VTrans Vermont Agency of Transportation

REQUEST FOR PROJECT REVIEW

RFPR version 4.0.a.

PROJECT INFORMATION

Proj. Name and Number: Brandon NH 019-3(496)

EA No.: 0193496 PPMS: 02B232

Project Manager: Scott Robertson

Program: Municipal Assistance Phase: Final

District: District 3 If Multiple Districts Specify

Traffic Signal: No Precast Elements: No

DOCUMENTS FOR REVIEW AND FILES LOCATION

PLANS	FILE LOCATION :	Z:\Highways\MUN\LCL\LTF Projects\Brandon NH 019-3(496) - 02B232\10. Construction\Change Orders \Slab C.O\Prelim Plans for review - slab\OLSR
ESTIMATE	FILE LOCATION :	Z:\Highways\MUN\LCL\LTF Projects\Brandon NH 019-3(496) - 02B232\10. Construction\Change Orders \Slab C.O\Prelim Plans for review - slab\OLSR
Special Provisions	FILE LOCATION :	Z:\Highways\MUN\LCL\LTF Projects\Brandon NH 019-3(496) - 02B232\10. Construction \Change Orders\Slab C.O\Prelim Plans for review - slab\OLSR
	FILE LOCATION :	
	FILE LOCATION :	

TIME LINES

SUBMITTED: 11-19-2019

DEADLINE: 12-06-2019

COMPLETED: 12-10-2019

INVITEES FOR REVIEW

[X] MOB Districts

REVIEWED
By Brian Sanderson (brian.sanderson@vermont.gov) at 2:27 pm, Nov 19, 2019

REVIEWED
By Eric House (eric.house@vermont.gov) at 2:55 pm, Nov 19, 2019

Operations and Safety Bureau

REVIEWED
By Joseph Kelly (joe.kelly@vermont.gov) at 7:50 am, Nov 20, 2019

[X] Support Services Bureau

REVIEWED
By Dexter Puls (dexter.puls@vermont.gov) at 10:45 am, Nov 26, 2019

[ ] MAB Bicycle and Pedestrian Program Unit

[ ] PDB Right-of-Way

[X] PDB Structural Section

REVIEWED

Didn't participate in On-line review.

[ ] PDB Survey Section

[X] PDB Utility Section

REVIEWED
By Shaun Corbett (Shaun.Corbett@vermont.gov) at 8:12 am, Nov 20, 2019

[ ] PDB Highway Safety & Design

[X] PDB Environmental Section

Didn't participate in On-line review.

[X] PDB Hydraulics Section

Didn't participate in On-line review.

[ ] CMB Construction Section

REVIEWED
By Sandra (sandra.schmitt@vermont.gov) at 11:31 am, Dec 02, 2019

REVIEWED
By Nancy Avery (nancy.avery@vermont.gov) at 2:30 pm, Nov 19, 2019

[X] CMB Materials Testing and Certification Section

Didn't participate in On-line review.

[ ] CMB Geotechnical Engineering Section

[ ] AMP Budget and Programming

Include on all reviews that include bridges within the Project Limits

[ ] AMP NBIS Inspections and Budget

Include on all reviews that include bridges within the Project Limits

[ ] Policy and Planning Bureau

[ ] FHWA

Include on all PoDI and WCRS Projects

[ ] Rail Bureau

[ ] Civil Rights

[ ] PPAID Permitting Services

[ ] Regional Planners

Others:

REVIEWED
By Scott Robertson (scott.robertson@vermont.gov) at 12:02 pm, Dec 06, 2019

Jon Lemieux
Pete Pochop

REVIEWED
By Peter Pochop (peter.pochop@vermont.gov) at 4:10 pm, Dec 05, 2019

REVIEWED
By Jon Lemieux (jon.lemieux@vermont.gov) at 12:02 pm, Dec 09, 2019

Review Focus Notes:

This review is for additional construction (via. change order) of a cast-in-place concrete and steel beam structure below the intersection of US-7 and W. Seminary St. This effort will repair or replace components of the existing structure.

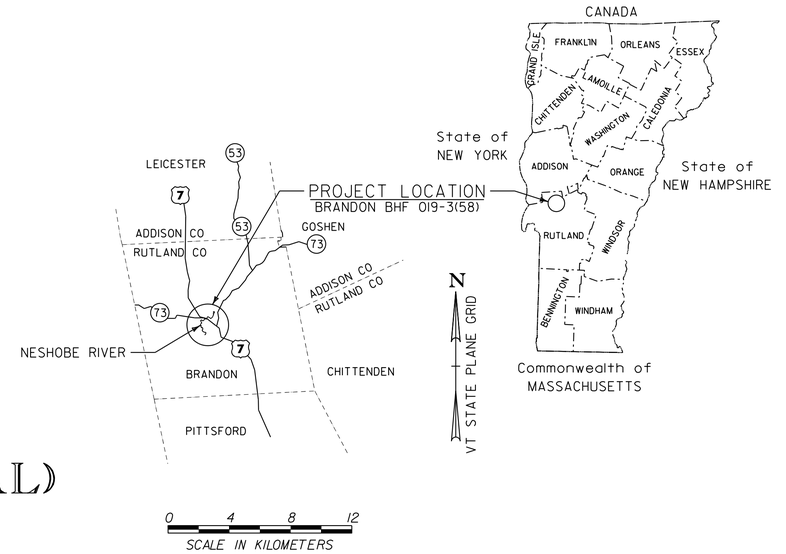
Print Form

Clear Form

Submit by Email

Online Shared Review

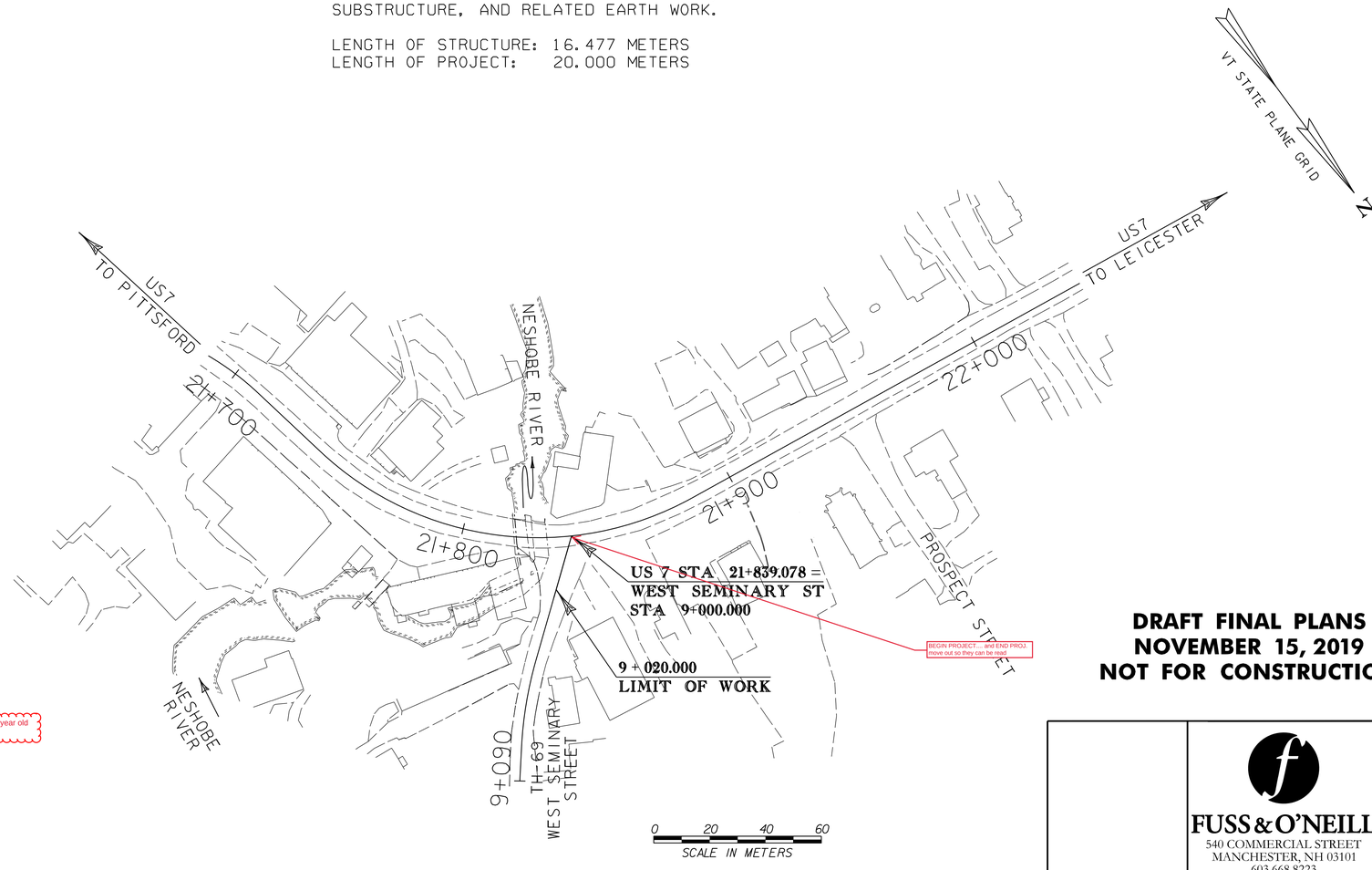
PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF BRANDON
COUNTY OF RUTLAND
US ROUTE 7 (PRINCIPAL ARTERIAL)



PROJECT LOCATION:
LOCATED IN THE TOWN OF BRANDON ON US ROUTE 7, APPROXIMATELY 0.320 KM NORTHERLY OF THE INTERSECTION OF US ROUTE 7 AND VT ROUTE 73 EAST AND EXTENDING NORTH WESTERLY APPROXIMATELY 40 METERS TO THE END.

PROJECT DESCRIPTION:
WORK TO BE PERFORMED INCLUDES THE SUPERSTRUCTURE REPLACEMENT OF THE EXISTING WEST SEMINARY STRUCTURE, THE REHABILITATION OF THE SUBSTRUCTURE, AND RELATED EARTH WORK.

LENGTH OF STRUCTURE: 16.477 METERS
LENGTH OF PROJECT: 20.000 METERS



2018 book should prob be used?

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

QUALITY ASSURANCE PROGRAM : LEVEL I

Comfortable with 6 year old survey?

SURVEYED BY : VAOT
SURVEYED DATE : 5/99, 2013 UPDATES

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (1992)

DRAFT FINAL PLANS
NOVEMBER 15, 2019
NOT FOR CONSTRUCTION

VAOT Metric
UNLESS NOTED OTHERWISE
STATIONS ARE IN KILOMETERS
ELEVATIONS ARE IN METERS
DIMENSIONS ARE IN MILLIMETERS

FUSS & O'NEILL
540 COMMERCIAL STREET
MANCHESTER, NH 03101
603.668.8223
www.fando.com

TOWN OF BRANDON
APPROVED _____ DATE _____

PROJECT NAME : BRANDON
PROJECT NUMBER : NH 019-3(496)

SHEET 1 OF 21 SHEETS

INDEX OF SHEETS

STRUCTURE DETAIL SHEETS

SD-501.00	02/09/2012	CONCRETE DETAILS AND NOTES
SD-502.00	10/10/2012	CONCRETE DETAILS AND NOTES
SD-601.00	06/04/2010	STRUCTURAL STEEL DETAILS AND NOTES
SD-602.00	05/02/2011	STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION, 2018 STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND ITS LATEST REVISIONS. THE SUPERSTRUCTURE SHALL CONFORM TO THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, DATED 2017, AND ITS LATEST REVISIONS.

2. THE DESIGN LIVE LOAD SHALL BE HL-93.

3. ALL WORK AND ANY ASSOCIATED ACTIVITY ON THIS PROJECT SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY LIMITS, EXCEPT AS NOTED ON THE PLANS.

4. THE CONTRACTOR SHALL USE CAUTION WHEN WORKING IN THE VICINITY OF THE EXISTING DUCTBANK. SEE ROADWAY LAYOUT PLAN AND BEAM DETAILS FOR ADDITIONAL INFORMATION.

5. A GUY WIRE IS LOCATED JUST TO THE NORTH OF THE SEMINARY STREET STRUCTURE DECK. SEE ROADWAY LAYOUT SHEET FOR APPROXIMATE LOCATION OF GUY WIRE. IT MAY NEED TO BE TEMPORARILY REMOVED AND THE UTILITY POLE TEMPORARILY SUPPORTED DURING CONSTRUCTION. THIS WORK WILL BE DONE BY OTHERS. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY TO FACILITATE THIS WORK IF REQUIRED.

6. ALL DIMENSIONS AS SHOWN ON THE PLANS ARE EITHER ESTIMATED BASED ON SURVEY AND FIELD MEASUREMENTS OR ASSUMED BASED ON KNOWN ENGINEERING PRACTICES AT THE TIME THE STRUCTURE WAS CONSTRUCTED. THE ACTUAL CONFIGURATION OF THE EXISTING EXTERIOR WALLS, PIERS, AND COLUMNS IS UNKNOWN. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS ONCE THE EXISTING SUPERSTRUCTURE HAS BEEN REMOVED AND THE SUBSTRUCTURE CONFIGURATION IS EXPOSED, AND MATCH INTO THE EXISTING SITE GEOMETRY WHERE APPLICABLE. THE ENGINEER SHOULD EVALUATE THE CONFIGURATION OF THE EXISTING SUBSTRUCTURE AS COMPARED THE ASSUMPTIONS MADE IN THE CONTRACT PLANS TO DETERMINE IF CHANGES TO THE PLANS ARE REQUIRED. STEEL BEAMS SHOULD NOT BE FABRICATED UNTIL BEAM LENGTHS ARE VERIFIED.

7. NO INVESTIGATION OF THE CONFIGURATION OF THE WALLS WAS PERFORMED. THEREFORE, FUSS & O'NEILL CANNOT ENSURE THEIR CONDITION AND STABILITY DURING AND AFTER CONSTRUCTION.

CONCRETE REMOVAL AND RELATED ITEMS

8. ITEM 529.15, "REMOVAL OF STRUCTURE" WILL INCLUDE REMOVAL OF THE EXISTING SUPERSTRUCTURE INCLUDING THE EXISTING CONCRETE DECK AND BEAMS. PROTECT ALL SUBSTRUCTURE ELEMENTS TO REMAIN.

9. ITEM 529.25, "REMOVAL OF CONCRETE OR MASONRY" WILL INCLUDE REMOVAL OF ANY PORTIONS OF THE EXISTING SUBSTRUCTURE AS SHOWN ON THE PLANS, INCLUDING THE TOPS OF THE EXISTING EXTERIOR WALLS AND THE CUTOUTS FOR THE NEW PEDESTALS AND STEEL BEAMS IN THE EXTERIOR WALLS, DOWNSTREAM BRIDGE PIER, AND UPSTREAM BUILDING PIER. THE REMOVAL OF THE EXISTING CONCRETE COLUMN TO 300 BELOW RIVERBED WILL BE PAID FOR UNDER THIS ITEM. PROTECT ALL ELEMENTS INTENDED TO REMAIN. SEE REMOVAL PLAN ON SHEET 6 AND LIMITS OF CONCRETE REMOVAL ON SHEETS 13 TO 15.

Permit needed/obtained?

CONCRETE REMOVAL AND RELATED ITEMS (CONT.)

10. SHORING MAY BE REQUIRED TO TEMPORARILY SUPPORT THE CENTER COLUMN AND BEAMS DURING EXISTING DECK AND BEAM REMOVAL. THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 529.25, "REMOVAL OF CONCRETE OR MASONRY".

11. ESTIMATED AREAS OF CONCRETE REPAIR BASED ON FIELD OBSERVATIONS ARE SHOWN ON SHEETS 19 AND 20. HOWEVER, THE CONTRACTOR SHALL SOUND ALL CONCRETE SUBSTRUCTURE SURFACES WITH THE ENGINEER TO IDENTIFY ALL AREAS THAT ARE IN NEED OF REPAIR. THE ENGINEER SHALL MAKE A DETERMINATION AS TO WHAT CLASS OF REPAIR IS REQUIRED AND THE LIMITS OF THE REPAIR. THE SOUNDINGS AND REPAIRS WILL BE PAID FOR UNDER ITEM 580.13, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I", ITEM 580.14, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II, OR ITEM 580.15, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III, AS APPLICABLE. QUANTITIES FOR ITEMS 580.13, 580.14, AND 580.15 AS SHOWN ON THE QUANTITY SUMMARY SHEETS ARE ESTIMATED.

12. CONCRETE REPAIR OPERATIONS OF THE SUBSTRUCTURE ELEMENTS WILL REQUIRE TEMPORARY STREAM RELOCATION TO COMPLETE THE REPAIRS IN THE DRY. WATER CONTROL NECESSARY TO COMPLETE THESE OPERATIONS WILL BE PAID FOR UNDER ITEM 900.645, "SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM)".

EARTHWORK

13. REMOVAL OF THE EXISTING SIDEWALK, PAVEMENT, SUBBASE MATERIALS, AND FILL OVER THE EXISTING CONCRETE DECK SHALL BE PAID FOR UNDER ITEM 203.15, "COMMON EXCAVATION".

14. THE EXISTING STONE FILL AROUND THE DOWNSTREAM BRIDGE PIER SHALL BE REMOVED TO FACILITATE CONCRETE REPAIRS AT THE BASE OF THE PIER. THIS WORK WILL BE PAID FOR UNDER ITEM 203.27, "UNCLASSIFIED CHANNEL EXCAVATION". AFTER ALL CONCRETE REPAIRS HAVE BEEN COMPLETED AND CURED, ITEM 613.12, "STONE FILL, TYPE III" SHALL BE PLACED AROUND THE PERIMETER OF THE NEW CONCRETE COLUMN AND THE DOWNSTREAM BRIDGE PIER TO RIVERBED. SEE TYPICAL DOWNSTREAM BRIDGE PIER EARTHWORK DETAIL ON SHEET 3.

15. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE EXISTING SUBSTRUCTURE CAUSED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE ENGINEER.

SUBSTRUCTURES ON ROCK

16. THE CENTER COLUMN SHALL BE FOUNDED ON LEDGE AT OR ABOVE THE ELEVATION SHOWN ON THE PLANS ON SHEET 18. THIS ELEVATION WAS APPROXIMATED BASED ON SURVEY AND FIELD MEASUREMENTS. IF LEDGE IS ENCOUNTERED BELOW THIS ELEVATION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

17. THE COLUMN FOUNDED ON LEDGE SHALL BE PLACED ON CLEAN COMPETENT LEVEL ROCK. ALL LOOSE ROCK AND DEBRIS SHALL BE REMOVED.

18. UPON COMPLETION OF THE EXCAVATION FOR SUBSTRUCTURES FOUNDED ON LEDGE AND PRIOR TO PLACING FORMWORK, THE ENGINEER SHALL DETERMINE IF THE LEDGE IS COMPETENT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 72 HOURS PRIOR TO WHEN THE ANALYSIS WILL BE NEEDED.

STEEL

19. AFTER THE PAVEMENT AND FILL ON TOP OF THE EXISTING DECK IS REMOVED, THE CONTRACTOR SHALL TAKE SHOTS AT A 1.5M SPACING ALONG THE PERIMETER OF THE TOP OF DECK AND AT A 1.5M GRID ALONG THE TOP OF THE DECK. THE TOP OF DECK ELEVATIONS AND LOCATIONS SHALL BE SENT TO THE ENGINEER FOR USE IN VERIFYING THE FINAL BEAM SEAT ELEVATIONS. THE CONTRACTOR SHALL EXPECT 3 WORKING DAYS FOR THE ENGINEER TO PREPARE THE FINAL BEAM SEAT ELEVATIONS.

20. ALL STEEL MEMBERS SHALL BE AASHTO M270 GRADE 50 AND SHALL BE FABRICATED AND GALVANIZED ~~BY THE FABRICATOR~~ UNLESS OTHERWISE SPECIFIED ON THE PLANS. STEEL MEMBERS WILL BE PAID FOR UNDER ITEM 506.50, "STRUCTURAL STEEL, ROLLED BEAM".

Units?

Structural steel is technically not galvanized by the fabricator. It may be better to write per 506 of the spec book

REINFORCED CONCRETE

21. ALL CAST-IN-PLACE CONCRETE IN THE DECK AND CURTAIN WALL SHALL CONFORM TO ITEM 501.37, "HIGH PERFORMANCE CONCRETE, CLASS PCD" WITH LIGHTWEIGHT AGGREGATE IN ACCORDANCE WITH SUBSECTION 704.14. ALL CAST-IN-PLACE CONCRETE IN THE WALL CAPS, PEDESTALS, AND COLUMN SHALL CONFORM TO ITEM 501.38, "HIGH PERFORMANCE CONCRETE, CLASS PCS".

22. BOND BREAKER, COMPRESSIBLE MATERIAL WITH SEALANT BETWEEN THE TOWN OFFICE BUILDING AND DECK, AND SHEET MEMBRANE WATERPROOFING, PREFORMED SHEET PER SUBSECTION 726.11 SHALL BE CONSIDERED INCIDENTAL TO ITEM 501.37, "HIGH PERFORMANCE CONCRETE, CLASS PCD".

23. ALL REINFORCING STEEL IN THE CONCRETE DECK AND CURTAIN WALL BELOW THE ROADWAY SHALL BE LEVEL I - EPOXY COATED AND MEET THE REQUIREMENTS OF SECTION 507. ALL OTHER REINFORCING STEEL IN THE CONCRETE DECK, AND ALL REINFORCEMENT IN THE SUBSTRUCTURE (WALL CAPS, PEDESTALS, AND COLUMN) SHALL BE LEVEL I - PLAIN AND MEET THE REQUIREMENTS OF SECTION 507.

24. GALVANIZED STAY-IN-PLACE CORRUGATED METAL FORMS(SIPCMF) FORMS WILL BE UTILIZED TO SUPPORT THE NEW DECK AND WILL BE DESIGNED BY THE CONTRACTOR IN ACCORDANCE WITH SECTION 501.09(h). SUBSECTION (1a) SHALL BE WAIVED.

MISCELLANEOUS

25. VIBRATION MONITORING OF THE TOWN OFFICE BUILDING IS REQUIRED FOR THE DURATION OF THE PROJECT AND SHALL BE PAID FOR UNDER ITEM 900.645, "SPECIAL PROVISION (CONSTRUCTION VIBRATION AND CRACK MONITORING)".

26. THE CENTER PIER OF THE TOWN OFFICE BUILDING IMMEDIATELY UPSTREAM OF THE WEST SEMINARY STRUCTURE HAS BEEN UNDERMINED SEVERAL FEET IN SOME LOCATIONS. ITEM 541.25, "CONCRETE, CLASS B" SHALL BE UTILIZED IN THESE LOCATIONS TO SECURE THE FOUNDATION. THE CONTRACTOR SHALL IDENTIFY THE AREAS WHERE CONCRETE IS REQUIRED AND NOTIFY THE ENGINEER. DEWATERING REQUIRED TO PLACE THE CONCRETE SHALL BE PAID FOR UNDER THE ITEM 900.645, "SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM)". THE QUANTITY FOR ITEM 541.25 AS SHOWN ON THE QUANTITY SUMMARY SHEET IS ESTIMATED.

Back?

27. WEEPHOLES SHALL BE CORED INTO THE NORTH AND WEST WALLS AS SHOWN ON SHEETS 19. THIS WORK SHALL BE PAID FOR UNDER ITEM 900.640, "SPECIAL PROVISION (CORE WEEPHOLES INTO CONCRETE AND STONE MASONRY)". THE CONFIGURATION OF THE BACK OF THE NORTH AND WEST WALLS IS UNKNOWN. THE QUANTITY FOR THIS ITEM AS SHOWN ON THE QUANTITY SUMMARY SHEET IS ESTIMATED.

28. THE REMOVAL OF THE EXISTING WEST SEMINARY SUPERSTRUCTURE WILL OCCUR IN CLOSE PROXIMITY TO THE EXISTING TWIN STONE ARCH STRUCTURE, BRIDGE NO. 114. IF ANY PORTION OF THE BRIDGE NO. 114 MASONRY IS DISTURBED BY THE SUPERSTRUCTURE REMOVAL OR CONCRETE OR MASONRY REMOVAL, REPAIRS TO STONE ARCH MASONRY SHALL BE PAID FOR UNDER ITEM 602.40, "REPAIRING STONE MASONRY". REPAIRS SHALL INCLUDE RESETTING EXISTING STONE THAT HAS BEEN DISLODGED AND REPLACING AREAS OF OF MISSING OR SEVERELY DAMAGED STONE WITH NEW STONE AND MORTAR. PAYMENT SHALL BE MADE ON A SM BASIS FOR THE REPAIRED SURFACE AREA, RESET EXISTING STONE, AND NEW MORTAR SURFACE AREA. ALL ANCILLARY COSTS FOR RESETTING STONE OR INSTALLING NEW STONE, INCLUDING BUT NOT LIMITED TO, PREPARING THE AREA FOR STONE INSTALLATION AND REMOVING OLD MORTAR AS NEEDED, SHALL BE CONSIDERED INCIDENTAL TO ITEM 602.40, "REPAIRING STONE MASONRY". ANY NEW STONE REQUIRED SHALL MATCH THE EXISTING IN TYPE AND COLOR, AND SHALL BE APPROVED BY THE ENGINEER AND HISTORIC PRESERVATION OFFICER.

Square Meter? Probably worth spelling out as this acronym is not in the spec book.

VAOT Metric

FUSS&O'NEILL

PROJECT NAME:	BRANDON
PROJECT NUMBER:	NH 019-3(496)
FILE NAME: zb008notes.dgn	PLOT DATE: 11/15/2019
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: S. BEAUMONT	CHECKED BY: S. BEAUMONT
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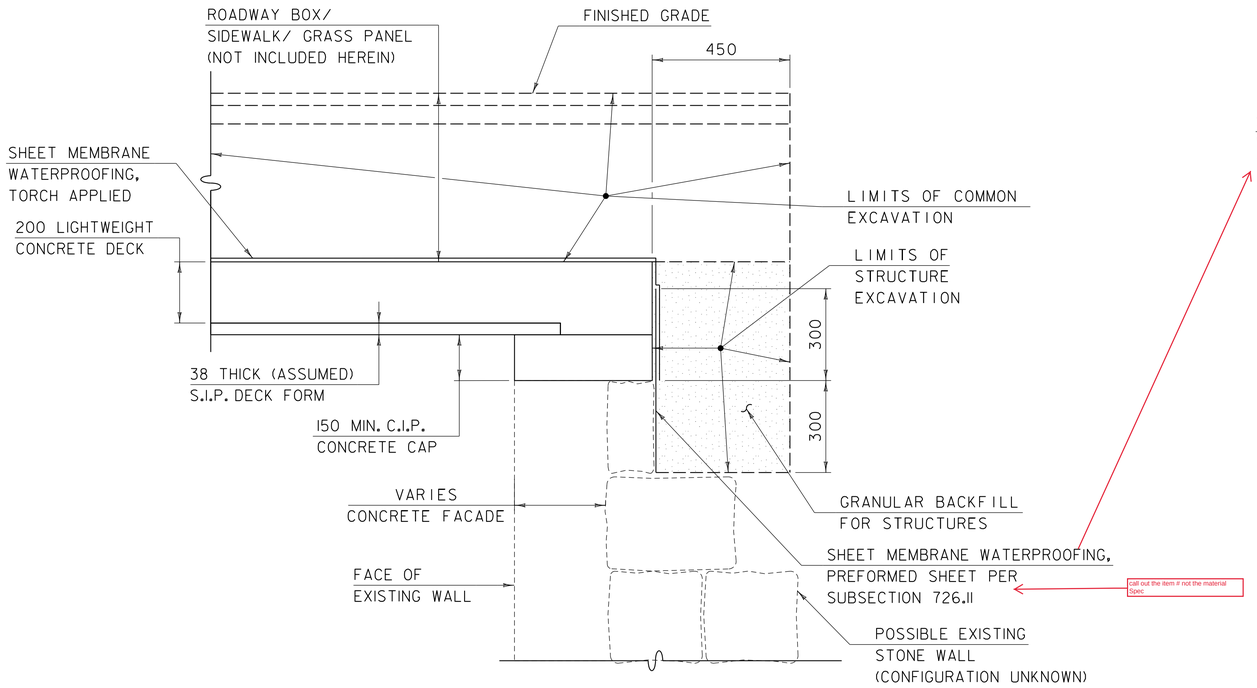
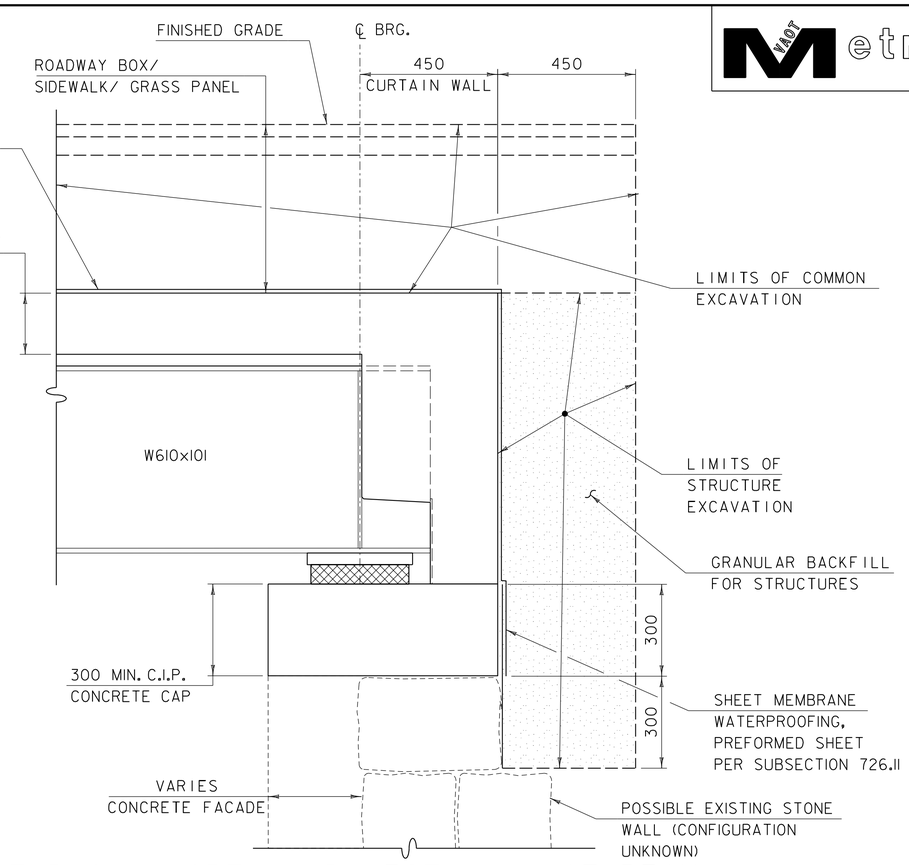


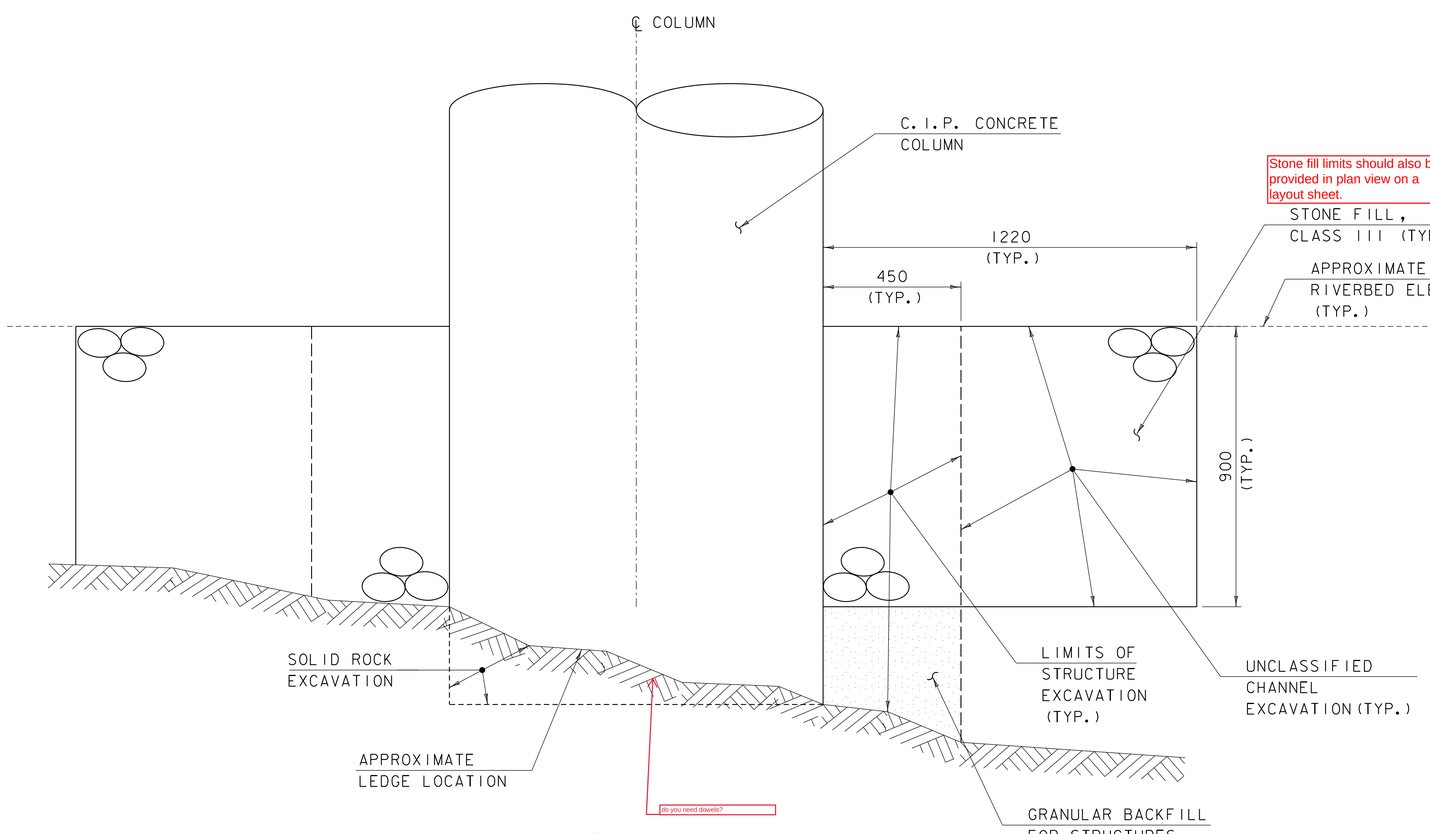
TYPICAL NORTH AND WEST WALL EARTHWORKS SECTION

10 SCALE



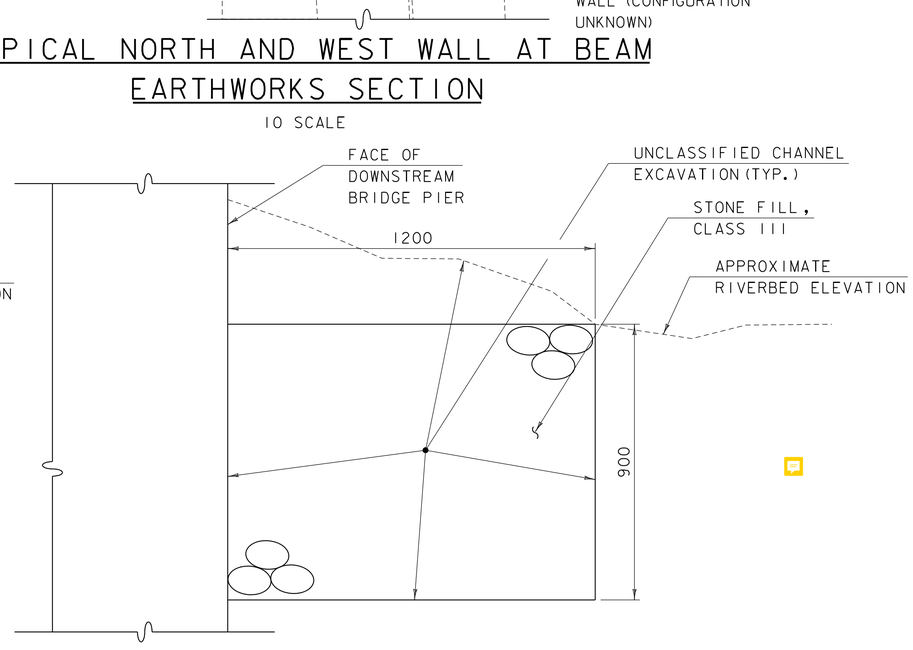
TYPICAL NORTH AND WEST WALL AT BEAM EARTHWORKS SECTION

10 SCALE



TYPICAL COLUMN EARTHWORKS SECTION

10 SCALE



TYPICAL DOWNSTREAM BRIDGE PIER EARTHWORKS SECTION

10 SCALE

PROJECT NAME:	BRANDON
PROJECT NUMBER:	NH 019-3(496)
FILE NAME: zb008sub.dgn	PLOT DATE: 11/15/2019
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: S. BEAUMONT	CHECKED BY: J. BYATT
TYPICAL EARTHWORK DETAILS SHEET	SHEET 3 OF 21

FUSS&O'NEILL

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES	TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
WEST SEMINARY STRUCTURE	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
76	76		CY	COMMON EXCAVATION	203.15				
2	2		CY	SOLID ROCK EXCAVATION	203.16				
19	19		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27				
14	14		CY	STRUCTURE EXCAVATION	204.25				
11	11		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
35	35		CY	HIGH PERFORMANCE CONCRETE, CLASS PCD	501.37				
11	11		CY	HIGH PERFORMANCE CONCRETE, CLASS PCS	501.38				
9017	9017		LB	STRUCTURAL STEEL, ROLLED BEAM	506.50				
12522	12522		LB	REINFORCING STEEL, LEVEL I (BLACK)	507.11				
7937	7937		LB	REINFORCING STEEL, LEVEL I (EPOXY)	507.11				
36	36		LF	DRILLING AND GROUTING DOWELS	507.16				
1	1		LS	SHEAR CONNECTORS 88 - 22 DIA. X 140 STUDS	508.15				
155	155		SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20				
1	1		EACH	REMOVAL OF STRUCTURE (WEST SEMINARY SUPERSTRUCTURE)	529.15				
16	16		CY	REMOVAL OF CONCRETE OR MASONRY	529.25				
14	14		EACH	BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD	531.17				
14	14		CY	CONCRETE, CLASS B	541.25				
22	22		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I	580.13				
20	20		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	580.14				
4	4		CY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III	580.15				
4	4		SY	REPAIRING STONE MASONRY	602.40				
23	23		CY	STONE FILL, TYPE III	613.12				
1	1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
50	50		LF	SPECIAL PROVISION (CORE WEEPHOLES INTO CONCRETE AND STONE MASONRY)	900.640				
1	1		LS	SPECIAL PROVISION (CONSTRUCTION VIBRATION AND CRACK MONITORING)	900.645				
1	1		LS	SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM)	900.645				

you're going to need traffic control and all items that accompany it.

Will additional traffic control be reguired to perform this work. Flaggers?

FUSS & O'NEILL

PROJECT NAME: BRANDON
PROJECT NUMBER: NH 019-3(496)

FILE NAME: zb008qss.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: S. BEAUMONT
QUANTITY SUMMARY SHEET

PLOT DATE: 11/15/2019
DRAWN BY: M. SMITH
CHECKED BY: S. BEAUMONT
SHEET 4 OF 21

VAOT Metric

US 7
TO PITTSFORD

US 7
TO LEICESTER

21+820

21+825.687

21+835.000

21+840

9+000

JOINT BETWEEN CONCRETE
BRIDGE SLAB OVER
BRIDGE # 114 AND NEW
CONCRETE DECK

FACE OF CURB
(TYP.)

CONCRETE ENCASED
TELEPHONE DUCTBANK

FACE OF WEST ARCH
BARREL, BRIDGE #114

SIDEWALK
(TYP.)

ADJUST BACK OF SIDEWALK
TO COVER JOINT BETWEEN
CONCRETE BRIDGE SLAB
AND CONCRETE DECK.

FACE OF EAST ARCH
BARREL, BRIDGE #114

FACE OF TOWN
OFFICE BUILDING

TOWN OFFICE
BUILDING

NESHOBE
RIVER

APPROXIMATE R.O.W.

BUILDING
CENTER PIER

WEST SEMINARY
STRUCTURE

TH-69
WEST SEMINARY ST

VT STATE PLANE GRID N

<-2.0%
4500

<-2.0%
8294

<-2.0%
4500

3.2%->
2266

9+005.687

1.4%->
6000

9+010.000

0.4%->
10625

9+012.311

0.17%->
8733

9+013.872

0.0%
7752

9+015.000

<-1.0%
6279

9+017.500

<-2.0%
5474

9+020

2.0%->

2.0%->

2.0%->

2.0%->

1680

RUT

UT

OHW

PUE&T

PUTV

Is this tel manhole still active following the Rte 7 reconstruction? If so, there should probably be notes calling this and the associated conduits out as protect in place.

Topsoil seed and mulch?

There appears to be a water shut off and fuel oil fill pipe in this general area. I do not see a waterline shown on the plans and see no accommodations for this infrastructure during construction.

0 2 4 6
SCALE IN METERS

NOTES:

1. ROADWAY/SIDEWALK WORK NOT INCLUDED HEREIN BUT IS SHOWN TO SPECIFY GRADES, SUBBASE, FILL, AND PAVEMENT DEPTHS TO ENSURE THEY ARE CONSISTENT WITH THE DESIGN OF THE WEST SEMINARY STRUCTURE.
2. SIDEWALK SHALL BE CONSTRUCTED AS SHOWN ON THESE PLANS.
3. PAVEMENT PAINT MARKINGS NOT SHOWN FOR CLARITY.

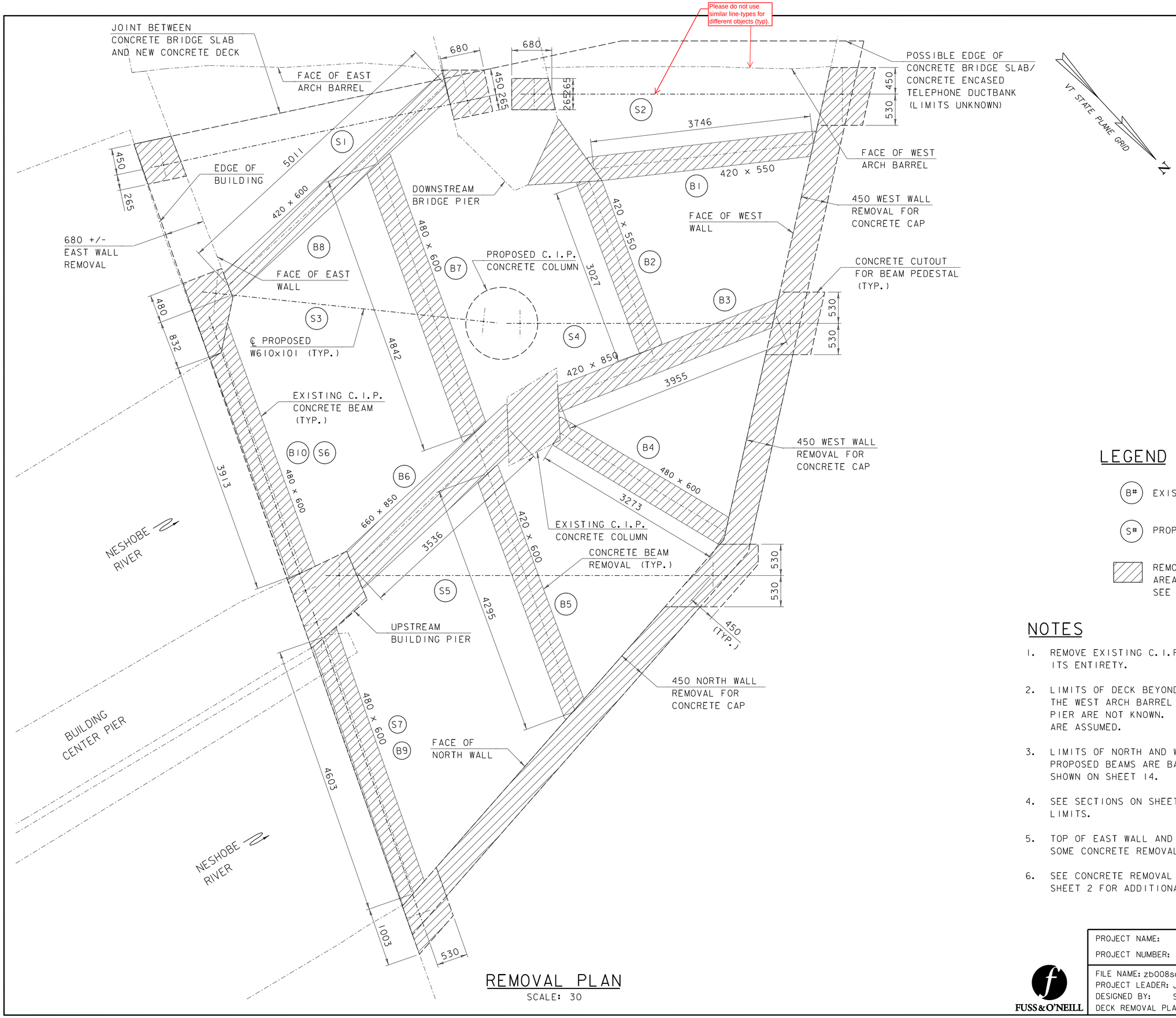
FUSS & O'NEILL

PROJECT NAME: BRANDON
PROJECT NUMBER: BHF 019-3(58)

FILE NAME: zb008pe.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: S. BEAUMONT
ROADWAY LAYOUT SHEET

PLOT DATE: 11/15/2019
DRAWN BY: M. SMITH
CHECKED BY: J. BYATT
SHEET 5 OF 21

Please do not use similar line-types for different objects (typ).



REMOVAL PLAN

SCALE: 30

LEGEND

- (B#) EXISTING CONCRETE BEAM NO.
- (S#) PROPOSED STEEL BEAM NO.
- REMOVAL AREA (DECK REMOVAL AREA NOT SHOWN FOR CLARITY. SEE NOTE 1 THIS SHEET.)

NOTES

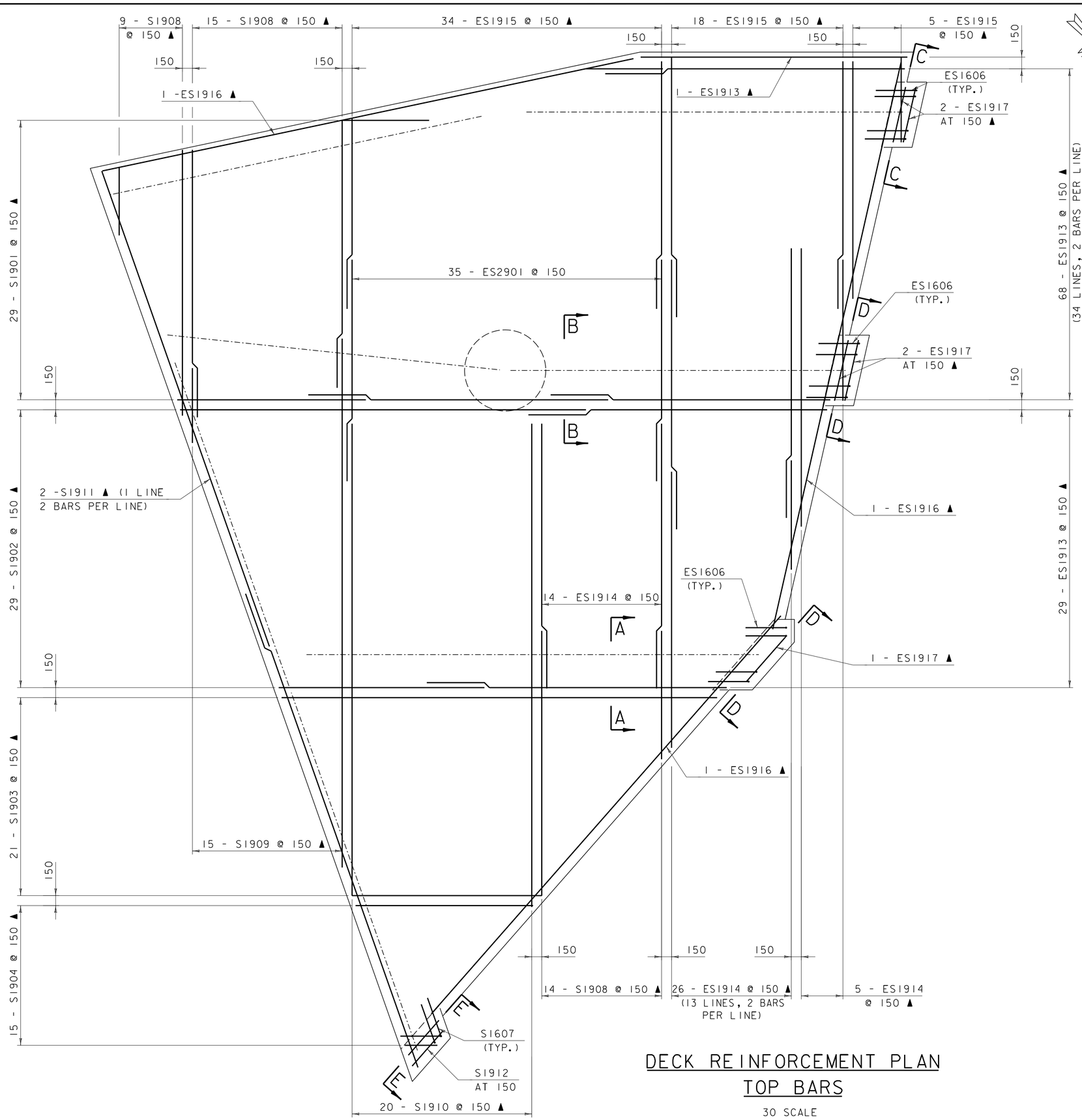
1. REMOVE EXISTING C.I.P. CONCRETE DECK IN ITS ENTIRETY.
2. LIMITS OF DECK BEYOND THE FACE OF THE WALLS, THE WEST ARCH BARREL AND THE DOWNSTREAM BRIDGE PIER ARE NOT KNOWN. THE REMOVAL LINES SHOWN ARE ASSUMED.
3. LIMITS OF NORTH AND WEST WALL REMOVAL AT THE PROPOSED BEAMS ARE BASED ON THE PROPOSED LIMITS SHOWN ON SHEET 14.
4. SEE SECTIONS ON SHEETS 13 TO 15 FOR VERTICAL REMOVAL LIMITS.
5. TOP OF EAST WALL AND DOWNSTREAM BRIDGE PIER MAY REQUIRE SOME CONCRETE REMOVAL TO ACCOMMODATE NEW CONCRETE DECK.
6. SEE CONCRETE REMOVAL AND RELATED ITEMS NOTES ON SHEET 2 FOR ADDITIONAL INFORMATION.

FUSS & O'NEILL

PROJECT NAME: BRANDON
PROJECT NUMBER: NH 019-3(496)

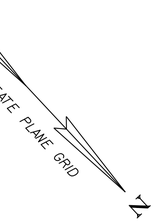
FILE NAME: zb008sup.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: S. BEAUMONT
DECK REMOVAL PLAN SHEET

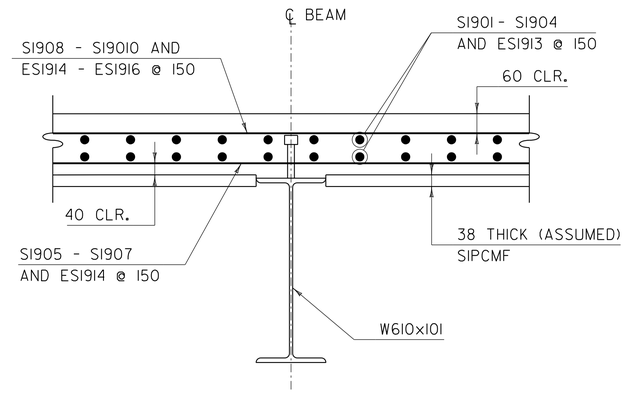
PLOT DATE: 11/15/2019
DRAWN BY: M. SMITH
CHECKED BY: J. BYATT
SHEET 6 OF 21



DECK REINFORCEMENT PLAN TOP BARS

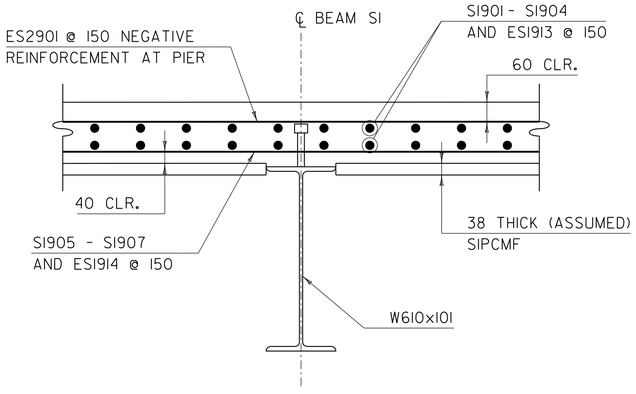
30 SCALE





SECTION A-A

10 SCALE



SECTION B-B

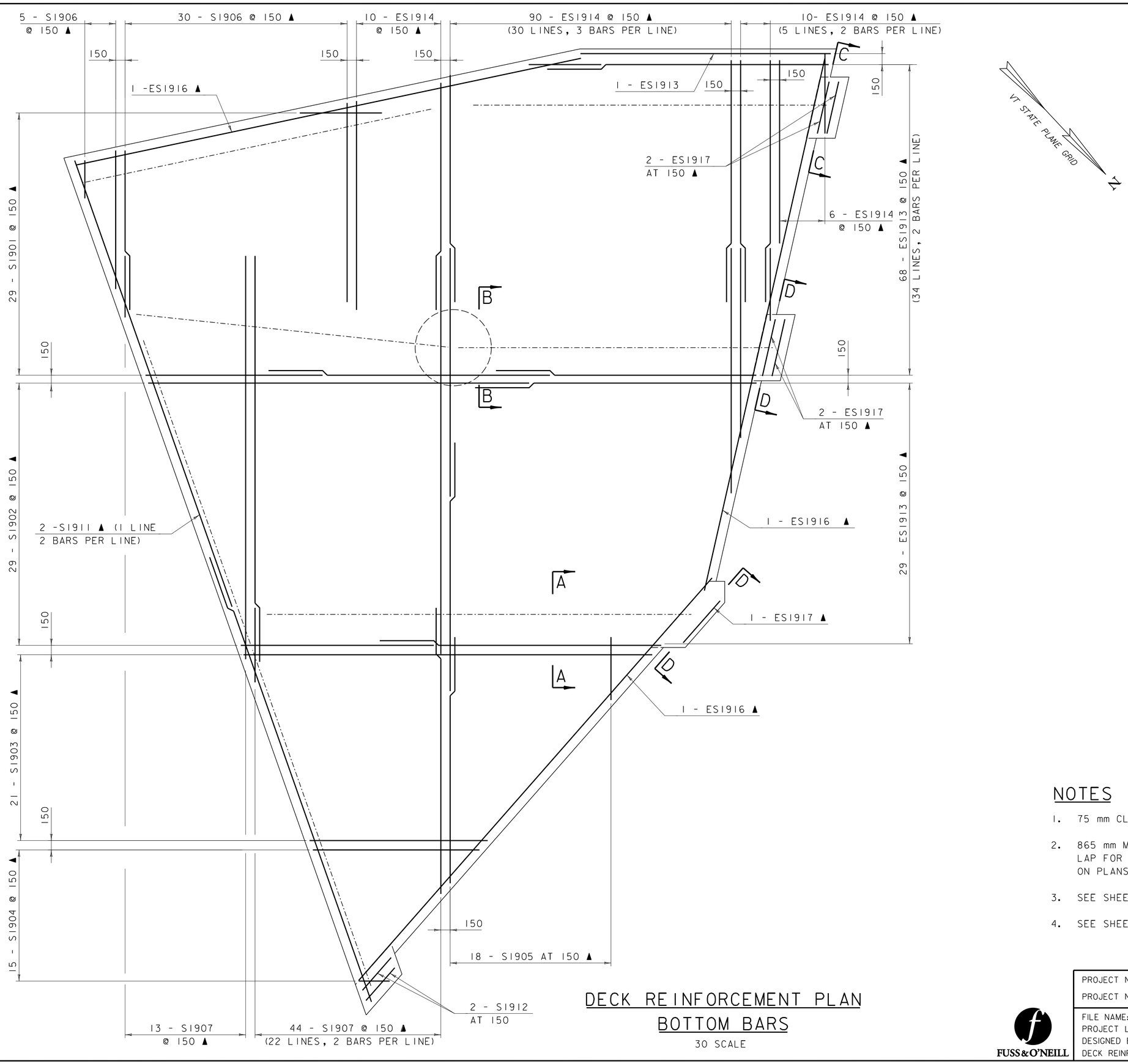
10 SCALE

NOTES

1. 75 mm CLEAR UNLESS OTHERWISE SPECIFIED ON PLANS.
2. 865 mm MINIMUM BAR LAP FOR #19 EPOXY BARS, 740 mm LAP FOR #19 BLACK BARS, UNLESS OTHERWISE SPECIFIED ON PLANS.
3. SEE SHEET 9 FOR SECTIONS C-C, D-D, AND E-E.

FUSS & O'NEILL

PROJECT NAME:	BRANDON
PROJECT NUMBER:	NH 019-3(496)
FILE NAME: zb008sup.dgn	PLOT DATE: 11/15/2019
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: S. BEAUMONT	CHECKED BY: J. BYATT
DECK REINFORCEMENT PLAN SHEET 1	SHEET 7 OF 21



DECK REINFORCEMENT PLAN
BOTTOM BARS

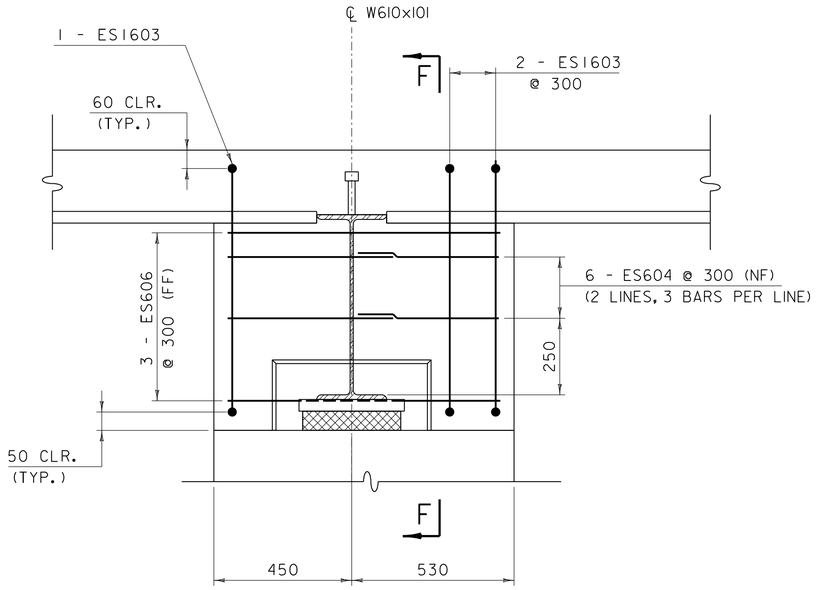
30 SCALE

NOTES

1. 75 mm CLEAR UNLESS OTHERWISE SPECIFIED ON PLANS.
2. 865 mm MINIMUM BAR LAP FOR #19 EPOXY BARS, 740 mm LAP FOR #19 BLACK BARS, UNLESS OTHERWISE SPECIFIED ON PLANS.
3. SEE SHEET 7 FOR SECTION A-A AND SECTION B-B.
4. SEE SHEET 9 FOR SECTIOND C-C, D-D, AND E-E.

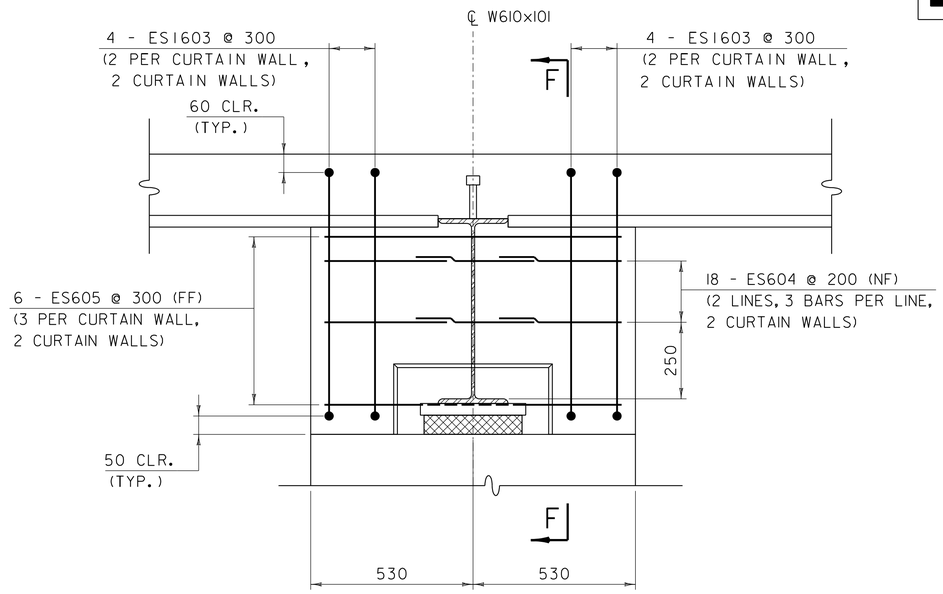
FUSS&O'NEILL

PROJECT NAME: BRANDON	
PROJECT NUMBER: NH 019-3(496)	
FILE NAME: zb008sup.dgn	PLOT DATE: 11/15/2019
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: S. BEAUMONT	CHECKED BY: J. BYATT
DECK REINFORCEMENT PLAN SHEET 2	SHEET 8 OF 21



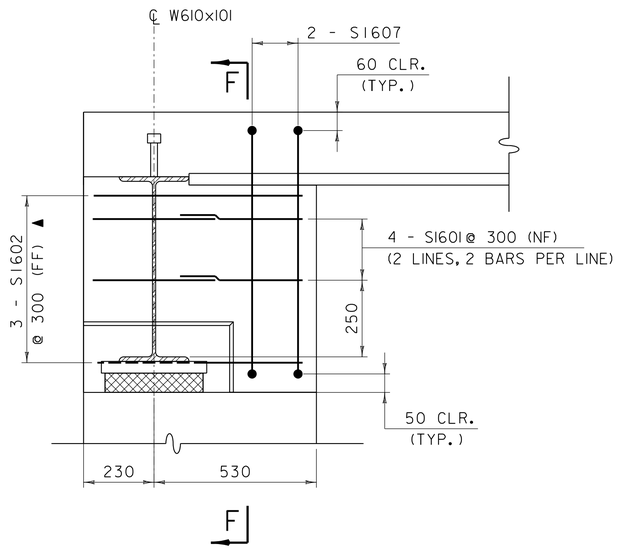
SECTION C-C

10 SCALE



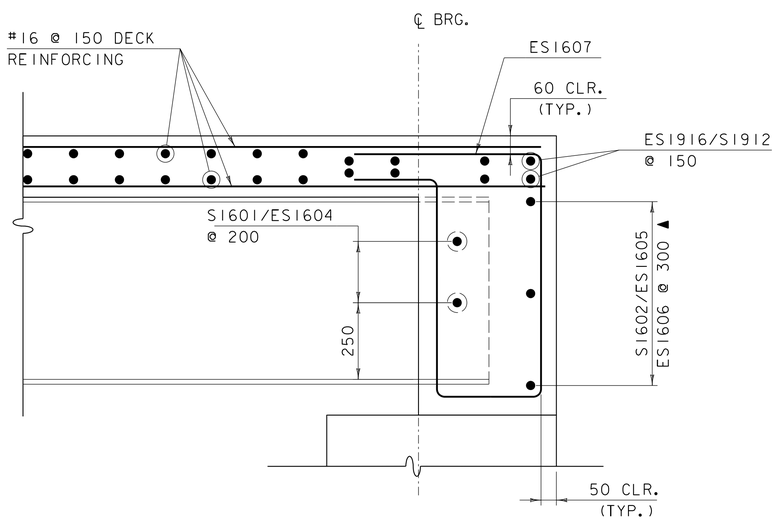
SECTION D-D

10 SCALE



SECTION E-E

10 SCALE



SECTION F-F

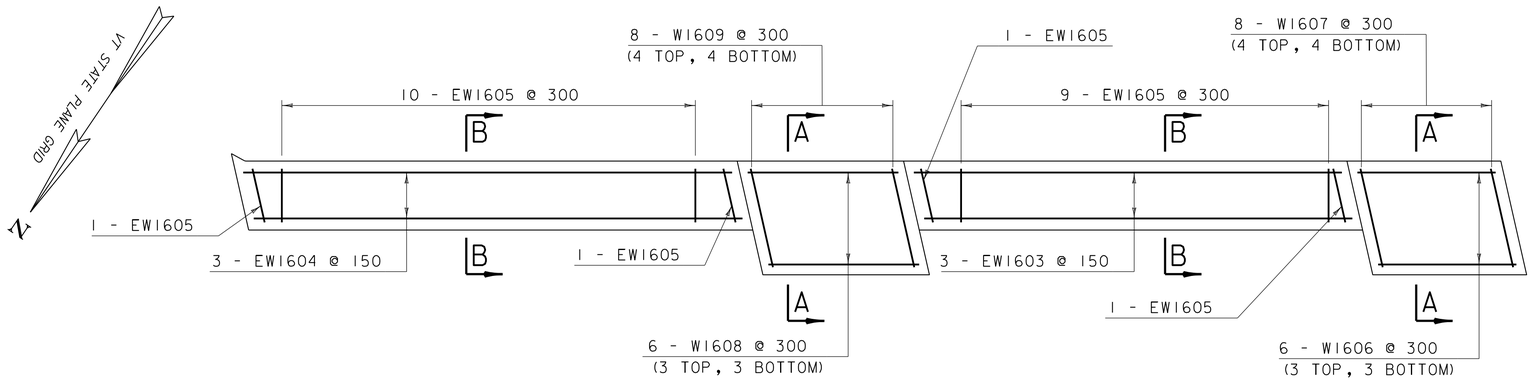
10 SCALE

NOTES

1. 75 mm CLEAR UNLESS OTHERWISE SPECIFIED ON PLANS.
2. SEE SHEETS 7 AND 8 FOR DECK REINFORCEMENT PLANS.

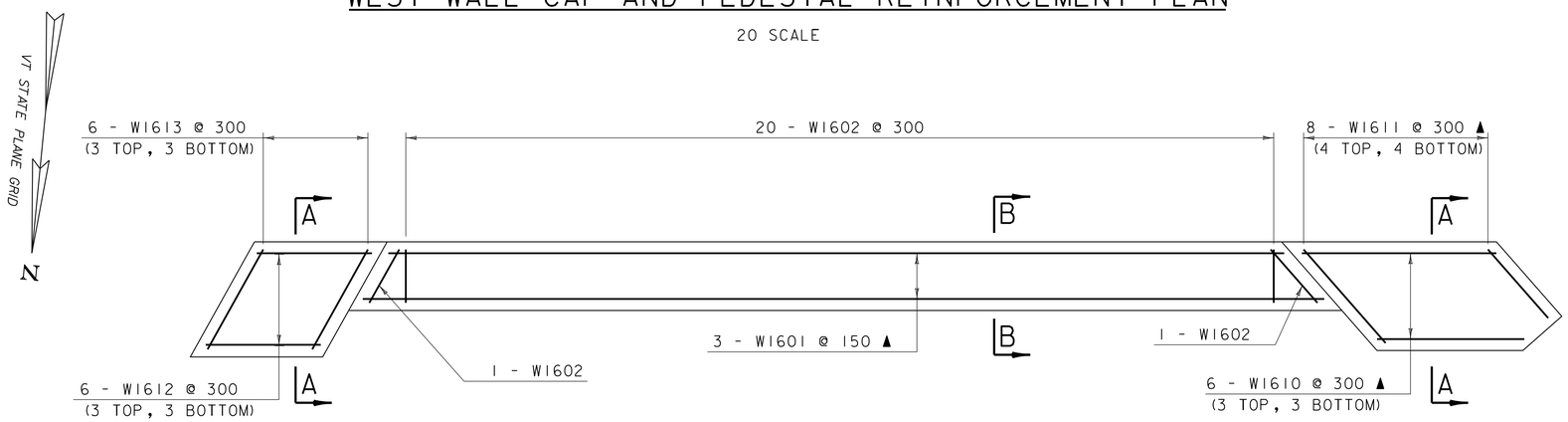
FUSS&O'NEILL

PROJECT NAME:	BRANDON
PROJECT NUMBER:	NH 019-3(496)
FILE NAME: zb008sup.dgn	PLOT DATE: 11/15/2019
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: S. BEAUMONT	CHECKED BY: J. BYATT
DECK DETAILS SHEET 3	SHEET 9 OF 21



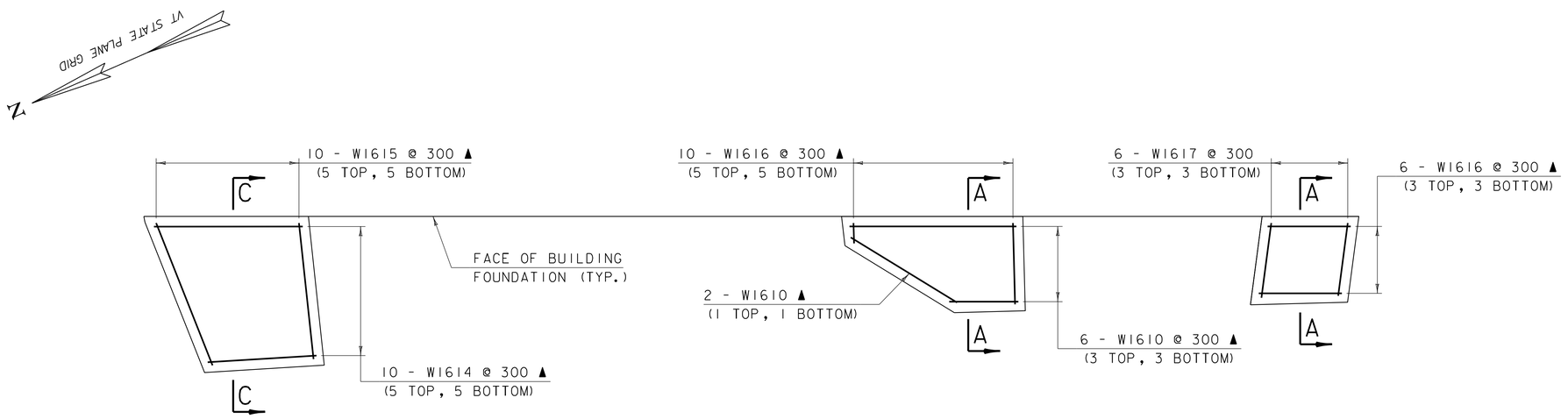
WEST WALL CAP AND PEDESTAL REINFORCEMENT PLAN

20 SCALE



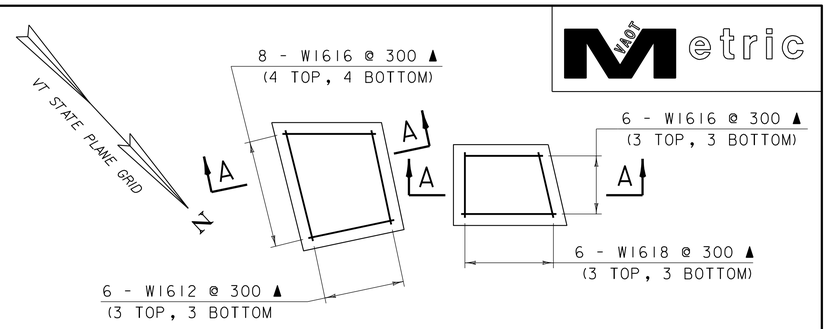
NORTH WALL CAP AND PEDESTAL REINFORCEMENT PLAN

20 SCALE



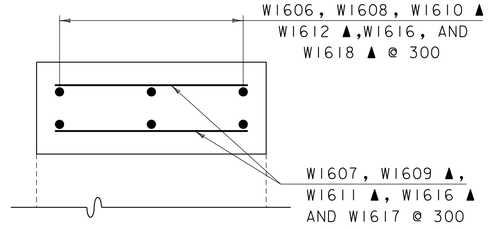
EAST WALL CAP AND PEDESTAL REINFORCEMENT PLAN

20 SCALE



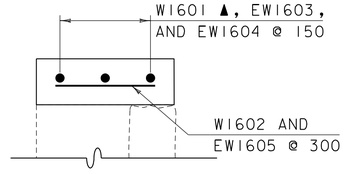
DOWNSTREAM BRIDGE PIER PEDESTAL REINFORCEMENT PLAN

20 SCALE



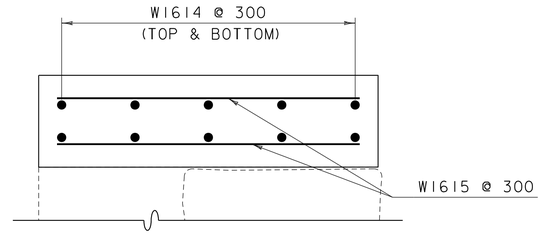
SECTION A-A

10 SCALE



SECTION B-B

10 SCALE



SECTION C-C

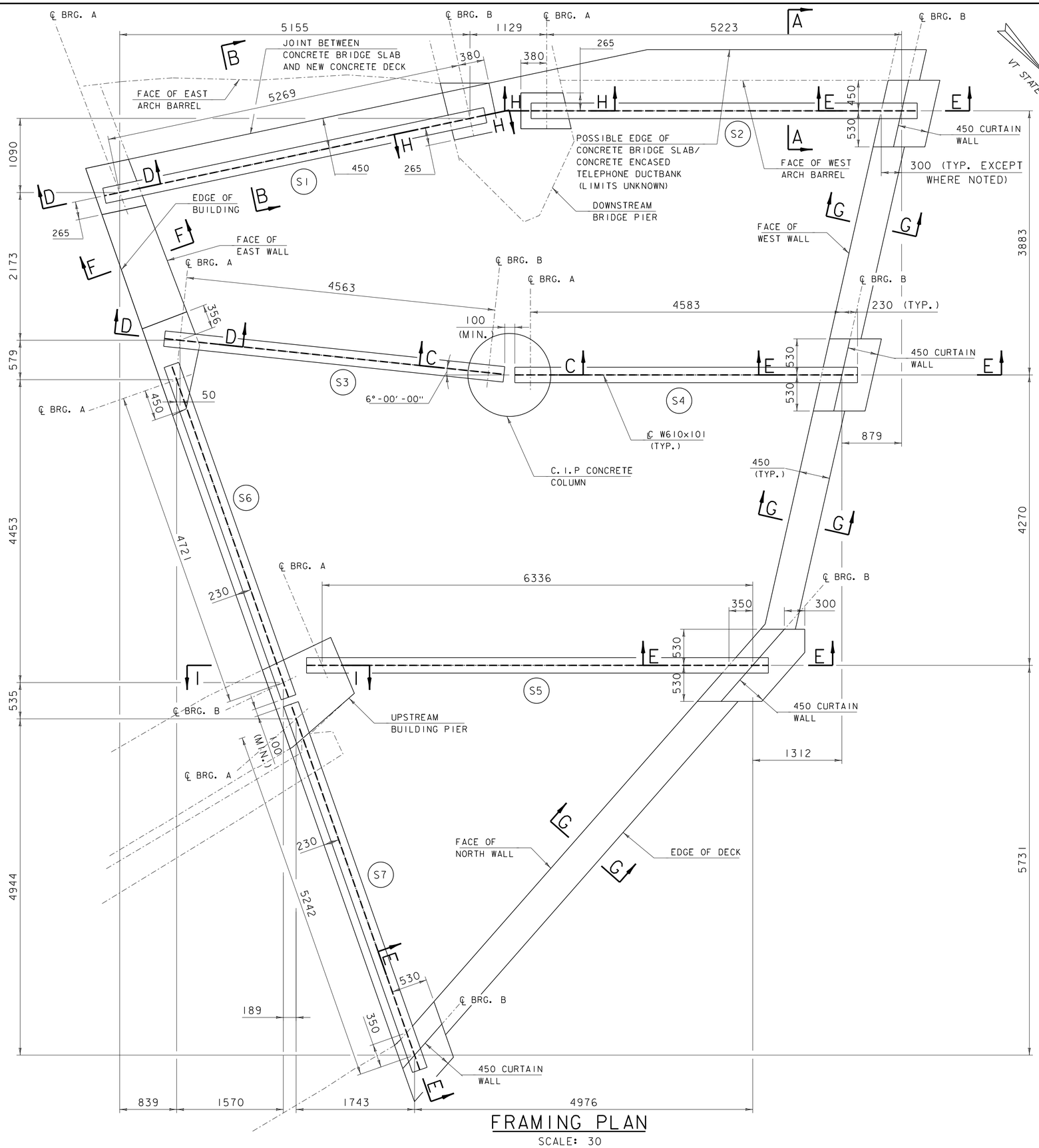
10 SCALE

NOTE

1. 75 mm CLEAR UNLESS OTHERWISE SPECIFIED ON PLANS.

FUSS & O'NEILL

PROJECT NAME: BRANDON	
PROJECT NUMBER: NH 019-3(496)	
FILE NAME: zb008sup.dgn	PLOT DATE: 11/15/2019
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: S. BEAUMONT	CHECKED BY: J. BYATT
DECK DETAILS SHEET 4	SHEET 10 OF 21



FRAMING PLAN

SCALE: 30

BEAM #	BRG.	BEAM SEAT ELEV.	NORTHING	EASTING
S1	A	-	-	-
	B	-	-	-
S2	A	-	-	-
	B	-	-	-
S3	A	-	-	-
	B	-	-	-
S4	A	-	-	-
	B	-	-	-
S5	A	-	-	-
	B	-	-	-
S6	A	-	-	-
	B	-	-	-
S7	A	-	-	-
	B	-	-	-

LEGEND

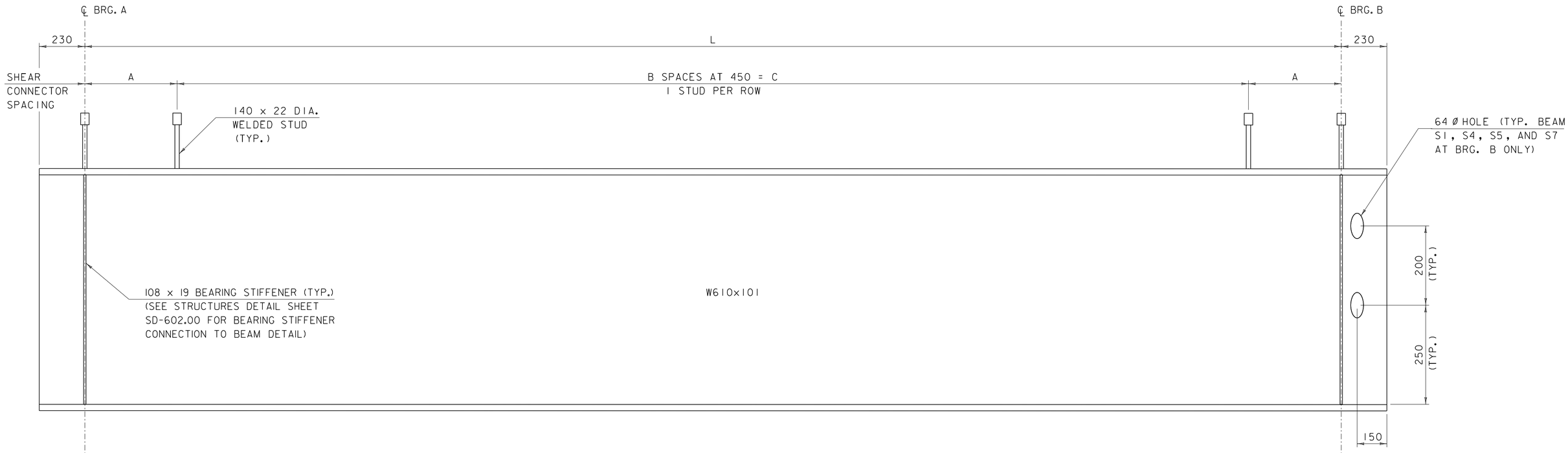
(S#) PROPOSED STEEL BEAM NO.

NOTES

1. SEE SHEETS 13 TO 15 FOR SECTIONS A-A TO H-H.
2. SEE SHEET 12 FOR TYPICAL BEAM ELEVATION.

FUSS&O'NEILL

PROJECT NAME:	BRANDON
PROJECT NUMBER:	NH 019-3(496)
FILE NAME: zb008sup.dgn	PLOT DATE: 11/15/2019
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: S. BEAUMONT	CHECKED BY: J. BYATT
FRAMING PLAN SHEET	SHEET 11 OF 21



TYPICAL BEAM ELEVATION

HORIZONTAL SCALE 10
VERTICAL SCALE 5

BEAM #	L	A	B	C
S1	5269	384.5	10	4500
S2	5223	361.5	10	4500
S3	4563	481.5	8	3600
S4	4583	491.5	8	3600
S5	6336	468	12	5400
S6	4721	335.5	9	4050
S7	5242	371	10	4500

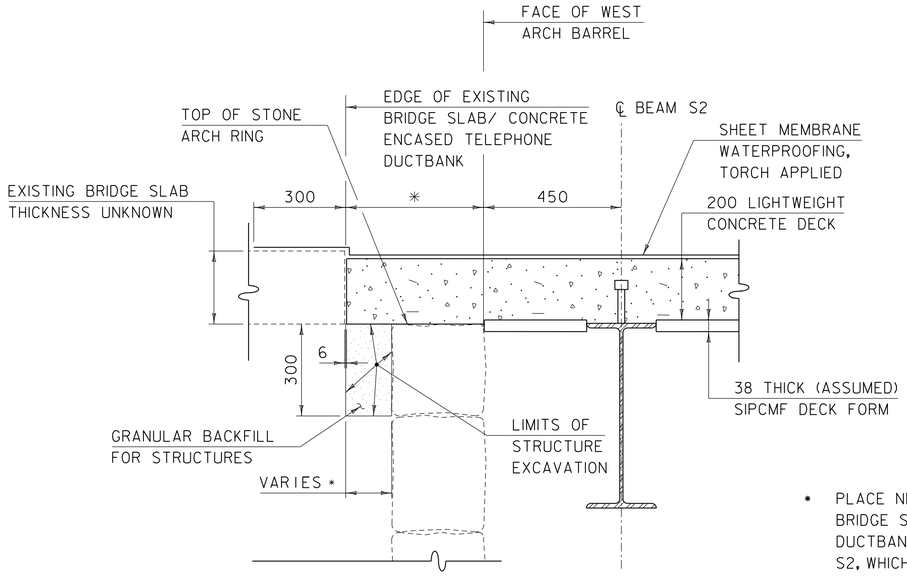
NOTE: REFER TO STRUCTURES DETAIL SHEET SD-601.00 FOR ADDITIONAL SHEAR CONNECTOR INFORMATION.

FUSS&O'NEILL

PROJECT NAME: BRANDON
PROJECT NUMBER: NH 019-3(496)

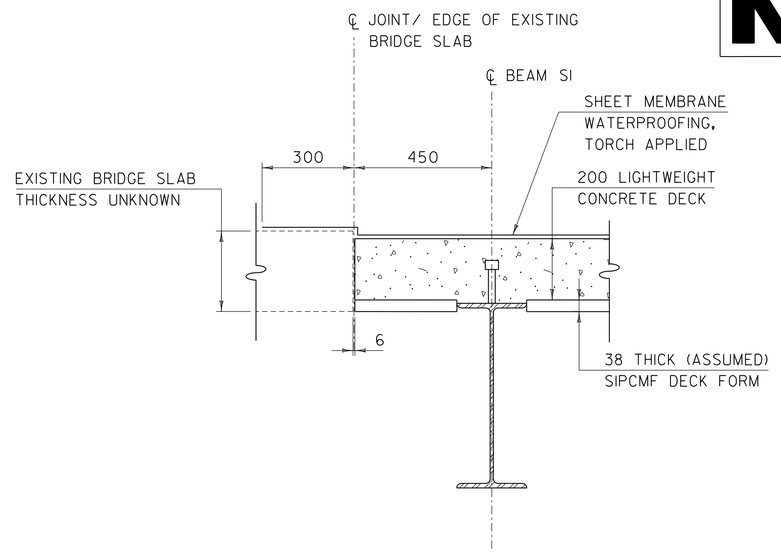
FILE NAME: zb008sup.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: S. BEAUMONT
BEAM DETAILS SHEET 1

PLOT DATE: 11/15/2019
DRAWN BY: M. SMITH
CHECKED BY: J. BYATT
SHEET 12 OF 21

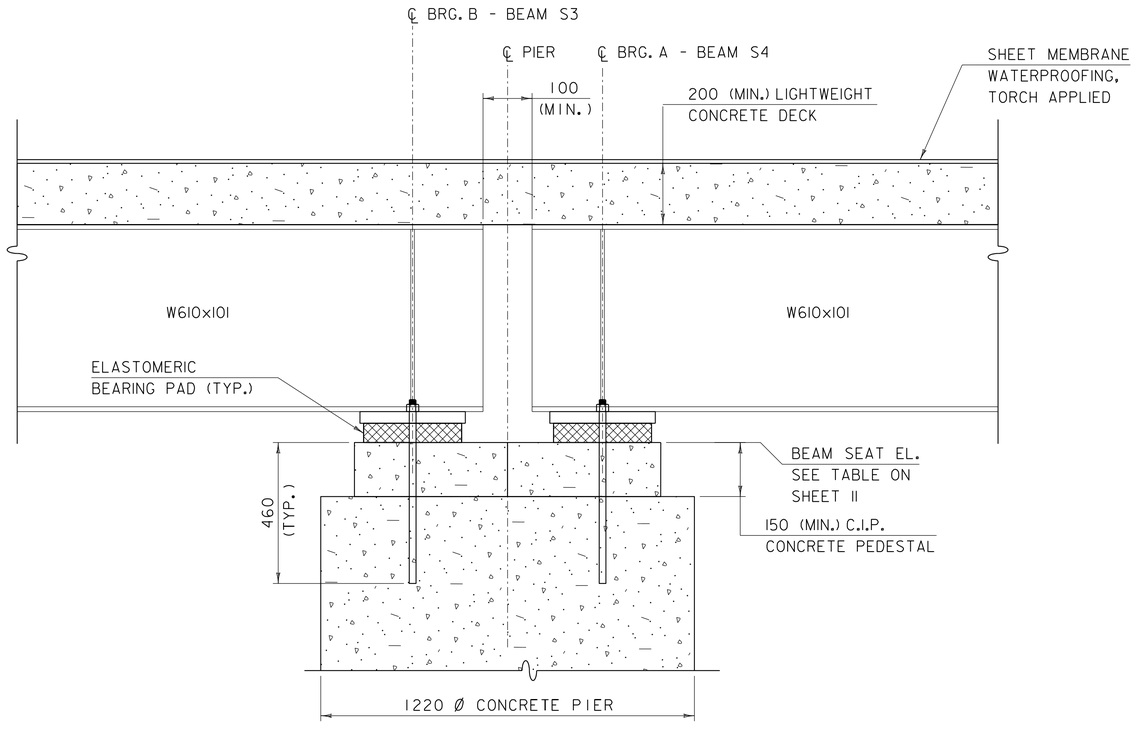


* PLACE NEW DECK TO FACE OF EXISTING BRIDGE SLAB/ CONCRETE ENCASED TELEPHONE DUCTBANK OR TO 900 FROM ℄ BEAM S2, WHICHEVER IS CLOSER TO BEAM S2.

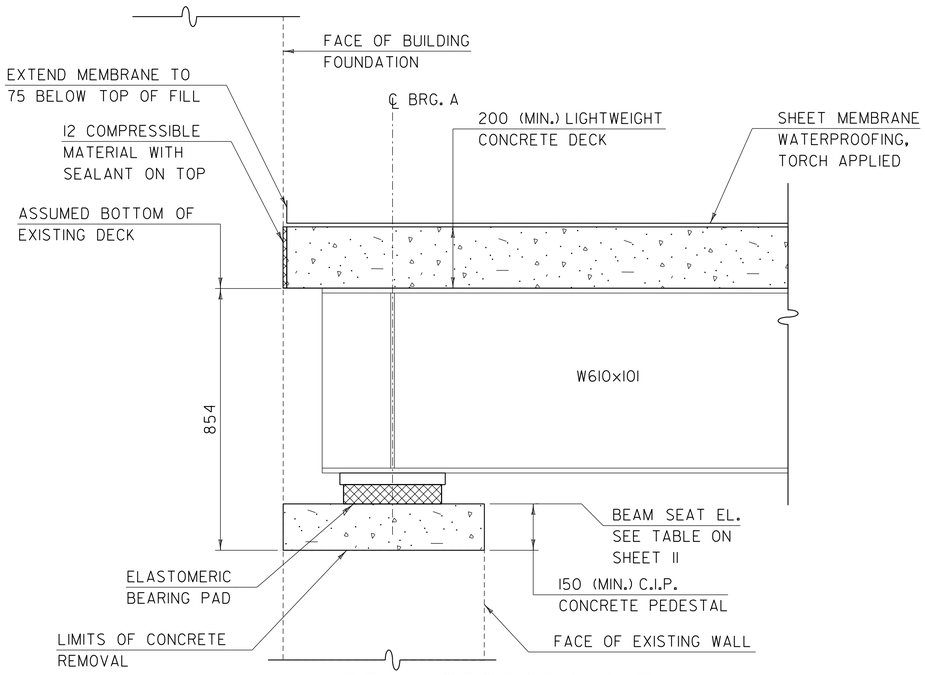
SECTION A-A
AT WEST ARCH BARREL
10 SCALE



SECTION B-B
AT EAST ARCH BARREL
10 SCALE



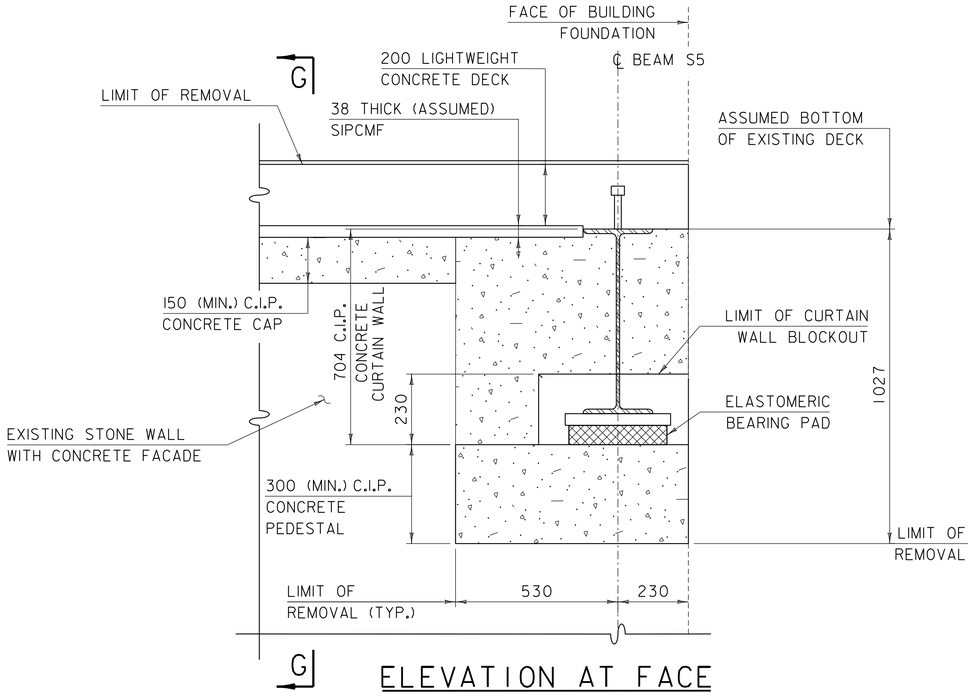
BEAM SECTION C-C
AT CONCRETE COLUMN
10 SCALE



BEAM SECTION D-D
AT EAST WALL BEAMS
(BEAM S1 SHOWN, BEAM S2 SIMILAR)
10 SCALE

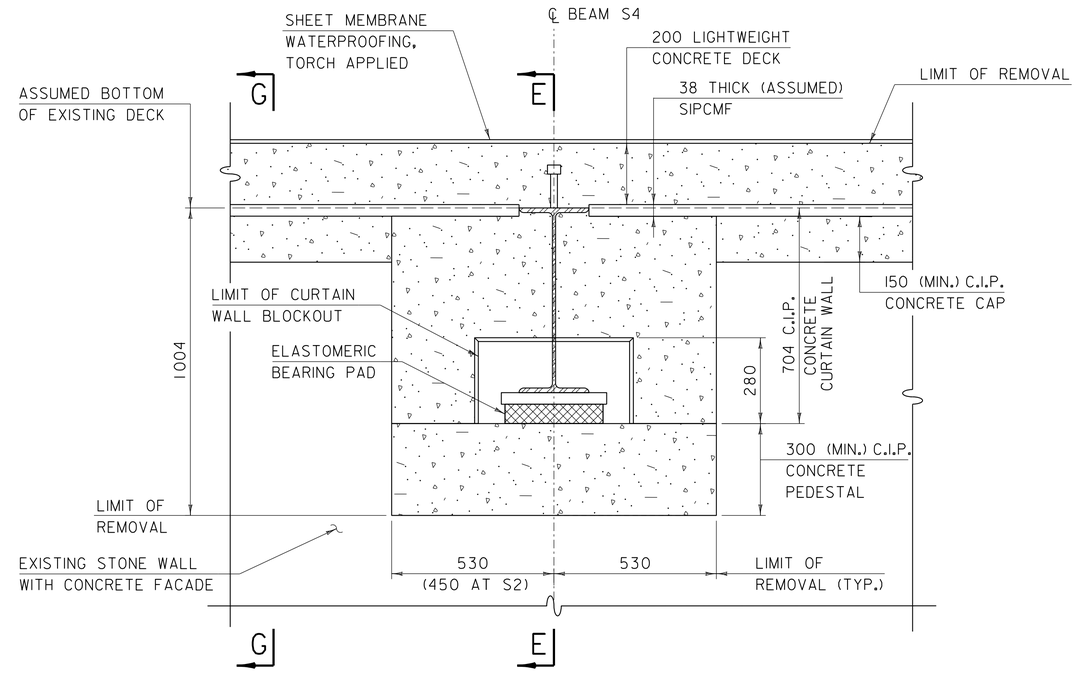
PROJECT NAME:	BRANDON
PROJECT NUMBER:	NH 019-3(496)
FILE NAME: zb008sup.dgn	PLOT DATE: 11/15/2019
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: S. BEAUMONT	CHECKED BY: J. BYATT
BEAM DETAILS SHEET 2	SHEET 13 OF 21

FUSS&O'NEILL



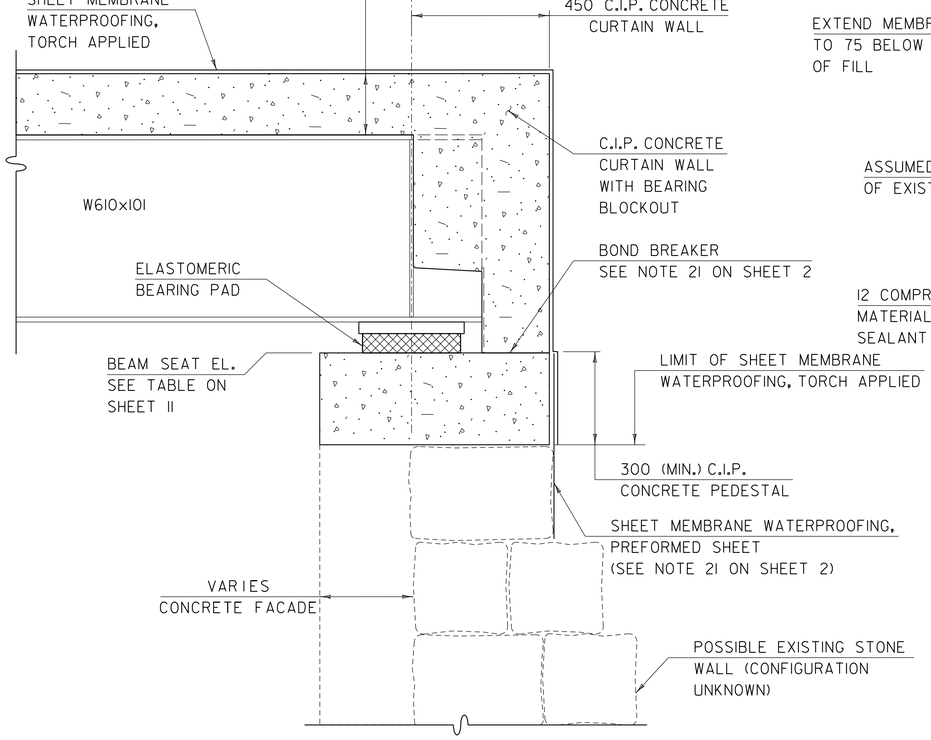
ELEVATION AT FACE OF NORTH WALL PEDESTAL

(BEAM S5 SHOWN)
10 SCALE



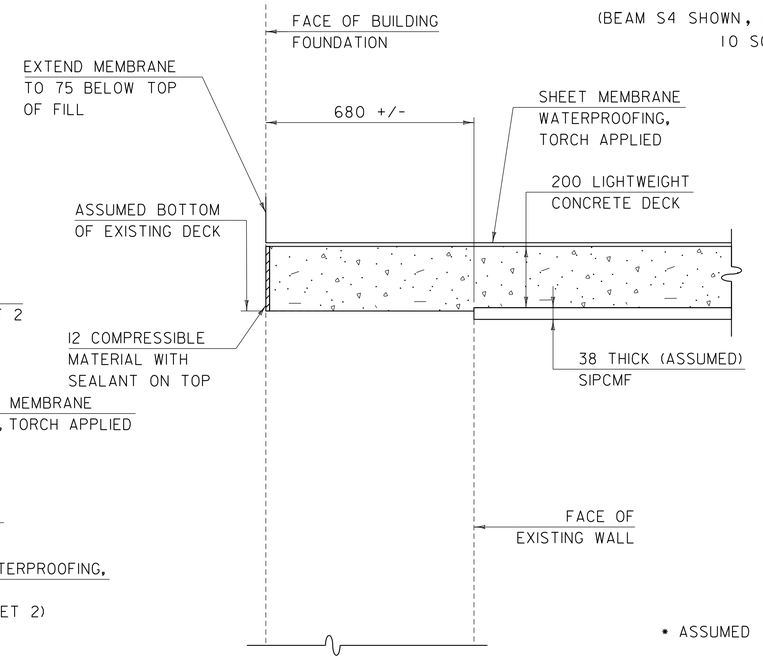
ELEVATION AT FACE OF NORTH AND WEST WALL PEDESTALS

(BEAM S4 SHOWN, BEAM S2 SIMILAR)
10 SCALE

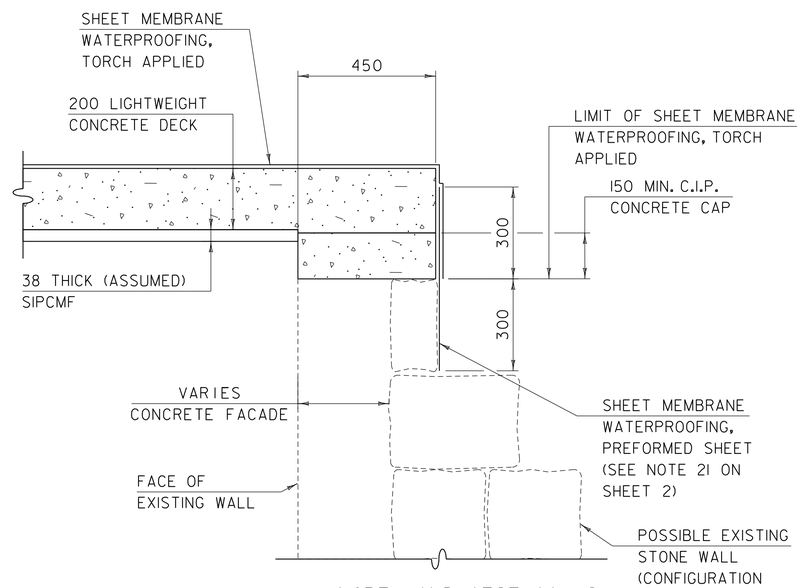


BEAM END SECTION E-E AT NORTH AND WEST WALLS

10 SCALE



EAST WALL
SECTION F-F



• ASSUMED

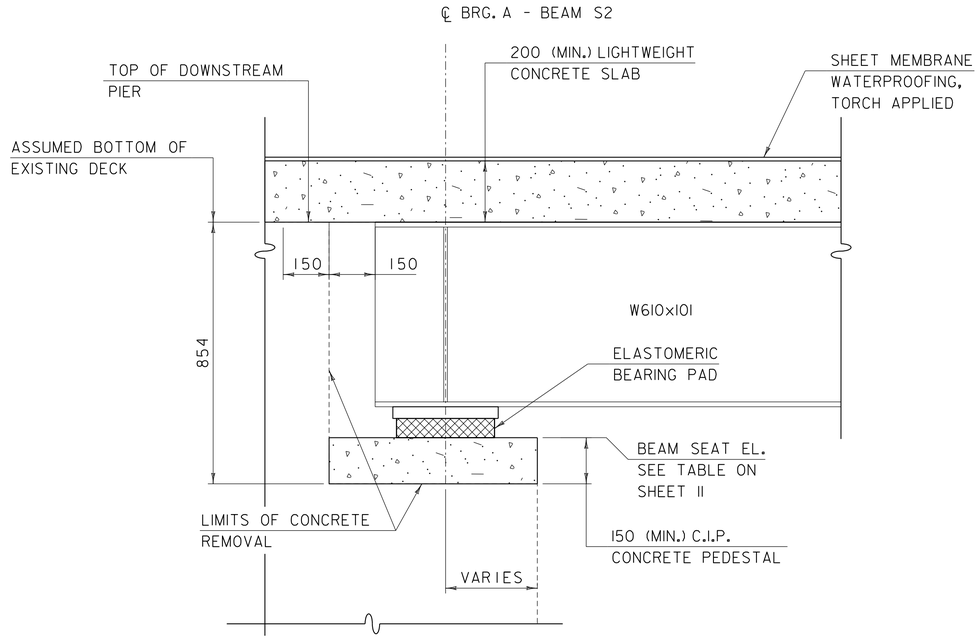
NORTH AND WEST WALLS
SECTION G-G

DECK END SECTION AT WALLS

10 SCALE

FUSS&O'NEILL

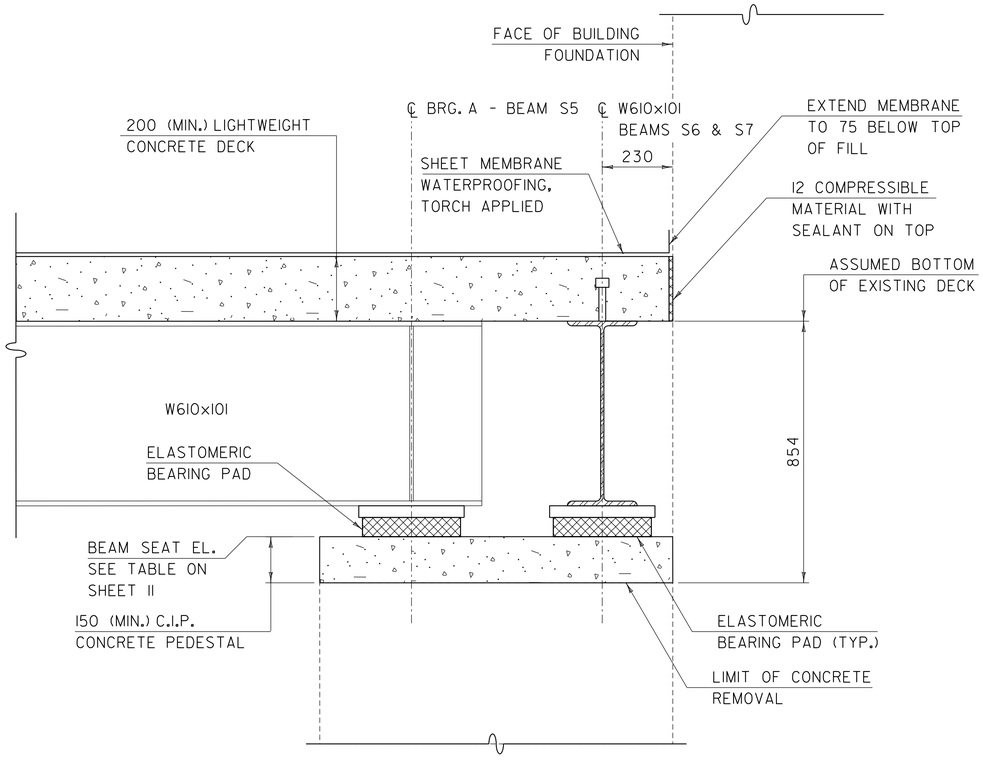
PROJECT NAME:	BRANDON
PROJECT NUMBER:	NH 019-3(496)
FILE NAME: zb008sup.dgn	PLOT DATE: 11/15/2019
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: S. BEAUMONT	CHECKED BY: J. BYATT
BEAM DETAILS SHEET 3	SHEET 14 OF 21



BEAM SECTION H-H AT DOWNSTREAM BRIDGE PIER

(BEAM S2 SHOWN, BEAM S1 SIMILAR)

10 SCALE

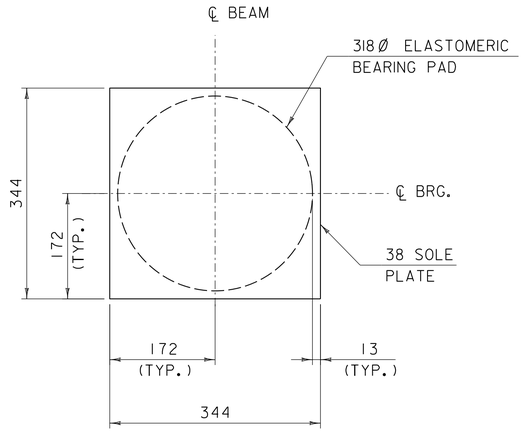


SECTION I-I AT UPSTREAM BUILDING PIER

10 SCALE

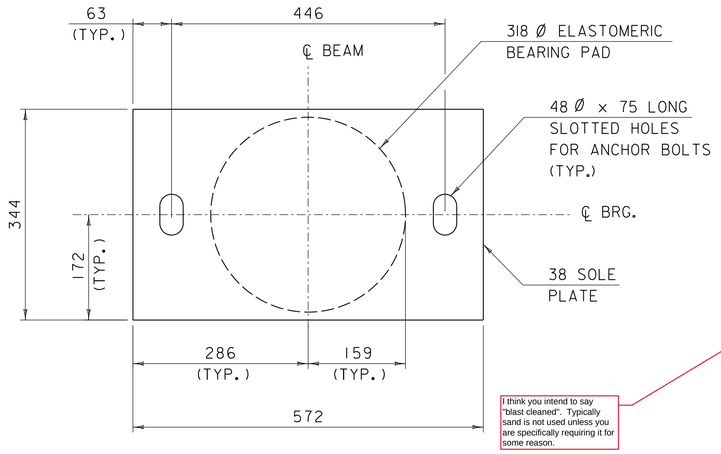
PROJECT NAME:	BRANDON
PROJECT NUMBER:	NH 019-3(496)
FILE NAME: zb008sup.dgn	PLOT DATE: 11/15/2019
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: S. BEAUMONT	CHECKED BY: J. BYATT
BEAM DETAILS SHEET 4	SHEET 15 OF 21

FUSS&O'NEILL



SOLE PLATE AT WALLS AND PIERS

5 SCALE



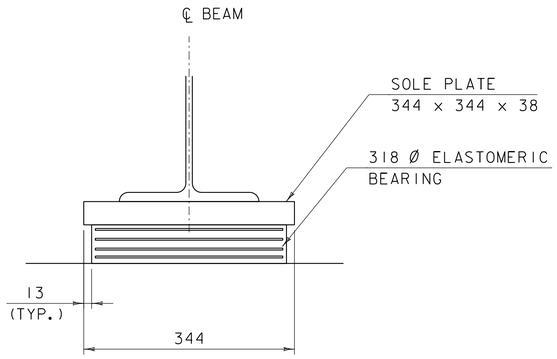
I think you intend to say "blast cleaned". Typically sand is not used unless you are specifically requiring it for some reason.

SOLE PLATE AT COLUMN

5 SCALE

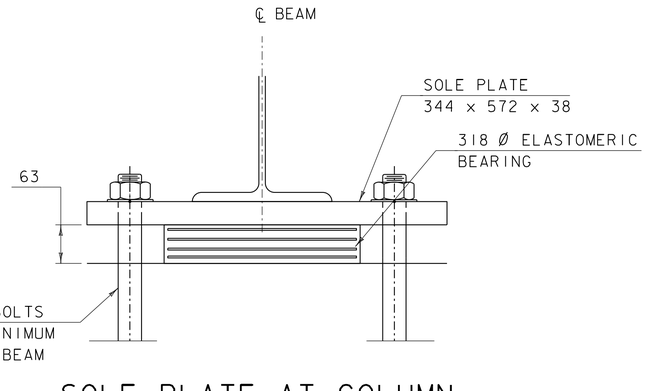
BEARING NOTES

1. BEARINGS SHALL CONFORM TO THE APPLICABLE SUBSECTIONS OF SECTIONS 531 AND 731 AND WILL BE PAID FOR UNDER CONTRACT ITEM 531.17. SHIM PLATES WILL BE INCIDENTAL TO CONTRACT ITEM 531.17.
2. ANCHOR BOLTS, NUTS, AND WASHERS SHALL MEET THE REQUIREMENTS OF SUBSECTION 714.08. ANCHOR BOLTS WILL BE INCIDENTAL TO ITEM 531.17.
3. ALL REINFORCEMENT BETWEEN LAYERS OF ELASTOMER SHALL BE STEEL MEETING THE REQUIREMENTS OF SUBSECTION 714.02. ALL INTERNAL STEEL PLATES SHALL BE SAND BLASTED AND FREE OF COATINGS, RUST, AND MILL SCALE. THE PLATES SHALL BE FREE OF SHARP EDGES AND BURRS.
4. STEEL REINFORCED ELASTOMERIC BEARINGS SHALL HAVE A MINIMUM 6 EDGE SEAL OF ELASTOMER INTEGRAL WITH BEARING OVER ALL INTERNAL PLATES.
5. THE ELASTOMER WAS DESIGNED WITH A SHEAR MODULUS OF 0.76 MPa.
6. THE ELASTOMER SHALL MEET THE REQUIREMENTS OF LOW TEMPERATURE ZONE D AND HAVE A HARDNESS OF 50 ON THE SHORE A SCALE.
7. DESIGN SERVICE LOADS PER BEARING: (DESIGN METHOD A)
   MAX DEAD LOAD: 242.98 kN
   MAX LIVE LOAD: 223.86 kN



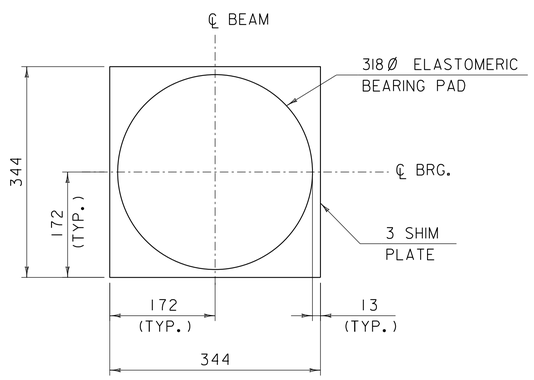
SOLE PLATE AT WALLS AND PIERS FRONT ELEVATION

5 SCALE



SOLE PLATE AT COLUMN FRONT ELEVATION

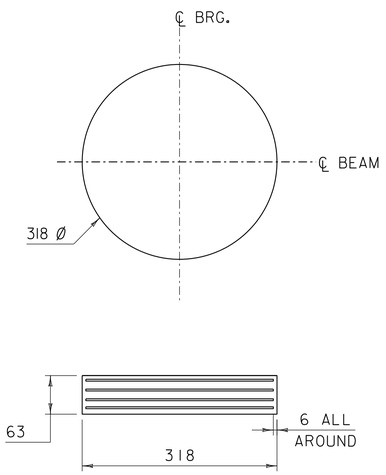
5 SCALE



SHIM PLATE

5 SCALE

NOTE: 3 mm SHIM PLATES SHALL BE AVAILABLE ON SITE DURING CONSTRUCTION IN CASE ADJUSTMENTS TO THE BEAM SEAT ELEVATIONS ARE NEEDED.



ELASTOMERIC BEARING PAD PLAN

5 SCALE

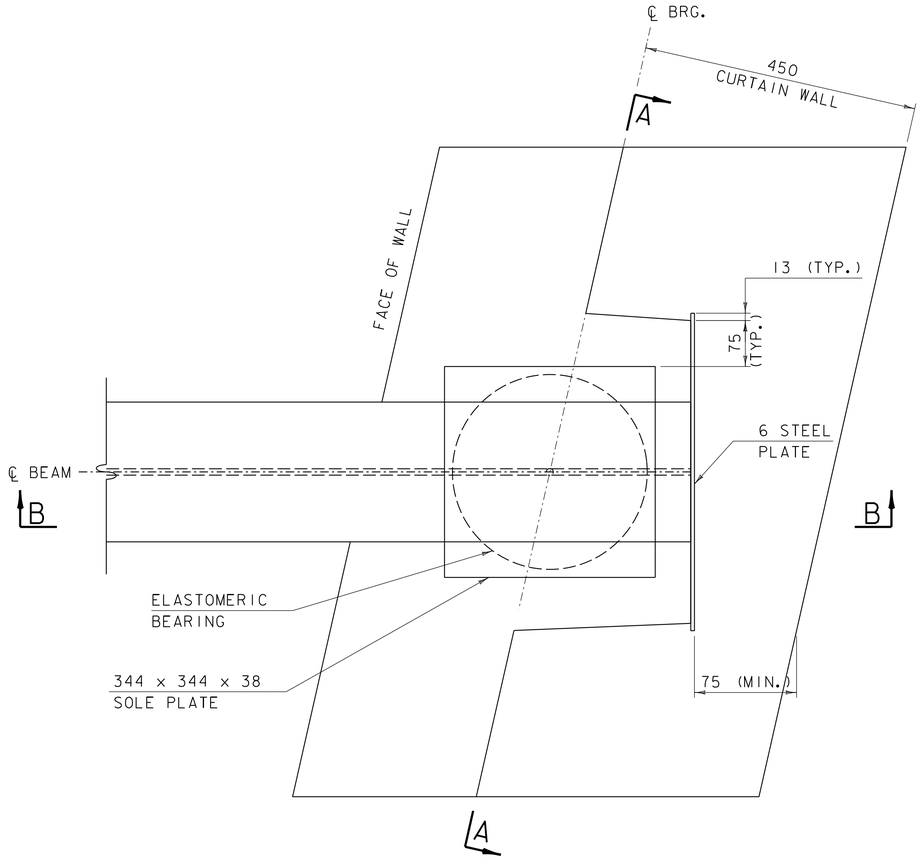
2 - 6mm EXTERIOR LAYERS OF ELASTOMER
3 - 13mm INTERIOR LAYERS OF ELASTOMER
4 - 11 GAGE STEEL REINFORCING PLATES

FUSS & O'NEILL

PROJECT NAME: BRANDON
PROJECT NUMBER: NH 019-3(496)

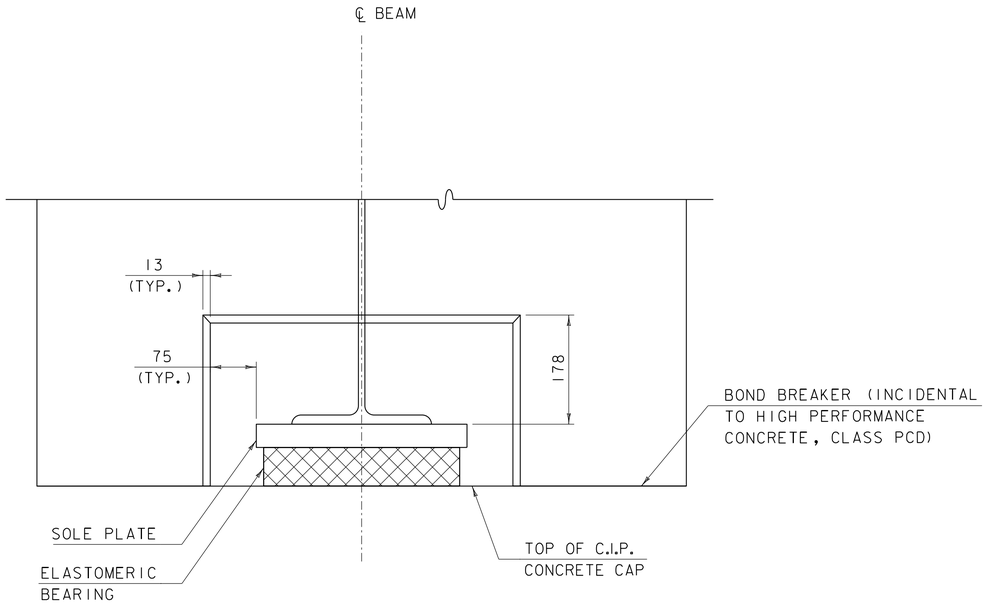
FILE NAME: zb008sup.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: S. BEAUMONT
BEARING DETAILS SHEET 1

PLOT DATE: 11/15/2019
DRAWN BY: M. SMITH
CHECKED BY: J. BYATT
SHEET 16 OF 21



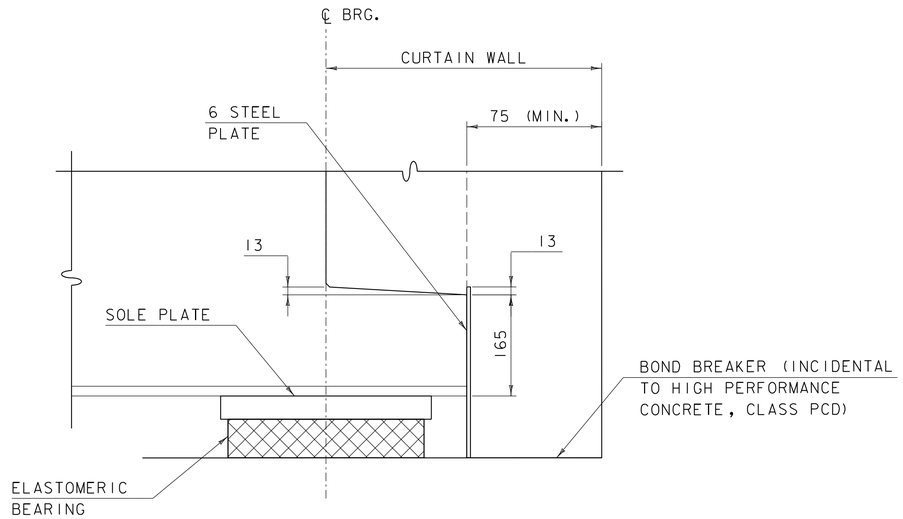
CURTAIN WALL BLOCKOUT DETAIL AT NORTH AND WEST WALLS

5 SCALE



SECTION A-A

5 SCALE

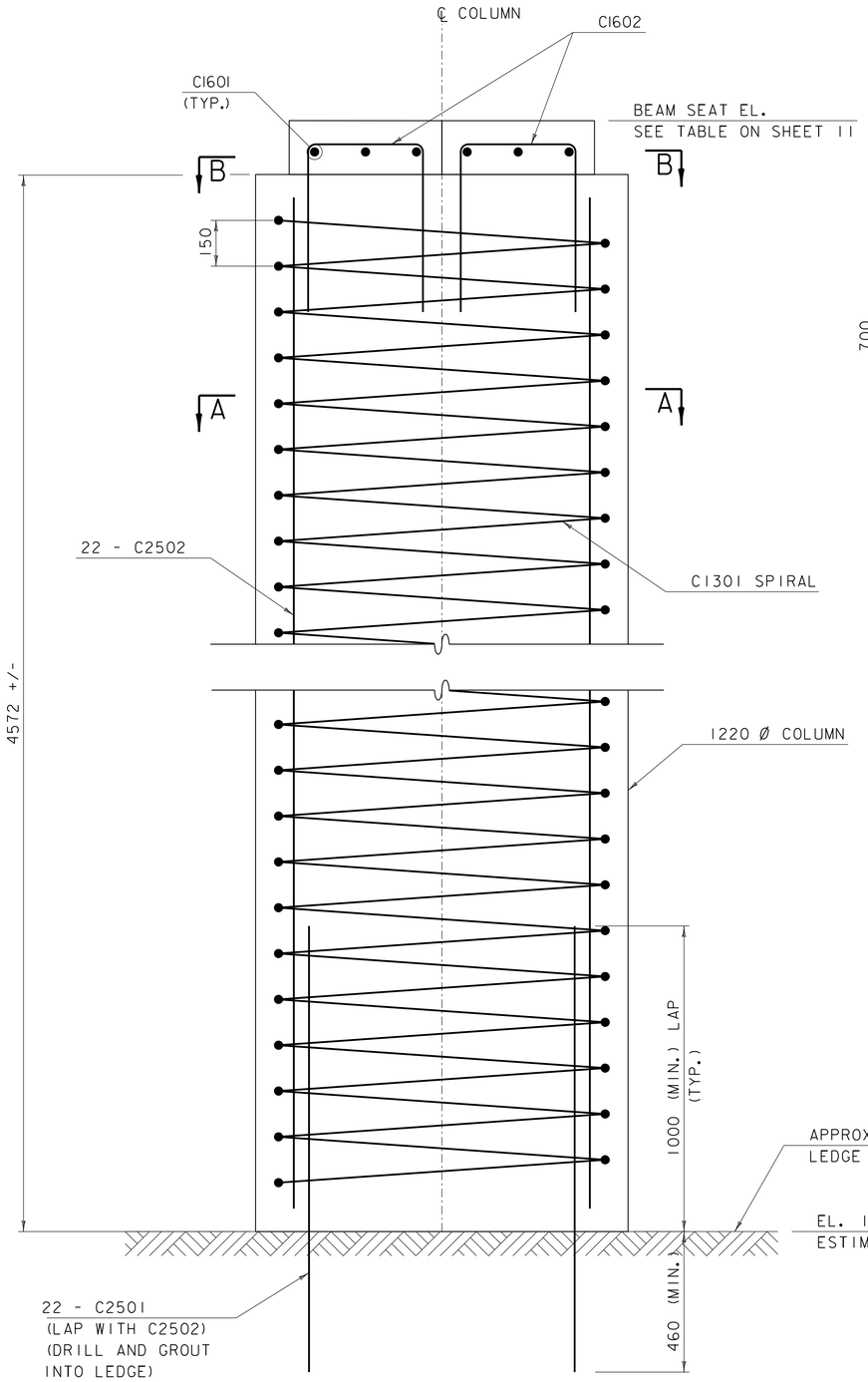


SECTION B-B

5 SCALE

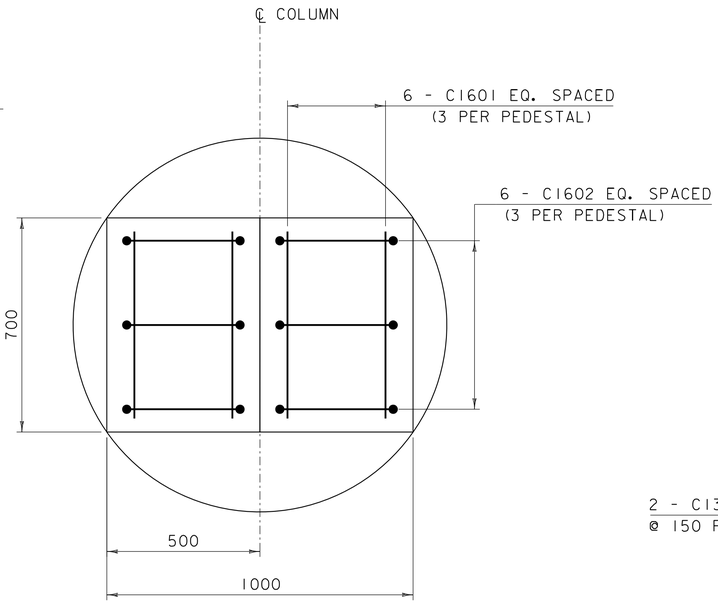
PROJECT NAME: BRANDON	
PROJECT NUMBER: NH 019-3(496)	
FILE NAME: zb008sup.dgn	PLOT DATE: 11/15/2019
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: S. BEAUMONT	CHECKED BY: J. BYATT
BEARING DETAILS SHEET 2	SHEET 17 OF 21

FUSS&O'NEILL



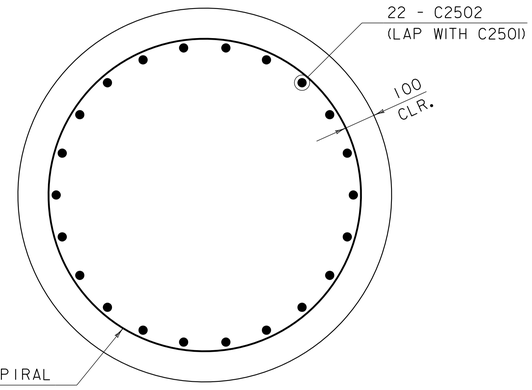
COLUMN MASONRY AND REINFORCEMENT ELEVATION

10 SCALE



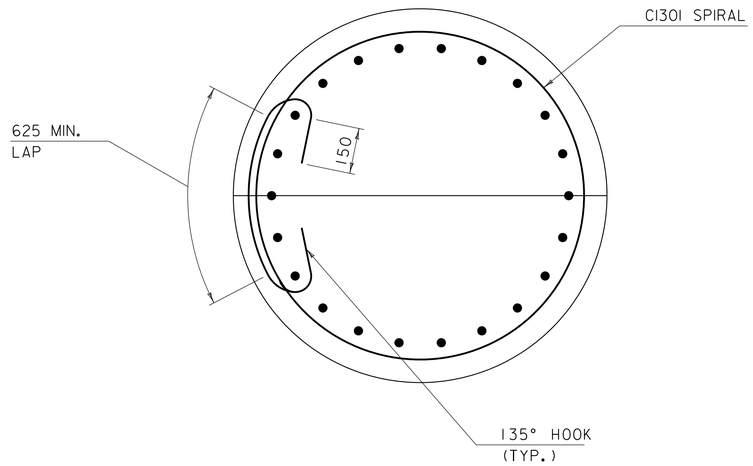
SECTION B-B

10 SCALE



SECTION A-A

10 SCALE

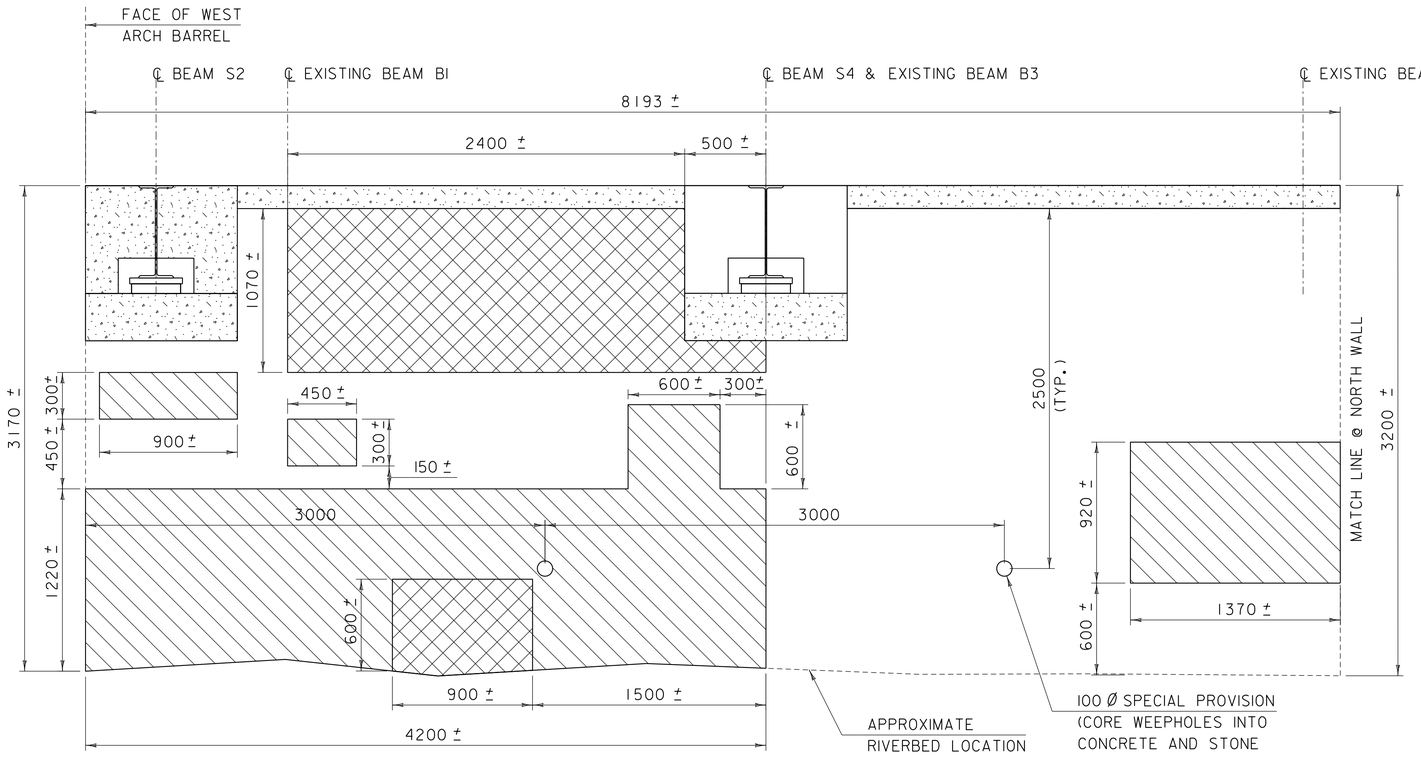


SPIRAL LAP SPLICE DETAIL

10 SCALE

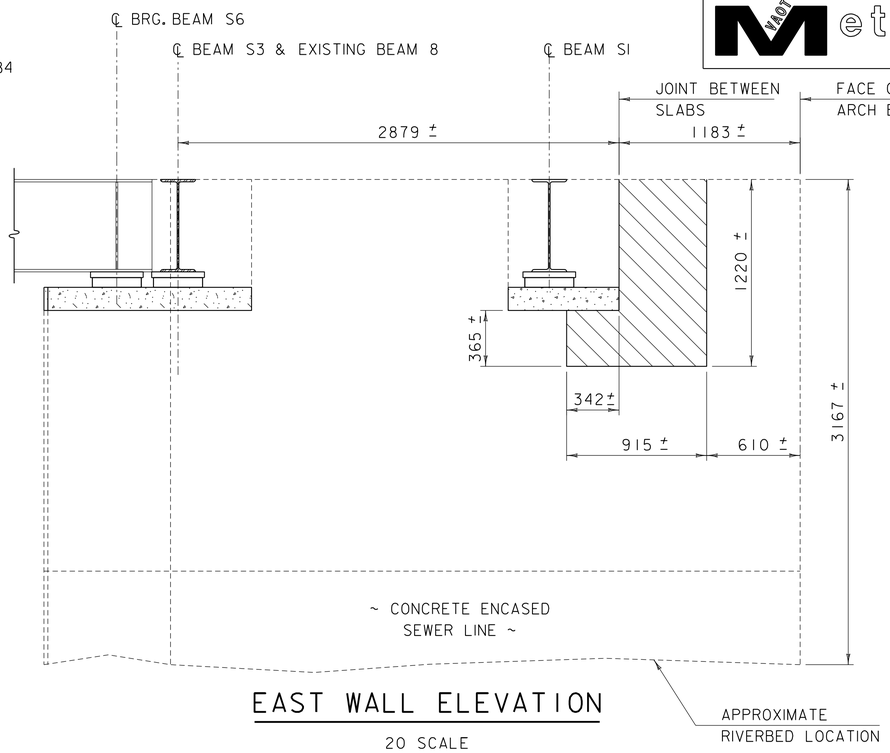
PROJECT NAME:	BRANDON
PROJECT NUMBER:	NH 019-3(496)
FILE NAME: zb008sub.dgn	PLOT DATE: 11/15/2019
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: S. BEAUMONT	CHECKED BY: J. BYATT
COLUMN DETAILS SHEET	SHEET 18 OF 21

FUSS&O'NEILL



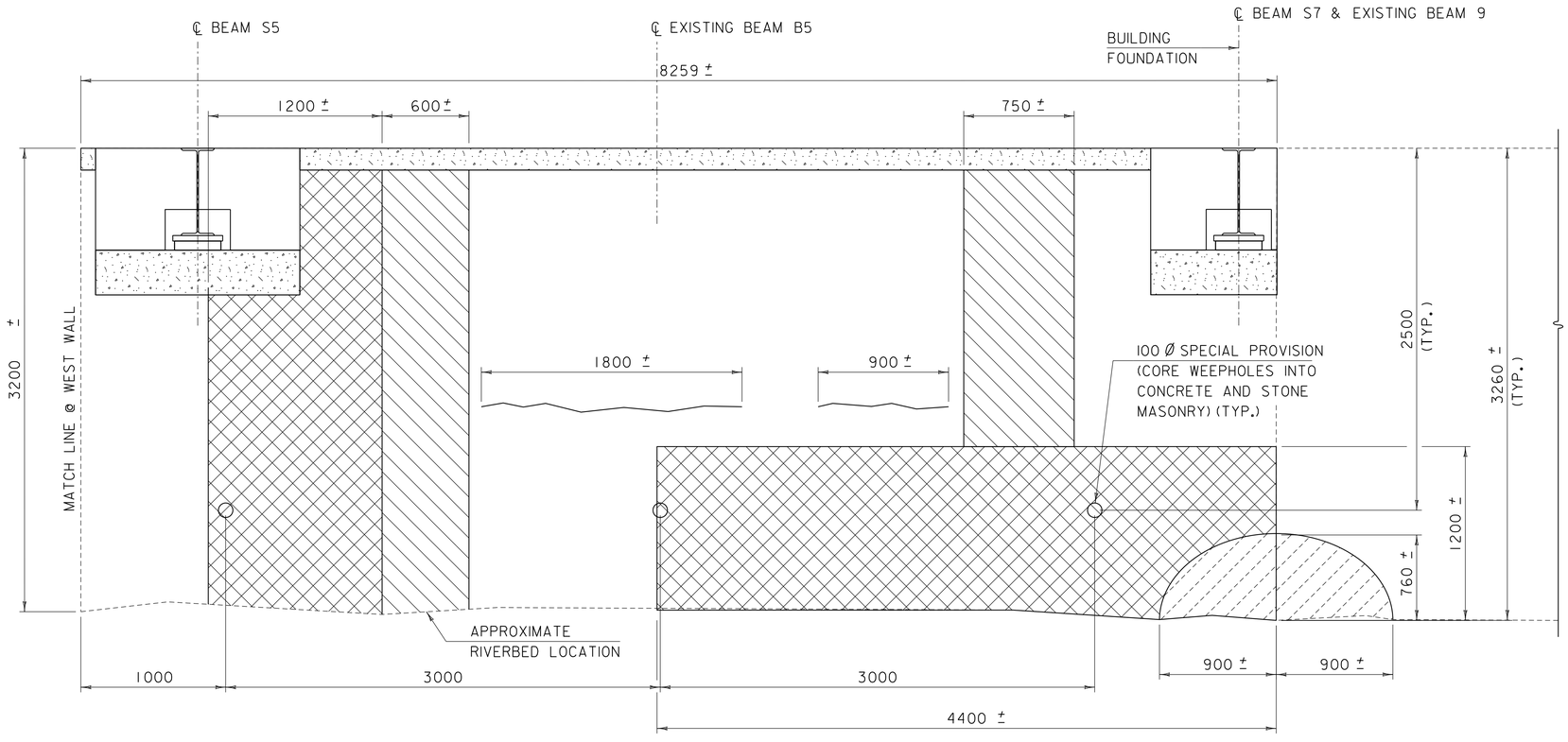
WEST WALL ELEVATION

20 SCALE



EAST WALL ELEVATION

20 SCALE



NORTH WALL ELEVATION

20 SCALE

NOTE: ALL DIMENSIONS MEASURED ALONG FACE OF WALL.

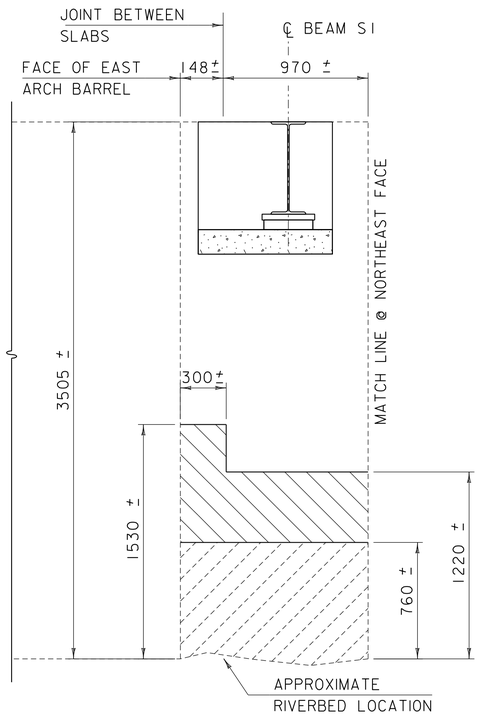
LEGEND

- HIGH PERFORMANCE CONCRETE, CLASS PCS
- CRACK (1/16" CRACK OR GREATER) (PAID FOR UNDER ITEM 580.13)
- DELAMINATION AREA/ SPALLED LESS THAN 2" (PAID FOR UNDER ITEM 580.13)
- SPALLING BETWEEN 2" AND 6" IN DEPTH (PAID FOR UNDER ITEM 580.14)
- SPALLED GREATER THAN 6" DEPTH (PAID FOR UNDER ITEM 580.15)

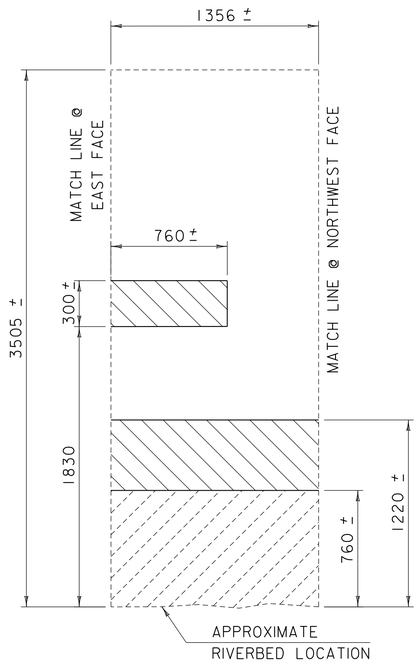
PROJECT NAME:	BRANDON
PROJECT NUMBER:	NH 019-3(496)
FILE NAME: zb008sub.dgn	PLOT DATE: 11/15/2019
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: S. BEAUMONT	CHECKED BY: J. BYATT
SUBSTRUCTURE REPAIR DETAILS SHEET 1	SHEET 19 OF 21

FUSS & O'NEILL

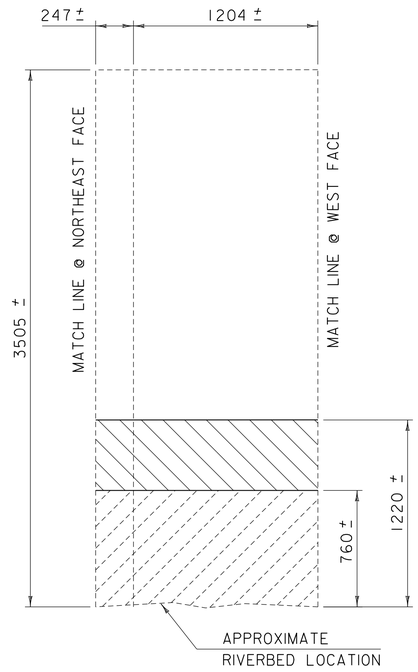
Metric



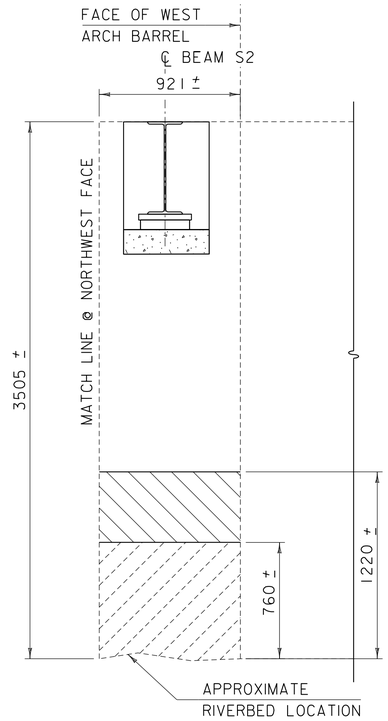
EAST FACE



NORTHEAST FACE



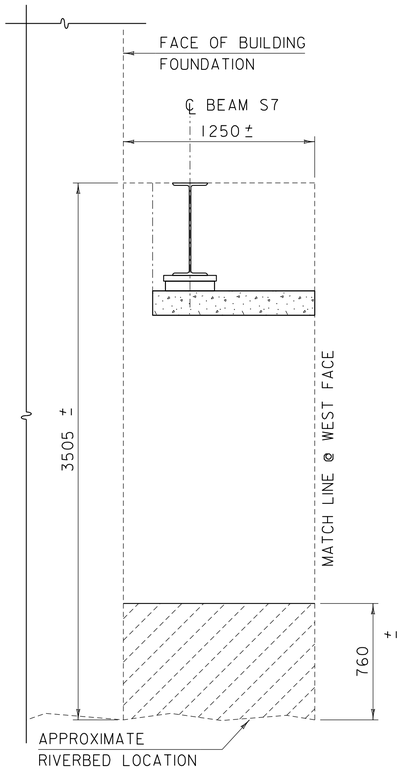
NORTHWEST FACE



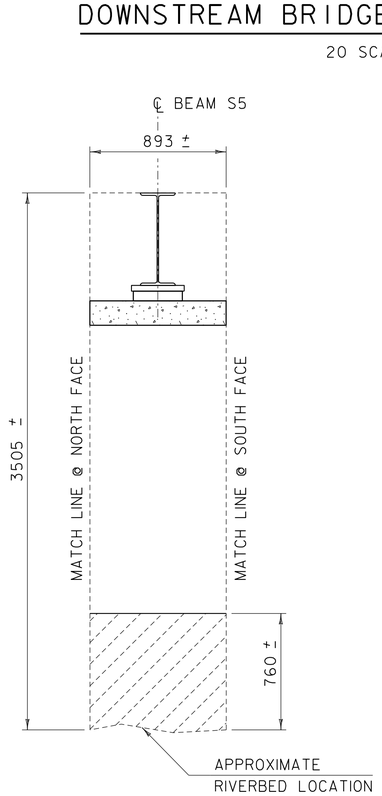
WEST FACE

DOWNSTREAM BRIDGE PIER ELEVATION

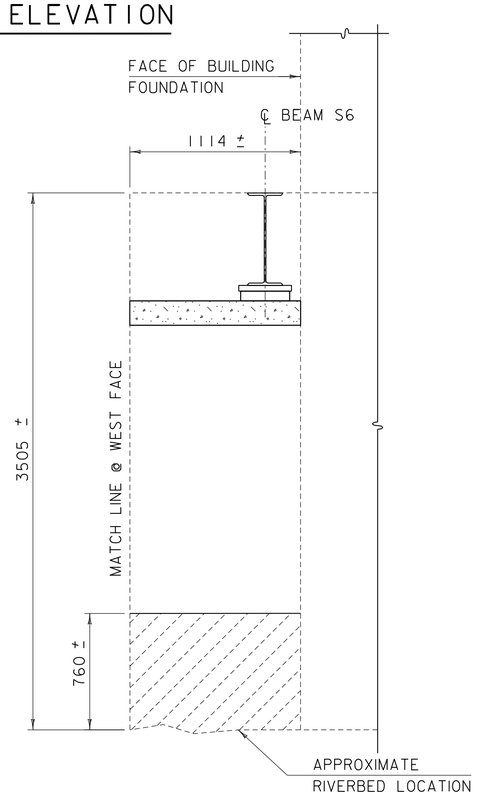
20 SCALE



NORTH FACE



WEST FACE



SOUTH FACE

UPSTREAM BUILDING PIER ELEVATION

20 SCALE

NOTE: ALL DIMENSIONS MEASURED ALONG FACE OF WALL.

LEGEND

- HIGH PERFORMANCE CONCRETE, CLASS PCS
- CRACK (1/16" CRACK OR GREATER) (PAID FOR UNDER ITEM 580.13)
- DELAMINATION AREA/ SPALLED LESS THAN 2" (PAID FOR UNDER ITEM 580.13)
- SPALLING BETWEEN 2" AND 6" IN DEPTH (PAID FOR UNDER ITEM 580.14)
- SPALLED GREATER THAN 6" DEPTH (PAID FOR UNDER ITEM 580.15)

FUSS & O'NEILL

PROJECT NAME: BRANDON
PROJECT NUMBER: NH 019-3(496)

FILE NAME: zb008sub.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: S. BEAUMONT
SUBSTRUCTURE REPAIR DETAILS SHEET 2

PLOT DATE: 11/15/2019
DRAWN BY: M. SMITH
CHECKED BY: J. BYATT
SHEET 20 OF 21

STATE OF VERMONT
AGENCY OF TRANSPORTATION

REINFORCING STEEL SCHEDULE

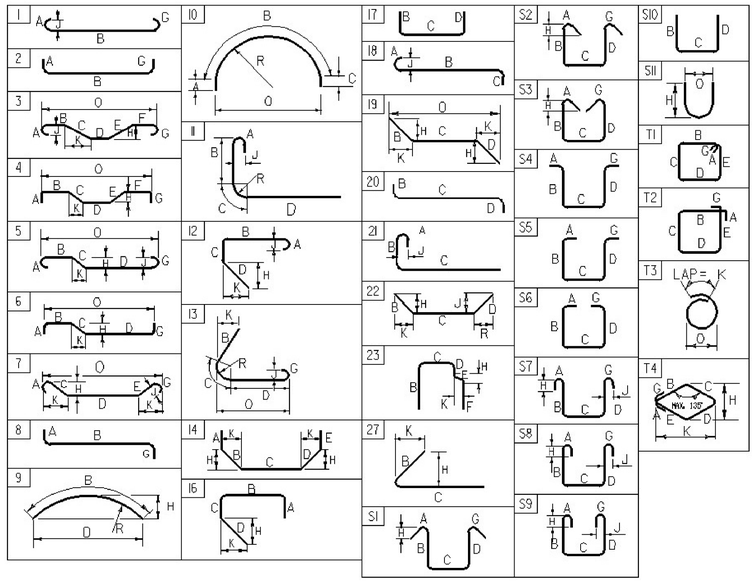
Metric

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
SLAB																	
	4	16	450	S1601	STR	500											
△ ▲	5	16	1000	S1602	STR	1000											
	18	16	525	ES1604	STR	525											
▲	9	16	1250	ES1605	STR	1250											
✳ ▲	59	19	4825	S1901	STR	4825											
▲	58	19	6400	S1902	STR	6400											
▲	42	19	6850	S1903	STR	6850											
▲	30	19	2975	S1904	STR	2975											
▲	18	19	4300	S1905	STR	4300											
✳ ▲	32	19	3500	S1906	STR	3500											
▲	57	19	6675	S1907	STR	6675											
▲	40	19	4300	S1908	STR	4300											
▲	15	19	7825	S1909	STR	7825											
▲	20	19	9950	S1910	STR	9950											
	4	19	7525	S1911	STR	7525											
▲	4	19	1000	S1912	STR	1000											
✳ ▲	197	19	4825	ES1913	STR	4825											
▲	161	19	4300	ES1914	STR	4300											
▲	58	19	4200	ES1915	STR	4200											
▲	6	19	4275	ES1916	STR	9075											
▲	10	19	1250	ES1917	STR	1250											
✳ ▲	36	29	3350	ES2901	STR	3350											
✳	4	16	1475	S1603	17		115	750	610								
	10	16	1625	ES1606	17		120	755	750								
WALL CAPS																	
✳ ▲	4	16	6275	W1601	STR	6275											
	22	16	300	W1602	STR	300											
▲	5	16	1625	W1603	STR	1625											
	7	16	500	W1604	STR	500											
✳	4	16	2750	EW1605	STR	2750											
	3	16	3150	EW1606	STR	3150											
	11	16	300	EW1607	STR	300											
PEDESTAL																	
	6	16	850	W1608	STR	850											
	8	16	625	W1609	STR	625											
	6	16	925	W1610	STR	925											
	8	16	600	W1611	STR	600											
▲	14	16	1200	W1612	STR	1200											
▲	8	16	750	W1613	STR	750											
▲	12	16	700	W1614	STR	700											
	6	16	675	W1615	STR	675											
▲	10	16	1050	W1616	STR	1050											
▲	10	16	1100	W1617	STR	1100											
▲	30	16	575	W1618	STR	575											
	6	16	500	W1619	STR	500											
▲	6	16	400	W1620	STR	400											
COLUMN																	
	6	16	575	C1601	STR	575											
✳	23	25	1875	C2501	STR	1875											
▲	22	25	3900	C2502	STR	3900											
▲	2	13	57250	C1301	SP	57250											
	6	16	1425	C1602	17		525	375	525								

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O

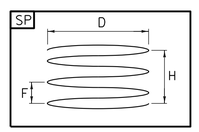
~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING 55M SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31M (ASTM A 615M-SI). ALL BARS SHALL BE GRADE 420, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. ✳ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. E IN BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.



ASTM STANDARD REINFORCING BARS

BAR SIZE	NOMINAL MASS (Kg/m)	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER (mm)	CROSS SECTIONAL AREA (mm^2)	PERIMETER (mm)
#10	0.560	9.5	71	29.84
#13	0.994	12.7	129	39.90
#16	1.552	15.9	199	49.95
#19	2.235	19.1	284	60.00
#22	3.042	22.2	387	69.74
#25	3.973	25.4	510	79.80
#29	5.060	28.7	645	90.16
#32	6.404	32.3	819	101.47
#36	7.907	35.8	1006	112.47
#43	11.380	43.0	1452	135.09
#57	20.240	57.3	2581	180.01



FUSS & O'NEILL

PROJECT NAME: BRANDON
PROJECT NUMBER: NH 019-3(496)

FILE NAME: zb008schedule.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: S. BEAUMONT
REINFORCING STEEL SCHEDULE

PLOT DATE: 11/15/2019
DRAWN BY: M. SMITH
CHECKED BY: S. BEAUMONT
SHEET 21 OF 21

SECTION 900 – SPECIAL PROVISION ITEMS

CORE WEEPHOLES INTO STONE MASONRY ARCH BRIDGE

18. DESCRIPTION. This work shall consist of coring weepholes through the existing stones of the stone masonry arch exterior walls.

19. GENERAL. The locations of the weepholes as shown on the plans are approximate. The locations may be adjusted to ensure coring occurs through the center of a larger stone to avoid cracking or damage to the mortar. The proposed weephole locations shall be identified by the Contractor and approved by the Engineer prior to coring operations.

20. METHOD OF MEASUREMENT. The quantity of Special Provision (Core Weepholes into Concrete and Stone Masonry) to be measured for payment will be the number of meters (linear feet) of weepholes cored in the complete and accepted work.

21. BASIS OF PAYMENT. The accepted quantity of Special Provision (Core Weepholes into Concrete and Stone Masonry) will be paid for at the Contract unit price per meter (linear feet). Payment will be full compensation for locating and coring each weephole, including all required materials and equipment to complete the work.

Payment will be made under:

Pay Item		Pay Unit
900.640	Special Provision (Core Weepholes into Concrete and Stone Masonry)	Meter

CONSTRUCTION VIBRATION AND CRACK MONITORING

52. DESCRIPTION. This work shall consist of conducting pre-construction building surveys, developing appropriate vibration trigger levels, and installing vibration and crack monitoring devices to record conditions prior to and during construction activities at the project site.

53. GENERAL. Vibration producing activities such as blasting, pile driving, vibratory compaction, pavement breaking, or operation of heavy construction equipment required for the construction of this project have the potential for creating damage to surrounding infrastructure, specifically the building immediately adjacent to Retaining Wall 2. The Contractor is advised that construction activities shall be conducted so as to preclude damage to this structure. The Contractor is responsible for all damage caused by the Contractor's activities.

54. MATERIALS. The Contractor shall provide Instantel Blastmate III, or equivalent amplitude/frequency vibration monitors (www.instantel.com). These instruments shall be capable of measuring, recording, and producing a hard copy of the frequency and peak particle velocity in three mutually perpendicular axes (Instruments that record "Vector sum" only measurements are not acceptable). These instruments shall be capable of measuring Linear Scale (dB-L) sound levels.

The Contractor shall provide crack monitoring equipment from the following, or an approved equal:

Tell-Tale Crack
monitors RST
Instruments Ltd.

Tel.: (800)665-5599

www.rstinstruments.com

Crack monitoring Equipment
Geotest Instrument Corp.

Tel.: (866)430-7645

www.crackgauge.com

Avongard Crack
Monitor Avongard
Products U.S.A.

Tel.: (800)244-7241

www.avongard.com

55. MONITORING CRITERIA.

(a) The Contractor shall provide the services of an independent qualified Engineering Consultant to perform pre-construction surveys of the building, develop site specific vibration limits that are protective of the building, and monitor the vibrations along active work zones and any crack monitoring identified as necessary during pre-construction building inspections or created by current construction activities. The Engineering Consultant shall have at minimum a two year associate's college degree in science or engineering and at least 10 years of experience in seismic monitoring. The Engineering Consultant shall interpret the seismograph records to ensure that the seismograph data will be effectively utilized in the control of the construction activities with respect to the existing structures. The Engineering Consultant used shall be subject to the approval of the Engineer. The Engineering Consultant shall supervise the placement and operation of the seismographs.

(b) The Contractor shall provide a description of proposed construction methods, including amplitude descriptions of each vibration producing activity, and a vibration monitoring plan for each activity, including the format for reporting the vibration readings. A minimum of two construction vibration monitoring devices shall be placed within or along the construction zone. These devices shall be placed at locations nearest buildings or structures closest to active construction to optimize evaluation and assessment of potential damage to surrounding features. Additional devices may be required as directed by the Engineer.

(c) In order to establish background conditions, vibration monitoring equipment should be set to record data for at least one full week prior to construction activities. A full report of this information will be provided to the Engineer prior to any construction activities beginning. If the Contractor’s construction means and methods create ground vibrations that result in damage to surrounding buildings or structures, the Engineer

will direct that all activities related to those causing the vibration be stopped. The Engineer may also, at any time, halt construction activities if vibration levels exceed those developed by the Engineering Consultant or if there are signs of damage to surrounding buildings and structures. In the event of work being stopped as a result of ground vibrations, the Contractor shall submit to the Engineer a report giving the construction parameter data and include the proposed corrective action for future construction events. In order to proceed with any further vibration producing activities, written permission must be obtained from the Engineer.

(d) Vibration monitoring equipment shall be capable of continuously recording the peak particle velocity and providing a permanent record of the entire vibration event. Copies of all vibration records and associated construction activity (blasting, pile driving, pavement breaking, compaction, etc.) data shall be provided to the Engineer in a format approved by the Engineer.

(e) The Engineering Consultant shall measure the magnitude of each vibration event with at least two vibration instruments, generally located adjacent to the building. The vibration monitors shall be amplitude and frequency sensitive and shall be operated during vibration producing activities that produce measurable ground vibrations. In the event that the Contractor chooses to have concurrent vibration producing activities at more than one location adjacent to buildings, the Contractor shall notify the Engineer prior to the commencement of such activities. The Engineer may require additional vibration monitoring instruments at each location depending on site parameters. No vibration producing activities may be started until the appropriate instrumentation is provided by the Contractor and approved by the Engineer.

(f) All vibration instruments shall be powered with rechargeable batteries, and the Contractor shall supply extension geophone and microphone cables so that the instruments can be placed within structures if outside temperatures drop below 32°F.

(g) All vibration instruments shall be supplied with current calibration documents and shall be recalibrated on approximately a six-month use interval. All

geophones shall be securely coupled to the ground.

(h) The Contractor shall be responsible for instrument maintenance. If the Contractor does not maintain a sufficient number of instruments to monitor the buildings/structures adjacent to the vibration producing activity, the Engineer may direct that all vibration activities cease until a sufficient number are working. The Contractor's consultant will be responsible for placing the instruments at measuring locations designated in the monitoring plan, and reading and recording the pertinent vibration levels during pile driving and other construction activities designated by the engineer.

(i) Crack displacement monitoring gages will be installed as appropriate across any significant existing cracks in buildings or structures identified and deemed necessary by the Contractor and Engineer during the Pre-Construction Building Inspections and agreed to by the Property Owner. Readings from the crack monitoring devices should be taken at the time of installation (at least one week prior to construction activities), again, just prior to construction start-up and at intervals during construction established by the Engineering Consultant. The consultant shall take and record readings of all instrumentation during the performance of the work and a report shall be provided to the Engineer within 24 hours of completing the readings.

(j) The Contractor shall also be required to install additional crack monitoring devices as necessary and directed by the Engineer as a result of cracks that are identified or develop during construction.

56. Pre-Construction Condition Survey. The Contractor shall conduct a pre-construction condition survey of the building adjacent to Retaining Wall 2. The survey method used shall be acceptable to the Contractor's insurance company, the Agency, and local authorities. The Contractor shall be responsible for any damage resulting from construction activities. The pre-construction condition survey records shall be made available to the Engineer for review. Occupants of the building shall be notified by the Contractor prior to the commencement of activities which may generate excessive vibrations.

57. SUBMITTALS. The Contractor shall submit their proposed construction vibration monitoring plan for the structural health of the building adjacent to Retaining Wall 2 to the Engineer for review and approval a minimum of 14 days prior to the start of construction. The submittals shall include the following:

(a) The qualifications of the Engineering Consultant. Include a list of three projects (with references) in the past five years where the Consultant has successfully developed vibration criteria and monitored construction activities on projects similar to the scope of the current project.

(b) A description of the monitoring equipment and current calibration documentation.

(c) Plan view showing number and locations of seismographs and crack gages being monitored.

(d) Proposed vibration limits for the particular construction activities under consideration.

(e) Procedures to be implemented if it is determined that the proposed construction activity cannot be reasonably implemented without exceeding vibration limits that are necessary to protect adjacent facilities.

58. PUBLIC RELATIONS. The Contractor is required to contact residents and owner or operator of the buildings. This contact will be made prior to the beginning of any vibration producing activity. The Contractor shall furnish to the Engineer a list of those contacted.

The Contractor shall maintain a log of all vibration related complaints, contacts, and actions, and shall furnish copy(ies) to the Engineer upon request.

59. METHOD OF MEASUREMENT. The quantity of Special Provision (Construction Vibration and Crack Monitoring) to be measured for payment will be on a lump sum basis in the complete and accepted work.

60. BASIS OF PAYMENT. The accepted quantity of Special Provision (Construction Vibration and Crack Monitoring) will be paid for at the Contract lump sum price. Payment will be full compensation for developing safe vibration limits, installing the monitors, recording the vibrations and crack

movement, making all necessary submittals, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
900.645 Special Provision (Construction Vibration and Crack Monitoring)	Lump Sum

TEMPORARY RELOCATION OF STREAM

65. DESCRIPTION. This work shall consist of a temporary stream diversion from both barrels of the twin arch to one barrel and then the other, including erosion prevention and sediment control in accordance with these specifications.

66. MATERIALS. Materials shall meet the requirements of the following Subsections:

Geotextile Fabrics	649.02
Stone Fill, Type III	706.04(c)

Other materials may be used. These shall be detailed on the EPSC Plan and are subject to approval.

67. GENERAL. Prior to their construction, the Contractor shall submit to the Engineer site-specific plans, including all construction, erosion prevention and sediment control, and maintenance details, for providing temporary stream relocations at stream crossings specified in the Plans. These details shall be developed in accordance with the requirements of Section 652 and will be considered a component of the overall project EPSC Plan.

All relocation plans must be approved by the Agency of Natural Resources prior to being submitted to the Engineer. These plans shall provide for a flow equal to twice the average daily flow, as a minimum, and shall be designed and stamped by a Professional Engineer registered in the State of Vermont. The plans shall address erosion prevention and sediment control, removing equipment from the stream, and preparing the site if a significant rain event occurs while working in the stream, and the materials and methods of creating the upstream diversion from the existing stream channel. These plans shall conform to any permits, both State and Federal, which have been issued for this project.

The Contractor shall provide for crossing the relocated stream channel for the duration of its existence so as not to impact the free flow of the stream or to increase any flood levels or potential for property damage upstream or downstream of the project site.

It shall be incumbent upon the Contractor to determine the level of protection required to protect the work. However, the protection of existing facilities, structures, and

property must also be undertaken and any damage thereto shall be repaired by the Contractor at no additional expense to the State. In addition, the temporary diversion shall not increase in any way flood levels or property damage upstream or downstream of the project site.

In-stream construction shall be undertaken during the period from June 1st through October 1st. Any changes to this period shall be approved in writing by the Vermont Agency of Natural Resources. It shall be the responsibility of the Contractor to obtain any variances to the in-stream construction period.

Furnishing and installing Geotextile Fabrics and Stone Fill shall be in conformance with the requirements of Sections 649 and 613, respectively.

Furnishing and installing pipes shall be in conformance with Section 601.

The upstream diversion shall be done in such a manner as to minimize erosion and sedimentation. Upstream diversion shall not be done when stream conditions are such that the possibility of excessive erosion and sedimentation will occur.

The relocation shall be maintained, throughout the time it is in place, free from debris, logs, stumps, and other obstructions which might impair the free-flow of water through the diversion.

68. METHOD OF MEASUREMENT. The quantity of Special Provision (Temporary Relocation of Stream) to be measured for payment shall be on a lump sum basis for all temporary stream locations specified, installed, maintained, and removed in the complete and accepted work.

Where a temporary relocation of stream is constructed for the convenience of the Contractor and is not specified in the Plans or ordered by the Engineer, the costs for the temporary relocation shall be considered incidental to all other Contract items.

69. BASIS OF PAYMENT. The accepted quantity of Special Provision (Temporary Relocation of Stream) will be paid for at the Contract lump sum price for all temporary stream relocations. Payment will be full compensation for designing, as necessary, constructing, including all required

materials, maintaining, and removing all temporary stream relocations.

Payment for the design and detailing of erosion prevention and sediment control measures for Temporary Relocation of Stream will be considered incidental to Contract item 652.10.

Payment for the monitoring and maintenance of erosion prevention and sediment control measures for Temporary Relocation of Stream will be considered incidental to Contract items 652.20 and 652.30, respectively.

Payment for erosion prevention and sediment control measures for Temporary Relocation of Stream will be made under the appropriate items in the Contract.

When the construction of the final temporary stream relocation is completed, operational, and accepted, a payment of 75 percent of the Contract lump sum price will be allowed. The remaining 25 percent of the Contract lump sum price will be paid when all of the temporary stream relocations have been removed and the site restored and stabilized to the satisfaction of the Engineer.

Payment will be made under:

Pay Item		Pay Unit
900.645	Special Provision (Temporary Relocation of Stream)	Lump Sum

Estimate ZB008

Estimated Cost:$584,099.84

Contingency: 0.00%

Estimated Total: $584,099.84

WORK TO BE PERFORMED INCLUDES THE SUPERSTRUCTURE REPLACEMENT OF THE EXISTING WEST SEMINARY STRUCTURE, THE REBABILITATION OF THE SUBSTRUCTURE, AND RELATED EARTHWORK.

Base Date: 11/15/19

Spec Year: 18

Unit System: E

Work Type: BRIDGE REHABILITATION

Highway Type: OTHER PRINCIPAL ARTERIAL

Urban/Rural Type: URBAN

Season: CONSTRUCTION (APRIL 15th - OCTOBER 15th)

County: BRANDON

Latitude of Midpoint: 434758

Longitude of Midpoint: 730520

District: SW

Federal Project Number: NH 019-3(496)

State Project Number:

Estimate Type: DRAFT FINAL PLANS SUBMISSION

Prepared by Kevin Carme on 11/15/19
Checked by Shannon Beaumont, P.E. on 11/15/19

Line #	Item Number / Description / *Supplemental Description*	Quantity	Units	Unit Price	Extension
Group 1211: WEST SEMINARY STRUCTURE					
0295	203.15 COMMON EXCAVATION	76.00	CY	$12.20	$927.20
0300	203.16 SOLID ROCK EXCAVATION	2.00	CY	$19.08	$38.16
0305	203.27 UNCLASSIFIED CHANNEL EXCAVATION	19.00	CY	$22.11	$420.09
0310	204.25 STRUCTURE EXCAVATION	14.00	CY	$35.34	$494.76
0315	204.30 GRANULAR BACKFILL FOR STRUCTURES	11.00	CY	$43.79	$481.69
0320	501.37 HIGH PERFORMANCE CONCRETE, CLASS PCD	35.00	CY	$2,429.14	$85,019.90
0325	501.38 HIGH PERFORMANCE CONCRETE, CLASS PCS	11.00	CY	$1,818.18	$19,999.98
0330	506.50 STRUCTURAL STEEL, ROLLED BEAM	9,017.00	LB	$6.35	$57,257.95
0335	507.11 REINFORCING STEEL, LEVEL I (BLACK)	12,522.00	LB	$1.00	$12,522.00
0340	507.11 REINFORCING STEEL, LEVEL I (EPOXY)	7,937.00	LB	$1.04	$8,254.48
0345	507.16 DRILLING AND GROUTING DOWELS	36.00	LF	$36.87	$1,327.32
0350	508.15 SHEAR CONNECTORS *88 - 22 DIA. X 140 STUDS*	1.00	LS	$4,400.00	$4,400.00
0355	519.20 SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	155.00	SY	$178.10	$27,605.50
0360	529.15 REMOVAL OF STRUCTURE *(WEST SEMINARY SUPERSTRUCTURE)*	1.00	EACH	$80,000.00	$80,000.00
0365	529.25 REMOVAL OF CONCRETE OR MASONRY	16.00	CY	$2,250.00	$36,000.00
0370	531.17 BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD	14.00	EACH	$1,500.00	$21,000.00
0375	541.25 CONCRETE, CLASS B	14.00	CY	$992.86	$13,900.04
0380	580.13 REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I	22.00	SY	$957.27	$21,059.94
0385	580.14 REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	20.00	SY	$2,523.20	$50,464.00
0390	580.15 REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III	4.00	CY	$2,726.47	$10,905.88
0395	602.40 REPAIRING STONE MASONRY	4.00	SY	$1,875.00	$7,500.00

Line #	Item Number / Description / *Supplemental Description*	Quantity	Units	Unit Price	Extension
0400	613.12 STONE FILL, TYPE III	23.00	CY	$83.52	$1,920.96
0405	635.11 MOBILIZATION/DEMOBILIZATION	1.00	LS	$53,099.99	$53,099.99
0410	900.640 SPECIAL PROVISION (CORE WEEPHOLES INTO CONCRETE AND STONE MASONRY)	50.00	LF	$30.00	$1,500.00
0415	900.645 SPECIAL PROVISION (CONSTRUCTION VIBRATION AND CRACK MONITORING)	1.00	LS	$28,000.00	$28,000.00
0420	900.645 SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM)	1.00	LS	$40,000.00	$40,000.00

Total for Group 1211:$584,099.84