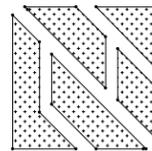


STANDARD DETAILS

ISOGRID® M.S.E. WALL SYSTEM

DESIGNER



THE NEEL COMPANY

8328-D TRAFORD LANE
SPRINGFIELD, VIRGINIA 22152
PH: (703) 913-7858
FX: (703) 913-7859

PRECASTER

OLDCASTLE PRECAST, INC

5995 SOUTEL DR.
JACKSONVILLE, FL 32219
PH: (904) 768-7081
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LEGEND

	PANEL WITH ONE SOIL REINFORCEMENT GRID		HORIZONTAL HALF-PANEL WITH ONE SOIL REINFORCEMENT GRID	
	PANEL WITH TWO SOIL REINFORCEMENT GRIDS		VERTICAL HALF-PANEL WITH ONE SOIL REINFORCEMENT GRID	
	PANEL WITH THREE SOIL REINFORCEMENT GRIDS		TL/BR & TR/BL QUARTER PANELS WITH ONE SOIL REINFORCEMENT GRID	
	PANEL WITH FOUR SOIL REINFORCEMENT GRIDS		SPECIAL HEIGHT PANELS (X-1 THRU X-5) WITH ONE SOIL REINFORCEMENT GRID	

DENOTES LIMITS OF DIFFERENT LENGTHS OF SOIL REINF. GRIDS

DESIGNER:



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

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

RETAINING WALL SYSTEM THE NEEL COMPANY ISOGRID

Names		Dates		Approved By	
Designed By	JMC	10/01/98	 State Structures Design Engineer		
Drawn By	CAA	10/01/98			
Checked By	JMC	10/01/98	Revision	Sheet No.	Index No.
			04	1 of 20	5012

MISCELLANEOUS NOTES:

1. DESIGNER:
THE NEEL COMPANY
8328-D TRAFORD LANE
SPRINGFIELD, VA 22152
PH: (703) 913-7858
FX: (703) 913-7859
2. PRECASTER:
OLDCASTLE PRECAST INC.
5995 SOUTEL DR.
JACKSONVILLE, FL 32219
PH: (904) 768-7081
FX: (904) 768-8428
3. MATERIALS SUPPLIED BY PRECASTER:
-PRECAST ISOGRID PANELS
-GALVANIZED SOIL REINFORCEMENT GRID
-GALVANIZED GRID LOCKING BAR
-DIAGONAL JOINT MATERIAL AND ADHESIVE
-VERTICAL JOINT MATERIAL

DESIGN NOTES:

1. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINING WALL VOLUME, METHODS OF CONSTRUCTION, AND QUALITY OF PREFABRICATED MATERIALS SHALL CONFORM TO SPEC SECTION 548 - RETAINING WALL SYSTEMS.
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 VALUE OF ϕ , c AND γ SHALL BE PROVIDED IN THE SHOP DRAWINGS
3. FACTORS OF SAFETY:
-OVERTURNING - 2.0
-SLIDING - 1.5
-INTERNAL PULLOUT - 1.5 (ALLOWABLE DEFORMATION 0.75")
-SOIL REINFORCEMENT GRID - 0.47 F_y AT END OF DESIGN LIFE
-BEARING CAPACITY - 2.5
-OVERALL STABILITY - 1.5
4. THE MAXIMUM APPLIED BEARING PRESSURE AT THE FOUNDATION LEVEL IS AS SHOWN ON THE WALL DESIGN DRAWINGS FOR EACH DESIGN CASE. IT IS THE RESPONSIBILITY OF THE OWNER TO DETERMINE THAT THIS APPLIED BEARING PRESSURE IS ALLOWABLE FOR THAT LOCATION.
5. THE DESIGN CONTAINED ON THESE DRAWINGS IS BASED ON INFORMATION PROVIDED BY THE OWNER. ON THE BASIS OF THIS INFORMATION, THE NEEL COMPANY IS RESPONSIBLE FOR INTERNAL STABILITY OF THE STRUCTURE ONLY. EXTERNAL STABILITY DESIGN INCLUDING FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF OTHERS

MATERIALS NOTES:

1. PRECAST CONCRETE:
-PRECAST ISOGRID PANELS - PER SPEC SECTION 548
-ARCHITECTURAL FINISH SHALL BE PLAIN STEEL FORM FINISH UNLESS OTHERWISE SPECIFIED ON THE RETAINING WALL CONTROL PLANS.
2. C.I.P. CONCRETE:
-C.I.P. LEVELING PAD - PER SPEC SECTION 548
-OTHER C.I.P. CONCRETE - PER SPEC SECTION 548
3. REINFORCING STEEL:
-PER SPEC SECTION 548
-6" x 6" WELDED GRID, D8 x D8 WIRE
OR
-#3 REBAR @ 6" O.C. EACH WAY
-WELDED PER ASTM A497 PRIOR TO GALVANIZATION
4. CONNECTION INSERT:
-PER SPEC SECTION 548
-WII WIRE
-WELDED PER ASTM A185 PRIOR TO GALVANIZATION
5. LOCKING BAR:
-PER SPEC SECTION 548
6. SOIL REINFORCEMENT GRIDS:
-PER SPEC SECTION 548
-WII WELDED WIRE GRIDS:
-5 LONGITUDINAL WIRES @ 6" O.C., LENGTH AS REQUIRED BY DESIGN
-2' LONG TRANSVERSE BARS AT 6" OR 12" O.C., AS REQUIRED BY DESIGN
-SOIL GRID LENGTHS SHOWN ON ISOGRID DESIGN DRAWINGS ARE NOMINAL LENGTHS AS REQUIRED BY DESIGN CALCULATIONS. DUE TO MANUFACTURING TOLERANCES, ACTUAL GRID LENGTHS MAY BE LONGER.
7. JOINT MATERIAL:
-DIAGONAL JOINT FILLER:
-1/2" x 4" x 4'-2"
-PREFORMED EPDM
-DUROMETER: 80 - 90
-DIAGONAL JOINT BACKING:
-MIRAFIL40N OR EQUAL
-12" WIDE x LENGTH OF JOINT
-GEOTEXTILE MEETING REQUIREMENTS OF SPEC SECTION 548
-WEEPHOLE COVER:
-TENSAR DC4205 OR EQUAL
-6" x 6 1/2" (MIN)
-GEOCOMPOSITE MEETING REQUIREMENTS OF SPEC SECTION 548
8. BACKFILL:
-PER SPEC SECTION 548

CONSTRUCTION NOTES:

1. ALL CONSTRUCTION PROCEDURES SHALL COMPLY WITH SPEC SECTION 548-8 AND THE "ISOGRID CONSTRUCTION MANUAL" (PROVIDED BY THE NEEL COMPANY OR OLDCASTLE PRECAST, INC). IN THE EVENT OF A DISCREPANCY BETWEEN THE SPEC AND THE "ISOGRID CONSTRUCTION MANUAL", THE SPEC SHALL CONTROL.
2. FOR LOCATION AND ALIGNMENT OF ISOGRID STRUCTURE, SEE RETAINING WALL CONTROL PLANS.
3. ISOGRID STRUCTURES ON CURVES SHALL BE BUILT IN CHORDS AS SHOWN IN THE ISOGRID DESIGN DRAWINGS.
4. IF MANHOLES OR DROP INLETS ARE PRESENT, THEY SHALL BE LOCATED AS SHOWN IN THE ISOGRID DESIGN DRAWINGS.
5. IF PILES ARE LOCATED WITHIN THE RETAINING WALL VOLUME, THEY SHALL BE DRIVEN BEFORE CONSTRUCTION OF THE ISOGRID STRUCTURE UNLESS A METHOD TO PROTECT THE STRUCTURE, WHICH IS ACCEPTABLE TO THE ENGINEER AND THE NEEL COMPANY, IS SUBMITTED AND APPROVED IN WRITING.
6. IF A STRUCTURE EXCEEDS 20' IN HEIGHT, THE FINISH GRADE AT THE FACE OF THE WALL SHALL BE PLACED AND COMPACTED BEFORE WALL CONSTRUCTION EXCEEDS 20' IN HEIGHT.
7. IF EXISTING OR FUTURE STRUCTURES, PIPES, FOUNDATIONS OR GUARDRAIL POSTS WHICH ARE WITHIN THE RETAINING WALL VOLUME INTERFERE WITH THE NORMAL PLACEMENT OF REINFORCING GRIDS AND SPECIFIC DIRECTION HAS NOT BEEN PROVIDED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.
8. TOP PANELS ON WALLS WITH CAST-IN PLACE COPING SHALL HAVE #4 REBAR PROTRUDING FROM THEIR TOP EDGE.
9. BACKFILL MATERIAL SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS FOR MSE WALLS TO A LEVEL OF APPROXIMATELY 2" ABOVE THE CONNECTION INSERT EMBEDDED IN THE PANELS. INSTALLATION OF THE SOIL REINFORCEMENT SHALL BE PERMITTED ONLY AFTER PLACEMENT AND COMPACTION OF THE BACKFILL MATERIAL HAS REACHED THE REQUIRED LEVEL.
10. COMPACTION AND OPERATION EQUIPMENT SHALL BE KEPT A MINIMUM DISTANCE OF 3' FROM THE BACK FACE OF THE ISOGRID PANELS. COMPACTION WITHIN 3' OF THE ISOGRID PANEL SHALL BE 90% OF AASHTO T-180.
11. THE CONTRACTOR IS RESPONSIBLE FOR GRADUALLY DEFLECTING UPPER REINFORCING GRIDS DOWNWARD TO AVOID CONFLICTS WITH PAVING AND SUBGRADE PREPERATION. THE CONTRACTOR'S ATTENTION IS DIRECTED ESPECIALLY TO SITUATIONS WHERE ROADWAY SUPERELEVATION AND/OR SOIL MIXING ARE ANTICIPATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING STORM WATER DRAINAGE IN THE VICINITY OF THE WALL DURING CONSTRUCTION. STORMWATER RUNOFF SHALL BE COLLECTED AND DISCHARGED AWAY FROM THE WALL AND THE RETAINING WALL VOLUME.

DESIGNER:



THE NEEL COMPANY

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SPRINGFIELD, VIRGINIA 22152
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OLDCASTLE PRECAST, INC

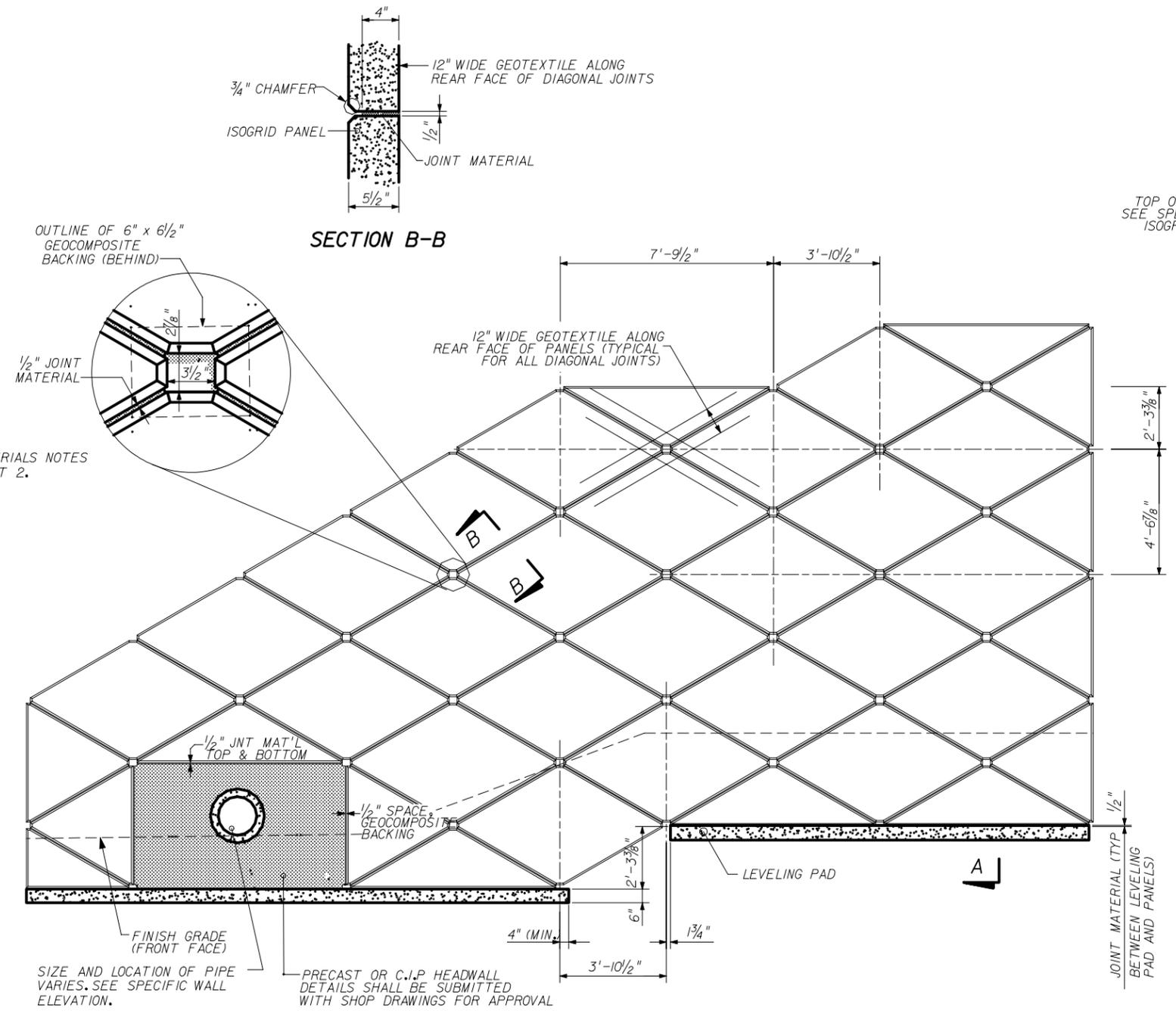
5995 SOUTEL DR.
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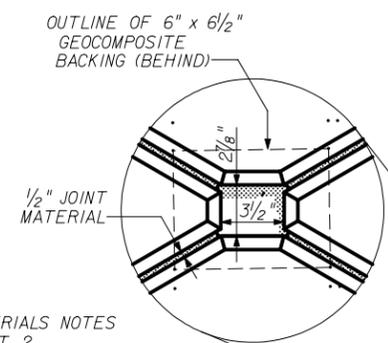
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

RETAINING WALL SYSTEM
THE NEEL COMPANY ISOGRID

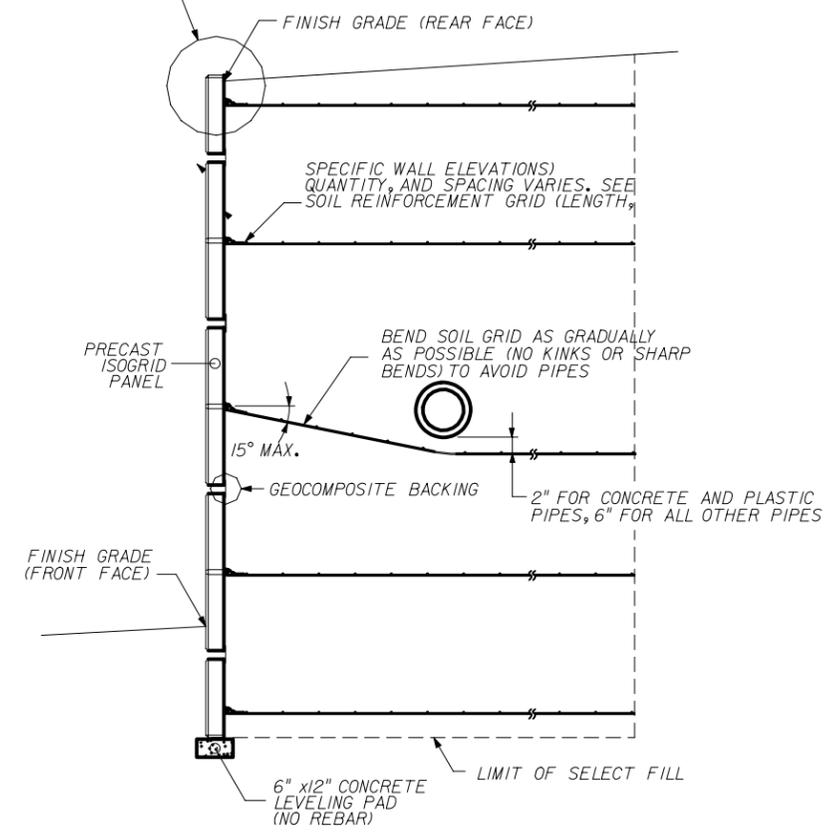
	Names	Dates	Approved By		
Designed By	JMC	10/01/98	State Roadway Design Engineer		
Drawn By	CAA	10/01/98	Revision	Sheet No.	Index No.
Checked By	JMC	10/01/98	04	2 of 20	5012



NOTE: FOR MATERIALS NOTES SEE SHEET 2.



TOP OF WALL TREATMENT VARIES. SEE SPECIFIC WALL ELEVATIONS AND ISOGRID STANDARD DRAWINGS FOR DETAILS



SECTION A-A SHOWING TYPICAL DETAILS

ELEVATION (FRONT FACE) SHOWING TYPICAL DETAILS

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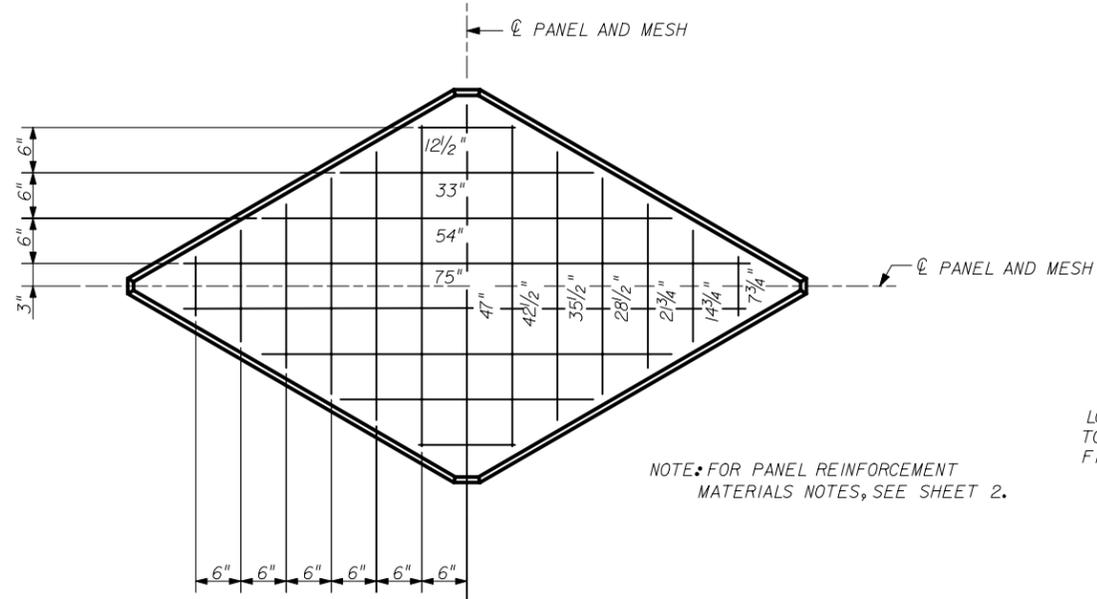
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

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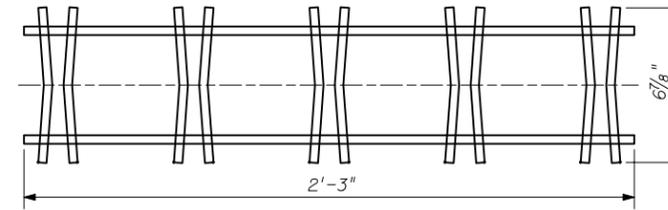
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NOTE:

PANEL IS HANDLED BY LIFTING DEVICE THAT ATTACHES TO CONNECTION INSERT



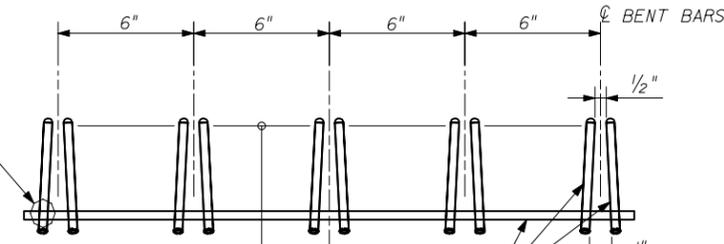
NOTE: FOR PANEL REINFORCEMENT MATERIALS NOTES, SEE SHEET 2.



TOP VIEW

NOTE: FOR CONNECTION INSERT MATERIALS NOTES, SEE SHEET 2.

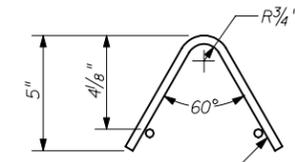
LONGITUDINAL WIRES TO BE WELDED TO BENT WIRES WHILE HELD IN A JIG FIXTURE (PRIOR TO GALVANIZATION).



INSIDE OF EACH BEND MUST BE WITHIN 1/16" (*) OF INSIDE OF ALL OTHER BENDS TO ASSURE PROPER BEARING UPON LOCKING BAR.

SIDE VIEW

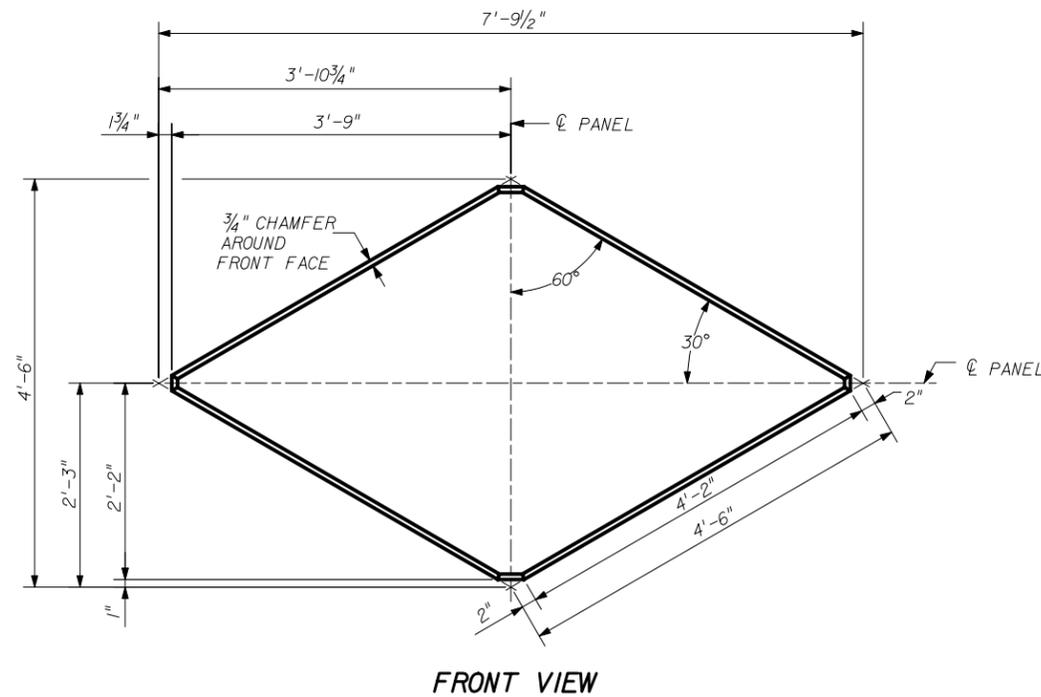
WIRE SIZE TO BE EQUAL TO SOIL REINFORCEMENT GRID WIRE SIZE



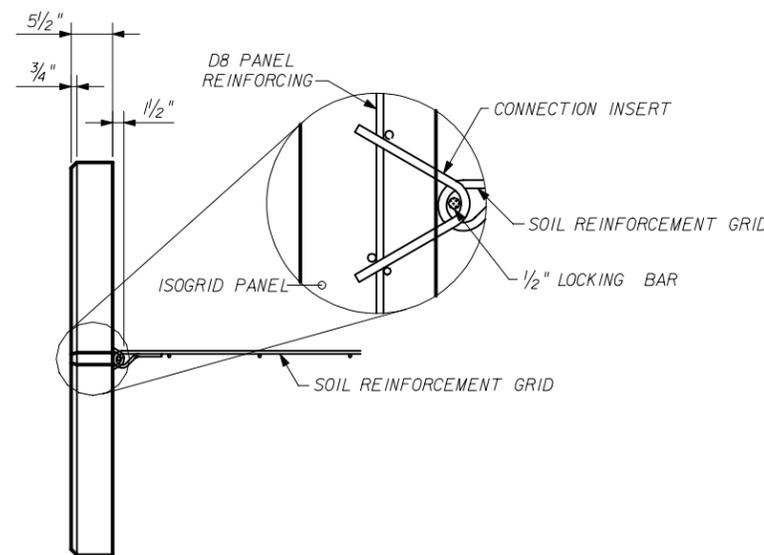
12" LENGTH OF WIRE BEFORE BENDING

END VIEW

WELDED WIRE MESH PANEL REINFORCEMENT



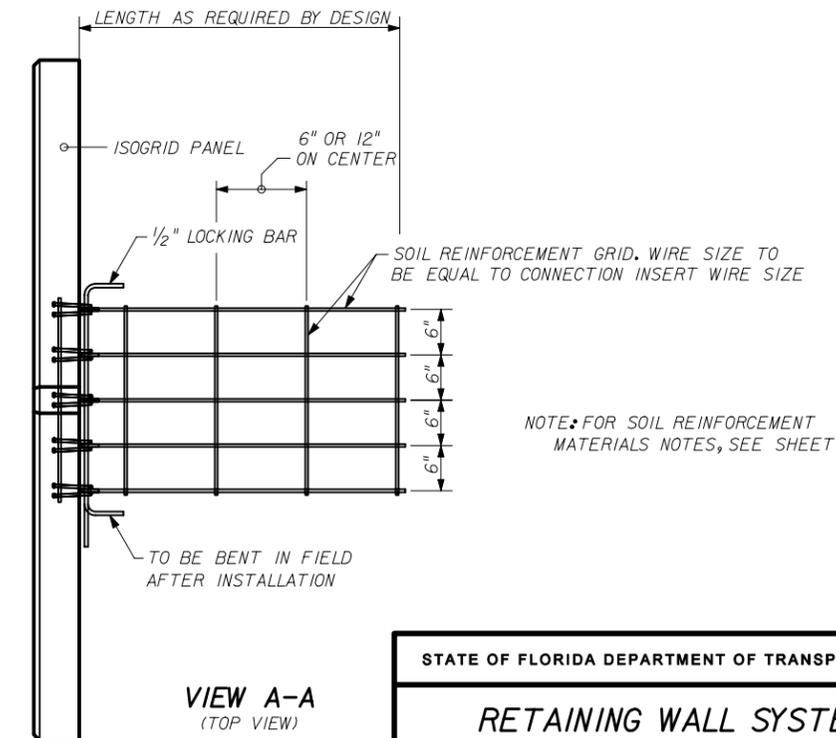
FRONT VIEW



SIDE VIEW

FULL-SIZE PANEL TYPICAL DIMENSIONS

CONNECTION INSERT



VIEW A-A (TOP VIEW)

NOTE: FOR SOIL REINFORCEMENT MATERIALS NOTES, SEE SHEET 2.

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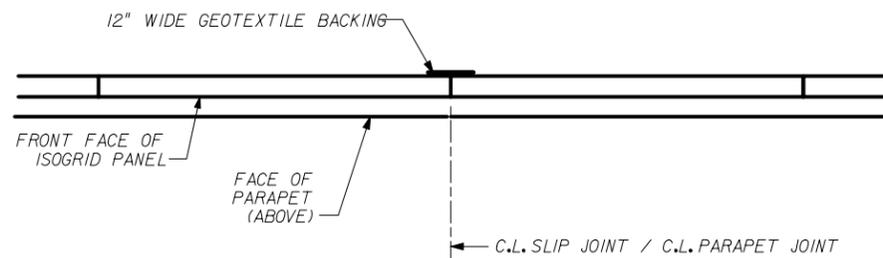
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JACKSONVILLE, FL 32219
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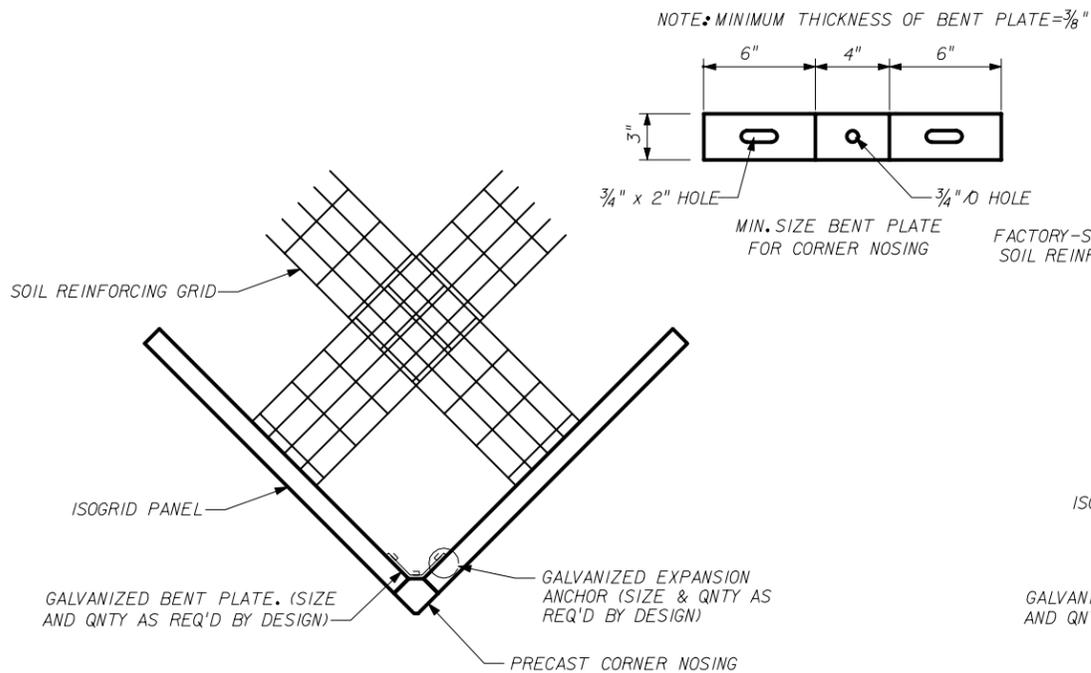
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

**RETAINING WALL SYSTEM
THE NEEL COMPANY ISOGRID**

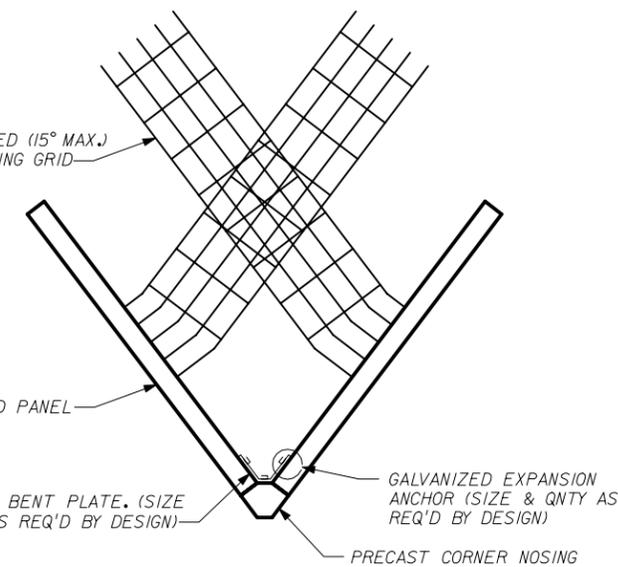
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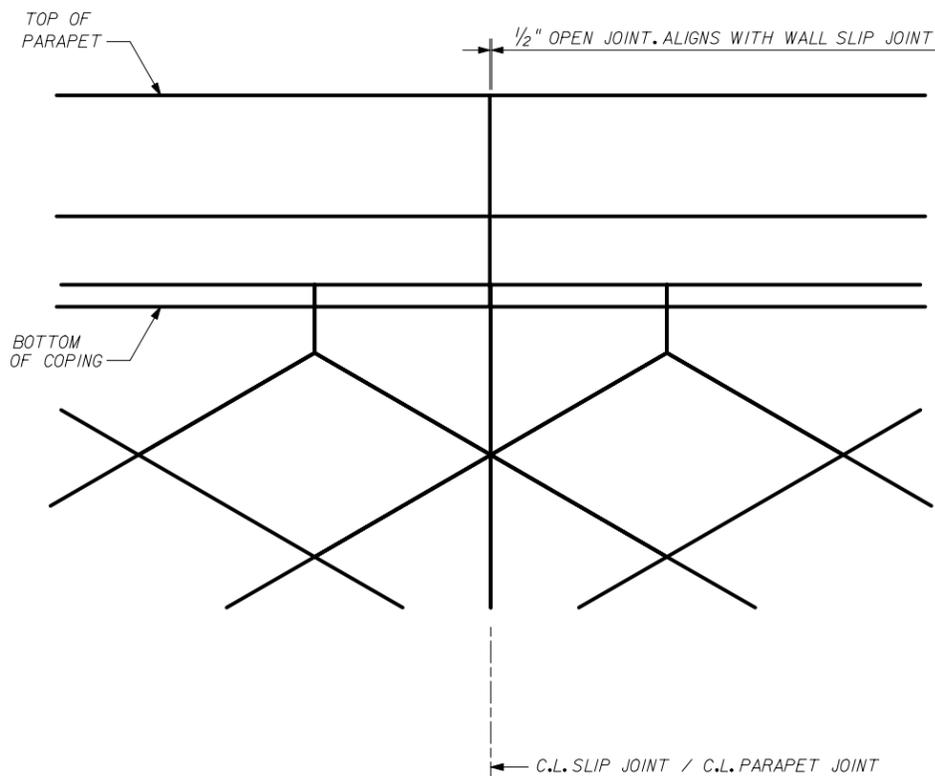
**PART PLAN
SLIP JOINT DETAIL**



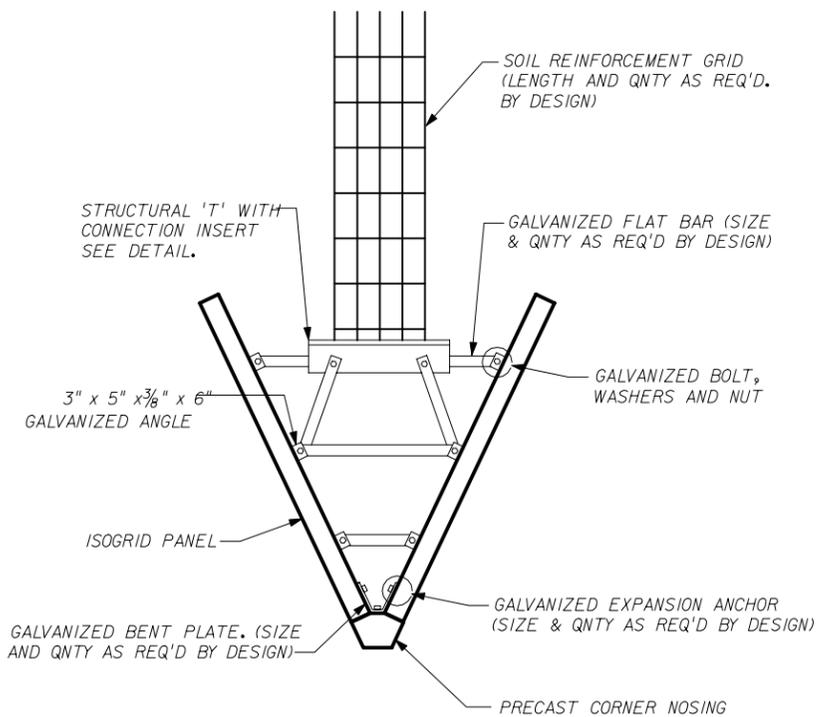
**PART PLAN
STD CORNER DETAIL**



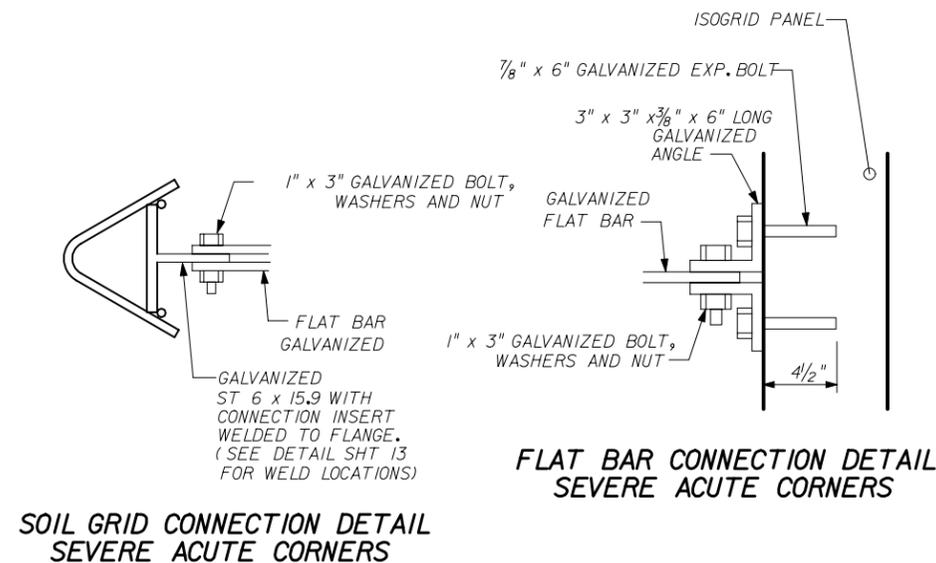
**PART PLAN
MILD (65° MIN.) ACUTE CORNER DETAIL**



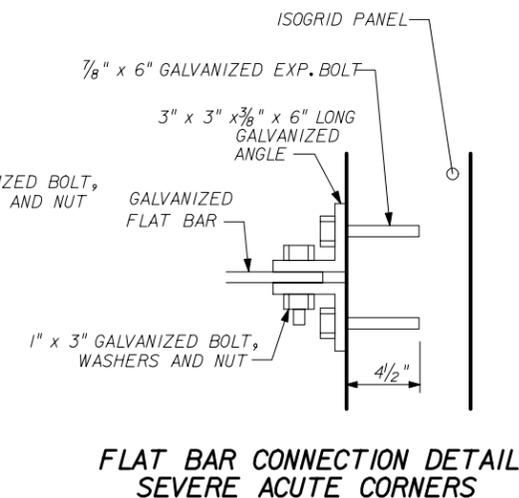
**PART ELEVATION
SLIP JOINT DETAIL**



**PART PLAN
SEVERE ACUTE CORNER DETAIL**



**SOIL GRID CONNECTION DETAIL
SEVERE ACUTE CORNERS**



**FLAT BAR CONNECTION DETAIL
SEVERE ACUTE CORNERS**

DESIGNER:

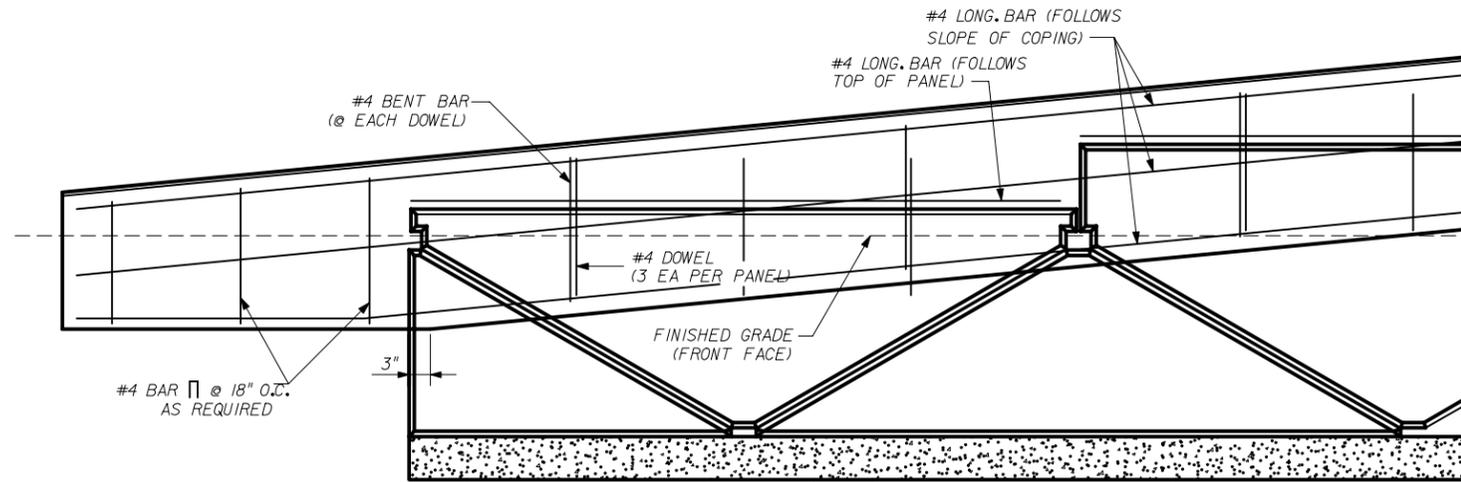


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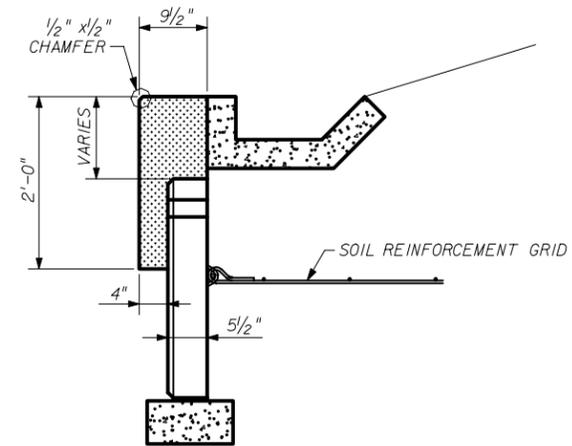
PRECASTER:

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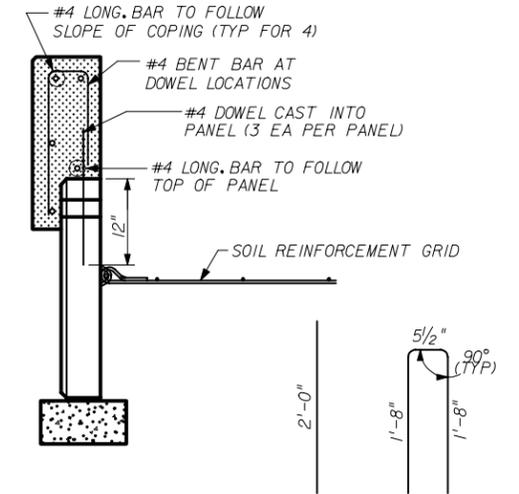
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION				
RETAINING WALL SYSTEM THE NEEL COMPANY ISOGRID				
Names	Dates	Approved By		
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				5012



C.I.P. COPING TREATMENT AT BEGINNING/END OF WALLS



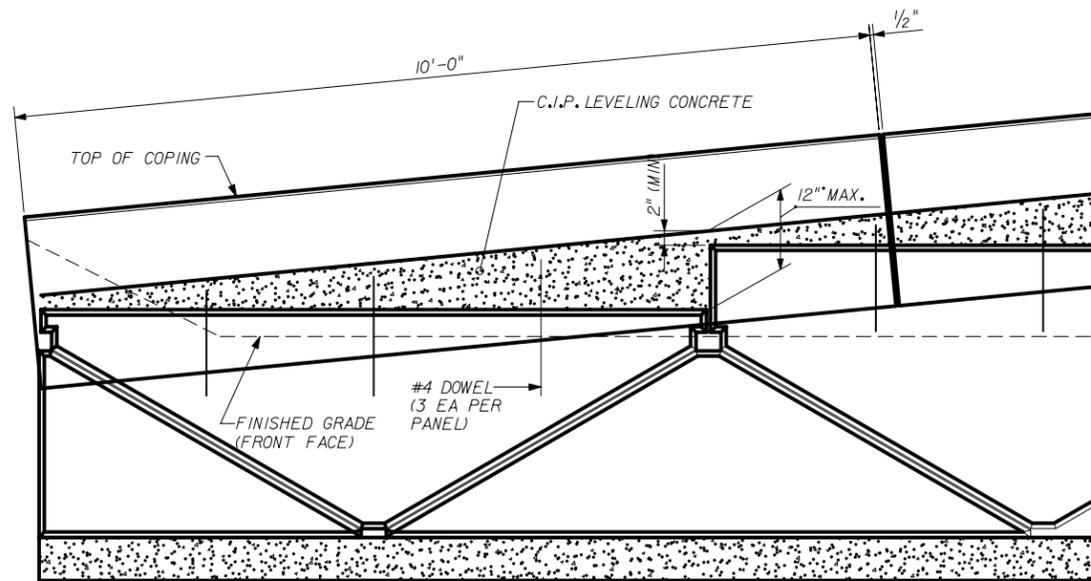
C.I.P. COPING DIMENSIONS



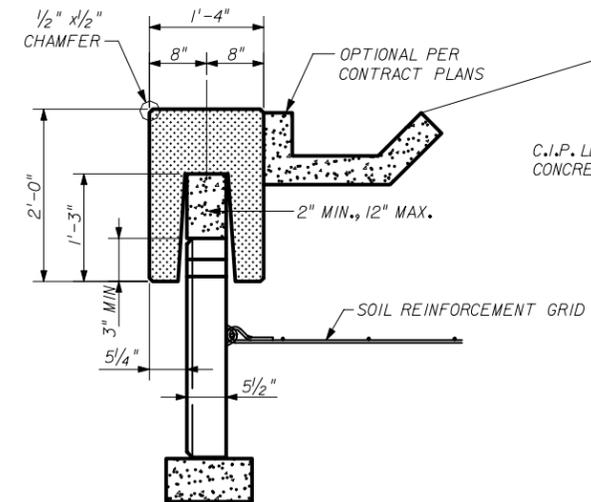
C.I.P. COPING REBAR

#4 DOWEL #4 BENT BAR

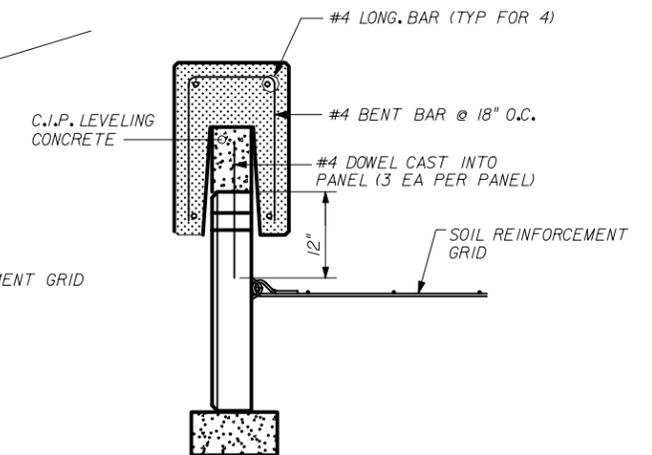
C.I.P. COPING REBAR DETAILS
BENT BAR AND DOWEL TO BE FIELD-TRIMMED AS REQUIRED TO PROVIDE MIN OF 2" OF CONCRETE COVER



PRECAST COPING - PART ELEVATION



PRECAST COPING DIMENSIONS

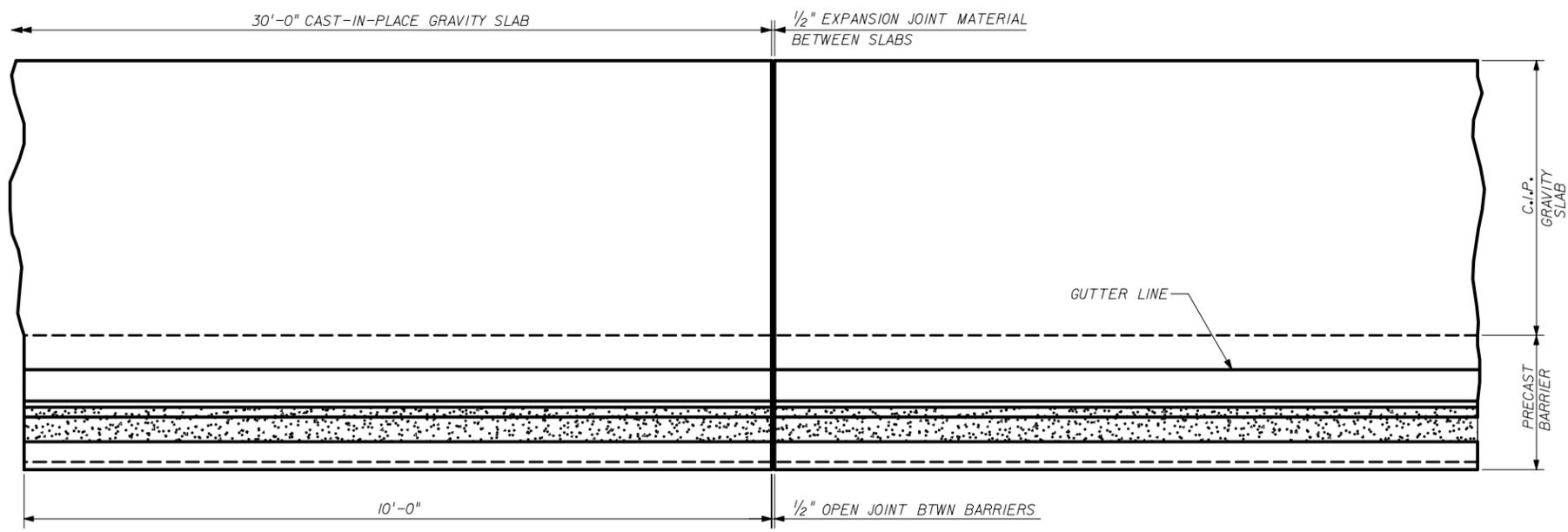


PRECAST COPING REBAR

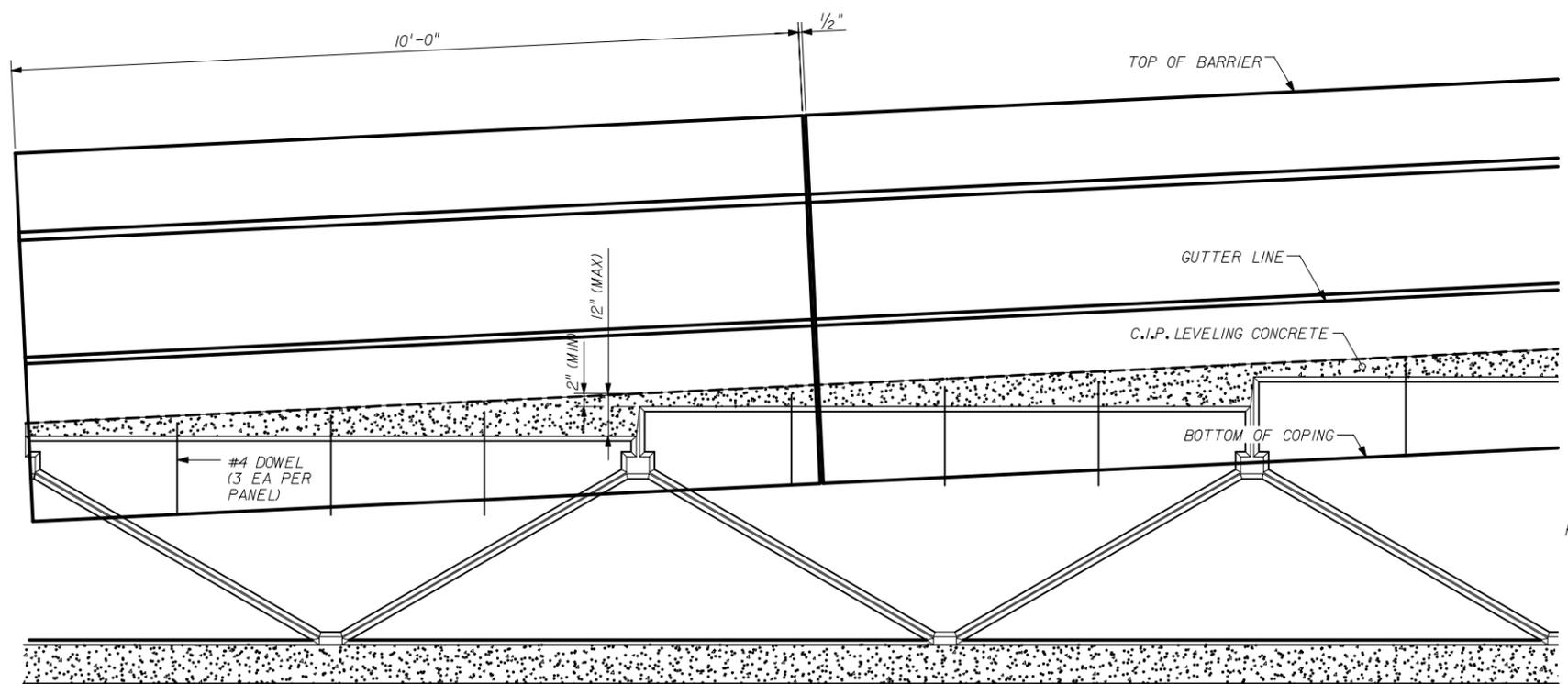
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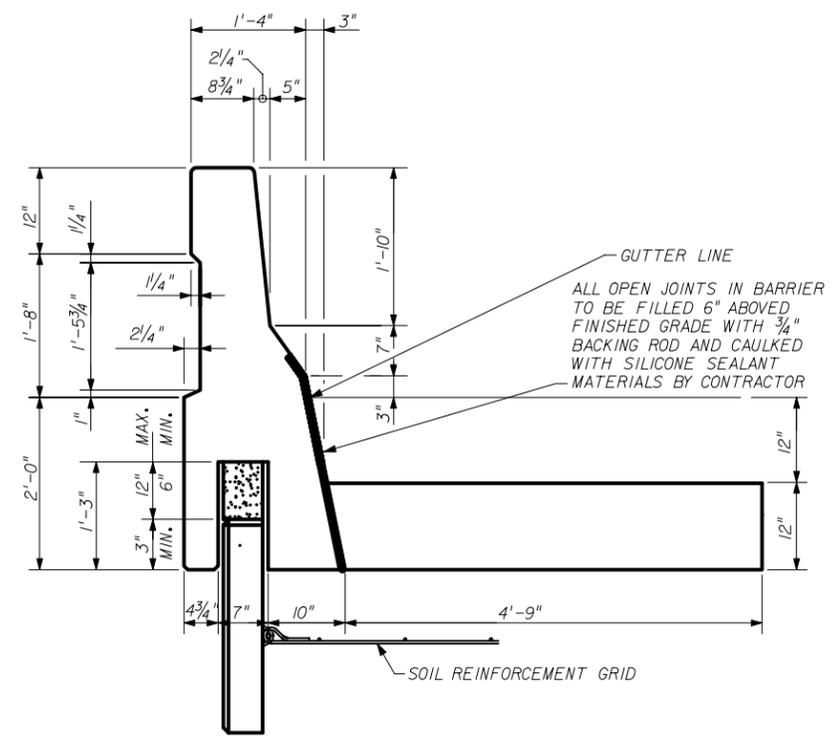
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION				
RETAINING WALL SYSTEM THE NEEL COMPANY ISOGRID				
Names	Dates	Approved By <i>W. J. [Signature]</i>		
Designed By	JMC	10/01/98	State Structures Design Engineer	
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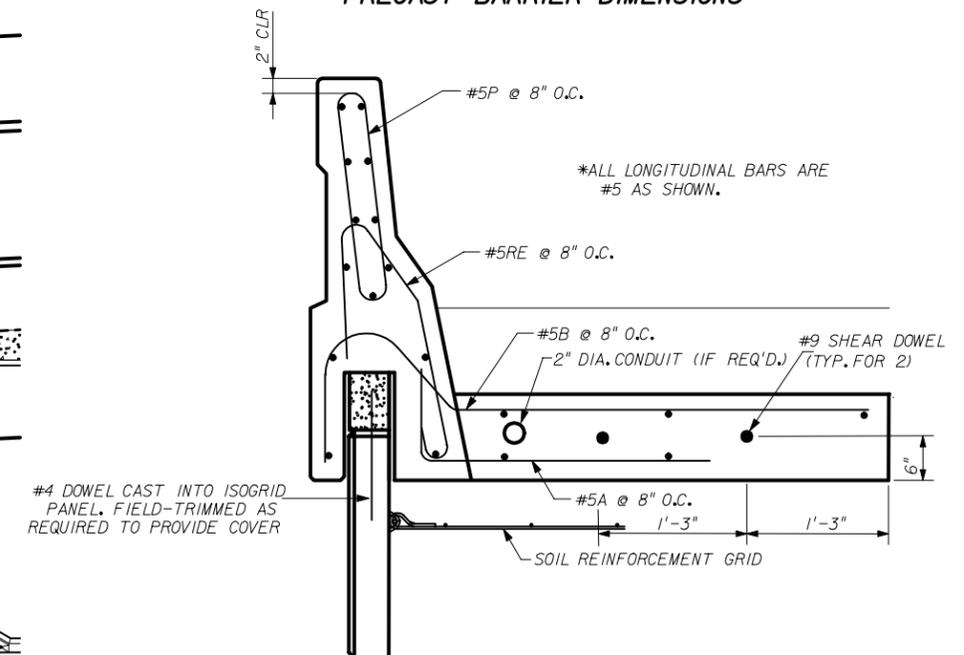
PART PLAN - PRECAST BARRIER



PART ELEVATION - PRECAST BARRIER



PRECAST BARRIER DIMENSIONS

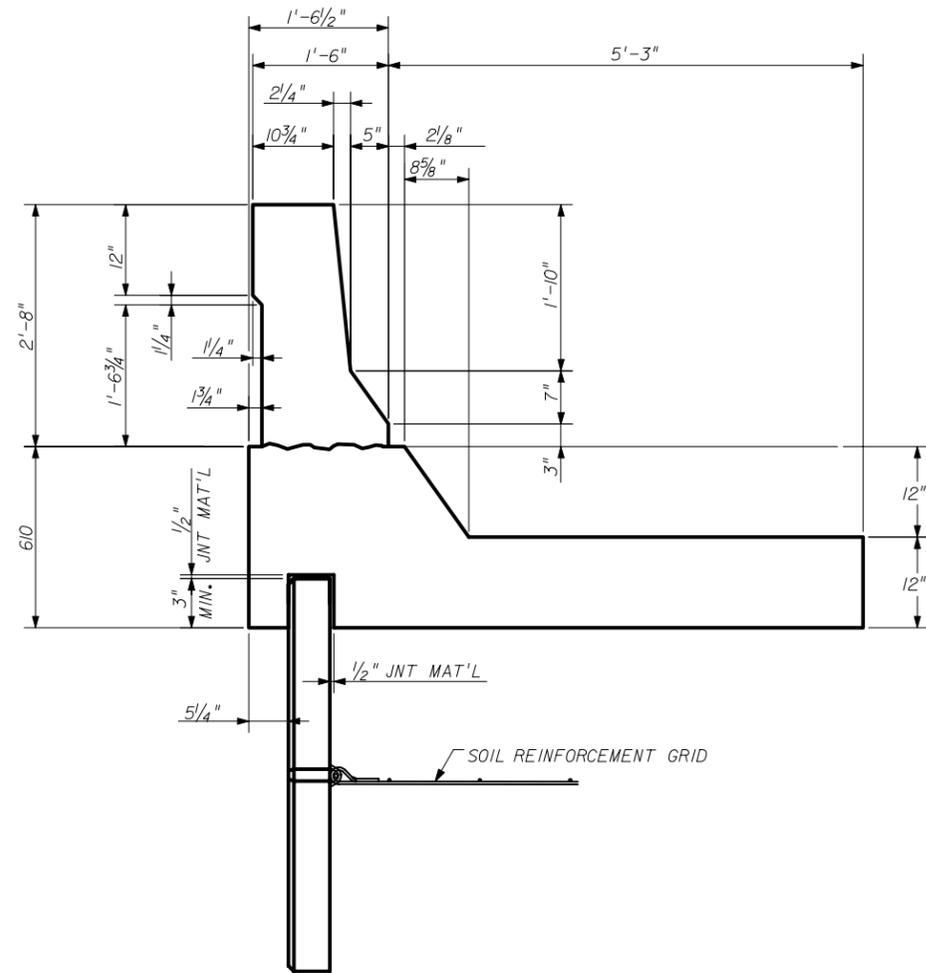


PRECAST BARRIER REBAR

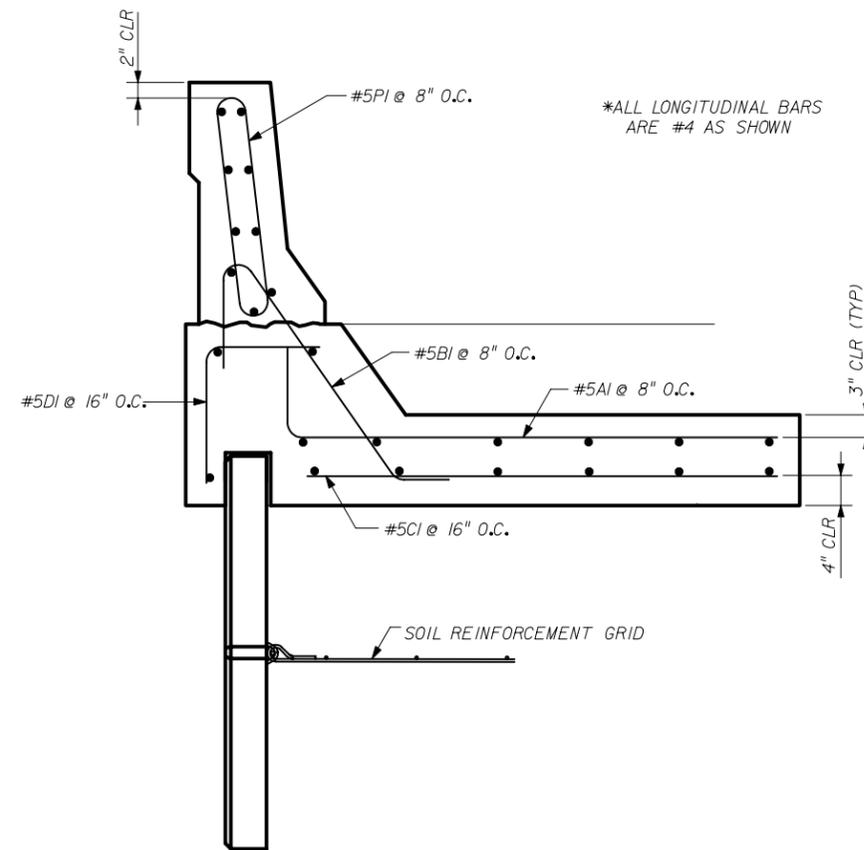
DESIGNER:
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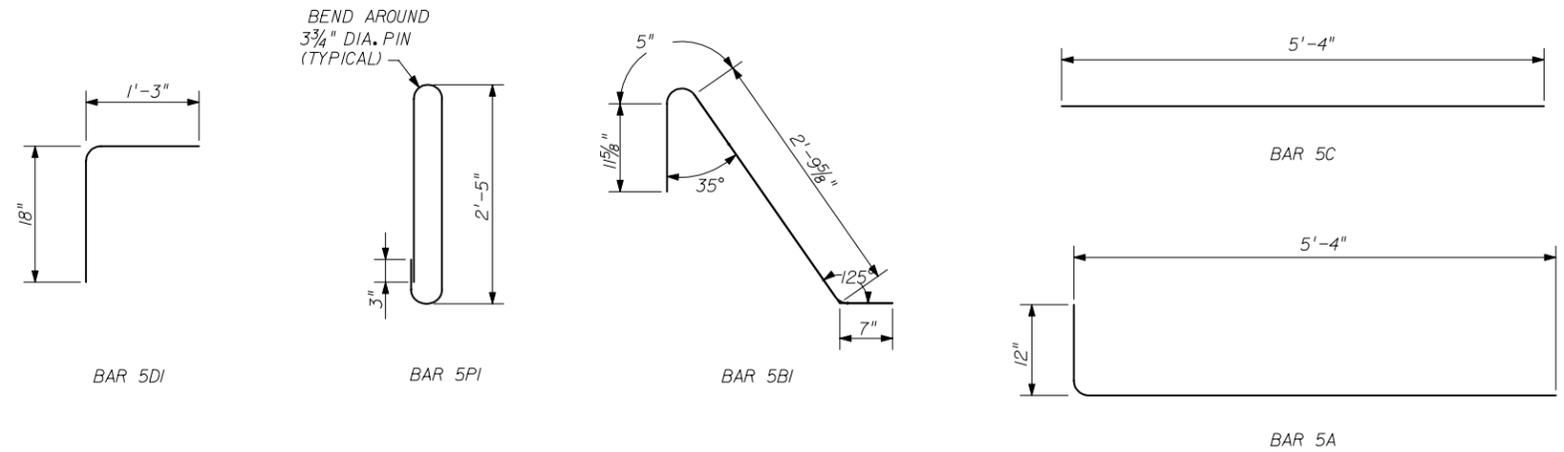
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C.I.P. BARRIER AND C.I.P. JUNCTION SLAB DIMENSIONS



C.I.P. BARRIER AND C.I.P. JUNCTION SLAB REBAR

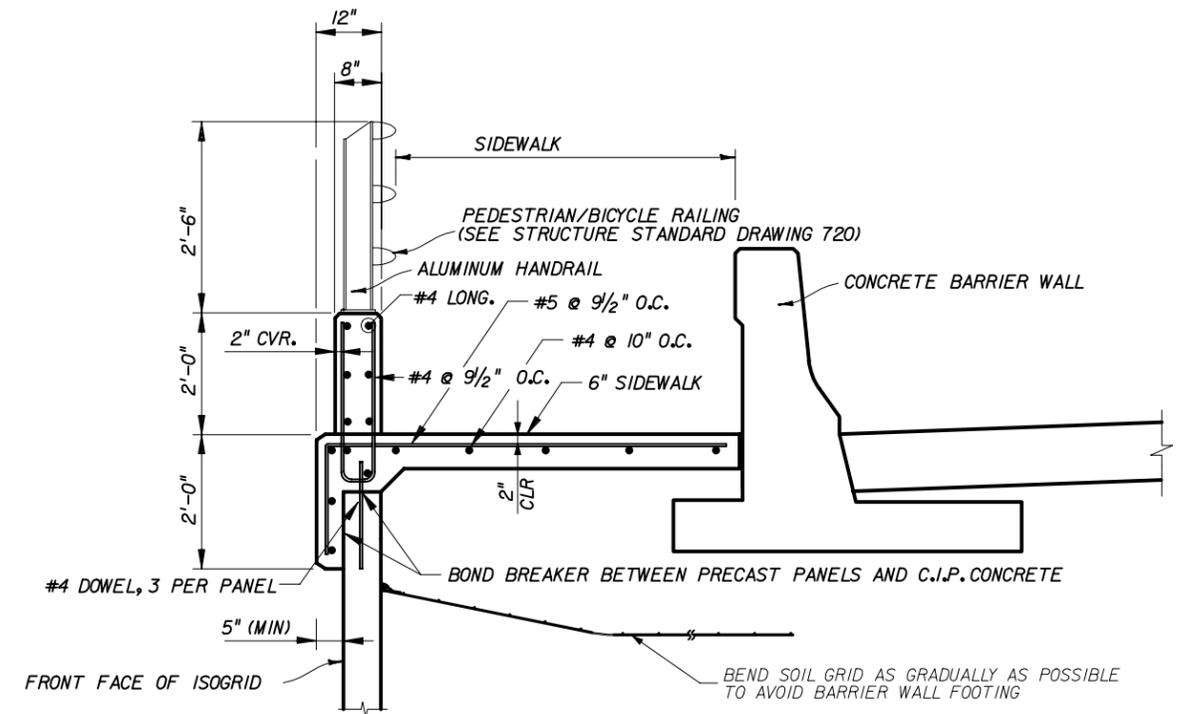


C.I.P. BARRIER REBAR DETAILS

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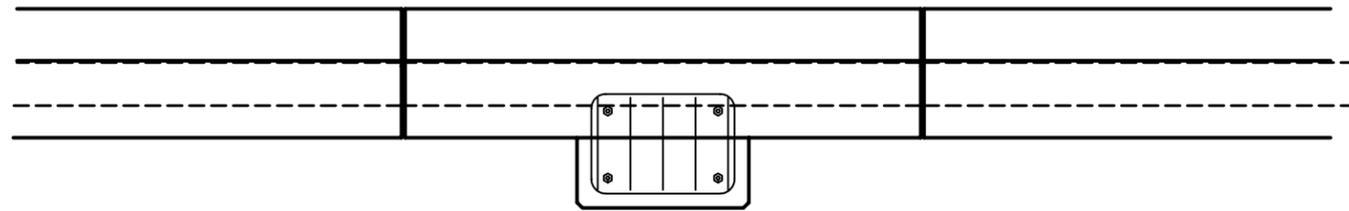


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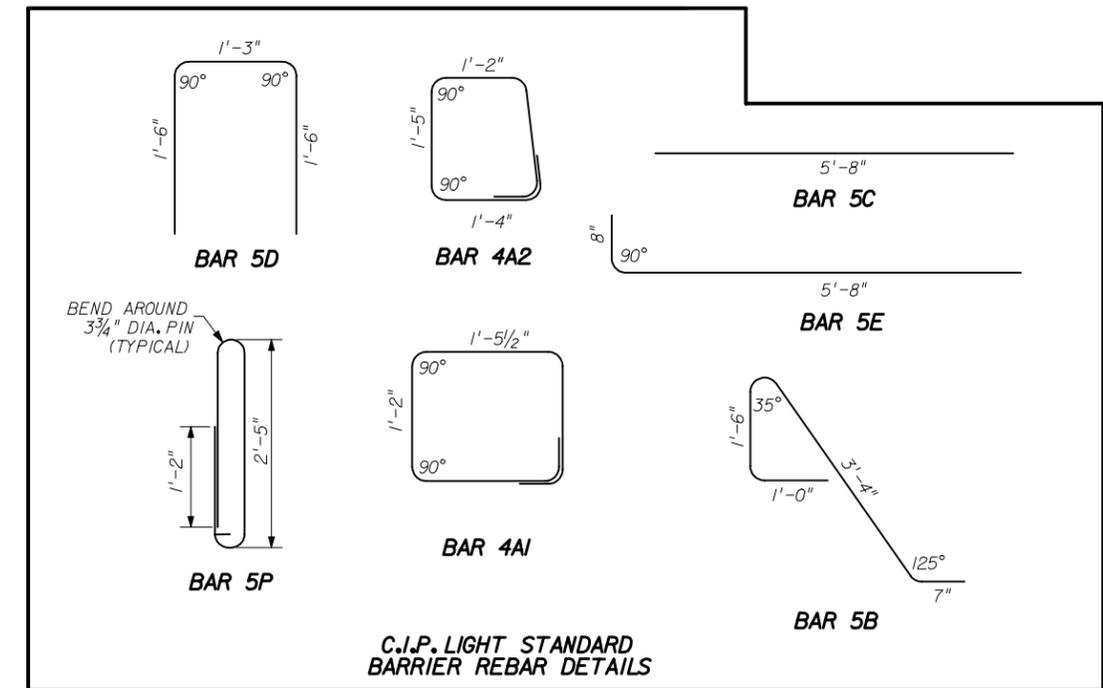
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 FX: (904) 768-8428

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION				
RETAINING WALL SYSTEM THE NEEL COMPANY ISOGRID				
	Names	Dates	Approved By 	
Designed By	JMC	10/01/98	State Structures Design Engineer	
Drawn By	CAA	10/01/98	Revision	Sheet No. Index No.
Checked By	JMC	10/01/98	04	9 of 20 5012

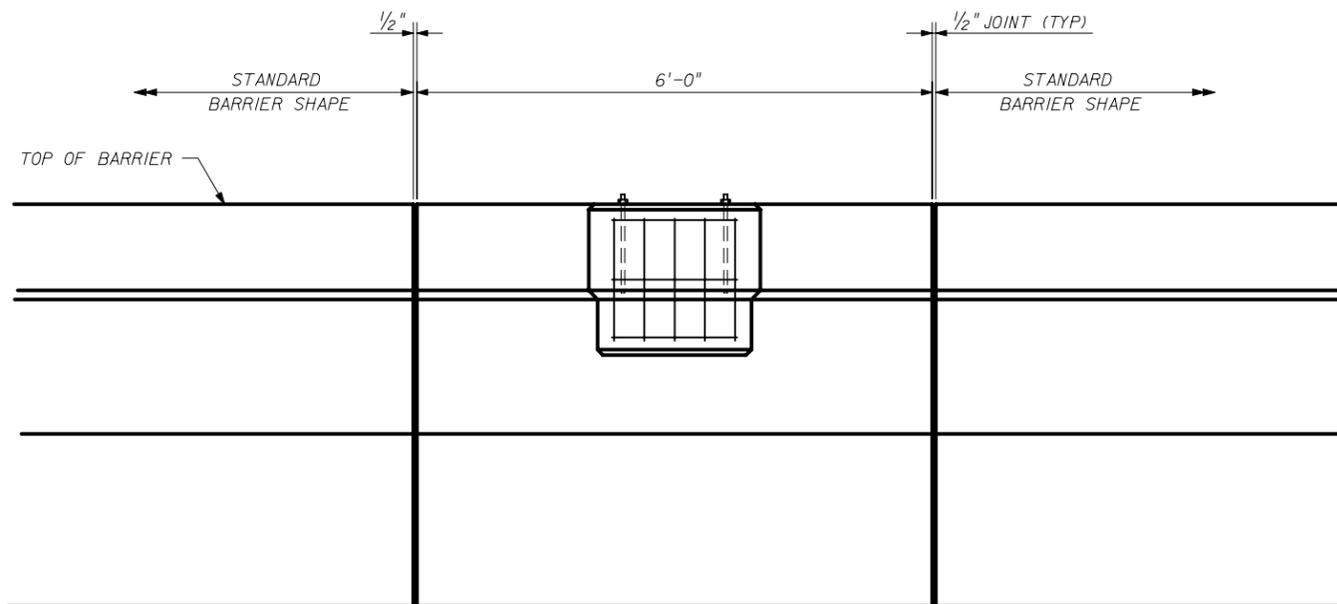


C.I.P. LIGHT STANDARD BARRIER - PART PLAN WITH REBAR
(BARRIER AND GRAVITY SLAB REBAR OMITTED FOR CLARITY)

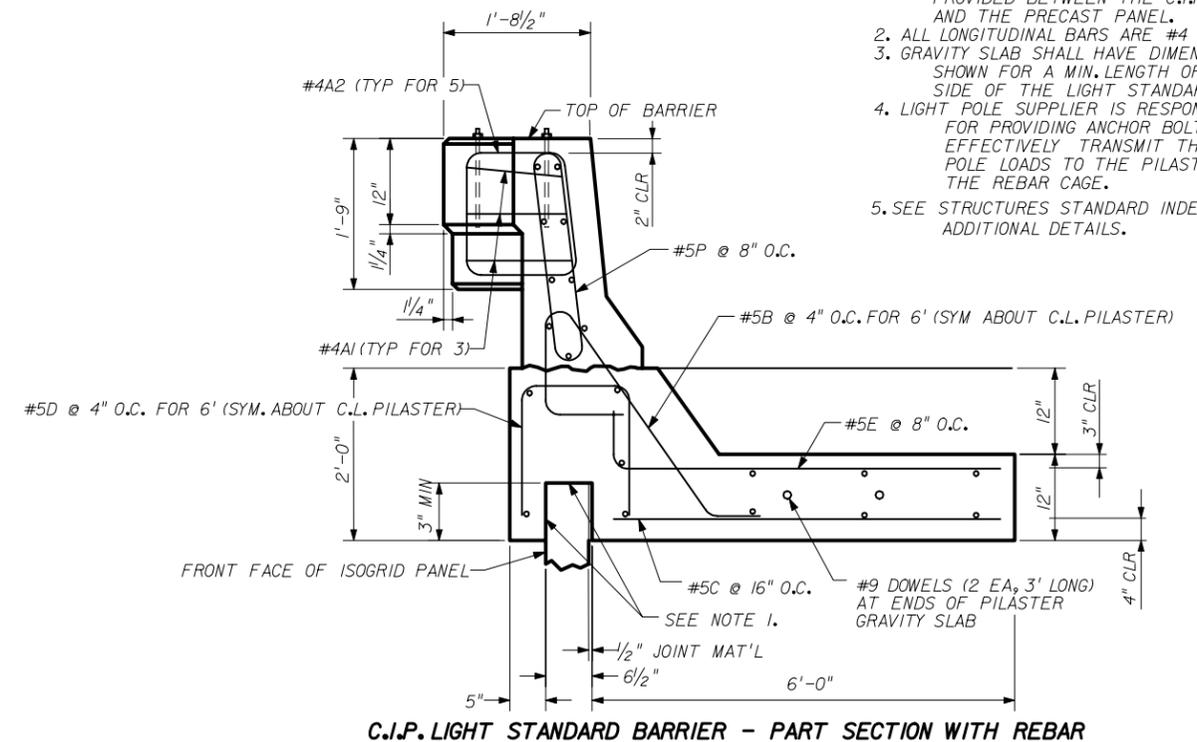


C.I.P. LIGHT STANDARD BARRIER REBAR DETAILS

- NOTES
1. POSITIVE BOND BREAKER SHALL BE PROVIDED BETWEEN THE C.I.P. CONC. AND THE PRECAST PANEL.
 2. ALL LONGITUDINAL BARS ARE #4 AS SHOWN.
 3. GRAVITY SLAB SHALL HAVE DIMENSIONS SHOWN FOR A MIN. LENGTH OF 10'-0" EITHER SIDE OF THE LIGHT STANDARD BARRIER.
 4. LIGHT POLE SUPPLIER IS RESPONSIBLE FOR PROVIDING ANCHOR BOLTS THAT EFFECTIVELY TRANSMIT THE LIGHT POLE LOADS TO THE PILASTER AND FIT THE REBAR CAGE.
 5. SEE STRUCTURES STANDARD INDEX 500 FOR ADDITIONAL DETAILS.



C.I.P. LIGHT STANDARD BARRIER - PART ELEVATION
(BARRIER AND GRAVITY SLAB REBAR OMITTED FOR CLARITY)



C.I.P. LIGHT STANDARD BARRIER - PART SECTION WITH REBAR

DESIGNER:

THE NEEL COMPANY
 8328-D TRAFORD LANE
 SPRINGFIELD, VIRGINIA 22152
 PH: 17031 913-7858
 FX: 17031 913-7859

PRECASTER:
OLDCASTLE PRECAST, INC
 5995 SOUTEL DR.
 JACKSONVILLE, FL 32219
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 FX: 19041 768-8428

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

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