

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.

1643 103rd STREET
JACKSONVILLE, FL 32210
PH: (904) 778-2990
FX: (904) 778-2992

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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OLDCASTLE PRECAST, INC.

1643 103rd STREET
JACKSONVILLE, FL 32210
PH: (904) 778-2990
FX: (904) 778-2992

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

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
ROAD DESIGN

RETAINING WALL SYSTEM THE NEEL COMPANY ISOGRID

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	APPROVED BY
JMC	JBL/PM	JMC	00	
Drawn By	CAK	Checked By	00	1 of 20
Checked By	JMC	Date	00	5012

*****PROOF COPY*****
*****S7/NC*****

MISCELLANEOUS NOTES:

1. DESIGNER:

THE NEEL COMPANY
8328-D TRAFORD LANE
SPRINGFIELD, VA 22152
PH: (703) 913-1858
FX: (703) 913-7859

2. PRECASTER:

OLDCASTLE PRECAST INC.
1643 103rd STREET
JACKSONVILLE, FL 32210
PH: (904) 778-2990
FX: (904) 778-2992

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 GAMMA 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 - 0.4F_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.J.P. CONCRETE:

-C.J.P. LEVELING PAD - PER SPEC SECTION 548
-OTHER C.J.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 A885 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
-DIAPHRAGM, 80 - 90
-DIAGONAL JOINT BACKING:
-MFRAFI 10N OR EQUAL
-12" WIDE x LENGTH OF JOINT
-GEOTEXTILE MEETING REQUIREMENTS OF SPEC SECTION 548
-WEEP HOLE COVER:
-TENSAR DC2025 OR EQUAL
-6" x 6" (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 USE 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 PREPARATION. 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

2320 S FIFTH LANE
JACKSONVILLE, FL 32218
PH: (703) 913-1858
FX: (703) 913-7859

PRECASTER

OLDCASTLE PRECAST, INC.

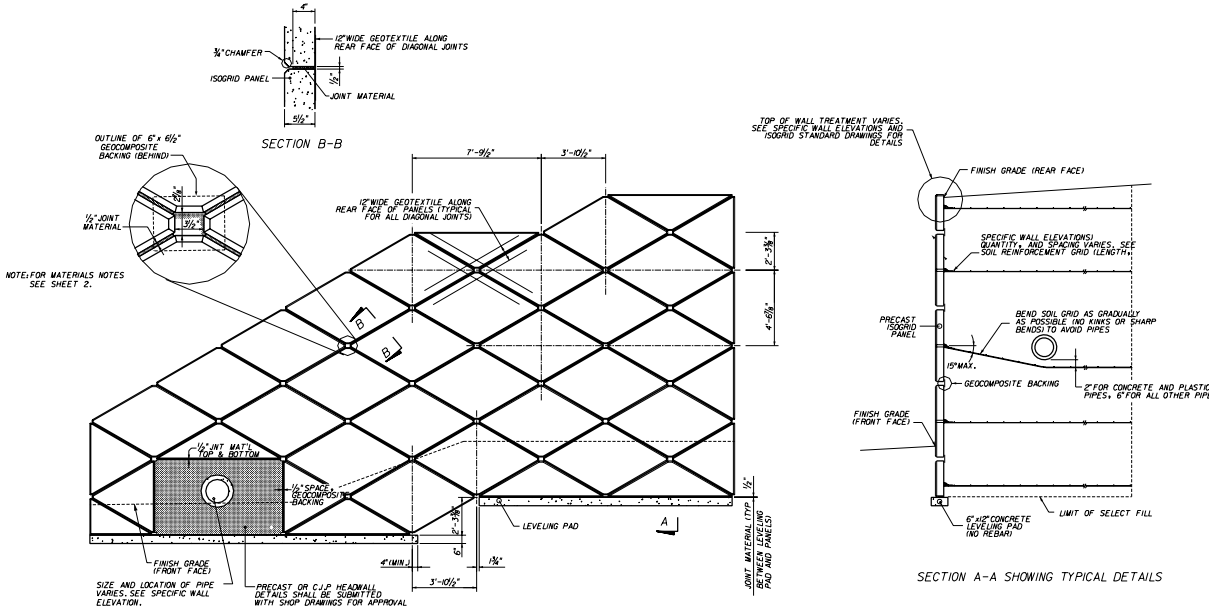
1243 NEW STREET
JACKSONVILLE, FL 32218
PH: (904) 778-2990
FX: (904) 778-2992

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

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
ROAD DESIGNRETAINING WALL SYSTEM
THE NEEL COMPANY ISOGRID

Revised	Date	Approved By
Designed By	JMC 10/01/02	W. J. [Signature]
Drawn By	GAH 10/01/02	
Checked By	JMC 10/01/02	00 2 of 20 5012

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
ROAD DESIGNSTATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
ROAD DESIGNSTATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
ROAD DESIGNSTATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
ROAD DESIGN



ELEVATION (FRONT FACE) SHOWING TYPICAL DETAILS

SECTION A-A SHOWING TYPICAL DETAILS

DESIGNER:



THE NEEL COMPANY
 5620 W. 19TH AVENUE
 MIAMI, FL 33156
 PH: (305) 484-1000
 FX: (305) 484-1000

PRECASTER:

OLDCASTLE PRECAST, INC.
 1840 38th STREET
 JACKSONVILLE, FL 32218
 PH: (904) 749-1000
 FX: (904) 749-1000

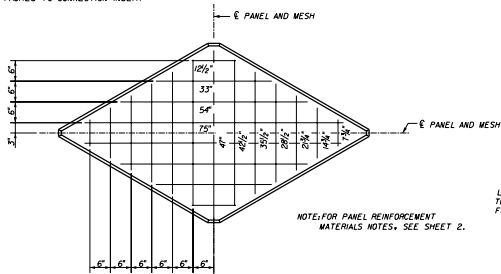
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
 ROAD DESIGN

**RETAINING WALL SYSTEM
 THE NEEL COMPANY ISOGRID**

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	APPROVED BY
JMC	JMC	JMC	00 3 of 20	<i>[Signature]</i>
STATE REGISTERED DESIGN ENGINEER LICENSE NO. _____ SEAL NO. _____ EXPIRES _____			STATE REGISTERED PROFESSIONAL ENGINEER LICENSE NO. _____ SEAL NO. _____ EXPIRES _____	

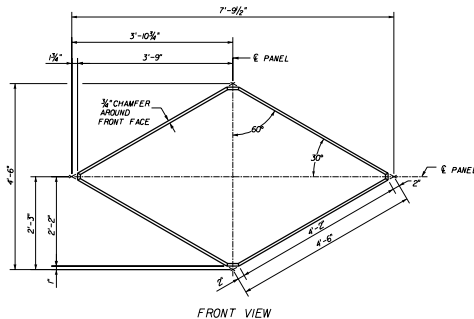
NOTE:

PANEL IS HANDLED BY LIFTING DEVICE THAT ATTACHES TO CONNECTION INSERT

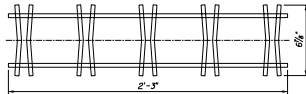


NOTE: FOR PANEL REINFORCEMENT MATERIALS NOTES, SEE SHEET 2.

WELDED WIRE MESH PANEL REINFORCEMENT

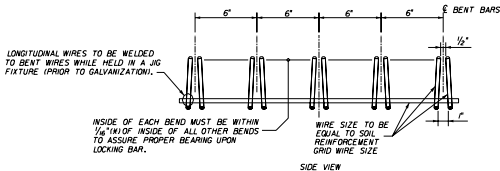


FRONT VIEW

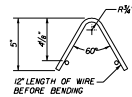


TOP VIEW

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

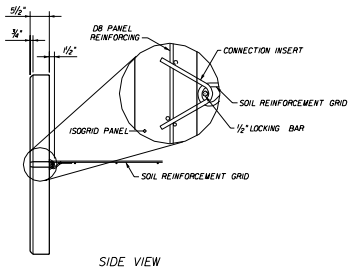


SIDE VIEW



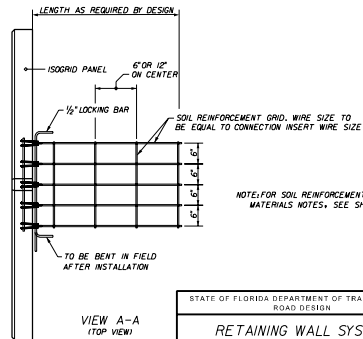
END VIEW

CONNECTION INSERT



SIDE VIEW

FULL-SIZE PANEL TYPICAL DIMENSIONS



VIEW A-A (TOP VIEW)

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

DESIGNER



THE NEEL COMPANY
2000 S. 10th Street
P.O. Box 1115, Kissimmee, FL 34742
PH: (813) 817-7000
FX: (813) 817-3000

PRECASTER

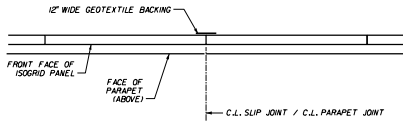
OLDCASTLE PRECAST, INC.
13643 8th Street
Jacksonville, FL 32218
PH: (904) 742-7000
FX: (904) 742-3000

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
ROAD DESIGN

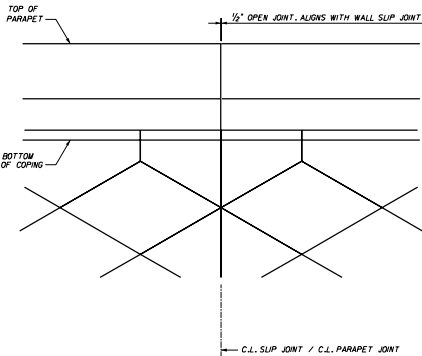
RETAINING WALL SYSTEM
THE NEEL COMPANY ISOGRID

DESIGNED BY	CHECKED BY	DATE	APPROVED BY
JMC	JMC	00	[Signature]
CAA	JMC	00	
JMC	JMC	00	

4 of 20 5012

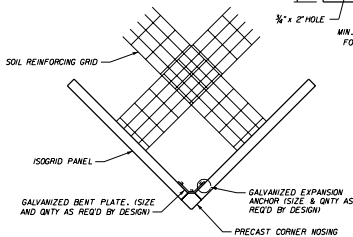


PART PLAN
SLIP JOINT DETAIL

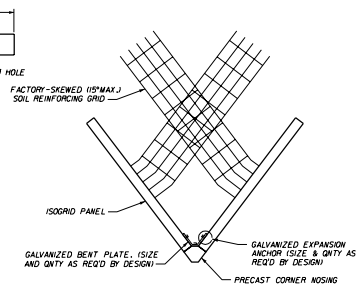


PART ELEVATION
SLIP JOINT DETAIL

NOTE: MINIMUM THICKNESS OF BENT PLATE = 3/8"

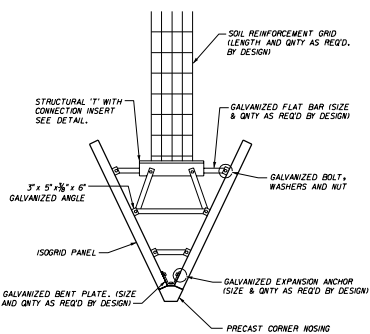


PART PLAN
STD CORNER DETAIL

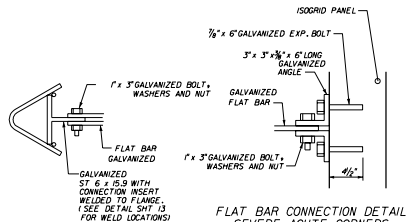


PART PLAN
MILD (65° MIN.) ACUTE CORNER DETAIL

APPLIES UNTIL GRID CONFLICTS
WITH ADJACENT PANELS



PART PLAN
SEVERE ACUTE CORNER DETAIL



SOIL GRID CONNECTION DETAIL
SEVERE ACUTE CORNERS

DESIGNER

THE NEEL COMPANY

3520 S. 142ND AVE.
MIRAGE F.L.D. 33404
PH: (754) 311-7000
FX: (754) 311-7009

PRECASTER

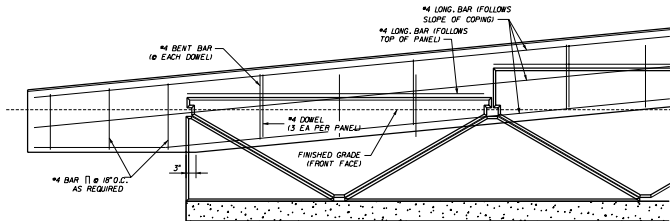
OLDCASTLE PRECAST, INC.

15434 (154TH STREET)
HICKORY HILL, FL 32718
PH: (904) 270-2700
FX: (904) 270-7500

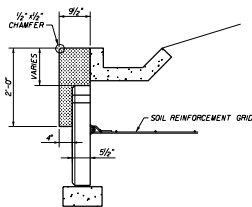
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
ROAD DESIGN

RETAINING WALL SYSTEM
THE NEEL COMPANY ISOGRID

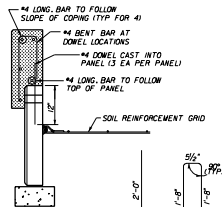
Issued	Drawn	Checked	Approved By
JNC	03/01/10	WJZ	
Drawn By	GAN	Checked By	DATE
Checked By	JNC	00	5 of 20
			5012



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

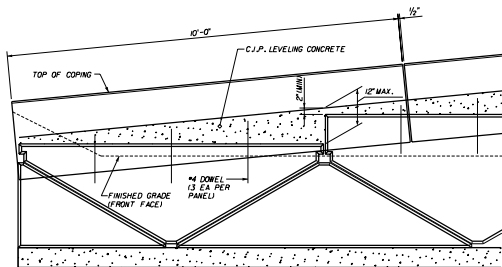


C.J.P. COPING DIMENSIONS

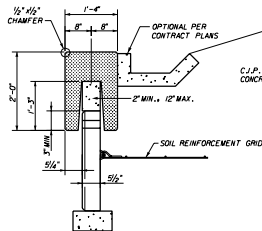


C.J.P. COPING REBAR

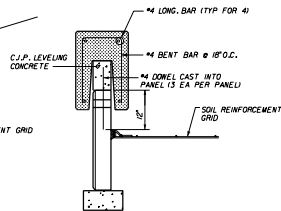
#4 DOWEL #4 BENT BAR
C.J.P. COPING REBAR DETAILS BENT BAR AND DOWEL TO BE FIELD-TRIMMED AS REQUIRED TO PROVIDE MIN OF 2" OF CONCRETE COVER



PRECAST COPING - PART ELEVATION



PRECAST COPING DIMENSIONS



PRECAST COPING REBAR

DESIGNER



THE NEEL COMPANY
3200 S. HAWTHORNE LANE
SPRINGFIELD, MISSOURI 65702
PH: (417) 863-7000
FX: (417) 863-7000

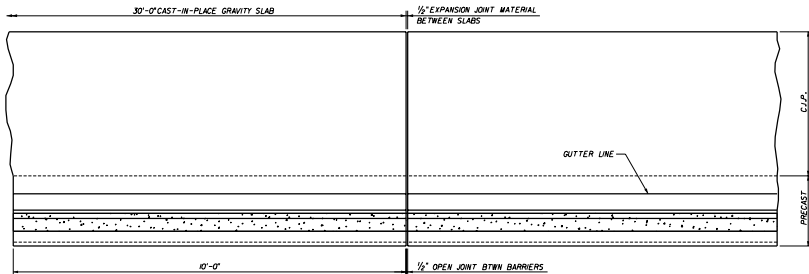
PRECASTER

DILCASTLE PRECAST, INC.
11625 TERRY STREET
JACKSONVILLE, FL 32218
PH: (904) 272-0900
FX: (904) 262-3000

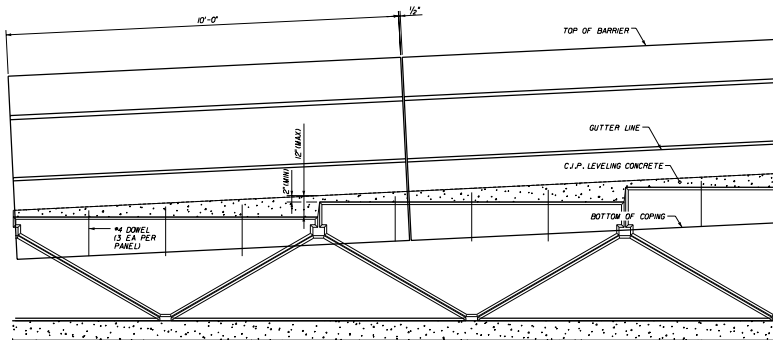
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
ROAD DESIGN

RETAINING WALL SYSTEM
THE NEEL COMPANY ISOGRID

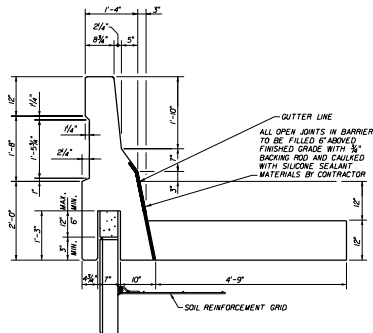
DESIGNED BY	DATE	APPROVED BY	DATE
JMC	10/01/06	[Signature]	10/01/06
DRAWN BY	DATE	CHECKED BY	DATE
GAH	10/01/06	JMC	10/01/06
CHECKED BY	DATE	NO.	SHEET NO.
JMC	10/01/06	00	6 of 20 5012



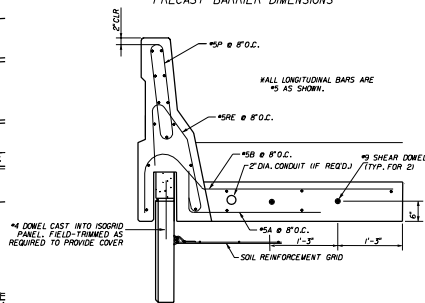
PART PLAN - PRECAST BARRIER



PART ELEVATION - PRECAST BARRIER



PRECAST BARRIER DIMENSIONS



PRECAST BARRIER REBAR

DESIGNER



THE NEEL COMPANY
2310 S. HARRIS LANE
SUNNYVALE, CALIFORNIA 95086
PH: (415) 913-1000
FX: (415) 913-1001

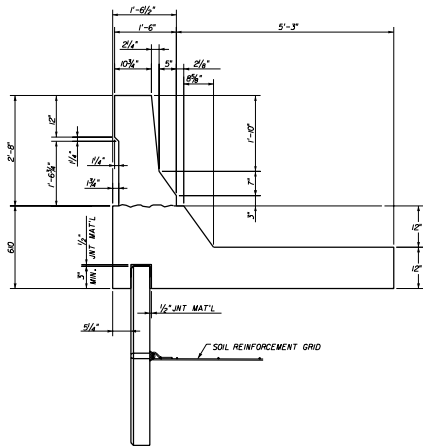
PRECASTER

OLDCASTLE PRECAST, INC.
13425 REDWOOD DRIVE
SAN DIEGO, CALIF. 92124
PH: (619) 578-2000
FX: (619) 513-1000

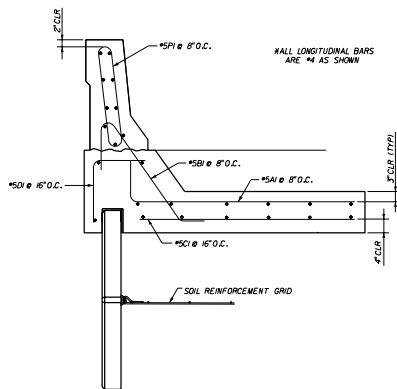
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
ROAD DESIGN

RETAINING WALL SYSTEM
THE NEEL COMPANY ISOGRID

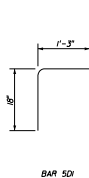
Revised	Drawn	Approved By
1/20/01	1/20/01	<i>W. J. [Signature]</i>
02A	02/01/01	STATE STRUCTURAL ENGINEER
1/20/01	02/01/01	REVIEWER
1/20/01	02/01/01	00 7 of 20 5012



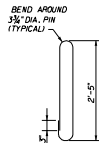
C.J.P. BARRIER AND C.J.P. JUNCTION SLAB DIMENSIONS



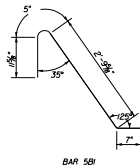
C.J.P. BARRIER AND C.J.P. JUNCTION SLAB REBAR



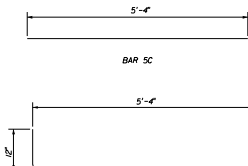
BAR 5DI



BAR 5PI



BAR 5BI



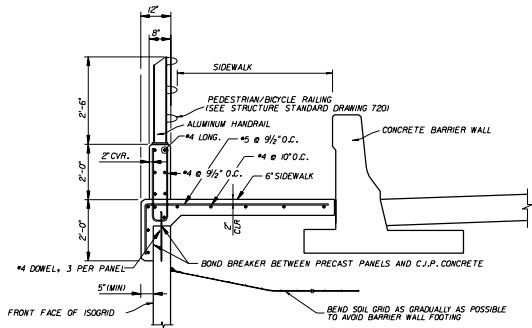
BAR 5A

C.J.P. BARRIER REBAR DETAILS

DESIGNER:
THE NEEL COMPANY
 2225 S. THUNDERBOLT LANE
 SPRING HILLS, ALABAMA 35120
 PH: (205) 912-3500
 FX: (205) 912-3525

PRECASTER:
OLDCASTLE PRECAST, INC.
 12841 130th STREET
 JACKSONVILLE, FL 32218
 PH: (904) 778-2900
 FX: (904) 778-2900

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROAD DESIGN			
RETAINING WALL SYSTEM THE NEEL COMPANY ISOGRID			
Designed By	JMC	Date	03/01/06
Drawn By	CAK	Checked By	WJH
Checked By	JMC	Date	03/01/06
		00	8 of 20
			5012



C.J.P. PARAPET DETAIL W/ HANDRAIL

DESIGNER:



THE NEEL COMPANY
 800 S. HARRIS LANE
 SUITE 100, FT. WORTH, TX 76102
 PH: (817) 312-7200
 FX: (817) 312-7229

PRECASTER:

OLDCASTLE PRECAST, INC.
 (844) 884-9767
 2400 W. ILL. ST., SUITE 200
 PH: (800) 378-2900
 FX: (800) 378-2900

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
 ROAD DESIGN

RETAINING WALL SYSTEM
 THE NEEL COMPANY ISOGRID

DESIGNED BY	DATE	APPROVED BY	SCALE	REVISION
JMC	10/01/06	<i>[Signature]</i>		
CAA	10/01/06			
JMC	10/01/06	00	9 of 20	5012

