TAI
The Reinforced Earth Company
8614 WESTWOOD CENTER DRIVE SUITE 1100, VIENNA, VIRGINIA 22182 (703) 821-1175

DESIGN CRITERIA

1. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL BEHIND THE PRECAST TECHWALL, METHODS OF CONSTRUCTION AND QUALITY OF PREFABRICATED MATERIALS SHALL CONFORM TO THE SPECIFICATIONS FOR TECHWALL.

2. SOIL PARAMETERS:

   SEE WALL CONTROL DRAWINGS FOR SOIL CHARACTERISTICS OF FOUNDATION MATERIAL TO BE USED IN THE DESIGN OF THE WALL SYSTEM. THE CONTRACTOR SHALL PROVIDE SOIL DESIGN PARAMETERS FOR BACKFILL MATERIAL BASED ON THE ACTUAL SOIL CHARACTERISTICS UTILIZED AT THE SITE. THE VALUES OF ϕ, C AND γ SHALL BE PROVIDED IN THE SHOP DRAWINGS.

3. THE MAXIMUM APPLIED BEARING PRESSURE AT THE TOE OF THE TECHWALL IS AS SHOWN ON THE WALL ELEVATIONS FOR EACH DESIGN CASE. IT IS THE RESPONSIBILITY OF THE OWNER TO DETERMINE THAT THIS APPLIED BEARING PRESSURE IS ALLOWABLE FOR THAT LOCATION.

4. ANY UNSUITABLE FOUNDATION MATERIAL BELOW THE CAST-IN-PLACE FOOTING, AS DETERMINED BY THE ENGINEER, SHALL BE EXCAVATED AND REPLACED WITH SUITABLE MATERIAL OR OTHERWISE STABILIZED AS DIRECTED BY THE ENGINEER.

5. THE MINIMUM FACTORS OF SAFETY REQUIRED FOR DESIGN

   OVERTURNING = 2.0
   SLIDING = 1.5
   BEARING CAPACITY = 2.5
   OVERALL STABILITY = 1.5

   REINFORCING STEEL DESIGN SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES AND FDOT DESIGN GUIDELINES NO. 625-020-150B.

WALL CONSTRUCTION

6. FOR LOCATION AND ALIGMENT OF TECHWALL, SEE RETAINING WALL CONTROL PLANS

7. TECHWALLS IN CURVES WILL FORM A SERIES OF SHORT CHORDS OF 8.00' EACH TO MATCH DESIRED WALL ALIGNMENT.

8. IF MANHOLES AND DROP INLETS ARE PRESENT, THEY SHALL BE LOCATED AS SHOWN ON WALL ELEVATIONS.

9. IF PILES ARE LOCATED WITHIN THE TECHWALL RETAINED VOLUME, THEY SHALL BE DRIVEN PRIOR TO CONSTRUCTION OF THE TECHWALL UNLESS A METHOD IS USED TO PROTECT THE STRUCTURE, WHICH IS ACCEPTABLE TO THE ENGINEER AND THE REINFORCED EARTH COMPANY, AND IS PROPOSED AND APPROVED IN WRITING.

10. BACKFILL MATERIAL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 548 OF THE FLORIDA DOT SPECIFICATIONS.

11. IF STRUCTURES IN EXCESS OF 20' IN HEIGHT OCCUR, THE FINISHED GRADE IN FRONT OF THE WALL SHALL BE PLACED AND COMPACTED BEFORE WALL CONSTRUCTION EXCEEDS A HEIGHT OF 20'. FINISHED GRADE BACKFILL SHALL BE COMPACTED TO 95% OF ASSHTO T-180, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

12. TECHWALL PANELS TO BE FINISHED WITH COPING SHALL HAVE #4 DOWELS PROTRUDING FROM THEIR TOP EDGE.

13. FOR OTHER INFORMATION PERTAINING TO WALL CONSTRUCTION PLEASE REFER TO THE REINFORCED EARTH CONSTRUCTION MANUAL FOR TECHWALL.

14. IF UNDERDRAIN IS SHOWN, THE FLOWLINE AND OUTLETS SHALL BE AS PER THE CONTRACT PLANS.

MATERIALS NOTES

15. PANEL FINISH

    THE PRECAST PANELS FOR THIS PROJECT SHALL HAVE A PLAIN STEEL FORM FINISH UNLESS OTHERWISE SPECIFIED IN THE CONTROL PLANS.

16. ONLY THE FOLLOWING MATERIALS ARE SUPPLIED BY THE REINFORCED EARTH COMPANY:

    - PRECAST CONCRETE FACING PANELS
    - GEOCOMPOSITE TERRADRAIN 101 OR EQUIVALENT (FOR PANEL JOINTS ONLY)
    - LIFTING HARDWARE FOR HANDLING PRECAST PANELS. (ON LOAN BASIS)
    - PANEL LEVELLING BOLTS AND PLATES.

    ANY OTHER MATERIALS CALLED FOR IN THE CONTRACT PLANS OR SPECIFICATIONS ARE TO BE SUPPLIED BY THE CONTRACTOR. ANY JOINT MATERIALS SHOWN AT THE INTERFACE OF PRECAST PANELS AND CAST-IN-PLACE CONCRETE STRUCTURES ARE TO BE SUPPLIED BY THE ERECTION CONTRACTOR. ALL SANDBLASTING, PAINTING, SEALERS OR OTHER SPECIAL APPLIED COATINGS ARE ALSO SUPPLIED/INSTALLED BY THE CONTRACTOR IN THE FIELD FOLLOWING PANEL ERECTION.

17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, SUPPLY, AND INSTALLATION OF A TEMPORARY FALSEWORK SUPPORT SYSTEM TO ADEQUATELY BRACE THE ASSEMBLED PRECAST WALL UNITS UNTIL THE CONCRETE FOOTING HAS BEEN POURED AND ADEQUATELY CURED ACCORDING TO THE REINFORCED EARTH COMPANY SPECIFICATIONS. PLANS FOR THE TEMPORARY FALSEWORK SUPPORT SYSTEM SHOWING DIMENSIONS, SUPPORT POINTS, MEMBER SIZES, CONNECTIONS AND MATERIAL SPECIFICATIONS SHALL BE SUBMITTED TO THE REINFORCED EARTH COMPANY PRIOR TO WALL ERECTION. NOTWITHSTANDING ITS' REVIEW OF THE TEMPORARY FALSEWORK SUPPORT SYSTEM, THE REINFORCED EARTH COMPANY SHALL NOT BE RESPONSIBLE FOR ANY DAMAGE OR LOSS CAUSED BY ANY DEFECT IN THE DESIGN AND/OR CONSTRUCTION OF THE TEMPORARY FALSEWORK SUPPORT SYSTEM. THRUST BLOCKS OR REACTION ASSEMBLIES SHALL BE OF SUFFICIENT SIZE SO THAT THE APPLIED SOIL PRESSURE DOES NOT EXCEED THE ALLOWABLE SOIL PRESSURE OR PRODUCE DETRIMENTAL DEFORMATIONS IN THE RESULTING POSITIONING OF THE ASSEMBLED PRECAST WALL UNITS.

18. CONCRETE COVER

    - CAST-IN-PLACE

    4" CLEAR ON REBAR FOR CONCRETE CAST AGAINST EARTH.
    3" CLEAR ON REBAR FOR ALL OTHER C.I.P. CONCRETE UNLESS NOTED OTHERWISE.

    - PRECAST CONCRETE

    ALL REBARS IN PRECAST CONCRETE SHALL HAVE 2" MINIMUM CONCRETE COVER.

19. CONCRETE FOR PRECAST PANELS WILL BE PROVIDED BY THE REINFORCED EARTH COMPANY'S MANUFACTURING PLANT IN ACCORDANCE WITH SECTION 346 OF THE FLORIDA DOT SPECIFICATIONS.

20. THE REINFORCED EARTH COMPANY IS RESPONSIBLE FOR INTERNAL STABILITY OF THE STRUCTURE ONLY. EXTERNAL STABILITY DESIGN INCLUDING FOUNDATION AND SLOPE STABILITY IS THE RESPONSIBILITY OF OTHERS.

21. THESE DRAWINGS ARE CERTIFIED WITH RESPECT TO THE INTERNAL STABILITY OF REINFORCED EARTH STRUCTURES ONLY

22. THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO THE REINFORCED EARTH COMPANY, AND IS BEING FURNISHED FOR THE USE IN CONNECTION WITH FDOT PROJECTS ONLY, AND THE INFORMATION CONTAINED HEREIN IS NOT TO BE TRANSMITTED TO ANY OTHER ORGANIZATION UNLESS SPECIFICALLY AUTHORIZED IN WRITTING BY THE REINFORCED EARTH COMPANY. THE REINFORCED EARTH COMPANY IS EXCLUSIVE LICENSEE IN THE UNITED STATES UNDER PATENTS ISSUED TO HENRY VIDAL, AND THE FURNISHING OF THIS DRAWING DOES NOT CONSTITUTE AN EXPRESSED OR IMPLIED LICENSE UNDER THE VIDAL PATENTS.

THIS SYSTEM SHALL NOT BE USED IN ACUTE ANGLE SMALLER THAN 60°

THIS SYSTEM SHALL BE USED IN SLIGHTLY OR MODERATELY AGGRESSIVE ENVIRONMENTS ONLY

TECHWALL

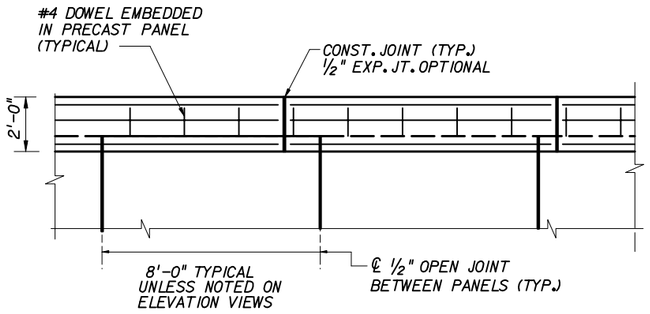
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

RETAINING WALL SYSTEM REINFORCED EARTH COMPANY TECHWALL

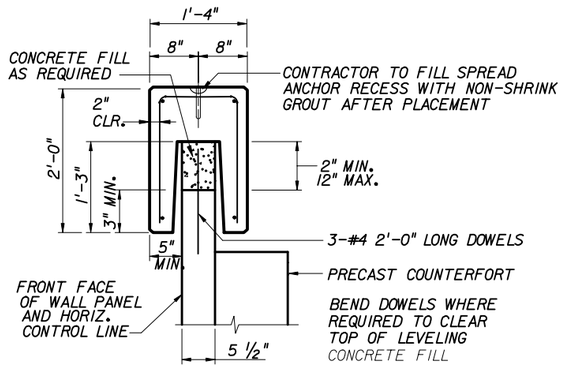
	Names	Dates
Designed By		
Drawn By		
Checked By		

Approved By W. N. [illegible]
State Structures Design Engineer

Revision	Sheet No.	Index No.
00	1 of 8	5016

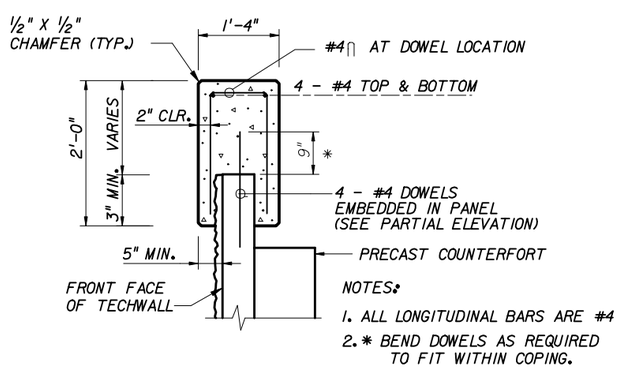


PRECAST COPING - PARTIAL ELEVATION



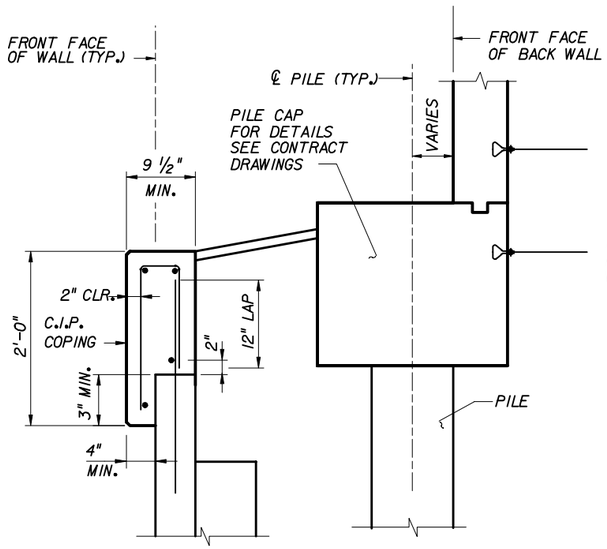
PRECAST COPING SECTION

NOTE:
STANDARD COPING UNIT IS 10.0' LONG WITH SQUARE ENDS.

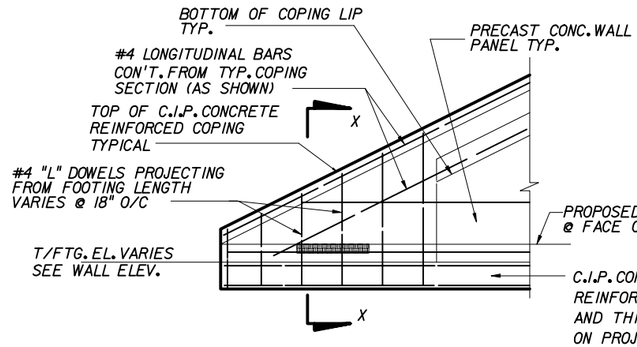


NOTES:
1. ALL LONGITUDINAL BARS ARE #4
2. * BEND DOWELS AS REQUIRED TO FIT WITHIN COPING.

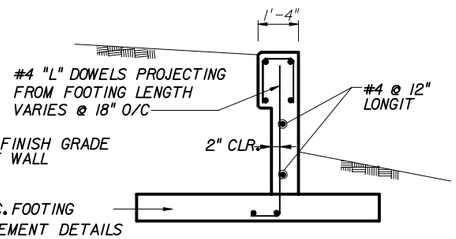
C.I.P. CONC. COPING DETAIL
(TO MATCH ADJACENT PRECAST COPING)



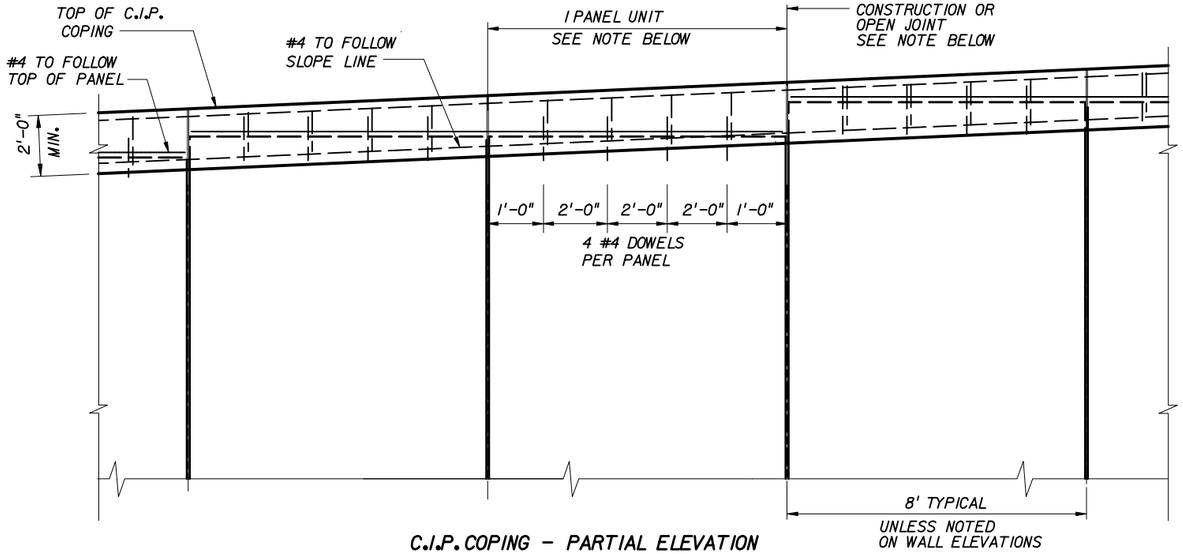
WALL LOCATION SECTION



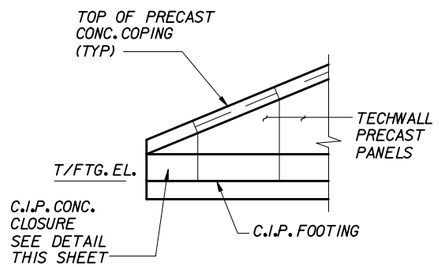
C.I.P. CLOSURE - PARTIAL ELEVATION



SECTION X-X
SECTION THRU C.I.P. END



C.I.P. COPING - PARTIAL ELEVATION



PARTIAL ELEVATION
C.I.P. CONCRETE CLOSURE

NOTE:
1/2" OPEN JOINTS IN COPING SHALL BE AT 4 PANEL INTERVALS AND COINCIDE APPROXIMATELY WITH PANEL JOINTS. REINFORCING STEEL SHALL BE STOPPED 2" SHORT OF EITHER SIDE OF THE JOINTS. CONSTRUCTION JOINTS IN BETWEEN THE OPEN JOINTS SHALL BE PROVIDED AT EVERY PANEL JOINT.

THIS SYSTEM SHALL BE USED IN SLIGHTLY OR MODERATELY AGGRESSIVE ENVIRONMENTS ONLY

TECHWALL

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

RETAINING WALL SYSTEM REINFORCED EARTH COMPANY TECHWALL

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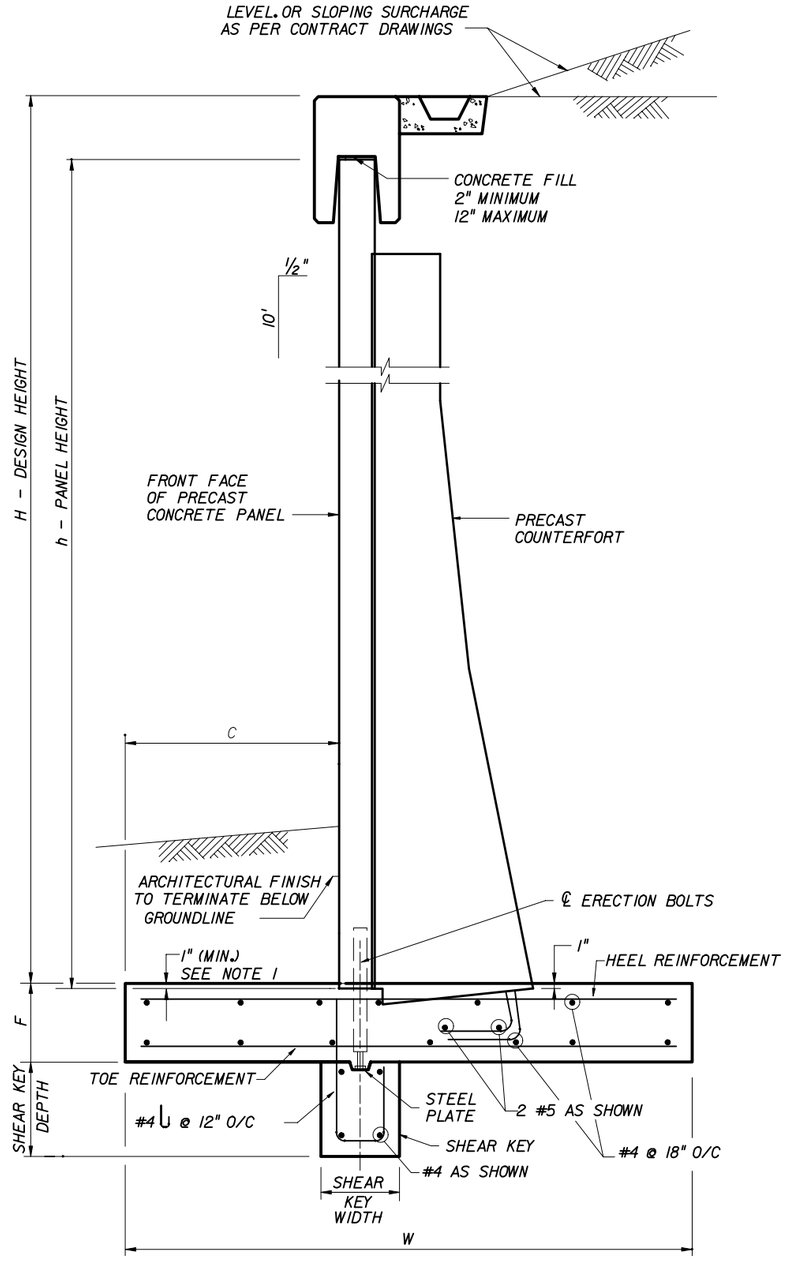
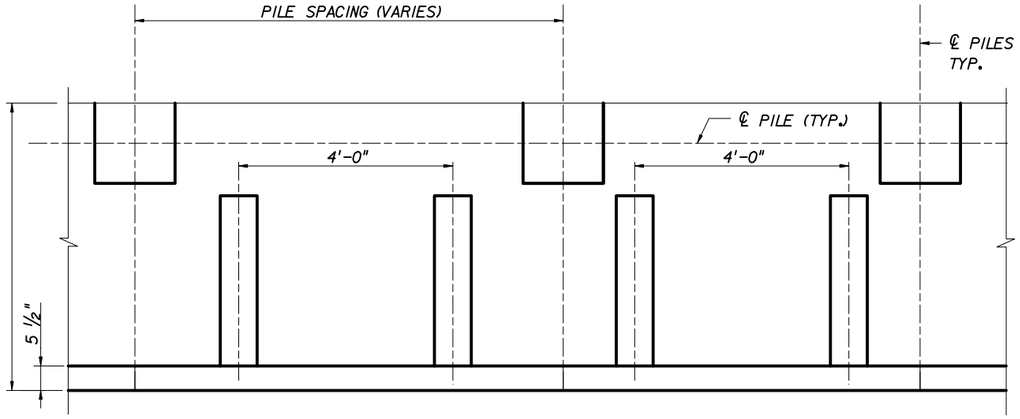
Drawn By		
Checked By		

Approved By W. V. [illegible]
State Structures Design Engineer

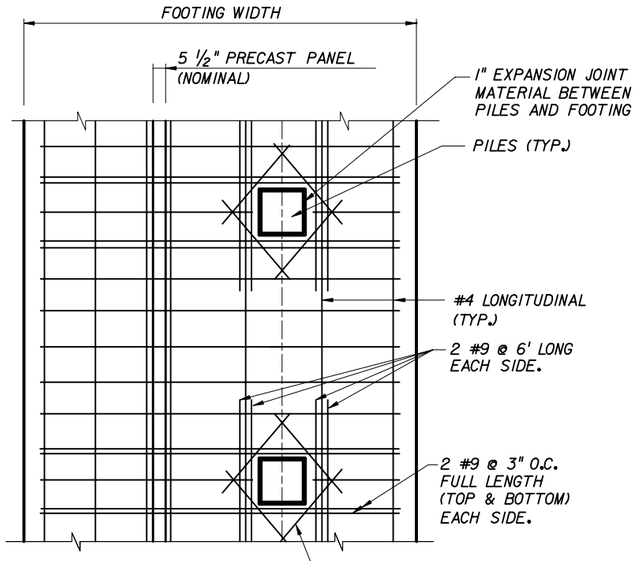
Revision	Sheet No.	Index No.
00	2 of 8	5016



TYPICAL SECTION THRU WALL

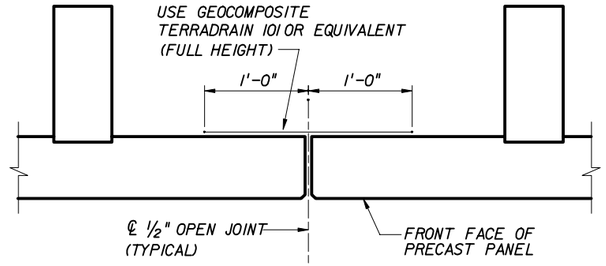


LAYOUT PRECAST PANEL W/COUNTERFORTS RELATED TO PILE LAYOUT



NOTE:
TOE REINFORCEMENT NOT SHOWN FOR CLARITY

PLAN-FOOTING AT ABUTMENT PILES



JOINT DETAIL

NOTES:

1. THE BOTTOM EDGE OF THE ASSEMBLED PRECAST PANEL SHALL BE COVERED BY 1" MINIMUM OF CAST-IN-PLACE FOOTING CONCRETE.
2. PRECAST WALL UNITS SHALL BE INSTALLED AT BATTER OF 1/2" PER 10' UNLESS OTHERWISE SHOWN ON CONSTRUCTION DRAWINGS.
3. FOR PANEL HEIGHTS OF 6.0' OR LESS COUNTERFORTS ARE NOT REQUIRED. PANELS WITHOUT COUNTERFORTS SHALL BE 8" THICK (NOMINAL). DETAILS WILL BE SHOWN ON CASTING DRAWINGS.

C, F, H, W AND THE REINFORCEMENT DETAILS ARE DETERMINED BY PROJECT SPECIFICS.

THIS SYSTEM SHALL BE USED IN SLIGHTLY OR MODERATELY AGGRESSIVE ENVIRONMENTS ONLY

TECHWALL

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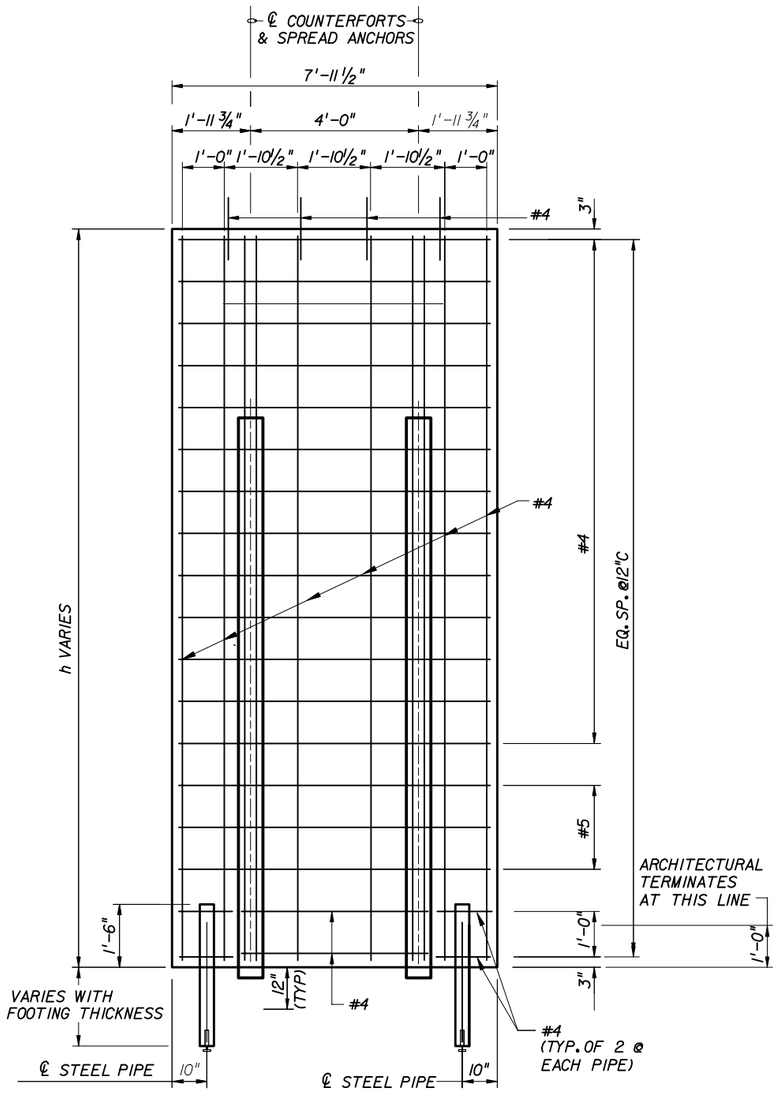
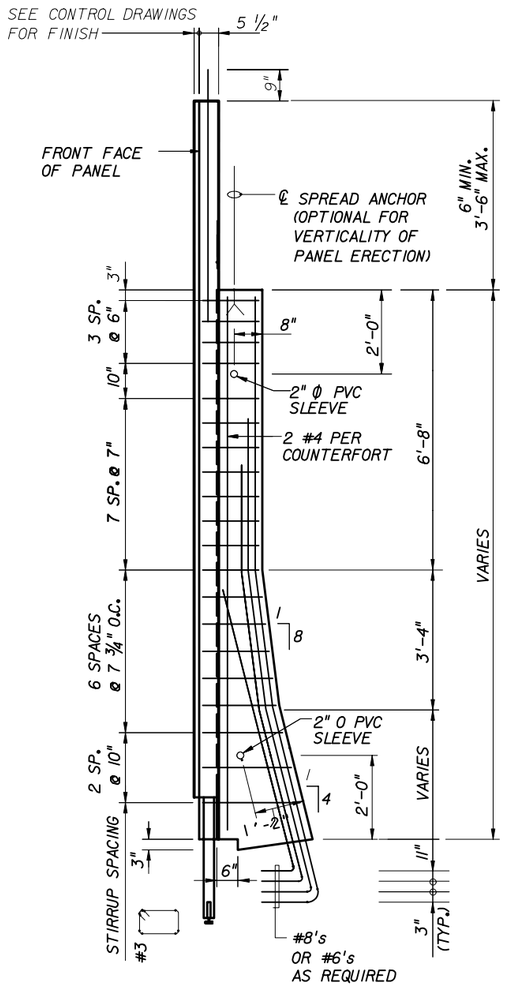
State Structures Design Engineer

Revision	Sheet No.	Index No.
00	3 of 8	5016



PANEL ELEVATION

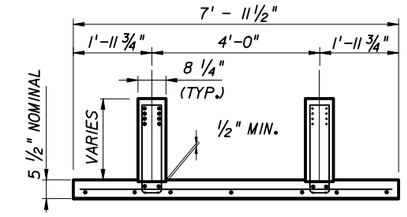
(REINFORCEMENT DETAILS MAY VARY WITH PROJECT SPECIFICS.)



COUNTERFORT - SIDE ELEVATION

(REINFORCEMENT DETAILS MAY VARY WITH PROJECT SPECIFICS.)

LIST OF MATERIALS	
CONCRETE: PANEL FACING (CY)	VARIES
COUNTERFORT, EACH (CY)	VARIES
TOTAL (CY)	VARIES
TOTAL PANEL WT. (LB)	VARIES
2" I.D. X 1'-0" PVC SLEEVE	4
SPREAD ANCHORS	2



PANEL SECTION

THIS SYSTEM SHALL BE USED IN SLIGHTLY OR MODERATELY AGGRESSIVE ENVIRONMENTS ONLY

TECHWALL

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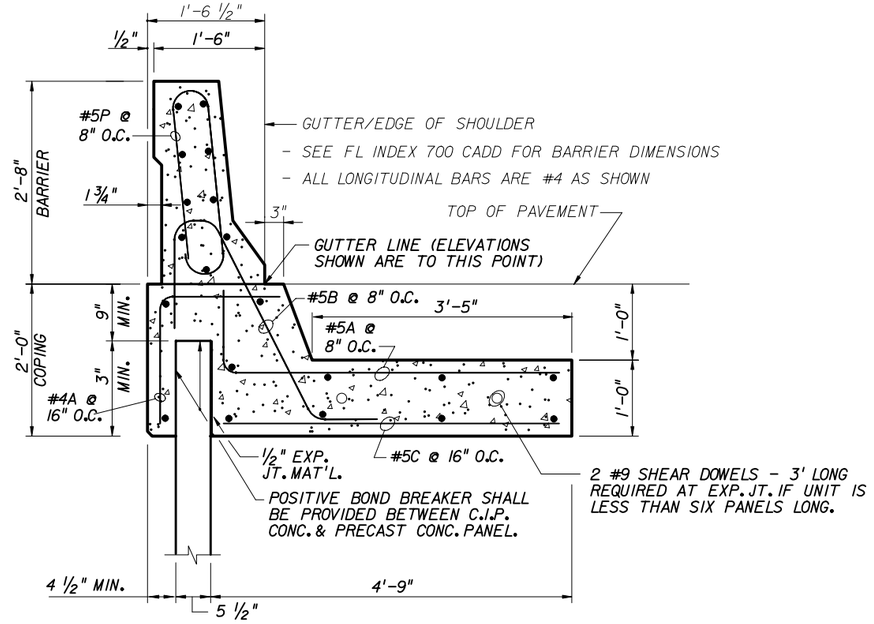
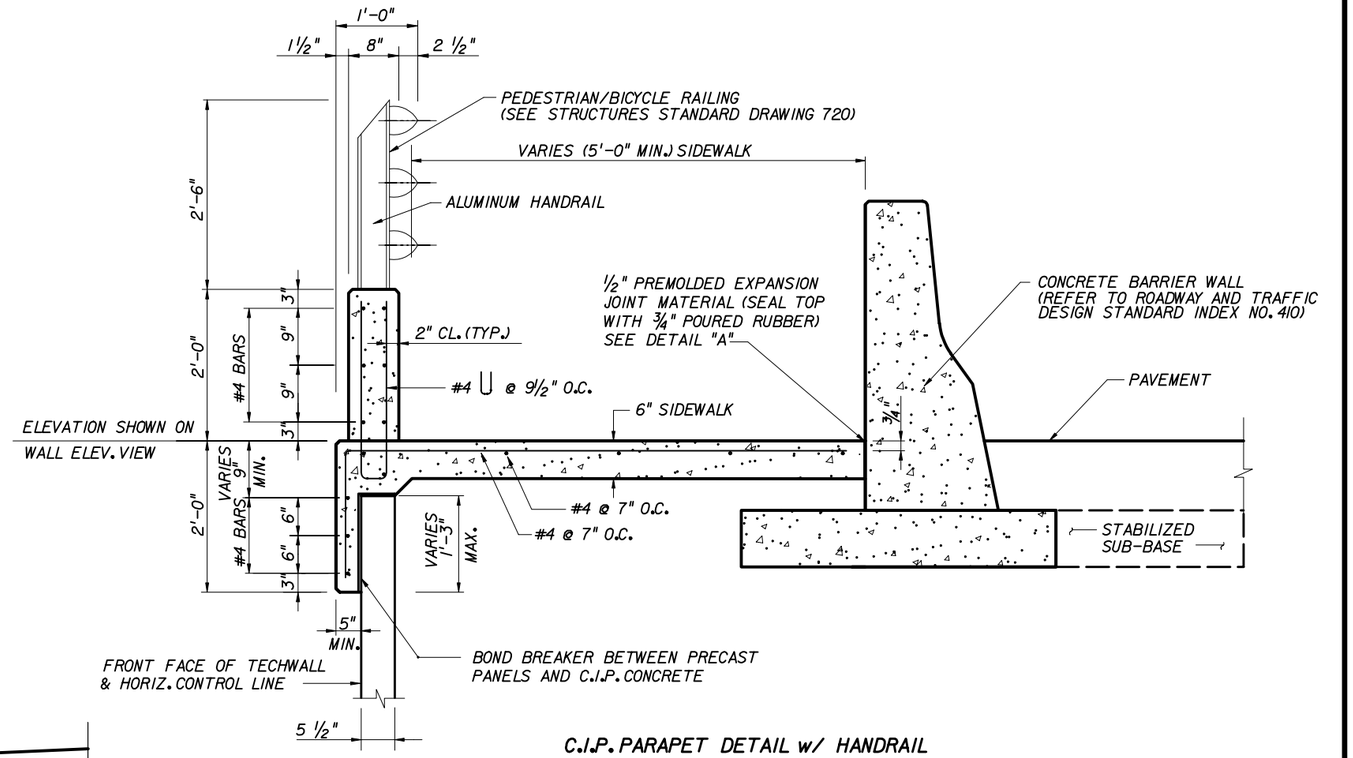
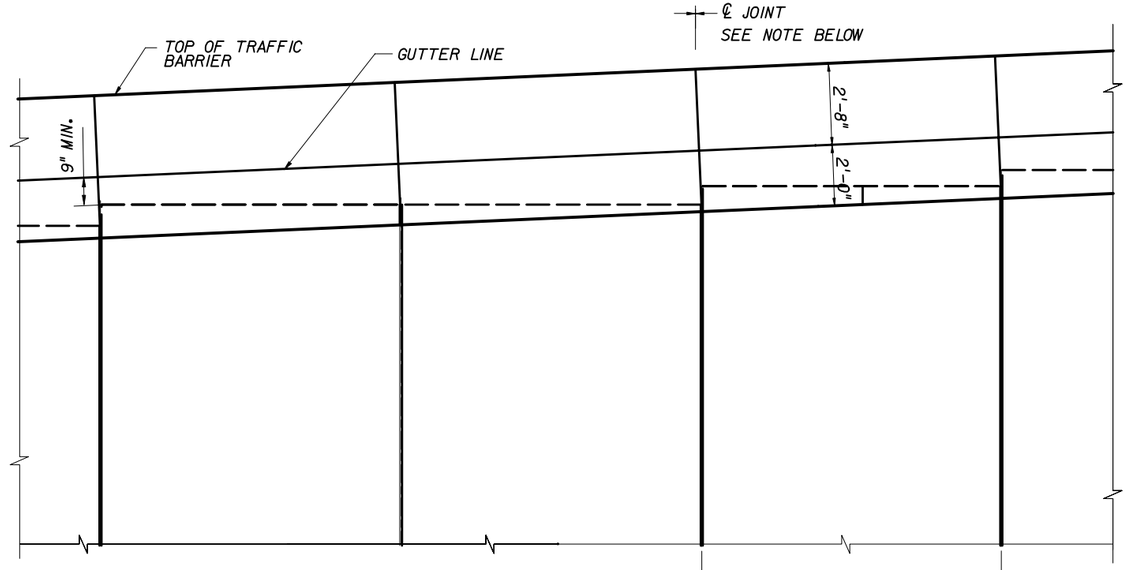
Revision	Sheet No.	Index No.
00	4 of 8	5016



C.I.P. CONC. TRAFFIC BARRIER



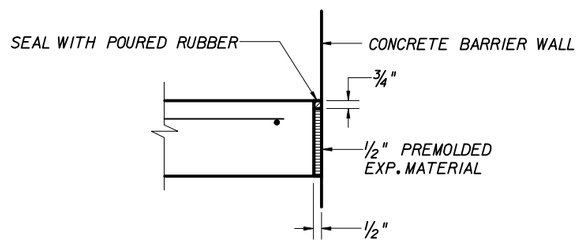
C.I.P. PARAPET DETAIL w/ HANDRAIL



C.I.P. TRAFFIC BARRIER PARTIAL ELEVATION

NOTE:

1/2-INCH OPEN JOINTS IN COPING SHALL BE AT 4 PANEL INTERVALS AND COINCIDE APPROXIMATELY WITH PANEL JOINTS. REINFORCING STEEL SHALL BE STOPPED 2" SHORT OF EITHER SIDE OF THE JOINTS. CONSTRUCTION JOINTS IN BETWEEN THE OPEN JOINTS SHALL BE PROVIDED AT EVERY PANEL JOINT.



DETAIL "A"

THIS SYSTEM SHALL BE USED IN SLIGHTLY OR MODERATELY AGGRESSIVE ENVIRONMENTS ONLY

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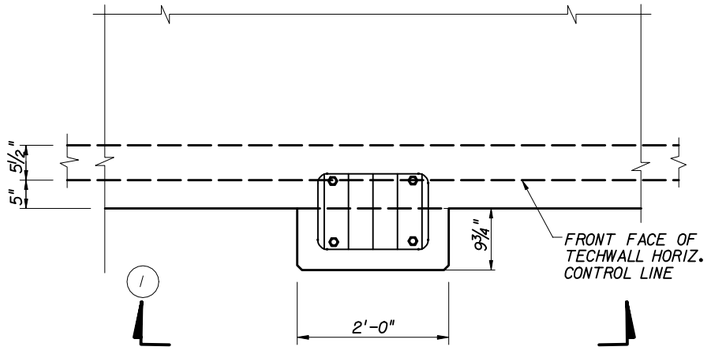
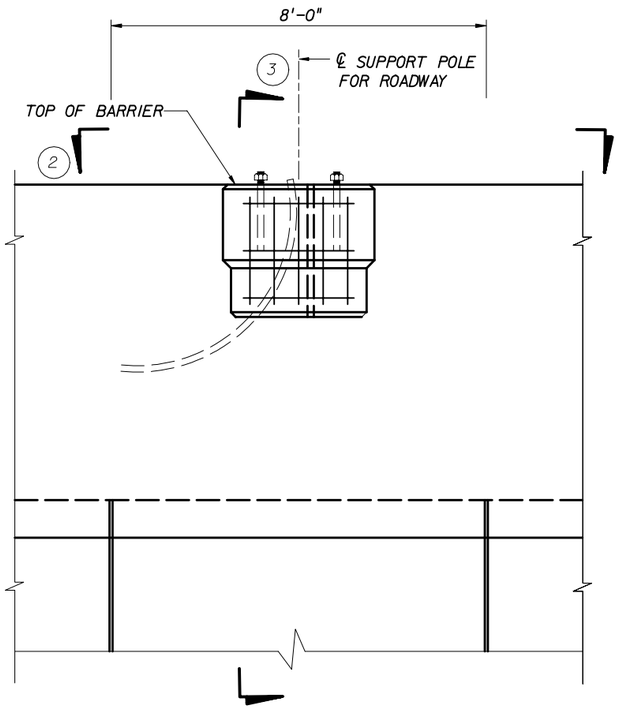
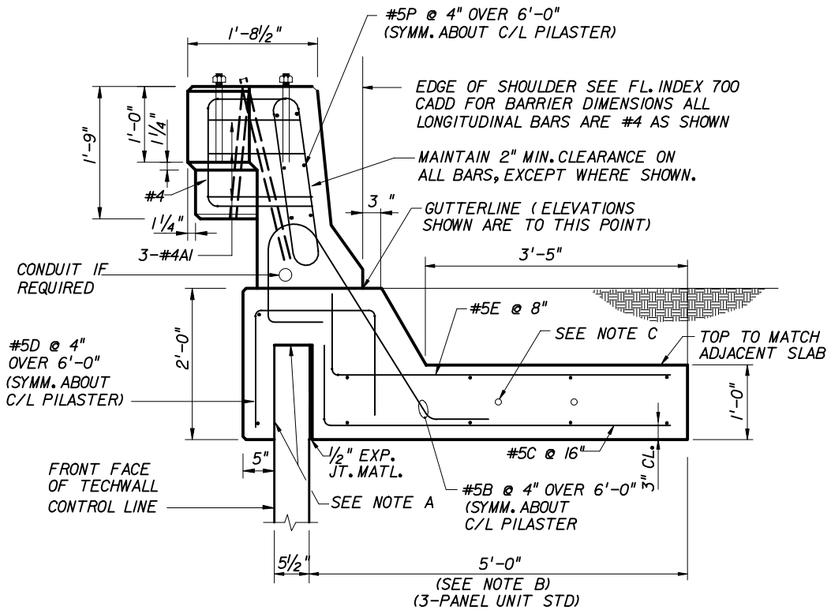
Revision	Sheet No.	Index No.
00	5 of 8	5016



2 PLAN



1 PARTIAL ELEVATION



3 BARRIER DETAIL @ LIGHT POLE

NOTES:

A. POSITIVE BOND BREAKER SHALL BE PROVIDED BETWEEN CAST IN PLACE CONC. AND PRECAST CONC. PANEL.

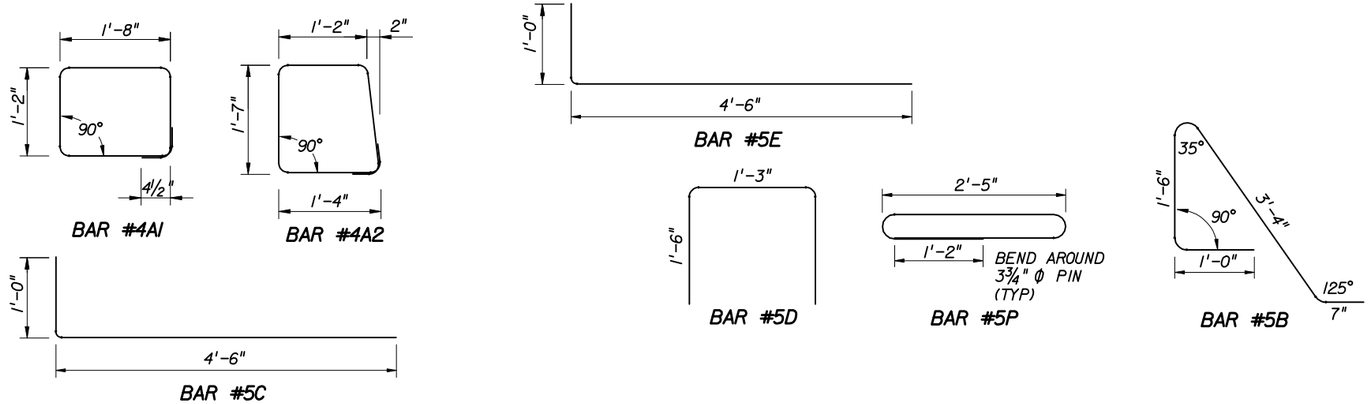
B. THE BARRIER JUNCTION SLAB SHALL HAVE THESE DIMENSIONS FOR ONE PRECAST UNIT EITHER SIDE OF LIGHT POLE BARRIER LONGITUDINAL BARS SHALL BE AS SHOWN ABOVE

C. 2 - #9 SHEAR DOWELS - 3'-0" LONG

D. LIGHTPOLE SUPPLIER IS RESPONSIBLE FOR PROVIDING ANCHOR BOLTS THAT EFFECTIVELY TRANSMIT THE LIGHTPOLE LOADS TO THE PILASTER AND FIT THE REINFORCING CAGE.

E. SEE STRUCTURES STANDARD DRAWING 500 FOR ADDITIONAL DETAILS.

REBAR SCHEDULE	
MARK	QTY.
#4A1	3
#4A2	5
#5B	18
#5C	4
#5D	18
#5E	9
#5P	18



4 BAR BENDING DETAILS

THIS SYSTEM SHALL BE USED IN SLIGHTLY OR MODERATELY AGGRESSIVE ENVIRONMENTS ONLY

TECHWALL

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

RETAINING WALL SYSTEM REINFORCED EARTH COMPANY TECHWALL

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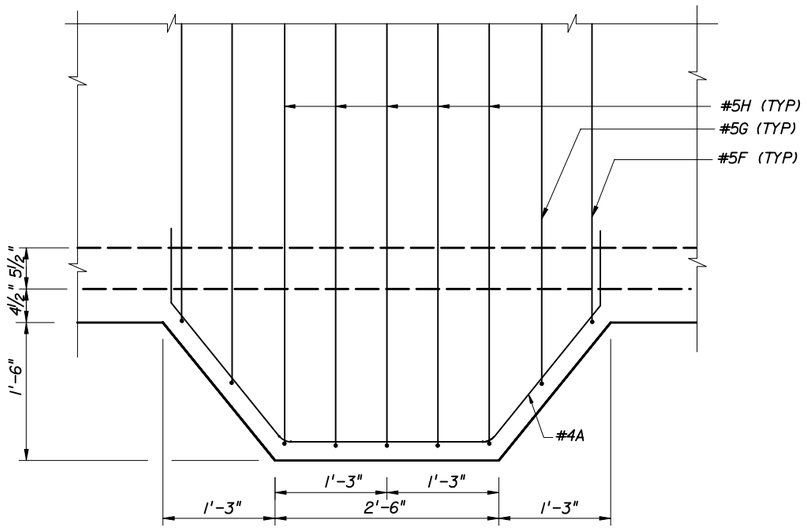
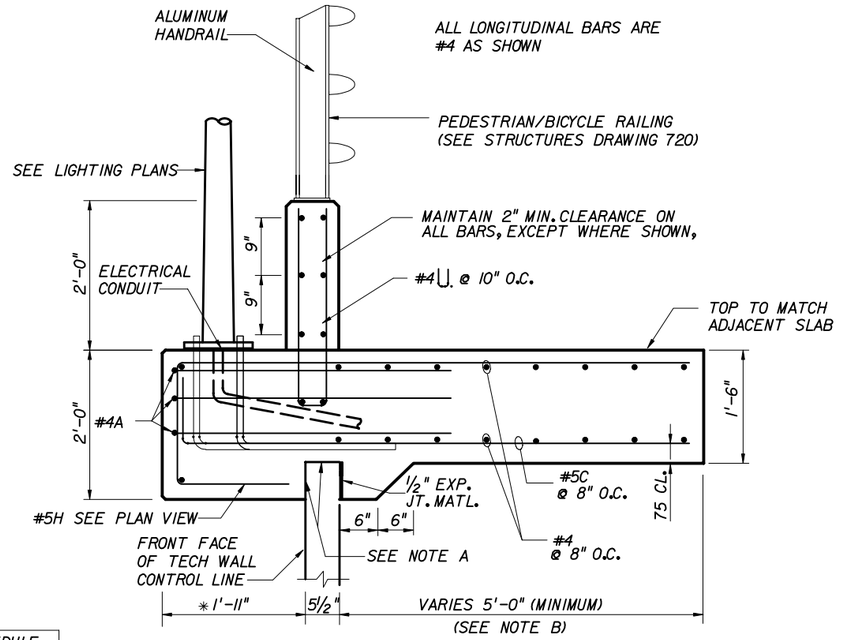
Approved By W. N. Bolt
State Structures Design Engineer

Revision	Sheet No.	Index No.
00	6 of 8	5016



1 PLAN



* DIMENSION MAY VARY AS REQUIRED FOR LIGHT POLE BASE PLATE.

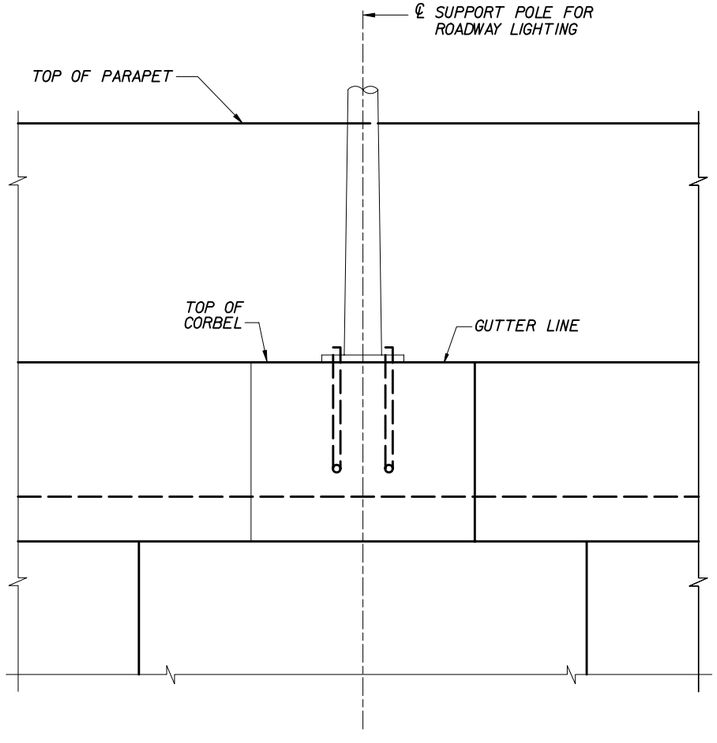
2 BARRIER DETAIL @ LIGHT POLE

NOTE A:
POSITIVE BOND BREAKER SHALL BE PROVIDED BETWEEN CAST IN PLACE CONC. AND PRECAST CONC. PANEL.

NOTE B:
THE BARRIER JUNCTION SLAB SHALL HAVE THESE DIMENSIONS FOR 5' UNIT EITHER SIDE OF LIGHT POLE BARRIER LONGITUDINAL BARS SHALL BE AS SHOWN ABOVE

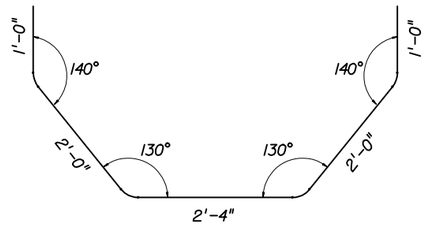
NOTE C:
SEE STRUCTURES DRAWING 500 FOR ADDITIONAL DETAILS

NOTE D:
LIGHT POLE MANUFACTURER IS RESPONSIBLE FOR PROVIDING ANCHOR BOLTS THAT EFFECTIVELY TRANSMIT LOADS TO THE PILASTER AND FIT THE REINFORCING CAGE.

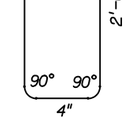


3 PARTIAL ELEVATION

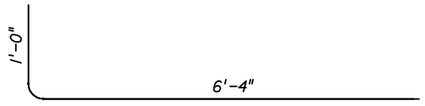
REBAR SCHEDULE	
MARK	QTY.
#4A	3
#5C	8
#5F	2
#5G	2
#5H	5
#4U	6



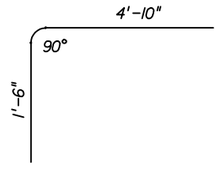
BAR 4A



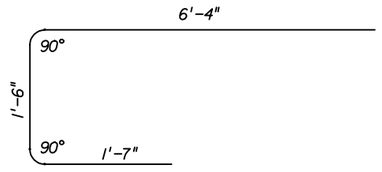
BAR #4 U



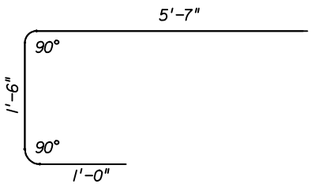
BAR #5C



BAR #5F



BAR #5H



BAR #5G

4 BAR BENDING DETAILS

THIS SYSTEM SHALL BE USED IN SLIGHTLY OR MODERATELY AGGRESSIVE ENVIRONMENTS ONLY

TECHWALL

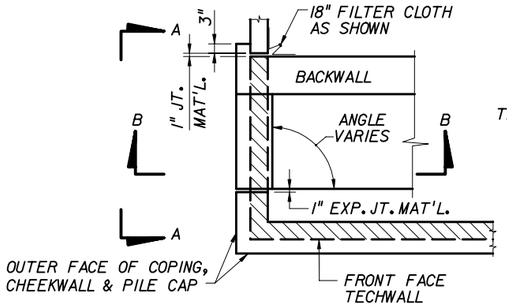
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

RETAINING WALL SYSTEM REINFORCED EARTH COMPANY TECHWALL

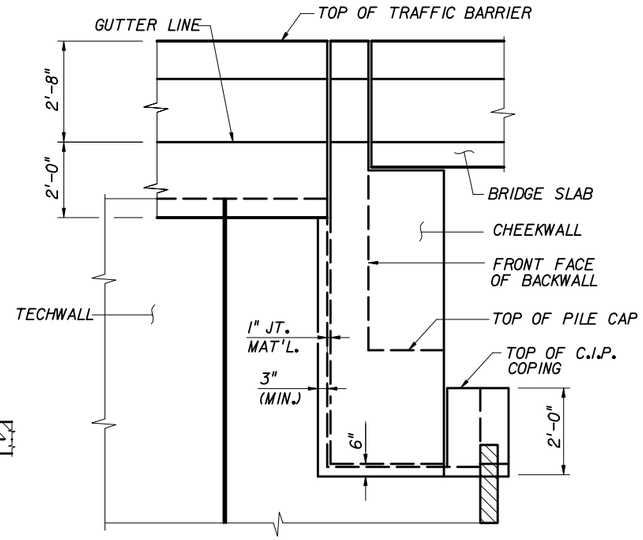
	Names	Dates
Designed By		
Drawn By		
Checked By		

Approved By W. V. Hall
State Structures Design Engineer

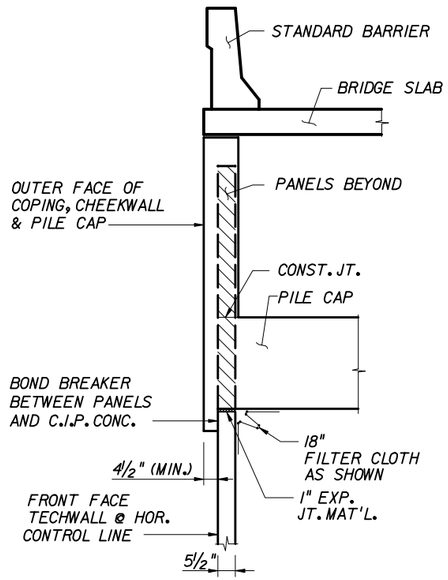
Revision	Sheet No.	Index No.
00	7 of 8	5016



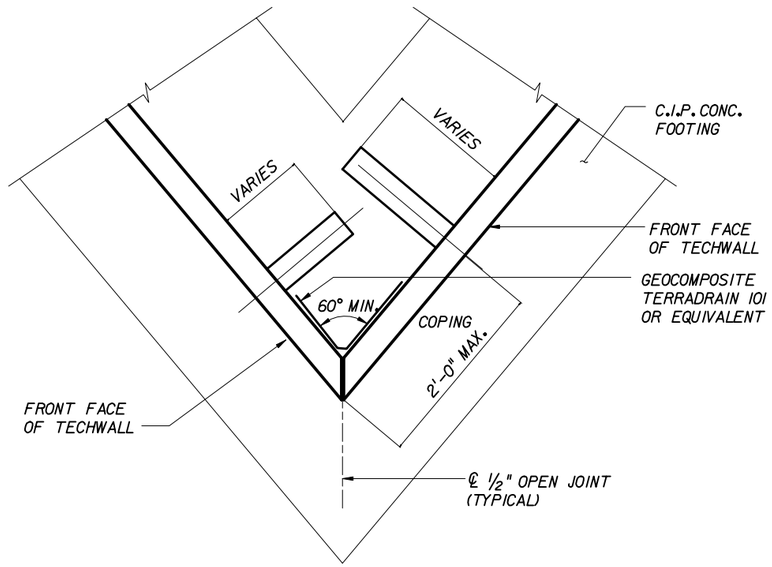
PLAN VIEW @ BEND (TYP.)



SECTION A-A



SECTION B-B



ACUTE CORNER DETAIL

THIS SYSTEM SHALL BE USED IN SLIGHTLY OR MODERATELY AGGRESSIVE ENVIRONMENTS ONLY

TECHWALL

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

RETAINING WALL SYSTEM REINFORCED EARTH COMPANY TECHWALL

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Designed By		
Drawn By		
Checked By		

Approved By W. V. Bitt
State Structures Design Engineer

Revision	Sheet No.	Index No.
00	8 of 8	5016