




February 6, 2006

TO: Rosario Revilla/Adam Brown
Northwest Region, MS NB 82-75

FROM:  M. Allen/M. A. Frye
E&EP Geotechnical Division, 47365

SUBJECT: SR-90, MP 6.22 to 7.24, XL2423
Two Way Transit & HOV Operations, Stage 1
Retaining Wall 5
Revised Geotechnical Recommendations

This memorandum presents revised geotechnical recommendations for the design of Retaining Wall 5 associated with the subject project. Our November 22, 2005 memorandum provided recommendations for a Standard Plan Concrete Cantilever for Wall 5. We understand temporary shoring to construct Wall 5 would impact traffic on the existing ramp above Wall 5. To minimize impacts to traffic, we understand a cantilever soldier pile wall is now the preferred alternative for Wall 5.

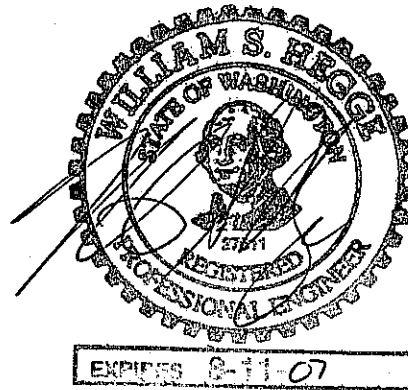
The attached earth pressure diagrams provide information for the design of Wall 5 and supplement our November 22, 2005 memorandum. We recommend a resistance factor of 0.75 be used for the passive earth pressure.

Rosario Revilla/Adam Brown

February 6, 2006

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If you have questions or require further information, please contact Tony Allen at (360) 709-5450 or Mark Frye at (360) 709-5469.



Prepared By:
Mark A. Frye
Geotechnical Designer

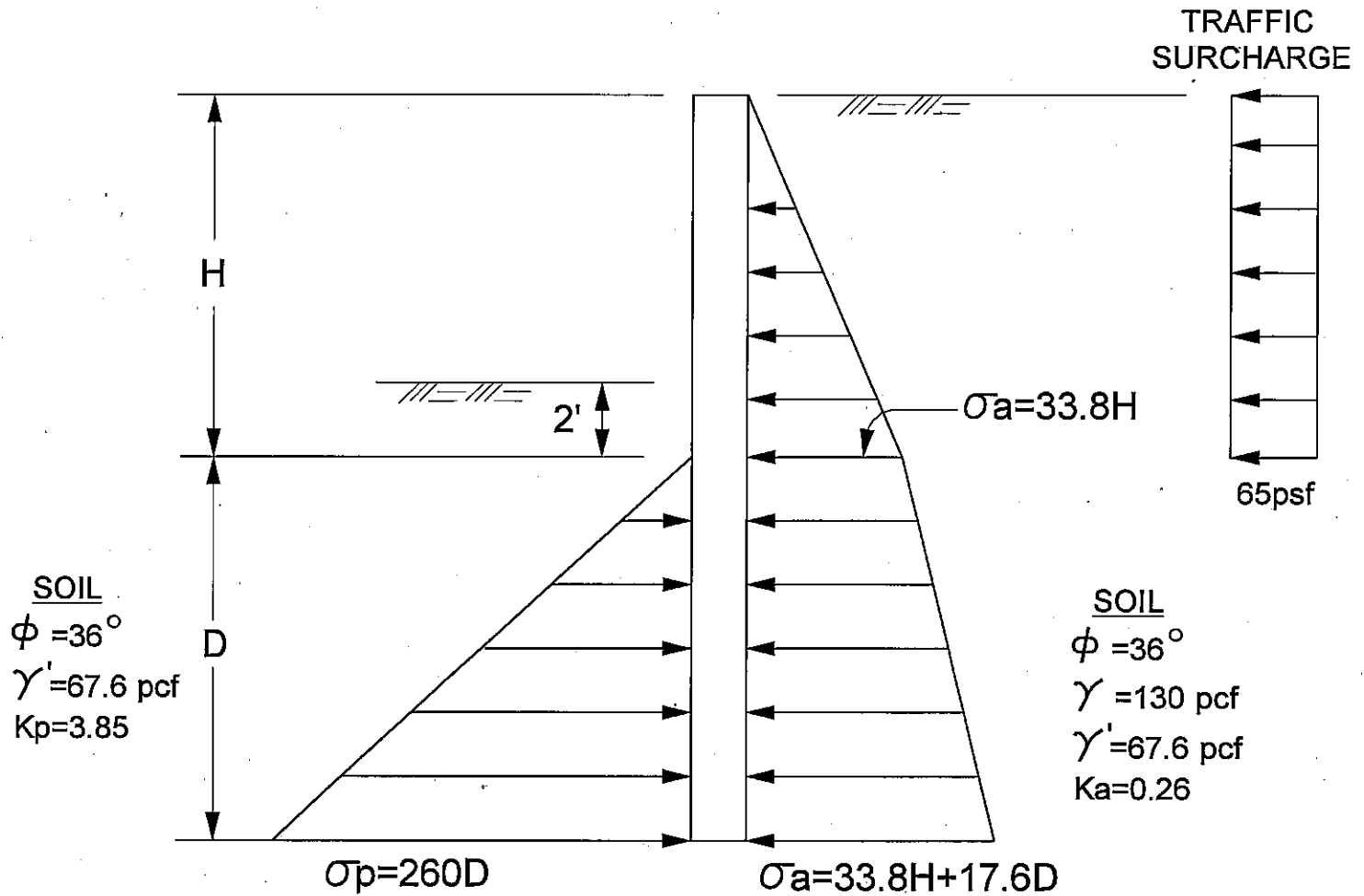
Reviewed By:
William S. Hegge
Senior Foundation Engineer

Agency Approval Authority:
Tony M. Allen
State Geotechnical Engineer

TMA/maf
Attachment: Figures

cc: Chris Johnson, Northwest Region Materials Engineer, MS NB 82-29
Munindra Talukdar, Bridge and Structures Office, MS 47340
Theresa D. McAuliffe, HNTB Corporation


Strength Limit State



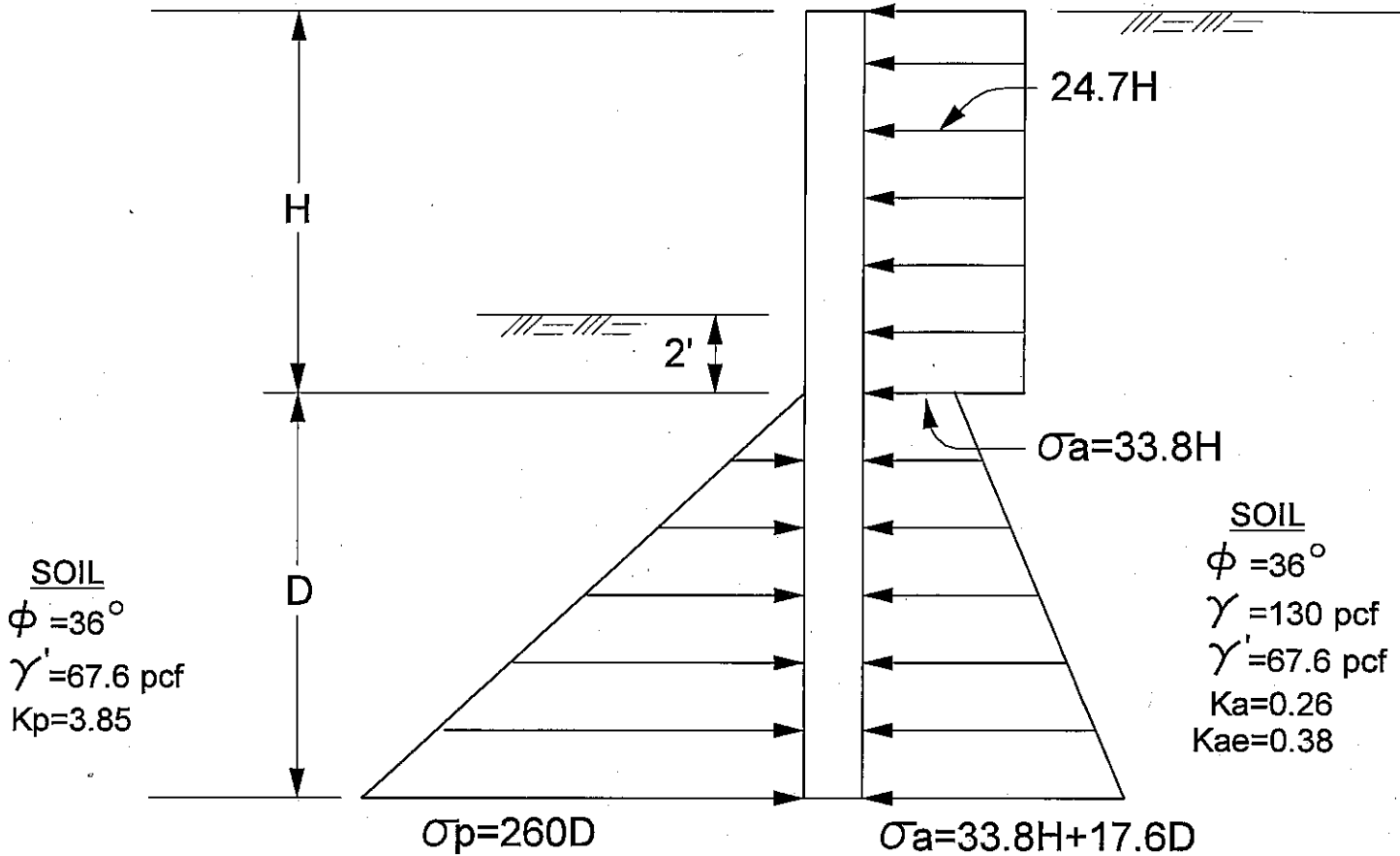
NOTES

- ① All pressures in psf.
- ② Passive pressures shown are unfactored.
- ③ Passive pressures should be applied over 3 pile diameters below the lagging.
- ④ Active pressures shown should be applied over 1 pile diameter below the lagging.

Figure 1: Earth Pressure Diagram
Walls 5

| | |
|---|--|
| JOB <u>XL-2423</u> S.R. <u>90</u> C.S. _____ LAYOUT _____ | |
| I-90 Two Way Transit & HOV Operations | |
|  WASHINGTON STATE DEPARTMENT OF TRANSPORTATION MATERIALS BRANCH T. E. BAKER MATERIALS ENGINEER | DATE <u>10/2005</u> |
| | SCALE <u>NOT TO SCALE</u> VERT. _____ HORIZ. _____ |
| | SHEET _____ OF _____ |
| | DRAWN BY <u>DWG</u> |


Extreme Limit State



NOTES

- ① All pressures in psf.
- ② Passive pressures shown are unfactored.
- ③ Passive pressures should be applied over 3 pile diameters below the lagging.
- ④ Active pressures shown should be applied over 1 pile diameter below the lagging.

Figure 2: Earth Pressure Diagram
Walls 5

| | |
|---|--------------------|
| JOB XL-2423 S.R. 90 C.S. LAYOUT | |
| I-90 Two Way Transit & HOV Operations | |
|  WASHINGTON STATE DEPARTMENT OF TRANSPORTATION MATERIALS BRANCH T. E. BAKER MATERIALS ENGINEER | DATE 10/2005 |
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