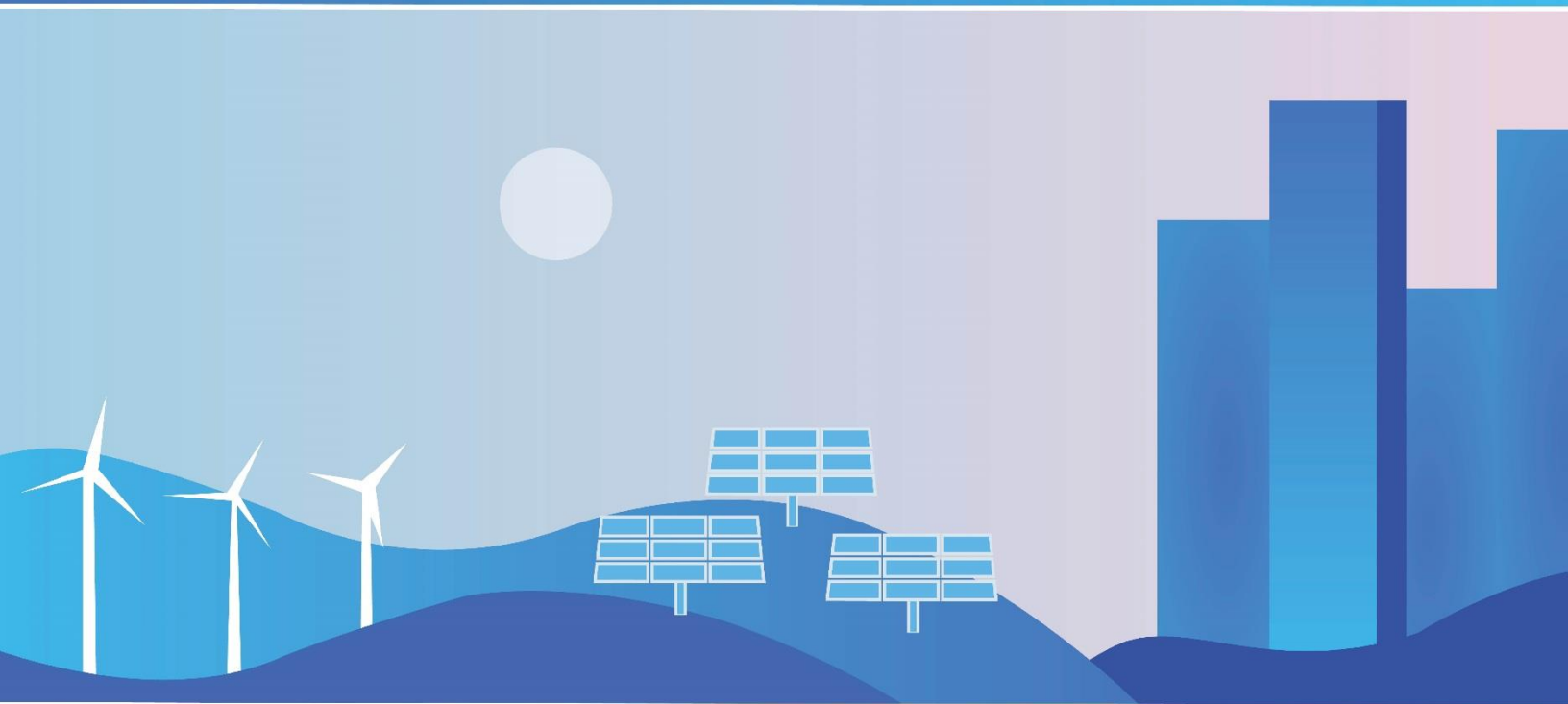




# TRAFFIC MANAGEMENT PLAN



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## 1. PROJECT IDENTIFICATION

**PROJECT NAME:** HALKIRK II WIND (H2)

**PROJECT NO.:** 23.0198B

**CLIENT:** CAPITAL POWER

**PROJECT LOCATION:** HALKIRK, ALBERTA

**DATE:** SEPTEMBER 5, 2023

## TABLE OF REVISIONS

REV.	DATE	DESCRIPTION	PREPARED BY	VERIFIED BY	APPROVAL
00	2023-09-05	First Edition	C. A. Malard	I. Zyto	M. Cummer

## **2. SCOPE OF WORK**

The Halkirk II project (AUC Decision 27961-D01-2023) is a wind-powered electric generating facility located near Halkirk, Alberta. The project featuring 31 Vestas V150-4.5MW turbines will generate approximately 139.5MW of electricity.

The project's footprint is spread across approximately 17 000 acres of land between Highway 855 and Highway 861. The North and South limits of the project are bounded by Township Road 402 and Township Road 394, respectively.

The scope of the project includes the work associated with the engineering, civil and mechanical preparation for the installation of the wind turbine generators (WTG), the associated 34.5kV underground collection system, batch plant construction, integration of a MET and ADLS tower.

## **3. OBJECTIVE**

The purpose of the Traffic Management Plan (TMP) is to provide for the safe movement of vehicular and pedestrian traffic, the protection of workers from passing traffic, the provision for access to properties located within the limits of the project, the provision of traffic controllers, the installation of temporary signs, road markings, lighting and safety barriers. It will also provide information for the effective implementation of Traffic Control Devices (TCD), with respect to but not limited to, rural roads, public information, incident management, traffic control, risk assessment and audit procedures.

The main objectives with respect to the TMP are to:

- Coordinate and prioritize work activities as they relate to transportation;
- Ensure the safety of employees, contractors and the general public;
- Mitigate traffic disruption including impacts to local stakeholders;
- Maintain satisfactory property access;
- Obtain any required approvals and licenses such as Road Occupancy Agreement and Notice of Road Closure.

The contents of this document are not intended to modify or supersede the provisions set forth by the local Ministry of Transportation or Health and Safety Acts. In the case of any discrepancy, the statutes set forth will govern. All primary roles and responsibilities of each party involved will be outlined within the document for effective traffic management.

## **4. RESPONSIBILITIES**

The following section outlines the roles and responsibilities of the key team members related to the traffic management plan.

#### 4.1. Construction Site Manager

- Is properly planned, organized, directed, and controlled;
- Is properly resourced with people, equipment, facilities, and systems;
- Complies with all other legislation and;
- Is achieving its objectives;
- The Construction Site Manager's responsibilities remain with him/her, in coordination with the Health & Safety Coordinator. However, the Construction Site Manager has delegated as follows.

#### 4.2. Health and Safety Coordinator

- Implementing the Traffic Management Plan and the Traffic Control Plan on site;
- Maintaining the TCP;
- Assessing and monitoring subcontractor's capabilities and performance in respect of site activities;
- Ensuring the safe passage of traffic at all times;
- Ensuring everyone on site is inducted and wears the appropriate approved clothing and;
- Driving through the site to inspect the traffic control layout, recording any deficiencies and the action taken to rectify them.

#### 4.3. Traffic Control Foreman

The signing-off of Non-Standard TCPs by a person who is qualified and is experienced in the design and implementation of traffic management plans. The contractor will ensure the Traffic Control Foreman will have completed the required training course on developing, implementing, and monitoring a traffic control plan in a construction environment. This foreman will be responsible for the following and be under the supervision of the Health and Safety Coordinator and the Construction Site Manager:

- Amount of required Traffic Controllers;
- Diversions, side tracks and/or detours as required;
- Temporary warning signs;
- Signs and devices;
- Adequate delineation for night/wet conditions;
- Special lighting when required;
- Access ways to be kept clear for emergency vehicles and over-dimensional vehicles;
- Temporary speed zones as required (and approved);
- Vehicle Movement Plans (including specified locations for on-site parking, and consideration of pedestrian movement for workers, the public including children and disabled persons, bicycles, buses and light rail where applicable);
- Set up diversions when required in consultation with Police when necessary;
- Possible impact on main arterial roads;
- Traffic impact for work near traffic lights;

- Temporary delineation, barriers and signs until permanent measures are completed. All temporary measures will be maintained in an effective condition while in use and removed when permanent devices are complete;
- Position cones and early warning signs when required;
- Sign sizes that are appropriate for the conditions;
- Portable traffic signs if required;
- Flashing traffic signs if required;
- Place signs (as required) regarding: Sight distance, motorists approaching at high speed, queue lengths, visibility, shade and light glare;
- Ensuring only undamaged or non-defective signs are used and;
- Ensuring consideration of the needs of:
  - Pedestrians (including those who are disabled);
  - Cyclists;
  - Business and property owners and;
  - School crossings and bus routes.
- Ensuring the TCP is approved;
- Ensuring that control measures are maintained, and that work-in-progress is inspected;
- Identifying training needs and arranging for employees and subcontractors to attend the training;
- Ensuring subcontractors/suppliers have suitable qualifications and experience and;
- Carrying out and recording weekly inspections and verifications to demonstrate compliance of the Services.

## 5. SITE COORDINATION

### 5.1. Orientation Meeting and Safety Alignment

Before entering the Halkirk 2 project site, all workers are required to check-in at the project office. Upon their first visit at Halkirk 2, workers will attend a health and safety orientation at the beginning of the day. The orientation session will address information regarding the traffic control plan and safety driving rules on site.

### 5.2. Plan of the Day (POD) and Three Week Look Ahead

Traffic management will be included into POD and 3 weeks' schedules. Subcontractors will be informed of equipment relocation as well as major deliveries for coordination of their work.

### 5.3. Construction Signage

A construction signage plan will be created. Signage installation will begin as soon as the first equipment arrives to site. Signage will be installed progressively following the opening of new access roads and sectors. Road names, turbine numbers, speed limits, waiting areas, and other information will aid drivers in situating themselves and will assist them in navigating safely through the different road configurations.

#### **5.4. School Bus Routes**

School bus routes will be shared with site personnel, subcontractors, and delivery truck drivers. Specific bus routes and times will be communicated so that deliveries and concrete pour traffic can avoid, as much as possible, those areas of concern.

### **6. CRITICAL WORK TASKS**

#### **6.1. Crane Mobilization and Crawling**

Three weeks' schedule and POD will show crane mobilizations as well as the routes the crane will take when crawling. Crane arrival to the construction site (and demobilization) will be managed by the installation Superintendent.

#### **6.2. Turbine Component Delivery**

Three weeks' schedule and POD will show turbine components deliveries. Turbine component deliveries will be coordinated between Borea Installation Superintendent, Site Manager and Vestas. Transport plan will be submitted by Vestas/Capital Power.

#### **6.3. Blocked Road**

Such road closures must be planned to minimize the time other transports cannot access the road. These closures will be announced during POD the day prior to the scheduled road closure.

#### **6.4. Safe Lifting Operations**

Depending on the pad configuration, roads may be closed during the lifting of some components. In that case, the foreman will barricade the road to close it off during lifts and reopen it as soon as it safe to do so. These closures must be planned and announced during POD the day prior to the schedule road closure.

#### **6.5. Access Road Entrance - Material Delivery**

During the construction of access road entrances, roads will need to be temporarily closed for the placement of aggregate. Entrances are typically constructed within the right of way and as such, trailers carrying materials may be required to offload at the entrance. Roads may be subject to temporary short duration closures.

### **7. MITIGATION MEASURES**

#### **7.1. Waiting Areas**

Waiting areas will be determined by the installation Superintendent for every delivery. These areas will be strategically chosen to allow trucks to park safely. Traffic can then continue to safely use the road while the



trucks wait for the pads to receive them. Appropriate temporary signage or flag man will be used when necessary if trucks partially block the road.

Drivers will be required to turn off their engines while waiting. Drivers who wish to exit their vehicles will be required to wear proper PPE, have a radio and smoke only per fire index in appropriate designated areas. Meanwhile, the load must stay completely attached to the truck until the truck has reached its destination and unloading point and is ready to be received by the offload crew.

## 7.2. Work Area Signage

Signage is installed on site as per Temporary Signage Localization. The signage is there for all road users' safety and must be strictly respected.

## 7.3. Open Excavations

Road closures for collection system excavation will be coordinated at the POD meeting daily and will be planned with the 3 weeks' schedule. Traffic control measures to undertake will reflect the specific excavated road configuration.

## 7.4. Weather Considerations

During bad weather conditions (snow, heavy rain, strong wind, etc.), roads could temporarily be unsafe for delivery trucks. In that case, delivery will be delayed and trucks already on site will be asked to park in designated areas. If for any reason they cannot reach the designated areas, trucks may be allowed to park on a pad with Borea's approval.

## 7.5. Right of Way

Loaded delivery trucks have the right of way when passing unloaded vehicles. In the case of two loaded trucks going in opposite directions, the one going uphill has the right of way. In other passing situations, the larger truck will have the right of way. Pickup trucks must park on the side of the road so the priority truck can use the middle of the road and keep a safe distance from ditches.

\*Note: The right of way described here is only when 2 vehicles are passing each other. All stop signs and normal traffic signage are still applicable.

## 7.6. Directions

Every truck driver must know where he is going and how to get there before entering the site. A map is given to workers when they check in at the office after the orientation meeting. Road configuration rarely allows loaded trucks to turn around if they take a wrong turn and backup maneuvering can be difficult.

Traffic will be directed to promote one-directional routing, when possible, and will be especially prioritized for heavier loads. To that effect, concrete trucks will have predetermined haul routes in accordance with the recommendations set forth in Exhibit M-3 for Concrete Foundation Pour Traffic.

## 7.7. Escorts

Oversized trucks and cranes must be escorted by vehicles with beacons (front and rear of convoy). The escort must make sure that no other vehicle is coming in the opposite direction when the moving truck requires the entire road width. This also prevents other vehicles from being surprised by a slow/stopped truck or crane when there is limited visibility. The escort must be present for the entire convoy and make sure the road is clear.

## 7.8. Speed Management

In accordance with the commitment Capital Power has agreed to with the County, speed limits within project boundaries will be limited to 50 km/h.

## 8. TRAFFIC CONTROL

If lane or road closures will temporarily modify traffic patterns or the imposition of temporarily restricting public access to or use of the Road Allowances, the Contractor will provide notice 5 business days prior to the effect. Coordination with the County and local emergency services will occur to minimize and mitigate any adverse impacts and ensure public safety. The stakeholders are, but not limited to hospitals, fire departments, police, school divisions, neighboring counties, and any residential and commercial stakeholders immediately adjacent to the work zone. An activity forecast report shall be provided to the Owner's representatives outlining any construction activities within a minimum of five (5) business days prior to any work.

To adequately maintain and rectify any damages caused to public roads by construction work, all roads within the project area shall be videoed with audio. This will be completed by the owner and provided to Borea. It will provide historical documentation showing the condition of the roads prior to the commencement of any work. The Owner's representative will be notified of Work performed on the roads or maintenance.

In the event of excessive dust created by construction activities, water tankers and/or spreader trucks will be used to suppress the emission of dust. This will include ensuring that all roads travelled on by construction traffic and intersections will have dust control maintenance in place. A chemical dust suppressant will be applied at turning intersections and in front of properties within the project limits only.

In the winter snow removal, will be needed at times for both access to the site and maintaining public accessibility through affected work zones. Snowplows will be used to clear access to the site for work crews.

### 8.1. Implementation

Correct TCD implementation to effectively direct traffic around the work zone will include accessing and alerting user groups of current site conditions, utilizing cones and barricades to effectively divert traffic, and maintaining minimum lane widths throughout the project area. Only TCDs that are necessary to clearly warn, advise and control traffic will be used. The following TCD considerations are, but not limited to:

- Duration of work;
- Traffic Volume;
- Capacity and level of service of the road;
- Available sight distance;
- Grade line and type of road surface;
- Speed reductions to be completed over a practical distance;
- Effects of restrictive traffic flow;
- Weather conditions;
- Site specific safety issues;
- Accommodation emergency vehicles;
- During site inactivity, signage shall not be visible;
- TCD shall be placed 24 hours prior to work commencing.

## 8.2. Traffic Control Plans

The Contractor will implement approved Traffic Control Plan (TCP) for any Services which interrupt traffic movement. Vehicle Movement Plans will be implemented as required and will encompass vehicle movement, pedestrian movement for both construction resources and the public. Any property accesses affected by the construction activities will also be identified on the TCPs. An Overview Haul route with a detailed turbine access route will function as the available paths for site personnel, subcontractors and vendors to use. Please refer to section 7. Site Map, which outlines the haul route.

## 8.3. Standard TCPs

Standard TCPs from the Traffic Accommodation In Work Zones 2018 will be used to control traffic through and around the work zone. When placing temporary signs, the following considerations will be made to accommodate and effectively manage traffic through the zone:

- Clear and Visible signs; not obstructed by equipment or vegetation;
- Signs in both directions of travel;
- Signage shall reflect the current condition of the work zone;
- Reduce speed signs shall be placed to provide ample time for the user to react and safely slow down;
- Monitoring of signage effectiveness; replacing when damaged or ineffective.

A typical signage and sign placement would include:

- Typical warning of approaching work zone and reduce speed posted, and includes:
  - Warning traffic that a construction zone is approaching;
  - Indicating road work ahead;
  - Indicating lane closure when applicable;
  - Indicating detour ahead;
  - Indicating lane diversion;
  - Warning for uneven road conditions;

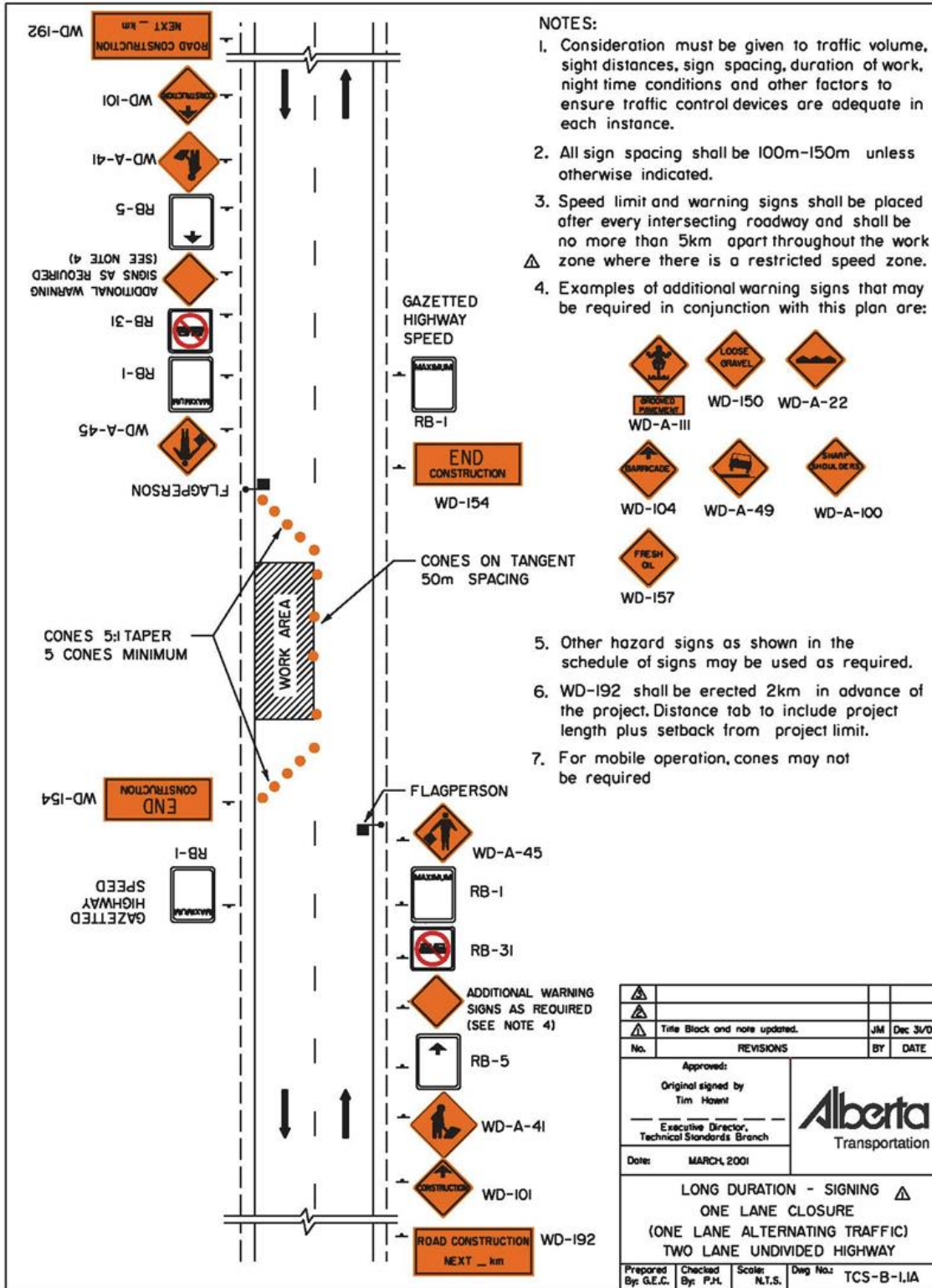
- Traffic control person ahead;
- Truck entrance sign;
- Truck Turning Signs;
- Two-way traffic;
- Speed reduction ahead;
- Maximum speed advisory sign;
- Construction zone begins/ends sign;
- Road closing/Restriction Notice Sign;
- Flashing arrow board sign;
- Typical signage for work off shoulder;
- Work partially on shoulder;
- Lane work during and after working hours.

The Contractor will not begin any work which will involve any obstruction to traffic until these TCP's have been approved by professionally trained TC personnel. In the event that flag people are needed, they shall be dressed in the appropriate personal protection equipment (PPE) which meets the High Visibility Regulation. All flag persons shall be certified by an approved course with certificates available on-site. When communication is necessary, such to accommodate special vehicles or single lane traffic, flag persons will be equipped with 2-way radios.

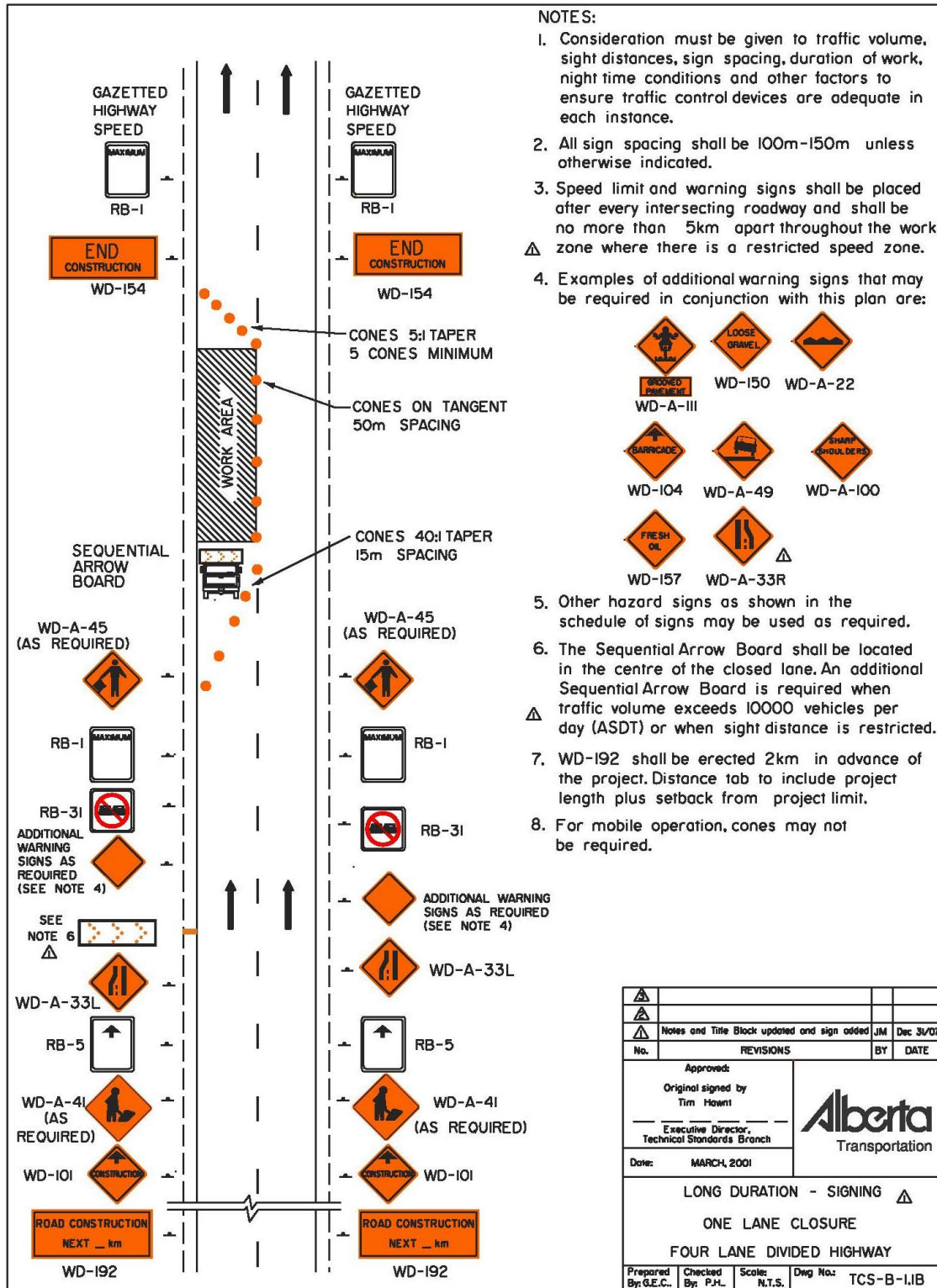
#### **8.4. Standard Drawings for Traffic Control Plans**

As described in the critical task section of this document, there are various scopes of work that require TCPs. Each trade may require different types of plans for traffic control. It will be determined by the traffic control professional what setup is best suited to protect the workers under the circumstance that exist in that work environment. Some examples of typical traffic control plans can be found below and more details of these plans and other setups for different situations can be found in Traffic Accommodation In Work Zones 2018. The Contractor will be responsible for installing all signage and maintaining it for the duration of the work.

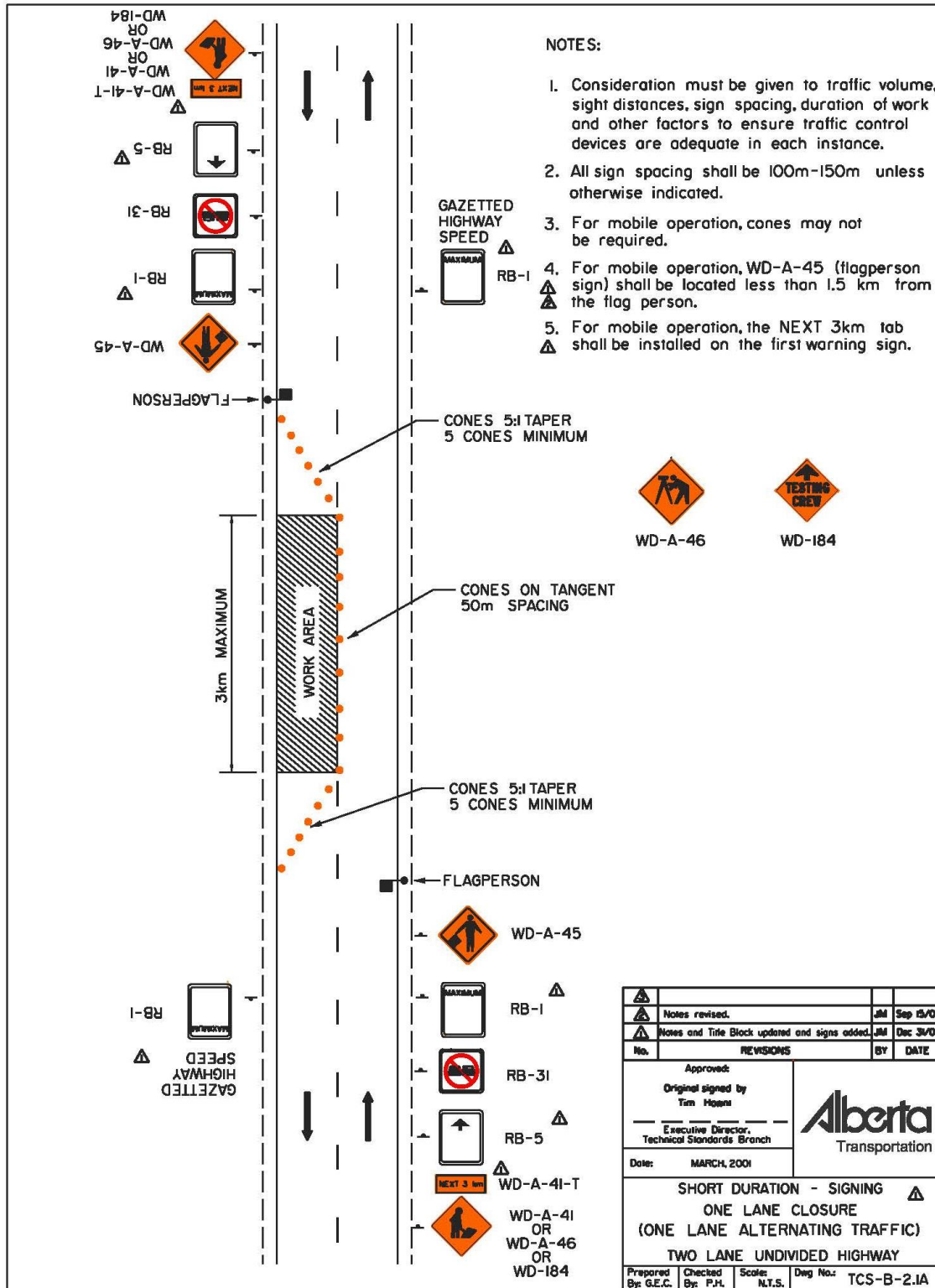
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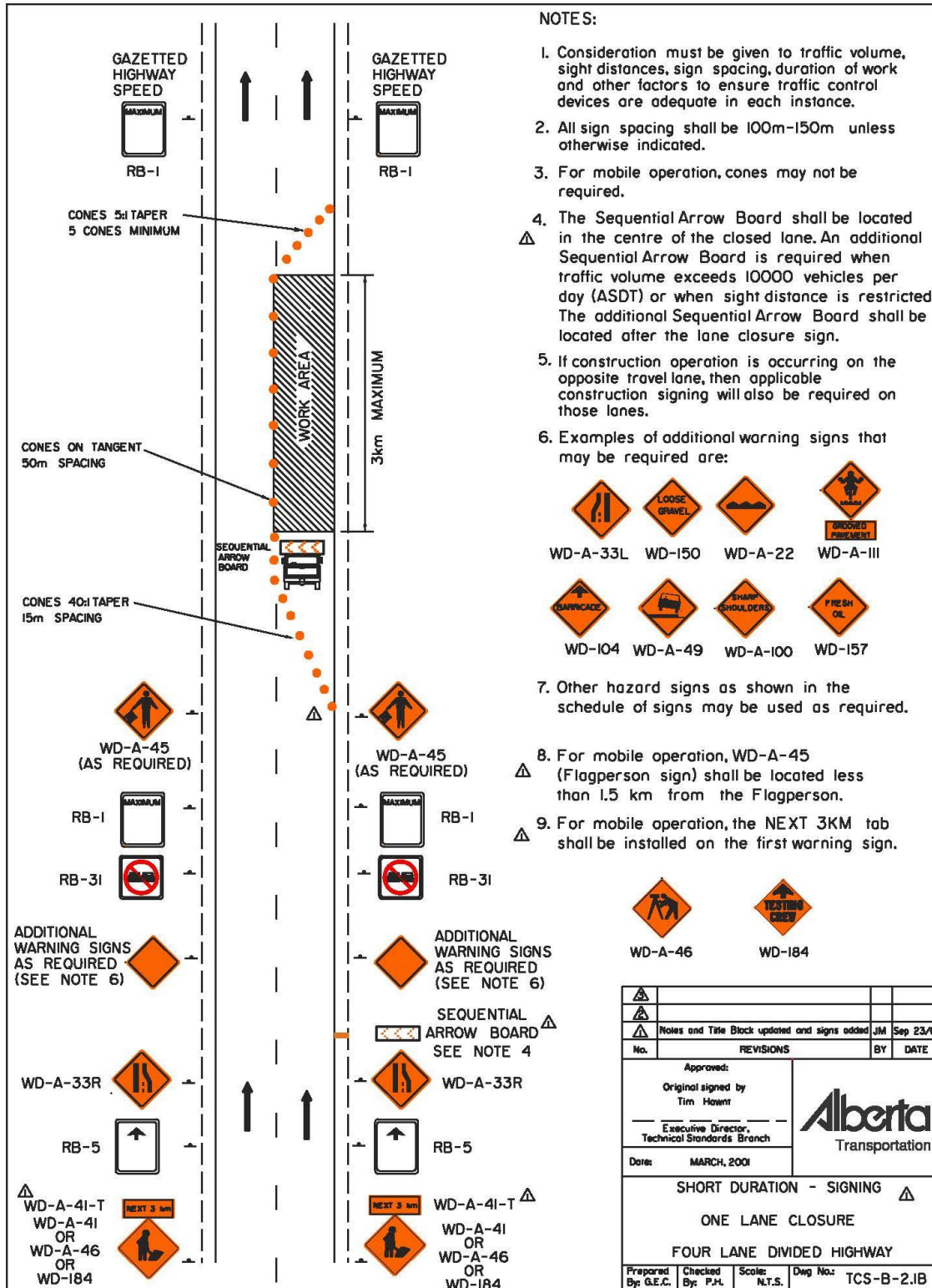
## TCS-B-1.1B



**TCS-B-2.1A**

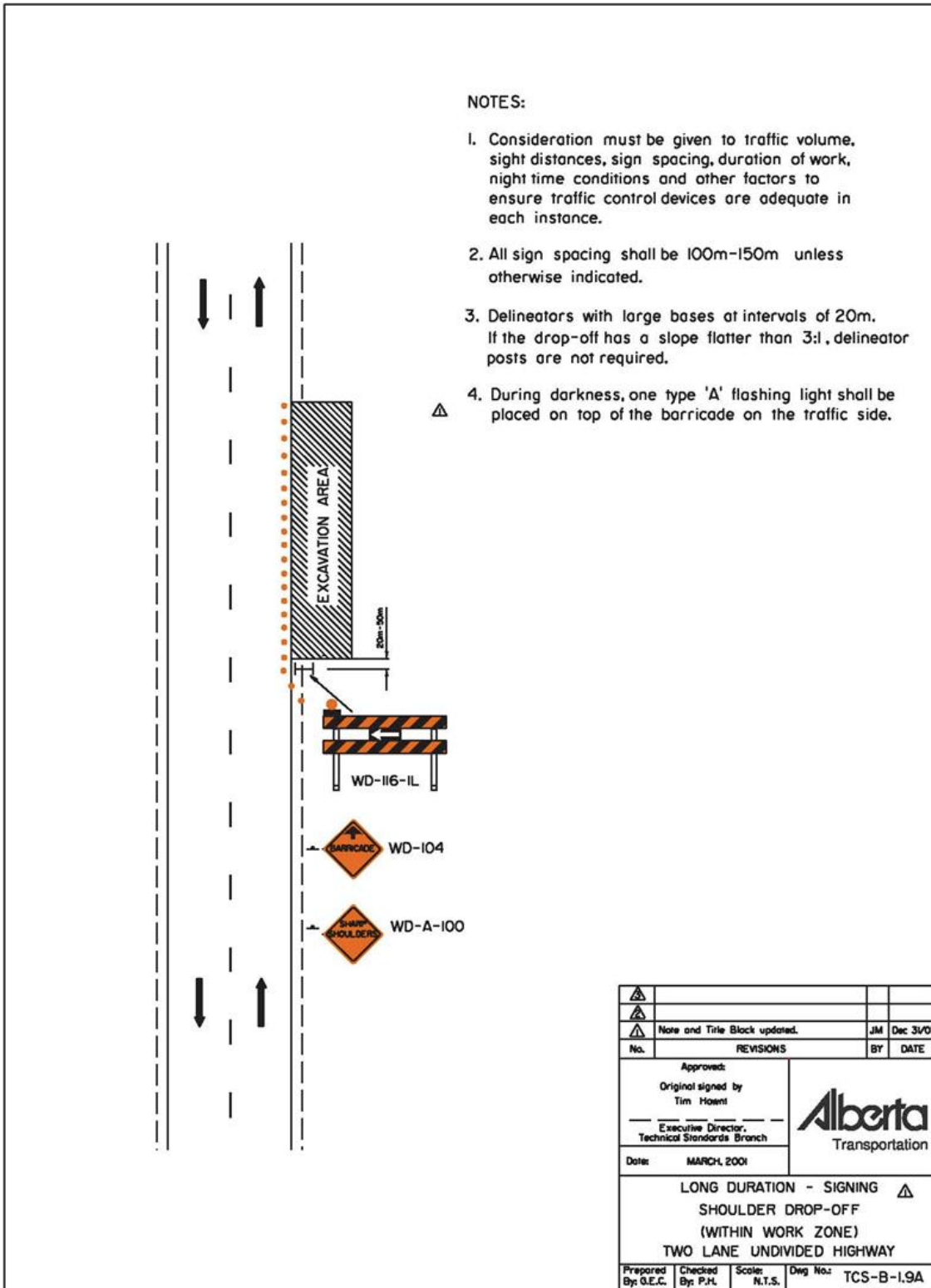


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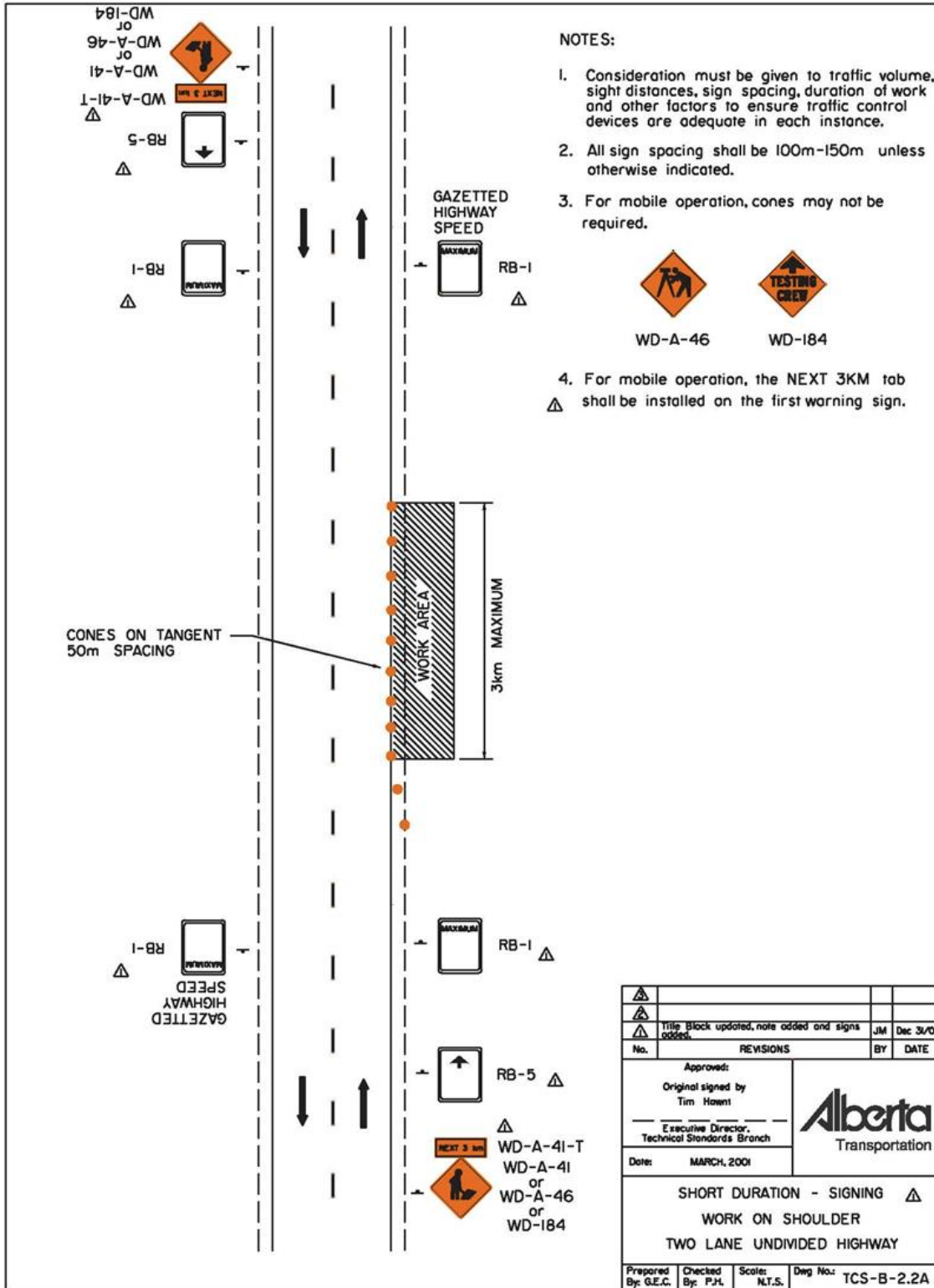




**TCS-B-1.9A**



## TCS-B-2.2A



### **8.5. Non-Standard TCP**

Non-Standard TCPs will be signed off by a person who has qualified in a course for Traffic Control for Temporary Work Zones and is experienced in the design and implementation of traffic management plans. Work will not begin until the non-standard TCP has been reviewed and approved by professionally trained TC personnel.

### **8.6. Emergency Response**

The Contractor will provide traffic control by qualified traffic controllers for emergencies such as accidents and spillages on the network. Traffic management for these events will not require a "hold point release" due to the time sensitivity of the response. TC personnel will use an appropriate standard plan and make adjustments as needed to suit the site conditions.

In the event of an emergency:

- Work is to be stopped;
- The Construction Site Manager and Health and Safety Coordinator will be notified;
- Hazards will be assessed first to avoid further incidents;
- Emergency Personal should be contacted if necessary;
- If the incident causes extensive traffic delays, alternative routes should be planned to alleviate the flow of traffic.

### **8.7. Specialty Vehicles**

Vehicles requiring assistance through the work site, for example ambulances, fire trucks, police cars, school buses, wide or long load vehicles and farm equipment, will be accommodated in a safe and timely manner. All emergency and school services will be advised of any construction work by the owner. The plan for all relevant road work will be issued via the 3-week look ahead and Plan of the Day schedules prior to work commencing. This will provide sufficient time to make any revisions to emergency and service routes to minimize any impacts caused by delays.

### **8.8. Wide and Long Load Vehicles**

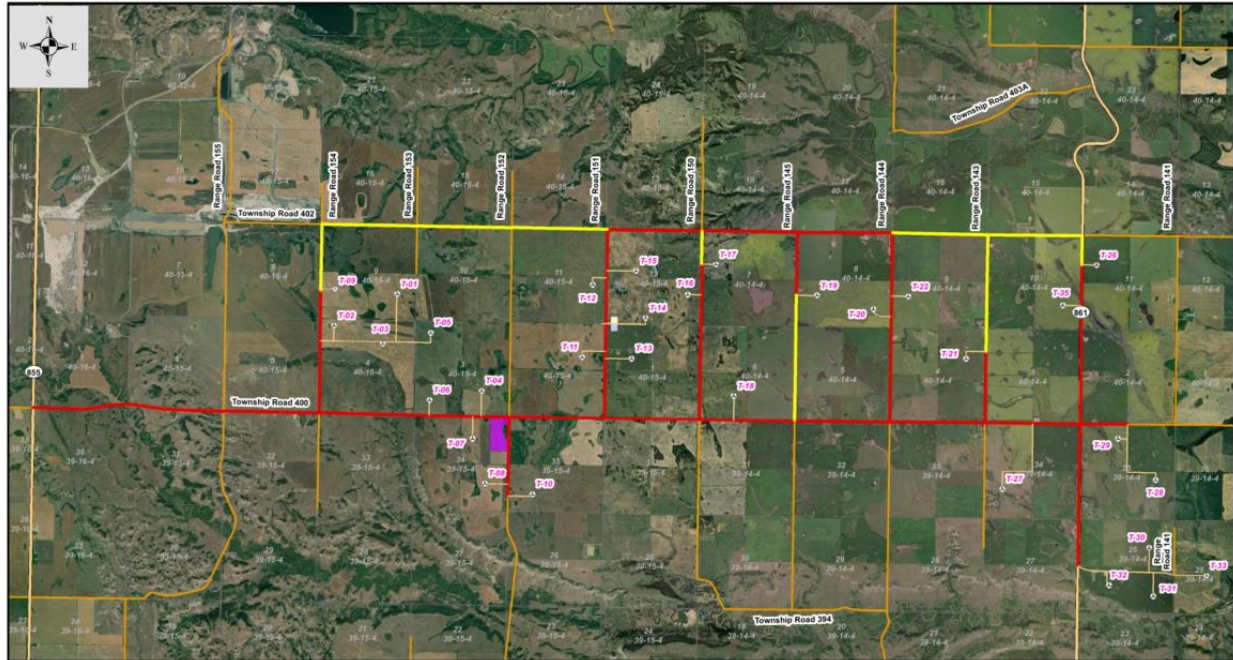
A request shall be issued in advanced to the local Ministry of Transportation office when wide or long loads are required to access the work zone. Accommodations will be made in order to provide a safe and timely route, all TCD are available and provide appropriate escorts if required. In the event of a large radius turn, flag people will be utilized to control oncoming traffic from all directions during these turns.

### **8.9. Remediation & Maintenance**








During the progress of the project the county roads will be maintained with a grader (when necessary) to avoid having any large rutting or soft and deteriorating shoulders that could cause potential driving hazards. Upon the completion of the project, the county roads will be assessed for any remediation measures that

are required to ensure the roads are back to their original (or better) driving conditions. This may include the requirement of spreading more aggregate and grading into place.

## 9. Site Map



Datum: NAD 1983 UTM Zone 12N

Legend	
	WTG - V150x4.5
	Access_Roads_CL
	Heavy Haul Route
	Light Haul Route
	Substation
	Substation laydown
	Laydown Area

**Halkirk II Wind**  
**Heavy Haul Road and**  
**Light Haul Road Deliver**  
**Roads**

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Rev: 1

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