

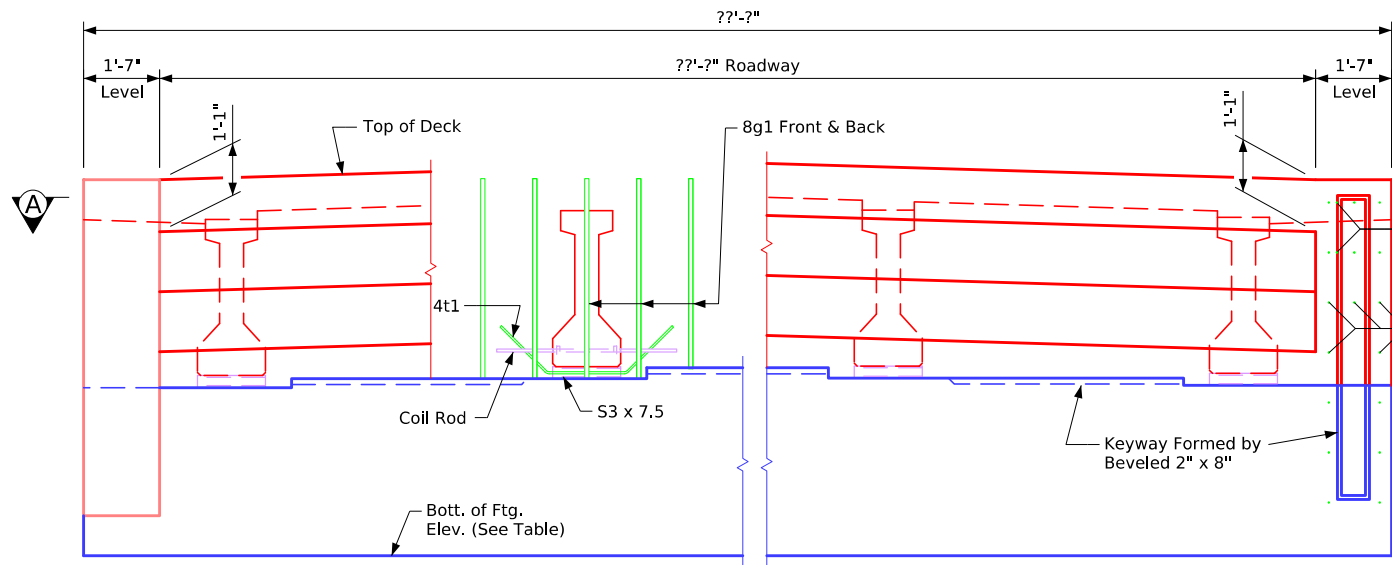
Index of Integral Bridge Standards

Standard	Description
100-1	Index of Integral Abutment Bridge Standards
2078	"A" or "B" Beams - Integral Abutment Details - 0 Skew
2079	"A" or "B" Beams - Integral Abutment Details - (L.A.) 0°01 - 7°30 Skew
2080	"A" or "B" Beams - Integral Abutment Details - (L.A.) 7°31 - 15° Skew
2081	"A" or "B" Beams - Integral Abutment Details - (L.A.) 15°01 - 30° Skew
2082	"A" or "B" Beams - Integral Abutment Details - (R.A.) 0°01 - 7°30 Skew
2083	"A" or "B" Beams - Integral Abutment Details - (R.A.) 7°31 - 15° Skew
2084	"A" or "B" Beams - Integral Abutment Details - (R.A.) 15°01 - 30° Skew
2085	"C" or "D" Beams - Integral Abutment Details - 0 Skew
2086	"C" or "D" Beams - Integral Abutment Details - (L.A.) 0°01 - 7°30 Skew
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2088	"C" or "D" Beams - Integral Abutment Details - (L.A.) 15°01 - 30° Skew
2089	"C" or "D" Beams - Integral Abutment Details - (R.A.) 0°01 - 7°30 Skew
2090	"C" or "D" Beams - Integral Abutment Details - (R.A.) 7°31 - 15° Skew
2091	"C" or "D" Beams - Integral Abutment Details - (R.A.) 15°01 - 30° Skew
4380	30' Roadway PPCB (A, B, C, D Beams - Integral Abut.) Cross Section
4383	40' Roadway PPCB (A, B, C, D Beams - Integral Abut.) Cross Section
4384	44' Roadway PPCB (A, B, C, D Beams - Integral Abut.) Cross Section
4385	40' Roadway PPCB (A, B, C, D Beams - Integral Abut.) Cross Section (Symm. Crown)
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4501	"A" or "B" Beams - Part Plan & Longitudinal Section - (L.A.) 0°01 - 7°30 Skew
4502	"A" or "B" Beams - Part Plan & Longitudinal Section - (L.A.) 7°31 - 15° Skew
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4504	"A" or "B" Beams - Part Plan & Longitudinal Section - (R.A.) 0°01 - 7°30 Skew
4505	"A" or "B" Beams - Part Plan & Longitudinal Section - (R.A.) 7°31 - 15° Skew
4506	"A" or "B" Beams - Part Plan & Longitudinal Section - (R.A.) 15°01 - 30° Skew
4507	"C" or "D" Beams - Part Plan & Longitudinal Section - 0 Skew
4508	"C" or "D" Beams - Part Plan & Longitudinal Section - (L.A.) 0°01 - 7°30 Skew
4509	"C" or "D" Beams - Part Plan & Longitudinal Section - (L.A.) 7°31 - 15° Skew
4510	"C" or "D" Beams - Part Plan & Longitudinal Section - (L.A.) 15°01 - 30° Skew
4511	"C" or "D" Beams - Part Plan & Longitudinal Section - (R.A.) 0°01 - 7°30 Skew
4512	"C" or "D" Beams - Part Plan & Longitudinal Section - (R.A.) 7°31 - 15° Skew
4513	"C" or "D" Beams - Part Plan & Longitudinal Section - (R.A.) 15°01 - 30° Skew
4514	Integral Abut. A or B Beams - Bar List & Super. Details - 0 Skew
4515	Integral Abut. A or B Beams - Bar List & Super. Details - 0°01 - 7°30 Skew
4516	Integral Abut. A or B Beams - Bar List & Super. Details - 7°31 - 15° Skew
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4520	Integral Abut. C or D Beams - Bar List & Super. Details - 7°31 - 15° Skew
4521	Integral Abut. C or D Beams - Bar List & Super. Details - 15°01 - 30° Skew

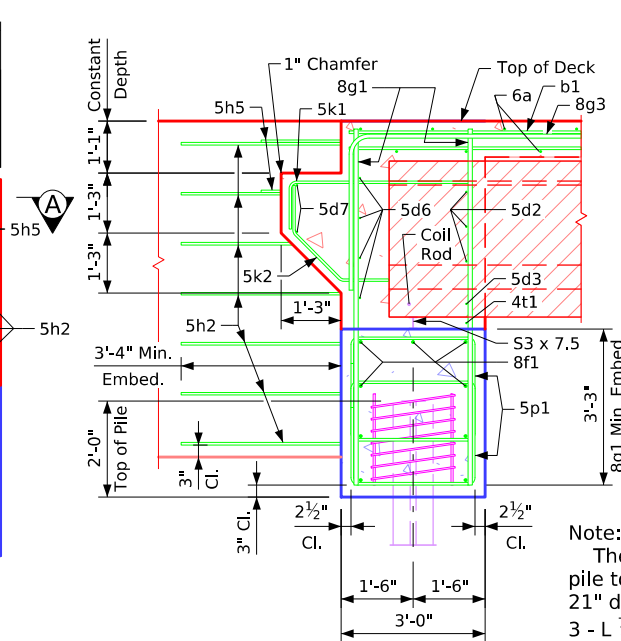
Index of Integral Abut. Bridge Stds

Revised 01-2023: Sheet format update.
Issued 02-2010.
IntegralBridges.dgn - 100-1 - This Sheet Re-Issued 09-2023.

Redrawn 09-08-1988. Correction 04-2014: Added Concrete Quantity Table & Referral Note to Summary Quantity Sheet. Removed design bearing note for abut. piling from Abutment Notes. Revised 01-2023: Sheet format update. Revised 06-2025: Changed 8g1 bar edge of abutment offset dimension to 3 3/4" and changed spacing to 2 Equal Spaces (was 2 Spaces at 8"). Added "Control Point" text. IntegralBridges.dgn - 2078 - This Sheet Re-issued 09-2023.



Part Rear Elevation at Abutment



Part Section B-B

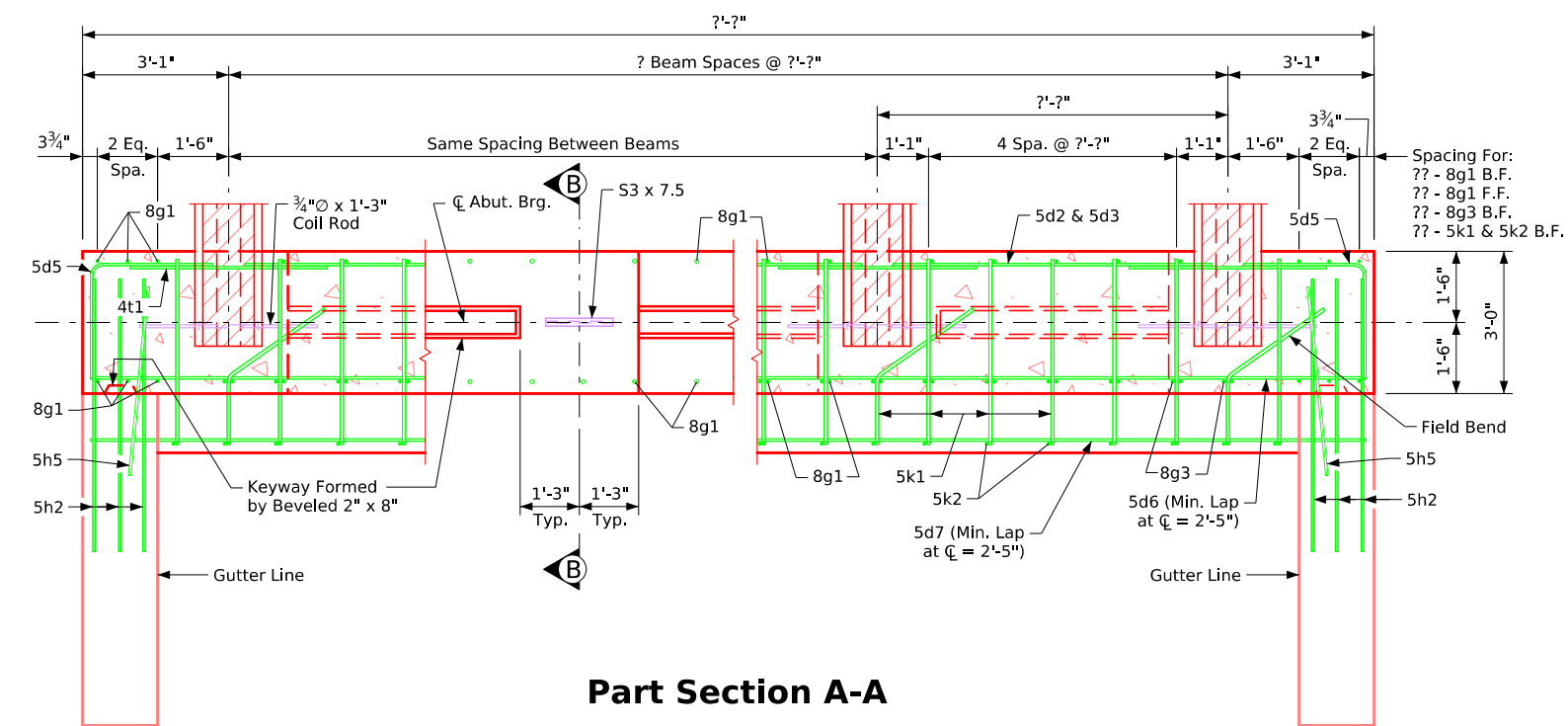
Control Point:



Abutment Step Diagram
(Rear Elevation)

Note:
The spiral at the top of each pile to be 7 turns of no. 2 bar, 21" diameter, 3" pitch with 3 - L 7/8" x 7/8" x 1/8" spacers punched to hold spiral.

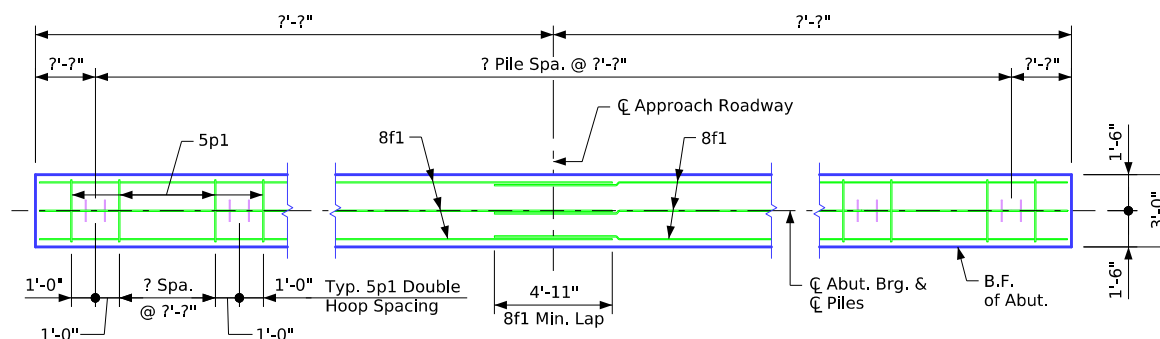
Table of Abutment Elevations		
Point	? Abutment	? Abutment
Elev. A	???.??	???.??
Bottom Footing Elev.	???.??	???.??
Table of Abutment Steps		
Step	? Abutment	? Abutment
a	???.??	???.??



Part Section A-A

Abutment Notes:

Minimum clear distance from face of concrete to near reinforcing bar is to be 2" unless otherwise noted or shown.
If necessary to prevent damage to the end of the bridge deck and backwall from construction equipment, an appropriate method of protection approved by the Engineer shall be provided by the Bridge Contractor at no extra cost to the State.



Abutment Pile Plan

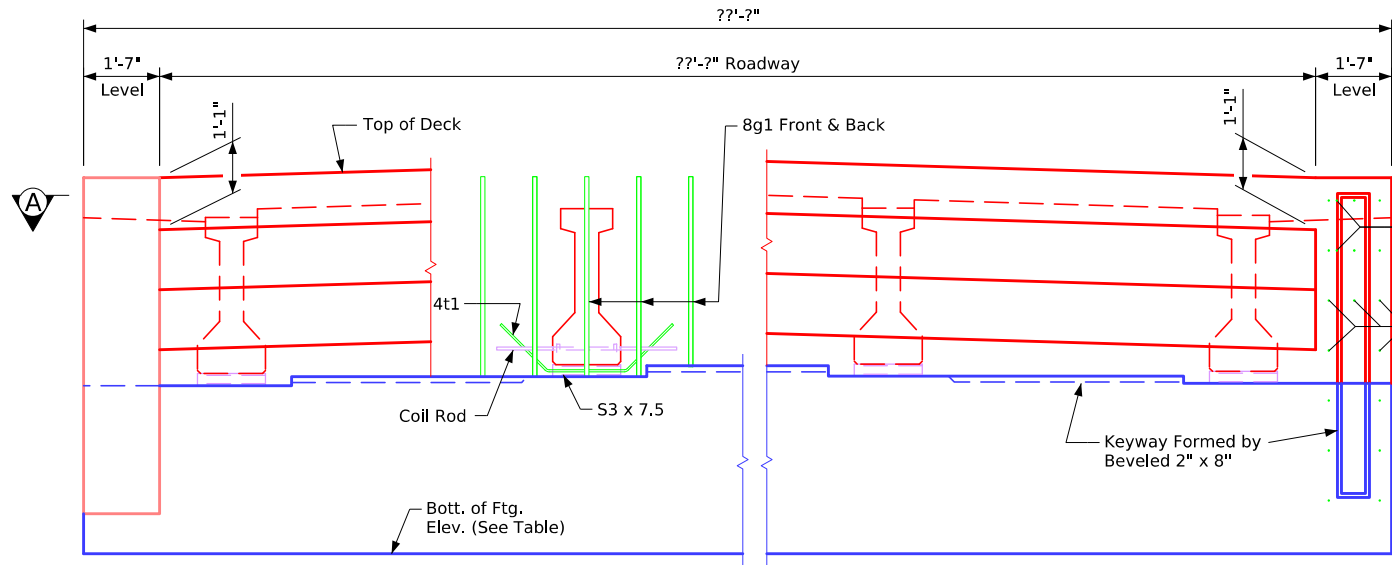
Abutment Concrete Quantity

Location	Quantity
? Abutment Footing	??
? Abutment Footing	??
Total (Cu. Yds.)	??

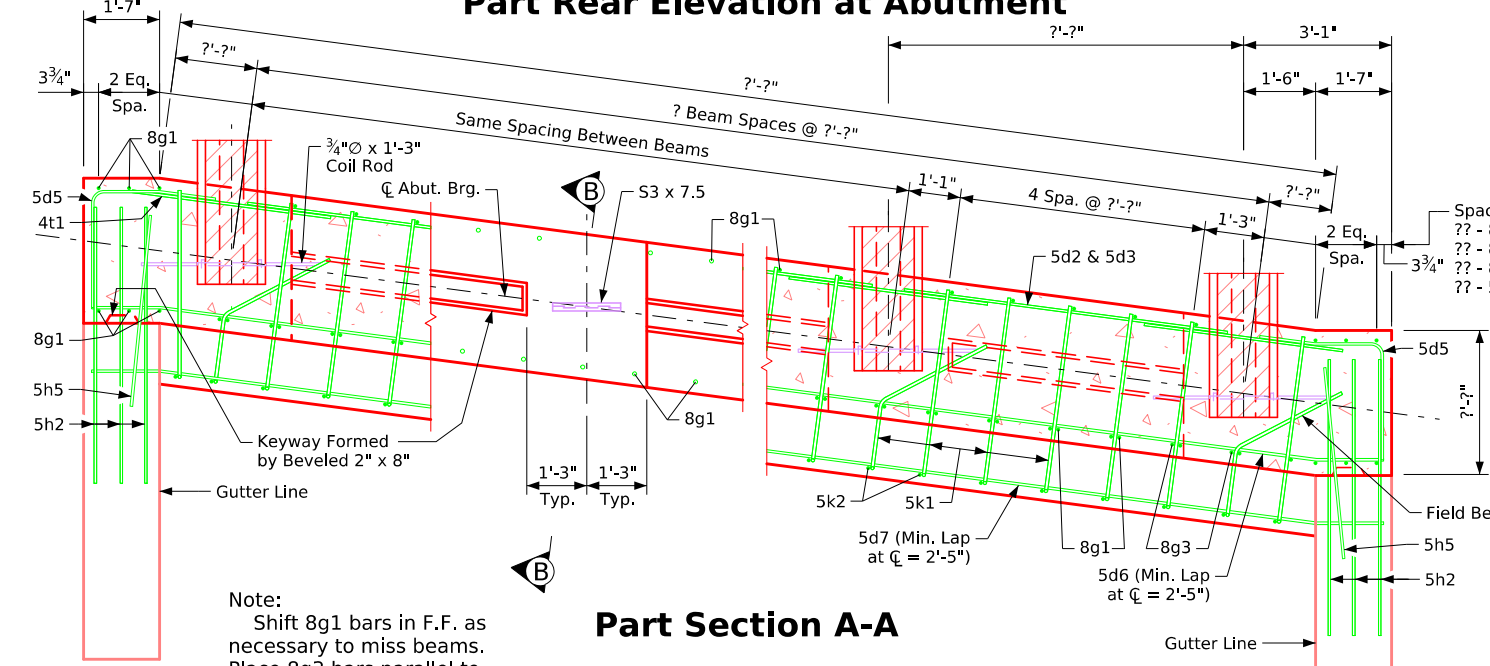
Notes:
Concrete Quantities are included on the Summary Quantities sheet.
?? - HP ?? x ?? steel bearing piling required at each abutment.
Barrier rail not shown in details.

Abutment Footing Details

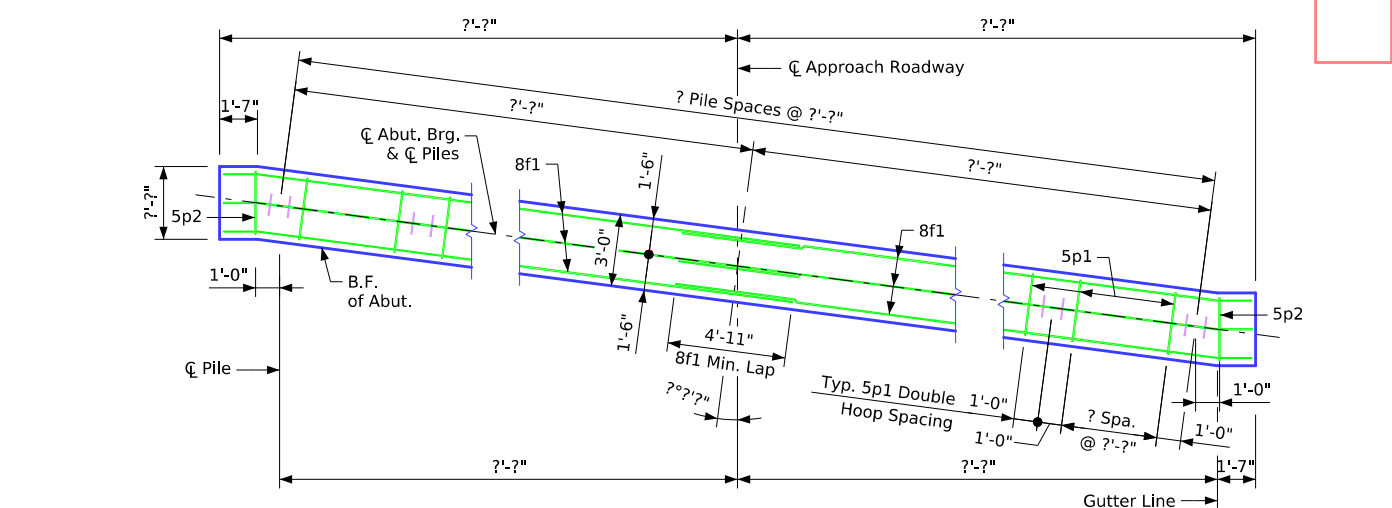
Redrawn 09-08-1988. Correction 04-2014: Added Concrete Quantity Table & Referral Note to Summary Quantity Sheet. Removed design bearing note for abut. piling from Abutment Notes. Revised 01-2023: Sheet format update. Revised 06-2025: Changed 8g1 bar edge of abutment offset dimension to 3 3/4" (was 3") and changed spacing to 2 Equal Spaces (was 2 Spaces at 8"). Added "Control Point" text. IntegralBridges.dgn - 2079 - This Sheet Re-issued 09-2023.



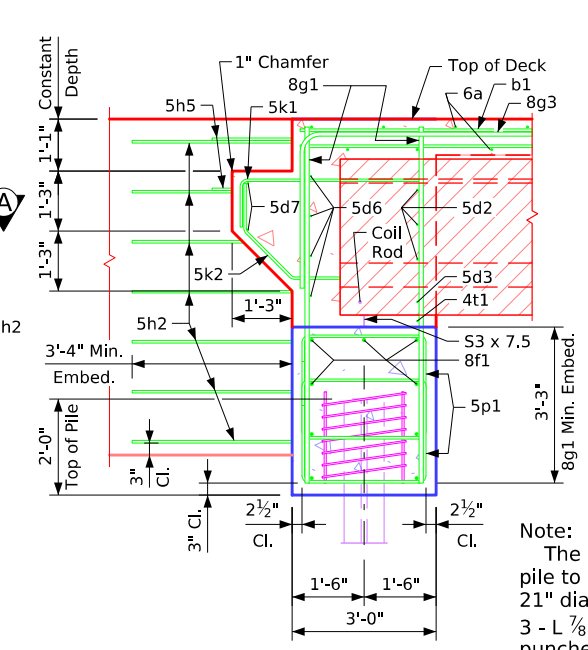
Part Rear Elevation at Abutment



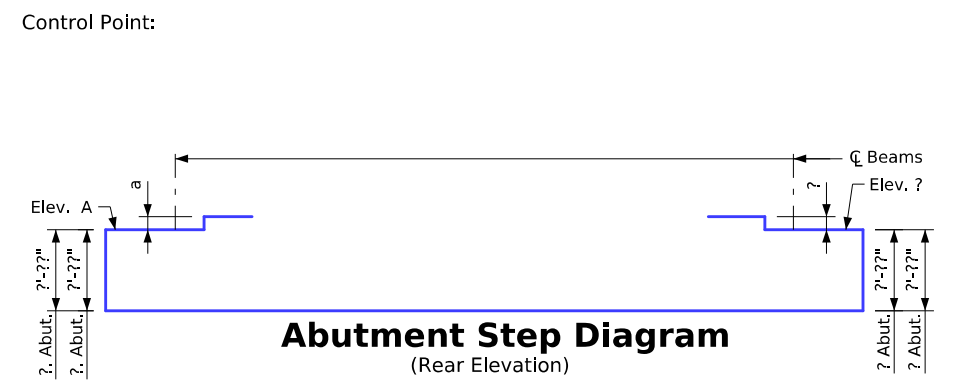
Part Section A-A



Abutment Pile Plan



Part Section B-B



Abutment Step Diagram (Rear Elevation)

Note:
 The spiral at the top of each pile to be 7 turns of no. 2 bar, 21" diameter, 3" pitch with 3 - L 7/8" x 7/8" x 1/8" spacers punched to hold spiral.

Table of Abutment Elevations		
Point	? Abutment	? Abutment
Elev. A	???.??	???.??
Bottom Footing Elev.	???.??	???.??

Table of Abutment Steps		
Step	? Abutment	? Abutment
a	???.??	???.??

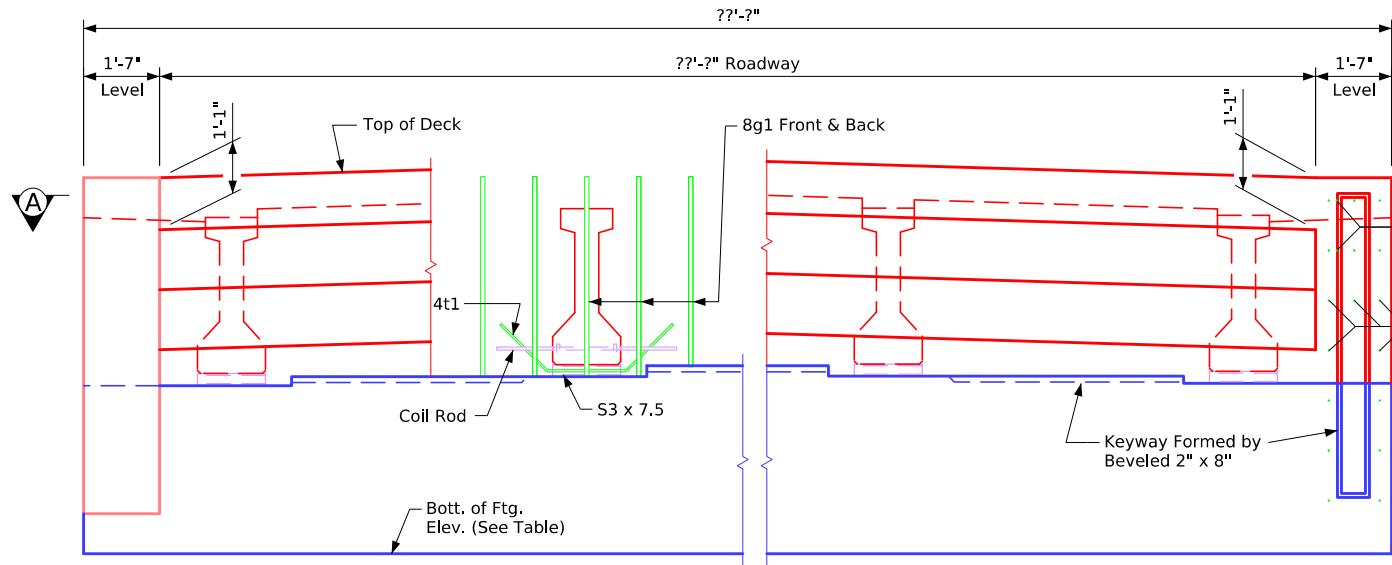
Abutment Concrete Quantity	
Location	Quantity
? Abutment Footing	??
? Abutment Footing	??
Total (Cu. Yds.)	??

Notes:
 Concrete Quantities are included on the Summary Quantities sheet.
 ?? - HP ?? x ?? steel bearing piling required at each abutment.
 Barrier rail not shown in details.

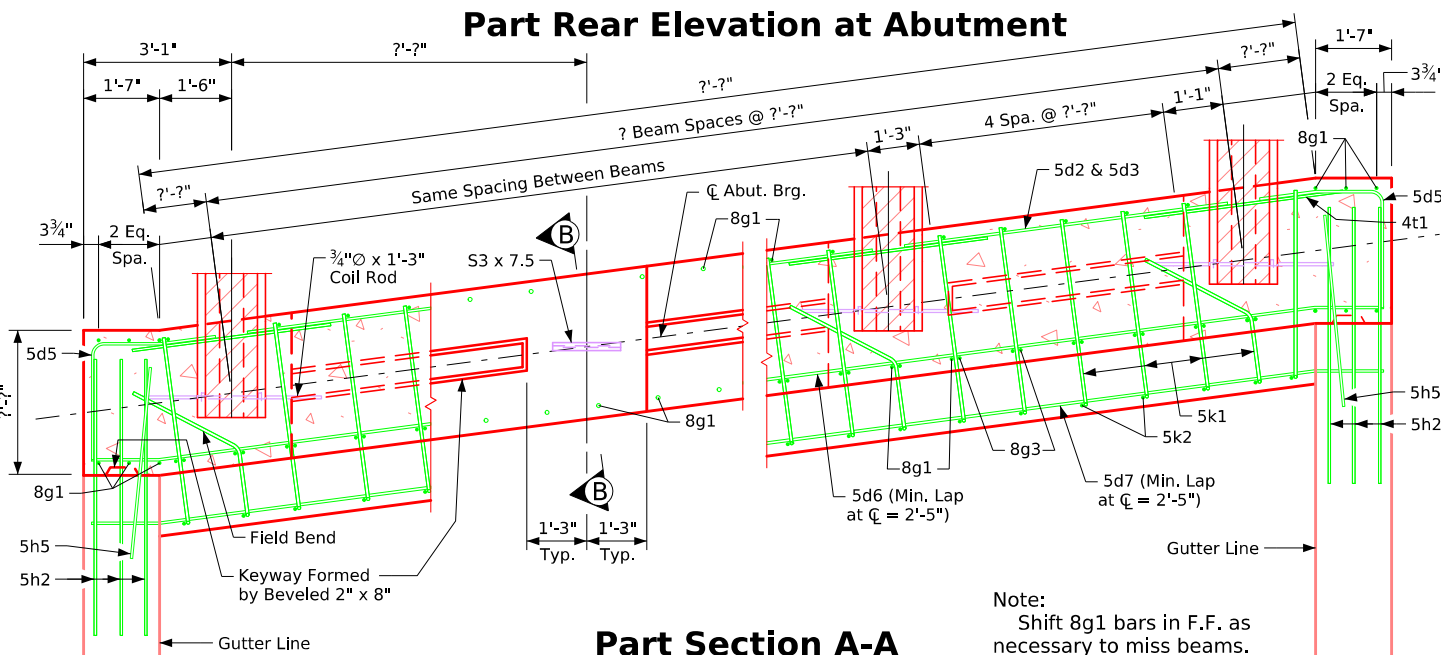
Abutment Notes:
 Minimum clear distance from face of concrete to near reinforcing bar is to be 2" unless otherwise noted or shown.
 If necessary to prevent damage to the end of the bridge deck and backwall from construction equipment, an appropriate method of protection approved by the Engineer shall be provided by the Bridge Contractor at no extra cost to the State.

Abutment Footing Details

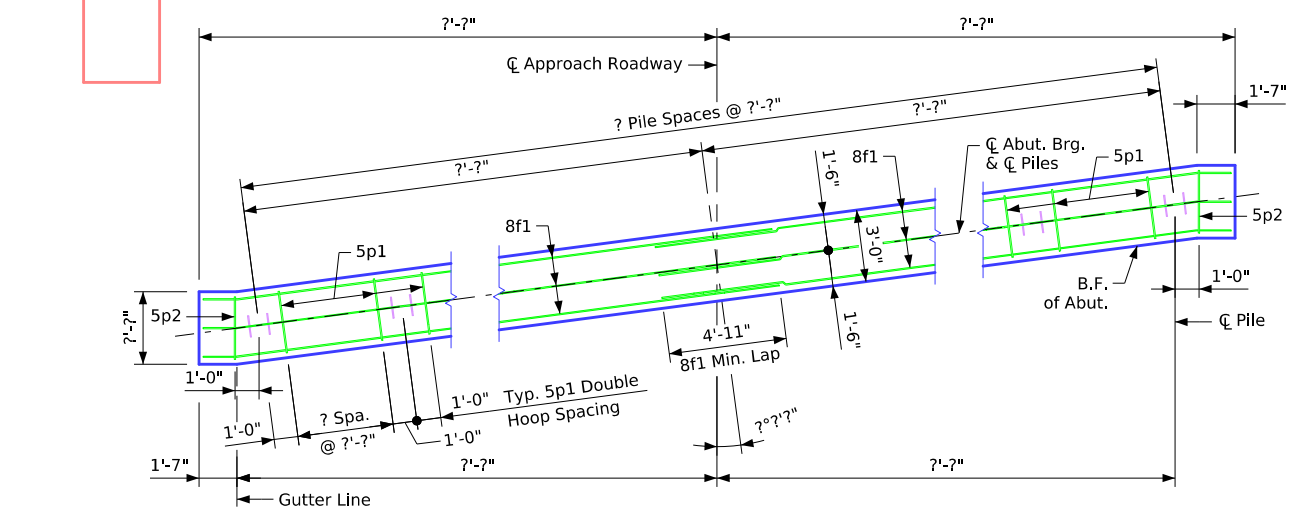
Redrawn 09-08-1988. Correction 04-2014: Added Concrete Quantity Table & Referral Note to Summary Quantity Sheet. Removed design bearing note for abut. piling from Abutment Notes. Revised 01-2023: Sheet format update. Revised 06-2025: Changed 8g1 bar edge of abutment offset dimension to 3 3/4" (was 3") and changed spacing to 2 Equal Spaces (was 2 Spaces at 8"). Added "Control Point" text. IntegralBridges.dgn - 2082 - This Sheet Re-issued 09-2023.



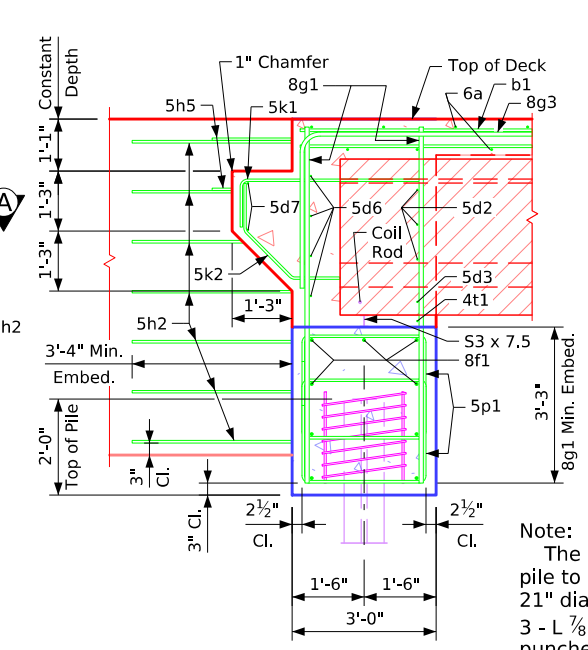
Part Rear Elevation at Abutment



Part Section A-A

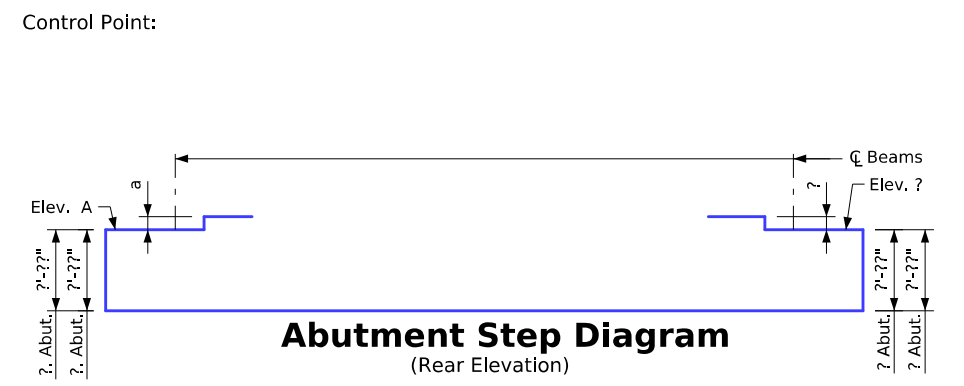


Abutment Pile Plan



Part Section B-B

Note:
 The spiral at the top of each pile to be 7 turns of no. 2 bar, 21" diameter, 3" pitch with 3 - L 7/8" x 7/8" x 1/8" spacers punched to hold spiral.



Abutment Step Diagram (Rear Elevation)

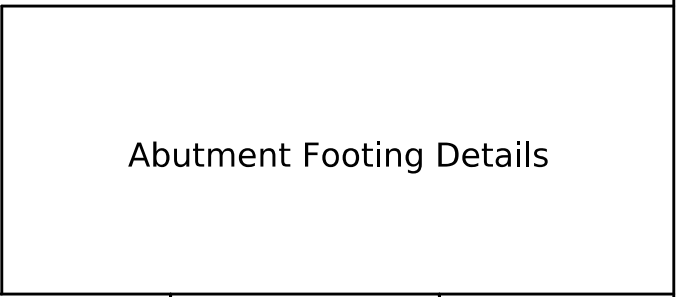
Table of Abutment Elevations		
Point	? Abutment	? Abutment
Elev. A	???.??	???.??
Bottom Footing Elev.	???.??	???.??

Table of Abutment Steps		
Step	? Abutment	? Abutment
a	???.??	???.??

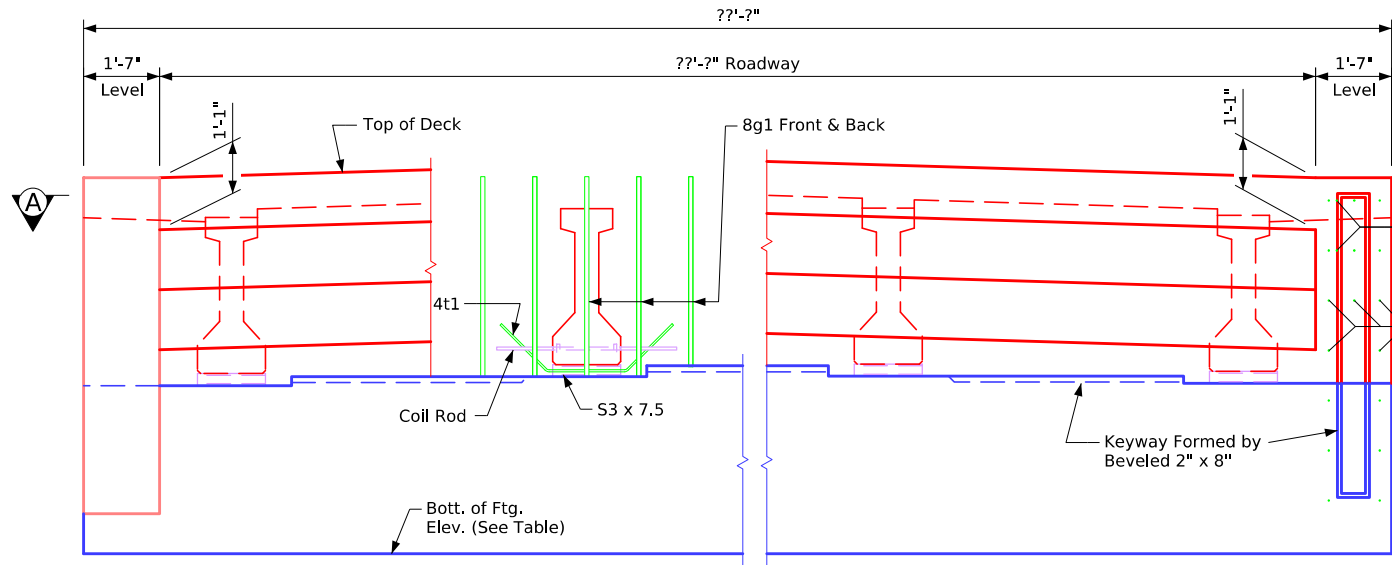
Abutment Concrete Quantity	
Location	Quantity
? Abutment Footing	??
? Abutment Footing	??
Total (Cu. Yds.)	??

Notes:
 Concrete Quantities are included on the Summary Quantities sheet.
 ?? - HP ?? x ?? steel bearing piling required at each abutment.
 Barrier rail not shown in details.

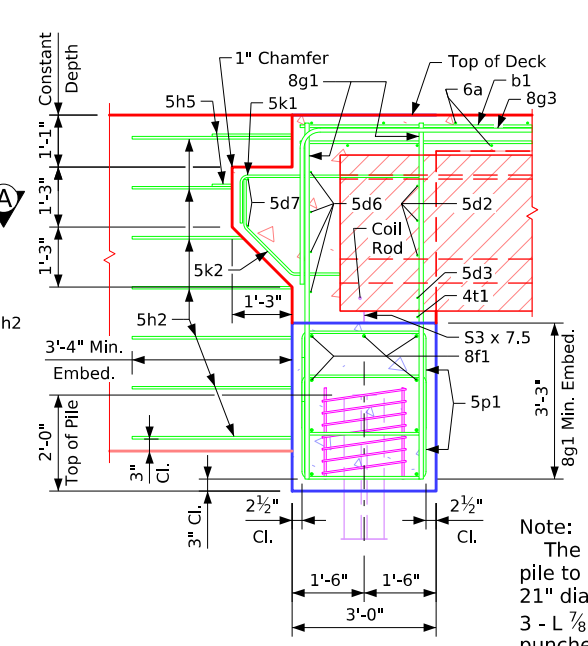
Abutment Notes:
 Minimum clear distance from face of concrete to near reinforcing bar is to be 2" unless otherwise noted or shown.
 If necessary to prevent damage to the end of the bridge deck and backwall from construction equipment, an appropriate method of protection approved by the Engineer shall be provided by the Bridge Contractor at no extra cost to the State.



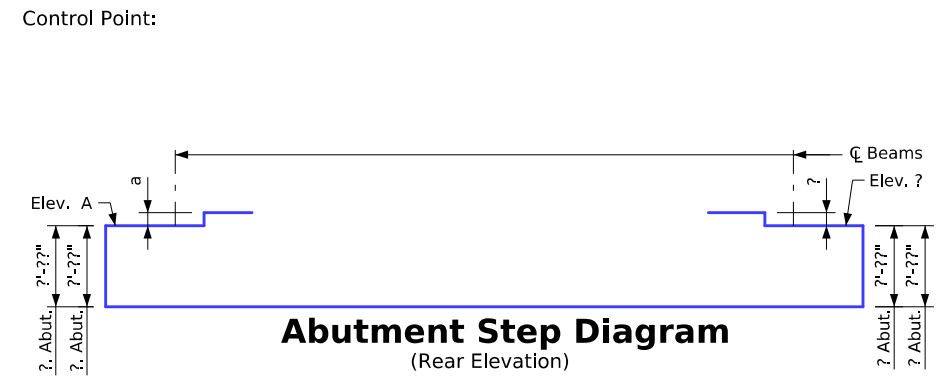
Redrawn 09-08-1988.
 Correction 04-2014: Added Concrete Quantity Table & Referral Note to Summary Quantity Sheet. Removed design bearing note for abut. piling from Abutment Notes.
 Revised 01-2023: Sheet format update.
 Revised 06-2025: Changed 8g1 bar edge of abutment offset dimension to 3 3/4" (was 3") and changed spacing to 2 Equal Spaces (was 2 Spaces at 8"). Added "Control Point" text.
 IntegralBridges.dgn - 2083 - This Sheet Re-issued 09-2023.



Part Rear Elevation at Abutment



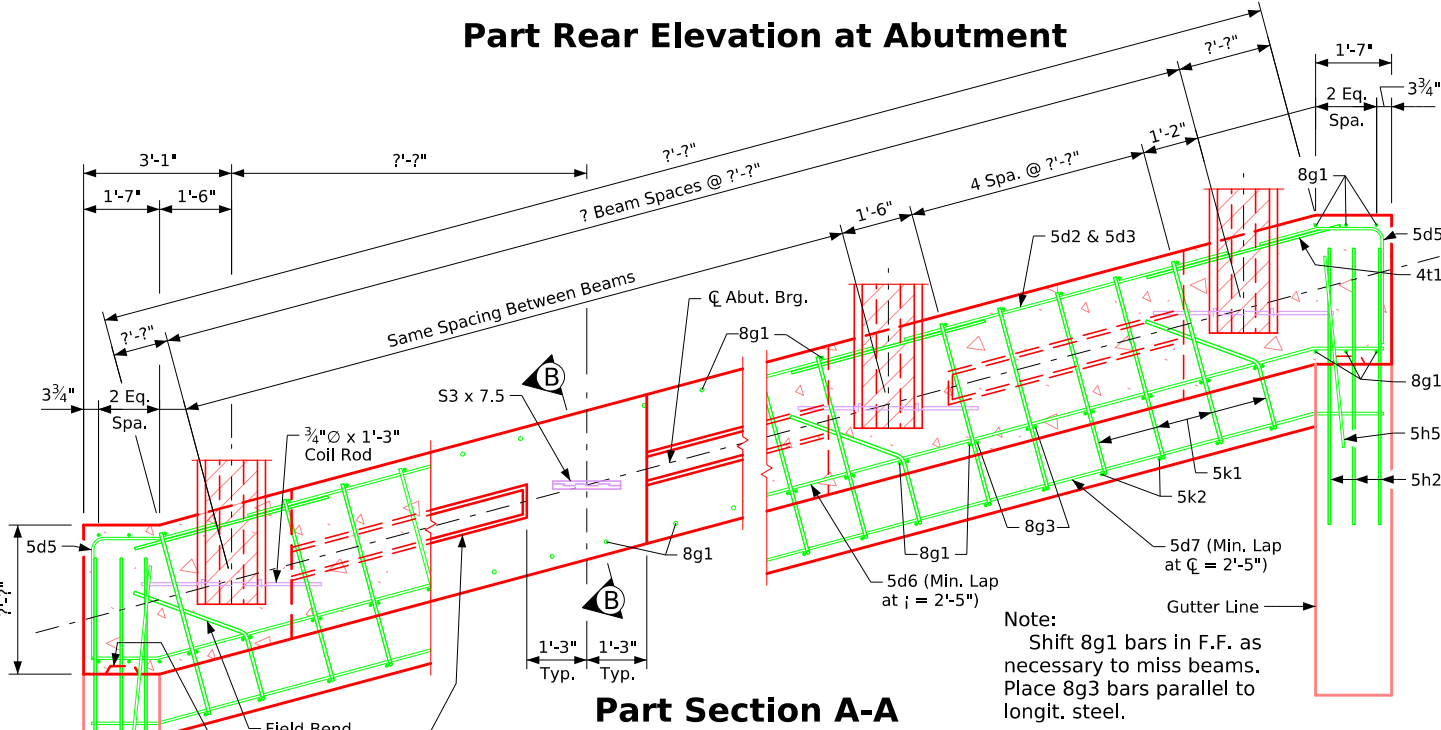
Part Section B-B



Abutment Step Diagram
(Rear Elevation)

Note:
 The spiral at the top of each pile to be 7 turns of no. 2 bar, 21" diameter, 3" pitch with 3 - L 7/8" x 7/8" x 1/8" spacers punched to hold spiral.

Table of Abutment Elevations		
Point	? Abutment	? Abutment
Elev. A	???.??	???.??
Bottom Footing Elev.	???.??	???.??



Part Section A-A

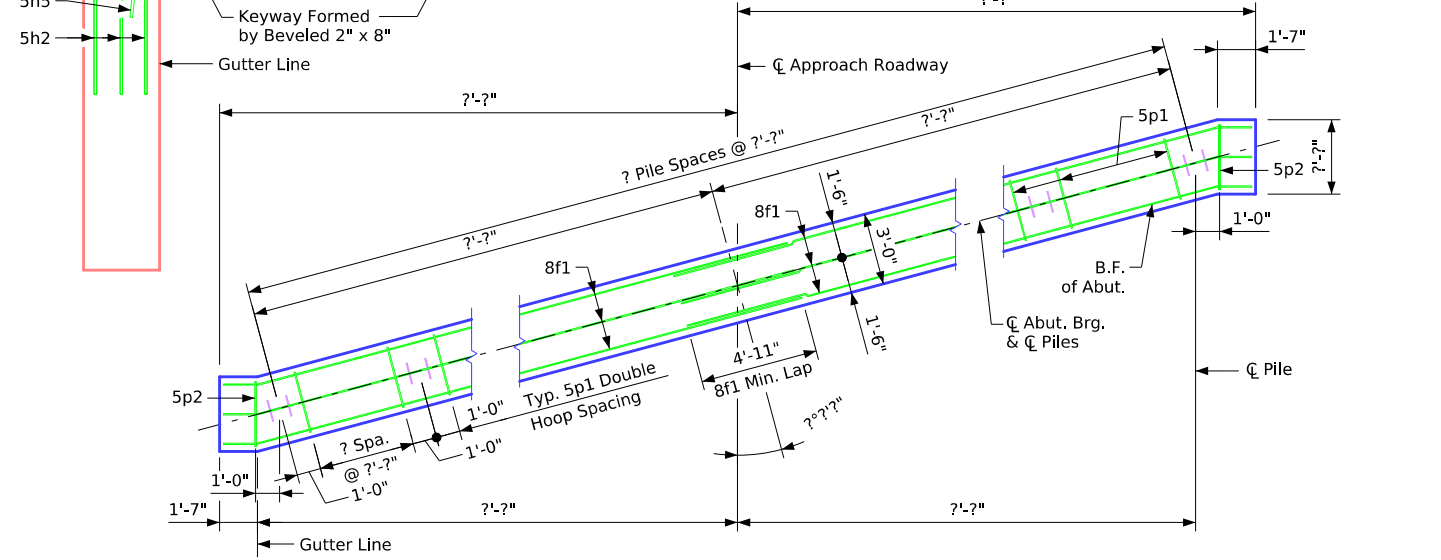
Note:
 Shift 8g1 bars in F.F. as necessary to miss beams. Place 8g3 bars parallel to longit. steel.

Table of Abutment Steps		
Step	? Abutment	? Abutment
a	???.??	???.??

Abutment Concrete Quantity

Location	Quantity
? Abutment Footing	??
? Abutment Footing	??
Total (Cu. Yds.)	??

Notes:
 Concrete Quantities are included on the Summary Quantities sheet.
 ?? - HP ?? x ?? steel bearing piling required at each abutment.
 Barrier rail not shown in details.



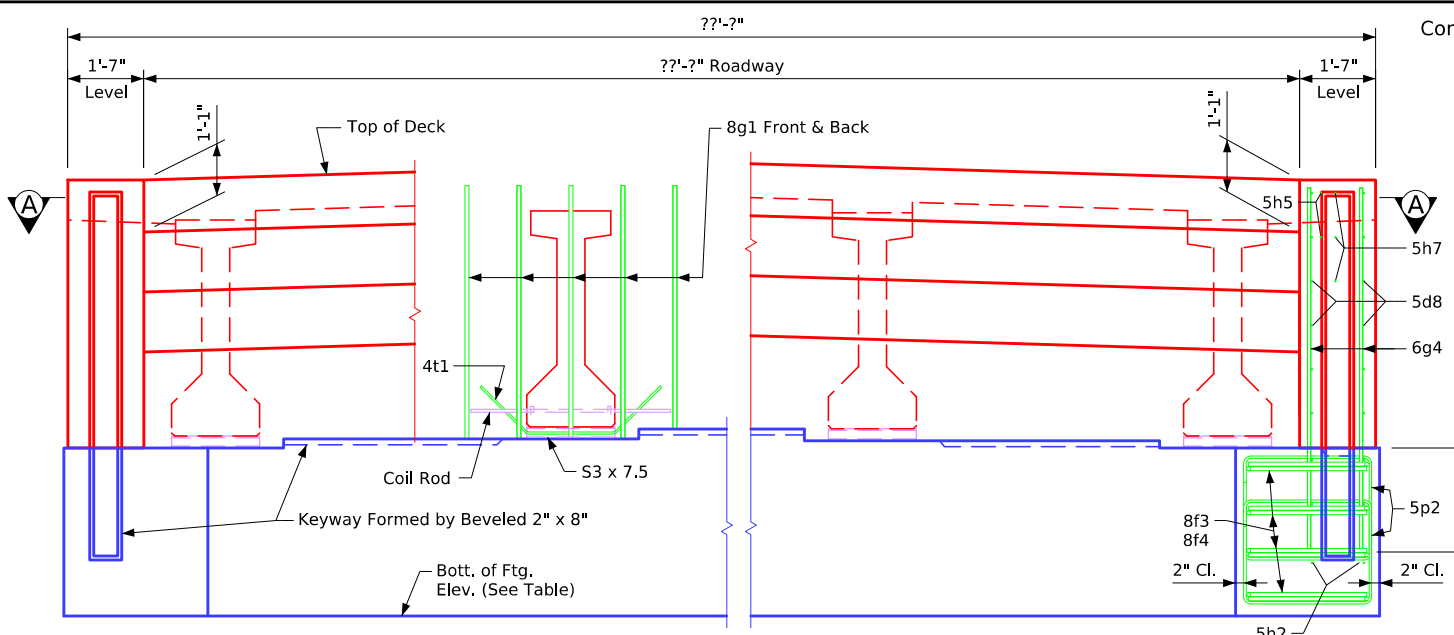
Abutment Pile Plan

Abutment Notes:

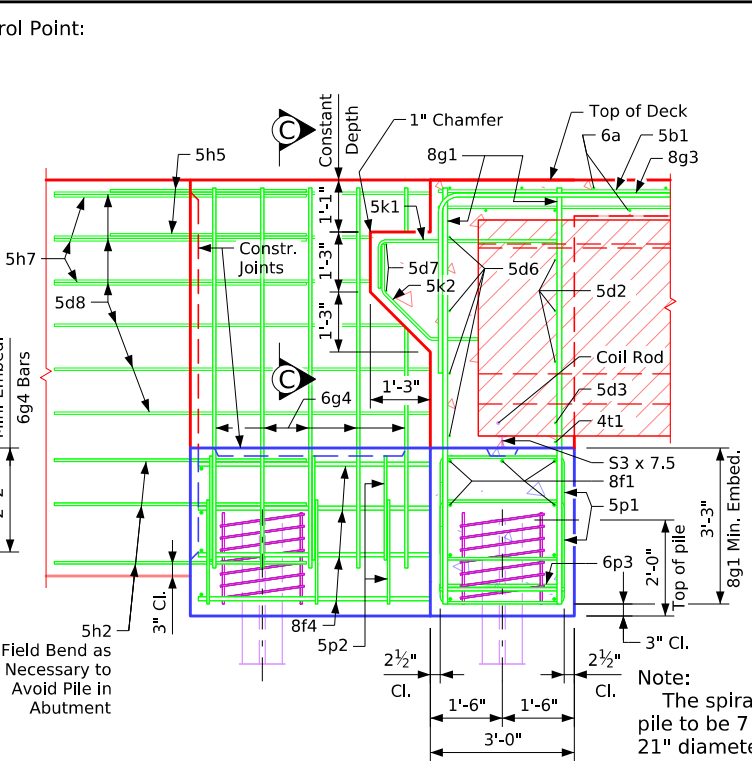
Minimum clear distance from face of concrete to near reinforcing bar is to be 2" unless otherwise noted or shown.
 If necessary to prevent damage to the end of the bridge deck and backwall from construction equipment, an appropriate method of protection approved by the Engineer shall be provided by the Bridge Contractor at no extra cost to the State.

Abutment Footing Details

Revised 01-2023: Sheet format update.
 Revised 06-2025: In Part Section C-C, flipped/switched orientation of horizontal and vertical bars in outside face of wingwall. Changed wingwall outer face rebar clearance to 2 5/8" (was 3").
 IntegralBridges.dgn - 2085 - This Sheet Re-issued 09-2023.



Part Rear Elevation at Abutment
(Wings not shown)

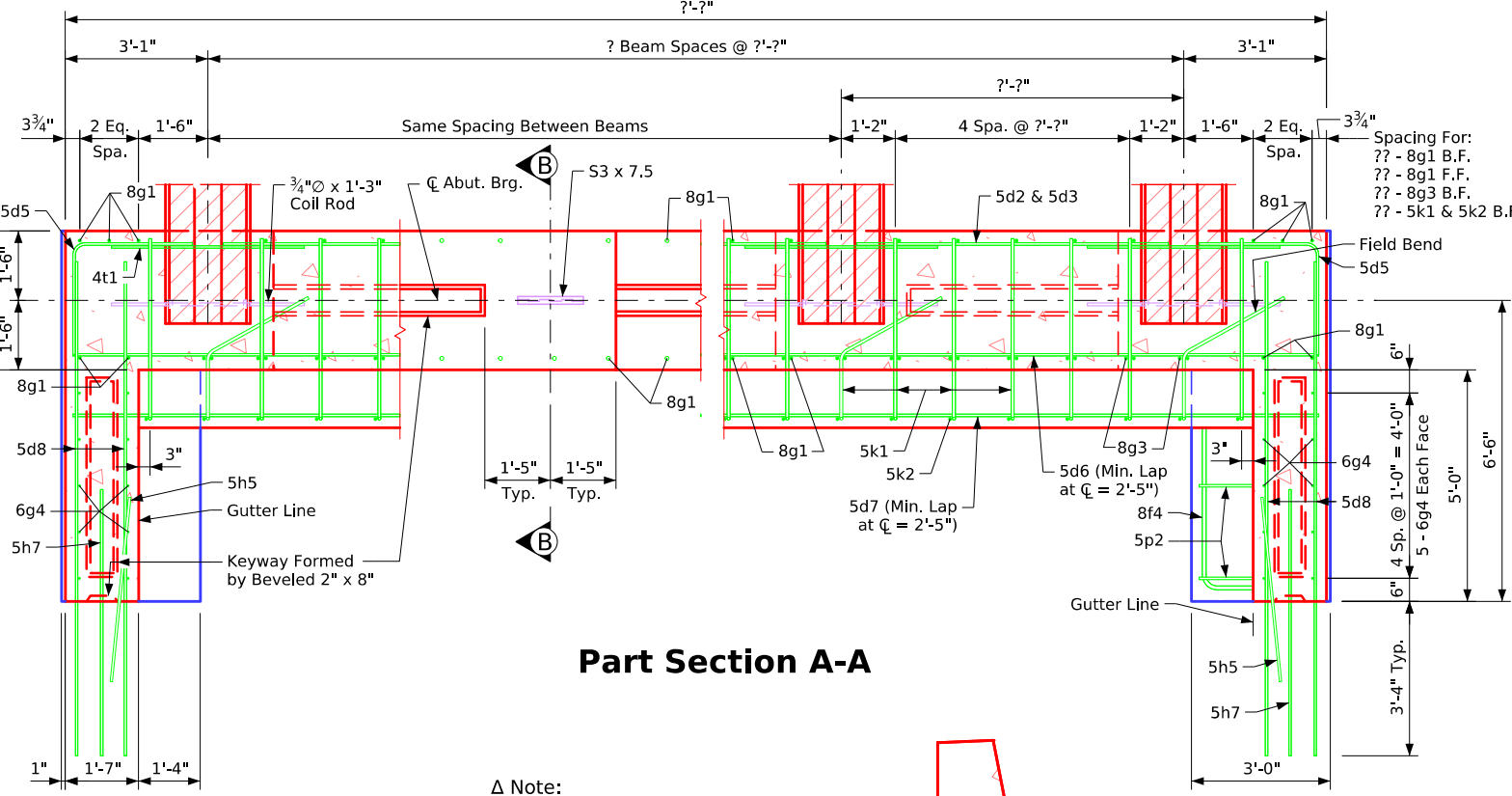


Part Section B-B
('D' Beam Shown)

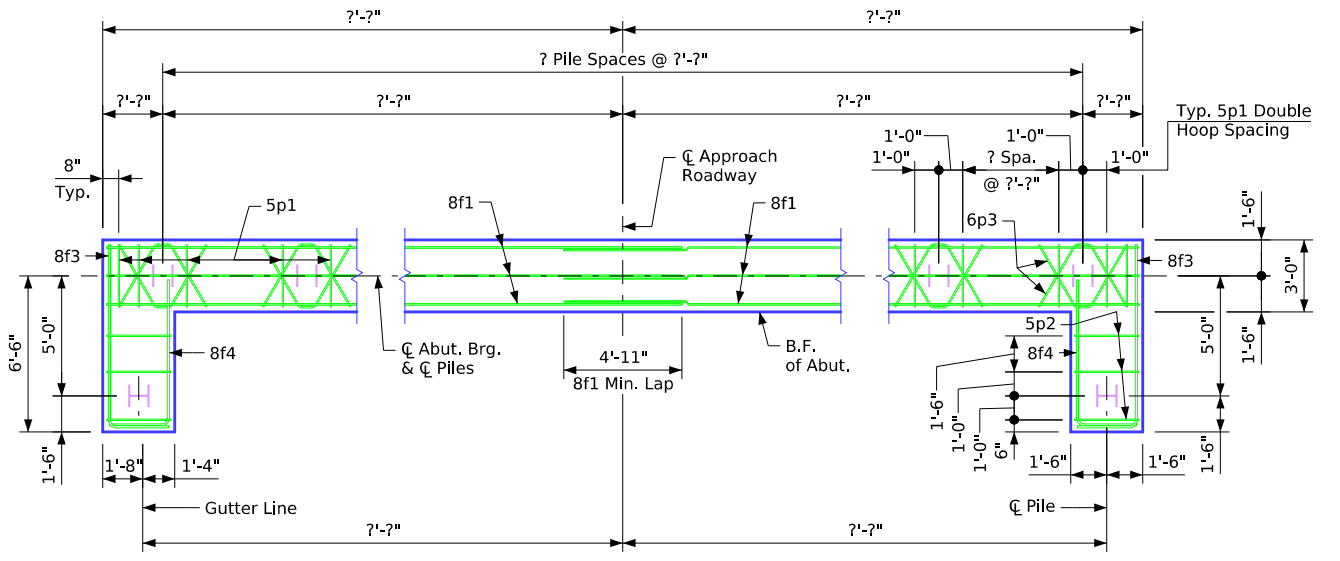
Table of Abutment Elevations		
Point	? Abutment	? Abutment
Elev. A	???.??	???.??
Bottom Footing Elev.	???.??	???.??

Table of Abutment Steps		
Step	? Abutment	? Abutment
a	???.??	???.??

Abutment Concrete Quantity	
Location	Quantity
? Abutment Footing	??
? Abutment Footing	??
Total (Cu. Yds.)	??

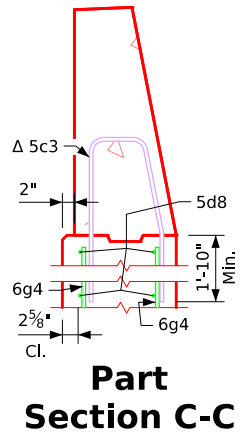


Part Section A-A



Abutment Pile Plan

Notes:
 Concrete Quantities are included on the Summary Quantities sheet.
 ?? - HP ?? x ?? steel bearing piling required at each abutment.
 Barrier rail not shown in details.



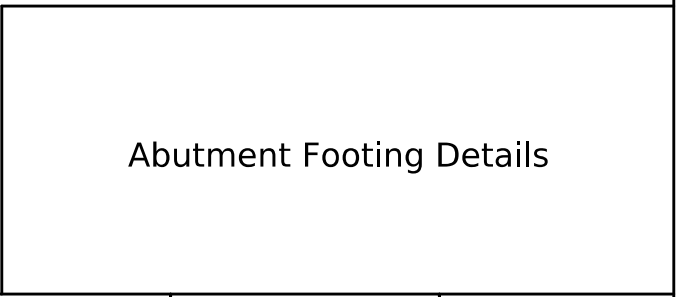
Part Section C-C



Abutment Step Diagram
(Rear Elevation)

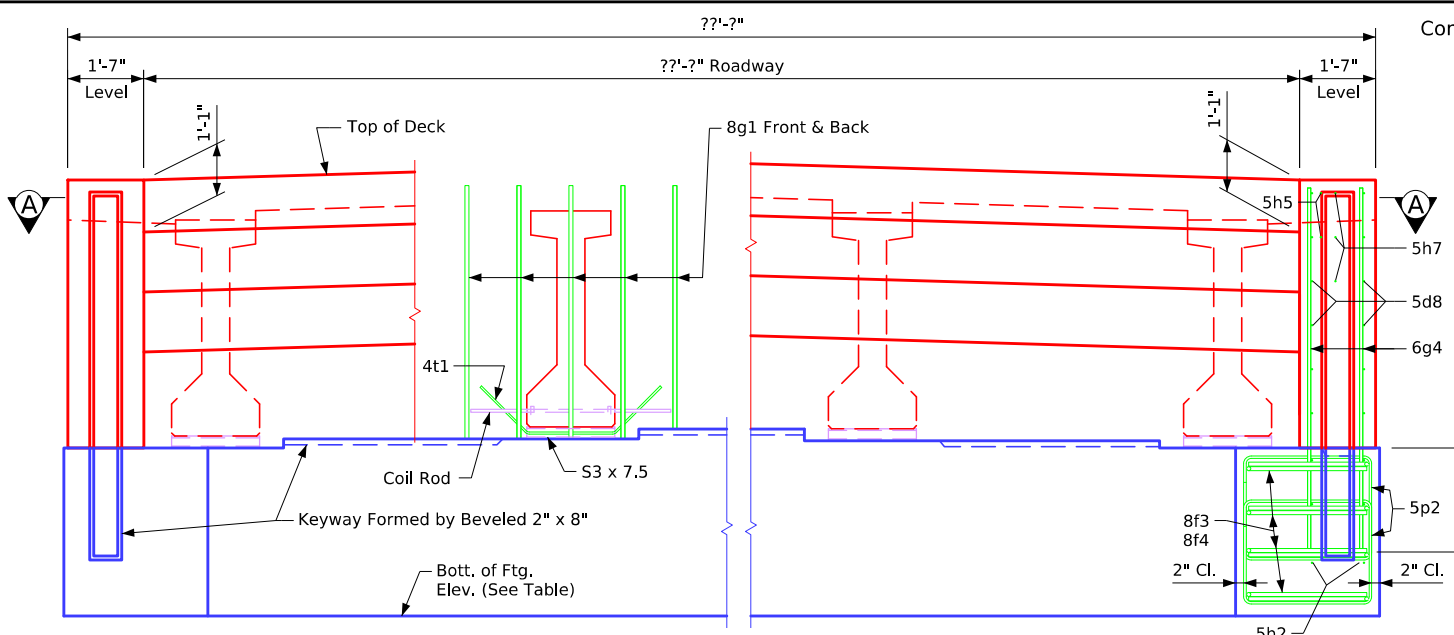
Abutment Notes:

Minimum clear distance from face of concrete to near reinforcing bar is to be 2" unless otherwise noted or shown.
 If necessary to prevent damage to the end of the bridge deck and backwall from construction equipment, an appropriate method of protection approved by the Engineer shall be provided by the Bridge Contractor at no extra cost to the State.

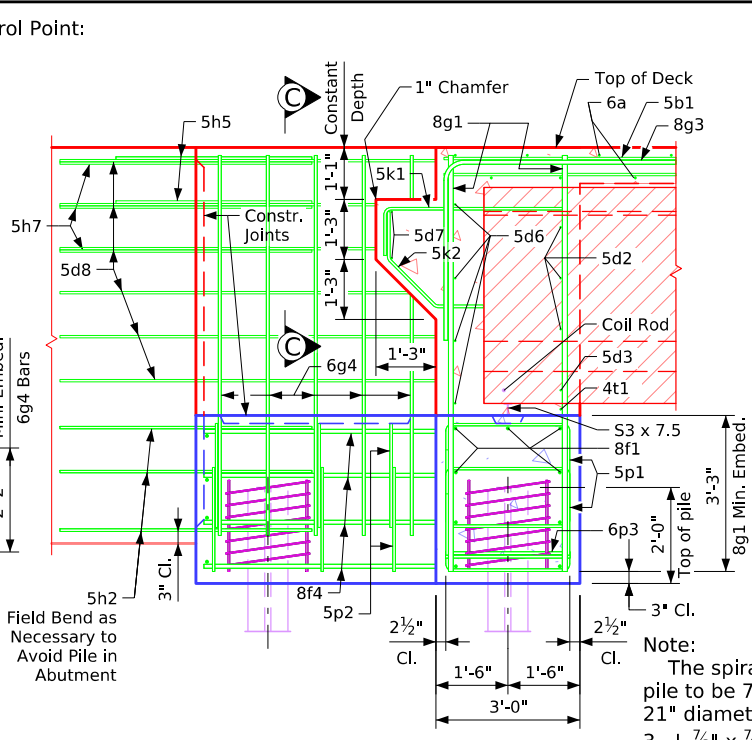


Abutment Footing Details

Revised 01-2023: Sheet format update.
 Revised 06-2025: In Part Section C-C, flipped/switched orientation of horizontal and vertical bars in outside face of wingwall. Changed wingwall outer face rebar clearance to 2 5/8" (was 3"). Changed 8g1 bar edge of abutment offset dimension to 3 3/4" (was 3") and changed spacing to 2 Equal Spaces (was 2 Spaces at 8"). Added "Control Point" text. IntegralBridges.dgn - 2090 - This Sheet Re-issued 09-2023.



Part Rear Elevation at Abutment
(Wings not shown)

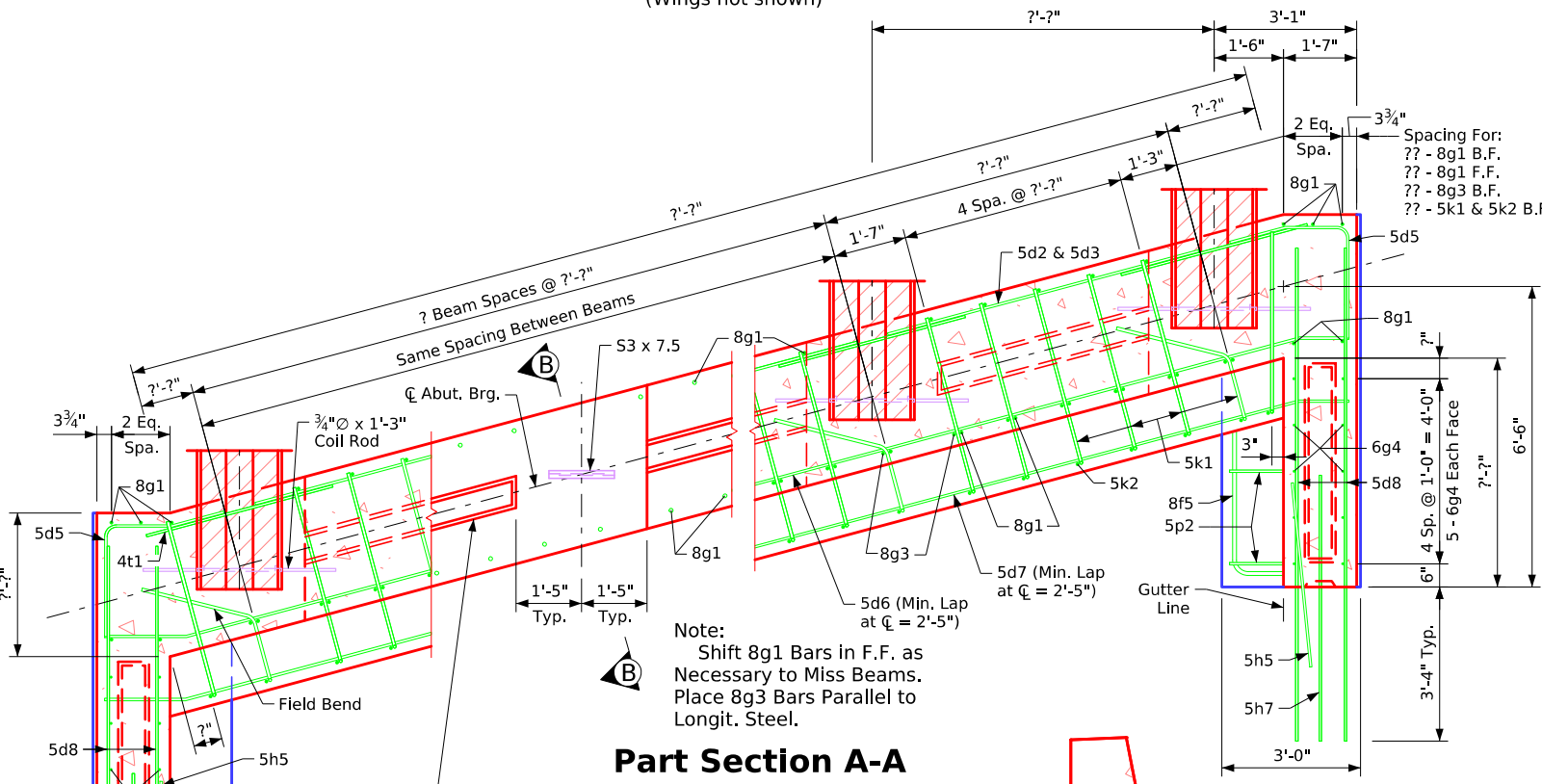


Part Section B-B
(“D” Beam Shown)

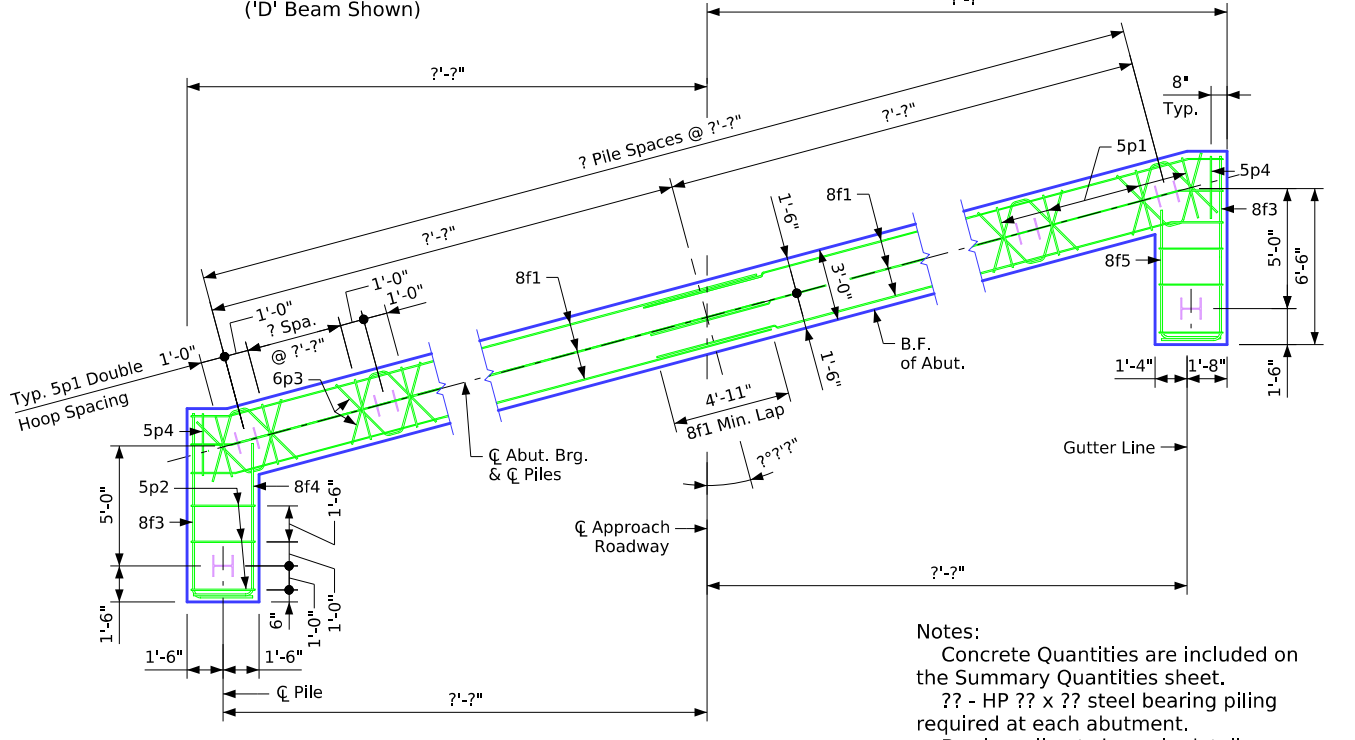
Table of Abutment Elevations		
Point	? Abutment	? Abutment
Elev. A	???.??	???.??
Bottom Footing Elev.	???.??	???.??

Table of Abutment Steps		
Step	? Abutment	? Abutment
a	???.??	???.??

Abutment Concrete Quantity	
Location	Quantity
? Abutment Footing	??
? Abutment Footing	??
Total (Cu. Yds.)	??



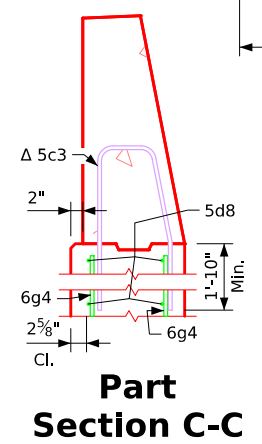
Part Section A-A



Abutment Pile Plan

Abutment Notes:

Minimum clear distance from face of concrete to near reinforcing bar is to be 2" unless otherwise noted or shown.
 If necessary to prevent damage to the end of the bridge deck and backwall from construction equipment, an appropriate method of protection approved by the Engineer shall be provided by the Bridge Contractor at no extra cost to the State.

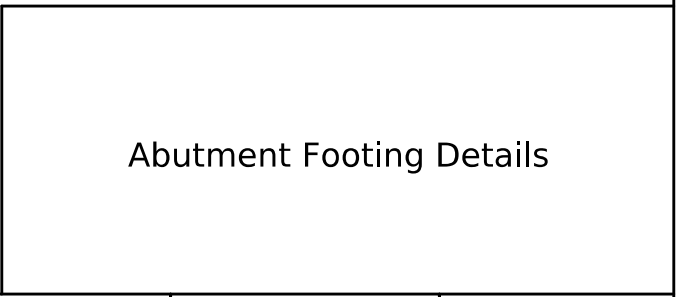


Part Section C-C



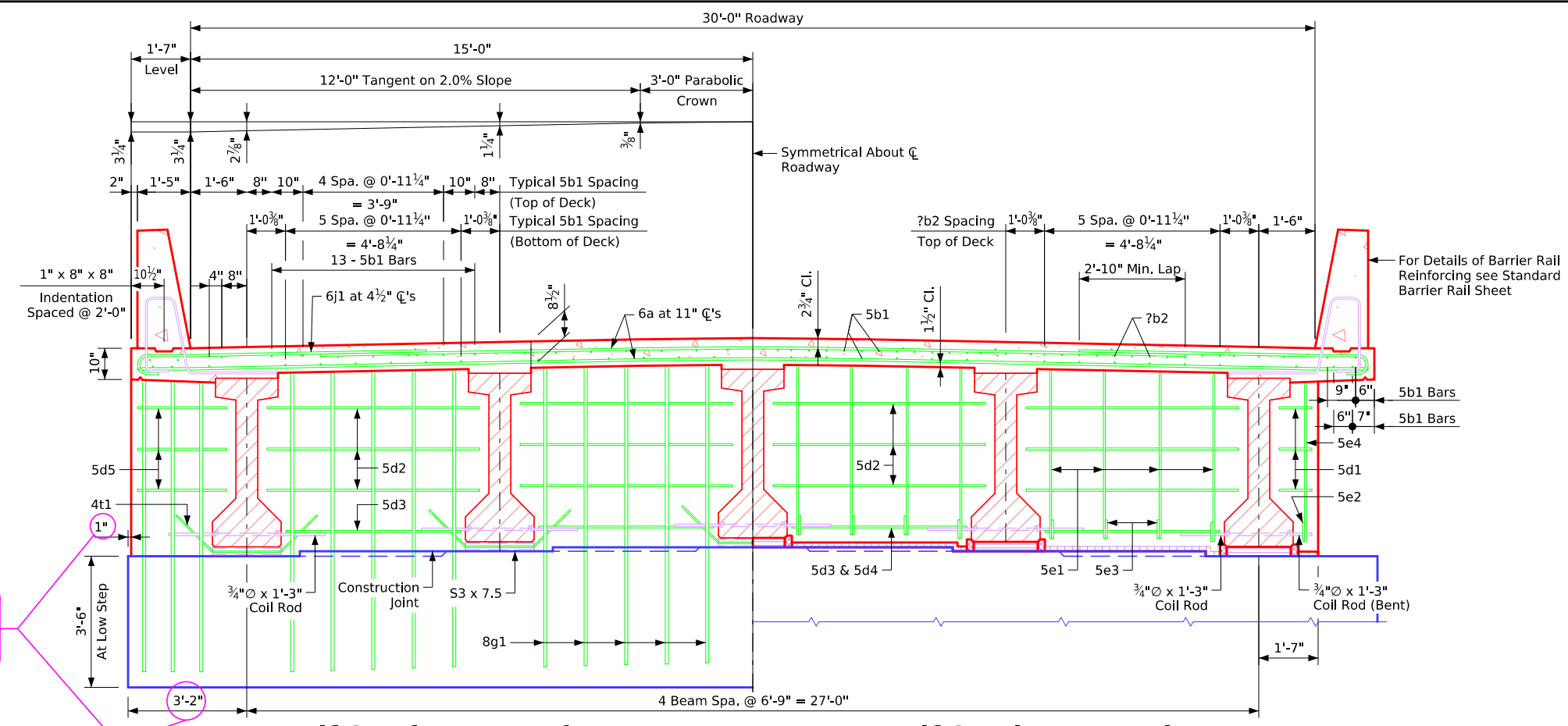
Abutment Step Diagram
(Rear Elevation)

Notes:
 Concrete Quantities are included on the Summary Quantities sheet.
 ?? - HP ?? x ?? steel bearing piling required at each abutment.
 Barrier rail not shown in details.



Abutment Footing Details

Correction 04-2014: Added Referral Note to Summary Quantities Sheet for the drain weight. Note about choice of epoxy or stainless steel deck to Barrier Rail bars.
 Revised 01-2023: Sheet format update.
 Issued 11-2006: LRFD designed deck.
 IntegralBridges.dgn - 4380 - This Sheet Re-issued 09-2023.

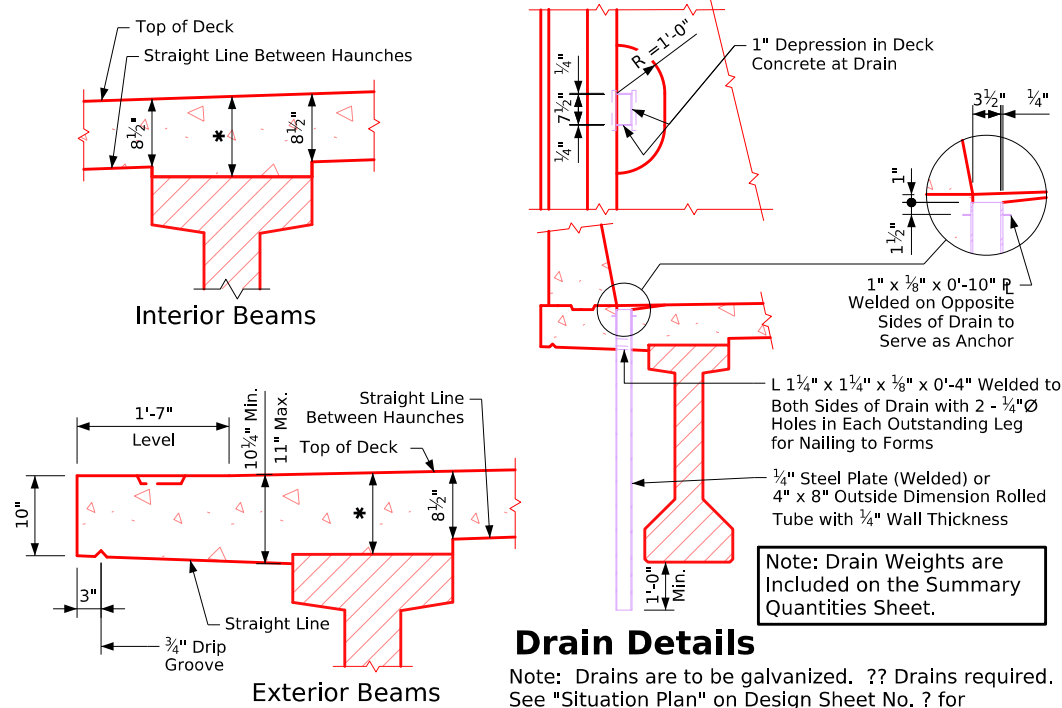


Note to Designer:
 Redraw for A&B beams to align footing and backwall faces; dimension 3'-2" becomes 3'-1"

Half Section Near Abutment **Half Section Near Pier**
 Note: For details of Intermediate Diaphragms see Design Sheet No. ??

Longest Adjacent Span		Bar Size
A, B, & C	D	
30'-0"		5
34'-2"	35'-0"	5
38'-4"	40'-0"	5
42'-6"	45'-0"	5
46'-8"	50'-0"	5
50'-10"	55'-0"	6
55'-0"	60'-0"	6
59'-2"	65'-0"	6
63'-4"		7
67'-6"		7
71'-8"	70'-0"	7
75'-10"	75'-0"	8
80'-0"	80'-0"	8
	85'-0"	8
	90'-0"	8
	95'-0"	8
	100'-0"	9
	105'-0"	9
	110'-0"	9

The midpoint of the 'b2' bar is to be placed at the centerline of pier.



Note to Designer:
 6j1 spacing shown for TL-4 barrier. See Bridge Design Manual Section 5.2 for TL-5 6j1 spacing.

Deck area = 24.28 Sq. Ft.
 Deck area does not include the nominal 1/2" haunch.

Length of S3 x 7.5 (Abutment Beam Seat)	
Beam Bottom Flange Width	Length of S3 x 7.5
1'-5"	1'-3 1/2"
1'-8"	1'-6 1/2"
1'-10"	1'-8 1/2"

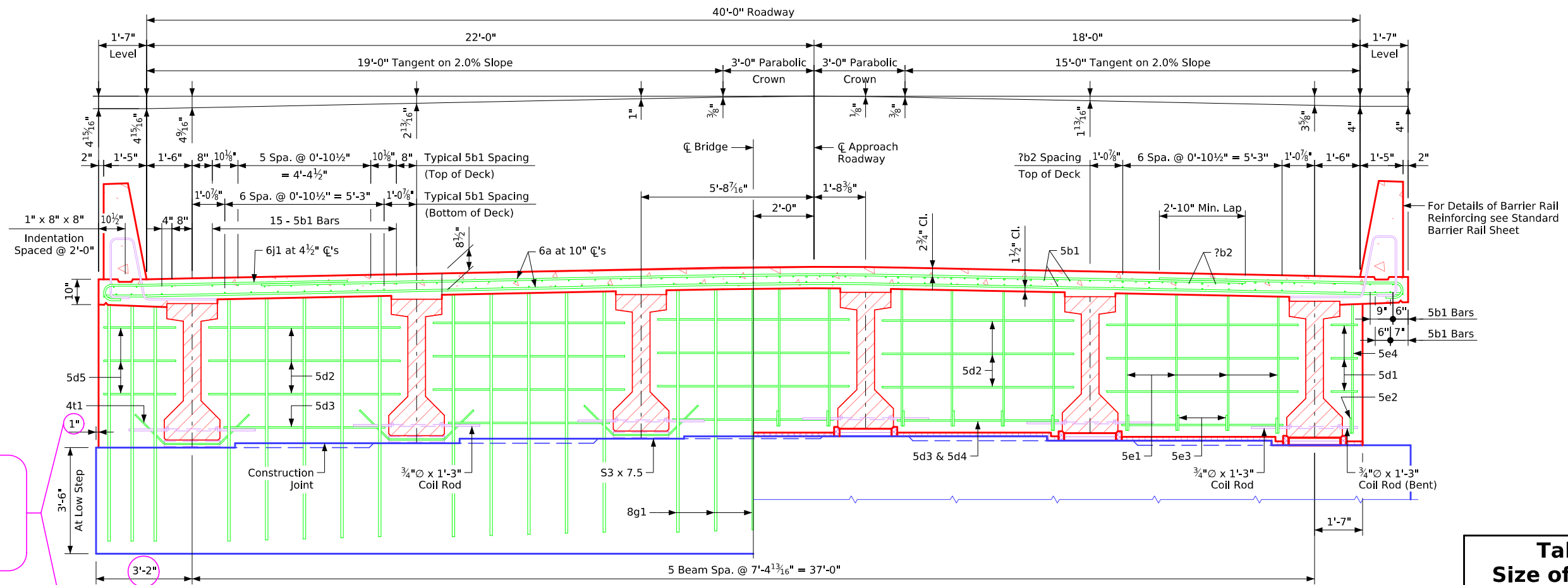
Superstructure Notes:

- The bridge deck as shown includes 3/4" integral wearing surface.
- The pier and abutment diaphragm concrete is to be placed monolithically with the bridge deck.
- Cost of all resilient joint filler material is to be included in the price bid for "Structural Concrete (Bridge)".
- All beams are to be set vertical.
- Forms for the deck and barrier rail are to be supported by the prestressed concrete beams.
- Clear distance from face of concrete to near reinforcing bar shall be 2" unless otherwise noted or shown.
- All deck and diaphragm reinforcing is to be wired in place and adequately supported before concrete is placed.
- Top transverse reinforcing steel is to be parallel to and 2 3/4" clear below top of deck. Bottom transverse reinforcing steel is to be parallel to and 1 1/2" clear above bottom of deck. Top and bottom reinforcing steel is to be supported by individual bar chairs spaced at not more than 3'-0" centers longitudinally and transversely, or by continuous rows of bar high chairs or deck bolsters spaced 4'-0" apart. I.M. 451.01 requirements shall apply for bar chairs, bar high chairs, and deck bolsters.
- Transverse deck reinforcing may be spliced with one lap located as follows:
 - Top bar - lap midway between beams (min. lap = 2'-10").
 - Bottom bars - lap over beams (min. lap = 3'-7").
- Payment for reinforcing bars shall be based on no splices, and no allowance shall be made for the additional length of bar required for the use of splices.
- Cost for bearing material is to be included in the price bid for "Prestressed Concrete Beams".

Bridge Deck Cross Section

Typical Deck and Haunch Detail
 * For Deck Thickness Over Beams See "Haunch And Camber Details" on Design Sheet No. ?.

Correction 04-2014: Added Referral Note to Summary Quantities Sheet for the drain weight. Note about choice of epoxy or stainless steel deck to Barrier Rail bars.
 Revised 01-2023: Sheet format update.
 Issued 11-2006: LRFD designed deck.
 IntegralBridges.dgn - 4383 - This Sheet Re-issued 09-2023.



Half Section Near Abutment

Half Section Near Pier

Note: For details of Intermediate Diaphragms see Design Sheet No. ??.

Table of Size of "b2" Bar			
Longest Adjacent Span	Beam		Bar Size
	A, B, & C	D	
30'-0"			5
34'-2"		35'-0"	5
38'-4"		40'-0"	5
42'-6"		45'-0"	5
46'-8"		50'-0"	5
50'-10"		55'-0"	6
55'-0"		60'-0"	6
59'-2"		65'-0"	6
63'-4"			7
67'-6"			7
71'-8"		70'-0"	7
75'-10"		75'-0"	8
80'-0"		80'-0"	8
		85'-0"	8
		90'-0"	8
		95'-0"	8
		100'-0"	9
		105'-0"	9
		110'-0"	9

The midpoint of the 'b2' bar is to be placed at the \O of pier.

Note to Designer:
 Redraw for A&B beams to align footing and backwall faces: dimension 3'-2" becomes 3'-1"

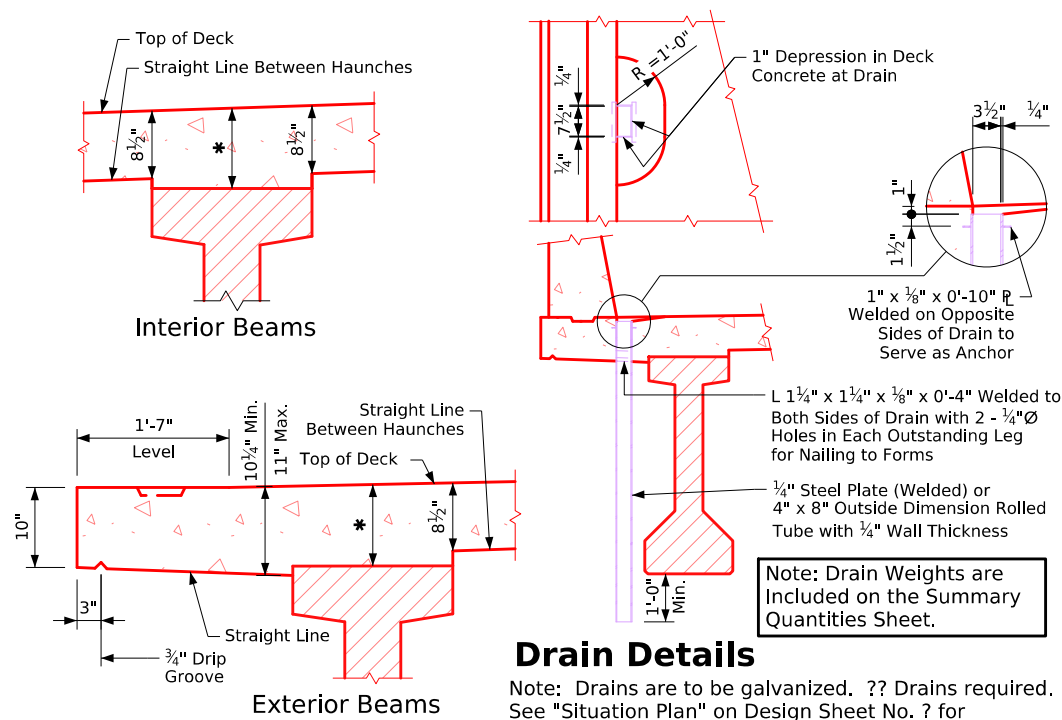
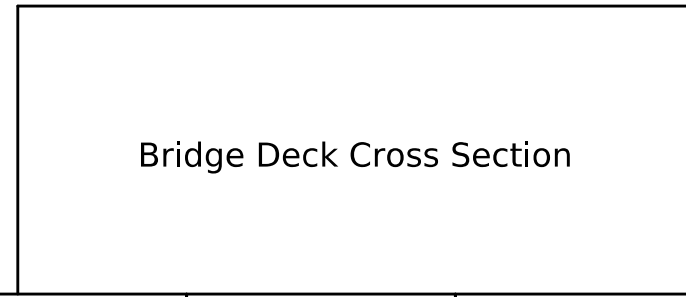
Note to Designer:
 6j1 spacing shown for TL-4 barrier. See Bridge Design Manual Section 5.2 for TL-5 6j1 spacing.

Deck area = 31.36 Sq. Ft.
 Deck area does not include the nominal 1/2" haunch.

Length of S3 x 7.5 (Abutment Beam Seat)	
Beam Bottom Flange Width	Length of S3 x 7.5
1'-5"	1'-3 1/2"
1'-8"	1'-6 1/2"
1'-10"	1'-8 1/2"

Superstructure Notes:

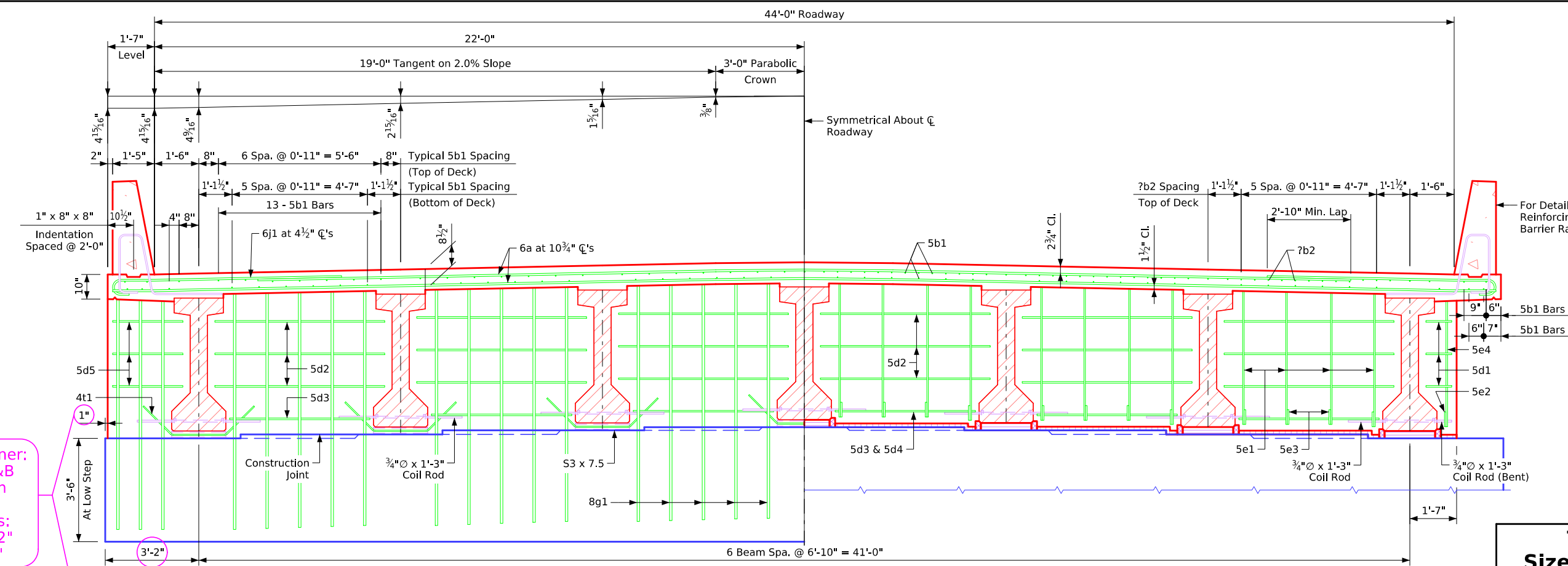
The bridge deck as shown includes 3/4" integral wearing surface. The pier and abutment diaphragm concrete is to be placed monolithically with the bridge deck. Cost of all resilient joint filler material is to be included in the price bid for "Structural Concrete (Bridge)". All beams are to be set vertical. Forms for the deck and barrier rail are to be supported by the prestressed concrete beams. Clear distance from face of concrete to near reinforcing bar shall be 2" unless otherwise noted or shown. All deck and diaphragm reinforcing is to be wired in place and adequately supported before concrete is placed. Top transverse reinforcing steel is to be parallel to and 2 3/4" clear below top of deck. Bottom transverse reinforcing steel is to be parallel to and 1 1/2" clear above bottom of deck. Top and bottom reinforcing steel is to be supported by individual bar chairs spaced at not more than 3'-0" centers longitudinally and transversely, or by continuous rows of bar high chairs or deck bolsters spaced 4'-0" apart. I.M. 451.01 requirements shall apply for bar chairs, bar high chairs, and deck bolsters. Transverse deck reinforcing may be spliced with one lap located as follows:
 Top bar - lap midway between beams (min. lap = 2'-10").
 Bottom bars - lap over beams (min. lap = 3'-7").
 Payment for reinforcing bars shall be based on no splices, and no allowance shall be made for the additional length of bar required for the use of splices.
 Cost for bearing material is to be included in the price bid for "Prestressed Concrete Beams".



Typical Deck and Haunch Detail

* For Deck Thickness Over Beams See "Haunch And Camber Details" on Design Sheet No. ?.

Correction 04-2014: Added Referral Note to Summary Quantities Sheet for the drain weight. Note about choice of epoxy or stainless steel deck to Barrier Rail bars.
 Revised 01-2023: Sheet format update.
 Issued 11-2006. LRFD designed deck.
 IntegralBridges.dgn - 4384 - This Sheet Re-issued 09-2023.



Note to Designer: Redraw for A&B beams to align footing and backwall faces: dimension 3'-2" becomes 3'-1"

Half Section Near Abutment

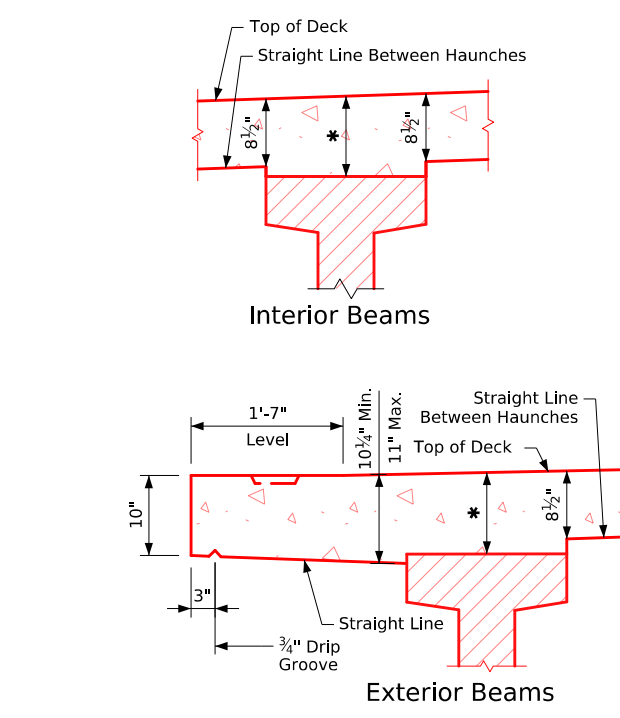
Half Section Near Pier

Note: For details of Intermediate Diaphragms see Design Sheet No. ??

Table of Size of "b2" Bar

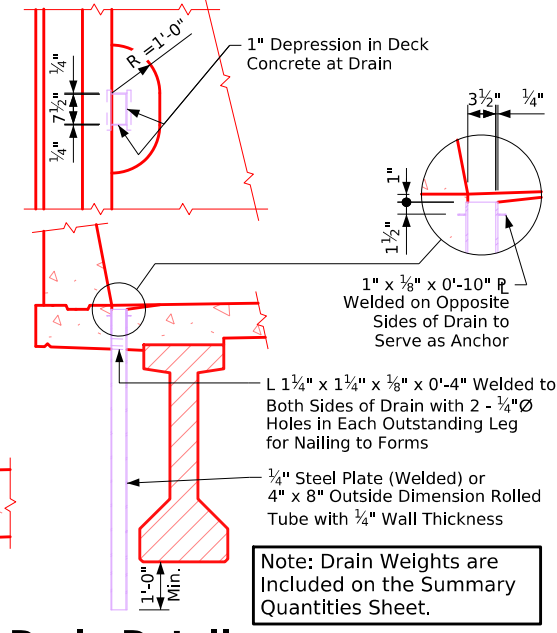
Longest Adjacent Span		Bar Size
Beam		
A, B, & C	D	
30'-0"		5
34'-2"	35'-0"	5
38'-4"	40'-0"	5
42'-6"	45'-0"	5
46'-8"	50'-0"	5
50'-10"	55'-0"	6
55'-0"	60'-0"	6
59'-2"	65'-0"	6
63'-4"		7
67'-6"		7
71'-8"	70'-0"	7
75'-10"	75'-0"	8
80'-0"	80'-0"	8
	85'-0"	8
	90'-0"	8
	95'-0"	8
	100'-0"	9
	105'-0"	9
	110'-0"	9

The midpoint of the 'b2' bar is to be placed at the centerline of pier.



Typical Deck and Haunch Detail

* For Deck Thickness Over Beams See "Haunch And Camber Details" on Design Sheet No. ?



Drain Details

Note: Drains are to be galvanized. ?? Drains required. See "Situation Plan" on Design Sheet No. ? for location. Weight of drains is included in the quantity for "Structural Steel". Weight is based on rolled tube.

Note to Designer: 6j1 spacing shown for TL-4 barrier. See Bridge Design Manual Section 5.2 for TL-5 6j1 spacing.

Deck Area = 34.20 Sq. Ft. Deck Area Does Not Include The Nominal 1/2" Haunch.

Length of S3 x 7.5
(Abutment Beam Seat)

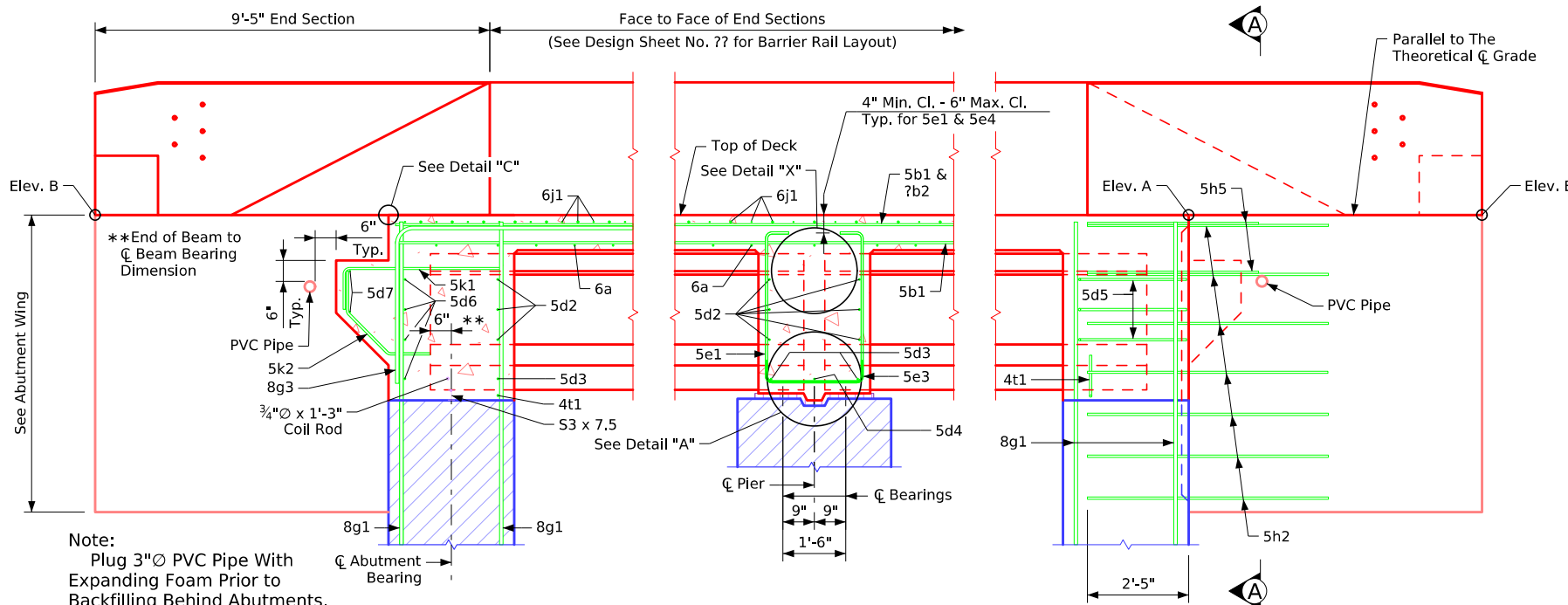
Beam Bottom Flange Width	Length of S3 x 7.5
1'-5"	1'-3 1/2"
1'-8"	1'-6 1/2"
1'-10"	1'-8 1/2"

Superstructure Notes:

The bridge deck as shown includes 3/4" integral wearing surface. The pier and abutment diaphragm concrete is to be placed monolithically with the bridge deck. Cost of all resilient joint filler material is to be included in the price bid for "Structural Concrete (Bridge)". All beams are to be set vertical. Forms for the deck and barrier rail are to be supported by the prestressed concrete beams. Clear distance from face of concrete to near reinforcing bar shall be 2" unless otherwise noted or shown. All deck and diaphragm reinforcing is to be wired in place and adequately supported before concrete is placed. Top transverse reinforcing steel is to be parallel to and 2 3/4" clear below top of deck. Bottom transverse reinforcing steel is to be parallel to and 1 1/2" clear above bottom of deck. Top and bottom reinforcing steel is to be supported by individual bar chairs spaced at not more than 3'-0" centers longitudinally and transversely, or by continuous rows of bar high chairs or deck bolsters spaced 4'-0" apart. I.M. 451.01 requirements shall apply for bar chairs, bar high chairs, and deck bolsters. Transverse deck reinforcing may be spliced with one lap located as follows:
 Top bar - lap midway between beams (min. lap = 2'-10").
 Bottom bars - lap over beams (min. lap = 3'-7").
 Payment for reinforcing bars shall be based on no splices, and no allowance shall be made for the additional length of bar required for the use of splices.
 Cost for bearing material is to be included in the price bid for "Prestressed Concrete Beams".

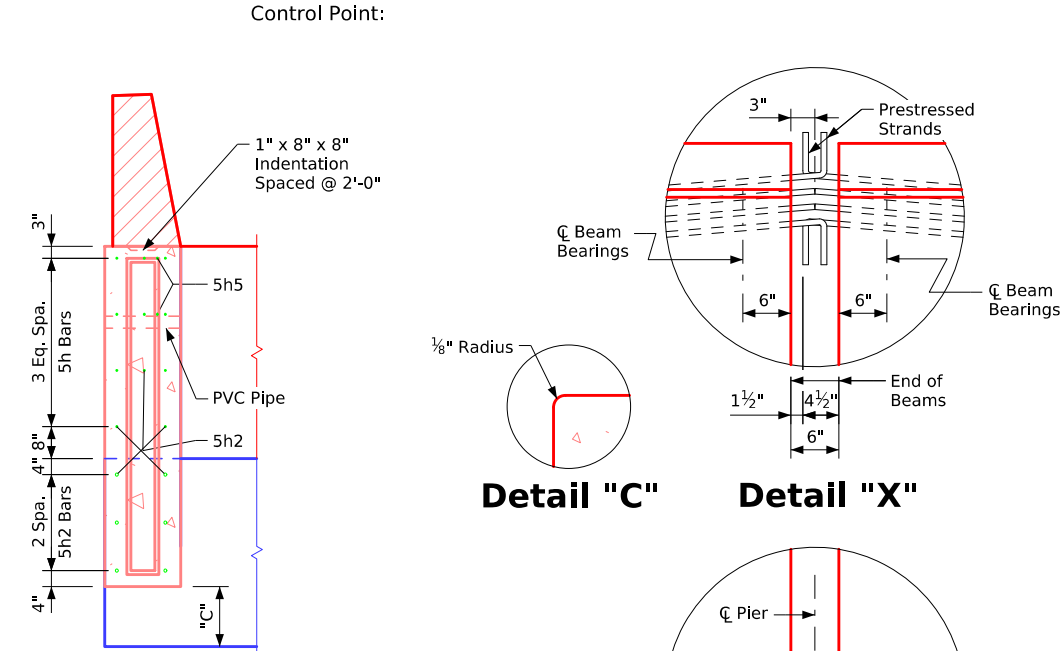


Bridge Deck Cross Section



Part Longitudinal Section Near Gutter
(For details of Intermediate Diaphragm see Design Sheet No. ??)

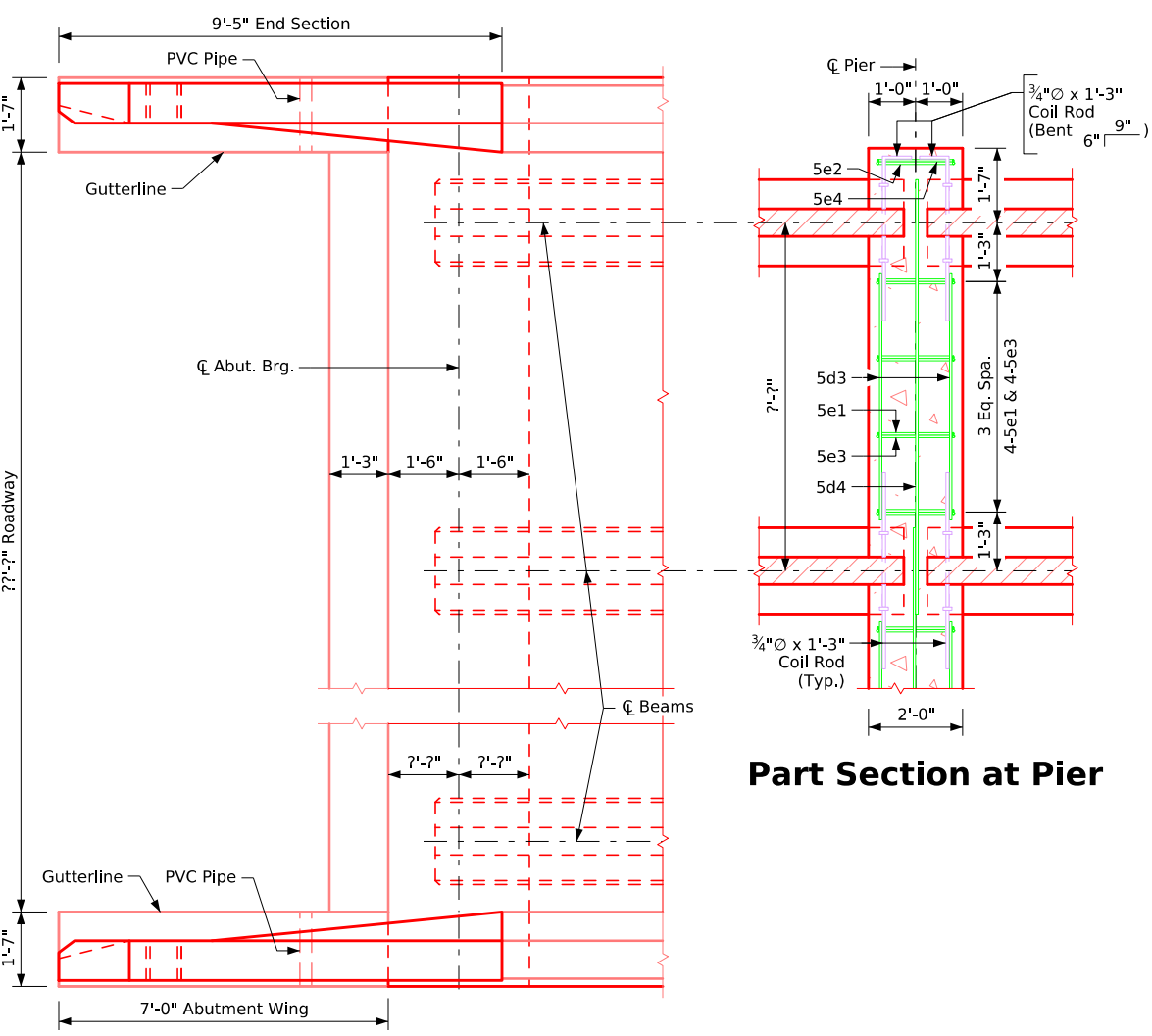
Part End View at Abutment



Section A-A

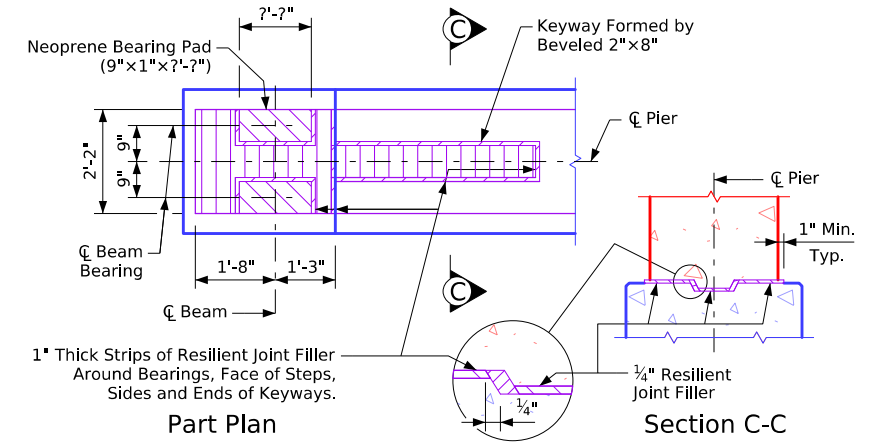
Table of Wing Elevations

Location	Dim "C"	Elev. A	Elev. B
S.W. Corner	?'-?''	???.?	???.?
N.W. Corner	?'-?''	???.?	???.?
S.E. Corner	?'-?''	???.?	???.?
N.E. Corner	?'-?''	???.?	???.?



Part Section at Pier

Part Plan

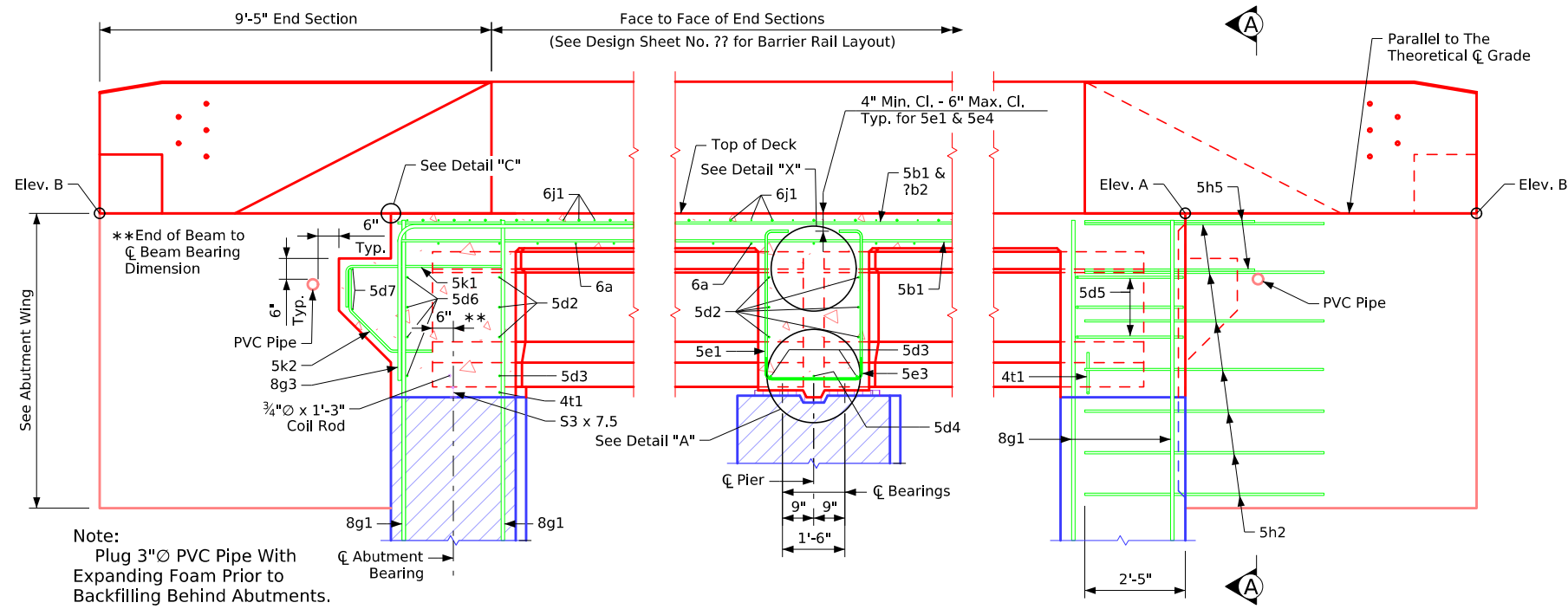


Top of Fixed Pier Details

Abut. & Pier Diaphragm Details

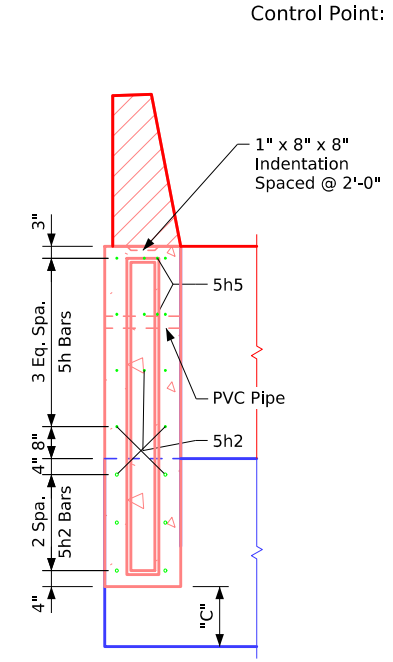
Redrawn 09-08-1988.
 Revised 07-2008: Distance from Centerline Beam to Step changed to 1'-3".
 Revised 01-2023: Sheet format update.
 Revised 06-2025: Corrected detailing errors in "Top of Fixed Pier Details". Added "Control Point" text.
 IntegralBridges.dgn - 4500 - This Sheet Re-issued 09-2023.

Redrawn 09-08-1988.
 Revised 07-2008: Distance from Centerline Beam to Step changed to 1'-3".
 Revised 01-2023: Sheet format update.
 Revised 06-2025: Corrected detailing errors in "Top of Fixed Pier Details". Added "Control Point" text.
 IntegralBridges.dgn - 4501 - This Sheet Re-issued 09-2023.



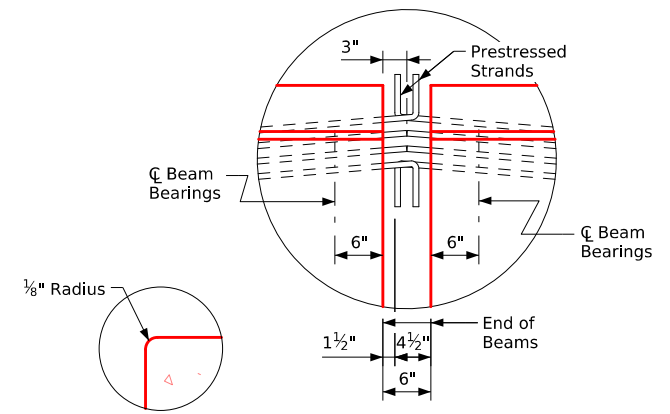
Part Longitudinal Section Near Gutter
(For details of Intermediate Diaphragm see Design Sheet No. ??)

Part End View at Abutment

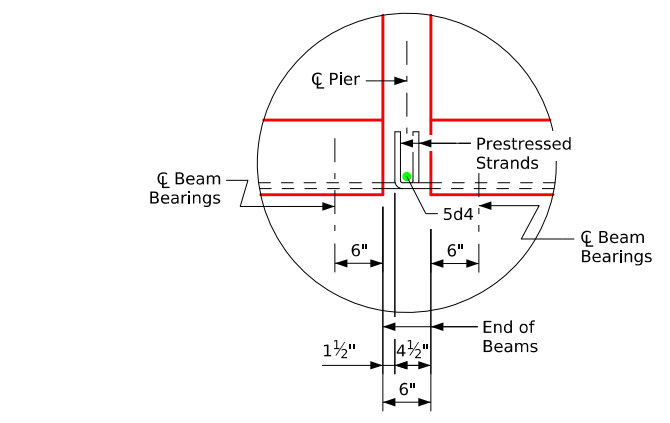


Section A-A

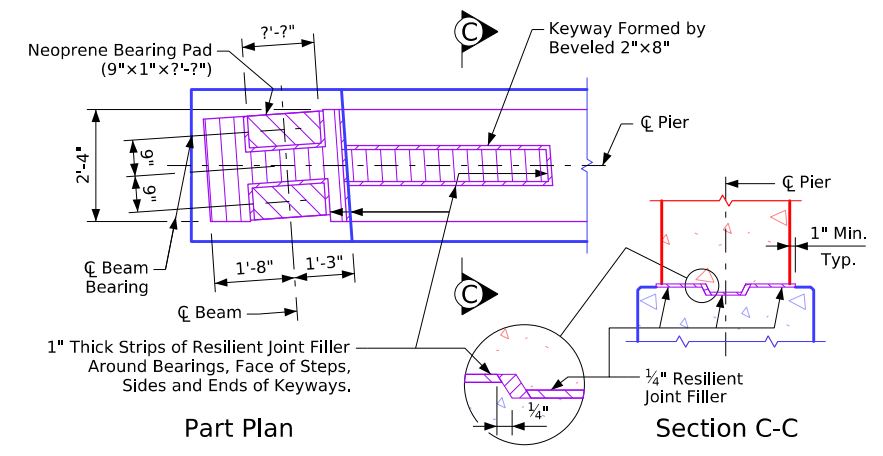
Table of Wing Elevations			
Location	Dim "C"	Elev. A	Elev. B
S.W. Corner	?'-?''	???.?	???.?
N.W. Corner	?'-?''	???.?	???.?
S.E. Corner	?'-?''	???.?	???.?
N.E. Corner	?'-?''	???.?	???.?



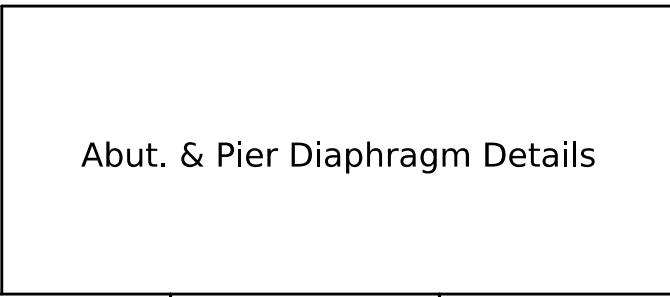
Detail "C" Detail "X"



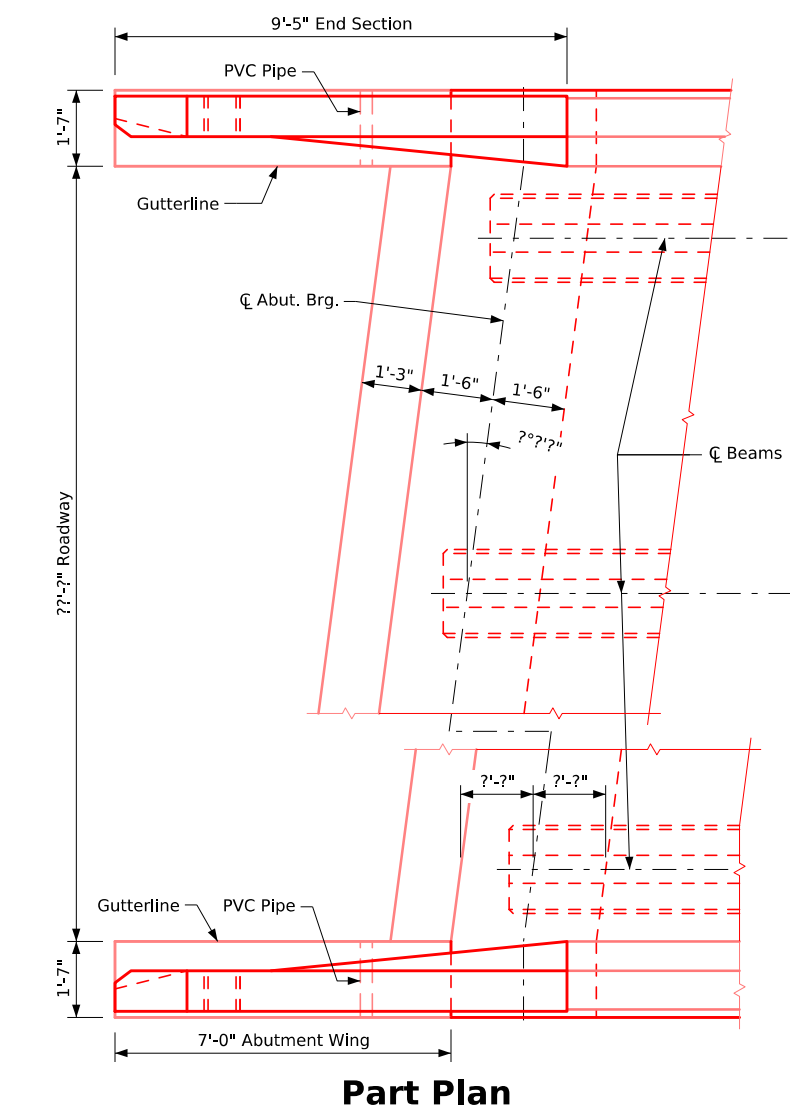
Detail "A"



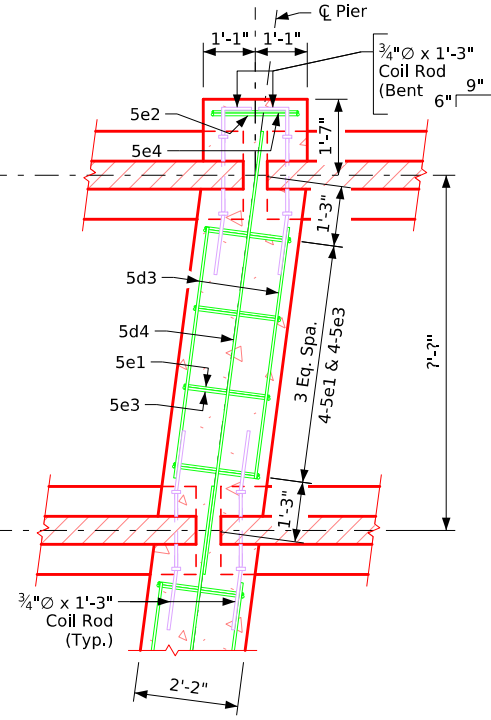
Top of Fixed Pier Details



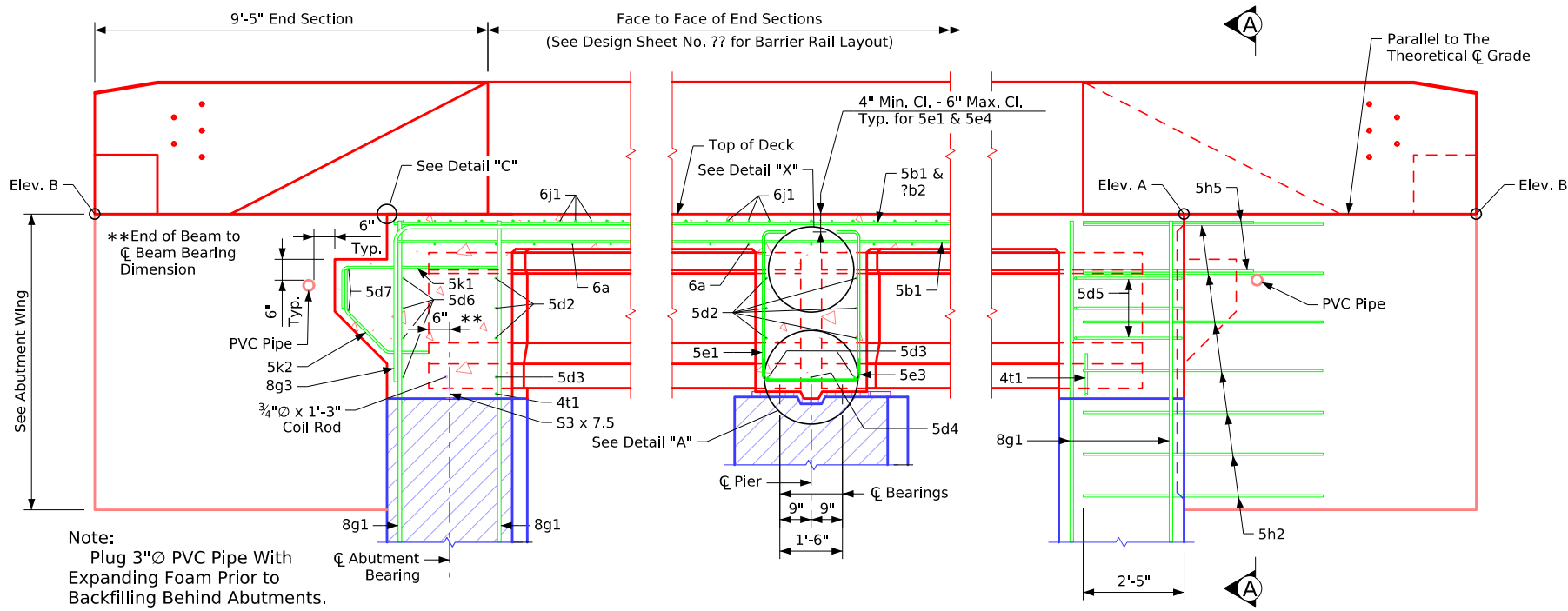
Abut. & Pier Diaphragm Details



Part Plan



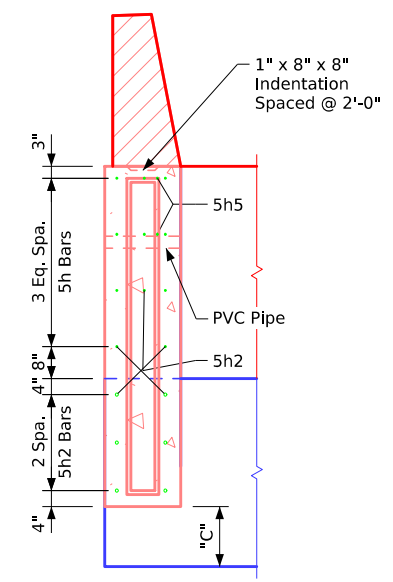
Part Section at Pier



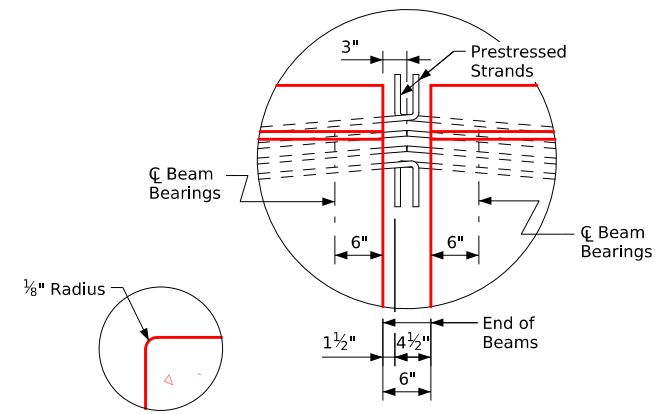
Part Longitudinal Section Near Gutter
(For details of Intermediate Diaphragm see Design Sheet No. ??)

Part End View at Abutment

Control Point:

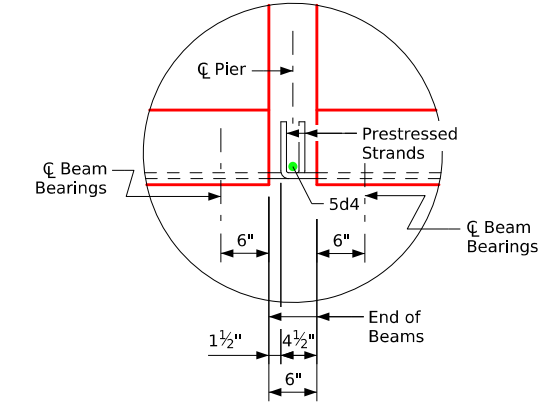


Section A-A



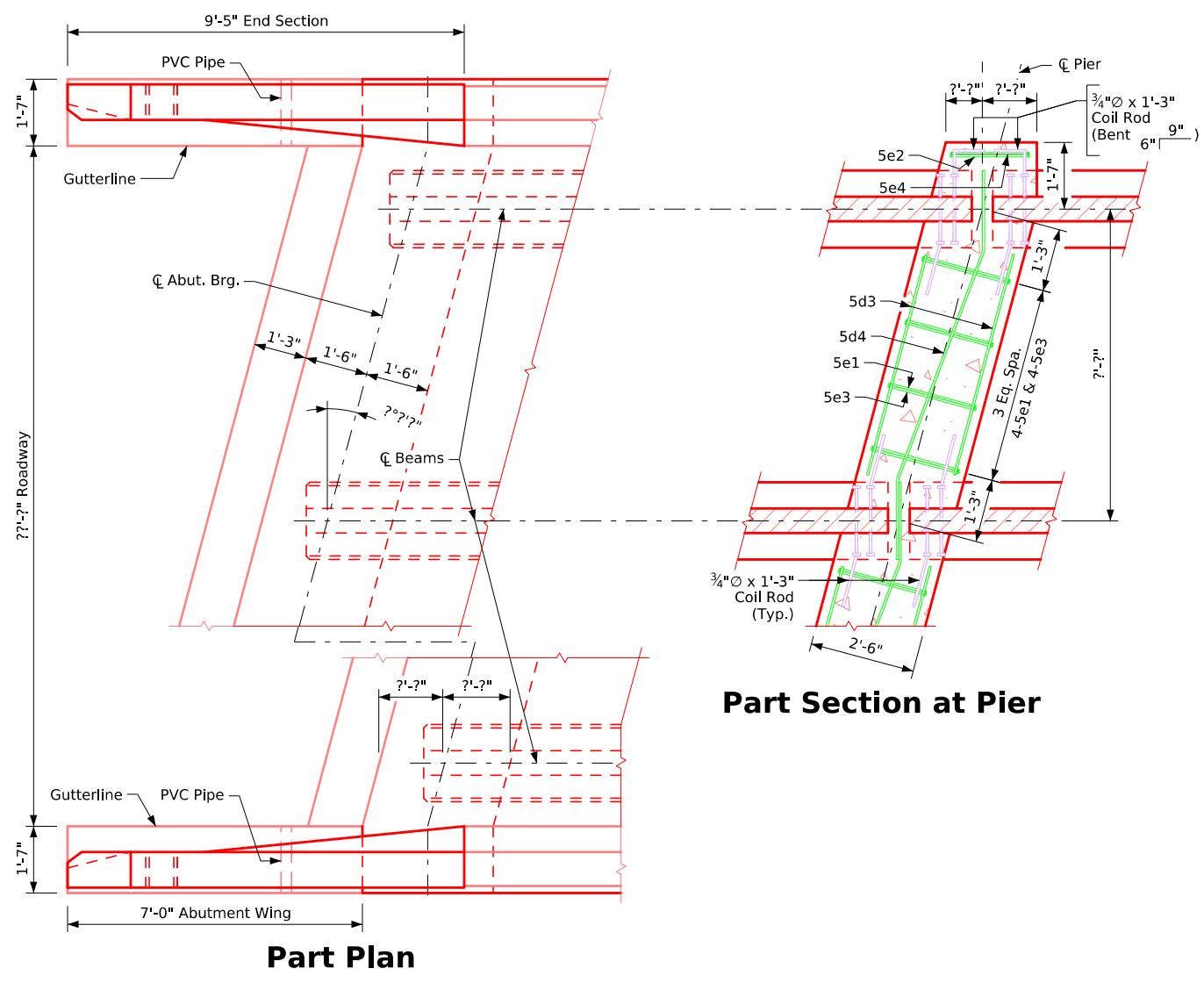
Detail "C"

Detail "X"



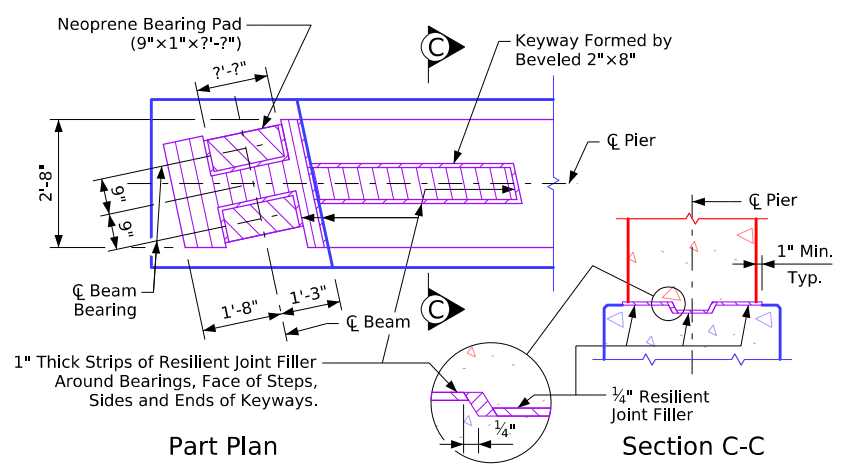
Detail "A"

Table of Wing Elevations			
Location	Dim "C"	Elev. A	Elev. B
S.W. Corner	?'-?''	???.?	???.?
N.W. Corner	?'-?''	???.?	???.?
S.E. Corner	?'-?''	???.?	???.?
N.E. Corner	?'-?''	???.?	???.?



Part Plan

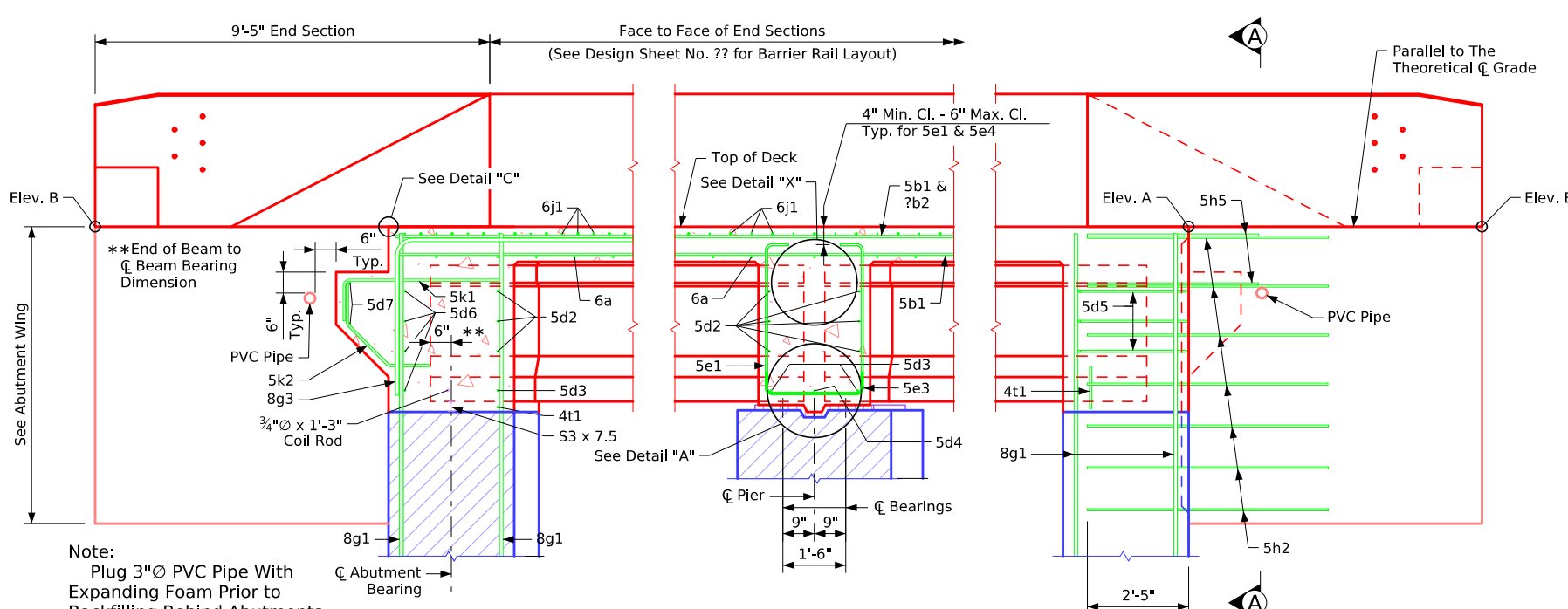
Part Section at Pier



Top of Fixed Pier Details

Abut. & Pier Diaphragm Details

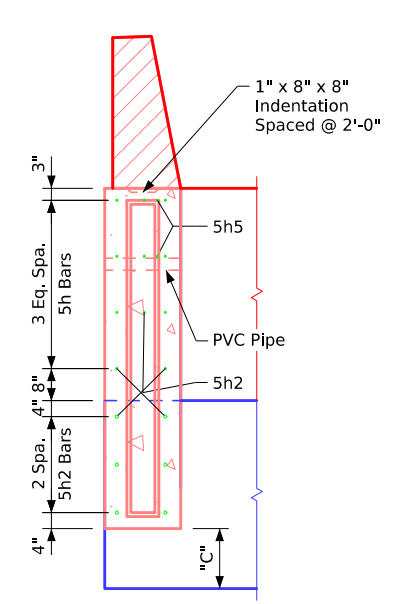
Redrawn 09-08-1988.
 Revised 07-2008: Distance from Centerline Beam to Step changed to 1'-3".
 Revised 01-2023: Sheet format update.
 Revised 06-2025: Corrected detailing errors in "Top of Fixed Pier Details". Added "Control Point" text.
 IntegralBridges.dgn - 4502 - This Sheet Re-issued 09-2023.



Part Longitudinal Section Near Gutter
(For details of Intermediate Diaphragm see Design Sheet No. ??)

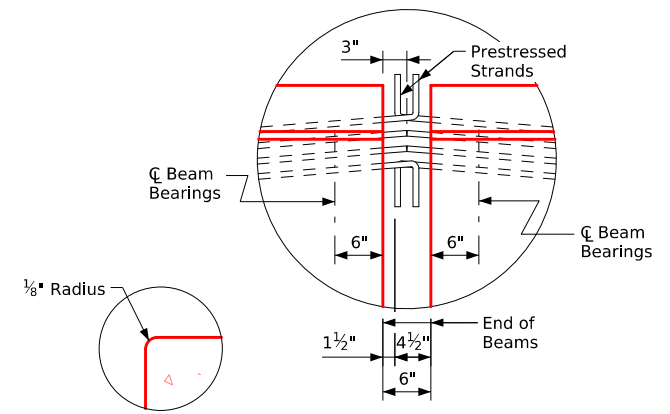
Part End View at Abutment

Control Point:



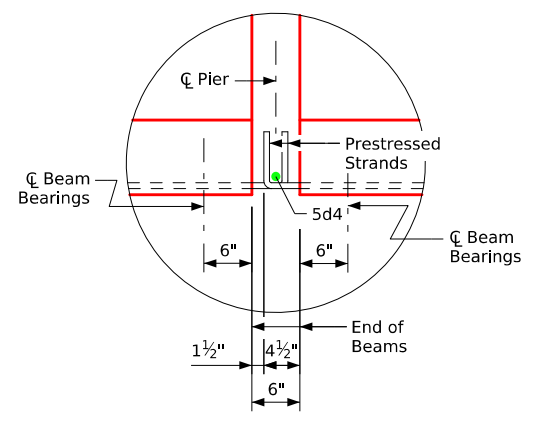
Section A-A

Table of Wing Elevations			
Location	Dim "C"	Elev. A	Elev. B
S.W. Corner	?'-?''	???.?	???.?
N.W. Corner	?'-?''	???.?	???.?
S.E. Corner	?'-?''	???.?	???.?
N.E. Corner	?'-?''	???.?	???.?

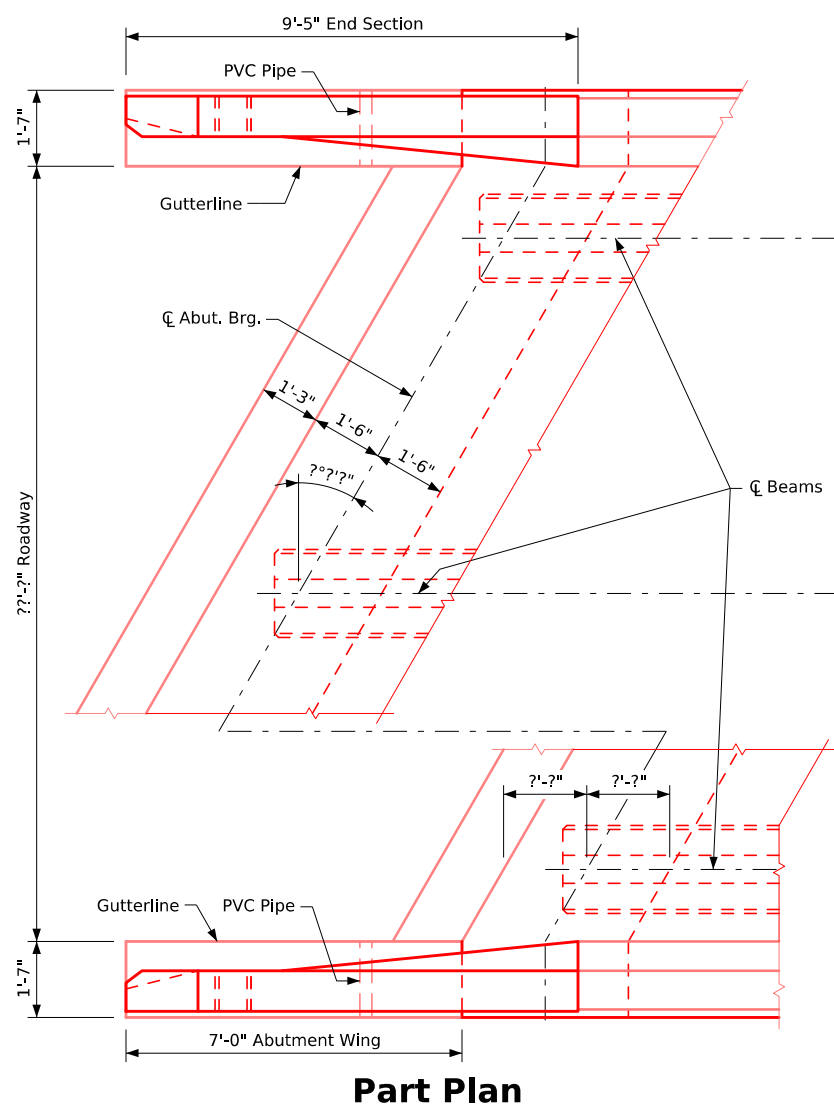


Detail "C"

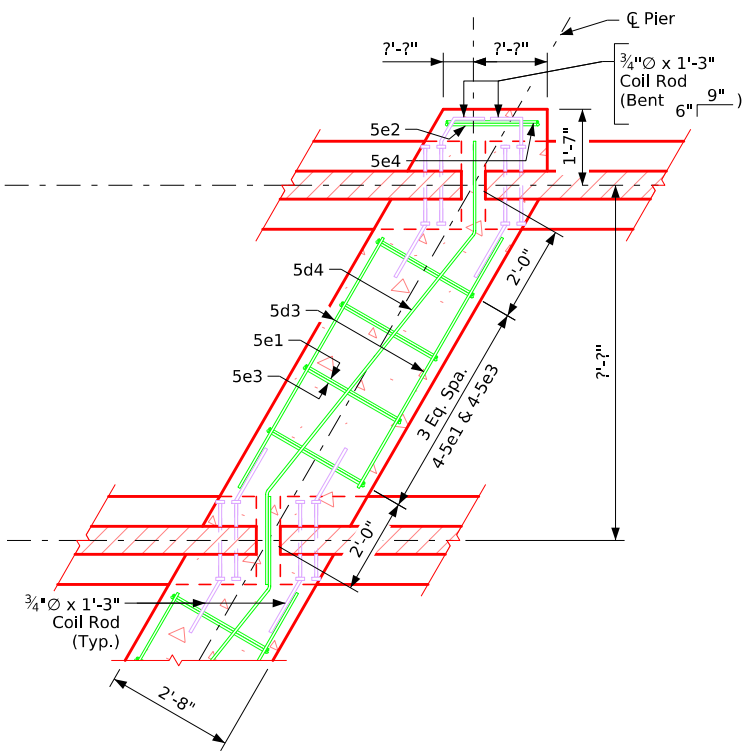
Detail "X"



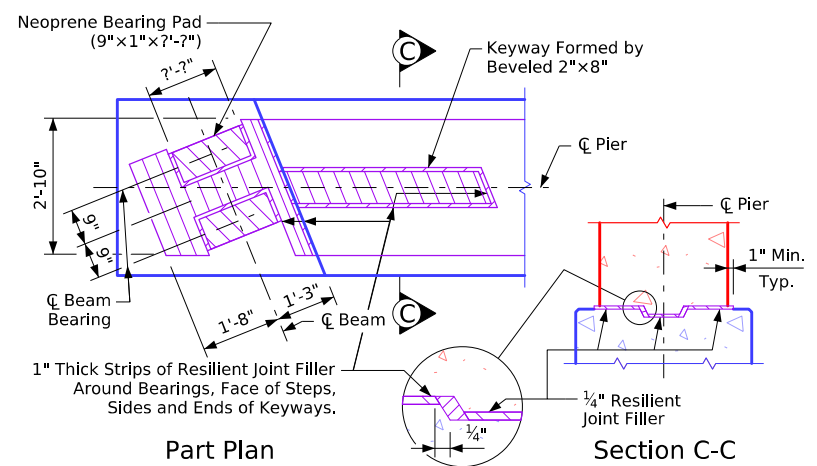
Detail "A"



Part Plan



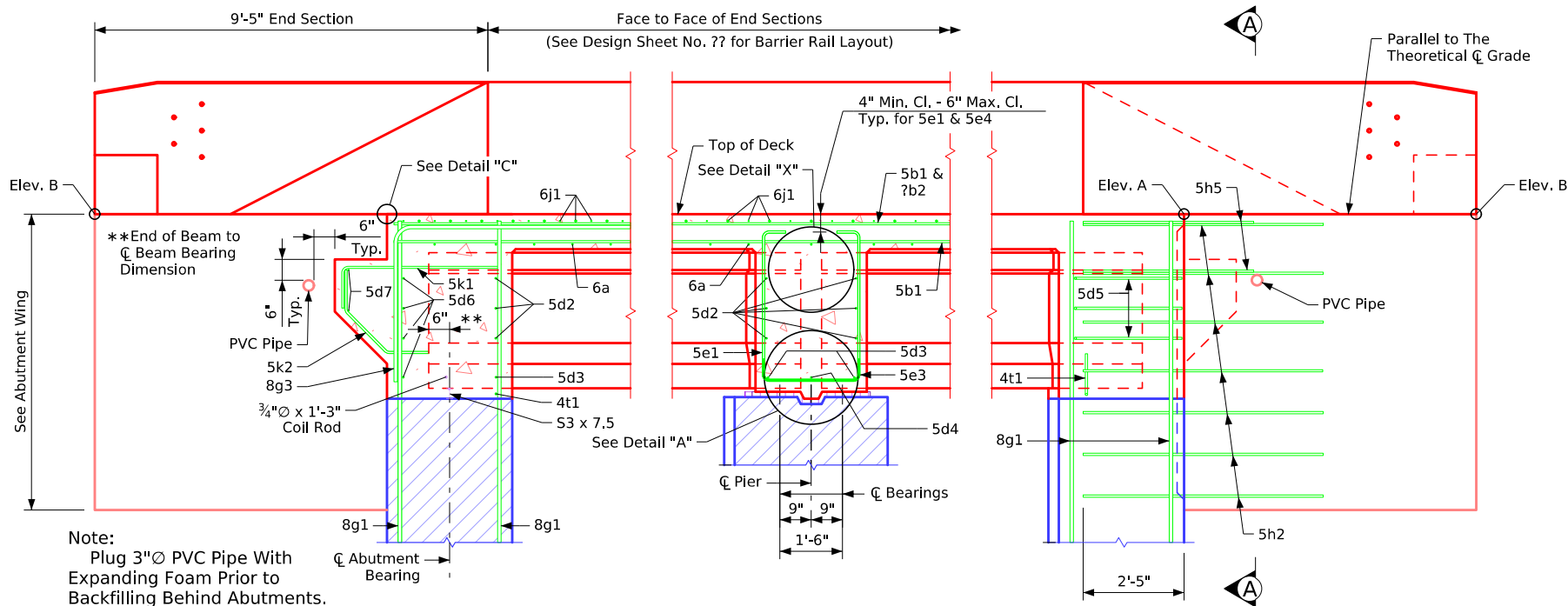
Part Section at Pier



Top of Fixed Pier Details

Abut. & Pier Diaphragm Details

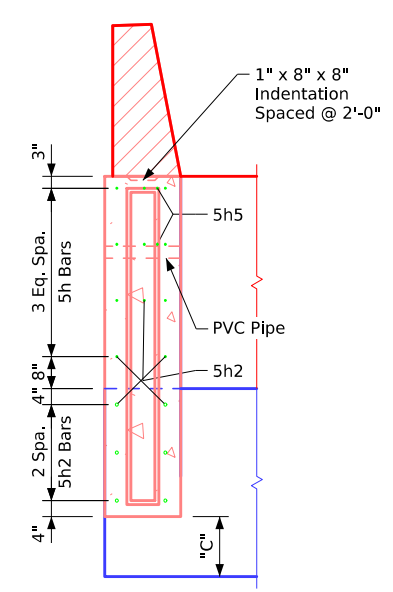
Redrawn 09-08-1988.
 Revised 07-2008: Distance from Centerline Beam to Step changed to 1'-3".
 Revised 01-2023: Sheet format update.
 Revised 06-2025: Corrected detailing errors in "Top of Fixed Pier Details". Added "Control Point" text.
 IntegralBridges.dgn - 4503 - This Sheet Re-issued 09-2023.



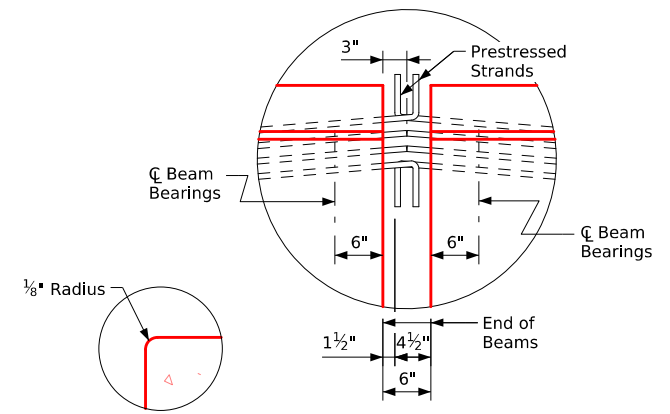
Part Longitudinal Section Near Gutter
(For details of Intermediate Diaphragm see Design Sheet No. ??)

Part End View at Abutment

Control Point:

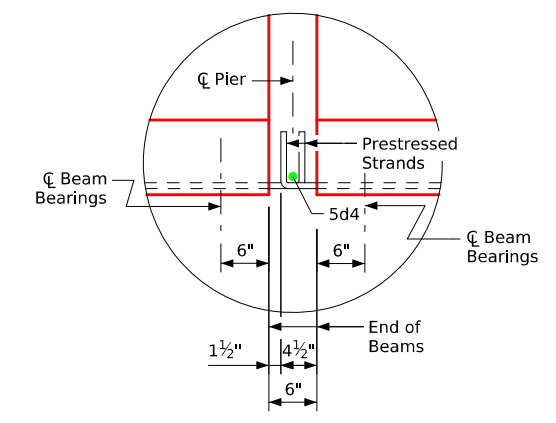


Section A-A



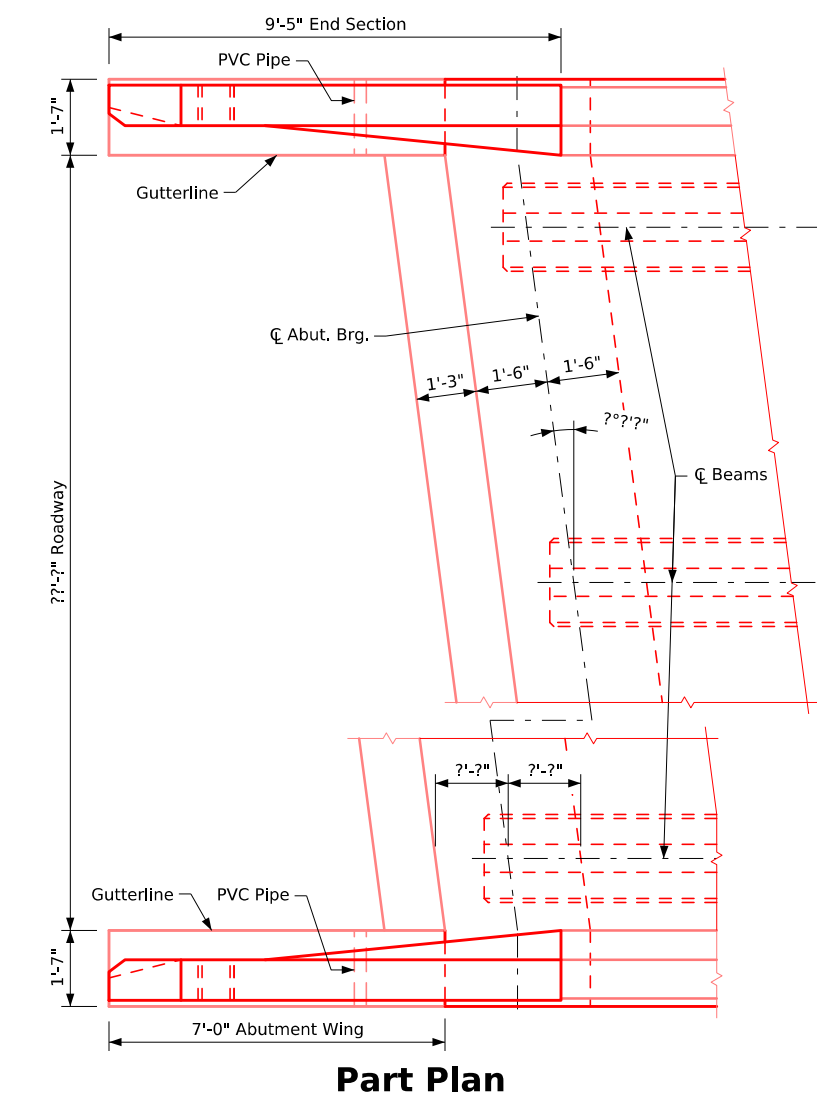
Detail "C"

Detail "X"

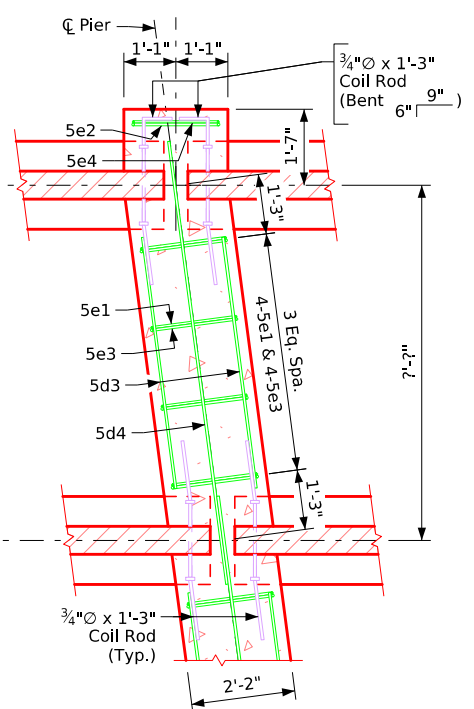


Detail "A"

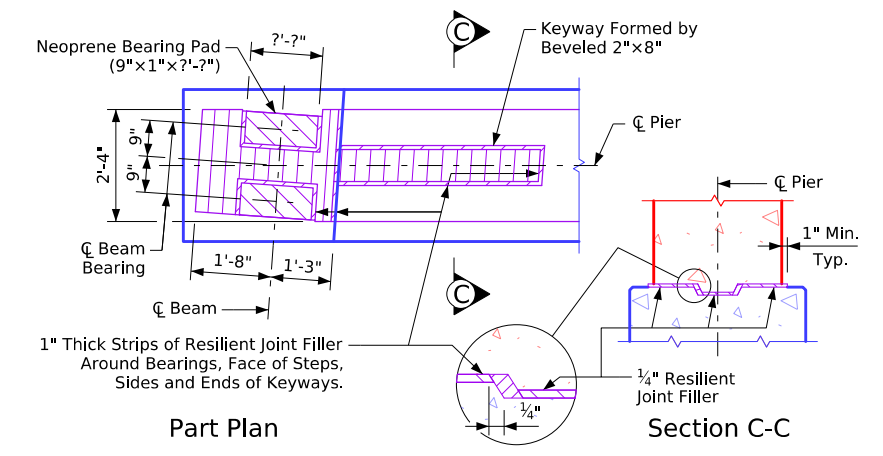
Table of Wing Elevations			
Location	Dim "C"	Elev. A	Elev. B
S.W. Corner	?'-?''	???.?	???.?
N.W. Corner	?'-?''	???.?	???.?
S.E. Corner	?'-?''	???.?	???.?
N.E. Corner	?'-?''	???.?	???.?



Part Plan



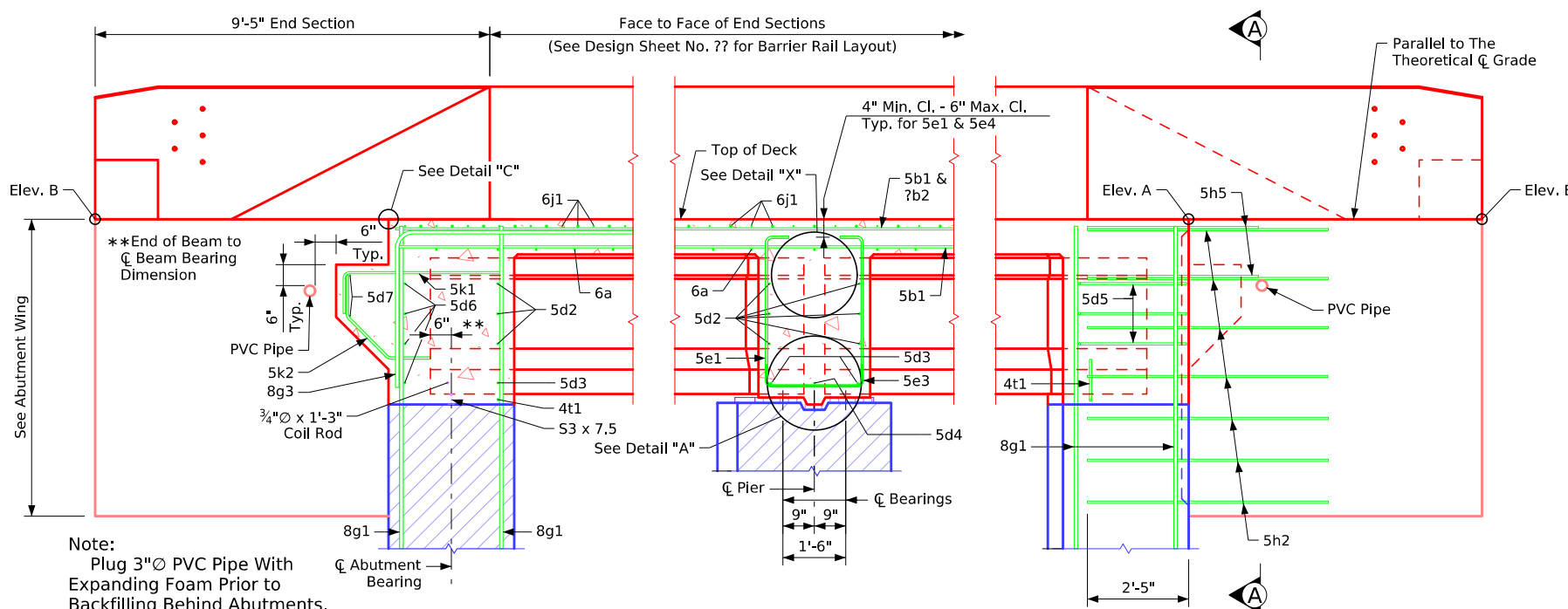
Part Section at Pier



Top of Fixed Pier Details

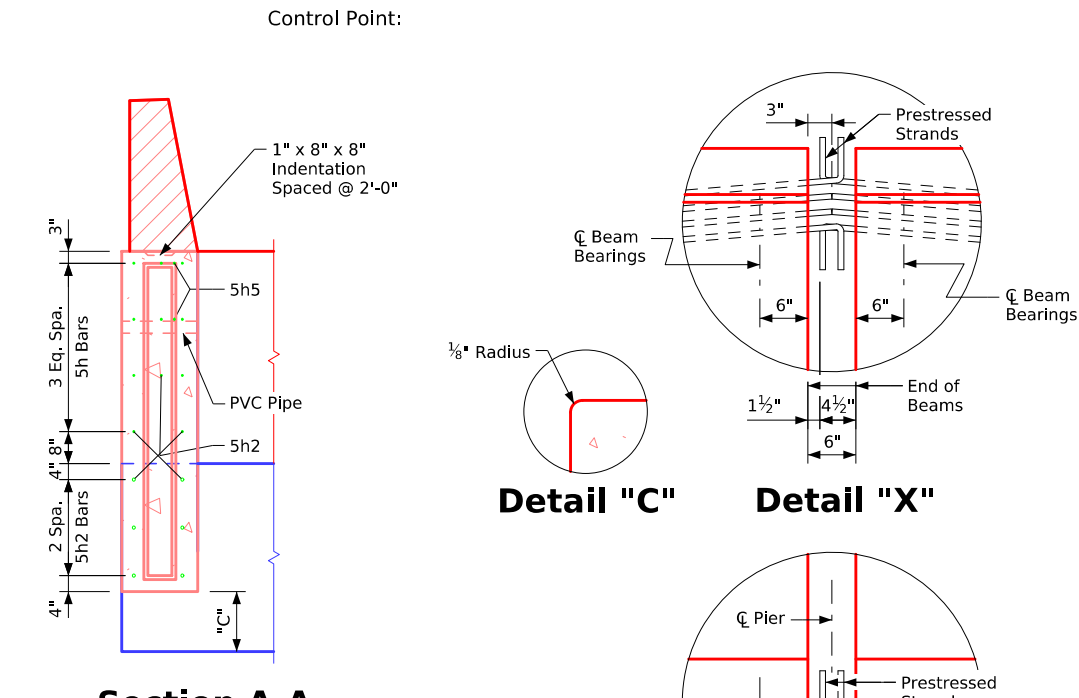
Abut. & Pier Diaphragm Details

Redrawn 09-08-1988.
 Revised 07-2008: Distance from Centerline Beam to Step changed to 1'-3".
 Revised 01-2023: Sheet format update.
 Revised 06-2025: Corrected detailing errors in "Top of Fixed Pier Details". Added "Control Point" text.
 IntegralBridges.dgn - 4504 - This Sheet Re-issued 08-2023.



Part Longitudinal Section Near Gutter
(For details of Intermediate Diaphragm see Design Sheet No. ??)

Part End View at Abutment

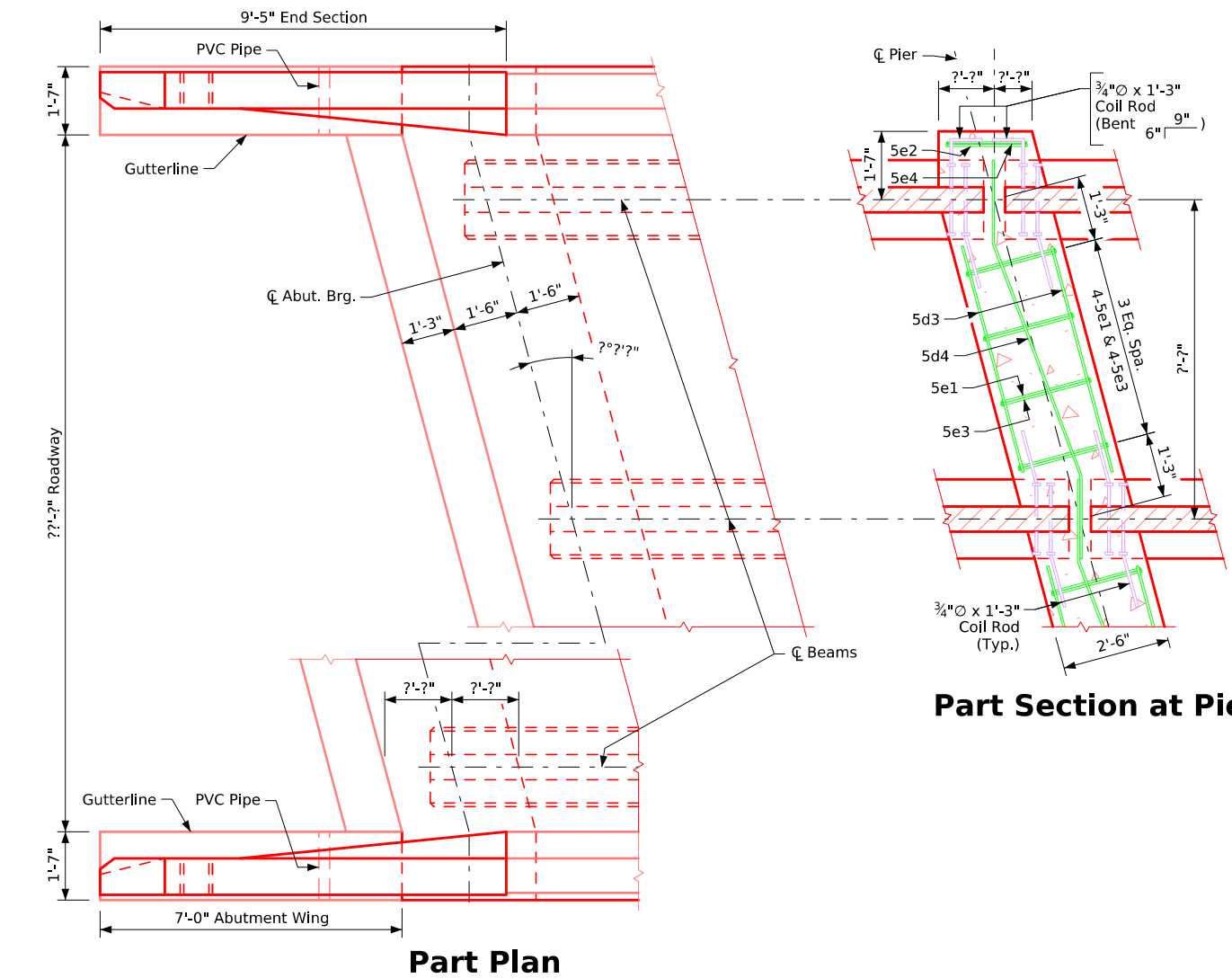


Section A-A

Table of Wing Elevations

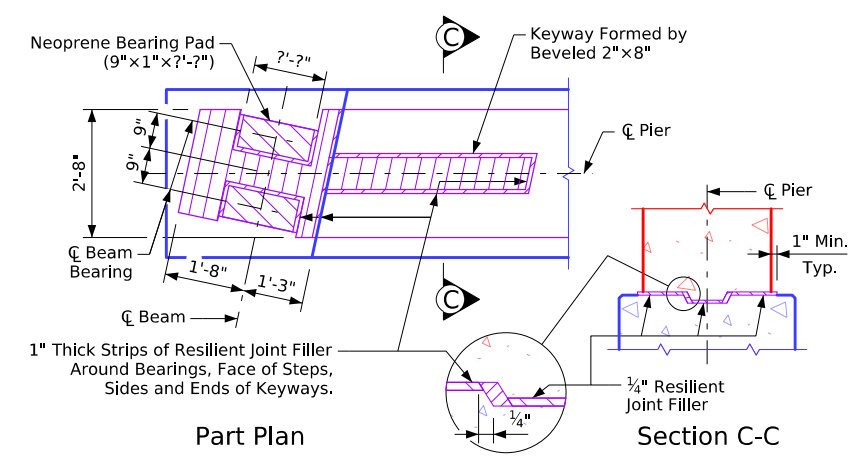
Location	Dim "C"	Elev. A	Elev. B
S.W. Corner	?'-?''	???.?	???.?
N.W. Corner	?'-?''	???.?	???.?
S.E. Corner	?'-?''	???.?	???.?
N.E. Corner	?'-?''	???.?	???.?

Detail "A"



Part Plan

Part Section at Pier

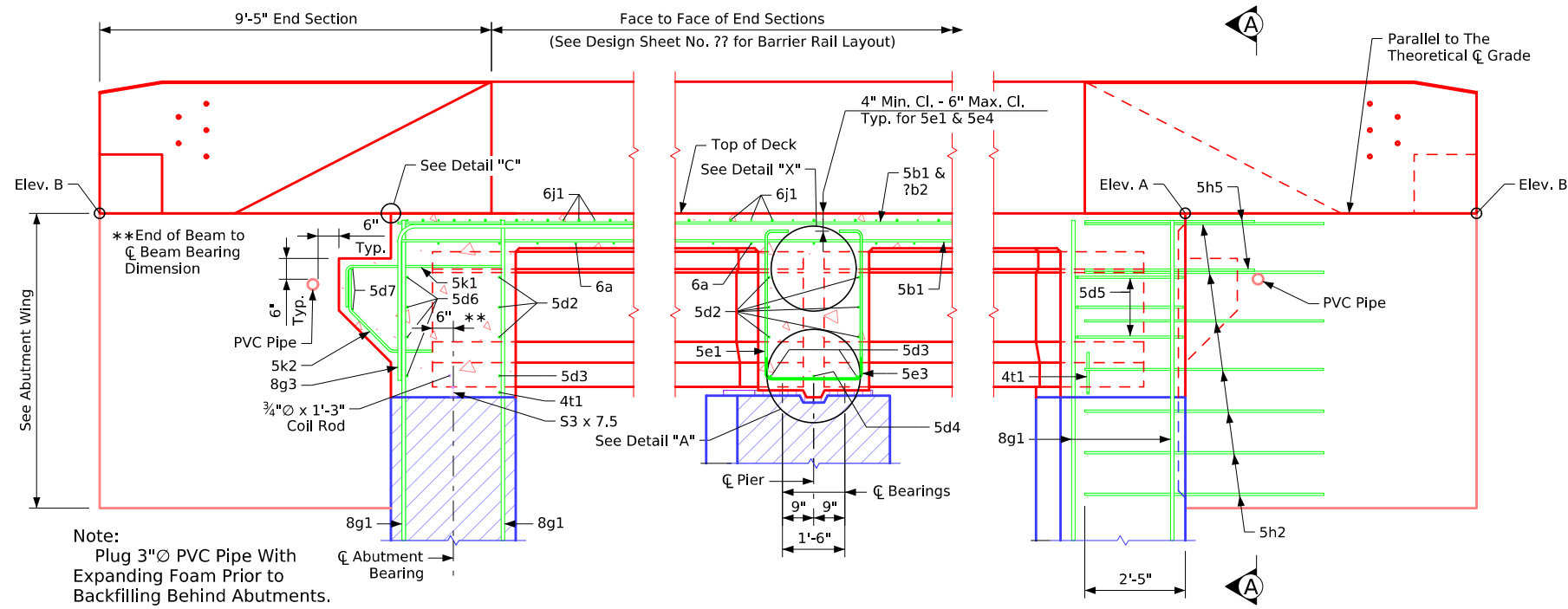


Top of Fixed Pier Details

Abut. & Pier Diaphragm Details

Redrawn 09-08-1988.
 Revised 07-2008: Distance from Centerline Beam to Step changed to 1'-3".
 Revised 01-2023: Sheet format update.
 Revised 06-2025: Corrected detailing errors in "Top of Fixed Pier Details". Added "Control Point" text.
 IntegralBridges.dgn - 4505 - This Sheet Re-issued 09-2023.

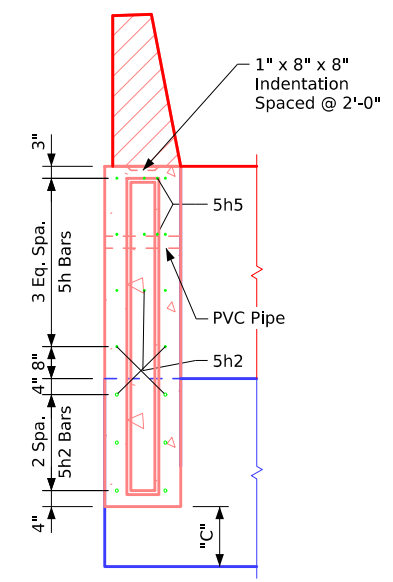
Redrawn 09-08-1988.
 Revised 07-2008: Distance from Centerline Beam to Step changed to 1'-3".
 Revised 01-2023: Sheet format update.
 Revised 06-2025: Corrected detailing errors in "Top of Fixed Pier Details". Added "Control Point" text.
 IntegralBridges.dgn - 4506 - This Sheet Re-issued 09-2023.



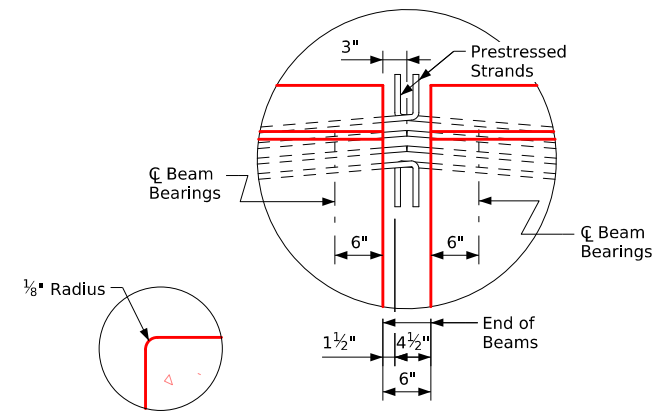
Part Longitudinal Section Near Gutter
(For details of Intermediate Diaphragm see Design Sheet No. ??)

Part End View at Abutment

Control Point:

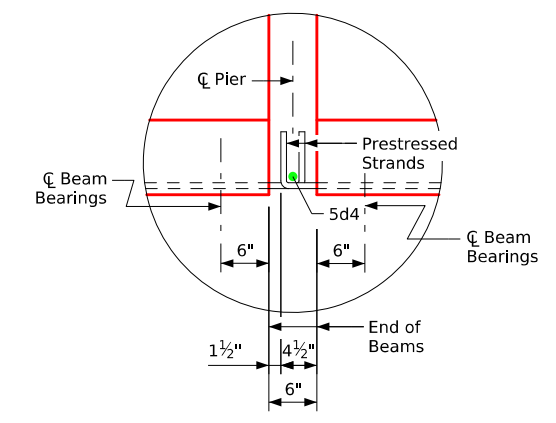


Section A-A



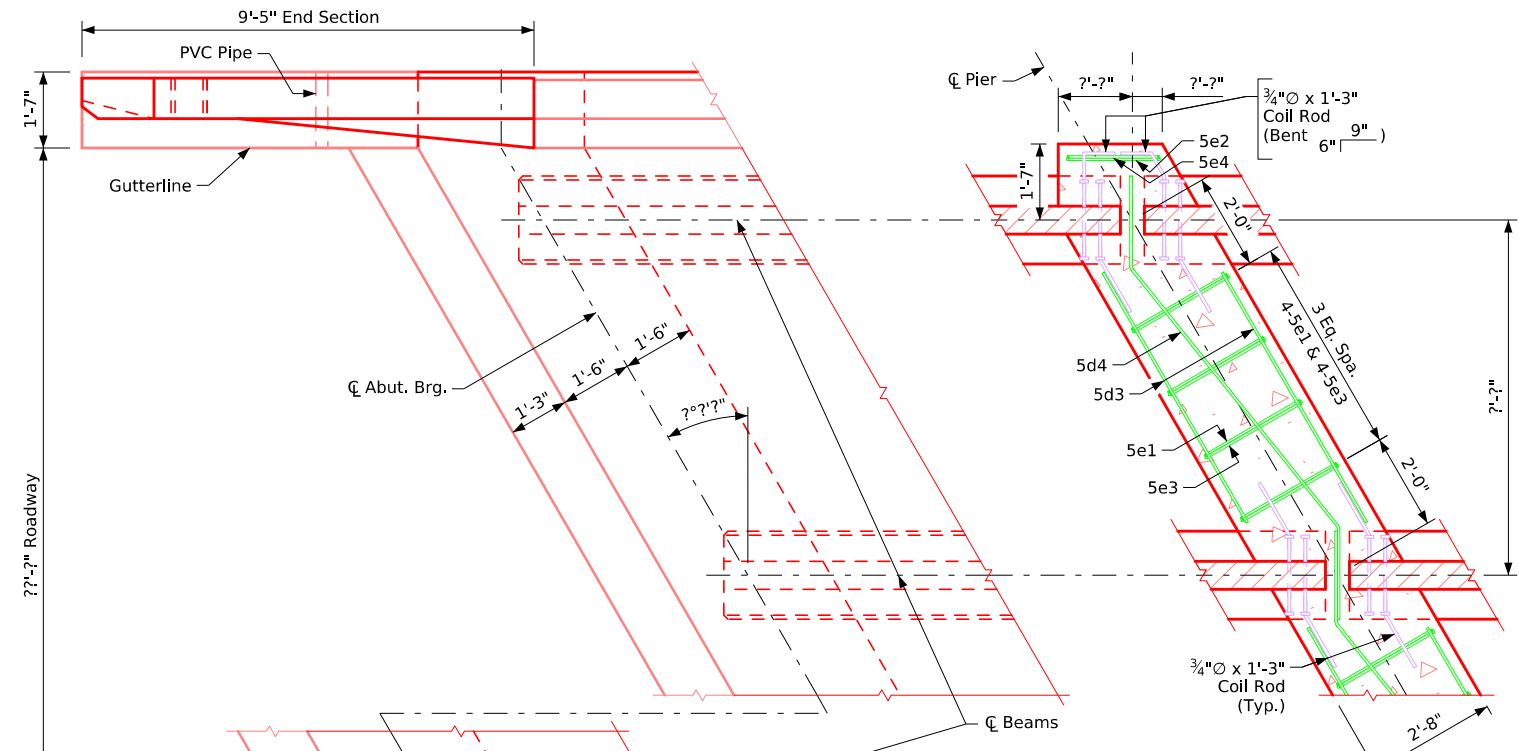
Detail "C"

Detail "X"



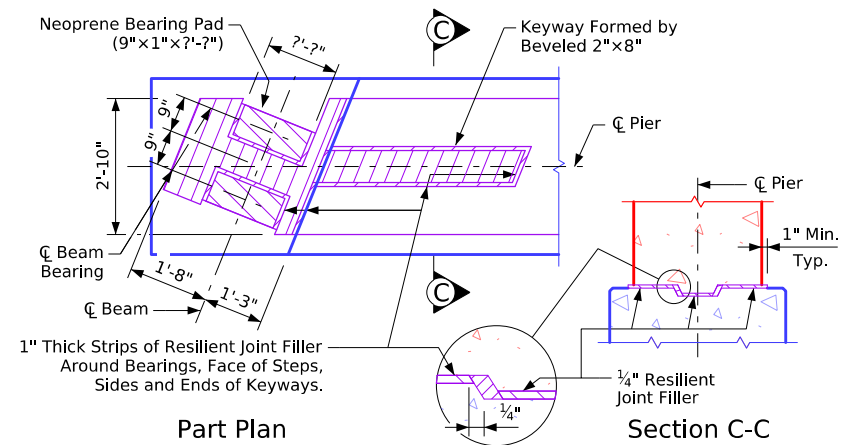
Detail "A"

Table of Wing Elevations			
Location	Dim "C"	Elev. A	Elev. B
S.W. Corner	?'-?''	???.?	???.?
N.W. Corner	?'-?''	???.?	???.?
S.E. Corner	?'-?''	???.?	???.?
N.E. Corner	?'-?''	???.?	???.?



Part Section at Pier

Part Plan



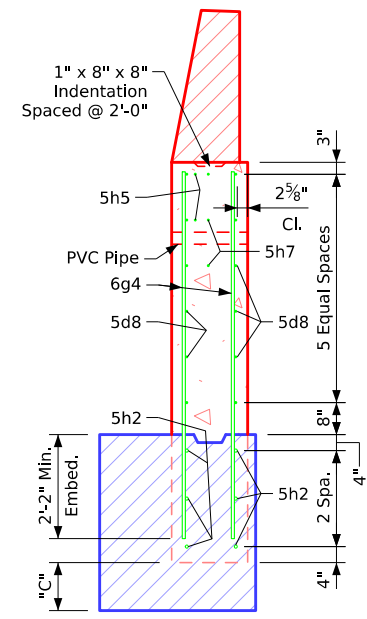
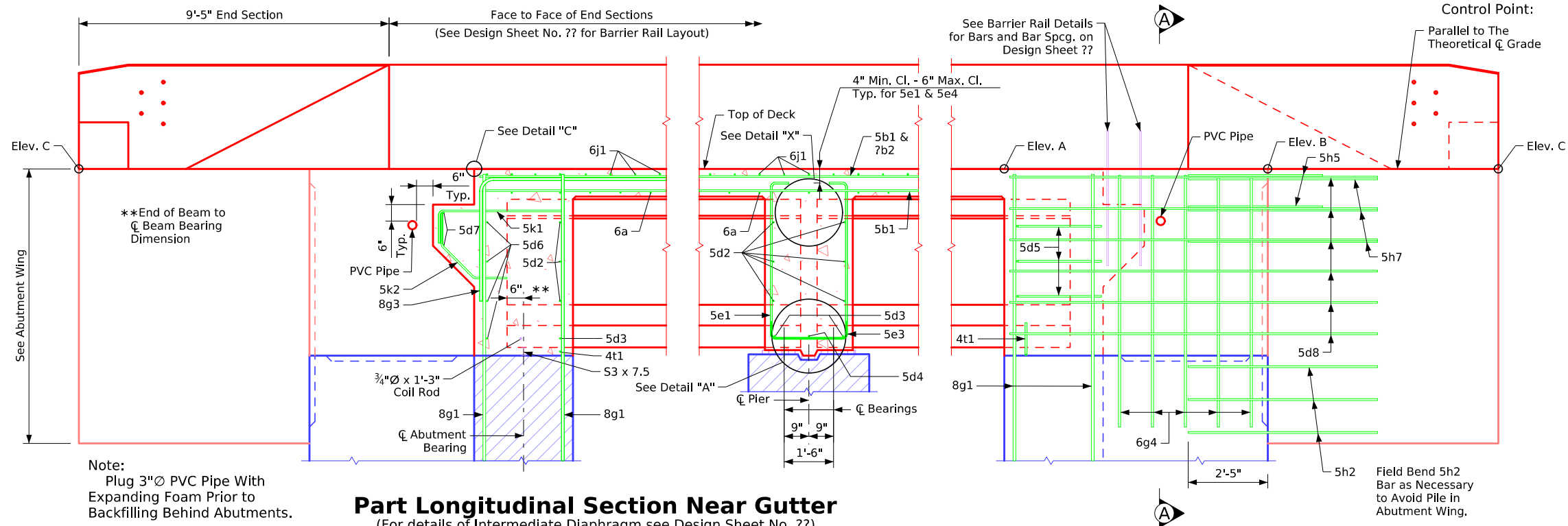
Part Plan

Section C-C

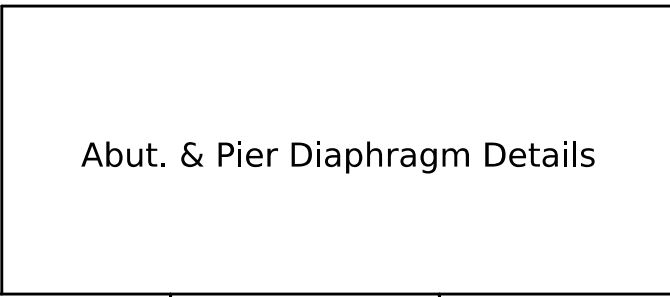
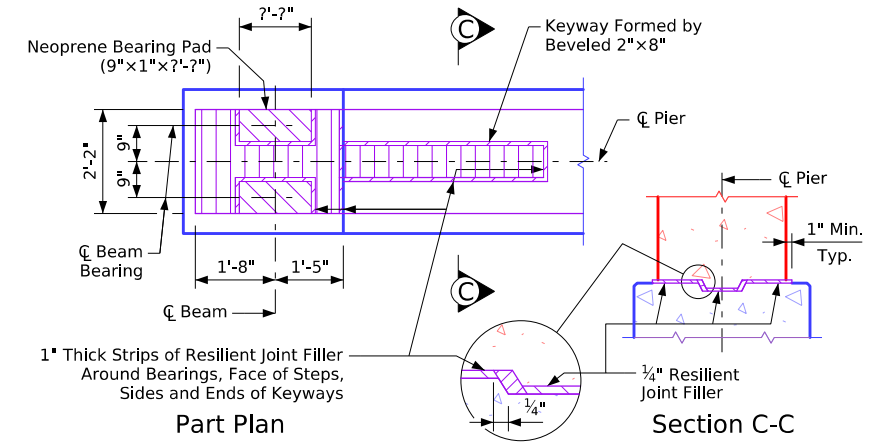
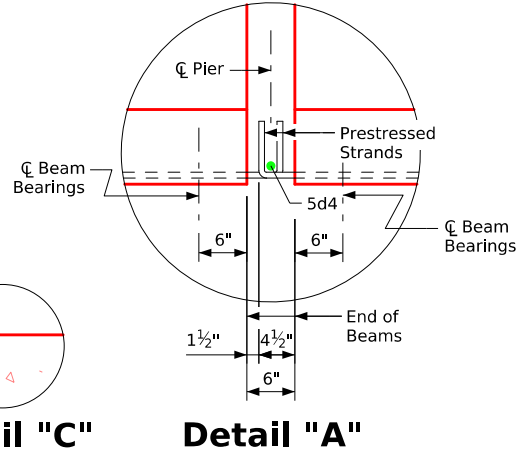
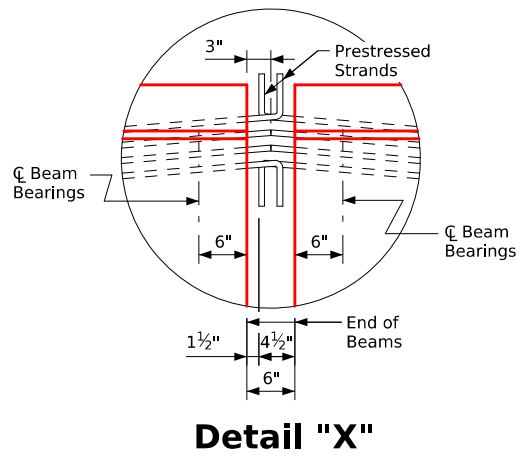
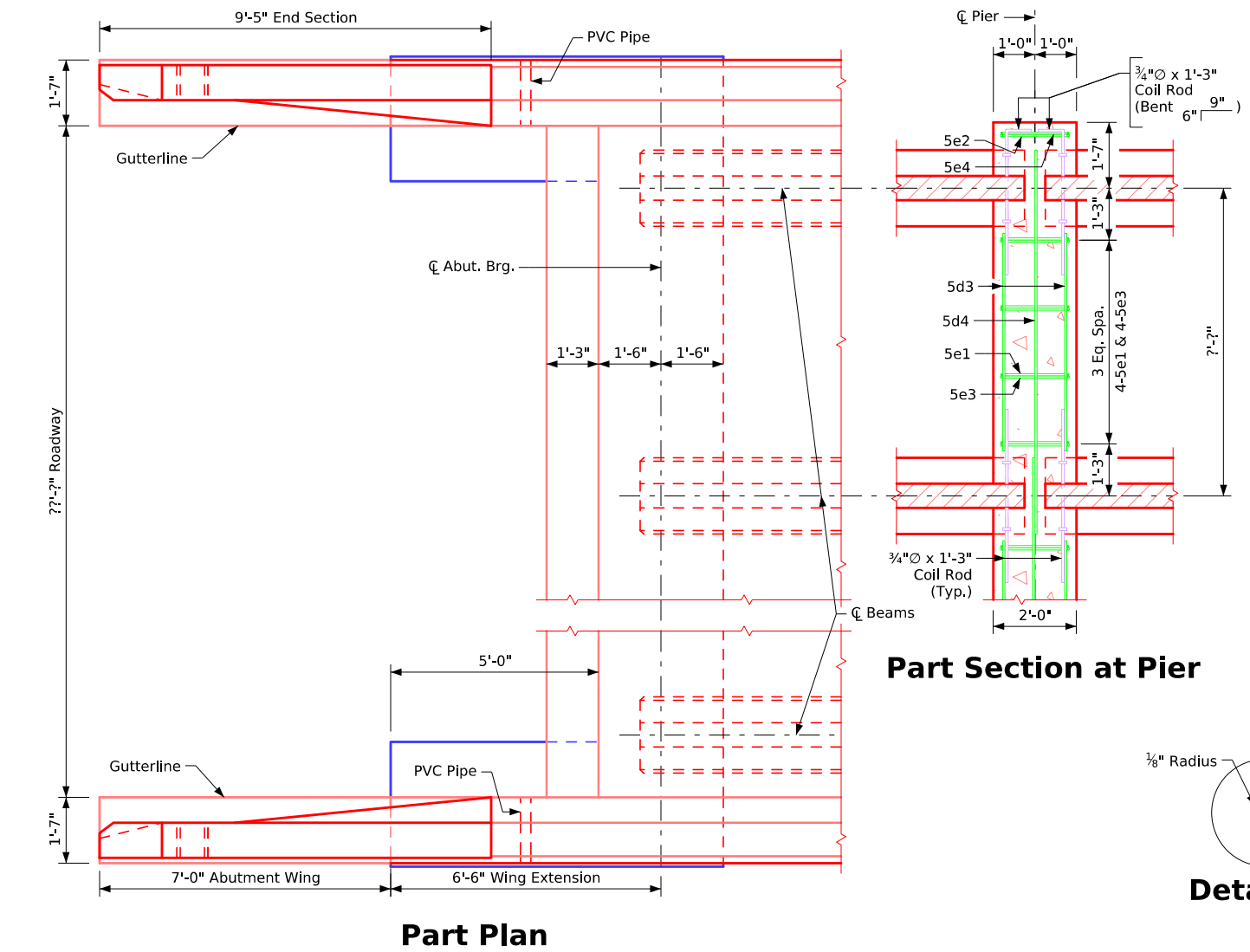
Top of Fixed Pier Details

Abut. & Pier Diaphragm Details

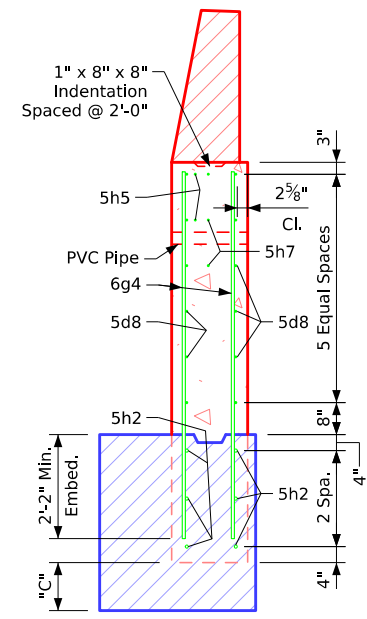
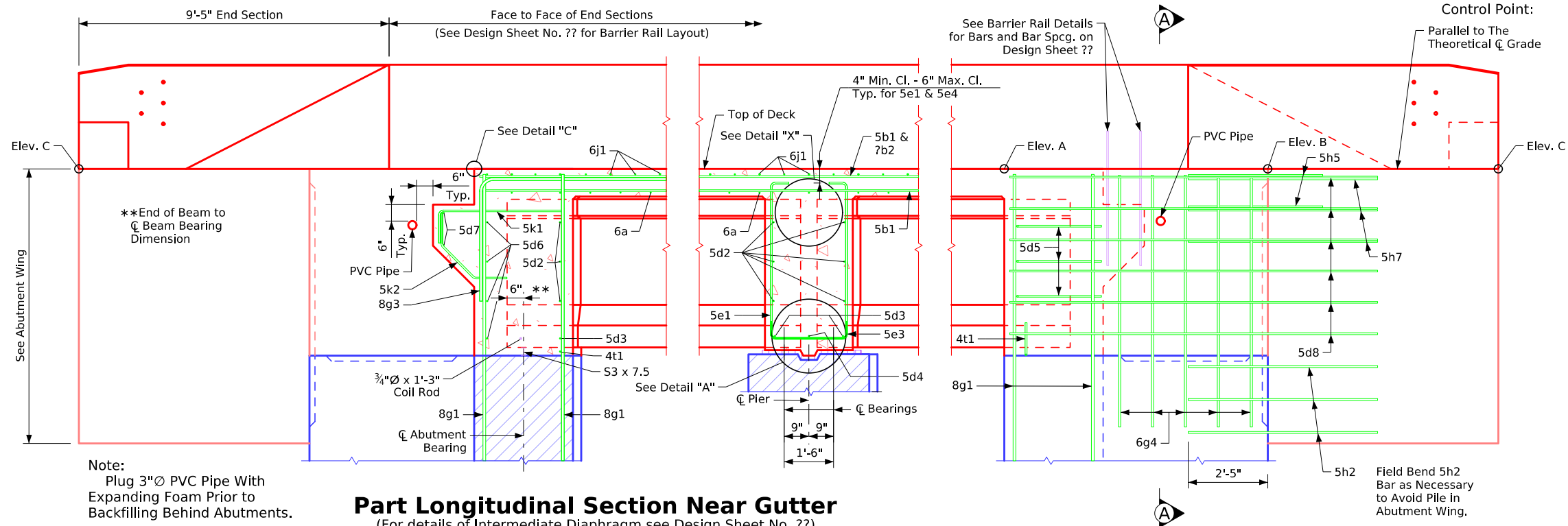
Redrawn 09-08-1988.
 Revised 01-2012: Added field bend 5h4 bar to avoid pile in Abutment Wing Note.
 Revised 01-2023: Sheet format update.
 Revised 06-2025: In Section A-A, flipped/switched orientation of horizontal and vertical bars in outside face of wingwall. Corrected detailing errors in "Top of Fixed Pier Details". Added "Control Point" text.
 IntegralBridges.dgn - 4507 - This Sheet Re-issued 09-2023.



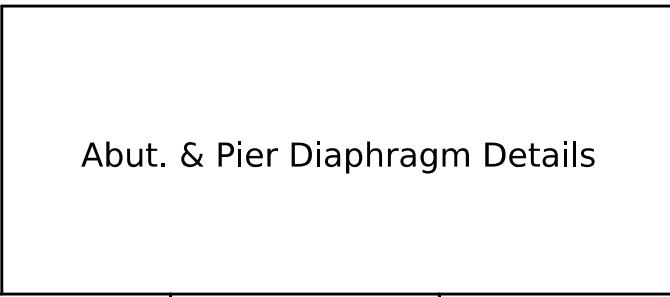
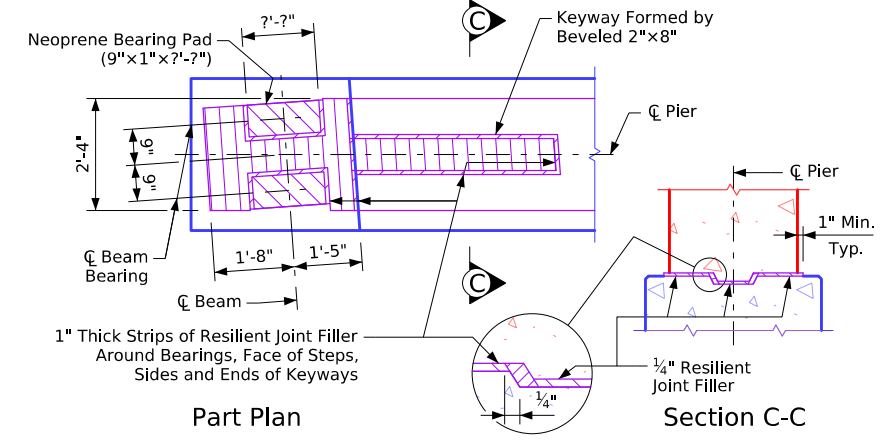
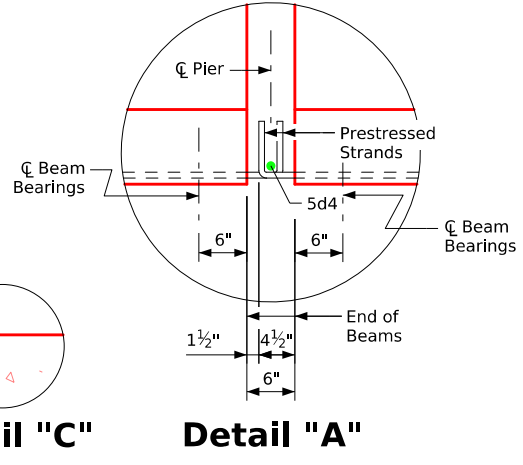
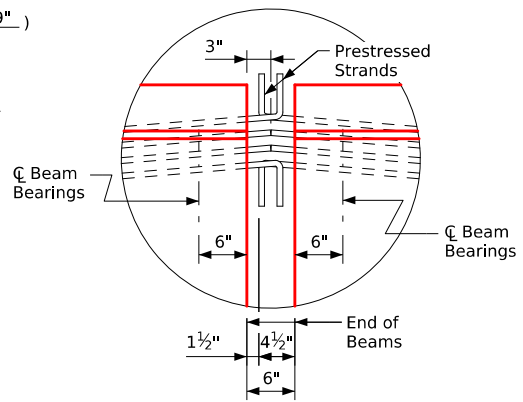
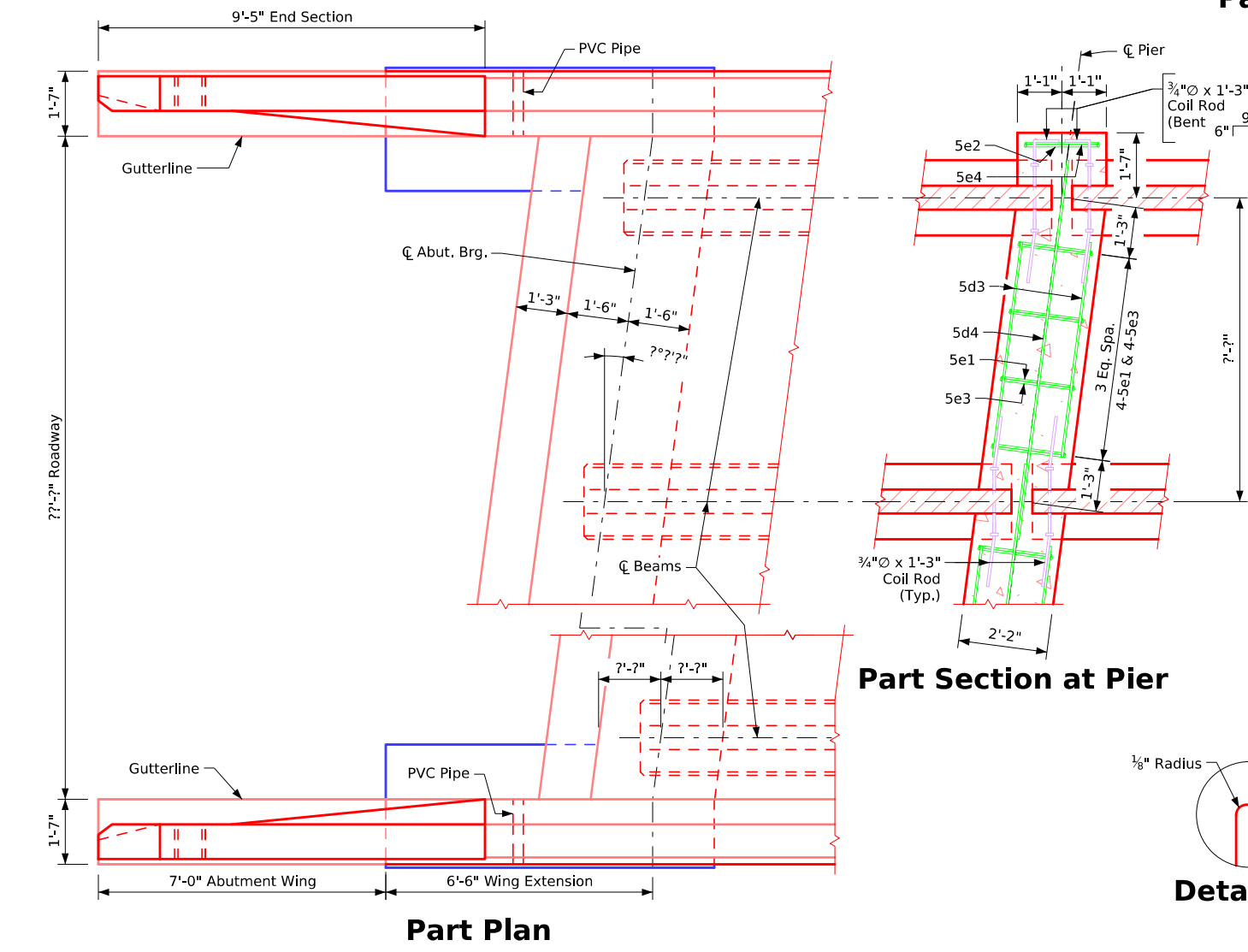
Location	Dim "C"	Elev. A	Elev. B	Elev. C
S.W. Corner	?'-?''	???.?	???.?	???.?
N.W. Corner	?'-?''	???.?	???.?	???.?
S.E. Corner	?'-?''	???.?	???.?	???.?
N.E. Corner	?'-?''	???.?	???.?	???.?



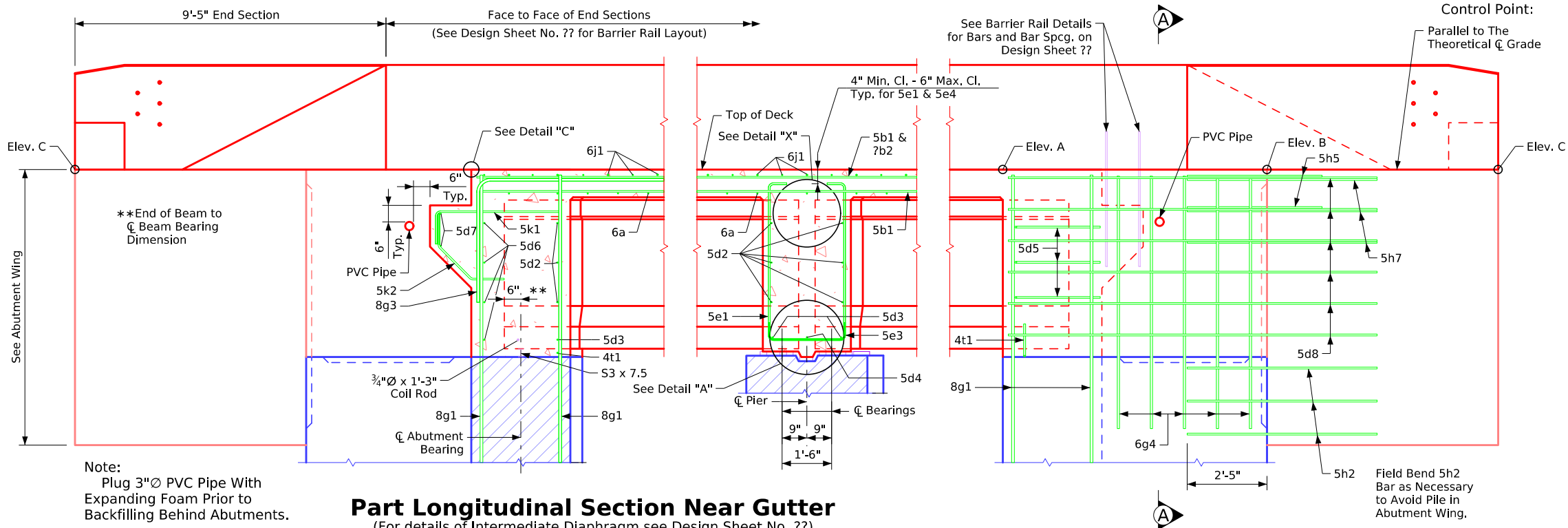
Redrawn 09-08-1988.
 Revised 01-2012: Added field bend 5h4 bar to avoid pile in Abutment Wing Note.
 Revised 01-2023: Sheet format update.
 Revised 06-2025: In Section A-A, flipped/switched orientation of horizontal and vertical bars in outside face of wingwall. Corrected detailing errors in "Top of Fixed Pier Details". Added "Control Point" text.
 IntegralBridges.dgn - 4508 - This Sheet Re-Issued 09-2023.



Location	Dim "C"	Elev. A	Elev. B	Elev. C
S.W. Corner	?'-?"	???.?	???.?	???.?
N.W. Corner	?'-?"	???.?	???.?	???.?
S.E. Corner	?'-?"	???.?	???.?	???.?
N.E. Corner	?'-?"	???.?	???.?	???.?

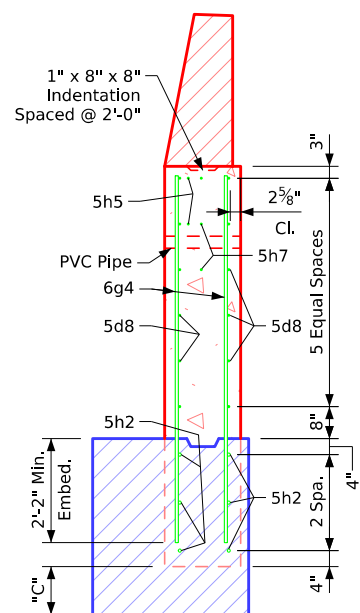


Redrawn 09-08-1988.
 Revised 01-2012: Added field bend 5h4 bar to avoid pile in Abutment Wing Note.
 Revised 01-2023: Sheet format update.
 Revised 06-2025: In Section A-A, flipped/switched orientation of horizontal and vertical bars in outside face of wingwall. Corrected detailing errors in "Top of Fixed Pier Details". Added "Control Point" text.
 IntegralBridges.dgn - 4509 - This Sheet Re-issued 09-2023.



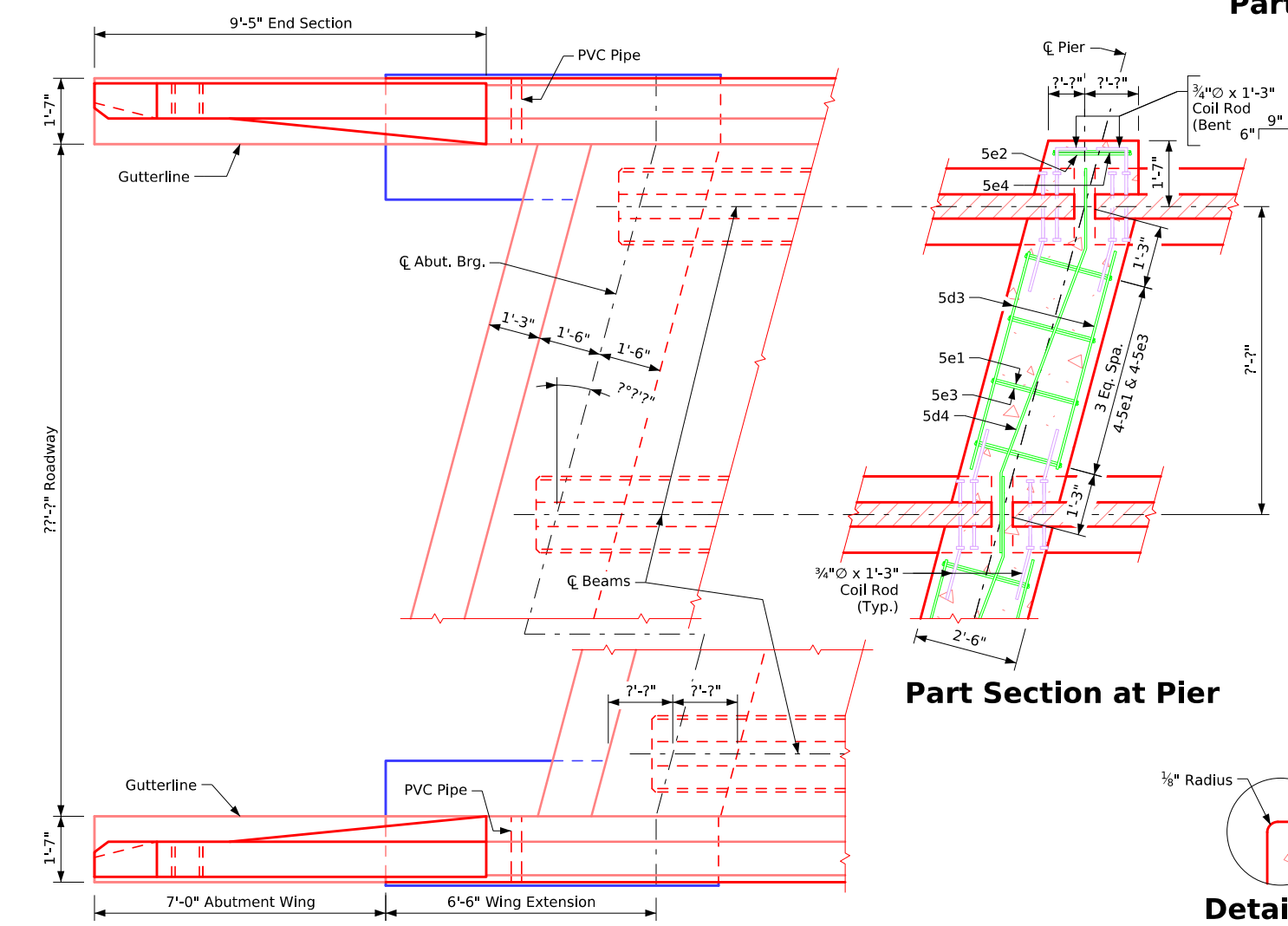
Part Longitudinal Section Near Gutter
(For details of Intermediate Diaphragm see Design Sheet No. ??)

Part End View at Abutment



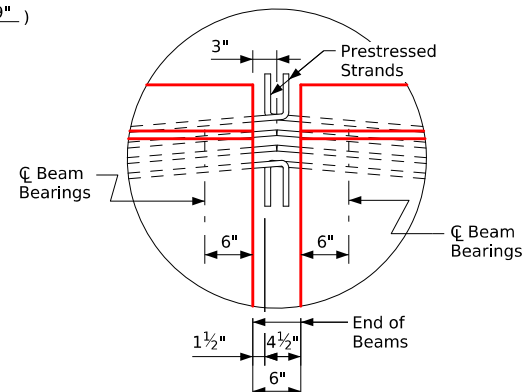
Section A-A

Location	Dim "C"	Elev. A	Elev. B	Elev. C
S.W. Corner	?'-?''	???.?	???.?	???.?
N.W. Corner	?'-?''	???.?	???.?	???.?
S.E. Corner	?'-?''	???.?	???.?	???.?
N.E. Corner	?'-?''	???.?	???.?	???.?

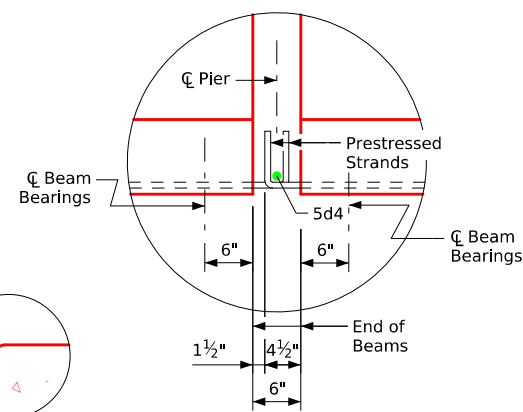


Part Plan

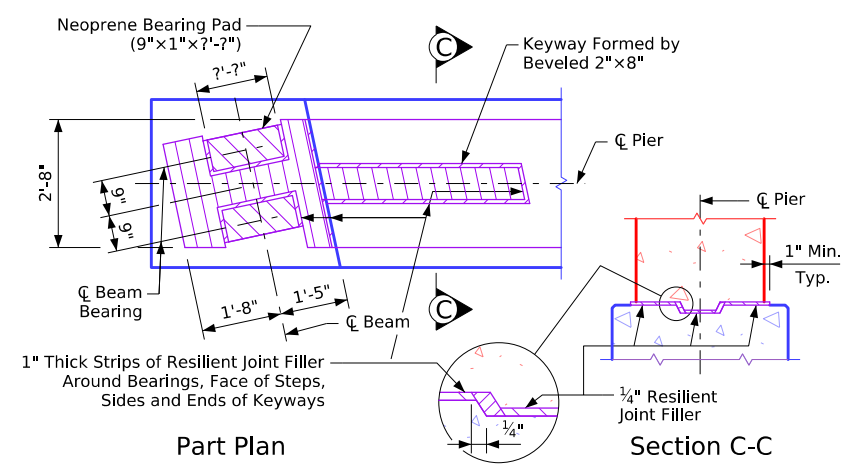
Part Section at Pier



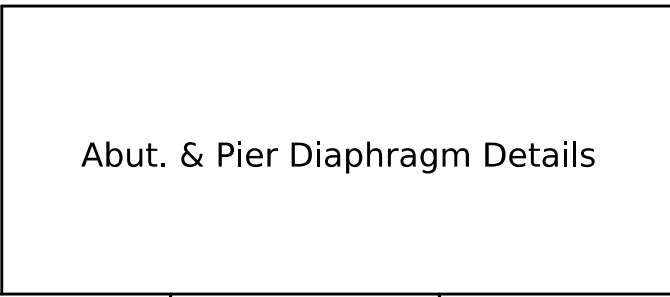
Detail "X"



Detail "A"

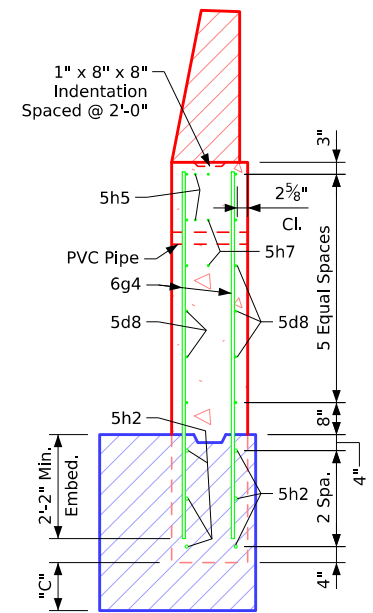
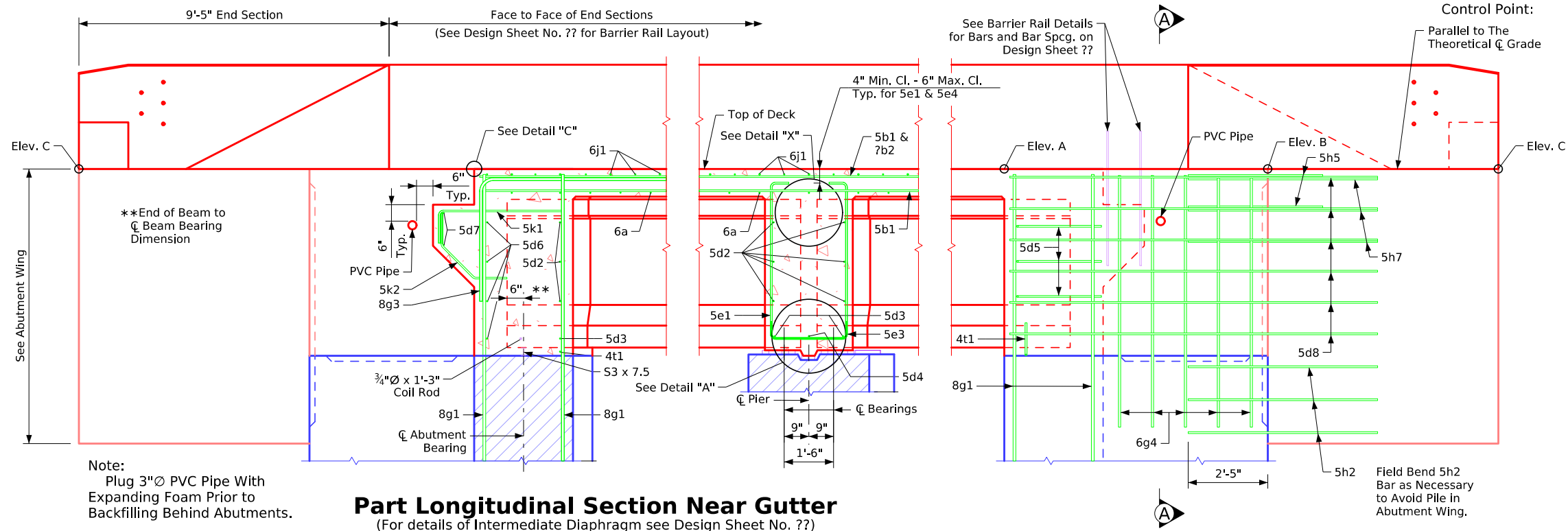


Top of Fixed Pier Details

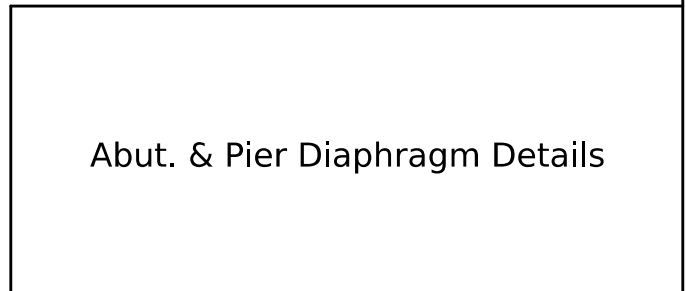
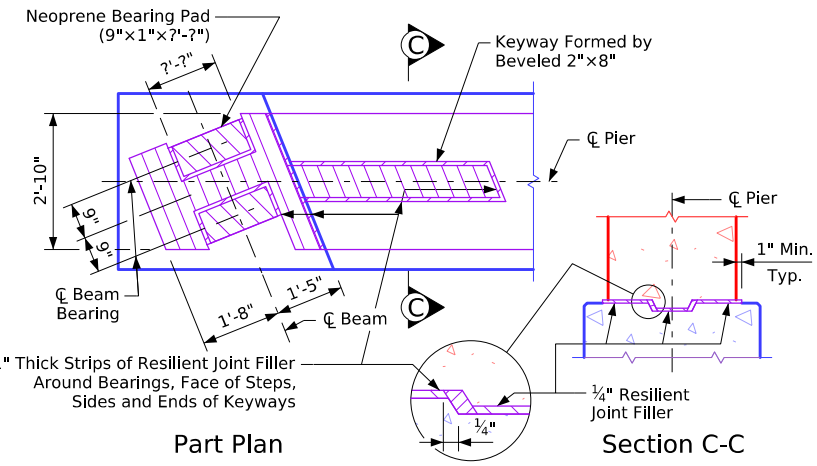
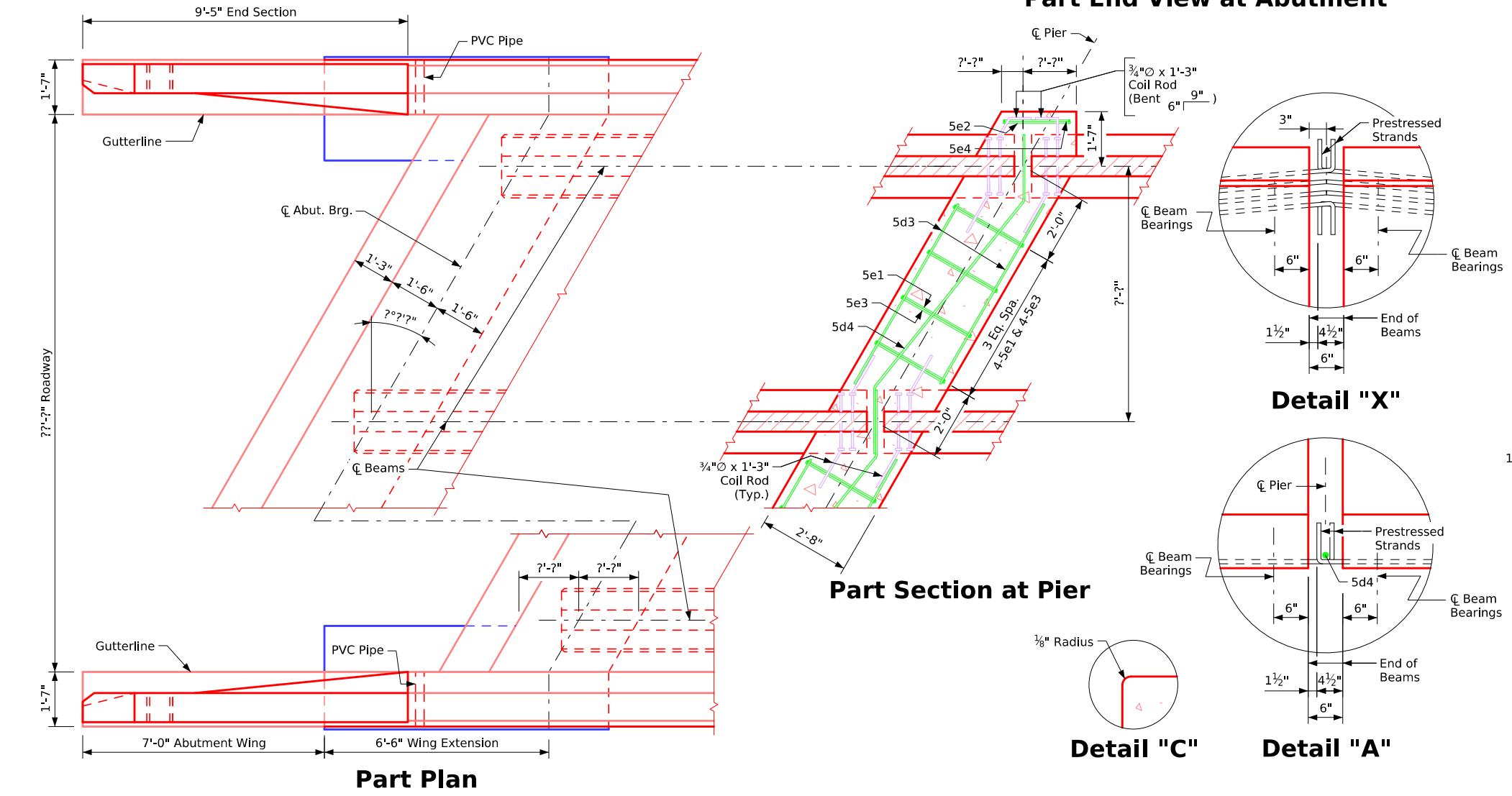


Abut. & Pier Diaphragm Details

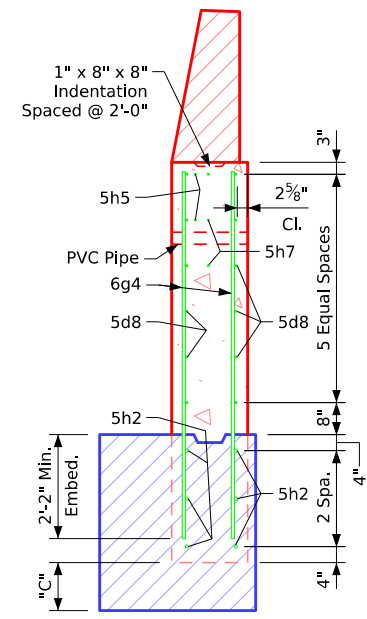
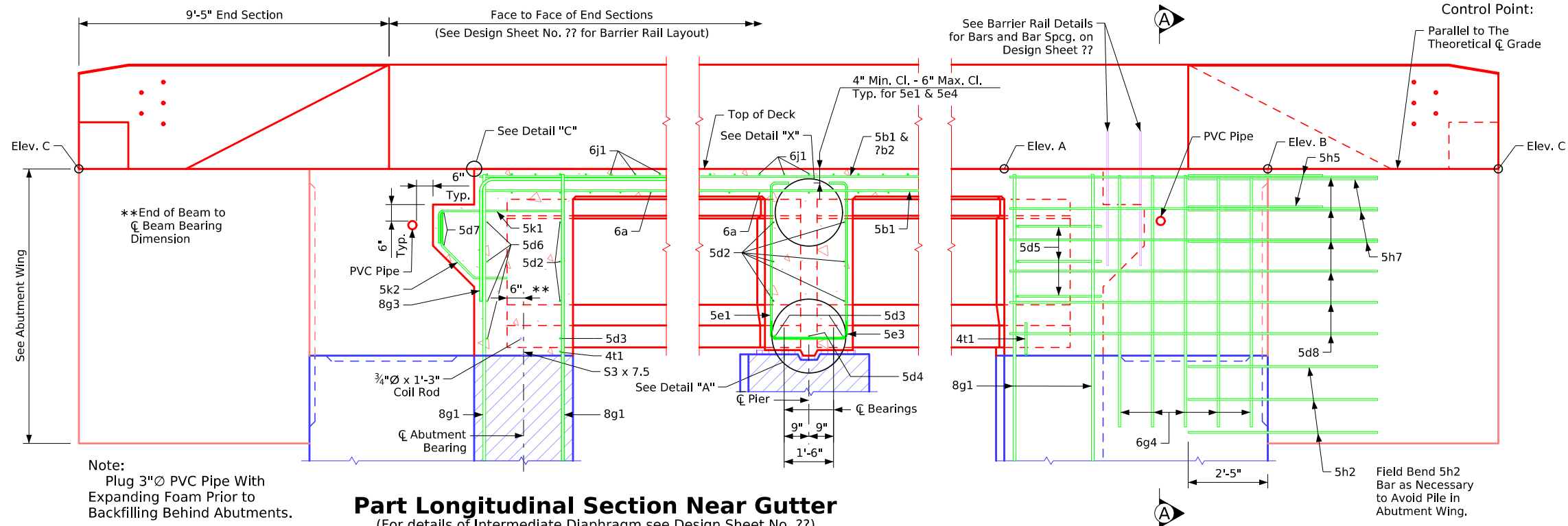
Redrawn 09-08-1988.
 Revised 01-2012: Added field bend 5h4 bar to avoid pile in Abutment Wing Note.
 Revised 01-2023: Sheet format update.
 Revised 06-2025: In Section A-A, flipped/switched orientation of horizontal and vertical bars in outside face of wingwall. Corrected detailing errors in "Top of Fixed Pier Details". Added "Control Point" text.
 IntegralBridges.dgn - 4510 - This Sheet Re-issued 09-2023.



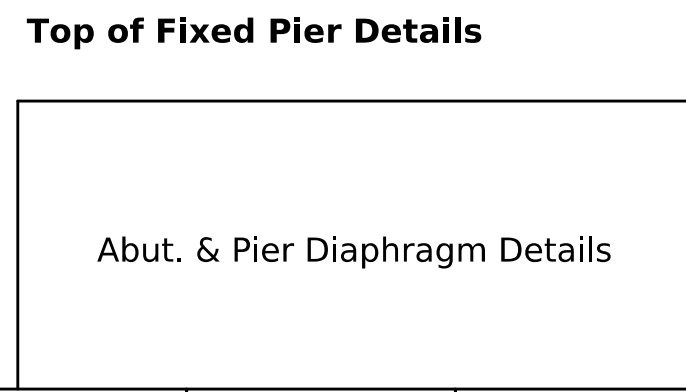
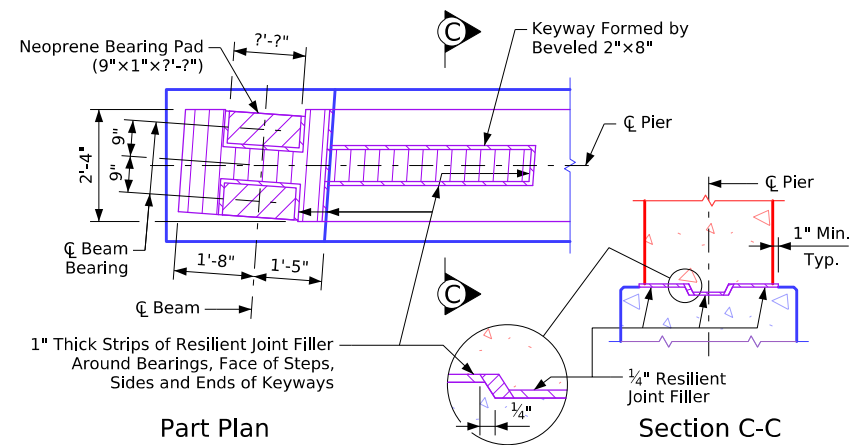
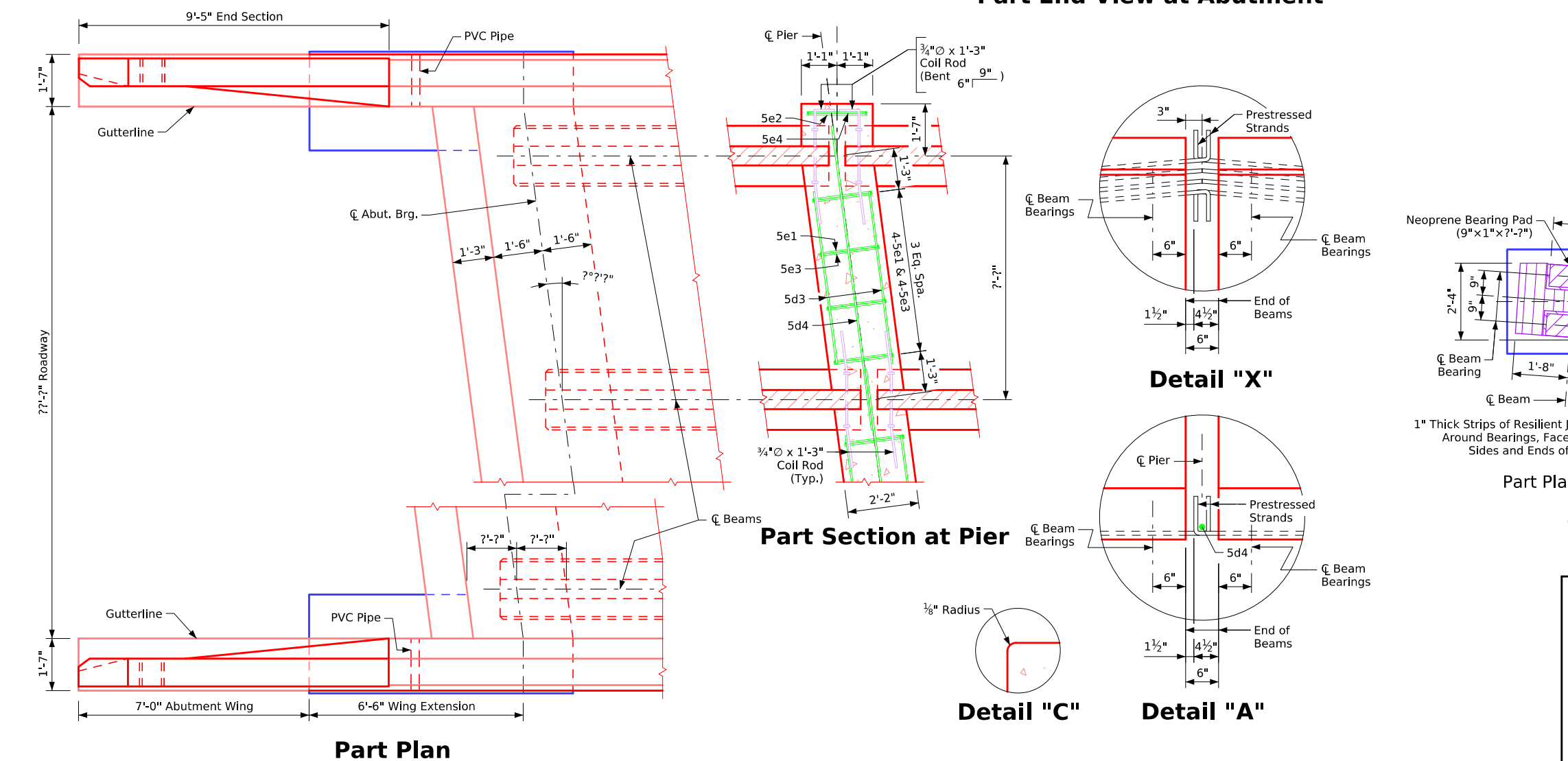
Location	Dim "C"	Elev. A	Elev. B	Elev. C
S.W. Corner	?'-?''	???.?	???.?	???.?
N.W. Corner	?'-?''	???.?	???.?	???.?
S.E. Corner	?'-?''	???.?	???.?	???.?
N.E. Corner	?'-?''	???.?	???.?	???.?

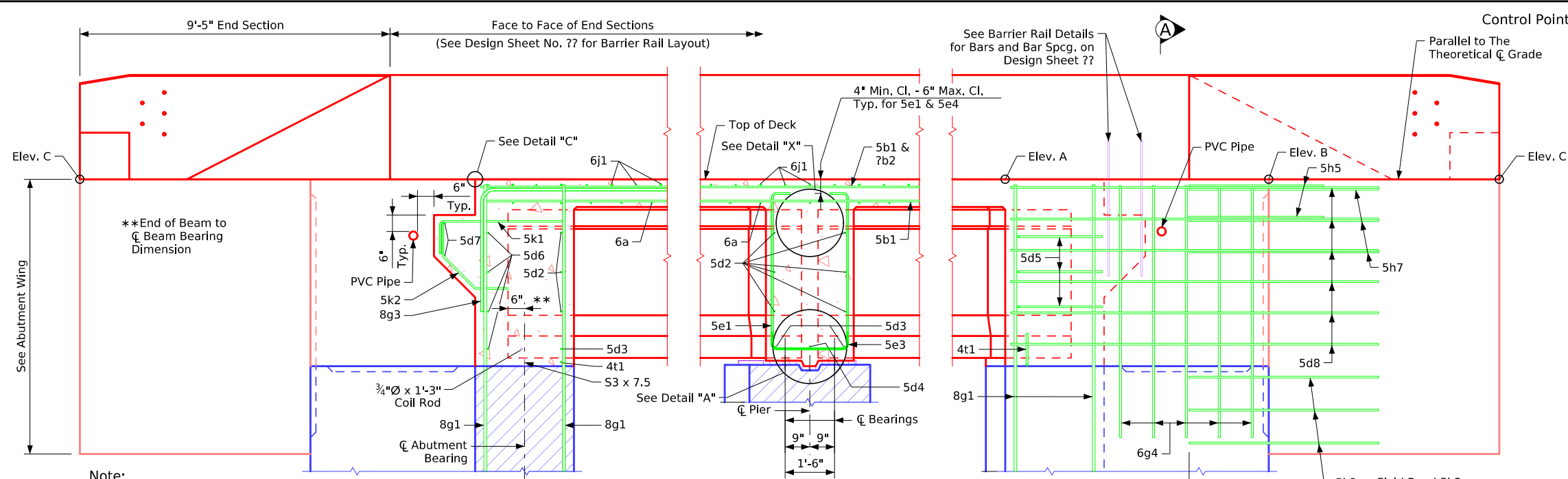


Redrawn 09-08-1988.
 Revised 01-2012: Added field bend 5h4 bar to avoid pile in Abutment Wing Note.
 Revised 01-2023: Sheet format update.
 Revised 06-2025: In Section A-A, flipped/switched orientation of horizontal and vertical bars in outside face of wingwall. Corrected detailing errors in "Top of Fixed Pier Details". Added "Control Point" text.
 IntegralBridges.dgn - 4511 - This Sheet Re-issued 09-2023.



Location	Dim "C"	Elev. A	Elev. B	Elev. C
S.W. Corner	?'-?"	???.?	???.?	???.?
N.W. Corner	?'-?"	???.?	???.?	???.?
S.E. Corner	?'-?"	???.?	???.?	???.?
N.E. Corner	?'-?"	???.?	???.?	???.?

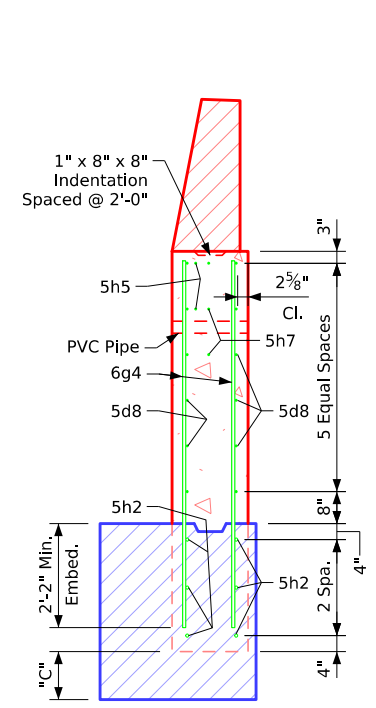




Note:
Plug 3" PVC Pipe With Expanding Foam Prior to Backfilling Behind Abutments.

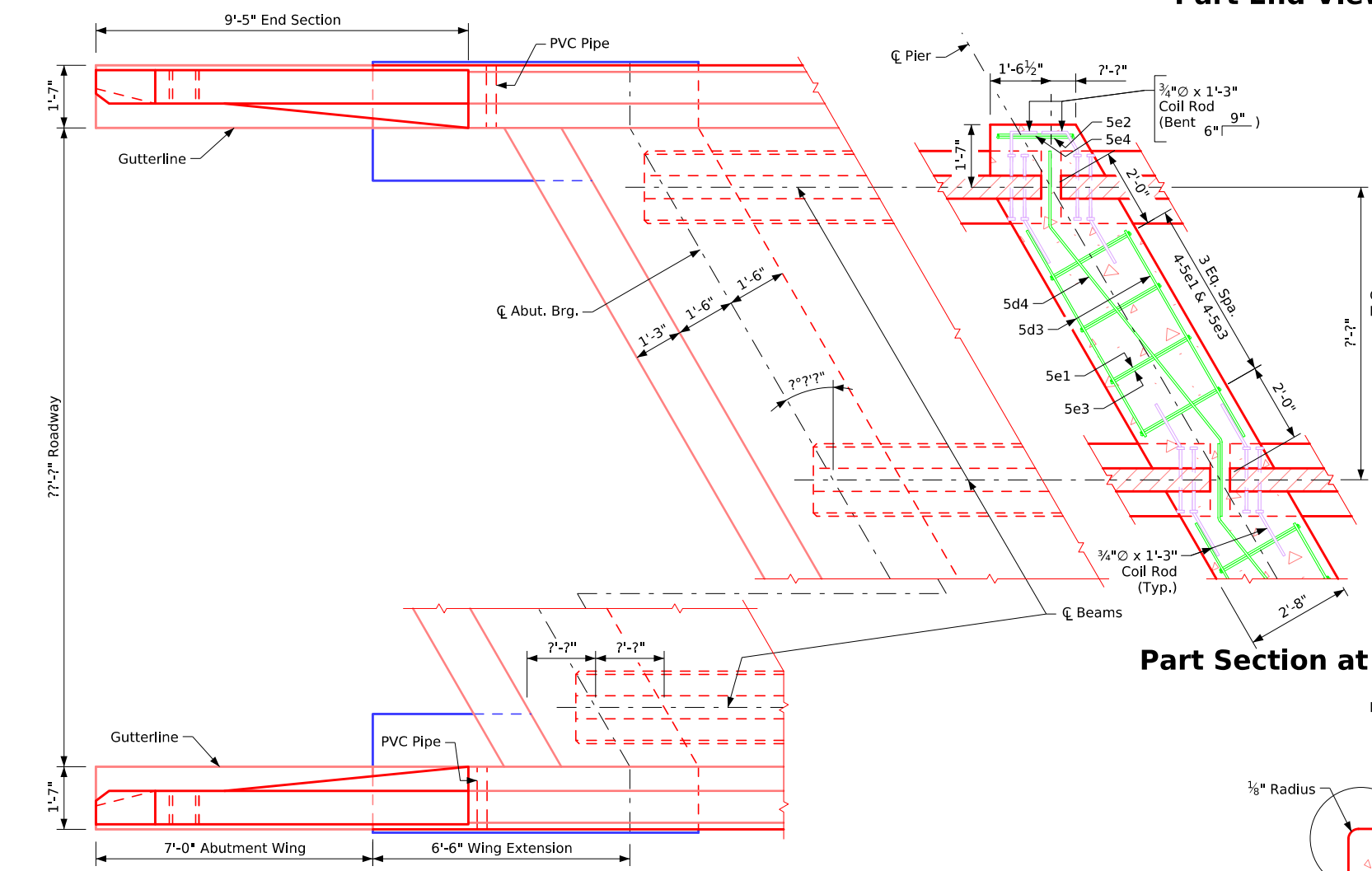
Part Longitudinal Section Near Gutter
(For details of Intermediate Diaphragm see Design Sheet No. ??)

Part End View at Abutment



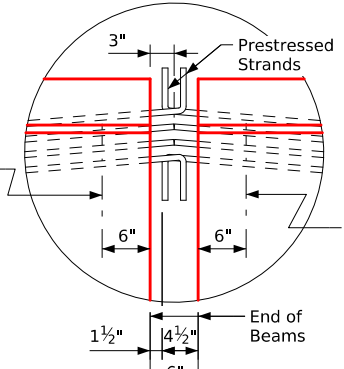
Section A-A

Table of Wingwall Elevations				
Location	Dim "C"	Elev. A	Elev. B	Elev. C
S.W. Corner	?'-?''	???.?	???.?	???.?
N.W. Corner	?'-?''	???.?	???.?	???.?
S.E. Corner	?'-?''	???.?	???.?	???.?
N.E. Corner	?'-?''	???.?	???.?	???.?

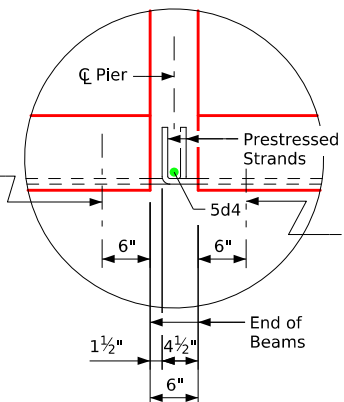


Part Plan

Part Section at Pier

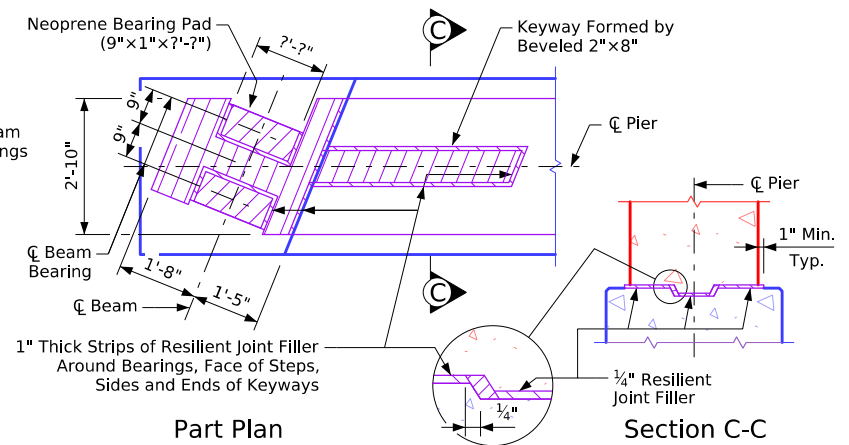


Detail "X"



Detail "C"

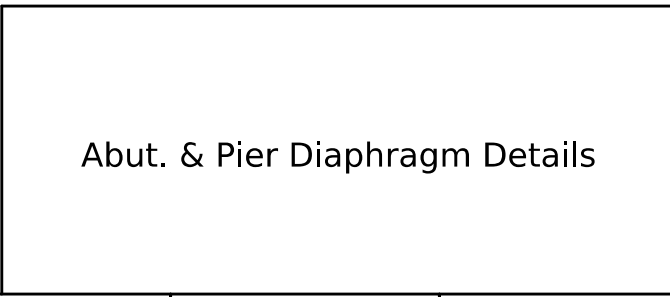
Detail "A"



Part Plan

Section C-C

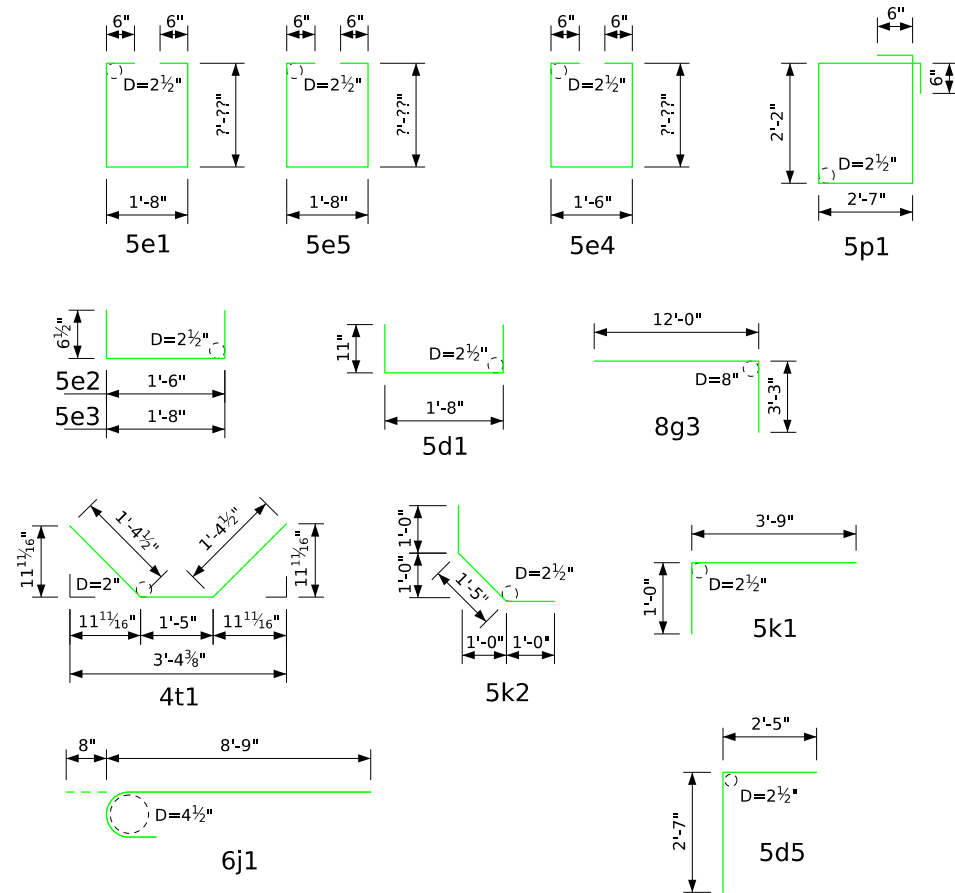
Top of Fixed Pier Details



Abut. & Pier Diaphragm Details

Redrawn 09-08-1988.
 Revised 01-2012: Added field bend 5h4 bar to avoid pile in Abutment Wing Note.
 Revised 01-2023: Sheet format update.
 Revised 06-2025: In Section A-A, flipped/switched orientation of horizontal and vertical bars in outside face of wingwall. Corrected detailing errors in "Top of Fixed Pier Details". Added "Control Point" text.
 IntegralBridges.dgn - 4513 - This Sheet Re-issued 09-2023.

Bent Bar Details



Note: All dimensions are out to out. D = Pin diameter

Non - Coated Reinforcing Steel - Deck, Abutment & Diaphragm

Bar	Location	Shape	No.	Length	Weight
#2	Pile Spiral		??	38'-6"	???
	Spiral Spacers, L 7/8 x 7/8 x 1/8 x 0.70		??	1'-10"	???
Non-Coated Reinforcing Total Weight (lbs.)					???

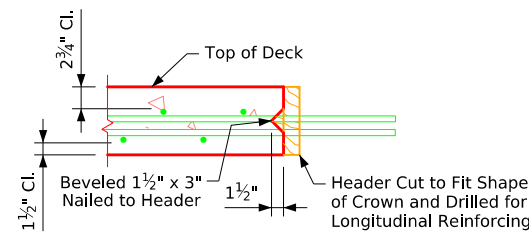
Concrete Placement Quantities

Location	Total	
Section 1, Deck & Abut. Diaph.	???	
Section 2, Deck	???	
Section 3, Deck & Abut. Diaph.	???	
Section 4, Deck & Pier Diaph.	???	
Section 5, Deck & Pier Diaph.	???	
Total (Cu. Yds.)		???

Note: Concrete and Reinforcing Steel Quantities are included on The Summary Quantities Sheet.

Epoxy Coated Reinforcing Steel - Deck, Abutment & Diaphragm

Bar	Location	Shape	No.	Length	Weight
6a1	Deck, Transv. Top		??	7'-7"	???
6a2	Deck, Transv. Bott.		??	7'-7"	???
5b1	Deck Longit. Top & Bott.		??	7'-7"	???
7b2	Deck Longit. Top at Piers		??	7'-7"	???
5d1	Pier Diaph. Ends		??	3'-6"	???
5d2	Pier & Abut. Diaph. Longit.		??	7'-7"	???
5d3	Pier & Abut. Diaph. Longit.		??	7'-7"	???
5d4	Pier Diaph. Longit.		??	7'-7"	???
5d5	Abut. Diaph. Ends		12	5'-0"	63
5d6	Abut. Diaph. Longit. B.F.		16	7'-7"	???
5d7	Paving Notch Longit.		8	7'-7"	???
5e1	Pier Diaph. Hoops		??	7'-7"	???
5e2	Pier Diaph. Tie Ends		??	2'-7"	???
5e3	Pier Diaph. Ties		??	2'-9"	???
5e4	Pier Diaph. Hoops Ends		??	7'-7"	???
5e5	Pier Diaph. Hoops Expansion Pier		??	7'-7"	???
8f1	Abut. Footing Longit. Both F.		36	7'-7"	???
8g1	Abut. Vert. Both F.		??	7'-7"	???
8g3	Abut. Diaph. Vert. B.F.		??	15'-3"	???
5h2	Abut. To Wing Anchor		68	5'-9"	408
5h5	Abut. To Wing Anchor		12	4'-0"	50
6j1	Top of Deck Transv. (At Rail)		??	9'-5"	???
5k1	Paving Notch		??	4'-9"	???
5k2	Paving Notch		??	3'-5"	???
5p1	Abut. Hoops		??	10'-6"	???
4t1	Under Beams At Abutments		??	4'-2"	???
Epoxy Reinforcing Total Weight (lbs.)					???



Permissible Transverse Deck Construction Joint

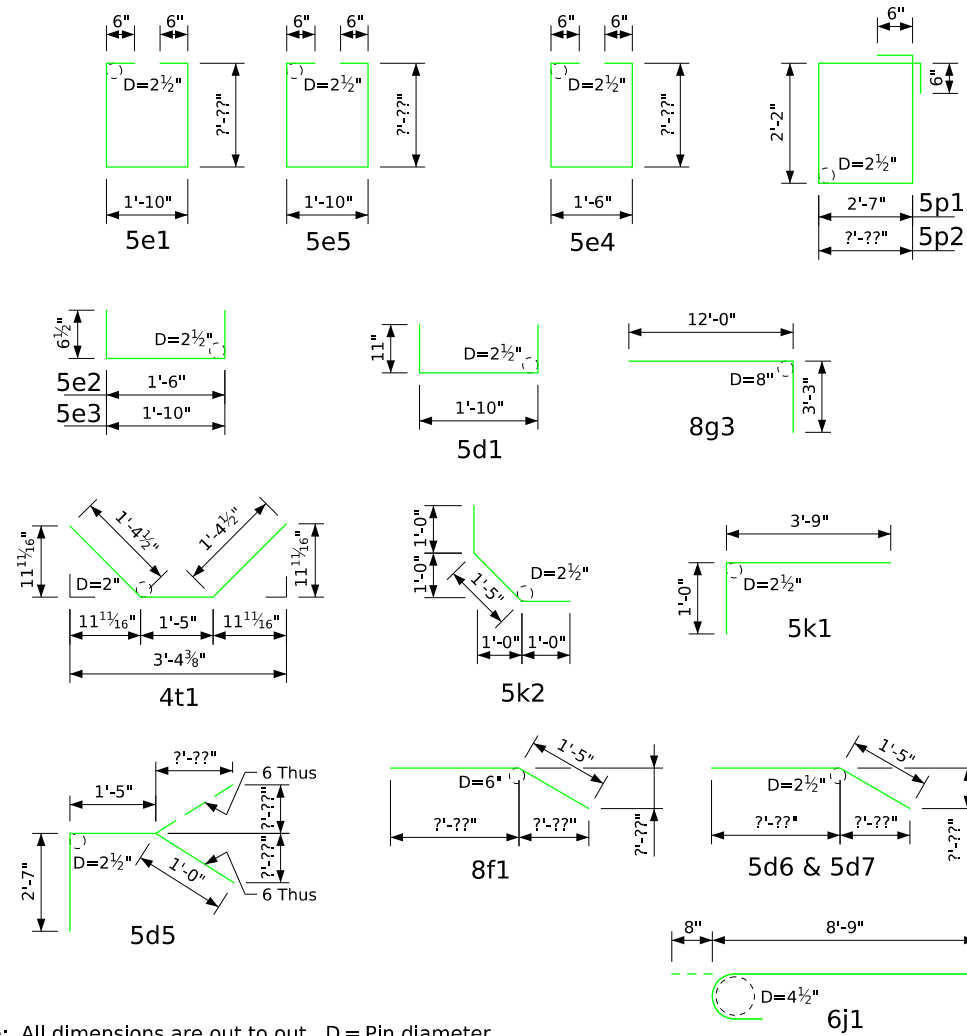
Concrete Placement Diagram

Note: Concrete deck shall be placed in sections and sequences indicated. Alternate procedures for placing deck concrete may be submitted for approval together with a statement of the proposed method and evidence that the Contractor possesses the necessary equipment and facilities to accomplish the required results. For approved alternate procedures the Engineer shall determine if a retarding admixture is required to maintain plasticity of the concrete deck during placement.

Deck, Abut. & Diaph. Quantities

Redrawn 09-08-1988.
 Revised 07-2015: Changed Concrete Placement Note to account for the possible addition of a retarding admixture to the concrete.
 Revised 01-2023: Sheet format update.
 Revised 06-2025: Updated Bar Mark Labels in Bent Bar Details to SubHeader text format.
 IntegralBridges.dgn - 4514 - This Sheet Re-Issued 09-2023.

Bent Bar Details



Note: All dimensions are out to out. D = Pin diameter

Non - Coated Reinforcing Steel - Deck, Abutment & Diaphragm

Bar	Location	Shape	No.	Length	Weight
#2	Pile Spiral		??	38'-6"	???
	Spiral Spacers, L 7/8 x 7/8 x 7/8 x 0.70		??	1'-10"	???
Non-Coated Reinforcing Total Weight (lbs.)					???

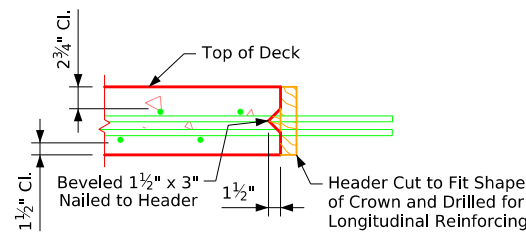
Epoxy Coated Reinforcing Steel - Deck, Abutment & Diaphragm

Bar	Location	Shape	No.	Length	Weight
6a1	Deck, Transv. Top		??	7'-7"	???
6a2	Deck, Transv. Bott.		??	7'-7"	???
5b1	Deck Longit. Top & Bott.		??	7'-7"	???
7b2	Deck Longit. Top at Piers		??	7'-7"	???
5d1	Pier Diaph. Ends		??	3'-8"	???
5d2	Pier & Abut. Diaph. Longit.		??	7'-7"	???
5d3	Pier & Abut. Diaph. Longit.		??	7'-7"	???
5d4	Pier Diaph. Longit.		??	7'-7"	???
5d5	Abut. Diaph. Ends		12	5'-0"	63
5d6	Abut. Diaph. Longit. B.F.		16	7'-7"	???
5d7	Paving Notch Longit.		8	7'-7"	???
5e1	Pier Diaph. Hoops		??	7'-7"	???
5e2	Pier Diaph. Tie Ends		??	2'-7"	???
5e3	Pier Diaph. Ties		??	2'-9"	???
5e4	Pier Diaph. Hoops Ends		??	7'-7"	???
5e5	Pier Diaph. Hoops Expansion Pier		??	7'-7"	???
8f1	Abut. Footing Longit. Both F.		36	7'-7"	???
8g1	Abut. Vert. Both F.		??	7'-7"	???
8g3	Abut. Diaph. Vert. B.F.		??	15'-3"	???
5h2	Abut. To Wing Anchor		68	5'-9"	408
5h5	Abut. To Wing Anchor		12	4'-0"	50
6j1	Top of Deck Transv. (At Rail)		??	9'-5"	???
5k1	Paving Notch		??	4'-9"	???
5k2	Paving Notch		??	3'-5"	???
5p1	Abut. Hoops		??	10'-6"	???
5p2	Abut. Hoops at Ends		8	7'-7"	???
4t1	Under Beams At Abutments		??	4'-2"	???
Epoxy Reinforcing Total Weight (lbs.)					???

Concrete Placement Quantities

Location	Total	
Section 1, Deck & Abut. Diaph.	???	
Section 2, Deck	???	
Section 3, Deck & Abut. Diaph.	???	
Section 4, Deck & Pier Diaph.	???	
Section 5, Deck & Pier Diaph.	???	
Total (Cu. Yds.)		???

Note: Concrete and Reinforcing Steel Quantities are included on The Summary Quantities Sheet.



Permissible Transverse Deck Construction Joint

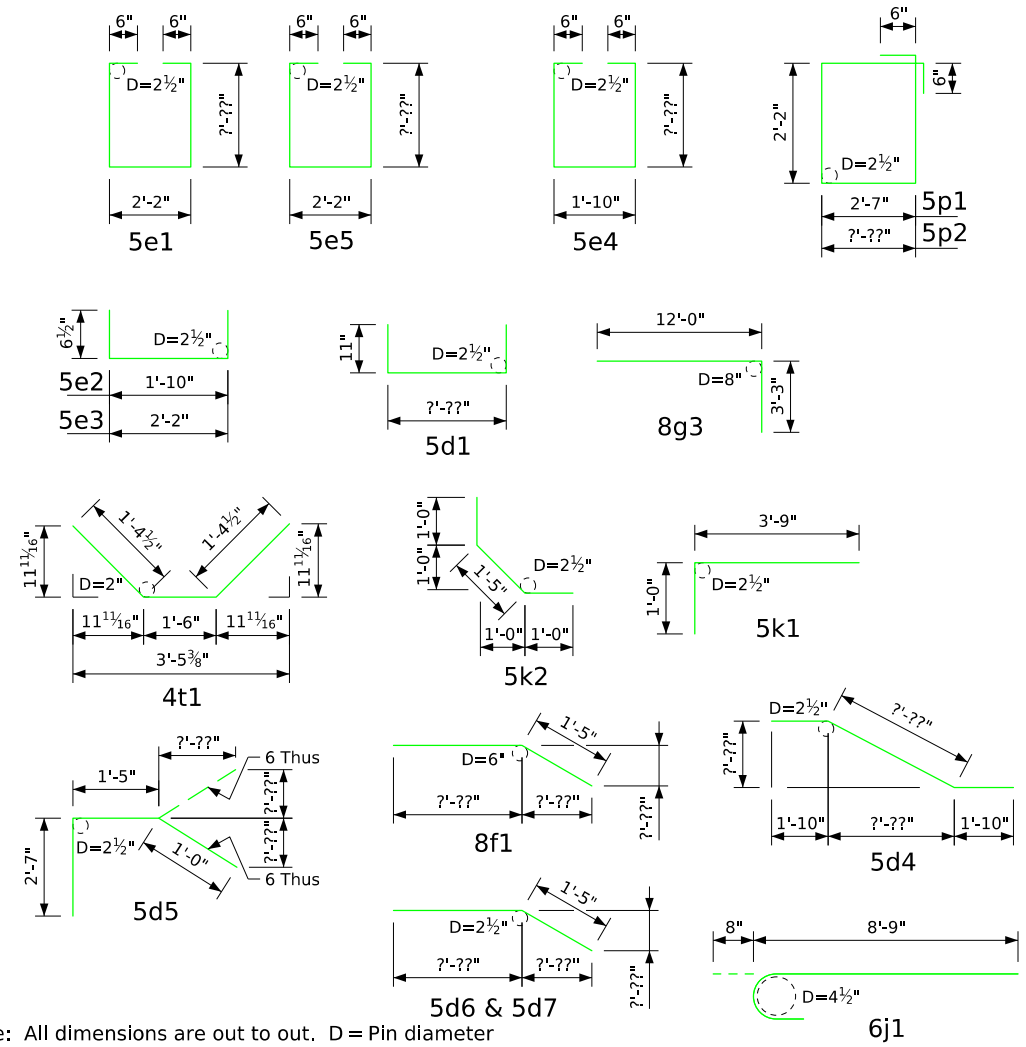
Concrete Placement Diagram

Note: Concrete deck shall be placed in sections and sequences indicated. Alternate procedures for placing deck concrete may be submitted for approval together with a statement of the proposed method and evidence that the Contractor possesses the necessary equipment and facilities to accomplish the required results. For approved alternate procedures the Engineer shall determine if a retarding admixture is required to maintain plasticity of the concrete deck during placement.

Deck, Abut. & Diaph. Quantities

Redrawn 09-08-1988.
 Revised 07-2015: Changed Concrete Placement Note to account for the possible addition of a retarding admixture to the concrete.
 Revised 01-2023: Sheet format update.
 Revised 06-2025: Updated Bar Mark Labels in Bent Bar Details to SubHeader text format.
 IntegralBridges.dgn - 4515 - This Sheet Re-Issued 09-2023.

Bent Bar Details



Note: All dimensions are out to out. D = Pin diameter

Non - Coated Reinforcing Steel - Deck, Abutment & Diaphragm

Bar #2	Location	Shape	No.	Length	Weight
	Pile Spiral		??	38'-6"	???
	Spiral Spacers, L 7/8 x 7/8 x 7/8 x 0.70		??	1'-10"	???
Non-Coated Reinforcing Total Weight (lbs.)					???

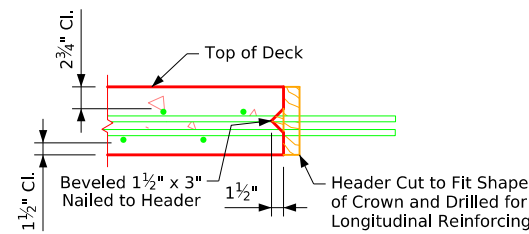
Concrete Placement Quantities

Location	Total	
Section 1, Deck & Abut. Diaph.	???	
Section 2, Deck	???	
Section 3, Deck & Abut. Diaph.	???	
Section 4, Deck & Pier Diaph.	???	
Section 5, Deck & Pier Diaph.	???	
Total (Cu. Yds.)		???

Note: Concrete and Reinforcing Steel Quantities are included on The Summary Quantities Sheet.

Epoxy Coated Reinforcing Steel - Deck, Abutment & Diaphragm

Bar	Location	Shape	No.	Length	Weight
6a1	Deck, Transv. Top		??	7'-7"	???
6a2	Deck, Transv. Bott.		??	7'-7"	???
6a3	Deck, Transv. Top Ends		??	Varies	???
6a4	Deck, Transv. Bott. Ends		??	Varies	???
5b1	Deck Longit. Top & Bott.		??	7'-7"	???
7b2	Deck Longit. Top at Piers		??	7'-7"	???
5d1	Pier Diaph. Ends		??	7'-7"	???
5d2	Pier & Abut. Diaph. Longit.		??	7'-7"	???
5d3	Pier & Abut. Diaph. Longit.		??	7'-7"	???
5d4	Pier Diaph. Longit.		??	7'-7"	???
5d5	Abut. Diaph. Ends		12	5'-0"	63
5d6	Abut. Diaph. Longit. B.F.		16	7'-7"	???
5d7	Paving Notch Longit.		8	7'-7"	???
5e1	Pier Diaph. Hoops		??	7'-7"	???
5e2	Pier Diaph. Tie Ends		??	2'-11"	???
5e3	Pier Diaph. Ties		??	3'-3"	???
5e4	Pier Diaph. Hoops Ends		??	7'-7"	???
5e5	Pier Diaph. Hoops Expansion Pier		??	7'-7"	???
8f1	Abut. Footing Longit. Both F.		36	7'-7"	???
8g1	Abut. Vert. Both F.		??	7'-7"	???
8g3	Abut. Diaph. Vert. B.F.		??	15'-3"	???
5h2	Abut. To Wing Anchor		68	5'-9"	408
5h5	Abut. To Wing Anchor		12	4'-0"	50
6j1	Top of Deck Transv. (At Rail)		??	9'-5"	???
5k1	Paving Notch		??	4'-9"	???
5k2	Paving Notch		??	3'-5"	???
5p1	Abut. Hoops		??	10'-6"	???
5p2	Abut. Hoops at Ends		8	7'-7"	???
4t1	Under Beams At Abutments		??	4'-3"	???
Epoxy Reinforcing Total Weight (lbs.)					???



Permissible Transverse Deck Construction Joint

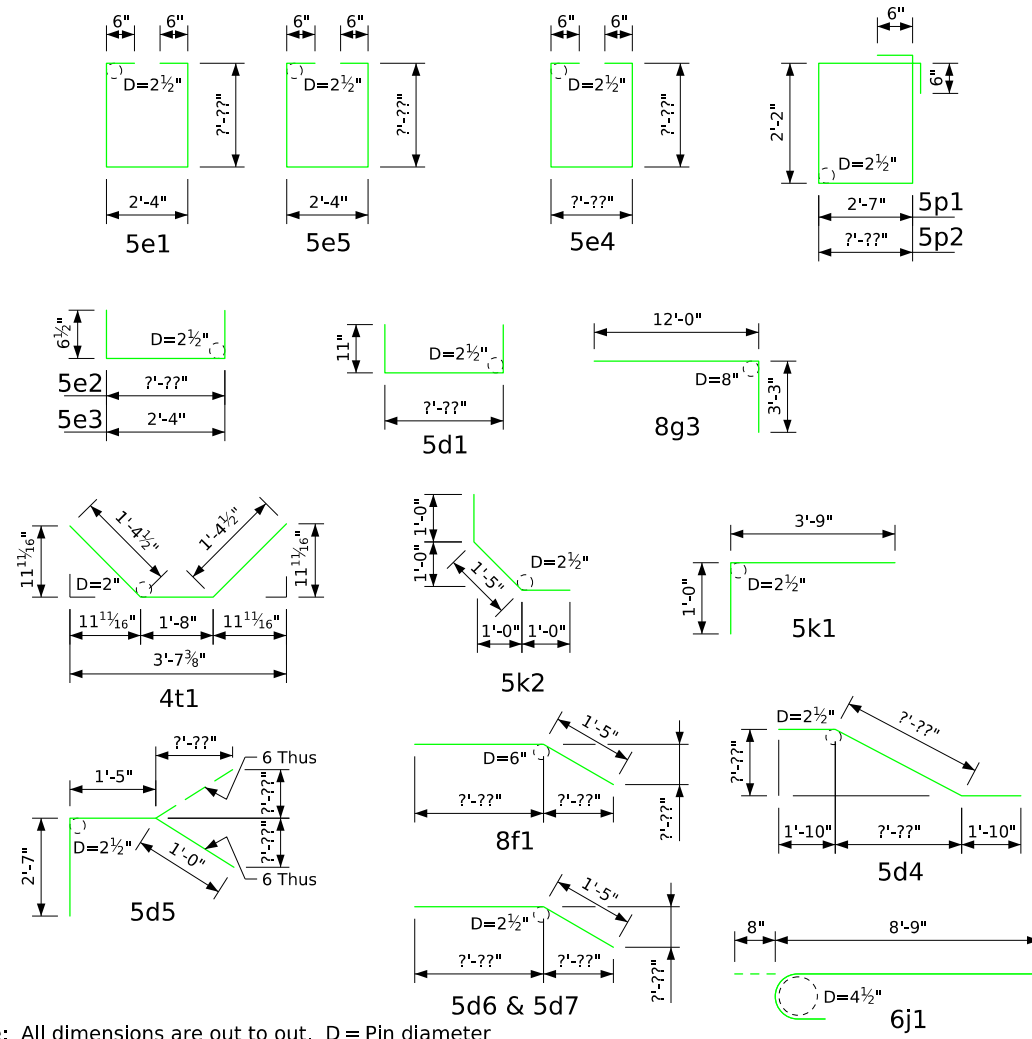
Concrete Placement Diagram

Note: Concrete deck shall be placed in sections and sequences indicated. Alternate procedures for placing deck concrete may be submitted for approval together with a statement of the proposed method and evidence that the Contractor possesses the necessary equipment and facilities to accomplish the required results. For approved alternate procedures the Engineer shall determine if a retarding admixture is required to maintain plasticity of the concrete deck during placement.

Deck, Abut. & Diaph. Quantities

Redrawn 09-08-1988.
 Revised 07-2015: Changed Concrete Placement Note to account for the possible addition of a retarding admixture to the concrete.
 Revised 01-2023: Sheet format update.
 Revised 06-2025: Updated Bar Mark Labels in Bent Bar Details to SubHeader text format.
 IntegralBridges.dgn - 4516 - This Sheet Re-Issued 09-2023.

Bent Bar Details



Note: All dimensions are out to out. D = Pin diameter

Non - Coated Reinforcing Steel - Deck, Abutment & Diaphragm

Bar	Location	Shape	No.	Length	Weight
#2	Pile Spiral		??	38'-6"	???
	Spiral Spacers, L 7/8 x 7/8 x 7/8 x 0.70		??	1'-10"	???
Non-Coated Reinforcing Total Weight (lbs.)					???

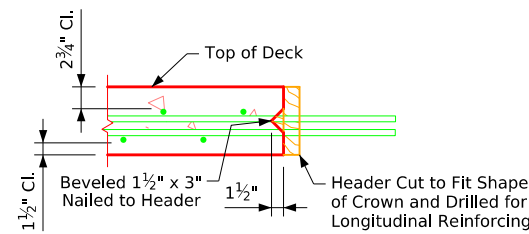
Epoxy Coated Reinforcing Steel - Deck, Abutment & Diaphragm

Bar	Location	Shape	No.	Length	Weight
6a1	Deck, Transv. Top		??	?'-7"	???
6a2	Deck, Transv. Bott.		??	?'-7"	???
6a3	Deck, Transv. Top Ends		??	Varies	???
6a4	Deck, Transv. Bott. Ends		7/	Varies	???
5b1	Deck Longit. Top & Bott.		??	?'-7"	???
7b2	Deck Longit. Top at Piers		??	?'-7"	???
5d1	Pier Diaph. Ends		??	?'-7"	???
5d2	Pier & Abut. Diaph. Longit.		??	?'-7"	???
5d3	Pier & Abut. Diaph. Longit.		??	?'-7"	???
5d4	Pier Diaph. Longit.		??	?'-7"	???
5d5	Abut. Diaph. Ends		12	5'-0"	63
5d6	Abut. Diaph. Longit. B.F.		16	?'-7"	???
5d7	Paving Notch Longit.		8	?'-7"	???
5e1	Pier Diaph. Hoops		??	?'-7"	???
5e2	Pier Diaph. Tie Ends		??	?'-7"	???
5e3	Pier Diaph. Ties		??	3'-5"	???
5e4	Pier Diaph. Hoops Ends		??	?'-7"	???
5e5	Pier Diaph. Hoops Expansion Pier		??	?'-7"	???
8f1	Abut. Footing Longit. Both F.		36	?'-7"	???
8g1	Abut. Vert. Both F.		??	?'-7"	???
8g3	Abut. Diaph. Vert. B.F.		??	15'-3"	???
5h2	Abut. To Wing Anchor		68	5'-9"	408
5h5	Abut. To Wing Anchor		12	4'-0"	50
6j1	Top of Deck Transv. (At Rail)		??	9'-5"	???
5k1	Paving Notch		??	4'-9"	???
5k2	Paving Notch		??	3'-5"	???
5p1	Abut. Hoops		??	10'-6"	???
5p2	Abut. Hoops at Ends		8	?'-7"	???
4t1	Under Beams At Abutments		??	4'-5"	???
Epoxy Reinforcing Total Weight (lbs.)					???

Concrete Placement Quantities

Location	Total	
Section 1, Deck & Abut. Diaph.	???	
Section 2, Deck	???	
Section 3, Deck & Abut. Diaph.	???	
Section 4, Deck & Pier Diaph.	???	
Section 5, Deck & Pier Diaph.	???	
Total (Cu. Yds.)		???

Note: Concrete and Reinforcing Steel Quantities are included on The Summary Quantities Sheet.



Permissible Transverse Deck Construction Joint

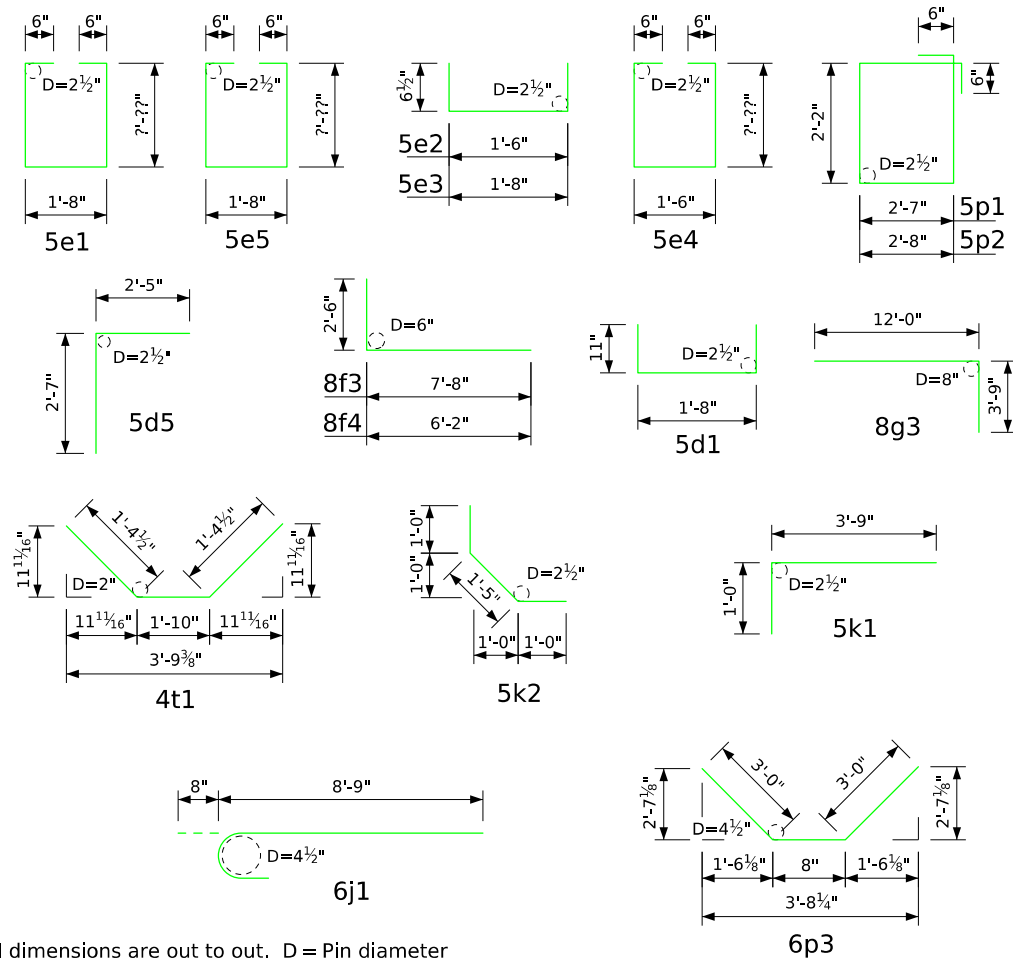
Concrete Placement Diagram

Note: Concrete deck shall be placed in sections and sequences indicated. Alternate procedures for placing deck concrete may be submitted for approval together with a statement of the proposed method and evidence that the Contractor possesses the necessary equipment and facilities to accomplish the required results. For approved alternate procedures the Engineer shall determine if a retarding admixture is required to maintain plasticity of the concrete deck during placement.

Deck, Abut. & Diaph. Quantities

Redrawn 09-08-1988.
 Revised 07-2015: Changed Concrete Placement Note to account for the possible addition of a retarding admixture to the concrete.
 Revised 01-2023: Sheet format update.
 Revised 06-2025: Updated Bar Mark Labels in Bent Bar Details to SubHeader text format.
 IntegralBridges.dgn - 4517 - This Sheet Re-Issued 09-2023.

Bent Bar Details



Note: All dimensions are out to out. D = Pin diameter

Non - Coated Reinforcing Steel - Deck, Abutment & Diaphragm

Bar	Location	Shape	No.	Length	Weight
#2	Pile Spiral		??	38'-6"	???
	Spiral Spacers, L 7/8 x 7/8 x 7/8 x 0.70		??	1'-10"	???
Non-Coated Reinforcing Total Weight (lbs.)					???

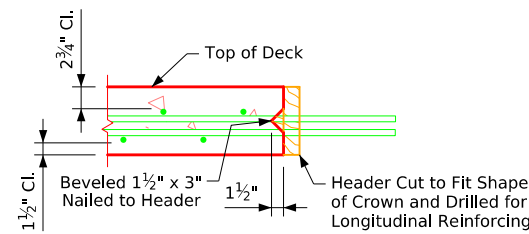
Concrete Placement Quantities

Location	Total	
Section 1, Deck & Abut. Diaph.	??.	
Section 2, Deck	??.	
Section 3, Deck & Abut. Diaph.	??.	
Section 4, Deck & Pier Diaph.	??.	
Section 5, Deck & Pier Diaph.	??.	
Total (Cu. Yds.)		??.

Note: Concrete and Reinforcing Steel Quantities are included on The Summary Quantities Sheet.

Epoxy Coated Reinforcing Steel - Deck, Abutment & Diaphragm

Bar	Location	Shape	No.	Length	Weight
6a1	Deck, Transv. Top		??	7'-7"	???
6a2	Deck, Transv. Bott.		??	7'-7"	???
5b1	Deck Longit. Top & Bott.		??	7'-7"	???
7b2	Deck Longit. Top at Piers		??	7'-7"	???
5d1	Pier Diaph. Ends		??	3'-6"	???
5d2	Pier & Abut. Diaph. Longit.		??	7'-7"	???
5d3	Pier & Abut. Diaph. Longit.		??	7'-7"	???
5d4	Pier Diaph. Longit.		??	7'-7"	???
5d5	Abut. Diaph. Ends		12	5'-0"	63
5d6	Abut. Diaph. Longit. B.F.		16	7'-7"	???
5d7	Paving Notch Longit.		8	7'-7"	???
5d8	Abut. Diaph. Wing Ext. Longit.		48	10'-8"	534
5e1	Pier Diaph. Hoops		??	7'-7"	???
5e2	Pier Diaph. Tie Ends		??	2'-7"	???
5e3	Pier Diaph. Ties		??	2'-9"	???
5e4	Pier Diaph. Hoops Ends		??	7'-7"	???
5e5	Pier Diaph. Hoops Expansion Pier		??	7'-7"	???
8f1	Abut. Footing Longit. Both F.		36	7'-7"	???
8f3	Abut. Extension Longit.		16	10'-2"	434
8f4	Abut. Extension Longit.		16	8'-8"	370
8g1	Abut. Vert. Both F.		??	7'-7"	???
8g3	Abut. Diaph. Vert. B.F.		??	15'-9"	???
6g4	Abut. Diaph. Wing Ext. Vert.		40	7'-7"	???
5h2	Abut. To Wing Anchor		24	5'-9"	144
5h5	Abut. To Wing Anchor		12	4'-0"	50
5h7	Abut. To Wing Anchor		12	5'-9"	72
6j1	Top of Deck Transv. (At Rail)		??	9'-5"	???
5k1	Paving Notch		??	4'-9"	???
5k2	Paving Notch		??	3'-5"	???
5p1	Abut. Hoops		??	10'-6"	???
5p2	Abut. Extension Hoops		24	10'-8"	267
6p3	Abut. Bott. At Piles		??	6'-8"	???
4t1	Under Beams At Abutments		??	4'-7"	???
Epoxy Reinforcing Total Weight (lbs.)					???



Permissible Transverse Deck Construction Joint

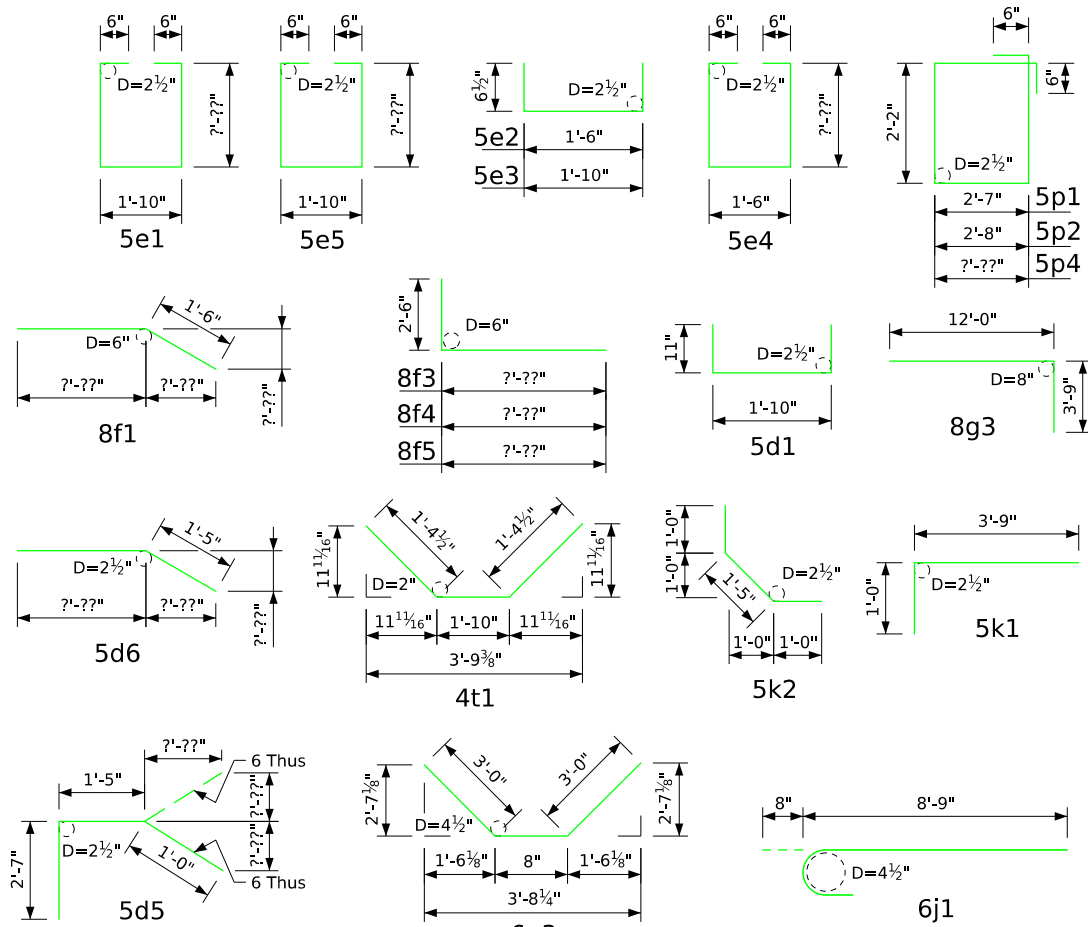
Concrete Placement Diagram

Note: Concrete deck shall be placed in sections and sequences indicated. Alternate procedures for placing deck concrete may be submitted for approval together with a statement of the proposed method and evidence that the Contractor possesses the necessary equipment and facilities to accomplish the required results. For approved alternate procedures the Engineer shall determine if a retarding admixture is required to maintain plasticity of the concrete deck during placement.

Deck, Abut. & Diaph. Quantities

Redrawn 09-08-1988.
 Revised 07-2015: Changed Concrete Placement Note to account for the possible addition of a retarding admixture to the concrete.
 Revised 01-2023: Sheet format update.
 Revised 06-2025: Updated Bar Mark Labels in Bent Bar Details to SubHeader text format.
 IntegralBridges.dgn - 4518 - This Sheet Re-Issued 09-2023.

Bent Bar Details



Note: All dimensions are out to out. D = Pin diameter

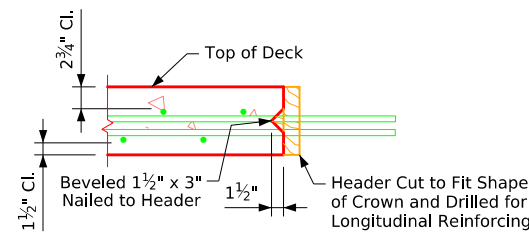
Non - Coated Reinforcing Steel - Deck, Abutment & Diaphragm

Bar #2	Location	Shape	No.	Length	Weight
	Pile Spiral		??	38'-6"	???
	Spiral Spacers, L 1/8 x 1/8 x 1/8 x 0.70		??	1'-10"	???
Non-Coated Reinforcing Total Weight (lbs.)					???

Concrete Placement Quantities

Location	Total	
Section 1, Deck & Abut. Diaph.	??.	
Section 2, Deck	??.	
Section 3, Deck & Abut. Diaph.	??.	
Section 4, Deck & Pier Diaph.	??.	
Section 5, Deck & Pier Diaph.	??.	
Total (Cu. Yds.)		??.

Note: Concrete and Reinforcing Steel Quantities are included on The Summary Quantities Sheet.



Permissible Transverse Deck Construction Joint

Epoxy Coated Reinforcing Steel - Deck, Abutment & Diaphragm

Bar	Location	Shape	No.	Length	Weight
6a1	Deck, Transv. Top		??	7'-7"	???
6a2	Deck, Transv. Bott.		??	7'-7"	???
5b1	Deck Longit. Top & Bott.		??	7'-7"	???
7b2	Deck Longit. Top at Piers		??	7'-7"	???
5d1	Pier Diaph. Ends		??	3'-8"	???
5d2	Pier & Abut. Diaph. Longit.		??	7'-7"	???
5d3	Pier & Abut. Diaph. Longit.		??	7'-7"	???
5d4	Pier Diaph. Longit.		??	7'-7"	???
5d5	Abut. Diaph. Ends		12	5'-0"	63
5d6	Abut. Diaph. Longit. B.F.		16	7'-7"	???
5d7	Paving Notch Longit.		8	7'-7"	???
5d8	Abut. Diaph. Wing Ext. Longit.		48	10'-8"	534
5e1	Pier Diaph. Hoops		??	7'-7"	???
5e2	Pier Diaph. Tie Ends		??	2'-7"	???
5e3	Pier Diaph. Ties		??	2'-11"	???
5e4	Pier Diaph. Hoops Ends		??	7'-7"	???
5e5	Pier Diaph. Hoops Expansion Pier		??	7'-7"	???
8f1	Abut. Footing Longit. Both F.		36	7'-7"	???
8f3	Abut. Extension Longit.		16	7'-7"	???
8f4	Abut. Extension Longit.		8	7'-7"	???
8f5	Abut. Extension Longit.		8	7'-7"	???
8g1	Abut. Vert. Both F.		??	7'-7"	???
8g3	Abut. Diaph. Vert. B.F.		??	15'-9"	???
6g4	Abut. Diaph. Wing Ext. Vert.		40	7'-7"	???
5h2	Abut. To Wing Anchor		24	5'-9"	144
5h5	Abut. To Wing Anchor		12	4'-0"	50
5h7	Abut. To Wing Anchor		12	5'-9"	72
6j1	Top of Deck Transv. (At Rail)		??	9'-5"	???
5k1	Paving Notch		??	4'-9"	???
5k2	Paving Notch		??	3'-5"	???
5p1	Abut. Hoops		??	10'-6"	???
5p2	Abut. Extension Hoops		24	10'-8"	267
6p3	Abut. Bott. At Piles		??	6'-8"	???
5p4	Abut. Hoops At Ends		8	7'-7"	???
4t1	Under Beams At Abutments		??	4'-7"	???
Epoxy Reinforcing Total Weight (lbs.)					???

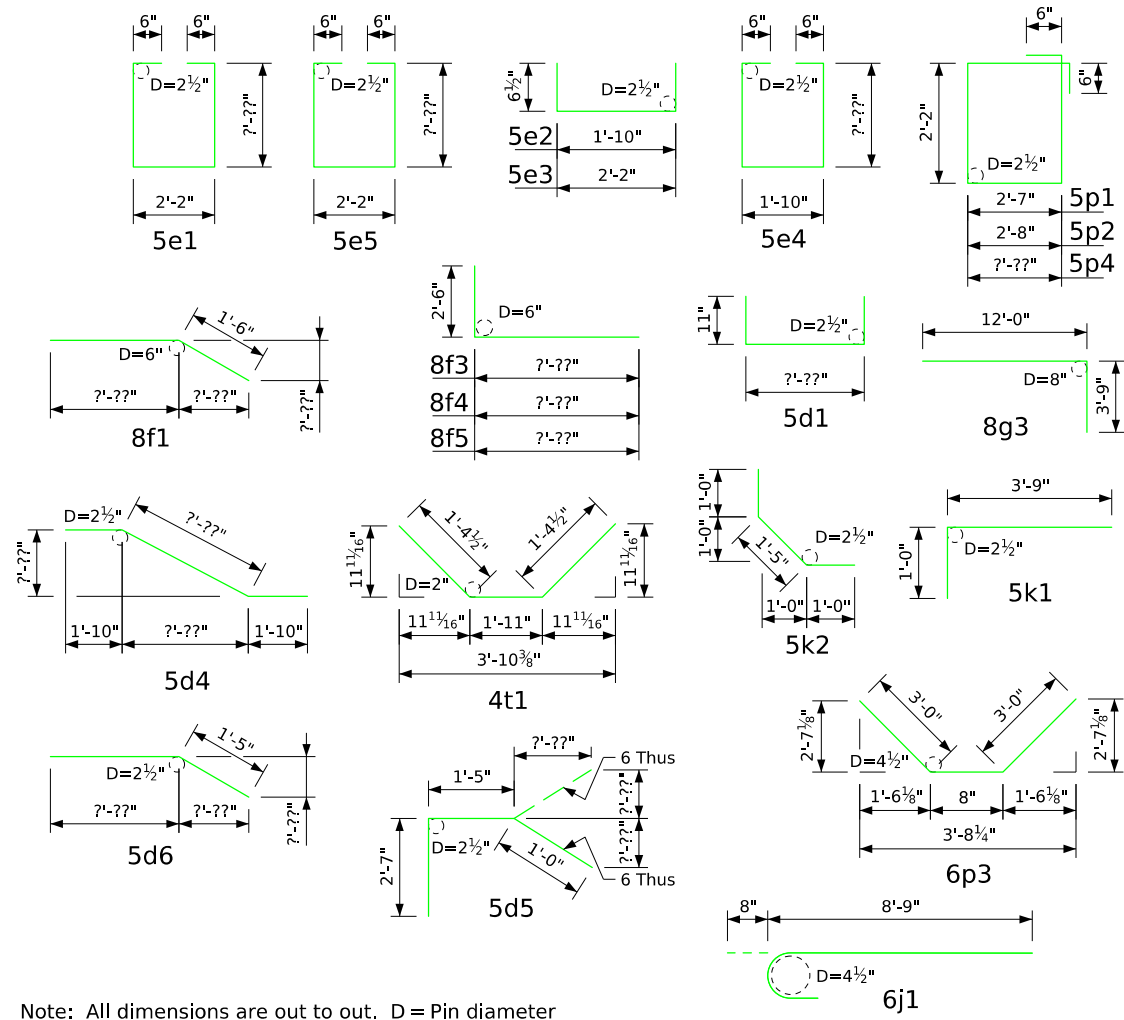
Deck, Abut. & Diaph. Quantities

Concrete Placement Diagram

Note: Concrete deck shall be placed in sections and sequences indicated. Alternate procedures for placing deck concrete may be submitted for approval together with a statement of the proposed method and evidence that the Contractor possesses the necessary equipment and facilities to accomplish the required results. For approved alternate procedures the Engineer shall determine if a retarding admixture is required to maintain plasticity of the concrete deck during placement.

Redrawn 09-08-1988.
 Revised 07-2015: Changed Concrete Placement Note to account for the possible addition of a retarding admixture to the concrete.
 Revised 01-2023: Sheet format update.
 Revised 06-2025: Updated Bar Mark Labels in Bent Bar Details to SubHeader text format.
 IntegralBridges.dgn - 4519 - This Sheet Re-issued 09-2023.

Bent Bar Details



Note: All dimensions are out to out. D = Pin diameter

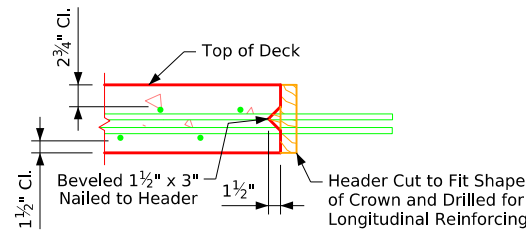
Non - Coated Reinforcing Steel - Deck, Abutment & Diaphragm

Bar #2	Location	Shape	No.	Length	Weight
	Pile Spiral		??	38'-6"	???
	Spiral Spacers, L 7/8 x 7/8 x 7/8 x 0.70		??	1'-10"	???
Non-Coated Reinforcing Total Weight (lbs.)					???

Concrete Placement Quantities

Location	Total	
Section 1, Deck & Abut. Diaph.	???	
Section 2, Deck	???	
Section 3, Deck & Abut. Diaph.	???	
Section 4, Deck & Pier Diaph.	???	
Section 5, Deck & Pier Diaph.	???	
Total (Cu. Yds.)		???

Note: Concrete and Reinforcing Steel Quantities are included on The Summary Quantities Sheet.



Permissible Transverse Deck Construction Joint

Epoxy Coated Reinforcing Steel - Deck, Abutment & Diaphragm

Bar	Location	Shape	No.	Length	Weight
6a1	Deck, Transv. Top		??	7'-7"	???
6a2	Deck, Transv. Bott.		??	7'-7"	???
6a3	Deck, Transv. Top Ends		??	Varies	???
6a4	Deck, Transv. Bott. Ends		??	Varies	???
5b1	Deck Longit. Top & Bott.		??	7'-7"	???
7b2	Deck Longit. Top at Piers		??	7'-7"	???
5d1	Pier Diaph. Ends		??	7'-7"	???
5d2	Pier & Abut. Diaph. Longit.		??	7'-7"	???
5d3	Pier & Abut. Diaph. Longit.		??	7'-7"	???
5d4	Pier Diaph. Longit.		??	7'-7"	???
5d5	Abut. Diaph. Ends		12	5'-0"	63
5d6	Abut. Diaph. Longit. B.F.		16	7'-7"	???
5d7	Paving Notch Longit.		8	7'-7"	???
5d8	Abut. Diaph. Wing Ext. Longit.		48	10'-8"	534
5e1	Pier Diaph. Hoops		??	7'-7"	???
5e2	Pier Diaph. Tie Ends		??	2'-11"	???
5e3	Pier Diaph. Ties		??	3'-3"	???
5e4	Pier Diaph. Hoops Ends		??	7'-7"	???
5e5	Pier Diaph. Hoops Expansion Pier		??	7'-7"	???
8f1	Abut. Footing Longit. Both F.		36	7'-7"	???
8f3	Abut. Extension Longit.		16	7'-7"	???
8f4	Abut. Extension Longit.		8	7'-7"	???
8f5	Abut. Extension Longit.		8	7'-7"	???
8g1	Abut. Vert. Both F.		??	7'-7"	???
8g3	Abut. Diaph. Vert. B.F.		??	15'-9"	???
6g4	Abut. Diaph. Wing Ext. Vert.		40	7'-7"	???
5h2	Abut. To Wing Anchor		24	5'-9"	144
5h5	Abut. To Wing Anchor		12	4'-0"	50
5h7	Abut. To Wing Anchor		12	5'-9"	72
6j1	Top of Deck Transv. (At Rail)		??	9'-5"	???
5k1	Paving Notch		??	4'-9"	???
5k2	Paving Notch		??	3'-5"	???
5p1	Abut. Hoops		??	10'-6"	???
5p2	Abut. Extension Hoops		24	10'-8"	267
6p3	Abut. Bott. At Piles		??	6'-8"	???
5p4	Abut. Hoops At Ends		8	7'-7"	???
4t1	Under Beams At Abutments		??	4'-8"	???
Epoxy Reinforcing Total Weight (lbs.)					???

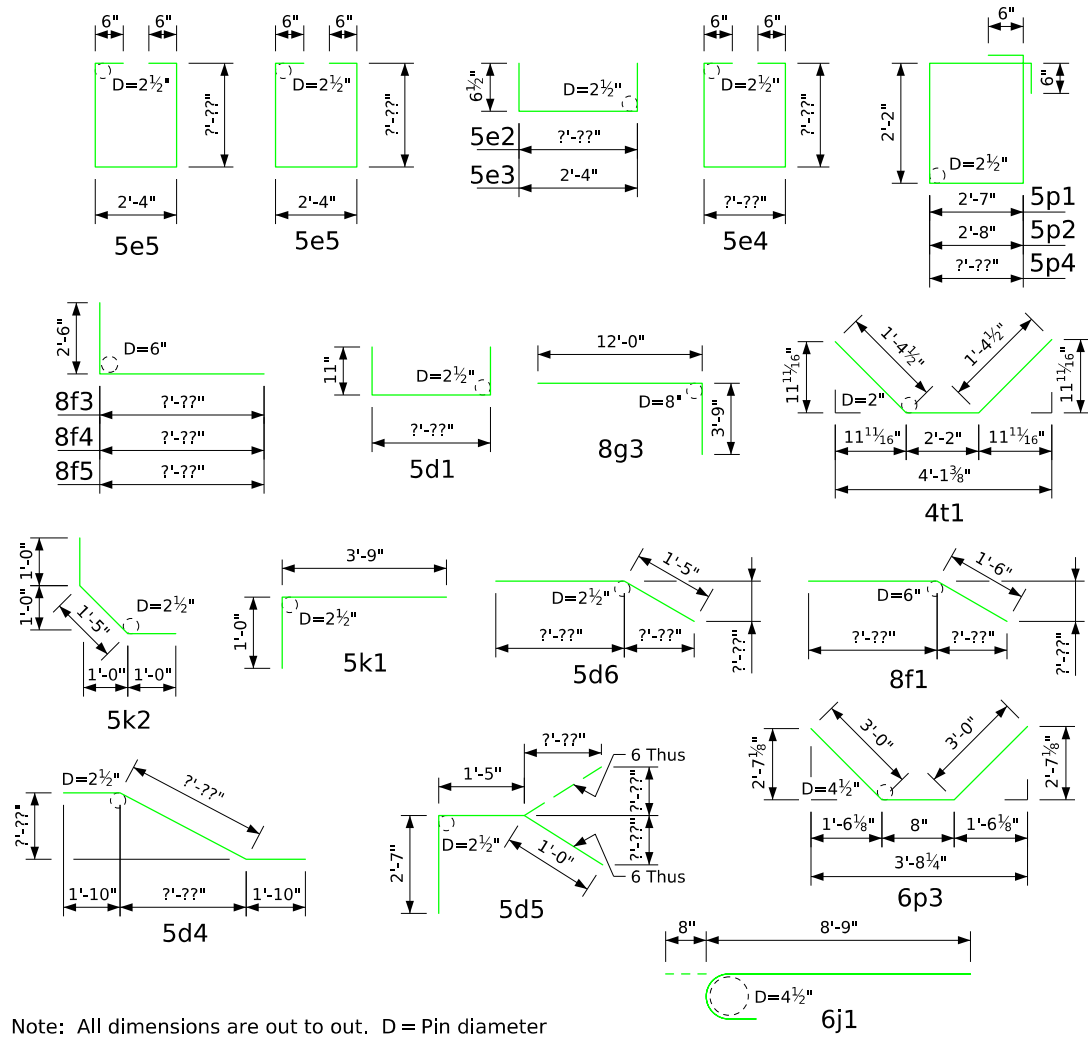
Deck, Abut. & Diaph. Quantities

Concrete Placement Diagram

Note: Concrete deck shall be placed in sections and sequences indicated. Alternate procedures for placing deck concrete may be submitted for approval together with a statement of the proposed method and evidence that the Contractor possesses the necessary equipment and facilities to accomplish the required results. For approved alternate procedures the Engineer shall determine if a retarding admixture is required to maintain plasticity of the concrete deck during placement.

Redrawn 09-08-1988.
 Revised 07-2015: Changed Concrete Placement Note to account for the possible addition of a retarding admixture to the concrete.
 Revised 01-2023: Sheet format update.
 Revised 06-2025: Updated Bar Mark Labels in Bent Bar Details to SubHeader text format.
 IntegralBridges.dgn - 4520 - This Sheet Re-issued 09-2023.

Bent Bar Details



Non - Coated Reinforcing Steel - Deck, Abutment & Diaphragm

Bar	Location	Shape	No.	Length	Weight
#2	Pile Spiral		??	38'-6"	???
	Spiral Spacers, L 7/8 x 7/8 x 7/8 x 0.70		??	1'-10"	???
Non-Coated Reinforcing Total Weight (lbs.)					???

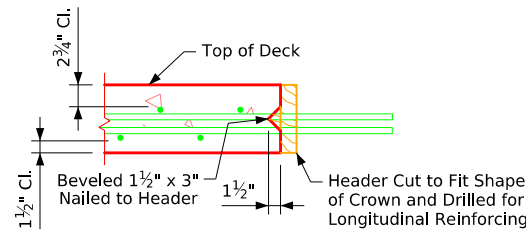
Epoxy Coated Reinforcing Steel - Deck, Abutment & Diaphragm

Bar	Location	Shape	No.	Length	Weight
6a1	Deck, Transv. Top		??	7'-7"	???
6a2	Deck, Transv. Bott.		??	Varies	???
6a3	Deck, Transv. Top Ends		??	Varies	???
6a4	Deck, Transv. Bott. Ends		??	Varies	???
5b1	Deck Longit. Top & Bott.		??	7'-7"	???
7b2	Deck Longit. Top at Piers		??	7'-7"	???
5d1	Pier Diaph. Ends		??	7'-7"	???
5d2	Pier & Abut. Diaph. Longit.		??	7'-7"	???
5d3	Pier & Abut. Diaph. Longit.		??	7'-7"	???
5d4	Pier Diaph. Longit.		??	7'-7"	???
5d5	Abut. Diaph. Ends		12	5'-0"	63
5d6	Abut. Diaph. Longit. B.F.		16	7'-7"	???
5d7	Paving Notch Longit.		8	7'-7"	???
5d8	Abut. Diaph. Wing Ext. Longit.		24	11'-4"	567
5e1	Pier Diaph. Hoops		??	7'-7"	???
5e2	Pier Diaph. Tie Ends		??	7'-7"	???
5e3	Pier Diaph. Ties		??	3'-5"	???
5e4	Pier Diaph. Hoops Ends		??	7'-7"	???
5e5	Pier Diaph. Hoops Expansion Pier		??	7'-7"	???
8f1	Abut. Footing Longit. Both F.		??	7'-7"	???
8f3	Abut. Extension Longit.		??	7'-7"	???
8f4	Abut. Extension Longit.		??	7'-7"	???
8f5	Abut. Extension Longit.		??	7'-7"	???
8g1	Abut. Vert. Both F.		??	7'-7"	???
8g3	Abut. Diaph. Vert. B.F.		??	15'-9"	???
6g4	Abut. Diaph. Wing Ext. Vert.		40	7'-7"	???
5h2	Abut. To Wing Anchor		24	5'-9"	144
5h5	Abut. To Wing Anchor		12	4'-0"	50
5h7	Abut. To Wing Anchor		12	5'-9"	72
6j1	Top of Deck Transv. (At Rail)		??	9'-5"	???
5k1	Paving Notch		??	4'-9"	???
5k2	Paving Notch		??	3'-5"	???
5p1	Abut. Hoops		??	10'-6"	???
5p2	Abut. Extension Hoops		24	10'-8"	267
6p3	Abut. Bott. At Piles		??	6'-8"	???
5p4	Abut. Hoops At Ends		8	7'-7"	???
4t1	Under Beams At Abutments		??	4'-11"	???
Epoxy Reinforcing Total Weight (lbs.)					???

Concrete Placement Quantities

Location	Total
Section 1, Deck & Abut. Diaph.	???
Section 2, Deck	???
Section 3, Deck & Abut. Diaph.	???
Section 4, Deck & Pier Diaph.	???
Section 5, Deck & Pier Diaph.	???
Total (Cu. Yds.)	???

Note: Concrete and Reinforcing Steel Quantities are included on The Summary Quantities Sheet.



Permissible Transverse Deck Construction Joint

Concrete Placement Diagram

Note: Concrete deck shall be placed in sections and sequences indicated. Alternate procedures for placing deck concrete may be submitted for approval together with a statement of the proposed method and evidence that the Contractor possesses the necessary equipment and facilities to accomplish the required results. For approved alternate procedures the Engineer shall determine if a retarding admixture is required to maintain plasticity of the concrete deck during placement.

Deck, Abut. & Diaph. Quantities

Redrawn 09-08-1988.
 Revised 07-2015: Changed Concrete Placement Note to account for the possible addition of a retarding admixture to the concrete.
 Revised 01-2023: Sheet format update.
 Revised 06-2025: Updated Bar Mark Labels in Bent Bar Details to SubHeader text format.
 IntegralBridges.dgn - 4521 - This Sheet Re-issued 09-2023.