

29'-0" Long By 15'-0" Wide Precast Concrete Bridge  
White Creek Bridge  
Yakima County, Washington  
Pacific Bridge And Construction, Inc.

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D R A W I N G I N D E X

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RENEWS: 01-05-2023

PROJECT: White Creek Bridge		CLIENT: Pacific Bridge And Construction, Inc. -- Sandy, Oregon -- 503-668-4798		VOICE: 503-763-9995 FAX: 503-763-9981 EMAIL: JOSH@QUINCYENG.COM		CHECKER: Josh Goodall		REVIEWER: Brett Karnes		PROJECT NO. 21-3051.07		SHEET 1 OF 19	
QUINCY ENGINEERING, INC 670 Hawthorne AVE SE, Suite 110 Salem, OR 97301 - 4996		DESIGNER: Liam Kucey		DRAFTER: Liam Kucey		TITLE: TITLE SHEET / DRAWING INDEX				DRAWING DATE: 4th June 2021			
ACCOMPANIED BY DWGS. ....		DATE		REVISION		BY							

Bridge Structure General Notes #1

GENERAL NOTES

1. These Plans Contain Information Proprietary To Pacific Bridge And Construction, Inc. And Is Being Furnished For The Use Of Waterways Consulting Inc. And Yakama Nation Fisheries Only In Connection With This Project. The Information Contained Herein May Not Be Reused At Other Locations Unless Specifically Authorized By Pacific Bridge And Construction, Inc. And Quincy Engineering, Inc.

DESIGN CRITERIA AND LOADINGS

1. Bridge Structure Designed To Comply With The Latest American Association Of State Highway Officials Design Provisions -- AASHTO LRFD Bridge Design Specifications, Eighth Edition, 2017.
2. Bridge Structure Design Dead Loads -- Being The Weight Of All Permanent Bridge Structure Components Plus  
A. Future Asphalt Pavement Wearing Surface Of 3" Thickness Weighing 35 Psf.
3. Live Load Distribution Factors Were Calculated Using A Finite Element Model Of The Structure:  
Exterior Girder Shear ..... 0.61  
Exterior Girder Moment ..... 0.33  
Interior Girder Shear ..... 0.48  
Interior Girder Moment ..... 0.27
4. Vehicular Live Load --  
A. Service and Strength I Limit States:  
"HL-93" Design Truck  
B. Overload Provisions (Strength II Limit States):  
"OR-STP-5BW" Permit Truck
5. Soil Pressure Loadings On Abutments And Wing Walls  
A. Abutment Wall BackFill Soil Design Parameters  
1) Failure State ..... At Rest.  
2) Density ..... 140 Pcf.  
3) Coefficient Of Internal Friction ..... 36 Deg.  
B. Wing Wall BackFill Soil Design Parameters  
1) Failure State ..... Active.  
2) Density ..... 140 Pcf.  
3) Coefficient Of Internal Friction ..... 36 Deg.
6. Seismic Design Is Performed In Accordance With 2nd Edition Of The "AASHTO Guide Specifications For LRFD Seismic Bridge Design".  
A. 1000 Year Return Period ("No Collapse" Criteria)  
AASHTO/USGS Seismic Site Parameters  
1) Peak Ground Acceleration Coefficient (PGA) ..... 0.223  
2) Site Coefficient For Site Class "D" (Fpga) ..... 1.353
7. Guardrails And/Or Handrails:  
This Bridge Will Be Constructed Without Crash-Test Designed Guardrails And/Or Handrails With The Knowledge And At The Request Of The Owner. By Specifying That This Bridge Be Constructed Without The Life And Property Protections Afforded By Designed Guardrails And/Or Handrails, The Owner Acknowledges And Agrees That The Bridge Structural Engineer-Of-Record And Pacific Bridge And Construction Inc. Accepts No Responsibility And/Or Liability For Injury, Death, Or Property Damage, Due In Whole Or In Part, Because Of The Absence Crash-Test Designed Guardrails And/Or Handrails. .
8. GRS Walls Are Designed Per The Design And Construction Guidelines For Geosynthetic Reinforced Soil Abutments And Intergrated Bridge Systems. FHWA-HRT-17080, June 2018.

SOILS, FOUNDATIONS, AND BACKFILLS

1. Because The Bridge Owner Has Not Provided The Bridge Structural Engineer-Of-Record With A Professionally-Qualified, Site-Specific, Hydraulics Report The Engineer Has Designed The Bridge To Be Compatible With Other On-Site And Imported Soil Properties Identified In The General Notes. The Owner Understands And Agrees That The Bridge Structural Engineer-Of-Record Accepts No Responsibility And/Or Liability For Injury, Death, Or Property Damage, Due In Whole Or In Part, Because The Foundation Design For This Bridge Structure Is Based On Assumed, Unconfirmed Soil Properties, Including Stream Scour.

SOILS, FOUNDATIONS, AND BACKFILLS

2. This Project Has Been Designed Using An Allowable Bearing Capacity = 4000 Psf As Recommended By The Project Geotechnical Engineer.
3. Remove Any Existing Fill, Any Existing Silty, Sand-Silt, Or Clay-Silt Soil, Or Any Soil That Is Loose Or Has Been Disturbed Down To Existing Very Dense Gravel For A Minimum Width Of 5'-0" Extending At Least 6" Beyond Front And Back Faces Of Footing Units.
4. Where Excavation Of Fill And/Or Silt Extends Below Bottom Elevation Of Abutment Blocks, Provide Imported Angular Crushed Rock Base Per Design Plans.
5. Compact Imported Base Material To At Least 95% Relative Compaction.
6. Provide A Non-Woven, Needle-Punched Soil Filter Fabric Of Minimum 4 Ounce Per Square Yard Weight Between Backfill Soil And Back Face Of Abutment Walls And Wing Wall Extensions.  
A. Lap All Joints, Horizontal And Vertical, A Minimum Of 6 Inches.  
B. Install As Shown On Drawings
7. Use Only Free-Draining Granular Material As Backfill Behind Abutment Walls And Wingwalls. Compact Material Placed Behind Walls To 95% Relative Compaction Using Only Light Or Hand-Operated Compaction Equipment.
8. Install Soil In Front Of Abutment Walls Simultaneously With Backfill Behind Abutment Walls To Prevent Unbalanced Lateral Loading Of Abutment Walls. Install Backfill Against Back Face Of Abutment Walls No More Than 6'-0" Above Elevation Of Soil Placed Against Front Face Until After Abutment Wall Vertical Reinforcement Has Been Grouted And Only After Bridge Deck Plank Units Have Been Dowel-Anchored-Grouted To Top Of Abutment Walls At Each End.

STEEL PLATES, PIPES, TUBES, ROLLED SHAPES, BOLTS, PINS, AND WELDS

1. Plate ..... ASTM A36.
2. Pipe ..... ASTM A53/Grade B Or ASTM A501.
3. Rolled Shapes ..... ASTM A992.
4. Structural Bolts ..... ASTM F3125, Grade A325, Type 1.
5. Weld In Conformance With AWS D1.5 By Properly Certified Welders Using E70 Electrodes And AWS Prequalified Procedures.
6. Do Not Weld Members After They Have Been Galvanized.
7. Hot-Dip Galvanize All Steel Components That Are Not Protected Against Atmospheric Corrosion By A Minimum Of 1" Of Concrete Cover.  
A. Provide A Minimum Zinc Coating Of 2.3 Ounces Per Square Foot Per ASTM A123 Or ASTM A385.  
B. Treat Field Drilled Holes, Field Welds, And Abrasions With One Coat Of Pittsburgh "Waterspar" Or "Speedhide" Galvanizing Primer And Two Coats Of "Ironhide" Metal Protective Paint.
8. Paint All Steel Not Encased In Concrete And Only Too Large To Be Hot-Dip Galvanized.  
A. Shop-Apply (3) Paint Coatings Each 2.0 Mil Minimum Dry Thickness  
1st Coat - Rust-0-Crylic "5769 Rust Inhibiting Red Primer".  
2nd Coat - Rust-0-Crylic "5791 White Primer".  
3rd Coat - Rust-0-Crylic "5700 System Top Coat" (Color Per Owner).

STEEL PLATES, PIPES, TUBES, ROLLED SHAPES, BOLTS, PINS, AND WELDS -- CONTINUED

B. After Completing All Field Welding And Bolting, Field-Apply The Above Painting System Onto All Steel Surfaces Field-Welded, Scratched, Chipped, Or Otherwise Unprotected Against Atmospheric Corrosion.

CONCRETE

1. General  
A. Provide Concrete Complying With ACI 301.  
B. Use Normal Weight (145 pcf +/- 5 pcf) Concrete.  
C. Air-Entrainment Volume ..... 5% +/- 1%.  
D. Provide Concrete Having A Minimum Cement Content Of 6 Sacks Per Cubic Yard.  
E. Cast Concrete Using A Maximum Water/Cement Ratio Of 5½ Gals Per Sack Of Cement.  
F. Do Not Use Any Concrete Unit Having Cracks Over ⅛" Wide.  
G. Fabricate Block "Lugs" And "Recesses" And Plank "Recesses" Such That The Dimensions Detailed For Them On The Drawings Are Achieved To A Tolerance Of +/- ⅛".
2. Precast Bridge Deck Planks  
A. Prestressed Concrete Planks  
1) Interior Plank  
Minimum Strength At 28-Days ..... F'c = 5000 Psi.  
Strength At Removal From Form ... FcRemove = 4000 Psi.  
2) Exterior Plank  
Minimum Strength At 28-Days ..... F'c = 5000 Psi.  
Strength At Removal From Form ... FcRemove = 4000 Psi.  
B. Use Aggregates No Larger Than 1" And No Smaller Than ¾".  
C. Fabricate Plank Units To The Following Dimensional Tolerances:  
1) Length ..... +/- ½".  
2) Width ..... +/- ½".  
3) Thickness ..... +/- ¼".  
4) Twist, As Measured By "Lift" Of Corner, Where The Other (3) Corners Define A Horizontal Plane . +/- ¼".  
D. Supply Plank Units Having The Following Surface Finishes:  
1) Bottom, Sides, And Ends ..... "As-Cast In Steel Forms".  
2) Top Surface ..... Transverse "Rake" Finish. (¼" Wide By ¼" Deep Grooves Spaced At ½" On Center)  
E. Provide Plank And Panel Units Having No "Honeycomb" Voids And No Corner Or Edge Chips Larger Than 1" In Any Direction.
3. Precast Abutment Block Units  
A. Minimum Strength At 28-Days ..... F'c = 3000 Psi.  
B. Minimum Strength At Removal From Form ..... FcRemove = 2000 Psi.  
C. Use Aggregates No Larger Than 3" And No Smaller Than ¾".  
D. Fabricate Units To The Following Dimensional Tolerances:  
1) Overall Width, Length, And Thickness ..... +/- ⅛".  
2) Squareness On All (6) Sides, As Measured By Comparing Lengths Of Face Diagonal Distances .... +/- ⅛".  
E. Supply Units Having "As-Cast In Steel Forms" Finish.  
F. Provide Units Having No "Honeycomb" Voids And No Corner Or Edge Chips Larger Than 2" In Any Direction.
4. Mortars And Grouts  
A. Provide Non-Corrosive Non-Shrink Cementitious Grout By The Euclid Chemical Company An RPM Company. Grout Should Be In Pourable Consistency When Placed In Longitudinal Joints Between Bridge Deck Planks.  
1) Provide Pre-Molded Compressible Back Rods Along Bottom And At Ends Of Joints To Retain Dry Pack.  
2) Fill Longitudinal Joints Flush With Top Surface Of Planks.  
B. Provide Non-Corrosive Non-Shrink Cementitious Grout By The Euclid Chemical Company An RPM Company. Grout Should Be In Fluid Consistency When Placed Between Top Of Top Abutment Block Units And Underside Of Precast Deck Plank Units.  
1) Provide Wood Setting Blocks, Pre-Molded Compressible Backer Rods, And/Or Expandable, Closed-Cell, Expandable Foam Around Perimeter Of Top Abutment Block(s) To Retain Grout.  
2) Fill Vertical Cylindrical Voids  
a) Around Abutment-To-Deck Anchor Dowel Pins.  
b) Around Abutment Block Vertical Post Tensioning Rods.  
3) Vibrate Grout, As Required, To Assure That All Voids Spaces Are Completely Filled.



RENEWS: 01-05-2023

PROJECT: White Creek Bridge	CLIENT: Pacific Bridge And Construction, Inc. -- Sandy, Oregon -- 503-668-4798	QUINCY ENGINEERING, INC 670 Hawthorne AVE SE, Suite 110 Salem, OR 97301 - 4996		DESIGNER: Liam Kucey	DRAFTER: Liam Kucey	CHECKER: Josh Goodall	REVIEWER: Brett Karnes	TITLE: BRIDGE STRUCTURE GENERAL NOTES #1	DRAWING DATE: 4th June 2021	PROJECT NO. 21-3051.07	SHEET 2 OF 19
				BY							
				REVISION							
				DATE							
ACCOMPANIED BY DWGS. ....											

Bridge Structure General Notes #2

CONCRETE REINFORCING STEEL

1. Provide Deformed Steel Bars Complying With ASTM A615, Grade 60.
2. Provide All Bars Full Length.  
A. Do Not Lap-Splice Any Bar.  
B. Do Not Weld-Splice Any Bar.
3. Position Deck Plank Longitudinal Bars Not Required To Be Full Length Mid-Length Of Deck Planks.
4. Shop-Fabricate All Bars Required To Be Bent.  
A. Cold-Bend All Bars.  
B. Do Not Apply Heat To Any Bar Or "Tack Weld" Any Bar.
5. Provide Minimum Concrete Cover For Reinforcing Bars As Follows:  
A. For All Precast Bridge Deck Plank Units  
1) At Bottom Surface And Sides Of Planks ..... 1" +/- 1/4".  
2) At Ends Of Planks ..... 2" +/- 1/4".  
3) At Top Surface Of Planks..... 1 1/2" +/- 1/4".  
B. For All Precast Reinforced Abutment Block Units  
1) At Top And Bottom Surfaces Of Blocks ..... 2 3/4" +/- 1/4".  
2) At Side Surfaces Of Blocks ..... 2 1/4" +/- 1/4".  
3) At Ends Of Blocks ..... 3" +/- 1/4".
6. Position Bars As Shown On The Drawings To The Following Tolerances:  
A. Bar Location As Measured Perpendicular To Bar Length .... +/- 1/4".  
B. Bar Location As Measured Parallel To Bar Length ..... +/- 1/2".  
C. Longitudinal Location Of Bends And Ends Of Bars ..... +/- 1/2".

SPECIAL INSPECTIONS AND TESTING

1. All Concrete Is Placed Under "Casting Plant" Conditions In Reusable Steel Forms. No Concrete Is Cast On-Site.  
A. Provide Periodic Inspection Of Concrete Reinforcement. And Embedment's For Each Day Concrete Is Cast.  
B. For Each Day Concrete Is Cast. Perform Standard Field Tests On Plastic Concrete And Mold 4 Minimum Standard Cylinders To Be Tested At 28 Days.  
C. Inspection and Testing Reports Will Be Available From Pacific Bridge And Construction, Inc.

GRS WINGWALL SYSTEM

1. Provide GRS Fabric Marifi HP570.  
If Approved By The Engineer, Another Equivilant Fabric May Be Used.

HORIZONTAL TRANSVERSE RODS FOR PRECAST BRIDGE PLANKS

1. Provide Transverse Tie Rods For Precast Bridge Planks At Elevations And Spacing's As Shown On The Drawings.
2. Use 3/4" Grade 75 All-Thread Rebar.
3. Galvanize Transverse Rods, Steel Bearing Plates, And Heavy Hex Nuts To Provide A Minimum Zinc Coating Thickness Of 2.3 Oz./Sq.Ft.
4. Bring Nuts On Each End Of All Rods To Fully "Snug" Condition, Then Tighten Each Nut 1 1/2 Turns.
5. After Nuts Have Been Properly Tightened, Install Lock Nut At Each End Of Rod. Rod Shall Extend 1/2" Beyond Lock Nut.
6. Note \*1: Do Not Tighten Nuts At Ends Of Rods Until Grout In All Longitudinal Joints Has Cured To A Minimum Compressive Strength Of 5000 Psi.

INSTALLATION NOTES

1. General  
A. These Drawings And Bridge Structure General Notes Indicate The Intended Finished Constructed Structure.  
B. Except As Specifically Indicated As "Required" Installation Procedures, Sequences, Means, And Methods Are The Sole Responsibility Of The Installation Contractor.  
C. Plans, Sections, Details, And Bridge Structure General Notes Provided By Quincy Engineering, Inc. Pertain Only To The Bridge Structure. For All Other Project Requirements, Including Stream Channel And Street Improvements, Refer To Engineering Documents Prepared For This Project By Waterways Consulting Inc.  
D. These Installation Notes May Not Be All-Inclusive. Installation Contractor Shall Perform All Work Required To Produce A Properly Constructed Bridge Structure.
2. Prepare Site For Installation Of Bridge  
A. Construct Temporary Dams And Other Required Stream Diversions.  
B. Provide Acceptable Required Dewatering And Sediment Controls.  
C. Install Pumps, Pipes, And Other Required Apparatus.  
D. Install "Required" Signage And Close Road To Traffic.  
E. Remove Existing Culvert, Bridge Structure, And Abandoned Debris.  
F. Remove Existing Trees, Including Root Systems, As Required.  
G. Excavate For Placement Of Abutment And Wing Wall Footing Units.  
H. Obtain Acceptance Of Foundation Bearing Subsurface.  
I. Place And Compact Imported Granular Base For Abutment Footings.  
J. Stability And Safety Of All Temporary Excavations And Structures Are The Sole Responsibility Of The Installation Contractor.
3. Install Abutments  
A. Place Abutment Footing Units Level And At Proper Elevation(s).  
B. Where Necessary, Provide Grout Plug In Bottom Of Grout Holes At Footing Vertical Voids "Required" To Contain Vertical Rebar.  
C. Provide 8" To 10" Diameter Annular Grout Retainage Rings On Top Of Each Abutment Around Vertical Voids To Be Reinforced Using A Well-Bonding Insulating Spray Foam (To Retain Grout When Abutment Vertical Rebar Is Grouted Later).  
D. Stack Abutment Units Plumb Onto Center Of Footings.  
1) Place Fill On Front And Back Sides Of Abutments.  
2) Limit Differential Height Of Fills On Front And Back Sides Of Abutment Walls To A "Required" Maximum Of 6'-0".  
3) Limit Weight Of Any Construction Equipment To 4000 Pounds Within 4'-0" Of Nearest Face Of Abutment Walls Until Plank-To-Abutment Dowel Connections Are Full Strength.
4. Install Vertical Rebar In Abutment From Bottom Of The Bridge Plank To Bottom Of Footing Units. Fully Grout (Under Pressure If Required) Voids Around Vertical Rebar To Top Of The Abutment Blocks.
5. Complete All Stream Channel Work To Occur Between Abutments As Specified By The Project Requirements.
6. Place Precast Concrete Bridge Plank Units  
A. Place Continuous Wood Bearing Strips Along Top Front Edge Or Top Back Edge Of Top Abutment Units.  
B. Note That It Is "Required" That Deck Plank Units Be Lifted By Lifting Loops At The Ends Of The Plank.  
C. Use Only Proper Lifting Techniques Such As Spreader Bars, Etc.  
D. Set Precast Deck Planks.  
E. Install Premolded Compressible Backing Rod Full Length At Bottom And Vertically At Each End Of All Longitudinal Grout Joints.  
F. Thread PVC Sleeves Thru Transverse Tie Rod Voids.  
G. Fully Grout All Longitudinal Joints Full Depth And Full Length.  
H. Allow Longitudinal Joint Grout In All Joints To Cure A "Required" Minimum Of 4 Hours. Keep grout moist during curing.
7. Install Premolded Compressible Backer Rods Continuous Along (3) Edges Of Top Abutment Blocks (Under Deck Planks).
8. Install Rebar Dowels And/Or Verticals At Each End Of Planks Down Into Pre-Formed And/Or Field-Drilled Holes In Abutment Block Units.

INSTALLATION NOTES -- CONTINUED

9. Fully Grout (Under Pressure If Required) Voids Around Vertical Rebar And Simultaneously Fill Voids Under Deck Planks At Top Of Abutments. Allow Grout To Cure A Minimum Of 4 Hours.
10. Install And Fully Tighten Transverse Tie Rods As "Required".
11. Remove 4" (Minimum) Lengths Of Backer Rods Under Ends Of Planks At 2'-0" (Maximum) Intervals To Confirm Grout Void Has Been Filled. Confirming That At Least 80% Of The Length Of The Grout Edge Has Full Contact Along Both The Top And Bottom Joint Surfaces.
12. Install Guardrail Systems If Required.
13. Complete Stream Channel, Roadway, And Other Work As "Required" And Specified In Contract Documents.

CONCRETE PRESTRESSING STRAND


1. Provide Uncoated 7-Wire, Grade 270, Low-Relaxation Prestress Strand Conforming To ASTM A416, Including Current Supplements Of 1/2" Diameter And Cross-Sectional Area 0.151 Sq.In.
2. Do Not Use Any Portion Of Strand Having Scratches, Gouges, Nicks, Or Any Other Abrasion, Or Any Portion Of Strand Previously Gripped By Jacking Chucks.
3. Run Strand Straight Between Jacking Chucks -- Do Not Harp Strands.
4. Jack Each 1/2" Diameter Strand To A Force Of 31,000 Lbs (75% Of Breaking Strength).
5. Confirm Jacking Force By Measuring Stretch Of Strand As It Is Jacked.  
A. Strain At Initial Jacking Force = 0.00711 In/In.  
B. Example: For A Distance Of 64'-4" Between Jacking Chucks And A Computed Shortening Of The Self-Stressing Forms Of 1/4", The Stressing Jack Will Move 5.75" Relative To The Bulkhead.
6. Recommended Jacking Sequence:  
A. Apply Initial Jacking Force Of 5000 Lbs To Each Strand. To Seat Jacking Chucks (Will Stretch Strand 7/8").  
B. Starting With Center Strands, Sequentially Stress Each Strand.  
C. After Stressing All Strands, Confirm That The Required 31,000 Lb Force Has Been Achieved In Each Strand. (Center Strands May Require Additional Jacking).  
D. After Concrete Has Attained Its Required Release Strength De-Tension Strands In Reverse Order Of Stressing The Strands.
7. Prior To Moving Prestressed Concrete Unit From Manufacturing Plant Provide Corrosion Protection By Thoroughly Coating Ends Of Strands With A Self-Adhesive, Asphalt-Based, Corrosion Preventive Mastic (Henry "HE209 - Elastomeric" And "H104 Asphalt Primer", If Required).

SHIPPING AND HANDLING

1. Precast Bridge Planks Shall Only Be Picked By Lifting Loops At The Ends Of The Plank. Contractor Shall Use Equipment Such That The Attachment To The Lifting Loops Remain Vertical Or No More Than 20° From Vertical.
2. Inspect Lifting Loops For Damage Prior To Picking Up Planks. If Damage Has Occurred To Lifting Loops Do Not Proceed Without Engineers Approval.
3. During Shipping Or Storage Of The Planks Place Wood Blocking Under The Plank Directly Under The Lifting Loops At Each End Of The Plank.



RENEWS: 01-05-2023

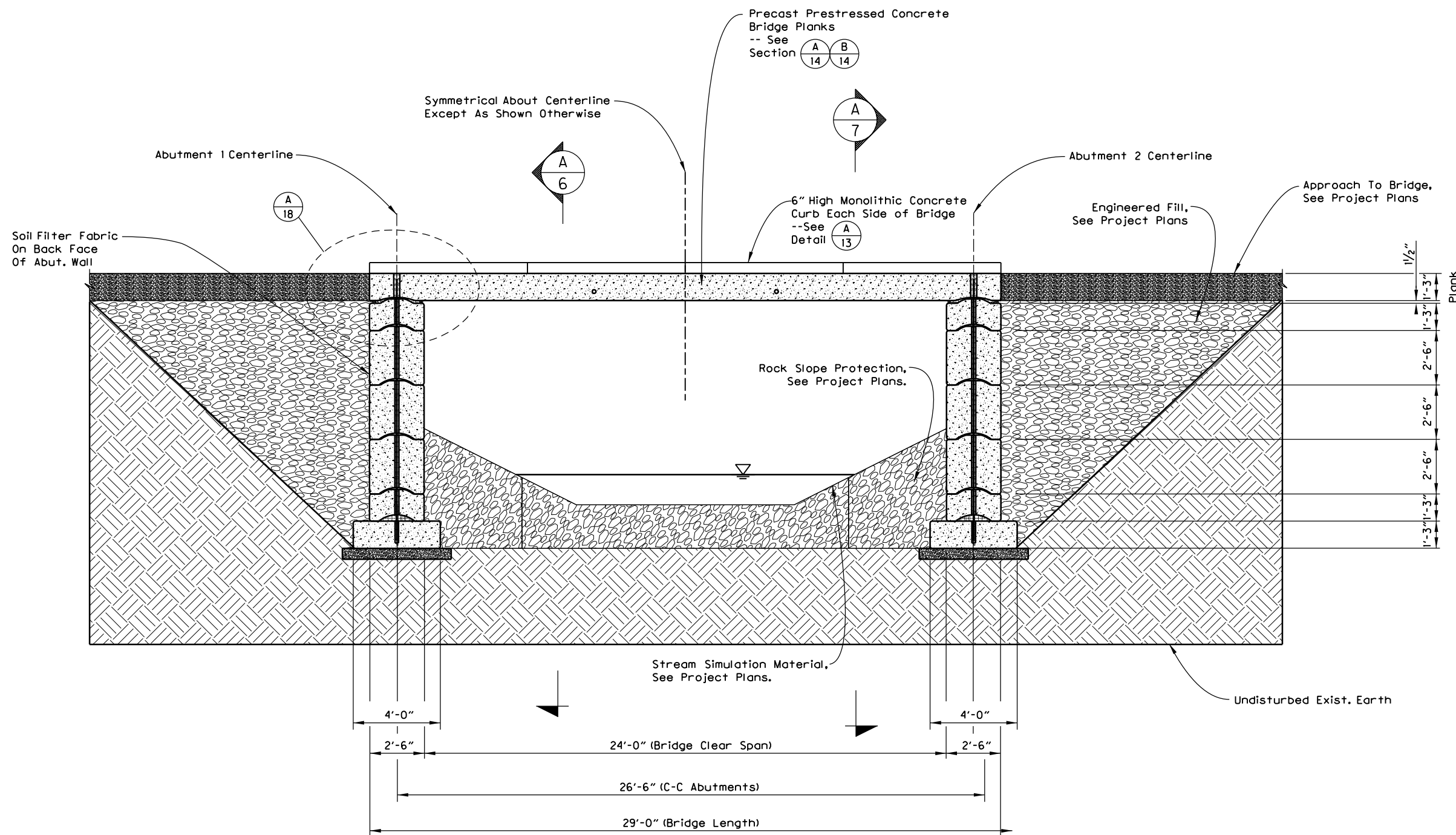
PROJECT: White Creek Bridge										
CLIENT: Pacific Bridge And Construction, Inc. -- Sandy, Oregon -- 503-668-4798										
<div><div></div><div><div>QUINCY ENGINEERING, INC</div><div>670 Hawthorne AVE SE, Suite 110</div><div>Salem, OR 97301 - 4996</div></div><div><div>VOICE: 503-763-9995</div><div>FAX: 503-763-9981</div><div>EMAIL: JOSH@QUINCYENG.COM</div></div></div>										
A		DATE	REVISION	BY	DESIGNER:	DRAFTER:	CHECKER:	REVIEWER:	BRIDGE STRUCTURE GENERAL NOTES #2	
					Liam Kucey	Liam Kucey	Josh Goodall	Brett Karnes		
TITLE:										
ACCOMPANIED BY DWGS.										
DRAWING DATE:					4th June 2021			PROJECT NO.	21-3051.07	SHEET 3 OF 19





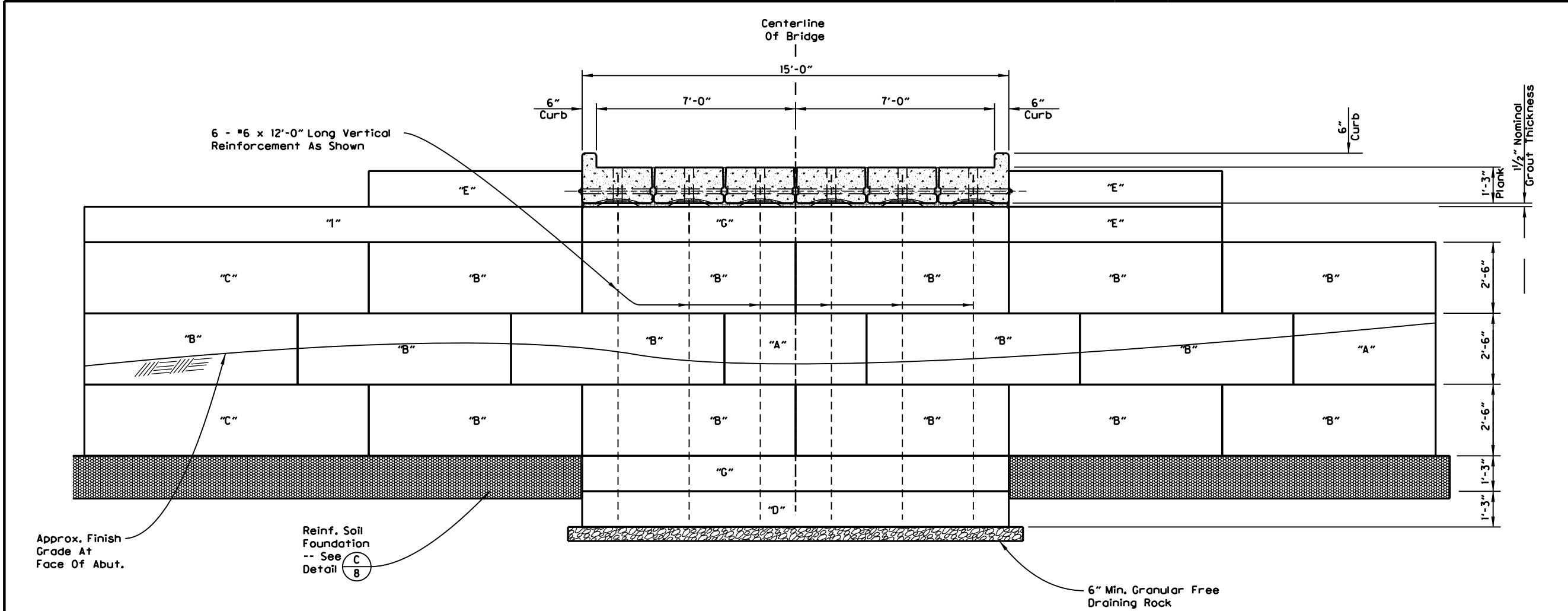
RENEWS: 01-05-2023

PROJECT: White Creek Bridge				PROJECT NO. 21-3051.07				SHEET 5 OF 19	
CLIENT: Pacific Bridge And Construction, Inc. -- Sandy, Oregon -- 503-668-4798				VOICE: 503-763-9995 FAX: 503-763-9981 EMAIL: JOSH@QUINCYENG.COM				REVIEWER: Brett Karnes	
QUINCY ENGINEERING, INC 670 Hawthorne AVE SE, Suite 110 Salem, OR 97301 - 4996				CHECKER: Josh Goodall				DRAFTER: Liam Kucey	
DESIGNER: Liam Kucey				TITLE: LONGITUDINAL SECTION THRU BRIDGE				DRAWING DATE: 4th June 2021	
BY				DATE				ACCOMPANIED BY DWGS.	
REVISION				DATE					



Note:  
Structure Shown Flat, For Slope  
And Elevation, See Project Plans.

5 Longitudinal Section Thru Bridge Structure  
 $\frac{3}{16}'' = 1'-0''$



**A**  
6 Elevation Of Abutment 1  
1/4" = 1'-0"

Precast Concrete Abutment Block Schedule										
Unit Mark	Total Count	Unit Type	Reference	Dimension (I)			End Shape		Reinf Bars	Notes
				Length	Height	Width	Left	Right		
"A"	2	Standard	Detail "A/15"	5'-0"	2'-6"	2'-6"	Round	Round	None	(I)
"B"	14	Standard	Detail "A/15"	7'-6"	2'-6"	2'-6"	Round	Round	None	(I)
"C"	2	Standard	Detail "A/15"	10'-0"	2'-6"	2'-6"	Round	Round	None	(I)
"D"	1	Footing	Detail "A/19"	15'-0"	1'-3"	2'-6"	Square	Square	Yes	(I)
"E"	3	Mono	Detail "A/16"	7'-6"	1'-3"	2'-6"	Round	Round	Yes	(I)
"G"	2	Mono	Detail "A/16"	15'-0"	1'-3"	2'-6"	Square	Square	Yes	(I)
"I"	1	Mono	Detail "A/16"	17'-6"	1'-3"	2'-6"	Round	Round	Yes	(I)

Schedule Notes:  
(I) These Units Are Reversible As Required By Project Layout (Left-To-Right).

**B**  
6 Abutment Block Schedule  
No Scale



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PROJECT: White Creek Bridge

CLIENT: Pacific Bridge And Construction, Inc. -- Sandy, Oregon -- 503-668-4798

QUINCY ENGINEERING, INC

670 Hawthorne AVE SE, Suite 110  
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BY: [Signature]

REVISION: [Table]

DATE: [Table]

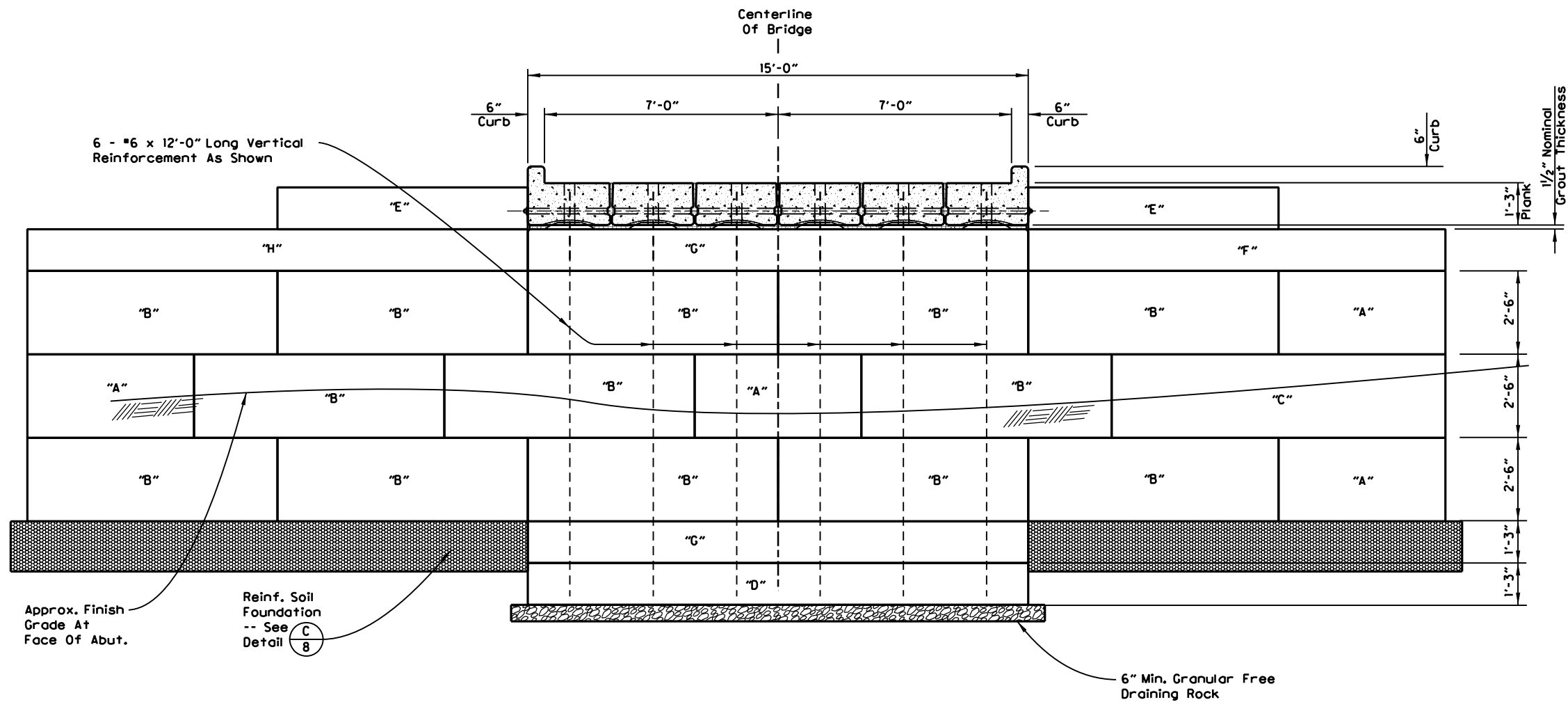
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SHOWING ELEVATION OF ABUTMENT 1

PROJECT NO. 21-3051.07

4th June 2021

6 OF 19

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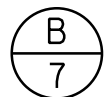
**Elevation Of Abutment 2**  
1/4" = 1'-0"

**Precast Concrete Abutment Block Schedule**

Unit Mark	Total Count	Unit Type	Reference	Dimension (I)			End Shape		Reinf Bars	Notes
				Length	Height	Width	Left	Right		
"A"	4	Standard	Detail "A/15"	5'-0"	2'-6"	2'-6"	Round	Round	None	(I)
"B"	13	Standard	Detail "A/15"	7'-6"	2'-6"	2'-6"	Round	Round	None	(I)
"C"	1	Standard	Detail "A/15"	10'-0"	2'-6"	2'-6"	Round	Round	None	(I)
"D"	1	Footing	Detail "A/19"	15'-0"	1'-3"	4'-0"	Square	Square	Yes	(I)
"E"	2	Mono	Detail "A/16"	7'-6"	1'-3"	2'-6"	Round	Round	Yes	(I)
"F"	1	Mono	Detail "A/16"	12'-6"	1'-3"	2'-6"	Round	Round	Yes	(I)
"G"	2	Mono	Detail "A/16"	15'-0"	1'-3"	2'-6"	Square	Square	Yes	(I)
"H"	1	Mono	Detail "A/16"	15'-0"	1'-3"	2'-6"	Round	Round	Yes	(I)

**Schedule Notes:**

(I) These Units Are Reversible As Required By Project Layout (Left-To-Right).

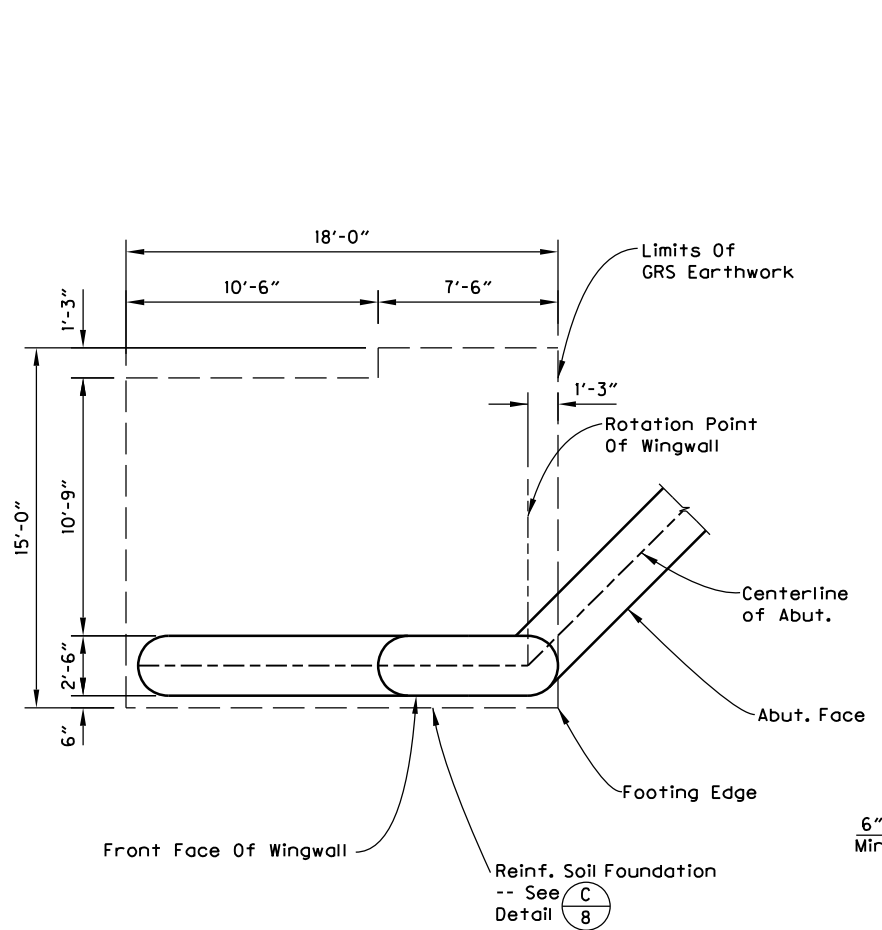


**Abutment Block Schedule**  
No Scale

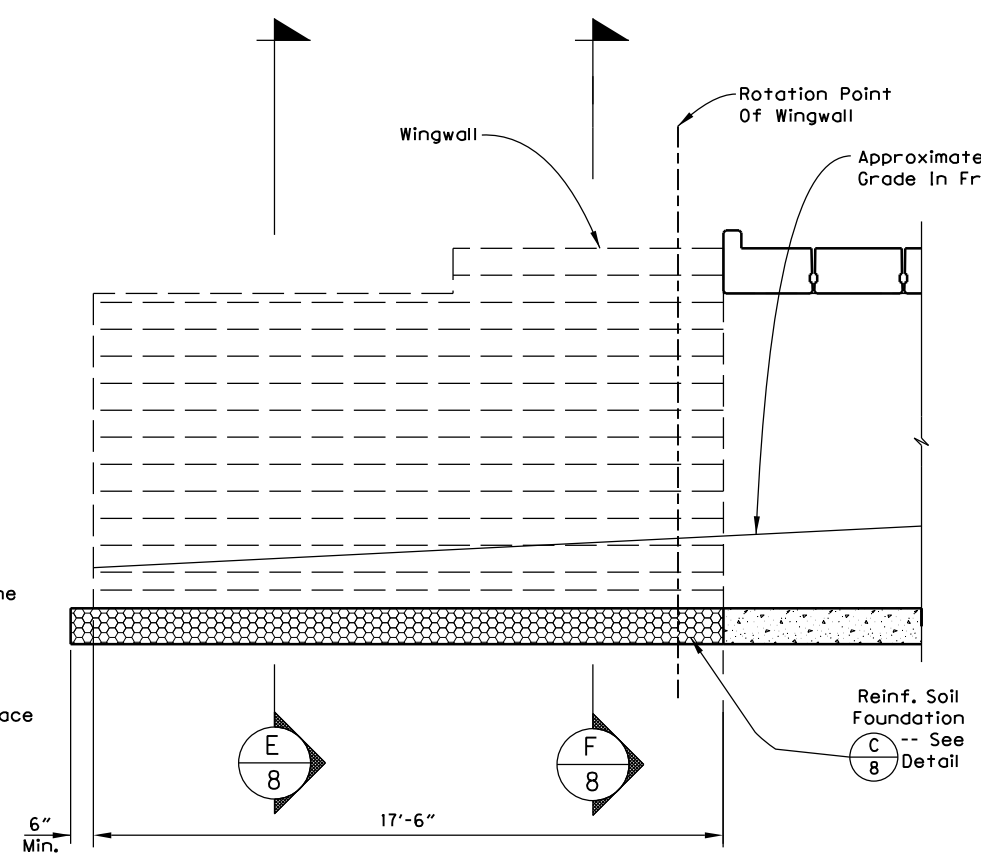


RENEWS: 01-05-2023

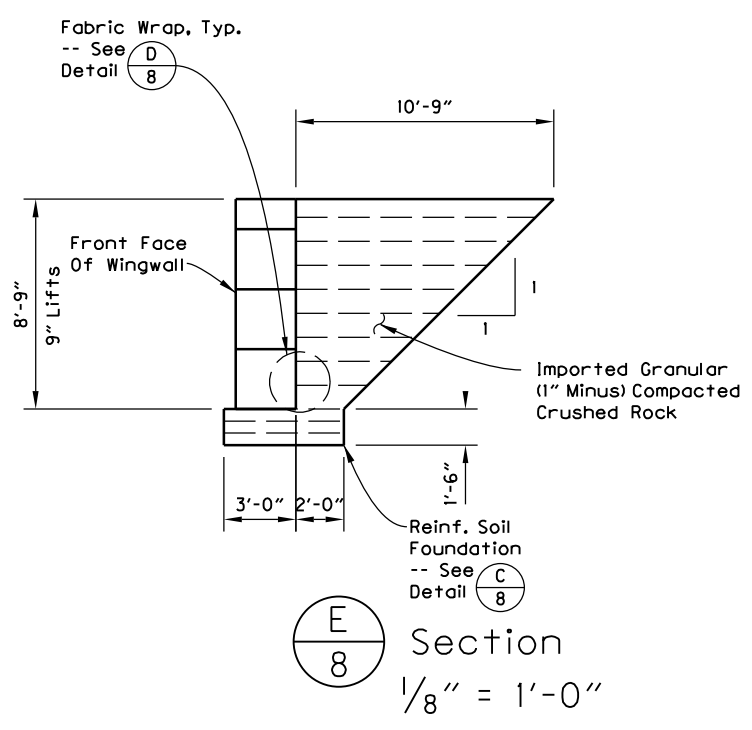
PROJECT: White Creek Bridge	CLIENT: Pacific Bridge And Construction, Inc. -- Sandy, Oregon -- 503-668-4798	DESIGNER: Liam Kucey	DRAFTER: Liam Kucey	CHECKER: Josh Goodall	REVIEWER: Brett Karnes	PROJECT NO. 21-3051.07	SHEET 7 OF 19
QUINCY ENGINEERING, INC 670 Hawthorne AVE SE, Suite 110 Salem, OR 97301 - 4996		VOICE: 503-763-9995 FAX: 503-763-9981 EMAIL: JOSH@QUINCYENG.COM		TRANSVERSE ELEVATION THRU BRIDGE SHOWING ELEVATION OF ABUTMENT 2		DRAWING DATE: 4th June 2021	
ACCOMPANIED BY DWGS.							



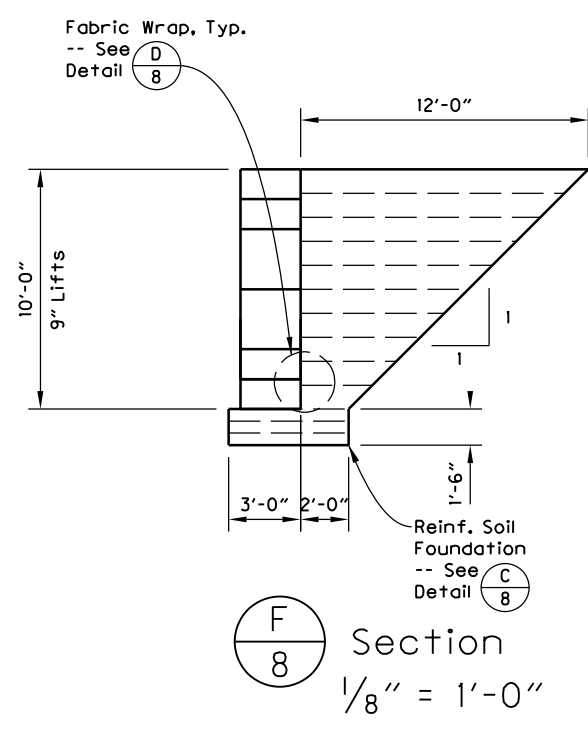
**A/8** GRS Wingwall Plan View  
 $\frac{1}{8}'' = 1'-0''$



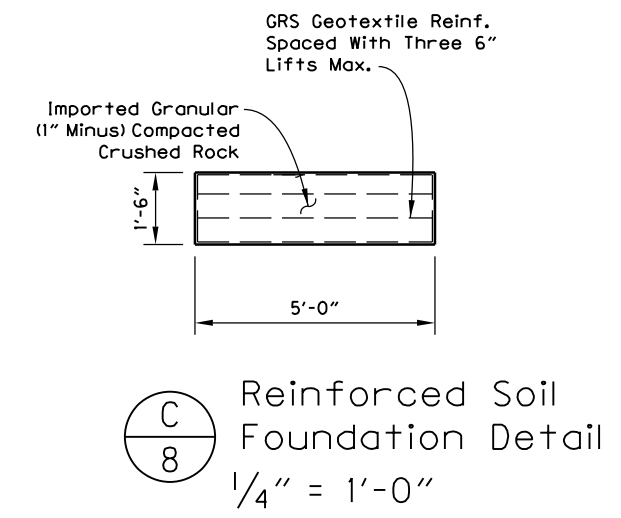
**B/8** GRS Wingwall Elevation View  
 $\frac{3}{16}'' = 1'-0''$



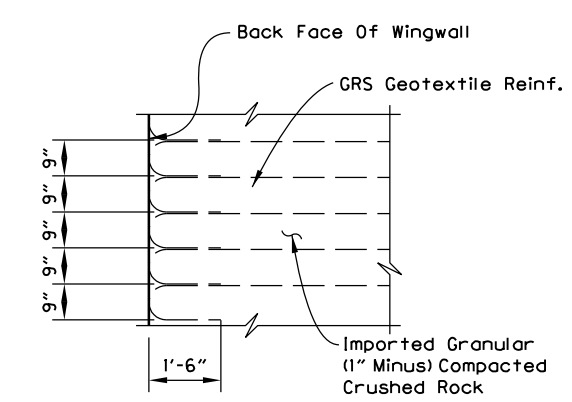
**E/8** Section  
 $\frac{1}{8}'' = 1'-0''$



**F/8** Section  
 $\frac{1}{8}'' = 1'-0''$



**C/8** Reinforced Soil Foundation Detail  
 $\frac{1}{4}'' = 1'-0''$



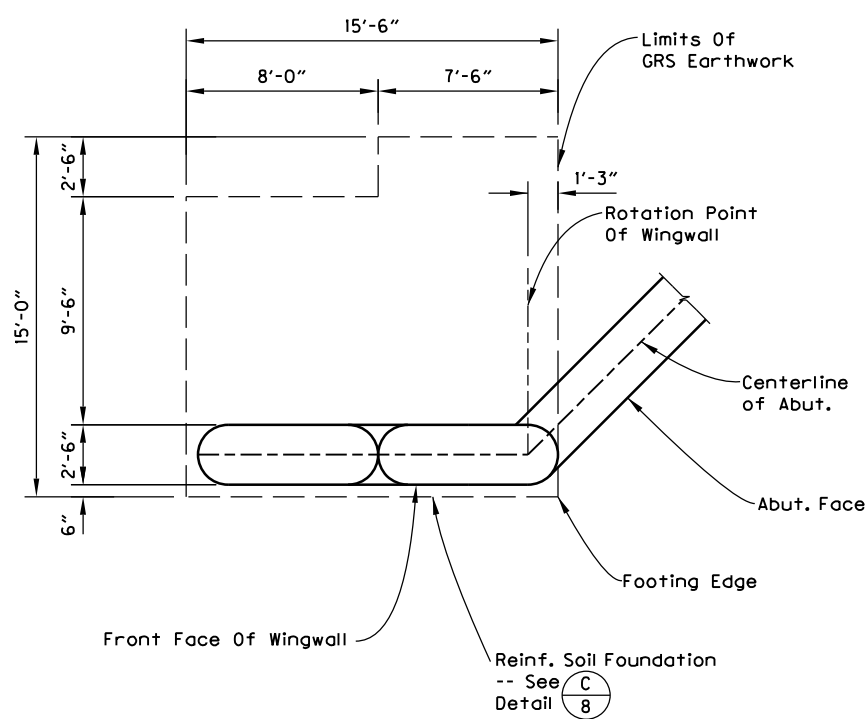
**D/8** Fabric Wrap Detail  
 $\frac{1}{4}'' = 1'-0''$



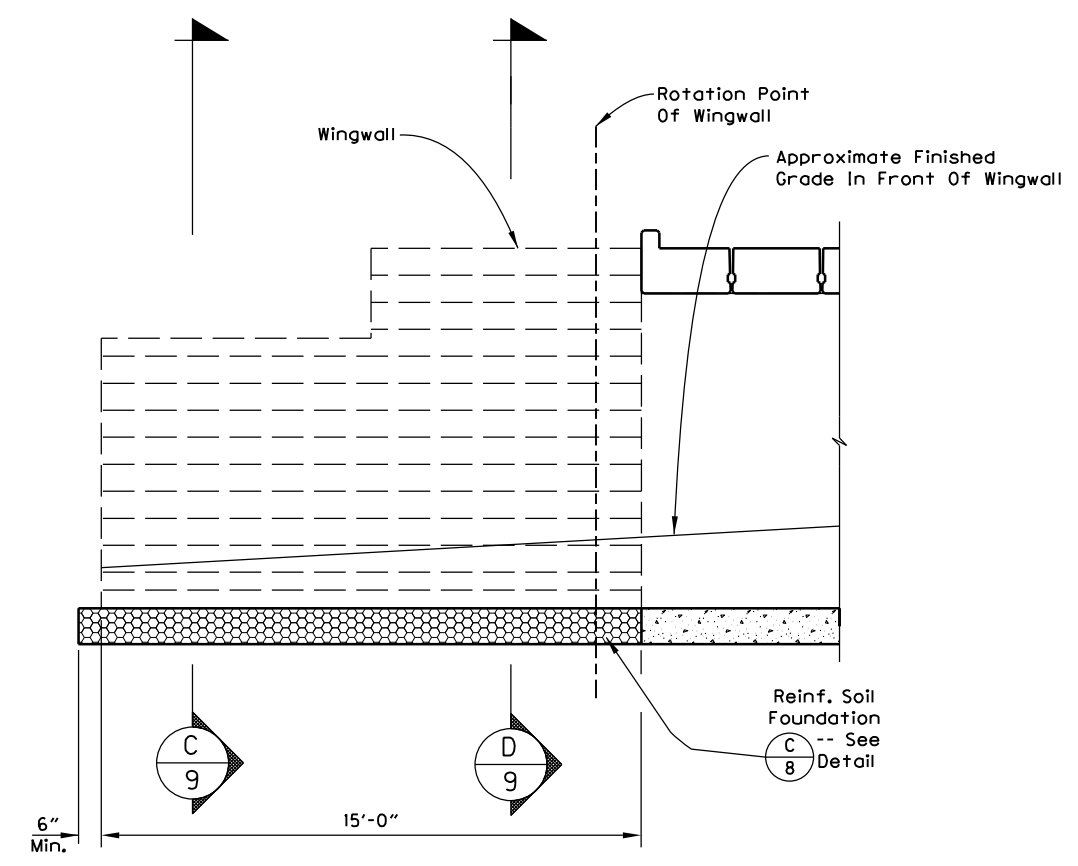
RENEWS: 01-05-2023

PROJECT: White Creek Bridge		CLIENT: Pacific Bridge And Construction, Inc. -- Sandy, Oregon -- 503-668-4798		DESIGNER: Liam Kucey		CHECKER: Josh Goodall	REVIEWER: Brett Karnes	PROJECT NO. 21-3051.07	SHEET 8 OF 19
QUINCY ENGINEERING, INC.		670 Hawthorne AVE SE, Suite 110		DRAFTER: Liam Kucey		TITLE: WINGWALL GRS DETAILS "A"		DRAWING DATE: 4th June 2021	
Salem, OR 97301 - 4996		VOICE: 503-763-9995		BY:		DATE:		ACCOMPANIED BY DWGS.	
		FAX: 503-763-9981		REVISION:					
		EMAIL: JOSH@QUINCYENG.COM							

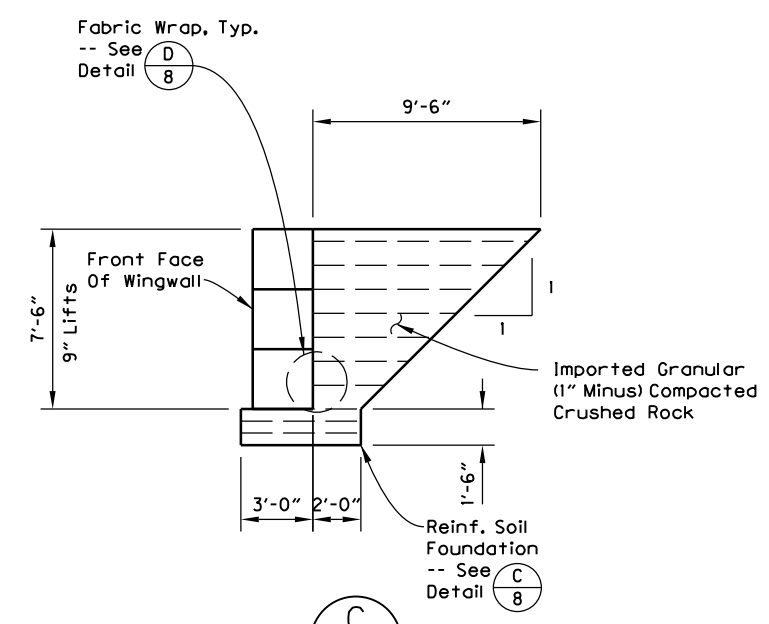




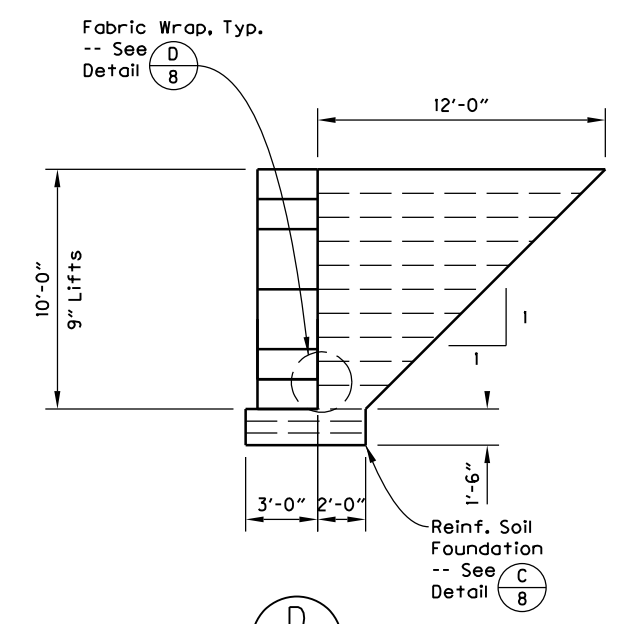
**A/9** GRS Wingwall Plan View  
 $\frac{1}{8}'' = 1'-0''$



**B/9** GRS Wingwall Elevation View  
 $\frac{3}{16}'' = 1'-0''$



**C/9** Section  
 $\frac{1}{8}'' = 1'-0''$



**D/9** Section  
 $\frac{1}{8}'' = 1'-0''$

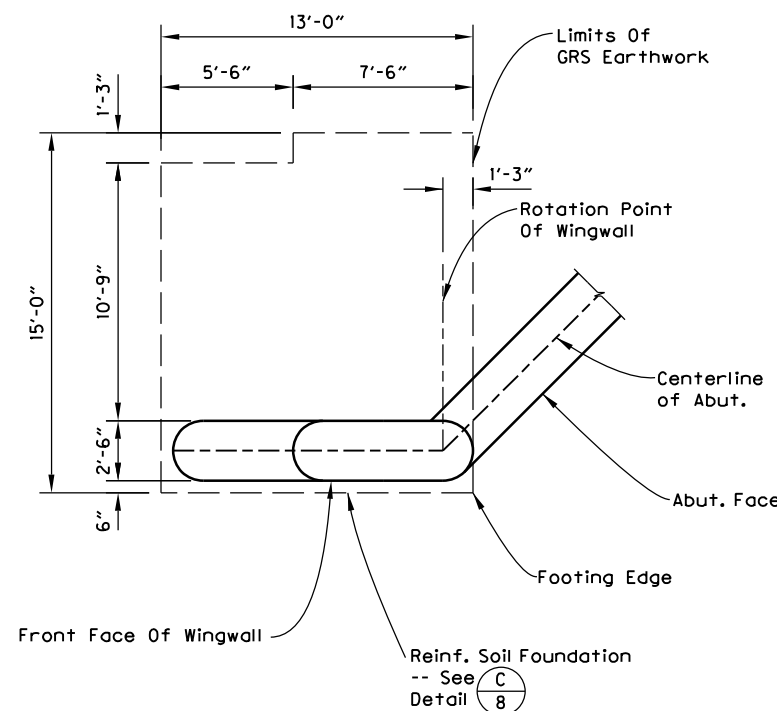


RENEWS: 01-05-2023

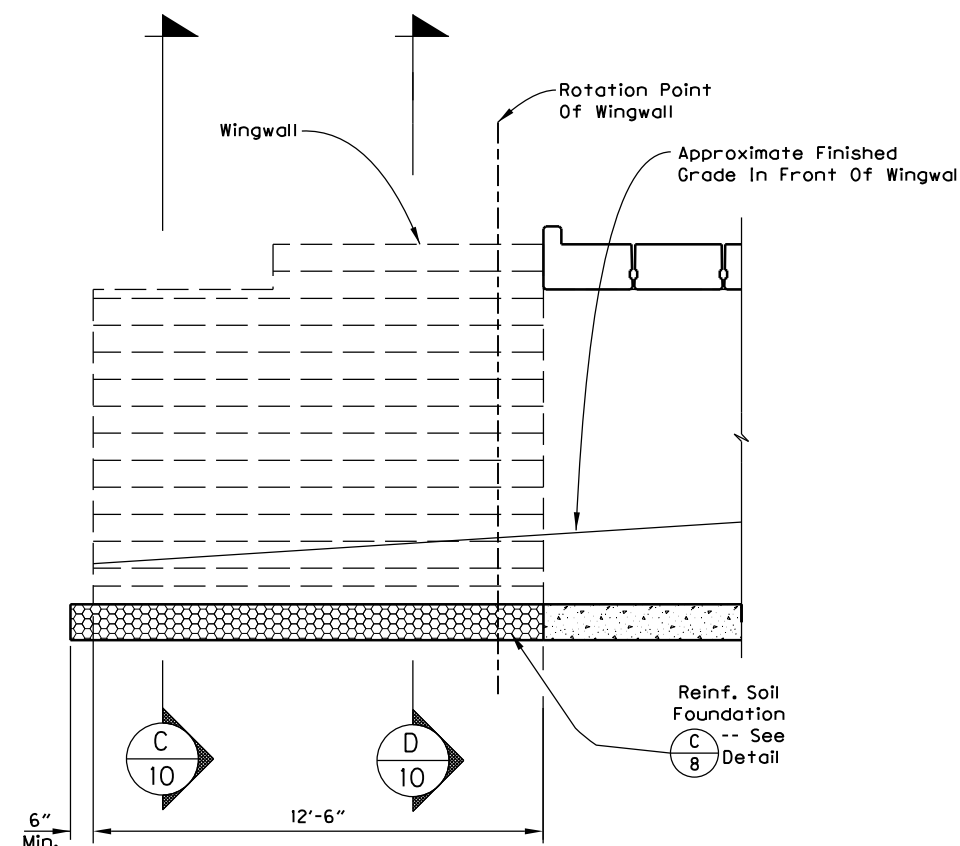
PROJECT: White Creek Bridge		CLIENT: Pacific Bridge And Construction, Inc. -- Sandy, Oregon -- 503-668-4798		DESIGNER: Liam Kucey		CHECKER: Josh Goodall		REVIEWER: Brett Karnes		PROJECT NO. 21-3051.07		SHEET 9 OF 19	
QUINCY ENGINEERING, INC		670 Hawthorne AVE SE, Suite 110		Salem, OR 97301 - 4996		VOICE: 503-763-9995		FAX: 503-763-9981		EMAIL: JOSH@QUINCYENG.COM		DRAWING DATE: 4th June 2021	
DATE		REVISION		BY		TITLE: WINGWALL GRS DETAILS "B"		ACCOMPANIED BY DWGS.					



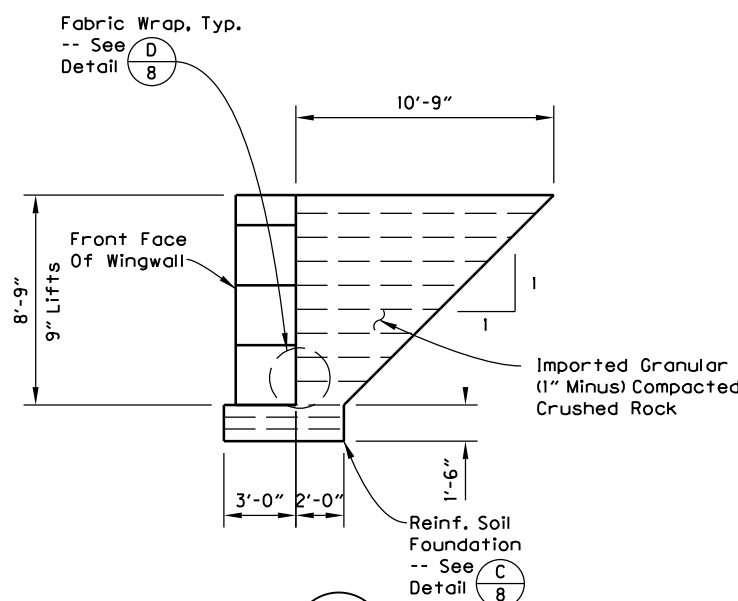
RENEWS: 01-05-2023



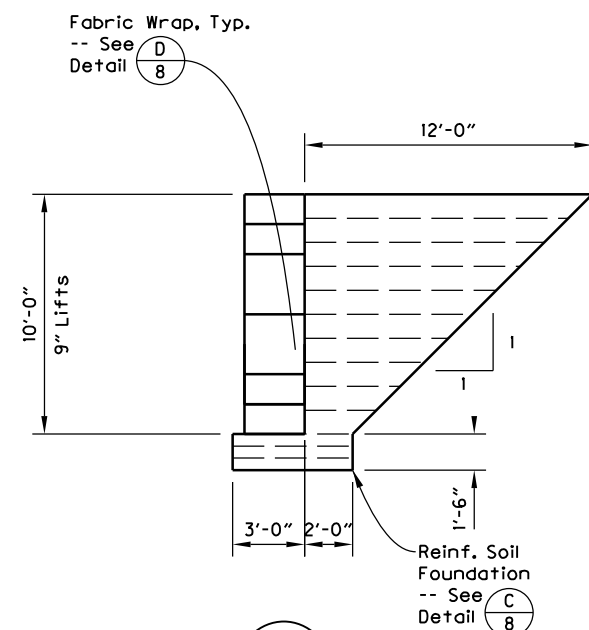
**A/10** GRS Wingwall Plan View  
1/8" = 1'-0"



**B/10** GRS Wingwall Elevation View  
3/16" = 1'-0"

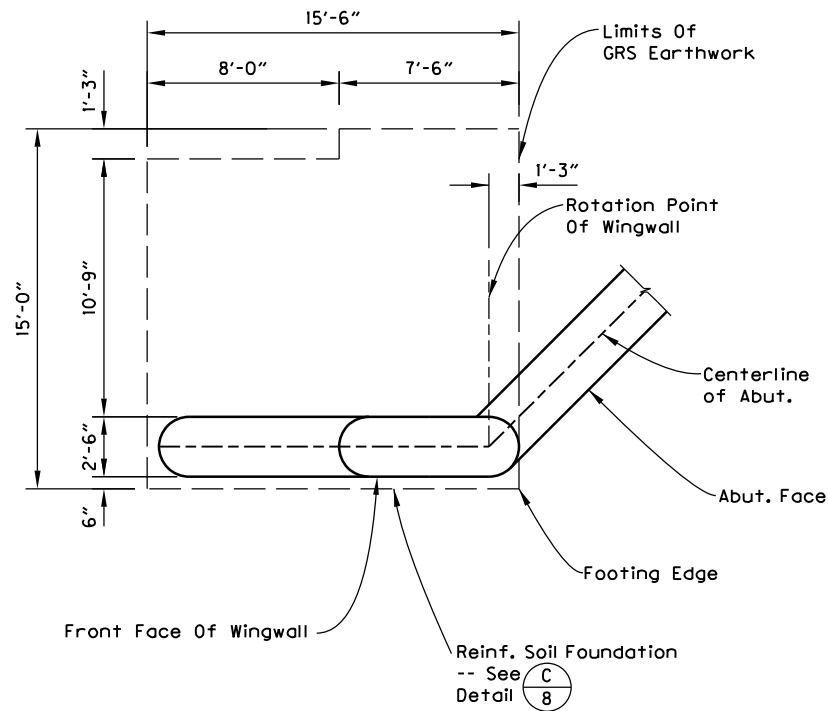


**C/10** Section  
1/8" = 1'-0"

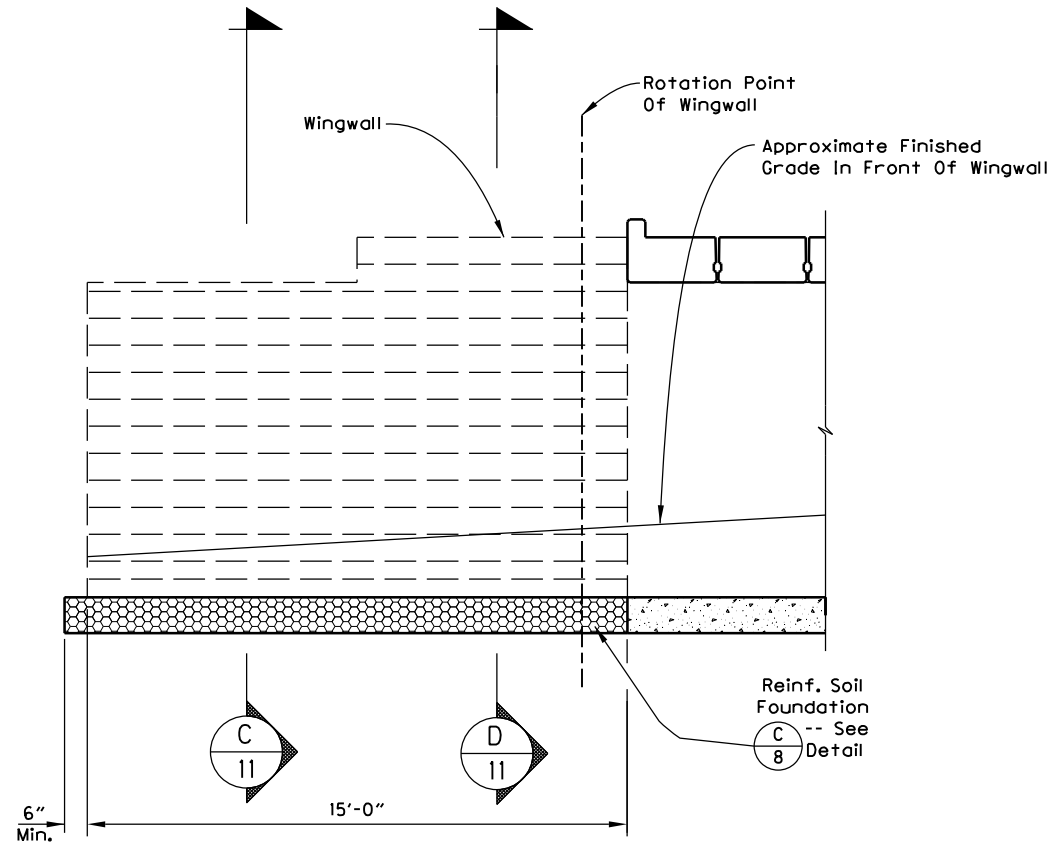


**D/10** Section  
1/8" = 1'-0"

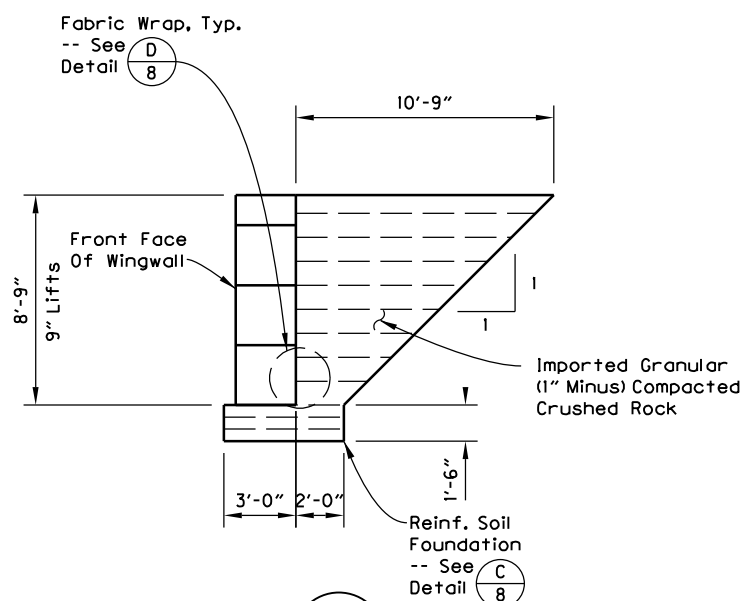
PROJECT: White Creek Bridge		CLIENT: Pacific Bridge And Construction, Inc. -- Sandy, Oregon -- 503-668-4798		DESIGNER: Liam Kucey		CHECKER: Josh Goodall		REVIEWER: Brett Karnes		PROJECT NO. 21-3051.07		SHEET 10 OF 19	
QUINCY ENGINEERING, INC		670 Hawthorne AVE SE, Suite 110		DRAFTER: Liam Kucey		TITILE:		WINGWALL GRS DETAILS "C"		DRAWING DATE: 4th June 2021			
VOICE: 503-763-9995		FAX: 503-763-9981		EMAIL: JOSH@QUINCYENG.COM									
DATE		REVISION		BY									
ACCOMPANIED BY DWGS.													



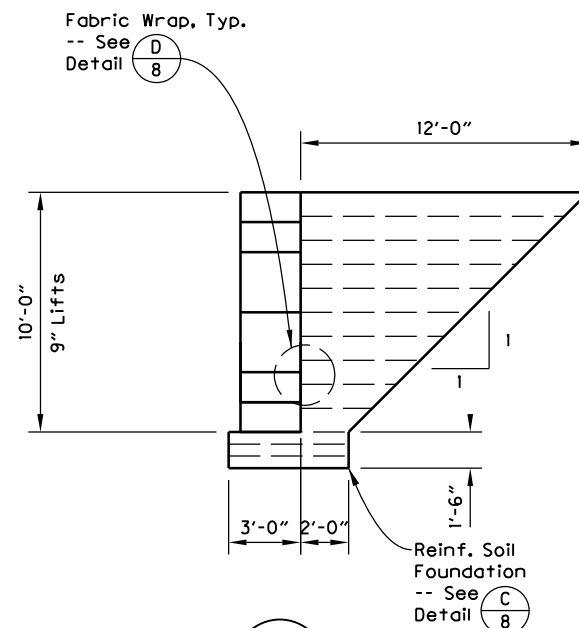
**A**  
11 GRS Wingwall Plan View  
 $\frac{1}{8}'' = 1'-0''$



**B**  
11 GRS Wingwall Elevation View  
 $\frac{3}{16}'' = 1'-0''$



**C**  
11 Section  
 $\frac{1}{8}'' = 1'-0''$



**D**  
11 Section  
 $\frac{1}{8}'' = 1'-0''$



RENEWS: 01-05-2023

PROJECT: White Creek Bridge  
CLIENT: Pacific Bridge And Construction, Inc. -- Sandy, Oregon -- 503-668-4798

QUINCY ENGINEERING, INC  
670 Hawthorne AVE SE, Suite 110  
Salem, OR 97301 - 4996  
VOICE: 503-763-9995  
FAX: 503-763-9981  
EMAIL: JOSH@QUINCYENG.COM

DESIGNER: Liam Kucey  
DRAFTER: Liam Kucey  
CHECKER: Josh Goodall  
REVIEWER: Brett Karnes

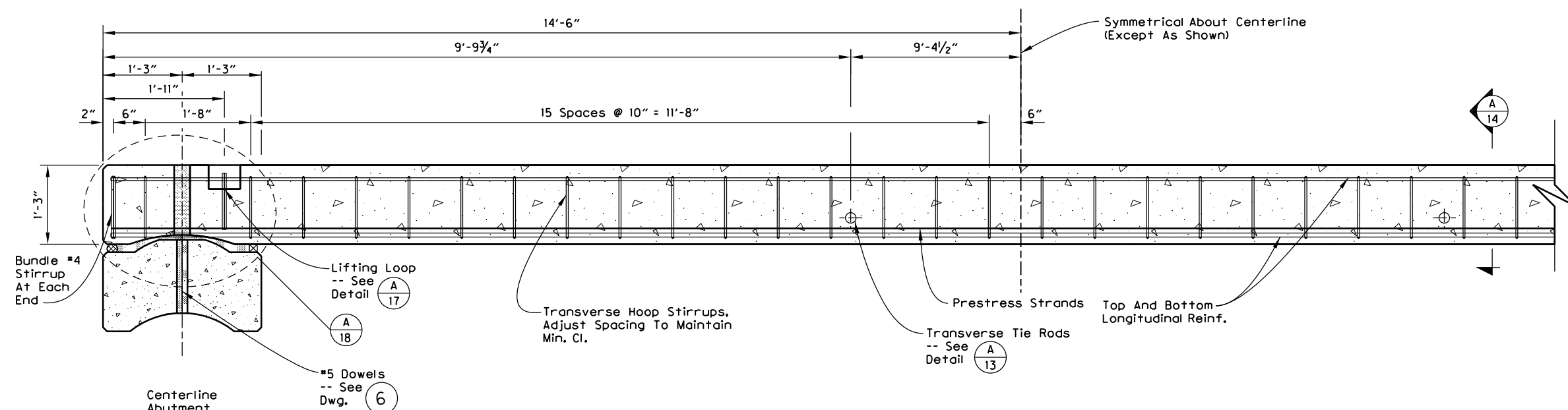
WINGWALL GRS DETAILS "D"

DRAWING DATE: 4th June 2021 PROJECT NO. 21-3051.07 SHEET 11 OF 19

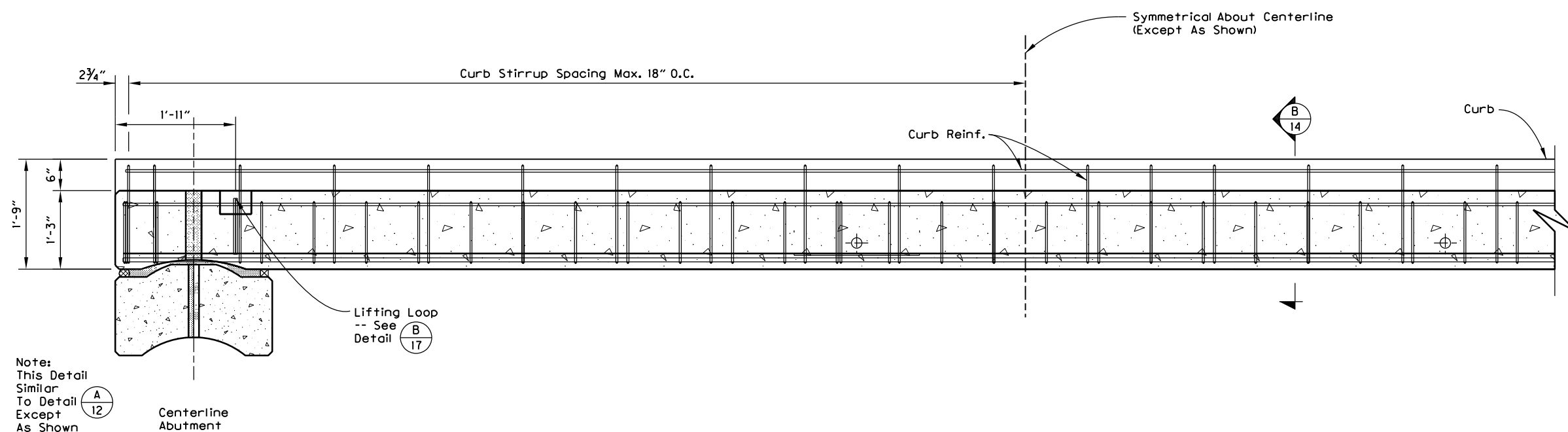
ACCOMPANIED BY DWGS.



RENEWS: 01-05-2023



**A**  
12 Longitudinal Section Of Concrete Interior Plank -- Type "2"  
1/2" = 1'-0"

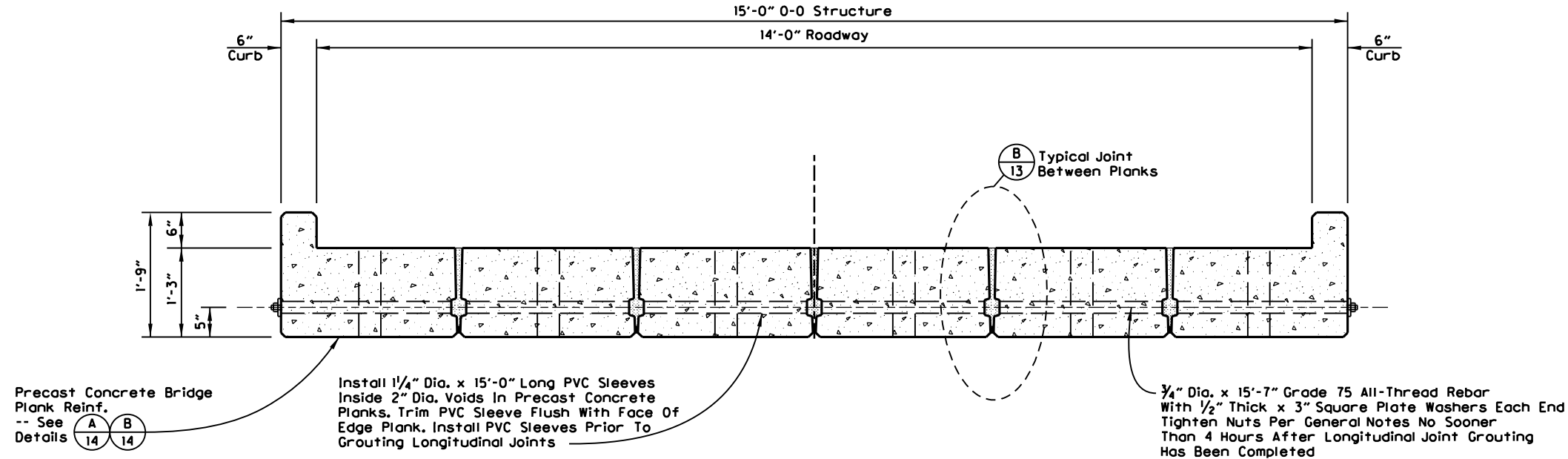


**B**  
12 Longitudinal Section Of Concrete Edge Plank -- Type "1"  
1/2" = 1'-0"

- Notes:
1. Structure Shown Flat, For Slope, See Project Plans.
  2. All Longitudinal Reinforcing Bars Extend Full Length Of Plank.
  3. Adjust Main Stirrups As Required To Place Transverse Tie Rods. Do Not Exceed Maximum Stirrup Spacing Shown (Add Additional Stirrups If Necessary)

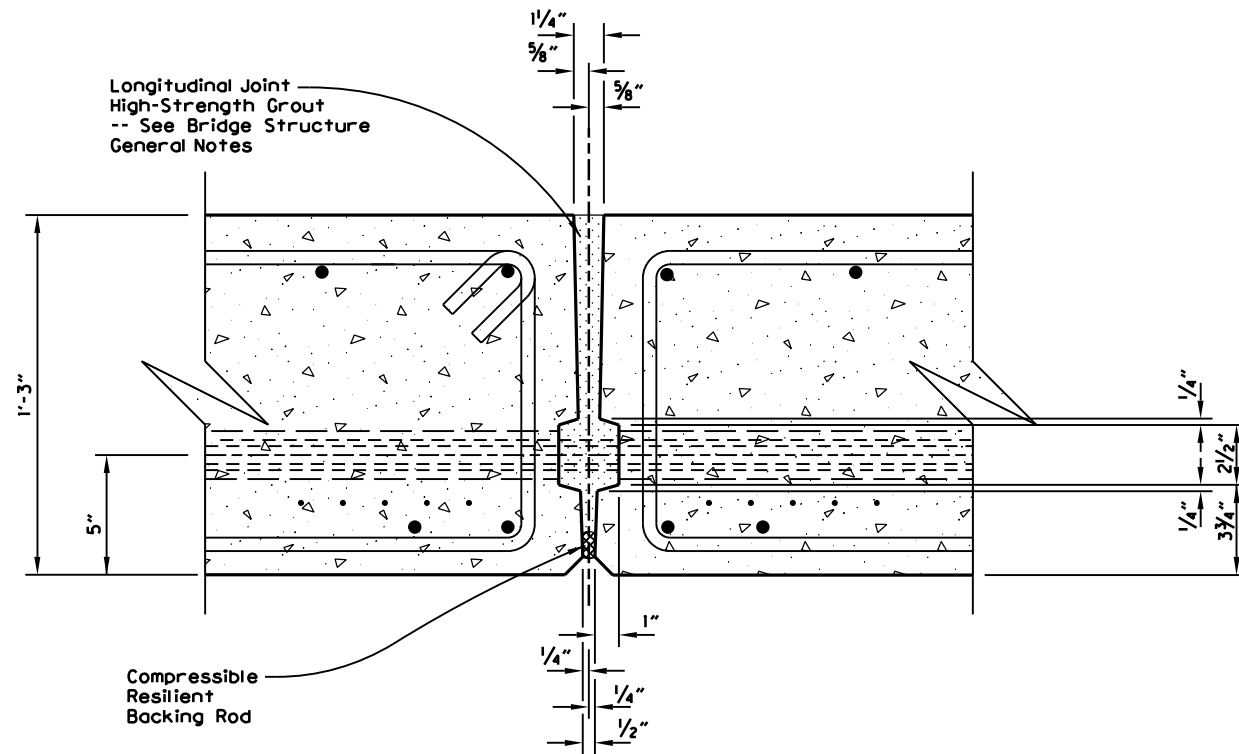
Precast Concrete Bridge Deck Plank Dimensions Schedule						
Unit Mark	Total Count	Detail	Main Stirrup Number	Curb Stirrup Number	Extra Guardrail Stirrup	Unit Weight
2	4	A/14	38	N/A	N/A	14 kips
1	2	B/14	38	20	N/A	15 kips

PROJECT: White Creek Bridge		CLIENT: Pacific Bridge And Construction, Inc. -- Sandy, Oregon -- 503-668-4798		QUINCY ENGINEERING, INC 670 Hawthorne AVE SE, Suite 110 Salem, OR 97301 - 4996		VOICE: 503-763-9995 FAX: 503-763-9981 EMAIL: JOSH@QUINCYENG.COM		REVIEWER: Brett Karnes		CHECKER: Josh Goodall		DRAFTER: Liam Kucey		DESIGNER: Liam Kucey		BY: _____		DATE: _____		REVISION: _____		ACCOMPANIED BY DWGS. _____	
LONGITUDINAL SECTION OF CONCRETE PLANKS												PROJECT NO. 21-3051.07		SHEET 12 OF 19									
DRAWING DATE: 4th June 2021																							



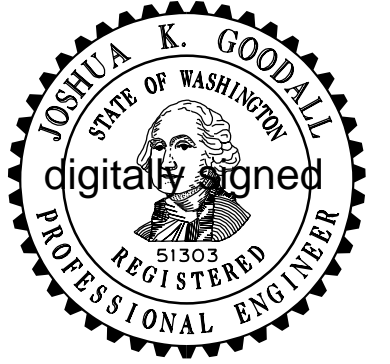
**A**  
13

Typical Transverse Tie Rod Across Full Width Of Precast Concrete Plank Bridge Deck  
3/4" = 1'-0"



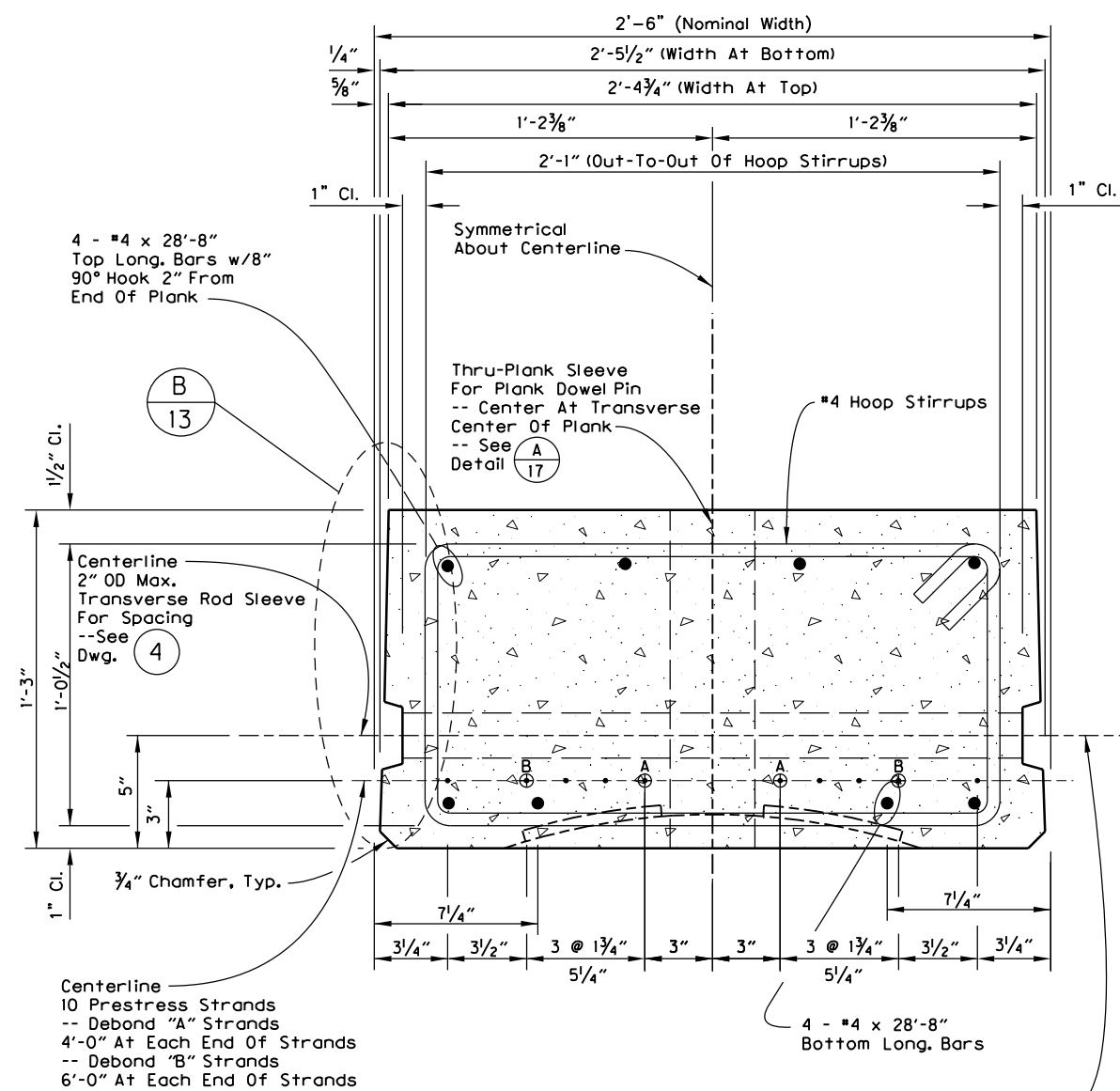
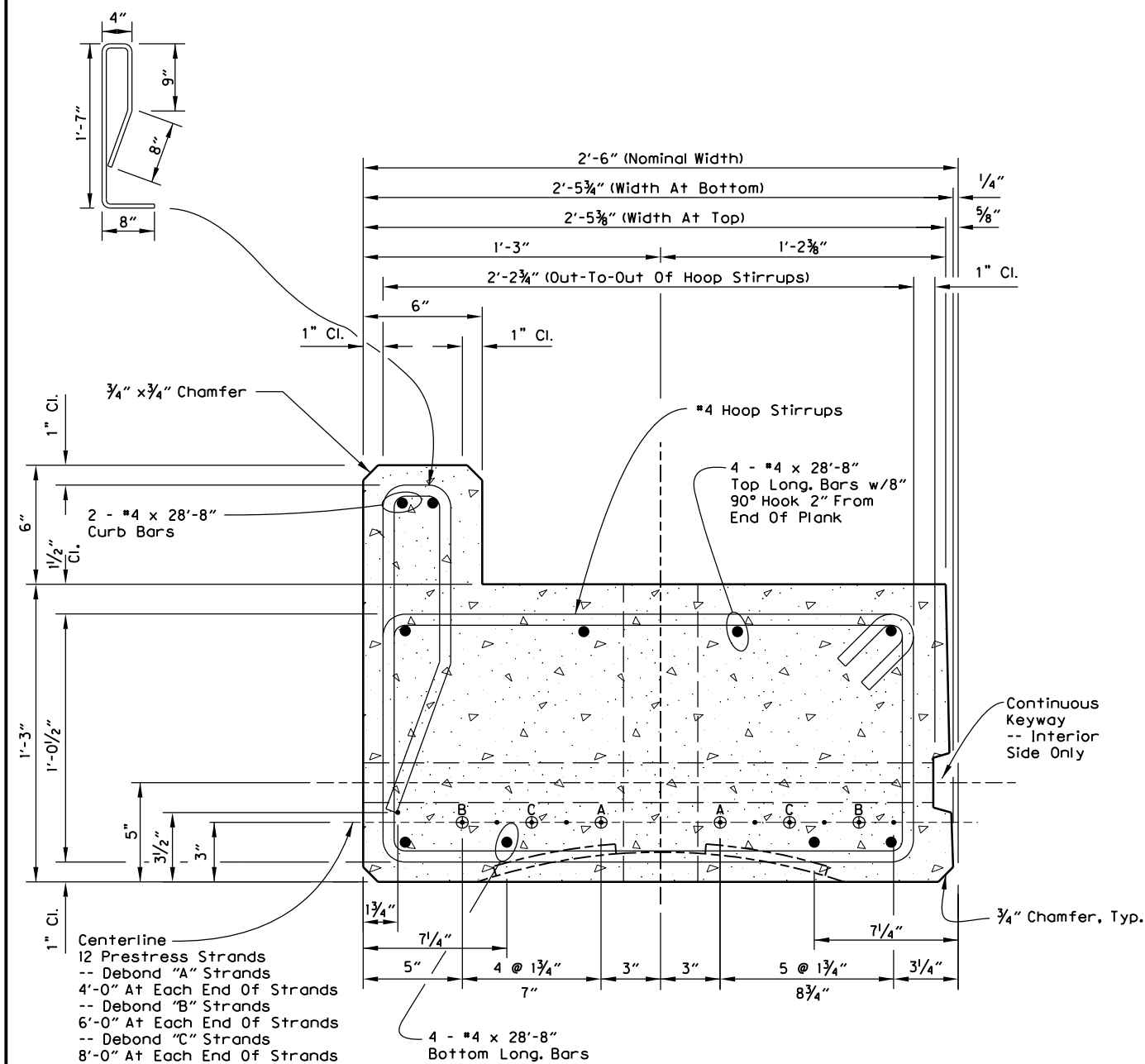
**B**  
13

Typical Longitudinal Key Joint Between 15" Thick Precast Concrete Bridge Planks  
1 1/2" = 1'-0"



RENEWS: 01-05-2023


PROJECT: White Creek Bridge		CLIENT: Pacific Bridge And Construction, Inc. -- Sandy, Oregon -- 503-668-4798		DESIGNER: Liam Kukey		DRAFTER: Liam Kukey		CHECKER: Josh Goodall		REVIEWER: Brett Karnes		PROJECT NO. 21-3051.07		SHEET 13 OF 19	
QUINCY ENGINEERING, INC		670 Hawthorne AVE SE, Suite 110		Salem, OR 97301 - 4996		VOICE: 503-763-9995		FAX: 503-763-9981		EMAIL: JOSH@QUINCYENG.COM		DRAWING DATE: 4th June 2021		TITLE: MISCELLANEOUS PRECAST BRIDGE DECK PLANK DETAILS	
DATE		REVISION		BY		ACCOMPANIED BY DWGS.									



Note:  
-- Similar  
To Detail  
Except  
As Shown

$$\frac{A}{14}$$

Transverse Section Thru Prestressed Edge (Curb) Planks  
1 1/2" = 1'-0"



Transverse Section Thru Prestressed Interior Planks  
1 1/2" = 1'-0"

Legend:

⊕ Debonded Strand



RENEWS: 01-05-2023

White Creek Bridge	
Pacific Bridge And Construction, Inc. -- Sandy, Oregon --	503-668-4798

VOICE: 503-763-9995  
FAX: 503-763-9981  
EMAIL: JOSH@QUINCYENG.COM

II	REVIEWER: <i>Brett Karnes</i>
----	----------------------------------

DRAFTER: Liam Kucey

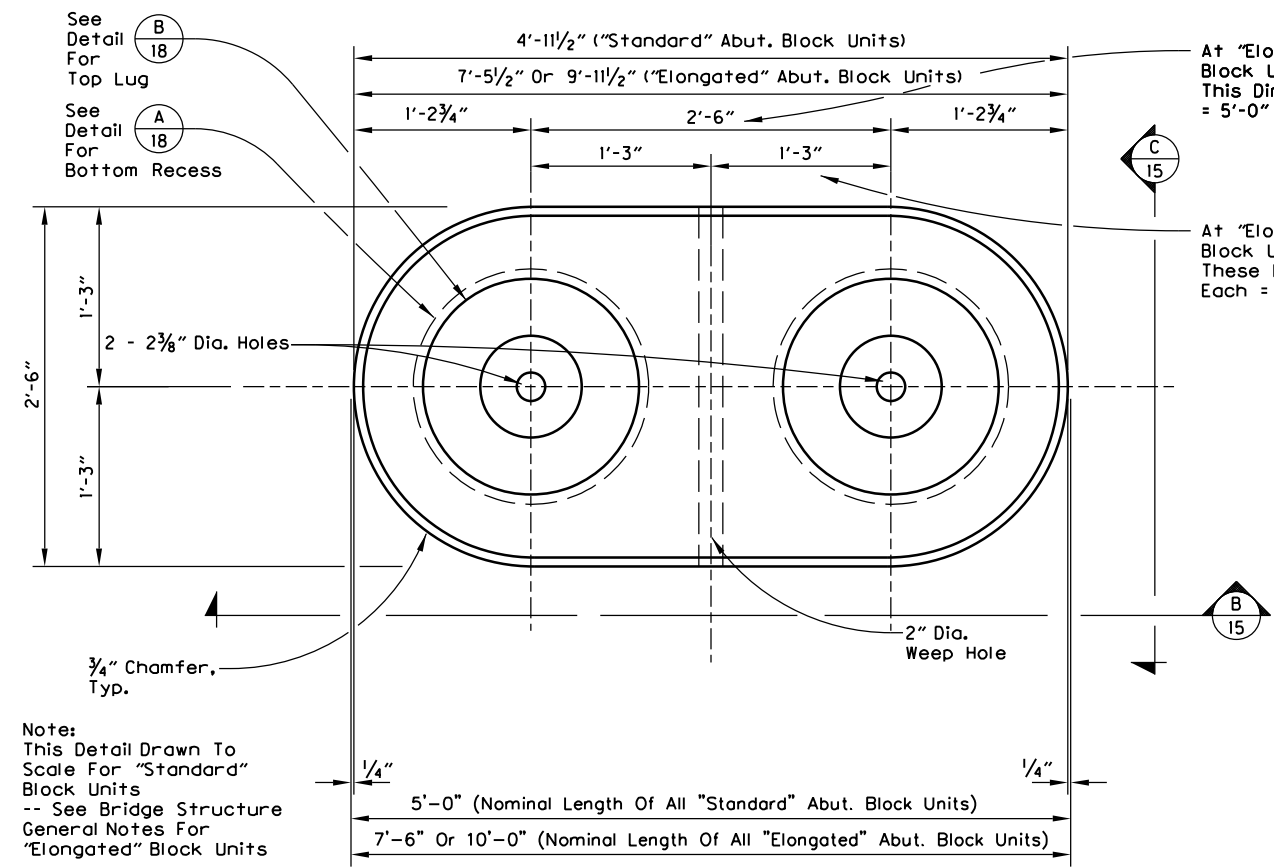
DESIGNER:  
*Liam Kucey*

TRANSVERSE PRECAST CONCRETE  
BRIDGE DECK PLANK SECTIONS

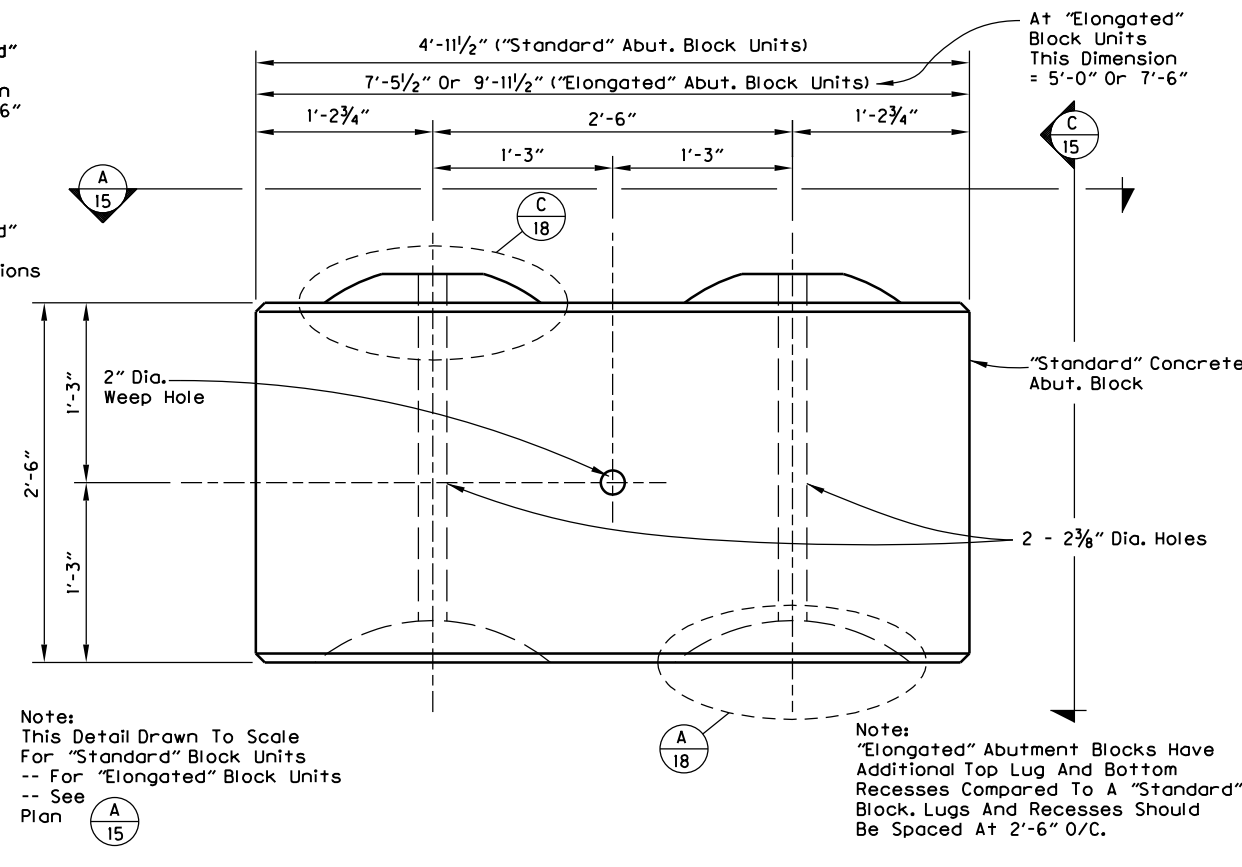
SHEET 14 OF 19

4th June 2021

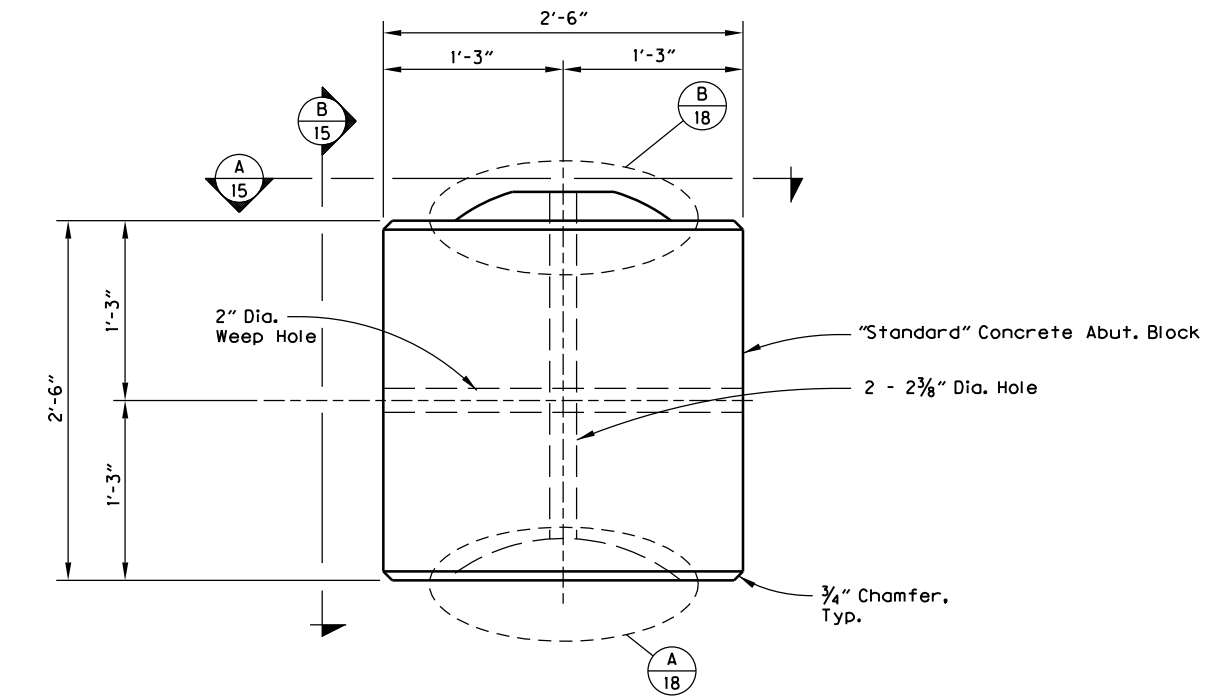
ACCOMPANIED BY DWGS.



**A**  
15 Top View Of "Standard" And "Elongated" Abutment Blocks  
3/4" = 1'-0"



**B**  
15 Front View Of "Standard" And "Elongated" Abutment Blocks  
3/4" = 1'-0"

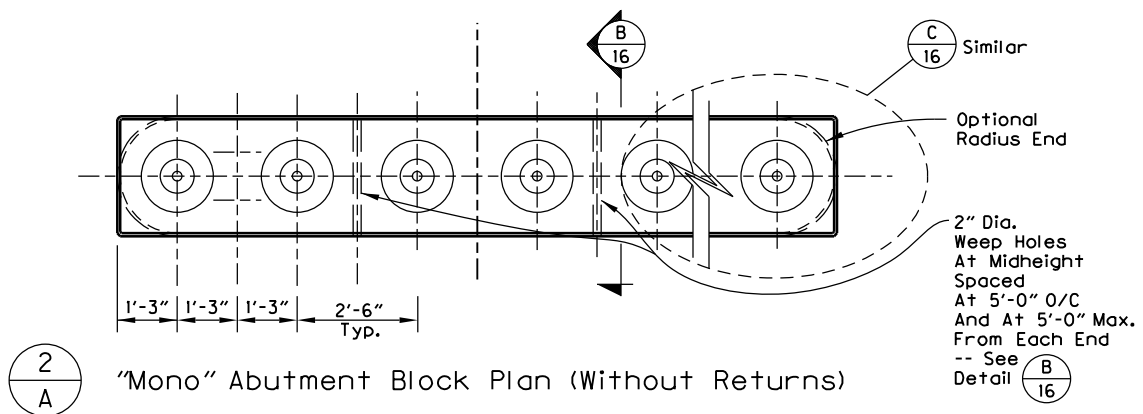


**C**  
15 Side View Of "Standard" Abutment Block  
3/4" = 1'-0"

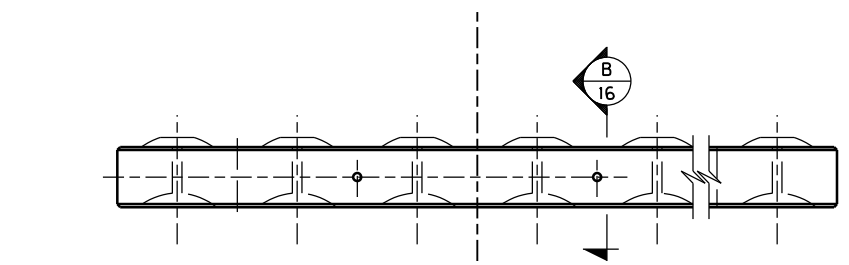


RENEWS: 01-05-2023

PROJECT: White Creek Bridge		CLIENT: Pacific Bridge And Construction, Inc. -- Sandy, Oregon -- 503-668-4798		DESIGNER: Liam Kucey		DRAFTER: Liam Kucey		CHECKER: Josh Goodall		REVIEWER: Brett Karnes		PROJECT NO. 21-3051.07		SHEET 15 OF 19	
QUINCY ENGINEERING, INC		670 Hawthorne AVE SE, Suite 110		Salem, OR 97301 - 4996		VOICE: 503-763-9995		FAX: 503-763-9981		EMAIL: JOSH@QUINCYENG.COM		TYPICAL "STANDARD" PRECAST CONCRETE		ABUTMENT BLOCK DETAILS	
DATE		REVISION		BY		DRAWING DATE: 4th June 2021		ACCOMPANIED BY DWGS.							

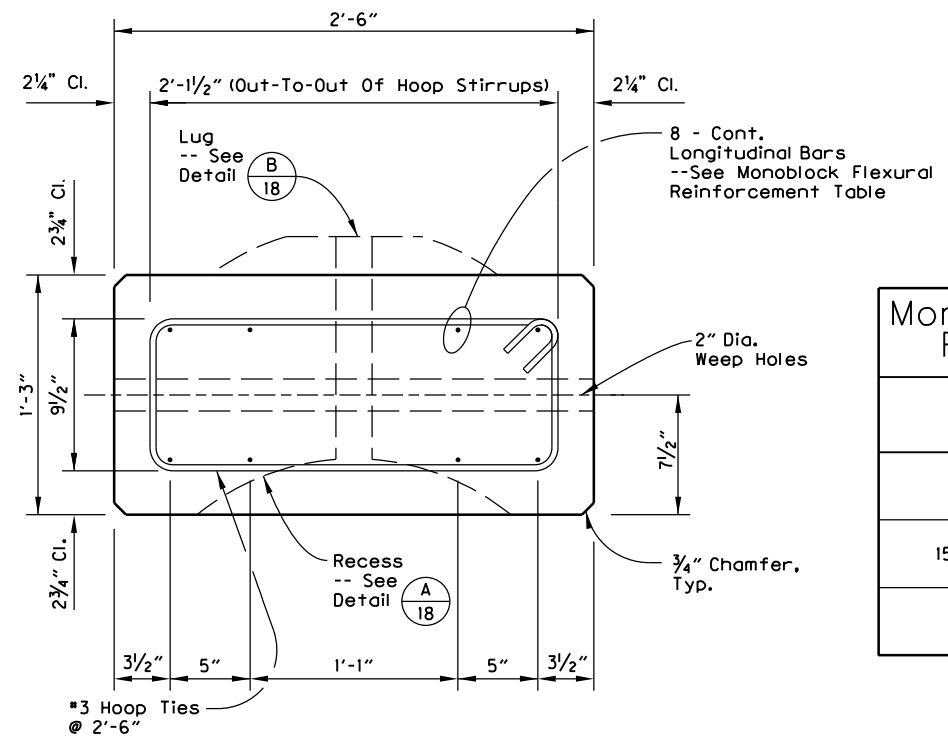


2/A "Mono" Abutment Block Plan (Without Returns)



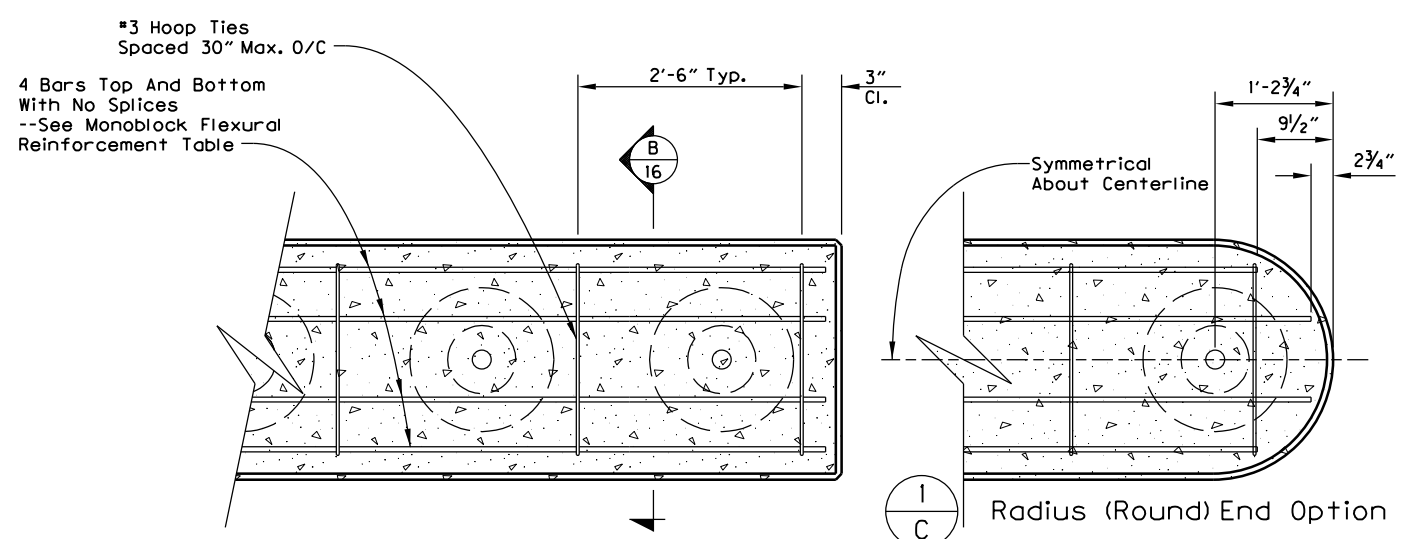
1/A Typical "Mono" Abutment Block Elevation

A/16 Plans And Elevation Of Modular Concrete "Mono" Abutment Block Units  
1/4" = 1'-0"



B/16 Typical Section Thru "Mono" Abutment Block  
1" = 1'-0"

Monoblock Flexural Reinforcement	
Block Length	Bar Size
$L \leq 15'-0"$	#4
$15'-0" < L \leq 22'-6"$	#5
$L > 22'-6"$	#6



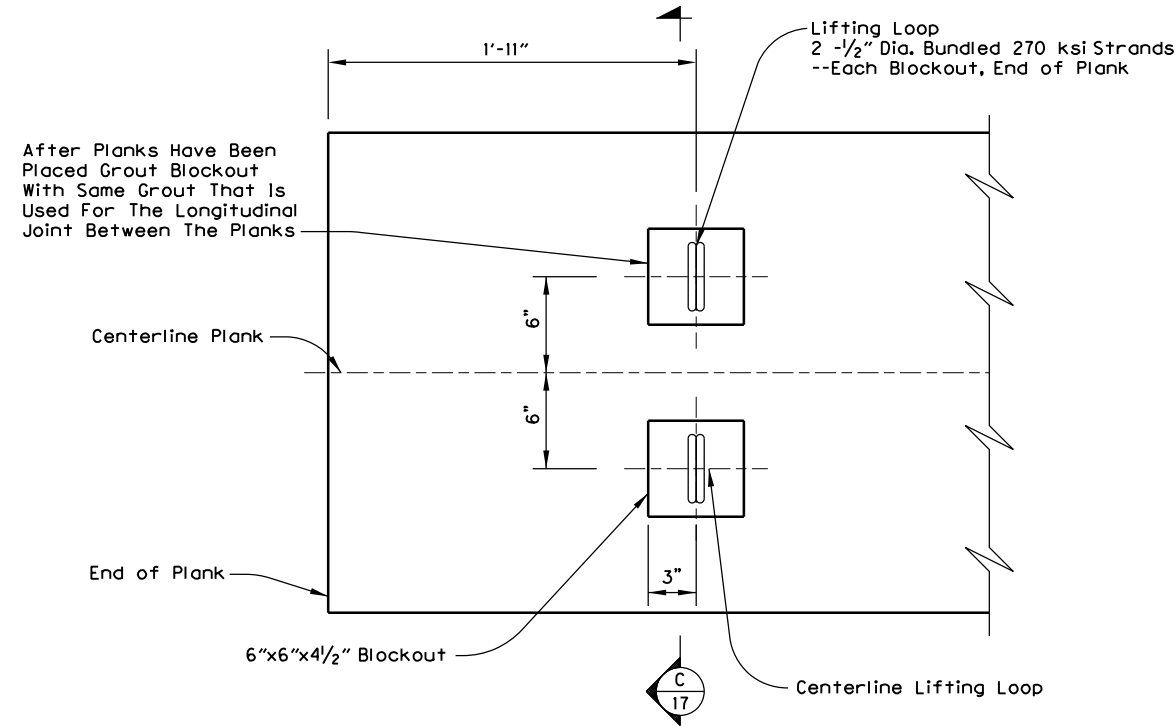
C/16 Typical Concrete Mono Abutment Block Reinforcing  
1/2" = 1'-0"



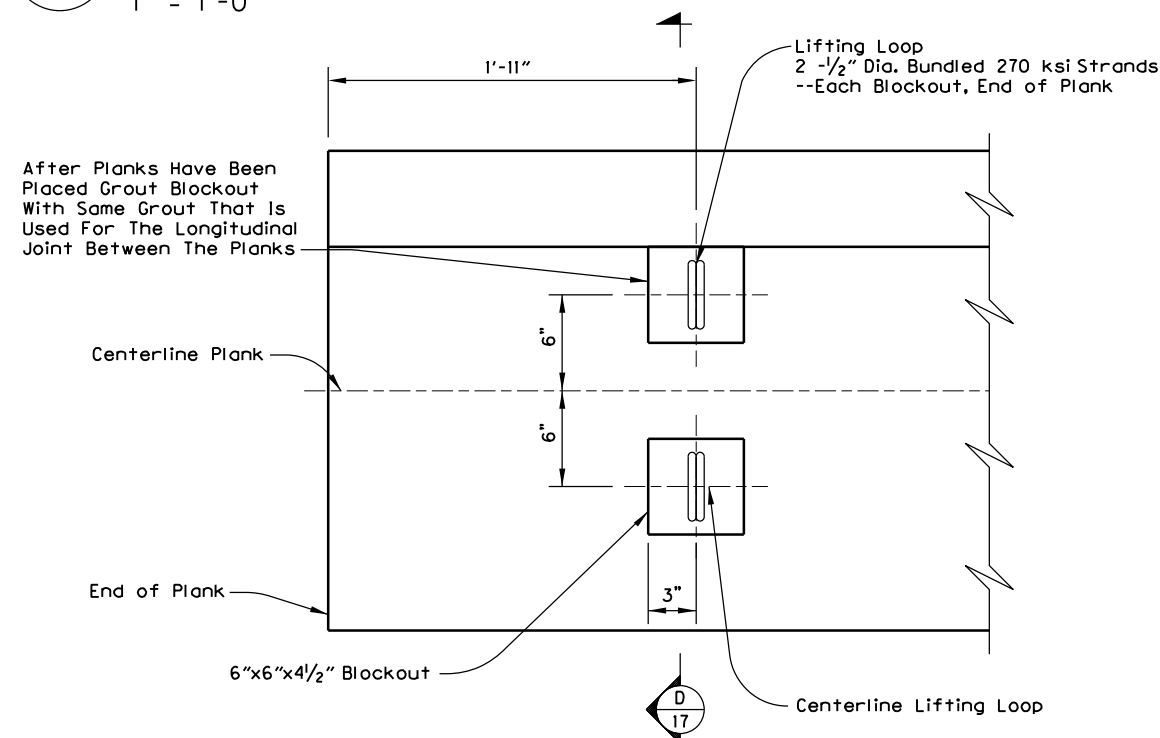
RENEWS: 01-05-2023

PROJECT: White Creek Bridge		CLIENT: Pacific Bridge And Construction, Inc. -- Sandy, Oregon -- 503-668-4798		PROJECT NO. 21-3051.07		SHEET 16 OF 19	
QUINCY ENGINEERING, INC 670 Hawthorne AVE SE, Suite 110 Salem, OR 97301 - 4996		VOICE: 503-763-9995 FAX: 503-763-9981 EMAIL: JOSH@QUINCYENG.COM		CHECKER: Josh Goodall		REVIEWER: Brett Karnes	
DESIGNER: Liam Kucey		DRAFTER: Liam Kucey		TITLE: TYPICAL "MONO" PRECAST CONCRETE ABUTMENT BLOCK DETAILS			
BY: _____		DATE: _____		REVISION: _____		ACCOMPANIED BY DWGS. _____	
DRAWING DATE: 4th June 2021							

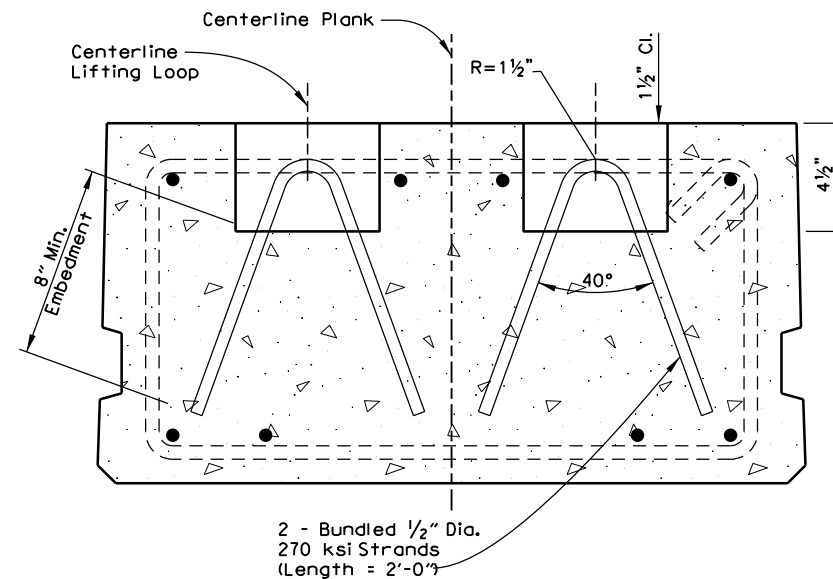




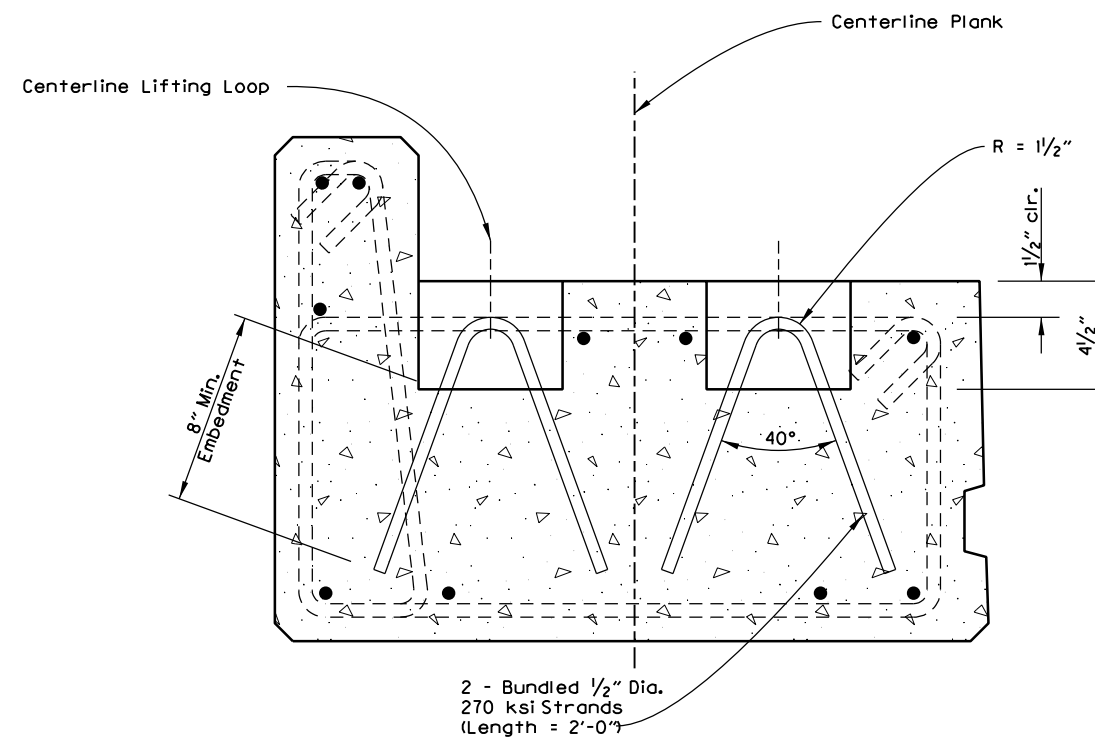
**A**  
17  
Lifting Loop Plan View  
Interior Plank  
1" = 1'-0"



**B**  
17  
Lifting Loop Plan View  
Exterior Plank  
1" = 1'-0"





**C**  
17  
Lifting Loop Section View  
Interior Plank  
1 1/2" = 1'-0"

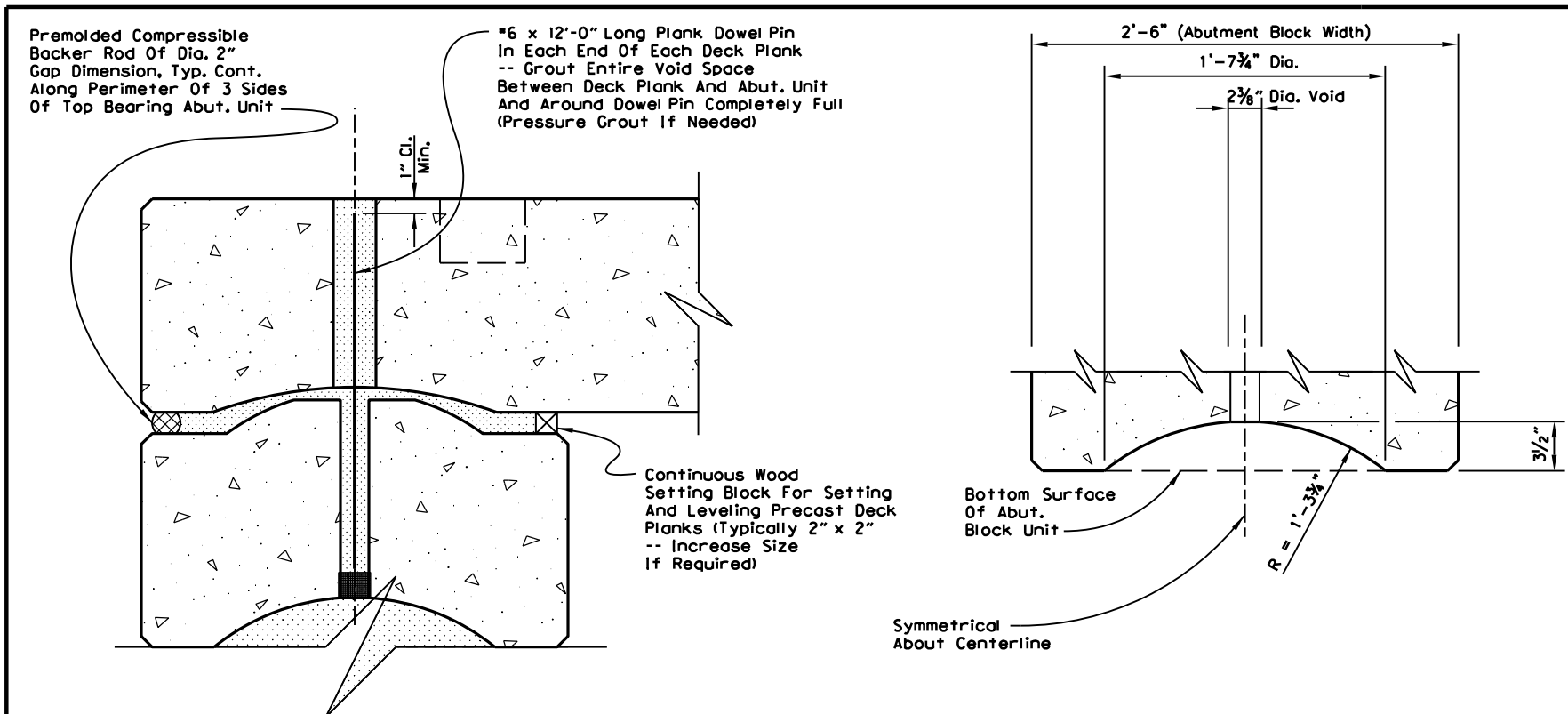


**D**  
17  
Lifting Loop Elevation View  
Exterior Plank  
1 1/2" = 1'-0"



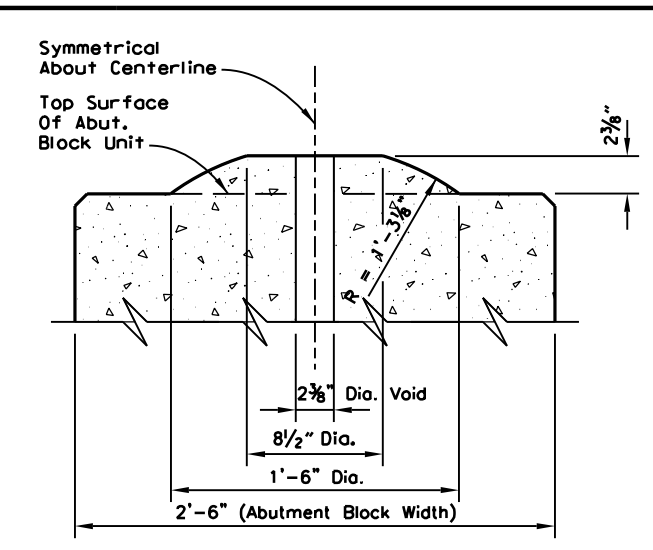
RENEWS: 01-05-2023

PROJECT: White Creek Bridge															
CLIENT: Pacific Bridge And Construction, Inc. -- Sandy, Oregon -- 503-668-4798															
<div><div></div><div><div>QUINCY ENGINEERING, INC</div><div>670 Hawthorne AVE SE, Suite 110</div><div>Salem, OR 97301 - 4996</div></div><div><div>VOICE: 503-763-9995</div><div>FAX: 503-763-9981</div><div>EMAIL: JOSH@QUINCYENG.COM</div></div></div>															
<div><div></div><div>DATE</div></div>		<div>REVISION</div>		<div>BY</div>		<div>DESIGNER: <i>Liam Kucey</i></div>		<div>DRAFTER: <i>Liam Kucey</i></div>		<div>CHECKER: <i>Josh Goodall</i></div>		<div>REVIEWER: <i>Brett Karnes</i></div>			
										TITLE: BRIDGE PLANK AND ABUTMENT BLOCK DETAILS #1					
ACCOMPANIED BY DWGS. ....										DRAWING DATE: <i>4th June 2021</i>		PROJECT NO. <i>21-3051.07</i>		SHEET 17 OF 19	

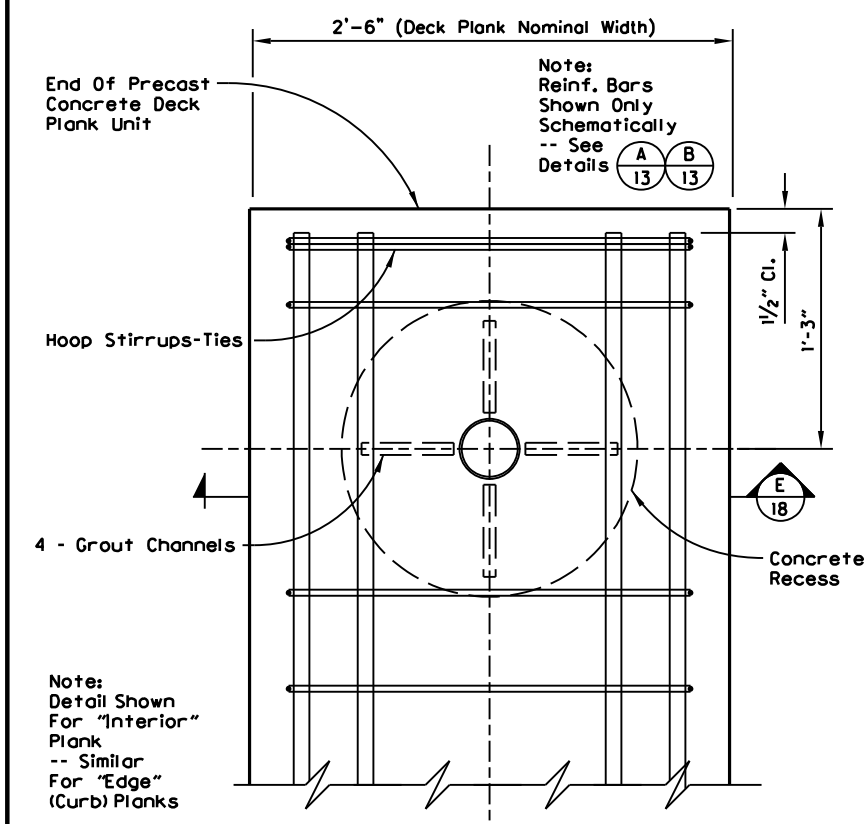


**A**  
18 Bridge Plank To Abutment Connection  
1" = 1'-0"

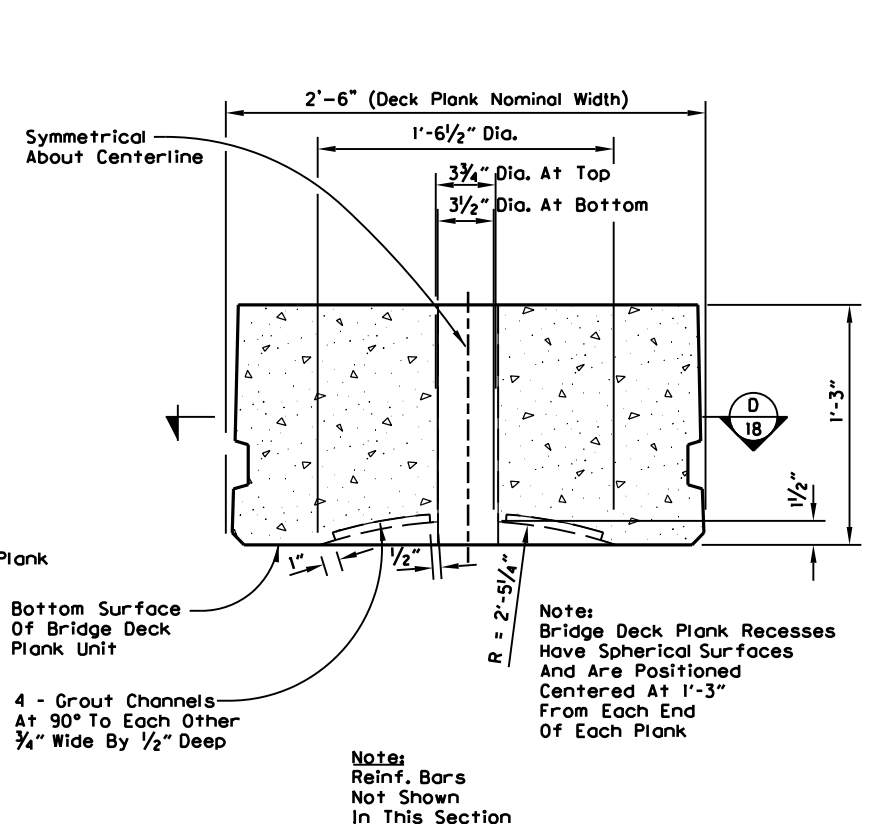
**B**  
18 Typical Abutment Block Recess  
On Bottom Of All Abutment Blocks  
1" = 1'-0"



**C**  
18 Typical Abutment Block Lug  
On Top Of All Abutment Blocks  
1" = 1'-0"



**D**  
18 Plan View Of Recess At Each End  
On Bottom Of Each Deck Plank Unit  
1" = 1'-0"

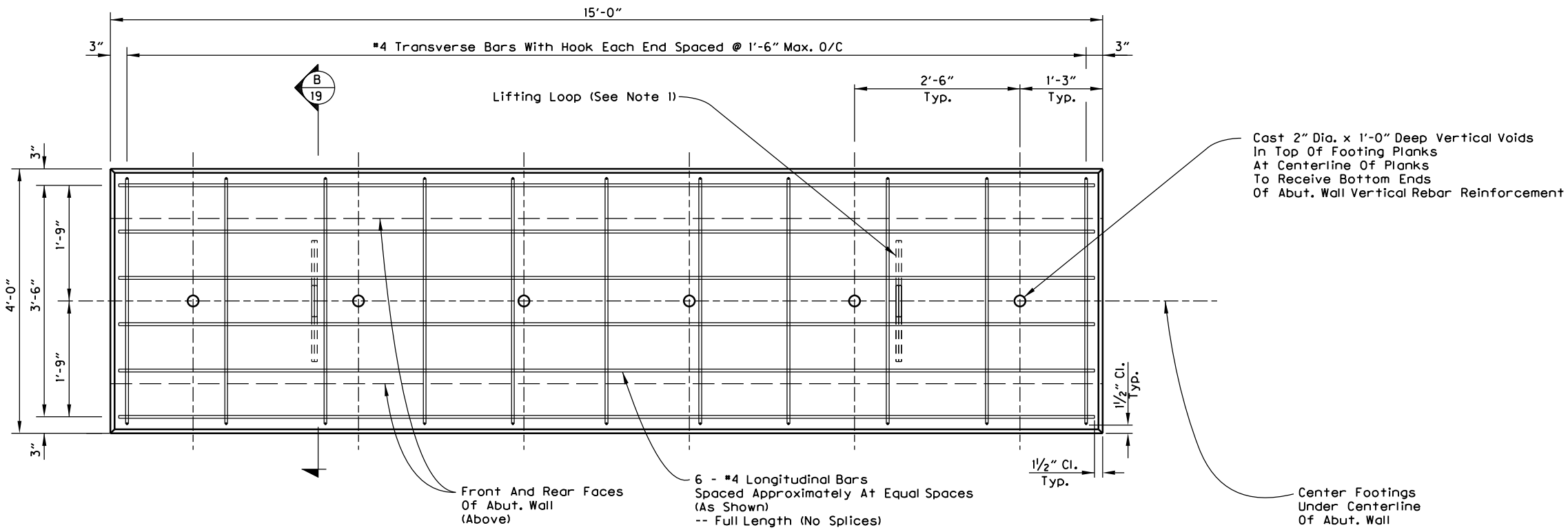


**E**  
18 Typical Recess At Each End  
On Bottom Of Each Deck Plank Unit  
1" = 1'-0"



RENEWS: 01-05-2023

PROJECT: White Creek Bridge		CLIENT: Pacific Bridge And Construction, Inc. -- Sandy, Oregon -- 503-668-4798		PROJECT NO. 21-3051.07		SHEET 18 OF 19	
DESIGNER: Liam Kuacey		CHECKER: Josh Goodall		REVIEWER: Brett Karnes		DRAWING DATE: 4th June 2021	
BY: _____		DATE: _____		REVISION: _____		ACCOMPANIED BY DWGS. _____	
QUINCY ENGINEERING, INC		670 Hawthorne AVE SE, Suite 110		Salem, OR 97301 - 4996		VOICE: 503-763-9995	
						FAX: 503-763-9981	
						EMAIL: JOSH@QUINCYENG.COM	
TITLE: BRIDGE PLANK AND ABUTMENT DETAILS #2							

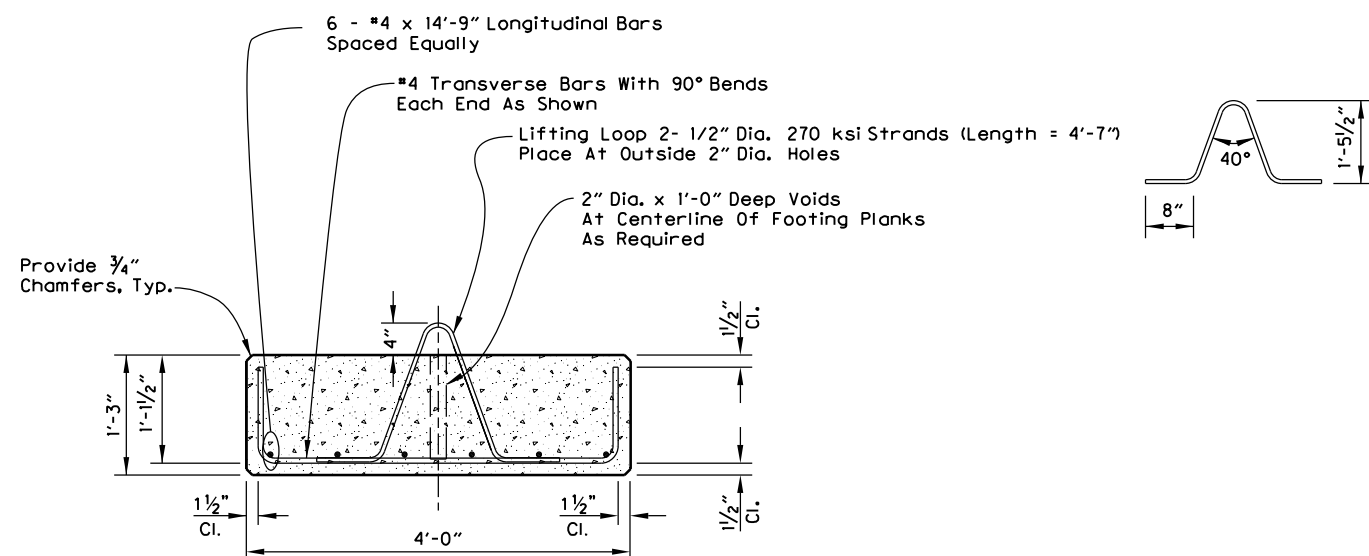


A  
19

Plan View - Precast Concrete Footing Planks  
1/2" = 1'-0"

**Note:**

1. After Placement of Footing Plank Cut Lifting Loop Flush With Top Of Concrete. If Another Abutment Block Is Placed Over The Top Of Lifting Loop The Abutment Block Recess Shall Be Grouted. If No Abutment Block Is Placed Above Lifting Loop Remove Lifting Loop 1/2" Below Top Of Concrete And Fill Void With Grout.



B  
19

Section View  
Precast Concrete Footing Planks  
1/2" = 1'-0"



RENEWS: 01-05-2023

PROJECT: White Creek Bridge		CLIENT: Pacific Bridge And Construction, Inc. -- Sandy, Oregon -- 503-668-4798		VOICE: 503-763-9995 FAX: 503-763-9981 EMAIL: JOSH@QUINCYENG.COM		REVIEWER: Brett Karnes		PROJECT NO. 21-3051.07		SHEET 19 OF 19	
QUINCY ENGINEERING, INC 670 Hawthorne AVE SE, Suite 110 Salem, OR 97301 - 4996		DRAFTER: Liam Kucey		CHECKER: Josh Goodall		REVIEWER: Brett Karnes		PROJECT NO. 21-3051.07		SHEET 19 OF 19	
BY		DATE		REVISION		TITLE: BRIDGE FOOTING PRECAST CONCRETE PLANKS		DRAWING DATE: 4th June 2021		ACCOMPANIED BY DWGS.	