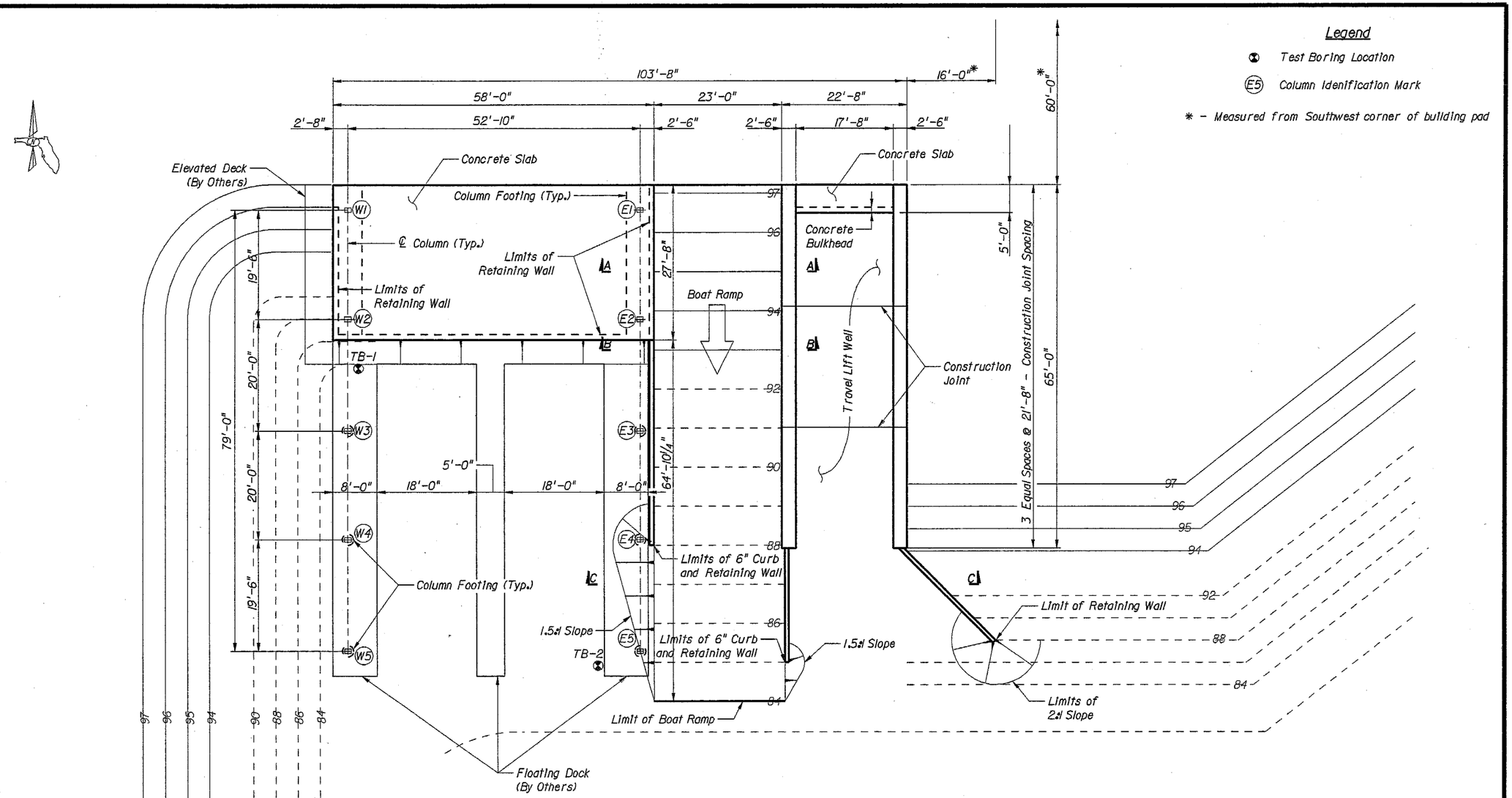



## Index of Sheets



Rodney G. Chamberlain 3/29/06

## Bar Callout Legend

8A2

Bar Size — Bar Mark

Bar Designation

| | | | |
|---|---|---|---|
| A | Travel Lift Walkway | F | Wall R2 |
| B | Footers F1 & F2 | G | Wall R3 |
| C | Footers F3 & F4 | H | Wall R4 |
| D | Bulkhead | I | Wall R5 |
| E | Wall R1 | J | Wall R6 |

REVISIONS

| DATE | BY | DESCRIPTION | DATE | BY | DESCRIPTION |
|---|---|---|---|---|---|
| | | | | | |

| | NAMES | DATES |
|---|---|---|
| DRAWN BY | R.G.C. | 03/06 |
| CHECKED BY | G.C.N. | 03/06 |
| DESIGNED BY | R.G.C. | 03/06 |
| CHECKED BY | G.C.N. | 03/06 |
| APPROVED BY | G. Craig Noon, P.E. | |

ENGINEER OF RECORD:

BOWYER-SINGLETON & ASSOCIATES, INCORPORATED
520 S. MAGNOLIA AVENUE - ORLANDO, FLORIDA 32801
FBPE CERTIFICATE OF AUTHORIZATION NO. 1221
ENGINEER OF RECORD: RODNEY G. CHAMBERLAIN P.E. NO. 53950

ORLANDO-ORANGE COUNTY EXPRESSWAY AUTHORITY

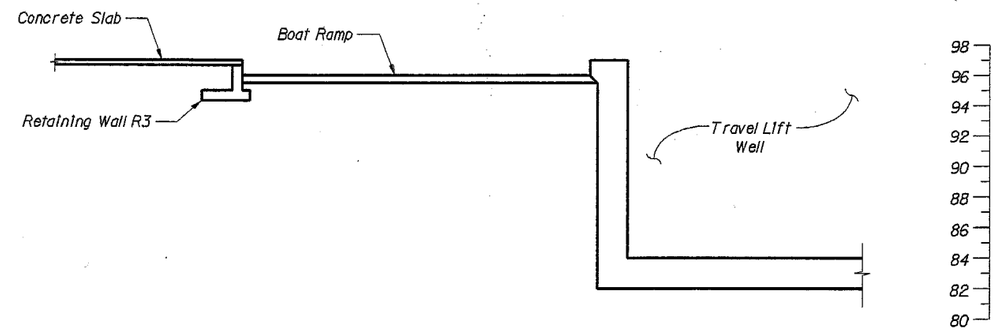
| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| 414 | ORANGE | |

SHEET TITLE: Project Plan Layout

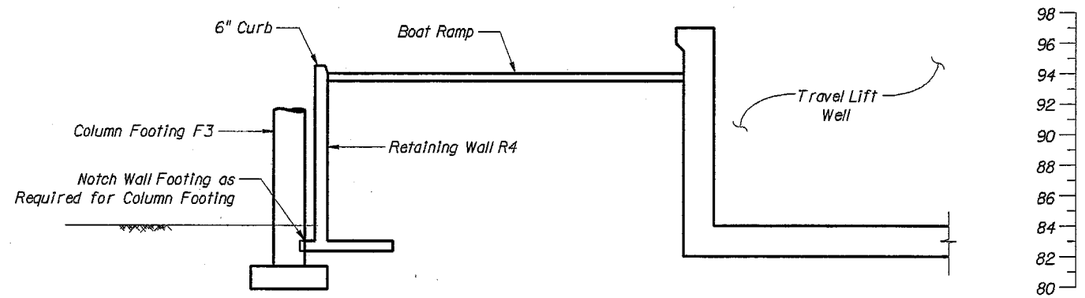
PROJECT NAME: Regal Marine Test Facility

SHEET NO. B-1

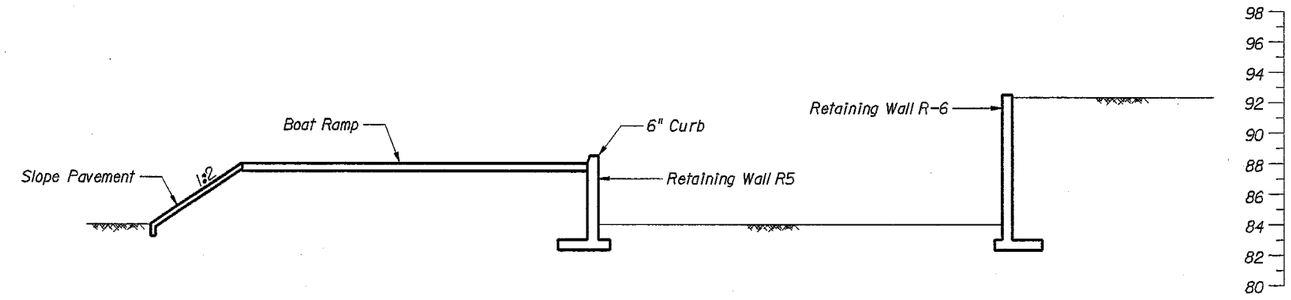
3/29/2006 10:20:57 e:\Land Development Jobs\C76\Struct\RegalPlan.dgn




Section A-A




Section B-B
(Floating Dock Not Shown for Clarity)




Section C-C

Rodney G. Chamberlain
3/29/06

3/29/2006

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| DATE | BY | DESCRIPTION | DATE | BY | DESCRIPTION |
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| | NAMES | DATES |
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| DRAWN BY | R.G.C. | 03/06 |
| CHECKED BY | G.C.N. | 03/06 |
| DESIGNED BY | R.G.C. | 03/06 |
| CHECKED BY | G.C.N. | 03/06 |
| APPROVED BY | G. Craig Noon, P.E. | |

ENGINEER OF RECORD:
BOWYER-SINGLETON & ASSOCIATES, INCORPORATED
520 S. MAGNOLIA AVENUE - ORLANDO, FLORIDA 32801
FIRM CERTIFICATE OF AUTHORIZATION NO. 1221
ENGINEER OF RECORD-RODNEY G. CHAMBERLAIN P.E. NO.-63950

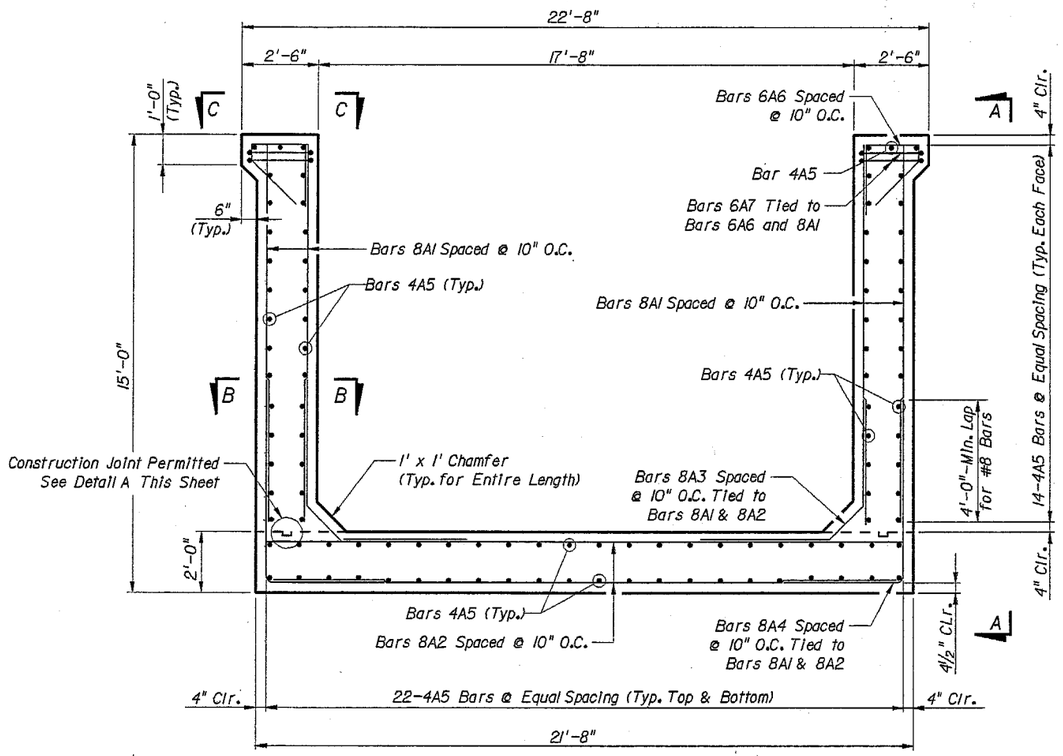
ORLANDO-ORANGE COUNTY EXPRESSWAY AUTHORITY

| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| 414 | ORANGE | |

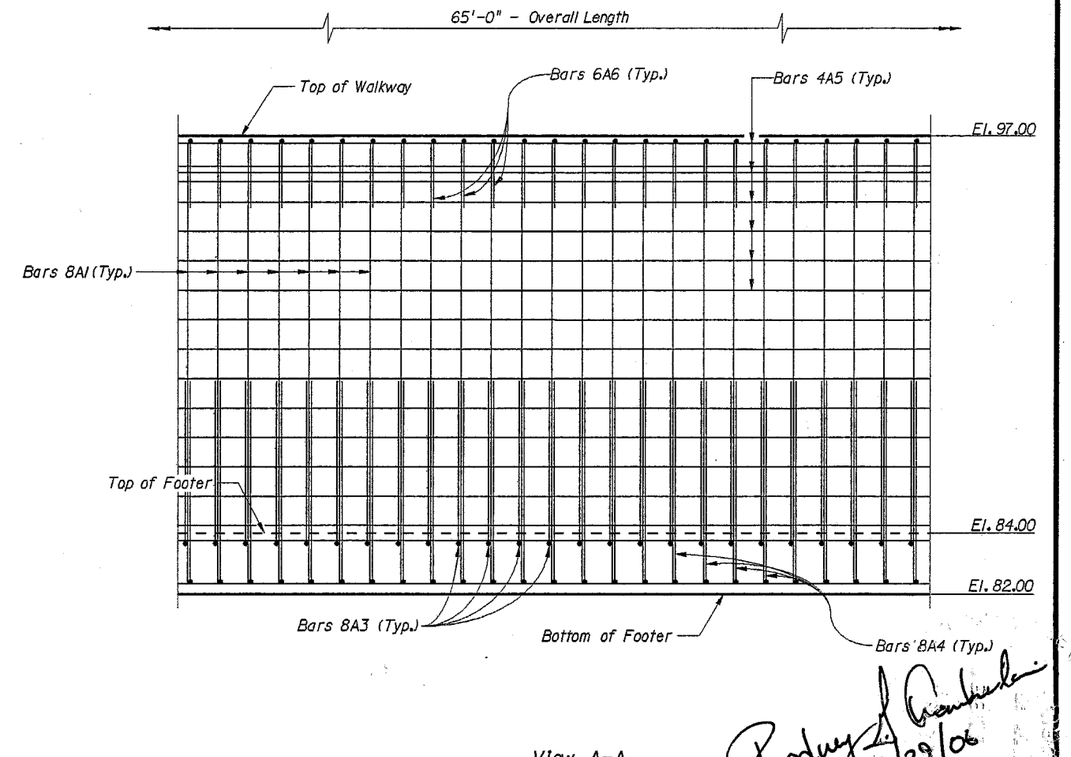
SHEET TITLE: Typical Sections

PROJECT NAME: Regal Marine Test Facility

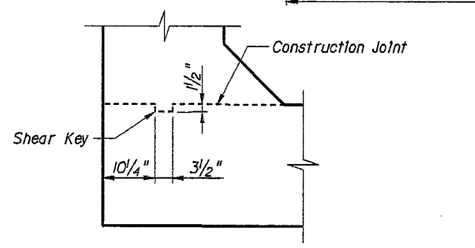
SHEET NO. B-2



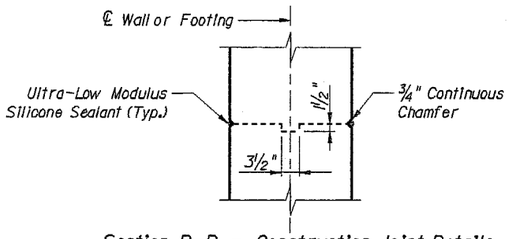

Typical Section




View A-A




Detail A

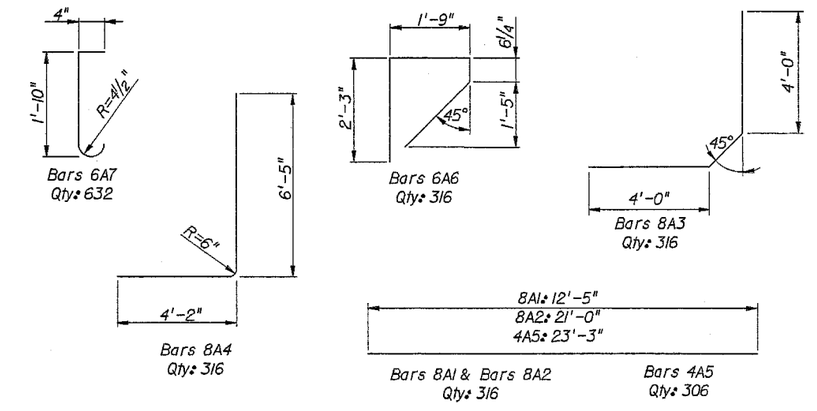



Section B-B - Construction Joint Details
(Reinforcement Not Shown For Clarity)

*Travel Lift Notes:*

1. *Use Class IV Concrete, f'c=5500psi*
   *Reinforcing steel: ASTM A-615 Grade 60 Fy=60ksi*
2. *Maintain 4" minimum clear concrete cover unless otherwise noted. Place ¾" chamfer at all corners.*
3. *Construction joints shall be made in separate pours with a minimum of 72 hours between consecutive pours of adjacent components. All chamfers of construction joints shall be continuous around entire perimeter of structure with the exception of bottom of footer. All Chamfers shall be sealed with an ultra-low modulus waterproof silicone sealant to be approved by the Engineer of Record. See construction joint detail this sheet for dimensions and plan sheet for locations.*
4. *Subgrade preparation beneath footer shall be carried out in accordance with the geotechnical report prepared by Professional Service Industries.*
5. *See sheet B-10 for view B-B and bulkhead details.*

## Bar Bending Diagram - Travel Lift Walkway




| REVISIONS | | | | | |
|---|---|---|---|---|---|
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| DRAWN BY | R.G.C. | 03/06 |
| CHECKED BY | G.C.N. | 03/06 |
| DESIGNED BY | R.G.C. | 03/06 |
| CHECKED BY | G.C.N. | 03/06 |
| APPROVED BY | G. Craig Noon, P.E. | |

ENGINEER OF RECORD:
BOWYER-SINGLETON & ASSOCIATES, INCORPORATED
920 S. MAGNOLIA AVENUE - ORLANDO, FLORIDA 32801
FBPE CERTIFICATE OF AUTHORIZATION NO. 1221
ENGINEER OF RECORD: RODNEY C. CHAMBERLAIN P.E. NO. 43590

ORLANDO-ORANGE COUNTY EXPRESSWAY AUTHORITY

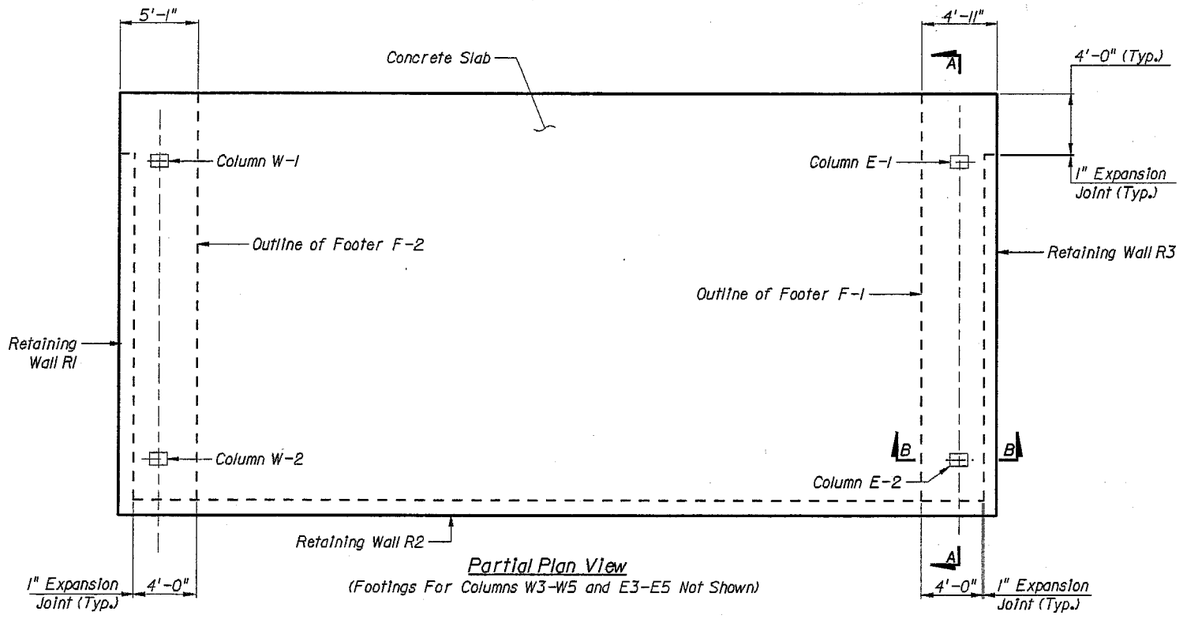
| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| 414 | ORANGE | |

SHEET TITLE: Travel Lift Walkway Details

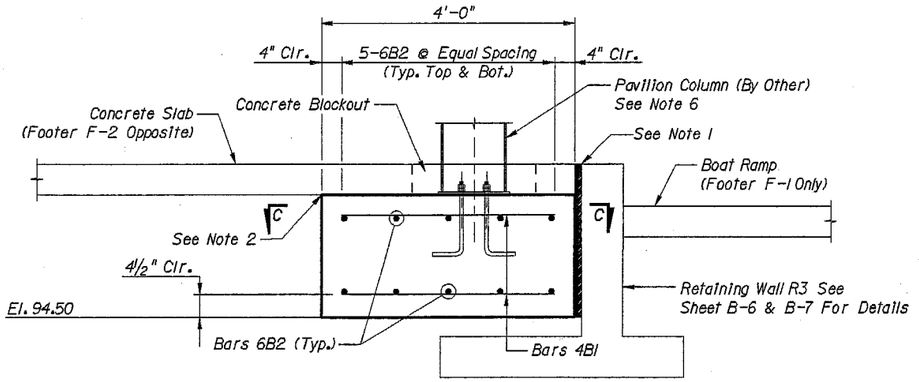
PROJECT NAME: Regal Marine Test Facility

SHEET NO. B-3

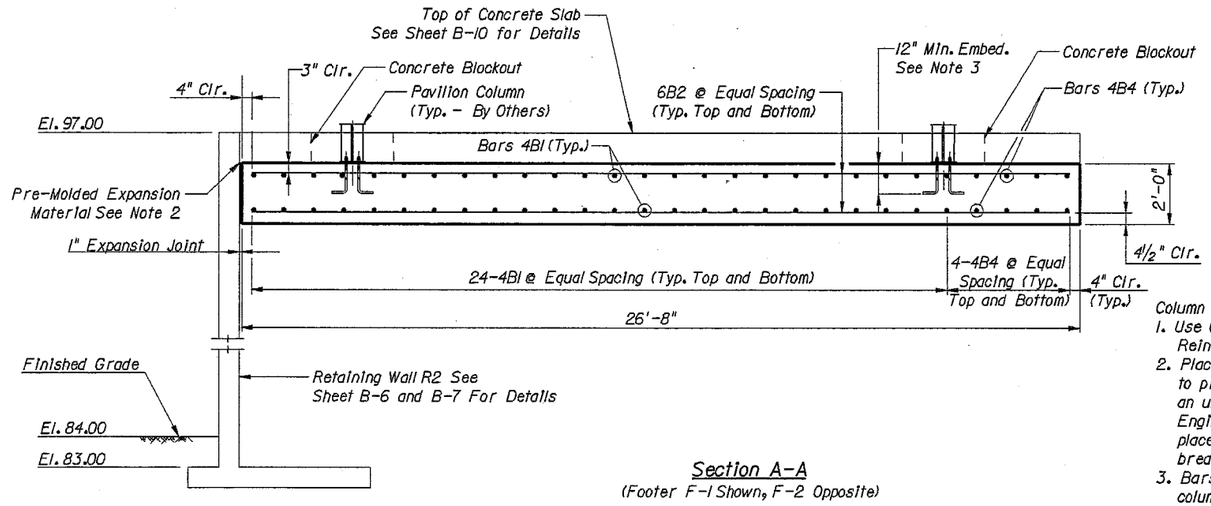
3/29/2006 10:23:24 e:\Land Development Jobs\2006\Struct\Travel Lift\Det.dgn



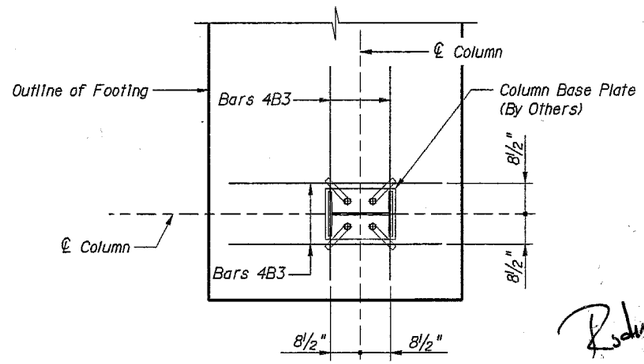

Partial Plan View
(Footings For Columns W3-W5 and E3-E5 Not Shown)




Section B-B
(Footer F-1 Shown)




Section A-A
(Footer F-1 Shown, F-2 Opposite)




Section C-C
(Footer Reinforcement Not Shown For Clarity)

Rodney C. Chamberlain 3/29/06

Column Footing Notes

1. Use Class IV Concrete, f'c=5500psi
   Reinforcing steel: ASTM A-615 Grade 60 Fy=60ksi
2. Place pre-molded expansion material at all Concrete-Concrete interfaces to provide a 1" expansion joint. Seal exposed side of expansion joint with an ultra low modulus waterproof silicone sealant to be approved by the Engineer of Record. Where Concrete Slab rests on top of footer, place 2 layers of 30# roofing paper to provide permenent bond break.
3. Bars 4B3 are to be placed below top mat of steel and centered around column base plate bolt pattern to the extent that concrete cover requirements are met.
4. Anchor bolts shall be embeded to a minimum of 12" plus 2½" projection above top of footing. Use ¾" Ø A36 J-bolts with double nuts at each location. See pavilion plans (by others) for bolt spacing pattern. Bottom legs of J-bolts should be turned outward as shown in Section C-C.
5. Bars 4B4 are to replace Bars 4B1 in that portion of footer extending beyond retianing wall R1 and R3.
6. Footing locations and dimensions shall be field-verified prior to steel fabrication.
7. Subgrade preparation beneath footer shall be carried out in accordance with the geotechnical report prepared by Professional Service Industries.

Total Rebar Quantities for Both Footers F1 & F2

| Bar | Length | Quantity |
|---|---|---|
| 4B1 | 3'-4" | 108 |
| 6B2 | 26'-0" | 20 |
| 4B3 | 3'-4" | 16 |
| 4B4 | 4'-3" | 16 |

REVISIONS

| DATE | BY | DESCRIPTION | DATE | BY | DESCRIPTION |
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| | NAME | DATE |
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| DRAWN BY | R.G.C. | 03/06 |
| CHECKED BY | G.C.N. | 03/06 |
| DESIGNED BY | R.G.C. | 03/06 |
| CHECKED BY | G.C.N. | 03/06 |
| APPROVED BY | G. Craig. Noon, P.E. | |

ENGINEER OF RECORD:
BOWYER-SINGLETON & ASSOCIATES, INCORPORATED
529 S. MAGNOLIA AVENUE - ORLANDO, FLORIDA 32801
EB# CERTIFICATE OF AUTHORIZATION NO. 1221
ENGINEER OF RECORD-RODNEY C. CHAMBERLAIN P.E. NO. 43990

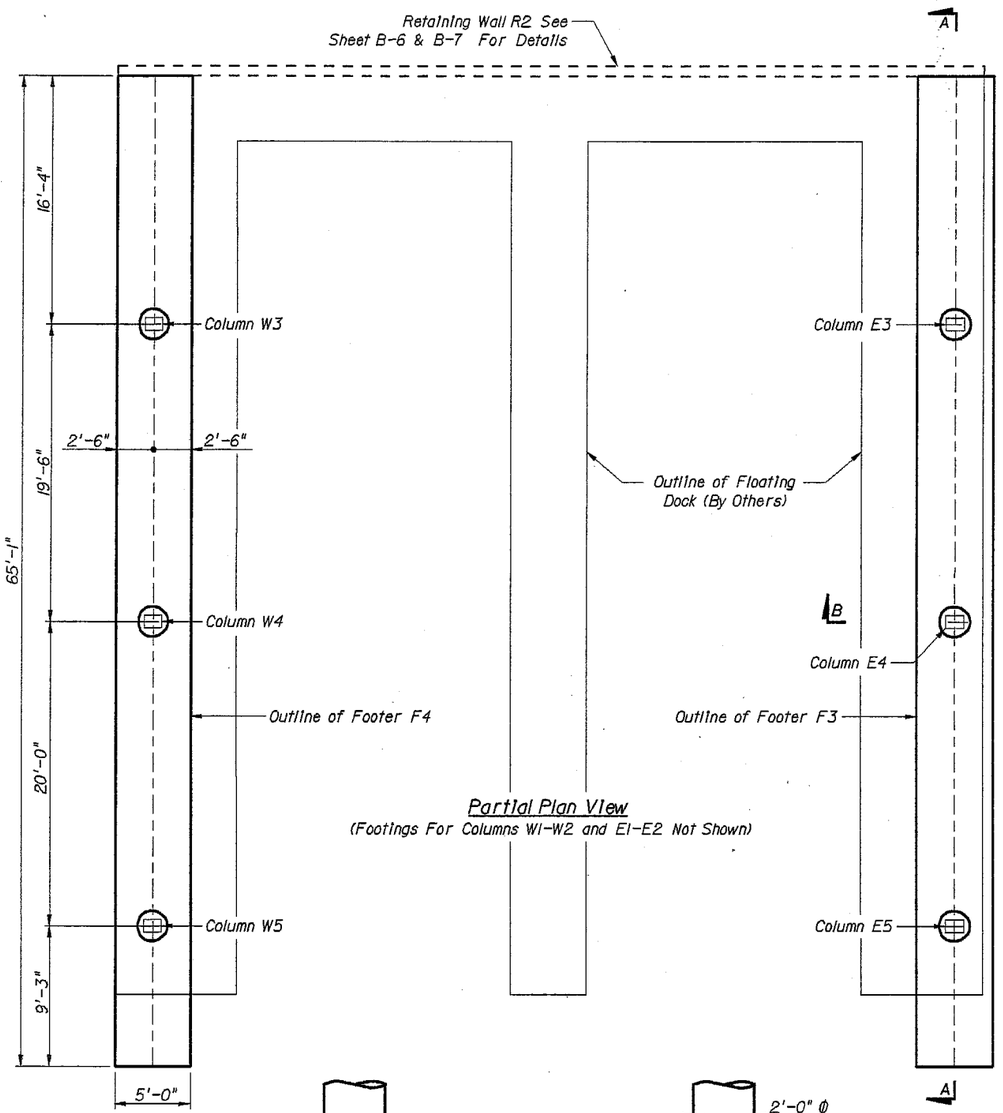
ORLANDO-ORANGE COUNTY EXPRESSWAY AUTHORITY

| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| 414 | ORANGE | |

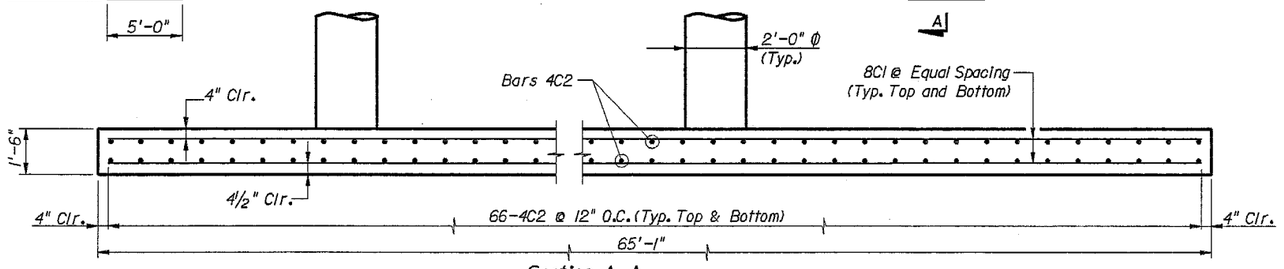
SHEET TITLE: Column Footing Details Sheet 1 of 2

PROJECT NAME: Regal Marine Test Facility

SHEET NO. B-4

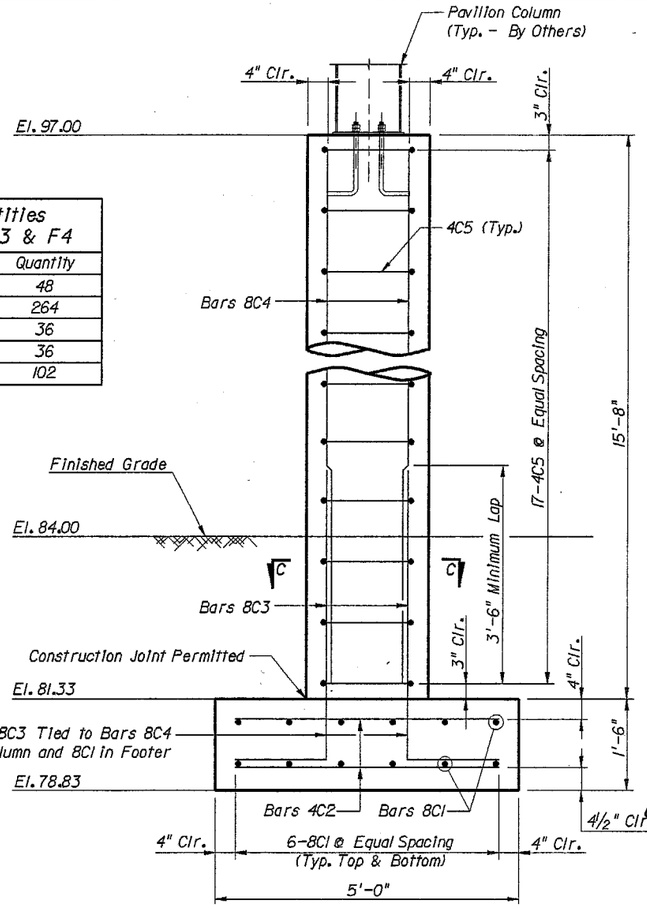



Partial Plan View
(Footings For Columns W1-W2 and E1-E2 Not Shown)

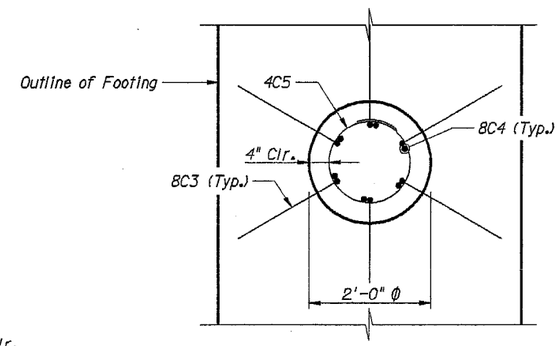



Section A-A
(Column Reinforcement Not Shown)

| Total Rebar Quantities for Both Footers F3 & F4 | | |
|---|---|---|
| Bar | Length | Quantity |
| 8C1 | 36'-3" | 48 |
| 4C2 | 4'-4" | 264 |
| 8C3 | 6'-10" | 36 |
| 8C4 | 15'-2" | 36 |
| 4C5 | 4'-10" | 102 |

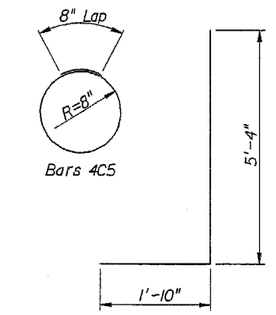



Section B-B




Section C-C
(Footer Reinforcing Not Shown)

Bar Bending Diagram




Rodney J. Chamberlain 3/29/06

| REVISIONS | | | | | |
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| DRAWN BY | R.G.C. | 03/06 |
| CHECKED BY | G.C.N. | 03/06 |
| DESIGNED BY | R.G.C. | 03/06 |
| CHECKED BY | G.C.N. | 03/06 |
| APPROVED BY | G. Craig Noon, P.E. | |

ENGINEER OF RECORD:
BOWYER-SINGLETON & ASSOCIATES, INCORPORATED
520 S. MAGNOLIA AVENUE - ORLANDO, FLORIDA 32801
FBPR CERTIFICATE OF AUTHORIZATION NO. 1221
ENGINEER OF RECORD: RODNEY C. CHAMBERLAIN P.E. NO. 43980

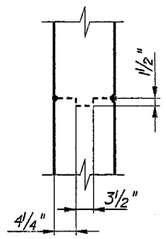
ORLANDO-ORANGE COUNTY EXPRESSWAY AUTHORITY

| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| 414 | ORANGE | |

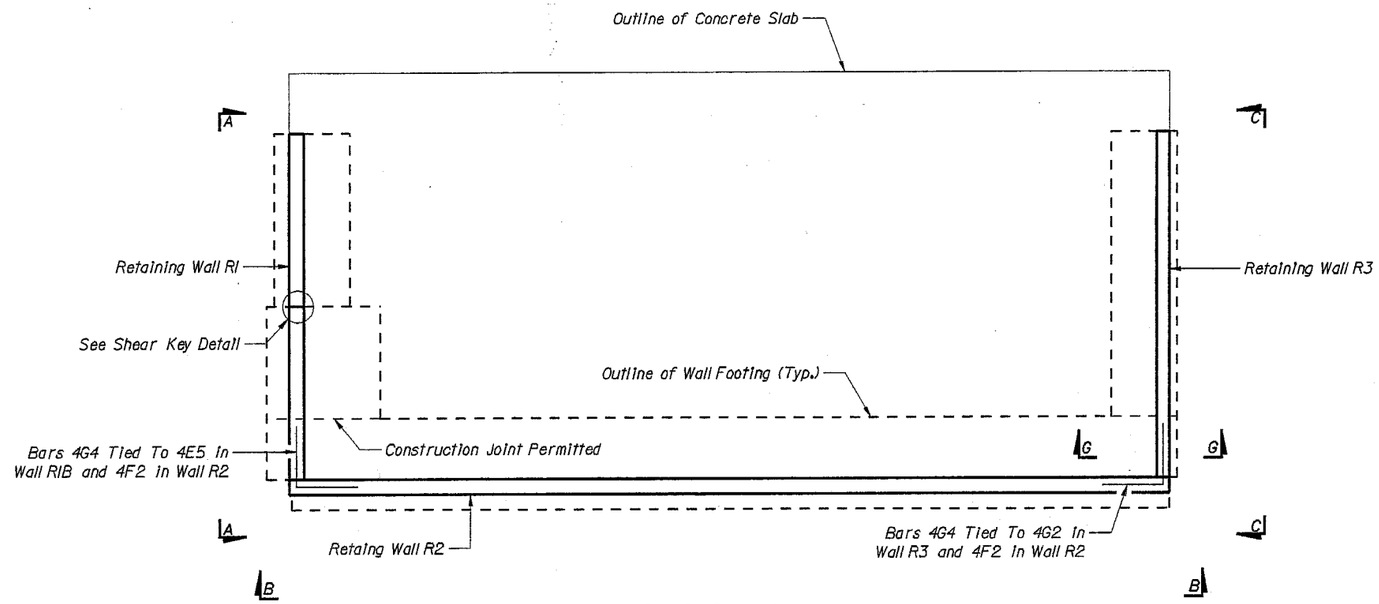
SHEET TITLE: Column Footing Details Sheet 2 of 2

PROJECT NAME: Regal Marine Test Facility

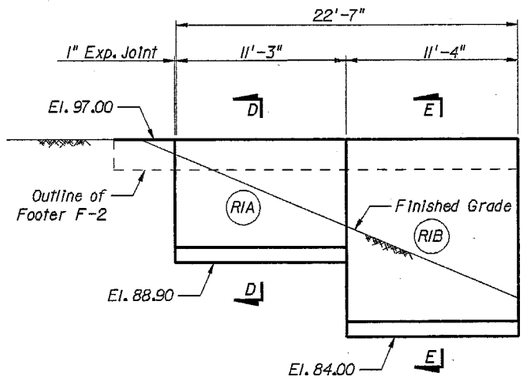
SHEET NO. B-5



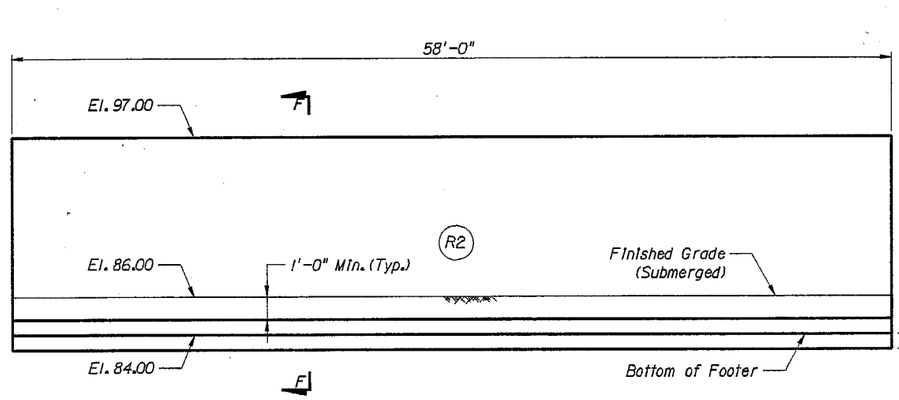

Shear Key Detail
(Construction Joint Similar)



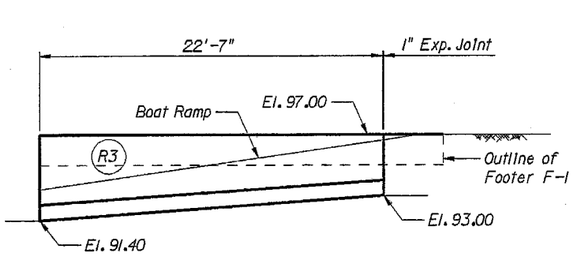

Partial Plan View




View A-A
(Wall R1 Elevation)




View B-B
(Wall R2 Elevation)




View C-C
Wall R3 Elevation

Wall Notes:
1. Use Class IV Concrete, f'c=5500psi
   Reinforcing steel: ASTM A-615 Grade 60 Fy=60ksi
2. For reinforcement details and Sections D-D, E-E, F-F and G-G, see sheet B-7 and B-9.
3. Minimum lap for #8 bars is 4'-0"; minimum lap for #4 bars is 2'-0".
4. Maintain 4" minimum clear concrete cover at all locations unless otherwise noted.
   Place ¾" Chamfer at all exposed edges.
5. Footing rebar at intersections of walls R1B & R2 and walls R3 & R2 should be placed so that minimum concrete cover is maintained at all locations.
6. Notch footing of wall R4 where required to accomodate Column Footing F3.
   Field bend and cut bars as required to maintain minimum cover requirements.
7. Place 6" curb on top of walls R4 and R5. See sheet B-10 for curb details.
8. Subgrade preparation beneath footers shall be carried out in accordance with the geotechnical report prepared by Professional Service Industries.

Rodney G. Chamberlain
3/29/06

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| DATE | BY | DESCRIPTION | DATE | BY | DESCRIPTION |
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| | NAMES | DATES |
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| DRAWN BY | R.G.C. | 03/06 |
| CHECKED BY | G.C.N. | 03/06 |
| DESIGNED BY | R.G.C. | 03/06 |
| CHECKED BY | G.C.N. | 03/06 |
| APPROVED BY | G. Craig Noon, P.E. | |

ENGINEER OF RECORD:
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529 S. MAGNOLIA AVENUE - ORLANDO, FLORIDA 32801
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ENGINEER OF RECORD-RODNEY G. CHAMBERLAIN P.E. NO. 61990

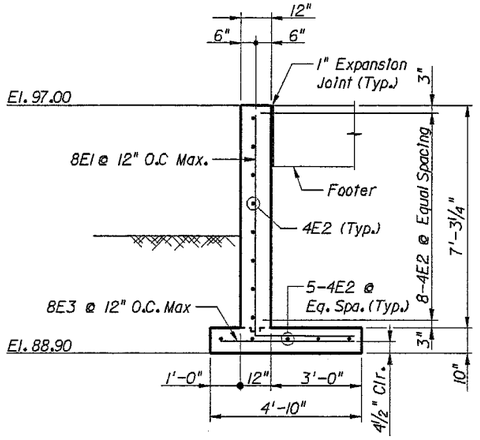
ORLANDO-ORANGE COUNTY EXPRESSWAY AUTHORITY

| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| 414 | ORANGE | |

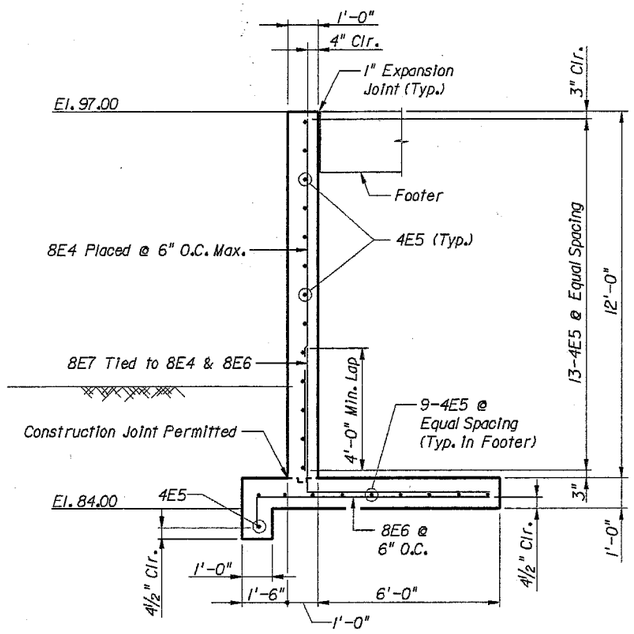
SHEET TITLE: Retaining Walls R1 Thru R3 Sheet 1 of 2

PROJECT NAME: Regal Marine Test Facility

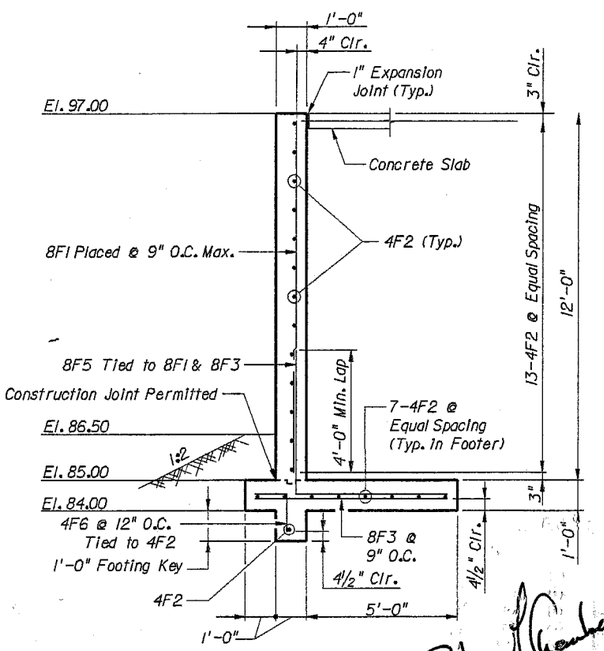
SHEET NO. B-6




Section D-D
(Wall R1A)

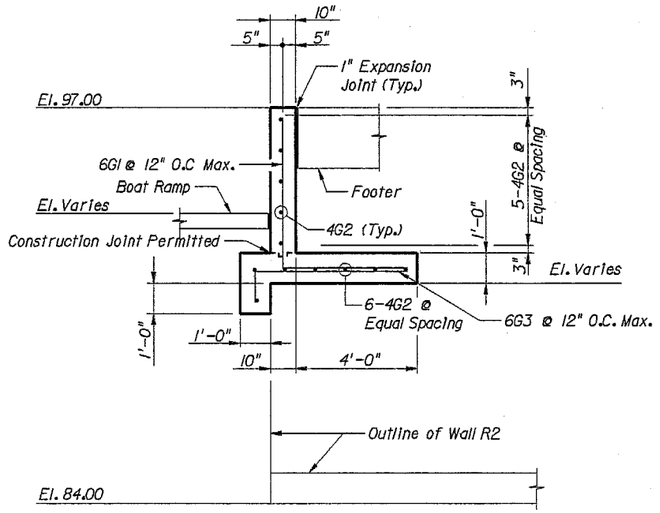



Section E-E
(Wall R1B)



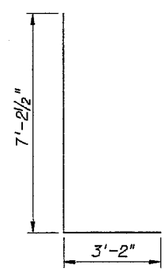

Section F-F
(Wall R2)

Rodney G. Chamberlain 3/29/06

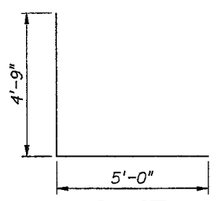



Section G-G
(Wall R3)

## Bar Bending Diagram - Retaining Walls R1 Thru R3




Bars 8E1
Qty: 12




Bars 8E7
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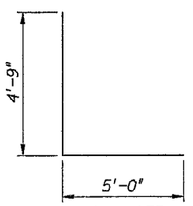
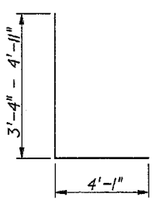
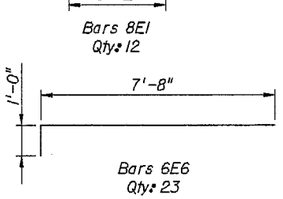



Bars 8F5
Qty: 78

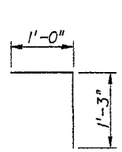



Bars 6G1
Qty: 23

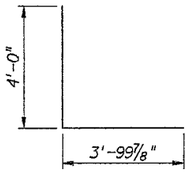
| Straight Bar Quantities For Walls R1 Thru R3 | | |
|---|---|---|
| Bar | Length | Quantity |
| 4E2 | 10'-7" | 13 |
| 8E3 | 4'-2" | 12 |
| 8E4 | 11'-6" | 23 |
| 4E5 | 10'-8" | 23 |
| 8F1 | 11'-6" | 78 |
| 4F2 | 30'-8" | 42 |
| 8F3 | 6'-4" | 78 |
| 4G2 | 21'-11" | 11 |




Bars 6E6
Qty: 23




Bars 4F6
Qty: 59

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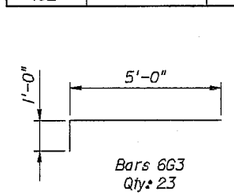
Qty: 18




Bars 6G3
Qty: 23

10/20141

3/29/2006

| REVISIONS | | | | | |
|---|---|---|---|---|---|
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| | NAMES | DATES |
|---|---|---|
| DRAWN BY | R.G.C. | 03/06 |
| CHECKED BY | G.C.N. | 03/06 |
| DESIGNED BY | R.G.C. | 03/06 |
| CHECKED BY | G.C.N. | 03/06 |
| APPROVED BY | G. Craig Noon, P.E. | |

ENGINEER OF RECORD:
BOWYER-SINGLETON & ASSOCIATES, INCORPORATED
520 S. MAGNOLIA AVENUE - ORLANDO, FLORIDA 32801
FIRM CERTIFICATE OF AUTHORIZATION NO. 1221
ENGINEER OF RECORD-RODNEY G. CHAMBERLAIN P.E. NO. 63990

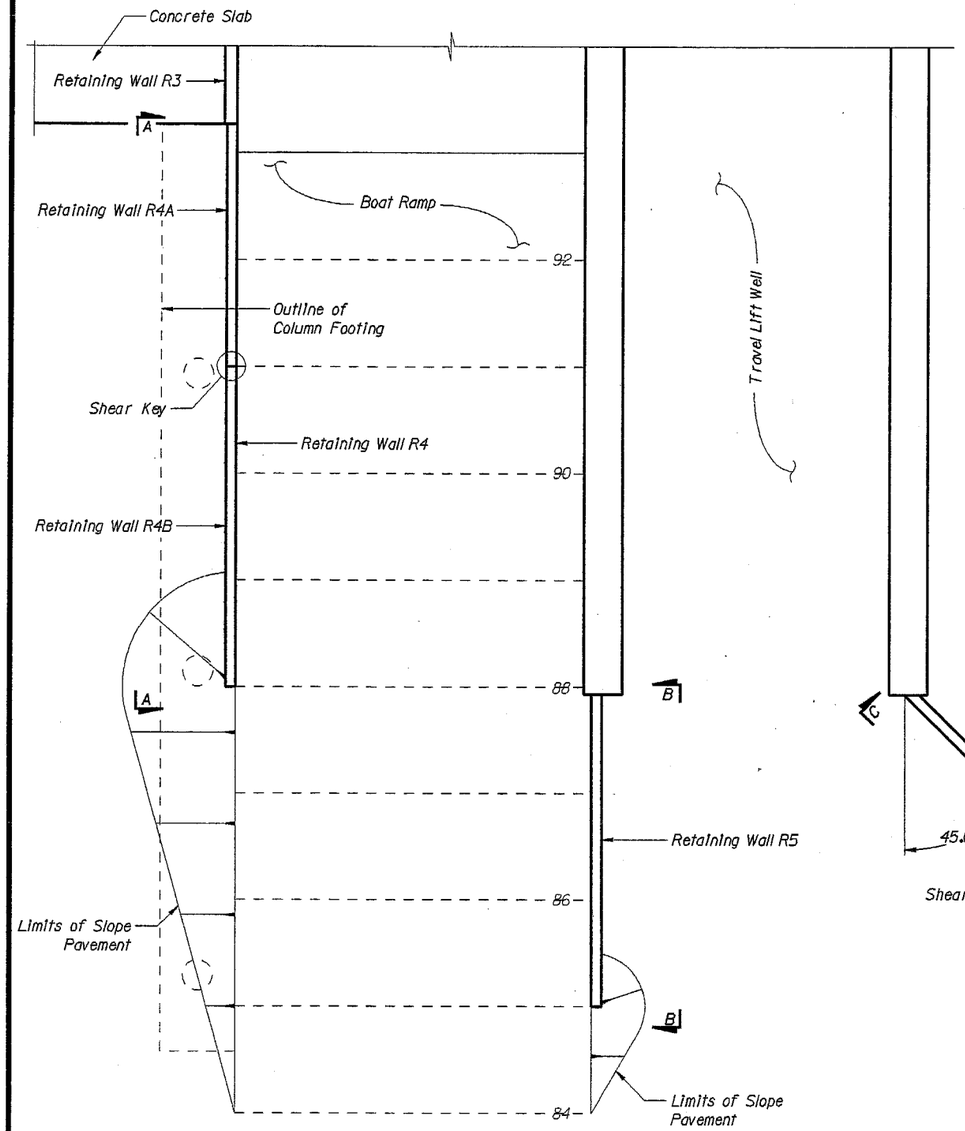
ORLANDO-ORANGE COUNTY EXPRESSWAY AUTHORITY

| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| 414 | ORANGE | |

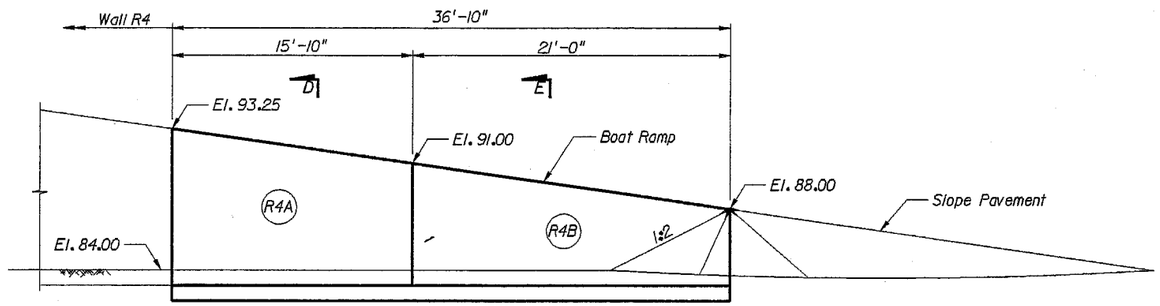
SHEET TITLE: Retaining Walls R1 Thru R3 Sheet 2 of 2

PROJECT NAME: Regal Marine Test Facility

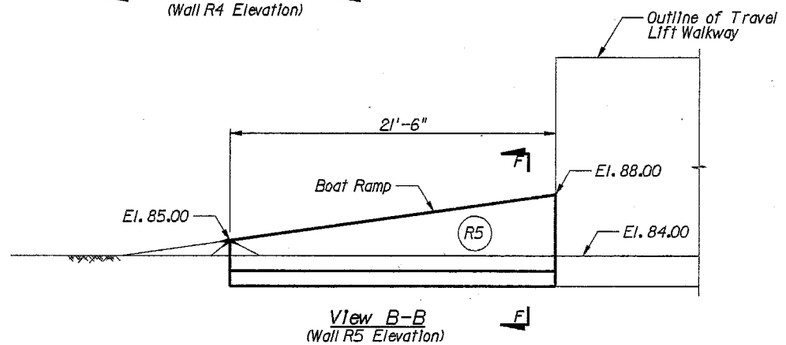
SHEET NO. B-7



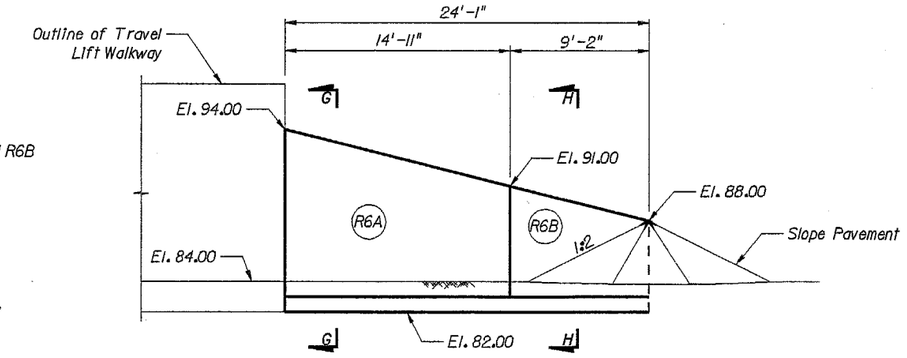

Partial Plan View




View A-A
(Wall R4 Elevation)




View B-B
(Wall R5 Elevation)




View C-C
(Wall R6 Elevation)

Robert G. Chamberlain 3/29/06

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| DATE | BY | DESCRIPTION | DATE | BY | DESCRIPTION |
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| CHECKED BY | G.C.N. | 03/06 |
| APPROVED BY | G. Craig Noon, P.E. | |

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FIRM CERTIFICATE OF AUTHORIZATION NO. 1221
ENGINEER OF RECORD-ROBERT G. CHAMBERLAIN P.E. NO. 63990

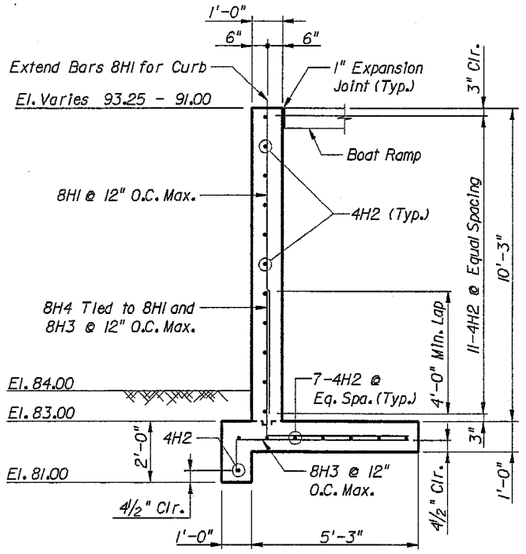
ORLANDO-ORANGE COUNTY EXPRESSWAY AUTHORITY

| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| 414 | ORANGE | |

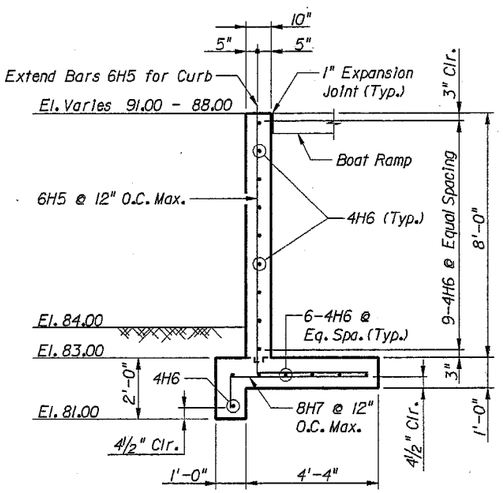
SHEET TITLE: Retaining Walls R4 Thru R6
Sheet 1 of 2

PROJECT NAME: Regal Marine Test Facility

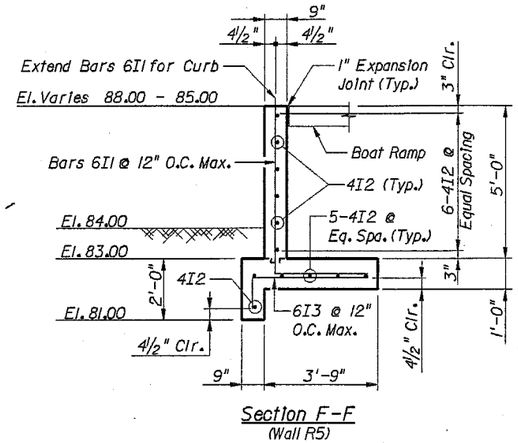
SHEET NO. B-8




Section D-D
(Wall R4A)

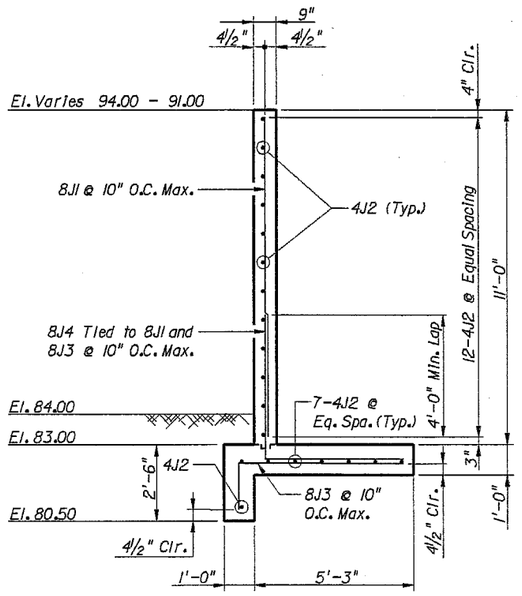



Section E-E
(Wall R4B)

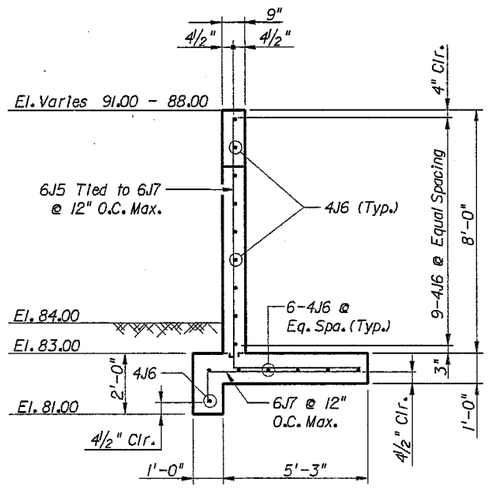



Section F-F
(Wall R5)

Rodney L. Chamberlain 3/29/06

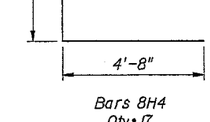



Section G-G
(Wall R6A)

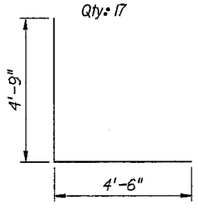



Section H-H
(Wall R6B)

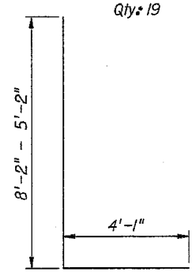
## Bar Bending Diagram - Retaining Walls R4 Thru R6



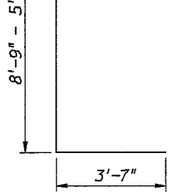

Bars 8H4
Qty: 17



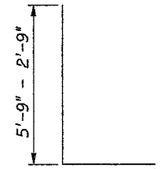

Bars 8J4
Qty: 19



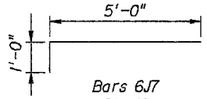

Bars 6J5
Qty: 10




Bars 6H5
Qty: 22



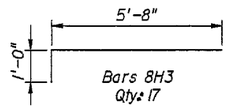

Bars 6I1
Qty: 22



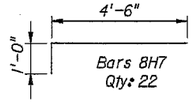

Bars 6J7
Qty: 10

### Straight Bar Quantities For Walls R4 Thru R6

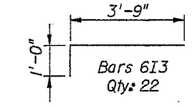
| Bar | Length | Quantity |
|---|---|---|
| 8H1 | 10'-3" - 8'-0" | 17 |
| 8H2 | 15'-3" | 19 |
| 4H6 | 20'-5" | 16 |
| 4I2 | 20'-10" | 12 |
| 8J1 | 10'-4" - 7'-4" | 19 |
| 4J2 | 14'-4" | 20 |
| 4J6 | 8'-7" | 16 |




Bars 8H3
Qty: 17




Bars 8H7
Qty: 22




Bars 6I3
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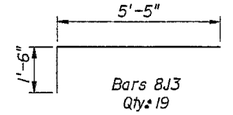


Bars 8J3
Qty: 19

10218.4

3/29/2006

| REVISIONS | | | | | |
|---|---|---|---|---|---|
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| APPROVED BY | G. Craig Noon, P.E. | |

ENGINEER OF RECORD:

BOWYER-SINGLETON & ASSOCIATES, INCORPORATED
520 S. MAGNOLIA AVENUE - ORLANDO, FLORIDA 32801
EB9% CERTIFICATE OF AUTHORIZATION No. 1221
ENGINEER OF RECORD-RODNEY L. CHAMBERLAIN P.E. No. 43990

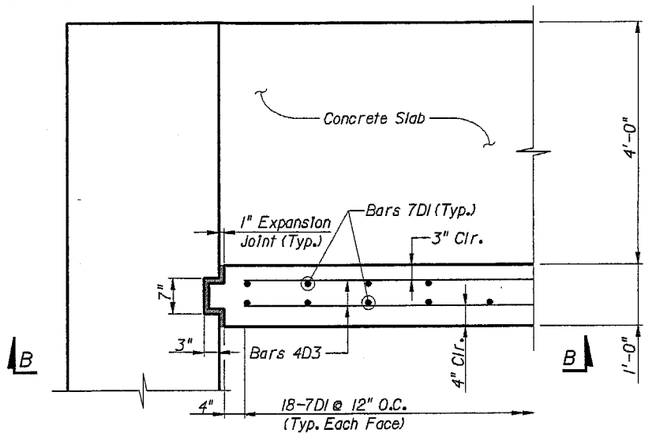
ORLANDO-ORANGE COUNTY EXPRESSWAY AUTHORITY

| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| 414 | ORANGE | |

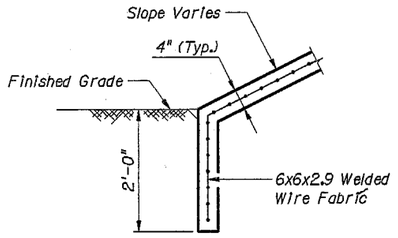
SHEET TITLE:
Retaining Walls R4 Thru R6
Sheet 2 of 2

PROJECT NAME:
Regal Marine Test Facility

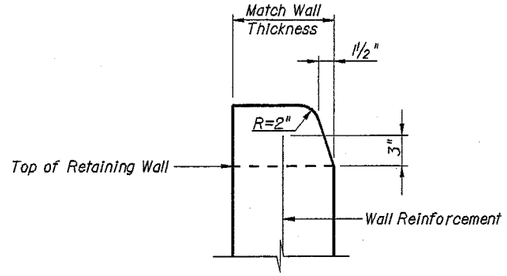
SHEET NO.
B-9



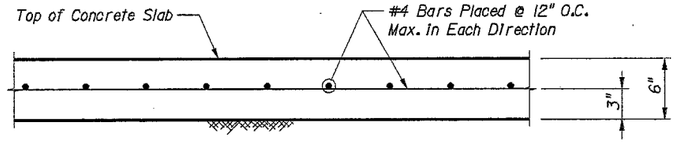

Partial Plan View



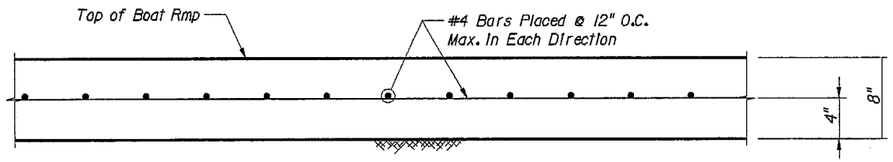

Slope Pavement Detial



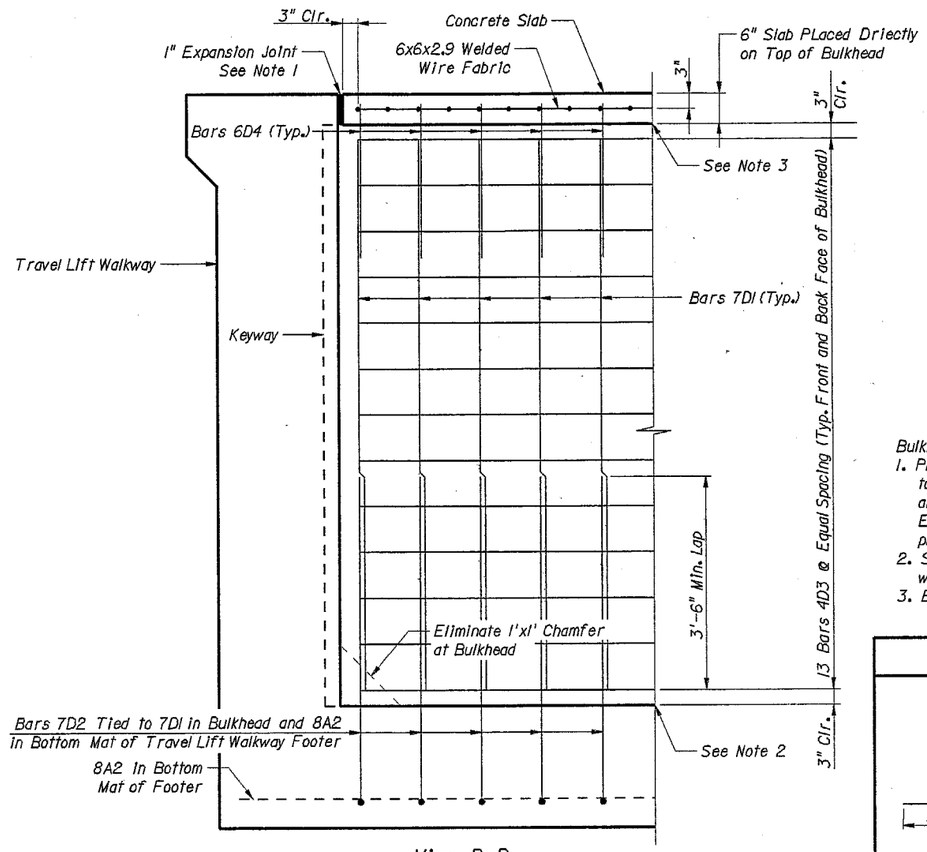

6" Curb Detail
(Located on Top of Walls R4 & R5)




Section Through Concrete Slab



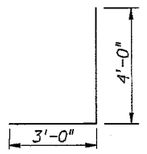

Section Through Boat Ramp




View B-B

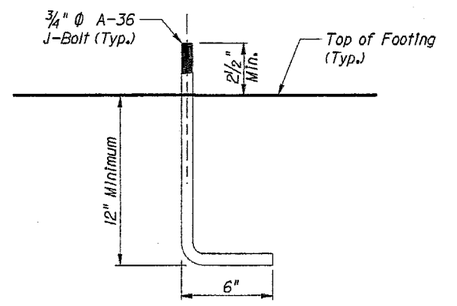
Bulkhead Notes:
1. Place pre-molded expansion material at all keyway interfaces to provide a 1" expansion joint. Seal exposed side of expansion joint with an ultra low modulus waterproof silicone sealant to be approved by the Engineer of Record. Where Concrete Slab rests on top of bulkhead, place 2 layers of 30# roofing paper to provide permenent bond break.
2. Subgrade preparation beneath slab and boat ramp shall be carried out in accordance with the geotechnical report prepared by Professional Service Industries.
3. Bars 6D4 shall be extended into slab a minimum of 3in.

Bar Bending Diagram and Quantities




Bars 7D2
Qty: 36

| Bar | Length | Quantity |
|---|---|---|
| 7D1 | 12'-6" | 36 |
| 4D3 | 17'-2" | 26 |
| 6D4 | 3'-4" | 36 |




Anchor Bolt Detail
(Anchor Bolts to be Cast-In-Place)

Rodney G. Chamberlain 3/29/06

| REVISIONS | | | | | |
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520 S. MAGNOLIA AVENUE - ORLANDO, FLORIDA 32801
FBPE CERTIFICATE OF AUTHORIZATION NO. 1221
ENGINEER OF RECORD-RODNEY G. CHAMBERLAIN P.E. NO.-63980

ORLANDO-ORANGE COUNTY EXPRESSWAY AUTHORITY

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| 414 | ORANGE | |

SHEET TITLE: Miscelaneous Details

PROJECT NAME: Regal Marine Test Facility

SHEET NO. B-10