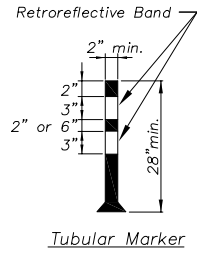


General Notes:

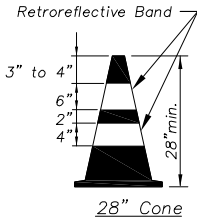
- All traffic control devices and application thereof, shall comply with the latest edition of the Manual of Uniform Traffic Control Devices (M.U.T.C.D.), and the City of Overland Park "Traffic Control Handbook." All roadside hardware shall have been tested and approved per National Cooperative Highway Research Program (N.C.H.R.P.) Report 350 or the American Association of State Highway and Transportation Officials (A.A.S.H.T.O.) Manual for Assessing Safety Hardware (M.A.S.H.), as applicable.
- 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 lump sum bid price, as ordered to be installed by the Engineer shall be considered subsidiary to the contract lump sum bid price.
- The Contractor may develop his or her own Temporary Traffic Control (T.T.C.) plan and submit to the Engineer for approval to use on this project.
- 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. Any deficiencies noted shall be corrected immediately.
- 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:
 - Employ another contractor to correct deficiencies and deduct the cost from the project pay estimate.
 - Suspend all pay estimates until deficiencies are corrected.
 - Stop the work until deficiencies are corrected.
 - Place the contractor in default.
- During all construction periods, the Contractor shall have at the jobsite all necessary traffic control devices (appropriate signs, arrow displays, channelizing devices, direction indicator barricades, etc.) to properly close at least one lane of traffic.
- Properly equipped flaggers shall be used to direct traffic as shown on the plans or as directed by the Engineer. Flaggers' clothing and equipment shall conform to the latest edition of the M.U.T.C.D.
- Existing stop, yield, and street name signs shall be maintained during construction. Stop, yield, and street name signs may be temporarily erected (no less than 7 feet vertical from grade) until they can be permanently installed. Any temporary stop or yield sign installation to be left in place overnight shall require prior approval from the Engineer.
- Existing signs that conflict with the temporary traffic control shall be covered or removed by the Contractor. The Contractor is responsible for removal, storage, and reinstallation of the signs and posts. Any damaged signs or posts shall be replaced at the Contractor's expense.
- Existing pavement markings that conflict with the temporary traffic control shall be covered temporarily, removed, or obliterated, as shown in the plans or as directed by the Engineer. If covered temporarily, removable, non-reflective, preformed tape that is approximately the same color as the pavement surface shall be used.
- All orange construction signs shall be fluorescent orange micro-encapsulated prismatic retroreflective grade sheeting. All regulatory signs shall be prismatic retroreflective grade sheeting.
- All retroreflective sheeting on barricades, vertical panels, conical delineators, drums, tubular markers, cones, and directional indicator barricades shall use Kansas Department of Transportation approved high intensity retroreflective grade sheeting.
- All pavement markings shall be retroreflective with the use of glass beads.
- The Contractor shall provide as many barricades with appropriate warning lights as needed to effectively close or restrict all or a portion of the right-of-way as shown in the plans or as directed by the Engineer. Detectable Pedestrian Barricades and/or Channelizers shall be used for all sidewalk closures or temporary sidewalk facilities. Type III barricades shall be used at street closings at the point of closure, and where new streets, under construction, connect to an existing street. A sidewalk detour shall be provided when necessary or directed by the Engineer. When existing pedestrian facilities are disrupted, closed, or relocated, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing facility. Where pedestrians with the visual disabilities normally use the closed sidewalk, a barrier that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.
- Appropriate warning lights shall be used at night on all barricades, unless otherwise specified.
- For merge taper channelization, direction indicator barricades shall be used for all long-term stationary traffic control installations. They may be used for intermediate-term, stationary, short-term stationary, and short duration installations but are not required. Standard conical delineators may be used in place of direction indicator barricades as long as the traffic control setup is three days or less.
- For longitudinal channelization, drums, conical delineators, or vertical panels are acceptable devices. For work that occupies a location less than 8 hours, retroreflective cones (28 inches min. height) may be used. Where space restrictions do not allow for the use of other more visible devices, retroreflective tubular markers (28 inches min. height) may be used.
- The maximum spacing between channelizing devices should be approximately equal in feet to the posted speed limit in miles per hour.
- Sign mounting height, measured vertically from the bottom of the sign to the top of the curb, shall be a minimum of 7 feet. Sign lateral offset, measured from the edge of the sign to the face of the curb, shall be a minimum of 2 feet.
- Construction signs that are to be in place for 3 days or less may be mounted on approved temporary supports. The mounting height for signs on temporary supports, measured vertically from the bottom of the sign to the traveled way, shall be a minimum of 1 foot above the adjacent pavement surface, with the exception of the Road Work Ahead sign (W20-1), which shall be a minimum of 7 feet above the adjacent pavement surface.
- Placement of advance work zone signing shall be based on the speed of the facility and the spacing indicated in the Advance Warning Sign Spacing Table.
- End Road Work signs (G20-2) should be placed at the downstream end of the termination area. If the End Road Work sign (G20-2) will be less than 1,000 feet from other construction improvements, it may be omitted.
- For road closures on a thoroughfare, a Changeable Message Sign shall be used to provide advance notices for all directions impacted by the closure. The message shall be displayed for a minimum of one week in advance of the closure.
- All messages to be displayed on Changeable Message Signs shall be approved by the Engineer in advance of sign deployment.
- Arrow boards shall be used at all lane closures on multilane streets. Preferred placement of the arrow display is at the start of the taper area.
- Traffic control devices shall be completely covered or removed when not in use.
- Any vertical pavement drop-off that exceeds 3 inches in depth and is located within 4 feet of an adjacent travel lane, shall require either a Curb Drop Off Ahead sign (OP TTCT) or Shoulder Drop Off sign (W8-17), as appropriate, spaced not less than 500 feet apart. Channelizing devices shall be placed at the edge of the drop off. If the drop-off is to remain in place for more than three days, a solid edge line pavement marking shall be present for the adjacent lane.
- The minimum lane width for a thru lane is 10 feet. The minimum lane width for a turn lane is 10 feet. A lane shall be closed if the minimum lane width cannot be maintained.

Construction Requirements:

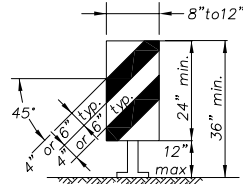
- Construction shall be sequenced to provide the least possible adverse effect to residents, roadway users, and pedestrians.
- Construction materials shall be kept off sidewalks and consolidated in areas within the City right-of-way unless otherwise approved by the Engineer.
- Mud and construction debris on streets or sidewalks shall be cleaned off immediately.
- Access shall be maintained to all drives and side streets or as indicated in the Temporary Traffic Control plan.
- Construction vehicles shall be parked along streets so as not to cause sight restrictions for vehicles coming from side streets or drives.
- The Contractor shall be responsible for coordinating with the Engineer for street closure locations and times.
- Construction shall not be performed on holidays or 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 shall be A36 certified steel a minimum of 1 inch thick. The plate shall be securely anchored and all edges of the plate shall be ramped with hot mix asphalt. If hot mix asphalt is not available, cold mix may be used. A Steel Plate Ahead warning sign (W8-24) with a Type B warning light shall be installed at the location of a street plate.
- Any construction activities which require the closing of a lane of traffic on thoroughfares (arterial streets) or collector streets shall not occur between the hours of 7:00 a.m. to 8:30 a.m. and 4:00 p.m. to 6:00 p.m. or on holidays or weekends, unless prior approval is received from the Engineer or there are emergency repairs necessary by a utility company or their representative.



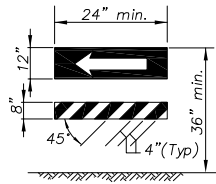
Tubular Marker



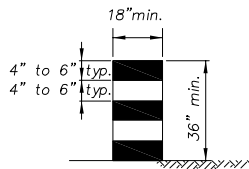
28" Cone



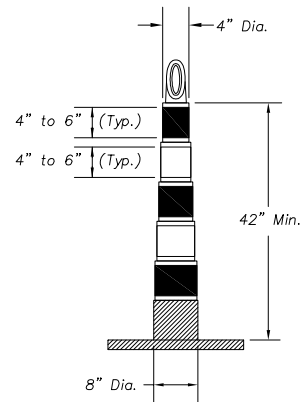
Vertical Panel



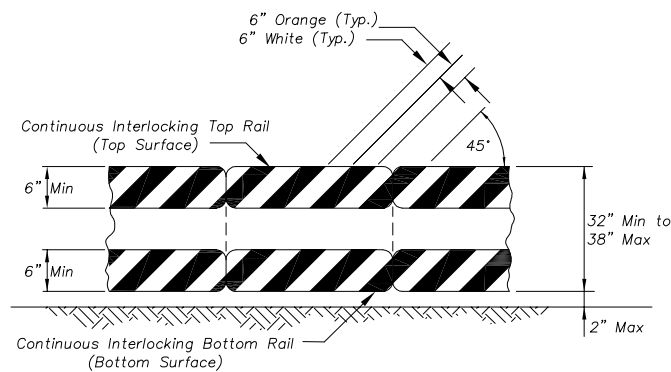
Direction Indicator Barricade
(See Note 16)



Drum

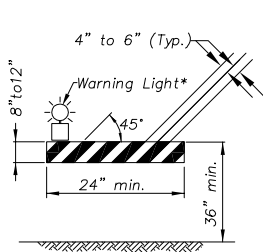


Conical Delineator

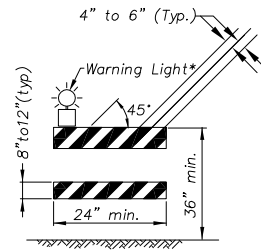


- Notes:**
- Adjacent sections shall have the same base color (orange, white, or yellow).
 - Adjacent sections shall be interlocked together.
 - Stripes are Optional.

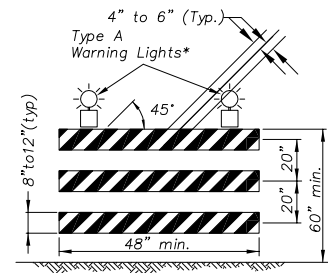
Detectable Pedestrian Barricade/Channelizer



Type 1 Barricade



Type 2 Barricade



Type 3 Barricade

*Optional during daylight hours (See general note #15)

Length and Device Spacing for Lane Closure

Speed Limit	Minimum Taper Length (L)			Min. No. of Devices for Taper (12FT. Lane)	Maximum Device Spacing
	Lane Width in Feet 10	11	12		
M.P.H.					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

$$L = S \times W \quad S \geq 45 \text{ MPH}$$

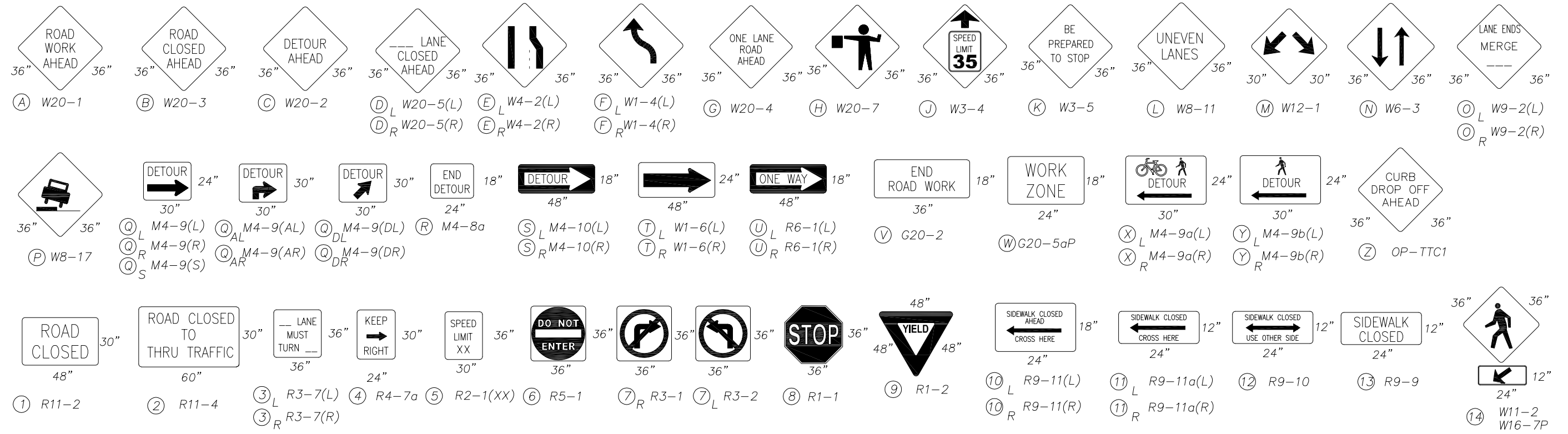
$$L = S^2 \times W / 60 \quad S \leq 40 \text{ MPH}$$

L = Minimum Taper Length (Feet)
W = Width of Offset (Feet)
S = Posted Speed Limits Prior to Construction (MPH)

Note: Length of downstream taper to be between 50' and 100' with device spacing of 20'.

LEGEND

- CMS Changeable Message Sign
- Arrow Board
- Type 3 Barricade
- Detectable Pedestrian Barricade/Channelizer
- Traffic or Pedestrian Signal
- Pavement Marking To Be Removed
- Work Area
- Sign Code
- Sign Symbol
- Channelizing Device
- Flagger
- Arrow Board Support
- Direction of Traffic
- Direction Indicator Barricade
- Tubular Markers



Sign Designations

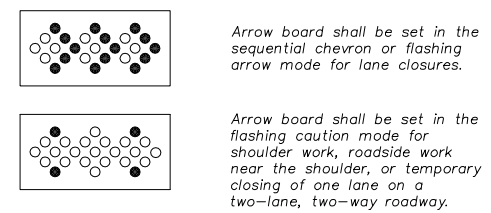
Subscript Codes

- L - Left
- R - Right
- S - Straight
- AL - Advance Left
- AR - Advance Right
- DL - Diagonal Left
- DR - Diagonal Right

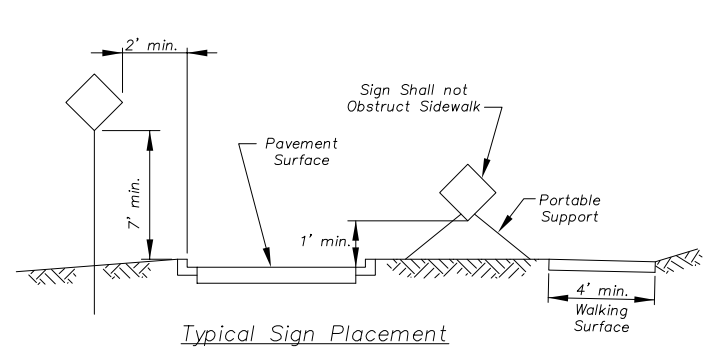
Notes

1. Sizes shown are for conventional roadways.
2. Signs (1), (2), and (3) shall be mounted on Portable Barricade/Channelizer

Type	Min. Size	Min. # of Elements	Usage
A	48"x24"	12	Speed Limit ≤ 30 MPH
B	60"x30"	13	Speed Limit = 35, 40, 45 MPH
C	96"x48"	15	Speed Limit ≥ 50 MPH



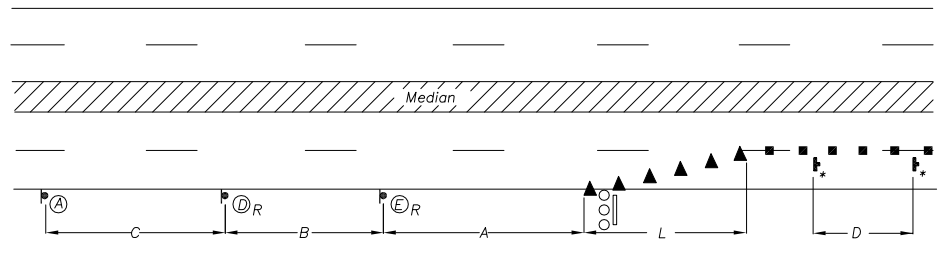
Arrow Board



Typical Sign Placement

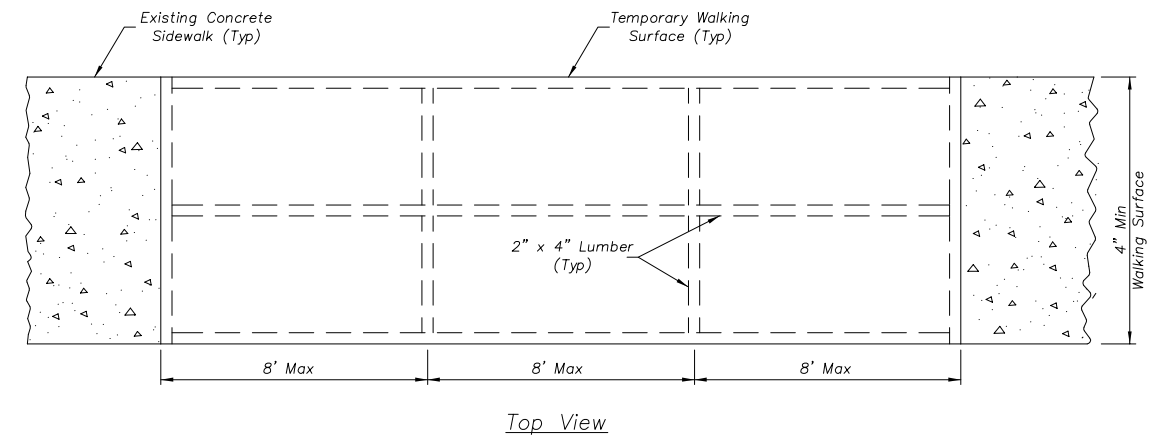
Advance Warning Sign Spacing Table

Road Type	Minimum Distance Between Signs			
	A	B	C	D
Urban (Speed Limit ≤ 30 MPH)	100'	100'	100'	100'
Urban (Speed Limit ≥ 35 MPH)	350'	350'	350'	150'
Rural (Speed Limit ≤ 40 MPH)	350'	350'	350'	200'
Rural (Speed Limit > 40 MPH)	500'	500'	500'	200'

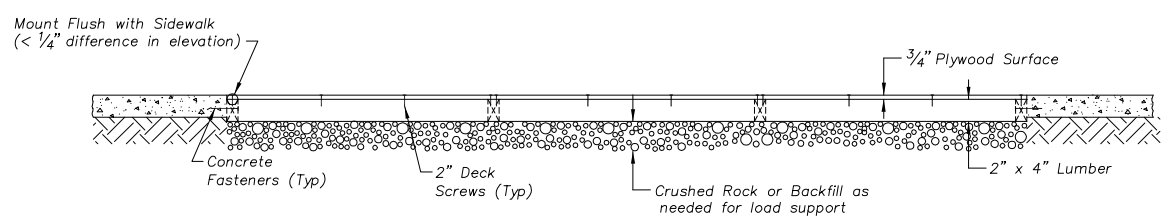


Typical Sign Spacing

Note: * Applies to any subsequent sign in the work zone.



Top View



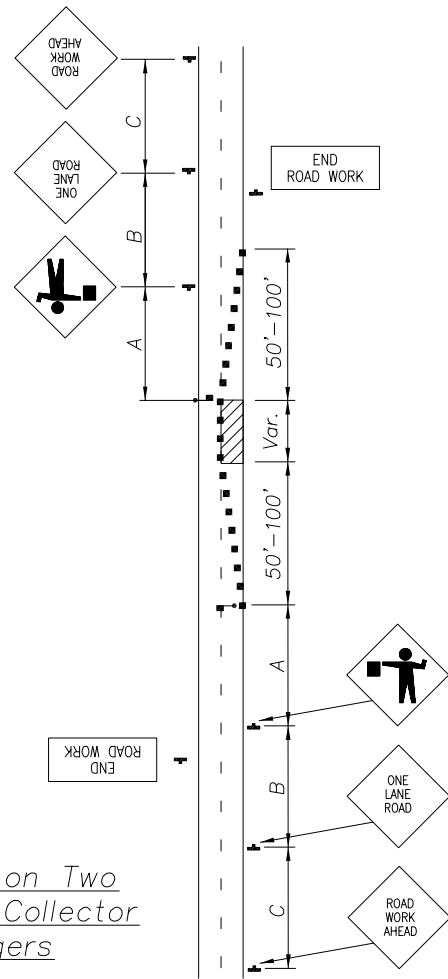
Side View

Temporary Sidewalk Detail

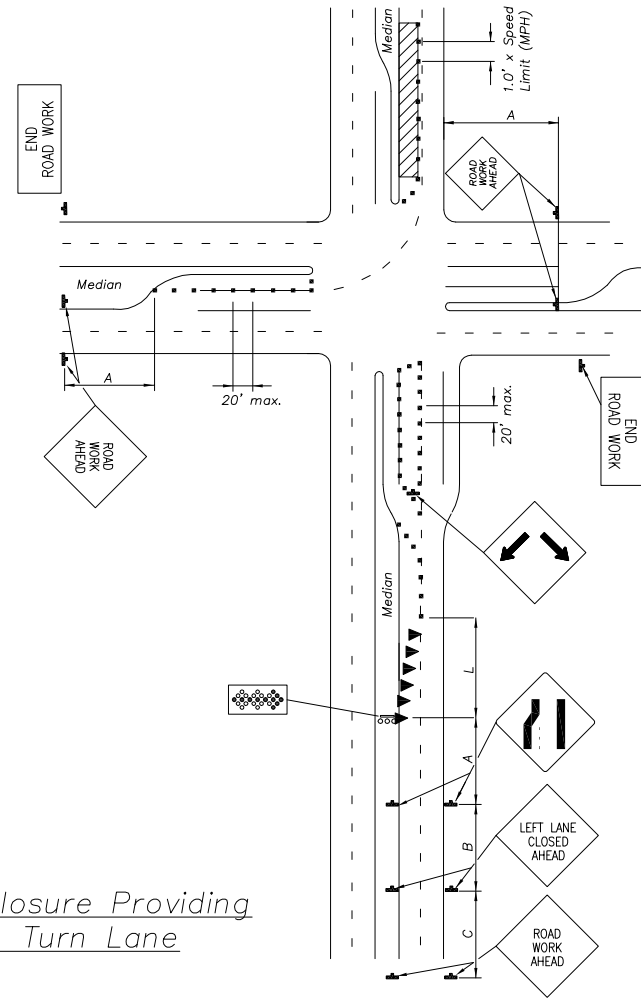
Notes

1. A temporary sidewalk may be installed, in lieu of providing a pedestrian detour, when removing sidewalk panels during construction.
2. The temporary sidewalk shall be installed immediately after the sidewalk has been removed.

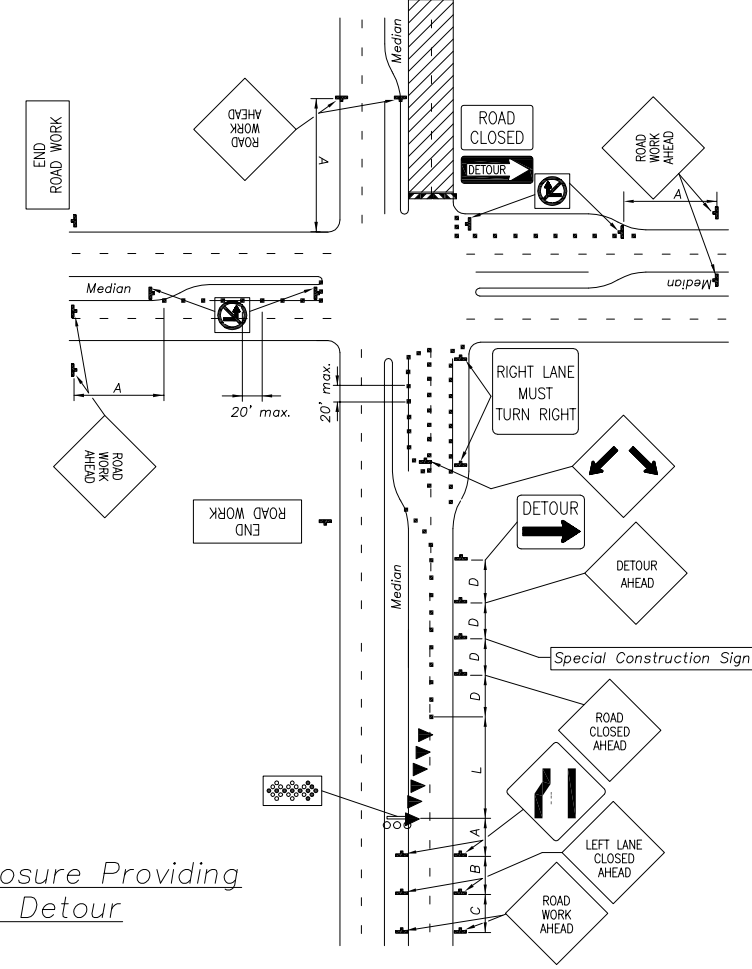
Typical Lane Closure on Two Lane Thoroughfare or Collector Road Using Flaggers



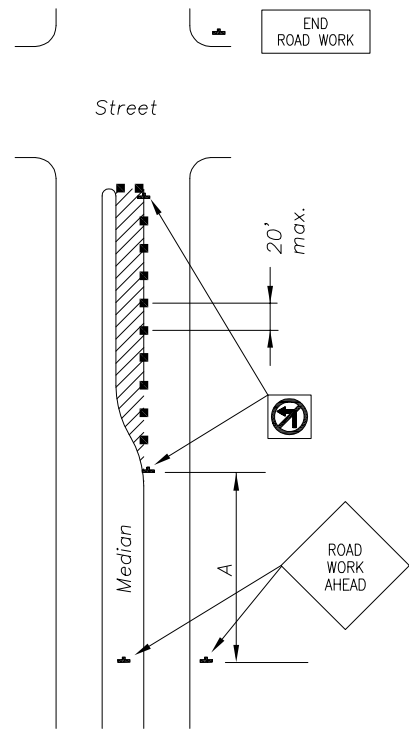
Typical Left Lane Closure Providing Access to Left Turn Lane



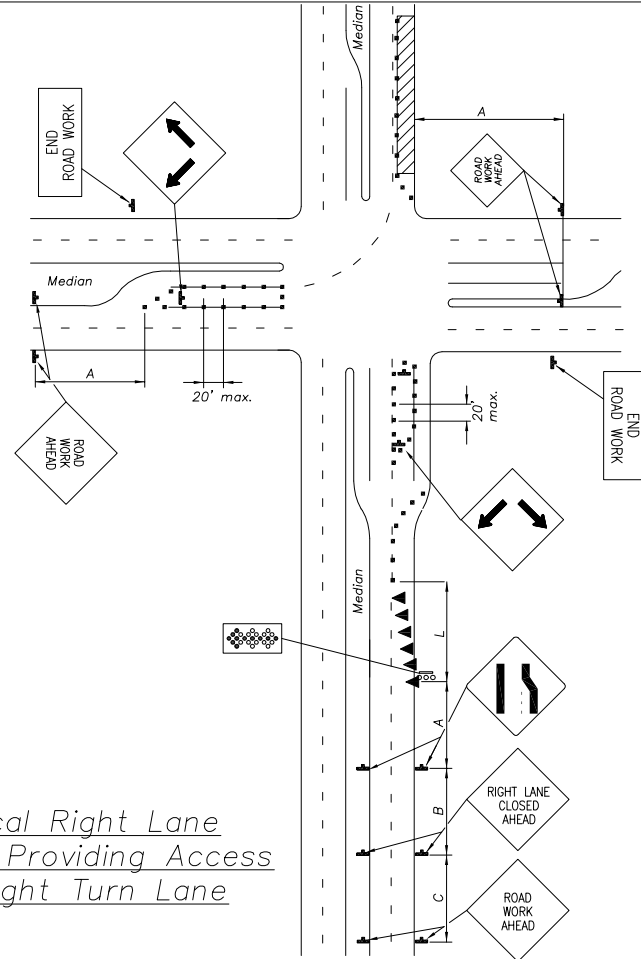
Typical Road Closure Providing Off-Site Detour



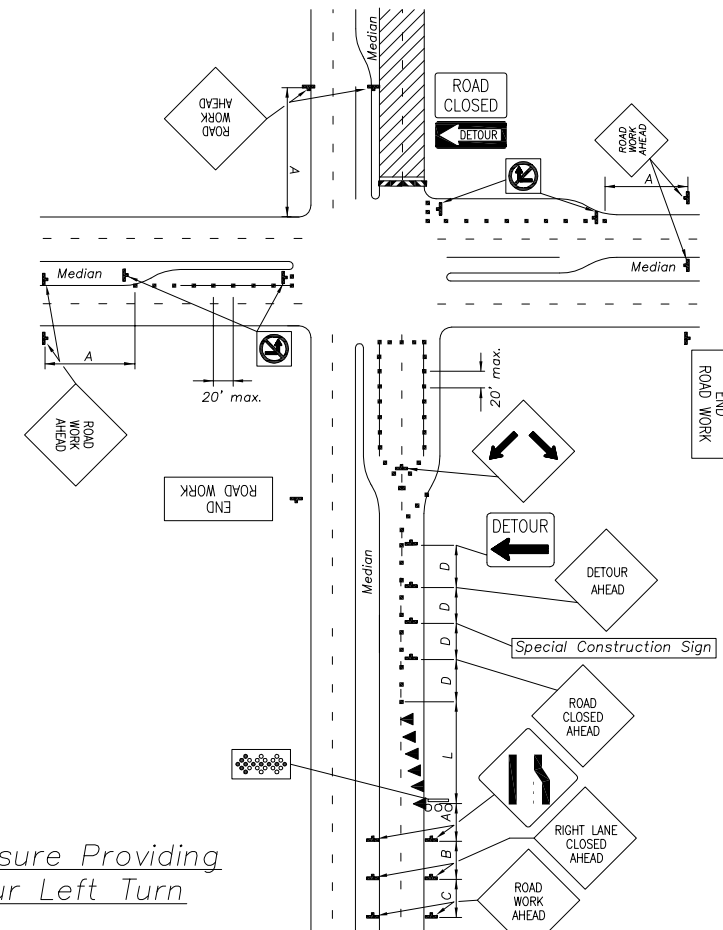
Typical Left Turn Lane Closure

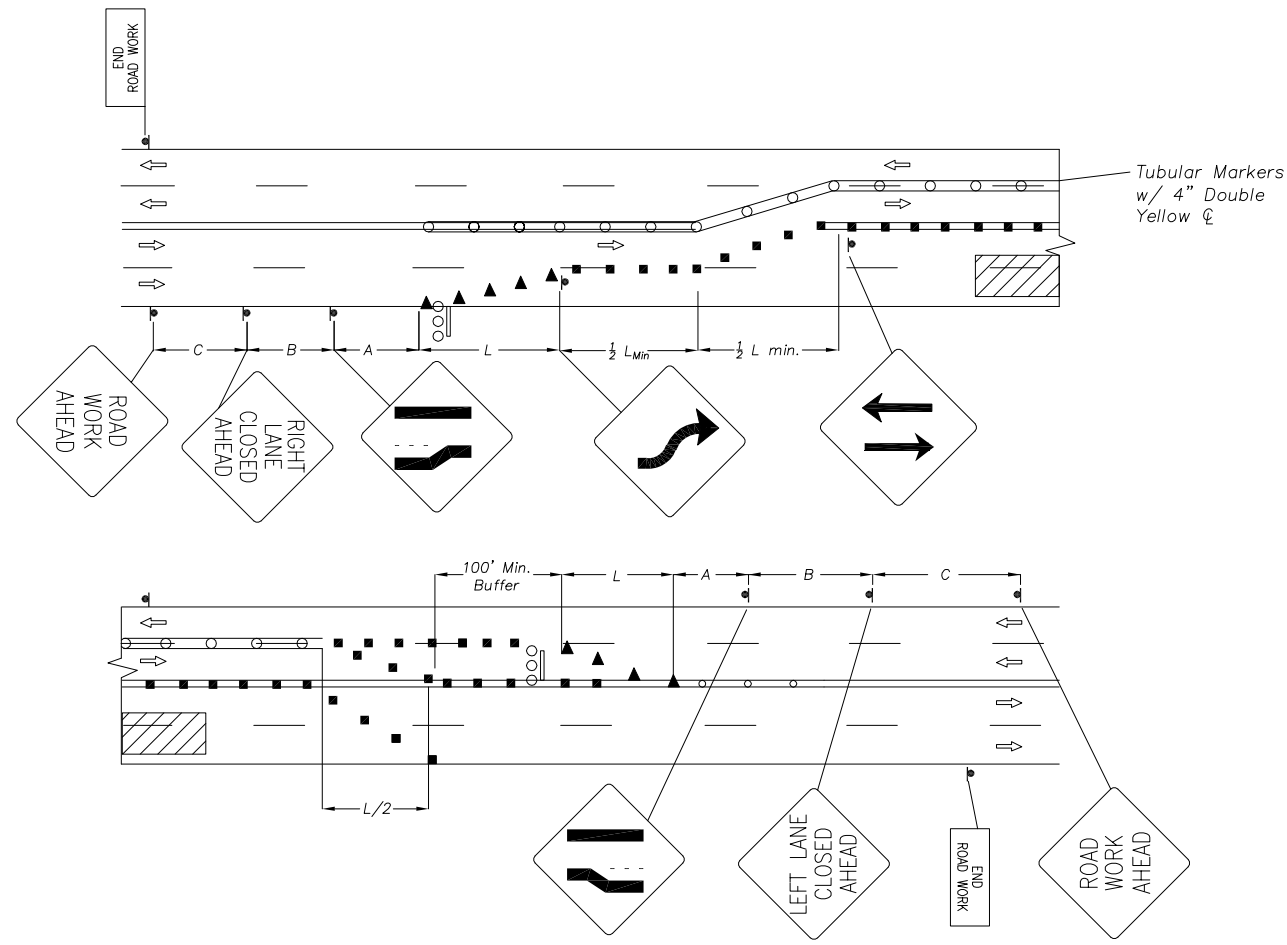


Typical Right Lane Closure Providing Access to Right Turn Lane

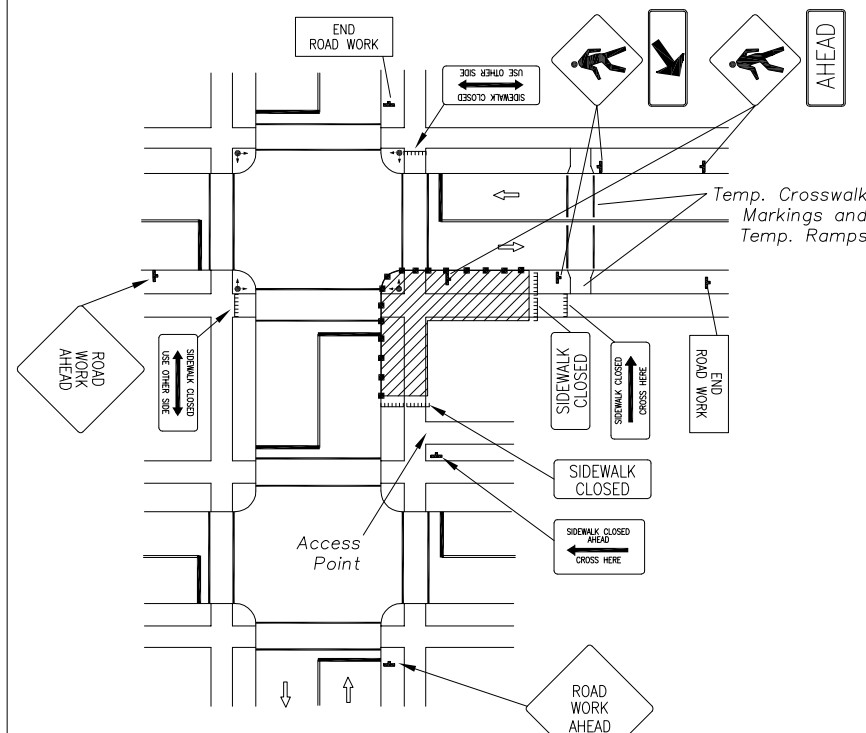


Typical Road Closure Providing Off-Site Detour Left Turn

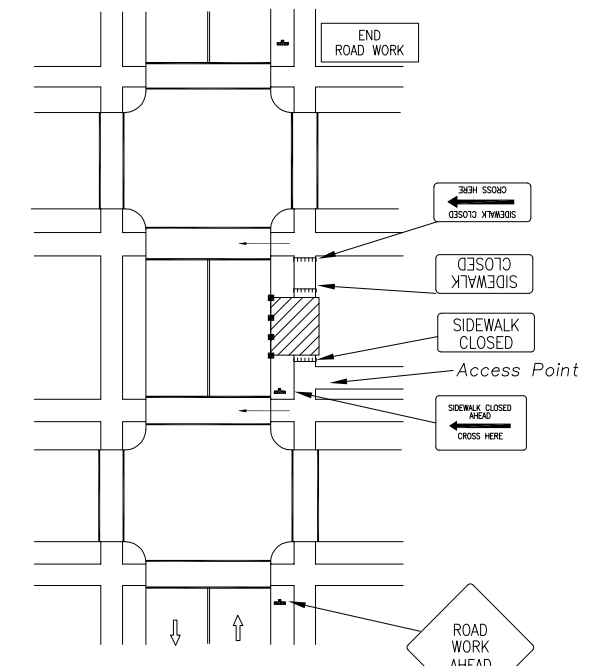




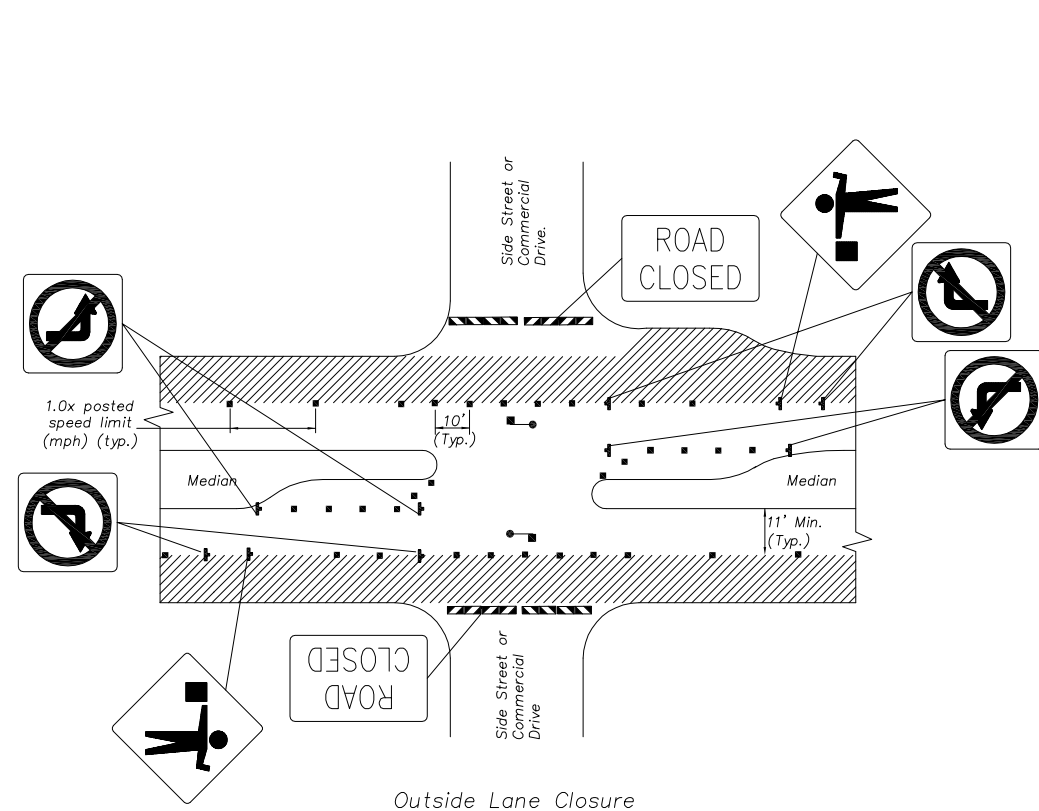
Typical Double Lane Closure on Four Lane Undivided



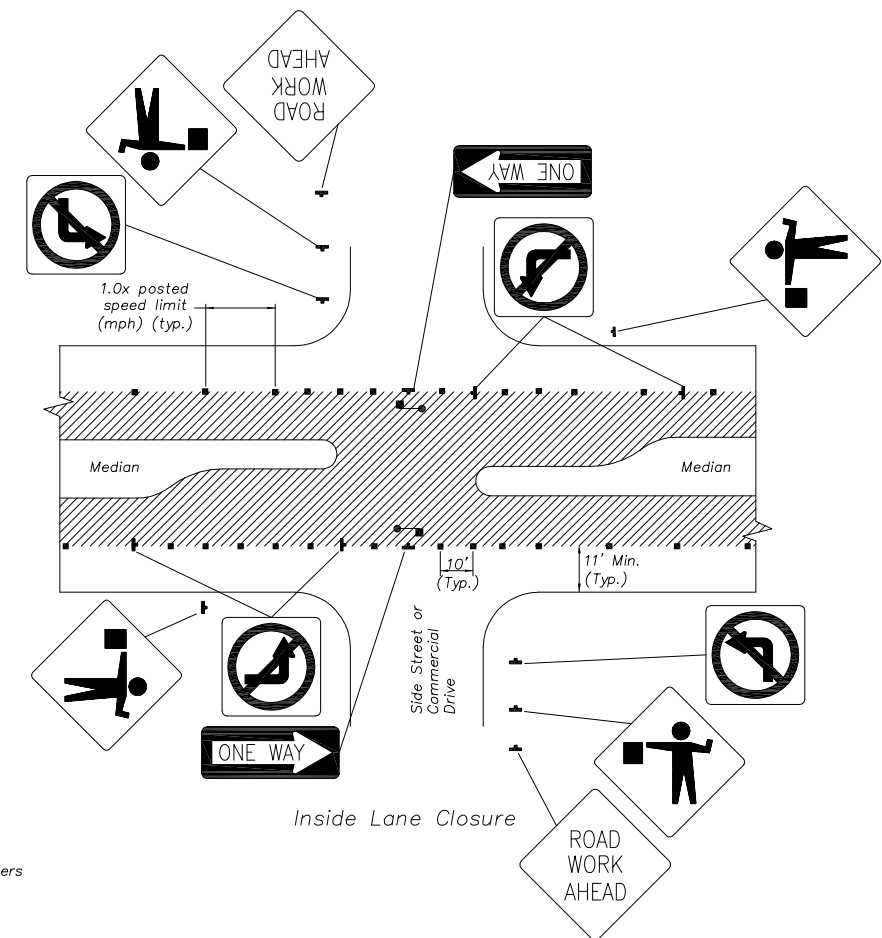
Sidewalk Closure with Temporary Pedestrian Crossing



Sidewalk Closure



Outside Lane Closure



Inside Lane Closure

Note:
A minimum of two (2) properly equipped flaggers shall be used at the intersection. Additional flaggers may be required as directed by the Engineer.

Overlay Lane Closure Details

CITY OF OVERLAND PARK DEPARTMENT OF PUBLIC WORKS	
V/G	BY
01/01/2018	DATE
1	NO.
2	
3	
REVISIONS	
2018 Standard Details	
TEMPORARY TRAFFIC CONTROL LANE CLOSURE DETAILS	
SHEET NO.	TOTAL SHEETS
43	50