CN RR CROSSING COMPRESSIVE PILE CAPACITIES,
SHOO-FLY SETTLEMENT ANALYSES
### Independent Technical Review

<table>
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<th>Lake Maurepas Diversion</th>
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<td>Project Location</td>
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<td>PM</td>
<td>Naveen Chilliara</td>
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<td>Project Number</td>
<td>10001876</td>
<td>PIC</td>
<td>Mike Patorno</td>
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(This section is to be completed by the Project Manager or the PM's Designee.)

**Assigned Reviewer:** Dwayne Smith  
**Comments Required by:** June 18, 2013

**Work Product Originator:** Ignacio Harrouch

**Work Product to be Reviewed:** Pile capacities

**Review Scope:** Check for technical completeness and applicability

**Specific Instructions:** Check for proper pile types, lengths, applicability, and report adequacy, validity, and completeness

**Submitted by:**  

**Project Manager Signature**  
9/30/13

(This Section is to be completed by the Reviewer.)

**Select:**

A. [X] Reviewer has no comments.

or

B. [ ] Comments have been provided on:
   - [ ] Marked directly on work product
   - [ ] Comment and Disposition Form 3-5
   - [ ] Other; Specify: Click to enter text.

**Reviewer Signature**  
6/18/2013

(If box B is checked above.)

(This section is to be completed by the Reviewer after verification of comment incorporation.)

**Select:**

C. [ ] Verification of comment incorporation has been performed by Reviewer. There are no outstanding issues.

or

D. [ ] Verification of comment incorporation has been performed by Reviewer. Unresolved issues have been submitted to the Project Manager or Designee for resolution.

and

E. [ ] Reviewer asserts that the work product ITR is complete.

**Reviewer Signature**

**Approval and Distribution**

[ ] ITR is complete.  
9/30/13

**Project Manager or Designee Signature**

**Distribution:**

- Project Central File – Quality File Folder
- Other – Specify: Enter names here.

Page 1 of 1
### Detail Check

<table>
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(This section is to be completed by the Project Manager or the PM's Designee.)

Assigned Checker: Graham Forsythe  
Comments Required by: June 18, 2013

Work Product Originator: Ignacio Harrouch
Work Product to be Checked: Pile capacities
☑ This Detail Check is a check for correctness, completeness and technical accuracy.
☐ This Detail Check is only a technical edit for format, spelling, grammar, pagination and readability.

Specific Instructions: Enter specific instructions for the work product.

Submitted by: ___________________________  
Project Manager Signature  
Date: ___________________________

This Section is to be completed by the Checker.

Select:
A. ☐ Checker has no comments.

or

B. ☐ Comments have been provided on:
   - [ ] Marked directly on work product
   - [ ] Comment and Disposition Form 3-5
   - [ ] Other: Specify: Discussed with originator

Checker Signature  
Date: 6/18/2013

(This section is to be completed by the Checker after verification of comment incorporation, if box B is checked off above.)

Select:
C. ☐ Verification of comment incorporation has been performed by Checker. There are no outstanding issues.

or

D. ☐ Verification of comment incorporation has been performed by Checker. Unresolved issues have been submitted to the Project Manager or Designee for final resolution.

and

E. ☐ Checker asserts that the work product review is complete.

Checker Signature  
Date: ___________________________

APPROVAL and DISTRIBUTION

☐ Detail Check is complete.

Project Manager or Designee Signature  
Date: ___________________________

Distribution:
- Project Central File – Quality File Folder
- Other – Specify: Enter names here.

Click here to enter a date.
### Project Information

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### Assigned Reviewer
- Dwayne Smith

### Work Product Information
- Work Product Originator: Mahendra Shewalla
- Work Product to be Reviewed: Settlement Analyses
- Review Scope: Review for technical accuracy and applicability
- Specific Instructions: Enter specific instructions for the work product.

### Comments
- **Select:**
  - [ ] Reviewer has no comments.
  - [ ] Comments have been provided on:
    - [ ] Marked directly on work product
    - [ ] Comment and Disposition Form 3-5
    - [ ] Other; Specify: Click to enter text.

### Verification
- **Select:**
  - [ ] Verification of comment incorporation has been performed by Reviewer. There are no outstanding issues.
  - [ ] Verification of comment incorporation has been performed by Reviewer. Unresolved issues have been submitted to the Project Manager or Designee for resolution.
  - [ ] Reviewer asserts that the work product ITR is complete.

### Approval and Distribution
- ITR is complete.

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<tr>
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| Distribution: |
- Project Central File – Quality File Folder
- Other – Specify: Enter names here.

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(This section is to be completed by the Project Manager or the PM's Designee.)

Assigned Checker: Chris LaFrosia  
Comments Required by: August 21, 2013

Work Product Originator: Mahendra Shewalla

Work Product to be Checked: Settlement Analyses

☐ This Detail Check is a check for correctness, completeness and technical accuracy.
☐ This Detail Check is only a technical edit for format, spelling, grammar, pagination and readability.

Specific Instructions: Enter specific instructions for the work product.

Submitted by: [Signature]
Date: 4/30/13

(This Section is to be completed by the Checker.)

Select:  
A. ☑ Checker has no comments.

or

B. ☐ Comments have been provided on:
   - ☐ Marked directly on work product
   - ☐ Comment and Disposition Form 3-5
   - ☐ Other Specify: Click here to enter text.

[Signature]
Date: 8-22-13

(This section is to be completed by the Checker after verification of comment incorporation, if box B is checked off above.)

Select:  
C. ☐ Verification of comment incorporation has been performed by Checker. There are no outstanding issues.

or

D. ☐ Verification of comment incorporation has been performed by Checker. Unresolved issues have been submitted to the Project Manager or Designee for final resolution.

and

E. ☐ Checker asserts that the work product review is complete.

[Signature]
Date: 

APPROVAL and DISTRIBUTION

☐ Detail Check is complete.

[Signature]
Date: 9/30/13

Click here to enter a date.

Distribution:
- Project Central File – Quality File Folder
- Other – Specify: Enter names here.
Shear Strength Plot - Canadian National Railroad

Shear Strength (psf)

Elevation (ft)

γ = 110 psf ; CH
γ = 107 psf ; CH
γ = 115 psf ; CH
γ = 115 psf ; CH

Nkt = 18

CPT-4
B-5
Proposed Strength Line
c/p=0.22
Notes:
1. Pile capacity curves represent axial resistance for a single pile and do not consider group effects.
2. Curves indicate Ultimate Capacity; the appropriate safety factors should be applied to arrive at the Allowable Capacity.

Required Safety Factors are:
3.0 for tension and compression w/o load test
2.0 for tension and compression with load test.

Coastal Protection and Restoration Authority
Lake Maurepas Diversion

Pile Capacities: Lake Maurepas - Canadian National Rail Road - 14 inch PPCP

Appendix G
Notes:
1. Pile capacity curves represent axial resistance for a single pile and do not consider group effects.
2. Curves indicate Ultimate Capacity; the appropriate safety factors should be applied to arrive at the Allowable Capacity.

Coastal Protection and Restoration Authority
Lake Maurepas Diversion
Pile Capacities: Lake Maurepas - Canadian National Rail Road - 16 inch PPCP
Notes:
1. Pile capacity curves represent axial resistance for a single pile and do not consider group effects.
2. Curves indicate Ultimate Capacity; the appropriate safety factors should be applied to arrive at the Allowable Capacity.
Notes:
1. Pile capacity curves represent axial resistance for a single pile and do not consider group effects.
2. Curves indicate Ultimate Capacity; the appropriate safety factors should be applied to arrive at the Allowable Capacity.

Required Safety Factors are:
- 3.0 for tension and compression w/o load test
- 2.0 for tension and compression with load test.

Pile Capacities: Lake Maurepas - Canadian National Rail Road - 20 inch PPCP
Notes:
1. Pile capacity curves represent axial resistance for a single pile and do not consider group effects.
2. Curves indicate Ultimate Capacity; the appropriate safety factors should be applied to arrive at the Allowable Capacity.
Difference in Consolidation Settlement and Time Rate Settlement of Embankment 1 and Embankment 2

Project No.: 10001863  August 2013  Lake Maurepas - Shoo Fly