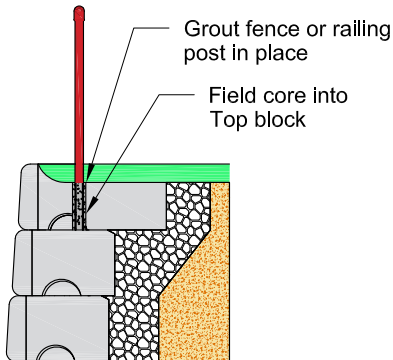
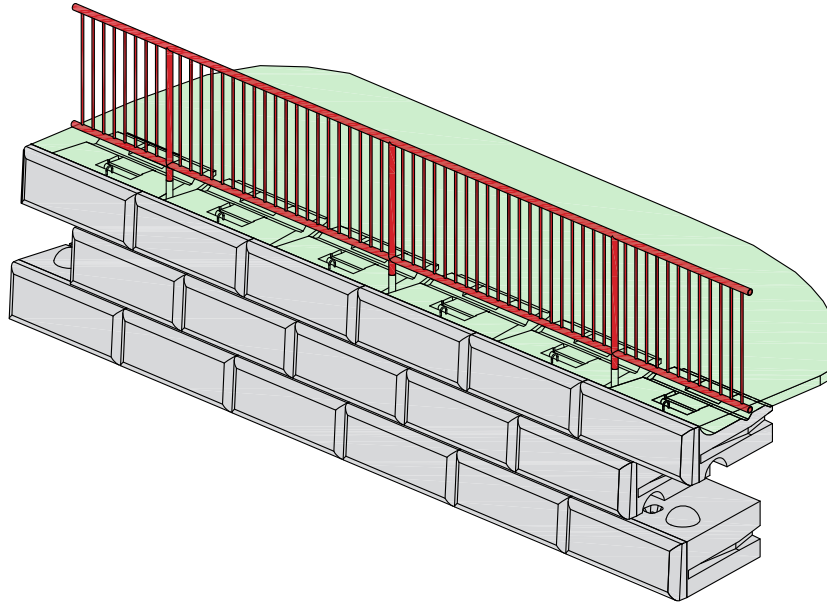
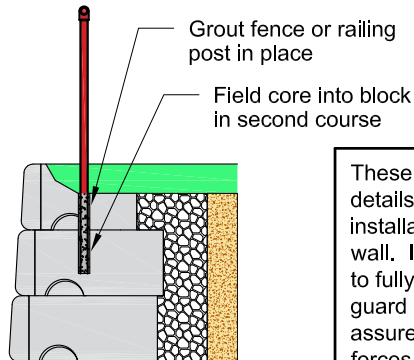


Fence or Pedestrian Guard Connection Options

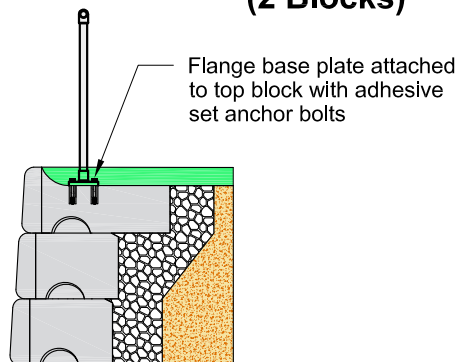


**Grouted Connection
(1 Block)**

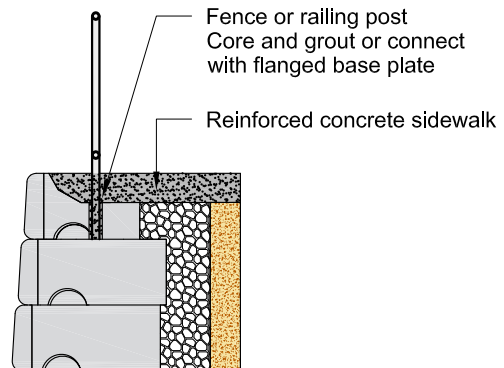


**Grouted Connection
(2 Blocks)**

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.



Flange Bolted Connection



Moment Slab Connection

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.

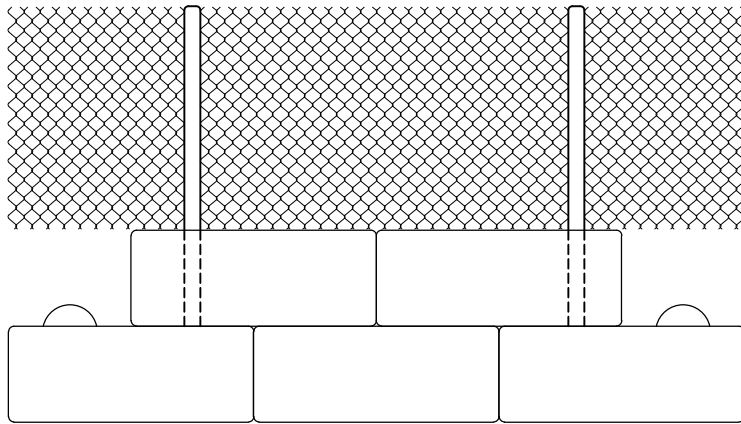
DRAWN BY: JRJ
APPROVED BY: JRJ
DATE: 06-22-2015
SHEET: 1 of 1

TITLE: Fence or Pedestrian Guard
Connection Options

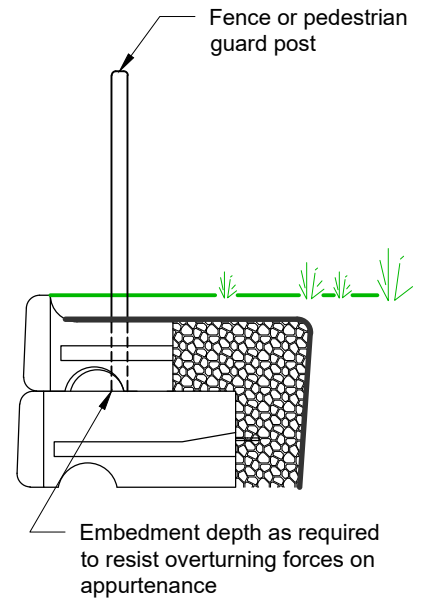
FILE: 5 Fence or Pedestrian Guard Connection Options 062215.dwg

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Fence or Pedestrian Guard Connection Locations



Front View

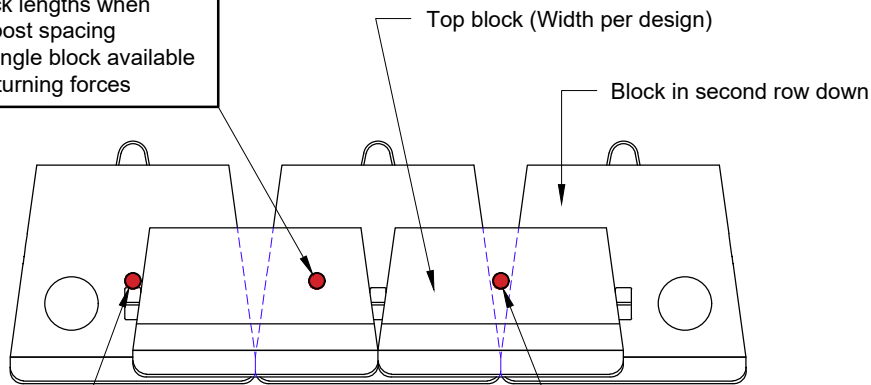


Side View

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



Top View

Connection Option #2

Grout posts in v-shaped opening between top blocks

- Spacing in multiples of 46 1/8 in (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 in (1172 mm)
- Weight of a 2 adjacent blocks on second level down and 3 top row blocks available to resist overturning forces

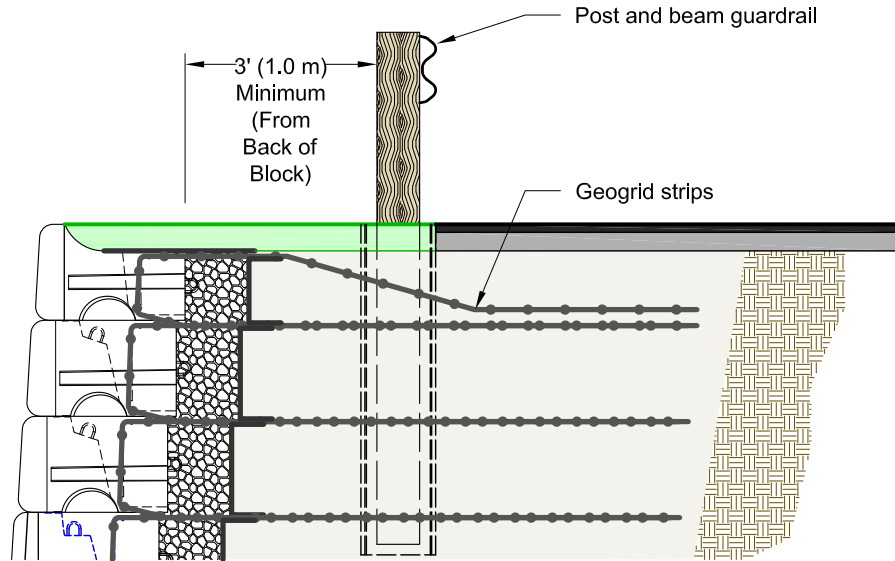
This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer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

DRAWN BY: LBH
APPROVED BY: LBH
DATE: 08-18-2023
SHEET: 1 of 1

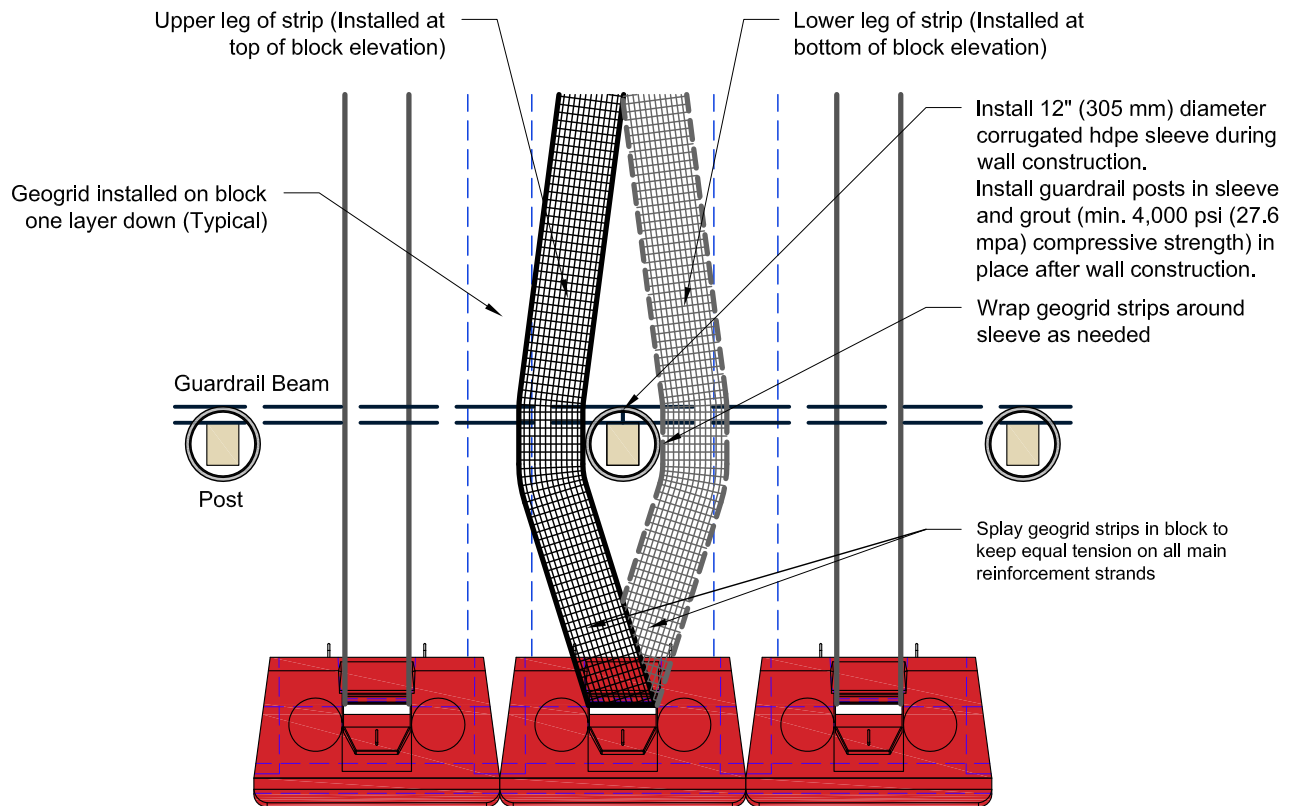
TITLE: Fence or Pedestrian Guard Connection Locations
FILE: Fence or Pedestrian Guard Connection Locations 08182023.dwg

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Post and Beam Guardrail



Section View



Top View

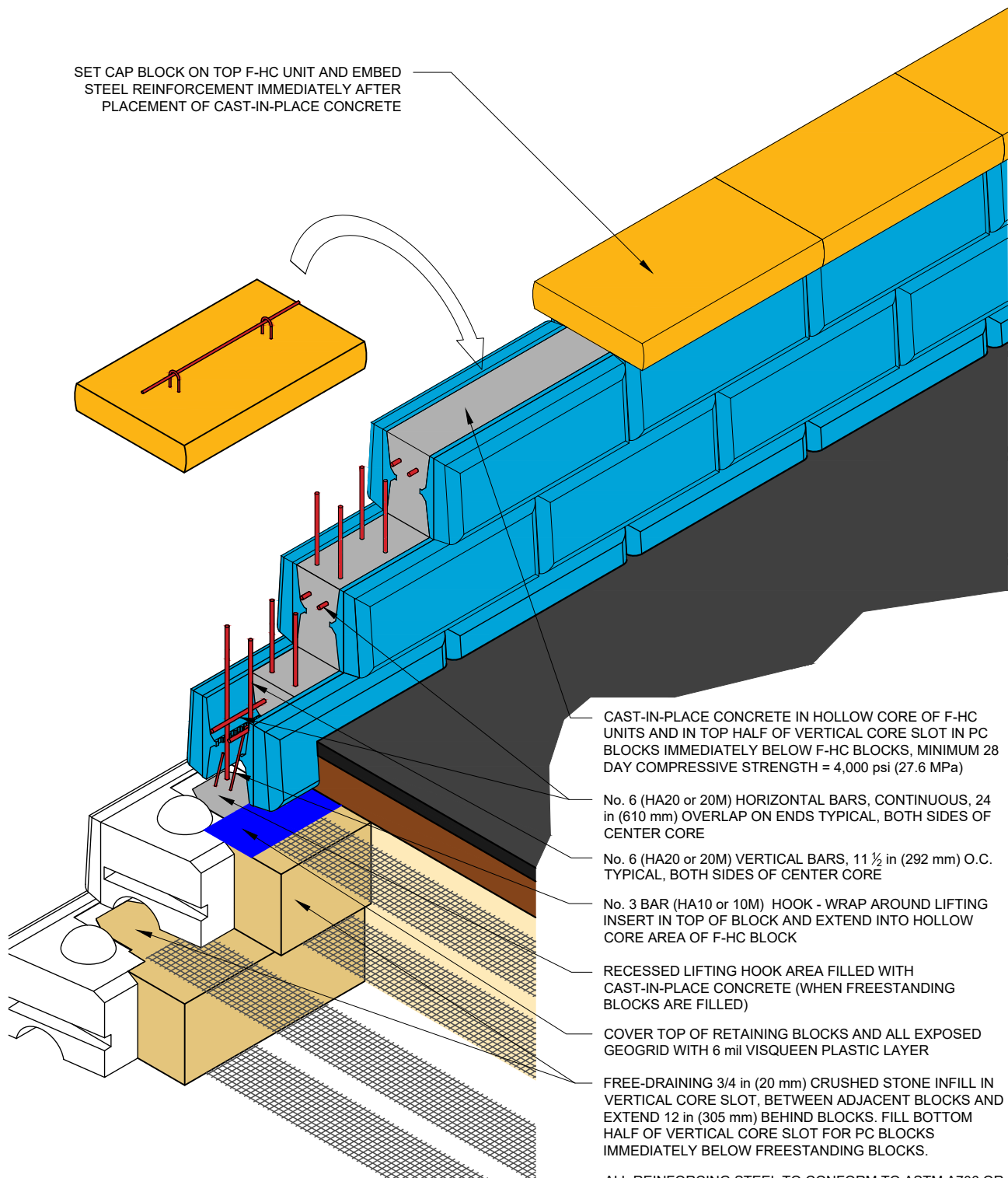
This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer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

DRAWN BY: JRJ
APPROVED BY: JRJ
DATE: 06-22-2015
SHEET: 1 of 1

TITLE: Post and Beam Guardrail
FILE: 7 Post and Beam Guardrail 062215.dwg

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SET CAP BLOCK ON TOP F-HC UNIT AND EMBED
STEEL REINFORCEMENT IMMEDIATELY AFTER
PLACEMENT OF CAST-IN-PLACE CONCRETE



CAST-IN-PLACE CONCRETE IN HOLLOW CORE OF F-HC
UNITS AND IN TOP HALF OF VERTICAL CORE SLOT IN PC
BLOCKS IMMEDIATELY BELOW F-HC BLOCKS, MINIMUM 28
DAY COMPRESSIVE STRENGTH = 4,000 psi (27.6 MPa)

No. 6 (HA20 or 20M) HORIZONTAL BARS, CONTINUOUS, 24
in (610 mm) OVERLAP ON ENDS TYPICAL, BOTH SIDES OF
CENTER CORE

No. 6 (HA20 or 20M) VERTICAL BARS, 11 1/2 in (292 mm) O.C.
TYPICAL, BOTH SIDES OF CENTER CORE

No. 3 BAR (HA10 or 10M) HOOK - WRAP AROUND LIFTING
INSERT IN TOP OF BLOCK AND EXTEND INTO HOLLOW
CORE AREA OF F-HC BLOCK

RECESSED LIFTING HOOK AREA FILLED WITH
CAST-IN-PLACE CONCRETE (WHEN FREESTANDING
BLOCKS ARE FILLED)

COVER TOP OF RETAINING BLOCKS AND ALL EXPOSED
GEOGRID WITH 6 mil VISQUEEN PLASTIC LAYER

FREE-DRAINING 3/4 in (20 mm) CRUSHED STONE INFILL IN
VERTICAL CORE SLOT, BETWEEN ADJACENT BLOCKS AND
EXTEND 12 in (305 mm) BEHIND BLOCKS. FILL BOTTOM
HALF OF VERTICAL CORE SLOT FOR PC BLOCKS
IMMEDIATELY BELOW FREESTANDING BLOCKS.

ALL REINFORCING STEEL TO CONFORM TO ASTM A706 OR
AASHTO M31 GRADE 60.

NOTE: METRIC BAR SIZES ARE GIVEN AS AN
APPROXIMATION TO THE US EQUIVALENT. METRIC
SPACING AND BAR SIZE SHOULD BE DESIGNED TO MEET
REGIONAL CODE REQUIREMENTS.

DRAWN BY: JJ/NL/EGS

APPROVED BY: LBR

DATE: 24JUN2026

SHEET: 1 OF 2

TITLE:

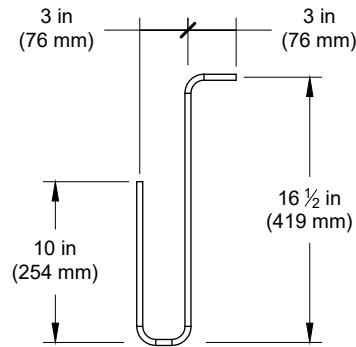
F-HC FREESTANDING BLOCK COPING

FILE: F-HC Coping R-Anchor Option 24JUN2026.dwg

REDI-ROCK

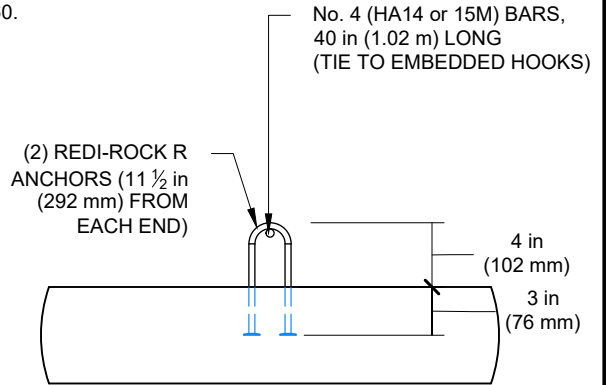
8212 M-119 Harbor Springs, MI 49740
(866) 222-8400 ext 3010 • engineering@redi-rock.com
www.redi-rock.com

ALL REINFORCING STEEL TO CONFORM TO
ASTM A706 OR AASHTO M31 GRADE 60.



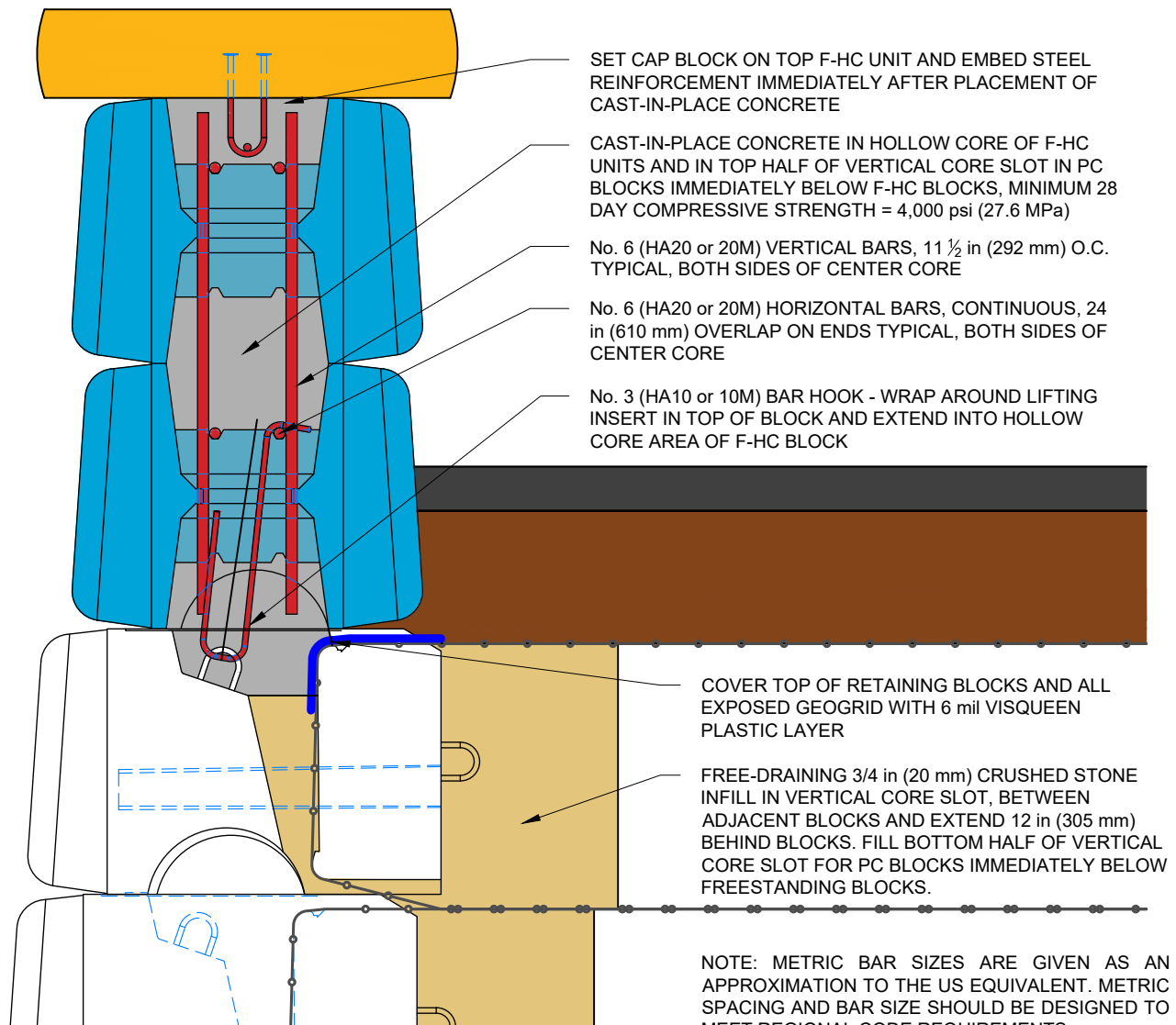
BEND DETAIL

NO. 3 (HA10 or 10M) REBAR
HOOKS



END VIEW

CAP BLOCK CAST WITH R-ANCHORS (SPECIALTY BLOCK)



NOTE: METRIC BAR SIZES ARE GIVEN AS AN APPROXIMATION TO THE US EQUIVALENT. METRIC SPACING AND BAR SIZE SHOULD BE DESIGNED TO MEET REGIONAL CODE REQUIREMENTS.

DRAWN BY: JJ/NL/EGS

APPROVED BY: LBR

DATE: 24JUN2026

SHEET: 2 OF 2

TITLE:

F-HC FREESTANDING BLOCK COPING

FILE:

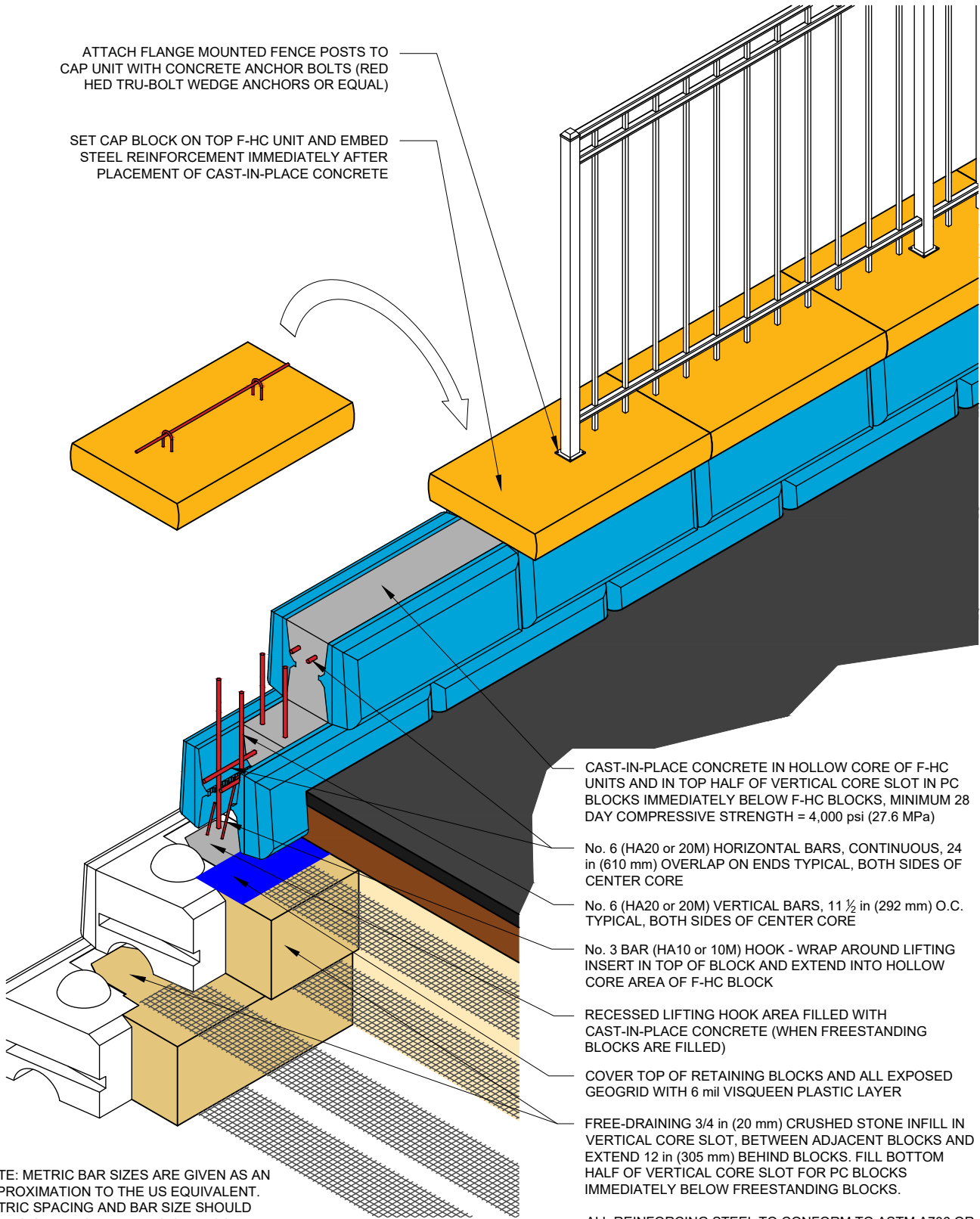
F-HC Coping R-Anchor Option 24JUN2026.dwg

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ATTACH FLANGE MOUNTED FENCE POSTS TO
CAP UNIT WITH CONCRETE ANCHOR BOLTS (RED
HED TRU-BOLT WEDGE ANCHORS OR EQUAL)

SET CAP BLOCK ON TOP F-HC UNIT AND EMBED
STEEL REINFORCEMENT IMMEDIATELY AFTER
PLACEMENT OF CAST-IN-PLACE CONCRETE



CAST-IN-PLACE CONCRETE IN HOLLOW CORE OF F-HC
UNITS AND IN TOP HALF OF VERTICAL CORE SLOT IN PC
BLOCKS IMMEDIATELY BELOW F-HC BLOCKS, MINIMUM 28
DAY COMPRESSIVE STRENGTH = 4,000 psi (27.6 MPa)

No. 6 (HA20 or 20M) HORIZONTAL BARS, CONTINUOUS, 24
in (610 mm) OVERLAP ON ENDS TYPICAL, BOTH SIDES OF
CENTER CORE

No. 6 (HA20 or 20M) VERTICAL BARS, 11 1/2 in (292 mm) O.C.
TYPICAL, BOTH SIDES OF CENTER CORE

No. 3 BAR (HA10 or 10M) HOOK - WRAP AROUND LIFTING
INSERT IN TOP OF BLOCK AND EXTEND INTO HOLLOW
CORE AREA OF F-HC BLOCK

RECESSED LIFTING HOOK AREA FILLED WITH
CAST-IN-PLACE CONCRETE (WHEN FREESTANDING
BLOCKS ARE FILLED)

COVER TOP OF RETAINING BLOCKS AND ALL EXPOSED
GEOGRID WITH 6 mil VISQUEEN PLASTIC LAYER

FREE-DRAINING 3/4 in (20 mm) CRUSHED STONE INFILL IN
VERTICAL CORE SLOT, BETWEEN ADJACENT BLOCKS AND
EXTEND 12 in (305 mm) BEHIND BLOCKS. FILL BOTTOM
HALF OF VERTICAL CORE SLOT FOR PC BLOCKS
IMMEDIATELY BELOW FREESTANDING BLOCKS.

ALL REINFORCING STEEL TO CONFORM TO ASTM A706 OR
AASHTO M31 GRADE 60.

NOTE: METRIC BAR SIZES ARE GIVEN AS AN
APPROXIMATION TO THE US EQUIVALENT.
METRIC SPACING AND BAR SIZE SHOULD
BE DESIGNED TO MEET REGIONAL CODE
REQUIREMENTS.

DRAWN BY: JJ/NL/EGS

APPROVED BY: LBR

DATE: 24JUN2026

SHEET: 1 OF 2

TITLE:

F-HC FREESTANDING BLOCK COPING WITH FENCE ATTACHMENT

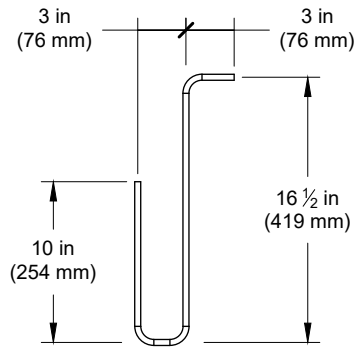
FILE:

F-HC Coping with Fence Attachment R-Anchor Option 24JUN2026.dwg

REDI-ROCK

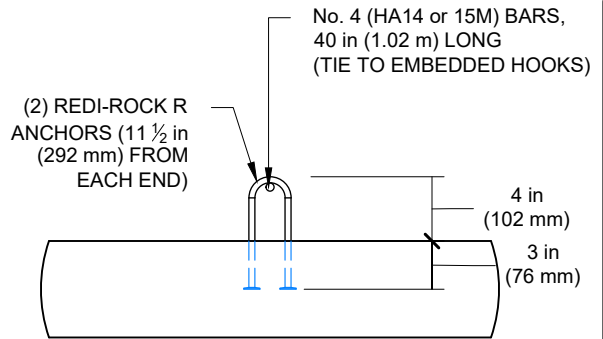
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ALL REINFORCING STEEL TO CONFORM TO
ASTM A706 OR AASHTO M31 GRADE 60.



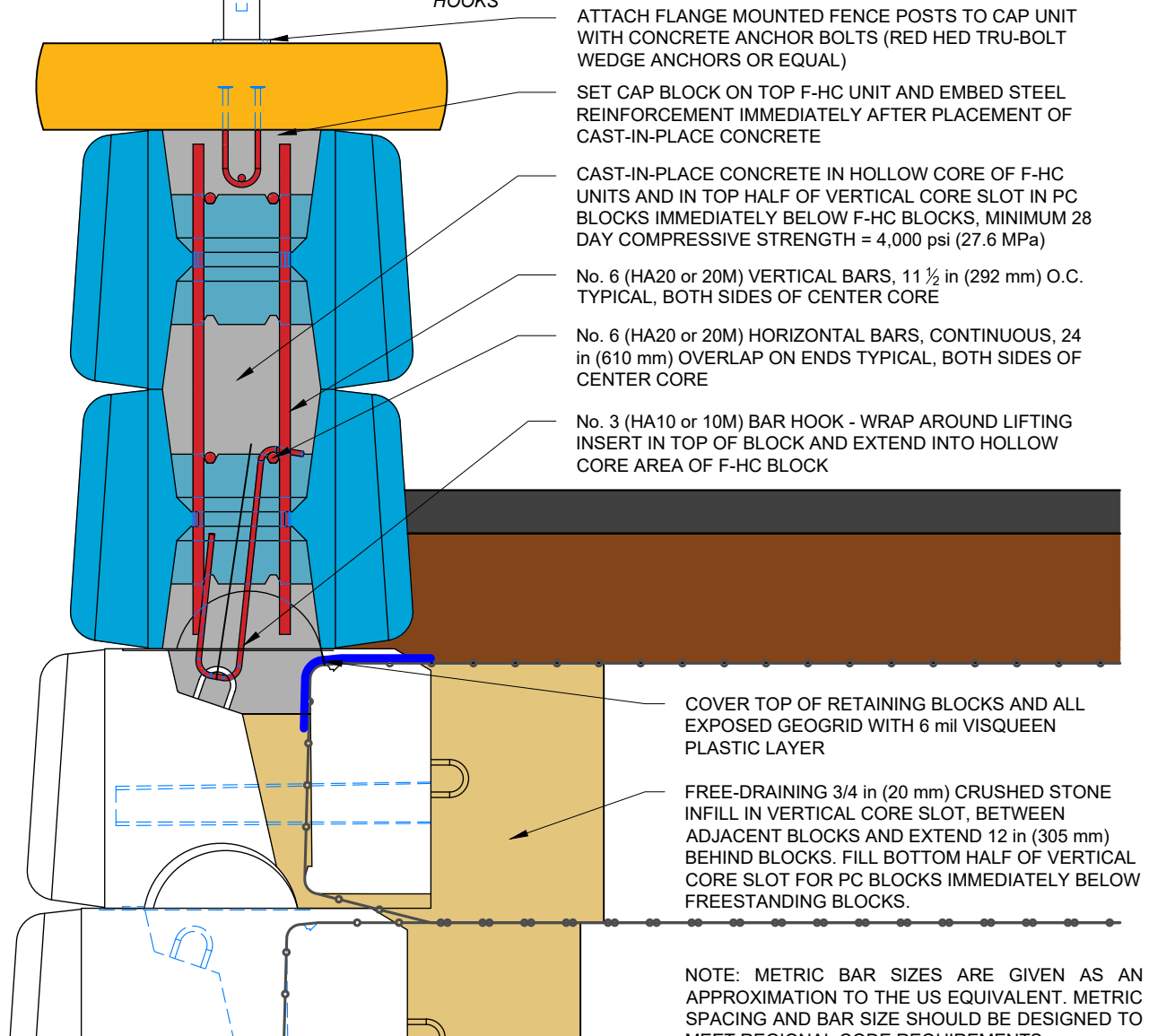
BEND DETAIL

NO. 3 (HA10 or 10M) REBAR
HOOKS



END VIEW

CAP BLOCK CAST WITH R-ANCHORS (SPECIALTY BLOCK)



NOTE: METRIC BAR SIZES ARE GIVEN AS AN APPROXIMATION TO THE US EQUIVALENT. METRIC SPACING AND BAR SIZE SHOULD BE DESIGNED TO MEET REGIONAL CODE REQUIREMENTS.

DRAWN BY: JJ/NL/EGS

APPROVED BY: LBR

DATE: 24JUN2026

SHEET: 2 OF 2

TITLE:

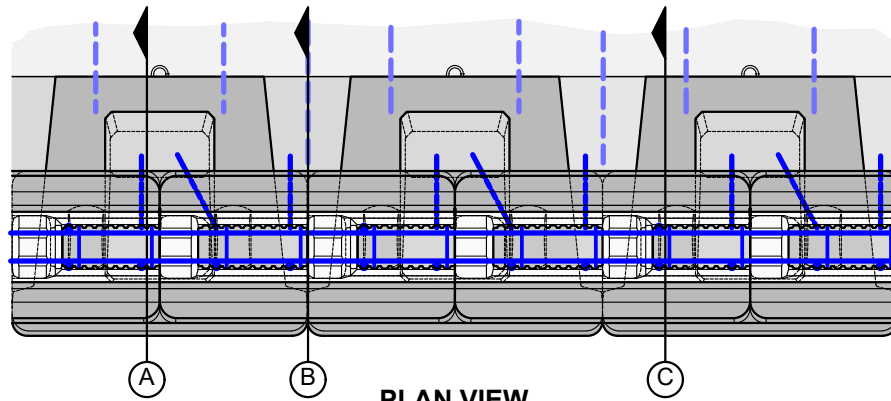
F-HC FREESTANDING BLOCK COPING WITH FENCE ATTACHMENT

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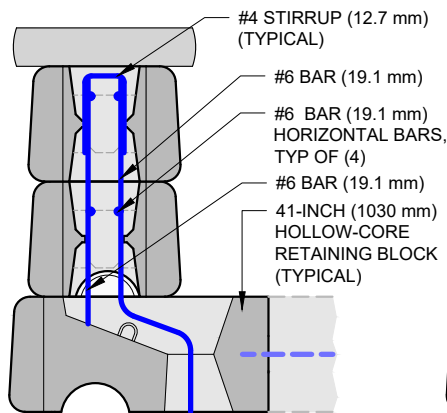
F-HC Coping with Fence Attachment R-Anchor Option 24JUN2026.dwg

REDI-ROCK

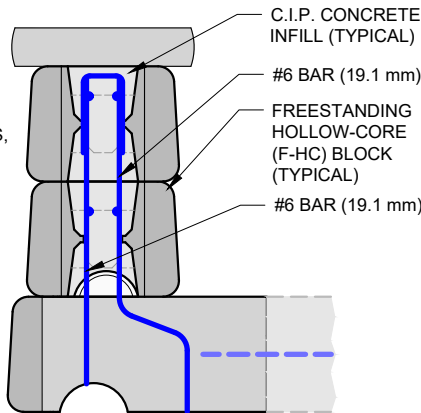
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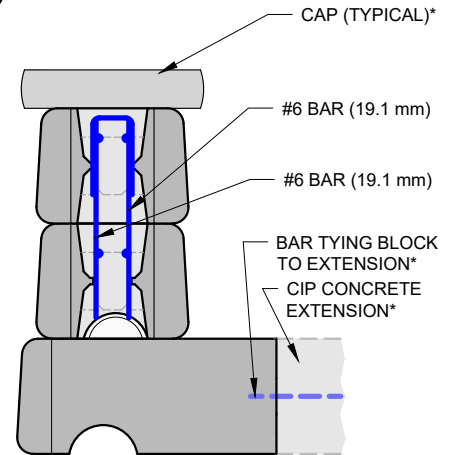
PLAN VIEW



SECTION A

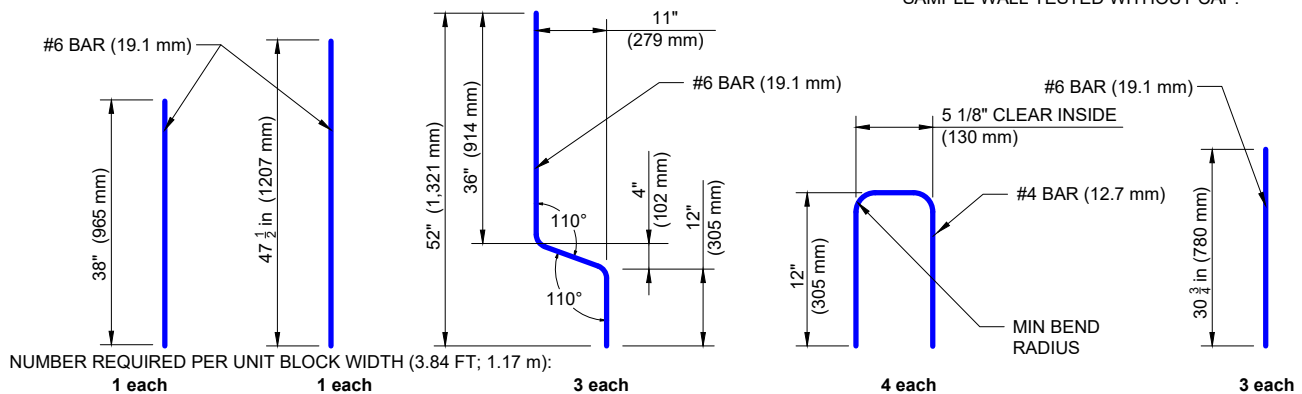


SECTION B



SECTION C

*SAMPLE WALL TESTED WITHOUT CAP.



REINFORCING BAR SCHEDULE

NOTES:

1. DETAIL SHOWN REPRESENTS CONFIGURATION OF SAMPLE WALL TESTED IN ASTER BRANDS TEST FACILITY.
2. SAMPLE WALL EXHIBITED ULTIMATE STRUCTURAL CAPACITY GREATER THAN 63,000 LBS (282 kN) AT A HEIGHT OF 29 1/2 INCHES (750 mm), CONSISTENT WITH AASHTO TL-4 EQUIVALENT STATIC LOADING.
3. C.I.P. CONCRETE INFILL: 4000 psi (27.6 MPa) COMPRESSIVE STRENGTH, REINFORCING STEEL BARS: 60,000 PSI (410 MPa).
4. REFER TO TEST REPORT FOR MORE INFORMATION.
5. USER IS RESPONSIBLE FOR DETERMINING SUITABILITY FOR PROJECT USE.
6. THIS DETAIL IS SHOWN FOR REFERENCE ONLY. DESIGN BY A LICENSED ENGINEER IS REQUIRED.
7. DESIGN MUST ALSO CONSIDER OVERTURNING AND SLIDING RESISTANCE.
8. *CIP CONCRETE EXTENSION OR MOMENT SLAB MAY BE CAST AGAINST BLOCKS TO ADD OVERTURNING AND SLIDING RESISTANCE. TIE TO BLOCKS WITH REINFORCING STEEL, AS NEEDED. (NOT INCLUDED IN TEST.)

DRAWN BY: N. LINDWALL

REVIEWED BY: D. HULA

DATE: 08/26/2021

SHEET: 1 OF 1

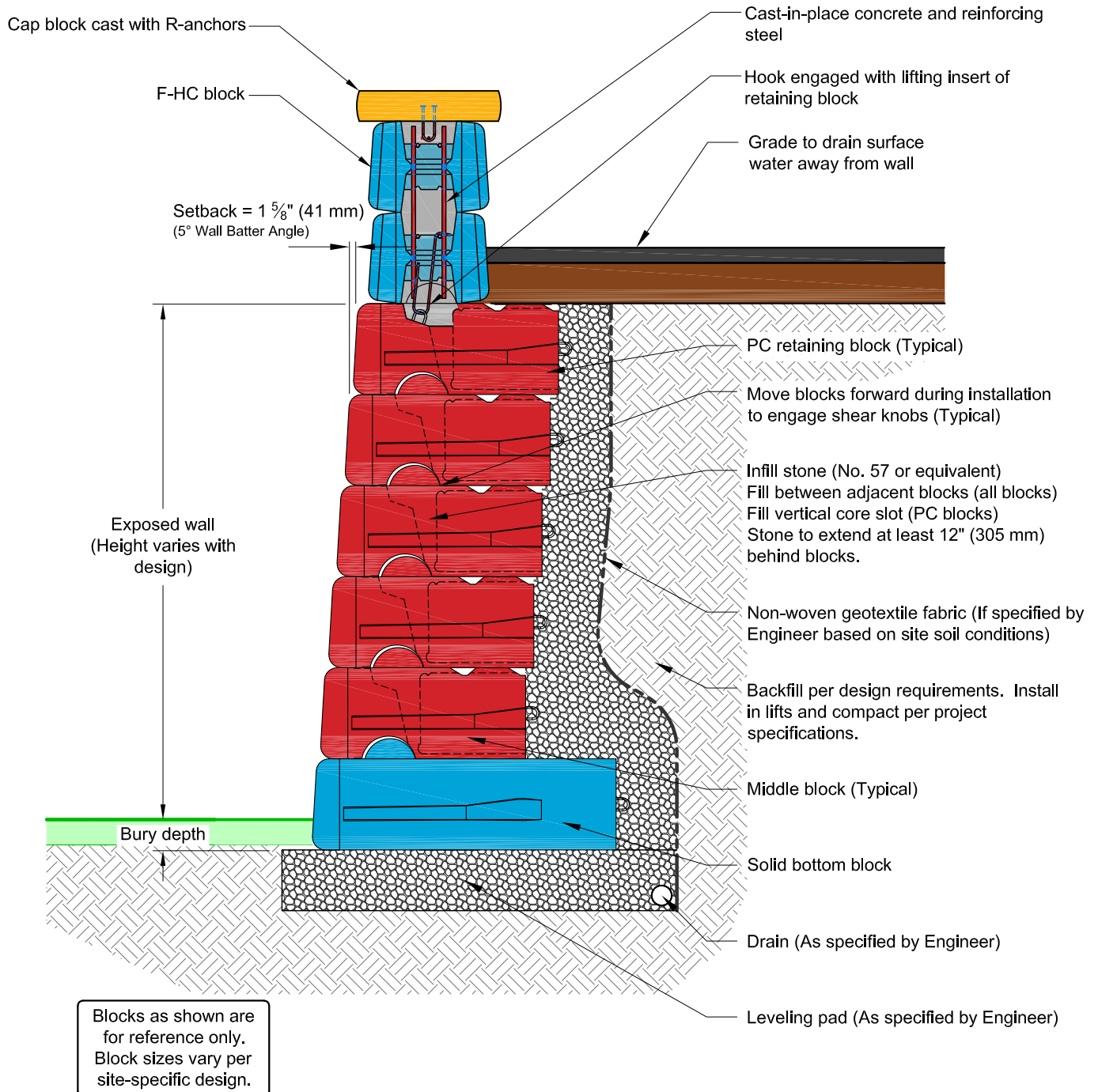
TITLE:

**F-HC FREESTANDING BLOCK
PARAPET/BARRIER CONCEPT**

FILE: F-HC_R-41HC_Parapet_Detail_082621.dwg

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Typical Gravity Wall Section with Freestanding Hollow Core Coping



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.

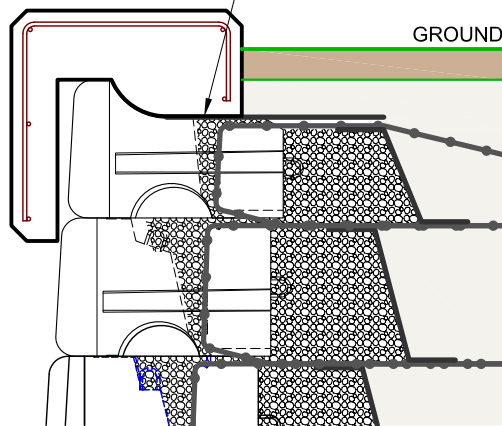
DRAWN BY:	NWL	TITLE:	Typical Gravity Wall Detail	REDI-ROCK 05481 US 31 SOUTH, CHARLEVOIX, MI 49720 (866) 222-8400 ext 3010 • engineering@redi-rock.com www.redi-rock.com
APPROVED BY:	JRJ			
DATE:	31MAY2018			
SHEET:	1 of 1	FILE:		

CAST-IN-PLACE COPING

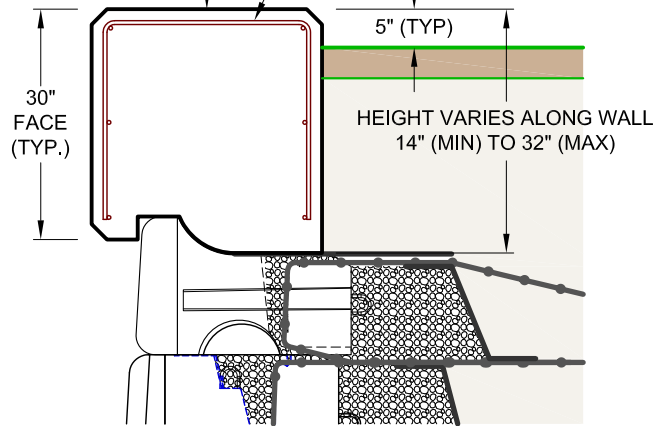
NON-WOVEN GEOTEXTILE OR
GEOMEMBRANE BARRIER
BETWEEN CAST-IN-PLACE
COPING AND TOP OF WALL
(TYP.)

CAST IN PLACE COPING
(DESIGN BY OTHERS)

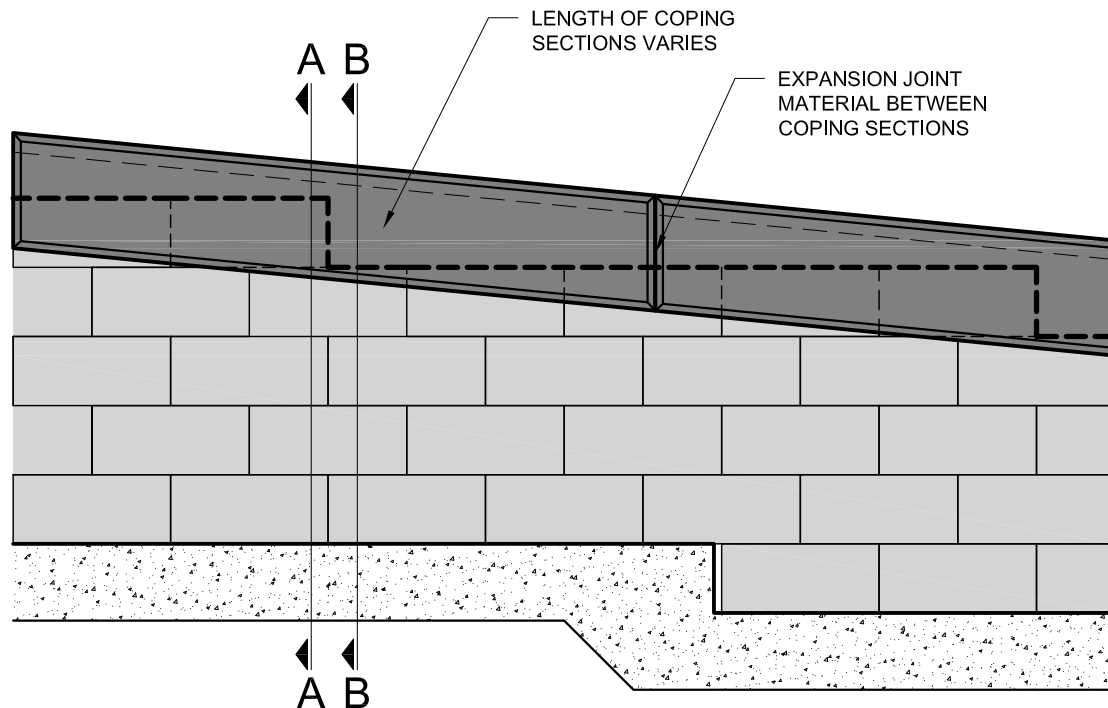
REINFORCEMENT
(DESIGN TO PROJECT
REQUIREMENTS)



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



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



ELEVATION VIEW

DRAWN BY:	JRJ
APPROVED BY:	JRJ
DATE:	06-22-2015
SHEET:	1 of 1

TITLE:	Cast-In-Place Wall Coping
FILE:	

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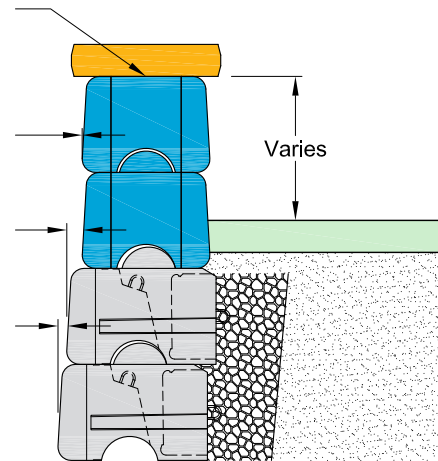
Freestanding Blocks with Cap at Top of Wall

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.

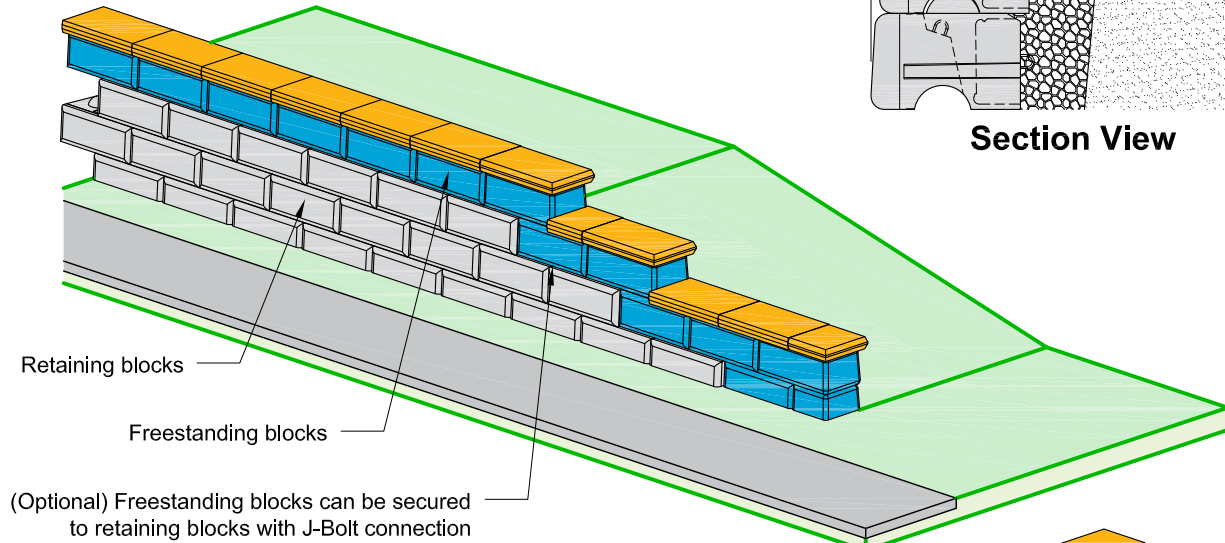
Setback = 0" (0 mm) on Freestanding blocks

Setback = $2\frac{7}{8}$ " (73 mm) when 10" (254 mm) knob used
Setback = $1\frac{5}{8}$ " (41 mm) when $7\frac{1}{2}$ " (190 mm) knob used

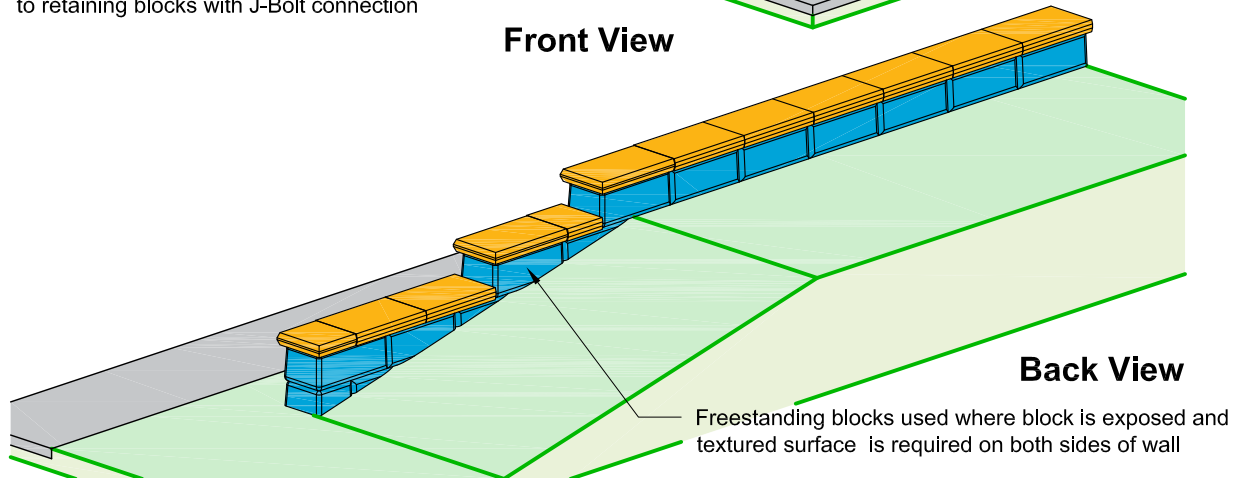
Setback = $1\frac{5}{8}$ " (41 mm) when 10" (254 mm) knob used



Section View



Front View



Back View

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.

DRAWN BY: JRJ
APPROVED BY: JRJ
DATE: 06-22-2015
SHEET: 1 of 1

TITLE: Freestanding Blocks with
Cap at Top of Wall
FILE: 3 Freestanding Blocks with Cap at Top of Wall 062215.dwg

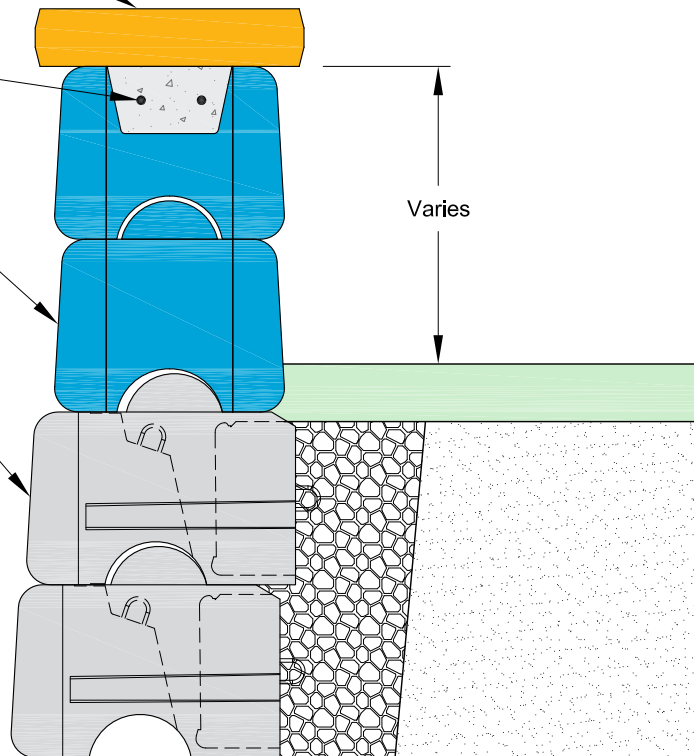
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Cap Block, Secure to Freestanding Block with Polyurethane Sealant, or Optional Rebar Embedded in Concrete

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



Section View

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.

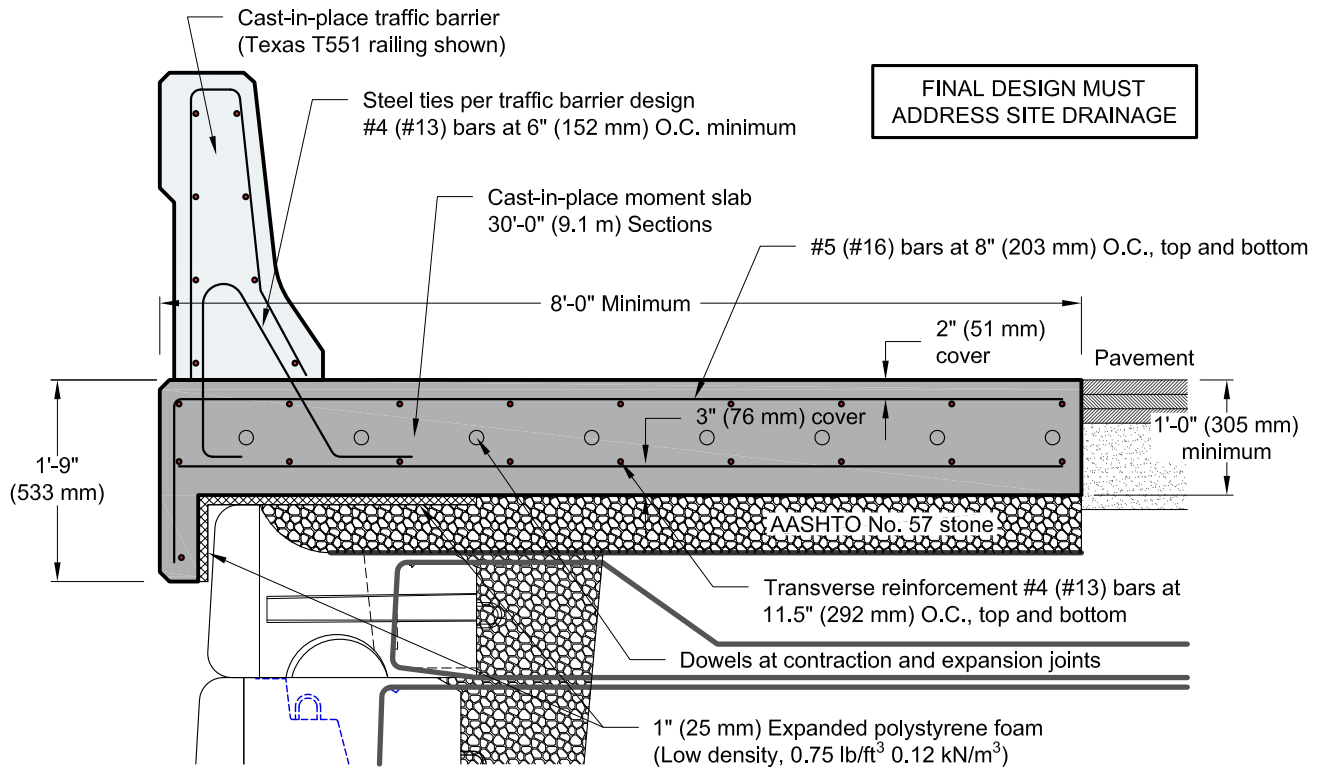
This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer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

DRAWN BY:	BWL
APPROVED BY:	JRJ
DATE:	01-14-2016
SHEET:	1 of 1

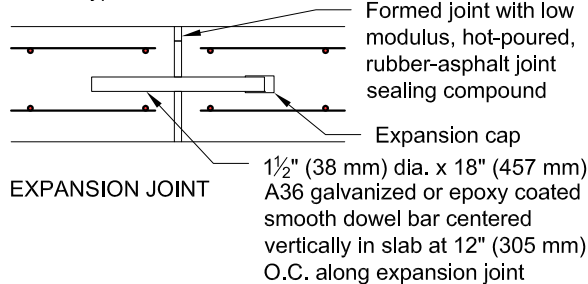
TITLE:	Freestanding Bond Beam at Top of Wall
FILE:	

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

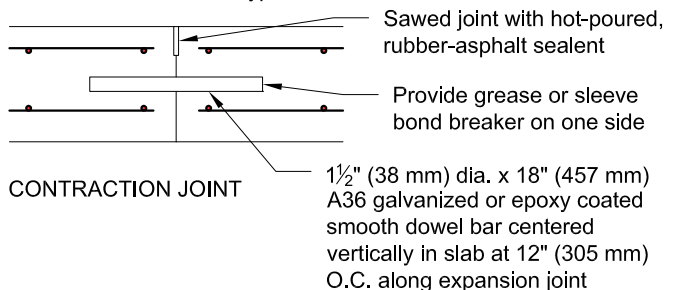


Expansion joints shall be provided in moment slab every 90'-0" (27.4 m). Expansion joint shall be dot standard detail. Typical features shown for reference.



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.



CONTRACTION JOINT

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.

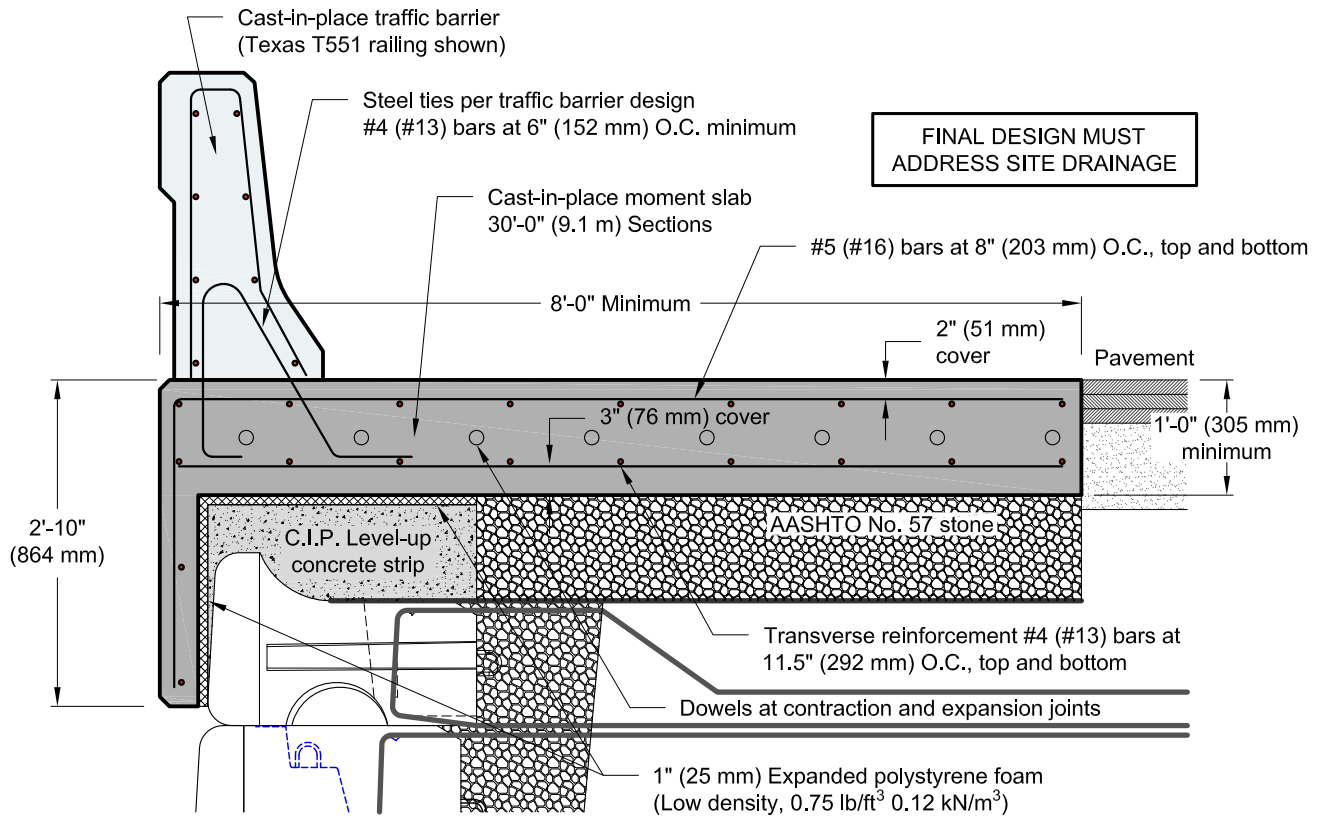
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DRAWN BY: JRJ
APPROVED BY: JRJ
DATE: 06-22-2015
SHEET: 1 of 1

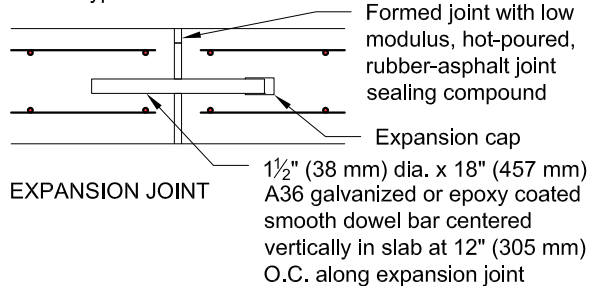
TITLE: Cast-In-Place Moment Slab Traffic Barrier - Flat Grade
FILE: 9 Cast-In-Place Moment Slab Traffic Barrier - Flat 062215.dwg

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Cast-in-Place Moment Slab Traffic Barrier - Sloping Installation



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.



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).

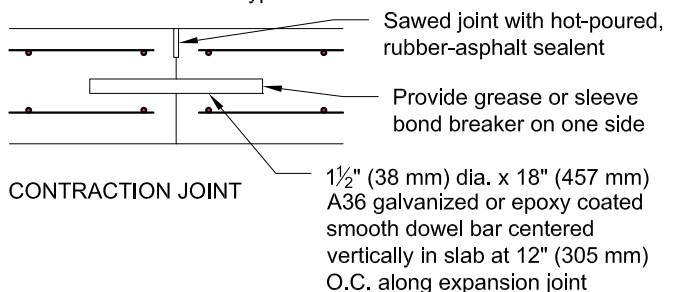
Design

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.

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.

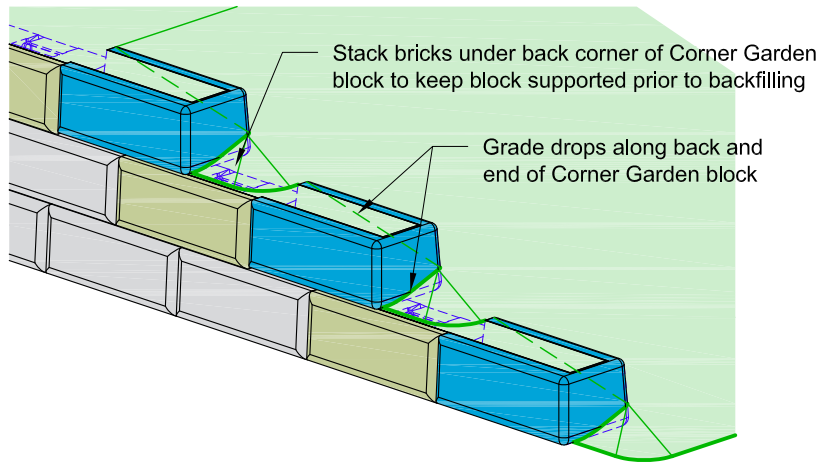


DRAWN BY: JRJ
APPROVED BY: JRJ
DATE: 06-22-2015
SHEET: 1 of 1

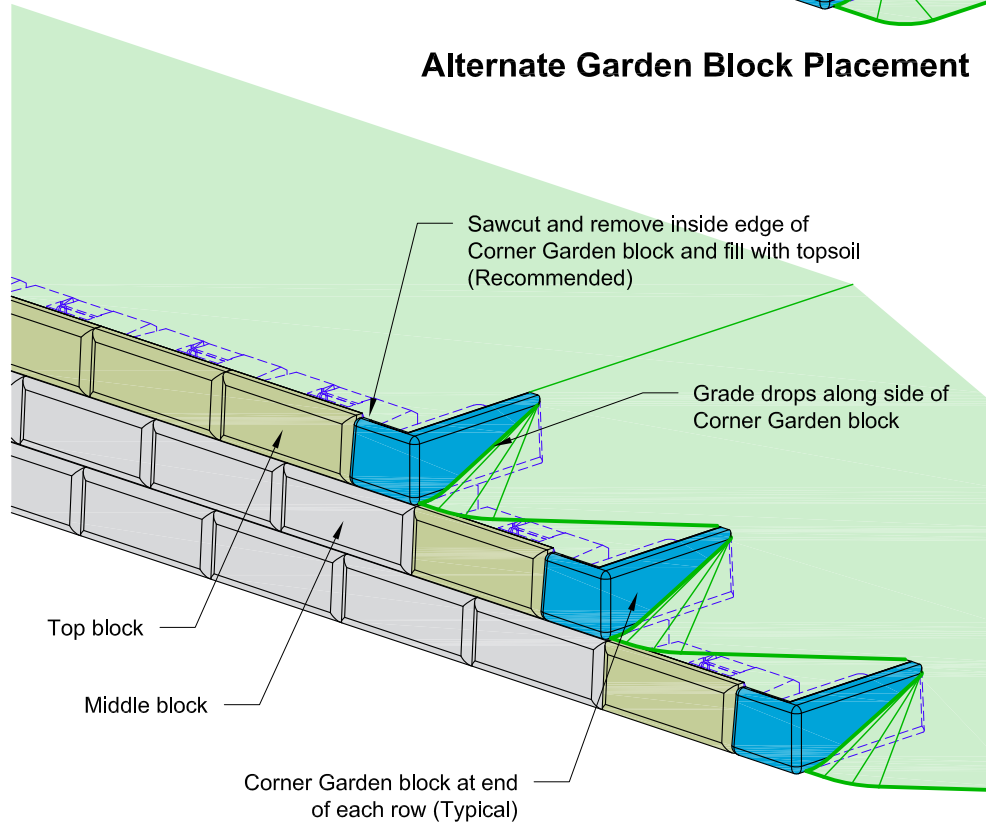
TITLE: Cast-In-Place Moment Slab Traffic Barrier - Sloping Grade
FILE: 10 CIP Moment Slab Traffic Barrier - Sloping 062215.dwg

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Top of Wall Step Options



Alternate Garden Block Placement



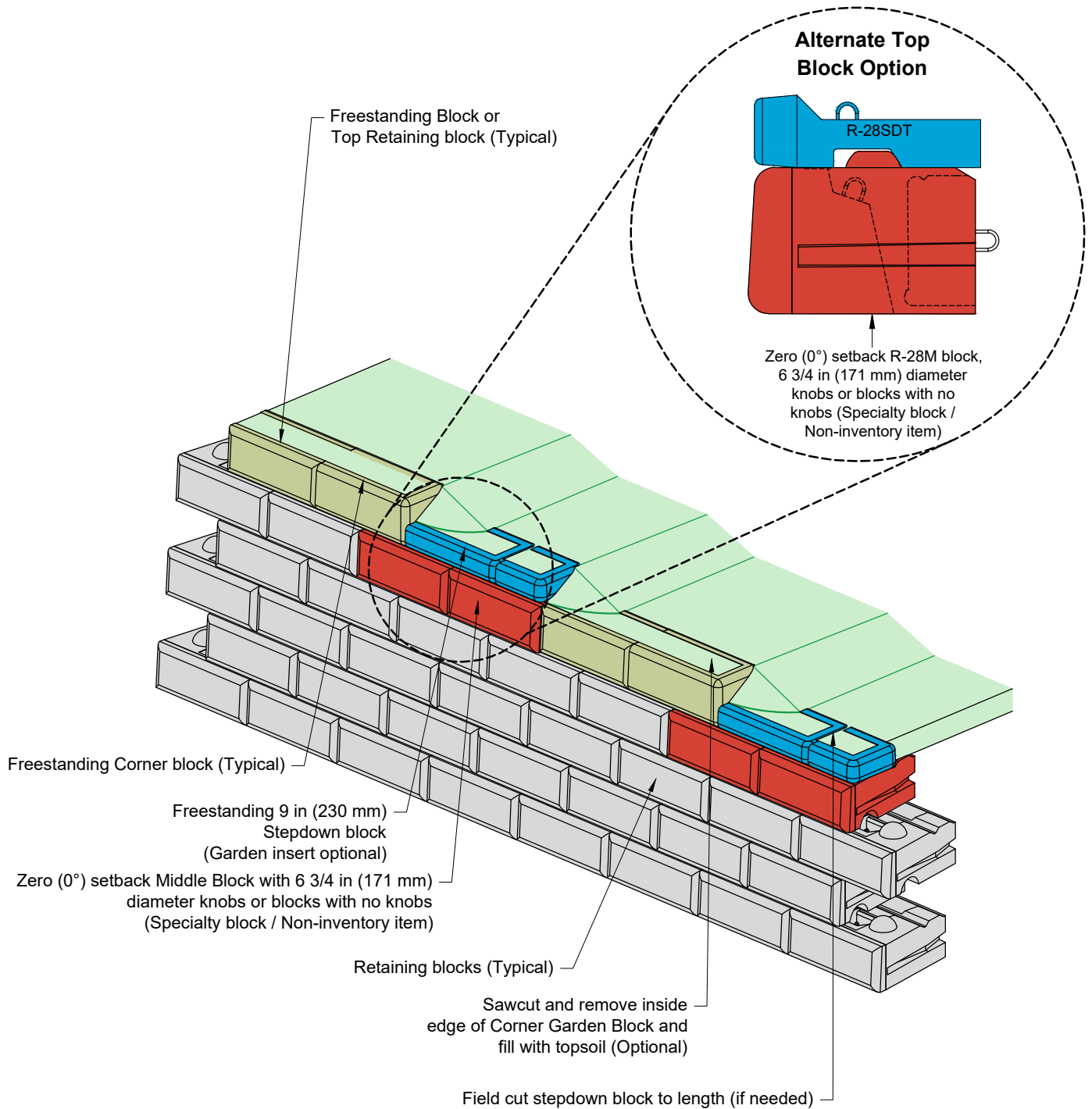
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 APPROVED BY: JRJ
 DATE: 06-22-2015
 SHEET: 1 of 1

TITLE: Top of Wall Step Options
 FILE: 1 Top of Wall Step Options 062215.dwg

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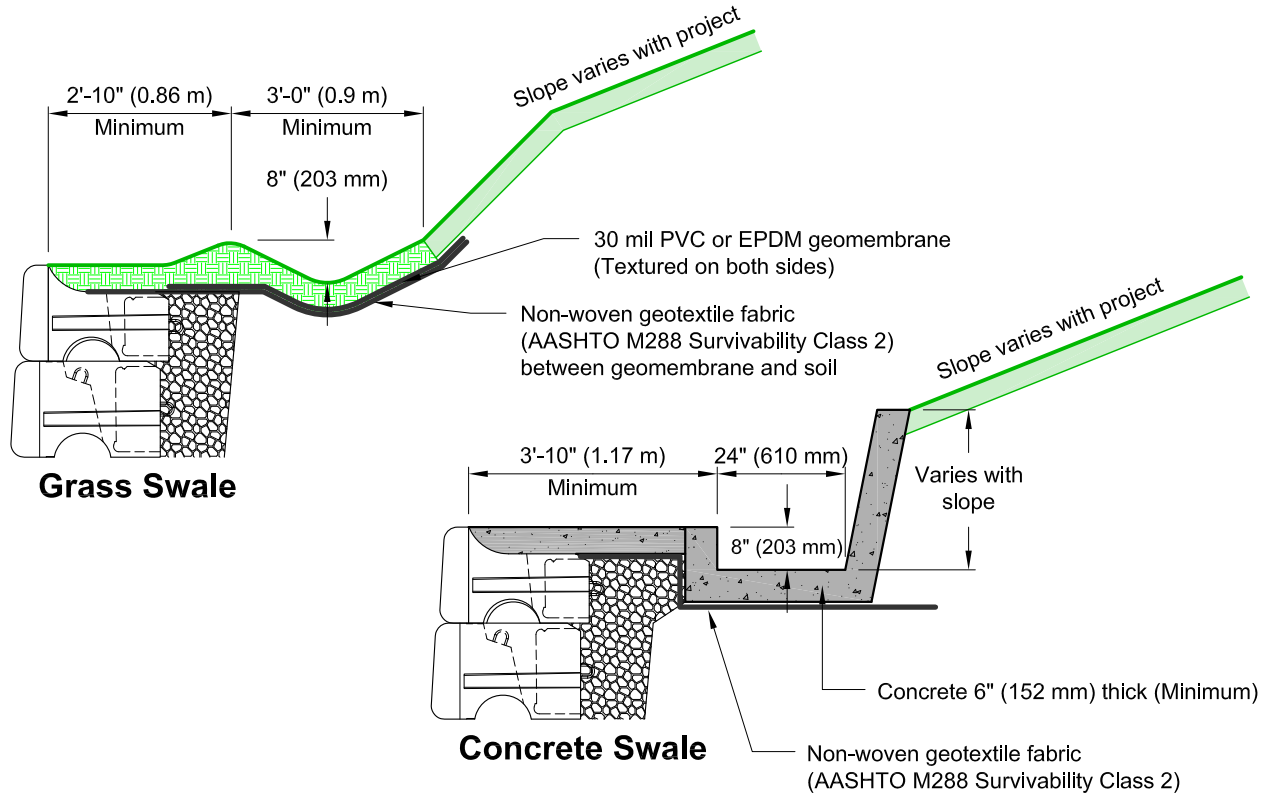
Top of Wall 9 in (230 mm) Stepdown Blocks



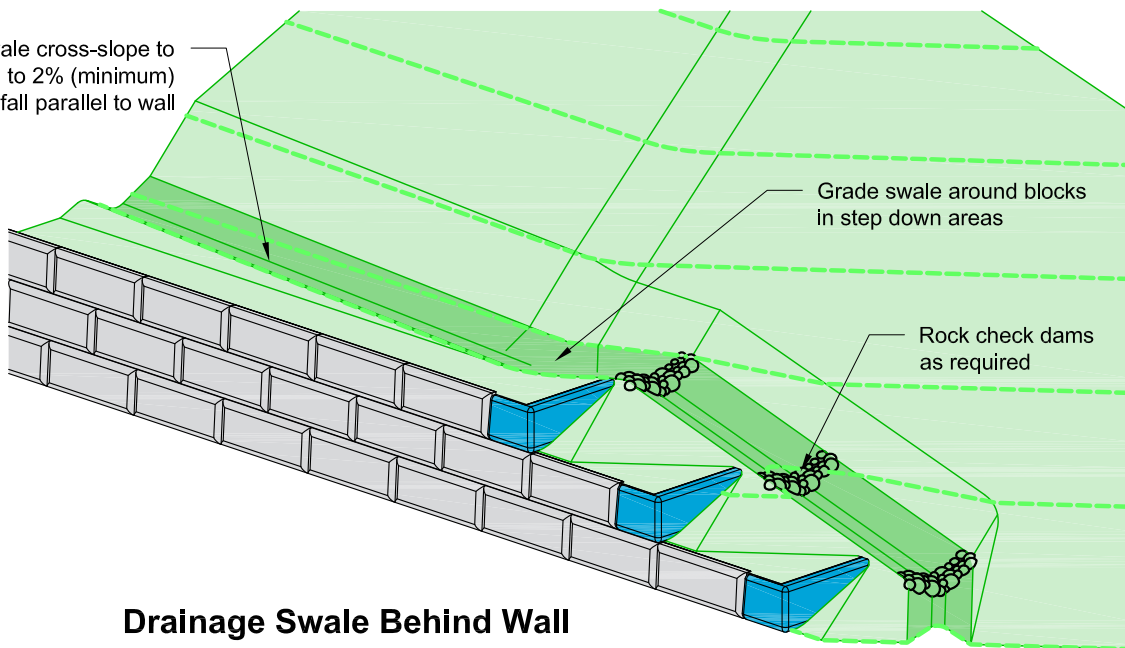
This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer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

DRAWN BY:	EGS	TITLE:	Top of Wall, 9 in Stepdown Blocks	 05481 US 31 SOUTH, CHARLEVOIX, MI 49720 (866) 222-8400 ext 3010 • engineering@redi-rock.com www.redi-rock.com
APPROVED BY:	LBH			
DATE:	24-APR-2025			
SHEET:	1 of 1	FILE:	Top of Wall 9 in Stepdown Blocks 24APR2025.dwg	

Drainage Swale Options



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.

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 APPROVED BY: JRJ
 DATE: 06-22-2015
 SHEET: 1 of 1

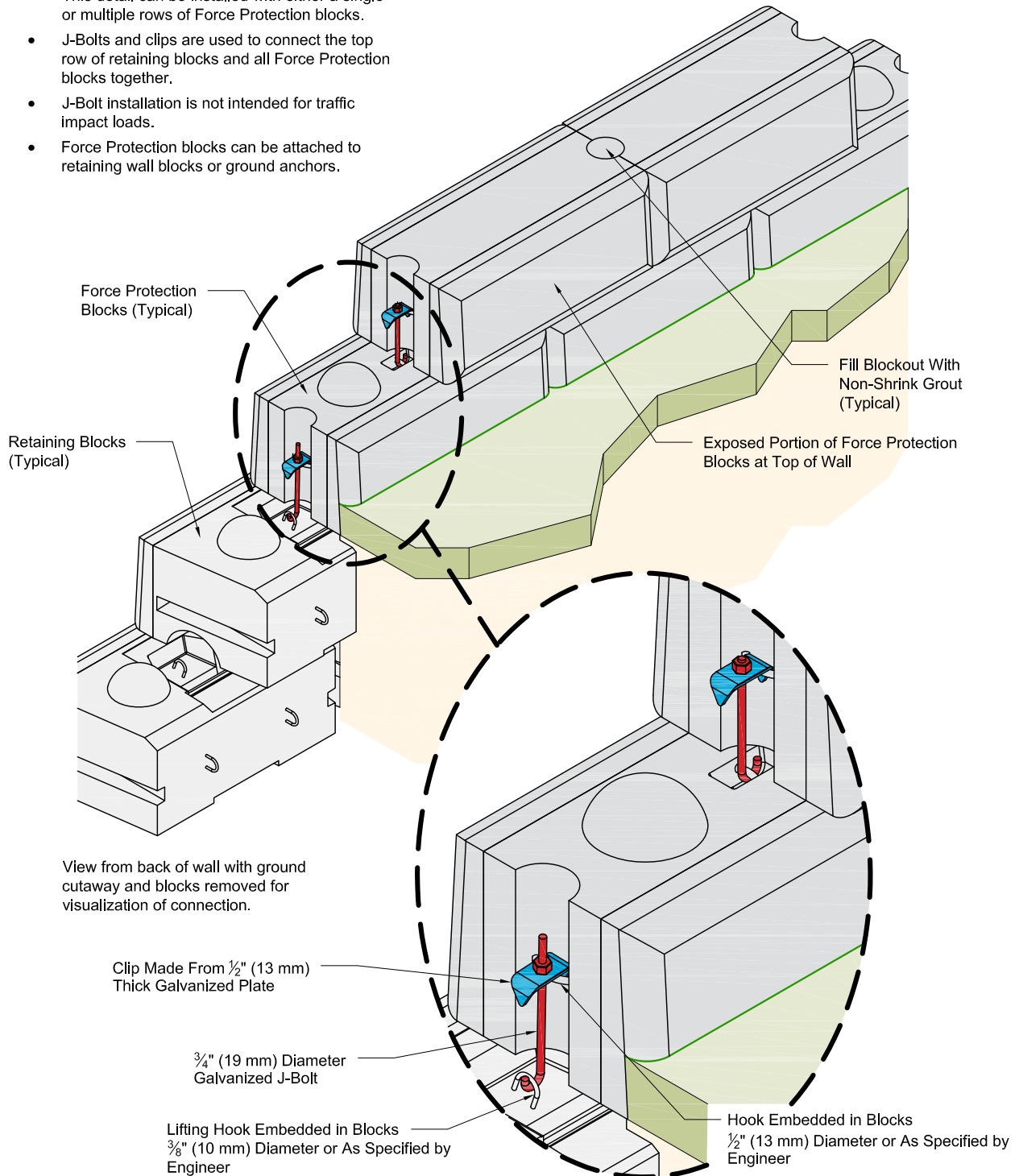
TITLE:

Drainage Swale Options

FILE: 4 Drainage Swale Options 062215.dwg

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- This detail can be installed with either a single or multiple rows of Force Protection blocks.
- J-Bolts and clips are used to connect the top row of retaining blocks and all Force Protection blocks together.
- J-Bolt installation is not intended for traffic impact loads.
- Force Protection blocks can be attached to retaining wall blocks or ground anchors.



- This drawing is for reference only.
- **Final designs for construction must be prepared by a registered Professional Engineer** using the actual conditions of the proposed site.
- **Final wall design must address both internal and external drainage and shall be evaluated by the Professional Engineer who is responsible for the wall design.**

DRAWN BY:	J. JOHNSON	TITLE:	FORCE PROTECTION COPING WITH J-BOLTS	REDI-ROCK™ 05481 US 31 SOUTH, CHARLEVOIX, MI 49720 (866) 222-8400 ext 3010 • www.redi-rock.com
APPROVED BY:	J. JOHNSON			
DATE:	FEB. 7, 2015			
SHEET:	1 of 1	FILE:		