



TEXAS DEPARTMENT OF TRANSPORTATION



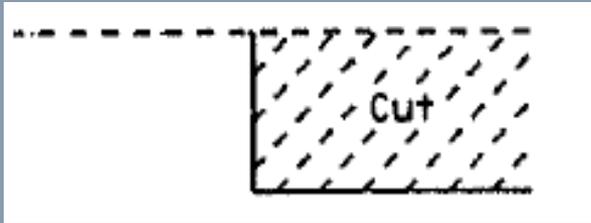
FACING OPTIONS FOR SOIL NAIL WALLS

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Facing Options for Soil Nail Walls

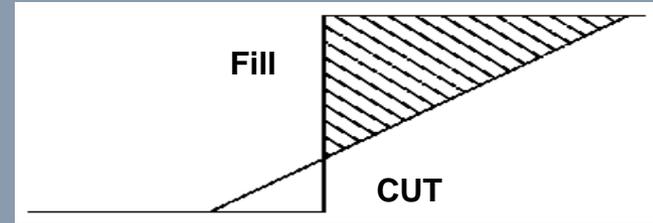
USE OF SOIL NAIL WALLS ON TxDOT PROJECTS

CUT SITUATIONS



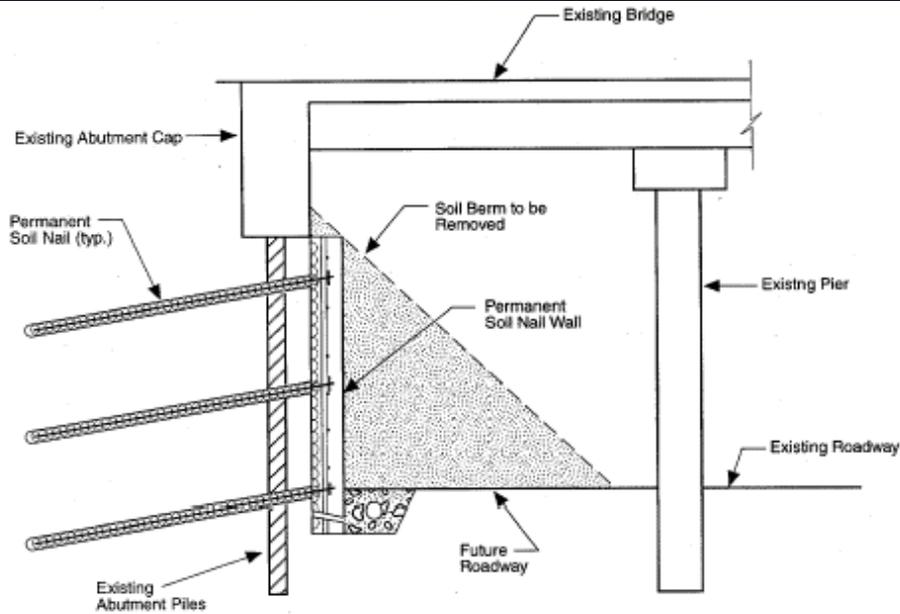
- TEXAS TURN AROUNDS
- DEPRESSED ROADWAYS
- WIDENED ROADWAYS
- TEMPORARY SPECIAL SHORING

CUT/FILL SITUATIONS



- HYBRID – SOIL NAIL/MSE
- TEMPORARY SPECIAL SHORING

Facing Options for Soil Nail Walls



“Texas Turn Around” Or U-Turn Walls



Facing Options for Soil Nail Walls

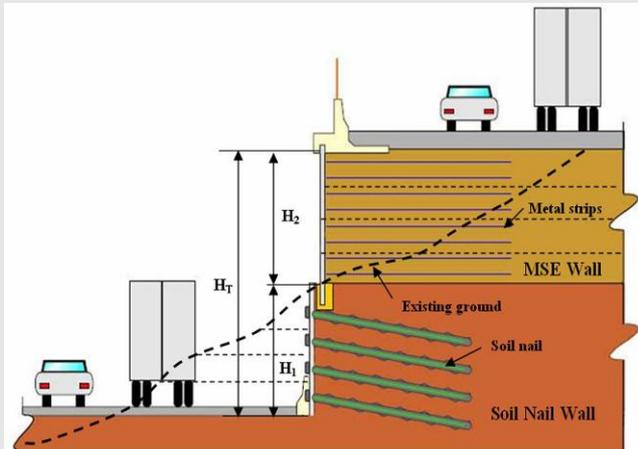
Widening a Roadway



Depressing a Roadway



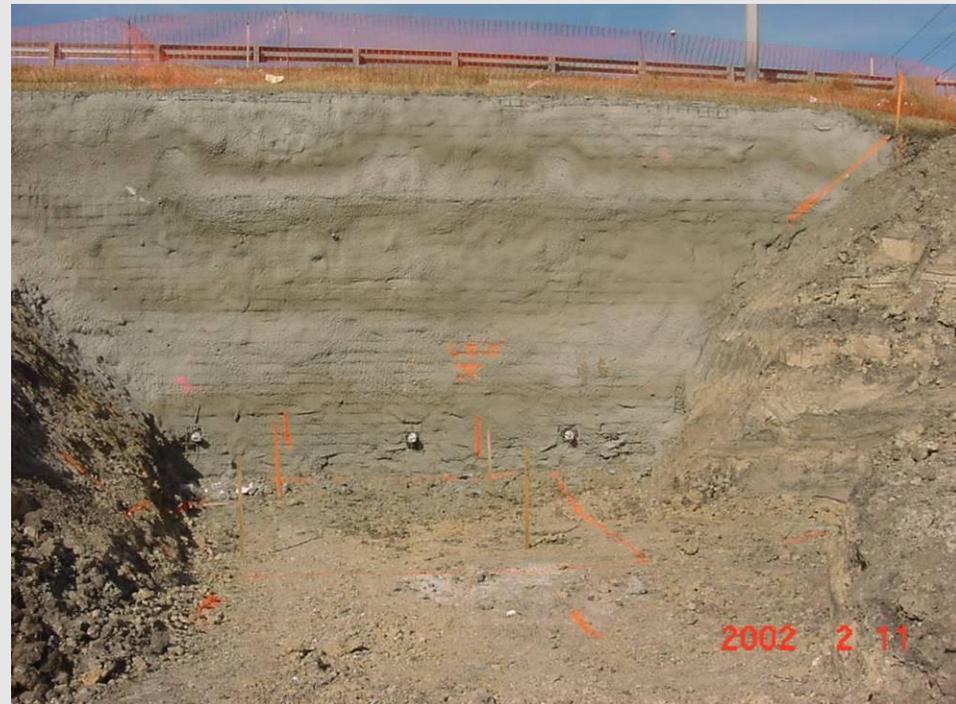
Soil Nail Hybrid Walls



Facing Options for Soil Nail Walls



Temporary Special Shoring



Focus on Permanent Soil Nail Walls
and the facing options available

What does one need to consider when trying to select a facing for a soil nail wall?

What types of facing options are available?

What is the range in cost of the facing options?

CONSIDERATIONS FOR FACING OPTION FOR A SOIL NAIL WALL

- Location
- Surrounding aesthetics

Facing Options for Soil Nail Walls

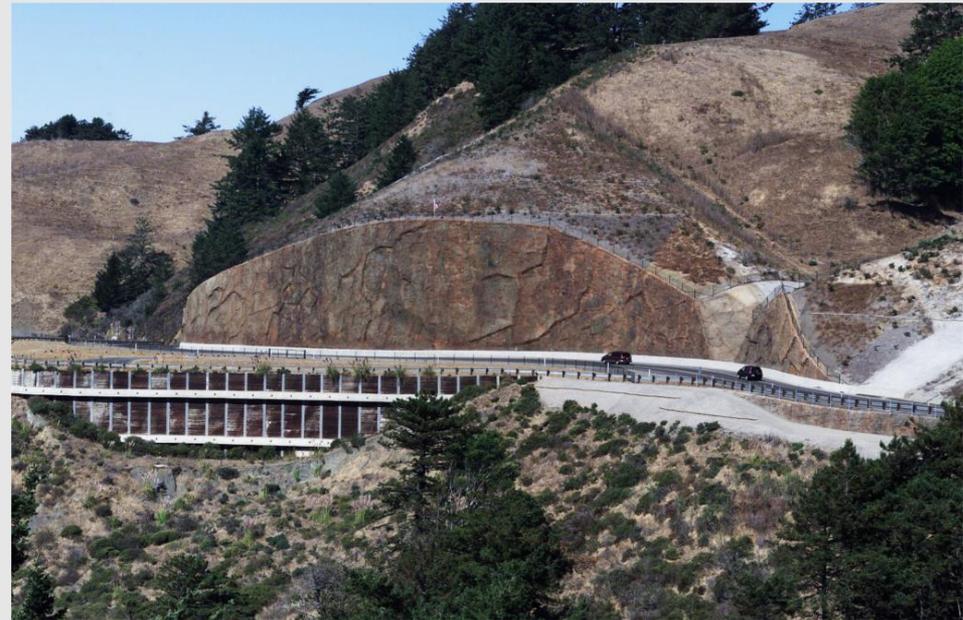
CONSIDERATIONS FOR FACING OPTION FOR A SOIL NAIL WALL

- Location

Urban



Rural



CONSIDERATIONS FOR FACING OPTION FOR A SOIL NAIL WALL

-Surrounding aesthetics



WHAT TYPES OF FACING OPTIONS ARE AVAILABLE?



WHAT TYPES OF FACING OPTIONS ARE AVAILABLE?

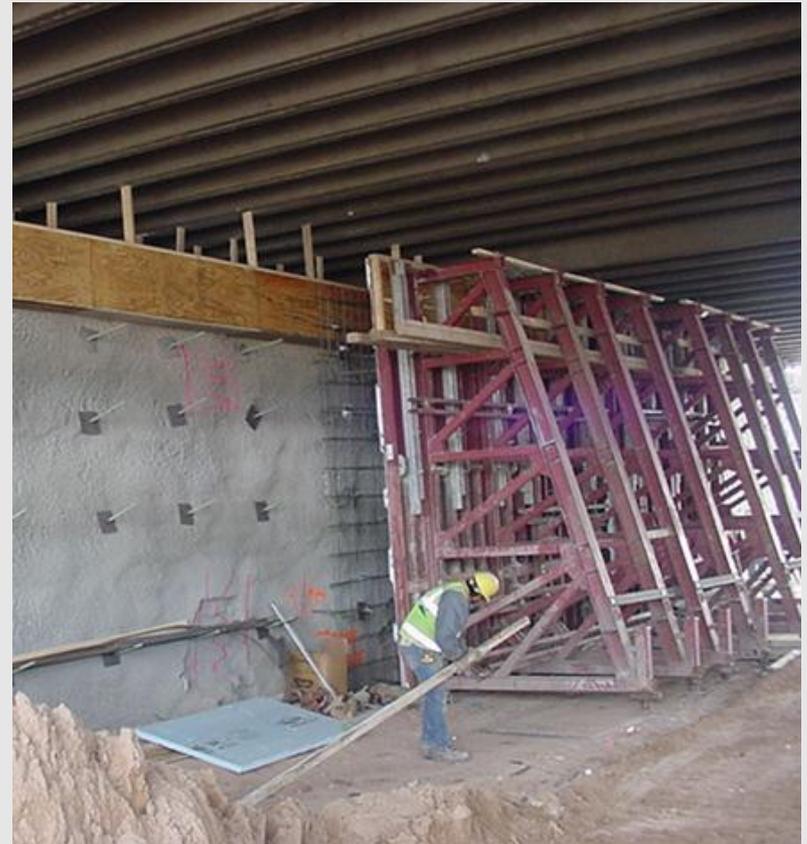
- Cast in-place
- Precast Panels
- Shotcrete

WHAT TYPES OF FACING OPTIONS ARE AVAILABLE?

- Cast in-place

Facing Options for Soil Nail Walls

Cast In-Place Fascia



Facing Options for Soil Nail Walls

Cast In-Place Fascia



Facing Options for Soil Nail Walls



Cast In-Place Fascia





Cast In-Place Fascia



WHAT TYPES OF FACING OPTIONS ARE AVAILABLE?

- Precast Panels

Facing Options for Soil Nail Walls



Pre-Cast Fascia



Facing Options for Soil Nail Walls



Pre-Cast Fascia



Facing Options for Soil Nail Walls



**Pre-Cast
Fascia**



Pre-Cast Fascia

WHAT TYPES OF FACING OPTIONS ARE AVAILABLE?

- Shotcrete
 - Sculpted Shotcrete
 - Smooth Finish
 - Rough Finish

WHAT TYPES OF FACING OPTIONS ARE AVAILABLE?

- Shotcrete
 - Sculpted Shotcrete

Facing Options for Soil Nail Walls



After reinforcement is placed, then shotcrete is applied to the surface by ACI Certified Nozzleman

Sculpted Shotcrete



As the shotcrete is being placed the sculptors follow behind carving the required pattern into the shotcrete

The shotcrete is then allowed to cure and is stained if required



Sculpted Shotcrete

Prior to starting the wall it is best to do a “mock-up” or test section.

This allows one to obtain a sense of what it will look like and what the staining will look like.

Facing Options for Soil Nail Walls

Sculpted Shotcrete





Sculpted Shotcrete

The shotcrete was allowed to cure prior to application of the color stain

Facing Options for Soil Nail Walls

Sculpted Shotcrete



Finished wall



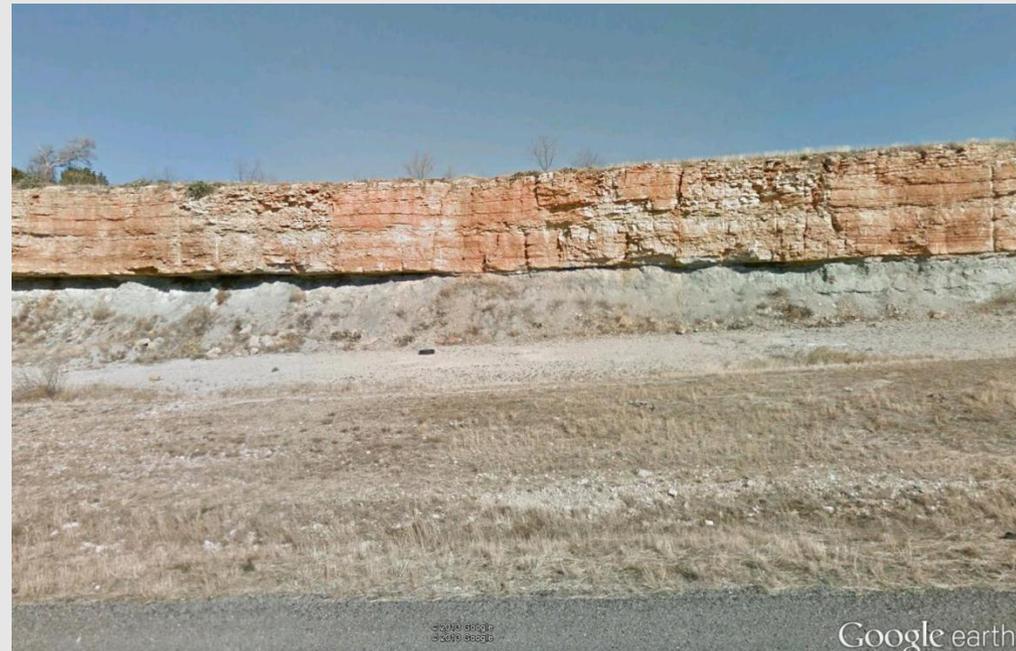
Facing Options for Soil Nail Walls



Finished wall

Sculpted Shotcrete

Actual Outcrop



Facing Options for Soil Nail Walls



Sculpted Shotcrete



WHAT TYPES OF FACING OPTIONS ARE AVAILABLE?

- Shotcrete
 - Smooth Finish

Facing Options for Soil Nail Walls



Smooth Shotcrete



Smooth Shotcrete





Rough Shotcrete



What is the range in cost of the facing options?

Finish Type	Cost* \$/sf
Cast In-Place	35 - 65
Precast Panels	30 - 50
Sculpted Shotcrete	25 - 40
Smooth/Rough Shotcrete**	15 - 28

* - Variation in cost is due to a number of factors, including quantity, complexity of aesthetics, etc.

** - Assumes that cost of the sculpting is ~ \$10/sf.

SUMMARY

- Soil Nail Walls are currently the most commonly used wall type in cut situations
- There are a variety of different facing options, which are: cast in-place; precast panels; sculpted shotcrete; and either smooth or rough shotcrete.
- Which is best for a project depends upon several factors, including: location; aesthetic surroundings; and cost.