VERMONT

State of Vermont
PDD/Structures Design Section
National Life Building – Drawer 33
Montpelier, VT 05633-5001
www.aot.state.vt.us

Agency of Transportation

[phone] 802-828-0161
[fax] 802-828-3566
[ttd] 800-253-0191

June 16, 2015

J. P. Sicard, Inc.
PO Box 508
1369 Glover Road
Barton, VT 05822

Project Name: Barton BRO 1449(31)

Structure Identification: TH 2, Bridge 8

The precast fabrication drawings (Revision 2A) associated with Items 540.10 Precast Concrete Structure (Abutment #1), 540.10 Precast Concrete Structure (Abutment #2), 540.10 Precast Concrete Structure (Approach Slab #1), 540.10 Precast Concrete Structure (Approach Slab #2), and 900.640 Special Provision (Prestressed Concrete NEXT D Beams)(NEXT 32 D) have been reviewed and are being returned herewith.

All sheets are approved.

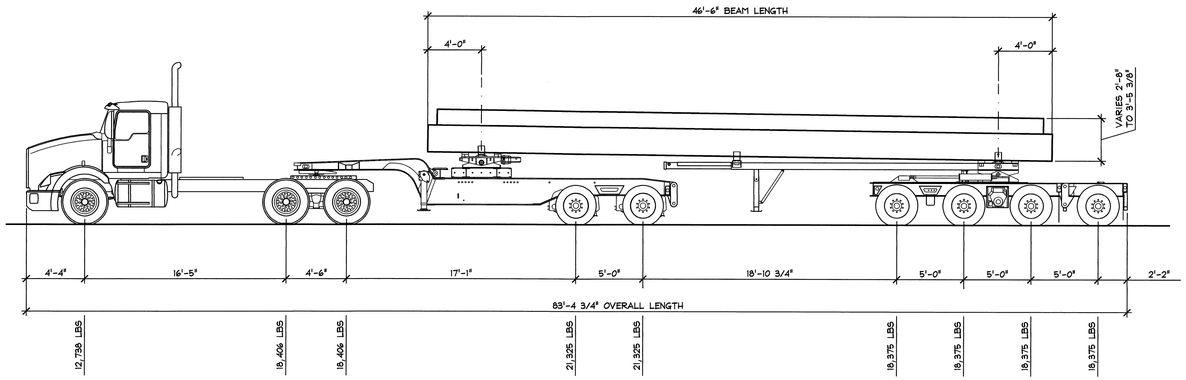
You must provide at least 2 weeks notice to VTrans' fabrication inspector, Jim Wild and the Agency's Engineer, as to the date fabrication represented by these drawings will begin. You may contact Jim by email at jim.wild@state.vt.us. Any material fabricated prior to the notification date is subject to rejection without further cause.

Sincerely,

Todd A. Sumner P.E.
Project Manager

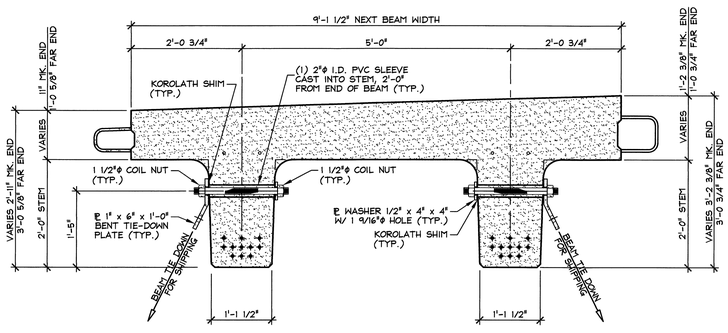
Cc. Seth Hisman, Resident Engineer
Ron Gray, Regional Construction Engineer
J.P. Sicard, Contractor
Jim Wild, Composite Materials Engineer

VTrans Working to Get You There
Vermont Agency of Transportation



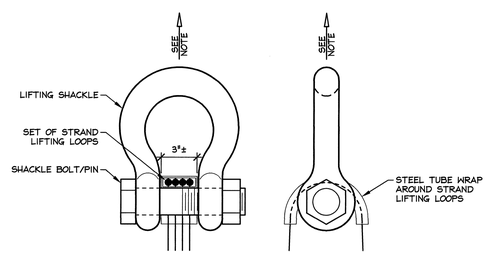
SHIPPING ELEVATION

3/16" = 1'-0"



MODIFIED NEXT BEAM 32D HOLD-DOWN DETAIL FOR SHIPPING

3/4" = 1'-0"



NOTE: BEAMS SHALL BE HANDLED AND ERECTED USING THE LIFTING LOOPS ONLY. RIGGING SHALL BE CONFIGURED SUCH THAT EQUAL AND VERTICAL FORCES ARE APPLIED TO EACH SET OF LIFTING LOOPS AT EACH END OF THE BEAM. SHACKLE BOLT/PIN SHALL BE PLACED UNDER LIFT LOOPS AS SHOWN. DESIGN AND CONFIGURATION OF RIGGING BY PURCHASER.

LIFTING SHACKLE DETAILS

N.T.S.

ABUTMENT & APPROACH SLAB GENERAL NOTES

1. MIN. CONCRETE STRENGTH AT 28 DAYS SHALL BE 5,000 PSI.
2. MIN. CONCRETE STRENGTH AT STRESS TRANSFER SHALL BE 3,500 PSI (UNLESS NOTED OTHERWISE).
3. REINFORCING STEEL SHALL BE GR-60, ASTM A-615 (AASHTO M31) LEVEL I (BLACK STEEL) (UNLESS NOTED OTHERWISE).
4. THE TOP OF ABUTMENTS SHALL RECEIVE A 1/4" RAKED AMPLITUDE FINISH (UNLESS NOTED OTHERWISE). THE TOP OF ABUTMENT CHEEKWALLS SHALL RECEIVE A SMOOTH FLOAT FINISH (UNLESS NOTED OTHERWISE).
5. SHEAR KEY SURFACES SHALL HAVE 1/8" COURSE AGGREGATE EXPOSED.
6. PRECAST CONCRETE UNITS SHALL BE HANDLED AND ERECTED USING THE LIFTING INSERTS ONLY. THE MINIMUM SLING ANGLE FROM THE HORIZONTAL SHALL BE 60°. NON-PRESTRESSED UNITS SHALL BE STORED & TRANSPORTED WITH TIMBER SUPPORTS AT 5th POINTS, UNLESS APPROVED BY J.P. CARRARA & SONS, INC.
7. MATERIAL SPECIFICATION AND MIX DESIGN SHALL CONFORM TO VERMONT SPEC. P510.02 AND P510.05 RESPECTIVELY.

   DESIGN MIX:

   APPROACH SL : J.P.C. BRIDGE MIX #4465MSCC (APPROVED 4-2-2015)

   ABUTMENT : J.P.C. BRIDGE MIX #4465M-NO DCI (APPROVED 3-21-2015)
8. QUALITY CONTROL PROCEDURES ARE IN ACCORDANCE WITH PCI REQUIREMENTS. J.P. CARRARA & SONS, INC. IS A PCI CERTIFIED PLANT.
9. CURING METHOD: AS SOON AS THE TOP OF PRECAST CONCRETE UNITS ARE FINISHED, A COVER OF RIGID INSULATION AND POLY WILL BE PLACED OVER THE UNIT. NATURAL CURE WITH NO EXTERNAL HEAT APPLIED.
10. ABUTMENT POST-TENSIONING SEQUENCE:
    A. ERECT PRECAST ABUTMENTS AND INSTALL TRANSVERSE STRANDS.
    B. APPLY EPOXY BONDING COMPOUND TO MATCH CAST FACES OF VERTICAL CONSTRUCTION JOINT.
    C. TENSION STRANDS TO 3K TO REMOVE SAG.
    D. CHECK ALIGNMENT OF PRECAST ELEMENTS.
    E. POST TENSION TENDONS TO 32,000 LBS.

Vermont Agency of Transportation
Barton Shop Drawings Rev 2A_STAMPED_FLATTENED.pdf
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ON: June 10, 2015
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BY: Todd A. Sumner DATE: 06/16/2015

NEXT BEAM GENERAL NOTES

1. MIN. CONCRETE STRENGTH AT 28 DAYS SHALL BE 6,000 PSI.
2. MIN. CONCRETE STRENGTH AT STRESS TRANSFER SHALL BE 4,000 PSI.
3. REINFORCING STEEL SHALL BE GR-60, ASTM A-615 (AASHTO M31) LEVEL II (DUAL COATED).
4. PRESTRESSING STRANDS SHALL CONFORM TO ASTM A-416 (AASHTO M203) AND SHALL CONSIST OF 0.60"ϕ x 270 KSI 7-WIRE LOW RELAXATION STRANDS.
5. PRESTRESSING STRANDS SHALL EACH BE PULLED TO HAVE A NET TENSION OF **44.0 K** AFTER ACCOUNTING FOR CHUCK SLIPPAGE. TENSION SHALL BE VERIFIED BY MEASURING STRAND ELONGATION. (SEE EXAMPLE ELONGATION CALCULATION AND TENSIONING PROCEDURE, THIS SHEET.)
6. ENDS OF PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH END OF NEXT BEAM STEMS (UNLESS NOTED OTHERWISE) AND COATED WITH TWO PART EPOXY PAINT SYSTEM.
7. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4" (UNLESS NOTED OTHERWISE).
8. THE TOP OF BEAMS SHALL RECEIVE A SMOOTH SCREED FINISH (UNLESS NOTED OTHERWISE).
9. SHEAR KEY SURFACES SHALL BE SAND BLASTED CLEAN.
10. BEAMS SHALL BE HANDLED AND ERECTED USING THE LIFTING LOOPS ONLY. RIGGING SHALL BE CONFIGURED SUCH THAT EQUAL AND VERTICAL FORCES ARE APPLIED TO EACH OF THE TWO LIFTING LOOPS AT EACH END OF THE BEAM. **THE PINS OF THE SHACKLES SHALL BE PLACED THROUGH THE LIFTING LOOPS. SEE DETAIL, THIS SHEET.** BEAMS SHALL BE STORED AND TRANSPORTED WITH TIMBER SUPPORTS WITHIN 2'-0" OF THE BEAM ENDS, UNLESS APPROVED BY J.P. CARRARA & SONS, INC.
11. MATERIAL SPECIFICATION AND MIX DESIGN SHALL CONFORM TO VERMONT SPEC. P510.02 AND P510.05 RESPECTIVELY.

    DESIGN MIX: J.P.C. BRIDGE MIX #4430M-NO DCI (SUBMITTED 3-21-2015)
12. QUALITY CONTROL PROCEDURES ARE IN ACCORDANCE WITH PCI REQUIREMENTS. J.P. CARRARA & SONS, INC. IS A PCI CERTIFIED PLANT.
13. CURING METHOD: AS SOON AS THE TOP OF BEAM IS FINISHED, A COVER OF INSULATED POLY. THE DESIRED CURING TEMPERATURE RANGE SHALL NOT DROP BELOW 50°F.) THE TEMPERATURE SHALL BE RECORDED BY AUTOMATIC SENSOR INSTRUMENTS ON GRAPH CHARTS, SPACED NOT MORE THAN 100' APART AND WILL CONTINUE UNTIL RELEASE STRENGTH IS ACHIEVED. EACH CHART SHALL BE MARKED WITH THE CASTING DATED AND LOCATION OF THE RECORDER. IF NECESSARY TO MAINTAIN CASTING BED TEMPERATURE PRIOR TO CONCRETE PLACEMENT OR TO ACCELERATE EARLY AGE STRENGTH GAIN, EXTERNAL RADIANT HEAT MAY BE EMPLOYED VIA HOT WATER DUCTS BENEATH AND WITHIN THE PERIPHERY OF THE CASTING BED. MAXIMUM CURING TEMPERATURE SHALL NOT EXCEED PCI SPECIFIED LIMITS.
14. CONTRACTOR SHALL PROVIDE APPROPRIATE WATERPROOFING TO GROUTED AND/OR EPOXIED SHEAR KEYS. J.P. CARRARA & SONS, INC. SHALL NOT BE HELD LIABLE FOR PROBLEMS ASSOCIATED WITH MOISTURE INFILTRATING GROUTED AND/OR EPOXIED SHEAR KEYS.
15. MANUFACTURING TOLERANCES SHALL COMPLY WITH PCI MNL-116. SINCE PRESTRESSED PRODUCT CAMBER IS A RESULT OF REQUIRED DESIGN LOADS AND SPAN LENGTH, CAMBER TOLERANCES SHALL NOT APPLY.

EXAMPLE PRESTRESSING STRAND ELONGATION CALC. AND TENSIONING

(NOT TO BE USED FOR CONSTRUCTION)

SIZE & GRADE: 0.60"ϕ x 270 KSI
AREA: 0.217 IN^2
TENSION: 44,000 LB. EACH STRAND
GRIP-TO-GRIP: 252'-0" = 252.00'
Es = 28,600,000 PSI (ASSUMED FOR THESE CALCULATIONS; VALUE TO BE OBTAINED FOR STRAND SPOOL ACTUALLY USED)

EXAMPLE:

$$\Delta = \frac{PL}{AE} = \frac{(44{,}000 - 3{,}000) \times 252.00 \times 12}{0.217 \times 28{,}600{,}000} = 19.977"$$

THEREFORE: (TOLERANCES ± 5%)
Δ UPPER LIMIT = 1.05 x 19.977" = 20.98" = 21"
Δ LOWER LIMIT = 0.95 x 19.977" = 18.98" = 19"

EXTRA FORCE REQUIRED TO COMPENSATE FOR 1/2" CHUCK SLIPPAGE:

$$\Delta P = \frac{0.5 \times 41{,}000}{19.977} = 1{,}026 \text{ LBS.}$$

TOTAL TENSIONING FORCE = 44,000 + 1,026 = 45,026 LBS.

ADDITIONALLY, INCREASED ELONGATION AND THE CORRESPONDING FORCE DUE TO FORM SHORTENING SHALL BE ACCOUNTED FOR IN THE CALCULATIONS USED FOR CONSTRUCTION PER PROVISION PCI MNL-116 5.3.11.3.

STRAND TENSIONING PROCEDURE:

1. PULL EACH STRAND INITIALLY TO 3,000# LBS. AND MARK STRAND.
2. THEN PULL EACH STRAND TO A TOTAL TENSION OF 45,026# LBS. AND MEASURE ELONGATION AFTER SEATING. IT MUST BE BETWEEN 19"# AND 21"#.

   # NOTE: FORCES READ ON STRESSING JACK GAUGES MUST BE MADE TO CORRESPOND TO ABOVE VALUES BASED ON CALIBRATION DATA FOR SPECIFIC JACK USED.
3. STRANDS IN BOTTOM TWO ROWS SHALL BE RE-PULLED TO VERIFY SHORTENING EFFECT OF SELF STRESSING BED. RE-PULL FORCE SHALL NOT INCLUDE OVER-PULL FOR SHORTENING.

DESIGN LIVE LOAD: HL-93

SHOP DRAWING REVIEW

☒ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☐ APPROVED AS NOTED

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CLD Consulting Engineers
560 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 120174
Reviewed by: SRB
Date: 06/11/2015

5/28/2015 REVISED AS NOTED T.D.

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

J.P. Sicard
CONTRACTOR
BARTON, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ORLEANS

TOWN OF BARTON
ROARING BROOK ROAD TH #2, RURAL MINOR COLLECTOR
BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)

COVER SHEET

DATE: FEB. 25, 2015
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23462-015
DWG. NO: C1

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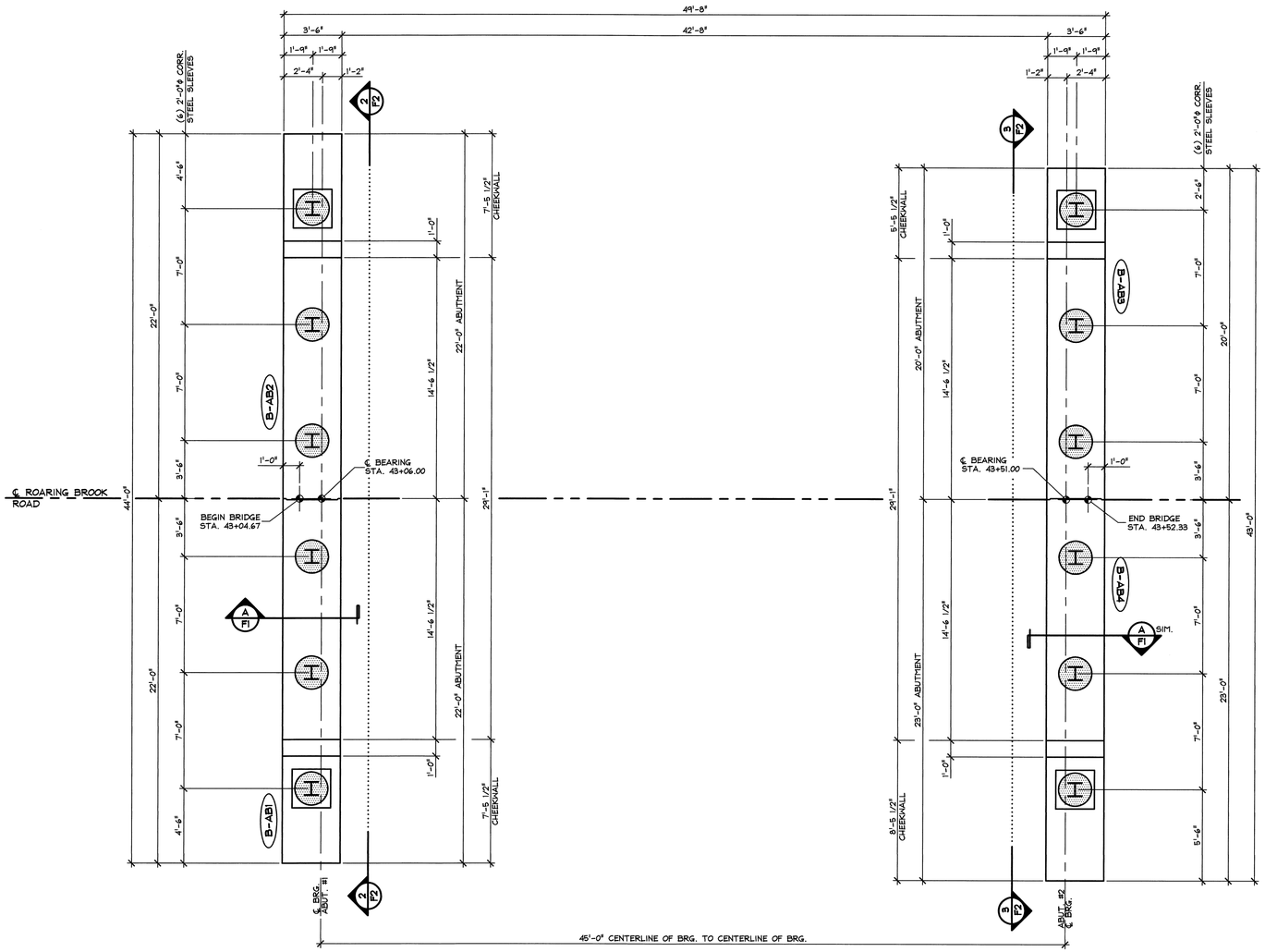
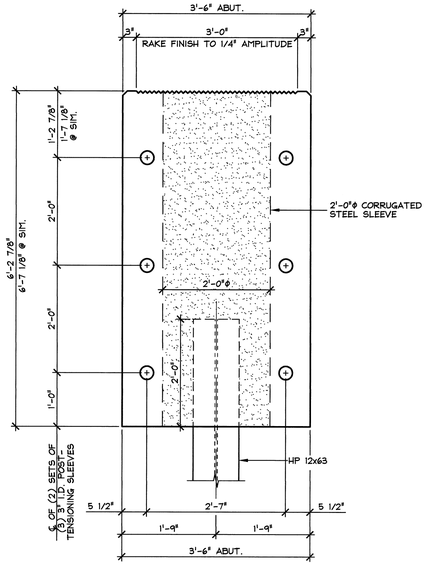


1 / F1 PRECAST ABUTMENT LAYOUT
1/4" = 1'-0"



A / F1 ABUTMENT SECTION
3/4" = 1'-0"

Vermont Agency of Transportation

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BY: Todd A. Sumner DATE: 06/16/2015

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SHOP DRAWING REVIEW

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CLD Consulting Engineers
540 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 120174
Reviewed by: SRB
Date: 06/11/2015

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J.P. Sicard
CONTRACTOR
BARTON, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ORLEANS

TOWN OF BARTON
ROARING BROOK ROAD TH #2, RURAL MINOR COLLECTOR
BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)

PRECAST ABUTMENT LAYOUT

DATE: FEB. 25, 2015
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23462-015
DWG. NO: F1

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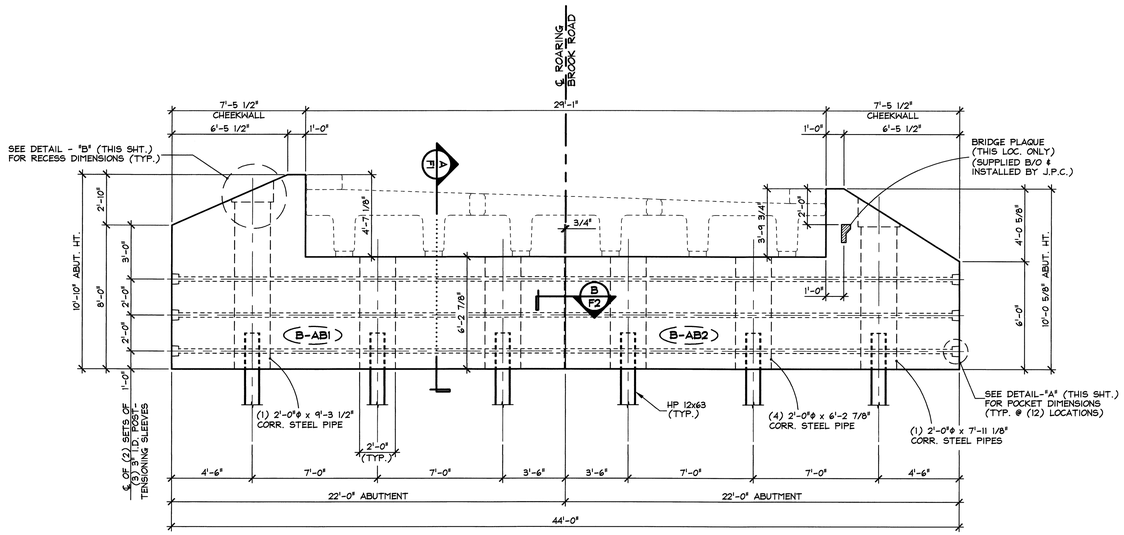
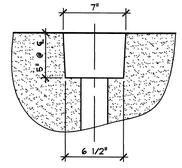
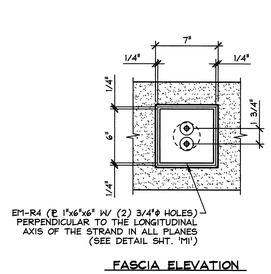


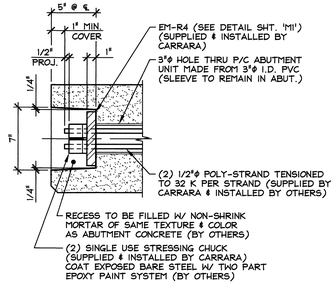
2 / F2 PRECAST ABUTMENT #1 ELEVATION
1/4" = 1'-0"



PLAN OF POCKET

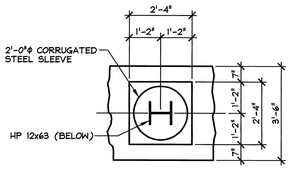


FASCIA ELEVATION

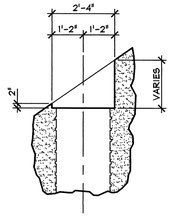


SECTION AT CENTERLINE

DETAIL - "A"
1 1/2" = 1'-0"



PLAN VIEW
3/8" = 1'-0"



DETAIL - "B"
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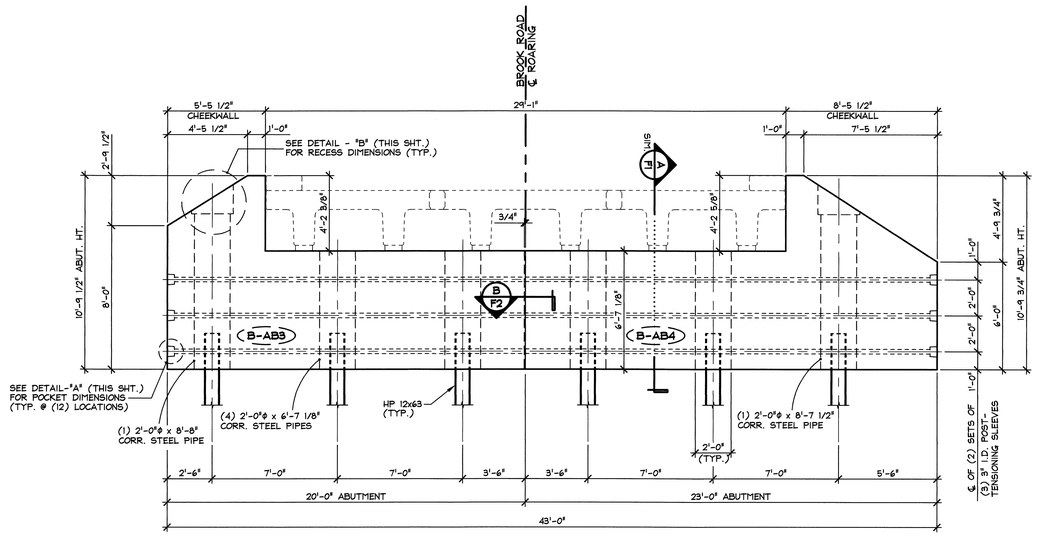
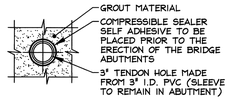
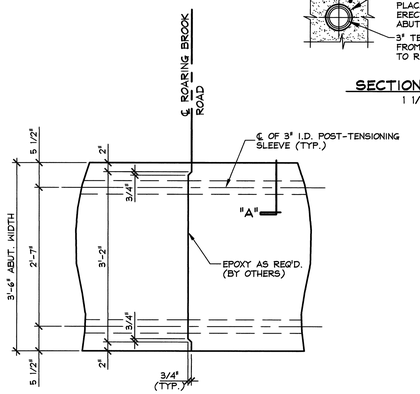


3 / F2 PRECAST ABUTMENT #2 ELEVATION
1/4" = 1'-0"



SECTION - "A"
1 1/2" = 1'-0"



B / F2 CONSTRUCTION JOINT SECTION @ P.T. SLEEVE (ABUTMENT) 3/4" = 1'-0"

Vermont Agency of Transportation

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BY: Todd A. Sumner DATE: 06/16/2015

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CLD Consulting Engineers
140 Commercial Street
Manchester, NH 03101
603-669-8223

Job Number: 120174
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BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)

PRECAST ABUTMENT ELEVATIONS & DETAILS

DATE: FEB. 25, 2015
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23462-015
DWG. NO: F2

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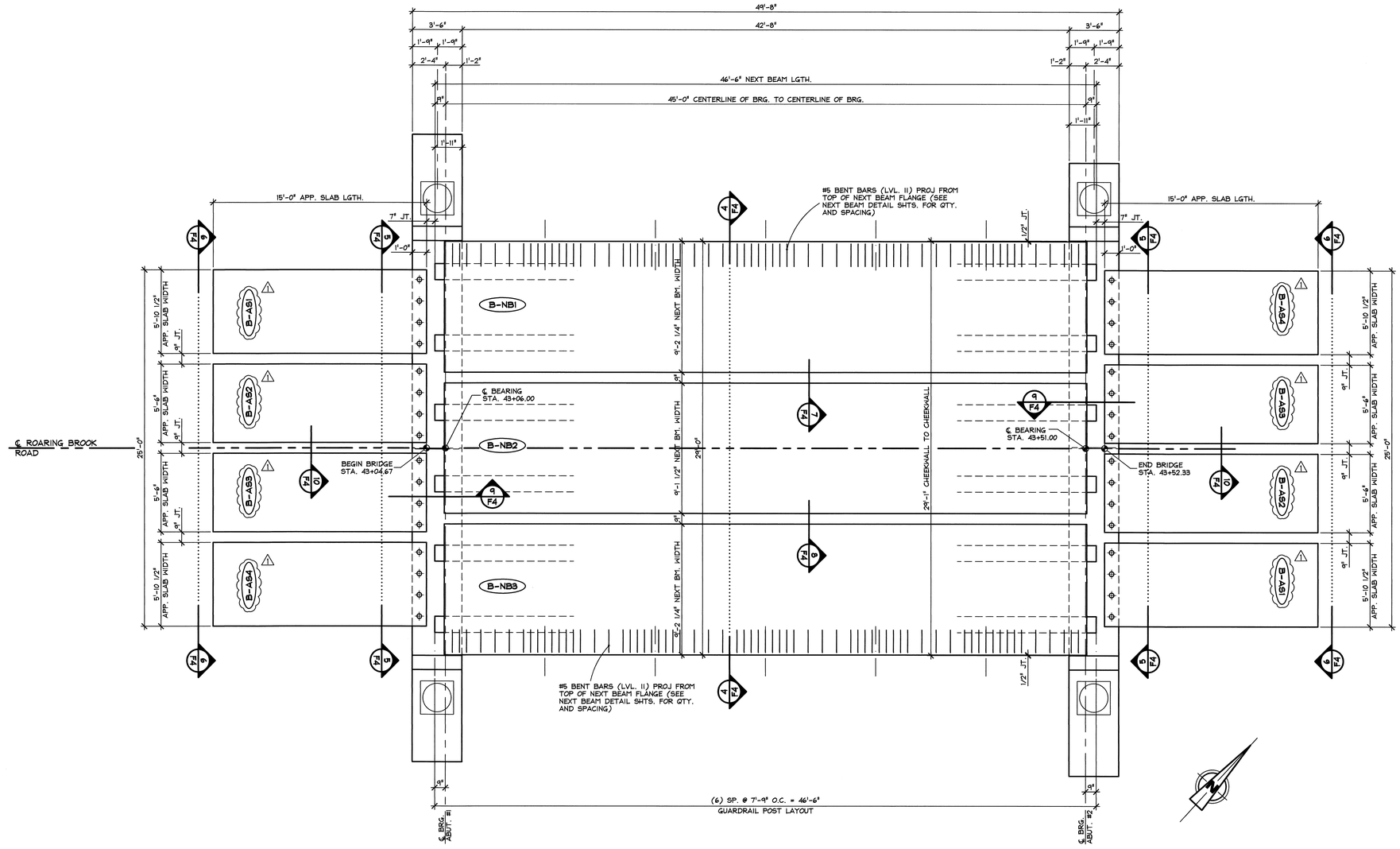

1 / F3 PRESTRESSED NEXT BEAM & APPROACH SLAB LAYOUT

1/4" = 1'-0"

Vermont Agency of Transportation

Barton Shop Drawings Rev 24_STAMPED_FLATTENED.pdf

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1 5/28/2015 REVISED AS NOTED T.D.

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BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)

PRECAST NEXT BEAM & APPROACH SLAB LAYOUT

DATE: FEB. 25, 2015
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23462-015
DWG. NO: F3

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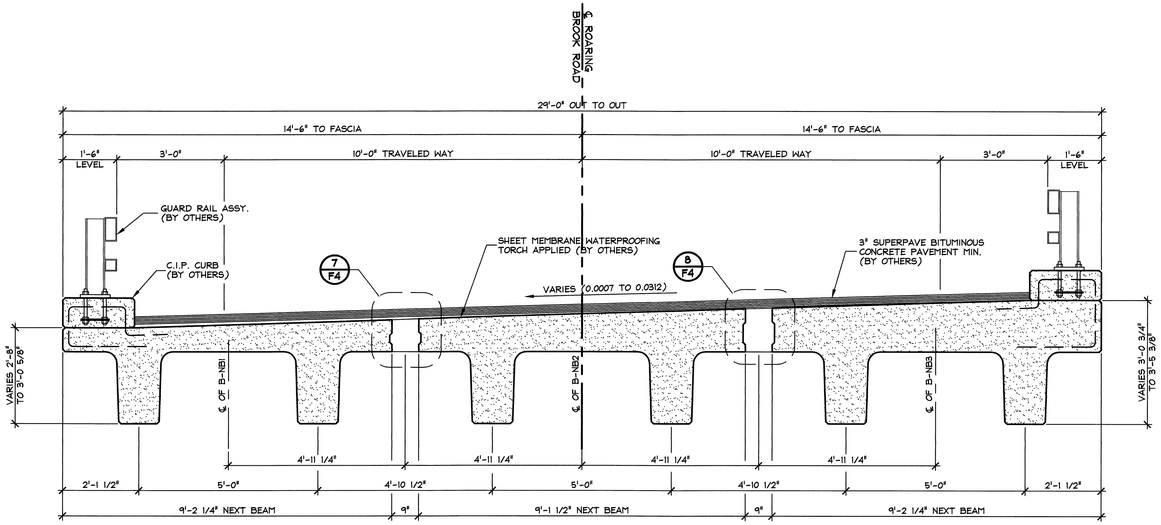
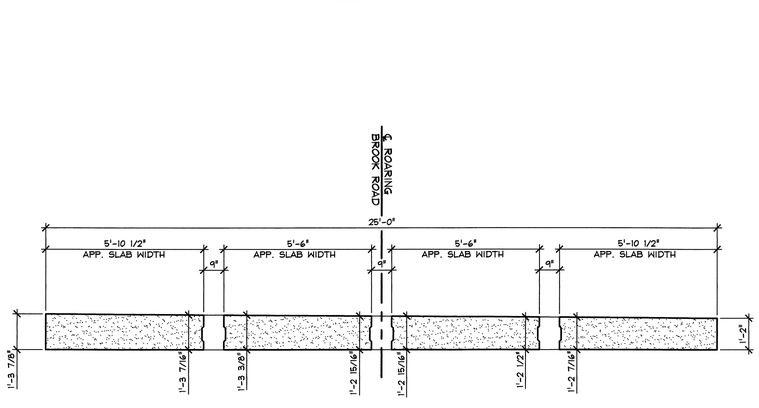
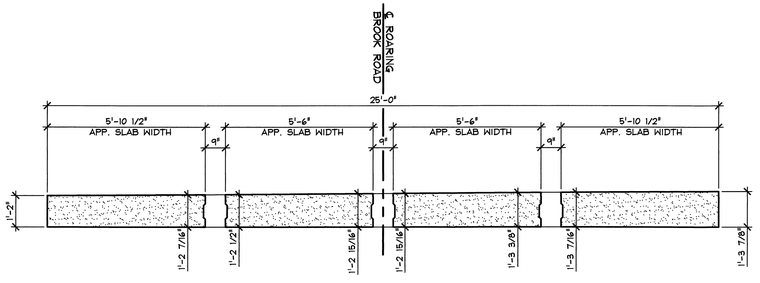


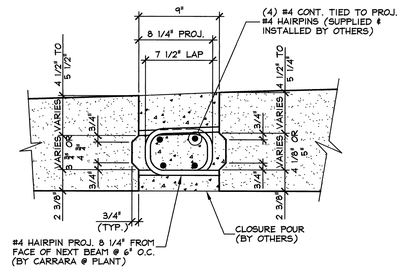
4/F4 TRANSVERSE SECTION THRU NEXT BEAMS
1/2" = 1'-0"



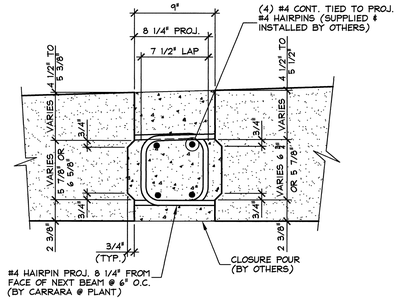
5/F4 SECTION AT APPROACH SLABS (ABUT. #1 & ABUT. #2)
3/8" = 1'-0"



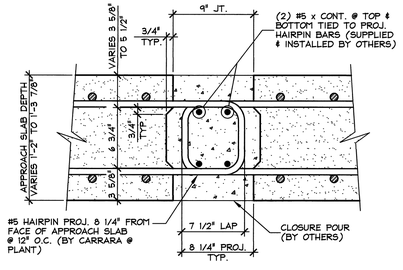
6/F4 SECTION AT APPROACH SLABS (ABUT. #1 & ABUT. #2)
3/8" = 1'-0"



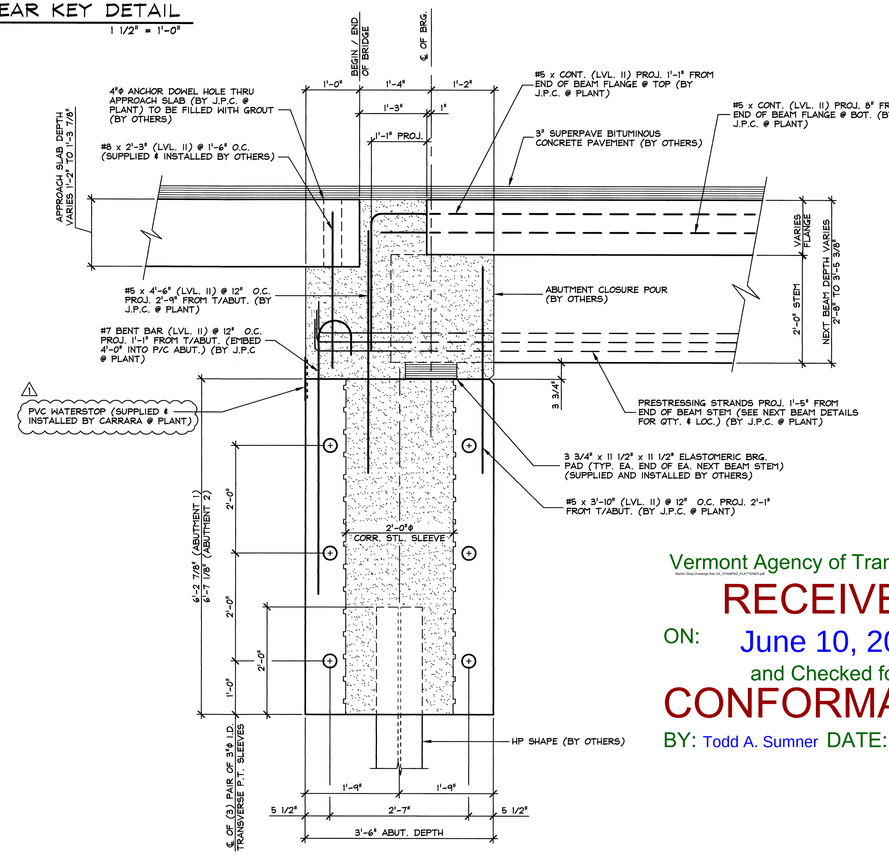
7/F4 SHEAR KEY DETAIL
1 1/2" = 1'-0"



8/F4 SHEAR KEY DETAIL
1 1/2" = 1'-0"



10/F4 APPROACH SLAB CLOSURE POUR
1 1/2" = 1'-0"



9/F4 ABUTMENT SECTION
3/4" = 1'-0"

SHOP DRAWING REVIEW

[X] REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

[ ] REJECTED [ ] REVISE AND RESUBMIT [ ] APPROVED AS NOTED

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CLD Consulting Engineers
540 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 120174
Reviewed by: SRB
Date: 06/11/2015

Vermont Agency of Transportation
RECEIVED
ON: June 10, 2015
and Checked for
CONFORMANCE
BY: Todd A. Sumner DATE: 06/16/2015

⚠ 5/28/2015 REVISED AS NOTED T.D.

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2484 OSE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

J.P. Sicard
CONTRACTOR
BARTON, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ORLEANS

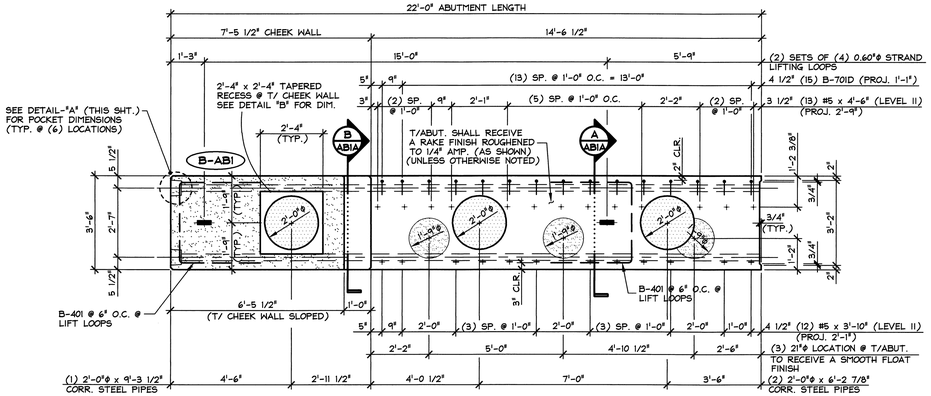
DATE: FEB. 25, 2015
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23462-015

TOWN OF BARTON
ROARING BROOK ROAD TH #2, RURAL MINOR COLLECTOR
BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)

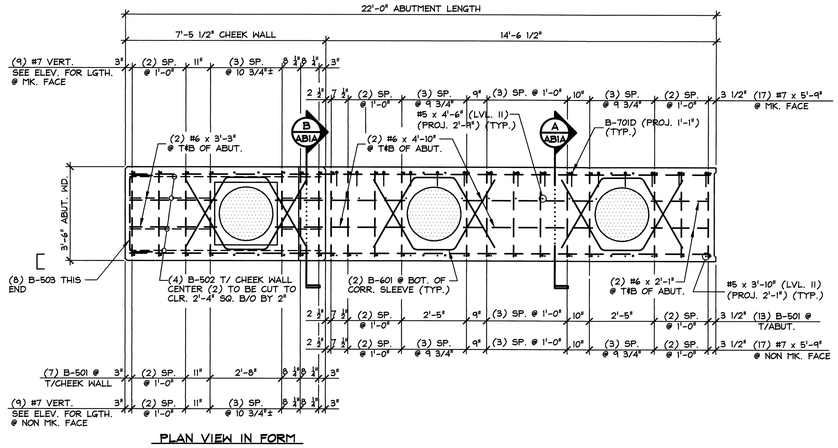
SECTIONS AND DETAILS

DWG. NO: F4

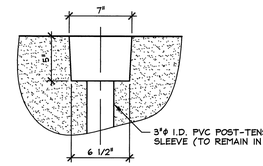
F:\VT-Bridges\23462-14 Barton\23462-F4.dwg, 6/10/2015 9:46:08 AM



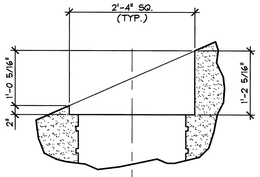
PLAN VIEW IN FORM



PLAN VIEW IN FORM

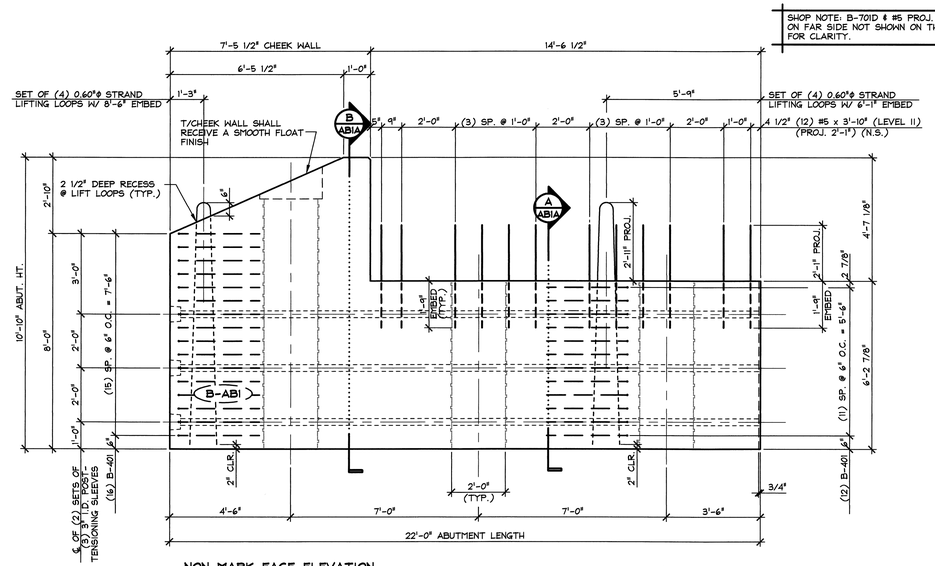


DETAIL - "A"
1 1/2" = 1'-0"



DETAIL - "B"
3/4" = 1'-0"

SHOP NOTE: B-701D & #5 PROJ. 2'-9" ON FAR SIDE NOT SHOWN ON THIS VIEW FOR CLARITY.

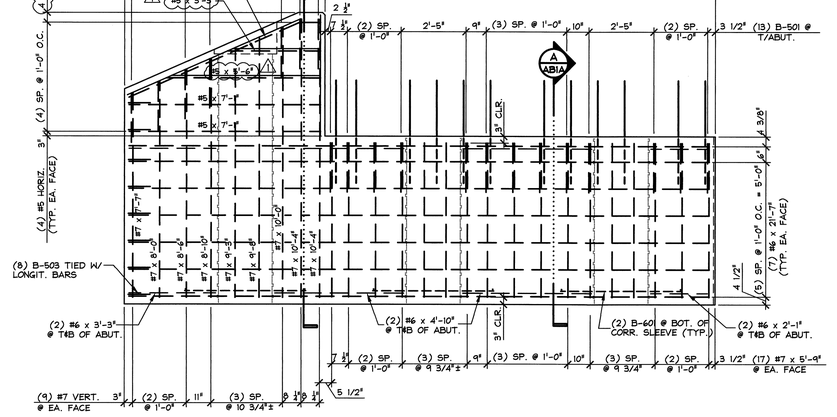


NON MARK FACE ELEVATION

1 ABI ABUTMENT DIMENSIONAL DETAILS
3/8" = 1'-0"

SHOP NOTE:
28 DAYS = 5,000 PSI
RELEASE = 5,000 PSI

MIX DESIGN:
MIX NO. 425M-NO DCI
APPROVED 3-21-2015



NON MARK FACE ELEVATION

2 ABI ABUTMENT REINFORCING DETAILS
3/8" = 1'-0"

SHOP NOTE:
ALL EDGES OF ABUTMENT SHALL RECEIVE A 1" CHAMFER (U.N.O.)

MARK: B-ABI	QTY.: 1	WT.: 37.33 T	VOL.: 18.21 cy

MATERIAL LIST / ABUTMENT

ITEM	MARK	DESCRIPTION	QTY.
1	B-401	#4 BENT BAR (LEVEL I)	28
2	B-501	#5 BENT BAR (LEVEL I)	20
3	B-502	#5 BENT BAR (LEVEL I)	4
4	B-503	#5 BENT BAR (LEVEL I)	8
5	B-601	#6 BENT BAR (LEVEL I)	6
6	B-701D	#5 BENT BAR (LEVEL II, DUAL COATED)	15
7		#5 x 3'-10" (LEVEL II, DUAL COATED)	12
8		#5 x 4'-6" (LEVEL II, DUAL COATED)	13
9		#5 x 3'-3" (LEVEL I) ⚠	2
10		#5 x 5'-6" (LEVEL I) ⚠	2
11		#5 x 7'-1" (LEVEL I)	4
12		#6 x 2'-1" (LEVEL I)	4
13		#6 x 3'-3" (LEVEL I)	4
14		#6 x 4'-10" (LEVEL I)	8
15		#6 x 21'-7" (LEVEL I)	14
16		#7 x 5'-9" (LEVEL I)	34
17		#7 x 7'-7" (LEVEL I)	2
18		#7 x 8'-0" (LEVEL I)	2
19		#7 x 8'-6" (LEVEL I)	2
20		#7 x 8'-10" (LEVEL I)	2
21		#7 x 10'-0" (LEVEL I)	2
22		#7 x 10'-4" (LEVEL I)	4
23		#7 x 9'-3" (LEVEL I)	2
24		#7 x 9'-8" (LEVEL I)	2
25		SET OF (4) 0.60ϕ STRAND LIFTING LOOPS	2
26		2'-0ϕ x 6'-2 7/8" CORRUGATED STEEL PIPE (GALV.)	2
27		2'-0ϕ x 9'-3 1/2" CORRUGATED STEEL PIPE (GALV.)	1

Vermont Agency of Transportation
Barton Shop Drawings Rev 24_STAMPED_FLATTENED.pdf
RECEIVED
ON: June 10, 2015
and Checked for
CONFORMANCE
BY: Todd A. Sumner DATE: 06/16/2015

SHOP DRAWING REVIEW

[X] REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

[ ] REJECTED [ ] REVISE AND RESUBMIT [ ] APPROVED AS NOTED

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CLD Consulting Engineers
540 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 120174
Reviewed by: SRB
Date: 06/11/2015

⚠ 5/26/2015 REVISED AS NOTED T.D.

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2484 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ORLEANS

TOWN OF BARTON
ROARING BROOK ROAD TH #2, RURAL MINOR COLLECTOR
BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)

PRECAST ABUTMENT DETAILS

DATE: FEB. 25, 2015
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23462-015
DWG. NO: AB1

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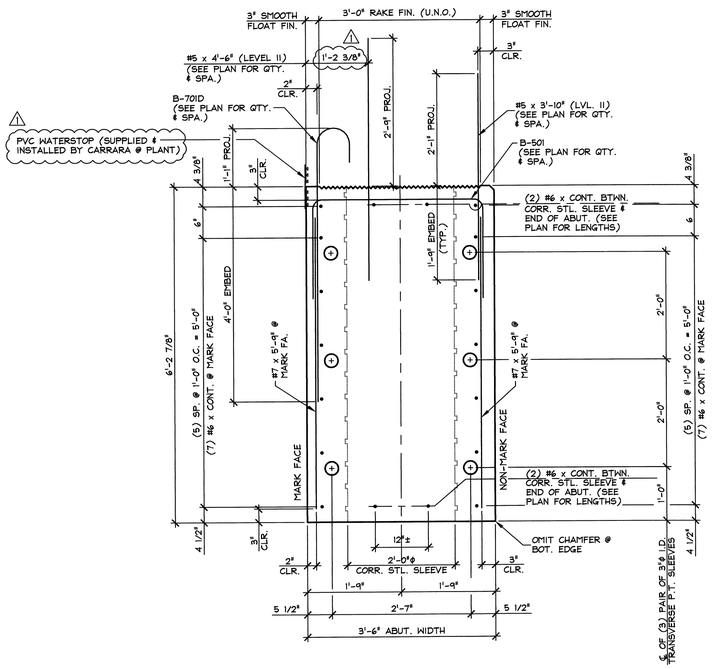
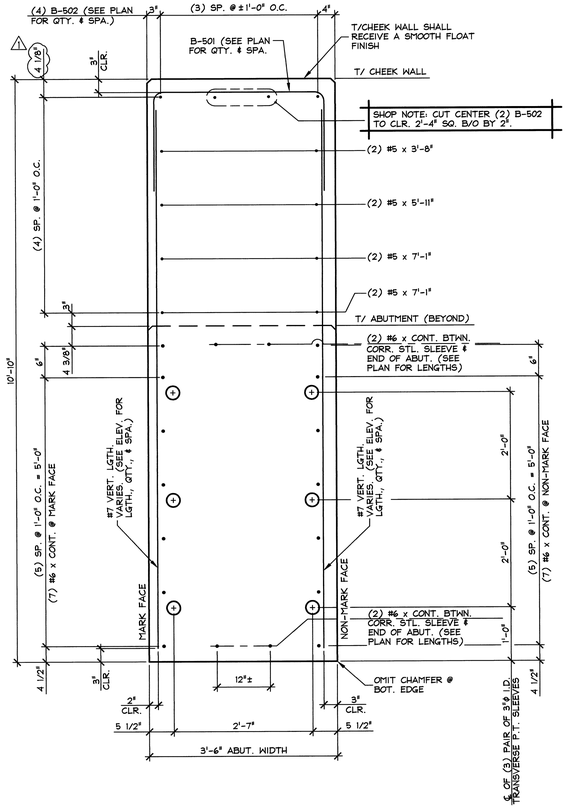


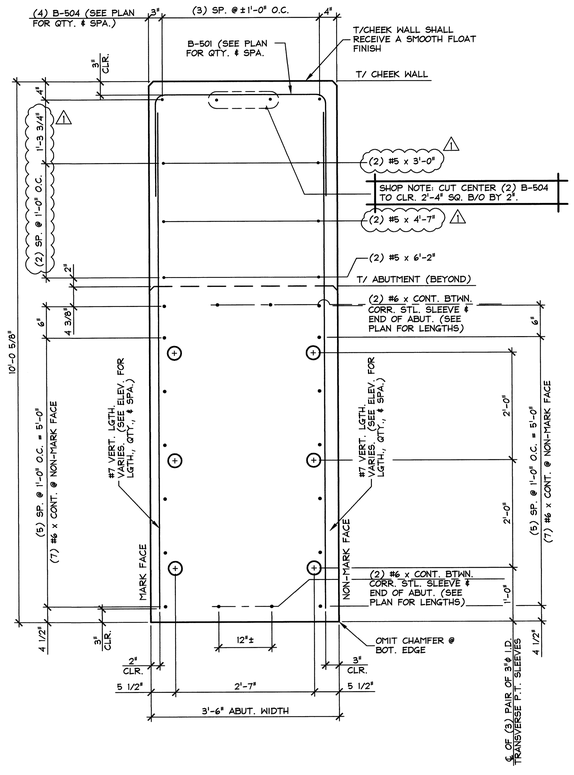
A ABIA ABUTMENT SECTION (B-AB1 & B-AB2) 3/4" = 1'-0"

SHOP NOTE:
ALL EDGES OF ABUTMENT SHALL RECEIVE A 1" CHAMFER (U.N.O.)



B ABIA ABUTMENT SECTION (B-AB1) 3/4" = 1'-0"

SHOP NOTE:
ALL EDGES OF ABUTMENT SHALL RECEIVE A 1" CHAMFER (U.N.O.)



C ABIA ABUTMENT SECTION (B-AB2) 3/4" = 1'-0"

SHOP NOTE:
ALL EDGES OF ABUTMENT SHALL RECEIVE A 1" CHAMFER (U.N.O.)

Vermont Agency of Transportation

Barton Shop Drawings Rev 04_STAMPED_FLATTENED.pdf

RECEIVED

ON: June 10, 2015

and Checked for

CONFORMANCE

BY: Todd A. Sumner DATE: 06/16/2015

SHOP DRAWING REVIEW

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CLD Consulting Engineers
540 Commercial Street
Manchester, NH 03101
603-669-6223

Job Number: 120174
Reviewed by: SRB
Date: 06/11/2015

⚠ 5/28/2015 REVISED AS NOTED T.D.

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 OKE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ORLEANS

TOWN OF BARTON
ROARING BROOK ROAD TH #2, RURAL MINOR COLLECTOR
BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)

PRECAST ABUTMENT SECTIONS

DATE: FEB. 25, 2015
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23462-015
DWG. NO: AB1A

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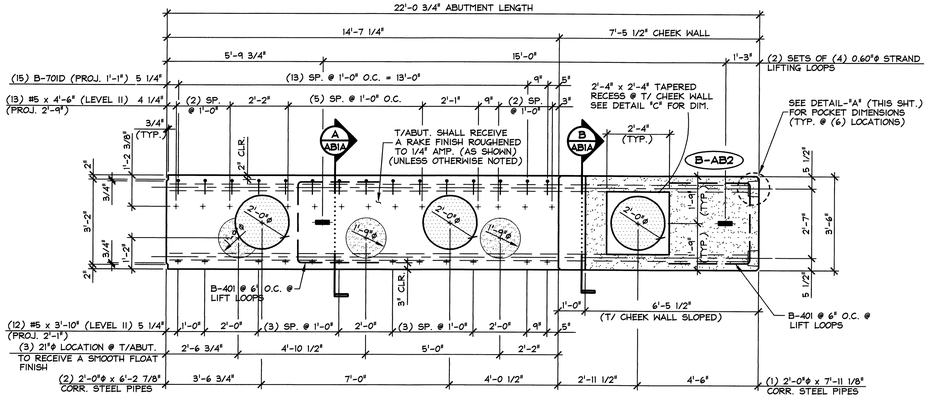
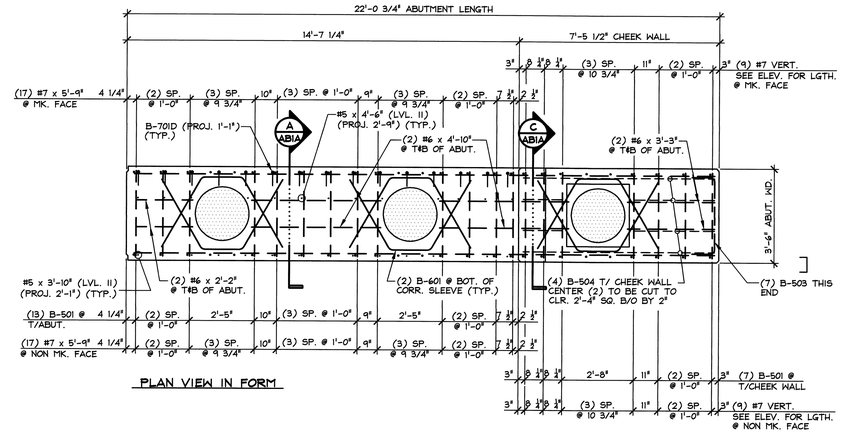
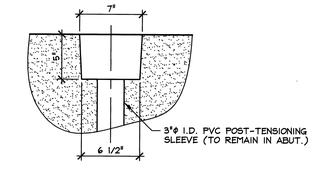


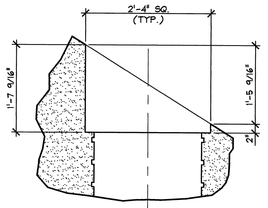
PLAN VIEW IN FORM



PLAN VIEW IN FORM

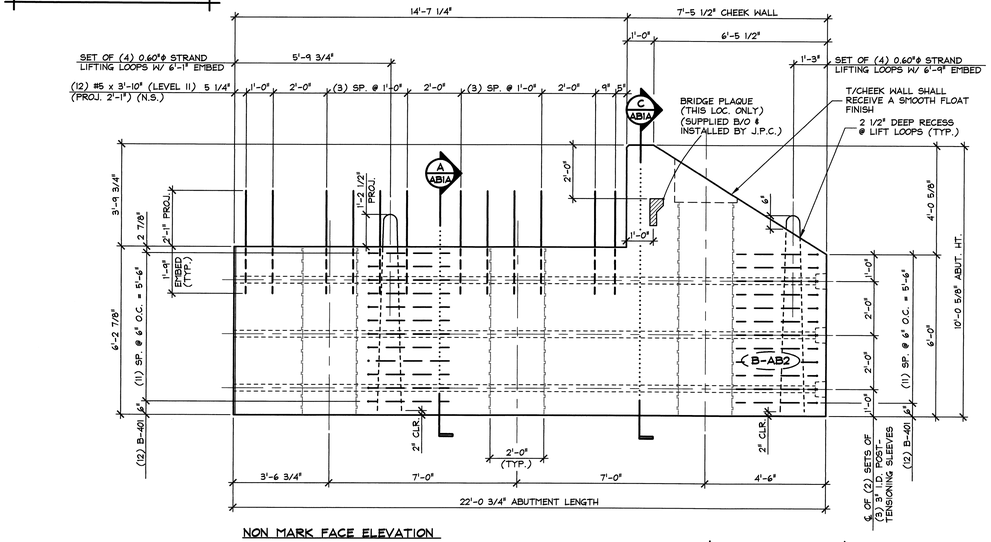


DETAIL - "A"
1 1/2" = 1'-0"



DETAIL - "C"
3/4" = 1'-0"

SHOP NOTE: B-701D & #5 PROJ. 2'-9" ON FAR SIDE NOT SHOWN ON THIS VIEW FOR CLARITY.

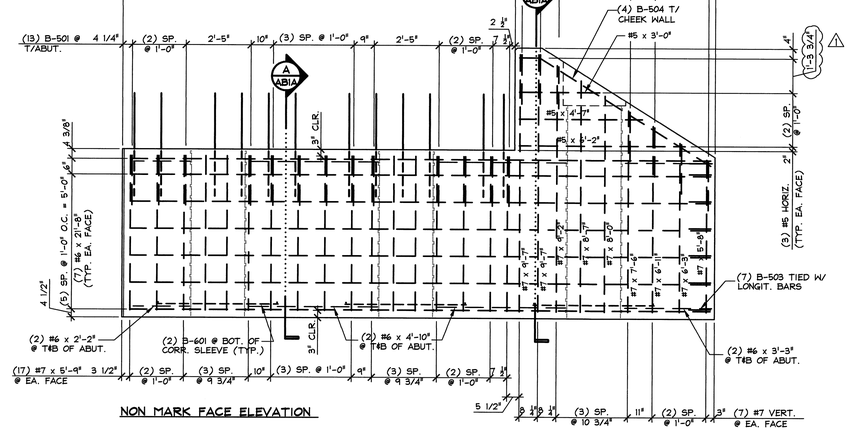


NON MARK FACE ELEVATION

1 AB2 ABUTMENT DIMENSIONAL DETAILS
3/8" = 1'-0"

SHOP NOTE:
28 DAYS = 5,000 PSI
RELEASE = 5,000 PSI

MIX DESIGN:
MIX NO. 425M-NO DCI
APPROVED 3-21-2015



NON MARK FACE ELEVATION

2 AB2 ABUTMENT REINFORCING DETAILS
3/8" = 1'-0"

SHOP NOTE:
ALL EDGES OF ABUTMENT SHALL RECEIVE A 1" CHAMFER (U.N.O.)

MARK: B-AB2	QTY.: 1	WT.: 35.13 T	VOL.: 17.14 cy

MATERIAL LIST / ABUTMENT

ITEM	MARK	DESCRIPTION	QTY.
1	B-401	#4 BENT BAR (LEVEL I)	24
2	B-501	#5 BENT BAR (LEVEL I)	20
3	B-504	#5 BENT BAR (LEVEL I)	4
4	B-503	#5 BENT BAR (LEVEL I)	7
5	B-601	#6 BENT BAR (LEVEL I)	6
6	B-701D	#5 BENT BAR (LEVEL II, DUAL COATED)	15
7		#5 x 3'-10" (LEVEL II, DUAL COATED)	12
8		#5 x 4'-6" (LEVEL II, DUAL COATED)	13
9		#5 x 3'-0" (LEVEL I)	2
10		#5 x 4'-7" (LEVEL I)	2
11		#5 x 6'-2" (LEVEL I)	2
12		#6 x 2'-2" (LEVEL I)	4
13		#6 x 3'-3" (LEVEL I)	4
14		#6 x 4'-10" (LEVEL I)	8
15		#6 x 21'-8" (LEVEL I)	14
16		#7 x 5'-9" (LEVEL I)	34
17		#7 x 5'-8" (LEVEL I)	2
18		#7 x 6'-3" (LEVEL I)	2
19		#7 x 6'-11" (LEVEL I)	2
20		#7 x 7'-6" (LEVEL I)	2
21		#7 x 9'-2" (LEVEL I)	2
22		#7 x 9'-7" (LEVEL I)	4
23		#7 x 8'-7" (LEVEL I)	2
24		#7 x 8'-0" (LEVEL I)	2
25		SET OF (4) 0.60"ø STRAND LIFTING LOOPS	2
26		2'-0"ø x 6'-2 7/8" CORRUGATED STEEL PIPE (GALV.)	2
27		2'-0"ø x 7'-11 1/8" CORRUGATED STEEL PIPE (GALV.)	1

Vermont Agency of Transportation

RECEIVED
ON: June 10, 2015
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CONFORMANCE
BY: Todd A. Sumner DATE: 06/16/2015

SHOP DRAWING REVIEW

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CLD Consulting Engineers, 340 Commercial Street, Manchester, NH 03101, 603-668-8223
Job Number: 120174
Reviewed by: SRB
Date: 06/11/2015

⚠ 5/28/2015 REVISED AS NOTED T.D.

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

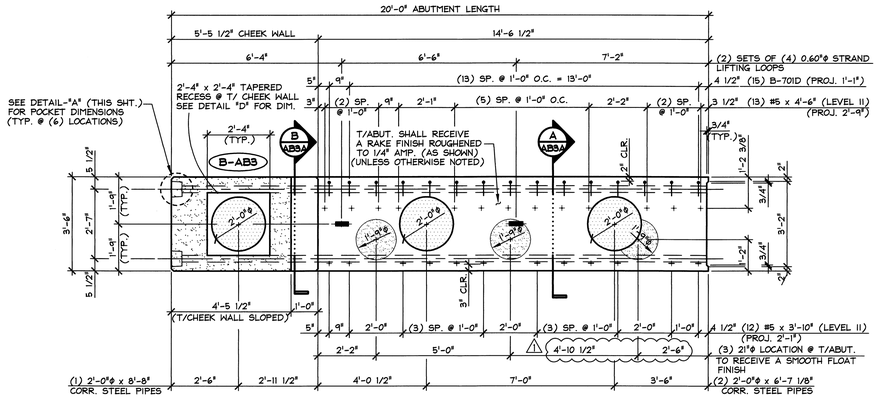
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ORLEANS

TOWN OF BARTON
ROARING BROOK ROAD TH #2, RURAL MINOR COLLECTOR
BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)

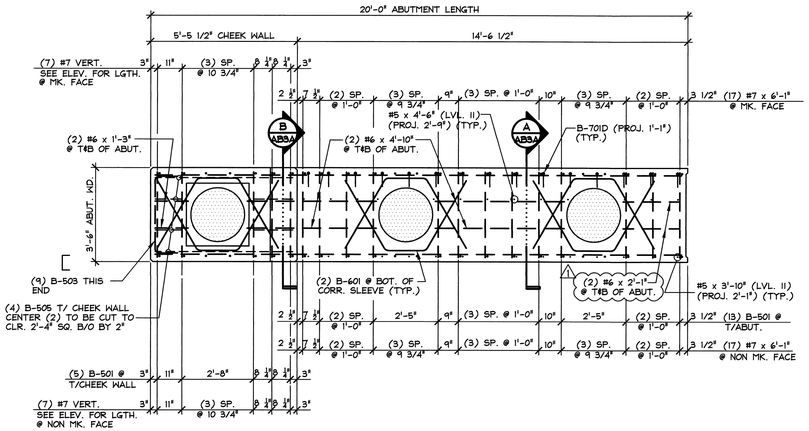
PRECAST ABUTMENT DETAILS

DATE: FEB. 25, 2015
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23462-015
DWG. NO: AB2

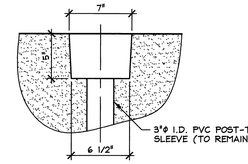
F:\VT-Bridges\23462-14 Barton\23462-AB2.dwg, 6/10/2015 10:22:53 AM



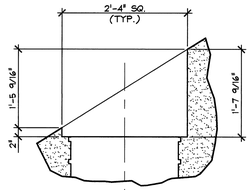
PLAN VIEW IN FORM



PLAN VIEW IN FORM

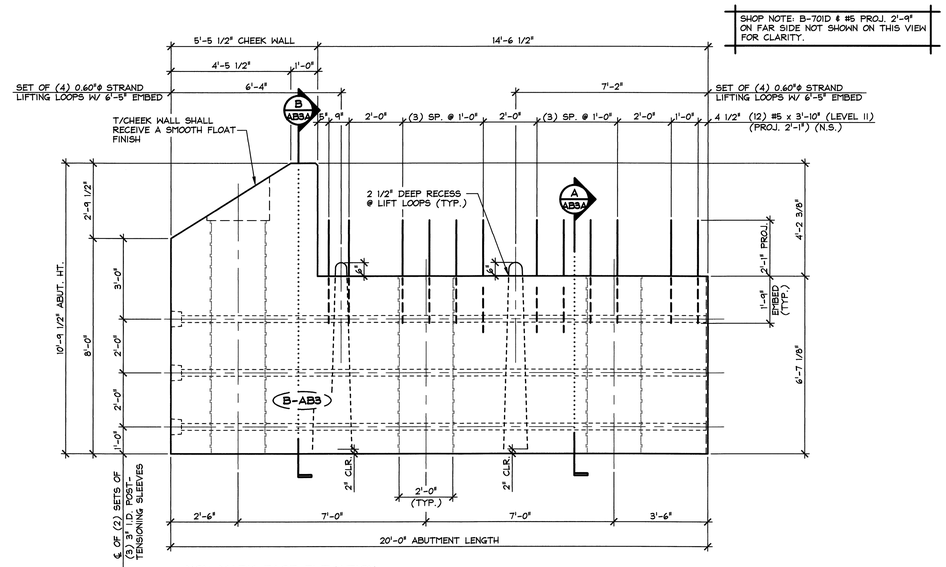


DETAIL - "A"
1 1/2" = 1'-0"



DETAIL - "D"
3/4" = 1'-0"

SHOP NOTE: B-701D & #5 PROJ. 2'-9" ON FAR SIDE NOT SHOWN ON THIS VIEW FOR CLARITY.

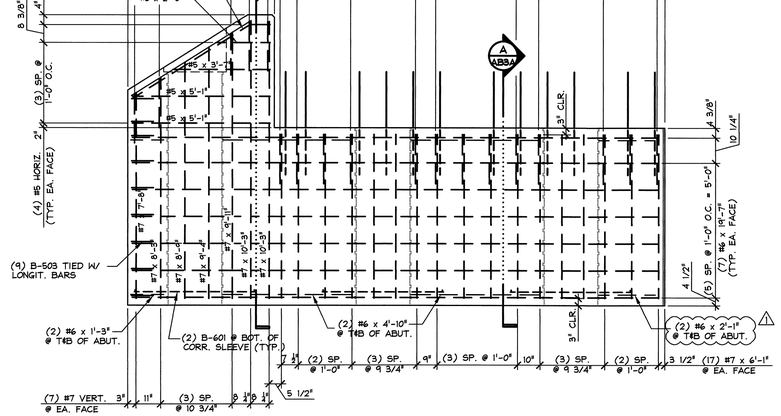


NON MARK FACE ELEVATION

1 AB3 ABUTMENT DIMENSIONAL DETAILS
3/8" = 1'-0"

SHOP NOTE:
28 DAYS = 5,000 PSI
RELEASE = 5,000 PSI

MIX DESIGN:
MIX NO. 425M-NO DCI
APPROVED 3-21-2015



NON MARK FACE ELEVATION

2 AB3 ABUTMENT REINFORCING DETAILS
3/8" = 1'-0"

SHOP NOTE:
ALL EDGES OF ABUTMENT SHALL RECEIVE A 1" CHAMFER (U.N.O.)

MARK: B-AB3	QTY.: 1	WT.: 33.63 T	VOL.: 16.61 cy

MATERIAL LIST / ABUTMENT

ITEM	MARK	DESCRIPTION	QTY.
1			
2	B-501	#5 BENT BAR (LEVEL I)	18
3	B-505	#5 BENT BAR (LEVEL I)	4
4	B-503	#5 BENT BAR (LEVEL I)	9
5	B-601	#6 BENT BAR (LEVEL I)	6
6	B-701D	#5 BENT BAR (LEVEL II, DUAL COATED)	15
7		#5 x 3'-10" (LEVEL II, DUAL COATED)	12
8		#5 x 4'-6" (LEVEL II, DUAL COATED)	13
9		#5 x 2'-0" (LEVEL I)	2
10		#5 x 3'-7" (LEVEL I)	2
11		#5 x 5'-1" (LEVEL I)	4
12		#6 x 2'-1" (LEVEL I) ⚠	4
13		#6 x 1'-3" (LEVEL I)	4
14		#6 x 4'-10" (LEVEL I)	8
15		#6 x 19'-7" (LEVEL I)	14
16		#7 x 6'-1" (LEVEL I)	34
17		#7 x 7'-8" (LEVEL I)	2
18		#7 x 8'-3" (LEVEL I)	2
19		#7 x 9'-11" (LEVEL I)	2
20		#7 x 10'-3" (LEVEL I)	4
21		#7 x 8'-9" (LEVEL I)	2
22		#7 x 9'-4" (LEVEL I)	2
23		SET OF (4) 0.60"ø STRAND LIFTING LOOPS	2
24		2'-0"ø x 6'-7 1/8" CORRUGATED STEEL PIPE (GALV.)	2
25		2'-0"ø x 8'-8" CORRUGATED STEEL PIPE (GALV.)	1

Vermont Agency of Transportation
Barton Shop Drawings Rev 2A_STAMPED_FLATTENED.pdf

RECEIVED
ON: June 10, 2015
and Checked for
CONFORMANCE
BY: Todd A. Sumner DATE: 06/16/2015

SHOP DRAWING REVIEW

☒ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☐ APPROVED AS NOTED

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CLD Consulting Engineers
540 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 120174
Reviewed by: SRB
Date: 06/11/2015

⚠ 5/28/2015 REVISED AS NOTED T.D.

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

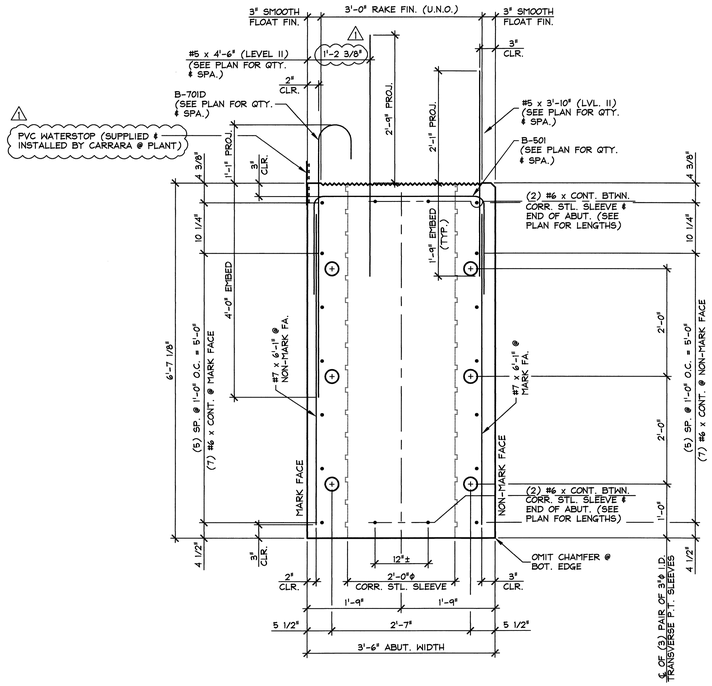
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ORLEANS

TOWN OF BARTON
ROARING BROOK ROAD TH #2, RURAL MINOR COLLECTOR
BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)

PRECAST ABUTMENT DETAILS

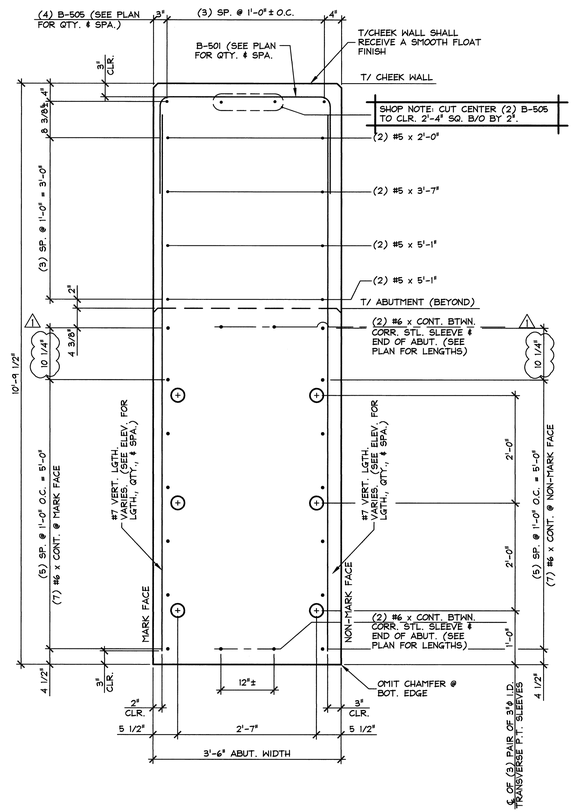
DATE: FEB. 25, 2015
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23462-015
DWG. NO: AB3

F:\VT-Bridges\23462.14 Barton\23462-AB3.dwg, 6/10/2015 10:35:51 AM



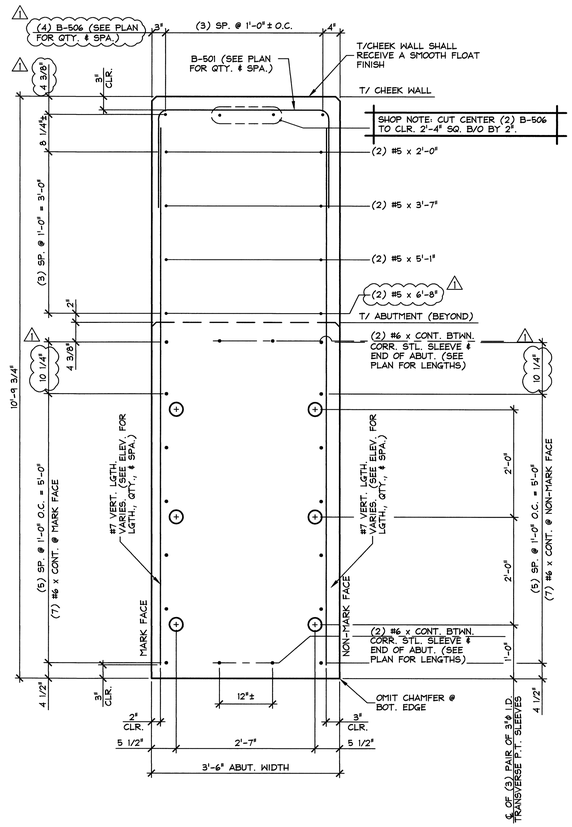
A AB3A ABUTMENT SECTION (B-AB3 & B-AB4) 3/4" = 1'-0"

SHOP NOTE:
ALL EDGES OF ABUTMENT SHALL RECEIVE A 1" CHAMFER (U.N.O.)



B AB3A ABUTMENT SECTION (B-AB3) 3/4" = 1'-0"

SHOP NOTE:
ALL EDGES OF ABUTMENT SHALL RECEIVE A 1" CHAMFER (U.N.O.)



C AB3A ABUTMENT SECTION (B-AB4) 3/4" = 1'-0"

SHOP NOTE:
ALL EDGES OF ABUTMENT SHALL RECEIVE A 1" CHAMFER (U.N.O.)

Vermont Agency of Transportation

Barton Shop Drawings Rev 2A_STAMPED_FLATTENED.pdf

RECEIVED
ON: June 10, 2015
and Checked for
CONFORMANCE
BY: Todd A. Sumner DATE: 06/16/2015

SHOP DRAWING REVIEW

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CLD Consulting Engineers
540 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 120174
Reviewed by: SRB
Date: 06/11/2015

⚠ 5/28/2015 REVISED AS NOTED T.D.

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF ORLEANS	DATE: FEB. 25, 2015
	SCALE: NOTED
TOWN OF BARTON ROARING BROOK ROAD TH #2, RURAL MINOR COLLECTOR BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)	CHKD: DFTM: T.D.
	JOB NO: 23462-015
PRECAST ABUTMENT SECTIONS	DWG. NO: AB3A

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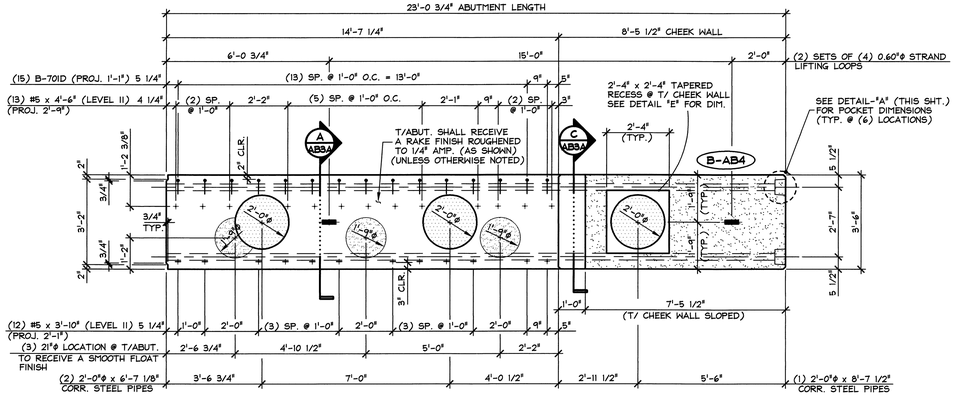
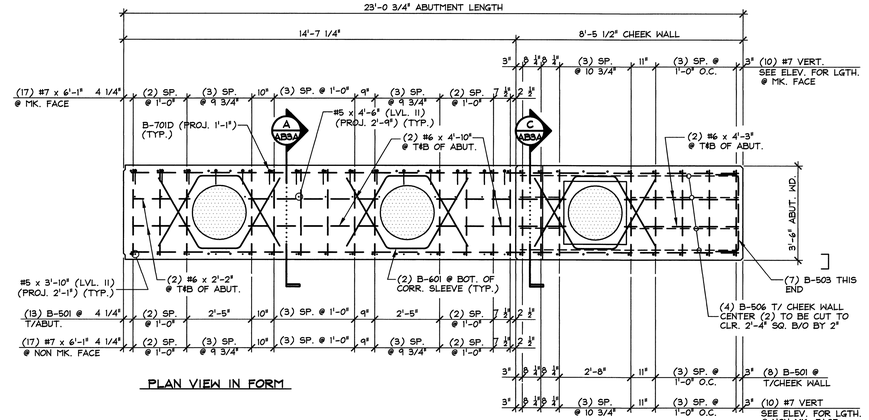
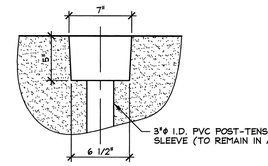


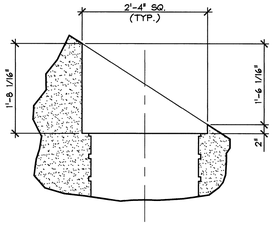
PLAN VIEW IN FORM



PLAN VIEW IN FORM



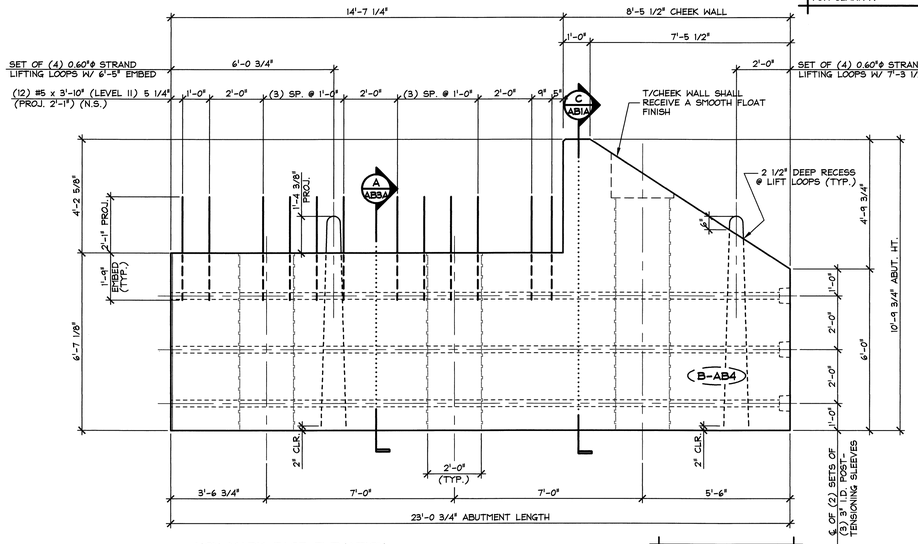
DETAIL - "A"
1 1/2" = 1'-0"



DETAIL - "E"
3/4" = 1'-0"

SHOP NOTE:
ALL EDGES OF ABUTMENT SHALL RECEIVE A 1" CHAMFER (U.N.O.)

SHOP NOTE: B-701D & #5 PROJ. 2'-9" ON FAR SIDE NOT SHOWN ON THIS VIEW FOR CLARITY.

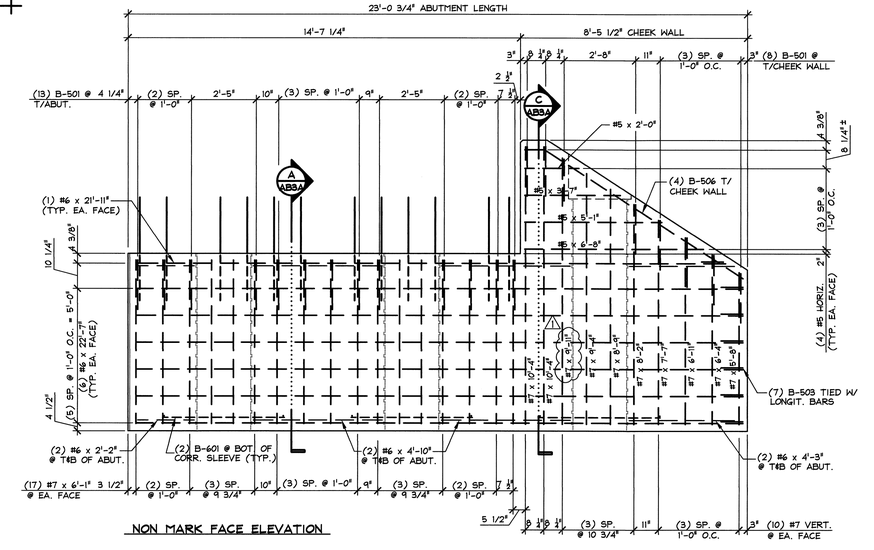


NON MARK FACE ELEVATION

1 AB4 ABUTMENT DIMENSIONAL DETAILS
3/8" = 1'-0"

SHOP NOTE:
28 DAYS = 5,000 PSI
RELEASE = 5,000 PSI

MIX DESIGN:
MIX NO. 425M-NO DCI
APPROVED 3-21-2015



NON MARK FACE ELEVATION

2 AB4 ABUTMENT REINFORCING DETAILS
3/8" = 1'-0"

MARK: B-AB4	QTY.: 1	WT.: 39.78 T	VOL.: 19.65 cy

MATERIAL LIST / ABUTMENT

ITEM	MARK	DESCRIPTION	QTY.
1	B-501	#5 BENT BAR (LEVEL I)	21
2 ⚠	B-506	#5 BENT BAR (LEVEL I)	4
3	B-503	#5 BENT BAR (LEVEL I)	7
4	B-601	#6 BENT BAR (LEVEL I)	6
5	B-701D	#5 BENT BAR (LEVEL II, DUAL COATED)	15
6		#5 x 3'-10" (LEVEL II, DUAL COATED)	12
7		#5 x 4'-6" (LEVEL II, DUAL COATED)	13
8		#5 x 2'-0" (LEVEL I)	2
9		#5 x 3'-7" (LEVEL I)	2
10		#5 x 5'-1" (LEVEL I)	2
11		#5 x 6'-8" (LEVEL I)	2
12		#6 x 2'-2" (LEVEL I)	4
13		#6 x 4'-3" (LEVEL I)	4
14		#6 x 4'-10" (LEVEL I)	8
15		#6 x 22'-7" (LEVEL I)	12
16		#6 x 21'-11" (LEVEL I)	2
17		#7 x 6'-1" (LEVEL I)	34
18		#7 x 5'-8" (LEVEL I)	2
19		#7 x 6'-4" (LEVEL I)	2
20		#7 x 6'-11" (LEVEL I)	2
21		#7 x 7'-7" (LEVEL I)	2
22		#7 x 8'-2" (LEVEL I)	2
23		#7 x 9'-11" (LEVEL I)	2
24		#7 x 10'-4" (LEVEL I)	4
25		#7 x 8'-9" (LEVEL I)	2
26		#7 x 9'-4" (LEVEL I)	2
27			
28		SET OF (4) 0.60"ϕ STRAND LIFTING LOOPS	2
29		2'-0"ϕ x 6'-7 1/8" CORRUGATED STEEL PIPE (GALV.)	2
30		2'-0"ϕ x 8'-7 1/2" CORRUGATED STEEL PIPE (GALV.)	1

⚠ 5/28/2015 REVISED AS NOTED T.D.

Vermont Agency of Transportation
Barton Shop Drawings Rev 2A_STAMPED_FLATTENED.pdf
RECEIVED
ON: June 10, 2015
and Checked for
CONFORMANCE
BY: Todd A. Sumner DATE: 06/16/2015

SHOP DRAWING REVIEW

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CLD Consulting Engineers
540 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 120174
Reviewed by: SRB
Date: 06/11/2015

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF ORLEANS	DATE:	FEB. 25, 2015
	SCALE:	NOTED
TOWN OF BARTON ROARING BROOK ROAD TH #2, RURAL MINOR COLLECTOR BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)	CHKD:	DFTM: T.D.
	JOB NO:	23462-015
PRECAST ABUTMENT DETAILS	DWG. NO:	AB4

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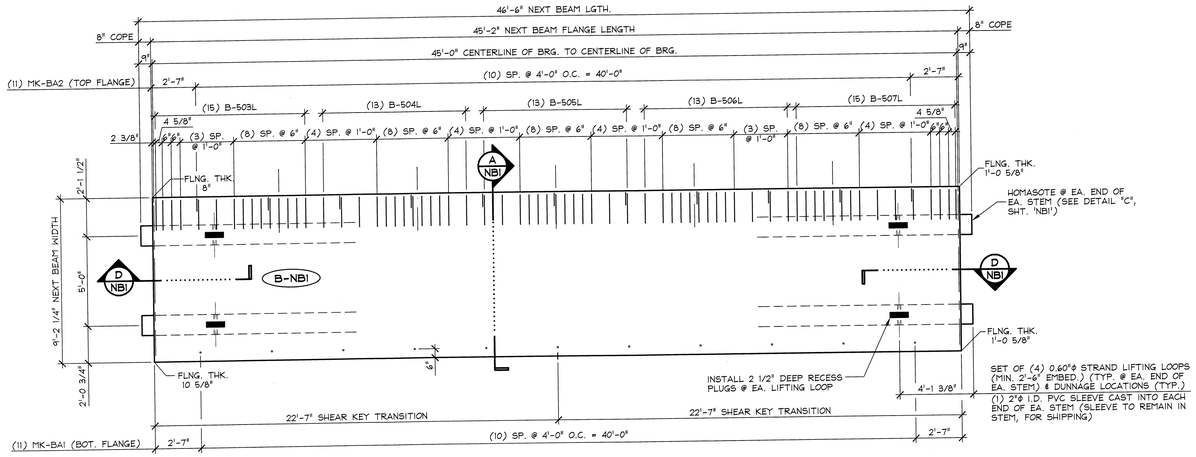
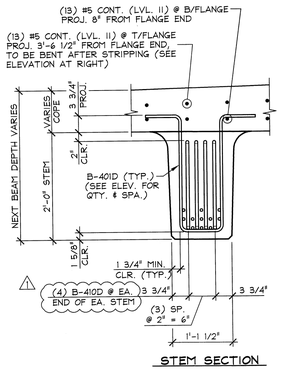
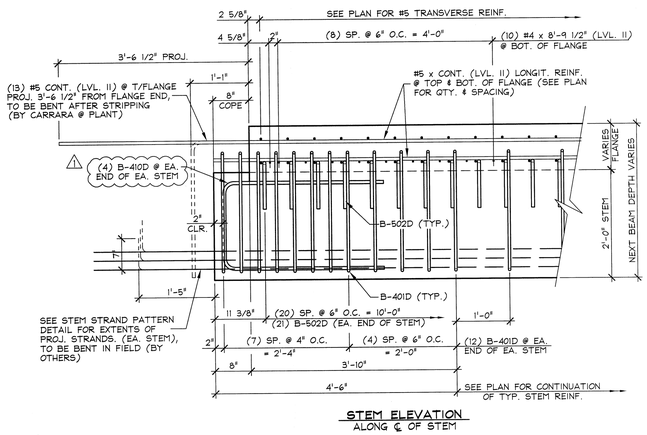


1 NBI DIMENSIONAL PLAN VIEW IN FORM
1/4" = 1'-0"

SHOP NOTE: SEE DWG. NB1A FOR SHEAR KEY ELEVATIONS

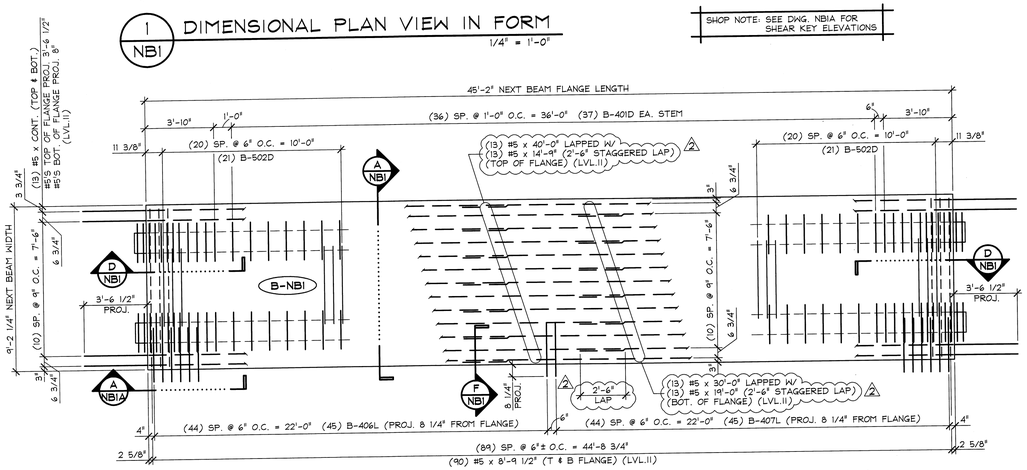


STEM SECTION

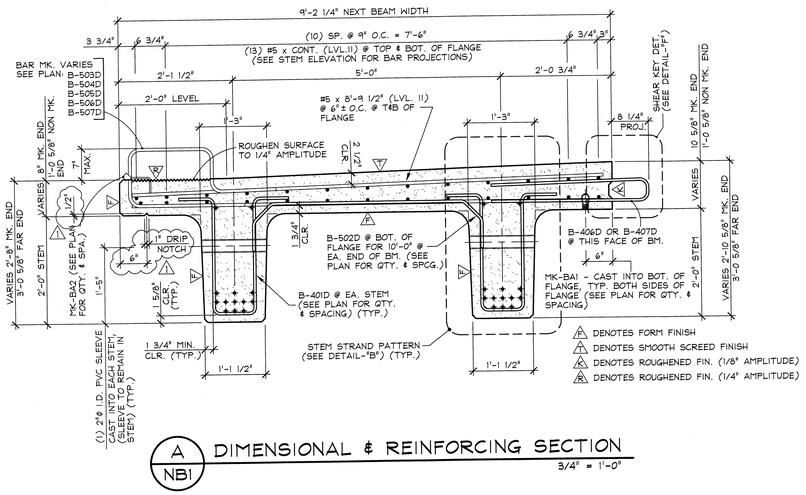


STEM ELEVATION
ALONG ℄ OF STEM

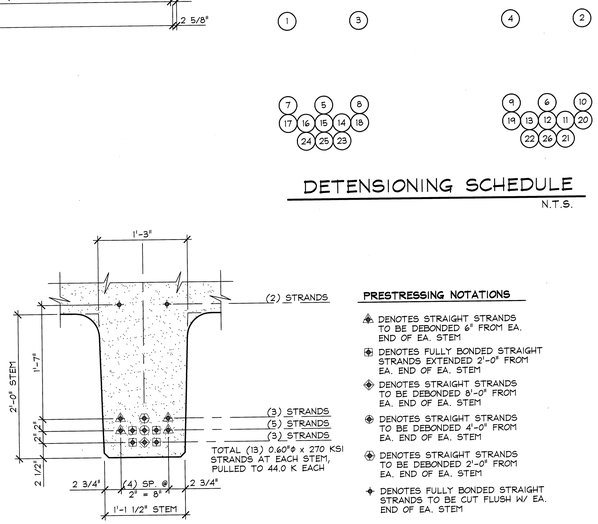
D NBI END BLOCK STEM REINFORCING DETAILS
3/4" = 1'-0"



2 NBI REINFORCING PLAN VIEW IN FORM
1/4" = 1'-0"



A NBI DIMENSIONAL & REINFORCING SECTION
3/4" = 1'-0"



B NBI STEM STRAND PATTERN
1" = 1'-0"

PRESTRESSING NOTATIONS

- ◆ DENOTES STRAIGHT STRANDS TO BE DEBONDED 6" FROM EA. END OF EA. STEM
- ⊕ DENOTES FULLY BONDED STRAIGHT STRANDS EXTENDED 2'-0" FROM EA. END OF EA. STEM
- ◈ DENOTES STRAIGHT STRANDS TO BE DEBONDED 8'-0" FROM EA. END OF EA. STEM
- ◉ DENOTES STRAIGHT STRANDS TO BE DEBONDED 4'-0" FROM EA. END OF EA. STEM
- ◈ DENOTES STRAIGHT STRANDS TO BE DEBONDED 2'-0" FROM EA. END OF EA. STEM
- ✦ DENOTES FULLY BONDED STRAIGHT STRANDS TO BE CUT FLUSH W/ EA. END OF EA. STEM

DETENSIONING SCHEDULE
N.T.S.

SHOP DRAWING REVIEW

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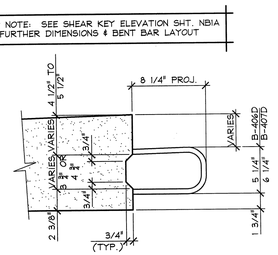
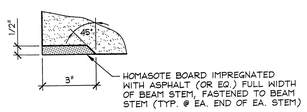
CLD Consulting Engineers
140 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 120174
Reviewed by: SRB
Date: 06/11/2015

SHOP NOTE: SEE SHEAR KEY ELEVATION SHT. NB1A FOR FURTHER DIMENSIONS & BENT BAR LAYOUT



F NBI SHEAR KEY DETAIL
1 1/2" = 1'-0"



C NBI HOMASOTE DETAIL
3" = 1'-0"

Vermont Agency of Transportation

RECEIVED
ON: June 10, 2015
and Checked for
CONFORMANCE
BY: Todd A. Sumner DATE: 06/16/2015

MARK: B-NBI	QTY.: 1	WT.: 44.87 T	VOL.: 22.15 cy

MATERIAL LIST / NEXT BEAM

ITEM	MARK	DESCRIPTION	QTY.
1	MK-BA1	3/4"ϕ F42 FERRULE INSERT (GALV.)	11
2	MK-BA2	DAYTON C-24 TYPE 4-APR DECK FORM HANGER (GALV.)	11
3			
4	B-401D	#4 BENT BAR (LEVEL II, DUAL COATED)	122
5	B-406D	#4 BENT BAR (LEVEL II, DUAL COATED)	45
6	B-407D	#4 BENT BAR (LEVEL II, DUAL COATED)	45
7 △1	B-410D	#4 BENT BAR (LEVEL II, DUAL COATED)	16
8	B-502D	#5 BENT BAR (LEVEL II, DUAL COATED)	42
9	B-503D	#5 BENT BAR (LEVEL II, DUAL COATED)	15
10	B-504D	#5 BENT BAR (LEVEL II, DUAL COATED)	13
11	B-505D	#5 BENT BAR (LEVEL II, DUAL COATED)	13
12	B-506D	#5 BENT BAR (LEVEL II, DUAL COATED)	13
13	B-507D	#5 BENT BAR (LEVEL II, DUAL COATED)	15
14		#4 x 8'-9 1/2" (LEVEL II, DUAL COATED)	20
15		#5 x 8'-9 1/2" (LEVEL II, DUAL COATED)	180
16		#5 x 40'-0" (LEVEL II, DUAL COATED)	13
17 △2		#5 x 14'-9" (LEVEL II, DUAL COATED)	13
18		#5 x 30'-0" (LEVEL II, DUAL COATED)	13
19		#5 x 19'-0" (LEVEL II, DUAL COATED)	13
20		SET OF (4) 0.60"ϕ STRAND LIFTING LOOPS	4

△2 6/9/2015 REVISED AS NOTED T.D.
△1 5/28/2015 REVISED AS NOTED T.D.

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

J.P. Sicard
CONTRACTOR
BARTON, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ORLEANS

TOWN OF BARTON
ROARING BROOK ROAD TH #2, RURAL MINOR COLLECTOR
BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)

PRESTRESSED NEXT BEAM DETAILS

DATE: FEB. 25, 2015
SCALE: NOTED
CHKD: - DFTM: T.D.
JOB NO: 23462-015
DWG. NO: NB1

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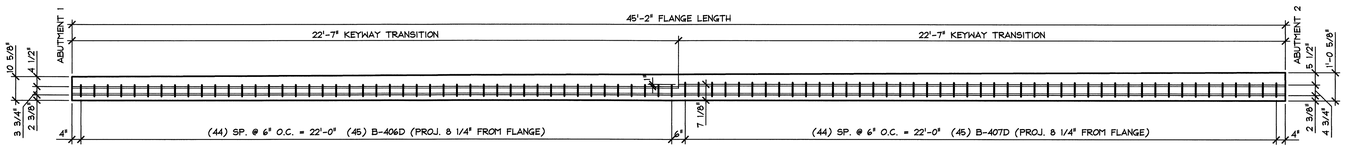
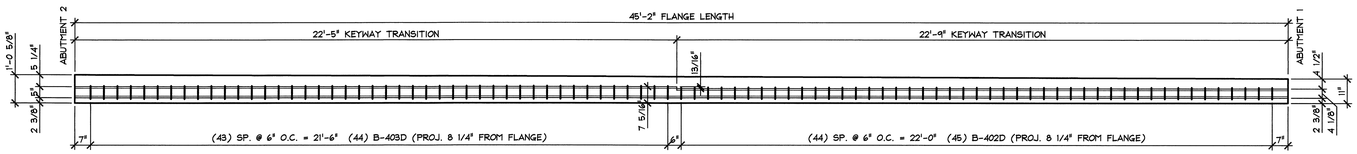
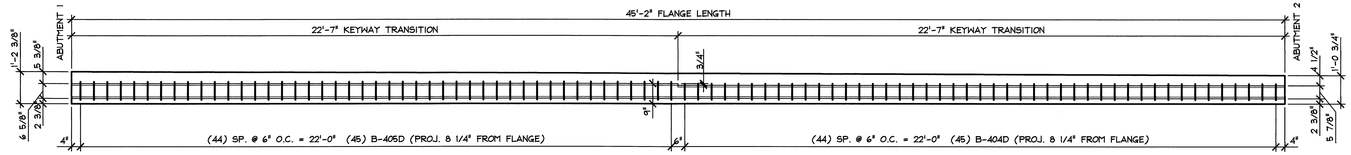


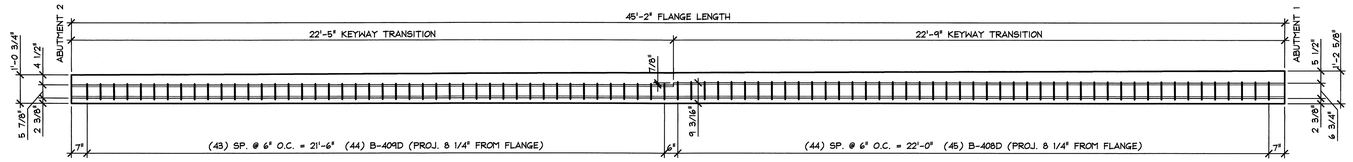
KEY ELEVATION - "A"
3/8" = 1'-0"



KEY ELEVATION - "B"
3/8" = 1'-0"



KEY ELEVATION - "C"
3/8" = 1'-0"



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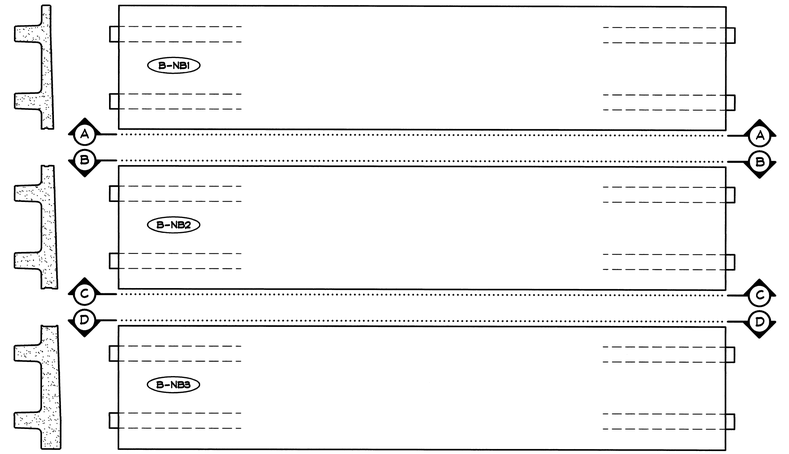
3/8" = 1'-0"



SCHEMATIC PLAN VIEW OF NEXT BEAMS
N.T.S.

Vermont Agency of Transportation
Barton Shop Drawings Rev 2A_STAMPED_FLATTENED.pdf
RECEIVED
ON: June 10, 2015
and Checked for
CONFORMANCE
BY: Todd A. Sumner DATE: 06/16/2015

SHOP DRAWING REVIEW

[X] REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

[ ] REJECTED [ ] REVISE AND RESUBMIT [ ] APPROVED AS NOTED

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CLD Consulting Engineers
540 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 120174
Reviewed by: SRB
Date: 06/11/2015

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

J.P. Sicard
CONTRACTOR
BARTON, VERMONT

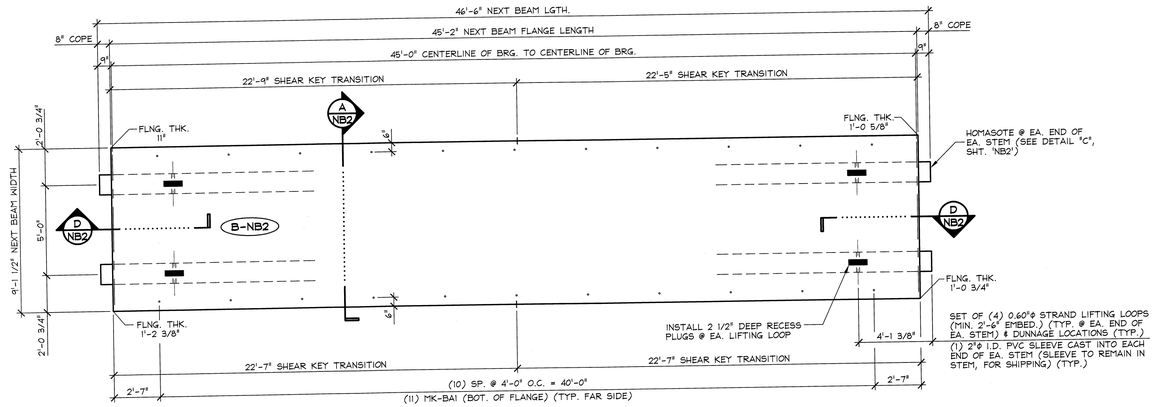
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ORLEANS

TOWN OF BARTON
ROARING BROOK ROAD TH #2, RURAL MINOR COLLECTOR
BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)

SHEAR KEY ELEVATIONS

DATE: FEB. 25, 2015
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23462-015
DWG. NO: NB1A

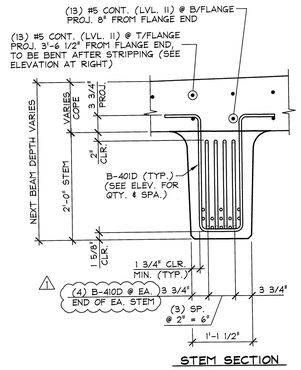
F:\VT-Bridges\23462-14 Barton\23462-NB1A.dwg, 6/10/2015 9:58:41 AM



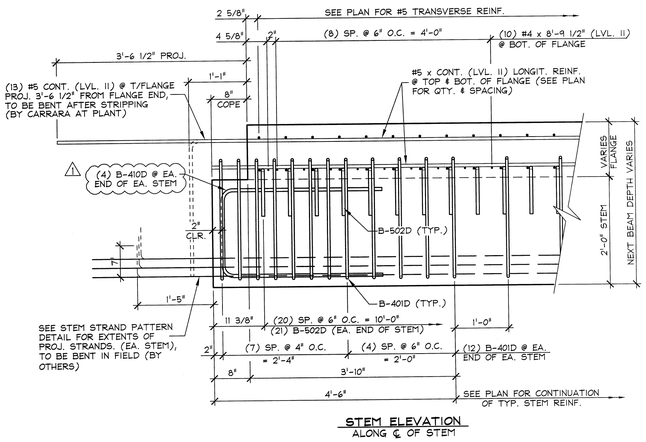
1 NB2 DIMENSIONAL PLAN VIEW IN FORM

1/4" = 1'-0"

SHOP NOTE: SEE DWG. NB1A FOR SHEAR KEY ELEVATIONS



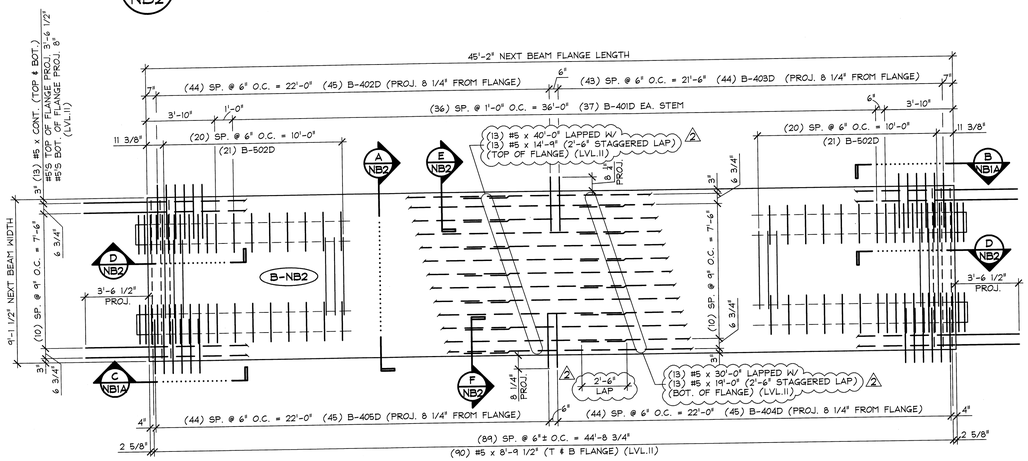
STEM SECTION



STEM ELEVATION
ALONG ℄ OF STEM

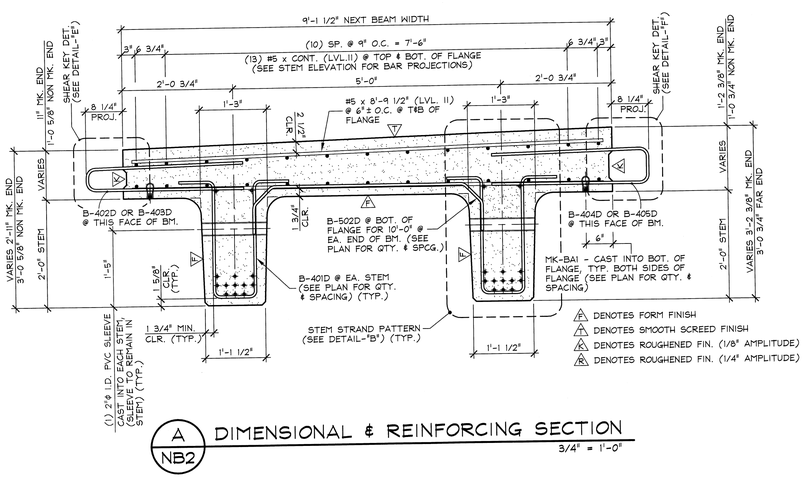
D NB2 END BLOCK STEM REINFORCING DETAILS

3/4" = 1'-0"



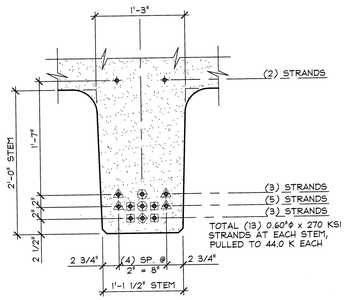
2 NB2 REINFORCING PLAN VIEW IN FORM

1/4" = 1'-0"



A NB2 DIMENSIONAL & REINFORCING SECTION

3/4" = 1'-0"

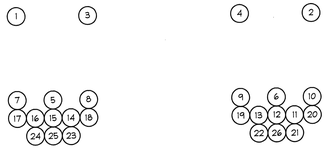


B NB2 STEM STRAND PATTERN

1" = 1'-0"

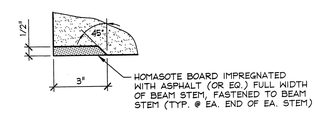
PRESTRESSING NOTATIONS

- DENOTES STRAIGHT STRANDS TO BE DEBONDED 6" FROM EA. END OF EA. STEM
- DENOTES FULLY BONDED STRAIGHT STRANDS EXTENDED 2'-0" FROM EA. END OF EA. STEM
- DENOTES STRAIGHT STRANDS TO BE DEBONDED 8'-0" FROM EA. END OF EA. STEM
- DENOTES STRAIGHT STRANDS TO BE DEBONDED 4'-0" FROM EA. END OF EA. STEM
- DENOTES STRAIGHT STRANDS TO BE DEBONDED 2'-0" FROM EA. END OF EA. STEM
- DENOTES FULLY BONDED STRAIGHT STRANDS TO BE CUT FLUSH W/ EA. END OF EA. STEM



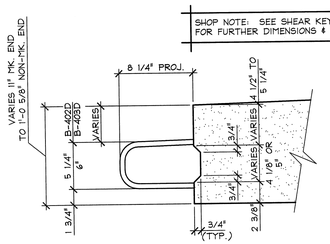
DETENSIONING SCHEDULE

N.T.S.



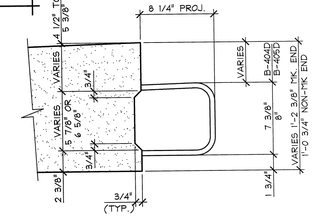
C NB2 HOMASOTE DETAIL

3" = 1'-0"



E NB2 SHEAR KEY DETAIL

1 1/2" = 1'-0"



F NB2 SHEAR KEY DETAIL

1 1/2" = 1'-0"

MARK: B-NB2	QTY.: 1	WT.: 49.36 T	VOL.: 24.38 cy

MATERIAL LIST / NEXT BEAM

ITEM	MARK	DESCRIPTION	QTY.
1	MK-BA1	3/4"ϕ F42 FERRULE INSERT (GALV.)	22
2	B-401D	#4 BENT BAR (LEVEL II, DUAL COATED)	122
3	B-402D	#4 BENT BAR (LEVEL II, DUAL COATED)	45
4	B-403D	#4 BENT BAR (LEVEL II, DUAL COATED)	44
5	B-404D	#4 BENT BAR (LEVEL II, DUAL COATED)	45
6	B-405D	#4 BENT BAR (LEVEL II, DUAL COATED)	45
7 ⚠1	B-401D	#4 BENT BAR (LEVEL II, DUAL COATED)	16
8	B-502D	#5 BENT BAR (LEVEL II, DUAL COATED)	42
9		#4 x 8'-9 1/2" (LEVEL II, DUAL COATED)	20
10		#5 x 8'-9 1/2" (LEVEL II, DUAL COATED)	180
11		#5 x 40'-0" (LEVEL II, DUAL COATED)	13
12	⚠2	#5 x 14'-9" (LEVEL II, DUAL COATED)	13
13		#5 x 30'-0" (LEVEL II, DUAL COATED)	13
14		#5 x 19'-0" (LEVEL II, DUAL COATED)	13
15		SET OF (4) 0.60"ϕ STRAND LIFTING LOOPS	4

⚠2 6/9/2015 REVISED AS NOTED T.D.
⚠1 5/28/2015 REVISED AS NOTED T.D.

SHOP DRAWING REVIEW

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CLD Consulting Engineers, 540 Commercial Street, Manchester, NH 03101, 603-668-8223

Job Number: 120174
Reviewed by: SRB
Date: 06/11/2015

Vermont Agency of Transportation
RECEIVED
ON: June 10, 2015
and Checked for
CONFORMANCE
BY: Todd A. Sumner DATE: 06/16/2015

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
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J.P. Sicard
CONTRACTOR
BARTON, VERMONT

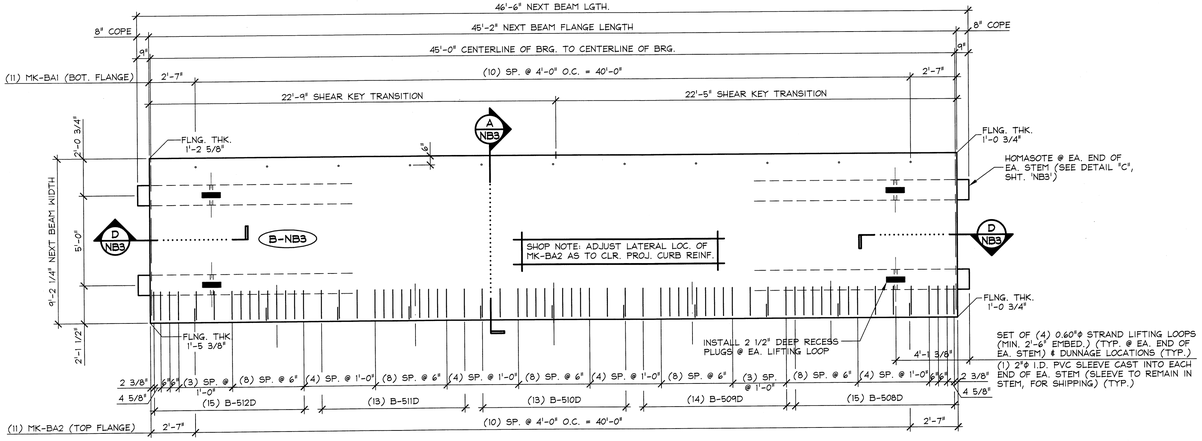
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ORLEANS

TOWN OF BARTON
ROARING BROOK ROAD TH #2, RURAL MINOR COLLECTOR
BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)

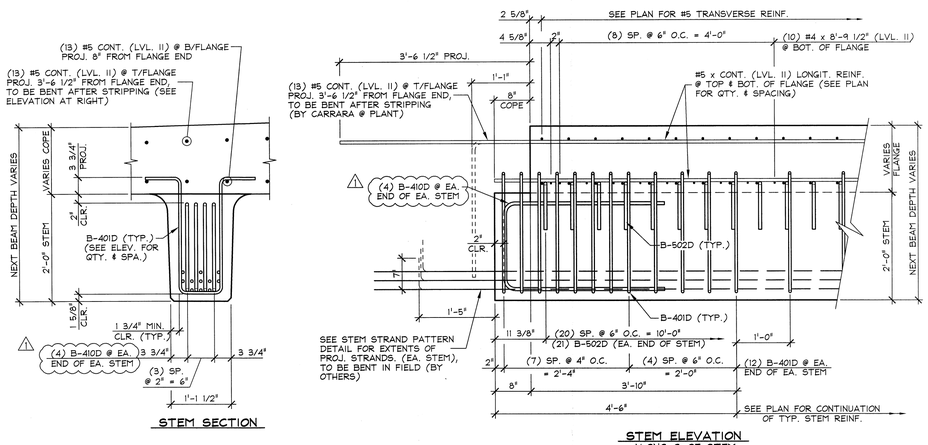
PRESTRESSED NEXT BEAM DETAILS

DATE: FEB. 25, 2015
SCALE: NOTED
CHKD: - DFTM: T.D.
JOB NO: 23462-015
DWG. NO: NB2

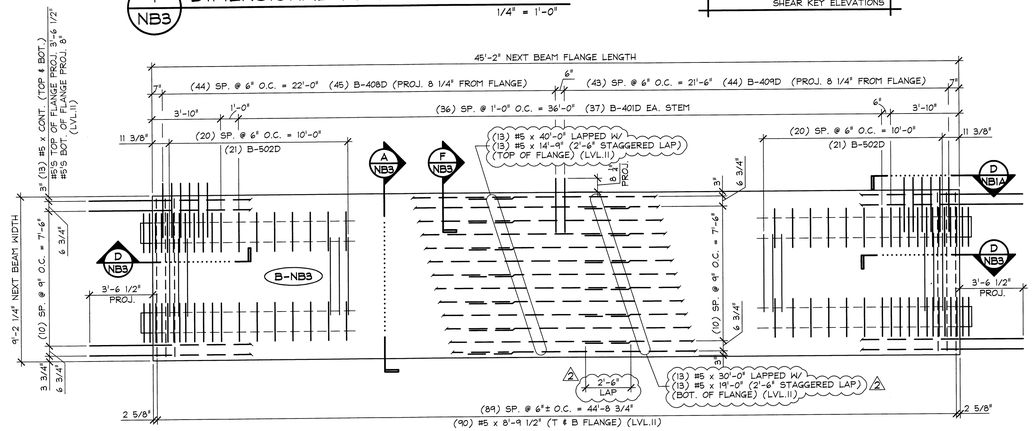
F:\VT-Bridges\23462-14 Barton\23462-NB1.dwg, 6/10/2015 4:05:01 PM



1 NB3 DIMENSIONAL PLAN VIEW IN FORM
1/4" = 1'-0"



D NB3 END BLOCK STEM REINFORCING DETAILS
3/4" = 1'-0"



2 NB3 REINFORCING PLAN VIEW IN FORM
1/4" = 1'-0"

SHOP NOTE: SEE DWG. NBIA FOR SHEAR KEY ELEVATIONS

SHOP DRAWING REVIEW

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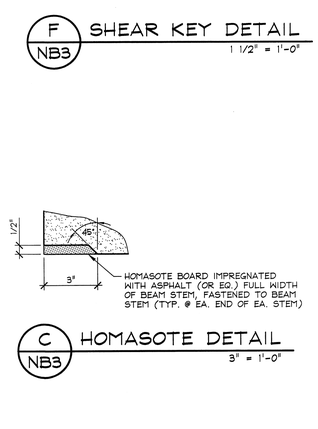
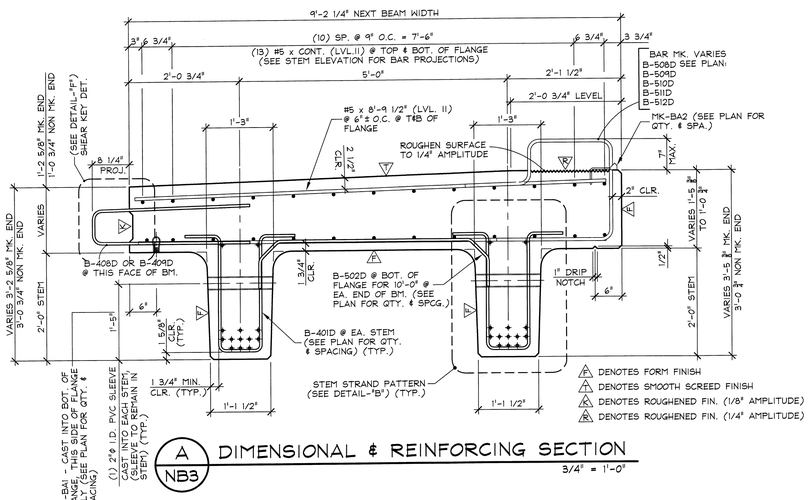


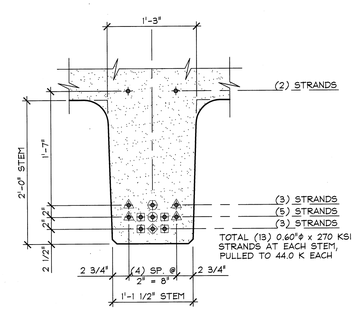
F NB3 SHEAR KEY DETAIL
1 1/2" = 1'-0"

DETENSIONING SCHEDULE
N.T.S.

C NB3 HOMASOTE DETAIL
3" = 1'-0"



A NB3 DIMENSIONAL ℄ REINFORCING SECTION
3/4" = 1'-0"



B NB3 STEM STRAND PATTERN
1" = 1'-0"

PRESTRESSING NOTATIONS

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- DENOTES FULLY BONDED STRAIGHT STRANDS EXTENDED 2'-0" FROM EA. END OF EA. STEM
- DENOTES STRAIGHT STRANDS TO BE DEBONDED 8'-0" FROM EA. END OF EA. STEM
- DENOTES STRAIGHT STRANDS TO BE DEBONDED 4'-0" FROM EA. END OF EA. STEM
- DENOTES STRAIGHT STRANDS TO BE DEBONDED 2'-0" FROM EA. END OF EA. STEM
- DENOTES FULLY BONDED STRAIGHT STRANDS TO BE CUT FLUSH W/ EA. END OF EA. STEM

F DENOTES FORM FINISH
S DENOTES SMOOTH SCREED FINISH
R1 DENOTES ROUGHENED FIN. (1/8" AMPLITUDE)
R2 DENOTES ROUGHENED FIN. (1/4" AMPLITUDE)

Vermont Agency of Transportation
Barton Shop Drawings Rev 2a_STAMPED_FLATTENED.pdf

RECEIVED
ON: June 10, 2015
and Checked for
CONFORMANCE
BY: Todd A. Sumner DATE: 06/16/2015

MARK: B-NB3	QTY.: 1	WT.: 54.39 T	VOL.: 26.86 cy

MATERIAL LIST / NEXT BEAM

ITEM	MARK	DESCRIPTION	QTY.
1	MK-BA1	3/4"ϕ F42 FERRULE INSERT (GALV.)	11
2	MK-BA2	DAYTON C-24 TYPE 4-APR DECK FORM HANGER (GALV.)	11
3			
4	B-401D	#4 BENT BAR (LEVEL II, DUAL COATED)	122
5	B-408D	#4 BENT BAR (LEVEL II, DUAL COATED)	45
6	B-409D	#4 BENT BAR (LEVEL II, DUAL COATED)	44
7 ⚠1	B-410D	#4 BENT BAR (LEVEL II, DUAL COATED)	16
8	B-502D	#5 BENT BAR (LEVEL II, DUAL COATED)	42
9	B-508D	#5 BENT BAR (LEVEL II, DUAL COATED)	15
10	B-509D	#5 BENT BAR (LEVEL II, DUAL COATED)	14
11	B-510D	#5 BENT BAR (LEVEL II, DUAL COATED)	13
12	B-511D	#5 BENT BAR (LEVEL II, DUAL COATED)	13
13	B-512D	#5 BENT BAR (LEVEL II, DUAL COATED)	15
14		#4 x 8'-9 1/2" (LEVEL II, DUAL COATED)	20
15		#5 x 8'-9 1/2" (LEVEL II, DUAL COATED)	180
16		#5 x 40'-0" (LEVEL II, DUAL COATED)	13
17 ⚠2		#5 x 14'-9" (LEVEL II, DUAL COATED)	13
18		#5 x 30'-0" (LEVEL II, DUAL COATED)	13
19		#5 x 19'-0" (LEVEL II, DUAL COATED)	13
20		SET OF (4) 0.60"ϕ STRAND LIFTING LOOPS	4

⚠2 6/9/2015 REVISED AS NOTED T.D.
⚠1 5/28/2015 REVISED AS NOTED T.D.

APPROVAL STAMP:

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Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

J.P. Sicard
CONTRACTOR
BARTON, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ORLEANS

TOWN OF BARTON
ROARING BROOK ROAD TH #2, RURAL MINOR COLLECTOR
BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)

PRESTRESSED NEXT BEAM DETAILS

DATE: FEB. 25, 2015
SCALE: NOTED
CHKD: - DFTM: T.D.
JOB NO: 23462-015
DWG. NO: NB3

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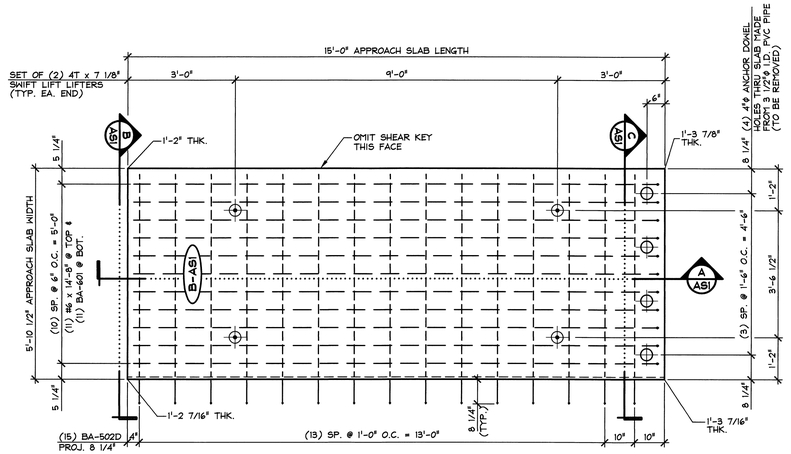
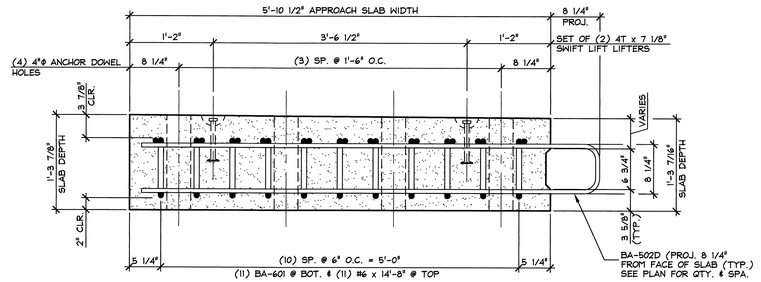


1 A5|

PLAN VIEW IN FORM

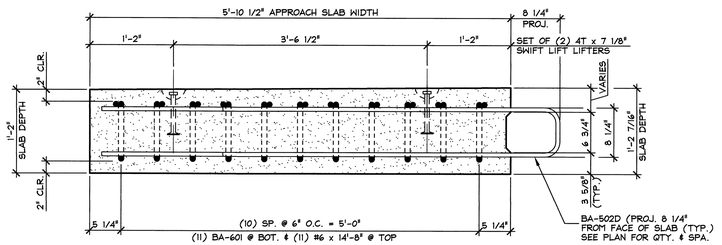
1/2" = 1'-0"



C A5|

SECTION

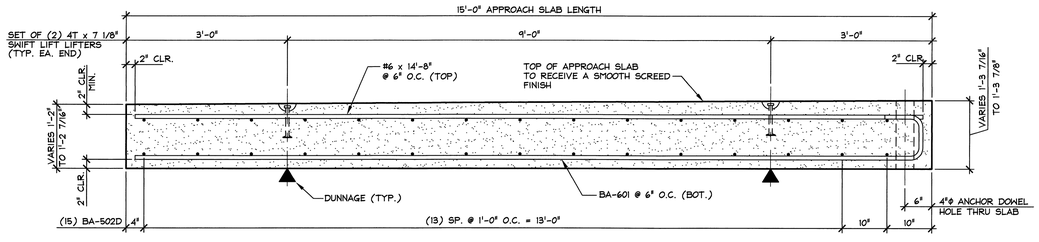
1" = 1'-0"



B A5|

SECTION

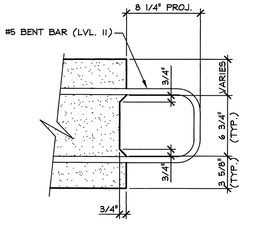
1" = 1'-0"



A A5|

LONGITUDINAL SECTION

3/4" = 1'-0"



SHEAR KEY DETAIL

1 1/2" = 1'-0"

MARK: B-A5|	QTY.: 2	WT.: 8.26 T	VOL.: 4.08 cy

MATERIAL LIST / APPROACH SLAB

ITEM	MARK	DESCRIPTION	QTY.
1			
2	BA-502D	#5 BENT BAR (LEVEL 11, DUAL COATED)	15
3	BA-601	#6 BENT BAR (LEVEL 1)	11
4			
5			
6		#6 x 14'-8" (LEVEL 1)	11
7			
8			
9			
10			
11			
12			
13			
14		⚠ DAYTON 4T x 7 1/8" SWIFT LIFT (DOMESTIC)	4
15			

Vermont Agency of Transportation

RECEIVED

ON: June 10, 2015

and Checked for

CONFORMANCE

BY: Todd A. Sumner DATE: 06/16/2015

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COUNTY OF ORLEANS

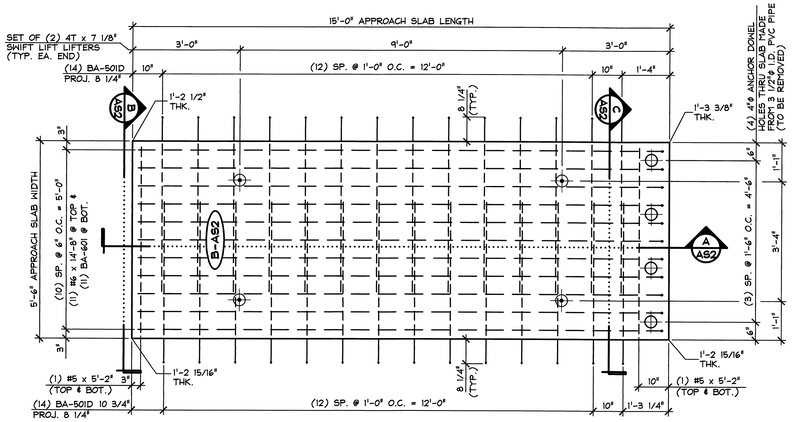
DATE: FEB. 25, 2015
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23462-015

TOWN OF BARTON
ROARING BROOK ROAD TH #2, RURAL MINOR COLLECTOR
BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)

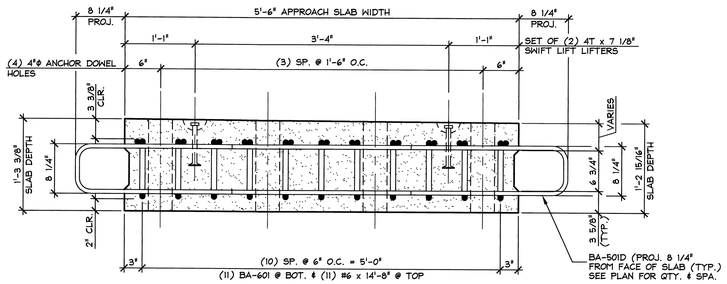
APPROACH SLAB DETAILS

DWG. NO: A5|

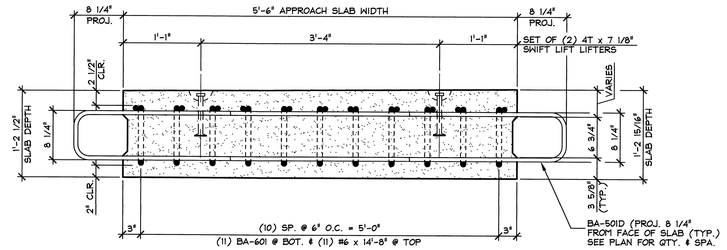
F:\VT-Bridges\23462.14 Barton\23462-A51.dwg, 6/10/2015 10:54:25 AM



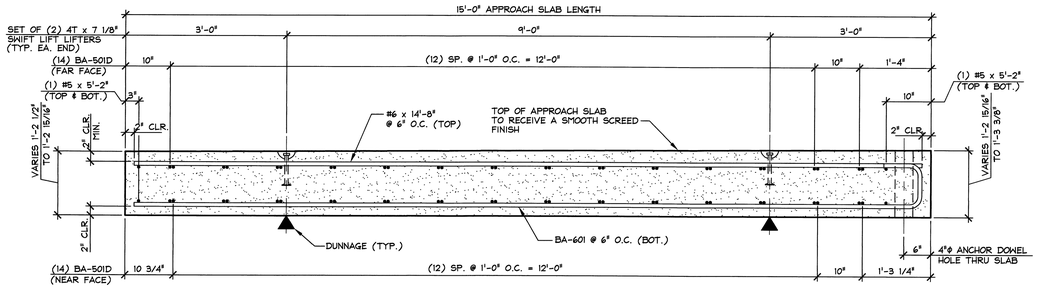
1 AS2 PLAN VIEW IN FORM
1/2" = 1'-0"



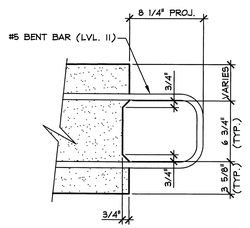
C AS2 SECTION
1" = 1'-0"



B AS2 SECTION
1" = 1'-0"



A AS2 LONGITUDINAL SECTION
3/4" = 1'-0"



SHEAR KEY DETAIL
1 1/2" = 1'-0"

MARK: B-AS2	QTY.: 2	WT.: 7.73 T	VOL.: 3.82 cy

MATERIAL LIST / APPROACH SLAB

ITEM	MARK	DESCRIPTION	QTY.
1			
2	BA-501D	#5 BENT BAR (LEVEL II, DUAL COATED)	28
3	BA-601	#6 BENT BAR (LEVEL 1)	11
4			
5			
6		#6 x 14'-8" (LEVEL 1)	11
7		#5 x 5'-2" (LEVEL 1)	4
8			
9			
10			
11			
12			
13			
14	⚠	DAYTON 4T x 7 1/8" SWIFT LIFT (DOMESTIC)	4
15			

Vermont Agency of Transportation
Bolton Shop Drawings Nov 24, 2014\PRESS_FLATTENED.pdf
RECEIVED
ON: June 10, 2015
and Checked for
CONFORMANCE
BY: Todd A. Sumner DATE: 06/16/2015

SHOP DRAWING REVIEW

☒ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☐ APPROVED AS NOTED

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CLD Consulting Engineers
540 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 120174
Reviewed by: SRB
Date: 06/11/2015

⚠ 5/28/2015 REVISED AS NOTED T.D.

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

J.P. Sicard
CONTRACTOR
BARTON, VERMONT

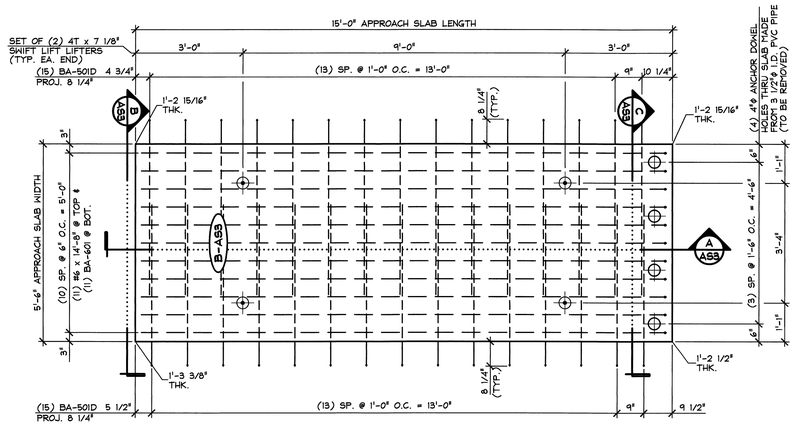
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ORLEANS

TOWN OF BARTON
ROARING BROOK ROAD TH #2, RURAL MINOR COLLECTOR
BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)

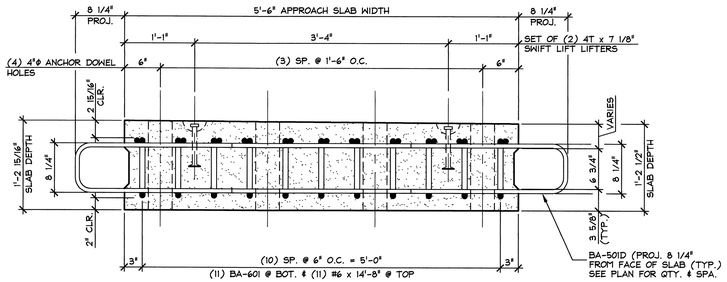
APPROACH SLAB DETAILS

DATE: FEB. 25, 2015
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23462-015
DWG. NO: AS2

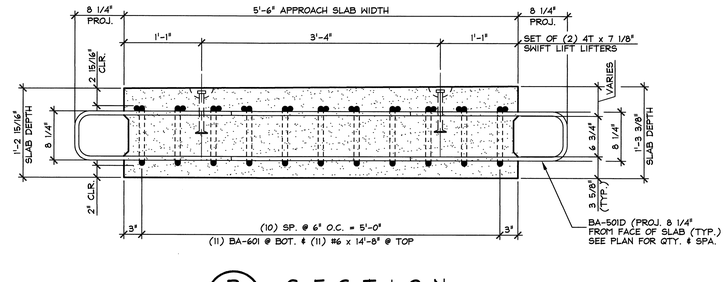
F:\VT-Bridges\23462-14 Barton\23462-AS2.dwg, 6/10/2015 10:55:16 AM



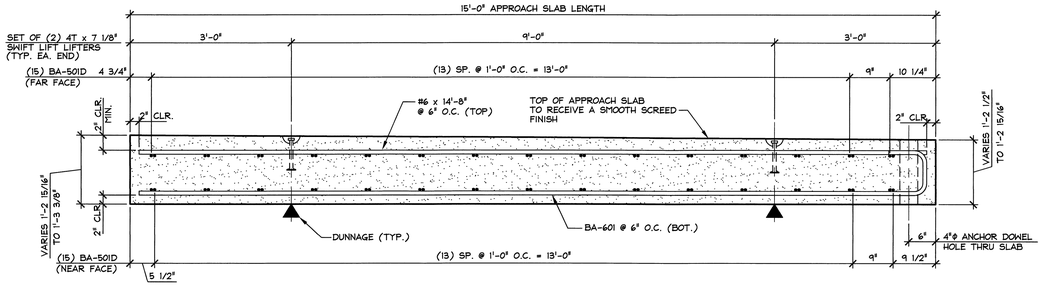
1 AS3 PLAN VIEW IN FORM
1/2" = 1'-0"



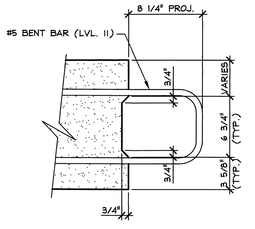
C AS2 SECTION
1" = 1'-0"



B AS2 SECTION
1" = 1'-0"



A AS3 LONGITUDINAL SECTION
3/4" = 1'-0"



SHEAR KEY DETAIL
1 1/2" = 1'-0"

MARK: B-AS3	QTY.: 2	WT.: 7.73 T	VOL.: 3.82 cy

MATERIAL LIST / APPROACH SLAB

ITEM	MARK	DESCRIPTION	QTY.
1			
2	BA-501D	#5 BENT BAR (LEVEL 1, DUAL COATED)	30
3	BA-601	#6 BENT BAR (LEVEL 1)	11
4			
5			
6		#6 x 14'-8" (LEVEL 1)	11
7			
8			
9			
10			
11			
12			
13			
14		⚠ DAYTON 4T x 7 1/8" SWIFT LIFT (DOMESTIC)	4
15			

Vermont Agency of Transportation

RECEIVED
ON: June 10, 2015
and Checked for
CONFORMANCE
BY: Todd A. Sumner DATE: 06/16/2015

SHOP DRAWING REVIEW

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CLD Consulting Engineers
540 Commercial Street
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603-668-8223

Job Number: 120174
Reviewed by: SRB
Date: 06/11/2015

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J.P. Sicard
CONTRACTOR
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COUNTY OF ORLEANS

TOWN OF BARTON
ROARING BROOK ROAD TH #2, RURAL MINOR COLLECTOR
BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)

APPROACH SLAB DETAILS

DATE: FEB. 25, 2015
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23462-015
DWG. NO: AS3

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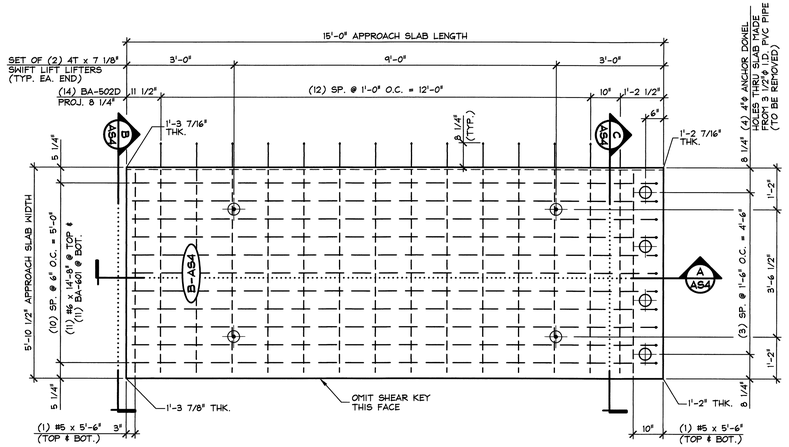
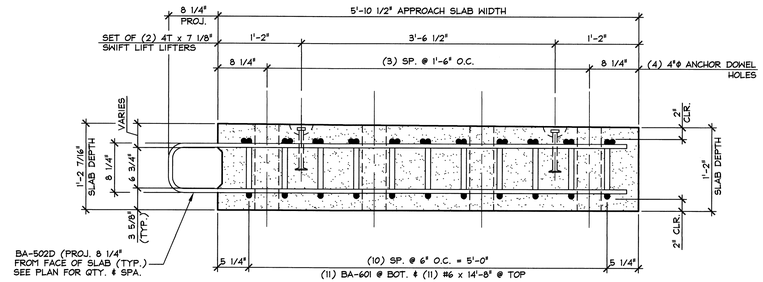
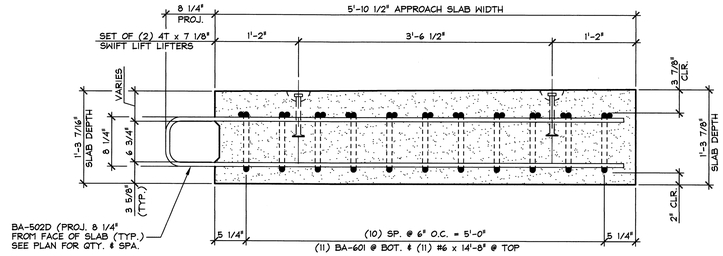


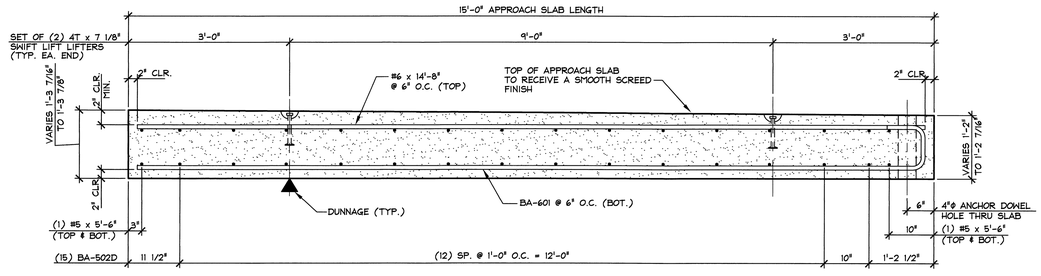
1 AS4 PLAN VIEW IN FORM
1/2" = 1'-0"



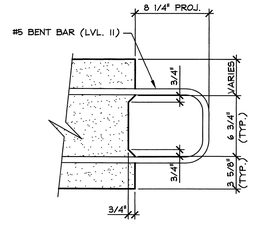
C AS4 SECTION
1" = 1'-0"



B AS4 SECTION
1" = 1'-0"



A AS4 LONGITUDINAL SECTION
3/4" = 1'-0"



SHEAR KEY DETAIL
1 1/2" = 1'-0"

MARK: B-AS4	QTY.: 2	WT.: 8.26 T	VOL.: 4.08 cy

MATERIAL LIST / APPROACH SLAB

ITEM	MARK	DESCRIPTION	QTY.
1			
2	BA-502D	#5 BENT BAR (LEVEL 11, DUAL COATED)	14
3	BA-601	#6 BENT BAR (LEVEL 1)	11
4			
5			
6		#6 x 14'-8" (LEVEL 1)	11
7		#5 x 5'-6" (LEVEL 1)	4
8			
9			
10			
11			
12			
13			
14		⚠ DAYTON 4T x 7 1/8" SWIFT LIFT (DOMESTIC)	4
15			

Vermont Agency of Transportation
Barton Shop Drawings Rev 2A_STAMPED_FLATTENED.pdf
RECEIVED
ON: June 10, 2015
and Checked for
CONFORMANCE
BY: Todd A. Sumner DATE: 06/16/2015

SHOP DRAWING REVIEW

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COUNTY OF ORLEANS

TOWN OF BARTON
ROARING BROOK ROAD TH #2, RURAL MINOR COLLECTOR
BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)

APPROACH SLAB DETAILS

DATE: FEB. 25, 2015
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23462-015
DWG. NO: AS4

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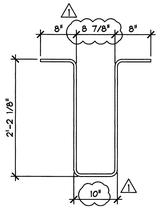
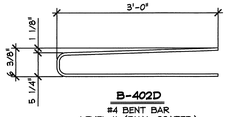
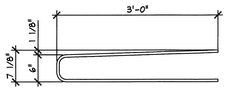


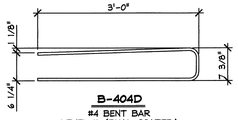
B-401D
#4 BENT BAR
LEVEL II (DUAL COATED)
(366) REQ'D.



B-402D
#4 BENT BAR
LEVEL II (DUAL COATED)
(46) REQ'D.



B-403D
#4 BENT BAR
LEVEL II (DUAL COATED)
(44) REQ'D.



B-404D
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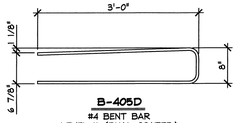
LEVEL II (DUAL COATED)
(45) REQ'D.



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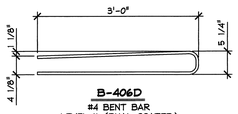
LEVEL II (DUAL COATED)
(45) REQ'D.



B-406D
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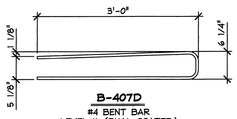
LEVEL II (DUAL COATED)
(45) REQ'D.



B-407D
#4 BENT BAR
LEVEL II (DUAL COATED)
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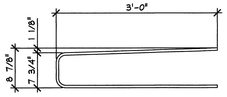

B-408D
#4 BENT BAR
LEVEL II (DUAL COATED)
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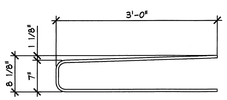
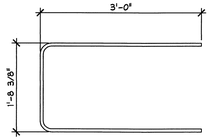


B-409D
#4 BENT BAR
LEVEL II (DUAL COATED)
(44) REQ'D. ⚠1



B-410D ⚠1
#4 BENT BAR
LEVEL II (DUAL COATED)
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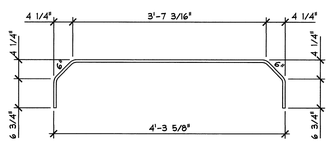
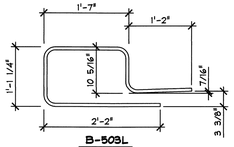
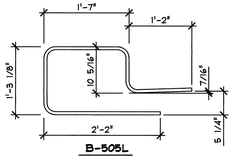


B-502D
#5 BENT BAR
LEVEL II (DUAL COATED)
(126) REQ'D.



B-503L
#5 BENT BAR
LEVEL II (DUAL COATED)
(15) REQ'D.



B-505L
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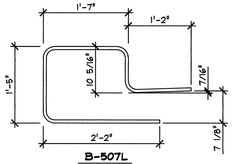
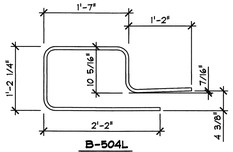
LEVEL II (DUAL COATED)
(13) REQ'D.



B-507L
#5 BENT BAR
LEVEL II (DUAL COATED)
(15) REQ'D.



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LEVEL II (DUAL COATED)
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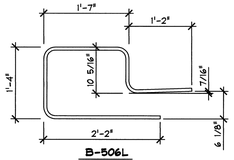
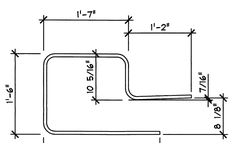
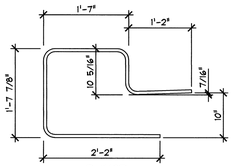


B-506L
#5 BENT BAR
LEVEL II (DUAL COATED)
(13) REQ'D.



B-508D
#5 BENT BAR
LEVEL II (DUAL COATED)
(15) REQ'D.



B-510D
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LEVEL II (DUAL COATED)
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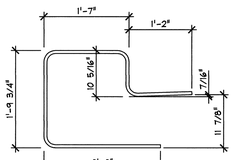

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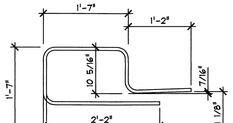
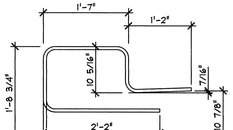
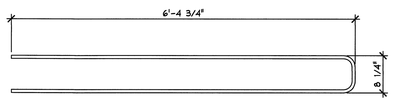


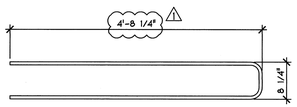
B-509D
#5 BENT BAR
LEVEL II (DUAL COATED)
(14) REQ'D.



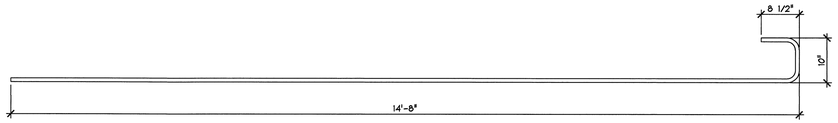
B-511D
#5 BENT BAR
LEVEL II (DUAL COATED)
(13) REQ'D.



BA-502D
#5 BENT BAR
LEVEL II (DUAL COATED)
(58) REQ'D.



BA-501D
#5 BENT BAR
LEVEL II (DUAL COATED)
(116) REQ'D.



BA-601
#6 BENT BAR
LEVEL II
(84) REQ'D. ⚠1

MISCELLANEOUS MATERIALS — P/S NEXT BEAMS

ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1	B-401D	366	#4 BENT BAR (LEVEL II, DUAL COATED)	
2	B-402D	45	#4 BENT BAR (LEVEL II, DUAL COATED)	
3	B-403D	44	#4 BENT BAR (LEVEL II, DUAL COATED)	
4	B-404D	45	#4 BENT BAR (LEVEL II, DUAL COATED)	
5	B-405D	45	#4 BENT BAR (LEVEL II, DUAL COATED)	
6	B-406D	45	#4 BENT BAR (LEVEL II, DUAL COATED)	
7	B-407D	45	#4 BENT BAR (LEVEL II, DUAL COATED)	
8	B-408D	45	#4 BENT BAR (LEVEL II, DUAL COATED)	
9 ⚠1	B-409D	44	#4 BENT BAR (LEVEL II, DUAL COATED)	
10	B-410D	48	#4 BENT BAR (LEVEL II, DUAL COATED) ⚠1	
11	B-502D	126	#5 BENT BAR (LEVEL II, DUAL COATED)	
12	B-503D	15	#5 BENT BAR (LEVEL II, DUAL COATED)	
13	B-504D	13	#5 BENT BAR (LEVEL II, DUAL COATED)	
14	B-505D	13	#5 BENT BAR (LEVEL II, DUAL COATED)	
15	B-506D	13	#5 BENT BAR (LEVEL II, DUAL COATED)	
16	B-507D	15	#5 BENT BAR (LEVEL II, DUAL COATED)	
17	B-508D	15	#5 BENT BAR (LEVEL II, DUAL COATED)	
18	B-509D	14	#5 BENT BAR (LEVEL II, DUAL COATED)	
19	B-510D	13	#5 BENT BAR (LEVEL II, DUAL COATED)	
20	B-511D	13	#5 BENT BAR (LEVEL II, DUAL COATED)	
21	B-512D	15	#5 BENT BAR (LEVEL II, DUAL COATED)	
22				
23		61	#4 x 8'-9 1/2" (LEVEL II, DUAL COATED)	(+1 SAMPLE) ⚠1
24		541	#5 x 8'-9 1/2" (LEVEL II, DUAL COATED)	(+1 SAMPLE)
25		39	#5 x 40'-0" (LEVEL II, DUAL COATED)	
26		39	#5 x 14'-9" (LEVEL II, DUAL COATED)	
27	⚠2	39	#5 x 30'-0" (LEVEL II, DUAL COATED)	
28		39	#5 x 19'-0" (LEVEL II, DUAL COATED)	
29		12	SET OF (4) 0.60"ϕ STRAND LIFTING LOOPS	
30	MK-BA1	44	3/4"ϕ F42 FERRULE INSERT (GALV.)	
31	MK-BA2	22	DAYTON C-24 TYPE 4-APR DECK FORM HANGER (GALV.)	

MISCELLANEOUS MATERIALS — P/C APPROACH SLABS

ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1	BA-501D	116	#5 BENT BAR (LEVEL II, DUAL COATED)	
2	BA-502D	58	#5 BENT BAR (LEVEL II, DUAL COATED) ⚠1	
3	BA-601	84	#6 BENT BAR (LEVEL I)	(+1 SAMPLE) ⚠1
4		⚠1		
5				
6		88	#6 x 14'-8" (LEVEL I)	
7		8	#5 x 5'-2" (LEVEL I)	
8		8	#5 x 5'-6" (LEVEL I)	
9				
10		32	DAYTON 4T x 7 1/8" SNIFT LIFT (DOMESTIC) ⚠1	

Vermont Agency of Transportation
Barton Shop Drawings Rev 2A_STAMPED_FLATTENED.pdf

RECEIVED
ON: June 10, 2015
and Checked for
CONFORMANCE
BY: Todd A. Sumner DATE: 06/16/2015

SHOP DRAWING REVIEW

☒ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☐ APPROVED AS NOTED

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CLD Consulting Engineers
540 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 120174
Reviewed by: SRB
Date: 06/11/2015

⚠2 6/9/2015 REVISED AS NOTED T.D.
⚠1 5/28/2015 REVISED AS NOTED T.D.

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 OSE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

J.P. Sicard
CONTRACTOR
BARTON, VERMONT

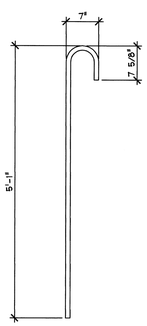
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ORLEANS

TOWN OF BARTON
ROARING BROOK ROAD TH #2, RURAL MINOR COLLECTOR
BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)

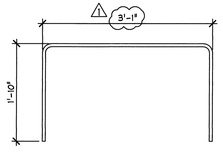
NEXT BEAM MATERIAL LIST

DATE: FEB. 25, 2015
SCALE: NOTED
CHKD: - DFTM: T.D.
JOB NO: 23462-015
DWG. NO: M1

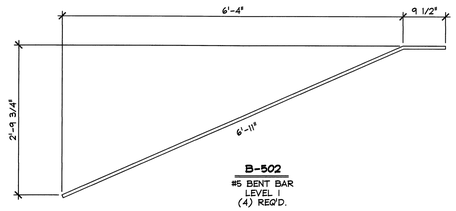
F:\VT-Bridges\23462-14 Barton\23462-M1.dwg, 6/9/2015 3:23:24 PM



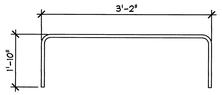
B-701D
#7 BENT BAR
LEVEL II (DUAL COATED)
(61) REQ'D.



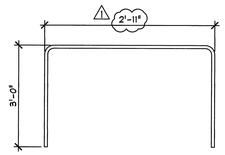
B-501
#5 BENT BAR
LEVEL I
(79) REQ'D



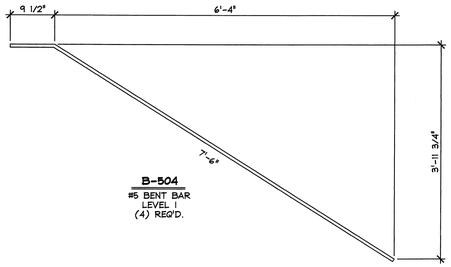
B-502
#5 BENT BAR
LEVEL I
(4) REQ'D.



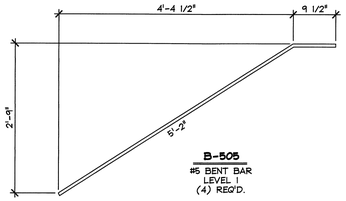
B-503
#5 BENT BAR
LEVEL I
(31) REQ'D.



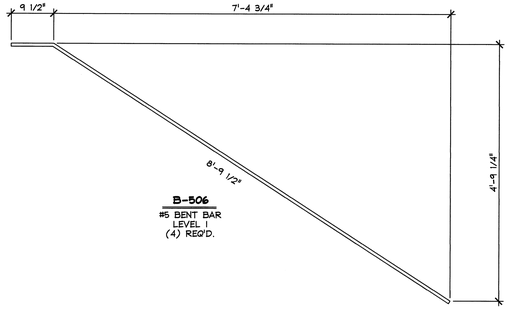
B-401
#4 BENT BAR
LEVEL I
(52) REQ'D.



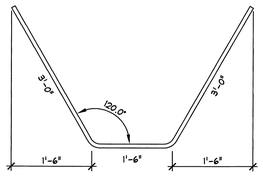
B-504
#5 BENT BAR
LEVEL I
(4) REQ'D.



B-505
#5 BENT BAR
LEVEL I
(4) REQ'D.



B-506
#5 BENT BAR
LEVEL I
(4) REQ'D.



B-601
#6 BENT BAR
LEVEL I
(24) REQ'D.

MISCELLANEOUS MATERIALS

ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1	B-401	52	#4 BENT BAR (LEVEL I)	
2 △	B-501	(79)	#5 BENT BAR (LEVEL I)	
3	B-502	4	#5 BENT BAR (LEVEL I)	
4 △	B-503	(31)	#5 BENT BAR (LEVEL I)	
5	B-504	4	#5 BENT BAR (LEVEL I)	
6	B-505	4	#5 BENT BAR (LEVEL I)	
7	B-506	4	#5 BENT BAR (LEVEL I)	
8	B-601	24	#6 BENT BAR (LEVEL I)	
9 △	B-701D	(61)	#7 BENT BAR (LEVEL II, DUAL COATED)	(+1 SAMPLE) △
10				
11		48	#5 x 3'-10" (LEVEL II, DUAL COATED)	
12	△	(52)	#5 x 4'-6" (LEVEL II, DUAL COATED)	
13				
14		4	#5 x 2'-0" (LEVEL I)	
15		4	#5 x 3'-7" (LEVEL I)	
16		2	#5 x 3'-9" (LEVEL I)	
17		2	#5 x 3'-0" (LEVEL I) △	
18		2	#5 x 4'-7" (LEVEL I)	
19		6	#5 x 5'-1" (LEVEL I)	
20		2	#5 x 5'-6" (LEVEL I) △	
21		2	#5 x 6'-2" (LEVEL I)	
22		2	#5 x 6'-8" (LEVEL I)	
23		4	#5 x 7'-1" (LEVEL I)	
24				
25		4	#6 x 1'-9" (LEVEL I)	
26	△	(8)	#6 x 2'-1" (LEVEL I)	
27	△	(8)	#6 x 2'-2" (LEVEL I)	
28		8	#6 x 3'-3" (LEVEL I)	
29		4	#6 x 4'-3" (LEVEL I) △	
30		32	#6 x 4'-10" (LEVEL I)	
31		14	#6 x 19'-7" (LEVEL I)	
32		14	#6 x 21'-7" (LEVEL I)	
33		14	#6 x 21'-8" (LEVEL I)	
34		12	#6 x 22'-7" (LEVEL I)	
35		2	#6 x 21'-11" (LEVEL I)	
36				
37		68	#7 x 5'-9" (LEVEL I)	
38		68	#7 x 6'-1" (LEVEL I)	
39		4	#7 x 5'-8" (LEVEL I)	
40		2	#7 x 6'-3" (LEVEL I)	
41		2	#7 x 7'-8" (LEVEL I)	
42		4	#7 x 7'-7" (LEVEL I)	
43		4	#7 x 6'-11" (LEVEL I)	
44		2	#7 x 6'-4" (LEVEL I)	
45		2	#7 x 7'-6" (LEVEL I)	
46		2	#7 x 8'-2" (LEVEL I)	
47		2	#7 x 8'-3" (LEVEL I)	
48		4	#7 x 8'-0" (LEVEL I)	
49		2	#7 x 8'-6" (LEVEL I)	
50		2	#7 x 8'-7" (LEVEL I)	
51		4	#7 x 8'-9" (LEVEL I)	
52		2	#7 x 8'-10" (LEVEL I)	
53		2	#7 x 9'-3" (LEVEL I)	
54		2	#7 x 9'-2" (LEVEL I)	
55		4	#7 x 9'-4" (LEVEL I)	
56		4	#7 x 9'-7" (LEVEL I)	
57		2	#7 x 9'-8" (LEVEL I)	
58		4	#7 x 9'-11" (LEVEL I)	
59		4	#7 x 10'-3" (LEVEL I)	
60		8	#7 x 10'-4" (LEVEL I)	
61		2	#7 x 10'-0" (LEVEL I)	
62				
63		4	2'-0"ϕ x 6'-2 7/8" CORRUGATED STEEL PIPE (GALV.)	
64		4	2'-0"ϕ x 6'-7 1/8" CORRUGATED STEEL PIPE (GALV.)	
65		1	2'-0"ϕ x 9'-3 1/2" CORRUGATED STEEL PIPE (GALV.)	
25		1	2'-0"ϕ x 7'-11 1/8" CORRUGATED STEEL PIPE (GALV.)	
25		1	2'-0"ϕ x 8'-8" CORRUGATED STEEL PIPE (GALV.)	
25		1	2'-0"ϕ x 8'-7 1/2" CORRUGATED STEEL PIPE (GALV.)	
25	△	(8)	SET OF (4) 0.60"ϕ STRAND LIFTING LOOPS	

Vermont Agency of Transportation
Bridge Shop Drawings Rev 24_2014#05) FLATTENED.pdf

RECEIVED
ON: June 10, 2015
and Checked for
CONFORMANCE
BY: Todd A. Sumner DATE: 06/16/2015

SHOP DRAWING REVIEW

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CLD Consulting Engineers
540 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 120174
Reviewed by: SRB
Date: 06/11/2015

△ 6/9/2015 REVISED AS NOTED T.D.
△ 5/28/2015 REVISED AS NOTED T.D.

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 OSE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

J.P. Sicard
CONTRACTOR
BARTON, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ORLEANS

TOWN OF BARTON
ROARING BROOK ROAD TH #2, RURAL MINOR COLLECTOR
BRIDGE NO.: 8 PROJECT NO.: BRO 1449(31)

PRECAST ABUTMENT
MATERIAL LIST

DATE: FEB. 25, 2015
SCALE: NOTED
CHKD: - DFTM: T.D.
JOB NO: 23462-015
DWG. NO: M2

F:\VT-Bridges\23462-14 Barton\23462-M2.dwg, 6/10/2015 8:05:35 AM