Bill as Introduced

HJR 1 – AS INTRODUCED

2011 SESSION

11-0391
06/05

HOUSE JOINT RESOLUTION *1*

A RESOLUTION directing the department of transportation and the department of environmental services to study the prevention of further erosion of the east bank of the Exeter River.

SPONSORS: Rep. Itse, Rock 9; Rep. Comerford, Rock 9; Rep. Antosz, Rock 9; Sen. Barnes, Jr., Dist 17

COMMITTEE: Resources, Recreation and Development

ANALYSIS

This joint resolution directs the department of transportation and the department of environmental services to study the prevention of further erosion of the east bank of the Exeter River.

11-0391
06/05

STATE OF NEW HAMPSHIRE

In the Year of Our Lord Two Thousand Eleven

A RESOLUTION directing the department of transportation and the department of environmental services to study the prevention of further erosion of the east bank of the Exeter River.

Be it Enacted by the Senate and House of Representatives in General Court convened:

Whereas, the replacement of bridge 096095 in 1998 changed the course of the Exeter River immediately downstream of the bridge; and

Whereas, the change in the course of the river causes the river to erode the east bank during floods; and

Whereas, such erosion threatens the property on the east river bank, including the Liberty Market located at the intersection of New Hampshire Route 107 and Sandown Road in Freemont; and

Whereas, the substantial changes to the river include the width of the channel, the roughness of the walls, and the removal of the center support which was angled so as to direct water away from the east bank of the river; now, therefore, be it

Resolved by the Senate and House of Representatives in General Court convened:

That the general court of the state of New Hampshire hereby directs the department of transportation and the department of environmental services to perform a study to determine the least costly method to prevent further erosion of the east bank of the Exeter River downstream of bridge 096095 and prepare all necessary permit applications to affect said further erosion.

Speakers

SIGN UP SHEET

To Register Opinion If Not Speaking

Bill # HJR 1 Date 1/25/11

Committee Resources, Recreation + Development

**** Please Print All Information ****

Name	Address	Phone	Representing	Pro	Con
Sen Barnes			17	✓	
NANCY MAYVILLE	7 HAZEN DR, CONCORD NH DEPT of TRANSPORTATION	271-2107	NHDOT		✓
Gary Cahoon	NH - Assoc of RecCare Owners				
CHRIS ALLGOOD					

SIGN UP SHEET

To Register Opinion If Not Speaking

Bill # HJR 1 - Continued Date 2/1/11

Committee Resources, Recreation + Development

**** Please Print All Information ****

Name	Address	Phone	Representing	Pro	Con
NANCY MAYVILLE	NHDOT - 7 HAZEN DR PO BOX 483, CONCORD, NH	271-2107	NH DEPT OF TRANSPORTATION		✓

Hearing Minutes

HOUSE COMMITTEE ON RESOURCES, RECREATION AND DEVELOPMENT

PUBLIC HEARING ON HJR 1

BILL TITLE: directing the department of transportation and the department of environmental services to study the prevention of further erosion of the east bank of the Exeter River.

DATE: January 25, 2011

LOB ROOM: 305 **Time Public Hearing Called to Order:** 1:30 p.m.

Time Adjourned: 2:00 p.m.

(please circle if present)

Committee Members: Reps. Renzullo, Kappler, C. Christensen, Russell, Ahlgren, Merrow, Bolster, Howard, Hutchinson, Lovett, Pettengill, Schroadter, Spang, Parkhurst, Moody, Aguiar and Thomas.

Bill Sponsors: Rep. Itse, Rock 9; Rep. Comerford, Rock 9; Rep. antosz, Rock 9; Sen. Barnes, Jr., Dist 17

TESTIMONY

* Use asterisk if written testimony and/or amendments are submitted.

Rep. Chris Ahlgren - Introduced the bill. No sponsor available.

Nancy Mayville, NH Department of Transportation (DOT) - Opposes the bill. Oversees funding to Towns for town projects such as bridge replacements. This was a town managed project. Town gets reimbursed 80% when job is done. This project had no pier replacement. Flow is unchanged. DOT is opposed to further study. Town owns the bridge; any problems are the town's to resolve. Construction was in 1998. Erosion is downstream of the bridge, not in the area of the construction.

Rene Pelletier with Steve Couture, NH Department of Environmental Services (DES) - Opposes the bill. DES and FEMA contributed to a study done by Beer Creek Environment. Conclusion – "there might be some alignment issues". Rip rap and bank erosion may have contributed. Design criteria was met. Municipality needs to talk to their consultant. DES has no funding for this bill/study. The town has not contacted DES on this matter.

Respectfully submitted,

Rep. D. L. Chris Christensen
Clerk

HOUSE COMMITTEE ON RESOURCES, RECREATION AND DEVELOPMENT

PUBLIC HEARING ON HJR 1

BILL TITLE: directing the department of transportation and the department of environmental services to study the prevention of further erosion of the east bank of the Exeter River.

DATE: 1/25/11

LOB ROOM: 305 **Time Public Hearing Called to Order:** 1:30 p.m.

Time Adjourned: ~~[illegible]~~ 2 PM (Recessed)

(please circle if present)

Committee Members: Reps. (Renzulli), (Kappler), (C. Christensen), (Russell), (Ahlgren), (Merrow), (Bolster), (Howard), (Hutchinson), (Lovett), (Pettengill), (Schroadter), (Spang), (Parkhurst), (Moody), (Aguiar) and Thomas.

Bill Sponsors: Rep. Itse, Rock 9; Rep. Comerford, Rock 9; Rep. antosz, Rock 9; Sen. Barnes, Jr., Dist 17

TESTIMONY

* Use asterisk if written testimony and/or amendments are submitted.

4/25/11 pg 1 of 2

1) HJR-1

Rep. Ahlgren - Intro. No sponsors available.-

~~Chair - Rep Kappler - received hearing~~.

2) Nancy Mayville - D.O.T. OPPOSE.

Overseer funding to Towns for town projects such as bridge replacements. - This was a town managed project Town gets reimbursed 80% when job is done. This project had no pier replacement flow is unchanged.

DOT is opposed to further study. Towns owns the bridge; any problems are the Town's to resolve. Construction was in 1998.

Maryville Erosion is downstream of the bridge, not in the area of the construction

3) Rene Pelletier - DES - OPPOSE -
w/ Steve Couture.
DES & FEMA contributed $ for a study done by Beer Creek Environmental.
Conclusion: there might be some alignment issues. Rip rap & bank armoring may have contributed. Design criteria was met. Municipality needs to talk to their consultant.
DES has no funding for this bill/study
The Town has not contacted DES on this matter.

HOUSE COMMITTEE ON RESOURCES, RECREATION AND DEVELOPMENT

PUBLIC HEARING ON HJR 1 Continued

BILL TITLE: directing the department of transportation and the department of environmental services to study the prevention of further erosion of the east bank of the Exeter River.

DATE: February 1, 2011

LOB ROOM: 305 **Time Public Hearing Called to Order:** 11:15 a.m.

Time Adjourned: 12:16 p.m.

(please circle if present)

Committee Members: Reps. Renzullo, Kappler, C. Christensen, Russell, Ahlgren, Merrow, Bolster, Howard, Hutchinson, Lovett, Pettengill, Schroadter, Spang, Parkhurst, Moody, Aguiar and Thomas.

Bill Sponsors: Rep. Itse, Rock 9; Rep. Comerford, Rock 9; Rep. Antosz, Rock 9; Sen. Barnes, Jr., Dist 17

TESTIMONY

* Use asterisk if written testimony and/or amendments are submitted.

Rep. Dan Itse - Prime sponsor of the bill. Supports the bill. 1996 we had a 50 year flood, damaging abutment on West Side of river. In replacing the bridge, the water damage shifted. The center of the bridge had a pier that also shifted threatening the old general store. Rep. Itse claims when the bridge was rebuilt, the design was flawed, causing further erosion. Prior to the flood, the flow was on the other side. Store has been there 100 years, the expansion is 30 years old. The Town of Fremont has not contacted either the Department of Environmental Services (DES) or the Department of Transportation (DOT). Are the engineers who redesigned the bridge responsible?

*** Nancy Mayville, NH Department of Transportation** - Opposes the bill. Reviewed old files and supplied three letters from files. Town owns the bridge and DOT reviewed plans for compliance with national standards and it meets standards. The original engineering firm has changed but the Town of Fremont could still go back to that firm or the designing engineers. Adding back a replacement bridge center support, which under new construction is not necessary, would not solve the erosion problem. Landowner should install shore stabilization. Designing engineer has continuing responsibility but Ms. Mayville does not know how many years that lasts.

Question: Rep. Bolster for Rene Pelletier of DES – Large increases in water volume and velocity has created problems that did not exist 10 years ago. Other development in the last 10-15 years changes things like impervious surface and affects streams all over the state. We lost 45 feet of land on the Mohawk River in the last two years. Adding a fix e.g. rip-rap in place forces water flow to cause a problem elsewhere. DES agrees with DOT that it is the town's problem. Growth has changed the character of flood plain. FEMA will be redrawing flood maps.

Respectfully submitted,

Rep. D. L. Chris Christensen
Clerk

HOUSE COMMITTEE ON RESOURCES, RECREATION AND DEVELOPMENT

PUBLIC HEARING ON HJR 1 Continued

BILL TITLE: directing the department of transportation and the department of environmental services to study the prevention of further erosion of the east bank of the Exeter River.

DATE: February 1, 2011

LOB ROOM: 305 **Time Public Hearing Called to Order:** 11:15 a.m.

Time Adjourned: 12:16 pm

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Bill Sponsors: Rep. Itse, Rock 9; Rep. Comerford, Rock 9; Rep. Antosz, Rock 9; Sen. Barnes, Jr., Dist 17

TESTIMONY

* Use asterisk if written testimony and/or amendments are submitted.

2/1/11 HJR 1 Re-opened. pg 1 of 3

Continued Public Hearing HJR 1 2/1/11 11:45

① Rep. Dan Itse, Prime Sponsor (supports)

1996 we had a 50 yr flood, damaging abutment on West Side of River. In replacing the bridge, the water damage shifted. The center of the bridge had a pier that also shifted. Threatening the old general store. Rep Itse claims when the bridge was rebuilt, the design was flawed, causing further erosion. Prior to the flood, the flow was on the other side. Store has been there 100 years, the expansion is 30 years old. Fremont has not contacted either DES or DOT. Are the engineers who re-designed the bridge responsible?

2nd Nancy Mayville NH DOT reviewed old files & supplied 3 letters from files.

Town owns the bridge & DOT reviewed plans for compliance with national standards & it meets standards.

The original engineering firm has changed but the Town of Fremont could still go back to that firm or the designing engineer.

Adding back a replacement bridge center support, which under new construction is not necessary would not solve the erosion problem. Landowner should install shore stabilization.

Designing engineer has continuing responsibility but Mr. Mayville does not knows how many years that lasts.

→ Q - Bobier for Rene Pelletier of DES - Large increases in water volume & velocity has created problems that did not exist 10 years ago. Q the development

in the last 10 - 15 years change things like impervious surface & affects streams all over the state. We lost 45 feet of bank on the Mohawk River in the last two years. Adding a fix eg. rip-rap, in one place forces water flow to cause a problem elsewhere.

DES agrees with DOT that it is the Town's problem.

Growth has changed the character of flood plains. FEMA will be re-drawing flood maps

Testimony

(2)

New Hampshire DOT
Department of Transportation

THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION

GEORGE N. CAMPBELL, JR.
COMMISSIONER

JEFF BRILLHART, P.E.
ASSISTANT COMMISSIONER

March 23, 2009

The Honorable Candace White Bouchard
N.H. House of Representatives
71 Northeast Village Road
Concord, N.H. 03301

Dear Representative Bouchard:

I am writing in response to your request for information regarding a bridge carrying Sandown Road over the Exeter River in Fremont. The bridge is owned by the Town of Fremont and was replaced by the Town using the State Aid Bridge program in 1998. An abutter feels the replacement of this bridge changed the flow of the river creating erosion problems along the rivers bank.

The Department manages the State Aid Bridge program in accordance with State law as a benefit to municipalities dealing with local bridge improvements. The actual design and construction for the bridge was managed by the Town of Fremont, and any outstanding issues relative to the bridge are the responsibility of the Town. I believe the property owner should contact the Town with his concerns.

Hopefully this information is helpful. If you have questions or comments, please call.

Sincerely,

David J. Brillhart, P.E.
Assistant Commissioner

DJB:d

cc: George Campbell
Nancy Mayville

RECEIVED
DEPARTMENT OF
TRANSPORTATION
MAR 25 2009
Bureau of
Planning and Community Assistance

NEED ORIGINAL LETTER + PETITION THAT PROMPTED THIS LETTER.
attached

Town of Fremont ~ New Hampshire

Office of the Selectmen
Telephone 603 895 2226
Facsimile 603 895 3149

295 Main Street
PO Box 120
Fremont NH 03044-0120

COPY

09 July 2009

Representative Dan Itse
20 Kelsey Drive
Fremont NH 03044

Sandown Road over Exeter River
Bridge 096/095

Dear Dan:

We are in receipt of your email dated June 8, 2009 and associated documents. We reviewed same at a recent meeting.

We find it unfortunate that no one has thought until now, to bring this matter to the attention of the Board of Selectmen. We understand that some years ago, Mr Arnofsky mentioned concerns about the store's foundation issues to the Town Administrator while she was making a purchase in the store, at which time she encouraged him to make contact with the Board. We have never heard from him in this regard.

As you may know, the Town spent a great deal of time and money on the reconstruction project for the formerly red-listed bridge that carries Sandown Road over the Exeter River. The reconstruction was engineered to State specifications, approved and 80% reimbursement funded, by the NH Bridge Aid Program.

The Town did some additional hand mortar and concrete work at the edge of their parking lot after reconstruction of the bridge. We do not know if this was caused from parking lot drainage, but did the work in an effort to alleviate future problems in that area.

You may also know that the property currently known as Liberty Square Market sits on a very small lot (1/2 acre); and that the building takes up virtually all of the space on that lot. The building has always been extremely close to the river bank. In the past 10 years since the bridge replacement, we have had 3 virtually-500-year floods, which are no reflection on the Town or the property, but exigent circumstances of nature. It may also be assumed that the several floods which occurred in the late 1980's and through the 1990's also contributed to the erosion issues in this lot.

Additionally, the additions put on to the building 25 to 30 years ago would never be allowed now, as they are far too close to the river. The added-on buildings brought it closer to the river and may also have to do with the accumulated problems in terms of weight and sprawl.

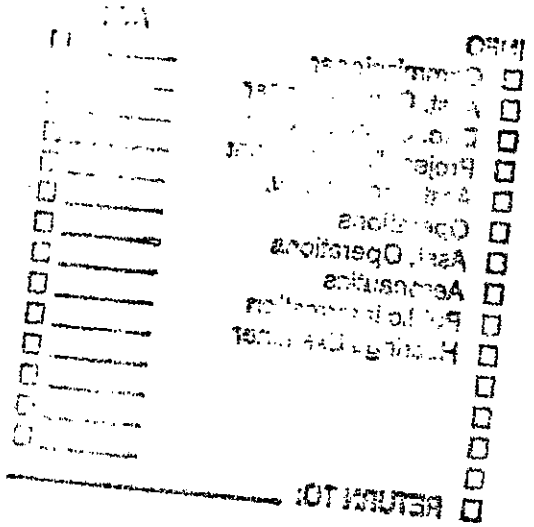
While the Board finds it unfortunate that any property owner has to do repairs to their property, we do not believe that this matter could be blamed on the State of NH or the Town of Fremont. Each followed the respective planning, engineering, permitting, and construction as outlined by state laws, and the bridge has worked well in the 10 years since its completion. There are a variety of mitigating factors in the history of the site as well.

We wish you luck in your endeavor, and would offer the Town's support in as much as we could reasonably accommodate.

Sincerely yours,

The Fremont Board of Selectmen

C: David Brillhard PE, Asst Commissioner NH DOT
Barry & Sharen Arnofsky
Rep Baldasara, Rock 3
Rep Dumaine, Rock 3
Rep Ingbretson, Grafton 5
Guerwood Holmes, Road Agent



THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION

September 10, 1997

LEON S. KENISON
COMMISSIONER

Heidi Carlson, Administrative Assistant
Town of Fremont
PO Box 120
Fremont, NH 03044

Re: Fremont Bridge Aid Project 12554
Bridge Number 096/095
Sandown Road over Exeter River

Dear Ms. Carlson:

The set of final design plans submitted by BAC Killam for the subject project have been reviewed and the following comments are offered:

1. The end walls will make access to the post-tensioning strands extremely difficult in the future. Perhaps this won't be necessary, or maybe the post-tensioning ducts could be moved to 2' ± from centerline of bearing.

2. Where the voided slabs pass through the end walls there will be a 4 1/4" gap (including 1" expansion material).

3. Detail of the backwall (Section A-A on Sheet 10 of 24) is awkward. We have attached a detail that we've used at the ends of voided slab bridges.

Subject to resolution of these comments with the final plans, we therefore give approval of the final plans and you may proceed with the bid phase of the project. Upon receipt of the bids please forward a copy of the bid tabulations for our review and concurrence to award. As soon as you provide a paid invoice for preliminary engineering services we will reimburse the Town for 80% of that cost.

Sincerely,

Robert T. Barry, Administrator
Bureau of Municipal Highways

RTB/ds

cc: James A. Moore, Administrator, Bureau of Bridge Design
Matthew Severson, BAC Killam

Bureau of Municipal Highways
John O. Morton Building - Room 111
Telephone: (603) 271-2107

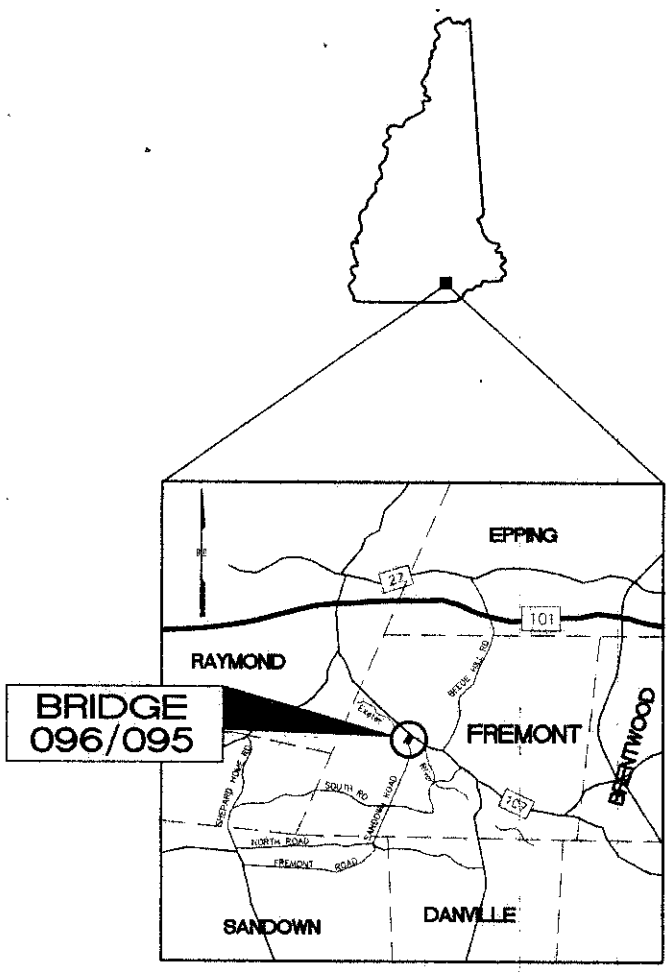
PLANS C

BRIDGE RI

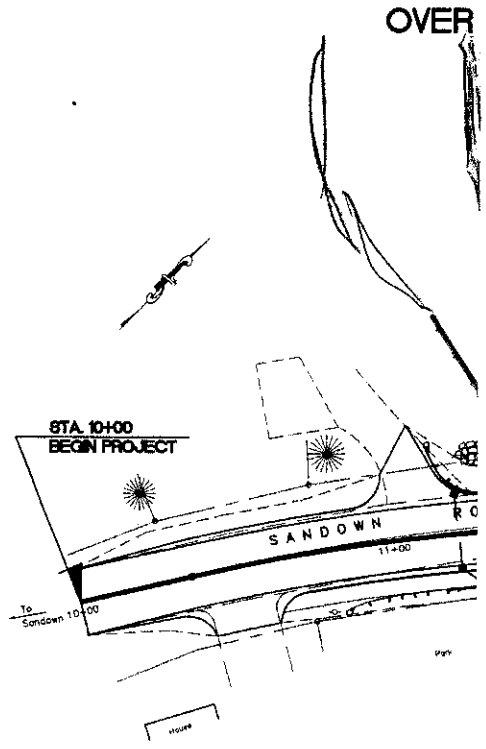
SA

SANDOV

OVER



LOCATION MAP



Rob J
Tom Marshall

Lee Carew
2 Wall St
Suite 450
Manchester
603 623 03011
4460

BRID

!

PLANS PREPARED BY

BAC Killam

THE CONCORD CENTER
10 FERRY STREET
CONCORD, NEW HAMPSHIRE

BAC Killam

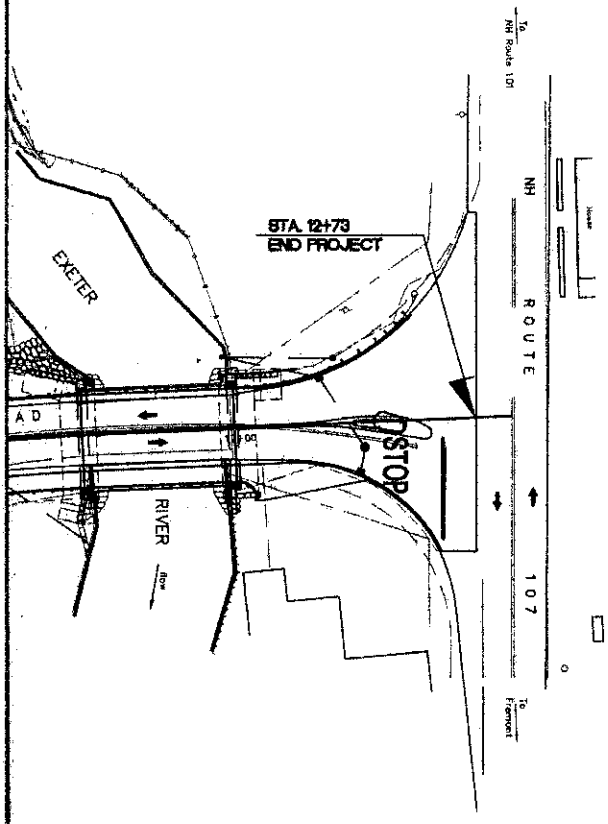
STATE OF NEW HAMPSHIRE
MATTHEW A. SEVERSON
No. 8147
LICENSED
PROFESSIONAL ENGINEER

TOWN
ROCKI

SEA Consult

OF PROPOSED
EPLACEMENT AND
FETY WORK

VN ROAD BRIDGE
EXETER RIVER



GE NO. 096/095

LAYOUT

SCALE: 1" = 30'

OF FREMONT
IGHAM COUNTY

INDEX OF SHEETS

CONTRACTOR TO NOTE

1) THE CONTRACTOR SHALL COMPLETE ALL WORK NO LATER THAN OCTOBER 30, 1998.

2) SANDOWN ROAD SHALL BE CLOSED TO THROUGH TRAFFIC FROM MAY 11, 1998 THROUGH OCTOBER 5, 1998.

3) LIQUIDATED DAMAGES OF THREE HUNDRED DOLLARS ($300.00) PER DAY, PLUS ENGINEERING CHARGES WILL BE ASSESSED FOR EACH CALENDAR DAY THAT THE ROADWAY REMAINS CLOSED AFTER OCTOBER 5, 1998.

4) LIQUIDATED DAMAGES OF THREE HUNDRED DOLLARS ($300.00) PER DAY, PLUS ENGINEERING CHARGES WILL BE ASSESSED FOR EACH CALENDAR DAY THAT THE PROJECT IS NOT COMPLETE AFTER OCTOBER 30, 1998.

AS-BUILT PLANS
OCTOBER 31, 1998

STATE FILE NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
93-2-1	12544	1	24

STANDARD PLANS

STANDARD	NO. 1	CONCRETE AND M.R.M. HEADWALLS	REVISED	MARCH 24, 1977
STANDARD	NO. 1A	CONCRETE AND M.R.M. HEADWALLS	REVISED	MAY 8, 1970
STANDARD	NO. 2	STEEL ARCH PIPES, SLOPE PAVING, UNDERDRAIN HEADWALL	REVISED	MARCH 1, 1983
STANDARD	NO. 2A	CORRUGATED ALUMINUM PIPE, PIPE ARCH, UNDERDRAIN FLUSHING BASIN	REVISED	DECEMBER 20, 1982
STANDARD	NO. 3	CATCH BASINS, DROP INLETS	REVISED	OCTOBER 17, 1983
STANDARD	NO. 3A	GRATES FOR C.B.'S & D.I.'S	REVISED	OCTOBER 17, 1983
STANDARD	NO. 3B	CATCH BASINS, DROP INLETS, TRAP	REVISED	OCTOBER 17, 1983
STANDARD	NO. 4	CURBING	REVISED	APRIL 21, 1982
STANDARD	NO. 5	CONCRETE BOUND, STEPS	REVISED	NOVEMBER 1, 1984
STANDARD	NO. 5A	GUTTERS, SLUICE, SLOPES, MUCK EXCAVATION	REVISED	FEBRUARY 26, 1975
STANDARD	NO. GR-1	BEAM GUARDRAIL, STD. SECTION-WOOD POSTS & HARDWARE DETAILS	REVISED	MAY 1, 1995
STANDARD	NO. GR-1A	BEAM GUARDRAIL, STD. SECTION-STEEL POSTS & HARDWARE DETAILS	REVISED	MAY 1, 1995
STANDARD	NO. GR-2	BEAM GUARDRAIL, TERMINAL UNIT TYPE MELT	REVISED	MAY 1, 1995
STANDARD	NO. GR-2A	BEAM GUARDRAIL, MELT HARDWARE DETAILS	REVISED	MAY 1, 1995
STANDARD	NO. GR-2B	BEAM GUARDRAIL, MELT HARDWARE DETAILS	REVISED	MAY 1, 1995
STANDARD	NO. GR-3	BEAM GUARDRAIL, TERMINAL UNIT TYPE G-2	REVISED	MAY 1, 1995
STANDARD	NO. GR-4	PRECAST CONC. MEDIAN BARRIER 1070 mm F-SHAPE (DOUBLE-FACED)	REVISED	MAY 1, 1995
STANDARD	NO. 9	WOVEN WIRE & CHAIN LINK FENCE	REVISED	AUGUST 2, 1977
STANDARD	NO. 9A	STEEL WITNESS MARKER, STEEL SIGN POST, DELINEATOR POST	REVISED	MAY 15, 1985
STANDARD	NO. 10		DELETED	
STANDARD	NO. 10A		DELETED	
STANDARD	NO. 11	END SECTIONS FOR PIPES	REVISED	MAY 21, 1975
STANDARD	NO. 12	DELINEATORS FOR GUARDRAIL, MEDIAN BARRIERS	REVISED	MAY 15, 1985
STANDARD	NO. 12A	DELINEATOR SPACING FOR RAMPS AND LOOPS	REVISED	MAY 15, 1985
STANDARD	NO. 13		DELETED	
STANDARD	NO. 14		DELETED	
STANDARD	NO. 15		DELETED	
STANDARD	NO. 16		DELETED	

THE FOLLOWING STANDARD PLANS WILL BE USED ON THIS PROJECT:

				3	3A	3B	4					GR-2	GR-2A	GR-2B	GR-3	GR-4		9A	11	12

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU HIGHWAY DESIGN

INDEX OF STANDARD PLANS

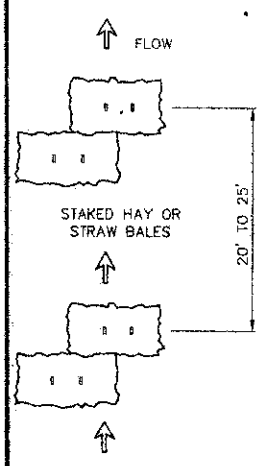
AS-BUILT (OCTOBER 31, 1998)

BAC Killam
THE CONCORD CENTER
10 FERRY STREET
CONCORD, NH 03301

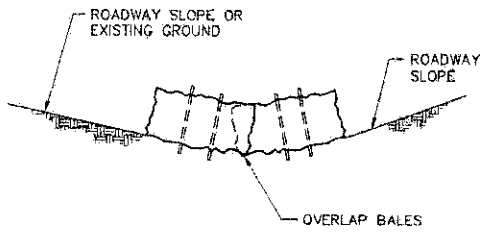
FILE NUMBER 23-2-1

REVISION DATE	BAC PROJECT NO.	BAC CAD FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
8/97	96071.00	INDEX.DWG	-	12544	2	24

FED.ROAD DIV. NO.	STATE	PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	N.H.			.	.



PLAN

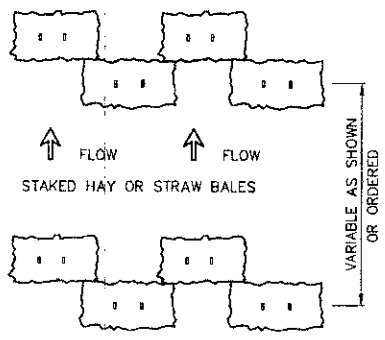


ELEVATION

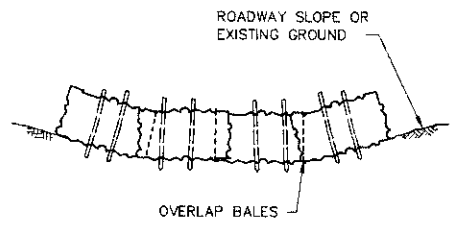
NOTE: USE IN NARROW DITCH SECTION.

EROSION PROTECTION TYPE C

NOT TO SCALE



PLAN

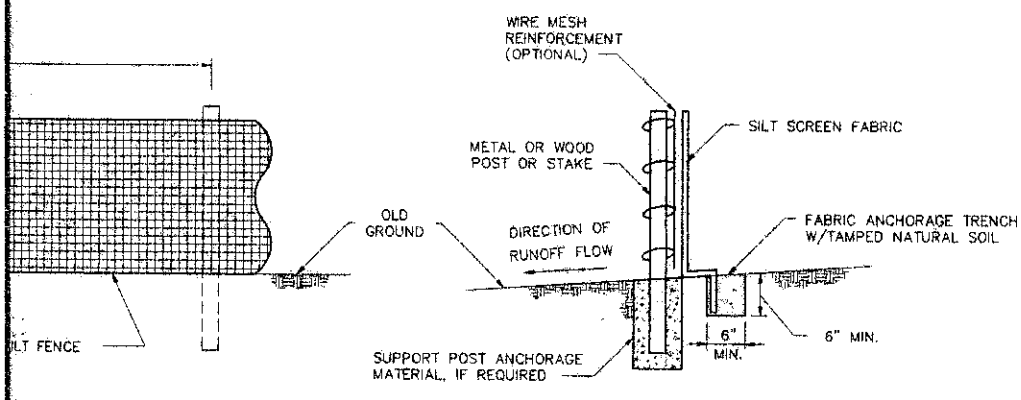


ELEVATION

NOTE: USE IN WIDE DITCH SECTION.

EROSION PROTECTION TYPE D

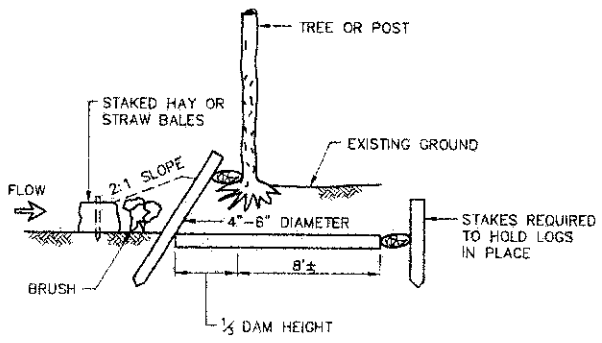
NOT TO SCALE



END VIEW

SILT FENCE

NOT TO SCALE



SECTION B-B

GENERAL NOTES

1. ALL WORK ASSOCIATED WITH TEMPORARY EROSION CONTROL, EXCEPT THAT DESCRIBED IN 699.5.2, WILL BE PAID FOR UNDER ITEM 699 – TEMPORARY PROJECT WATER POLLUTION CONTROL.
2. BALED HAY AND STRAW WILL BE SUBSIDIARY TO ITEM 699. STAKES TO HOLD BALES SHALL BE 2"x2" OR EQUIVALENT SAPLINGS, AND SHALL BE LONG ENOUGH TO EXTEND 1 FOOT MINIMUM INTO THE GROUND. STAKES WILL BE SUBSIDIARY TO ITEM 699.
3. BALES SHALL BE SET 3 ¼"CHES ± BELOW THE GROUND SURFACE OR AS ORDERED. ANY REQUIRED EXCAVATION TO SET BALES WILL BE SUBSIDIARY.
4. HAY BALES WILL BE ALLOWED TO ROT IN PLACE EXCEPT IN HIGHLY VISIBLE AREAS WHERE THE ENGINEER MAY ORDER REMOVAL (SUBSIDIARY).
5. THE FENCE SHALL CONSIST OF POLYPROPYLENE FABRIC ATTACHED TO A WIRE MESH BACKING SECURED TO WOOD POSTS AS APPROVED BY THE ENGINEER.
6. POLYPROPYLENE FABRIC SHALL BE MIRAF 1100X OR APPROVED EQUAL.
7. WIRE MESH SHALL BE COMMON CHICKEN WIRE, HOG WIRE, OR AS OTHERWISE APPROVED BY THE ENGINEER.
8. SIX INCHES OF FABRIC SHALL BE TOED INTO THE GROUND BY DIGGING A TRENCH AND BACKFILLING OR BY LAYING THE EXCESS FABRIC ON THE GROUND AND PLACING FILL AT THE BASE.
9. PRIOR TO BEGINNING EARTHWORK OPERATIONS AT LOCATIONS DIRECTED BY THE ENGINEER, SILT FENCE SHALL BE CONSTRUCTED ALONG THE TOE OF PROPOSED EMBANKMENT SLOPES AT THE LIMITS OF CLEARING.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INTEGRITY OF THE SILT FENCE THROUGHOUT THE DURATION OF THE CONTRACT AND SHALL EFFECT REPAIRS AT HIS OWN EXPENSE. AT THE COMPLETION OF THE CONTRACT, THE FENCE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU HIGHWAY DESIGN

TEMPORARY EROSION CONTROL DETAILS

AS-BUILT (OCTOBER 31, 1998)

BAC Killam
THE CONCORD CENTER
10 FERRY STREET
CONCORD, NH 03301

FILE NUMBER 93-2-1

REVISION DATE	BAC PROJECT NO.	BAC CAD FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
5-97	96071.00	T-EROS.DWG	–	12544	3	24

PROVIDE AND SCHEDULE ON SHOP
TEEL AND THE NECESSARY
ECURELY IN PLACE AT THE CORRECT
THE FABRICATOR SHALL MINIMIZE

GINEER OF COMPLETION OF
W AT LEAST 24 HOURS BEFORE
THE ENGINEER TO INSPECT THE

ROOM FINISH.

A SMOOTH, STEEL TROWELED

SHALL BE CONSTRUCTED FROM
BRIDGE SUBSTRUCTURE. THE
STONES WITH THE CONTRACTOR TO
ERIAL FOR REUSE PRIOR TO

RELATIVELY SQUARE UNLESS
STONES SHALL BE PLACED TO
E EXPOSED FACE.

EVE THE MINIMUM DESIRED
NS. THE FACE OF THE WALL SHALL
SLIGHT BATTER BACK (2:12 MAX.).
PATTERN UNLESS OTHERWISE

NG RELATIVELY UNIFORM STONE SIZES.
T THE BASE OF THE WALL.

WILL BE CONSTRUCTED BEHIND THE
NFLICTS WITH THE APPROACH RAIL

HE TOWN SHALL BE DISPOSED OF BY

DER DRY SQUARE STONE MASONRY

OUGH TRAFFIC DURING
ND PORTABLE CONCRETE BARRIERS
F THE EXISTING BRIDGE BEGINS.

E FOR THE INSTALLATION AND
ND CONSTRUCTION DETOUR. REFER
IER INFORMATION REGARDING THE
QUIREMENTS.

N THROUGHOUT CONSTRUCTION.
C ACCESS TO THE PARKING LOT AND
RACT.

INTAINED BY THE CONTRACTOR

ON SHOWN ON THE PLANS IS
THE ACCURACY OR COMPLETENESS
TOR IS SOLELY RESPONSIBLE FOR
ON SITE DURING CONSTRUCTION.

E PROPERTY OF ANY PUBLIC UTILITY
A PART OF THIS CONTRACT. THE
E OWNER IN THE PERFORMANCE OF

SUMMARY OF QUANTITIES

THIS INFORMATION IS FOR BIDDING PURPOSES ONLY

ITEM NUMBER	DESCRIPTION	UNIT	QUANTITY
203.1	COMMON EXCAVATION	CY	200
203.5	BORROW	CY	50
209.201	GRANULAR BACKFILL BRIDGE (460 CY)	UNIT	1
214.	FINE GRADING	UNIT	1
304.3	CRUSHED GRAVEL	CY	200
304.35	CRUSHED GRAVEL FOR DRIVES	CY	5
403.11	HOT BITUMINOUS PAVEMENT – MACHINE METHOD	TON	150
403.12	HOT BITUMINOUS PAVEMENT – HAND METHOD	TON	20
403.911	HOT BITUMINOUS BRIDGE PAVEMENT – 1" BASE COURSE WITH POLYESTER FIBER	TON	10
502.101	REMOVAL OF EXISTING BRIDGE STRUCTURE	UNIT	1
503.1	WATER DIVERSION STRUCTURES	UNIT	1
504.1	COMMON BRIDGE EXCAVATION	CY	350
504.2	ROCK BRIDGE EXCAVATION	CY	350
508.	STRUCTURAL FILL	CY	70
520.01	CONCRETE – CLASS AA	CY	20
520.12	CONCRETE – CLASS A, ABOVE FOOTINGS	CY	120
520.21	CONCRETE – CLASS B, FOOTINGS	CY	120
520.85	CONCRETE – BRIDGE DECK OVERLAY INCL. HIGH RANGE WATER REDUCING ADMIXTURE	CY	17
529.1	PRESTRESSED CONCRETE BRIDGE DECK	UNIT	1
534.3	WATER REPELLENT (SILANE–SILOXANE)	GAL	6
538.2	BARRIER MEMBRANE – VERTICAL SURFACES	SY	36
538.4	BARRIER MEMBRANE – RUBBERIZED ASPHALT	SY	120
544.	REINFORCING STEEL	LB	17000
544.2	REINFORCING – EPOXY COATED	LB	2500
548.11	ELASTOMERIC BEARING PADS (16 EACH)	UNIT	1
563.73	BRIDGE RAIL F, 3–BAR ALUMINUM WITH BALUSTERS	LF	100
565.73	BRIDGE APPROACH RAIL F, 3–BAR ALUMINUM	LF	112
570.3	DRY SQUARED STONE MASONRY	CY	105
586.2	PLACING EXCAVATED ROCK FOR CHANNEL PROTECTION	CY	65
593.2	GEOTEXTILE, NON–WOVEN	SY	100
603.00215	15" R.C. PIPE, 2000D, INCLUDING SPECIFIED EXCAVATION	LF	120
604.12	CATCH BASIN – TYPE B	UNIT	4
606.1451	BEAM GUARDRAIL (TERMINAL UNIT TYPE (MELT)) GR–1451	UNIT	2
606.147	BEAM GUARDRAIL (TERMINAL UNIT TYPE G–2) GR–147	UNIT	1
606.417	PORTABLE CONCRETE BARRIER FOR TRAFFIC CONTROL	LF	150
608.12	2" BITUMINOUS SIDEWALK	SY	10
609.01	STRAIGHT GRANITE CURB	LF	8
609.21	STRAIGHT GRANITE SLOPE CURB	LF	30
609.22	STRAIGHT GRANITE SLOPE CURB WITH RADIAL JOINTS	LF	50
609.3	STRAIGHT GRANITE CURB (BRIDGE)	LF	96
609.811	BITUMINOUS CURB – TYPE B (4" REVEAL)	LF	200
615.034	RELOCATING TRAFFIC SIGN – TYPE C	EACH	3
619.2	CONSTRUCTION SIGNS AND WARNING DEVICES	UNIT	1
621.21	REFLECTORIZED BEAM GUARDRAIL DELINEATOR (WHITE)	EACH	4
628.2	SAWED BITUMINOUS PAVEMENT	LF	225
632.0104	RETROREFLECTIVE PAINT PAVEMENT MARKING – 4" LINE	LF	1200
632.0112	RETROREFLECTIVE PAINT PAVEMENT MARKING – 12" LINE	LF	32
632.02	RETROREFLECTIVE PAINT PAVEMENT MARKING – SYMBOL OR WORD	SF	22.9
645.51	HAY BALES FOR TEMPORARY EROSION CONTROL	UNIT	100
645.531	SILT FENCE	LF	250
645.7	EROSION AND SEDIMENT CONTROL STORMWATER MANAGEMENT PLAN	UNIT	1
646.31	TURF ESTABLISHMENT WITH MULCH AND TACKIFIERS	ACRE	0.2
670.066	MAILBOX POST ASSEMBLIES	EACH	2
692.	MOBILIZATION	UNIT	1
699.	TEMPORARY PROJECT WATER POLLUTION CONTROL	ALLOWANCE	$5000
1002.	REPAIRS OR REPLACEMENTS AS NEEDED	ALLOWANCE	$1000

AS-BUILT (OCTOBER 31, 1998)

△	REVISION DESCRIPTION	BY	DATE

BA&C Project No. 96071.00 | BA&C CAD File NTS-QUAN.DWG

BAC Kilam
THE CONCORD CENTER
10 FERRY STREET
CONCORD, NH 03301

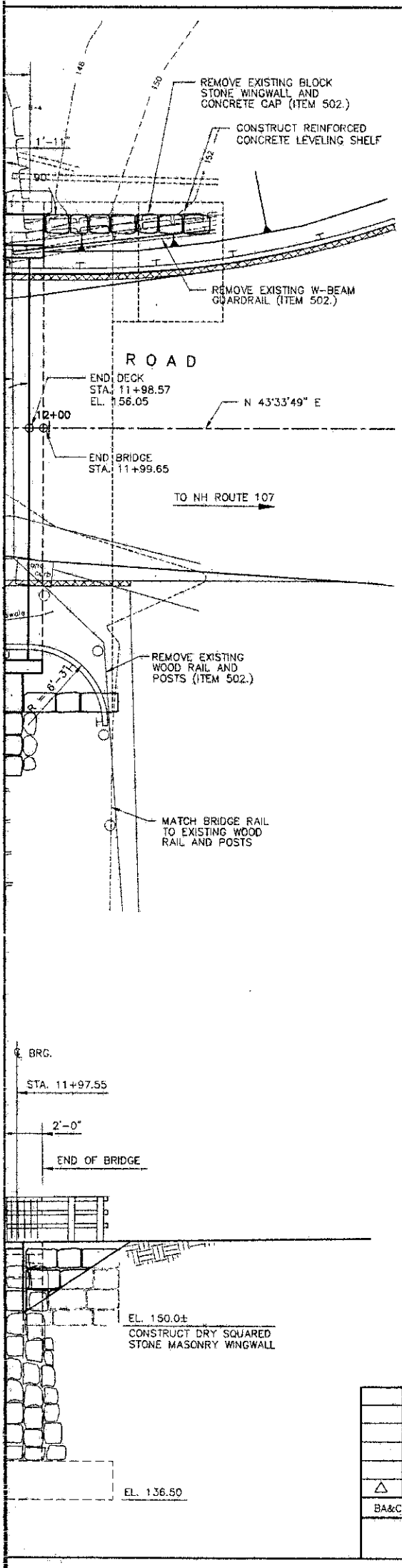
SUMMARY OF QUANTITIES

TOWN FREMONT BRIDGE NO. 096/095

LOCATION SANDOWN ROAD BRIDGE OVER EXETER RIVER

	BY	DATE		BY	DATE	FILE NUMBER
DESIGNED	MAS	4/97	CHECKED	JWP	5/97	93-2-1
DRAWN	MTB	4/97	CHECKED	MAS	5/97	
QUANTITIES			CHECKED			BRIDGE SHEET NO.
						OF

STATE FILE NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	12544	4	24



GENERAL NOTES

DESIGN LOAD:

AASHTO HS25-44 LIVE LOAD

SEISMIC DESIGN CATEGORY B.

SPECIFICATIONS:

AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SIXTEENTH EDITION, 1996, AS MODIFIED BY NHDOT BRIDGE DESIGN MANUAL.

NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 1997 WITH CURRENT ADDITIONS AND MODIFICATIONS.

FOUNDATIONS:

NEW CAST-IN-PLACE CONCRETE ABUTMENTS WITH RECONSTRUCTED BLOCK STONE WINGWALLS.

SUPERSTRUCTURE:

SINGLE SPAN PRECAST CONCRETE DECK BEAMS WITH NON-COMPOSITE, CONCRETE OVERLAY WITH HIGH RANGE WATER REDUCING ADMIXTURE.

CONCRETE:

CONCRETE DESIGN STRESSES ARE BASED UPON A 28-DAY COMPRESSIVE STRENGTH OF:

f'c = 6,000 PSI, FOR PRECAST DECK BEAMS
f'c = 4,000 PSI, CONCRETE OVERLAY INCLUDING HIGH RANGE WATER REDUCING ADMIXTURE
f'c = 4,000 PSI, CLASS AA FOR BRIDGE SEATS, SAFETY CURBS, SIDEWALKS AND ABUTMENT CAP
f'c = 3,000 PSI, CLASS A FOR ABUTMENT WALLS.
f'c = 3,000 PSI, CLASS B FOR FOOTINGS.

ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED ¾" EXCEPT AS NOTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM-A615), GRADE 60.

REINFORCING STEEL FOR BRIDGE DECK OVERLAY SHALL BE WELDED WIRE FABRIC (WWF6x6 - W4.0xW4.0), EPOXY COATED CONFORMING TO AASHTO M55 (ASTM A185-79).

CONCRETE COVER MEASURED FROM THE FACE OF REINFORCING STEEL SHALL BE 2½" EXCEPT AS NOTED.

PRESTRESSING STEEL:

PRESTRESSING AND POST-TENSIONING STRANDS SHALL BE LOW RELAXATION SEVEN WIRE STRANDS CONFORMING TO AASHTO M203 (ASTM A416) GRADE 270.

HYDROLOGIC/HYDRAULICS:

DESIGN YEAR STORM EVENT	= 100 YEAR
DRAINAGE AREA	= 51.2 SQUARE MILES
DESIGN FLOOD VOLUME, Q_{100}	= 2465 CFS
DESIGN FLOOD VELOCITY, V_{100}	= 8.73 FPS

VERTICAL CURVE DATA

P.V.I. STA	= 11+62.00
P.V.I. EL.	= 154.60
LENGTH	= 200'
AD	= 4.6
K	= 43.44
GRADE IN	= -1.30%
GRADE OUT	= +3.30%

HORIZONTAL CURVE DATA

P.I. STA	= 10+95.89
Δ	= 10°54'35"
D	= 9°05'40"
T	= 60.16
L	= 119.96
E	= 2.87
R	= 630.00

AS-BUILT (OCTOBER 31, 1998)

△	REVISION DESCRIPTION	BY	DATE
BA&C Project No. 96071.00	BA&C CAD File	PGENPLN.DWG	

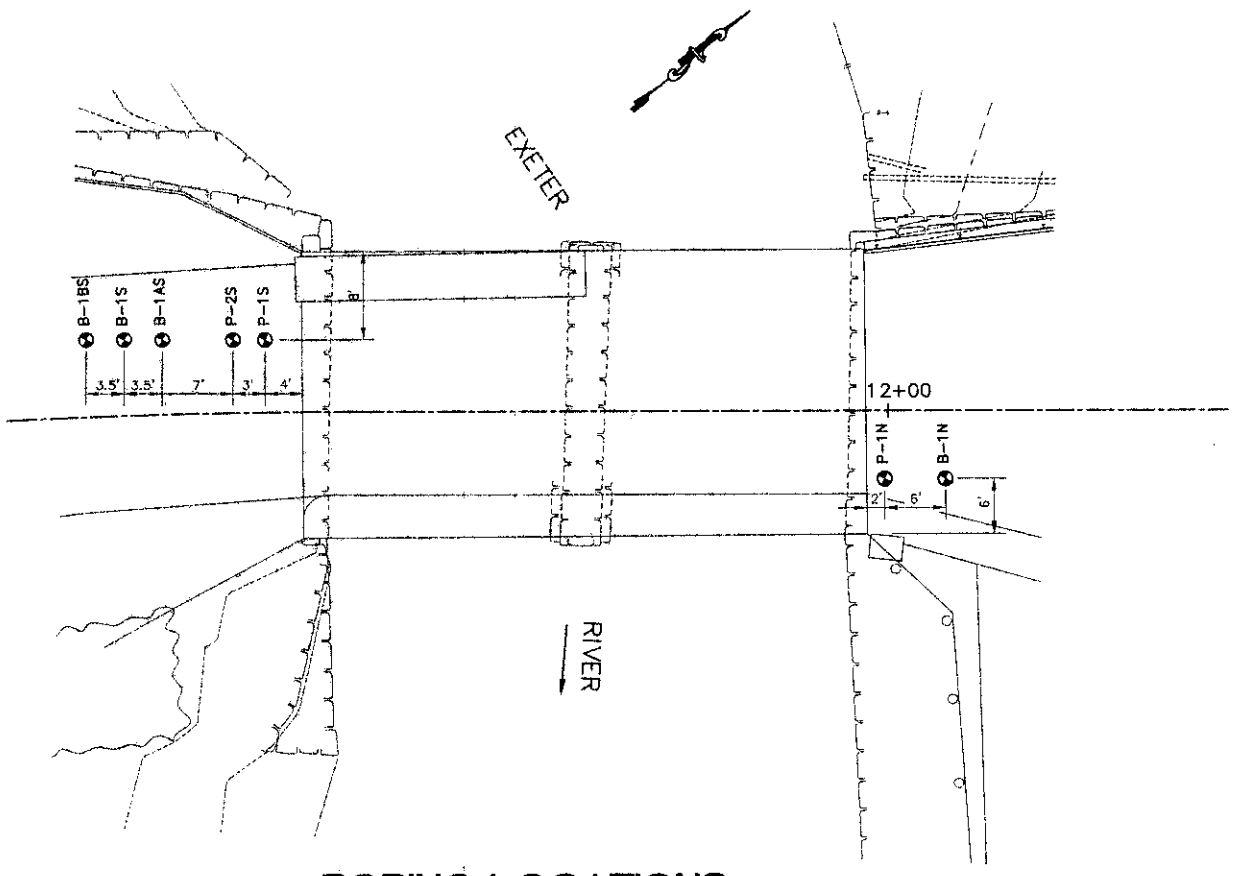
BAC Killam
THE CONCORD CENTER
10 FERRY STREET
CONCORD, NH 03301

GENERAL PLAN and ELEVATION

TOWN FREMONT BRIDGE NO. 096/095
LOCATION SANDOWN ROAD BRIDGE OVER EXETER RIVER

	BY	DATE		BY	DATE	FILE NUMBER
DESIGNED	MAS	3/97	CHECKED	WRB	8/97	93-2-1
DRAWN	MTB	3/97	CHECKED	MAS	4/97	BRIDGE SHEET NO.
QUANTITIES			CHECKED			. OF .

STATE FILE NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	12544	5	24



BORING LOCATIONS

NTS

B-1AS

VATION = 155.6

CASING	SAMPLE	CORE
HSA		
4¼"		

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM OF CASING	BOTTOM OF HOLE

R	SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE BLOWS PER 6 Inches	RECOVERY

SOIL DESCRIPTION

ASPHALT	0.5'
SAND, GRAVEL, and FILL (Very Hard Drilling)	9.0'
Drilled into boulder with 4" roller bit to 11'	11.0'
BOTTOM OF BORING	11.0'

Note: Typed driller's field log.

NOTES:

BORINGS PERFORMED BY: CON-TEC INC.
P.O. BOX 1153
CONCORD, N.H. 03302 - 1153

Phone: 603-224-0020

DRILLER: T. Flores

HELPER: J. Edge

INSPECTOR:

Borings completed 10/8/96 & 10/9/96

AS-BUILT (OCTOBER 31, 1998)

SANDOWN ROAD BORING LOGS
FREMONT, N.H.

BAC Kilam
THE CONCORD CENTER
10 FERRY STREET
CONCORD, NH 03301

FILE NUMBER 93-2-1

BAC PROJECT NO.	BAC CAD FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
96071	BORINGS.DWG		12544	6	24

P-1S

ATION = 155.6

CASING	SAMPLE	CORE
SSA		
4"		

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM OF CASING	BOTTOM OF HOLE

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE BLOWS PER 6 inches	RECOVERY

SOIL DESCRIPTION

ASPHALT	0.5'
GRAVEL, COBBLES, and BOULDERS (Very Hard Drilling)	
Auger Refusal	5.0'
BOTTOM OF PROBE	5.0'

Note: Typed driller's field log.

B-1N

ATION = 156.3

CASING	SAMPLE	CORE
HSA	SS	
4¼"	1½"	
	140	
	30"	

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM OF CASING	BOTTOM OF HOLE
10/8		10'		24.8'

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE BLOWS PER 6 inches	RECOVERY
1	0.5'-2.5'	19 18 - 14 16	10"
2	4'-6'	5 - 4 4 - 4	12"
3	9'-11'	3 - 2 3 - 16	6"
4	14'-16'	66 - 41 46 - 46	15"
5	20'-21'	84 - 162	10"
6	24'-24.8'	112 - 120/.4	10"

SOIL DESCRIPTION

ASPHALT	0.5'
Dark grey, dry, dense f/m/c SAND, and f/ GRAVEL	3.0'
Light brown, dry, loose m/f/c SAND, little f/m gravel	8.0'
Dark brown, moist loose ORGANIC SILT, trace embedded f/m/c sand, trace embedded f/m gravel	10.5'
Light brown, wet, dense to very dense f/m/c SAND and c/m/f GRAVEL, occasional cobbles	18.0'
Light brown, moist, very dense f/m/c SAND and embedded f/m/c GRAVEL, trace silt	24.8'
BOTTOM OF BORING	24.8'

Note: Typed driller's field log.

NOTES:

BORINGS PERFORMED BY: CON-TEC INC.
P.O. BOX 1153
CONCORD, N.H. 03302 - 1153

Phone: 603-224-0020

DRILLER: T. Flores

HELPER: J. Edge

INSPECTOR:

Borings completed 10/8/96 & 10/9/96

SEE BRIDGE SHEET 6 FOR BORING LOCATIONS.

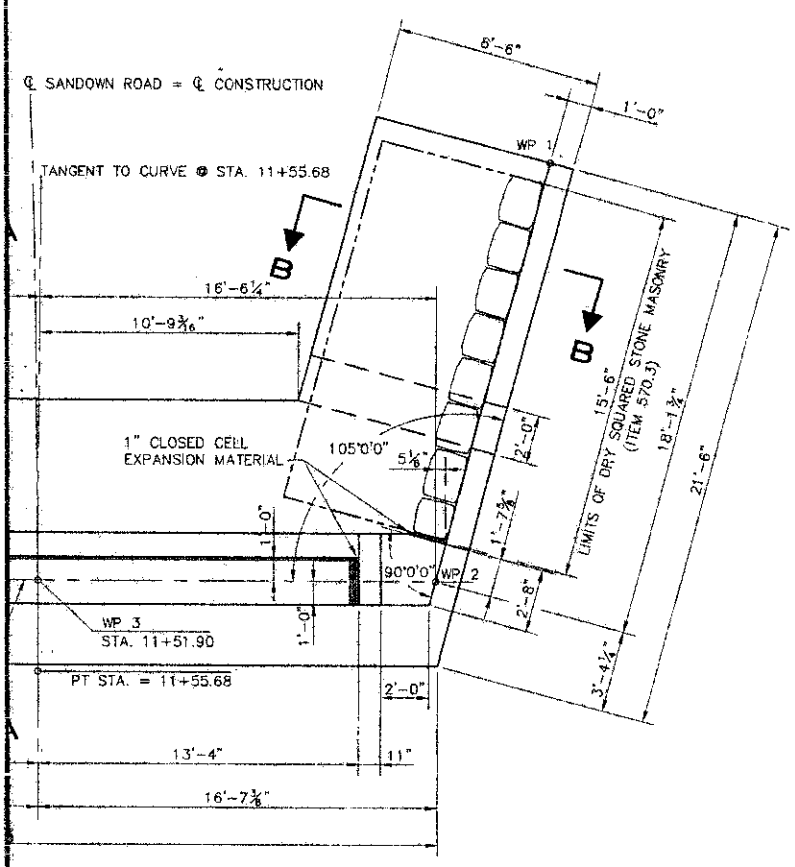
AS-BUILT (OCTOBER 31, 1998)

SANDOWN ROAD BORING LOGS
FREMONT, N.H.

BAC Killam
THE CONCORD CENTER
10 FERRY STREET
CONCORD, NH 03301

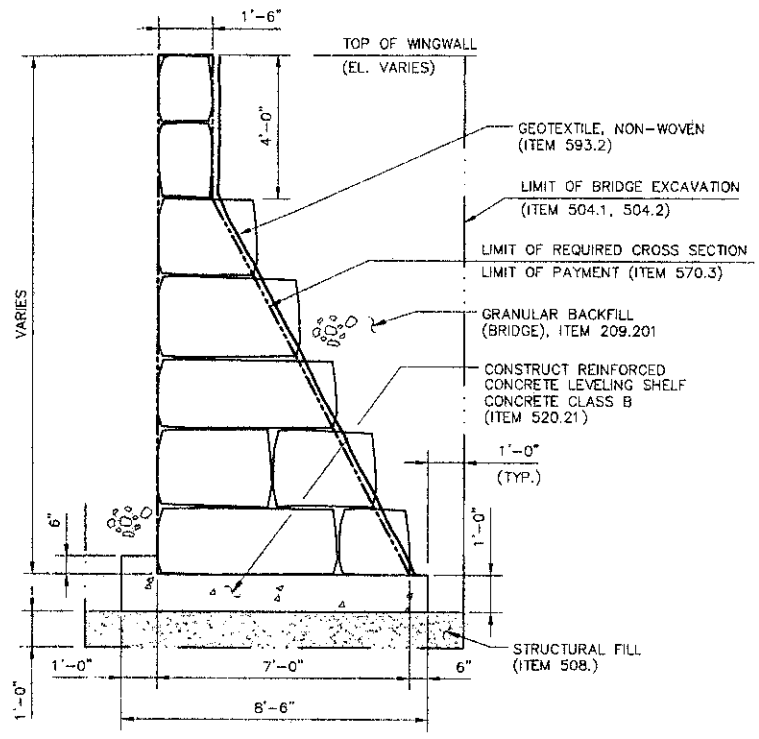
FILE NUMBER 93-2-1

BAC PROJECT NO.	BAC CAD FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
96071	BORINGS.DWG		12544	7	24



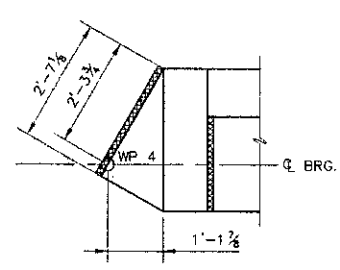
TMENT 1

1'-0"



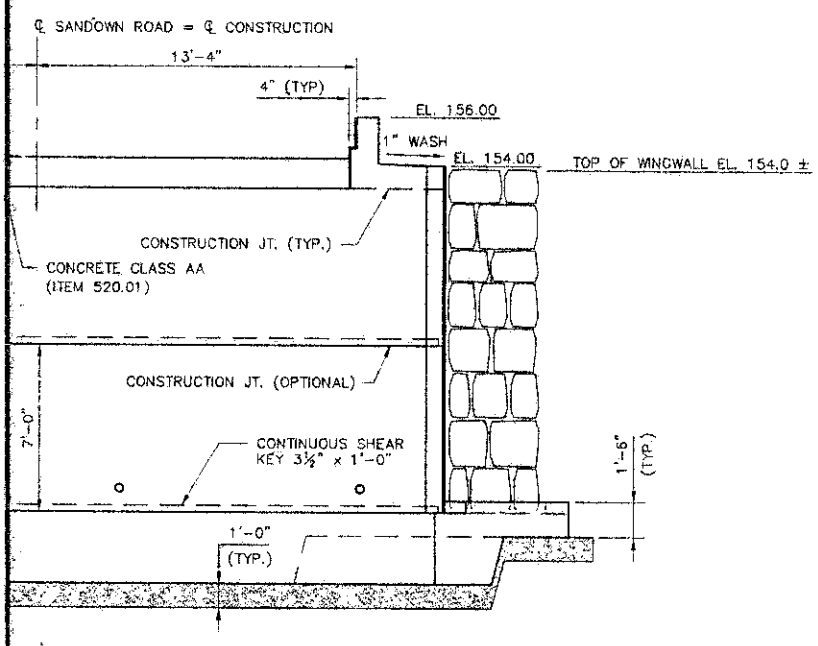
SECTION B-B

SCALE: ⅜" = 1'-0"



DETAIL A

SCALE: ½" = 1'-0"



BUTMENT 1

'-0"

NOTES:

1. ALL CONCRETE IN FOOTINGS SHALL BE CONCRETE CLASS B, FOOTINGS (ITEM 520.21).
2. THE CONCRETE IN THE ABUTMENT WALL SHALL BE CONCRETE CLASS A, ABOVE FOOTINGS (ITEM 520.12).
3. THE COST OF CLOSED CELL EXPANSION MATERIAL TO BE INCLUDED IN ITEM 520.12.
4. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED ¾".
5. SEE SHEET 10 FOR SECTION A-A.

AS-BUILT (OCTOBER 31, 1998)

△	REVISION DESCRIPTION	BY	DATE

BA&C Project No. 96071.00 | BA&C CAD File ABUT1MAS.DWG

BAC Kilam
THE CONCORD CENTER
10 FERRY STREET
CONCORD, NH 03301

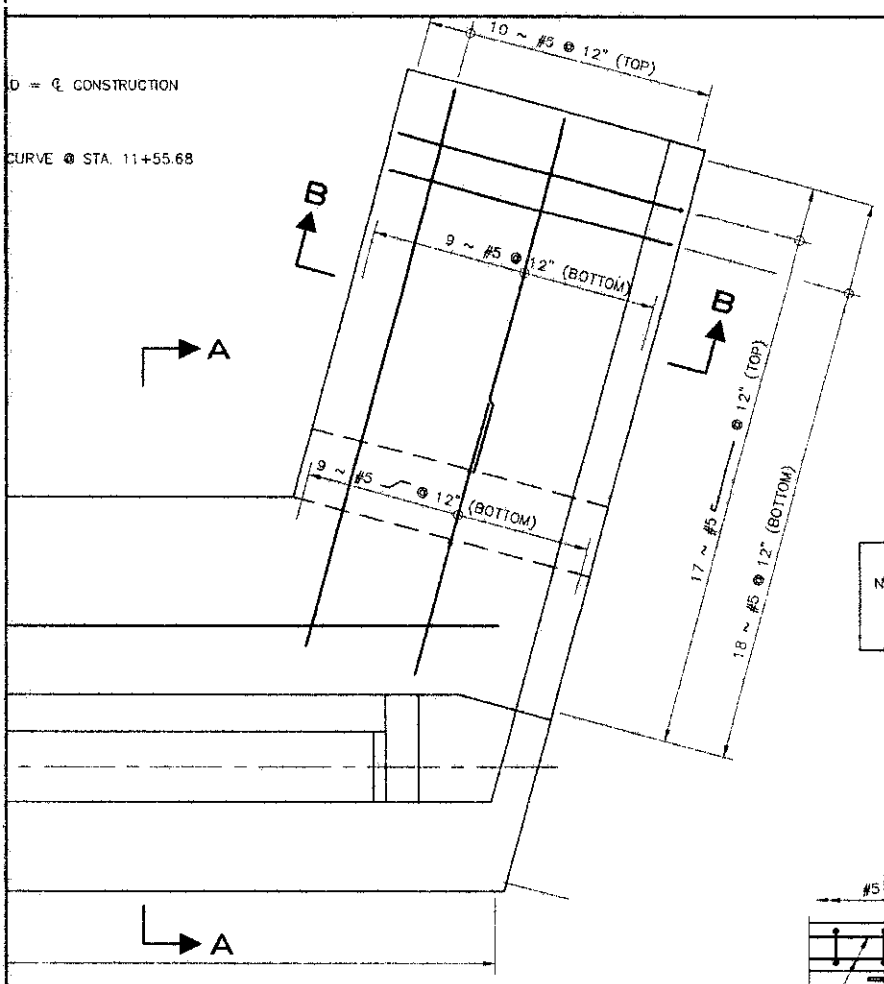
ABUTMENT 1 MASONRY

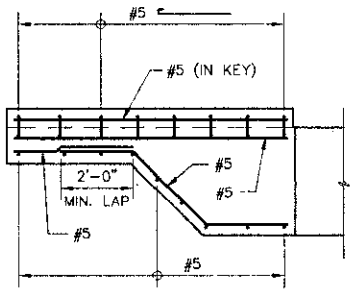
TOWN FREMONT BRIDGE NO. 096/095

LOCATION SANDOWN ROAD BRIDGE OVER EXETER RIVER

	BY	DATE		BY	DATE	FILE NUMBER
DESIGNED	JWP	4/97	CHECKED	WRB	6/97	93-2-1
DRAWN	MTB	4/97	CHECKED	MAS	5/97	
QUANTITIES	.	.	CHECKED	.	.	BRIDGE SHEET NO. . OF .

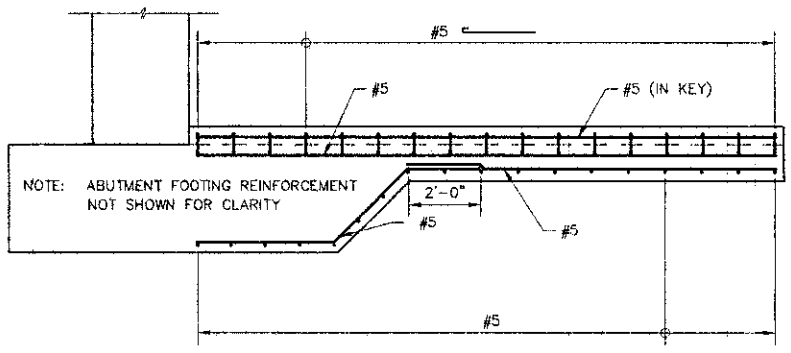
STATE FILE NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	12544	8	24





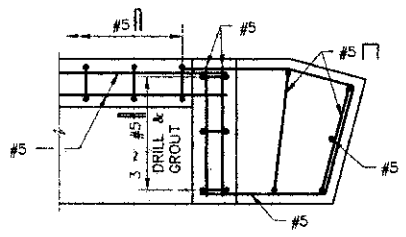
ELEVATION - EAST LEVELING SHELF

SCALE: 3/8" = 1'-0"

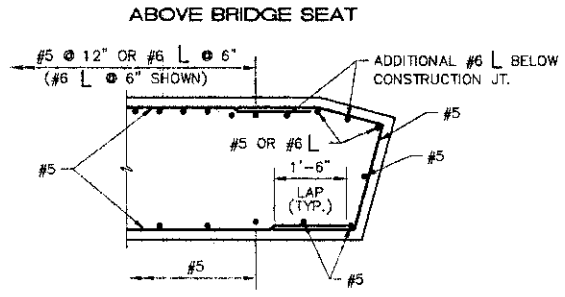


ELEVATION - WEST LEVELING SHELF

SCALE: 3/8" = 1'-0"



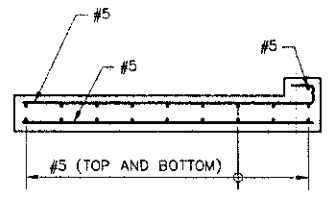
ABOVE BRIDGE SEAT



BELOW BRIDGE SEAT

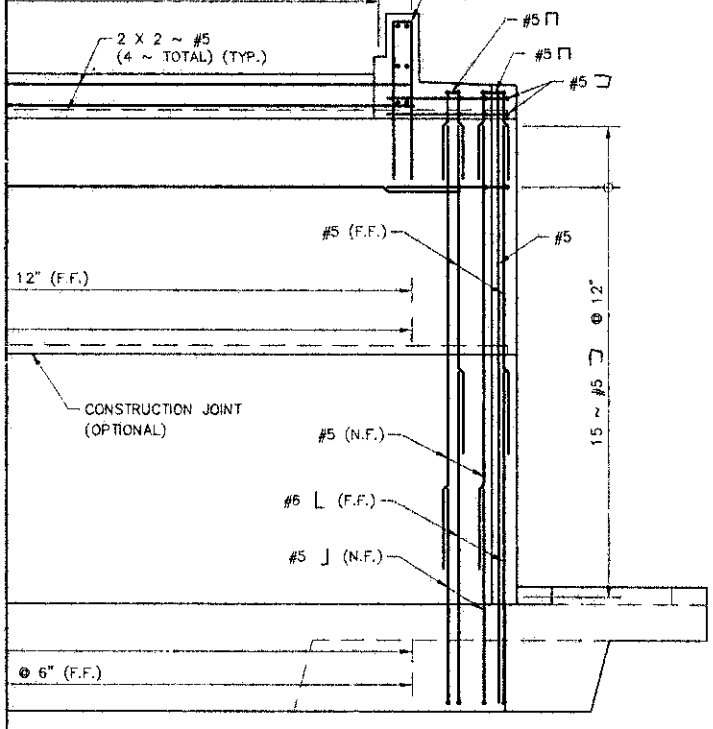
PLAN - WEST ENDWALL

SCALE: 1/2" = 1'-0"



SECTION B-B

SCALE: 3/8" = 1'-0"



PLAN - WEST ENDWALL

SCALE: 1/2" = 1'-0"

NOTES:

1. CONCRETE COVER MEASURED FROM THE FACE OF THE REINFORCING STEEL SHALL BE 2½" EXCEPT AS NOTED.
2. SEE "ABUTMENT 2 REINFORCING" SHEET FOR SECTION A-A.
3. THE PRECAST CONCRETE DECK BEAMS SHALL BE INSTALLED AND FULLY TENSIONED PRIOR TO CONSTRUCTION OF THE ABUTMENT BACKWALL, AND KEEPER WALLS.

LEGEND

N.F.	NEAR FACE
F.F.	FAR FACE
E.F.	EACH FACE
△	CUT TO FIT IN FIELD

AS-BUILT (OCTOBER 31, 1998)

ENT 1

△	REVISION DESCRIPTION	BY	DATE

BA&C Project No. 96071.00 | BA&C CAD File ABUT1REI.DWG

BAC Killam
THE CONCORD CENTER
10 FERRY STREET
CONCORD, NH 03301

ABUTMENT 1 REINFORCING

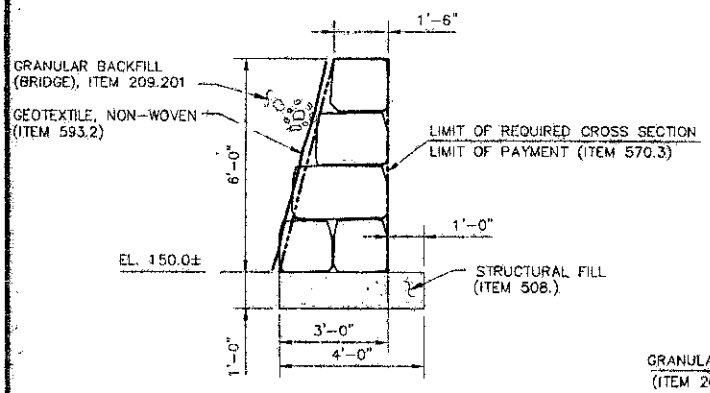
TOWN FREMONT BRIDGE NO. 096/095

LOCATION SANDOWN ROAD BRIDGE OVER EXETER RIVER

	BY	DATE		BY	DATE	FILE NUMBER
DESIGNED	JWP	4/97	CHECKED	WRB	6/97	93-2-1
DRAWN	MTB	4/97	CHECKED	MAS	7/97	BRIDGE SHEET NO.
QUANTITIES	.	.	CHECKED	.	.	. OF .

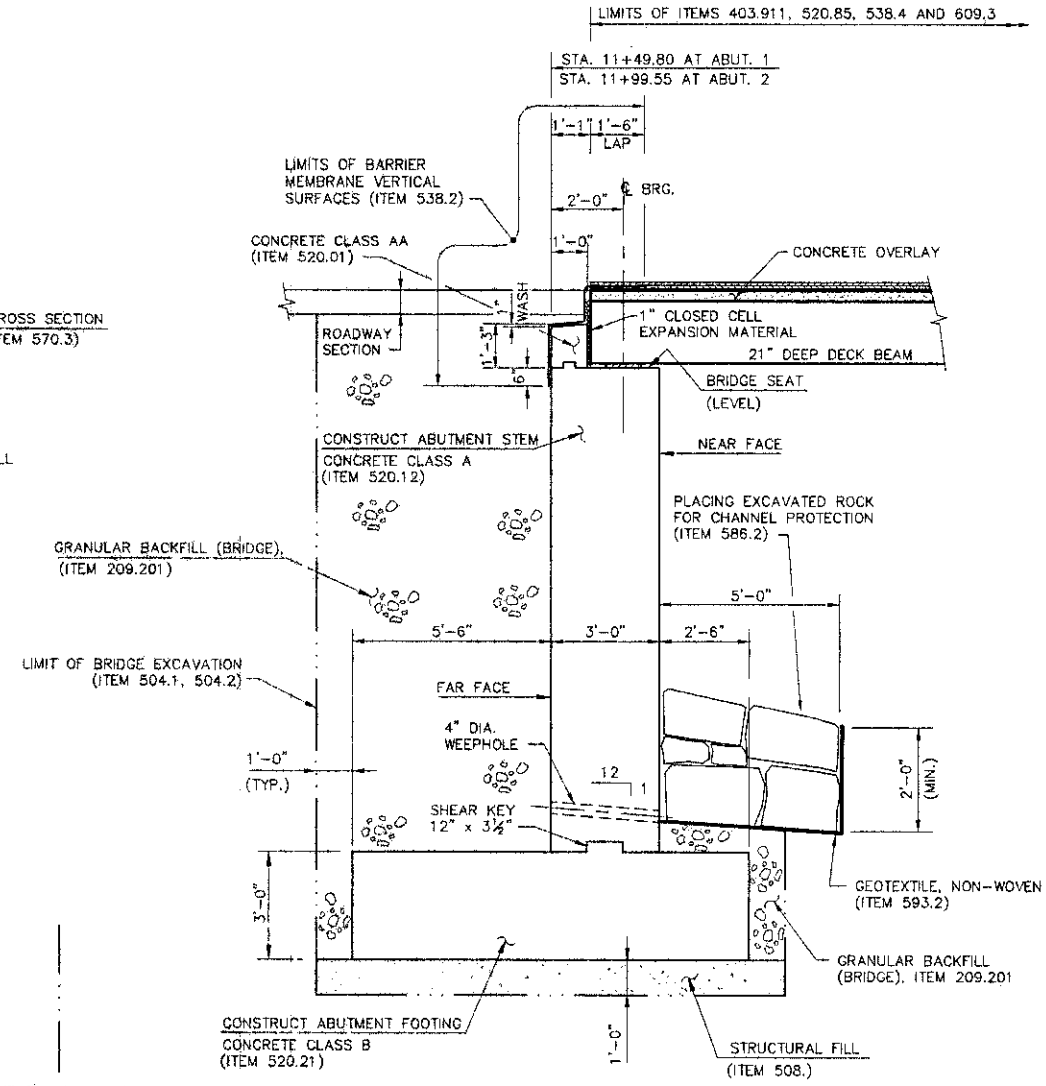
STATE FILE NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	12544	9	24

TION	OFFSET
2+13.65	16.75' LT
1+97.65	16.75' LT
1+97.65	0
1+97.65	22.25' RT



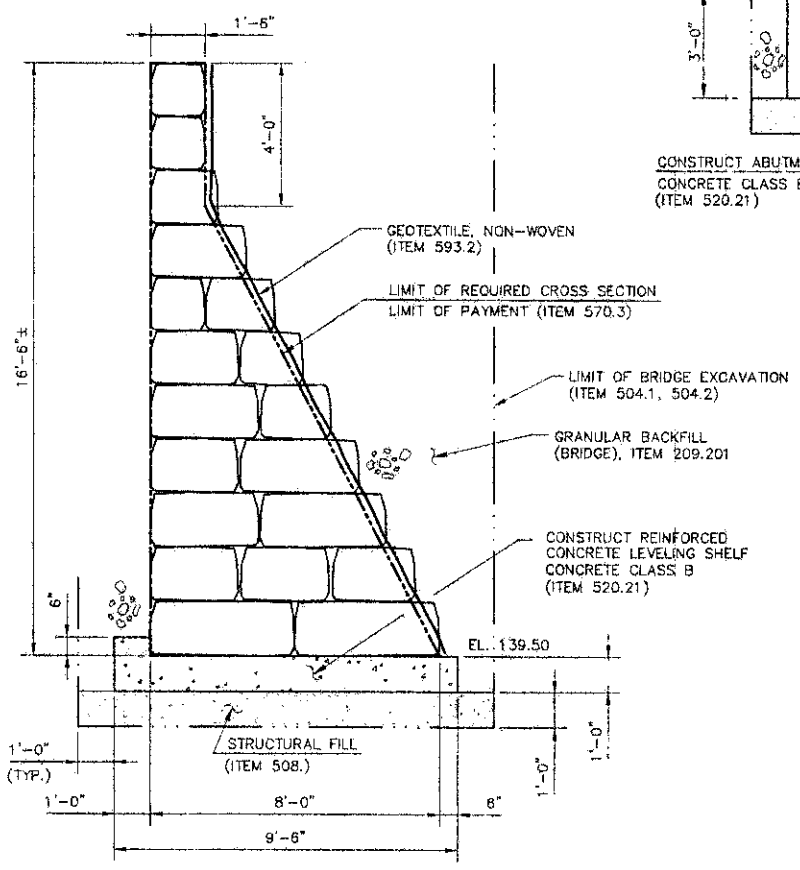
SECTION D-D

SCALE: ⅜" = 1'-0"



SECTION A-A

SCALE: ⅜" = 1'-0"



SECTION C-C

SCALE: ⅜" = 1'-0"

NOTES:

1. ALL CONCRETE IN FOOTINGS SHALL BE CONCRETE CLASS B, FOOTINGS (ITEM 520.21).
2. THE CONCRETE IN THE ABUTMENT WALL SHALL BE CONCRETE CLASS A, ABOVE FOOTINGS (ITEM 520.12).
3. THE COST OF CLOSED CELL EXPANSION MATERIAL TO BE INCLUDED IN ITEM 520.12.
4. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED ¾".

AS-BUILT (OCTOBER 31, 1998)

△	REVISION DESCRIPTION	BY	DATE

BA&C Project No. 96071.00 | BA&C CAD File ABUT2MAS.DWG

BAC Kilburn
THE CONCORD CENTER
TO FERRY STREET
CONCORD, NH 03301

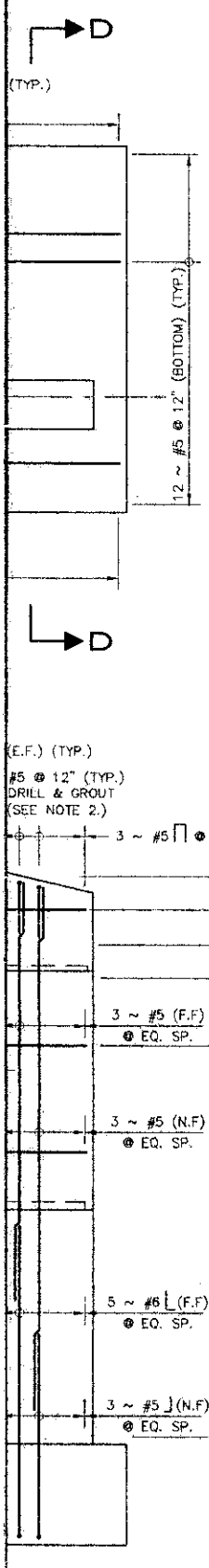
ABUTMENT 2 MASONRY

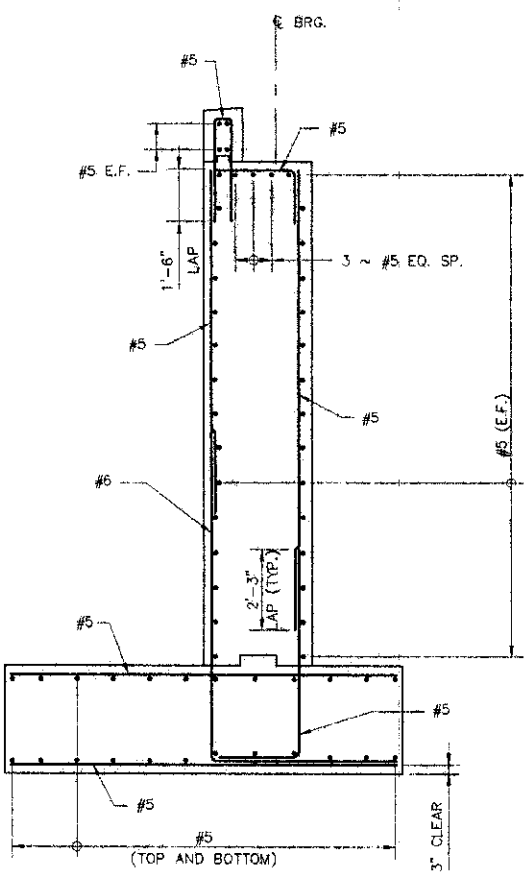
TOWN FREMONT BRIDGE NO. 096/095

LOCATION SANDOWN ROAD BRIDGE OVER EXETER RIVER

	BY	DATE		BY	DATE	FILE NUMBER
DESIGNED	JWP	4/97	CHECKED	WRB	6/97	93-2-1
DRAWN	MTB	4/97	CHECKED	MAS	5/97	BRIDGE SHEET NO.
QUANTITIES	-		CHECKED	-		- OF -

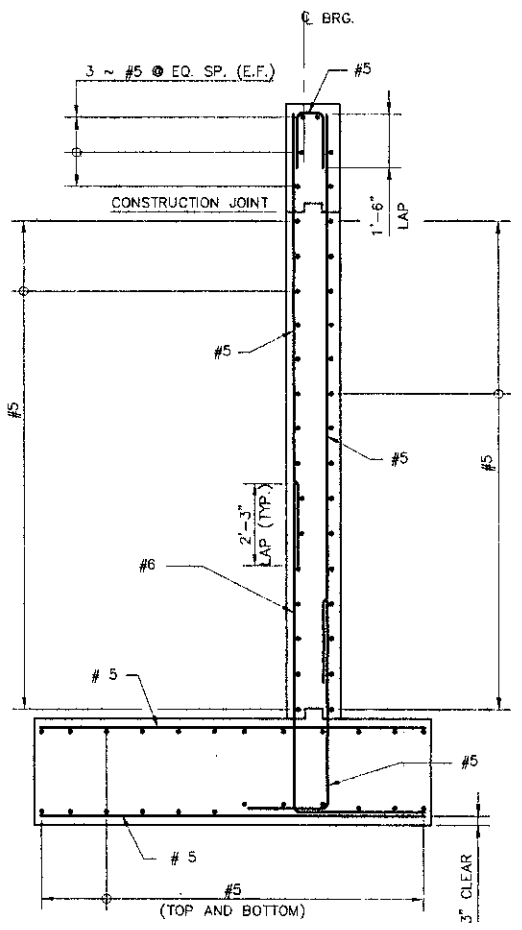
STATE FILE NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	12544	10	24





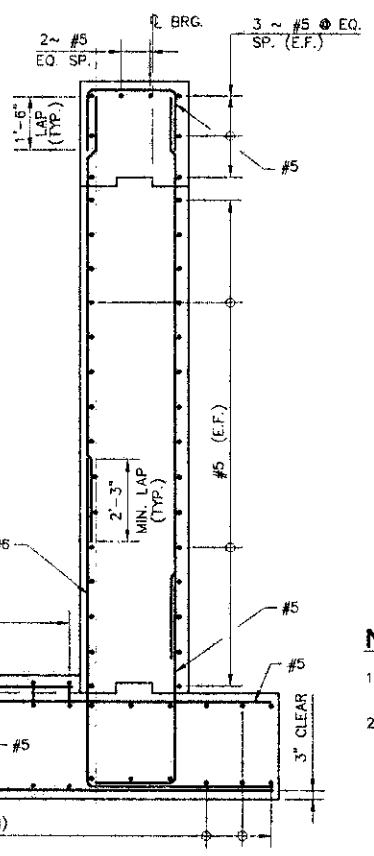
SECTION A-A

SCALE: ⅜" = 1'-0"



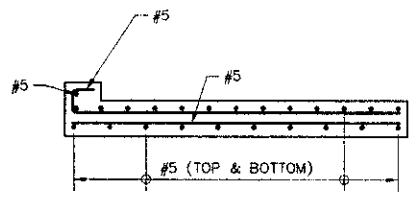
SECTION D-D

SCALE: ⅜" = 1'-0"



SECTION E-E

SCALE: ⅜" = 1'-0"



SECTION C-C

SCALE: ⅜" = 1'-0"

NOTES:

1. CONCRETE COVER MEASURED FROM THE FACE OF THE REINFORCING STEEL SHALL BE 2½" EXCEPT AS NOTED.
2. THE PRECAST CONCRETE DECK BEAMS SHALL BE INSTALLED AND FULLY TENSIONED PRIOR TO CONSTRUCTION OF THE ABUTMENT BACKWALL AND KEEPER WALLS.

LEGEND

N.F.	NEAR FACE
F.F.	FAR FACE
E.F.	EACH FACE
△	CUT TO FIT IN FIELD

AS-BUILT (OCTOBER 31, 1998)

ABUTMENT 2 REINFORCING

TOWN FREMONT BRIDGE NO. 096/095

LOCATION SANDOWN ROAD BRIDGE OVER EXETER RIVER

	BY	DATE		BY	DATE	FILE NUMBER
DESIGNED	JWP	4/97	CHECKED	WRB	6/97	93-2-1
DRAWN	MTB	4/97	CHECKED	MAS	7/97	BRIDGE SHEET NO.
QUANTITIES			CHECKED			. OF .

△	REVISION DESCRIPTION	BY	DATE

BA&C Project No. 96071.00 | BA&C CAD File ABUT2REI.DWG

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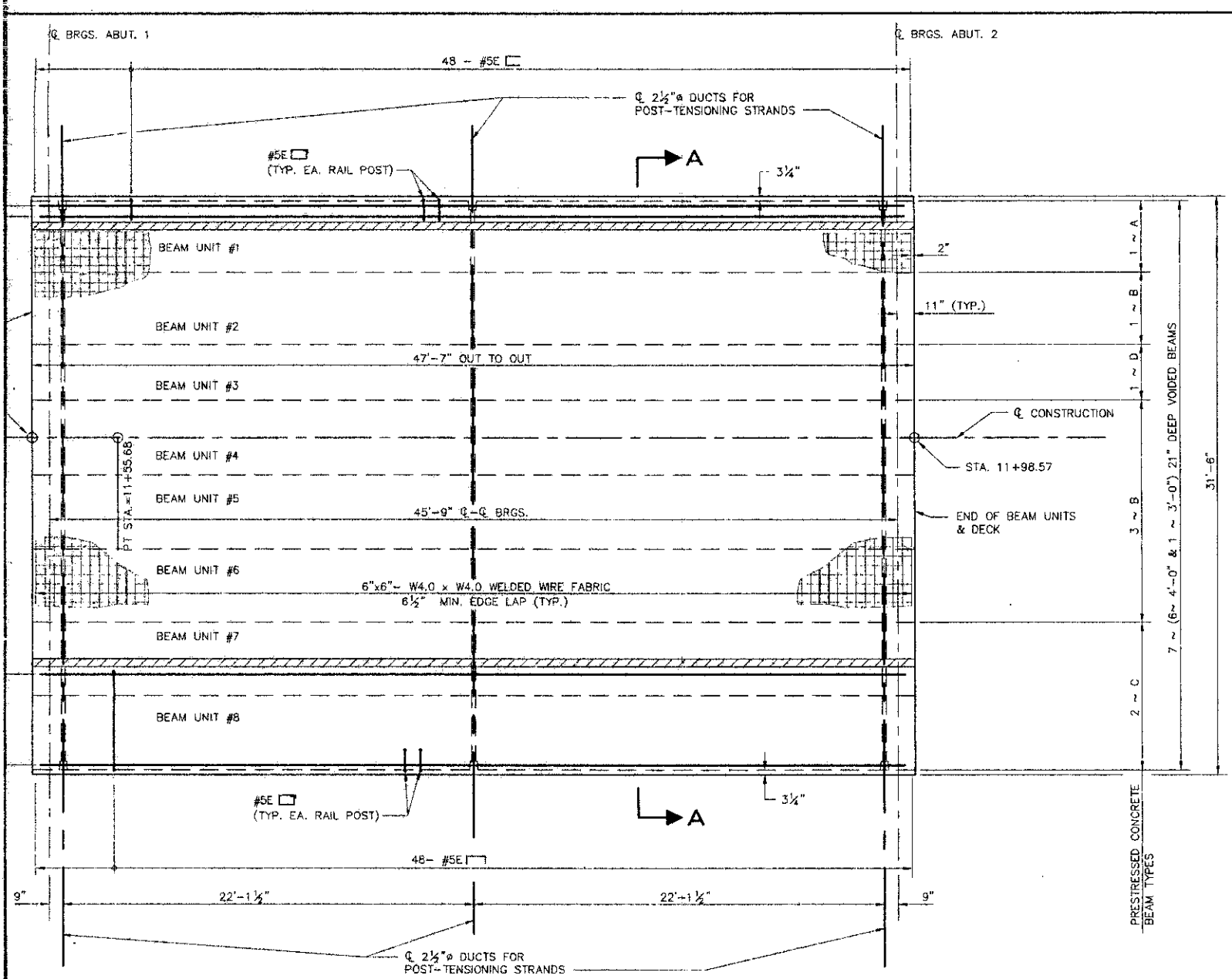
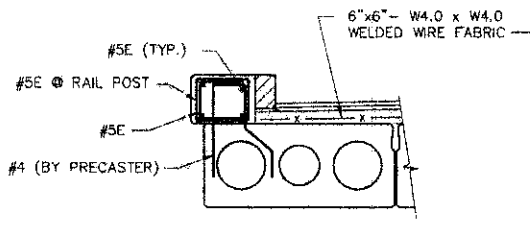
STATE FILE NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	12544	11	24



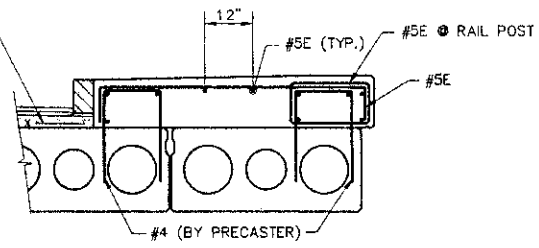
BEAM LAYOUT/SUPERSTRUCTURE PLAN

SCALE: ¼" = 1'-0"



WEST FASCIA DETAIL

SCALE: ½" = 1'-0"



EAST FASCIA DETAIL

SCALE: ½" = 1'-0"

- LIMIT OF WATER REPELLENT (SILANE-SILOXANE) (ITEM 534.3)
- CONCRETE CLASS AA (ITEM 520.01)
- SEE DRIP NOTCH DETAIL (TYP.)
- ED CONCRETE

NOTES:

1. FOR PRESTRESSED CONCRETE BEAMS, SEE SHEETS 13 AND 14.
2. FOR PRESTRESSED CONCRETE BEAM DETAILS, SEE SHEET 15.
3. REINFORCING DESIGNATED WITH AN "E" SHALL BE EPOXY COATED.
4. THE COST OF FURNISHING AND INSTALLING ALL REINFORCING FOR BRUSH CURB AND SIDEWALK TO BE INCLUDED UNDER ITEM 544.2

AS-BUILT (OCTOBER 31, 1998)

△	REVISION DESCRIPTION	BY	DATE

BA&C Project No. 96071.00 | BA&C CAD File DECKPLAN.DWG

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CONCORD, NH 03301

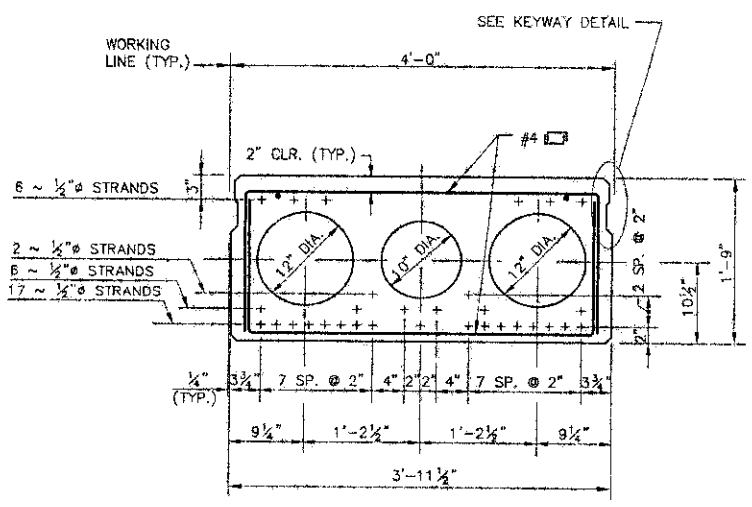
DECK PLAN and TRANSVERSE SECTION

TOWN FREMONT BRIDGE NO. 096/095

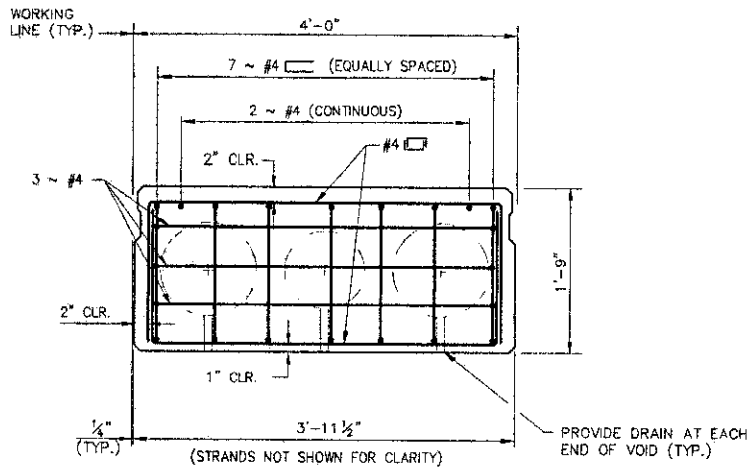
LOCATION SANDOWN ROAD BRIDGE OVER EXETER RIVER

	BY	DATE		BY	DATE	FILE NUMBER
DESIGNED	MAS	4/97	CHECKED	JWP	5/97	93-2-1
DRAWN	MTB	4/97	CHECKED	MAS	5/97	BRIDGE SHEET NO.
QUANTITIES			CHECKED			. OF .

STATE FILE NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	12544	12	24

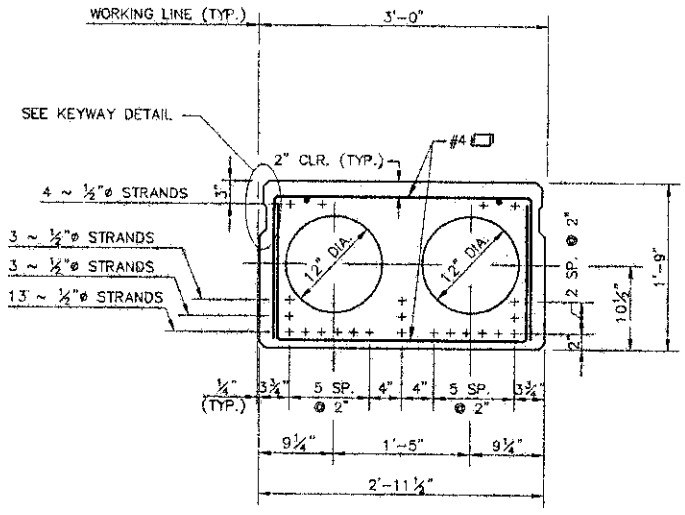


MIDSPAN SECTION
SCALE: 1" = 1'-0"

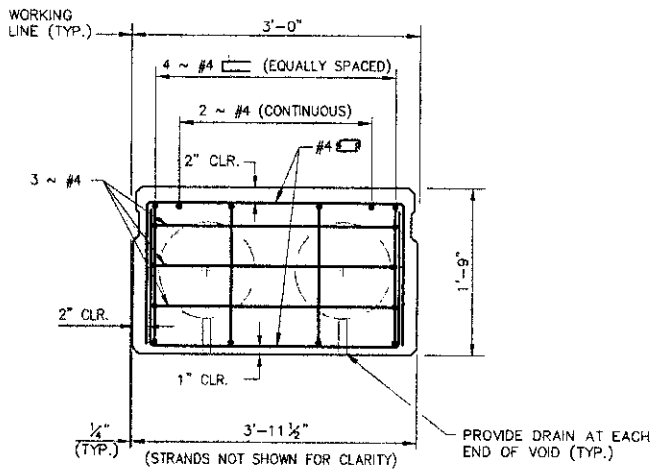


END SECTION
SCALE: 1" = 1'-0"

TYPE B - PRESTRESSED CONCRETE BEAM

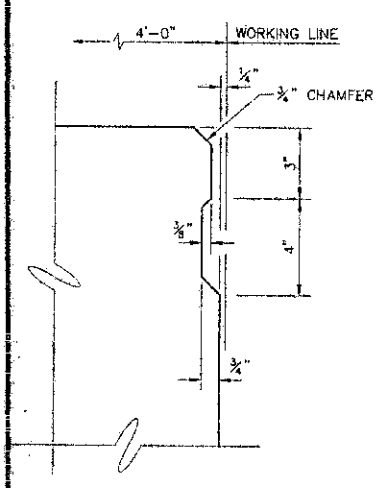


MIDSPAN SECTION
SCALE: 1" = 1'-0"



END SECTION
SCALE: 1" = 1'-0"

TYPE D - PRESTRESSED CONCRETE BEAM



RESTRESSED CONCRETE BEAM KEYWAY DETAIL
SCALE: 3" = 1'-0"

NOTES:

1. ALL DIMENSIONS SHOWN ARE HORIZONTAL.
2. FOR BEAM LAYOUT/SUPERSTRUCTURE PLAN, SEE SHEET 12.
3. FOR PRESTRESSED CONCRETE BEAMS, ALSO SEE SHEET 14.
4. FOR PRESTRESSED CONCRETE BEAM DETAILS, SEE SHEET 15.
5. BLAST CLEAN KEYWAY SURFACES AT PLANT.
6. f'c = 6000 P.S.I. f'ci = 4800 P.S.I.
7. ALL BARS TO BE EPOXY COATED.
8. COST OF ALL REINFORCING IN PRESTRESSED BEAMS SHALL BE INCLUDED IN ITEM 529.1.

AS-BUILT (OCTOBER 31, 1998)

△	REVISION DESCRIPTION	BY	DATE

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BAC Kilam
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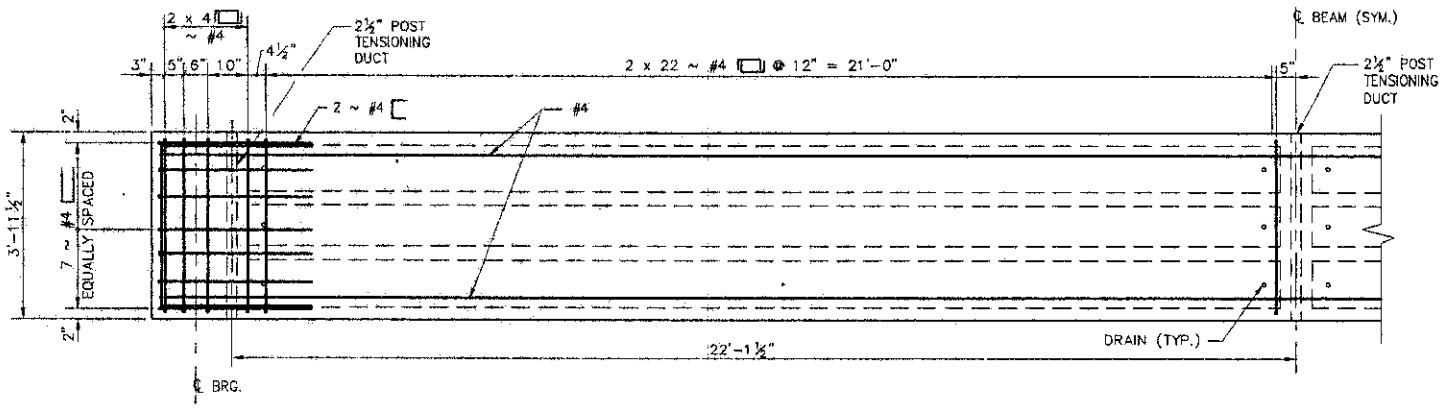
10 FERRY STREET
CONCORD, NH 03301

PRESTRESSED CONCRETE BEAMS

TOWN FREMONT BRIDGE NO. 096/095
LOCATION SANDOWN ROAD BRIDGE OVER EXETER RIVER

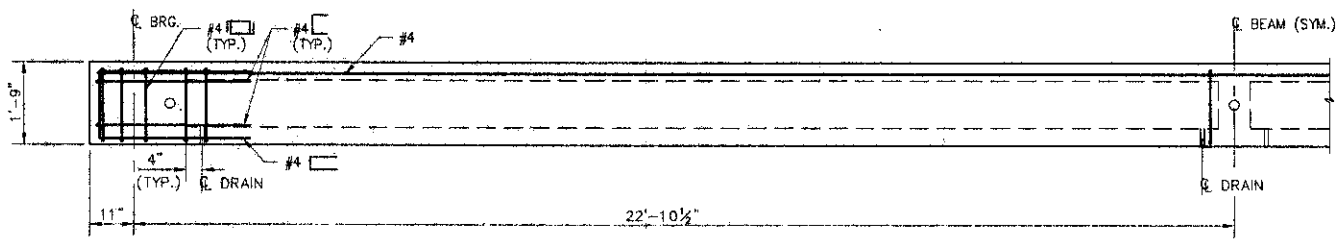
	BY	DATE		BY	DATE	FILE NUMBER
DESIGNED	JWP	5/97	CHECKED	TJM	6/97	93-2-1
DRAWN	MTB	5/97	CHECKED	MAS	7/97	
QUANTITIES			CHECKED			BRIDGE SHEET NO. . OF .

STATE FILE NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	12544	13	24



HALF PLAN

SCALE: ½" = 1'-0"

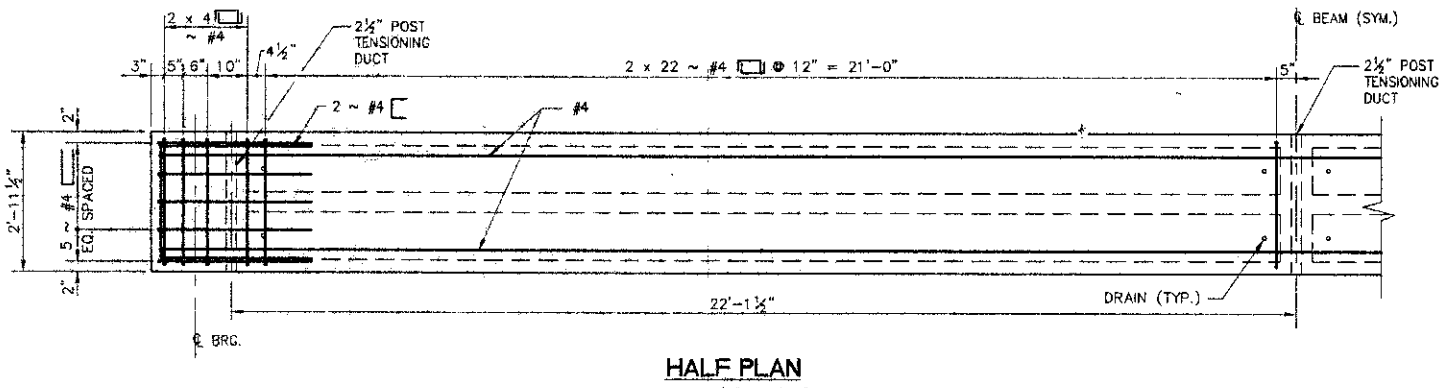


HALF ELEVATION

SCALE: ½" = 1'-0"

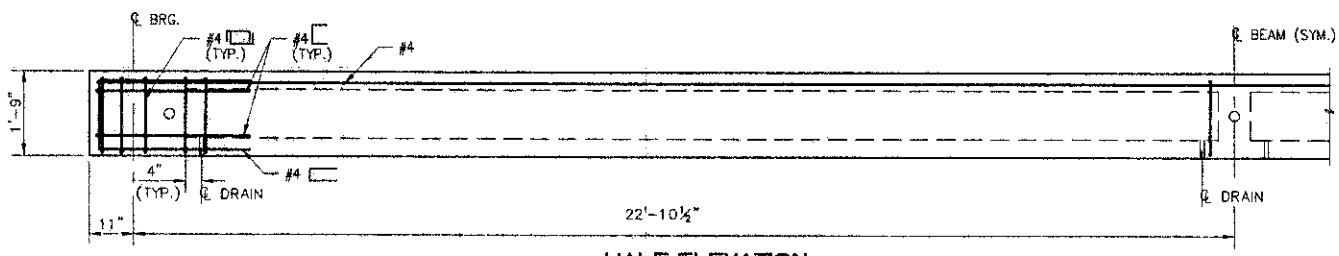
TYPE B - PRESTRESSED CONCRETE BEAM

(FOUR REQUIRED)



HALF PLAN

SCALE: ½" = 1'-0"



HALF ELEVATION

SCALE: ½" = 1'-0"

TYPE D - PRESTRESSED CONCRETE BEAM

(ONE REQUIRED)

AS-BUILT (OCTOBER 31, 1998)

N ARE HORIZONTAL.

PERSTRUCTURE PLAN, SEE SHEET 12.

CRETE BEAMS, ALSO SEE SHEET 13.

CRETE BEAM DETAILS, SEE SHEET 15.

SURFACES AT PLANT.

'ci = 4800 P.S.I.

Y COATED.

ING IN PRESTRESSED BEAMS SHALL 529.1.

△	REVISION DESCRIPTION	BY	DATE

BA&C Project No. 96071.00 | BA&C CAD File CONCBM1.DWG

BAC Kilam
THE CONCORD CENTER
10 FERRY STREET
CONCORD, NH 03301

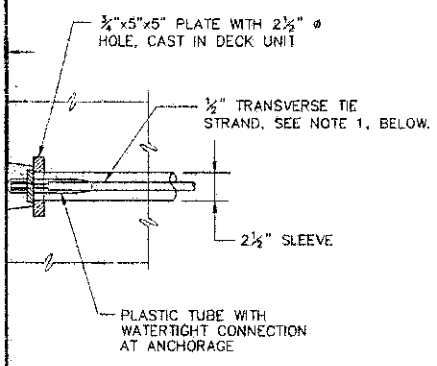
PRESTRESSED CONCRETE BEAMS

TOWN FREMONT BRIDGE NO. 096/095

LOCATION SANDOWN ROAD BRIDGE OVER EXETER RIVER

	BY	DATE		BY	DATE	FILE NUMBER
DESIGNED	JWP	5/97	CHECKED	TJM	6/97	93-2-1
DRAWN	MTB	5/97	CHECKED	MAS	7/97	BRIDGE SHEET NO.
QUANTITIES			CHECKED			OF

STATE FILE NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	12544	14	24



STRANDS SHALL BE ½" DIA. SEVEN-WIRE STRANDS CONFORMING (ASTM A416) GRADE 270, LOW RELAXATION. POST-TENSIONING BE COMPLETELY COATED WITH A SEAMLESS POLYPROPYLENE SHEATH N PREVENTATIVE COATING SUCH AS FLO-GARD, AS MANUFACTURED AND CABLE COMPANY, JACKSONVILLE, FLORIDA; POLYSTRAND, AS Y LANG TENDONS, INC., TOUGHKENAMON, PA, OR APPROVED EQUAL. BIDIARY TO ITEM 529.1.

ERIOR POCKETS SHALL BE AN APPROVED NON-SHRINK TYPE. THE SAME COLOR AND TEXTURE AS THE BEAM CONCRETE. COST TO ITEM 529.1.

E SYSTEMS MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ATE ANCHORAGE SYSTEMS SHALL BE WATERTIGHT AND CORROSION

BE TIE POCKET DETAIL

SCALE: 1½" = 1'-0

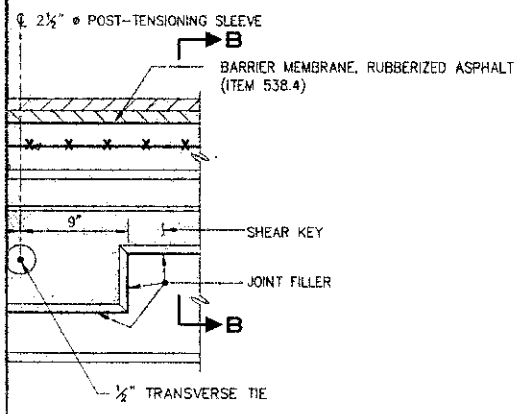
PRESTRESS BEAM NOTES:

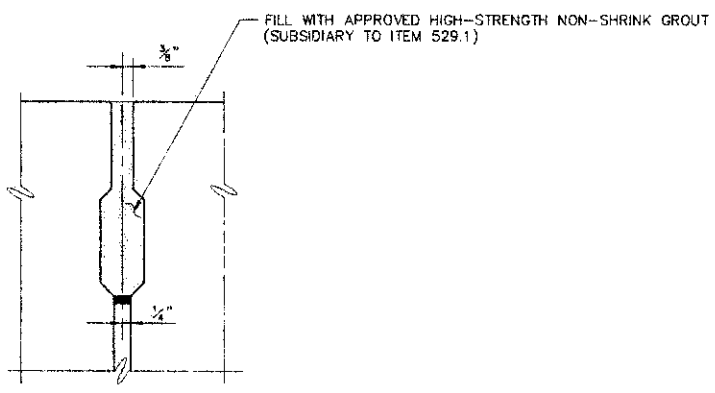
1. PRETENSIONING ELEMENTS SHALL BE ½" ø, UNCOATED, SEVEN-WIRE, LOW RELAXATION STEEL STRANDS, GRADE 270, CONFORMING TO AASHTO M 203 (ASTM A416). THE INITIAL PRESTRESSING FORCE PER STRAND SHALL EQUAL 30,983 POUNDS.
2. ALL REINFORCEMENT SHALL CONFORM TO AASHTO M31 (ASTM-615) GRADE 60, EPOXY COATED.
3. ALL REINFORCEMENT AND PRESTRESSING STRANDS THAT ARE CAST IN THE DECK BEAMS SHALL BE INCLUDED IN ITEM 529.1.
4. THE CONCRETE COMPRESSIVE STRENGTH SHALL BE A MINIMUM OF 4,800 PSI AT RELEASE, AND 6,000 PSI AT 28 DAYS.
5. THE DRILLING OF HOLES IN BEAMS OR THE USE OF POWER ACTUATED TOOLS ON BEAMS WILL NOT BE PERMITTED.
6. BEAM ENDS SHALL BE VERTICAL AFTER APPLICATION OF FULL DEAD LOAD.

TRANSVERSE TIE TENSIONING NOTES:

1. AFTER ALL BEAMS HAVE BEEN ERECTED, INITIALLY POST TENSION EACH TRANSVERSE TIE TO 5,000 POUNDS.
2. PLACE GROUT IN ALL SHEAR KEYS AND ALLOW TO CURE. IF THE SHEAR KEYS ARE NOT FILLED WITHIN 5 DAYS AFTER THE BEAMS ARE ERECTED, THE CONTRACTOR SHALL COVER AND PROTECT THE SHEAR KEYS FROM WEATHER AND DEBRIS UNTIL THEY ARE FILLED.
3. AFTER THE GROUT HAS CURED, FULLY TENSION EACH TRANSVERSE TIE TO 30,000 POUNDS. NO TRAFFIC OR HEAVY EQUIPMENT WILL BE PERMITTED ON THE BEAMS UNTIL ALL TIES HAVE BEEN FULLY TENSIONED.
4. CONCRETE FOR THE OVERLAY AND SIDEWALK SHALL BE PLACED AFTER THE TRANSVERSE TIES HAVE BEEN FULLY TENSIONED.

HOT BITUMINOUS PAVEMENT (ITEMS 403.11 & 403.911)





AS-BUILT (OCTOBER 31, 1998)

ON A-A

T.S.

SECTION B-B

N.T.S.

△	REVISION DESCRIPTION	BY	DATE

BA&C Project No. 96071.00 | BA&C CAD File BEAMDTLS.DWG

BAC Kilam
THE CONCORD CENTER
10 FERRY STREET
CONCORD, NH 03301

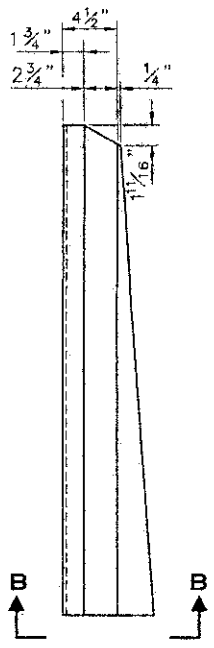
PRESTRESSED CONCRETE BEAM DETAILS

TOWN FREMONT BRIDGE NO. 096/095

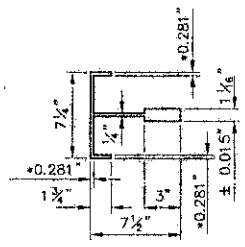
LOCATION SANDOWN ROAD OVER EXETER RIVER

	BY	DATE		BY	DATE	FILE NUMBER
DESIGNED	JWP	5/97	CHECKED	MAS	7/97	93-2-1
DRAWN	MTB	5/97	CHECKED	MAS	7/97	BRIDGE SHEET NO.
QUANTITIES	.	.	CHECKED	.	.	. OF .

STATE FILE NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	12544	15	24

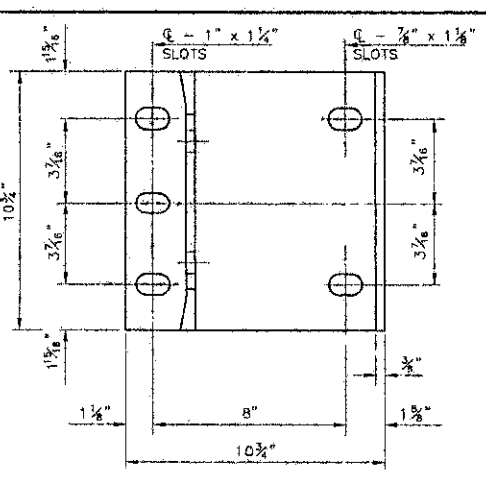


SIDE VIEW

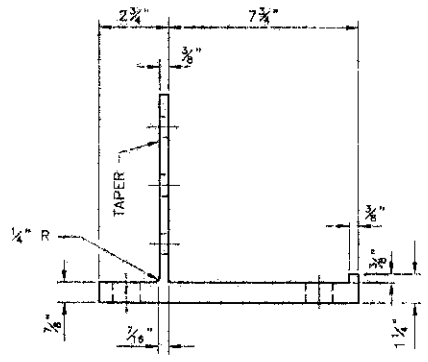


VIEW B-B

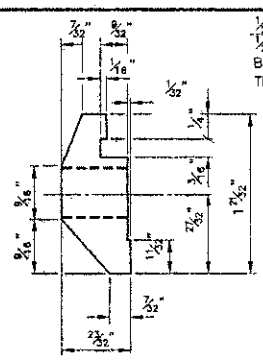
* ± 0.012"



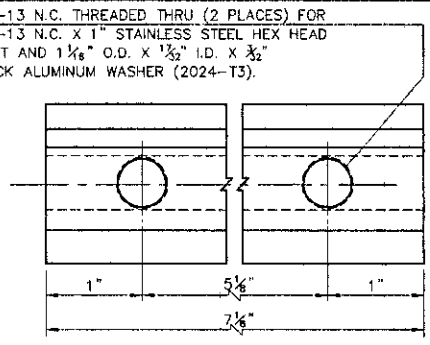
PLAN VIEW



END VIEW



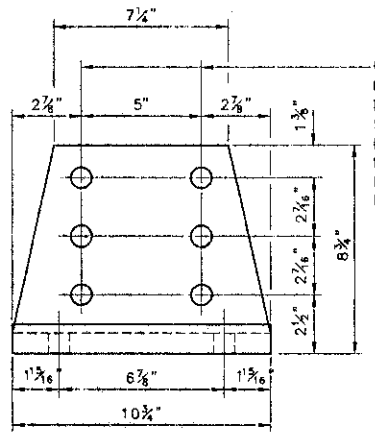
END VIEW



BACK VIEW

RAIL CLAMP BAR

FULL SIZE



℄ – 3/4" ø HOLES FOR 3/4" ø HIGH BUTTON HEAD RIVETS ASTM B316 OR B221 ALLOY 6061–T6. RIVETS SHALL HAVE MANUFACTURED HIGH BUTTON HEADS MEETING THE DIMENSIONAL REQUIREMENTS OF ANSI B18.4 & SHALL HAVE DRIVEN CONE POINT HEADS.

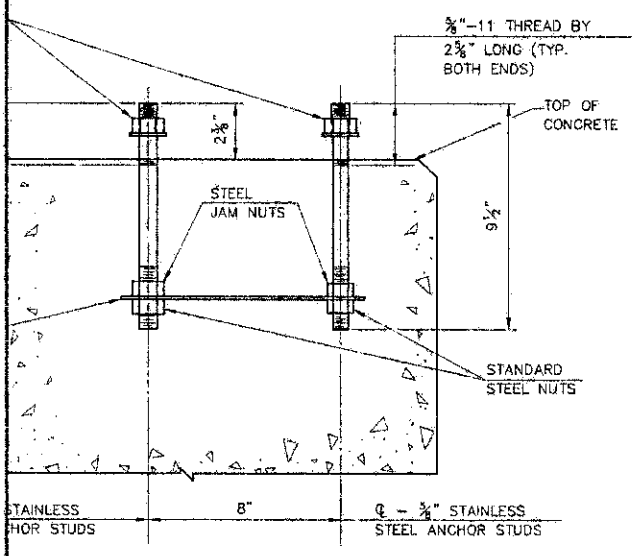
ELEVATION VIEW

POST BASE DETAILS

SCALE: 3" = 1'–0"

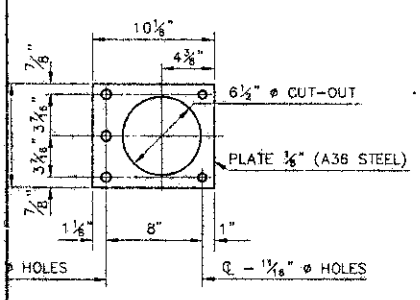
T DETAILS

1 1/2" = 1'–0"



POST ANCHOR ASSEMBLY

SCALE: 3" = 1'–0"



NCHORAGE PLATE

SCALE: 1 1/2" = 1'–0"

RAIL NOTES:

1. POSTS SHALL BE NORMAL TO FINISHED GRADE.
2. THREADS FOR ANCHOR BOLTS MAY BE ROLLED OR CUT. IF CUT THREADS ARE USED BOLT DIAMETER SHALL NOT BE LESS THAN NOMINAL DIAMETER. IF ROLLED THREADS ARE USED, BOLT DIAMETER SHALL NOT BE LESS THAN ROOT DIAMETER OF THREADS.
3. JOINTS IN RAIL LENGTH SHALL BE SPLICED AS DETAILED.
4. ENDS OF TUBE SECTIONS SHALL BE SAWED OR MILLED.
5. CUT ENDS SHALL BE TRUE AND SMOOTH.
6. EACH RAIL SECTION SHALL BE ATTACHED TO A MINIMUM OF FOUR (4) POSTS.
7. GRIND ALL EDGES SMOOTH.

MATERIAL:

1. ALUMINUM EXTRUSIONS (POSTS, BASES, RAILS, SPLICE BARS, PINS AND CLAMP BARS) SHALL BE ASTM B221, ALLOY 6061–T6 OR ALLOY 6351–T5 (MIN. 10% ELONGATION).
2. STAINLESS STEEL ANCHOR STUDS, HEX HEAD BOLTS AND HEX NUTS (TYPE 302) SHALL BE ASTM A276, (TYPE 430 MOD) OR (TYPE 304 MOD), (100,000 PSI AND 15% ELONGATION).
3. STEEL EMBEDDED JAM AND HEX NUTS SHALL BE ASTM A563 GRADE A OR BETTTER.
4. ALUMINUM WASHERS SHALL BE ASTM B209, ALLOY 2024–T3 ALCLAD.
5. PREFORMED ELASTOMERIC BEARING PAD SHALL MEET REQUIREMENTS OF AASHHTO M251.

ANCHOR ASSEMBLY NOTES:

1. 3/4" & 5/8" AMERICAN STANDARD FINISHED HEXAGON STEEL NUTS ON BOTTOM OF ANCHOR ASSEMBLY, 3/4" & 5/8" AMERICAN STANDARD FINISHED HEXAGON STEEL JAM NUTS ON TOP OF ANCHORAGE PLATE.
2. 3/4" & 5/8" STAINLESS STEEL HEXAGON NUTS ON TOP ENDS OF BOLTS WITH CLASS 2B THREADS. 13/16" I.D., 1 1/2" O.D., 1/8" THICK ALUMINUM WASHERS UNDER NUTS ON TOP. ALL NUTS SHALL COMPLY WITH AMERICAN HEXAGON ANSI SPEC. B18.2. STAINLESS STEEL HEXAGON NUTS SHALL HAVE FULL THREADS.

SPLICE BAR DETAILS:

1. SEE SHEET 18 FOR SPLICE BAR DETAILS AND NOTES.

AS-BUILT (OCTOBER 31, 1998)

△	REVISION DESCRIPTION	BY	DATE

BACKillam Project No. 96071.00 | BACKillam CAD File BR–3BAR.DWG

BACKillam

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF BRIDGE DESIGN

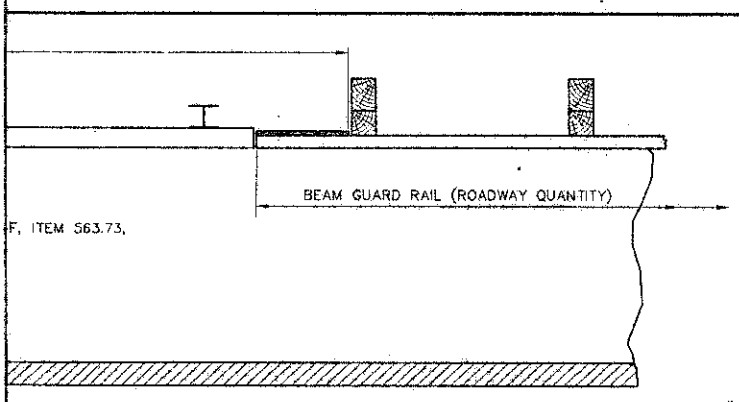
BRIDGE RAIL DETAILS (3-BAR ALUMINUM)

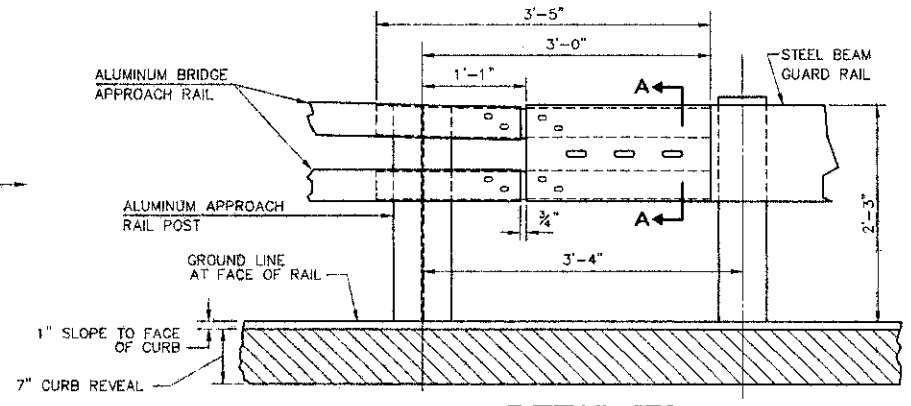
TOWN FREMONT BRIDGE NO. 096/095

LOCATION SANDOWN ROAD BRIDGE OVER EXETER RIVER

	BY	DATE		BY	DATE	FILE NUMBER
DESIGNED	NHDOT	.	CHECKED	.	.	
DRAWN	KJT/GMC	9/87	CHECKED	MWR	1/90	93-2-1
TRACED	TJM	8/97	CHECKED	MAS	8/97	BRIDGE SHEET NO.
QUANTITIES	.	.	CHECKED	.	.	OF .

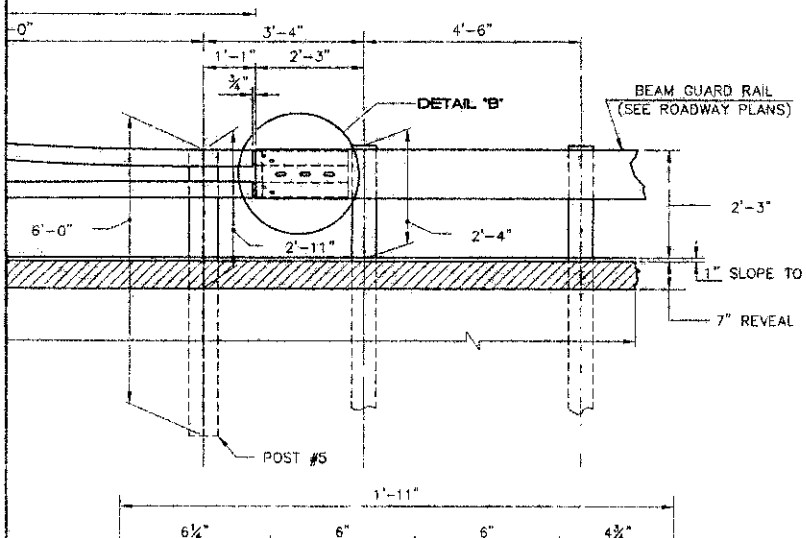
FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
.	12544	16	24

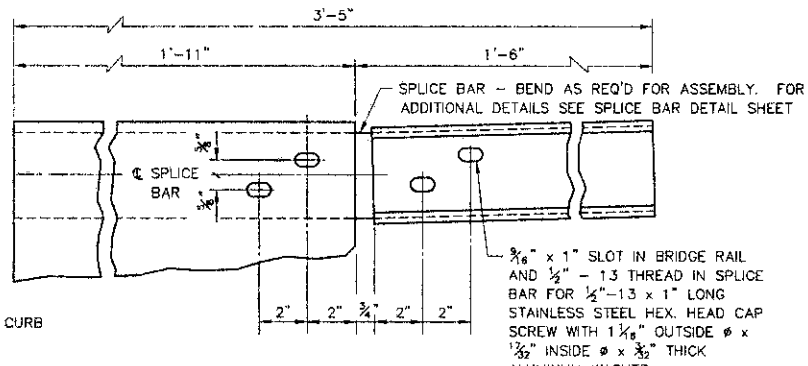




DETAIL "B"

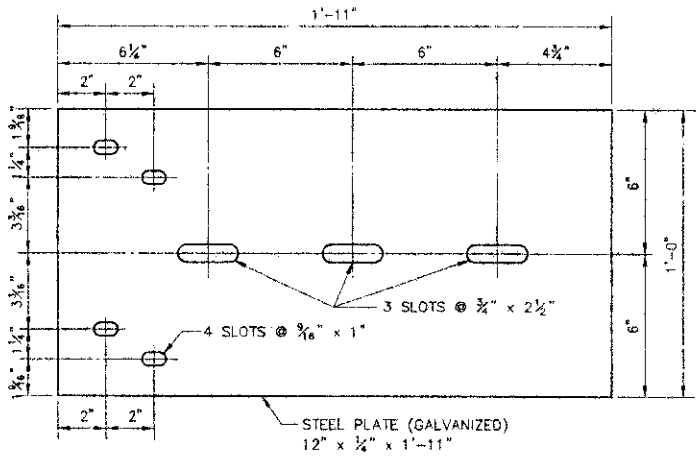
SCALE: 1" = 1'-0"





SPLICE BAR DETAIL

SCALE: 3" = 1'-0"
(BACK VIEW)



BACK-UP PLATE DETAIL

SCALE: 3" = 1'-0"

TING BOLT, NUT, & WASHER
ON BEAM GUARD RAIL SHEET
ANTITY)

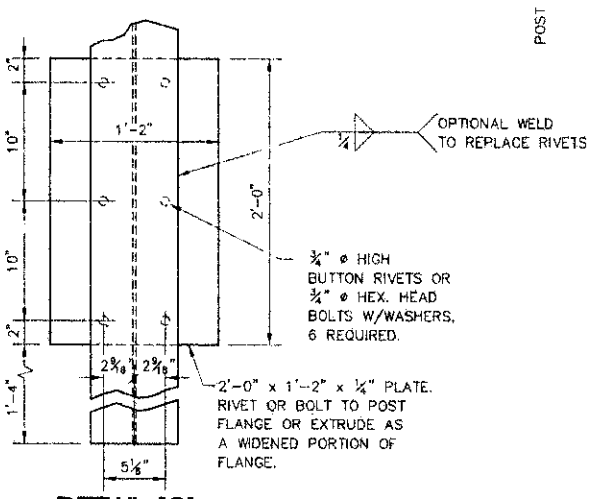
METRICAL ABOUT ℄

UP PLATE (GALVANIZED)
TITY)

N OF STEEL BEAM
ROADWAY QUANTITY)

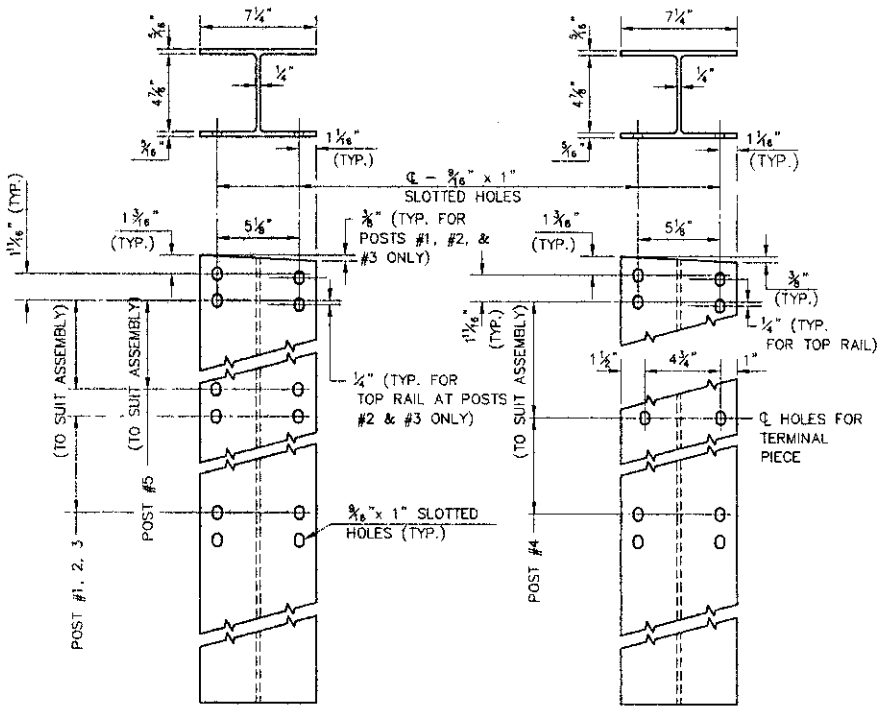
P SCREW, SEE SPLICE
BRIDGE QUANTITY)

BEND AS REQ'D FOR ASSEMBLY.
AL DETAILS SEE SPLICE BAR
DRILL & TAP FOR
HEAD CAP SCREW (TYP)
TITY)



DETAIL "C"

SCALE: 1½" = 1'-0"



RAIL POST - FRONT ELEVATION

SCALE: 2" = 1'-0"

AS-BUILT (OCTOBER 31, 1998)

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF BRIDGE DESIGN

APPROACH RAIL DETAILS (3-BAR ALUMINUM)

TOWN FREMONT BRIDGE NO. 096/095

LOCATION SANDOWN ROAD BRIDGE OVER EXETER RIVER

	BY	DATE		BY	DATE	FILE NUMBER
DESIGNED	NHDOT	.	CHECKED	.	.	93-2-1
DRAWN	PJP	2/91	CHECKED	MWR	7/91	
TRACED	TJM	8/97	CHECKED	MAS	8/97	BRIDGE SHEET NO.
QUANTITIES	.	.	CHECKED	.	.	. OF .

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
.	12544	17	24

BACKillam Project No. 96071.00 | BACKillam CAD File APP-3BAR.DWG

PLANS PREPARED BY: BACKillam

FED.ROAD DIV. NO.	STATE	PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	N.H.		.	.	.

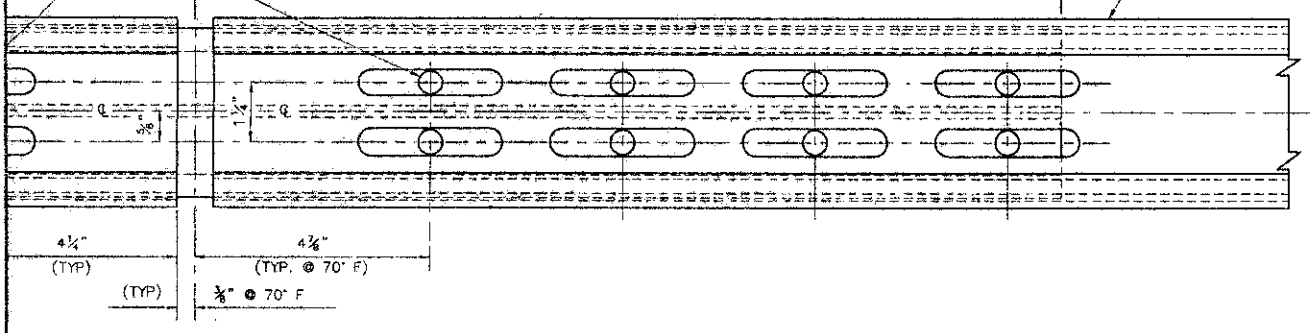
TE #3a,
SHEET

℄ SYMMETRY OF BARRIER RAIL SPLICE AND SPLICE BAR BOLT HOLE LAYOUT.

END OF SPLICE BAR (TYP)

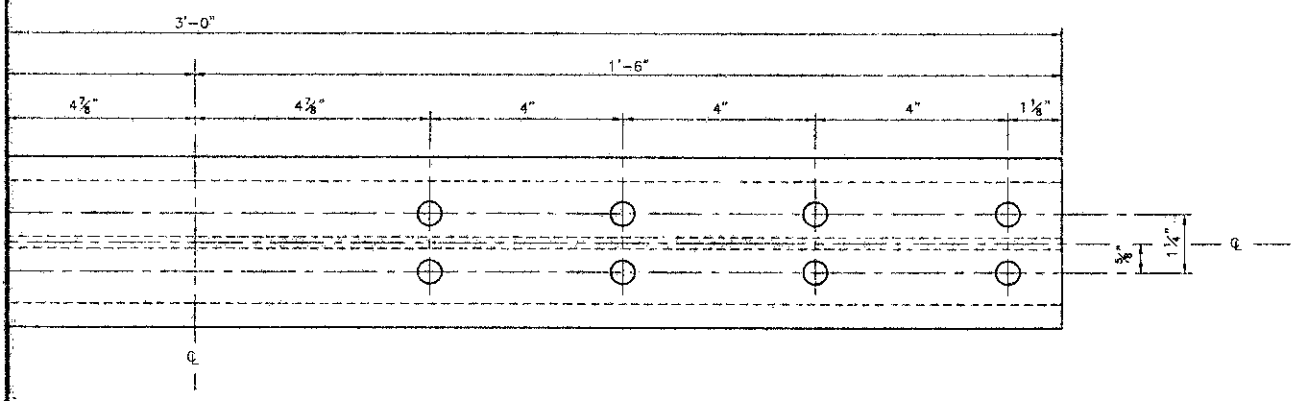
RAIL ELEMENT

1'-6" (TYP)



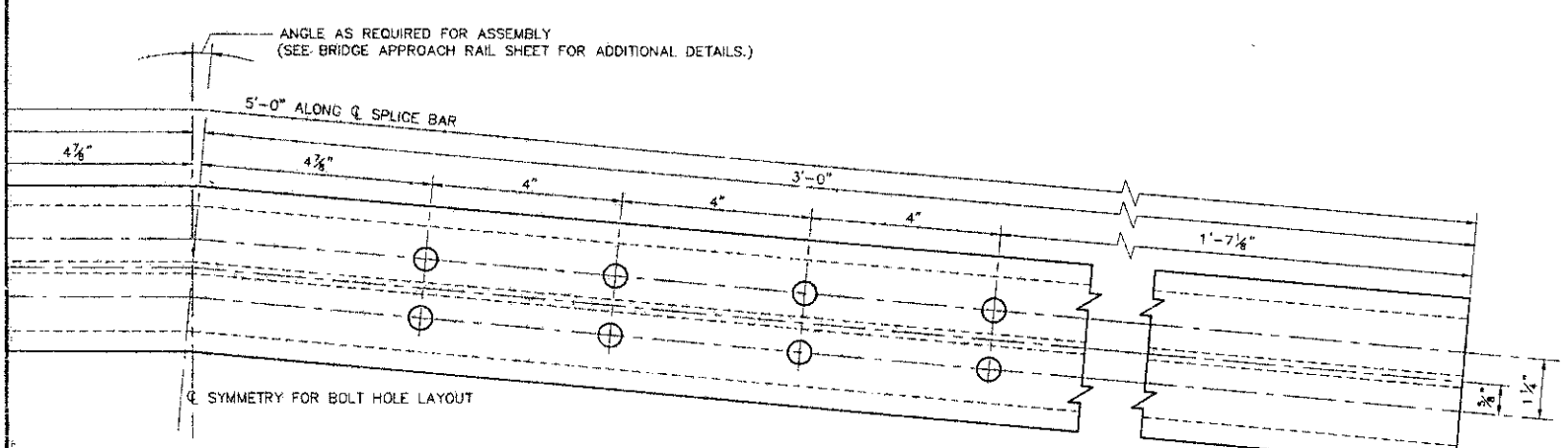
DARD SPLICE ASSEMBLY DETAILS

BACK ELEVATION VIEW – HALF SIZE



LICE BAR FOR BRIDGE RAIL

BACK ELEVATION VIEW – HALF SIZE



BAR FOR BRIDGE APPROACH RAIL

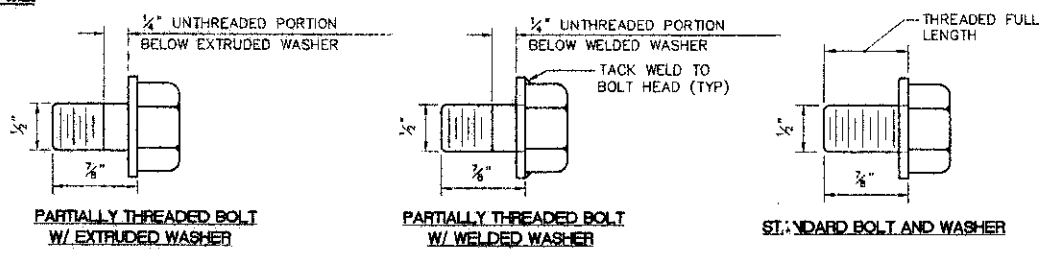
BACK ELEVATION VIEW – HALF SIZE

CE BAR NOTES

AND ADDITIONAL DETAILS, SEE THE BRIDGE RAIL
EETS.

APPROACH RAILS SHALL HAVE SLOTTED HOLES AT
ENT.

CHED TO THE RAIL ELEMENT AS FOLLOWS;
BOTH BRIDGE AND APPROACH RAILS SHALL BE FASTENED ON
BOLTS & WASHERS TIGHTENED SECURELY. THE OTHER SIDE
THE PARTIALLY THREADED BOLT WITH EITHER THE EXTRUDED
SHER, TIGHTENED SECURELY TO THE END OF THE THREADS,
THIS ALLOWS EXPANSION ON ONE SIDE OF THE JOINT.
RIDGE EXPANSION JOINT SHALL BE FASTENED ON BOTH
USING THE PARTIALLY THREADED BOLTS, WITH EITHER
THE WELDED WASHER, TIGHTENED SECURELY TO THE END
ING A ⅛" GAP. THIS ALLOWS EXPANSION ON BOTH



PARTIALLY THREADED BOLT W/ EXTRUDED WASHER

PARTIALLY THREADED BOLT W/ WELDED WASHER

STANDARD BOLT AND WASHER

SPLICE BAR BOLT DETAILS

FULL SIZE

AS-BUILT (OCTOBER 31, 1998)

△	REVISION DESCRIPTION	BY	DATE

BACKillam Project No. 96071.00 | BACKillam CAD File SPLI-BAR.DWG

BAC Killam

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF BRIDGE DESIGN

BRIDGE RAIL SPLICE BAR DETAILS (ALUMINUM)

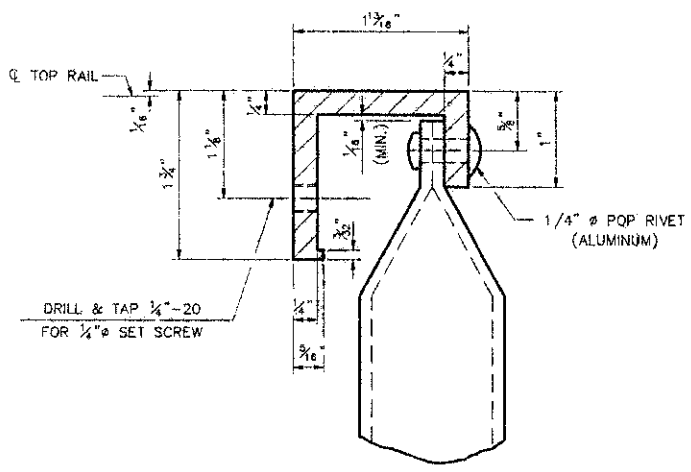
TOWN FREMONT BRIDGE NO. 096/095

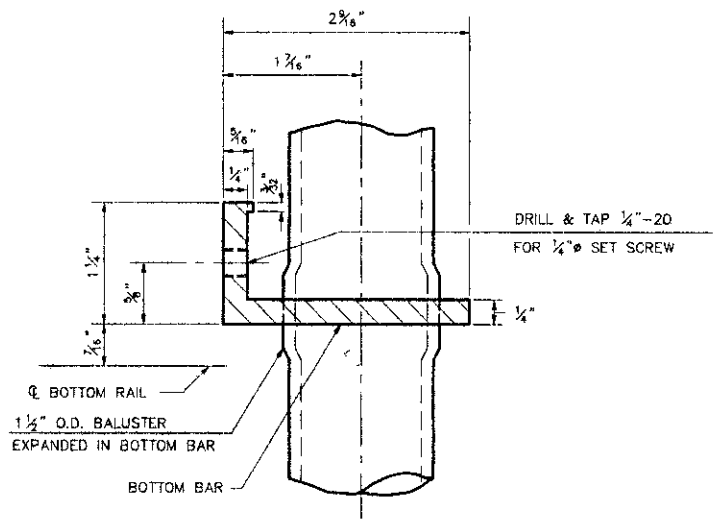
LOCATION SANDOWN ROAD BRIDGE OVER EXETER RIVER

	BY	DATE		BY	DATE	FILE NUMBER
DESIGNED	NHDOT	.	CHECKED	.	.	.
DRAWN	MWR	6/88	CHECKED	MWR	1/90	
TRACED	TJM	8/97	CHECKED	MAS	8/97	BRIDGE SHEET NO.
QUANTITIES	.	.	CHECKED	.	.	. OF .

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
.	12544	18	24

FED.ROAD DIV. NO.	STATE	PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	N.H.		.	.	.





3'-0 3/4" LONG.
WALL. BALUSTERS
POST

DETAIL "A"

FULL SIZE

DETAIL "B"

FULL SIZE

BALUSTER NOTES

1. BALUSTERS AND ATTACHMENTS SHALL BE PAID FOR UNDER ITEM 563.73.
2. ALUMINUM BALUSTERS AND ATTACHMENTS SHALL CONFORM TO THE REQUIREMENTS SPECIFIED IN N.H. SPECIFICATION 563.2.6.
3. PAY LIMITS FOR BALUSTERS SHALL BE AS SHOWN ON THE PLANS.

AS-BUILT (OCTOBER 31, 1998)

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF BRIDGE DESIGN

ALUMINUM BALUSTER DETAILS

TOWN FREMONT BRIDGE NO. 096/095

LOCATION SANDOWN ROAD BRIDGE OVER EXETER RIVER

	BY	DATE		BY	DATE	
DESIGNED	NHDOT		CHECKED	.	.	FILE NUMBER 93-2-1
DRAWN	GMC/CADD	9/87	CHECKED	MWR	1/90	
TRACED	TJM	8/97	CHECKED	MAS	8/97	BRIDGE SHEET NO.
QUANTITIES	.	.	CHECKED	.	.	. OF .

△	REVISION DESCRIPTION	BY	DATE

BACKillam Project No. 96071.00 | BACKillam CAD File BALUSTER.DWG

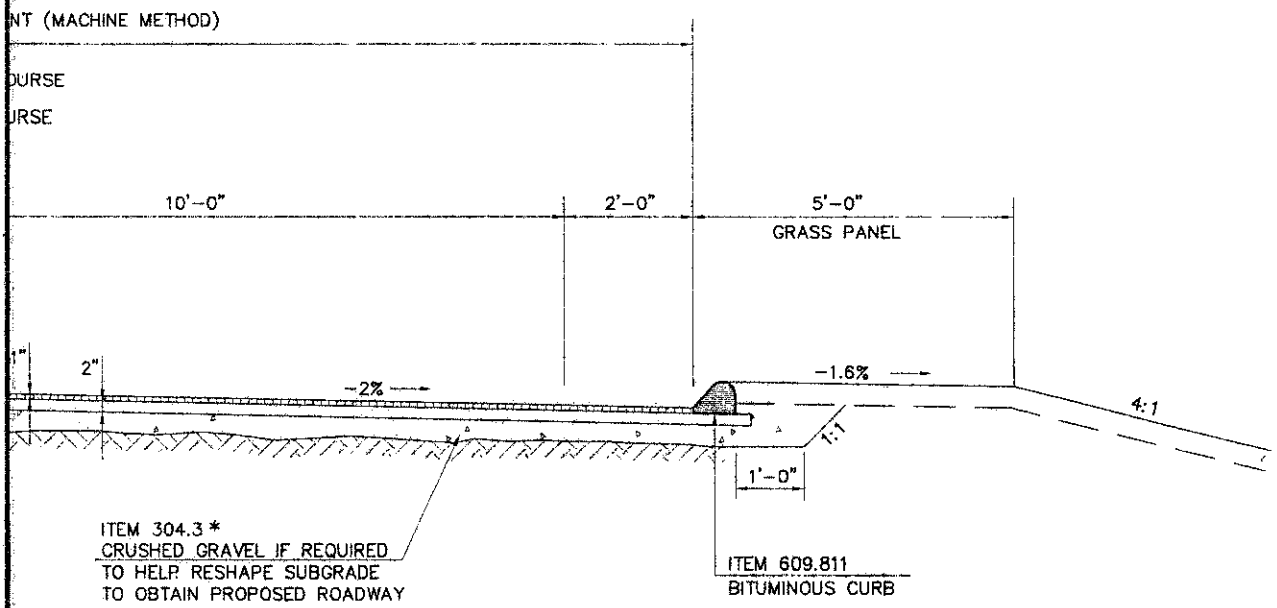
BAC Killam

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
.	12544	19	24

NT (MACHINE METHOD)

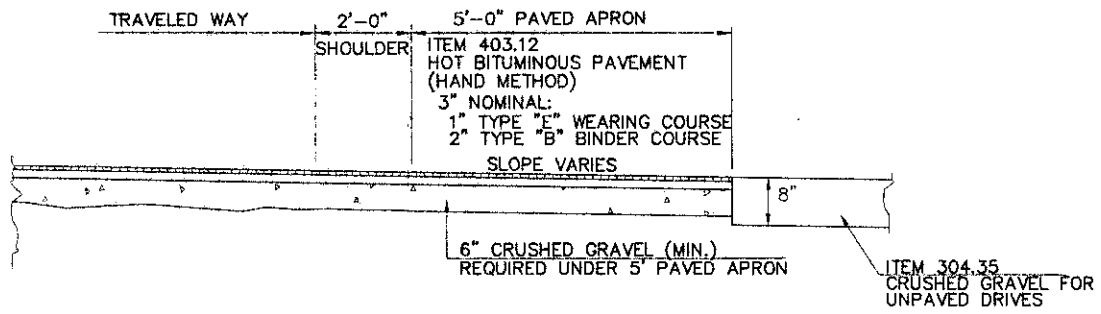
URSE

URSE



* NOTE: THE USE OF MODIFIED CRUSHED GRAVEL WILL NOT BE PERMITTED.

CTION



DRIVE TYPICAL FOR UNPAVED DRIVES

* SEE CROSS-SECTIONS FOR EACH DRIVE LOCATION

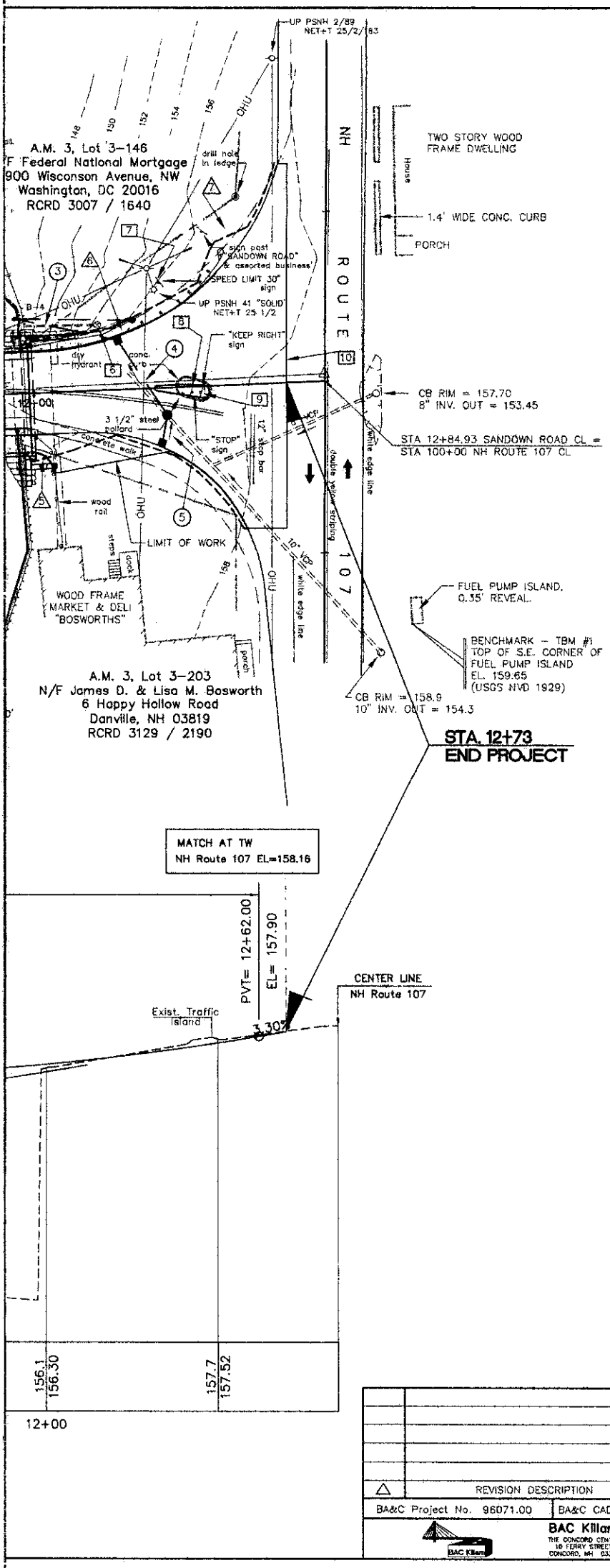
AS-BUILT (OCTOBER 31, 1998)

ROADWAY TYPICAL SECTION

BAC Kilfam
THE CONCORD CENTER
10 FERRY STREET
CONCORD, NH 03301

SCALE
1" = 3'

BAC PROJECT NO.	BAC CAD FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
98071.00	TYPICAL.DWG		12544	20	24



DRAINAGE NOTES

1. STA 11+21 TO STA 11+45
CONST. 35 LF x 15" RCP, 2000D
PLACE EXCAVATED ROCK (ITEM 586.2)
INV. @ OUTLET = 150.00
CONST. CB-B, ALT 1, +21, RT 11'
15" INV. OUT = 150.75
15" INV. IN = 151.00

2. STA 11+21 TO STA 11+21
CONST. 22 LF x 15" RCP, 2000D
CONST. CB-B, ALT. 1, +21, LT 12'
INV. OUT = 151.25

3. STA 11+97 TO STA 12+25
CONST. 28 LF x 15" RCP, 2000D
INV. @ OUTLET = 145.9
CONST. CB-B, ALT. 1, +25, LT 14'
15" INV. OUT = 147.90
15" INV. IN = 152.25

4. STA 12+25 TO STA 12+39
CONST. 26 LF x 15" RCP, 2000D
CONST. DMH, +39, RT 8'
15" INV. OUT = 152.55
10" INV. IN = 153.2±
15" INV. IN = 152.65

5. STA 12+38 TO STA 12+37
CONST. 8 LF x 15" RCP, 2000D
CONST. CB-B, ALT. 1, +37, RT 16'
15" INV. OUT = 152.75

6. PLACING EXCAVATED ROCK FOR CHANNEL PROTECTION (ITEM 586.2)

GUARDRAIL NOTES

△1 STA 10+80 TO STA 11+17, RT
REMOVE STUMPS (SUBSID.)
CONST. BEAM GUARDRAIL
TERMINAL UNIT TYPE MELT
(ITEM 606.1451)

△2 STA 11+17 TO STA 11+51, RT
REMOVE STUMPS (SUBSID.)
CONST. BRIDGE APPROACH
RAIL F (ITEM 565.73)

△3 STA 11+13 TO STA 11+18, LT
CONST. BEAM GUARDRAIL
TERMINAL UNIT TYPE G-2
(ITEM 606.147)

△4 STA 11+18 TO STA 11+51, LT
CONST. BRIDGE APPROACH
RAIL F (ITEM 565.73)

△5 STA 11+99 TO STA 12+05, RT
CONST. BRIDGE APPROACH
RAIL F (ITEM 565.73)

△6 STA 11+33 TO STA 12+58, LT
CONST. BRIDGE APPROACH
RAIL (ITEM 565.73)

△7 STA 12+33 TO STA 12+58, LT
CONST. BEAM GUARDRAIL
TERMINAL UNIT TYPE MELT
(ITEM 606.1451)

NOTES

[1] STA 10+00
SAW CUT BITUMINOUS PVMT.
(ITEM 628.2)

[2] STA 10+50, RT
CONST. PAVED DRIVEWAY APRON
AND GRAVEL DRIVE

[3] STA 10+75, RT
REMOVE MAILBOX & ASSEMBLIES
CONST. MAILBOX & ASSEMBLIES
2 REQUIRED (ITEM 670.066)

[4] STA 10+80
UTILITY POLE TO BE
RELOCATED BY OTHERS

[5] STA 11+10, LT
CONST. PAVED DRIVEWAY APRON
AND GRAVEL DRIVE

[6] STA 12+25, LT
EXIST. DRY HYDRANT TO REMAIN
RESET HEIGHT AS REQUIRED (ITEM 1002.)

[7] STA 12+38, LT
REMOVE AND STACK
EXIST. TRAFFIC SIGN,
TYPE C (SUBSID.)

[8] STA 12+46, RT
REMOVE AND STACK
EXIST. TRAFFIC SIGN,
TYPE C (SUBSID.)

[9] STA 12+49, RT
REMOVE AND STACK
EXIST. TRAFFIC SIGN,
TYPE C (SUBSID.)

[10] STA 12+73
SAW CUT BITUMINOUS PVMT.
(ITEM 628.2)

AS-BUILT (OCTOBER 31, 1998)

△	REVISION DESCRIPTION	BY	DATE

BA&C Project No. 96071.00 | BA&C CAD File ROADPLN.DWG

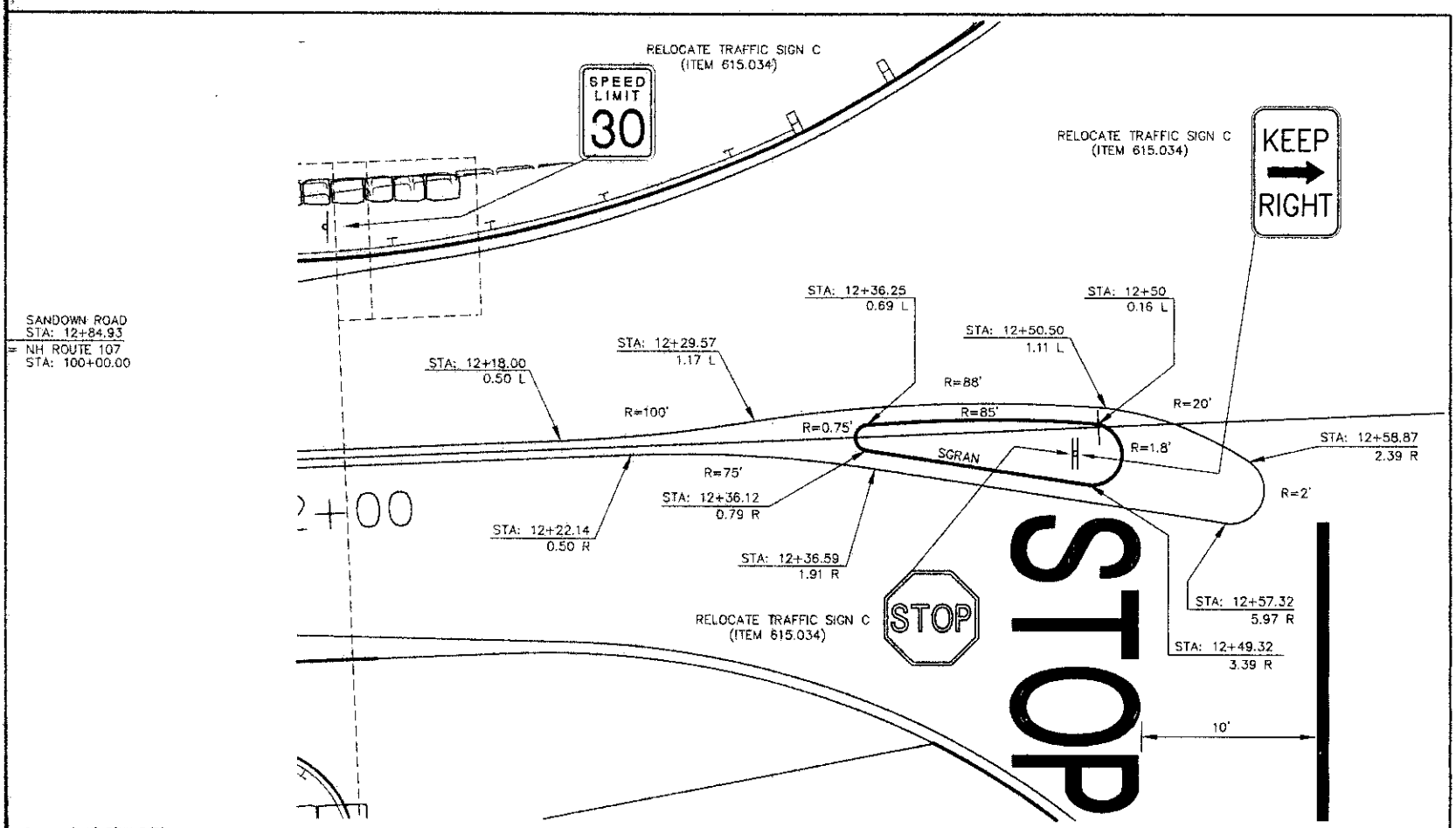
BAC Kilam
THE CONCORD CENTER
10 FERRY STREET
CONCORD, NH 03301

ROADWAY PLAN AND PROFILE

TOWN FREMONT BRIDGE NO. 096/095
LOCATION SANDOWN ROAD BRIDGE OVER EXETER RIVER

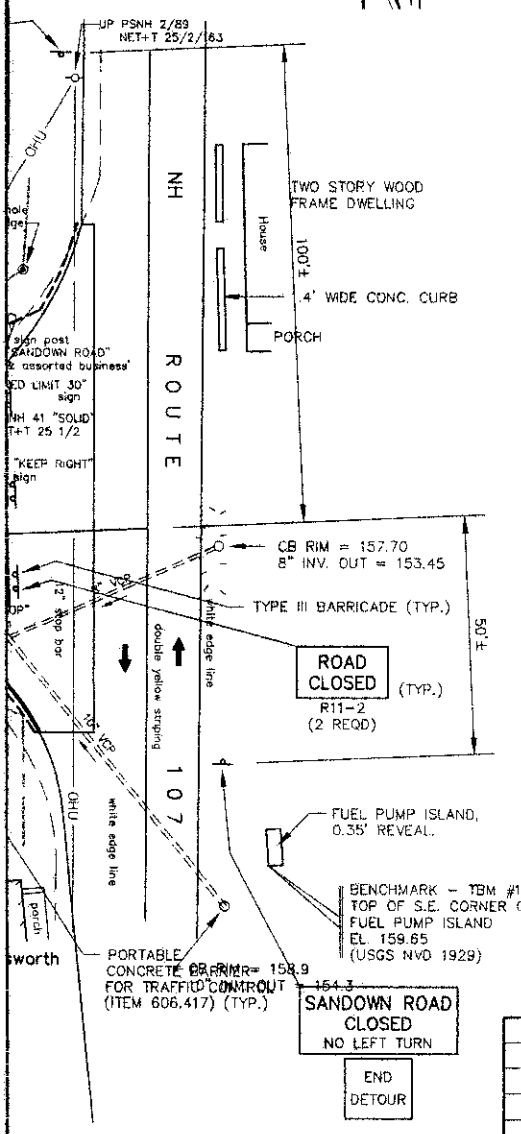
	BY	DATE		BY	DATE	FILE NUMBER
DESIGNED	MAS	4/97	CHECKED	DCK	8/97	
DRAWN	SLM	8/97	CHECKED	MAS	8/97	BRIDGE SHEET NO.
QUANTITIES	.	.	CHECKED	.	.	. OF .

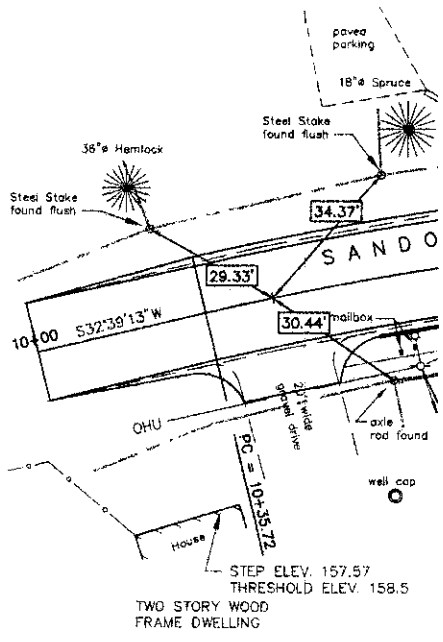
STATE FILE NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
93-2-1	12544	21	24



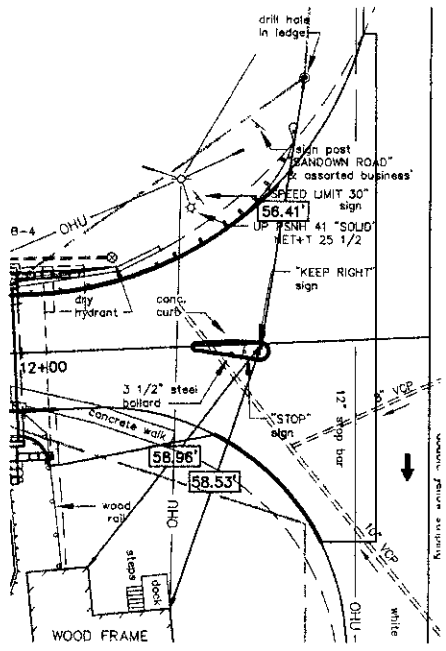
BLOWUP "A"

SCALE: 1" = 5'





STATION 10+50



STATION 12+50

CONSTRUCTION TIES

SCALE: 1" = 20'

AS-BUILT (OCTOBER 31, 1998)

△	REVISION DESCRIPTION	BY	DATE

BA&C Project No. 96071.00 | BA&C CAD File PVMTPLAN.DWG

BAC Killam
THE CONCORD CENTER
10 FERRY STREET
CONCORD, NH 03301

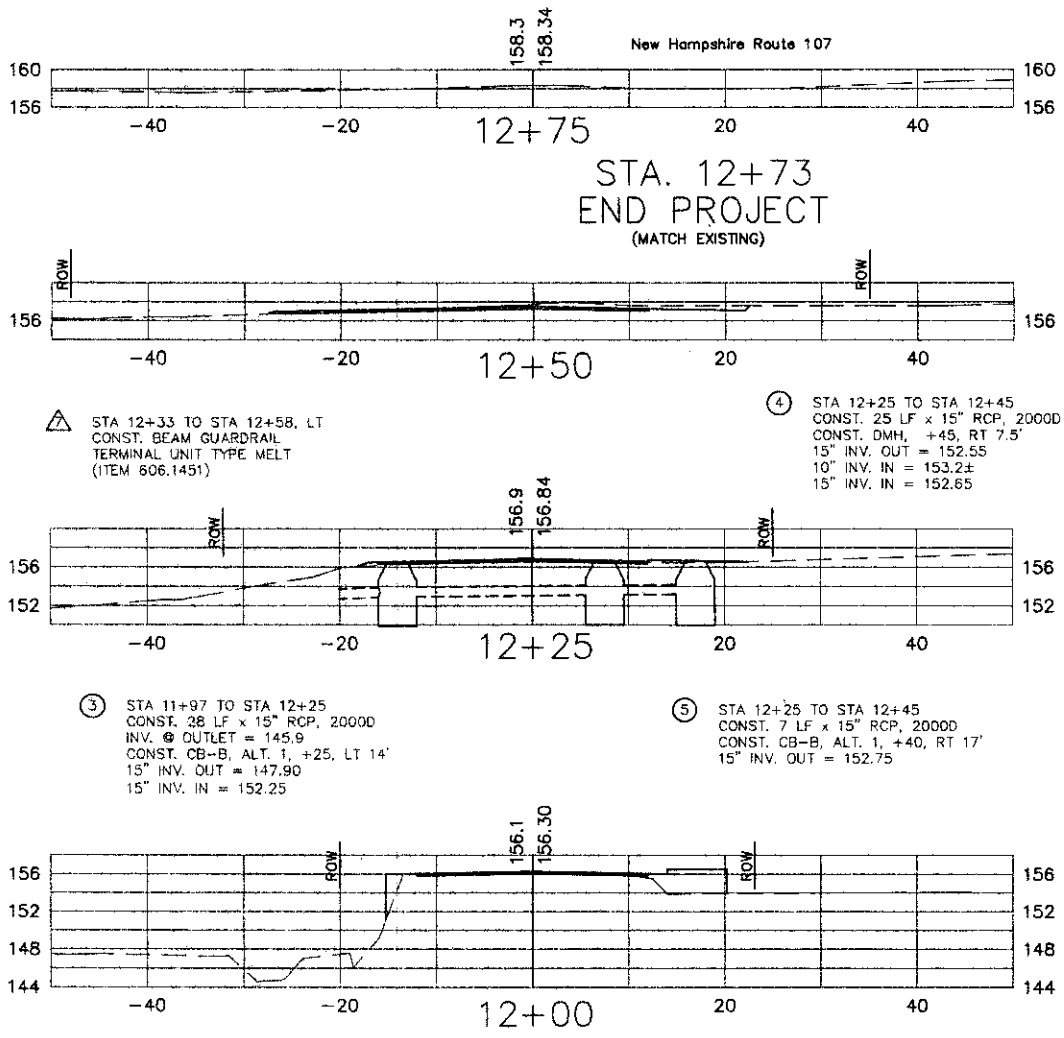
CURBING, PAVEMENT, AND PAINTING LAYOUT ROAD CLOSURE / CONSTRUCTION TIES

TOWN FREMONT BRIDGE NO. 096/095

LOCATION SANDOWN ROAD BRIDGE OVER EXETER RIVER

	BY	DATE		BY	DATE	FILE NUMBER
DESIGNED	MAS	4/97	CHECKED			
DRAWN	SLM	8/97	CHECKED	MAS	8/97	BRIDGE SHEET NO.
QUANTITIES			CHECKED			. OF .

STATE FILE NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
93-2-1	12544	22	24



(7) STA 12+33 TO STA 12+58, LT
CONST. BEAM GUARDRAIL
TERMINAL UNIT TYPE MELT
(ITEM 606.1451)

(4) STA 12+25 TO STA 12+45
CONST. 25 LF x 15" RCP, 2000D
CONST. DMH, +45, RT 7.5'
15" INV. OUT = 152.55
10" INV. IN = 153.2±
15" INV. IN = 152.65

(3) STA 11+97 TO STA 12+25
CONST. 28 LF x 15" RCP, 2000D
INV. @ OUTLET = 145.9
CONST. CB-B, ALT. 1, +25, LT 14'
15" INV. OUT = 147.90
15" INV. IN = 152.25

(5) STA 12+25 TO STA 12+45
CONST. 7 LF x 15" RCP, 2000D
CONST. CB-B, ALT. 1, +40, RT 17'
15" INV. OUT = 152.75

(5) STA 11+99 TO STA 12+05, RT
CONST. BRIDGE APPROACH
RAIL F (ITEM 565.73)

(6) STA 11+33 TO STA 12+58, LT
CONST. BRIDGE APPROACH
RAIL (ITEM 565.73)

AS-BUILT (OCTOBER 31, 1998)

CROSS-SECTIONS
SANDOWN ROAD

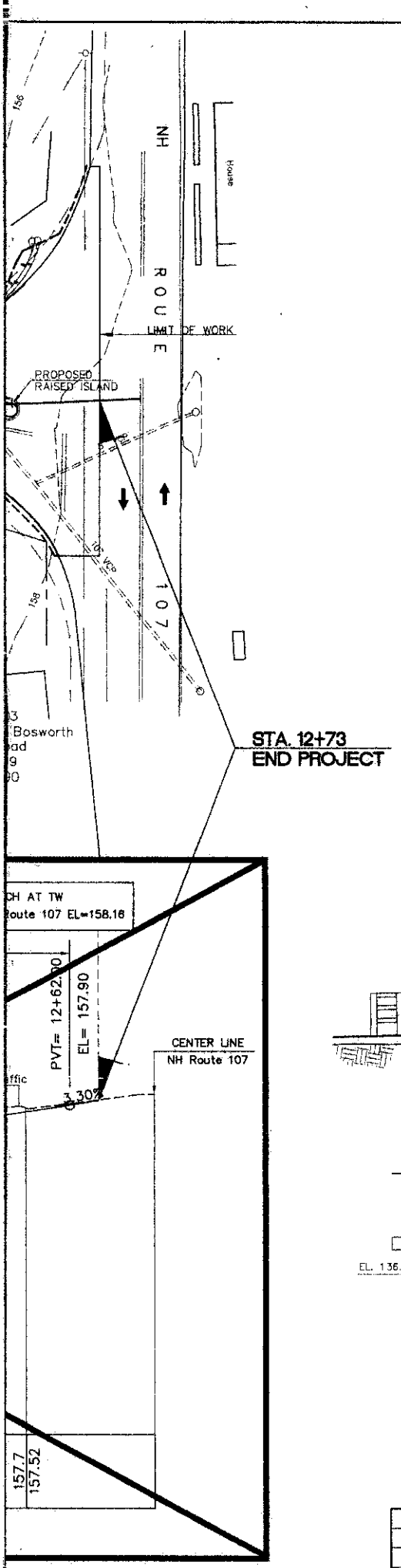
BA&C Project No. 96071.00	BA&C CAD File XSEC.DWG

BAC Killam
THE CONCORD CENTER
10 FERRY STREET
CONCORD, NH 03301

BAC Killam
THE CONCORD CENTER
10 FERRY STREET
CONCORD, NH 03301

FILE NUMBER

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
93-2-1	12544	23	24



GENERAL NOTES:

1.) NO LAYOUT OF SANDOWN ROAD WAS FOUND IN THE TOWN RECORDS OF FREEMONT, NH.

2.) WETLANDS IDENTIFICATION AND FLAGGING SHOWN HEREON IS AS DETERMINED BY NEW HAMPSHIRE SOIL CONSULTANTS, INC. ON SEPTEMBER 17, 1996.

3.) VERTICAL DATUM OF THE ELEVATIONS AND TOPOGRAPHY SHOWN HEREON IS THE UNITED STATES GEOLOGICAL SURVEY NATIONAL VERTICAL DATUM OF 1929. SAID DATUM USED WAS BROUGHT TO THIS SITE FROM USGS VERTICAL CONTROL DISC "R-1931, RESET 1963" LOCATED ON THE NORTHERLY SIDE OF ROUTE 107 APPROXIMATELY 0.6 MILE EAST OF THIS SITE.

4.) CONTOUR INTERVAL SHOWN IS 2 FEET.

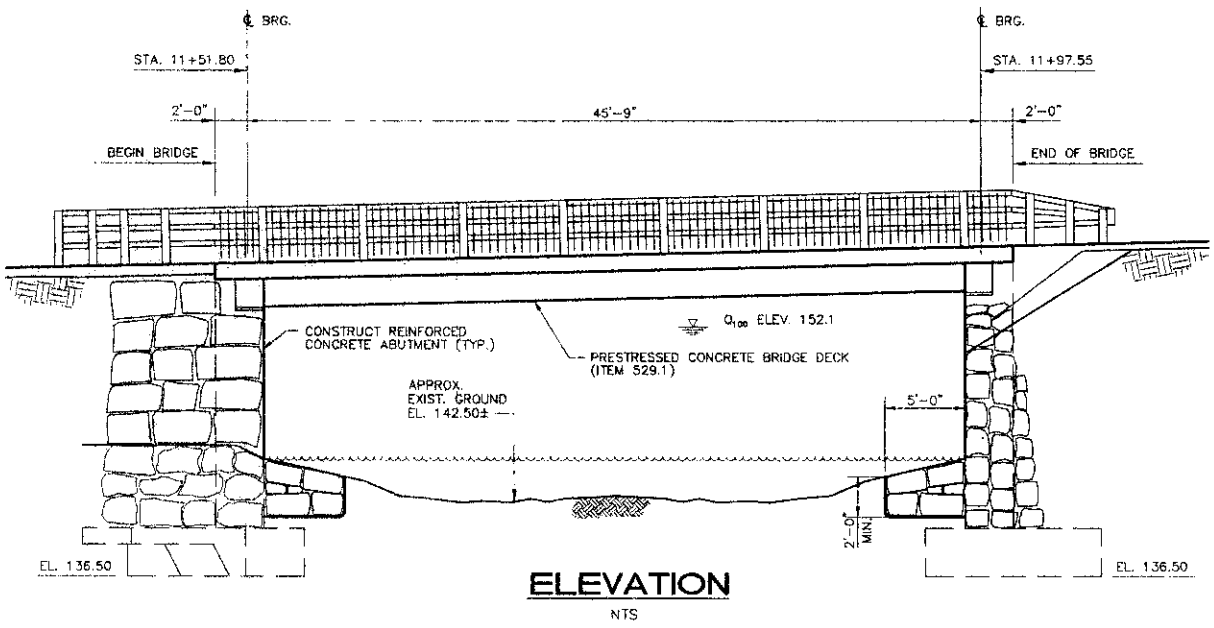
5.) WETLAND IMPACTS:
TEMPORARY WETLAND IMPACTS = 699 sf
PERMANENT WETLAND IMPACTS = 831 sf

TOTAL WETLAND IMPACTS = 1530 sf

REFERENCE PLANS:

1.) "PLAT OF LAND FOR JOSEPH F. FAVALARO AND JANIE E. TURKEWICH IN FREMONT N.H."; SCALE: 1" = 50'; DATED: JUNE 1981; BY: PARKER SURVEY ASSOCIATES, INC.; R.C.R.D. PLAN C10218.

2.) "PLAN OF LAND FOR JESSE AND MEREDITH BOLOUC IN FREEMONT, N.H."; SCALE: 1" = 50'; DATED: 8 JULY 1983; BY: SEACOAST ENGINEERING ASSOCIATES, INC.; R.C.R.D. PLAN C-12588.



ELEVATION

NTS

AS-BUILT (OCTOBER 31, 1998)

FOR INFORMATION ONLY

WETLAND PERMIT PLAN FOR SANDOWN RD. BRIDGE

TOWN FREMONT BRIDGE NO. 096/095

LOCATION SANDOWN ROAD BRIDGE OVER EXETER RIVER

	BY	DATE		BY	DATE	FILE NUMBER
DESIGNED	MAS	4/97	CHECKED			
DRAWN	MTB	4/97	CHECKED	MAS	5/97	BRIDGE SHEET NO.
QUANTITIES			CHECKED			OF

△	REVISION DESCRIPTION	BY	DATE

BA&C Project No. 96071.00 | BA&C CAD File WET.DWG

BAC Kilam
THE CONCORD CENTER
10 FERRY STREET
CONCORD, NH 03301

STATE FILE NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
93-2-1	12544	24	24

FREMONT 096/095

Voting Sheets

HOUSE COMMITTEE ON RESOURCES, RECREATION AND DEVELOPMENT

EXECUTIVE SESSION on HJR 1

BILL TITLE: **directing the department of transportation and the department of environmental services to study the prevention of further erosion of the east bank of the Exeter River.**

DATE: February 8, 2011

LOB ROOM: 305

Amendments:

Sponsor: Rep. OLS Document #:

Sponsor: Rep. OLS Document #:

Sponsor: Rep. OLS Document #:

Motions: OTP, OTP/A, ITL, Interim Study (Please circle one.)

Moved by Rep. Pettengill

Seconded by Rep. Merrow

Vote: 15-0 (Please attach record of roll call vote.)

Motions: OTP, OTP/A, ITL, Interim Study (Please circle one.)

Moved by Rep.

Seconded by Rep.

Vote: (Please attach record of roll call vote.)

CONSENT CALENDAR VOTE: 15-0

(Vote to place on Consent Calendar must be unanimous.)

Statement of Intent: Refer to Committee Report

Respectfully submitted,

Rep. Chris Christensen, Clerk

HOUSE COMMITTEE ON RESOURCES, RECREATION AND DEVELOPMENT

EXECUTIVE SESSION on HJR 1

BILL TITLE: **directing the department of transportation and the department of environmental services to study the prevention of further erosion of the east bank of the Exeter River.**

DATE: 2/8/11

LOB ROOM: 305

Amendments:

Sponsor: Rep. OLS Document #:

Sponsor: Rep. OLS Document #:

Sponsor: Rep. OLS Document #:

Motions: OTP, OTP/A, ITL, Interim Study (Please circle one.)

Moved by Rep. Pettengill

Seconded by Rep. Merrow

Vote: 15/0 (Please attach record of roll call vote.)

Motions: OTP, OTP/A, ITL, Interim Study (Please circle one.)

Moved by Rep.

Seconded by Rep.

Vote: (Please attach record of roll call vote.)

CONSENT CALENDAR VOTE:

(Vote to place on Consent Calendar must be unanimous.) Yes

Statement of Intent: Refer to Committee Report

Respectfully submitted,

Rep. Chris Christensen, Clerk

David Russell acting clerk

OFFICE OF THE HOUSE CLERK 2011 SESSION

RESOURCES, RECREATION AND DEVELOPMENT

Bill #: HTR 1 **Title:** directing DOT & DES to study prevention of further erosion on Exeter River

PH Date: 2/1/11 Exec Session Date: 2/8/11

Motion: ITL Amendment #:

MEMBER	YEAS	NAYS
Renzullo, Andrew, Chairman	✓	
Kappler, Lawrence M, V Chairman	✓	
Christensen, D.L. Chris		
Russell, David H	✓	
Ahlgren, Christopher J	✓	
Merrow, Harry C	✓	
Bolster, Peter S	✓	
Howard, Thomas J		
Hutchinson, Winfred O	✓	
Lovett, Charlene M	✓	
Pettengill, Laurie P	✓	
Schroadter, Adam R	✓	
Spang, Judith T	✓	
Parkhurst, Henry A. L.	✓	
Moody, Marcia G	✓	
Aguiar, James D	✓	
Thomas, Yvonne D	✓	
TOTAL VOTE:	15	0

Printed: 1/4/2011

Committee Report

CONSENT CALENDAR

February 10, 2011

HOUSE OF REPRESENTATIVES

REPORT OF COMMITTEE

The Committee on RESOURCES, RECREATION AND DEVELOPMENT to which was referred HJR1,

AN ACT directing the department of transportation and the department of environmental services to study the prevention of further erosion of the east bank of the Exeter River. Having considered the same, report the same with the following Resolution: RESOLVED, That it is INEXPEDIENT TO LEGISLATE.

Rep. Laurie P Pettengill

FOR THE COMMITTEE

Original: House Clerk
Cc: Committee Bill File

COMMITTEE REPORT

Committee:	**RESOURCES, RECREATION AND DEVELOPMENT**
Bill Number:	**HJR1**
Title:	**directing the department of transportation and the department of environmental services to study the prevention of further erosion of the east bank of the Exeter River.**
Date:	**February 10, 2011**
Consent Calendar:	**YES**
Recommendation:	**INEXPEDIENT TO LEGISLATE**

STATEMENT OF INTENT

This resolution would direct the Department of Transportation (DOT) and the Department of Environmental Services (DES) to study the prevention of further erosion of the east bank of the Exeter River. The sponsor alleges that a bridge built ten years ago by the town in conjunction with the DOT, shifted the erosion from one bank of the river to the other bank, causing damage to the property of a local business. The sponsor feels the engineering design was faulty. The DOT maintains that the town is the primary entity constructing the bridge and that the engineer was hired and supervised by the town. The committee heard testimony from DES that there are many factors that could contribute to bank erosion, including the flooding of recent years. Conspicuously absent was testimony from the town and from the property owner. This resolution is really asking the committee to adjudicate a liability dispute. We are not equipped to do that and thus cannot grant what the resolution requests. It should be noted, however, that DES did volunteer to meet with town officials should they request it.

Vote 15-0.

Rep. Laurie P Pettengill
FOR THE COMMITTEE

Original: House Clerk
Cc: Committee Bill File

CONSENT CALENDAR

RESOURCES, RECREATION AND DEVELOPMENT

HJR1, directing the department of transportation and the department of environmental services to study the prevention of further erosion of the east bank of the Exeter River. **INEXPEDIENT TO LEGISLATE.**

Rep. Laurie P Pettengill for RESOURCES, RECREATION AND DEVELOPMENT. This resolution would direct the Department of Transportation (DOT) and the Department of Environmental Services (DES) to study the prevention of further erosion of the east bank of the Exeter River. The sponsor alleges that a bridge built ten years ago by the town in conjunction with the DOT, shifted the erosion from one bank of the river to the other bank, causing damage to the property of a local business. The sponsor feels the engineering design was faulty. The DOT maintains that the town is the primary entity constructing the bridge and that the engineer was hired and supervised by the town. The committee heard testimony from DES that there are many factors that could contribute to bank erosion, including the flooding of recent years. Conspicuously absent was testimony from the town and from the property owner. This resolution is really asking the committee to adjudicate a liability dispute. We are not equipped to do that and thus cannot grant what the resolution requests. It should be noted, however, that DES did volunteer to meet with town officials should they request it. **Vote 15-0.**

Original: House Clerk
Cc: Committee Bill File

HJR 1

ITL

This resolution would direct the Department of Transportation (DOT) and the Department of Environmental Services (DES) to study the prevention of further erosion of the east bank of the Exeter River. The sponsor alleges that a bridge built ten years ago by the town in conjunction with the DOT, shifted the erosion from one bank of the river to the other bank, causing damage to the property of a local business. The sponsor feels the engineering design was faulty. The DOT maintains that the town is the primary entity constructing the bridge and that the engineer was hired and supervised by the town. The committee heard testimony from DES that there are many factors that could contribute to bank erosion, including the flooding of recent years. Conspicuously absent was testimony from the town and from the property owner. This resolution is really asking the committee to adjudicate a liability dispute. We are not equipped to do that and thus cannot grant what the resolution requests. It should be noted, however, that DES did volunteer to meet with town officials should they request it.

Laurie Pettengill