

APPENDIX Q
BUILDABILITY REPORT

A46 Coventry Junctions Upgrade (Walsgrave Junction)

Buildability Report PCF Stage 2

Status: S2

Document Ref: HE604820-ACM-GEN-WAL_SW_000_Z-RP-XX-0001

September 2021

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September 2021

Revision	Current Status	Date	Prepared By	Reviewed By	Approved By
P01	Draft	09/06/21	AC	IH	IH
P02	Draft	20/08/21	AC	IH	IH
P03	Draft	29/09/21	AC	IH	IH

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1 Introduction

1.1 Overview of Project

1.1.1 It is proposed to upgrade the existing A46 Walsgrave Junction.

1.1.2 The existing junction is an at grade non-signalised 3-arm roundabout, connecting the A46 to B4082 in a semi-rural setting.

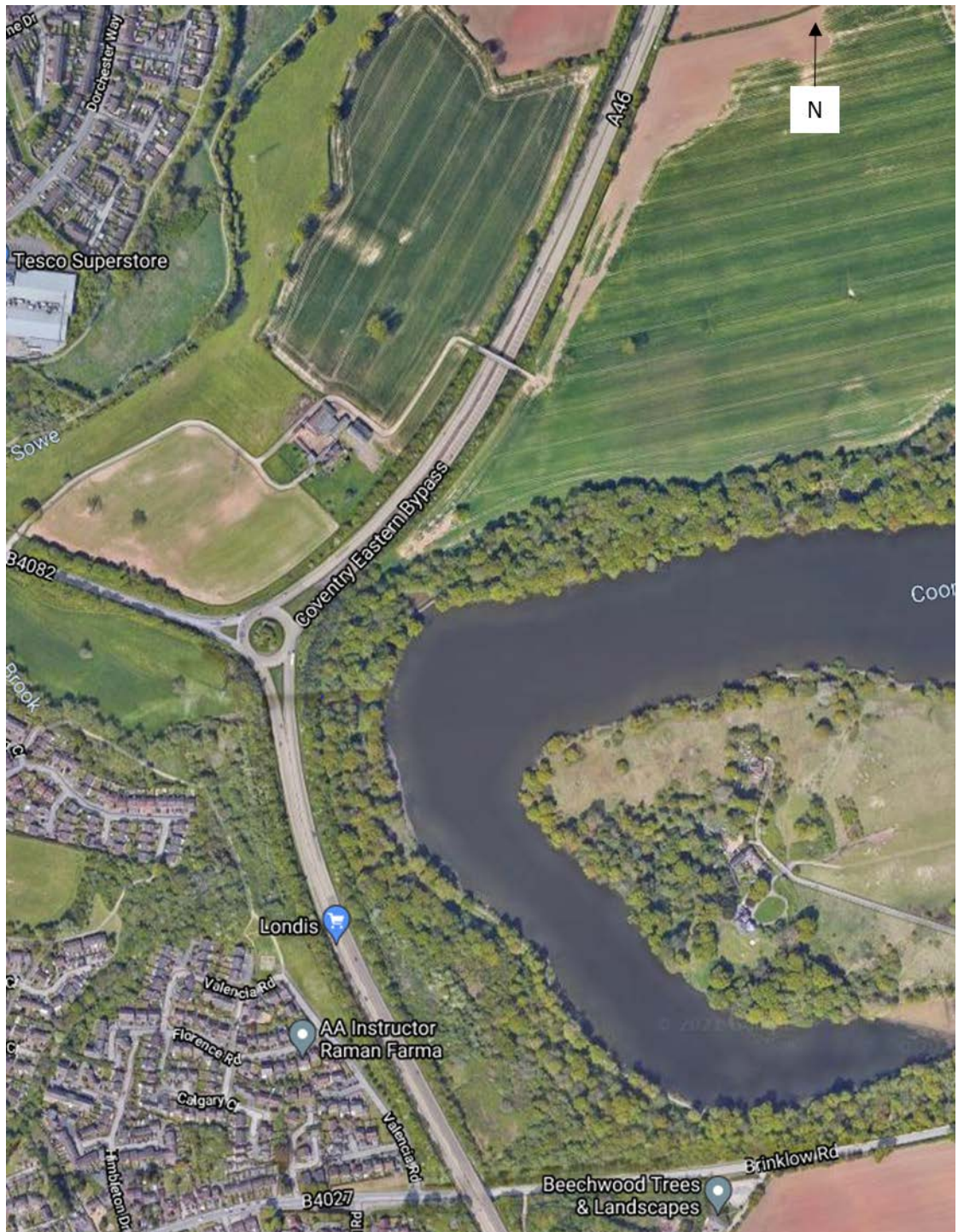


Figure 1 - A46 Walsgrave - Existing Layout

1.1.3 The upgrade works are currently in PCF Stage 2.

- 1.1.4 Four options are currently under review with a view to presenting at a non-statutory Public Consultation.
- 1.1.5 The purpose of this report is to detail the buildability considerations for each of the options under review to inform the non-statutory Public Consultation and PCF Stage 2 design, to facilitate selection of the preferred route to be carried forward to future stages.
- 1.1.6 The four options currently under review are detailed in sections 1.2, 1.3, 1.4 and 1.5 below.
- 1.1.7 The key buildability constraints to the project are shown in Figure 2:

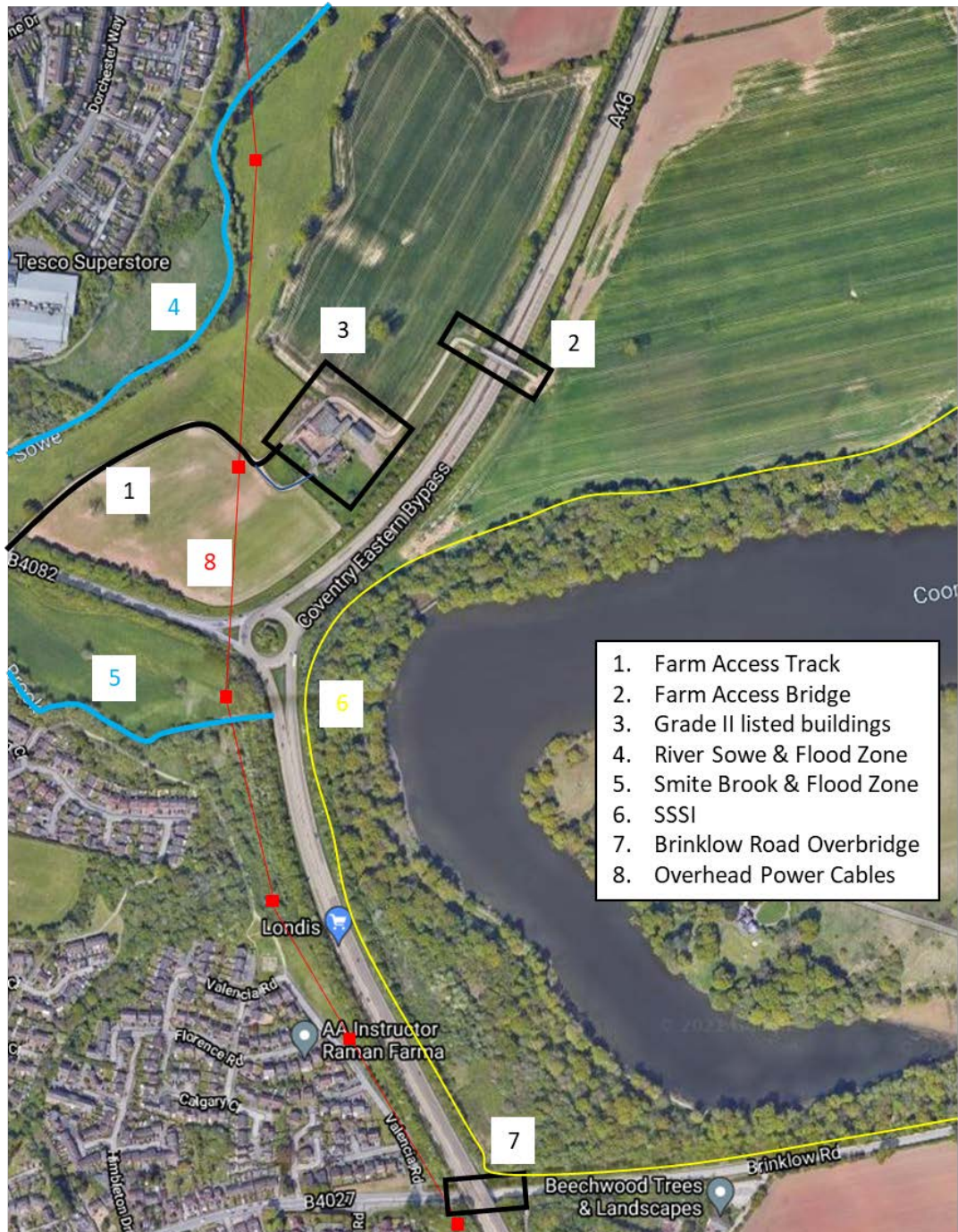


Figure 2 - Key Constraints

1.2 Option 6

- 1.2.1 Option 6 incorporates a national speed limit fully grade separated dumbbell junction.
- 1.2.2 A General Arrangement of Option 6 is shown below in Figure 3.



Figure 3 - Option 6 General Arrangement

1.3 Option 7

1.3.1 Option 7 is a left-in / left-out arrangement, allowing merging or diverging from the proposed A46 northbound carriageway. The speed limit on the mainline through the junction will be 50mph.

1.3.2 A General Arrangement of Option 7 is shown below in Figure 4.



Figure 4 - Option 7 General Arrangement

1.4 Option 8

1.4.1 Option 8 is also a left-in / left-out arrangement, allowing merging or diverging from the proposed A46 northbound carriageway. The mainline in this option has a larger radius to allow for a 70mph speed limit on the proposed A46 through the junction. It is worth noting this option acquires land from Hungerley Hall Farm and associated land parcel.

1.4.2 A General Arrangement of Option 8 is shown below in Figure 5.

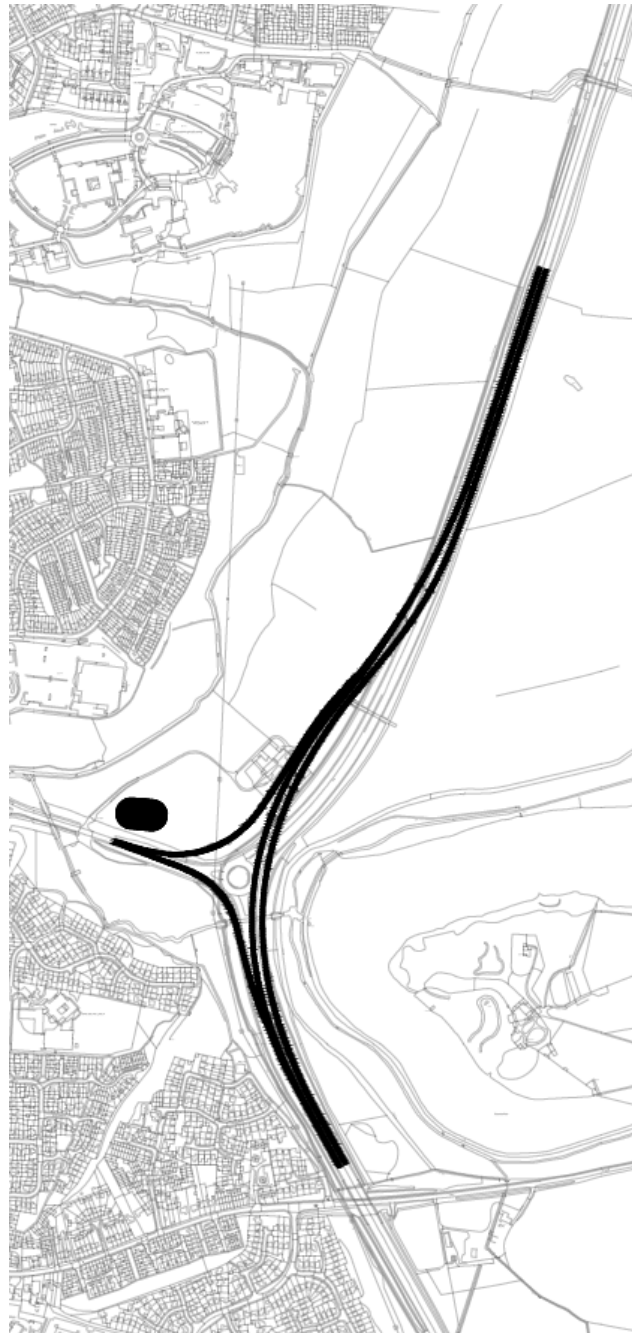


Figure 5 - Option 8 General Arrangement

1.5 Option 11

1.5.1 Option 11 incorporates a fully grade separated dumbbell junction with link road to the B4082. The speed limit on the mainline through the junction will be 50mph.

1.5.2 A General Arrangement of Option 11 is shown below in Figure 6.



Figure 6 - Option 11 General Arrangement

2 Construction Programme

2.1 Overview

- 2.1.1 At the time of writing, the most recent project programme -; MP-0418_CL32 DD 01-08-21 (WD-2) gives the Stage 6 start date as 20/10/2025.
- 2.1.2 The programme calendar is based upon 5 day/week 8 hrs/day working and all UK holidays.
- 2.1.3 The following assumptions have been made within all the programmes:
- The statutory undertaker's lead-in periods will have been completed to allow diversion works to start on site as per each programme.
 - The site clearance works will have been completed to allow works to progress. This is particularly important when seasonal constraints such as nesting birds are considered. This risk may be mitigated by undertaking the site clearance works in advance of DCO provided suitable provisions are made in the draft of the DCO.
 - That an adequate period has been allowed for mobilisation and in particular to enable long lead-in item procurement.
 - That two lanes of traffic in all directions on the A46 mainline must be provided at peak times.
- 2.1.4 The general construction activity sequence for all options is:
- Fencing
 - Site clearance
 - Earthworks
 - Statutory diversions
 - Drainage and ducting
 - Carriageway construction
 - White lines, signs etc.
- 2.1.5 The construction durations provided below are the periods for site works, additional durations will need to be considered for enabling works, mobilisation and for documentation closeout.
- Option 6 - 90 weeks
 - Option 7 - 73 weeks
 - Option 8 - 67 weeks
 - Option 11 - 68 weeks
- 2.1.6 Full construction programmes for each option are provided in Appendix A.

3 Construction Phasing / Methodology

3.1 Construction Phasing

3.1.1 Construction Phasing Sketches are provided in Appendix B of this document.

3.1.2 A brief commentary on the construction phasing for each option is included below:

3.1.3 Option 6

- Phase 1 –
Construct temporary SB dual carriageways between Ch200 to 800 and CH1600 to 2400.
Construct 4 no crossovers.
- Phase 2 –
Construct the new A46 main line CH900 to 1800.
Construct the new B4082 CH000 to 1300.
Construct the NB merge diverge and RA.
Construct the overbridge and west side slip roads.
Partly build the SB merge diverge and RA east of the existing A46.
There are major stats diversions of sewer and water main, in the west segment, which affect the start of construction.
The A46 can go ahead apart from the bridge construction and the roundabout and slip roads which must wait for the sewer completion.
The B4082 link road cannot be completed until the sewer diversion is completed.
Once traffic can use the temporary SB sections move traffic into dual contraflow and build a section of NB A46 carriageway and temporary widening CH400 to 800.
- Phase 3 –
Put traffic on new A46 NB – keep traffic on temporary A46 SB and NB temporary section.
Build the A46 across the existing roundabout and the SB sections CH400 to 900 and CH2000 to 2400 approx.
Remove the SB temporary carriageway.
- Phase 4 -
Complete SB merge & diverge slips
Final A46 South end construction under lane closures
Remove old roads and rest of temporary carriageways.
Demolish ex bridge

3.1.4 Option 7 –

- Phase 1 -
Build temporary crossovers and temporary A46 NB CW CH400 to 900
- Phase 2 -
Put traffic into dual Contraflow using the NB temporary CW and build permanent and temporary A46 SB CW CH400 to 1100
- Phase 3 -
Put traffic into dual contraflow using the temporary SB CW and build the new A46 NB carriageway and the B4082. Remove the temporary NB CW and existing island.
- Phase 4 -
Remove the temporary SB CW and build the A46 at both ends using weekend closures

3.1.5 Option 8 –

- Phase 1 -
Build temporary crossovers and temporary A46 SB CH200 to 900 & CH1300 to 2000.
- Phase 2 -
Put traffic into dual Contraflow using the SB temporary CW and build the offline works NB A46 and B4082.
- Phase 3 -
Put traffic into dual contraflow using the temporary SB CW and new NB carriageway and build the new SB carriageway
- Phase 4 -
Complete the A46 construction at the south end on weekend closures. Remove the temporary carriageways. Excavate the old A46 and demolish the old bridge.

3.1.6 Option 11 –

- Phase 1 –
Slip Roads - Build the 4 new interchange slip roads but without the roundabouts and joining them up as through roads.
- Phase 2 –
Overbridge and A46 - Put the A46 traffic onto the slip roads as temporary A46. This will retain two lanes in each direction but is likely to require a temporary 40mph speed restriction. This allows the overbridge to be built and the A46 to be reconstructed between CH1400 and 2050. Once the A46 has been reconstructed and the bridge built up to deck level move the traffic back onto the A46 and build the new roundabouts.
- Phase 3 (runs concurrently with phase 1 & 2) –
B4082 Link Road - build the new B4082. The farm accommodation bridge will be demolished toward the end of the B4082 link road construction. There will be short period (approx. 4 weeks) where the farmer will be required to access the fields to the east of the A46 via the mainline A46. Temporary mitigations to may be possible subject to discussions with the farmer. The new interchange and B4082 link road will then be opened.
- Phase 4 –
A46 - Construct temporary carriageway across the existing Walsgrave roundabout and at the side of the existing NB to allow continuous dual two-lane traffic. Build the new SB off-line A46 between Ch650 and 1050. Once traffic is using the new interchange and B4082 build the new NB section between CH650 and 1050.
- Phase 5 - A46
A46 - Re-construct the A46 between CH400 and 650 at nights for the central reserve and at weekend closures for the new carriageway. Re-construct the A46 between CH1050 and 1400 at nights for the central reserve and at weekend closures for the new carriageway. Remove the existing roundabout.

3.2 Structures

3.2.1 In PCF Stage 2, design of the structures has only been undertaken to the required level of detail for option selection. This section details the assumed construction methodologies for each option.

3.2.2 Option 6 -

- Option 6 includes a new bridge over the A46.

- Piled foundations, insitu concrete abutments, an insitu concrete deck atop steel or PCC beams have been assumed.
- The sequencing assumes that the bridge can be constructed offline of the existing A46.

3.2.3 Option 7 -

- This option has no structures

3.2.4 Option 8 -

- This option will require a new farmers accommodation bridge. Insitu foundations with PCC bridge and approach ramps have been assumed. During the construction of the offline A46 and new accommodation bridge a temporary Bailey type bridge has been allowed for the farmer's access.
- This option also has a cutting some 5m deep alongside Hungerley Hall Farm and the programme has assumed that some form of retaining wall will be required to reduce the number of buildings to be demolished. The programme allows a 2-month construction period for piled and faced retaining walls.

3.2.5 Option 11 -

- Option 11 includes a new dumbbell bridge over the A46.
- Piled foundations, insitu concrete abutments, an insitu concrete deck atop steel or PCC beams have been assumed.
- The sequencing assumes that the bridge can be constructed while A46 mainline traffic is utilising the new slip roads and therefore no road closures are required.

3.3 Structural Demolition and Pavement Removal

3.3.1 In PCF Stage 2, specification of the demolition required on site has only been undertaken to the required level of detail for Public Consultation. This section details the assumed construction methodologies for each option.

3.3.2 Option 6 -

- The aim is to avoid outbuilding demolition at the farmhouse. If demolition of the building is required Listed Building Consent will be required from English Heritage. Currently it is assumed that a small amount of demolition to the Hungerley Hall farm outbuildings will be required for this option. The programme allows 4 weeks work.
- The existing farm accommodation bridge will be removed at the end of construction. Four weeks work has been allowed for in the programme for this demolition.
- A section of the existing A46 and B4082 will be removed during construction of this option.

3.3.3 Option 7 -

- There is no demolition required for this option
- The existing roundabout will be removed during construction of this option.

3.3.4 Option 8 –

- Hungerley Hall Farmhouse and an outbuilding are demolished in this option. There is therefore a risk that Asbestos and/or Anthrax will be disturbed during these works. Further information is provided in section 8 of this report. A two month period for this work has been allowed on the programme.

- The existing farm accommodation bridge will be removed at the end of construction and 4 weeks work has been allowed on the programme.
- A section of the existing A46 and the existing roundabout will be removed as part of this option.

3.3.5 Option 11 -

- The existing farm access bridge will be demolished. This will require one weekend closure of both directions of the A46 to remove the span. Removal of the substructure will be undertaken offline.
- The existing roundabout will be removed during construction of this option.

3.4 Culvert Impacts

3.4.1 Options 6, 7 & 8 require construction works to the existing culverts. No design details have yet been developed for these works. This section details the assumed construction methodologies for each option.

3.4.2 Environmental controls associated with working in the live water course are detailed in section 8 of this document.

3.4.3 Option 6 -

- No amendments required to Smite mainline culvert.
- Extension of link road culvert required at both sides to support the proposed new verge.
- Assumed methodology - Removal of existing wingwalls and headwall, insitu RC extension (7m on the north side and approx. 3m on the south side of culvert), new insitu RC Wingwalls, new insitu RC headwall

3.4.4 Option 7 -

- No amendments required to link road culvert
- Headwall extension on the west side of Smite main line culvert
- Assumed Methodology - New precast retaining wall (approx. 1.2m high and 6.2m long) to be provided in front of the existing headwall to retain fill.

3.4.5 Option 8 –

- No amendments required to link road culvert.
- Extension required at both ends of Smite main line culvert
- Assumed Methodology - Removal of existing headwall and wingwalls, insitu RC extension (3m on the west side and 4.5m on the east side of the culvert), new insitu RC headwall, new insitu RC wingwalls.

3.4.6 Option 11 –

- B4082/Smite Brook culvert – no modification to the existing culvert is anticipated
- A46/Smite Brook Mainline culvert - no modification to the existing culvert is anticipated

4 Temporary Traffic Management

4.1 Overview

- 4.1.1 The temporary traffic management layouts required to construct each of the options under consideration are shown in the Traffic Management Drawing provided in Appendix C of this document.
- 4.1.2 These drawings should be read in conjunction with the construction phasing drawings provided in Appendix B which detail the position of live lanes and work areas during each phase.

4.2 Summary of TM requirements

- 4.2.1 Each of the options require installations of narrow lanes in contraflow, off peak closures of the A46 / B4082 and full weekend closures.
- 4.2.2 The table below summarises the duration / number of each of these types of closures based on the programmes included in Appendix A for each option.

	Units	Option 6	Option 7	Option 8	Option 11
Narrow Lanes	Calendar Days	404	323	310	300
No right hand turning	Calendar Days	0	225	225	0
2-way Contra-Flow	Calendar Days	272	205	158	47
Off peak A46 Carriageway closure	Night Shifts	15	0	0	0
Off peak B4062 Carriageway closure	Night Shifts	10	256	181	5
Full weekend closure of the A46 highway	Number	20	20	8	20

Table 1 - Summary of TM requirements

- 4.2.3 Full weekend closures are required to safely construct or demolish bridge structures over live carriageway or to construct overlaid sections of carriageway which require full depth reconstruction. Some of these closures may be mitigated by overlaying the existing carriageway rather than reconstructing. This opportunity has been captured on the scheme risk register. Opportunities for mitigation which will be pursued at later stages include obtaining a departure from standard for omission of cement bound sub-base, completing additional Site Investigation to reduce full depth reconstruction areas and further vertical alignment optimisation.

4.3 Diversion routes

- 4.3.1 During full closures of a carriageway, diversion routes will be in place.
- 4.3.2 The proposed diversion routes are detailed in Appendix D of this document.

5 Impact on Road Users

5.1 Overview

- 5.1.1 Installation of the required Traffic Management to construct the proposed works will have an impact on all road users.
- 5.1.2 Table 1 above in section 4.2 shows the forecast durations for each TM installation for each option. Reduced TM installations will reduce disruption to road users.

5.2 Key Road Users

- 5.2.1 The annotated map below in Figure 7 shows the location of local key road users who will be affected by carriageway closures:

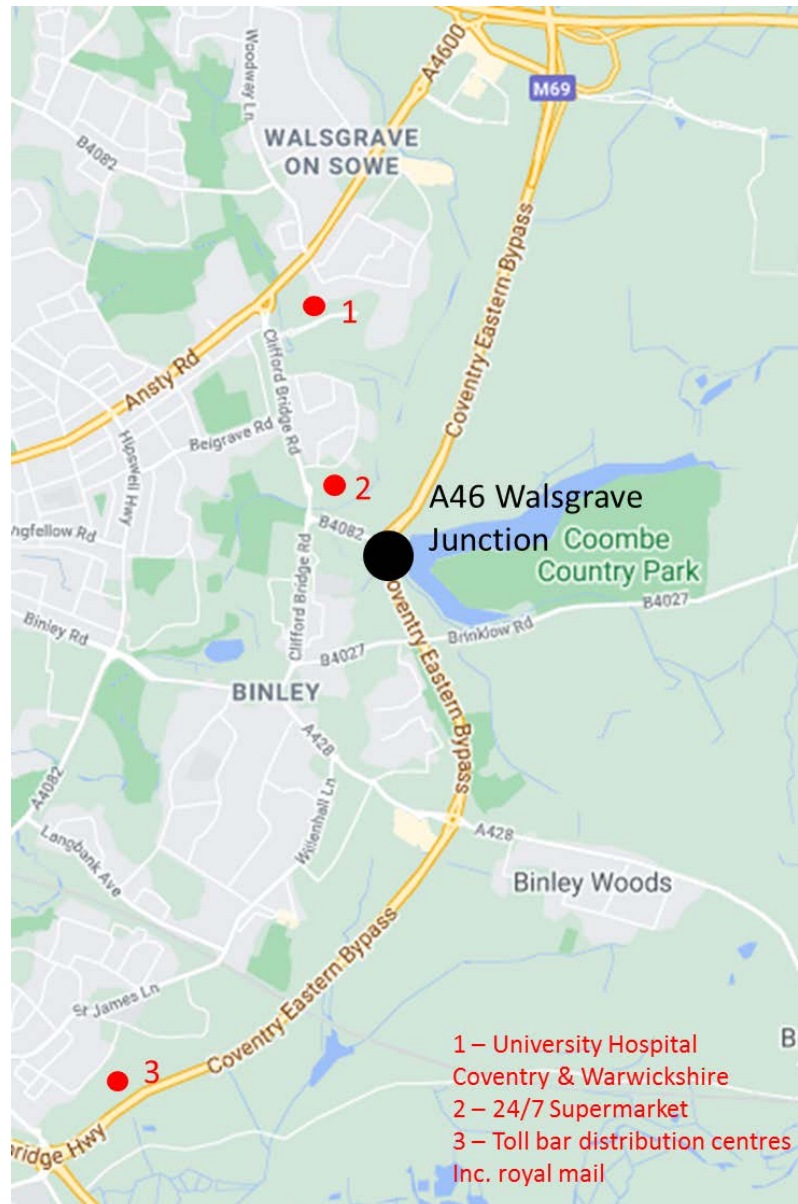


Figure 7 - Key Road Users

- 5.2.2 Liaison with these local key road users will be maintained throughout the construction phase of the scheme to ensure awareness of upcoming traffic management layouts and road closures.
- 5.2.3 The design of options 7 & 8 include the permanent removal right hand turns from and to the B4082. This change in highway layout will take effect at the start of construction phase.

6 Site Compounds / Accommodation Works

6.1 Overview

- 6.1.1 The proposed locations of the site compounds for each option are shown in figures 8, 9, 10 & 11.
- 6.1.2 These locations have been included on the land take drawings produced by AECOM at Stage 2.
- 6.1.3 These locations will include material storage and storage of site won materials.

6.2 Option 6

- 6.2.1 The location of the Option 6 Site Compound is shown below in Figure 8 –



Figure 8 - Option 6 Site Compound Location

- 6.2.2 The Option 6 compound will be accessible off the existing Hungerley Hall Farm access during Phases 1 & 2 of construction and from the existing A46 SB carriageway during Phases 3 & 4.

- 6.2.3 It is assumed that a section 278 agreement will not be required for the compound access as the existing Hungerley Hall Farm access will be utilised.
- 6.2.4 The existing access to Hungerley Hall Farm for residents will be maintained during phases 1 & 2 of Option 6 construction. It is proposed to use the proposed permanent access to the farm during phases 3 and 4 of construction although the location of this has not been finalised.
- 6.2.5 The access between Hungerley Hall Farm and the fields to the east of the A46 will be maintained during phases 1 to 3 of option 6 construction. On demolition of the accommodation overbridge and removal of the existing A46 carriageway this access in phase 4 and beyond will be at-grade.

6.3 Option 7

- 6.3.1 The location of the site compound for option 7 is shown below in Figure 9:

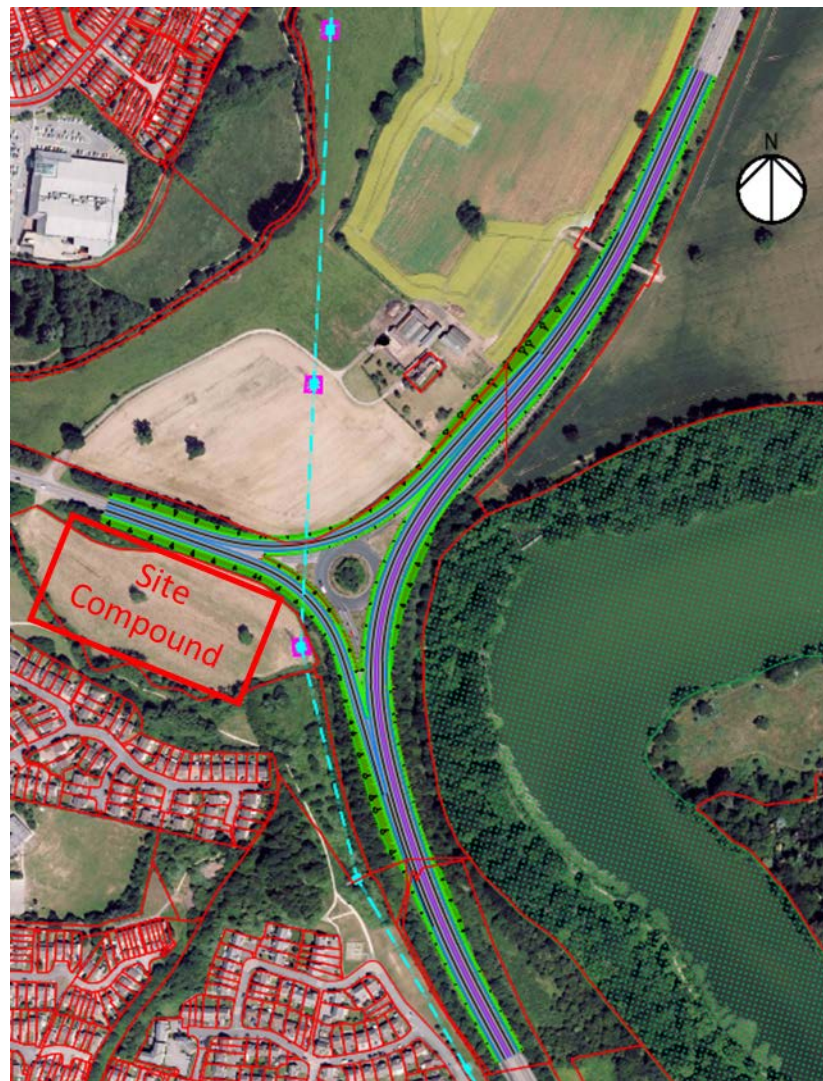


Figure 9 - Option 7 Site Compound Location

- 6.3.2 The site compound for option 7 will be accessible off the B4082 throughout the construction phase for option 7.
- 6.3.3 It is assumed that this compound and its access will be allowable under permitted developments and therefore no programme time has been allocated to obtain S278 agreements.

- 6.3.4 The access to Hungerley Hall Farm should be unaffected by construction works for Option 7.
- 6.3.5 The location of this site compound may require further investigation with regards to its viability due to the flood modelling being undertaken.

6.4 Option 8

- 6.4.1 The location of the site compound for option 8 is shown below in Figure 10 -



Figure 10 - Option 8 Site Compound Location

- 6.4.2 The site compound for option 8 will be accessible off the B4082 throughout the construction phase.
- 6.4.3 It is assumed that this compound and its access will be allowable under permitted developments and therefore no programme time has been allocated to obtain S278 agreements.
- 6.4.4 The access to Hungerley Hall Farm should be unaffected by construction works for Option 8.
- 6.4.5 A temporary bridge will be required to maintain access to the farm fields to the east of the existing A46 during construction of offline works whilst the permanent overbridge is constructed.

6.4.6 The location of this site compound may require further investigation with regards to its viability due to the flood modelling being undertaken.

6.5 Option 11

6.5.1 The location of the site compound for option 11 is shown below in Figure 11 -



Figure 11 - Option 11 Site Compound Location

6.5.2 The site compound for option 11 will be accessible off the B4082 throughout the construction phase for Option 11 utilising the existing farm access.

6.5.3 It is assumed that this compound and its access will be allowable under permitted developments and therefore no programme time has been allocated to obtain S278 agreements.

6.5.4 The access to Hungerley Hall Farm should be unaffected by construction works for Option 11.

- 6.5.5 Access to the farm fields east of the A46 will be by the existing bridge up until the end of phase 3 and thereafter by the proposed roundabouts and overbridge.

7 Utilities Diversions

7.1 Overview

- 7.1.1 The required utility diversions and protection measures vary for each option.
- 7.1.2 Appendix E includes a summary table of the utility diversions currently planned for each option. This summary table also includes value engineering proposals made by Osborne's utility consultant to reduce the scope of the required utility diversions for each option.
- 7.1.3 The Western Power distribution 132kV overhead assets do not require diversion for any of the proposed options. They will however present a hazard to the construction of each option. Further details are provided on section 10 of this document.
- 7.1.4 The current planned utility diversions for each option are summarised below.

7.2 Option 6

- 7.2.1 This option has the most onerous diversions of the options currently considered.
- 7.2.2 The programme durations for the on-site works are as follows:
- Severn Trent Water Sewer pumping main diversion STWS01 a total of 25 weeks has been allocated to this diversion on the programme.
 - Severn Trent Water potable main diversion STWP01 a total of 14 weeks has been allocated to this diversion on the programme.
 - BT overhead line to Hungerley Hall Farm a total of 5 weeks has been allocated on the programme.
 - Western Power to Hungerley Hall Farm WPD01 a total of 8 weeks has been allocated on the programme.
 - Comms cable diversions BT, Vodafone and WPD telecoms 4 weeks have been allowed on the programme

7.3 Option 7

- 7.3.1 This option has a significantly reduced number of diversions when compared to option 6.
- 7.3.2 The programme durations for the on-site works are as follows:
- WPD telecoms. Currently the programme allows 4 weeks for diversion although it may be possible to protect the cable in its existing location which would reduce the programme.

7.4 Option 8

- 7.4.1 This option has a similar amount of diversions as option 7 with additional removal of services from Hungerley Hall Farm.
- 7.4.2 The programme durations for the on-site works are as follows:
- Comms cable diversions BT, Vodafone and WPD telecoms 4 weeks have been allowed on the programme
 - The time for removal of the services to the farm is included in the demolition period.

7.5 Option 11

7.5.1 This option only requires protection measures to be undertaken for the WPD Telecoms and Vodafone cables. No diversions are required in accordance with C3 responses.

7.5.2 A period of 2 weeks is allowed for in the programme for these works.

8 Environmental Mitigation

8.1 Badger, bat and other protected species.

- 8.1.1 The requirement for protected species licences and mitigation, particularly for badgers and bats, will be subject to further survey and selection of the preferred option. Badger setts have been identified in the vicinity and there is high potential for bat roosts in buildings and trees affected by the scheme. If licenses are required, it is likely to restrict the working areas and the timeframes.
- 8.1.2 Active badger setts have been identified within the option boundaries. Given that badgers are mobile and do relocate setts over time surveys will be undertaken at each future stage to determine whether these remain a risk. If badgers remain a risk and are directly affected by the construction works then the programme will allow for obtaining a Protected Species Licence to destroy any setts within the footprint of the road and if necessary construct a new sett within the existing territory.
- 8.1.3 It is likely that the same precautionary method statements would be required for all four options resulting in European Protected Species licenses being required or precautionary method statements to be prepared and implemented. All options will likely have timing constraints on the construction works and potentially spatial constraints.
- 8.1.4 Other protected and notable species recorded in the area with potential to be affected by the scheme include hedgehog, great crested newt and barn owl.
- 8.1.5 Further surveys are proposed at the next stage to confirm status of protected and notable species and the need for mitigation and licencing.

8.2 Bird Nesting constraints

- 8.2.1 These are the same restrictions for all options. The greater the vegetation clearance the more impact on the potential nesting habitat for the birds.
- 8.2.2 Dependent upon the timings of the construction programme it is recommended to clear all vegetation from the site during the period of September – March.
- 8.2.3 Site clearance works can be undertaken outside of this period provided sufficient mitigation measures are undertaken.

8.3 Water Course Protection and culvert impacts

- 8.3.1 All the options have an impact on the southern end of Smite Brook where it enters the SSSI.
- 8.3.2 Protection measures will need to be agreed with the EA, the LLFA and Natural England. Works within 8m of a main river require EA consent, if the flow or profile of an ordinary watercourse is impacted, the consent is gained from the LLFA. Smite Brook is classed as an Ordinary Watercourse, the River Sowe as a Main River.
- 8.3.3 Working within the floodplain will be kept to a minimum, with temporary land-take required for construction to be located out of the floodplain as far as reasonably

practicable or allowances made for floodplain control measures. Relevant permits will be sought for any temporary storage or works within a floodplain.

- 8.3.4 The effect on buildability is the same for all options.
- 8.3.5 Protection can be in the form of a coffer dam whilst work is undertaken or a method of preventing silt entering the SSSI using silt netting or similar.
- 8.3.6 Silt netting does have an impact on fish and aquatic invertebrates so unlikely to be acceptable to NE as in close proximity to a SSSI. A bubble net or similar could be utilised. Precautionary methods would be proposed and agreed with the statutory authorities as an integral element of any consent or permit sought.
- 8.3.7 The risk of heavy rain disrupting works will need to be managed during the construction phase.
- 8.3.8 All options will require consideration of biosecurity for working adjacent or within water.

8.4 Environmental and ecological consents / constraints

- 8.4.1 The Environmental Assessment will assess and identify risks and opportunities of the activities on the environment, which are then developed through the Environmental Management Plans produced for the works.
- 8.4.2 For all options optimisation of the cut fill balance should be prioritised to reduce the requirement for import / export of large volumes of fill.
- 8.4.3 Option 6 – requires large volumes of material or a piled structure to raise the proposed road and overpass above the flood zone. Obtaining a suitable supply of appropriately graded and clean material will have an environmental impact on material use, carbon footprints and additional land take for temporary storage.
- 8.4.4 Option 7 – this option has the smallest footprint and will require less imported materials to construct. The need to design in a cut / fill balance is important to support the HE targets on circular economy.
- 8.4.5 Option 8 – storage of materials will be a constraint due to the alignment of the new road remaining predominantly on the footprint of the existing road. Storage will be required close by as delivery directly to the area of use will be very difficult. Significant periods of off peak (night) works will be required to construct option 8, The construction of option 8 will also result in direct loss of woodland within the adjacent SSSI. Temporary land take will be minimised in this area to reduce the impact.
- 8.4.6 Option 11 requires a large fill requirement which is most likely to require importation of material. Through increasing the temporary land take and extending the areas of cut slopes could be slackened which would have the following benefits:
 - decreasing the quantity of imported fill (assuming the spoil is suitable for reuse),
 - slacker slopes are beneficially to being returned to landowners for farming or planting and
 - improve the safety of the maintenance contractor.

8.5 Noise nuisance management and local constraints

- 8.5.1 Option 6 – offline with only the tie ins required at night. Limited impact on the local residential population and on wildlife due to limited night working although there are works that do need to be undertaken at night to construct carriageway tie-ins and overlay.
- 8.5.2 Option 7 – Significant impact on the local residents as this will need to be constructed using predominantly night closures of the existing A46 due to the new road being closely aligned to the existing road and it crosses over the existing in several places. Statutory diversions will need to be outside the current footprint and could impact the SSSI and the residential area the most.
- 8.5.3 Option 8 – Considerable impact on the residents as the majority of works will be required to occur at night as the new road aligns with the existing.
- 8.5.4 Option 11 – slightly reduced impact on the residents due to the proximity of the construction plant although due to the necessary removal of all the existing vegetation between the existing road and the housing estate visibility would increase and therefore perceived noise levels would also increase.

8.6 Asbestos

- 8.6.1 The construction of Option 8 requires the demolition of Hungerley Hall Farmhouse and outbuilding. There is therefore a risk that Asbestos and/or Anthrax will be disturbed during these works.
- 8.6.2 Asbestos surveys will need to be undertaken in advance of any demolition works with licenced contractors used for demolition if asbestos containing materials are found to be present.
- 8.6.3 Asbestos containing materials may also be present in the existing culverts. Records for these structures will be obtained in advance of undertaking works, if required works will be undertaken in accordance with the approved code of practice.

9 Planning Licences & Consents

9.1 Site Compound

- 9.1.1 It is assumed that the site compound for each option will be included in red line boundary of the scheme and constructed under Permitted Development Rights and will therefore not require a separate planning application.

9.2 Permission to demolish a listed building

- 9.2.1 Option 8 – Listed Building Consent will be required from English Heritage to demolish a listed building.
- 9.2.2 A full monitoring schedule is generally required prior to any loss of heritage assets so the records can be updated prior to loss, this will have a programme impact.
- 9.2.3 A CPO will be required to purchase the property. The timeline would need to be agreed with the landowner and his Agent.

9.3 Permission to work in the flood zone

- 9.3.1 Option 6 has the greatest impact on the flood zone, Option 7 the least.
- 9.3.2 All work in a flood zone must be compensated for in terms of flood storage. Where the whole scheme is within the flood zone this will have logistical issues for the designers and construction.
- 9.3.3 Option 11 has no impact on the flood zone but consideration to temporary land take for storage and a site compound would need to be considered.

9.4 Permission to work in a water course

- 9.4.1 LLFA consent will be required for all the options as culverts and watercourses are impacted.
- 9.4.2 The Environment agency will need to issue a Standard Permit to work in the flood zone and agree the compensation measures for the permanent land-take as well as any temporary measures required.
- 9.4.3 Option 6 has the greatest impact on the River Sowe and its floodplain requiring the largest compensation design for the flood zone impingement. Excavating ponds leads to an increase in material arisings that must be designed into the cut / fill balance or will be removed off site. Constructing ponds in this location has challenges due to the clay nature of the ground leading to localised impoundment of water during construction.

9.5 SSSI

- 9.5.1 All options have the potential for indirect impact on the SSSI. Option 8 has direct impact during construction on a temporary basis.
- 9.5.2 Option 8 has most impact on the SSSI, as it has the largest footprint within the designation. Natural England will be required to consent the works and agree any compensatory habitat.
- 9.5.3 Options 6, 7 and 11 have a reduced direct impact on the footprint and zone of influence of the SSSI, therefore less compensation required by the project .

Precautions to protect the trees within the SSSI will be considered during the design of the scheme with construction mitigation to include management of tree root protection zones.

10 Construction Issues / Risks

10.1 Issues / Risks affecting all options

- 10.1.1 Keeping 2 lanes of traffic in each direction during A46 realignment. This issue is most prominent for option 7 as the majority of the works are overlaid against the existing carriageway. To maintain two lanes of traffic in each direction significant temporary works will be required.
- 10.1.2 Existing services and OH power lines. Appendix F of this document includes the Osborne procedures for working in close proximity to live overhead cables.
- 10.1.3 Contaminated ground / poor ground conditions to the south of the existing junction
- 10.1.4 The close proximity of the SSSI at Combes Pool
- 10.1.5 Maintaining access to Hungerley Hall Farm and access between the farm and the fields to the east of the existing A46.
- 10.1.6 Noise issues at the adjacent properties
- 10.1.7 Poor ground conditions south of the roundabout.
- 10.1.8 Performance of the Statutory Utilities completing diversion works.
- 10.1.9 Effects of issues outside of the project's control. For example:
 - Brexit
 - COVID-19
 - HS2 works

10.2 Issues / Risks Specific to Option 6

- 10.2.1 The realigned A46 goes to the west of Hungerley Hall Farm and consequently there is a deep excavation which will be in poor ground conditions of alluvial soils. There may also need to be a retaining wall built within these ground conditions.
- 10.2.2 The realignment of the A46 brings the road into the River Sowe flood zone. Therefore, deep excavation/poor ground/flood zone will require special techniques.
- 10.2.3 This alignment brings the new road closer to the OH power lines west of the farm and particularly where there may be a retaining wall required therefore needing craneage.
- 10.2.4 Because this option effectively leaves Hungerley Hall Farm in an island during construction between the new construction and the existing A46 access will be an issue with the possibility of having to bring access through the works. If there are animals to move from field to field this will be an additional problem.

10.3 Issues / Risks Specific to Option 7

- 10.3.1 This alignment is closer to the SSSI Coombe Pool and will cause more environmental constraints and create a lack of room for haul roads etc
- 10.3.2 The culvert extension will cause additional constraints. The water course will need to be maintained or diverted / over pumped during construction. Works will therefore be dependent on obtaining the applicable approvals and weather.

- 10.3.3 This option brings the new road closer to the OH power lines west of the roundabout.

10.4 Issues / Risks Specific to Option 8

- 10.4.1 The farmhouse and one outbuilding at Hungerley Hall will require demolition and therefore possibly environmental, access, temporary/permanent buildings etc constraints.
- 10.4.2 The culvert extension will cause additional constraints. The water course will need to be maintained or diverted / over pumped during construction. Works will therefore be dependent on obtaining the applicable approvals and weather.

10.5 Issues / Risks Specific to Option 11

- 10.5.1 Maintenance of access to Hungerley Hall farm will need to be maintained at all times. Connectivity will also need to be maintained between the farm and fields both east and west of the A46.

11 Appendix A – Construction Programmes

12 Appendix B – Phasing Sketches

13 Appendix C – Traffic Management Drawings

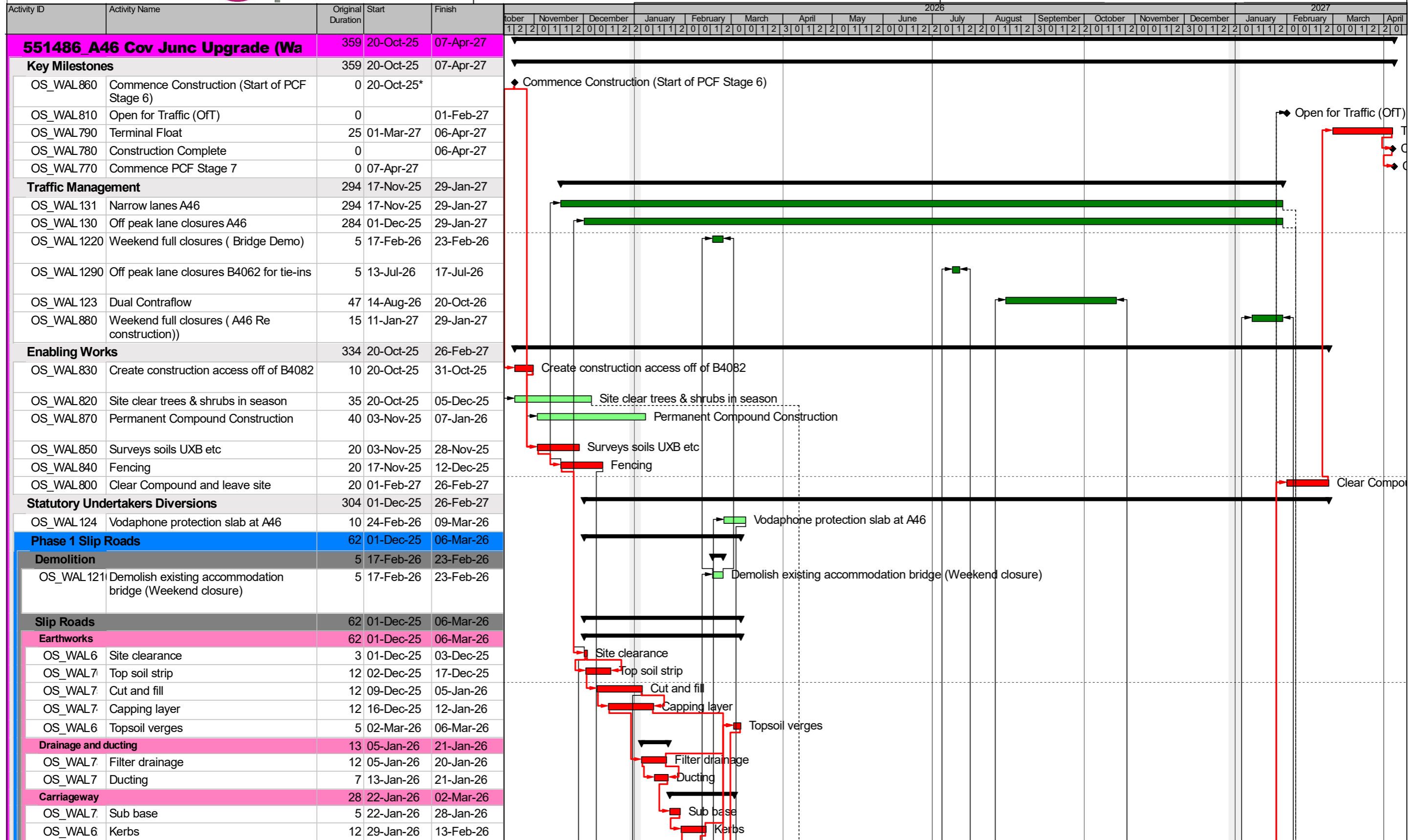
14 Appendix D – Diversion Route Drawings

15 Appendix E – Utility Diversion Summary

16 Appendix F – Safety procedures relevant to OHL Equipment



551486_A46 Cov Junc Upgrade (Walsgrave) Option 11



█ Remaining Level of Effort
 █ Remaining Work
 █ Actual Work
 █ Critical Remaining Work
 ◆ Milestone

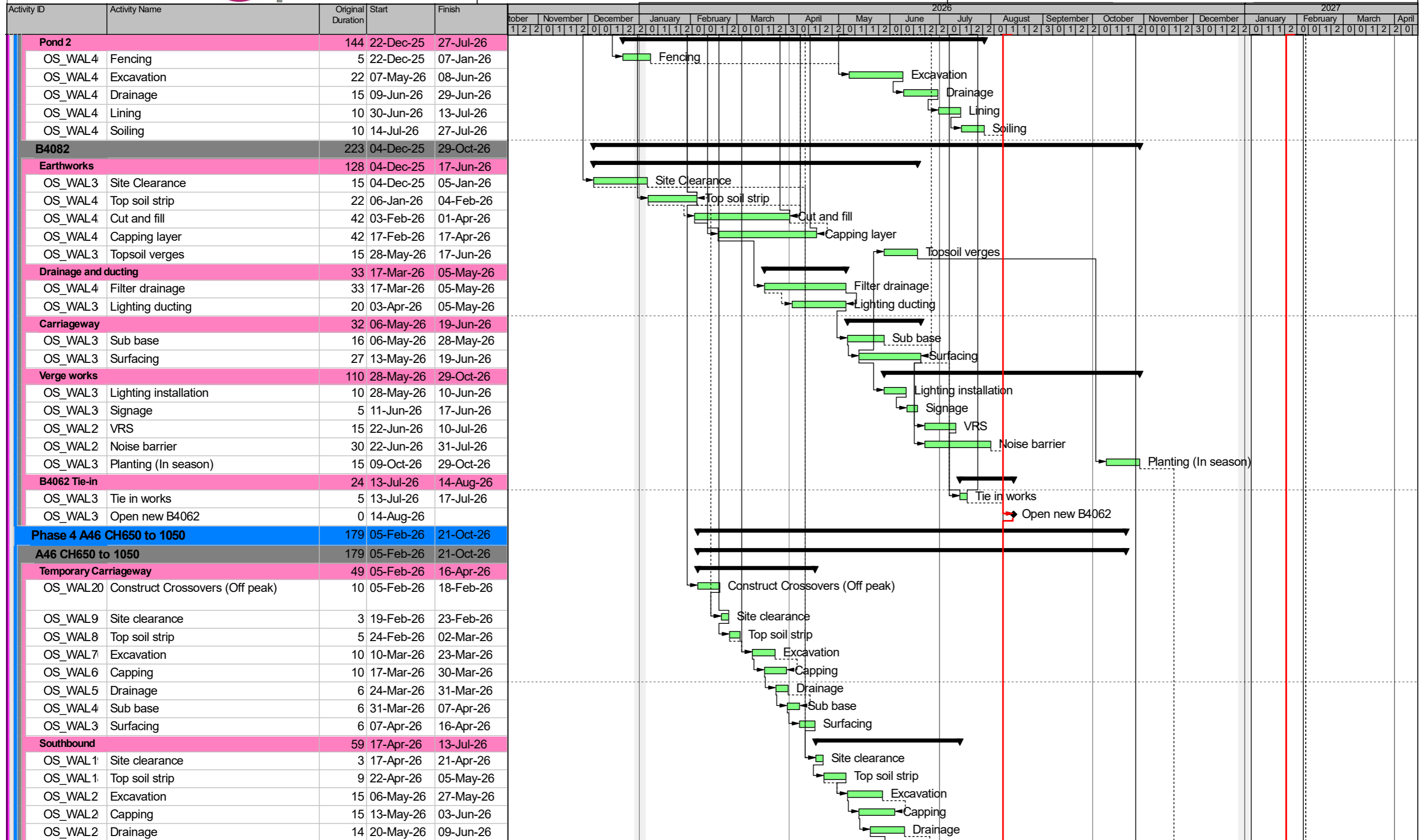
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551486_A46 Cov Junc Upgrade (Walsgrave) Option 11

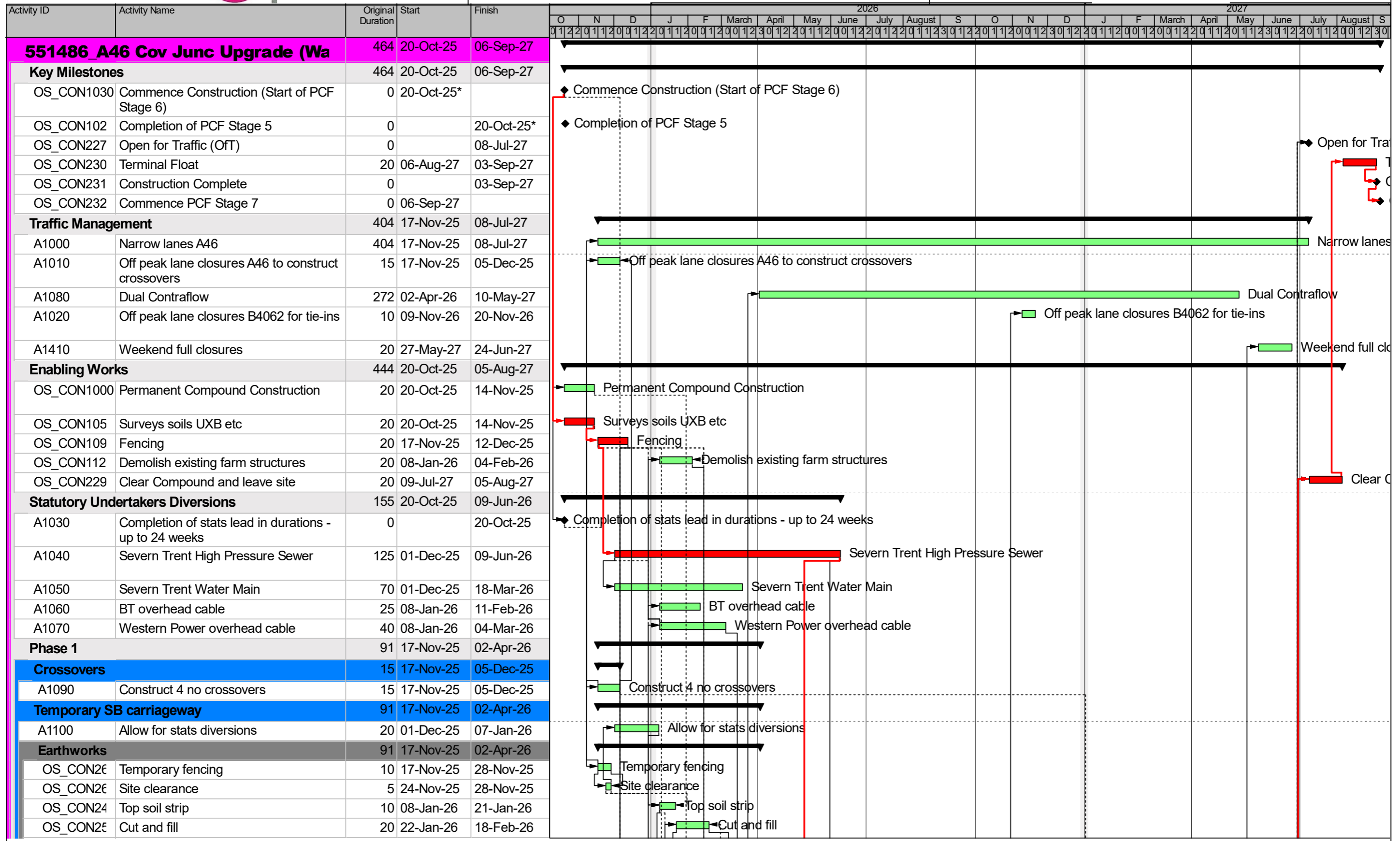


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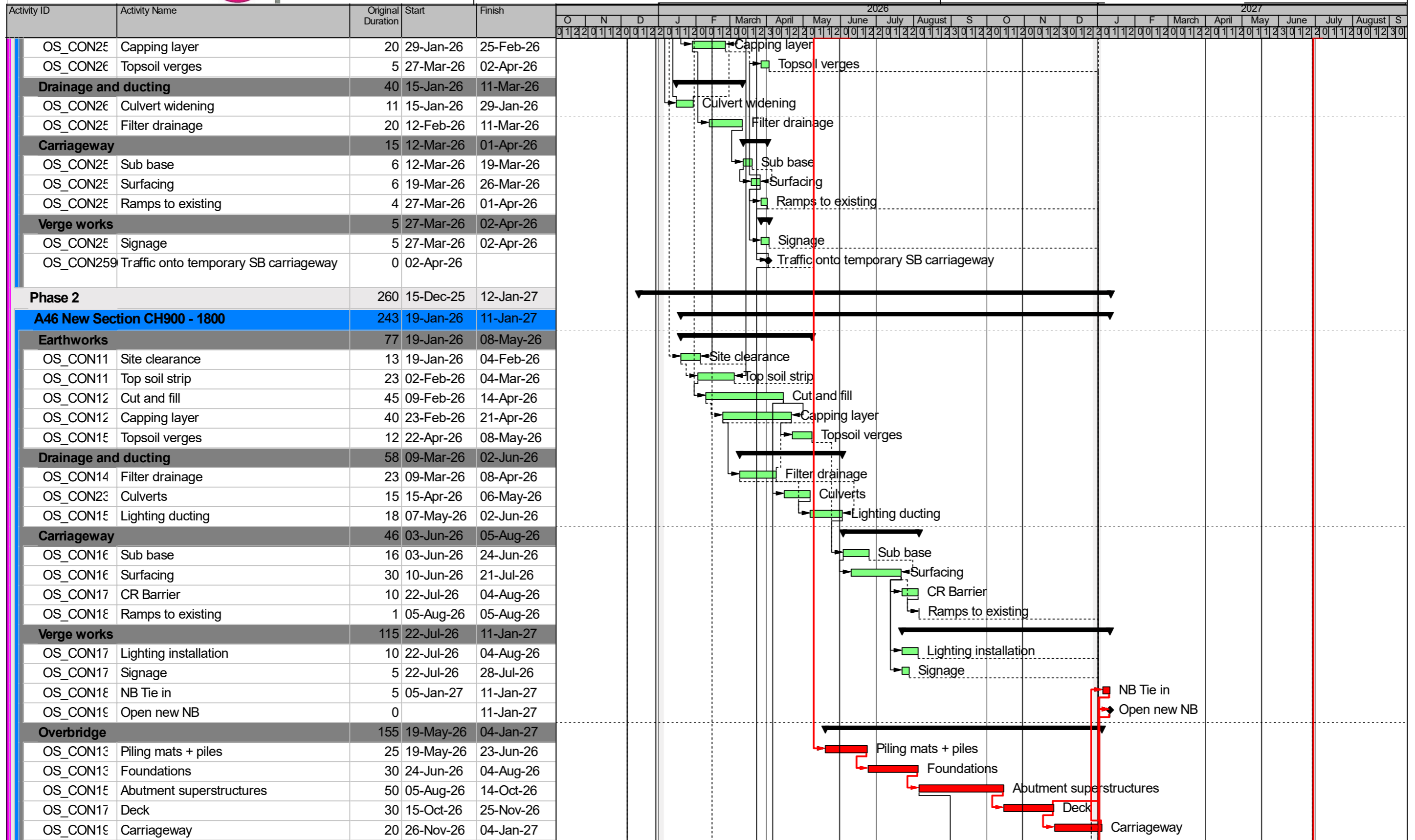
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551486_A46 Cov Junc Upgrade (Walsgrave) Option 6



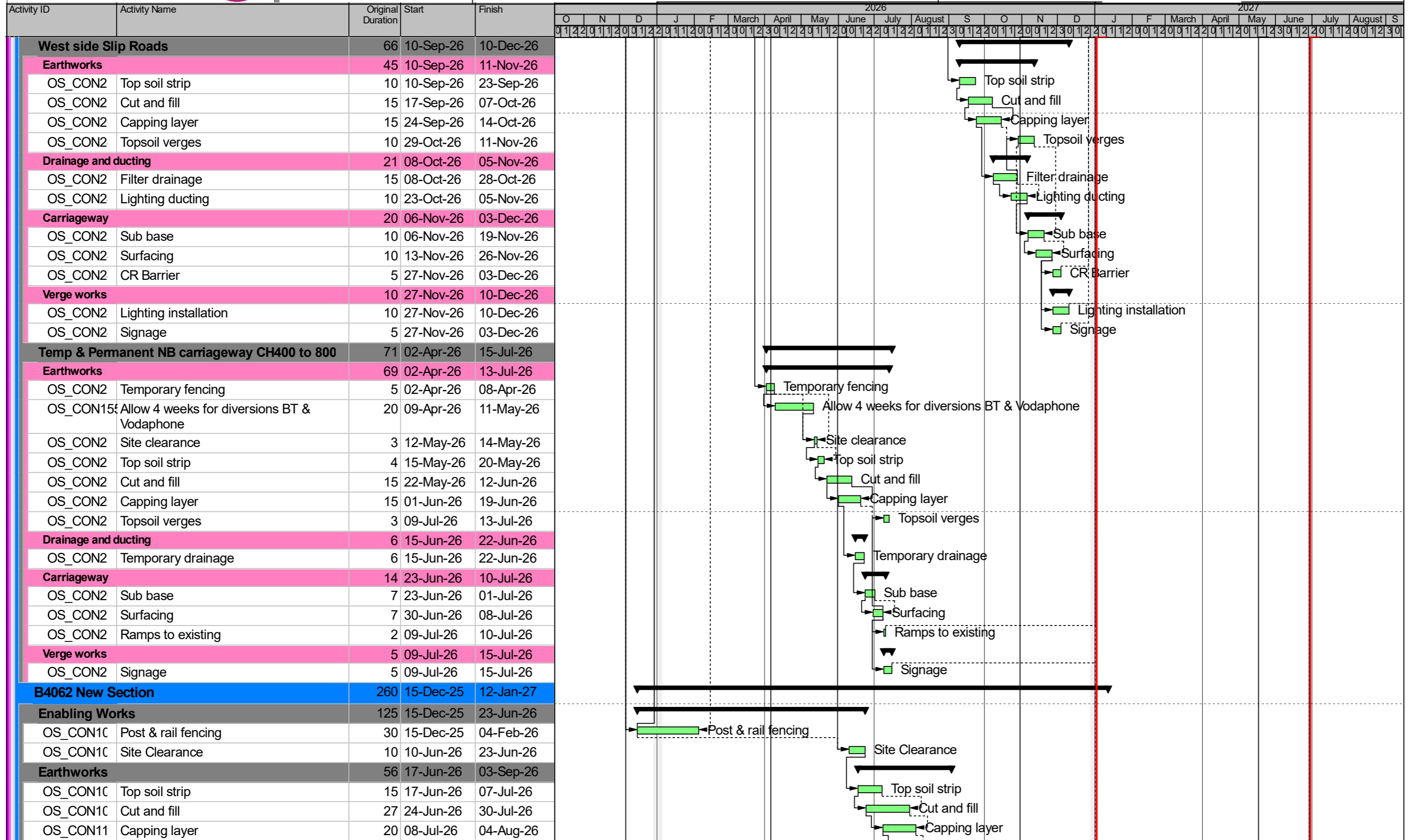
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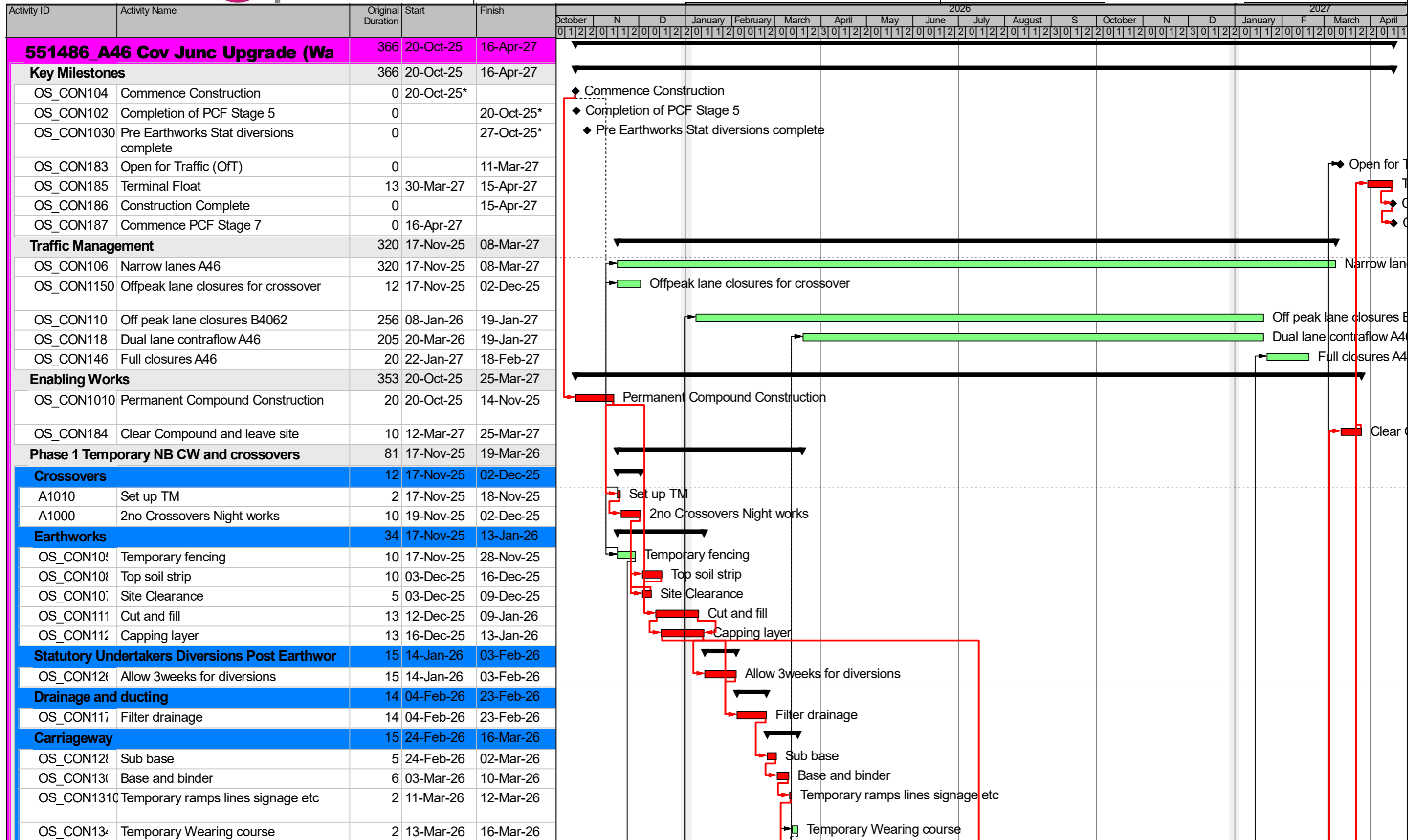
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551486_A46 Cov Junc Upgrade (Walsgrave) Option 7



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 ▬ Actual Level...
 ◆ Milestone

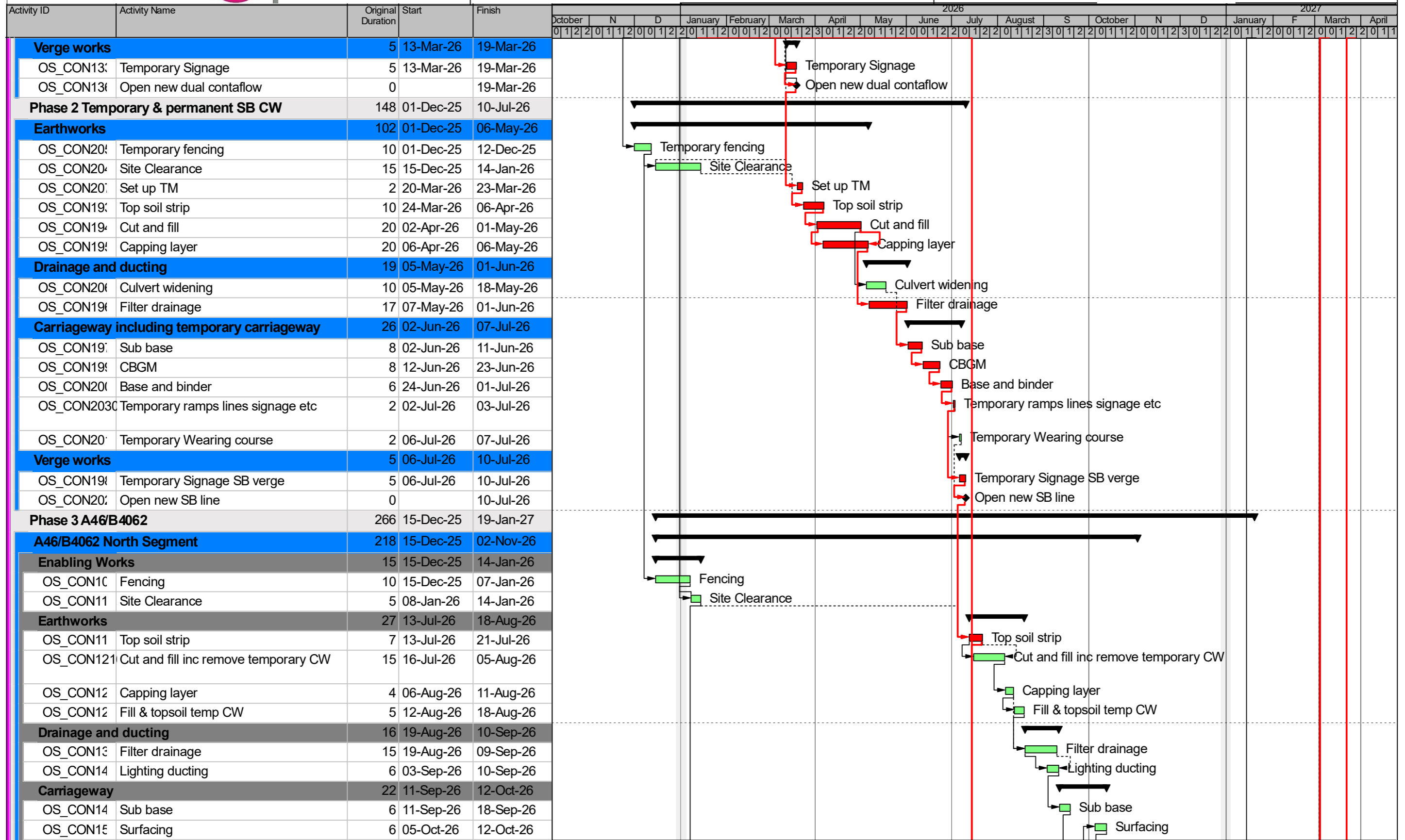
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551486_A46 Cov Junc Upgrade (Walsgrave) Option 7



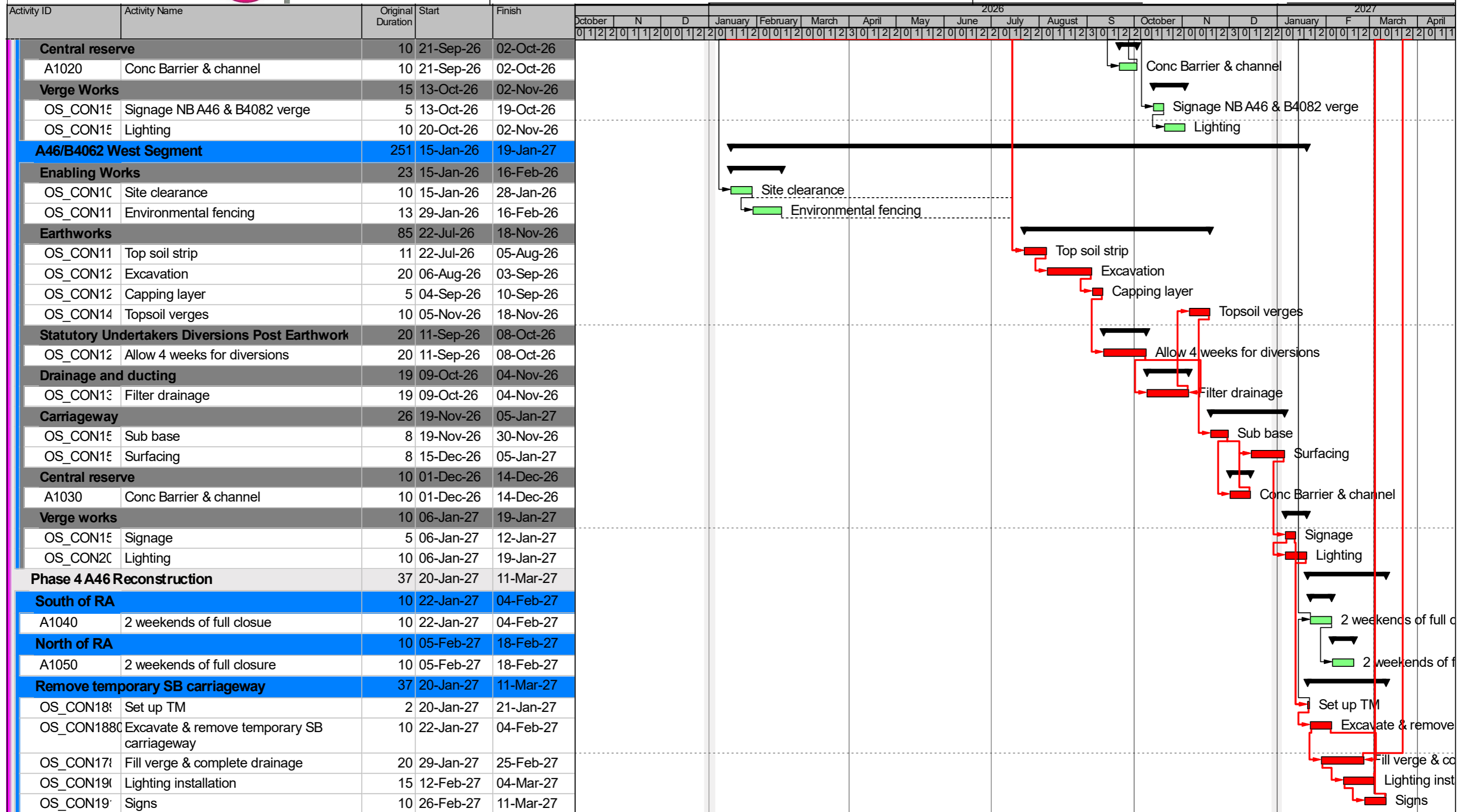
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20-Aug-21 TASK filter: All Activities



551486_A46 Cov Junc Upgrade (Walsgrave) Option 7



■ Remaining Level of Effort
 ■ Remaining Work
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 ◆ Critical Remaining Work
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551486_A46 Cov Junc Upgrade (Walsgrave) Option 7

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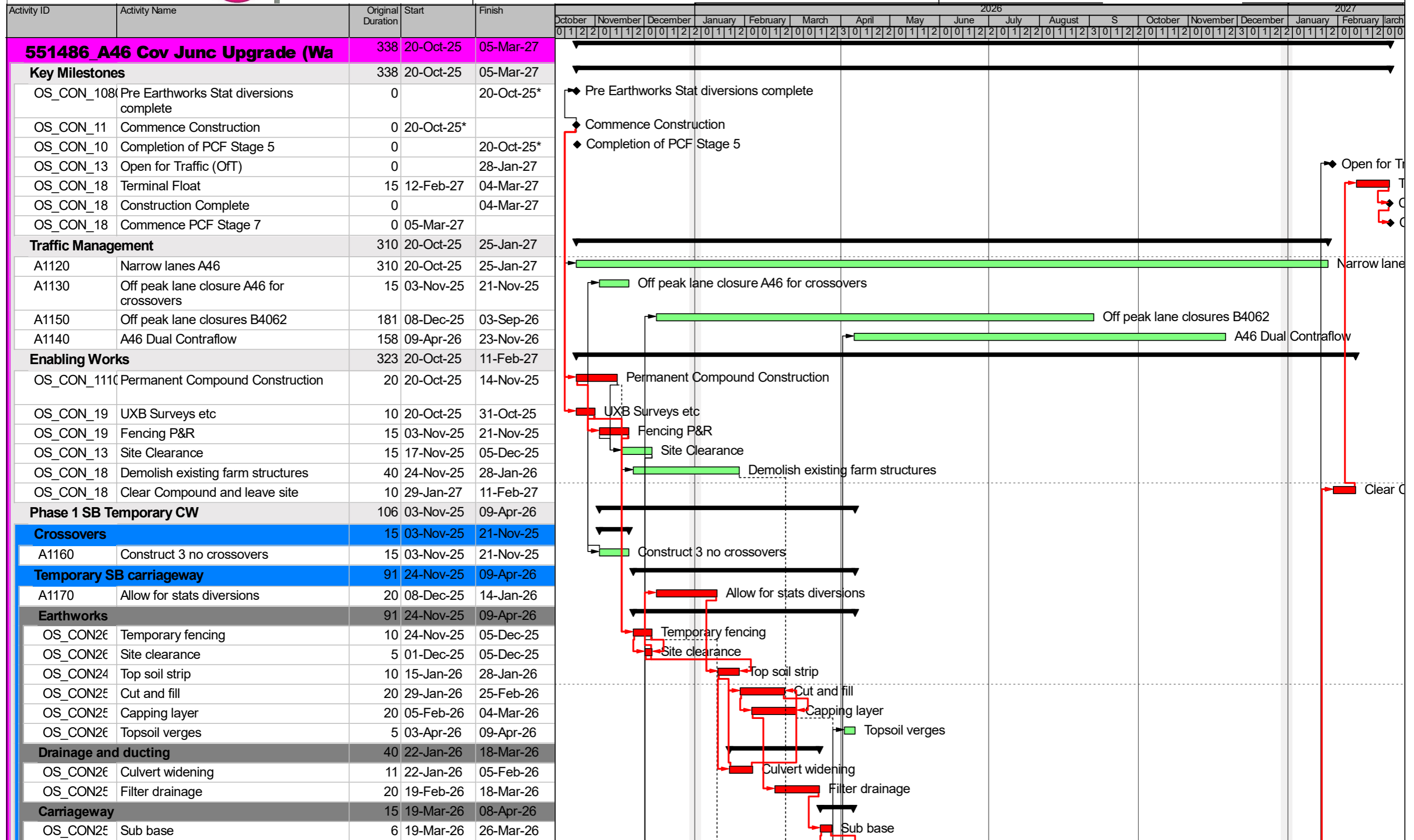
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551486_A46 Cov Junc Upgrade (Walsgrave) Option 8



█ Remaining Level of Effort
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 █ Actual Level...
 █ Actual Work
 █ Critical Remaining Work
 ◆ Milestone
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551486_A46 Cov Junc Upgrade (Walsgrave) Option 8

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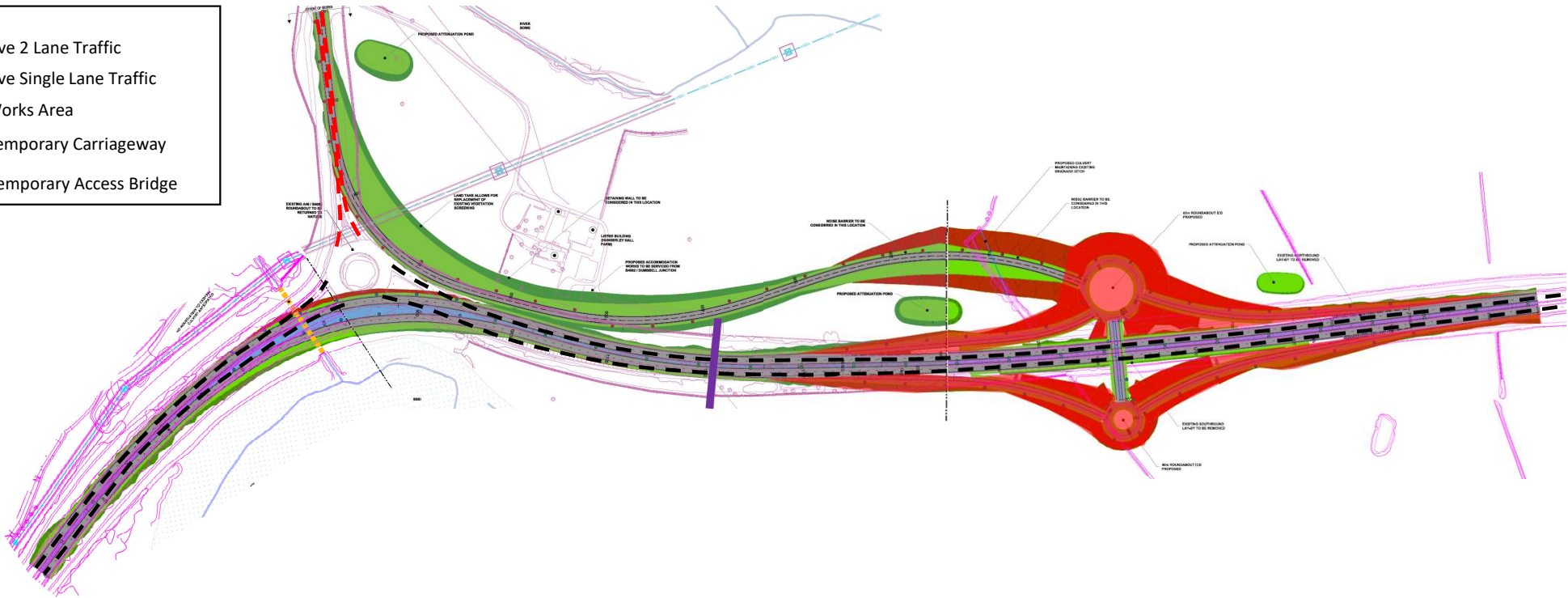
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Option 11 – Phase 1

- Build the 4 new interchange slip roads with temporary carriageway through proposed roundabouts
- All works offline.
- Access for farmer to be maintained over existing bridge
- Narrow lanes required on A46 mainline to construct slip road tie ins

Key

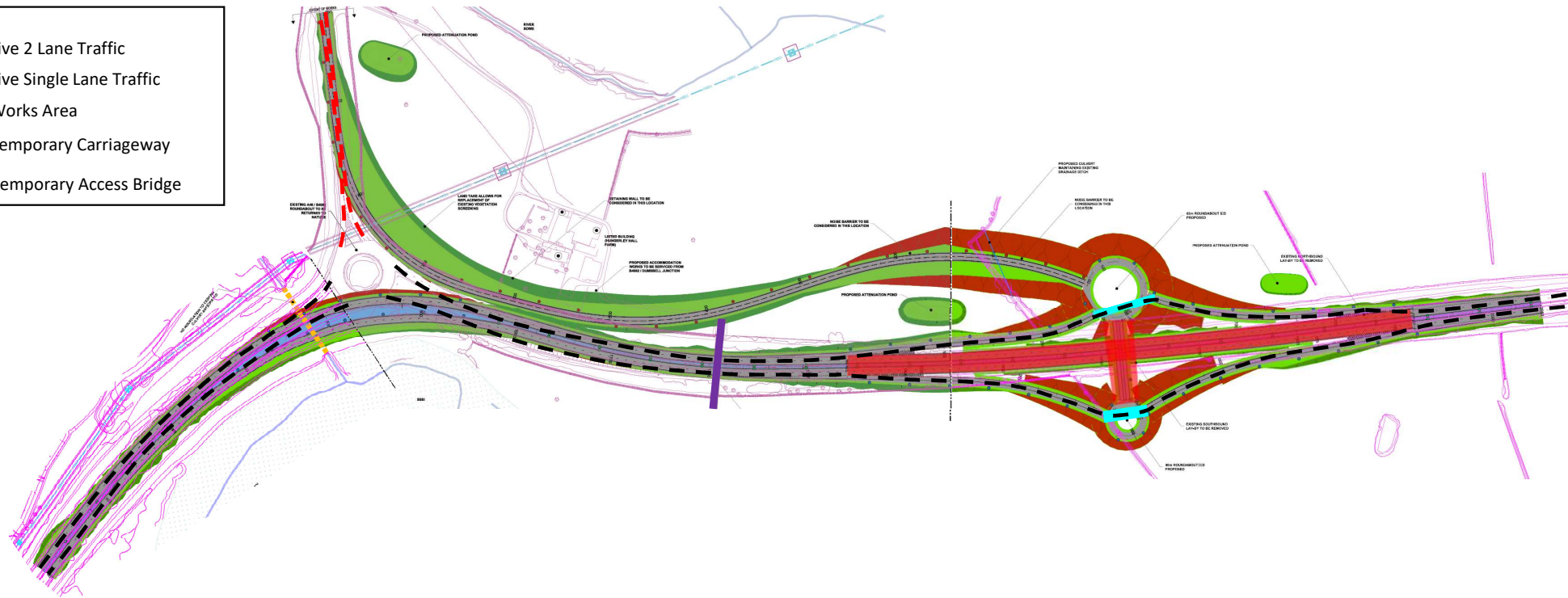
- — — — — Live 2 Lane Traffic
- - - - - Live Single Lane Traffic
- █ Works Area
- █ Temporary Carriageway
- █ Temporary Access Bridge



Option 11 – Phase 2

- A46 Mainline diverted on to new slip roads.
- Proposed overbridge constructed and built up.
- A46 Mainline constructed between CH 1400 to 2050
- All works offline.
- Access for farmer to be maintained over existing bridge

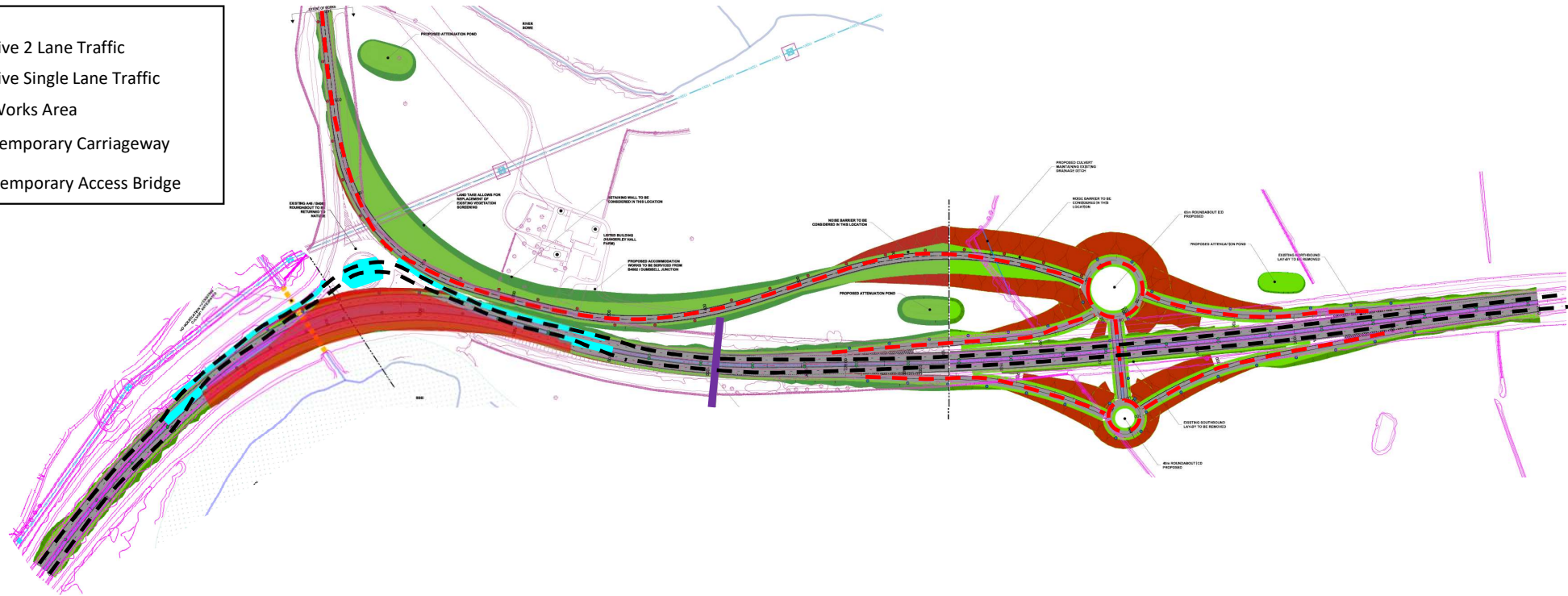
Key	
	Live 2 Lane Traffic
	Live Single Lane Traffic
	Works Area
	Temporary Carriageway
	Temporary Access Bridge



Option 11 – Phase 4

- SB Carriageway and Central Res Constructed between CH 650 and 1050
- Access for farmer to be over new link road / roundabouts / overbridge.
- Traffic on contra flow on main line and using new link road, roundabouts and overbridge.

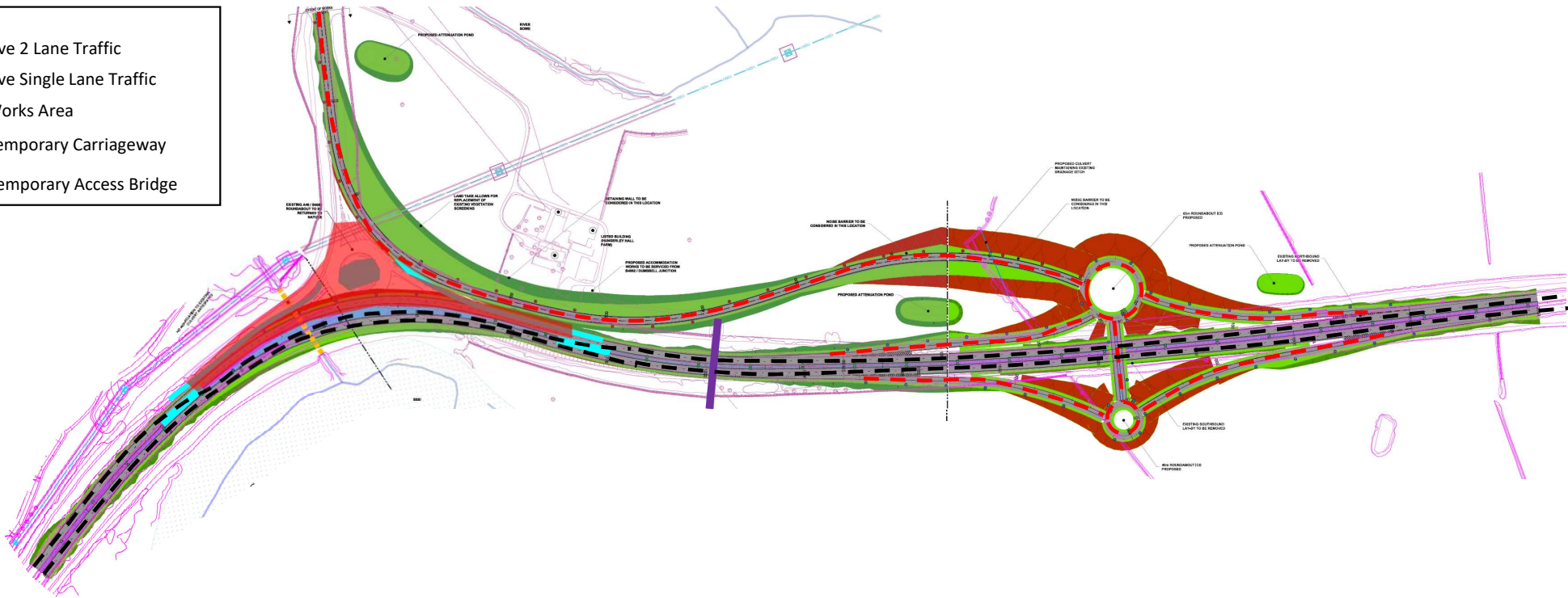
Key	
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	Live Single Lane Traffic
	Works Area
	Temporary Carriageway
	Temporary Access Bridge



Option 11 – Phase 5

- NB Carriageway Constructed between CH 650 and 1050
- Existing Roundabout Demolished
- Access for farmer to be over new link road / roundabouts / overbridge.
- Traffic on contra flow on main line and using new link road, roundabouts and overbridge.

Key	
	Live 2 Lane Traffic
	Live Single Lane Traffic
	Works Area
	Temporary Carriageway
	Temporary Access Bridge



Option 11 – Phase 6

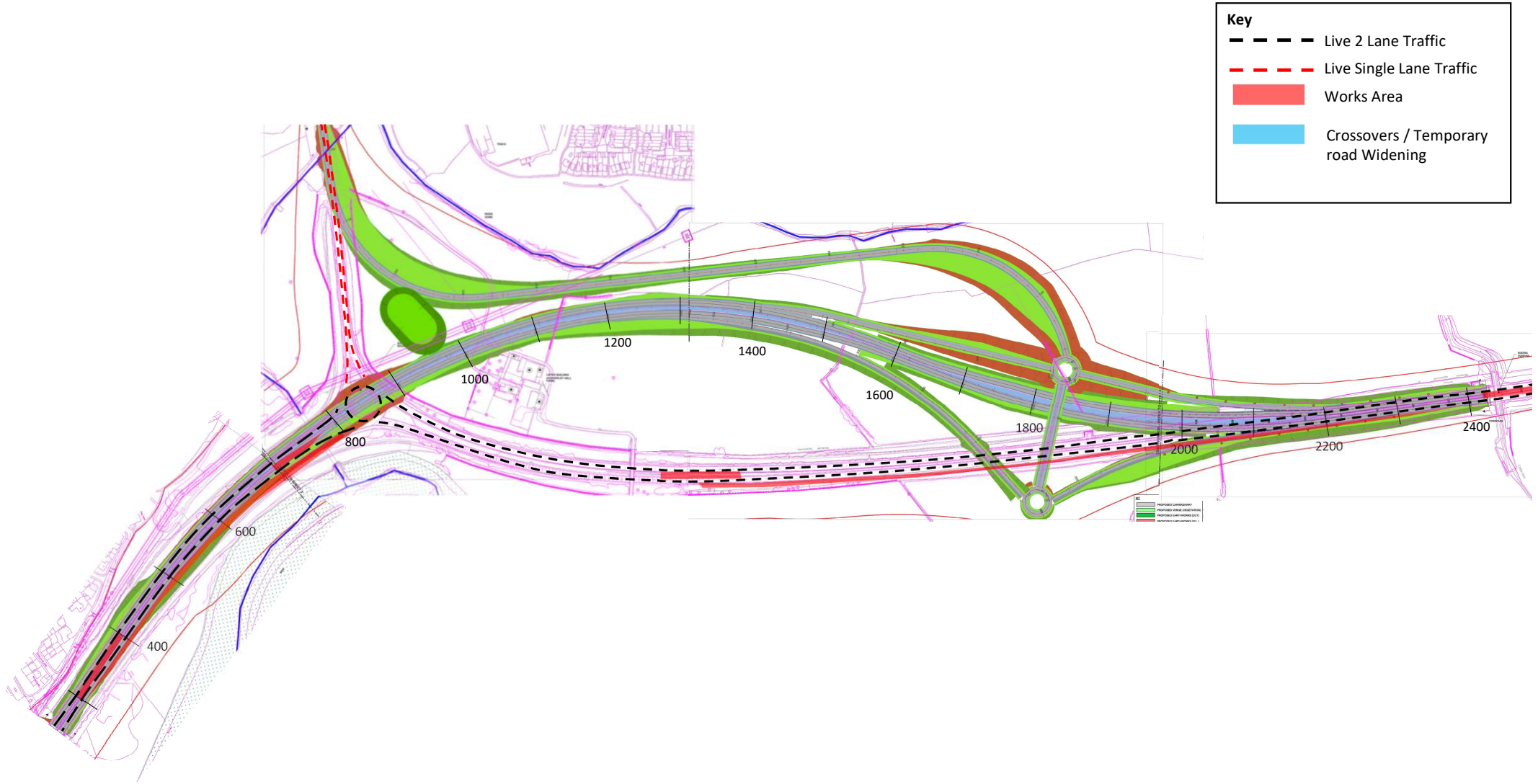
- Reconstruct A46 between CH 40 and 650 under night / weekend closures
- Reconstruct A46 between CH 1050 and 1350 under night / weekend closures
- All traffic on permanent alignment

Key	
	Live 2 Lane Traffic
	Live Single Lane Traffic
	Works Area
	Temporary Carriageway
	Temporary Access Bridge



Option 6 – Phase 1

- Crossover installation & Temporary Carriageway Widening to NB Carriageway



Option 6 – Phase 2

- Construction of offline works including temporary carriageway on the NB south of the roundabout
- Traffic in Dual Contraflow on Sb Carriageway
- Access to farm house required

