

ENGINEERING REPORT

**HOLLAND MARSH DRAINAGE SYSTEM
CANAL IMPROVEMENT PROJECT**

TOWN OF BRADFORD WEST-GWILLIMBURY

COUNTY OF SIMCOE

TOWNSHIP OF KING

REGION OF YORK

“DRAWINGS”

VOLUME 3

January 16, 2009

File No. 03-023

K. SMART ASSOCIATES LIMITED
Kitchener Sudbury New Liskeard Rainy River

TABLE OF CONTENTS

Drawing 1 – Watershed Plan – shows the entire limit of lands that have water draining to the Holland Marsh Drainage System.

It shows there are 6 different municipalities with lands in the watershed.

This drawing indicates some of the major Highways, roads, Lots and Concessions.

As well, for the Town of Bradford West Gwillimbury the areas for 3 separate assessment roll numbers are shown.

Other Municipal drains, North Branch River and Kettleby Creek and their watersheds are shown.

Drawing 2 – is similar detail to drawing 1 but has information and location of all components of Holland Marsh Drainage System.

Drawing 3 – shows the North and South Canals and the Eighteen (18) Study Intervals along them. These Intervals were created to study the different sections of the Canal and determine the construction or improvements required. A brief description of the Construction Work in each Interval is listed along the sides of the drawing.

Drawings 4 to 14 – These are plan and profile drawings.

The plan portion along the top of the drawing shows the names of the property owners that abut the canal.

Also shown, as identification, are property assessment roll numbers.

A legend along the right hand side of the drawings, indicate items on the plan, such as where the canal is to be relocated and survey cross section locations.

Along the bottom of these drawings is a profile which matches the same length of canal on the plan portion.

The profile indicates the elevation of the road or dyke, the approximate depth of the existing canal and the proposed new depth or bottom and the calculated 100 year flood levels.

Soil borehole data is also shown as determined from field data and previous reports.

The profile is also used to show the approximate position of new drainage catchbasin positions alongside the road or canal dyke.

Drawings 15 to 51- these aerials show the work and owners along the North Canal and at a larger scale.

Drawings 52 to 92- these aerials show the work and owners along the South Canal and at a larger scale.

These drawings have an air photograph image in the background. Note, some distortion occurs with the images so that property lines do not always line up exactly.

Also note there is a description of the Extent of Work or construction that is to take place in that section of Canal. For example, the type of canal work (relocation, cleanout), clearing of bush required, hauling of excavated material, proposed irrigation lines, catchbasin and stockpile locations, etc.

Names of the property owners that abut the canal are shown, property assessment roll numbers and street addresses. Ownership status of the canal and dyke lands is also described.

Also shown are the approximate locations of fish mitigation items.

Drawings 93 to 102 - North Canal. These are cross sections to show the proposed work in the canal at various locations.

Drawings 103 to 116 - South Canal. These are cross sections to show the proposed work in the canal at various locations.

Cross section drawings indicate the depth and width of the improved/relocated canal in relationship to the existing road or dyke and canal. Depths and widths of cleanouts and levelling are also shown.

Drawings 117 to 119 – Detail drawings -Section of raised or widened dyke, Procedures for mitigation of flooding during construction, Capping plate on irrigation lines, Check Valve detail

Drawings 120 to 157 – Bridge drawings

These are preliminary drawings to show the existing conditions and the alternatives for any required work that will be necessary at various bridges across both the North and South canals. These enlargement and replacement drawings are conceptual/preliminary only and final design drawings would have to be produced prior to construction. Text in Volume 1 further describes the bridge work necessary.

NOTE: Full size drawings are available for review at the Board or Engineer's office.

PREFIX ROLL NUMBER LEGEND

TOWN OF BRADFORD WEST GWILLIMBURY
4312-010-...
4312-020-...
4312-030-...
TOWNSHIP OF KING
1949-000-...
TOWN OF CALEDON
2124-010-...
TOWN OF NEW TECUMSETH
4324-040-...
TOWN OF NEWMARKET
1948-040-...
TOWN OF EAST GWILLIMBURY
1954-000-...

LIST OF DRAWINGS

WATERSHED PLAN	(Drawing 1)
DRAINAGE SYSTEM	(Drawing 2)
STUDY INTERVALS	(Drawing 3)
PLAN AND PROFILE INTERVALS	(Drawings 4 to 14)
EXTENT OF WORK AERIAL DRAWINGS	
AERIALS NORTH	(Drawings 15 to 51)
AERIALS SOUTH	(Drawings 52 to 92)
CROSS SECTIONS	
NORTH CANAL CROSS SECTIONS	(Drawings 93 to 102)
SOUTH CANAL CROSS SECTIONS	(Drawings 103 to 116)
DETAILS	(Drawings 117 to 119)
BRIDGE DRAWINGS	
BRIDGES 1 TO 12 AND 15	(Drawings 120 to 157)

LEGEND

	CANAL
	CENTRAL RIVER (HOLLAND RIVER)
	MUNICIPAL BOUNDARY
	WATERSHED AS SHOWN ON THIS PLAN AND URBAN ENLARGEMENTS
	WATERSHED AS SHOWN ON RURAL ENLARGEMENTS
	INTERIOR WATERSHED
	MUNICIPAL DRAIN
IV	DENOTES CONCESSION NUMBERS
20 21	DENOTES LOT NUMBERS

SCALE: 1:60,000

HOLLAND MARSH DRAINAGE SYSTEM

SECTION 76 REPORT

COUNTY OF SIMCOE
REGION OF YORK

TOWN OF BRADFORD WEST GWILLIMBURY
TOWNSHIP OF KING

WATERSHED PLAN

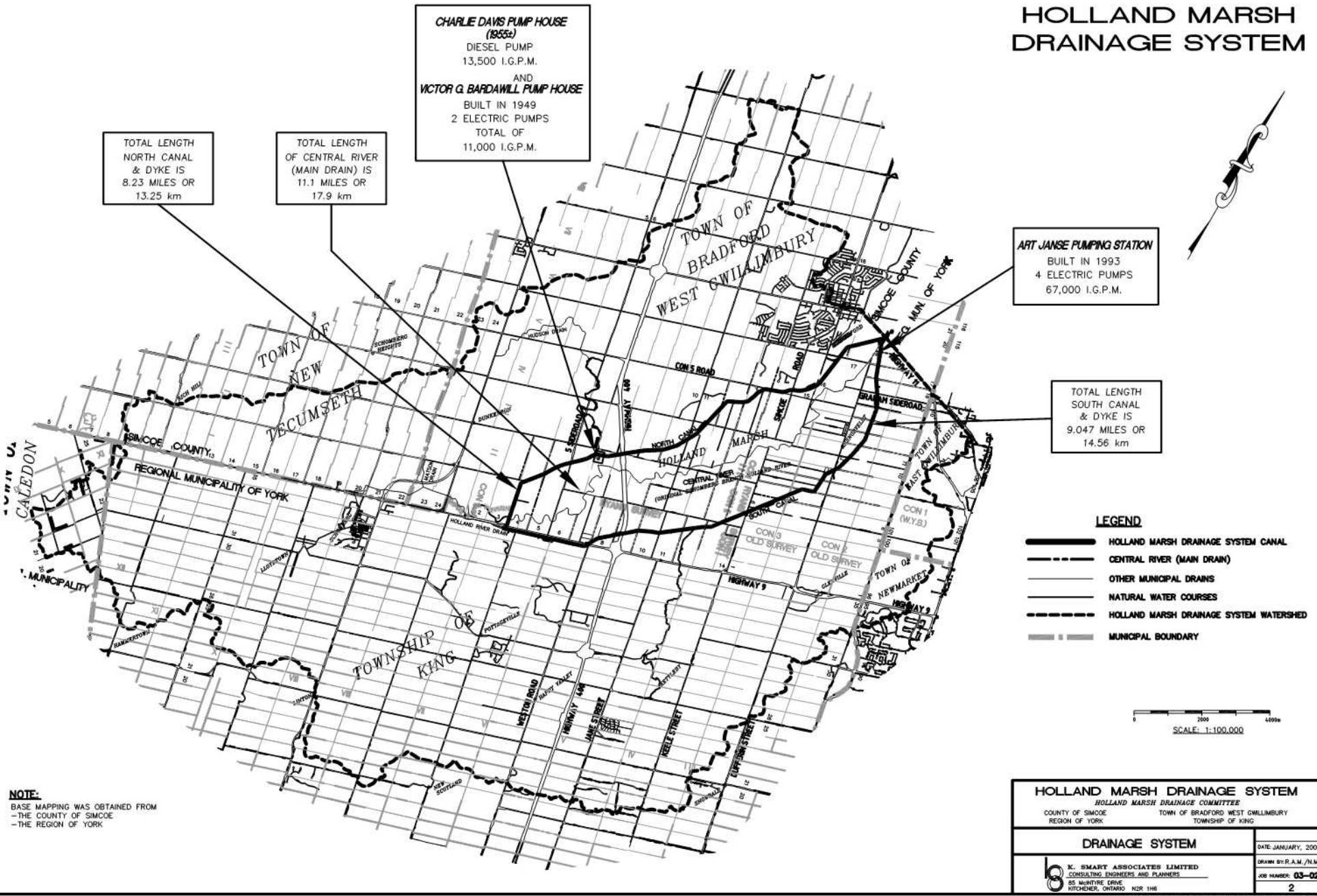
SCALE: N.T.S.

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE, KITCHENER, ONTARIO N2R 1H6
519-748-1199

DATE: JANUARY, 2009
DRAWN BY: R.A.M./K.D.
JOB NUMBER: 03-023

1

HOLLAND MARSH DRAINAGE SYSTEM



DRAWING 3 STUDY INTERVALS AND RECOMMENDED WORK

HOLLAND MARSH STUDY INTERVALS

Interval 1
Full Relocation with added earth berm
Clean through two bridges (Hwy 9 & 5 Sideroad)
Enlarge or replace 5 Sideroad bridge later
Improve or remove one private bridge
Partial relocation only west of 5 Sideroad

Interval 2
Full Relocation with added earth berm
Clean through one bridge (Hwy 400)
Enlarge Hwy 400 bridge capacity after if not replaced by MTO
Cleanout only at North Branch River junction

Interval 3
Full Relocation with added earth berm
No Bridges to be cleaned, enlarged or replaced

Interval 4
Full Relocation. No berm but raise road in one short length
Replace Fifth Line bridge before canal work

Interval 5
Full Relocation (no berm)
Clean through one bridge (Simcoe Road)
Partial relocation/cleanout only west of Simcoe Road

Interval 6
Full Relocation (no berm)
Partial relocation only east of Simcoe Road
No Bridges to be cleaned, enlarged or replaced

Interval 7
Full Relocation (no berm in most of interval but 300m has a berm)
No Bridges to be cleaned, enlarged or replaced

Interval 8
Bottom cleanout with hauling predominantly but some leveling on small marsh scheme dyke

Interval 9
Full Relocation (no berm)
Clean through one bridge (Graham Sideroad)
Enlarge or replace same bridge later

Interval 10
Bottom cleanout with minor widening
Level material on marsh lands side (inside) of dyke adjacent to lots in Ansnorveldt.
Haul excavation
Clean through one bridge
Enlarge or replace same bridge later (Dufferin St)
Replace private bridge with new laneway (done)

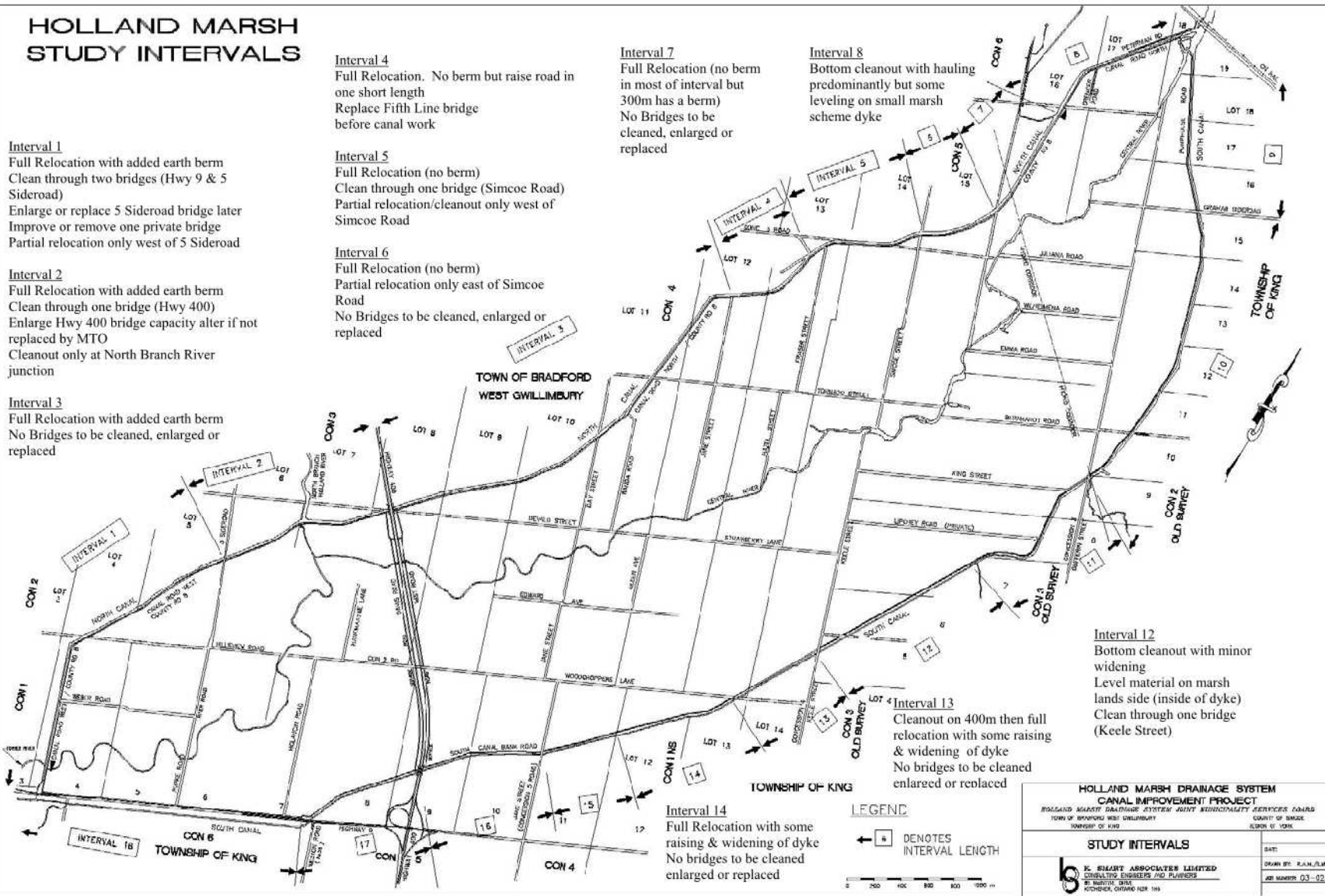
Interval 11
Bottom cleanout with hauling by King Road
Elsewhere, bottom cleanout with minor widening
Level material on marsh lands side (inside) dyke
No bridges to be cleaned

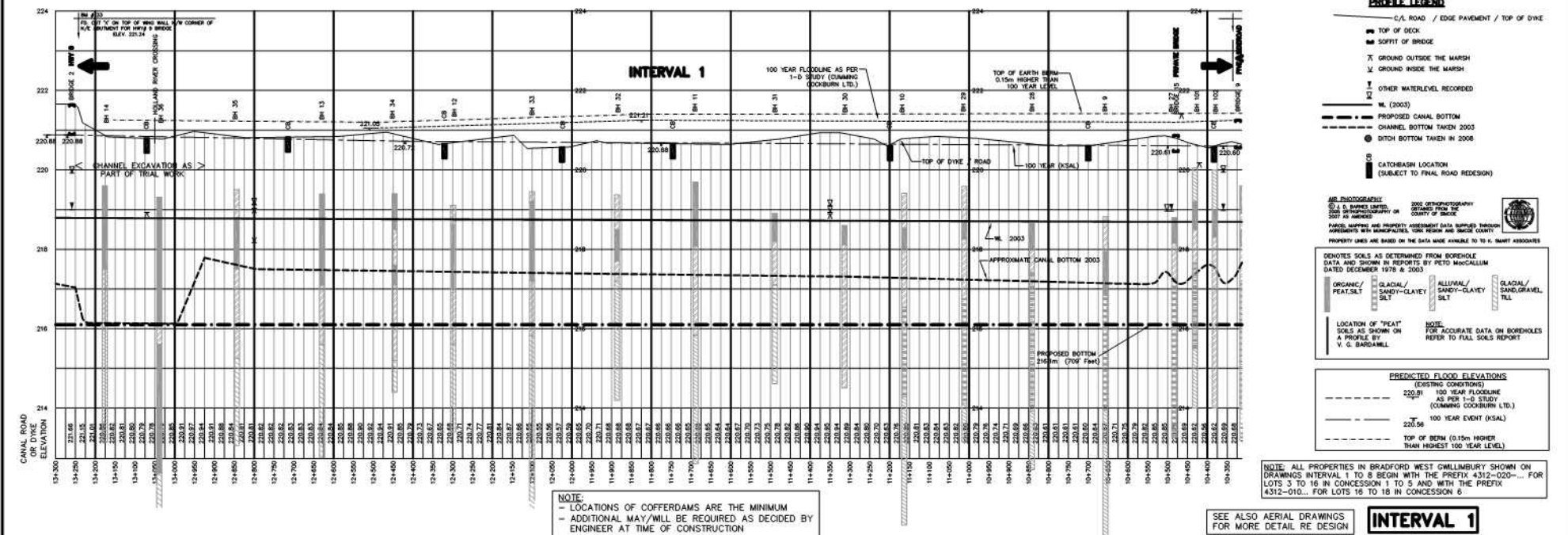
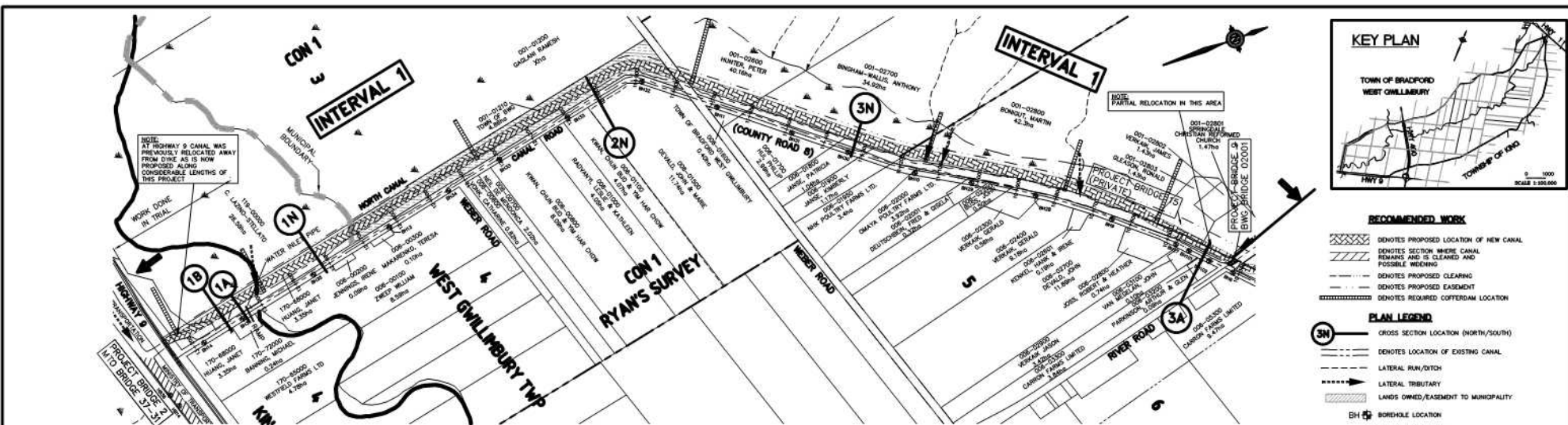
Interval 18
Bottom cleanout with some leveling on boulevard between Hwy 9 and canal
Hauling away of balance
No bridges to be cleaned, enlarged or replaced

Interval 17
Full Relocation with berm
Clean through one bridge (Highway 9)

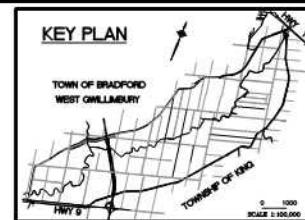
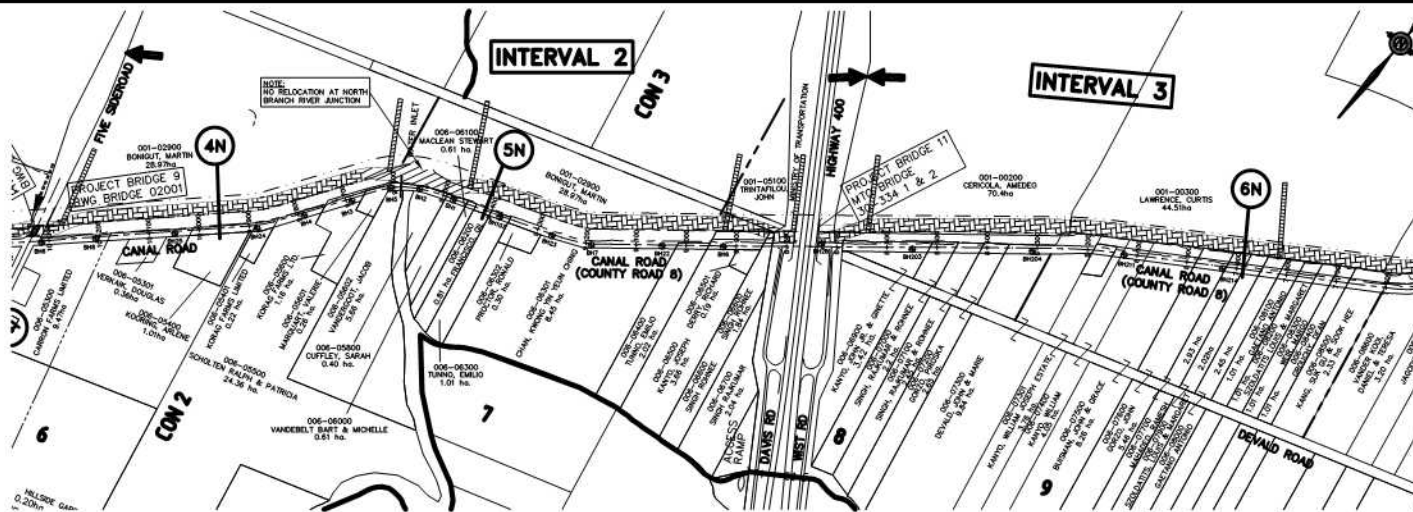
Interval 16
Full Relocation with berm
Clean through Highway 400 overpass
Enlarge Highway 400 bridge capacity if not replaced by MTO

Interval 15
Full Relocation with some raising & widening of dyke
Replace Jane Street bridge prior to canal work





No.	REVISION	DATE	DESIGNED BY: K.A.S.	SCALE		HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE TOWNSHIP OF KING REGION OF YORK	PLAN AND PROFILE INTERVAL 1	K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MEINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023 DATE JANUARY, 2009 DRAWING NUMBER 4
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			DRAWN BY: R.A.M.	ORIGINAL 1:5000 REDUCED 1:10000					
			CHECKED BY: K.A.S.	ORIGINAL 1:5000 REDUCED 1:10000					
			FIELD BOOK:						



- RECOMMENDED WORK**
- DENOTES PROPOSED LOCATION OF NEW CANAL
 - DENOTES SECTION WHERE CANAL REMAINS AND IS CLEANED AND POSSIBLE WIDENING
 - DENOTES PROPOSED CLEARING
 - DENOTES PROPOSED EASEMENT
 - DENOTES REQUIRED COFFERDAM LOCATION

- PLAN LEGEND**
- 3N --- CROSS SECTION LOCATION (NORTH/SOUTH)
 - DENOTES LOCATION OF EXISTING CANAL
 - LATERAL RUN/DITCH
 - LATERAL TRIBUTARY
 - LANDS OWNED/EASEMENT TO MUNICIPALITY

- PROFILE LEGEND**
- C/L ROAD / EDGE PAVEMENT / TOP OF DYKE
 - TOP OF DECK
 - SOFFIT OF BRIDGE
 - X --- GROUND OUTSIDE THE MARSH
 - V --- GROUND INSIDE THE MARSH
 - OTHER WATERLEVEL RECORDED
 - M. (2003)
 - PROPOSED CANAL BOTTOM
 - CHANNEL BOTTOM TAKEN 2003
 - DITCH BOTTOM TAKEN IN 2008
 - CATCHBASIN LOCATION (SUBJECT TO FINAL ROAD REDESIGN)

AIR PHOTOGRAPHY
 G.L.S. & BARBARA LIMITED
 2007 PHOTOGRAPHY OF THE COUNTY OF SIMCOE
 PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO THE SHAWT ASSOCIATES

DENOTES SOILS AS DETERMINED FROM BOREHOLE DATA AND SHOWN IN REPORTS BY PETO MACCALLUM DATED DECEMBER 1978 & 2003

ORGANIC / PEAT/SILT GLACIAL / SANDY-CLAYEY SILT ALLUVIAL / SANDY-CLAYEY SILT GLACIAL / SAND/GRAVEL TILL

LOCATION OF "PEAT" SOILS AS SHOWN ON A PROFILE BY V. G. BARDEWILL

NOTE: FOR ACCURATE DATA ON BOREHOLES REFER TO FULL SOILS REPORT

PREDICTED FLOOD ELEVATIONS (EXISTING CONDITIONS)

--- 220.81 100 YEAR FLOODLINE (AS PER 1-D STUDY (COUAMING COOKBURN LTD.))

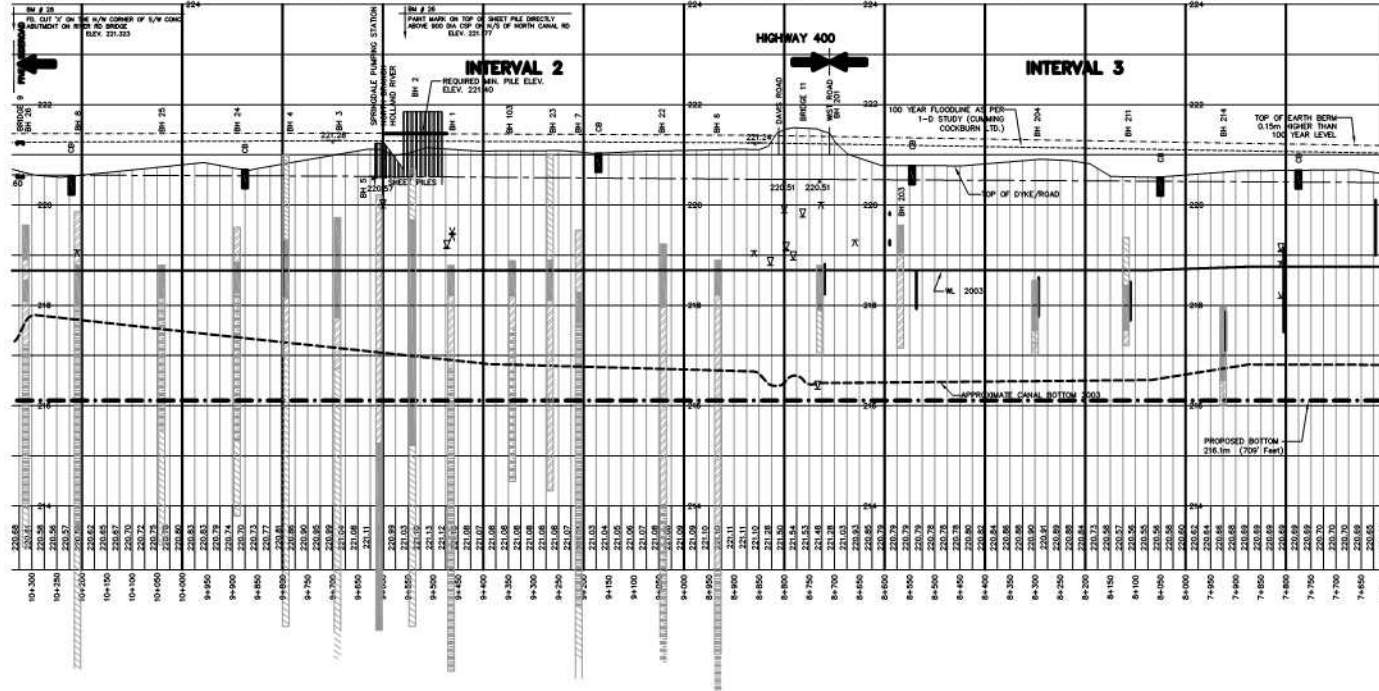
--- 220.56 100 YEAR EVENT (KSA)

--- TOP OF BERM (0.15m HIGHER THAN HIGHEST 100 YEAR LEVEL)

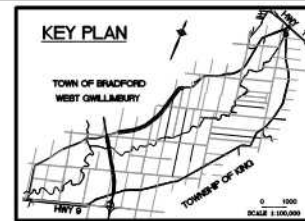
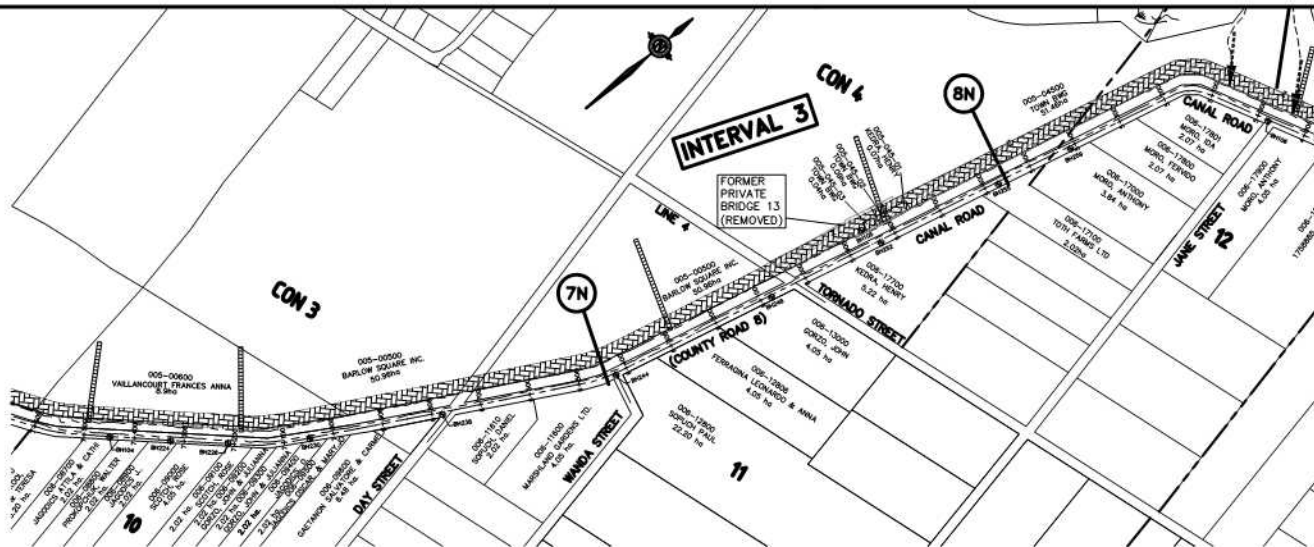
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SEE ALSO AERIAL DRAWINGS FOR MORE DETAIL RE DESIGN

INTERVAL 2



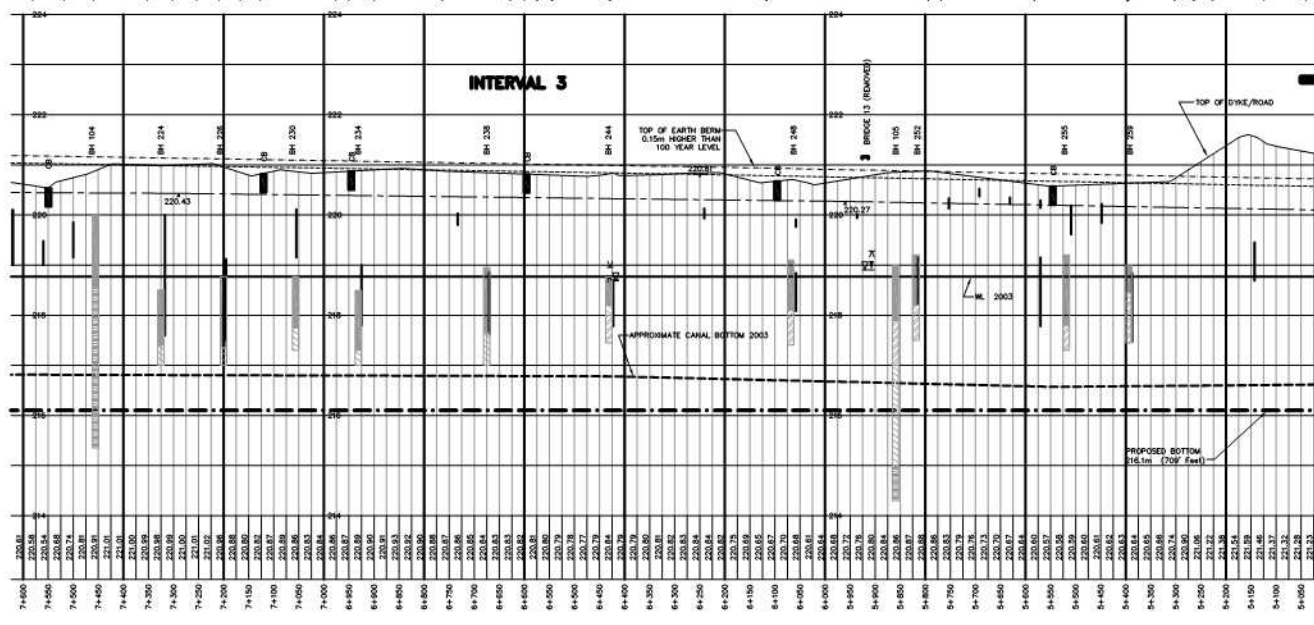
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			CHECKED BY: K.A.S.					
			DRAWN BY: R.A.M.					
			CHECKED BY: K.A.S.					
			FIELD BOOK:					



- RECOMMENDED WORK**
- DENOTES PROPOSED LOCATION OF NEW CANAL
 - DENOTES SECTION WHERE CANAL REMAINS AND IS CLEANED AND POSSIBLE WIDENING
 - DENOTES PROPOSED CLEARING
 - DENOTES PROPOSED EASEMENT
 - DENOTES REQUIRED COFFERDAM LOCATION

- PLAN LEGEND**
- CROSS SECTION LOCATION (NORTH/SOUTH)
 - DENOTES LOCATION OF EXISTING CANAL
 - LATERAL RUN/DITCH
 - LATERAL TRIBUTARY
 - LANDS OWNED/EASEMENT TO MUNICIPALITY
 - BOREHOLE LOCATION

- PROFILE LEGEND**
- C/L ROAD / EDGE PAVEMENT / TOP OF DYKE
 - TOP OF DECK
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 - GROUND OUTSIDE THE MARSH
 - GROUND INSIDE THE MARSH
 - OTHER WATERLEVEL RECORDED
 - M.L. (2003)
 - PROPOSED CANAL BOTTOM
 - CHANNEL BOTTOM TAKEN 2003
 - DITCH BOTTOM TAKEN IN 2008
 - CATCHBASIN LOCATION (SUBJECT TO FINAL ROAD REDESIGN)



ALL PHOTOGRAPHY
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 2007 AS ADVISED

2003 ORTHOPHOTOPHRY
 OBTAINED FROM THE
 COUNTY OF SIMCOE

PARCEL MAPS AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
 AGREEMENTS WITH MUNICIPALITIES: TOWN OF KING AND BRUCE COUNTY

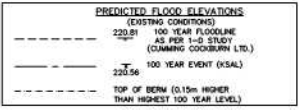
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO IT BY SMART ASSOCIATES

DENOTES SOILS AS DETERMINED FROM BOREHOLE
 DATA AND SHOWN IN REPORTS BY PETO MACCALLUM
 DATED DECEMBER 1978 & 2003.

ORGANIC/PEAT/SILT	CLAY/CLAY-SANDY-CLAYEY SILT	ALLUVIAL/SANDY-CLAYEY SILT	GLACIAL/SAND/GRAVEL TILL
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LOCATION OF "PEAT" SOILS AS SHOWN ON A PROFILE BY V. G. BARDELL

NOTE:
 FOR ACCURATE DATA ON BOREHOLES REFER TO FULL SOILS REPORT

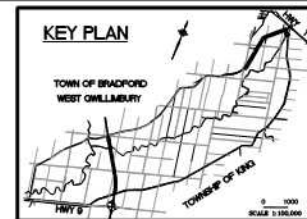
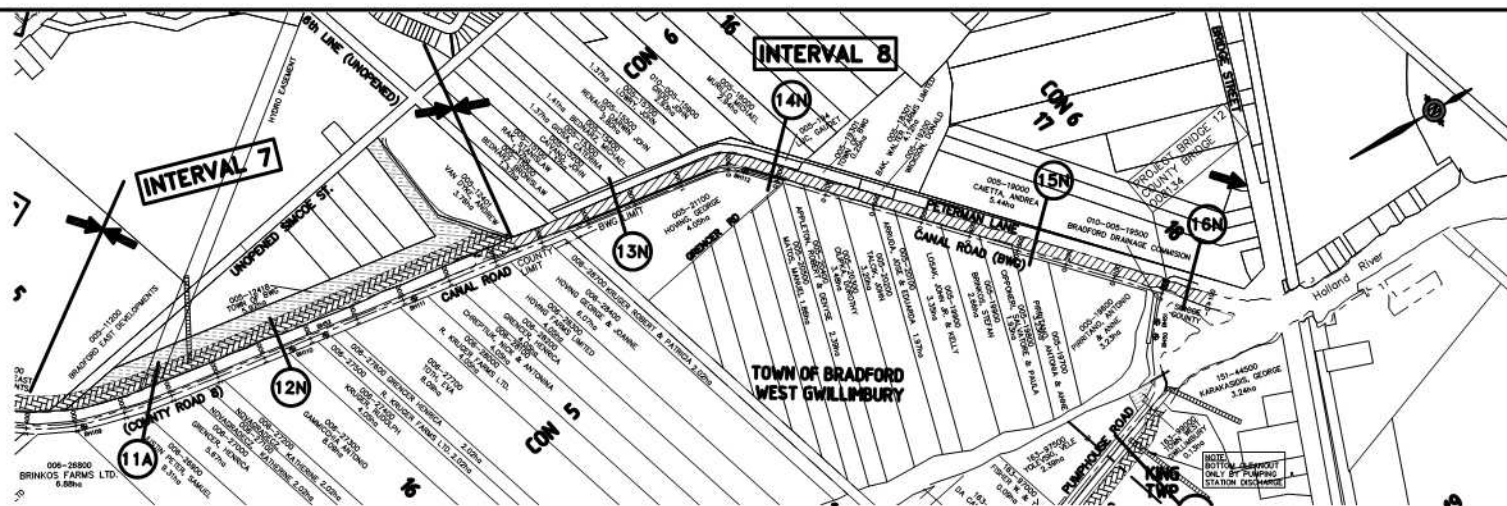


NOTE: ALL PROPERTIES IN BRADFORD WEST GWILLIMBURY SHOWN ON DRAWINGS INTERVAL 1 TO 8 BEGIN WITH THE PREFIX 4312-020-... FOR LOTS 3 TO 16 IN CONCESSION 1 TO 5 AND WITH THE PREFIX 4312-010-... FOR LOTS 16 TO 18 IN CONCESSION 6

SEE ALSO AERIAL DRAWINGS FOR MORE DETAIL RE DESIGN

INTERVAL 3

No. REVISION 	DESIGNED BY: K.A.S.	SCALE 0 100 200 HORIZONTAL ORIGINAL 1:5000 REDUCED 1:10000 VERTICAL ORIGINAL 1:5000 REDUCED 1:10000		HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE TOWNSHIP OF KING REGION OF YORK		K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023 DATE JANUARY, 2008 DRAWING NUMBER 6
	CHECKED BY: K.A.S.						
	DRAWN BY: R.A.M.						
	CHECKED BY: K.A.S.						
	FIELD BOOK:						



RECOMMENDED WORK

- DENOTES PROPOSED LOCATION OF NEW CANAL
- DENOTES SECTION WHERE CANAL REMAINS AND IS CLEANED AND POSSIBLE MODERN
- DENOTES PROPOSED CLEARING
- DENOTES PROPOSED EASEMENT
- DENOTES REQUIRED COFFERDAM LOCATION

PLAN LEGEND

- CROSS SECTION LOCATION (NORTH/SOUTH)
- DENOTES LOCATION OF EXISTING CANAL
- LATERAL RUN/DITCH
- LATERAL TRIBUTARY
- LANDS OWNED/EASEMENT TO MUNICIPALITY

BH BOREHOLE LOCATION

PROFILE LEGEND

- C/L ROAD / EDGE PAVEMENT / TOP OF DYKE
- TOP OF DECK
- SOFFIT OF BRIDGE
- GROUND OUTSIDE THE MARSH
- GROUND INSIDE THE MARSH
- OTHER WATERLEVEL RECORDED
- M.L. (2003)
- PROPOSED CANAL BOTTOM
- CHANNEL BOTTOM TAKEN 2003
- DITCH BOTTOM TAKEN IN 2008
- CATCHBASIN LOCATION (SUBJECT TO FINAL ROAD REDESIGN)

NO PHOTOGRAPHY
OF A 5.0 METER WIDE
SECTION OF THE
COUNTY OF SIMCOE
PROPERTY LINES ARE BASED ON THE DATA AVAILABLE TO THE TOWN OF BRADFORD WEST GWILLIMBURY

DENOTES SOILS AS DETERMINED FROM BOREHOLE
DATA AND SHOWN IN REPORTS BY PETO MACCALLUM
DATED DECEMBER 1978 & 2003

ORGANIC / PEAT / SILT	CLAY / SANDY-CLAY / SILT	ALLUVIAL / SANDY-CLAY / SILT	CLAY / SAND / GRAVEL / TILL

LOCATION OF "HEAT"
SOILS AS SHOWN ON
A PROFILE BY
V. G. BARDWILL

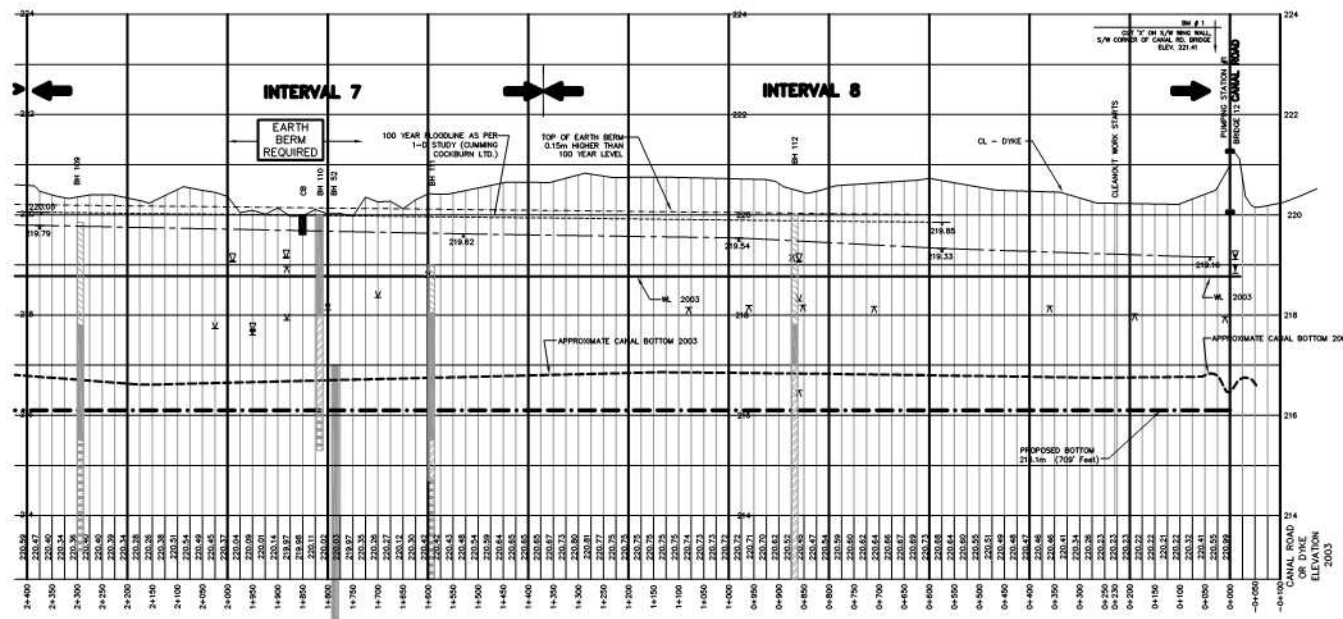
NOTE:
FOR ACCURATE DATA ON BOREHOLES
REFER TO FULL SOILS REPORT

PREDICTED FLOOD ELEVATIONS
(EXISTING CONDITIONS)
--- 220.81 100 YEAR FLOODLINE
AS PER 1-D STUDY
(CUNNINGHAM COOKBURN LTD.)
--- 222.36 100 YEAR EVENT (VSAL)
--- 223.56 TOP OF BERM (0.15m HIGHER
THAN HIGHEST 100 YEAR LEVEL)

NOTE: ALL PROPERTIES IN BRADFORD WEST GWILLIMBURY SHOWN ON
DRAWINGS INTERVAL 1 TO 6 BEGIN WITH THE PREFIX 4312-020... FOR
LOTS 3 TO 16 IN CONCESSION 1 TO 5 AND WITH THE PREFIX
4312-010... FOR LOTS 16 TO 18 IN CONCESSION 6

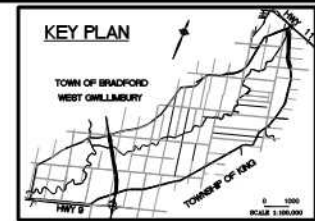
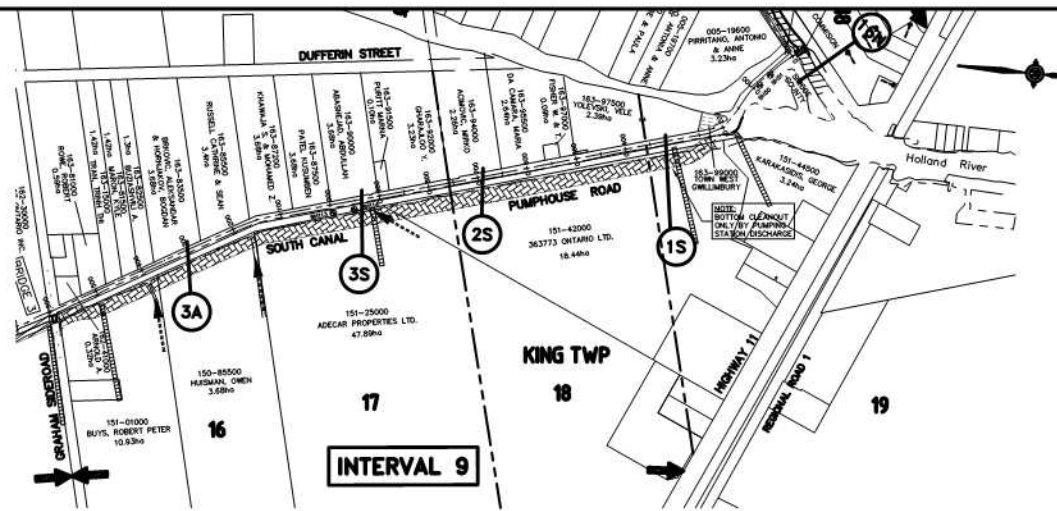
SEE ALSO AERIAL DRAWINGS
FOR MORE DETAIL RE DESIGN

INTERVAL 7 & 8

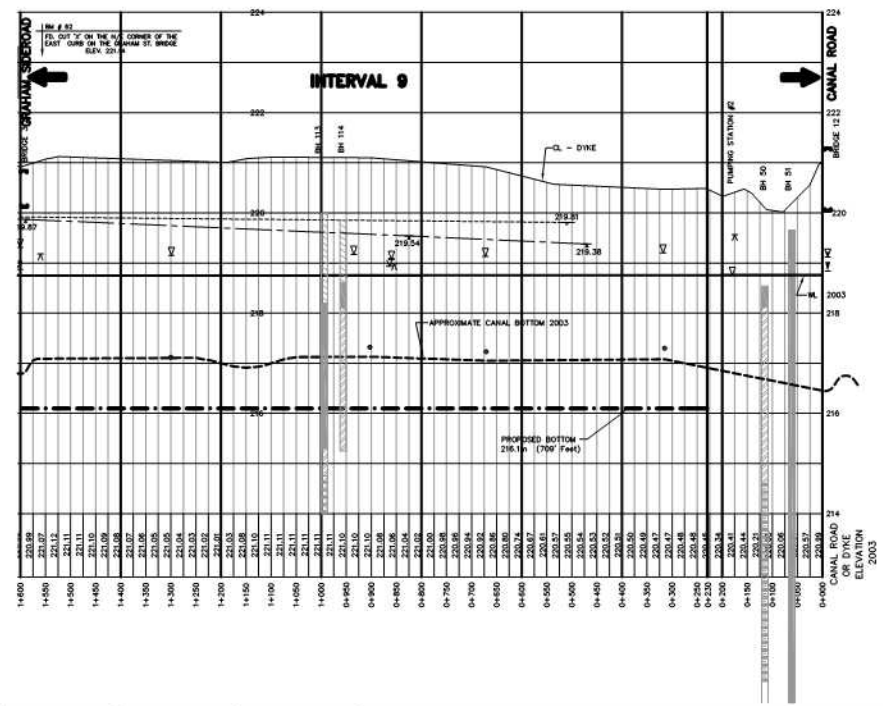


No.	REVISION	DATE	DESIGNED BY: K.A.S.	CHECKED BY: K.A.S.	DRAWN BY: R.A.M.	CHECKED BY: K.A.S.	FIELD BOOK:	SCALE	PROFESSIONAL ENGINEER	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT		JOB NUMBER
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								ORIGINAL 1:5000		TOWN OF BRADFORD WEST GWILLIMBURY		DATE
								REDUCED 1:10000		COUNTY OF SIMCOE		JANUARY, 2009
								ORIGINAL 1:5000		TOWNSHIP OF KING		DRAWING NUMBER
								REDUCED 1:10000		REGION OF YORK		8

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MEINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6



- RECOMMENDED WORK**
- DENOTES PROPOSED LOCATION OF NEW CANAL
 - DENOTES SECTION WHERE CANAL REMAINS AND IS CLEANED AND POSSIBLE MOORING
 - DENOTES PROPOSED CLEARING
 - DENOTES PROPOSED EASEMENT
 - DENOTES REQUIRED COFFERDAM LOCATION
- PLAN LEGEND**
- CROSS SECTION LOCATION (NORTH/SOUTH)
 - DENOTES LOCATION OF EXISTING CANAL
 - LATERAL RUN/DITCH
 - LATERAL TRIBUTARY
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- C/L ROAD / EDGE PAVEMENT / TOP OF DYKE
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 - CHANNEL BOTTOM TAKEN 2003
 - DITCH BOTTOM TAKEN IN 2008
 - CATCHBASIN LOCATION (SUBJECT TO FINAL ROAD REDESIGN)



NO PHOTOGRAPHY
 OF A. & S. BARNES LIMITED
 2007 AS ADVISED

2003 ORTHOPHOTOPHOTOGRAPHY
 OBTAINED FROM THE
 COUNTY OF SIMCOE

PROPERTY LINES AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
 AGREEMENTS WITH MUNICIPALITIES, TOWNSHIP OF SIMCOE AND BRIDGE COUNTY

PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO T. SMART ASSOCIATES

DENOTES SOILS AS DETERMINED FROM BOREHOLE
 DATA AND SHOWN IN REPORTS BY PETO MACCALLUM
 DATED DECEMBER 1978 & 2003

ORGANIC/PEAT/SILT **GLACIAL/SANDY-CLAYEY SILT** **ALLUVIAL/SANDY-CLAYEY SILT** **GLACIAL/SAND/GRAVEL/CLAY**

LOCATION OF "HEAT" SOILS AS SHOWN ON A PROFILE BY V. G. BARNARD

NOTE: FOR ACCURATE DATA ON BOREHOLES REFER TO FULL SOILS REPORT

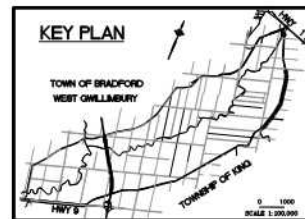
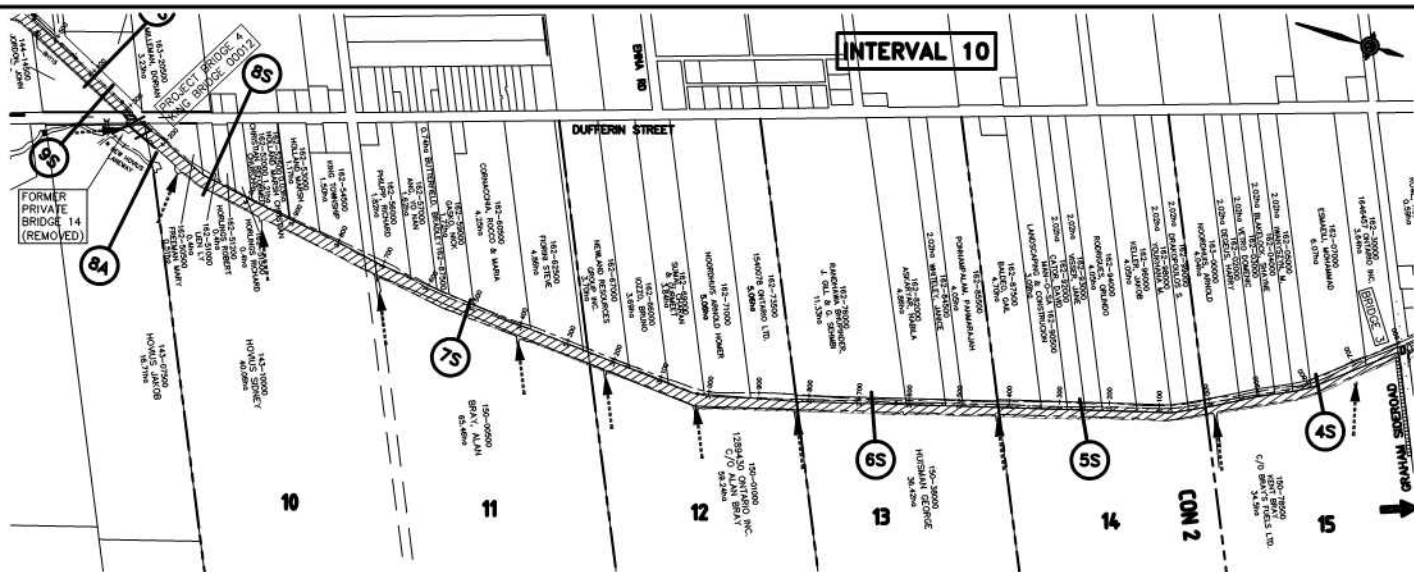
PREDICTED FLOOD ELEVATIONS

EXISTING CONDITIONS	100 YEAR FLOODLINE AS PER 1-D STUDY (CUNNING COBBURN LTD.)	100 YEAR EVENT (VSAL)	TOP OF BERM (0.15m HIGHER THAN HIGHEST 100 YEAR LEVEL)
220.81	220.81	220.81	220.81
220.81	220.81	220.81	220.81
220.81	220.81	220.81	220.81

SEE ALSO AERIAL DRAWINGS FOR MORE DETAIL RE DESIGN

INTERVAL 9

No.	REVISION	DATE	DESIGNED BY: K.A.S.	SCALE		HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD TOWN OF BRADFORD WEST GWILLIMBURY TOWNSHIP OF KING	PLAN AND PROFILE INTERVAL 9	K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MAINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023 DATE JANUARY, 2008 DRAWING NUMBER 9
			CHECKED BY: K.A.S.	0 100 200					
			DRAWN BY: R.A.M.	ORIGINAL 1:5000 REDUCED 1:10000					
			CHECKED BY: K.A.S.	ORIGINAL 1:5000 REDUCED 1:10000					
			FIELD BOOK:						



RECOMMENDED WORK

- DENOTES PROPOSED LOCATION OF NEW CANAL
- DENOTES SECTION WHERE CANAL REMAINS AND IS CLEANED AND POSSIBLE MODERN
- DENOTES PROPOSED CLEARING
- DENOTES PROPOSED EASEMENT
- DENOTES REQUIRED COFFERDAM LOCATION

PLAN LEGEND

- CROSS SECTION LOCATION (NORTH/SOUTH)
- DENOTES LOCATION OF EXISTING CANAL
- LATERAL RUN/EDCH
- LATERAL TRIBUTARY
- LANDS OWNED/EASEMENT TO MUNICIPALITY

BH BOREHOLE LOCATION

PROFILE LEGEND

- C/L ROAD / EDGE PAVEMENT / TOP OF DYKE
- TOP OF DECK
- SOFFIT OF BRIDGE
- GROUND OUTSIDE THE MARSH
- GROUND INSIDE THE MARSH
- OTHER WATERLEVEL RECORDED
- WL (2003)
- PROPOSED CANAL BOTTOM
- CHANNEL BOTTOM TAKEN 2003
- DITCH BOTTOM TAKEN IN 2008
- CATCHBASIN LOCATION (SUBJECT TO FINAL ROAD REDESIGN)

ALL PHOTOGRAPHY
G.S. & S. BARNES LIMITED
2007 AS AMENDED
2003 ORTHOPHOTOGRAPHY
OBTAINED FROM THE
COUNTY OF SIMCOE
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO K. SMART ASSOCIATES

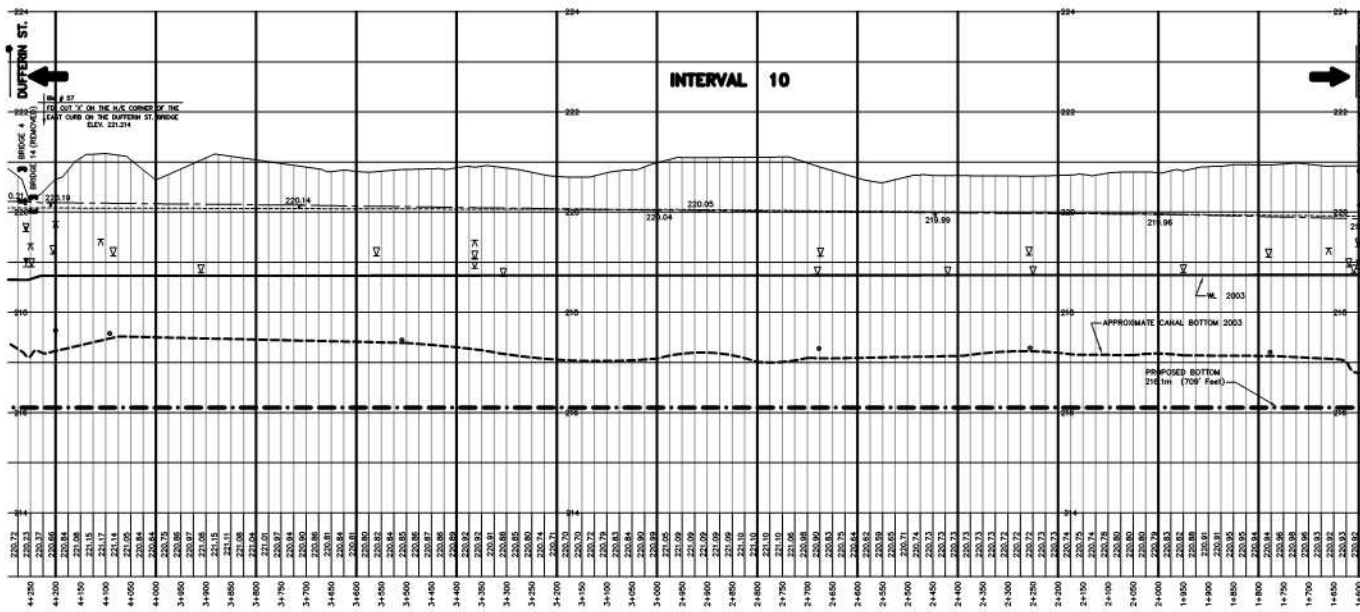
DENOTES SOILS AS DETERMINED FROM BOREHOLE
DATA AND SHOWN IN REPORTS BY PETO MACCALLUM
DATED DECEMBER 1978 & 2003.

- ORGANIC/PEAT/SILT
- CLAY/SANDY-CLAYEY SILT
- ALLUVIAL/SANDY-CLAYEY SILT
- ALLUVIAL/SAND/GRAVEL TILL

LOCATION OF "HEAT" SOILS AS SHOWN ON A PROFILE BY V. G. BARNESWILL

NOTE: FOR ACCURATE DATA ON BOREHOLES REFER TO FULL SOILS REPORT

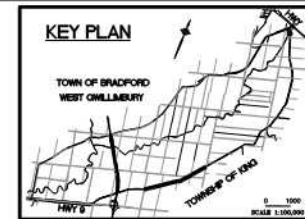
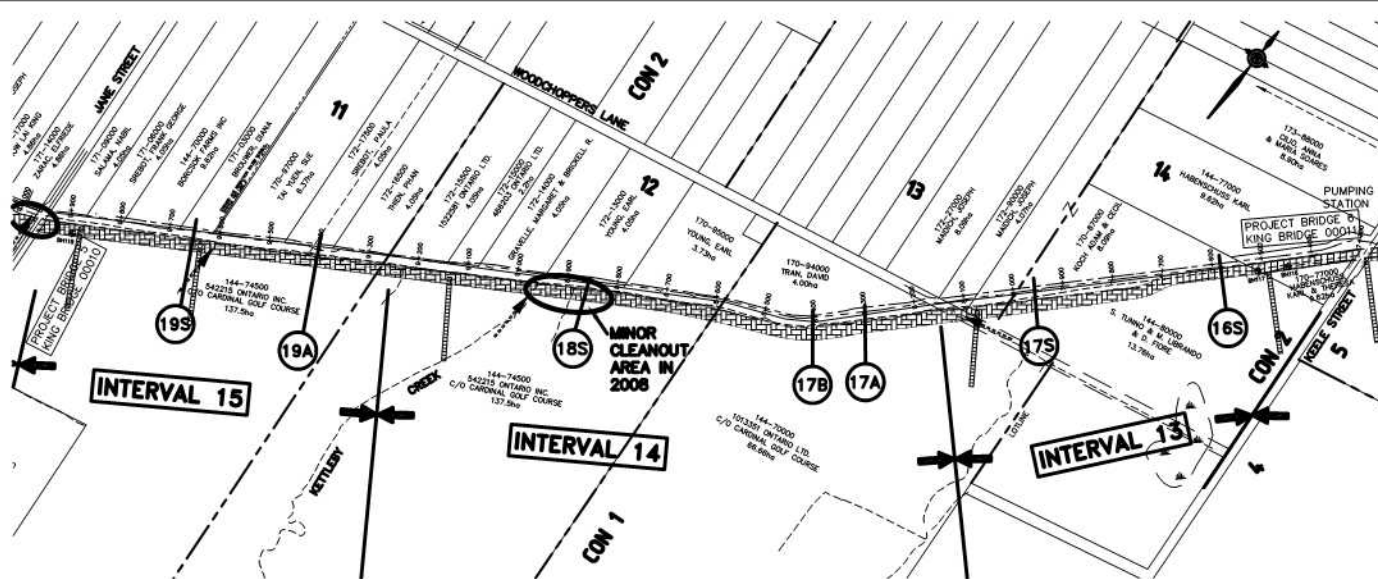
- PREDICTED FLOOD ELEVATIONS (EXISTING CONDITIONS)
- 220.81 100 YEAR FLOODLINE AS PER 1-D STUDY (CLUNNING COOKBURN LTD.)
- 220.56 100 YEAR EVENT (VSAL)
- TOP OF BERM (0.15m HIGHER THAN HIGHEST 100 YEAR LEVEL)



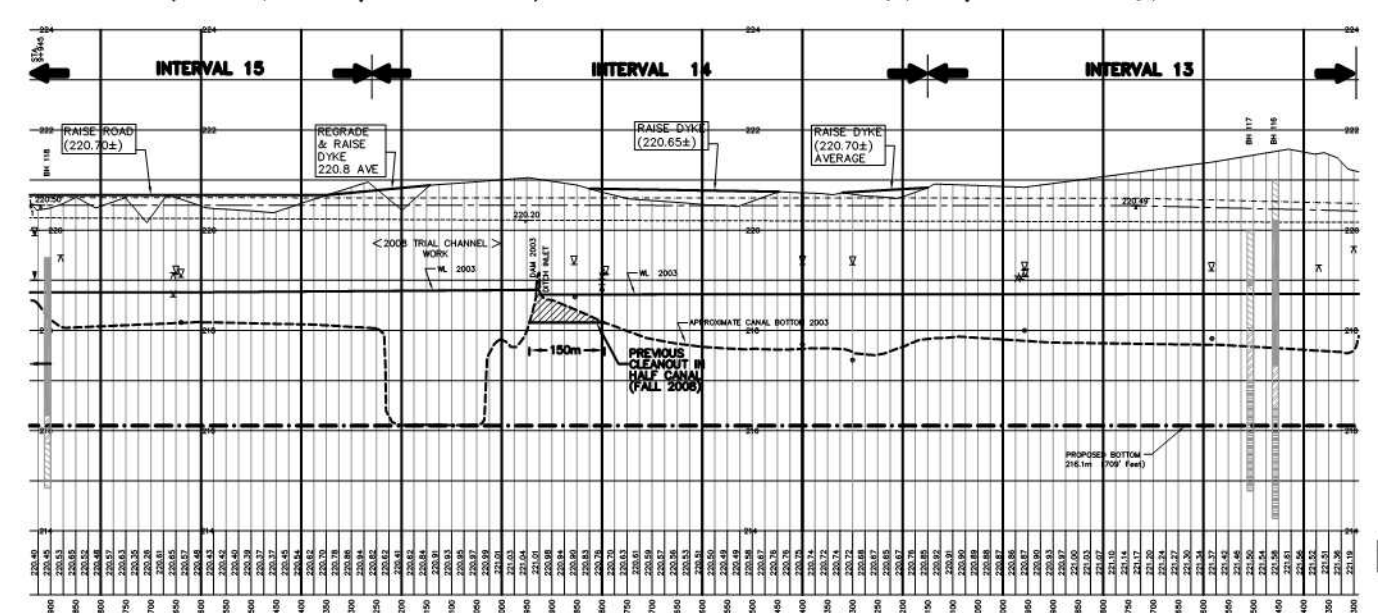
SEE ALSO AERIAL DRAWINGS FOR MORE DETAIL RE DESIGN

INTERVAL 10

No.	REVISION	DATE	DESIGNED BY: K.A.S.	SCALE		HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE TOWNSHIP OF KING	PLAN AND PROFILE INTERVAL 10	K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MOUNTY DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023 DATE JANUARY, 2009 DRAWING NUMBER 10
			CHECKED BY: K.A.S.	0 100 200					
			DRAWN BY: R.A.M.	ORIGINAL 1:5000 REDUCED 1:10000					
			CHECKED BY: K.A.S.	ORIGINAL 1:5000 REDUCED 1:10000					
			FIELD BOOK:						



- RECOMMENDED WORK**
- DENOTES PROPOSED LOCATION OF NEW CANAL
 - DENOTES SECTION WHERE CANAL REMAINS AND IS CLEANED AND POSSIBLE WIDENING
 - DENOTES PROPOSED CLEARING
 - DENOTES PROPOSED EASEMENT
 - DENOTES REQUIRED OFFERED LOCATION
- PLAN LEGEND**
- 3N --- CROSS SECTION LOCATION (NORTH/SOUTH)
 - DENOTES LOCATION OF EXISTING CANAL
 - LATERAL RUN/DITCH
 - LATERAL TRIBUTARY
 - LANDS OWNED/EASEMENT TO MUNICIPALITY
 - BH --- BOREHOLE LOCATION
- PROFILE LEGEND**
- C/L ROAD / EDGE PAVEMENT / TOP OF DYKE
 - TOP OF DECK
 - SOFFIT OF BRIDGE
 - GROUND OUTSIDE THE MARSH
 - GROUND INSIDE THE MARSH
 - OTHER WATERLEVEL RECORDED
 - M.L. (2003)
 - PROPOSED CANAL BOTTOM
 - CHANNEL BOTTOM TAKEN 2003
 - DITCH BOTTOM TAKEN IN 2008
 - CATCHBASIN LOCATION (SUBJECT TO FINAL ROAD REDESIGN)

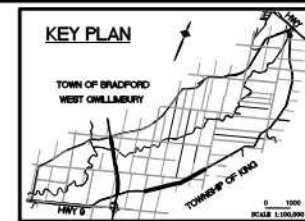
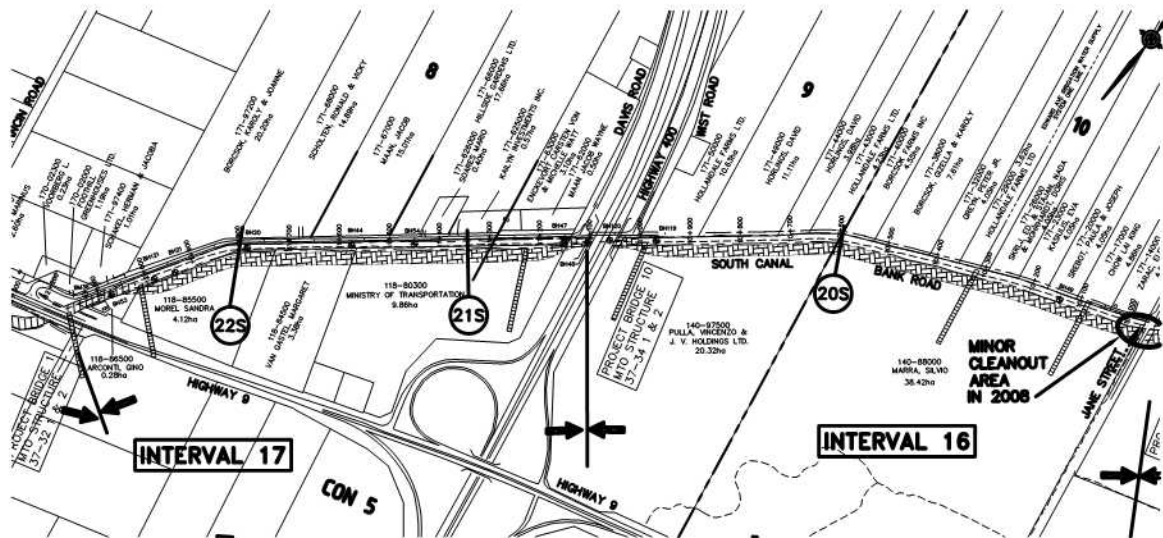


- NOTES**
- NO PHOTOGRAPHY OF 2.4 & 3.0 METER LINES, OR 2007 AS ADVISED
 - 1000 ORTHOPHOTOPHOTOGRAPHY OBTAINED FROM THE COUNTY OF SIMCOE
 - PARCEL MAPS AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH AGREEMENT WITH MUNICIPALITIES, TOWN OF KING AND BRADFORD COUNTY
 - PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO T. SMART ASSOCIATES
 - DENOTES SOILS AS DETERMINED FROM BOREHOLE DATA AND SHOWN IN REPORTS BY PETO MACCALLUM DATED DECEMBER 1978 & 2003
 - ORGANIC / PEAT / SILT
 - CLAY / SANDY-CLAYEY SILT
 - ALLUVIAL / SANDY-CLAYEY SILT
 - GLACIAL / SAND / GRAVEL TILL
 - LOCATION OF "HEAT" SOILS AS SHOWN ON A PROFILE BY V. G. BARDWILL
 - NOTE: FOR ACCURATE DATA ON BOREHOLES REFER TO FULL SOILS REPORT
- PREDICTED FLOOD ELEVATIONS (EXISTING CONDITIONS)**
- 220.81 100 YEAR FLOODLINE AS PER 1-D STUDY (CLUNNING COOKBURN LTD.)
 - 222.56 100 YEAR EVENT (K.S.A.)
 - TOP OF BERM (0.15m HIGHER THAN HIGHEST 100 YEAR LEVEL)

SEE ALSO AERIAL DRAWINGS FOR MORE DETAIL RE DESIGN

INTERVAL 13, 14 & 15

No. REVISION 	DESIGNED BY: K.A.S.	SCALE 0 100 200 M ORIGINAL 1:5000 REDUCED 1:10000 ORIGINAL 1:5000 REDUCED 1:10000		HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD TOWN OF BRADFORD WEST Gwillimbury COUNTY OF SIMCOE TOWNSHIP OF KING REGION OF YORK	 K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MOUNTY DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023
	CHECKED BY: K.A.S.					DATE JANUARY, 2008
	DRAWN BY: R.A.M.					DRAWING NUMBER 12
	CHECKED BY: K.A.S.					
	FIELD BOOK:					



RECOMMENDED WORK

- DENOTES PROPOSED LOCATION OF NEW CANAL
- DENOTES SECTION WHERE CANAL REMAINS AND IS CLEANED AND POSSIBLE MODERN
- DENOTES PROPOSED CLEARING
- DENOTES PROPOSED EASEMENT
- DENOTES REQUIRED OFFEREDMAN LOCATION

PLAN LEGEND

- CROSS SECTION LOCATION (NORTH/SOUTH)
- DENOTES LOCATION OF EXISTING CANAL
- LATERAL RUN/ETICH
- LATERAL TRIBUTARY
- LANDS OWNED/EASEMENT TO MUNICIPALITY

PROFILE LEGEND

- C/L ROAD / EDGE PAVEMENT / TOP OF DYKE
- TOP OF DECK
- SOFFIT OF BRIDGE
- GROUND OUTSIDE THE MARSH
- GROUND INSIDE THE MARSH
- OTHER WATERLEVEL RECORDED
- M.L. (2003)
- PROPOSED CANAL BOTTOM
- CHANNEL BOTTOM TAKEN 2003
- DITCH BOTTOM TAKEN IN 2008
- CATCHBASIN LOCATION (SUBJECT TO FINAL ROAD REDESIGN)

NO PHOTOGRAPHY
 OF A. B. BARNES LIMITED
 2007 AS ADVISED

NO PHOTOGRAPHY
 OF A. B. BARNES LIMITED
 2007 AS ADVISED

PROPERTY MAPS AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH AGREEMENTS WITH MUNICIPALITIES, TOWN, COUNTY AND BRUCE COUNTY

PROPERTY LINES ARE BASED ON THE DATA AVAILABLE TO T. SMART ASSOCIATES

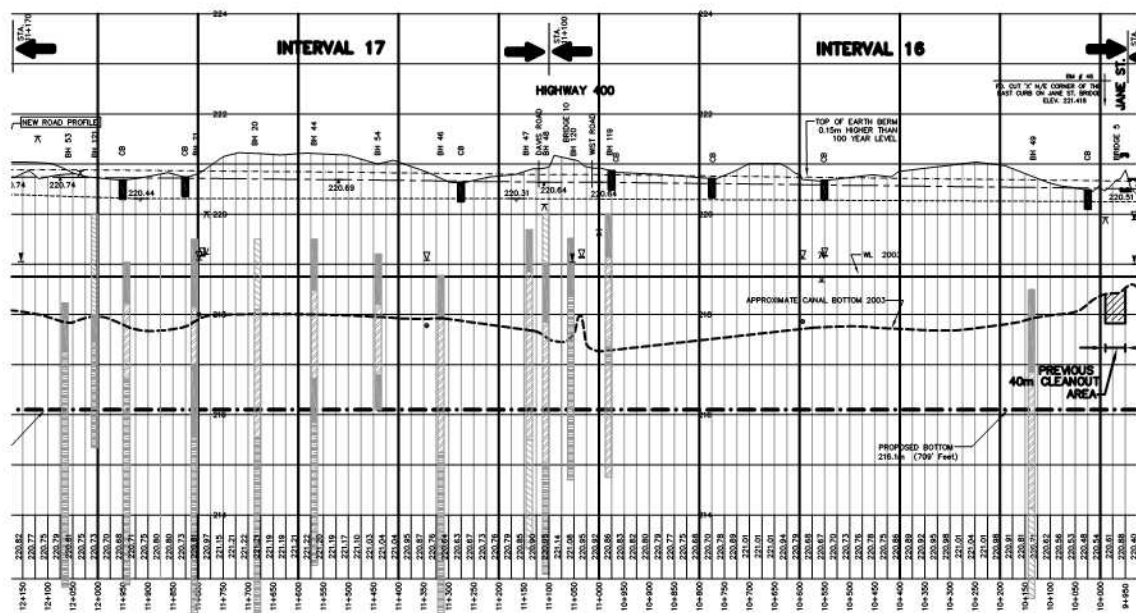
DENOTES SOILS AS DETERMINED FROM BOREHOLE DATA AND SHOWN IN REPORTS BY PETO MACCALLUM DATED DECEMBER 1978 & 2003.

ORGANIC/PEAT/SILT **CLAY/CLAY/SANDY-CLAYEY SILT** **ALLUVIAL/SANDY-CLAYEY SILT** **GLACIAL/SAND/GRAVEL TILL**

LOCATION OF "HEAT" SOILS AS SHOWN ON A PROFILE BY V. G. BARNWELL

NOTE: FOR ACCURATE DATA ON BOREHOLES REFER TO FULL SOILS REPORT

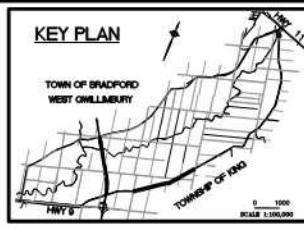
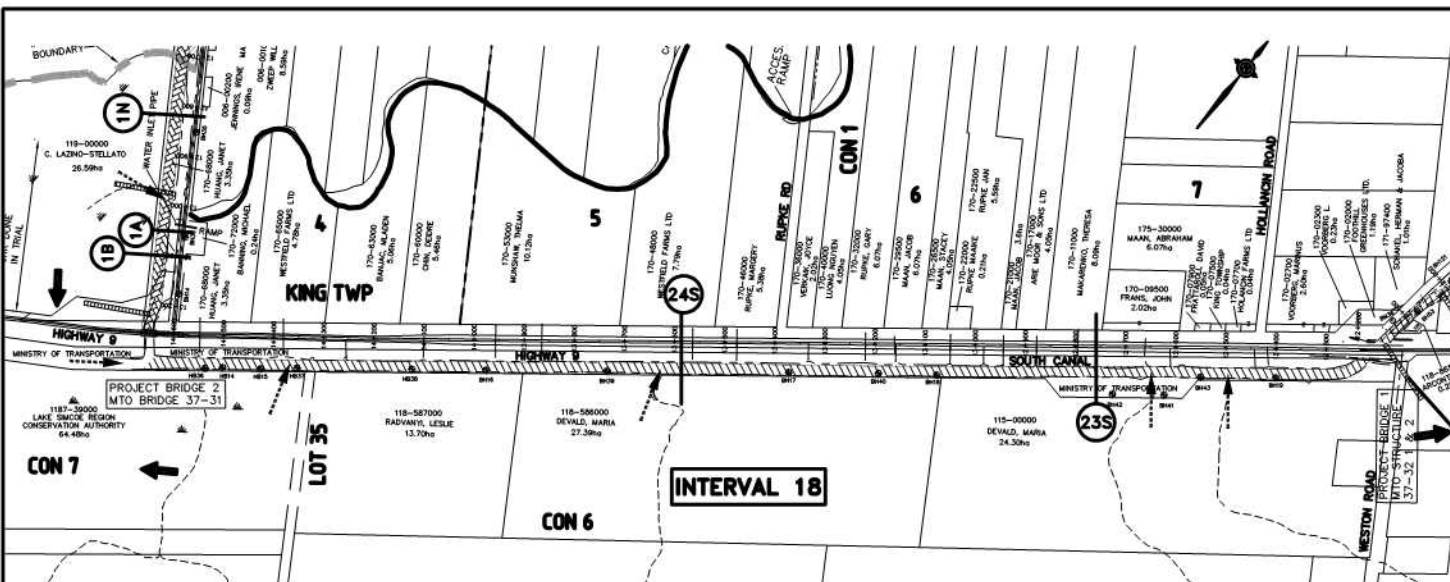
PREDICTED FLOOD ELEVATIONS (EXISTING CONDITIONS)	
220.81	100 YEAR FLOODLINE AS PER 1-D STUDY (CLUNNING COCKBURN LTD.)
222.58	100 YEAR EVENT (KSAL)
220.58	TOP OF BERM (0.15m HIGHER THAN HIGHEST 100 YEAR LEVEL)



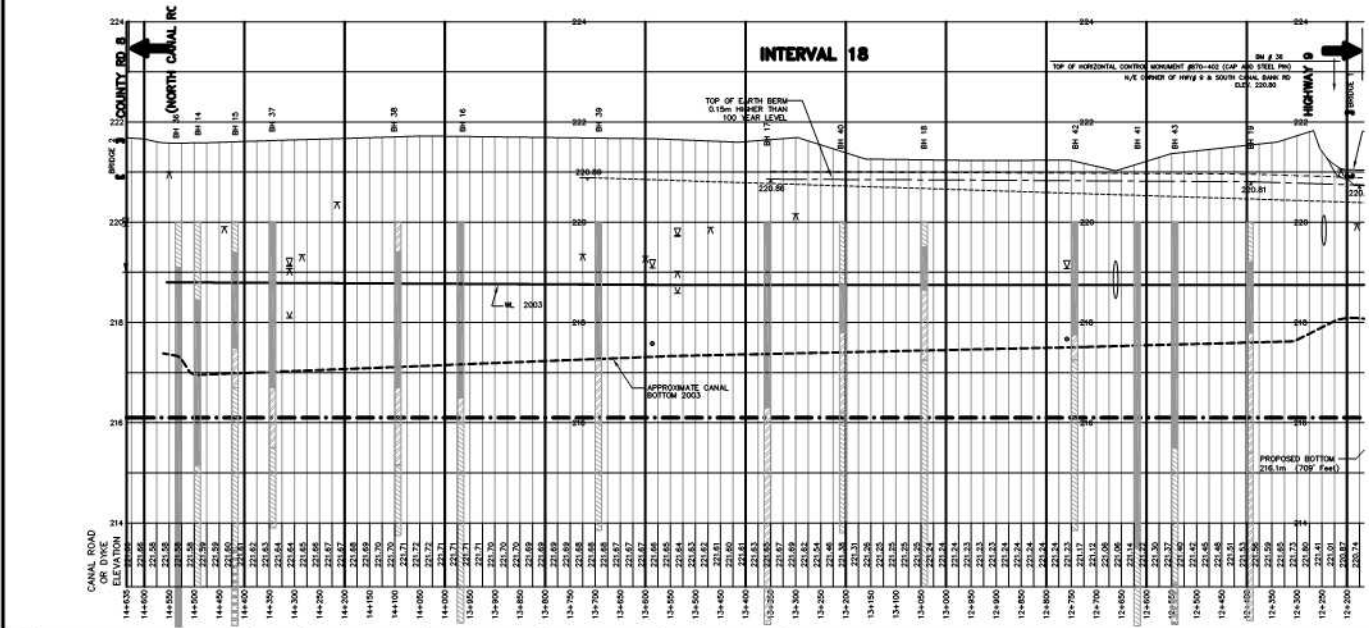
SEE ALSO AERIAL DRAWINGS FOR MORE DETAIL RE DESIGN

INTERVAL 16, 17

No.	REVISION	DATE	DESIGNED BY: K.A.S.	SCALE		HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD TOWN OF BRADFORD WEST Gwillimbury COUNTY OF SIMCOE TOWNSHIP OF KING REGION OF YORK	K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MEINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023 DATE JANUARY, 2008 DRAWING NUMBER 13
			CHECKED BY: K.A.S.	0 100 200				
			DRAWN BY: R.A.M.	ORIGINAL 1:5000 REDUCED 1:10000				
			CHECKED BY: K.A.S.	ORIGINAL 1:5000 REDUCED 1:10000				
			FIELD BOOK:					



- RECOMMENDED WORK**
- DENOTES PROPOSED LOCATION OF NEW CANAL
 - DENOTES SECTION WHERE CANAL REMAINS AND IS CLEANED AND POSSIBLE MODERN
 - DENOTES PROPOSED CLEARING
 - DENOTES PROPOSED EASEMENT
 - DENOTES REQUIRED COFFERDAM LOCATION
- PLAN LEGEND**
- 3N --- CROSS SECTION LOCATION (NORTH/SOUTH)
 - DENOTES LOCATION OF EXISTING CANAL
 - LATERAL RUN/DITCH
 - LATERAL TRIBUTARY
 - LANDS OWNED/EASEMENT TO MUNICIPALITY
 - BH --- BOREHOLE LOCATION
- PROFILE LEGEND**
- C/L ROAD / EDGE PAVEMENT / TOP OF DYKE
 - TOP OF DECK
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 - CHANNEL BOTTOM TAKEN 2003
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 - CATCHBASIN LOCATION (SUBJECT TO FINAL ROAD REDESIGN)



NO PHOTOGRAPHY
 OF A & B. BARRIERS LIMITED
 2007 AS ADVISED

2003 ORTHOPHOTOPHOTOGRAPHY
 OBTAINED FROM THE
 COUNTY OF SIMCOE

PARCEL LAPPING AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
 AGREEMENTS WITH MUNICIPALITIES: TOWN OF KITCHENER AND BRUCE COUNTY

PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO T. SMART ASSOCIATES

DENOTES SOILS AS DETERMINED FROM BOREHOLE
 DATA AND SHOWN IN REPORTS BY PETO MACCALLUM
 DATED DECEMBER 1978 & 2003.

ORGANIC / PEAT / SILT **CLAY / SANDY-CLAYEY SILT** **ALLUVIAL / SANDY-CLAYEY SILT** **GLACIAL / SAND / GRAVEL / TILL**

LOCATION OF "HEAT"
 SOILS AS SHOWN ON
 A PROFILE BY
 V. G. BARDWILL

NOTE:
 FOR ACCURATE DATA ON BOREHOLES
 REFER TO FULL SOILS REPORT



SEE ALSO AERIAL DRAWINGS
 FOR MORE DETAIL RE DESIGN

INTERVAL 18

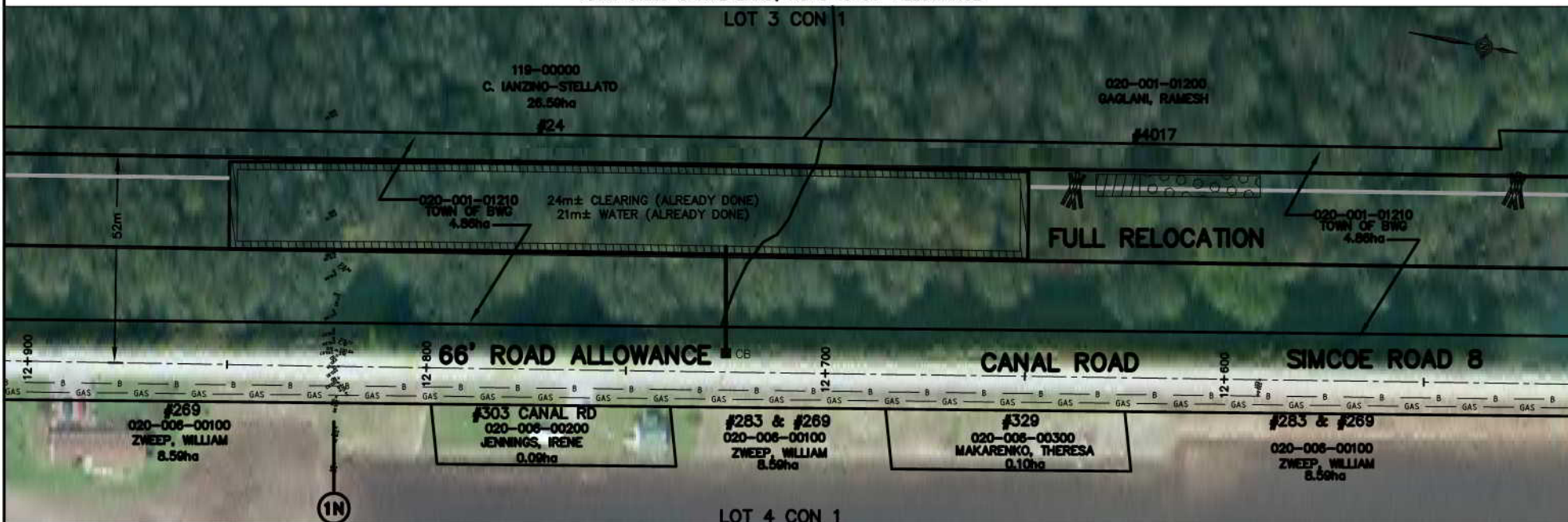
No.	REVISION	DATE	DESIGNED BY: K.A.S.	CHECKED BY: K.A.S.	DRAWN BY: R.A.M.	CHECKED BY: K.A.S.	FIELD BOOK:	SCALE	0 100 200	ORIGINAL 1:5000 REDUCED 1:10000	VER	ORIGINAL 1:5000 REDUCED 1:10000	PROFESSIONAL ENGINEER K. A. SMART TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE REGION OF YORK	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE REGION OF YORK	JOB NUMBER 03-023 DATE JANUARY, 2008 DRAWING NUMBER 14

Extent of Work

Interval 1 Cont.
12+900 to 12+520 - Type II canal work 380m
12+700± - CB & outlet - Engineer to locate Onet(1)



TOWN OWNS CANAL LAND, ROAD IS 66' ALLOWANCE



LOT 4 CON 1
INTERVAL 1

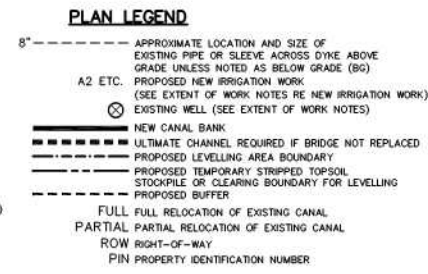
NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DITCHES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

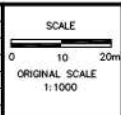
AIR PHOTOGRAPHY
BY: S. BARNES LIMITED
DATE: 08/01/2008
SCALE: 1:1000
PROJECT: HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO K. SMART ASSOCIATES

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)



No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLIMBURY
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

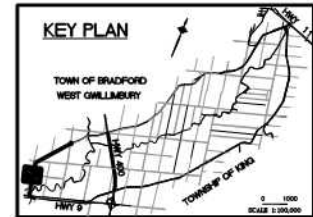
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
16

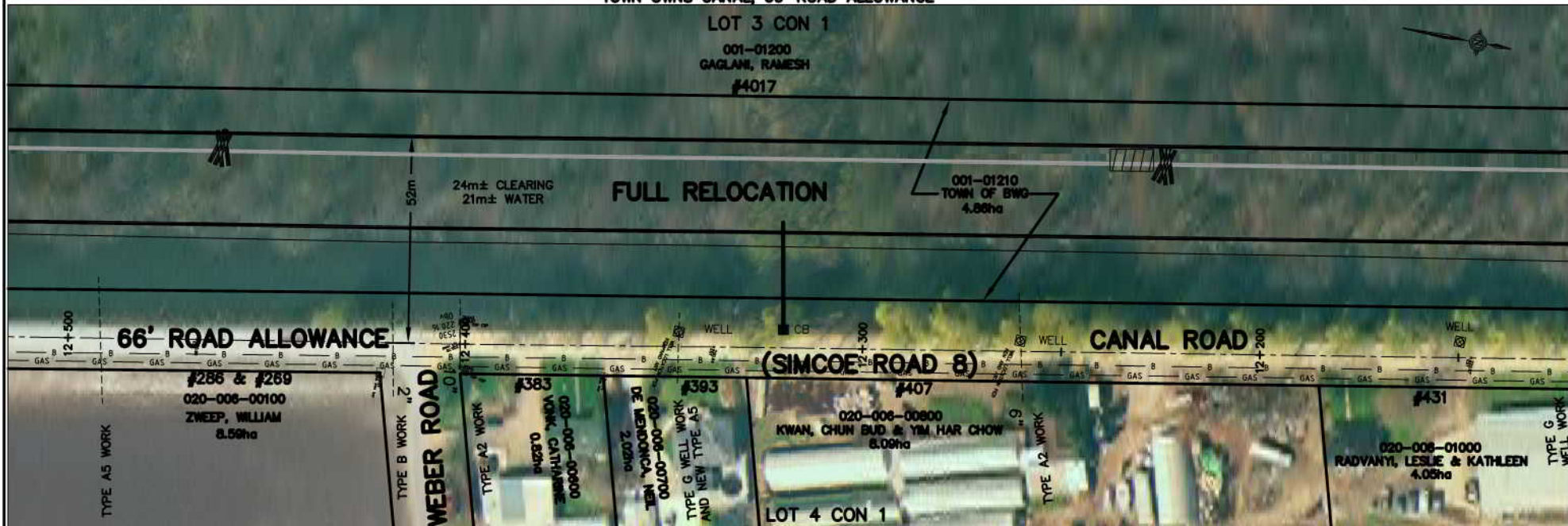
Extent of Work

Interval 1 Cont.

12+520 to 12+150	- Type II canal work	370m
12-490±	- New irrigation line - Type A5 work	One (1)
12-419	- Irrigation line 50mm - New Type B work	One (1)
12-402	- Irrigation line 250mm - New Type A2 work	One (1)
12+366 to 12+330	- Provide new irrigation line. Type A5 work (200mm)	One(1)
12+346	- Well location - do well extension (Type GE work)	One (1)
	- Do well raising - Type G-R work	One (1)
12-260	- Irrigation line 150mm - new Type A2 work	One (1)
12-260	- Abandoned well work required	One (1)
12+320±	- CB & outlet - Engineer to locate	One(1)



TOWN OWNS CANAL, 66' ROAD ALLOWANCE



INTERVAL 1

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DITCHES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

AIR PHOTOGRAPHY
BY: S. BARNES LIMITED
DATE: 08/09/2008
SCALE: 1:1000
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO S. BARNES LIMITED



FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

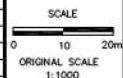
DEEP POOLS	
MACROPHYTE TRANSPLANTS	
LITTORAL SHELF	
GRAVEL SUBSTRATES	
ROOT MASSES OR LOG BUNDLES	

RELOCATED DITCH	
ACCESS ROUTE	
LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)	
GUIDE RAIL	
BELL LINE	
UNDER GROUND GAS LINE	
PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE	
OVERHEAD HYDRO AND POLE	
HYDRO POLE (TO MOVE IF X)	
ANCHOR POLE (TO MOVE IF X)	
CROSS-SECTION LOCATION	
IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING	

PLAN LEGEND

8"-----	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DITCH ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
A2 ETC.	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
	EXISTING WELL (SEE EXTENT OF WORK NOTES)
-----	NEW CANAL BANK
-----	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
-----	PROPOSED LEVELLING AREA BOUNDARY
-----	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
-----	PROPOSED BUFFER
-----	FULL FULL RELOCATION OF EXISTING CANAL
-----	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
-----	ROW RIGHT-OF-WAY
-----	PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GILLIMBURY
TOWNSHIP OF KING
COUNTY OF SIMCOE
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
17

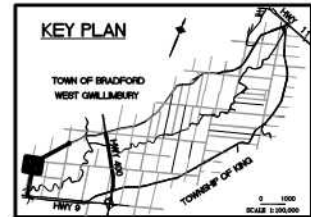
Extent of Work

Interval 1 Cont.

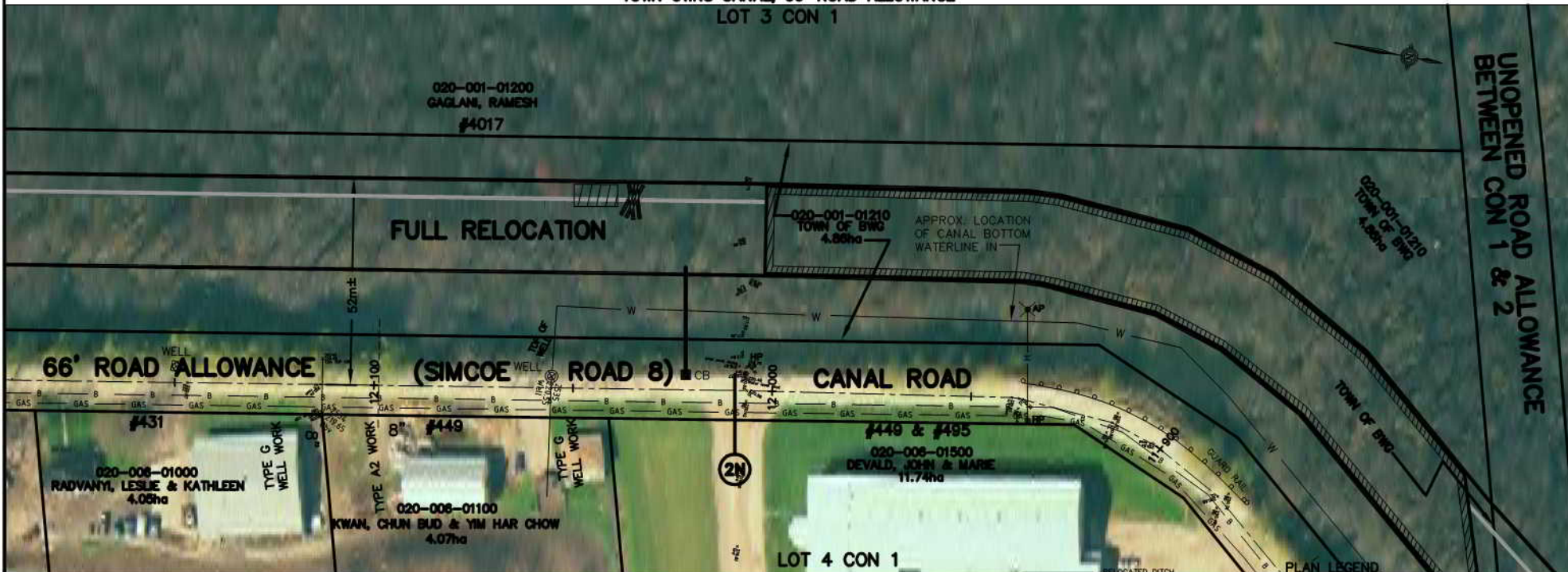
12+150 to 11+900	- Type II canal work	250m
12+150±	- Abandoned well work required	One (1)
12+120±	- Irrigation line 250mm to 300mm sleeve	
	- Type A2 work (250mm)	One(1)
12+113	- There is outlet from new building side well to extend	
	- Type G-E work	One(1)
12+099	- Irrigation line 200mm - Type A2 work	One (1)
12+055	- Raise existing concrete well casing to level of new berm (Type G-R work)	One (1)
	- Ensure existing line that enters and exits casing is maintained	

12+055 to 11+900	- Existing water line in canal bottom to remain (no work)
12+025	- CB and outlet - Engineer to locate
11+940	- Move anchor pole and extend line
11+900 to 11+945	- Remove existing guide rail

One (1)
One (1)
45m



TOWN OWNS CANAL, 66' ROAD ALLOWANCE LOT 3 CON 1



NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DYES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
BY: K. SMART LIMITED
DATE: 03/03/2003
SCALE: 1:1000
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO K. SMART ASSOCIATES



INTERVAL 1

FISH HABITAT LEGEND

DEEP POOLS	[Symbol]
MACROPHYTE TRANSPLANTS	[Symbol]
LITTORAL SHELF	[Symbol]
GRAVEL SUBSTRATES	[Symbol]
ROOT MASSES OR LOG BUNDLES	[Symbol]

ACCESS ROUTE	[Symbol]
LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)	[Symbol]
GUIDE RAIL	[Symbol]
BELL LINE	[Symbol]
UNDER GROUND GAS LINE	[Symbol]
PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE	[Symbol]
OVERHEAD HYDRO AND POLE	[Symbol]
HYDRO POLE (TO MOVE IF X)	[Symbol]
ANCHOR POLE (TO MOVE IF X)	[Symbol]
CROSS-SECTION LOCATION	[Symbol]
IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING	[Symbol]
APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)	[Symbol]
A2 ETC. (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK) (SEE EXTENT OF WORK NOTES)	[Symbol]
EXISTING WELL (SEE EXTENT OF WORK NOTES)	[Symbol]
NEW CANAL BANK	[Symbol]
ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED	[Symbol]
PROPOSED LEVELLING AREA BOUNDARY	[Symbol]
PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING	[Symbol]
PROPOSED BUFFER	[Symbol]
FULL FULL RELOCATION OF EXISTING CANAL	[Symbol]
PARTIAL RELOCATION OF EXISTING CANAL	[Symbol]
ROW RIGHT-OF-WAY	[Symbol]
PIN PROPERTY IDENTIFICATION NUMBER	[Symbol]

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
COUNTY OF SIMCOE
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AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
18

Extent of Work

Interval Cont.

11+900 to 11+570

11+854

11+800 & 11+786

11+900 to 11+740

- Type II canal work
- Irrigation line 100mm - do new Type A4 work
- Irrigation lines - two old 50mm (2")

Do one new Type B work or Type G work and one Type C work (Engineer to advise)

- costed for one Type B work and one Type G-E work

- Retain water line that enters canal and runs in canal bottom

- Raise well casing at Sta. 11+740, Type G-R work

330m

One (1)

One (1)

One (1)

11+750±

11+725

11+900 to 11+875

- CB and outlet - Engineer to locate

- Three irrigation lines, 2 - 200mm and

- 1 - 150mm. Do one Type A4 work (250mm)

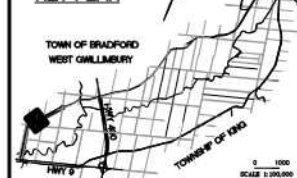
- Remove existing guide rail

One (1)

One(1)

25m

KEY PLAN



**TOWN OWNS CANAL
66' ROAD ALLOWANCE**

020-001-01200
GAGLANI, RAMESH
#4017

020-001-01210
TOWN OF BWG
4.86ha

CANAL OWNED BY LANDS TO SOUTH, ROAD IS ROW

LOT 4 CON 2

020-001-02600
HUNTER, PETER
#3935 LINE 3
40.16ha

24m± CLEARING
21m± WATER

FULL RELOCATION

TOWN OF BWG

CANAL ROAD

**(SIMCOE ROAD, 8)
ROW**

#449 & #495
020-006-01500
DEVALD, JOHN & MARIE
11.74ha

#531

020-006-01800
TOWN OF BWG
0.40ha

#549

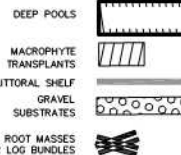
020-006-01700
HUI, PHILIP
2.99ha

LOT 4 CON 1

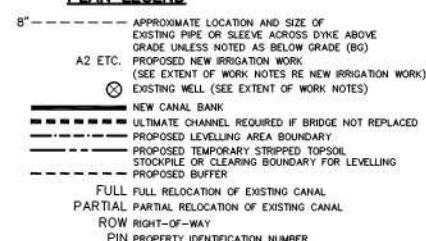
INTERVAL 1

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)



PLAN LEGEND



NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DITCHES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
BY: S. BARNES LIMITED
DATE: 03/03/2003
SCALE: 1:5000
PROJECT: MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
PROPERTY LINES ARE BASED ON THE DATA AVAILABLE TO S. BARNES LIMITED

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

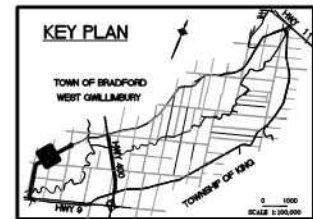
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
19

Extent of Work

Interval 1 Cont.

11+570 to 11+180	- Type II canal work	390m
11+478	- Irrigation line 200mm - Type A2 work	One (1)
11+424	- Well location - outlet extension Type G-E work and raise casing if necessary (Type G-R work)	One (1)
11+364	- Irrigation line 50mm. No work required. Owner to do any work required	One (1)
11+319	- Irrigation line 125mm - Type A2 work	One (1)
11+312	- Well location - raise and extend casing - Type G-R work	One (1)
11+296	- Irrigation line 50mm - Type B work	One (1)
11+223	- Irrigation line 100mm - Type A2 work	One (1)
11+200	- CB and outlet - Engineer to locate	One (1)



CANAL OWNED BY LANDS TO SOUTH, ROAD IS ROW

LOT 4 CON 2

020-001-02700
BINGHAM-WALLIS, ANTHONY
34.92ha
#3885 LINE 3

020-001-02800
BONROUT, MARTIN
42.3ha
#5739 LINE 3

24m± CLEARING
21m± WATER

FULL RELOCATION

(SIMCOE ROAD 8)

CANAL ROAD

ROW

50±' ROW

#549

020-008-01700
HUI, PHILIP
2.99ha

8" TYPE A2 WORK

TYPE G WORK

2" (BG)
WORK TO BE
BY OWNER

#597
020-008-01800
JANSE, PATRICIA
1.04ha

TYPE A2 WORK
TYPE G-R WORK

TYPE B WITH NEW
CROSSING

#611
020-008-01900
JANSE, KIMBERLY
1.17ha

4" TYPE A2 WORK

020-008-01950
H&K POULTRY FARMS LTD.
3.4ha

INTERVAL 1

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AIR PHOTOGRAPHY
BY: K. SMART ASSOCIATES
DATE: 01/01/2009
SOURCE: AERIAL PHOTOGRAPHY
DATE: 01/01/2009
PARCEL SHAPING AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
LANDSCAPE WITH MANIPULATED TOP SOIL AND SLOPE CORRECTION
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO K. SMART ASSOCIATES



FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

DEEP POOLS	
MACROPHYTE TRANSPLANTS	
LITTORAL SHELF	
GRAVEL SUBSTRATES	
ROOT MASSES OR LOG BUNDLES	

	RELOCATED DITCH
	ACCESS ROUTE
	LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
	GUIDE RAIL
	BELL LINE
	UNDER GROUND GAS LINE
	LOCATION AND OUTLET PIPE
	OVERHEAD HYDRO AND POLE
	HYDRO POLE (TO MOVE IF X)
	ANCHOR POLE (TO MOVE IF X)
	CROSS-SECTION LOCATION
	IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
	EXISTING WELL (SEE EXTENT OF WORK NOTES)
	NEW CANAL BANK
	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
	PROPOSED LEVELLING AREA BOUNDARY
	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
	PROPOSED BUFFER
	FULL FULL RELOCATION OF EXISTING CANAL
	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
	ROW RIGHT-OF-WAY
	PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
COUNTY OF SIMCOE
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

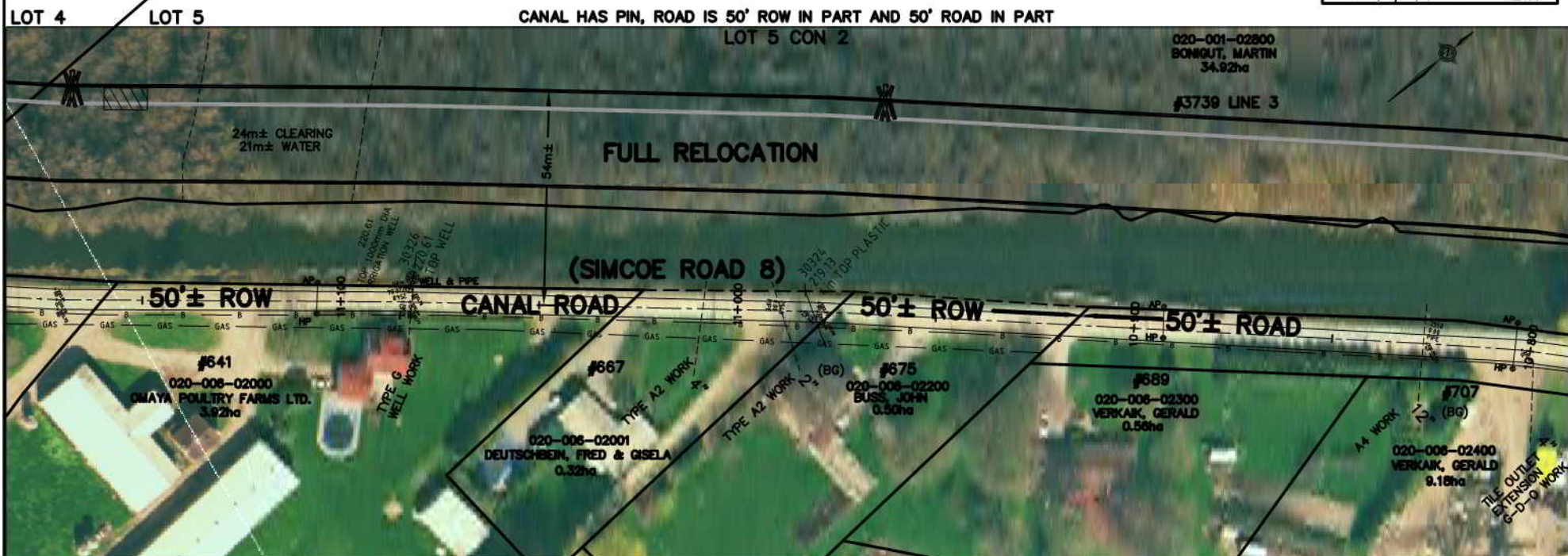
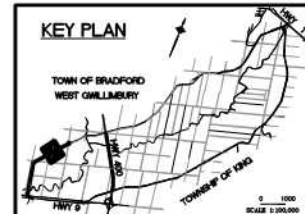
JOB NUMBER 03-023
DATE JANUARY, 2009
DRAWING NUMBER 20

Extent of Work

Interval 1 Cont.

11+180 to 10+800	- Type II canal work	380m
11+082	- Well location - raise casing - Type G-R work	One (1)
	- Extend outlet - Type G-E work	One (1)
11+008	- Irrigation line 100mm - Type A2 or Type B work (Type A2 work costed)	One (1)
10+988 & 10+980	- Two irrigation lines 50mm - Type A2 or B work (Type A2 work costed)	One (1)
10+827	- Irrigation line 300mm - Type A4 work	One (1)

KEY PLAN



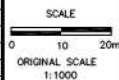
INTERVAL 1

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AIR PHOTOGRAPHY
BY: K. SMART LIMITED
DATE: 2002
SOURCE: FROM THE COUNTY OF BRADFORD
FOR: HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
PROJECT NUMBER: 03-023
DATE: JANUARY, 2009
DRAWING NUMBER: 21

No.	REVISION	DATE



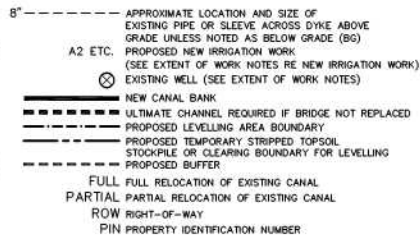
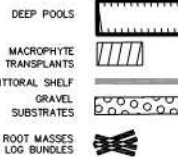
HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GILLIMBURY
TOWNSHIP OF KING
COUNTY OF SIMCOE
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

PLAN LEGEND

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)



Extent of Work

Interval 1 Cont.

- 10+420 to 10+335 - Type IV canal work (partial relocation)
 - Rock or geobasket cofferdam required or dewatering with slope protection required
 - Top elev. to be 221.35
 - If surplus excavated materials result, such as to be hauled and disposed of elsewhere in Interval 1
 - 300mm plastic pipe fire line. Shorten line to fit new bank. Salvage and reuse inlet and marker
 - Irrigation line 200mm - Type A2 work
 - CB and outlet - Engineer to locate

85m

One (1)
 One (1)

Interval 2 (Part of Contract 1A and 1B)

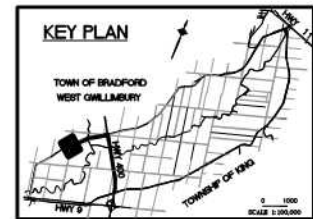
- 10+335 to 10+320± - Clean through existing structures (see structure drawing) (Type VI canal work)
 - Materials to be disposed of with other materials
 - Ultimate work by Town is to enlarge or replace structure
 - Type I canal work
 - Cofferdam required (any material but to be flood proof)
 - Two irrigation lines 50mm - Type B or C work (Type C work is costed) for one, Type B work for the other
 - Irrigation line 150mm abandon

15m

110m
 110m
 One (1)
 One (1)
 One (1)

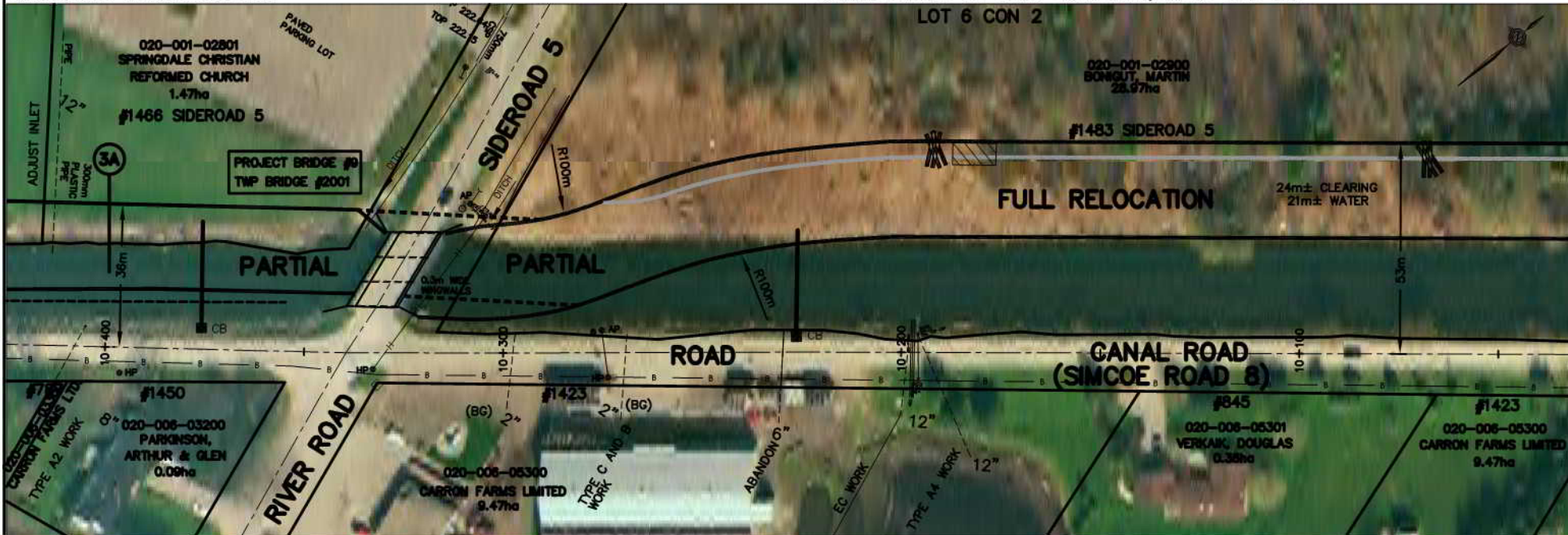
- 10+225± - CB and outlet - Engineer to locate
 10+210 to 10+050 - Type II canal work
 10+197 - Irrigation line 300mm communal Type EC work
 10+196 - Irrigation line 300mm - Do new Type A4 work (250mm)

One (1)
 160m
 One (1)
 One (1)



CANAL AND ROAD HAVE PIN

CANAL OWNED BY LAND TO NORTH, ROAD HAS PIN



INTERVAL 1

INTERVAL 2

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AIR PHOTOGRAPHY
 BY K. SMART ASSOCIATES
 DATE: 03/03/2003
 SCALE: 1:1000
 PROJECT: HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

Cofferdam and Riprap Work at Bridge 9 (Sideroad 5 Structure):

- New top of berm (elev. 221.35± on south side) to blend in with existing wingwalls (SE & SW)
- Face of new berm is to taper out along the wingwalls. Interlocking sheet steel piles would also be acceptable.
- Final design to recognize structure work to be done by Town
- Expected new edges of water are shown
- Cofferdam extending from 10+210 to 10+320 in southeast quadrant to be geomembrane protected, partial work earth slope or rock embankment to give 21m water width at 218.75.
- Top elev. to be 221.40.
- Interlocking steel sheet piling (12m± long sections) would also be accepted.
- Heavy, angular rock riprap to be placed in NE and NW quadrant, to convey road ditch waters and to protect slopes.
- Approximate amount required is 100m³ on filter fabric, 1m thick and recessed in.

100m³

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

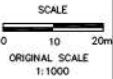
- DEEP POOLS
- MACROPHYTE TRANSPLANTS
- LITTORAL SHELF
- GRAVEL SUBSTRATES
- ROOT MASSES OR LOG BUNDLES

- RELOCATED DITCH
- ACCESS ROUTE
- LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
- GUIDE RAIL
- BELL LINE
- UNDER GROUND GAS LINE
- PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
- OVERHEAD HYDRO AND POLE
- HYDRO POLE (TO MOVE IF X)
- ANCHOR POLE (TO MOVE IF X)
- CROSS-SECTION LOCATION
- IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

- 8" - - - - - APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
- A2 ETC. PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
- EXISTING WELL (SEE EXTENT OF WORK NOTES)
- NEW CANAL BANK
- ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
- PROPOSED LEVELLING AREA BOUNDARY
- PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
- PROPOSED BUFFER
- FULL FULL RELOCATION OF EXISTING CANAL
- PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
- ROW RIGHT-OF-WAY
- PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
 HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
 TOWN OF BRADFORD WEST GILLIMBURY
 COUNTY OF SIMCOE
 REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
 CONSULTING ENGINEERS AND PLANNERS
 85 MCINTYRE DRIVE
 KITCHENER, ONTARIO N2R 1H6

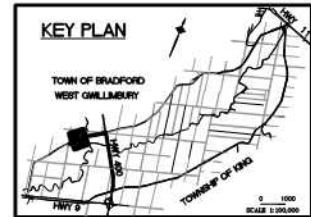
JOB NUMBER 03-023
 DATE JANUARY, 2009
 DRAWING NUMBER 23

Extent of Work

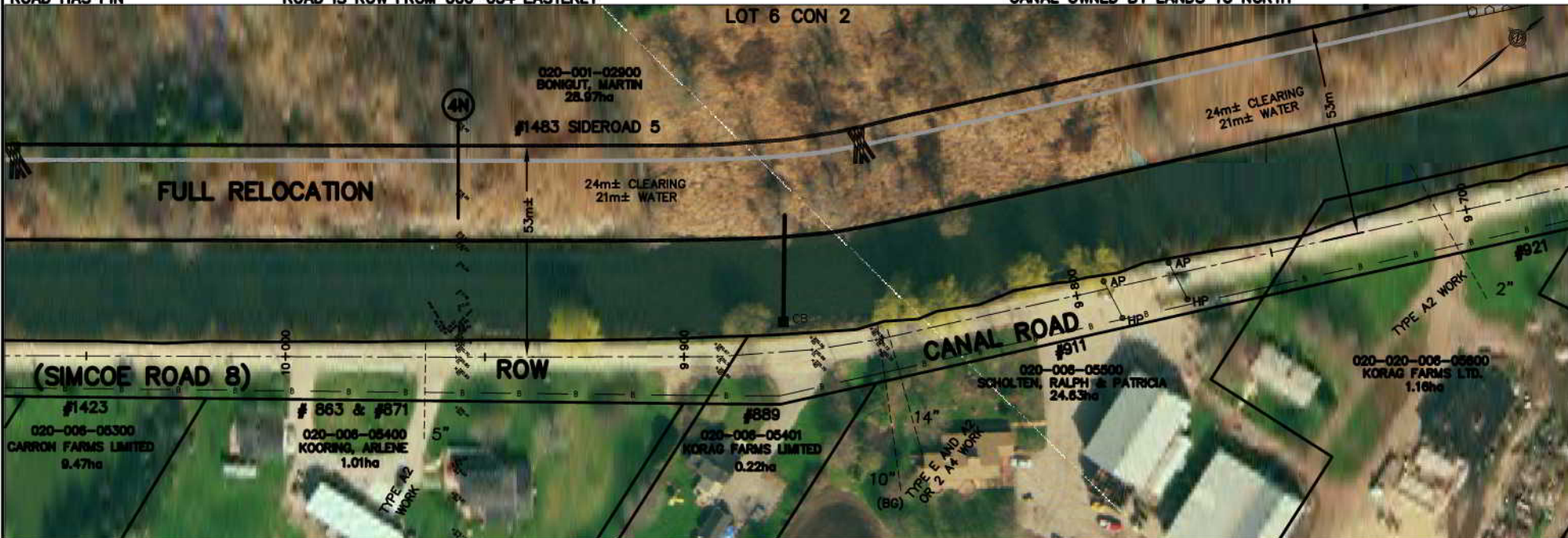
Interval 2 Cont.

10+050 to 9+700	- Type II canal work	350m
9+965	- Irrigation line 125mm - may not be used. Type A2 work	One (1)
9+851	- Irrigation line 250mm - Type E work	One (1)
9+875±	- CB and outlet - Engineer to locate	One (1)
9+848	- Irrigation line 350mm - Type A2 work	One (1)
9+703	- Irrigation line 50mm - Type A2 work	One (1)

KEY PLAN



ROAD HAS PIN ROAD IS ROW FROM 006-054 EASTERLY LOT 6 CON 2 CANAL OWNED BY LANDS TO NORTH



INTERVAL 2

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AIR PHOTOGRAPHY
BY: K. SMART LIMITED
DATE: 03/03/2003
SCALE: 1:1000
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO K. SMART ASSOCIATES

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000

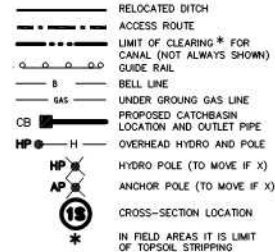


HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

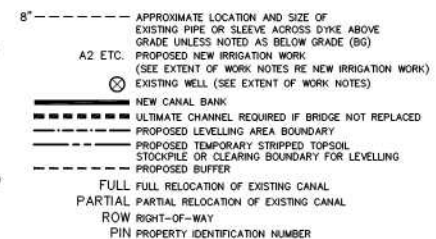
AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)



PLAN LEGEND



Extent of Work

Interval 2 Cont.

9-700 to 9-670 - Type II canal work
 9-670 to 9-600 - Type I canal work
 9-670 to 9-600± and 9-485 to 9-400
 - Cofferdams required
 - May be done with interlocking sheet steel piling, rock, or with earth or with combinations
 - Top of cofferdam to be elev. 221.40 and to be flood proof.
 Approximate quantity of road if all rock is used would be 10,000m³

9-610 to 9-485 - Existing interlocking steel sheet pile wall to be raised to elev. 221.40 (approximately 25m² of similar material required) over a 60m± length. A proposal to reuse any of existing, where above 221.40 elev. could be reviewed and approved
 9-610 to 9-585 - Do not disturb existing pumphouse inlets and outlets
 9-600 to 9-485 - Type III-H canal work - bottom cleanout at north river intersection with some widening and with hauling may have to be done by barge and scow or by long reach dragline working from road. Possible amount to excavate and haul (excluding deep pool amount) is 2,000m³
 9-493 to 9-449 - Possible new irrigation line. Type A5 work
 9-485 to 9-400 - Type I canal work (transition)
 9-449 - Well location - outlet extension required - Type G-E work
 - Raise casing to fit. Type G-R work

9-440 to 9-485 and 9-605 to 9-650 - Guide rail required 90m



LANDS TO NORTH OWN CANAL EXCEPT AT RIVER. ROAD IS ROW IN PART AND ROAD HAS PIN IN PART

**ROAD IS 40' ROW
 LOT 7 CON 2**



INTERVAL 2

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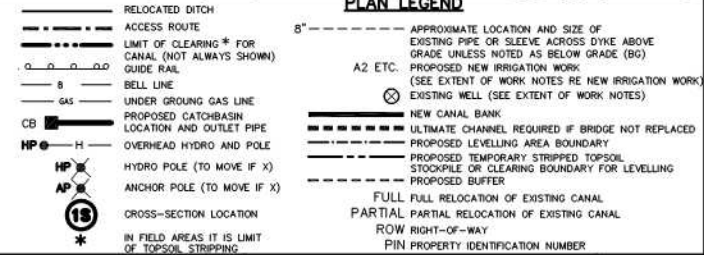
THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

AIR PHOTOGRAPHY
 2002 ORTHOPHOTOGRAPHY
 BY: S. BARNES LIMITED
 DATE: 04/05/2002
 SCALE: 1:5000
 PARCEL SHAPING AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH AIRPHOTOGRAPHY WITH MANIPULATED TONE BROWN AND BLACK COLOURS
 PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO S. BARNES LIMITED

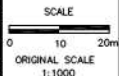


FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)



No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
 HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
 TOWN OF BRADFORD WEST Gwillimbury
 COUNTY OF SIMCOE
 TOWNSHIP OF KING

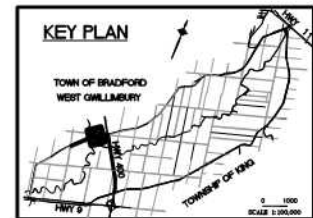
AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
 CONSULTING ENGINEERS AND PLANNERS
 85 MCINTYRE DRIVE
 KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
 DATE
JANUARY, 2009
 DRAWING NUMBER
25

Extent of Work

Interv. 2 Cont.		
9+400 to 9+100	- Type II canal work	300m
9+175±	- CB and outlet - Engineer to locate	One (1)
9+146	- Well location - well is on canal side of dyke. May be waterline along edge of dyke road running east to sleeve at 9+090	One (1)
	- Provide for raising well casing - Type G-R work	One (1)
	- Extending outlet - Type G-E work	One (1)



LANDS TO NORTH OWN CANAL, ROAD 40' ROW

LOT 7 CON 2



INTERVAL 2

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AIR PHOTOGRAPHY
© J. S. BARNES LIMITED
2002 ORTHOPHOTOGRAPHY
DUE DILIGENCE WAS USED TO OBTAIN THE DATA SHOWN ON THIS MAP. THE DATA IS PROVIDED AS IS, WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE ACCURACY, COMPLETENESS, OR SUITABILITY OF THE DATA FOR ANY PURPOSE.



FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

DEEP POOLS	
MACROPHYTE TRANSPLANTS	
LITTORAL SHELF	
SUBSTRATES	
ROOT MASSES OR LOG BUNDLES	

	RELOCATED DITCH
	ACCESS ROUTE
	LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
	GUIDE RAIL
	BELL LINE
	UNDER GROUND GAS LINE
	PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
	OVERHEAD HYDRO AND POLE
	HYDRO POLE (TO MOVE IF X)
	ANCHOR POLE (TO MOVE IF X)
	CROSS-SECTION LOCATION
	IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
	EXISTING WELL (SEE EXTENT OF WORK NOTES)
	NEW CANAL BANK
	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
	PROPOSED LEVELLING AREA BOUNDARY
	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
	PROPOSED BUFFER
	FULL FULL RELOCATION OF EXISTING CANAL
	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
	ROW RIGHT-OF-WAY
	PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE 1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER 03-023
DATE JANUARY, 2009
DRAWING NUMBER 26

Extent of Work

Interval 2 Cont.

9+100 to 8+875
9+090

- Type II canal work
- Irrigation line 300mm.
- Do Type A2 with 250mm dia.
- Grout existing pipes that pass through it
- Extension to canal may be 75mm

225m
One (1)

8-852
8-800±
8+790 to 8+735

- Irrigation line 125mm (not found). Do new Type A2 work
- Lateral ditch treatment
- Highway 400 bridge - clean through bottom (type VI canal work)
- Ultimately MTO and/or report to provide more capacity
- Excavated materials to be disposed of with other materials
- See bridge drawings for cleanout work cross-section
- Gabion stone protection exists at piers (not to be disturbed)
- Type I canal work
- Existing guide rail to be protected and to remain. If necessary to replace, payment at unit price for guide rail will made as tendered elsewhere

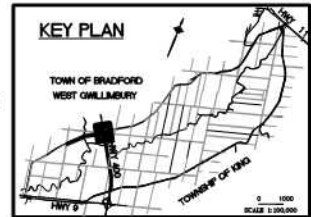
One (1)
One (1)
55m

Cofferdam Work at Highway 400

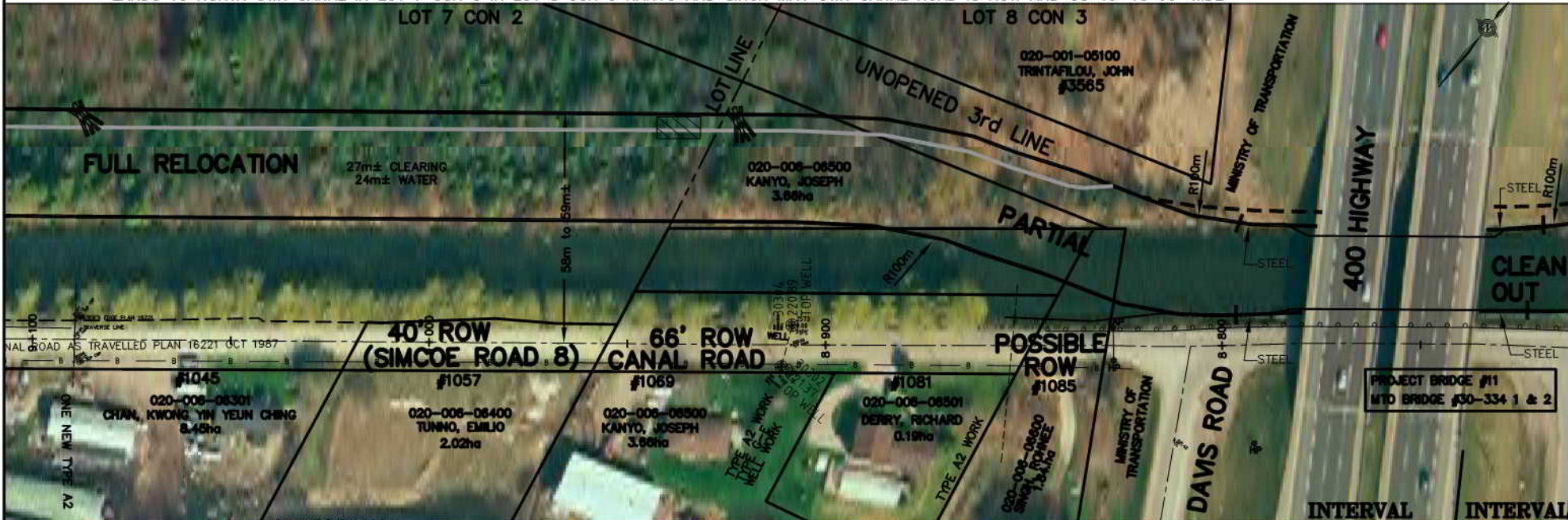
- Top of dams to be 221.40 until berm is intersected
- Dams may be interlocking steel piling, rock or geobasket but is to provide flood protection
- Steel pile lengths to be 12m±
- Dam is to extend from Sta. 8+875 to 8+790 Interval 2
- Special guide rail with flood panels may be required to east and west of overpass until cofferdam berm is intersected (possibly 100m total)

85m

* Widening will be necessary through overpass if structure is not replaced and with more channel capacity



LANDS TO NORTH OWN CANAL IN LOT 7 CON 3 IN LOT 8 CON 3 KANYO AND SINGH MAY OWN CANAL ROAD IS ROW AND OS 40' TO 66' WIDE



Interval 2 Quantities:

Clearing Work (Part of Contract 1A)

- For Relocation - at 24m wide - 1.7 ha, at 27m wide - 1.9 ha
- Along Edge of Dyke - approx 50% of the 1500m length has trees

Berm Work (Part of Contract 1A)

- 7,000m³ of material to haul and level
- To be paid as hauling work in South Canal items
- Berm Work (Part of Contract 1B)
- 30,000m² shaping and final grading
- 1,400m of swale work
- 1,400m of grading, seeding and planting on berm
- Three catchbasins and outlets

Earth work

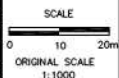
- To haul during excavation 2,000m³
- To excavate and backfill (relocation) 68,000m³
- Total excavation 70,500m³
- Relevelled 30,000m²
- Material to be brought in to finish berm 7,000m³
- Quantities do not include deep pool excavation

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AIR PHOTOGRAPHY
BY: S. BARNES LIMITED
DATE: 08/01/2008
SCALE: 1:1000
PROPERTY LINES ARE BASED ON THE DATA AVAILABLE TO S. BARNES LIMITED

No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GILLIMBURY
COUNTY OF SIMCOE
TOWNSHIP OF KING

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
27

8+710 to 8+610	- Type I canal work
8+610 to 8+360	- Type II canal work
8+620 & 8+568	- Irrigation lines - 2 - 250mm. Do one Type A2 work
8+550	- CB and outlet - Engineer to locate
8+507	- Irrigation line 200mm - Do Type A2 work
8+469 & 8+474	- Irrigation lines - 2 - 50mm not used - no work
8+447	- Irrigation line 200mm - Do one Type A2 work

One (1)

8+700 to 8+650
8+700 to 8+735

8+710
8+600±

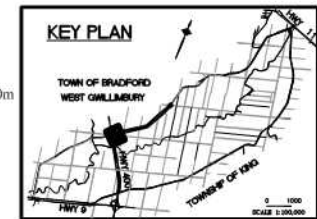
8+420

- Guide rail required
- Existing guide rail to remain and to be protected.
- If necessary to replace, payment would be made at unit price for guide rail as tendered elsewhere
- Lateral channel treatment
- Canal side well location (not found). Do Type G-E ext. work and raise casing - Type G-R work
- Relocate existing hydro pole, adjust hydro line

50m

One
One
One
One

- Top of dams to be 221.40 until berm is intersected
- Dams may be interlocking steel piling, rock or geobasket but is to provide flood protection
- Steel pile lengths to be 12m
- Dam is to extend from 8'-610 to 8'-710 Interval 3
- Special guide rail with flood panels may be required to east and west of overpass until cofferdam berm is intersected (possibly 100m total)



020-005-00200
CERICOLA, AMEDEO
70.4ha
#3399 LINE 4

FULL RELOCATION

27m± CLEARING
24m± WATER

PARTIAL

66' ROW OR PIN

(SIMCOE ROAD 8)

UNOPENED 3rd LINE
020-006-88900
KAMRO, JOHN JR. & GINETTE
3.4th

020-008-06900
KANYO, JOHN JR. & GINETTE

TYPE 12
WORK

#1177 8" in TOP L
TYPE WORK A2
020-005-07100
SINGH, RAJANAR & R

#1189
020-008-07200
GORZO, PIROSKA
2.65ha

FISH HABITAT LEGEND
(FINAL LOCATION TO BE SET AT
TIME OF CONSTRUCTION)

INDICATES EXISTING
STEEL SHEET WALL

STEEL

DEEP POOLS

MACROPHYTE
TRANSPLANTS

LITTORAL SHELF

GRAVEL
SUBSTRATES

ROOT MASSES
OR LOG BUNDLES

	RELOCATED DITCH
	ACCESS ROUTE
	LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
	GUIDE RAIL
	BELL LINE
	UNDER GROUND GAS LINE
	PROPOSED CATCHBASIN LOCATION
	OVERHEAD HYDRO AND POLE
	HYDRO POLE (TO MOVE IF X)
	ANCHOR POLE (TO MOVE IF X)
	CROSS-SECTION LOCATION
	IN FIELD AREA IT IS LIMIT OF TOPSOIL STRIPPING

-----	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DRYDE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
A2. ETCP.	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
⊗	EXISTING WELL (SEE EXTENT OF WORK NOTES)
=====	NEW CANAL BANK
-----	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
-----	PROPOSED LEVELLING AREA BOUNDARY
-----	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
-----	PROPOSED BUFFER
FULL	FULL RELOCATION OF EXISTING CANAL
PARTIAL	PARTIAL RELOCATION OF EXISTING CANAL
ROW	RIGHT-OF-WAY
PIN	PROPERTY IDENTIFICATION NUMBER


NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN, THE DYKES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
© J. S. BARNES LIMITED
2002 ORTHOPHOTOGRAPHY OR
2007 AS AMENDED

2002 ORTHOPHOTOGRAPHY
OBTAINED FROM THE
COUNTY OF SMOCK

PAID, SHIPPING AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
AGREEMENTS WITH MUNICIPALITIES, YORK REGION AND SMOCK COUNTY

[illegible]

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE
TOWNSHIP OF KING REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES



K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER	03-023
DATE	JANUARY, 2009
DRAWING NUMBER	28

Extent of Work

Interval 3 Cont.

8+360 to 8+000

8+330

8+290

8+263

8+164

8+150, 8+142 & 8+110

- Type II canal work
- Well location - extend outlet - Type G-E work
- Raise well, Type G-E work
- Irrigation line 200mm - Do Type A2 work (250mm)
- Well location - extend outlet - Type G-E work
- Raise well, Type G-E work
- Well location - work to be confirmed, if any
- Irrigation lines 300mm, 150mm & 200mm
- Do one Type A4 work
- Do two Type A2 work

360m

One (1)

One (1)

One (1)

One (1)

One (1)

One (1)

One (1)

Two (2)

8+190

8+106

8+058

8+050

- Relocate any anchor pole and extend line
- Well location - raise casing - Type G-E work & provide overflow Type G-E work
- Irrigation line 150mm - Do one Type A2 work
- May be well here. If found, do Type G work. Raise casing (type G-R work) and extend outlet (type G-E work) to be confirmed
- Catchbasin and outlet - Engineer to locate.

One (1)

One (1)

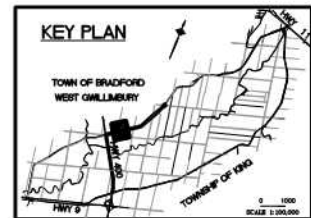
One (1)

One (1)

One (1)

One (1)

KEY PLAN



CANAL HAS SEPARATE PIN,
ROAD EITHER SEPARATE PIN OR ROW
LOT 8 CON 3

PROPERTIES TO SOUTH OWN CANAL, ROAD IS ROW
LOT 9 CON 3

020-005-00200
CERVOOLA, AMEDEO
70.4ha
#3399 LINE 4

020-005-00300
LAWRENCE, CURTIS
44.51ha
#3269 LINE 4

FULL RELOCATION

66' ROW OR PIN

#1209

020-006-07300
DEVALD, JOHN & MARIE
9.84ha

#1227

020-006-07302
KANYO, JOHN & MARIE
0.2ha

#1241

020-006-07400
KANYO, WILLIAM
4.05ha

(SIMCOE ROAD '8')

#1257

020-006-07500
BUSMAN, JOHN & GRACE
8.28ha

020-006-07600
CORZO, JOHN
0.46 ha

INTERVAL 3

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AIR PHOTOGRAPHY
BY: S. B. BARNES LIMITED
DATE: 08/01/2008
SCALE: 1:1000
PARCEL SHAPING AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH LANDSCAPE WITH MANIPULATED TOPSOIL AND SLICE CUTS
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO S. B. BARNES LIMITED



FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

- DEEP POOLS
- MACROPHYTE TRANSPLANTS
- LITTORAL SHELF
- GRAVEL SUBSTRATES
- ROOT MASSES OR LOG BUNDLES

- RELOCATED DITCH
- ACCESS ROUTE
- LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
- GUIDE RAIL
- BELL LINE
- UNDER GROUND GAS LINE
- PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
- OVERHEAD HYDRO AND POLE
- HYDRO POLE (TO MOVE IF X)
- ANCHOR POLE (TO MOVE IF X)
- CROSS-SECTION LOCATION
- IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

- 8" - APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
- A2 ETC. - PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
- EXISTING WELL (SEE EXTENT OF WORK NOTES)
- NEW CANAL BANK
- ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
- PROPOSED LEVELLING AREA BOUNDARY
- PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
- PROPOSED BUFFER
- FULL - FULL RELOCATION OF EXISTING CANAL
- PARTIAL - PARTIAL RELOCATION OF EXISTING CANAL
- ROW - RIGHT-OF-WAY
- PIN - PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLIMBURY
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

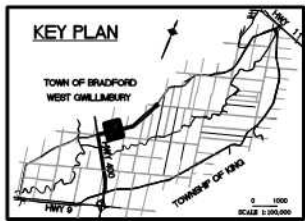
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
29

Extent of Work

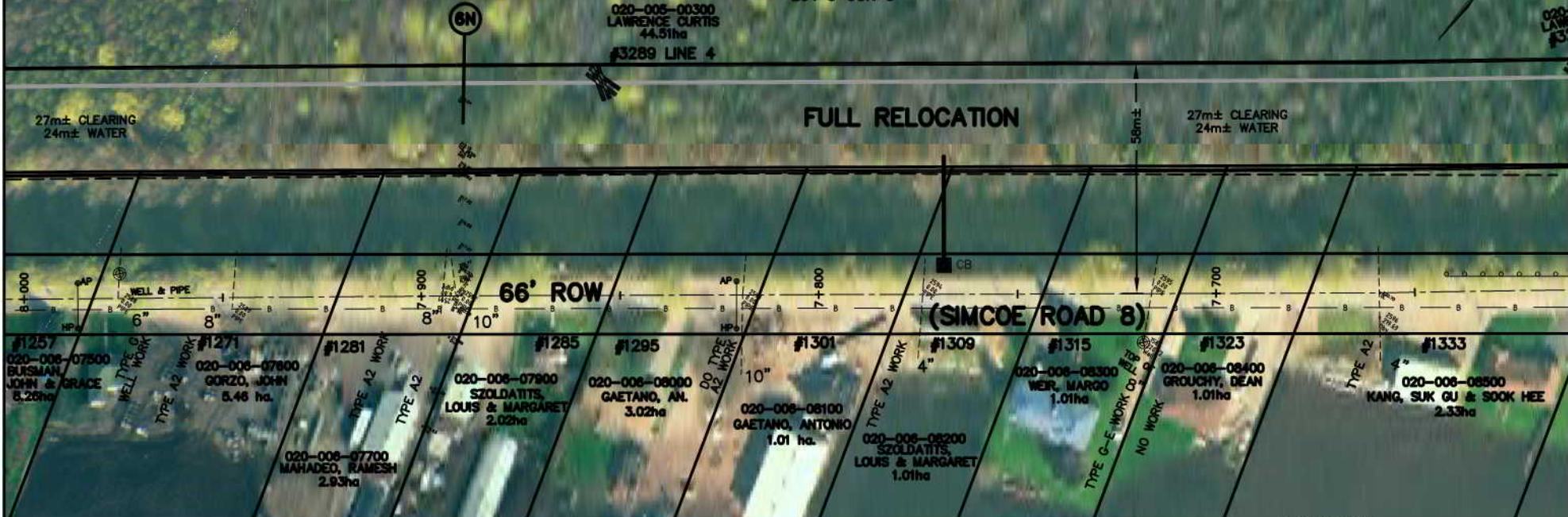
Interval 3 Cont.

8+000 to 7+600	- Type II canal	400m
7+976	- Well location - Do Type G-E work	One (1)
	Do Type G-R work	One (1)
7+947	- Irrigation line 200mm - Do one Type A2 work	One (1)
7+895	- Irrigation line 200mm - Do one Type A2 work	One (1)
7+890	- Irrigation line 250mm - Do one Type A2 work	One (1)
7+819	- Irrigation line 250mm - Do one Type A2 work	One (1)
7+775	- Irrigation line 100mm - Do Type A2	One (1)
7+770±	- CB and outlet - Engineer to locate	One (1)
7+716	- Sleeve for well outlet location. Extend well outlet (G-E work)	One (1)
7+659	- Irrigation line 100mm - Do Type A2 work	One (1)
7+600 to 7+645	- Remove existing guide rail	45m



IN LOT 9 PROPERTIES TO SOUTH OWN CANAL 66' ROW FOR ROAD

LOT 9 CON 3



INTERVAL 3

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AIR PHOTOGRAPHY
BY: K. SMART LIMITED
DATE: 2002
SOURCE: AERIAL PHOTOGRAPHY
DATE: 2002
SCALE: 1:1000

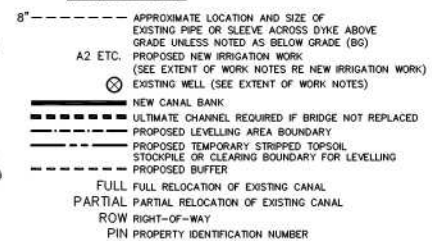


FISH HABITAT LEGEND

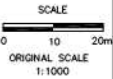
(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)



PLAN LEGEND



No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
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CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
30

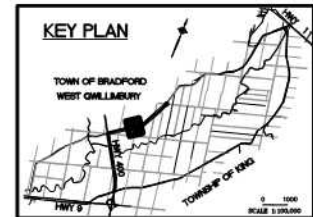
Extent of Work

Interval 3 Cont.

7+600 to 7+220	- Type II canal work	380m	7+326	- Irrigation line 200mm - Do Type A2 work	One (1)
7+593	- Well location - extend well outlet only.	One (1)	7+321	- Irrigation line 100mm - Do Type A2 work	One (1)
	Type G-E work		7+283	- Irrigation line 300mm - Do Type A2 work	One (1)
7+552	- Irrigation line 300mm - Do Type A2 work	One (1)	7+222	- Irrigation line 300mm - Do Type A2 work	One (1)
7+550	- CB and outlet - Engineer to locate	One (1)			
7+472	- Irrigation line 250mm - Do Type A2 work	One (1)			
7+470 to 7+600	- Remove existing guide rail	130m			
7+424	- Irrigation line 200mm - Do Type G-E work or Type B work to extend small plastic line (Type B work is costed)	One (1)			
7+418	- Irrigation line 300mm - Do Type A2 work	One (1)			
7+365	- Well location - extend outlet only.	One (1)			
	Type G-E work				






IN LOT 10, CANAL AND ROAD HAVE OWN PINS
66' ROAD ALLOWANCE

KEY PLAN



INTERVAL 3

FISH HABITAT LEGEND

DEEP POOLS	
MACROPHYTE TRANSPLANTS	
LITTORAL SHELF	
GRAVEL SUBSTRATES	
ROOT MASSES OR LOG BUNDLES	

RELOCATED DITCH	ACCESS ROUTE
LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)	BELL LINE
UNDER GROUND GAS LINE	LOCATION AND OUTLET PIPE
OVERHEAD HYDRO AND POLE	HYDRO POLE (TO MOVE IF X)
ANCHOR POLE (TO MOVE IF X)	CROSS-SECTION LOCATION
IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING	

PLAN LEGEND

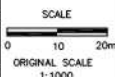
8" - - - - -	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
A2 ETC.	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
⊗	EXISTING WELL (SEE EXTENT OF WORK NOTES)
---	NEW CANAL BANK
---	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
---	PROPOSED LEVELLING AREA BOUNDARY
---	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
---	PROPOSED BUFFER
---	FULL FULL RELOCATION OF EXISTING CANAL
---	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
---	ROW RIGHT-OF-WAY
---	PIN PROPERTY IDENTIFICATION NUMBER

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DYMES (WHETHER THEY ARE DRY, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
K. A. SMART LIMITED
3000 GERRARD STREET EAST
SUITE 200
SCARBOROUGH, ONTARIO M1V 4Y7
TEL: (416) 291-1111
FAX: (416) 291-1112
WWW.KSMART.COM

No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
COUNTY OF SIMCOE
TOWNSHIP OF YORK
AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER	03-023
DATE	JANUARY, 2009
DRAWING NUMBER	31

Extent of Work

Interval 3 Cont.

7+220 to 6+830	- Type II canal work	290m
7+180	- Well location - Type G-E work	One (1)
7+158	- Irrigation line 300mm - Do Type A2 work	One (1)
7+125	- CB and outlet - Engineer to locate	One (1)
7+118	- Irrigation line 200mm - Do Type A2 work	One (1)
7+026	- Irrigation line 300mm - Do one Type A4 or I-A2 plus I-A5 work (one A4 is costed)	
7+003	- Well location - extend outlet only. Type G-E work	One (1)
6+950±	- CB and outlet - Engineer to locate	One (1)
6+845	- Irrigation line 200mm - Do one Type A2 work plus one Type A5 or just one Type A4 work. Type A4 is costed	One (1)



CANAL AND ROAD HAVE OWN PINS

EXISTING ROAD MAY BE ROW ADJACENT TO GAETANO

LOT 10 CON 3

LOT 10 CON 3

020-005-00600
VAILLANCOURT, FRANCES
8.9ha

#1438 CANAL RD

020-005-00500
BARLOW SQUARE INC.
50.90ha

#1622

FULL RELOCATION

27m± CLEARING
24m± WATER

66' ROAD ALLOWANCE

(SIMCOE ROAD 8)

POSSIBLY 66' ROW
BY GAETANO ONLY

INTERVAL 3

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN, THE DYKES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
BY: K. SMART LIMITED
DATE: 03/01/2008
SCALE: 1:1000
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO K. SMART ASSOCIATES



FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

DEEP POOLS	
MACROPHYTES TRANSPLANTS	
LITTORAL SHELF	
GRAVEL SUBSTRATES	
ROOT MASSES OR LOG BUNDLES	

RELOCATED DITCH	
ACCESS ROUTE	
LIMIT OF CLEARING* FOR CANAL (NOT ALWAYS SHOWN)	
GUIDE RAIL	
BELL LINE	
GAS	
UNDER GROUND GAS LINE	
PROPOSED CATCH-BASIN LOCATION AND OUTLET PIPE	
OVERHEAD HYDRO AND POLE	
HYDRO POLE (TO MOVE IF X)	
ANCHOR POLE (TO MOVE IF X)	
CROSS-SECTION LOCATION	
IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING	

PLAN LEGEND

8"-----	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
A2 ETC.	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
⊗	EXISTING WELL (SEE EXTENT OF WORK NOTES)
-----	NEW CANAL BANK
-----	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
-----	PROPOSED LEVELLING AREA BOUNDARY
-----	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
-----	PROPOSED BUFFER
-----	FULL FULL RELOCATION OF EXISTING CANAL
-----	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
-----	ROW RIGHT-OF-WAY
-----	PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLIMBURY
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
32

Extent of Work

Interval 3 Cont.

6+830 to 6+440	- Type II canal work	390m
6+796	- Irrigation line - seal (see note at Sta. 6+845)	One (1)
6+700	- Relocate one anchor pole and extend line	One(1)
6+707	- New irrigation line - Do Type A5 work	One (1)
6+600	- CB and outlet - Engineer to locate	One (1)
6+500±	- New irrigation line - Do Type A5 work	One (1)



CANAL AND ROAD HAVE OWN PINS, EXISTING ROAD MAY BE ROW ADJACENT TO GAETANO

IN LOT 11 SEPARATE PINS FOR CANAL AND ROAD

LOT 10 CON 3

LOT 11 CON 3

020-005-00500
BARLOW SQUARE INC.
50.96ha
#1622

020-005-00500
BARLOW SQUARE INC.
50.96ha
#1622

UNOPENED ROAD

FULL RELOCATION

27m± CLEARING
24m± WATER

POSSIBLY ROW

66' ROAD ALLOWANCE

(SIMCOE ROAD 8)

#1495
020-006-09800
GAETANO,
SALVATORE &
CARMELA
6.48ha

#1529
020-008-11610
SOPUCH, DANIEL
2.02ha

#1581
020-008-11600
MARSHLAND GARDENS LTD.
4.05ha

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DYKES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
BY: K. SMART LIMITED
DATE: 03/01/2009
SCALE: 1:1000
SOURCE: AERIAL PHOTOGRAPHY
DATE: 03/01/2009
SCALE: 1:1000
SOURCE: AERIAL PHOTOGRAPHY



INTERVAL 3

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

DEEP POOLS	
MACROPHYTES TRANSPLANTS	
LITTORAL SHELF	
GRAVEL SUBSTRATES	
ROOT MASSES OR LOG BUNDLES	

RELOCATED DITCH	
ACCESS ROUTE	
LIMIT OF CLEARING* FOR CANAL (NOT ALWAYS SHOWN)	
GUIDE RAIL	
B	
GAS	
UNDER GROUND GAS LINE	
PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE	
CB	
HP	
H	
OVERHEAD HYDRO AND POLE	
HYDRO POLE (TO MOVE IF X)	
ANCHOR POLE (TO MOVE IF X)	
AP	
CROSS-SECTION LOCATION	
IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING	

PLAN LEGEND

8"-----	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
A2, ETC.	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
⊗	EXISTING WELL (SEE EXTENT OF WORK NOTES)
-----	NEW CANAL BANK
-----	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
-----	PROPOSED LEVELLING AREA BOUNDARY
-----	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
-----	PROPOSED BUFFER
-----	FULL FULL RELOCATION OF EXISTING CANAL
-----	PARTIAL RELOCATION OF EXISTING CANAL
-----	ROW RIGHT-OF-WAY
-----	PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLIMBURY
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES



K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

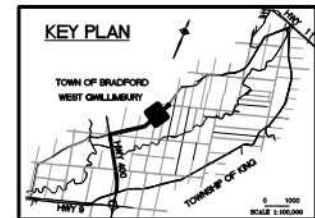
JOB NUMBER 03-023
DATE JANUARY, 2009
DRAWING NUMBER 33

Extent of Work

Interval 3 Cont.

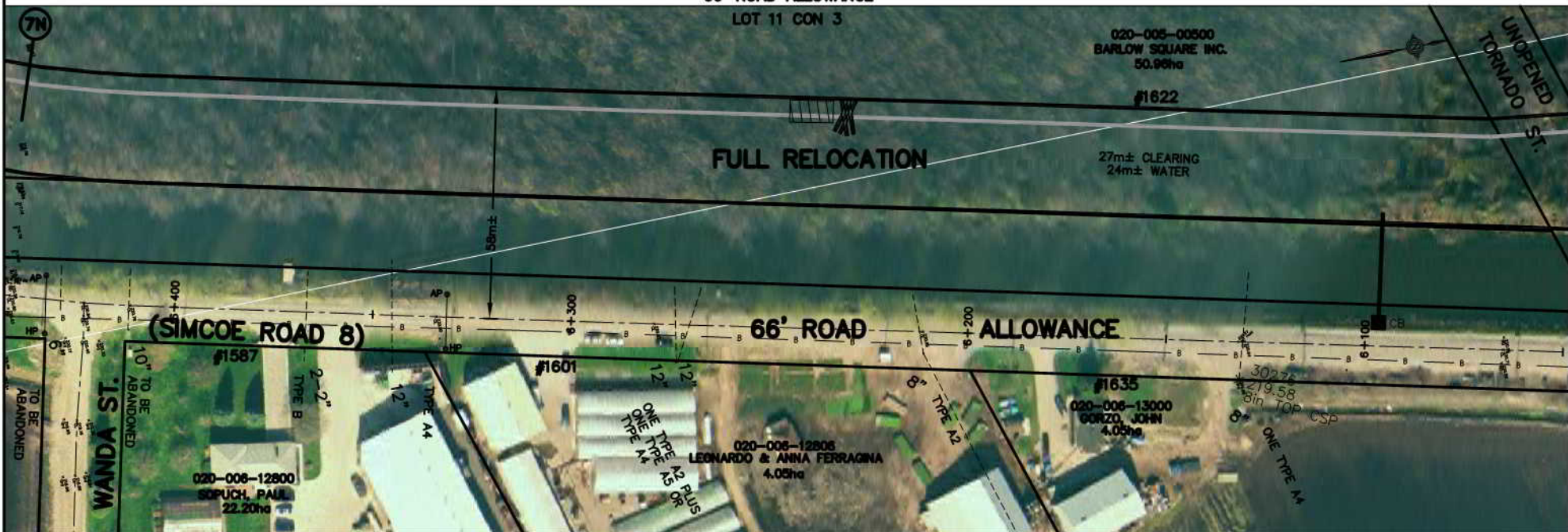
6+440 to 6+050	- Type II canal work	390m
6+430	- Irrigation line 150mm - abandon existing (seal)	One (1)
6+413	- Irrigation line 250mm - abandon existing (seal)	One (1)
6+368	- Irrigation line, 2 - 50mm - Do Type B work	Two (2)
6+346	- Irrigation line 300mm - Do Type A4 work	One (1)
6+274	- Irrigation line 300mm - Do Type A2* work	One (1)
6+268	- Irrigation line 300mm - Do Type A5* work	One (1)
6+213	- Irrigation line 200mm - Do Type A2 work	One (1)
6+130	- Irrigation line 200mm - Do Type A4 work	One (1)
	(since one at 6+035 is to be abandoned/sealed)	One (1)
6+100±	- CB and outlet - Engineer to locate	One (1)

* One type A4 could be done to replace the two of these.
Decision to be made at time of construction.



IN LOT 11 SEPARATE PINS FOR CANAL AND ROAD 66' ROAD ALLOWANCE

LOT 11 CON 3



INTERVAL 3

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AIR PHOTOGRAPHY
© J. S. BARNES LIMITED, 2008
OBTAINED FROM THE
COUNTY OF SIMCOE
DATE: 10/10/08
FACED, SHOWN AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
AGREEMENTS WITH MUNICIPALITIES, TOWN REGION AND SIMCOE COUNTY.
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO A. SMART ASSOCIATES.



FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

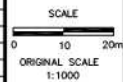
DEEP POOLS	
MACROPHYTE TRANSPLANTS	
LITTORAL SHELF	
GRAVEL SUBSTRATES	
ROOT MASSES OR LOG BUNDLES	

RELOCATED DITCH	
ACCESS ROUTE	
LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)	
GUIDE RAIL	
BELL LINE	
UNDER GROUND GAS LINE	
PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE	
OVERHEAD HYDRO AND POLE	
HYDRO POLE (TO MOVE IF X)	
ANCHOR POLE (TO MOVE IF X)	
CROSS-SECTION LOCATION	
IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING	

PLAN LEGEND

8" - - - - -	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
A2 ETC.	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
	EXISTING WELL (SEE EXTENT OF WORK NOTES)
	NEW CANAL BANK
	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
	PROPOSED LEVELLING AREA BOUNDARY
	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
	PROPOSED BUFFER
	FULL FULL RELOCATION OF EXISTING CANAL
	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
	ROW RIGHT-OF-WAY
	PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
TOWNSHIP OF KING
COUNTY OF SIMCOE
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER	03-023
DATE	JANUARY, 2009
DRAWING NUMBER	34

Extent of Work

Interval 3 Cont.

5+660 to 5+260	- Type II canal work	400m
5+550±	- CB and outlet - Engineer to locate	One (1)
5+522	- Irrigation line 200mm - Do Type A2 work	One (1)
5+435	- Irrigation line 200mm - Do Type A2 work	One (1)
5+310	- Irrigation line 200mm - Do Type A2 work	One (1)
5+260 to 5+435	- Remove guide rail	175m

Interval 3 Quantities:

Clearing Work (Part of Contract 2A)

- a) For Restoration - 10.3 ha
b) Along Dyke - approximately 25% of the 3,700m length has trees

Berm Work (Part of Contract 2A)

- 20,000m³ additional material to be brought in and graded and paid as hauling work in South Canal

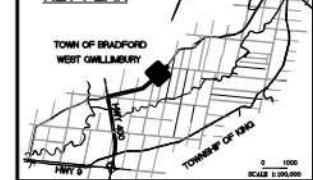
Berm Work (Part of Contract 2B)

- 85,000m³ shaping and final grading (would be 10,000m³± of material to push into berm)
- 3,422m of swale work
- 3,422m seeding and planting on berm
- Nine catchbasins and outlets

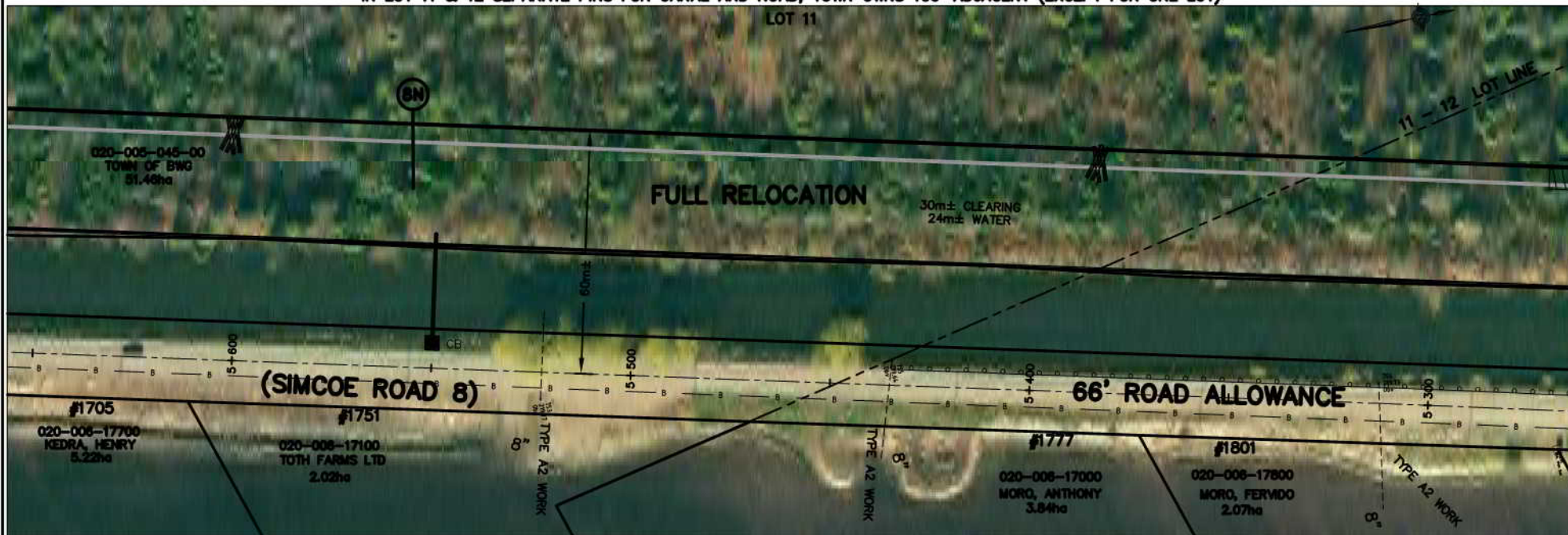
Earth work

- To excavate and backfill (relocation) 203,500m³
- Total excavation 203,500m³
- Releveling 85,000m³
- Final leveling 7,000m³
- Material to be brought in to finish berm 20,000m³
- Quantities do not include deep pool excavation

KEY PLAN



IN LOT 11 & 12 SEPARATE PINS FOR CANAL AND ROAD, TOWN OWNS 100' ADJACENT (EXCEPT FOR ONE LOT)



INTERVAL 3

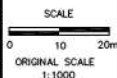
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AIR PHOTOGRAPHY
BY: S. BARNES LIMITED
DATE: 2002
SOURCE: FROM THE
COUNTY OF SIMCOE
DATE: AS SHOWN

PAVED, SHOWN AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
AGREEMENT WITH MANIPULATED TOPSOIL AND SLICE CLOSURE
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO A. SMART ASSOCIATES

No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GILLIMBURY
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

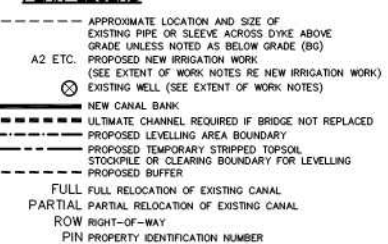
AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)



PLAN LEGEND



JOB NUMBER 03-023
DATE JANUARY, 2009
DRAWING NUMBER 36

Extent of Work

Interval 3 Cont.

5+260 to 4+982	- Type VIIA canal work	278m
5+140	- Irrigation line 200mm - abandon	One (1)
4+993	- Irrigation line 200mm - Do Type A4 work	One (1)
4+982 to 5+260	- Remove guide rail	278m
5+110 to 5+160	- Relocate anchor pole and extend line	Two (2)

Interval 4 (Part of Contract 2A and 2B)

4+982 to 4+820	- Type VIIA canal work	162m
4+982	- Irrigation line 200mm - abandon	One (1)
4+913	- Irrigation line 200mm - Do Type A2 work	One (1)
4+982 to 4+875	- Remove guide rail	107m


KEY PLAN



IN LOT 11 & 12 SEPARATE PINS FOR CANAL AND ROAD, TOWN OWNS 100' ADJACENT (EXCEPT FOR ONE LOT)






LOT 12 CON 4



INTERVAL 3  INTERVAL 4



FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)










DEEP POOLS	
MACROPHYTE TRANSPLANTS	
LITTORAL SHELF	
GRAVEL SUBSTRATES	
ROOT MASSES OR LOG BUNDLES	

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RELOCATED DITCH	
ACCESS ROUTE	
LIMIT OF CLEARING* FOR CANAL (NOT ALWAYS SHOWN)	
GUIDE RAIL	
BELL LINE	
UNDER GROUND GAS LINE	
PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE	
OVERHEAD HYDRO AND POLE	
HYDRO POLE (TO MOVE IF X)	
ANCHOR POLE (TO MOVE IF X)	
CROSS-SECTION LOCATION	
IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING	

PLAN LEGEND

8"-----	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
A2 ETC.	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
	EXISTING WELL (SEE EXTENT OF WORK NOTES)
	NEW CANAL BANK
	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
	PROPOSED LEVELLING AREA BOUNDARY
	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
	PROPOSED BUFFER
	FULL FULL RELOCATION OF EXISTING CANAL
	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
	ROW RIGHT-OF-WAY
	PIN PROPERTY IDENTIFICATION NUMBER

AIR PHOTOGRAPHY
BY: S. BARNES LIMITED
DATE: 08/01/2008
SCALE: 1:1000
PROJECT: HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO S. BARNES LIMITED

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLIMBURY
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
37

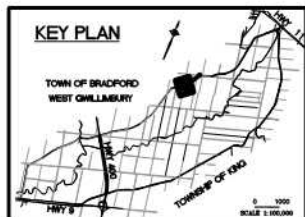
Extent of Work

Interval 4 Cont.

4+820 to 4+430	- Type VIIA canal work	390m
4+795	- Irrigation line 200mm - abandon and seal	One (1)
4+758	- Irrigation line 150mm - Do Type A4 work	One (1)
4+650	- CB and outlet - Engineer to locate	One (1)
4+532	- Irrigation line 175mm - Do Type A4 work	One (1)
4+640 to 4+430	- Remove guide rail	210m
4+750 to 4+550	- It is recommended where Canal Road is resurfaced following construction that the road be raise by 250mm in the sag with tapering to match at ends of the 200m long portion	

IN LOT 11 & 12 SEPARATE PINS FOR CANAL AND ROAD, TOWN OWNS 100' ADJACENT (EXCEPT FOR ONE LOT)

IN LOT 13 TOWN OWNS CANAL AND LANDS TO NORTH, ROAD HAS PIN



INTERVAL 4

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DYKES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

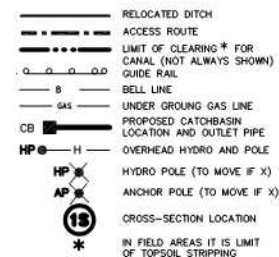
THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

AIR PHOTOGRAPHY
© J. S. BARNES LIMITED, 2008
2008 AERIAL PHOTOGRAPHY
OBTAINED FROM THE
COUNTY OF SIMCOE
PARTIAL, SHOWN AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
AGREEMENTS WITH MANIPULATES, TOP, REGION AND SIMCOE COUNTY.
PROPERTY LINES ARE BASED ON THE AVAILABLE AVAILABLE TO A BEST AVAILABLE

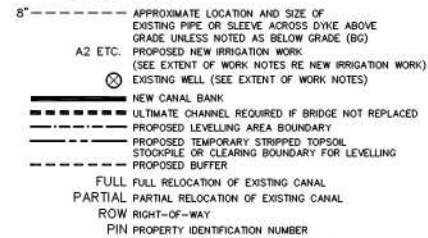


FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)



PLAN LEGEND



No.	REVISION	DATE	SCALE	ORIGINAL SCALE	1:1000	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT	HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD TOWN OF BRADFORD WEST Gwillimbury TOWNSHIP OF KING	COUNTY OF SIMCOE REGION OF YORK	K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023 DATE JANUARY, 2009 DRAWING NUMBER 38
-----	----------	------	-------	----------------	--------	---	---	------------------------------------	---	---

Extent of Work

Interval 4 Cont.

- 4+440± to 4+140± - Clear 15m path west of old abandoned channel and between old abandoned channel and new channel and then 15m west of (approximately 0.5 ha)
- Fill in old abandoned channel (approx. 2,500m³)
4+430 to 4+138 - Type VIIA canal work
4+388 - Irrigation line 200mm - Do Type A2 work
4+372 - Irrigation line 100mm - Do Type A2 work
4+362 - Irrigation line 250mm - Do Type A2 work
4+260 to 4+200 - Construct 60m cofferdam on west side of old cut *
4+430 to 4+138 - Remove guide rail

0.5 ha

One (1)
292m
One (1)
One (1)
One (1)
60m
292m

4+195 to 4+150

4+138 & 4+128

- Construct 45m cofferdam cofferdam on east side of old cut* 45m
- New bridge to be constructed (5th Line) by Town in advance of canal work
- Riprap lateral channels (50m³ rock and filter)
- Match new channel to new bridge cut *

50m³

Interval 5 (Part of Contract 2A)

4+128 to 4+050

4+051

- Type VIIA canal work
- Irrigation line 100mm - Do Type A2 work
- Probably just 50mm extension
- Remove guide rail

78m

One (1)

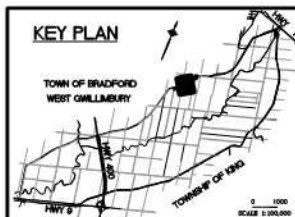
78m

Work to blend to existing bridge if necessary

See Bridge drawing which shows 3 extra cofferdams, temporary cleanout of 110m, cleanout of bridge, filling in of two notches with riprap to be provided if old bridge not replaced in advance. Also detail construction drawings would be necessary if old bridge were to be retained and joined into

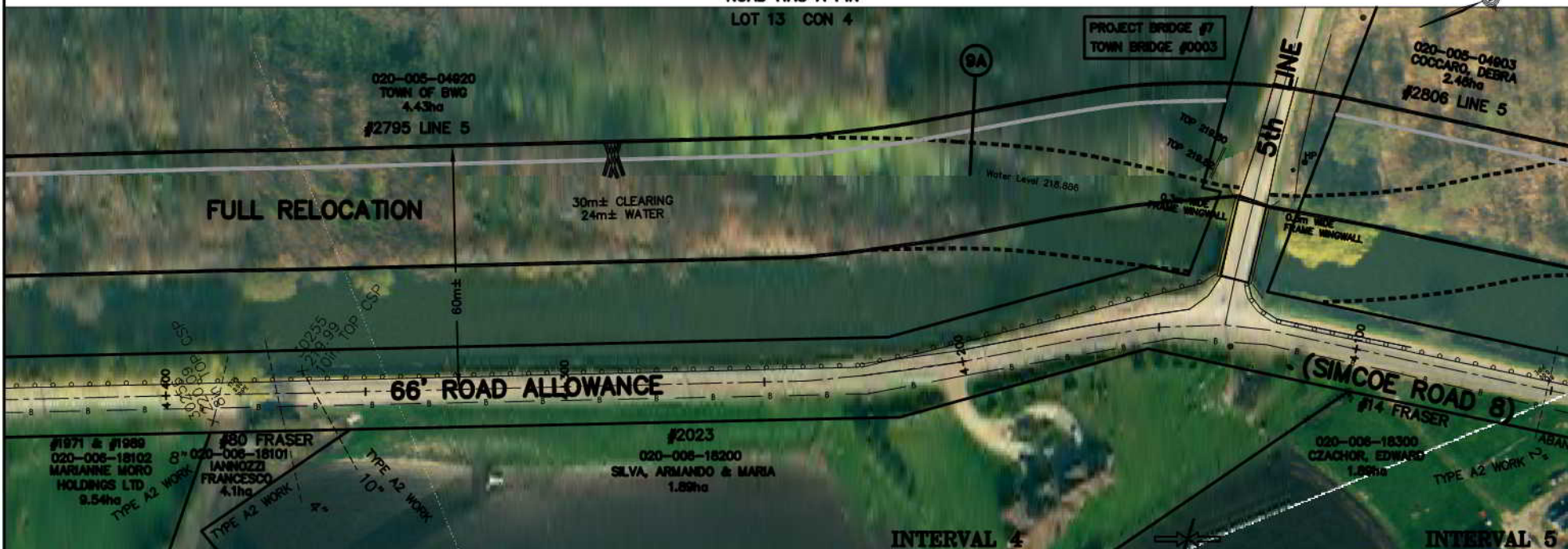
* This is on the basis new bridge exists prior to construction (See note this drawing)

KEY PLAN



TOWN OWNS CANAL AND LANDS TO NORTH ROAD HAS A PIN

LOT 13 CON 4



NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN, THE DYMES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
BY: K. SMART LIMITED
DATE: 2002
SOURCE: 2002 ORTHOPHOTOGRAPHY
OBTAINED FROM THE
COUNTY OF BRADFORD
WEST GILLIMBURY
2002 AS SHOWN

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GILLIMBURY
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
39

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

- DEEP POOLS
MACROPHYTES TRANSPLANTS
LITTORAL SHELF
GRAVEL SUBSTRATES
ROOT MASSES OR LOG BUNDLES

- RELOCATED DITCH
ACCESS ROUTE
LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
GUIDE RAIL
BELL LINE
UNDER GROUND GAS LINE
PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
OVERHEAD HYDRO AND POLE
HYDRO POLE (TO MOVE IF X)
ANCHOR POLE (TO MOVE IF X)
CROSS-SECTION LOCATION
IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

- 8" - - - - - APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
A2 ETC.
PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
EXISTING WELL (SEE EXTENT OF WORK NOTES)
NEW CANAL BANK
ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
PROPOSED LEVELLING AREA BOUNDARY
PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
PROPOSED BUFFER
FULL FULL RELOCATION OF EXISTING CANAL
PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
ROW RIGHT-OF-WAY
PIN PROPERTY IDENTIFICATION NUMBER

Extent of Work

Interval 5 Cont.

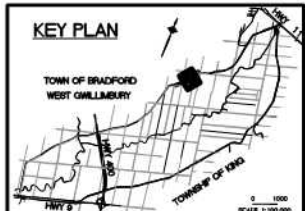
4+050 to 3+665	- Type VIIA canal work	385m
4+050 to 3+820	- Remove guide rail	230m
4+028	- Irrigation line 100mm - abandon (seal)	One (1)
3+965	- Irrigation line 300mm communal - Do Type E-C work	One (1)
3+855	- Irrigation line 300mm - Do Type A2 work	One (1)
3+788	- Irrigation line 100mm - Do Type A2 work	One (1)
3+753	- Irrigation line 200mm - Do Type A2 work	One (1)
3+750	- Lateral channel treatment at Golf Course pumping station. Ensure equivalent channel remains.	One (1)
3+700	- Irrigation line 250mm - Do Type A2 work	One (1)

OWNER TO NORTH MAY OWN CANAL
ROAD HAS PIN IN LOT 13 CON 4

CANAL AND ROAD HAVE PINS IN LOT 13 CON 5

TOWN OWNS TO NORTH OF CANAL
CANAL AND ROAD HAVE PINS
BUT ROAD MAY BE A ROW
LOT 14 CON 5

KEY PLAN



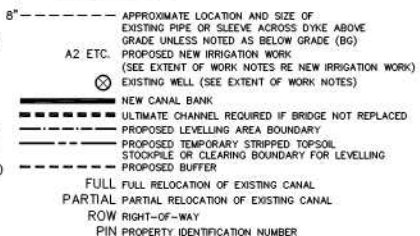
INTERVAL 5

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)



PLAN LEGEND



NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN, THE DYKES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
BY: K. SMART ASSOCIATES
DATE: 2001
SOURCE: FROM THE COUNTY OF BRADFORD WEST Gwillimbury
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO A. SMART ASSOCIATES

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
40

3+665 to 3+350

3+610 to 3+350

KEY PLAN




LOT 14 CON 5



AIR PHOTOGRAPHY
© J. S. BARNES LIMITED
2002 ORTHOPHOTOGRAPHY OR
2002 AS AIRCRAFT

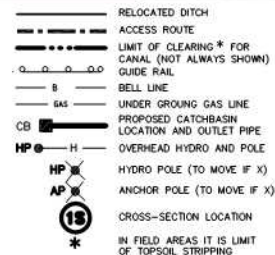
2002 ORTHOPHOTOGRAPHY
OBTAINED FROM THE
COUNTY OF SIMCOE



PARCEL MAPPING AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
AGREEMENTS WITH MUNICIPALITIES, YORK REGION AND SIMCOE COUNTY

PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO A. BARNES PHOTOGRAPHY

(FINAL LOCATION TO BE SET AT
TIME OF CONSTRUCTION)

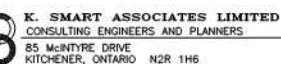


8"-----	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
A2 ETC.	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
⊗	EXISTING WELL (SEE EXTENT OF WORK NOTES)
=====	NEW CANAL BANK
=====	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
-----	PROPOSED LEVELLING AREA BOUNDARY
-----	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
-----	PROPOSED BARRIER
FULL	FULL RELOCATION OF EXISTING CANAL
PARTIAL	PARTIAL RELOCATION OF EXISTING CANAL
ROW	RIGHT-OF-WAY
PIN	PROPERTY IDENTIFICATION NUMBER

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES



JOB NUMBER	03-023
DATE	JANUARY, 2009
DRAWING NUMBER	41

Extent of Work

Interval 5 Cont.

3+350 to 3+220	- Type VIIA canal work	130m
3+350 to 3+310	- Existing guide rail may remain unless county elects to remove it	
	- If contractor wishes to remove it, to facilitate his work, and if county agrees, it may be removed but no additional payment will be made	
3+326	- Irrigation line 100mm - Do Type A2 work	One (1)
3+285	- Irrigation line 300mm - Do Type A2 work	One (1)
3+220 to 3+108	- Type I canal work	112m
3+202	- Irrigation line 200mm - Do Type A2 work	One (1)

3+185

3+165 to 3+115

3+163

3+220 to 3+108

3+108 to 3+098

- Irrigation line 200mm - Do Type A2 work
- Well outlet extension G-E work
- Construct new fence on north bank of new canal to match existing (vinyl coated chain link, 1.5m high)
- Irrigation line 200mm - Seal and abandon
- Cofferdam required (If steel use 12m lengths)
- A 5m work area may be used to north of canal but topsoil and sod restoration required.
- Clean bottom through Simcoe Road bridge (Type VI canal work)
- Place recessed rock riprap protection on filter at two ditch entries (approx. 50m³ of rock)

One(1)

One (1)

50m

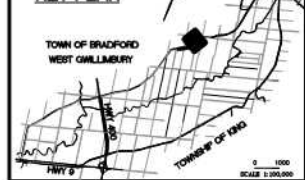
One (1)

112m

10m

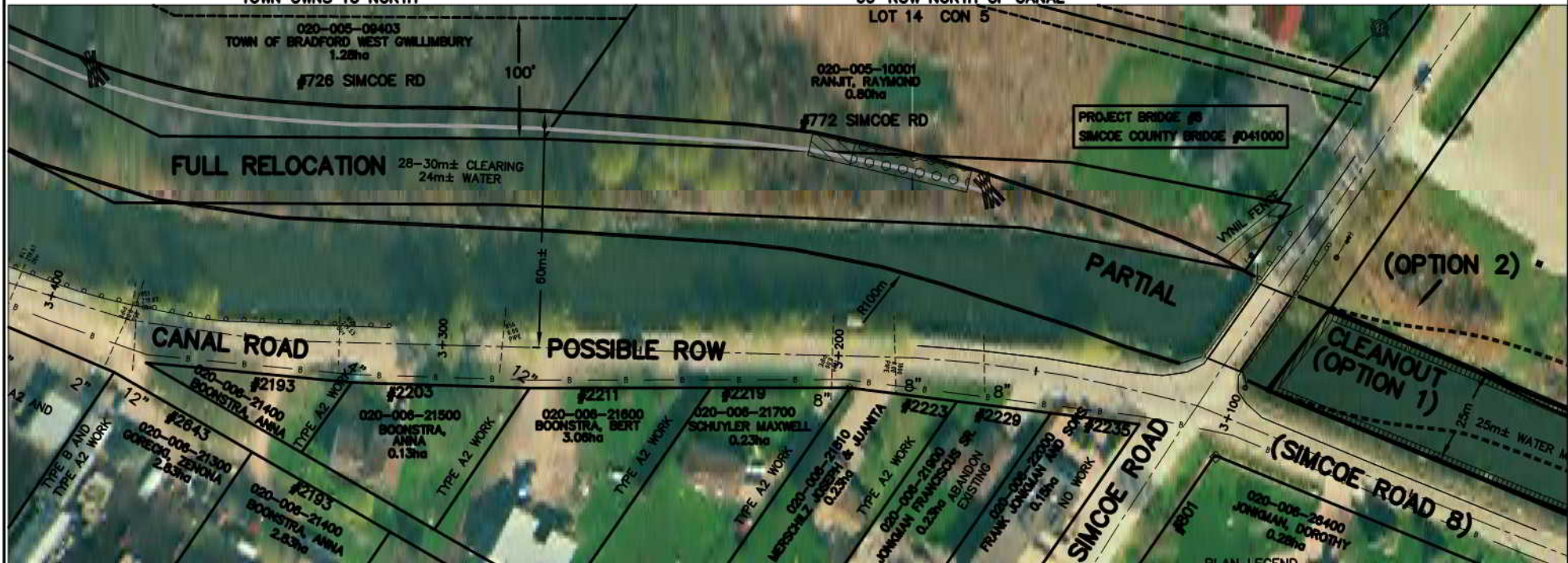
50m³

KEY PLAN



CANAL AND ROAD HAVE PINS, BUT ROAD MAY BE ON A ROW, TOWN OWNS TO NORTH

CANAL AND ROAD HAVE PINS, 66' ROW NORTH OF CANAL



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Interval 5 Quantities:

Clearing Work in Interval 5

(No Berm) (Part of Contract 2A)

Clearing for restoration - 2.8 ha
Clearing along dyke - approx 15% of the 1,030m length has trees but these may remain wherever possible since no berm is required.

Earth work

- To excavate and backfill (relocate) 53,500m³

- Total excavation 53,500m³

- Final leveling 26,000m³

- Quantities do not include deep pool excavation

INTERVAL 5

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

- DEEP POOLS
- MACROPHYTE TRANSPLANTS
- LITTORAL SHELF
- GRAVEL SUBSTRATES
- ROOT MASSES OR LOG BUNDLES

RELOCATED DITCH

- ACCESS ROUTE
- LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
- GUIDE RAIL
- BELL LINE
- UNDER GROUND GAS LINE
- PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
- OVERHEAD HYDRO AND POLE
- HYDRO POLE (TO MOVE IF X)
- ANCHOR POLE (TO MOVE IF X)
- CROSS-SECTION LOCATION
- IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

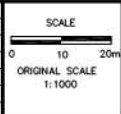
PLAN LEGEND

- APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
- PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
- EXISTING WELL (SEE EXTENT OF WORK NOTES)
- NEW CANAL BANK
- ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
- PROPOSED LEVELLING AREA BOUNDARY
- PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
- PROPOSED BUFFER
- FULL RELOCATION OF EXISTING CANAL
- PARTIAL RELOCATION OF EXISTING CANAL
- ROW RIGHT-OF-WAY
- PIN PROPERTY IDENTIFICATION NUMBER

INTERVAL 6

AIR PHOTOGRAPHY
BY: K. SMART ASSOCIATES
DATE: 2001
SOURCE: FROM THE COUNTY OF YORK
DATE: 2001
PARCELS, SHAPES AND PROPERTY IDENTIFICATION DATA SUPPLIED THROUGH LANDQUARTER WITH MANIPULATED TOWN RECORD AND SIMCOE COUNTY PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO K. SMART ASSOCIATES

No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLIMBURY
COUNTY OF SIMCOE
TOWNSHIP OF KING
AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

	K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023 DATE JANUARY, 2009 DRAWING NUMBER 42

3+098 to 2+830

- 268m

2+895
2+753
2+830 to 2+750
2+830 to 2+715

- | | |
|--|---------|
| - Irrigation line 300mm - Do Type A2 | One (1) |
| - Irrigation line 250mm - Do Type A2 | One (1) |
| - Type 1 canal work | 80m |
| - New cofferdam required (it could be continuation of Type IV work if Option 2 is used to west and 1,400m ² more ECB would be necessary | 115m |
| - May be any of approved materials. | |
| - Haul any material made surplus due to embankment type of cofferdam | |
| - Clay cofferdam is costed as part of Type I work | |

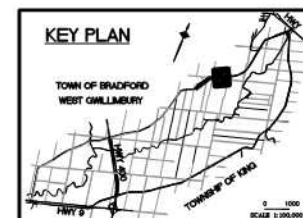
One (1)
One (1)
80m

115m

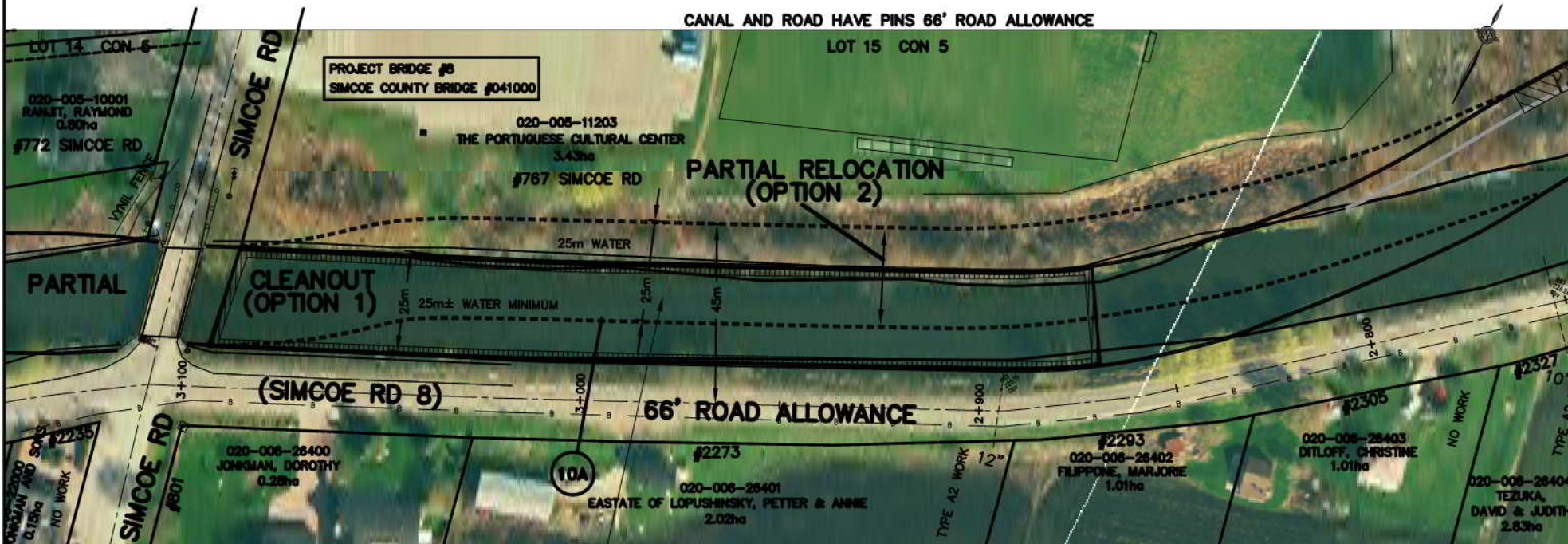
Note:

If Option 1 implemented approx. 320m of guide rail is necessary

TOWN OF BRADFORD



LOT 15 CON 5




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AIR PHOTOGRAPHY
© J. D. BARNES LIMITED,
2002 ORTHOPHOTOGRAPHY OF
2007 AS SHOWN

2002 ORTHOPHOTOGRAPHY
OBTAINED FROM THE
COUNTY OF SIMCOE



PARCEL SHAPING AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
AGREEMENTS WITH MUNICIPALITIES, YORK REGION AND SIMCOE COUNTY

PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO A. MAINT. ASSOCIATES

Deep pool here only if a cleanout (Option 1) —
is implemented
To be shifted to East if Option 2 is implemented

INTERVAL 6

FISH HABITAT LEGEND

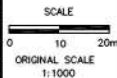
(FINAL LOCATION TO BE SET AT
TIME OF CONSTRUCTION)

- DEEP POOLS
MACROPHYTE
TRANSPLANTS
LITTORAL SHELF
GRAVEL
SUBSTRATES
ROOT MASSES
OR LOG BUNDLES

- | | |
|--|--|
| | RELOCATED DITCH |
| | ACCESS ROUTE |
| | LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN) |
| | GUIDE RAIL |
| | BELL LINE |
| | GAS |
| | UNDERGROUND GAS LINE |
| | PROPOSED CATCHBASIN |
| | LOCATION AND OUTLET PIPE |
| | OVERHEAD HYDRO AND POLE |
| | HYDRO POLE (TO MOVE IF X) |
| | ANCHOR POLE (TO MOVE IF X) |
| | CROSS-SECTION LOCATION |
| | IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING |

PLAN LEGEND

- | | |
|-------------|---|
| 8" ----- | APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG) |
| (N) A2 ETC. | PROPOSED NEW IRRIGATION WORK (SEE EXTENT WORK NOTES FOR NEW IRRIGATION WORK) |
| ⊗ | EXISTING WELL (SEE EXTENT OF WORK NOTES) |
| ===== | NEW CANAL BANK |
| ----- | ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED |
| ----- | PROPOSED LEVELLING AREA BOUNDARY |
| ----- | PROPOSED TEMPORARY STRIPPED TOPSOIL |
| (X) ----- | STOOPPILE OR CLEARING BOUNDARY FOR LEVELLING |
| (X) ----- | PROPOSED SLOPE |
| | FULL FULL RELOCATION OF EXISTING CANAL |
| | PARTIAL PARTIAL RELOCATION OF EXISTING CANAL |
| ROW | RIGHT-OF-WAY |
| | PIN PROPERTY IDENTIFICATION NUMBER |

[illegible]

HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
 TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE
 TOWNSHIP OF KING REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES



K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER	03-023
DATE	JANUARY, 2009
DRAWING NUMBER	43

Extent of Work

Interval 6 Cont.

2+750 to 2+715

- Type I canal work (see previous page for notes re cofferdams)

35m

2+715 to 2+400

- Type VIIA canal work

315m

2+494

- Irrigation line 150mm - Do Type A2 work

One (1)

2+505 to 2+400

- Existing guide rail to remain unless County elects to remove it

- If contractor wishes to remove it, to facilitate his work, and if county agrees, it may be removed but no additional payment will be made

Interval 6 Quantities:

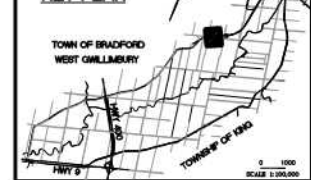
Clearing for Interval 6 (Part of Contract 3A)

- Clearing for relocation - 1.3 ha (if Option 2)
- Clearing along dyke - approx. 25% of the 698m length has trees but these may remain wherever possible since no berm is required (if Option 1 is implemented)
- If Option 2 is implemented approx. 100m of length along dyke will be necessary to be cleaned

Earth work (No berm work to do)

- To excavate and backfill 33,500m³
- Total excavation 33,500m³
- Final leveling 20,000m³
- Quantities do not include deep pool excavation

KEY PLAN



CANAL AND ROAD HAVE PINS 66' ROAD ALLOWANCE

LOT 15 CON 5

020-005-11200
BRADFORD EAST DEVELOPMENTS
21.45ha

#80 SIMCOE RD

020-005-11203
THE PORTUGUESE CULTURAL CENTER
3.43ha
#767 SIMCOE RD

PARTIAL

30m± CLEARING
26m± WATER

FULL RELOCATION

ROAD ALLOWANCE

#2327
020-008-28404
TEZUKA, DAVID & JUDITH
2.83ha

#2351
020-008-28500
COLE, BEATRICE
2.07ha

(SIMCOE ROAD 8)

#2373
020-008-28600
VAN WISSEN, CORNELIS & MARIA
2.89ha

SIMCOE ST
ROAD ALLOWANCE

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DYKES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
BY: S. BARNES LIMITED
DATE: 03/01/2003
SCALE: 1:1000
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO S. BARNES LIMITED



FISH HABITAT LEGEND

- DEEP POOLS
- MACROPHYTE TRANSPLANTS
- LITTORAL SHELF
- GRAVEL SUBSTRATES
- ROOT MASSES OR LOG-BUNDLES

- RELOCATED DITCH
- ACCESS ROUTE
- LIMIT OF CLEARING* FOR CANAL (NOT ALWAYS SHOWN)
- GUIDE RAIL
- BELL LINE
- GAS
- UNDER GROUND GAS LINE
- PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
- OVERHEAD HYDRO AND POLE
- HYDRO POLE (TO MOVE IF X)
- ANCHOR POLE (TO MOVE IF X)
- CROSS-SECTION LOCATION
- IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

- APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
- PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
- EXISTING WELL (SEE EXTENT OF WORK NOTES)
- NEW CANAL BANK
- ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
- PROPOSED LEVELLING AREA BOUNDARY
- PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
- PROPOSED BUFFER
- FULL FULL RELOCATION OF EXISTING CANAL
- PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
- ROW RIGHT-OF-WAY
- PIN PROPERTY IDENTIFICATION NUMBER

INTERVAL 6

INTERVAL 7

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GILLIMBURY
TOWNSHIP OF KING
COUNTY OF SIMCOE
REGION OF YORK
AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

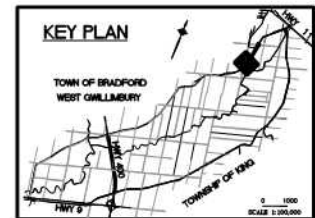
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
44

Extent of Work

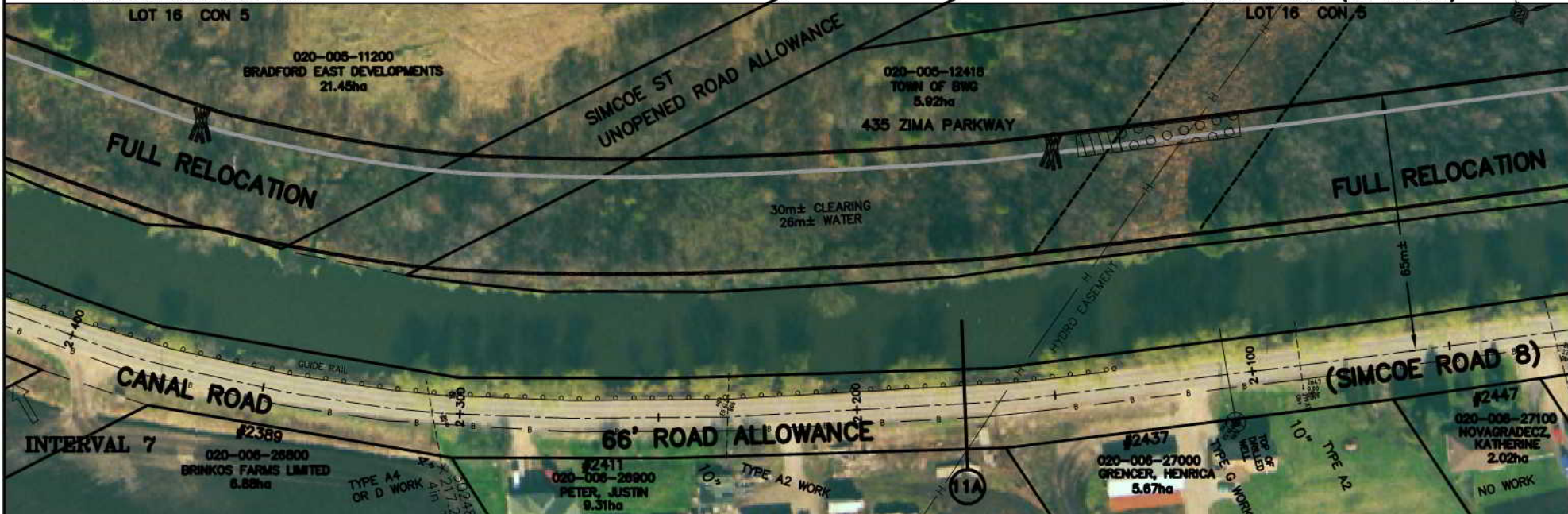
Interval 7 (Part of Contracts 3A and 3B)

2+400 to 2+020	- Type VIIIB canal work.	380m
2+400 to 2+135	- Existing guide rail may remain unless county elects to remove it	
	- If contractor wishes to remove it, to facilitate his work, no additional payment will be made	
2+306	- Irrigation line 100mm - Do Type A4 or Type D (Type D work is costed)	One (1)
2+233	- Irrigation line 250mm - Do Type A2 work	One (1)
2+165	- Utility crossing - overhead hydro	
2+106	- Well location - may be outlet to extend Type G-E Work - Engineer to advise	One (1)
2+088	- Irrigation line 250mm - Do Type A2 work	One (1)
2+023	- Irrigation line 250mm - Abandon and seal	One (1)



CANAL AND ROAD HAVE PINS
LOT 16 CON 5

CANAL (75'±) ROAD (66'±) HAVE PINS,
TOWN OWNS TO NORTH (197' OR 60m)



INTERVAL 7

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AIR PHOTOGRAPHY
BY: K. SMART ASSOCIATES
DATE: 03/01/2009
SCALE: 1:1000
PROJECT: HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO K. SMART ASSOCIATES

FISH HABITAT LEGEND

DEEP POOLS	[Symbol]
MACROPHYTE TRANSPLANTS	[Symbol]
LITTORAL SHELF	[Symbol]
GRAVEL SUBSTRATES	[Symbol]
ROOT MASSES OR LOG BUNDLES	[Symbol]

RELOCATED DITCH	[Symbol]
ACCESS ROUTE	[Symbol]
LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)	[Symbol]
GUIDE RAIL	[Symbol]
BELL LINE	[Symbol]
UNDER GROUND GAS LINE	[Symbol]
PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE	[Symbol]
OVERHEAD HYDRO AND POLE	[Symbol]
HYDRO POLE (TO MOVE IF X)	[Symbol]
ANCHOR POLE (TO MOVE IF X)	[Symbol]
CROSS-SECTION LOCATION	[Symbol]
IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING	[Symbol]

PLAN LEGEND

8"-----	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
A2 ETC.	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
⊗	EXISTING WELL (SEE EXTENT OF WORK NOTES)
---	NEW CANAL BANK
---	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
---	PROPOSED LEVELLING AREA BOUNDARY
---	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
---	PROPOSED BUFFER
---	FULL FULL RELOCATION OF EXISTING CANAL
---	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
---	ROW RIGHT-OF-WAY
---	PIN PROPERTY IDENTIFICATION NUMBER

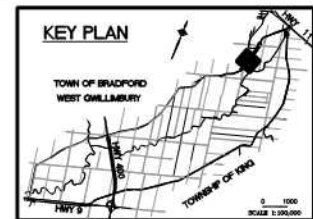
No.	REVISION	DATE	SCALE	0 10 20m	ORIGINAL SCALE 1:1000	K. A. SMART ASSOCIATES LIMITED	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD TOWN OF BRADFORD WEST Gwillimbury COUNTY OF SIMCOE TOWNSHIP OF KING REGION OF YORK	K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023 DATE JANUARY, 2009 DRAWING NUMBER 45
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Extent of Work

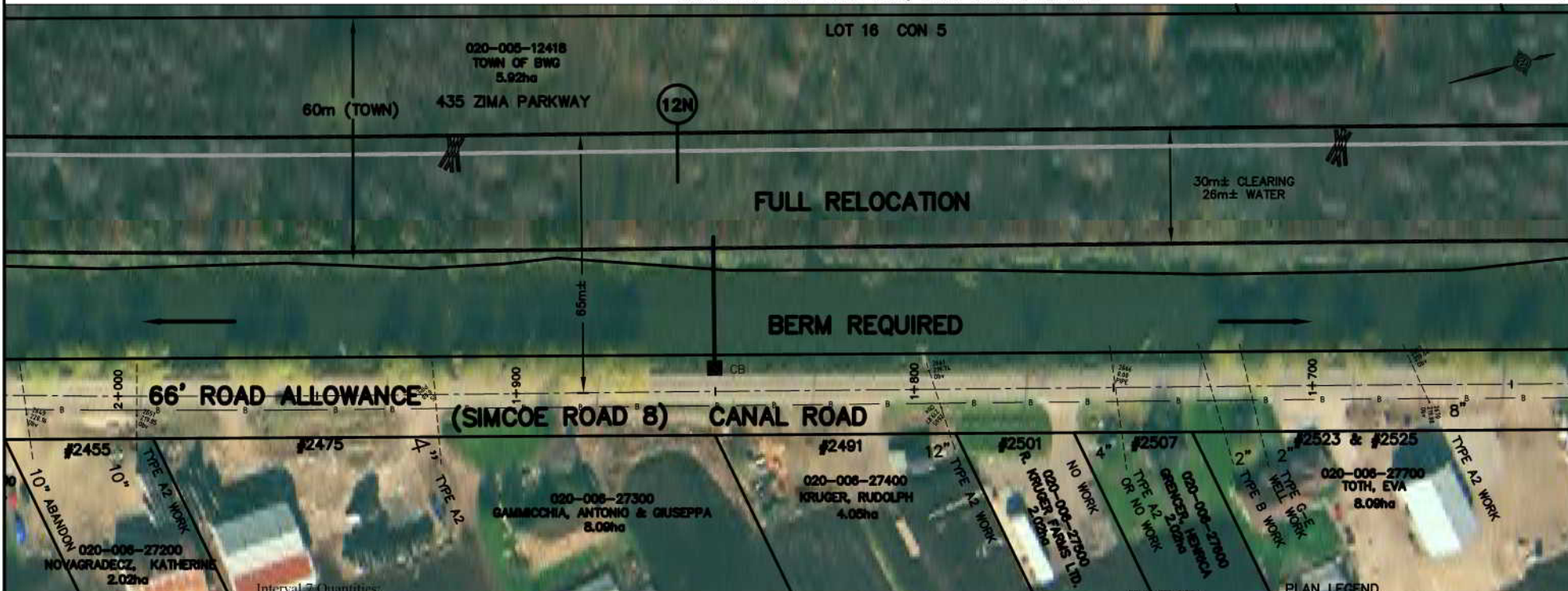
Interval 7 Cont.

2+020 to 2+000 & 1+700 to 1+650

2+000 to 1+700	- Type VIIB canal work	70m	1-795	- Irrigation line 300mm - Do Type A2 work	One (1)
	- Need berm. Use canal Type II	300m	1-749	- Irrigation line 100mm - Do Type A2 work	One (1)
	- Need one CB and outlet - Engineer to locate (approx. Sta. 1+850±)	One (1)	1-725	- Irrigation line 50mm - Do Type B work	One (1)
	- Use more clayey material for the berm from elsewhere		1-715	- Irrigation line 50mm - Do Type G-E work	One (1)
1+995	- Irrigation line 250mm - Do Type A2 work	One (1)	1-672	- Irrigation line 200mm - Do Type A2 work	One (1)
1+920	- Irrigation line 100mm - Do Type A2 work	One (1)			
1+800	- Lateral ditch treatment	One (1)			



CANAL AND ROAD HAVE PINS, TOWN OWNS TO NORTH



Interval 7 Quantities:

Clearing in Interval 7 (Part of Contract 3A)

For relocation - 2.7 ha

At edge of dyke - approx. 40% of the 1070m length has trees but these may remain wherever possible except at berm location (2+000 to 1+700) where there may be 120m length to clear

Berm work (Part of Contract 3A) (300m to do)

- 1,000m³ additional material to be brought in and leveled and paid as hauling in South Canal (Sta. 2+000 to 1+700)

Berm work (Part of Contract 3B)

- 300m long (1+700 to 2+000)
- 9,000m² shaping and final grading
- 300m of swale work
- 300m³ seeding and planting on berm
- One catchbasin and outlet

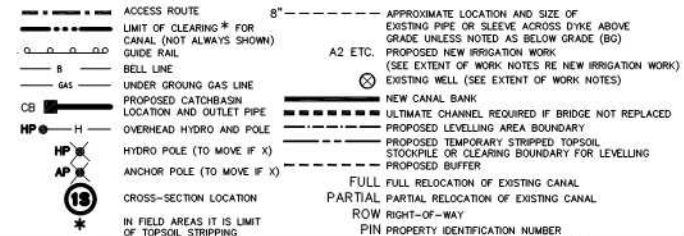
Earth work

- To excavate and backfill (relocation) 58,000m³
- Total excavation 58,000m³
- Releveling 9,000m²
- Final leveling 21,000m²
- Material to be brought in to finish berm 1,000m³
- Quantities do not include deep pool excavation

INTERVAL 7

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

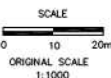


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AIR PHOTOGRAPHY
BY: S. BARNES, MARCH 2002
DATE: 03/03/2003
SCALE: 1:1000
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO S. BARNES ASSOCIATES

No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER	03-023
DATE	JANUARY, 2009
DRAWING NUMBER	46

Extent of Work

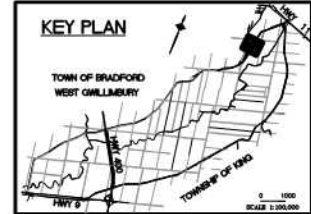
Interval 7 Cont.

1+650 to 1+460	-Type VIIIB canal work	190m
1+618	-Irrigation line 400mm - Do Type A2 work	One (1)
1+559	-Irrigation line 400mm - Do modified Type A2 cap or capping plate only	One (1)
1+500	-Irrigation line 250mm - Do Type A2 work	One (1)
1+400 to 1+370	-Type I canal work	90m
1+444	-Irrigation line 200mm - Do Type A2 work	One (1)
1+460 to 1+370	-90m long cofferdam required or partial relocation slope with ECB)	90m
	-New canal bottom to blend with small scheme canal bottom	
1+395	-Irrigation line 200mm - Do Type A2 work	One (1)
1+358	-Irrigation line 250mm - Do Type A2 work	One (1)

Interval 8 (Part of Contract 3A)

1+370 to 1+290 - Type III-HL canal work 80m

KEY PLAN



SEPARATE PINS FOR CANAL AND ROAD, TOWN OWNS TO NORTH

020-006-12418
TOWN OF BWO
5.92ha

LOT 16 CON 5

435 ZIMA PARKWAY

30m± CLEARING
26m± WATER

FULL RELOCATION

30m
POSSIBLE ACCESS FROM WEST

SMALL SCHEME DYKE PRIVATELY OWNED
ROAD AND CANAL HAVE A PIN

020-006-12401
VAN DYKE, ANDREW
3.76ha

#417 MORRIS RD

ROAD ALLOWANCE
BETWEEN CON 5 & 6

PARTIAL

CLEANOUT

66' ROAD ALLOWANCE

(SIMCOE ROAD 8)

CANAL ROAD

ROW

#2507
020-006-27700
TOTH, EVA
8.09ha

#2537
020-006-28000
R. KRUGER FARMS LTD.
4.05ha

#2549
020-006-28100
CHREPTIUK, NICK & ANTONINA
4.05ha

#2559
020-006-28200
GRENCER, HENRICA
4.05ha

#2571
020-006-28300
HOVING FARMS LIMITED
4.05ha

#2593
020-006-28400
HOVING, GEORGE & JOANNE
6.07ha

INTERVAL 7

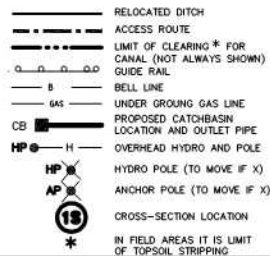
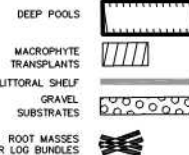
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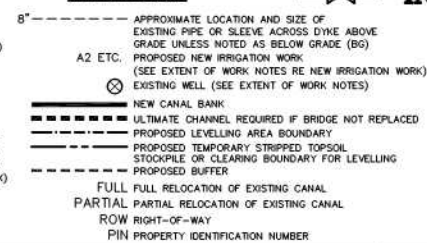
AIR PHOTOGRAPHY
© J. B. SMITH LIMITED
500 GERRARD STREET EAST
TORONTO, ONTARIO M5E 1B5
FACED, SHOWN AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH LANDSCAPE WITH MANIPULATED TOPSOIL AND SLICE COUNTRY PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO A. SMART ASSOCIATES

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)



PLAN LEGEND



INTERVAL 8

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GILLIMBURY
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

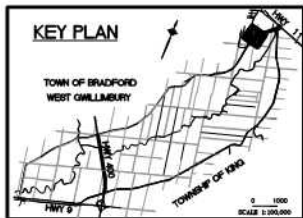
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
47

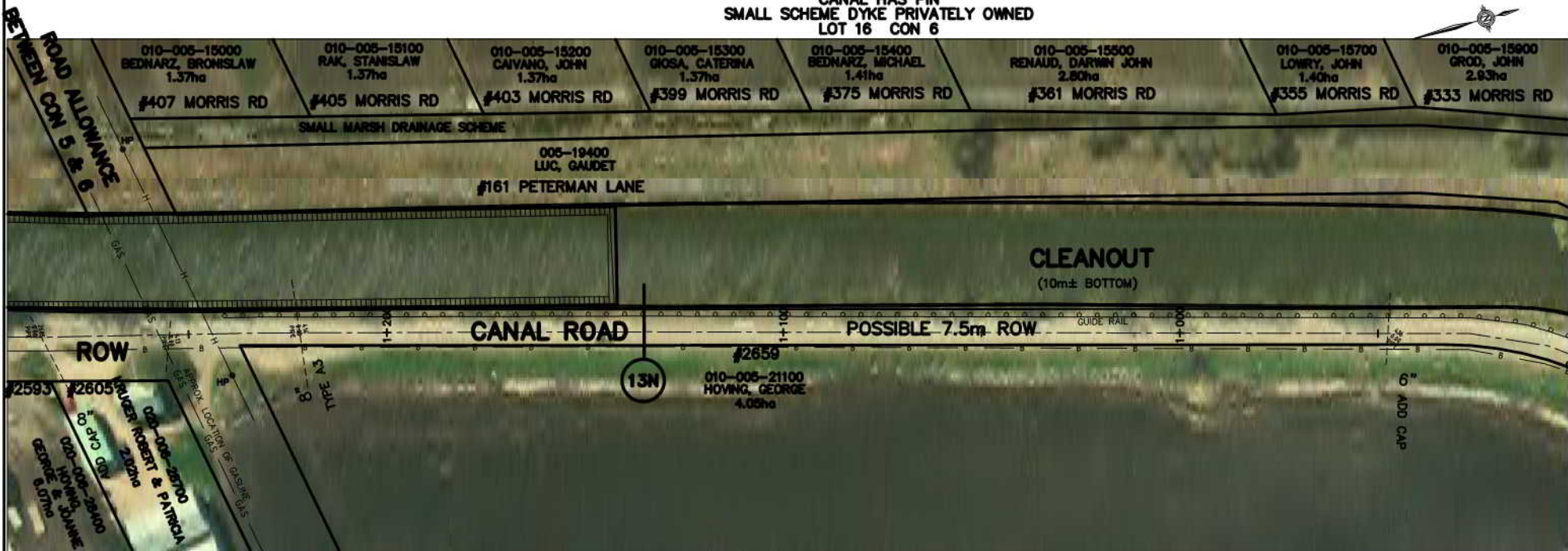
Extent of Work

Interval 8 Cont.

1-290 to 940	- Type III-HL canal work	350m
1-289	- Irrigation line 200mm - Do Type A3 (250mm)	One (1)
1-245±	- Utility line crossing - overhead hydro	
1-260±	- Utility line crossing - gasoline in canal bottom	
	- To be pre-located and protected	
1-245 to 940	- Existing guide rail may remain unless county elects to remove it	
	- If contractor wishes to remove it, to facilitate his work, and if county agrees, it may be removed but no additional payment will be made	
1-222	- Irrigation line 300mm - Do Type A3 work	One (1)
948	- Irrigation line 150mm - Add cap or capping plate	One (1)



**CANAL ROAD IS POSSIBLE 7.5m ROW (24.6')
CANAL HAS PIN
SMALL SCHEME DYKE PRIVATELY OWNED
LOT 16 CON 6**



**COUNTY OF SIMCOE
JURISDICTION
RE ROAD**

**TOWN OF BRADFORD
WEST-GWILLUMBY
JURISDICTION
RE ROAD**

INTERVAL 8

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

DEEP POOLS	
MACROPHYTE TRANSPLANTS	
LITTORAL SHELF	
GRAVEL SUBSTRATES	
ROOT MASSES OR LOG BUNDLES	

	RELOCATED DITCH
	ACCESS ROUTE
	LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
	GUIDE RAIL
	BELL LINE
	UNDER GROUND GAS LINE
	PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
	OVERHEAD HYDRO AND POLE
	HYDRO POLE (TO MOVE IF X)
	ANCHOR POLE (TO MOVE IF X)
	CROSS-SECTION LOCATION
	IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
	A2 ETC. PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
	EXISTING WELL (SEE EXTENT OF WORK NOTES)
	NEW CANAL BANK
	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
	PROPOSED LEVELLING AREA BOUNDARY
	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
	PROPOSED BUFFER
	FULL FULL RELOCATION OF EXISTING CANAL
	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
	ROW RIGHT-OF-WAY
	PIN PROPERTY IDENTIFICATION NUMBER

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AIR PHOTOGRAPHY
BY: 3 PHOTOGRAPHY
DATE: 2002
SOURCE: FROM THE COUNTY OF SIMCOE
DATE: 2001
PARCEL SHAPING AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH AIRPHOTOGRAPHY WITH MANIPULATED TOPSOIL STRIPPING AND BUFFER COUNTRY PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO A. SMART ASSOCIATES

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLUMBY
TOWNSHIP OF KING
COUNTY OF SIMCOE
REGION OF YORK
AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MONTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

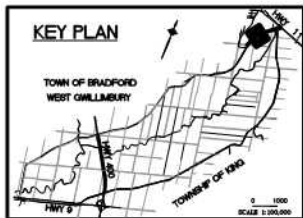
JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
48

Extent of Work

Interval 8 Cont.

940 to 640	- Type III-HL canal work	300m
640 to 590	- Type III-II canal	50m
797	- Irrigation line 125mm - add cap or capping plate	One (1)
791	- Irrigation line 50mm - add cap or capping plate	One (1)
789	- Irrigation line 100mm - add cap or capping plate	One (1)
786	- Irrigation line 150mm - add cap or capping plate	One (1)
751	- Irrigation line 150mm - add cap or capping plate	One (1)
701	- Irrigation line 100mm - Do New Type A3 work	One (1)
621	- Irrigation line 250mm - Add cap or capping plate	One (1)

940 to 590 - Existing guide rail may remain unless town elects to remove it
 - If contractor wishes to remove it, to facilitate his work,
 and if town agrees, it may be removed but no additional payment will be made



CANAL SEPARATE PIN
SMALL SCHEME DYKE PRIVATELY OWNED
CANAL ROAD IS POSSIBLE 7.5m ROW (24.6') IN PART AND IS 12m (40') ROW IN PART



NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DYES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
 2002 ORTHOPHOTOGRAPHY
 BY: K. SMART LIMITED
 DATE: 03/01/2003
 2007 AS SHOWN



No.	REVISION	DATE

SCALE
 0 10 20m
 ORIGINAL SCALE
 1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
 HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
 TOWN OF BRADFORD WEST GILLIMBURY
 TOWNSHIP OF KING
 COUNTY OF SIMCOE
 REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

RELOCATED DITCH	ACCESS ROUTE	8"-----	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)	GUIDE RAIL	A2 ETC.	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
B	BELL LINE	⊗	EXISTING WELL (SEE EXTENT OF WORK NOTES)
GAS	UNDER GROUND GAS LINE	-----	NEW CANAL BANK
CB	PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE	-----	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
HP	OVERHEAD HYDRO AND POLE	-----	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
HP	HYDRO POLE (TO MOVE IF X)	-----	PROPOSED BUFFER
AP	ANCHOR POLE (TO MOVE IF X)	-----	FULL FULL RELOCATION OF EXISTING CANAL
15	CROSS-SECTION LOCATION	-----	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
*	IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING	-----	ROW RIGHT-OF-WAY
		-----	PIN PROPERTY IDENTIFICATION NUMBER

K. SMART ASSOCIATES LIMITED
 CONSULTING ENGINEERS AND PLANNERS
 85 MCINTYRE DRIVE
 KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
 DATE
JANUARY, 2009
 DRAWING NUMBER
49

Extent of Work

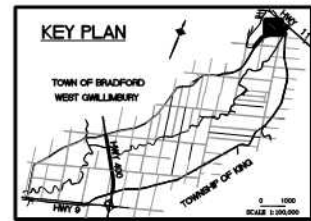
Interval 8 Cont.

590 to 200	- Type III-H canal	390m
581	- Irrigation line 50mm - add cap or capping plate	One (1)
567	- Irrigation line 50mm - add cap or capping plate	One (1)
466	- Irrigation line 100mm - add cap or capping plate	One (1)
425	- Irrigation line 50mm - add cap or capping plate	One (1)
363	- Irrigation line 100mm - add cap or capping plate	One (1)
338	- Irrigation line 200mm - add cap or capping plate	One (1)
298	- Irrigation line 250mm - add cap or capping plate	One (1)

- 610 to 200 - Grade and resurface Peterman road
 590 to 200 - Existing guide rail may remain unless town elects to remove it
 - If contractor wishes to remove it, to facilitate his work,
 and if town agrees, it may be removed but no additional payment will be made

* Could grout sleeve, if more appropriate

410m



**CANAL HAS PIN,
SMALL SCHEME DYKE
PRIVATELY OWNED**

CANAL ROAD IS ROW

**CANAL HAS PIN
SMALL SCHEME DYKE OWNED BY TOWN
CANAL ROAD IS ROW**

MAIN DYKE IS ROW



INTERVAL 8

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DYKES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

THE POSITION OF POLE LINES, CONDOLTS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

AIR PHOTOGRAPHY
 2002 ORTHOPHOTOGRAPHY
 BY: S. BARNES LIMITED
 500 GERRARD STREET EAST
 TORONTO, ONTARIO M5E 1B3
 PARCELS, SHAPES AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH AIRPHOTOGRAPHY WITH MANIPULATED TOP, BOTTOM AND SLICE CUTOFFS
 PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO S. BARNES ASSOCIATES

No.	REVISION	DATE

SCALE
 0 10 20m
 ORIGINAL SCALE
 1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
 HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
 TOWN OF BRADFORD WEST GILLIMBURY
 TOWNSHIP OF KING
 COUNTY OF SIMCOE
 REGION OF YORK
AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
 CONSULTING ENGINEERS AND PLANNERS
 85 MCINTYRE DRIVE
 KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
 DATE
JANUARY, 2009
 DRAWING NUMBER
50

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

- DEEP POOLS
- MACROPHYTE TRANSPLANTS
- LITTORAL SHELF
- GRAVEL SUBSTRATES
- ROOT MASSES OR LOG BUNDLES

- RELOCATED DITCH
- ACCESS ROUTE
- LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
- GUIDE RAIL
- BELL LINE
- UNDER GROUND GAS LINE
- PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
- OVERHEAD HYDRO AND POLE
- HYDRO POLE (TO MOVE IF X)
- ANCHOR POLE (TO MOVE IF X)
- CROSS-SECTION LOCATION
- IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

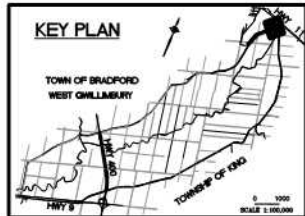
- 8" - - - - - APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE, UNLESS NOTED AS BELOW GRADE (BG)
- A2 ETC. PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
- EXISTING WELL (SEE EXTENT OF WORK NOTES)
- NEW CANAL BANK
- ULTIMATE CHANNEL REQUIRED IF BOUNDARY NOT REPLACED
- PROPOSED LEVELLING AREA BOUNDARY
- PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
- PROPOSED BUFFER
- FULL FULL RELOCATION OF EXISTING CANAL
- PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
- ROW RIGHT-OF-WAY
- PIN PROPERTY IDENTIFICATION NUMBER

Extent of Work

Interval 8 Cont.

200 to 005	- Type III-H canal work	195m
	- Grade and resurface Peterman road	195m
029	- Irrigation line 250mm - add cap or capping plate	One (1)
027	- Irrigation line 250mm - add cap or capping plate	One (1)
005 to -005	- Clean bottom of Bridge 12 and dispose of with material disposal from widening area.	10m
	Type VI canal work.	

000 to -150	- Type III-L canal work	150m
	- Clear 150m length of peninsula, 20m wide (0.30 ha)	
	- Construct rock embankment to contain leveled material (100m ³ rock)	100m ³
	- Widen water body to give 26m water surface and clean bottom. Dispose of materials upstream of new rock cofferdam	
200 to 000	- Existing guide rail may remain unless town elects to remove it	
	- If contractor wishes to remove it, to facilitate his work, and if town agrees, it may be removed but no additional payment will be made	



PIN FOR SMALL SCHEME DYKE (OWNED BY TOWN) AND CANAL 12m ROW FOR CANAL ROAD

LOT 17 CON 6

LOT 18 CON 6

010-005-19000
CAIETTA, ANDREA
5.44ha
#270 BRIDGE ST

010-005-19100
BRADFORD DRAINAGE COMMISSION
0.74ha
#33 PETERMAN LANE

PETERMAN LANE

CANAL ROAD

CLEANOUT
(10m± BOTTOM)

12m ROW

PROJECT BRIDGE #12
COUNTY BRIDGE #6134

CANAL ROAD

CLEANOUT & WIDENING
(10m± BOTTOM)
26m MINIMUM WATER

#2835
010-005-19800
PIRITANO, ANTONIO & ANNE
3.23ha

#670
010-005-19500
PUMPHOUSE
BRADFORD DRAINAGE COMMISSION

DISPOSAL SITE
ROCK EMBANKMENT
SIMCOE COUNTY

Interval 8 Quantities:

(Part of Contract 3A)

Earth work (No berm work)

- To haul during excavation 11,000m³
- To excavate and level 12,000m³
- Total excavation 23,000m³
- To haul later from leveling 6,500m³
- Final leveling 10,000m³
- Quantities do not include deep pool excavation)

Clearing in Interval 8 (Part of Contract 3A)

Variable along small scheme dyke - for 800m is continuous (approx 1.4 ha), for 570m is very scattered (10 trees only) (allow 0.1 ha)
Approximately 0.3 ha for lower end widening
At edge of Canal Road, approximately 90% of the 1370m length has trees, but these may remain except where necessary to remove.

INTERVAL 8

FISH HABITAT LEGEND

- DEEP POOLS
- MACROPHYTE TRANSPLANTS
- LITTORAL SHELF
- GRAVEL SUBSTRATES
- ROOT MASSES OR LOG BUNDLES

- RELOCATED DITCH
- ACCESS ROUTE
- LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
- GUIDE RAIL
- BELL LINE
- UNDER GROUND GAS LINE
- LOCATION AND OUTLET PIPE
- OVERHEAD HYDRO AND POLE
- HYDRO POLE (TO MOVE IF X)
- ANCHOR POLE (TO MOVE IF X)
- CROSS-SECTION LOCATION
- IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

- APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
- PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
- EXISTING WELL (SEE EXTENT OF WORK NOTES)
- NEW CANAL BANK
- ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
- PROPOSED LEVELLING AREA BOUNDARY
- PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
- PROPOSED BUFFER
- FULL FULL RELOCATION OF EXISTING CANAL
- PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
- ROW RIGHT-OF-WAY
- PIN PROPERTY IDENTIFICATION NUMBER

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DITCHES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
© J. S. BARNES LIMITED
2005
TOPOGRAPHIC SURVEY OR
2007 AS NOTED

2005 ORTHOPHOTOGRAPHY
OBTAINED FROM THE
CITY OF KING
2007 AS NOTED

PLANNED, SURVEYED AND PROPERTY IDENTIFICATION DATA SUPPLIED THROUGH
AGREEMENTS WITH MUNICIPALITIES, TOWN, REGION AND SIMCOE COUNTY.
PROPERTY LINES ARE BASED ON THE AVAILABLE AVAILABLE TO A SURVEY AGENTS.

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GILLIMBURY
TOWNSHIP OF KING
COUNTY OF SIMCOE
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
51

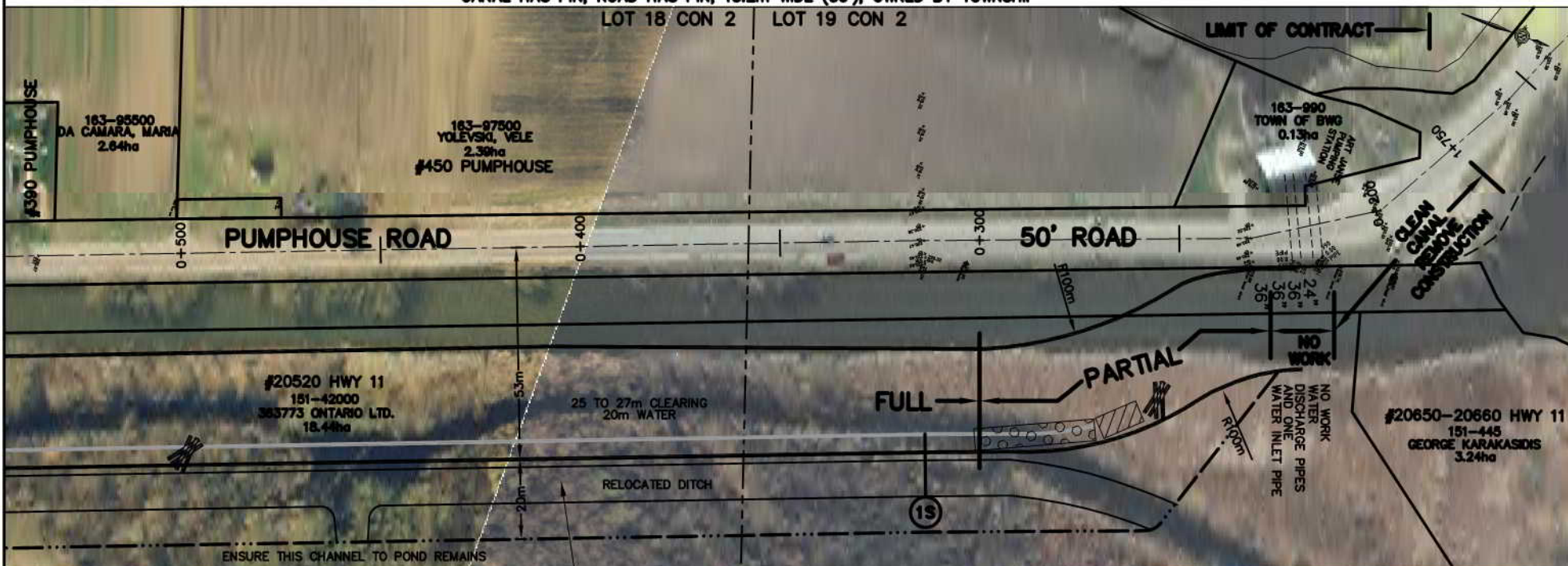
Interval 9 (Part of Contract 3A)

000 to 175	- No work. Existing canal is to remain.
175 to 210	- Reconstruct west bank to provide similar channel width as between Sta. 210 and 230 (approx 200m ² excav) - Clear and grub trees and either remove and dispose or chip and leave on site (part of excavation work) - Excavated materials to be hauled away or to be in part leveled on Township lands if approval is obtained (otherwise see list of disposal sites)
210 to 230	- No work. Existing canal is to remain as is. - Existing pumping station outlet pipes to be carefully avoided

230 to 300	- Type I canal work - Construct cofferdam. If steel or wood is used, pile height to be 12m.	70m 80m
250 to 540	- Relocate existing ditch including work for 20m width of clearing and leveling of spoil for private ditch	290m
200 to 300	- Construct guide rail	100m
280	- Lateral ditch treatment	One (1)
300 to 540	- Type VIIA canal work - Could be 1 new Type A5 irrigation line	240m
460	- Lateral ditch treatment and ensure channel to pond remains	One (1)



CANAL HAS PIN, ROAD HAS PIN, 15.2m WIDE (50'), OWNED BY TOWNSHIP



FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT
TIME OF CONSTRUCTION)

DEEP POOLS

MACROPHYTE
TRANSPLANTS

LITTORAL SHELF

GRAVEL
SUBSTRATES

ROOT MASSES
OR LOG RUNDLES

	RELOCATED DITCH
	ACCESS ROUTE
	LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
	GUIDE RAIL
	BELL LINE
	UNDER GROUND GAS LINE
	PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
	OVERHEAD HYDRO AND POLE
	HYDRO POLE (TO MOVE IF X)
	ANCHOR POLE (TO MOVE IF X)
	CROSS-SECTION LOCATION
	IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

8" -----	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BO)
A2 ETC. -----	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
⊗ -----	EXISTING WELL (SEE EXTENT OF WORK NOTES)
=====	NEW CANAL BANK
-----	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
-----	PROPOSED LEVELLING AREA BOUNDARY
-----	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
-----	PROPOSED BUFFER
FULL	FULL RELOCATION OF EXISTING CANAL
PARTIAL	PARTIAL RELOCATION OF EXISTING CANAL
ROW	RIGHT-OF-WAY
	PIN PROPERTY IDENTIFICATION NUMBER


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- 20m additional clearing to relocate private ditch
- See cross-section for relocated ditch and spoil disposal
- See also special provisions

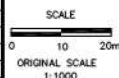
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AIR PHOTOGRAPHY
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2002 ORTHOPHOTOGRAPHY OF
2007 AS AIRCRAFTS

2002 ORTHOPHOTOGRAPHY
OBTAINED FROM THE
COUNTY OF SIMCOE



PARCEL, SHAPING AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
AGREEMENTS WITH MUNICIPALITIES, YORK REGION AND SIMCOE COUNTY
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO A SMART APPROXIMATE

[illegible]

HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
 TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE
 TOWNSHIP OF KING REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

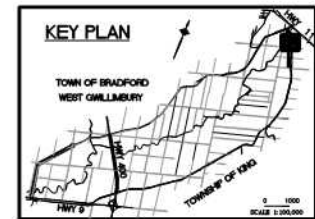


K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 McINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

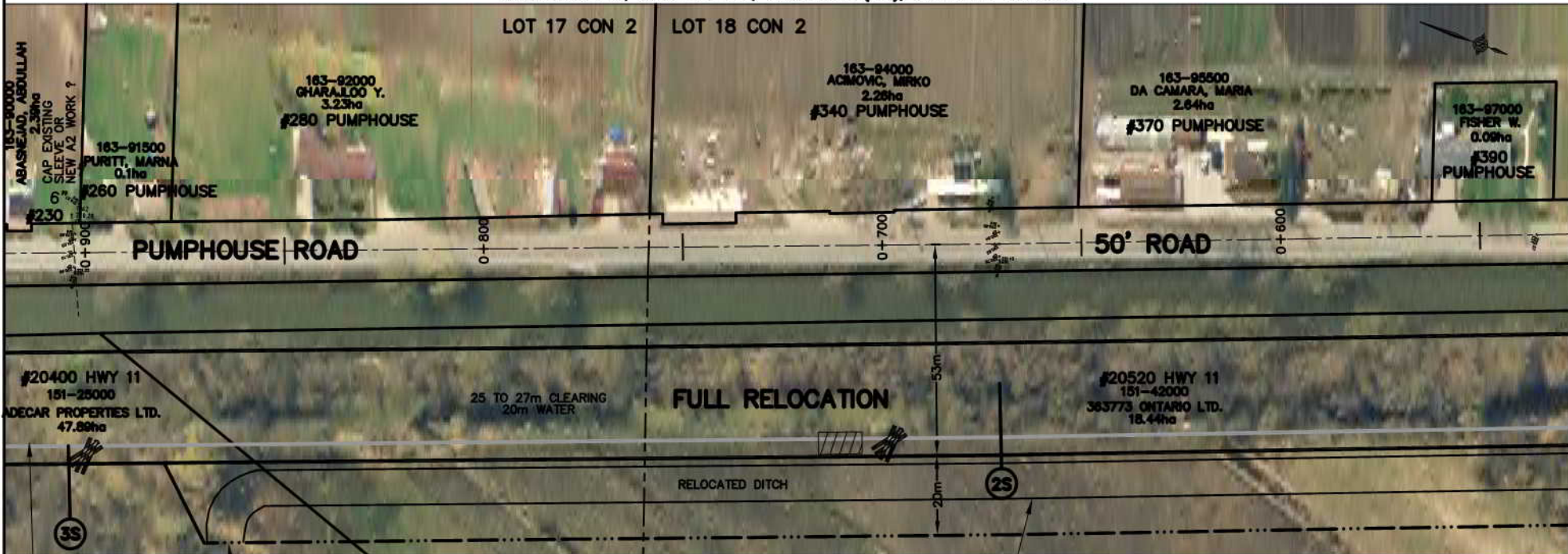
JOB NUMBER	03-023
DATE	JANUARY, 2009
DRAWING NUMBER	52

Interval 9 Cont.

540 to 900	-Type VIIA canal work	360m
540 to 900	- May be one new Type A5 irrigation line in this interval	One (1)
615	- Lateral ditch treatment	One (1)
620	- Carefully relocate pumping station for owner but if he does not want it, remove and dispose off site.	One (1)
600 to 850	- 3m wide grass buffer required on east side of new canal	250m
540 to 880	- Relocate existing ditch including topsoil stripping and replacement and leveling of spoil	340m



CANAL HAS PIN, ROAD HAS PIN, 15.2m WIDE (50'), OWNED BY TOWNSHIP



This section of ditch to be filled and abandoned

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AIR PHOTOGRAPHY
© J. S. BARNES LIMITED
2002 ORTHOPHOTOGRAPHY OR
2007 AS AMENDED

2002 ORTHOPHOTOGRAPHY
OBTAINED FROM THE
COUNTY OF SMOKE

PARCEL, MAPPING AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
AGREEMENTS WITH MUNICIPALITIES, YORK REGION AND SMOKE COUNTY

PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO A. BARNES ASSOCIATES

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT
TIME OF CONSTRUCTION)

DEEP POOLS

MACROPHYTE TRANSPLANTS

LITTORAL SHELF

GRAVEL SUBSTRATES

ROOT MASSES OR LOG BUNDLES

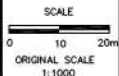
INTERVAL 9

- 20m width required for ditch relocation and levelling
- Strip and replace topsoils
- See cross-sections and special provisions

PLAN LEGEND

PLAN LEGEND

RELOCATED DITCH	8" -----	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
ACCESS ROUTE	-----	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)	-----	EXISTING WELL (SEE EXTENT OF WORK NOTES)
GUIDE RAIL	○ ○ ○ ○ ○	NEW CANAL BANK
B	-----	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
BELL LINE	-----	PROPOSED LEVELLING AREA BOUNDARY
GAS	-----	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
UNDER GROUND GAS LINE	-----	PROPOSED BUFFER
PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE	-----	FULL FULL RELOCATION OF EXISTING CANAL
OVERHEAD HYDRO AND POLE	-----	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
HYDRO POLE (TO MOVE IF X)	HP ○	ROW RIGHT-OF-WAY
ANCHOR POLE (TO MOVE IF X)	AP ○	PIN PROPERTY IDENTIFICATION NUMBER
CROSS-SECTION LOCATION	(13)	
IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING	*	

[illegible]

HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
 TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE
 TOWNSHIP OF KING REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES



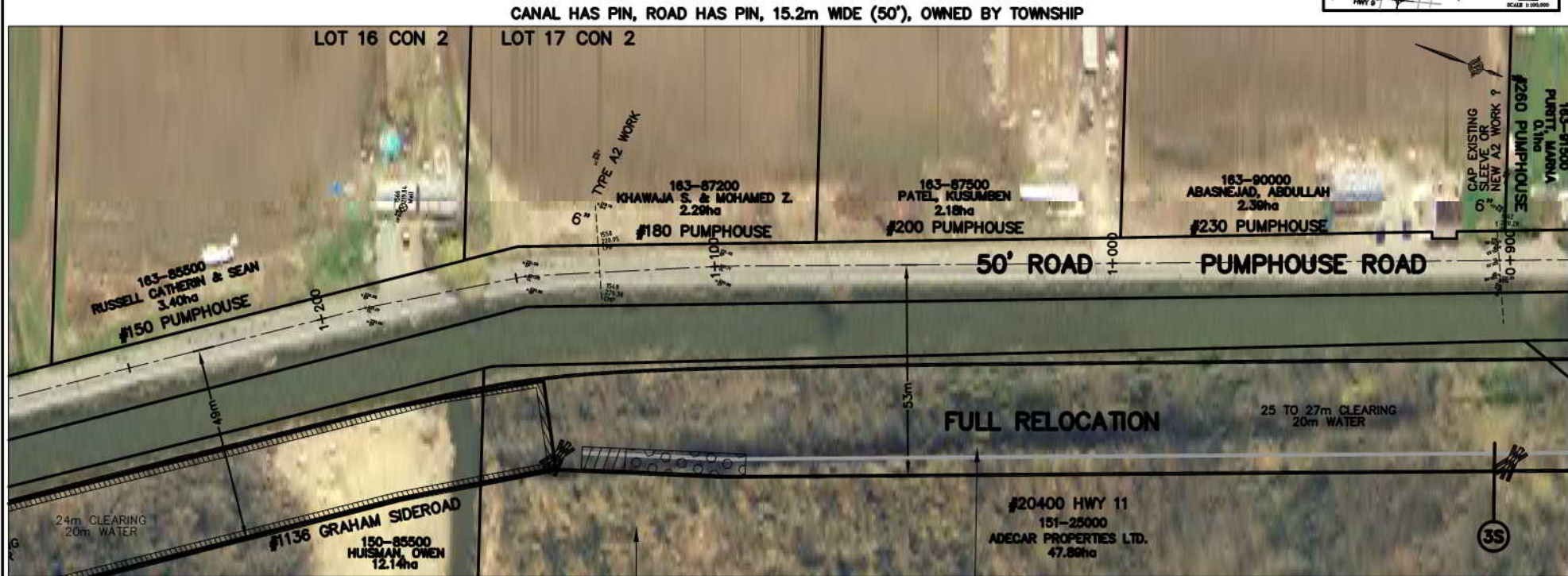
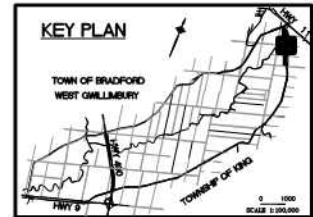
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 McINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER	03-023
DATE	JANUARY, 2009
DRAWING NUMBER	53

Extent of Work

Interval 9 Cont.

900 to 1+250	- Type VIIA canal work	350m
902, 1+128	- 2 irrigation lines - both 150mm, Type A2 work	Two (2)
1+165	- Lateral ditch treatment	One (1)



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AIR PHOTOGRAPHY
BY: S. BARNES LIMITED
DATE: 03/01/2009
SCALE: 1:1000
PROJECT: HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO S. BARNES LIMITED



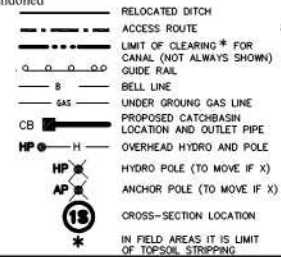
- Possible disposal site for surplus available on Adecar property
- Engineer to layout at time of construction
- Clearing required
- See special provisions

INTERVAL 9

Existing ditch is filled in and abandoned

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)



PLAN LEGEND

- 8" --- APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
- A2 ETC. PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
- ⊗ EXISTING WELL (SEE EXTENT OF WORK NOTES)
- NEW CANAL BANK
- ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
- PROPOSED LEVELLING AREA BOUNDARY
- PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
- PROPOSED BUFFER
- FULL FULL RELOCATION OF EXISTING CANAL
- PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
- ROW RIGHT-OF-WAY
- PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER 03-023
DATE JANUARY, 2009
DRAWING NUMBER 54

Interval 9 Cont.

1+250 to 1+500

- | | | |
|----------------|--|-------------------|
| 1-250 to 1-510 | - May be new Type A5 irrigation line in this interval | One (1) |
| 1-303, 1-460± | - 2 irrigation lines - 1 - 100mm and 1 - 150mm.
Provide 2 new Type A2 work | Two(2) |
| 1-395 | - Provide new line - Type A2 work | One (1) |
| +397 | - Lateral ditch treatment | One (1) |
| 1-500 to 1-595 | - Type 1 canal work | 95m |
| 1-595 to 1-605 | - Clean bottom through existing wood pier bridge
Structure on Graham Sideroad. (Type VI canal work
- Ensure road ditch in northeast and southeast
quadrants are adjusted to fit widened canal | 10m

Two(2) |

- | | |
|---|---------|
| - Do lateral ditch treatments | Two (2) |
| - Structure is to be replaced or enlarged prior to end of project | |
| - See bridge drawings | |
| - May be new Type A5 irrigation line in this interval | One (1) |
| - Guide rail required | 80m |
| - New cofferdam required | 80m |
- Interroad Structure**
- If steel piling is used, height of piles to be 12m

Interval 9 Quantities:

Clearing (Part of Contract 3A)

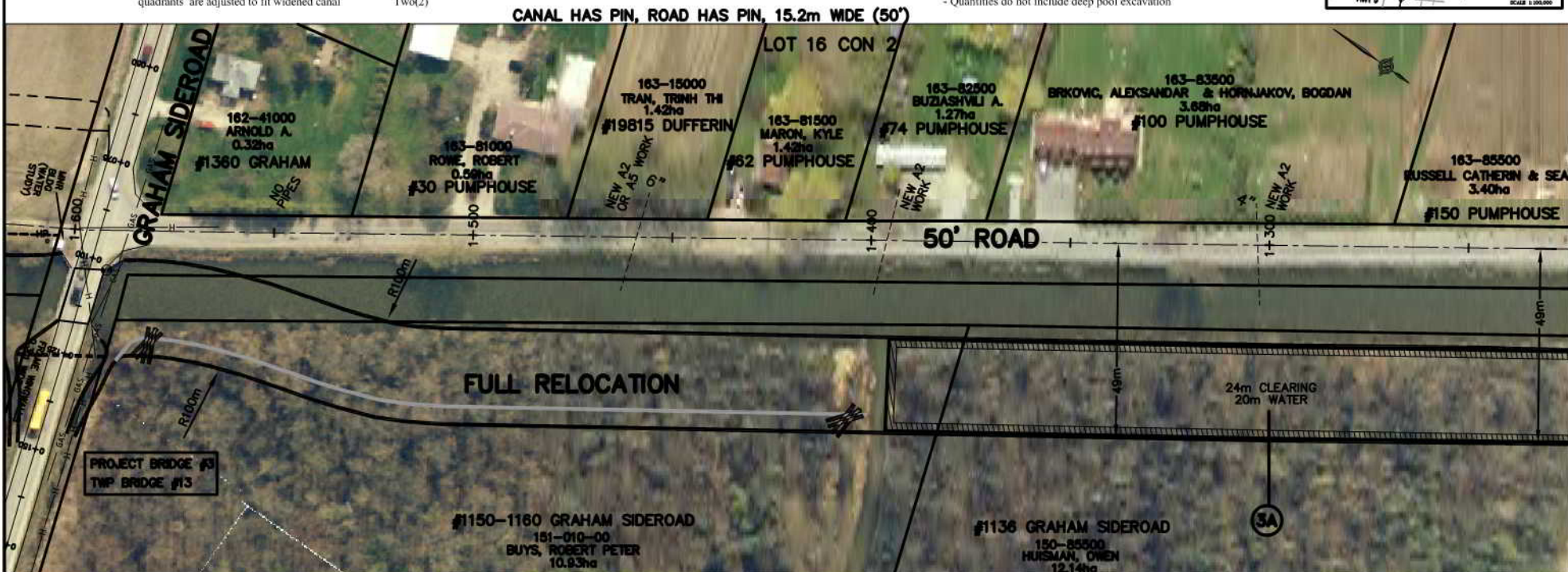
- a) For relocation 3.5 ha (plus 1.25ha for private ditch)
b) Along edge of dyke - approx. 20% of the 1420m length has trees but these may remain wherever possible since no berm work is necessary (if all were cleared could be 0.35ha)

Berm Work (No Berm Required)

Earth work (Part of Contract 3A)

- To haul during excavation 10,000m³
- To excavate and backfill (relocations) 58,000m³
- Total excavation 68,000m³
- Final leveling 30,000m³
- Quantities do not include deep pool excavation

KEY PLAN




INTERVAL 9

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN, THE DYKES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE

AIR PHOTOGRAPHY
J. S. BARNES LIMITED
AIR ORTHOPHOTOGRAPHY OR
NOT AS APPLICABLE

2002 ORTHOPHOTOGRAPHY
OBTAINED FROM
THE
COUNTY OF SIMCOE



MAPS, SHAPING AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
AGREEMENTS WITH MUNICIPALITIES, YORK REGION AND SIMCOE COUNTY

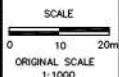
FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT
TIME OF CONSTRUCTION)

- DEEP POOLS
- MACROPHYTE TRANSPLANTS
- LITTORAL SHELF
- GRAVEL SUBSTRATES
- ROOT MASSES
- ROOT LOG BUNDLES

PLAN LEGEND

- | | | | |
|--|---|--|---|
| | RELOCATED TITCH | | APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG) |
| | ACCESS ROUTE | | PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK) |
| | LIMIT OF CLEARING* FOR CANAL (NOT ALWAYS SHOWN) | | EXISTING WELL (SEE EXTENT OF WORK NOTES) |
| | GUIDE RAIL | | NEW CANAL BANK |
| | BELL LINE | | ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED |
| | UNDER GROUND GAS LINE | | PROPOSED LEVELLING AREA BOUNDARY |
| | PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE | | PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING |
| | OVERHEAD HYDRO AND POLE | | PROPOSED BUTTER |
| | HYDRO POLE (TO MOVE IF X) | | FULL FULL RELOCATION OF EXISTING CANAL |
| | ANCHOR POLE (TO MOVE IF X) | | PARTIAL PARTIAL RELOCATION OF EXISTING CANAL |
| | CROSS-SECTION LOCATION | | ROW RIGHT-OF-WAY |
| | IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING | | PIN PROPERTY IDENTIFICATION NUMBER |

[illegible]

HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
 TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE
 TOWNSHIP OF KING REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES



K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

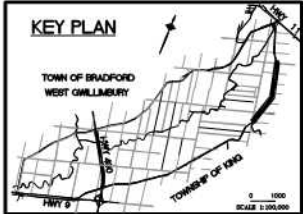
JOB NUMBER	03-023
DATE	JANUARY, 2009
DRAWING NUMBER	55

Extent of Work

Interval 10 Cont.
1-950 to 2-300
1-991

- Type III-L canal work
- Lateral ditch treatment

350m
One (1)



CANAL HAS PIN, LANDS ON WEST SIDE OWN TO CANAL, WITH 15.2m (50') ROW FOR DYKE



INTERVAL 10

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DYKES (WHETHER THEY ARE DIRT, GRAVEL PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

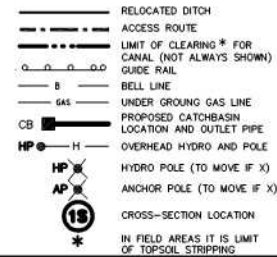
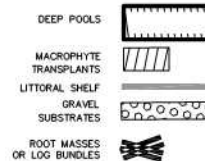
THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SENSORS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL BEHOLD HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

AIR PHOTOGRAPHY
BY J. S. BARNES LIMITED
DATE OF PHOTOGRAPHY
2007 AS SHOWN
2002 OR PHOTOGRAPHY
OBTAINED FROM THE
COUNTY OF SIMCOE
PARCELS SHOWN AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
AGREEMENT WITH SIMCOE COUNTY
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO A. SMART ASSOCIATES

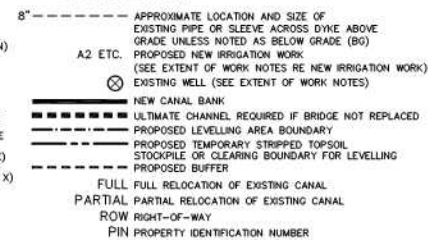


FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)



PLAN LEGEND



No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GILLIMBURY
TOWNSHIP OF KING
COUNTY OF SIMCOE
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

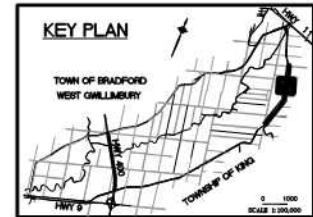
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
57

Extent of Work

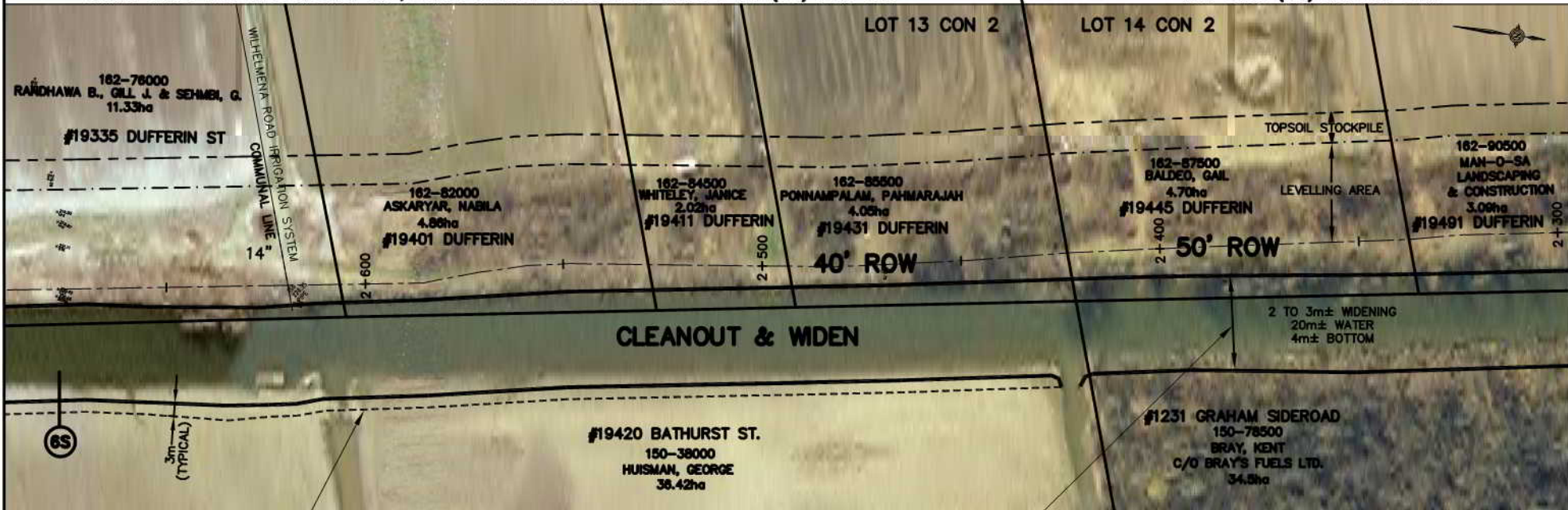
Interval 10 Cont.

2+300 to 2+650	- Type III-L canal work	350m
2+425 to 2+650	- 3m wide grass buffer required	225m
2+425, 2+610	- Lateral ditch treatments	Two (2)
2+620	- Irrigation line - communal 350mm dia. (Type EC work)	One (1)
	- Protect and do not disturb it	



CANAL OWNED BY LANDS ON EAST SIDE, LANDS ON WEST SIDE OWN TO CANAL 12.2m (40') DYKE ROW

CANAL HAS PIN, LANDS ON WEST SIDE OWN TO CANAL, WITH 15.2m (50') ROW FOR DYKE



CLEANOUT & WIDEN

INTERVAL 10

Minor widening as necessary (0 to 2m) to give 20m± water when less than 20m exists at elev. 218.75, 4m± bottom

FISH HABITAT LEGEND

DEEP POOLS	
MACROPHYTES TRANSPLANTS	
LITTORAL SHELF	
GRAVEL SUBSTRATES	
ROOT MASSES OR LOG BUNDLES	

	RELOCATED DITCH
	ACCESS ROUTE
	LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
	GUIDE RAIL
	BELL LINE
	UNDER GROUND GAS LINE
	PROPOSED CATCHBASIN
	LOCATION AND OUTLET PIPE
	OVERHEAD HYDRO AND POLE
	HYDRO POLE (TO MOVE IF X)
	ANCHOR POLE (TO MOVE IF X)
	CROSS-SECTION LOCATION
	IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

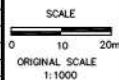
	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
	EXISTING WELL (SEE EXTENT OF WORK NOTES)
	NEW CANAL BANK
	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
	PROPOSED LEVELLING AREA BOUNDARY
	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
	PROPOSED BUFFER
	FULL FULL RELOCATION OF EXISTING CANAL
	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
	ROW RIGHT-OF-WAY
	PIN PROPERTY IDENTIFICATION NUMBER

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DYKES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
BY: K. SMART ASSOCIATES
DATE: 03-02-2009
SCALE: 1:1000
PROJECT: HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
TOWN OF BRADFORD WEST GWILLIMBURY
COUNTY OF SIMCOE
REGION OF YORK

No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLIMBURY
COUNTY OF SIMCOE
REGION OF YORK
AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

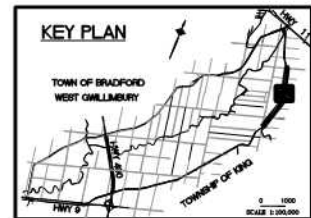
JOB NUMBER 03-023
DATE JANUARY, 2009
DRAWING NUMBER 58

Extent of Work

Interval 10 Cont.

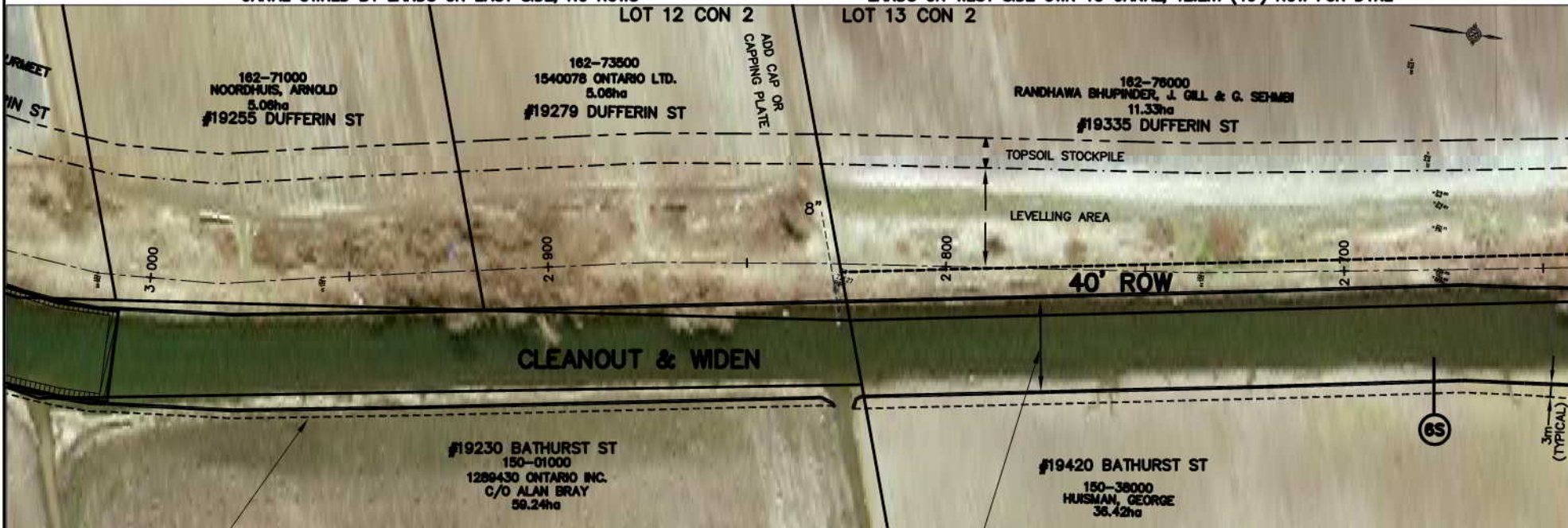
- 2+650 to 3+000 - Type III-L canal work
- 2+650 to 3+000 - 3m wide grass buffer required
- 2+830 - Lateral ditch treatment
- 2+829 - Irrigation line 200mm - Type A3 work.
- Add cap or capping plate

- 350m
- 350m
- One (1)
- One (1)



CANAL OWNED BY LANDS ON EAST SIDE, NO ROWS

CANAL OWNED BY LANDS ON EAST SIDE,
LANDS ON WEST SIDE OWN TO CANAL, 12.2m (40') ROW FOR DYKE



3m wide buffer strip required
(typical where field abut canal)

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DYKES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
BY: S. BARNES LIMITED
DATE: 08/01/2008
SCALE: 1:1000
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO S. BARNES LIMITED

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

- DEEP POOLS
- MACROPHYTE TRANSPLANTS
- LITTORAL SHELF
- GRAVEL SUBSTRATES
- ROOT MASSES OR LOG BUNDLES

INTERVAL 10

Minor widening as necessary (0 to 2m) to give 20m water when less than 20m exists at elev. 218.75, 4m± bottom

- RELOCATED DITCH
- ACCESS ROUTE
- LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
- GUIDE RAIL
- BELL LINE
- UNDER GROUND GAS LINE
- PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
- OVERHEAD HYDRO AND POLE
- HYDRO POLE (TO MOVE IF X)
- ANCHOR POLE (TO MOVE IF X)
- CROSS-SECTION LOCATION
- IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

- APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
- A2 ETC. PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
- EXISTING WELL (SEE EXTENT OF WORK NOTES)
- NEW CANAL BANK
- ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
- PROPOSED LEVELLING AREA BOUNDARY
- PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
- PROPOSED BUFFER
- FULL FULL RELOCATION OF EXISTING CANAL
- PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
- ROW RIGHT-OF-WAY
- PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

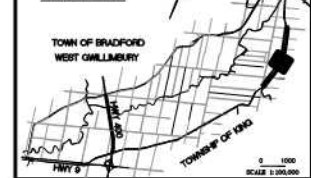
JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
59

Extent of Work

Interval 10 Cont.

3+000 to 3+350	- Type III-L canal work	350m
3+000 to 3+350	- 3m wide grass buffer required	350m
3+022, 3+210	- Two lateral ditch treatments	Two (2)
3+059, 3+144 & 3+260	- 3 irrigation lines, all 150mm. Type A3 work.	Three (3)
	- Add caps or capping plate	
3+265	- Irrigation line (250mm) communal.	
	- Add cap or capping plate. Type A3 work	One (1)

KEY PLAN



CANAL OWNED BY LANDS ON THE EAST SIDE, NO ROWS

CANAL OWNED BY LANDS ON THE EAST SIDE, NO ROWS

LOT 11 CON 2

LOT 12 CON 2

162-62500
FIORINI, STEVE
4.38ha

#19125 DUFFERIN

TOPSOIL STOCKPILE

LEVELLING AREA

162-67000
NEWLAND RESOURCES
GROUP INC.
3.70ha

#19165 DUFFERIN ST

162-66000
IOZZO, BRUNO
3.68ha

#19145 DUFFERIN ST

162-69000
SUMAL, CHARAN & GURMEET
3.84ha

#16219 DUFFERIN ST

162-71000
NOORDHUIS, ARNOLD
5.06ha

#19255 DUFFERIN ST

CLEANOUT & WIDEN

#19070 BATHURST
150-00500
BRAY, ALAN
65.46ha

#19230 BATHURST ST
150-01000
1289430 ONTARIO INC.
C/O ALAN BRAY
59.24ha

INTERVAL 10

Minor widening as necessary (0 to 2m) to give 20m water when less than 20m exists at elev. 218.75, 4m± bottom

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

DEEP POOLS



MACROPHYTE TRANSPLANTS



LITTORAL SHELF



GRAVEL SUBSTRATES



ROOT MASSES OR LOG BUNDLES



NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DYKES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
C/O S. BARNES LIMITED
2002 ORTHOPHOTOGRAPHY
OBTAINED FROM THE
COUNTY OF SIMCOE
DATE AS SHOWN



PARCEL SHAPING AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
AGREEMENT WITH SIMCOE COUNTY. THIS DRAWING AND SOURCE COUNTY
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO S. BARNES ASSOCIATES

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
60

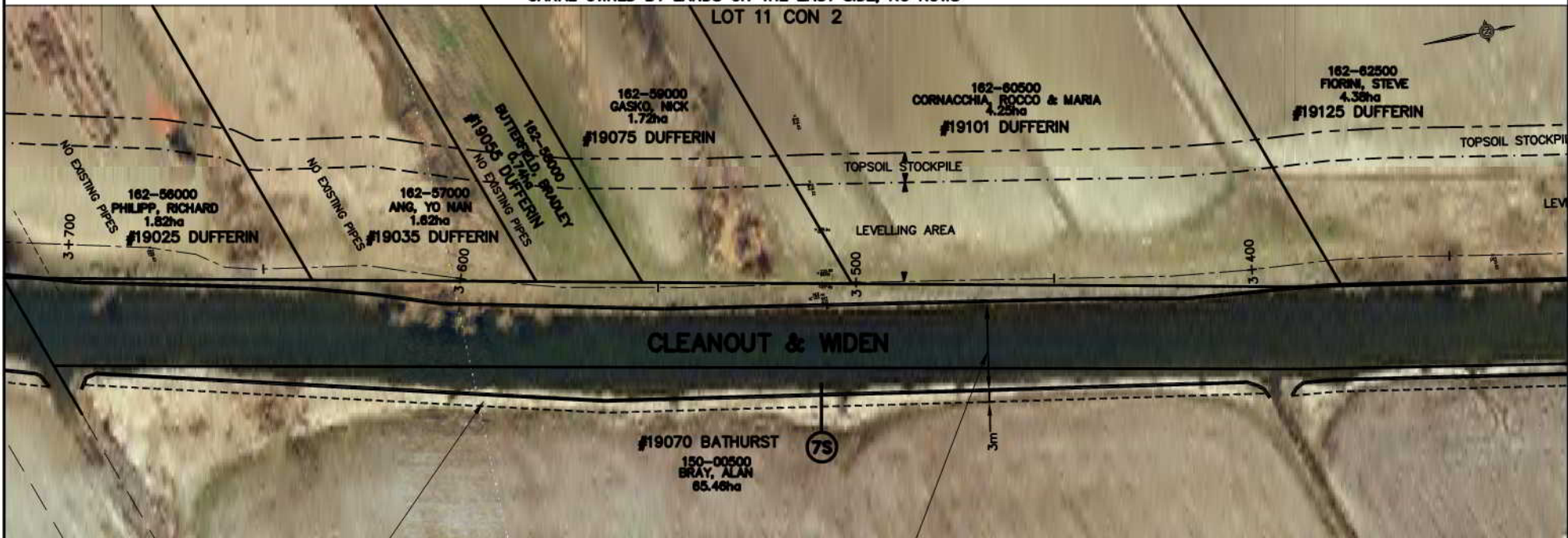
Extent of Work

Interval 10 Cont.

3+350 to 3+700	- Type III-L canal work	350m
3+350 to 3+700	- 3m wide grass buffer required	350m
3+396 & 3+700	- 2 lateral ditch treatments	Two (2)
3+600 to 3+700	- Dyke needs repair in this interval	100m



CANAL OWNED BY LANDS ON THE EAST SIDE, NO ROWS LOT 11 CON 2



3m wide buffer strip required
(typical where field abut canal)

INTERVAL 10

Minor widening as necessary (0 to 2m) to give
20m water when less than 20m exists at
elev. 218.75, 4m± bottom

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF
ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE
DITCHES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND
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AND/OR APPROVED ACCESS AREAS.

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AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND
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BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM
HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND
STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE
TO THEM.

AIR PHOTOGRAPHY
BY: S. BARNES LIMITED
DATE: 08/01/2008
SCALE: 1:1000
PROJECT: HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
PROPERTY LINES ARE BASED ON THE DATA AVAILABLE TO S. BARNES LIMITED

FISH HABITAT LEGEND

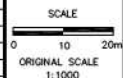
DEEP POOLS	
MACROPHYTE TRANSPLANTS	
LITTORAL SHELF	
GRAVEL SUBSTRATES	
ROOT MASSES OR LOG BUNDLES	

	RELOCATED DITCH
	ACCESS ROUTE
	LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
	GUIDE RAIL
	BELL LINE
	UNDER GROUND GAS LINE
	PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
	OVERHEAD HYDRO AND POLE
	HYDRO POLE (TO MOVE IF X)
	ANCHOR POLE (TO MOVE IF X)
	CROSS-SECTION LOCATION
	IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
	EXISTING WELL (SEE EXTENT OF WORK NOTES)
	NEW CANAL BANK
	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
	PROPOSED LEVELLING AREA BOUNDARY
	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
	PROPOSED BUFFER
	FULL FULL RELOCATION OF EXISTING CANAL
	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
	ROW RIGHT-OF-WAY
	PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
TOWNSHIP OF KING
COUNTY OF SIMCOE
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER 03-023
DATE JANUARY, 2009
DRAWING NUMBER 61

Extent of Work

Interval 10 Cont.

3+700 to 3+725

3+700 to 4+050

3+700 to 4+040

3+725 to 4+050

3+700

- Type III-L canal work.
- 3m wide grass buffer required
- Pre-locate, and avoid if possible, existing 150mm (6") header drain on east side of canal.
- If necessary to move, work will be paid as authorized and pre-discussed extra work.
- Type III-H canal work. Load and haul to North canal or to disposal site
- In areas of hauling where trees exist, clear (by chipping) (partial or full) a 10m wide working area measured from east top of edge of dyke plus clear from top of dyke to water's edge
- Leave chippings as a mat or haul away. Haul any trunks or give to owner if requested
- Irrigation line, 200mm pipe, through dyke with end cap or capping plate (Type A3 work)

25m
350m

One (1)
325m

One (1)

3+745

3+870 to 3+950

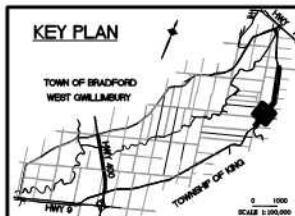
3+960

4+000 to 4+100

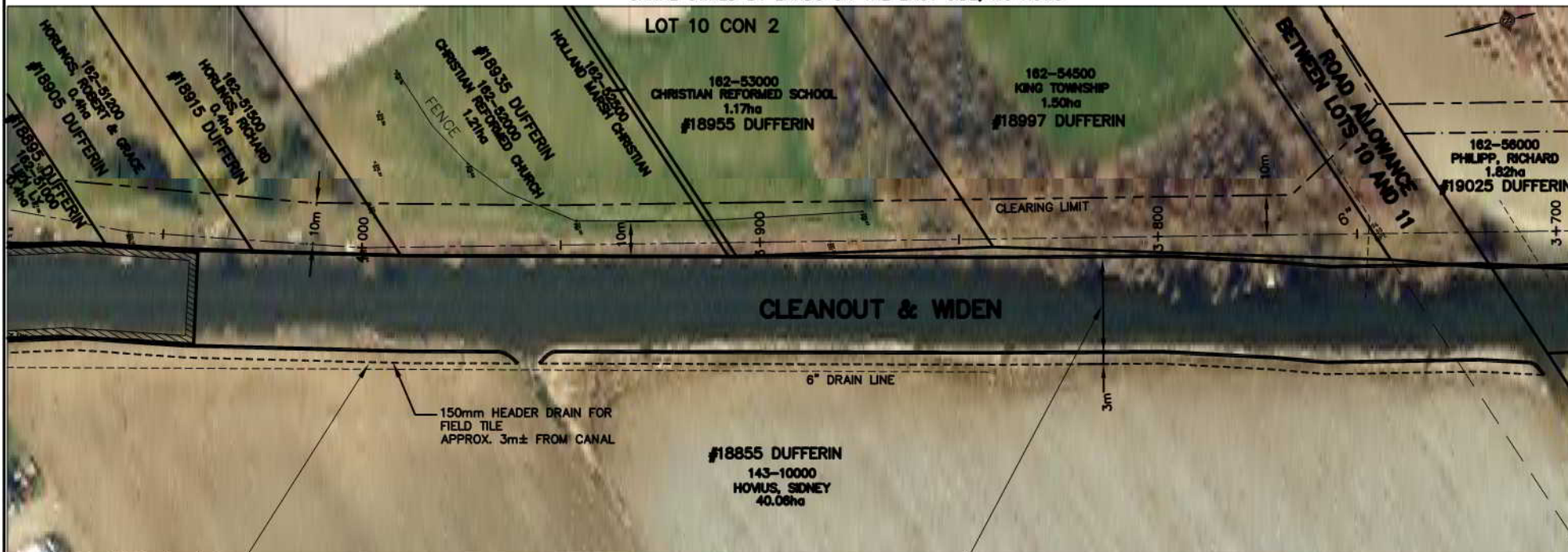
- Irrigation line - 150mm. Provide end cap or capping plate (Type A3 work)
- Protect existing fence on west side (to be part of excavation item). If any additional fence is necessary such will be extra payment
- Reduce clearing width where fence exists
- Lateral ditch treatment required
- Move building materials from dyke (to be part of excavation item)

One (1)

One (1)



CANAL OWNED BY LANDS ON THE EAST SIDE, NO ROWS



3m wide buffer strip required
(typical where field abut canal)

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN, THE DYKES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
BY: S. SMART LIMITED
DATE: 08/01/2008
SCALE: 1:1000
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO S. SMART LIMITED

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

- DEEP POOLS
- MACROPHYTE TRANSPLANTS
- LITTORAL SHELF
- GRAVEL SUBSTRATES
- ROOT MASSES OR LOG BUNDLES

INTERVAL 10

Minor widening as necessary (0 to 2m) to give 20m water when less than 20m exists at elev. 218.75, 4m± bottom

- RELOCATED DITCH
- ACCESS ROUTE
- LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
- GUIDE RAIL
- BELL LINE
- UNDER GROUND GAS LINE
- PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
- OVERHEAD HYDRO AND POLE
- HYDRO POLE (TO MOVE IF X)
- ANCHOR POLE (TO MOVE IF X)
- CROSS-SECTION LOCATION
- IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

- 8" - - - - - APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
- A2 ETC. PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
- EXISTING WELL (SEE EXTENT OF WORK NOTES)
- NEW CANAL BANK
- ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
- PROPOSED LEVELLING AREA BOUNDARY
- PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
- PROPOSED BUFFER
- FULL FULL RELOCATION OF EXISTING CANAL
- PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
- ROW RIGHT-OF-WAY
- PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
COUNTY OF SIMCOE
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
62

Extent of Work

Interval 10 Cont.

- 4+050 to 4+280 - Type III-H canal work. Load and haul to North canal or disposal site
- In areas of hauling where trees exist, clear (by chipping) (partial or full) a 10m wide working area measured from east top of edge of dyke plus clear from top of dyke to water's edge
- 4+050 to 4+100 - 3m wide grass buffer required
- 4+109 - Irrigation line, 200mm. Already sealed.
- No work required.
- 4+230 - Remove and dispose off site all remaining components of existing bridge and construct canal section to equal upstream and downstream (former Private Bridge 14)

230m

50m

One (1)

- Reconstruct earth lane off Dufferin Street to blend to existing dyke cross-sections. To be part of bridge removal item (If granular is required, additional payment will be made.)

4+250 to 4+280 & 4+285 to 4+300

- Retain existing guide rail (replace if necessary to remove for construction)
- 4+280 to 4+290 - Clean bottom through existing two span wood pier structure on Dufferin Street. (Type VI canal work)
- Structure is to be enlarged or replaced prior to completion of project
- See bridge drawings
- Lateral ditch treatment
- Realign road ditch as necessary for outlet

4+270

One (1)

Extent of Work

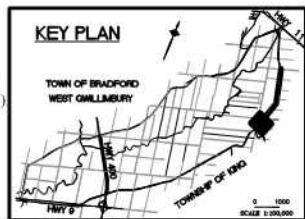
Interval 11

- 4+290 to 4+400 - Type III-H canal work
- 4+300 to 4+400 - New guide rail (remove existing). Tie into existing steel rail at 4+300±
- 4+310 - Lateral ditch treatment
- Realign road ditch as necessary for outlet

10m

One (1)

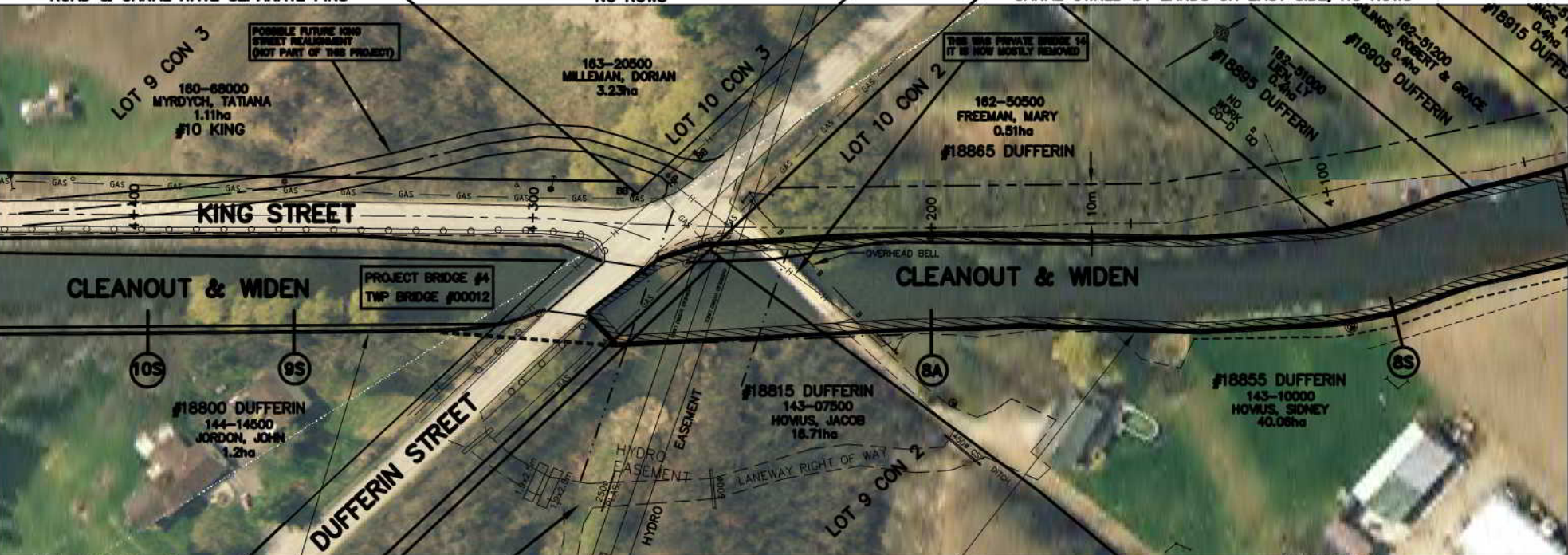
KEY PLAN



ROAD & CANAL HAVE SEPARATE PINS

CANAL OWNED BY LANDS ON EAST SIDE, NO ROWS

CANAL OWNED BY LANDS ON EAST SIDE, NO ROWS



INTERVAL 11

Widening as necessary (1 to 4m) to give 20m water when less than 20m exists at elev. 218.75

INTERVAL 10

THIS IS LANDWAY NOW CONSTRUCTED TO REPLACE BRIDGE 14

Interval 10 Quantities:

Clearing (Part of Contract 1A)

- a) For widening 0.25 ha
- b) For leveling 6.0 ha
- c) Along edge of dyke - included as part of 6.0 ha

Berm Work (No berm work)

Earth work (Part of Contract 1A)

- To haul during excavation 10,000m³
- To excavate and level (cleanouts) 30,000m³
- Total excavation 40,000m³
- Final leveling 85,000m³
- Available to haul later from stockpile if needed 10,000m³
- Quantities do not include deep pool excavation

Minor widening as necessary (0 to 2m) to give 20m water when less than 20m exists at elev. 218.75, 4m± bottom

FISH HABITAT LEGEND

- (FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)
- DEEP POOLS
- MACROPHYTES
- LITTORAL SHELF
- GRAVEL
- SUBSTRATES
- ROOT MASSES OR LOG BUNDLES

- RELOCATED DITCH
- ACCESS ROUTE
- LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
- GUIDE RAIL
- BELL LINE
- UNDER GROUND GAS LINE
- PROPOSED CATCHBASIN
- LOCATION AND OUTLET PIPE
- OVERHEAD HYDRO AND POLE
- HYDRO POLE (TO MOVE IF X)
- ANCHOR POLE (TO MOVE IF X)
- CROSS-SECTION LOCATION
- IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

- APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
- PROPOSED NEW IRRIGATION WORK
- EXISTING WELL (SEE EXTENT OF WORK NOTES)
- NEW CANAL BANK
- ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
- PROPOSED LEVELLING AREA BOUNDARY
- PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
- PROPOSED BUFFER
- FULL FULL RELOCATION OF EXISTING CANAL
- PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
- ROW RIGHT-OF-WAY
- PIN PROPERTY IDENTIFICATION NUMBER

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

AIR PHOTOGRAPHY
© J. B. SMITH LIMITED
2002 ORTHOPHOTOGRAPHY
OBTAINED FROM THE
COUNTY OF SIMCOE
PARCEL SHAPING AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
ARRANGEMENTS WITH MANIPULATED TOWN BOUNDARY AND SHEDD COUNTY
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO J. B. SMITH ASSOCIATES

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No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GILLIMBURY
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

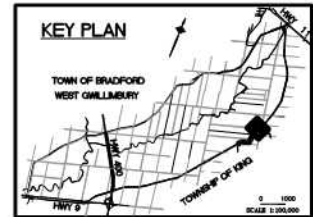
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
63

Extent of Work

Interval 11 Cont. (Part of Contract 1A)

4+400 to 4+600	- Type III-H canal work. Load and haul to North canal or to disposal site	200m
4+600 to 4+780	- Type III-L canal work	180m
	- Verify leveling locations with owners	
	- Contractor to provide for hauling to adjacent leveling locations in various portions of Interval 11	
	(Typical for both Type II-H and III-L work)	
4+400 to 4+520	- Guide rail work (remove old & dispose of and place new)	120m



CANAL HAS A PIN, LANDS ON WEST SIDE OWN TO CANAL, 6m (20') ROW FOR DYKE

KING ST. HAS A PIN, CANAL HAS A PIN



INTERVAL 11

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DITCHES (WHETHER THEY ARE DIRT, GRAVEL PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
BY: K. SMART ASSOCIATES
DATE: 03/03/2003
SOURCE: FROM THE
COUNTY OF SIMCOE
DATE: AS SHOWN



FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

DEEP POOLS	
MACROPHYTE TRANSPLANTS	
LITTORAL SHELF	
GRAVEL SUBSTRATES	
ROOT MASSES OR LOG BUNDLES	

Widening as necessary (3 to 4m) to give 20m water when less than 20m exists at elev. 218.75, 4m± bottom

	RELOCATED DITCH
	ACCESS ROUTE
	LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
	GUIDE RAIL
	BELL LINE
	UNDER GROUND GAS LINE
	PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
	OVERHEAD HYDRO AND POLE
	HYDRO POLE (TO MOVE IF X)
	ANCHOR POLE (TO MOVE IF X)
	CROSS-SECTION LOCATION
	IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
	EXISTING WELL (SEE EXTENT OF WORK NOTES)
	NEW CANAL BANK
	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
	PROPOSED LEVELLING AREA BOUNDARY
	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
	PROPOSED BUFFER
	FULL FULL RELOCATION OF EXISTING CANAL
	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
	ROW RIGHT-OF-WAY
	PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLIMBURY
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

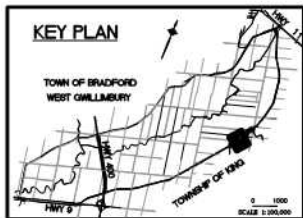
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MONTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
64

Extent of Work

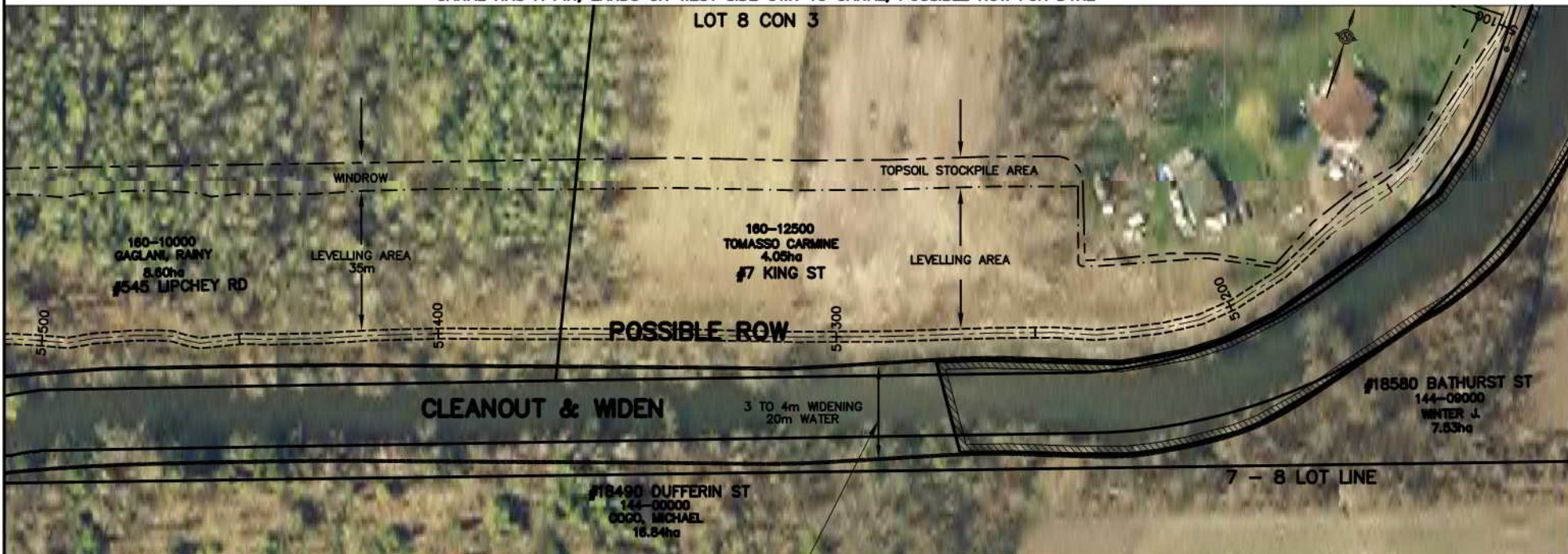
Interval 11 Cont.

5+140 to 5+500	- Type III-L canal work.	360m
	- Verify leveling location with owners	
	- Contractor to provide for hauling to adjacent leveling locations in various portions of Interval 11 due to buildings	
	- Dyke needs repair in this interval	360m
5+140 to 5+585	- There is a well outlet on J. Winter property (outside of marsh) in this interval, to be extended. Type G-E work	One(1)



CANAL HAS A PIN, LANDS ON WEST SIDE OWN TO CANAL, POSSIBLE ROW FOR DYKE

LOT 8 CON 3



INTERVAL 11

Widening as necessary (3 to 4m) to give 20m water when less than 20m exists at elev. 218.75, 4m± bottom

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AIR PHOTOGRAPHY
BY: S. BARNES LIMITED
DATE: 08/01/2008
SCALE: 1:1000
SOURCE: FROM THE COUNTY OF BRUCE
PARCEL SHAPING AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH AGREEMENT WITH MAPS/PROCESSED TOPSOIL AND SLUDGE CARRY PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO S. BARNES LIMITED



FISH HABITAT LEGEND

DEEP POOLS	
MACROPHYTE TRANSPLANTS	
LITTORAL SHELF	
GRAVEL SUBSTRATES	
ROOT MASSES OR LOG BUNDLES	

RELOCATED DITCH	
ACCESS ROUTE	
LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)	
GUIDE RAIL	
BELL LINE	
UNDER GROUND GAS LINE	
PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE	
OVERHEAD HYDRO AND POLE	
HYDRO POLE (TO MOVE IF X)	
ANCHOR POLE (TO MOVE IF X)	
CROSS-SECTION LOCATION	
IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING	

PLAN LEGEND

8" -	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
A2 ETC.	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
	EXISTING WELL (SEE EXTENT OF WORK NOTES)
	NEW CANAL BANK
	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
	PROPOSED LEVelling AREA BOUNDARY
	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVelling
	PROPOSED BUFFER
	FULL FULL RELOCATION OF EXISTING CANAL
	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
	ROW RIGHT-OF-WAY
	PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE 1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLIMBURY
COUNTY OF SIMCOE
REGION OF YORK
AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

	K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6
JOB NUMBER 03-023	DATE JANUARY, 2009
DRAWING NUMBER 66	

Extent of Work

Interval 11 Cont.
5+500 to 5+870

- Type III-L canal work.
- Verify leveling location with owners
- Contractor to provide for hauling to adjacent leveling locations in various portions of Interval 11 due to buildings
- Protect existing fence during and as part of excavation work

5+750 to 5+870

Interval 11 Quantities:

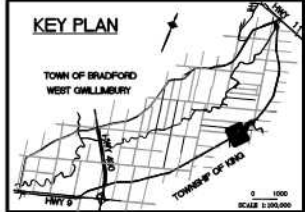
Clearing (Part of Contract 1A)

- For widening 0.45 ha
- For leveling 3.7 ha

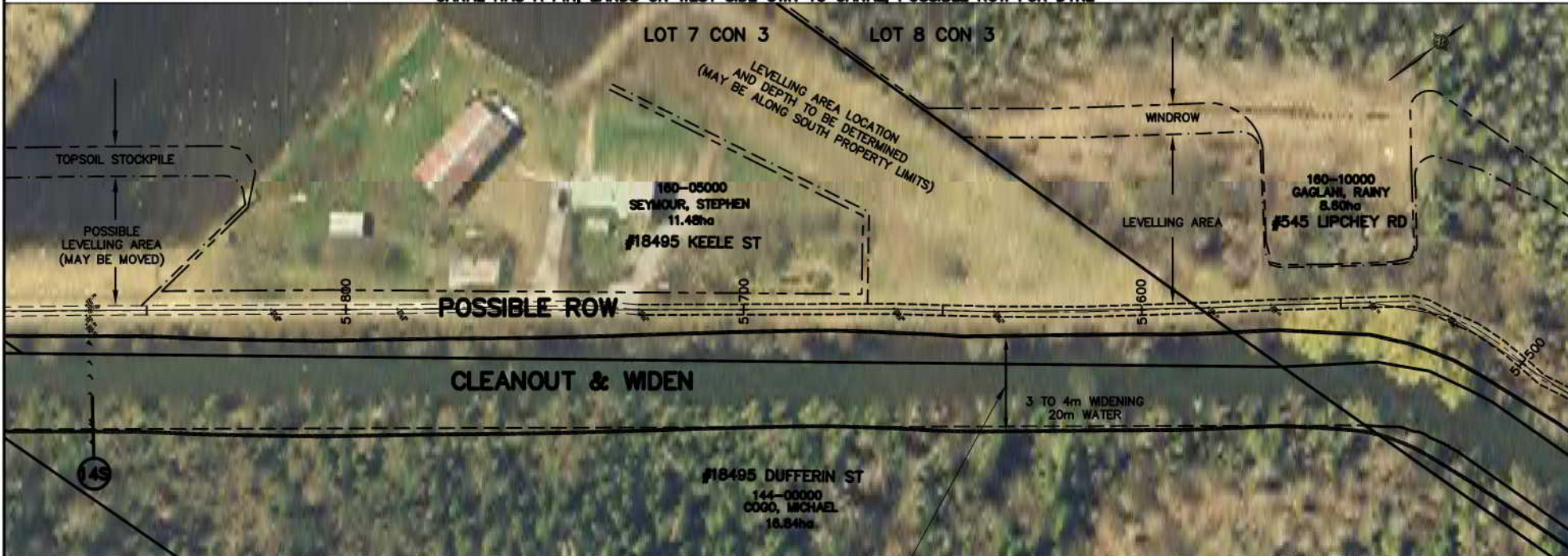
Berm Work (No Berm Required)

Earth work (Part of Contract 1A)

- To excavate and level (cleanouts) 30,000m³. 8,000m³ to move/haul laterally at building site.
- Total excavation 36,500m³
- Final leveling 53,000m³
- Available to haul later from stockpiles if needed 6,500m³
- Quantities do not include deep pool excavation



CANAL HAS A PIN, LANDS ON WEST SIDE OWN TO CANAL POSSIBLE ROW FOR DYKE



INTERVAL 12 ← → INTERVAL 11

Widening as necessary (3 to 4m) to give 20m water when less than 20m exists at elev. 218.75, 4m± bottom

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

- DEEP POOLS
- MACROPHYTE TRANSPLANTS
- LITTORAL SHELF
- GRAVEL SUBSTRATES
- ROOT MASSES OR LOG BUNDLES

- RELOCATED DITCH
- ACCESS ROUTE
- LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
- GUIDE RAIL
- BELL LINE
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- PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
- OVERHEAD HYDRO AND POLE
- HYDRO POLE (TO MOVE IF X)
- ANCHOR POLE (TO MOVE IF X)
- CROSS-SECTION LOCATION
- IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

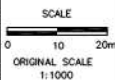
- 8" - - - - - APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (B0)
- A2 ETC. PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
- ⊗ EXISTING WELL (SEE EXTENT OF WORK NOTES)
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- PROPOSED BUFFER
- FULL FULL RELOCATION OF EXISTING CANAL
- PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
- ROW RIGHT-OF-WAY
- PIN PROPERTY IDENTIFICATION NUMBER

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AIR PHOTOGRAPHY
© J. S. BARNES LIMITED
2002 ORTHOPHOTOGRAPHY
OBTAINED FROM THE
COUNTY OF SIMCOE
2002 AS SHOWN

No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK
AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

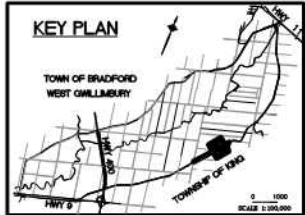
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
67

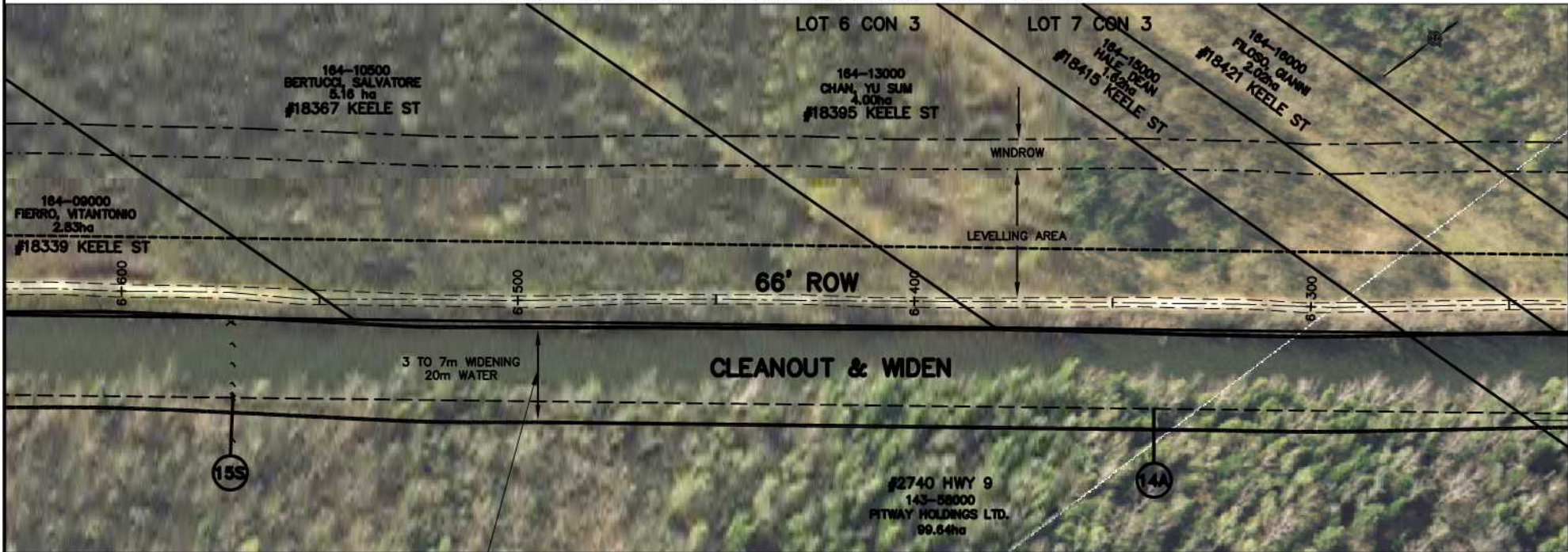
Extent of Work

Interval 12 Cont.

6+250 to 6+600 - Type III-L canal work 350m



CANAL HAS A PIN, LANDS ON WEST SIDE OWN TO CANAL, 66' ROW FOR DYKE



Widening as necessary (3 to 7m) to give 20m water when less than 20m exists at elev. 218.75, 4m+ bottom

INTERVAL 12

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AIR PHOTOGRAPHY
BY: S. BARNES LIMITED
DATE: 08/01/2008
SCALE: 1:1000
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO S. BARNES LIMITED



FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

- DEEP POOLS
- MACROPHYTE TRANSPLANTS
- LITTORAL SHELF
- GRAVEL SUBSTRATES
- ROOT MASSES OR LOG BUNDLES

- RELOCATED DITCH
- ACCESS ROUTE
- LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
- GUIDE RAIL
- BELL LINE
- UNDER-GROUND GAS LINE
- PROPOSED CATCH-BASH LOCATION AND OUTLET PIPE
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- HYDRO POLE (TO MOVE IF X)
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- CROSS-SECTION LOCATION
- IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

- APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (B0)
- PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
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- PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
- PROPOSED BUFFER
- FULL FULL RELOCATION OF EXISTING CANAL
- PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
- ROW RIGHT-OF-WAY
- PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



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HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

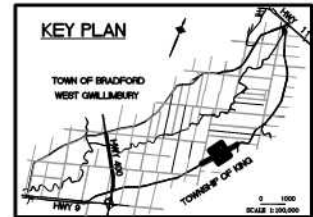
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
69

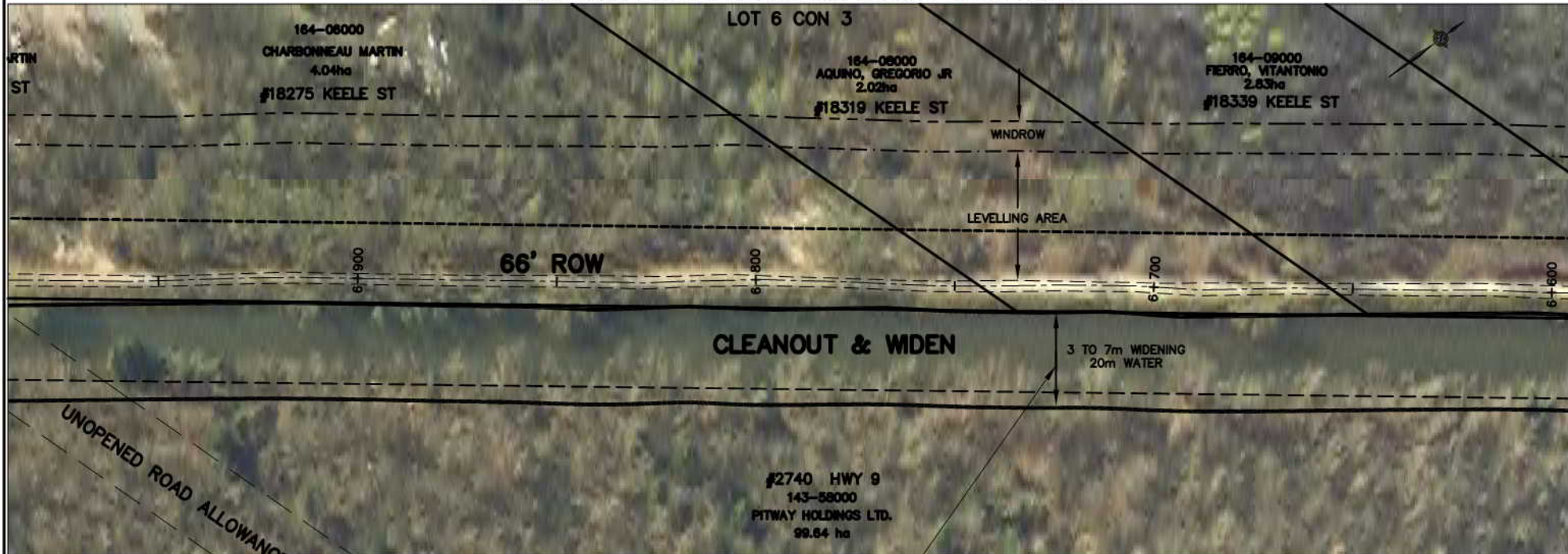
Extent of Work

Interval 12 Cont.

6+600 to 6+970 - Type III-L canal work 370m



CANAL HAS A PIN, LANDS ON WEST SIDE OWN TO CANAL, 66' ROW FOR DYKE



INTERVAL 12

Widening as necessary (3 to 7m) to give 20m water when less than 20m exists at elev. 218.75, 4m± bottom

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DITCHES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SENSORS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL REVEAL HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

AIR PHOTOGRAPHY
BY: S. BARNES SURVEY
DATE: 08/01/2008
SOURCE: FROM THE
COUNTY OF SIMCOE
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO S. BARNES SURVEY



FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

- DEEP POOLS
- MACROPHYTE TRANSPLANTS
- LITTORAL SHELF
- GRAVEL SUBSTRATES
- ROOT MASSES OR LOG BUNDLES

- RELOCATED DITCH
- ACCESS ROUTE
- LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
- GUIDE RAIL
- B
- GAS
- CB
- HP
- HP
- AP
- 13
- *

PLAN LEGEND

- 8" - - - - - APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
- A2 ETC. PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
- ⊗ EXISTING WELL (SEE EXTENT OF WORK NOTES)
- NEW CANAL BANK
- ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
- PROPOSED LEVELLING AREA BOUNDARY
- PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
- PROPOSED BUFFER
- FULL FULL RELOCATION OF EXISTING CANAL
- PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
- ROW RIGHT-OF-WAY
- PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000

HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GILLIMBURY
TOWNSHIP OF KING

COUNTY OF SIMCOE
REGION OF YORK

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
70

Extent of Work

Interval 12 Cont.

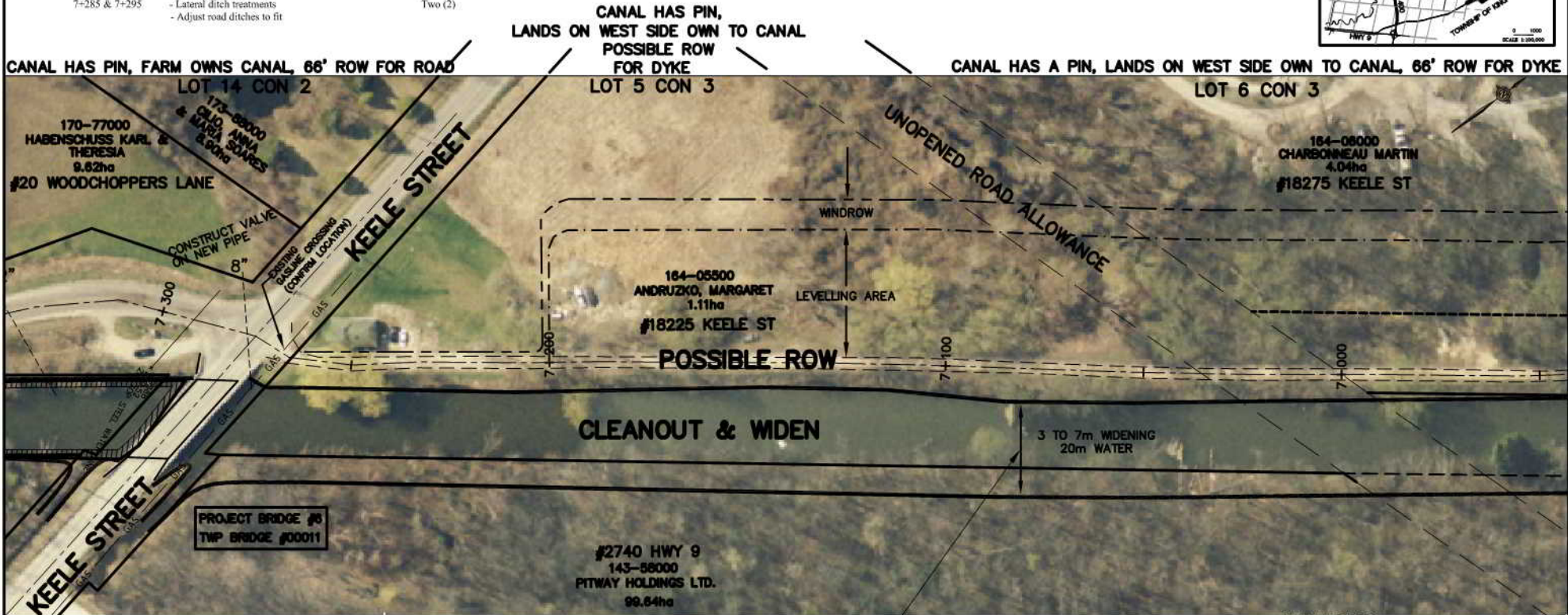
- 6+970 to 7+285 - Type III-L work *
- 7+275 - Irrigation line - 200mm - construct valve on pipe
- 7+285 to 7+295 - Clean bottom through existing Keele Street bridge (concrete structure). Type VI canal work with wood 10m piers
- 7+285 & 7+295 - No additional wingwall/cofferdam work required
- See bridge drawings
- Lateral ditch treatments
- Adjust road ditches to fit

315m
One (1)
10m

Two (2)

★ From 7+200 to 7+285 excavated material by the building to be moved/hailed to east to levelling area.

KEY PLAN



INTERVAL 12

Widening as necessary (3 to 7m) to give 20m water when less than 20m exists at elev. 218.75, 4m± bottom

Interval 12 Quantities:

Clearing (Part of Contract 1A)

- a) For widening 0.55 ha
- b) For leveling 5.0 ha
- Berm Work (No Berm Required)

Earth work

- To excavate and level (cleanouts) 32,000m³. 1,500m³ move/haul laterally at building sites.
- Total excavation 32,000m³
- Final leveling 53,000m³
- Quantities do not include deep pool excavation

FISH HABITAT LEGEND

- (FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)
- DEEP POOLS
- MACROPHYTE TRANSPLANTS
- LITTORAL SHELF
- GRAVEL SUBSTRATES
- ROOT MASSES OR LOG BUNDLES

- RELOCATED DITCH
- ACCESS ROUTE
- LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
- GUIDE RAIL
- B BELL LINE
- GAS UNDER GROUND GAS LINE
- CB PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
- HP OVERHEAD HYDRO AND POLE
- HP HYDRO POLE (TO MOVE IF X)
- AP ANCHOR POLE (TO MOVE IF X)
- CROSS-SECTION LOCATION
- IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

- 8" APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BQ)
- A2 ETC. PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
- EXISTING WELL (SEE EXTENT OF WORK NOTES)
- NEW CANAL BANK
- ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
- PROPOSED LEVELLING AREA BOUNDARY
- PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
- PROPOSED BUFFER
- FULL FULL RELOCATION OF EXISTING CANAL
- PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
- ROW RIGHT-OF-WAY
- PIN PROPERTY IDENTIFICATION NUMBER

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DITCHES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL BEWARE HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

AIR PHOTOGRAPHY
BY: K. SMART LIMITED
DATE: 03/01/2009
SCALE: 1:5000
PROJECT: HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT



No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
71

7+295 to 7+650	- Type III-H canal work - 0 to 3m is to be cleared along side being widened	355m
7+295 to 7+650	- New guide rail	355m
7+340	- Irrigation line - 50mm. No work but grout sleeve	One (1)
7+540±	- Irrigation line - 100mm - Do Type A3 work (new line)	One (1)

KEY PLAN

TOWN OF BRADFORD
WEST GILLIMURY

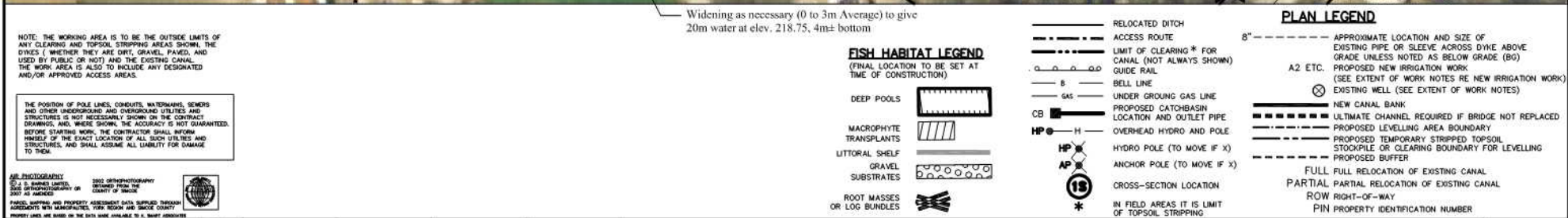
HWY 9



HWY 104

HWY 124

TOWNSHIP OF KNOX

0 1000
SCALE 1:300,000



No.	REVISION	DATE		HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD TOWN OF BRADFORD WEST OUILMIBURY COUNTY OF SIMCOE TOWNSHIP OF KING REGION OF YORK	 K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023
						DATE JANUARY, 2009
						DRAWING NUMBER 72

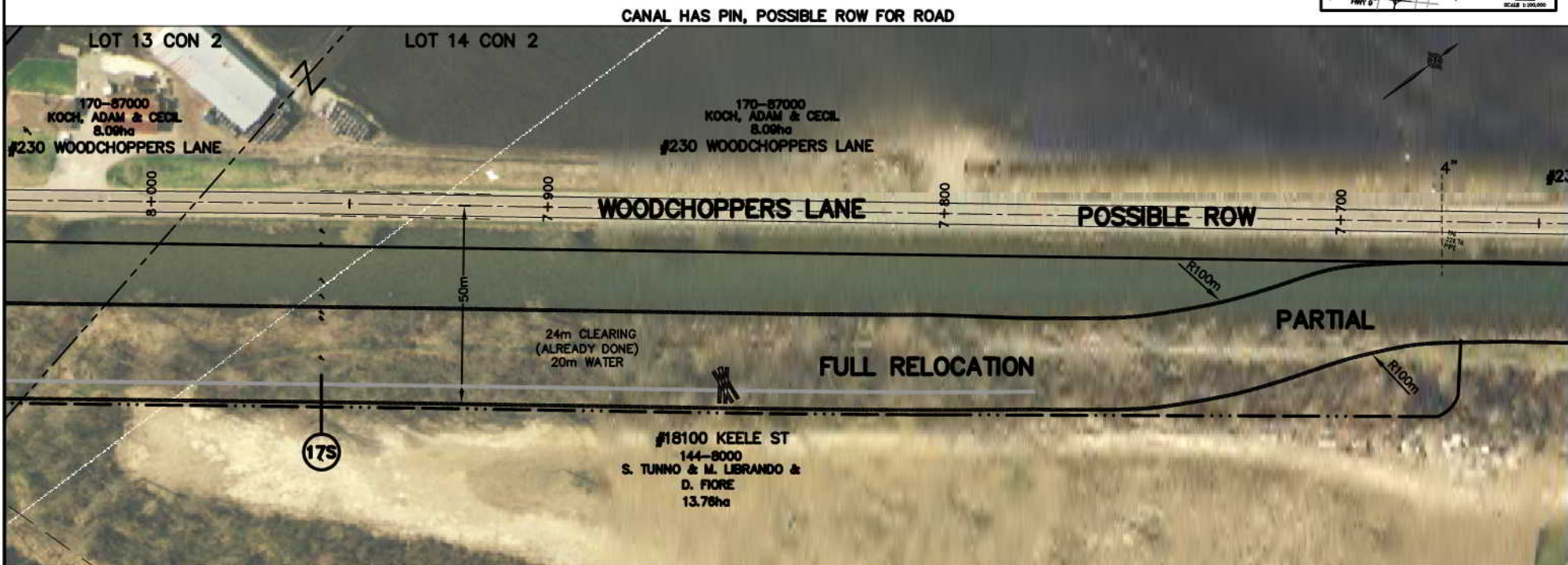
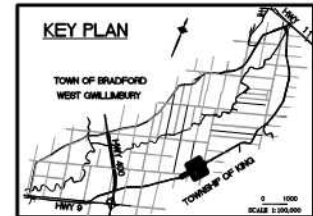
Interval 13 Cont.*

7+650 to 7+675 -

- | | | |
|----------------|--|---------|
| 7+650 to 7+675 | - Type III-H canal work (0 to 3m clearing required for widening) | 25m |
| 7+650 to 7+750 | - New guide rail | 100m |
| 7+675 to 7+750 | - Type I canal work | 75m |
| 7+675 to 7+750 | - New cofferdam required | 75m |
| | - Provide for 12m long piles if steel | |
| 7+750 to 8+000 | - Type VIIA canal work | 250m |
| 7+675 | - Irrigation line - 100m - Type A3 work (new line) | One (1) |

* In Interval 13, all clearing has been done from Sta. 7+670 upstream along route for new canal where it is to be relocated.
Clearing still necessary in cleanout and widening areas and is still required along existing dyke.

KEY PLAN



INTERVAL 13

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN, THE DYKES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
© J. S. SHAW LIMITED
2002 ORTHOPHOTOGRAPHY OR
2007 AS AIRCRAFT

2002 ORTHOPHOTOGRAPHY
OBTAINED FROM THE
COUNTY OF SMOKE








PARCEL SHAPING AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
AGREEMENTS WITH MUNICIPALITIES, YORK REGION AND SMOKE COUNTY

PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO A SMART AEROSPACE

FISH HABITAT LEGEND

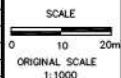
(FINAL LOCATION TO BE SET AT
TIME OF CONSTRUCTION)



	RELOCATED DITCH
	ACCESS ROUTE
	LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
	GUIDE RAIL
	BELL LINE
	UNDER GROWING GAS LINE
	PROPOSED CATCHBASIN
	LOCATION AND OUTLET PIPE
	OVERHEAD HYDRO AND POLE
	HYDRO POLE (TO MOVE IF X)
	ANCHOR POLE (TO MOVE IF X)
	CROSS-SECTION LOCATION
	IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

-----	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
A2 ETC.	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
⊗	EXISTING WELL (SEE EXTENT OF WORK NOTES)
=====	NEW CANAL BANK
-----	ULTIMATE CHANNEL, REQUIRED IF BRIDGE NOT REPLACED
-----	PROPOSED LEVELLING AREA BOUNDARY
-----	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
-----	PROPOSED BUFFER
FULL	FULL RELOCATION OF EXISTING CANAL
PARTIAL	PARTIAL RELOCATION OF EXISTING CANAL
ROW	RIGHT-OF-WAY
PIN	PROPERTY IDENTIFICATION NUMBER

[illegible]

HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
 TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE
 TOWNSHIP OF KING REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES



K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 McINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER	03-023
DATE	JANUARY, 2009
DRAWING NUMBER	73

Extent of Work

Interval 13 Cont. *

8+000 to 8+150	- Type VIIA canal work	150m
8+090	- Irrigation line - 250mm sleeve	One (1)
	- Type A2 work	
8+140	- Lateral channel treatment	One (1)
8+150±	- Irrigation line - 50mm - Type B work	One (1)

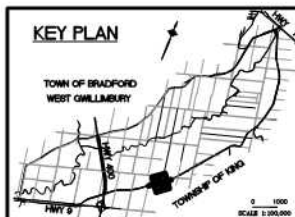
* In Interval 13, clearing is already completed from Sta. 7+670 upstream along route for new canal where it is to be relocated.
Clearing still necessary in cleanout and widening areas and is still required along existing dyke.

Extent of work

Interval 14 (Part of Contract 1A and 1B) *

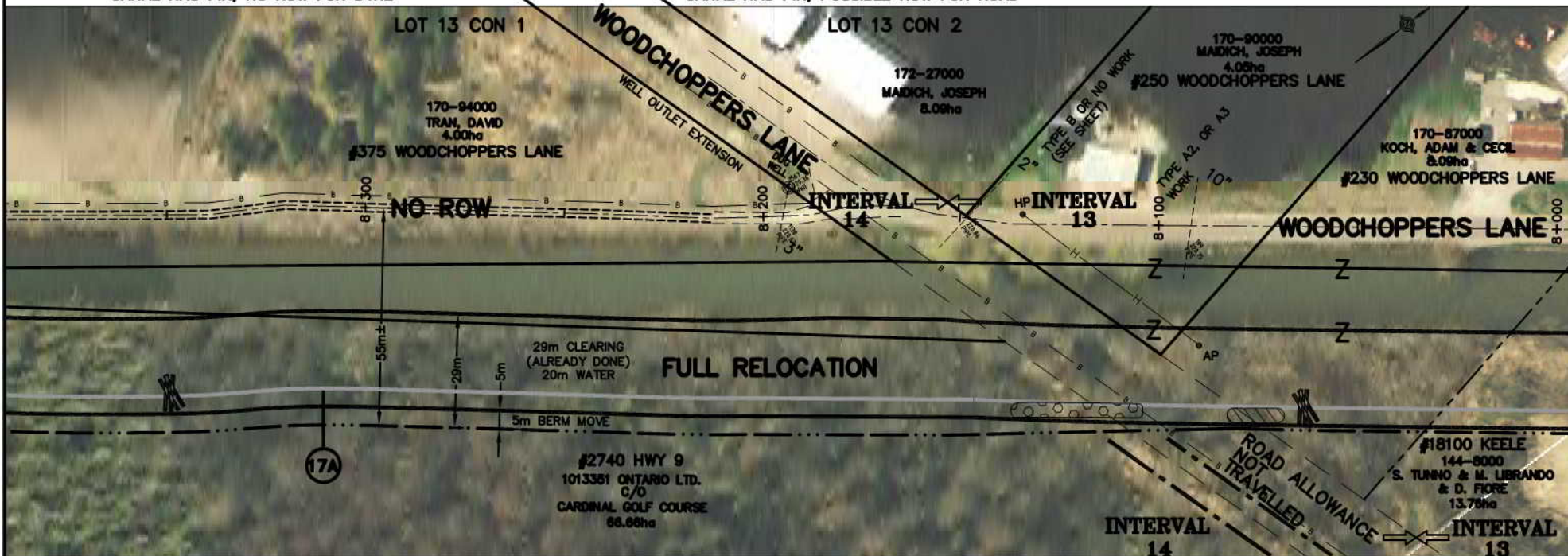
8+150 to 8+380	- Type VIIA canal work	230m
8+150 to 8+300	- Raise earth dyke and widen to 5m (where needed)	150m
8+195	- Well overflow line (75mm). Extend as 75mm well outlet.	
	- Type G-E work	One (1)
	- A second 75mm line here is not used and may be abandoned	

* In Interval 14, clearing is already completed along route for new relocated canal.
Clearing still required along existing dyke.



CANAL HAS PIN, NO ROW FOR DYKE

CANAL HAS PIN, POSSIBLE ROW FOR ROAD



Interval 13 Quantities:

Clearing (Part of Contract 1A)

- For widening 0.1 ha
- For relocation - completed already
- Along edge of dyke - approx. 50% of the 860m length has trees or brush and such are to be chipped or removed.

Earth work (Part of Contract 1A)

- To haul during excavation 9,000m³
- To excavate and backfill (relocations) 20,000m³
- Total excavation 29,000m³
- Final leveling 9,500m³
- Available to haul later from stockpiles if needed 9,000m³
- To haul later from backfilling 4,000m³
- Quantities do not include deep pool excavation

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

DEEP POOLS	
MACROPHYTE TRANSPLANTS	
LITTORAL SHELF	
GRAVEL SUBSTRATES	
ROOT MASSES OR LOG BUNDLES	

RELOCATED DITCH	
ACCESS ROUTE	
LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)	
GUIDE RAIL	
BELL LINE	
UNDER GROUND GAS LINE	
PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE	
OVERHEAD HYDRO AND POLE	
HYDRO POLE (TO MOVE IF X)	
ANCHOR POLE (TO MOVE IF X)	
CROSS-SECTION LOCATION	
IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING	

PLAN LEGEND

8" - - - - -	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BQ)
A2 ETC.	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
	EXISTING WELL (SEE EXTENT OF WORK NOTES)
	NEW CANAL BANK
	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
	PROPOSED LEVELLING AREA BOUNDARY
	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
	PROPOSED BUFFER
	FULL RELOCATION OF EXISTING CANAL
	PARTIAL RELOCATION OF EXISTING CANAL
	ROW RIGHT-OF-WAY
	PIN PROPERTY IDENTIFICATION NUMBER

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THE POSITION OF POLE LINES, CONDUITS, WATERWAYS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

AIR PHOTOGRAPHY
© J. S. BARNES LIMITED
2002 ORTHOPHOTOGRAPHY
OBTAINED FROM THE
COUNTY OF SIMCOE
2007 AS NOTED

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GILLIMBURY
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER 03-023
DATE JANUARY, 2009
DRAWING NUMBER 74

C:\03-023\PIPER AND ROADS 03-023 OPS.dwg 755 22-Dec-08 4:11:07 PM

Extent of Work

Interval 14 Cont. *

- 8+750 to 9+100 - Type VIIA canal work ** 350m
- Some bottom cleanout (1,000m² to 1,500m²) was recently done by Kettleby Creek, materials still to be leveled **
- A 24m easement from edge of water to south exists and new canal is to be in this easement
- Berm to be moved to south
- 8+750 to 8+80 - Raise earth dyke and widen to 5m (where needed) 50m
- 8+780 to 8+940 - Provide new irrigation line if required (Type A6 work) One (1)
- 8+840 - Lateral channel treatment One (1)

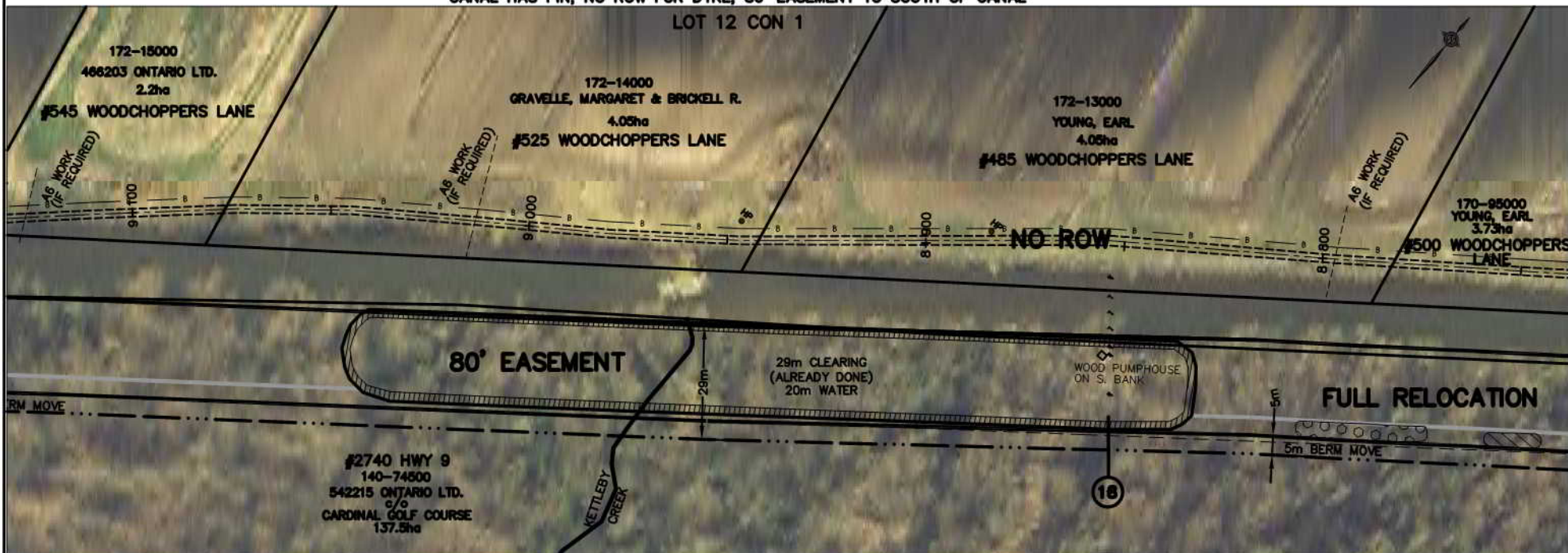
- 8+853 - Existing pumphouse and piping to be moved to south of new canal. Electrical service to be removed from canal bottom and replaced with new overhead servicing including 2 poles to new pumphouse One (1)
- 8+940 to 9+080 - Provide new irrigation line if required (Type A6 work) One (1)
- 9+080 to 9+150 - Provide new irrigation line if required (Type A6 work) One (1)

- * In Interval 14, clearing is already done along route for new relocated canal. Clearing still required along existing dyke edge.
- ** One short area in Interval 11 and another short area in Interval 15 were similarly done and materials are to be leveled



CANAL HAS PIN, NO ROW FOR DYKE, 80' EASEMENT TO SOUTH OF CANAL

LOT 12 CON 1



INTERVAL 14

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DYKES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

- In Lots 11 and 12 Con 1 Engineer will flag the 24m easement

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AIR PHOTOGRAPHY 2002 ORTOPHOTOGRAPHY
BY: S. B. SMITH, INC. OBTAINED FROM THE
COUNTY OF SIMCOE
PARCELS SHOWN AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
LANDSAT-5 WITH MANIPULATED TIRN BROWN AND SHADE COMPOSITE
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO S. B. SMITH ASSOCIATES



FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

- DEEP POOLS
- MACROPHYTES TRANSPLANTS
- LITTORAL SHELF
- GRAVEL SUBSTRATES
- ROOT MASSES OR LOG BUNDLES

- RELOCATED DITCH
- ACCESS ROUTE
- LIMIT OF CLEARING* FOR CANAL (NOT ALWAYS SHOWN)
- GUIDE RAIL
- BELL LINE
- UNDER GROUND GAS LINE
- PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
- OVERHEAD HYDRO AND POLE
- HYDRO POLE (TO MOVE IF X)
- ANCHOR POLE (TO MOVE IF X)
- CROSS-SECTION LOCATION
- IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

- 8" - APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
- A2 ETC. - PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
- EXISTING WELL (SEE EXTENT OF WORK NOTES)
- NEW CANAL BANK
- ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
- PROPOSED LEVELLING AREA BOUNDARY
- PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
- PROPOSED BUFFER
- FULL FULL RELOCATION OF EXISTING CANAL
- PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
- ROW RIGHT-OF-WAY
- PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
COUNTY OF SIMCOE
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
76

Extent of Work

Interval 14 Cont. *

- 9+100 to 9+259 - Type VIIA canal work 159m
 9+190± - Irrigation line (100m). Extension required.
 Type A6 work One (1)
 9+150 to 9+260 - Provide new irrigation line if required (Type A6 work) One (1)
 - A 24m easement exists from edge of water to south and new canal is to be in this easement (5m width to be cleared and used for berm move)
 9+150 to 9+259 - Raise earth dyke and widen to 5m (where needed) 109m

Interval 14 Quantities:

Clearing (Part of Contract 1A)

- a) For relocation - already completed
 b) Along edge of dyke - approx. 100% of the 1100m length has trees. Width of treed area is greater where dyke is not used as a lane. Trees to be partially or fully chipped.

Earth work (Part of Contract 1A)

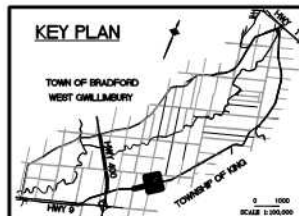
- To excavate and backfill (relocations) 51,000m³
- Total excavation 51,000m³
- Final leveling 24,000m³
- To haul later from backfill 9,000m³
- Quantities do not include deep pool excavation

- * In Interval 14, clearing is already done along route for new relocated canal. Clearing still required along existing dyke.

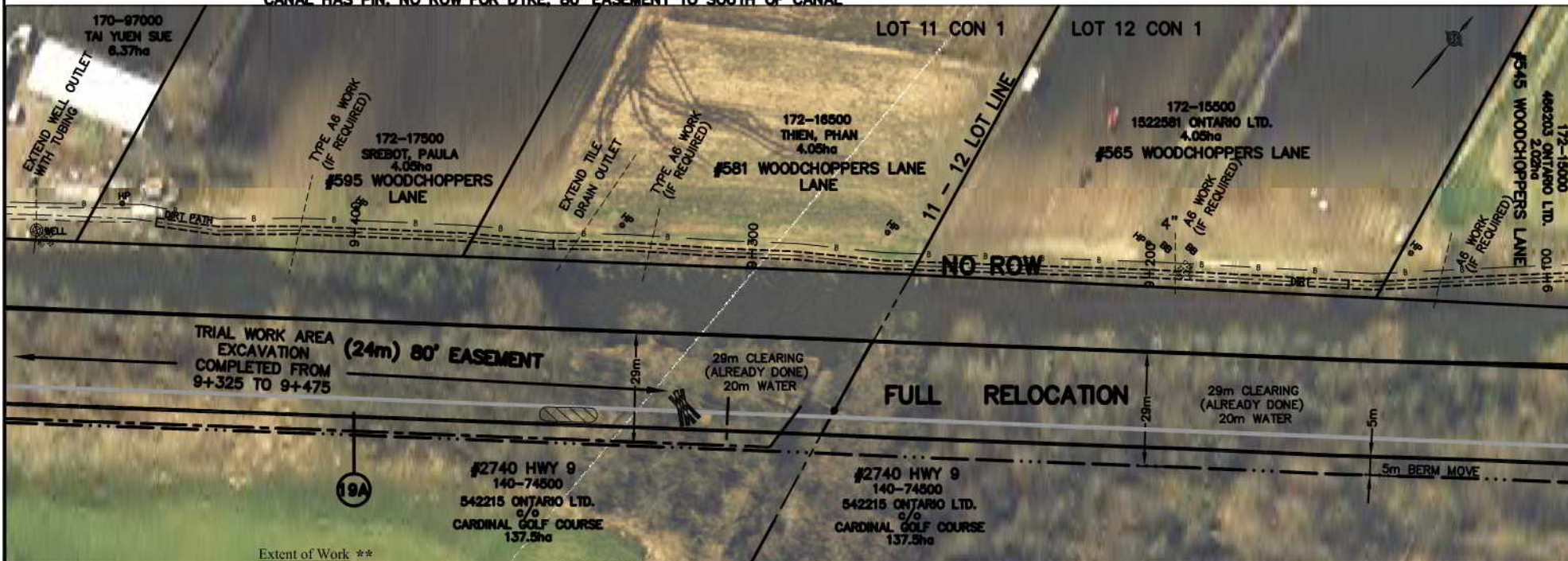
- ** In Interval 15, clearing is already completed along route for new relocated canal. Clearing is still required along existing dyke edge.

- *** Sta. 9+275 to 9+475± (150m±). This portion is already excavated but some widening of north bank is still required

KEY PLAN



CANAL HAS PIN. NO ROW FOR DYKE. 80' EASEMENT TO SOUTH OF CANAL



Extent of Work **

Interval 15 (Part of Contracts 1A and 1B) ***

- 9+259 to 9+275 - Type VIIA canal work 16m
 - A 24m easement exists from edge of water to south and new canal is to be in this easement (5m width to be cleared and used for berm move)
 9+259 to 9+450 - Raise earth dyke and widen 5m (where needed) 191m
 - Dyke to be reconstructed to required section (use excavated materials)
 9+259 to 9+370 - New Irrigation Type A6 may be required One (1)
 9+290 - Lateral channel treatment One (1)
 9+450 to 9+470 - Resurface and raise dyke road after completion of work. Maintain such during work. See cross-section and specifications re work to do. See notes also on next drawing. Road to be raised in locations.
 9+345± - Tile drain outlet. Extent as Type G-D-O work One (1)

INTERVAL 15

INTERVAL 14

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

- DEEP POOLS
- MACROPHYTE TRANSPLANTS
- LITTORAL SHELF
- GRAVEL SUBSTRATES
- ROOT MASSES OR LOG BUNDLES

- RELOCATED DITCH
- ACCESS ROUTE
- LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
- GUIDE RAIL
- BELL LINE
- UNDER GROUND GAS LINE
- PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
- OVERHEAD HYDRO AND POLE
- HYDRO POLE (TO MOVE IF X)
- ANCHOR POLE (TO MOVE IF X)
- CROSS-SECTION LOCATION
- IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

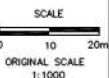
- 8" - - - - - APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
- A2 ETC. PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
- EXISTING WELL (SEE EXTENT OF WORK NOTES)
- NEW CANAL BANK
- ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
- PROPOSED LEVELLING AREA BOUNDARY
- PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
- PROPOSED BUFFER
- FULL RELOCATION OF EXISTING CANAL
- PARTIAL RELOCATION OF EXISTING CANAL
- ROW RIGHT-OF-WAY
- PIN PROPERTY IDENTIFICATION NUMBER

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DIVES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
 HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
 TOWN OF BRADFORD WEST GILLIMBURY
 COUNTY OF SIMCOE
 REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
 CONSULTING ENGINEERS AND PLANNERS
 85 MCINTYRE DRIVE
 KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
 DATE
JANUARY, 2009
 DRAWING NUMBER
77

Extent of Work

Interval 15 Cont.

- 9+470 to 9+860 - Type VIIA canal work
 - A 24m easement exists from edge of water to south and new canal is to be in this easement (5m width to be cleared and used for berm move)
 9+450 to 9+950 - Resurface/regrade dyke road after completion of work. Maintain such during work. See cross-section and specifications re work to do. See notes also on next drawing. Road to be raised in locations
 9+480 - Well on south side of dyke. Raise well. Type G-R work.
 - Extend outlet. Type G-E work
 - Place new 50mm water line from 9+480 to 9+526

390m

50m

One (1)

One (1)

46m

9+525 & 9+840±

- 2 hydro poles and lines to move. Service is overhead.
 From north and then underground to south (450mm± resurface deep)

9+526

- Irrigation line - 200mm sleeve. Type A2 work

9+610

- Irrigation line - 50mm, type B or C work (Type C work costed)

- Lateral channel treatment

9+615

- Possible canal side well, Type G work. Raise well Type G-R and extend outlet (Type G-E work)

- Irrigation line - 50mm - Type B or C work (Type B costed)

9+650

- Irrigation line - one 350mm communal. Type EC work

Two(2)

One (1)

One (1)

One (1)

One (1)

One (1)

One (1)

One (1)

9+771 to 9+773

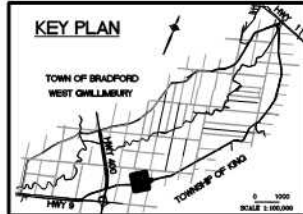
- One irrigation line, 150mm sleeve
 - Do Type A2 or A4 modified if owner wishes (Type A2 work costed)
 - One well outlet - Do Type G-E work - well outlet extension
 9+813 - Irrigation line - 250mm sleeve. Possible A2 work

One (1)

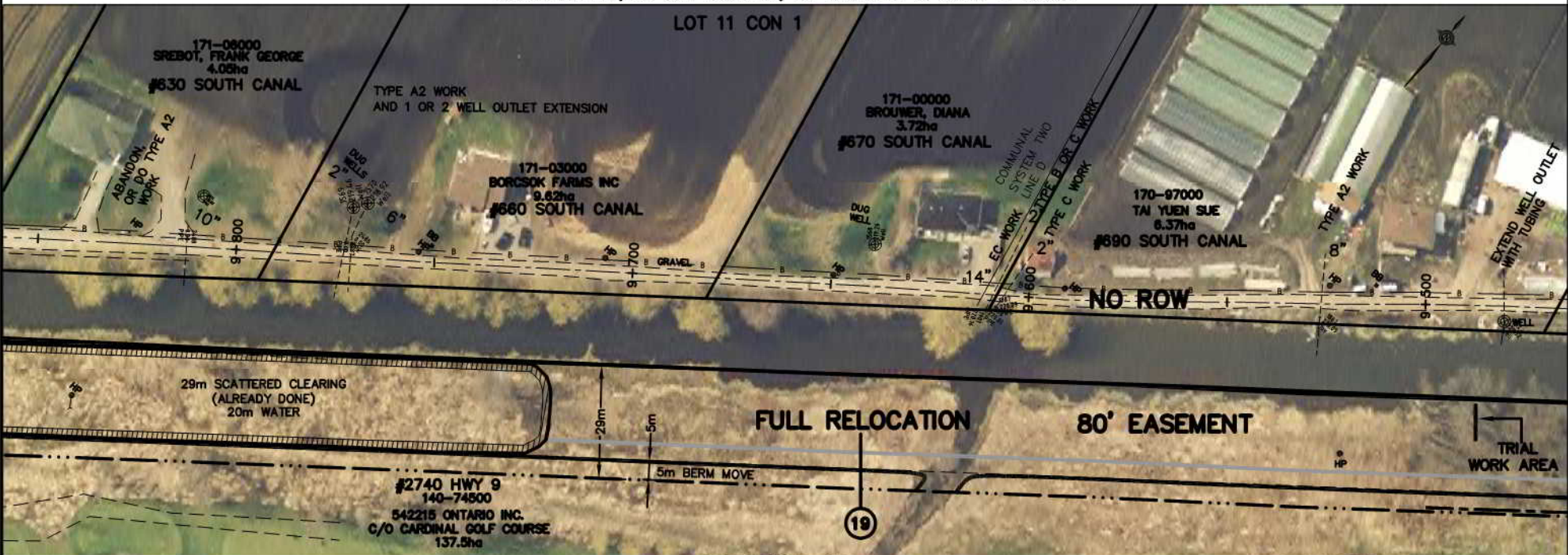
One (1)

One (1)

** In Interval 15, clearing is already completed along route for new relocated canal. Clearing is still required along existing dyke edge.



CANAL HAS PIN, NO ROW FOR DYKE, 80' EASEMENT TO SOUTH OF CANAL



INTERVAL 15

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

- DEEP POOLS
 MACROPHYTE TRANSPLANTS
 LITTORAL SHELF
 GRAVEL SUBSTRATES
 ROOT MASSES OR LOG BUNDLES

- RELOCATED DITCH
 ACCESS ROUTE
 LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
 GUIDE RAIL
 BELL LINE
 UNDER GROUND GAS LINE
 PROPOSED CATCH-BASH LOCATION AND OUTLET PIPE
 OVERHEAD HYDRO AND POLE
 HYDRO POLE (TO MOVE IF X)
 ANCHOR POLE (TO MOVE IF X)
 CROSS-SECTION LOCATION
 IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

- 8" - APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
 A2 ETC. PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
 EXISTING WELL (SEE EXTENT OF WORK NOTES)
 NEW CANAL BANK
 ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
 PROPOSED LEVELLING AREA BOUNDARY
 PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
 PROPOSED BUFFER
 FULL FULL RELOCATION OF EXISTING CANAL
 PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
 ROW RIGHT-OF-WAY
 PIN PROPERTY IDENTIFICATION NUMBER

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 PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO J. S. BARNES ASSOCIATES

NO.	REVISION	DATE

SCALE
 0 10 20m
 ORIGINAL SCALE
 1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
 TOWN OF BRADFORD WEST Gwillimbury
 TOWNSHIP OF KING
 COUNTY OF SIMCOE
 REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
 CONSULTING ENGINEERS AND PLANNERS
 85 MCINTYRE DRIVE
 KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
 03-023
 DATE
 JANUARY, 2009
 DRAWING NUMBER
 78

Extent of Work

- 9+860 to 9+950 - Type VIIA canal work. New canal to blend to new bridge 90m
- 9+915 - Irrigation line - 200mm (8") - Type A2 work One (1)
- 9+919 & 9+926 - Irrigation line - 50mm, Type B work and one well overflow outlet - 50mm, Type G-E work One (1)
- 9+860 to 9+940 - Resurface/regrade dyke road after completion of work. Maintain such during work. See cross-section and specifications re work to do. See notes also on previous drawing. Road to be raised in locations 80m
- 9+925 to 9+945 - Guide rail to be removed 20m
- 9+945 - Lateral channel treatment and realign ditch as necessary One (1)

**CANAL OWNED BY LANDS ON SOUTH SIDE,
NO ROW FOR DYKE**

Interval 15 Quantities:

Clearing (Part of Contract 1A)

- a) For relocation - already completed
- b) Along edge of dyke - approx. 50% of the 690m length has trees. Width of treed area is greater where dyke is not used as a lane. Trees to be partially or fully chipped.

Earth work (Part of Contract 1A)

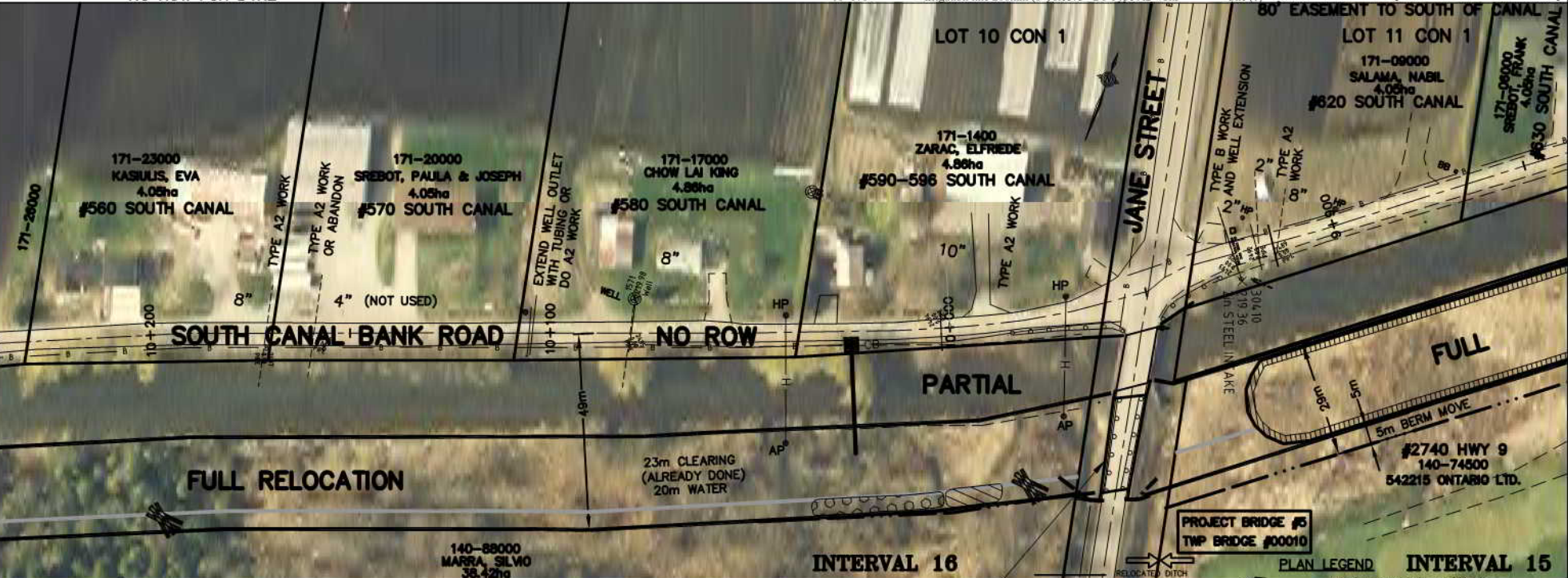
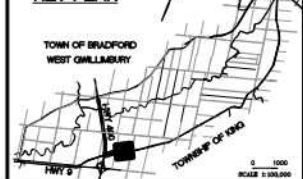
- To excavate and backfill 21,500m³ (including 1,000m³ from trial channel)
- Total excavation 21,500m³
- Final leveling 16,000m²
- To haul later from backfill 9,000m³
- To move laterally from trial backfill 1,000m³ (plus 1,000m³ new excavation)
- Quantities do not include deep pool excavation

Extent of work

Interval 16 (Part of Contracts 1A and 1B) *

- 9+960 to 10+200 - Type II canal work (New canal to blend to new bridge) 240m
- 9+950 to 9+960 - See Bridge Drawings for conceptual drawing of new bridge to be built prior to or during canal work
- 9+960 to 9+985 - Guide rail to be removed 25m
- 9+965 - Lateral channel treatment & realign ditch as necessary One (1)
- 10-002 - Irrigation line - 250mm (10") sleeve - Type A2 work One (1)
- 10-025 - Catchbasin and outlet - Engineer to confirm location One (1)
- 10-080 - Well outlet - Type G-E work One (1)
- 10-105 - Irrigation line - 250mm (10") sleeve - Type A2 work One (1)
- 10-160+ - Irrigation line - 100mm (4") sleeve (not used) One (1)
- Confirm any new work with owner. May be necessary to seal if not already done
- 10-170+ - Irrigation line 200mm (8") sleeve - Do Type A2 work One (1)

KEY PLAN



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* Interval 16, clearing is already done along route for relocated canal. Clearing still required along existing dyke.

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

- DEEP POOLS
- MACROPHYTE TRANSPLANTS
- LITTORAL SHELF
- GRAVEL SUBSTRATES
- ROOT MASSES OR LOG BUNDLES

New bridge to be constructed prior to, or during, canal excavation work

- ACCESS ROUTE
- LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
- GUIDE RAIL
- BELL LINE
- UNDER GROUND GAS LINE
- PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
- OVERHEAD HYDRO AND POLE
- HYDRO POLE (TO MOVE IF X)
- ANCHOR POLE (TO MOVE IF X)
- CROSS-SECTION LOCATION
- IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

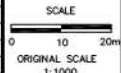
- APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
- PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
- EXISTING WELL (SEE EXTENT OF WORK NOTES)
- NEW CANAL BANK
- ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
- PROPOSED LEVELLING AREA BOUNDARY
- PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
- PROPOSED BUFFER
- FULL RELOCATION OF EXISTING CANAL
- PARTIAL RELOCATION OF EXISTING CANAL
- ROW RIGHT-OF-WAY
- PIN PROPERTY IDENTIFICATION NUMBER

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No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GILLIMBURY
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MONTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
79

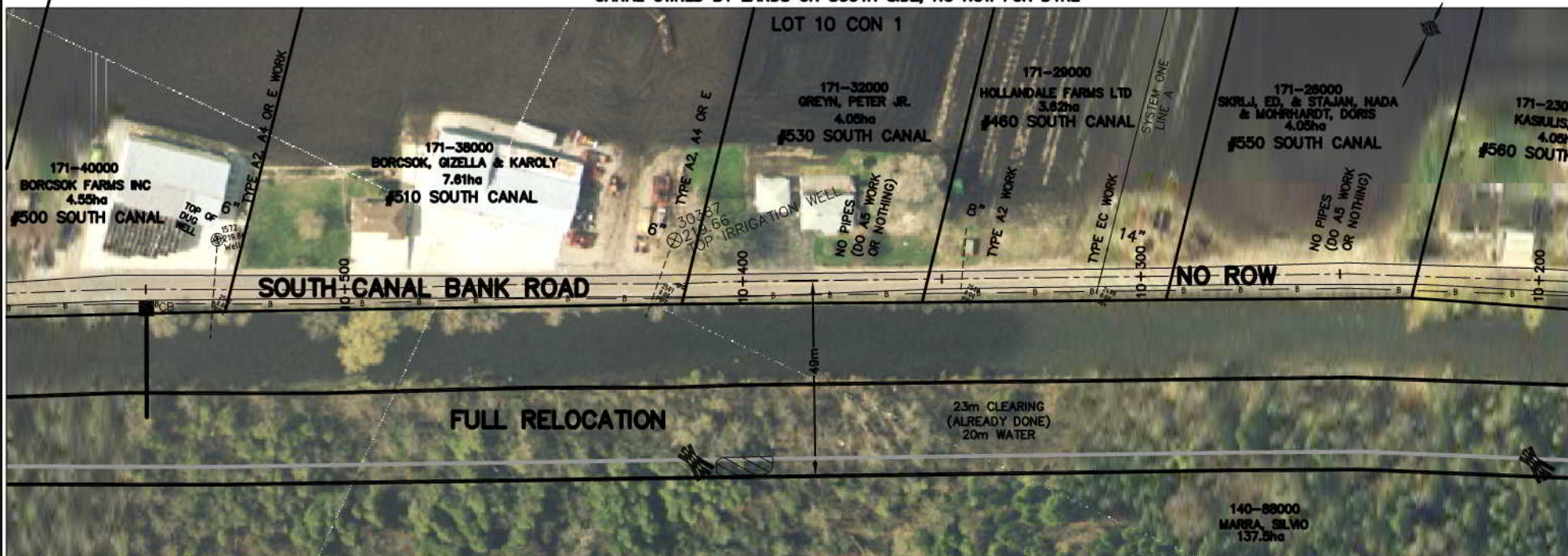
Interval 16 Cont. *

Interval 16 Cont. *
10+200 to 10+550

10-200 to 10-550	- Type II canal work (full relocation with berm)	350m
10-310	- Irrigation line - 350mm communal - Type EC work	One (1)
10-350	- Irrigation line - 200mm (8") sleeve - Type A2 work	One (1)
10-420	- Irrigation line - 150mm(6") - Type A2, A4 or E work	One (1)
	Engineer to advise. Type E work is costed	
10-533	- Irrigation line - 150mm (6") pipe - Type A2, A4 Modified or E work	One (1)
	Engineer to advise. Type E work is costed	
10-550±	- Catchbasin and outlet. Engineer to confirm location	One (1)

* Interval 16, clearing is already done along route for relocated canal.
Clearing still required along existing dyke.

CANAL OWNED BY LANDS ON SOUTH SIDE, NO ROW FOR DYKE

**INTERVAL 16**


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AIR PHOTOGRAPHY
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2002 ORTHOPHOTOGRAPHY
 OBTAINED FROM THE
 COUNTY OF SIMCOE

PAVED, SHAPED AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
 AGREEMENTS WITH MUNICIPALITIES, YORK REGION AND SIMCOE COUNTY



FISH HABITAT LEGEND

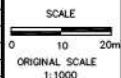
(FINAL LOCATION TO BE SET AT
TIME OF CONSTRUCTION)

DEEP POOLS
MACROPHYTE
TRANSPLANTS
LITTORAL SHELF
GRAVEL
SUBSTRATES
ROOT MASSES
OR LOG BUNDLES

	RELOCATED DITCH
	ACCESS ROUTE
	LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
	GUIDE RAIL
	BELL LINE
	UNDER GROUND GAS LINE
	PROPOSED CATCHBASIN
	LOCATION AND OUTLET PIPE
	OVERHEAD HYDRO AND POLE
	HYDRO POLE (TO MOVE IF X)
	ANCHOR POLE (TO MOVE IF X)
	CROSS-SECTION LOCATION
	IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

8" ----- APPROXIMATE LOCATION AND SIZE OF
EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE
GRADE UNLESS NOTED AS BELOW GRADE (BG)
A2 ETC. PROPOSED NEW IRRIGATION WORK
(SEE EXTENT WORK NOTES FOR NEW IRRIGATION WORK)
EXISTING WELL (SEE EXTENT OF WORK NOTES)
NEW CANAL BANK
----- ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
----- PROPOSED LEVELLING AREA BOUNDARY
----- PROPOSED TEMPORARY STRIPPED TOPSOIL
STOOPHOLE OR CLEARING BOUNDARY FOR LEVELLING
----- PROPOSED BUFFER
FULL FULL RELOCATION OF EXISTING CANAL
PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
ROW RIGHT-OF-WAY
PIN PROPERTY IDENTIFICATION NUMBER

[illegible]

HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE
TOWNSHIP OF KING REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES



K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER	03-023
DATE	JANUARY, 2009
DRAWING NUMBER	80

10-550 to 10-930	Type II canal work	380 m
10-640	- Irrigation line - 150mm (6") sleeve - Type A2 work	One (1)
10-767	- Irrigation line - 250mm (10") sleeve - Type A4 work	One (1)
10-775	- Catchbasin and outlet - Engineer to confirm location	One (1)
10-876	- Irrigation line - 200mm (8") sleeve will be replaced by new A4 at Sta. 10-876. Seal only	One (1)
10-910	- Irrigation line - 250mm (10") sleeve Type A4 or D work. Type A4 is costed	One (1)

KEY PLAN

TOWN OF BRADFORD
WEST GILLIMURY

Highway 9
Highway 10
TOWNSHIP OF BRADFORD
TOWNSHIP OF GILLIMURY

0 1000
SCALE: 1:50,000

171-50000
HOLLANDALE FARMS LTD.
10.63ha
#400 SOUTH CANAL

171-49000
HORLINGS, DAVID
11.11ha
#460 SOUTH CANAL

171-44000
HORLINGS, DAVID
3.98ha
#480 SOUTH CANAL

171-43000
HOLLANDALE FARMS LTD.
4.23ha
#490 SOUTH CANAL

171-40000
BORCSOK FARMS INC.
4.88ha
#500 SOUTH CANAL

140-97500
PULLA, VINCENZO & J. V. HOLDINGS LTD.
20.32ha

140-88000
MARRA, SILVO
38.42ha

SOUTH CANAL BANK ROAD

FULL RELOCATION

NO ROW

23m CLEARING (ALREADY DONE)
20m WATER

10" ABANDON 2 EXISTING

10" REPLACE BOTH WITH ONE NEW A4 (10" PIPE)

10" NO PIPES OR TYPE AS

10" TYPE A2 WORK

LOT 9 CON 1

LOT 10 CON 1

LOT 11

PLAN LEGEND

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OBTAINED FROM THE
COUNTY OF SMOKE

**PARCEL MAPPING AND PROPERTY ASSESSMENT DATA SUPPLIED THROUGH
AGREEMENTS WITH MUNICIPALITIES, YORK REGION AND SMOKE COUNTY**
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO A. SMART APPROX

(FINAL LOCATION TO BE SET AT
TIME OF CONSTRUCTION)

DEEP POOLS

Year	Number of people (millions)
1980	18
1985	22
1990	26
1995	30
2000	34
2005	38
2020	42

MACROPHYTE ☒

MACROPHYTE TRANSPLANTS

LITTORAL SHELF

EFFORTAL SHELF
CRANE

GRAVEL
SUBSTRATES

SUBSTRATES

ROOT MASSES

R LOG BUNDLES 

95. SYSTEM CAN













IMAGE SYSTEM CAN

AGE SYSTEM JOINT MUN

ST GWILLIMBURY

PROPERTIES AND EXTENSIONS


PROPERTIES AND EXTENSION

 RELOCATED DITCH
 ACCESS ROUTE
 LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
 GUIDE RAIL
 BELL LINE
 UNDERGROUND GAS LINE
 PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
 OVERHEAD HYDRO AND POLE
 HYDRO POLE (TO MOVE IF X)
 ANCHOR POLE (TO MOVE IF X)
 CROSS-SECTION LOCATION
 IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

8" -----	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (B6)
A2 ETC.	EXISTING UTILITY NOT IRRIGATION WORK (SEE EXTENT WORK NOTES RE NEW IRRIGATION WORK)
⊗	EXISTING WELL (SEE EXTENT OF WORK NOTES)
=====	NEW CANAL BANK
-----	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
-----	PROPOSED LEVELLING AREA BOUNDARY
-----	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
-----	PROPOSED BUFFER
FULL	FULL RELOCATION OF EXISTING CANAL
PARTIAL	PARTIAL RELOCATION OF EXISTING CANAL
ROW	RIGHT-OF-WAY
PIN	PROPERTY IDENTIFICATION NUMBER

[illegible]

SCALE



0 10 20m

ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE
TOWNSHIP OF KING REGION OF YORK

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

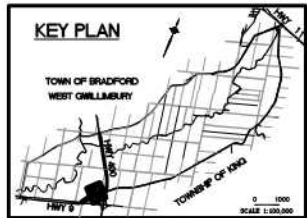
JOB NUMBER	03-023
DATE	JANUARY, 2009
DRAWING NUMBER	81

Extent of Work

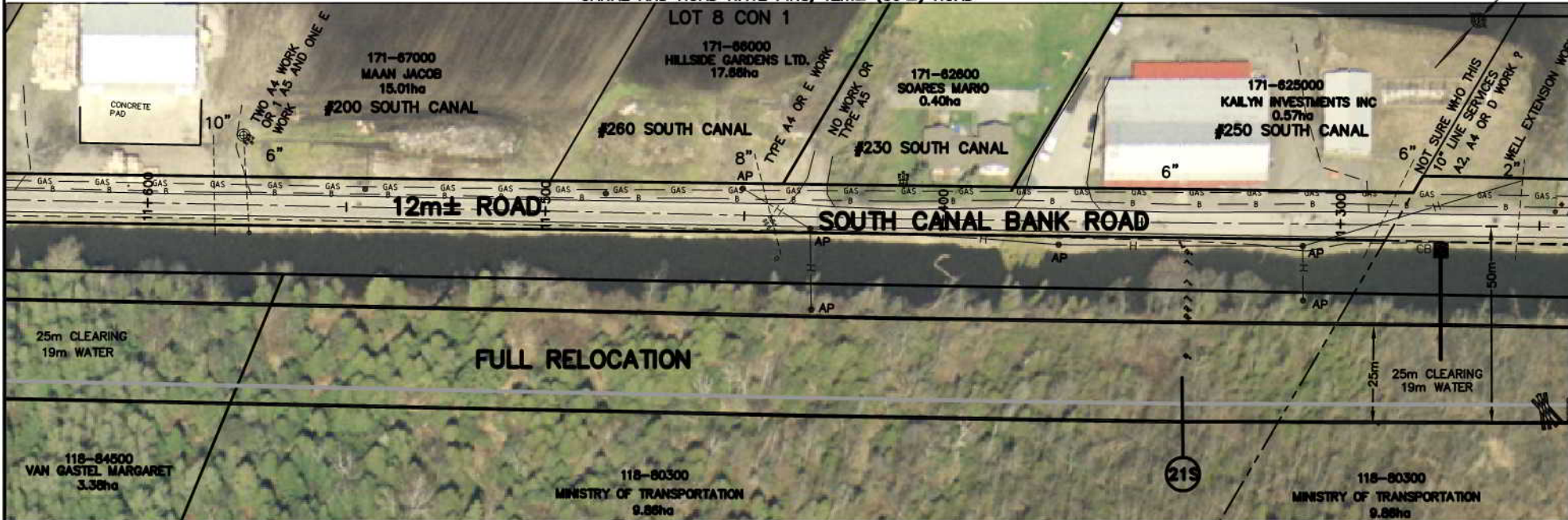
Interval 17 Cont.

11+270 to 11+600 - Type II canal work	300 m
11+285±	One (1)
11+345	One (1)
11+442	One (1)
11+575	One (1)
11+585±	One (1)
- Irrigation line 250mm - Type A4 work (250mm)	
- Irrigation line 150mm - Seal and abandon	
- Irrigation line 200mm - Type A4 or E work. E is costed (200mm)	
- Irrigation line 150mm - Type A4 or E work. E is costed (150mm)	
- Irrigation line 250mm - Type A2 work	

KEY PLAN



CANAL AND ROAD HAVE PINS, 12m± (39'±) ROAD



INTERVAL 17

NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DYKES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

AIR PHOTOGRAPHY: 2001 AERIAL PHOTOGRAPHY OF J. B. SMITH MAPS, LTD. OBTAINED FROM THE COUNTY OF BRUCE. FENCED, SHAPED AND PROPERTY IDENTIFICATION DATA SUPPLIED THROUGH AGREEMENT WITH MUNICIPALITY. THIS DRAWING AND THESE SHAPES PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO K. SMART ASSOCIATES.



FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

DEEP POOLS	
MACROPHYTE TRANSPLANTS	
LITTORAL SHELF	
SUBSTRATES	
ROOT MASSES OR LOG BUNDLES	

	RELOCATED DITCH
	ACCESS ROUTE
	LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
	GUIDE RAIL
	BELL LINE
	UNDER GROUND GAS LINE
	PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
	OVERHEAD HYDRO AND POLE
	HYDRO POLE (TO MOVE IF X)
	ANCHOR POLE (TO MOVE IF X)
	CROSS-SECTION LOCATION
	IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
	EXISTING WELL (SEE EXTENT OF WORK NOTES)
	NEW CANAL BANK
	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
	PROPOSED LEVELLING AREA BOUNDARY
	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
	PROPOSED BUFFER
	FULL FULL RELOCATION OF EXISTING CANAL
	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
	ROW RIGHT-OF-WAY
	PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLIMBURY
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

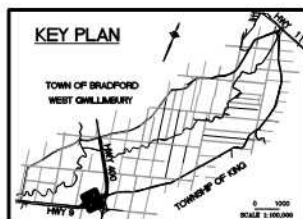
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
83

Extent of Work

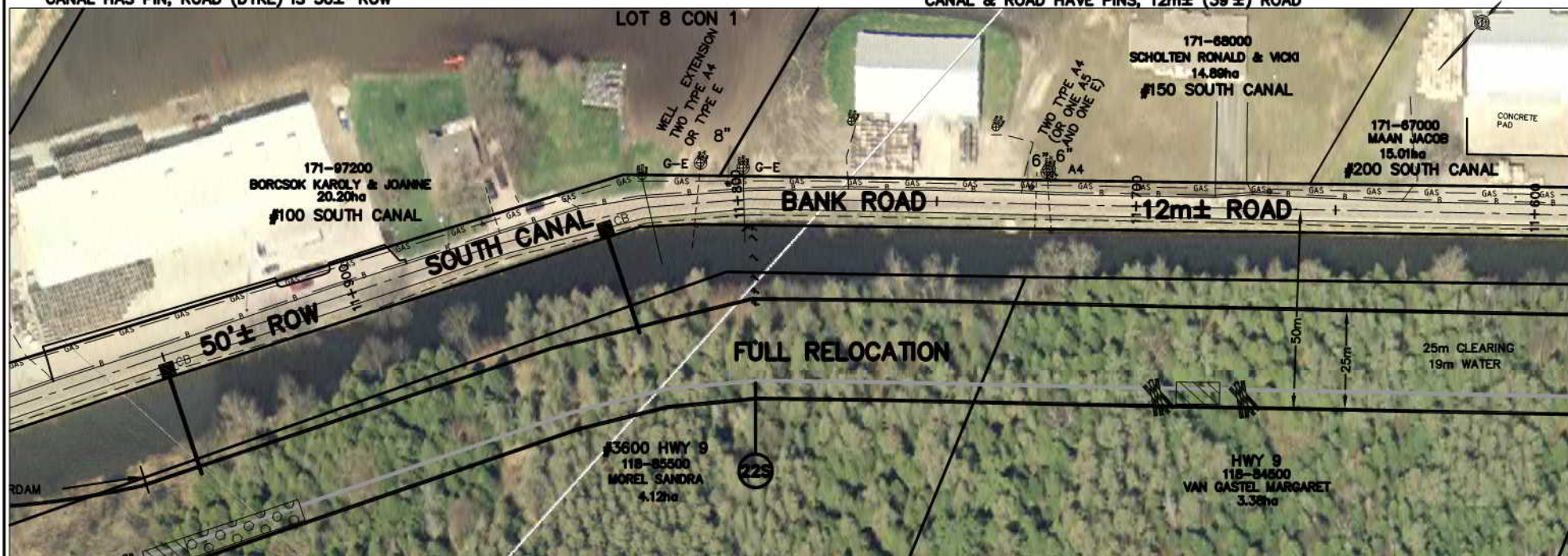
Interval 17 Cont.

11+600 to 11+945	- Type II canal work	345m
11+720	- Irrigation line - 150mm - Type A4 work (250mm)	One (1)
11+797 to 11+825	- Well outlet and irrigation lines - work still to be decided upon	One (1)
	Type E work is costed (200mm)	
	- Irrigation line - Type A4 or E work. Type E work is costed (200mm)	One(1)
	- Well outlet - Type B work or G-E work depending if sleeve exists.	One (1)
	Type G-E work is costed	
11+825±	- Catchbasin and outlet - Engineer to confirm location	One (1)
11+950	- Catchbasin and outlet - Engineer to confirm location	One (1)



CANAL HAS PIN, ROAD (DYKE) IS 50±' ROW

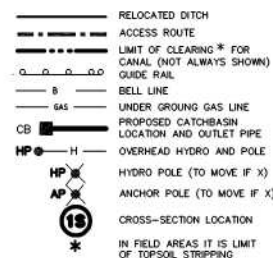
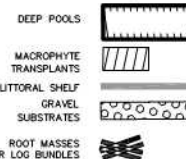
CANAL & ROAD HAVE PINS, 12m± (39'±) ROAD



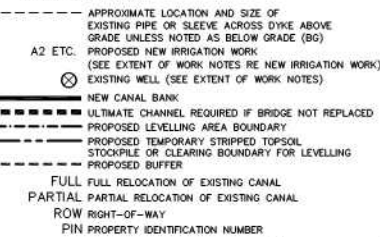
INTERVAL 17

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)



PLAN LEGEND



THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SENSORS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

AIR PHOTOGRAPHY
© J. S. BARNES LIMITED
2005 ORIGINALLY OBTAINED FROM THE
COUNTY OF BRUCE
2007 AS AMENDED
PARCELS, SHADING AND PROPERTY ASSIGNMENT DATA SUPPLIED THROUGH
AGREEMENTS WITH MANIPULATED, YORK REGION AND BRUCE COUNTY
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO A. SMART ASSOCIATES



No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLIMBURY
TOWNSHIP OF KING
COUNTY OF SIMCOE
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES



K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
84

Extent of Work

Interval 17 Cont.

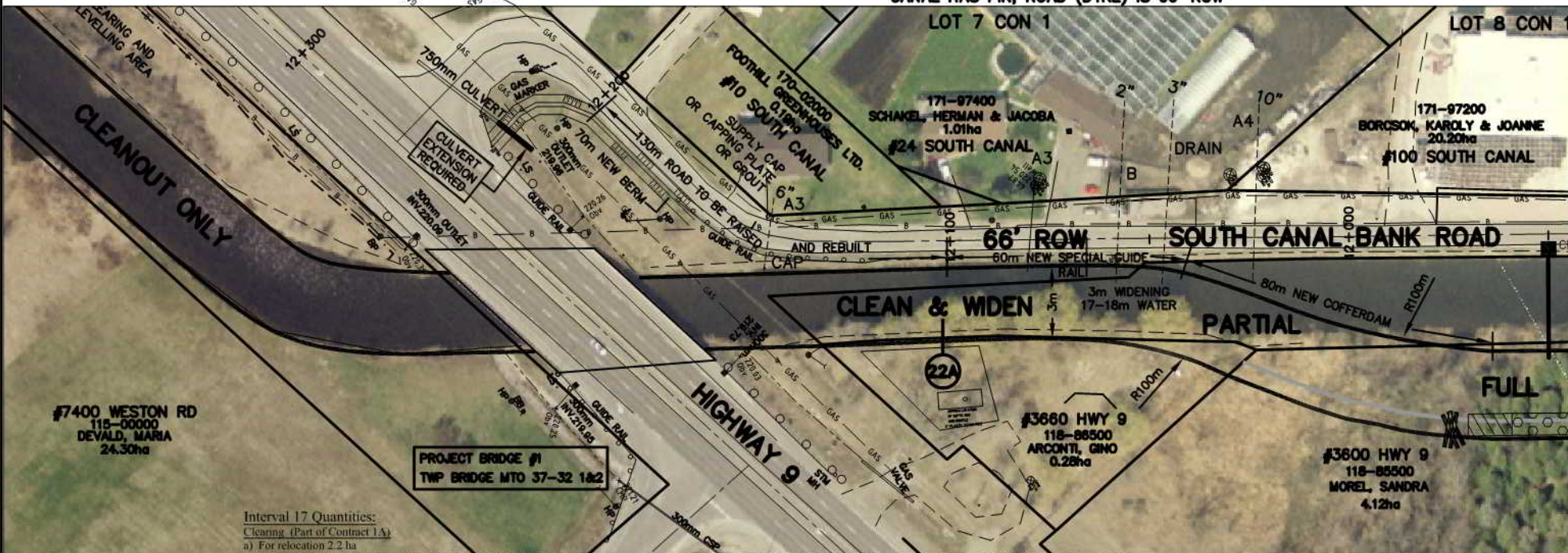
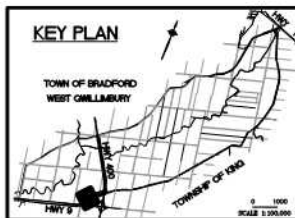
- 11+945 to 11+960 - Type II canal work 25m
- 11+960 to 12+040 - Construct new cofferdam (to act as flood barrier) 80m
- 11+960 to 12+060 - Top to be at elev. 221.05. Piles, if steel, to be 12m length
- 11+985 to 12+040* - Transition ditch work. Type I canal work. 100m
- 12+025 - Extend existing guide rail 55m
- 12+031 - Irrigation line - 250mm B/G. Type A4 work or E work (possible piling wall & valve work). Type A4 work is costed (250mm) One (1)
- 12+040 to 12+100* - Well outlet - 50mm - Type B or G work (piling wall and valve work). Type B work is costed One (1)
- 12+040 to 12+100* - Special guide rail 60m

- 12+045 - Drain outlet - 75mm. Ensure it has inlet through new piling wall and add flap gate. One (1)
- 12+057 - Well outlet - 50mm - Type B or G work. Type G-E work is costed. Extend through pile wall One (1)
- 12+075 - Type A3 work One (1)
- 12+060 to 12+170 - Type III-H canal work (haul to Interval 1) 130m
- 12+070 to 12+200* - South Canal Bank Road to be reconstructed and raised so it is at elev. 221.05 between Sta 12+100 to 12+180 (see strip plans, cross-section and specifications) 130m
- 12+137 - Adjust guy wires on pole on south side of canal if necessary One (1)
- 12+145 - Irrigation line - 150mm - Type A3 work One (1)
- 12+150 - Irrigation line - 150mm. Add cap or capping plate One (1)
- 12+175 - Caution: Gas line crossing of canal

- 12+180 to 12+250* - Construct new earth berm (2m top, 3:1 slopes) and topsoil and seed. Strip existing topsoils One (1)
- 12+200 to 12+250* - Extend culvert with 12m of 750mm CSP (2.0mm wall and 1 coupler) and relocate flap gate One (1)
- 12+250* - Redirect road drainage to new CB One (1)
- 12+250* - Construct new CB on existing 750mm CSP (900mm dia. plastic or 600x1200mm concrete CB) or construct separate 600mm CSP (2.0mm wall) with flap gate through new berm (15m long) One (1)

* These items of work could all be replaced if a special guide rail with panels to act as a flood barriers, is constructed along edge of road from Sta. 12+100 to 12+250±, (to be Engineer's decision)

CANAL HAS PIN, ROAD (DYKE) IS 66' ROW

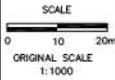


NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN, THE DYKES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
 © J. S. BARNES, 2008
 100% ORTHOPHOTOGRAPHY
 OBTAINED FROM THE
 COUNTY OF SIMCOE
 2007 AS INDICATED

No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
 HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
 TOWN OF BRADFORD WEST GWILLIMBURY
 COUNTY OF SIMCOE
 TOWNSHIP OF KING
 REGION OF YORK
AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

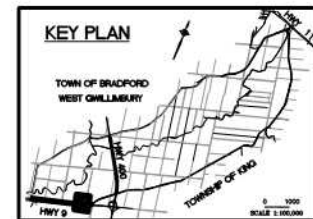
K. SMART ASSOCIATES LIMITED
 CONSULTING ENGINEERS AND PLANNERS
 85 MONTVIRE DRIVE
 KITCHENER, ONTARIO N2R 1H6

JOB NUMBER 03-023
DATE JANUARY, 2009
DRAWING NUMBER 85

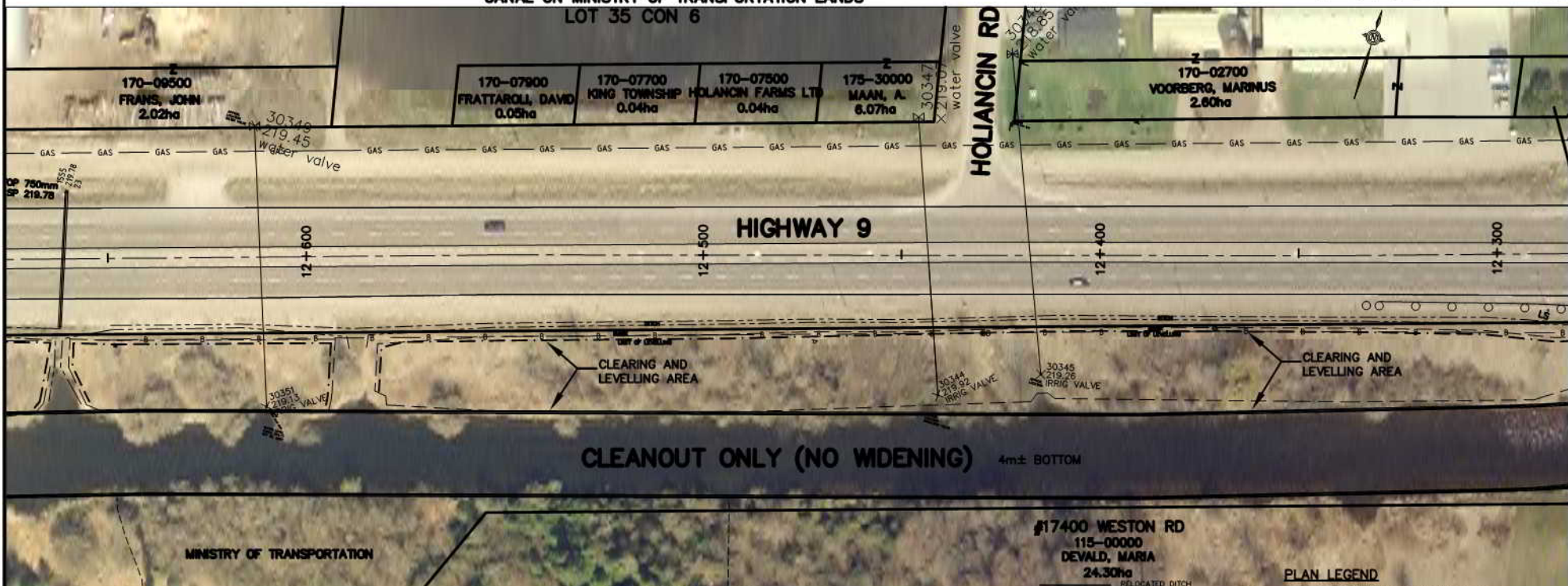
Interval 18 Cont. (Part of Contract 1A) *

12+300 to 12+650	- Type III-H&L canal work	350m
12+418	- Irrigation line - Type F work	One (1)
12+443	- Irrigation line - Type F work	One (1)
12+612	- Irrigation line - Type F work	One (1)

* Decision may be made at time of construction in Interval 18 to not haul.
Will need to see how well material can be graded and seeded once dry.



CANAL ON MINISTRY OF TRANSPORTATION LANDS LOT 35 CON 6



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AIR PHOTOGRAPHY: 2008 ORTHOPHOTOGRAPHY
© J. S. BARNES LIMITED, OBTAINED FROM THE
COUNTY OF BRADFORD
2007 AS INDICATED
PARCELS, BOUNDARIES AND PROPERTY ASSIGNMENT DATA SUPPLIED THROUGH
AGREEMENTS WITH MUNICIPALITIES, TOWN, REGION AND BRADFORD COUNTY
PROPERTY LINES ARE BASED ON THE AVAILABLE AVAILABLE TO A REASONABLE ASSURANCE



INTERVAL 18

FISH HABITAT LEGEND

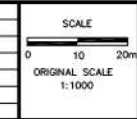
(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

- DEEP POOLS
- MACROPHYTES
- TRANSPLANTS
- LITTORAL SHELF
- GRAVEL
- SUBSTRATES
- ROOT MASSES
- OR LOG BUNDLES

PLAN LEGEND

- ACCESS ROUTE
- LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
- GUIDE RAIL
- BELL LINE
- UNDER GROUND GAS LINE
- PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE
- OVERHEAD HYDRO AND POLE
- HYDRO POLE (TO MOVE IF X)
- ANCHOR POLE (TO MOVE IF X)
- CROSS-SECTION LOCATION
- IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING
- APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
- A2 ETC. PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
- EXISTING WELL (SEE EXTENT OF WORK NOTES)
- NEW CANAL BANK
- ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
- PROPOSED LEVELLING AREA BOUNDARY
- PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
- PROPOSED BUFFER
- FULL FULL RELOCATION OF EXISTING CANAL
- PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
- ROW RIGHT-OF-WAY
- PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GILLIMBURY COUNTY OF SIMCOE REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER	03-023
DATE	JANUARY, 2009
DRAWING NUMBER	86

Extent of Work

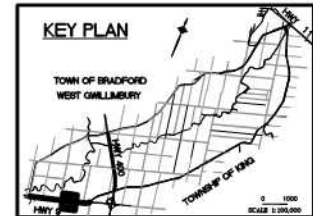
Interval 18 Cont. *

12+650 to 13+000	- Type III- H&I. canal work	350m
12+661	- Existing 750mm CSP crossing Highway 9 (no work required)	
12+795	- Irrigation line - Type F work	One (1)
12+877	- Irrigation line - Type F work	One (1)
12+943	- Irrigation line - Type F work	One (1)
12+983	- Irrigation line - Type F work	One (1)

* Decision may be made at time of construction in Interval 18 to not haul.

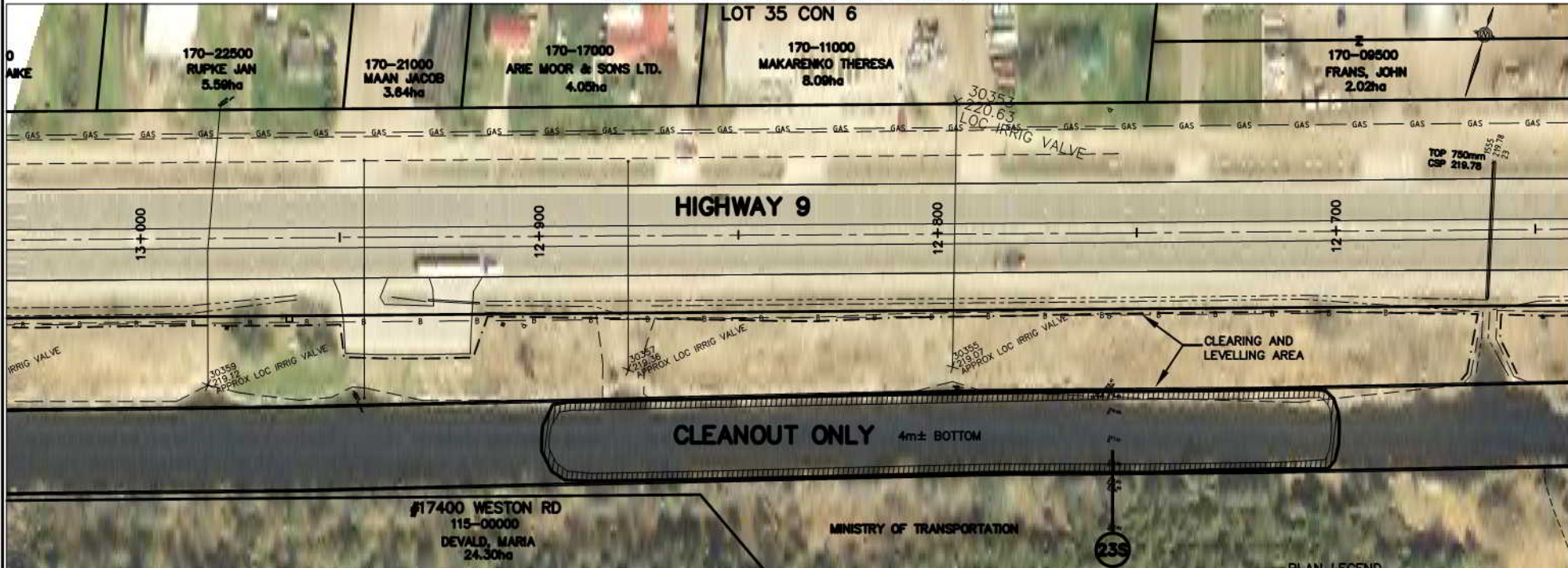
Will need to see how well material can be graded and seeded once dry.

KEY PLAN



CANAL ON MINISTRY OF TRANSPORTATION LANDS

LOT 35 CON 6

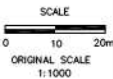


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AIR PHOTOGRAPHY
BY: K. SMART ASSOCIATES
DATE: 03/03/2003
SCALE: 1:1000
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO K. SMART ASSOCIATES

No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
 TOWN OF BRADFORD WEST Gwillimbury
 COUNTY OF SIMCOE
 REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
 CONSULTING ENGINEERS AND PLANNERS
 85 MCINTYRE DRIVE
 KITCHENER, ONTARIO N2R 1H6

JOB NUMBER 03-023
DATE JANUARY, 2009
DRAWING NUMBER 87

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

DEEP POOLS	
MACROPHYTE TRANSPLANTS	
LITTORAL SHELF	
GRAVEL SUBSTRATES	
ROOT MASSES OR LOG BUNDLES	

RELOCATED DITCH	
ACCESS ROUTE	
LIMIT OF CLEARING* FOR CANAL (NOT ALWAYS SHOWN)	
GUIDE RAIL	
B	
UNDER GROUND GAS LINE	
PROPOSED CATCHBASIN LOCATION AND OUTLET PIPE	
OVERHEAD HYDRO AND POLE	
HYDRO POLE (TO MOVE IF X)	
ANCHOR POLE (TO MOVE IF X)	
CROSS-SECTION LOCATION	
IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING	

PLAN LEGEND

8"-----	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (B0)
A2 ETC.	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
	EXISTING WELL (SEE EXTENT OF WORK NOTES)
	NEW CANAL BANK
	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
	PROPOSED LEVELLING AREA BOUNDARY
	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
	PROPOSED BUFFER
	FULL FULL RELOCATION OF EXISTING CANAL
	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
	ROW RIGHT-OF-WAY
	PIN PROPERTY IDENTIFICATION NUMBER

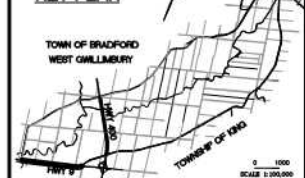
Extent of Work

Interval 18 Cont.

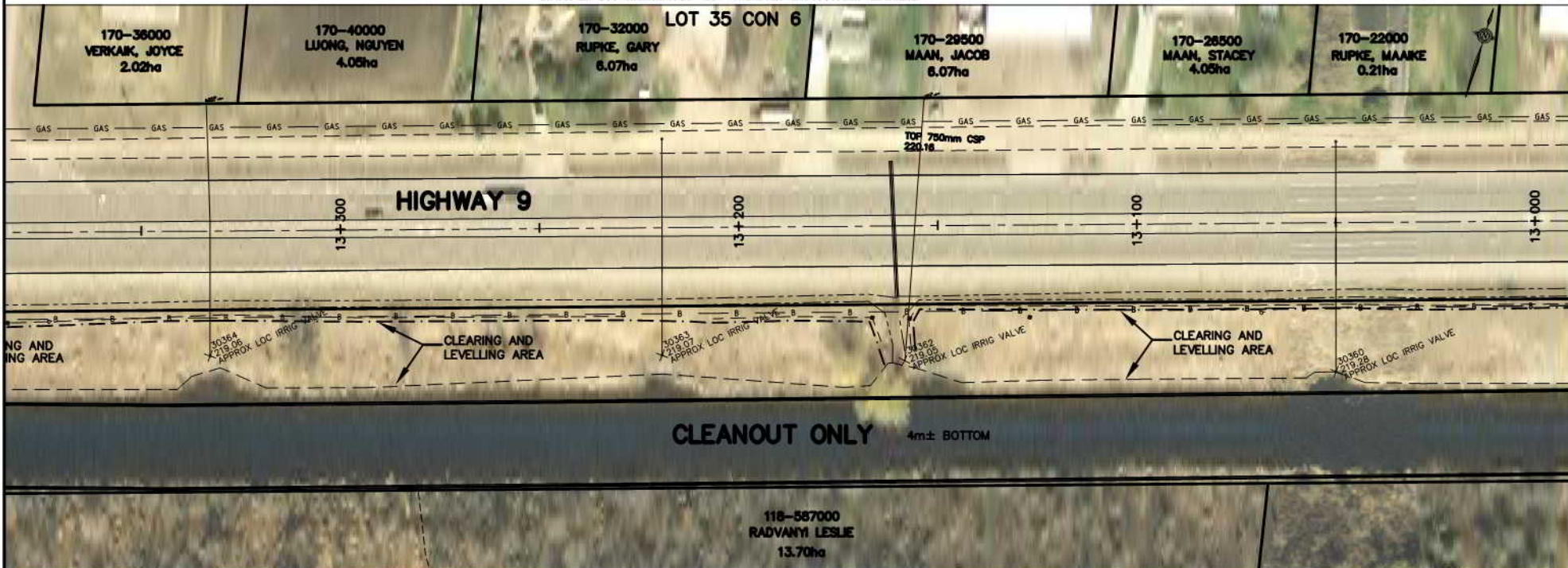
13+000 to 13+350	- Type III- H&L canal work	350m
13+050	- Irrigation line - Type F work	One (1)
13+158	- Irrigation line - Type F work	One (1)
13+160	- Existing 750mm CSP crossing Highway 9 (no work required)	One (1)
13+219	- Irrigation line - Type F work	One (1)
13+333	- Irrigation line - Type F work	One (1)

* Decision may be made at time of construction in Interval 18 to not haul.
Will need to see how well material can be graded and seeded once dry.

KEY PLAN



CANAL ON MINISTRY OF TRANSPORTATION LANDS



INTERVAL 18

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AIR PHOTOGRAPHY
BY: S. BARNES, 2002
DATE: 08/08/2002
SCALE: 1:1000
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO S. BARNES ASSOCIATES



FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

DEEP POOLS	
MACROPHYTE TRANSPLANTS	
LITTORAL SHELF	
GRAVEL SUBSTRATES	
ROOT MASSES OR LOG BUNDLES	

RELOCATED DITCH	
ACCESS ROUTE	
LIMIT OF CLEARING* FOR CANAL (NOT ALWAYS SHOWN)	
GUIDE RAIL	
BELL LINE	
UNDER GROUND GAS LINE	
PROPOSED CATCH-BASIN	
LOCATION AND OUTLET PIPE	
OVERHEAD HYDRO AND POLE	
HYDRO POLE (TO MOVE IF X)	
ANCHOR POLE (TO MOVE IF X)	
CROSS-SECTION LOCATION	
IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING	

PLAN LEGEND

8"-----	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
A2 ETC.	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
	EXISTING WELL (SEE EXTENT OF WORK NOTES)
-----	NEW CANAL BANK
-----	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
-----	PROPOSED LEVELLING AREA BOUNDARY
-----	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
-----	PROPOSED BUFFER
-----	FULL FULL RELOCATION OF EXISTING CANAL
-----	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
-----	ROW RIGHT-OF-WAY
-----	PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK
AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER 03-023
DATE JANUARY, 2009
DRAWING NUMBER 88

Extent of Work

Interval 18 Cont. *

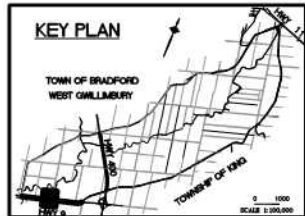
13+350 to 13+700 - Type III- H&L canal work
 13+476 - Irrigation line - Type F work
 13+564 - Irrigation line - Type F work
 13+625 - Lateral ditch treatment work (to be done by barge) ***
 13+653 - Existing 750mm CSP crossing Highway 9 (no work required)

350m
 One (1)
 One (1)
 One (1)

* Decision may be made at time of construction in Interval 18 to not haul.
 Will need to see how well material can be graded and seeded once dry.

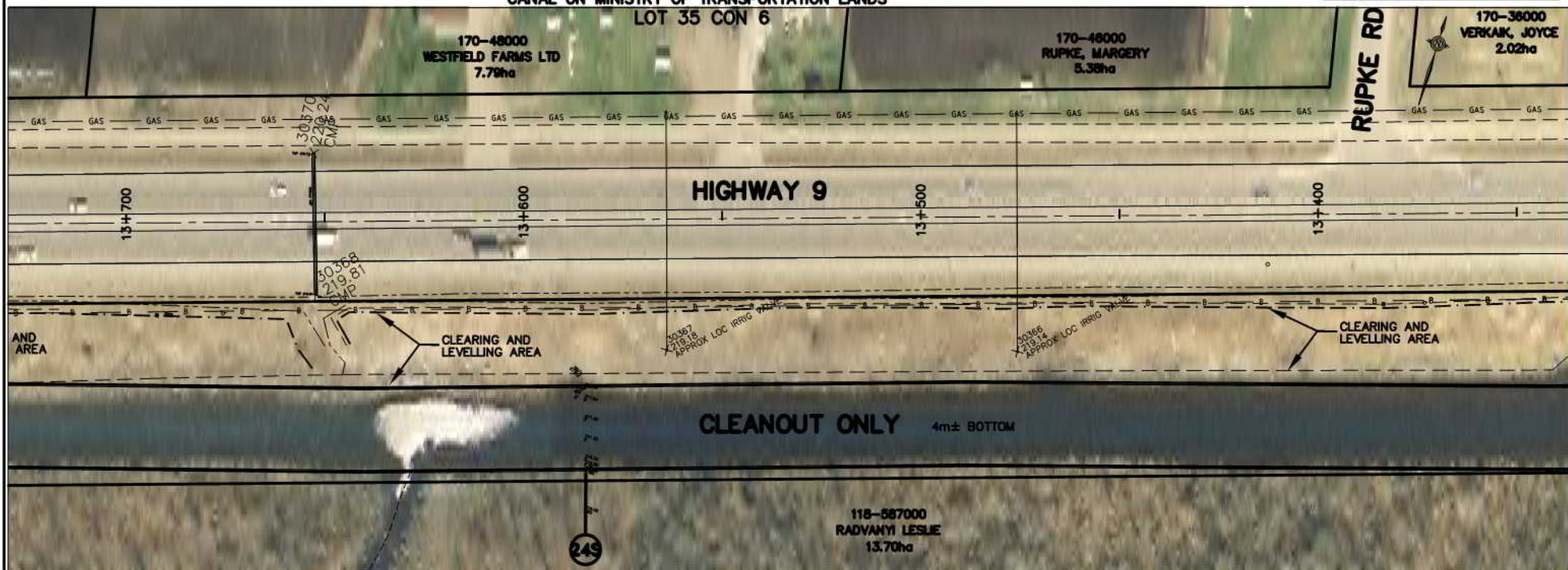
*** This work may be deleted

KEY PLAN



CANAL ON MINISTRY OF TRANSPORTATION LANDS

LOT 35 CON 6



NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DYKES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

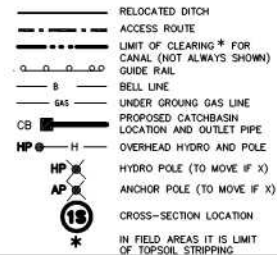
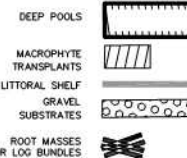
THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

AIR PHOTOGRAPHY
 2002 ORTHOPHOTOGRAPHY
 BY S. BARNES LIMITED
 500 GERRARD STREET EAST
 TORONTO, ONTARIO M4M 1B7
 416-463-1111
 416-463-1112
 416-463-1113
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 416-463-1200

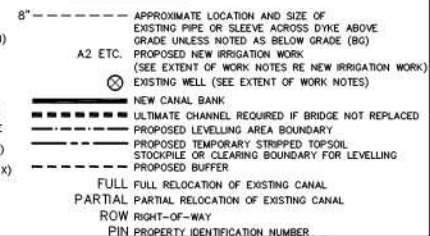
INTERVAL 18

FISH HABITAT LEGEND

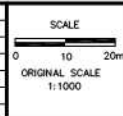
(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)



PLAN LEGEND



No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
 HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
 TOWN OF BRADFORD WEST Gwillimbury
 TOWNSHIP OF KING
 COUNTY OF SIMCOE
 REGION OF YORK
AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
 CONSULTING ENGINEERS AND PLANNERS
 85 MCINTYRE DRIVE
 KITCHENER, ONTARIO N2R 1H6

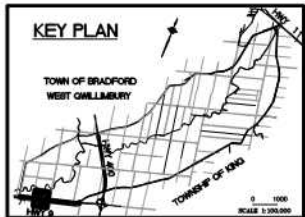
JOB NUMBER
03-023
 DATE
JANUARY, 2009
 DRAWING NUMBER
89

Extent of Work

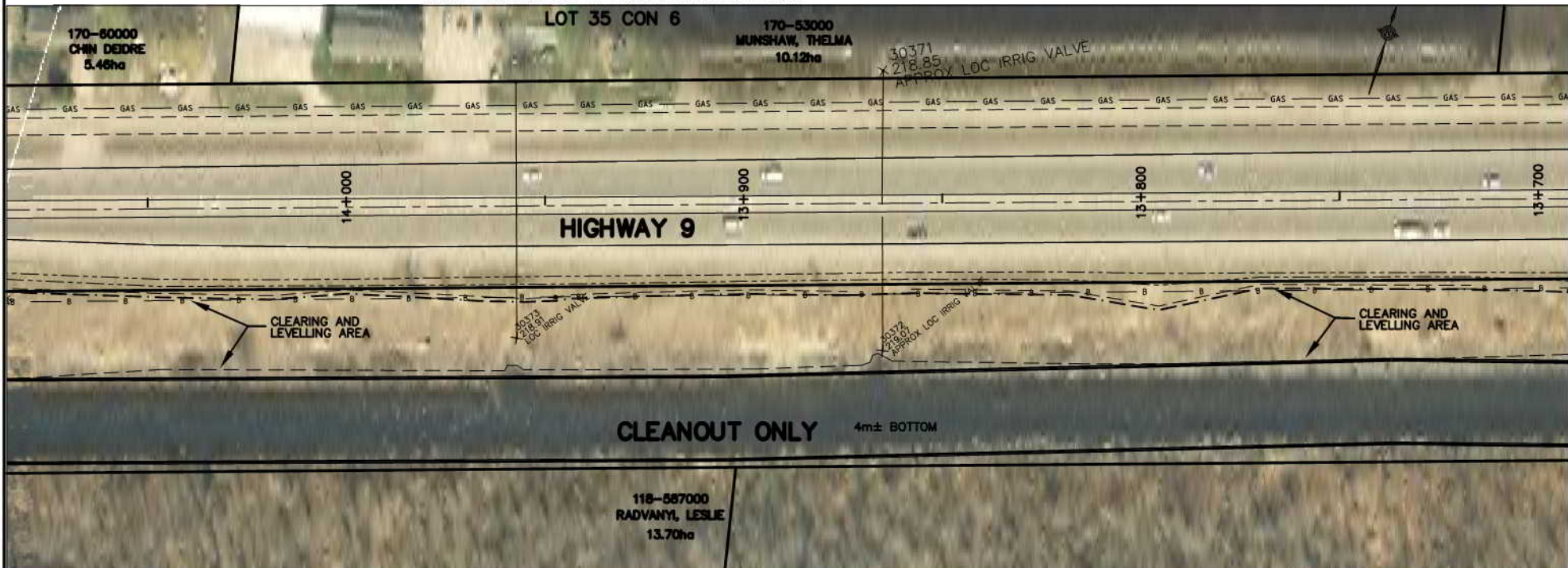
Interval 18 Cont. *

13-700 to 14-050	- Type III- H&L canal work	350m
13-865	- Irrigation line - Type F work	One (1)
13-957	- Irrigation line - Type F work	One (1)

* Decision may be made at time of construction in Interval 18 to not haul.
Will need to see how well material can be graded and seeded once dry.



CANAL ON MINISTRY OF TRANSPORTATION LANDS



NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN. THE DYKES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
BY: S. BARNES LIMITED
DATE: 08/01/2008
SCALE: 1:1000
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO S. BARNES LIMITED



INTERVAL 18

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

DEEP POOLS	
MACROPHYTES TRANSPLANTS	
LITTORAL SHELF	
GRAVEL SUBSTRATES	
ROOT MASSES OR LOG BUNDLES	

	RELOCATED DITCH
	ACCESS ROUTE
	LIMIT OF CLEARING* FOR CANAL (NOT ALWAYS SHOWN)
	GUIDE RAIL
	BELL LINE
	UNDER GROUND GAS LINE
	PROPOSED CATCHBASIN
	LOCATION AND OUTLET PIPE
	OVERHEAD HYDRO AND POLE
	HYDRO POLE (TO MOVE IF X)
	ANCHOR POLE (TO MOVE IF X)
	CROSS-SECTION LOCATION
	IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
	EXISTING WELL (SEE EXTENT OF WORK NOTES)
	NEW CANAL BANK
	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
	PROPOSED LEVELLING AREA BOUNDARY
	PROPOSED TEMPORARY STRIPPED TOPSOIL
	STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
	PROPOSED BUFFER
	FULL FULL RELOCATION OF EXISTING CANAL
	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
	ROW RIGHT-OF-WAY
	PIN PROPERTY IDENTIFICATION NUMBER

No.	REVISION	DATE

SCALE
0 10 20m
ORIGINAL SCALE
1:1000



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
90

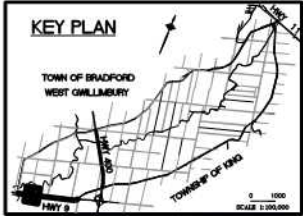
Extent of Work

Interval 18 Cont. *

14-050 to 14-400	- Type III-H&L canal work	350m
14-101	- Irrigation line - Type F work	One (1)
14-256	- Irrigation line - Type F work	One (1)
14-323	- Existing 750mm CSP crosses Highway 9	
14-370	- Lateral ditch treatment work (to be done by barge)***	One (1)
14-381	- Irrigation line - Type F work	One (1)

* Decision may be made at time of construction in Interval 18 to not haul.
Will need to see how well material can be graded and seeded once dry.

*** This work may be deleted



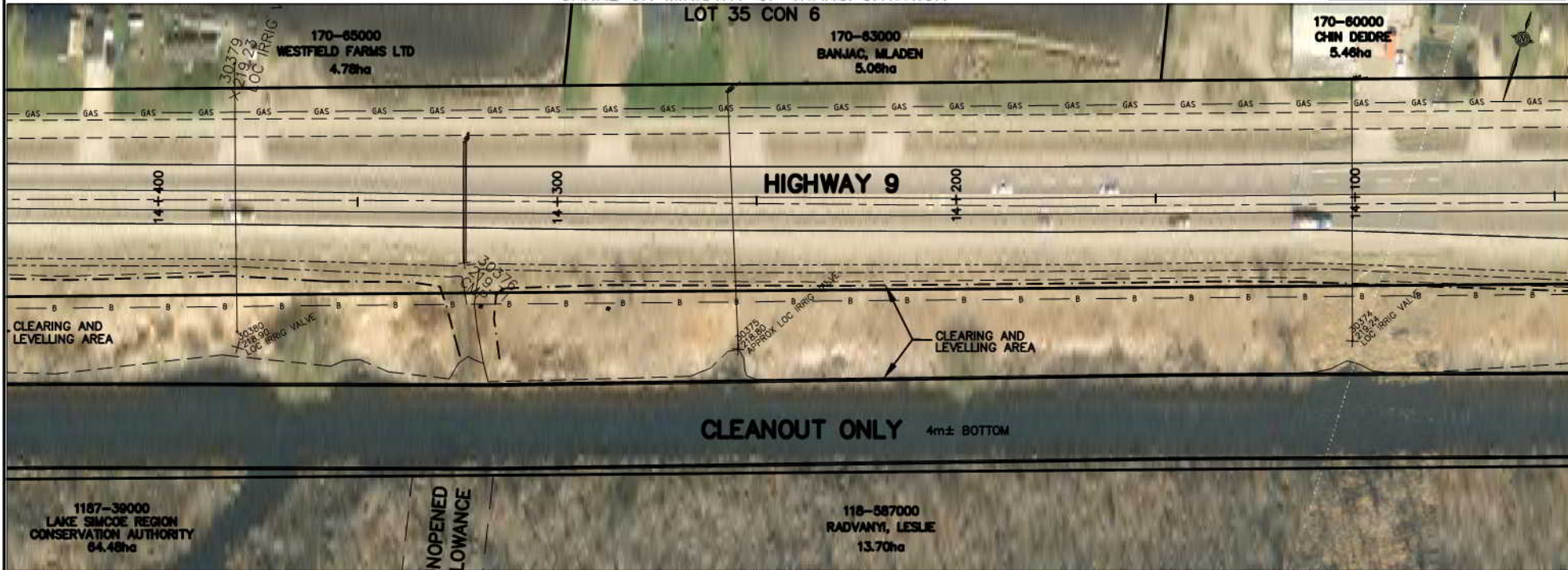
CANAL ON MINISTRY OF TRANSPORTATION

LOT 35 CON 6

170-65000
WESTFIELD FARMS LTD
4.78ha

170-63000
BANJAC, MLADEN
5.08ha

170-60000
CHIN DEIDRE
5.46ha



INTERVAL 18

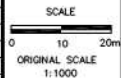
NOTE: THE WORKING AREA IS TO BE THE OUTSIDE LIMITS OF ANY CLEARING AND TOPSOIL STRIPPING AREAS SHOWN, THE DYKES (WHETHER THEY ARE DIRT, GRAVEL, PAVED, AND USED BY PUBLIC OR NOT) AND THE EXISTING CANAL. THE WORK AREA IS ALSO TO INCLUDE ANY DESIGNATED AND/OR APPROVED ACCESS AREAS.

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AIR PHOTOGRAPHY
2002 ORTHOPHOTOGRAPHY
BY: S. BARNES LIMITED
DATE: 08/01/2002
SCALE: 1:1000
PROJECT: HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO S. BARNES ASSOCIATES



No.	REVISION	DATE



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GILLIMBURY
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)

DEEP POOLS	
MACROPHYTES TRANSPLANTS	
LITTORAL SHELF	
GRAVEL SUBSTRATES	
ROOT MASSES OR LOG BUNDLES	

	RELOCATED DITCH
	ACCESS ROUTE
	LIMIT OF CLEARING * FOR CANAL (NOT ALWAYS SHOWN)
	GUIDE RAIL
	BELL LINE
	UNDER GROUND GAS LINE
	PROPOSED CATCHBASIN
	LOCATION AND OUTLET PIPE
	OVERHEAD HYDRO AND POLE
	HYDRO POLE (TO MOVE IF X)
	ANCHOR POLE (TO MOVE IF X)
	CROSS-SECTION LOCATION
	IN FIELD AREAS IT IS LIMIT OF TOPSOIL STRIPPING

PLAN LEGEND

	APPROXIMATE LOCATION AND SIZE OF EXISTING PIPE OR SLEEVE ACROSS DYKE ABOVE GRADE UNLESS NOTED AS BELOW GRADE (BG)
	PROPOSED NEW IRRIGATION WORK (SEE EXTENT OF WORK NOTES RE NEW IRRIGATION WORK)
	EXISTING WELL (SEE EXTENT OF WORK NOTES)
	NEW CANAL BANK
	ULTIMATE CHANNEL REQUIRED IF BRIDGE NOT REPLACED
	PROPOSED LEVELLING AREA BOUNDARY
	PROPOSED TEMPORARY STRIPPED TOPSOIL STOCKPILE OR CLEARING BOUNDARY FOR LEVELLING
	PROPOSED BUFFER
	FULL FULL RELOCATION OF EXISTING CANAL
	PARTIAL PARTIAL RELOCATION OF EXISTING CANAL
	ROW RIGHT-OF-WAY
	PIN PROPERTY IDENTIFICATION NUMBER



K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

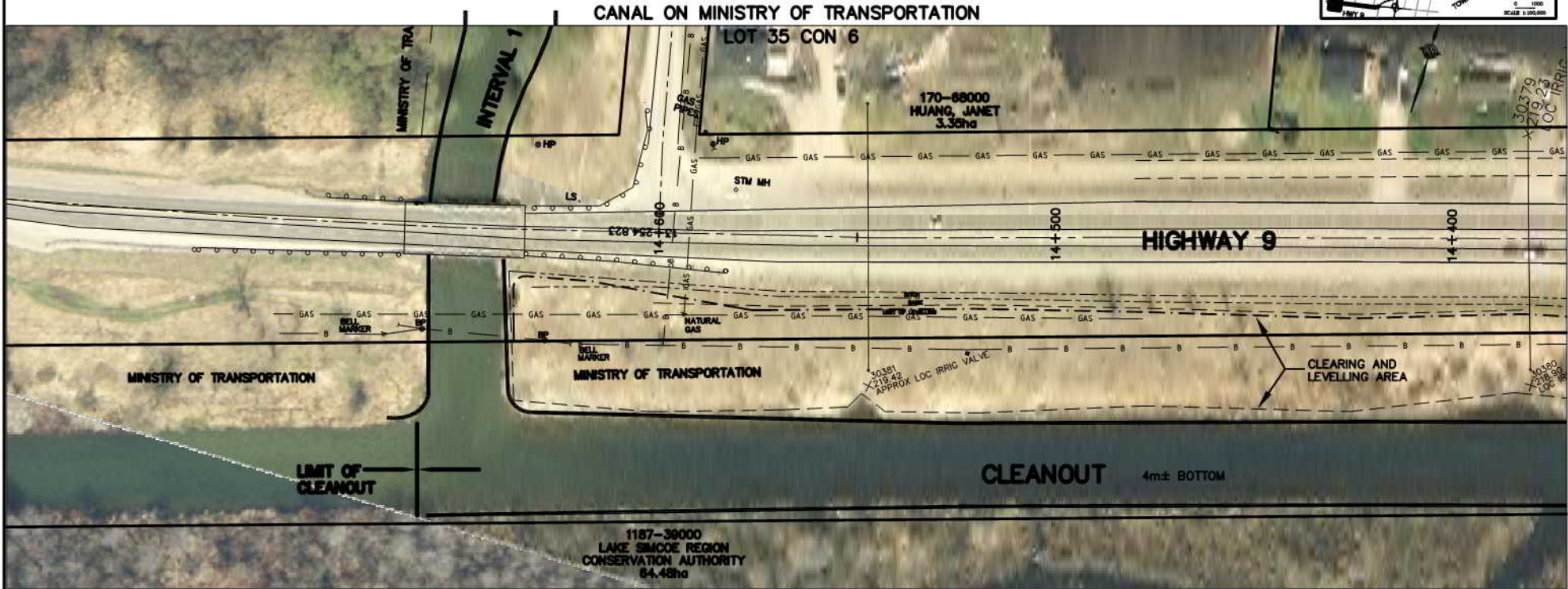
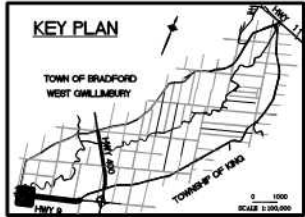
JOB NUMBER 03-023
DATE JANUARY, 2009
DRAWING NUMBER 91

Extent of Work

Interval 18 Cont. #
14+400 to 14+660± - Type III-H&L canal work 260m
14-547 - Irrigation line - Type F work One (1)

Interval 18 Quantities:

Clearing (Part of Contract 3A)
For work any leveling area - 1.5 ha (based on cumulative dripline of scattered trees)
Berm Work (No berm)
Earth work (Part of Contract 3A)
- To excavate and level (outlets) 45,000m³
- Total excavation 45,000m³
- To haul later from leveling 20,000m³
- Final grading 49,000m³
- Quantities do not include deep pool excavation



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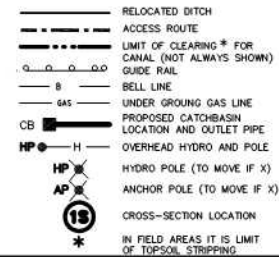
AIR PHOTOGRAPHY
2002 ORTHOPHOTOGRAPHY
BY: K. SMART ASSOCIATES
DATE: 03/01/2003
SCALE: 1:1000
PROPERTY LINES ARE BASED ON THE DATA MADE AVAILABLE TO K. SMART ASSOCIATES



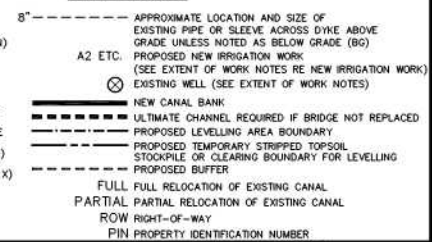
INTERVAL 18

FISH HABITAT LEGEND

(FINAL LOCATION TO BE SET AT TIME OF CONSTRUCTION)



PLAN LEGEND



No.	REVISION	DATE

SCALE
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ORIGINAL SCALE
1:1000

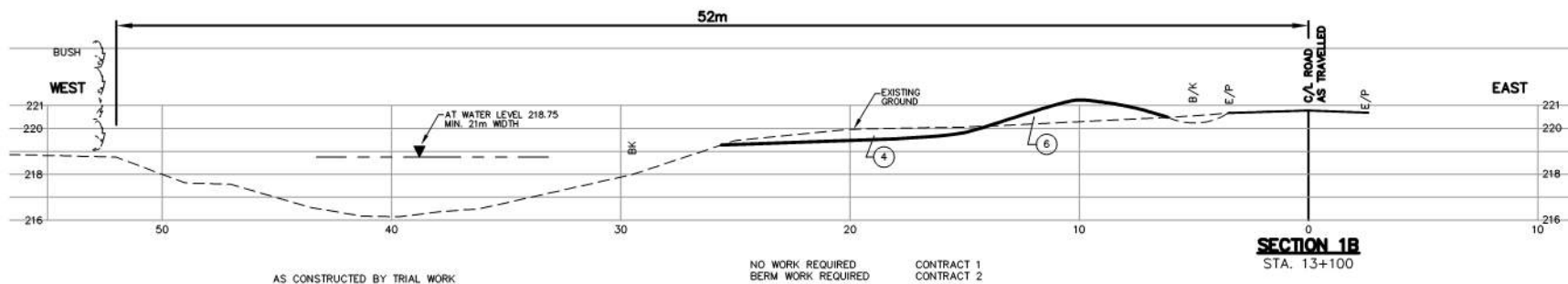
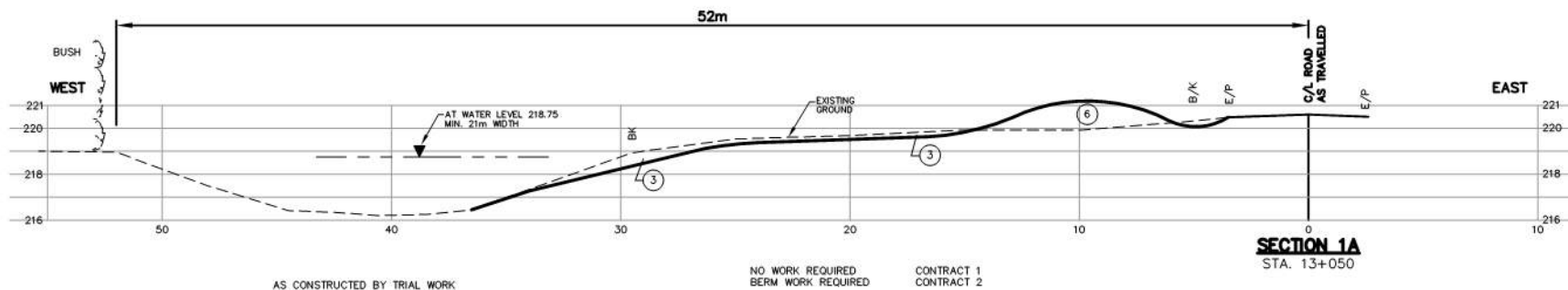


HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST Gwillimbury
COUNTY OF SIMCOE
TOWNSHIP OF KING
REGION OF YORK

AERIAL VIEW OF PROPERTIES AND EXTENT OF WORK NOTES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

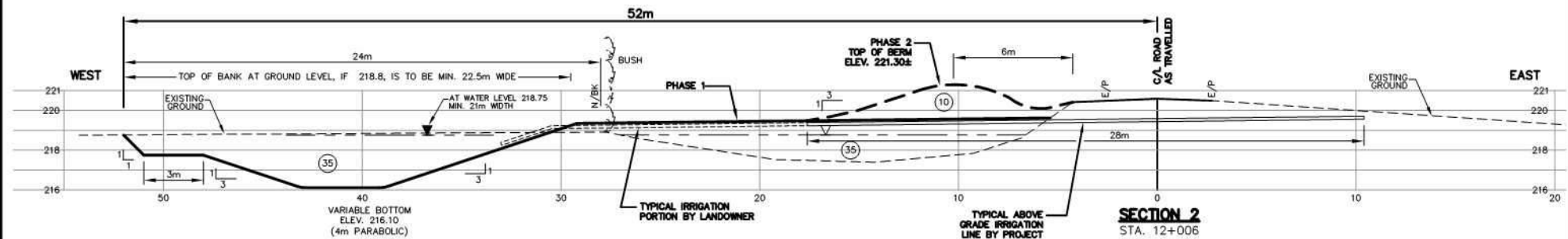
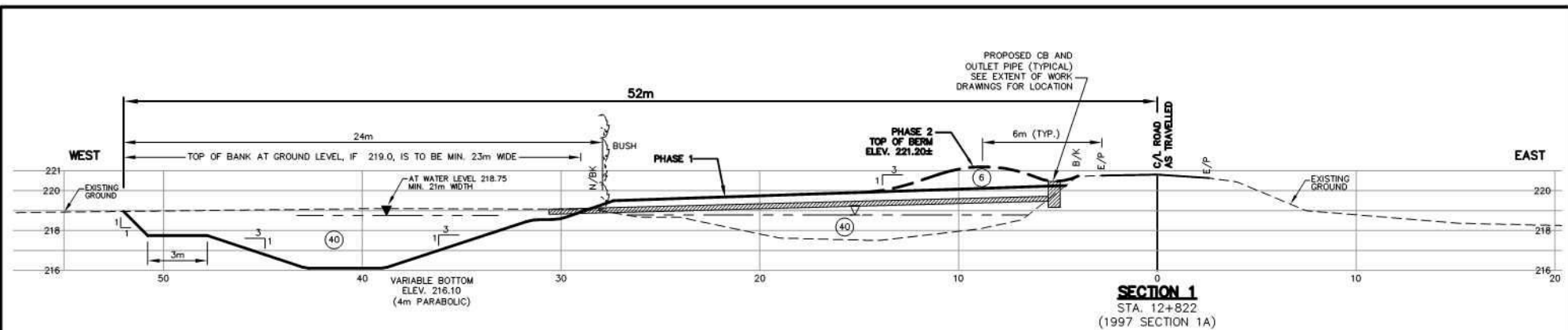
JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
92



NORTH CANAL Interval 1

- Full relocation with earth berm
- Clean through one bridge
- Enlarge or replace some bridge later
- Improve or remove one private bridge

No.	REVISION	DATE	DESIGNED BY: K.A.S.	SCALE	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT			K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6		JOB NUMBER
			CHECKED BY: K.A.S.	0 2 4						03-023
			DRAWN BY: N.M.B.	PROFILE HOR 1:200 VERT 1:200	HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD TOWN OF BRADFORD WEST GWILLIMBURY TOWNSHIP OF KING			DATE JANUARY, 2008		DRAWING NUMBER
			CHECKED BY: K.A.S.							93
			FIELD BOOK:		SECTIONS 1A & 1B					



- NOTES:
1. CROSS SECTION FOR FULLY RELOCATED NEW CHANNEL AS SHOWN AT STA. 12+006 IS TYPICAL FROM STA. 12+900 TO 9+670 WHENEVER FULL RELOCATION IS TO OCCUR
 2. BACK SLOPE OF LITTORAL SHELF TO BE 1:1 AND SHELF TO BE 3m WIDE
 3. ROAD CROSS SECTION MAY CHANGE WITH RE DESIGN OF THE ROAD
 4. PORTION FROM 13+200 TO 12+950 IS ALREADY CONSTRUCTED. SOME WIDENING IS NECESSARY AS SHOWN

NORTH CANAL Interval 1

- Full relocation with earth berm
- Clean through one bridge
- Enlarge or replace some bridge later
- Improve or remove one private bridge

No.	REVISION	DATE

DESIGNED BY: K.A.S.
CHECKED BY: K.A.S.
DRAWN BY: H.M.B.
CHECKED BY: K.A.S.
FIELD BOOK:

SCALE
0 2 4
PROFILE
HOR 1:200
VERT 1:200

HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLIMBURY
TOWNSHIP OF KING

COUNTY OF SIMCOE
REGION OF YORK

SECTIONS 1 AND 2

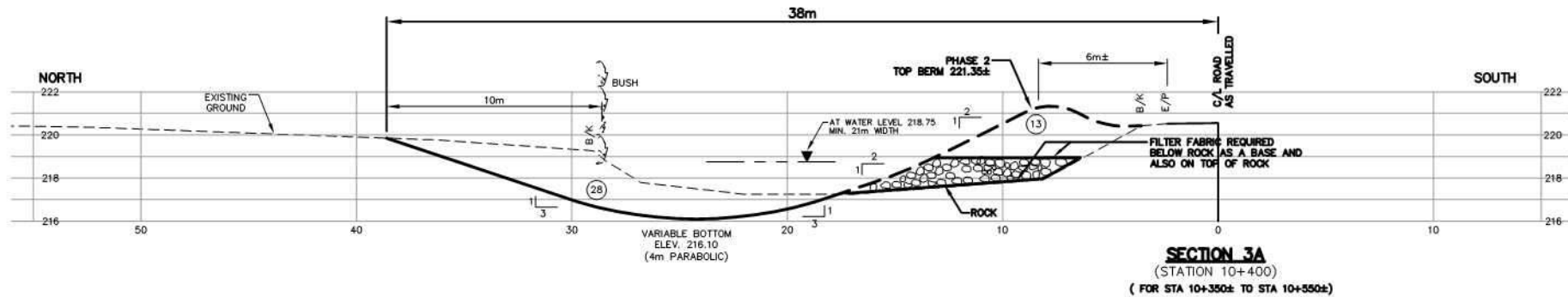
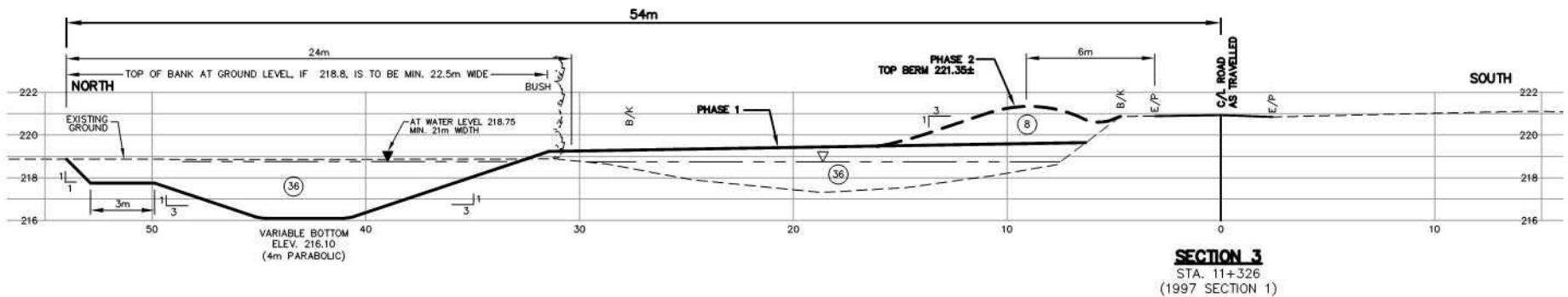


K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023

DATE
JANUARY, 2008

DRAWING NUMBER
94



NOTE:
SLOPE FOR ROCK AND FILL IS 2:1
SLOPE FOR CUT BELOW IS 3:1

- NOTES:**
- CROSS SECTION FOR FULLY RELOCATED NEW CHANNEL AS SHOWN AT STA. 12+006 IS TYPICAL FROM STA. 12+900 TO 9+670 WHENEVER FULL RELOCATION IS TO OCCUR
 - BACK SLOPE OF LITTORAL SHELF TO BE 1:1 AND SHELF TO BE 3m WIDE
 - ROAD CROSS SECTION MAY CHANGE WITH RE DESIGN OF THE ROAD
 - PORTION FROM 13+200 TO 12+950 IS ALREADY CONSTRUCTED. SOME WIDENING IS NECESSARY AS SHOWN

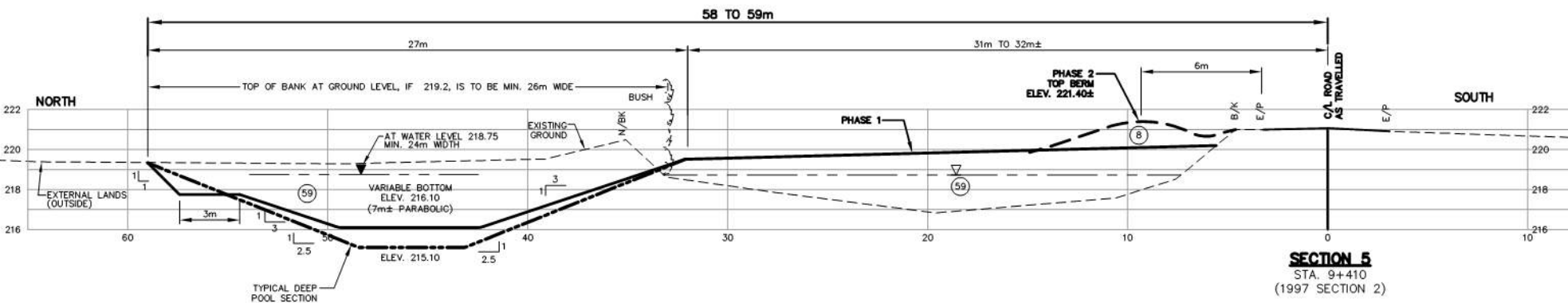
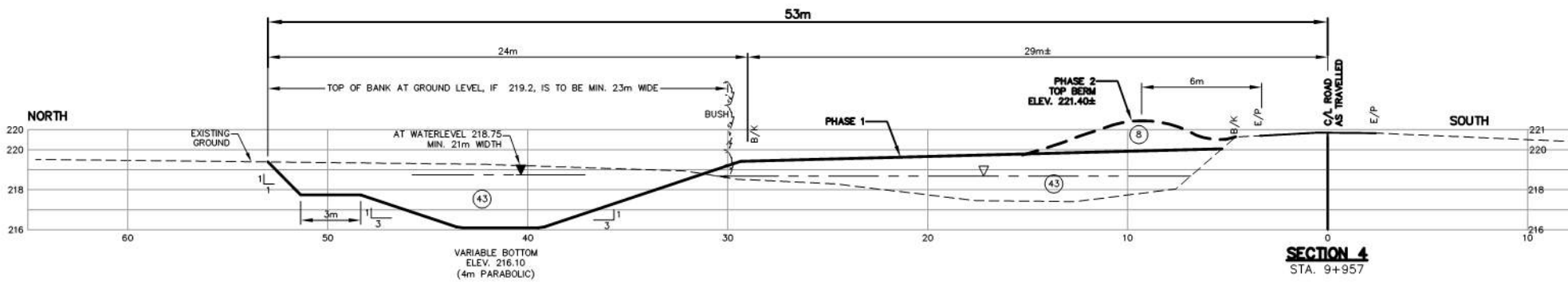
NOTE RE QUANTITIES FOR INTERVAL 1 (CONTRACT 1A)

- TO HAUL DURING EXCAVATION 3,500cu.m.
- TO EXCAVATE & LEVEL 89,500cu.m.
- TOTAL EXCAVATION 93,000cu.m.
- HAUL IN FOR BERM 23,500cu.m.±
- GRADING BEFORE BERM 1,000cu.m.
- RELEVELLING 10,000sq.m.

NORTH CANAL Interval 1


- Full relocation with earth berm
- Clean through one bridge
- Enlarge or replace some bridge later
- Improve or remove one private bridge

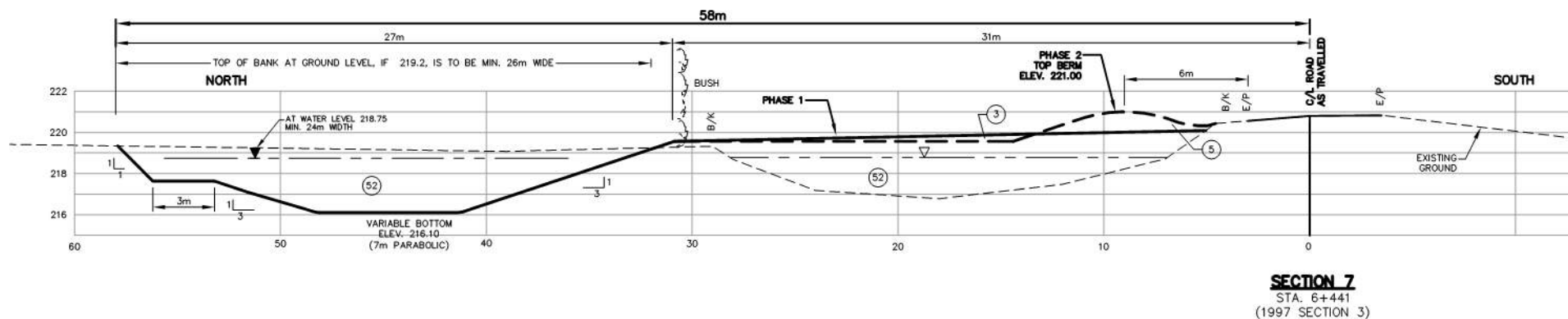
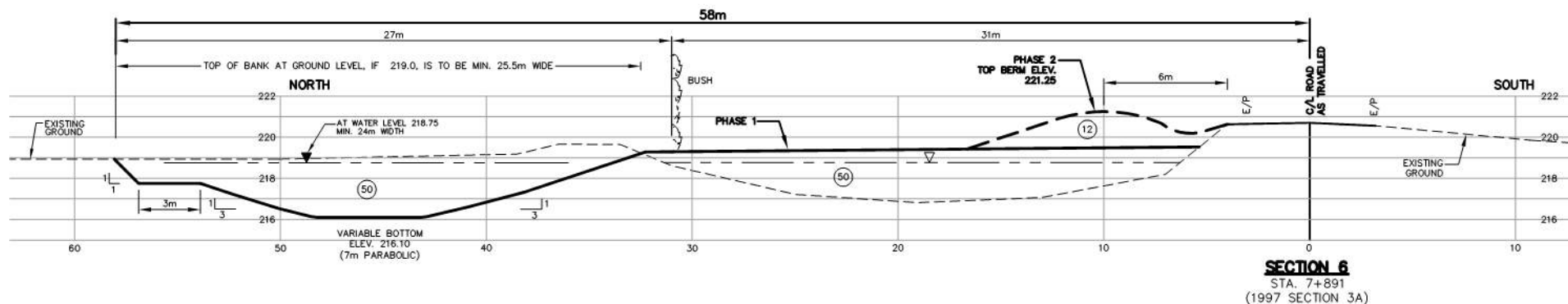
No.	REVISION	DATE	DESIGNED BY: K.A.S.	CHECKED BY: K.A.S.	DRAWN BY: H.M.B.	CHECKED BY: K.A.S.	FIELD BOOK:	SCALE	PROFILE HOR 1:200 VERT 1:200	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT	HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD	TOWNSHIP OF KING	COUNTY OF SIMCOE	REGION OF YORK	JOB NUMBER 03-023	DATE JANUARY, 2009	DRAWING NUMBER 85



NOTE RE QUANTITIES FOR INTERVAL 2 (CONTRACT 1A)
 - TO HAUL DURING EXCAVATION 2,000cu.m.
 - TO EXCAVATE & LEVEL 68,000cu.m.
 - TOTAL EXCAVATION 70,500cu.m.
 - HAUL IN FOR BERM 7,000cu.m.
 - RELEVELLING 30,000sq.m.

**NORTH CANAL
Interval 2**
 -Full relocation with earth berm
 -Clean through one bridge
 -Enlarge or replace some bridge later

No.	REVISION	DATE	DESIGNED BY: K.A.S.	SCALE	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE TOWNSHIP OF KING REGION OF YORK	SECTIONS 4 AND 5	 K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023
			CHECKED BY: K.A.S.	0 2 4				DATE JANUARY, 2009
			DRAWN BY: N.M.B.	PROFILE HOR 1:200 VERT 1:200				DRAWING NUMBER 96
			CHECKED BY: K.A.S.					
			FIELD BOOK:					



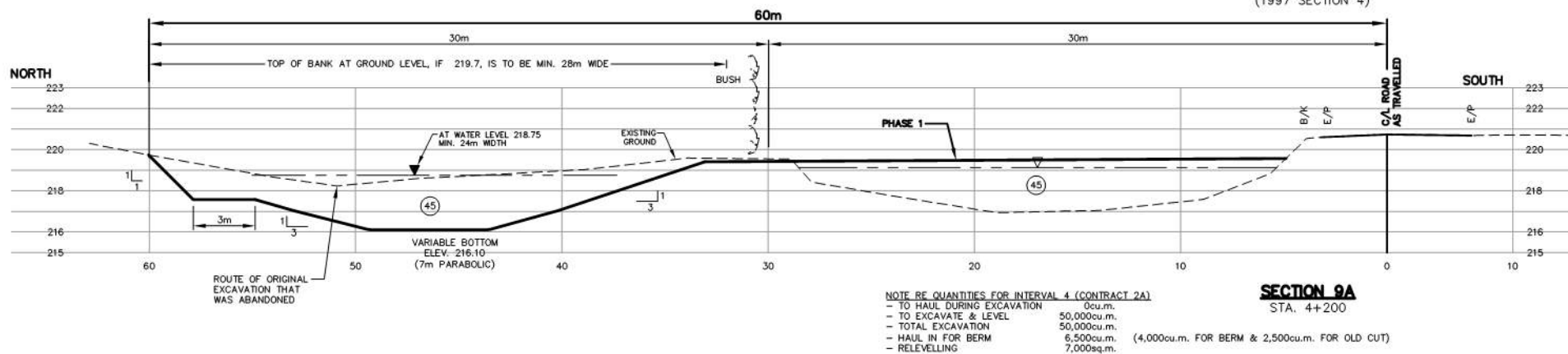
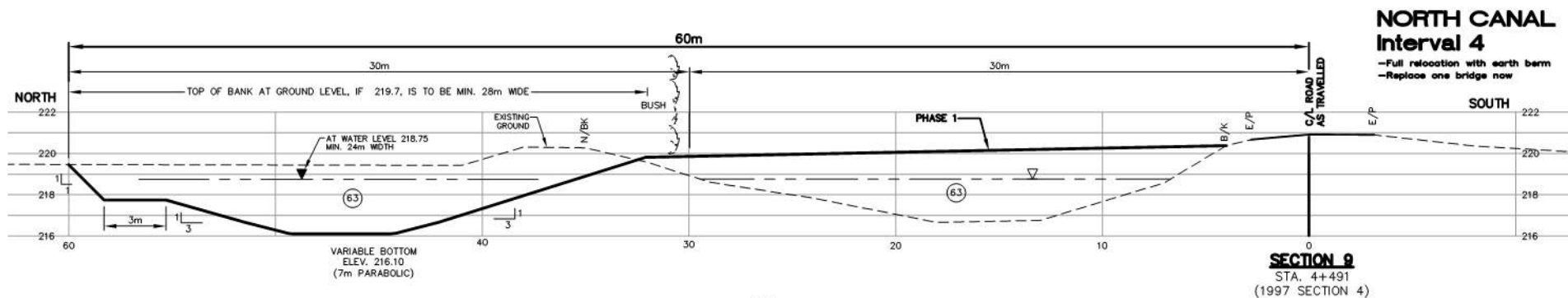
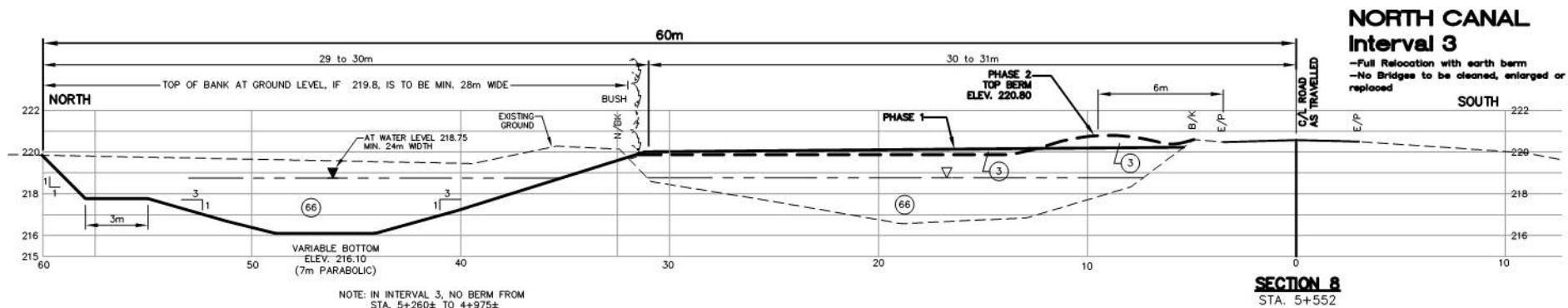
NOTE RE QUANTITIES FOR INTERVAL 3 (CONTRACT 2A)

- TO HAUL DURING EXCAVATION	0cu.m.
- TO EXCAVATE & LEVEL	203,500cu.m.
- TOTAL EXCAVATION	203,500cu.m.
- GRADING BEFORE BERM	10,000cu.m.
- HAULING IN FOR BERM	20,000cu.m.
- RELEVELLING	92,000sq.m.

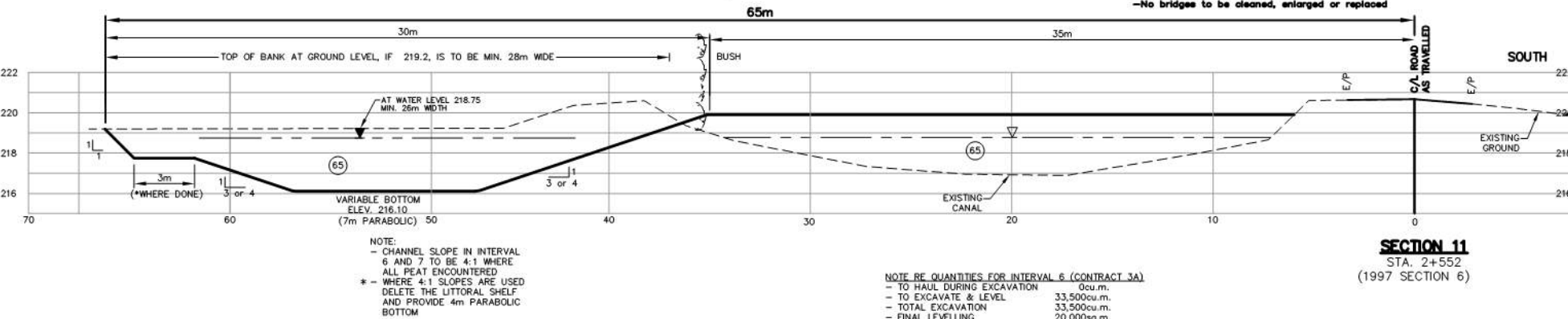
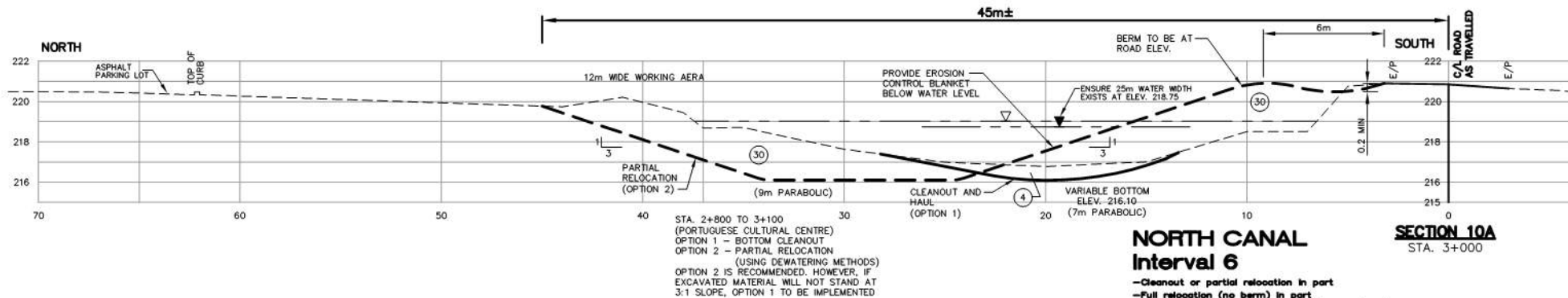
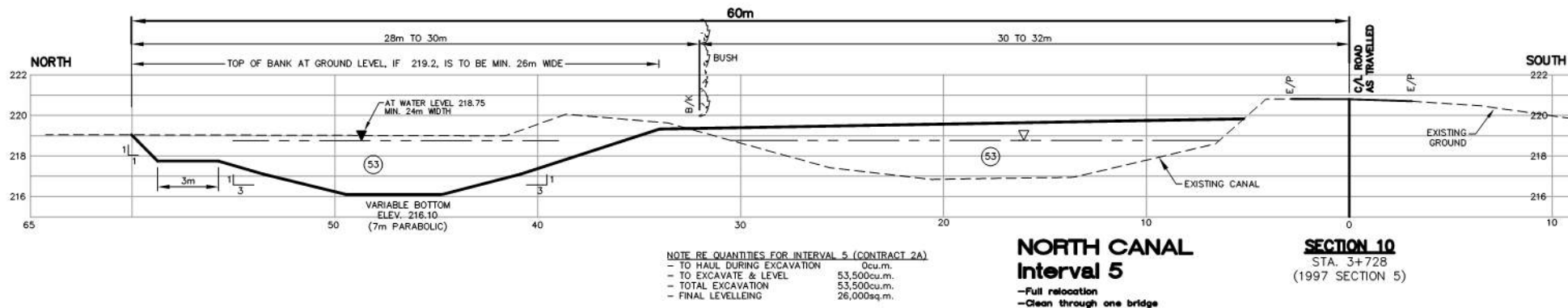
NORTH CANAL Interval 3

-Full relocation with earth berm
-No bridges to be cleaned, enlarged or replaced

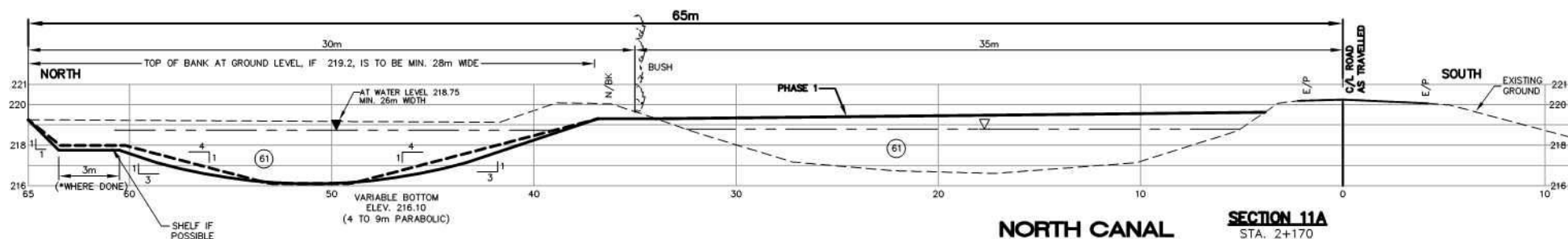
No.	REVISION	DATE	DESIGNED BY: K.A.S.	SCALE	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT			K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023
			CHECKED BY: K.A.S.	0 2 4					DATE SEPTEMBER, 2008
			DRAWN BY: N.M.B.	PROFILE HOR 1:200 VERT 1:200	HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD TOWN OF BRADFORD WEST GWILLIMBURY TOWNSHIP OF KING			DRAWING NUMBER 97	
			CHECKED BY: K.A.S.						
			FIELD BOOK:		SECTIONS 6 AND 7				



No.	REVISION	DATE	DESIGNED BY: K.A.S.	SCALE	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE TOWNSHIP OF KING REGION OF YORK	K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023
			CHECKED BY: K.A.S.	0 2 4			DATE JANUARY, 2009
			DRAWN BY: N.M.B.	PROFILE HOR 1:200 VERT 1:200			DRAWING NUMBER 88
			CHECKED BY: K.A.S.				
			FIELD BOOK:				



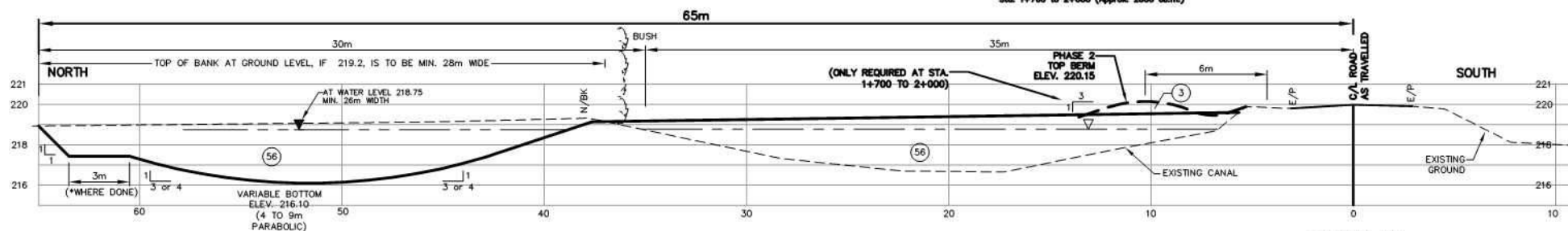
No.	REVISION	DATE	DESIGNED BY: K.A.S.	SCALE	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT	K. SMART ASSOCIATES LIMITED	JOB NUMBER
			CHECKED BY: K.A.S.	0 2 4	HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD	CONSULTING ENGINEERS AND PLANNERS	03-023
			DRAWN BY: N.M.B.	PROFILE HOR 1:200 VERT 1:200	TOWN OF BRADFORD WEST GUILMBURY	85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	DATE
			CHECKED BY: K.A.S.		TOWNSHIP OF KING		JANUARY, 2009
			FIELD BOOK:				DRAWING NUMBER
							99



NORTH CANAL Interval 7

SECTION 11A
STA. 2+170

- Full relocation
- No bridges to be cleaned, enlarged or replaced
- Use approved material from Interval 7 to make berm from Sta. 1+700 to 2+000 (Approx. 2000 cu.m.)

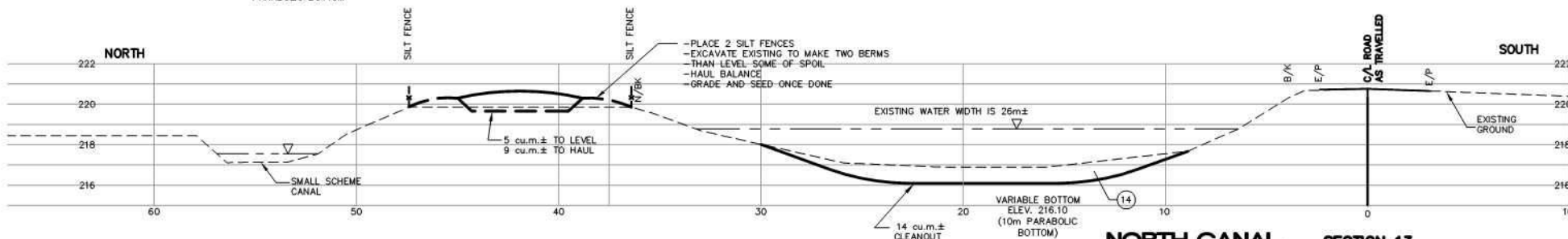


NORTH CANAL Interval 7

SECTION 12
STA. 1+859
(1997 SECTION 7)

NOTE:
- CHANNEL SLOPE IN INTERVAL 6 AND 7 TO BE 4:1 WHERE ALL PEAT ENCOUNTERED
- IN INTERVAL 7, ALL PEAT IS EXPECTED
* - WHERE 4:1 SLOPES ARE USED DELETE THE LITTORAL SHELVE, BUT PROVIDE 4m WIDE PARABOLIC BOTTOM

NOTE RE QUANTITIES FOR INTERVAL 7 (CONTRACT 3A)
- TO HAUL DURING EXCAVATION 0cu.m.
- TO EXCAVATE & LEVEL 58,000cu.m.
- TOTAL EXCAVATION 58,000cu.m.
- HAUL IN FOR BERM 1,000cu.m.
- RELEVELLING 21,000sq.m.



NORTH CANAL Interval 8

SECTION 13
STA. 1+135

- Bottom cleanout with hauling predominantly but some levelling on small marsh scheme dyke (outside of north canal)
- Clean through one bridge

NOTE RE QUANTITIES FOR INTERVAL 8
- TO HAUL DURING EXCAVATION 11,000cu.m.
- TO EXCAVATE & LEVEL 12,000cu.m.
- TOTAL EXCAVATION 23,000cu.m.
- TO HAUL LATER 6,500cu.m.
- FINAL LEVELLING 10,000sq.m.

No.	REVISION	DATE	DESIGNED BY: K.A.S.
			CHECKED BY: K.A.S.
			DRAWN BY: N.M.B.
			CHECKED BY: K.A.S.
			FIELD BOOK:

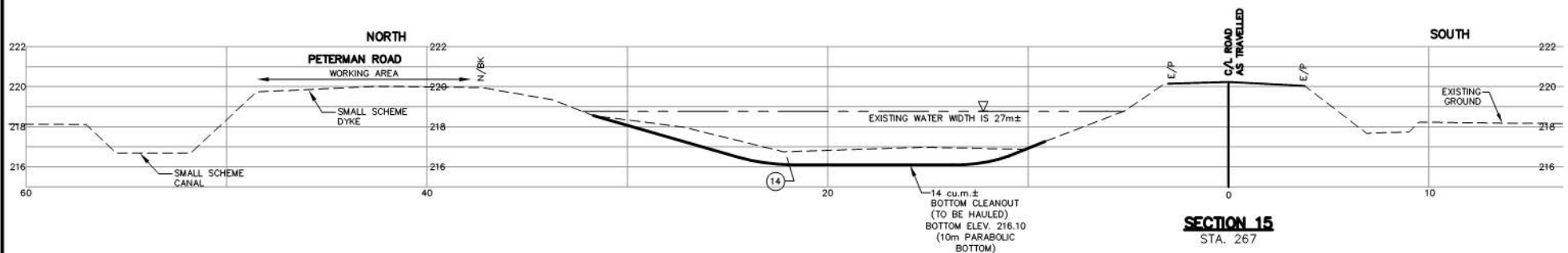
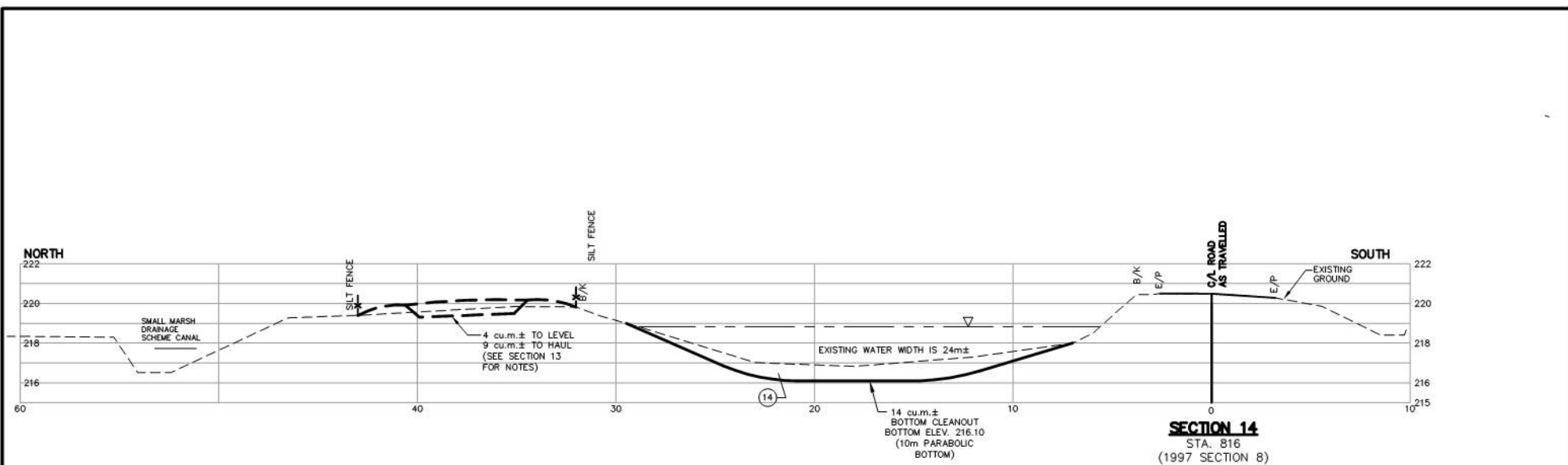
SCALE
0 2 4
PROFILE HOR 1:200 VERT 1:200

HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GUILMBURY COUNTY OF SIMCOE
TOWNSHIP OF KING REGION OF YORK

SECTIONS 11A, 12 AND 13

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

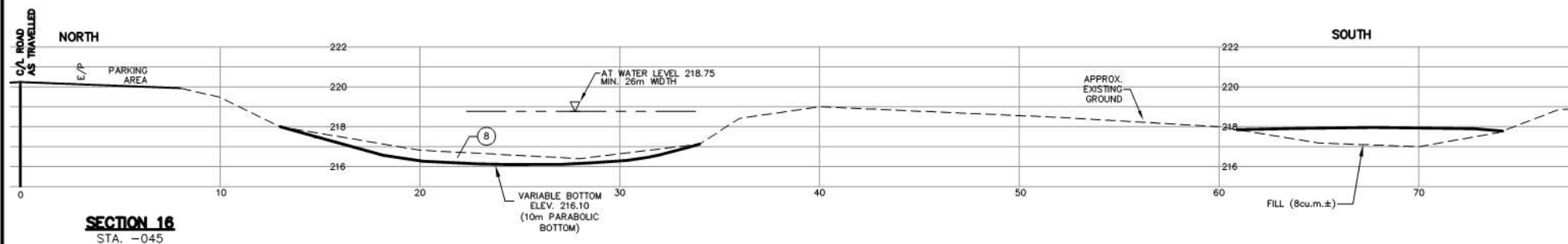
JOB NUMBER
03-023
DATE
JANUARY, 2009
DRAWING NUMBER
100



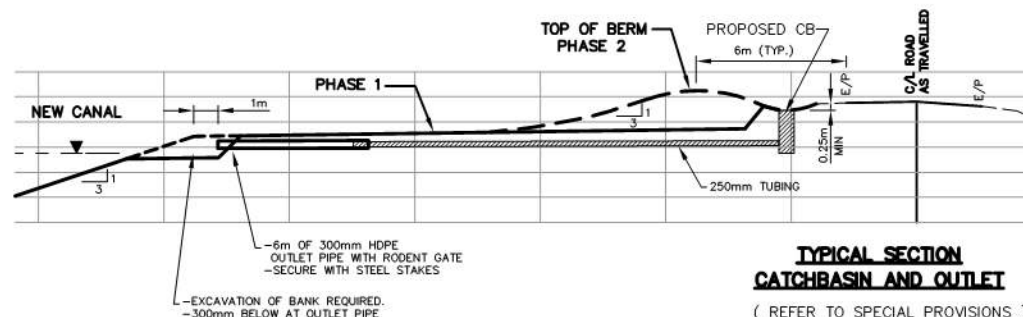
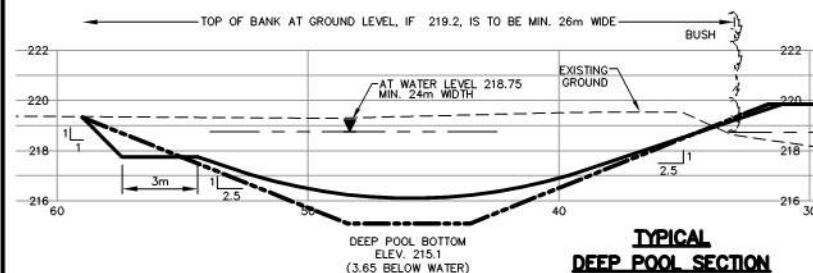
NORTH CANAL Interval 8

—Bottom cleanout with hauling predominantly but some levelling on small marsh scheme dyke (outside of north canal)
—Clean through one bridge

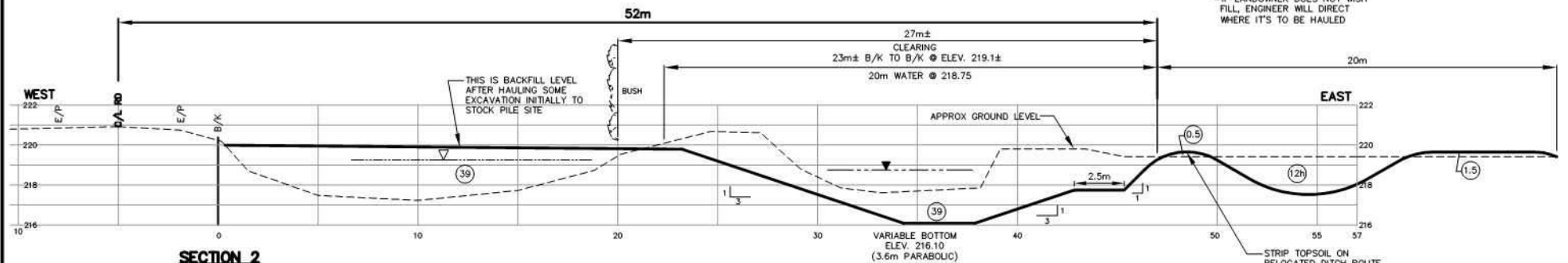
No.	REVISION	DATE	DESIGNED BY: K.A.S.	<div>SCALE</div> <div></div> <div>PROFILE HOR 1:200 VERT 1:200</div>	<div>HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT</div> <div>HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD</div> <div>TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE</div> <div>TOWNSHIP OF KING REGION OF YORK</div>	<div></div> <div>K. SMART ASSOCIATES LIMITED</div> <div>CONSULTING ENGINEERS AND PLANNERS</div> <div>85 MCINTYRE DRIVE</div> <div>KITCHENER, ONTARIO N2R 1H6</div>	JOB NUMBER
			CHECKED BY: K.A.S.				03-023
			DRAWN BY: N.M.B.				DATE
			CHECKED BY: K.A.S.				JANUARY, 2009
			FIELD BOOK:				
SECTIONS 14, 15						DRAWING NUMBER	
						101	



NORTH CANAL Interval 8



No.	REVISION	DATE	DESIGNED BY: K.A.S.	SCALE	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT			K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6		JOB NUMBER 03-023
			CHECKED BY: K.A.S.	0 2 4						DATE JANUARY, 2009
			DRAWN BY: N.M.B.	PROFILE HOR 1:200 VERT 1:200	HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD TOWN OF BRADFORD WEST GWILLIMBURY TOWNSHIP OF KING			NEW SECTIONS		DRAWING NUMBER 102
			CHECKED BY: K.A.S.							
			FIELD BOOK:							



*ENGINEER MAY INDICATE THAT SURPLUS MATERIAL TO BE HAULED TO ADECAR PROPERTY INITIALLY (AT TIME OF CONSTRUCTION) DECISION WILL BE MADE RE EXTENT OF MATERIALS TO BE HAULED


NOTE: "MIN." DENOTES MINIMUM

NOTE RE QUANTITIES FOR INTERVAL 9

- TO HAUL DURING EXCAVATION	10,000cu.m
- TO EXCAVATE & LEVEL	58,000cu.m
- TOTAL EXCAVATION	68,000cu.m

SOUTH CANAL
Interval 9

- Full relocation (no berm)
- Clean through one bridge
- Enlarge or replace some bridge later (10 years±)

No.	REVISION	DATE	DESIGNED BY: K.A.S.	 <p>SCALE</p> <p>0 2 4</p> <p>ORIGINAL SCALE</p> <p>PROFILE HOR 1:200 VERT 1:200</p>
			CHECKED BY: K.A.S.	
			DRAWN BY: R.A.M.	
			CHECKED BY: K.A.S.	
			FIELD BOOK:	

HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE
TOWNSHIP OF KING REGION OF YORK

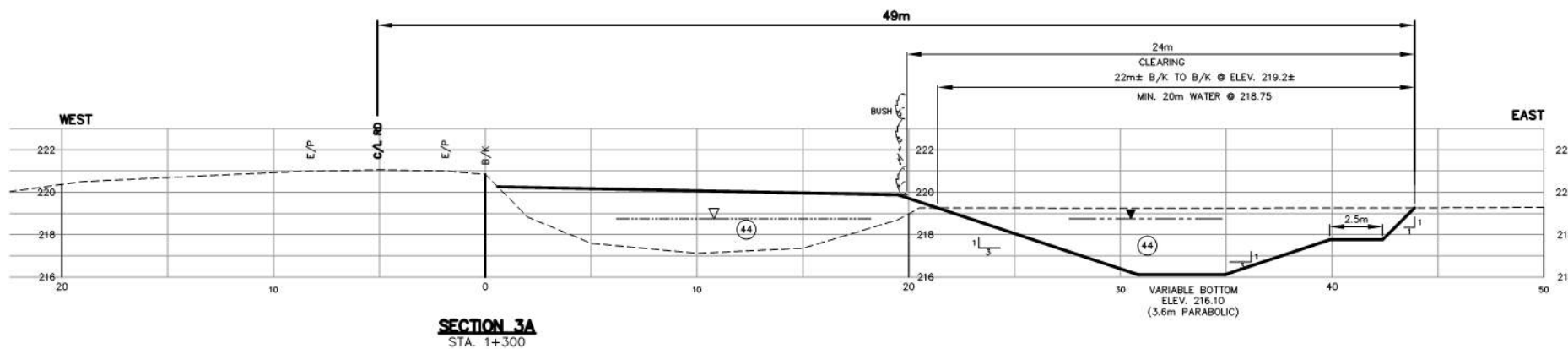
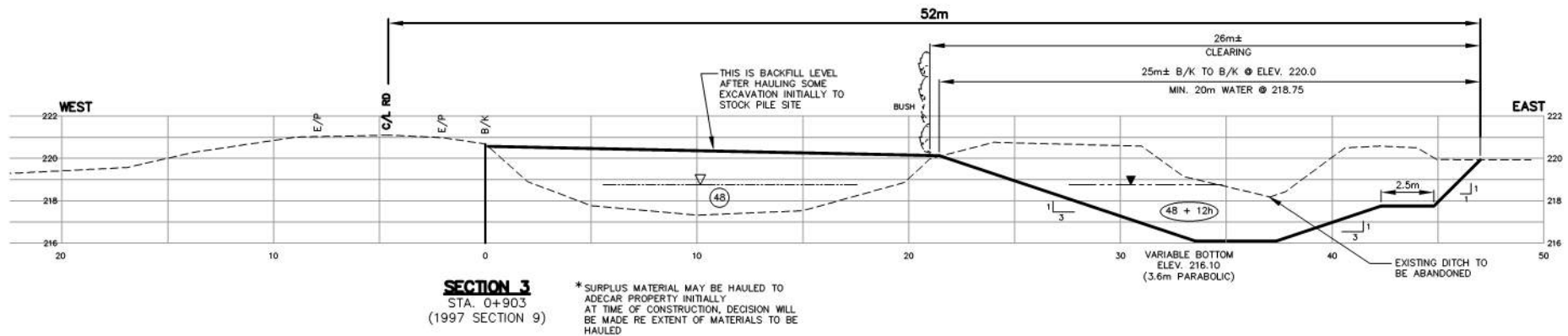
SECTIONS 1 AND 2

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023

DATE
JANUARY, 2009

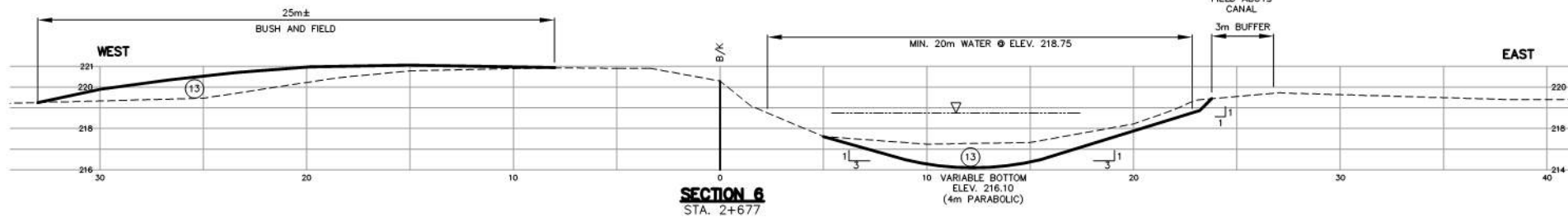
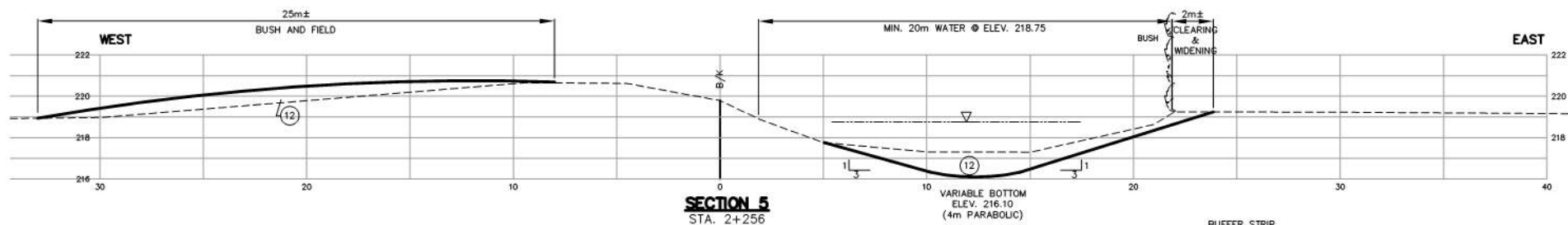
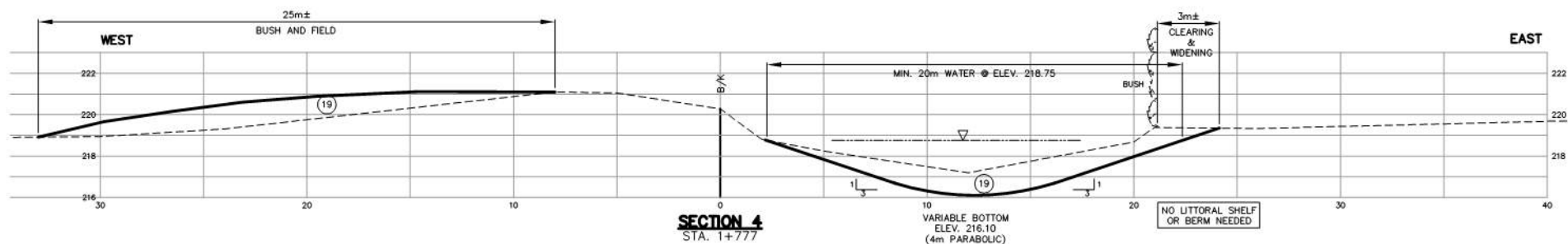
DRAWING NUMBER



SOUTH CANAL Interval 9

- Full relocation (no berm)
- Clean through one bridge
- Enlarge or replace same bridge later (10 years)

No.	REVISION	DATE	DESIGNED BY: K.A.S.	SCALE	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT			K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023
			CHECKED BY: K.A.S.	0 2 4					DATE
			DRAWN BY: R.A.M.	ORIGINAL SCALE	HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD TOWN OF BRADFORD WEST GWILLIMBURY TOWNSHIP OF KING			SECTIONS 3 AND 3A	JANUARY, 2008
			CHECKED BY: K.A.S.	PROFILE HOR. 1:200 VERT. 1:200					DRAWING NUMBER
			FIELD BOOK:						104



NOTE RE QUANTITIES IN INTERVAL 10
 - TO HAUL DURING EXCAVATION 10,000cu.m.
 - TO EXCAVATE & LEVEL 30,000cu.m.
 - TOTAL EXCAVATION 40,000cu.m.

SOUTH CANAL Interval 10

-Bottom cleanout with minor widening
 -Level material on marsh lands side (inside) of dike
 -Enlarge or replace some and additional bridge
 later (10 years±)

No.	REVISION	DATE	DESIGNED BY: K.A.S.
			CHECKED BY: K.A.S.
			DRAWN BY: R.A.M.
			CHECKED BY: K.A.S.
			FIELD BOOK:

SCALE
 0 2 4
 ORIGINAL SCALE
 PROFILE
 HOR 1:200
 VERT 1:200

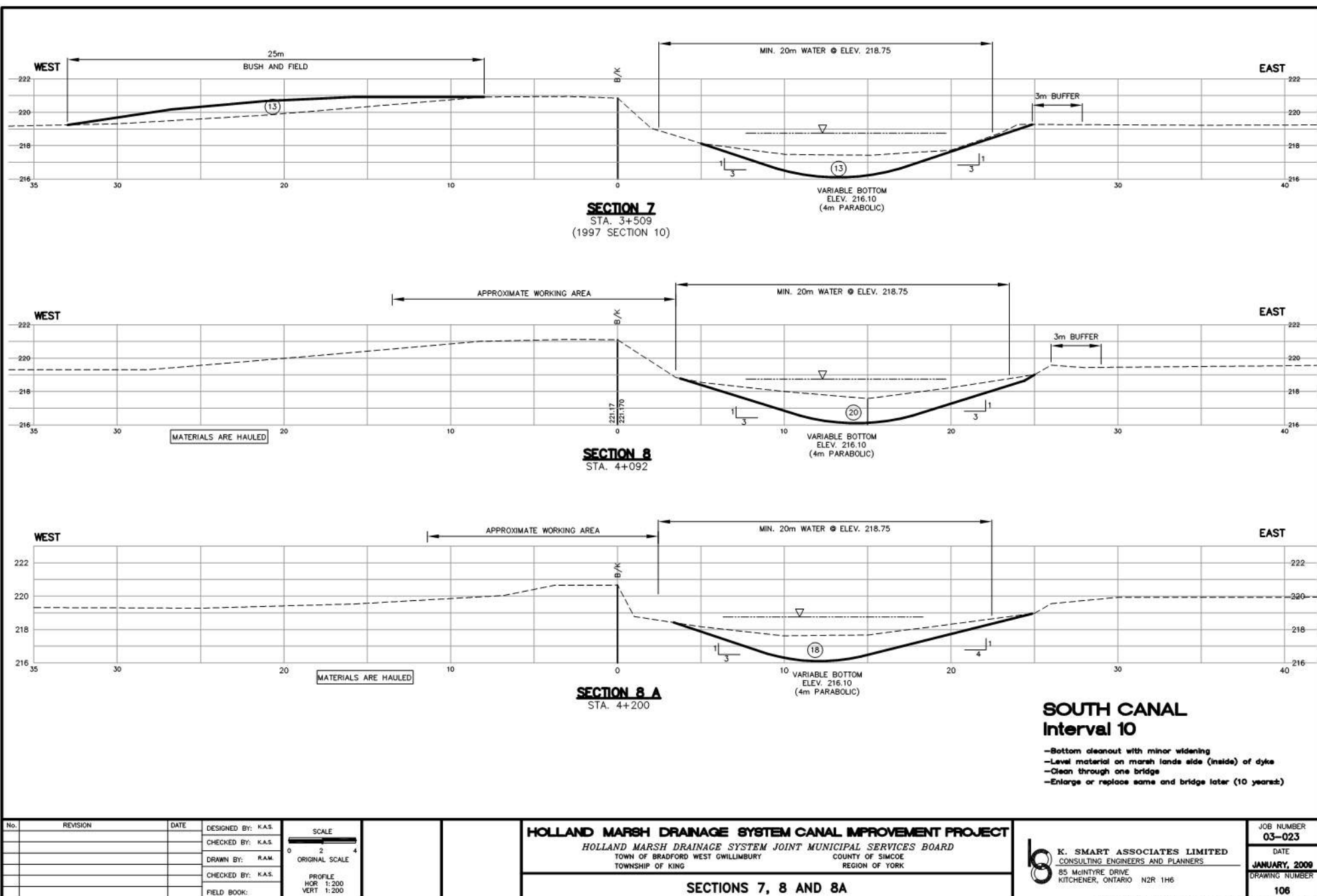
HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

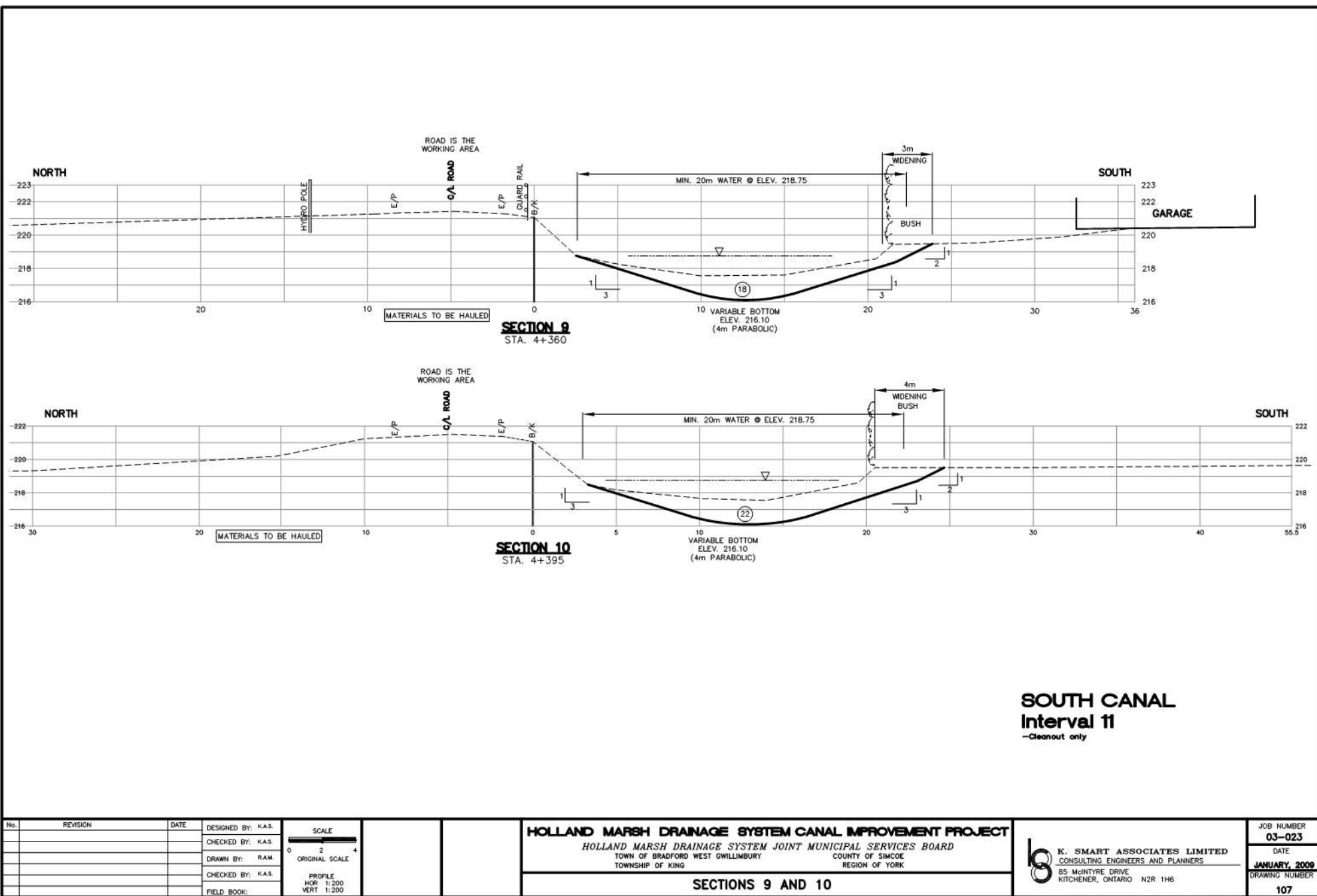
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
 TOWN OF BRADFORD WEST GUILMBURY COUNTY OF SIMCOE
 TOWNSHIP OF KING REGION OF YORK

SECTIONS 4, 5, AND 6

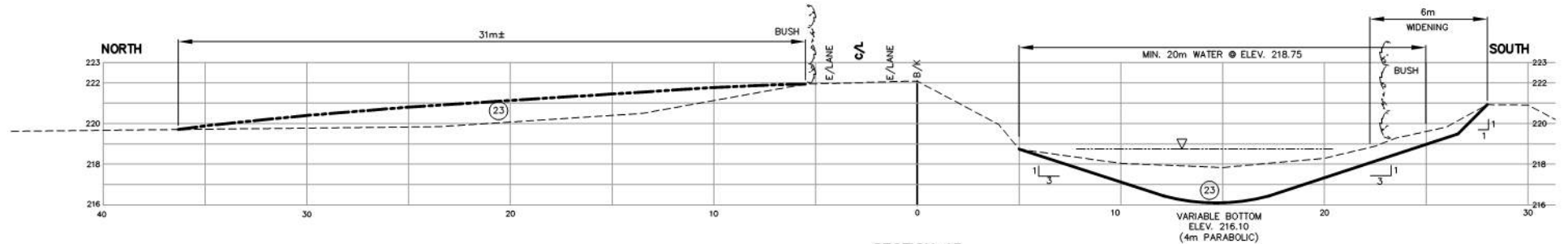
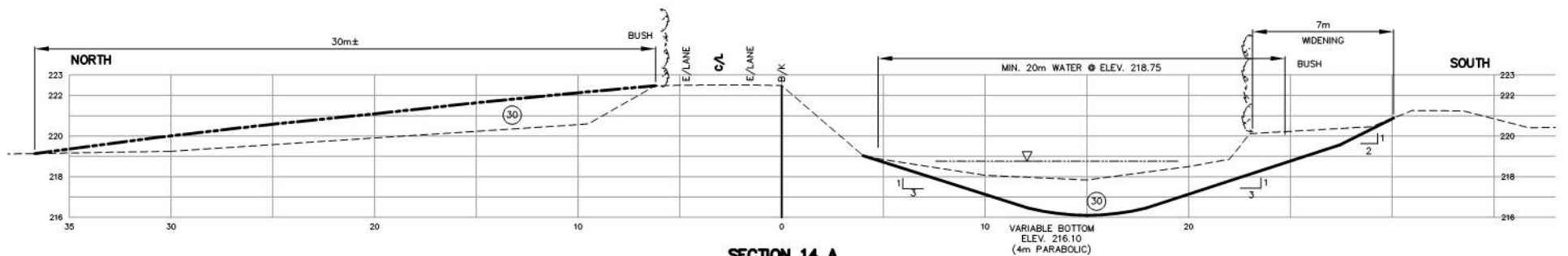
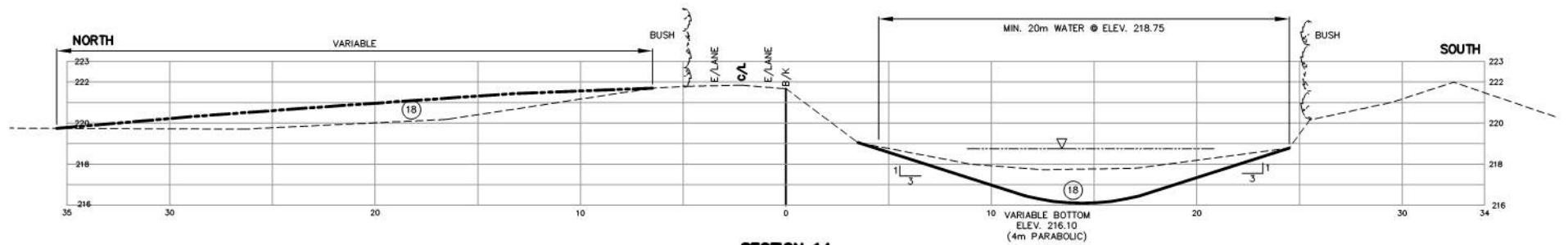
K. SMART ASSOCIATES LIMITED
 CONSULTING ENGINEERS AND PLANNERS
 85 MCINTYRE DRIVE
 KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023
 DATE
JANUARY, 2008
 DRAWING NUMBER
105





No.	REVISION	DATE	DESIGNED BY: K.A.S.	SCALE	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT		K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6		JOB NUMBER 03-023
			CHECKED BY: K.A.S.	0 2 4 ORIGINAL SCALE					DATE JANUARY, 2009
			DRAWN BY: R.A.M.	PROFILE HOR 1:200 VERT 1:200	HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD TOWN OF BRADFORD WEST GUILMBURY TOWNSHIP OF KING		COUNTY OF SIMCOE REGION OF YORK		DRAWING NUMBER 107
			CHECKED BY: K.A.S.						
			FIELD BOOK:		SECTIONS 9 AND 10				




NOTE RE QUANTITIES FOR INTERVAL 12

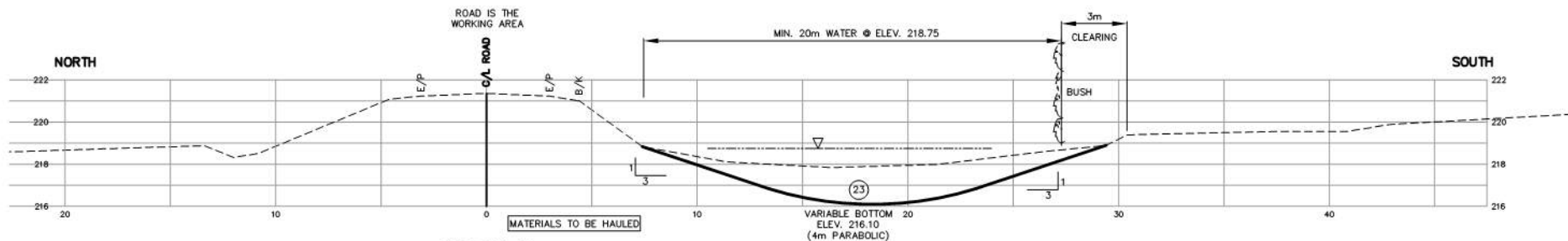
- TO HAUL DURING EXCAVATION	0cu.m.
- TO EXCAVATE & LEVEL	32,000cu.m. *
- TOTAL EXCAVATION	32,000cu.m.

* OF THIS, APPROXIMATELY 1,500cu.m. TO BE
HAULED/MOVED Laterally DUE TO BUILDING
AREAS PRIOR TO LEVELLING.

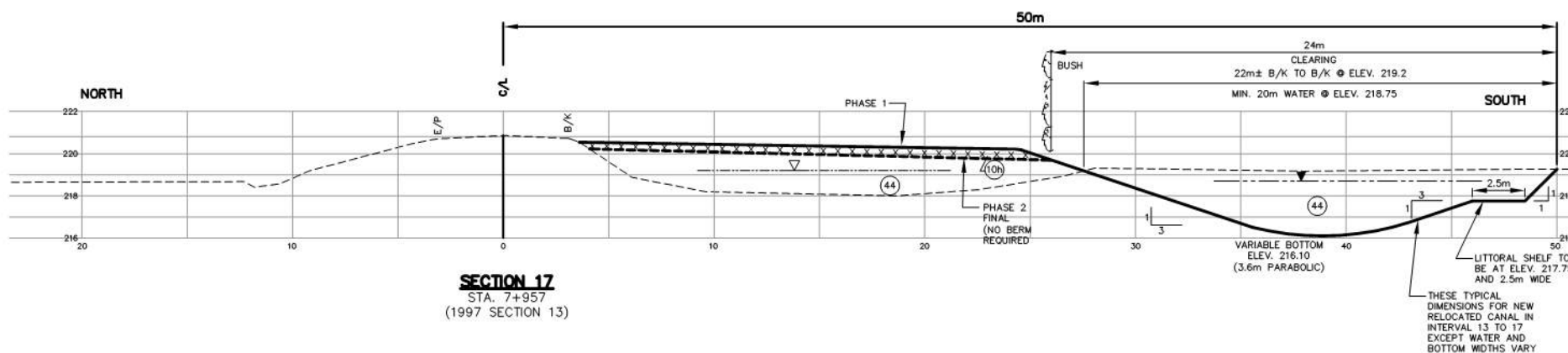
SOUTH CANAL Interval 12

- Bottom cleanout with minor widening
- Level material on marsh lands side (inside) of dyke
- Clean through one bridge

No.	REVISION	DATE	DESIGNED BY: K.A.S.	<div>SCALE</div> <div>0 2 4</div> <div>ORIGINAL SCALE</div> <div>PROFILE HOR 1:200 VERT 1:200</div> <div>FIELD BOOK:</div>			HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT			<div></div> <div>K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6</div>	JOB NUMBER 03-023
			CHECKED BY: K.A.S.				HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD				DATE JANUARY, 2009
			DRAWN BY: R.A.M.				TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE TOWNSHIP OF KING				DRAWING NUMBER
			CHECKED BY: K.A.S.				SECTIONS 14, 14A AND 15				109
			FIELD BOOK:								



SECTION 16
STA. 7+583



SECTION 17
STA. 7+957
(1997 SECTION 13)

PHASE 2 IS ONLY SHOWN WHERE
MATERIALS HAVE TO BE HAULED
FROM BACKFILL WHEN DRY
[X X X] - REPRESENTS MATERIAL TO HAUL

NOTE RE QUANTITIES INTERVAL 13
- TO HAUL DURING EXCAVATION 9,000cu.m.
- TO EXCAVATE & LEVEL 20,000cu.m.
- TOTAL EXCAVATION 29,000cu.m.
- TO HAUL LATER FROM BACKFILL 4,000cu.m.

SOUTH CANAL Interval 13

-Full relocation
-No bridges to be cleaned, enlarged or replaced

No.	REVISION	DATE	DESIGNED BY: K.A.S.
			CHECKED BY: K.A.S.
			DRAWN BY: R.A.M.
			CHECKED BY: K.A.S.
			FIELD BOOK:

SCALE

0 2 4

ORIGINAL SCALE

PROFILE

HOR 1:200

VERT 1:200

HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLIMBURY
COUNTY OF SIMCOE
TOWNSHIP OF KING REGION OF YORK

SECTIONS 16 AND 17

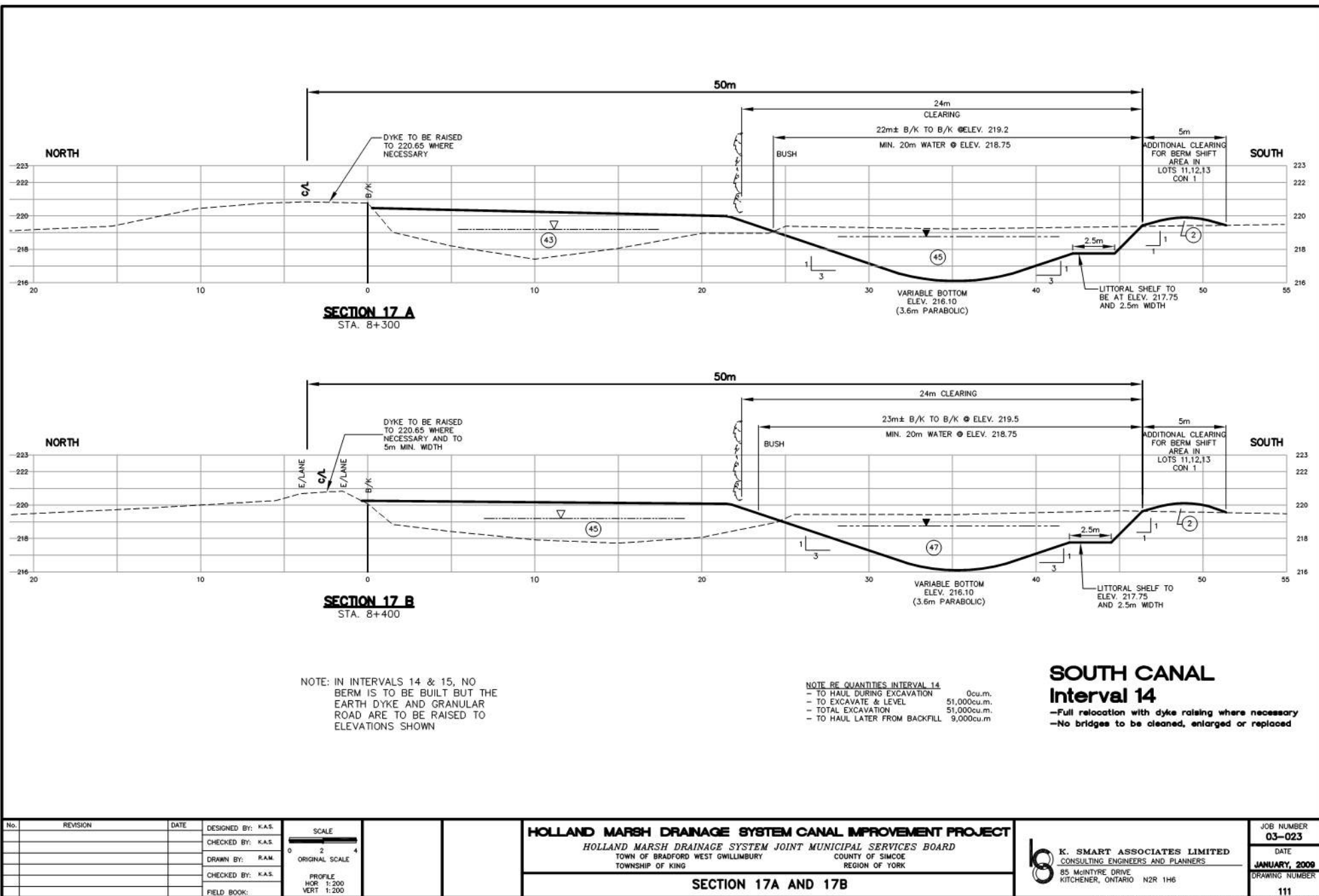


K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023

DATE
JANUARY, 2008

DRAWING NUMBER
110



No.	REVISION	DATE	DESIGNED BY: K.A.S.
			CHECKED BY: K.A.S.
			DRAWN BY: R.A.M.
			CHECKED BY: K.A.S.
			FIELD BOOK:

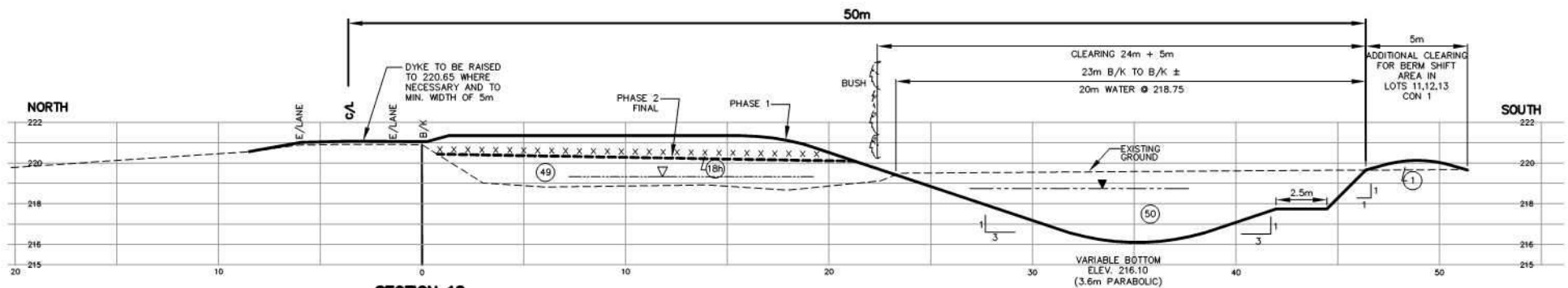


HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE
TOWNSHIP OF KING REGION OF YORK

SECTION 17A AND 17B

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER 03-023
DATE JANUARY, 2008
DRAWING NUMBER 111

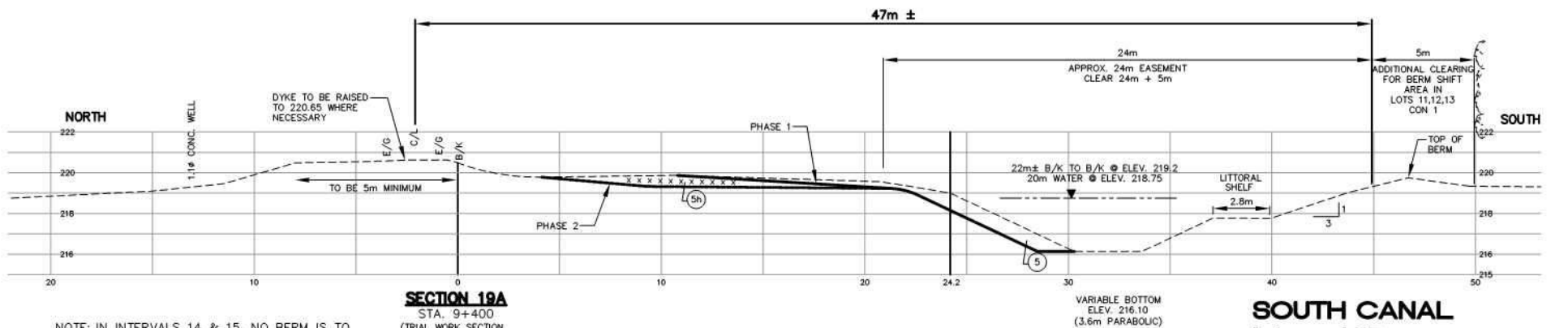


SECTION 18
STA. 8+854
(1997 SECTION 14)

PHASE 2 IS ONLY SHOWN WHERE
MATERIALS HAVE TO BE HAULED
FROM BACKFILL WHEN DRY
[X X X] - REPRESENTS MATERIAL TO HAUL

SOUTH CANAL Interval 14

-Full relocation with dyke raising as necessary
-No bridges to be cleaned, enlarged or replaced



SECTION 19A
STA. 9+400
(TRIAL WORK SECTION
COMPLETED OCT. 2008)

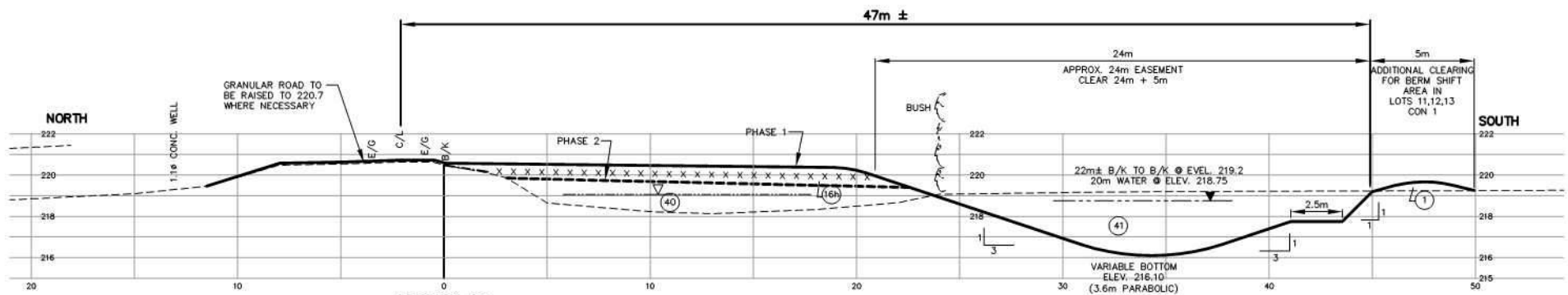
NOTE: IN INTERVALS 14 & 15, NO BERM IS TO
BE BUILT BUT THE EARTH DYKE AND
GRANULAR ROAD ARE TO BE RAISED
AND/OR WIDENED TO ELEVATIONS AND
WIDTHS SHOWN WHERE NECESSARY

WORK NOW IS TO WIDEN
NORTH BANK TO GIVE
20m WATER WIDTH.

SOUTH CANAL Interval 15

-Full relocation with dyke and gravel road raising as
necessary
-Replace one bridge now

No.	REVISION	DATE	DESIGNED BY: K.A.S.	SCALE	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD TOWN OF BRADFORD WEST GUILMBURY COUNTY OF SIMCOE TOWNSHIP OF KING REGION OF YORK	SECTION 18 AND 19	K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023
			CHECKED BY: K.A.S.	0 2 4				DATE JANUARY, 2008
			DRAWN BY: R.A.M.	ORIGINAL SCALE				DRAWING NUMBER
			CHECKED BY: K.A.S.	PROFILE HOR 1:200 VERT 1:200				112
			FIELD BOOK:					



SECTION 19
STA. 9+640
(1997 SECTION 15)

NOTE: IN INTERVALS 14 & 15, NO
BERM IS TO BE BUILT BUT THE
EARTH DYKE AND GRANULAR
ROAD ARE TO BE RAISED TO
ELEVATIONS SHOWN

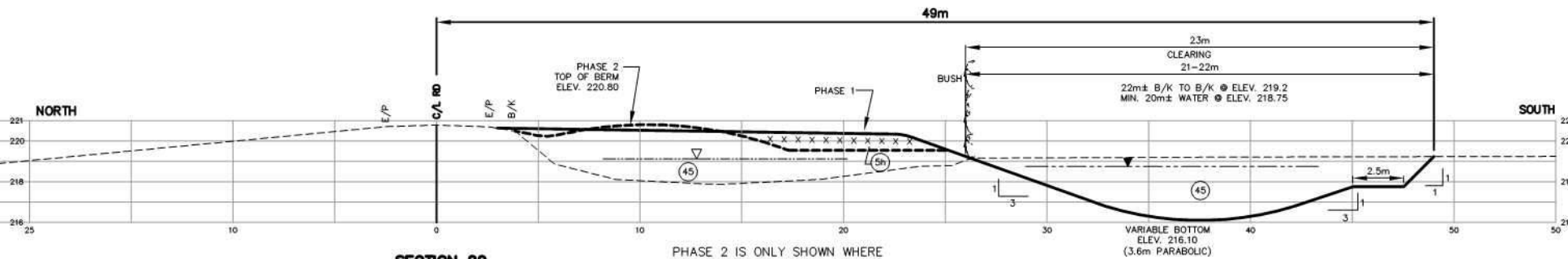
PHASE 2 IS ONLY SHOWN WHERE
MATERIALS HAVE TO BE HAULED
FROM BACKFILL WHEN DRY
[X X X] - REPRESENTS MATERIAL TO HAUL

NOTE RE QUANTITIES FOR INTERVAL 15
- TO HAUL DURING EXCAVATION 0cu.m.
- TO EXCAVATE & LEVEL 21,500cu.m. *
- TOTAL EXCAVATION 21,500cu.m.
- TO HAUL LATER FROM BACKFILL 9,000cu.m.
- TO MOVE LATERALLY FROM 1,000cu.m.
BACKFILL IN TRIAL AREA PLUS
ADD NEW EXCAVATION IN TRIAL
AREA TO MOVE ALSO. 1,000 cu.m.

* INCLUDES 1,000cu.m.± EXCAVATION TO
FINISH/WIDEN WHEN TRIAL AREA SECTION

SOUTH CANAL Interval 15

-Full relocation with dyke and gravel road raising
as necessary
-Replace one bridge now



SECTION 20
STA. 10+598
(1997 SECTION 16)

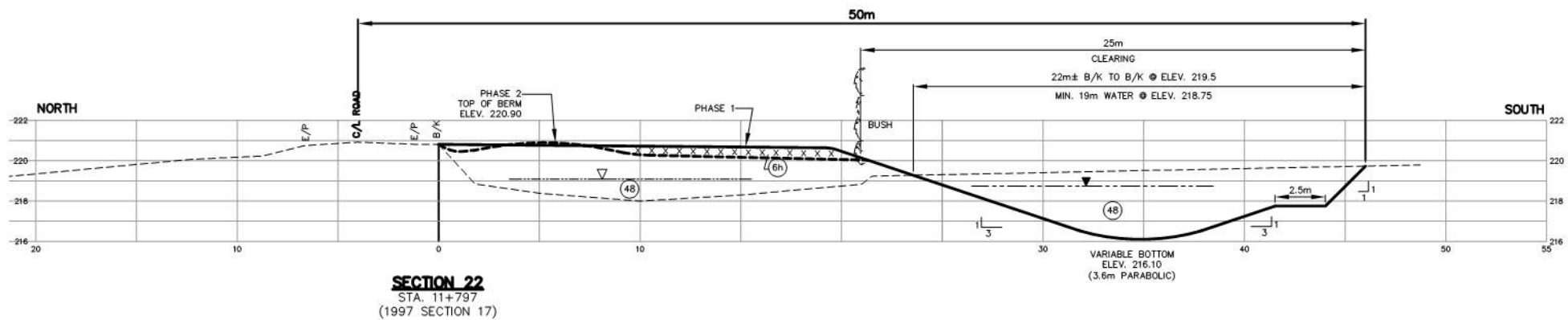
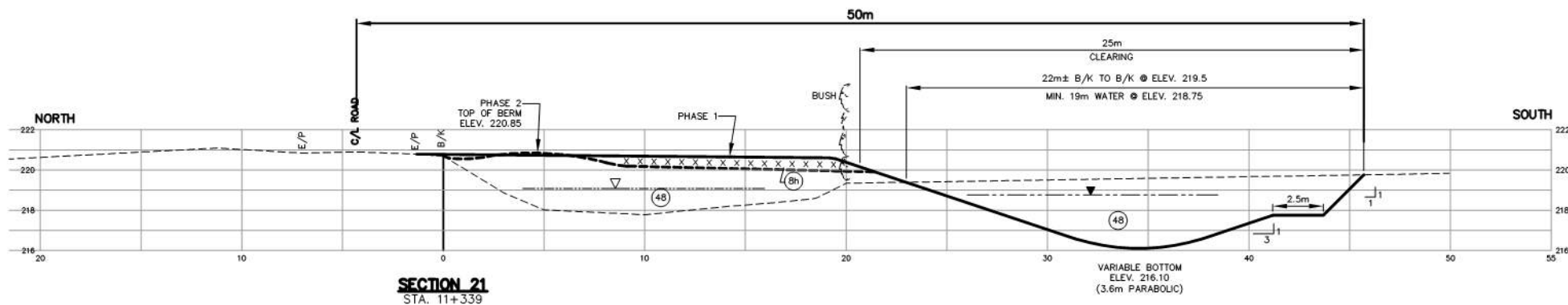
PHASE 2 IS ONLY SHOWN WHERE
MATERIALS HAVE TO BE HAULED
FROM BACKFILL WHEN DRY
[X X X] - REPRESENTS MATERIAL TO HAUL

NOTE RE QUANTITIES INTERVAL 16
- TO HAUL DURING EXCAVATION 0cu.m.
- TO EXCAVATE & LEVEL 47,700cu.m.
- TOTAL EXCAVATION 47,700cu.m.
- TO HAUL LATER FROM BACKFILL 5,500cu.m.

SOUTH CANAL Interval 16

-Full relocation (no berm)
-Clean through two bridges
-Enlarge or replace one bridge

No.	REVISION	DATE	DESIGNED BY: K.A.S.	CHECKED BY: K.A.S.	DRAWN BY: R.A.M.	CHECKED BY: K.A.S.	FIELD BOOK:	SCALE:	PROFILE HOR: 1:200 VERT: 1:200	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT	HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD	TOWN OF BRADFORD WEST GUILMBURY	COUNTY OF SIMCOE	REGION OF YORK	JOB NUMBER 03-023	DATE JANUARY, 2008	DRAWING NUMBER 113

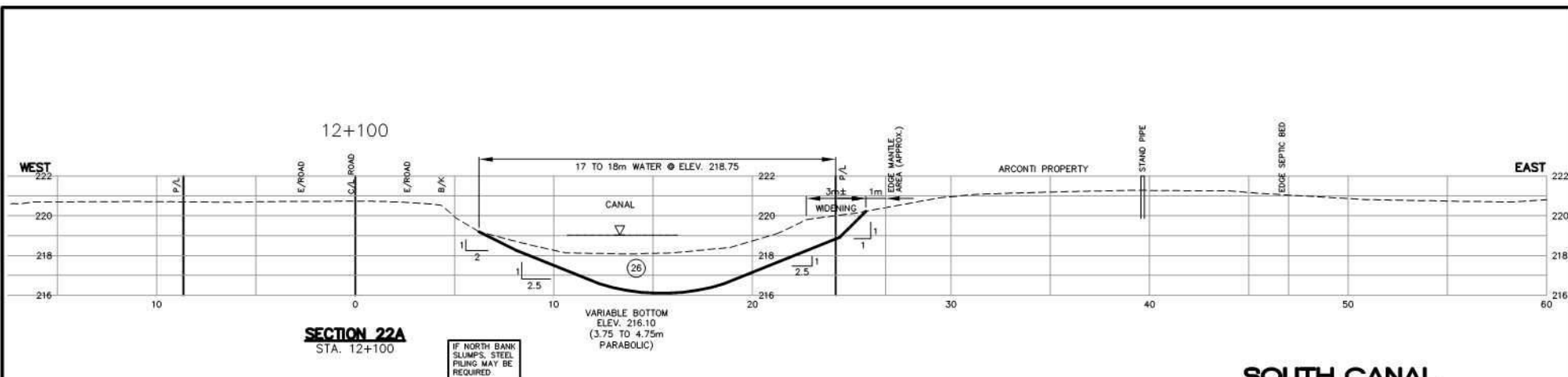


PHASE 2 IS ONLY SHOWN WHERE
MATERIALS HAVE TO BE HAULED
FROM BACKFILL WHEN DRY
[X X X] - REPRESENTS MATERIAL TO HAUL

NOTE RE QUANTITIES INTERVAL 17
- TO HAUL DURING EXCAVATION 3,200cu.m.
- TO EXCAVATE & LEVEL 41,500cu.m.
- TOTAL EXCAVATION 44,700cu.m.
- TO HAUL LATER FROM BACKFILL 6,500cu.m.

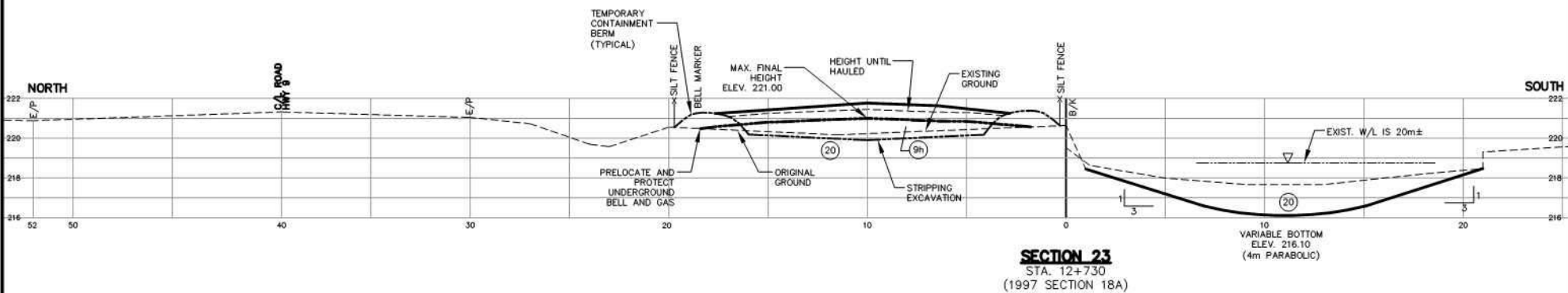
SOUTH CANAL
Interval 17
-Full relocation (no berm)
-Clean through one bridge

No.	REVISION	DATE	DESIGNED BY: K.A.S.	SCALE	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD TOWN OF BRADFORD WEST GWILLIMBURY COUNTY OF SIMCOE TOWNSHIP OF KING REGION OF YORK			K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6		JOB NUMBER 03-023 DATE JANUARY, 2008 DRAWING NUMBER 114	
			CHECKED BY: K.A.S.	0 2 4							
			DRAWN BY: R.A.M.	ORIGINAL SCALE	SECTIONS 21, 22						
			CHECKED BY: K.A.S.	PROFILE HOR 1:200 VERT 1:200							
			FIELD BOOK:								



SOUTH CANAL Interval 17

- Full relocation (no berm)
- Clean through one bridge




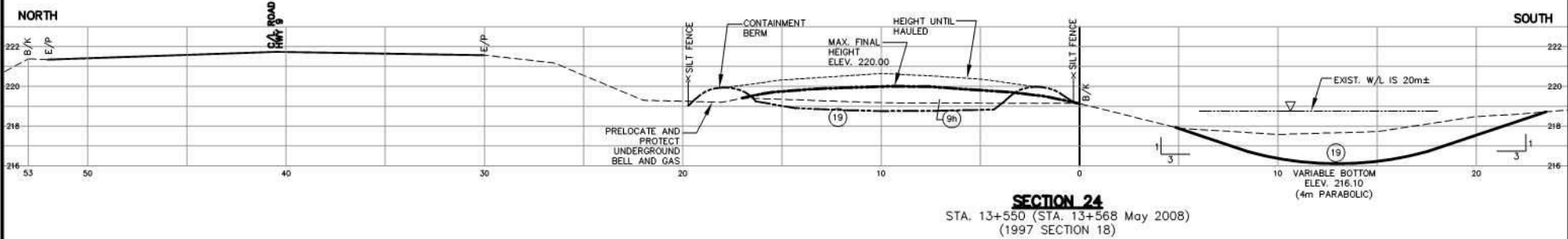
SOUTH CANAL Interval 18

- Bottom cleanup with some levelling on boulevard between Highway 9 and canal
- Hauling away of balance
- No bridges to be cleaned, enlarged or replaced

NOTE RE QUANTITIES INTERVAL 18

- TO HAUL DURING EXCAVATION	0cu.m.
- TO EXCAVATE & LEVEL	45,000cu.m.
- TOTAL EXCAVATION	45,000cu.m.
- TO HAUL LATER FROM BACKFILL	20,000cu.m.

No.	REVISION	DATE	DESIGNED BY: K.A.S.	<div>SCALE</div> <div></div> <div>ORIGINAL SCALE</div> <div>PROFILE HOR 1:200 VERT 1:200</div> <div>FIELD BOOK:</div>			HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT			<div></div> <div>K. SMART ASSOCIATES LIMITED</div> <div>CONSULTING ENGINEERS AND PLANNERS</div> <div>85 MCINTYRE DRIVE</div> <div>KITCHENER, ONTARIO N2R 1H6</div>	JOB NUMBER
			CHECKED BY: K.A.S.				HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD				03-023
			DRAWN BY: R.A.M.				TOWN OF BRADFORD WEST GWILLIMBURY				DATE
			CHECKED BY: K.A.S.				COUNTY OF SIMCOE				JANUARY, 2008
			FIELD BOOK:				TOWNSHIP OF KING				DRAWING NUMBER
							SECTION 22A AND 23			115	



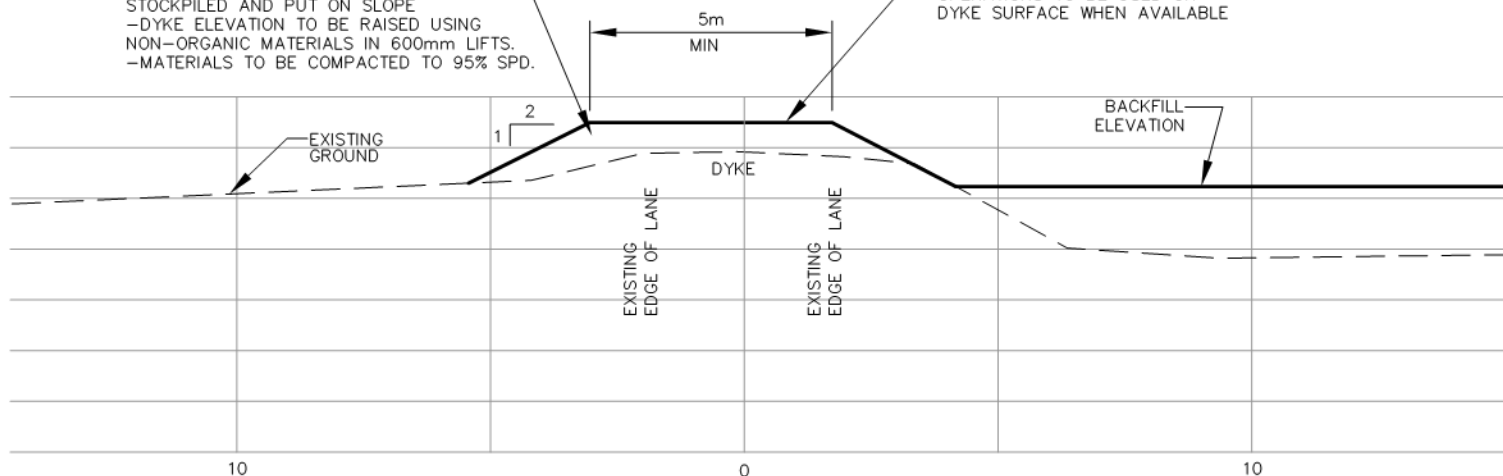
SOUTH CANAL Interval 18

- Bottom cleanout with some levelling on boulevard between Highway 9 and canal
- Hauling away of balance
- No bridges to be cleaned, enlarged or replaced

No.	REVISION	DATE	DESIGNED BY: K.A.S.	<div><div><div>SCALE</div><div><div><div></div><div></div><div></div></div><div>024</div></div><div>ORIGINAL SCALE</div><div>PROFILE HOR 1:200 VERT 1:200</div></div></div>	<div><div><div><div><div>HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT</div><div><i>HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD</i></div><div>TOWN OF BRADFORD WEST GWILLIMBURY</div><div>TOWNSHIP OF KING</div></div><div><div>COUNTY OF SIMCOE</div><div>REGION OF YORK</div></div></div></div><div><div>SECTION 24</div></div></div>	<div><div><div><div><div>K. SMART ASSOCIATES LIMITED</div><div>CONSULTING ENGINEERS AND PLANNERS</div></div><div><div><div><div><div>KS</div><div>85 MCINTYRE DRIVE</div><div>KITCHENER, ONTARIO</div><div>N2R 1H6</div></div></div></div></div></div><div><div>JOB NUMBER 03-023</div><div>DATE JANUARY, 2009</div><div>DRAWING NUMBER 116</div></div></div></div>
			CHECKED BY: K.A.S.			
			DRAWN BY: R.A.M.			
			CHECKED BY: K.A.S.			
			FIELD BOOK:			

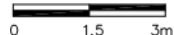
-TOPSOIL (IF ANY) TO BE STRIPPED AND STOCKPILED AND PUT ON SLOPE
 -DYKE ELEVATION TO BE RAISED USING NON-ORGANIC MATERIALS IN 600mm LIFTS.
 -MATERIALS TO BE COMPACTED TO 95% SPD.

CHIPPINGS FROM CLEARING OPERATIONS TO BE USED ON DYKE SURFACE WHEN AVAILABLE



**TYPICAL SECTION OF
 DYKE REPAIRS
 (REFER TO SPECIAL PROVISIONS)**

SCALE 1:150



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD

TOWN OF BRADFORD WEST GWILLIMBURY
TOWNSHIP OF KING

COUNTY OF SIMCOE
REGION OF YORK

JOB NUMBER

03-023

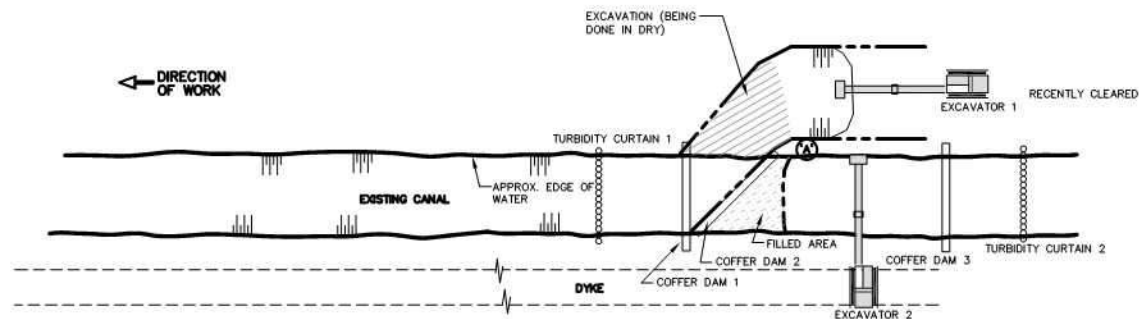
DATE

JANUARY, 2009

DRAWING NUMBER

117

CROSS SECTION OF RAISED AND/OR WIDENED DYKE

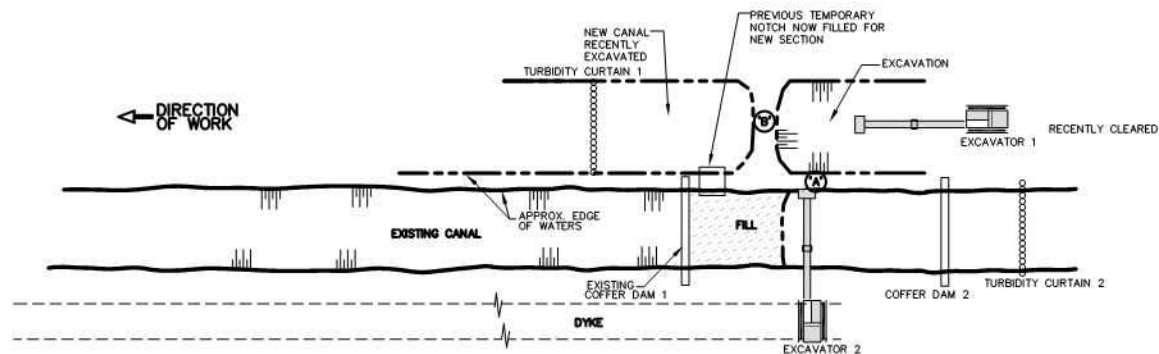


PLAN VIEW
N.T.S.

IF AT AN END OF SECTION WORK

SEQUENCE OF WORK

- ① FILL NEW EXCAVATION WITH WATER BY PUMPS
- ② DIG NOTCH AT 'A'
- ③ EXCAVATOR 1 OPENS COFFER DAM 3
- ④ EXCAVATOR 2 OPENS COFFER DAM 1
- ⑤ REMOVE TURBIDITY CURTAINS 1 AND 2



PLAN VIEW
N.T.S.

IF AT A MID SECTION WORK

SEQUENCE OF WORK

- ① FILL NEW EXCAVATION WITH WATER BY PUMPS
- ② DIG NOTCH AT 'A'
- ③ EXCAVATOR 1 REMOVES COFFER DAM 2
- ④ EXCAVATOR 2 TRAVELS OVER COFFER DAM 1 AND OPENS AREA 'B'
- ⑤ REMOVE TURBIDITY CURTAINS 1 AND 2

SCHEMATIC FOR:

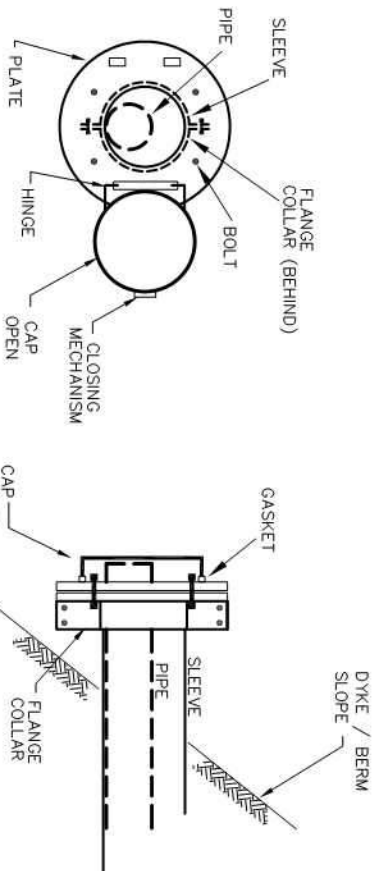
PROVISION FOR FLOODING IN RELOCATION WORK



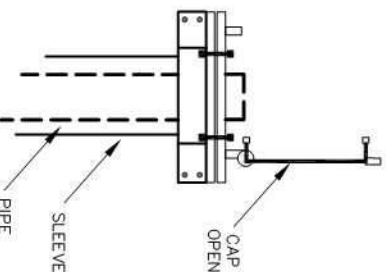
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER ENGLEHART SUDBURY RAINY RIVER

DRAWING NUMBER

118



- 1/4" STEEL PLATE ATTACHED TO COLLAR
- FASTENED TO PLATE IS A CAP THAT IS FREE TO CLOSE AND COVER PIPE WHEN CLOSED.
- CLOSING MECHANISM ATTACHED TO CAP AND PLATE, TO SECURE IT ONCE CLOSED.
- RUBBER GASKET ATTACHED FOR TIGHT FIT.



CAPPING PLATE DETAIL

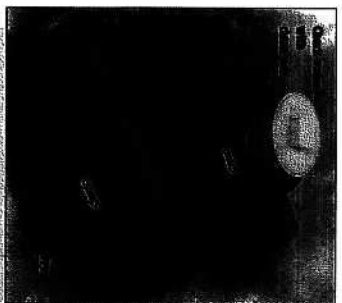
WHERE PIPE REMAINS IN SLEEVE

N.T.S.

Check Valves *

(Larger Sizes)

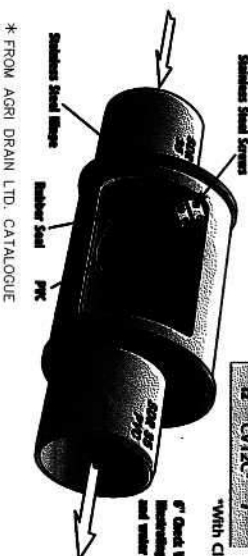
Clean outs available



SIZE	STANDARD LENGTH
6" GVMC	18"
8" GVMC	18"
10" GVMC	18"
12" GVMC	18"
14" GVMC	18"
16" GVMC	18"
18" GVMC	18"
20" GVMC	18"
22" GVMC	18"
24" GVMC	18"
26" GVMC	18"
28" GVMC	18"
30" GVMC	18"
32" GVMC	18"
34" GVMC	18"
36" GVMC	18"
38" GVMC	18"
40" GVMC	18"
42" GVMC	18"
44" GVMC	18"
46" GVMC	18"
48" GVMC	18"
50" GVMC	18"
52" GVMC	18"
54" GVMC	18"
56" GVMC	18"
58" GVMC	18"
60" GVMC	18"
62" GVMC	18"
64" GVMC	18"
66" GVMC	18"
68" GVMC	18"
70" GVMC	18"
72" GVMC	18"
74" GVMC	18"
76" GVMC	18"
78" GVMC	18"
80" GVMC	18"
82" GVMC	18"
84" GVMC	18"
86" GVMC	18"
88" GVMC	18"
90" GVMC	18"
92" GVMC	18"
94" GVMC	18"
96" GVMC	18"
98" GVMC	18"
100" GVMC	18"

*With Clean Out.

6" Check Valve
Indicating working parts
and water flow direction.



* FROM AGRI DRAIN LTD. CATALOGUE

CHECK VALVE DETAIL

N.T.S.

HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
TOWN OF BRADFORD WEST GWILLIMBURY
TOWNSHIP OF KING
COUNTY OF SIMCOE
REGION OF YORK

CAPPING PLATE AND CHECK VALVE DETAILS

JOB NUMBER

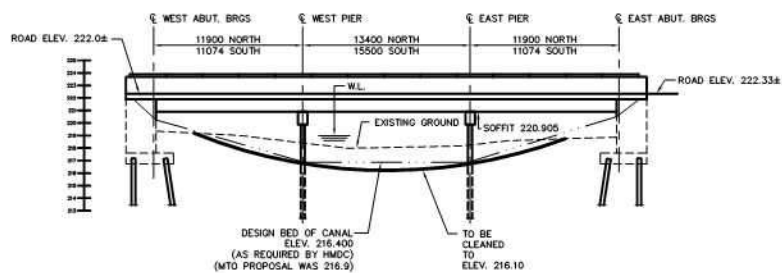
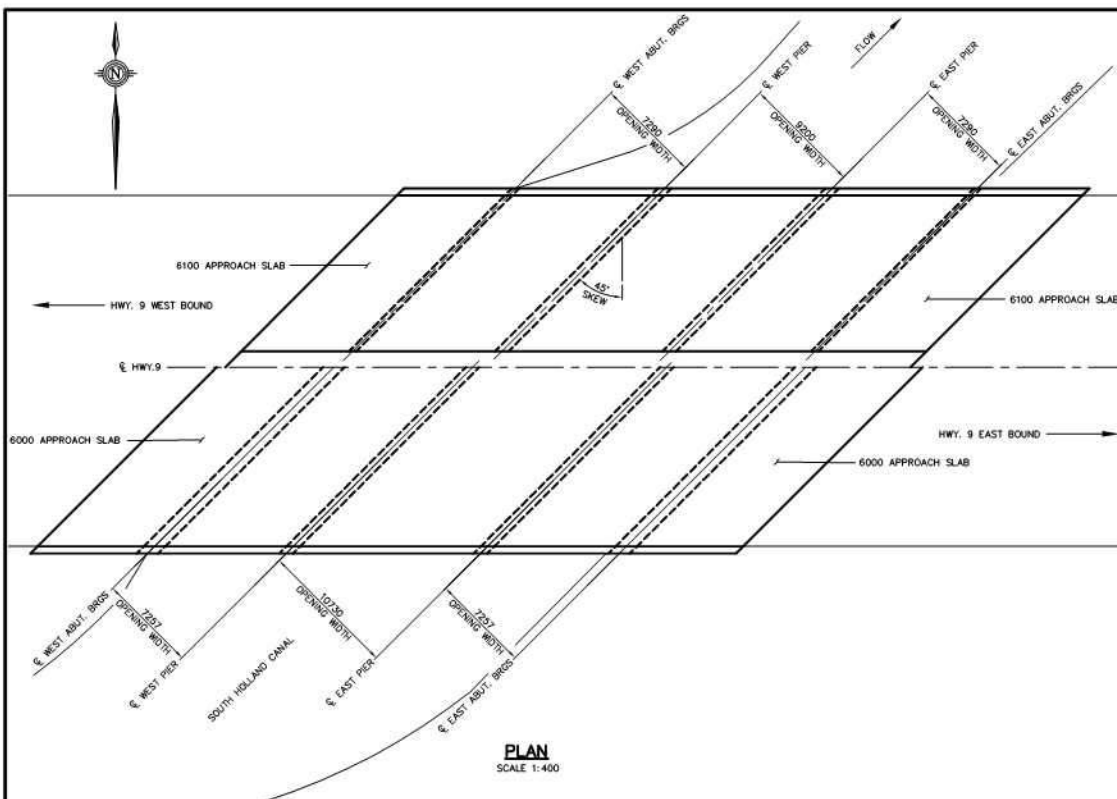
03-023

DATE

JANUARY, 2009

DRAWING NUMBER

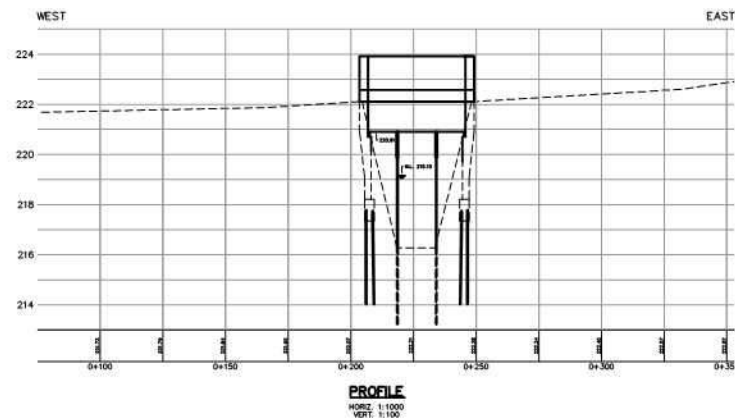
119



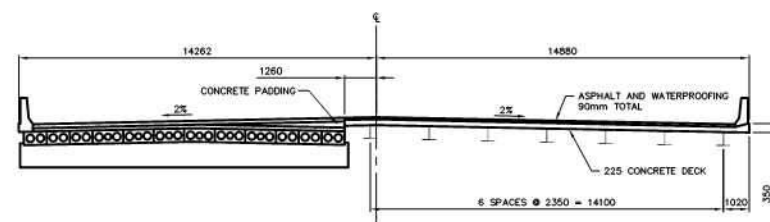
EXISTING BOTTOM 218.0 TO 218.2
DESIGN BOTTOM 216.4 TO 216.9
PROPOSED CLEANOUT 216.1

SCOPE OF WORK

PERFORM BOTTOM CLEANOUT



NOTE:
CANAL BOTTOM SHOWN ON PROFILE IS APPROXIMATE ORIGINAL DESIGN (TYP)



EXISTING GENERAL ARRANGEMENT AND CLEANOUT WORK

No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE		HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOERY REGION OF YORK TOWN OF BRADFORD WEST GUILMBURY TOWNSHIP OF KING BRIDGE 1 (HWY. 9 SOUTH CANAL) [MTO STRUCTURE 37-32 1 & 2]		JOB NUMBER 03-023 DATE JANUARY, 2009 DRAWING NUMBER 120
1.	ISSUED FOR REPORT	31/10/08	CHECKED BY: E.A.	AS NOTED				
			DRAWN BY: J.R.					
			CHECKED BY: K.A.S.					
			FIELD BOOK:					

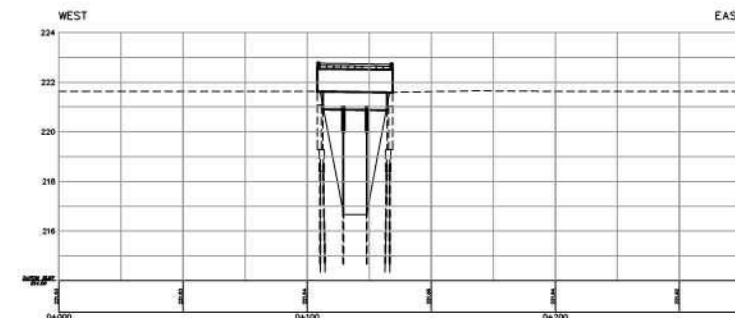
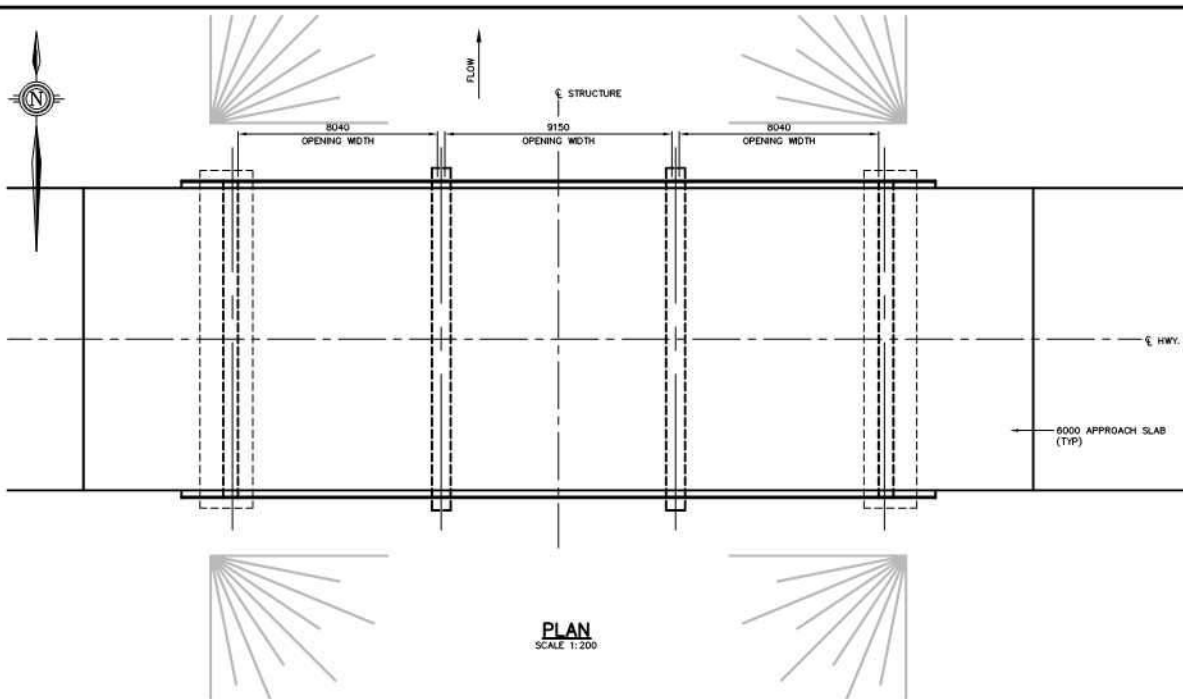


No.	REVISION	DATE

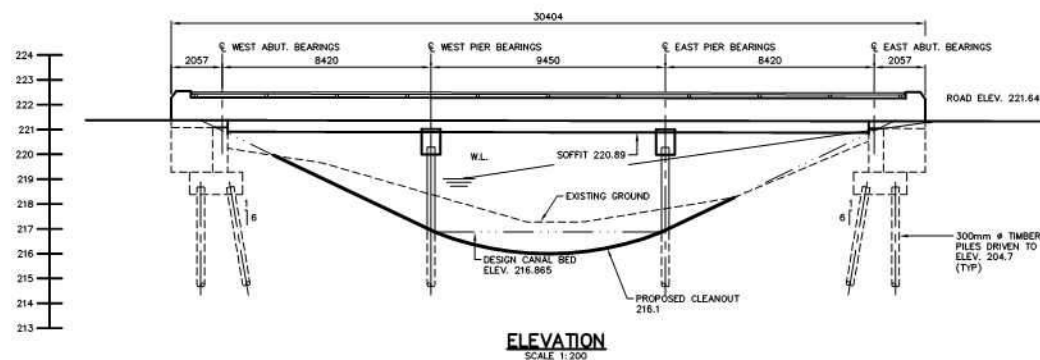
DESIGNED BY: A.G.	SCALE 1:750
CHECKED BY: E.A.	
DRAWN BY: D.C.P.	
CHECKED BY: E.A.	
FIELD BOOK:	

HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOERY TOWN OF BRADFORD WEST GWILLIMBURY REGION OF YORK TOWNSHIP OF KING	
BRIDGE 1 (HWY. 9 SOUTH CANAL) [MTO STRUCTURE 37-32 1 & 2]	

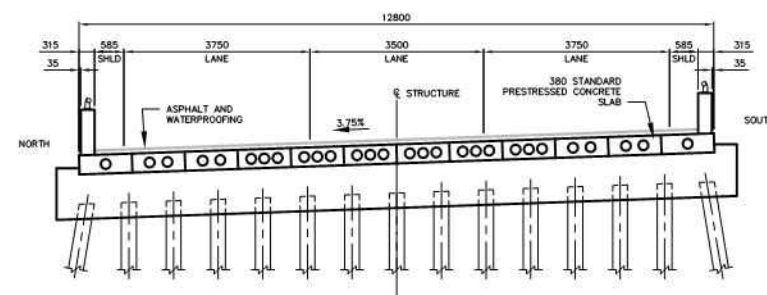
	K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023 JOB NUMBER JANUARY, 2009 DRAWING NUMBER 121



NOTE
CANAL BOTTOM SHOWN ON PROFILE IS
APPROXIMATE ORIGINAL DESIGN (TYP)



EXISTING BOTTOM 217.0 TO 217.5
DESIGN BOTTOM 216.9
PROPOSED CLEANOUT 216.1



EXISTING GENERAL ARRANGEMENT AND CLEANOUT WORK



No.	REVISION	DATE	DESIGNED BY: K.A.S.	SCALE						JOB NUMBER
1.	ISSUED FOR REPORT	31/10/08	CHECKED BY: K.A.S.							03-023
			DRAWN BY: A.S.	AS NOTED						DATE
			CHECKED BY: K.A.S.							JANUARY, 2009
			FIELD BOOK:							DRAWING NUMBER
										122

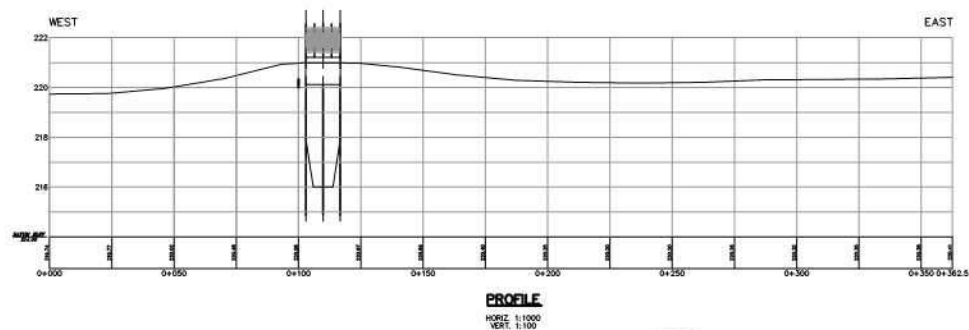


HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
 COUNTY OF SIMCOERY TOWN OF BRADFORD WEST GWILLIMBURY
 REGION OF YORK TOWNSHIP OF KING
BRIDGE 2 (HWY. 9 NORTH CANAL) [MTO STRUCTURE 37-31]

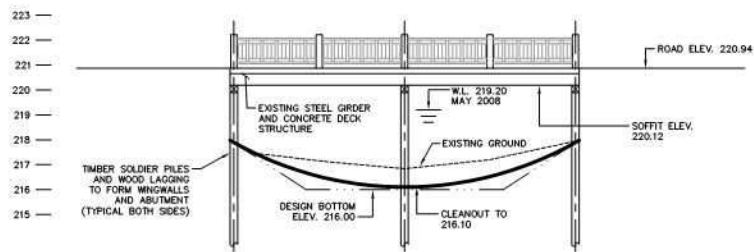
K. SMART ASSOCIATES LIMITED
 CONSULTING ENGINEERS AND PLANNERS
 85 MCINTYRE DRIVE
 KITCHENER, ONTARIO N2R 1H6



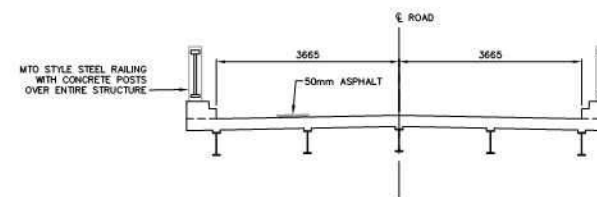
No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE 1:750 			HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOE REGION OF YORK	 K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023
			CHECKED BY: E.A.						DATE
			DRAWN BY: D.C.P.						JANUARY, 2009
			CHECKED BY: E.A.						DRAWING NUMBER
			FIELD BOOK:						123
BRIDGE 2 (HWY. 9 SOUTH CANAL)									



NOTE:
CANAL BOTTOM SHOWN ON PROFILE IS
APPROXIMATE ORIGINAL DESIGN (TYP)

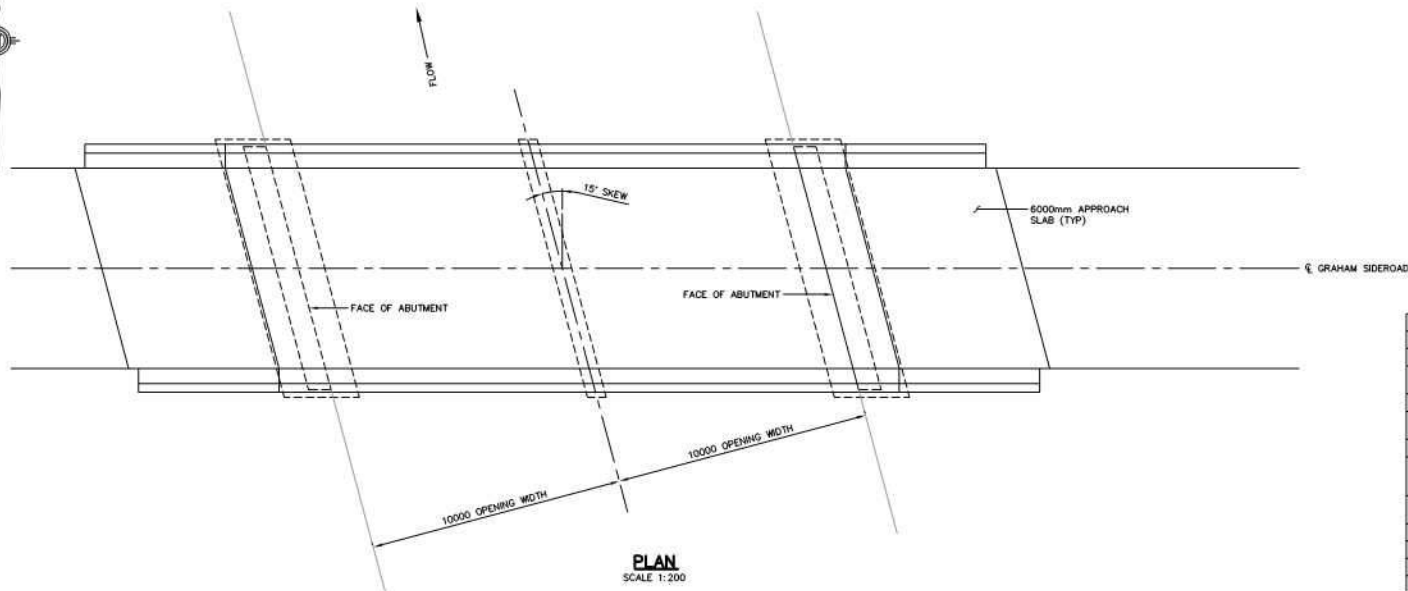


SCOPE OF WORK
- PERFORM BOTTOM CLEANOUT



EXISTING GENERAL ARRANGEMENT AND REQUIRED INITIAL WORK

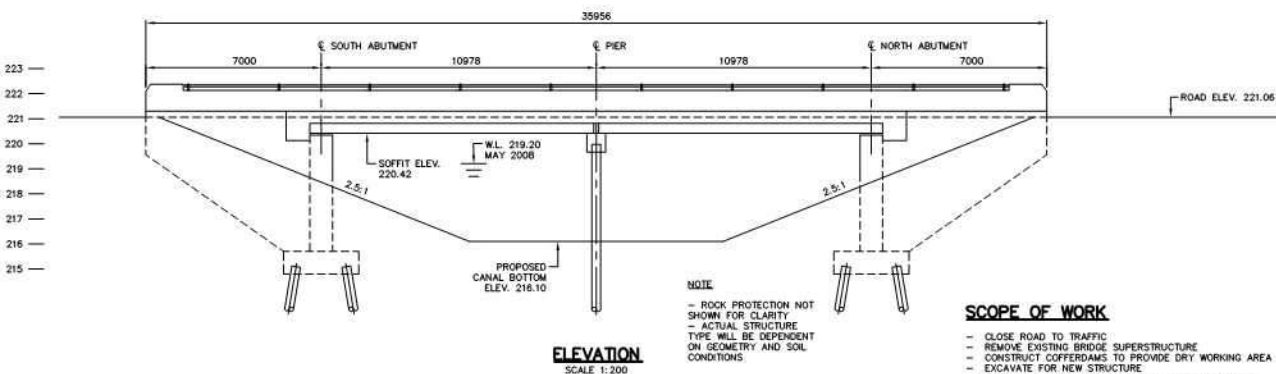
No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE	 	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOERY TOWN OF BRADFORD WEST GUILMBURY REGION OF YORK TOWNSHIP OF KING		 K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6		JOB NUMBER 03-023 DATE JANUARY, 2009 DRAWING NUMBER 124	
1.	ISSUED FOR REPORT	31/10/08	CHECKED BY: E.A.	AS NOTED							
			DRAWN BY: A.G.								
			CHECKED BY: K.A.S.								
			FIELD BOOK:								



COST BREAKDOWN

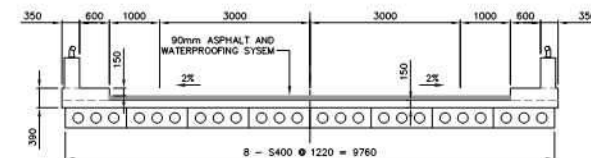
ITEM	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
HL4 ASPHALT*	234 TONNES	\$150	\$35,100
ROADWORK*	SEE NOTE 1	LUMP SUM	\$30,000
REMOVAL OF EXISTING STRUCTURE	N/A	LUMP SUM	\$25,000
ROCK PROTECTION	100 m ³	\$150	\$15,000
STEEL BEAM GUIDE RAILS WITH CHANNEL	60.96 m	\$150	\$9,144
RESTORATION	N/A	LUMP SUM	\$10,000
EARTH EXCAVATION FOR NEW STRUCTURE, DEWATERING AND EARTH BACKFILL	N/A	LUMP SUM	\$75,000
PIILING MOBILIZATION AND DEMOBILIZATION	N/A	LUMP SUM	\$50,000
PIILING - DRIVEN IN PLACE	250 m	\$100	\$25,000
CONCRETE IN FOOTING	60 m ³	\$750	\$45,000
CONCRETE IN ABUTMENTS	130 m ³	\$1000	\$130,000
CONCRETE IN PIER CAP	12 m ³	\$1000	\$12,000
CONCRETE IN DECK	51 m ³	\$1,200	\$61,200
CONCRETE IN CURBS	16 m ³	\$750	\$12,000
CONCRETE IN PARAPET WALL	14 m ³	\$750	\$10,500
REINFORCING STEEL BAR (UNCOATED & COATED)	20 TONNES	\$3,500	\$70,000
STEEL RAILING FOR BARRIER WALL	N/A	LUMP SUM	\$13,000
PRESTRESSED HOLLOW SLABS	183 m	\$1,300	\$237,900
BRIDGE DECK WATERPROOFING	N/A	LUMP SUM	\$11,000
NATURAL RUBBER BEARINGS	N/A	LUMP SUM	\$4,000
CONTINGENCIES	N/A	LUMP SUM	\$85,000
TOTAL			\$968,844

* ASSUMING 200m TOTAL ROADWORK BEYOND BRIDGE
WITH ENGINEERING INCLUDED BUDGET \$1,200,000.00



SCOPE OF WORK

- CLOSE ROAD TO TRAFFIC
- REMOVE EXISTING BRIDGE SUPERSTRUCTURE
- CONSTRUCT COFERDAMS TO PROVIDE DRY WORKING AREA
- EXCAVATE FOR NEW STRUCTURE
- INSTALL PILING, FOOTINGS, ABUTMENTS AND WINGWALLS
- COMPLETE STRUCTURE BACKFILL
- COMPLETE CANAL RELOCATION
- INSTALL BEARINGS AND PRECAST SLABS
- PLACE CONCRETE DECK, CURBS AND PARAPET WALLS
- PLACE STEEL RAILING FOR PARAPET WALL
- WATERPROOF AND PAVE STRUCTURE AND APPROACHES
- OPEN ROAD TO TRAFFIC



DECK CROSS-SECTION

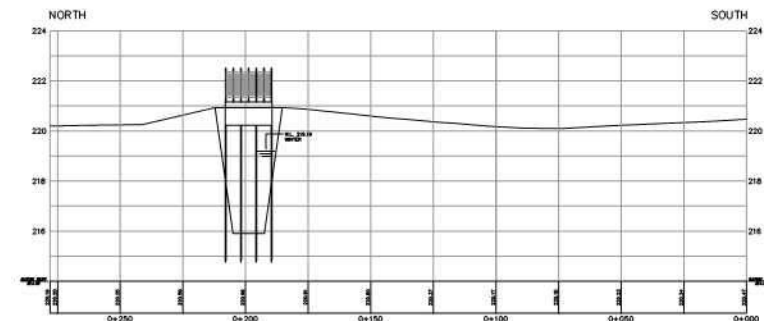
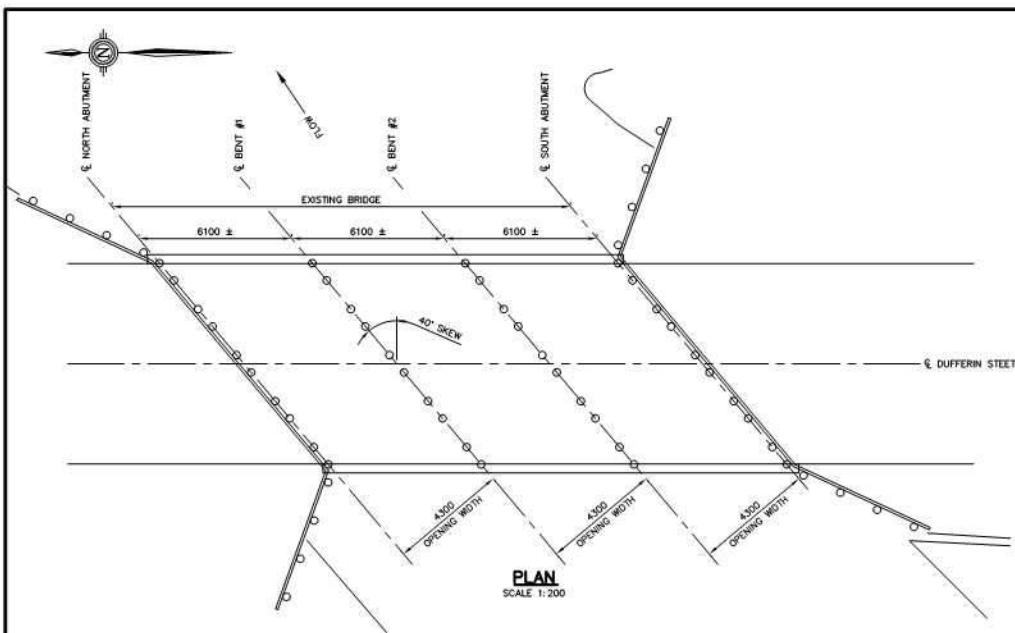
SCALE 1:100

CONCEPTUAL GENERAL ARRANGEMENT FOR STRUCTURE REPLACEMENT

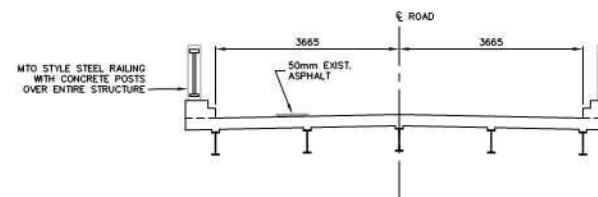
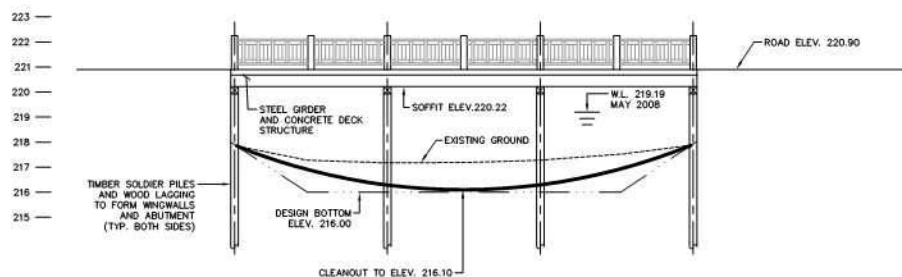
No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE			HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOERY TOWN OF BRADFORD WEST GUILMURBY REGION OF YORK TOWNSHIP OF KING	BRIDGE 3 (GRAHAM SIDEROAD SOUTH CANAL) [KING TWP. BRIDGE 00013]		JOB NUMBER 03-023
1.	ISSUED FOR REPORT	31/10/08	CHECKED BY: E.A.	AS NOTED						DATE JANUARY, 2009
			DRAWN BY: J.R.							DRAWING NUMBER 125
			CHECKED BY: K.A.S.							
			FIELD BOOK:							



No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOERY TOWN OF BRADFORD WEST GUILMBURY REGION OF YORK TOWNSHIP OF KING			K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6		JOB NUMBER
			CHECKED BY: E.A.	1:750						03-023
			DRAWN BY: D.C.P.	3.75m 0 7.5m						JOB NUMBER
			CHECKED BY: E.A.							JANUARY, 2009
			FIELD BOOK:							DRAWING NUMBER
					BRIDGE 3 (GRAHAM SIDEROAD SOUTH CANAL) [KING TWP. BRIDGE 00013]					126



NOTE:
CANAL BOTTOM SHOWN ON PROFILE IS
APPROXIMATE ORIGINAL DESIGN (TYP)

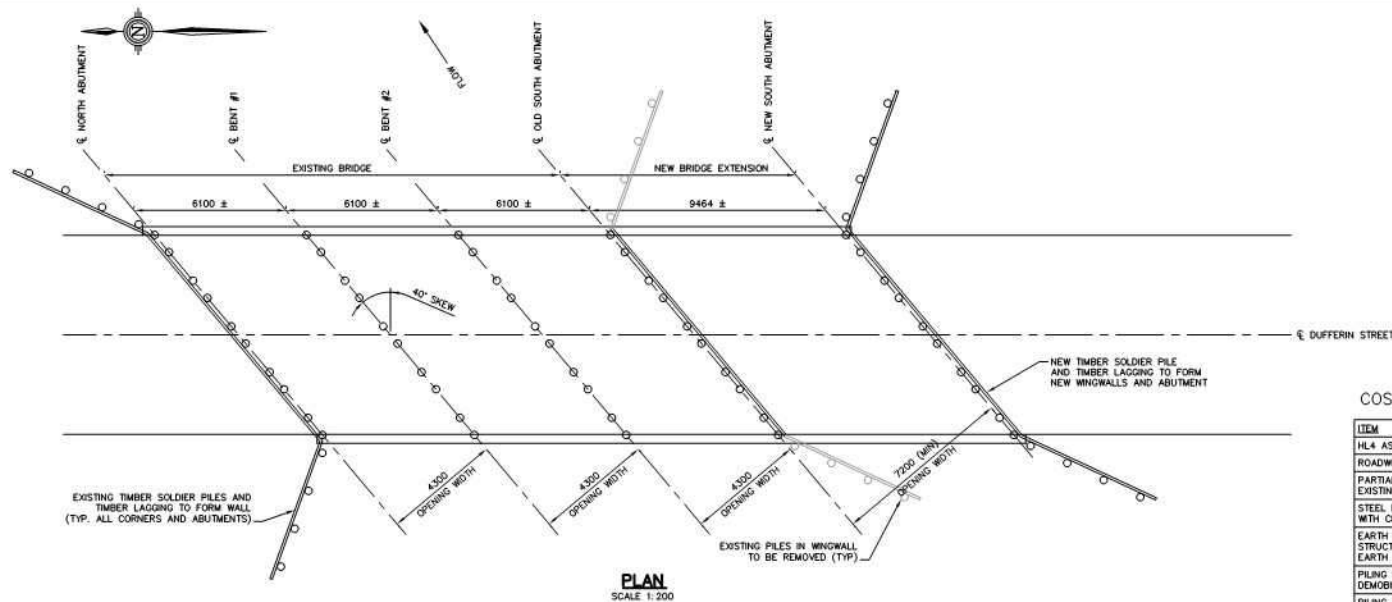


SCOPE OF WORK

- PERFORM BOTTOM CLEANOUT

EXISTING GENERAL ARRANGEMENT AND REQUIRED INITIAL WORK

No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE		HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOERY TOWN OF BRADFORD WEST GUILMBURY REGION OF YORK TOWNSHIP OF KING	K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023
1.	ISSUED FOR REPORT	31/10/08	CHECKED BY: E.A.	AS NOTED				DATE JANUARY, 2009
			DRAWN BY: J.R.					DRAWING NUMBER 127
			CHECKED BY: K.A.S.					
			FIELD BOOK:					



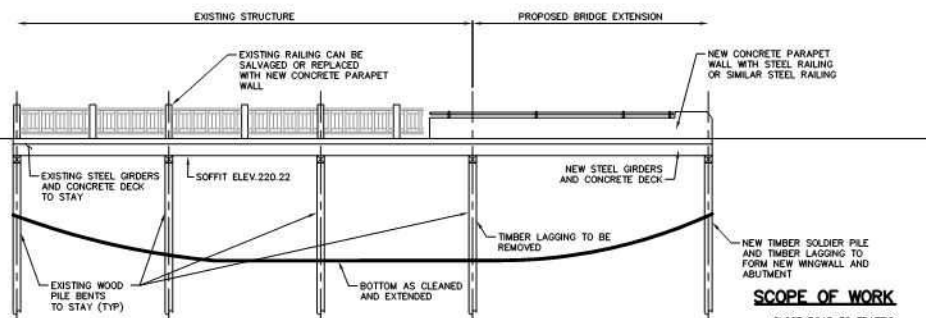
COST BREAKDOWN

ITEM	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
HL4 ASPHALT*	144 TONNES	\$150	\$21,600
ROADWORK*	SEE NOTE 1	LUMP SUM	\$15,000
PARTIAL REMOVAL OF EXISTING STRUCTURE	9.6 m ³	\$5,000	\$48,000
STEEL BEAM GUIDE RAILS WITH CHANNEL	60.96 m	\$150	\$9,144
EARTH EXCAVATION FOR NEW STRUCTURE, DEWATERING AND EARTH BACKFILL	N/A	LUMP SUM	\$100,000
PILING MOBILIZATION AND DEMOBILIZATION	N/A	LUMP SUM	\$50,000
PILING - DRIVEN IN PLACE	247 m	\$100	\$24,700
CONCRETE IN DECK	30 m ³	\$1,000	\$30,000
CONCRETE IN PARAPET WALL**	11 m ³	\$750	\$8,250
REINFORCING STEEL BAR (UNCOATED & COATED)	8 TONNES	\$3,500	\$28,000
STRUCTURAL STEEL	8 TONNES	\$5,000	\$30,000
WOOD IN SUB STRUCTURE (PILE BENTS, WINGWALLS AND ABUTMENTS)	N/A	LUMP SUM	\$5,000
STEEL RAILING FOR BARRIER WALL	N/A	LUMP SUM	\$5,000
CONTINGENCIES	N/A	LUMP SUM	\$38,000
TOTAL			\$412,694

* ASSUMING 100m TOTAL ROADWORK BEYOND BRIDGE

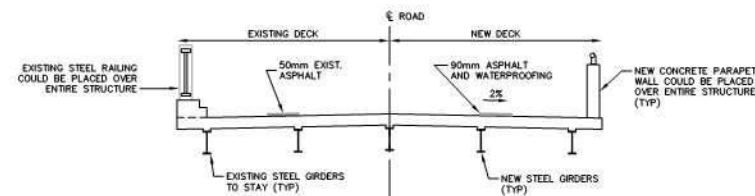
** ASSUME REPLACING ENTIRE PARAPET WALL

WITH ENGINEERING INCLUDED, BUDGET \$625,000.00



SCOPE OF WORK

- CLOSE ROAD TO TRAFFIC
- INSTALL COFFERDAMS TO ISOLATE WORKING AREA
- INSTALL NEW PILE BENTS
- CHIP AND REMOVE EXISTING CONCRETE END DIAPHRAGM
- INSTALL NEW STEEL BEAMS
- REMOVE EXISTING LAGGING ON SOUTH ABUTMENT
- REMOVE EXISTING PILES IN SOUTH WINGWALLS
- REMOVE EXISTING RAILINGS AND CURB
- SCARIFY EXISTING STRUCTURE DECK
- PLACE CONCRETE IN NEW DECK AND OVERLAY
- PLACE CONCRETE FOR NEW PARAPET WALL
- WATERPROOF AND PAVE STRUCTURE AND APPROACHES
- OPEN ROAD TO TRAFFIC



CONCEPTUAL GENERAL ARRANGEMENT FOR STRUCTURE EXTENSION

No.	REVISION	DATE	DESIGNED BY: A.G.
1.	ISSUED FOR REPORT	31/10/08	CHECKED BY: E.A.
			DRAWN BY: J.R.
			CHECKED BY: K.A.S.
			FIELD BOOK:

SCALE

AS NOTED



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD

COUNTY OF SIMCOE

TOWN OF BRADFORD WEST GUILMBURY

REGION OF YORK

TOWNSHIP OF KING

BRIDGE 4 (DUFFERIN ST. SOUTH CANAL) [KING TWP. BRIDGE 12]



K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER

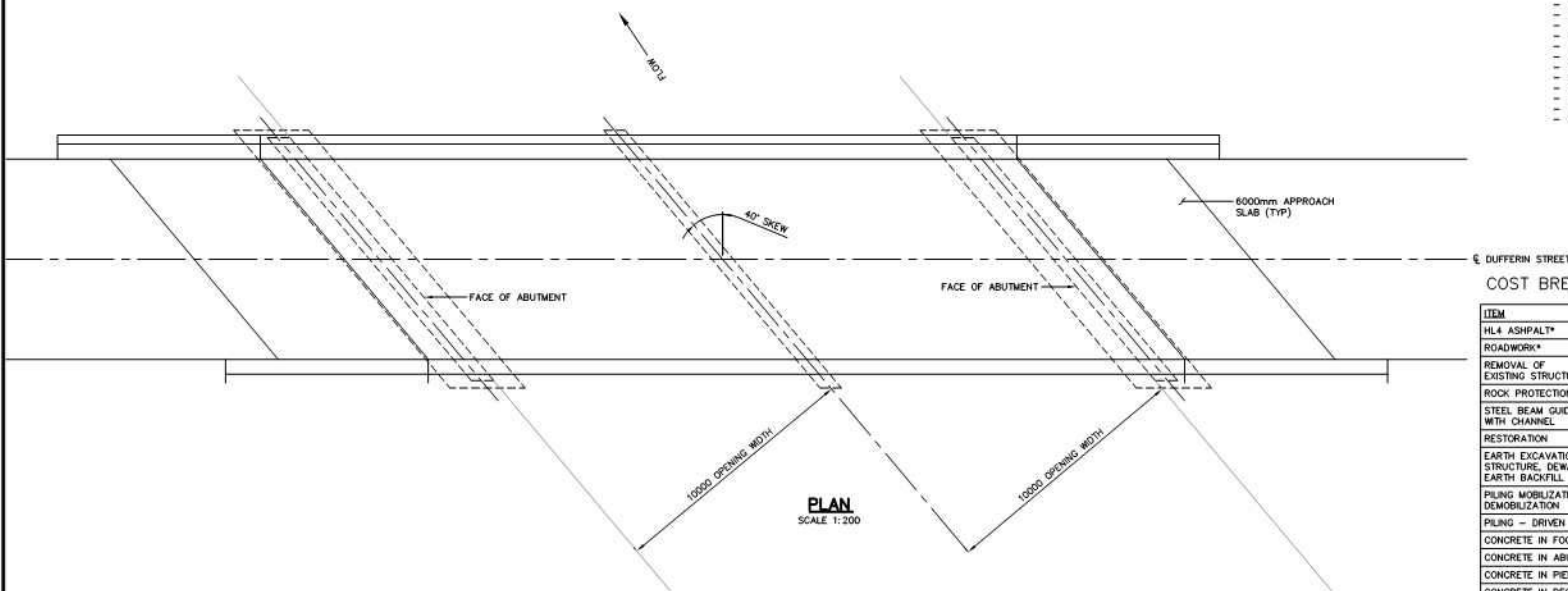
03-023

DATE

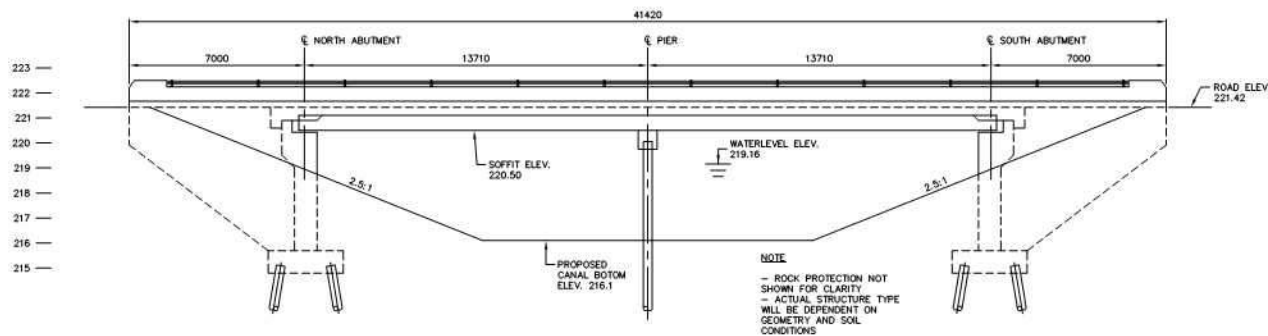
JANUARY, 2009

DRAWING NUMBER

128



PLAN
SCALE 1:200



ELEVATION
SCALE 1:200

NOTE
- ROCK PROTECTION NOT SHOWN FOR CLARITY
- ACTUAL STRUCTURE TYPE WILL BE DEPENDENT ON GEOMETRY AND SOIL CONDITIONS

SCOPE OF WORK

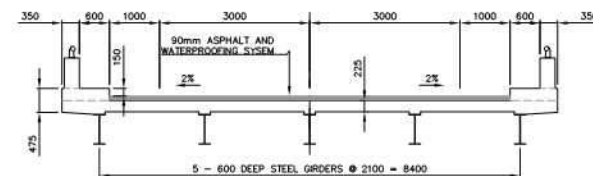
- CLOSE ROAD TO TRAFFIC
- REMOVE EXISTING BRIDGE SUPERSTRUCTURE
- CONSTRUCT COFFERDAMS TO PROVIDE DRY WORKING AREA
- EXCAVATE FOR NEW STRUCTURE
- INSTALL PILING, FOOTINGS, ABUTMENTS AND WINGWALLS
- COMPLETE STRUCTURE BACKFILL
- COMPLETE CANAL RELOCATION
- INSTALL BEARINGS AND STEEL BEAMS
- PLACE CONCRETE DECK, CURBS AND PARAPET WALLS
- PLATE STEEL RAILING FOR PARAPET WALL
- WATERPROOF AND PAVE STRUCTURE AND APPROACHES
- OPEN ROAD TO TRAFFIC

COST BREAKDOWN

ITEM	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
HL4 ASPHALT*	265 TONNES	\$150	\$39,750
ROADWORK*	SEE NOTE 1	LUMP SUM	\$30,000
REMOVAL OF EXISTING STRUCTURE	N/A	LUMP SUM	\$25,000
ROCK PROTECTION	100 m ³	\$150	\$15,000
STEEL BEAM GUIDE RAILS WITH CHANNEL	60.96 m	\$150	\$9,144
RESTORATION	N/A	LUMP SUM	\$10,000
EARTH EXCAVATION FOR NEW STRUCTURE, DEWATERING AND EARTH BACKFILL	N/A	LUMP SUM	\$100,000
PILING MOBILIZATION AND DEMOBILIZATION	N/A	LUMP SUM	\$50,000
PILING - DRIVEN IN PLACE	250 m	\$100	\$25,000
CONCRETE IN FOOTING	60 m ³	\$750	\$45,000
CONCRETE IN ABUTMENTS	130 m ³	\$1000	\$130,000
CONCRETE IN PIER CAP	12 m ³	\$1000	\$12,000
CONCRETE IN DECK	76 m ³	\$1,200	\$91,200
CONCRETE IN CURBS	21 m ³	\$750	\$15,750
CONCRETE IN PARAPET WALL	17 m ³	\$750	\$12,750
REINFORCING STEEL BAR (UNCOATED & COATED)	20 TONNES	\$3,500	\$70,000
STEEL RAILING FOR BARRIER WALL	N/A	LUMP SUM	\$13,000
STRUCTURAL STEEL	16 TONNES	\$5,000	\$80,000
BRIDGE DECK WATERPROOFING	N/A	LUMP SUM	\$11,000
NATURAL RUBBER BEARINGS	N/A	LUMP SUM	\$4,000
CONTINGENCIES	N/A	LUMP SUM	\$80,000
TOTAL			\$668,594

* ASSUMING 200m TOTAL ROADWORK BEYOND BRIDGE

WITH ENGINEERING INCLUDED BUDGET \$1,100,000.00



DECK CROSS SECTION

SCALE 1:100

CONCEPTUAL GENERAL ARRANGEMENT FOR STRUCTURE REPLACEMENT

No.	REVISION	DATE	DESIGNED BY: A.S.
1.	ISSUED FOR REPORT	31/10/08	CHECKED BY: E.A.
			DRAWN BY: J.R.
			CHECKED BY: K.A.S.
			FIELD BOOK:

SCALE

AS NOTED



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD

COUNTY OF SIMCOE
REGION OF YORK

TOWN OF BRADFORD WEST GUILMBURY
TOWNSHIP OF KING

BRIDGE 4 (DUFFERIN ST. SOUTH CANAL) [KING TWP. BRIDGE 00012]



K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MAINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER

03-023

DATE

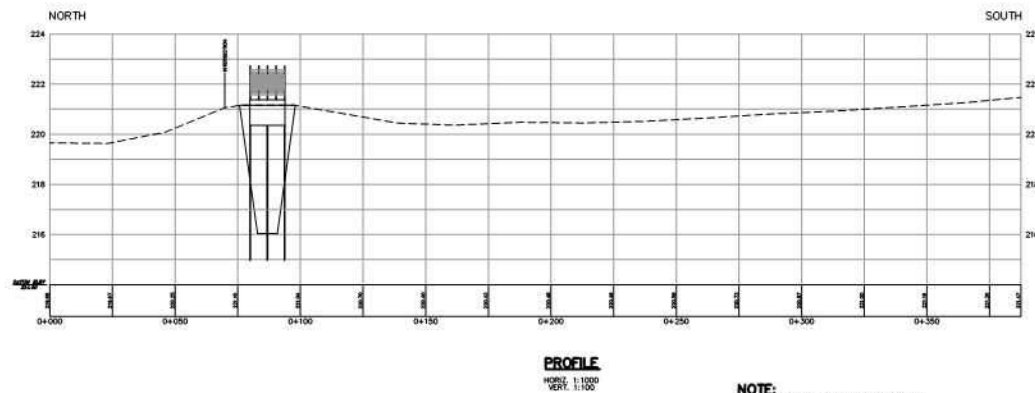
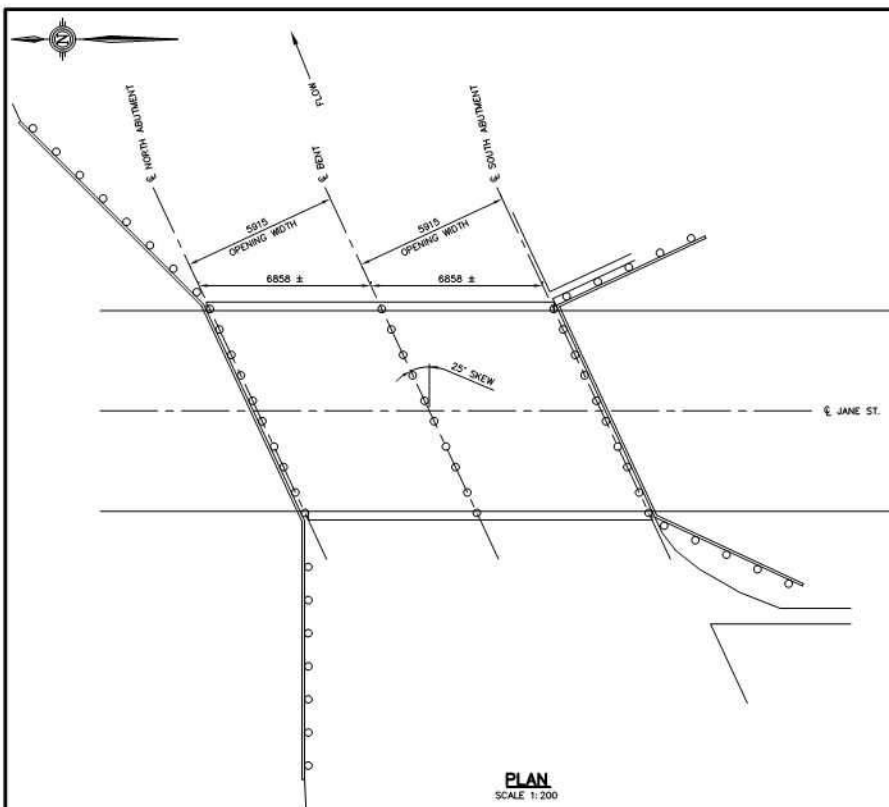
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DRAWING NUMBER

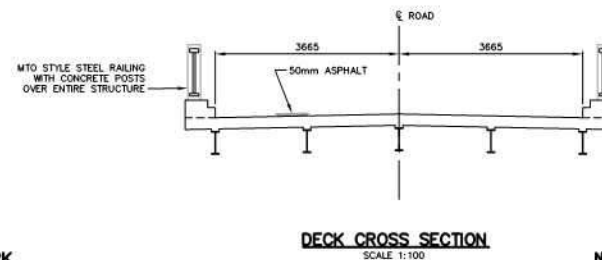
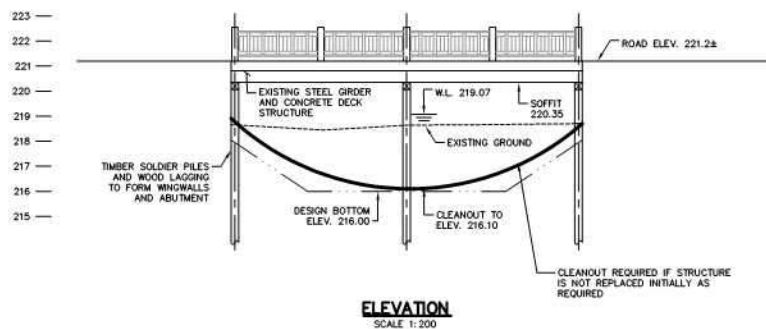
129



No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE 1:750 			HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOE REGION OF YORK TOWN OF BRADFORD WEST GUILMBURY TOWNSHIP OF KING	 K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023
			CHECKED BY: E.A.						DATE
			DRAWN BY: D.C.P.						JANUARY, 2009
			CHECKED BY: E.A.						DRAWING NUMBER
			FIELD BOOK:						130
BRIDGE 4 (DUFFERIN ST. SOUTH CANAL) [KING TWP. BRIDGE 00012]									



NOTE:
CANAL BOTTOM SHOWN ON PROFILE IS
APPROXIMATE ORIGINAL DESIGN (TYP)

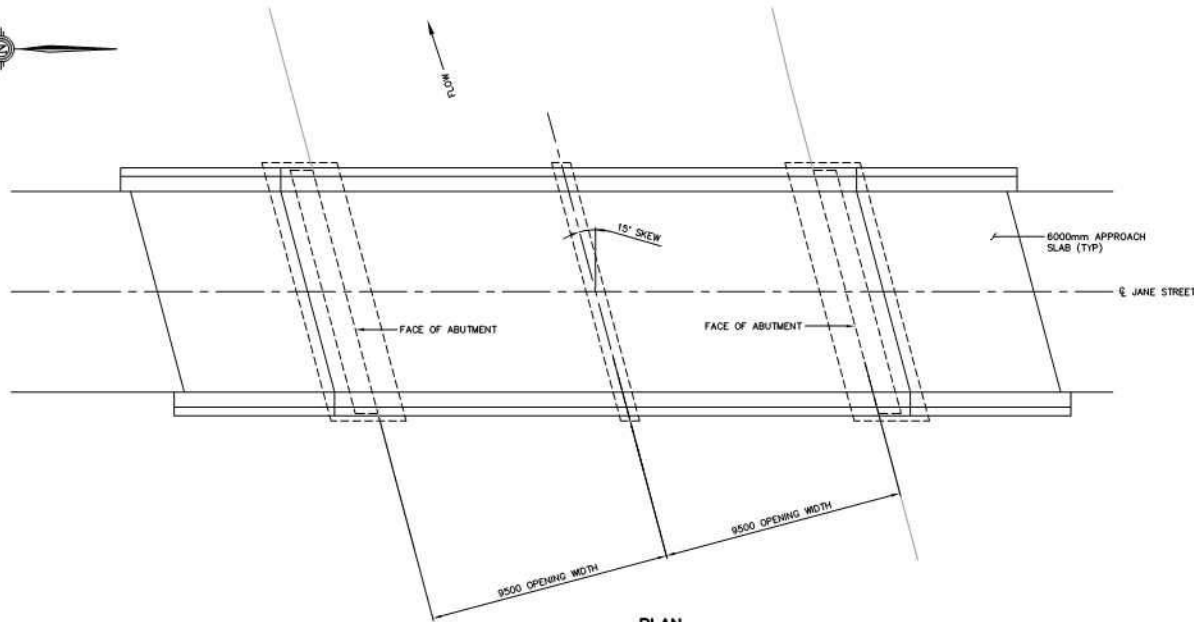


NOTE:
REPORT REQUIRES STRUCTURE TO BE REPLACED
INITIALLY AND CLEANOUT WORK IS NOT AN OPTION

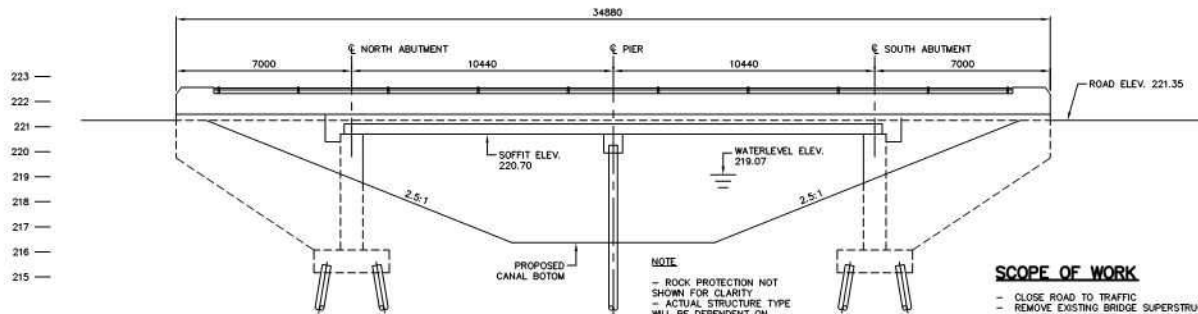
SCOPE OF WORK
- REPLACE STRUCTURE

EXISTING GENERAL ARRANGEMENT AND CLEANOUT WORK

No.		REVISION	DATE	DESIGNED BY: A.G.	SCALE			HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOY TOWN OF BRADFORD WEST GUILMBURY REGION OF YORK TOWNSHIP OF KING	 K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER	
1.		ISSUED FOR REPORT	31/10/08	CHECKED BY: E.A.						AS NOTED	DATE
				DRAWN BY: J.R.							JANUARY, 2009
				CHECKED BY: K.A.S.							DRAWING NUMBER
				FIELD BOOK:							131



PLAN
SCALE 1:200



ELEVATION
SCALE 1:200

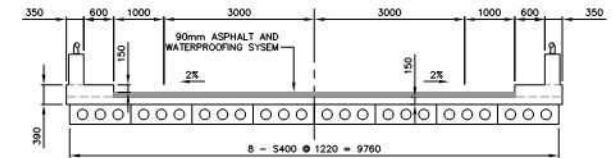
SCOPE OF WORK

- CLOSE ROAD TO TRAFFIC
- REMOVE EXISTING BRIDGE SUPERSTRUCTURE
- CONSTRUCT COFFERDAMS TO PROVIDE DRY WORKING AREA
- EXCAVATE FOR NEW STRUCTURE
- INSTALL PILING, FOOTINGS, ABUTMENTS, AND WINGWALLS
- COMPLETE STRUCTURE BACKFILL
- COMPLETE CANAL RELOCATION
- INSTALL BEARINGS AND PRECAST SLABS
- PLACE CONCRETE DECK, CURBS AND PARAPET WALLS
- WATERPROOF AND PAVE STRUCTURE AND APPROACHES
- OPEN ROAD TO TRAFFIC

ITEM	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
HL4 ASPHALT*	255 TONNES	\$150	\$38,250
ROADWORK*	SEE NOTE 1	LUMP SUM	\$35,000
REMOVAL OF EXISTING STRUCTURE	N/A	LUMP SUM	\$25,000
ROCK PROTECTION	100 m ³	\$150	\$15,000
STEEL BEAM GUIDE RAILS WITH CHANNEL	60.96 m	\$150	\$9,144
RESTORATION	N/A	LUMP SUM	\$10,000
EARTH EXCAVATION FOR NEW STRUCTURE, DEWATERING AND EARTH BACKFILL	N/A	LUMP SUM	\$75,000
PILING MOBILIZATION AND DEMOBILIZATION	N/A	LUMP SUM	\$50,000
PILING - DRIVEN IN PLACE	476 m	\$100	\$47,600
CONCRETE IN FOOTING	60 m ³	\$750	\$45,000
CONCRETE IN ABUTMENTS	130 m ³	\$1,000	\$130,000
CONCRETE IN PIER CAP	12 m ³	\$1,000	\$12,000
CONCRETE IN DECK	46 m ³	\$1,000	\$46,000
CONCRETE IN CURBS	16 m ³	\$750	\$12,000
CONCRETE IN PARAPET WALL	13 m ³	\$750	\$9,750
REINFORCING STEEL BAR (UNCOATED & COATED)	20 TONNES	\$3,500	\$70,000
STEEL RAILING FOR BARRIER WALL	N/A	LUMP SUM	\$13,000
PRESTRESSED HOLLOW SLABS	167 m	\$1,300	\$217,100
BRIDGE DECK WATERPROOFING	N/A	LUMP SUM	\$11,000
NATURAL RUBBER BEARINGS	N/A	LUMP SUM	\$4,000
CONTINGENCIES	N/A	LUMP SUM	\$90,000
TOTAL			\$964,844

* ASSUMING 200m TOTAL ROADWORK BEYOND BRIDGE

WITH ENGINEERING INCLUDED BUDGET \$1,200,000.00



DECK CROSS SECTION
SCALE 1:100

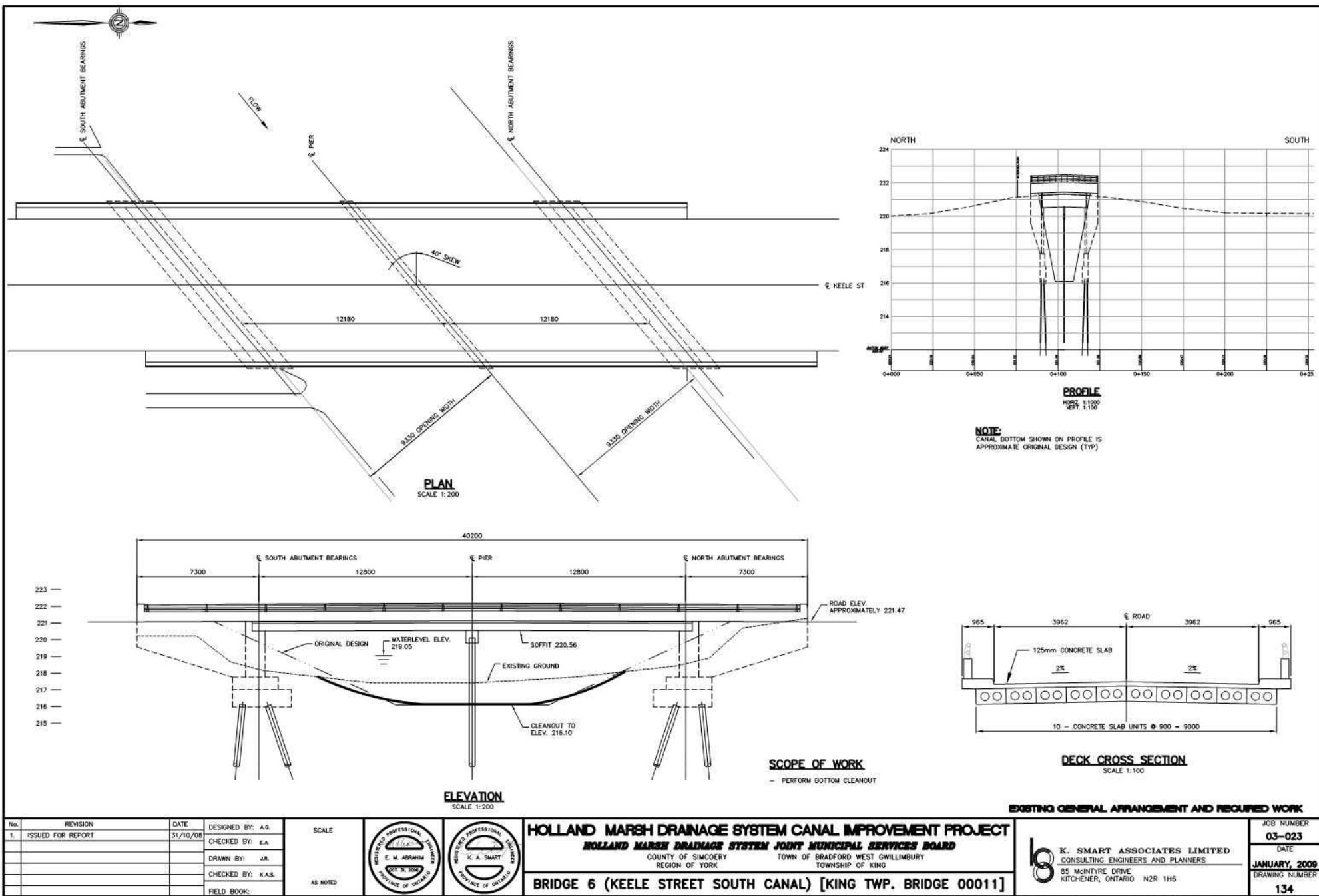
CONCEPTUAL GENERAL ARRANGEMENT FOR STRUCTURE REPLACEMENT

No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE			HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOE TOWN OF BRADFORD WEST GUILMBURY REGION OF YORK TOWNSHIP OF KING	BRIDGE 5 (JANE STREET SOUTH CANAL) [KING TWP. BRIDGE 00010]		JOB NUMBER 03-023
1.	ISSUED FOR REPORT	31/10/08	CHECKED BY: E.A.	AS NOTED						DATE JANUARY, 2009
			DRAWN BY: J.R.							DRAWING NUMBER 132
			CHECKED BY: K.A.S.							
			FIELD BOOK:							



No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT				JOB NUMBER
			CHECKED BY: E.A.	1:750	HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD				03-023
			DRAWN BY: D.C.P.	3.75m 0 7.5m	COUNTY OF SIMCOE REGION OF YORK				DATE
			CHECKED BY: E.A.		TOWN OF BRADFORD WEST GWILLIMBURY TOWNSHIP OF KING				JANUARY, 2009
			FIELD BOOK:		BRIDGE 5 (JANE STREET SOUTH CANAL) [KING TWP. BRIDGE 00010]				DRAWING NUMBER
									133
					K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6				

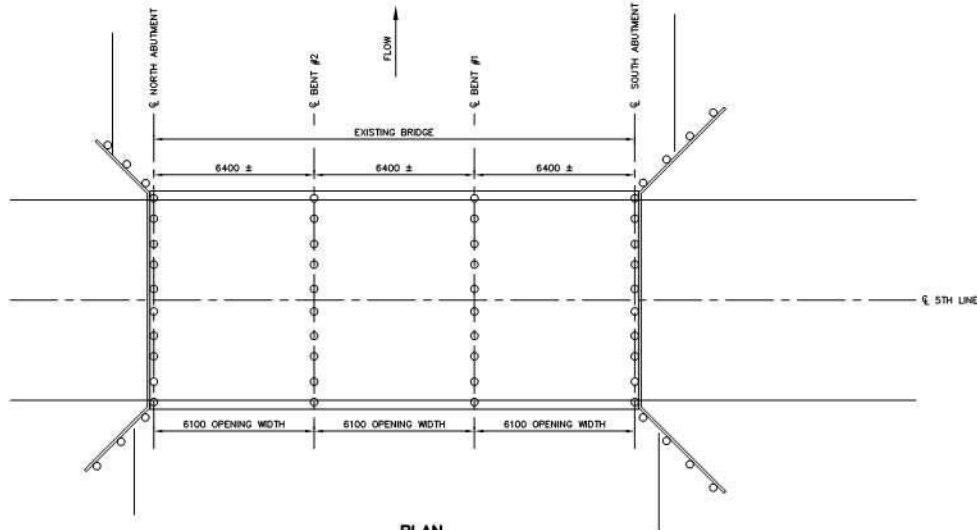

K. SMART ASSOCIATES LIMITED
 CONSULTING ENGINEERS AND PLANNERS
 85 MCINTYRE DRIVE
 KITCHENER, ONTARIO N2R 1H6



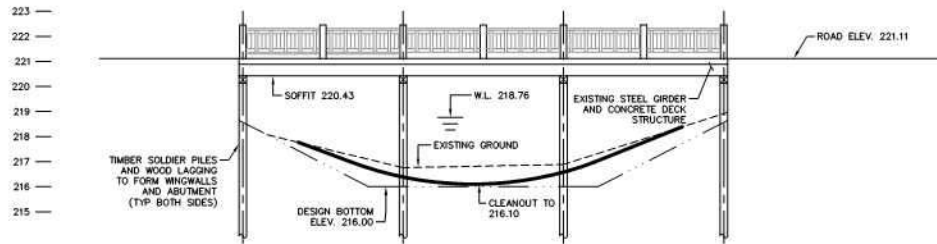
No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE		HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOERY TOWN OF BRADFORD WEST GUILMBURY REGION OF YORK TOWNSHIP OF KING	BRIDGE 6 (KEELE STREET SOUTH CANAL) [KING TWP. BRIDGE 00011]	K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023 DATE JANUARY, 2009 DRAWING NUMBER 134
1.	ISSUED FOR REPORT	31/10/08	CHECKED BY: E.A.	AS NOTED					
			DRAWN BY: J.R.						
			CHECKED BY: K.A.S.						
			FIELD BOOK:						



No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOERY TOWN OF BRADFORD WEST GWILLIMBURY REGION OF YORK TOWNSHIP OF KING			K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6		JOB NUMBER 03-023
			CHECKED BY: E.A.	1:750						DATE JANUARY, 2008
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			FIELD BOOK:							



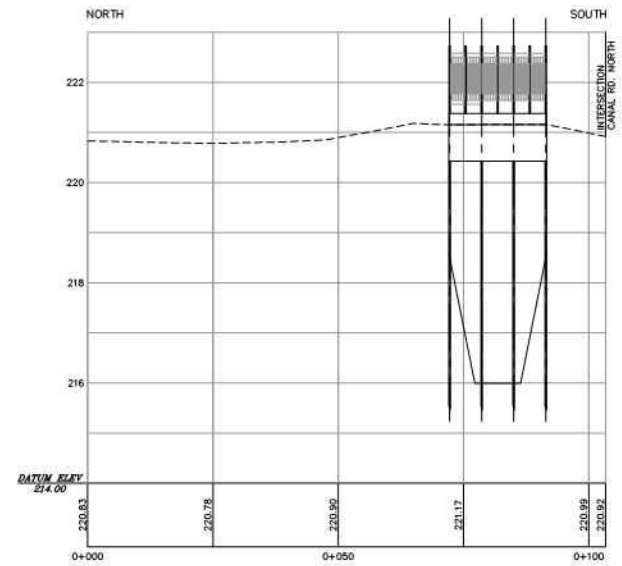
PLAN
SCALE 1:200



ELEVATION
SCALE 1:200

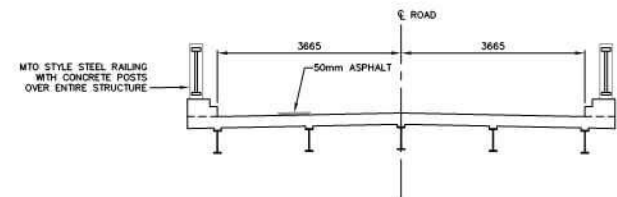
SCOPE OF WORK

- PERFORM BOTTOM CLEANOUT






PROFILE
HORIZ. SCALE 1:50
VERT. SCALE 1:50

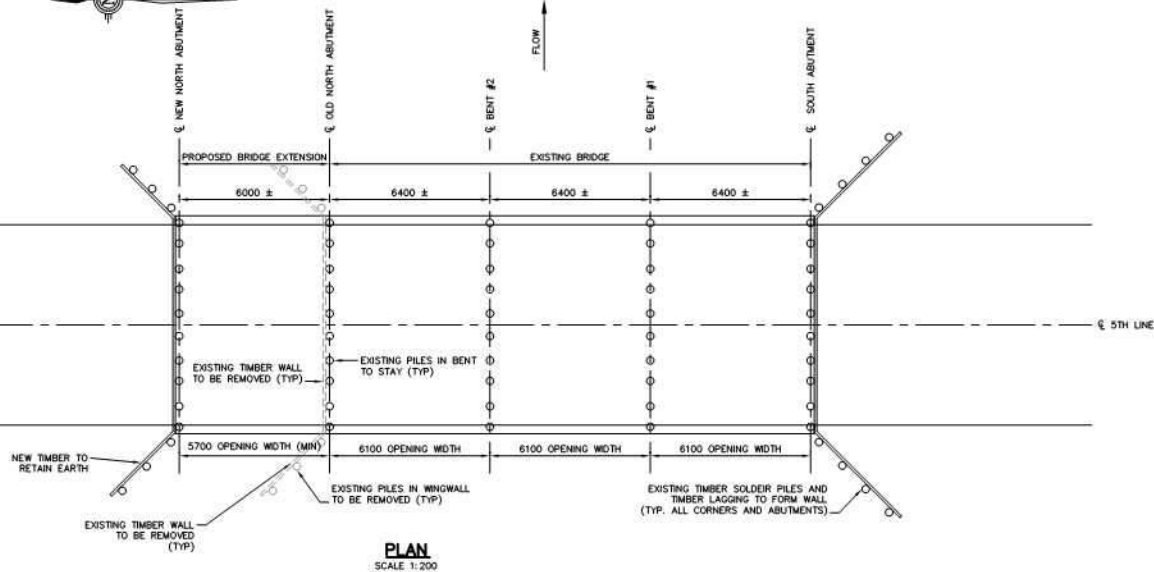
NOTE:
CANAL BOTTOM SHOWN ON PROFILE IS
APPROXIMATE ORIGINAL DESIGN (TYP)



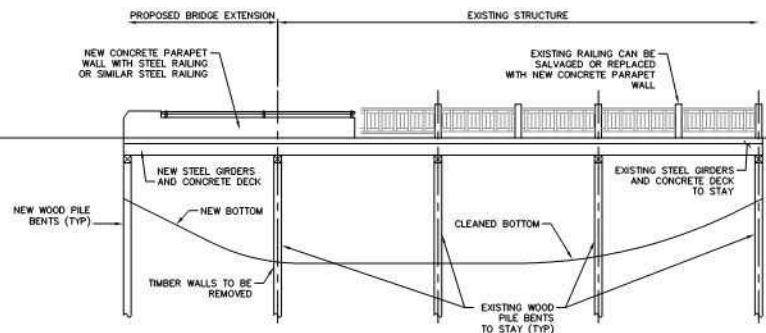
DECK CROSS SECTION
SCALE 1:100

EXISTING GENERAL ARRANGEMENT AND REQUIRED INITIAL WORK

No.		REVISION	DATE	DESIGNED BY: A.G.	SCALE			<div>HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOERY REGION OF YORK</div> <div>TOWN OF BRADFORD WEST GWILLIMBURY TOWNSHIP OF KING</div>	 <div>K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6</div>	JOB NUMBER
1.	ISSUED FOR REPORT	31/10/08	CHECKED BY: E.A.	03-023						
			DRAWN BY: J.R.	DATE						
			CHECKED BY: K.A.S.	JANUARY, 2009						
			FIELD BOOK:	DRAWING NUMBER						
					AS NOTED	BRIDGE 7 (FIFTH LINE NORTH CANAL) [BWG BRIDGE 05002]				136



PLAN
SCALE 1:200



ELEVATION
SCALE 1:200

SCOPE OF WORK

- CLOSE ROAD TO TRAFFIC
- INSTALL COTTERDAMS TO ISOLATE WORKING AREA
- INSTALL NEW PILE BENTS
- CHIP AND REMOVE EXISTING CONCRETE END DIAPHRAGM
- INSTALL NEW STEEL BEAMS
- REMOVE EXISTING LAGGING ON SOUTH ABUTMENT
- REMOVE EXISTING PILES IN SOUTH WINGWALLS
- REMOVE EXISTING RAILINGS AND CURBS
- SCARIFY EXISTING CONCRETE DECK
- PLACE CONCRETE IN NEW DECK AND OVERLAY
- PLACE CONCRETE FOR NEW PARAPET WALL
- WATERPROOF AND PAVE STRUCTURE AND APPROACHES
- OPEN ROAD TO TRAFFIC

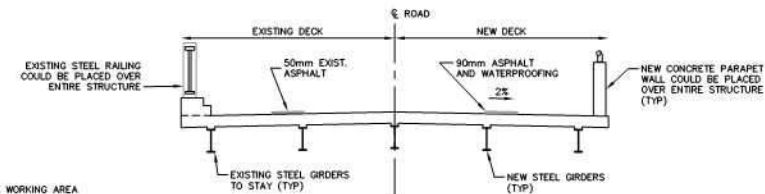
COST BREAKDOWN

ITEM	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
HL4 ASPHALT*	140 TONNES	\$150	\$21,000
ROADWORK*	SEE NOTE 1	LUMP SUM	\$15,000
PARTIAL REMOVAL OF EXISTING STRUCTURE	10 m ³	\$5,000	\$50,000
STEEL BEAM GUIDE RAILS WITH CHANNEL	60.96 m	\$150	\$9,144
EARTH EXCAVATION FOR NEW STRUCTURE, DOWATERING AND EARTH BACKFILL	N/A	LUMP SUM	\$100,000
PIILING MOBILIZATION AND DEMOBILIZATION	N/A	LUMP SUM	\$50,000
PIILING - DRIVEN IN PLACE	244 m	\$100	\$24,400
CONCRETE IN DECK	27 m ³	\$1,000	\$27,000
CONCRETE IN PARAPET WALL**	10 m ³	\$750	\$7,500
REINFORCING STEEL BAR (UNCOATED & COATED)	8 TONNES	\$3,500	\$28,000
STRUCTURAL STEEL	4 TONNES	\$5,000	\$20,000
WOOD IN SUB STRUCTURE (PILE BENTS, WINGWALLS AND ABUTMENTS)	N/A	LUMP SUM	\$5,000
STEEL RAILING FOR BARRIER WALL	N/A	LUMP SUM	\$5,000
CONTINGENCIES	N/A	LUMP SUM	\$35,000
TOTAL			\$397,044

* ASSUMING 100m TOTAL ROADWORK BEYOND BRIDGE
** ASSUME REPLACING ENTIRE PARAPET WALL

WITH ENGINEERING INCLUDED BUDGET \$600,000.00

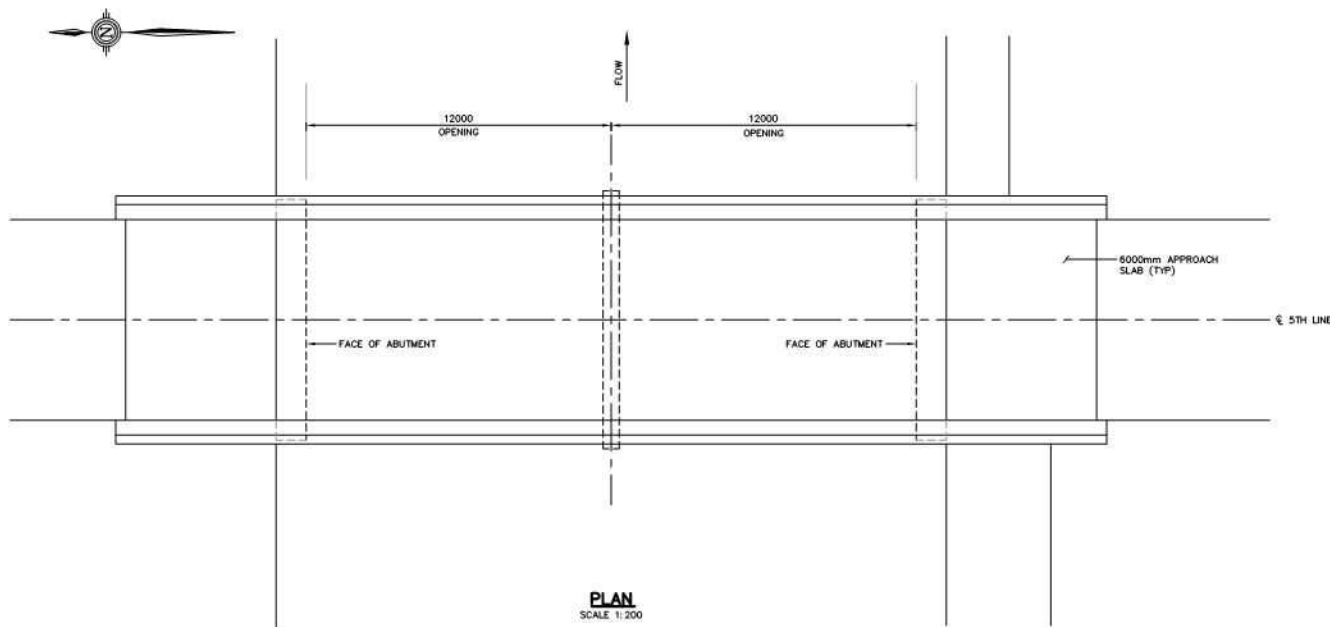
NOTE:
STRUCTURE EXTENSION IS NOT RECOMMENDED SINCE CANAL IS TO BE RELOCATED ON EACH SIDE



DECK CROSS SECTION
SCALE 1:100

CONCEPTUAL GENERAL ARRANGEMENT FOR STRUCTURE EXTENSION

No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE			HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOERY TOWN OF BRADFORD WEST GWILLIMBURY REGION OF YORK TOWNSHIP OF KING			JOB NUMBER 03-023
1.	ISSUED FOR REPORT	31/10/08	CHECKED BY: E.A.	AS NOTED						DATE JANUARY, 2009
			DRAWN BY: J.R.							DRAWING NUMBER 137
			CHECKED BY: K.A.S.							
			FIELD BOOK:							

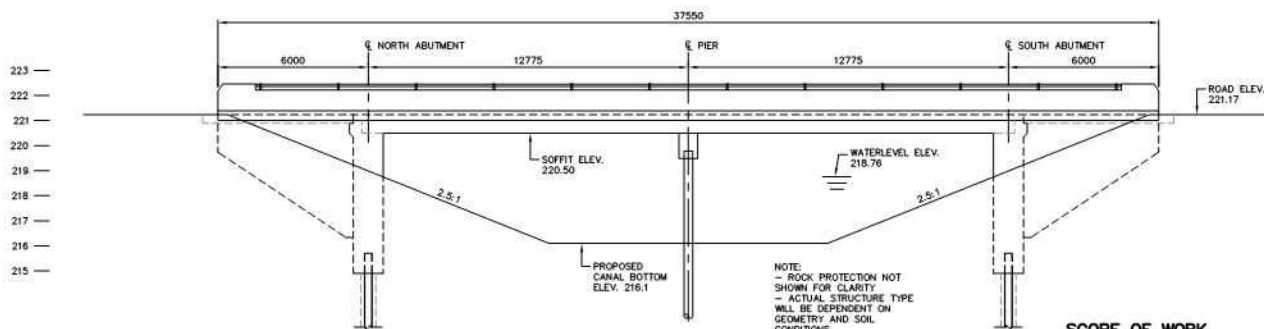


COST BREAKDOWN

ITEM	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
HL4 ASPHALT*	261 TONNES	\$150	\$39,150
ROADWORK*	SEE NOTE 1	LUMP SUM	\$35,000
REMOVAL OF EXISTING STRUCTURE	N/A	LUMP SUM	\$25,000
ROCK PROTECTION	100 m ³	\$150	\$15,000
STEEL BEAM GUIDE RAILS WITH CHANNEL	60.96 m	\$150	\$9,144
RESTORATION	N/A	LUMP SUM	\$10,000
EARTH EXCAVATION FOR NEW STRUCTURE, DEWATERING AND EARTH BACKFILL	N/A	LUMP SUM	\$75,000
PILING MOBILIZATION AND DEMOBILIZATION	N/A	LUMP SUM	\$30,000
PILING - HOLLOW TUBE	153 m	\$100	\$15,300
PILING - HP 310 x 110	220 m	\$350	\$77,000
CONCRETE IN ABUTMENTS	130 m ³	\$1,000	\$130,000
CONCRETE IN PIER CAP	12 m ³	\$1,000	\$12,000
CONCRETE IN DECK	40 m ³	\$1,000	\$40,000
CONCRETE IN CURBS	19 m ³	\$750	\$14,250
CONCRETE IN PARAPET WALL	15 m ³	\$750	\$11,250
REINFORCING STEEL BAR (UNCOATED & COATED)	20 TONNES	\$3,500	\$70,000
STEEL RAILING FOR BARRIER WALL	N/A	LUMP SUM	\$13,000
PRESTRESSED HOLLOW SLABS	205 m	\$1,700	\$348,500
BRIDGE DECK WATERPROOFING	N/A	LUMP SUM	\$11,000
NATURAL RUBBER BEARINGS	N/A	LUMP SUM	\$4,000
CONTINGENCIES	N/A	LUMP SUM	\$90,000
TOTAL			\$1,073,594

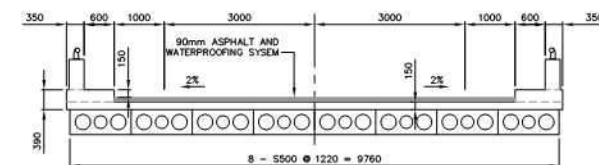
* ASSUMING 200m TOTAL ROADWORK BEYOND BRIDGE

WITH ENGINEERING INCLUDED BUDGET \$1,300,000.00



SCOPE OF WORK

- CLOSE ROAD TO TRAFFIC
- REMOVE EXISTING BRIDGE SUPERSTRUCTURE
- CONSTRUCT COFFERDAMS TO PROVIDE DRY WORKING AREA
- EXCAVATE FOR NEW STRUCTURE
- INSTALL PILING, ABUTMENTS, WINGWALLS AND PIERS
- COMPLETE STRUCTURE BACKFILL AND COMPLETE DEMOLITION
- COMPLETE CANAL RELOCATION
- INSTALL BEARINGS AND PRECAST SLABS
- PLACE CONCRETE DECK, CURBS AND PARAPET WALLS
- PLACE STEEL RAILING FOR PARAPET WALL
- WATERPROOF AND PAVE STRUCTURE AND APPROACHES
- OPEN ROAD TO TRAFFIC

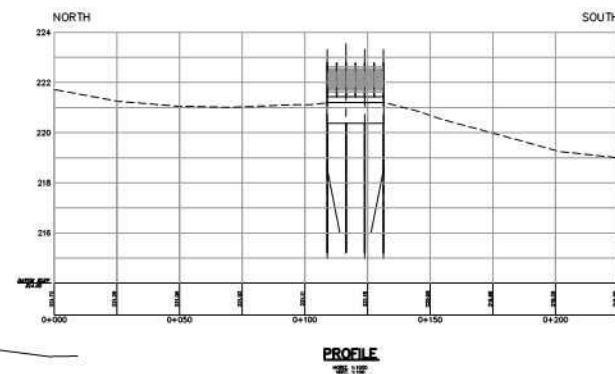
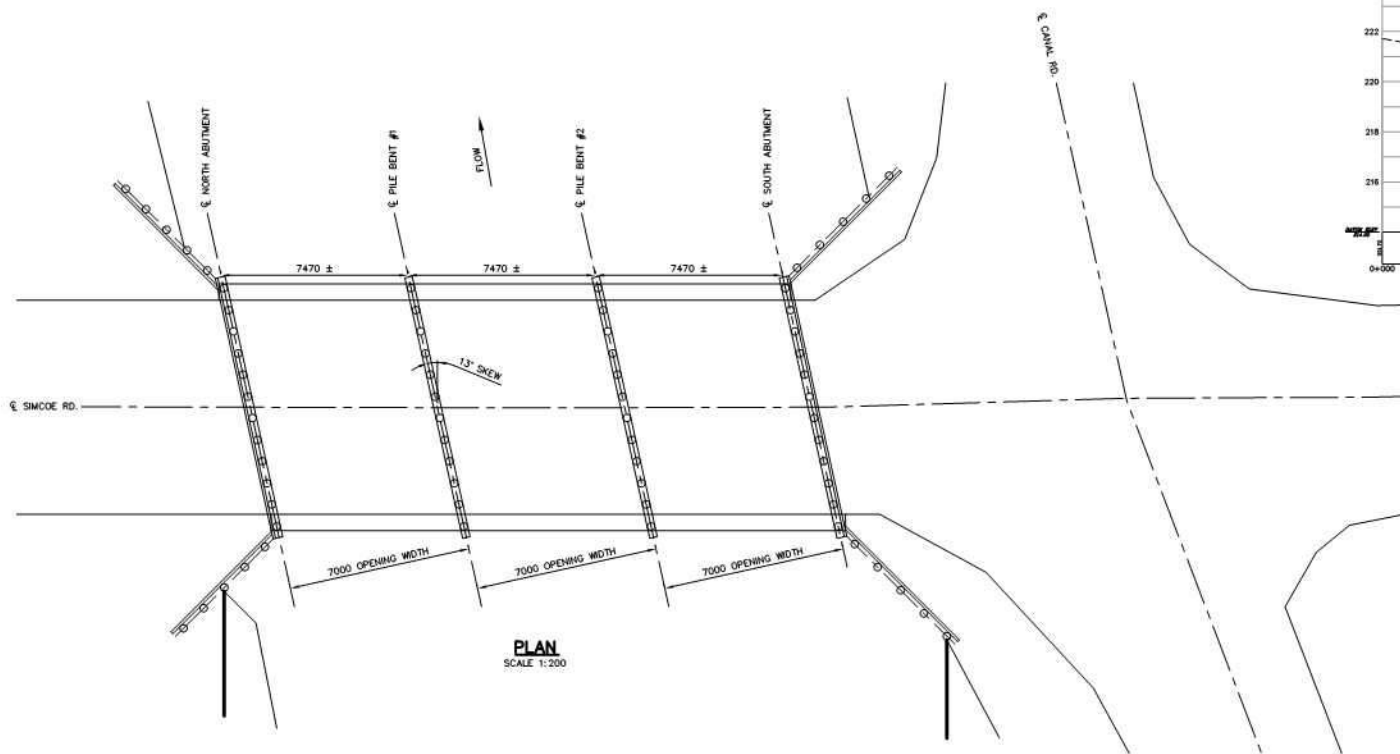


CONCEPTUAL GENERAL ARRANGEMENT FOR STRUCTURE REPLACEMENT

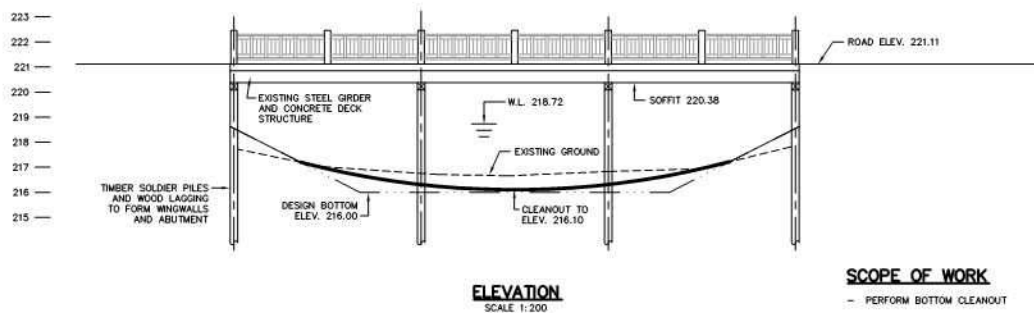
No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE		HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOERY TOWN OF BRADFORD WEST GUILMBURY REGION OF YORK TOWNSHIP OF KING	K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023 DATE JANUARY, 2009 DRAWING NUMBER 138
	1. ISSUED FOR REPORT	31/10/08	CHECKED BY: E.A.					
			DRAWN BY: J.R.					
			CHECKED BY: K.A.S.					
	FIELD BOOK:							



No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOERY TOWN OF BRADFORD WEST GUILMBURY REGION OF YORK TOWNSHIP OF KING			K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6		JOB NUMBER
			CHECKED BY: E.A.	1:750						03-023
			DRAWN BY: D.C.P.	3.75m 0 7.5m						DATE
			CHECKED BY: E.A.							JANUARY, 2009
			FIELD BOOK:							DRAWING NUMBER
					BRIDGE 7 (FIFTH LINE NORTH CANAL) [BWG TWP. BRIDGE 05002]					139

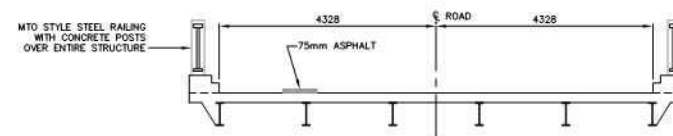


NOTE:
CANAL BOTTOM SHOWN ON PROFILE IS
APPROXIMATE ORIGINAL DESIGN (TYP)



SCOPE OF WORK

- PERFORM BOTTOM CLEANOUT

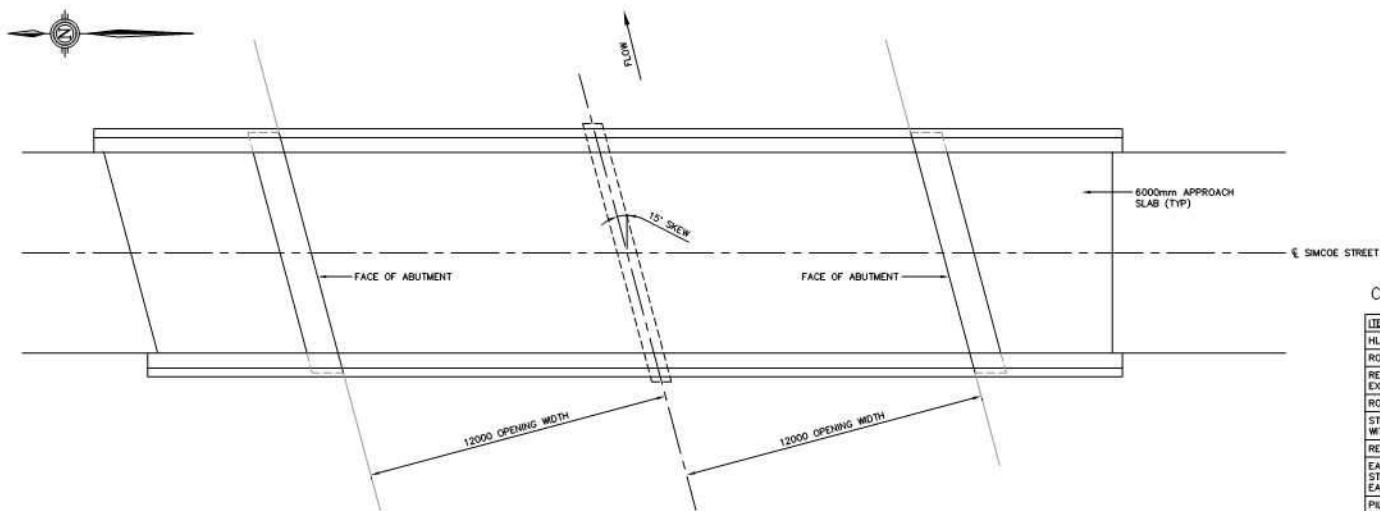


DECK CROSS SECTION

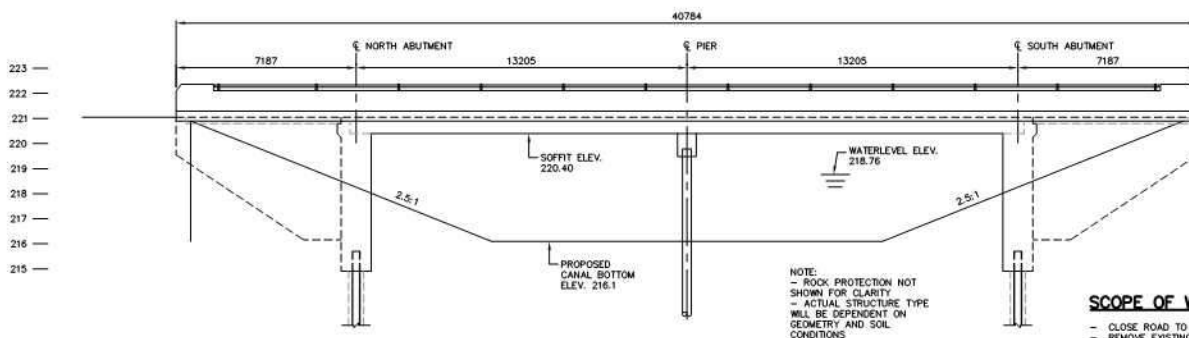
SCALE 1:100

EXISTING GENERAL ARRANGEMENT AND REQUIRED INITIAL WORK

C:\Q3-023\BRIDGES\Bridge 8 Site Plan.dwg EXISTING GENERAL ARRANGEMENT 5-Jan-09 4:10:57 PM



PLAN
SCALE 1:200



ELEVATION
SCALE 1:200

NOTE:
- ROCK PROTECTION NOT SHOWN FOR CLARITY - ACTUAL STRUCTURE TYPE WILL BE DEPENDENT ON GEOMETRY AND SOIL CONDITIONS

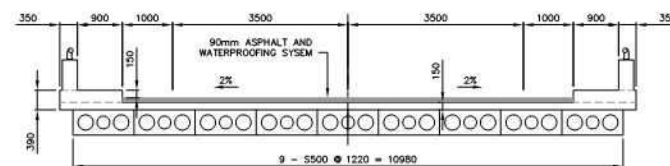
SCOPE OF WORK

- CLOSE ROAD TO TRAFFIC
- REMOVE EXISTING BRIDGE SUPERSTRUCTURE
- CONSTRUCT COTTERDOAMS TO PROVIDE DRY WORKING AREA
- COMPLETE DEMOLITION
- EXCAVATE FOR NEW STRUCTURE
- INSTALL PILING, ABUTMENTS, WINGWALLS AND PIER
- COMPLETE STRUCTURE BACKFILL
- COMPLETE CANAL WORK
- INSTALL BEARINGS AND PRECAST SLABS
- PLACE CONCRETE DECK, CURBS AND PARAPET WALL
- PLACE STEEL RAILING FOR PARAPET WALL
- WATERPROOF AND PAVE STRUCTURE DECK AND APPROACHES
- OPEN ROAD TO TRAFFIC

COST BREAKDOWN

ITEM	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
HL4 ASPHALT*	272 TONNES	\$150	\$40,800
ROADWORK*	SEE NOTE 1	LUMP SUM	\$35,000
REMOVAL OF EXISTING STRUCTURE	N/A	LUMP SUM	\$25,000
ROCK PROTECTION	100 m ³	\$150	\$15,000
STEEL BEAM GUIDE RAILS WITH CHANNEL	60.96 m	\$150	\$9,144
RESTORATION	N/A	LUMP SUM	\$10,000
EARTH EXCAVATION FOR NEW STRUCTURE, DEWATERING AND EARTH BACKFILL	N/A	LUMP SUM	\$75,000
PILING MOBILIZATION AND DEMOBILIZATION	N/A	LUMP SUM	\$30,000
PILING - HOLLOW TUBE	153 m	\$100	\$15,300
PILING - HP310 x 110	220 m	\$350	\$77,000
CONCRETE IN ABUTMENTS	130 m ³	\$1,000	\$130,000
CONCRETE IN PIER CAP	12 m ³	\$1,000	\$12,000
CONCRETE IN DECK	46 m ³	\$1,000	\$46,000
CONCRETE IN CURBS	25 m ³	\$750	\$18,750
CONCRETE IN PARAPET WALL	15 m ³	\$750	\$11,250
REINFORCING STEEL BAR (UNCOATED & COATED)	20 TONNES	\$3,500	\$70,000
STEEL RAILING FOR BARRIER WALL	N/A	LUMP SUM	\$13,000
PRESTRESSED HOLLOW SLABS	242 m	\$1700	\$411,400
BRIDGE DECK WATERPROOFING	N/A	LUMP SUM	\$11,000
NATURAL RUBBER BEARINGS	N/A	LUMP SUM	\$4,000
CONTINGENCIES	N/A	LUMP SUM	\$90,000
TOTAL			\$1,149,644

* ASSUMING 200m TOTAL ROADWORK BEYOND BRIDGE
WITH ENGINEERING INCLUDED BUDGET \$1,300,000



DECK CROSS SECTION
SCALE 1:100

NOTE

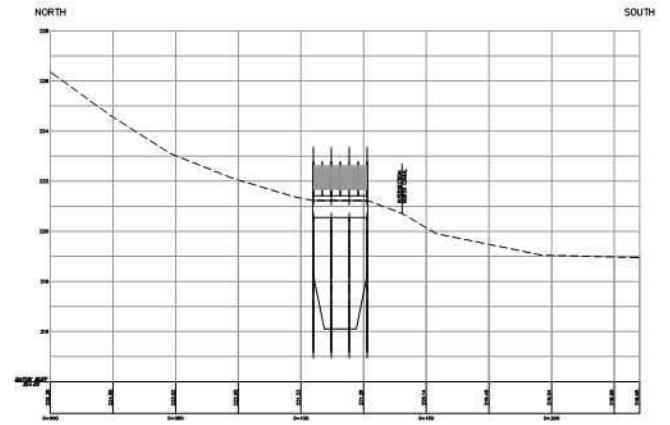
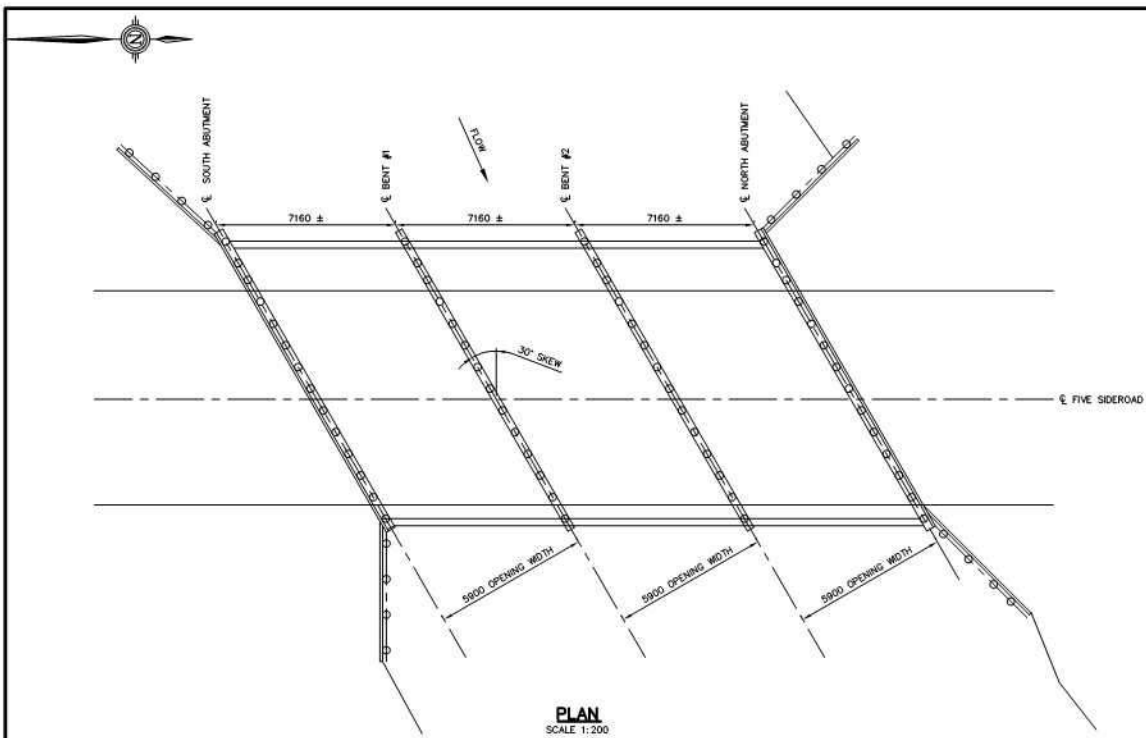
THIS DRAWING IS SHOWN FOR USE IF AND WHEN REPLACEMENT OCCURS. NO WORK REQUIRED UNDER REPORT.

CONCEPTUAL GENERAL ARRANGEMENT FOR STRUCTURE REPLACEMENT, IF AND WHEN DONE

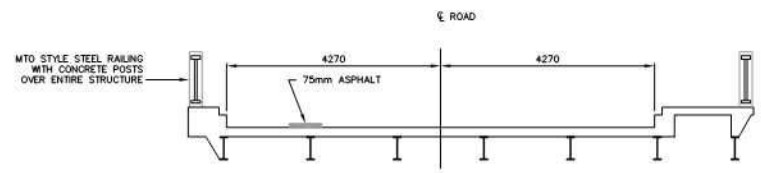
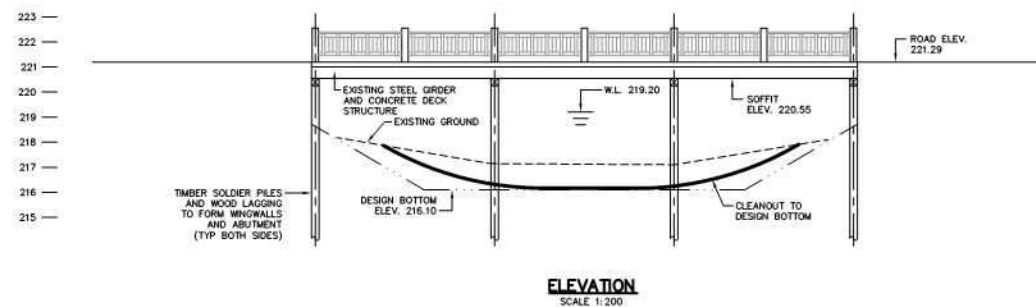
No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE		HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOERY TOWN OF BRADFORD WEST GUILMURBY REGION OF YORK TOWNSHIP OF KING	BRIDGE 8 (SIMCOE ST. NORTH CANAL)[SIMCOE COUNTY BRIDGE 041000]	K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023
1.	ISSUED FOR REPORT	31/10/08	CHECKED BY: E.A.	AS NOTED					DATE JANUARY, 2009
			DRAWN BY: J.R.						BRIDGE DRAWING NUMBER 141
			CHECKED BY: K.A.S.						
			FIELD BOOK:						



No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOERY TOWN OF BRADFORD WEST GUILMBURY REGION OF YORK TOWNSHIP OF KING			18 K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6		JOB NUMBER
			CHECKED BY: E.A.	1:750						03-023
			DRAWN BY: D.C.P.	3.75m 0 7.5m						DATE
			CHECKED BY: E.A.							JANUARY, 2009
			FIELD BOOK:							DRAWING NUMBER
					BRIDGE 8 (SIMCOE ST. NORTH CANAL) [SIMCOE COUNTY BRIDGE 041000]					142






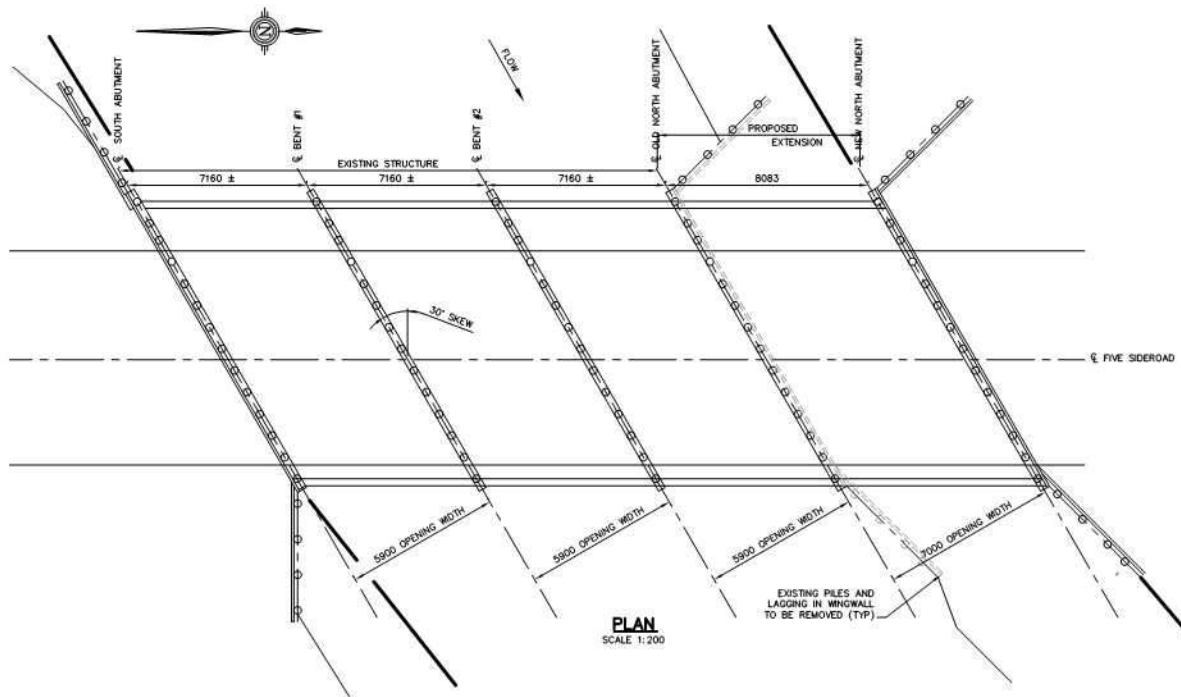
NOTE
CANAL BOTTOM SHOWN ON PROFILE IS APPROXIMATE ORIGINAL DESIGN (TYP)



SCOPE OF WORK
- PERFORM BOTTOM CLEANOUT

EXISTING GENERAL ARRANGEMENT AND REQUIRED INITIAL WORK

No. 1. REVISION ISSUED FOR REPORT		DATE 31/10/08	DESIGNED BY: A.G. CHECKED BY: E.A. DRAWN BY: J.R. CHECKED BY: K.A.S. FIELD BOOK:	SCALE AS NOTED	 	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOE REGION OF YORK TOWN OF BRADFORD WEST GUILMBURY TOWNSHIP OF KING BRIDGE 9 (FIVE SIDEROAD NORTH CANAL) [BWG BRIDGE 02001]	 K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023 DATE JANUARY, 2009 DRAWING NUMBER 143
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COST BREAKDOWN

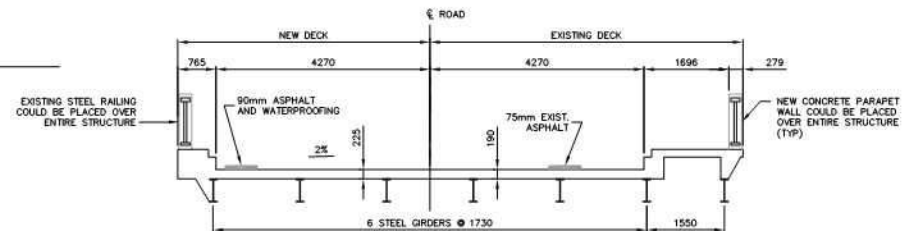
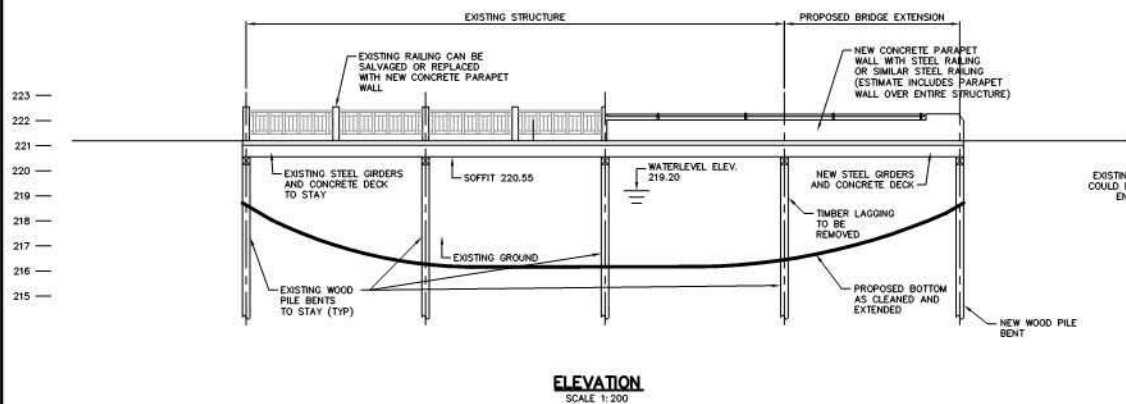
ITEM	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
H/A ASPHALT*	154 TONNES	\$150	\$23,100
ROADWORK*	SEE NOTE 1	LUMP SUM	\$15,000
PARTIAL REMOVAL OF EXISTING STRUCTURE	11 m ³	\$5,000	\$55,000
STEEL BEAM GUIDE RAILS WITH CHANNEL	60.96 m	\$150	\$9,144
EARTH EXCAVATION FOR NEW STRUCTURE, DEWATERING AND EARTH BACKFILL	N/A	LUMP SUM	\$100,000
PIILING MOBILIZATION AND DEMOBILIZATION	N/A	LUMP SUM	\$50,000
PIILING - DRIVEN IN PLACE	402 m	\$100	\$40,200
CONCRETE IN DECK	32 m ³	\$1,000	\$32,000
CONCRETE IN PARAPET WALL**	11 m ³	\$750	\$8,250
REINFORCING STEEL BAR (UNCOATED & COATED)	8 TONNES	\$3,500	\$28,000
STRUCTURAL STEEL	5 TONNES	\$5,000	\$25,000
WOOD IN SUB STRUCTURE (PILE BENTS, WINGWALLS AND ABUTMENTS)	N/A	LUMP SUM	\$5,000
STEEL RAILING FOR BARRIER WALL	N/A	LUMP SUM	\$5,000
CONTINGENCIES	N/A	LUMP SUM	\$40,000
		TOTAL	\$435,694

* ASSUMING 100m TOTAL ROADWORK BEYOND BRIDGE
** ASSUME REPLACING ENTIRE PARAPET WALL

WITH ENGINEERING INCLUDED BUDGET \$850,000.00

SCOPE OF WORK

- CLOSE ROAD TO TRAFFIC
- INSTALL COFFERDAMS TO ISOLATE WORKING AREA
- INSTALL NEW PILE BENTS AND WINGWALLS
- CHIP AND REMOVE EXISTING CONCRETE END DIAPHRAGM
- INSTALL NEW STEEL BEAMS
- REMOVE EXISTING LAGGING ON SOUTH ABUTMENT
- REMOVE EXISTING PILES IN SOUTH WINGWALLS
- REMOVE EXISTING CURBS AND RAILINGS
- SCARIFY EXISTING CONCRETE DECK
- PLACE CONCRETE IN NEW DECK AND OVERLAY
- PLACE CONCRETE FOR NEW PARAPET WALL
- WATERPROOF AND PAVE STRUCTURE AND APPROACHES
- OPEN ROAD TO TRAFFIC



DECK CROSS SECTION

SCALE 1:100

CONCEPTUAL GENERAL ARRANGEMENT FOR STRUCTURE EXTENSION

No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE							JOB NUMBER
1.	ISSUED FOR REPORT	31/10/08	CHECKED BY: E.A.								03-023
			DRAWN BY: J.R.								DATE
			CHECKED BY: K.A.S.								JANUARY, 2009
			FIELD BOOK:								DRAWING NUMBER
											144

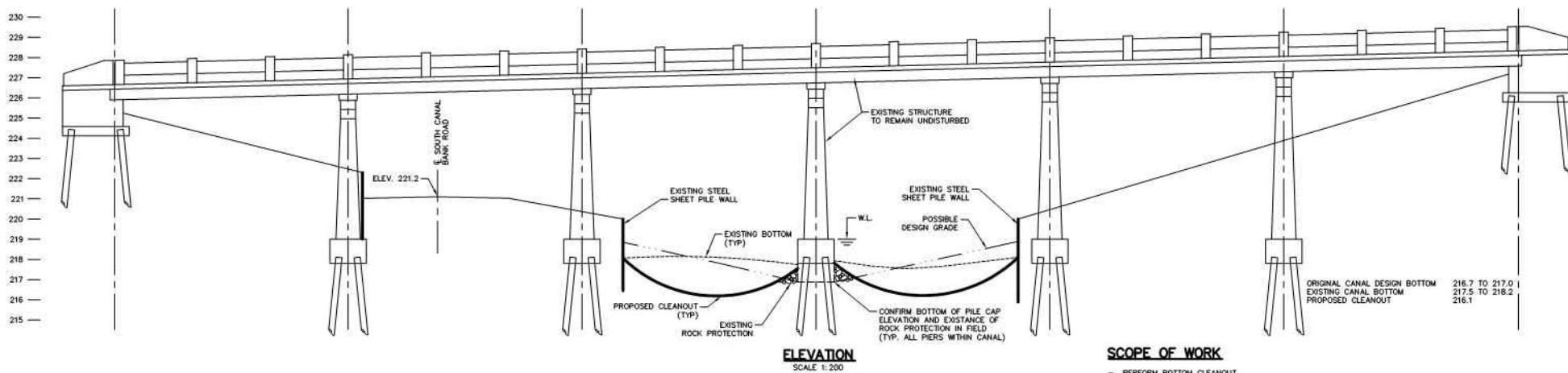
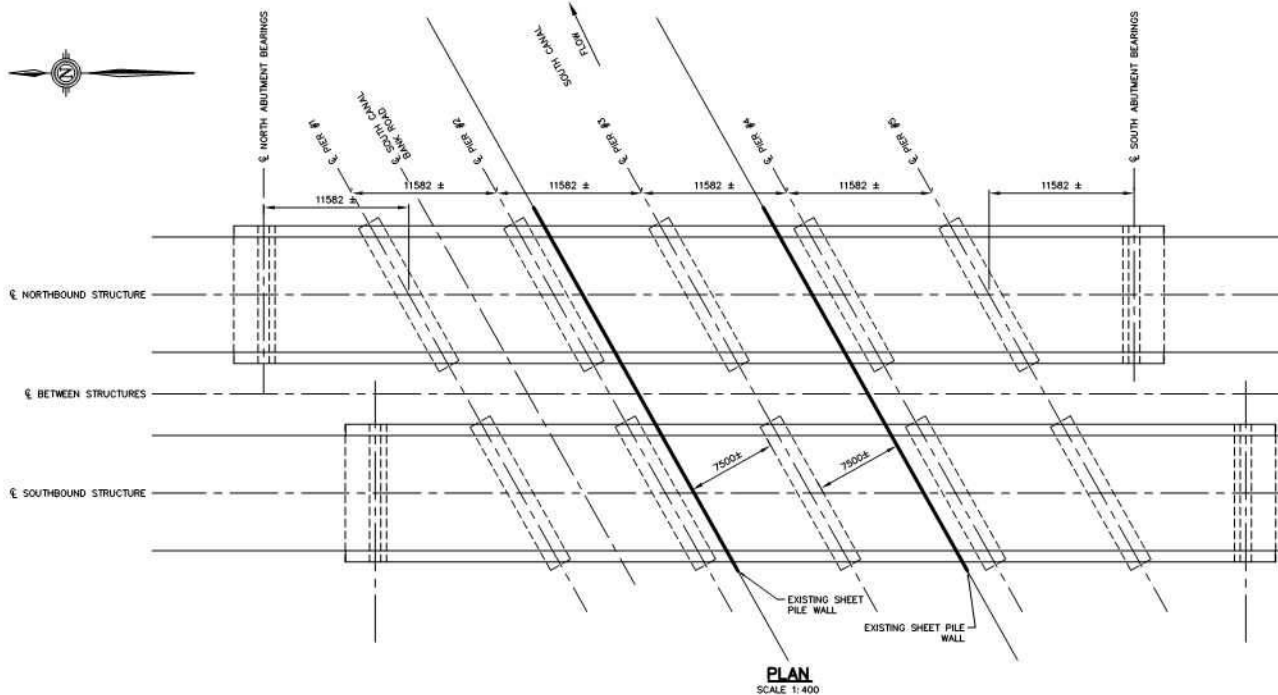


HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT
HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD
 COUNTY OF SIMCOERY TOWN OF BRADFORD WEST GUILMBURY
 REGION OF YORK TOWNSHIP OF KING
BRIDGE 9 (FIVE SIDEROAD NORTH CANAL) [BWG BRIDGE 02001]

K. SMART ASSOCIATES LIMITED
 CONSULTING ENGINEERS AND PLANNERS
 85 MCINTYRE DRIVE
 KITCHENER, ONTARIO N2R 1H6



No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOERY TOWN OF BRADFORD WEST GUILMBURY REGION OF YORK TOWNSHIP OF KING			K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6		JOB NUMBER
			CHECKED BY: E.A.	1:750						03-023
			DRAWN BY: D.C.P.	3.75m 0 7.5m						DATE
			CHECKED BY: E.A.							JANUARY, 2009
			FIELD BOOK:							DRAWING NUMBER
					BRIDGE 9 (FIVE SIDEROAD NORTH CANAL) [BWG BRIDGE 02001]					146



SCOPE OF WORK

— PERFORM BOTTOM CLEANOUT

EXISTING GENERAL ARRANGEMENT AND REQUIRED INITIAL WORK

No.	REVISION	DATE	DESIGNED BY: A.G.
1.	ISSUED FOR REPORT	31/10/08	CHECKED BY: E.A.
			DRAWN BY: J.R.
			CHECKED BY: K.A.S.
			FIELD BOOK:

SCALE

AS NOTED



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD

COUNTY OF SIMCOERY
REGION OF YORK

TOWN OF BRADFORD WEST GUILMBURY
TOWNSHIP OF KING

BRIDGE 10 (HWY. 400 SOUTH CANAL)[MTO STRUCTURE 37-34 1 & 2]



K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MCINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER

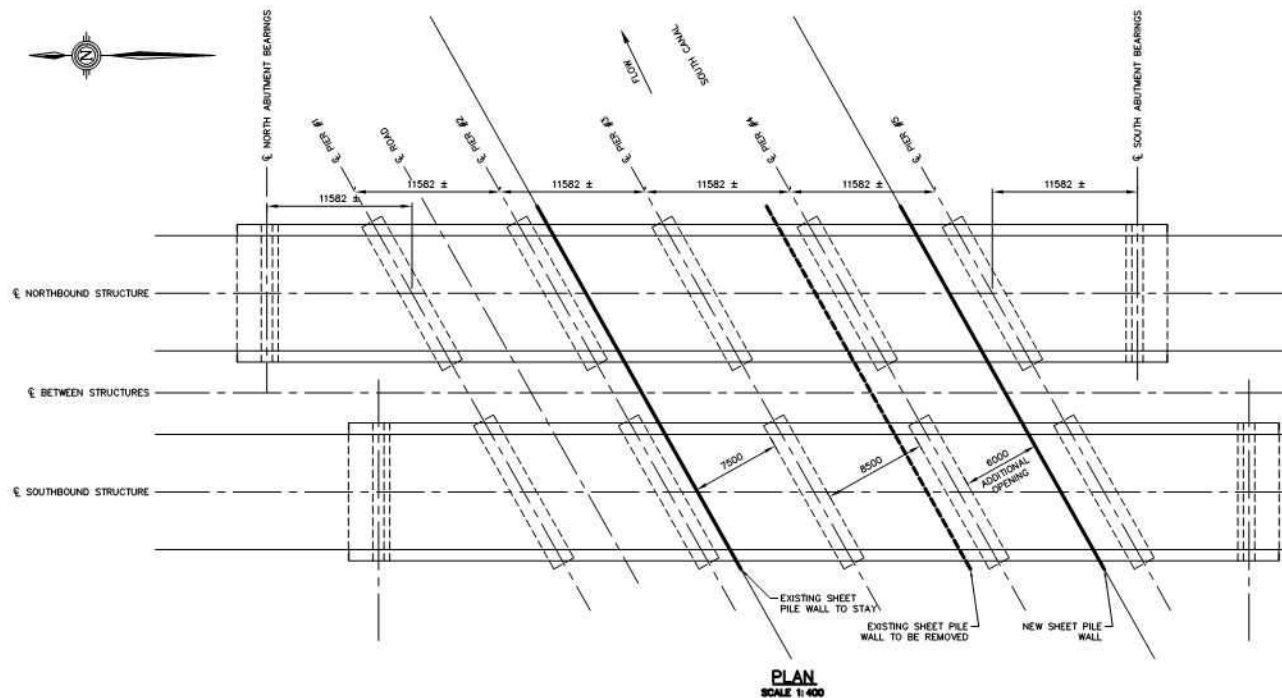
03-023

DATE

JANUARY, 2009

DRAWING NUMBER

147



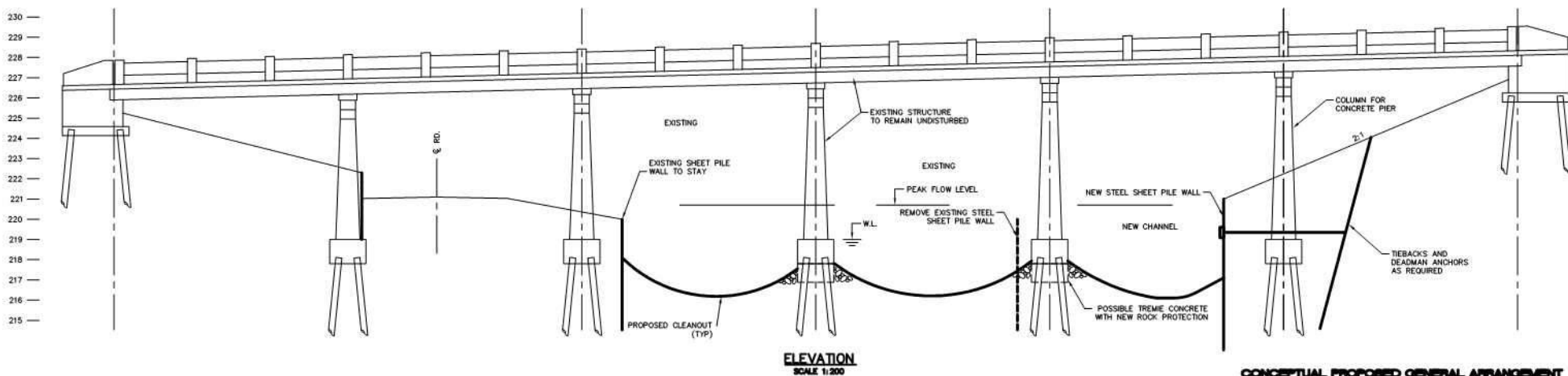
COST BREAKDOWN

ITEM	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
EARTH EXCAVATION UNDER STRUCTURE, DEWATERING AND EARTH BACKFILL	N/A	LUMP SUM	\$125,000
ROCK PROTECTION	500 m ³	\$100	\$50,000
PIILING MOBILIZATION AND DEMOBILIZATION	N/A	LUMP SUM	\$50,000
PIILING - DRIVEN IN PLACE	600 m ²	\$1,000	\$600,000
REMOVE EXISTING SHEET PILES	N/A	LUMP SUM	\$15,000
CONTINGENCIES	N/A	LUMP SUM	\$150,000
TOTAL			\$990,000

WITH ENGINEERING AND APPROVALS INCLUDED BUDGET \$1,500,000.00

SCOPE OF WORK

- CONSTRUCT NEW STEEL SHEET PILE WALL
- EXCAVATE TO FORM NEW FLOW CHANNEL
- INSTALL ROCK PROTECTION
- REMOVE EXISTING SHEET PILE WALL

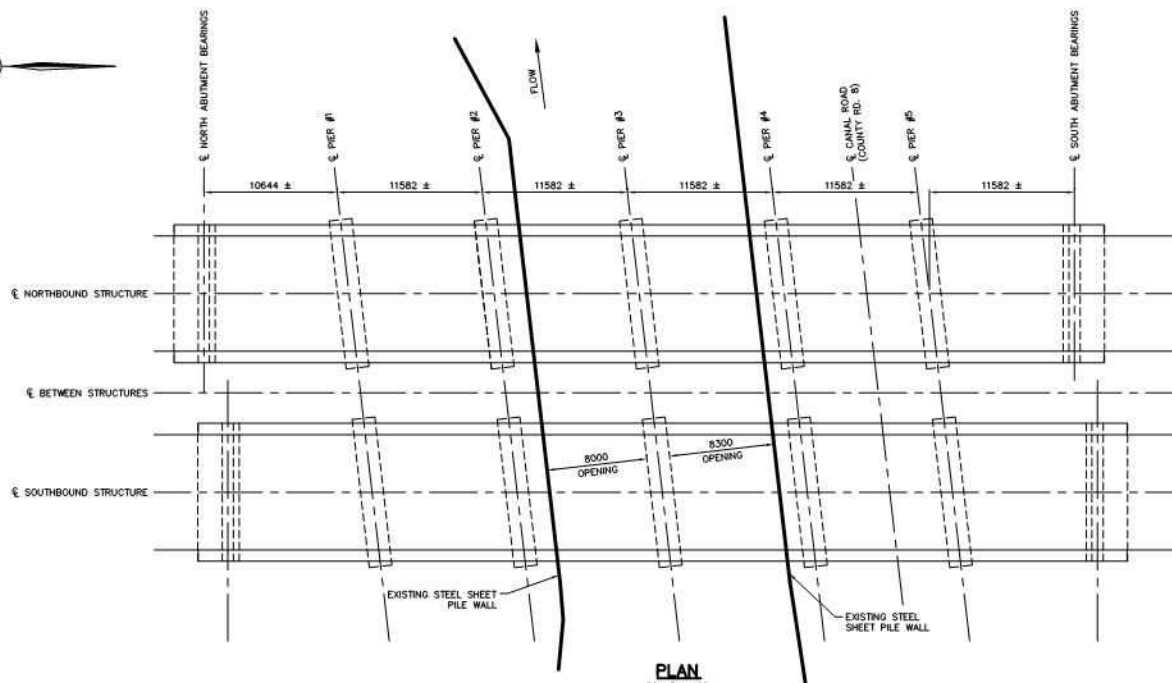


CONCEPTUAL PROPOSED GENERAL ARRANGEMENT

No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE		HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOERY TOWN OF BRADFORD WEST GUILMURBY REGION OF YORK TOWNSHIP OF KING	BRIDGE 10 (HWY. 400 SOUTH CANAL)[MTO STRUCTURE 37-34 1 & 2]	K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023
1.	ISSUED FOR REPORT	31/10/08	CHECKED BY: E.A.	AS NOTED					DATE JANUARY, 2009
			DRAWN BY: J.R.						DRAWING NUMBER 148
			CHECKED BY: K.A.S.						
			FIELD BOOK:						

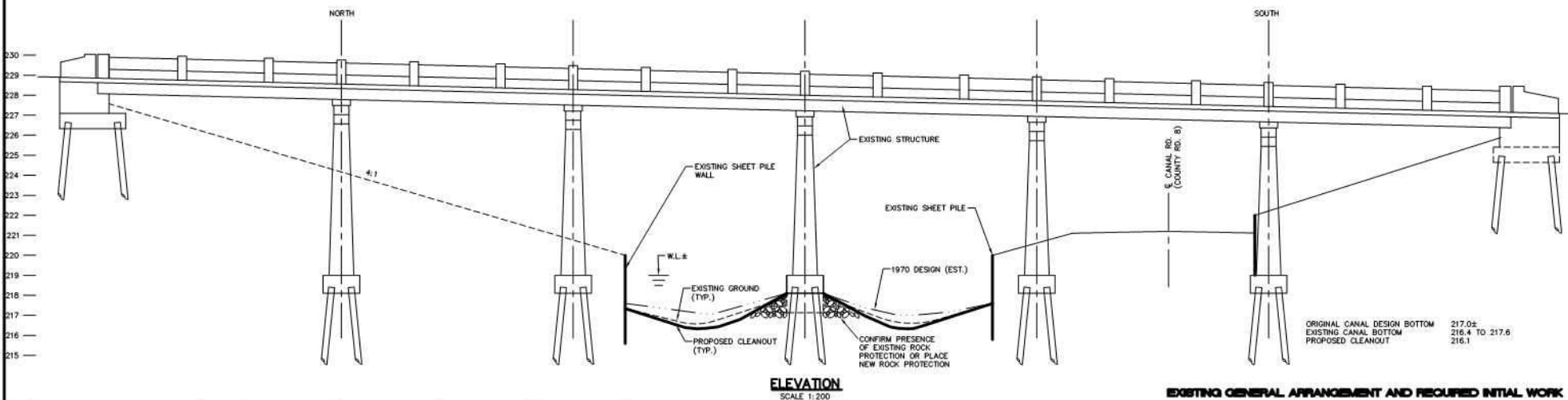


No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOERY TOWN OF BRADFORD WEST GUILMBURY REGION OF YORK TOWNSHIP OF KING			K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6		JOB NUMBER 03-023
			CHECKED BY: E.A.	1:750						DATE JANUARY, 2009
			DRAWN BY: D.C.P.	3.75m 0 7.5m						DRAWING NUMBER
			CHECKED BY: E.A.							149
			FIELD BOOK:							
					BRIDGE 10 (HWY 400 SOUTH CANAL)[MTO STRUCTURE 37-34 1 & 2]					






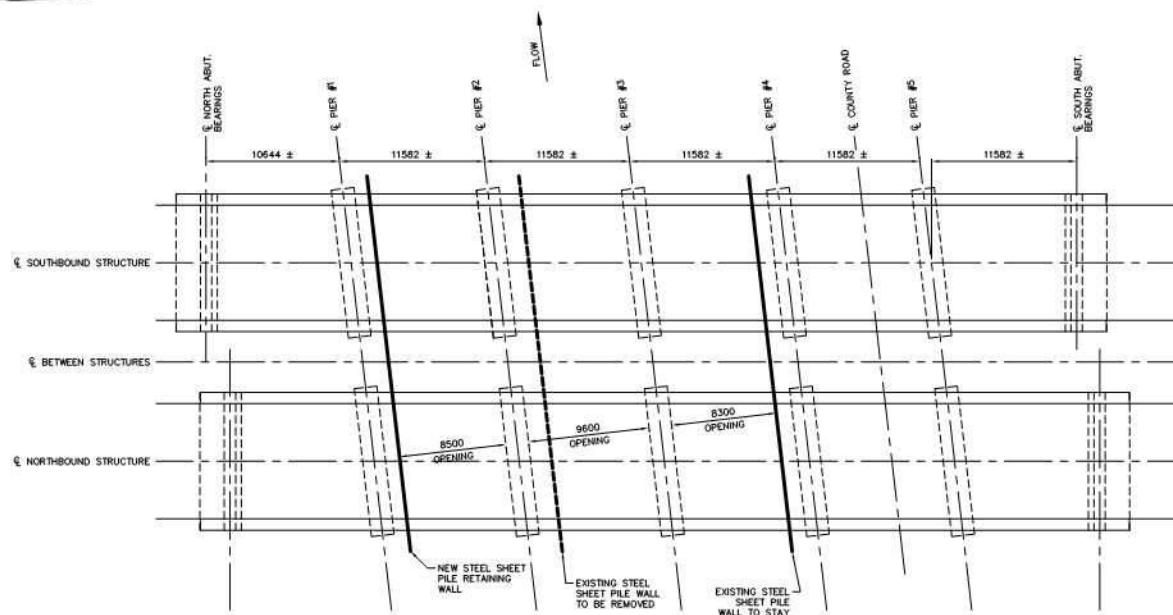
SCOPE OF WORK

- PERFORM BOTTOM CLEANOUT

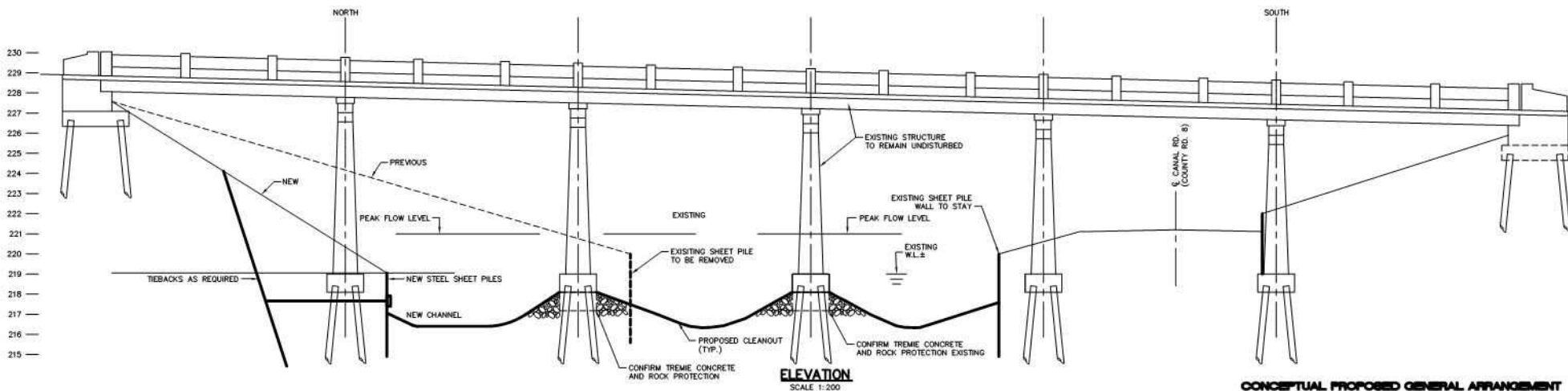


EXISTING GENERAL ARRANGEMENT AND REQUIRED INITIAL WORK

No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE			HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOERY TOWN OF BRADFORD WEST GUILMBURY REGION OF YORK TOWNSHIP OF KING	 K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023 DATE JANUARY, 2009 DRAWING NUMBER 150
	1. ISSUED FOR REPORT		CHECKED BY: E.A.						
			DRAWN BY: J.R.						
			CHECKED BY: K.A.S.						
			FIELD BOOK:						



PLAN
SCALE 1:400



CONCEPTUAL PROPOSED GENERAL ARRANGEMENT

COST BREAKDOWN

ITEM	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
EARTH EXCAVATION UNDER STRUCTURE, DEWATERING AND EARTH BACKFILL	N/A	LUMP SUM	\$125,000
ROCK PROTECTION	500 m ³	\$100	\$50,000
PILING MOBILIZATION AND DEMOBILIZATION	N/A	LUMP SUM	\$50,000
PILING - DRIVEN IN PLACE	600 m ²	\$1,000	\$600,000
REMOVE EXISTING SHEET PILES	N/A	LUMP SUM	\$15,000
CONTINGENCIES	N/A	LUMP SUM	\$150,000
TOTAL			\$990,000

WITH ENGINEERING AND APPROVALS INCLUDED BUDGET \$1,500,000.00

SCOPE OF WORK

- PERFORM BOTTOM CLEANOUT

No.	REVISION	DATE	DESIGNED BY: A.G.
1.	ISSUED FOR REPORT	31/10/08	CHECKED BY: E.A.
			DRAWN BY: J.R.
			CHECKED BY: K.A.S.
			FIELD BOOK:

SCALE

AS NOTED



HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT

HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD

COUNTY OF SIMCOERY
REGION OF YORK

TOWN OF BRADFORD WEST GUILMBURY
TOWNSHIP OF KING

BRIDGE 11 (HWY. 400 NORTH CANAL)[MTO STRUCTURE 30-334 1 & 2]





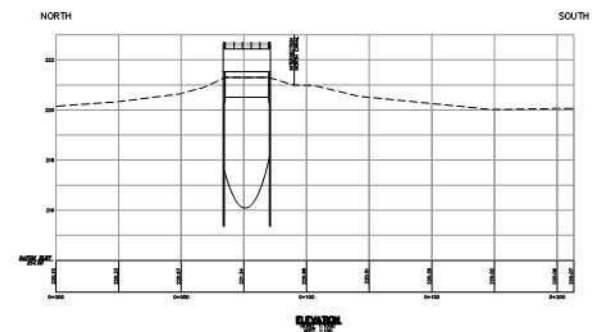
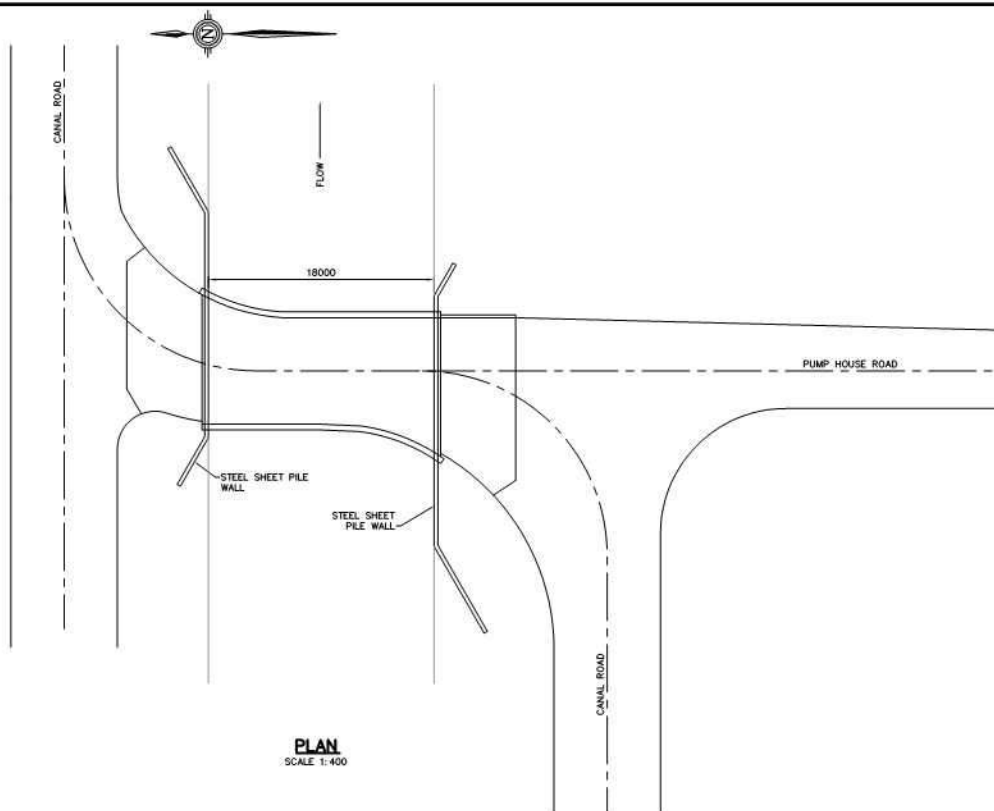
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 MAINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

JOB NUMBER
03-023

DATE
JANUARY, 2008
DRAWING NUMBER
151

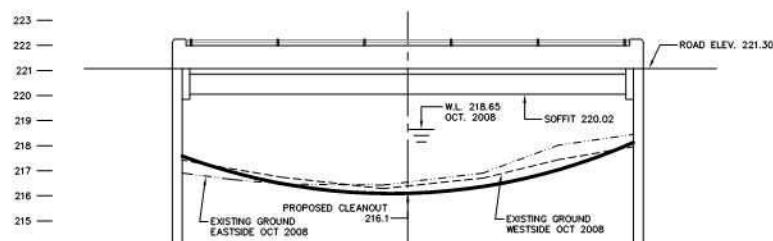


No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE 1:750 		HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOE REGION OF YORK	TOWN OF BRADFORD WEST GILLIMBURY TOWNSHIP OF KING	 K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023
			CHECKED BY: E.A.						DATE JANUARY, 2009
			DRAWN BY: D.C.P.						BRIDGE DRAWING NUMBER 152
			CHECKED BY: E.A.						
			FIELD BOOK:						
BRIDGE 11 (HWY. 400 NORTH CANAL)[MTO STRUCTURE 30-334 1 & 2]									



NOTE

CANAL BOTTOM SHOWN ON PROFILE IS APPROXIMATE ORIGINAL DESIGN (TYP)

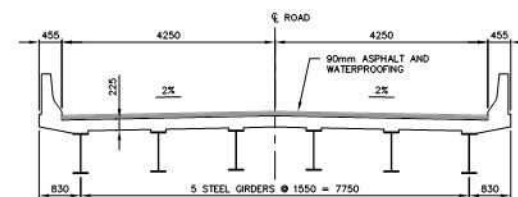


ELEVATION

SCALE 1:200

SCOPE OF WORK

PERFORM BOTTOM CLEANOUT






DECK CROSS SECTION

SCALE 1:100

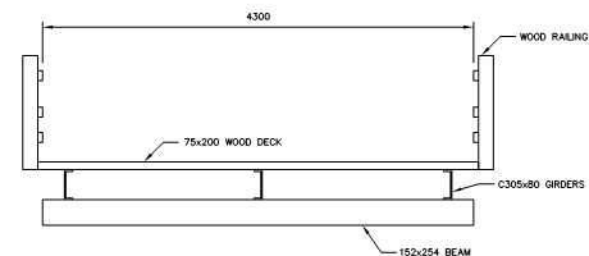
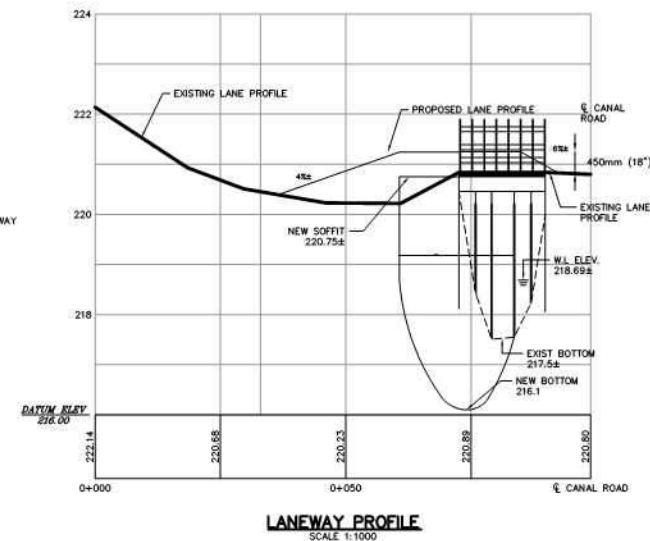
SIMCOE COUNTY STRUCTURE 008134

EXISTING GENERAL ARRANGEMENT AND REQUIRED INITIAL WORK

No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE	 	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOE TOWN OF BRADFORD WEST GUILMIBURY REGION OF YORK TOWNSHIP OF KING		 K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6		JOB NUMBER
1.	ISSUED FOR REPORT	31/10/08	CHECKED BY: E.A.	AS NOTED						03-023
			DRAWN BY: J.R.							DATE
			CHECKED BY: K.A.S.							JANUARY, 2009
			FIELD BOOK:							DRAWING NUMBER
										153



No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE	HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOE TOWN OF BRADFORD WEST GUILMBURY REGION OF YORK TOWNSHIP OF KING		JOB NUMBER 03-023
			CHECKED BY: E.A.	1:750			DATE JANUARY, 2009
			DRAWN BY: D.C.P.	3.75m 0 7.5m			BRIDGE DRAWING NUMBER 154
			CHECKED BY: E.A.				
			FIELD BOOK:				
					BRIDGE 12 (PUMPHOUSE RD. NORTH CANAL) [SIMCOE BRIDGE 008134]		K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6

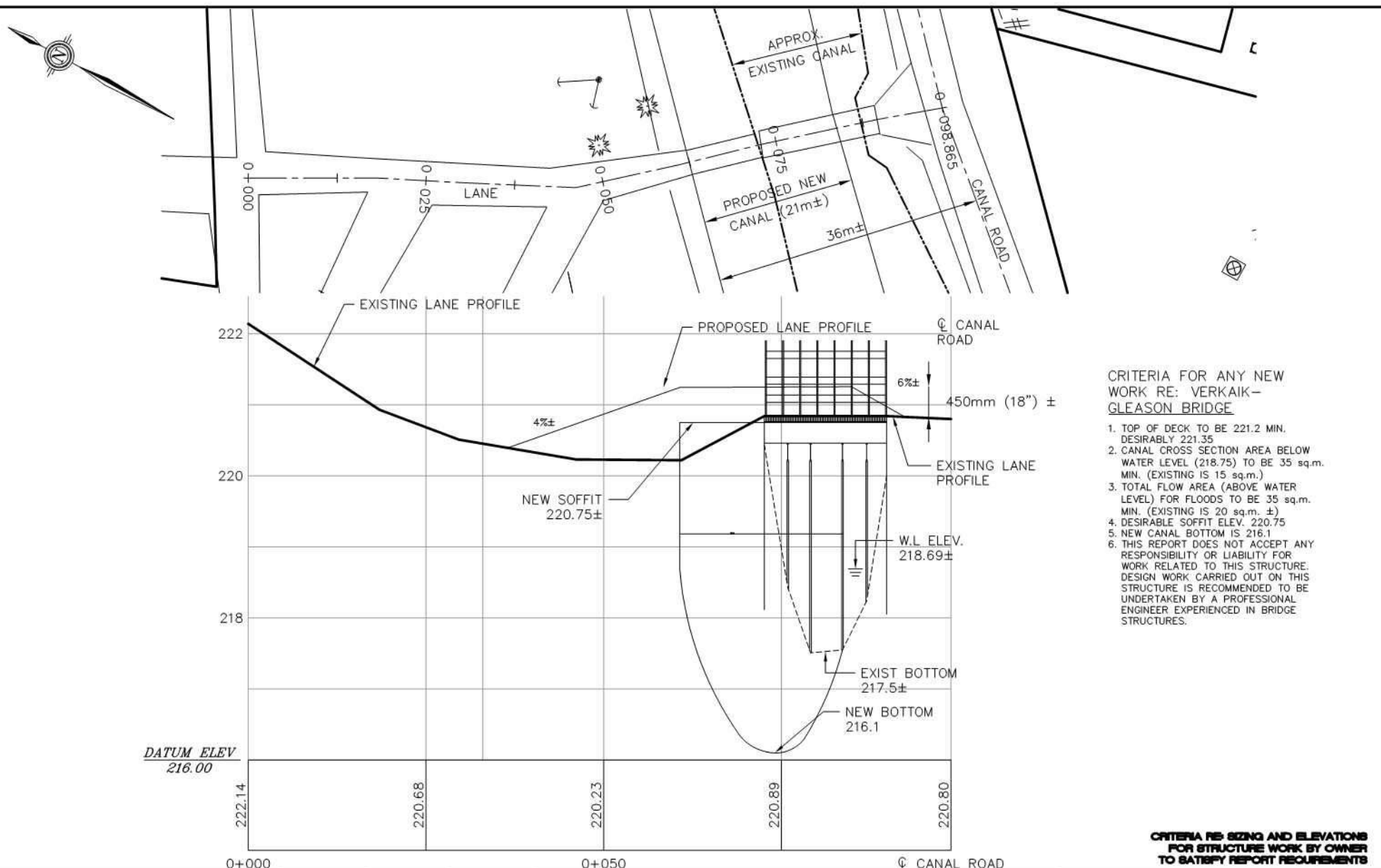


NOTE:

- IF STRUCTURE IS NOT IMPROVED PRIOR TO CANAL WORK, IT MAY HAVE TO BE REMOVED
- CLEANOUT WORK WOULD ONLY BE DONE IF ENGINEER AGREED. SUCH IS TO BE DONE WHILE REPLACEMENT WORK IS UNDERWAY


PROJECT

C:\33-023\BROCKEN\bridge 15 Site Plan.dwg (EXISTING GENERAL ARRANGEMENT) 5-Jan-09 4:20:55 PM





- CRITERIA FOR ANY NEW WORK RE: VERKAIK-GLEASON BRIDGE
1. TOP OF DECK TO BE 221.2 MIN, DESIRABLY 221.35
 2. CANAL CROSS SECTION AREA BELOW WATER LEVEL (218.75) TO BE 35 sq.m. MIN. (EXISTING IS 15 sq.m.)
 3. TOTAL FLOW AREA (ABOVE WATER LEVEL) FOR FLOODS TO BE 35 sq.m. MIN. (EXISTING IS 20 sq.m. ±)
 4. DESIRABLE SOFFIT ELEV. 220.75
 5. NEW CANAL BOTTOM IS 216.1
 6. THIS REPORT DOES NOT ACCEPT ANY RESPONSIBILITY OR LIABILITY FOR WORK RELATED TO THIS STRUCTURE. DESIGN WORK CARRIED OUT ON THIS STRUCTURE IS RECOMMENDED TO BE UNDERTAKEN BY A PROFESSIONAL ENGINEER EXPERIENCED IN BRIDGE STRUCTURES.

CRITERIA RE: SIZING AND ELEVATIONS FOR STRUCTURE WORK BY OWNER TO SATISFY REPORT REQUIREMENTS

No.		REVISION	DATE	DESIGNED BY: K.A.S.	SCALE	HORIZ: 1:500 VERT: 1:50			HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOE REGION OF YORK	TOWN OF BRADFORD WEST GUILMBURY TOWNSHIP OF KING	 K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER
			CHECKED BY: K.A.S.	03-023								
			DRAWN BY: J.R.	DATE								
			CHECKED BY: K.A.S.	JANUARY, 2009								
			FIELD BOOK:	DRAWING NUMBER								
BRIDGE 15 (PRIVATE NORTH CANAL)											156	



No.	REVISION	DATE	DESIGNED BY: A.G.	SCALE 1:750 			HOLLAND MARSH DRAINAGE SYSTEM CANAL IMPROVEMENT PROJECT HOLLAND MARSH DRAINAGE SYSTEM JOINT MUNICIPAL SERVICES BOARD COUNTY OF SIMCOERY REGION OF YORK TOWN OF BRADFORD WEST GWILLIMBURY TOWNSHIP OF KING	 K. SMART ASSOCIATES LIMITED CONSULTING ENGINEERS AND PLANNERS 85 MCINTYRE DRIVE KITCHENER, ONTARIO N2R 1H6	JOB NUMBER 03-023
			CHECKED BY: E.A.						DATE
			DRAWN BY: D.C.P.						JANUARY, 2009
			CHECKED BY: E.A.						DRAWING NUMBERS
			FIELD BOOK:						157
BRIDGE 15 (PRIVATE NORTH CANAL)									