SEE SHEET 2 FOR INDEX OF SHEETS AND LIST OF STANDARDS

RECORD PLANS

CONTRACTOR: AUSTIN CONSTRUCTION, INC.- CONCORD, VT

RESIDENT ENGINEER: DOUG BUMPS

CONSTRUCTION BEGAN: APRIL 23, 2012

CONSTRUCTION COMPLETE:

RECORD PLANS BY: DOUG BUMPS & C. PIERCE

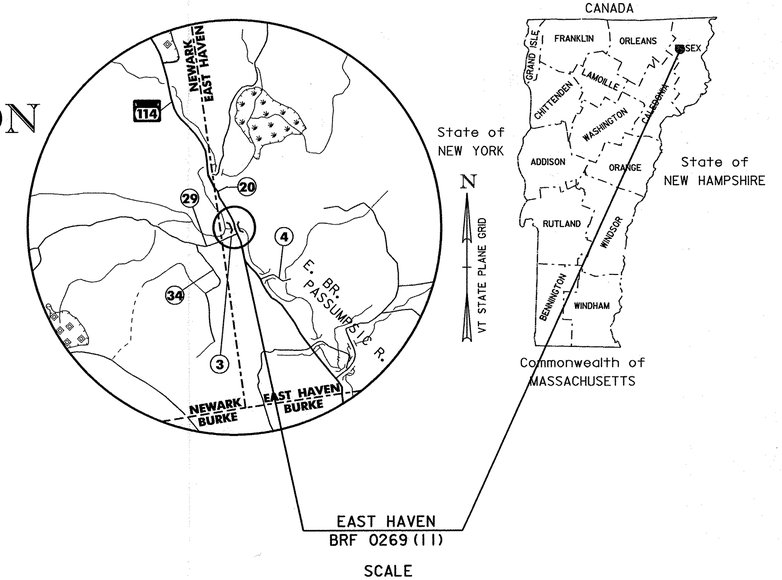
I HEREBY CERTIFY THAT ALL THE CONSTUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY _____ RESIDENT ENGINEER

DATE 5/23/13

NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

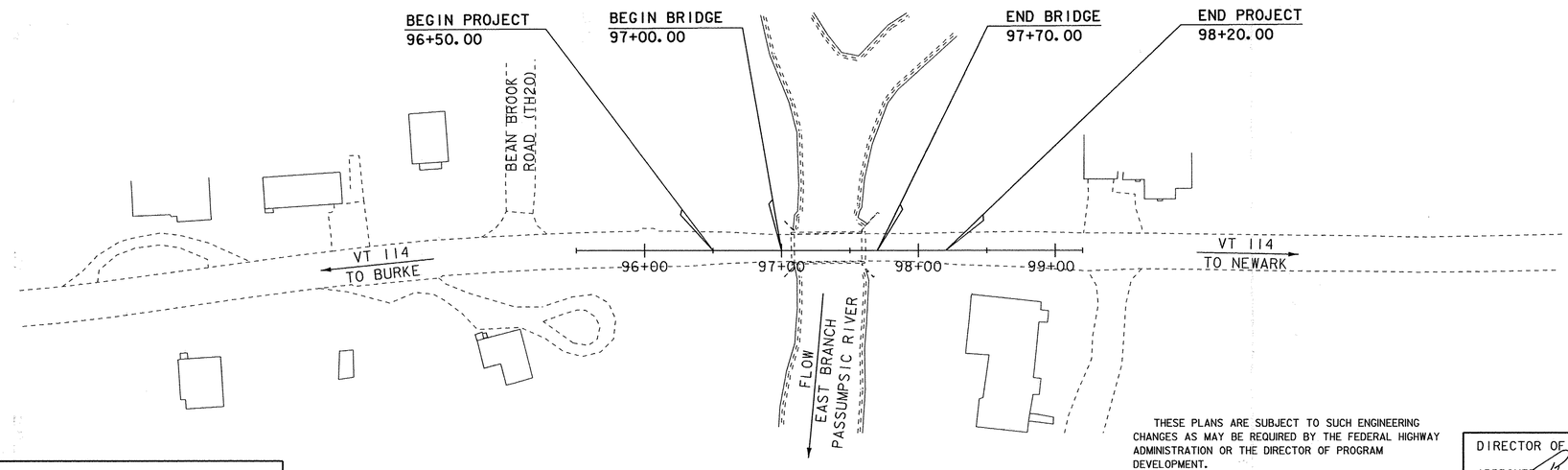


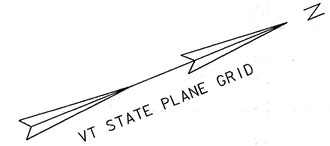
PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF EAST HAVEN
COUNTY OF ESSEX
STATE ROUTE 114 - MAJOR COLLECTOR
BRIDGE NO. 18

PROJECT LOCATION: BEGINNING AT MILE POST 1.827 ON VT 114 IN EAST HAVEN, CROSSING THE PASSUMPSIC RIVER AND ENDING AT MILE POST 1.860.

PROJECT DESCRIPTION: THIS PROJECT SHALL CONSIST OF THE REPLACEMENT OF THE EXISTING STRUCTURE WITH RELATED APPROACH WORK.

LENGTH OF BRIDGE: 70.00 FEET
LENGTH OF ROADWAY: 100.00 FEET
LENGTH OF PROJECT: 170.00 FEET





QUALITY ASSURANCE PROGRAM: LEVEL 2

CONVENTIONAL SYMBOLS

COUNTY LINE
TOWN LINE
LIMITS OF ACCESS
POINT OF ACCESS
FENCE LINE
STONE WALL
TRAVELED WAY
GUARD RAIL
RAILROAD
SURVEY LINE
CULVERT
POWER POLE
TELEPHONE POLE
TREES
CONTROL OF ACCESS
PROPERTY LINE
R.O.W. TAKING LINE
SLOPE RIGHTS
TOP OF CUT
TOE OF SLOPE

SURVEYED BY : R. GILMAN
SURVEYED DATE : 11/00

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (96)

SCALE 1" = 50'-0"
50 0 50

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF PROGRAM DEVELOPMENT.

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JUNE 15, 2006 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED _____ DATE 8/8/11

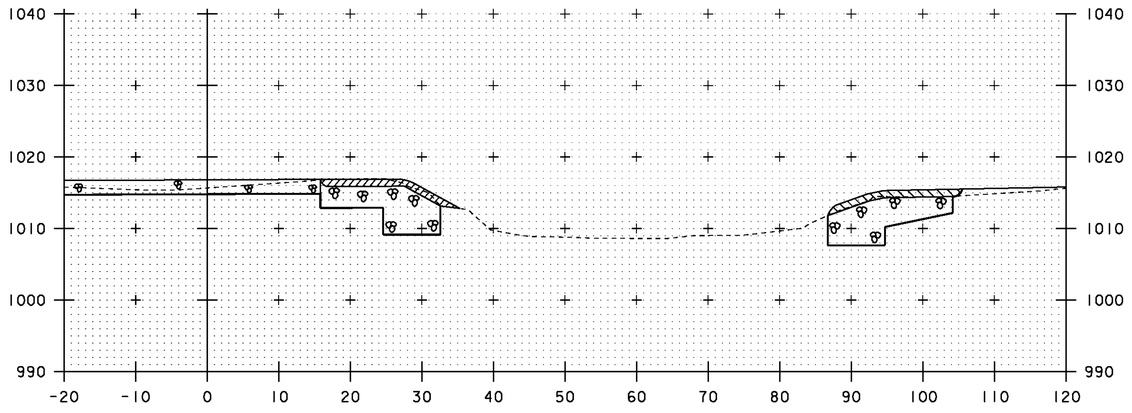
PROJECT MANAGER : KRISTIN HIGGINS

PROJECT NAME : EAST HAVEN
PROJECT NUMBER : BRF 0269(11)

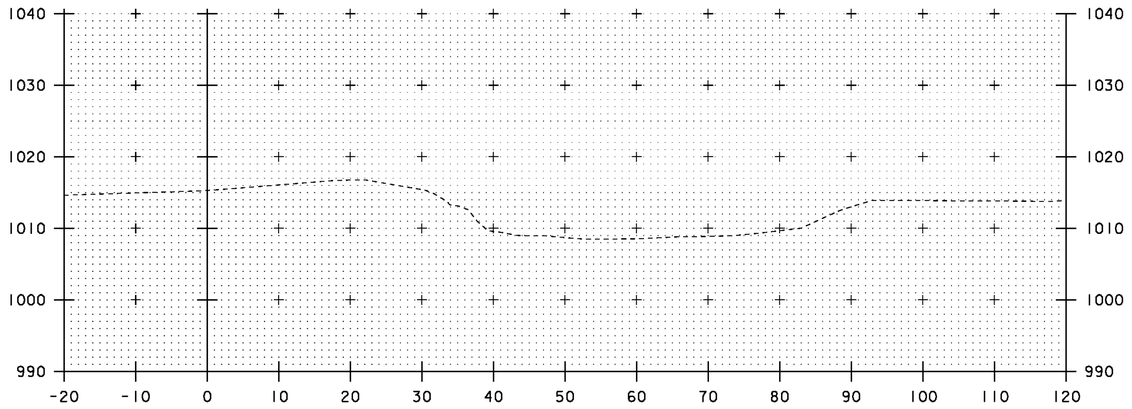
SHEET 1 OF 40 SHEETS

STA 51+28.00 RT
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN STONE, FILL TYPE IV
BEGIN GRUBBING MATERIAL
STA 51+34.00
END GRUBBING MATERIAL

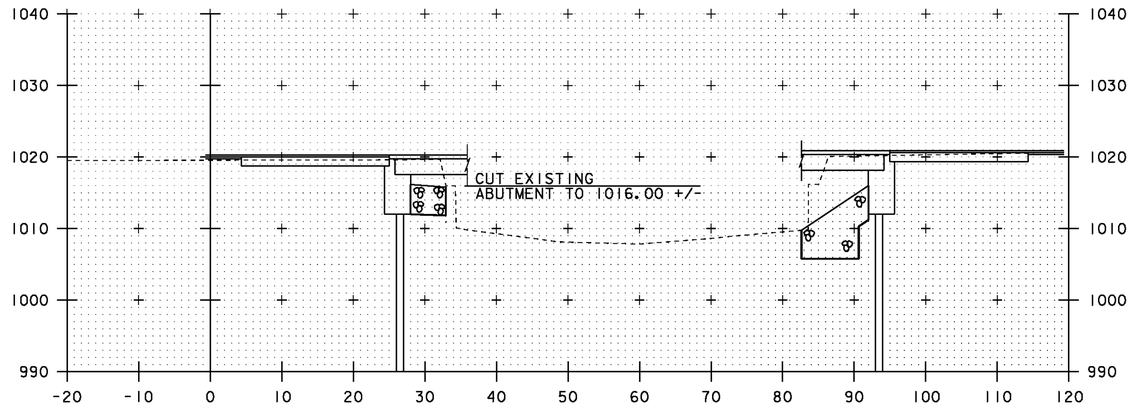
STA 51+27.60 FAR RT
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN STONE FILL, TYPE IV
BEGIN GRUBBING MATERIAL
STA 51+34.00
END GRUBBING MATERIAL



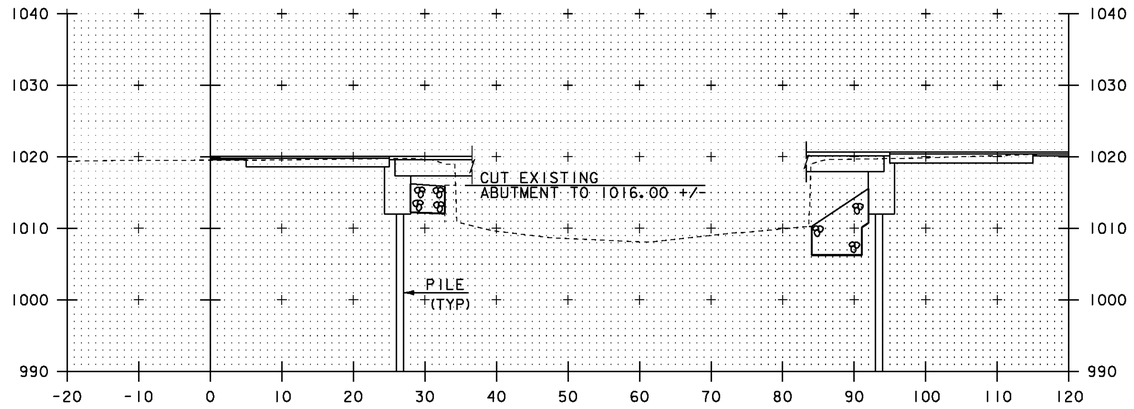
51+30



51+20



51+50



51+40

SCALE 1" = 10'-0"
10 0 10

STA. 51+20 TO STA. 51+50

PROJECT NAME: EAST HAVEN
PROJECT NUMBER: BRF 0269(11)

FILE NAME: s00cl62xs.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. LACROIX
CHANNEL SECTIONS #1

PLOT DATE: 08-AUG-2011
DRAWN BY: R. PELLETT
CHECKED BY: J. LACROIX
SHEET 39 OF 40

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT, AGENCY OF TRANSPORATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2006, AND ITS LATEST REVISIONS, THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FIFTH EDITION, AND ITS LATEST REVISIONS AND THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, THIRD EDITION, AND ITS LATEST REVISIONS.

2. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.

3. ITEM 529.15 "REMOVAL OF STRUCTURE" IS FOR THE REMOVAL OF THE EXISTING SUPERSTRUCTURE, INCLUDING THE BRIDGE RAIL, THE SOUTH ABUTMENT DOWN TO ELEVATION 1016' AS WELL AS ANY PORTION OF THE ABUTMENT THAT WILL AFFECT NEW CONSTRUCTION, AND THE ENTIRE NORTH ABUTMENT.

4. THERE ARE GRAVE SITES LOCATED IN THE VICINITY OF WINGWALL #1. THE CONTRACTOR SHALL CONTACT VTRANS ARCHAEOLOGIST JEANNINE RUSSELL AT 802-828-3981 A MINIMUM OF TWO WEEKS PRIOR TO PERFORMING EXCAVATION IN THIS AREA. A REPRESENTATIVE OF THE STATE WILL BE PRESENT DURING THE EXCAVATION IN THIS AREA. THIS WORK WILL BE INCLUDED IN THE BID PRICE OF THE APPROPRIATE EXCAVATION ITEM. IN NO CASE SHALL THE CONTRACTOR DISTURB EARTH OUTSIDE OF THE BARRIER FENCE AS SHOWN IN THE EROSION CONTROL PLANS. SEE SPECIAL PROVISIONS FOR MORE INFORMATION.

5. THERE IS A FENCE TO BE REMOVED BETWEEN STATIONS 97+61 RT AND 98+50 RT. THE CONTRACTOR SHALL STOCKPILE THIS FENCE AT A LOCATION ACCEPTABLE TO THE PROPERTY OWNER.

CONCRETE

6. ITEM 514.10 "WATER REPELLENT, SILANE", SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT THE UNDERSIDE OF THE SUPERSTRUCTURE BETWEEN DRIP NOTCHES.

7. THE OVERLAY AND SUBSTRUCTURE CONCRETE ABOVE THE CONSTRUCTION JOINT SHALL BE SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT)

8. THE SUBSTRUCTURE CONCRETE BELOW THE CONSTRUCTION JOINT SHALL BE CONCRETE, HIGH PERFORMANCE CLASS B.

9. THE DECK WILL HAVE A LONGITUDINAL GROOVED FINISH. THIS WORK WILL BE PAID FOR UNDER ITEM 900.675 SPECIAL PROVISION (LONGITUDINAL DECK GROOVING).

10. THE TOP SURFACE OF THE PILE CAP SHALL INITIALLY BE GIVEN A FLOAT FINISH TO GRADE. THE CONCRETE WITHIN THE REINFORCING CAGE SHALL THEN BE ROUGHENED BY RAKING PARALLEL TO THE FACE OF THE ABUTMENT TO AN AMPLITUDE OF ½ INCH. THE CONCRETE OUTSIDE THE REINFORCING CAGE AND UNDER THE BEARING PADS SHALL REMAIN SMOOTH.

11. TO FACILITATE COMPLETE CONSOLIDATION OF CONCRETE BETWEEN THE TOP OF THE BRIDGE SEAT AND THE BOTTOM OF THE BEAM, VENT HOLES MAY BE PROVIDED FOR THE INSERTION OF A VIBRATOR IN THE FRONT FORM UNDER EACH BEAM. IF CONCRETE DOES NOT CONSOLIDATE IN THIS AREA, THE CONTRACTOR SHALL REPAIR THIS AREA TO THE SATISFACTION OF THE ENGINEER.

PRESTRESSED BOX BEAMS

12. TRANSVERSE TENDONS PLATES AND CHUCKS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M 232M/M 232.

13. ITEM 510.24 "GROUTING SHEAR KEYS": FILL THE JOINTS BETWEEN THE BEAMS WITH MORTAR, TYPE IV, AS DESCRIBED IN SUBSECTION 510.13 AND AS FOLLOWS:

    A. CLEAN JOINTS WITH AN OIL FREE AIR-BLAST IMMEDIATELY BEFORE GROUT PLACEMENT. VERIFY THAT THE BACKER ROD IS STILL IN PLACE.
    B. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR ADDITIONAL JOINT PREPARATION AND GROUT PLACEMENT.
    C. CAREFULLY ROD JOINTS TO ELIMINATE ANY POSSIBILITY OF VOIDS.

14. DESIGN VALUES
    A. CONCRETE: f'c = 7 ksi AND STRENGTH @ RELEASE = 5.5 ksi
    B. LIVE LOAD: AASHTO HL-93
    C. PRESTRESSING STRANDS: 0.6" DIAMETER, 270 ksi, LOW-RELAXATION 7-WIRE STRANDS PULLED TO 75% OF THEIR YIELD STRENGTH
    D. POST-TENSIONING STRANDS: 0.6" DIAMETER, 270 ksi, LOW-RELAXATION 7-WIRE STRANDS.
    E. THE ASSUMED MODULUS OF ELASTICITY FOR THE STRAND IS 28,500 KSI.
    F. TRANSVERSE TENDONS SHALL BE COVERED BY SEAMLESS POLYPROPYLENE SHEATH (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND) FOR THE LENGTH OF THE STRAND. TIES SHALL BE TENSIONED TO 47 KIPS FOR EACH 0.6" DIAMETER STRAND.
    G. SERVICE LOADS

MEMBER MOMENT	732.1 K-FT
SUPERIMPOSED DEAD LOAD MOMENT	106.3 K-FT
LIVE LOAD & IMPACT MOMENT	499.2 K-FT
DEAD LOAD REACTION	67.4 K
LIVE LOAD & IMPACT REACTION	57.9 K
TOTAL REACTION	125.3 K
FINAL CAMBER	0.3 IN

15. THE FABRICATOR MAY, WITH THE APPROVAL OF THE ENGINEER, ALTER THE DESIGN AS DETAILED TO MEET THE CONTRACTOR'S CONSTRUCTION NEEDS, OR THE PLANT'S PRESTRESSING OPERATION AND MATERIAL REQUIREMENTS. ALTERNATE STRAND, TRANSVERSE TIE AND CROSS-SLOPE CONFIGURATIONS MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ANY DESIGN CHANGES SHALL MEET ALL OF THE APPLICABLE DESIGN CRITERIA, LOADINGS AND CODES (THE LATEST EDITION OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND THE LATEST EDITION OF THE STRUCTURES DESIGN MANUAL), AND SHALL BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF VERMONT.

16. THE PRECASTER SHALL SANDBLAST SHEAR KEY FACES PRIOR TO DELIVERY.

17. ALL TIES AND STIRRUPS IN THE BOX BEAMS SHALL BE EPOXY COATED.

REMOVED BOTH EXISTING ABUTMENTS DOWN TO ELEVATION 1013.50. REMAINDER OF EXISTING ABUTMENTS LEFT IN-PLACE.

PILES

18. THE PILES SHALL BE HP 14 X 102.

19. THE PILES SHALL BE EMBEDDED IN THE GROUND A MINIMUM OF 25 FEET AND SHALL BE DRIVEN TO A NOMINAL RESISTANCE OF 350 KIP. TO PREVENT DAMAGE TO THE PILES, PILE SHOES SHALL BE REQUIRED AND SHALL CONFORM TO SECTION 505.

20. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AS SHOWN ON THE BORING LOGS. THE ACTUAL IN PLACE LENGTHS MAY VARY.

21. A MINIMUM OF ONE DYNAMIC PILE TEST SHALL BE CONDUCTED FOR EACH SUBSTRUCTURE UNIT. MORE TESTS MAY BE REQUIRED BY THE ENGINEER. THE FIRST TEST PILE SHALL BE THE FIRST DRIVEN FOR THE SUBSTRUCTURE UNIT. THE PILE SHALL BE DRIVEN AT THE PLAN LOCATION AND THE PILE SHALL BE MEASURED FOR PAYMENT UNDER CONTRACT ITEM 505.29.

TRAFFIC CONTROL

22. THE TRAFFIC CONTROL PHASING SHOWN IN THE PLANS IS OF A CONCEPTUAL NATURE ONLY. THE CONTRACTOR SHALL SUPPLY A DETAILED TRAFFIC CONTROL PLAN, WHICH NEED NOT UTILIZE THE PHASING SHOWN IN THESE PLANS.

23. AS PART OF 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE), THE CONTRACTOR SHALL SUBMIT A SITE SPECIFIC TRAFFIC CONTROL PLAN TO THE ENGINEER FOR APPROVAL PER SUBSECTION 105.03. SEE SPECIAL PROVISIONS.

24. ALL SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD. FOR ADDITIONAL SIGNING INSTRUCTIONS SEE STANDARDS E-100, E-100A, E-101, E-102, E-102A, AND E-121.

25. ALL ITEMS REQUIRED TO IMPLEMENT THE CONTRACTOR'S TRAFFIC CONTROL PLAN WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED INCLUDED IN THE BID PRICE FOR ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE). THIS INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING ITEMS:

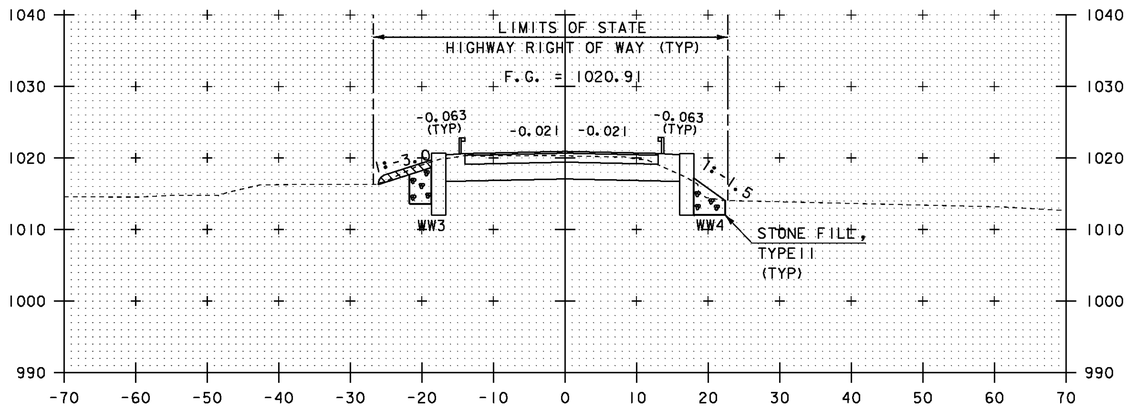
    TEMPORARY TRAFFIC SIGNAL SYSTEM
    TEMPORARY TRAFFIC BARRIER
    TEMPORARY PAVEMENT MARKINGS (INCLUDING REMOVAL OF EXISTING MARKINGS)
    CONSTRUCTION SIGNING

26. PAYMENT FOR MAINTENANCE OF THE EXISTING BRIDGE STRUCTURE FOR PHASE 1 TRAFFIC WILL BE MADE UNDER CONTRACT ITEM 527.10. PAYMENT FOR TEMPORARY BRIDGE WIDENING AND MAINTENANCE OF THE NEW BRIDGE STRUCTURE FOR PHASE II TRAFFIC WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 900.645 SPECIAL PROVISION (TEMPORARY BRIDGE WIDENING FOR PHASE CONSTRUCTION).

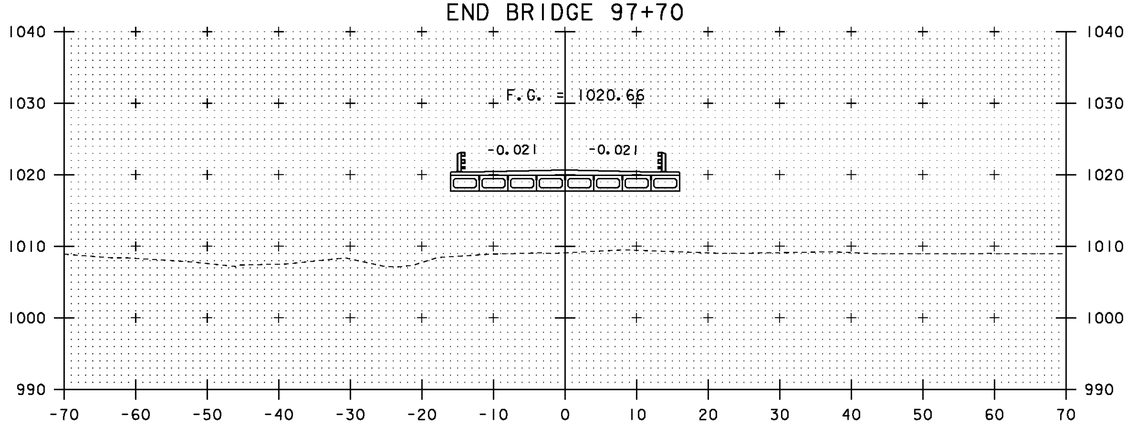
27. THERE ARE NUMEROUS DETAILS ON THESE PLANS THAT ARE BASED ON A PHASED CONSTRUCTION DESIGN THAT MAY OR MAY NOT BE USED BY THE CONTRACTOR. THE LOCATION OF CONSTRUCTION JOINTS, THE CONFIGURATION OF THE ABUTMENTS, AND THE DIMENSIONS OF REINFORCING STEEL WILL ALL HAVE TO BE CONSIDERED ONCE THE CONTRACTOR'S TRAFFIC CONTROL PLAN HAS BEEN ACCEPTED.

28. SPECIAL PROVISION (TEMPORARY BRIDGE WIDENING FOR PHASED CONSTRUCTION) IS FOR THE CONSTRUCTION OF A TEMPORARY ROADWAY AND BRIDGE COMPONENT SO THAT A 12 FOOT TRAVEL LANE, INCLUDING SHOULDERS CAN BE MAINTAINED THROUGH THE PROJECT (SEE TRAFFIC PHASING TYPICALS SHEET). THE CONTRACTOR SHALL KEEP ALL FILL SLOPES FROM THE TEMPORARY BRIDGE INSIDE THE RIGHT OF WAY LIMITS UNLESS THE CONTRACTOR CAN MAKE OTHER ARRANGEMENTS WITH PROPERTY OWNERS. IF TEMPORARY SHEET PILING IS REQUIRED TO KEEP FILLS INSIDE THE RIGHT OF WAY, COST SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR SPECIAL PROVISION (TEMPORARY BRIDGE WIDENING FOR PHASED CONSTRUCTION).

PROJECT NAME:	EAST HAVEN
PROJECT NUMBER:	BRF 0269(11)
FILE NAME: s00ci62gennotes.dgn	PLOT DATE: 08-AUG-2011
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. PELLETT
DESIGNED BY: J. LACROIX	CHECKED BY: J. LACROIX
GENERAL NOTES	SHEET 3 OF 40

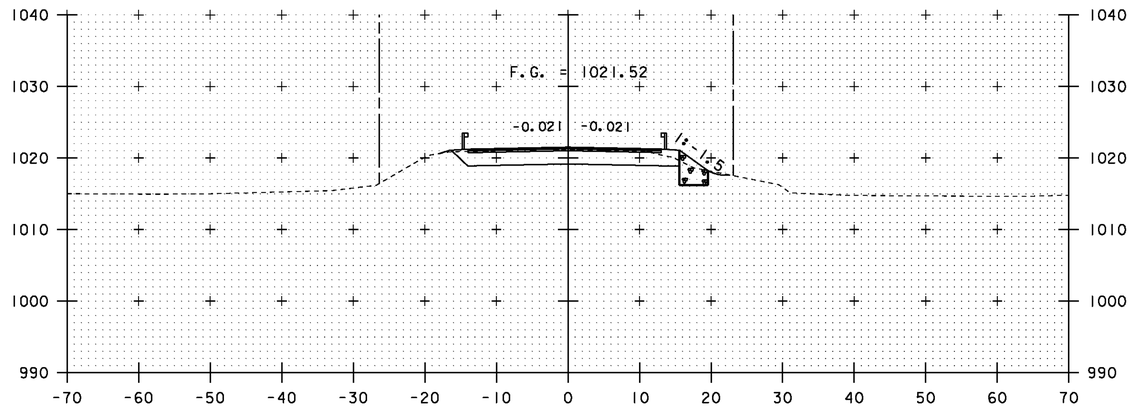


97+75



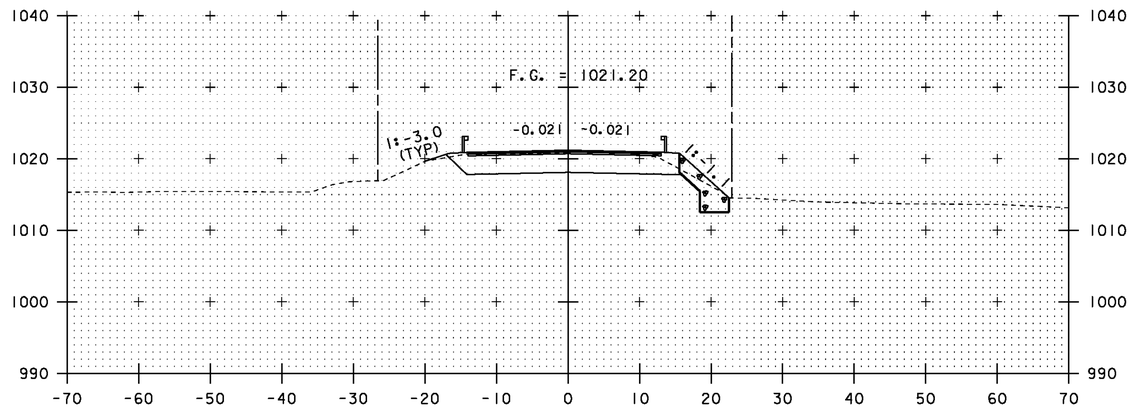
END BRIDGE 97+70

97+50



98+25

END PROJECT 98+20

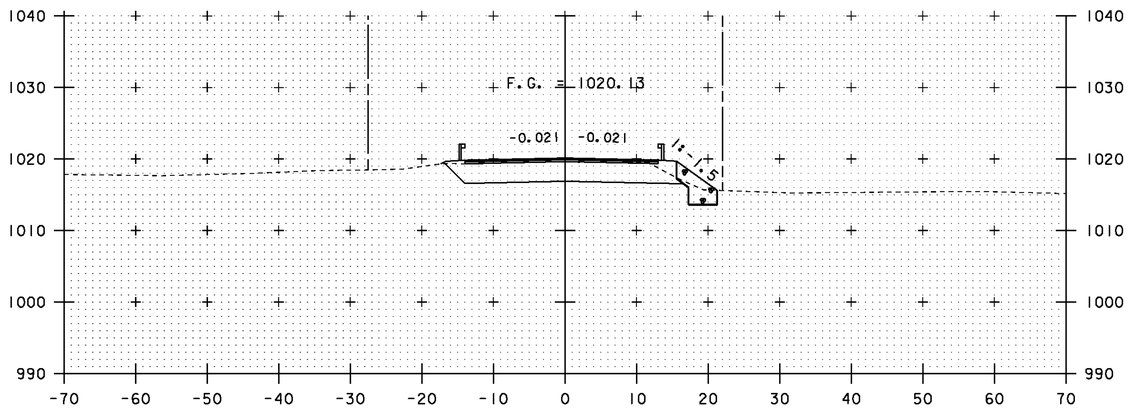


98+00

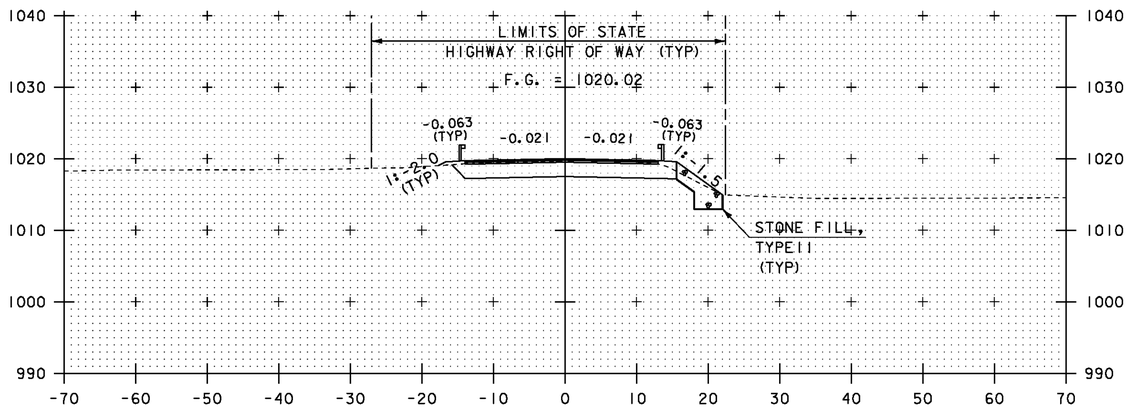
SCALE 1" = 10'-0"
10 0 10

STA. 97+50 TO STA. 98+25

PROJECT NAME:	EAST HAVEN
PROJECT NUMBER:	BRF 0269(11)
FILE NAME: s00c162xs.dgn	PLOT DATE: 08-AUG-2011
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. PELLETT
DESIGNED BY: J. LACROIX	CHECKED BY: J. LACROIX
MAINLINE SECTIONS #3	SHEET 37 OF 40

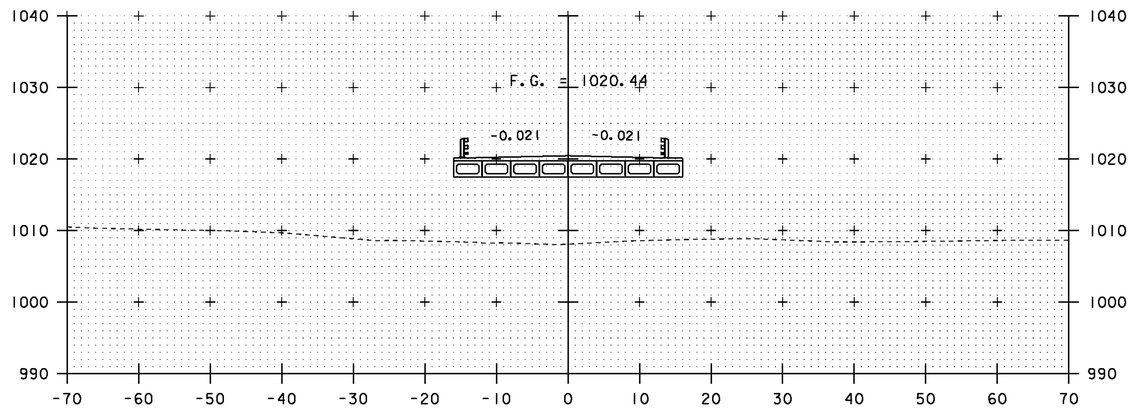


96+75

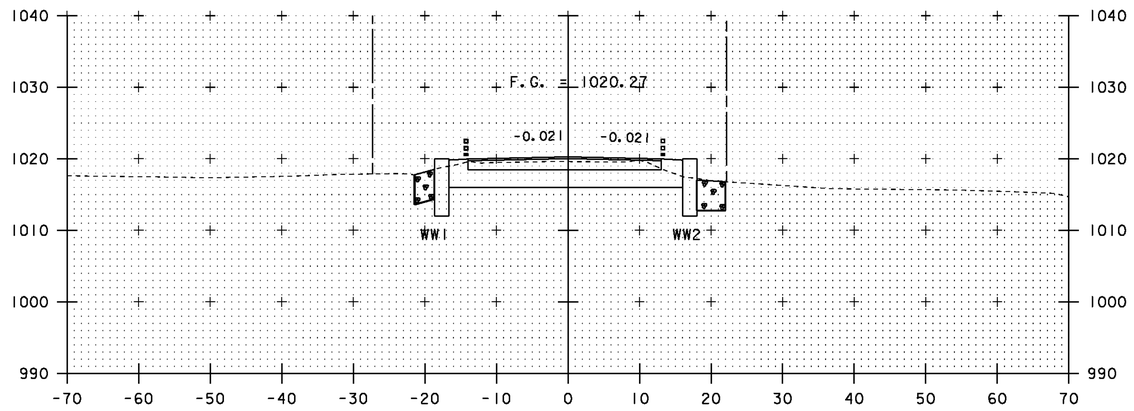


96+50

BEGIN PROJECT



97+25



97+00

BEGIN BRIDGE

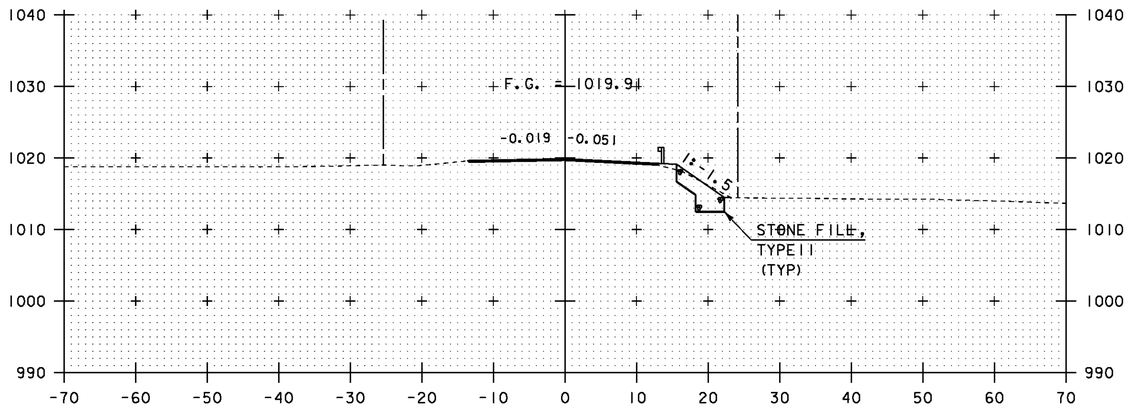
SCALE 1" = 10'-0"
10 0 10

STA. 96+50 TO STA. 97+25

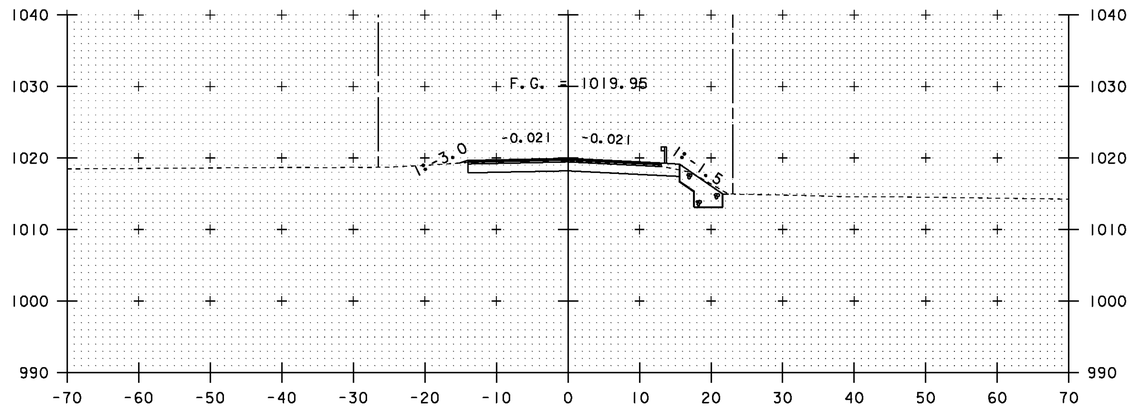
PROJECT NAME: EAST HAVEN
PROJECT NUMBER: BRF 0269(11)

FILE NAME: s00cl62xs.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. LACROIX
MAINLINE SECTIONS #2

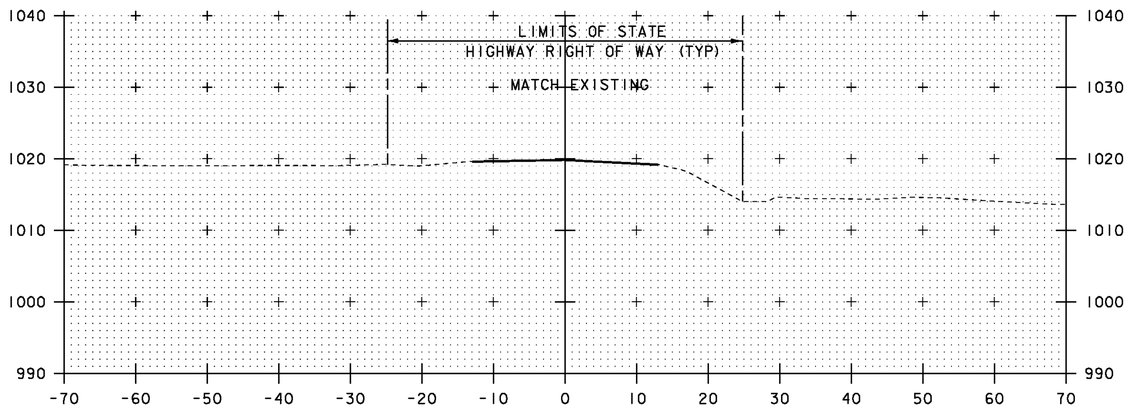
PLOT DATE: 08-AUG-2011
DRAWN BY: R. PELLETT
CHECKED BY: J. LACROIX
SHEET 36 OF 40



95+75

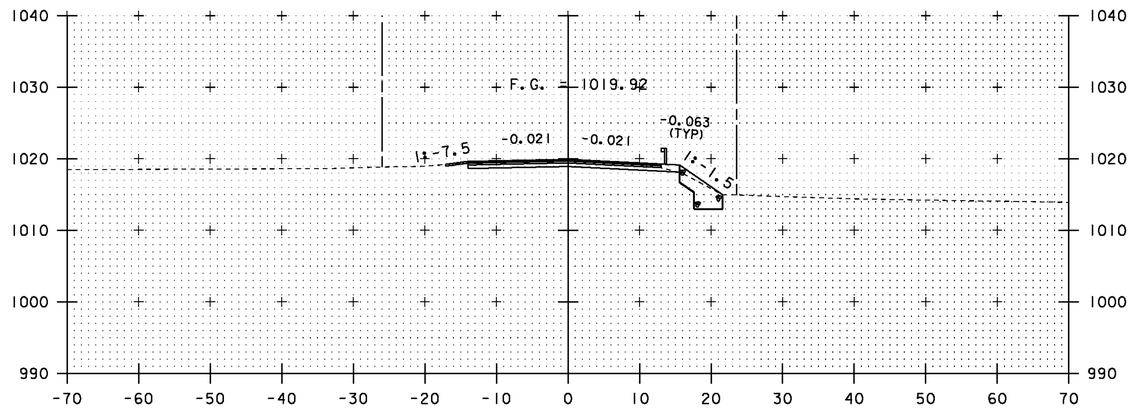


96+25



95+50

BEGIN APPROACH



96+00

SCALE 1" = 10'-0"
10 0 10

STA. 95+50 TO STA. 96+25

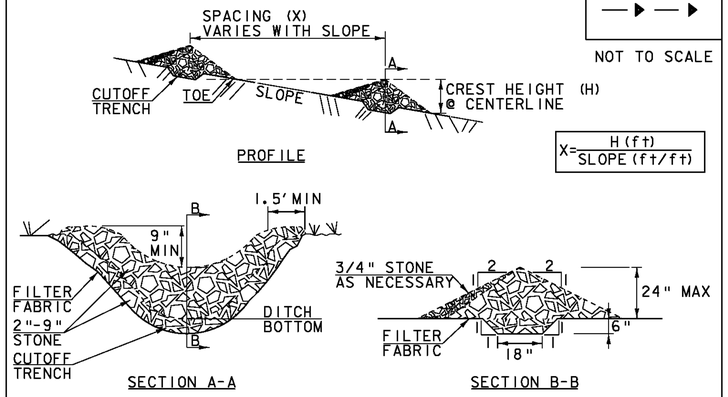
PROJECT NAME: EAST HAVEN
PROJECT NUMBER: BRF 0269(11)

FILE NAME: s00cl62xs.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. LACROIX
MAINLINE SECTIONS #1

PLOT DATE: 08-AUG-2011
DRAWN BY: R. PELLETT
CHECKED BY: J. LACROIX
SHEET 35 OF 40

SYMBOL

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION.
2. CHECK DAMS SHALL BE SPACED SO THAT THE ELEVATION OF THE CREST OFTHE DOWNSTREAM DAM IS AT THE SAME ELEVATION AS THE TOE OF THE UPSTREAM DAM.
3. 3/4" FILTERING STONE MAY BE ADDED TO THE FACE OF THE CHECK DAM AS NECESSARY.
4. EXTEND THE STONE A MINIMUM OF 1.5' BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
5. PROTECT CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
6. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.
7. MAXIMUM DRAINAGE AREA 2 ACRES.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

CHECK DAM

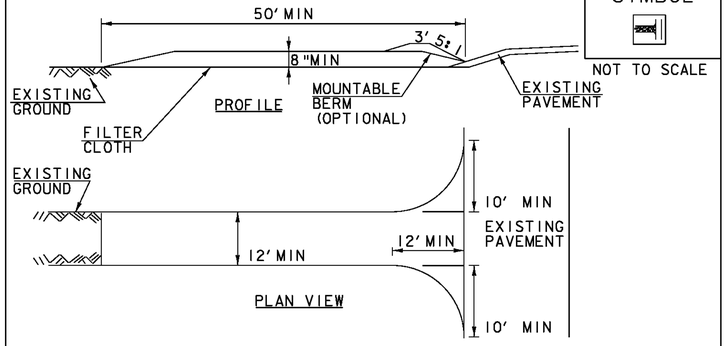
NOTES:
REFER TO 'THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR TEMPORARY STONE CHECK DAM, TYPE I (PAY ITEM 653.25)

REVISIONS	
MARCH 21, 2008	WHF
JANUARY 8, 2009	WHF

SYMBOL

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE- USE 1-4" STONE, RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH- NOT LESS THAN 50' (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES).
3. THICKNESS- NOT LESS THAN 8".
4. WIDTH- 12' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24' IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
6. SURFACE WATER- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

STABILIZED CONSTRUCTION ENTRANCE

NOTES:
REFER TO 'THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR VEHICLE TRACKING PAD (PAY ITEM 653.35) OR AS SPECIFIED IN THE CONTRACT.

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

VAOT RURAL AREA MIX

	LBS/AC				
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
37.5%	22.5	45	CREEPING RED FESCUE	85%	98%
37.5%	22.5	45	TALL FESCUE	90%	95%
5.0%	3	6	RED TOP	90%	95%
15.0%	9	18	BIRDSFOOT TREFOIL	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	85%	95%
100%	60	120			

VAOT URBAN AREA MIX

	LBS/AC				
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
42.5%	34	68	CREEPING RED FESCUE	85%	98%
10.0%	8	16	PERENNIAL RYE GRASS	90%	95%
42.5%	34	68	KENTUCKY BLUE GRASS	85%	85%
5.0%	4	8	ANNUAL RYE GRASS	85%	95%
100%	80	160			

SOIL AMENDMENT GUIDANCE

FERTILIZER		LIME	
BROADCAST	HYDROSEED	BROADCAST	HYDROSEED
10-20-10	*FOLLOW*	PELLETIZED	*FOLLOW*
500 LBS/AC	*MANUFACTURER*	2 TONS/AC	*MANUFACTURER*

CONSTRUCTION GUIDANCE

1. RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
2. URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
7. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED
8. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

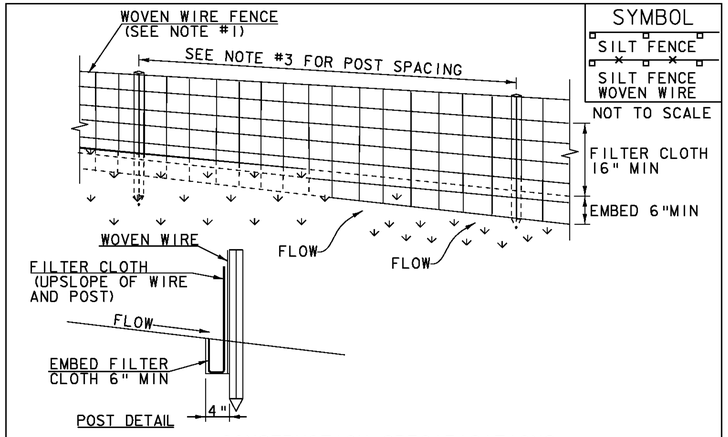
TURF ESTABLISHMENT

REVISIONS	
JUNE 23, 2009	WHF
JANUARY 15, 2010	WHF
FEBRUARY 16, 2011	WHF

PROJECT NAME: EAST HAVEN
PROJECT NUMBER: BRF 0269(11)

FILE NAME: s00c162erodet.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. LACROIX
EPSC DETAILS #2

PLOT DATE: 08-AUG-2011
DRAWN BY: R. PELLETT
CHECKED BY: J. LACROIX
SHEET 34 OF 40



SYMBOL

SILT FENCE

SILT FENCE WOVEN WIRE

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

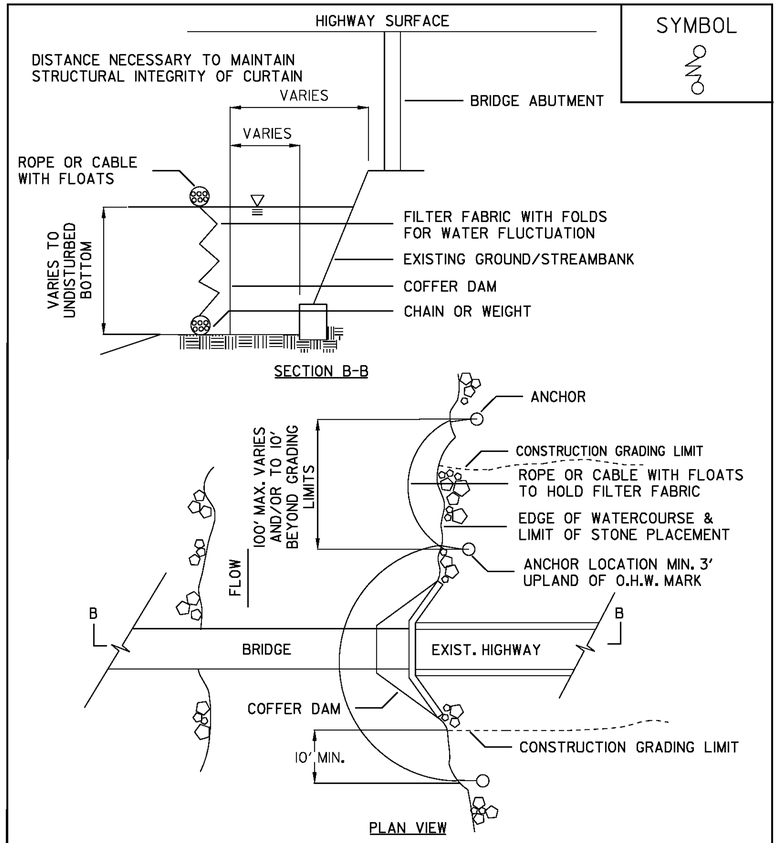
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

NOTES:
REFER TO 'THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- ' FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 AND AS SHOWN IN THE PLANS FOR ~~GEOTEXTILE FOR SILT FENCE (PAY ITEM 649.51) OR~~ GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.515).

REVISIONS	
MARCH 21, 2008	WHF
DECEMBER 11, 2008	WHF
JANUARY 13, 2009	WHF

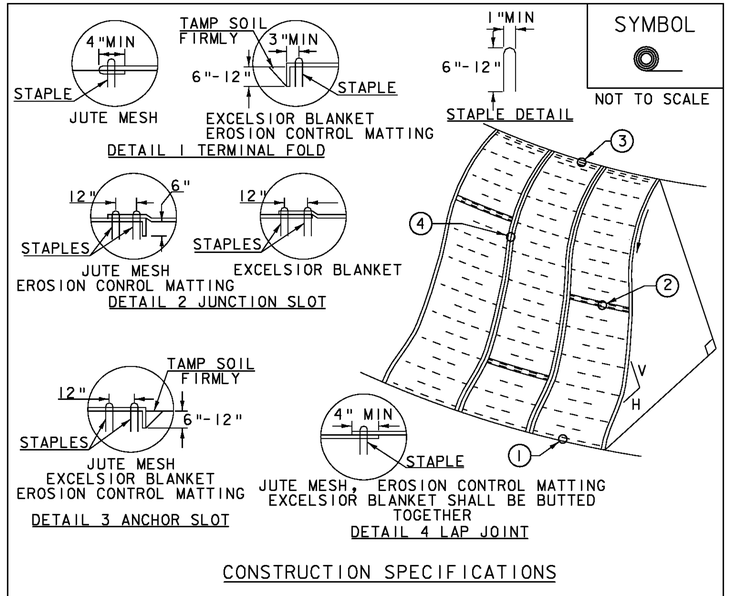


SYMBOL

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT AGENCY OF TRANSPORTATION

TURBIDITY CURTAIN

NOTES:
THIS ITEM SHALL BE PAID FOR UNDER ITEM 649.61 GEOTEXTILE FOR FILTER CURTAIN



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

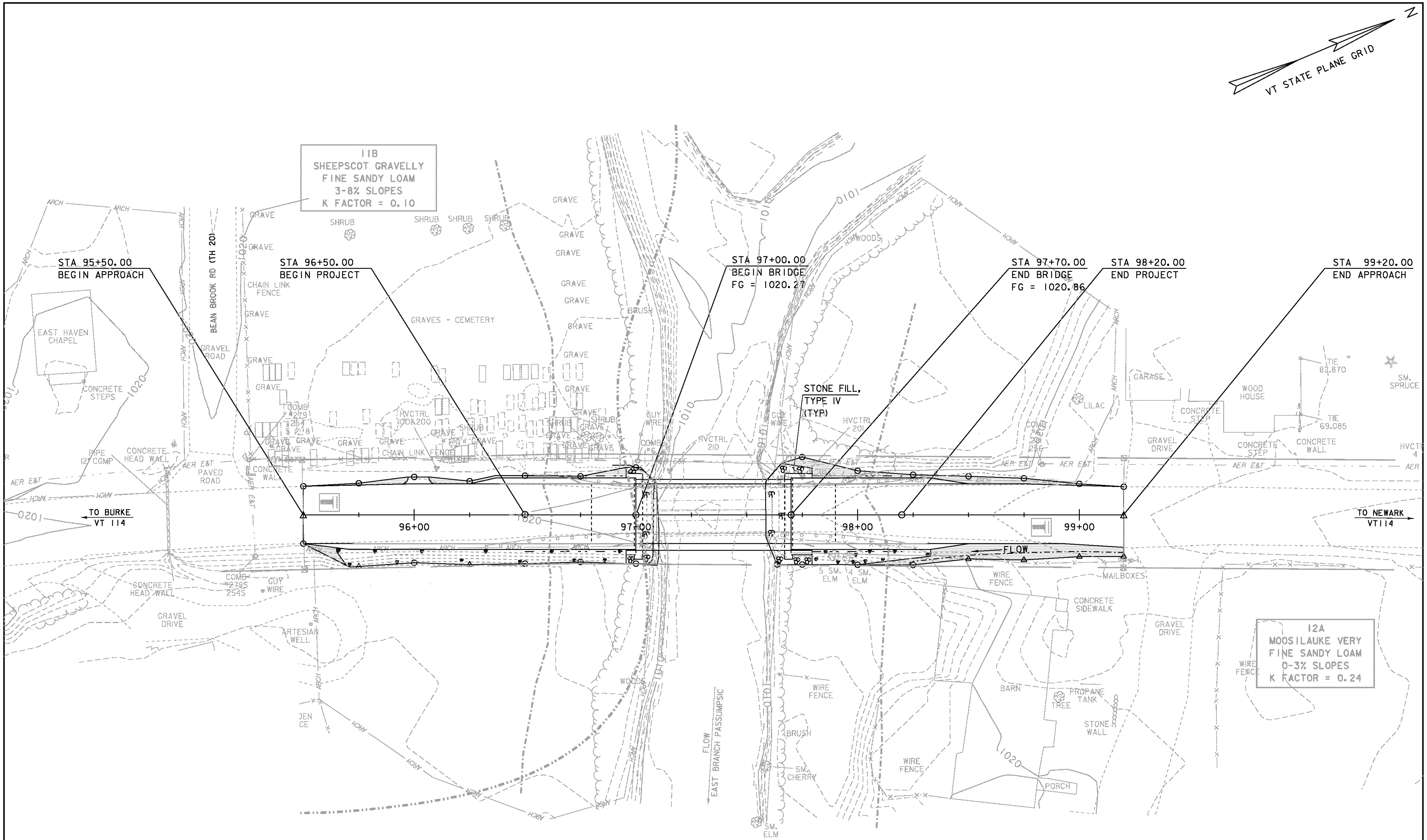
NOTES:
REFER TO 'THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- ' FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) ~~OR PERMANENT EROSION MATTING (PAY ITEM 653.21).~~

REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF

PROJECT NAME: EAST HAVEN
PROJECT NUMBER: BRF 0269(11)

FILE NAME: s00ci62erodet.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. LACROIX
EPSC DETAILS #1

PLOT DATE: 08-AUG-2011
DRAWN BY: R. PELLETT
CHECKED BY: J. LACROIX
SHEET 33 OF 40



EPSC FINAL SITE PLAN

SCALE 1" = 20'-0"

20 0 20

AREAS OF EARTH DISTURBANCE THAT WILL REQUIRE REVEGETATION.

PROJECT NAME: EAST HAVEN	
PROJECT NUMBER: BRF 0269(11)	
FILE NAME: s00c162erobdr.dgn	PLOT DATE: 08-AUG-2011
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. PELLETT
DESIGNED BY: J. LACROIX	CHECKED BY: J. LACROIX
EPSC FINAL SITE PLAN	SHEET 32 OF 40

TEMPORARY EROSION MATTING
STA 95+50.00 - 96+96.83 RT
STA 97+79.17 - 99+20.00 RT

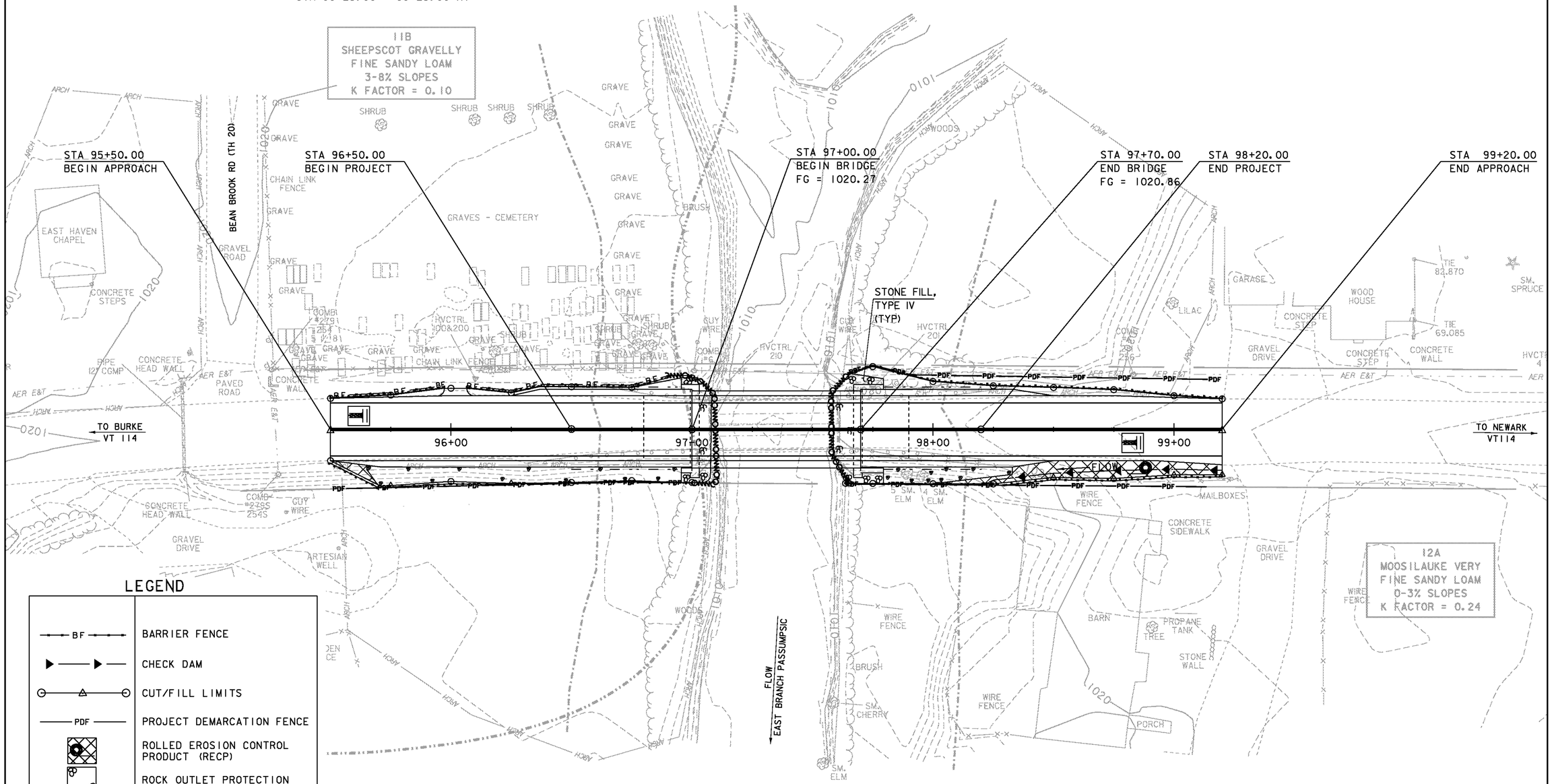
GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED
STA 95+50.00 - 95+97.19 LT
STA 95+50.00 - 97+00.00 RT
STA 96+06.62 - 96+90.00 LT
STA 97+65.00 - 99+20.00 LT/RT

BARRIER FENCE
STA 95+50.00 - 95+97.19 LT
STA 96+06.62 - 96+90.00 LT

PROJECT DEMARCATION FENCE
STA 95+50.00 - 97+05.00 RT
STA 97+65.00 - 99+20.00 LT/RT

TEMPORARY STONE CHECK DAM, TYPE I
STA 98+25.00 - 99+25.00 RT

N
VT STATE PLANE GRID



LEGEND

BF	BARRIER FENCE
	CHECK DAM
	CUT/FILL LIMITS
PDF	PROJECT DEMARCATION FENCE
	ROLLED EROSION CONTROL PRODUCT (RECP)
	ROCK OUTLET PROTECTION
	SILT FENCE, WIRE WOVEN REINFORCED
	STABILIZED CONSTRUCTION ENTRANCE
	TURBIDITY CURTAIN

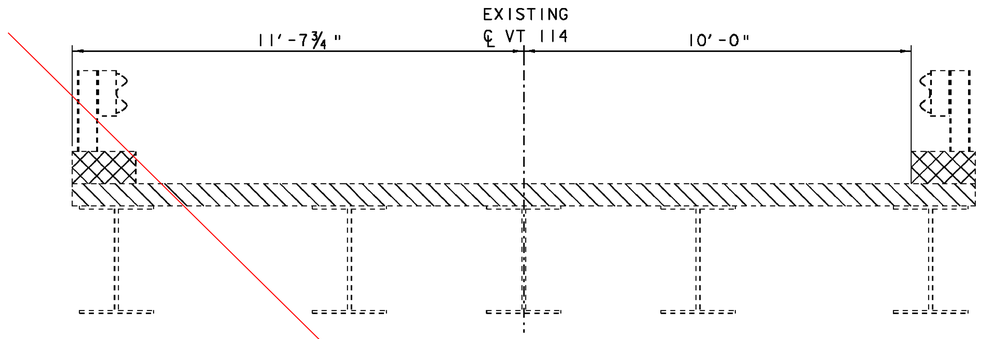
EPSC CONSTRUCTION SITE PLAN

SCALE 1" = 20'-0"
20 0 20

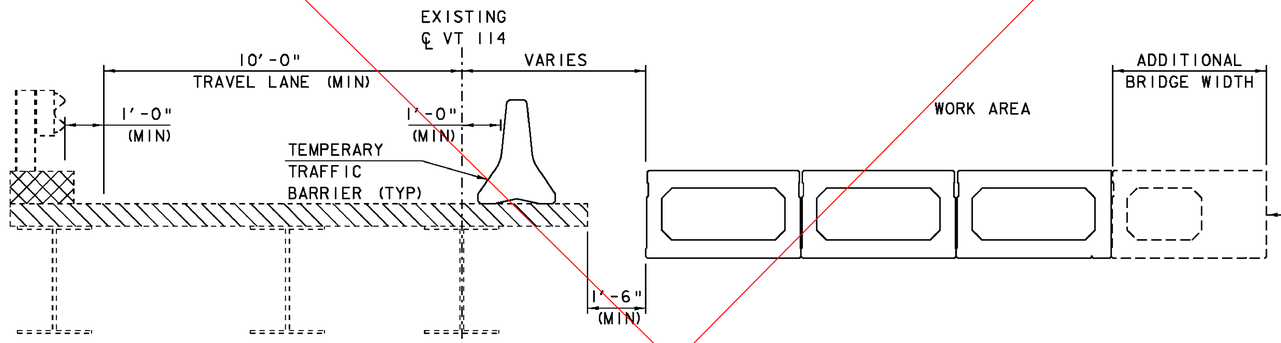
PROJECT NAME: EAST HAVEN
PROJECT NUMBER: BRF 0269(11)

FILE NAME: s00c162erobdr.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. LACROIX
EPSC CONSTRUCTION SITE PLAN

PLOT DATE: 08-AUG-2011
DRAWN BY: R. PELLETT
CHECKED BY: J. LACROIX
SHEET 31 OF 40

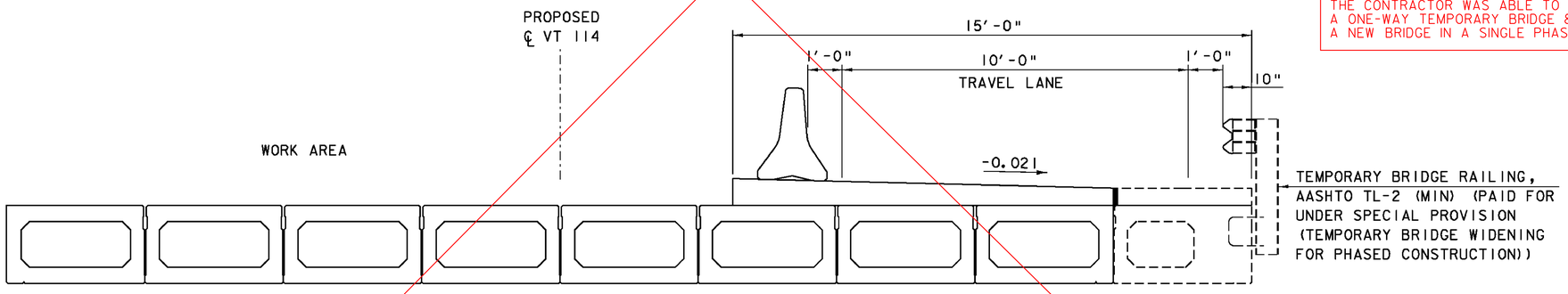


EXISTING TYPICAL SECTION



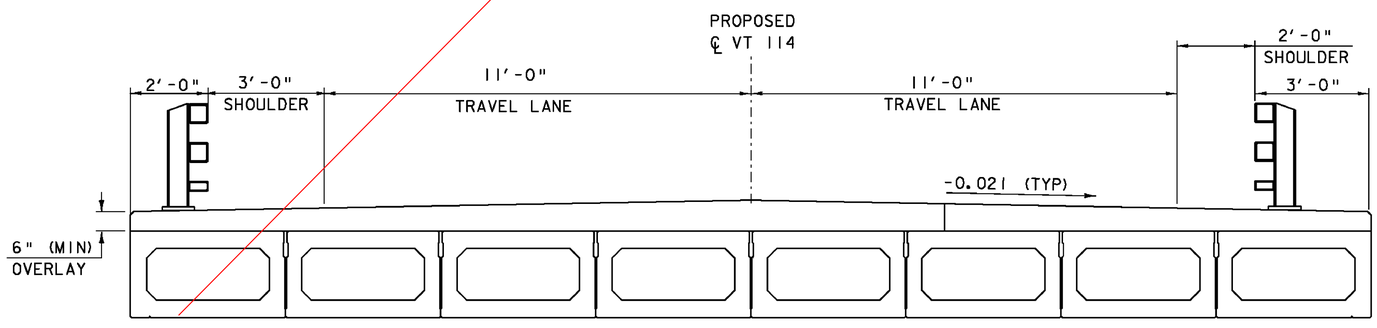
CONTRACTOR TO PROVIDE ADDITIONAL WIDTH FOR PHASED CONSTRUCTION. SEE SPECIAL PROVISIONS FOR ITEM 900.645 SPECIAL PROVISION (TEMPORARY BRIDGE WIDENING FOR PHASED CONSTRUCTION)

PHASE I



TEMPORARY BRIDGE RAILING, AASHTO TL-2 (MIN) (PAID FOR UNDER SPECIAL PROVISION (TEMPORARY BRIDGE WIDENING FOR PHASED CONSTRUCTION))

PHASE II



FINAL CONDITION

NOTE:

THE TRAFFIC CONTROL PHASING SHOWN IS OF A CONCEPTUAL NATURE ONLY. THE CONTRACTOR SHALL SUPPLY A DETAILED TRAFFIC CONTROL PLAN, WHICH NEED NOT UTILIZE PHASING OR THE PHASING SHOWN HERE. SEE THE TRAFFIC CONTROL NOTES AND THE SPECIFICATIONS FOR ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE) FOR MORE DETAILS.

- VOID -

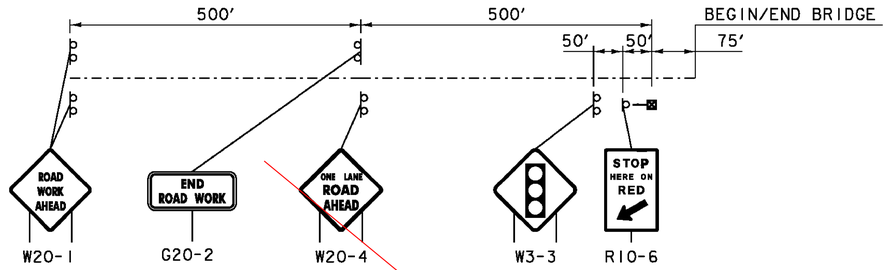
NOTE - THIS PHASED CONCEPTUAL DESIGN WAS NOT USED.
THE CONTRACTOR WAS ABLE TO INSTALL A ONE-WAY TEMPORARY BRIDGE & CONSTRUCT A NEW BRIDGE IN A SINGLE PHASE.

SCALE ½" = 1'-0"
0 1 2

PROJECT NAME: EAST HAVEN
PROJECT NUMBER: BRF 0269(11)

FILE NAME: s00c162phasing.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. LACROIX
TRAFFIC PHASING TYPICALS

PLOT DATE: 08-AUG-2011
DRAWN BY: R. PELLETT
CHECKED BY: J. LACROIX
SHEET 11 OF 40



APPROACH SIGNS

NOT TO SCALE

SEE NOTE SHEET II

TIMING SEQUENCE FOR PORTABLE SIGNALS

MAXIMUM GREEN	25 SECONDS
MINIMUM GREEN	8 SECONDS
EXTENSION	2 SECONDS
ALL-RED CLEARANCE	16 SECONDS

LEGEND

- REMOVAL OF EXISTING MARKINGS
- SIGN POSTS
- TYPE III BARRICADES (MOD.)
- TEMP. TRAFFIC BARRIER
- REFLECTORIZED BARREL
- PTSS — PORTABLE TRAFFIC SIGNAL SYSTEM
- TEMPORARY STOP BAR

TRAFFIC CONTROL - PHASE I

SCALE 1" = 20'-0"

20 0 20

PROJECT NAME:	EAST HAVEN
PROJECT NUMBER:	BRF 0269(11)
FILE NAME: s00ci62phia.dgn	PLOT DATE: 08-AUG-2011
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. PELLETT
DESIGNED BY: J. SALVATORI	CHECKED BY: J. SALVATORI
TRAFFIC CONTROL - PHASE I	SHEET 12 OF 40

N

VT STATE PLANE GRID

SEE NOTE - SHEET II

ROAD WORK AHEAD

W20-1

STA 95+50.00
BEGIN APPROACH

BEAN BROOK RD (TH 20)

STA 96+50.00
BEGIN PROJECT

STA 97+00.00
BEGIN BRIDGE
FG = 1020.27

STA 97+70.00
END BRIDGE
FG = 1020.86

STA 98+20.00
END PROJECT

STA 99+20.00
END APPROACH

- VOID -

STOP HERE ON RED

R10-6

W3-3

PTSS

TO BURKE
VT 114

96+00

97+00

98+00

99+00

PTSS

TO NEWARK
VT114

W1-8

W3-3

STOP HERE ON RED

R10-6

W1-8

FLOW
EAST BRANCH PASSUMPSIC

LEGEND

- REMOVAL OF EXISTING MARKINGS
- SIGN POSTS
- TYPE III BARRICADES (MOD.)
- TEMP. TRAFFIC BARRIER
- REFLECTORIZED BARREL
- PORTABLE TRAFFIC SIGNAL SYSTEM (PTSS)
- TEMPORARY STOP BAR

TIMING SEQUENCE FOR PORTABLE SIGNALS

MAXIMUM GREEN	25 SECONDS
MINIMUM GREEN	8 SECONDS
EXTENSION	2 SECONDS
ALL-RED CLEARANCE	16 SECONDS

TRAFFIC CONTROL - PHASE II

SCALE 1" = 20'-0"

20 0 20

PROJECT NAME: EAST HAVEN
PROJECT NUMBER: BRF 0269(11)

FILE NAME: s00ci62phIIa2.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. SALVATORI
TRAFFIC CONTROL - PHASE II

PLOT DATE: 08-AUG-2011
DRAWN BY: R. PELLETT
CHECKED BY: J. SALVATORI
SHEET 13 OF 40

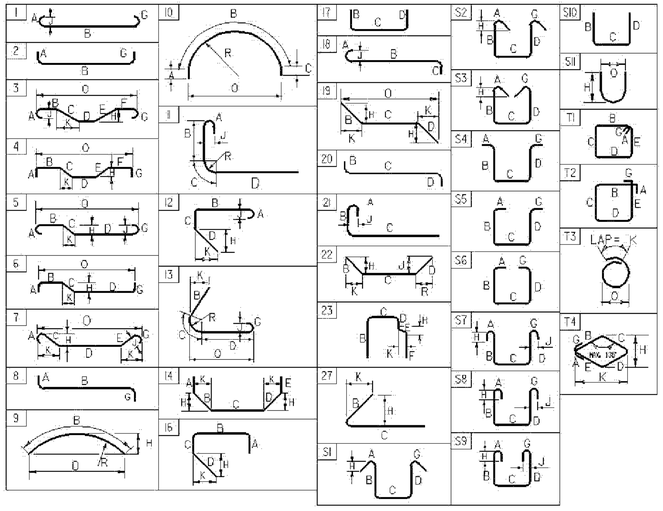
STATE OF VERMONT
AGENCY OF TRANSPORTATION

REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	DECK																
	66	5	36'- 3"	ES501	STR	36'- 3"											
△	73	5	10'- 6"	ES502	STR	10'- 6"											
	71	5	20'- 6"	ES503	STR	20'- 6"											
	66	5	4'- 8"	ES504	17		2'- 2"	2'- 6"	---								
△	132	6	23'- 2"	ES601	3	0'- 8"	2'- 6"	20'- 0"	---	---	---	---	17'- 4"	0'- 6"	10'- 0"		
	APPROACH SLAB #1																
	21	5	8'- 6"	1EAS501	STR	8'- 6"											
	21	5	17'- 6"	1EAS502	STR	17'- 6"											
	33	9	20'- 9"	1EAS901	1	1'- 3"	19'- 6"					---		0'- 9"			
	APPRAOCH SLAB #2																
	21	5	8'- 6"	2EAS501	STR	8'- 6"											
	21	5	17'- 6"	2EAS502	STR	17'- 6"											
	33	9	20'- 9"	2EAS901	1	1'- 3"	19'- 6"					---		0'- 9"			
	ABUTMENT #1																
	19	5	16'- 6"	1A501	STR	16'- 6"											
	19	5	21'- 2"	1A502	STR	21'- 2"											
	78	6	10'- 3"	1A601	S10		3'- 6"	3'- 3"	3'- 6"								
△	8	5	12'- 6"	1EA501	STR	12'- 6"											
	8	5	21'- 2"	1EA502	STR	21'- 2"											
				1EA503	BAR NOT USED												
	33	5	3'- 9"	1EA504	1	0'- 7"	2'- 7"					0'- 7"		0'- 5"			
	3	5	10'- 3"	1EA505	S10		4'- 7"	1'- 1"	4'- 7"								
	33	6	7'- 1"	1EA601	S10		3'- 0"	1'- 1"	3'- 0"								
	WINGWALL #1																
△	10	5	7'- 9"	1W501	STR	7'- 9"											
	12	5	9'- 2"	1W502	22		2'- 2"	7'- 0"	---								
	4	5	5'- 11"	1W503	S10		2'- 2"	1'- 7"	2'- 2"								
	8	5	7'- 0"	1EW501	S10		2'- 2"	4'- 10"	---								
	4	5	5'- 11"	1EW502	S10		2'- 2"	1'- 7"	2'- 2"								
	WINGWALL #2																
	8	5	4'- 9"	2W501	STR	4'- 9"											
	12	5	9'- 2"	2W502	22		2'- 2"	7'- 0"	---								
	4	5	5'- 11"	2W503	S10		2'- 2"	1'- 7"	2'- 2"								
	8	5	4'- 10"	2EW501	STR	4'- 10"											
	4	5	3'- 11"	2EW502	S10		1'- 9"	2'- 2"	---								
	4	5	2'- 4"	2EW503	S10		0'- 2"	2'- 2"	---								
	6	5	7'- 7"	2EW504	S10		3'- 0"	1'- 7"	3'- 0"								
	ABUTMENT #2																
	19	5	16'- 6"	2A501	STR	16'- 6"											
	19	5	21'- 2"	2A502	STR	21'- 2"											
	78	6	11'- 1"	2A601	S10		3'- 11"	3'- 3"	3'- 11"								
△	8	5	12'- 6"	2EA501	STR	12'- 6"											
	8	5	21'- 2"	2EA502	STR	21'- 2"											
				2EA503	BAR NOT USED												
	33	5	3'- 9"	2EA504	1	0'- 7"	2'- 7"					0'- 7"		0'- 5"			
	3	5	10'- 3"	2EA505	S10		4'- 7"	1'- 1"	4'- 7"								
	33	6	7'- 1"	2EA601	S10		3'- 0"	1'- 1"	3'- 0"								
	WINGWALL #3																
△	22	5	8'- 3"	3W501	STR	8'- 3"											
	12	5	14'- 2"	3W502	22		2'- 2"	12'- 0"	---								
	10	5	5'- 11"	3W503	S10		2'- 2"	1'- 7"	2'- 2"								
	8	5	12'- 0"	3EW501	22		2'- 2"	9'- 10"	---								
	10	5	5'- 11"	3EW502	S10		2'- 2"	1'- 7"	2'- 2"								
	WINGWALL #4																
	20	5	5'- 3"	4W501	STR	5'- 3"											
	12	5	14'- 2"	4W502	22		2'- 2"	12'- 0"	---								
	10	5	5'- 11"	4W503	S10		2'- 2"	1'- 7"	2'- 2"								
	8	5	9'- 10"	4EW501	STR	9'- 10"											
	4	5	3'- 11"	4EW502	S10		1'- 9"	2'- 2"	---								
	4	5	2'- 4"	4EW503	S10		0'- 2"	2'- 2"	---								
	12	5	7'- 7"	4EW504	S10		3'- 0"	1'- 7"	3'- 0"								

~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-SI). ALL BARS SHALL BE GRADE 60, 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.

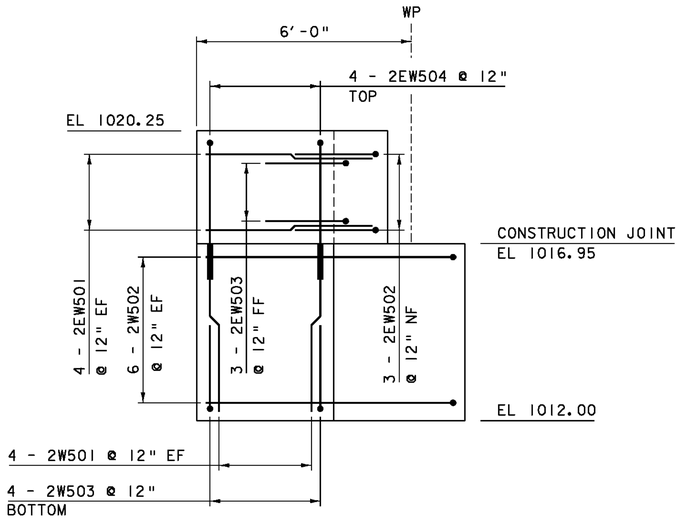


ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER INCHES	AREA INCHES^2	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.044	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.142
#9	3.400	1.128	1.00	3.544
#10	4.303	1.270	1.27	3.990
#11	5.313	1.410	1.56	4.430
#14	7.65	1.693	2.25	5.32
#18	13.60	2.257	4.00	7.09

PROJECT NAME: **EAST HAVEN**
PROJECT NUMBER: **BRF 0269(11)**

FILE NAME: **s00c152rss.xls** PLOT DATE: **8/2/2011**
PROJECT MANAGER: **K. HIGGINS** DRAWN BY: **R. PELLETT**
DESIGNED BY: **J. LACROIX** CHECKED BY: **J. LACROIX**
REINFORCING STEEL SCHEDULE SHEET **27** OF **40**

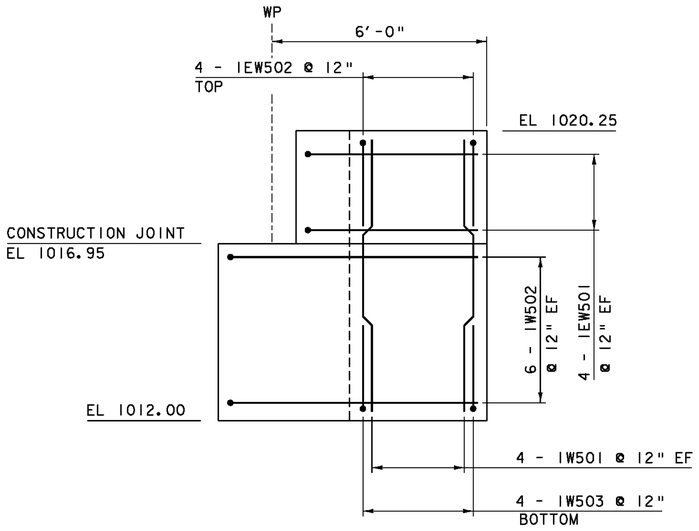


WINGWALL #2 ELEVATION VIEW

SCALE ½" = 1'-0"

WINGWALL #4 ELEVATION VIEW

SCALE ½" = 1'-0"

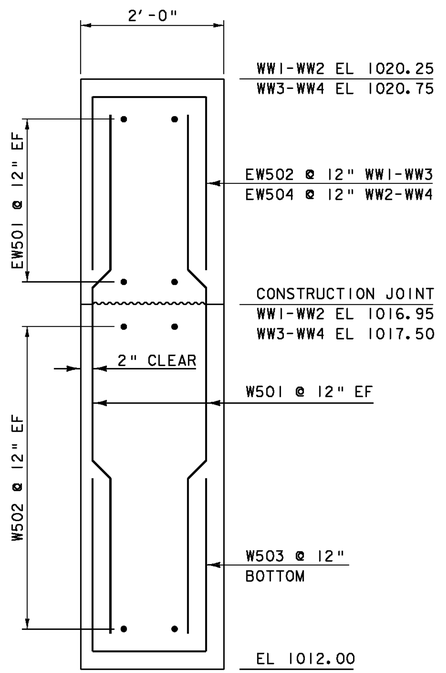


WINGWALL #1 ELEVATION VIEW

SCALE ½" = 1'-0"

WINGWALL #3 ELEVATION VIEW

SCALE ½" = 1'-0"



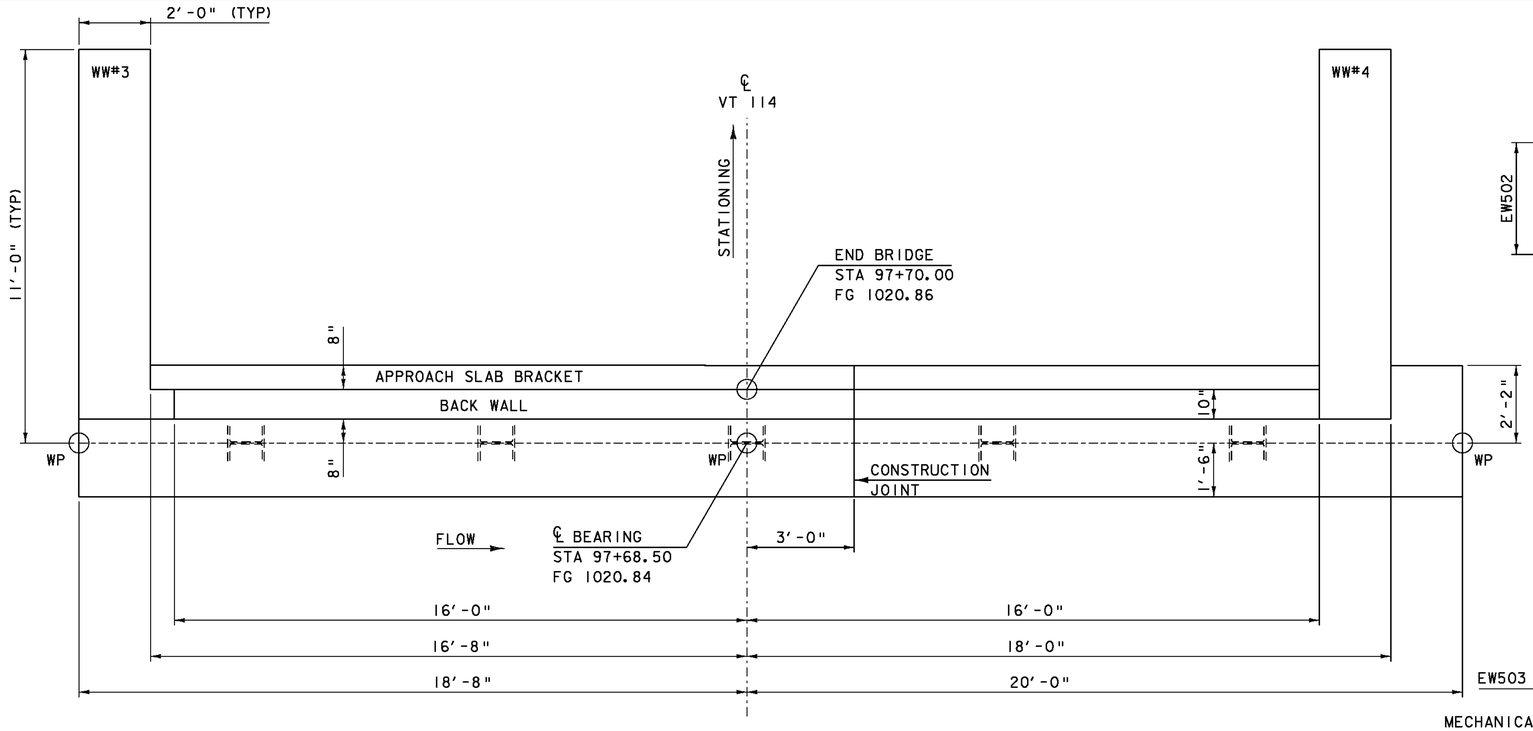
WINGWALL TYPICAL

SCALE 1" = 1'-0"

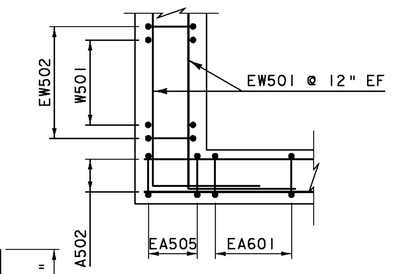
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

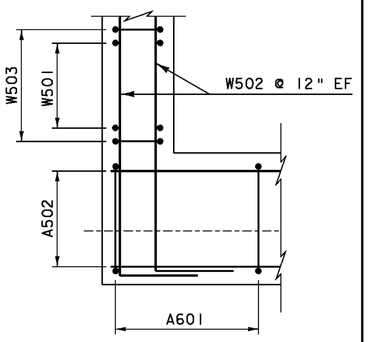
PROJECT NAME:	EAST HAVEN
PROJECT NUMBER:	BRF 0269(11)
FILE NAME: s00cl62sub.dgn	PLOT DATE: 08-AUG-2011
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. GRIFFIN	CHECKED BY: J. LACROIX
WINGWALL DETAILS	SHEET 26 OF 40



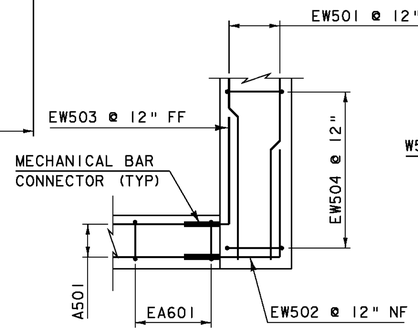
ABUTMENT #2 PLAN VIEW



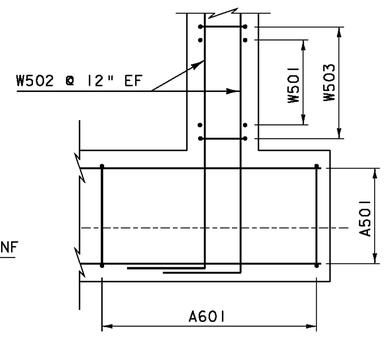
WINGWALL 1 & 3
CORNER DETAIL
ABOVE BRIDGE SEAT



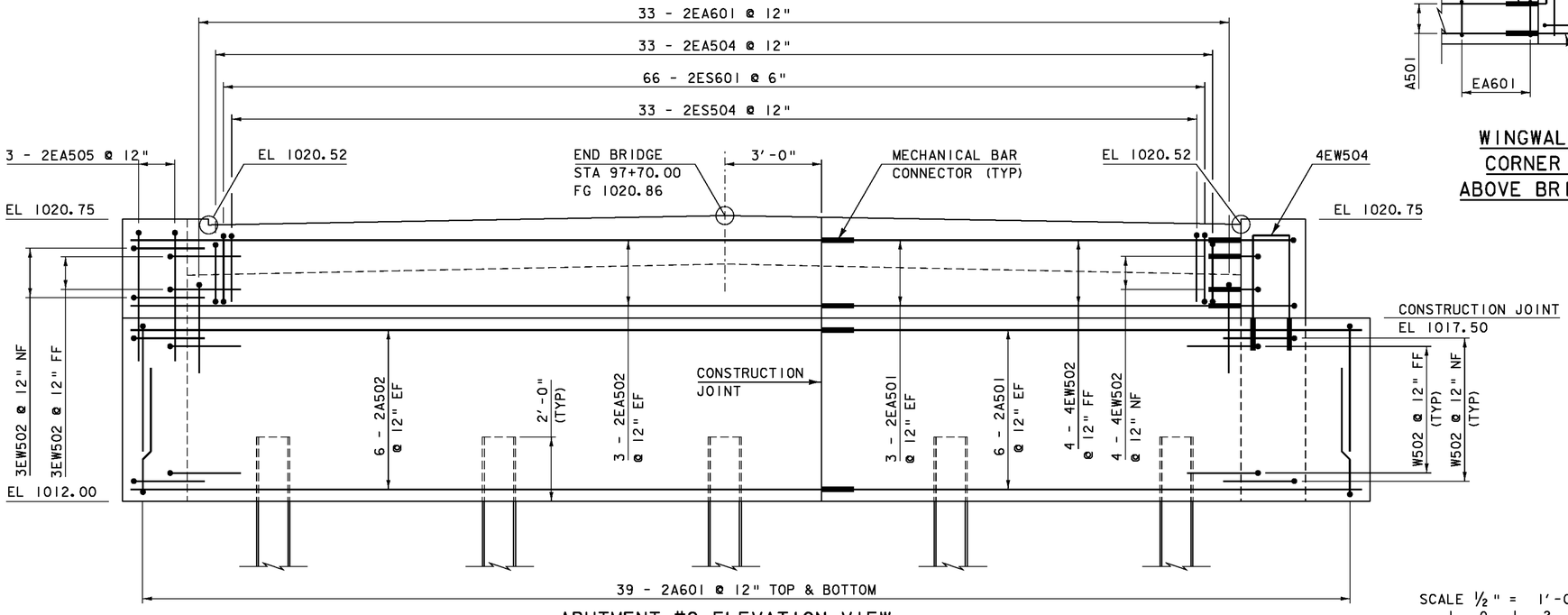
WINGWALL 1 & 3
CORNER DETAIL
BELOW BRIDGE SEAT



WINGWALL 2 & 4
CORNER DETAIL
ABOVE BRIDGE SEAT



WINGWALL 2 & 4
CORNER DETAIL
BELOW BRIDGE SEAT



ABUTMENT #2 ELEVATION VIEW

NOTE:

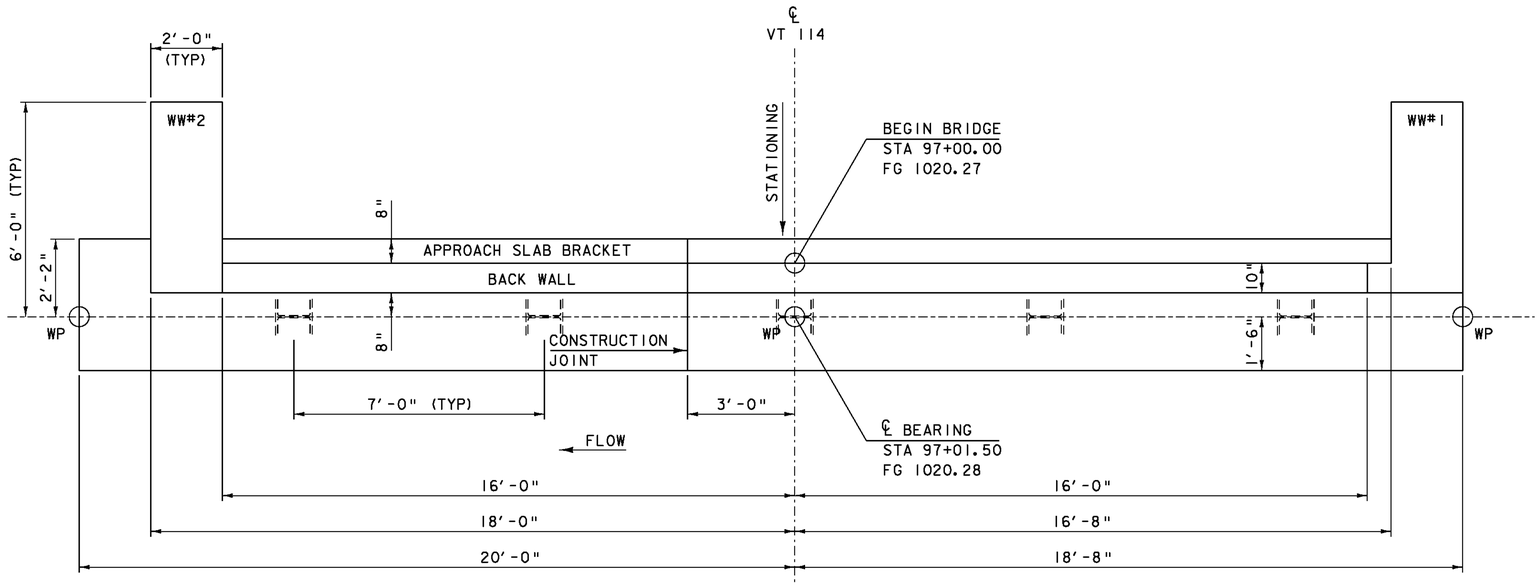
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

SCALE ½" = 1'-0"
0 1 2

PROJECT NAME: EAST HAVEN
PROJECT NUMBER: BRF 0269(11)

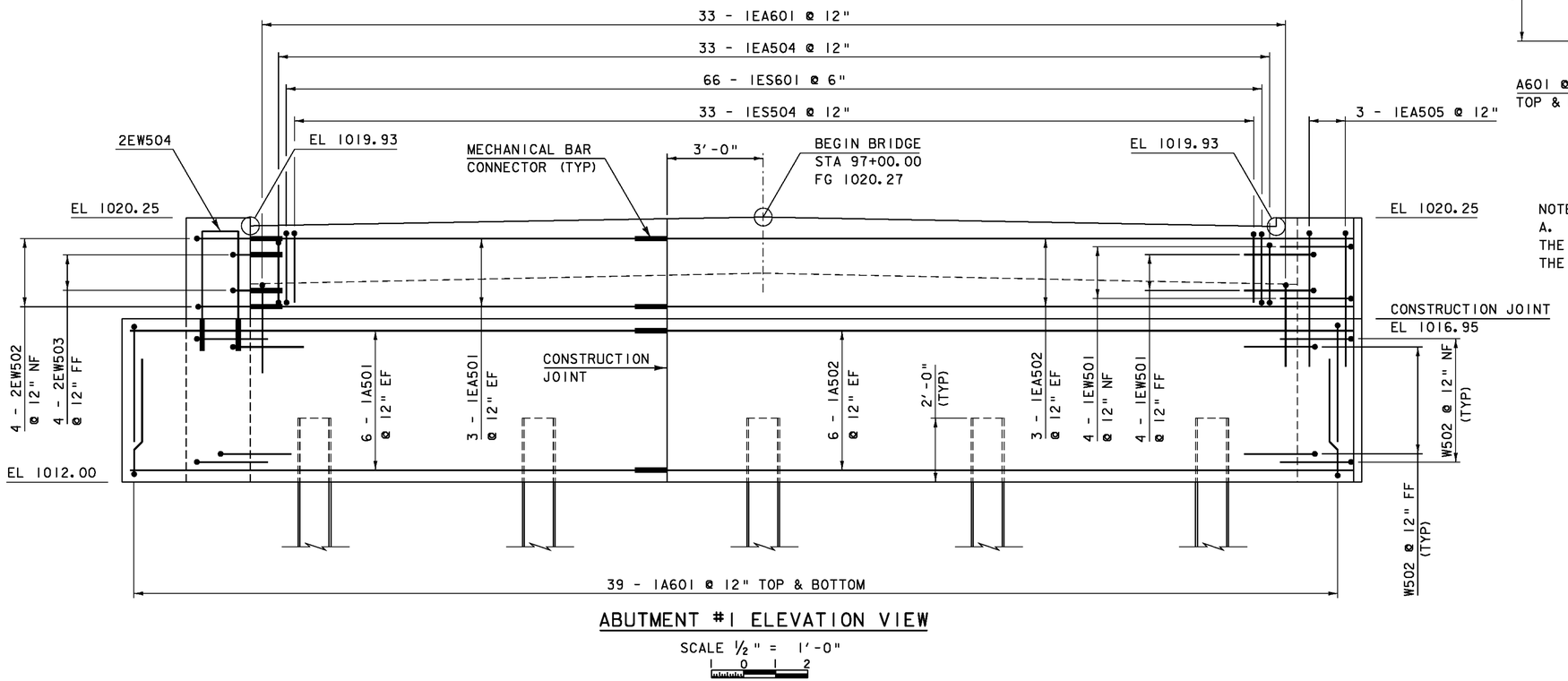
FILE NAME: s00c162sub.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIFFIN
ABUTMENT #2 DETAILS

PLOT DATE: 08-AUG-2011
DRAWN BY: J. SALVATORI
CHECKED BY: J. LACROIX
SHEET 25 OF 40



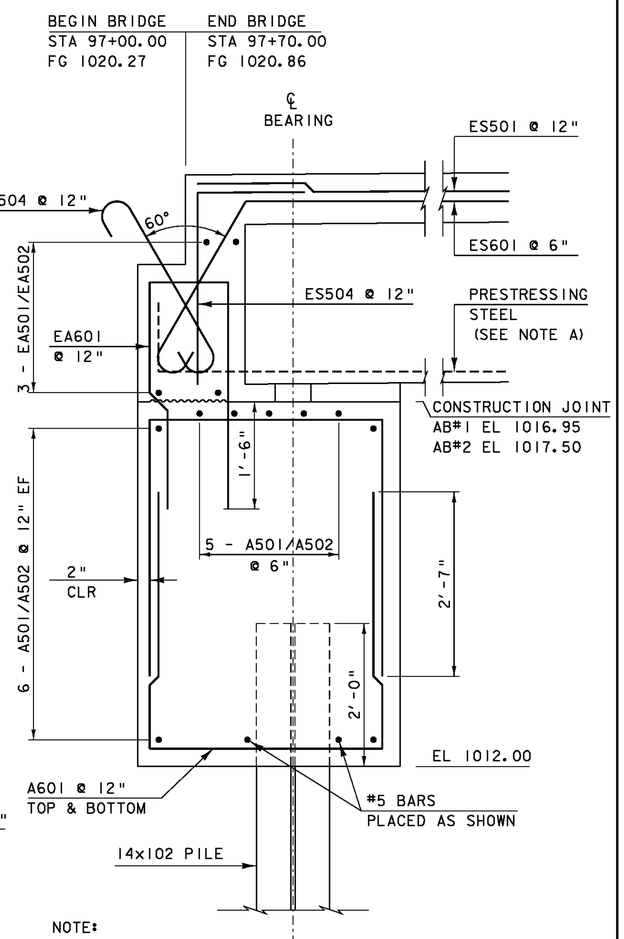
ABUTMENT #1 PLAN VIEW

SCALE ½" = 1'-0"



ABUTMENT #1 ELEVATION VIEW

SCALE ½" = 1'-0"



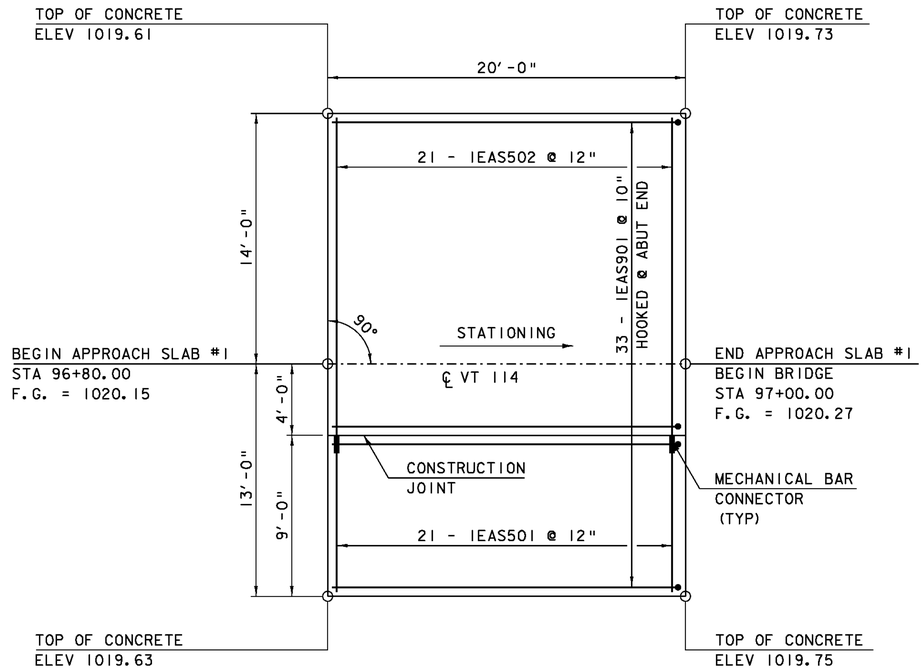
NOTE:
A. EXTEND EVERY OTHER BONDED PRESTRESSED STRANDS ON THE BOTTOM ROW 2'-8". IN LIEU OF EXTENDING THE STRANDS, THE CONTRACTOR MAY PROPOSE AN ALTERNATE DETAIL.

ABUTMENT TYPICAL

SCALE 1" = 1'-0"

NOTE:
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

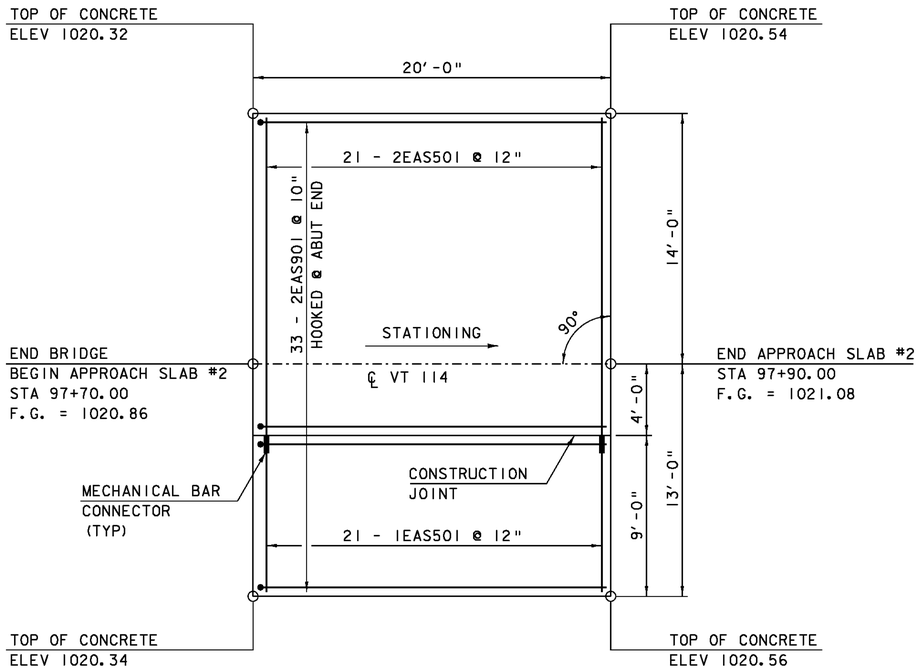
PROJECT NAME:	EAST HAVEN
PROJECT NUMBER:	BRF 0269(11)
FILE NAME: s00c162sub.dgn	PLOT DATE: 08-AUG-2011
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. GRIFFIN	CHECKED BY: J. LACROIX
ABUTMENT #1 DETAILS	SHEET 24 OF 40



APPROACH SLAB #1 PLAN

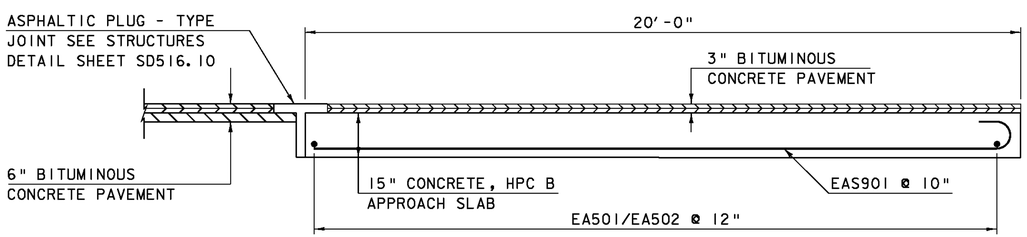
SCALE 1/4" = 1'-0"

FLOW
EAST BRANCH PASSUMPSIC



APPROACH SLAB #2 PLAN

SCALE 1/4" = 1'-0"



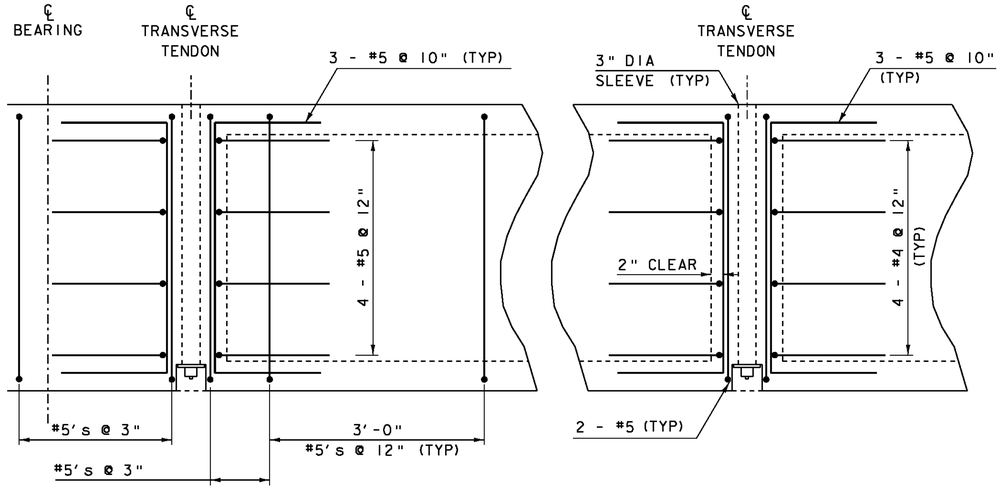
APPROACH SLAB ELEVATION (TYP)

SCALE 1/2" = 1'-0"

NOTE:

E = EPOXY COATED REINFORCING
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
3'-0" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME:	EAST HAVEN
PROJECT NUMBER:	BRF 0269(11)
FILE NAME: s00c162app.dgn	PLOT DATE: 08-AUG-2011
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. PELLETT
DESIGNED BY: R. PELLETT	CHECKED BY: J. GRIFFIN
APPROACH SLABS	SHEET 23 OF 40

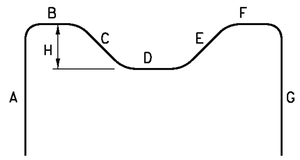


END DIAPHRAGM REINFORCING (INTERIOR & EXTERIOR)

SCALE ½" = 1'-0"

INTERMEDIATE DIAPHRAGM REINFORCING (INTERIOR & EXTERIOR)

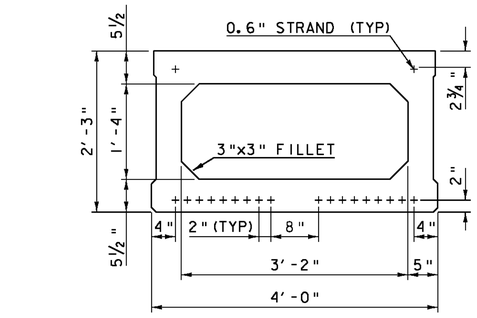
SCALE ½" = 1'-0"



A = 1'-8"
B = 0'-10"
C = 0'-9"
D = 0'-10"
E = 0'-9"
F = 0'-10"
G = 1'-8"
H = 0'-7½"

SPECIAL #5 BAR

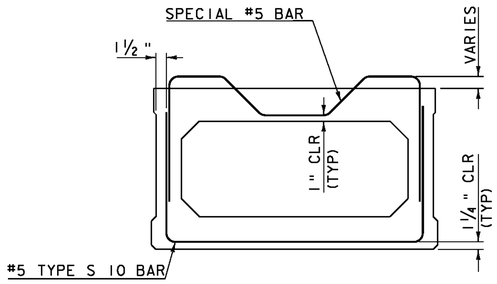
(NOT TO SCALE)



STRAND PATTERN (TYP)

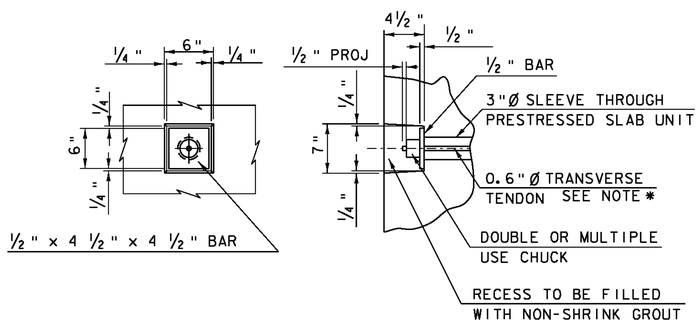
SCALE ½" = 1'-0"

NOTES:
1. EXTEND EVERY OTHER BONDED PRESTRESSED STRANDS ON THE BOTTOM ROW 2'-8". IN LIEU OF EXTENDING THE STRANDS, THE CONTRACTOR MAY PROPOSE AN ALTERNATE DETAIL.
2. REINFORCING STEEL NOT SHOWN FOR CLARITY.



SHEAR REINFORCMENT

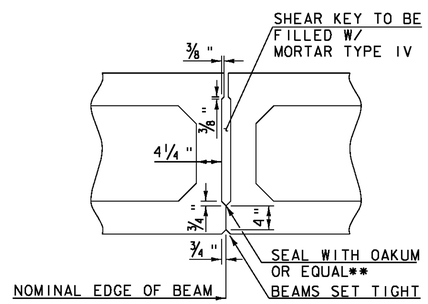
SCALE ½" = 1'-0"
STRANDS NOT SHOWN FOR CLARITY



0.6"Ø TRANSVERSE TENDON DETAIL

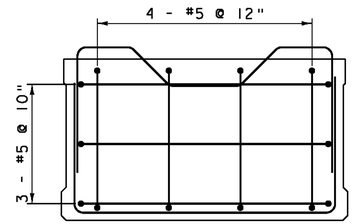
(NOT TO SCALE)

*TRANSVERSE TIES SHALL BE COVERED BY SEAMLESS POLYPROPYLENE SHEATH (WITH CORROSION INHIBITER GREASE BETWEEN SHEATH AND STRAND) FOR THE LENGTH OF STRAND, EXCEPT AT ANCHORAGE LOCATIONS, EACH STRAND SHALL BE TENSIONED TO 47 KIPS



SHEAR KEY DETAIL FOR BOX BEAM

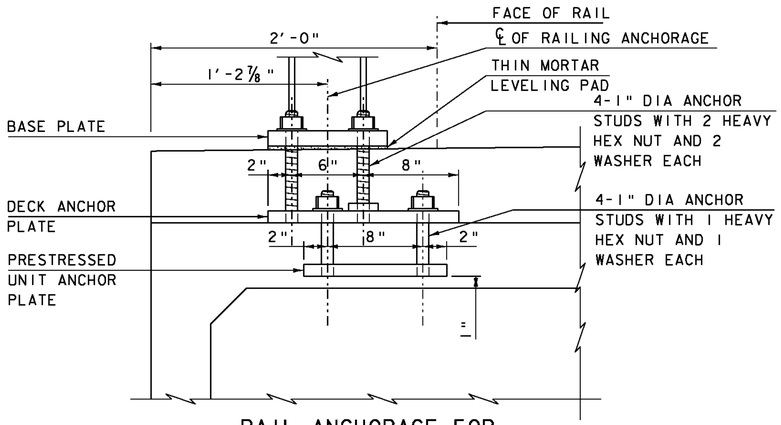
** NOTES:
1. INSTALL OAKUM AFTER UNITS HAVE BEEN PLACED.
2. PAYMENT INCIDENTAL TO ITEM 510.21 PRESTRESSED CONCRETE BOX BEAMS



BOX BEAM REINFORCING LAYOUT @ BEG/END BRIDGE

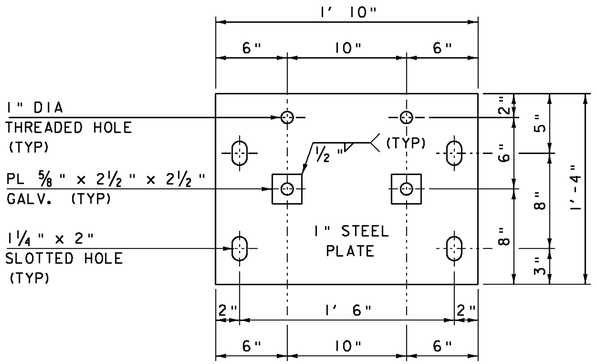
SCALE ½" = 1'-0"
NOTES:
1. ONE MAT EACH SIDE OF TRANSVERSE DUCTS
2. STRANDS NOT SHOWN FOR CLARITY

PROJECT NAME:	EAST HAVEN
PROJECT NUMBER:	BRF 0269(11)
FILE NAME: s00c162sup.dgn	PLOT DATE: 17-AUG-2011
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. GRIFFIN
DESIGNED BY: J. GRIFFIN	CHECKED BY: J. LACROIX
SUPERSTRUCTURE REINFORCING 2	SHEET 22 OF 40



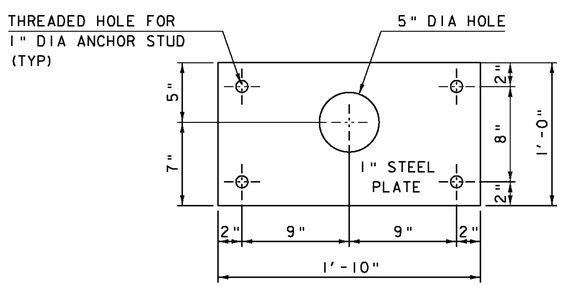
RAIL ANCHORAGE FOR PRE-STRESSED CONCRETE BRIDGE

NOT TO SCALE



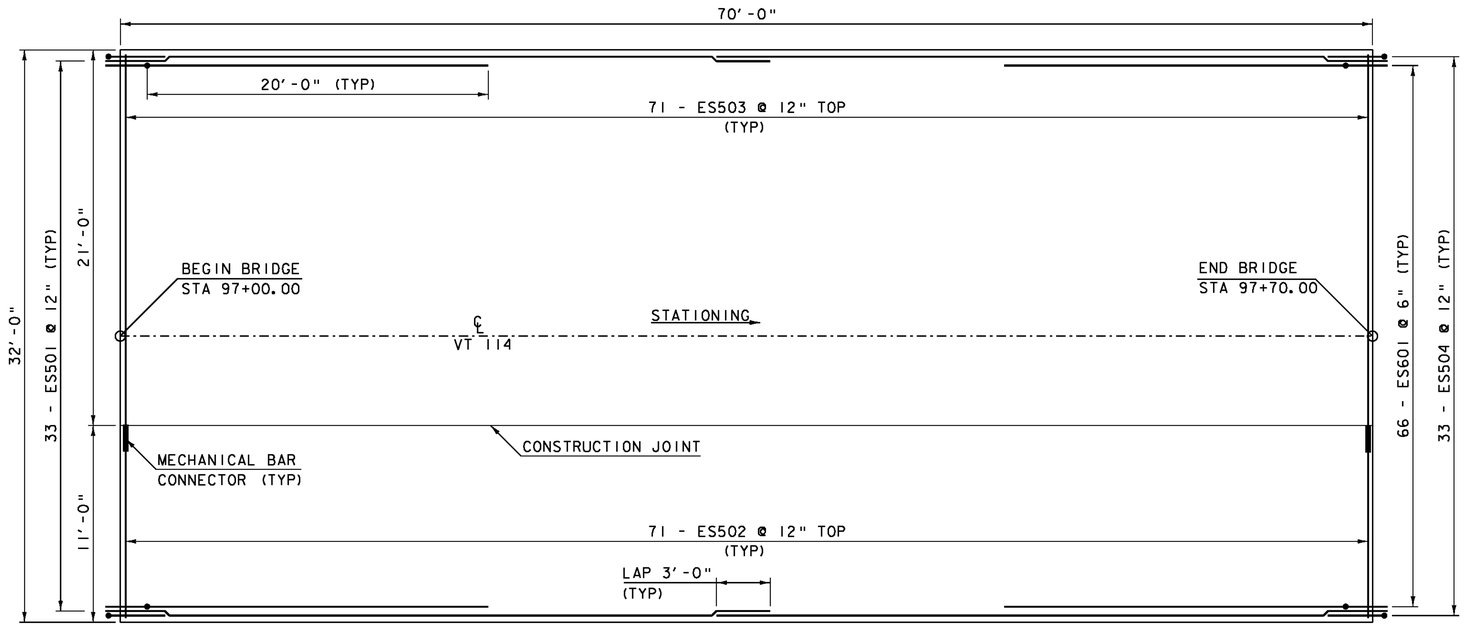
DECK ANCHOR PLATE

NOT TO SCALE



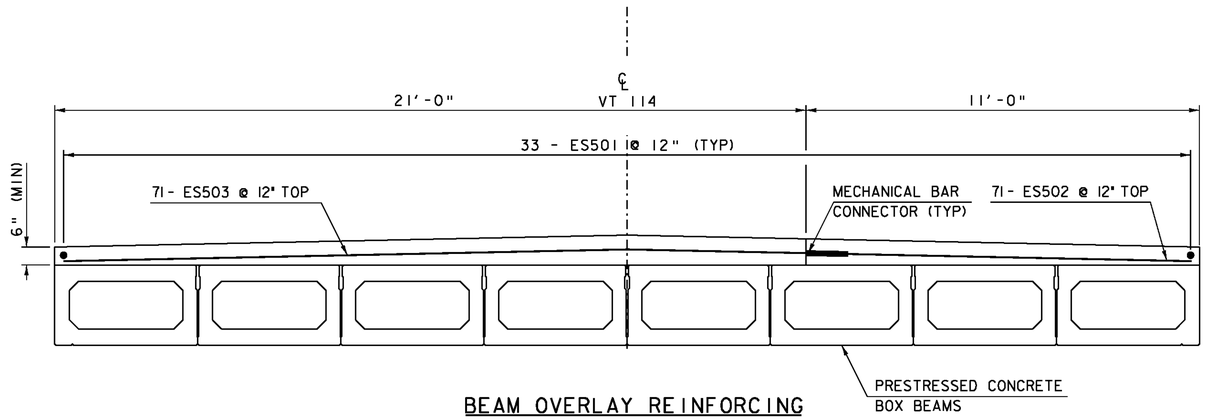
PRESTRESSED UNIT ANCHOR PLATE

NOT TO SCALE



BEAM OVERLAY REINFORCING

SCALE ⅛" = 1'-0"



BEAM OVERLAY REINFORCING

SCALE ¼" = 1'-0"

NOTES:

1. THE COST OF DECK ANCHOR PLATE AND THE RAILING ANCHOR STUDS SHALL BE INCLUDED IN THE BID PRICE BID FOR THE BRIDGE RAILING
2. THE COST OF ANCHOR PLATE AND STUDS CAST INTO PRESTRESSED CONCRETE UNITS SHALL BE INCLUDED IN THE BID PRICE BID FOR THE PRESTRESSED UNIT.
3. SEE STANDARD S-364A FOR BRIDGE RAIL DETAILS ABOVE THE TOP OF THE OVERLAY.

NOTE:

NF = NEAR FACE
FF = FAR FACE
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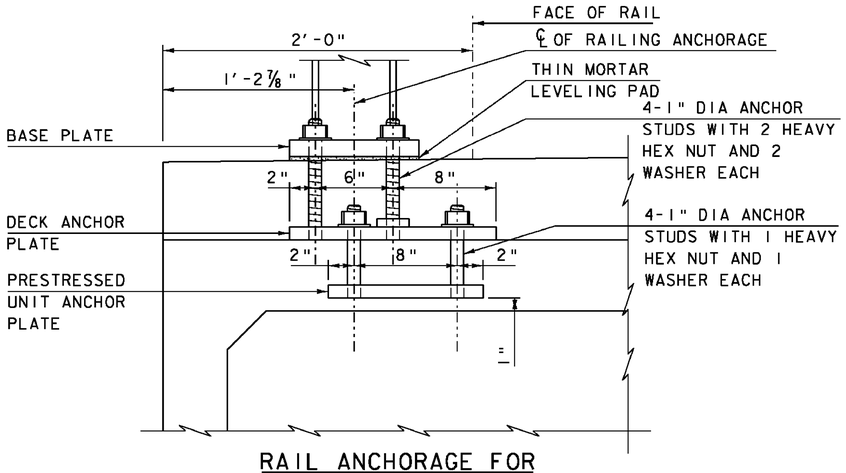
3'-0" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.
E - EPOXY

PROJECT NAME: EAST HAVEN
PROJECT NUMBER: BRF 0269(11)

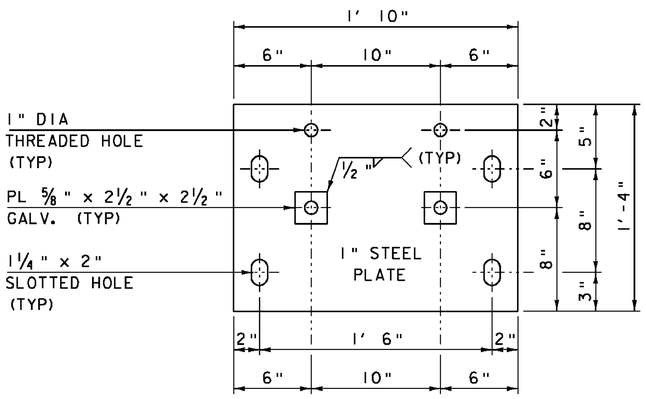
FILE NAME: s00c162sup.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIFFIN
SUPERSTRUCTURE REINFORCING 1

PLOT DATE: 17-AUG-2011
DRAWN BY: J. GRIFFIN
CHECKED BY: J. LACROIX
SHEET 21 OF 40



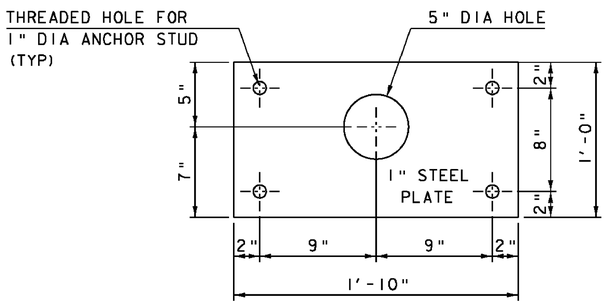
RAIL ANCHORAGE FOR PRE-STRESSED CONCRETE BRIDGE

NOT TO SCALE



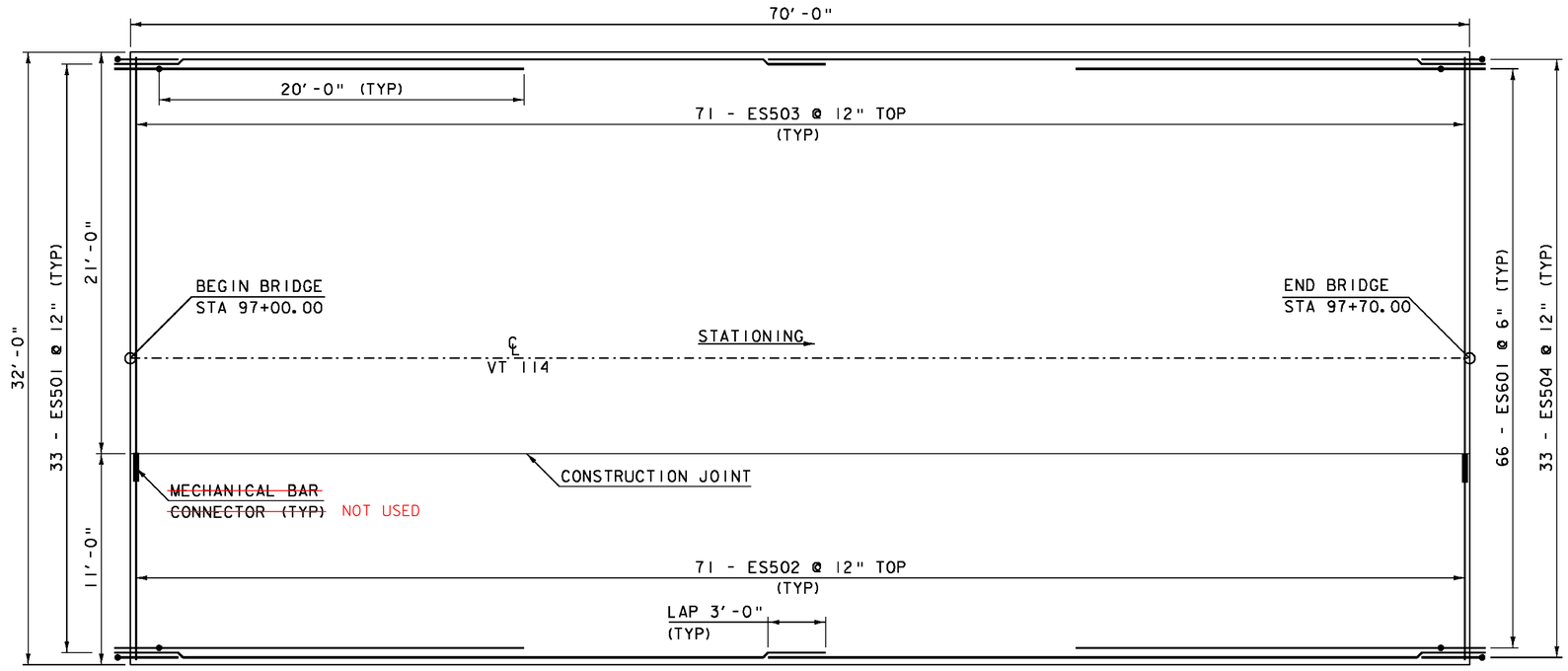
DECK ANCHOR PLATE

NOT TO SCALE



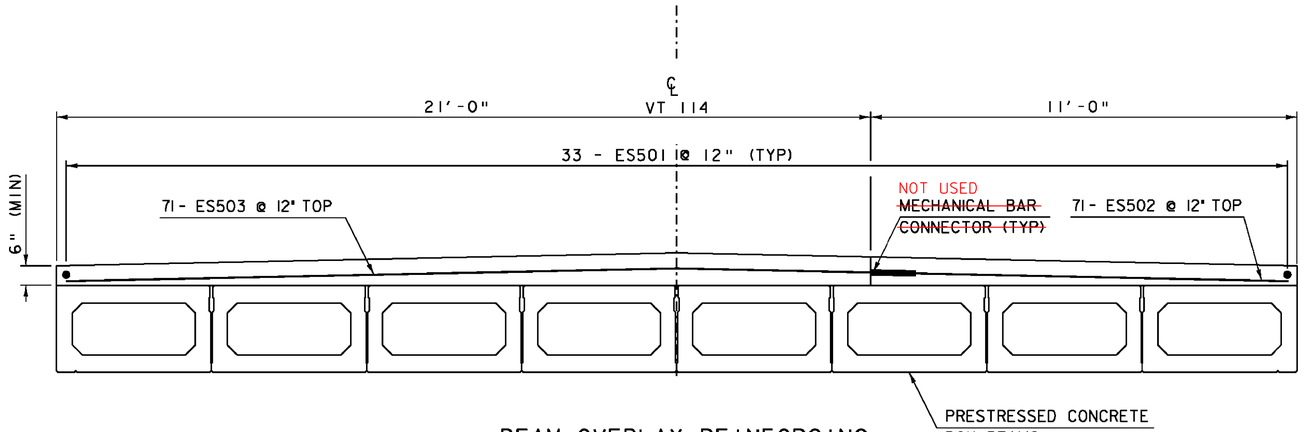
PRESTRESSED UNIT ANCHOR PLATE

NOT TO SCALE



BEAM OVERLAY REINFORCING

SCALE ⅛" = 1'-0"



BEAM OVERLAY REINFORCING

SCALE ¼" = 1'-0"

NOTES:

1. THE COST OF DECK ANCHOR PLATE AND THE RAILING ANCHOR STUDS SHALL BE INCLUDED IN THE BID PRICE BID FOR THE BRIDGE RAILING
2. THE COST OF ANCHOR PLATE AND STUDS CAST INTO PRESTRESSED CONCRETE UNITS SHALL BE INCLUDED IN THE BID PRICE BID FOR THE PRESTRESSED UNIT.
3. SEE STANDARD S-364A FOR BRIDGE RAIL DETAILS ABOVE THE TOP OF THE OVERLAY.

NOTE:

NF = NEAR FACE
FF = FAR FACE
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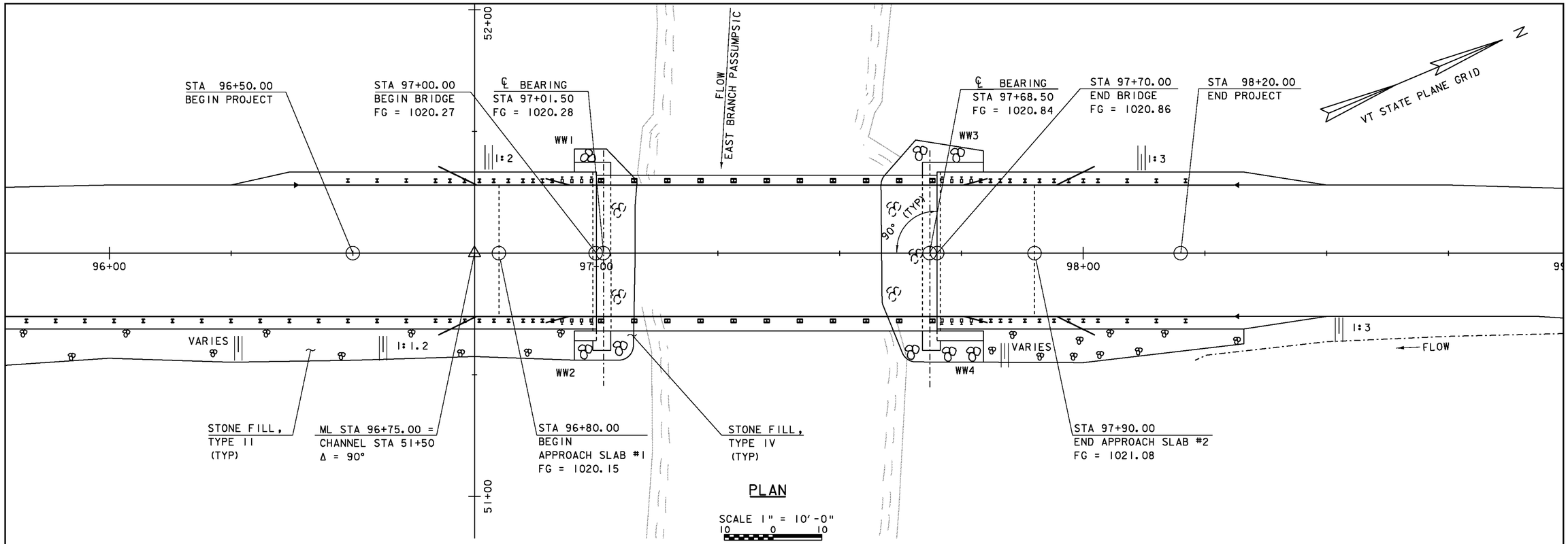
3'-0" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.
E - EPOXY

PROJECT NAME: EAST HAVEN
PROJECT NUMBER: BRF 0269(11)

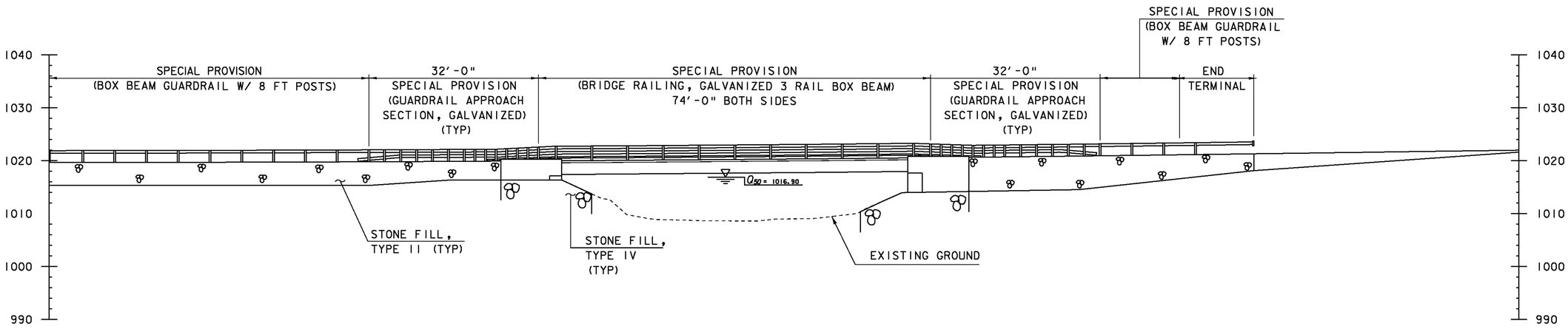
FILE NAME: s00c162sup.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIFFIN
SUPERSTRUCTURE REINFORCING 1

PLOT DATE: 17-AUG-2011
DRAWN BY: J. GRIFFIN
CHECKED BY: J. LACROIX
SHEET 21 OF 40



PLAN

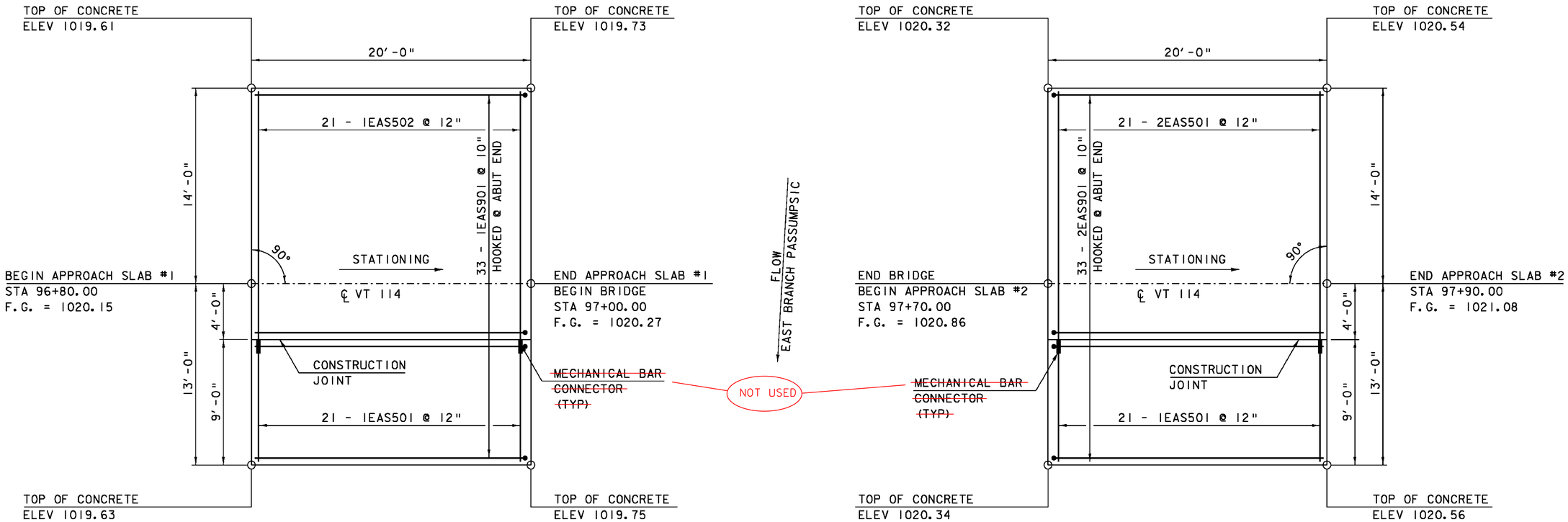
SCALE 1" = 10'-0"
10 0 10



ELEVATION DOWN STREAM FASCIA

SCALE 1" = 10'-0"
10 0 10

PROJECT NAME:	EAST HAVEN
PROJECT NUMBER:	BRF 0269(11)
FILE NAME: s00c162pe.dgn	PLOT DATE: 08-AUG-2011
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. PELLETT
DESIGNED BY: J. LACROIX	CHECKED BY: J. LACROIX
PLAN & ELEVATION	SHEET 19 OF 40

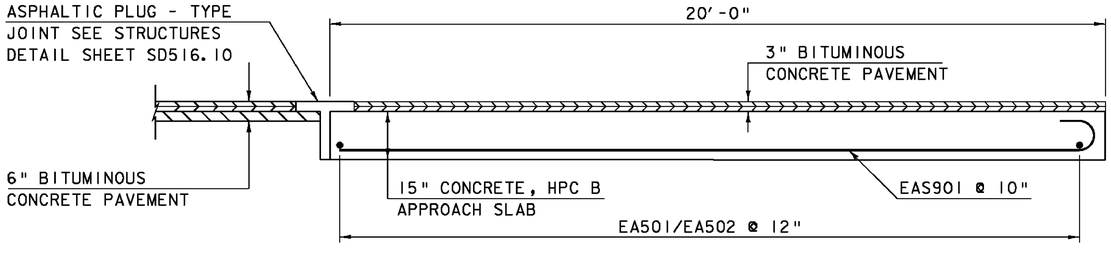


APPROACH SLAB #1 PLAN

SCALE 1/4" = 1'-0"

APPROACH SLAB #2 PLAN

SCALE 1/4" = 1'-0"



APPROACH SLAB ELEVATION (TYP)

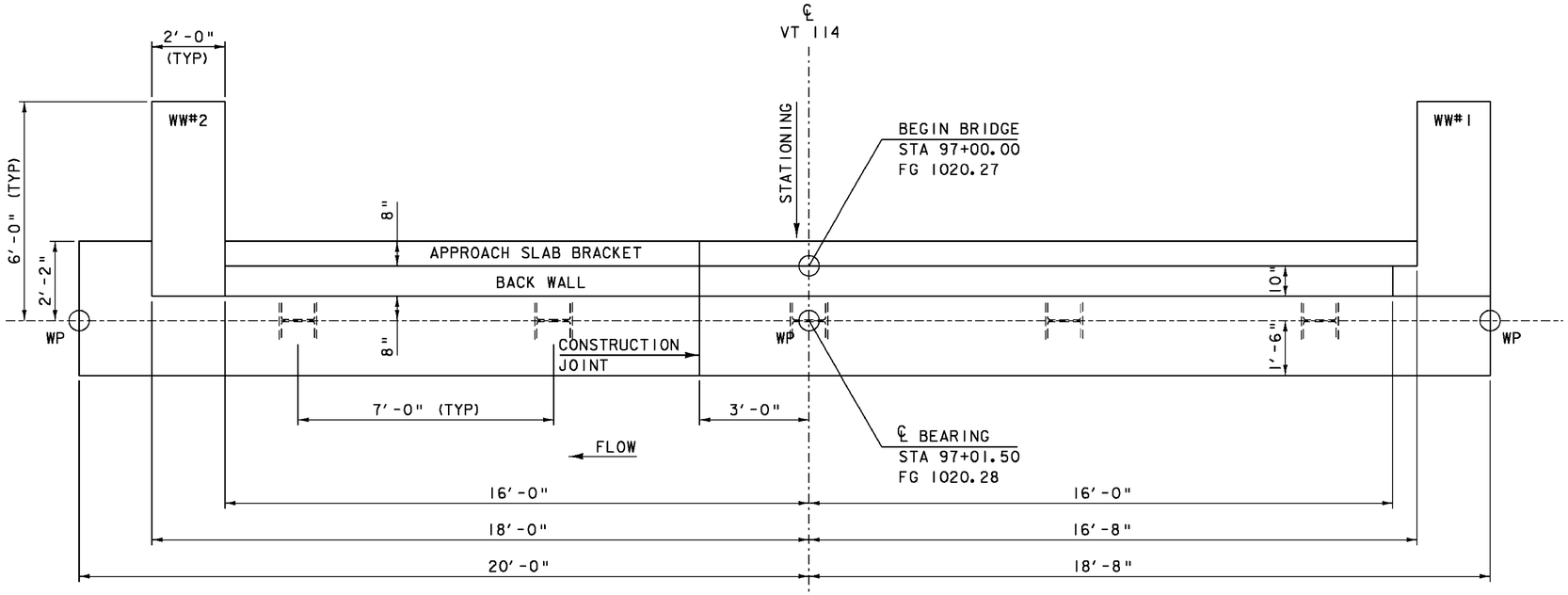
SCALE 1/2" = 1'-0"

NOTE:

E = EPOXY COATED REINFORCING
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
3'-0" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

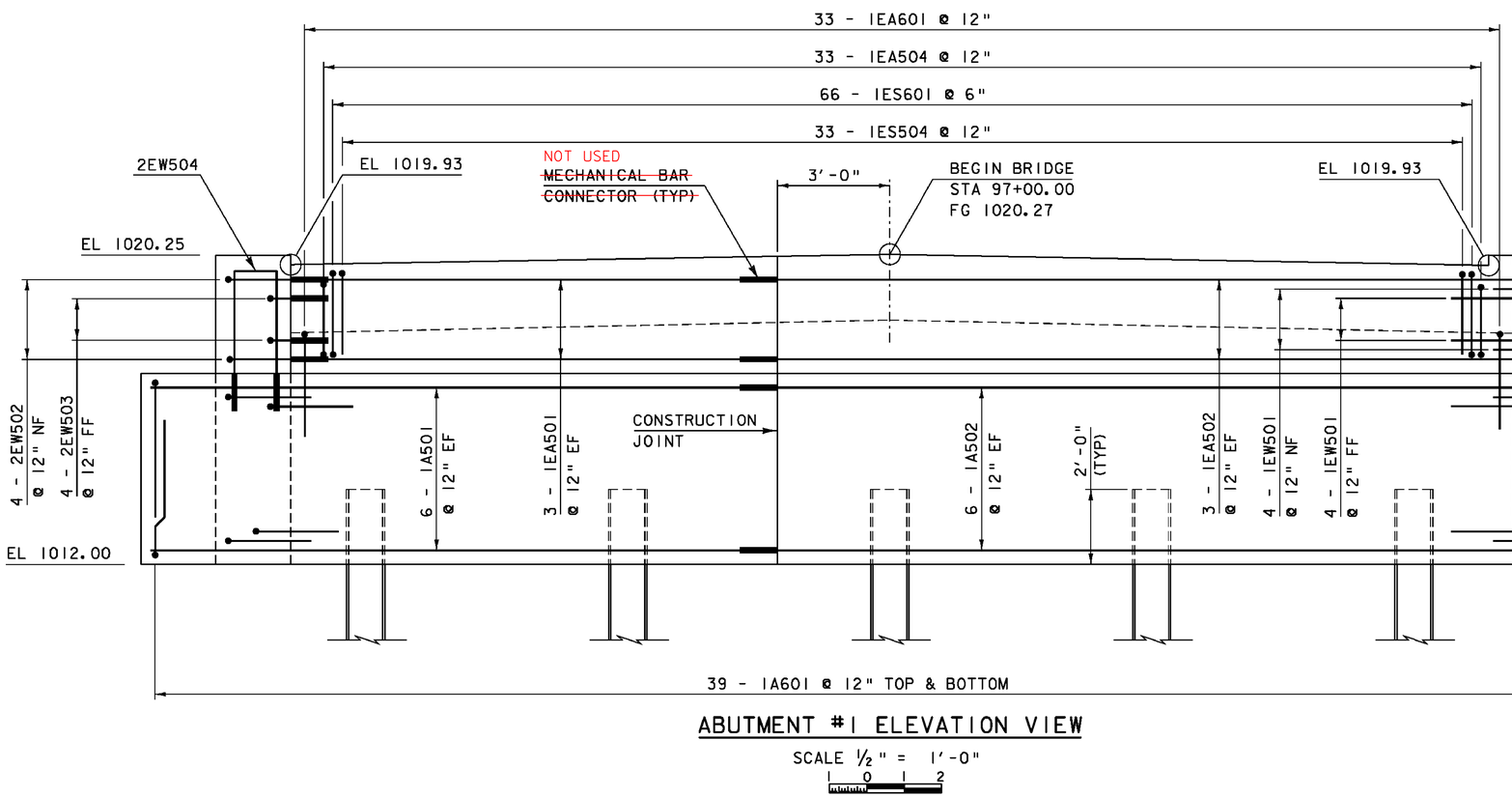
PROJECT NAME:	EAST HAVEN
PROJECT NUMBER:	BRF 0269(11)

FILE NAME: s00c162app.dgn	PLOT DATE: 08-AUG-2011
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. PELLETT
DESIGNED BY: R. PELLETT	CHECKED BY: J. GRIFFIN
APPROACH SLABS	SHEET 23 OF 40



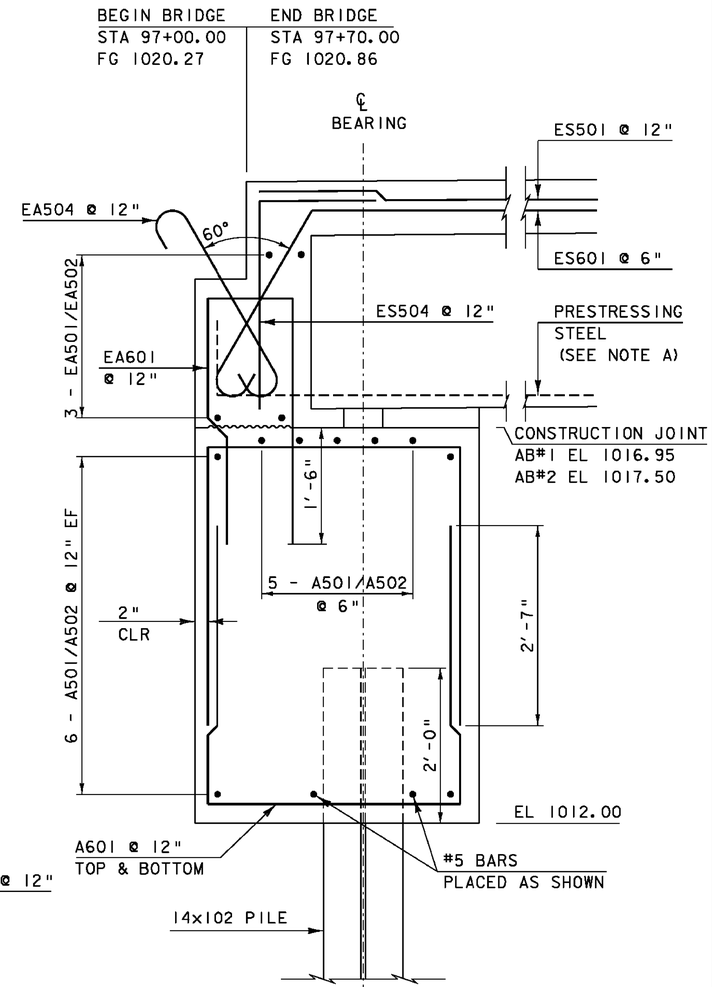
ABUTMENT #1 PLAN VIEW

SCALE ½" = 1'-0"



ABUTMENT #1 ELEVATION VIEW

SCALE ½" = 1'-0"



NOTE:
A. EXTEND EVERY OTHER BONDED PRESTRESSED STRANDS ON THE BOTTOM ROW 2'-8". IN LIEU OF EXTENDING THE STRANDS, THE CONTRACTOR MAY PROPOSE AN ALTERNATE DETAIL.

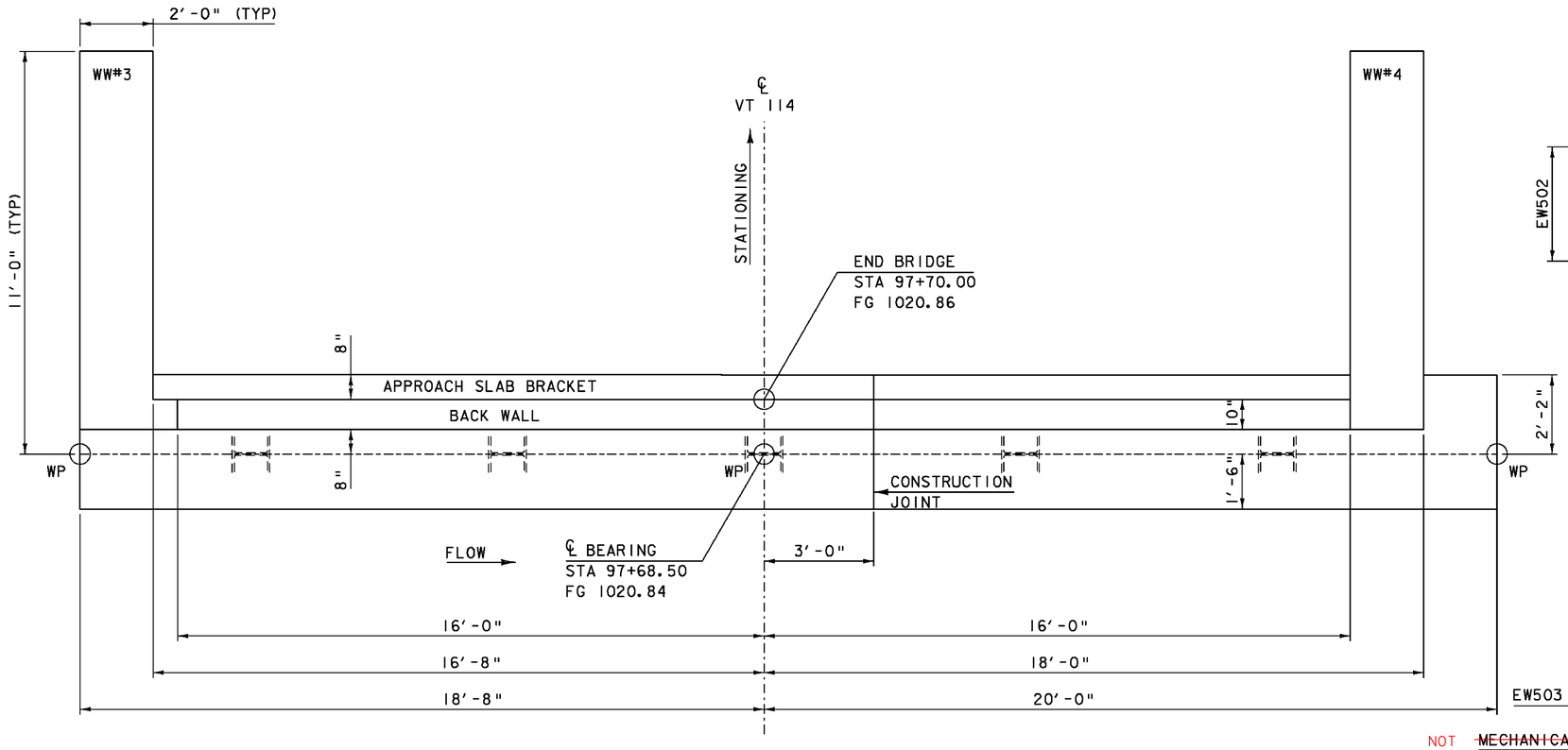
ABUTMENT TYPICAL

SCALE 1" = 1'-0"

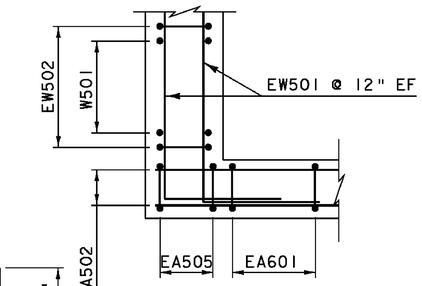
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

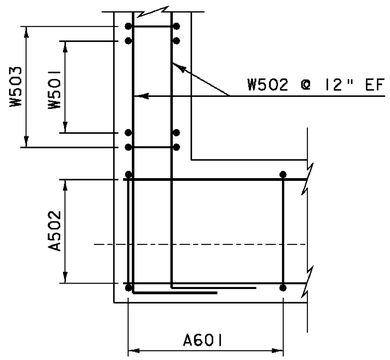
PROJECT NAME:	EAST HAVEN
PROJECT NUMBER:	BRF 0269(11)
FILE NAME: s00c162sub.dgn	PLOT DATE: 08-AUG-2011
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. GRIFFIN	CHECKED BY: J. LACROIX
ABUTMENT #1 DETAILS	SHEET 24 OF 40



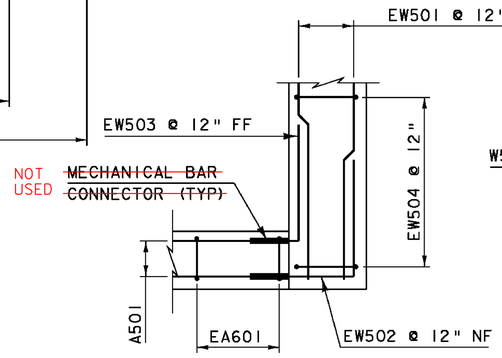
ABUTMENT #2 PLAN VIEW



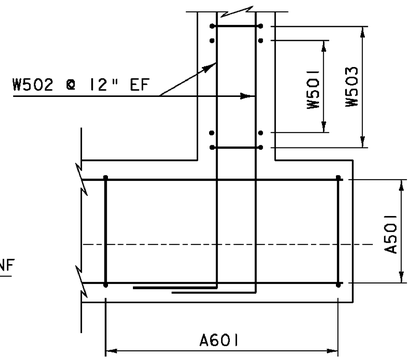
WINGWALL 1 & 3 CORNER DETAIL ABOVE BRIDGE SEAT



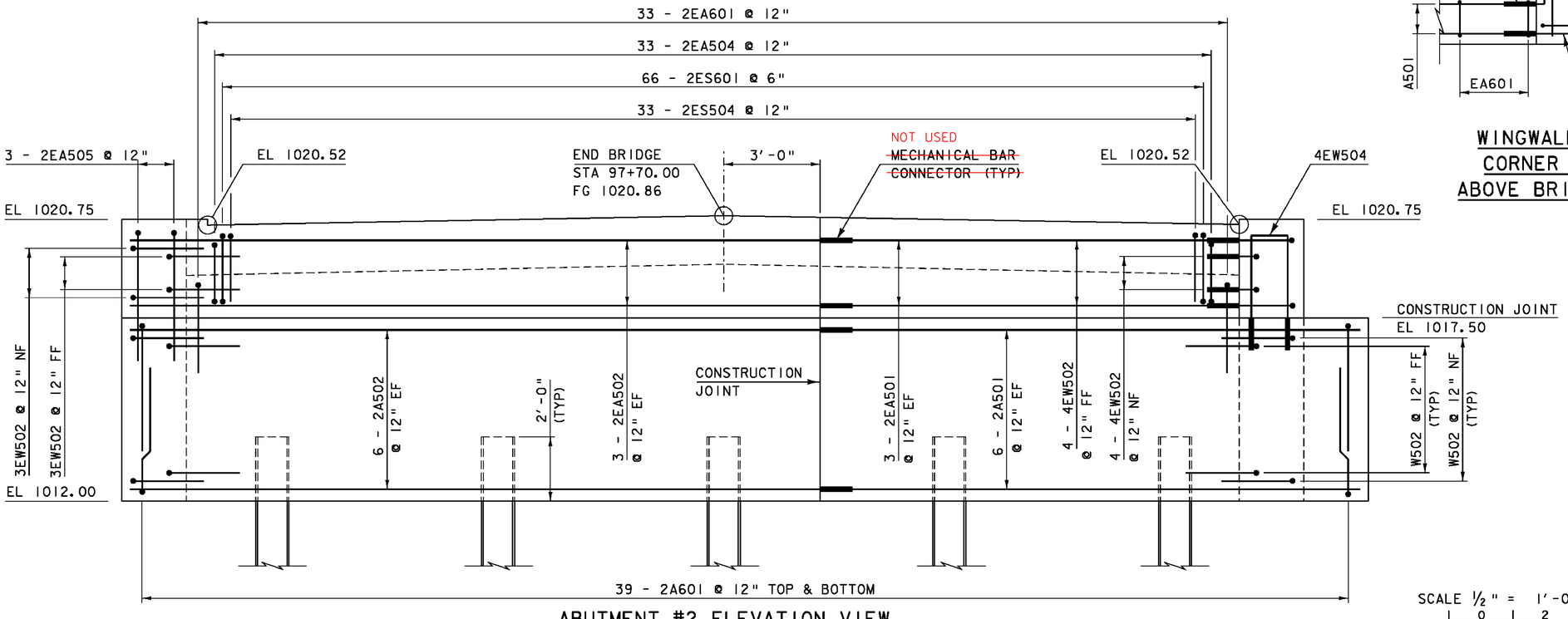
WINGWALL 1 & 3 CORNER DETAIL BELOW BRIDGE SEAT



WINGWALL 2 & 4 CORNER DETAIL ABOVE BRIDGE SEAT



WINGWALL 2 & 4 CORNER DETAIL BELOW BRIDGE SEAT



ABUTMENT #2 ELEVATION VIEW

SCALE ½" = 1'-0"

0 1 2

NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME:	EAST HAVEN
PROJECT NUMBER:	BRF 0269(11)
FILE NAME: s00ci62sub.dgn	PLOT DATE: 08-AUG-2011
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. GRIFFIN	CHECKED BY: J. LACROIX
ABUTMENT #2 DETAILS	SHEET 25 OF 40

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS WIDTH (In)	SIGN DIMENSIONS HEIGHT (In)	NEW SIGN "A"	EXIST POST RETAIN	EXIST POST SALVAGE	NEW SIGN POSTS NO. OF POSTS	NEW SIGN POSTS SQUARE STEEL (In) 2.0 lb/ft 2.16	2.0 lb/ft 2.42	2.5 lb/ft 3.35	ANCHOR	SLEEVE	REMARKS	SIGN DETAIL DETAIL ON SHEET NUMBER	SIGN DETAIL STD. SHEET NUMBER
96+77.75 RT.	BRIDGE 18 VT 114	6	8	0.33			1	10			X		VD-701		E-134
97+84.98 LT.	BRIDGE 18 VT 114	6	8	0.33			1	10			X		VD-701		E-134
								FT	FT 20	FT		EA			
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE VTRANS "SIGN POST DESIGN GUIDELINE."															
TOTALS				SF 0.66				FT 20					SHS = STANDARD HIGHWAY SIGNS (MUTCD)		

N

VT STATE PLANE GRID

NOTE:
ADJUST NEW EDGE LINE TO MATCH EXISTING EDGE LINE AT BEGIN/END APPROACH

STA 95+50.00
BEGIN APPROACH

STA 96+50.00
BEGIN PROJECT

STA 97+00.00
BEGIN BRIDGE
FG = 1020.27

STA 97+70.00
END BRIDGE
FG = 1020.86

STA 98+20.00
END PROJECT

STA 99+20.00
END APPROACH

BEAN BROOK RD (TH 20)

STA 97+02.10

STA 97+64.80

STA 97+84.98

EXISTING R.O.W.

TO BURKE
VT 114

TO NEWARK
VT 114

96+00 97+00 98+00 99+00

EXISTING R.O.W.

FLOW
EAST BRANCH PASSUMPSIC

STA 96+77.75

STA 97+02.80

STA 97+65.30

DURABLE 4 INCH WHITE LINE (LT & RT)
STA 95+50.00 - STA 99+20.00

DURABLE 4 INCH YELLOW LINE (DOUBLE)
STA 95+50.00 - STA 99+20.00

TRAFFIC SIGNS, TYPE A
STA 96+77.75 RT (VD-701)
STA 97+84.98 LT (VD-701)

REMOVING SIGNS
STA 96+77.70 RT
STA 97+02.10 LT
STA 97+02.80 RT
STA 97+64.80 LT
STA 97+65.30 RT
STA 97+84.95 LT
NB NARROW BRIDGE AHEAD @ MM 1.695
SB NARROW BRIDGE AHEAD @ MM 1.965

SIGN & PAVEMENT MARKINGS LAYOUT SHEET

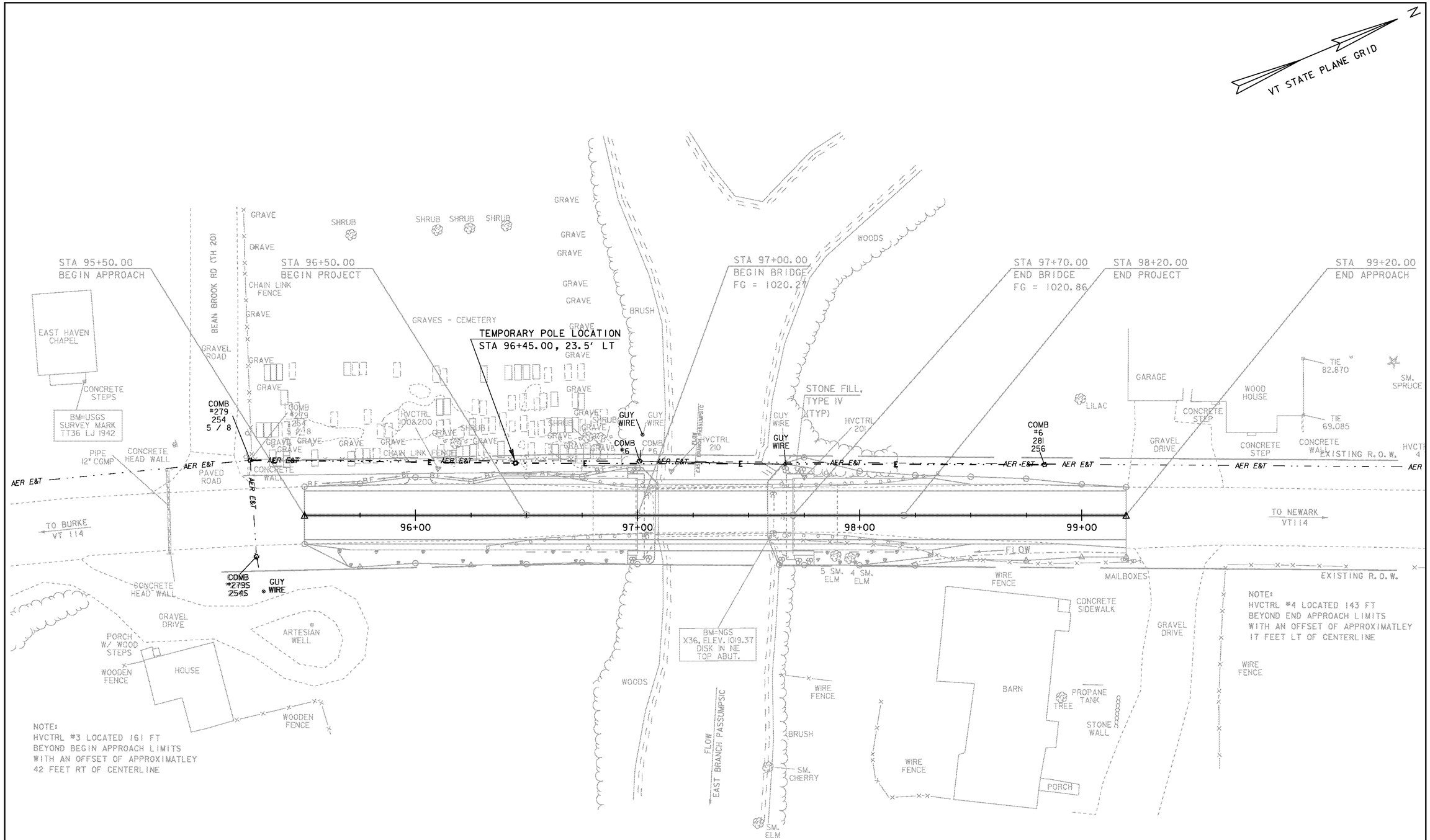
SCALE 1" = 20'-0"
20 0 20

SIGN LEGEND
N = NEW
R = REMOVE
S = SALVAGE
R&S = ERECT SALVAGED SIGN

PROJECT NAME: EAST HAVEN
PROJECT NUMBER: BRF 0269(11)

FILE NAME: s00ci62signbdr.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. SALVATORI
SIGN & PAVEMENT MARKINGS LAYOUT SHEET

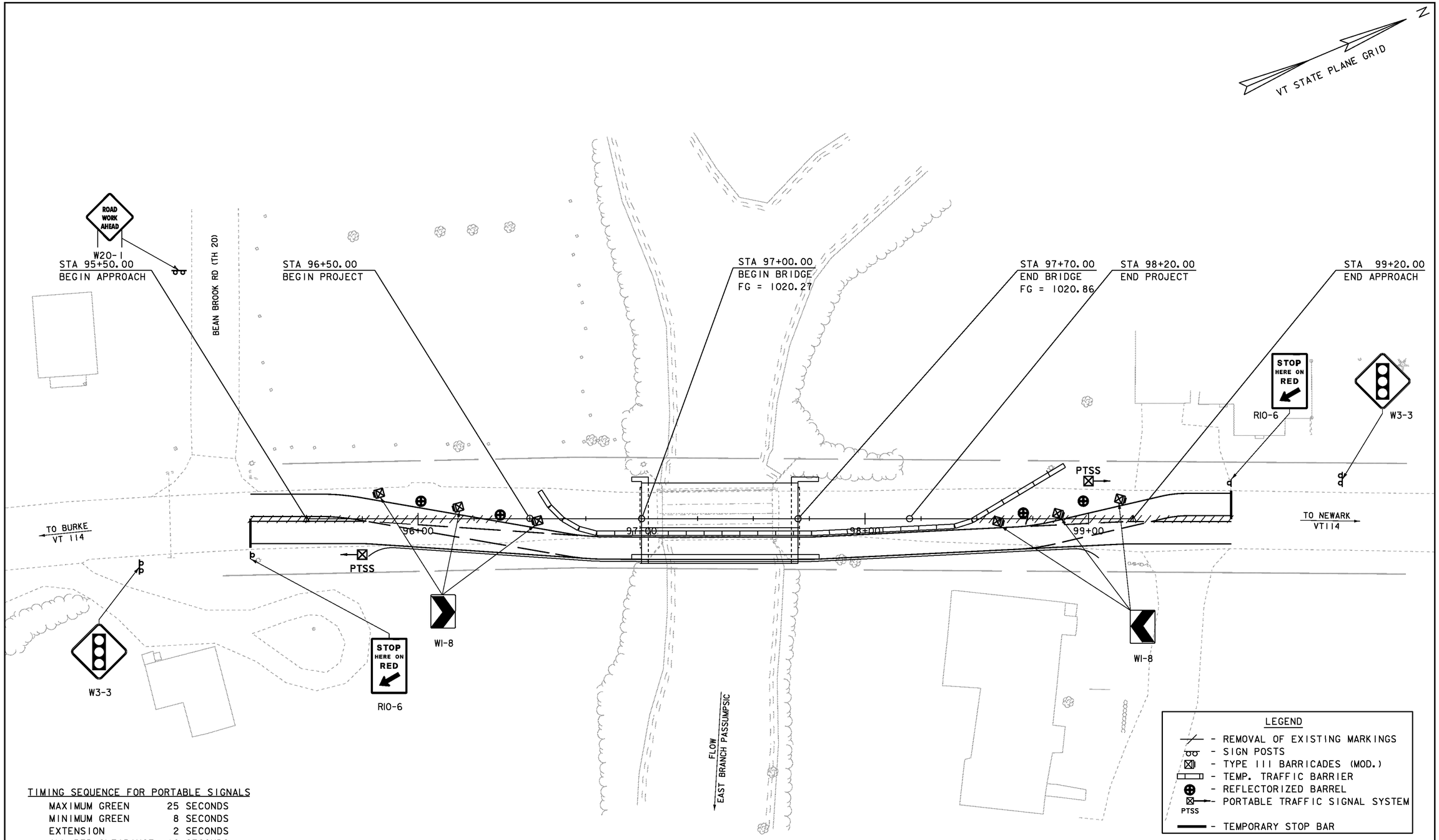
PLOT DATE: 08-AUG-2011
DRAWN BY: R. PELLETT
CHECKED BY: J. LACROIX
SHEET 15 OF 40



UTILITY LAYOUT SHEET

SCALE 1" = 20'-0"
20 0 20

PROJECT NAME:	EAST HAVEN
PROJECT NUMBER:	BRF 0269(11)
FILE NAME: s00ci62ut1lbdr.dgn	PLOT DATE: 08-AUG-2011
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. PELLETT
DESIGNED BY: J. LACROIX	CHECKED BY: J. LACROIX
UTILITY LAYOUT SHEET	SHEET 14 OF 40



TIMING SEQUENCE FOR PORTABLE SIGNALS

MAXIMUM GREEN	25 SECONDS
MINIMUM GREEN	8 SECONDS
EXTENSION	2 SECONDS
ALL-RED CLEARANCE	16 SECONDS

TRAFFIC CONTROL - PHASE II

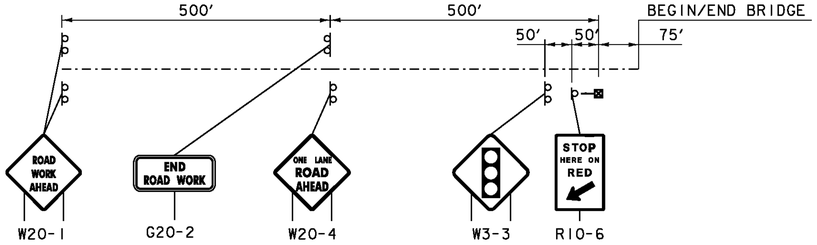
SCALE 1" = 20'-0"

20 0 20

PROJECT NAME: EAST HAVEN
PROJECT NUMBER: BRF 0269(11)

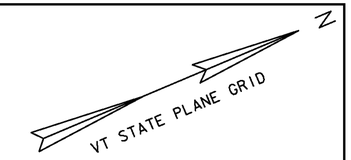
FILE NAME: s00c162ph1a2.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. SALVATORI
TRAFFIC CONTROL - PHASE II

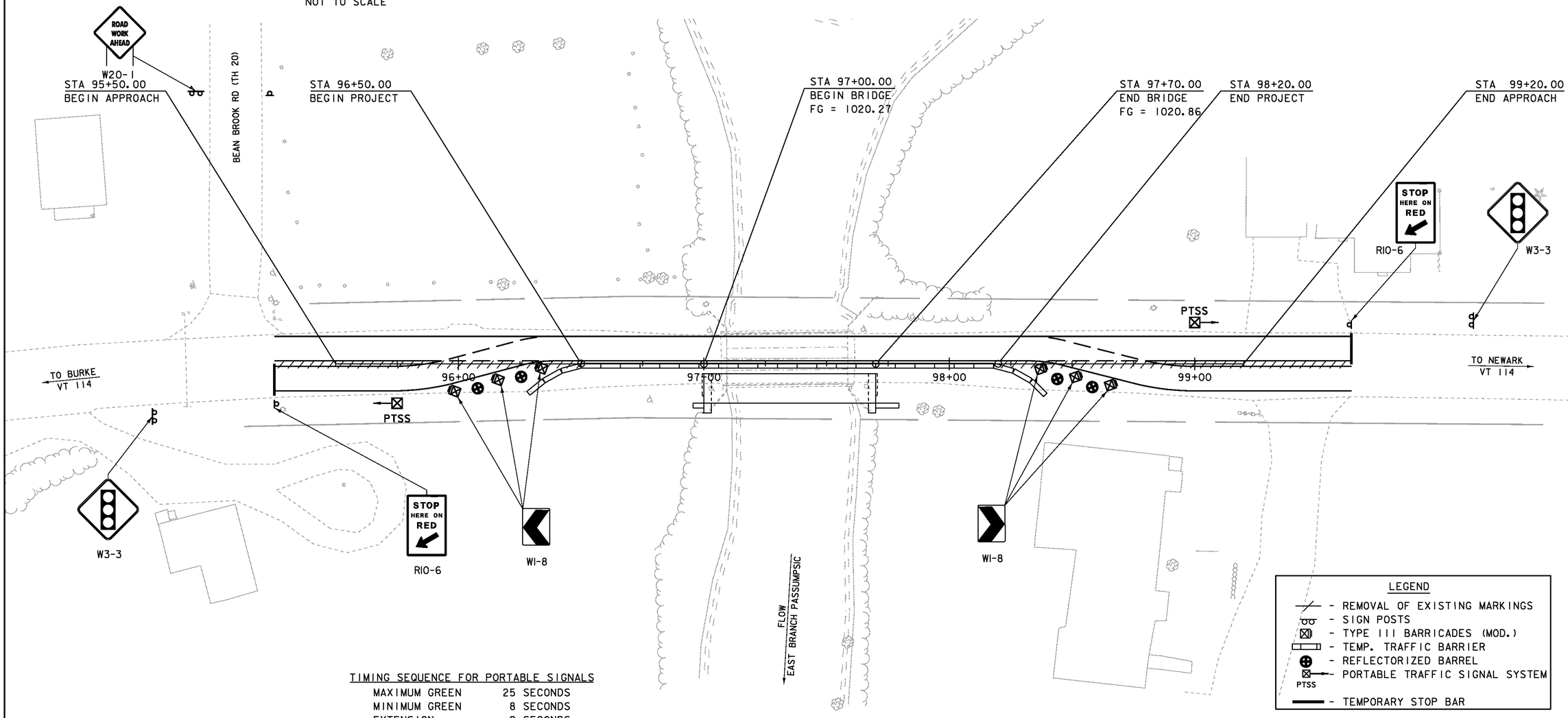
PLOT DATE: 08-AUG-2011
DRAWN BY: R. PELLETT
CHECKED BY: J. SALVATORI
SHEET 13 OF 40



APPROACH SIGNS

NOT TO SCALE





LEGEND

- REMOVAL OF EXISTING MARKINGS
- SIGN POSTS
- TYPE III BARRICADES (MOD.)
- TEMP. TRAFFIC BARRIER
- REFLECTORIZED BARREL
- PTSS — PORTABLE TRAFFIC SIGNAL SYSTEM
- TEMPORARY STOP BAR

TIMING SEQUENCE FOR PORTABLE SIGNALS

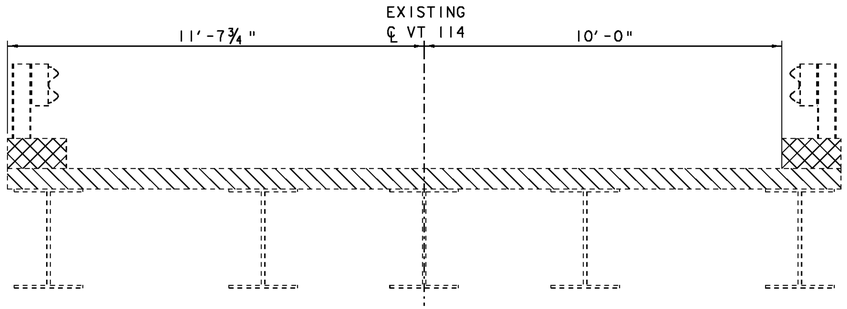
MAXIMUM GREEN	25 SECONDS
MINIMUM GREEN	8 SECONDS
EXTENSION	2 SECONDS
ALL-RED CLEARANCE	16 SECONDS

TRAFFIC CONTROL - PHASE I

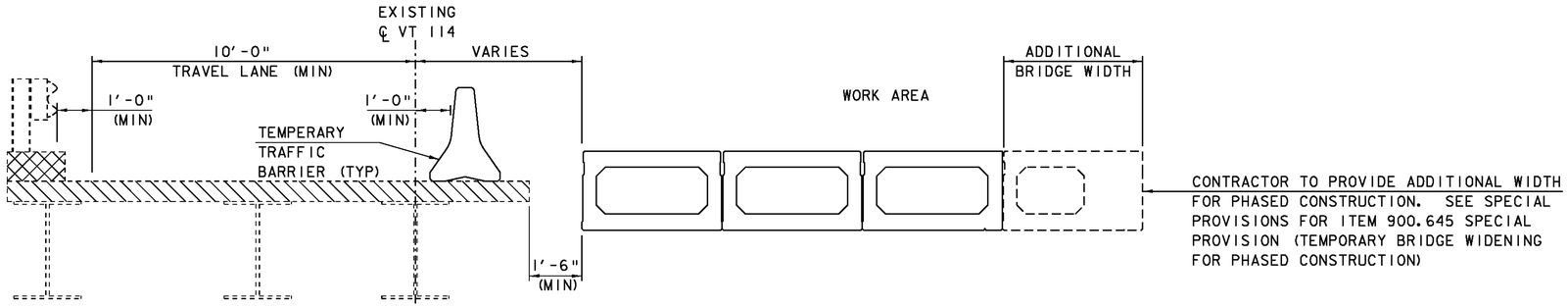
SCALE 1" = 20′-0"

20 0 20

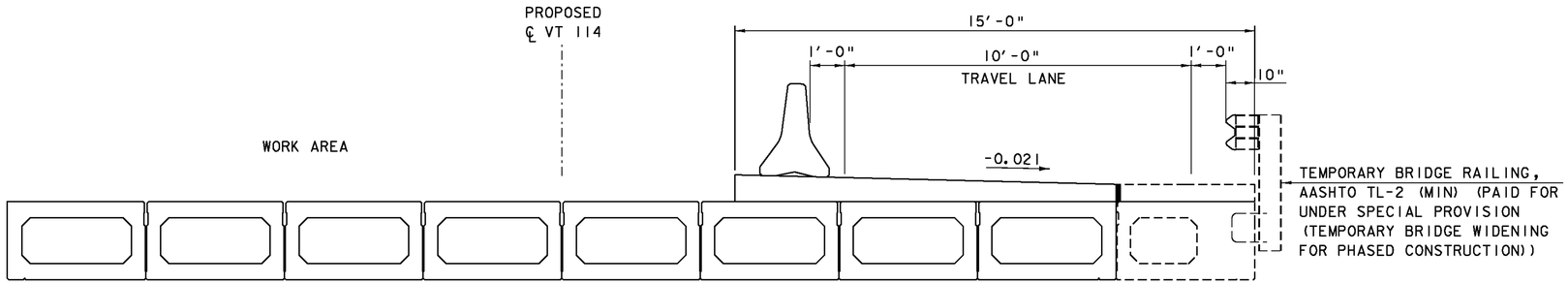
PROJECT NAME:	EAST HAVEN
PROJECT NUMBER:	BRF 0269(11)
FILE NAME: s00c162phia.dgn	PLOT DATE: 08-AUG-2011
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. PELLETT
DESIGNED BY: J. SALVATORI	CHECKED BY: J. SALVATORI
TRAFFIC CONTROL - PHASE I	SHEET 12 OF 40



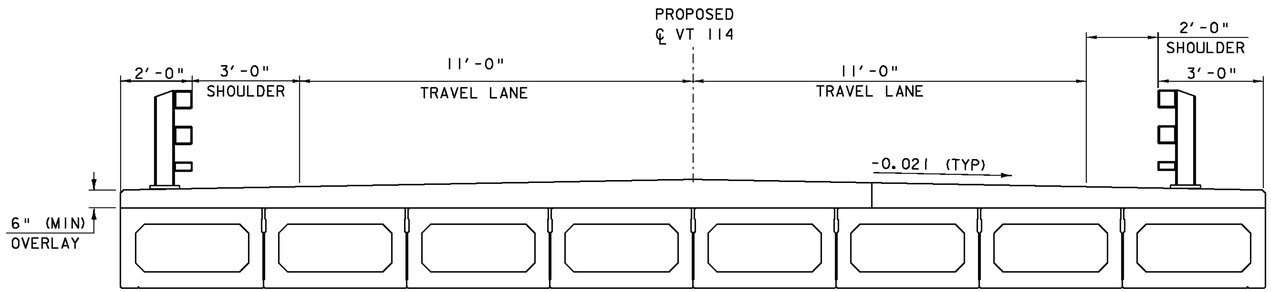
EXISTING TYPICAL SECTION



PHASE I



PHASE II



FINAL CONDITION

NOTE:

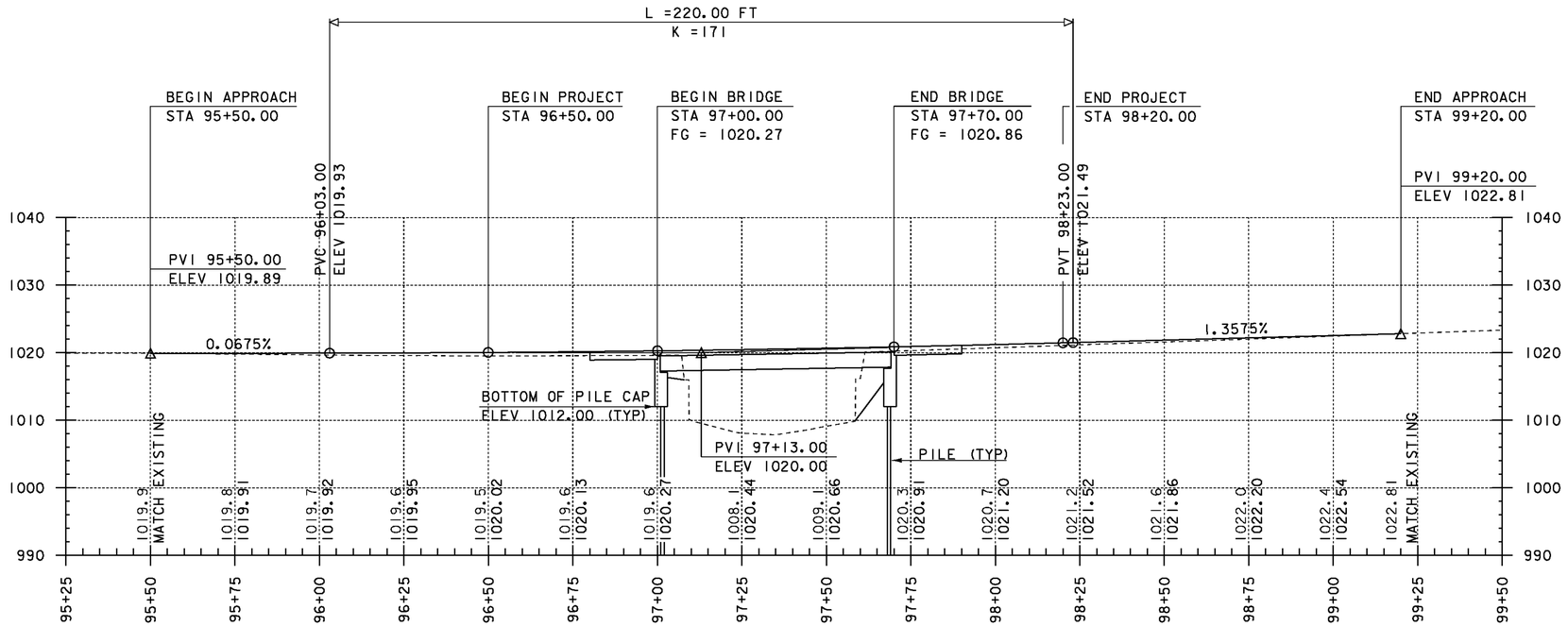
THE TRAFFIC CONTROL PHASING SHOWN IS OF A CONCEPTUAL NATURE ONLY. THE CONTRACTOR SHALL SUPPLY A DETAILED TRAFFIC CONTROL PLAN, WHICH NEED NOT UTILIZE PHASING OR THE PHASING SHOWN HERE. SEE THE TRAFFIC CONTROL NOTES AND THE SPECIFICATIONS FOR ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE) FOR MORE DETAILS.

SCALE ½" = 1′-0"
1 0 1 2

PROJECT NAME: EAST HAVEN
PROJECT NUMBER: BRF 0269(11)

FILE NAME: s00c162phasing.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. LACROIX
TRAFFIC PHASING TYPICALS

PLOT DATE: 08-AUG-2011
DRAWN BY: R. PELLETT
CHECKED BY: J. LACROIX
SHEET 11 OF 40

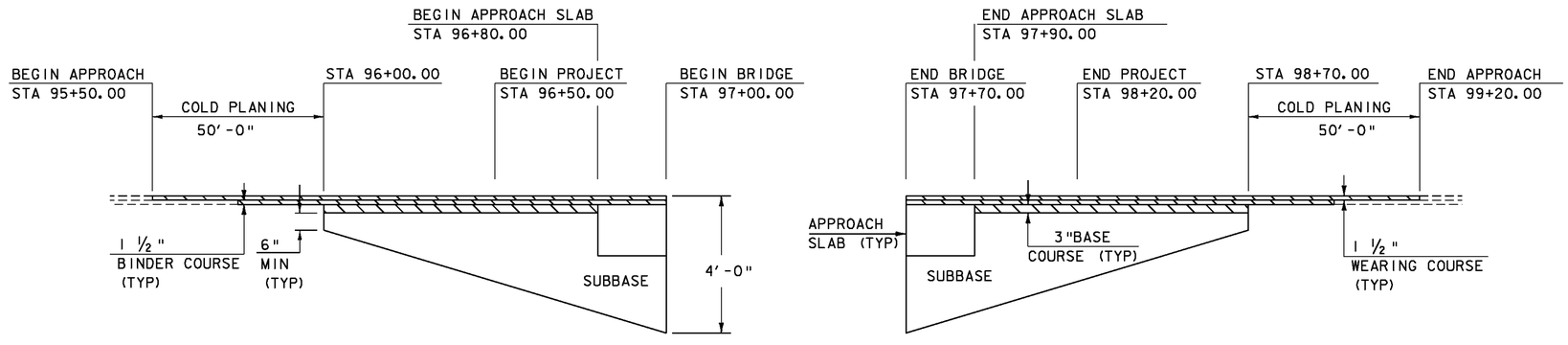


MAINLINE PROFILE

HORIZONTAL SCALE 1" = 20'-0"
VERTICAL SCALE 1" = 10'-0"

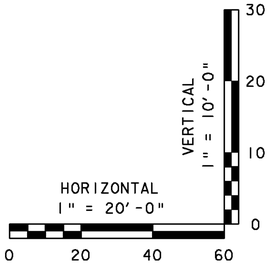
THE GRADES SHOWN TO THE NEAREST TENTH ARE THE ORIGINAL GROUND ELEVATIONS ALONG THE PROPOSED ALIGNMENT.

THE GRADES SHOWN TO THE NEAREST HUNDREDTH ARE THE FINISH GRADES ALONG THE PROPOSED ALIGNMENT.



MATERIAL TRANSITION

HORIZONTAL SCALE 1" = 20'-0"
VERTICLE SCALE 1/2" = 1'-0"



PROJECT NAME:	EAST HAVEN
PROJECT NUMBER:	BRF 0269(11)
FILE NAME: s00c162pro.dgn	PLOT DATE: 08-AUG-2011
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. PELLETT
DESIGNED BY: J. LACROIX	CHECKED BY: J. LACROIX
MAINLINE PROFILE	SHEET 10 OF 40

STONE FILL, TYPE II
STA 95+65.00 - 96+95.50 RT
STA 97+79.50 - 98+32.95 RT

REMOVAL OF EXISTING FENCE
STA 97+61 - STA 98+50 RT
(SEE GENERAL NOTES)

REMOVAL AND DISPOSAL OF GUARDRAIL
STA 96+32 - STA 97+07 RT
STA 96+60 - STA 97+07 LT
STA 97+61 - STA 98+21 RT
STA 97+61 - STA 98+36 LT

MANUFACTURED TERMINAL SECTION, TANGENT
STA 95+72 - STA 95+86 RT
STA 96+38 - STA 96+52 LT
STA 98+18 - STA 98+32 LT
STA 98+18 - STA 98+32 RT

SPECIAL PROVISION (BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM)
STA 96+99 - STA 97+71 LT & RT

SPECIAL PROVISION (GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM)
STA 96+67 - STA 96+99 LT & RT
STA 97+71 - STA 98+03 LT & RT

SPECIAL PROVISION (BOX BEAM GUARDRAIL, W/ 8 FT POSTS)
STA 95+86 - STA 96+67 RT
STA 96+52 - STA 96+67 LT
STA 98+03 - STA 98+18 LT
STA 98+03 - STA 98+18 RT

N
VT STATE PLANE GRID

STA 95+50.00
BEGIN APPROACH

STA 96+50.00
BEGIN PROJECT

STA 97+00.00
BEGIN BRIDGE
FG = 1020.27

STA 97+70.00
END BRIDGE
FG = 1020.86

STA 98+20.00
END PROJECT

STA 99+20.00
END APPROACH

BEAN BROOK RD (TH 20)

EAST HAVEN CHAPEL

CONCRETE STEPS

BM=USGS SURVEY MARK TT36 LJ 1942

GRAVEL ROAD

CHAIN LINK FENCE

GRAVES - CEMETERY

SHRUB

BRUSH

WOODS

GARAGE

WOOD HOUSE

CONCRETE STEP

CONCRETE WALK

SM. SPRUCE

LILAC

GRAVEL DRIVE

EXISTING R.O.W.

COMB #279 254 5 7/8

COMB #6

GUY WIRE

COMB #6 281 256

PIPE 12" CGMP

CONCRETE HEAD WALL

PAVED ROAD

AER E&T

BF

N22° 55' 06.04"E

96+00

97+00

98+00

99+00

TO BURKE VT 114

TO NEWARK VT114

FLOW

COMB #279S 254S

GUY WIRE

5 SM. ELM

4 SM. ELM

MAILBOXES

WIRE FENCE

℄ BRG
STA 97+01.50
F.G. = 1020.28

℄ BRG
STA 97+68.50
F.G. = 1020.84

CONCRETE SIDEWALK

GRAVEL DRIVE

ARTESIAN WELL

PORCH W/ WOOD STEPS

WOODEN FENCE

HOUSE

BM=NGS X36, ELEV. 1019.37 DISK IN NE TOP ABUT.

ML STA 96+75 =
CHANNEL STA 51+50
Δ = 90°

N67° 04' 53.96"W

FLOW
EAST BRANCH PASSUMPSIC

BARN

PROPANE TANK

TREE

STONE WALL

PORCH

SM. CHERRY

SM. ELM

STONE FILL, TYPE IV (TYP)

53+00
52+00
51+00
50+00

NOTE:
HVCTRL #3 LOCATED 161 FT
BEYOND BEGIN APPROACH LIMITS
WITH AN OFFSET OF APPROXIMATLEY
42 FEET RT OF CENTERLINE

NOTE:
HVCTRL #4 LOCATED 143 FT
BEYOND END APPROACH LIMITS
WITH AN OFFSET OF APPROXIMATLEY
17 FEET LT OF CENTERLINE

EXISTING BRIDGE DATA
STEEL ROLLED BEAM, CONCRETE DECK
LENGTH = 52'-0"
WIDTH = 20'-0" CURB TO CURB
BUILT IN 1929

LAYOUT SHEET

SCALE 1" = 20'-0"
20 0 20

PROJECT NAME:	EAST HAVEN
PROJECT NUMBER:	BRF 0269(11)
FILE NAME: s00c162bdr.dgn	PLOT DATE: 08-AUG-2011
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. PELLETT
DESIGNED BY: J. LACROIX	CHECKED BY: J. LACROIX
LAYOUT SHEET	SHEET 9 OF 40

GPS CONTROL POINTS

HCTRL # 1

STANDARD DISK STAMPED

RIVERS

N = 790777.775
E = 1799982.453

GENERAL LOCATION - EAST HAVEN, VT
TO REACH FROM THE INTERSECTION OF VT ROUTE 114 AND US ROUTE 5 IN LYNDONVILLE GO NORTH NORTHEAST ALONG VT ROUTE 114 FOR 4.7 MI (7.6 KM) TO THE INTERSECTION OF BURKE MOUNTAIN ROAD RIGHT. CONTINUE STRAIGHT ALONG VT ROUTE 114 FOR 6.5 MI (10.5 KM) TO THE MARK ON THE RIGHT. THE MARK IS LOCATED 6.8 M (22.3 FT) EAST SOUTHEAST OF AND 0.5 M (1.6 FT) LOWER THAN THE CENTERLINE OF VT ROUTE 114, 25.1 M (82.3 FT) SOUTH SOUTHEAST OF POLE 261/286, 52.4 M (171.9 FT) NORTH NORTHEAST OF THE MOST NORTHERLY GRAVEL DRIVE TO HOUSE 2024, 0.6 M (2.0 FT) NORTHWEST OF A FENCE LINE, AND 0.6 M (2.0 FT) WEST OF A FIBERGLASS WITNESS POST.

HVCTRL #2

STANDARD DISK STAMPED

RIVERS AZ MK

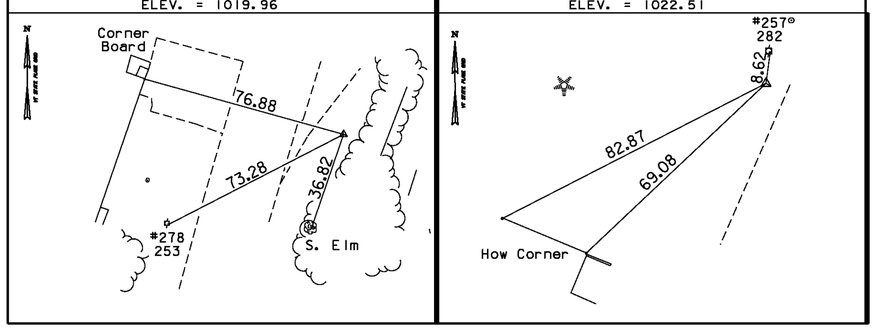
N = 789166.456
E = 1799368.163
ELEV. = 1018.170

GENERAL LOCATION - EAST HAVEN, VT OWNERSHIP - SCOTT RIVERS
TO REACH FROM THE INTERSECTION OF VT ROUTE 114 AND US ROUTE 5 IN LYNDONVILLE GO NORTH NORTHEAST ALONG VT ROUTE 114 FOR 4.7 MI (7.6 KM) TO THE INTERSECTION OF BURKE MOUNTAIN ROAD RIGHT. CONTINUE STRAIGHT ALONG VT ROUTE 114 FOR 6.1 MI (9.8 KM) TO THE MARK ON THE LEFT SET IN THE TOP OF A 0.6 M (2.0 FT) X 0.6 M (2.0 FT) ROCK OUTCROP. THE MARK IS LOCATED 7.5 M (24.6 FT) WEST NORTHWEST OF AND ABOUT LEVEL WITH THE CENTERLINE OF VT ROUTE 114, 36.4 M (119.4 FT) NORTHEAST OF POLE 251/6/276, 5.8 M (19.0 FT) SOUTH SOUTHWEST OF POLE 6/277/252, AND 2.4 M (7.9 FT) SOUTH SOUTHWEST OF A FENCE AND FIBERGLASS WITNESS POST.

- TO ALLOW THE STATE PLANE COORDINATES TO FIT THE AGENCY DESIGN PLANE, SUBTRACT 700,000 FROM THE NORTHING AND SUBTRACT 1,700,000 FROM THE EASTING.
- DESCRIPTION PROVIDED BY VERMONT AGENCY OF TRANSPORTATION GEODETIC SURVEY UNIT

TRAVERSE TIES

HVCTRL #3	HVCTRL#4
N = 89389.86	N = 90034.21
E = 99489.85	E = 99697.80
ELEV. = 1019.96	ELEV. = 1022.51



- MAIN TRAVERSE COMPLETED 11/14/00 by R. Gilman P.C. R. Bullock & J. Hulett

ALIGNMENT COORD

ALIGNMENT CURRENT AS OF 1/7/2011

MAIN LINE VT 114

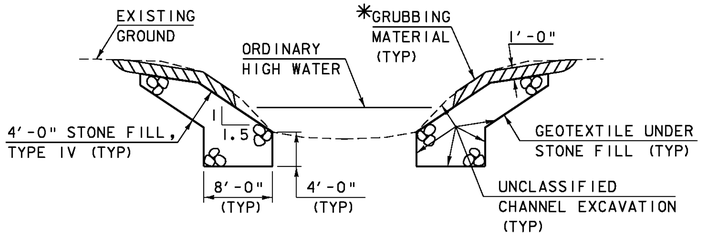
POB	95+50.00	89554.76	99514.03
POE	99+20.00	89895.56	99658.12
TANGENT DIRECTION		N 22°55'06" E	
TANGENTIAL LENGTH		370.00	

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83/96
ADJUSTMENT	COMPASS

PROJECT NAME: EAST HAVEN
PROJECT NUMBER: BRF 0269(11)

FILE NAME: 00c162/survey/xc162t1.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: SURVEY
TIE SHEET

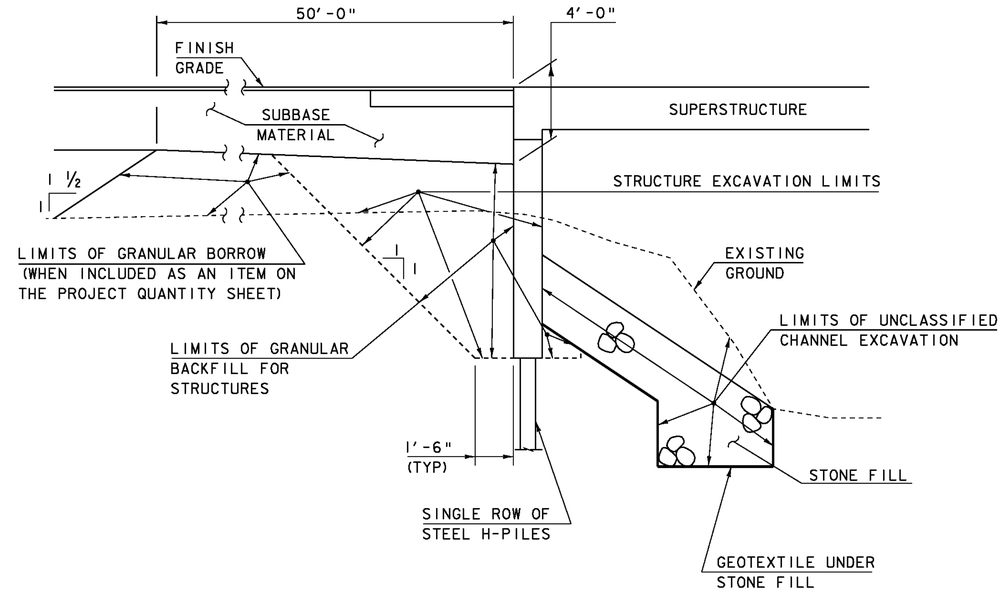
PLOT DATE: 08-AUG-2011
DRAWN BY: R. Bullock
CHECKED BY: SURVEY
SHEET 8 OF 40



TYPICAL CHANNEL SECTION

(NOT TO SCALE)

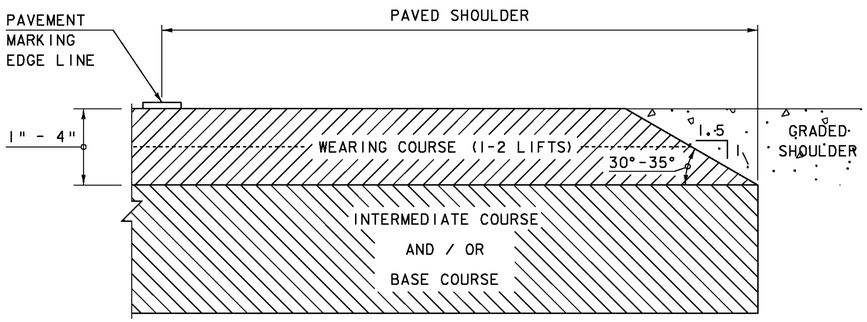
*GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN THE AREA UNDER THE BRIDGE. WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.



TYPICAL INTEGRAL ABUTMENT SECTION

NOT TO SCALE

ACTUAL LIMITS OF STRUCTURE EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR. HOWEVER, ONLY THE EXCAVATION BETWEEN THE LIMITS SHOWN WILL BE PAID FOR UNDER THE ITEM 204.25 "STRUCTURE EXCAVATION". EXCAVATION BY THE CONTRACTOR OUTSIDE OF THESE LIMITS WILL BE AT THE EXPENSE OF THE CONTRACTOR.



SAFETY EDGE DETAIL

NOT TO SCALE

NOTE: LEVELING COURSE MAY INCLUDE THE "SAFETY EDGE" AT THE CONTRACTOR'S CHOICE.

PROJECT NAME:	EAST HAVEN
PROJECT NUMBER:	BRF 0269(11)
FILE NAME: s00c162typ.dgn	PLOT DATE: 08-AUG-2011
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. PELLETT
DESIGNED BY: J. LACROIX	CHECKED BY: J. LACROIX
TYPICAL SECTIONS #2	SHEET 7 OF 40

MATERIAL TOLERANCES

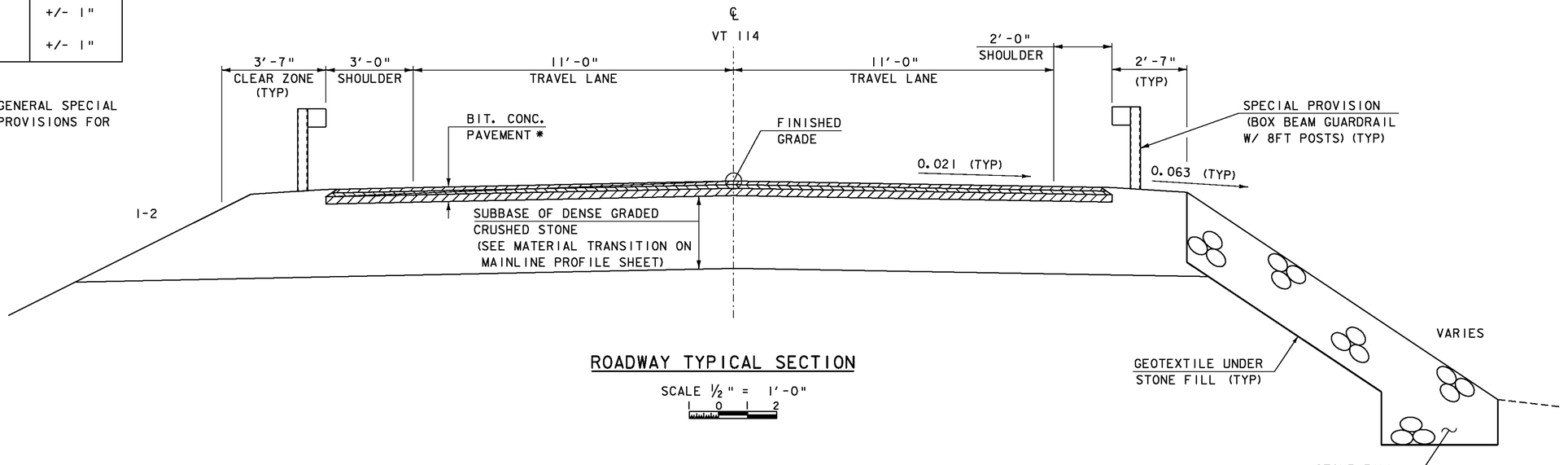
(IF USED ON PROJECT)

SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"

NOTE:
SEE SECTION 490 OF THE GENERAL SPECIAL PROVISIONS AND SPECIAL PROVISIONS FOR PG BINDER REQUIREMENTS.

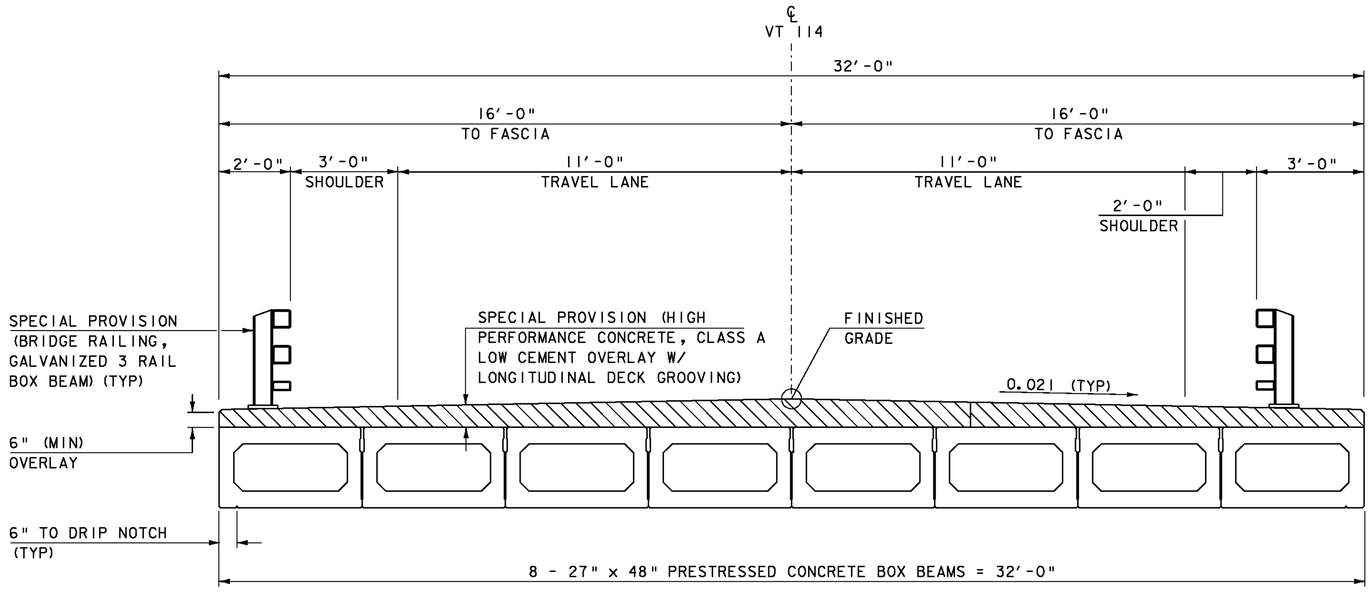
* 1 1/2" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IVS
1 1/2" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IVS
3" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IIS

VARIES SUBBASE OF DENSE GRADED CRUSHED STONE



ROADWAY TYPICAL SECTION

SCALE 1/2" = 1'-0"



BRIDGE TYPICAL SECTION

SCALE 1/2" = 1'-0"

PROJECT NAME:	EAST HAVEN
PROJECT NUMBER:	BRF 0269(11)
FILE NAME: s00c162typ.dgn	PLOT DATE: 08-AUG-2011
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. PELLETT
DESIGNED BY: J. LACROIX	CHECKED BY: J. LACROIX
TYPICAL SECTIONS #1	SHEET 6 OF 40

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES									TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
					ROADWAY	EMPLOYEE TRAINEESHIP	EROSION CONTROL	BRIDGE	FULL C.E	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
					740					740		LF	DURABLE 4 INCH WHITE LINE (FPQ)	646.400				
					740					740		LF	DURABLE 4 INCH YELLOW LINE (FPQ)	646.410				
							300			300		SY	GEOTEXTILE UNDER STONE FILL	649.31				
							200			200		SY	GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED	649.515				
							60			60		SY	GEOTEXTILE FOR FILTER CURTAIN	649.61				
							5			5		LB	SEED	651.15				
							5			5		LB	SEED, WINTER RYE	651.17				
							40			40		LB	FERTILIZER	651.18				
							0.25			0.25		TON	AGRICULTURAL LIMESTONE	651.20				
							0.25			0.25		TON	HAY MULCH	651.25				
							25			25		CY	TOPSOIL	651.35				
							50			50		SY	GRUBBING MATERIAL	651.40				
							1			1		LS	EPSC PLAN	652.10				
							50			50		HR	MONITORING EPSC PLAN	652.20				
							1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30				
							25			25		SY	TEMPORARY EROSION MATTING	653.20				
							15			15		CY	TEMPORARY STONE CHECK DAM, TYPE I	653.25				
							120			120		CY	VEHICLE TRACKING PAD	653.35				
							140			140		LF	BARRIER FENCE	653.50				
							465			465		LF	PROJECT DEMARCATION FENCE	653.55				
					0.66					0.66		SF	TRAFFIC SIGNS, TYPE A	675.20				
					20					20		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341				
					8					8		EACH	REMOVING SIGNS	675.50				
								62		62		CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT)	900.608				
								4		4		EACH	SPECIAL PROVISION (GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM)	900.620				
					126					126		LF	SPECIAL PROVISION (BOX BEAM GUARDRAIL W/8 FEET POSTS) (FPQ)	900.640				
								144		144		LF	SPECIAL PROVISION (BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM) (FPQ)	900.640				
								1		1		LS	SPECIAL PROVISION (TEMPORARY BRIDGE WIDENING FOR PHASE CONSTRUCTION)	900.645				
					1					1		LS	SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)	900.645				
								210		210		SY	SPECIAL PROVISION (LONGITUDINAL DECK GROOVING) (FPQ)	900.675				

PROJECT NAME: EAST HAVEN
PROJECT NUMBER: BRF 0269(11)

FILE NAME: s00c162qs.xls
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. LACROIX
QUANTITY SHEET - 2

PLOT DATE: 08-AUG-2011
DRAWN BY: R. PELLETT
CHECKED BY: J. LACROIX
SHEET 5 OF 40

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES								TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
					ROADWAY	EMPLOYEE TRAINEESHIP	EROSION CONTROL	BRIDGE	FULL C.E	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
					1					1		LS	CLEARING AND GRUBBING, NCLUDING INDIVIDUAL TREES AND STUMPS	201.10				**EARTHWORKS SUMMARY**
					585					585		CY	COMMON EXCAVATION	203.15		500	CY	COMMON EXCVATION (500 * 1.0)
					250					250		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27		150	CY	UNCLASSIFIED CHANNEL EXCAVATION (200 * 0.75)
					1					1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22		172.50	CY	STRUCTURE EXCAVATION (230 * 0.75)
								230		230		CY	STRUCTURE EXCAVATION	204.25		822.50	CY	SUBTOTAL
								110		110		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30		7.50	CY	ROUND
					300					300		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
					465					465		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35		830	CY	TOTAL FILL AVAILABLE
					1					1		CWT	EMULSIFIED ASPHALT	404.65		0	CY	FILL REQUIRED
					1					1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50		830	CY	TOTAL WASTE
					200					200		TON	SUPERPAVE BITUMINOUS CONCRETE PAVEMENT	490.30				
					1					1		LU	MAT DENSITY PAY ADJUSTMENT (N.A.B.I.)	490.32				
								118		118		CY	CONCRETE, HIGH PERFORMANCE CLASS B (FPQ)	501.34				**SUPERPAVE BITUMINOUS CONCRETE PAVEMENT**
								1		1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10		120	TON	TYPE IVS
								390		390		LF	STEEL PILING FOR INTEGRAL ABUTMENTS, HP 14 X 102	505.29		80	TON	TYPE IIS
								2		2		EACH	DYNAMIC PILE LOADING TEST	505.45		200	TON	TOTAL SUPERPAVE
								9800		9800		LB	REINFORCING STEEL (FPQ)	507.15				
								13100		13100		LB	EPOXY COATED REINFORCING STEEL (FPQ)	507.17				
								227		227		EACH	MECHANICAL BAR CONNECTOR (#5)	507.19				
								560		560		LF	PRESTRESSED CONCRETE BOX BEAMS (27" X 48") (FPQ)	510.21				
								490		490		LF	GROUTING SHEAR KEYS (FPQ)	510.24				
								30		30		GAL	WATER REPELLENT, SILANE	514.10				
								54		54		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG (FPQ)	516.10				
								1		1		LS	MAINTENANCE OF STRUCTURES AND APPROACHES	527.10				
					120					120		SY	REMOVAL OF BRIDGE PAVEMENT	529.10				
					1					1		EACH	REMOVAL OF STRUCTURE (1040 SF - EST.)	529.15				
								8		8		EACH	BEARING DEVICE ASSEMBLY, ELASTOMERIC PAD (11 1/2" X 11 1/2")	531.11				
								16		16		EACH	BEARING DEVICE ASSEMBLY, ELASTOMERIC PAD (5 3/4" X 11 1/2")	531.11				
					125					125		CY	STONE FILL, TYPE II	613.11				
					150					150		CY	STONE FILL, TYPE IV	613.13				
					89					89		LF	REMOVAL OF EXISTING FENCE	620.55				
					4					4		EACH	MANUFACTURED TERMINAL SECTION, TANGENT	621.51				
					257					257		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80				
					3000					3000		HR	FLAGGERS	630.15				
									1	1		LS	FIELD OFFICE, ENGINEERS	631.10				
									1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16				
									1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
									3000	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26				
						520				520		HR	EMPLOYEE TRAINEESHIP	634.10				
					1					1		LS	MOBILIZATION/DEMOBILIZATION	635.11				

PROJECT NAME: EAST HAVEN
PROJECT NUMBER: BRF 0269(III)

FILE NAME: s00cl62qs.xls
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. LACROIX
QUANTITY SHEET - I

PLOT DATE: 08-AUG-2011
DRAWN BY: R. PELLETT
CHECKED BY: J. LACROIX
SHEET 4 OF 40

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT, AGENCY OF TRANSPORATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2006, AND ITS LATEST REVISIONS, THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FIFTH EDITION, AND ITS LATEST REVISIONS AND THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, THIRD EDITION, AND ITS LATEST REVISIONS.

2. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.

3. ITEM 529.15 "REMOVAL OF STRUCTURE" IS FOR THE REMOVAL OF THE EXISTING SUPERSTRUCTURE, INCLUDING THE BRIDGE RAIL, THE SOUTH ABUTMENT DOWN TO ELEVATION 1016' AS WELL AS ANY PORTION OF THE ABUTMENT THAT WILL AFFECT NEW CONSTRUCTION, AND THE ENTIRE NORTH ABUTMENT.

4. THERE ARE GRAVE SITES LOCATED IN THE VICINITY OF WINGWALL #1. THE CONTRACTOR SHALL CONTACT VTRANS ARCHAEOLOGIST JEANNINE RUSSELL AT 802-828-3981 A MINIMUM OF TWO WEEKS PRIOR TO PERFORMING EXCAVATION IN THIS AREA. A REPRESENTATIVE OF THE STATE WILL BE PRESENT DURING THE EXCAVATION IN THIS AREA. THIS WORK WILL BE INCLUDED IN THE BID PRICE OF THE APPROPRIATE EXCAVATION ITEM. IN NO CASE SHALL THE CONTRACTOR DISTURB EARTH OUTSIDE OF THE BARRIER FENCE AS SHOWN IN THE EROSION CONTROL PLANS. SEE SPECIAL PROVISIONS FOR MORE INFORMATION.

5. THERE IS A FENCE TO BE REMOVED BETWEEN STATIONS 97+61 RT AND 98+50 RT. THE CONTRACTOR SHALL STOCKPILE THIS FENCE AT A LOCATION ACCEPTABLE TO THE PROPERTY OWNER.

CONCRETE

6. ITEM 514.10 "WATER REPELLENT, SILANE", SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT THE UNDERSIDE OF THE SUPERSTRUCTURE BETWEEN DRIP NOTCHES.

7. THE OVERLAY AND SUBSTRUCTURE CONCRETE ABOVE THE CONSTRUCTION JOINT SHALL BE SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT)

8. THE SUBSTRUCTURE CONCRETE BELOW THE CONSTRUCTION JOINT SHALL BE CONCRETE, HIGH PERFORMANCE CLASS B.

9. THE DECK WILL HAVE A LONGITUDINAL GROOVED FINISH. THIS WORK WILL BE PAID FOR UNDER ITEM 900.675 SPECIAL PROVISION (LONGITUDINAL DECK GROOVING).

10. THE TOP SURFACE OF THE PILE CAP SHALL INITIALLY BE GIVEN A FLOAT FINISH TO GRADE. THE CONCRETE WITHIN THE REINFORCING CAGE SHALL THEN BE ROUGHENED BY RAKING PARALLEL TO THE FACE OF THE ABUTMENT TO AN AMPLITUDE OF ½ INCH. THE CONCRETE OUTSIDE THE REINFORCING CAGE AND UNDER THE BEARING PADS SHALL REMAIN SMOOTH.

11. TO FACILITATE COMPLETE CONSOLIDATION OF CONCRETE BETWEEN THE TOP OF THE BRIDGE SEAT AND THE BOTTOM OF THE BEAM, VENT HOLES MAY BE PROVIDED FOR THE INSERTION OF A VIBRATOR IN THE FRONT FORM UNDER EACH BEAM. IF CONCRETE DOES NOT CONSOLIDATE IN THIS AREA, THE CONTRACTOR SHALL REPAIR THIS AREA TO THE SATISFACTION OF THE ENGINEER.

PRESTRESSED BOX BEAMS

12. TRANSVERSE TENDONS PLATES AND CHUCKS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M 232M/M 232.

13. ITEM 510.24 "GROUTING SHEAR KEYS": FILL THE JOINTS BETWEEN THE BEAMS WITH MORTAR, TYPE IV, AS DESCRIBED IN SUBSECTION 510.13 AND AS FOLLOWS:

    A. CLEAN JOINTS WITH AN OIL FREE AIR-BLAST IMMEDIATELY BEFORE GROUT PLACEMENT. VERIFY THAT THE BACKER ROD IS STILL IN PLACE.
    B. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR ADDITIONAL JOINT PREPARATION AND GROUT PLACEMENT.
    C. CAREFULLY ROD JOINTS TO ELIMINATE ANY POSSIBILITY OF VOIDS.

14. DESIGN VALUES
    A. CONCRETE: f'c = 7 ksi AND STRENGTH @ RELEASE = 5.5 ksi
    B. LIVE LOAD: AASHTO HL-93
    C. PRESTRESSING STRANDS: 0.6" DIAMETER, 270 ksi, LOW-RELAXATION 7-WIRE STRANDS PULLED TO 75% OF THEIR YIELD STRENGTH
    D. POST-TENSIONING STRANDS: 0.6" DIAMETER, 270 ksi, LOW-RELAXATION 7-WIRE STRANDS.
    E. THE ASSUMED MODULUS OF ELASTICITY FOR THE STRAND IS 28,500 KSI.
    F. TRANSVERSE TENDONS SHALL BE COVERED BY SEAMLESS POLYPROPYLENE SHEATH (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND) FOR THE LENGTH OF THE STRAND. TIES SHALL BE TENSIONED TO 47 KIPS FOR EACH 0.6" DIAMETER STRAND.
    G. SERVICE LOADS

MEMBER MOMENT	732.1 K-FT
SUPERIMPOSED DEAD LOAD MOMENT	106.3 K-FT
LIVE LOAD & IMPACT MOMENT	499.2 K-FT
DEAD LOAD REACTION	67.4 K
LIVE LOAD & IMPACT REACTION	57.9 K
TOTAL REACTION	125.3 K
FINAL CAMBER	0.3 IN

15. THE FABRICATOR MAY, WITH THE APPROVAL OF THE ENGINEER, ALTER THE DESIGN AS DETAILED TO MEET THE CONTRACTOR'S CONSTRUCTION NEEDS, OR THE PLANT'S PRESTRESSING OPERATION AND MATERIAL REQUIREMENTS. ALTERNATE STRAND, TRANSVERSE TIE AND CROSS-SLOPE CONFIGURATIONS MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ANY DESIGN CHANGES SHALL MEET ALL OF THE APPLICABLE DESIGN CRITERIA, LOADINGS AND CODES (THE LATEST EDITION OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND THE LATEST EDITION OF THE STRUCTURES DESIGN MANUAL), AND SHALL BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF VERMONT.

16. THE PRECASTER SHALL SANDBLAST SHEAR KEY FACES PRIOR TO DELIVERY.

17. ALL TIES AND STIRRUPS IN THE BOX BEAMS SHALL BE EPOXY COATED.

PILES

18. THE PILES SHALL BE HP 14 X 102.

19. THE PILES SHALL BE EMBEDDED IN THE GROUND A MINIMUM OF 25 FEET AND SHALL BE DRIVEN TO A NOMINAL RESISTANCE OF 350 KIP. TO PREVENT DAMAGE TO THE PILES, PILE SHOES SHALL BE REQUIRED AND SHALL CONFORM TO SECTION 505.

20. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AS SHOWN ON THE BORING LOGS. THE ACTUAL IN PLACE LENGTHS MAY VARY.

21. A MINIMUM OF ONE DYNAMIC PILE TEST SHALL BE CONDUCTED FOR EACH SUBSTRUCTURE UNIT. MORE TESTS MAY BE REQUIRED BY THE ENGINEER. THE FIRST TEST PILE SHALL BE THE FIRST DRIVEN FOR THE SUBSTRUCTURE UNIT. THE PILE SHALL BE DRIVEN AT THE PLAN LOCATION AND THE PILE SHALL BE MEASURED FOR PAYMENT UNDER CONTRACT ITEM 505.29.

TRAFFIC CONTROL

22. THE TRAFFIC CONTROL PHASING SHOWN IN THE PLANS IS OF A CONCEPTUAL NATURE ONLY. THE CONTRACTOR SHALL SUPPLY A DETAILED TRAFFIC CONTROL PLAN, WHICH NEED NOT UTILIZE THE PHASING SHOWN IN THESE PLANS.

23. AS PART OF 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE), THE CONTRACTOR SHALL SUBMIT A SITE SPECIFIC TRAFFIC CONTROL PLAN TO THE ENGINEER FOR APPROVAL PER SUBSECTION 105.03. SEE SPECIAL PROVISIONS.

24. ALL SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD. FOR ADDITIONAL SIGNING INSTRUCTIONS SEE STANDARDS E-100, E-100A, E-101, E-102, E-102A, AND E-121.

25. ALL ITEMS REQUIRED TO IMPLEMENT THE CONTRACTOR'S TRAFFIC CONTROL PLAN WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED INCLUDED IN THE BID PRICE FOR ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE). THIS INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING ITEMS:

    TEMPORARY TRAFFIC SIGNAL SYSTEM
    TEMPORARY TRAFFIC BARRIER
    TEMPORARY PAVEMENT MARKINGS (INCLUDING REMOVAL OF EXISTING MARKINGS)
    CONSTRUCTION SIGNING

26. PAYMENT FOR MAINTENANCE OF THE EXISTING BRIDGE STRUCTURE FOR PHASE 1 TRAFFIC WILL BE MADE UNDER CONTRACT ITEM 527.10. PAYMENT FOR TEMPORARY BRIDGE WIDENING AND MAINTENANCE OF THE NEW BRIDGE STRUCTURE FOR PHASE II TRAFFIC WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 900.645 SPECIAL PROVISION (TEMPORARY BRIDGE WIDENING FOR PHASE CONSTRUCTION).

27. THERE ARE NUMEROUS DETAILS ON THESE PLANS THAT ARE BASED ON A PHASED CONSTRUCTION DESIGN THAT MAY OR MAY NOT BE USED BY THE CONTRACTOR. THE LOCATION OF CONSTRUCTION JOINTS, THE CONFIGURATION OF THE ABUTMENTS, AND THE DIMENSIONS OF REINFORCING STEEL WILL ALL HAVE TO BE CONSIDERED ONCE THE CONTRACTOR'S TRAFFIC CONTROL PLAN HAS BEEN ACCEPTED.

28. SPECIAL PROVISION (TEMPORARY BRIDGE WIDENING FOR PHASED CONSTRUCTION) IS FOR THE CONSTRUCTION OF A TEMPORARY ROADWAY AND BRIDGE COMPONENT SO THAT A 12 FOOT TRAVEL LANE, INCLUDING SHOULDERS CAN BE MAINTAINED THROUGH THE PROJECT (SEE TRAFFIC PHASING TYPICALS SHEET). THE CONTRACTOR SHALL KEEP ALL FILL SLOPES FROM THE TEMPORARY BRIDGE INSIDE THE RIGHT OF WAY LIMITS UNLESS THE CONTRACTOR CAN MAKE OTHER ARRANGEMENTS WITH PROPERTY OWNERS. IF TEMPORARY SHEET PILING IS REQUIRED TO KEEP FILLS INSIDE THE RIGHT OF WAY, COST SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR SPECIAL PROVISION (TEMPORARY BRIDGE WIDENING FOR PHASED CONSTRUCTION).

PROJECT NAME:	EAST HAVEN
PROJECT NUMBER:	BRF 0269(11)

FILE NAME: s00cl62gennotes.dgn	PLOT DATE: 08-AUG-2011
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. PELLETT
DESIGNED BY: J. LACROIX	CHECKED BY: J. LACROIX
GENERAL NOTES	SHEET 3 OF 40

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version 11.06.15

LRFD

INDEX OF SHEETS

PLAN SHEETS

STRUCTURAL DETAIL SHEETS

STANDARDS LIST

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2005	1100	170	54	9	140
2025	1500	220	54	7	150

20 year ESAL for flexible pavement from 2005 to 2025 : 1681000

40 year ESAL for flexible pavement from 2005 to 2045 : 4381000

Design Speed : 50 mph

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: July 2010

DRAINAGE AREA : 45.4 sq. mi.
CHARACTER OF TERRAIN : Hilly to mountainous, mostly forested with some open areas.
STREAM CHARACTERISTICS : Incised, sinuous, with a confluence 100' upstream
NATURE OF STREAMBED : Gravel, cobbles, sand, silt and boulders

PEAK FLOW DATA

Q 2.33 =	1200 cfs	Q 50 =	3700 cfs
Q 10 =	2450 cfs	Q 100 =	4200 cfs
Q 25 =	3125 cfs	Q 500 =	5900 cfs

DATE OF FLOOD OF RECORD : Unknown
ESTIMATED DISCHARGE: Unknown
WATER SURFACE ELEV.: Unknown
NATURAL STREAM VELOCITY : @ Q50 = 11.6 fps
ICE CONDITIONS : Moderate
DEBRIS: Moderate
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No
IS ORDINARY RISE RAPID? Yes
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No
IF YES, DESCRIBE:

WATERSHED STORAGE: 1% HEADWATERS:
UNIFORM: X
IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Single span steel beam bridge with concrete deck
YEAR BUILT: 1929
CLEAR SPAN(NORMAL TO STREAM): 49'
VERTICAL CLEARANCE ABOVE STREAMBED: 8'
WATERWAY OF FULL OPENING: 314 sq. ft.
DISPOSITION OF STRUCTURE: Remove superstructure and north abutment
TYPE OF MATERIAL UNDER SUBSTRUCTURE: See boring information

WATER SURFACE ELEVATIONS AT:

Q2.33 =	1013.5'	VELOCITY =	7.2 fps
Q10 =	1015.6'	"	11.1 fps
Q25 =	1019.3'	"	10.4 fps
Q50 =	1020.0'	"	11.6 fps
Q100 =	1020.5'	"	12.8 fps

LONG TERM STREAMBED CHANGES: Minor scour in the center of the channel through the bridge area.

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes
FREQUENCY: Between Q25 and Q50
RELIEF ELEVATION: 1019.6'
DISCHARGE OVER ROAD @Q100: 730 cfs

UPSTREAM STRUCTURE

TOWN: Newark DISTANCE: 4200'
HIGHWAY # : VT 114 STRUCTURE #: 19
CLEAR SPAN: 52' CLEAR HEIGHT: 11'
YEAR BUILT: 1929 FULL WATERWAY: 572 sq. ft.
STRUCTURE TYPE: Single span steel beam bridge with concrete deck

DOWNSTREAM STRUCTURE

TOWN: East Haven DISTANCE: 3100'
HIGHWAY # : T.H. 4 STRUCTURE #: 10
CLEAR SPAN: 35' CLEAR HEIGHT: 10'
YEAR BUILT: 1960 FULL WATERWAY: 350 sq. ft.
STRUCTURE TYPE: Single span steel beam bridge with timber deck & stone abutments

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY	2.84	1.46					
POSTING							
OPERATING	3.68	1.89	3.03	2.02	2.61	1.88	
COMMENTS:							

PILE DRIVING AND TESTING REQUIREMENTS

1. NOMINAL PILE DRIVING CAPACITY — R_{nr}: 350.00 KIP
2. PILE TEST RESISTANCE FACTOR — ϕ: 0.65
3. MAXIMUM PILE TIP ELEVATION: 987.00 FT
4. 0

PROPOSED STRUCTURE

STRUCTURE TYPE: Single span prestressed concrete box beam bridge

CLEAR SPAN(NORMAL TO STREAM): 65'
VERTICAL CLEARANCE ABOVE STREAMBED: 10'
WATERWAY OF FULL OPENING: 455 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	1013.4'	VELOCITY=	6.7 fps
Q10 =	1015.2'	"	9.7 fps
Q25 =	1016.1'	"	11.3 fps
Q50 =	1016.9'	"	12.7 fps
Q100 =	1017.7'	"	13.6 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: Above Q100
RELIEF ELEVATION: 1019.9'
DISCHARGE OVER ROAD @Q100: 0 cfs

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 1018.2'
VERTICAL CLEARANCE: @ Q50 = 1.3'

SCOUR: 3' of contraction scour at Q100.
Maximum scour up to Q500 = 4' of contraction scour, at incipient overtopping flow.
REQUIRED CHANNEL PROTECTION: Stone Fill, Type IV

PERMIT INFORMATION

AVERAGE DAILY FLOW:	90 cfs	
ORDINARY LOW WATER:	40 cfs	DEPTH OR ELEVATION: Elevation 1010'
ORDINARY HIGH WATER:	515 cfs	Elevation 1012'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: No temporary bridge required.
CLEAR SPAN (NORMAL TO STREAM):
VERTICAL CLEARANCE ABOVE STREAMBED:
WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN ONE-WAY TRAFFIC ON THE EXISTING STRUCTURE.
2. INSTALL AND MAINTAIN TRAFFIC SIGNALS.
3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOAD		HL-93
2. FUTURE PAVEMENT	d_p:	3.0 INCH
3. DESIGN SPAN	L:	67.00 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:	- - -
5. PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX)	f_y:	270 KSI
6. PRESTRESSED CONCRETE STRENGTH	f'_c:	7.0 KSI
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci}:	5.5 KSI
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f'_c:	4.0 KSI
9. CONCRETE, HIGH PERFORMANCE CLASS A	f'_c:	4.0 KSI
10. CONCRETE, HIGH PERFORMANCE CLASS B	f'_c:	3.5 KSI
11. CONCRETE, CLASS C	f'_c:	3.0 KSI
12. REINFORCING STEEL	f_y:	60 KSI
13. STRUCTURAL STEEL AASHTO M270	f_y:	- - -
14. SOIL UNIT WEIGHT	γ:	0.140 KCF
15. NOMINAL BEARING RESISTANCE OF SOIL	q_n:	4.0 KSF
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	- - -
17. NOMINAL BEARING RESISTANCE OF ROCK	q_n:	10.0 KSF
18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	- - -
19. NOMINAL AXIAL PILE RESISTANCE	q_p:	350 kips
20. PILE YIELD STRENGTH ASTM A572	f_y:	50
21. PILE SIZE		14X102
22. EST. PILE LENGTH	L_p:	39 FT
23. PILE RESISTANCE FACTOR	ϕ:	- - -
24. LATERAL PILE DEFLECTION	Δ:	- - -
25. BASIC WIND SPEED	V_{3s}:	- - -
26. MINIMUM GROUND SNOW LOAD	p_g:	- - -
27. SEISMIC DATA PGA: - - -	S_s:	- - -
	S_1:	- - -

PROJECT NAME: **EAST HAVEN**
PROJECT NUMBER: **BRF 0269(11)**

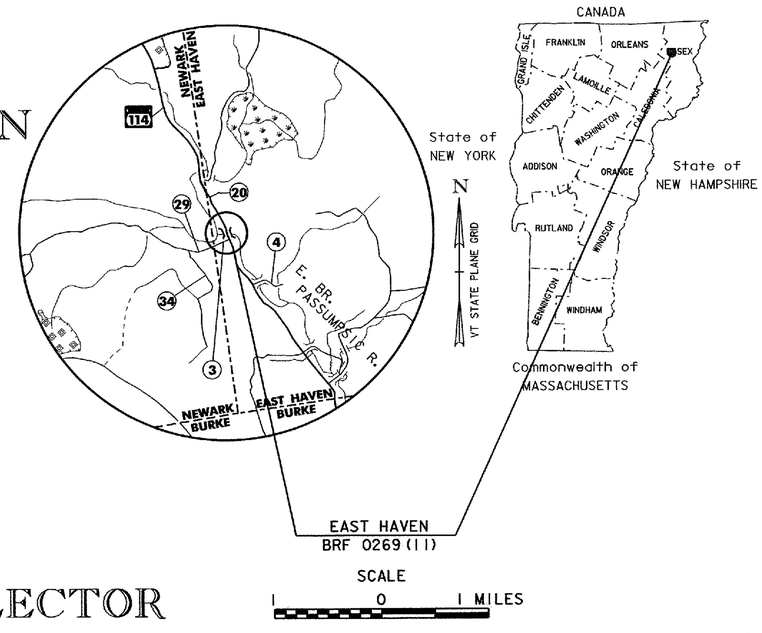
FILE NAME: **s00c162 PI Sheet Builder.xls**
PROJECT LEADER: **K. HIGGINS**
DESIGNED BY: **J. LACROIX**
PRELIMINARY INFORMATION SHEET (BRIDGE)

PLOT DATE: 8/9/2011
DRAWN BY: **R. PELLETT**
CHECKED BY: **J. LACROIX**

SEE SHEET 2 FOR INDEX OF SHEETS AND LIST OF STANDARDS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

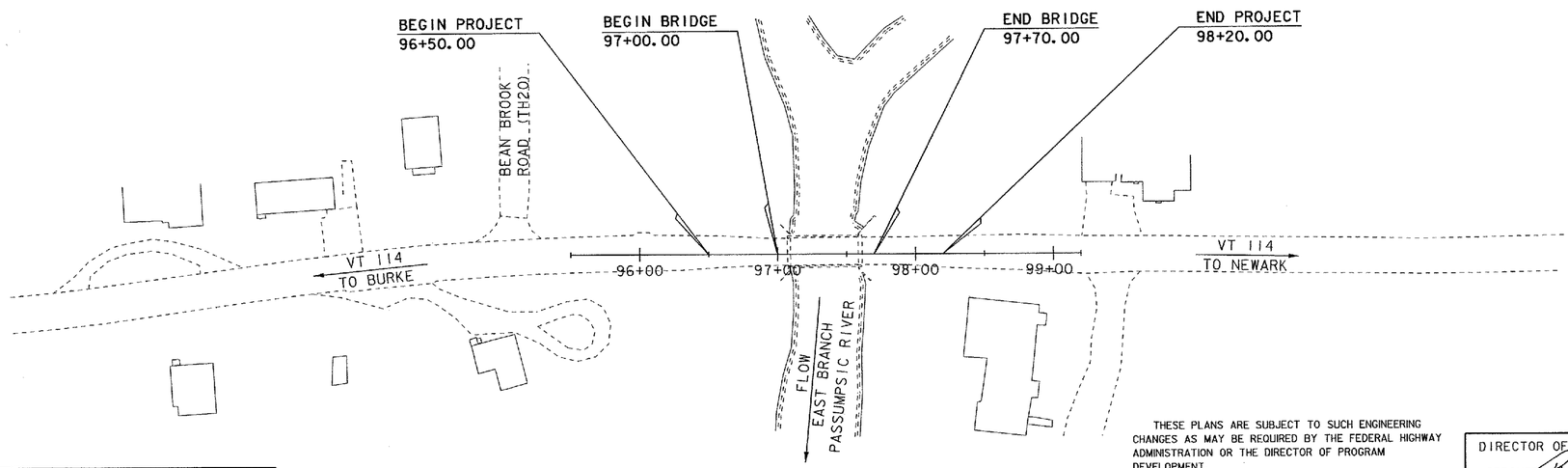
PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF EAST HAVEN
COUNTY OF ESSEX
STATE ROUTE 114 - MAJOR COLLECTOR
BRIDGE NO. 18

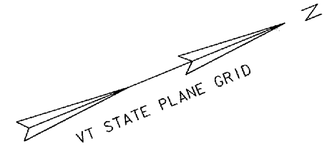


PROJECT LOCATION: BEGINNING AT MILE POST 1.827 ON VT 114 IN EAST HAVEN, CROSSING THE PASSUMPSIC RIVER AND ENDING AT MILE POST 1.860.

PROJECT DESCRIPTION: THIS PROJECT SHALL CONSIST OF THE REPLACEMENT OF THE EXISTING STRUCTURE WITH RELATED APPROACH WORK.

LENGTH OF BRIDGE: 70.00 FEET
LENGTH OF ROADWAY: 100.00 FEET
LENGTH OF PROJECT: 170.00 FEET





SCALE 1" = 50'-0"
50 0 50

QUALITY ASSURANCE PROGRAM: LEVEL 2

CONVENTIONAL SYMBOLS

COUNTY LINE
TOWN LINE
LIMITS OF ACCESS
POINT OF ACCESS
FENCE LINE
STONE WALL
TRAVELED WAY
GUARD RAIL
RAILROAD
SURVEY LINE
CULVERT
POWER POLE
TELEPHONE POLE
TREES
CONTROL OF ACCESS
PROPERTY LINE
R.O.W. TAKING LINE
SLOPE RIGHTS
TOP OF CUT
TOE OF SLOPE

SURVEYED BY : R. GILMAN
SURVEYED DATE : 11/00

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (96)

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF PROGRAM DEVELOPMENT.

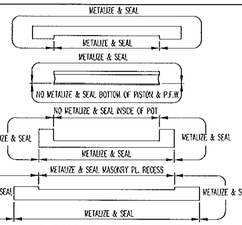
CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JUNE 15, 2006 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED Richard Fitzgerald DATE 8/5/11

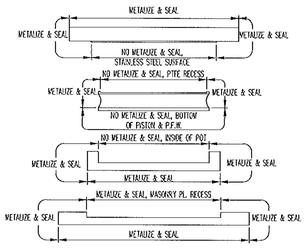
PROJECT MANAGER : KRISTIN HIGGINS

PROJECT NAME : EAST HAVEN
PROJECT NUMBER : BRF 0269(11)

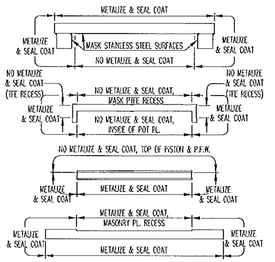
SHEET 1 OF 40 SHEETS



FIXED BEARING COATING LIMITS



MULTI-DIRECTIONAL BEARING COATING LIMITS



UNI-DIRECTIONAL BEARING COATING LIMITS

GENERAL NOTES

⚠ 1. MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN & CONSTRUCTION SPECIFICATIONS 5TH EDITION & ITS LATEST REVISIONS, THE VERMONT AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006 AS AMENDED BY THE SPECIAL PROVISIONS, AND THE CONTRACT PLANS.

2. PTFE SHALL BE VIRGIN, UNFILLED POLYTETRAFLUOROETHYLENE. GUIDE BAR PTFE SHALL 15% CLASS FILLED & PIGMENTED.

3. PTFE IS TO BE PURCHASED ETCHED ON ONE SIDE FOR BONDING AND MACHINED RECESS. SHELL MATING SURFACES OF PTFE AND STEEL SHALL BE GRIT BLASTED AND DEGREASED PRIOR TO APPLICATION OF ADHESIVE. ADHESIVE SHALL BE APPLIED USING DIRECTIONS SUPPLIED BY THE ADHESIVE MANUFACTURER. THE PTFE RESIN SHALL CONFORM TO THE REQUIREMENTS OF ASTM D4894.

4. STAINLESS STEEL SHALL CONFORM TO ASTM A240 – TYPE 304 AND SHALL BE 11 GA. (0.120"). STAINLESS STEEL SLIDING SURFACES IN CONTACT WITH PTFE SHALL HAVE A NO. 8 MIRROR FINISH AND ALL OTHERS SHALL HAVE A 2B FINISH.

5. WELDING SHALL CONFORM TO AWS-D1.5 BRIDGE WELDING CODE, AS WELL AS ANY STATE STANDARD.

6. THE TOP AND BOTTOM OF THE NEOPRENE DISC SHALL BE LUBRICATED WITH DOW CORNING #4 SILICONE COMPOUND.

7. ALL SHARP CORNERS OF STEEL MATERIALS SHALL BE REMOVED BY GRINDING OR SANDING.

8. THE BRASS SEALING RING ENDS SHALL BE CUT AT AN ANGLE OF 45° WITH A MAXIMUM GAP OF 0.05". THE RINGS SHALL BE STAGGERED 120° USING A QUANTITY OF THREE (3) RINGS.

9. EACH BEARING SHALL BE MARKED WITH THE MANUFACTURER'S NAME, THE BEARING TYPE OR MODEL NUMBER, THE BEARING NUMBER AND LOT NUMBER, UPSTATION, AND THE INSTALLED LOCATION. THE MARKING SHALL BE PERMANENT AND IN A LOCATION THAT WILL BE VISIBLE AFTER ERECTION OF STRUCTURE.

10. EACH BEARING SHALL HAVE MARKS PLACED ON THE SIDE OF THE MASONRY & SOLE PLATES TO INDICATE THE LOCATION OF THE CENTERLINE. IN ADDITION, EACH UNI-DIRECTIONAL BEARING SHALL HAVE THE SOLE PL. & MASONRY PL. MARKED TO INDICATE THE LOCATION OF THE TRANSVERSE CL OF THE STAINLESS STEEL. THE MARK ON THE MASONRY PL. SHALL EXTEND THE ENTIRE LENGTH ON THE TOP SURFACE FROM TO ASSEMBLY. THIS MARK CAN BE USED IN THE FIELD TO DETERMINE THE AXIAL OFFSET LOCATION OF THE SOLE PLATE (IF APPLICABLE). THE MARKS SHALL BE MADE IN INDELIBLE INK AND SHALL BE VISIBLE AFTER BEARING INSTALLATION.

11. BEARINGS ARE TO BE SHIPPED AS COMPLETE UNITS, STEEL BANDED, AND SHALL BE WRAPPED TO PROTECT FROM MOISTURE AND DIRT DURING TRANSIT AND STORAGE. BEARINGS SHALL BE STORED IN A CLEAN, DRY, LEVEL UPRIGHT POSITION WHILE AT JOBSITE. BEARINGS SHALL BE LIFTED FROM THEIR UNDERSIDES ONLY.

12. AT NO TIME MAY THE BEARINGS BE DISASSEMBLED WITHOUT AUTHORIZATION FROM D.S. BROWN OR WITHOUT THE PRESENCE OF A D.S. BROWN REPRESENTATIVE.

13. POT/PISTON INTERFACE SHALL BE CAULKED WITH SIKAFLEX 1A OR APPROVED EQUAL PRIOR TO SHIPMENT.

14. DS BROWN MAY SUBSTITUTE A709 OR 50W FOR A709 GR 50 DUE TO AVAILABILITY AT NO ADDITIONAL COST TO THE OWNER OR CONTRACTOR.

15. IN ACCORDANCE WITH AISC STEEL BRIDGE COMPONENT CERTIFICATION REQUIREMENTS, CALCULATIONS AND DRAWINGS HAVE BEEN REVIEWED BY PHILIP CASE P.E.

16. VERSIFLEX MUNOR "POT" STYLE BEARING MANUFACTURING FACILITY AND REPRESENTATIVE FOR COORDINATING PRODUCTION:
THE D.S. BROWN COMPANY
300 EAST CHERRY STREET
NORTH BALTIMORE, OHIO 45872
CSR – BRYAN KRIDER

PROTECTIVE COATING NOTES

1. ALL MILL SCALE SHALL BE REMOVED FROM BEARINGS BY BLASTING (SSPC-SP5) PRIOR TO APPLYING PROTECTIVE COATING.

2. METALIZATION SHALL BE IN ACCORDANCE WITH ANSI/AWS C2.18-93 EXTERNAL STEEL SURFACES SHALL BE METALIZED TO A MINIMUM THICKNESS OF 5 MILS. PROVIDE WIRE MATERIAL FOR THE METALIZED PRIMER CONSISTING OF PURE ZINC (99.9% PURITY).

3. WITHIN 8 HOURS AFTER METALIZATION, THE EXTERNAL STEEL SURFACES SHALL RECEIVE A SEAL COAT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
SEAL COAT = CARBOLINE RUSTBOND, D.F.T. = 2 MILS MIN.

4. SEE COATING LIMIT DETAILS FOR COATING LOCATIONS.

5. PRIOR TO METALIZING ALL CORNERS AND EDGES OF THE STEEL PLATES, SHAPES, ETC., SHALL BE GROUND TO 0.063" RADIUS.

CONTRACTOR NOTES

1. THE LOCATIONS OF THE ANCHOR BOLTS SHALL BE CROSS-REFERENCED WITH SHOP DRAWINGS TO VERIFY THE LOCATIONS.

2. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE STAINLESS STEEL AND PTFE SLIDING SURFACES FROM DAMAGE AT ALL TIMES.

3. DUE TO DESIGN DIFFERENCES, THE OVERALL HEIGHTS OF THE BEARING BEING SUPPLIED MAY DIFFER FROM THE HEIGHTS SHOWN IN THE CONTRACT PLANS. THE ACTUAL BEARING HEIGHTS ARE GIVEN IN THE DATA TABLE ON THE INDIVIDUAL BEARING DETAIL SHEET. CONTRACTOR TO RECALCULATE AND MODIFY PEDESTAL ELEVATIONS ACCORDINGLY.

4. THE BEARINGS WILL BE SHIPPED CENTERED, AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OFFSET THE SOLE PLATE IN THE FIELD DURING INSTALLATION, IF APPLICABLE. OFFSET VALUES WERE NOT PROVIDED ON THE CONTRACT PLANS, SO IF REQUIRED, OFFSETS SHALL BE PROVIDED BY THE BRIDGE DESIGNER.

5. THE CONTRACTOR SHALL ENSURE THAT THE MAXIMUM TEMPERATURE REACHED BY SURFACES IN CONTACT WITH THE PTFE IS LIMITED TO 300°F (149°C), AND LIMITED TO 200°F (94°C) FOR SURFACES IN CONTACT WITH THE ELASTOMER. TEMPERATURES SHALL BE DETERMINED BY TEMPERATURE INDICATING WAX PENCILS OR OTHER SUITABLE MEANS. DURING FIELD WELDING, NO WELDING CURRENT SHALL BE PERMITTED TO PASS BETWEEN THE POT AND PISTON COMPONENTS.

SAMPLING AND TESTING NOTES

ELASTOMERIC DISCS SHALL BE SUBJECTED TO RANDOM IN-HOUSE TESTING OF THE APPLICABLE PHYSICAL PROPERTIES PER AASHTO LRFD CONSTRUCTION SPECIFICATIONS, SECTION 18.

BEARINGS SHALL BE SUBJECTED TO THE TESTS DESCRIBED BELOW AND IN ACCORDANCE WITH THE APPLICABLE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS.

1. SAMPLE TEST – ONE (1) BEARING PER "LOT" SHALL BE TESTED AND SHALL BE CHOSEN AT RANDOM. A "LOT" SHALL CONSIST OF ONE OF THE FOLLOWING:
(1) NO MORE THAN 10 EXPANSION BEARINGS OF ONE "LOAD CATEGORY"
ONE LOAD CATEGORY MAY CONSIST OF BEARINGS OF A DIFFERING VERTICAL LOAD CAPACITY BUT THE BEARINGS MAY NOT EXCEED A RANGE OF CAPACITY DIFFERING BY MORE THAN 500KIPS.

2. PROCEDURE FOR TESTING EXPANSION BEARINGS–
a.) LOAD THE BEARING WITH ITS DESIGN LOADING FOR AT LEAST 12 HOURS. MEASURE THE FORCE REQUIRED FOR THE FIRST MOVEMENT AND CALCULATE THE COEFFICIENT OF FRICTION. MEASURE THE FORCE REQUIRED FOR MOVEMENT UNDER DYNAMIC LOADING AND CALCULATE THE COEFFICIENT OF FRICTION.
b.) LOAD THE BEARING AT 70% OF THE DESIGN LOAD BUT NOT LESS THAN 200KIPS. MEASURE THE STATIC AND DYNAMIC COEFFICIENTS OF FRICTION.
c.) LOAD THE BEARING AT 150% OF THE DESIGN LOAD FOR 30 MINUTES, AT A 2% ROTATION, AND SUBJECT THE BEARING TO 100 CYCLES OF MOVEMENT. MEASURE THE STATIC AND DYNAMIC COEFFICIENTS OF FRICTION.
d.) COEFFICIENTS OF FRICTION SHALL BE LESS THAN 4%

3. PROCEDURE FOR TESTING FIXED BEARINGS–
a.) LOAD BEARING AT 150% OF ITS DESIGN LOAD FOR 30 MINUTES, AT A 2% ROTATION.

4. AFTER PERFORMING EACH TEST DESCRIBED IN (2) & (3) ABOVE, DISASSEMBLE THE BEARING AND INSPECT FOR:
a.) ANY SIGN OF SEALING FAILURE.
b.) ANY SIGN OF MATERIAL FAILURE.
c.) ANY OTHER DEFECTS.

TOLERANCE TABLE LRFD 18.1.4.2-1

DESCRIPTION	THICKNESS TOLERANCE	DIMENSION TOLERANCE	FLATNESS TOLERANCE	SURFACE FINISH (μ-in)
POT BEARING				
OVERALL DIMENSIONS	+1/4", -0"	+1/8", -0"	--	--
POT DEPTH (INSIDE)	--	+0.025", -0"	--	--
POT WALL: THICKNESS & AVE. I.D.	+1/8", -0"	+0.003", -0.003"	+0.001", -0.001"	32
POT BASE: TOP & BOTTOM SURFACES	+0.025", -0"	--	CLASS C	63
PISTON: RIM	+1/16", -0"	+0.003", -0.003"	+0.001", -0.001"	32
PISTON: TOP AND BOTTOM SURFACES	+0.025", -0"	--	CLASS C	63
ELASTOMERIC DISK (UNSTRESSED)	+1/8", -0"	+1/16", -0"	--	--
FLAT PTFE SLIDING SURFACES				
PTFE	+1/16", -0"	+0.030", -0"	CLASS A	--
STAINLESS STEEL	+1/16", -0"	+1/8", -0"	CLASS A	# 8 MIRROR
GUIDES				
CONTACT SURFACE	--	+1/8", -0"	CLASS A	32
DISTANCE BETWEEN GUIDES	--	+0.030", -0"	--	--
PARALLELISM OF GUIDES	--	+/- 0.005 RAD	--	--
LOAD PLATES				
OVERALL DIMENSIONS	+1/16", -1/16"	+1/4", -1/4"	*CLASS A	125
BEVEL SLOPE	+/- 0.002 RAD	--	--	--

* ONLY FOR SURFACES IN CONTACT WITH THE BEARING. TOP SURFACE OF SOLE PLATE AND BOTTOM SURFACE OF MASONRY PLATE SHALL BE CLASS B.

FLATNESS TOLERANCE

CLASS	X NOM. DIM.
A	0.001
B	0.002
C	0.005

TOLERANCES

EXCEPT AS NOTED BELOW, THE DIMENSIONAL TOLERANCES AND SURFACE FINISHES OF THE BEARING SHALL SATISFY THE REQUIREMENTS OF AASHTO LRFD TABLE 18.1.4.2-1.

1. DIMENSIONS (LENGTH, WIDTH, THICKNESS, HOLE LOCATIONS AND POSITION OF WELDED COMPONENTS). THE TOLERANCE SHALL BE ± 0.005".

2. FLATNESS
a.) SOLE PLATE – BEARING SURFACES SHALL BE FLAT WITH MAXIMUM PERMISSIBLE VARIATION OF 0.01" FROM A PLANE DETERMINED BY ANY THREE CORNERS OF THE PLATES.
b.) MASONRY PLATE – BEARING SURFACES SHALL BE FLAT WITH MAXIMUM PERMISSIBLE VARIATION OF 0.04" FROM A PLANE DETERMINED BY ANY THREE CORNERS OF THE PLATE.
c.) SLIDING SURFACES – FOR STAINLESS STEEL MATING WITH PTFE BONDED TO STEEL, THE TOLERANCE SHALL BE THE "NOMINAL DIMENSION" IN INCHES TIMES 0.0005. THE "NOMINAL DIMENSION" SHALL BE THE DISTANCE BETWEEN ANY DIAGONAL CORNERS OR OPPOSITE EDGES OF THE BEARING SURFACE. THE TOLERANCE IS APPLICABLE TO BOTH SURFACES.

Vermont Agency of Transportation
RECEIVED
CK'D BY GML OK'D BY JEL
8:53 am, Mar 29, 2012
RESUBMIT ____ APPROVED X
BY KMH DATE 3/29/2012

REV.	DESCRIPTION	DATE	DR'T.	CK'D.
⚠ 1	COVERSING SPECIFICATIONS NOTE	3/28/12	KTG	KTG

ITEM	QUANTITY
LOCATION — TOWN HIGHWAY 6 BRIDGE NO. 57	--
BRIDGE — 57	--
PROJECT NO. — BRO 1442(28)	--
PROJECT NAME — SPRINGFIELD	--
—	--
DESIGNER — VTDOT	--
CUSTOMER — T BUCK CONSTRUCTION, INC.	--
	--
	--

D.S. BROWN
THE D.S. BROWN COMPANY
300 E. CHERRY STREET
NORTH BALTIMORE, OHIO 45872
419.257.2561
FAX: 419.257.0332
WWW.DSBROWN.COM

DESCRIPTION	SCALE	DRAWN	DESIGNED	DATE
GENERAL NOTES & COATING LIMITS	N.T.S.	DA	KTG	1/28/12
WINDSOR CO., VT	PROJECT NUMBER 35029	PUBLICATION 1112	TITLE 1	SHEET GN1

MK	QTY	DESCRIPTION
1A	2	PF-115
1sp1	2	SOLE PLATE
1pt1	2	PISTON
1pl1	2	POT PLATE
1ed1	2	ELASTOMERIC DISC
1br1	6	BRASS RING
1mp1	2	MASONRY PLATE
NFA	2	UNDERLAYMENT (*SL)
1B	4	SWEDGE ROD (*SL)
1C	4	HEAVY HEX NUT (*SL)
1D	4	WASHER PLATE (*SL)

HLMR BEARING ASSEMBLY LOCATION & USED DESIGN INFORMATION (PF)

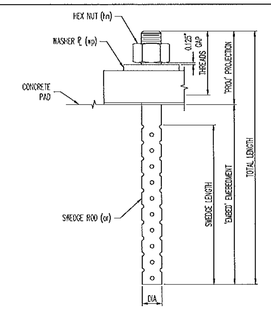
MK	QTY	STRUCTURE	BEARING TYPE	LOCATION	MAX VERT. SERVICE	MAX VERT. STRENGTH	MAX HORIZ. SERVICE	MAX HORIZ. STRENGTH	LONG MVMNT	TRANS MVMNT	ROTATION (RAD)	HEIGHT TO FABRICATE	HEIGHT IN PLANS	DIFFERENCE IN PLANS	UNDERLAYMENT IN HEIGHT (Y/N)
1A	2	Bridge No. 57	PF-115	ABUTMENT 2: G2, G3	115.0 kips	173.0 kips	29.0 kips	45.0 kips	0	0	0.03	5.382	9.000	-3.618	YES

ELASTOMERIC DISC SCHEDULE (PF)

ASSEM MK	PIECE MK	QTY	ELASTOMERIC DISC DIMENSIONS	ELASTOMER MATERIAL
1A	1ed1	2	0.750 X 6.500#	Neoprene, 50H/-5 Dure Gr.3

BRASS RING SCHEDULE (PF)

ASSEM MK	PIECE MK	QTY	BRASS RING DIMENSIONS	BRASS MATERIAL
1A	1br1	6	0.094 X 0.375 X 6.500#	B36 Half-Hard



ANCHOR ASSEMBLY DETAIL

ANCHOR ROD SCHEDULE (PF)

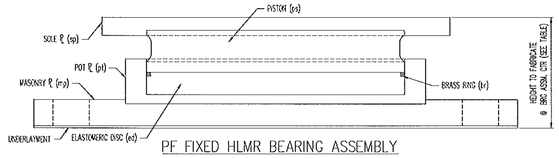
ASSEM MK	FOR BRG	PIECE MK	QTY	DIA	LENGTH	PROJ	EMBED	REMARKS	LOCATION	MATERIAL	COATING
1B	1A	1sr1	2	1.500	20.000	5.000	15.000	4" threads, 14° swedge	ABUTMENT 2: G2	F1554 GR 36	A153-HDG
1B	1A	1sr1	2	1.500	20.000	5.000	15.000	4" threads, 14° swedge	ABUTMENT 2: G3	F1554 GR 36	A153-HDG

NUT SCHEDULE (PF)

ASSEM MK	FOR BRG	PIECE MK	QTY	DIA	MATERIAL	COATING
1C	1A	1hn1	4	1.500	A563-DH or A194-2H	A153-HDG, Dry Lube & Dye

WASHER SCHEDULE (PF)

ASSEM MK	FOR BRG	PIECE MK	QTY	THICKNESS	WIDTH	LENGTH	REMARKS	MATERIAL	COATING
1D	1A	1wp1	4	0.375	3.000	3.000	ø1.625" HOLE @ CTR	A36	A123-HDG



PF FIXED HLMR BEARING ASSEMBLY

Vermont Agency of Transportation

RECEIVED

CK'D BY GML OK'D BY JEL

8:53 am, Mar 29, 2012

RESUBMIT ..... APPROVED X

BY KMH DATE 3/29/2012

* SL = SHIPPED LOOSE
SEE SHT. 02 FOR SUB-ASSEMBLY DETAILS.
SEE SHT. 01 FOR GENERAL NOTES & COATING UNITS.
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED

REV.	DESCRIPTION	DATE	DET.	CKD.

D.S. BROWN
THE D.S. BROWN COMPANY
300 E. CHERRY STREET
NORTH BALTIMORE, OHIO 45872
419.257.3351
FAX: 419.257.0322
WWW.DSBROWN.COM

LOCATION — TOWN HIGHWAY 6 BRIDGE NO. 57
BRIDGE — 57
PROJECT NO. — BRO 1442(26)
PROJECT NAME — SPRINGFIELD
—
DESIGNER — VTRDOT
CUSTOMER — T. BUCK CONSTRUCTION, INC.

ITEM	QUANTITY
35029-1112-3	2 OF 2
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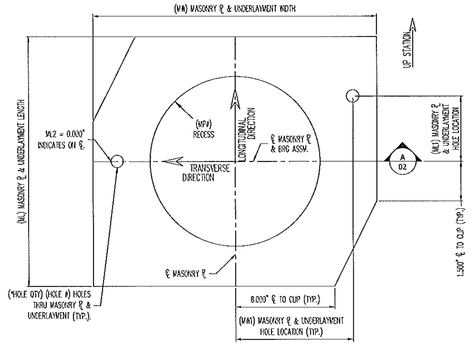
DESCRIPTION: PF FIXED HLMR ASSEMBLY & DESIGN INFORMATION
WINDSOR CO., VT

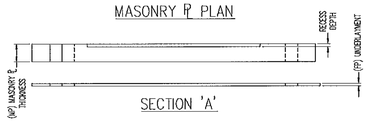
SCALE	REVISED	DRAWN	CHECKED	DATE
N.T.S.	DA	ICTG	KTG	1/26/12

PROJECT NUMBER	PROJECT CODE	RELEASE	SHEET
35029	1112	1	01

ASSEMBLY 01

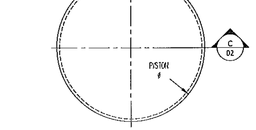


MASONRY ℄ PLAN

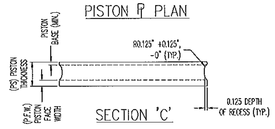


SECTION 'A'

MASONRY PLATE SCHEDULE (PF)																
ASSEM MK	PIECE MK	QTY	WP	WW	WL	WW1	WL1	WL2	RECESS WP#	RECESS DEPTH	*HOLE QTY	HOLE #	UL MK	UL FP	UL MATERIAL	MASONRY PL MATERIAL
1A	1mp1	2	1.500	29.000	18.000	12.250	4.500	0.000	8.313	0.250	2	1.875	1EA (1)p1	0.125	AASHTO (LRFD) 18.10.2	A709 GR 50 or 50W

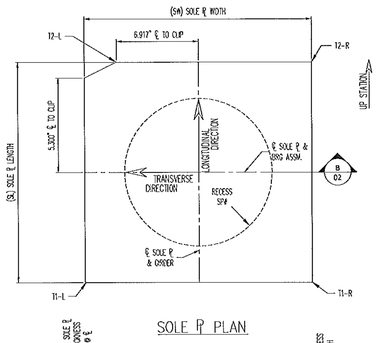


PISTON ℄ PLAN

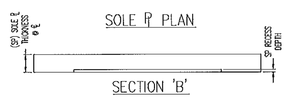


SECTION 'C'

PISTON SCHEDULE (PF)							
ASSEM MK	PIECE MK	QTY	PS	PISTON #	PFW	PISTON BASE	PISTON MATERIAL
1A	1ps1	2	1.100	6.460	0.208	0.250	A709 GR 50 or 50W

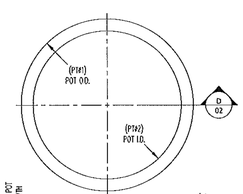


SOLE ℄ PLAN



SECTION 'B'

SOLE PLATE SCHEDULE (PF)													
ASSEM MK	PIECE MK	QTY	BEVEL T1-L	BEVEL T1-R	BEVEL T2-L	BEVEL T2-R	SP	SW	SL	RECESS SP#	SP RECESS DEPTH	SOLE PLATE MATERIAL
1A	1sp1	2	1.625	1.625	1.000	1.000	1.313	20.033	18.033	6.523	0.250	A709 GR 50 or 50W



POT ℄ PLAN

SECTION 'D'

POT PLATE SCHEDULE (PF)									
ASSEM MK	PIECE MK	QTY	PT	PT #1	PT #2	PB	PD	POT PL MATERIAL
1A	1pt1	2	2.150	8.250	6.500	1.035	1.035	A709 GR 50 or 50W

* PER PLATE.
SEE SHT. 01 FOR ASSEMBLY INFORMATION & DETAILS.
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED.

Vermont Agency of Transportation
RECEIVED
CK'D BY GML OK'D BY JEL
8:53 am, Mar 29, 2012
RESUBMIT _____ APPROVED X
BY KMH DATE 3/29/2012

REV.	DESCRIPTION	DATE	DET.	CKD.

D.S. BROWN
THE D.S. BROWN COMPANY
300 E. CHERRY STREET
NORTH BALTIMORE, OHIO 45872
419.257.3561
FAX: 419.257.0353
WWW.DSBROWN.COM

ITEM	QUANTITY
LOCATION — TOWN HIGHWAY 6 BRIDGE NO. 57	--
BRIDGE — 57	--
PROJECT NO. — BRO 1442(26)	--
PROJECT NAME — SPRINGFIELD	--
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DESIGNER — VTDOT	--
CUSTOMER — T. BUCK CONSTRUCTION, INC.	--
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DESCRIPTION: FIXED HLMR SUB-ASSEMBLY DETAILS
WINDSOR CO., VT

SCALE	DRAWN BY	DESIGNED	CHECKED	DATE	--
N.T.S.	DA	KTG		1/26/12	--
PROJECT NUMBER		PROJECT CODE	REVISE	SHT	
35029		1112	1	02	

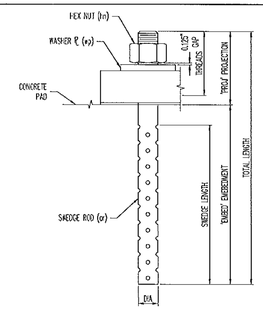
MK	QTY	DESCRIPTION
3A	2	PM-150
3sp1	2	SOLE PLATE
3sf1	2	STAINLESS STEEL
3pf1	2	PTFE DISC
3ps1	2	PISTON
3pt1	2	POT PLATE
3se1	2	ELASTOMERIC DISC
3br1	6	BRASS RING
3mp1	2	MASONRY PLATE
3FA	2	UNDERLAYMENT (*2)
3B	4	SWEDGE ROD (*2)
3C	4	HEAVY HEX NUT (*2)
3D	4	WASHER PLATE (*2)

HLMR BEARING ASSEMBLY LOCATION & USFD DESIGN INFORMATION (PM)															
MK	QTY	STRUCTURE	BEARING TYPE	LOCATION	MAX VERT. SERVICE	MAX VERT. STRENGTH	MAX HORIZ. SERVICE	MAX HORIZ. STRENGTH	LONG MVMNT	TRANS MVMNT	ROTATION (RAD)	HEIGHT TO FABRICATE	HEIGHT IN PLANS	DIFFERENCE IN PLANS	UNDERLAYMENT IN HEIGHT (Y/N)
3A	2	Bridge No. 57	PM-150	ABUTMENT 1: G1, G4	150.0 Kips	225.0 Kips	15.0 Kips	15.0 Kips	2.000	1.000	0.03	5.239	9.000	-3.761	YES

ELASTOMERIC DISC SCHEDULE (PM)				
ASSEM MK	PIECE MK	QTY	ELASTOMERIC DISC DIMENSIONS	ELASTOMER MATERIAL
3A	3se1	2	0.750 X 7.5059	Neoprene, 50H +/-5 Duro Cr.3

BRASS RING SCHEDULE (PM)				
ASSEM MK	PIECE MK	QTY	BRASS RING DIMENSIONS	BRASS MATERIAL
3A	3br1	6	0.094 X 0.375 X 7.5059	B36 Half-Hard

PTFE DISC SCHEDULE (PM)				
ASSEM MK	PIECE MK	QTY	PTFE DIMENSIONS	PTFE DISC MATERIAL
3A	3pf1	2	0.188 X 7.2559	Pure Virgin Unfilled

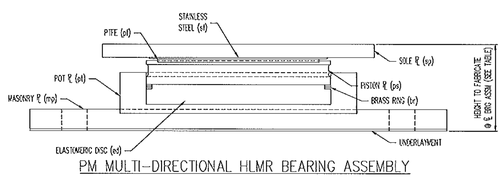


ANCHOR ASSEMBLY DETAIL

ANCHOR ROD SCHEDULE (PM)											
ASSEM MK	FOR BRG	PIECE MK	QTY	DIA	LENGTH	PROJ	EMBED	REMARKS	LOCATION	MATERIAL	COATING
3B	3A	3ar1	2	1.500	20.000	5.000	15.000	4" threads, 16" swedge	ABUTMENT 1: G1	F1554 GR 36	A153-HDG
3B	3A	3ar1	2	1.500	20.000	5.000	15.000	4" threads, 16" swedge	ABUTMENT 1: G4	F1554 GR 36	A153-HDG

NUT SCHEDULE (PM)						
ASSEM MK	FOR BRG	PIECE MK	QTY	DIA	MATERIAL	COATING
3C	3A	3nt1	4	1.500	A563-DH or A194-2H	A153-HDG, Dry Lube & Dye

WASHER SCHEDULE (PM)									
ASSEM MK	FOR BRG	PIECE MK	QTY	THICKNESS	WIDTH	LENGTH	REMARKS	MATERIAL	COATING
3D	3A	3wp1	4	0.375	3.000	3.000	ø1.625" HOLE @ CTR	A36	A123-HDG



PM MULTI-DIRECTIONAL HLMR BEARING ASSEMBLY

* P = SHIPPED LOOSE
SEE SHT. 04 & 05 FOR SUB-ASSEMBLY DETAILS.
SEE SHT. 01 FOR GENERAL NOTES & COATING LIMITS.
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED

Vermont Agency of Transportation
RECEIVED
CK'D BY GML OK'D BY JEL
8:53 am, Mar 29, 2012
RESUBMIT ____ APPROVED X
BY KMH DATE 3/29/2012

REV.	DESCRIPTION	DATE	DE.	CKD.

D.B. BROWN
THE D.B. BROWN COMPANY
300 E. CHERRY STREET
NORTH BALTIMORE, OHIO 45872
419.257.3561
FAX: 419.257.3332
WWW.DBBROWN.COM

LOCATION — TOWN HIGHWAY 6 BRIDGE NO. 57
BRIDGE — 57
PROJECT NO. — BRO 1442(26)
PROJECT NAME — SPRINGFIELD
—
DESIGNER — VTDOT
CUSTOMER — T. BUCK CONSTRUCTION, INC.

ITEM	QUANTITY
35029-1112-1	2 OF 2
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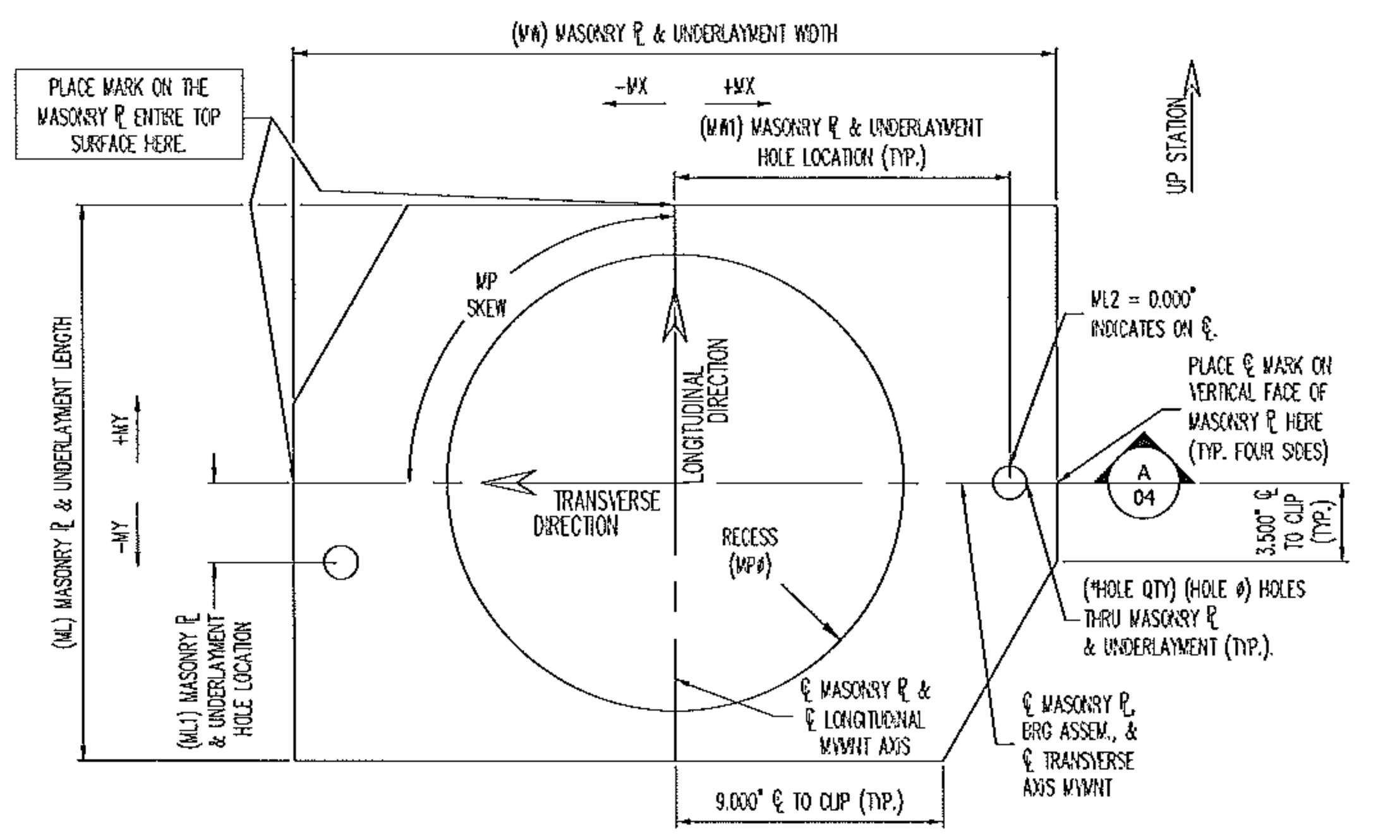
DESCRIPTION: PM MULTI-DIRECTIONAL HLMR ASSEMBLY & DESIGN INFORMATION
WINDSOR CO., VT

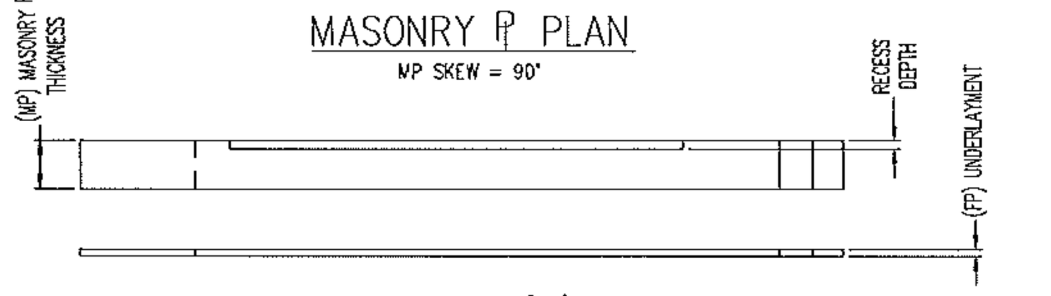
SCALE	DRAWN	DESIGNED	DATE
N.T.S.	DA	KTG	1/26/12

PROJECT NUMBER	PROJECT SEQUENCE	PLANS	SHEET
35029	1112	1	03

ASSEMBLY 03

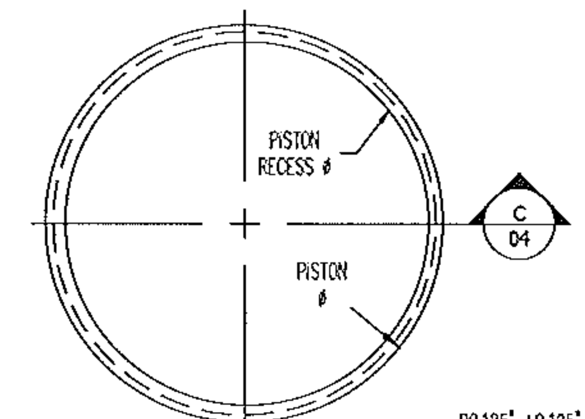


MASONRY PL PLAN
MP SKEW = 90°

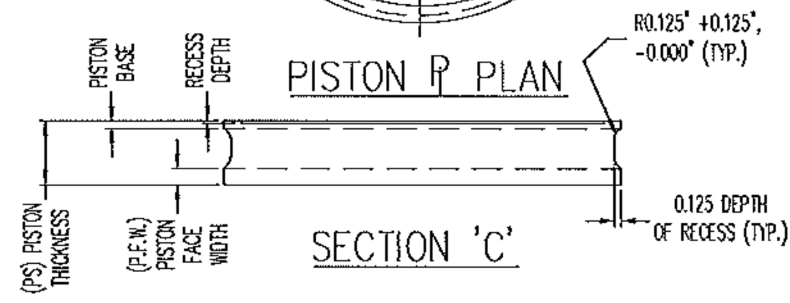


SECTION 'A'

MASONRY PLATE SCHEDULE (PM)																			
ASSEM MK	PIECE MK	QTY	MP	MW	ML	MW1	ML1	ML2	RECESS MPØ	RECESS DEPTH	*HOLE QTY	HOLE Ø	MP SKEW	MY	MX	UL MK	UL FP	UL MATERIAL	MASONRY PL MATERIAL
3A	3mp1	2	1.500	29.000	16.000	12.250	2.000	0.000	9.063	0.250	2	1.875	+90.0°	+0.000	+0.000	3FA (3fp1)	0.125	AASHTO (LRFD) 18.10.2	A709 GR 50 or 50W

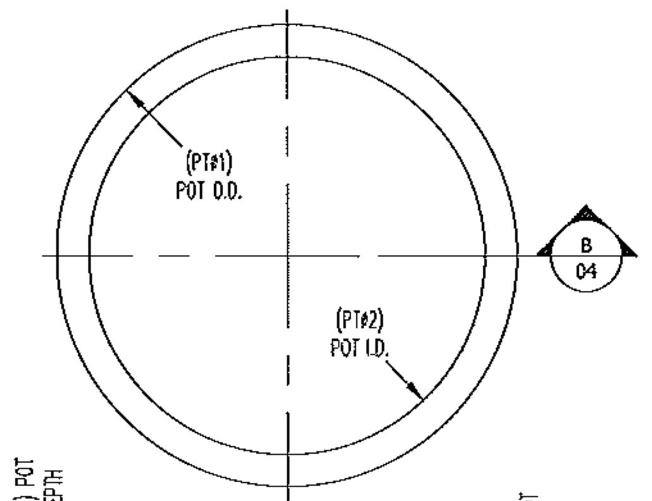


PISTON PL PLAN

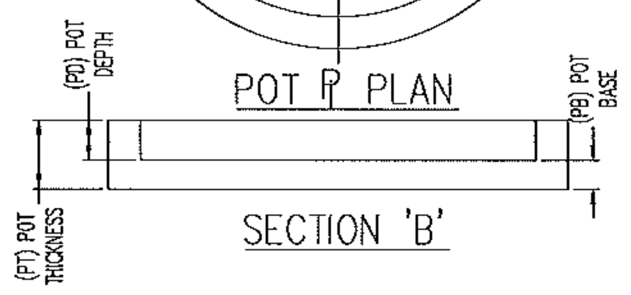


SECTION 'C'

PISTON SCHEDULE (PM)									
ASSEM MK	PIECE MK	QTY	PS	PISTON Ø	PFW	PISTON BASE	RECESS DEPTH	PISTON RECESS Ø	PISTON MATERIAL
3A	3ps1	2	0.900	7.460	0.225	0.188	0.034	7.250	A709 GR 50 or 50W



POT PL PLAN



SECTION 'B'

POT PLATE SCHEDULE (FM)									
ASSEM MK	PIECE MK	QTY	PT	PT Ø1	PT Ø2	PB	PD	POT PL MATERIAL	
3A	3pt1	2	1.775	9.000	7.500	0.688	1.088	A709 GR 50 or 50W	

Vermont Agency of Transportation
RECEIVED
CK'D BY GML OK'D BY JEL
8:53 am, Mar 29, 2012
RESUBMIT BY KMH APPROVED X DATE 3/29/2012

* PER PLATE
SEE SHT. 03 FOR ASSEMBLY INFORMATION & DETAILS.
SEE SHT. 05 FOR SUB-ASSEMBLY DETAILS.
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED.

REV.	DESCRIPTION	DATE	DET.	CKD.

D.S. BROWN
THE D.S. BROWN COMPANY
300 E. CHERRY STREET
NORTH BALTIMORE, OHIO 45872
419.257.3561
FAX: 419.257.0332
WWW.DSBROWN.COM

LOCATION — TOWN HIGHWAY 6 BRIDGE NO. 57
BRIDGE — 57
PROJECT NO. — BRO 1442(26)
PROJECT NAME — SPRINGFIELD
—
DESIGNER — VTDOT
CUSTOMER — T BUCK CONSTRUCTION, INC.

ITEM	QUANTITY
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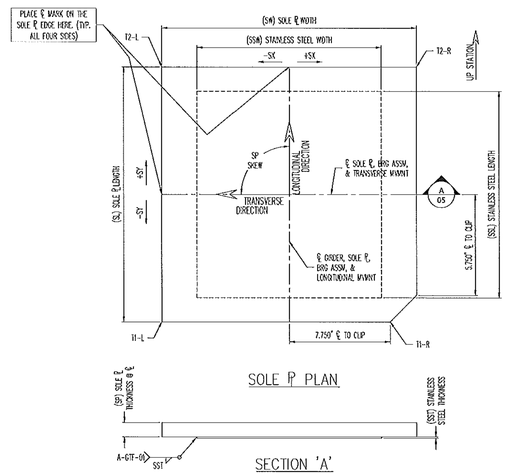
DESCRIPTION	SCALE	DRAWN BY	CHECKED BY	DATE	
PM MULTI-DIRECTIONAL HLMR SUB-ASSEMBLY DETAIL WINDSOR CO., VT	N.T.S.	DA	KTC	1/26/12	–
	PROJECT NUMBER 35029	PRODUCT CODE 1112		RELEASE 1	SHEET 04

ASSEMBLY

03



SOLE ℄ PLAN

SECTION 'A'

SOLE PLATE & STAINLESS STEEL SCHEDULE (SW)

ASSEM MK	PIECE MK	QTY	BEVEL 11-L	BEVEL 11-R	BEVEL 12-L	BEVEL 12-R	SP	SW	SL	SOLE PLATE MATERIAL	SP SST MK	SST	SSW	SSL	SP SKEW	SY	SX	SP SS MATERIAL
SA	3@1	2	1.625	1.625	1.000	1.000	1.313	20.000	15.000	A709 GR 50 or 50W	3@1	0.120	18.250	11.250	⌀90.0°	±0.000	±0.000	A240 T304, #3 & 2B

SEE SHT. 03 FOR ASSEMBLY INFORMATION & DETAILS.
SEE SHT. 04 FOR SUB-ASSEMBLY DETAILS.
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED.

REV.	DESCRIPTION	DATE	DET.	CKD.

Vermont Agency of Transportation

RECEIVED

CK'D BY GML OK'D BY JEL

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RESUBMIT ____ APPROVED X

BY KMH DATE 3/29/2012

D.B. BROWN

THE D.B. BROWN COMPANY
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419.257.3561
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LOCATION — TOWN HIGHWAY 8 BRIDGE NO. 57
BRIDGE — 57
PROJECT NO. — BRO 1442(26)
PROJECT NAME — SPRINGFIELD
—
DESIGNER — VTDOT
CUSTOMER — T BUCK CONSTRUCTION, INC.

ITEM	QUANTITY
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DESCRIPTION: PM MULTI-DIRECTIONAL HLMR SUB-ASSEMBLY DETAIL
WINDSOR CO., VT

SCALE	DRAWN	DESIGNED	DATE
N.T.S.	DA	KTG	1/26/12

PROJECT NUMBER	PROJECT NO.	REVISION	SHEET
35029	1112	1	05

MK	QTY	DESCRIPTION
6A	1	PMG-165
6sp1	1	SOLE PLATE
6st1	1	STAINLESS STEEL
6pt1	1	PTFE DISC
6ps1	1	PISTON
6pt1	1	POT PLATE
6es1	1	ELASTOMERIC DISC
6sr1	3	BRASS RING
6gb1	2	GUIDE BAR
6sg1	2	G.B. STAINLESS STEEL
6gg1	2	G.B. LOW-FRICTION MAT'L
6mp1	1	MASONRY PLATE
6FA	1	UNDERLAYMENT (*2L)
6F	2	SWEDGE ROD (*2L)
6H	2	HEAVY HEX NUT (*2L)
6M	2	WASHER PLATE (*2L)

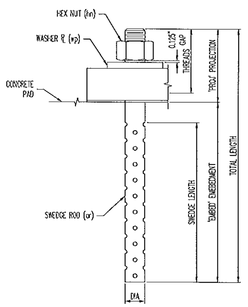
MK	QTY	DESCRIPTION
6B	1	PMG-165
6sp2	1	SOLE PLATE
6st1	1	STAINLESS STEEL
6pt1	1	PTFE DISC
6ps1	1	PISTON
6pt1	1	POT PLATE
6es1	1	ELASTOMERIC DISC
6sr1	3	BRASS RING
6gb1	2	GUIDE BAR
6sg1	2	G.B. STAINLESS STEEL
6gg1	2	G.B. LOW-FRICTION MAT'L
6mp1	1	MASONRY PLATE
6FA	1	UNDERLAYMENT (*2L)
6F	2	SWEDGE ROD (*2L)
6H	2	HEAVY HEX NUT (*2L)
6M	2	WASHER PLATE (*2L)

MK	QTY	DESCRIPTION
6C	1	PMGT-140
6sp3	1	SOLE PLATE
6sr2	1	STAINLESS STEEL
6pt2	1	PTFE DISC
6ps2	1	PISTON
6pt2	1	POT PLATE
6es2	1	ELASTOMERIC DISC
6sr2	3	BRASS RING
6gb2	2	GUIDE BAR
6sg2	2	G.B. STAINLESS STEEL
6gg2	2	G.B. LOW-FRICTION MAT'L
6mp2	1	MASONRY PLATE
6FB	1	UNDERLAYMENT (*2L)
6F	1	SWEDGE ROD (*2L)
6H	2	HEAVY HEX NUT (*2L)
6M	2	WASHER PLATE (*2L)

MK	QTY	DESCRIPTION
6D	1	PMGT-300
6sp4	1	SOLE PLATE
6st3	1	STAINLESS STEEL
6pt3	1	PTFE DISC
6ps3	1	PISTON
6pt3	1	POT PLATE
6es3	1	ELASTOMERIC DISC
6sr3	3	BRASS RING
6gb3	2	GUIDE BAR
6sg3	2	G.B. STAINLESS STEEL
6gg3	2	G.B. LOW-FRICTION MAT'L
6mp3	1	MASONRY PLATE
6FC	1	UNDERLAYMENT (*2L)
6G	2	SWEDGE ROD (*2L)
6K	2	HEAVY HEX NUT (*2L)
6N	2	WASHER PLATE (*2L)

MAJOR BEARING ASSEMBLY LOCATION & LRFD DESIGN INFORMATION (PMG)

MK	QTY	STRUCTURE	BEARING TYPE	LOCATION	MAX. VERT. SERVICE	MAX. VERT. STRENGTH	MAX. HORIZ. SERVICE	MAX. HORIZ. STRENGTH	LONG MVMNT	TRANS MVMNT	ROTATION (RAD)	HEIGHT TO FABRICATE	HEIGHT IN PLANS	DIFFERENCE IN PLANS	UNDERLAYMENT IN HEIGHT (Y/N)
6A	1	Bridge No. 57	PMG-165	ABUTMENT 1: G2	165.0 Kips	214.0 Kips	42.0 Kips	61.0 Kips	2.000	0	0.03	6.174	9.000	-2.826	YES
6B	1	Bridge No. 57	PMG-165	ABUTMENT 1: G3	165.0 Kips	214.0 Kips	42.0 Kips	61.0 Kips	2.000	0	0.03	6.174	9.000	-2.826	YES
6C	1	Bridge No. 57	PMGT-140	ABUTMENT 2: G1	140.0 Kips	205.0 Kips	35.0 Kips	52.0 Kips	1.000	0	0.03	5.932	9.000	-3.061	YES
6D	1	Bridge No. 57	PMGT-300	ABUTMENT 2: G4	300.0 Kips	450.0 Kips	75.0 Kips	115.0 Kips	1.000	0	0.03	8.165	9.000	-0.835	YES



ANCHOR ASSEMBLY DETAIL

ELASTOMERIC DISC SCHEDULE (PMG)

ASSEM MK	PIECE MK	QTY	ELASTOMERIC DISC DIMENSIONS	ELASTOMER MATERIAL
6A	6es1	1	0.875 X 7.750ø	Neoprene, 50H+/-5 Duro Gr.3
6B	6es1	1	0.875 X 7.750ø	Neoprene, 50H+/-5 Duro Gr.3
6C	6es2	1	0.750 X 7.500ø	Neoprene, 50H+/-5 Duro Gr.3
6D	6es3	1	1.125 X 10.500ø	Neoprene, 50H+/-5 Duro Gr.3

BRASS RING SCHEDULE (PMG)

ASSEM MK	PIECE MK	QTY	BRASS RING DIMENSIONS	BRASS MATERIAL
6A	6sr1	3	0.024 X 0.375 X 7.750ø	B36 Half-Hard
6B	6sr1	3	0.024 X 0.375 X 7.750ø	B36 Half-Hard
6C	6sr2	3	0.024 X 0.375 X 7.500ø	B36 Half-Hard
6D	6sr3	3	0.024 X 0.375 X 10.500ø	B36 Half-Hard

PTFE DISC SCHEDULE (PMG)

ASSEM MK	PIECE MK	QTY	PTFE DIMENSIONS	PTFE DISC MATERIAL
6A	6pt1	1	0.188 X 7.750ø	Pure Virgin Unfilled
6B	6pt1	1	0.188 X 7.750ø	Pure Virgin Unfilled
6C	6pt2	1	0.188 X 7.250ø	Pure Virgin Unfilled
6D	6pt3	1	0.188 X 10.500ø	Pure Virgin Unfilled

GUIDE BAR LOW-FRICTION MAT'L SCHEDULE (PMG)

ASSEM MK	PIECE MK	QTY	LOW-FRICTION MAT'L DIMENSIONS	LOW-FRICTION MATERIAL
6A	6gg1	2	0.188 X 1.000 X 7.750	Filled and Pigmented
6B	6gg1	2	0.188 X 1.000 X 7.750	Filled and Pigmented
6C	6gg2	2	0.188 X 0.875 X 7.250	Filled and Pigmented
6D	6gg3	2	0.188 X 1.375 X 10.500	Filled and Pigmented

ANCHOR ROD SCHEDULE (PMG)

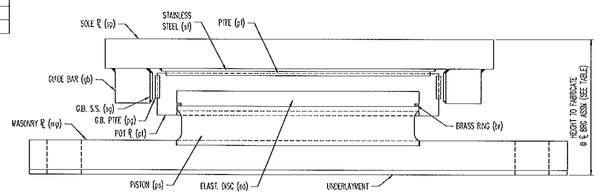
ASSEM MK	FOR BRG	PIECE MK	QTY	DIA	LENGTH	PROJ	EMBED	REMARKS	LOCATION	MATERIAL	COATING
6F	6A	6ar1	2	1.500	20.000	5.000	15.000	4" threads, 14" swedge	ABUTMENT 1: G2	F1554 GR 36	A153-HDG
6F	6B	6ar1	2	1.500	20.000	5.000	15.000	4" threads, 14" swedge	ABUTMENT 1: G3	F1554 GR 36	A153-HDG
6F	6C	6ar1	1	1.500	20.000	5.000	15.000	4" threads, 14" swedge	ABUTMENT 2: G1	F1554 GR 36	A153-HDG
6G	6D	6ar2	2	2.000	21.000	6.000	15.000	4" threads, 14" swedge	ABUTMENT 2: G4	F1554 GR 36	A153-HDG

NUT SCHEDULE (PMG)

ASSEM MK	FOR BRG	PIECE MK	QTY	DIA	MATERIAL	COATING
6H	6A	6hn1	2	1.500	A563-DH or A194-2H	A153-HDG, Dry Lube & Dye
6H	6B	6hn1	2	1.500	A563-DH or A194-2H	A153-HDG, Dry Lube & Dye
6H	6C	6hn1	2	1.500	A563-DH or A194-2H	A153-HDG, Dry Lube & Dye
6K	6D	6hn2	2	2.000	A563-DH or A194-2H	A153-HDG, Dry Lube & Dye

WASHER SCHEDULE (PMG)

ASSEM MK	FOR BRG	PIECE MK	QTY	THICKNESS	WIDTH	LENGTH	REMARKS	MATERIAL	COATING
6M	6A	6wp1	2	0.375	3.000	3.000	ø1.625" HOLE @ CTR	A36	A123-HDG
6M	6B	6wp1	2	0.375	3.000	3.000	ø1.625" HOLE @ CTR	A36	A123-HDG
6M	6C	6wp1	2	0.375	3.000	3.000	ø1.625" HOLE @ CTR	A36	A123-HDG
6N	6D	6wp2	2	0.375	4.000	4.000	ø2.125" HOLE @ CTR	A36	A123-HDG



PMG UNI-DIRECTIONAL HLMR BEARING ASSEMBLY

Vermont Agency of Transportation

RECEIVED

CK'D BY GML OK'D BY JEL

8:53 am, Mar 29, 2012

RESUBMIT ____ APPROVED X

BY KMH DATE 3/29/2012

SEE SHT. 07 & 08 FOR SUB-ASSEMBLY DETAILS.
SEE SHT. 01 FOR GENERAL NOTES & COATING LIMITS.
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED

REV.	DESCRIPTION	DATE	DET.	CKD.

D.S. BROWN
THE D.S. BROWN COMPANY
300 E. CHERRY STREET
NORTH BALTIMORE, OHIO 45872
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FAX: 419.257.3332
WWW.DSBROWN.COM

LOCATION — TOWN HIGHWAY 6 BRIDGE NO. 57
BRIDGE — 57
PROJECT NO. — BRO 1442(26)
PROJECT NAME — SPRINGFIELD
—
DESIGNER — VTDOT
CUSTOMER — T BUCK CONSTRUCTION, INC.

ITEM	QUANTITY
35029-1112-2	2 OF 2
35029-1112-4	1 OF 1
35029-1112-5	1 OF 1
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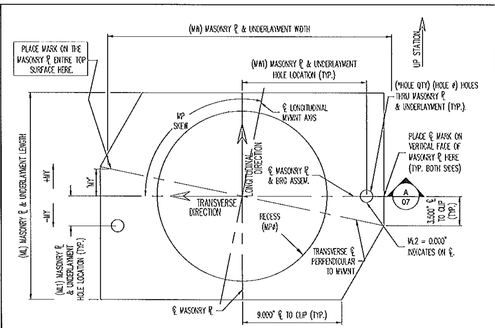
DESCRIPTION: PMG UNI-DIRECTIONAL HLMR ASSEMBLY & DESIGN INFORMATION
WINDSOR CO., VT

SCALE: N.T.S. | DRAWN BY: DA | DESIGNED BY: KTC | DATE: 1/26/12 | SHEET: --

PROJECT NUMBER: 35029 | PROJECT CODE: 1112 | REVISE: 1 | SHEET: 06

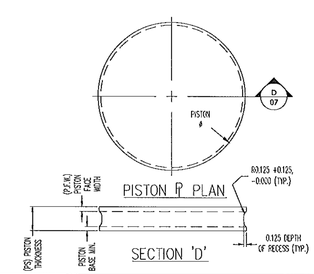


POT PLATE SCHEDULE (PMG)

ASSEM MK	PIECE MK	QTY	PT	PW	PL	PB	PD	PT #	PR #	TFE L	TFE W	PTFE RECESS	POT PL MATERIAL
6A	6p1	1	2.400	8.750	8.750	1.173	1.227	7.750	7.250	7.750	1.000	0.031	A709 GR 50 or 50W
6B	6p1	1	2.400	8.750	8.750	1.173	1.227	7.750	7.250	7.750	1.000	0.031	A709 GR 50 or 50W
6C	6p2	1	2.150	8.500	8.500	1.053	1.068	7.500	7.250	7.250	0.875	0.031	A709 GR 50 or 50W
6D	6p3	1	3.150	12.000	12.000	1.539	1.611	10.500	10.500	10.500	1.375	0.031	A709 GR 50 or 50W

MASONRY PLATE SCHEDULE (PMG)

LOCATION	ASSEM MK	PIECE MK	QTY	MP	WA	WL	WA1	WL1	WL2	RECESS WPH	RECESS DEPTH	*HOLE QTY	HOLE #	MP SKEW	WY	WX1	UL MK	UL TP	UL MATERIAL	MASONRY PL MATERIAL
ABUTMENT 1: G2	6A	6p1	1	1.500	29.000	16.000	12.250	2.000	0.000	7.773	0.250	2	1.875	+90.0°	+1.505		6FA (6p1)	0.125	AASHTO (LRFD) 18.10.2	A709 GR 50 or 50W
ABUTMENT 1: G3	6B	6p1	1	1.500	29.000	16.000	12.250	2.000	0.000	7.773	0.250	2	1.875	+90.0°	+0.755		6FA (6p1)	0.125	AASHTO (LRFD) 18.10.2	A709 GR 50 or 50W
ABUTMENT 2: G1	6C	6p2	1	1.500	29.000	18.000	12.250	4.500	0.000	7.523	0.250	2	1.875	+0.0°		+0.000	6FB (6p2)	0.125	AASHTO (LRFD) 18.10.2	A709 GR 50 or 50W
ABUTMENT 2: G4	6D	6p3	1	2.500	29.000	18.000	11.500	4.500	0.000	10.523	0.250	2	2.375	+0.0°		+0.000	6FC (6p3)	0.125	AASHTO (LRFD) 18.10.2	A709 GR 50 or 50W



PISTON SCHEDULE (PMG)

ASSEM MK	PIECE MK	QTY	PS	PISTON #	PSW	PISTON BASE	PISTON MATERIAL
6A	6p1	1	1.225	7.710	0.236	0.250	A709 GR 50 or 50W
6B	6p1	1	1.225	7.710	0.236	0.250	A709 GR 50 or 50W
6C	6p2	1	1.225	7.460	0.225	0.250	A709 GR 50 or 50W
6D	6p3	1	1.600	10.460	0.329	0.250	A709 GR 50 or 50W

Vermont Agency of Transportation

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RESUBMIT ____ APPROVED X

BY KMH DATE 3/29/2012

* PER PLATE
SEE SHT. 05 FOR ASSEMBLY DETAILS & LOCATIONS.
SEE SHT. 08 FOR ADDITIONAL SUB-ASSEMBLY DETAILS.
ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

REV	DESCRIPTION	DATE	DET.	CKD.
⚠	ADDED LOCATIONS TO MASONRY PLATE SCHEDULE	5/28/12	KTG	KTG

B.S. BROWN
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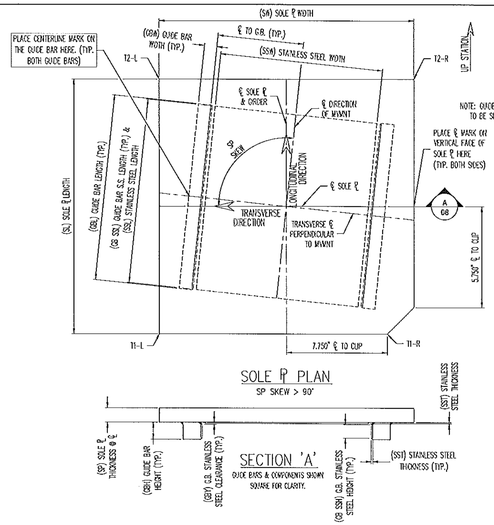
ITEM	QUANTITY
LOCATION — TOWN HIGHWAY 6 BRIDGE NO. 57	--
BRIDGE — 57	--
PROJECT NO. — BRO 1442(26)	--
PROJECT NAME — SPRINGFIELD	--
—	--
DESIGNER — VTDOT	--
CUSTOMER — T. BUCK CONSTRUCTION, INC.	--
	--
	--

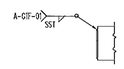
DESCRIPTION: PMG UNI-DIRECTIONAL HLMR SUB-ASSEMBLY DETAIL
WINDSOR CO., VT

SCALE: N.T.S. | DRAWN BY: DA | CHECKED BY: KTG | DATE: 1/26/12
PROJECT NO.: 35029 | PROJECTION: 1112 | SHEET NO.: 1 | SHEET: 07

ASSEMBLY 06

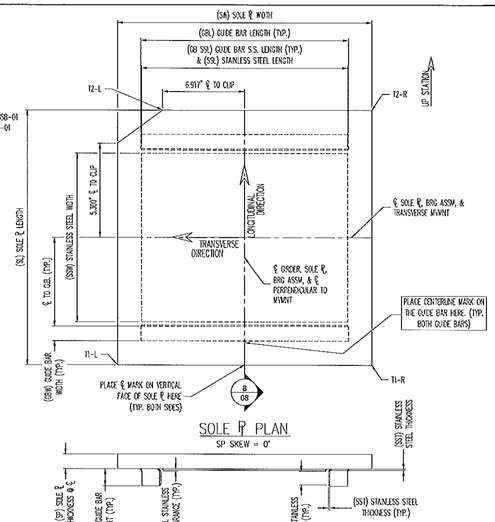


GUIDE BAR WELD DETAIL



STAINLESS STEEL WELD DETAIL

NOTE: DS BROWN RESERVES THE RIGHT TO MACHINE THE GUIDE BARS AND SOLE ℄ OUT OF ONE PIECE OF STEEL IN LIEU OF WELDING THE GUIDE BARS TO THE SOLE ℄. IF THE GUIDE BARS ARE MADE INTEGRAL, THE GUIDE BAR DIMENSIONS WILL EITHER REMAIN THE SAME OR WILL BE EXTENDED TO THE OUTSIDE EDGE OF THE PLATE FOR PWG BEARINGS. THE GUIDE BAR LENGTH SHALL BE HELD FOR ALL PWOT BEARINGS. ALL EXTERNAL DIMENSIONS WILL BE HELD.



SOLE PLATE, STAINLESS STEEL, & GUIDE BAR SCHEDULE (PWS)

LOCATION	ASSEM MK	PIECE MK	QTY	BEVEL T1-L	BEVEL T1-R	BEVEL T2-L	BEVEL T2-R	SP	SW	SL	SOLE PLATE MATERIAL	SP SS MK	SST	SSW	SSL	SP SS MATERIAL	GB SS MK	GB SSH	GB SSL	GB SS MATERIAL	GB MK	GBW	GBH	GBL	CL to GB	GBY	FW	BW	GB MATERIAL	SP SKEW
ABUTMENT 1: 62	6A	6sp1	1	1.625	1.625	1.033	1.033	1.315	20.000	16.000	AASHTO GR 50 or 50W	6ss1	0.120	8.750	11.750	A240 T304, §3 & 28	6sg1	1.250	11.750	A240 T304, §3 & 28	6gb1	1.750	1.750	12.000	4.651	0.344	0.313	0.438 (0.313)	AASHTO GR 50 or 50W	66.3°
ABUTMENT 1: 63	6B	6sp2	1	1.625	1.625	1.033	1.033	1.315	20.000	16.000	AASHTO GR 50 or 50W	6ss1	0.120	8.750	11.750	A240 T304, §3 & 28	6sg1	1.250	11.750	A240 T304, §3 & 28	6gb1	1.750	1.750	12.000	4.651	0.344	0.313	0.438 (0.313)	AASHTO GR 50 or 50W	113.0°
ABUTMENT 2: 61	6C	6sp3	1	1.625	1.625	1.033	1.033	1.315	20.000	18.000	AASHTO GR 50 or 50W	6ss2	0.120	8.250	10.250	A240 T304, §3 & 28	6sg2	1.125	10.250	A240 T304, §3 & 28	6gb2	1.625	1.625	10.500	4.526	0.344	0.313	0.438 (0.313)	AASHTO GR 50 or 50W	+0.0°
ABUTMENT 2: 64	6D	6sp4	1	1.625	1.625	1.033	1.033	1.315	20.000	18.125	AASHTO GR 50 or 50W	6ss3	0.120	11.500	13.500	A240 T304, §3 & 28	6sg3	1.625	13.500	A240 T304, §3 & 28	6gb3	2.125	2.125	13.750	6.276	0.344	0.313	0.438 (0.313)	AASHTO GR 50 or 50W	+0.0°

SEE SHT. 05 FOR ASSEMBLY DETAILS & LOCATIONS.
SEE SHT. 07 FOR ADDITIONAL SUB-ASSEMBLY DETAILS.
ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

Vermont Agency of Transportation

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8:53 am, Mar 29, 2012

RESUBMIT ____ APPROVED X

BY KMH DATE 3/29/2012

D.S. BROWN
THE D.S. BROWN COMPANY
300 E. CHERRY STREET
NORTH BALTIMORE, OHIO 45872
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REV.	DESCRIPTION	DATE	DET.	CK'D.
⚠	ADDED LOCATIONS TO SOLE PLATE SCHEDULE	3/28/12	KTG	KTG

	ITEM	QUANTITY
LOCATION — TOWN HIGHWAY 6 BRIDGE NO. 57	--	--
BRIDGE — 57	--	--
PROJECT NO. — BRO 1442(26)	--	--
PROJECT NAME — SPRINGFIELD	--	--
—	--	--
DESIGNER — VTDOT	--	--
CUSTOMER — T BUCK CONSTRUCTION, INC.	--	--
	--	--

DRAWING	SCALE	DRAWN BY	CHK'D BY	DATE	
PWG UNI-DIRECTIONAL RUBR SUB-ASSEMBLY DETAIL WINDSOR CO., VT	N.T.S.	DA	KTG	1/26/12	-
	PROJECT NO. 35029		PROJECTION 1112	HEADS 1	SHEET 08

ASSEMBLY 06

DSBROWN

Production Joint Welding Procedure Specification (D1.5-08)

Procedure No: A-(MC)GF-01 Date Issued: 9-28-04 Revision No: 02 Rev. Date: 9-15-09

Contractor (Fabricator) D. S. Brown Company Prepared by: Brad Streeter, Quality Assurance Manager

1. Non-Fracture Critical [X] Fracture Critical [ ] WPS Expiration Date: 8-11-14
2. Qualified in accordance with: AWS D1.5- 2008 (5.13)
   Referenced PQR No(s). PQR-(MC)GMAW-03(09) __ , __ , ____
   Referenced FWST No(s). PQR-(MC)GMAW-FWST-01A(09) , PQR-(MC)GMAW-FWST-01B(09) , __ , __
3. Material specification(s) ASTM A709 Gr. 36, 50, 50W
4. Material Thickness (es) Unlimited
5. Welding process GMAW
6. Manual [ ] , machine [X] , or semiautomatic [X]
7. Position(s) of welding 1F, 2F
8. Filler metal specification AWS A5.18
9. Filler metal class and brand name E70C-6M Corex Metal-Core Maxim
10. Flux class & brand N/A , Type N/A
11. Shielding gas 75% Ar / 25% CO2 Flow rate 45 CFH
12. Single pass [X] Or multiple pass [X]
13. Single arc [X] Or multiple arc [ ]
14. Welding Current DCEP
15. Polarity Reverse
16. Welding progression stringers
17. Root treatment Clean to bright sound metal or per AWS D1.5 (3.2.1 & 3.11)
18. Postheat treatment N/A
19. Calculated Heat Input (KJ/In) Min 34.77 Kj/in Max 49.65 Kj/in
20. Electrode extension (electrical stickout) 3/4"

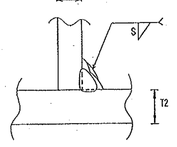
For DOT Approval

FEB 28 2012

Weld size (In)	Pass No(s).	Electrode Size (In)	Welding Process Variables AMPS/WFS*	VOLTS	Travel Speed (IPM)
**1/4"	1	.052"	270-307	27.9-31	11.5-13
5/16"	1	.052"	270-307	27.9-31	11.5-13
3/8"	1-3	.052"	270-307	27.9-31	11.5-13
7/16"	2-4	.052"	270-307	27.9-31	11.5-13
1/2"	4-6	.052"	270-307	27.9-31	11.5-13
5/8"	5-7	.052"	270-307	27.9-31	11.5-13
3/4"	6-8	.052"	270-307	27.9-31	11.5-13

Joint Detail (Fillet)

Show all dimensions, weld sizes, passes, and AWS symbols



T1 = Varies
T2 = Varies
S = Weld Size

**** T1 & T2 equal to or less than 3/4" for 1/4" welds.**

* Wire feed speed may be used along with amperage (include chart)

Prepared By: DSB QA Manager

Project:

DSB Job: 35029-1112

Preheat and Interpass Temperature Chart

Base Metal Thickness range	Minimum Preheat (°F)	Max Preheat & Interpass (°F)
≤ 3/4"	50°F	450°F
>3/4" to ≤1.5"	70°F	450°F
>1.5" to ≤2.5"	150°F	450°F
>2.5"	225°F	450°F

Note: When this procedure is used for A709Gr50W materials, it shall be limited to 5/16" single pass or material be coated.

Production Joint Welding Procedure Specification (D1.5-08)

DSBROWN

Procedure No: A-(MC)GSB-01 Date Issued: 9-28-04 Revision No: 01 Rev. Date: 9-15-09

Contractor (Fabricator) D. S. Brown Company Prepared by: Brad Streeter, Quality Assurance Manager

1. Non-Fracture Critical [X] Fracture Critical [ ] WPS Expiration Date: 8-11-14
2. Qualified in accordance with: AWS D1.5- 2008 (5.13)
   Referenced PQR No(s). PQR-(MC)GMAW-03(09) __ , __ , __
   Referenced FWST No(s). PQR-(MC)GMAW-FWST-01A(09) , PQR-(MC)GMAW-FWST-01B(09) , __ , __
3. Material specification(s) ASTM A709 Gr. 36, 50, 50W
4. Material Thickness (es) Unlimited
5. Welding process GMAW
6. Manual [ ] , machine [X] , or semiautomatic [X]
7. Position(s) of welding 1G, 2G, 1F, 2F
8. Filler metal specification AWS A5.18
9. Filler metal class and brand name E70C-6M Corex Metal-Core Maxim
10. Flux class & brand N/A , Type N/A
11. Shielding gas 75% Ar / 25% CO2 Flow rate 45 CFH
12. Single pass [X] Or multiple pass [X]
13. Single arc [X] Or multiple arc [ ]
14. Welding Current DCEP
15. Polarity Reverse
16. Welding progression stringers
17. Root treatment Clean to bright sound metal or per AWS D1.5 (3.2.1 & 3.11)
18. Postheat treatment N/A
19. Calculated Heat Input (KJ/In) Min 34.77 Kj/in Max 49.65 Kj/in
20. Electrode extension (electrical stickout) 3/4"

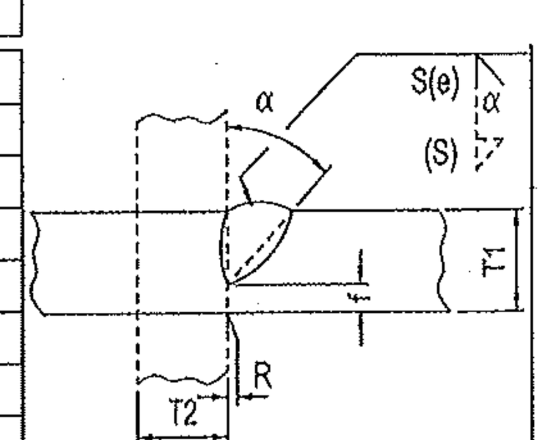
For DOT Approval

VTrans Received FEB 28 2012 CKD BY JWC APPROVED DATE 3/8/12

Weld size (In) (E)&(S)	Pass No(s).	Electrode Size (In)	Welding Process Variables: AMPS/WFS*	Welding Process Variables: VOLTS	Travel Speed (IPM)
1/4"	1	.052"	270-307	27.9-31	11.5-13
5/16"	1	.052"	270-307	27.9-31	11.5-13
3/8"	1-2	.052"	270-307	27.9-31	11.5-13
1/2"	3-4	.052"	270-307	27.9-31	11.5-13
5/8"	4-6	.052"	270-307	27.9-31	11.5-13
3/4"	5-7	.052"	270-307	27.9-31	11.5-13
7/8"	6-9	.052"	270-307	27.9-31	11.5-13
1"	7-10	.052"	270-307	27.9-31	11.5-13

Joint Detail (TC-P4-GF)

Show all dimensions, weld sizes, passes, and AWS symbols



T1 = ¼" min.
T2 = Varies
(E) = S-1/8"
f = 1/8" min.
R = 0
α = 45°
S = size groove
(S) = size of reinforcing fillet(if required) not to exceed ¼" in corner & T jts.

For Butt Joints see AWS 2.14

* Wire feed speed may be used along with amperage (include chart)

Prepared By: ____________ DSB QA Manager

Project: ____________

DSB Job: 35029-1112

Preheat and Interpass Temperature Chart

Base Metal Thickness range	Minimum Preheat (°F)	Max Preheat & Interpass (°F)
≤ 3/4"	50°F	450°F
>3/4" to ≤1.5"	70°F	450°F
>1.5" to ≤2.5"	150°F	450°F
>2.5"	225°F	450°F

Note: When this procedure is used for A709Gr50W materials, it shall be limited to 5/16" single pass or material be coated.

Production Joint Welding Procedure Specification (D1.5-08)

DSBROWN

Procedure No: B-FF-01 Date Issued: 3-28-08 Revision No: 01 Rev. Date: 11-11-09

Contractor (Fabricator) D. S. Brown Company Prepared by: Brad Streeter, Quality Assurance Manager

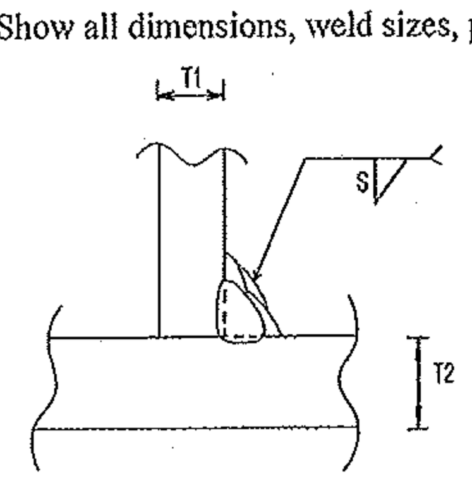
1. Non-Fracture Critical [X] Fracture Critical [ ] WPS Expiration Date: 3-6-13
2. Qualified in accordance with: AWS D1.5- 2008 (5.13)
   Referenced PQR No(s). PQR-FCAW-01-(08) __ , __ , ____
   Referenced FWST No(s). PQR-FCAW-FWST-01A(08) , PQR-FCAW-FWST-01B(08) , __ , ____
3. Material specification(s) ASTM A709 Gr. 36, 50, 50W
4. Material Thickness (es) Unlimited
5. Welding process FCAW
6. Manual [ ] , machine [ ] , or semiautomatic [X]
7. Position(s) of welding 1F, 2F
8. Filler metal specification AWS A5.20
9. Filler metal class and brand name E71T-1CH8 (UltraCore71C)
10. Flux class & brand N/A , Type N/A
11. Shielding gas 100% CO2 Flow rate 45 CFH
12. Single pass [X] Or multiple pass [X]
13. Single arc [X] Or multiple arc [ ]
14. Welding Current DCEP
15. Polarity Reverse
16. Welding progression stringers
17. Root treatment Clean to bright sound metal or per AWS D1.5 (3.2.1 & 3.11)
18. Postheat treatment N/A
19. Calculated Heat Input (KJ/In) Min 32.2 Kj/in Max 45.8 Kj/in
20. Electrode extension (electrical stickout) 3/4"

For DOT Approval

VTrans Received FEB 28 2012 Ckd by JWC APPROVED DATE 3/6/12

Weld size (In)	Pass No(s).	Electrode Size (In)	Welding Process Variables		Travel Speed (IPM)
			AMPS/WFS*	VOLTS	
**1/4"	1	1/16"	257-295	26.1-29.5	11.4-12.5
5/16"	1	1/16"	257-295	26.1-29.5	11.4-12.5
3/8"	2-3	1/16"	257-295	26.1-29.5	11.4-12.5
7/16"	3-5	1/16"	257-295	26.1-29.5	11.4-12.5
1/2"	4-6	1/16"	257-295	26.1-29.5	11.4-12.5
5/8"	5-7	1/16"	257-295	26.1-29.5	11.4-12.5
3/4"	6-8	1/16"	257-295	26.1-29.5	11.4-12.5

Joint Detail (Fillet)
Show all dimensions, weld sizes, passes, and AWS symbols



T1 = Varies
T2 = Varies
S = Weld Size

**** T1 & T2 equal to or less than 3/4" for 1/4" welds.**

* Wire feed speed may be used along with amperage (include chart)

Prepared By: ______ DSB QA Manager

Project: ______

DSB Job: 35029-1112

Preheat and Interpass Temperature Chart

Base Metal Thickness range	Minimum Preheat (°F)	Max Preheat & Interpass (°F)
≤ 3/4"	50°F	450°F
>3/4" to ≤1.5"	70°F	450°F
>1.5" to ≤2.5"	150°F	450°F
>2.5"	225°F	450°F

Note: When this procedure is used for A709Gr50W materials, it shall be limited to 5/16" single pass or material be coated.

Production Joint Welding Procedure Specification (D1.5-08)

DSBROWN

Procedure No: B-FSB-01 Date Issued: 3-28-08 Revision No: 01 Rev. Date: 11-11-09

Contractor (Fabricator) D. S. Brown Company Prepared by: Brad Streeter, Quality Assurance Manager

1. Non-Fracture Critical [X] Fracture Critical [ ] WPS Expiration Date: 3-6-13
2. Qualified in accordance with: AWS D1.5- 2008 (5.13)
   Referenced PQR No(s). PQR-FCAW-01-(08) ___ , ___ , ___
   Referenced FWST No(s). N/A , N/A , ___ , ___
3. Material specification(s) ASTM A709 Gr. 36, 50, 50W
4. Material Thickness (es) Unlimited
5. Welding process FCAW
6. Manual [ ] , machine [ ] , or semiautomatic [X]
7. Position(s) of welding 1G, 2G,(1F,2F)
8. Filler metal specification AWS A5.20
9. Filler metal class and brand name E71T-1CH8 (UltraCore71C)
10. Flux class & brand N/A , Type N/A
11. Shielding gas 100% CO2 Flow rate 45 CFH
12. Single pass [X] Or multiple pass [X]
13. Single arc [X] Or multiple arc [ ]
14. Welding Current DCEP
15. Polarity Reverse
16. Welding progression Stringers
17. Root treatment Clean to bright sound metal or per AWS D1.5 (3.2.1 & 3.11)
18. Postheat treatment N/A
19. Calculated Heat Input (KJ/In) Min 32.2 Kj/in Max 45.8 Kj/in
20. Electrode extension (electrical stickout) 3/4"

For DOT Approval

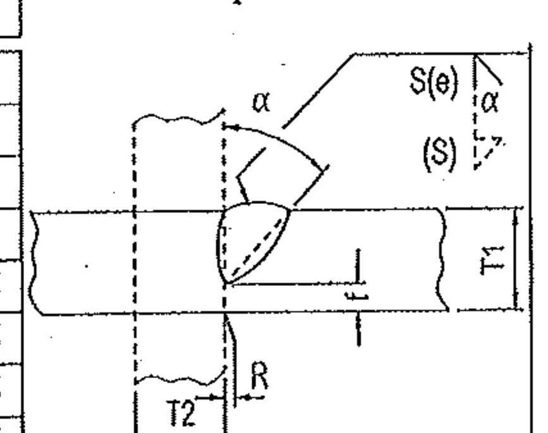
VTrans Received CK'd BY JWC
FEB 28 2012
APPROVED DATE
Resubmit BY

Weld size (In) (E)&(S)	Pass No(s).	Electrode Size (In)	Welding Process Variables		Travel Speed (IPM)
			AMPS/WFS*	VOLTS	
**1/4"	1	1/16"	257-295	26.1-29.5	11.4-12.5
5/16"	1	1/16"	257-295	26.1-29.5	11.4-12.5
3/8"	2-3	1/16"	257-295	26.1-29.5	11.4-12.5
1/2"	3-4	1/16"	257-295	26.1-29.5	11.4-12.5
5/8"	4-6	1/16"	257-295	26.1-29.5	11.4-12.5
3/4"	5-7	1/16"	257-295	26.1-29.5	11.4-12.5
7/8"	6-8	1/16"	257-295	26.1-29.5	11.4-12.5
1"	7-9	1/16"	257-295	26.1-29.5	11.4-12.5

Joint Detail (TC-P4-GF)

Show all dimensions, weld sizes, passes, and AWS symbols

** T1 & T2 equal to or less than 3/4" for 1/4" welds



For Butt Joints see AWS 2.14

- T1 = ¼" min.
- T2 = Varies
- (E) = S-1/8"
- f = 1/8" min.
- R = 0
- α = 45°
- S = size groove
- (S) = size of reinforcing fillet(if required) not to exceed ¼" in corner & T jts.

* Wire feed speed may be used along with amperage (include chart)

Prepared By:____________________DSB QA Manager

Project: ____________________

DSB Job: 35029-1112

Preheat and Interpass Temperature Chart		
Base Metal Thickness range	Minimum Preheat (°F)	Max Preheat & Interpass (°F)
≤ 3/4"	50°F	450°F
>3/4" to ≤1.5"	70°F	450°F
>1.5" to ≤2.5"	150°F	450°F
>2.5"	225°F	450°F

Note: When this procedure is used for A709Gr50W materials, it shall be limited to 5/16" single pass or material be coated.

DSBROWN

Production Joint Welding Procedure Specification (D1.5-08)

Procedure No: A-GTF-01 Date Issued: 1-9-04 Revision No: 01 Rev. Date: 5-15-09

Contractor (Fabricator) D.S. Brown Company Prepared by: Brad Streeter, Quality Assurance Manager

1. Non-Fracture Critical [X] Fracture Critical [ ] WPS Expiration Date: _____
2. Qualified in accordance with: AWS D1.5- 2008 , AWS D1.6-07
   Referenced PQR No(s). PQR-GTAW-01-(07)NY __ , __ , ____
   Referenced FWST No(s). PQR-GTAW-01(03) , __ , __ , ____
3. Material specification(s) ASTM A709 Gr. 36, 50, 50W, 304SS, 316SS
4. Material Thickness (es) Unlimited
5. Welding process GTAW
6. Manual [X] , machine [ ] , or semiautomatic [ ]
7. Position(s) of welding 1F, 2F
8. Filler metal specification AWS A5.9
9. Filler metal class and brand name ER309L (Murrex)
10. Flux class & brand N/A , Type N/A
11. Shielding gas 100% Argon Flow rate 20 CFH
12. Single pass [X] Or multiple pass [ ]
13. Single arc [X] Or multiple arc [ ]
14. Welding Current DCEN
15. Polarity Straight
16. Welding progression stringers
17. Root treatment Clean to bright sound metal or per AWS D1.5 (3.2.1 & 3.11)
18. Postheat treatment N/A
19. Calculated Heat Input (KJ/In) Min 10.9 KJ Max 20.4 KJ
20. Electrode extension (electrical stickout) N/A

For DOT Approval

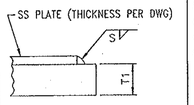
Returned for Changes
Checked by JW

FEB 28 2012

Returned APPROVED
By _____ Date 3/9/12

Weld size (In)	Pass No(s).	Electrode Size (In)	Welding Process Variables AMPS/WFS*	VOLTS	Travel Speed (IPM)
20 ga.	1	1/8"	170-200	15-17	12.6-15.4
16 ga.	1	1/8"	170-200	15-17	12.6-15.4
14 ga.	1	1/8"	170-200	15-17	12.6-15.4
12 ga.	1	1/8"	170-200	15-17	12.6-15.4
11 ga.	1	1/8"	170-200	15-17	12.6-15.4
10 ga.	1	1/8"	170-200	15-17	12.6-15.4
8 ga.	1	1/8"	170-200	15-17	12.6-15.4
3/16"	1	1/8"	170-200	15-17	12.6-15.4

Joint Detail (Fillet Weld)
Show all dimensions, weld sizes, passes, and AWS symbols



T_1 = Varies
S = Fillet Weld Size (Fillet weld must not exceed thickness of stainless steel)

* Wire feed speed may be used along with amperage (include chart)

Prepared By: _____ DSB QA Manager

Project: _____

DSB Job: 35029-1112

Preheat and Interpass Temperature Chart

Base Metal Thickness range	Minimum Preheat (°F)	Max Preheat & Interpass (°F)
≤ 3/4"	50°F	450°F
>3/4" to ≤1.5"	70°F	450°F
>1.5" to ≤2.5"	150°F	450°F
>2.5"	225°F	450°F

Note: When this procedure is used for A709Gr50W materials, it shall be limited to 5/16" single pass or material be coated.

Vermont Agency of Transportation
RECEIVED
CK'D BY GML OK'D BY JWC
6:29 am, Feb 29, 2012
RESUBMIT ______ APPROVED X
BY KMH DATE 3/14/2012

WELDING PROCEDURE SPECIFICATION (WPS) YES (X)
PREQUALIFIED X QUALIFIED BY TESTING ______
PROCEDURE QUALIFICATION RECORD (PQR) YES ( )

Company Name: ARC Enterprises, Inc.
Welding Process(es): GMAW
Supporting PQR No.(s): ______

Identification #: ARC WPS 5M2b
Revision: 5 Date: 2-14-12 By: SVH
Authorized by: STEVE HOWARD Date: 12-5-05
Type - Manual Semi - Automatic (X)
Machine ( ) Automatic ( )

JOINT DESIGN USED
Type: Fillet
Single: X Double Weld ( )
Backing ( ) NO (X)
Backing Material: ______
Root Opening: 0 Root Face Dimension: N/A
Groove Angle: N/A Radius (J-U): N/A
Back Gouging: YES( ) NO ( ) Method: N/A

BASE METALS
Material Spec: A709
Type or Grade: 50
Thickness Groove ______ Fillet: UNLIMITED
Diameter (Pipe) ______

FILLER METALS
AWS Specification: A5.18
AWS Classification: ER70S-6 Lincoln SuperArc L-56

SHIELDING
Flux ______ Gas: 98%ARGON 2%O2
Composition ______
Electrode - Flux (Class) ______ Flow Rate: 25-35 cfh
Gas Cup Size: 5/8

preheat;up to 3/4" - 50 degreesF,3/4" - 1 1/2"-70 degrees F
1 1/2" - 2 1/2" - 150 degrees F
over 2 1/2" - 225 degrees F

POSITION
Position of Groove ______ Fillet: 1F 2F
Vertical Progression ( )

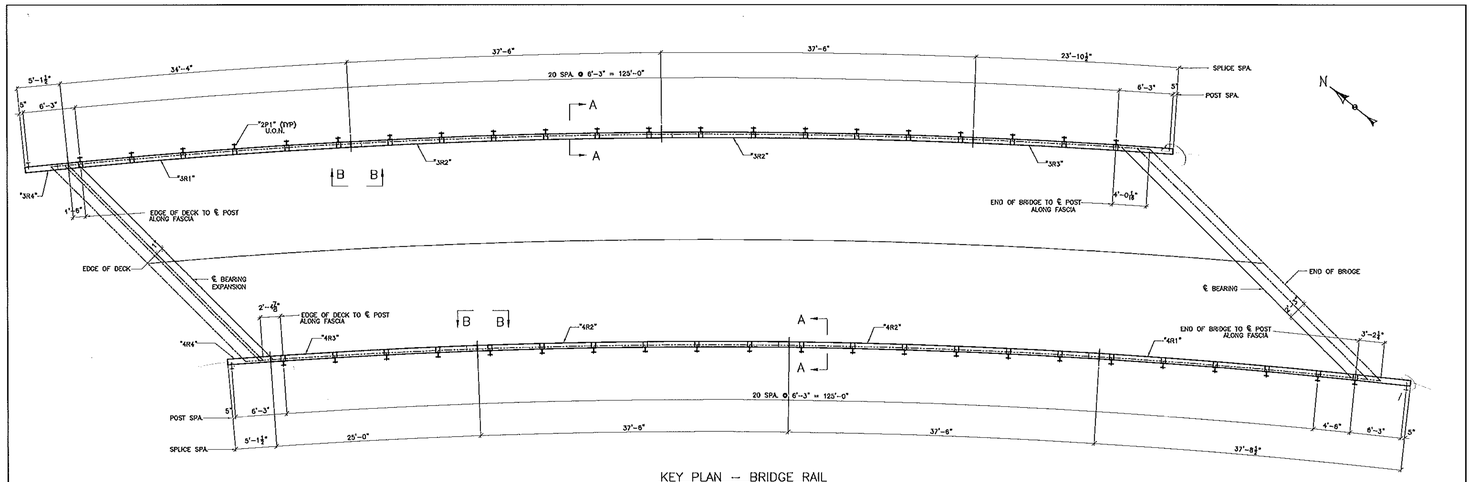
ELECTRICAL CHARACTERISTICS
Transfer Mode (FCAW) Short Circuiting ( )
Globular ( ) Spray (X)
Current: AC ( ) DCEP (X) DCEN ( )
Pulsed ( )
OTHER: ______

TECHNIQUE
Stringer or Weave Bead: STRINGER
Multi-pass or Single Pass (per side): SINGLE/MULTI
Number of Electrodes ______
Electrode Spacing Longitudinal: NA
Lateral: NA
Angle: NA
Contact Tube to Work Distance: 5/8" - 3/4"
Peening: NA
Interpass Cleaning: HAND/POWER TOOLS

POSTWELD HEAT TREATMENT
Temp: NA
Time: NA

WELDING PROCEDURE

Pass or Weld Layer(s)	S	Filler Metals: Class	Filler Metals: Diameter	Current: Type & Polartiy	Current: Amps or Wire Feed Speed	Volts	Travel Speed	Joint Details
1 1	3/16"	ER70S-6	.035"	DCEP	180-220	25-27	7-9	
1 1	1/4"	"	.035"	"	180-220	25-27	5-6	
1 1	5/16"	"	.035"	"	180-220	25-27	4-5	
1 1	3/8"	"	.035"	"	180-220	25-27	3-4	
1 2+	7/16"	"	.035"	"	180-220	25-27	2-3	
1 2+	1/2"	"	.045"	"	270-330	28-30	2-3	

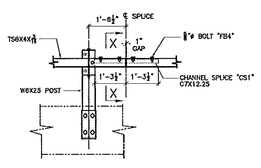


KEY PLAN -- BRIDGE RAIL

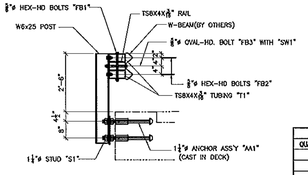
GENERAL NOTES:

1. HEAVY DUTY STEEL BEAM GUARD RAIL SHALL CONFORM TO VT. SPECIFICATION SECTION 732.
2. STRUCTURAL STEEL TUBING SHALL CONFORM TO VT. SPECIFICATION SECTION 732 GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH (AASHTO M111) ASTM A123.
3. BRIDGE RAIL POSTS, SPECIAL WASHERS, PLATE WASHERS AND SPLICE BARS SHALL CONFORM TO (AASHTO M223) A572 GR50 GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH (AASHTO M111 ASTM A123.
4. ALL BOLTS AND RELATED HARDWARE SHALL CONFORM TO (AASHTO M164) ASTM A325 TYPE 1 BOLTS, HOT DIPPED OR MECHANICALLY GALVANIZED PER SPECIFICATION.
5. ALL POSTS SHALL BE SET NORMAL TO GRADE.
6. SPLICES FOR THE STEEL BEAM GUARDRAIL SHALL LAP IN THE DIRECTION OF TRAFFIC.
7. ALL FIELD CUT OR DRILLED AREAS SHALL BE REPAIRED PER SECTION 513.
8. ALL FLAT WASHERS SHALL CONFORM TO ASTM F436.
9. ALL NUTS SHALL CONFORM TO ASTM A563, GRADE DH

FOLLOW THIS ON SHEET R2



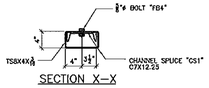
SECTION B-B (TYP. SPLICE)



SECTION A

NOTES:

1. ALL DIMENSIONS ARE ALONG FACE OF RAIL U.O.N.
2. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A $\frac{1}{16}$" RADIUS AND BE FREE OF BURRS PRIOR TO GALVANIZING.
3. SEAL WELD ALL CONNECTIONS, WHERE POSSIBLE, PRIOR TO GALVANIZING.



SECTION X-X

Vermont Agency of Transportation

RECEIVED

CK'D BY GML OK'D BY JTS

3:46 pm, Mar 26, 2012

RESUBMIT APPROVED AS NOTED

BY KMH DATE 3/28/2012

ERECTION BOLTS W/NUTS				WASHERS		FINISH
QUAN.	SIZE	LENGTH	TYPE	FLAT	BEV.	GALV. AASHTO M232

FINISH	HOT DIPPED GALVANIZED				
MATERIAL	AASHTO M270 GR. 36				
HOLES	AS NOTED				
ELECTRODES	PER W.P.S.				
WELDS	AS NOTED				
SURFACE PREP	SSPC-SP8	1	3/23/12	PER APPROVAL	JAC
		NO	DATE	DESCRIPTION	BY

REVISIONS

ARC ENTERPRISES, INC.

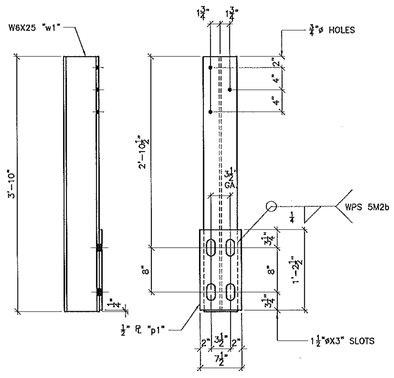
ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 120 WINDSOR, ME. 04987
PHONE: (207) 265-2848 - FAX: (207) 265-4054

DRAFTER	JAC	BRIDGE RAIL KEY PLAN	PROJECT NO. BRO 1442(26)
DATE	2/8/12	VERMONT AGENCY OF TRANSPORTATION, TOWN OF SPRINGFIELD, TH 6 CLASS III, LOCAL ROAD	DWG. NO. R1
CHECKED	MTD	C.C. T. BUCK CONSTRUCTION, INC.	
JOB	11-175		

Follow Material Spec 732.04: Steel Beam Bridge Railing

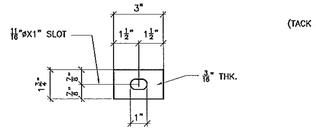
ASTM A572 GRADE 50

A563 GRADE DH

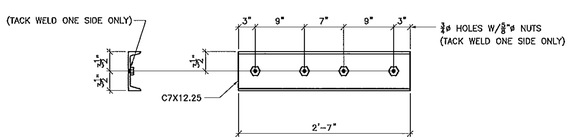


42 – POST ASS'Y – 2P1

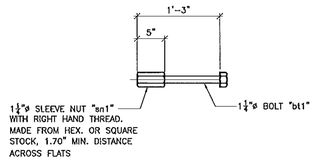
10 GAUGE CORRUGATED RAIL
AASHTO (M180) CLASS B, TYPE II



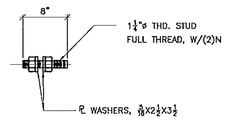
42 – SPECIAL WASHER – SW1



8 – CHANNEL SPLICE – CS1



168 – ANCHOR ASS'Y – AA1



168 – STUD ASS'Y – S1

BILL OF MATERIAL

SHIP	SHOP MARK	NO. PCS.	PIECE MARK	DESCRIPTION	LENGTH	REMARKS	MAT'L	WT.
24	2P1			POSTS				
		24	w1	W6X25	3'–10		A992	2300
		24	p1	PL ½X7½	1'–2½		A36	370
8	CS1			C7X12.25	2'–7		A36	253
		32		⅞ø NUTS			A563	
42	SW1			PL ⅜X1½	0'–3		A572 GR50	12
168	AA1			ANCHOR ASS'Y				
		168	bt1	1½ø MACH. BOLT	1'–0	3" MIN THD.	A325	
		168	sn1	1½ø SLEEVE NUT	0'–5	SEE DETAIL	A563	
168	S1			STUD ASS'Y				
		168		1½ø THD. STUD	1'–0	W/2N	A449	
		336		℄ WASH.		SEE DETAIL	F436	
				FIELD BOLTS				
46	FB1			⅞ø BOLT	1'–1	W/N&2W	A325	
92	FB2			⅞ø BOLT	0'–2	W/N&2W	A325	
46	FB3			⅞ø OVAL–HD. BOLT	0'–10	W/N&W	A325	
32	FB4			⅞ø BOLT	0'–2	W/W	A325	

GALVANIZE AFTER FABRICATION PER AASHTO M111

Vermont Agency of Transportation

RECEIVED

CK'D BY GML OK'D BY JTS

3:46 pm, Mar 26, 2012

RESUBMIT ____ APPROVED AS NOTED

BY KMH DATE 3/28/2012

ERECTION BOLTS W/A.H.N.				WASHERS		FINISH
QUAN.	SIZE	LENGTH	TYPE	FLAT	BEV.	GALV. AASHTO M232

FINISH	HOT DIPPED GALVANIZED
MATERIAL	AASHTO M270 GR. 36
HOLES	AS NOTED
ELECTRODES	PER W.P.S.
WELDS	AS NOTED
SURFACE PREP	SSPC–SP6

NO	DATE	DESCRIPTION	BY
2	3/23/12	PER APPROVAL	JAC

REVISIONS

ARC ENTERPRISES, INC.

ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 120 KINGFIELD, ME. 04947
PHONE: (207) 265–2640 – FAX: (207) 265–4054

DRAFTER	JAC
DATE	2/8/12
CHECKED	MTD
JOB	11–175

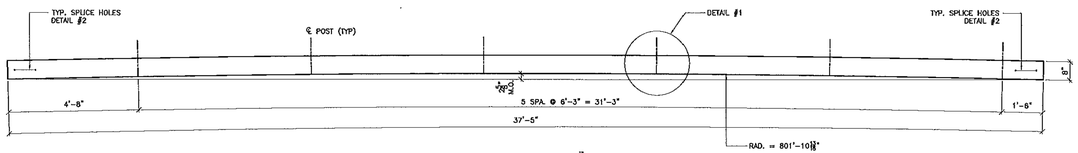
BRIDGE RAIL POST DETAILS

VERMONT AGENCY OF TRANSPORTATION
TOWN OF SPRINGFIELD, TH 8 CLASS III, LOCAL ROAD

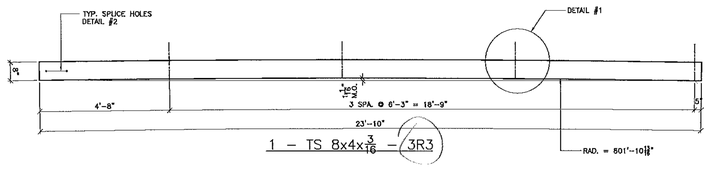
C.C. T. BUCK CONSTRUCTION, INC.

PROJECT NO. BRO 1442(28)

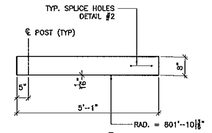
DWG. NO. R2



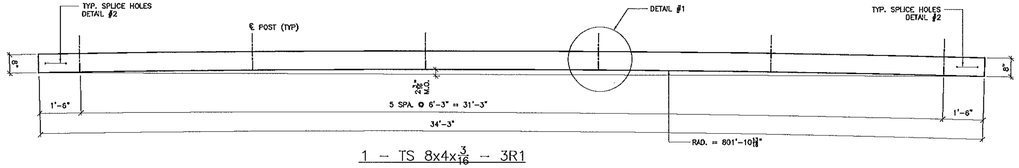
2 – TS 8x4x$\frac{3}{16}$ – 3R2



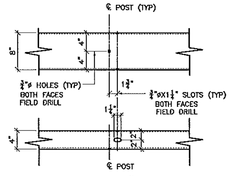
1 – TS 8x4x$\frac{3}{16}$ – 3R3



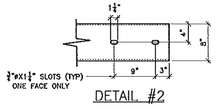
1 – TS 8x4x$\frac{3}{16}$ – 3R4



1 – TS 8x4x$\frac{3}{16}$ – 3R1

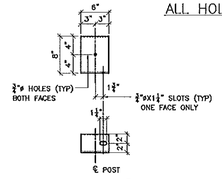


DETAIL #1



DETAIL #2

ALL HOLES FOR POSTS ARE FIELD DRILLED



92 REQ'D. TS8X4X$\frac{3}{16}$, MARK "T1"

BILL OF MATERIAL

SHIP	SHIP MARK	NO. PCS.	PIECE MARK	DESCRIPTION	LENGTH	REMARKS	WT
1	3R1			TS 8X4X$\frac{3}{16}$	34'-3	A500 GR.B	498
2	3R2			TS 8X4X$\frac{3}{16}$	37'-5	A500 GR.B	1089
1	3R3			TS 8X4X$\frac{3}{16}$	23'-10	A500 GR.B	345
1	3R4			TS 8X4X$\frac{3}{16}$	5'-1	A500 GR.B	73
1	4R1			TS 8X4X$\frac{3}{16}$	37'-8	A500 GR.B	544
2	4R2			TS 8X4X$\frac{3}{16}$	37'-5	A500 GR.B	1089
1	4R3			TS 8X4X$\frac{3}{16}$	24'-11	A500 GR.B	363
1	4R4			TS 8X4X$\frac{3}{16}$	5'-1	A500 GR.B	73
92	T1			TS 8X4X$\frac{3}{16}$	0'-8	A500 GR.B	668

TUBE: ASTM A500 GR. B
GALVANIZE AFTER FABRICATION PER AASHTO M111

Vermont Agency of Transportation
RECEIVED
CK'D BY GML OK'D BY JTS
3:46 pm, Mar 26, 2012
RESUBMIT ____ APPROVED X
BY KMH DATE 3/28/2012

ERECTION BOLTS W/NUTS				WASHERS		FINISH
QUAN.	SIZE	LENGTH	TYPE	FLAT	BEV.	GALV. AASHTO M232

FINISH	HOT DIPPED GALVANIZED
MATERIAL	AASHTO M270 GR. 36
HOLES	AS NOTED
ELECTRODES	PER W.P.S.
WELDS	AS NOTED
SURFACE PREP	SSPC-SP6

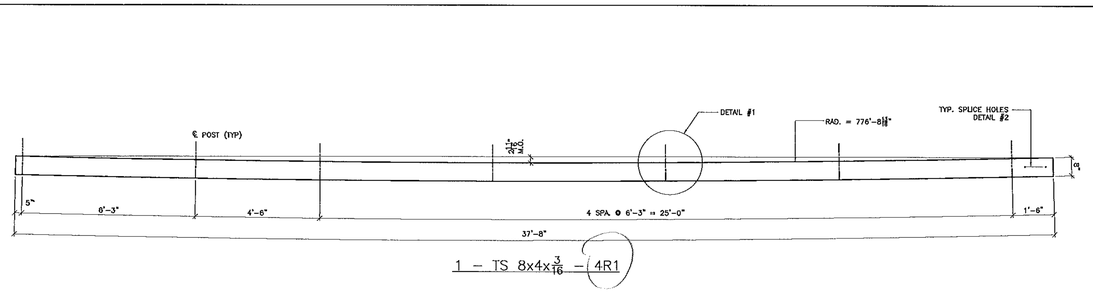
NO	DATE	DESCRIPTION	BY
1	3/23/12	PER APPROVAL	JAC

REVISIONS

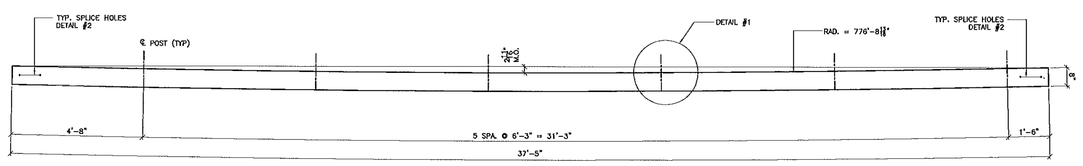
ARC ENTERPRISES, INC.

ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 120 KINGFIELD, ME. 04947
PHONE: (207) 265-2646 – FAX: (207) 265-4054

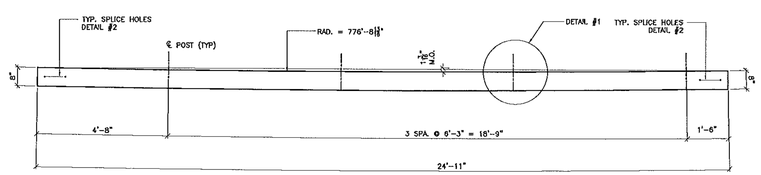
DRAFTER JAC	BRIDGE RAIL DETAILS	PROJECT NO.
DATE 2/8/12	VERMONT AGENCY OF TRANSPORTATION TOWN OF SPRINGFIELD, TH 8 CLASS III, LOCAL ROAD	BRO 1442(28)
CHECKED MTD		DWG. NO.
JOB 11-175	T. BUCK CONSTRUCTION, INC.	R3



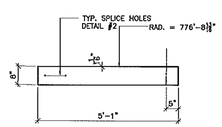
1 – TS 8x4x$\frac{3}{16}$ – 4R1



2 – TS 8x4x$\frac{3}{16}$ – 4R2



1 – TS 8x4x$\frac{3}{16}$ – 4R3



1 – TS 8x4x$\frac{3}{16}$ – 4R4

ALL HOLES FOR POSTS ARE FIELD DRILLED

SEE DWG R3 FOR B.O.M. & DETAILS NOT SHOWN

TUBE: ASTM A500 GR. B
GALVANIZE AFTER FABRICATION PER AASHTO M111

Vermont Agency of Transportation
RECEIVED
CK'D BY GML OK'D BY JTS
3:46 pm, Mar 26, 2012
RESUBMIT APPROVED X
BY KMH DATE 3/28/2012

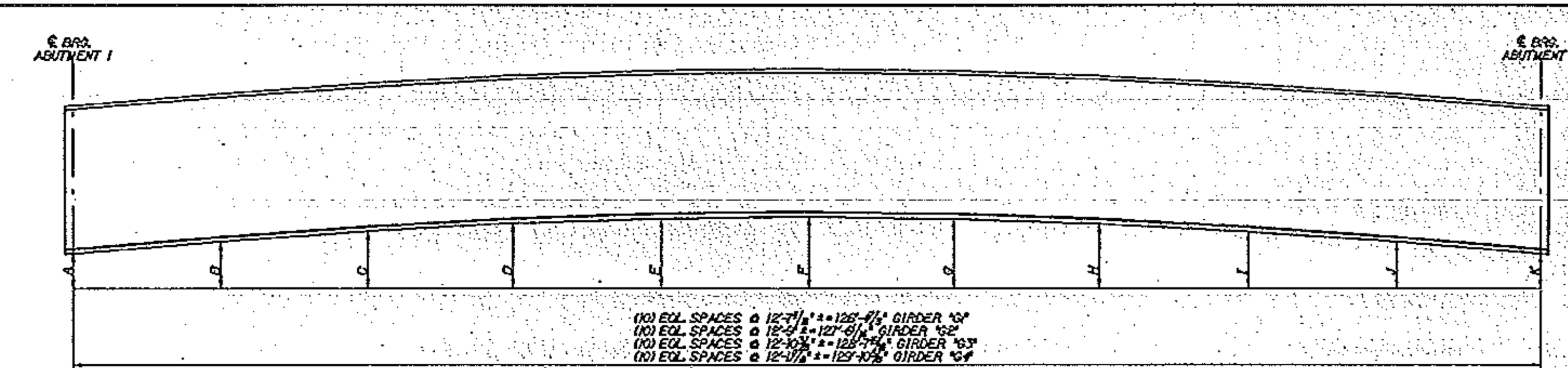
ERECTION BOLTS H/H.H.N.				WASHERS		FINISH
QUAN.	SIZE	LENGTH	TYPE	FLAT	BEV.	GALV. AASHTO M232

FINISH	HOT DIPPED GALVANIZED				
MATERIAL	AASHTO M270 GR. 36				
HOLES	AS NOTED				
ELECTRODES	PER W.P.S.				
WELDS	AS NOTED				
SURFACE PREP	SSPC-SP6	1	3/23/12	PER APPROVAL	JAC
		NO	DATE	DESCRIPTION	BY

REVISIONS

ARC ENTERPRISES, INC.
ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 130 KINGFIELD, ME. 04947
PHONE: (207) 265-2646 – FAX: (207) 265-4054

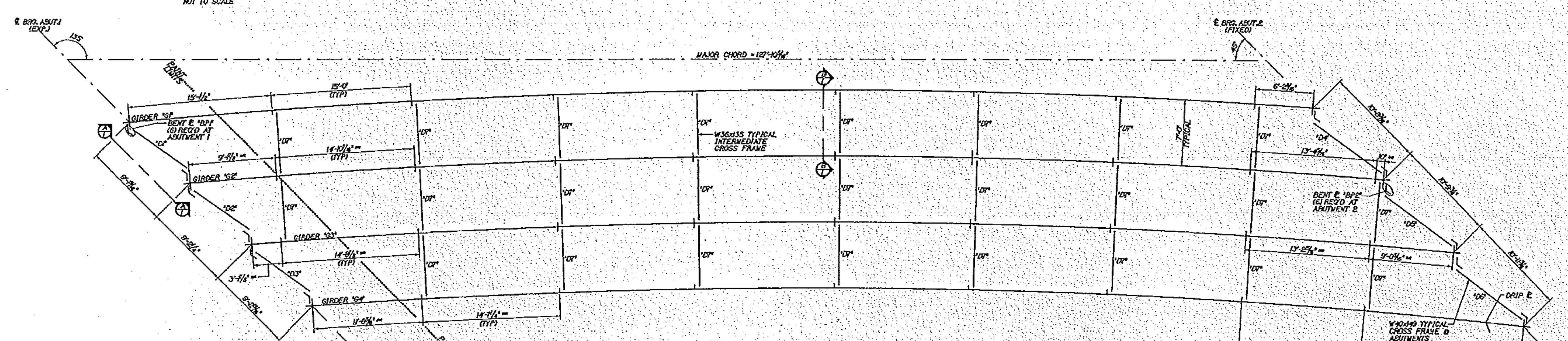
DRAFTER JAC	BRIDGE RAIL DETAILS	PROJECT NO.
DATE 2/8/12	VERMONT AGENCY OF TRANSPORTATION, TOWN OF SPRINGFIELD, TH 6 CLASS III, LOCAL ROAD	BRO 1442(26)
CHECKED MTD	T. BUCK CONSTRUCTION, INC.	DWG. NO.
JOB 11-175		R4



BLOCKING DIAGRAM ~ SEE CHART ALL DIMENSIONS ARE TO THE OUTSIDE OF BOTTOM FLANGES

BLOCKING DIAGRAM IS DEVELOPED
NOT TO SCALE

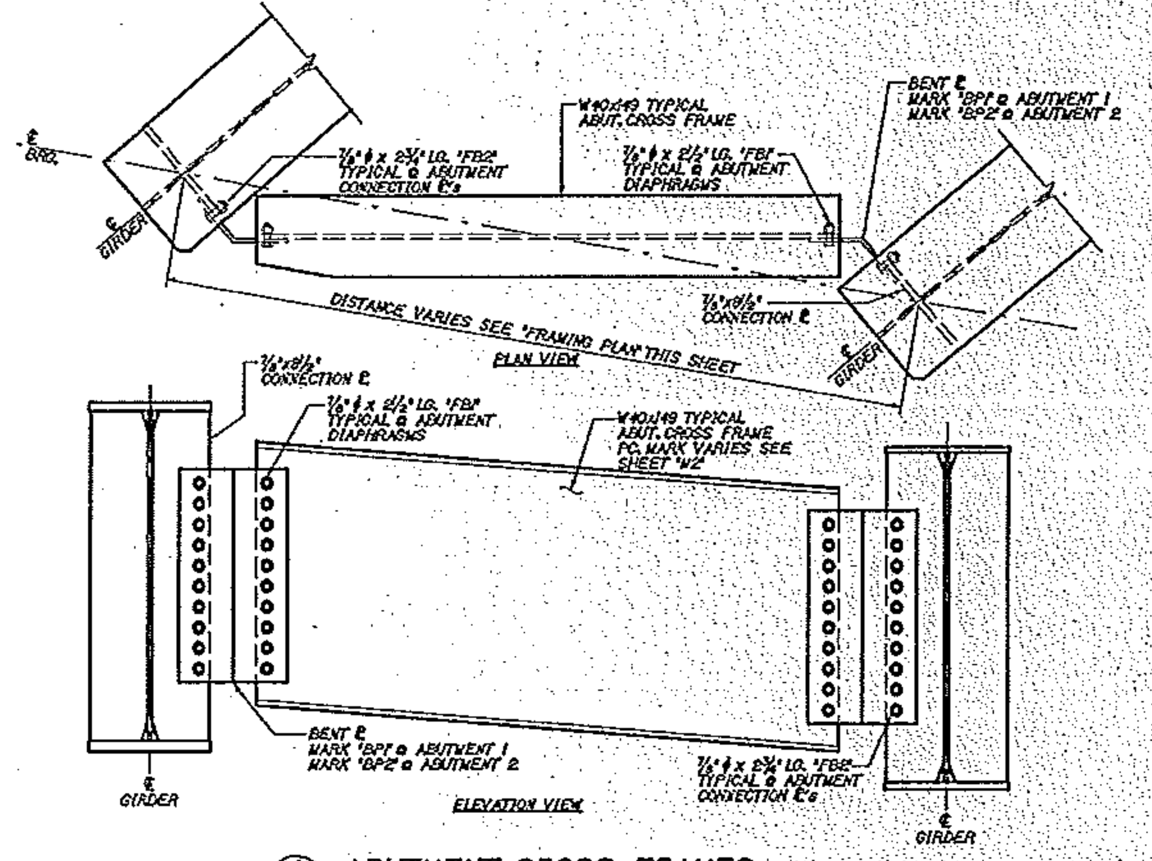
GIRDER LINE	ABUT. 1 ℄ BRG. "A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"I"	"J"	ABUT. 2 ℄ BRG. "K"
GIRDER "G1"	6"	10"	1'-4 5/16"	1'-4 11/16"	1'-6"	1'-6 1/8"	1'-6"	1'-4 1/4"	1'-1 1/2"	10"	6"
GIRDER "G2"	6"	9 7/8"	1'-1 1/8"	1'-3 7/8"	1'-5 1/8"	1'-5 1/2"	1'-4 7/8"	1'-3 1/8"	1'-0 7/16"	9 7/8"	6"
GIRDER "G3"	6"	9 5/8"	1'-0 1/8"	1'-2 7/8"	1'-4 1/4"	1'-4 3/8"	1'-4"	1'-2 1/2"	1'-0 1/8"	9 1/4"	6"
GIRDER "G4"	6"	9 1/4"	1'-0 1/2"	1'-2 1/16"	1'-3 5/8"	1'-4 1/2"	1'-3 1/8"	1'-2 3/8"	1'-0 3/16"	9 5/16"	6"



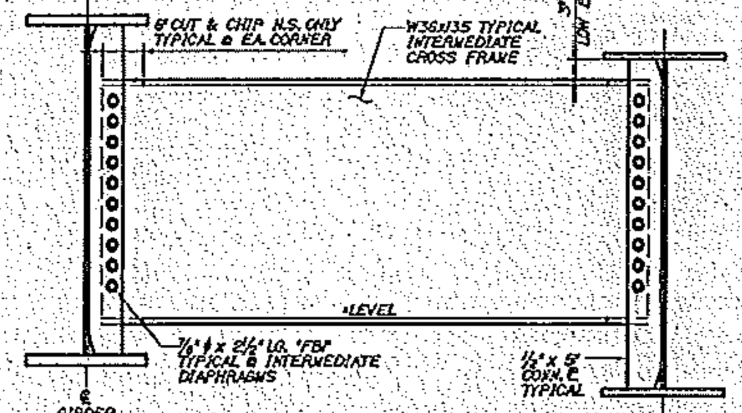
REVIEWER VERIFY
RADIAL DIMENSIONS FOLLOWED WITH TWO ASTERISKS (**) VARY FROM THE DIMENSIONS IN CONTRACT DETAILS.
THIS WAS DONE TO KEEP ALL THE DIMENSIONS ALONG THE GIRDER LINES RADIAL, WHICH MADE ALL THE INTERNAL DIAPHRAGMS THE SAME.

FRAMING PLAN
SCALE: 3/16" = 1'-0"

GIRDER TABLE		
PC. MARK	RADIUS	LENGTH
"G1"	800.153'	127'-8"
"G2"	793.153'	128'-9 1/4"
"G3"	786.153'	129'-11"
"G4"	779.153'	131'-1 5/8"



A ABUTMENT CROSS FRAMES
ELEVATION VIEW IS DEVELOPED
SCALE: 3/4" = 1'-0"



B INTERMEDIATE CROSS FRAMES
SCALE: 3/4" = 1'-0"

GENERAL FABRICATION NOTES

MATERIAL SPECIFICATIONS

1.) GIRDERS SHALL BE WEB PLUMB AT STEEL DEAD LOAD CONDITION.

2.) ALL MATERIAL EXCEPT THE BOTTOM FLANGES SHALL BE ASTM A709 GRADE 50W. THE BOTTOM FLANGE OF THE GIRDERS SHALL CONFORM TO ASTM A709 GRADE HPS 70W AND SHALL BE PAID FOR UNDER SPECIAL PROVISION (HIGH PERFORMANCE STEEL, CURVED PLATE GIRDER, GRADE 70W).

3.) ALL A709 GRADE 50W & 70W MATERIAL DENOTED 'CVN' SHALL MEET THE CHARPY V-NOTCH TESTING REQUIREMENTS OF ZONE 2, H FREQUENCY: 15 FT-LB AT 40°(UP TO 2" WELDED)

ITEMS SHALL CALL OUT 'CVN' FOR EACH APPLICABLE ITEM IN THE BILL OF MATERIALS

4.) BOLTS OUTSIDE PAINT LIMITS:
- BOLTS SHALL BE HIGH STRENGTH BOLTS ASTM A325, TYPE 3
- NUTS SHALL BE A563 GRADE C3 OR DH3
- WASHERS SHALL BE ASTM F436, TYPE 3

BOLTS W/IN PAINT LIMITS:
- BOLTS SHALL BE HIGH STRENGTH BOLTS ASTM A325, TYPE 1 (GALV.)
- NUTS SHALL BE A563 GRADE DH (GALV.)
- WASHERS SHALL BE ASTM F436, TYPE 1 (GALV.)

5.) BOLTS AND NUTS SHALL BE ROTATIONAL CAPACITY TESTED. DO NOT MIX NUTS AND BOLTS FROM DIFFERENT CONTAINERS UNLESS ALL NUTS AND BOLTS HAVE THE SAME LOT NUMBER.

FABRICATION

1.) DIE STAMPING IS ALLOWED IN SPECIFIC LOCATIONS WITH THE APPROVAL OF THE ENGINEER.

2.) ALL EDGES OF FLAME CUT MATERIAL SUBJECTED TO CALCULATED STRESSES SHALL BE ROUNDED TO A MINIMUM RADIUS OF 1/16", OR AN EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE.

3.) ALL PLATES, FLAME CUT FROM LARGER PLATES, SHALL BE CUT SO THAT THE PRIMARY DIRECTION OF ROLLING IS PARALLEL TO THE MAIN TENSILE OR COMPRESSIVE STRESS.

4.) EXPOSED CORNERS IN AREAS TO BE PAINTED SHALL BE ROUNDED TO APPROXIMATELY AN 1/8" RADIUS

WELDING

1.) ALL WELDING PROCEDURES SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF SUBSECTION 506.10

2.) NON DESTRUCTIVE TESTING OF WELDS SHALL BE IN ACCORDANCE WITH ANSI/AASHTO/AWS D1.5 - SECTION 6. FLANGE WELDS WILL BE CALLED OUT AS BEING IN EITHER COMPRESSION OR TENSION. WEB WELD WILL LABEL EITHER TOP OR BOTTOM AS BEING IN COMPRESSION.

FLANGE SPLICES SHALL BE TESTED AS FOLLOWS:
FLANGE SPLICES IN TENSION ~ TESTED 100%
FLANGE SPLICES IN COMPRESSION ~ TESTED 25%

WEB SPLICES SHALL BE TESTED AS FOLLOWS:
FOR 1/6 THE DEPTH OF THE WEB (TENSION AREA) ~ TESTED 100%
FOR THE REMAINING DEPTH OF WEB (COMPRESSION AREA) ~ TESTED 25 %

3.) TERMINATE STIFFENER WELDS AS SHOWN IN "TYPICAL WELD TERMINATION DETAIL" ON SHEET M1

GENERAL FABRICATION NOTES

FIELD CONNECTIONS

1.) FIELD BOLTS SHALL HAVE A HEAVY HEX NUT, HEX HEAD, AND ONE HARD WASHER EACH.

2.) PIECE MARKS WILL BE LOCATED AS SHOWN ON ERECTION DRAWINGS. ALL ERECTION MARKS, MATCH MARKS, AND WEIGHT MARKS MUST NOT BE EXPOSED IN THE FINISHED STRUCTURE.

3.) HARDENED WASHERS ARE REQUIRED OVER OVERSIZED HOLES.

CLEANING AND PAINTING

1.) THE PORTION OF THE GIRDERS WITHIN 10 FEET OF THE EXPANSION JOINT AND ANY DIAPHRAGMS LOCATED WITHIN 10 FEET OF THE EXPANSION JOINT ALONG ANY GIRDER LINE SHALL BE PAINTED

2.) UNPAINTED STEEL SHALL BE BLAST CLEANED TO SSPC SP-6 TO ACHIEVE A UNIFORM WEATEHERED APPEARANCE.

3.) ALL PAINTED AREAS OF GIRDERS SHALL BE PAINTED WITH THE THREE (3) COATS, ZINC RICH SYSTEM DESCRIBED BELOW (4). ALL MATERIAL TO RECIEVE PAINT SHALL BE BLAST CLEANED TO SSPC SP-10.

4.) COATING SYSTEMS SHALL BE NORTHEAST PROTECTIVE COATING COMMITEE (NEPCOAT) SSC(03)-01 AS FOLLOWS:
- PRIMER: CARBOZINC 11HS
- INTERMEDIATE COAT: CARBOGUARD 893
- TOP COAT: CARBOTHANE 133 LH

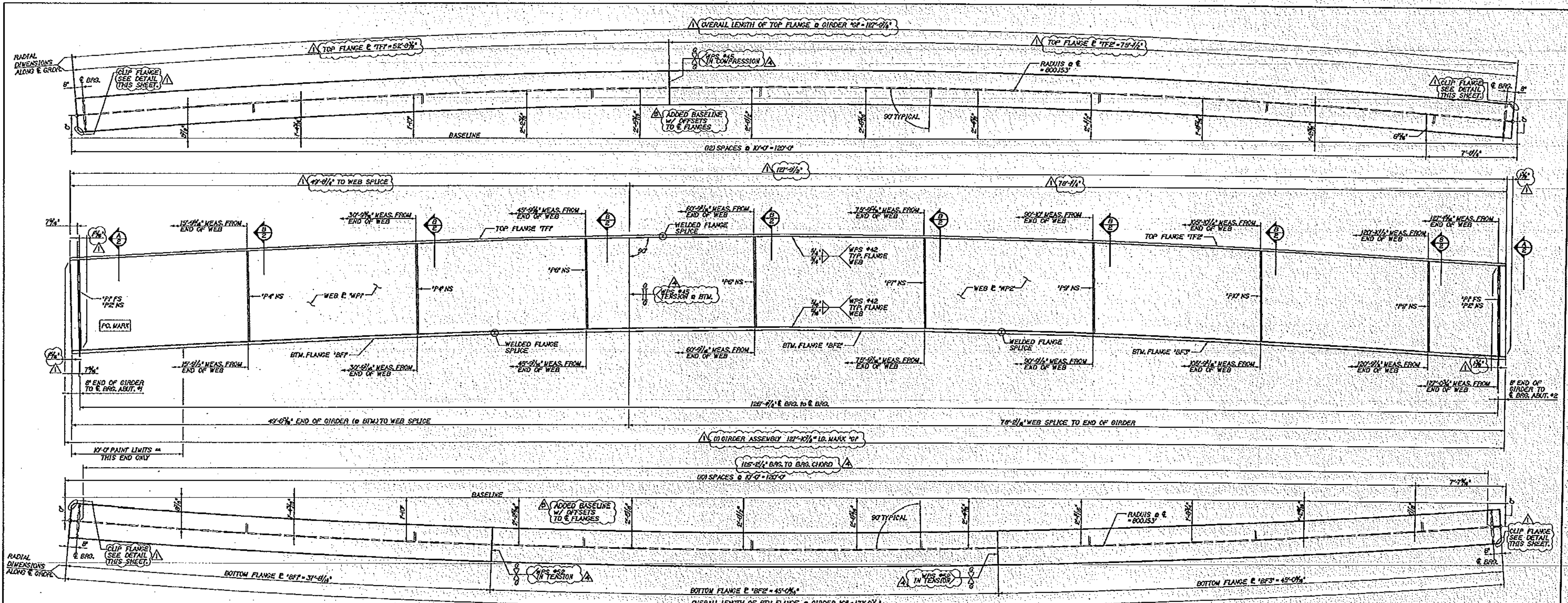
5.) THE FINISH TOPCOAT COLOR SHALL BE A LUSTERLESS BROWN CONFORMING TO THE FEDERAL STANDARD 595B, COLOR NUMBER 30045.

6.) PAINTED SURFACES WITHIN 3" OF AN OPEN HOLE SHALL BE PRIMED ONLY AND DEVELOP A CLASS B SLIP COEFFICIENT.

FINISH					
MATERIAL	SEE DETAIL SHEETS				
HOLES		4	3/13/2012	AS NOTED	JJH
ELECTRODES					
WELDS	PER WELD PROCEDURE				
SURFACE PREP		1	2/15/2012	AS NOTED	JJH
		NO	DATE	DESCRIPTION	BY
		REVISIONS			

ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 129 KINGFIELD, ME 04947
PHONE: (207) 265-2645 - FAX: (207) 265-4054

DRAFTER: JJH	FRAMING DETAILS		PROJECT NO. BRO 1442(29)
DATE: DEC. 2011	BRIDGE # 57, TOWN HIGHWAY 6, SPRINGFIELD, VERMONT		
CHECKED: ETC			DWG. NO. 1
DATE: JAN. 2012	GC: T BUCK CONSTRUCTION		

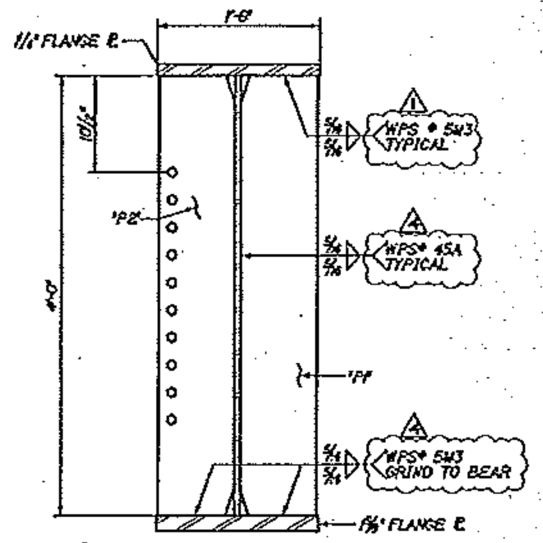


- STIFFENERS AND ENDS OF BEAM CHANGED TO BE VERTICAL AT STEEL DEAD LOAD CONDITION.
- RUNNING DIMENSIONS ADDED TO THE BOTTOM OF THE STIFFENERS.
- RUNNING DIMENSIONS ARE NOW GIVEN ALONG THE CURVE AND ALONG THE CAMBER OF THE BEAMS (I.e. WHERE THE FILLET WELD BETWEEN WEB AND FLANGE WILL BE). TOP RUNNING DIMENSIONS HAVE BEEN UPDATE ACCORDINGLY.

1/2 DIMENSIONAL PLANS & ELEVATIONS ~ GIRDER "G1"

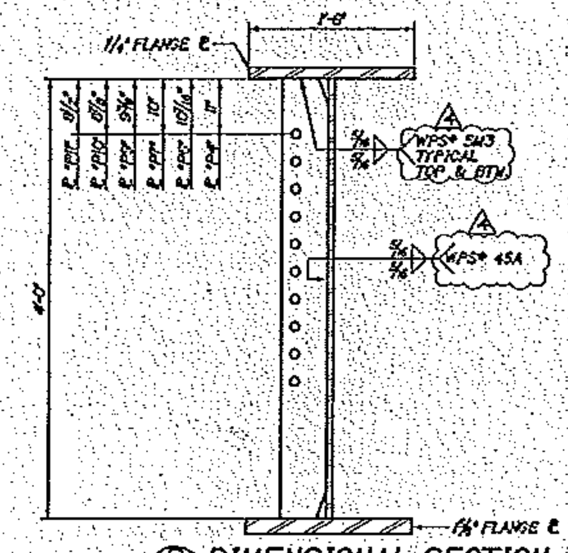
DIMENSIONAL DETAILS ARE DEVELOPED (DIMENSIONS ARE ALONG ARC U.N.O.)
SCALE: 1/8" = 1'-0"
VERTICAL SCALE EXAGERATED 2X

** PRIME WITH CARBOZINC 11HS, INTERMEDIATE COAT WITH CARBOGUARD 893, TOP COAT WITH CARBOTHANE 133 LH APPLIED IN SHOP TOUCH UP REQUIRED IN THE FIELD DUE TO DAMAGE FROM HANDLING AND ERECTION BY OTHERS



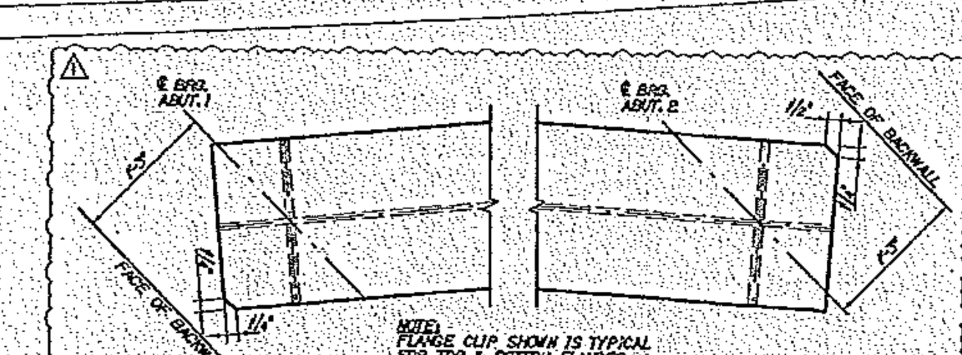
A/2 DIMENSIONAL SECTION

SCALE: 1" = 1'-0"



B/2 DIMENSIONAL SECTION

SCALE: 1" = 1'-0"



FLANGE CLIP DETAIL

SCALE: 1" = 1'-0"

NOTE:
FOR CAMBER DIAGRAMS SEE SHEET "M3"

BILL OF MATERIALS

SHIP	SHIP MARK	NO. PCS.	PIECE MARK	DESCRIPTION	LENGTH	REMARKS	MATERIAL
1	G1			BRIDGE GIRDER	127'-10 7/8"	36,255#	
		1	WP1	℄ 5/8" x 48"	49'-8 3/8"	5075#	Gr. 50W (CVN)
		1	WP2	℄ 5/8" x 48"	78'-3 3/8"	7985#	Gr. 50W (CVN)
		1	TF1	℄ 1 1/4" x 18"	52'-8 3/8"	4040#	Gr. 50W (CVN)
		1	TF2	℄ 1 1/4" x 18"	75'-1/4"	5760#	Gr. 50W (CVN)
		1	BF1	℄ 1 5/8" x 18"	37'-8 1/4"	3750#	Gr. 70W (CVN)
		1	BF2	℄ 1 5/8" x 18"	45'-0 3/4"	4485#	Gr. 70W (CVN)
		1	BF3	℄ 1 5/8" x 18"	45'-0 3/4"	4485#	Gr. 70W (CVN)
		2	P1	SEE SHEET M1		100# EA.	
		2	P2	SEE SHEET M1		100# EA.	
		2	P4	SEE SHEET M1		34# EA.	
		2	P6	SEE SHEET M1		34# EA.	
		1	P7	SEE SHEET M1		34# EA.	
		1	P9	SEE SHEET M2		34# EA.	
		1	P10	SEE SHEET M2		34# EA.	
		1	P11	SEE SHEET M2		34# EA.	

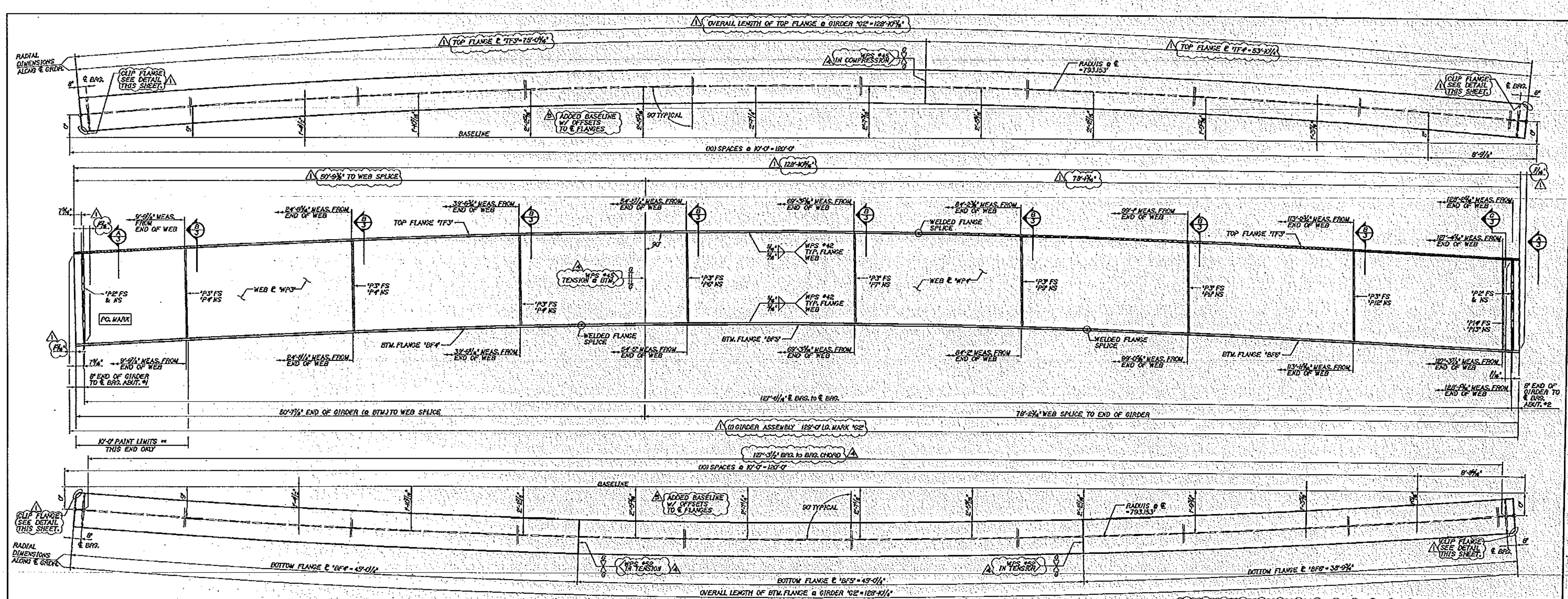
FINISH	SSPC SP6 EVERYWHERE - OUTSIDE PAINT LIMITS ONLY
MATERIAL	AASHTO M270 (ASTM A709) GRADE 50W (TYP.) (ASTM A709) GRADE HPS 70W (BTM. FLANGE)
HOLES	15/16" Ø U.N.O.
ELECTRODES	
WELDS	PER WELD PROCEDURE
SURFACE PREP	SSPC SP10 w/in PAINTING LIMITS; SSPC SP6 ELSEWHERE

REVISIONS

NO	DATE	DESCRIPTION	BY
4	3/13/2012	AS NOTED	JJH
3	2/21/2012	BASELINE w/ OFFSETS & AS NOTED	JJH
1	2/15/2012	AS NOTED	JJH

ARC
ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 120 KINGFIELD, ME 04947
PHONE: (207) 265-2646 - FAX: (207) 265-4264

DRAFTER: JJH	GIRDER 1		PROJECT NO. BRO 1442(39)
DATE: DEC. 2011	BRIDGE # 57, TOWN HIGHWAY 6 SPRINGFIELD, VERMONT		
CHECKED: ETC			DWG. NO. 2
DATE: JAN. 2012	SC: T BUCK CONSTRUCTION		



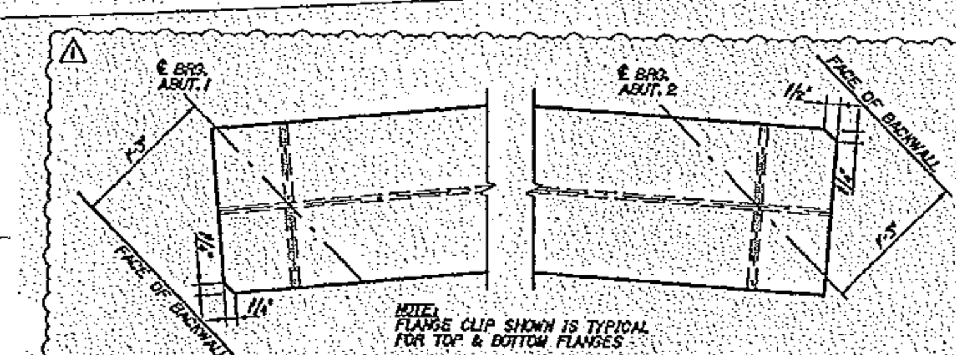
- STIFFENERS AND ENDS OF BEAM CHANGED TO BE VERTICAL AT STEEL DEAD LOAD CONDITION.
- RUNNING DIMENSIONS ADDED TO THE BOTTOM OF THE STIFFENERS.
- RUNNING DIMENSIONS ARE NOW GIVEN ALONG THE CURVE AND ALONG THE CAMBER OF THE BEAMS (I.E. WHERE THE FILLET WELD BETWEEN WEB AND FLANGE WILL BE). TOP RUNNING DIMENSIONS HAVE BEEN UPDATE ACCORDINGLY.

1/3 DIMENSIONAL PLANS & ELEVATIONS ~ GIRDER "G2"

DIMENSIONAL DETAILS ARE DEVELOPED (DIMENSIONS ARE ALONG ARC U.N.O.)
SCALE: 1/4" = 1'-0"
VERTICAL SCALE EXAGERATED 2:1

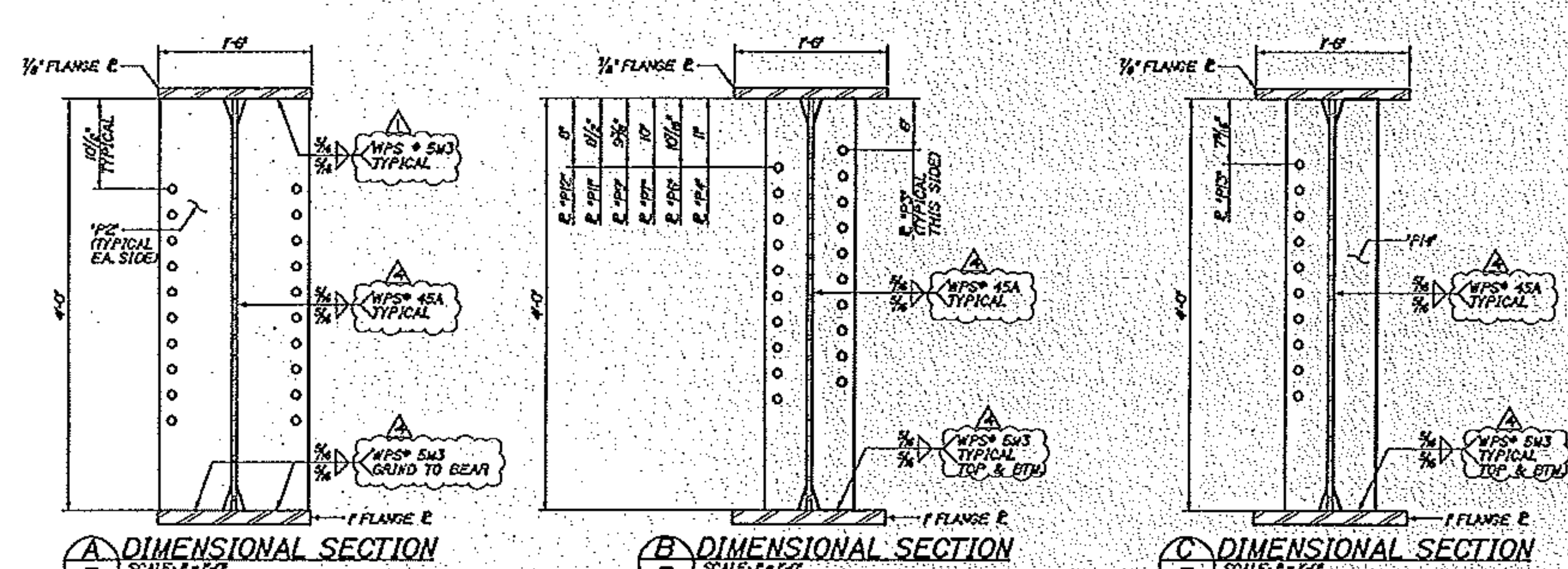
* PRIME WITH CARBOZINC 11 HS, INTERMEDIATE COAT WITH CARBOGUARD 893, TOP COAT WITH CARBOTHANE 133 LH APPLI... TOUCH UP REQUIRED IN THE FIELD DUE TO DAMAGE FROM HANDLING AND ERECTION BY OTHERS

Vermont Agency of Transportation
RECEIVED
CK'D BY GML OK'D BY JEL
11:20 am, Mar 19, 2012
RESUBMIT ______ APPROVED X
BY KMH DATE 3/19/2012



FLANGE CLIP SHOWN IS TYPICAL FOR TOP & BOTTOM FLANGES

FLANGE CLIP DETAIL
SCALE: 1" = 1'-0"



A/3 DIMENSIONAL SECTION — B/3 DIMENSIONAL SECTION — C/3 DIMENSIONAL SECTION

NOTE: FOR CAMBER DIAGRAMS SEE SHEET "M3"

BILL OF MATERIALS

SHIP	SHIP MARK	NO. PCS.	PIECE MARK	DESCRIPTION	LENGTH	REMARKS	MATERIAL
1	G2			BRIDGE GIRDER	129'-0"	29,000#	
		1	WP3	PL 5/8" x 48"	50'-9 1/2"	5185#	Gr. 50W (CVN)
		1	WP4	PL 5/8" x 48"	78'-3 1/4"	7965#	Gr. 50W (CVN)
		1	TF3	PL 7/8" x 18"	75'-0 3/4"	4025#	Gr. 50W (CVN)
		1	TF4	PL 7/8" x 18"	53'-10 1/4"	2890#	Gr. 50W (CVN)
		1	BF4	PL 1" x 18"	45'-0 1/4"	2760#	Gr. 70W (CVN)
		1	BF5	PL 1" x 18"	45'-0 1/4"	2760#	Gr. 70W (CVN)
		1	BF6	PL 1" x 18"	38'-9 3/4"	2380#	Gr. 70W (CVN)
		4	P2	SEE SHEET M1		100# EA.	
		8	P3	SEE SHEET M1		34# EA.	
		3	P4	SEE SHEET M1		34# EA.	
		1	P6	SEE SHEET M1		34# EA.	
		1	P7	SEE SHEET M2		34# EA.	
		1	P9	SEE SHEET M2		34# EA.	
		1	P11	SEE SHEET M2		34# EA.	
		1	P12	SEE SHEET M2		34# EA.	
		1	P13	SEE SHEET M2		34# EA.	
		1	P14	SEE SHEET M2		34# EA.	

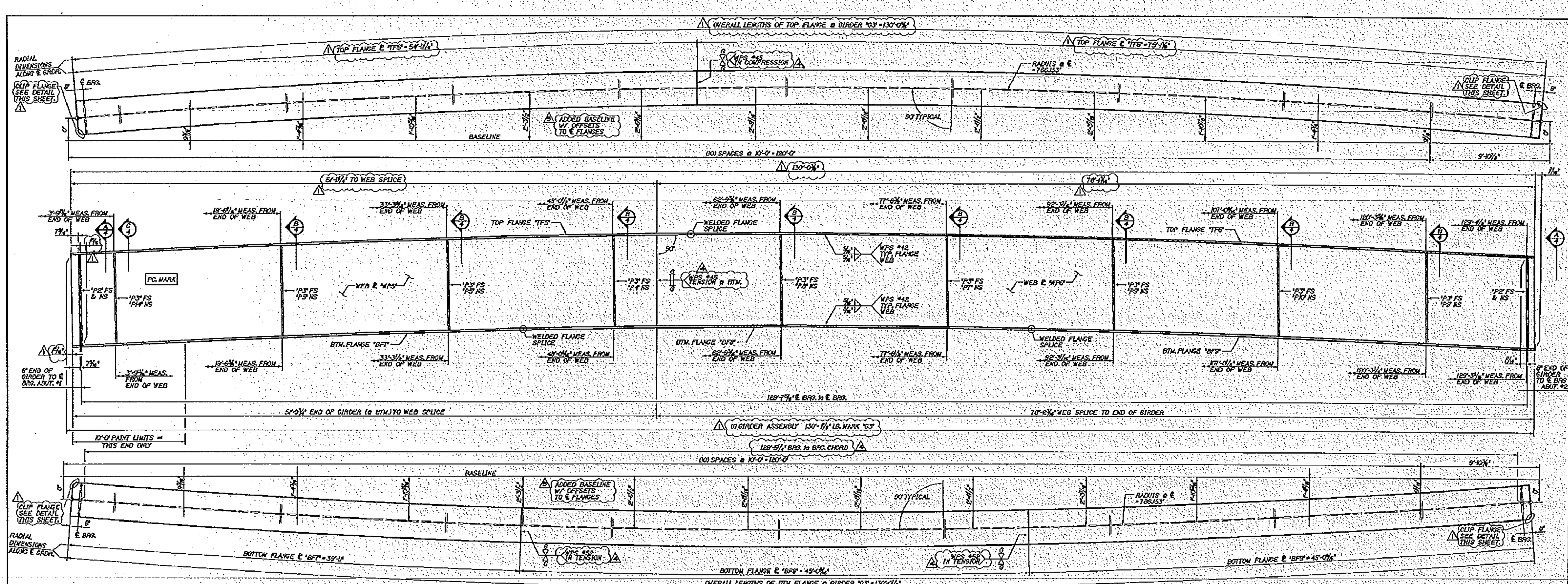
FINISH	SSPC SP6 EVERYWHERE - OUTSIDE PAINT LIMITS ONLY
MATERIAL	AASHTO M270 (ASTM A709) GRADE 50W (TYP.) (ASTM A709) GRADE HPS 70W (BTM. FLANGE)
HOLES	15/16" Ø U.N.O.
ELECTRODES	
WELDS	PER WELD PROCEDURE
SURFACE PREP	SSPC SP10 w/in PAINTING LIMITS, SSPC SP6 ELSEWHERE

REVISIONS

NO	DATE	DESCRIPTION	BY
4	3/13/2012	AS NOTED	JJH
3	2/21/2012	BASELINE w/ OFFSETS & AS NOTED	JJH
1	2/15/2012	AS NOTED	JJH

ARC ENTERPRISES, INC.
ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 120 KINGFIELD, ME. 04947
PHONE: (207) 265-2645 - FAX: (207) 265-4064

DRAFTER	JJH	GIRDER 2	PROJECT NO. BRO 1443(9)
DATE	DEC. 2011	BRIDGE # 57, TOWN HIGHWAY 6, SPRINGFIELD, VERMONT	
CHECKED	ETC		DWG. NO.
DATE	JAN. 2012	T BUCK CONSTRUCTION	3

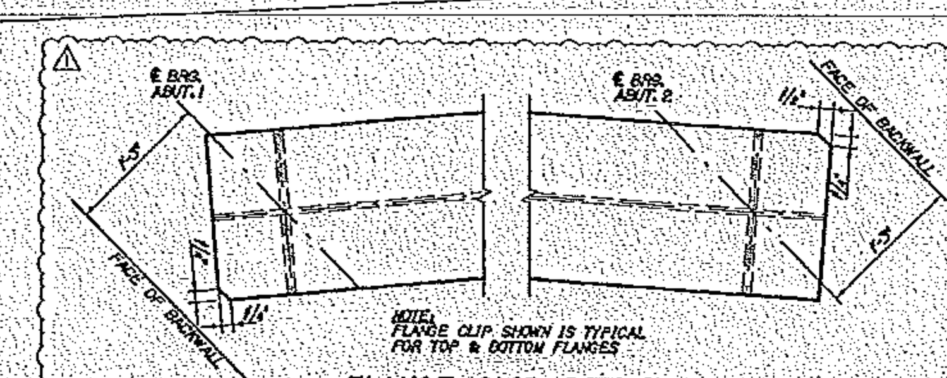


DIMENSIONAL PLANS & ELEVATIONS ~ GIRDER 'G3'

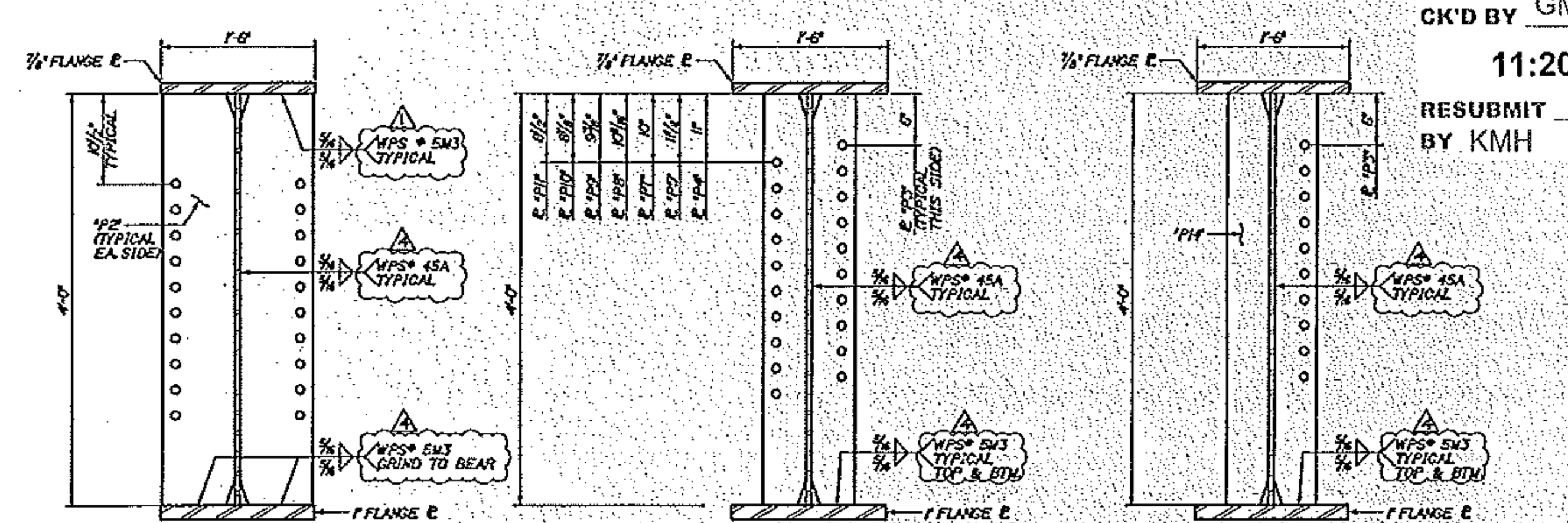
DIMENSIONAL DETAILS ARE DEVELOPED (DIMENSIONS ARE ALONG ARC U.N.O.)
SCALE: 1/4" = 1'-0"
VERTICAL SCALE EXAGERATED 2x

- PRIME WITH CARBOZINC 11HS, INTERMEDIATE COAT WITH CARBOGUARD 893, TOP COAT WITH CARBOTHANE 133 LH APPLIED IN SHOP. TOUCH UP REQUIRED IN THE FIELD DUE TO DAMAGE FROM HANDLING AND ERECTION BY OTHERS

- STIFFENERS AND ENDS OF BEAM CHANGED TO BE VERTICAL AT STEEL DEAD LOAD CONDITION.
- RUNNING DIMENSIONS ADDED TO THE BOTTOM OF THE STIFFENERS.
- RUNNING DIMENSIONS ARE NOW GIVEN ALONG THE CURVE AND ALONG THE CAMBER OF THE BEAMS (I.e. WHERE THE FILLET WELD BETWEEN WEB AND FLANGE WILL BE). TOP RUNNING DIMENSIONS HAVE BEEN UPDATE ACCORDINGLY.



FLANGE CLIP DETAIL
SCALE: 1" = 1'-0"



A/4 DIMENSIONAL SECTION
B/4 DIMENSIONAL SECTION
C/4 DIMENSIONAL SECTION

Vermont Agency of Transportation
RECEIVED
CK'D BY GML OK'D BY JEL
11:20 am, Mar 19, 2012
RESUBMIT ____ APPROVED X
BY KMH DATE 3/19/2012

NOTE:
FOR CAMBER DIAGRAMS SEE SHEET "M3"

BILL OF MATERIALS

SHIP	SHIP MARK	NO. PCS.	PIECE MARK	DESCRIPTION	LENGTH	REMARKS	MATERIAL
1	03			BRIDGE GIRDER	130'-1/8"	23,245#	
		1	WP5	PL 5/8" x 48"	51'-11/16"	6300#	Gr. 50W (CVN)
		1	WP6	PL 5/8" x 48"	78'-3 3/16"	7965#	Gr. 50W (CVN)
		1	TF5	PL 7/8" x 18"	54'-11/4"	2950#	Gr. 50W (CVN)
		1	TF6	PL 7/8" x 18"	75'-7 3/8"	4030#	Gr. 50W (CVN)
		1	BF7	PL 1" x 18"	39'-11"	2445#	Gr. 70W (CVN)
		1	BF8	PL 1" x 18"	45'-0 3/4"	2760#	Gr. 70W (CVN)
		1	BF9	PL 1" x 18"	45'-0 3/4"	2760#	Gr. 70W (CVN)
		4	P2	SEE SHEET M1		100# EA.	
		9	P3	SEE SHEET M1		34# EA.	
		1	P4	SEE SHEET M1		34# EA.	
		2	P5	SEE SHEET M1		34# EA.	
		1	P7	SEE SHEET M2		34# EA.	
		1	P8	SEE SHEET M2		34# EA.	
		1	P9	SEE SHEET M2		34# EA.	
		1	P10	SEE SHEET M2		34# EA.	
		1	P11	SEE SHEET M2		34# EA.	
		1	P14	SEE SHEET M2		34# EA.	

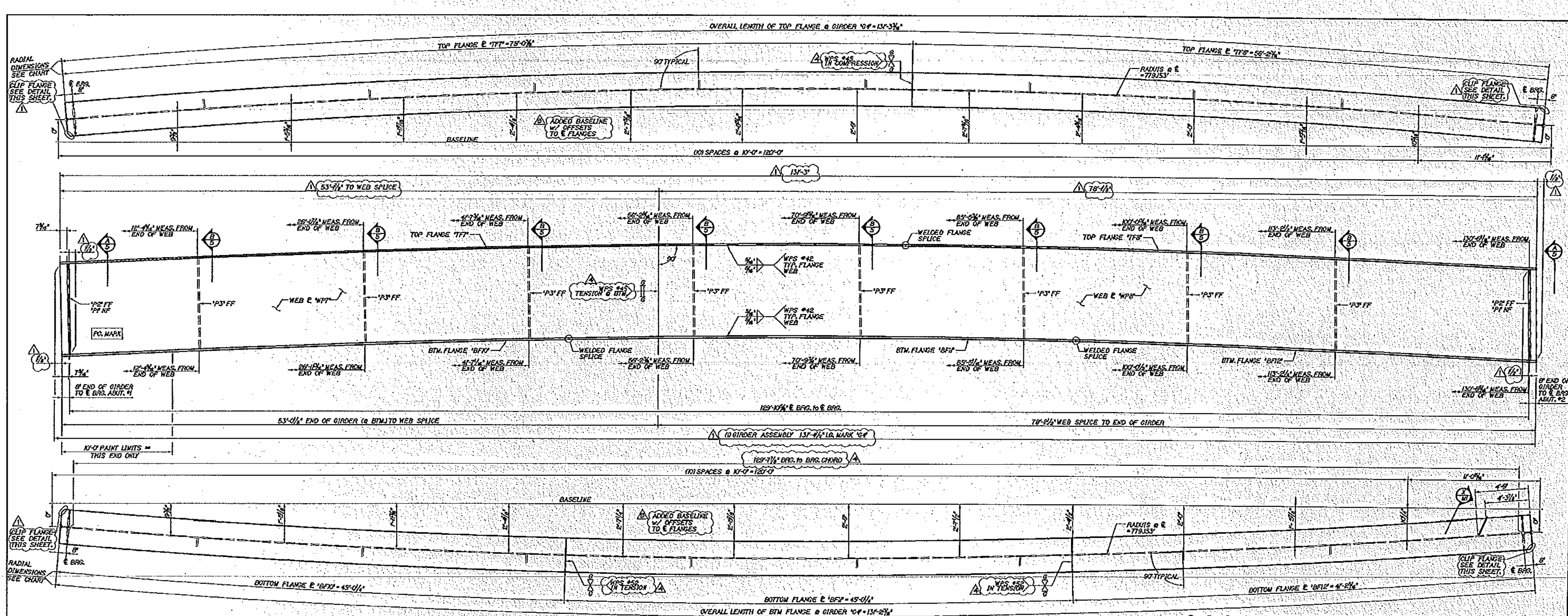
FINISH	SSPC SP6 EVERYWHERE - OUTSIDE PAINT LIMITS ONLY
MATERIAL	AASHTO M270 (ASTM A709) GRADE 50W-(TYP.) (ASTM A709) GRADE HPS 70W-(BTM. FLANGE)
HOLES	15/16" Ø U.N.O.
ELECTRODES	
WELDS	PER WELD PROCEDURE
SURFACE PREP	SSPC SP10 w/in PAINTING LIMITS; SSPC SP6 ELSEWHERE

NO	DATE	DESCRIPTION	BY
4	3/13/2012	AS NOTED	JJH
3	2/21/2012	BASELINE w/ OFFSETS & AS NOTED	JJH
1	2/15/2012	AS NOTED	JJH

REVISIONS

ARC ENTERPRISES, INC.
ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 120 KINGFIELD, ME 04947
PHONE: (207) 265-2645 - FAX: (207) 265-4064

DRAFTER	JJH	GIRDER 3	PROJECT NO. 8PO 14(29)
DATE	DEC. 2011	BRIDGE # 57, TOWN HIGHWAY 6 SPRINGFIELD, VERMONT	
CHECKED	ETC		DWG. NO. 4
DATE	JAN. 2012	T BUCK CONSTRUCTION	

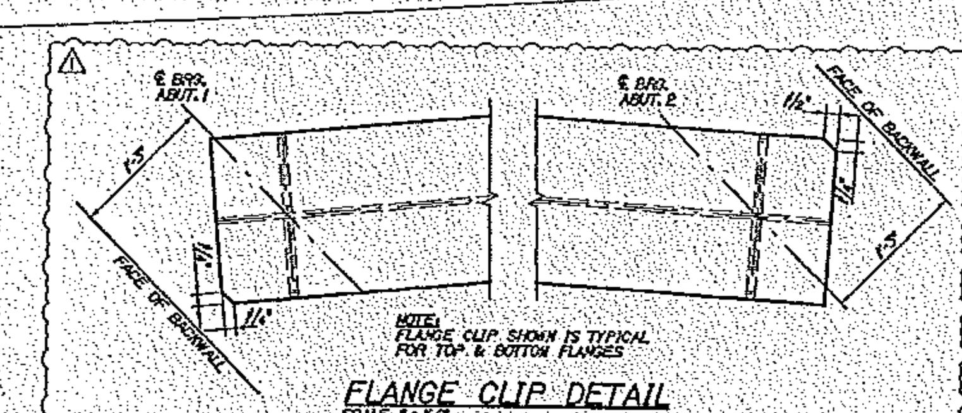


(1/5) DIMENSIONAL PLANS & ELEVATIONS ~ GIRDER "G4"

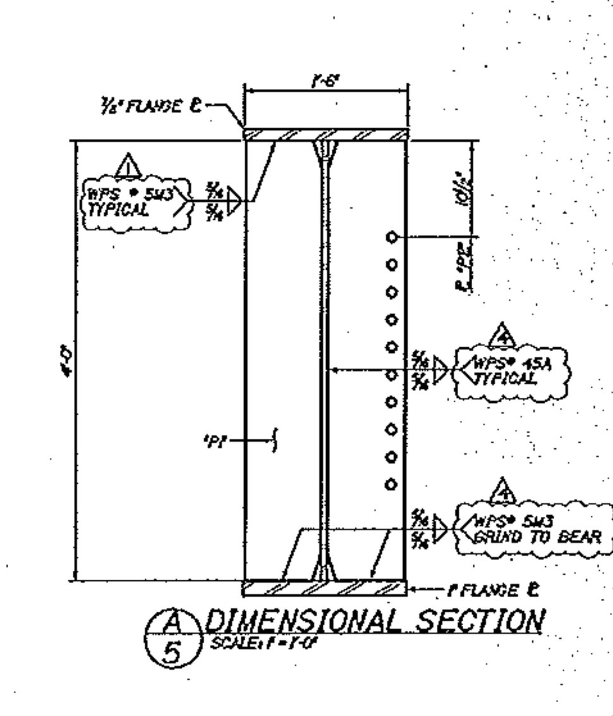
DIMENSIONAL DETAILS ARE DEVELOPED (DIMENSIONS ARE ALONG ARC U.N.O.)
SCALE: ⅛" = 1'-0"
VERTICAL SCALE EXAGERATED 24

(Revision 1)
- STIFFENERS AND ENDS OF BEAM CHANGED TO BE VERTICAL AT STEEL DEAD LOAD CONDITION.
- RUNNING DIMENSIONS ADDED TO THE BOTTOM OF THE STIFFENERS.
- RUNNING DIMENSIONS ARE NOW GIVEN ALONG THE CURVE AND ALONG THE CAMBER OF THE BEAMS (i.e. WHERE THE FILLET WELD BETWEEN WEB AND FLANGE WILL BE). TOP RUNNING DIMENSIONS HAVE BEEN UPDATE ACCORDINGLY.

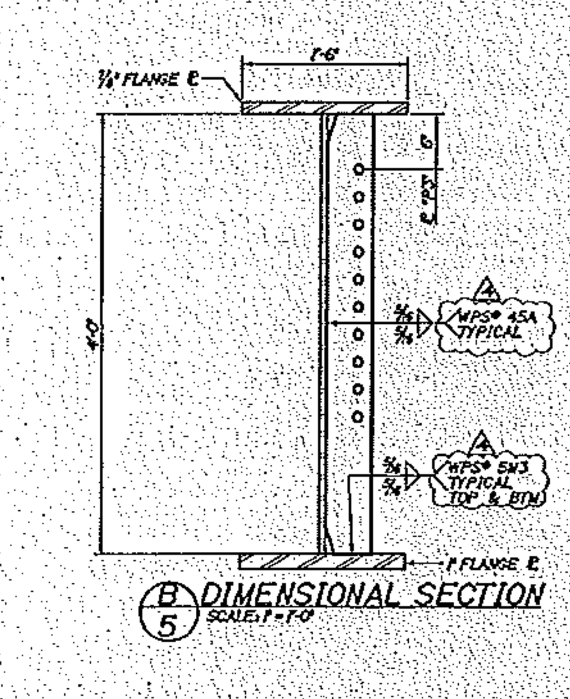
= PRIME WITH CARBOZINC 11 HS, INTERMEDIATE COAT WITH CARBOGUARD 893, TOP COAT WITH CARBOTHANE 133 LH APPLIED IN SHOP
TOUCH UP REQUIRED IN THE FIELD DUE TO DAMAGE FROM HANDLING AND ERECTION BY OTHERS



FLANGE CLIP DETAIL
SCALE: 1" = 1'-0"



(A/5) DIMENSIONAL SECTION



(B/5) DIMENSIONAL SECTION

Vermont Agency of Transportation
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11:20 am, Mar 19, 2012
RESUBMIT .... APPROVED X
BY KMH DATE 3/19/2012

NOTE:
FOR CAMBER DIAGRAMS SEE SHEET 'M3'

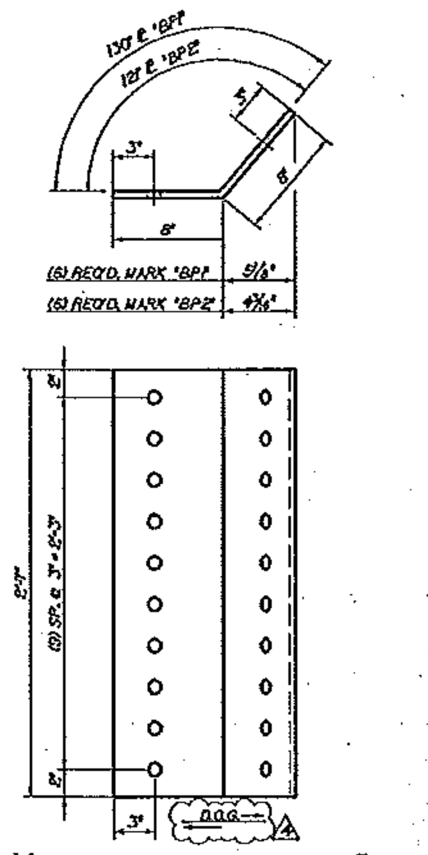
BILL OF MATERIALS

SHIP	SHIP MARK	NO. PCS.	PIECE MARK	DESCRIPTION	LENGTH	REMARKS	MAT'L
1	G4			BRIDGE GIRDER	131'-4½"	29,115#	
		1	WP7	℄ ⅝" x 48"	53'-1⅝"	5425#	Gr. 50W (CVN)
		1	WP8	℄ ⅝" x 48"	78'-3⅝"	7565#	Gr. 50W (CVN)
		1	TF7	℄ ⅞" x 18"	75'-0⅜"	4025#	Gr. 50W (CVN)
		1	TF8	℄ ⅞" x 18"	56'-2⅝"	3020#	Gr. 50W (CVN)
		1	BF10	℄ 1" x 18"	45'-0¼"	2760#	Gr. 70W (CVN)
		1	BF11	℄ 1" x 18"	45'-0¼"	2760#	Gr. 70W (CVN)
		1	BF12	℄ 1" x 18"	41'-2⅝	2525#	Gr. 70W (CVN)
		2	P1	SEE SHEET M		100# EA.	
		2	P2	SEE SHEET M		100# EA.	
		8	P3	SEE SHEET M		34# EA.	

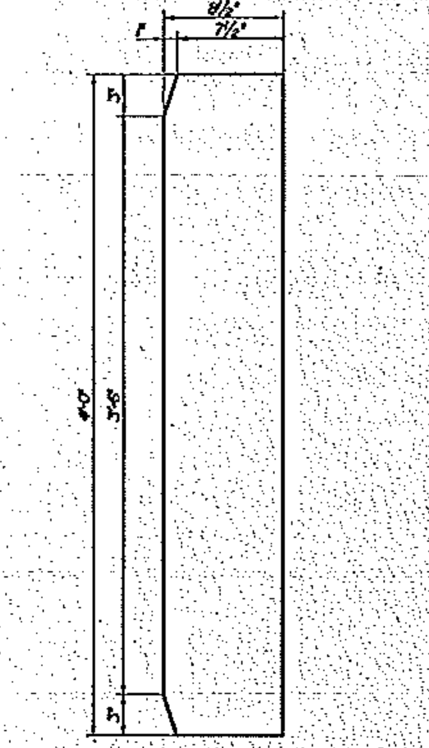
FINISH: SSPC SP6 EVERYWHERE - OUTSIDE PAINT LIMITS ONLY				
MATERIAL: AASHTO M270 (ASTM A709) GRADE 50W (TYP.)				
(ASTM A709) GRADE HPS 70W (BTM. FLANGE)				
HOLES: 15/16" Ø U.N.O.	4	3/13/2012	AS NOTED	JJH
ELECTRODES	3	2/21/2012	BASELINE w/ OFFSETS & AS NOTED	JJH
WELDS: PER WELD PROCEDURE				
SURFACE PREP: SSPC SP10 w/ PAINTING LIMITS	1	2/15/2012	AS NOTED	JJH
SSPC SP6 ELSEWHERE	NO	DATE	DESCRIPTION	BY
	REVISIONS			

ARC ENTERPRISES, INC.
ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 120 KINGFIELD, ME 04947
PHONE (207) 265-2645 - FAX (207) 265-4054

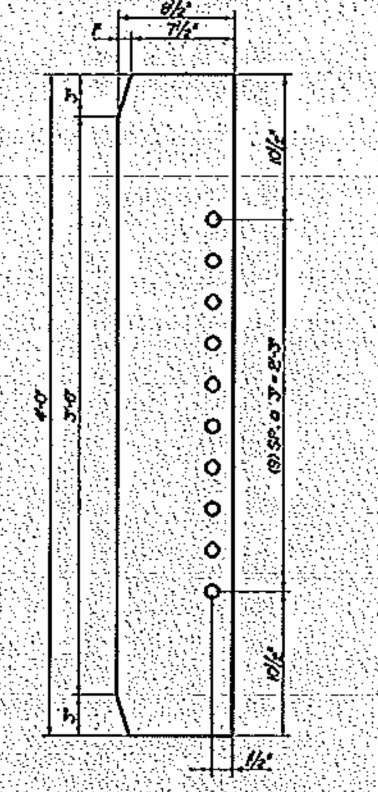
DRAFTER: JJH	GIRDER 4	PROJECT NO. BRO 1442(35)
DATE: DEC. 2011	BRIDGE # 57, TOWN HIGHWAY 6, SPRINGFIELD, VERMONT	
CHECKED: ETC		DWG. NO. 5
DATE: JAN. 2012	GC: T BUCK CONSTRUCTION	



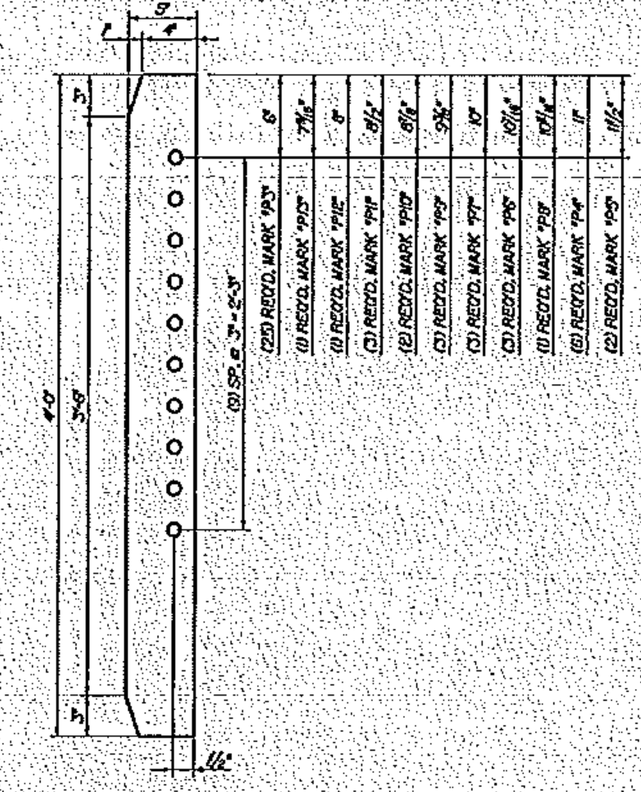
1/2" BENT CONNECTION PL's
(12) REQ'D
SCALE: 1/2" = 1'-0"
USE "BP1" @ ABUTMENT #1
USE "BP2" @ ABUTMENT #2



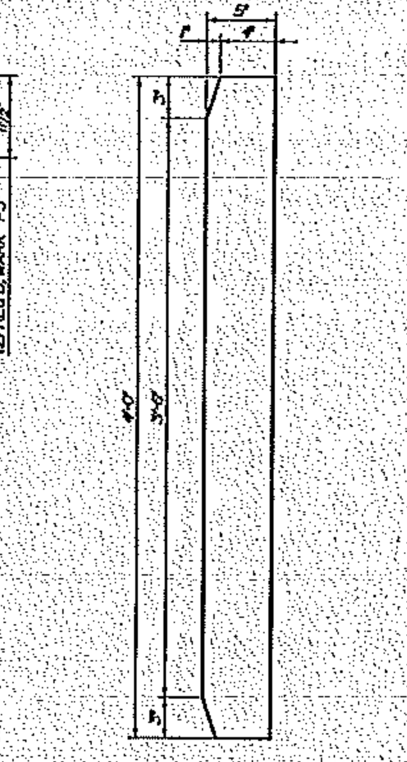
7/8" CONN. PL, MARK "P1"
(4) REQ'D
SCALE: 1/2" = 1'-0"



7/8" CONN. PL, MARK "P2"
(12) REQ'D
SCALE: 1/2" = 1'-0"



1/2" CONNECTION PL's
(50) REQ'D
SCALE: 1/2" = 1'-0"



1/2" CONN. PL, MARK "P14"
(2) REQ'D
SCALE: 1/2" = 1'-0"

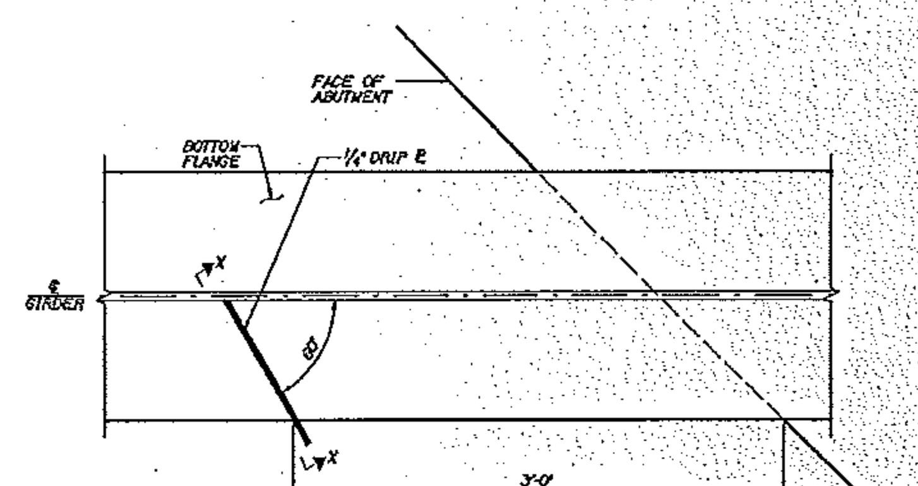
BILL OF MATERIALS

SHIP	SHIP MARK	NO. PCS.	PIECE MARK	DESCRIPTION	LENGTH	REMARKS	MAT'L
		6	BP1	PL 1/2" x 1'-4"	2'-7"	70# EACH	CVN
		6	BP2	PL 1/2" x 1'-4"	2'-7"	70# EACH	CVN
		4	P1	PL 7/8" x 8 1/2"	4'-0"	100# EACH	CVN
		12	P2	PL 7/8" x 8 1/2"	4'-0"	100# EACH	CVN
		25	P3	PL 1/2" x 9"	4'-0"	34# EACH	CVN
		6	P4	PL 1/2" x 9"	4'-0"	34# EACH	CVN
		2	P5	PL 1/2" x 9"	4'-0"	34# EACH	CVN
		3	P6	PL 1/2" x 9"	4'-0"	34# EACH	CVN
		3	P7	PL 1/2" x 9"	4'-0"	34# EACH	CVN
		1	P8	PL 1/2" x 9"	4'-0"	34# EACH	CVN
		3	P9	PL 1/2" x 9"	4'-0"	34# EACH	CVN
		2	P10	PL 1/2" x 9"	4'-0"	34# EACH	CVN
		3	P11	PL 1/2" x 9"	4'-0"	34# EACH	CVN
		1	P12	PL 1/2" x 9"	4'-0"	34# EACH	CVN
		1	P13	PL 1/2" x 9"	4'-0"	34# EACH	CVN
		2	P14	PL 1/2" x 9"	4'-0"	34# EACH	CVN

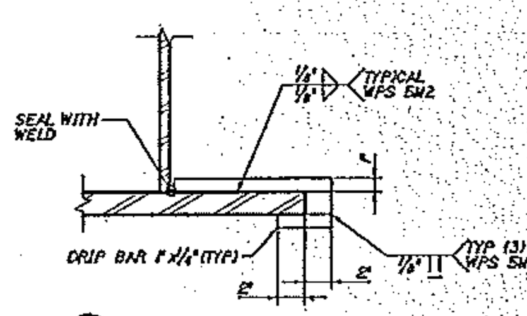
FIELD BOLTS

		NO. PCS.	PIECE MARK	DESCRIPTION	LENGTH	REMARKS
	△	560	FB1	7/8" ⌀ BOLT W/ N&W	2 1/2"	ASTM A325, TYPE 3
		60	FB2	7/8" ⌀ BOLT W/ N&W	2 3/4"	ASTM A325, TYPE 1 (GALV.)
		60	FB3	7/8" ⌀ BOLT W/ N&W	2 1/2"	ASTM A325, TYPE 1 (GALV.)
		60	FB4	7/8" ⌀ BOLT W/ N&W	2 3/4"	ASTM A325, TYPE 3

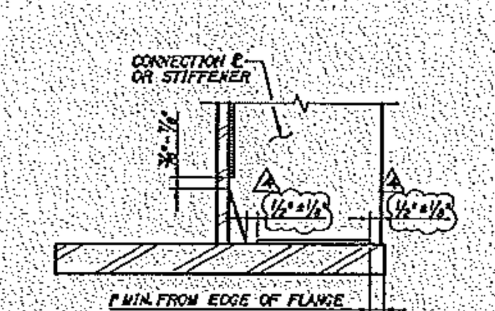
△ NOTE:
ALL A325 (TYPE 3) BOLTS ARE TO BE USED OUTSIDE THE PAINT LIMITS
ALL A325 (TYPE 1) GALVANIZED BOLTS ARE TO BE USED W/IN PAINT LIMITS
SEE SHEET *1 PAINT LIMITS



DRIP BAR PLAN



X/M1 DRIP BAR SECTION
1 1/2" = 1'-0"



—/M1 TYPICAL WELD TERMINATION DETAIL
2" = 1'-0"

Vermont Agency of Transportation
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RESUBMIT ____ APPROVED X
BY KMH DATE 3/19/2012

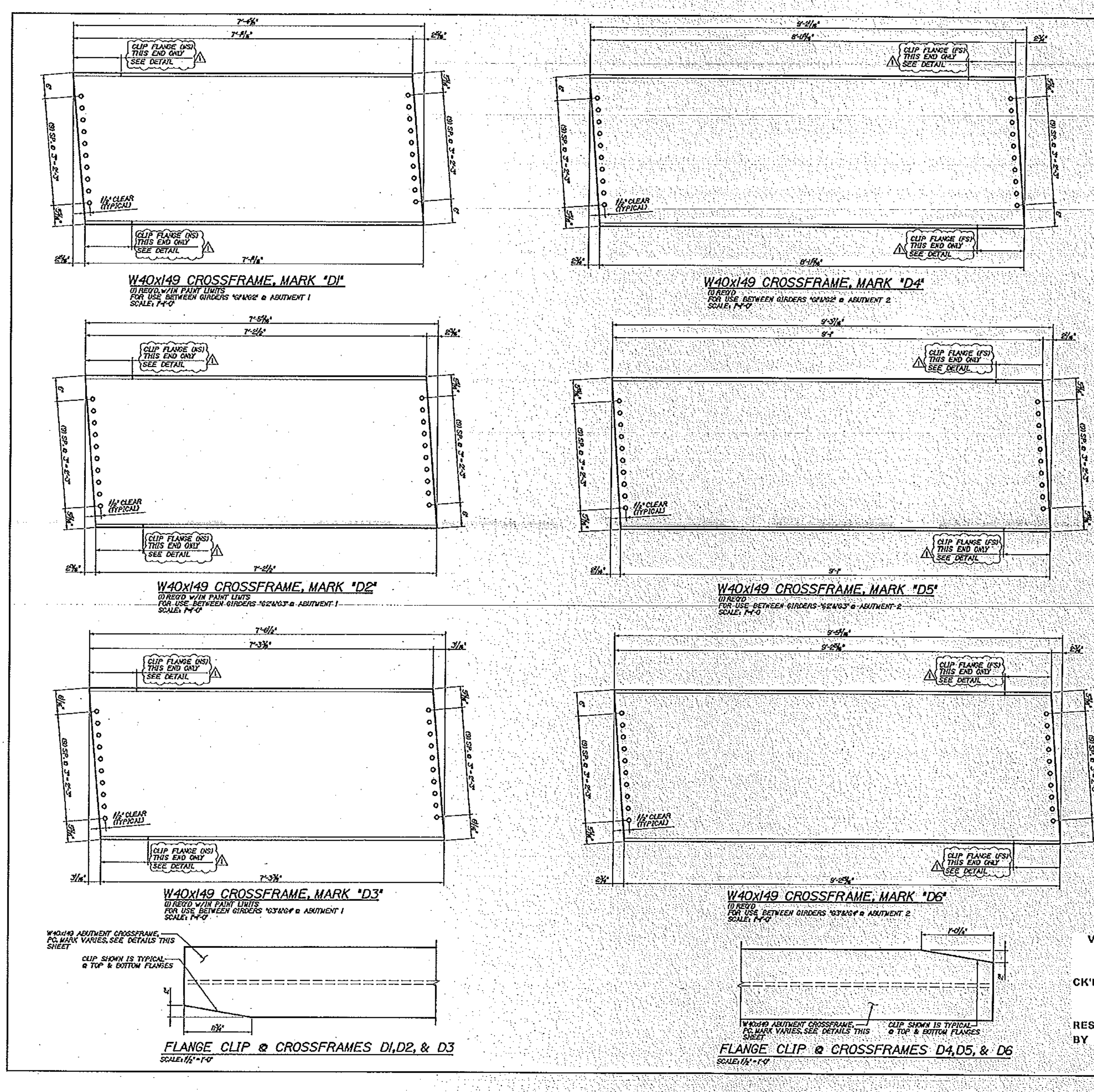
		NO	DATE	DESCRIPTION	BY
FINISH	SSPC SP6 EVERYWHERE - OUTSIDE PAINT LIMITS ONLY				
MATERIAL	AASHTO M270 (ASTM A709) GRADE 50W				
HOLES	15/16" ⌀ U.N.O.	4	3/13/2012	WELD TERM. & D.O.G ON BENT PLs	JJH
ELECTRODES					
WELDS	PER WELD PROCEDURE	2	2/17/2012	CVN TESTING IN BILL	JJH
SURFACE PREP	SSPC SP10 w/in PAINTING LIMITS	1	2/16/2012	GALVANIZED BOLTS	JJH
	SSPC SP6 ELSEWHERE				

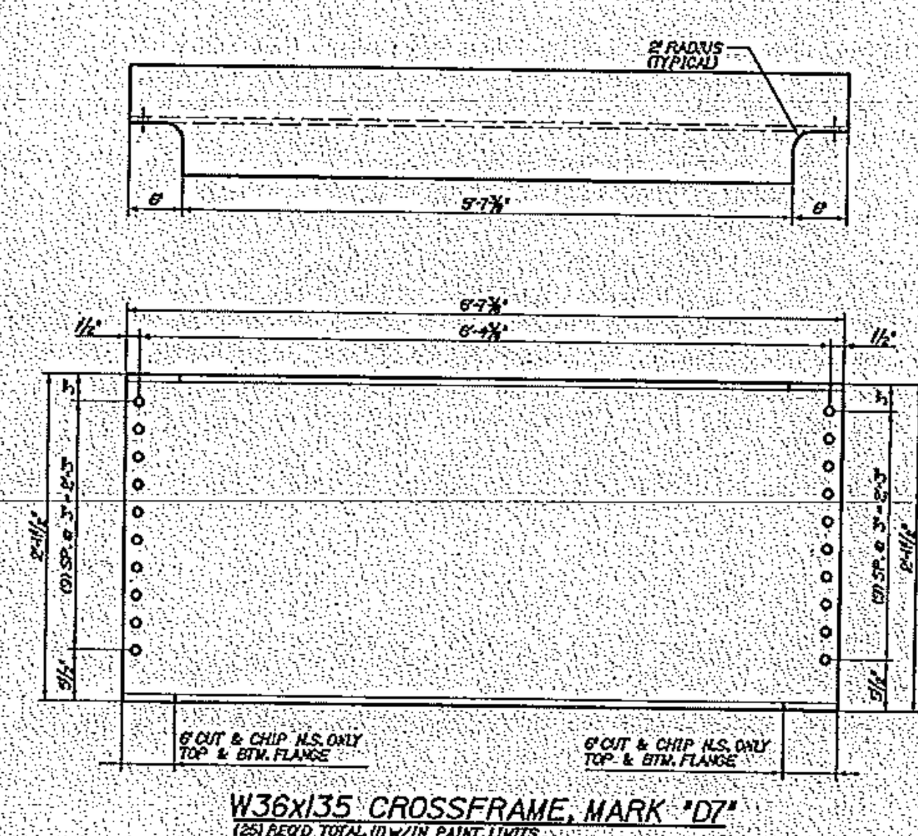
REVISIONS

ARC ENTERPRISES INC.

ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 120 KINGFIELD, ME 04947
PHONE: (207) 265-5545 - FAX: (207) 265-4054

DRAFTER	JJH		PROJECT NO.
DATE	DEC. 2011	BRIDGE # 57, TOWN HIGHWAY 5 SPRINGFIELD, VERMONT	BRO 1H(30)
CHECKED	ETC		DWG. NO.
DATE	JAN. 2012	T BUCK CONSTRUCTION	M1





BILL OF MATERIALS

SHIP	SHIP MARK	NO. PCS.	PIECE MARK	DESCRIPTION	LENGTH	REMARKS	MAT'L
		1	D1	W40x149	7'-4⅝"	1065# EACH	CVN
		1	D2	W40x149	7'-5⅜"	1075# EACH	CVN
		1	D3	W40x149	7'-6½"	1085# EACH	CVN
		1	D4	W40x149	9'-2¹⁄₁₆"	1335# EACH	CVN
		1	D5	W40x149	9'-3⁷⁄₁₆"	1355# EACH	CVN
		1	D6	W40x149	9'-5⅛"	1375# EACH	CVN
		25	D7	W36x135	6'-7¾"	895# EACH	CVN

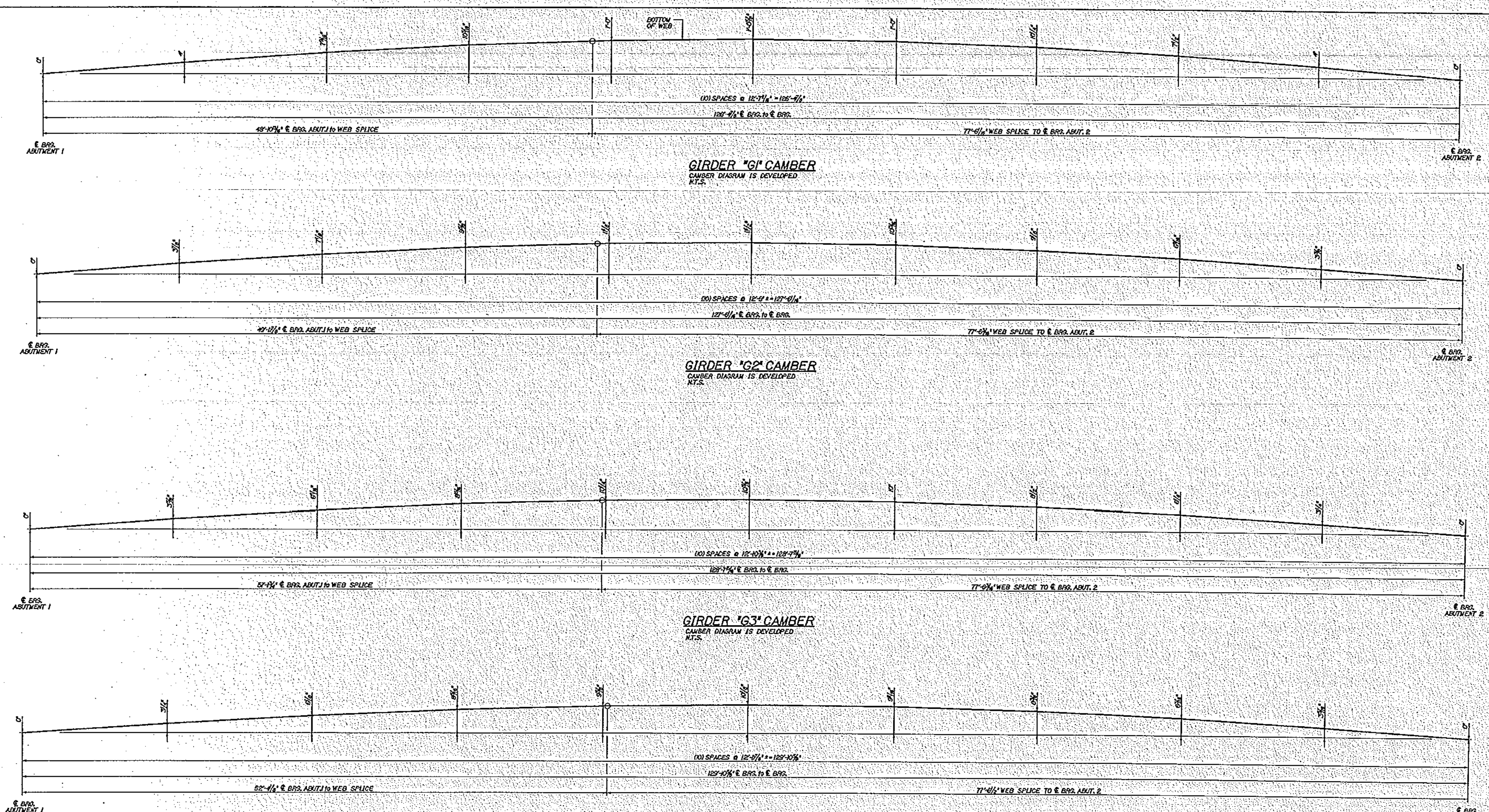
Vermont Agency of Transportation
RECEIVED
CK'D BY GML OK'D BY JEL
11:20 am, Mar 19, 2012
RESUBMIT ______ APPROVED X
BY KMH DATE 3/19/2012

		NO.	DATE	DESCRIPTION	BY
FINISH	SSPC SP6 EVERYWHERE - OUTSIDE PAINT LIMITS ONLY				
MATERIAL	AASHTO M270 (ASTM A709) GRADE 50W				
HOLES	15/16" Ø U.N.O.				
ELECTRODES					
WELDS	PER WELD PROCEDURE	2	2/17/2012	CVN TESTING IN BILL	JJH
SURFACE PREP	SSPC SP10 w/in PAINTING LIMITS	1	2/15/2012	FLANGE CLIPS	JJH
	SSPC SP6 ELSEWHERE			REVISIONS	

ARC ENTERPRISES, INC.

ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 127 KINGFIELD, ME. 04947
PHONE: (207) 265-2645 - FAX: (207) 265-4064

DRAFTER JJH	CROSS FRAMES		PROJECT NO. BRO 1442(29)
DATE DEC. 2011	BRIDGE #57, TOWN HIGHWAY 6 SPRINGFIELD, VERMONT		
CHECKED ETC	GC: T BUCK CONSTRUCTION		DWG. NO. M2
DATE JAN. 2012			



GIRDER "G1" CAMBER
CAMBER DIAGRAM IS DEVELOPED
N.T.S.

GIRDER "G2" CAMBER
CAMBER DIAGRAM IS DEVELOPED
N.T.S.

GIRDER "G3" CAMBER
CAMBER DIAGRAM IS DEVELOPED
N.T.S.

GIRDER "G4" CAMBER
CAMBER DIAGRAM IS DEVELOPED
N.T.S.

		NO	DATE	DESCRIPTION	BY
FINISH	SSPC SP6 EVERYWHERE - OUTSIDE PAINT LIMITS ONLY				
MATERIAL	AASHTO M270 (ASTM A709) GRADE 50W				
HOLES	15/16" Ø U.N.O.				
ELECTRODES					
WELDS	PER WELD PROCEDURE				
SURFACE PREP	SSPC SP10 w/in PAINTING LIMITS				
	SSPC SP6 ELSEWHERE			REVISIONS	

ARC ENTERPRISES, INC.

ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 123 KINGFIELD, ME 04947
PHONE: (207) 265-2645 - FAX: (207) 265-4064

DRAFTER	JJH	CAMBER DIAGRAMS	PROJECT NO. BRO 1442(9)
DATE	DEC. 2011	BRIDGE # 57, TOWN HIGHWAY 6 SPRINGFIELD, VERMONT	
CHECKED	ETC		DWG. NO.
DATE	JAN. 2012	CC: T BUCK CONSTRUCTION	M3

VERMONT

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

Agency of Transportation

[phone] 802-828-2621
[fax] 802-828-3566
[ttd] 800-253-0191

April 28, 2012

J.P Carrara & Sons, Inc
2464 Case St.
Middlebury, VT 05753

Project Name: East Haven **Project #: BRF 0269(11)**

Structure Identification: Bridge #18 over East Branch Passumpsic River

The Prestressed Concrete Box Beam fabrication drawings [Item 510.21 Prestressed Concrete Box Beams] for the above project (General Contractor – Austin Construction, Inc.) have been reviewed and are being returned herewith.

All sheets are approved. I have included section 10.11 from the PCI Manual as our inspector will be checking for conformance throughout the fabrication process.

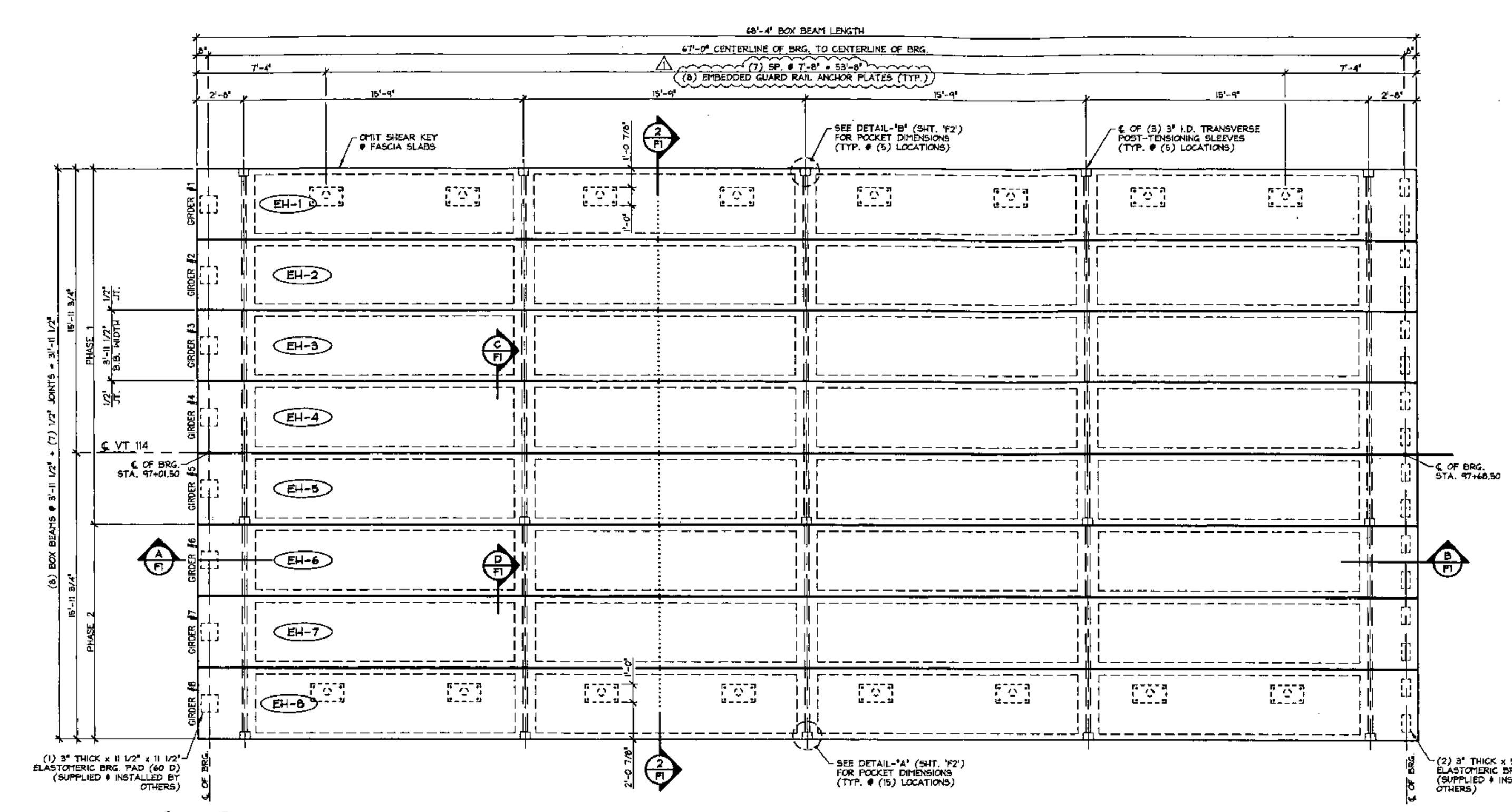
You must provide notice to our fabrication inspector, Jim Wild, as to the date fabrication represented by these drawings will begin. Jim must receive and acknowledge your notice at least seven days prior to that date. You may contact Jim by phone at (802)828-6931 or email at jim.wild@state.vt.us. Any material fabricated prior to the notification date is subject to rejection without further cause.

Sincerely,

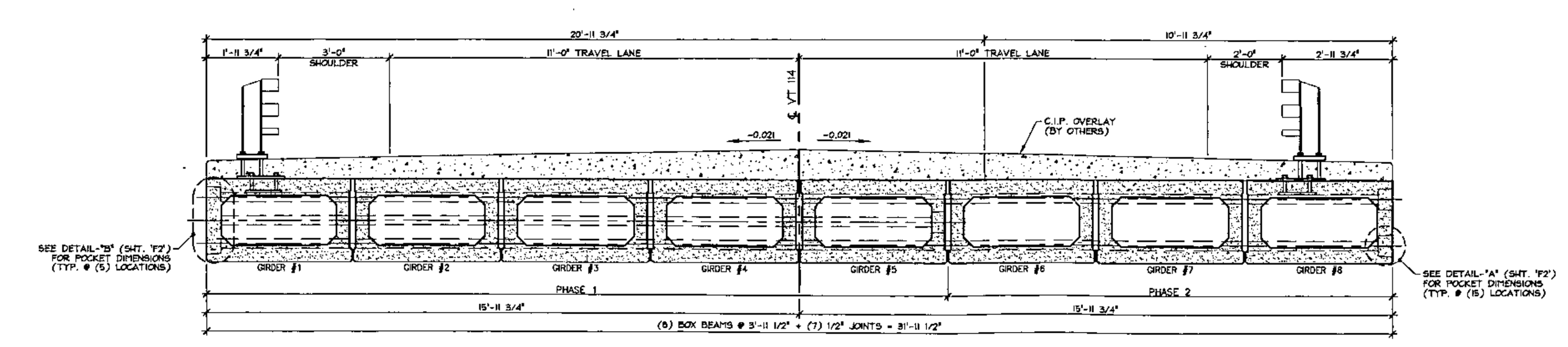
Kristin M. Higgins P.E.
Project Manager

Attachments
cc: [x] Resident Engineer – Doug Bumps w/prints
[x] Shop Inspector – Jim Wild w/prints
[x] Contractor – Austin Construction., Inc. w/prints
[x] Construction Division – letter only
[x] Materials & Research Section (C&IA Unit) – letter only
[x] Files (Structures & Central)

VTrans Working to Get You There



1/F1 PRESTRESSED BOX BEAM LAYOUT
1/4" = 1'-0"



2/F1 TRANSVERSE SECTION
1/2" = 1'-0"

GENERAL NOTES

1. MIN. CONCRETE STRENGTH AT 28 DAYS SHALL BE 7,000 PSI.
2. MIN. CONCRETE STRENGTH AT STRESS TRANSFER SHALL BE 5,500 PSI.
3. REINFORCING STEEL SHALL BE GR-60, ASTM A-615 (AASHTO M31) AND SHALL BE EPOXY COATED.
4. PRESTRESSING STRANDS SHALL CONFORM TO ASTM A-416 (AASHTO M203) AND SHALL CONSIST OF 0.60"Ø x 270 KSI 7-WIRE LOW RELAXATION STRANDS.
5. PRESTRESSING STRANDS SHALL EACH BE PULLED TO HAVE A NET TENSION OF 44.0 K AFTER ACCOUNTING FOR CHUCK SLIPPAGE. TENSION SHALL BE VERIFIED BY MEASURING STRAND ELONGATION. (SEE EXAMPLE ELONGATION CALCULATION AND TENSIONING PROCEDURE, THIS SHEET.)
6. ENDS OF PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH END OF BOX BEAMS (UNLESS NOTED OTHERWISE) AND EPOXY PAINTED.
7. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
8. THE TOP OF BEAMS SHALL RECEIVE A TRANSVERSE RAKE FINISH ROUGHENED TO 1/4" AMPLITUDE.
9. SHEAR KEY SURFACES SHALL BE SAND BLASTED CLEAN. (△1)
10. BEAMS SHALL BE HANDLED AND ERECTED USING THE LIFTING LOOPS ONLY. THE PINS OF THE SHACKLES SHALL BE PLACED THOUGH THE LIFTING LOOPS. SEE DETAIL, SHEET "F2". BEAMS SHALL BE STORED AND TRANSPORTED WITH TIMBER SUPPORTS WITHIN 2'-0" OF THE BEAM ENDS, UNLESS APPROVED BY J.P. CARRARA & SONS, INC.
11. MATERIAL SPECIFICATION AND MIX DESIGN SHALL CONFORM TO VERMONT SPEC. P510.02 AND P510.05 RESPECTIVELY.
    DESIGN MIX: J.P.C. BRIDGE MIX #425M
12. QUALITY CONTROL PROCEDURES ARE IN ACCORDANCE WITH PCI REQUIREMENTS. J.P. CARRARA & SONS, INC. IS A PCI CERTIFIED PLANT.
13. THE VOIDS MUST BE VENTED DURING CURING PERIOD.
14. CURING METHOD: AS SOON AS THE TOP OF BEAM IS FINISHED, A COVER OF POLY AND A LAYER OF HOMOSOTE (OR BLUE BOARD) WILL BE PLACED OVER THE BEAM. THE DESIRED CURING TEMPERATURE RANGE SHALL NOT DROP BELOW 70°F. THE TEMPERATURE SHALL BE RECORDED BY AUTOMATIC SENSOR INSTRUMENTS ON GRAPH CHARTS, SPACED NOT MORE THAN 100' APART AND WILL CONTINUE UNTIL RELEASE STRENGTH IS ACHIEVED, (NATURAL CURE WITH NO EXTERNAL HEAT APPLIED). EACH CHART SHALL BE MARKED.
15. TRANSVERSE POST-TENSIONING SEQUENCE:
    - (△2) A. ERECT PHASE 1 BOX BEAMS (GIRDERS #1 THRU #5), AND POST-TENSION CENTER TENDON TO APPROXIMATELY 5,000 LBS.
    - B. GROUT SHEAR KEYS.
    - C. ONCE SHEAR KEY GROUT HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI; POST TENSION TENDONS TO 47,000 LBS.
    - (△2) D. ERECT PHASE 2 BOX BEAMS (GIRDERS #6 THRU #8), AND POST-TENSION TOP & BOTTOM TENDONS TO APPROXIMATELY 5,000 LBS.
    - E. GROUT SHEAR KEYS.
    - F. ONCE SHEAR KEY GROUT HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI; POST TENSION TENDONS TO 47,000 LBS.

EXAMPLE PRESTRESSING STRAND ELONGATION CALC. AND TENSIONING

(NOT TO BE USED FOR CONSTRUCTION)

SIZE & GRADE: 0.60"Ø x 270 KSI
AREA: 0.217 IN^2
TENSION: 44,000 LB. EACH STRANDS
GRIP-TO-GRIP: 192'-9 3/4" = 192.813'
Es = 28,600,000 PSI (ASSUMED FOR THESE CALCULATIONS; VALUE TO BE OBTAINED FOR STRAND SPOOL ACTUALLY USED)

EXAMPLE:

$$\Delta = \frac{PL}{AE} = \frac{(44,000 - 3,000) \times 192.813 \times 12}{0.217 \times 28,600,000} = 15.29"$$

THEREFORE: (TOLERANCES ± 5%)
Δ UPPER LIMIT = 1.05 x 15.29" = 16.05" = 16 1/16"
Δ LOWER LIMIT = 0.95 x 15.29" = 14.53" = 14 1/2"

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

$$\Delta P = \frac{0.5 \times 41,000}{15.29} = 1,340 \text{ LBS.}$$

TOTAL TENSIONING FORCE = 44,000 + 1,340 = 45,340 LBS.

STRAND TENSIONING PROCEDURE:

1. PULL EACH STRAND INITIALLY TO 3,000* LBS. AND MARK STRAND.
2. THEN PULL EACH STRAND TO A TOTAL TENSION OF 45,340* LBS. AND MEASURE ELONGATION AFTER SEATING. IT MUST BE BETWEEN 14 1/2" & 16 1/16".

* NOTE: FORCES READ ON STRESSING JACK GAUGES MUST BE MADE TO CORRESPOND TO ABOVE VALUES BASED ON CALIBRATION DATA FOR SPECIFIC JACK USED.

Vermont Agency of Transportation
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10:30 am, April 04,2012
RESUBMIT ______ **APPROVED** X
BY KMH **DATE** 4-04-12

NO.	DATE	REVISION	
2	4-4-12	REVISED AS NOTED	B.L.
1	3-1-12	REVISED PER ENGINEER COMMENTS	B.L.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAWN: B. LOPEZ
DESIGNED:
CHECKED:
APPROVED:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753
Phone:(802)388-6361
Fax:(802)388-9010
Double-Tees Hollow-Core Plank Flat Panels

AUSTIN CONSTRUCTION
CONCORD, VT

Project Name:
TOWN OF EAST HAVEN, VT
STATE ROUTE 114 - MAJOR COLLECTOR
BRIDGE NO. 18 PROJECT NO. BRF 0269(11)
SUPERSTRUCTURE PLAN & SECTION

SCALE:	JOB #:
NOTED	23363-011
DATE:	SHEET #:
1-20-11	F1

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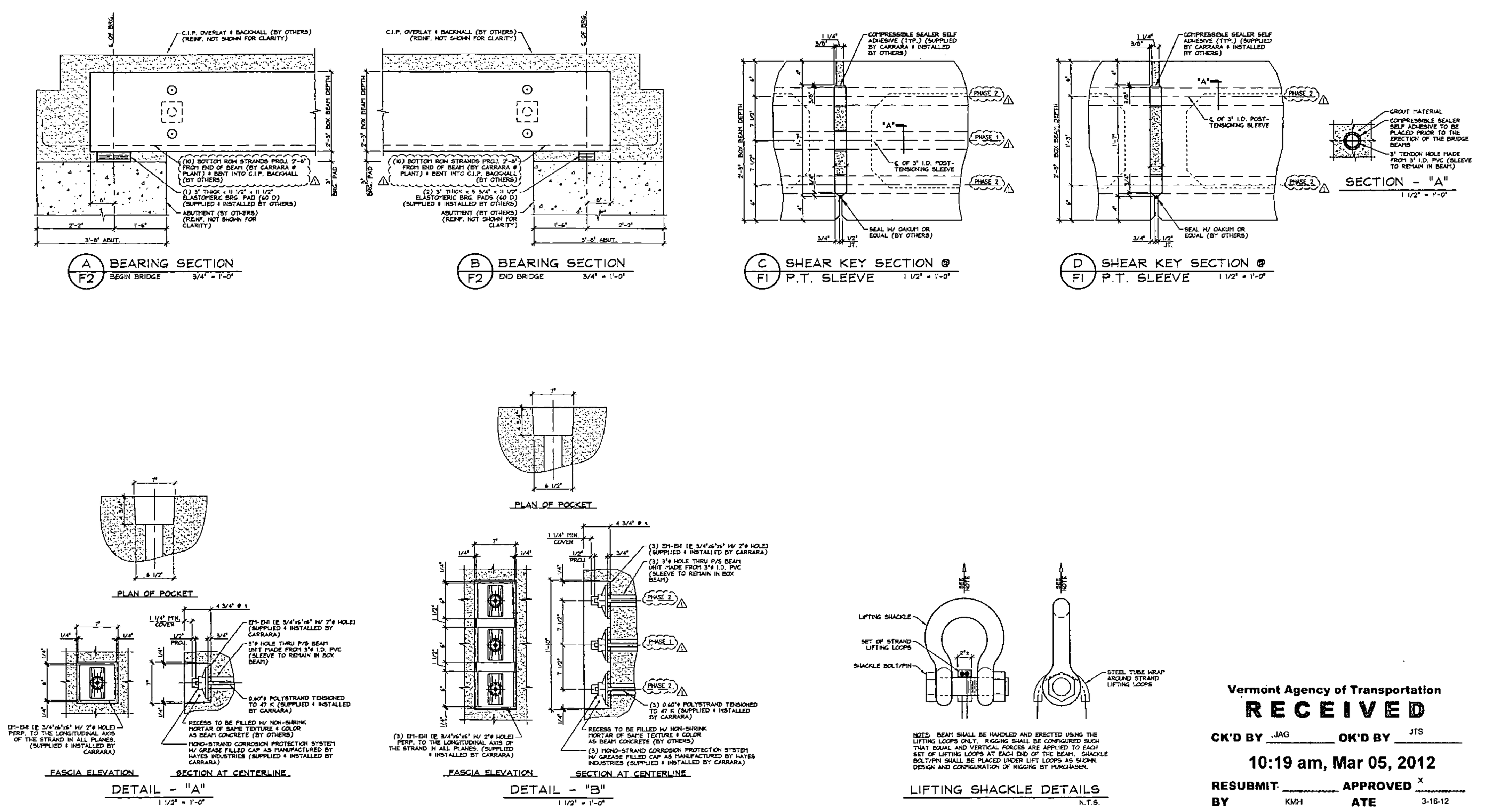

Vermont Agency of Transportation
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10:19 am, Mar 05, 2012
RESUBMIT ______ APPROVED X
BY KMH ATE 3-16-12

NO.	DATE	REVISION	
1	3-1-12	REVISED PER ENGINEER COMMENTS	B.L.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAWN: B. LOPEZ
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APPROVED:

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AUSTIN CONSTRUCTION
CONCORD, VT

Project Name:
TOWN OF EAST HAVEN, VT
STATE ROUTE 114 - MAJOR COLLECTOR
BRIDGE NO. 18 PROJECT NO. BRF 0269(11)

SUPERSTRUCTURE DETAILS

SCALE: NOTED
JOB #: 23363-011
DATE: 1-20-11
SHEET #: F2

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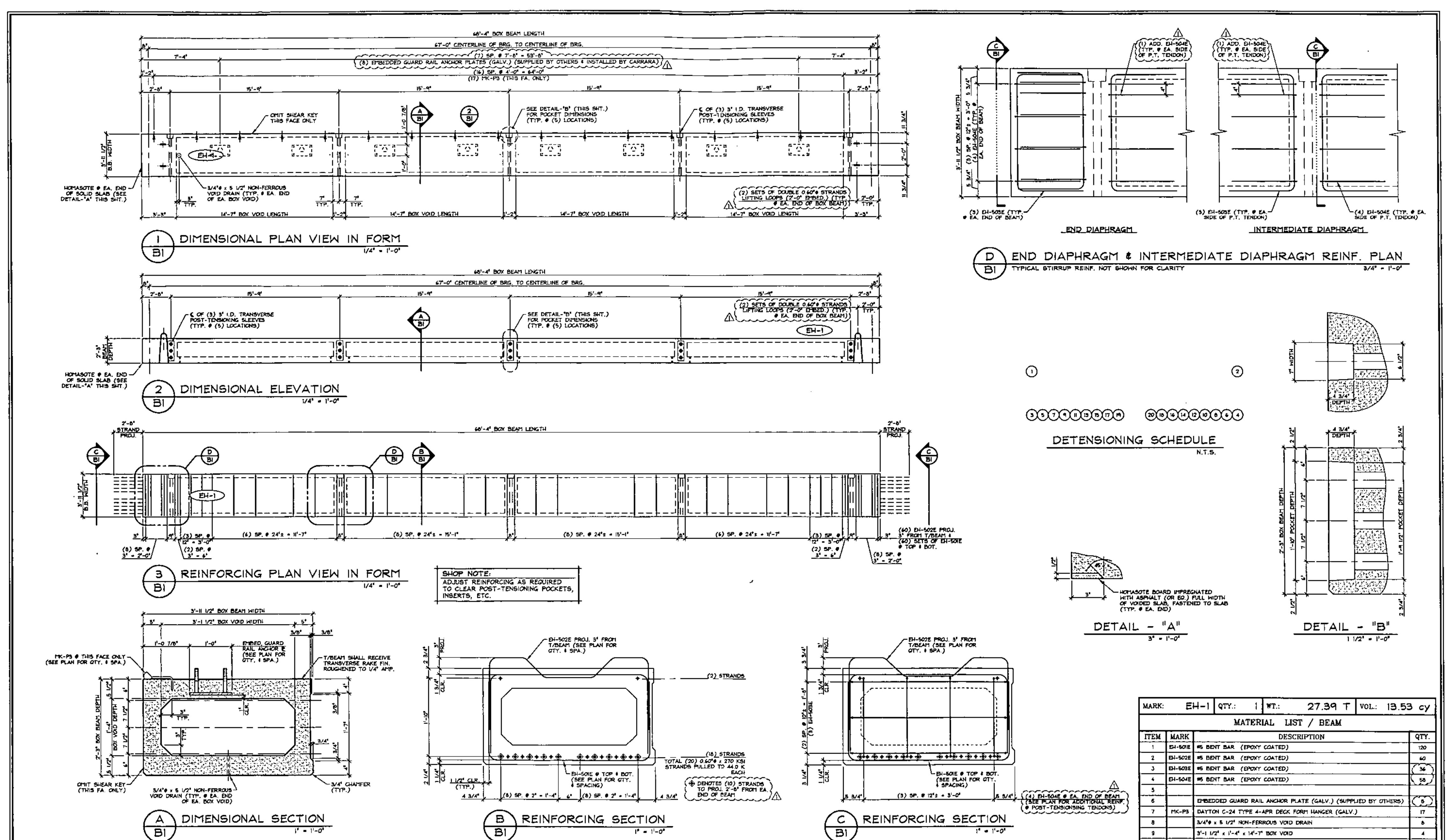

MARK: EH-1	QTY.: 1	WT.: 27.39 T	VOL.: 13.53 cy

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY.
1	EH-501E	#5 BENT BAR (EPOXY COATED)	120
2	EH-502E	#5 BENT BAR (EPOXY COATED)	60
3	EH-503E	#6 BENT BAR (EPOXY COATED)	36
4	EH-504E	#5 BENT BAR (EPOXY COATED)	58
5			
6		EMBEDDED GUARD RAIL ANCHOR PLATE (GALV.) (SUPPLIED BY OTHERS)	8
7	MK-P3	DAYTON C-24 TYPE 4-APR DECK FORM HANGER (GALV.)	17
8		3/4"⌀ x 5 1/2" NON-FERROUS VOID DRAIN	8
9		3'-1 1/2" x 1'-4" x 14'-7" BOX VOID	4
10		SET OF DOUBLE 0.60"⌀ STRAND LIFTING LOOPS	4

Vermont Agency of Transportation
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STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAWN: B. LOPEZ
DESIGNED:
CHECKED:
APPROVED:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753
Phone:(802)388-6363
Fax:(802)388-9010
Double-Tees Hollow-Core Plank Flat Panels

AUSTIN CONSTRUCTION
CONCORD, VT

Project Name:
TOWN OF EAST HAVEN, VT
STATE ROUTE 114 - MAJOR COLLECTOR
BRIDGE NO. 18 PROJECT NO. BRF 0269(11)

PRESTRESSED BOX BEAM DETAILS

SCALE:	JOB #:
NOTED	23363-011
DATE:	SHEET #:
1-20-11	B1

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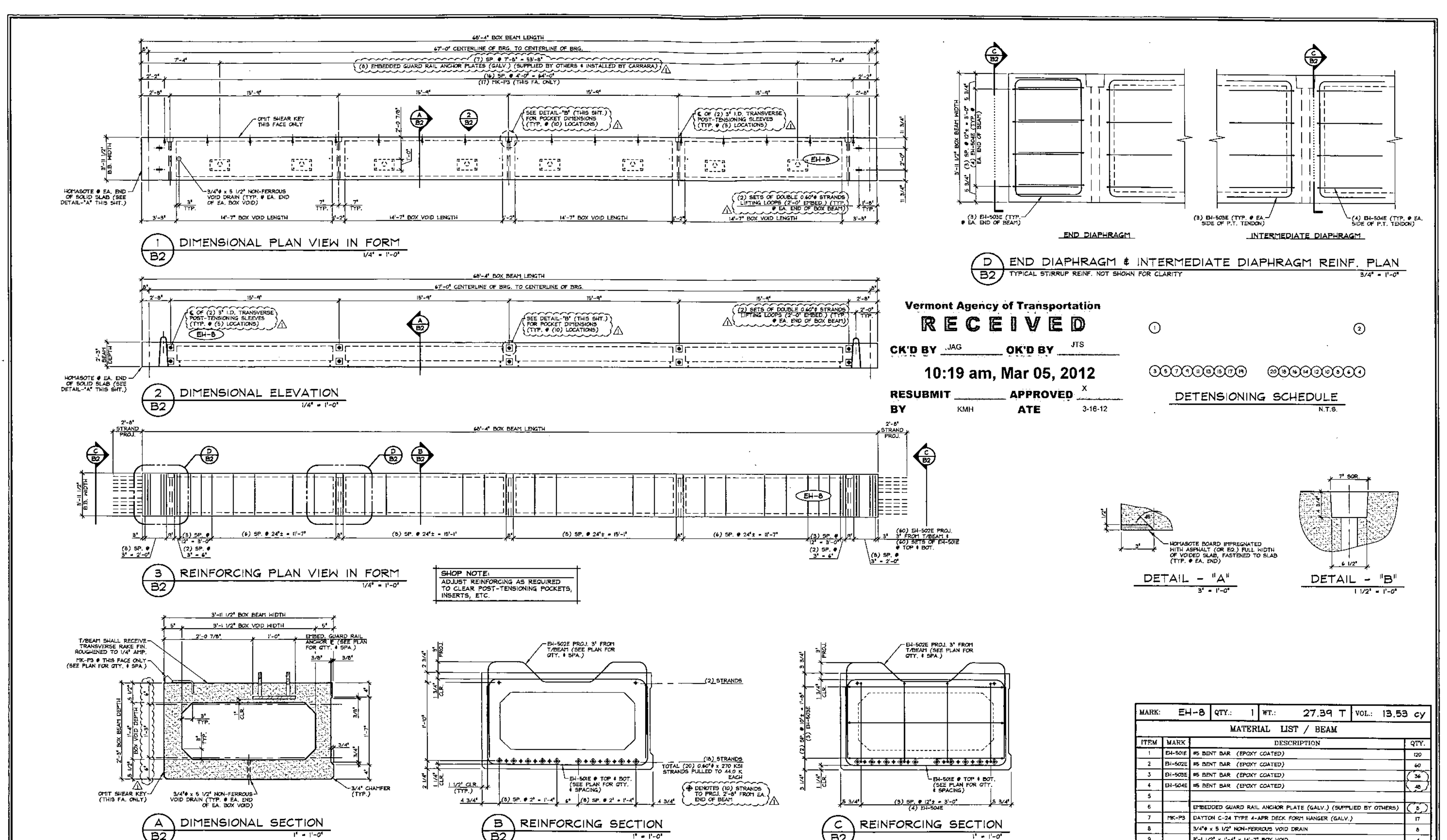

MARK: EH-8	QTY.: 1	WT.: 27.39 T	VOL.: 13.53 cy

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY.
1	EH-501E	#5 BENT BAR (EPOXY COATED)	120
2	EH-502E	#5 BENT BAR (EPOXY COATED)	60
3	EH-503E	#5 BENT BAR (EPOXY COATED)	36
4	EH-504E	#5 BENT BAR (EPOXY COATED)	48
5			
6		EMBEDDED GUARD RAIL ANCHOR PLATE (GALV.) (SUPPLIED BY OTHERS)	8
7	MK-P3	DAYTON C-24 TYPE 4-APR DECK FORM HANGER (GALV.)	17
8		3/4"⌀ x 5 1/2" NON-FERROUS VOID DRAIN	8
9		3'-1 1/2" x 1'-4" x 14'-7" BOX VOID	4
10		SET OF DOUBLE 0.60"⌀ STRAND LIFTING LOOPS	4

NO.	DATE	REVISION	
1	3-1-12	REVISED PER ENGINEER COMMENTS	B.L.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAWN: B. LOPEZ
DESIGNED:
CHECKED:
APPROVED:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753
Phone:(802)388-6381
Fax:(802)388-9010
Double-Tees Hollow-Core Plank Flat Panels

AUSTIN CONSTRUCTION
CONCORD, VT

Project Name:
TOWN OF EAST HAVEN, VT
STATE ROUTE 114 - MAJOR COLLECTOR
BRIDGE NO. 18 PROJECT NO. BRF 0269(11)

PRESTRESSED BOX BEAM DETAILS

SCALE: NOTED
JOB #: 23363-011
DATE: 1-20-11
SHEET #: B2

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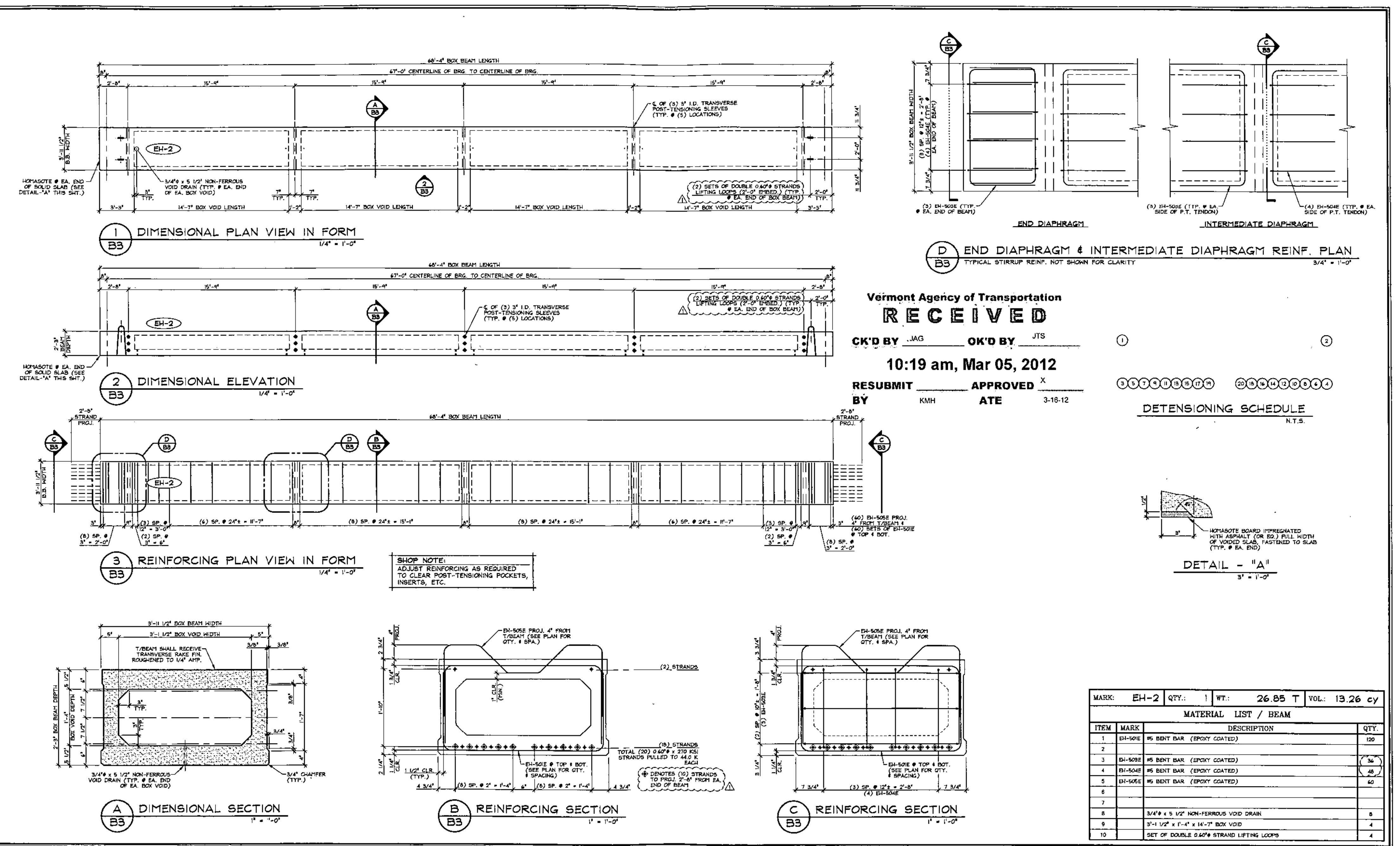

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10:19 am, Mar 05, 2012
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BY KMH ATE 3-16-12

MARK:	EH-2	QTY.: 1	WT.: 26.85 T	VOL.: 13.26 cy

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY.
1	EH-501E	#5 BENT BAR (EPOXY COATED)	120
2			
3	EH-503E	#5 BENT BAR (EPOXY COATED)	36
4	EH-504E	#5 BENT BAR (EPOXY COATED)	48
5	EH-505E	#5 BENT BAR (EPOXY COATED)	60
6			
7			
8		3/4"φ x 5 1/2" NON-FERROUS VOID DRAIN	8
9		3'-1 1/2" x 1'-4" x 14'-7" BOX VOID	4
10		SET OF DOUBLE 0.60"φ STRAND LIFTING LOOPS	4

NO.	DATE	REVISION	
1	3-1-12	REVISED PER ENGINEER COMMENTS	B.L.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAWN: B. LOPEZ
DESIGNED:
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APPROVED:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753
Phone:(802)388-6361
Fax:(802)388-9010
Double-Tees Hollow-Core Plank Flat Panels

AUSTIN CONSTRUCTION
CONCORD, VT

Project Name:
TOWN OF EAST HAVEN, VT
STATE ROUTE 114 - MAJOR COLLECTOR
BRIDGE NO. 18 PROJECT NO. BRF 0269(11)
PRESTRESSED BOX BEAM DETAILS

SCALE: NOTED
JOB #: 23363-011
DATE: 1-20-11
SHEET #: B3

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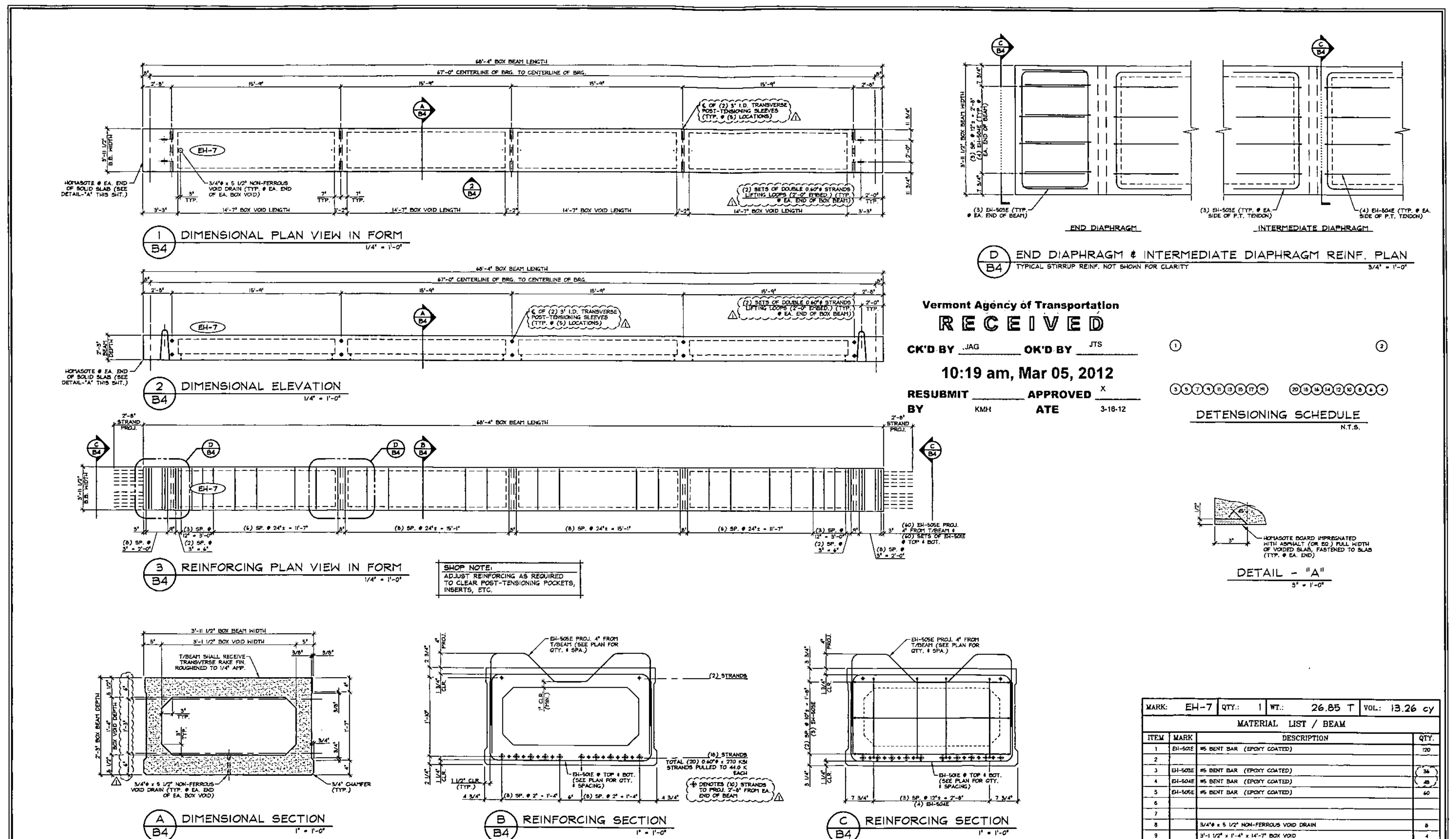

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MARK: EH-7	QTY.: 1	WT.: 26.85 T	VOL.: 13.26 cy

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY.
1	EH-501E	#5 BENT BAR (EPOXY COATED)	120
2			
3	EH-503E	#5 BENT BAR (EPOXY COATED)	36
4	EH-504E	#5 BENT BAR (EPOXY COATED)	48
5	EH-505E	#5 BENT BAR (EPOXY COATED)	60
6			
7			
8		3/4"ø x 5 1/2" NON-FERROUS VOID DRAIN	8
9		3'-1 1/2" x 1'-4" x 14'-7" BOX VOID	4
10		SET OF DOUBLE 0.60"ø STRAND LIFTING LOOPS	4

NO.	DATE	REVISION	
1	3-1-12	REVISED PER ENGINEER COMMENTS	B.L.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAWN: B. LOPEZ
DESIGNED:
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AUSTIN CONSTRUCTION
CONCORD, VT

Project Name:
TOWN OF EAST HAVEN, VT
STATE ROUTE 114 - MAJOR COLLECTOR
BRIDGE NO. 18 PROJECT NO. BRF 0269(11)

PRESTRESSED BOX BEAM DETAILS

SCALE: NOTED
JOB #: 23363-011
DATE: 1-20-11
SHEET #: B4

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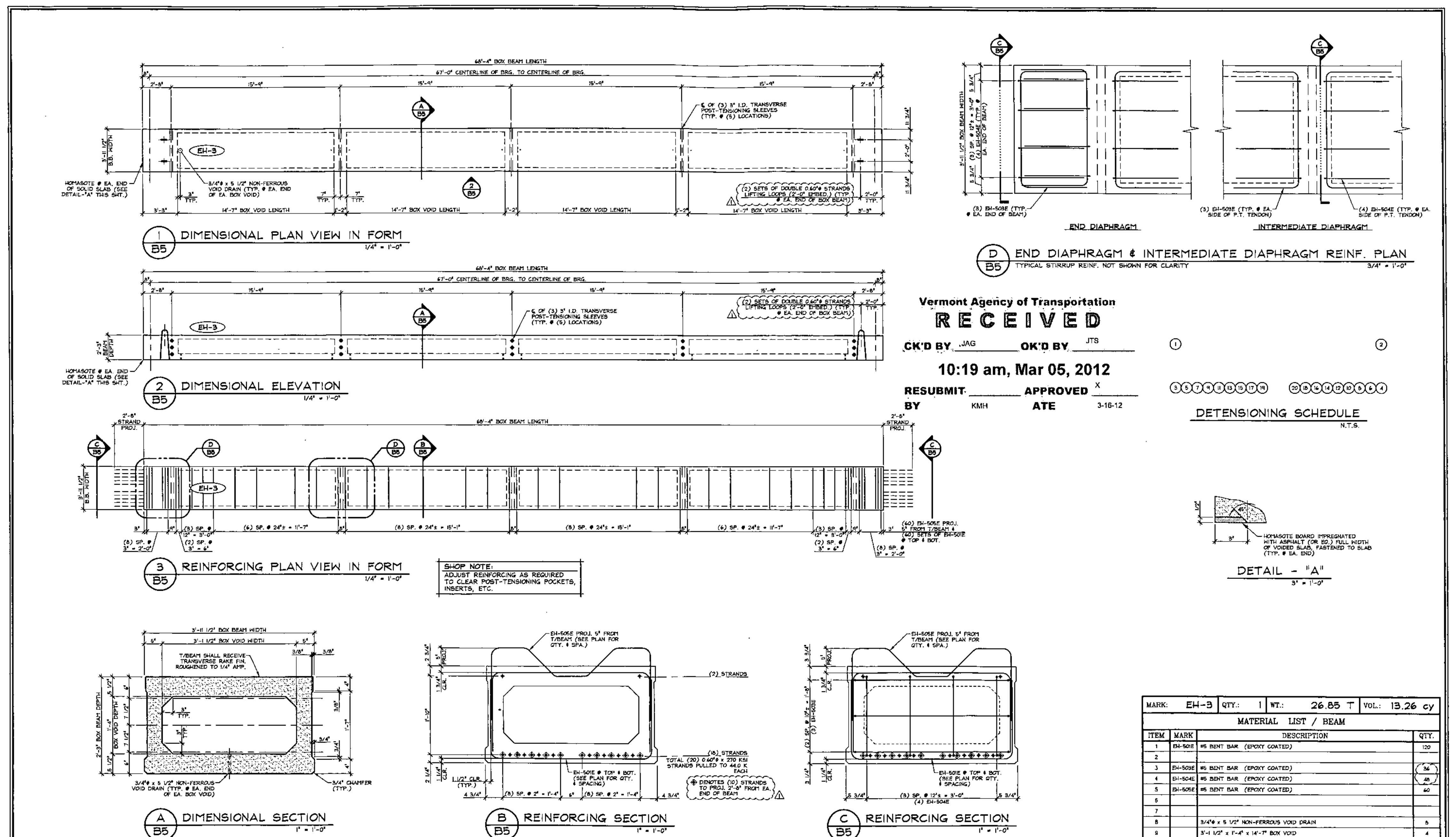

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MARK: EH-3	QTY.: 1	WT.: 26.85 T	VOL.: 13.26 cy

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY.
1	EH-501E	#5 BENT BAR (EPOXY COATED)	120
2			
3	EH-503E	#5 BENT BAR (EPOXY COATED)	36
4	EH-504E	#5 BENT BAR (EPOXY COATED)	48
5	EH-505E	#5 BENT BAR (EPOXY COATED)	60
6			
7			
8		3/4"Ø x 5 1/2" NON-FERROUS VOID DRAIN	8
9		3'-1 1/2" x 1'-4" x 14'-7" BOX VOID	4
10		SET OF DOUBLE 0.60"Ø STRAND LIFTING LOOPS	4

NO.	DATE	REVISION	
1	3-1-12	REVISED PER ENGINEER COMMENTS	B.L.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAWN: B. LOPEZ
DESIGNED:
CHECKED:
APPROVED:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753
Phone:(802)388-6361
Fax:(802)388-9010
Double-Tees Hollow-Core Plank Flat Panels

AUSTIN CONSTRUCTION
CONCORD, VT

Project Name:
TOWN OF EAST HAVEN, VT
STATE ROUTE 114 - MAJOR COLLECTOR
BRIDGE NO. 18 PROJECT NO. BRF 0269(11)

PRESTRESSED BOX BEAM DETAILS

SCALE: NOTED
JOB #: 23363-011
DATE: 1-20-11
SHEET #: B5

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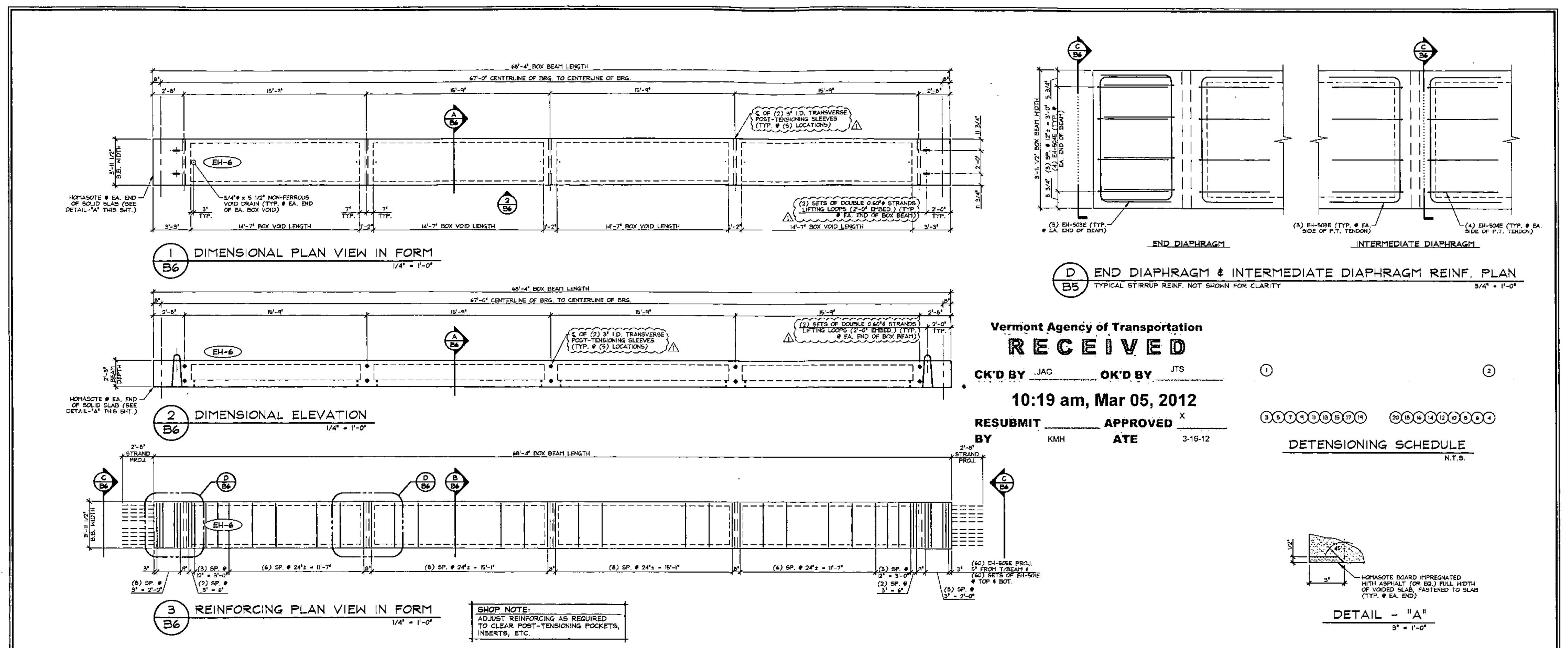

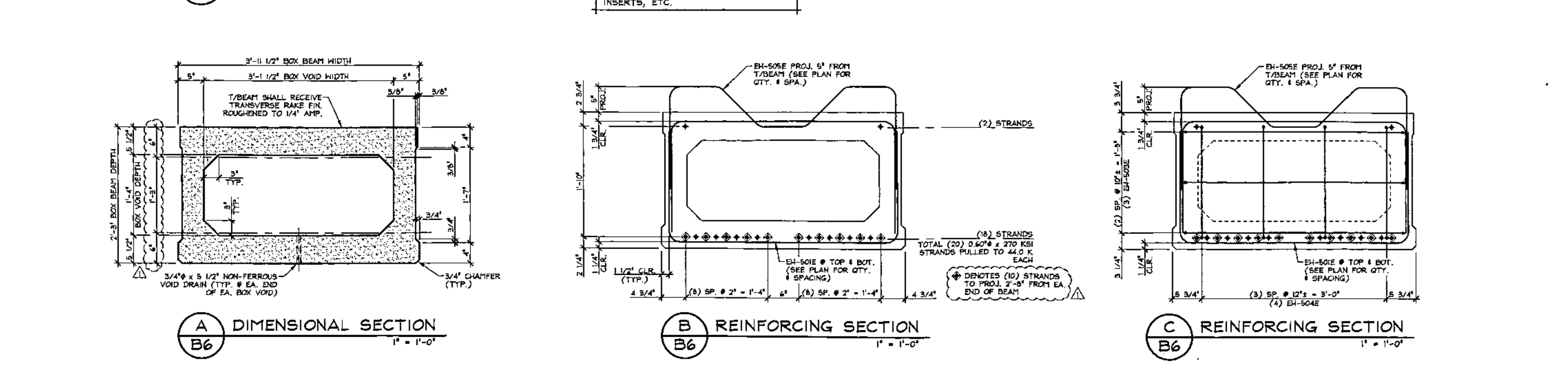

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BY KMH DATE 3-16-12

MARK: EH-6	QTY.: 1	WT.: 26.85 T	VOL.: 13.26 cy

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY.
1	EH-501E	#5 BENT BAR (EPOXY COATED)	120
2			
3	EH-503E	#5 BENT BAR (EPOXY COATED)	36
4	EH-504E	#5 BENT BAR (EPOXY COATED)	48
5	EH-505E	#5 BENT BAR (EPOXY COATED)	60
6			
7			
8		3/4"ø x 5 1/2" NON-FERROUS VOID DRAIN	6
9		3'-1 1/2" x 1'-4" x 14'-7" BOX VOID	4
10		SET OF DOUBLE 0.60"ø STRAND LIFTING LOOPS	4

NO.	DATE	REVISION	
1	3-1-12	REVISED PER ENGINEER COMMENTS	B.L.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAWN: B. LOPEZ
DESIGNED:
CHECKED:
APPROVED:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753
Phone:(802)388-6381
Fax:(802)388-9010
Double-Tees Hollow-Core Plank Flat Panels

AUSTIN CONSTRUCTION
CONCORD, VT

Project Name:
TOWN OF EAST HAVEN, VT
STATE ROUTE 114 - MAJOR COLLECTOR
BRIDGE NO. 18 PROJECT NO. BRF 0269(11)

PRESTRESSED BOX BEAM DETAILS

SCALE: NOTED
JOB #: 23363-011
DATE: 1-20-11
SHEET #: B6

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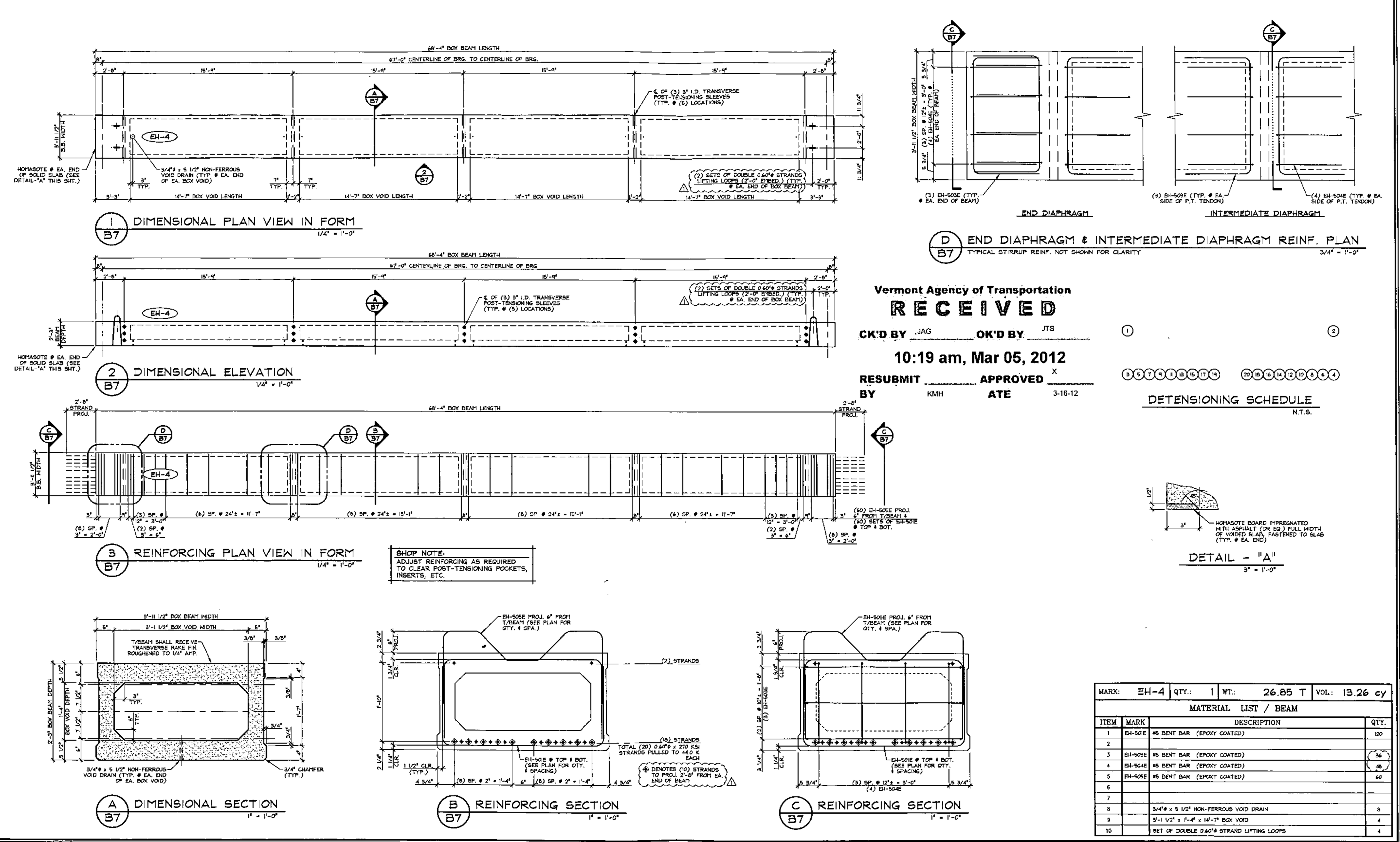

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BY KMH ATE 3-16-12

MARK: EH-4	QTY.: 1	WT.: 26.85 T	VOL.: 13.26 cy

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY.
1	EH-501E	#5 BENT BAR (EPOXY COATED)	120
2			
3	EH-503E	#5 BENT BAR (EPOXY COATED)	36
4	EH-504E	#5 BENT BAR (EPOXY COATED)	48
5	EH-505E	#6 BENT BAR (EPOXY COATED)	60
6			
7			
8		3/4"⌀ x 5 1/2" NON-FERROUS VOID DRAIN	8
9		3'-1 1/2" x 1'-4" x 14'-7" BOX VOID	4
10		SET OF DOUBLE 0.60"⌀ STRAND LIFTING LOOPS	4

NO.	DATE	REVISION	
1	3-1-12	REVISED PER ENGINEER COMMENTS	B.L.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAWN: B. LOPEZ
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Phone:(802)388-6381
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Double-Tees Hollow-Core Plank Flat Panels

AUSTIN CONSTRUCTION
CONCORD, VT

Project Name:
TOWN OF EAST HAVEN, VT
STATE ROUTE 114 - MAJOR COLLECTOR
BRIDGE NO. 18 PROJECT NO. BRF 0269(11)

PRESTRESSED BOX BEAM DETAILS

SCALE: NOTED
JOB #: 23363-011
DATE: 1-20-11
SHEET #: B7

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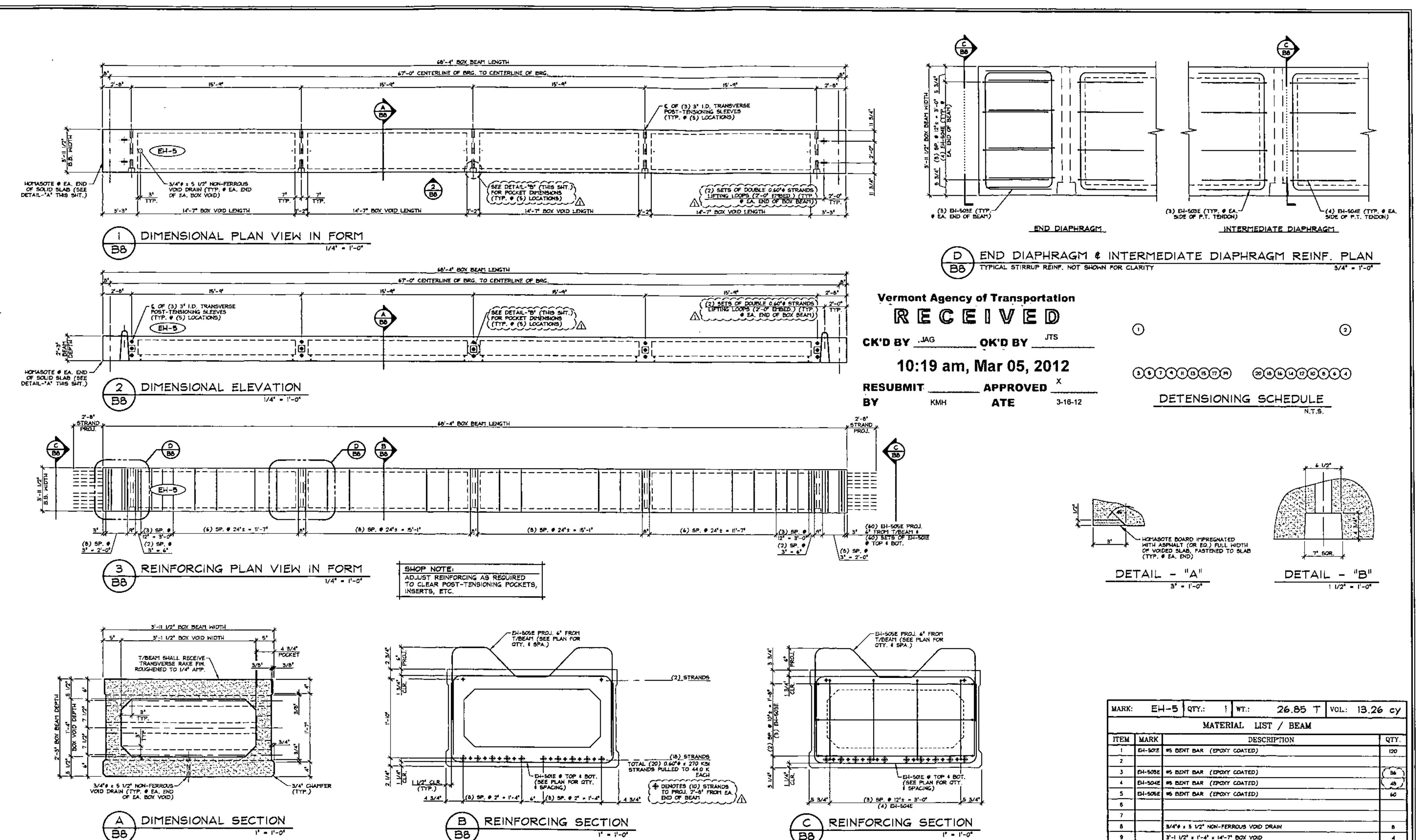

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10:19 am, Mar 05, 2012
RESUBMIT ____ APPROVED X
BY KMH ATE 3-16-12

MARK: EH-5	QTY.: 1	WT.: 26.85 T	VOL.: 13.26 cy
MATERIAL LIST / BEAM			
ITEM	MARK	DESCRIPTION	QTY.
1	EH-501E	#5 BENT BAR (EPOXY COATED)	120
2			
3	EH-503E	#5 BENT BAR (EPOXY COATED)	36
4	EH-504E	#5 BENT BAR (EPOXY COATED)	45
5	EH-505E	#5 BENT BAR (EPOXY COATED)	60
6			
7			
8		3/4"ø x 5 1/2" NON-FERROUS VOID DRAIN	8
9		3'-1 1/2" x 1'-4" x 14'-7" BOX VOID	4
10		SET OF DOUBLE 0.60"ø STRAND LIFTING LOOPS	4

NO.	DATE	REVISION	
1	3-1-12	REVISED PER ENGINEER COMMENTS	B.L.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAWN: B. LOPEZ
DESIGNED:
CHECKED:
APPROVED:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
Double-Tees Hollow-Core Plank Flat Panels

AUSTIN CONSTRUCTION
CONCORD, VT

Project Name:
TOWN OF EAST HAVEN, VT
STATE ROUTE 114 - MAJOR COLLECTOR
BRIDGE NO. 18 PROJECT NO. BRF 0269(11)

PRESTRESSED BOX BEAM DETAILS

SCALE: NOTED
JOB #: 23363-011
DATE: 1-20-11
SHEET #: B8

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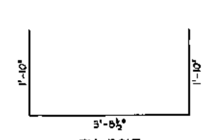

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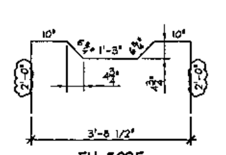
#5 BENT BAR
EPOXY COATED
(960) REQ'D.



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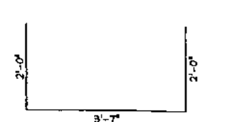
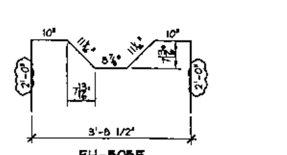
#5 BENT BAR
EPOXY COATED
(120) REQ'D.

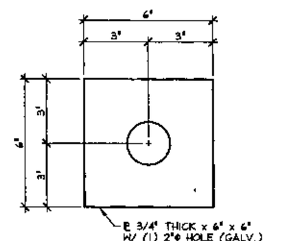


EH-503E
#5 BENT BAR
EPOXY COATED
(288) REQ'D.

EH-504E
#5 BENT BAR
EPOXY COATED
(394) REQ'D.



EH-505E
#5 BENT BAR
EPOXY COATED
(360) REQ'D.



PL 3/4" THICK x 6" x 6"
W/ (1) 2"⌀ HOLE (GALV.)
(ASTM A-36)

EM - EH1
3" = 1'-0"

MISCELLANEOUS MATERIALS

ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1	EM-EH1	30	PL 3/4" x 6" x 6" W/ (1) 2"⌀ HOLE (GALV.)	FOR ERECTION; SEE DETAIL THIS SHEET
2		30	SINGLE USE STRESSING CHUCK (0.60"⌀)	FOR ERECTION
3		5	0.60"⌀ x 22'-9" POLY-STRAND	FOR ERECTION, PHASE 1
4		10	0.60"⌀ x 34'-9" POLY-STRAND	FOR ERECTION, PHASE 2
5		90	COMPRESSIBLE SEALER SELF ADHESIVE	FOR ERECTION
6				
7				
8				
9		64	3/4"⌀ x 5 1/2" NON-FERROUS VOID DRAIN	
10		32	3'-1 1/2" x 1'-4" x 14'-7" BOX VOID	
11		32	SET OF DOUBLE 0.60"⌀ STRAND LIFTING LOOPS	
12				
13		16	EMBEDDED GUARD RAIL ANCHOR PLATE (GALV.)	SUPPLIED BY OTHERS
14	MK-P3	34	DAYTON C-24 TYPE 4-APR DECK FORM HANGER	GALVANIZE
15				
16				
17				
18				
19				
20				

Vermont Agency of Transportation
RECEIVED
CK'D BY JAG OK'D BY JTS
10:19 am, Mar 05, 2012
RESUBMIT ________ APPROVED X
BY KMH ATE 3-16-12

NO.	DATE	REVISION	
1	3-1-12	REVISED PER ENGINEER COMMENTS	B.L.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAWN: B. LOPEZ
DESIGNED:
CHECKED:
APPROVED:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753
Phone:(802)388-6363
Fax:(802)388-9010
Double-Tees Hollow-Core Plank Flat Panels

AUSTIN CONSTRUCTION
CONCORD, VT

Project Name:
TOWN OF EAST HAVEN, VT
STATE ROUTE 114 - MAJOR COLLECTOR
BRIDGE NO. 18 PROJECT NO. BRF 0269(11)

MATERIALS LIST

SCALE: NOTED
JOB #: 23363-011
DATE: 1-20-11
SHEET #: M1

F:\VT-Bridges\23363-11 East Haven\23363-M1.dwg, 3/1/2012 10:21:24 AM