

Guide Lines on Traffic Management in Work Zones (IRC:SP:55 -2014)

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Aims and objectives of Guidelines

- **Guidelines on Safety in Road construction Zones was first published by IRC in 2001. This was revised to include latest technology of Traffic Management and road safety aspect in 2014.**
- **Work zone Traffic Management Plans (WTMPS) to meet the safety needs of regular traffic as well as works traffic.**
- **To facilitate the safe passage of road users through such work zones**
- **Applicable for all categories of roads**
- **Basic strategy of a Safe System approach in work zone**

Topics

- **Principles of work zones Traffic Management Plans**
- **Definitions**
- **Planning and Design**
- **Temporary Traffic Control Zones**
- **Traffic Control devices**
- **Roles and Responsibilities**
- **Implementation and Operations**
- **Traffic Management Plan (TMP)**
- **Personnel and safety compliances**
- **Typical Layouts**

Principles

- **4 C's principle: work zones be designed, operated and maintained such that the works are:**
- **Clear,**
- **Concise,**
- **Comprehensive, and**
- **Credible.**

Roles and Responsibilities

- **Road Authority**
- **Road Operator**
- **Project director**
- **Designers**
- **Road safety auditors**
- **Contractor/ concessionaire**
- **Supervision consultant**
- **Local Police**
- **Road user**
- **General Public / Communities**

WORK ZONE DESIGN STRATEGIES

- **Alternate One Way Operations-**
 - for very low volume roads
 - Requires two flaggers or temporary traffic lights
- **Detours-** traffic rerouted on alternate road
- **Diversions**
 - traffic is routed on a temporary road
 - can carry one way or two way traffic
 - useful in construction of bridges and culverts
- **Full Road Closures**
- **Intermittent Closures** - for a short duration of about 30 min
- **Lane closures** – requires barriers
- **Use of shoulder as a Travel lane-** requires strengthening of shoulders
- **Night Construction** – mostly in city roads, noise pollution

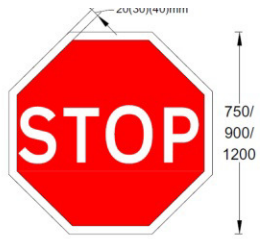
Temporary Traffic Control Zones

- **Advance Warning Zone**- Men at work sign
- **Approach Transition Zone**
 - use of tapers or with circular curves
- **Activity Zone**
 - Work Space
 - Traffic Space
 - Buffer Space
- **Terminal transition Zone**
 - Traffic will be redirected to normal path
- **Work Zone end**

TRAFFIC CONTROL DEVICES

- **Road Signs**
 - Regulatory
 - Warning
 - Informatory/ guide signs
- **Channelizing Devices**
 - Traffic Cones
 - Hazard Markers
 - Drums
 - Barricades
 - Delineators
- **Temporary Pavement Markings & Road Studs**
- **Lighting devices and Variable Message Signs**
 - Arrow Boards
 - Flashing warning beacons
 - Temporary traffic control Signals
 - Portable Variable Message Signs

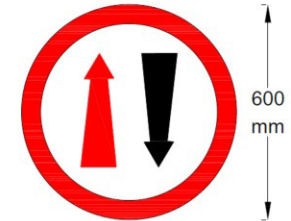
REGULATORY SIGNS



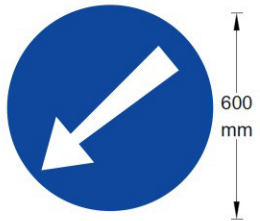
STOP (Fig. 14.01)



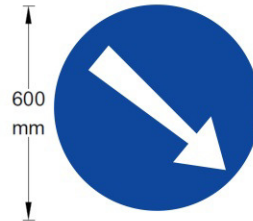
GIVE WAY



Priority to Vehicles from the Opposite Direction (Fig. 14.26)



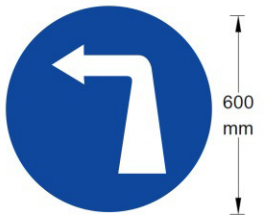
Compulsory Keep Left (Fig. 14.48)



Compulsory Keep Right (Fig. 14.49)



Maximum Speed Limit (Fig. 14.37)



Compulsory Turn Left
(In advance of Junction) (Fig. 14.47)



Compulsory Turn Right
(In advance of Junction) (Fig. 14.46)

Figure 3-2: Regulatory Signs
(Fig. No Refer to IRC: 67-2012)

WARNING SIGNS



Reduced Carriage Way



Men at Work



Rumble Strip



Lane Closed (Two Lane Road)



Lane Closed (Three Lane Road)



Lanes Closed (Three Lane Road)



Two Lane Road



Narrow Road Ahead



Left Lane Diverted



Right Lane Diverted



Centre Lane (Three Lane Road)



Narrow Bridge Ahead



Traffic Signal Ahead



Two Way Traffic



Diversion to Other Carriageway



Slippery Road



Divided Road



Divided Road End



Men at Work



- ┌ Details of Diamond with Warning Sign; Orange Background and Black Borders, Letters (as per speed limits)
- ┌ Standard size 1200mm x 1200mm

OTHER REGULATORY SIGNS & SIZES FOR DIFFERENT SPEED



| Approach Speed (km/h) | Font Height (mm) | | Overall Size (mm) | | | |
|-----------------------|------------------|------------|-------------------|-------------------|--------------------|-------------|
| | Lower Case | Upper Case | ROAD AHEAD CLOSED | Traffic Diversion | WORKS TRAFFIC ONLY | DIVERSION |
| 31 – 50 km/h | 75 | 105 | 767 x 600 | 720 x 620 | 840 x 650 | 950 x 620 |
| 51 – 65 km/h | 100 | 140 | 1020 x 800 | 970 x 820 | 1120 x 870 | 1260 x 830 |
| 66 – 80 km/h | 125 | 175 | 1270 x 1000 | 1210 x 1030 | 1400 x 1080 | 1580 x 1030 |
| 81 – 100 km/h | 150 | 210 | 1530 x 1190 | 1450 x 1230 | 1680 x 1300 | 1900 x 1240 |
| 101 – 120 km/h | 200 | 280 | 1530 x 1190 | 1450 x 1230 | 1680 x 1300 | 1900 x 1240 |

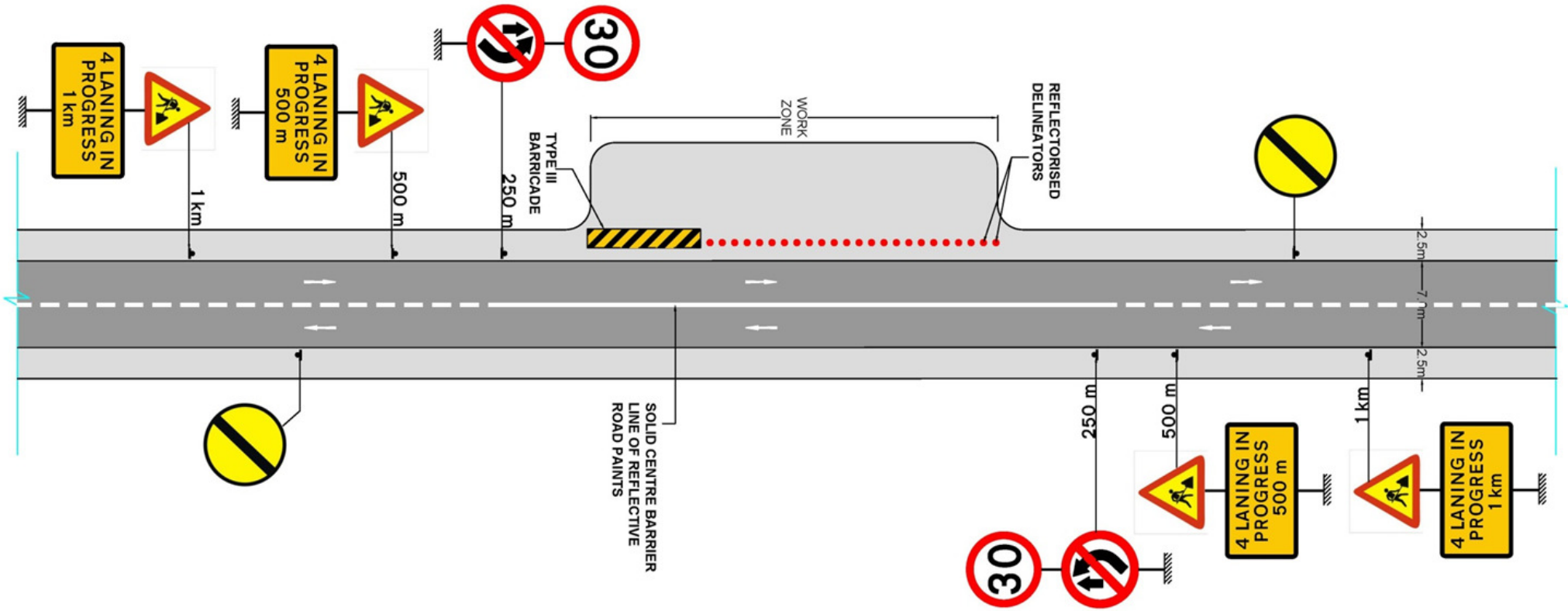
REQUIREMENTS OF TRAFFIC MANAGEMENT PLAN

- Sound and Optimal Deployment of TTC Devices
- Prepared and vetted by Competent Personnel
- Prepared with Due Regard to site Conditions
- Planned Prior to Occupying the Work Site
- Ensured Support from Enforcing Authority
- Wide Publicity and awareness to Affected

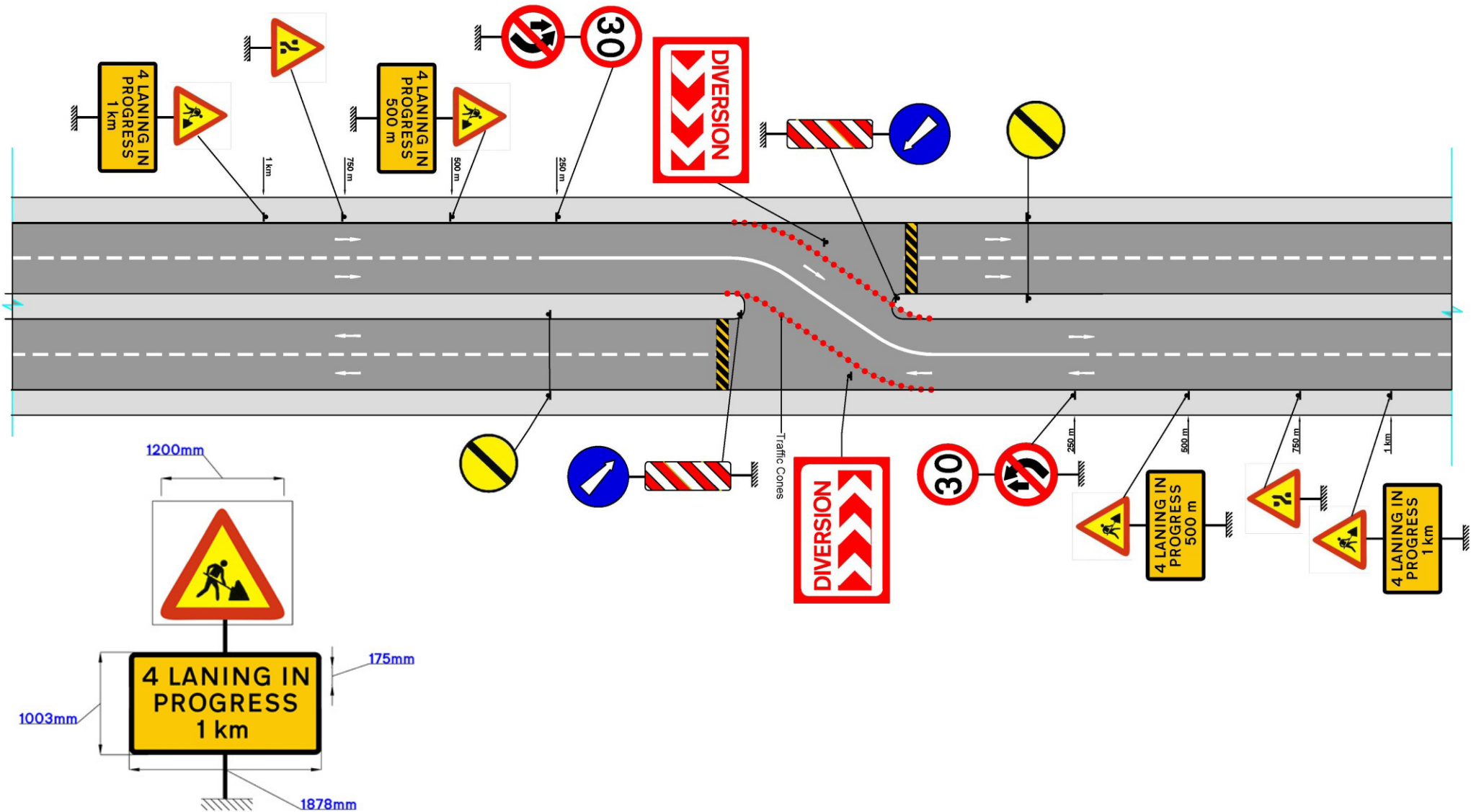
PRIMARY FEATURES OF WORK ZONES

- Adequate Warning, Delineation and Channelisation
- Smooth Movements Through Temporary Traffic Zones
- Provision of Separate Pedestrian Routes
- Location of Temporary Transit Stops and Guidance
- Prepared and Supervised by Experienced Personnel
- Continued Monitoring and Modifications
- Unwanted (Earlier) TC Devices to be Removed
- Coordinately Planned with Adjacent Projects
- TTC Should be Removed once Works are Completed
- Guard and Protect Workers and Equipment
- Monitor Crashes and Accommodate the Straying Vehicles

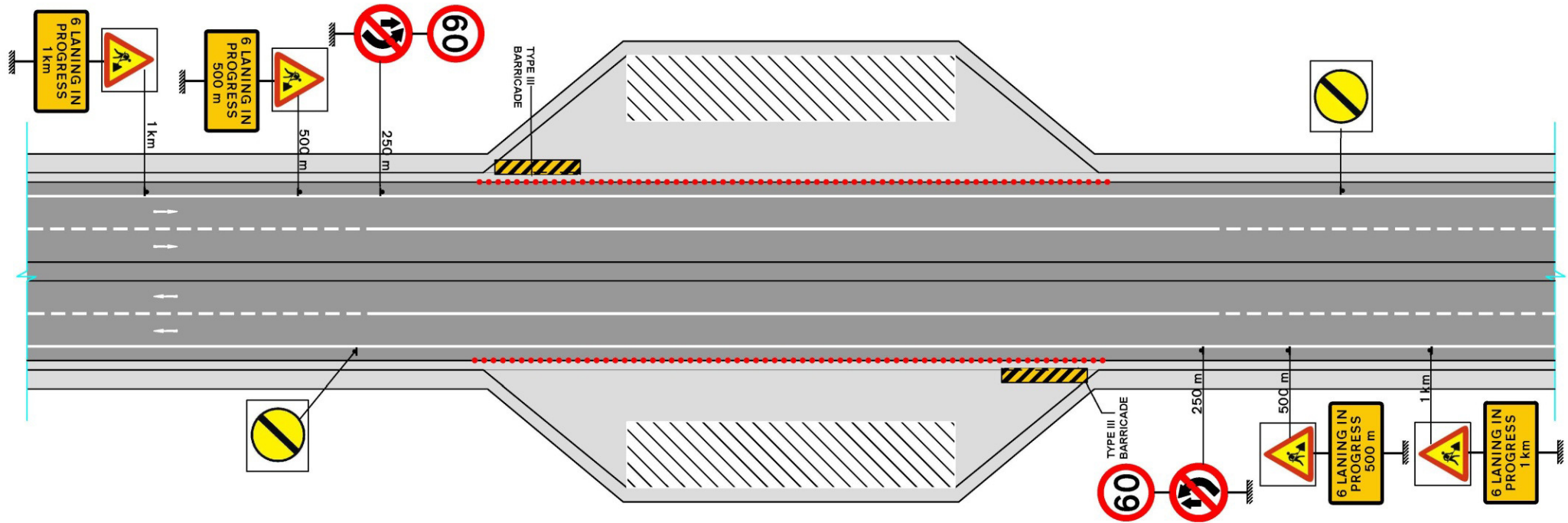
2-LANE TO 4-LANE: NEW CARRIAGEWAY UNDER CONSTRUCTION



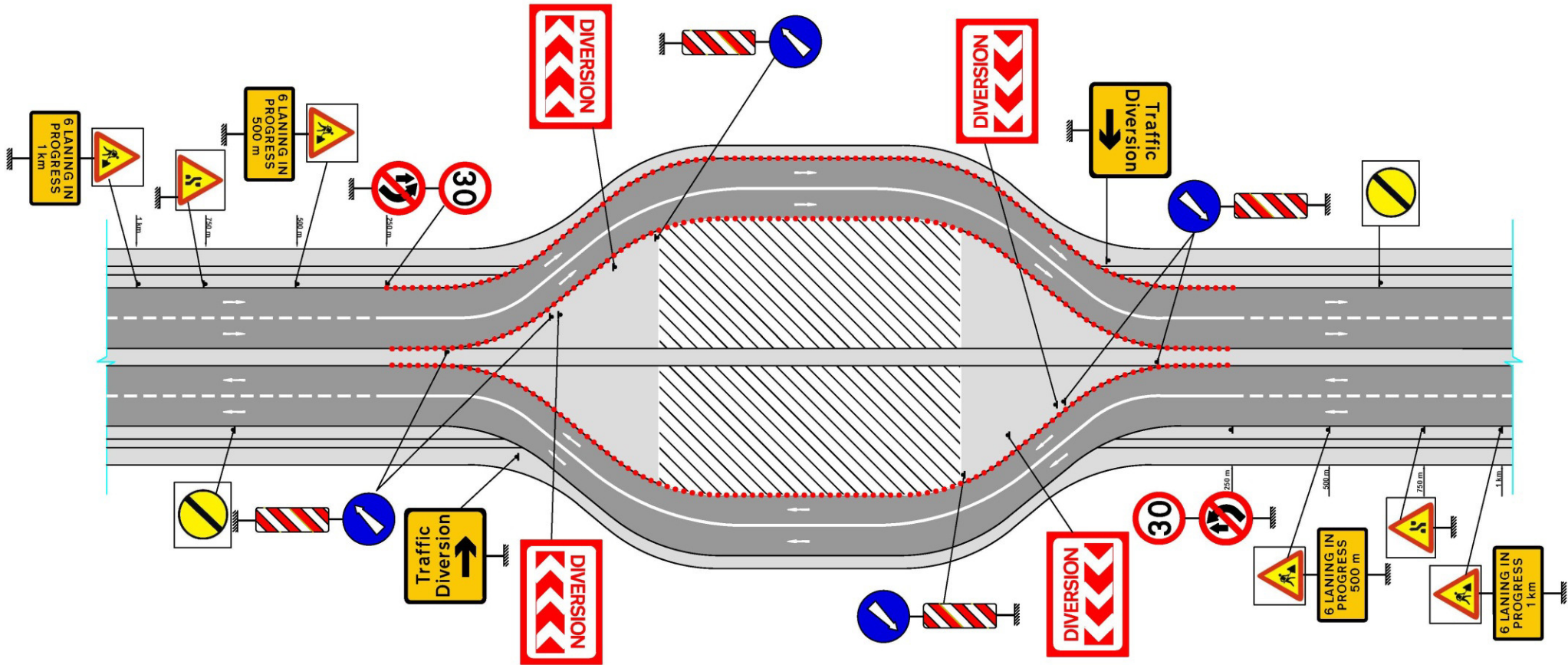
2-LANE TO 4-LANE: SHIFTING OF TRAFFIC FROM ONE C/W TO OTHER



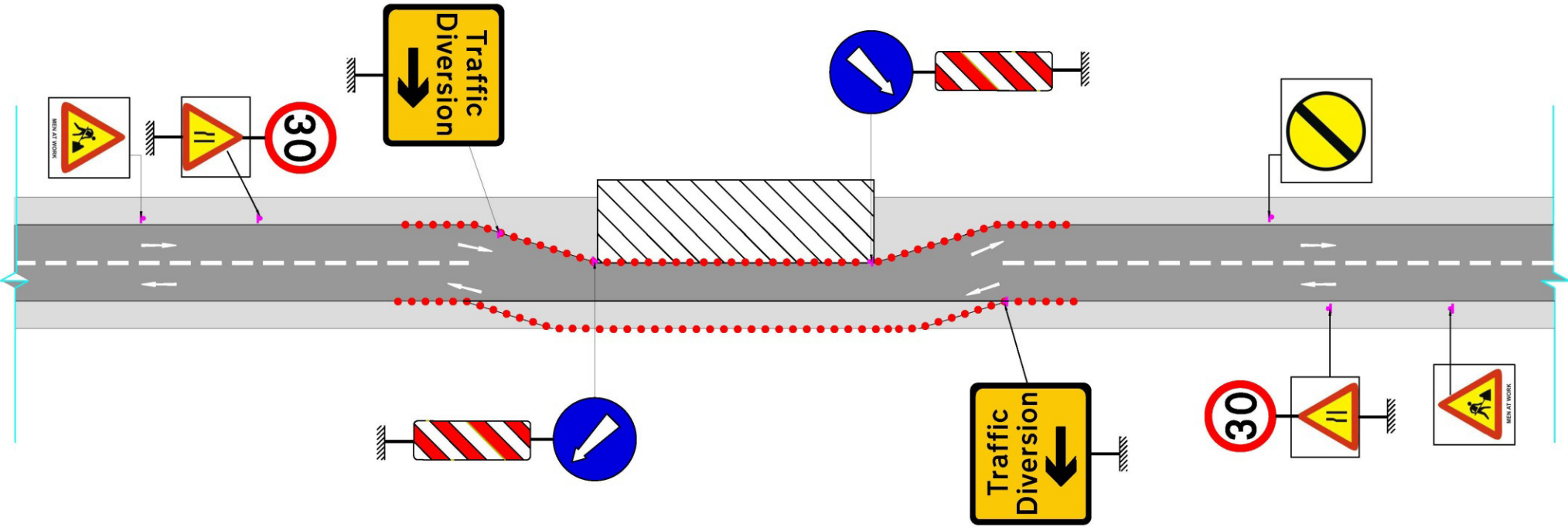
4-LANE TO 6-LANE: SERVICE ROADS UNDER CONSTRUCTION



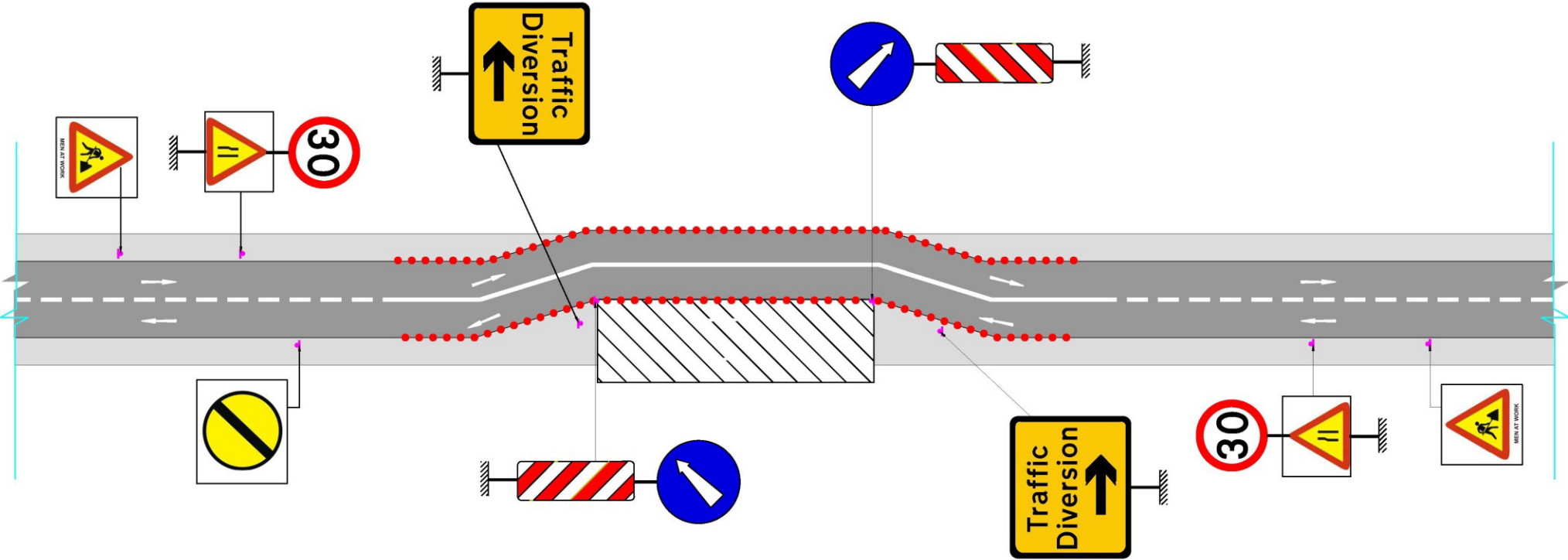
4-LANE TO 6-LANE: WIDENING & STRENGTHENING OF 4-LANE PORTION



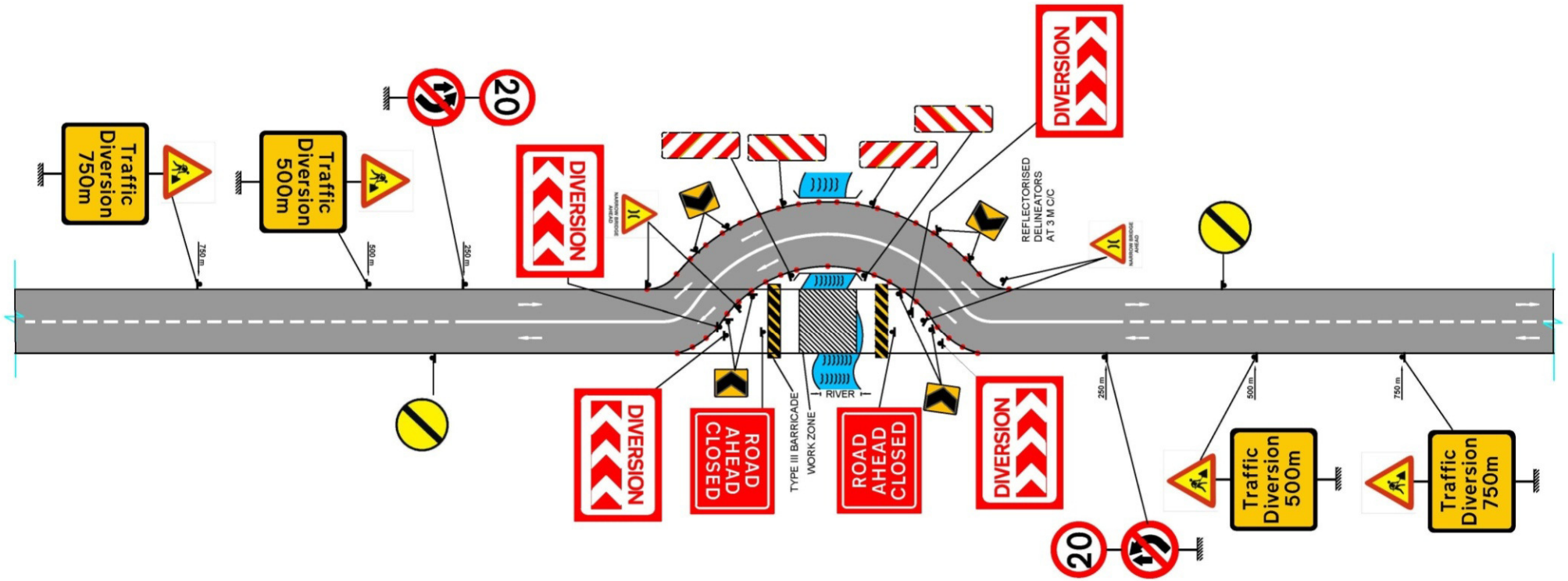
Intermediate lane Road into 2-lane with Paved Shoulder: First Half Under Construction



Intermediate lane Road into 2-lane with Paved Shoulder: Second Half Under Construction



TEMPORARY TRAFFIC DIVERSION



WORKERS SAFETY

- **Deployment of Flagman**
- **Training**
- **Behaviour**
- **Reflective Clothing**
- **Protective Gears**
 - High visibility safety apparels, headgear, boots, gloves, protective helmets



Thanking you