

INITIALS	DESIGN	DATE	DETAIL	DATE	QUANTITY	DATE
By						
Checked By						

Revision Dates						
12/19	3/23	9/24				

GENERAL NOTES

All work shall be done in accordance with the latest edition of the Colorado Department of Transportation (CDOT) Standard Specifications for Road and Bridge Construction.

Expansion joint material shall meet AASHTO specification M-213.

*All exposed concrete surfaces shall receive a Class [X] final finish per Section 601.14 to one foot below the ground line, with coating, texture, and color as shown in the plans.

*All exposed shotcrete surfaces shall receive a gun finish unless indicated otherwise in the plans.

Minimum Grade 60 reinforcing steel is required.

All reinforcing steel, bearing plates, shear studs, washers and nuts shall be epoxy coated or galvanized unless otherwise noted.

Ⓝ denotes non-coated reinforcing steel.

The following table gives the minimum lap splice length for epoxy coated reinforcing bars placed in accordance with subsection 602.06.

Bar size: #4

Splice length for Shotcrete: 2'-3"

The following table gives the minimum lap splice length for black reinforcing bars placed in accordance with subsection 602.06.

Bar size: #4

Splice length for Shotcrete: 1'-6"

Note to Designer: Delete if not applicable to all reinforcing.

During work operations, the Contractor shall take such precautions as may be necessary to prevent shotcrete overspray, drill cuttings, equipment exhaust, oil, wash water, and other materials from defacing or damaging private and public property, roadway barriers, vehicles, and adjacent landscaping.

The Contractor shall be responsible for the stability of the excavations, slopes, and existing structures during construction.

All longitudinal and transverse dimensions are measured horizontally and include no correction for grade.

The information shown on these plans concerning the type and location of underground utilities is not guaranteed to be accurate or all inclusive. The Contractor is responsible for making his own determination as to the type and location of underground utilities as may be necessary to avoid damage thereto. The Contractor shall contact the Utility Notification Center of Colorado at 811 (1-800-922-1987) at least 3 days (2 days not including the day of notification) prior to any excavation or other earthwork.

Soil Nail is synonymous with the term Ground Nail and are paid for as Item 504 Soil Nail.

Groundwater, cobbles, boulders, and bedrock may be encountered at any depth in the excavation or during drilling.

Note to Designer: Above note should be excluded or included at the discretion of the designer, based on anticipated subsurface conditions.

SOIL NAIL DESIGN PARAMETERS

The soil nail wall has been designed in accordance with the procedures contained in the following:

FHWA Geotechnical Engineering Circular No. 7, Soil Nail Walls Reference Manual, Report No. FHWA-NHI-14-007.

AASHTO LRFD Bridge Design Specifications, Customary US units, 8th Edition, with Current Interims.

DESIGN DATA

The following soil properties were assumed for design:

Soil/Rock Unit	Effective Friction Angle (Deg)	Effective Cohesion (psf)	Unit Weight (pcf)	Nominal Pullout (Kip/Ft)

Seismic Site Class: Site Class *
Site-Adjusted, Design Peak Ground Acceleration (As): *.***g
Uniform Earth Pressure at Wall Facing: *** psf

Strength I Limit State, Extreme Event I & II Limit States:

Pullout Resistance Factor: ***
Tensile Resistance Factor: ***
Nominal Bearing Resistance (Facing): *.*** psf
Bearing Resistance Factor (Facing): ***
Reinforced Concrete Structural Strength:
Punching - Shear Resistance Factor: ***
Bending - Flexure Resistance Factor: **

Note to Designer: If weight of facing cannot be supported by soil nails, indicate foundation bearing resistance assumed for facing design.

Service I Limit State:

Global Stability Factor of Safety = **. **

Material Parameters:

Class D Concrete: f'c = 4,500 psi
Grout: f'c = 3,000 psi
Shotcrete: f'c = *.*** psi
Reinforcing Steel: fy = 60,000 psi
Soil Nail Steel: fy = **.*** psi
Design Service Life of Wall: 75 years

Note to Designer: Revise material parameters and rebar splice table as required for initial and permanent facing.

Refer to Engineering Geology sheet for results of corrosion testing.

SOIL NAIL TESTING

See specifications for verification and proof testing requirements.
Required nominal pullout resistance: Rpo = *. * Kip/Ft.

INDEX OF DRAWINGS

W01	SOIL NAIL WALL GENERAL NOTES
W02	SOIL NAIL WALL QUANTITIES
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W07	SOIL NAIL FACING DETAILS
W08	SOIL NAIL TEST ASSEMBLY

Note to Designer: Replace all asterisks with appropriate project values.

Engineer of Record (EOR) may modify worksheets in parts or whole; however specific features contained within the worksheets represent CDOT design policies for the soil nail walls and should be maintained as minimum requirements. These features include corrosion protection of soil nails, and dimensions (including thickness) of the bearing plate and drainage elements (geocomposite strip drains, underdrain, and drain pan).

All seals for this set of drawings are applied to the cover page(s)	Print Date: \$DATE\$	<div><div></div><div></div><div></div><div></div></div>	Sheet Revisions			<div><div><div></div><div></div></div><div>2829 West Howard Place, 3rd Floor Denver, CO 80204 Phone: 303-512-4079 FAX: 303-757-9197</div><div>Staff Bridge Branch</div></div> <div>Initials</div>	As Constructed	SOIL NAIL WALL GENERAL NOTES			Project No./Code
	File Name: Sheet_B-504-SNI.dgn		Date:	Comments	Init.		No Revisions:	Project Number			
	Horiz. Scale: None Vert. Scale: As Noted						Revised:	Designer: XXXXXXXX	Structure Numbers	X-XX-XX	Code
	Unit Information Unit Leader Initials							Detailer: XXXXXXXX		X-XX-XX	
							Void:	Sheet Subset: WALL	Subset Sheets: WXX of XXX		Sheet Number