TH1/VT 11 WALL DESIGN AND CONSTRUCTION

12. THE EXISTING METAL BIN WALL SHALL BE REHABILITATED WITHIN THE LIMITS SHOWN ON THE PLANS.

13. AS SHOWN IN THE PLANS, THE REHABILITATED WALL SYSTEM SHALL CONSIST OF A CAST-IN-PLACE, REINFORCED CONCRETE WALL FACING PLACED DIRECTLY IN FRONT OF THE EXISTING METAL BIN WALL SECTIONS, SECURED TO THE EXISTING EMBANKMENT WITH PERMANENT TIEBACKS DRILLED THROUGH THE EXISTING WALL. TIEBACK LENGTHS, SPACING AND INCLINATION SHALL BE AS SHOWN IN THE PLANS.

14. THE FOLLOWING PARAMETERS WERE USED IN DESIGN:

FRICTION ANGLE (EXISTING SLOPE MATERIAL)	34°
UNIT WEIGHT OF SOIL BEHIND EXISTING BINWALLS	125 PCF
COHESION	100 PCF
GLOBAL SLOPE STABILITY SAFETY FACTOR	1.35
OVERTURNING STABILITY SAFETY FACTOR	2.0
SLIDING STABILITY FACTOR OF SAFETY	1.5
FACING FLEXURE FACTOR OF SAFETY	1.5
FACING PUNCHING SHEAR FACTOR OF SAFETY	1.5
ULTIMATE BOND STRENGTH (GROUT AND ROCK)	300 PSI
BOREHOLE DIA. SIZE	5 IN
ULTIMATE BOND STRENGTH FOR 5 INCH HOLE	56,550 LB/FT
ALLOWABLE TIEBACK PULLOUT RESISTANCE=QD	= 56,550 LB/FT / 3.0 (FS) = 18,850 LB/FT
ALLOWABLE STRESS (STEEL BAR) (FY = YIELD STRESS = 150 KSI)	0.6 Fpu
CONCRETE F'C	3,500 PSI
TIEBACK GROUT F'C	3,000 PSI MIN

15. TIEBACK INSTALLATION MAY BE DONE DURING WINTER MONTHS PROVIDED ADEQUATE MEASURES ARE TAKEN TO PREVENT FREEZING OF THE GROUT. HOWEVER, COLD WEATHER CONCRETE OPERATIONS WILL NOT BE ALLOWED ON ANY PORTION OF THE REINFORCED CONCRETE FACING, NEW RETAINING WALL, SIDEWALKS OR STEPS.

17. PROOF AND/OR PERFORMANCE TESTS WILL BE REQUIRED ON ALL TIEBACKS AND SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITION OF "RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS" AS PUBLISHED BY PTI (POST TENSIONING INSTITUTE). LOAD TESTING PROCEDURES SHALL BE SHOWN ON THE TIEBACK SHOP DRAWING. A MINIMUM OF TWO TIEBACKS SHALL BE PERFORMANCE TESTED. AT LEAST ONE TEST SHALL BE PERFORMED AT THE START OF THE PROJECT. TEST LOCATION SHALL BE SELECTED IN CONSULTATION WITH THE ENGINEER TO EVALUATE CONDITIONS ALONG THE LENGTH OF THE WALL.
ALL REMAINING TIEBACKS SHALL BE PROOF LOAD TESTED TO 1.33 TIMES THE DESIGN LOAD. TIEBACKS FAILING TO MEET THE REQUIRED PROOF LOADING SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

24. CONCRETE FOR WALL FACING AND FOOTING SHALL BE HIGH PERFORMANCE CLASS B AND SHALL BE PAID FOR UNDER ITEM 501.34, "CONCRETE, HIGH PERFORMANCE CLASS B".

VALUE ENGINEERING REDESIGN
OF WALL 2 PREPPARED BY
GEODESIGN, INC. 3-16-05

GEODESIGN INCORPORATED
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TIEBACK NOTES

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00b124\structures\sbl24pn.l
PROJECT MANAGER: W. FRANK
DESIGNED BY: M. HARIHARAN
PLOT DATE: 3/16/05
DRAWN BY: D. FRANK
CHECKED BY: W. FRANK
SHEET 44A OF 72

...\752-22 notes REVISED 3-16-05.dgn