

CONSTRUCTION NOTES:

- PROCEDURES FOR SHIMMING AND ADJUSTING OF T-WALL® UNITS TO ACHIEVE PROPER LINE, GRADE AND PLUMBNESS ARE TO BE AS DIRECTED BY THE NEEL COMPANY.
- FOUNDATION PREPARATION: PER PROJECT SPECIFICATIONS.
- EXCAVATE TO, FORM AND POUR THE LEVELING PAD. CAREFUL ATTENTION TO MAINTAINING PROPER TOP OF PAD ELEVATION WILL MINIMIZE SHIMMING OF SUCCESSIVE ROWS OF T-WALL® UNITS.
- STRIP PAD AND CHECK FOR HIGHEST POINT - ENTIRE FIRST ROW OF T-WALL® UNITS MUST BE SHIMMED TO THIS ELEVATION.
- BEGIN PLACEMENT OF FIRST ROW OF T-WALL® UNITS AT THE BEGINNING OF WALL (AS SHOWN ON THESE PLANS), SHIMMING AND ALIGNING EACH UNIT TO ACHIEVE PROPER LINE AND GRADE.
- WHEN ENTIRE ROW HAS BEEN PLACED, SIGHT DOWN THE TOP FRONT EDGE OF THE UNITS, ADJUSTING AND SHIMMING THOSE UNITS STILL NOT PROPERLY ALIGNED.
- PLACE VERTICAL JOINT MATERIAL ALONG BACK FACE OF EACH VERTICAL JOINT.
- PLACE AND COMPACT BACKFILL BETWEEN STEMS AND BEHIND STEMS PER PROJECT SPECIFICATIONS.
- PLACE FOUR RUBBER PADS ON TOP OF FRONT FACE OF EACH UNIT WITH FILTER CLOTH BACKING, AND SHEAR KEYS WRAPPED IN JOINT MATERIAL AS SHOWN ON THE TYPICAL T-WALL NOMENCLATURE SHEET 3.
- PLACE NEXT ROW OF T-WALL® UNITS, SHIMMING AND ALIGNING EACH UNIT AS REQUIRED TO ACHIEVE PROPER LINE AND GRADE.
- REPEAT STEPS 6 - 10 UNTIL WALL IS COMPLETE.

MATERIAL NOTES:

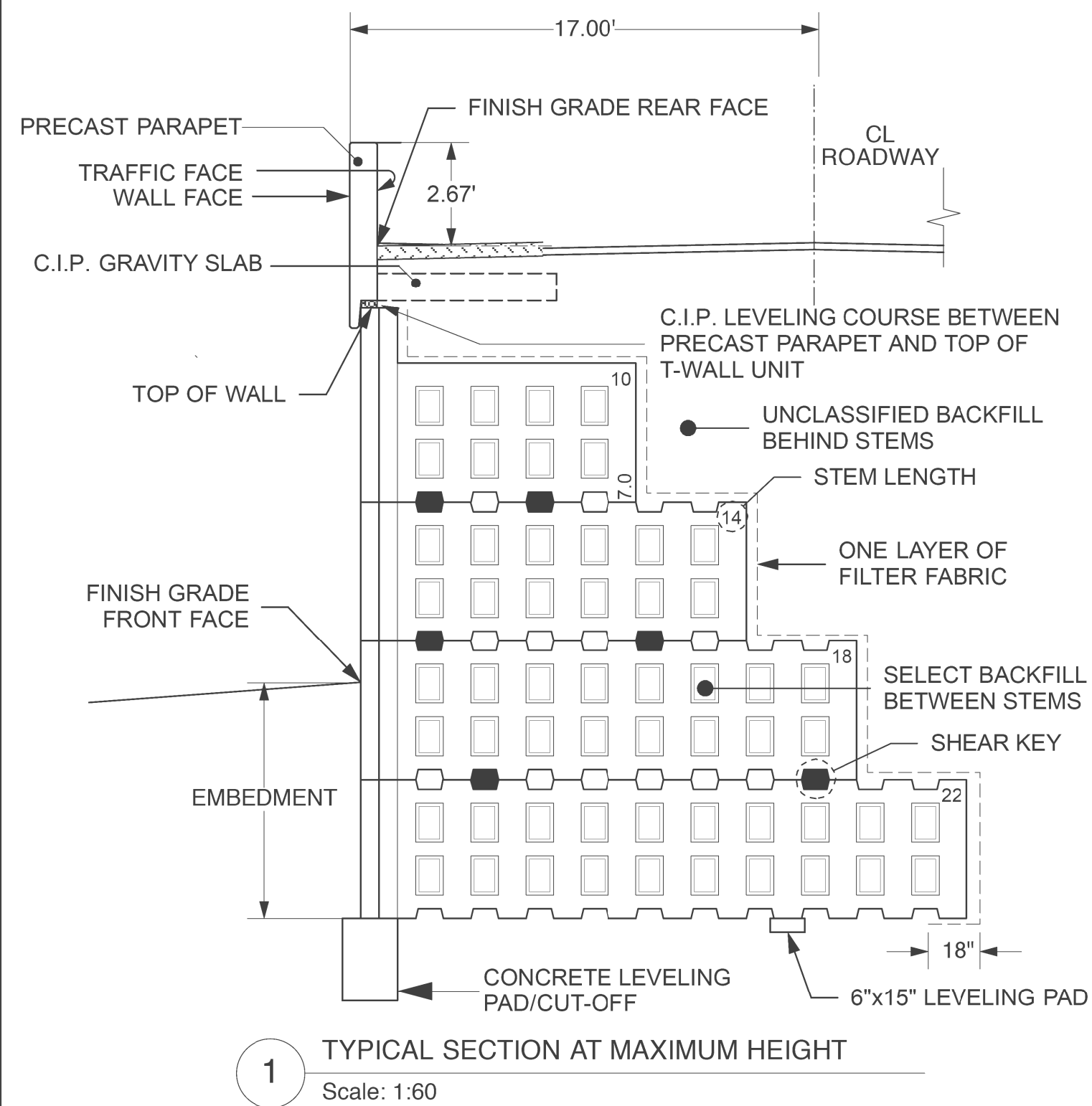
- CONCRETE:
 - PRECAST T-WALL® UNITS - 4000 psi (@ 28 days)
 - PRECAST SHEAR KEYS - 4000 psi (@ 28 days)
 - C.I.P. LEVELING PAD - 2500 psi
- REINFORCING STEEL:
 - PRECAST T-WALL® UNITS - ASTM A 615, GRADE 60 BLACK STEEL
 - PRECAST SHEAR KEYS - NONE
 - C.I.P. LEVELING PAD - NONE
- JOINT MATERIAL - SUPPLIED BY PRECASTER:
 - VERTICAL JOINT - 12 INCH WIDE x JOINT HEIGHT, FILTER CLOTH CENTERED AT JOINT
 - HORIZONTAL JOINT - FOUR PER UNIT OF 3/4 INCH x 2 INCH x 6 INCH NEOPRENE BLOCKS WITH 12 INCH WIDE x 8'-6" LONG FILTER CLOTH CENTERED AT JOINT AT THE BACK FACE OF T-WALL® PANELS (AS SHOWN ON SHEET 3)
 - SHEAR KEY - 1/4 INCH POLYETHYLENE FOAM SHEAR KEY WRAP
- SELECT BACKFILL MATERIAL BETWEEN AND BEHIND STEMS:
 - ANGLE OF INTERNAL FRICTION - 34° (MINIMUM)
 - DENSITY - 120 pcf
 - 5% MAXIMUM (BY WEIGHT) PASSING No. 200 SIEVE
 - 60% MAXIMUM (BY WEIGHT) PASSING No. 40 SIEVE
 - 100% PASSING 3" SIEVE
 - 95% STANDARD PROCTOR COMPACTION (ASTM D-698)
- UNCLASSIFIED BACKFILL BEHIND STEMS:
 - ANGLE OF INTERNAL FRICTION - 30°
 - DENSITY - 120 pcf
 - 95% STANDARD COMPACTION (ASTM D-698)
- PRECAST PARAPET
 - CONCRETE STRENGTH : 4000 PSI (MINIMUM) AT 28 DAYS.
 - ASTM A615, GRADE 60 BLACK STEEL.
- CAST-IN-PLACE GRAVITY SLAB
 - CONCRETE STRENGTH - 4000 PSI (MINIMUM) AT 28 DAYS
 - ASTM A615, GRADE 60 BLACK STEEL.

SPECIAL NOTES:

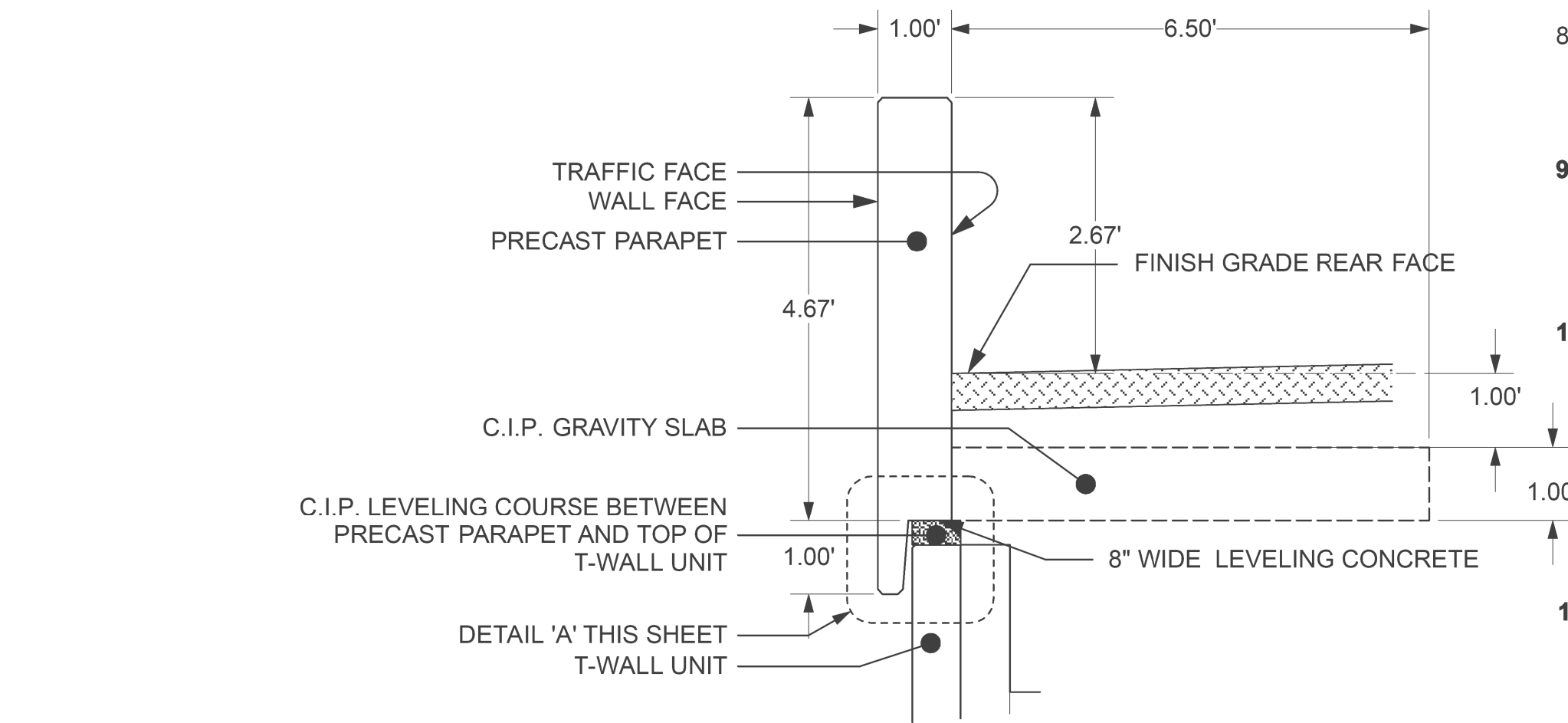
- THESE DRAWINGS WERE PREPARED BASED ON INFORMATION GIVEN IN THE FOLLOWING:
 - CONTRACT DWG BY PROFESSIONAL ENGINEERING CONSULTANTS, P.A. DATED DECEMBER 2009
 - GEOTECHNICAL REPORT BY ALLIED LABORATORIES DEPARTMENT OF PROFESSIONAL ENGINEERING CONSULTANTS, P.A. DATED OCTOBER 2010.
- REPORT DISCREPANCIES 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.
 - FLOOD LEVEL: EL 1334.00 (FINISH GRADE REAR FACE)**
- APPLIED BEARING PRESSURE
 - SEGMENT 1 & 5 : 2200 PSF
 - SEGMENT 2 & 4 : 3050 PSF
 - SEGMENT 3 : 3800 PSF
- EARTH LOADS:
 - AS SPECIFIED BY AREMA AND AASHTO
- TRACK LOADING SURCHARGE:
 - COOPER E80, MODEL AS 8'-6" WIDE, 1,882 ksf STRIP LOAD FOR EACH TRACK. FOR WALL DESIGN, CALCULATE LATERAL LOADS IMPOSED BY THE TRACK SURCHARGE SHALL BE PER AREMA CHAPTER 8, PART 20, SECTION 20.3.2.2, APPLIED ALONG A VERTICAL PLANE EXTENDING THROUGH THE FRONT FACE OF THE WALL.
 - TRACK SURCHARGE SHALL BE APPLIED SIMULTANEOUSLY. TRACK SURCHARGE LOADS DUE TO SIMULTANEOUS LOADING ON TWO TRACKS SHALL BE APPLIED PER AREMA CHAPTER 8, PART 2, SECTION 2.2.3c(6).
- 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 CONTRACTOR SHALL PROVIDE SUFFICIENT TESTING TO INSURE COMPLIANCE WITH THE SELECT BACKFILL GRADATION AND COMPACTION SPECIFICATIONS NOTED ON THIS SHEET. PLACEMENT OF LOOSE LIFT OF BACKFILL PER PENNDOT 406, SECTION 206.3 (b) AND SHALL NOT EXCEED 12 INCHES.
- SCOUR PROTECTION NOTE:**
 - THE NEEL COMPANY HAS NOT PERFORMED ANY SCOUR ANALYSIS FOR THIS WALL.
 - THE NEEL COMPANY ASSUMES THAT THE BOTTOM OF WALL ELEVATION SHOWN ON THESE PLANS ARE BELOW SCOUR DEPTH FOR THIS LOCATION. THE ENGINEER / CONTRACTOR MUST VERIFY THIS ASSUMPTION.

GENERAL NOTES:

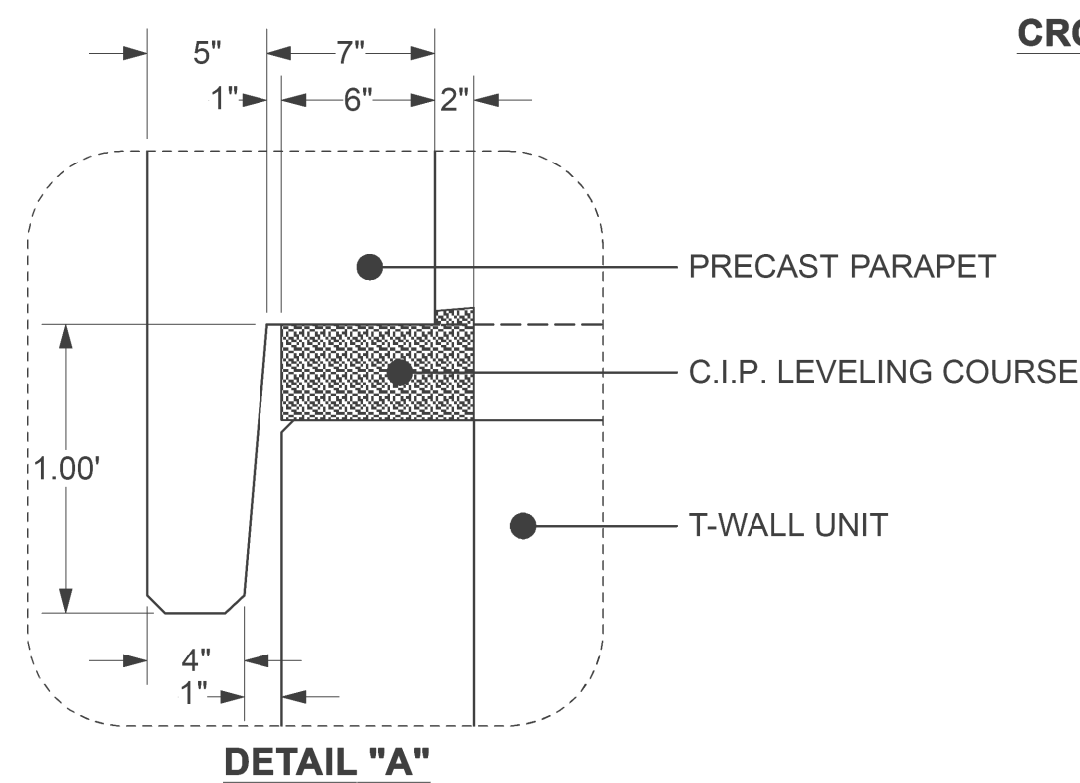
- SEE PROJECT DRAWINGS FOR COMPLETE LAYOUT OF UTILITIES, RAILROAD TRACKS, EXISTING AND PROPOSED STRUCTURES, ETC.
- RETAINING WALL DESIGNER:
 - THE NEEL COMPANY
 - 8328-D TRAFORD LANE
 - SPRINGFIELD, VA 22152-1638
 - PH: (703) 913-7858
 - FX: (703) 913-7859
 - WEB: http://www.neelco.com
- PRIMARY DESIGN REFERENCE:
 - AREMA 2002 MANUAL FOR RAILWAY ENGINEERING
 - AASHTO, STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17th EDITION 2002 (WITH INTERIMS)
- PRECAST T-WALL® UNITS:
 - PLAIN STEEL FORM FINISH
 - SUPPLIED BY THE PRECASTER
- PRECAST SHEAR KEYS:
 - SUPPLIED BY THE PRECASTER
- CAST-IN-PLACE LEVELING PAD:
 - CONSTRUCTED BY THE CONTRACTOR
 - NO REBAR
 - FRONT LEVELING PAD - SEE DEVELOPED ELEVATION ON SHEET 3
 - REAR LEVELING PAD - 6 INCH (MINIMUM) x 15 INCH
 - GRADE TOLERANCE - 1/4 INCH IN 10 FEET
- HORIZONTAL JOINT:
 - 1/2 INCH JOINT (NOMINAL)
 - 12 INCH WIDE x 8'-6" LONG FILTER CLOTH BACKING GLUED TO BACK FACE OF T-WALL® UNITS
- VERTICAL JOINT:
 - 1/2 INCH SPACE
 - 12" WIDE FILTER CLOTH BACKING
- OVERALL DIMENSIONAL TOLERANCES FOR FINISHED WALL:
 - VERTICAL ALIGNMENT (PLUMBNESS) - 3/4 INCH IN 10 FEET
 - HORIZONTAL ALIGNMENT (LINE) - 3/4 INCH IN 15 FEET
- T-WALL® CONSTRUCTION:
 - TO BE IN ACCORDANCE WITH CONSTRUCTION MANUAL FOR RAILROAD PROJECTS (06/06) AND TYPICAL T-WALL® NOMENCLATURE ON SHEET 2.
- T-WALL® FOUNDATION:
 - PRIOR TO WALL CONSTRUCTION, PROOF ROLL THE ENTIRE WALL SUBGRADE. ANY SOFT OR UNSUITABLE MATERIALS SHALL BE REMOVED AND REPLACED WITH COMPACTED SELECT FILL PER ENGINEER DIRECTIONS.
- T-WALL® UNIT DESCRIPTION:
 - STANDARD UNITS:
 - 5.0 x 7.5 x 16 STD (HEIGHT x WIDTH x STEM LENGTH 5'-0" STEM HEIGHT)
 - STANDARD TOP UNITS:
 - 10.0 x 7.5 x 12 TOP (HEIGHT x WIDTH x STEM LENGTH 5'-0" STEM HEIGHT)



1 TYPICAL SECTION AT MAXIMUM HEIGHT
Scale: 1:60



CROSS SECTION - TYPICAL PRECAST PARAPET



DETAIL "A"

ITEM	QNTY
T-Wall Lifting device	1 ea
Shear Keys	149 ea
AF250 Polyethylene Foam	3 rolls
MIRAFI 160N Filter Fabric (12" wide)	695 lf
1/2" x 4" x 5' Hor. Jt Matl	745 lf

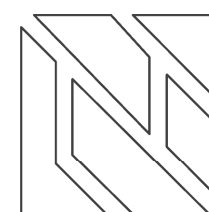
The design contained on these drawings is based upon information provided by the owner. On the basis of this information, The Neel Company has designed, and is responsible for, the internal stability of the structure only. External stability, including foundation and slope stability, is the responsibility of the owner.

This drawing contains information proprietary to The Neel Company. T-WALL® is a registered trademark owned by The Neel Company. The Neel Company is the exclusive licensee of the T-WALL® patent. © 2010 The Neel Company

PRECASTER: WICHITA CONCRETE PIPE
PROJECT #:

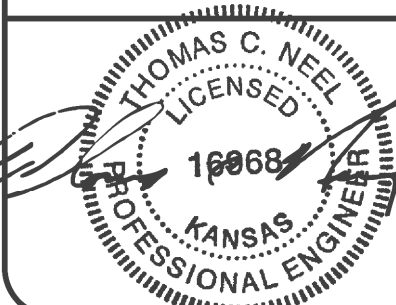
CONTRACTOR:
PROJECT #:

DESIGNER



THE NEEL COMPANY
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WEB: WWW.NEELCO.COM
PROJECT #: TW3723

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



REVISIONS

HEARTLAND PREPAREDNESS CENTER

WICHITA, KS

DESIGN DRAWINGS

SECTION, SHIP LOOSE AND NOTES

T-WALL® RETAINING WALL SYSTEM

SCALE: AS NOTED

DATE: 10/28/10

DESIGNED BY: KD

DRAWN BY: ACS/KB

CHECKED BY: KD

SHEET: A-4