OPCC Review Summary 2009
Heritage Storage Pool Development Project

AGENCY	COMMENT	RESPONSE
St. Clair Region Conservation Authority Phone conversation / Emails from Ashlea Rabideau dated January 16, 2009	Phone conversation January 16, 2009 - Authority inquiry as to proximity of pipeline to Provincially Significant Wetlands. (PSW) Email January 19, 2009 - Authority requiring confirmation of proposed roadways within 120m of PSW. - Authority requiring confirmation of any temporary or permanent watercourse crossings, culvert size and location	Email response January 16, 2009 with attached map indicating pipeline proximity to PSW. Email response January 20, 2009 -indicating no roadway to be constructed within 120m of PSW. - Attached map showing location of temporary culvert to be installed in road ditch for access. Road ditch not considered a permitted watercourse. Included Union Gas/DFO endorsed Sediment Control Plan – Vehicle Crossing

Norm Dumouchelle

From: Norm Dumouchelle
Sent: January 16, 2009 7:59 AM
To: 'Ashlea Rabideau'
Subject: Heritage Storage Pool Project
Attachments: PSW Location Map.ppt

Hi Ashlea

In response to your inquiry regarding the proximity of the proposed pipeline for the Heritage Storage Pool Project to the Provincially Significant Wetlands in the area, I have attached a map showing the woodlots in question.

1) - Bickford Woods which is the main component of the wetland complex, is approx.190 metres north of the pipeline which will be located within the road allowance of Bickford Line.

2) - Woodlot 2 is located directly adjacent to the pipeline easement. The easement and construction activities will be undertaken on the agricultural field east of the woodlot. As you are aware, Union retained the services of Jacques Whitford Limited to conduct a survey of the area and it was determined that the proposed pipeline construction will not produce a significant adverse or net residual environmental negative effect.

3) - Woodlot 3 is located approx. 180 metres east of the pipeline construction.

If you have any more questions please don't hesitate to contact me.

Norm Dumouchelle
Environmental Planner
Project Execution Dept.

1-866-949-1595 ext. 76955
cell: 1-519 365-0726
e-mail: npdumouchelle@uniongas.com

Sent: January 19, 2009 8:01 AM
To: Norm Dumouchelle
Subject: RE: Heritage Storage Pool Project

Hi Norm;

As discussed in our phone conversation of January 16, 2009.

- Woodlot #2 is the only area where the proposed pipeline will be within 120 metres of a wetland.

- The concerns of drainage of the wetland in woodlot #2, via the proposed pipeline has been addressed in the Heritage Storage Pool Environmental Protection Plan provided by Jacques Whitford Limited dated November 2008.

- The Authority requires confirmation of any proposed roadways within 120 metres of the wetlands.

- The Authority requires details of any proposed temporary or permanent watercourse crossings.

If you have any further questions please do not hesitate to contact me.

Regards,

Ashlea Rabideau, Resources Technician

St. Clair Region Conservation Authority
205 Mill Pond Cres., Strathroy, ON
N7G 3P9
(Tel) 519-245-3710
(Fax) 519-245-3348
(E-mail) arabideau@scrca.on.ca

Heritage Pool General Location

Norm Dumouchelle

From: Norm Dumouchelle
Sent: January 29, 2009 2:45 PM
To: 'Ashlea Rabideau'
Subject: RE: Heritage Storage Pool Project
Attachments: SCR - Culvert.doc; Vehicle Crossing.pdf

Hi Ashlea

Please find attached a photo of the culvert location in question. I have also attached the Union / DFO Sediment Control Plan for Vehicle Crossing which will be followed during the culvert installation.

Thanks

From: Ashlea Rabideau [mailto:arabideau@scrca.on.ca]
Sent: January 28, 2009 1:45 PM
To: Norm Dumouchelle
Subject: RE: Heritage Storage Pool Project

Hi Norm;

Can you provide the details for the temporary culvert (size, installation techniques, ect)

If you have any questions please do not hesitate to contact me.

Thanks

Ashlea Rabideau, Resources Technician

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205 Mill Pond Cres., Strathroy, ON
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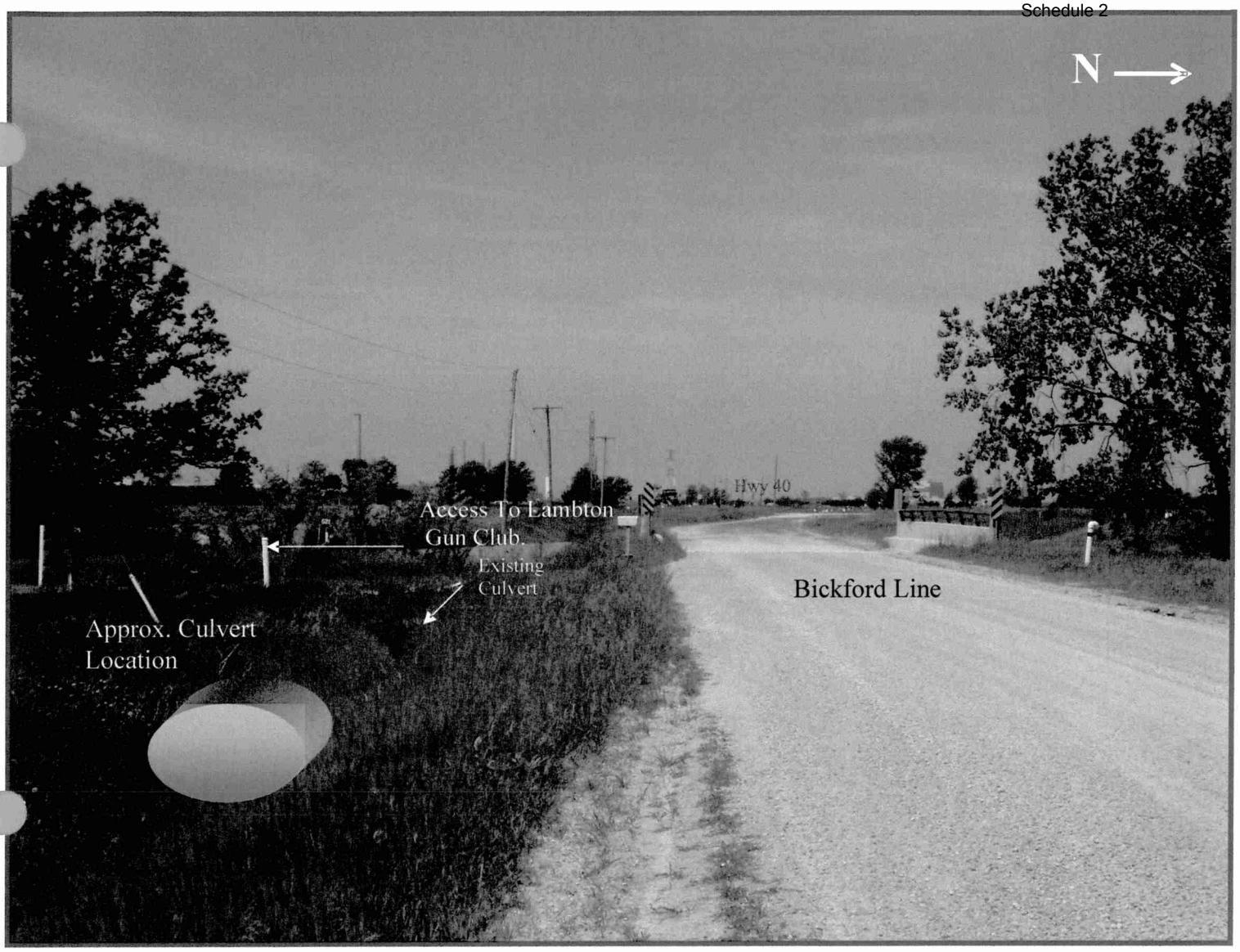
From: Norm Dumouchelle [mailto:NPDumouchelle@uniongas.com]
Sent: Tuesday, January 20, 2009 12:16 PM
To: Ashlea Rabideau
Subject: RE: Heritage Storage Pool Project

Hi Ashlea

In response to your concerns, there will be no temporary roadways installed along woodlot #2. All work will be performed on the agricultural lands east of the woodlot. Due to a shallow road side ditch and the difference in the grade level between the agricultural field and the road surface, temporary culvert will need to be installed at Bickford Line. The location of the culvert will be approx. 260m from the woodlot. I have attached a map showing the location of the culvert.

Thanks You

From: Ashlea Rabideau [mailto:arabideau@scrca.on.ca]



The temporary culvert will be the same size (18 in.) as the existing culvert for the access to the gun club or larger. The installation of the culvert will follow the Union Gas / DFO endorsed plan. Generally the culvert is placed in the ditch and covered with a geo-technical material. We then backfill with a course rock and cover this with geo-tech, then a layer of granular "A" for a solid driving surface. The material at the ends of the culvert are raised and stacked to prevent the gravel from migrating into the ditch.

Heritage Pool General Location

Generic Sediment Control Plan – Vehicle Crossings

This plan sets out the measures that will be taken by Union Gas Limited (company) and its contractors to control downstream sediment to the lowest level practically achievable during the construction, use and removal of temporary vehicle water crossing at streams, rivers and ponds. The conditions and techniques set out on this plan are to be followed unless approved otherwise by the Department of Fisheries and Oceans (DFO).

General Measures

The company must use materials, construction practices, mitigation techniques and monitoring of operations at every water crossing in order to prevent the unauthorized harmful alteration, disruption or destruction of fish habitat or the impairment of water quality. Vehicle crossings typically include temporary bridges such as wooden mats (swamp mats), portable bridges and culvert/grade fill ramps. The following requirements apply to any waterbody (stream, river, pond) and areas adjacent to it.

* Temporary vehicle access to be in place for less than four seasons and no work shall occur outside of timing windows, unless prior approval is obtained from the permitting agency. If temporary vehicle access is to stay in place outside of the in–water timing windows, then appropriate fish passage will be provided.
* Use existing vehicle access accross watercourses wherever possible.
* Prior to removal of the low vegetative cover, effective mitigation techniques for erosion and sediment control must be in place to protect water quality. Limit the areal extent of disturbance to the minimum needed for construction and delay grubbing to immediately prior to grading operations.
* Prior to commencing the installation of temporary vehicle crossings, local weather stations will be monitored to determine whether any precipitation is forcasted. If practical work will be delayed until weather conditions are favourable and if flows are in flood stage. If necessary to proceed with work under unfavourable conditions, the company will exercise due diligence.
* Vehicle crossing structures capable of handling anticipated high water flows during the construction period will be used. See guidelines below on sizing of water openings.
* Coarse cobbles, sandbags, geotextile liners and/or curb stringers to protect culvert and ramp approach fills from erosion and to prevent sedimentation of a watercourse will be used.
* On the approaches to vehicle crossing structures, road ditches constructed for drainage control will incorporate the necessary erosion and sedimentation control measures (e.g., silt fence, check dams) to prevent sediment from entering the watercourse.
* Except during construction of the crossing, the company will not obstruct any watercourse so as to impede the free movement of water and fish.
* All exposed mineral soil must be graded to a stable slope and treated as quickly as possible to prevent erosion and sediment from entering the water.
* All temporary vehicle crossing structures will be removed upon completion of construction. Banks and approaches will be restored and stabilized immediately upon removal of a vehicle crossing structure.
* The area around water crossings is to be regularly monitored and if erosion problems develop, immediate action is to be taken with appropriate treatments and completed as quickly as possible. Accumulated sediment is to be removed regularly from sediment control mitigations.
* Equipment fording will only be allowed with approval from the applicable government agencies. Fording will only be considered if:
  - The fording site does not support known critical aquatic habitat, such as spawning gravels;
  - The fording does not take place during fish spawning, incubation or migration periods;
  - The work site cannot be accessed from the opposite side of the watercourse to avoid fording activities;
  - The fording site has low profile and gradual banks which will not require grading to support vehicle traffic;
  - The fording site has relatively shallow water depths (less than 1m) at time of use;
  - The fording site has coarse substrate which will support vehicle travel without creating erosion and sedimentation;
  - Run–off from the approach slopes to the ford can be effectively controlled to prevent sediment introductions to the stream.
  - The number of crossings of the fording should be limited to a one–time event (over and back).
  - Boundaries of the fording site will be marked on both sides of the crossing to confine all vehicle traffic to the ford.
  - Fords will be aligned at right angles to the channel flow wherever possible to minimize instream travel.
  - Excess soil will be removed from vehicles before fording. In addition, all vehicles using the ford will be in good working order and checked to ensure no fuel, hydraulic fluid or lubricating fluid leaks are present.
  - Bed and banks of ford sites will be restored when no longer needed.
* For additional information refer to the Fisheries and Oceans Operational Statement–Clear Span Bridges. If the installation of a clean span bridge can meet all the conditions as stated in the Operational Statement, DFO review is not necessary.
* The company will be held responsible for implementation of this plan.

Sizing of Water Opening

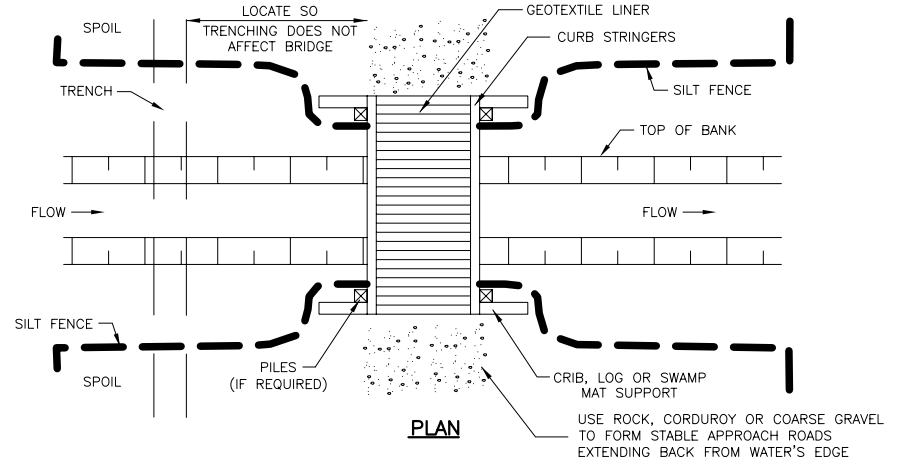
It is important that the size of the water opening be selected so the structure can safely pass flood flows that can reasonably be expected to occur during the life of the crossing. Either of the following methods can be followed:

* Install a bridge that clear spans the creek from top of bank to top of bank and ensure adequate freeboard to allow for anticipated increase in stream discharge and passage of debris.
* Conduct a hydrology analysis to determine theoretical opening size. The design flow will be the two year flood (Q2), unless the culvert is to be left in place through the spring freshet, in which case the theoretical opening size will be based on the five year flood (Q5). Culvert sizes may also be selected to be the same as existing nearby culverts that have been in place for many years and have performed satisfactorily.
* Culvert sizes and lengths must be approved by DFO prior to installation.
* If culverts are used, the approved size or equivalent multiple culverts must be installed. If a bridge is selected with cribs or piers in the water, the opening must provide the same end area as the culvert and must be approved by DFO.

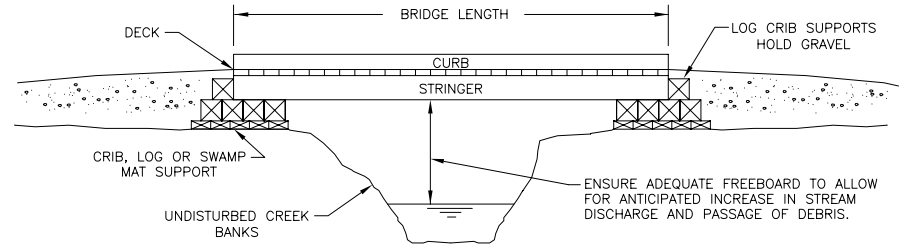
Detailed Construction Sequence – Temporary Bridges

In general terms, the following sequence of construction and mitigation measures will be followed at all temporary bridges:

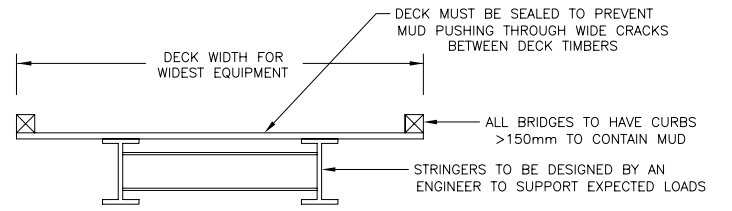
1. Generally, there are no restrictions on timing for the construction of clear–span structures as they do not involve in–water work. However, if there are any activites with the potential to disrupt fish or fish habitat (e.g., in–water crossing of watercourse by machinery), these should be done during provincial fisheries, timing windows.
2. Install the bridge in a manner that will minimize sediment entering the water. Stringers must be engineered to support the loads expected on the bridge. Curbs at least 150 mm high must be installed along the edge of the deck and if necessary, the deck lined with geotextile to contain mud on the bridge. Fasteners connecting components must be strong enough to hold them in position during the life of the bridge. If used, cribs are to be filled with rock or cobble. Rip rap erosion protection is to be placed around the cribs and on the fill slopes projecting into the water.
3. Road approaches leading to bridges and flume vehicle crossings must be raised and stable so equipment loads are supported a sufficient distance back from the water to reduce mud entering the stream from equipment tracks. This may require using materials such as gravel, rock or corduroy. If cuts are needed to obtain a satisfactory grade, they are to be dug with side ditches and stable slopes. Erosion and sediment control measures are to be installed to keep sediment on land (eg., check dams, filter cloth, rip rap, seed and mulch, sediment traps, etc.)
4. While the bridge is in use, any buildup of mud on the bridge deck or approaches that is affecting water quality is to be scraped off and disposed of in an approved location.
5. Temporary crossings shall be removed as quickly as possible when no longer required. Surplus gravel and bridge materials are to be removed from the crossing area and stabilized above the floodplain in an approved location. The creek bed and banks are to be restored to a stable angle and protected with erosion resistant material compatible with flow velocity (eg., coarse gravel or rip rap) Measures such as berms or logs may be needed to prevent sediment laden water running down the road.
6. Vegetate any disturbed areas by planting and seeding preferably native trees, shrubs or grasses and cover such areas with mulch or erosion control matting to prevent soil erosion and to help seeds germinate.



PLAN



BRIDGE PROFILE

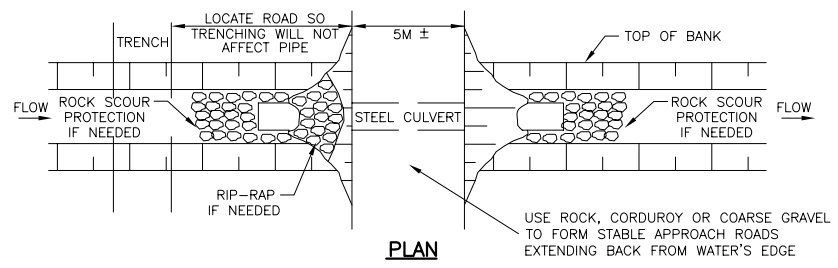


TYPICAL STEEL BRIDGE SECTION

Detailed Construction Sequence – Temporary Culverts

In general terms, the following sequence of construction and mitigation measures will be followed at all temporary culverts:

1. Install culvert pipe of diameter and length as per approval conditions. Culvert invert is to be set to allow a minimum of 10cm water depth for fish passage where soil conditions permit (otherwise at at stream grade and slope). If streambed soils are soft, install coarse gravel or rockfill pad under the pipe. Pipe installation can be done in flowing water unless DFO specifies otherwise. Culvert backfill and fill for the road is to be coarse granular or rock fill material. Erosion protection may be needed on the upstream road fill slope and if scour is possible, rip rap is to be placed in the streambed upstream and downstream of the pipe outlet.
2. The road approach leading to the culvert crossing must be raised and stable so equipment loads are supported a sufficient distance back from the water to reduce mud entering the water from equipment tracks. This may require using materials such as gravel, rock or corduroy. If cuts are needed to obtain a satisfactory grade, they are to be dug with side ditches and stable slopes. Erosion and sediment control measures are to be installed to keep sediment on land (eg., check dams, filter cloth, rip rap, seed and mulch, sediment traps, etc).
3. While the culvert is in use, any build–up of mud on the road surface or approaches that is affecting water quality is to be scraped off and disposed of in an approved location.
4. When the temporary crossing is no longer required, it is to be removed as quickly as possible. Removal shall not occur outside the construction windows as identified in the approval without prior written approval from DFO. Surplus gravel is to be removed from the crossing area and disposed of in an approved location. The creek bed and banks are to be restored to a stable angle and protected with erosion resistant material compatible with flow velocity (eg., coarse gravel, rip rap or erosion control matting). Measures such as berms or logs may be needed to prevent sediment laden water running down the road.
5. Vegetate any disturbed areas by planting and seeding preferably native trees, shrubs or grasses and cover such areas with mulch or erosion control matting to prevent soil erosion and to help seeds germinate.



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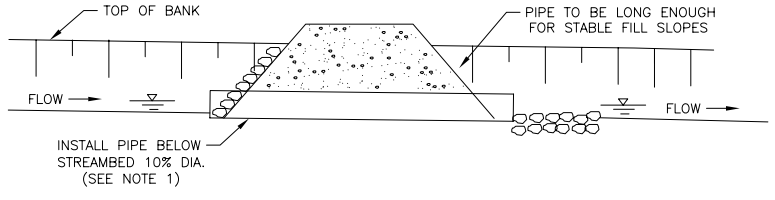

STREAM PROFILE

NOTES

Union Gas is responsible for implementation of appropriate sediment and erosion control to mitigate impacts to fish and fish habitat. Fisheries and Oceans Canada, Ontario–Great Lakes Area has reviewed Union Gas drawing, "GENERIC SEDMENT CONTROL PLAN TEMPORARY VEHICLE CROSSINGS" dated January 2008, and endorses its use as a guideline for implementation of erosion and sediment measures.

For more information on this plan, please contact:
Doug Schmidt,
Principal Environmental Planner,
Union Gas Limited,
1–800–571–8446, ext. 2895

DATE	REV NO	REVISION	BY	APPD

uniongas
A Spectra Energy Company

PROJECT
UNION GAS LIMITED
CONSTRUCTION PROGRAM

LOCATION
ALL TEMPORARY VEHICLE CROSSINGS (BRIDGES & CULVERTS) IN ONTARIO

DRAWING TITLE
GENERIC SEDIMENT CONTROL PLAN TEMPORARY VEHICLE CROSSINGS

SCALE	NTS	DATE	JAN. 1/08
FILE No.		PROJECT NO	
DRAWN GTH	CHECKED	DRAWING	3 of 3
APPROVED			REV 0

EB-2008-0405
Section 2.5
Schedule 2