Top of Wall Step Options

Stack bricks under back corner of Corner Garden block to keep block supported prior to backfilling.

Grade drops along back and end of Corner Garden block.

Alternate Garden Block Placement

Sawcut and remove inside edge of Corner Garden block and fill with topsoil.
(Recommended)

Grade drops along side of Corner Garden block.

Top block

Middle block

Corner Garden block at end of each row (Typical).

This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.
This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.
Freestanding Blocks with Cap at Top of Wall

Secure cap block to freestanding block with polyurethane sealant. Optional shear lugs cast into cap block or rebar ties that can be embedded in site-cast concrete (with garden block) are also available.

Setback = 0" (0 mm) on Freestanding blocks

Setback = 2 7/8" (73 mm) when 10" (254 mm) knob used
Setback = 1 5/8" (41 mm) when 7 1/2" (190 mm) knob used
Setback = 1 5/8" (41 mm) when 10" (254 mm) knob used

Section View

Retaining blocks
Freestanding blocks

(Optional) Freestanding blocks can be secured to retaining blocks with J-Bolt connection

Front View

Back View

Freestanding blocks used where block is exposed and textured surface is required on both sides of wall

One-component, highly flexible, non-priming, gun grade, high performance elastomeric polyurethane sealant shall have movement of plus or minus 25% per ASTM C719, tensile strength greater than 200 psi (1.4 MPa) per ASTM D412, and adhesion to peel on concrete greater than 20 PLI per ASTM C794. Apply sealant in one and one half-inch (1.5") (38 mm) diameter round "hersey kiss" shaped dollops located in two rows at the top of the Freestanding blocks at 8" (203 mm) on center.

This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.
Section View

Cap Block, Secure to Freestanding Block with Polyurethane Sealant, or Optional Rebar Embedded in Concrete

Freestanding Garden Block with Two (2) Continuous Reinforcing Bars, Filled with Cast-in-Place Concrete, as Designed by Wall Design Engineer

Freestanding Wall Blocks

Retaining Wall Blocks

Sealant Adhesive: One-component, highly flexible, non-priming, gun grade, high performance elastomeric polyurethane sealant shall have movement of plus or minus 25% per ASTM C719, tensile strength greater than 200 psi (1.4 MPa) per ASTM D412, and adhesion to peel on concrete greater than 20 PLI per ASTM C794. Apply sealant in one and one half-inch (1.5") (38 mm) diameter round "hersey kiss" shaped dollops located in two rows at the top of the Freestanding blocks at 8" (203 mm) on center.

This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.
Drainage Swale Options

Grass Swale

Concrete Swale

Slope varies with project

30 mil PVC or EPDM geomembrane
(Textured on both sides)

Non-woven geotextile fabric
(AASHTO M288 Survivability Class 2)
between geomembrane and soil

Concrete 6" (152 mm) thick (Minimum)

Grade swale around blocks in step down areas

Rock check dams as required

Grade swale cross-slope to provide 1% to 2% (minimum)
fall parallel to wall

Drainage Swale Behind Wall

This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.
These generic pedestrian guard and fence details show a few potential options for their installation on the top of a Redi-Rock retaining wall. It is the design engineer’s responsibility to fully design and detail the connection of the guard posts to the retaining wall blocks and assure acceptable resistance to the applied forces. Redi-Rock blocks are plain concrete, without steel reinforcement.

This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.
Fence or Pedestrian Guard Connection Locations

Connection Option #1
Anchor into the top block
- Consider block lengths when determining post spacing
- Weight of a single block available to resist overturning forces

Connection Option #2
Grout posts in v-shaped opening between top blocks
- Spacing in multiples of 46 1/8" (1172 mm)
- Weight of a 2 adjacent blocks available to resist overturning forces

Connection Option #3
Core through top block and grout posts in V-shaped opening between lower blocks
- Spacing in multiples of 46 1/8" (1172 mm)
- Weight of 2 adjacent blocks on second level down and 3 top row blocks available to resist overturning forces

Front View

Side View

Top View

This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.
Post and Beam Guardrail

- Post and beam guardrail
- Geogrid strips

### Section View
- Upper leg of strip (installed at top of block elevation)
- Lower leg of strip (installed at bottom of block elevation)
- Geogrid installed on block one layer down (Typical)
- Guardrail Beam
- Post

### Top View
- Install 12" (305 mm) diameter corrugated hdpe sleeve during wall construction.
- Install guardrail posts in sleeve and grout (min. 4,000 psi (27.6 mpa) compressive strength) in place after wall construction.
- Wrap geogrid strips around sleeve as needed.
- Splay geogrid strips in block to keep equal tension on all main reinforcement strands.

This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.
Precast Barrier Block

Isometric View

Rebar shown in barrier block meets AASHTO TL-3 loading requirements. Rebar design in barrier block is intended to be modified as necessary to meet other loading conditions. All reinforcing steel shall be grade 80 (414 MPa) deformed rebar. All concrete shall have a minimum 28 day compressive strength of 4000 psi (27.6 MPa).

Top View

Design of reinforced concrete moment slab by local engineer to meet project requirements.

Side View

#6 (#19) bent bar @ 9" (229 mm) O.C. (10 each)

#5 (#16) Straight Bar @ 8" (203 mm) O.C. (11 Each)

Back View

This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.
Cast-in-Place Moment Slab Traffic Barrier - Flat Grade Installation

Cast-in-place traffic barrier (Texas T551 railing shown)
Steel ties per traffic barrier design
#4 (#13) bars at 6" (152 mm) O.C. minimum

Cast-in-place moment slab
30'-0" (9.1 m) Sections

#5 (#16) bars at 8" (203 mm) O.C., top and bottom
8'-0" Minimum

2" (51 mm)
cover

Pavement

1'-0" (305 mm)
minimum

AASHTO No. 57 stone

Transverse reinforcement #4 (#13) bars at 11.5" (292 mm) O.C., top and bottom

Dowels at contraction and expansion joints

1" (25 mm) Expanded polystyrene foam
(Low density, 0.75 lb/ft³ 0.12 kN/m³)

Expansion joints shall be provided in moment slab every 90'-0" (27.4 m). Expansion joint shall be dot standard detail. Typical features shown for reference.

Formed joint with low modulus, hot-poured, rubber-asphalt joint
sealing compound

Expansion cap

CONTRACTION JOINT

1½" (38 mm) dia. x 18" (457 mm)
A36 galvanized or epoxy coated
smooth dowel bar centered
vertically in slab at 12" (305 mm)
O.C. along expansion joint

Sawed joint with hot-poured,
rubber-asphalt sealant

Provide grease or sleeve
bond breaker on one side

Materials
Concrete for cast-in-place barrier and moment slab shall be dot standard structure mix. Minimum 28 day compressive strength shall be 4,000 psi (27.6 mpa) or higher as specified. Reinforcing steel shall conform to ASTM A706 or AASHTO M31 Grade 60 (420 MPa).

Design
Moment slab shown is dimensioned based on an equivalent static load of 10,000 lbs (44.5 kN) per NCHRP Report 663. Moment slab reinforcement shown is based on AASHTO LRFD Bridge Design Specifications, 5th edition, 2010, TL-4 loading detailed in Table A13.2.1.

The selection and use of this detail, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the registered professional engineer in charge of the project.

This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.

Cast-In-Place Moment Slab Traffic Barrier - Flat Grade
Cast-in-Place Moment Slab Traffic Barrier - Sloping Installation

Cast-in-place traffic barrier (Texas T551 railing shown)
Steel ties per traffic barrier design
#4 (#13) bars at 6" (152 mm) O.C. minimum
Cast-in-place moment slab
30'-0" (9.1 m) Sections
#5 (#16) bars at 8" (203 mm) O.C., top and bottom
8'-0" Minimum
2" (51 mm) cover
Pavement
3" (76 mm) cover
AASHTO No. 57 stone
Transverse reinforcement #4 (#13) bars at 11.5" (292 mm) O.C., top and bottom
Dowels at contraction and expansion joints
1" (25 mm) Expanded polystyrene foam (Low density, 0.75 lbs/ft³, 0.12 kN/m³)

Expansion joints shall be provided in moment slab every 90'-0" (27.4 m). Expansion joint shall be dot standard detail. Typical features shown for reference.

Formed joint with low modulus, hot-poured, rubber-asphalt joint sealing compound
Expansion cap

EXPANSION JOINT

1⅜" (38 mm) dia. x 18" (457 mm)
A36 galvanized or epoxy coated smooth dowel bar centered vertically in slab at 12" (305 mm) O.C. along expansion joint

CONTRACTION JOINT

1⅜" (38 mm) dia. x 18" (457 mm)
A36 galvanized or epoxy coated smooth dowel bar centered vertically in slab at 12" (305 mm) O.C. along expansion joint

Contraction joints shall be provided in moment slab every 30'-0" (9.1 m) between expansion joints. Contraction joint shall be dot standard detail. Typical features shown for reference.

Sawed joint with hot-poured, rubber-asphalt sealant
Provide grease or sleeve bond breaker on one side

Materials
Concrete for cast-in-place barrier and moment slab shall be dot standard structure mix. Minimum 28 day compressive strength shall be 4,000 psi (27.6 mpa) or higher as specified. Cast-In-Place level up concrete shall be manufactured in accordance with ASTM C94. Minimum 28 day compressive strength shall be 3,500 psi (24.1 MPa) or higher as specified. Reinforcing steel shall conform to ASTM A706 or AASHTO M31 Grade 60 (420 MPa).

Design
Moment slab shown is dimensioned based on an equivalent static load of 10,000 lbs (44.5 kN) per NCHRP Report 663. Moment slab reinforcement shown is based on AASHTO LRFD Bridge Design Specifications, 5th edition, 2010, TL-4 loading detailed in Table A13.2.1.

The selection and use of this detail, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the registered professional engineer in charge of the project.

This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.
CAST-IN-PLACE COPING

NON-WOVEN GEOTEXTILE OR GEOFABRIC BARRIER BETWEEN CAST-IN-PLACE COPING AND TOP OF WALL (TYP.)

CAST IN PLACE COPING (DESIGN BY OTHERS)

REINFORCEMENT (DESIGN TO PROJECT REQUIREMENTS)

GROUND

30" FACE (TYP.)

5" (TYP.)

HEIGHT VARIES ALONG WALL 14" (MIN) TO 32" (MAX)

SECTION A-A
(JUST BEFORE STEP DOWN ON TOP OF WALL)

SECTION B-B
(JUST AFTER STEP DOWN ON TOP OF WALL)

LENGTH OF COPING SECTIONS VARIES

EXPANSION JOINT MATERIAL BETWEEN COPING SECTIONS

ELEVATION VIEW

Cast-In-Place Wall Coping

DRAWN BY: JRJ
APPROVED BY: JRJ
DATE: 06-22-2015
SHEET: 1 of 1
FILE: 11 Cast-In-Place Wall Coping 062215.dwg