

TRAFFIC CONTROL GENERAL NOTES

TRAFFIC CONTROL DEVICE REQUIREMENTS:

1. ALL TRAFFIC CONTROL DEVICES SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE M.U.T.C.D AND THE N.C.H.R.P 350, LATEST EDITIONS. THE TRAFFIC CONTROL PLAN (T.C.P.) WILL COVER A MAJOR PORTION OF THE WORK INVOLVED IN THIS PROJECT. THE CONTRACTOR MAY DEVELOP HIS OWN T.C.P UPON SUBMISSION AND APPROVAL BY THE ENGINEER BEFORE IT CAN BE IMPLEMENTED FOR THIS PROJECT.

2. ALL ORANGE CONSTRUCTION SIGNS SHALL BE REFLECTORIZED WITH FLUORESCENT ORANGE PRISMATIC GRADE RETROREFLECTIVE SHEETING. ALL REGULATORY SIGNS USED IN THE CONSTRUCTION TRAFFIC CONTROL SHALL BE REFLECTORIZED WITH MICRO-ENCAPSULATED PRISMATIC RETROREFLECTIVE SHEETING. ALL TYPE I, II, III AND INDICATOR BARRICADES AND CHANNELIZATION DEVICES SHALL BE REFLECTORIZED WITH A KANSAS DEPARTMENT OF TRANSPORTATION APPROVED HIGH INTENSITY GRADE RETROREFLECTIVE SHEETING. WHITE BANDS ON CONICAL DELINEATORS, TUBULAR MARKERS, DRUMS AND CONES SHALL BE KANSAS DEPT. OF TRANSPORTATION APPROVED HIGH INTENSITY GRADE RETROREFLECTIVE SHEETING. ORANGE BANDS SHALL BE FLUORESCENT PRISMATIC GRADE SHEETING. ALL MARKINGS SHALL BE REFLECTORIZED WITH GLASS BEADS.

3. ALL BARRICADES 3' IN LENGTH OR LONGER SHALL HAVE 6" WIDE STRIPES OF ALTERNATING HIGH INTENSITY GRADE RETROREFLECTORIZED WHITE AND ORANGE SHEETING. ALL BARRICADES LESS THAN 3' IN LENGTH SHALL USE 4" WIDE STRIPES.

4. DRUMS, CONICAL DELINEATORS, DIRECTION INDICATOR BARRICADES, AND TYPE I OR II BARRICADES ARE ACCEPTABLE CHANNELIZATION DEVICES FOR USE IN TAPERS AND TRANSITION AREAS.

5. VERTICAL PANELS, 28" RETRO-REFLECTORIZED CONES AND 28" RETRO-REFLECTORIZED TUBULAR MARKERS MAY BE USED FOR TAPER CHANNELIZATION AND TRANSITION AREAS WHERE SPACE RESTRICTIONS DON'T ALLOW FOR OTHER MORE VISIBLE DEVICES OR FOR SHORT DURATION MAINTENANCE OR UTILITY WORK. NON-REFLECTORIZED 18" ORANGE CONES OR REFLECTORIZED ORANGE TUBULAR MARKERS MAY BE USED DURING DAYLIGHT CONSTRUCTION OR UNDER LOW SPEED CONDITIONS ONLY.

6. TYPE III BARRICADES SHALL BE USED AT STREET CLOSINGS AT THE POINT OF CLOSURE.

7. THE SPACING OF CHANNELIZING DEVICES SHOULD NOT EXCEED A DISTANCE IN FEET EQUAL TO THE SPEED LIMIT FOR TAPER CHANNELIZATION, AND A DISTANCE IN FEET EQUAL TO TWO TIMES THE SPEED LIMIT IN TANGENT CHANNELIZATION AREAS.

8. WARNING LIGHTS SHALL BE USED AT NIGHT ON ALL BARRICADES AND SHALL CONFORM TO THE LATEST EDITION OF THE M.U.T.C.D. AND N.C.H.R.P. 350 FOR CRASHWORTHINESS. FLASHING WARNING LIGHTS SHALL BE USED WHEN BARRICADES OR DRUMS ARE USED SINGLY. STEADY BURN LIGHTS SHALL BE USED WHEN CHANNELIZING DEVICES ARE USED IN A SERIES, I.E. LANE CLOSURE, DELINEATION OF EDGE OF TRAVELED CONSTRUCTION, ETC.

9. PROPERLY EQUIPPED FLAGGERS SHALL BE USED TO DIRECT TRAFFIC FOR A LANE CLOSURE OF A TWO-LANE STREET WHEN CONSTRUCTION VEHICLES ARE ENTERING AND EXITING THE WORK AREA OR AT OTHER LOCATIONS AS DIRECTED BY THE CITY. FLAGGERS' CLOTHING AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITION OF THE M.U.T.C.D.

10. ADVANCE WARNING ARROW DISPLAYS SHALL BE USED AT ALL LANE CLOSURES ON MULTILANE STREETS BUT SHOULD NOT BE USED IN LIEU OF PROPER TRAFFIC CONTROL SIGNS, BARRICADES, OR CHANNELIZING DEVICES. PREFERRED PLACEMENT OF THE ARROW DISPLAY SHOULD BE AT THE START OF THE TAPER AREA.

11. TRAFFIC CONTROL DEVICES WHEN NOT IN USE SHALL BE COMPLETELY COVERED OR REMOVED FROM THE CONSTRUCTION SITE.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TRAFFIC CONTROL DEVICES ON AN AROUND-THE-CLOCK BASIS, WHETHER OR NOT WORK IS ACTIVELY BEING PURSUED AND ANY DEFICIENCIES NOTED SHALL BE CORRECTED IMMEDIATELY.

13. THE TRAFFIC CONTROL REQUIREMENTS SHOWN ON THESE PLANS ARE MINIMUM REQUIREMENTS ONLY AND DO NOT ATTEMPT TO ADDRESS IN DEPTH THE VARIETY OF SITUATIONS THAT MAY OCCUR ONCE CONSTRUCTION HAS STARTED. IN NO WAY DO THE REQUIREMENTS SHOWN ON THESE PLANS RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR SELECTING THE PROPER TRAFFIC CONTROL DEVICES AND IMPLEMENTATION PROCEDURES THAT WILL ASSURE THE SAFETY OF MOTORIST, PEDESTRIANS, AND WORKERS AT ALL TIMES. ANY ADDITIONAL QUANTITIES OF TRAFFIC CONTROL DEVICES NECESSARY TO COMPLETE THE CONTRACT OR AS ORDERED INSTALLED BY THE ENGINEER SHALL BE CONSIDERED SUBSIDIARY TO THE CONTRACT LUMP SUM BID PRICE.

14. SHOULD THE CONTRACTOR FAIL TO ENFORCE THE TRAFFIC CONTROL PLAN OR FAIL TO CLEAN, REPAIR, REPLACE OR OTHERWISE MAINTAIN THE TRAFFIC CONTROL DEVICES WHEN DIRECTED TO DO SO BY THE ENGINEER OR HIS REPRESENTATIVE, THE CITY MAY TAKE ONE OR MORE OF THE FOLLOWING ACTIONS:

- A.) EMPLOY ANOTHER AGENCY TO CORRECT DEFICIENCIES IN SIGNING OR WARNING DEVICES AND DEDUCT THE COST FROM THE CONTRACTOR'S PAY ESTIMATE.
- B.) SUSPEND ALL PAY ESTIMATES UNTIL DEFICIENCIES ARE CORRECTED.
- C.) STOP THE WORK UNTIL DEFICIENCIES ARE CORRECTED.
- D.) PLACE THE CONTRACTOR IN DEFAULT.

15. ANY EXISTING PERMANENT SIGNS REMOVED BY THE CONTRACTOR FOR CONSTRUCTION PURPOSES OTHER THAN STOP, YIELD AND STREET NAME SIGNS SHALL BE RETURNED TO THE CITY OF LENEXA MAINTENANCE FACILITIES. ALL STOP, YIELD AND STREET NAME SIGNS REMOVED SHALL BE TEMPORARILY ERRECTED IN THE APPROPRIATE LOCATIONS (NO LESS THAN 7 FEET VERTICAL FROM GRADE) UNTIL THE PERMANENT SIGNING CAN BE INSTALLED. ANY TEMPORARY STOP OR YIELD SIGN INSTALLATION TO BE LEFT IN PLACE OVERNIGHT WILL REQUIRE PRIOR APPROVAL FROM THE ENGINEER.

16. ANY PERMANENT SIGN OR EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH THIS TRAFFIC CONTROL PLAN SHALL BE COVERED, OBLITERATED OR REMOVED AS DIRECTED BY THE ENGINEER.

17. THE CONTRACTOR SHALL PROVIDE AS MANY BARRICADES WITH APPROPRIATE WARNING LIGHTS AS NEEDED TO EFFECTIVELY PROTECT PEDESTRIANS OR TRAFFIC FROM EXPOSED OBJECTS OR EXCAVATIONS. LIGHTED BARRICADES SHALL BE USED AT REMOVED SIDEWALK SECTIONS AND TEMPORARY ROCK PLACED FOR A WALKING SURFACE UNTIL CONCRETE IS PLACED.

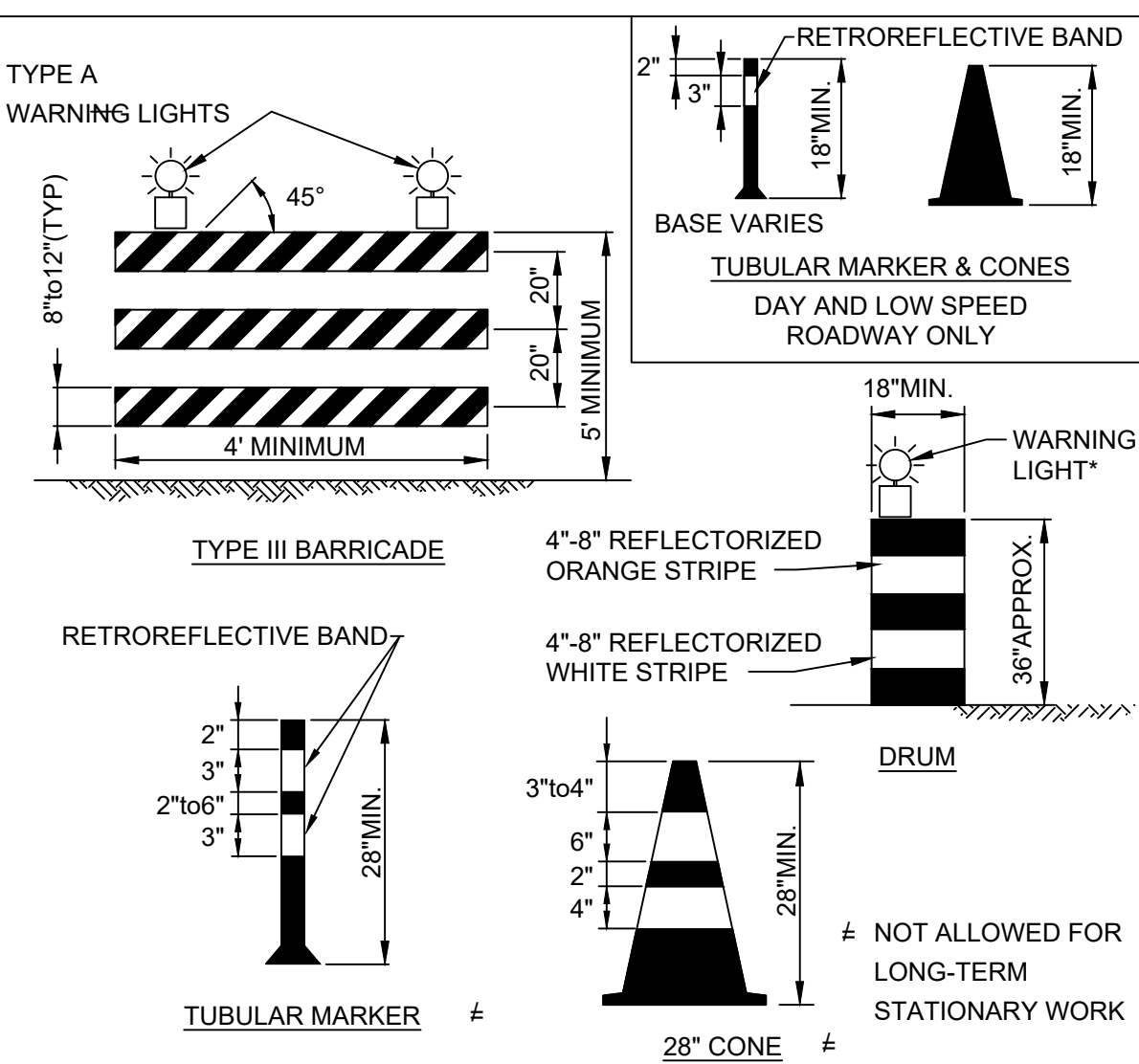
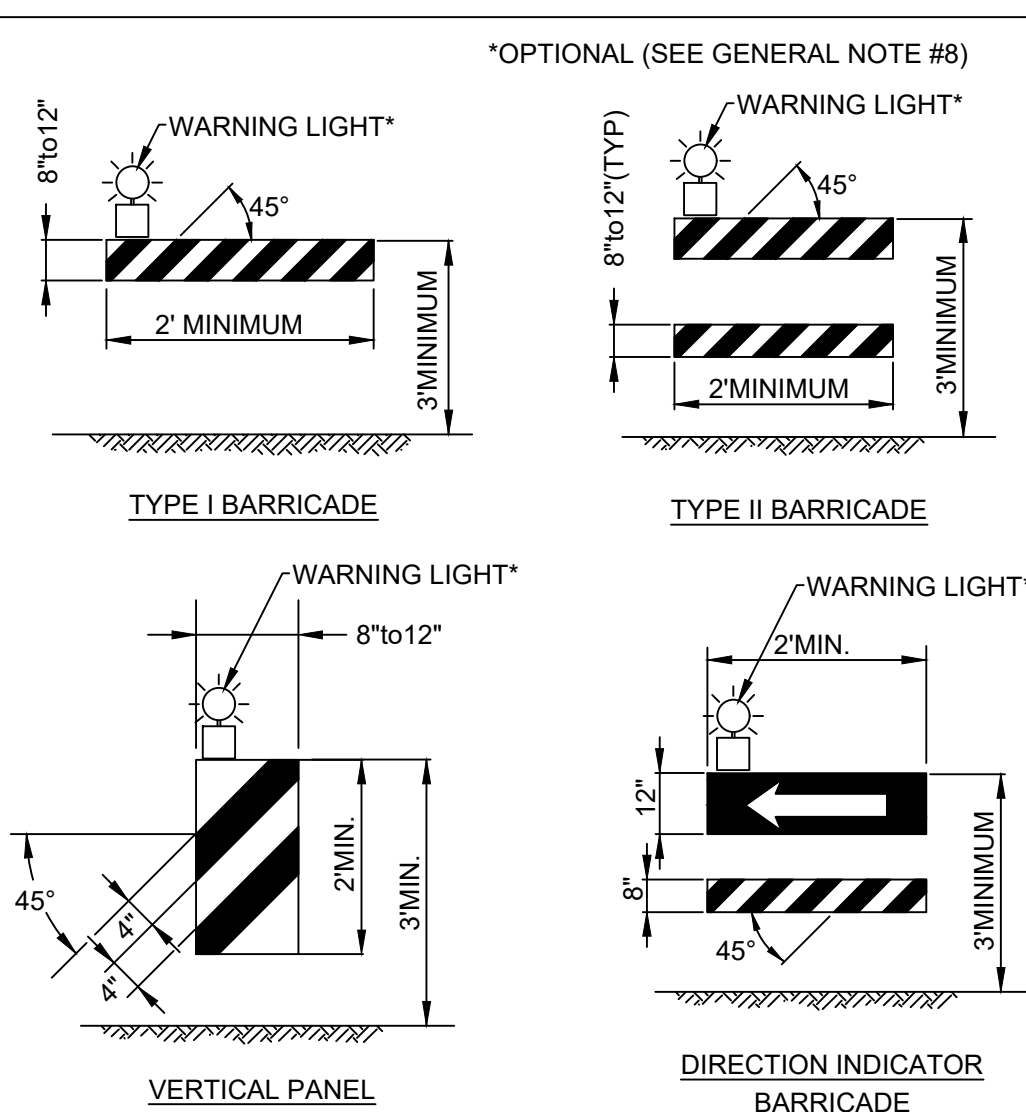
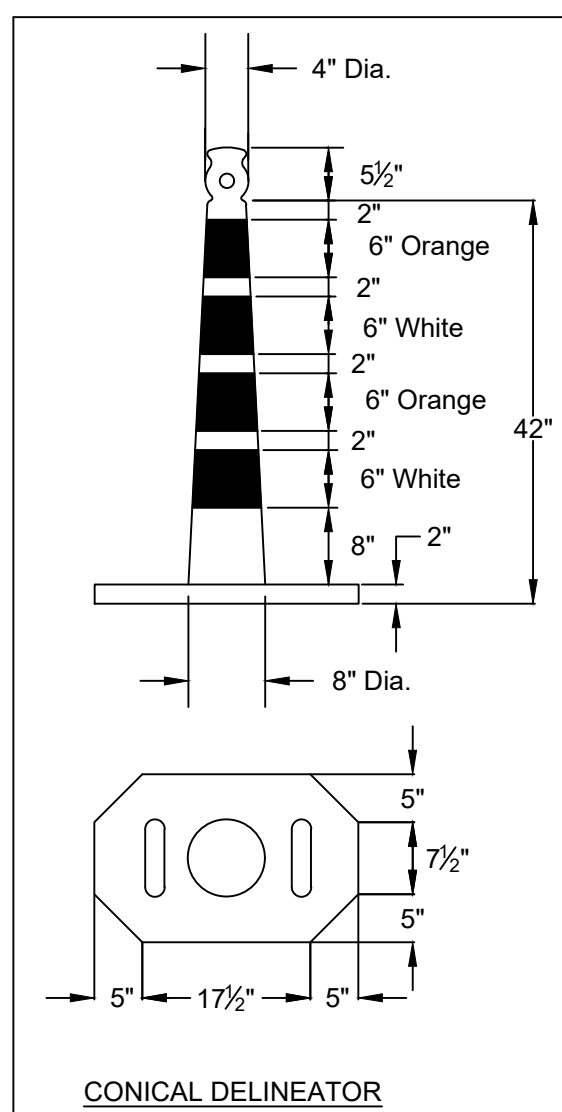
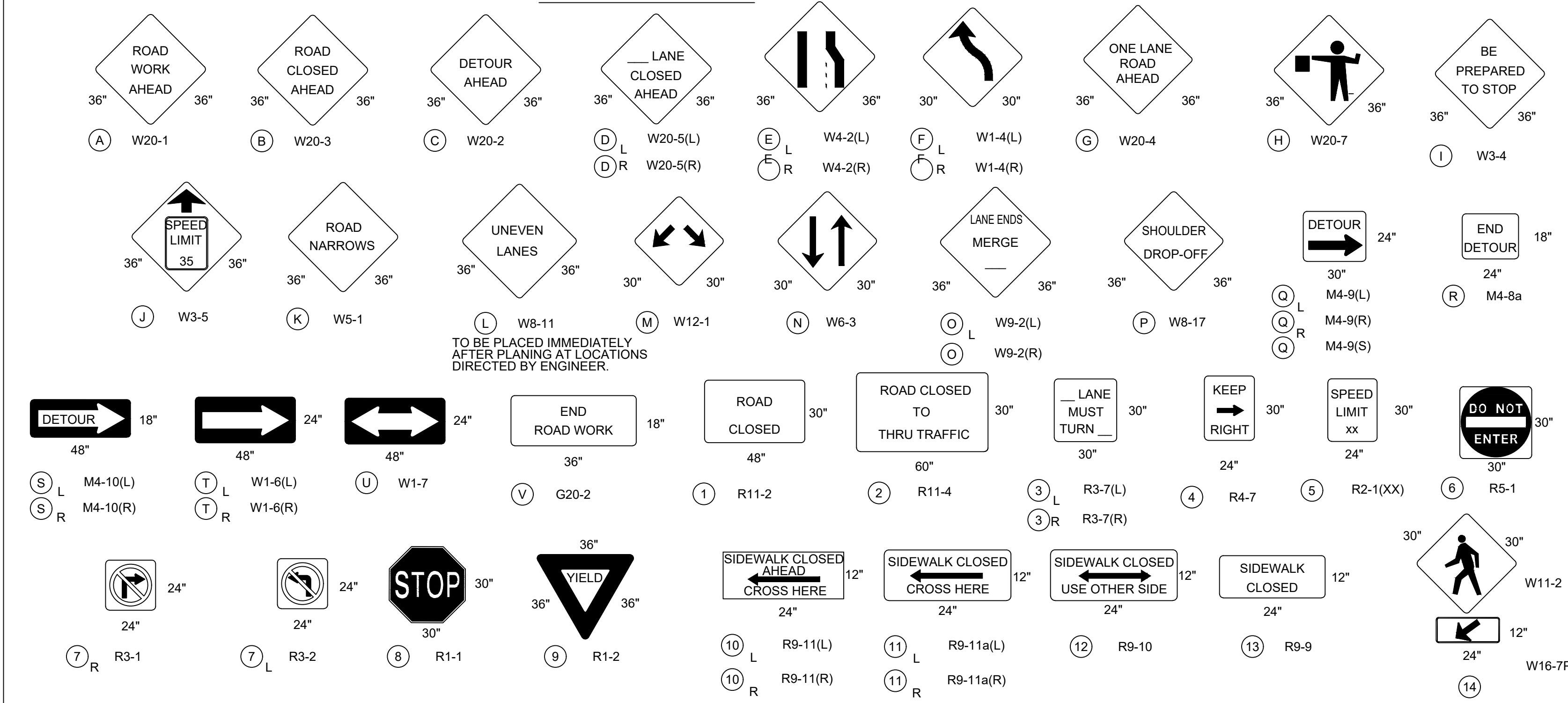
18. DURING ALL CONSTRUCTION PERIODS, THE CONTRACTOR SHALL HAVE AT THE JOBSITE ALL NECESSARY TRAFFIC CONTROL DEVICES (APPROPRIATE SIGNS, LIGHTED ARROW DISPLAY, CHANNELIZING DEVICES, ETC.) TO PROPERLY CLOSE AT LEAST ONE LANE OF TRAFFIC.

19. ANY TWO CONSECUTIVE DROP-OFF CONDITIONS THAT EXIST WITHIN 50' OR MORE OF EACH OTHER WILL BE CONSIDERED AS ONE HAZARD AND WILL REQUIRE TYPE "C" LIGHTS ON STANDARD DEVICES IN A SERIES. ANY DROP-OFF CONDITION 100' OR MORE IN LENGTH WILL ALSO REQUIRE TYPE "C" LIGHTS ON STANDARD DEVICES TO DELINEATE TRAFFIC FROM THE HAZARD. ANY DROP-OFF CONDITION EXISTING UNDER 50' IN LENGTH WILL REQUIRE TYPE "A" LIGHTS ON STANDARD DEVICES USED SINGLY TO WARN OF THE HAZARD. THESE REQUIREMENTS SHALL APPLY TO ANY DROP-OFF GREATER THAN TWO INCHES IN HEIGHT. APPROPRIATE WARNING SIGNS (SHOULDER DROP-OFF) SHALL BE PLACED IN ADVANCE OF THE HAZARD.

20. ALL W20-1 ADVANCE WARNING SIGNS SHALL BE POST MOUNTED.

21. PLACE G20-2 SIGNS 500' MINIMUM PAST CONSTRUCTION. IF THE G20-2 SIGN WILL BE LESS THAN 1,000 FEET FROM OTHER CONSTRUCTION IMPROVEMENTS, IT CAN BE OMITTED. PLACEMENT OF ADVANCE WORK ZONE SIGNING SHALL BE AS INDICATED IN THE "ADVANCE WARNING SIGNING SPACING" TABLE BASED ON THE SPEED OF THE FACILITY.

CONSTRUCTION SIGNS



| TYPE | MIN. SIZE | MIN.# LAMPS | USAGE |
|------|-----------|-------------|--------------------------------------|
| A | 48"x24" | 12 | LOW SPEED STREETS 25-30 MPH |
| B | 60"x30" | 13 | INTERMEDIATE SPEED STREETS 35-45 MPH |
| C | 96"x48" | 15 | HIGH SPEED STREETS 50-55 MPH |

ARROW DISPLAY SHALL BE SET IN THE (LEFT OR RIGHT) SEQUENTIAL CHEVRON MODE FOR LANE CLOSURES.

ARROW DISPLAY SHALL BE SET IN THE CAUTION MODE FOR WORK NEAR ROADSIDE.

USE OF A TYPE "C" PANEL AT AN "A" OR "B" LOCATION OR USE OF A TYPE "B" PANEL AT AN "A" LOCATION IS ALLOWABLE.

ARROW DISPLAY

LENGTH AND DEVICE SPACING FOR LANE CLOSURE AND CHANNELIZATION TAPERS

| SPEED LIMIT | MINIMUM TAPER LENGTH (L)** | | | MIN. NO. OF DEVICES FOR TAPER (12FT. LANE) | MAXIMUM DEVICE SPACING |
|-------------|----------------------------|-----|-----|--|------------------------|
| | 10 | 11 | 12 | | |
| M.P.H. | LANE WIDTH IN FEET | | | | IN FEET |
| 20 | 70 | 75 | 80 | 5 | 20 |
| 25 | 105 | 115 | 125 | 6 | 25 |
| 30 | 150 | 165 | 180 | 7 | 30 |
| 35 | 205 | 225 | 245 | 8 | 35 |
| 40 | 270 | 295 | 320 | 9 | 40 |
| 45 | 450 | 495 | 540 | 13 | 45 |
| 50 | 500 | 550 | 600 | 13 | 50 |
| 55 | 550 | 605 | 660 | 13 | 55 |

**NOTE: TAPER FORMULA - $L = SxW$ $L = SxW/60$ $S > 45$ MPH $S < 40$ MPH

WHERE
 L = MINIMUM TAPER LENGTH
 S = POSTED SPEED LIMIT (PRIOR TO CONSTRUCTION)
 W = WIDTH OF OFFSET

ADVANCE WARNING SIGN SPACING TABLE

| ROAD TYPE | DISTANCE BETWEEN SIGNS** | | |
|--|--------------------------|------|------|
| | A | B | C |
| RESIDENTIAL AND COLLECTOR (30 MPH AND UNDER) | 100' | 100' | 100' |
| URBAN ARTERIALS (35 MPH TO 45 MPH) | 350' | 350' | 350' |
| URBAN ARTERIALS (50 MPH AND OVER) | 350' | 350' | 350' |
| RURAL ROADS (40 MPH AND OVER) | 500' | 500' | 500' |

** THE COLUMN HEADINGS A, B, AND C ARE THE DISTANCES BETWEEN ADVANCED WARNING SIGNS AND RESTRICTION POINTS AS INDICATED BELOW.

CONSTRUCTION REQUIREMENTS:

- CONSTRUCTION SHALL BE SEQUENCED TO PROVIDE THE LEAST POSSIBLE ADVERSE EFFECT TO RESIDENCES.
- CONSTRUCTION MATERIALS SHALL BE KEPT OFF SIDEWALKS AND CONSOLIDATED IN AREAS WITHIN THE CITY RIGHT-OF-WAY UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- MUD AND CONSTRUCTION DEBRIS ON STREETS OR SIDEWALKS SHALL BE CLEANED OFF IMMEDIATELY.
- ACCESS SHALL BE MAINTAINED TO ALL DRIVES AND SIDE STREETS OR AS INDICATED IN THE TRAFFIC CONTROL PLAN.
- CONSTRUCTION VEHICLES SHALL BE PARKED ALONG STREETS SO AS NOT TO RESTRICT SIGHT DISTANCE FOR VEHICLES EXITING AT STREETS OR ANY DRIVES.
- NO CONSTRUCTION SHALL BE PERFORMED ON HOLIDAYS AND WEEKENDS UNLESS PRIOR APPROVAL IS RECEIVED IN WRITING FROM THE ENGINEER.
- THE CONTRACTOR IS RESPONSIBLE FOR AVOIDING ANY AND ALL UTILITIES WHEN SETTING SIGN POSTS AND WILL BE REQUIRED TO COORDINATE HIS ACTIVITIES WITH ANY AND ALL UTILITY COMPANIES WHETHER THEIR FACILITY IS INDICATED ON THE PLANS OR NOT.
- STREET PLATES, WHEN USED, SHALL BE A36 CERTIFIED STEEL AT LEAST 1" THICK WITH LIFT HOOKS AND SECURELY FASTENED TO THE PAVEMENT WITH STAKES, PINS OR ASPHALT WEDGE COURSE.
- ANY CONSTRUCTION ACTIVITIES WHICH REQUIRE THE CLOSING OF A LANE OF TRAFFIC SHALL NOT OCCUR DURING THE HOURS OF 7:00 A.M. TO 8:30 A.M. AND 4:00 P.M. TO 6:00 P.M. MONDAY THROUGH FRIDAY.
- LANE CLOSURES LASTING LONGER THAN THREE (3) CONSECUTIVE DAYS SHALL BE CONSIDERED A LONG TERM CLOSURE. AS A RESULT, TEMPORARY PAVEMENT MARKING TAPE SHALL BE REQUIRED. TEMPORARY PAVEMENT MARKING TAPE SHALL BE SUBSIDIARY TO THE LUMP SUM TRAFFIC CONTROL BID ITEM.

www.lenexa.com 2017

REVISED DATE: 08/17
 DETAILED: BKC
 APPROVED: ---

Lenexa
 KANSAS

TRAFFIC CONTROL DETAILS

SHEET D-1000