# STANDARD SOLDIER PILE WALL NOTES ON PLANS (10-19-21)

(Instructions for use are in parentheses after each note, if applicable and choices are in italics.)

FOR SOLDIER PILE RETAINING WALLS, SEE SOLDIER PILE RETAINING WALLS PROVISION.

FOR STEEL BEAM GUARDRAIL, SEE ROADWAY PLANS AND SECTION 862 OF THE STANDARD SPECIFICATIONS.

FOR SINGLE FACED PRECAST CONCRETE BARRIER, SEE ROADWAY PLANS AND SECTION 857 OF THE STANDARD SPECIFICATIONS.

A CONCRETE BARRIER RAIL WITH MOMENT SLAB IS REQUIRED ABOVE RETAINING WALL NO. \_\_\_\_. SEE PLANS FOR CONCRETE BARRIER RAIL WITH MOMENT SLAB DETAILS. (When using this note, add a concrete barrier rail with moment slab plan sheet from the geotechnical design cell library to the wall plans.)

A FENCE OR HANDRAIL IS REQUIRED ON TOP OF RETAINING WALL NO. \_\_\_\_. SEE ROADWAY PLANS FOR FENCE OR HANDRAIL ATTACHMENT DETAILS. (Use this note for fences or handrails attached to only soldier pile walls with concrete facing. Per Roadway Design Policy, fences or handrails should not be attached to soldier pile walls with coping.)

DRILLED-IN H-PILES ARE REQUIRED FOR RETAINING WALL NO. \_\_\_\_. (Use this note to prohibit driven piles for soldier pile walls.)

AT THE CONTRACTOR’S OPTION, USE DRIVEN H-PILES FOR RETAINING WALL NO. \_\_\_\_. (Use this note to allow driven piles for soldier pile walls with panels.)

USE A SOLDIER PILE RETAINING WALL WITH PRECAST CONCRETE PANELS THAT MEET SECTION 1077 OF THE STANDARD SPECIFICATIONS FOR RETAINING WALL NO. \_\_\_\_.

AN EXPOSED AGGREGATE FINISH THAT MEETS ARTICLE 1077-12 OF THE STANDARD SPECIFICATIONS IS REQUIRED FOR PRECAST CONCRETE PANELS FOR RETAINING WALL NO. \_\_\_\_.

PAINT GALVANIZED H-PILES *GRAY or BLACK* IN ACCORDANCE WITH ARTICLE 442-13 OF THE STANDARD SPECIFICATIONS FOR RETAINING WALL NO. \_\_\_\_.

USE A SOLDIER PILE RETAINING WALL WITH A CIP REINFORCED CONCRETE FACE FOR RETAINING WALL NO. \_\_\_\_.

A \_\_\_\_\_\_\_\_\_\_\_\_ ARCHITECTURAL FINISH IS REQUIRED FOR *PRECAST CONCRETE PANELS or THE CIP REINFORCED CONCRETE FACE* FOR RETAINING WALL NO. \_\_\_\_.

A BRICK VENEER IS REQUIRED FOR RETAINING WALL NO. \_\_\_\_ AS SHOWN. SUBMIT BRICK SAMPLES FOR APPROVAL BEFORE BEGINNING SOLDIER PILE WALL CONSTRUCTION.

BEFORE BEGINNING SOLDIER PILE WALL DESIGN FOR RETAINING WALL NO. \_\_\_\_, SURVEY WALL LOCATION AND SUBMIT A REVISED WALL PROFILE VIEW (WALL ENVELOPE) FOR REVIEW. DO NOT START WALL DESIGN OR CONSTRUCTION UNTIL THE REVISED WALL ENVELOPE IS ACCEPTED.

DESIGN RETAINING WALL NO. \_\_\_\_ FOR THE FOLLOWING:

1. DESIGN HEIGHT (H) = WALL HEIGHT + WALL EMBEDMENT
2. DESIGN LIFE = *75 or 100* YEARS
3. MINIMUM WALL EMBEDMENT ELEVATION = \_\_\_\_ FT
4. MINIMUM PILE PENETRATION INTO ROCK = \_\_\_ FT
5. IN-SITU ASSUMED MATERIAL PARAMETERS *ABOVE ELEVATION \_\_\_\_ FT*:

UNIT WEIGHT, $γ$ = \_\_\_ PCF

FRICTION ANGLE, $ϕ$= \_\_ DEGREES

COHESION, c = \_\_\_ PSF

1. *IN-SITU ASSUMED MATERIAL PARAMETERS BELOW ELEVATION \_\_\_\_ FT:*

*UNIT WEIGHT,* $γ$ *= \_\_\_ PCF*

*FRICTION ANGLE,* $ϕ$*= \_\_ DEGREES*

*COHESION, c = \_\_\_ PSF*

1. *IN-SITU ASSUMED MATERIAL PARAMETERS BELOW ELEVATION \_\_\_\_ FT:*

*ROCK MASS SHEAR STRENGTH, Sm = \_\_\_ PSF*

(Use 100-year design life for soldier pile walls supporting or adjacent to structures not owned by the Department or walls for routes or bridges (abutment walls) classified as Regional Tier facilities or higher per the North Carolina Multimodal Investment Network (NCMIN). Use 75-year design life for all other soldier pile walls. Modify No. 3 through 7 as necessary for variable wall heights and conditions. No. 3, 4, 6, 7 and “ABOVE ELEVATION \_\_\_\_ FT” in No. 5 are optional. Use No. 3 when more than the minimum embedment in accordance with the provision is necessary such as soldier pile walls subject to scour. Replace “ELEVATION” with “DEPTH” in No. 3 to require a constant embedment depth below the bottom of wall elevation instead of a fixed top of leveling pad elevation. Use No. 6 and “ABOVE ELEVATION \_\_\_\_ FT” in No. 5 when different materials are present above and below an elevation. Use No. 4 and 7 when piles will penetrate hard rock and be designed for passive resistance of the rock. Recommended values for rock socket and Sm are 5 ft and 3,000 psf, respectively.)

THE MINIMUM WALL EMBEDMENT ELEVATION FOR RETAINING WALL NO. \_\_\_\_ INCLUDES EMBEDMENT FOR SCOUR.

DESIGN RETAINING WALL NO. \_\_\_\_ FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

DESIGN RETAINING WALL NO. \_\_\_\_ FOR THE *POINT, LINE or STRIP* SURCHARGE LOAD SHOWN.

DESIGN RETAINING WALL NO. \_\_\_\_ FOR A PIPE EXTENDING UNDER OR THROUGH THE WALL AS SHOWN. VERIFY PIPE LOCATION AND ELEVATION BEFORE BEGINNING SOLDIER PILE WALL DESIGN OR CONSTRUCTION.

AT THE CONTRACTOR’S OPTION, USE A TEMPORARY SLOPE INSTEAD OF TEMPORARY SUPPORT OF EXCAVATIONS FOR RETAINING WALL NO. \_\_\_\_.

“TEMPORARY SHORING” *IS or MAY BE* REQUIRED FOR RETAINING WALL NO. \_\_\_\_ IN ACCORDANCE WITH THE TEMPORARY SHORING PROVISION. SEE *ROADWAY, STRUCTURE or TRAFFIC CONTROL* PLANS.