HDR Engineering, Inc. of the Carolinas 3733 National Drive, Suite 207 Raleigh, N.C. 27612 N.C.B.E.L.S. License Number: F-0116

NOTES FOR TEMPORARY SHORING No. 4

AT THE CONTRACTOR'S OPTION, USE A 1.5:1 (H:V) OR FLATTER FILL SLOPE OR TEMPORARY SHORING FOR UTILITY INSTALLATION FROM STATION -L- 33+75 ±, 16.0 FT RIGHT.

FOR TEMPORARY SHORING, AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROJECT SPECIAL PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -L- $33+75\pm$, 16.0 FT RIGHT, TO STATION -L- $34+53\pm$, 16.0 FT RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF FRICTION ANGLE (ϕ) = 30 DEGREES COHESION (c) = 0 LB/SF GROUNDWATER ELEVATION = 92.0 FT ±

DO NOT USE CANTILEVER, BRACED, OR ANCHORED SHORING FOR TEMPORARY SHORING FROM STATION -L- 33+75 ±, 16.0 FT RIGHT, TO STATION -L- 34+53 ±, 16.0 FT RIGHT.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 33+75 ±, 16.0 FT RIGHT, TO STATION -L- 34+53 ±, 16.0 FT RIGHT. SEE STANDARD DETAIL NUMBER 1801.02 FOR STANDARD TEMPORARY WALLS.

WHEN BACKFILL FOR RETAINING WALLS OVERLAPS WITH THE REINFORCED ZONE OF TEMPORARY WALLS, USE SHORING BACKFILL OR BACKFILL MATERIAL REQUIRED FOR RETAINING WALLS, WHICHEVER IS BETTER, IN THE REINFORCED ZONE OF TEMPORARY WALLS.

THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT.

THE DOCUMENT WAS SUBMITTED TO THE WZTC SECTION ON 07/22/2015

AND SEALED BY A PROFESSIONAL ENGINEER, JINYOUNG PARK, LICENSE # 032171.

NOTES FOR TEMPORARY SHORING No. 5

FOR TEMPORARY SHORING, AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROJECT SPECIAL PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -L- $35+50 \pm 17.5 \text{ FT}$ RIGHT, TO STATION -L- $36+50 \pm 17.5 \text{ FT}$ RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (?) = 120 LB/CF FRICTION ANGLE (ϕ) = 30 DEGREES COHESION (c) = 0 LB/SF GROUNDWATER ELEVATION = 90.0 FT ±

DO NOT USE A TEMPORARY WALL FOR FOR TEMPORARY SHORING FROM STATION -L- 35+50 ±, 17.5 FT RIGHT, TO STATION -L- 36+50 ±, 17.5 FT RIGHT.

NOTES FOR TEMPORARY SHORING No. 6

FOR TEMPORARY SHORING, AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROJECT SPECIAL PROVISION.

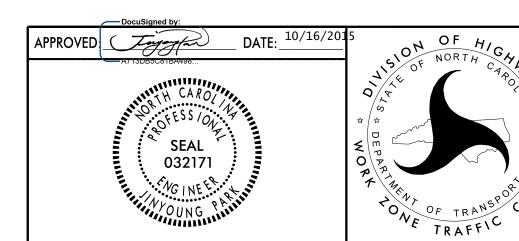
BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -L- 35+64 ±, 16.0 FT RIGHT, TO STATION -L- 36+50 ±, 16.0 FT RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF FRICTION ANGLE (ϕ) = 30 DEGREES COHESION (c) = 0 LB/SF GROUNDWATER ELEVATION = 90.0 FT ±

DO NOT USE CANTILEVER, BRACED, OR ANCHORED SHORING FOR TEMPORARY SHORING FROM STATION -L- 35+64 ±, 16.0 FT RIGHT, TO STATION -L- 36+50 ±, 16.0 FT RIGHT.

WHEN BACKFILL FOR RETAINING WALLS OVERLAPS WITH THE REINFORCED ZONE OF TEMPORARY WALLS, USE SHORING BACKFILL OR BACKFILL MATERIAL REQUIRED FOR RETAINING WALLS, WHICHEVER IS BETTER, IN THE REINFORCED ZONE OF TEMPORARY WALLS.



TEMPORARY SHORING DATA