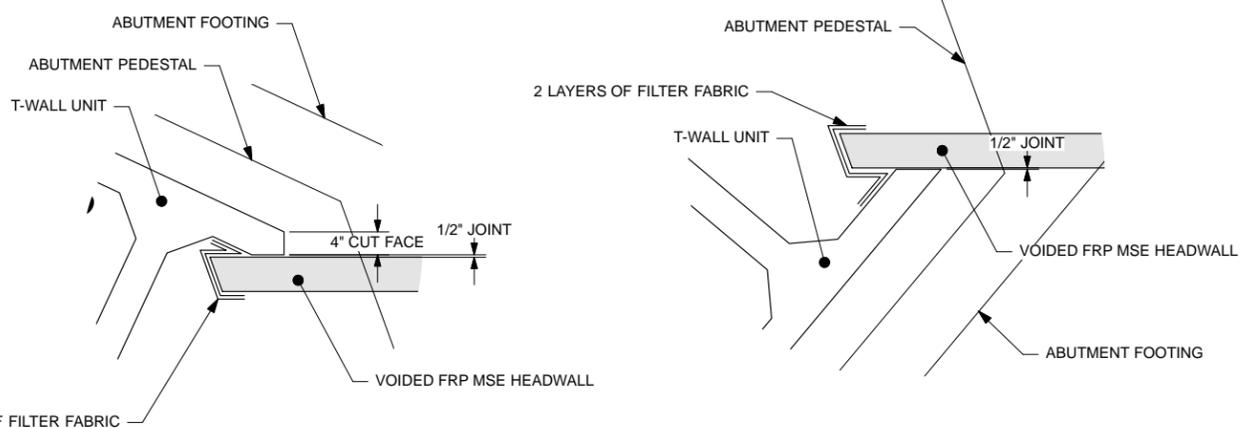
NOTE: Select backfill quantities are between stems only.

T-WALL Unit Count for Wingwall 4 4/18/14 10:36:30 AM

PANEL TYPE	QNTY (ea)	AREA (sf)	SELECT FILL (cy)
2.5 x 5.0 x 06 Std	3	37.50	7
2.5 x 5.0 x 08 Std	4	50.00	13
2.5 x 5.0 x 10 Std	4	50.00	16
2.5 x 5.0 x 12 Std	2	25.00	10
Special Units	7	137.82	17
TOTALS:	20 ea	300.32 sf	63 cy

NOTE: Select backfill quantities are between stems only.

SP19 NOT REQ'D.
NUMBER OF SPECIAL UNITS: 9 TOTAL NUMBER OF UNITS: 25
UPDATE AREA AND SELECT FILL QUANTITIES.



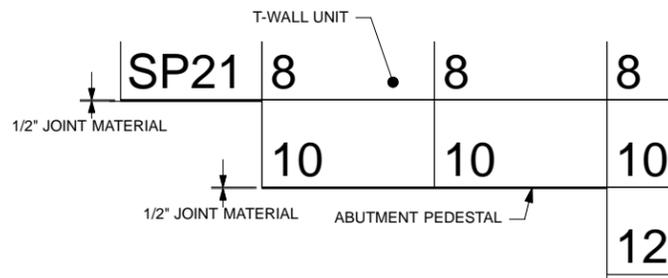
2 WINGWALLS 1 & 4 INTERFACE DETAIL
Scale: 3/4" = 1'-0"

3 WINGWALLS 2 & 3 INTERFACE DETAIL
Scale: 3/4" = 1'-0"

SHIP LOOSE LIST FOR WINGWALL 4

ITEM	QNTY
T-Wall Lifting Device	1 ea
Shear Keys	102 ea
Mirafix 160N Filter Fabric (12" wide)	287 lf
1/2" x 4" x 5' Horizontal Joint Material	255 lf

SHEAR KEYS: 100 EA



4 ELEVATION DETAIL
Scale: 3/8" = 1'-0"

NOTE: CONTRACTOR TO CONFIRM REVISED PEDESTAL ELEVATIONS FOR 2'6" SPACING.

Approved
 Rejected

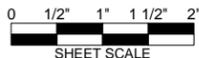
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McFarland Johnson



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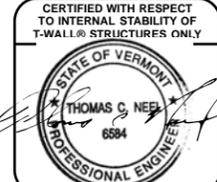
PRECASTER: CONCRETE SYSTEMS, INC. CSI
PROJECT #: T21882

CONTRACTOR: A.L. ST. ONGE CONTRACTORS
PROJECT #:

DESIGNER

THE NEEL COMPANY
8328-D TRAFORD LANE
SPRINGFIELD, VIRGINIA 22152
PH: (703) 913-7858
FX: (703) 913-7859
WEB: WWW.NEELCO.COM

PROJECT #: TW4301



REVISIONS

NO.	DESCRIPTION

RIGIDIFIED TUBE FRP ARCH (RTFA) PROJECT

FAIRFIELD, VT

SHOP DRAWINGS
WALL DRAWINGS
SECTION, DETAILS & QUANTITIES
T-WALL® RETAINING WALL SYSTEM

SCALE:	AS NOTED
DATE:	4/21/14
DESIGNED BY:	KD
DRAWN BY:	ABC
CHECKED BY:	CCG
SHEET:	6

T-WALL UNIT PROPERTIES

UNIT TYPE	H	W	S	Tf*	Ts	SH	VOLUME*	WEIGHT*
2.5x5.0x06 Std	2'6"	5'0"	6'4 1/2"	6"	6"	2'6"	0.45 cy	1,827 lbs
2.5x5.0x08 Std	2'6"	5'0"	8'4 1/2"	6"	6"	2'6"	0.52 cy	2,088 lbs
2.5x5.0x10 Std	2'6"	5'0"	10'4 1/2"	6"	6"	2'6"	0.58 cy	2,349 lbs
2.5x5.0x12 Std	2'6"	5'0"	12'4 1/2"	6"	6"	2'6"	0.64 cy	2,610 lbs

* VOLUMES AND WEIGHTS ON THIS TABLE ARE BASED ON 6" FACE THICKNESS (Tf)

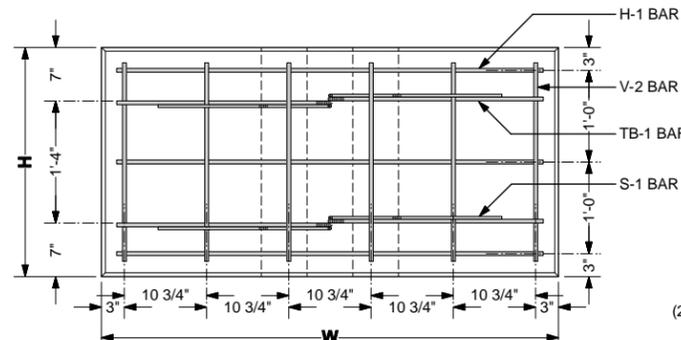
REBAR SCHEDULES

Unit Dims	Bar Mark	Qty	Size	Length	Dim "A"	Bar Weight	Bend Dia	Remarks
H=2'6"	H-1	3 ea	#4	48"		9.35 lbs		
W=5'0"	V-1	12 ea	#4	2'2"		17.37 lbs		
S=6'4 1/2"	V-2	6 ea	#4	2'2"		8.68 lbs		
SH=2'6"	S-1	4 ea	#4	3'4 1/2"		9.02 lbs	D= 3"	
	TB-1	4 ea	#4	8'2"	5'11"	21.81 lbs	D= 3"	
						66.23 lbs		

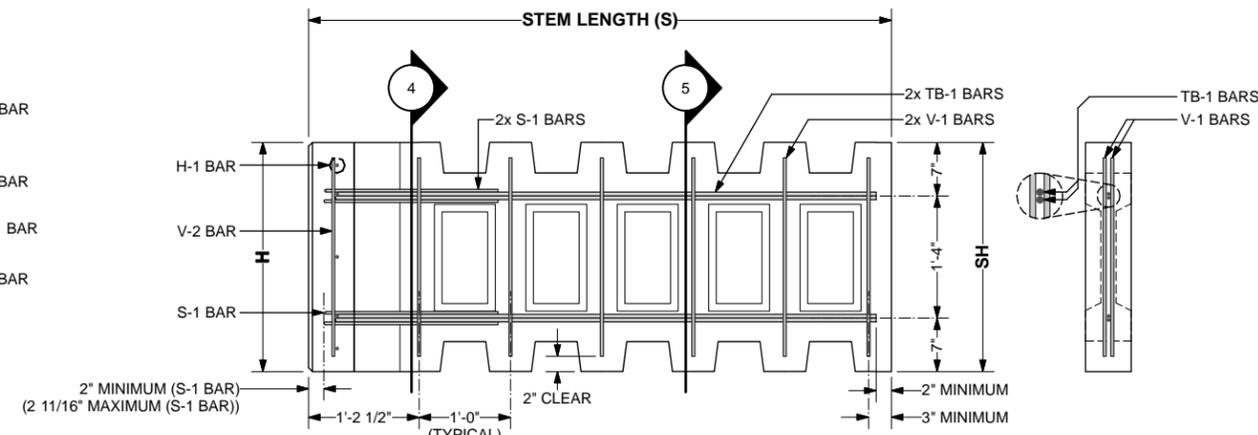
Unit Dims	Bar Mark	Qty	Size	Length	Dim "A"	Bar Weight	Bend Dia	Remarks
H=2'6"	H-1	3 ea	#4	48"		9.35 lbs		
W=5'0"	V-1	16 ea	#4	2'2"		23.16 lbs		
S=8'4 1/2"	V-2	6 ea	#4	2'2"		8.68 lbs		
SH=2'6"	S-1	4 ea	#4	3'4 1/2"		9.02 lbs	D= 3"	
	TB-1	4 ea	#4	10'2"	7'11"	27.16 lbs	D= 3"	
						77.37 lbs		

Unit Dims	Bar Mark	Qty	Size	Length	Dim "A"	Bar Weight	Bend Dia	Remarks
H=2'6"	H-1	3 ea	#4	48"		9.35 lbs		
W=5'0"	V-1	20 ea	#4	2'2"		16.29 lbs		
S=10'4 1/2"	V-2	6 ea	#4	2'2"		4.89 lbs		
SH=2'6"	S-1	4 ea	#4	3'4 1/2"		5.08 lbs	D= 2 1/4"	
	TB-1	4 ea	#4	12'2"	9'11"	32.50 lbs	D= 3"	
						68.11 lbs		

Unit Dims	Bar Mark	Qty	Size	Length	Dim "A"	Bar Weight	Bend Dia	Remarks
H=2'6"	H-1	3 ea	#4	48"		9.35 lbs		
W=5'0"	V-1	20 ea	#4	2'2"		16.29 lbs		
S=12'4 1/2"	V-2	6 ea	#4	2'2"		4.89 lbs		
SH=2'6"	S-1	4 ea	#4	3'4 1/2"		5.08 lbs	D= 2 1/4"	
	TB-1	4 ea	#4	12'2"	9'11"	32.50 lbs	D= 3"	
						68.11 lbs		



3 FRONT VIEW - 2.5 x 5.0 x 06 Std SHOWN
Scale: 1" = 1'-0" (V-1 BARS IN STEM OMITTED FOR CLARITY)



2 SIDE VIEW - 2.5 x 5.0 x 06 Std SHOWN
Scale: 1" = 1'-0"

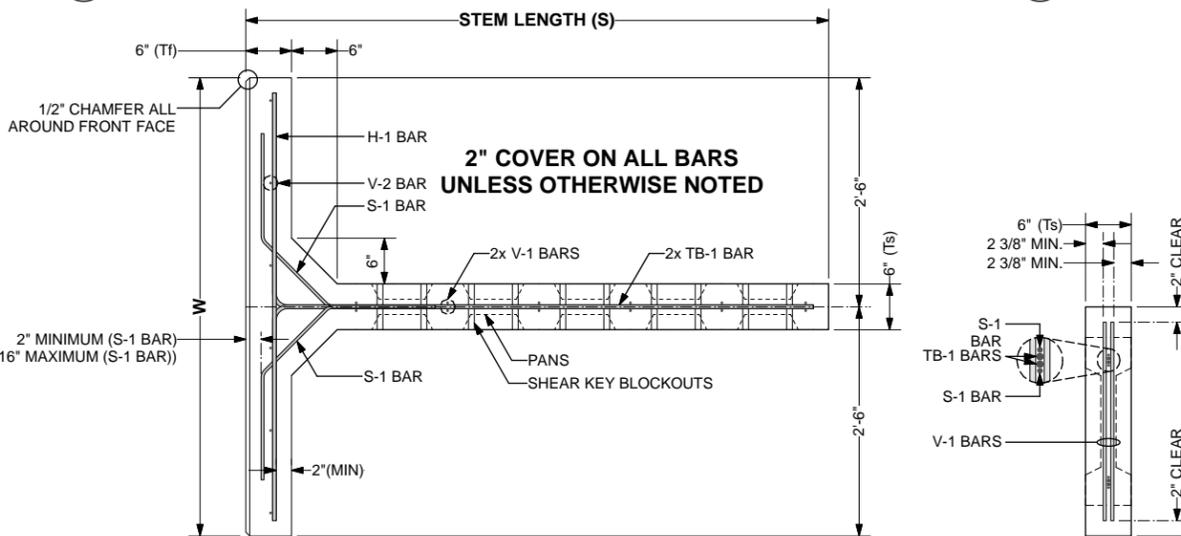
5 SECTION THROUGH STEM
Scale: 1" = 1'-0"

SPECIAL NOTES:

- FRONT FACE OF T-WALL® UNITS FINISH TREATMENT:
 - PLAIN STEEL FORM FINISH

GENERAL NOTES:

- PRIMARY REFERENCE:
 - AASHTO, LRFD BRIDGE DESIGN SPECIFICATION, 5TH EDITION 2010 (WITH INTERIMS)
- T-WALL® CONCRETE:
 - Fc = 5000 psi (MINIMUM) @ 28 DAYS
 - MINIMUM STRIPPING STRENGTH: 2500 psi
- T-WALL® REINFORCING STEEL:
 - BLACK
 - Fy = 60 ksi (GRADE 60)
 - WELDING IS NOT PERMITTED
- MARKING OF PRECAST UNITS:
 - CLEARLY MARK EACH PRECAST UNIT ON THE BUTT END OF THE STEM WITH THE UNIT TYPE (i.e. 2.5x5.0x06 STD), THE DATE OF MANUFACTURE, THE LOT NUMBER (IF APPLICABLE), AND THE TRADEMARK "T-WALL®".
- REINFORCING FABRICATION AND PLACEMENT TOLERANCES:
 - THE STRUCTURAL DESIGN OF PRECAST UNITS ASSUMES 2 INCHES OF CONCRETE COVER OVER ALL REINFORCING BARS.
 - UNLESS OTHERWISE NOTED IN CONTRACT DOCUMENTS OR REFERENCED SPECIFICATIONS, TOLERANCES ON CONCRETE COVER SHALL BE ± 3/8 INCHES.
 - UNLESS OTHERWISE NOTED IN CONTRACT DOCUMENTS OR REFERENCED SPECIFICATIONS, TOLERANCES ON BAR PLACEMENT SHALL BE:
 - VERTICAL LOCATION OF TB-1 BARS: ± 3/8 INCHES
 - LOCATION / SPACING OF H-1, V-1 & V-2 BARS: ± 1 INCH
 - REGARDLESS OF THE SPECIFIED PLACEMENT TOLERANCES, CONCRETE COVER SHALL BE MAINTAINED WITHIN ± 3/8 INCHES AS PREVIOUSLY NOTED.
 - ALL REINFORCING BARS SHALL BE CUT AND BENT FOLLOWING REQUIREMENTS OF THE CRSI MANUAL OF STANDARD PRACTICE.
 - UNLESS NOTED OTHERWISE, TOLERANCES FOR BAR FABRICATION SHALL MEET REQUIREMENTS OF STANDARD ACI 318 AND THE CRSI MANUAL OF STANDARD PRACTICE.



1 PLAN VIEW - 2.5 x 5.0 x 06 Std SHOWN
Scale: 1" = 1'-0"

4 SECTION THROUGH STEM
Scale: 1" = 1'-0"

X Approved
Approved As Noted
Rejected

This review is only for general conformance with the design concept and the information given in the Construction Documents. Corrections or comments made on the shop drawings during the review do not relieve the Contractor from compliance with the requirements of the Plans and Specifications. Review of a specific item shall not include review of an assembly of which an item is a component. The Contractor is responsible for dimensions to be confirmed and corrected at the job site; information that pertains solely to the fabrication process or to the means, methods, techniques, sequences and procedures of construction; coordination of the Work with that of other trades and performing all Work in a safe and satisfactory manner.



The design contained on these drawings is based upon information provided by the owner. On the basis of this information, The Neel Company has designed the structure only. Extensive stability, is the responsibility of the contractor.

McFarland Johnson

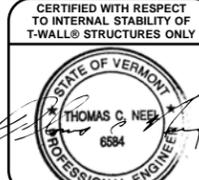
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PRECASTER: CONCRETE SYSTEMS, INC. CSI
Date: 5/5/2014
T21882

PROJECT #:

DESIGNER
THE NEEL COMPANY
8328-D TRAFORD LANE
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PH: (703) 913-7858
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PROJECT #: TW4301



NO.	DATE	REVISIONS

RIGIDIFIED TUBE FRP ARCH (RTFA) PROJECT

FAIRFIELD, VT

SHOP DRAWINGS
STANDARD UNITS
REBAR AND DIMENSIONS
T-WALL® RETAINING WALL SYSTEM

SCALE:	AS NOTED
DATE:	4/21/14
DESIGNED BY:	KD
DRAWN BY:	ABC
CHECKED BY:	CCG
SHEET:	7

GENERAL NOTES:

- PRIMARY REFERENCE:
 - AASHTO, LRFD BRIDGE DESIGN SPECIFICATION, 5TH EDITION 2010 (WITH INTERIMS)
- T-WALL® CONCRETE:
 - F_c = 5000 psi (MINIMUM) @ 28 DAYS
 - MINIMUM STRIPPING STRENGTH: 2500 psi
- T-WALL® REINFORCING STEEL:
 - BLACK
 - F_y = 60 ksi (GRADE 60)
 - WELDING IS NOT PERMITTED
- MARKING OF PRECAST UNITS:
 - CLEARLY MARK EACH PRECAST UNIT ON THE BUTT END OF THE STEM WITH THE UNIT TYPE (i.e. 2.5x5.0x06 STD), THE DATE OF MANUFACTURE, THE LOT NUMBER (IF APPLICABLE), AND THE TRADEMARK "T-WALL®".
- REINFORCING FABRICATION AND PLACEMENT TOLERANCES:
 - THE STRUCTURAL DESIGN OF PRECAST UNITS ASSUMES 2 INCHES OF CONCRETE COVER OVER ALL REINFORCING BARS.
 - UNLESS OTHERWISE NOTED IN CONTRACT DOCUMENTS OR REFERENCED SPECIFICATIONS, TOLERANCES ON CONCRETE COVER SHALL BE ± 3/8 INCHES.
 - UNLESS OTHERWISE NOTED IN CONTRACT DOCUMENTS OR REFERENCED SPECIFICATIONS, TOLERANCES ON BAR PLACEMENT SHALL BE:
 - VERTICAL LOCATION OF TB-1 BARS: ± 3/8 INCHES
 - LOCATION / SPACING OF H-1, V-1 & V-2 BARS: ± 1 INCH
 - REGARDLESS OF THE SPECIFIED PLACEMENT TOLERANCES, CONCRETE COVER SHALL BE MAINTAINED WITHIN ± 3/8 INCHES AS PREVIOUSLY NOTED.
 - ALL REINFORCING BARS SHALL BE CUT AND BENT FOLLOWING REQUIREMENTS OF THE CRSI MANUAL OF STANDARD PRACTICE.
 - UNLESS NOTED OTHERWISE, TOLERANCES FOR BAR FABRICATION SHALL MEET REQUIREMENTS OF STANDARD ACI 318 AND THE CRSI MANUAL OF STANDARD PRACTICE.

SPECIAL NOTES:

- FRONT FACE OF T-WALL® UNITS FINISH TREATMENT:
 - PLAIN STEEL FORM FINISH
- LIFTING INSERTS CAPACITY:
 - TWO QUICKLIFT® QL050G LIFTING INSERTS OR EQUAL, SPACED AT LEAST 30" APART.
 - 2000 LBS (1 TON) MINIMUM RATED WORKING LOAD CAPACITY.
 - MINIMUM CONCRETE STRENGTH SHALL BE 3,500 psi PRIOR TO STRIPPING AND LIFTING OPERATIONS.
- 1/2" FALSE JOINT LOCATION:
 - IF H-1 IS GREATER THEN 2'-6", THEN FIRST FALSE JOINT WILL BE 2'-6" FROM THE BOTTOM OF THE UNIT.
 - IF H-1 IS GREATER THEN 5'-0", THEN SECOND FALSE JOINT WILL BE 2'-6" ABOVE THE FIRST FALSE JOINT.
 - THE FALSE JOINT WILL 1/2" HIGH AND 1/2" DEEP.

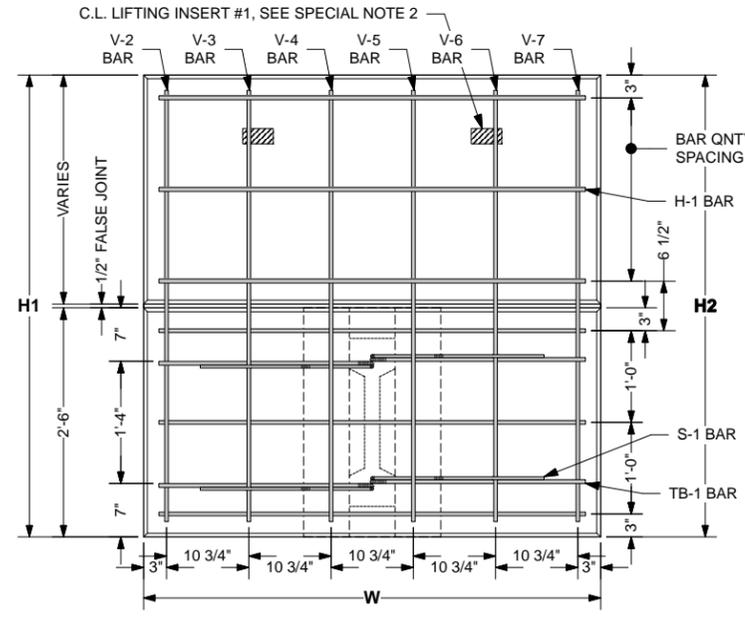
REBAR SCHEDULES

6' STEM SPECIAL UNITS

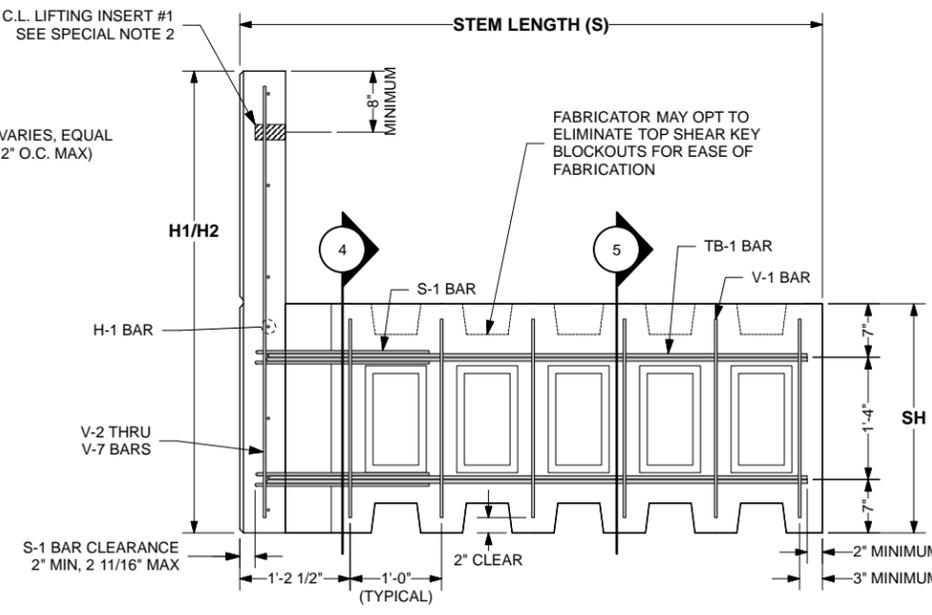
Unit Dims	Bar Mark	Qty	Size	Length	Dim "A"	Bar Weight	Bend Dia	Remarks
H-VARIES	H-1	VARIABLES	#4	4'8"				SEE SLOPED TOP UNIT SCHEDULE
W=5'0"	V-1	12 ea	#4	2'2"		17.37 lbs		
S=6'4 1/2"	V-2 THRU V-7	1 ea	#5	VARIABLES				SEE SLOPED TOP UNIT SCHEDULE
SH=2'6"	S-1	4 ea	#4	3'4 1/2"		9.02 lbs	D=3"	
	TB-1	4 ea	#4	8'3"	5'11"	22.04 lbs	D=3"	

SLOPED TOP UNIT SCHEDULE:

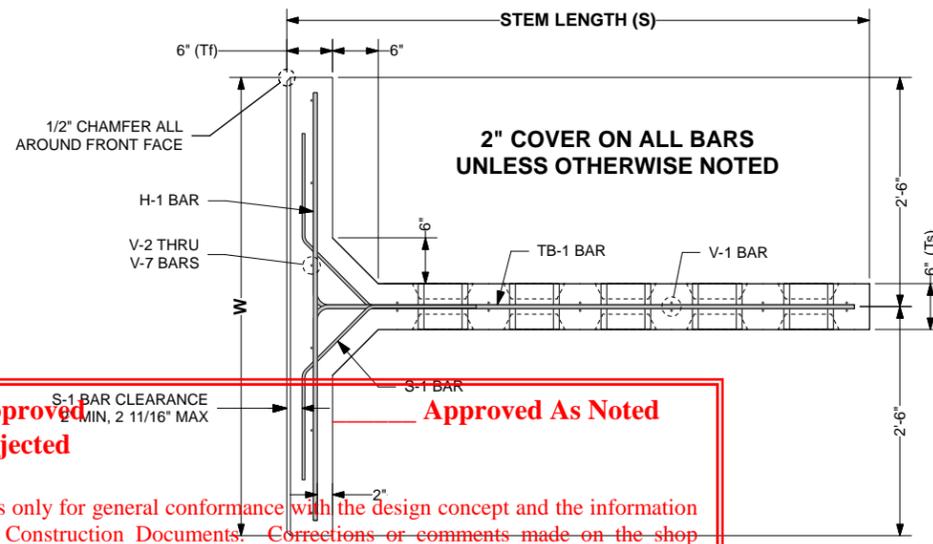
MARK No.	QNTY	STEM	WIDTH	H1	H2	H-1 BAR	V-2 BAR	V-3 BAR	V-4 BAR	V-5 BAR	V-6 BAR	V-7 BAR	VOL	WEIGHT	AREA
SP2	1 ea	6'0"	5'0"	6'4 1/2"	5'7 3/8"	7 ea	6'0"	5'10 1/4"	5'8 3/8"	5'7 1/2"	5'5 5/8"	5'3 7/8"	0.78 cy	3,147 lbs	29.97 sf
SP3	1 ea	6'0"	5'0"	5'7 3/8"	4'10 1/4"	7 ea	5'2 7/8"	5'1 1/8"	4'11 1/4"	4'10 3/8"	4'8 1/2"	4'6 3/4"	0.71 cy	2,862 lbs	26.17 sf
SP4	1 ea	6'0"	5'0"	4'10 1/4"	4'1 1/8"	6 ea	4'5 3/4"	4'4"	4'2 1/8"	4'1 1/4"	3'11 3/8"	3'9 5/8"	0.64 cy	2,576 lbs	22.37 sf
SP5	1 ea	6'0"	5'0"	4'1 1/8"	3'4"	5 ea	3'8 5/8"	3'6 7/8"	3'5"	3'4 1/8"	3'2 1/4"	3'0 1/2"	0.57 cy	2,291 lbs	18.57 sf
SP6	1 ea	6'0"	5'0"	5'10 1/2"	5'1 3/8"	7 ea	5'6"	5'4 1/4"	5'2 3/8"	5'1 1/2"	4'11 5/8"	4'9 7/8"	0.73 cy	2,959 lbs	27.47 sf
SP7	1 ea	6'0"	5'0"	4'8 1/2"	6'5 1/2"	7 ea	4'5 5/8"	4'9 7/8"	5'2"	5'4 1/8"	5'8 1/4"	6'0 3/8"	0.74 cy	2,993 lbs	27.93 sf
SP8	1 ea	6'0"	5'0"	3'11"	5'8"	7 ea	3'8 1/8"	4'0 3/8"	4'4 1/2"	4'6 5/8"	4'10 3/4"	5'2 7/8"	0.67 cy	2,697 lbs	23.98 sf
SP9	1 ea	6'0"	5'0"	3'1 1/2"	4'10 1/2"	6 ea	2'10 3/4"	3'2 7/8"	3'7"	3'9 1/8"	4'1 1/4"	4'5 3/8"	0.59 cy	2,401 lbs	20.02 sf
SP11	1 ea	6'0"	5'0"	3'1 7/8"	4'11 7/8"	6 ea	2'11 1/8"	3'3 1/2"	3'7 3/4"	3'10"	4'2 3/8"	4'6 3/4"	0.60 cy	2,427 lbs	20.38 sf
SP12	1 ea	6'0"	5'0"	4'11 7/8"	6'9 7/8"	8 ea	4'9 1/8"	5'3 3/4"	5'8"	6'0 1/4"	6'4 5/8"	6'8"	0.77 cy	3,113 lbs	29.52 sf
SP15	1 ea	6'0"	5'0"	5'3 1/2"	4'6 3/4"	6 ea	4'11"	4'9 1/4"	4'7 1/2"	4'6 5/8"	4'4 7/8"	4'3 1/4"	0.68 cy	2,746 lbs	24.62 sf
SP16	1 ea	6'0"	5'0"	4'6 3/4"	3'10"	6 ea	4'2 1/4"	4'0 1/2"	3'10 3/4"	3'9 7/8"	3'8 1/8"	3'6 1/2"	0.61 cy	2,472 lbs	20.97 sf
SP17	1 ea	6'0"	5'0"	3'10"	3'1 1/4"	5 ea	3'5 1/2"	3'3 3/4"	3'2"	3'1 1/8"	2'11 3/8"	2'9 5/8"	0.54 cy	2,198 lbs	17.32 sf
SP18	1 ea	6'0"	5'0"	5'7 3/4"	4'11"	7 ea	5'3 3/8"	5'1 5/8"	4'11 7/8"	4'11"	4'9 1/4"	4'7 1/2"	0.71 cy	2,881 lbs	26.43 sf



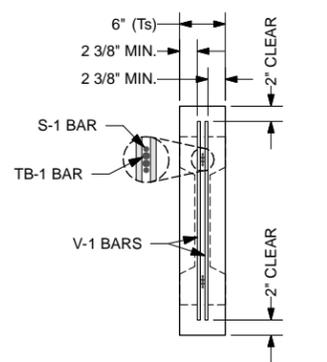
3 FRONT VIEW - 6' STEM UNIT SHOWN
Scale: 1" = 1'-0" (V-1 BARS IN STEM OMITTED FOR CLARITY)



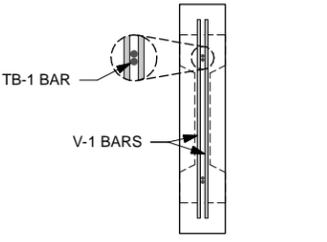
2 SIDE VIEW - 6' STEM UNIT SHOWN
Scale: 1" = 1'-0"



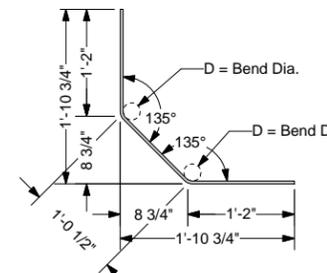
PLAN VIEW - 6' STEM UNIT SHOWN
Scale: 1" = 1'-0"



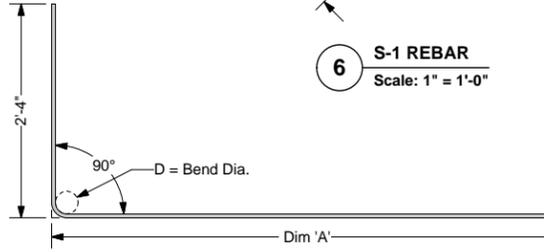
4 SECTION AT STEM
Scale: 1" = 1'-0"



5 SECTION AT STEM
Scale: 1" = 1'-0"



6 S-1 REBAR
Scale: 1" = 1'-0"



7 TB-1 REBAR
Scale: 1" = 1'-0"

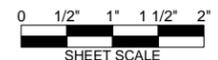
X Approved
Rejected

Approved As Noted

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Date 5/5/2014

By T. Traver



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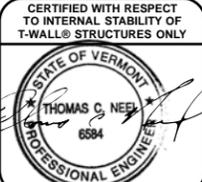
PRECASTER: CONCRETE SYSTEMS, INC. CSI
PROJECT #: T21882

CONTRACTOR: A.L. ST. ONGE CONTRACTORS
PROJECT #:

DESIGNER

THE NEEL COMPANY
 8328-D TRAFORD LANE
 SPRINGFIELD, VIRGINIA 22152
 PH: (703) 913-7858
 FX: (703) 913-7859
 WEB: WWW.NEELCO.COM

PROJECT #: TW4301



NO.	REVISIONS

RIGIDIFIED TUBE FRP ARCH (RTFA) PROJECT

FAIRFIELD, VT

SHOP DRAWINGS
 SLOPED TOP UNITS
 REBAR AND DIMENSIONS

T-WALL® RETAINING WALL SYSTEM

SCALE:	AS NOTED
DATE:	4/21/14
DESIGNED BY:	KD
DRAWN BY:	ABC
CHECKED BY:	CCG
SHEET:	8

GENERAL NOTES:

- PRIMARY REFERENCE:
 - AASHTO, LRFD BRIDGE DESIGN SPECIFICATION, 5TH EDITION 2010 (WITH INTERIMS)
- T-WALL@ CONCRETE:
 - F_c = 5000 psi (MINIMUM) @ 28 DAYS
 - MINIMUM STRIPPING STRENGTH: 2500 psi
- T-WALL@ REINFORCING STEEL:
 - BLACK
 - F_y = 60 ksi (GRADE 60)
 - WELDING IS NOT PERMITTED
- MARKING OF PRECAST UNITS:
 - CLEARLY MARK EACH PRECAST UNIT ON THE BUTT END OF THE STEM WITH THE UNIT TYPE (i.e. 2.5x5.0x6 STD), THE DATE OF MANUFACTURE, THE LOT NUMBER (IF APPLICABLE), AND THE TRADEMARK "T-WALL@".
- REINFORCING FABRICATION AND PLACEMENT TOLERANCES:
 - THE STRUCTURAL DESIGN OF PRECAST UNITS ASSUMES 2 INCHES OF CONCRETE COVER OVER ALL REINFORCING BARS.
 - UNLESS OTHERWISE NOTED IN CONTRACT DOCUMENTS OR REFERENCED SPECIFICATIONS, TOLERANCES ON CONCRETE COVER SHALL BE ± 3/8 INCHES.
 - UNLESS OTHERWISE NOTED IN CONTRACT DOCUMENTS OR REFERENCED SPECIFICATIONS, TOLERANCES ON BAR PLACEMENT SHALL BE:
 - VERTICAL LOCATION OF TB-1 BARS: ± 3/8 INCHES
 - LOCATION / SPACING OF H-1, V-1 & V-2 BARS: ± 1 INCH
 - REGARDLESS OF THE SPECIFIED PLACEMENT TOLERANCES, CONCRETE COVER SHALL BE MAINTAINED WITHIN ± 3/8 INCHES AS PREVIOUSLY NOTED.
 - ALL REINFORCING BARS SHALL BE CUT AND BENT FOLLOWING REQUIREMENTS OF THE CRSI MANUAL OF STANDARD PRACTICE.
 - UNLESS NOTED OTHERWISE, TOLERANCES FOR BAR FABRICATION SHALL MEET REQUIREMENTS OF STANDARD ACI 318 AND THE CRSI MANUAL OF STANDARD PRACTICE.

SPECIAL NOTES:

- FRONT FACE OF T-WALL@ UNITS FINISH TREATMENT:
 - PLAIN STEEL FORM FINISH
- LIFTING INSERTS CAPACITY:
 - TWO QUICKLIFT "QL050G" LIFTING INSERTS OR EQUAL, SPACED AT LEAST 30" PART
 - 2000 LBS (1 TON) MINIMUM RATED WORKING LOAD CAPACITY.
 - MINIMUM CONCRETE STRENGTH SHALL BE 3,500 psi PRIOR TO STRIPPING AND LIFTING OPERATIONS.
- 1/2" FALSE JOINT LOCATION:
 - IF H-1 IS GREATER THEN 2'-6", THEN FIRST FALSE JOINT WILL BE 2'-6" FROM THE BOTTOM OF THE UNIT.
 - IF H-1 IS GREATER THEN 5'-0", THEN SECOND FALSE JOINT WILL BE 2'-6" ABOVE THE FIRST FALSE JOINT.
 - THE FALSE JOINT WILL 1/2" HIGH AND 1/2" DEEP.

REBAR SCHEDULES

6' STEM SPECIAL UNITS

Unit Dims	Bar Mark	Qty	Size	Length	Dim "A"	Bar Weight	Ref. Unit
H=VARIES	H-1	VARIES	#4	4'1 1/4"			SEE SLOPED TOP UNIT SCHEDULE
W=4'1 1/4"	V-1	12 ea	#4	2'2"		17.37 lbs	
S=6'4 1/2"	V-2 THRU V-6	1 ea	#4	VARIES			SEE SLOPED TOP UNIT SCHEDULE
SH=2'6"	S-1	2 ea	#4	3'4 1/2"		4.51 lbs	D=3"
	S-2	2 ea	#4	3'0 1/2"		4.06 lbs	D=3"
	TB-1	2 ea	#4	4'4"	2'0 1/2"	5.79 lbs	D=3"
	TB-2	2 ea	#4	3'5 1/4"	2'0 1/2"	4.59 lbs	D=3"

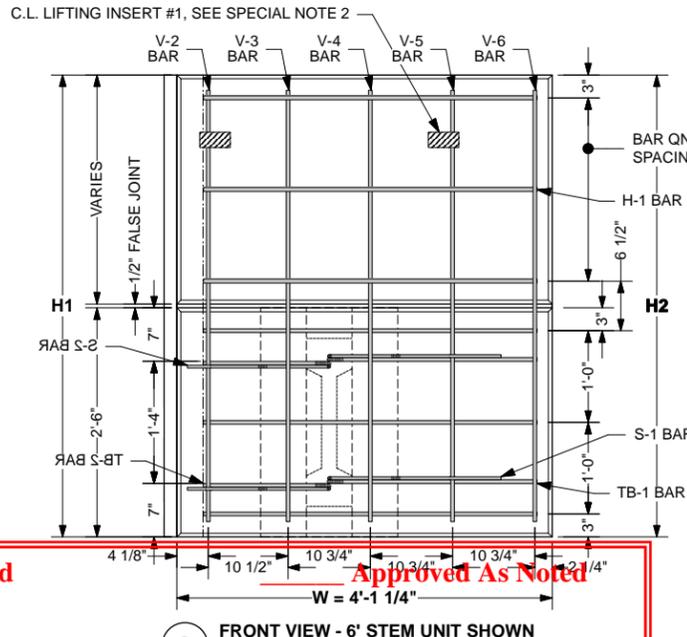
SLOPED TOP UNIT SCHEDULE:

MARK No.	QNTY	STEM	WIDTH	H1	H2	H-1 BAR	V-2 BAR	V-3 BAR	V-4 BAR	V-5 BAR	V-6 BAR	VOL	WEIGHT	AREA
SP1	1 ea	6'0"	4'10 1/2"	4'7 1/2"	3'10 1/2"	6 ea	4'2 3/4"	4'1 7/8"	3'11 5/8"	3'10"	3'8 3/8"	0.61 cy	2,454 lbs	20.74 sf
SP14	1 ea	6'0"	4'10 1/2"	6'0 1/8"	5'3 1/2"	7 ea	5'7 3/8"	5'6 1/2"	5'4 3/8"	5'2 3/4"	5'1 1/4"	0.73 cy	2,967 lbs	27.57 sf

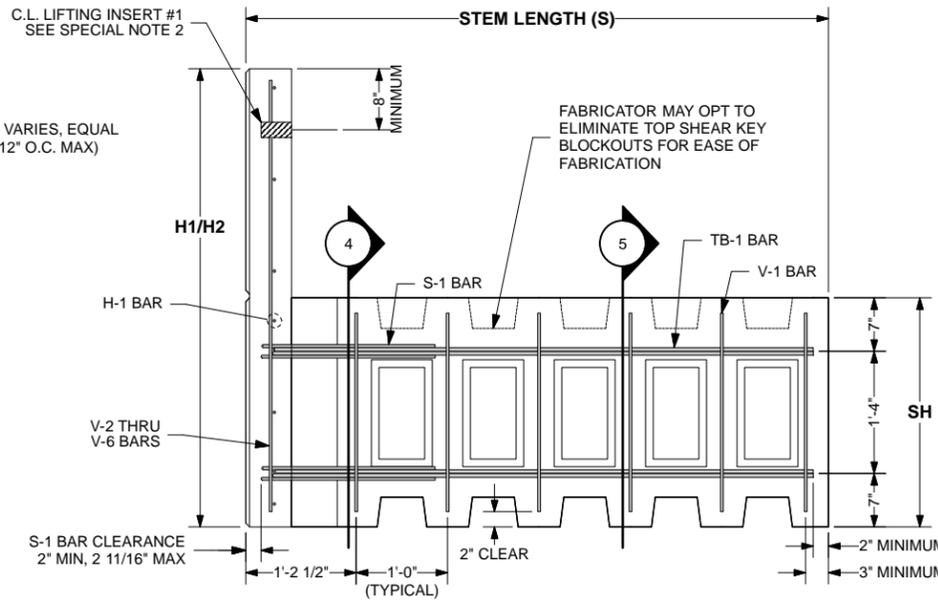
X Approved
Rejected

This review is only for general conformance with the design concept and the information given in the Construction Documents. Corrections or comments made on the shop drawings during the review do not relieve the Contractor from compliance with the requirements of the Plans and Specifications. Review of a specific item shall not include review of an assembly of which an item is a component. The Contractor is responsible for dimensions to be confirmed and corrected at the job site; information that pertains solely to the fabrication process or to the means, methods, techniques, sequences and procedures of construction; coordination of the Work with that of other trades and performing all Work in a safe and satisfactory manner.

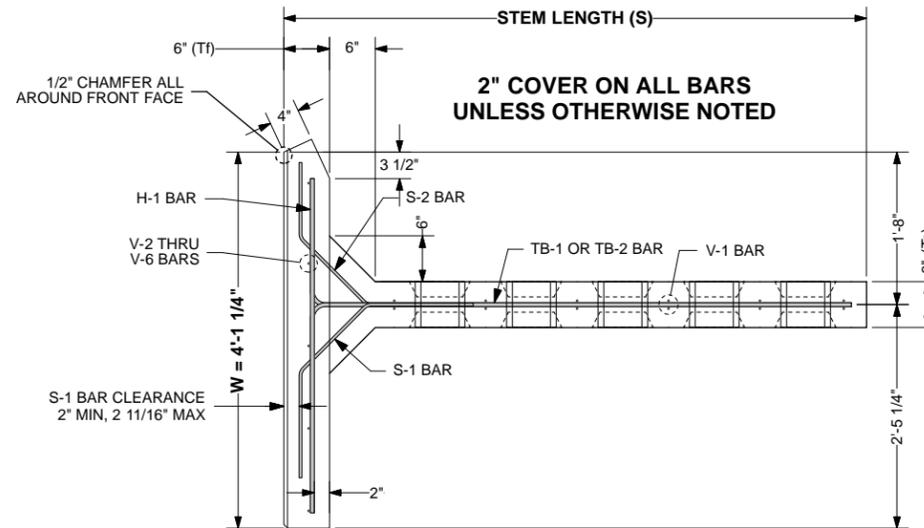
Date 5/5/2014
 By T. Traver



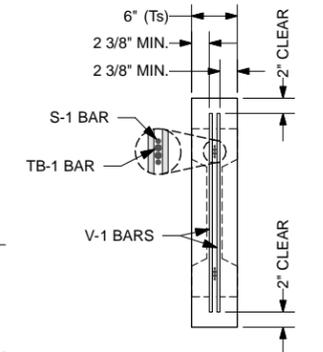
3 FRONT VIEW - 6' STEM UNIT SHOWN
Scale: 1" = 1'-0" (V-1 BARS IN STEM OMITTED FOR CLARITY)



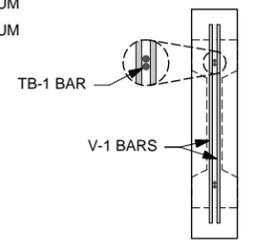
2 SIDE VIEW - 6' STEM UNIT SHOWN
Scale: 1" = 1'-0"



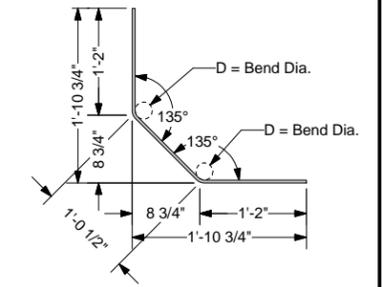
1 PLAN VIEW - 6' STEM UNIT SHOWN
Scale: 1" = 1'-0"



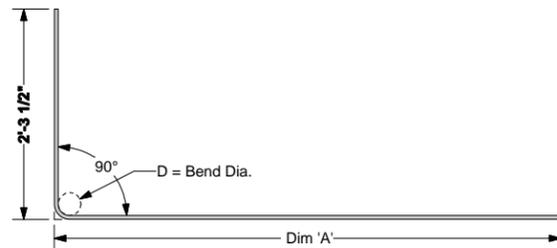
4 SECTION AT STEM
Scale: 1" = 1'-0"



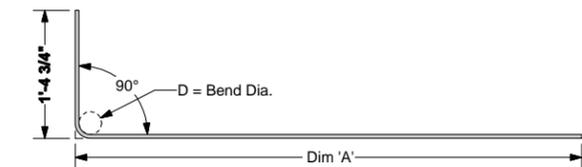
5 SECTION AT STEM
Scale: 1" = 1'-0"



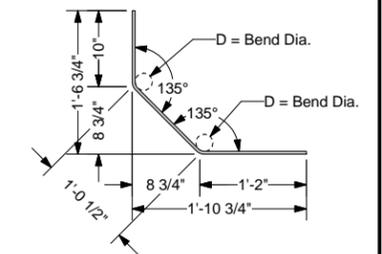
6 S-1 REBAR
Scale: 1" = 1'-0"



7 TB-1 REBAR
Scale: 1" = 1'-0"



8 TB-2 REBAR
Scale: 1" = 1'-0"



9 S-2 REBAR
Scale: 1" = 1'-0"



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PRECASTER: CONCRETE SYSTEMS, INC. CSI

PROJECT #: T21882

CONTRACTOR: A.L. ST. ONGE CONTRACTORS

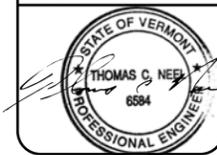
PROJECT #:

DESIGNER

THE NEEL COMPANY
8328-D TRAFORD LANE
SPRINGFIELD, VIRGINIA 22152
PH: (703) 913-7858
FX: (703) 913-7859
WEB: WWW.NEELCO.COM

PROJECT #: TW4301

CERTIFIED WITH RESPECT TO INTERNAL STABILITY OF T-WALL@ STRUCTURES ONLY



REVISIONS

NO.	DESCRIPTION

RIGIDIFIED TUBE FRP ARCH (RTFA) PROJECT

FAIRFIELD, VT

SHOP DRAWINGS
NARROW SLOPED TOP LEFT BEVELED UNITS
REBAR AND DIMENSIONS
T-WALL@ RETAINING WALL SYSTEM

SCALE: AS NOTED

DATE: 4/21/14

DESIGNED BY: KD

DRAWN BY: ABC

CHECKED BY: CCG

SHEET: 9

GENERAL NOTES:

- 1. PRIMARY REFERENCE: AASHTO, LRFD BRIDGE DESIGN SPECIFICATION, 5TH EDITION 2010 (WITH INTERIMS)
2. T-WALL@ CONCRETE: Fc = 5000 psi (MINIMUM) @ 28 DAYS
3. T-WALL@ REINFORCING STEEL: BLACK, Fy = 60 ksi (GRADE 60), WELDING IS NOT PERMITTED
4. MARKING OF PRECAST UNITS: CLEARLY MARK EACH PRECAST UNIT ON THE BUTT END OF THE STEM WITH THE UNIT TYPE (i.e. 2.5x5.0x06 STD), THE DATE OF MANUFACTURE, THE LOT NUMBER (IF APPLICABLE), AND THE TRADEMARK "T-WALL@".
5. REINFORCING FABRICATION AND PLACEMENT TOLERANCES: THE STRUCTURAL DESIGN OF PRECAST UNITS ASSUMES 2 INCHES OF CONCRETE COVER OVER ALL REINFORCING BARS.

SPECIAL NOTES:

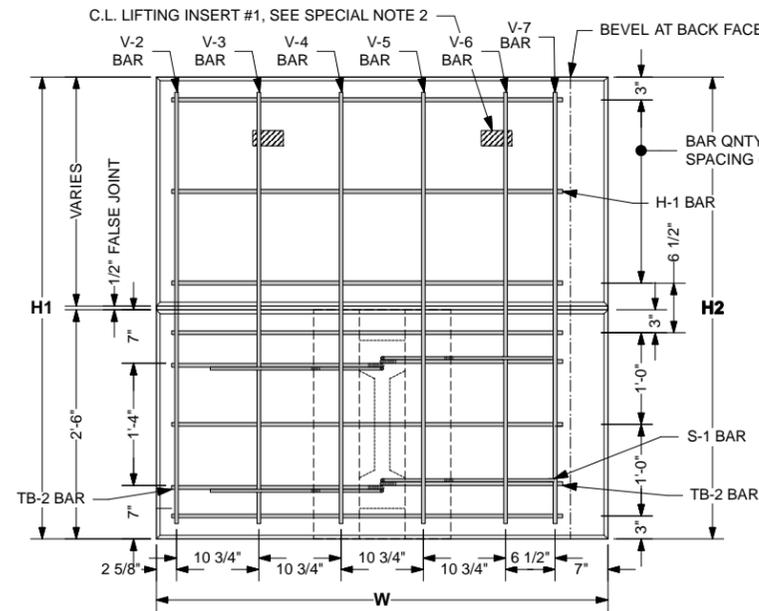
- 1. FRONT FACE OF T-WALL@ UNITS FINISH TREATMENT: PLAIN STEEL FORM FINISH
2. LIFTING INSERTS CAPACITY: TWO QUICKLIFT 'QL050G' LIFTING INSERTS OR EQUAL, SPACED AT LEAST 30" APART.
3. 1/2" FALSE JOINT LOCATION: IF H-1 IS GREATER THEN 2'-6", THEN FIRST FALSE JOINT WILL BE 2'-6" FROM THE BOTTOM OF THE UNIT.

REBAR SCHEDULES

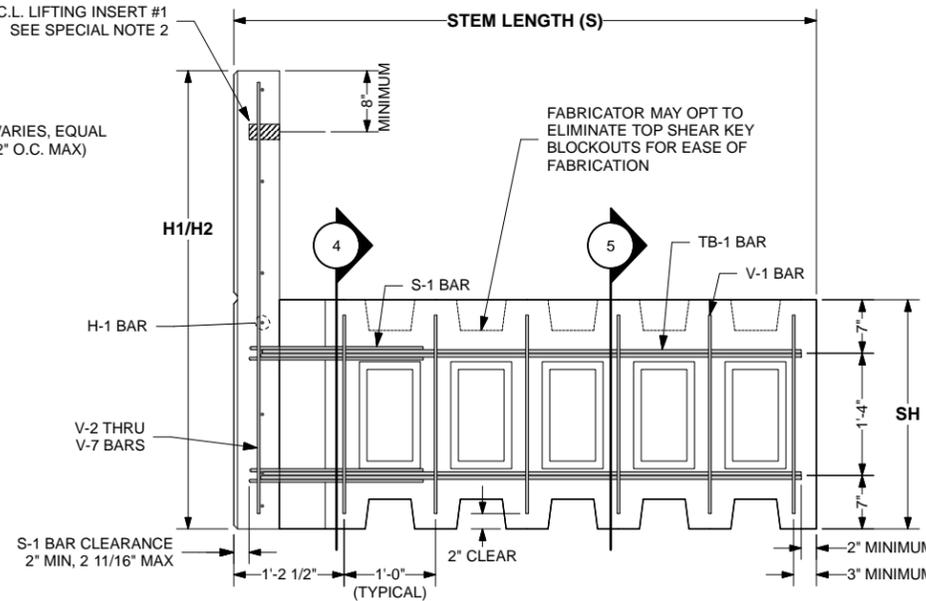
Table with 9 columns: Unit Dims, Bar Mark, Qty, Size, Length, Dim 'A', Bar Weight, Bend Dia, Remarks. Includes 6' STEM SPECIAL UNITS and HIGHWAY REBAR.

SLOPED TOP UNIT SCHEDULE:

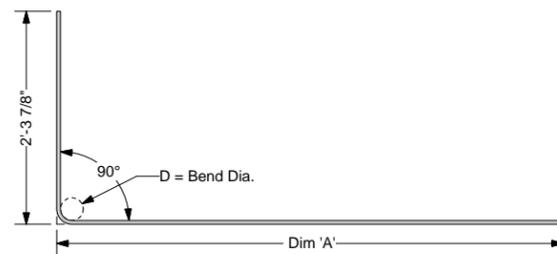
Table with 15 columns: MARK No., QNTY, STEM, WIDTH, H1, H2, H-1 BAR, V-2 BAR, V-3 BAR, V-4 BAR, V-5 BAR, V-6 BAR, V-7 BAR, VOL, WEIGHT, AREA.



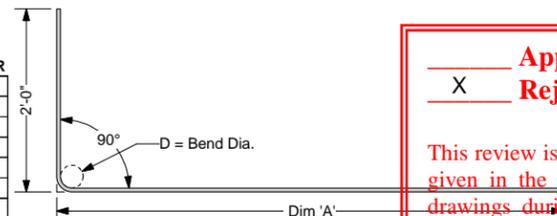
3 FRONT VIEW - 6' STEM UNIT SHOWN Scale: 1" = 1'-0" (V-1 BARS IN STEM OMITTED FOR CLARITY)



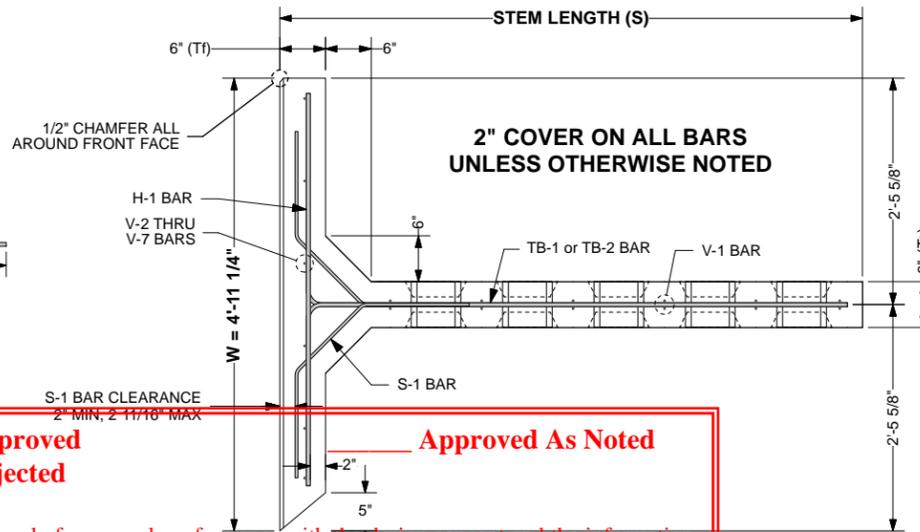
2 SIDE VIEW - 6' STEM UNIT SHOWN Scale: 1" = 1'-0"



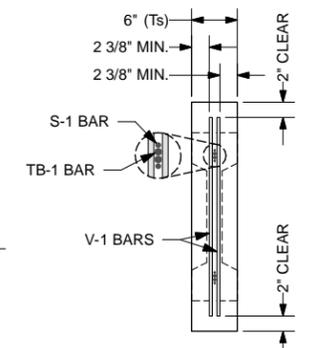
7 TB-1 REBAR Scale: 1" = 1'-0"



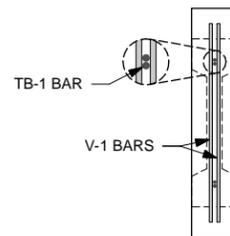
7 TB-1 REBAR Scale: 1" = 1'-0"



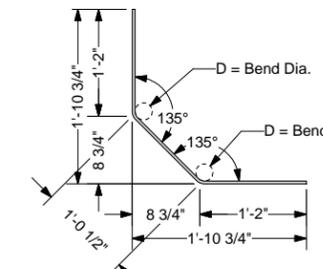
PLAN VIEW - 6' STEM UNIT SHOWN Scale: 1" = 1'-0"



4 SECTION AT STEM Scale: 1" = 1'-0"

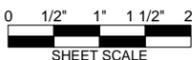


5 SECTION AT STEM Scale: 1" = 1'-0"



6 S-1 REBAR Scale: 1" = 1'-0"

Approved Rejected Approved As Noted
This review is only for general conformance with the design concept and the information given in the Construction Documents. Corrections or comments made on the shop drawings during the review do not relieve the Contractor from compliance with the requirements of the Plans and Specifications. Review of a specific item shall not include review of an assembly of which an item is a component. The Contractor is responsible for dimensions to be confirmed and corrected at the job site; information that pertains solely to the fabrication process or to the means, methods, techniques, sequences and procedures of construction; coordination of the Work with that of other trades and performing all Work in a safe and satisfactory manner.
Date 5/5/2014
By T. Traver



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PRECASTER: CONCRETE SYSTEMS, INC. CSI

PROJECT #: T21882

CONTRACTOR: A.L. ST. ONGE CONTRACTORS

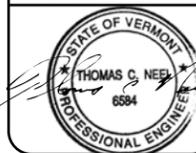
PROJECT #:

DESIGNER

THE NEEL COMPANY
8328-D TRAFORD LANE
SPRINGFIELD, VIRGINIA 22152
PH: (703) 913-7858
FX: (703) 913-7859
WEB: WWW.NEELCO.COM

PROJECT #: TW4301

CERTIFIED WITH RESPECT TO INTERNAL STABILITY OF T-WALL@ STRUCTURES ONLY



REVISIONS

RIGIDIFIED TUBE FRP ARCH (RTFA) PROJECT

FAIRFIELD, VT

SHOP DRAWINGS

NARROW SLOPED TOP RIGHT BEVELED UNITS

REBAR AND DIMENSIONS

T-WALL@ RETAINING WALL SYSTEM

SCALE: AS NOTED

DATE: 4/21/14

DESIGNED BY: KD

DRAWN BY: ABC

CHECKED BY: CCG

SHEET: 10

REBAR SCHEDULES

Table for SP22 Highway Rebar with columns: Unit Dims, Bar Mark, Qty, Size, Length, Dim "A", Bar Weight, Bend Dia, Remarks. Includes a red box 'SP19 NOT REQ'D.'

Table for SP21 Highway Rebar with columns: Unit Dims, Bar Mark, Qty, Size, Length, Dim "A", Bar Weight, Bend Dia, Remarks.

Table for SP20 Highway Rebar with columns: Unit Dims, Bar Mark, Qty, Size, Length, Dim "A", Bar Weight, Bend Dia, Remarks.

Table for SP19 Highway Rebar with columns: Unit Dims, Bar Mark, Qty, Size, Length, Dim "A", Bar Weight, Bend Dia, Remarks. Includes a red box 'SP19 NOT REQ'D.'

SPECIAL NOTES:

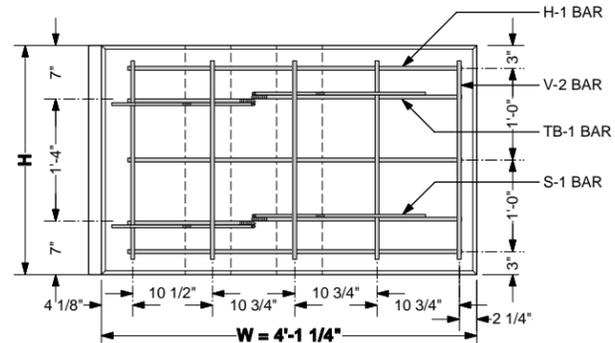
- 1. FRONT FACE OF T-WALL@ UNITS FINISH TREATMENT: PLAIN STEEL FORM FINISH

GENERAL NOTES:

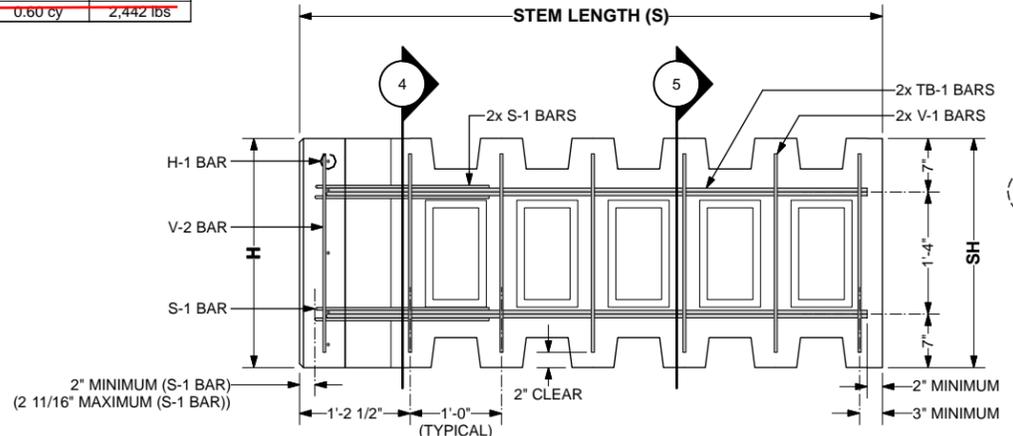
- 1. PRIMARY REFERENCE: AASHTO, LRFD BRIDGE DESIGN SPECIFICATION, 5TH EDITION 2010 (WITH INTERIMS)
2. T-WALL@ CONCRETE: Fc = 5000 psi (MINIMUM) @ 28 DAYS
3. T-WALL@ REINFORCING STEEL: BLACK, Fy = 60 ksi (GRADE 60), WELDING IS NOT PERMITTED
4. MARKING OF PRECAST UNITS: CLEARLY MARK EACH PRECAST UNIT ON THE BUTT END OF THE STEM WITH THE UNIT TYPE...
5. REINFORCING FABRICATION AND PLACEMENT TOLERANCES: THE STRUCTURAL DESIGN OF PRECAST UNITS ASSUMES 2 INCHES OF CONCRETE COVER OVER ALL REINFORCING BARS...

T-WALL UNIT PROPERTIES

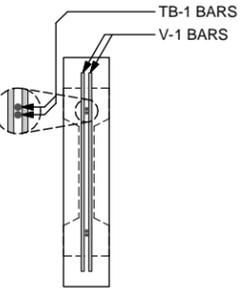
Table with columns: UNIT TYPE, H, W, S, Tf, Ts, SH, VOLUME, WEIGHT. Includes a note: * VOLUMES AND WEIGHTS ON THIS TABLE ARE BASED ON 6" FACE THICKNESS (Tf)



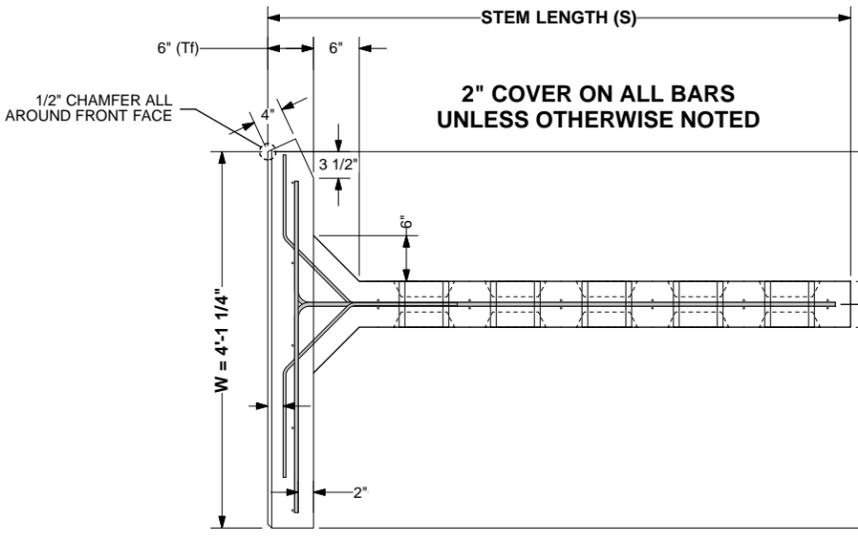
3 FRONT VIEW - 2.5 x 5.0 x 06 Std SHOWN Scale: 1" = 1'-0" (V-1 BARS IN STEM OMITTED FOR CLARITY)



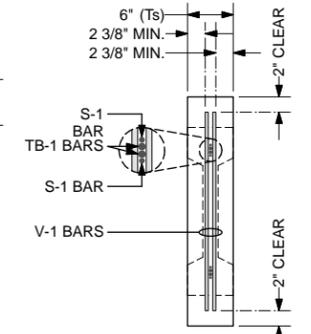
2 SIDE VIEW - 2.5 x 5.0 x 06 Std SHOWN Scale: 1" = 1'-0"



5 SECTION THROUGH STEM Scale: 1" = 1'-0"

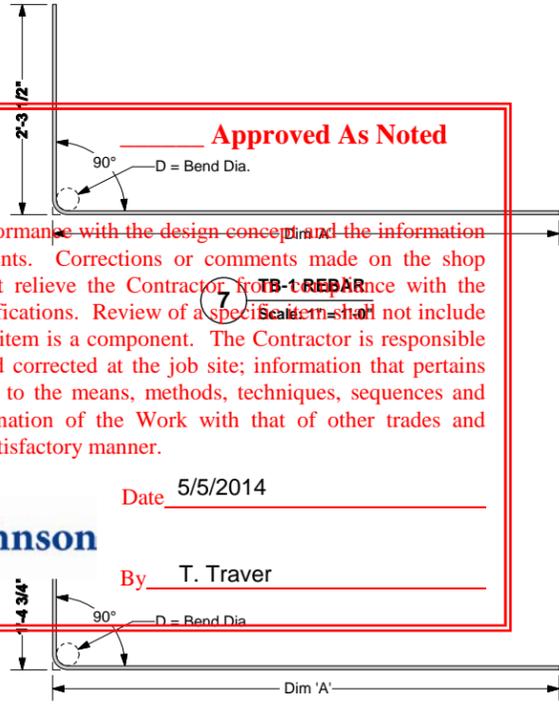


1 PLAN VIEW - 2.5 x 5.0 x 06 Std SHOWN Scale: 1" = 1'-0"



4 SECTION THROUGH STEM Scale: 1" = 1'-0"

Approval stamp area with 'Approved' and 'Rejected' options, a signature line for T. Traver, date 5/5/2014, and the McFarland Johnson logo.



8 TB-2 REBAR Scale: 1" = 1'-0"

6 S-1 REBAR Scale: 1" = 1'-0"

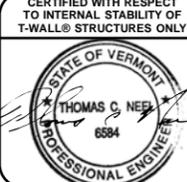
9 S-2 REBAR Scale: 1" = 1'-0"



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PRECASTER: CONCRETE SYSTEMS, INC. CSI
PROJECT #: T21882
CONTRACTOR: A.L. ST. ONGE CONTRACTORS
PROJECT #:

DESIGNER: THE NEEL COMPANY
8328-D TRAFORD LANE
SPRINGFIELD, VIRGINIA 22152
PH: (703) 913-7858
FX: (703) 913-7859
WEB: WWW.NEELCO.COM
PROJECT #: TW4301



REVISIONS table with columns for description and date.

RIGIDIFIED TUBE FRP ARCH (RTFA) PROJECT
FAIRFIELD, VT
SHOP DRAWINGS
NARROW LEFT BEVELED UNITS
REBAR AND DIMENSIONS
T-WALL@ RETAINING WALL SYSTEM

Table with columns: SCALE, DATE, DESIGNED BY, DRAWN BY, CHECKED BY, SHEET. Values include AS NOTED, 4/21/14, KD, ABC, CCG, 11.

T-WALL UNIT PROPERTIES

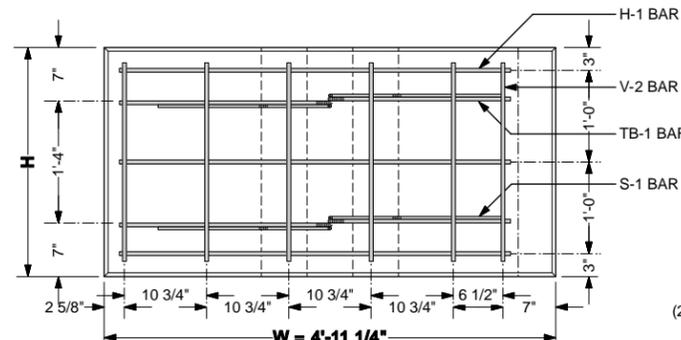
Table with 10 columns: UNIT TYPE, H, W, S, Tf, Ts, SH, VOLUME, WEIGHT. Rows for SP24 and SP23.

* VOLUMES AND WEIGHTS ON THIS TABLE ARE BASED ON 6" FACE THICKNESS (Tf)

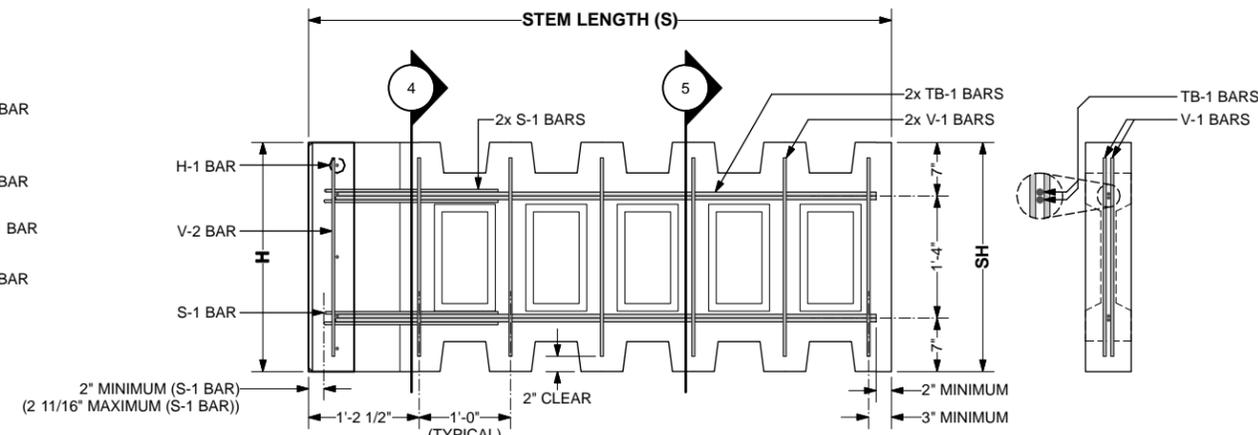
REBAR SCHEDULES

Table for SP24 HIGHWAY REBAR with columns: Unit Dims, Bar Mark, Qty, Size, Length, Dim "A", Bar Weight, Bend Dia, Remarks.

Table for SP23 HIGHWAY REBAR with columns: Unit Dims, Bar Mark, Qty, Size, Length, Dim "A", Bar Weight, Bend Dia, Remarks.



3 FRONT VIEW - 2.5 x 5.0 x 06 Std SHOWN Scale: 1" = 1'-0" (V-1 BARS IN STEM OMITTED FOR CLARITY)



2 SIDE VIEW - 2.5 x 5.0 x 06 Std SHOWN Scale: 1" = 1'-0"

5 SECTION THROUGH STEM Scale: 1" = 1'-0"

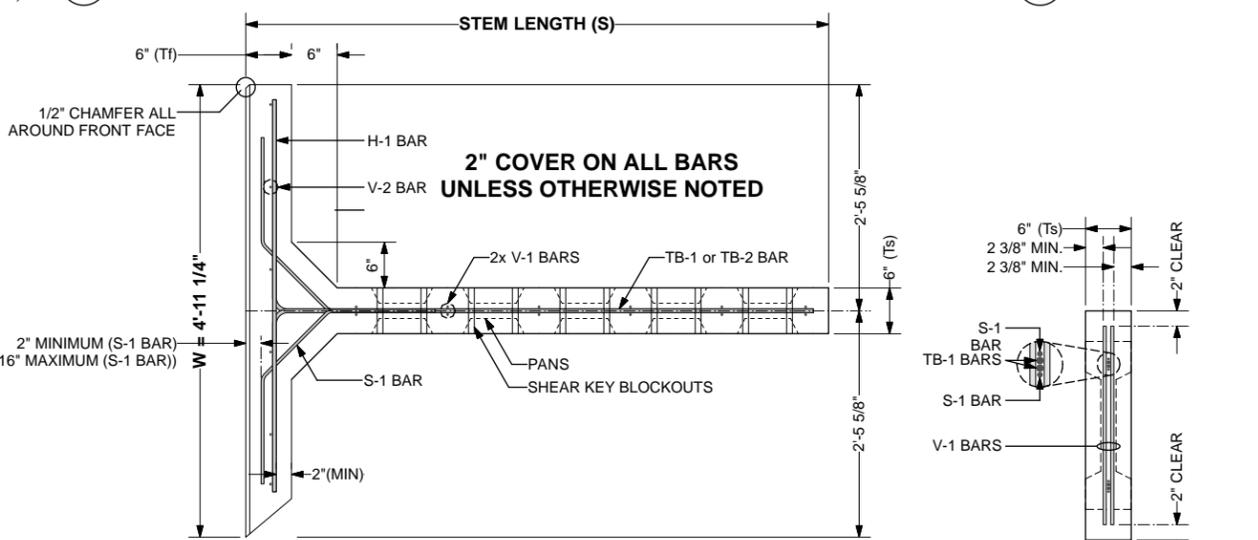
SPECIAL NOTES:

- 1. FRONT FACE OF T-WALL® UNITS FINISH TREATMENT: PLAIN STEEL FORM FINISH

GENERAL NOTES:

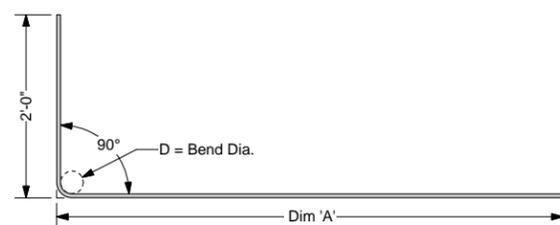
- 1. PRIMARY REFERENCE: AASHTO, LRFD BRIDGE DESIGN SPECIFICATION, 5TH EDITION 2010 (WITH INTERIMS)
2. T-WALL® CONCRETE: Fc = 5000 psi (MINIMUM) @ 28 DAYS
3. T-WALL® REINFORCING STEEL: BLACK, Fy = 60 ksi (GRADE 60), WELDING IS NOT PERMITTED
4. MARKING OF PRECAST UNITS: CLEARLY MARK EACH PRECAST UNIT ON THE BUTT END OF THE STEM
5. REINFORCING FABRICATION AND PLACEMENT TOLERANCES:

Approval stamp area with 'Approved' and 'Approved As Noted' options, a red 'X' mark, and a signature 'T. Traver' dated 5/5/2014 from McFarland Johnson.

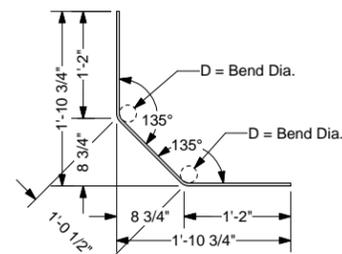


1 PLAN VIEW - 2.5 x 5.0 x 06 Std SHOWN Scale: 1" = 1'-0"

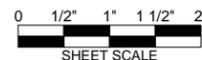
4 SECTION THROUGH STEM Scale: 1" = 1'-0"



8 TB-2 REBAR Scale: 1" = 1'-0"



6 S-1 REBAR Scale: 1" = 1'-0"



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Project information box containing PRECASTER: CONCRETE SYSTEMS, INC. CSI, PROJECT #: T21882, CONTRACTOR: A.L. ST. ONGE CONTRACTORS, PROJECT #:

Designer information box for THE NEEL COMPANY, 8328-D TRAFORD LANE, SPRINGFIELD, VIRGINIA 22152, PH: (703) 913-7858, FX: (703) 913-7859, WEB: WWW.NEELCO.COM, PROJECT #: TW4301

Certification stamp for Thomas O. Neel, Professional Engineer, State of Vermont, No. 6584

Revisions table with columns for description and date.

Project title and location: RIGIDIFIED TUBE FRP ARCH (RTFA) PROJECT, FAIRFIELD, VT, SHOP DRAWINGS, NARROW RIGHT BEVELED UNITS REBAR AND DIMENSIONS, T-WALL® RETAINING WALL SYSTEM

Scale and drawing information table: SCALE: AS NOTED, DATE: 4/21/14, DESIGNED BY: KD, DRAWN BY: ABC, CHECKED BY: CCG, SHEET: 12