SCHULTZ

Town of Rochester, Vermont. Bridge 19
ER BRF 0162(18)
Traffic Control Plan

During the course of construction for Bridge 19 on Route 73 at Route 100 traffic control will be necessary. We intend to limit our impact on the public as much as possible. To help with this we will utilize daily temporary traffic setup until the permanent traffic setup is necessary. At a minimum traffic will remain open to alternating one lane of traffic in each direction. When physical work begins we will have one lane alternating traffic controlled with the proper MP&T devices, signals and flaggers as needed directing each side when to proceed. Once major construction activities begin barrier and the permanent one lane closure will be setup. Traffic setups will comply with the contract plans, specifications, VTRANS section 641 and the MUTCD.

- Attached are drawings of our proposed traffic setup, along with applicable standards & plan sheets.
- We plan to deploy message boards, prior to any permanent road closure.
- Sign location layout and setup will occur prior to initiation of our permanent closure.
- Driveways will be maintained or have alternate access provided.
- Flaggers will be used as needed and communicate with 2 way radios.
- All MP&T devices such as signs, cones, barrels and barrier will comply with VTRANS standard sheets.
- Initially temporary lane closures will be utilized until the temporary bridge is in place and open.
- Then the permanent traffic control setup with barrier and signals will be installed and initialized.

Phase 1 – Daily Closures, Alternating Lane with Flaggers

- Initial job mobilization will use temporary daily single lane closures to unload equipment and materials.
- Also during this time initial site access and staging will require daily single lane closures.
- Temporary bridge abutment construction will begin under daily closures.
- Pre- setup for the permanent closure.

Phase 2 – Permanent Closure, Alternating Traffic with Signals

- Permanent one lane closure on Route 100, signs, signals and barrier in place.
- Dismantle and removal of existing Temporary Bridge.
- Begin new permanent bridge excavation and protection system along RT 100.
- Start abutment work and continue typical logical construction of new permanent bridge under permanent one lane closure along route 100 south bound with traffic signals in place.
- Road Reconstruction and finish work to open bridge.

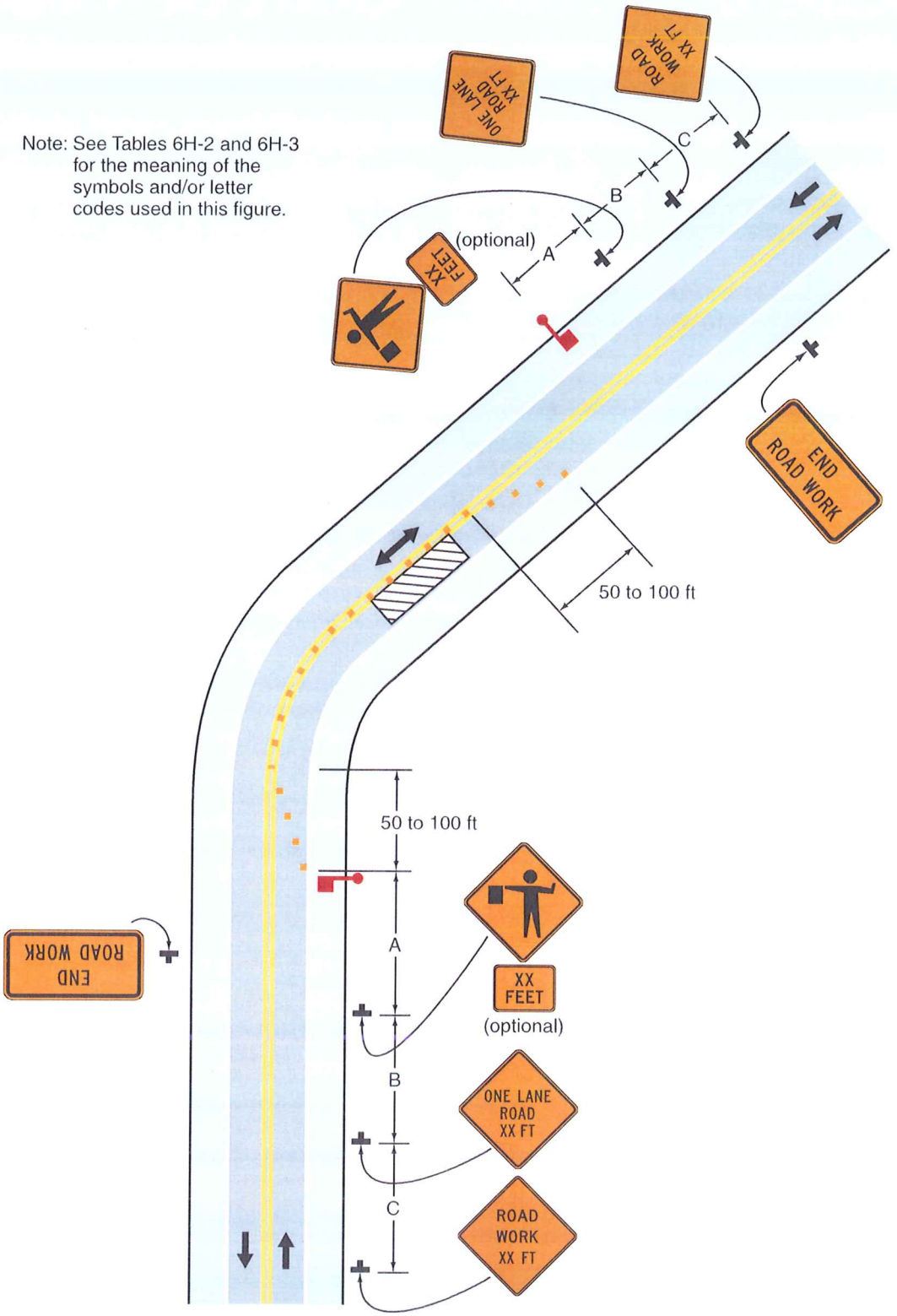
This proposed plan is meant to apply to most regular daily operations for Bridge 19 at Routes 100 & 73. Special or unique situations are to be expected and this traffic plan can be adapted with approval from the Engineer to address changes that may arise from actual field conditions while still complying with the plans, standards, VTRANS section 641, and the MUTCD. Please advise of any additional information that the agency may require.

Sincerely,
W.M. Schultz Construction, Inc.

Michael D. Garn
Asst. Project Manager

Advanced Illumination
BigTown Gallery
ROCHESTER
Huntington House Inn
Wheatfield Dr
Rochester Elementary/
High School
100
White River
Nason Brook
Nason Brook
Upper Sparrow Hawk Rd
Sparrow Hawk Rd
Austin Hill
Osprey Run
Woodlawn Cemetery
1-113 Brandon
Mountain Rd
73
Blair's Berry Farm
Brandon Mountain Rd
100
Clay Hill Rd
Austin Hill
73
State Garage Rd
White River Golf Course
Laughin' Otter Travel Etc
Brandon Mountain Rd
73
White River
100
Brandon Mountain Rd
73
Rogers Brook
Mountain Rd
White River
Map data ©2014 Google 1000 ft

Figure 6H-10. Lane Closure on a Two-Lane Road Using Flaggers (TA-10)



Typical Application 10

PROJECT NOTES

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION, AND ITS LATEST REVISIONS.

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

3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DOCUMENT THE CONDITION OF ALL STRUCTURES THAT HAVE THE POTENTIAL FOR DAMAGE FROM CONSTRUCTION ACTIVITIES. THIS DOCUMENTATION SHALL BE IN THE FORM OF VIDEO OR PICTURES, WITH SUFFICIENT DESCRIPTION, AND SHALL BE SUPPLIED TO THE ENGINEER PRIOR TO ANY EXCAVATION OR DRIVING OF SHEET PILING. THE COST OF PREPARING THIS DOCUMENTATION WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED INCIDENTAL TO ALL CONTRACT ITEMS. SEE SPECIAL PROVISIONS.

4. THE BRIDGE IS DESIGNED FOR HL-93 LIVE LOAD WITH A 2.5 INCH ALLOWANCE FOR FUTURE PAVEMENT.

5. THE LIMITS OF THE COFFERDAM ARE TO BE DETERMINED BY THE CONTRACTOR.

6. A TEMPORARY BRIDGE IS IN PLACE OVER THE EXISTING, FAILED STRUCTURE. REMOVAL OF THIS TEMPORARY BRIDGE SHALL BE PAID FOR UNDER ITEM 900.645, "SPECIAL PROVISION (REMOVAL OF TEMPORARY BRIDGE)". REMOVAL OF ABUTMENT NO. 1 WILL NOT BE PAID FOR SEPARATELY, BUT IS INCLUDED IN THE UNIT PRICE BID FOR ITEM 900.645, "SPECIAL PROVISION (REMOVAL OF TEMPORARY BRIDGE)". THE TEMPORARY BRIDGE IS THE PROPERTY OF VTRANS AND SHALL BE RETURNED TO THE VTRANS MAINTENANCE FACILITY IN SPRINGFIELD, VT. CONTACT BILL SARGENT AT (802) 828-2699 TO MAKE NECESSARY ARRANGEMENTS AS PER THE SPECIAL PROVISIONS.

7. THE CONTRACTOR SHALL NOT REMOVE THE EXISTING TEMPORARY BRIDGE REFERENCED ABOVE UNTIL THE NEW TEMPORARY BRIDGE IS INSTALLED ON THE DETOUR ALIGNMENT AND OPEN TO TRAFFIC.

TRAFFIC CONTROL

8. THE CONTRACTOR SHALL IMPLEMENT THE ROAD CLOSURE, TRAFFIC CONTROL, AND DETOUR AS SHOWN ON THE PLANS.

9. DURING CONSTRUCTION, TRAFFIC SHALL BE MAINTAINED ON A TWO-WAY TEMPORARY BRIDGE LOCATED DOWNSTREAM OF THE NEW STRUCTURE. THE TEMPORARY BRIDGE AND DETOUR SHALL BE PAVED. THE CONTRACTOR SHALL PROVIDE A NEW TWO-WAY TEMPORARY BRIDGE. CONSTRUCTION AND MAINTENANCE OF THE TEMPORARY BRIDGE AND ITS APPROACHES SHALL BE PAID FOR UNDER ITEM 528.11, "TWO-WAY TEMPORARY BRIDGE".

10. FULL ACCESS TO ALL SIDE ROADS AND DRIVES WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 641.10, "TRAFFIC CONTROL (ER BRF 0162(18))".

11. UNLESS COVERED UNDER INDIVIDUAL PAY ITEMS OR NOTED OTHERWISE, ALL COSTS FOR WORK SHOWN ON THE TRAFFIC CONTROL SHEETS AND FOR TEMPORARY TRAFFIC CONTROL DEVICES WILL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR ITEM 641.10, "TRAFFIC CONTROL (BRF 0162(16))". THIS INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING ITEMS:

    TEMPORARY TRAFFIC BARRIERS
    RETROREFLECTIVE DRUMS
    SIGNS
    SIGN POSTS
    ENERGY ABSORPTION ATTENUATORS

    TEMPORARY TRAFFIC BARRIER SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 621.

12. ALL SIGNS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND THE "STANDARD HIGHWAY SIGNS AND MARKINGS" BOOK (SHSM) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA).

EARTHWORK

13. REMOVAL OF THE EXISTING ABUTMENT NO. 2 STRUCTURE SHALL BE UNDER ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE". THIS WORK SHALL INCLUDE REMOVAL OF ANY PORTIONS OF THE EXISTING ABUTMENT NO. 2 THAT FALLS OUTSIDE THE LIMITS OF STRUCTURE EXCAVATION OR UNCLASSIFIED CHANNEL EXCAVATION.

14. THE CONTRACTOR'S ATTENTION IS DIRECTED TO SUBSECTION 301.06 REGARDING THE COMPACTION OF THE SUBBASE MATERIAL.

15. A COFFERDAM IS REQUIRED FOR THE CONSTRUCTION OF ABUTMENT NO. 2. REFER TO THE "TYPICAL EARTHWORKS SECTIONS" FOR COFFERDAM NOTES.

16. THE HEIGHT OF FILL BEHIND ABUTMENT NO. 1 WILL BE LIMITED TO THE HORIZONTAL CONSTRUCTION JOINT ELEVATION UNTIL THE DECK HAS BEEN POURED AND THE CURING PERIOD IS UP.

17. STONE FILL, TYPE III SHALL BE PLACED IN FRONT OF THE ABUTMENTS BEFORE THE NEW GIRDERS ARE SET, AS SHOWN ON THE PLANS.

18. TEMPORARY CONSTRUCTION FILLS WITHIN THE WATERCOURSE FOR ANY PURPOSE SHALL CONSIST OF CLEAN STONE FILL ONLY, NO OTHER FILLING IN THE STREAM SHALL OCCUR WITHOUT THE APPROVAL OF THE STREAM ALTERATION ENGINEER.

19. ANY TEMPORARY EXCAVATION AND FILL NECESSARY TO MAINTAIN TRAFFIC SHALL BE INCIDENTAL TO ITEM 528.11, "TWO-WAY TEMPORARY BRIDGE".

20. ANY TEMPORARY MEANS OF SUPPORTING EXCAVATION NECESSARY TO MAINTAIN TRAFFIC SHALL BE INCIDENTAL TO ITEM 528.11, "TWO-WAY TEMPORARY BRIDGE" AND SHALL MEET THE REQUIREMENTS OF SECTION 204. ASSOCIATED CONSTRUCTION DRAWINGS SHALL BE SUBMITTED IN ACCORDANCE WITH SECTION 105.

21. THE AREA DISTURBED BY THE TEMPORARY DETOUR SHALL BE RESTORED TO ITS ORIGINAL GRADE AND VEGETATED. THE COST OF THE SEED, FERTILIZER, MULCH AND LIME WILL BE INCIDENTAL TO ITEM 528.11, "TWO-WAY TEMPORARY BRIDGE".

STRUCTURAL STEEL

22. ALL STRUCTURAL STEEL PAID UNDER ITEM 506.55, "STRUCTURAL STEEL, PLATE GIRDER (FPQ)" SHALL CONFORM TO AASHTO M270M/M270 GRADE 50W.

23. ALL STRUCTURAL STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC).

24. ALL MEMBERS MARKED (CVN) MUST MEET THE CHARPY V-NOTCH TESTING REQUIREMENTS AS INDICATED IN SUBSECTION 714.01.

25. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH-STRENGTH BOLTS IN 15/16" DIAMETER HOLES, PER SECTION 506.

26. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF SUBSECTION 506.10.

27. ANY CONNECTIONS THAT ARE NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL.

28. AFTER THE STRUCTURAL STEEL HAS BEEN SET ON THE BEARINGS, ELEVATIONS SHALL BE TAKEN ALONG THE TOP OF EACH GIRDER UNDER THE DIRECTION OF THE RESIDENT ENGINEER. THESE ELEVATIONS SHALL BE USED IN DETERMINING THE FINAL GRADE.

29. ANY HOLES IN FASCIA GIRDERS NOT OTHERWISE FILLED SHALL BE FILLED WITH BOLTS CONFORMING TO ASTM A325 TYPE III. THESE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.19

30. BEARING STIFFENERS AND GIRDER ENDS SHALL BE VERTICAL UNDER FULL DEAD LOAD DEFLECTION.

31. THE FAYING SURFACES ON THE CONNECTION PLATES SHALL BE PREPARED AS CLASS "B". THESE SURFACES SHALL BE PROTECTED FROM DAMAGE AND CORROSION PRIOR TO THE CONNECTION.

32. THE CONTRACTOR MAY INCLUDE AN OPTIONAL FIELD SPLICE TO FACILITATE TRANSPORTATION OF THE STEEL GIRDERS. THE FIELD SPLICE SHALL BE DESIGNED BY THE FABRICATOR. DESIGN CALCULATIONS SHALL BE SUBMITTED WITH THE FABRICATION DRAWINGS STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF VERMONT. THE STEEL QUANTITY SHALL NOT BE INCREASED TO ACCOUNT FOR THE ADDITIONAL WEIGHT OF STEEL FOR THE OPTIONAL FIELD SPLICE. ALL COSTS FOR THE OPTIONAL FIELD SPLICE SHALL BE INCLUDED IN ITEM 506.55, "STRUCTURAL STEEL, PLATE GIRDER (FPQ)".

H-PILES

33. ABUTMENT PILES
    A. THE PILES SHALL BE HP 12x84.
    B. THE PILES SHALL BE DRIVEN TO A NOMINAL PILE DRIVING RESISTANCE (RNDR) OF 409 KIPS, PROVIDED A MINIMUM PENETRATION OF 35 FEET BELOW THE BOTTOM OF PILE CAP HAVE BEEN ACHIEVED.

34. TO PREVENT DAMAGE TO THE PILES, PILE SHOES ARE REQUIRED AND SHALL CONFORM TO SUBSECTION 505.04 (f).

35. A MINIMUM OF TWO DYNAMIC TESTS ARE REQUIRED AT ABUTMENT NO. 1 DURING PILE INSTALLATION. PAYMENT IS ITEM 505.45, "DYNAMIC PILE LOADING TEST".

36. THE TOPS OF THE PILES AFTER DRIVING SHALL NOT VARY FROM THE POSITION SHOWN ON THE PLANS BY MORE THAN 5 DEGREES. THE CONTRACTOR SHALL DEMONSTRATE TO THE SATISFACTION OF THE ENGINEER HOW THE TOLERANCES WILL BE MET. THESE MEASURES SHALL BE DEMONSTRATED IN A SUBMITTAL TO BE ACCEPTED BEFORE PILE DRIVING COMMENCES.

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

CONCRETE

38. CONCRETE FOR THE DECK, CURBS AND ABUTMENTS ABOVE THE BRIDGE SEAT OR CONSTRUCTION JOINT SHALL BE ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A (FPQ)".

39. ALL OTHER SUBSTRUCTURE CONCRETE SHALL BE ITEM 501.34, "CONCRETE, HIGH PERFORMANCE CLASS B" UNLESS OTHERWISE NOTED.

40. NO CONCRETE IN ABUTMENT NO. 1 OR ABUTMENT NO. 1 WINGWALLS SHALL BE PLACED ABOVE THE BRIDGE SEAT ELEVATIONS UNTIL THE GIRDERS OR SLABS HAVE BEEN PROFILED AND THE FINISHED GRADE OF THE DECK HAS BEEN DETERMINED.

41. IN ACCORDANCE WITH SUBSECTION 506.23 (a) AND AS DIRECTED BY THE RESIDENT ENGINEER, THE CONTRACTOR SHALL TAKE MEASURES NECESSARY TO PROTECT ALL SUBSTRUCTURE CONCRETE FROM STAINING DUE TO OXIDE FORMATION ON THE STRUCTURAL STEEL PRIOR TO PLACEMENT OF THE DECK. THESE MEASURES WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO ITEM 501.34, "CONCRETE, HIGH PERFORMANCE CLASS B". ANY SUCH STAINING THAT OCCURS PRIOR TO DECK PLACEMENT SHALL BE REMOVED AT NO ADDITIONAL COST TO THE STATE.

42. THE DECK IS TO BE POURED IN ONE CONTINUOUS POUR WITH A MAXIMUM DURATION OF EIGHT HOURS. IF CIRCUMSTANCES BEYOND THE CONTRACTOR'S CONTROL PREVENT THIS FROM BEING ACCOMPLISHED, A TRANSVERSE CONSTRUCTION JOINT SHALL BE USED BETWEEN ADJACENT POURS. A MINIMUM 96 HOUR DELAY BETWEEN ADJACENT POURS SHALL BE OBSERVED.

43. RELATIVE TO GRADE, ALL DECK POURS SHALL BEGIN FROM THE LOW ELEVATION END AND PROCEED TOWARDS THE HIGH ELEVATION END.

44. STAY-IN-PLACE CORRUGATED METAL FORMS (SIPCMF) SHALL BE USED TO FORM THE UNDERSIDE OF THE CONCRETE BRIDGE DECK BETWEEN THE STEEL GIRDERS. THE SIPCMF AND THEIR COMPONENTS, ATTACHMENTS, ETC. SHALL BE GALVANIZED OR STAINLESS STEEL. THE SIPCMF SHALL BE LOCATED TO MAINTAIN A CONSTANT CONCRETE DECK THICKNESS OF 9" FROM THE TOP OF THE SIPCMF'S CORRUGATIONS. THE CORRUGATIONS SHALL BE FILLED WITH FOAM OR A LIGHT WEIGHT MATERIAL APPROVED BY THE MANUFACTURER OR AS DIRECTED BY THE ENGINEER.

45. FLEMING BRACKETS OR SIMILAR FALSE WORK SHALL BE DESIGNED BY THE CONTRACTOR AND PLACED AT A MAXIMUM SPACING OF 4'-0". THE BRACKETS SHALL BEAR NEAR THE BOTTOM FLANGE AND IN NO CASE SHALL THEY BEAR ABOVE THE BOTTOM QUARTER OF THE WEB DEPTH.

46. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1 INCH x 1 INCH UNLESS OTHERWISE NOTED.

47. ITEM 514.10, "WATER REPELLENT, SILANE", SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON THE BRIDGE SUPERSTRUCTURE AND SUBSTRUCTURE EXCEPT THE UNDERSIDE OF THE DECK BETWEEN DRIP NOTCHES.

48. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.

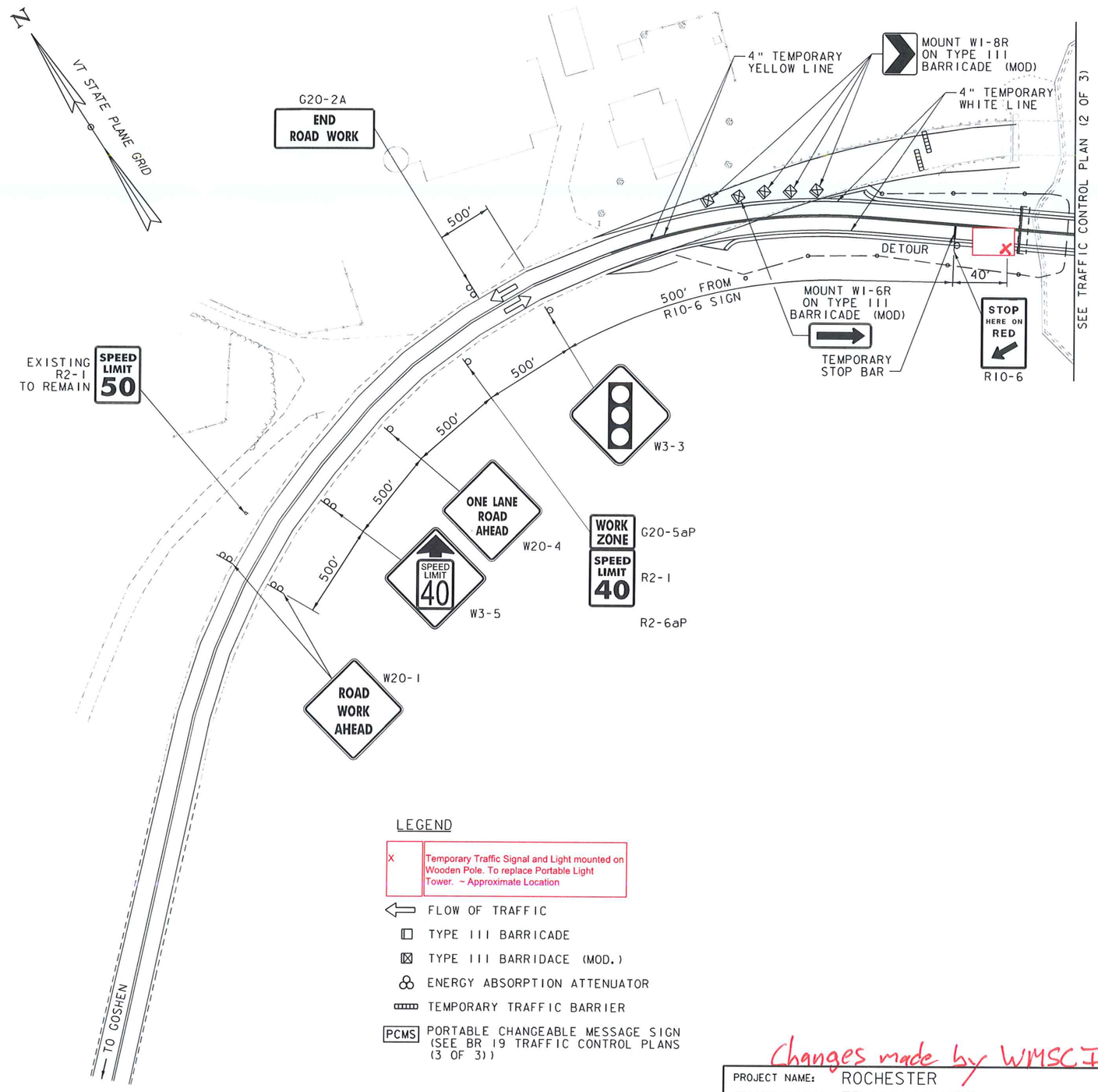
49. THE KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT. ANY UPWARD KEY SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT.

50. MINIMUM COVER FOR REINFORCING STEEL SHALL BE 2" ALONG THE BACK FACES OF WALLS AGAINST EARTH, 1½" ALONG THE BOTTOM SURFACE OF THE DECK AND 3" ELSEWHERE, UNLESS OTHERWISE NOTED.

NOTES:

1. SEE REGIONAL TRAFFIC CONTROL PLANS FOR ADDITIONAL NOTES.
2. ALL WORK ASSOCIATED WITH THE INSTALLATION AND REMOVAL OF THE DETOUR TEMPORARY BRIDGE AND ITS APPROACHES, INCLUDING THE TEMPORARY TRAFFIC BARRIER, STEEL BEAM GUARDRAIL, ENERGY ABSORPTION ATTENUATOR(S), AND PAVEMENT, ON BOTH VT 73 AND VT 100 WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 528.11, "TWO-WAY TEMPORARY BRIDGE".
3. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE REQUIREMENTS OF SECTION 621 REGARDING TEMPORARY TRAFFIC BARRIER, STEEL BEAM GUARDRAIL, AND ENERGY ABSORPTION ATTENUATORS.
4. PAYMENT FOR ALL ON AND OFF-PROJECT CONSTRUCTION SIGNING, SIGN POSTS, AND TRAFFIC CONTROL DEVICES, INCLUDING DRUMS AND BARRICADES, WILL BE MADE UNDER CONTRACT ITEM 641.10, "TRAFFIC CONTROL (ER BRF 0162(18))".
5. THE NUMBER OF TYPE III BARRICADES AND OTHER TRAFFIC CONTROL DEVICES SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE ACTUAL NUMBER REQUIRED ARE TO BE DETERMINED BASED ON INDIVIDUAL ROADWAY CLOSURE REQUIREMENTS.
6. THE EXISTING SPEED LIMIT ON VT 100 IS 40 MPH. THE EXISTING SPEED LIMIT ON VT 73 IS 50 MPH. THE SPEED LIMIT ON VT 73 WILL BE REDUCED TO 40 MPH THROUGH THE DETOUR.
7. ALL WORK DESCRIBED HEREIN FOR THE TEMPORARY TRAFFIC SIGNAL SYSTEM, AND NOT SPECIFIED FOR PAYMENT UNDER A SEPARATE CONTRACT ITEM, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 678.40, "TEMPORARY TRAFFIC SIGNAL SYSTEM".
8. SIGNAL TIMING/TIMING ADJUSTMENTS REQUESTED BY THE ENGINEER SHALL BE ACCOMPLISHED WITHIN 24 HOURS AFTER BEING REQUESTED. PAYMENT SHALL BE INCIDENTAL TO ITEM 678.40. THE CONTRACTOR, AT THE DIRECTION OF THE ENGINEER, SHALL MAKE SEVERAL TRIAL RUNS TO DETERMINE THE PROPER ALL-RED CLEARANCE INTERVAL.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING SIGNAL PHASING. THE CONTRACTOR SHALL SUBMIT A PHASING DIAGRAM TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL MAKE SIGNALS OPERATIONAL ONLY AFTER RECEIVING APPROVAL OF THE PHASING DIAGRAM BY THE ENGINEER.
10. SIGNAL FACES SHALL BE L.E.D. AND CONSIST OF 12" LENSES. (RED, AMBER, AND GREEN).
11. THE BOTTOM OF THE HOUSING OF A SIGNAL FACE SUSPENDED OVER A ROADWAY SHALL NOT BE LESS THAN 16.5 FEET NOR MORE THAN 19 FEET ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY. THE BOTTOM OF A SIGNAL FACE NOT MOUNTED OVER A ROADWAY SHALL NOT BE LESS THAN 8 FEET NOR MORE THAN 15 FEET ABOVE THE GROUND. CAUTION SHOULD BE USED TO INSURE COMPLIANCE WITH THE HEIGHT REQUIREMENTS IN THE EVENT THE NEW APPROACH GRADES DIFFER SIGNIFICANTLY FROM THE OLD ROAD GRADE.
12. SIGNAL FACES FOR ANY ONE APPROACH SHALL NOT BE LESS THAN 8 FEET APART MEASURED HORIZONTALLY BETWEEN CENTER FACES.

(NOTES CONTINUED ON NEXT SHEET)



LEGEND

X	Temporary Traffic Signal and Light mounted on Wooden Pole. To replace Portable Light Tower. ~ Approximate Location
	FLOW OF TRAFFIC
	TYPE III BARRICADE
	TYPE III BARRIDACE (MOD.)
	ENERGY ABSORPTION ATTENUATOR
	TEMPORARY TRAFFIC BARRIER
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN (SEE BR 19 TRAFFIC CONTROL PLANS (3 OF 3))

LOCAL TRAFFIC CONTROL PLAN
NOT TO SCALE

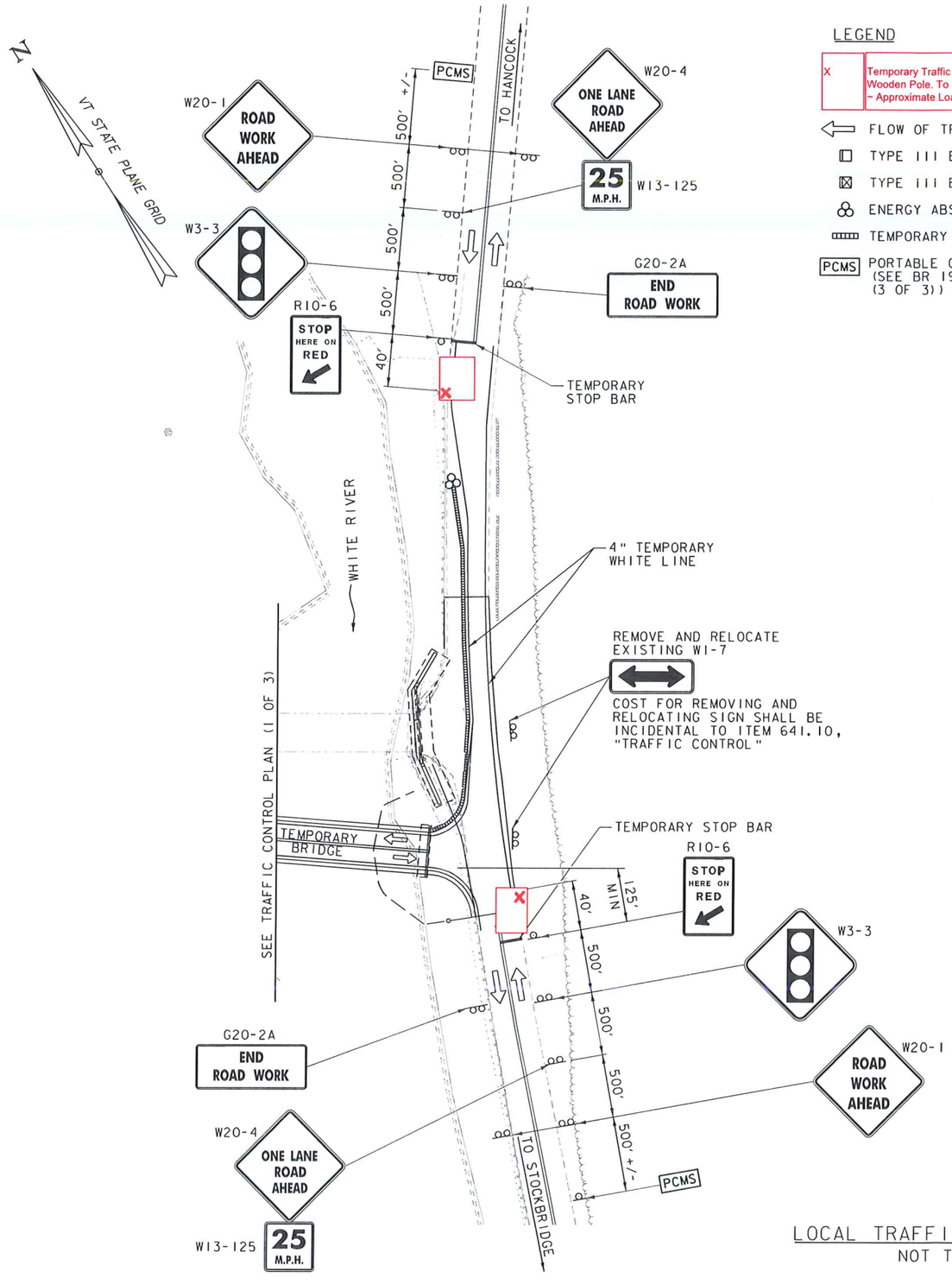
Changes made by WMSCI

PROJECT NAME: ROCHESTER
PROJECT NUMBER: ER BRF 0162(18)

FILE NAME: z11c332detour.dgn
PROJECT LEADER: S.E. BURBANK
DESIGNED BY: E.A. FIALA
BR 19 TRAFFIC CONTROL PLANS (1 OF 3)
PLOT DATE: 3/5/2014
DRAWN BY: E.A. FIALA
CHECKED BY: S.E. BURBANK
SHEET 2 OF 3

VHB Vanasse Hangen Brustlin, Inc.

VHB 57517



LOCAL TRAFFIC CONTROL PLAN
NOT TO SCALE

LEGEND

X	Temporary Traffic Signal and Light mounted on Wooden Pole. To replace Portable Light Tower. ~ Approximate Loaction

- FLOW OF TRAFFIC
- TYPE III BARRICADE
- TYPE III BARRIDACE (MOD.)
- ENERGY ABSORPTION ATTENUATOR
- TEMPORARY TRAFFIC BARRIER
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN (SEE BR 19 TRAFFIC CONTROL PLANS (3 OF 3))

NOTES CONTINUED:

13. ONE SIGNAL HEAD SHALL BE SUPPORTED FROM A CANTILEVER MAST ARM, WHICH SHALL BE IN THE CONE OF VISION OF APPROACHING TRAFFIC AT ALL TIMES. THE SECOND SIGNAL HEAD SHALL BE MOUNTED TO THE POST OF THE CANTILEVER MAST ARM. THE TEMPORARY TRAFFIC SIGNAL SHALL BE LOCATED SO AS TO PLACE THE POST MOUNTED SIGNAL HEAD AT A HORIZONTAL DISTANCE OF NO GREATER THAN 14.5 FEET FROM THE CENTER OF THE APPROACH LANE WHEN THE STOP BAR IS 40 FEET FROM THE SIGNAL HEAD. CONSULT THE M.U.T.C.D. 2009 EDITION FOR ADDITIONAL INFORMATION CONCERNING SIGNAL PLACEMENT.

14. SIGNAL HEAD LOCATION SHALL BE ADJUSTED TO REFLECT LANE LOCATION CHANGES.

15. THE TEMPORARY TRAFFIC SIGNAL SYSTEM SHALL CONSIST OF A MINIMUM OF THREE (3) TEMPORARY TRAFFIC SIGNALS AND LUMINAIRES.

16. ALL TEMPORARY TRAFFIC SIGNALS, SIGNS, ETC., SHALL BELONG TO THE CONTRACTOR AT THE END OF THE PROJECT AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR REMOVAL INCLUDING ANY TEMPORARY PAVEMENT MARKINGS, ETC.

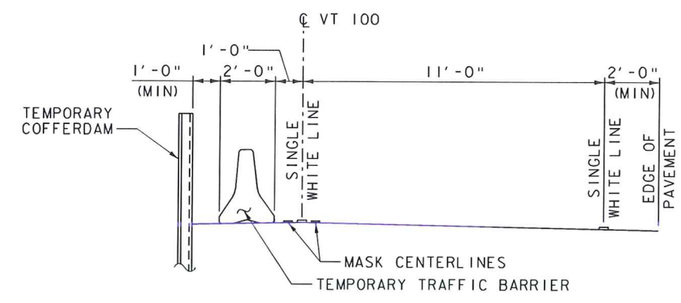
17. A ~~PORTABLE LIGHT TOWER~~ WITH A MINIMUM OF A 250 WATT MER/150 WATT HPS LUMINAIRE MOUNTED ON A MAST AT A HEIGHT OF 30 FEET ABOVE THE ROADWAY CENTERLINE SHALL BE PROVIDED AS SHOWN ON THE TRAFFIC CONTROL PLANS OR AT THE DISCRETION OF THE ENGINEER. THE INTENT IS TO ILLUMINATE THE AREA AROUND THE SIGNAL HEADS AND STOP BAR FOR INCREASED VISIBILITY. THE ENGINEER SHALL DETERMINE THE ADEQUACY OF THE LIGHTING AND DIRECT CHANGES IF THE LIGHTING IS INSUFFICIENT.

18. TEMPORARY STOP BARS SHALL BE LOCATED A MINIMUM OF 40' AND A MAXIMUM OF 120' FROM THE NEAREST SIGNAL HEAD.

19. SEE STD. E-121 FOR SIGN PLACEMENT.

20. ALL STOP SIGNS AND ANY OTHER TRAFFIC SIGNS MADE IRRELEVANT DUE TO THE TEMPORARY SIGNAL SHALL BE COVERED DURING OPERATION OF THE TEMPORARY SIGNAL OR AT THE DISCRETION OF THE ENGINEER. THE COSTS OF COVERING AND UNCOVERING THESE SIGNS SHALL BE PAID INCIDENTAL TO ITEM 641.10,"TRAFFIC CONTROL (ER BRF 0162(18))".

21. THE PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL DISPLAY MESSAGES 1 AND 2 WHEN VT 100 HAS BEEN REDUCED TO ONE-WAY ALTERNATING TRAFFIC. (SEE BR. 19 TRAFFIC CONTROL PLAN (3 OF 3) FOR PCMS MESSAGES).



VT 100 (LEFT LANE COSURE)
SCALE 3/8" = 1'-0"

Changes made by WMSCI

PROJECT NAME: ROCHESTER	
PROJECT NUMBER: ER BRF 0162(18)	
FILE NAME: zllc332detour.dgn	PLOT DATE: 3/5/2014
PROJECT LEADER: S.E. BURBANK	DRAWN BY: E.A. FIALA
DESIGNED BY: E.A. FIALA	CHECKED BY: S.E. BURBANK
BR 19 TRAFFIC CONTROL PLANS (2 OF 3)	SHEET 3 OF 3

VHB Vanasse Hangen Brustlin, Inc.

VHB 57517

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH (IN)	SIZE OF SIGN HEIGHT (IN)	TEXT	NUMBER OF SIGNS REQ'D	REMARKS
G20-2A	48	24	END ROAD WORK	3	MOUNT ON TWO POSTS
G20-5aP	24	18	WORK ZONE	1	MOUNT ABOVE THE R2-1
R2-1	24	30	SPEED LIMIT 40	1	MOUNT ON ONE POST
R10-6	24	36	STOP HERE ON RED	3	MOUNT ON ONE POST
R2-6aP	24	18	FINES DOUBLE	1	MOUNT BELOW R2-1(40)
W1-6R	48	24		1	MOUNT ON TYPE III BARRICADE (MOD)
W1-8R	12	18		4	MOUNT ON TYPE III BARRICADE (MOD)
W3-3	48	48		3	MOUNT ON TWO POSTS
W3-5	48	48	SPEED LIMIT 40	1	MOUNT ON TWO POSTS
W13-125	18	18	25 M.P.H.	2	MOUNT ON ONE POST
W20-1	48	48	ROAD WORK AHEAD	6	MOUNT ON TWO POSTS
W20-4	48	48	ONE LANE ROAD AHEAD	3	MOUNT ON TWO POSTS

NOTES:

1. DURING CONSTRUCTION OF BRIDGE 19, PCMS MESSAGES 1 AND 2 WILL BE DISPLAYED AT THE BRIDGE.

MESSAGES FOR PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) - BRIDGE NO 19

DURING CONSTRUCTION

MESSAGE 1	MESSAGE 2
ONE LANE	BE
ROAD	PREPARED
AHEAD	TO STOP

Vanasse Hangen Brustlin, Inc.

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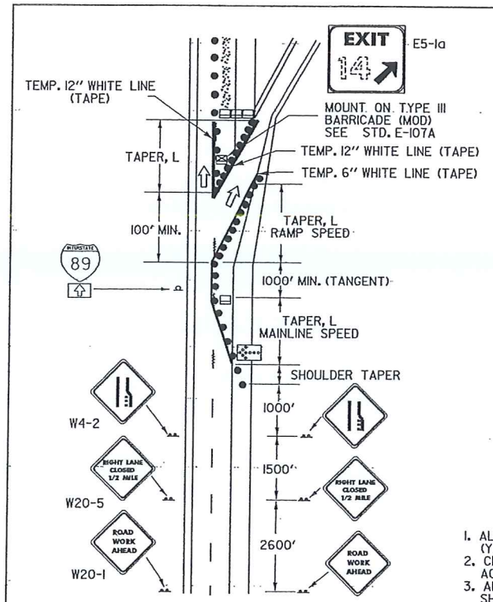
PROJECT NUMBER: ER BRF 0162(18)

FILE NAME: zllc332detour.dgn
PROJECT LEADER: S.E. BURBANK
DESIGNED BY: E.A. FIALA
BR 19 TRAFFIC CONTROL PLANS (3 OF 3)

PLOT DATE: 9/3/2013
DRAWN BY: E.A. FIALA
CHECKED BY: G.S. GOODRICH
SHEET 193 OF 238

VHB 57517



MAINLINE LANE CLOSURE AT AN EXIT RAMP

NOT TO SCALE

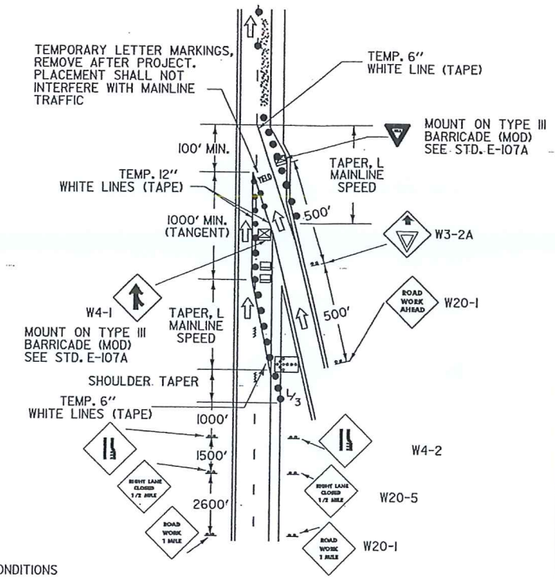
THIS DETAIL SHALL BE USED WHEN THE WORK ZONE BEGINS AT THE GORE OR THE MAINLINE LANE CLOSURE DRUM PLACEMENT INTERFERES WITH THE EXIT RAMP.

LEGEND

- REFL. PLASTIC DRUMS
- PAVEMENT MARKING REMOVAL
- INDICATES TRAFFIC FLOW
- WORK AREA
- FLASHING ARROW PANEL
- TYPE III BARRICADES
- TYPE III BARRICADES (MOD.)

NOTES

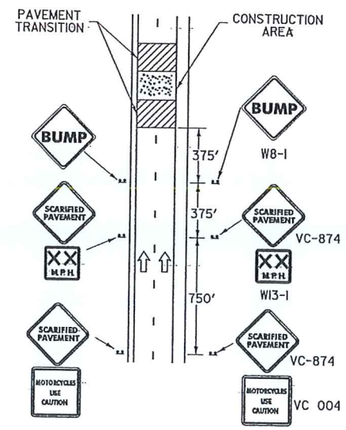
1. ALL SIGNS SHALL BE MOUNTED ON FIXED POSTS (YIELDING TYPE) UNLESS OTHERWISE NOTED.
2. CHANNELIZING DEVICES SHALL BE PLACED IN ACCORDANCE WITH THE TABLE ON THIS SHEET
3. ALL DISTANCES ARE DESIRABLE MINIMUMS, FIELD CONDITIONS SHALL CONTROL THE ACTUAL PLACEMENT.
4. TAPER RATES ARE BASED ON THE POSTED MAINLINE AND EXIT SPEEDS.
5. TEMPORARY PAVEMENT MARKINGS ARE REQUIRED WHEN THE LAYOUT IS TO BE IN EFFECT FOR THREE DAYS OR MORE.
6. LANE CLOSURES AND TAPER LENGTHS, L, AS DETAILED ON THIS SHEET.
7. EXIT SIGN SHALL BE MOUNTED A MINIMUM OF 7 FEET ABOVE THE GROUND AND HIGH ENOUGH TO BE SEEN ABOVE CHANNELIZING DEVICES.



MAINLINE LANE CLOSURE AT AN ENTRANCE RAMP

NOT TO SCALE

THIS DETAIL SHALL BE USED WHEN THE WORK ZONE BEGINS AT THE END OF THE ACCELERATION LANE OR THE MAINLINE LANE CLOSURE DRUM PLACEMENT INTERFERES WITH THE ON-RAMP TRAFFIC. IF THE LENGTH OF THE ACCELERATION LANE IS NOT ADEQUATE, THE YIELD SIGN SHALL BE REPLACED WITH A STOP SIGN. IF A STOP SIGN IS USED, IT SHOULD BE ACCOMPANIED BY A STOP BAR.

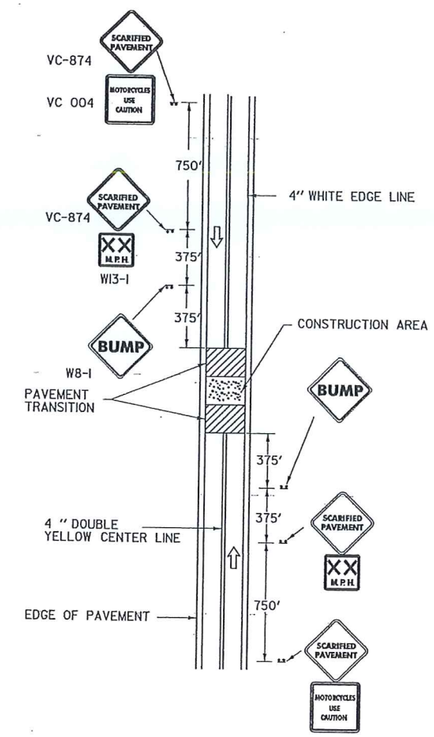


ADVANCED WARNING SIGN PACKAGE FOR COLD PLANED (SCARIFIED) SURFACES DIVIDED HIGHWAY

NOT TO SCALE

NOTES

1. ADVISORY SPEED AS DETERMINED BY THE RESIDENT ENGINEER (40 MPH MINIMUM RECOMMENDED).
2. ALL SIGNS SHALL BE MOUNTED ON FIXED POSTS (YIELDING TYPE).
3. ALL DISTANCES ARE DESIRABLE MINIMUMS, FIELD CONDITIONS SHALL CONTROL THE ACTUAL PLACEMENT.
4. THE BUMP SIGN MAY BE ELIMINATED WHEN THERE IS NO BUMP. WHEN THE CONTRACTOR IS WORKING IN THE CONSTRUCTION AREA THE APPROPRIATE ADVANCED WARNING SIGN PACKAGE SHALL BE USED, SEE STD.E-103.
5. GATE POSTING OF SIGNS IS AN OPTION AS DETERMINED BY THE RESIDENT ENGINEER (WHEN PASSING, TURNING OR CLIMBING LANES LIMIT VISIBILITY).

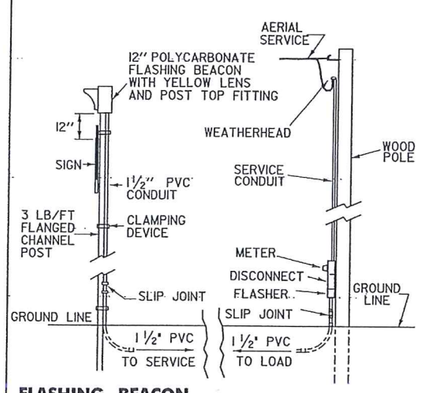


ADVANCED WARNING SIGN PACKAGE FOR COLD PLANED (SCARIFIED) SURFACES 2 LANE ROADWAY

NOT TO SCALE

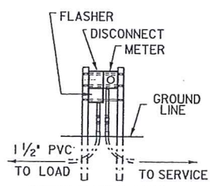
NOTES

1. ADVISORY SPEED AS DETERMINED BY THE RESIDENT ENGINEER (40 MPH MINIMUM RECOMMENDED).
2. ALL SIGNS SHALL BE MOUNTED ON FIXED POSTS (YIELDING TYPE).
3. ALL DISTANCES ARE DESIRABLE MINIMUMS, FIELD CONDITIONS SHALL CONTROL THE ACTUAL PLACEMENT.
4. THE BUMP SIGN MAY BE ELIMINATED WHEN THERE IS NO BUMP. WHEN THE CONTRACTOR IS WORKING IN THE CONSTRUCTION AREA THE APPROPRIATE ADVANCED WARNING SIGN PACKAGE SHALL BE USED, SEE STD.E-110.
5. GATE POSTING OF SIGNS IS AN OPTION AS DETERMINED BY THE RESIDENT ENGINEER (WHEN PASSING, TURNING OR CLIMBING LANES LIMIT VISIBILITY).

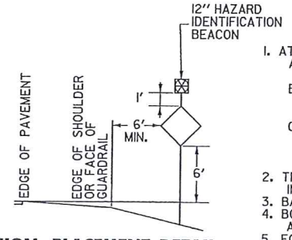


FLASHING BEACON DETAIL

AERIAL SERVICE WITHOUT LUMINAIRE



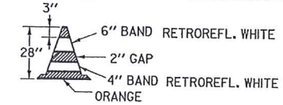
UNDERGROUND SERVICE DETAIL



SIGN PLACEMENT DETAIL

NOTES

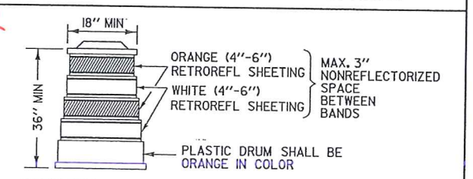
1. AT THE CONTRACTOR'S OPTION:
   A. THE POWER SUPPLY MAY BE AERIAL OR UNDERGROUND (SEE DETAIL).
   B. POWER FOR A FLASHING BEACON MAY BE COMBINED WITH POWER FOR A TRAFFIC SIGNAL OR THEY MAY HAVE SEPARATE POWER SOURCES.
   C. THE FLASHER MAY BE INSTALLED ON A STANCHION NEAR THE SIGN, ON A UTILITY POLE (WITH UTILITY COMPANY APPROVAL) OR AT THE SAME LOCATION AS A TRAFFIC SIGNAL CONTROLLER.
2. THE FLASHER UNIT SHALL BE ONE CIRCUIT AND INCLUDE A RADIO INTERFERENCE FILTER.
3. BATTERY OPERATED FLASHERS WILL NOT BE ALLOWED.
4. BOTTOM OF THE BEACON SHALL BE A MIN. OF 8' AND A MAX. OF 12' ABOVE THE EDGE OF THE PAVEMENT.
5. FOR URBAN AREA PLACEMENT SEE STD. E-121.
6. FOR POWER DROP STANCHIONS SEE STD. E-175



28" REFLECTORIZED CONE

NOTES

1. 28" CONES SHALL BE USED ON ROADWAYS WITH SPEED LIMITS OF 35 MPH OR MORE AND ON ALL ROADWAYS DURING HOURS OF DARKNESS.
2. CONES MAY BE WEIGHTED TO PREVENT OVERTURNING, HOWEVER THE WEIGHTS SHALL NOT PRESENT A HAZARD IF THE CONE IS STRUCK.
3. RETROREFLECTIVE SHEETING SHALL BE ASTM TYPE III OR TYPE VI.



REFLECTORIZED PLASTIC DRUM

SAND BAGS OR AN APPROPRIATE BALLASTING DEVICE, WHICH DOES NOT PRESENT A HAZARD TO THE IMPACTING VEHICLE OR BECOME A PROJECTILE UPON IMPACT, SHALL BE USED TO WEIGHT DRUMS. RETROREFLECTIVE SHEETING SHALL BE ASTM TYPE III OR TYPE VI.

CHANNELIZING DEVICES

TAPER RATES ARE DETERMINED USING THE FOLLOWING EQUATION:

L = WS FOR DESIGN SPEEDS OF 45 MPH OR GREATER

L = WS^2/60 FOR DESIGN SPEEDS OF 40 MPH OR LESS

WHERE: L = MINIMUM LENGTH OF TAPER IN FEET

W = WIDTH OF OFFSET (USUALLY LANE WIDTH) IN FEET

S = DESIGN SPEED IN MPH

POSTED SPEED OR 85th PERCENTILE (mph)	DESIGN SPEED (mph)	TAPER LENGTHS (ft)			TANGENT SECTION LENGTHS (L/2) (ft)	MINIMUM BUFFER SPACE LENGTH (ft)	MAXIMUM CHANNELIZING DEVICE SPACING (ft)		BARRIER FLARE RATE (MIN)
		MERGING 12ft LANE (L)	SHIFTING W=16ft (L/2)	SHOULDER W=10ft (L/3)			TAPER	ALONG LANE LINE & WORK ZONE	
≤40	40	320	215	90	160	160	35	70	1:9
45	45	540	360	150	270	270	40	80	1:9
50	50	600	400	170	300	300	50	100	1:11
55	55	660	440	185	330	330	55	110	1:13
60 & 65	60	720	480	200	360	360	60	120	1:13
70	70	840	560	235	420	440	65	130	1:13

OTHER STDS. REQUIRED: E-101, E-102, E-102A, E-103, E-107A, E-110, E-121, E-136, E-150, E-175

REVISIONS AND CORRECTIONS

APR 12, 1988 - DATE OF ORIGINAL ISSUE
JAN 23, 1989 - REVISED EXIT SIGN - CLARIFIED EXIT TAPER
SEPT 20, 1993 - REVISED RAMP CLOSURES, FLASHING BEACON DETAILS AND MOVED TYPE III BARRICADE (MOD) TO STDE-107A
AUG 08, 1995 - REVISED BEACON SIZE
MAR. 01, 2004 - ADDED ADVANCED WARNING SIGN PACKAGE FOR COLD PLANED TWO WAY HIGHWAYS, CHANNELIZING DEVICES CHART

APPROVED

DIRECTOR OF PROGRAM DEVELOPMENT

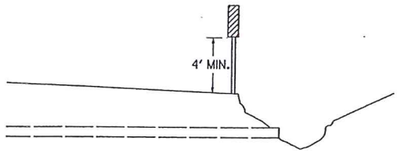
TRAFFIC OPERATIONS ENGINEER

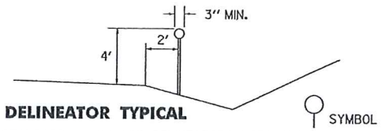
FEDERAL HIGHWAY ADMINSTRATION

TRAFFIC CONTROL MISCELLANEOUS DETAILS

VERMONT AGENCY OF TRANSPORTATION

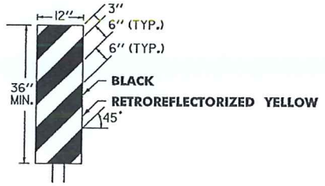
STANDARD E-106





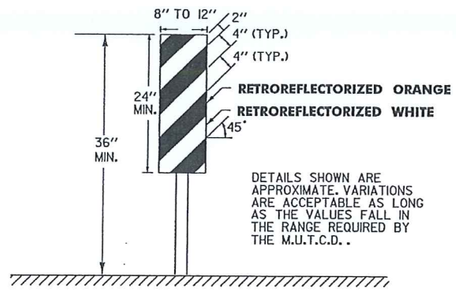
DELINEATOR TYPICAL

THE STANDARD COLOR FOR DELINEATORS USED ALONG BOTH SIDES OF TWO-WAY STREETS AND HIGHWAYS AND THE RIGHT SIDE OF ONE-WAY STREETS SHALL BE WHITE. DELINEATORS USED ALONG THE LEFT SIDE OF ONE-WAY ROADWAYS SHALL BE YELLOW THEY SHALL HAVE A MINIMUM AREA OF 7 SQUARE INCHES. THEY MAY BE ROUND, SQUARE OR OBLONG, FOR ALTERNATES SEE STD. E-198



OBJECT MARKER TYPICAL

OBJECTS MARKERS ARE USED TO MARK OBSTRUCTIONS WITHIN OR ADJACENT TO THE ROADWAY. IN SOME CASES THERE MAY NOT BE A PHYSICAL OBJECT INVOLVED, BUT OTHER ROADSIDE CONDITIONS SUCH AS NARROW SHOULDER DROP-OFFS, GORES, D.I. EXCAVATIONS, AND ABRUPT CHANGES IN THE ROADWAY ALIGNMENT MAY MAKE IT UNDESIRABLE FOR A DRIVER TO LEAVE THE ROADWAY. THE INSIDE EDGE OF THE OBJECT MARKER SHALL BE IN LINE WITH THE INNER EDGE OF THE OBSTRUCTION, WHENEVER POSSIBLE.
OBJECT MARKERS SHALL HAVE ALTERNATING BLACK AND RETROREFLECTORIZED YELLOW STRIPES. (SLOPING DOWNWARD IN THE DIRECTION TRAFFIC IS TO PASS).

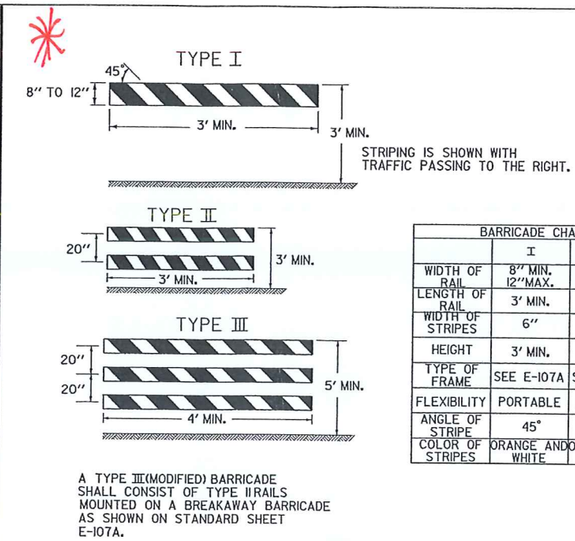


DETAILS SHOWN ARE APPROXIMATE. VARIATIONS ARE ACCEPTABLE AS LONG AS THE VALUES FALL IN THE RANGE REQUIRED BY THE M.U.T.C.D..

VERTICAL PANEL

VERTICAL PANELS SHALL HAVE ALTERNATING ORANGE AND WHITE RETROREFLECTORIZED STRIPES (SLOPING DOWNWARD IN THE DIRECTION TRAFFIC IS TO PASS). THESE DEVICES MAY BE USED FOR TRAFFIC SEPARATION, CHANNELIZING OR BARRICADING WHERE SPACE IS AT A MINIMUM.

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



A TYPE III(MODIFIED) BARRICADE SHALL CONSIST OF TYPE II RAILS MOUNTED ON A BREAKAWAY BARRICADE AS SHOWN ON STANDARD SHEET E-107A.

BARRICADE CHARACTERISTICS			
	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

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 ERECTED 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 RETRO-REFLECTORIZED WHITE AND ORANGE STRIPES. THE ORANGE SHALL CONFORM WITH THE STANDARD COLORS ADOPTED BY AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICALS AND APPROVED BY THE US DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION. THE BARRICADE COMPONENTS SHALL BE WHITE UNLESS 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.

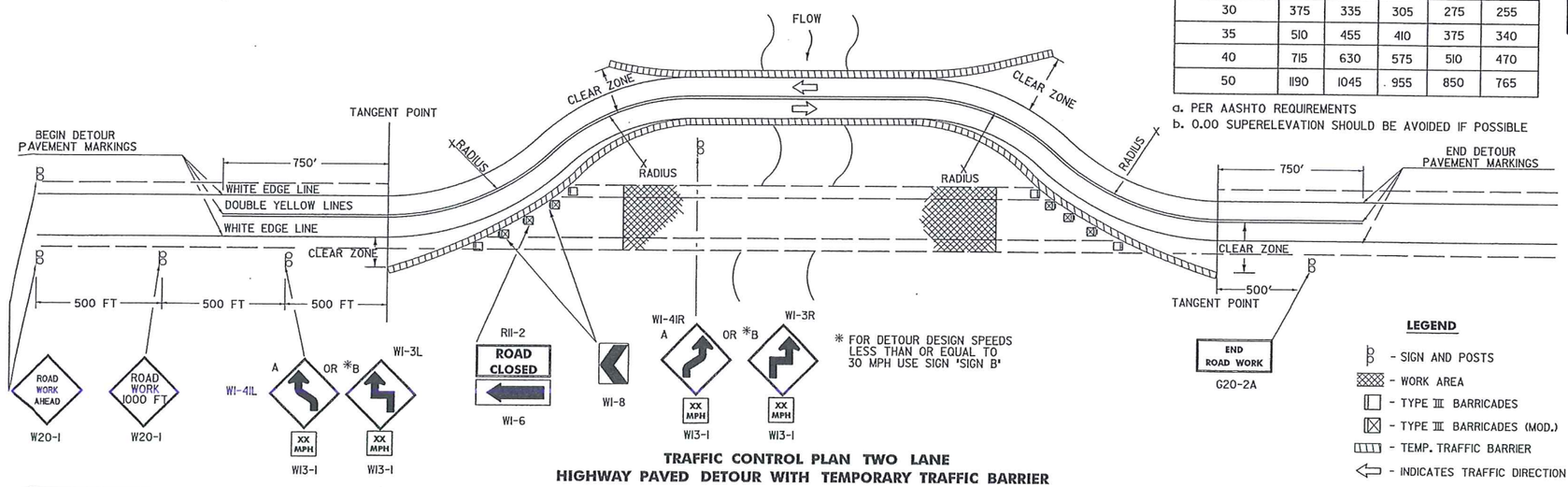
MAINTENANCE

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.

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.

DETOUR DESIGN SPEED	MINIMUM RADIUS (FT.)[a] SUPERELEVATION (FT./FT.)				
(M.P.H.)	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

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

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

VERMONT AGENCY OF TRANSPORTATION

STANDARD E-107