

Section C: Traffic Control Plans

INDEX OF SHEETS

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BEGIN NH-P 0014(184)418 PCN 035T

Sta. 415+80.8 (US 14E) Approximately
4825.72 feet West and 161.12 feet
South of the Southeast corner of
Section 15 - Township 110 North -
Range 50 West
MRM 418.00 +0.056 (US 14E)

Sta. 412+29.7 (US 14W) Approximately
6144.98 feet West and 205.21 feet
South of the Southeast corner of
Section 15 - Township 110 North -
Range 50 West
MRM 417.08 +0.726 (US 14W)

BEGIN NH 014B(04)418 PCN 035U

Sta. 5+85.9 (US 14EB) Approximately 3997.22
feet West and 131.41 feet South of the Southeast
corner of Section 15 - Township 110 North -
Range 50 West MRM 418.11 +0.103 (US 14EB)

Sta. 5+81.7 (US 14WB) Approximately 4102.76
feet West and 136.94 feet South of the Southeast
corner of Section 15 - Township 110 North -
Range 50 West MRM 418.19 +0.003 (US 14WB)

BEGIN EXCEPTION PCN 035U

BEGIN PCN 04D3

Sta 175+93.92

END EXCEPTION PCN 035U

END PCN 04D3

Sta 192+71.47

END NH 014B(04)418 PCN 035U

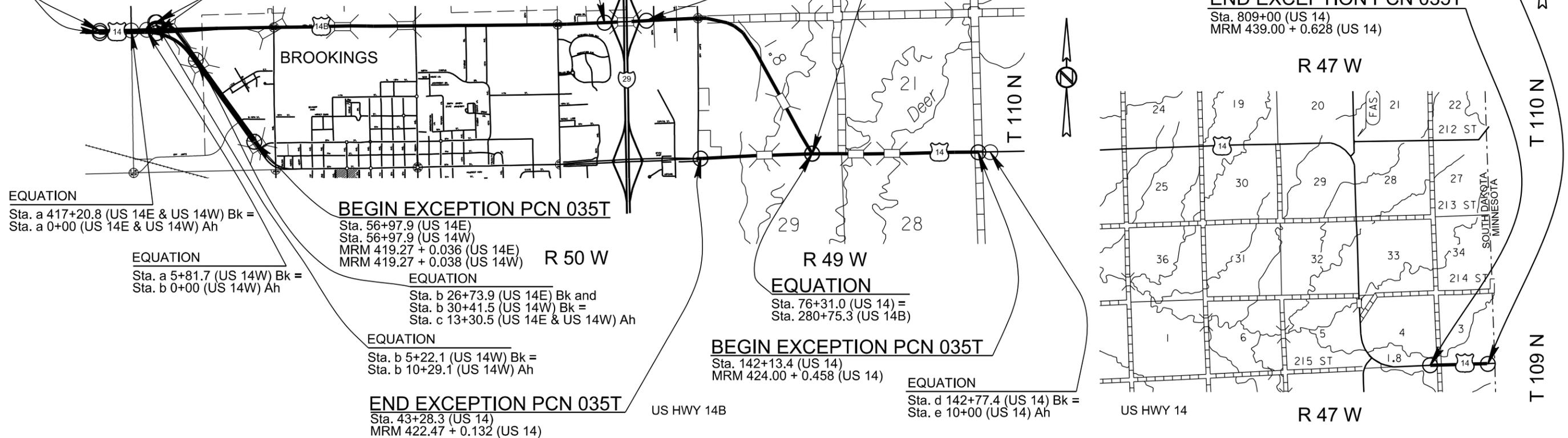
Sta. 280+75.3 (US 14B) Approximately
1333.99 feet West and 29.6 feet north
of the Southeast corner of Section 20 -
Township 110 North - Range 49 West
MRM 423.23 (US 14B)

END NH-P 0014(184)418 PCN 035T

Sta. 815+29.83 (US 14) Approximately
25.26 feet North of the Southeast corner
of Section 3 - Township 109 North -
Range 47 West
MRM 439.75 (US 14)

END EXCEPTION PCN 035T

Sta. 809+00 (US 14)
MRM 439.00 + 0.628 (US 14)



EQUATION
Sta. a 417+20.8 (US 14E & US 14W) Bk =
Sta. a 0+00 (US 14E & US 14W) Ah

EQUATION
Sta. a 5+81.7 (US 14W) Bk =
Sta. b 0+00 (US 14W) Ah

BEGIN EXCEPTION PCN 035T

Sta. 56+97.9 (US 14E)
Sta. 56+97.9 (US 14W)
MRM 419.27 + 0.036 (US 14E) R 50 W
MRM 419.27 + 0.038 (US 14W)

EQUATION
Sta. b 26+73.9 (US 14E) Bk and
Sta. b 30+41.5 (US 14W) Bk =
Sta. c 13+30.5 (US 14E & US 14W) Ah

EQUATION
Sta. b 5+22.1 (US 14W) Bk =
Sta. b 10+29.1 (US 14W) Ah

END EXCEPTION PCN 035T

Sta. 43+28.3 (US 14)
MRM 422.47 + 0.132 (US 14)

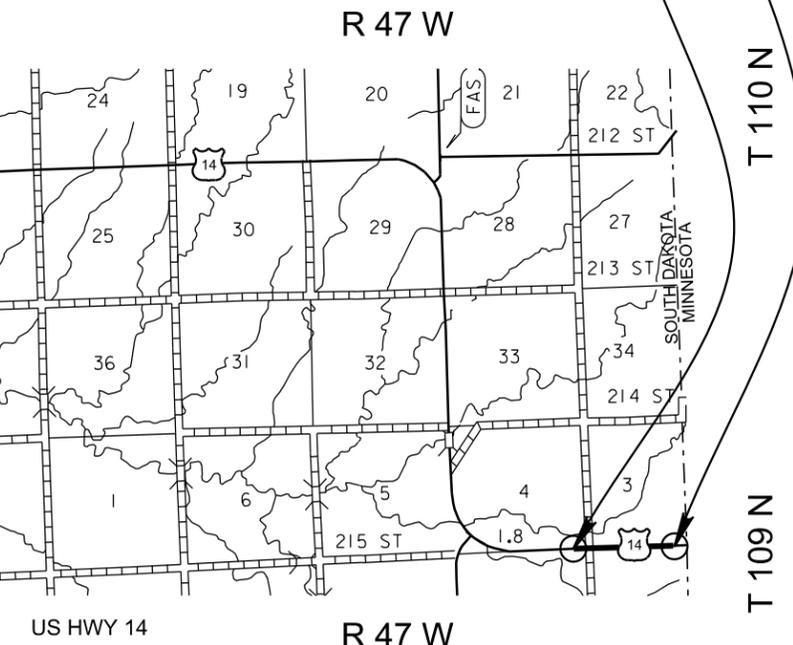
R 49 W

EQUATION
Sta. 76+31.0 (US 14) =
Sta. 280+75.3 (US 14B)

BEGIN EXCEPTION PCN 035T

Sta. 142+13.4 (US 14)
MRM 424.00 + 0.458 (US 14)

EQUATION
Sta. d 142+77.4 (US 14) Bk =
Sta. e 10+00 (US 14) Ah



SECTION C ESTIMATE OF QUANTITIES

IM 0295(39)132 PCN 04D3

| Bid Item Number | Item | Quantity | Unit |
|-----------------|------------------------------------|----------|------|
| 634E0010 | Flagging | 20 | Hour |
| 634E0100 | Traffic Control | 524 | Unit |
| 634E0120 | Traffic Control, Miscellaneous | Lump Sum | LS |
| 634E0420 | Type C Advance Warning Arrow Panel | 2 | Each |
| 634E0640 | Temporary Pavement Marking | 1,800 | Ft |

NH-P 0014(184)418 PCN 035T

| Bid Item Number | Item | Quantity | Unit |
|-----------------|------------------------------------|----------|------|
| 634E0010 | Flagging | 400 | Hour |
| 634E0020 | Pilot Car | 200 | Hour |
| 634E0100 | Traffic Control | 2,222 | Unit |
| 634E0120 | Traffic Control, Miscellaneous | Lump Sum | LS |
| 634E0420 | Type C Advance Warning Arrow Panel | 1 | Each |
| 634E0630 | Temporary Pavement Marking | 17.2 | Mile |

NH 014B(04)418 PCN 035U

| Bid Item Number | Item | Quantity | Unit |
|-----------------|------------------------------------|----------|------|
| 634E0010 | Flagging | 450 | Hour |
| 634E0020 | Pilot Car | 225 | Hour |
| 634E0100 | Traffic Control | 2,070 | Unit |
| 634E0120 | Traffic Control, Miscellaneous | Lump Sum | LS |
| 634E0420 | Type C Advance Warning Arrow Panel | 2 | Each |
| 634E0630 | Temporary Pavement Marking | 18.8 | Mile |

SEQUENCE OF OPERATIONS

Work shall consist of shoulder widening, cold milling asphalt concrete, asphalt concrete paving, box culvert extension, pipe repair / replacement, roadway lighting, pavement markings, traffic signs, and erosion control.

Cold Milling on any section of the project shall precede asphalt concrete paving of that section by no more than **3** working days.

All intersections along the project, unless specifically noted shall remain open to the traveling public at all times.

Access to South Dakota State University must be maintained at all times.

The Contractor shall expect heavy truck traffic at intersections between 34th Ave. and Western Ave. Truck traffic at Western Ave., Medary Ave., 22nd Ave., 32nd Ave., 34th Ave., and the Bell Cheese Plant entrances must be maintained at all times. To accommodate these trucks, the Contractor will be limited at all intersections to constructing turn lanes one side at a time. The Contractor will not be allowed to work on both the eastside and westside of any intersections at the same time.

The following General Sequence of Operations shall be adhered to. Any changes must be approved in writing by the Area Engineer prior to changes being made.

1. Install traffic control and fixed location signing prior to start of work.
2. Complete grading work for turn lanes.
3. Complete mainline culvert & box culvert extensions.
4. Complete shoulder widening.
5. Complete surfacing for turn lanes and shoulder areas.
6. Complete slope flattening work.
7. Complete shoulder preparation.
8. Complete cold milling operations.
9. Excavate digouts and complete backfill operations.
10. Complete gravel surfacing placement operations.
11. Knockdown gravel surfacing to allow access on approaches.
12. Complete asphalt paving operations.
13. Shape approach gravel and mow project inslopes.
14. Complete permanent pavement marking.
15. Complete permanent sign installation.
16. Complete all remaining project items.

Completion of median crossovers along I-29 may proceed at any time during construction.

The project will be open full width throughout its length for all traffic and turning movements prior to winter. Should there be any un-surfaced areas either on the project proper, street approaches or accesses which are started and not completed by that time, the Contractor shall be responsible at his expense for providing at least 6 inches of Base Course and 4 inches of asphalt concrete for winter use and for its removal in the spring when the project work is completed.

GENERAL NOTES

All waste and excess material generated from the various construction activities shall be removed from the ROW as determined by the Engineer.

The Contractor shall be required to mow the inslopes with a rotary mower to a height of 6 inches for a distance of 14' from the edge of the roadway (or shoulder), for the length of the project. This work will be completed to the satisfaction of the Engineer, after all construction activities are completed. All costs associated with this work shall be incidental to the various contract items.

TRAFFIC CONTROL

Removing, relocating, covering, salvaging and resetting of existing permanent traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost of this work shall be incidental to the various contract bid items unless otherwise specified in the plans. Delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

Storage of vehicles and equipment shall be as near the right-of-way as possible. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work. Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

Work activities during non-daylight hours are subject to prior approval.

Work limits for cold milling operation and pilot car operation shall not exceed 1 mile in length. Work limits for asphalt paving operation and pilot car operation shall not exceed 1 miles in length. Signing and flagging stations shall be kept current in regard to their location which may require relocation during the day.

Traffic approaching the project from intersecting roadways, streets, and approaches must be adequately accommodated. Major intersections or large commercial entrances may require additional signing, flaggers, and channelizing devices on a temporary basis until work activities pass these areas.

The bottom of signs on portable or temporary supports shall not be less than seven feet above the pavement in urban areas and one foot above the pavement in rural areas. Portable sign supports may be used as long as the duration is less than 3 days. If the duration is more than 3 days the signs shall be on fixed location, breakaway supports.

An Advisory Speed Plate displaying 30 M.P.H. shall be attached to all "Bump" signs used on the project. These speed plates are included in the Traffic Control Devices Inventory sheet in these plans.

"Grooved Pavement" and Motorcycle Symbol signs shall be placed at each end of the project until all cold milled areas are covered with asphalt concrete. Additional "Grooved Pavement" and Motorcycle Symbol signs shall be placed as shown on the Fixed Location Ground Mounted Breakaway Support Signs detail until all cold milled areas are covered with asphalt concrete. Attached to each sign shall be a "Next xx Miles" sign. These signs are included in the Traffic Control Devices Inventory sheet.

Traffic Control units, as shown in the Estimate of Quantities, are estimates. Contractor's operation may require adjustments in quantities, either more or less. Payment will be for those signs actually ordered by the Engineer and used.

The Contractor shall provide documentation that all breakaway sign supports comply with FHWA NCHRP Report 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

The Contractor shall notify the Aberdeen Region Traffic Engineer, Dan Martell (605-626-7879) a minimum of 1 week prior to opening any phase of the project to traffic in order to verify the installation of permanent signing by the Contractor.

The Contractor shall designate an employee to maintain traffic as described in Section 634.3 of the Specifications. This person shall be required to do weekend checks to ensure traffic control devices are in satisfactory condition. The Contractor shall submit a weekly log stating time and date of all such inspections. The log shall be signed by the person doing the inspections. The cost of the traffic control person shall be incidental to the contract lump sum price for "Traffic Control Miscellaneous". The employee selected must be approved by the Engineer.

Revised 12/22/14 BRO

TRAFFIC CONTROL (Continued)

A night inspection of traffic control signing shall be done by the Contractor's designated employee after the signs are revised for each phase of construction. The Contractor shall submit additional log information for this inspection to the Engineer.

The Contractor will be responsible for maintaining all existing traffic control signing for the safety of the traveling public.

Construction operations will be allowed during daylight hours only.

The Contractor shall provide the City Police Department, City Fire Department, Brookings Ambulance Service, County Sheriff's Office, and the Brookings Hospital Emergency Department a detailed map showing roadway segment construction work limits and the anticipated schedule of work. Updated maps shall be provided to the departments 24 hours prior to any changes in work limits or anticipated schedule. Changes in work limits or schedule will not be allowed until the 24 hour advance notice requirement has been satisfied.

All traffic control devices used on this project shall be **new** or in **like-new** condition, as approved by the Engineer.

Locations of signs on traffic control layouts are diagrammatic. Non-fixed location signs may be mounted on portable supports. The portable supports shall be constructed to yield upon impact to minimize hazards to motorists. The bottom of signs on portable or temporary supports shall not be less than seven feet above the pavement in urban areas, and one foot above the pavement in rural areas.

"Shoulder Closed Ahead" and "Shoulder Closed" signs shall be installed in advance of and at shoulder work locations that create a hazard to the traveling public as determined by the Engineer. "Shoulder Closed Ahead" and "Shoulder Closed" signs shall be maintained in place until the shoulder areas are completely restored. Concrete Barriers will not be required for Shoulder Closure Areas.

"Shoulder Drop-Off" signs and drums shall be installed at shoulder work locations where the shoulder drop-off exceeds 3 inches. "Shoulder Drop-Off" signs shall be placed at the beginning of traffic control closures and other locations as determined by the Engineer. "Shoulder Drop-Off" signs and drums shall be maintained in place until the shoulder areas are completely restored.

A "Road Closed" sign and barricades have been included in the sign inventory on the project and shall be installed on the newly constructed Stadium Road Intersection at the direction of the Engineer.

The use of moveable concrete barriers as shown on standard plate 634.61 will not be required on the project.

TEMPORARY PAVEMENT MARKINGS

Maintaining size, shape, and dimension of existing pavement markings shall be the responsibility of the Contractor for both temporary and permanent pavement marking applications.

Temporary road markers shall be used to mark dashed centerline, No Passing Zones and applicable lane lines. Paint will not be allowed for Temporary Pavement Marking on the Asphalt Concrete Class Q3R Hot Mixed Asphalt Concrete wear course.

The total length of no passing zone on this project is estimated to be 8.6 miles.

Quantities of Temporary Pavement Markings consist of:

- One pass on top of the Cold Milled surface.
- One pass on top of the Blade Laid surface.
- One pass on top of the Hot Mixed Asphalt Concrete surface.
- One pass on top of the Flush Seal.

If the Flush Seal is eliminated, the application of the Temporary Pavement Marking on top of the Flush Seal will be eliminated. No adjustment in the contract unit price for Temporary Pavement Marking will be made because of a variation in quantities.

Temporary Road Markers (tabs) shall be used as detailed in the Specifications. Covers on the tabs shall be sufficiently secured to prevent traffic from dislodging the cover. If used, the Contractor shall remove and properly dispose of the covers and tabs after Permanent Pavement Marking is applied. Method of removal shall be nondestructive to the road surface and shall be accomplished within one week of completion of the Permanent Pavement Marking.

Cost for furnishing, applying, removing and disposing of the Temporary Road Markers on PCN 035T and PCN 035U shall be included in the contract unit price per mile for TEMPORARY PAVEMENT MARKING.

Flagger symbol signs (W20-7) and flaggers, or a shadow vehicle with rotating yellow lights or strobe lights shall be positioned on the roadway shoulder in advance of workers during the installation of temporary road markers. The traffic control device used shall be moved to provide proper warning of the work operation. A ROAD WORK AHEAD (W20-1), a Workers symbol sign (W21-1) or a BE PREPARED TO STOP (W3-4) warning sign shall be mounted on the rear of the shadow vehicle. The method of traffic control used by the Contractor for this work shall be approved by the Engineer.

Cost for furnishing, applying, removing and disposing of the Temporary Road Markers for delineating tapers that are required overnight on PCN 04D3 shall be included in the contract unit price per foot for TEMPORARY PAVEMENT MARKING.

TABLE OF TEMPORARY PAVEMENT MARKING

| PCN | Route | Station | to Station | Temp Pavement Marking (Miles/Ft) |
|----------------------|-------|--------------------|-------------|----------------------------------|
| 035T | 14 E | 415+80.8 | to 417+20.8 | 0.03 |
| 035T | 14E | 0+00 | to 26+73.9 | 0.51 |
| 035T | 14E | 15+89.5 | to 50+60.7 | 0.66 |
| 035T | 14E | 53+39.3 | to 56+97.9 | 0.07 |
| 035T | 14W | 412+29.7 | to 417+20.8 | 0.09 |
| 035T | 14W | 0+00 | to 5+81.7 | 0.11 |
| 035T | 14W | 3+53.1 | to 5+22.1 | 0.03 |
| 035T | 14W | 10+29.1 | to 14+30.3 | 0.08 |
| 035T | 14W | 20+38.3 | to 30+41.5 | 0.19 |
| 035T | 14W | 15+89.5 | to 50+60.7 | 0.66 |
| 035T | 14W | 53+39.3 | to 56+97.9 | 0.07 |
| 035T | 14 | 41+53.3 | to 57+49.3 | 0.30 |
| 035T | 14 | 61+42.8 | to 91+47.0 | 0.57 |
| 035T | 14 | 95+73.0 | to 107+27.0 | 0.22 |
| 035T | 14 | 111+53.0 | to 142+13.4 | 0.58 |
| 035T | 14 | 809+00 | to 815+29.8 | 0.12 |
| Application Subtotal | | | | 4.29 |
| PCN 035T Total (X4) | | | | 17.16 Miles |
| 035U | 14EB | 5+85.9 | to 31+52.7 | 0.49 |
| 035U | 14WB | 5+81.7 | to 31+52.7 | 0.49 |
| 035U | 14B | 31+52.7 | to 80+28.7 | 0.92 |
| 035U | 14B | 82+91.4 | to 90+34.9 | 0.14 |
| 035U | 14B | 119+49.3 | to 175+93.9 | 1.07 |
| 035U | 14B | 192+71.5 | to 259+37.2 | 1.26 |
| 035U | 14B | 262+62.9 | to 280+75.3 | 0.34 |
| Application Subtotal | | | | 4.71 |
| PCN 035U Total (X4) | | | | 18.84 Miles |
| 04D3 | I-29 | 900' SB Lane Taper | | 900 Ft |
| 04D3 | I-29 | 900' NB Lane Taper | | 900 Ft |
| Application Subtotal | | | | 1800 Ft |
| PCN 04D3 Total | | | | 1800 Ft |

ITEMIZED LIST FOR TRAFFIC CONTROL IM 0295(39)132 PCN 04D3

| SIGN CODE | DESCRIPTION | CONVENTIONAL ROAD | | | | EXPRESSWAY / INTERSTATE | | | |
|--------------|----------------------------------|-----------------------|-----------|-------------------|-------|-------------------------|-----------|-------------------|-------|
| | | NUMBER | SIGN SIZE | UNITS PER SIGN | UNITS | NUMBER | SIGN SIZE | UNITS PER SIGN | UNITS |
| W4-2 | LEFT or RIGHT LANE ENDS (symbol) | 2 | 48" x 48" | 34 | 68 | 4 | 48" x 48" | 34 | 136 |
| W8-6 | TRUCK CROSSING | | 48" x 48" | 34 | | 4 | 48" x 48" | 34 | |
| W20-1 | ROAD WORK AHEAD | | 48" x 48" | 34 | | 4 | 48" x 48" | 34 | 136 |
| W20-5 | LEFT or RIGHT LANE CLOSED AHEAD | | 48" x 48" | 34 | | 4 | 48" x 48" | 34 | 136 |
| G20-2 | END ROAD WORK | | 36" x 18" | 17 | | 2 | 48" x 24" | 24 | 48 |
| | | TOTAL UNITS 68 | | | | TOTAL UNITS 456 | | | |

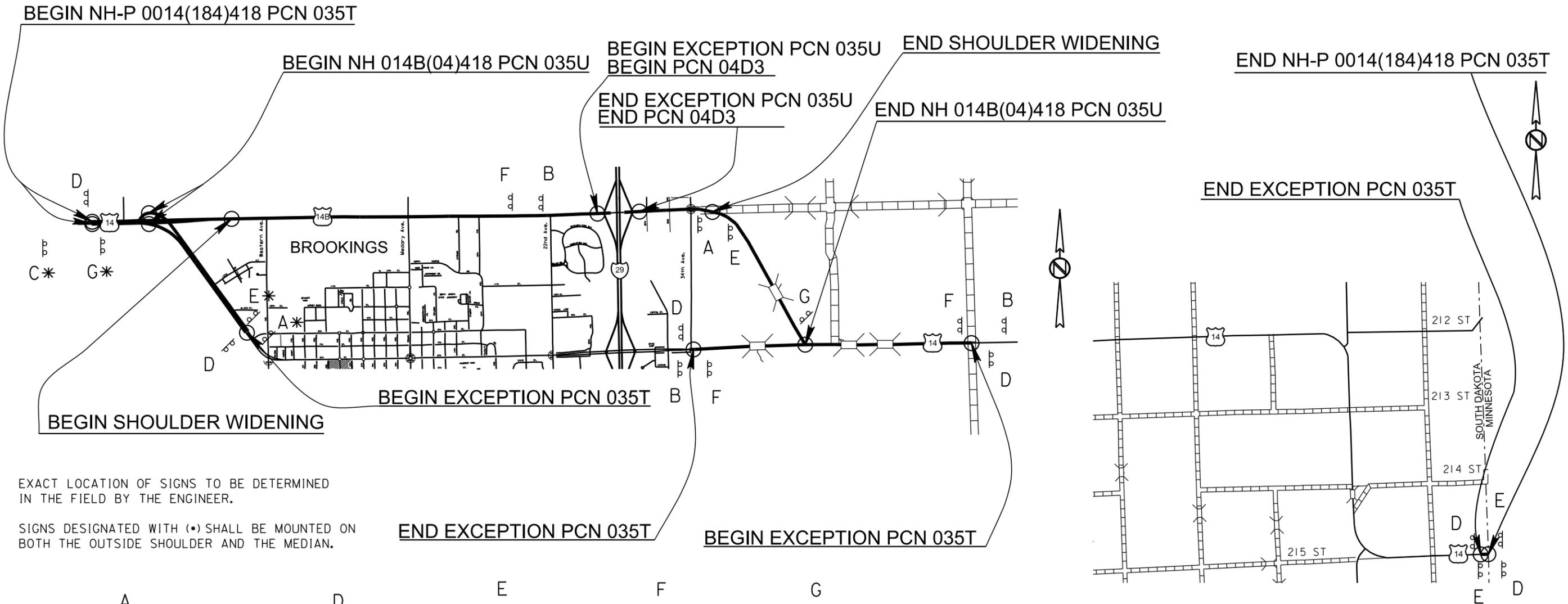
ITEMIZED LIST FOR TRAFFIC CONTROL - NH-P 0014(184)418 PCN 035T

| SIGN CODE | DESCRIPTION | CONVENTIONAL ROAD | | | |
|-------------------------|----------------------------------|-------------------|-----------|-------------------|-------|
| | | NUMBER | SIGN SIZE | UNITS PER SIGN | UNITS |
| W4-2 | LEFT or RIGHT LANE ENDS (symbol) | 4 | 48" x 48" | 34 | 136 |
| W7-3aP | NEXT __ MILES (plaque) | 6 | 36" x 30" | 23 | 138 |
| W8-1 | BUMP | 20 | 48" x 48" | 34 | 680 |
| W8-6 | TRUCK CROSSING | 2 | 48" x 48" | 34 | 68 |
| W8-11 | UNEVEN LANES | 2 | 48" x 48" | 34 | 68 |
| W8-15 | GROOVED PAVEMENT | 6 | 48" x 48" | 34 | 204 |
| W8-15P | MOTORCYCLE SYMBOL | 6 | 24" x 24" | 16 | 96 |
| W13-1P | ADVISORY SPEED (plaque) 30 MPH | 4 | 30" x 30" | 21 | 84 |
| W20-1 | ROAD WORK AHEAD | 4 | 48" x 48" | 34 | 136 |
| W20-4 | ONE LANE ROAD AHEAD | 2 | 48" x 48" | 34 | 68 |
| W20-5 | LEFT or RIGHT LANE CLOSED AHEAD | 4 | 48" x 48" | 34 | 136 |
| W20-7 | FLAGGER (symbol) | 2 | 48" x 48" | 34 | 68 |
| W21-2 | FRESH OIL | 2 | 48" x 48" | 34 | 68 |
| W21-5 | SHOULDER WORK | 2 | 48" x 48" | 34 | 68 |
| G20-1 | ROAD WORK NEXT __ MILES | 6 | 36" x 18" | 17 | 102 |
| G20-2 | END ROAD WORK | 6 | 36" x 18" | 17 | 102 |
| TOTAL UNITS 2222 | | | | | |

ITEMIZED LIST FOR TRAFFIC CONTROL - NH-P 014B(04)418 PCN 035U

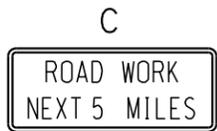
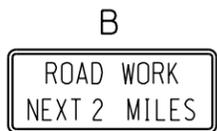
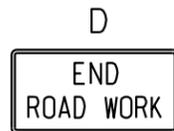
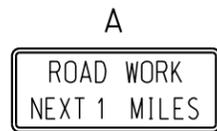
| SIGN CODE | DESCRIPTION | CONVENTIONAL ROAD | | | |
|-------------------------|-------------------------------------|-------------------|-----------|-------------------|-------|
| | | NUMBER | SIGN SIZE | UNITS PER SIGN | UNITS |
| R11-2 | ROAD CLOSED | 1 | 48" x 30" | 27 | 27 |
| W4-2 | LEFT or RIGHT LANE ENDS (symbol) | 4 | 48" x 48" | 34 | 136 |
| W7-3aP | NEXT __ MILES (plaque) | 3 | 36" x 30" | 23 | 69 |
| W8-1 | BUMP | 6 | 48" x 48" | 34 | 204 |
| W8-6 | TRUCK CROSSING | 4 | 48" x 48" | 34 | 136 |
| W8-9 | SHOULDER DROPOFF | 4 | 48" x 48" | 34 | 136 |
| W8-11 | UNEVEN LANES | 2 | 48" x 48" | 34 | 68 |
| W8-15 | GROOVED PAVEMENT | 3 | 48" x 48" | 34 | 102 |
| W8-15P | MOTORCYCLE SYMBOL | 3 | 24" x 24" | 16 | 48 |
| W13-1P | ADVISORY SPEED (plaque) 30 MPH | 6 | 30" x 30" | 21 | 126 |
| W20-1 | ROAD WORK AHEAD | 6 | 48" x 48" | 34 | 204 |
| W20-4 | ONE LANE ROAD AHEAD | 4 | 48" x 48" | 34 | 136 |
| W20-5 | LEFT or RIGHT LANE CLOSED AHEAD | 4 | 48" x 48" | 34 | 136 |
| W20-7 | FLAGGER (symbol) | 4 | 48" x 48" | 34 | 136 |
| W21-2 | FRESH OIL | 2 | 48" x 48" | 34 | 68 |
| W21-5a | LEFT or RIGHT SHOULDER CLOSED | 2 | 48" x 48" | 34 | 68 |
| W21-5b | LEFT or RIGHT SHOULDER CLOSED AHEAD | 2 | 48" x 48" | 34 | 68 |
| G20-1 | ROAD WORK NEXT __ MILES | 2 | 36" x 18" | 17 | 34 |
| - | TYPE 3 BARRICADE - 8' double sided | 3 | | 56 | 168 |
| TOTAL UNITS 2070 | | | | | |

FIXED LOCATION GROUND MOUNTED BREAKAWAY SUPPORT SIGNS



EXACT LOCATION OF SIGNS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

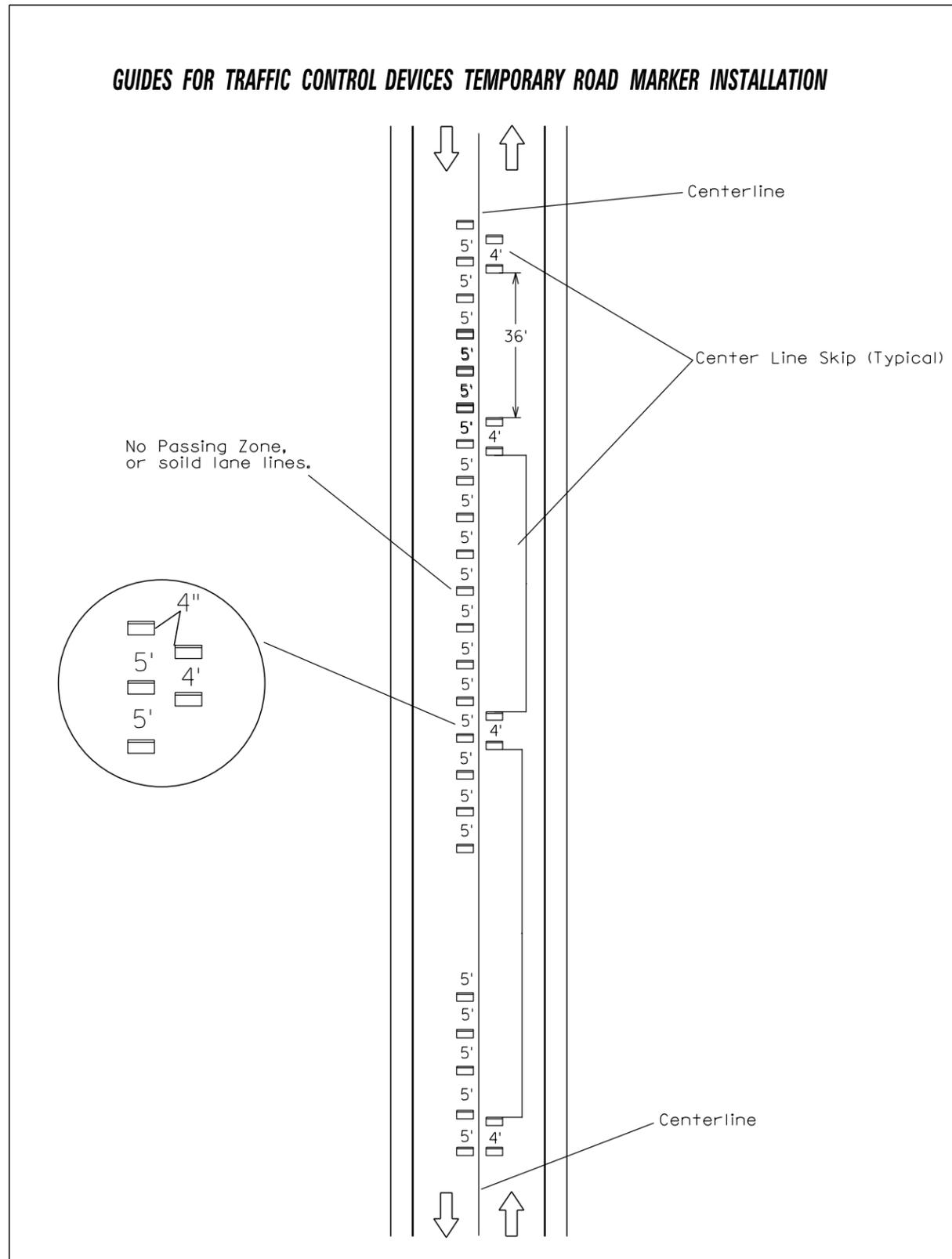
SIGNS DESIGNATED WITH (*) SHALL BE MOUNTED ON BOTH THE OUTSIDE SHOULDER AND THE MEDIAN.



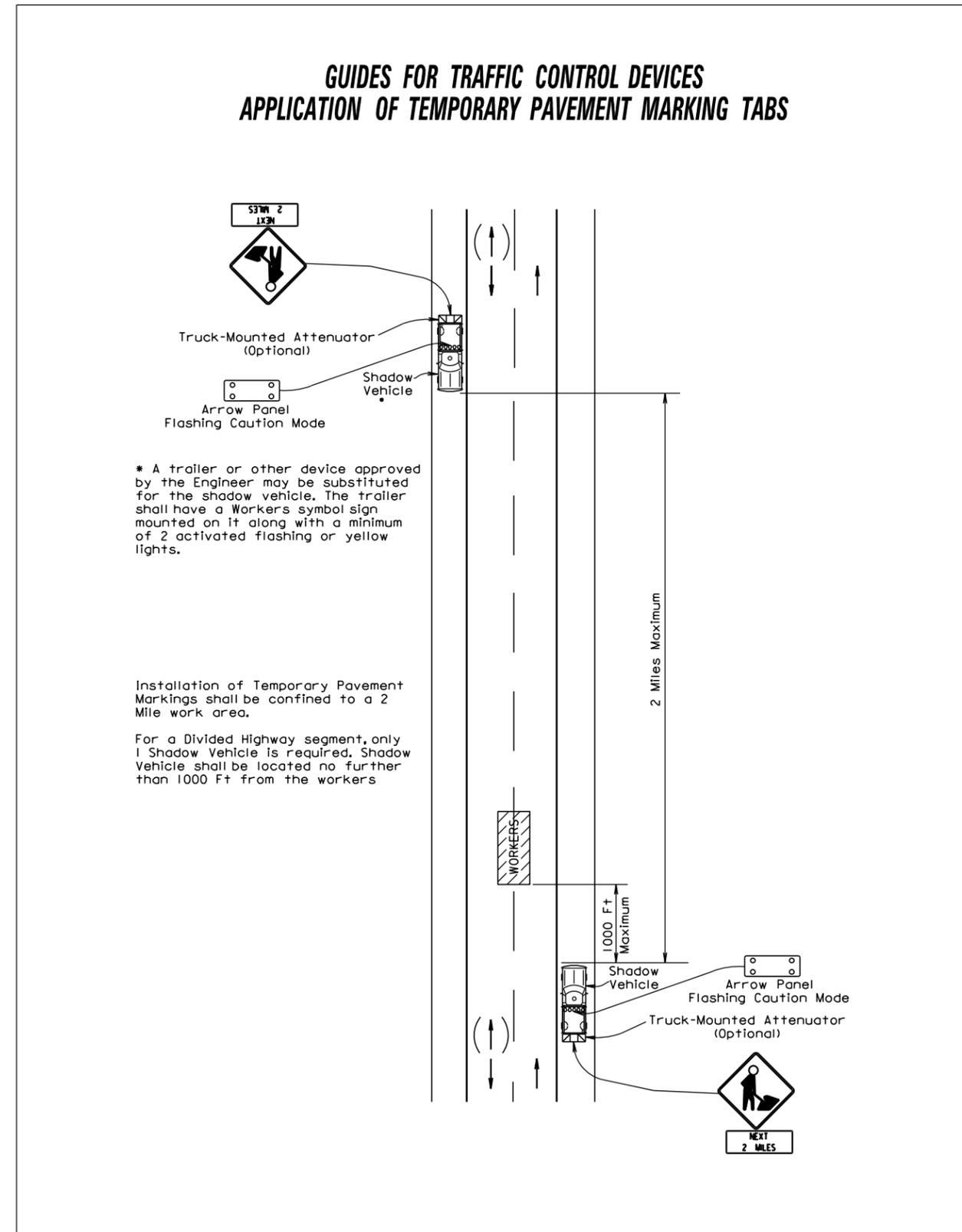
W20-1 ROAD WORK AHEAD signs shall be mounted on portable supports, and shall be placed on intersecting roadways as directed by the Engineer. ROAD WORK AHEAD signs shall be moved as necessary to keep current with the work activities.

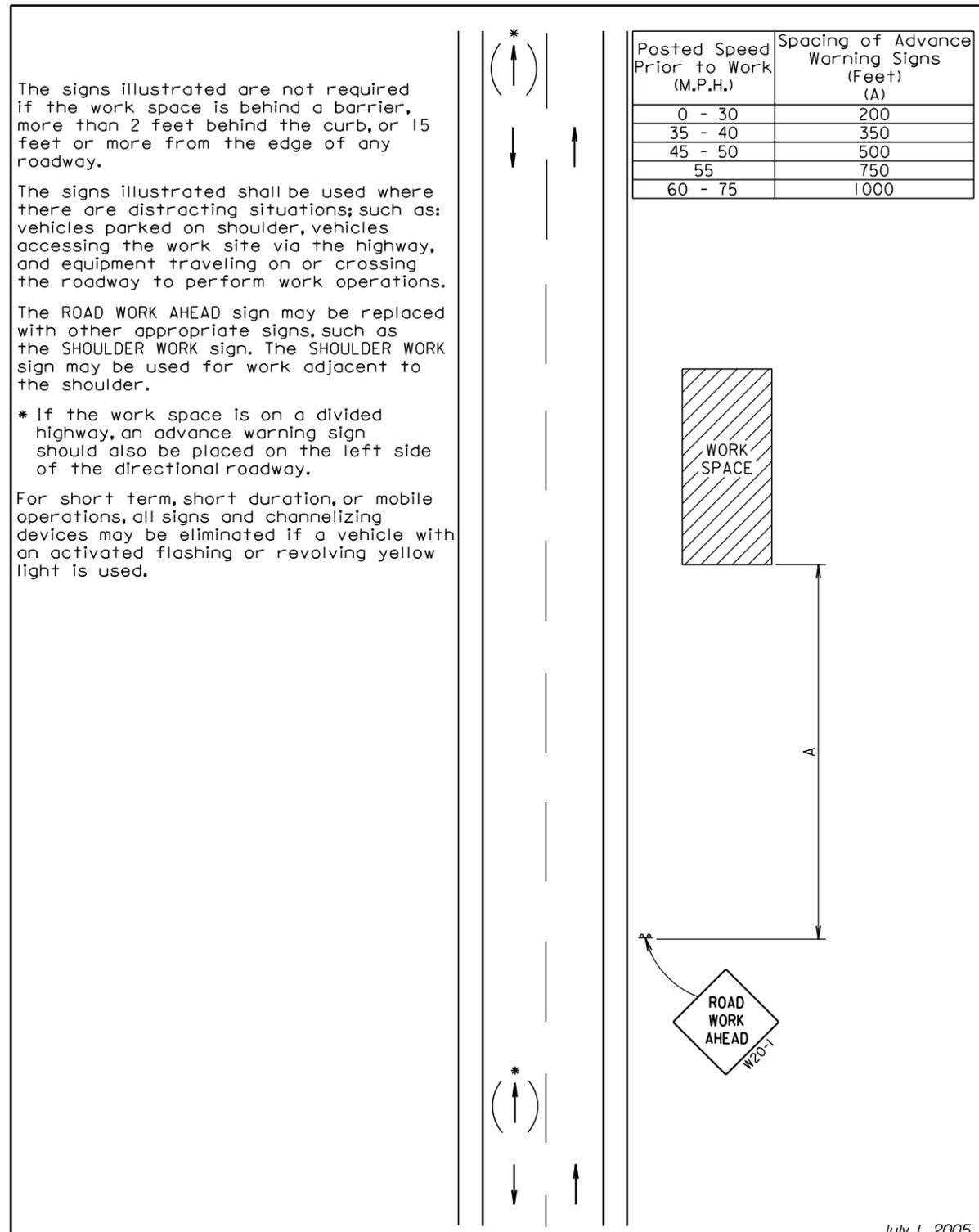
GROOVED PAVEMENT signs shall only be visible when the condition exists. Signs shall be covered or removed when the grooved pavement condition is not present.

GUIDES FOR TRAFFIC CONTROL DEVICES TEMPORARY ROAD MARKER INSTALLATION

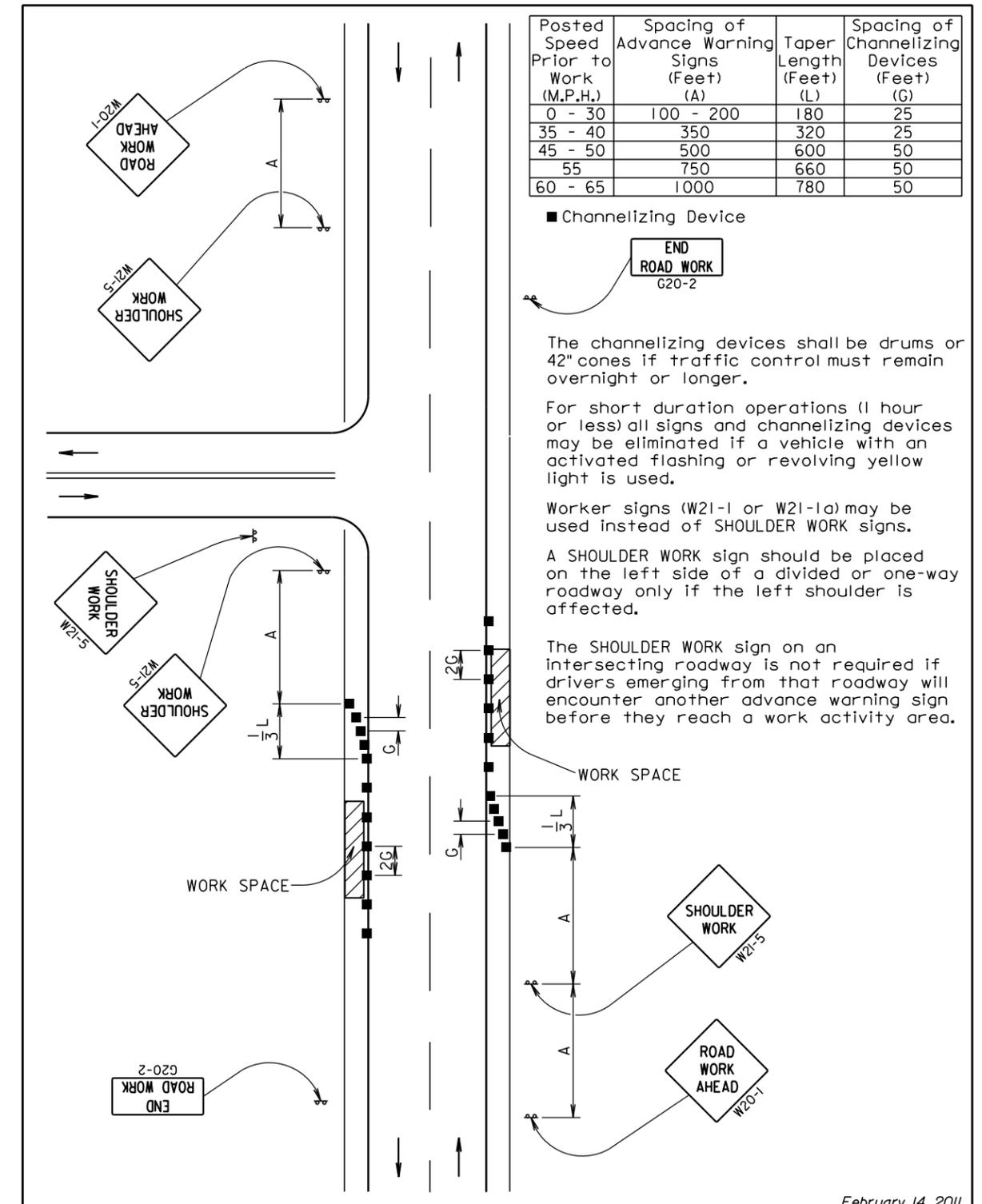


GUIDES FOR TRAFFIC CONTROL DEVICES APPLICATION OF TEMPORARY PAVEMENT MARKING TABS

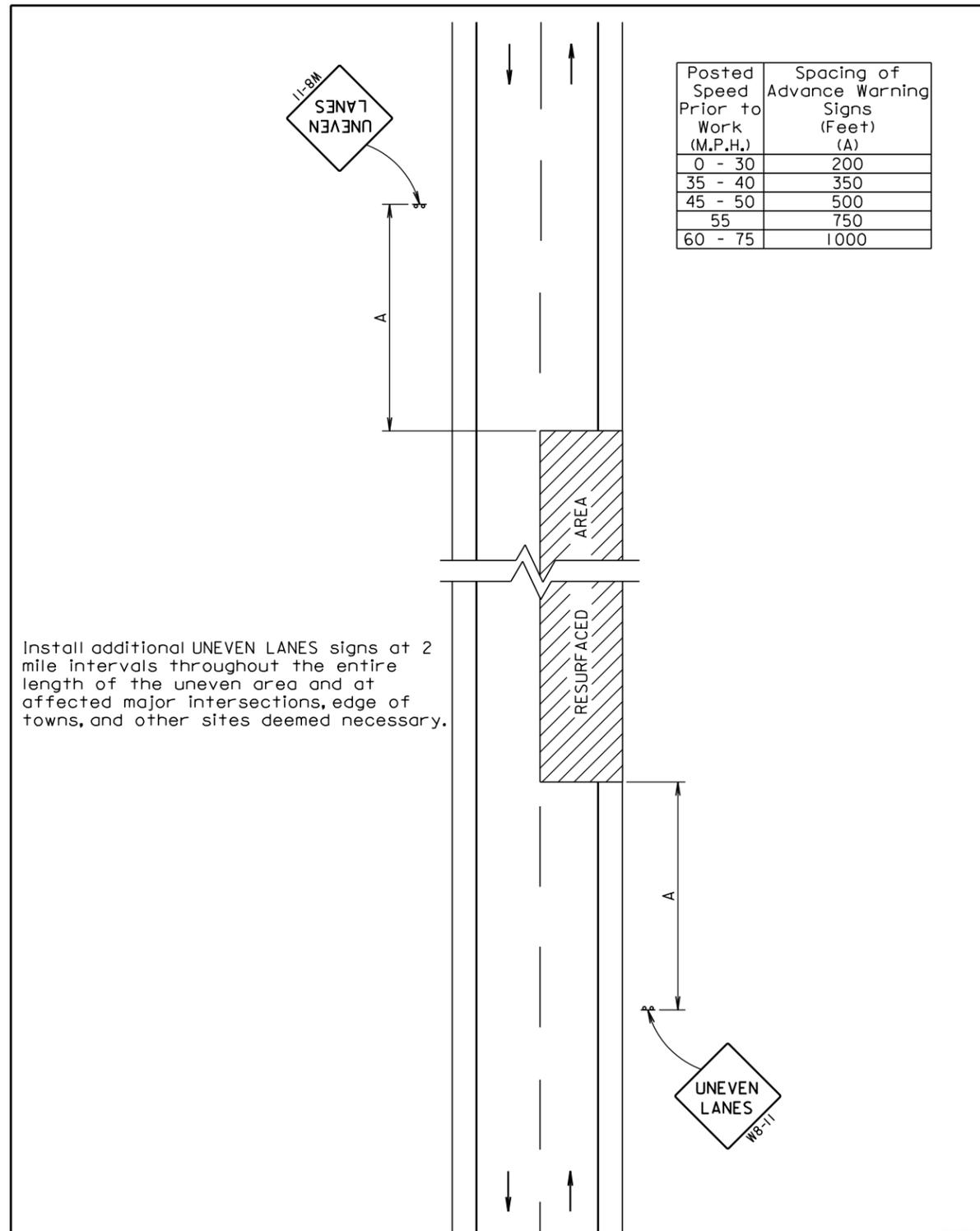




July 1, 2005



February 14, 2011



Install additional UNEVEN LANS signs at 2 mile intervals throughout the entire length of the uneven area and at affected major intersections, edge of towns, and other sites deemed necessary.

July 1, 2005

| Posted Speed Prior to Work (M.P.H.) | Spacing of Advance Warning Signs (Feet) (A) | Spacing of Channelizing Devices (Feet) (C) |
|-------------------------------------|---|--|
| 0 - 30 | 200 | 25 |
| 35 - 40 | 350 | 25 |
| 45 - 50 | 500 | 50 |
| 55 | 750 | 50 |
| 60 - 65 | 1000 | 50 |

- Flagger
- Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) shall be displayed in advance of the liquid asphalt areas.

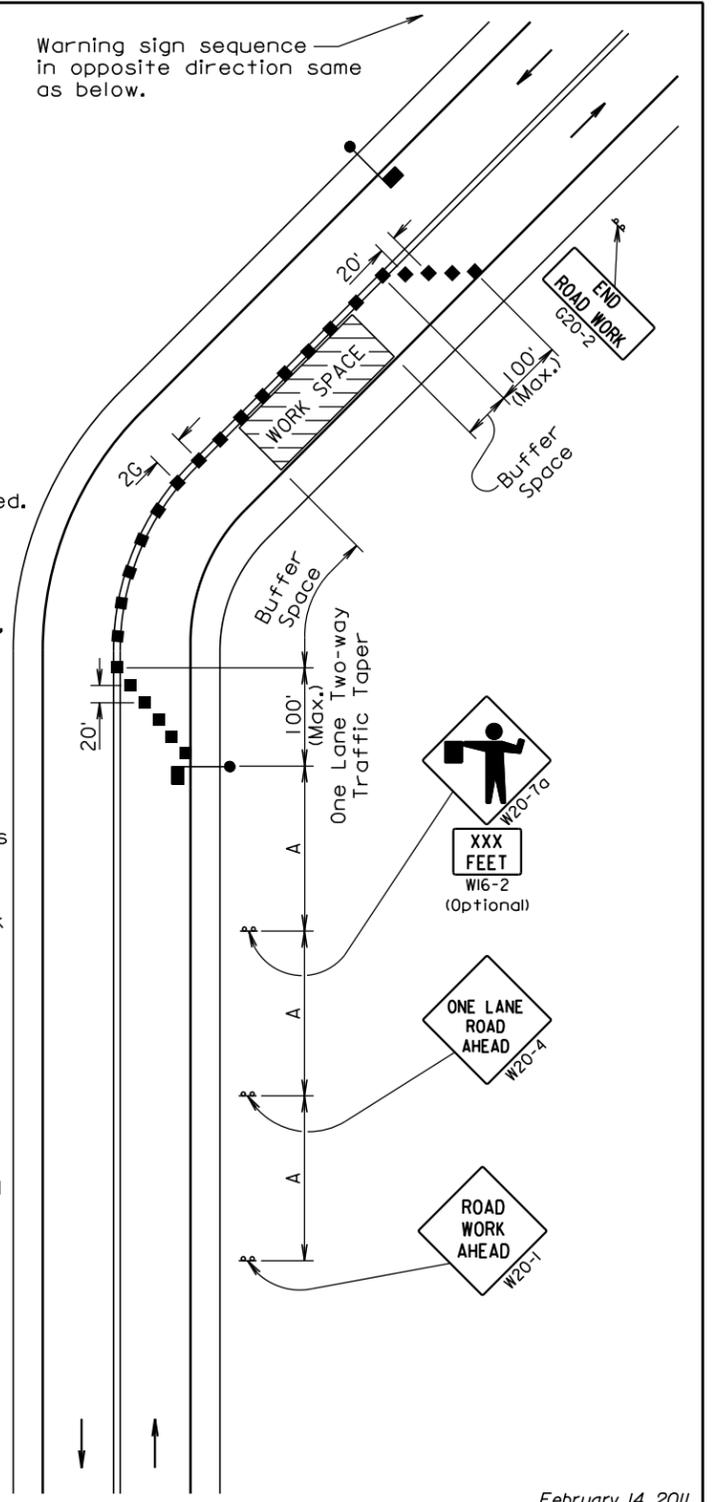
Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

The channelizing devices shall be drums or 42" cones.

Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

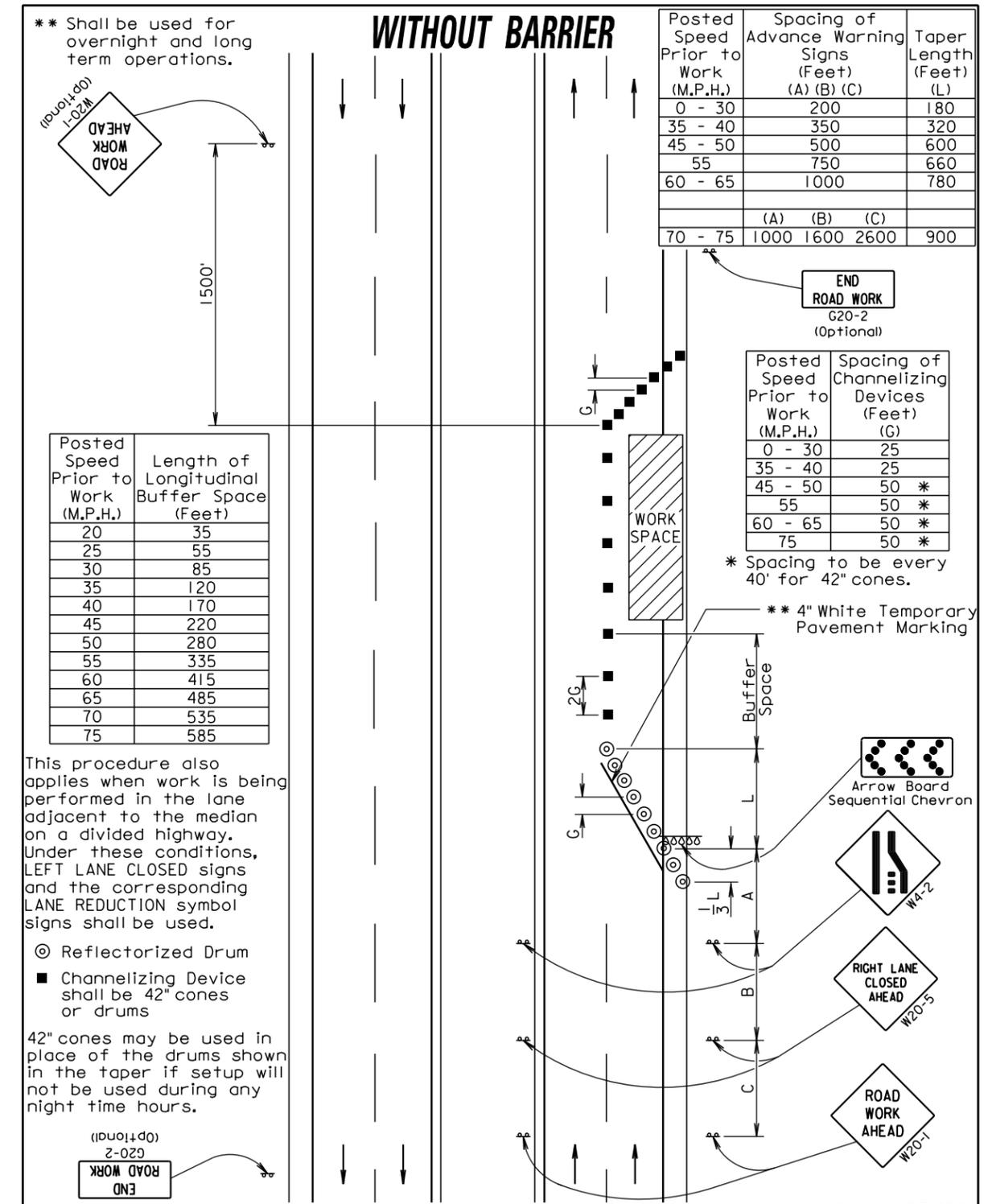
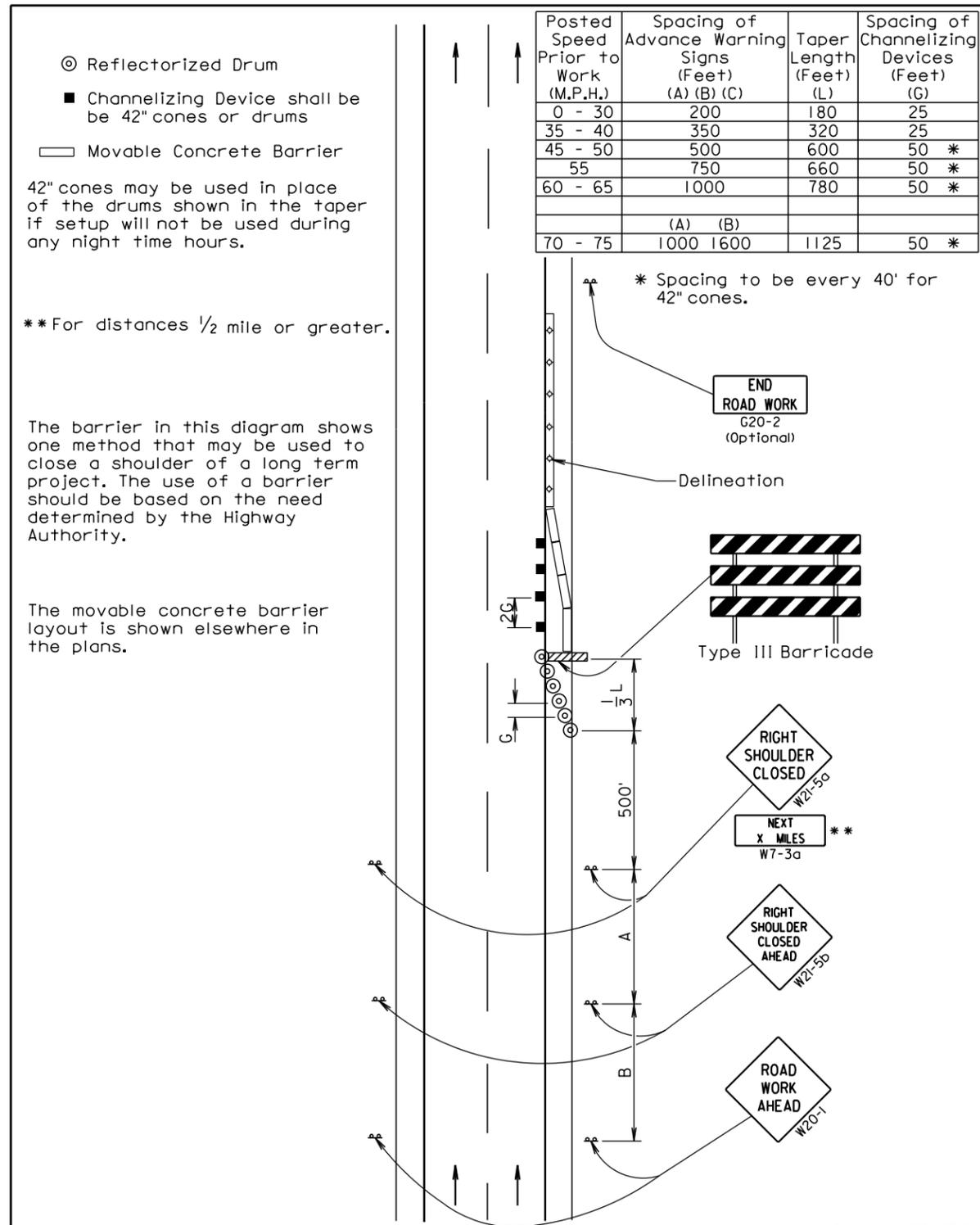
The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

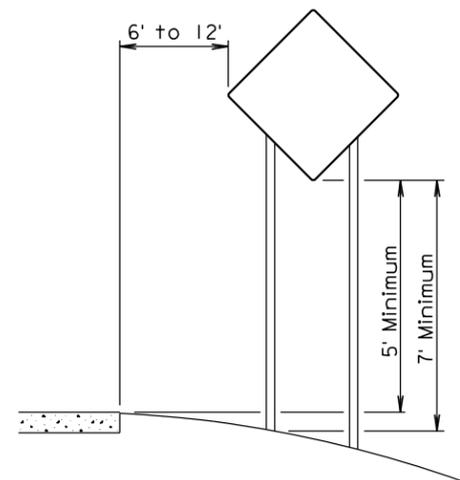


Warning sign sequence in opposite direction same as below.

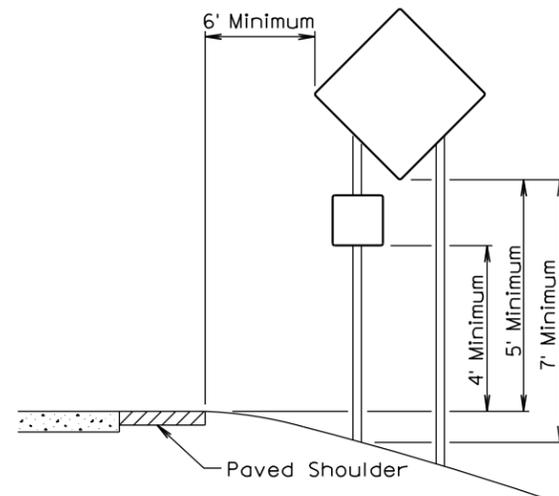
- ROAD WORK G20-2
- END ROAD WORK G20-2
- Buffer Space
- 100' (Max.)
- 20'
- 20'
- 20'
- 100' (Max.)
- One Lane Two-way Traffic Taper
- XXX FEET W16-2 (Optional)
- ONE LANE ROAD AHEAD W20-4
- ROAD WORK AHEAD W20-1

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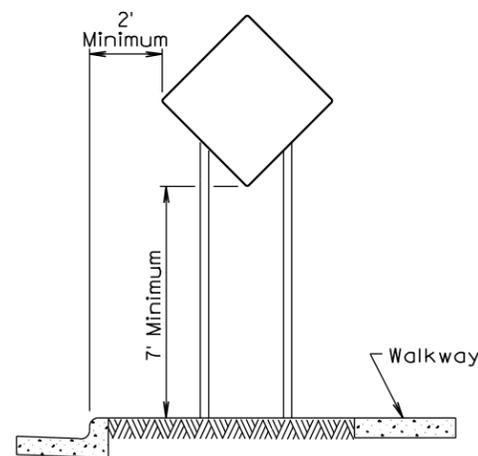




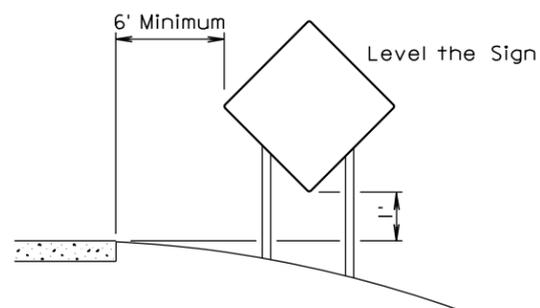
RURAL DISTRICT



RURAL DISTRICT WITH
SUPPLEMENTAL PLATE

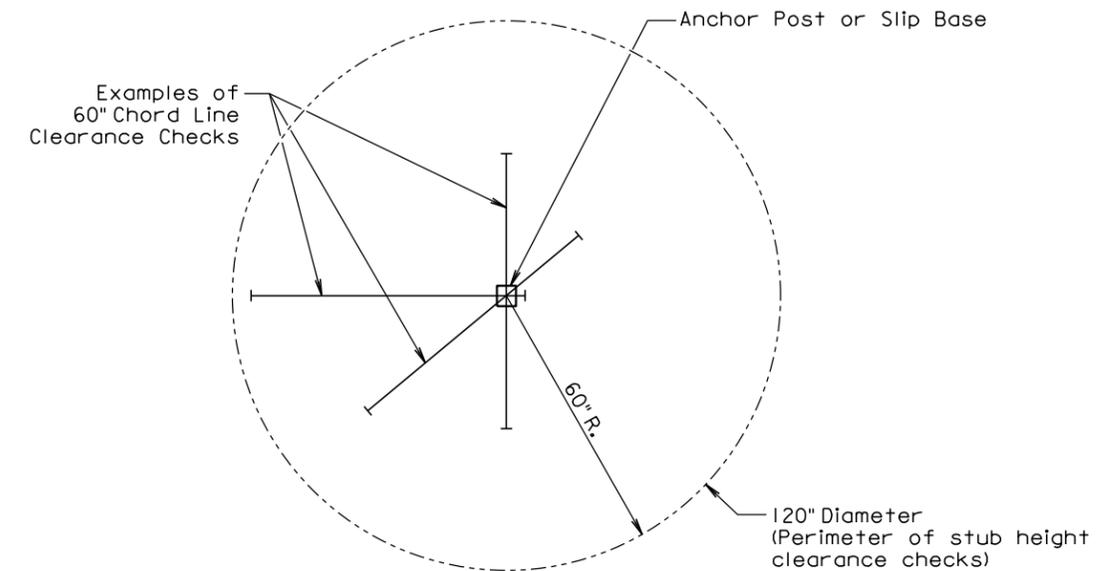


URBAN DISTRICT

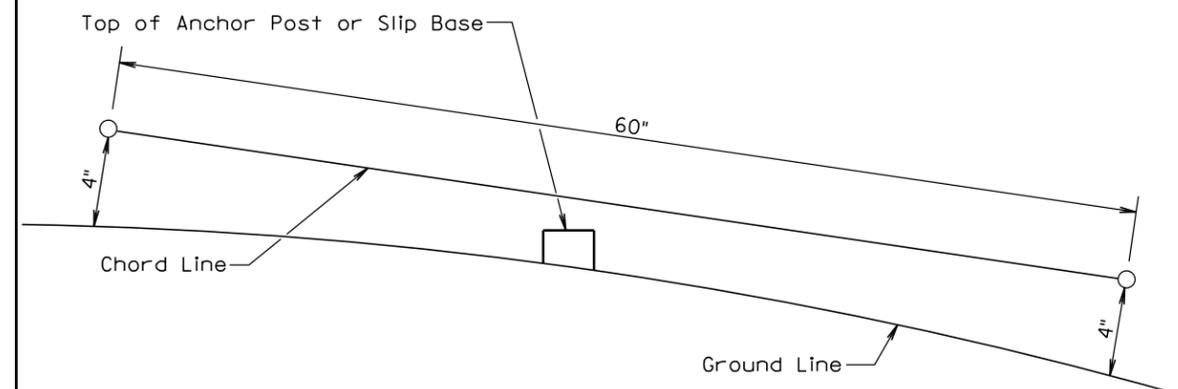


RURAL DISTRICT
3 DAY MAXIMUM

February 14, 2011



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

The top of anchor posts and slip bases SHALL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height shall be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

July 1, 2005