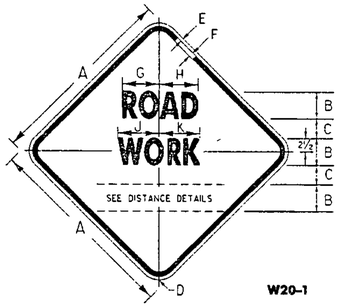
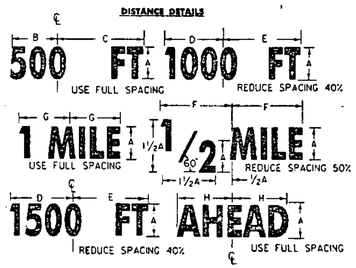
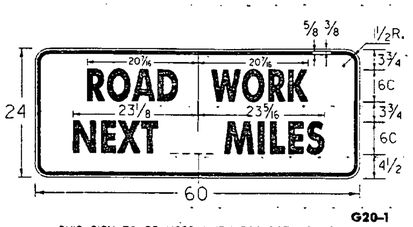



W20-1

| DIMENSIONS (INCHES) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | J | K |
| STD. | 48 | 7C | 4¾ | 3" R. | ¾ | 1¼ | 9½ | 9⅞ | 10½ | 10⅝ |
| URBAN | 36 | 5C | 3⅝ | 2¼R. | ⅝ | ⅞ | 6⅞ | 7⅛ | 7½ | 7⅞ |

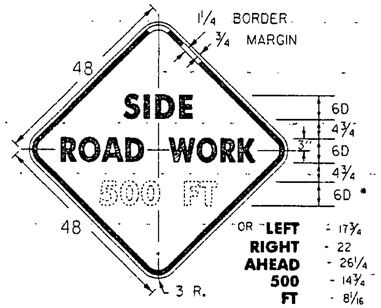
**DISTANCE DETAILS**




G20-1

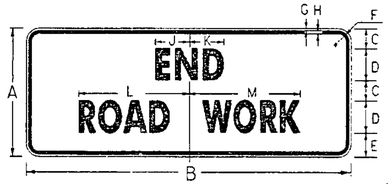
THIS SIGN TO BE USED WHEN PROJECT LENGTH EXCEEDS 2 MILES OR AS REQUESTED BY THE RESIDENT ENGINEER. SHOW MILEAGE TO NEAREST ¼ MILE USING FRACTIONS. NOT DECIMALS. HAND LETTERING OF MILEAGE WILL NOT BE ALLOWED. (ALL DIMENSIONS SHOWN IN INCHES)




OR - LEFT - 17¾
RIGHT - 22
AHEAD - 26¼
500 - 14¾
FT - 8⅛

W20-1 * REDUCE SPACING 50%

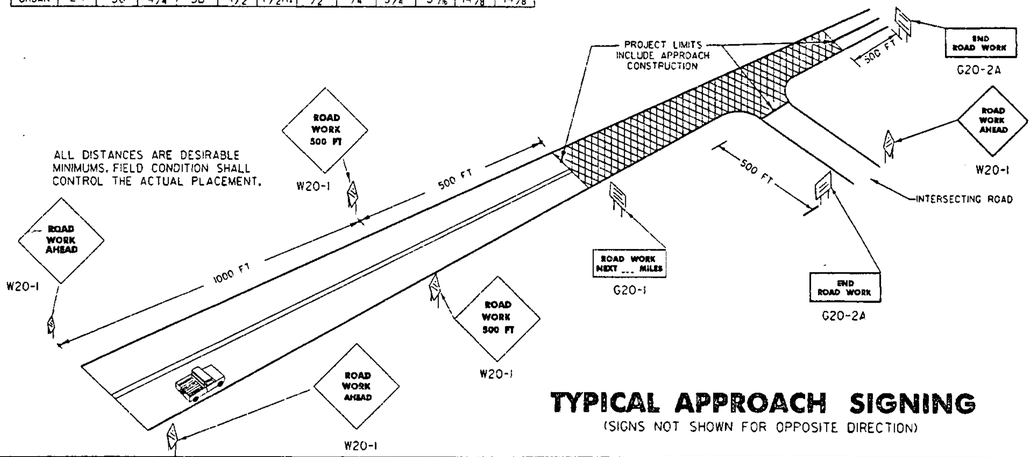
| DIMENSIONS (INCHES) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H |
| 5D | 10¾ | 10⅞ | 11⅝ | 11¼ | 11¼ | 9½ | 10⅛ | |
| 6C | 10⅜ | 10½ | 11¼ | 12 | 12½ | 9⅛ | 10½ | |
| 7C | 12 | 12⅜ | 13⅛ | 14 | 14⅜ | 10⅝ | 12¼ | |
| 8D | 16¼ | 17¼ | 17 | 18 | 18 | 14⅜ | 17⅜ | |




G20-2A

| DIMENSIONS (INCHES) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | J | K | L | M |
| STD. | 24 | 60 | 3¾ | 6C | 4½ | 11½R. | ⅜ | ⅝ | 6¼ | 6⅜ | 20⅞ | 20⅞ |
| URBAN | 24 | 36 | 4¼ | 5B | 4½ | 11½R. | ½ | ¾ | 3¾ | 3⅛ | 14⅜ | 14⅜ |

**(ALL DIMENSIONS SHOWN IN INCHES UNLESS OTHERWISE NOTED)**




## TYPICAL APPROACH SIGNING

(SIGNS NOT SHOWN FOR OPPOSITE DIRECTION)

## NOTES

THE SIGNS SHOWN ON THIS SHEET ARE INTENDED FOR USE IN PROVIDING ADVANCE WARNING AND INFORMATION ON CONSTRUCTION PROJECTS OVER WHICH TRAFFIC WILL BE MAINTAINED. WHEN ADDITIONAL APPROACH SIGNS OR OTHER TYPES OF ADVANCE SIGNING OR CONTROL ARE NECESSARY, THE PLANS AND/OR THE SPECIFICATIONS FOR THAT PROJECT WILL GIVE THE DETAILS OF THE SIGNS AND DEVICES REQUIRED, FOR ON-PROJECT CONSTRUCTION SIGNS. REFER TO APPROPRIATE STANDARD SHEETS.

**APPLICATION OF STANDARDS**

SINCE IT IS NOT POSSIBLE TO PRESCRIBE DETAILED STANDARDS OF APPLICATION FOR ALL OF THE SITUATIONS THAT MAY CONCEIVABLY ARISE ON A CONSTRUCTION PROJECT, REFERENCE SHALL BE MADE TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" FOR THE PRINCIPLES, PROCEDURES, AND STANDARDS THAT WILL BE REQUIRED IN CONNECTION WITH ADVANCED WARNING AND ON-PROJECT CONSTRUCTION SIGNS AND BARRICADES. THE SIGNS SHOWN IN E-101 AND E-102 REPRESENT A SAMPLE OF THOSE MORE COMMONLY USED.

**LOCATION**

THE SIGNS SHALL BE LOCATED AS DETAILED ON THIS SHEET OR AS OTHERWISE SHOWN ON THE PLANS. THEY SHALL APPEAR AT EACH END OF THE HIGHWAY UNDER CONSTRUCTION AND ON ALL INTERSECTING PUBLIC HIGHWAYS. THE EXACT PLACEMENT OF ANY SIGN SHALL DEPEND UPON THE ALIGNMENT INTENDED TO INDICATE THE SEQUENCE TO BE FOLLOWED, AND THE APPROXIMATE SPACING TO BE OBSERVED. THE ENGINEER SHALL DETERMINE THE EXACT LOCATIONS.

**DESIGN**

THE DESIGN OF THE SIGNS SHALL CONFORM WITH THE DETAILS SHOWN ON THIS SHEET AND WITH THE STANDARDS PRESCRIBED IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

**MATERIALS**

THE SIGN BASE MATERIAL USED FOR THE SIGNS ON THIS SHEET MAY BE ANY OF THE FOLLOWING, WITH MINIMUM THICKNESS AS NOTED.

| | |
|---|---|
| FLAT SHEET ALUMINUM | 0.125 INCHES |
| HIGH DENSITY OVERLAYED PLYWOOD | 1/2, 5/8, OR 3/4 INCHES |
| GALVANIZED SHEET STEEL | 12 GAGE |

**RETROREFLECTORIZATION**

ALL REFLECTORIZED MATERIAL SHALL CONSIST OF TYPE IIB OR TYPE III SHEETING.

**COLORS**

THE COLORS SHALL CONFORM WITH THE STANDARD COLORS ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS AND APPROVED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION. COLORS SHOWN ON THIS SHEET CONSIST OF BLACK TEXT AND BORDER ON A REFLECTORIZED ORANGE BACKGROUND.

**INSTALLATION**

THE SIGNS SHALL BE ERECTED BEFORE THE START OF ANY WORK AND SHALL BE COVERED UNTIL WORK COMMENCES, DURING PERIODS OF INACTIVITY, OR UPON COMPLETION OF THE WORK. SIGNS MAY BE REMOVED UPON COMPLETION OF THE WORK AT THE DISCRETION OF THE ENGINEER. EACH SIGN SHALL BE ERECTED IN A NEAT AND WORKMANLIKE MANNER ON POSTS SET SECURELY IN THE GROUND. THE BOTTOM OF A SIGN SHALL BE AT LEAST 7 FEET ABOVE THE EDGE OF PAVEMENT, AND THE NEAREST EDGE OF A SIGN SHALL BE AT LEAST 6 FEET OUTSIDE THE SHOULDER POINT, 4 FEET OUTSIDE GUARD RAIL, OR 2 FEET OUTSIDE CURBING, OR SIDEWALK. THE INSTALLATION OF SIGNS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER. IN URBAN AREAS, THE BOTTOM OF THE SIGN SHALL BE AT LEAST 7 FEET ABOVE THE SIDEWALK.

**MAINTENANCE**

SIGNS SHALL BE MAINTAINED IN A CLEAN AND LEGIBLE CONDITION SATISFACTORY TO THE ENGINEER. THEY SHALL BE COMPLETELY VISIBLE TO APPROACHING TRAFFIC AT ALL TIMES. THEY SHALL BE KEPT PLUMB AND LEVEL, AND ALWAYS PRESENT A NEAT APPEARANCE. DAMAGED, DEFACED, OR DIRTY SIGNS SHALL BE REPAIRED, CLEANED OR REPLACED AS ORDERED BY THE ENGINEER.

## NOTES CONT.

**GENERAL**

THE COST OF FURNISHING, INSTALLING, MAINTAINING AND REMOVING ALL CONSTRUCTION APPROACH SIGNS WILL BE CONSIDERED SUBSIDIARY WORK PERTAINING TO THE PROJECT AS A WHOLE AND SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR VARIOUS ITEMS INVOLVED IN THE CONTRACT. DURING ALL PHASES OF CONSTRUCTION THE REQUIREMENTS SET FORTH IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" SHALL BE MET. WHEN THE PROJECT IS CLOSED DOWN FOR TEMPORARY PERIODS THE SIGNS SHALL BE COVERED IN A WORKMANLIKE MANNER.

**SIGN COVERS**

SIGN COVERS SHALL CONSIST OF A PANEL PAINTED FLAT BLACK. THE SAME SIZE AS THE SIGN IT COVERS. THE PANEL SHALL BE OF WOOD, PLYWOOD, HARDBOARD OR ANY MATERIAL SATISFACTORY TO THE ENGINEER. NO MATERIAL WILL BE APPROVED THAT WILL DETERIORATE BY EXPOSURE TO THE WEATHER DURING THE PROJECT. MOUNTING OF THE PANEL SHALL BE DONE IN SUCH A WAY AS NOT TO DAMAGE THE SIGN FACE MATERIAL.

CONTRACTORS SHALL COORDINATE THEIR SIGNING ACTIVITIES WITH OTHER CONTRACTORS WITHIN THE PROJECT LIMITS, AS DIRECTED BY THE REGIONAL CONSTRUCTION ENGINEER.

## SIGN POSTS

WHERE CONSTRUCTION SIGN INSTALLATIONS ARE NOT PROTECTED BY GUARD RAIL OR OTHER APPROVED TRAFFIC BARRIERS, THE POSTS ON WHICH THE SIGNS ARE MOUNTED SHALL BE YIELDING METAL POSTS AS DESIGNATED IN THE E SERIES OF STANDARD DRAWINGS OR YIELDING WOODEN POSTS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

WOODEN POSTS ARE ACCEPTABLE FOR USE WITH CONSTRUCTION SIGNS. THESE POSTS SHALL HAVE A UNIFORM CROSS-SECTION AND SHALL BE MADE FROM GRADE 2, AIR-DRIED SOUTHERN YELLOW PINE OR ANOTHER EQUIVALENT SOFTWOOD. AN ACCEPTABLE EQUIVELANT SOFTWOOD SHALL HAVE AN EXTREME FIBER IN BENDING "Fb" DESIGN VALUE NOT TO EXCEED 1400 psi AND HORIZONTAL SHEAR "Fv" DESIGN VALUE NOT TO EXCEED 90 psi SPECIFICATION "DESIGN VALUES FOR WOOD CONSTRUCTION" AND RELATED SUPPLEMENT, DATED 1986.

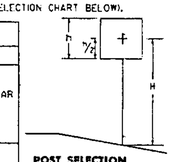
AS ESTABLISHED BY THE NATIONAL FOREST PRODUCTS ASSOCIATION IN THEIR NATIONAL DESIGN THE FOLLOWING ARE CONSIDERED TO BE ACCEPTABLE WOODEN POSTS:

1. 4" X 4" (ACTUAL DIMENSIONS ARE 3.5" X 3.5")
   A) ACCEPTABLE FOR SINGLE OR DUAL POSTS INSTALLATION WITH NO MODIFICATIONS.
   B) ACCEPTABLE FOR THREE POSTS ( OR MORE) INSTALLATION ONLY WHEN THERE ARE NO MORE THAN TWO POSTS IN A 7 FOOT PATH.
2. 4" X 6" (ACTUAL DIMENSIONS ARE 3.5" X 5.5")
   A) ACCEPTABLE FOR SINGLE POST INSTALLATIONS ONLY WHEN MODIFIED BY DRILLING TWO 1 1/2" DIAMETER HOLES, ONE AT 4" AND THE OTHER 18" ABOVE THE GROUND LINE AND PERPINDICULAR TO THE ROADWAY CENTERLINE.
   B) ACCEPTABLE FOR MULTIPLE POSTS (TWO OR MORE) INSTALLATIONS ONLY WHEN MODIFIED AS ABOVE AND THE MINIMUM SPACING BETWEEN POSTS IS 7 FEET.
3. 6" X 6" (ACTUAL DIMENSIONS ARE 5.5" X 5.5")
   A) ACCEPTABLE FOR SINGLE POST INSTALLATIONS ONLY WHEN MODIFIED BY DRILLING TWO 2" DIAMETER HOLES, ONE AT 4" AND THE OTHER AT 18" ABOVE THE GROUND LINE AND PERPINDICULAR TO ROADWAY CENTERLINE.
   B) ACCEPTABLE FOR MULTIPLE POST INSTALLATION ONLY WHEN MODIFIED AS ABOVE AND THE MINIMUM SPACING BETWEEN POSTS IS 7 FEET.
4. 6" X 8" (ACTUAL DIMENSIONS ARE 5.5" X 7.5")
   A) ACCEPTABLE FOR SINGLE POST INSTALLATIONS ONLY WHEN MODIFIED BY DRILLING TWO 3" DIAMETER HOLES, ONE AT 4" AND THE OTHER AT 18" ABOVE THE GROUND LINE AND PERPINDICULAR TO THE ROADWAY CENTERLINE.
   B) ACCEPTABLE FOR MULTIPLE POST INSTALLATIONS ONLY WHEN MODIFIED AS ABOVE AND THE MINIMUM SPACING BETWEEN POSTS IS 7 FEET.

**ADDITIONAL DESIGN CRITERIA**

THE LONGER DIMENSION OF THE POST(S), SUCH AS THE 6" DIMENSION OF THE 4" X 6" POST, SHALL BE PLACED PARALLEL TO THE ROADWAY CENTERLINE.
ALL WOODEN POSTS SHALL HAVE AN EMBEDMENT DEPTH OF 4 FEET.
NO CROSS-BRACING OR BACK-BRACING TO KEEP THE POSTS PLUMB WILL BE ALLOWED.
CONCRETE FOUNDATIONS COLLARS OR SOIL BEARING PLATES ARE NOT PERMITTED.
CONSTRUCTIONS SIGNS SHALL BE PLACED ON TWO OR MORE POSTS WHEN ANY OF THE FOLLOWING CONDITIONS GOVERN:
   A) THE SIGN WIDTH (HORIZONTAL DIMENSIONS FOR DIAMOND SHAPED SIGNS) EXCEEDS 3 1/2 FEET.
   B) THE EXPOSED SIGN AREA OF ANY SINGLE SIGN OR ASSEMBLY EXCEEDS 12 ½ SQ. FEET.
   C) THE Sv OF A SINGLE POST IS EXCEEDED. (SEE THE POST SELECTION CHART BELOW).

| WOOD POST SELECTION CHART | | |
|---|---|---|
| SIGN AREA ($FT^2$) X HEIGHT (FT) ≤ Sv (SELECTION VALUE) | | |
| POST SIZE | Sv | DESIGN CRITERIA: |
| 4" X 4" | 64 | WIND SPEED = 60 MPH (10-YEAR |
| 4" X 6" | 147 | MEAN OCCURENCE INTERVAL) |
| 6" X 6" | 216 | WIND PRESSURE = 13 psf |
| 6" X 8" | 389 | ALLOWABLE BENDING STRESS |




POST SELECTION CHART DETAIL

**OTHER STDS. REQUIRED:**

REVISIONS AND CORRECTIONS

MAY 26, 1989 - DATE OF ORIGINAL ISSUE

OCT 21, 1992 - REVISED WOOD POST REQUIREMENTS, ADDED SIGN DETAILS, & REVISED TITLE BLOCK

AUG 08, 1995 - MINOR NOTE REVISIONS

APPROVED FOR THIS PROJECT AND/OR DESIGN IMPLEMENTATION. FHWA FINAL APPROVAL PENDING.

APPROVED

Gordon S. McArthur
DIRECTOR OF ENGINEERING

David A. Ross
TRAFFIC AND SAFETY ENGINEER

# CONSTRUCTION APPROACH SIGNS

/traf/std/stde100.dgn : stde100.i

VERMONT AGENCY OF TRANSPORTATION

STANDARD E-100