

APPENDIX 7. WORK AREA PROTECTION AND TRAFFIC CONTROL MANUAL

This Appendix contains the entirety of the Work Area Protection and Traffic Control Manual referred to in the Initial Study for the Viejo System Project. The document is available for review from the California Public Utilities Commission or Southern California Edison.

Work Area Protection and Traffic Control Manual



California Joint Utility Traffic Control Committee



Southern California
Gas Company



An Enova Company



PACIFIC  BELL



An EDISON INTERNATIONAL Company



August, 1999

Table of Contents

| | |
|---|-------|
| Endorsements | 1 |
| Introduction to the Third Edition | 1 |
| California Joint Utility Traffic Control Committee | 1 |
| Public Utilities Code | 2 |
| Objectives | 3 |
| Work Area Planning | 3 |
| Warning and Construction Signs, Guards and Barriers | 4 |
| Leave the Work Area Orderly at End of Work Period | 4 |
| Night Operations | 4 |
| Channelizing Devices | 4 - 5 |
| Use of Flaggers | 6 |
| Flagging Procedures for Traffic Control | 6 |
| Pedestrian Traffic | 7 |
| Bicycle Traffic | 7 |
| Special Considerations | 7 |
| Barricades | 7 |
| Flashing Arrow Signs (FAS) | 8 |
| Regulatory Signs | 9 |
| Warning Signs | 10 |
| Construction Signs | 11 |
| Acceptable Channelization Devices | 12 |
| Drawings, Suburban/Rural Section: | |
| Single Lane Closure - Right Lane | 1 |
| Single Lane Closure - Left Lane | 2 |
| Multi Lane Closure - Right Lanes | 3 |
| Multi Lane Closures - Left lanes | 4 |
| Left Turn Lane Closure | 5 |
| Typical Closing of Half Roadway | 6 |
| Typical Lane Closure with Reversible Control | 7 |
| Work Within Intersection - Left lane/Left turn Lane | 8 |
| Work Within Intersection - Right Lane/Right Turn Lane | 9 |
| Work Beyond Intersection - Left Lane | 10 |
| Work Beyond Intersection - Right Lane | 11 |
| Middle Lane Closure | 12 |
| Work in Center of Road | 13 |
| Edge of Gutter Closure | 14 |
| Drawings, Urban Section: | |
| Intersection Work - Right/Center | 15 |
| Intersection Work - Right/Left | 16 |
| Beyond Intersection - Far Left | 17 |
| Intersection Work - Center | 18 |
| Intersection Work - Right | 19a |
| Intersection Work - Right (reversed) | 19b |
| Intersection Work - Center | 20 |
| Intersection Work - Right/Center | 21 |
| Intersection work - Right | 22 |
| Intersection Work - Far Left/Right | 23 |

| | |
|--|----|
| Half Street Closure - Far Side | 24 |
| Half Street Closure - Near side | 25 |
| Full Street Closure | 26 |
| Full Street Closure - One Way Street | 27 |
| Side Walk Closure | 28 |
| Sidewalk Closure | 29 |
| Sidewalk Closure | 30 |
| Midblock No.1 Lane Closure | 31 |
| Midblock Closure of No.2 Lane and Curb Lane | 32 |
| Midblock Closure for One Direction of Traffic | 33 |
| Midblock Half Street Closure Flagger Control | 34 |
| Midblock No.1 Closures for Both Directions of Traffic..... | 35 |
| Sample Traffic Circulation plan | 36 |

| | |
|--|----|
| Half Street Closure - Far Side | 24 |
| Half Street Closure - Near side | 25 |
| Full Street Closure | 26 |
| Full Street Closure - One Way Street | 27 |
| Side Walk Closure | 28 |
| Sidewalk Closure | 29 |
| Sidewalk Closure | 30 |
| Midblock No.1 Lane Closure | 31 |
| Midblock Closure of No.2 Lane and Curb Lane | 32 |
| Midblock Closure for One Direction of Traffic | 33 |
| Midblock Half Street Closure Flagger Control | 34 |
| Midblock No.1 Closures for Both Directions of Traffic..... | 35 |
| Sample Traffic Circulation plan | 36 |

ENDORSEMENTS

I have reviewed the Work Area Protection and Traffic Control Manual which meets and in some cases exceeds the basic standards per section 21400 of the California Vehicle Code.

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I have reviewed the Manual prepared by the California Joint Utility Traffic Control Committee and am pleased to endorse it.

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Introduction to the Third Edition

The Traffic Control Plans and associated text depicted in this Manual conform with the Federal Department of Transportation (D.O.T.), Chapter 5 of the State of California Manual of Traffic Controls.

adjacent to, a roadway to install and maintain such devices which are necessary to provide safe passage for the traveling public through the work area and for the safety of the workers.

This manual is coordinated and prepared by the California Joint Utility Traffic Control Committee and Forkert Engineering, a professionally licensed engineering firm. It provides the basic standards for the safe movement of traffic upon highways or streets in accordance with Section 21400 of the California Vehicle Code. Traffic control includes safe protection for the public, motorist, cyclist, pedestrian and worker. It is the responsibility of the contractor or organization performing work on , or

This text is not intended to establish or create a legal standard. The criteria for the position, location, manner of installation, and the use of such signs, lights and devices are furnished solely for the purpose of information and guidance. This manual will be updated as required to conform with the changes in the Federal D.O.T., and Caltrans. When working on State Highways in California, refer to the Caltrans handbook and use the existing encroachment permit processes.

California Joint Utility Traffic Control Committee;

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Public Utilities Code

Pacific Bell, General Telephone, and AT&T as telephone utilities, have been granted by the State the right to use public streets. This grant, known as the state franchise is found in Section 7901 of the California Public Utilities Code. Section 7901 provides that:

"Telegraph or telephone corporations may construct lines of telegraph or telephone lines along and upon any public road or highway, along or across any of the waters or lands within this State, and may erect poles, posts, piers, or abutments for supporting the insulators, wires, and other necessary fixtures of their lines, in such manner and at such points as not to incommode the public use of the road or highway or interrupt the navigation of the waters."

Cities and counties have granted Southern California Edison, as an electric utility, the right to use public streets. This grant, known as the city or county franchise is found in Section 6265 of the California Public Utilities Code. Section 6265 provides that:

"... and every electric franchise so granted confers upon the grantee thereof the right to use, or to construct and use, poles, wires or conduits and appurtenances for the purpose of transmitting and distributing electricity for all purposes, under, along, across, or upon the public streets, ways, alleys, and places as they now or hereafter exist within the municipality."

San Diego Gas & Electric and Pacific Gas & Electric Companies, as electric utilities and gas utilities have been granted by cities and counties the right to use public streets. This grant, known as the city or county franchise is found in Section 6265 of the California Public Utilities Code. Section 6265 provides that:

"Every gas franchise granted pursuant to this chapter confers upon the grantee the right to use, or to lay and use, gas pipes and appurtenances for the purpose of transmitting and distributing gas, every oil franchise so granted confers upon the grantee thereof the right to use, or lay and use, oil pipes and appurtenances for the purpose of transmitting and distributing oil or products thereof;

every industrial gas franchise so granted confers upon the grantee the right to use, or lay and use, industrial gas pipelines and appurtenances for the purpose of transmitting and distributing industrial gas;... and every electric franchise so granted confers upon the grantee thereof the right to use, or to construct and use, poles, wires or conduits and appurtenances for the purpose of transmitting and distributing electricity for all purposes, under, along, across, or upon the public streets, ways, alleys, and places as they now or hereafter exist within the municipality."

The cities and counties have granted Southern California Gas Company, as a gas utility, the right to use public streets. This grant, known as a city or county franchise, is found in Section 6265 of the California Public Utilities Code. Section 6265 provides that:

"Every gas franchise granted pursuant to this chapter confers upon the grantee the right to use, or to lay and use, gas pipes and appurtenances for the purpose of transmitting and distributing gas, every oil franchise so granted confers upon the grantee thereof the right to use, or lay and use, oil pipes and appurtenances for the purpose of transmitting and distributing oil or products thereof, every industrial gas franchise so granted confers upon the grantee the right to use, or lay and use, industrial gas pipelines and appurtenances for the purpose of transmitting and distributing industrial gas;...

The Department of Water and Power of the City of Los Angeles, as an electric and water public utility, owned and operated by a municipal corporation has been granted the right to use the public streets by Section 10101 of the California Public Utilities Code, which provides that;

"There is granted to every municipal corporation of the state the right to construct, operate and maintain water... pipes, mains and conduits, electric light and power lines..., all with the necessary appurtenances, across, along, in, under, over, or upon any road, street, alley, avenue, or highway".

Objectives

Provide:

1. Safety protection for the public, motorist, cyclist and pedestrian.
2. Safety protection for utility employees, their contractors and equipment.
3. Safe access for police, fire and rescue vehicles.
4. Guidelines for safe, effective work areas; and warn, control, protect and expedite vehicular and pedestrian traffic.
5. Traffic control guidelines provide for the basic principles that govern the design and usage of warning signs, lights and devices placed upon any public roadway or street.

Offers metric solutions to traffic control planning and set-up. All metric conversion charts meet or exceed the English equivalent.

Work Area Planning

Work should be planned in advance, to permit employees and equipment to safely move into position, accomplish the job in a safe and skillful manner and move out of the area as soon as possible upon completion.

Drivers must be able to see warning signs far enough in advance to slow their vehicles to a safe speed.

Where physical conditions are such that hills, curves, buildings, vegetation, etc., reduce or obscure driver view, additional precautions become necessary. Oncoming traffic should be alerted to potential hazards by the suitable use of signs, flaggers barricades, flags, flashers, or traffic cones, in any combination that will give adequate advance warning and that will channel traffic according to the predetermined plan.

Under conditions of severely restricted visibility, a second "Road Work Ahead" sign, spaced in accordance with the speed/distance table, is advised.

The employee in charge must review and advise the workers on how to set up, maintain and remove the traffic control devices.

In planning for the safety of all involved, consider the traveling public and remember:

1. They must be warned sufficiently in advance to allow time to think and react.
2. They must have time to regulate their speed, to allow them to pass through the guidance pattern with safety and ensure an even flow of traffic.
3. The need for decision making must be reduced to a minimum. This can be done with a planned guidance pattern.

A checklist of items to be considered in planning should include the following:

1. Estimated time required to complete the job in order to determine short-term or long-range operations.
2. Volume and speed of traffic.
3. Changes in traffic conditions during the job operation.
4. Local ordinances and permit requirements.
5. Set up shall always start with the advance warning sign and work back to the jobsite.
6. Use of the most effective traffic guidance pattern.
7. Determination of the number and types of safety devices, cones/delineators, signs, flags, flashers, barricades, flashing arrow signs, etc., required for the job.
8. Flaggers, while setting up protection and during the job operation, if required.
9. Effective utilization of utility vehicles for maximum protection.
10. When lanes are to be closed, place the lane

Warning and Construction Signs, Guards and Barriers

Sign sizing:

45 mph (70 Km/h) or greater = 48" (122cm) sign minimum.

40 mph (65 Km/h) or less = 36" (92cm) sign minimum.

- Approved warning signs, barricades, cones / delineators, guards, flags, flares, reflectors and lights at night, shall be installed and properly maintained wherever hazards exist due to moving or stationary vehicles, open excavations, construction and maintenance operations and similar work. Approved equipment and methods for work area protection are displayed in this manual.

- Warning equipment shall be placed so as to provide adequate notice to motorists, cyclists, or pedestrians that they are approaching an excavation, obstruction, or other hazard.

Warning signs shall be removed as soon as the excavation, obstruction, or other hazard is cleared.

Flaggers will be provided where approved signs or barricades do not provide adequate traffic control.

Leave the Work Area Orderly at End of Work Period

Before leaving a work area, it is necessary that approved warning devices be placed to protect motorists and pedestrians.

- Ensure that the area is properly barricaded and that flashing lights, where required, are functioning satisfactorily.
- Make sure that equipment is secured and that the work area is left orderly.

Night Operations

- In order to provide enhanced warning and safety during twilight and night operations, the following steps should be adhered to:

- When the work area is to be illuminated by use of flood lights, the light placement shall be such that the light beams are not hazardous to oncoming traffic.
- All warning signs and cones/delineators shall be illuminated or reflectorized.
- Flashing or rotating amber lights on vehicles may be used when the vehicles are blocking established traffic lanes or for additional work area protection.
- Flaggers must be illuminated, visible to approaching traffic, and wear approved reflectorized garments.

Note: Flares and red emergency reflectors are strictly for emergency situations and must not be used as substitutes for standard work area warning devices. Flares shall not be used in combustible or high fire areas.

Channelizing Devices

- Channelizing devices are elements in a total system of traffic control devices for use in construction and maintenance operations. These elements shall be preceded by a subsystem of warning devices that are adequate in size, number and placement for the type of roadway on which the work is to take place.

Approved channelizing devices shall be used the following purposes:

- To channel and divert traffic in advance of work zones.
- To define traffic lanes through the work zone.
- To define a change in the position of the lanes around the work zones.
- To define curves and the edges of the roadway on detours.
- To separate opposing lanes of traffic.

Correctly positioned cones/delineators provide an excellent guidance path. Improperly positioned cones/delineators only confuse drivers. Spacing of cones/delineators and length of taper with respect to oncoming traffic, shall be in accordance with the following tables.

Table 1: English

| SPEED LIMIT (mph) | SPACING (feet) |
|-------------------|----------------------------|
| 25 or less | 10 or less |
| Over 25 | Posted speed limit or less |

Example: Posted Speed Limit of 45 mph. Spacing not to exceed 45 feet

Table 2: Metric

| SPEED LIMIT (K/m/h) | SPACING (Meters) |
|---------------------|----------------------------|
| 40 km/h or less | 3 or less |
| Over 40 | Posted speed limit or less |

Example: Posted Speed Limit of 70 Km/h. Spacing not to exceed 13.7 meters.

Table 3: English

| Approach Speed mph | Taper Length L Feet | Number of Cones/Delineators for Taper* | Max. Spacing of Cones/Delineators Along Taper Feet |
|--------------------|---------------------|--|--|
| 25 or less | 128 | 6 | 25 |
| 30 | 200 | 7 | 30 |
| 35 | 288 | 8 | 35 |
| 40 | 338 | 9 | 40 |
| 45 | 560 | 13 | 45 |
| 50 | 640 | 13 | 50 |
| 55 | 720 | 20 | 50 |
| 55+ | 1000 | 20 | 50 |

*Based on 12-foot wide lane. This column is also appropriate for lane widths less than 12 feet.

Table 4: Metric

| Approach Speed (km/h) | Taper Length L Meters | Number of Cones/Delineators for Taper* | Max. Spacing of Cones/Delineators Along Taper Meters |
|-----------------------|-----------------------|--|--|
| 40 or less | 40 | 6 | 8 |
| 50 | 60 | 7 | 9 |
| 60 | 90 | 8 | 11 |
| 65 | 100 | 9 | 12 |
| 70 | 170 | 13 | 14 |
| 80 | 195 | 13 | 15 |
| 85 | 220 | 20 | 15 |
| 85+ | 305 | 20 | 15 |

*Based on 3.7 meter wide lane. This column is also appropriate for lane widths less than 3.7 meters.

Spacing of cones/delineators, to define the work area shall never exceed ten feet. (3 meters) Any number of cones/delineators may be used as long as they do not confuse oncoming drivers.

Use of Flaggers

The proper use of flaggers, where circumstances warrant, will not only provide for vehicular traffic, but will also provide protection for employees working in the immediate area to divert the normal flow of traffic.

Flaggers are required as follows:

1. At all locations where warning and control devices cannot adequately control the moving traffic.
2. Where the job requires the use of one lane for two directions of traffic. (One flagger is required for each direction of traffic.)
3. More information at:
<http://www.dot.ca.gov/hq/construc/flagging.html>

Placement and equipment requirements:

1. Flaggers shall be logically placed in relation to the equipment or operation so as to give adequate warning, and shall be stationed approximately 100 feet (30.5m) ahead of the possible impact point.
2. Flaggers shall wear approved warning garments. Reflectorized vests shall be used when flagging at night and the flaggers must be illuminated and visible to approaching traffic.
3. The warning sign, 0-9 or C-9a, "Flagman Ahead" shall be placed ahead of the flagger. The distance between the sign and the flagger should be based on the average traffic speed allowing approximately 100 feet (30.5m) for each ten miles per hour.
4. Flaggers shall be trained in the proper fundamentals of flagging traffic before being assigned as a flagger.
5. Radios or other positive communications shall be used by flaggers who are not in visual contact with each other.
6. Flagging procedures and all signs and equipment comply with the Federal D.O.T., State of California Manual of Traffic Controls for Construction and Maintenance Work Zones.

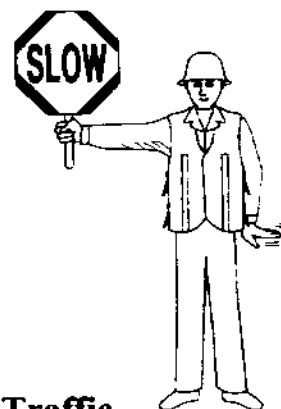
Flagging Procedures for Traffic Control

Flagging procedures for traffic control shall be in accordance with the following illustrations. Where flaggers are required, the Stop/Slow paddle shall be used.



To Stop Traffic

Hold the STOP paddle in a stationary position with the arm extended horizontally away from the body. The free arm should be raised with palm facing approaching traffic.



To Alert or Slow Traffic

Hold the SLOW paddle in a stationary position with the arm extended horizontally away from the body. The free arm should be raised and lowered slowly with the palm down.



To Direct Traffic to proceed

Hold SLOW paddle at arm's length and motion with the free hand for traffic to proceed.

Pedestrian Traffic

When the work area encroaches upon a sidewalk, walkway, or crosswalk area, adequate protection for the safety of pedestrians must be provided.

1. Barricades and cones/delineators may be used advantageously in defining pedestrian walkways.
2. Protect against any condition which would create a tripping, falling or slipping hazard.
3. When overhead work is being performed, pedestrian passage area below must be rerouted or protected.
4. A minimum walkway width of 48" (122cm) must be maintained at all times for safe passage through the work area.

Bicycle Traffic

1. Whenever possible, maintain bicycle lanes.
2. Provide bicycle warning signs where appropriate.

Special Considerations

1. Where physical conditions are such that hills, curves, buildings, vegetation, etc., reduce or obscure driver view, additional precautions become necessary. Oncoming traffic should be alerted to potential hazards by the suitable use of signs, flaggers, barricades, flags, flashers, or traffic cones.
2. Whenever possible, maintain ingress and egress for private property.

3. In cases of vital services such as hospitals, police stations, fire stations, ingress and egress shall be maintained at all times.
4. Closely spaced intersections also require special consideration for sign and delineator spacing (refer to drawings 6, 7, 10, and 11). Plan view drawings may be used individually or in combination.

Barricades

The function of barricades is to separate the motorist from objects or unusual situations created by construction or maintenance activities in or near the traveled way. Barricades should not be used to guide motorists through the transition or work zones.

The barricade would not be used where a collision with the barricade would be more severe than a collision with the object being separated. At such locations, cones/delineators, or other less rigid devices should be used.¹

Barricade design:

Barricades for vehicular traffic shall be of three types: Type I, Type II and Type III.

Markings for barricade rails shall be alternate orange and white stripes sloping downward at an angle of 45 degrees. The entire area of orange and white shall be effectively reflectorized. The predominant color for other barricade components shall be white.

¹ On 8/28/98 the FHWA concurred with an agreement proposed by a task force of the AASHTO to delay implementation of certain safety hardware, including many work zone traffic control devices and barriers. The compliance dates for purchase of new work zone devices that meet NCHRP Report 350 test and evaluation criteria are;

Category I devices, 10/1/1998

Category II devices, 10/1/2000

Category III devices (attenuators), 10/1/1998

Category III devices (temporary barriers), New units must have tensile and moment resistance after 10/1/2000

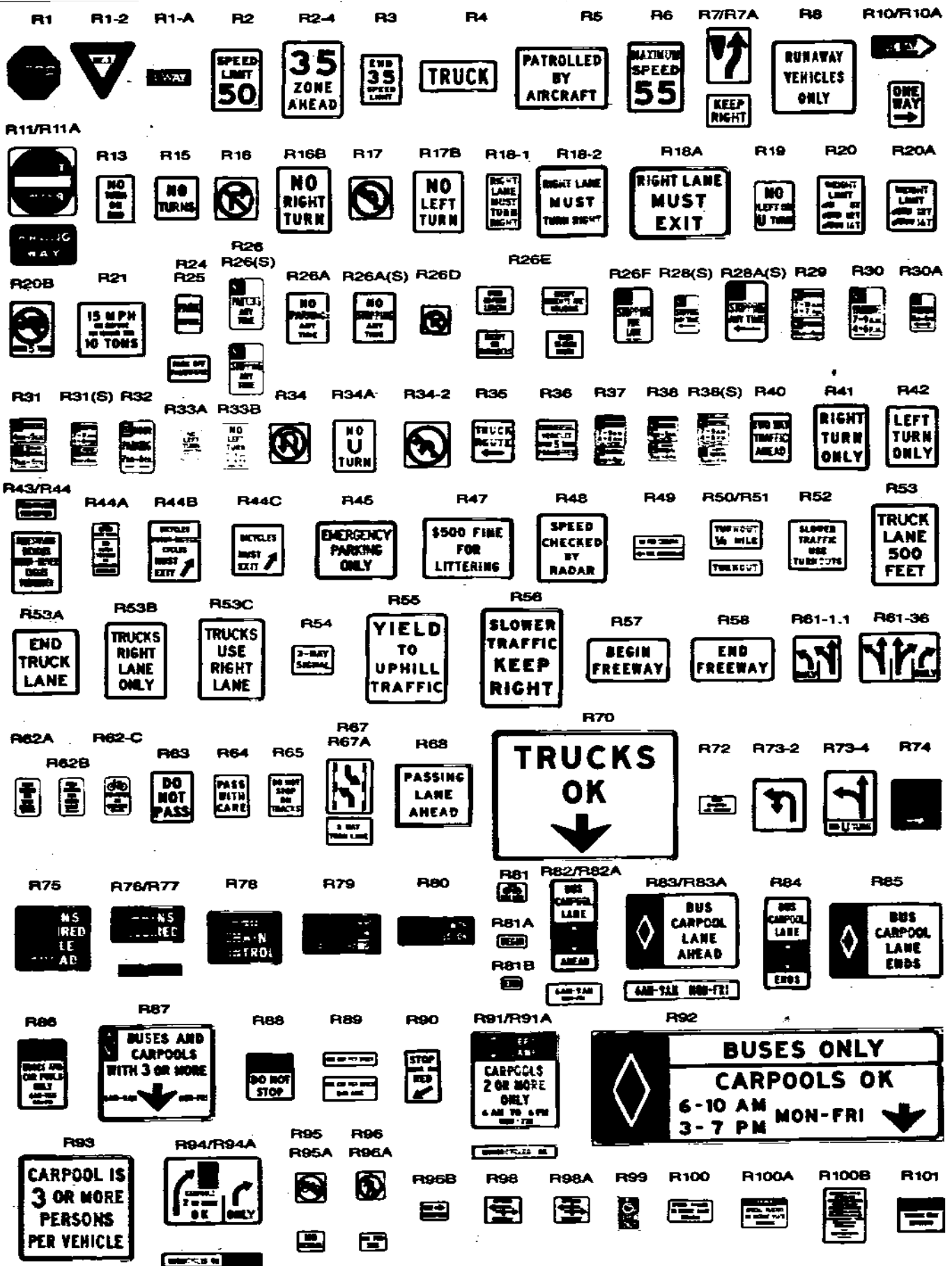
Flashing Arrow Signs (FAS)**Table 5: English**

| Type | Min. Size | Min Number of Panel Lamps | Min Legibility Distance |
|------|-----------|---------------------------|-------------------------|
| A | 24" x 48" | 12 | 1/2 mile |
| II | 36" x 72" | 13 | 3/4 mile |
| I | 48" x 96" | 15 | 1 mile |

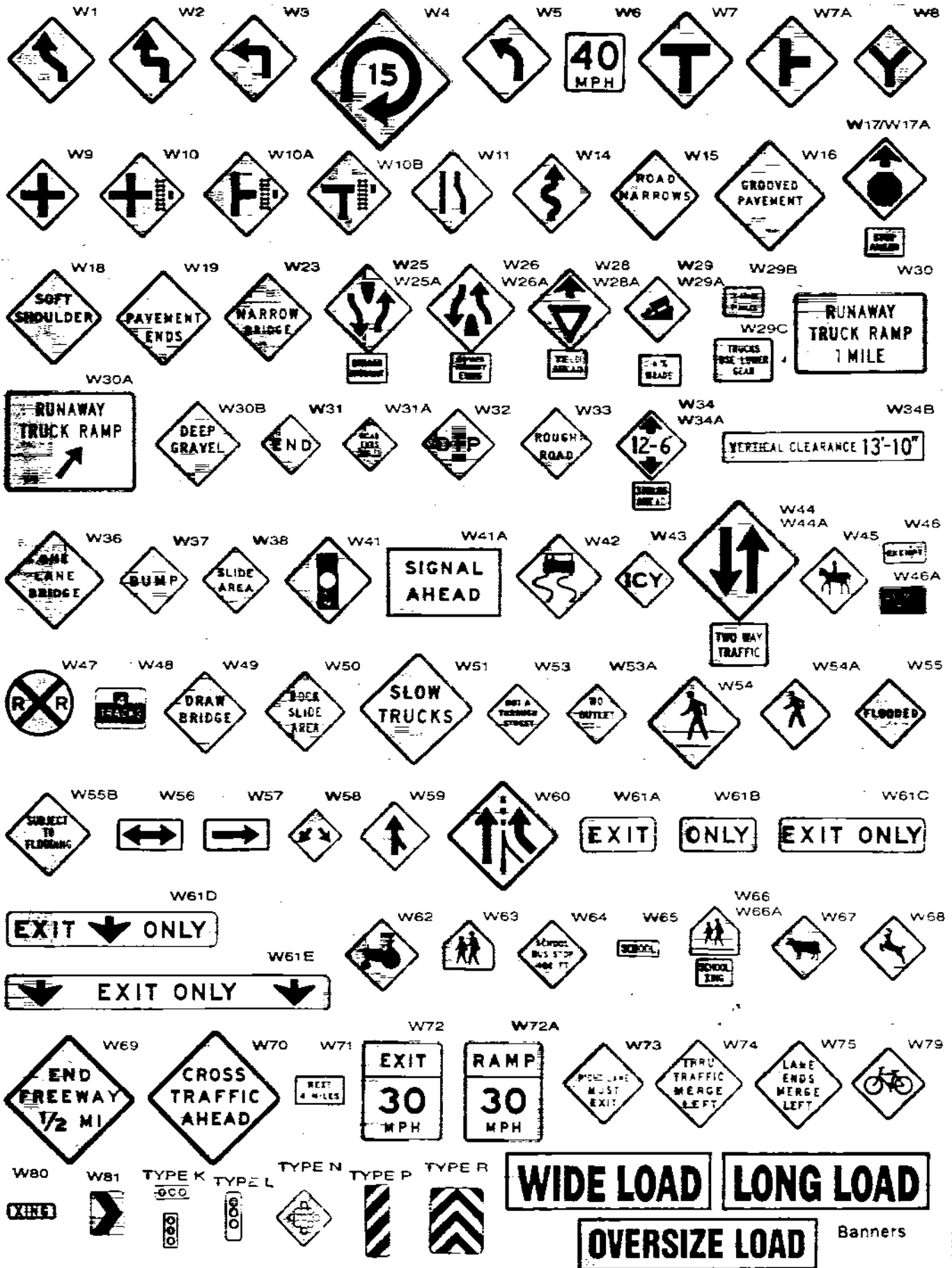
Table 6: Metric

| Type | Min. Size cm | Min Number of Panel Lamps | Min Legibility Distance Km |
|------|--------------|---------------------------|----------------------------|
| A | 61 x 122 | 12 | .80 |
| II | 92 x 183 | 13 | 1.21 |
| I | 122 x 244 | 15 | 1.61 |

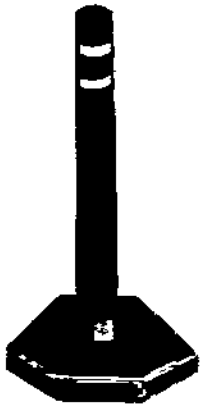
NOTES



Warning Signs

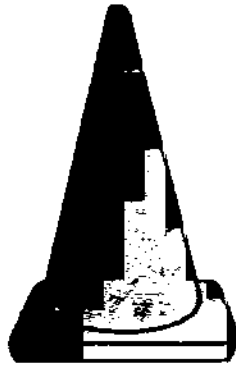


ACCEPTABLE CHANNELIZATION DEVICES



**PORTABLE
DELINEATOR**

24" MINIMUM HEIGHT
61 cm

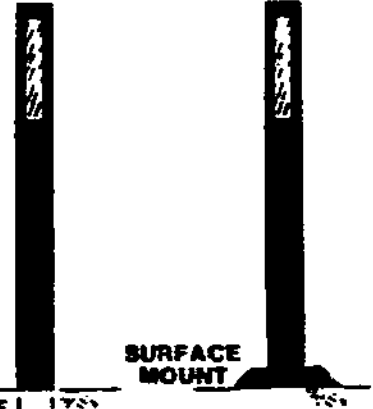


TRAFFIC CONE

24" MINIMUM HEIGHT
61 cm



Reflective
Cone
Sleeve

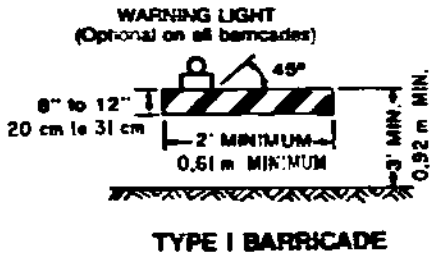


PERMANENT TYPE CHANNELIZER

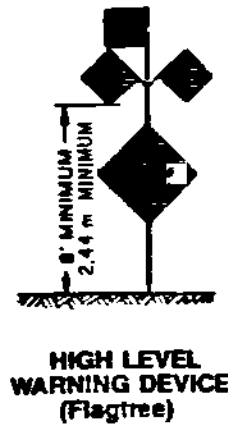
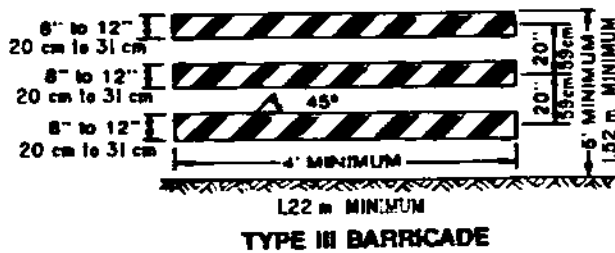
24" MINIMUM HEIGHT
61 cm

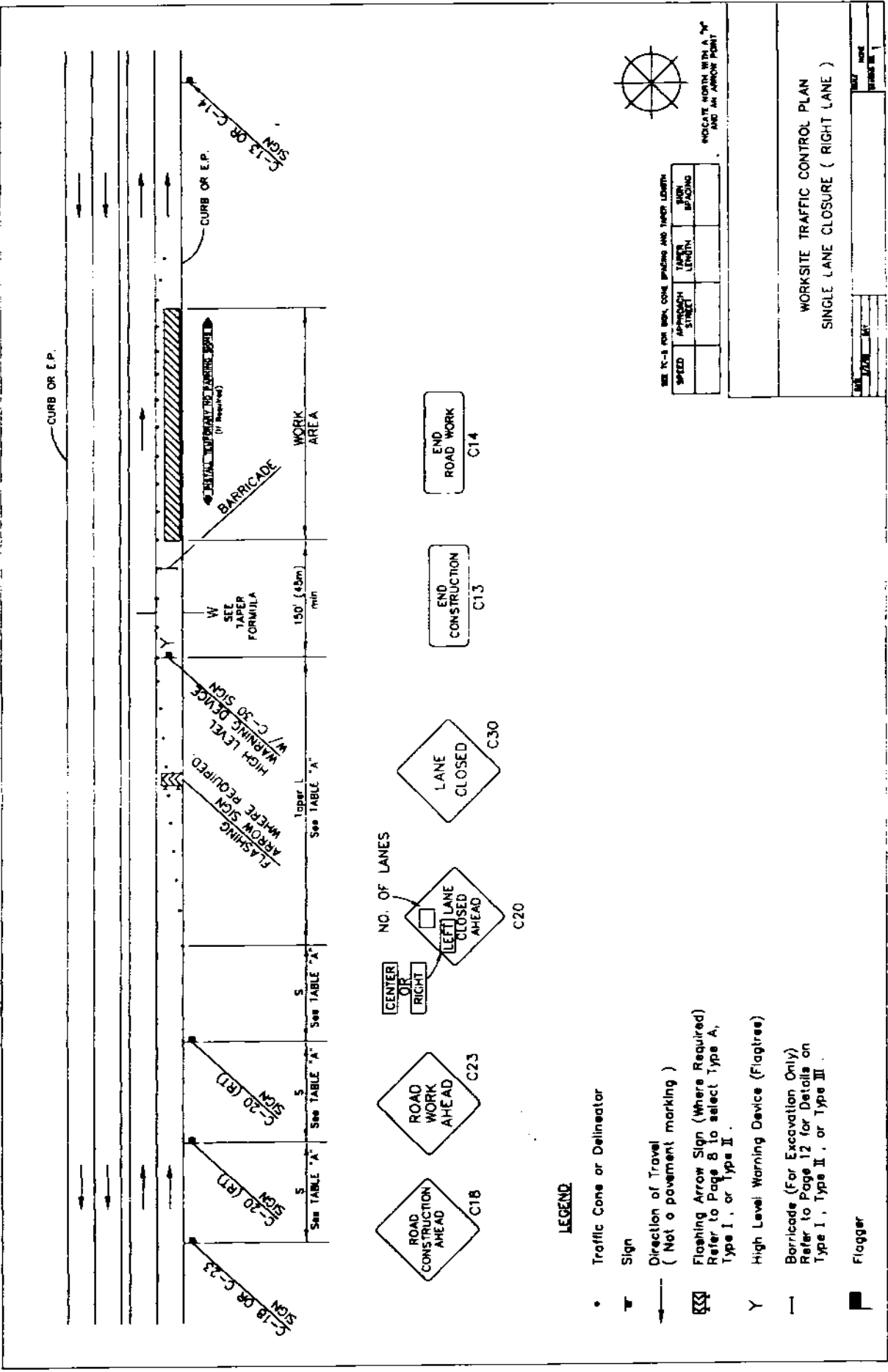
NOTE: REFLECTORIZED MATERIAL FOR THE ABOVE DEVICES SHALL BE WHITE

TYPICAL BARRICADES



Note: Barricades shall have a minimum of 1742 cm² or 270 square inches of retroreflective area facing traffic when used on freeways, expressways, and other high speed highways.





SEE TABLE 'A' FOR SIGN SPACING AND TAPER LENGTHS

| SPEED | APPROACH STREET | TAPER LENGTH | SIGN SPACING |
|-------|-----------------|--------------|--------------|
| | | | |

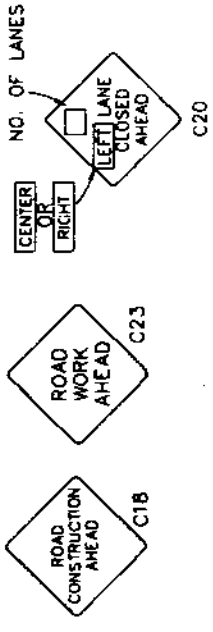
INDICATE NORTH WITH 'N' AND AN ARROW POINT

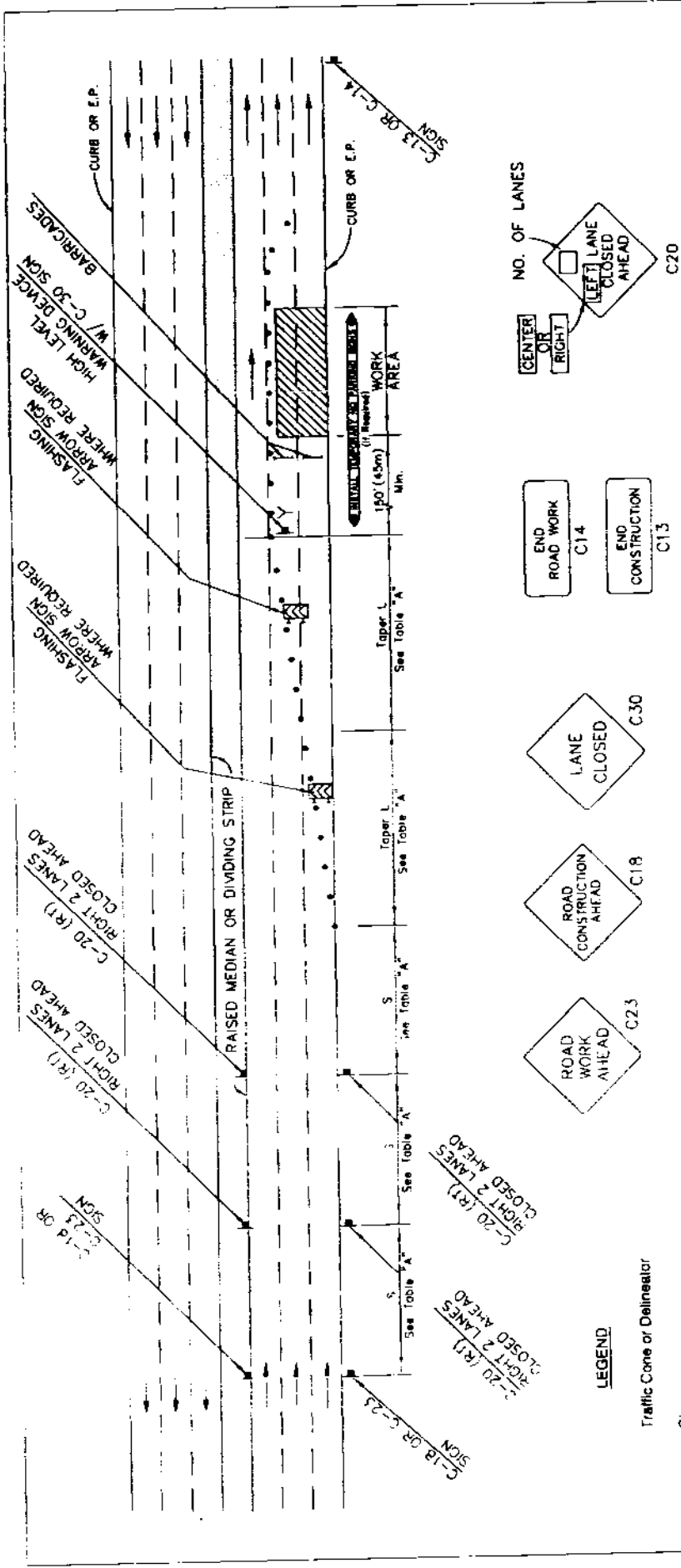
WORKSITE TRAFFIC CONTROL PLAN
SINGLE LANE CLOSURE (RIGHT LANE)

| DATE | TIME | BY | SCALE |
|------|------|----|-------|
| | | | |

LEGEND

- Traffic Cone or Delimitator
- Sign
- Direction of Travel (Not a pavement marking)
- ↔ Flashing Arrow Sign (Where Required) Refer to Page 8 to select Type A, Type I, or Type II.
- Y High Level Warning Device (Flagtree)
- Barricade (For Excavation Only) Refer to Page 12 for Details on Type I, Type II, or Type III.
- ▬ Flagger





LEGEND

- Traffic Cone or Delineator
- Sign
- Direction of Travel
(Not a pavement marking)
- Flashing Arrow Sign (Where Required)
Refer to Page 8 to select Type A, Type I, or Type II.
- High Level Warning Device (Flagtree)
- Barricade (For Excavation Only)
Refer to Page 12 for Details on Type I, Type II, or Type III.
- Flagger

NO. OF LANES

CENTER OR RIGHT

LEFT LANE CLOSED AHEAD C20

END ROAD WORK C14

END CONSTRUCTION C13

LANE CLOSED C30

ROAD CONSTRUCTION AHEAD C18

ROAD WORK AHEAD C23

SEE TABLE FOR SIGN CONE SPACING AND TAPER LENGTH

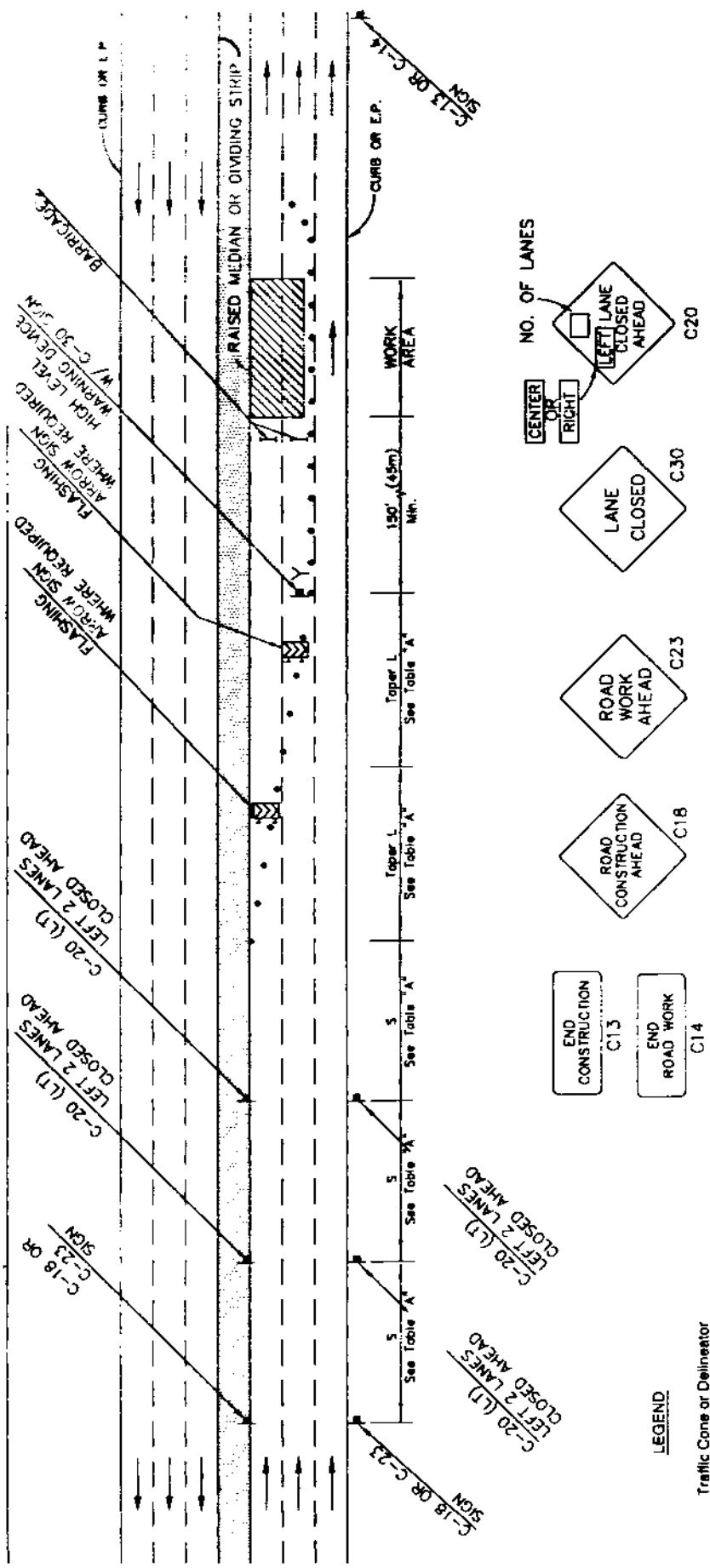
| SPEED | APPROACH STREET | TAPER LENGTH | CONUSING SPACING |
|-------|-----------------|--------------|------------------|
| | | | |

INDICATE NORTH WITH A "N" AND AN ARROW POINT

WORKSITE TRAFFIC CONTROL PLAN

MULTI-LANE CLOSURE (RIGHT LANES)

| DATE | BY | SCALE | REVISION |
|------|----|-------|----------|
| | | | |



LEGEND

- Traffic Cone or Delineator
- Sign
- Direction of Travel (Not a pavement marking)
- Flashing Arrow Sign (Where Required) Refer to Page 8 to select Type A, Type I, or Type II
- High Level Warning Device (Flagpole)
- Barricade (For Excavation Only) Refer to Page 12 for Details on Type I, Type II, or Type III.
- Flagger

INDICATE NORTH WITH A "N" AND AN ARROW POINT

NO. OF LANES

END CONSTRUCTION C13

END ROAD WORK C14

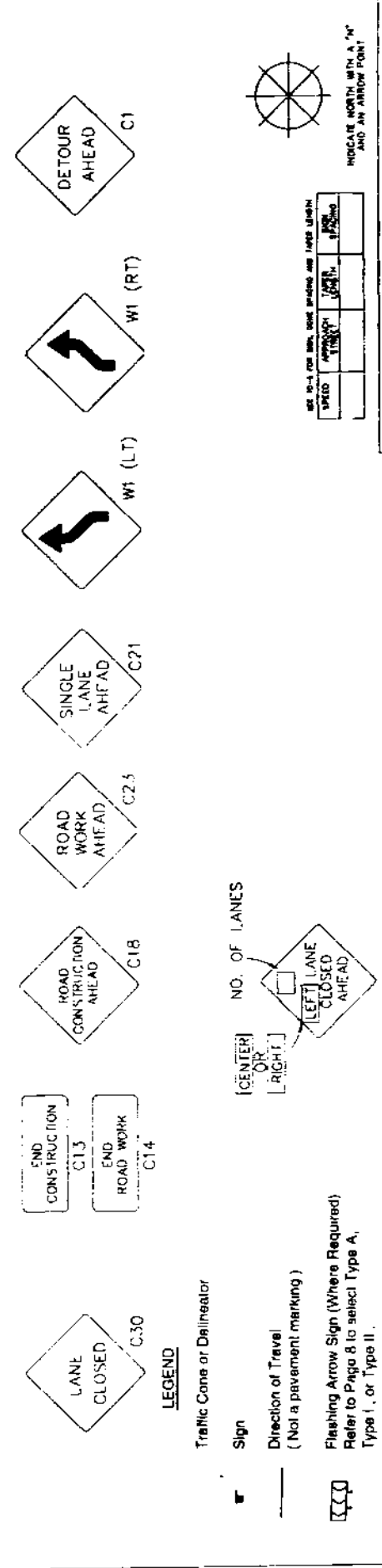
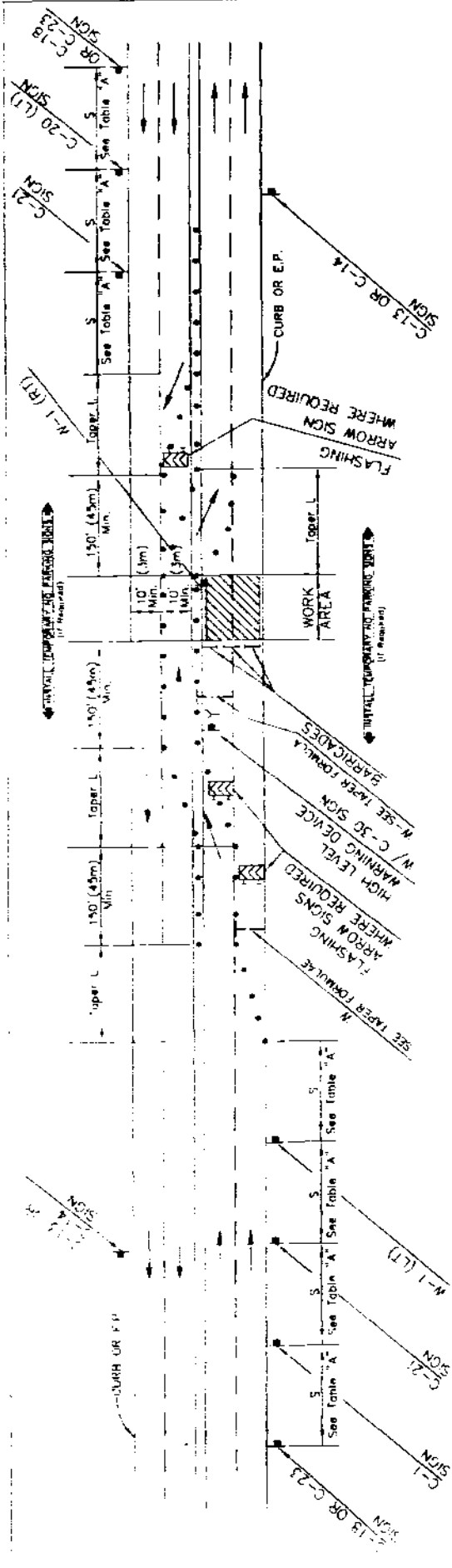
ROAD CONSTRUCTION AHEAD C18

ROAD WORK AHEAD C23

LANE CLOSED C30

LEFT LANE CLOSED AHEAD C20

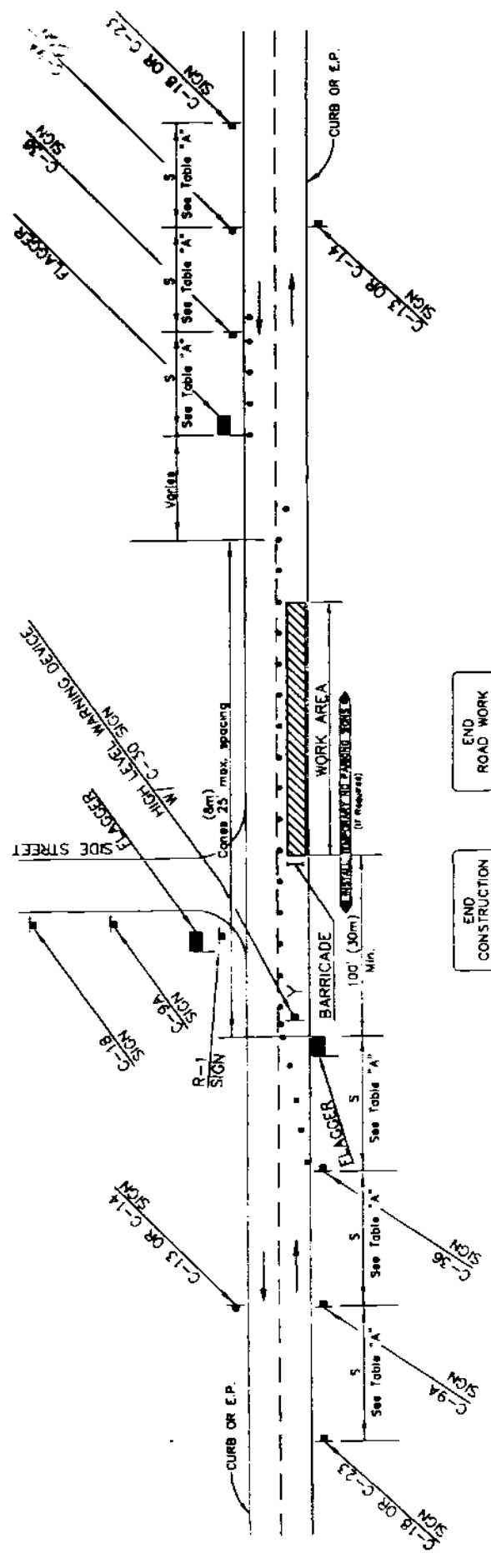
WORKSITE TRAFFIC CONTROL PLAN
MULTI-LANE CLOSURE (LEFT LANES)



INDICATE NORTH WITH A "N" AND AN ARROW POINT

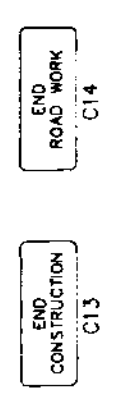
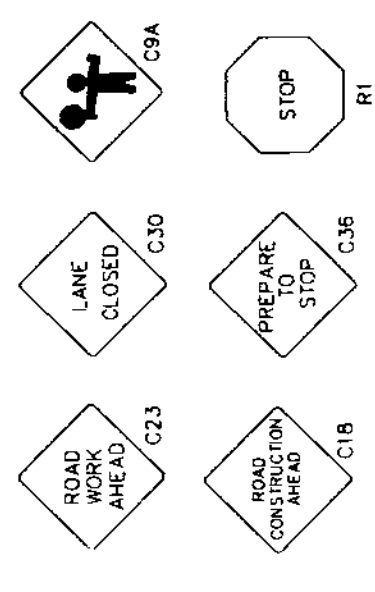
WORKSITE TRAFFIC CONTROL PLAN
TYPICAL CLOSING OF HALF ROADWAY

Sheet No. _____ of 6



LEGEND

- Traffic Cone or Delimitor
- Sign
- Direction of Travel
(Not a pavement marking)
- Flashing Arrow Sign (Where Required)
Refer to Page 8 to select Type A, Type I, or Type II
- High Level Warning Device (Flaglee)
- Barricade (For Excavation Only)
Refer to Page 12 for Details on Type I, Type II, or Type III.
- Flagger

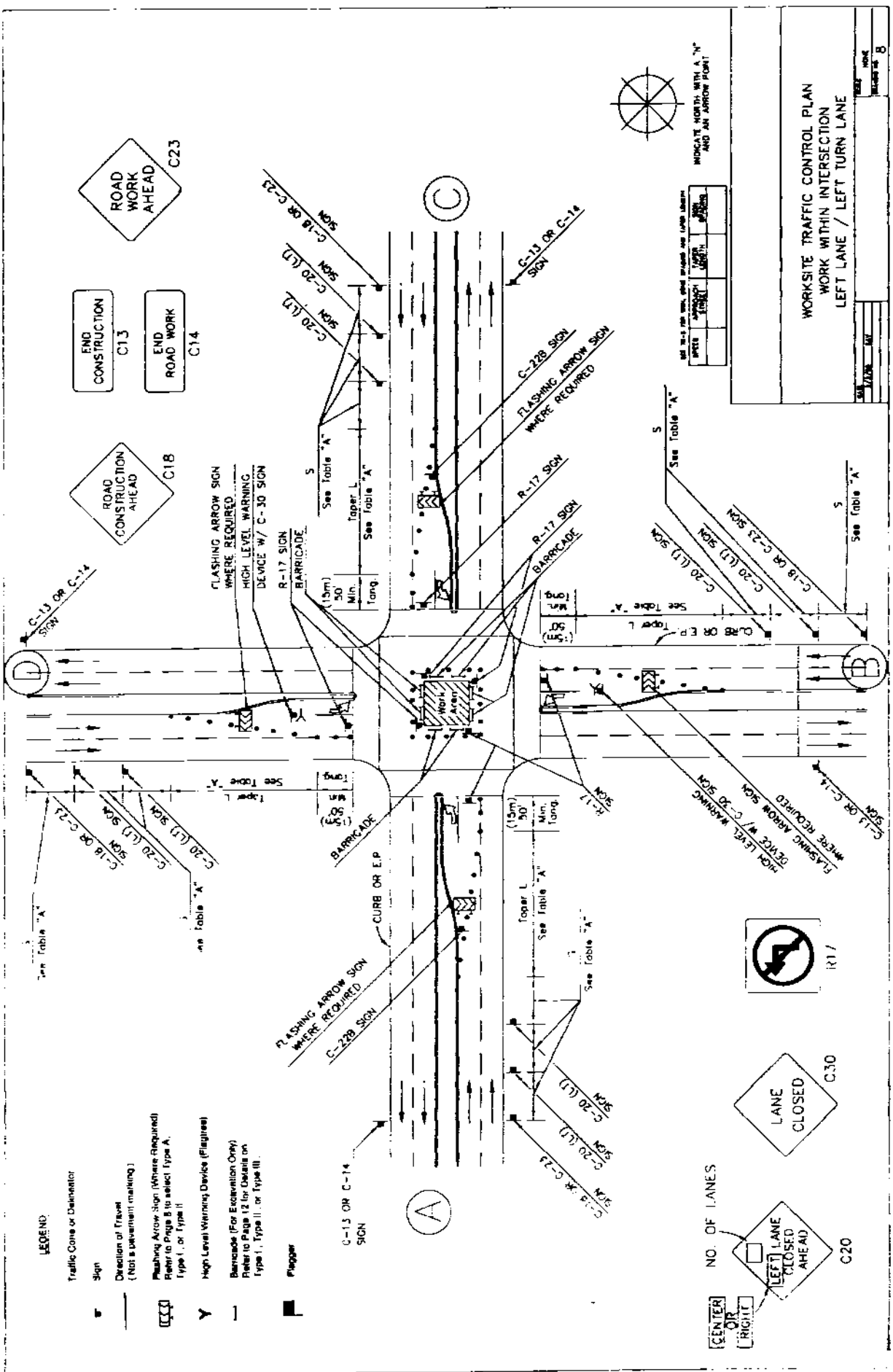


SEE TABLE FOR SIGN, CONE SPACING AND FLAGGER POSITION

| | | | | |
|-------|----------|--------|------|---------|
| SPEED | APPROACH | STREET | TYPE | SPACING |
| | | | | |

INDICATE NORTH WITH A "N" AND AN ARROW POINT

WORKSITE TRAFFIC CONTROL PLAN
TYPICAL LANE CLOSURE
WITH REVERSIBLE CONTROL



LEGEND

- Traffic Cone or Delineator
- Sign
- Direction of Travel (Not a pavement marking)
- Flashing Arrow Sign (Where Required) Refer to Page B to select Type A, Type I, or Type II
- High Level Warning Device (Flaggies)
- Barricade (For Excavation Only) Refer to Page B for details on Type I, Type II, or Type III
- Flagger

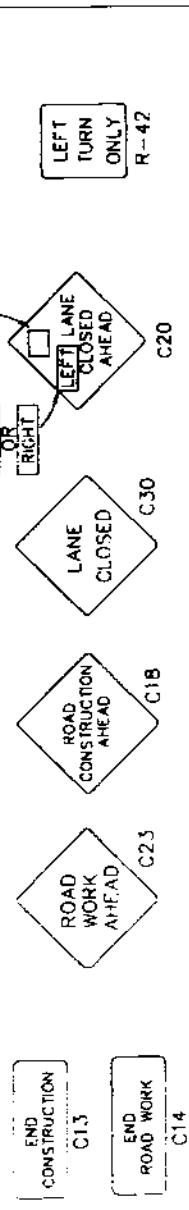
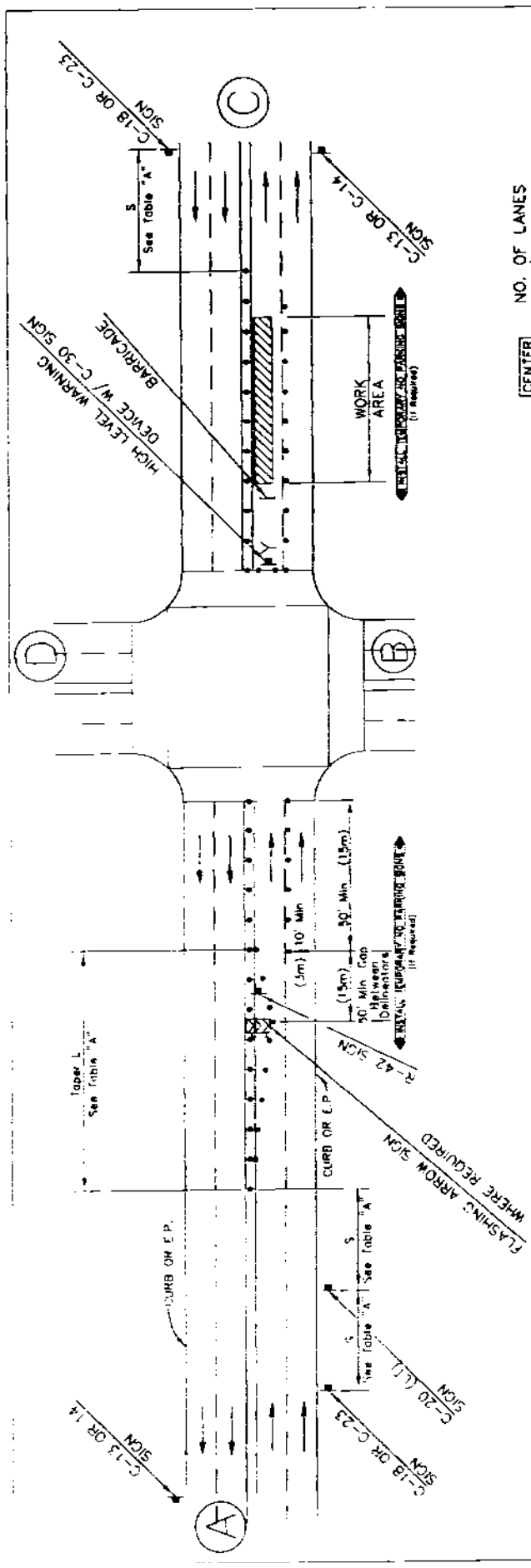
NO. OF LANES
 [CENTER OR RIGHT] []
 [] []
 [] []
 [] []

SEE THIS FOR SIGN TYPE THROUGH THE LANE LINE

| TYPE | LOCATION | TYPE | LOCATION |
|------|----------|------|----------|
| | | | |
| | | | |
| | | | |

WORKSITE TRAFFIC CONTROL PLAN
 WORK WITHIN INTERSECTION
 LEFT LANE / LEFT TURN LANE

| DATE | BY | REVISION |
|------|----|----------|
| | | |
| | | |



LEGEND

Traffic Cone or Delineator

Sign

Direction of Travel
(Not a pavement marking)

Flashing Arrow Sign (Where Required)
Refer to Page 8 to select Type A, Type I, or Type II.

Y High Level Warning Device (Flagtree)

— Barricade (For Excavation Only)
Refer to Page 12 for Details on Type I, Type II, or Type III.

Flagger

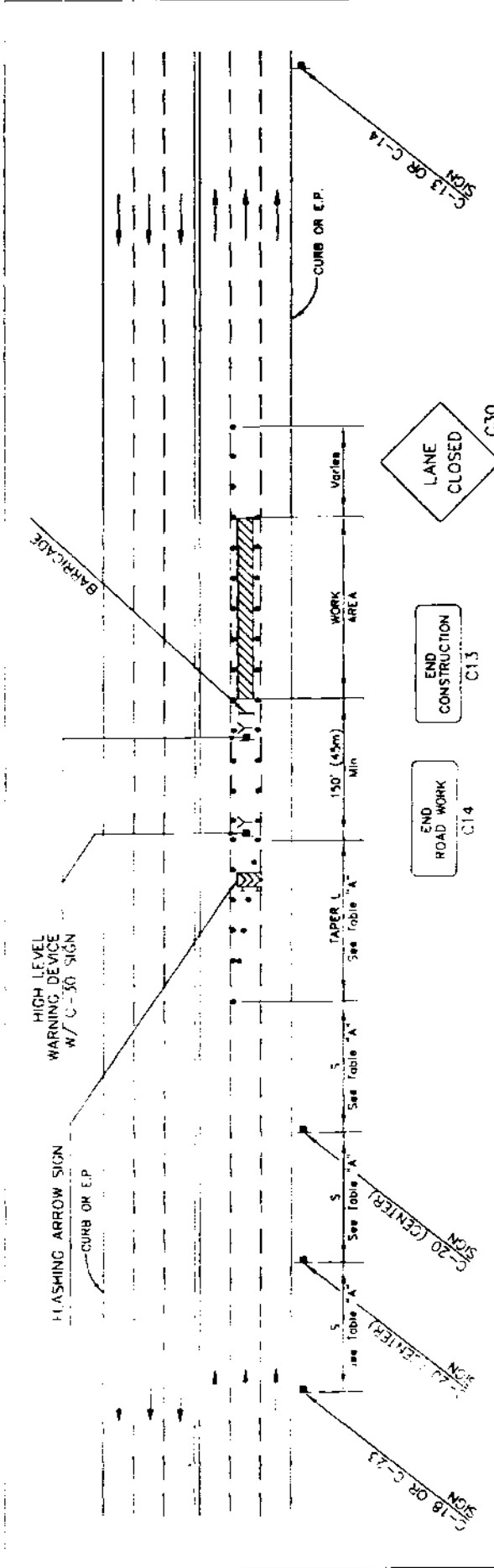


SEE TABLE FOR SIGN, MARK OR DEVICE AND LANE CLOSURE. INDICATE HOUSING WITH A "N" AND AN ARROW POINT.

| | | | |
|------|--------------|------|--------------|
| TYPE | NO. OF LANES | TYPE | NO. OF LANES |
| | | | |

WORKSITE TRAFFIC CONTROL PLAN
WORK BEYOND INTERSECTION (LEFT LANE)

| | | |
|------|-------|---------------|
| DATE | SCALE | NO. OF SHEETS |
| | | |



LEGEND

Traffic Cone or Delineator

Sign

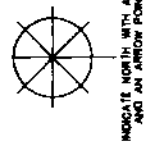
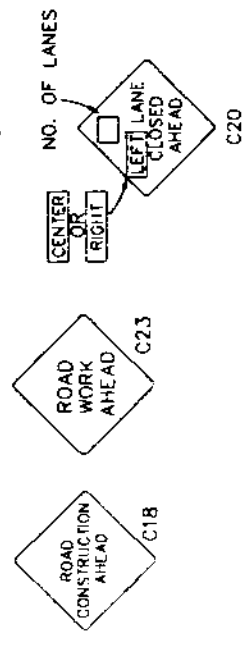
Direction of Travel
(Not a pavement marking)

Flashing Arrow Sign (Where Required)
Refer to Page 8 to select Type A,
Type I, or Type II

High Level Warning Device (Flagtree)

Barriacade (For Excavation Only)
Refer to Page 12 for Details on
Type I, Type II, or Type III.

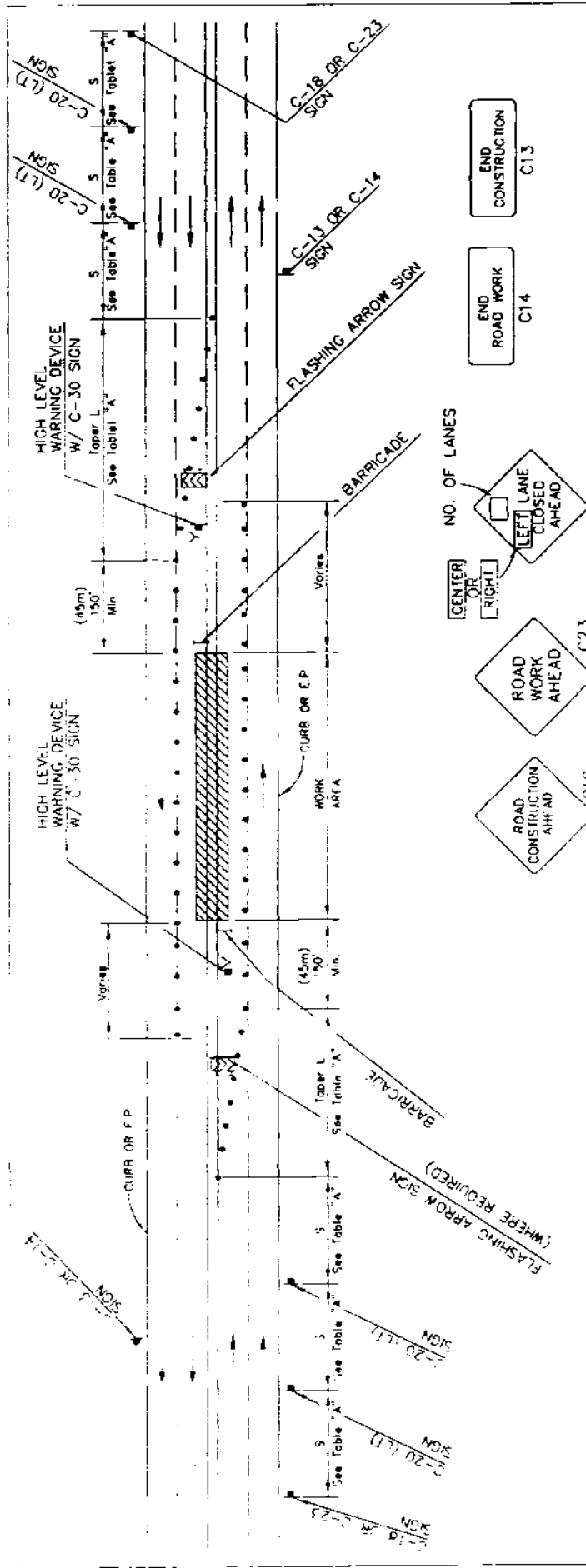
Flagger



SEE PAGE 10 FOR SIGN CONSTRUCTION AND LAYOUT DETAILS

| | | | | |
|------|------|------|------|------|
| TYPE | SIZE | TEXT | TEXT | TEXT |
| | | | | |

WORKSITE TRAFFIC CONTROL PLAN
MIDDLE LANE CLOSURE



LEGEND:

Traffic Cone or Delimiter

Sign

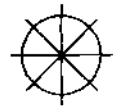
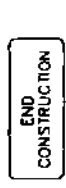
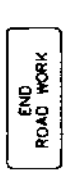
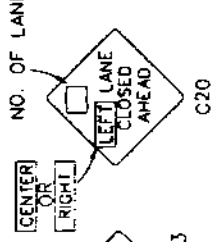
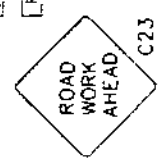
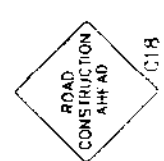
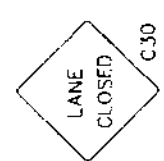
Direction of Travel
(Not a pavement marking)

Flashing Arrow Sign (Where Required)
Refer to Page 8 to select Type A, Type I, or Type II

High Level Warning Device (Flagtree)

Barricade (For Excavation Only)
Refer to Page 12 for Details on Type I, Type II, or Type III

Flagger



SEE TABLE FOR SIGN, CONE SPACING AND TAPER LENGTH

| SPEED | APPROACH STREET | TAPER LENGTH | MIN SPACING |
|-------|-----------------|--------------|-------------|
| | | | |

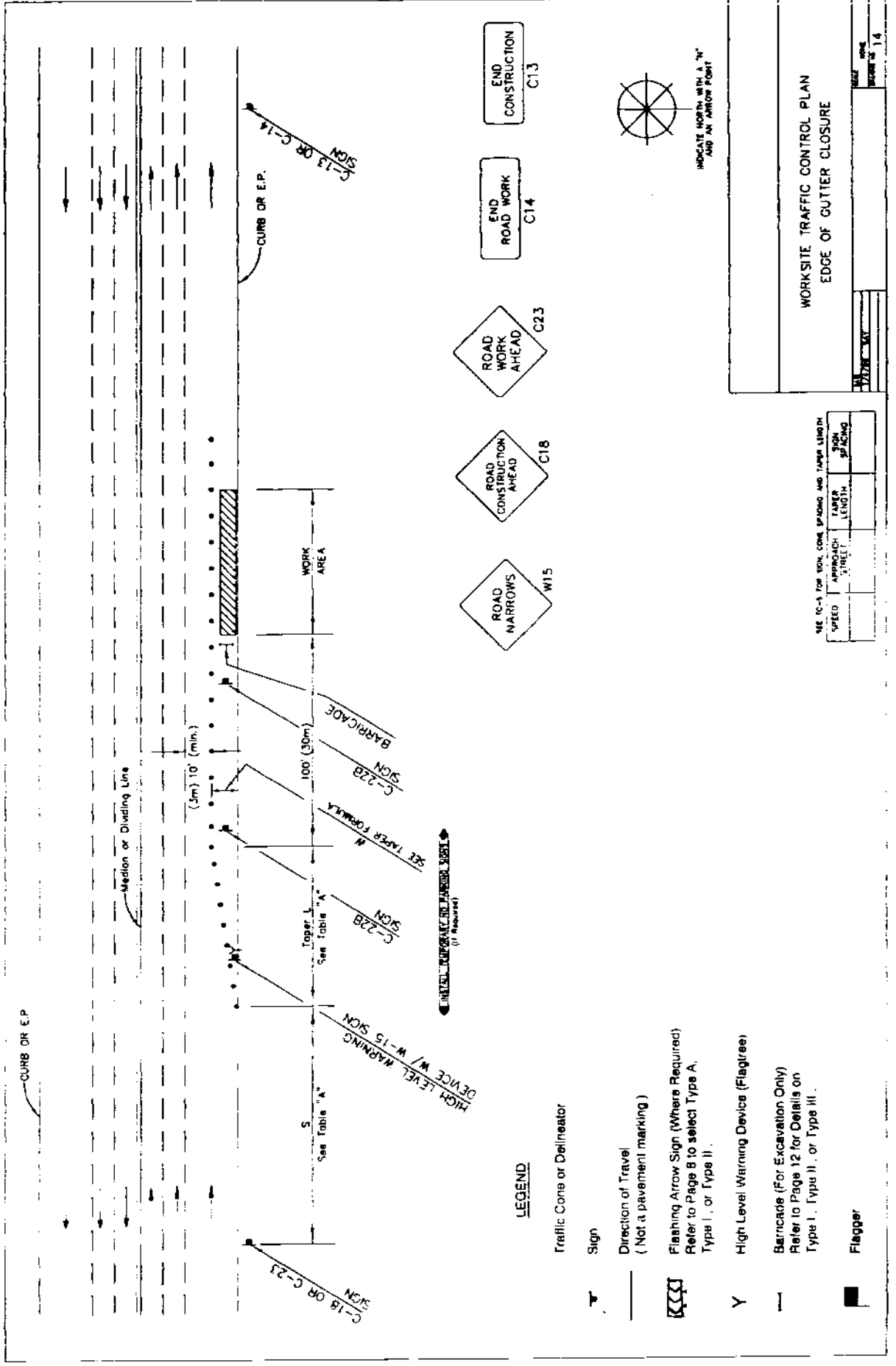
INDICATE NORTH WITH A "N" AND AN ARROW POINT

WORKSITE TRAFFIC CONTROL PLAN
WORK IN CENTER OF ROAD

DATE: _____ TIME: _____

BY: _____

SCALE: _____



**WORKSITE TRAFFIC CONTROL PLAN
EDGE OF GUTTER CLOSURE**

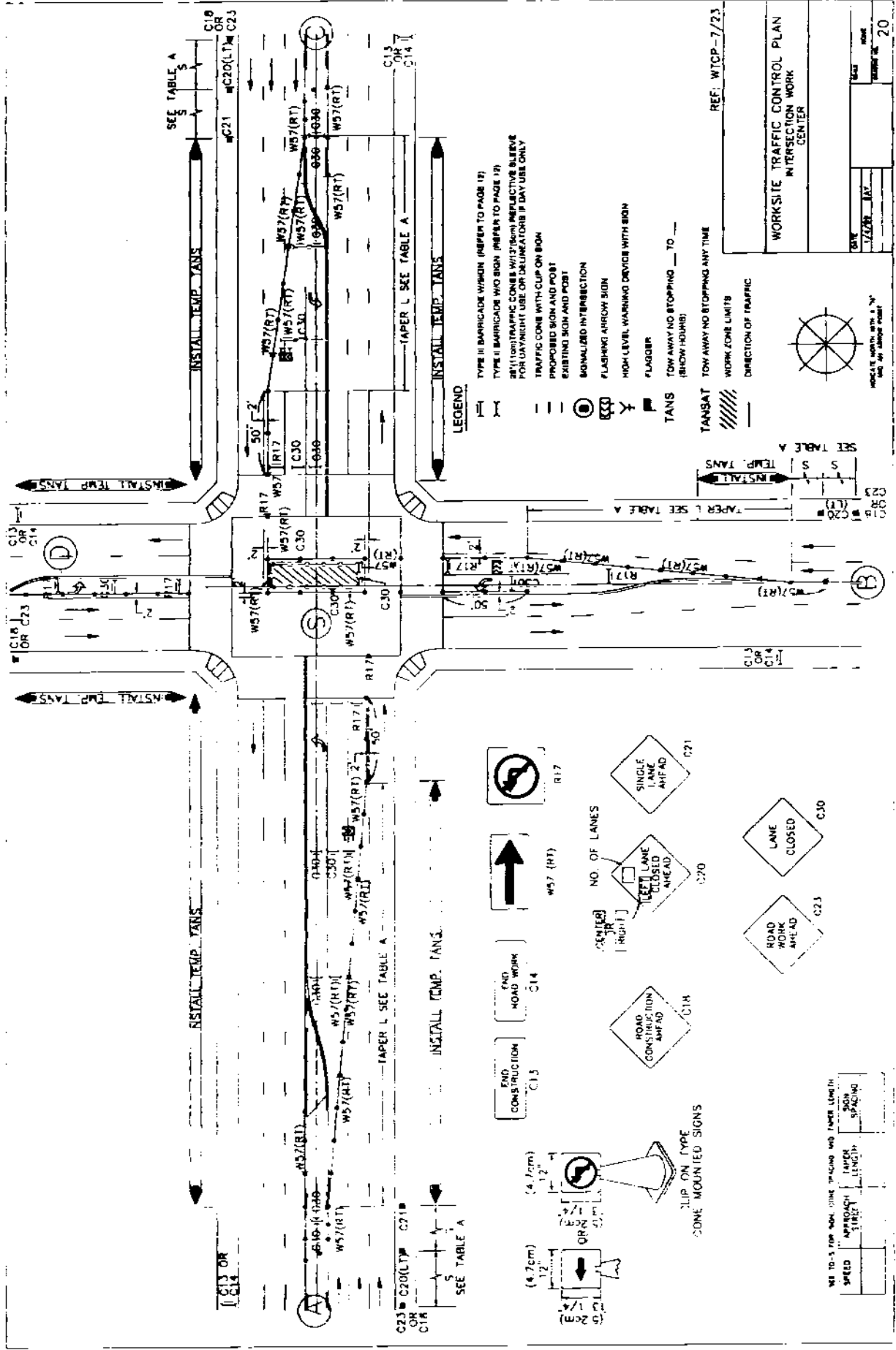
SEE 10-1 FOR SIGN CONE SPACING AND TAPER LENGTH

| SPEED | APPROACH SHEET | TAPER LENGTH | SIGN SPACING |
|-------|----------------|--------------|--------------|
| | | | |

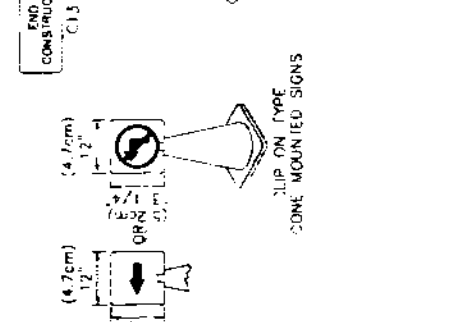
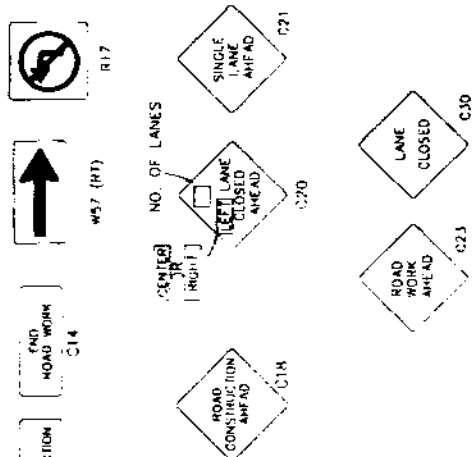
Flagger

DATE: _____
DRAWN BY: _____
CHECKED BY: _____

SCALE: _____



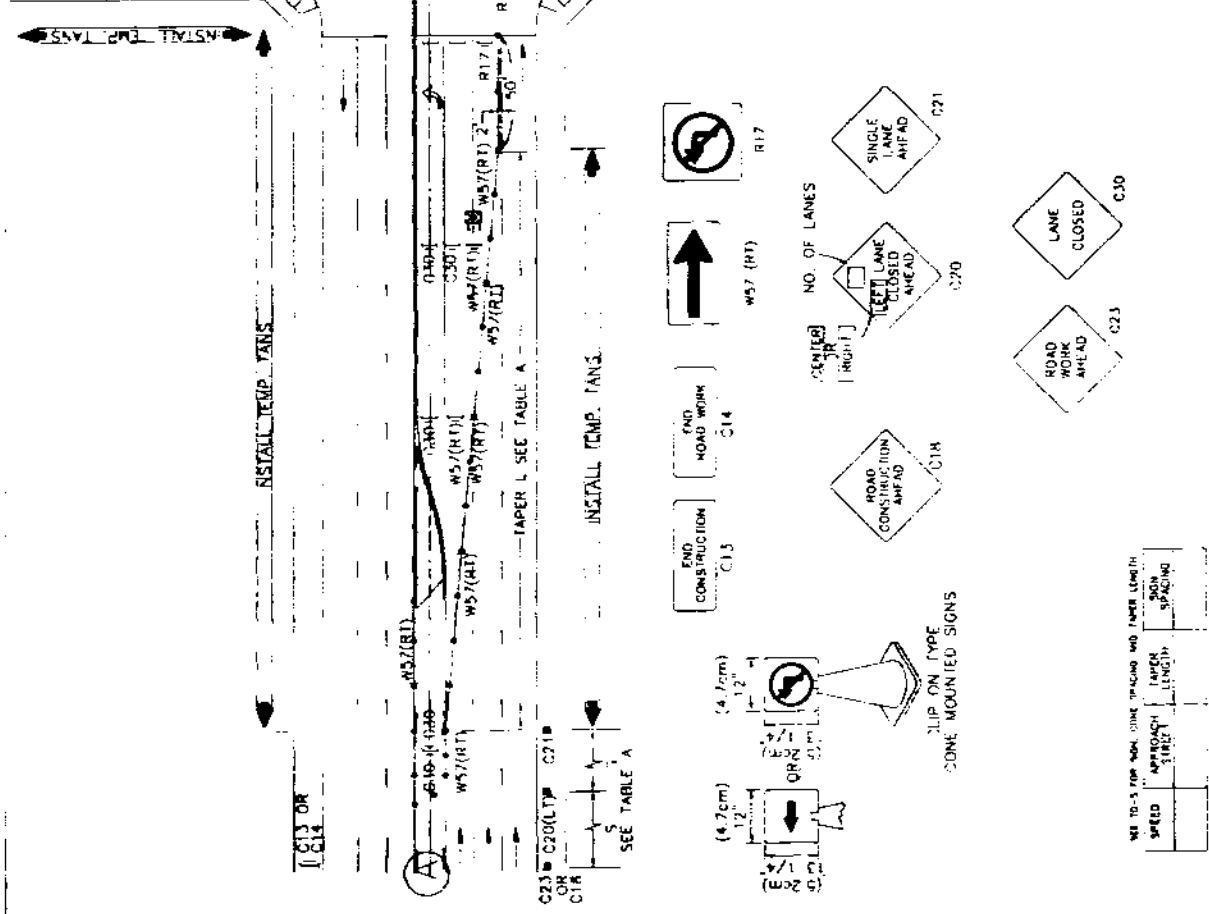
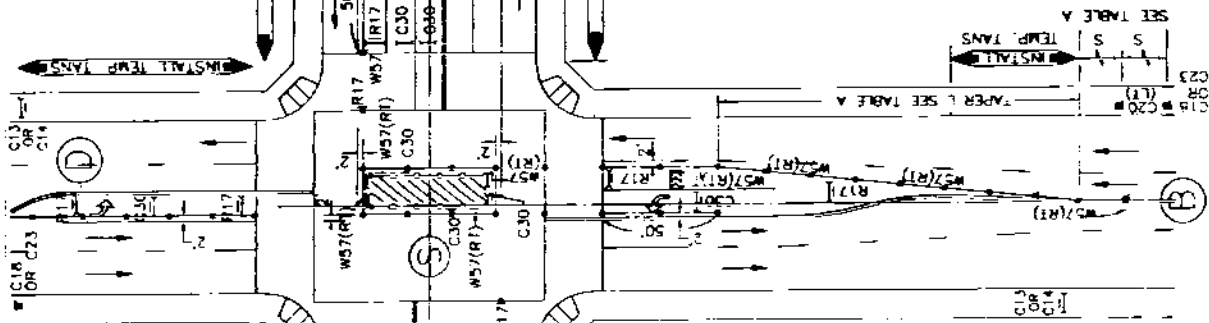
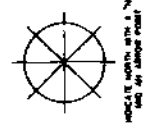
- LEGEND**
- TYPE III BARRICADE WITH SIGN (REFER TO PAGE 19)
 - TYPE II BARRICADE WITH SIGN (REFER TO PAGE 19)
 - TRAFFIC CONE WITH SIGN REFLECTIVE BLUE FOR DAY/NIGHT USE OR DELINEATOR IN DAY USE ONLY
 - TRAFFIC CONE WITH CLIP ON SIGN
 - PROHIBIT SIGN AND POST
 - ERECTING SIGN AND POST
 - SIGNALIZED INTERSECTION
 - FLASHING ARROW SIGN
 - HIGH LEVEL WARNING DEVICE WITH SIGN
 - FLAGGER
 - TANS
 - TOW AWAY NO STOPPING TO (SHOW HOURS)
 - TOW AWAY NO STOPPING ANY TIME
 - WORK ZONE LIMITS
 - DIRECTION OF TRAFFIC

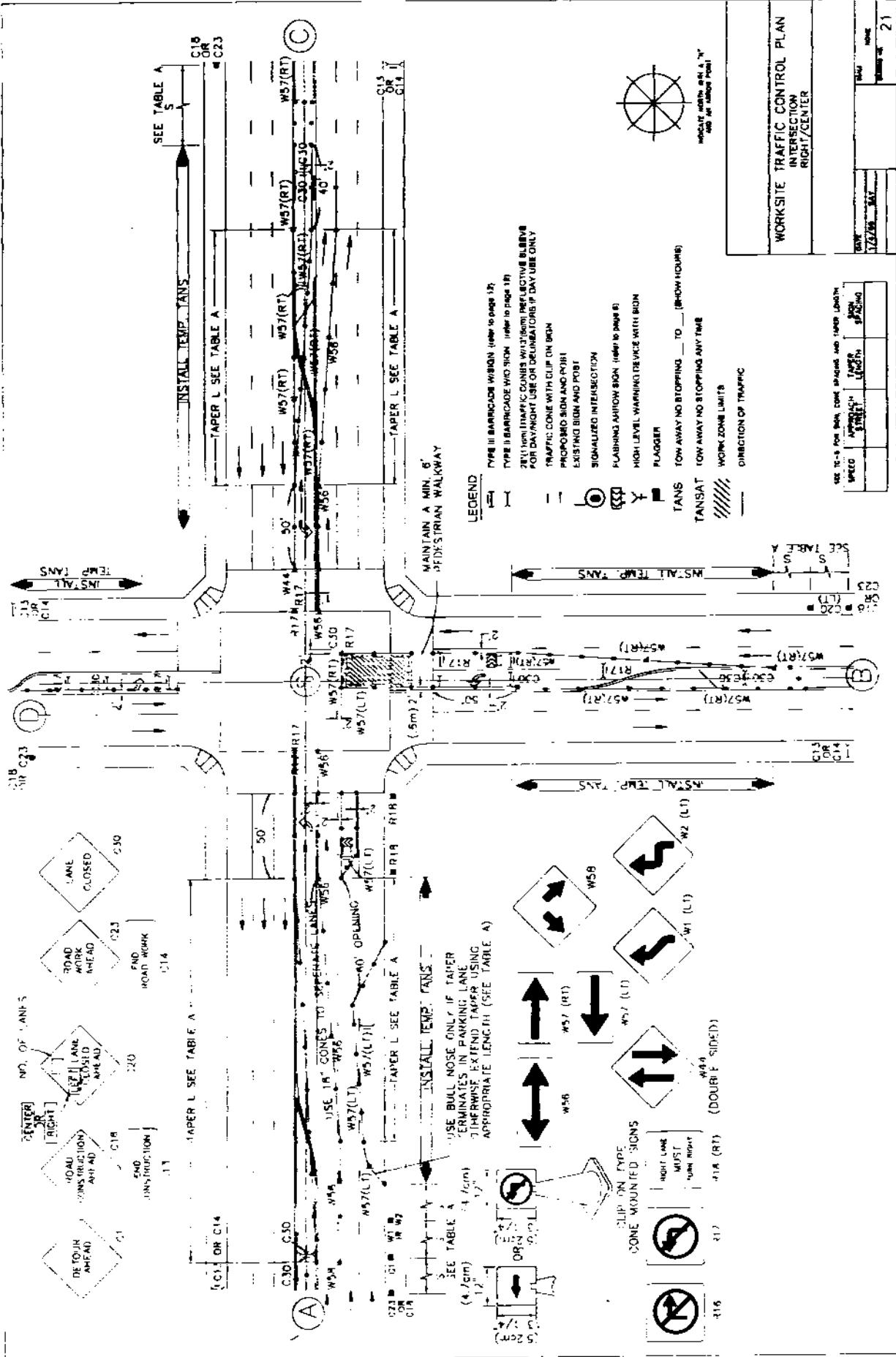


REF: WTCP-7/23

WORKSITE TRAFFIC CONTROL PLAN
INTERSECTION WORK CENTER

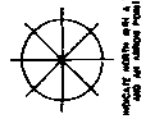
| | | |
|-------|-------|-----|
| DATE | SCALE | NO. |
| 12/20 | 1/4" | 20 |





LEGEND

- TYPE II BARRICADE WITH SIGN (SEE PAGE 12)
- TYPE III BARRICADE WITH SIGN (SEE PAGE 12)
- 211 (100) TRAFFIC CONES WITH 300 REFLECTIVE BILBEVE FOR DAY/NIGHT USE OR DELINEATORS IF DAY USE ONLY
- TRAFFIC CONE WITH CLIP ON BRN
- PROPOSED SIGN AND POST
- EXISTING SIGN AND POST
- STANDARDIZED INTERSECTION
- FLASHING ARROW SIGN (SEE PAGE 8)
- HIGH LEVEL WARNING DEVICE WITH BRN
- FLAGGER
- TANS TOW AWAY NO STOPPING TO (SHOW HOURS)
- TANSAT TOW AWAY NO STOPPING ANY TIME
- WORK ZONE LIMITS
- DIRECTION OF TRAFFIC



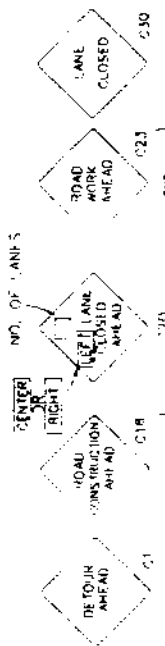
INDICATE NORTH WITH A "N" AND AN ARROW POINT

SEE 10-9 FOR SIGN, TANK, STRIPES AND TAPER LENGTHS

| SPEED | APPROACH | STREET | WORK | POSTING |
|-------|----------|--------|------|---------|
| 35 | | | | |
| 40 | | | | |
| 45 | | | | |
| 50 | | | | |
| 55 | | | | |
| 60 | | | | |
| 65 | | | | |
| 70 | | | | |
| 75 | | | | |
| 80 | | | | |
| 85 | | | | |
| 90 | | | | |
| 95 | | | | |
| 100 | | | | |

WORKSITE TRAFFIC CONTROL PLAN
INTERSECTION
RIGHT/CENTER

| | | | |
|-------|----------|---------|----|
| DATE | 1/22/88 | BY | ML |
| SCALE | AS SHOWN | PROJECT | 21 |



USE BULL NOSE ONLY IF TAPER TERMINATES IN PARKING LANE OTHERWISE EXTEND TAPER USING APPROPRIATE LENGTH (SEE TABLE A)

USE 18" CONES TO SEPARATE LANES

USE 18" CONES TO SEPARATE LANES

USE 18" CONES TO SEPARATE LANES

USE 18" CONES TO SEPARATE LANES

USE 18" CONES TO SEPARATE LANES

USE 18" CONES TO SEPARATE LANES

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USE 18" CONES TO SEPARATE LANES

USE 18" CONES TO SEPARATE LANES

USE 18" CONES TO SEPARATE LANES

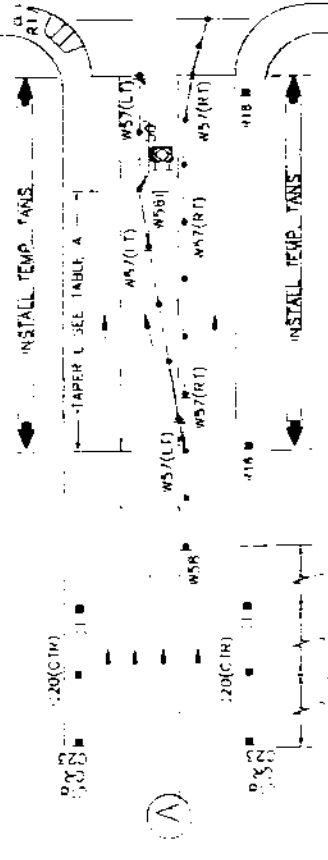
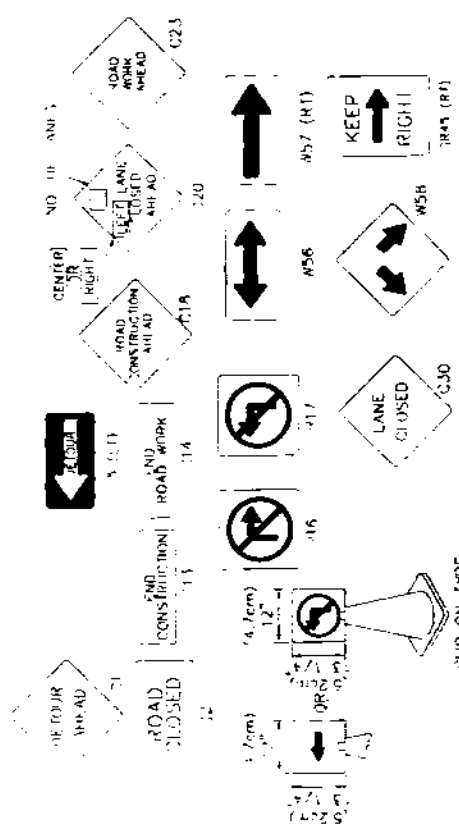
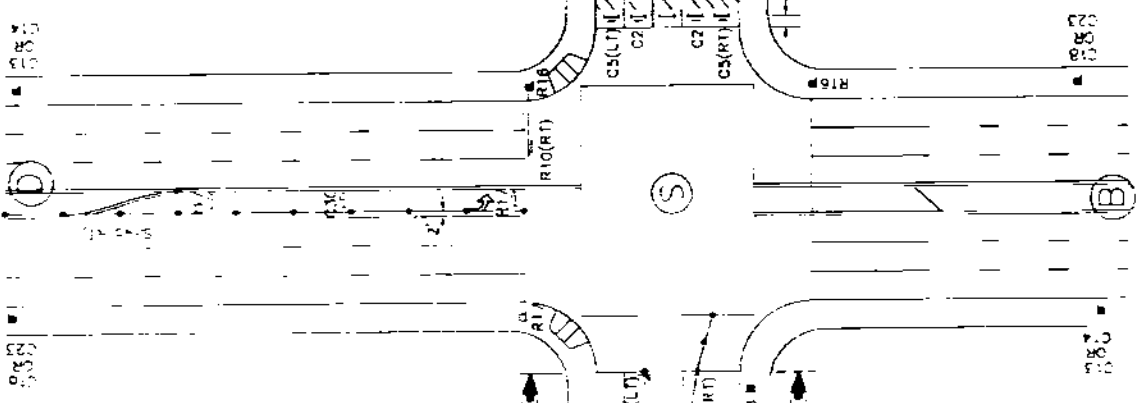
USE 18" CONES TO SEPARATE LANES

USE 18" CONES TO SEPARATE LANES

USE 18" CONES TO SEPARATE LANES

LEGEND

- TYPE III BARRICADE WITH SIGN (refer to page 12)
- TYPE II BARRICADE WITH SIGN (refer to page 12)
- ZVI (NON) TRAFFIC CONES (refer to page 12)
- REFLECTIVE BLENK FOR DAY/NIGHT USE OR DELINEATORS IN DAY USE ONLY
- TRAFFIC ZONE WITH CLIP ON SIGN
- PROPOSED SIGN AND POST
- EXISTING SIGN AND POST
- SIGNALIZED INTERSECTION
- FLASHING ARROW SIGN (refer to page 8)
- HIGH LEVEL WARNING DEVICE WITH SIGN
- FLASHER
- TOW AWAY NO STOPPING (SHOW HOUR)
- TOW AWAY NO STOPPING ANY TIME
- WORK ZONE UNIT
- DIRECTION OF TRAFFIC

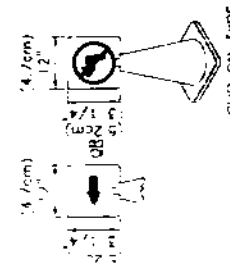
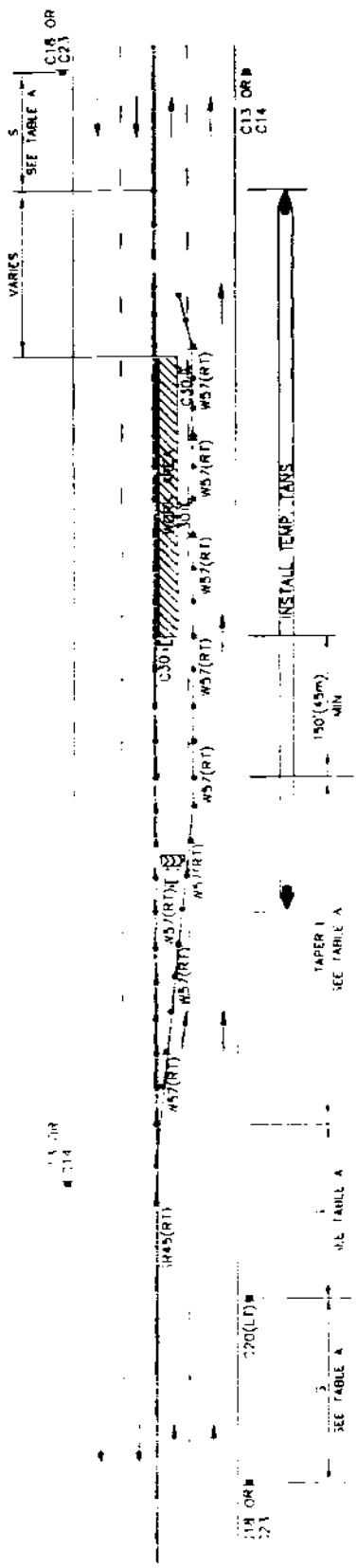


SEE 10-1 FOR SIGN CONE SPACING AND TAPER LENGTH

| SPEED | APPROACH STREET | TAPER LENGTH | CON SIGN SPACING |
|-------|-----------------|--------------|------------------|
| | | | |

WORKSITE TRAFFIC CONTROL PLAN
FULL STREET CLOSURE
ONE WAY STREET

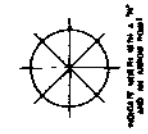
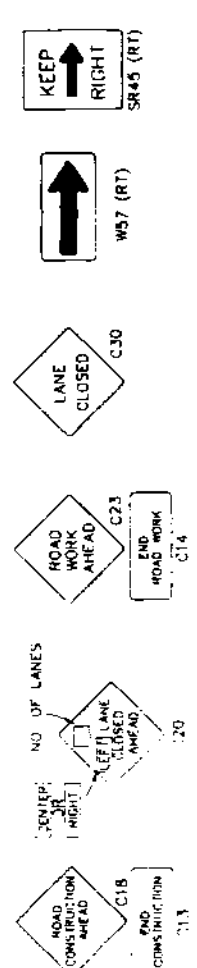
| | | | |
|------|--|-------------|--|
| DATE | | SCALE | |
| BY | | PROJECT NO. | |
| | | | |



CLIP ON TYPE
CONE MOUNTED SIGNS

LEGEND

- TYPE III BARRICADE W/ SIGN (refer to page 12)
- TYPE II BARRICADE W/O SIGN (refer to page 12)
- WORK ZONE TRAFFIC CONTROL WORK ZONE (USE ONLY ON HOLIDAY NIGHT USE ON LANE CLOSURE DAY USE ONLY)
- TRAFFIC CONE WITH CLIP ON SIGN
- PROPOSED SIGN AND POST
- REFLECTOR SIGN AND POST
- HORIZONTAL INTERSECTION
- FLASHING ARROW SIGN (refer to page 8)
- W/ (L) (R) WARNING DEVICE WITH SIGN
- FLASHING
- FANS
- TANGENT
- WORK ZONE LIGHTS
- WORK STOPPING TRAFFIC



REF: WICP-18/23

WORKSITE TRAFFIC CONTROL PLAN
MIDBLOCK NO.1 LANE CLOSURE

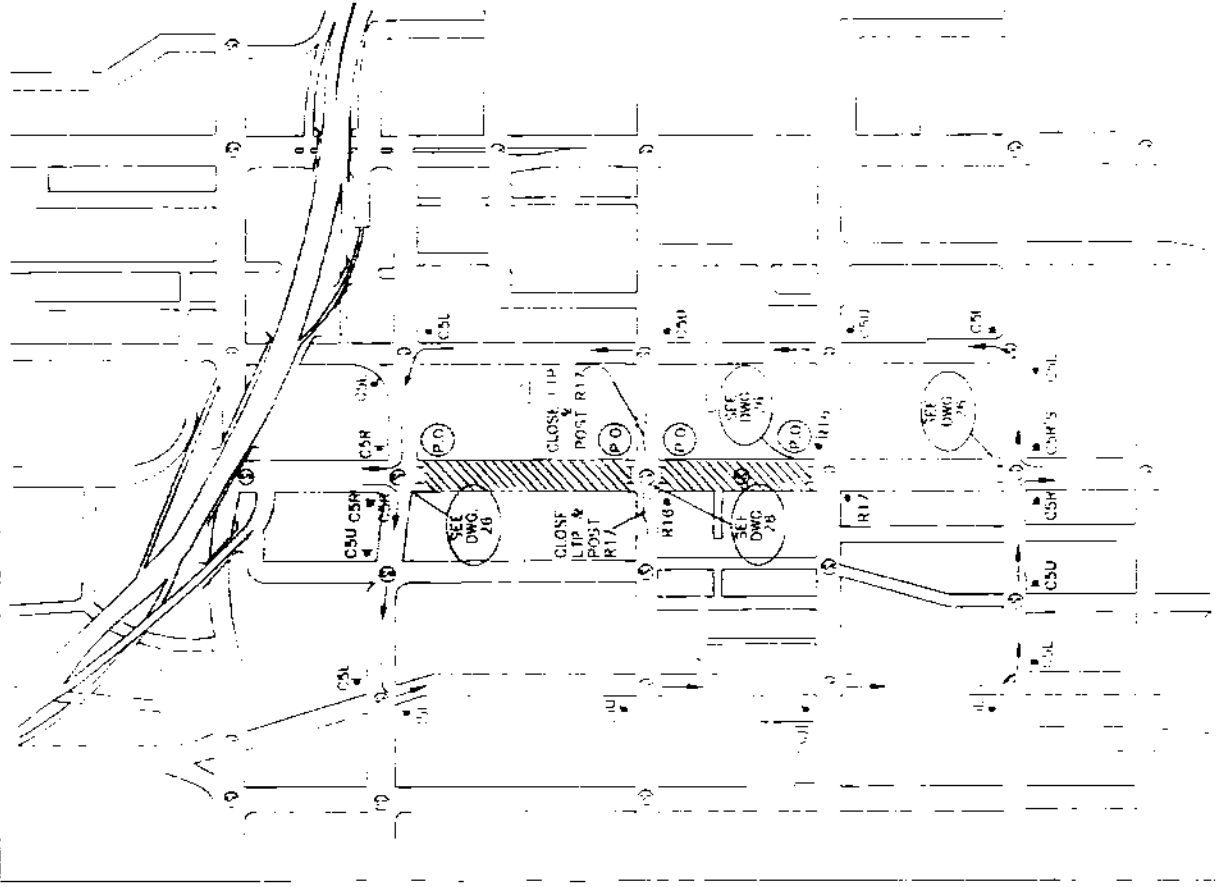
SEE TO-1 FOR SIGN, CONE SPACING AND TAPER LENGTH

| SPEED | APPROACHING STREET | LANE LENGTH | CON SPACING |
|-------|--------------------|-------------|-------------|
| | | | |

| | | | |
|---------|----|------|------|
| DATE | BY | CHKD | DATE |
| 1/27/18 | AV | | |

LEGEND:

- P.O. - POLICE OFFICER
- CS - DETOUR (L-LEFT, R-RIGHT, U-UP)
- - DIRECTION OF DETOUR
- Ⓢ - TRAFFIC SIGNAL



REF: WICP-23/25

WORKSITE TRAFFIC CONTROL PLAN
SAMPLE TRAFFIC CIRCULATION PLAN

| | |
|------|-------|
| DATE | ISSUE |
| | |
| | |
| | |