

**DESIGN
FOR
TEMPORARY BRIDGE**

FOR

HANCOCK ER BRF 0174
(16)
HANCOCK, VERMONT

FOR

PARENT CONSTRUCTION
INC
HINESBURG, VERMONT

PREPARED BY
JOHN B. STEVENS, PE
122 SMITH HILL ROAD
NORTHFIELD, VT
802-485-6448
OCTOBER 10, 2012

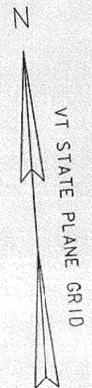
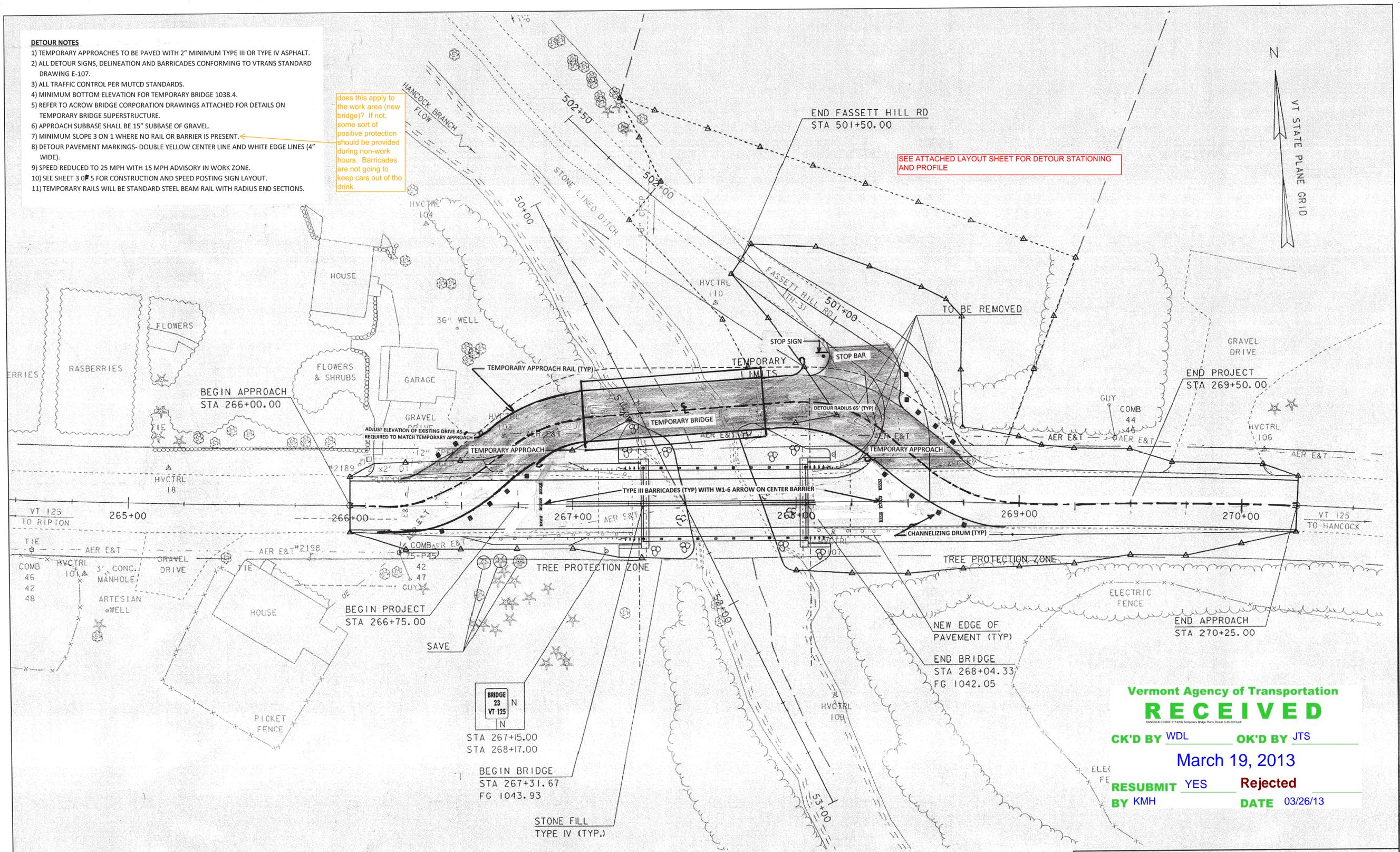
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RECEIVED
HANCOCK ER BRF 0174(16) Temporary Bridge Plans, Permit 1-20-2012.pdf
CK'D BY WDL OK'D BY JTS
March 19, 2013
RESUBMIT YES Rejected
BY KMH DATE 03/26/13

DETOUR NOTES

- 1) TEMPORARY APPROACHES TO BE PAVED WITH 2" MINIMUM TYPE III OR TYPE IV ASPHALT.
- 2) ALL DETOUR SIGNS, DELINEATION AND BARRICADES CONFORMING TO VTRANS STANDARD DRAWING E-107.
- 3) ALL TRAFFIC CONTROL PER MUTCD STANDARDS.
- 4) MINIMUM BOTTOM ELEVATION FOR TEMPORARY BRIDGE 1038.4.
- 5) REFER TO ACROW BRIDGE CORPORATION DRAWINGS ATTACHED FOR DETAILS ON TEMPORARY BRIDGE SUPERSTRUCTURE.
- 6) APPROACH SUBBASE SHALL BE 15" SUBBASE OF GRAVEL.
- 7) MINIMUM SLOPE 3 ON 1 WHERE NO RAIL OR BARRIER IS PRESENT.
- 8) DETOUR PAVEMENT MARKINGS- DOUBLE YELLOW CENTER LINE AND WHITE EDGE LINES (4" WIDE).
- 9) SPEED REDUCED TO 25 MPH WITH 15 MPH ADVISORY IN WORK ZONE.
- 10) SEE SHEET 3 OF 5 FOR CONSTRUCTION AND SPEED POSTING SIGN LAYOUT.
- 11) TEMPORARY RAILS WILL BE STANDARD STEEL BEAM RAIL WITH RADIUS END SECTIONS.

does this apply to the work area (new bridge)? If not, some sort of positive protection should be provided during non-work hours. Barricades are not going to keep cars out of the drink.

SEE ATTACHED LAYOUT SHEET FOR DETOUR STATIONING AND PROFILE



LAYOUT SHEET

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

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PROJECT NAME: HANCOCK
 PROJECT NUMBER: ER BRF 0174(16)

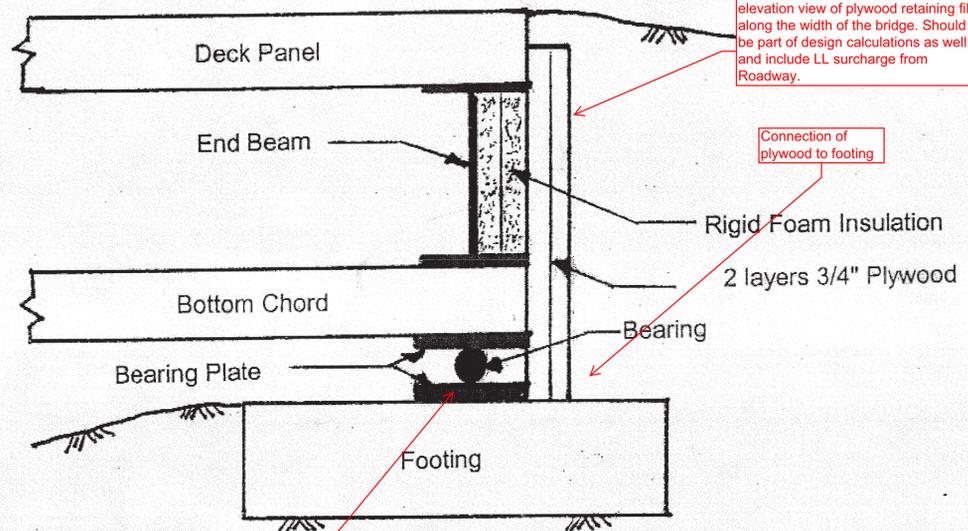
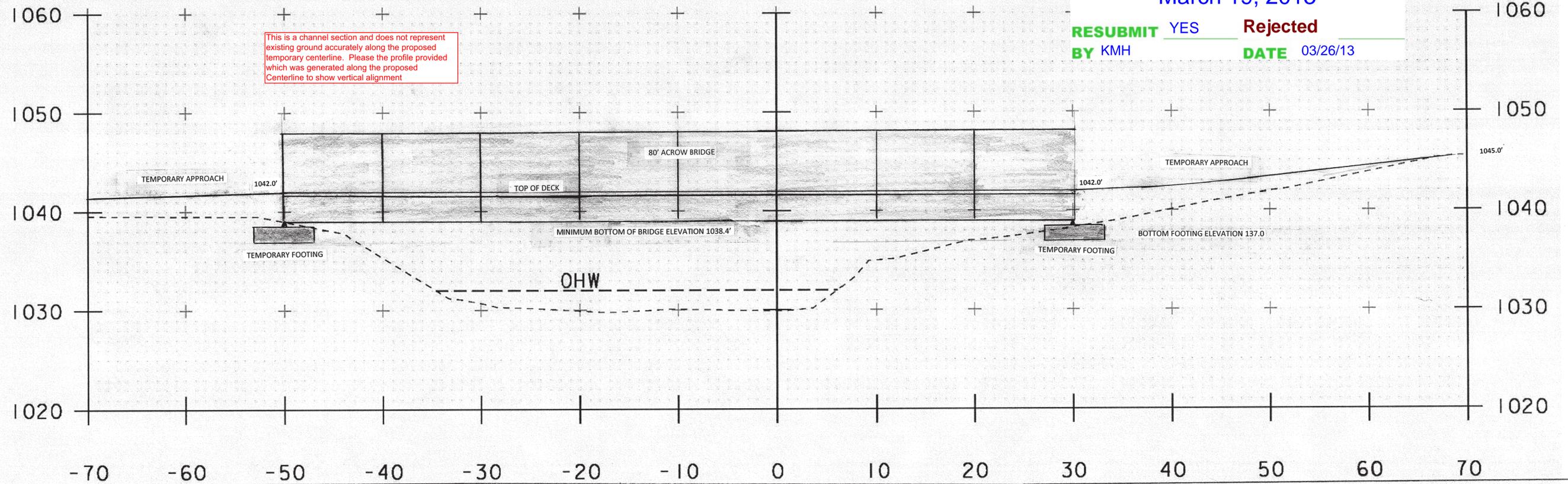
DETOUR LAYOUT PLAN

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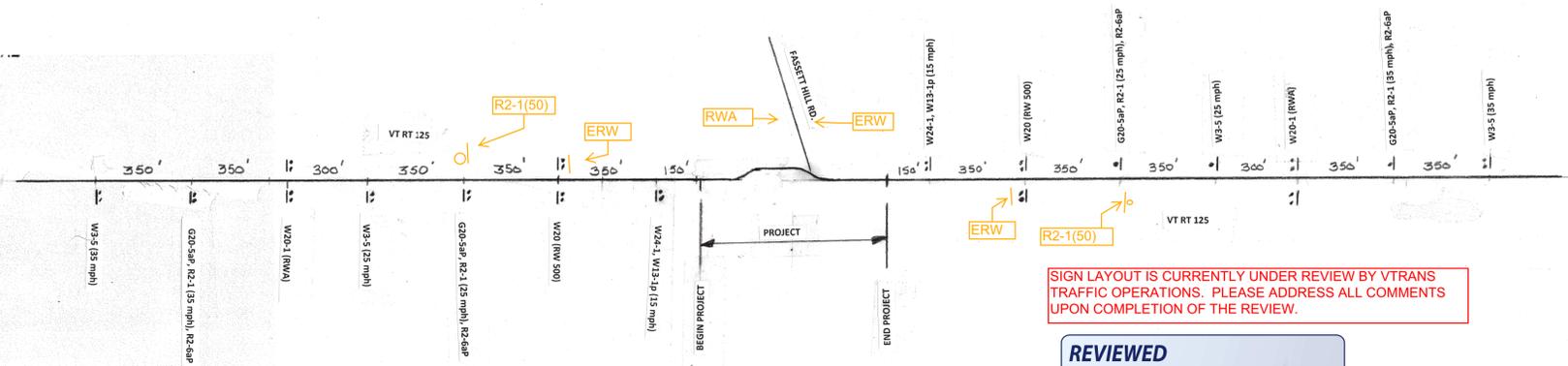
How is this going to work? Show an elevation view of plywood retaining fill along the width of the bridge. Should be part of design calculations as well and include LL surcharge from Roadway.

Connection of plywood to footing

submit abutment design calculations stamped by a PE per section 528.04.

Bearing provided by Acrow Panel Bridge?

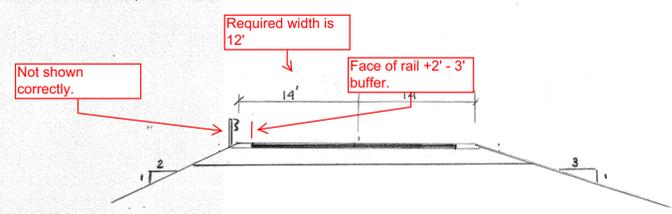
BACKWALL DETAIL



SIGN LAYOUT IS CURRENTLY UNDER REVIEW BY VTRANS TRAFFIC OPERATIONS. PLEASE ADDRESS ALL COMMENTS UPON COMPLETION OF THE REVIEW.

REVIEWED
 By Amy Gamble (amy.gamble@state.vt.us) at 3:22 pm, Mar 26, 2013

CONSTRUCTION AND SPEED POSTING SIGN LAYOUT (NTS)



TYPICAL TEMPORARY APPROACH SECTION (NTS)

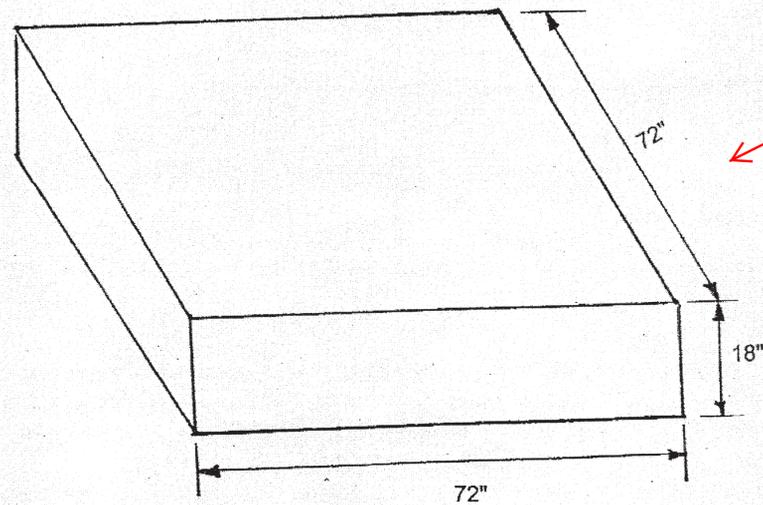
TEMPORARY BRIDGE FOOTING DESIGN
 HANCOCK ER BRF 0174 (16)
 HANCOCK, VT

PARENT CONSTRUCTION, INC.
 HINESBURG, VT

JOHN B. STEVENS, PE
 Northfield, VT
 802-485-6448

DATE: Oct 4, 2012 P3 OF 5

DETOUR PROFILE
 ALONG CENTER LINE



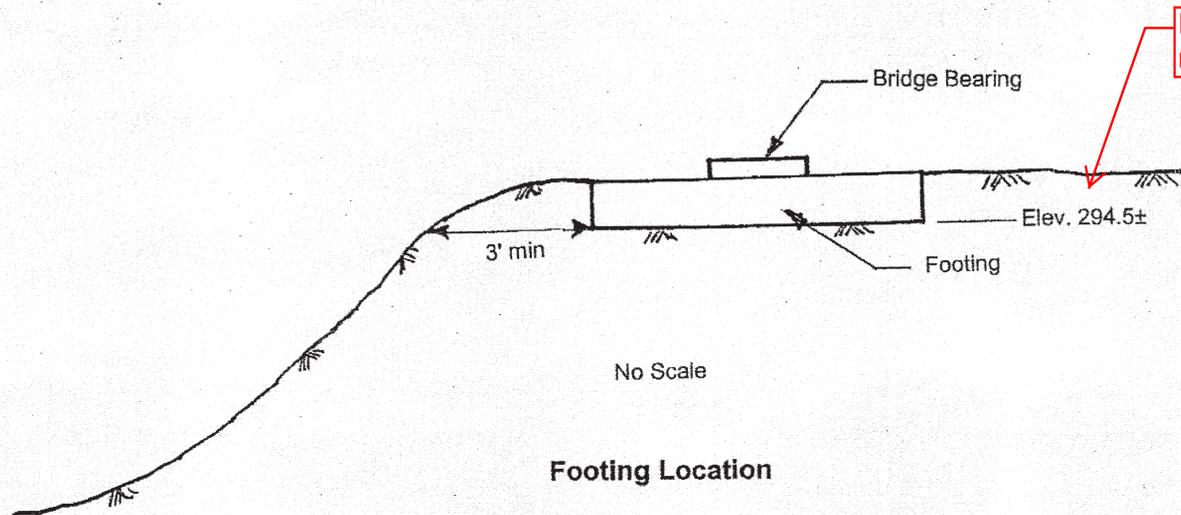
Need to see design for this.

No Scale

Footing Dimensions

Concrete Footing Notes

1. Concrete to be Class B - 3500 psi compressive strength at 28 days.
2. Reinforcement to be two mats of # 6 bars spaced 6 inches each way. Lower mat to be 3 inches from footing bottom and top mat to be 2 inches from slab top. All reinforcement to be Grade 60.
3. Provide 3 inches of clearance on all sides for reinforcement.
4. Bearing to be centered on footing.
5. Anchor bolts as per Acrow Bridge Corporation.



Elevation doesn't make sense

No Scale

Footing Location

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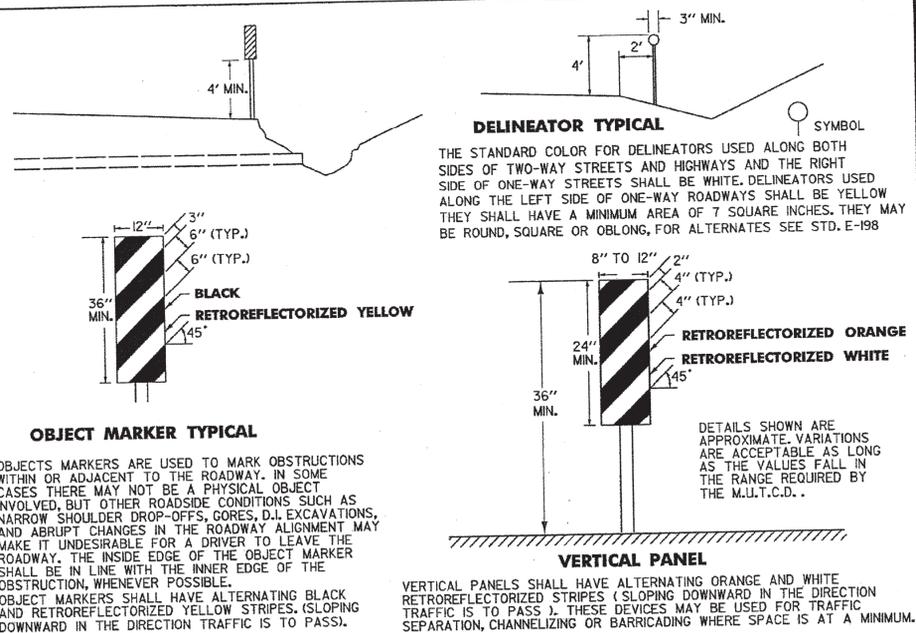
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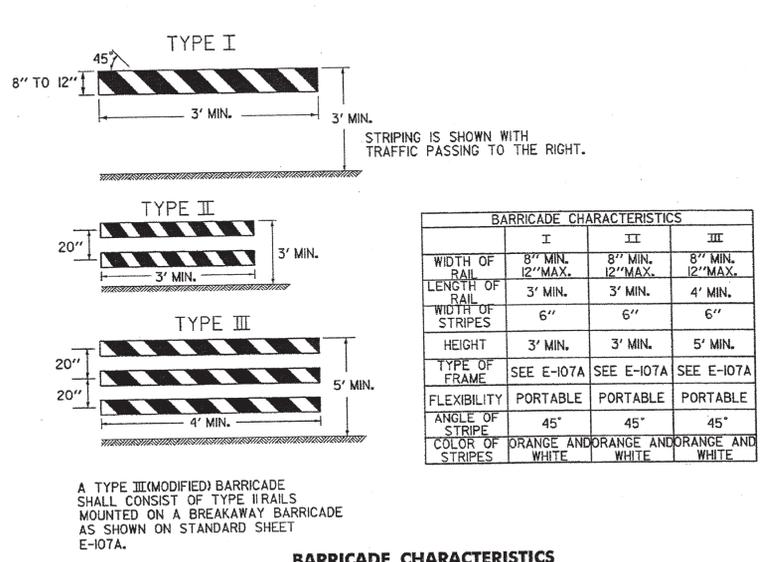
BY KMH DATE 03/26/13

| | | |
|---|---------|--|
| TEMPORARY BRIDGE FOOTING DESIGN HANCOCK ER BR F 0174 (16) HANCOCK, VT | | |
| PARENT CONSTRUCTION, INC. HINESBURG, VT | | |
| JOHN B. STEVENS, PE Northfield, VT 802-485-6448 | | |
| DATE: Oct 4, 2012 | P4 OF 5 | |



DELINEATOR, VERTICAL PANEL AND OBJECT MARKER DETAILS FOR CONSTRUCTION AREAS WHERE TRAFFIC IS MAINTAINED

ALL SIGN PLACEMENT DISTANCES ARE DESIRABLE SPECIFICATIONS. FIELD CONDITIONS SHALL CONTROL THE ACTUAL PLACEMENT. PROJECT CONSTRUCTION APPROACH SIGNING PLACEMENT SHALL TAKE INTO CONSIDERATION SPACING REQUIREMENTS FOR THE DETOUR SIGN LAYOUT REQUIREMENTS.

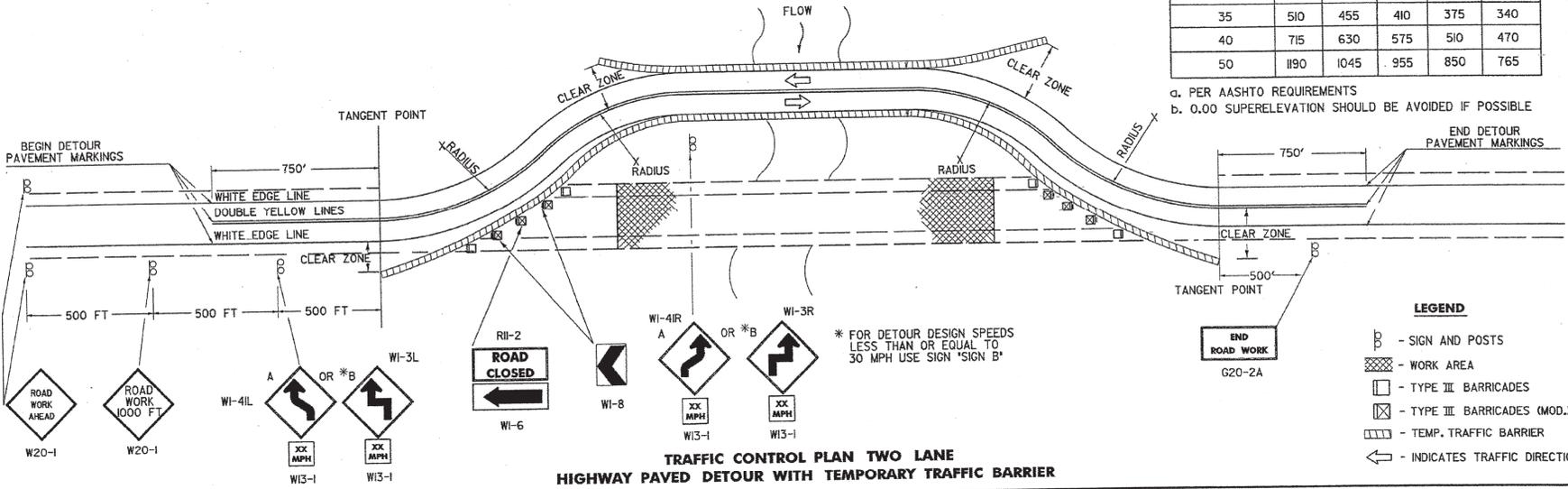


| | I | II | III |
|------------------|------------------|------------------|------------------|
| WIDTH OF RAIL | 8" MIN. 12" MAX. | 8" MIN. 12" MAX. | 8" MIN. 12" MAX. |
| LENGTH OF RAIL | 3' MIN. | 3' MIN. | 4' MIN. |
| WIDTH OF STRIPES | 6" | 6" | 6" |
| HEIGHT | 3' MIN. | 3' MIN. | 5' MIN. |
| TYPE OF FRAME | SEE E-107A | SEE E-107A | SEE E-107A |
| FLEXIBILITY | PORTABLE | PORTABLE | PORTABLE |
| ANGLE OF STRIPE | 45° | 45° | 45° |
| COLOR OF STRIPES | ORANGE AND WHITE | ORANGE AND WHITE | ORANGE AND WHITE |

BARRICADE CHARACTERISTICS

| DETOUR DESIGN SPEED (M.P.H.) | MINIMUM RADIUS (FT.) ^a | | | | |
|------------------------------|-----------------------------------|------|------|------|------|
| | 0.00 ^b | 0.02 | 0.04 | 0.06 | 0.08 |
| 20 | 160 | 140 | 130 | 120 | 110 |
| 25 | 245 | 220 | 200 | 185 | 170 |
| 30 | 375 | 335 | 305 | 275 | 255 |
| 35 | 510 | 455 | 410 | 375 | 340 |
| 40 | 715 | 630 | 575 | 510 | 470 |
| 50 | 1190 | 1045 | 955 | 850 | 765 |

a. PER AASHTO REQUIREMENTS
b. 0.00 SUPERELEVATION SHOULD BE AVOIDED IF POSSIBLE



TRAFFIC CONTROL PLAN TWO LANE HIGHWAY PAVED DETOUR WITH TEMPORARY TRAFFIC BARRIER

BARRICADES

APPLICATION NOTES
TYPE I BARRICADES SHALL BE USED ON CONVENTIONAL ROADS OR URBAN STREETS AND ARTERIALS TO MARK A SPECIFIC HAZARD.
TYPE II BARRICADES SHALL BE USED ON EXPRESSWAYS AND FREEWAYS, SERVING THE SAME FUNCTIONS AS TYPE I BARRICADES.
TYPE III BARRICADES (SEE STD. E-107A) SHALL ONLY BE USED WHEN A ROAD SECTION OR LANE IS CLOSED TO TRAFFIC AND ARE TO BE ERRECTED AT THE POINT OF CLOSURE.

MATERIALS
THE BARRICADES SHOWN ON THIS SHEET SHOULD BE OF LIGHTWEIGHT MATERIAL. IF WOOD IS USED THE FOLLOWING CONDITIONS SHALL APPLY:
1. WOODEN BARRICADES (TYPE I AND II)
A) SHALL NOT BE USED TO CHANNELIZE OR DELINEATE WORK AREAS WITHIN THE CLEAR ZONE OF ANY HIGHWAY WHERE OPERATING SPEEDS IN EXCESS OF 20 M.P.H. ARE EXPECTED UNLESS INSTALLED FOR PEDESTRIAN CONTROL BEHIND APPROVED POSITIVE BARRIERS.
B) MAY BE USED WHERE OPERATING SPEEDS OF 20 M.P.H. OR LESS ARE EXPECTED.
2. TYPE III WOODEN BARRICADES SHALL NOT BE USED.

COLORS
THE BARRICADE PANELS SHOWN ON THIS SHEET SHALL HAVE ALTERNATING RETROREFLECTORIZED WHITE AND ORANGE STRIPES. THE ORANGE SHALL CONFORM WITH THE STANDARD COLORS ADOPTED BY AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS AND APPROVED BY THE US DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION. THE BARRICADE COMPONENTS SHALL BE WHITE UNPAINTED METAL OR ALUMINUM IS USED.

REFLECTORIZATION
THE RETROREFLECTIVE SHEETING ON BARRICADE PANELS SHALL BE ASTM TYPE III.

LOCATION
THE BARRICADES SHOWN ON THIS SHEET WILL BE LOCATED BY THE RESIDENT ENGINEER IN THE FIELD OR AS SHOWN ON THE PLANS. THE LOCATION OF THE BARRICADES SHALL FOLLOW THE PROCEDURES SET FORTH IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", OR AS OTHERWISE NOTED.

MAINTENANCE
BARRICADES SHALL BE MAINTAINED IN CLEAN CONDITION, SATISFACTORY TO THE RESIDENT ENGINEER. THEY SHALL BE COMPLETELY VISIBLE TO THE APPROACHING TRAFFIC AT ALL TIMES. DAMAGED, DEFACED, OR DIRTY BARRICADES SHALL BE REPAIRED, CLEANED, OR REPLACED AS ORDERED BY THE RESIDENT ENGINEER.

DETOUR NOTES

- 1.) SIGNS AND DELINEATION SHOWN FOR ONE DIRECTION OF TRAFFIC ONLY.
- 2.) THE CONTRACTOR IS RESPONSIBLE FOR PAVEMENT MARKING AND SHALL REMOVE ANY CONFLICTING OR CONFUSING EXISTING MARKINGS.
- 3.) ADDITIONAL SIGNING MAY BE REQUIRED AT THE DISCRETION OF THE RESIDENT ENGINEER.
- 4.) UNPAVED DETOURS REQUIRE PAVEMENT MARKINGS FOR TRANSITIONS FROM EXISTING PAVEMENT.
- 5.) THE NUMBER OF CHANNELIZING DEVICES, BARRICADES AND OTHER TRAFFIC CONTROL DEVICES SHOWN ON THIS SHEET ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE ACTUAL NUMBER REQUIRED SHALL BE DETERMINED BASED ON INDIVIDUAL DETOUR CONDITIONS (TAPERS, SPEED LIMITS, LENGTH OF DETOUR CURVE, ETC.).
- 6.) AASHTO CLEAR ZONE REQUIREMENTS SHOULD BE MET. IF NOT THEN AN APPROVED ENERGY ABSORPTION ATTENUATOR (SUITABLE FOR THE TEMPORARY TRAFFIC BARRIER USED AND FOR THE DESIGN SPEED) SHALL BE INSTALLED PER THE CURRENT AASHTO ROADSIDE DESIGN GUIDE.
- 7.) THE DETOUR DESIGN SPEED SHOULD BE NO LESS THAN 10 M.P.H. BELOW THE POSTED SPEED LIMIT, UNLESS PHYSICAL RESTRICTIONS PREVENT THIS.
- 8.) SEE STANDARD SHEETS E-100, E-101 AND E-102 FOR SIGN DETAIL AND MATERIAL REQUIREMENTS.
- 9.) IF THE USE OF TEMPORARY TRAFFIC BARRIER IS NOT REQUIRED, THEN REFLECTORIZED PLASTIC DRUMS SHALL BE USED.

OTHER STDS. REQUIRED: E-100 E-101 E-102 E-102a E-107a E-198 **P5 OF 5**

REVISIONS AND CORRECTIONS
SEPT. 10, 1987 - DATE OF ORIGINAL ISSUE
APRIL 29, 1988 - FHWA REVIEW COMMENTS
SEPT. 20, 1993 - NEW RADIUS CHART, BARRICADE ALIGNMENT AND USE OF TEMPORARY TRAFFIC BARRIER
AUG. 08, 1995 - REVISED SIGNING PER MUTCD
JUNE 30, 2003 - CHANGED REFLECTIVE SHEETING TO TYPE III

APPROVED
DIRECTOR OF PROGRAM DEVELOPMENT
TRAFFIC OPERATIONS ENGINEER
FEDERAL HIGHWAY ADMINISTRATION

DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS



STANDARD E-107

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