

Appendix A

Existing Utilities

Summary of Existing Utilities

NOTES:

Utilities along Huron Church/Talbot Corridor	ALTERNATIVE 1A/1B							
	Length (m)	Howard to Cousineau	Length (m)	Cousineau to Cabana	Length (m)	Cabana to Lambton/Grand Marais	Length (m)	Lambton/Grand Marais to Malden Road
TELECOM								
Bell Canada - Underground	334	North	223	North	1416	North	394	North
	884	South	1093	South	1759	South	661	South
Bell Canada - Overhead	1420	North	902	North	40	North		
	758	South	465	South	55	South	934	South
GAS								
Union Gas - Major and Minor	1134	North	926	North	1308	North	601	North
	1515	South	725	South	714	South	630	South
MUNICIPAL								
City of Windsor - Storm								
Less than 900 mm	171	North	89	North	351	North	790	North
					420	South	1030	South
Greater than 900 mm					620	North	250	North
					430	South	16	South
City of Windsor - Sanitary								
Less than 250 mm					149	South		
Greater than 250 mm	99	North	281	North	277	North	564	North
					96	South	1266	South
City of Windsor - Watermain								
150 DIA.	240	North	377	North	42	North	11	North
	47	South	300	South	73	South	380	South
200 DIA.	1146	North	245	North	40	North	31	North
	21	South			13	South	56	South
250 DIA.			85	North	56	North		
					1262	South	692	South
300 DIA.					40	North		
					13	South		
400 DIA.			28	North				
			62	South			109	South
500 DIA.	42	North						
	110	South						
600 DIA.	10	North						
HYDRO								
Enwin 27 - Overhead	64	North			62	North	81	North
					1308	South	1287	South
Enwin 27 - Underground	1597	North	1693	North	22	North		
					147	South		
Essex OH - June 27								
	87	South	52	South				
Essex UG - June 27								
Essex OH - Dia 1 - June 27								
	1004	South	1277	South				
OTHERS								
MaXess Networks					71	North	40	North
					890	South	22	South
Total Length of Utility moved (km)	10.7		8.8		11.7		9.8	

Summary of Existing Utilities

Utilities along Huron Church/Talbot Corridor	ALTERNATIVE 2A/2B							
	Length (m)	Howard to Cousineau	Length (m)	Cousineau to Cabana	Length (m)	Cabana to Lambton/Grand Marais	Length (m)	Lambton/Grand Marais to Malden Road
TELECOM								
Bell Canada - Underground	357	North	209	North	902	North	343	North
	834	South	1542	South	2238	South	1504	South
Bell Canada - Overhead	1420	North	902	North	16	North		
	815	South	678	South	69	South	2706	South
GAS								
Union Gas - Major and Minor	1274	North	917	North	706	North	63	North
	1445	South	1090	South	853	South	1341	South
MUNICIPAL								
City of Windsor - Storm								
Less than 900 mm	184	North	81	North	61	North	243	North
					420	South	854	South
Greater than 900 mm					205	North	156	North
					490	South	115	South
City of Windsor - Sanitary								
Less than 250 mm					299	South		
Greater than 250 mm	113	North	261	North	220	North	197	North
					96	South	2245	South
City of Windsor - Watermain								
150 DIA.	222	North	377	North	29	North		
	47	South	456	South	208	South	983	South
200 DIA.	1333	North	290	North	19	North	31	North
	21	South			13	South	156	South
250 DIA.					56	North		
					1262	South	696	South
300 DIA.					31	North		
					13	South		
400 DIA.			76	South			239	South
500 DIA.	42	North						
	182	South						
600 DIA.	10	North						
HYDRO								
Enwin 27 - Overhead	74	North			27	North	40	North
					1386	South	1237	South
Enwin 27 - Underground	1597	North	1651	North	22	North		
					288	South		
Essex OH - June 27								
	87	South	91	South				
Essex UG - June 27								
Essex OH - Dia 1- June 27								
	983	South	1267	South				
OTHERS								
District Energy - Windsor Utilities								
MaXess					29	North	24	North
					899	South	35	South
Detroit and Canada Tunnel								
Canadian Transit Corporation								
Total Length of Utility moved	11.0	0	9.9		10.9		13.2	

Summary of Existing Utilities

Utilities along Huron Church/Talbot Corridor	ALTERNATIVE 3							
	Length (m)	Howard to Cousineau	Length (m)	Cousineau to Cabana	Length (m)	Cabana to Lambton/Grand Marais	Length (m)	Lambton/Grand Marais to Malden Road
TELECOM								
Bell Canada - Underground	372	North	69	North	1562	North	385	North
	875	South	901	South	1664	South	1350	South
Bell Canada - Overhead	1420	North	902	North	41	North		
	769	South	418	South	43	South	2558	South
GAS								
Union Gas - Major and Minor	1019	North	931	North	1310	North	604	North
	1623	South	626	South	715	South	1326	South
MUNICIPAL								
City of Windsor - Storm								
Less than 900 mm			94	North	419	North	501	North
					430	South	932	South
Greater than 900 mm					620	North	252	North
					476	South	115	South
City of Windsor - Sanitary								
Less than 250 mm								
					187	South		
Greater than 250 mm	6	North	281	North	250	North		
					153	South	1975	South
City of Windsor - Watermain								
150 DIA.	60	North	380	North	48	North	14	North
	71	South	286	South	54	South	1002	South
200 DIA.	1126	North	252	North	40	North	28	North
	234	South			13	South	143	South
250 DIA.			27	North	56	North		
					1262	South	696	South
300 DIA.					40	North		
					14	South		
400 DIA.			35	North				
			46	South			233	South
500 DIA.	42	North						
	186	South						
600 DIA.	10	North						
HYDRO								
Enwin 27 - Overhead	92	North					89	North
					1273	South	1244	South
Enwin 27 - Underground	1597	North	1707	North	22	North		
					122	South		
Essex OH - June 27								
	93	South	53	South				
Essex UG - June 27								
Essex OH - Dia 1- June 27								
	1021	South	1277	South				
OTHERS								
MaXess Networks					79	North	43	North
					868	South	35	South
Total Length of Utility moved	10.6		8.3		11.8		13.5	

Summary of Existing Utilities

NOTES:

Utilities along Huron Church/Talbot Corridor	PARKWAY							
	Length (m)	Howard to Cousineau	Length (m)	Cousineau to Cabana	Length (m)	Cabana to Lambton/Grand Marais	Length (m)	Lambton/Grand Marais to Malden Road
TELECOM								
Bell Canada - Underground	412	North	201	North	1584	North	485	North
	827	South	1367	South	2109	South	1628	South
Bell Canada - Overhead	1420	North	902	North	49	North		
	788	South	507	South	91	South	598	South
GAS								
Union Gas - Major and Minor	1069	North	944	North	1749	North	726	North
	1831	South	1068	South	1006	South	1125	South
MUNICIPAL								
City of Windsor - Storm								
Less than 900 mm	34	North	106	North	600	North	522	North
					420	South	1066	South
Greater than 900 mm					620	North	253	North
					490	South	36	South
City of Windsor - Sanitary								
Less than 250 mm					145	South		
Greater than 250 mm	6	North	331	North	648	North	564	North
					125	South	1415	South
City of Windsor - Watermain								
150 DIA.	104	North	411	North	109	North	34	North
	82	South	456	South	137	South	360	South
200 DIA.	1194	North	271	North	88	North	293	North
	246	South			13	South		
250 DIA.			57	North	56	North	696	North
					1262	South		
300 DIA.					63	North		
					13	South		
400 DIA.			55	North			206	North
			119	South				
500 DIA.	42	North						
	175	South						
600 DIA.	55	North						
HYDRO								
Enwin 27 - Overhead	92	North			133	North	287	North
					1421	South	1529	South
Enwin 27 - Underground	1596	North	1797	North	56	North		
					278	South		
Essex OH - June 27								
	80	South	176	South				
Essex UG - June 27								
	210	South						
Essex OH - Dia 1 - June 27								
	1030	South	1277	South				
OTHERS								
MaXess Networks					115	North	128	North
					899	South	211	South
Total Length of Utility moved (km)	11.3		10.0		14.3		12.2	

Appendix B

Typical Cross-Sections

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WP No XXX-XX-XX

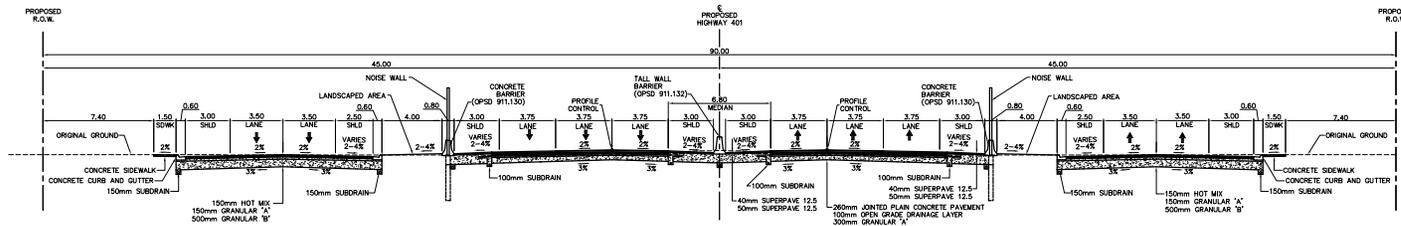


TYPICAL SECTIONS
Survey _____ Revised _____

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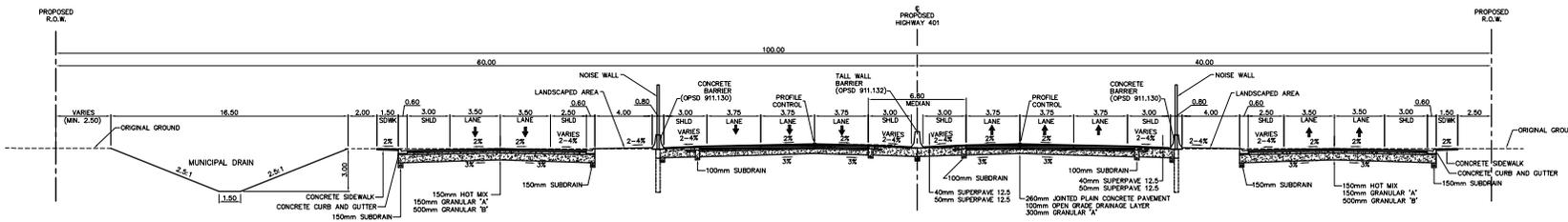
DETROIT RIVER INTERNATIONAL CROSSING
TYPICAL SECTIONS
HIGHWAY 3/HURON CHURCH ROAD CORRIDOR

TYPICAL 6-LANE URBAN FREEWAY SECTION WITH 2-LANE SERVICE ROADS ON BOTH SIDES



CONCEPTUAL

TYPICAL 6-LANE URBAN FREEWAY SECTION WITH 2-LANE SERVICE ROADS ON BOTH SIDES WITH MUNICIPAL DRAIN



ALTERNATIVE 1A

SCALE



METRIC

PLATE No
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WP No XXX-XX-XX

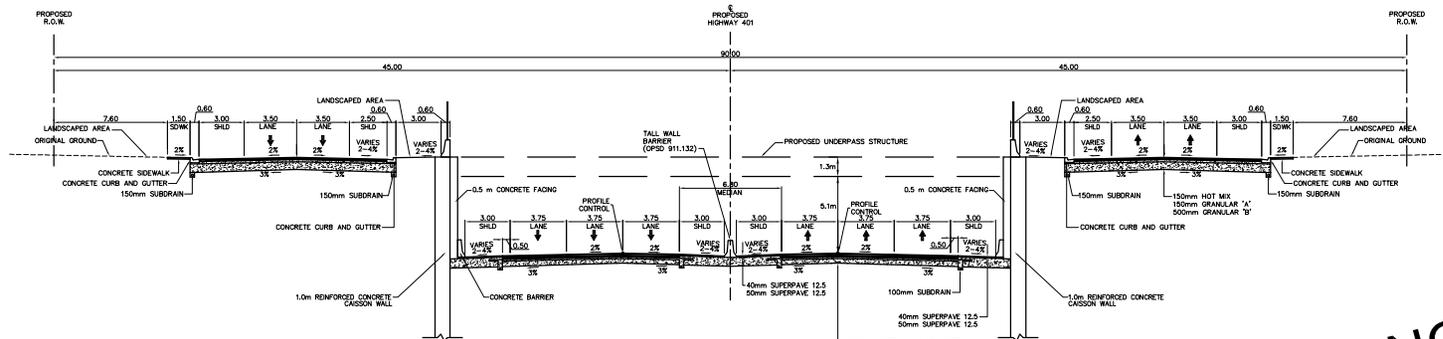


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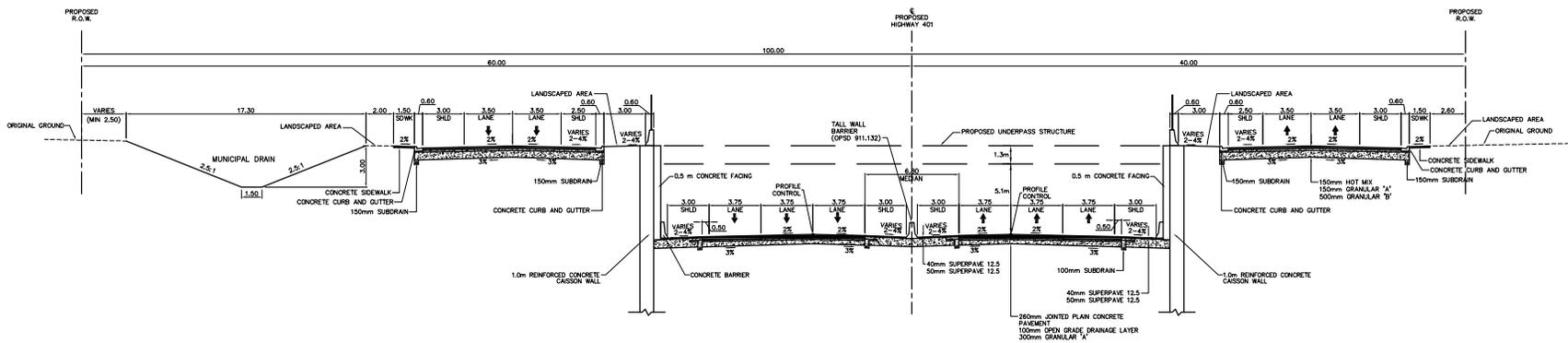
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DETROIT RIVER INTERNATIONAL CROSSING
TYPICAL SECTIONS
HIGHWAY 3/HURON CHURCH ROAD CORRIDOR

TYPICAL BELOW-GRADE 6-LANE URBAN FREEWAY SECTION WITH ONE-WAY SERVICE ROADS



TYPICAL BELOW-GRADE 6-LANE URBAN FREEWAY SECTION WITH ONE-WAY SERVICE ROADS AND MUNICIPAL DRAIN



CONCEPTUAL

ALTERNATIVE 1B

SCALE



METRIC

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WP No XXX-XX-XX

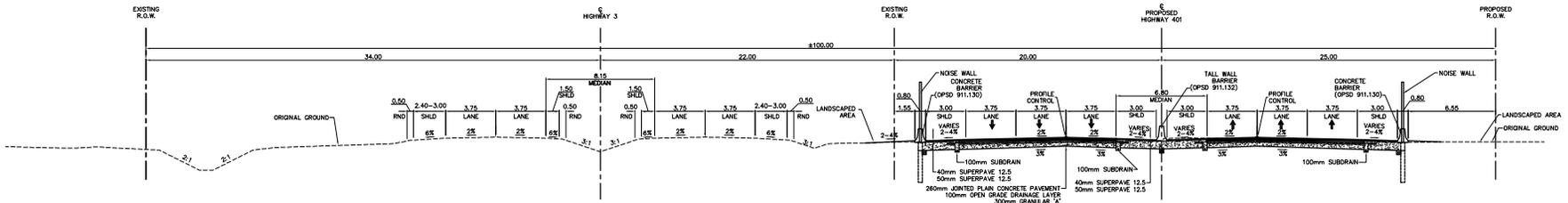


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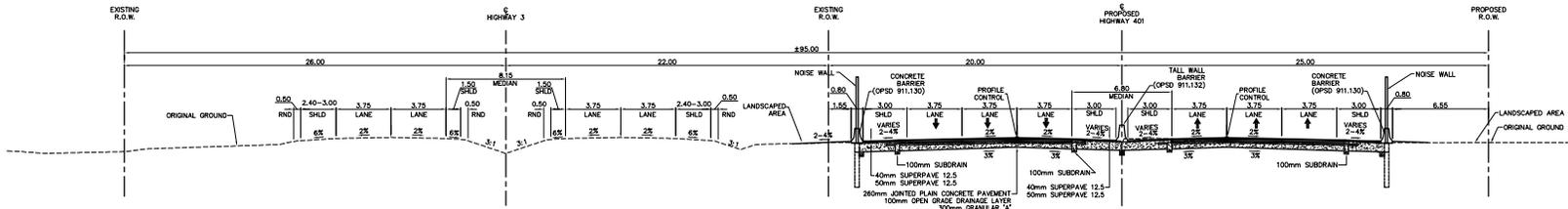
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DETROIT RIVER INTERNATIONAL CROSSING
TYPICAL SECTIONS
HIGHWAY 3/HURON CHURCH ROAD CORRIDOR

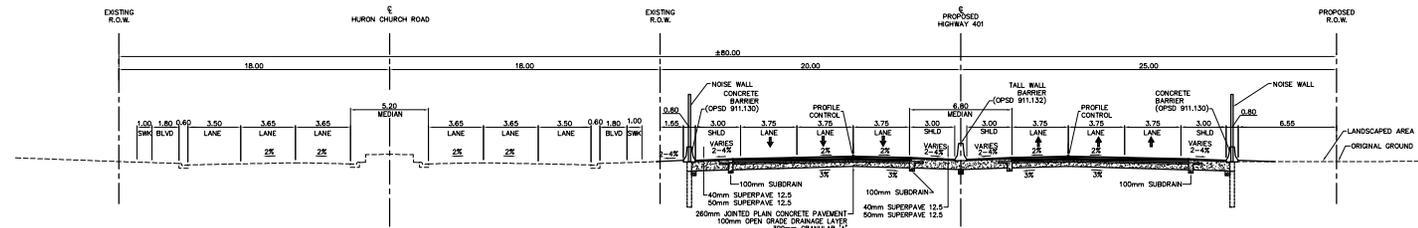
TYPICAL 6-LANE URBAN FREEWAY SECTION ADJACENT TO HIGHWAY 3
NOISE BARRIER ON NORTH SIDE WITH NO SERVICE ROAD ON SOUTH SIDE OF URBAN FREEWAY



TYPICAL 6-LANE URBAN FREEWAY SECTION ADJACENT TO HIGHWAY 3
NOISE BARRIER ON NORTH SIDE WITH NO SERVICE ROAD ON SOUTH SIDE OF URBAN FREEWAY



TYPICAL 6-LANE URBAN FREEWAY SECTION ADJACENT TO HURON CHURCH ROAD
NOISE BARRIER ON NORTH SIDE WITH NO SERVICE ROAD ON SOUTH SIDE OF URBAN FREEWAY



CONCEPTUAL

ALTERNATIVE 2A

SCALE



METRIC

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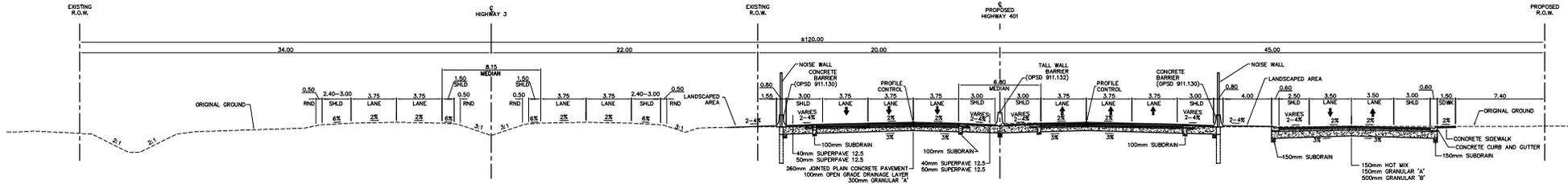


DETROIT RIVER INTERNATIONAL CROSSING
TYPICAL SECTIONS
HIGHWAY 3/HURON CHURCH ROAD CORRIDOR

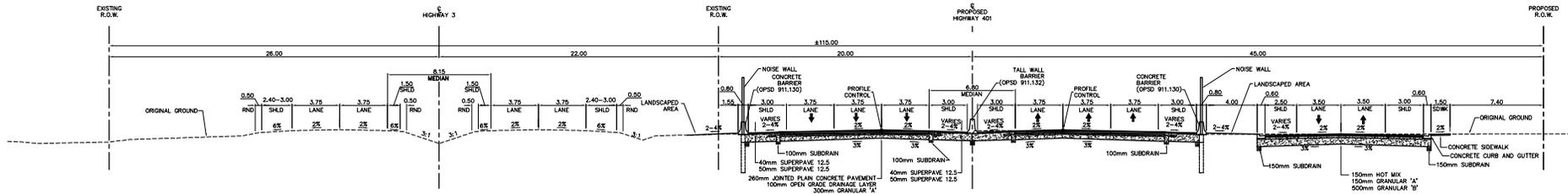
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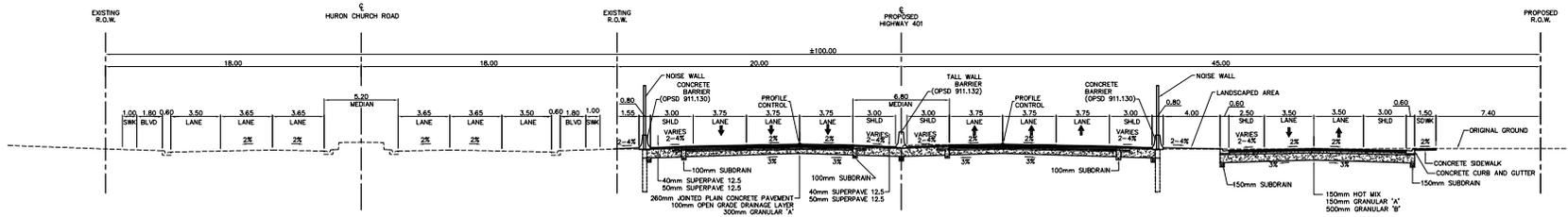
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NOISE BARRIER ON NORTH SIDE WITH TWO-WAY SERVICE ROAD ON SOUTH SIDE OF URBAN FREEWAY



TYPICAL 6-LANE URBAN FREEWAY SECTION ADJACENT TO HIGHWAY 3
NOISE BARRIER ON NORTH SIDE WITH TWO-WAY SERVICE ROAD ON SOUTH SIDE OF URBAN FREEWAY



TYPICAL 6-LANE URBAN FREEWAY SECTION ADJACENT TO HURON CHURCH ROAD
NOISE BARRIER ON NORTH SIDE WITH TWO-WAY SERVICE ROAD ON SOUTH SIDE OF URBAN FREEWAY



CONCEPTUAL

ALTERNATIVE 2A

SCALE



**DETROIT RIVER INTERNATIONAL CROSSING
TYPICAL SECTIONS
HIGHWAY 3/HURON CHURCH ROAD CORRIDOR**

METRIC

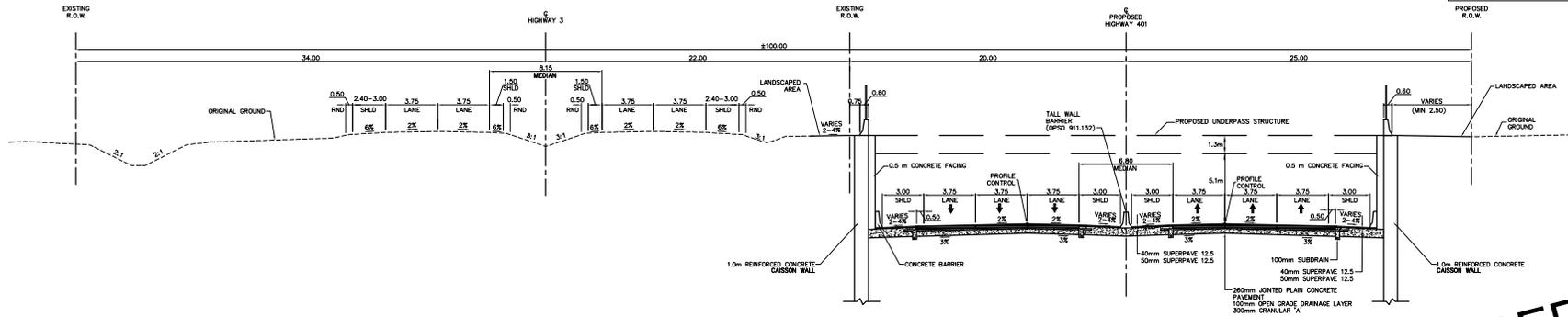
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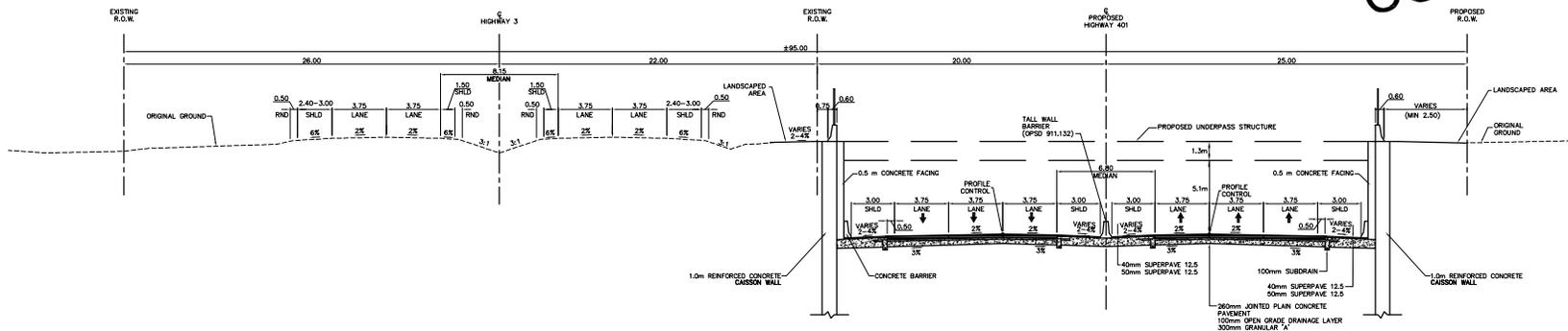
TYPICAL SECTIONS

**SHEET
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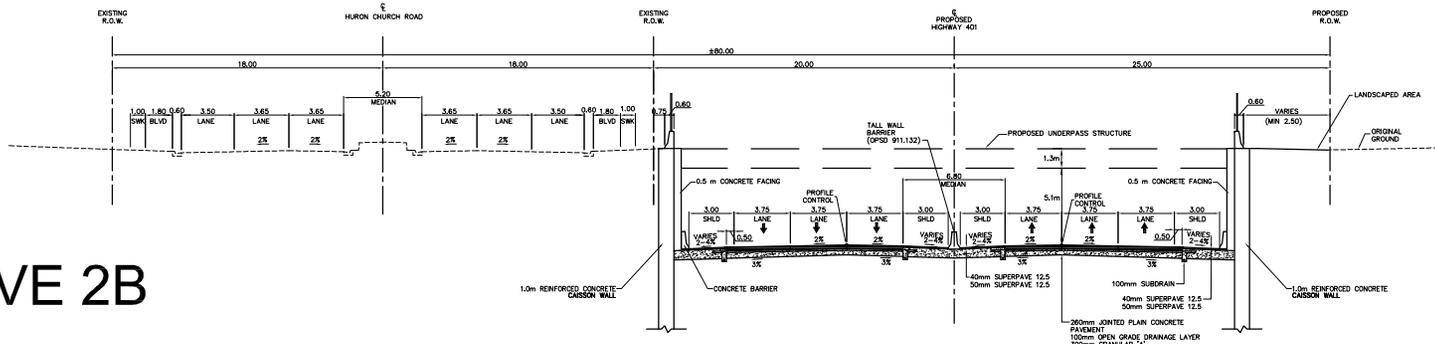
TYPICAL BELOW GRADE 6-LANE URBAN FREEWAY SECTION ADJACENT TO HIGHWAY 3
NOISE BARRIER ON NORTH SIDE WITH NO SERVICE ROAD ON SOUTH SIDE OF URBAN FREEWAY



TYPICAL BELOW GRADE 6-LANE URBAN FREEWAY SECTION ADJACENT TO HIGHWAY 3
NOISE BARRIER ON NORTH SIDE WITH NO SERVICE ROAD ON SOUTH SIDE OF URBAN FREEWAY



TYPICAL BELOW GRADE 6-LANE URBAN FREEWAY SECTION ADJACENT TO HURON CHURCH ROAD
NOISE BARRIER ON NORTH SIDE WITH NO SERVICE ROAD ON SOUTH SIDE OF URBAN FREEWAY



CONCEPTUAL

ALTERNATIVE 2B

SCALE



**DETROIT RIVER INTERNATIONAL CROSSING
TYPICAL SECTIONS
HIGHWAY 3/HURON CHURCH ROAD CORRIDOR**

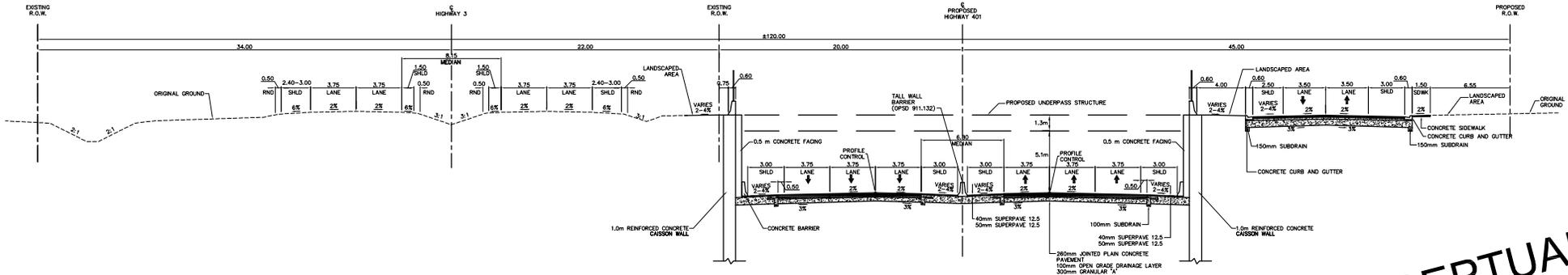
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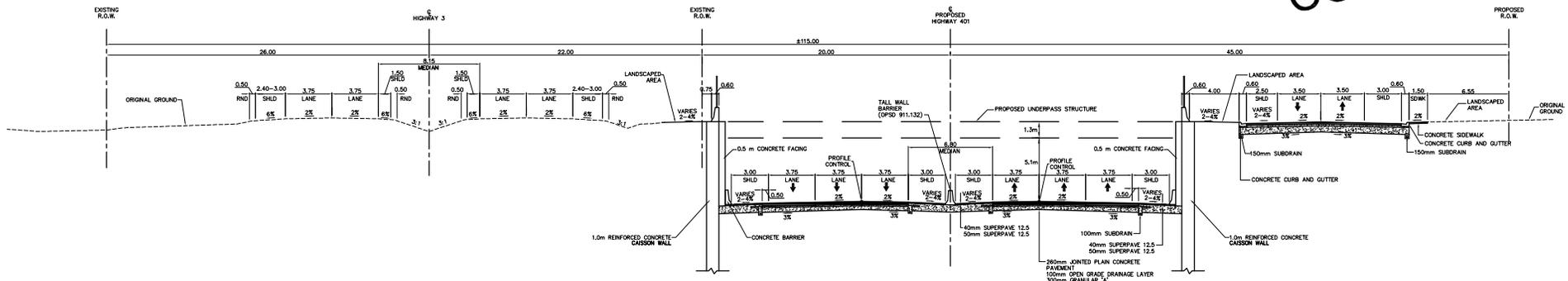
TYPICAL SECTIONS

**SHEET
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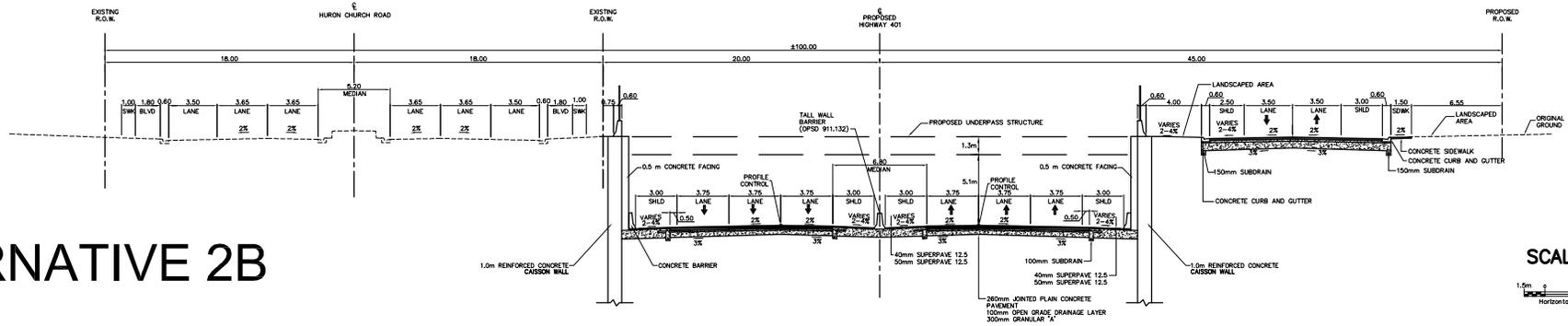
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NOISE BARRIER ON NORTH SIDE WITH TWO-WAY SERVICE ROAD ON SOUTH SIDE OF URBAN FREEWAY



TYPICAL BELOW GRADE 6-LANE URBAN FREEWAY SECTION ADJACENT TO HIGHWAY 3
NOISE BARRIER ON NORTH SIDE WITH TWO-WAY SERVICE ROAD ON SOUTH SIDE OF URBAN FREEWAY



TYPICAL BELOW GRADE 6-LANE URBAN FREEWAY SECTION ADJACENT TO HURON CHURCH ROAD
NOISE BARRIER ON NORTH SIDE WITH TWO-WAY SERVICE ROAD ON SOUTH SIDE OF URBAN FREEWAY



ALTERNATIVE 2B

CONCEPTUAL

SCALE



METRIC

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WP No XXX-XX-XX

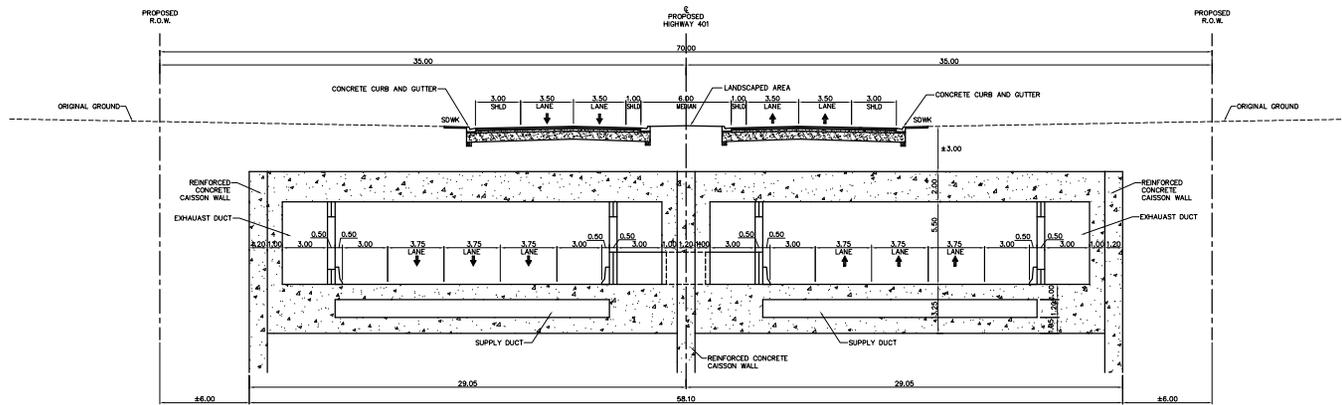


TYPICAL SECTIONS

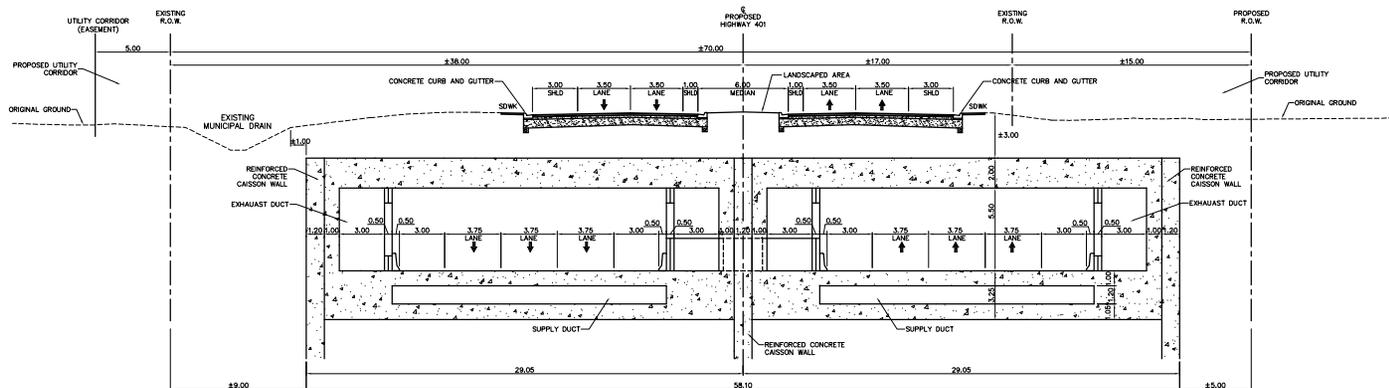
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DETROIT RIVER INTERNATIONAL CROSSING
TYPICAL SECTIONS
HIGHWAY 3/HURON CHURCH ROAD CORRIDOR

CUT AND COVER TUNNEL SECTION



CUT AND COVER TUNNEL SECTION WITH MUNICIPAL DRAIN



CONCEPTUAL

ALTERNATIVE 3

SCALE



**DETROIT RIVER INTERNATIONAL CROSSING
HURON CHURCH ROAD CORRIDOR**

METRIC

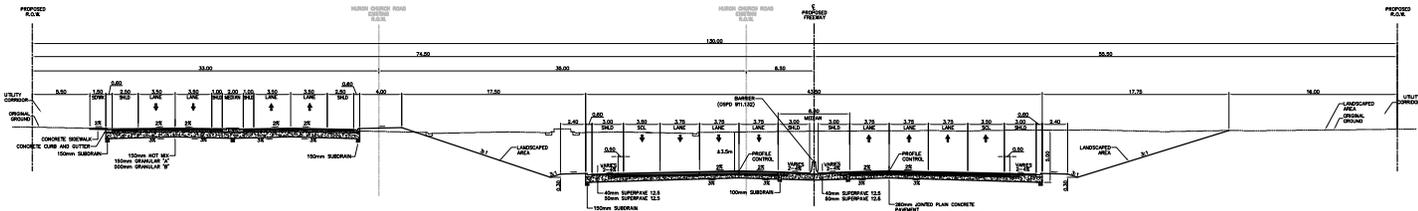
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TYPICAL SECTIONS

SHEET
XXX

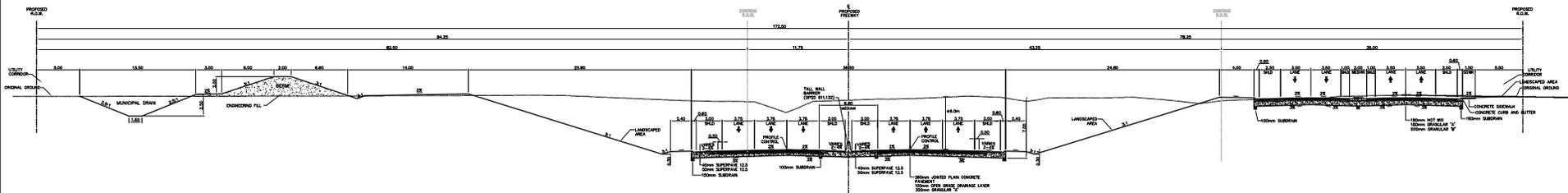
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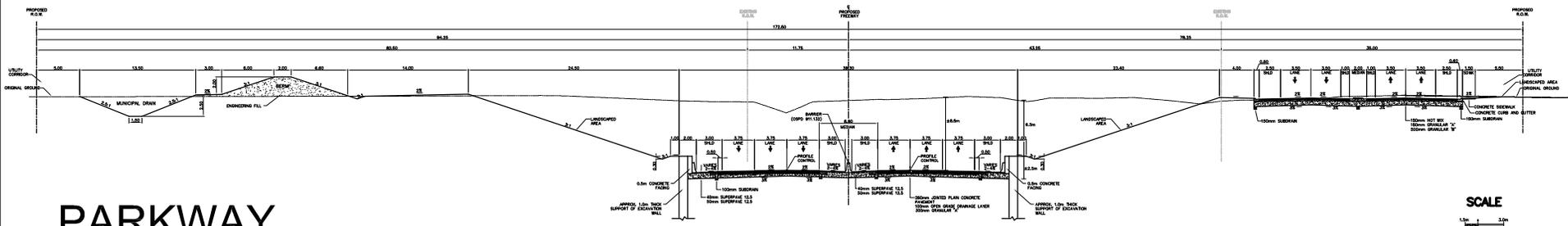
**DETROIT RIVER INTERNATIONAL CROSSING
HIGHWAY 3/TALBOT ROAD CORRIDOR**

TYPICAL BELOW-GRADE 6-LANE URBAN FREEWAY SECTION
TWO-WAY SERVICE ROAD ON SOUTH SIDE WITH MUNICIPAL DRAIN AND BERM ON NORTH SIDE
MAXIMUM DEPTH OF EXCAVATION (7m) WITHOUT SUPPORT OF EXCAVATION WALLS

CONCEPTUAL



TYPICAL BELOW-GRADE 6-LANE URBAN FREEWAY SECTION
TWO-WAY SERVICE ROAD ON SOUTH SIDE WITH MUNICIPAL DRAIN AND BERM ON NORTH SIDE
MAXIMUM DEPTH OF EXCAVATION (9m) WITH SUPPORT OF EXCAVATION WALLS



PARKWAY

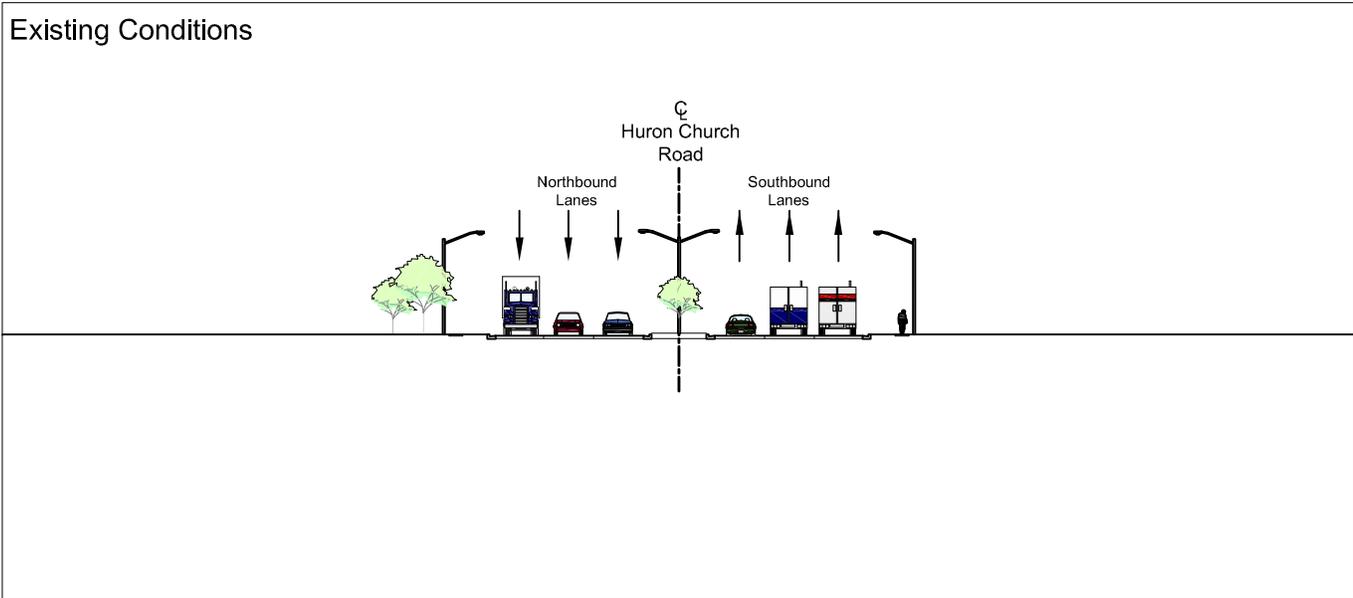
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Appendix C

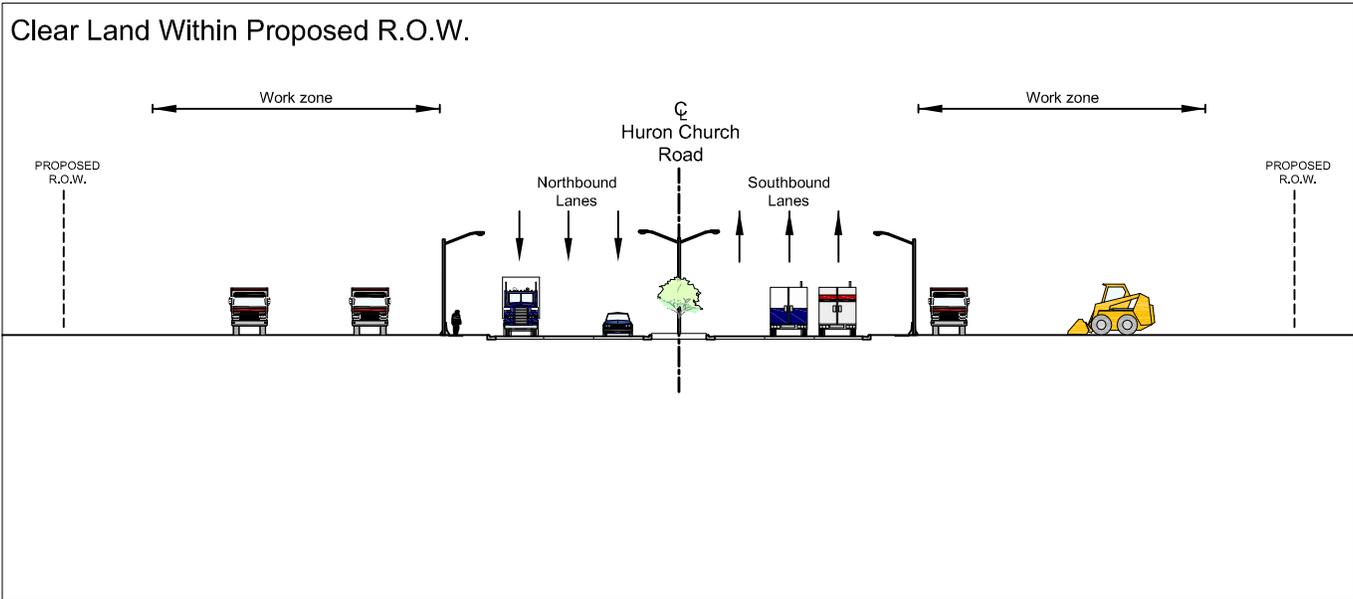
Conceptual Construction Methods

ALTERNATIVE 1A

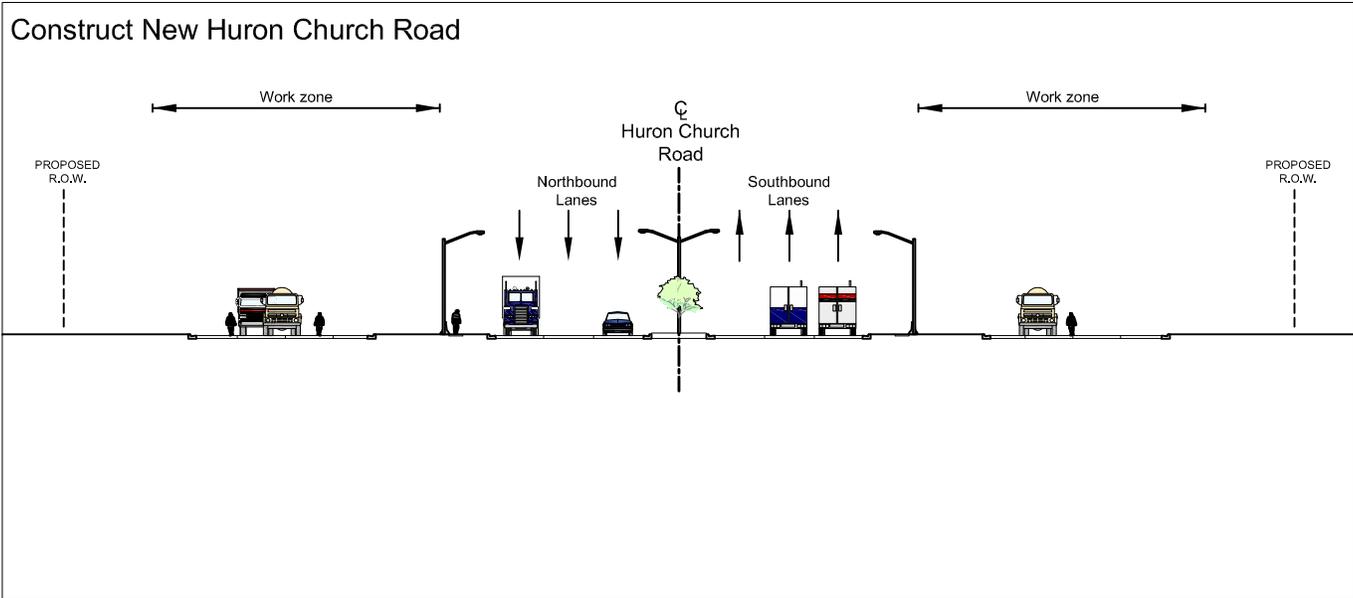
Existing Conditions



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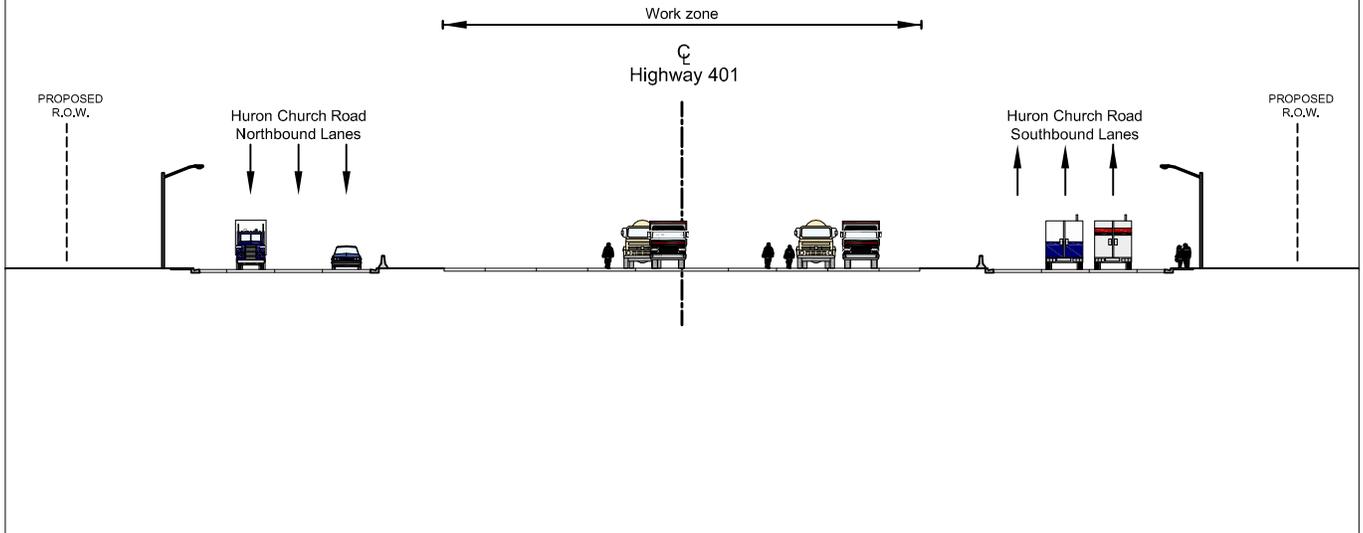


Construct New Huron Church Road

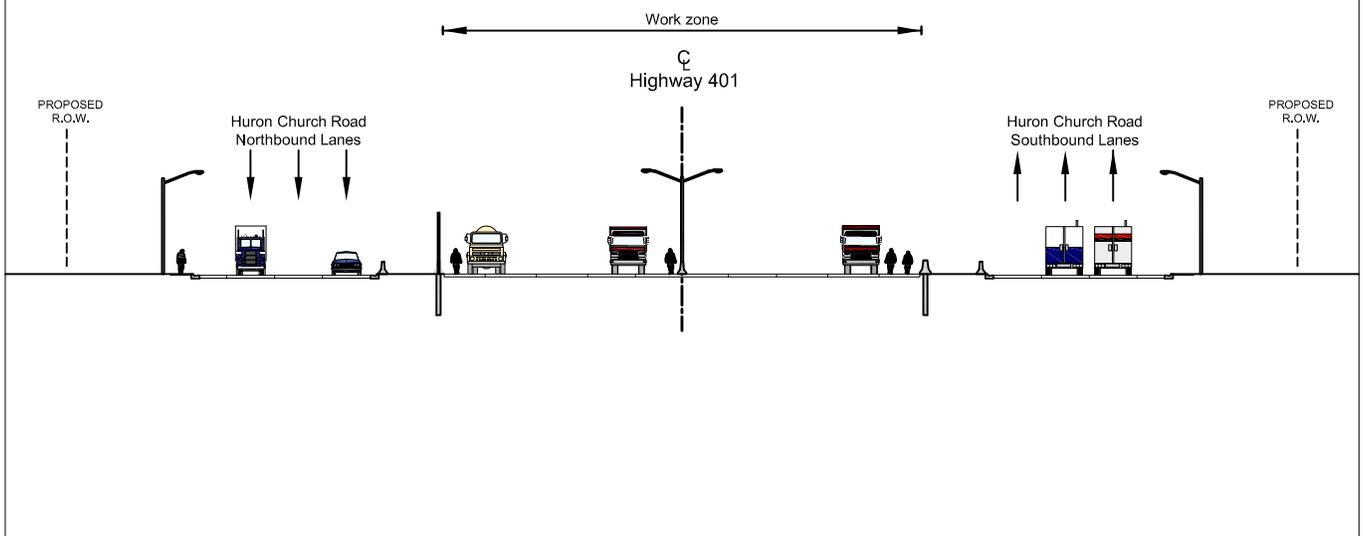


ALTERNATIVE 1A (CON'T)

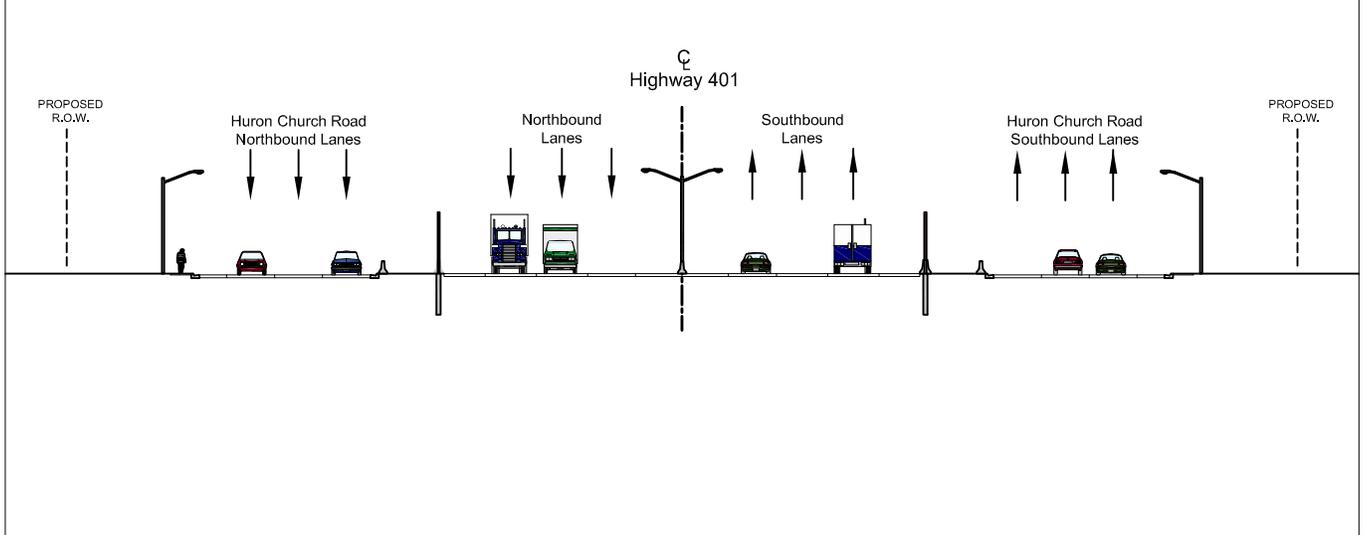
Relocate Traffic to New Huron Church Road & Construct Highway 401



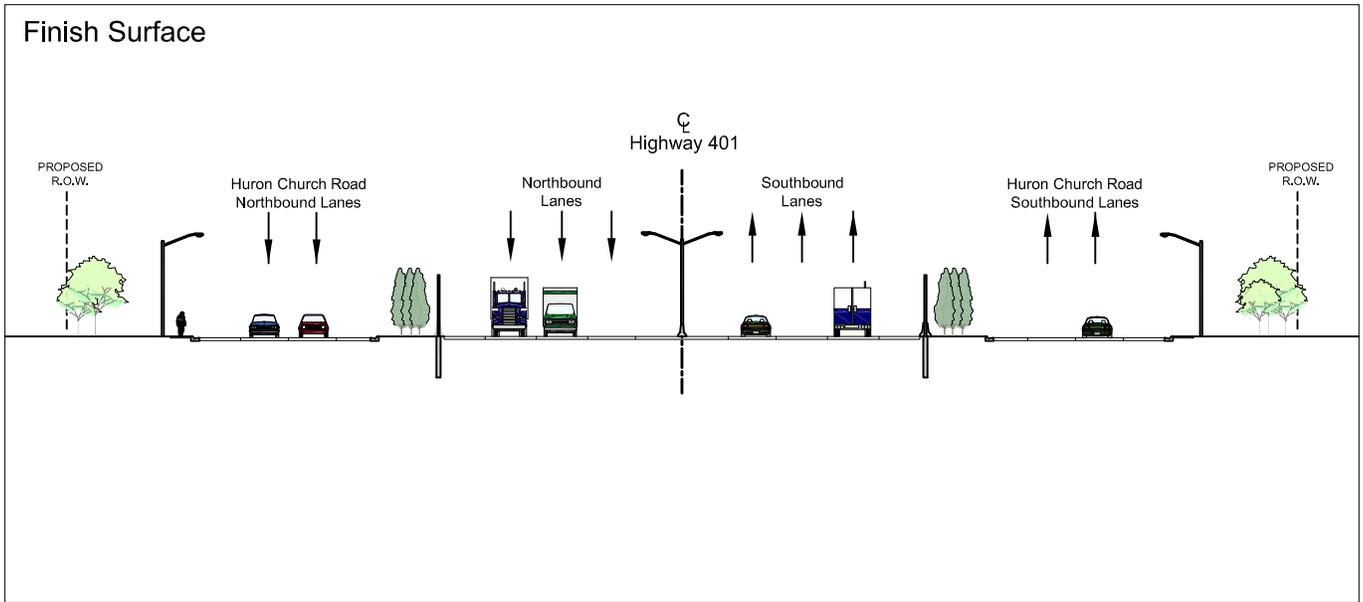
Install Noise Walls & Barriers



Open Traffic on Highway 401

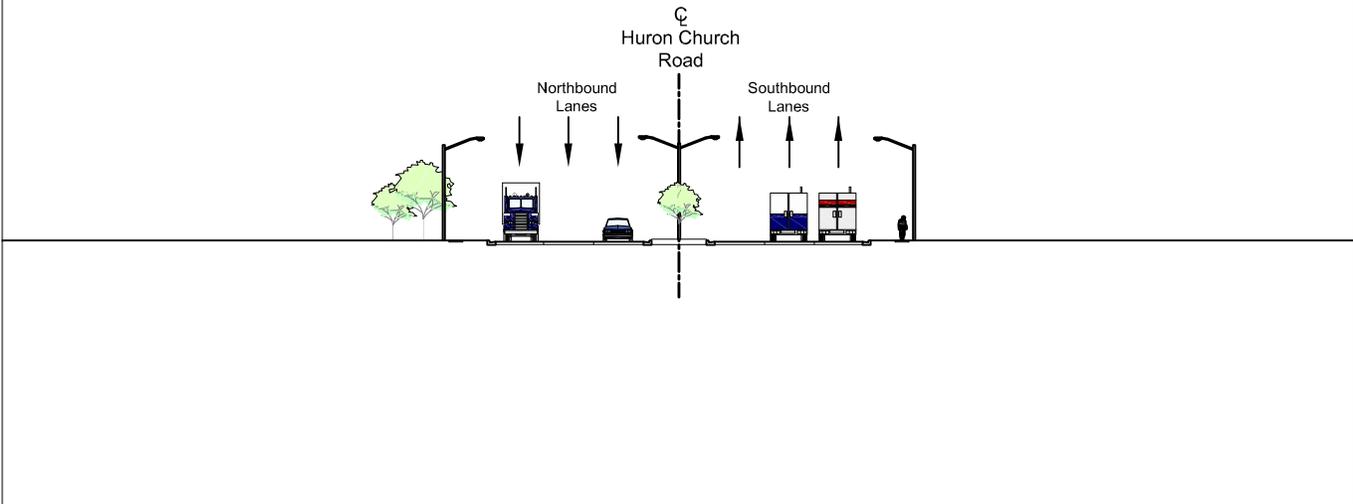


ALTERNATIVE 1A (CON'T)

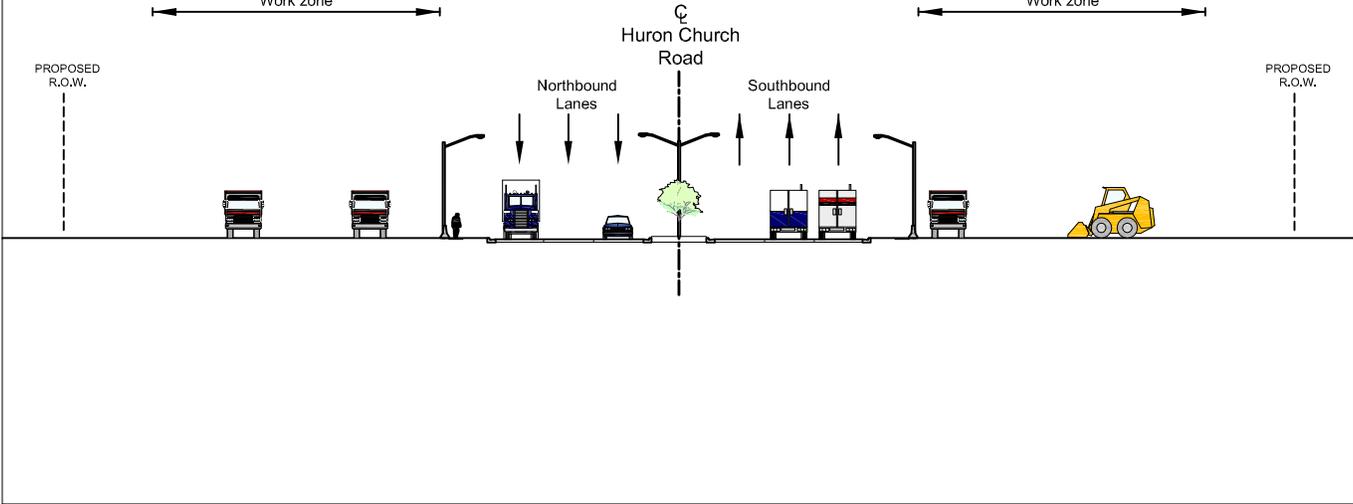


ALTERNATIVE 1B

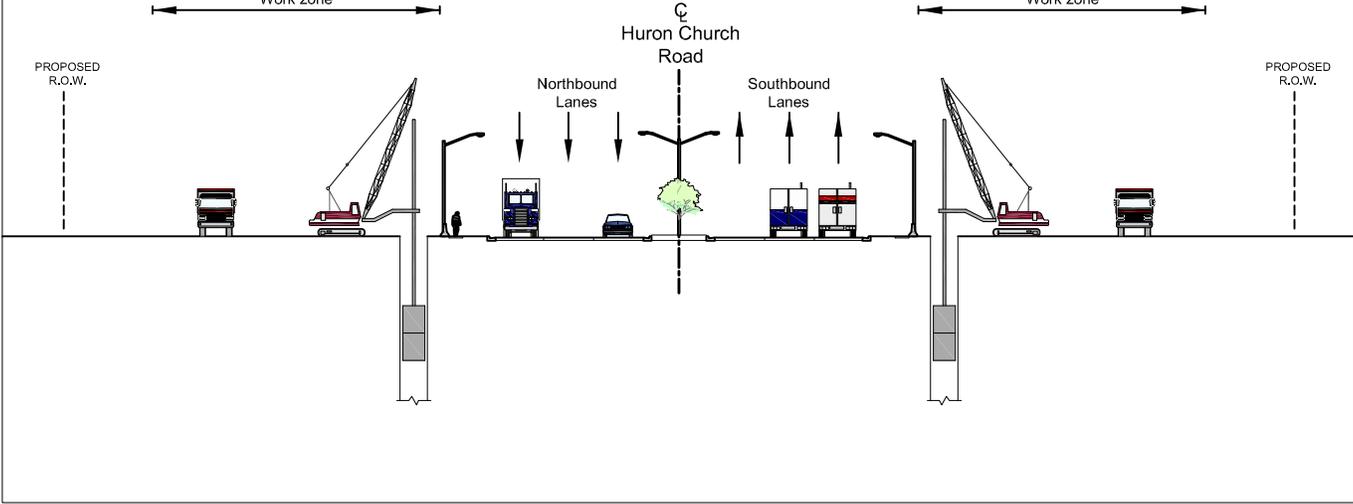
Existing Conditions



Clear Land Within Proposed R.O.W.

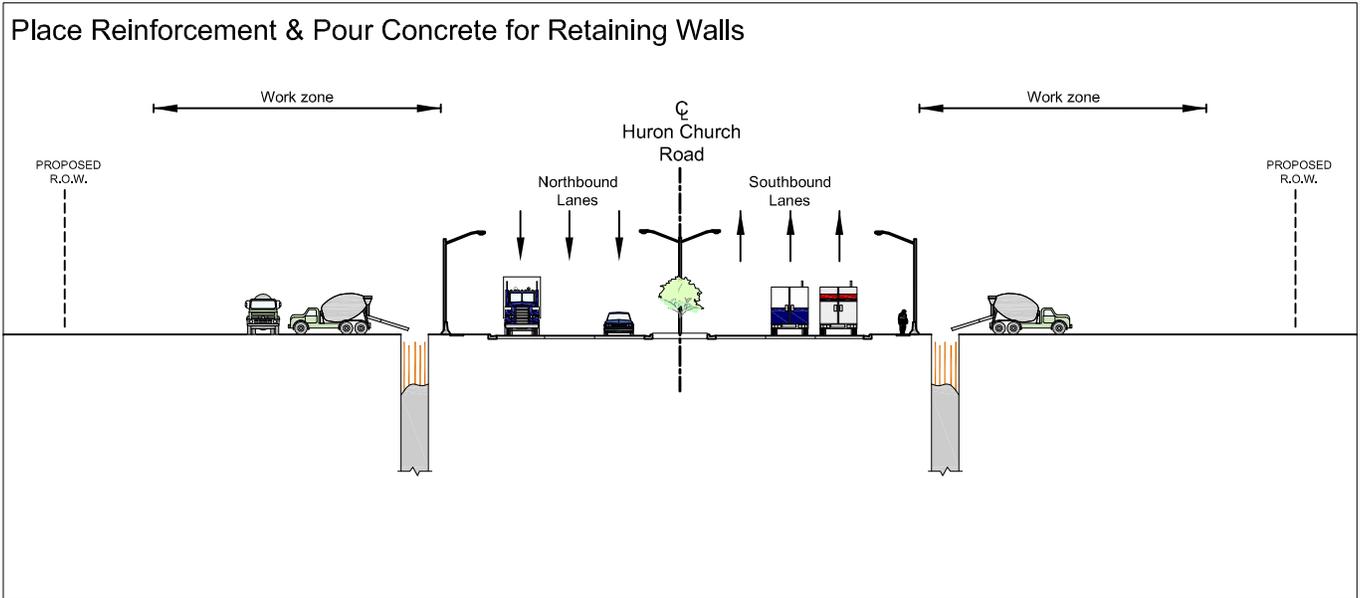


Excavate Trenches for Retaining Walls

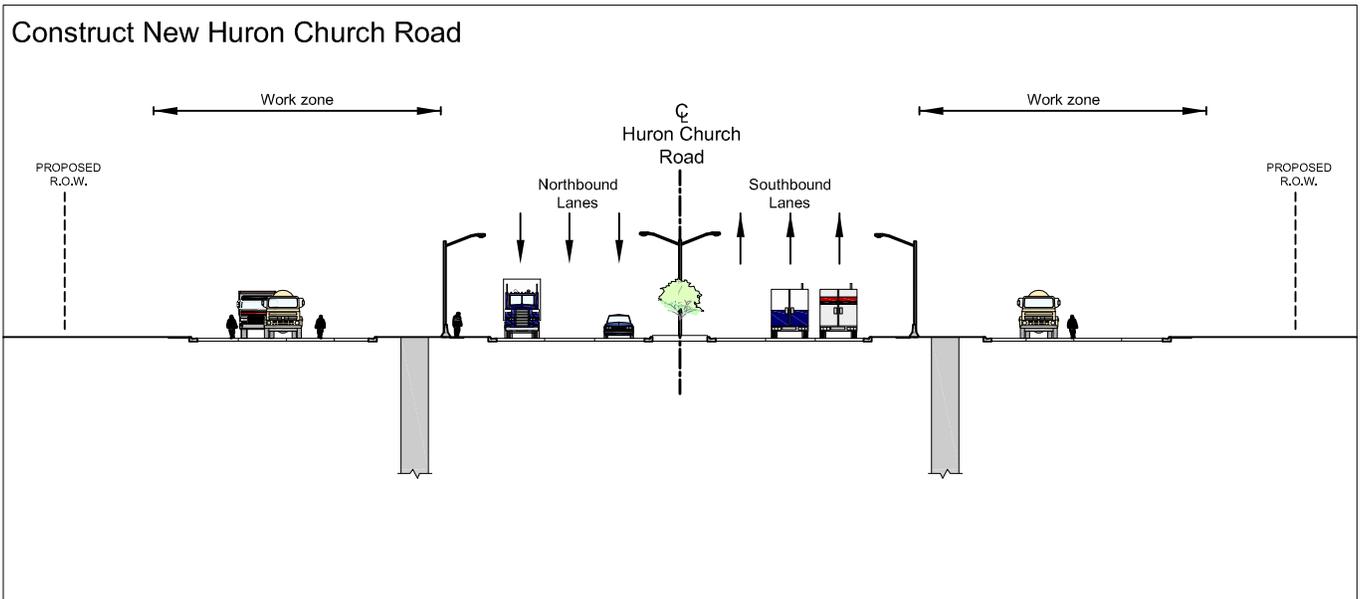


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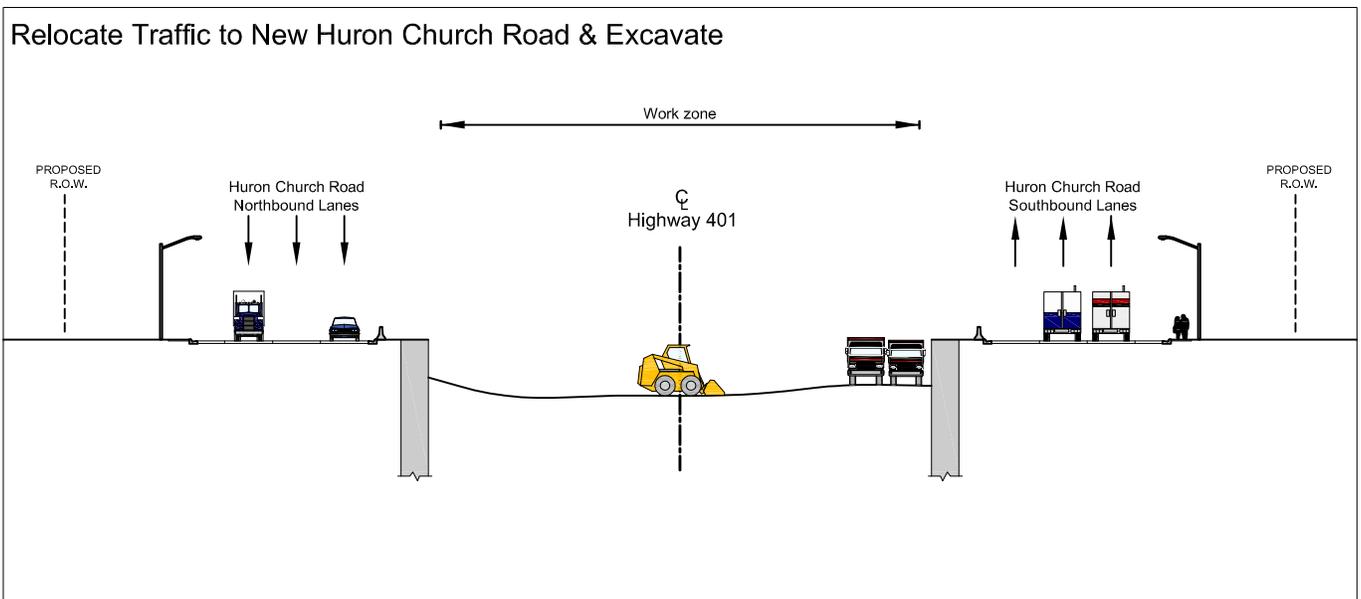
Place Reinforcement & Pour Concrete for Retaining Walls



Construct New Huron Church Road

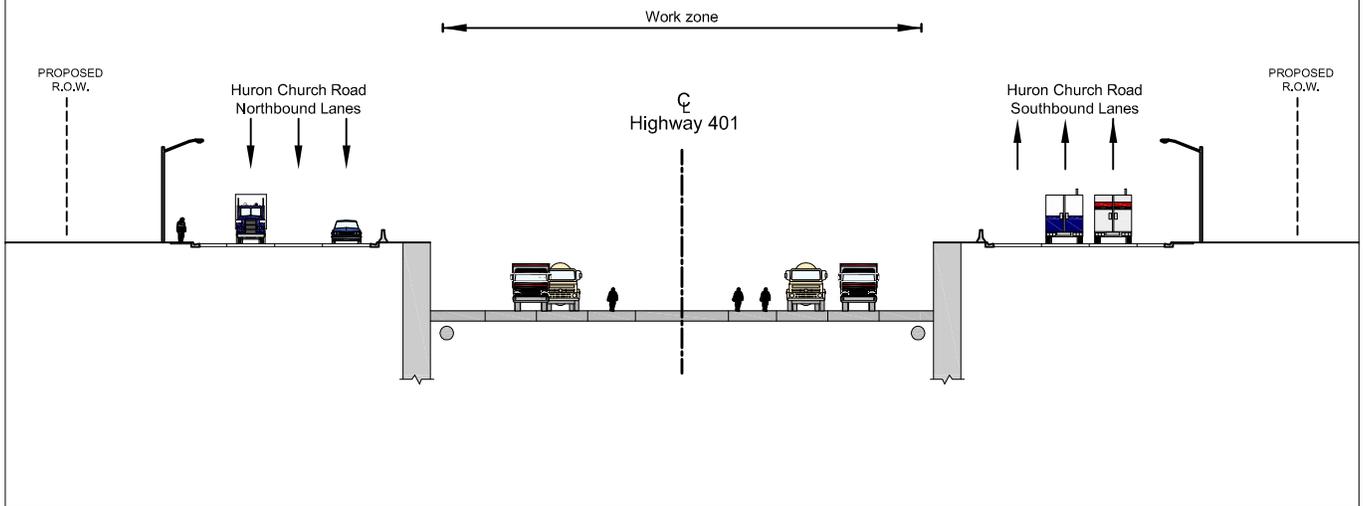


Relocate Traffic to New Huron Church Road & Excavate

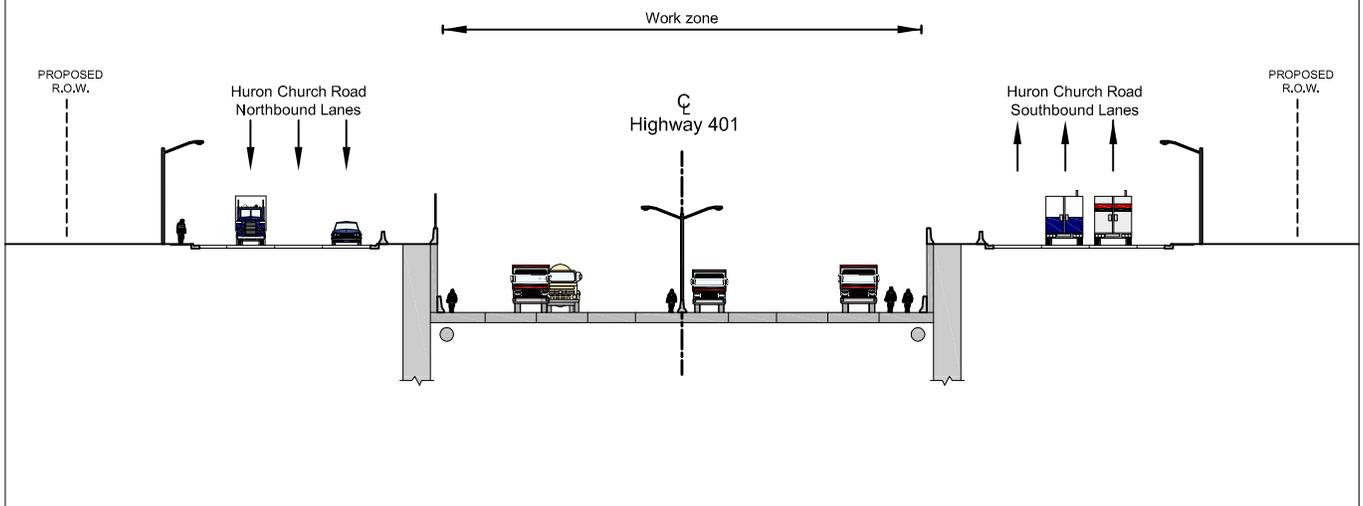


ALTERNATIVE 1B (CON'T)

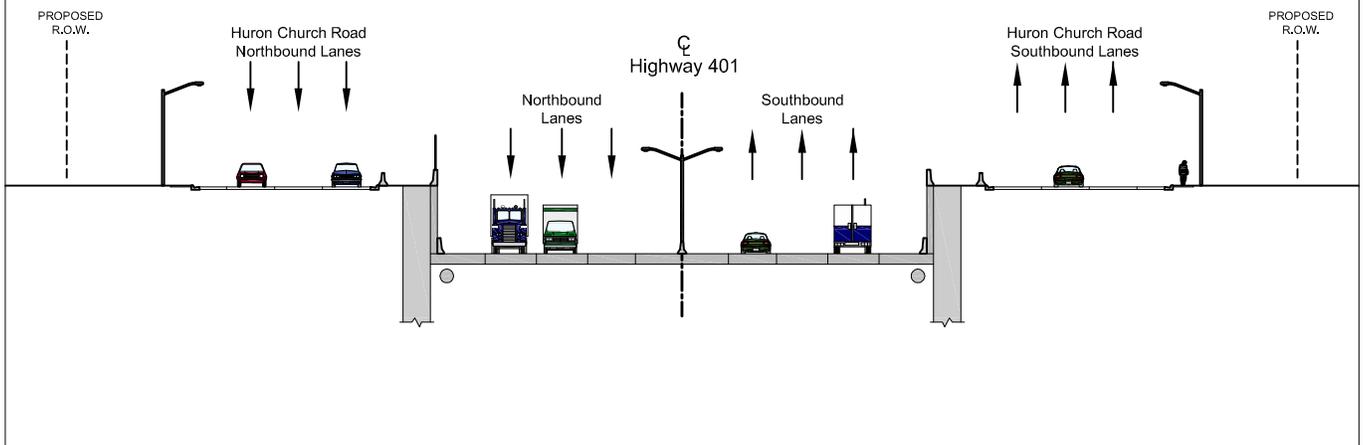
Install Drainage & Construct Highway 401



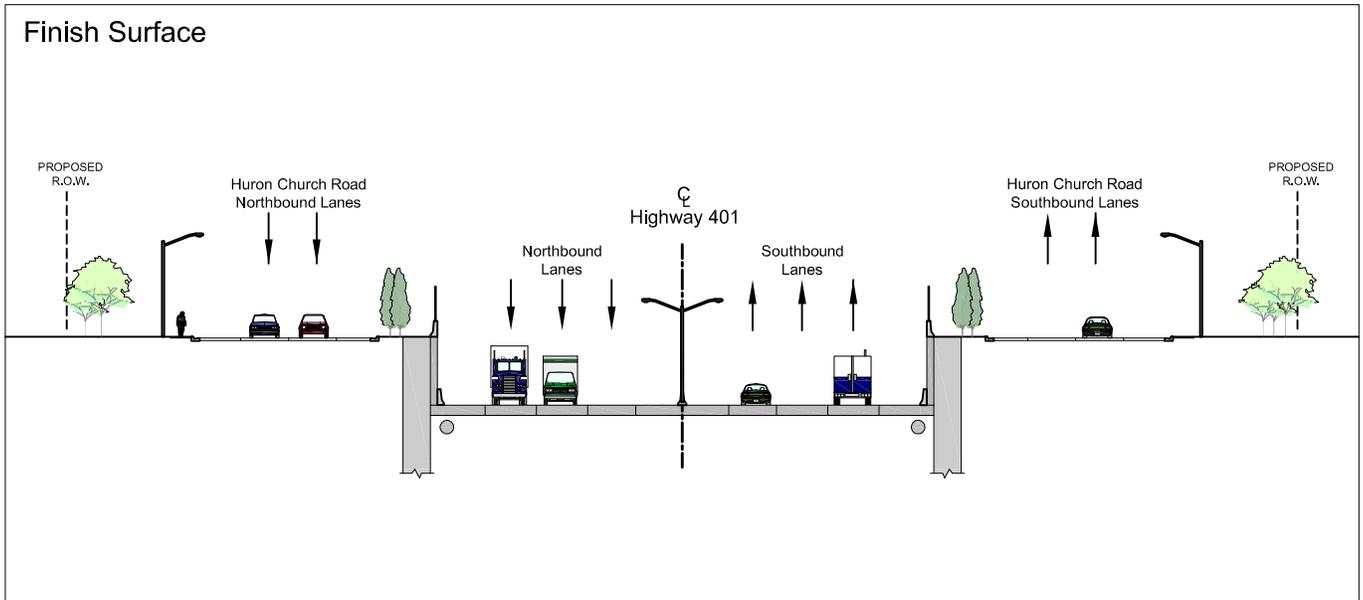
Install Barriers & Complete Finishes



Open Traffic on Highway 401

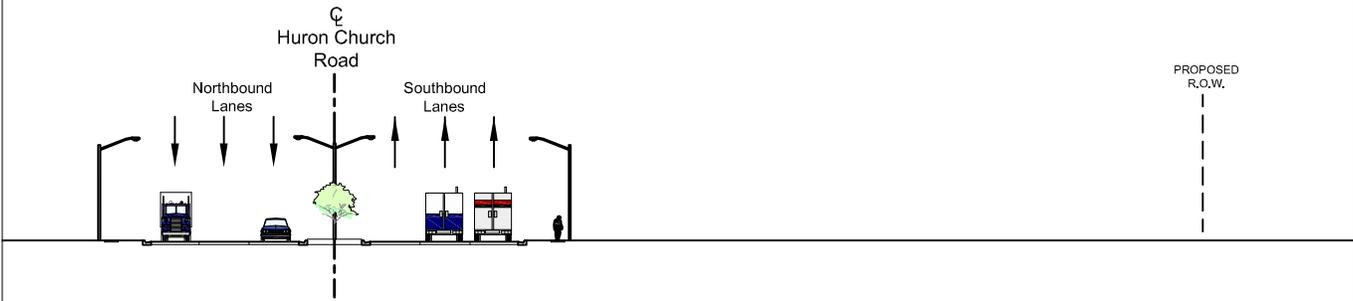


ALTERNATIVE 1B (CON'T)

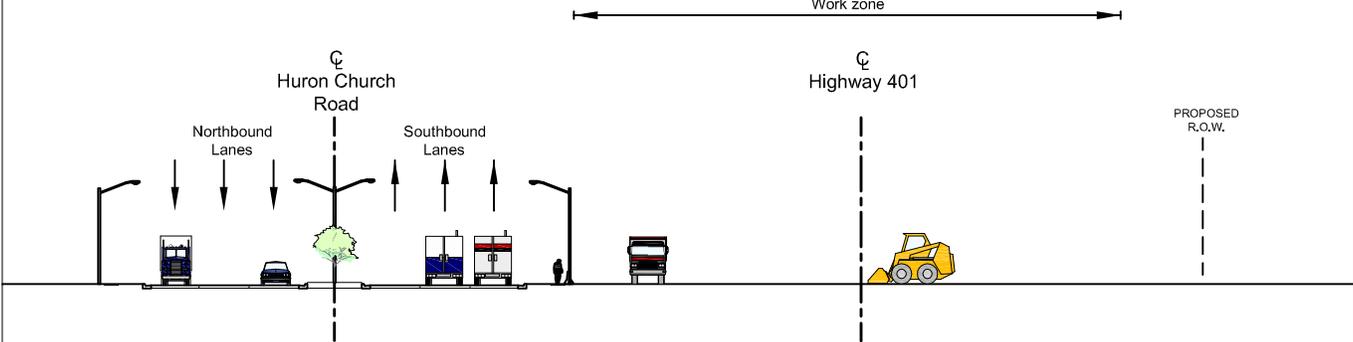


ALTERNATIVE 2A

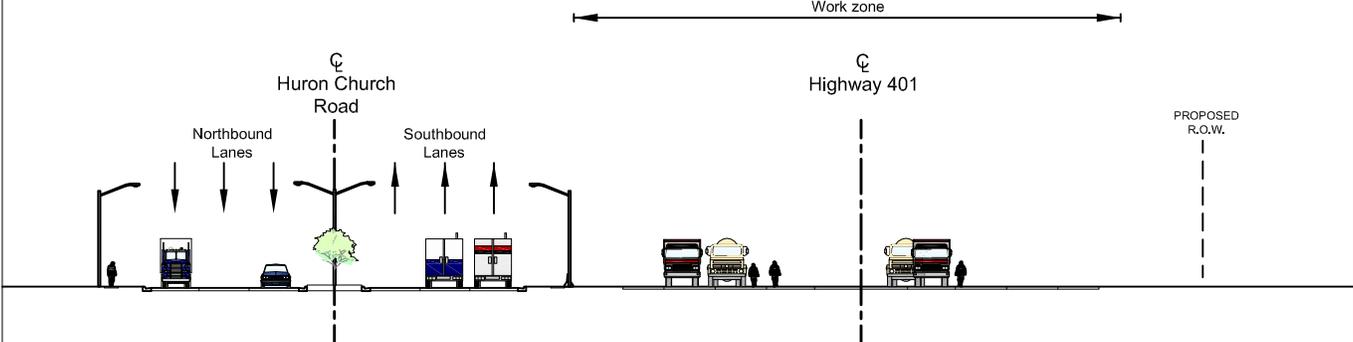
Existing Conditions



Clear Land Within Proposed R.O.W.

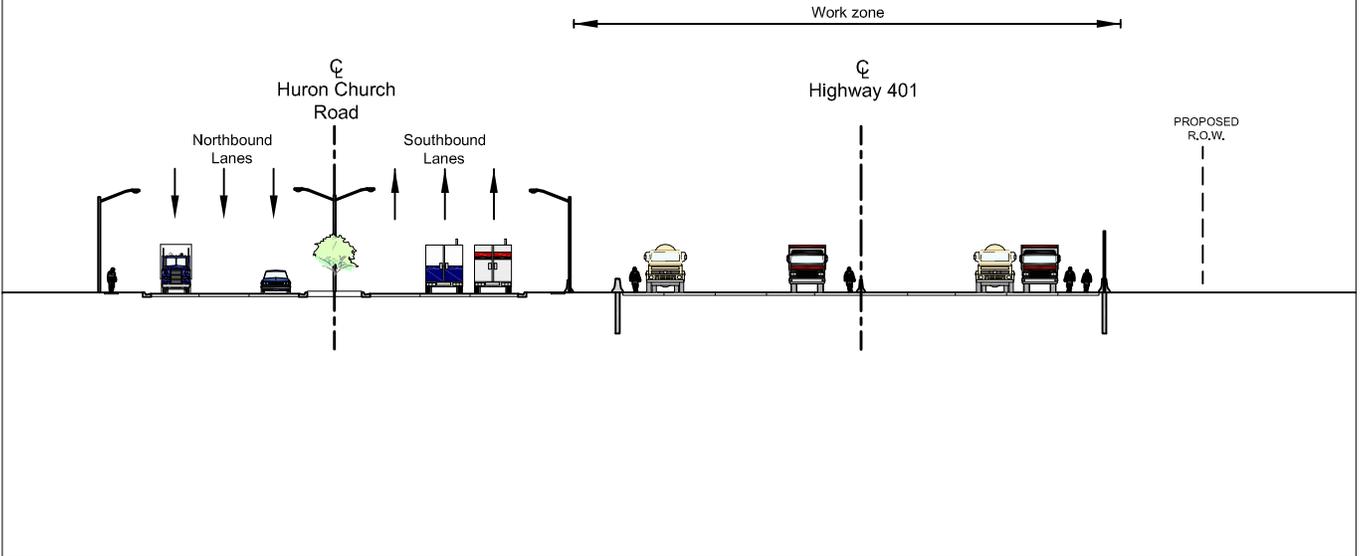


Construct Highway 401

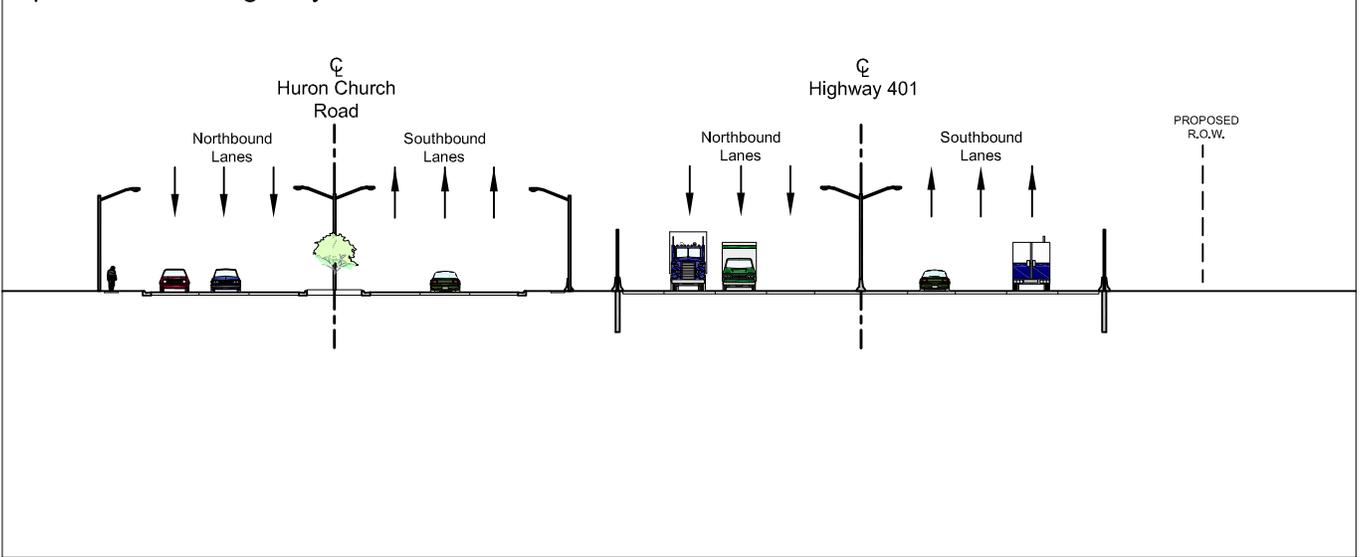


ALTERNATIVE 2A (CON'T)

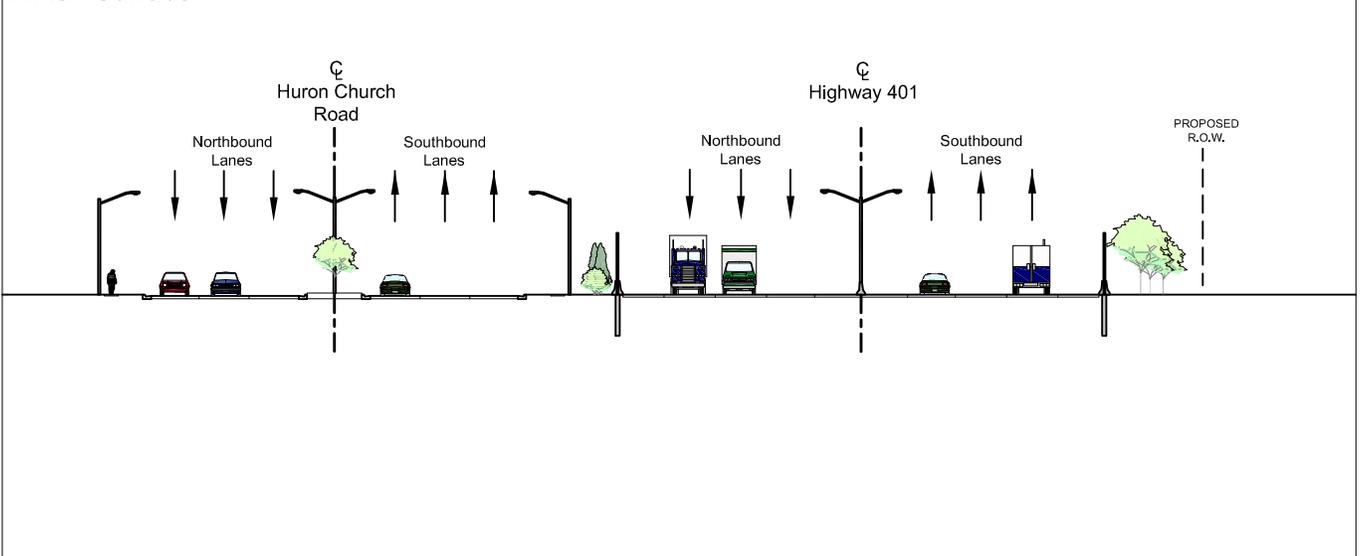
Install Noise Walls & Barriers



Open Traffic on Highway 401

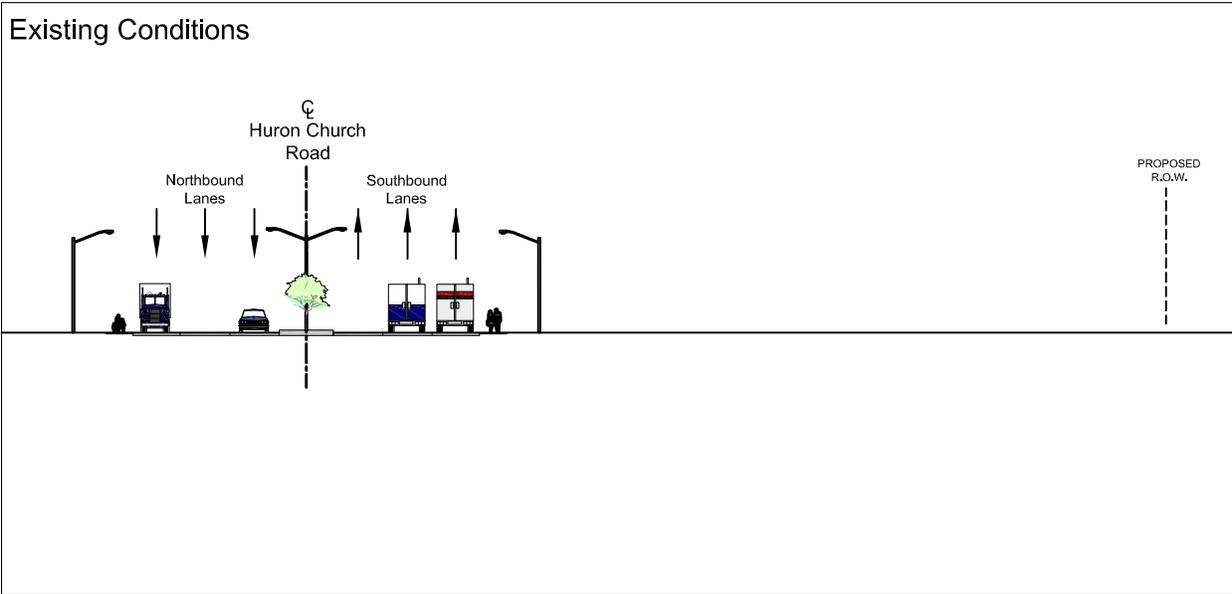


Finish Surface

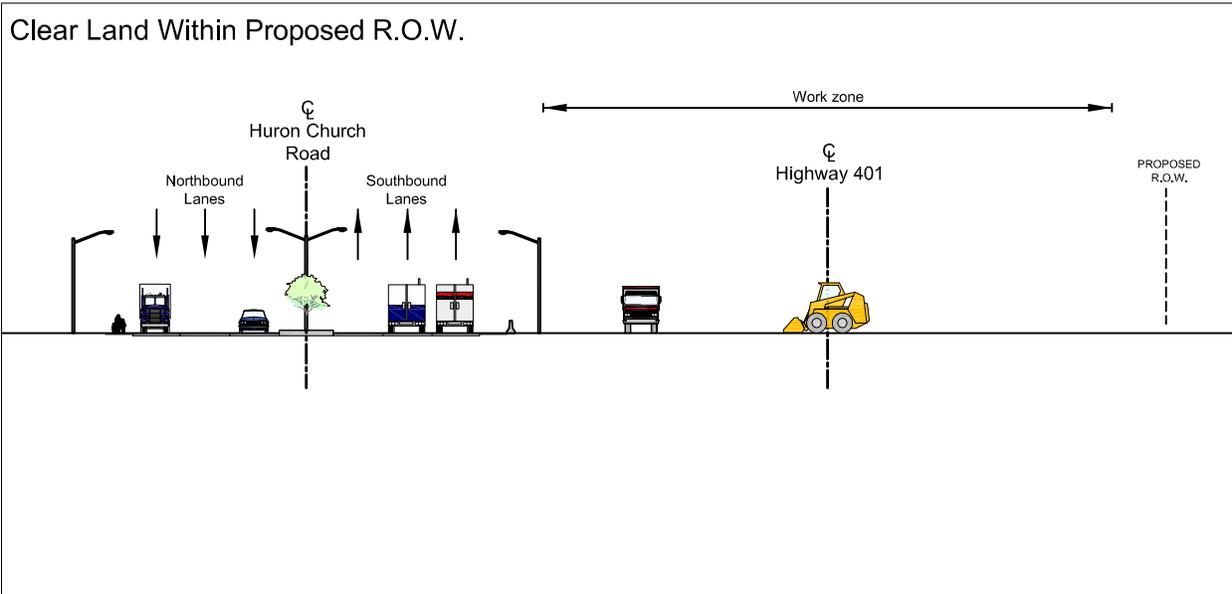


ALTERNATIVE 2B/ PARKWAY

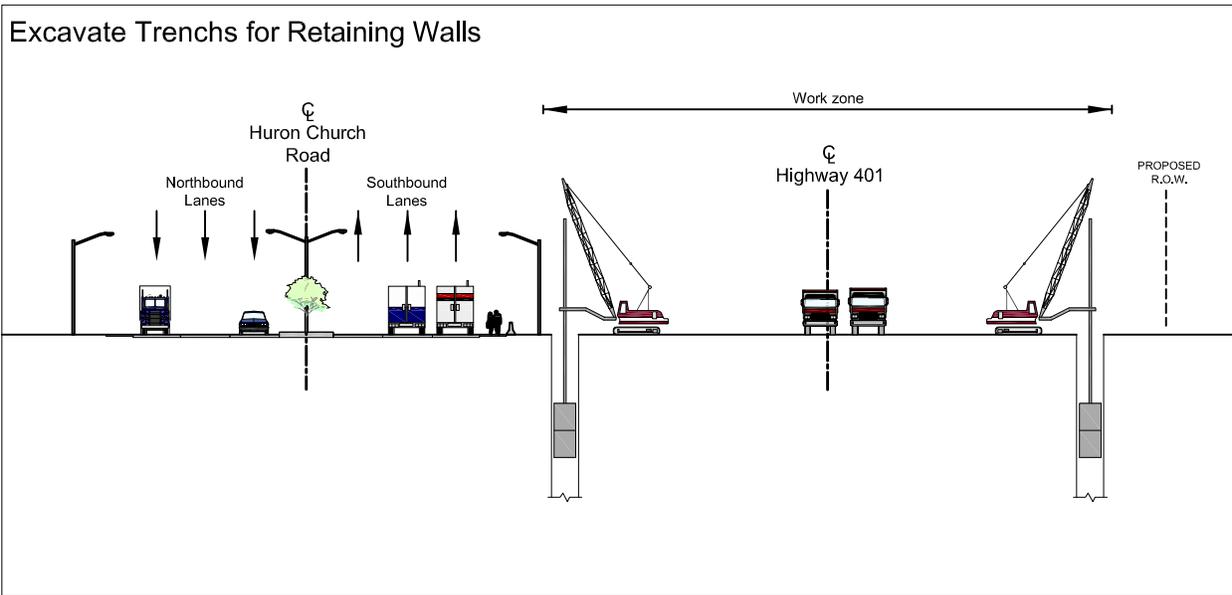
Existing Conditions



Clear Land Within Proposed R.O.W.

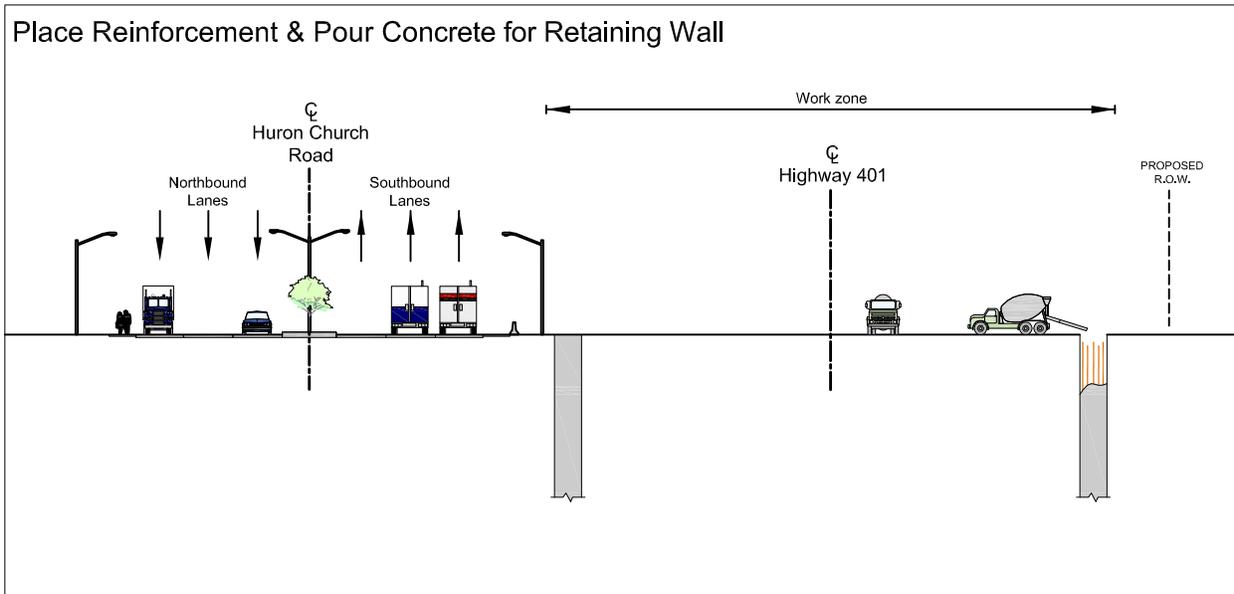


Excavate Trenches for Retaining Walls

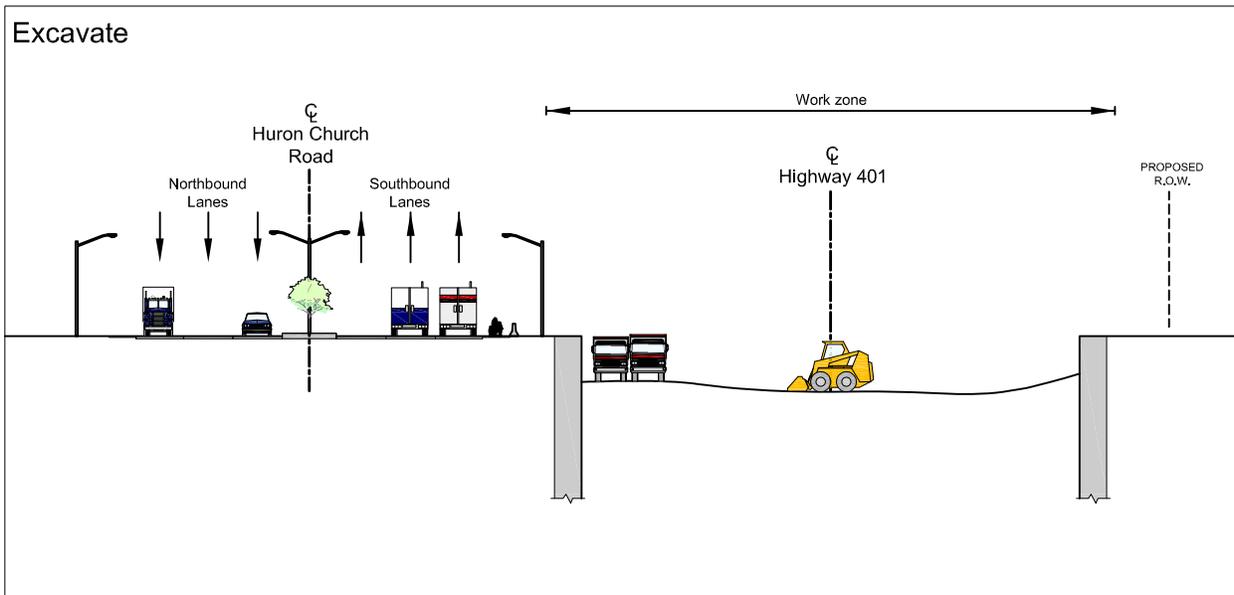


ALTERNATIVE 2B/ PARKWAY(CON'T)

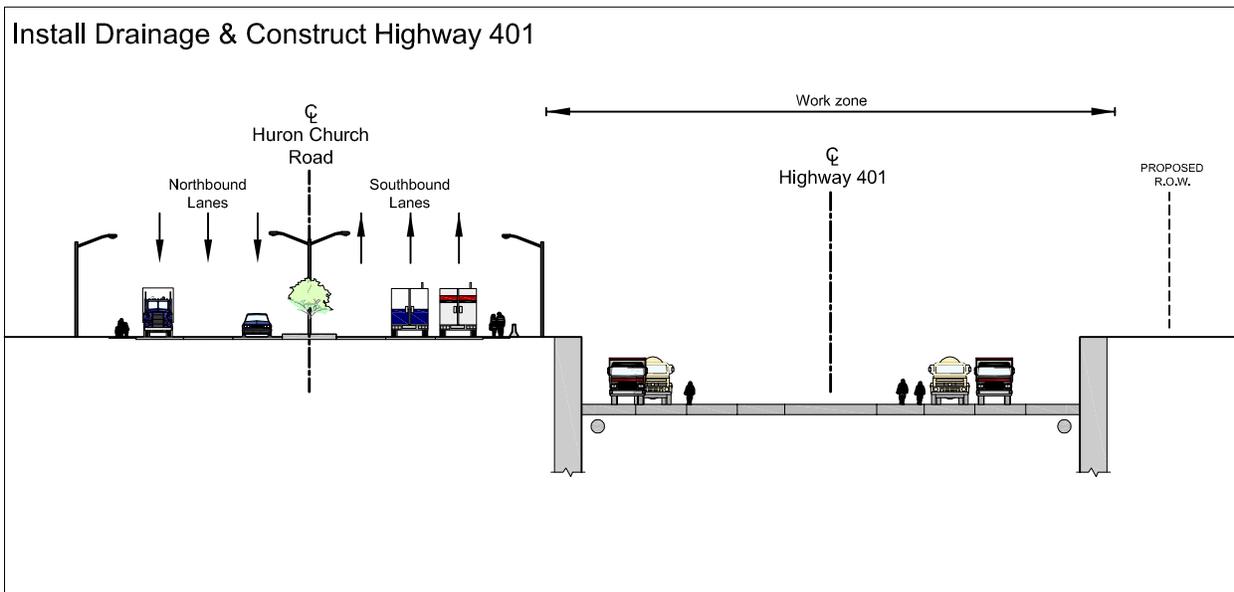
Place Reinforcement & Pour Concrete for Retaining Wall



Excavate

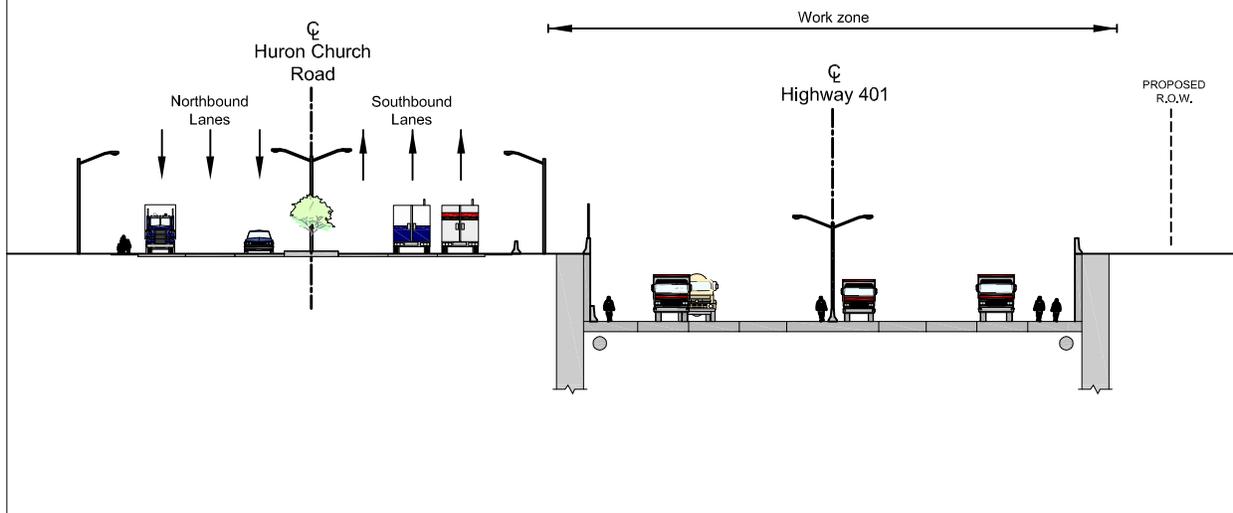


Install Drainage & Construct Highway 401

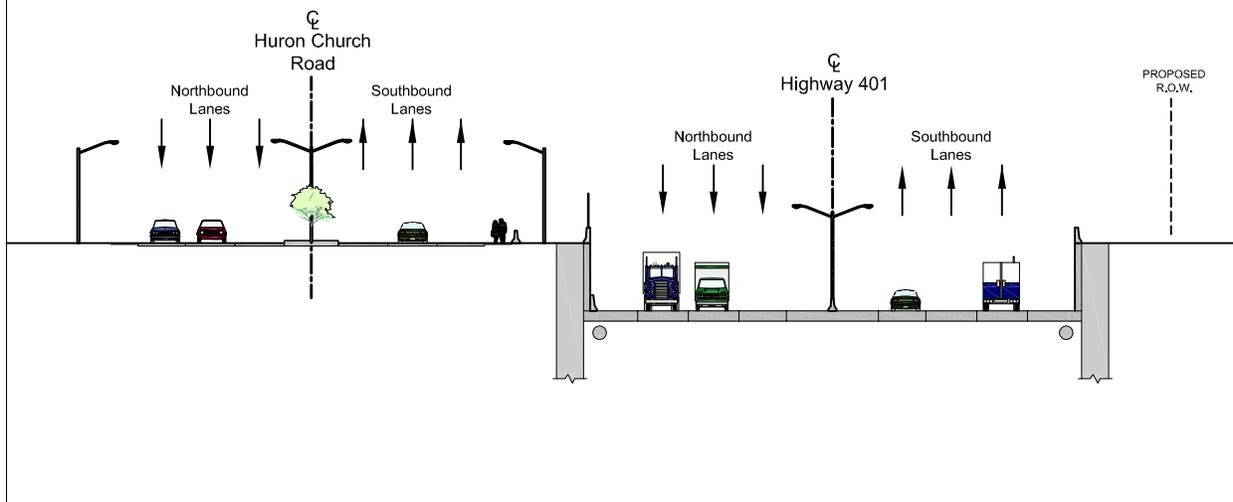


ALTERNATIVE 2B/ PARKWAY(CON'T)

Install Barriers & Complete Finishes

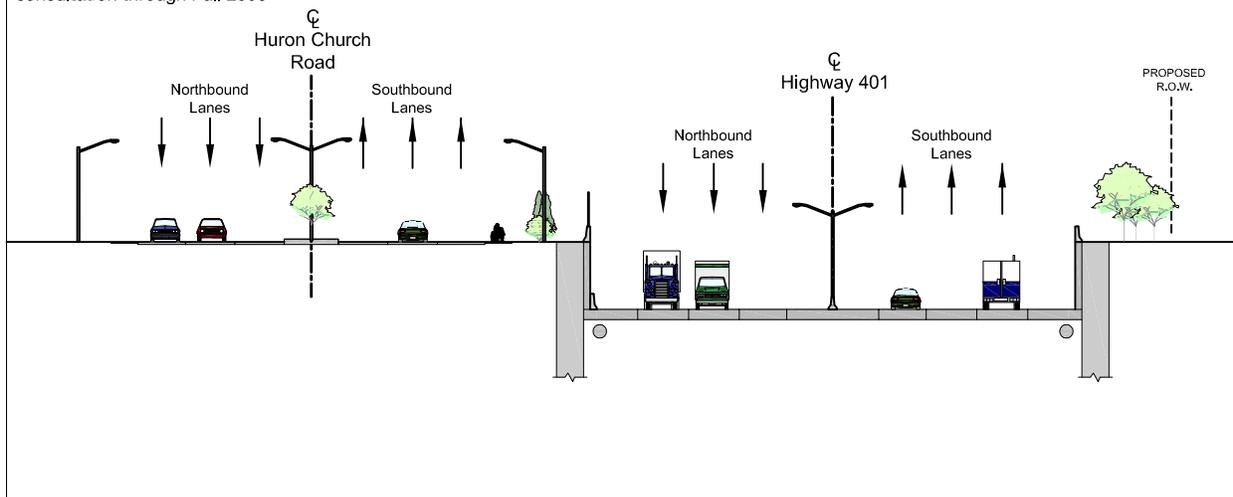


Open Traffic on Highway 401



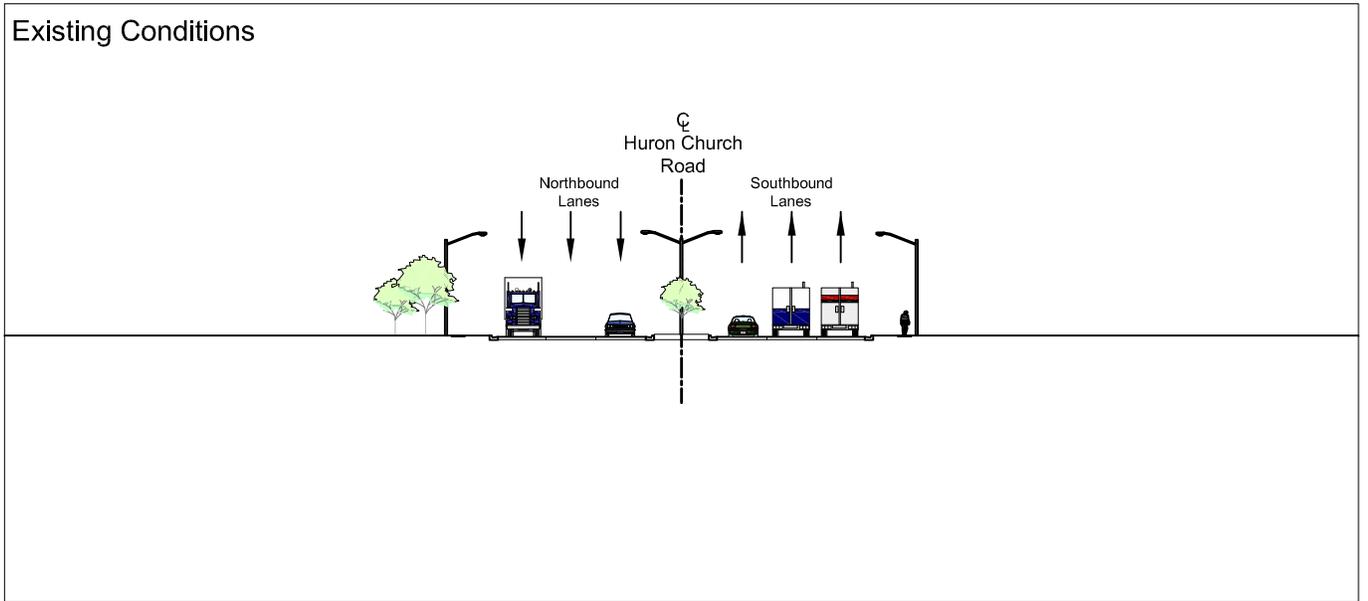
Finish Surface

Note: Design elements such as landscaping and treatments are being developed through public consultation through Fall 2006

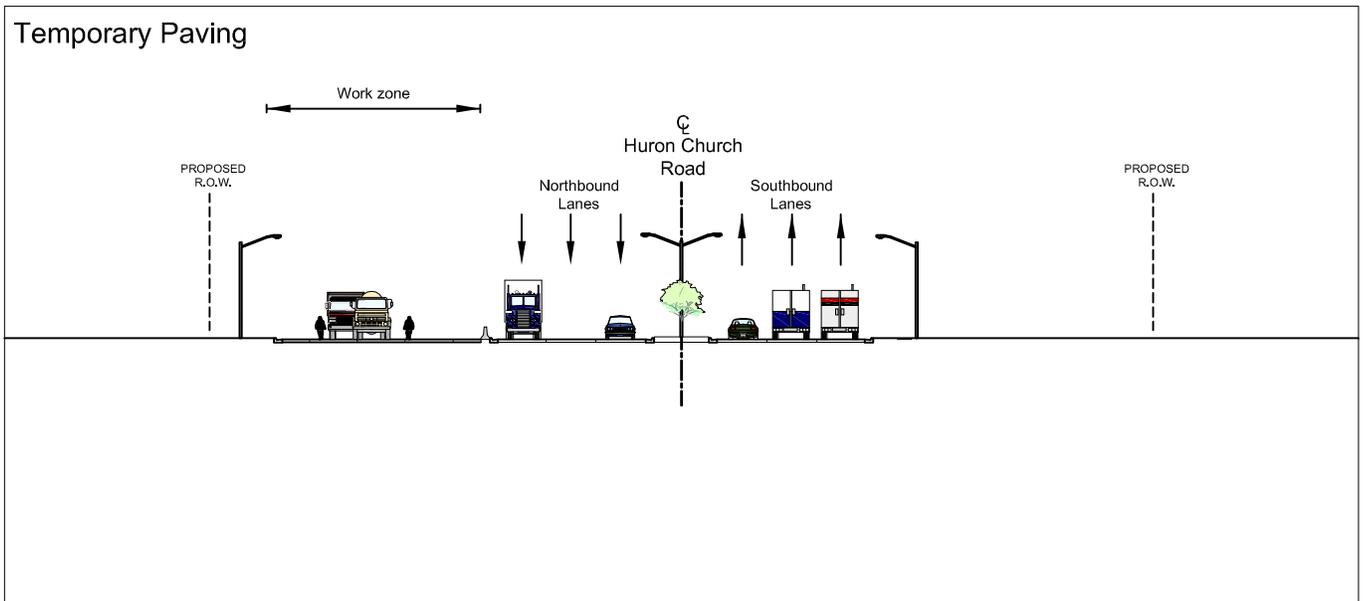


ALTERNATIVE 3

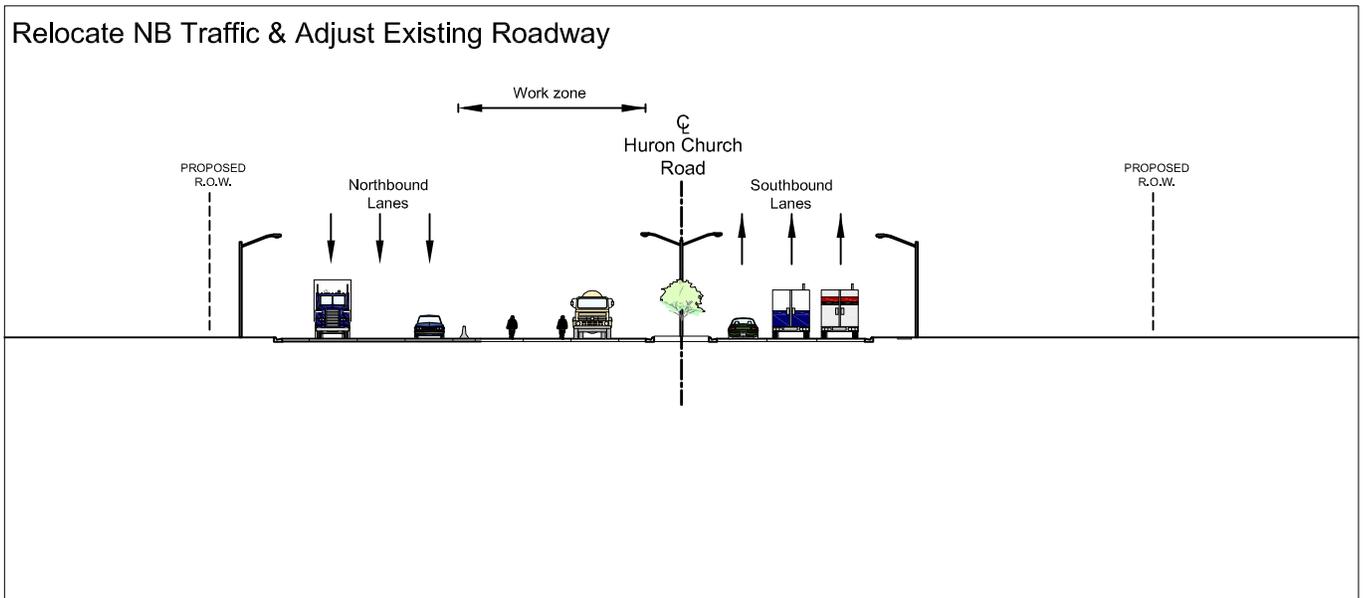
Existing Conditions



Temporary Paving

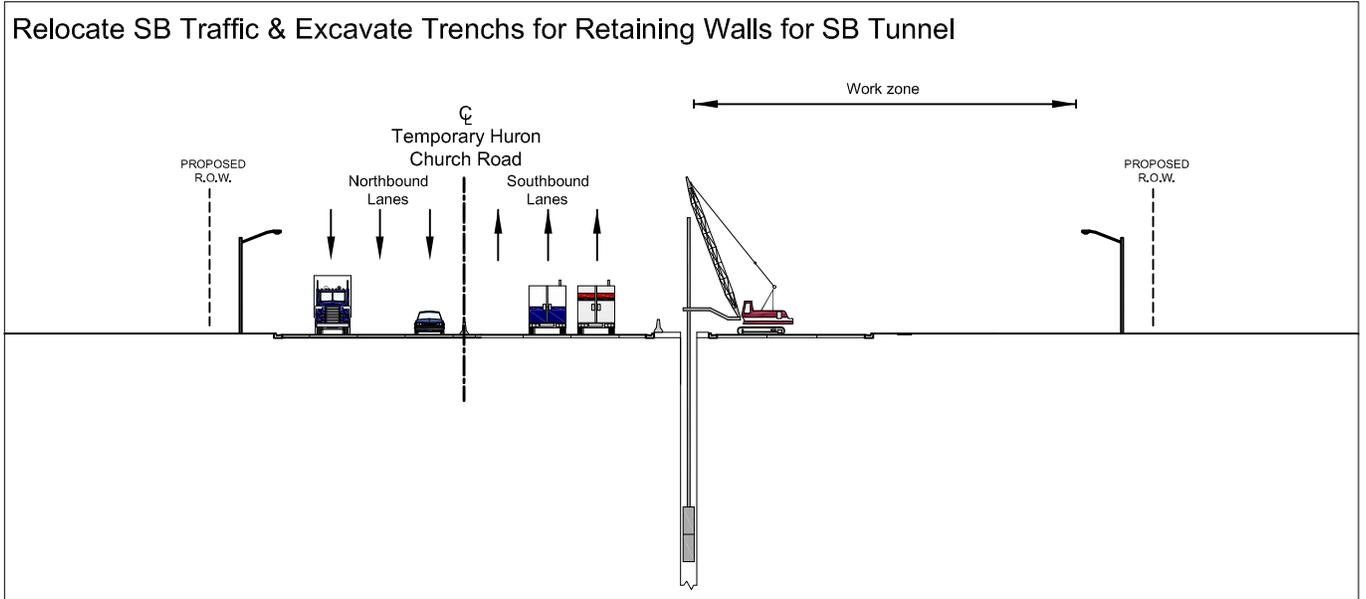


Relocate NB Traffic & Adjust Existing Roadway

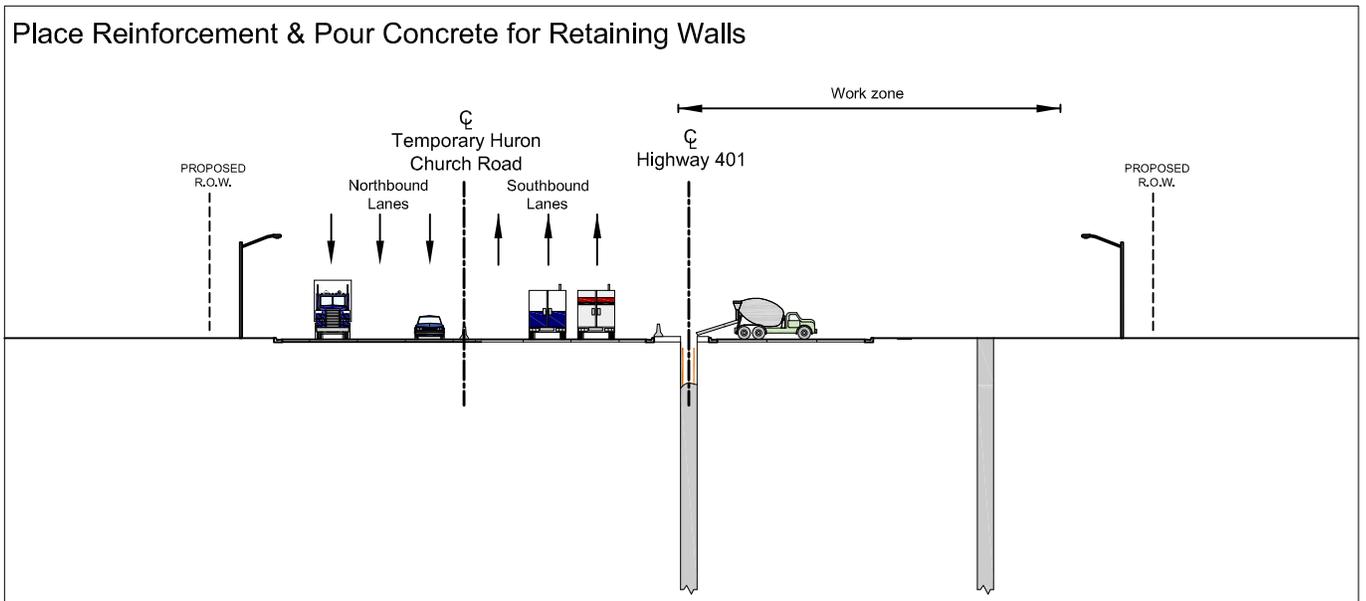


ALTERNATIVE 3 (CON'T)

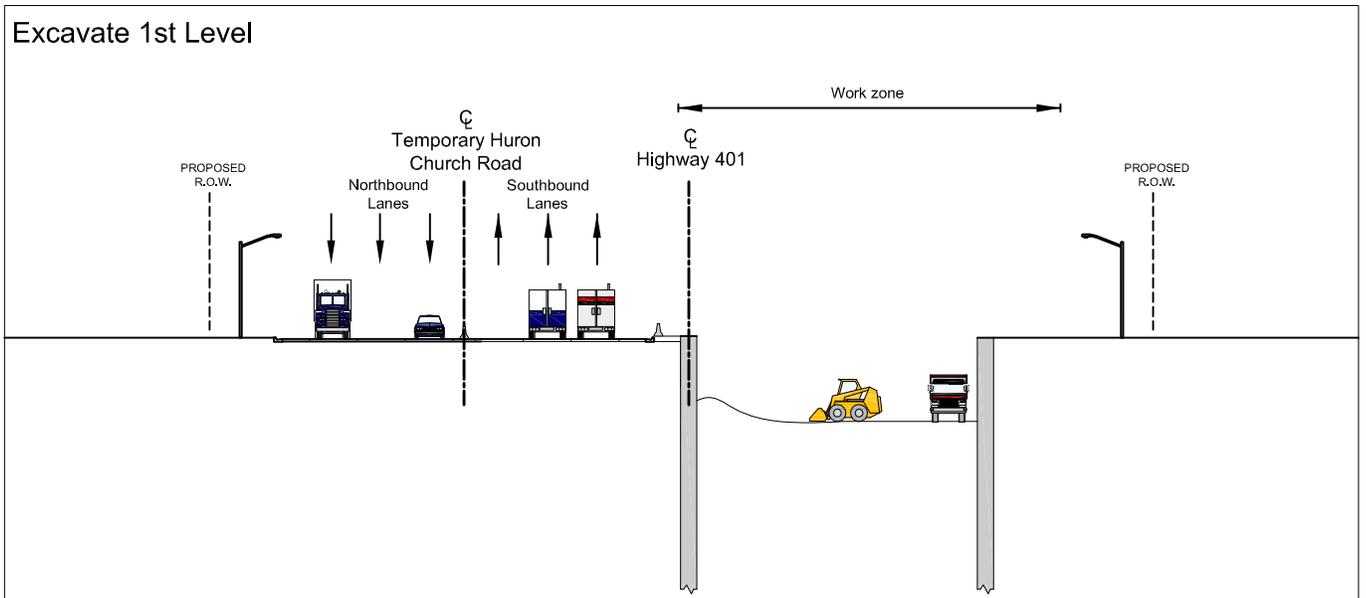
Relocate SB Traffic & Excavate Trenches for Retaining Walls for SB Tunnel



Place Reinforcement & Pour Concrete for Retaining Walls

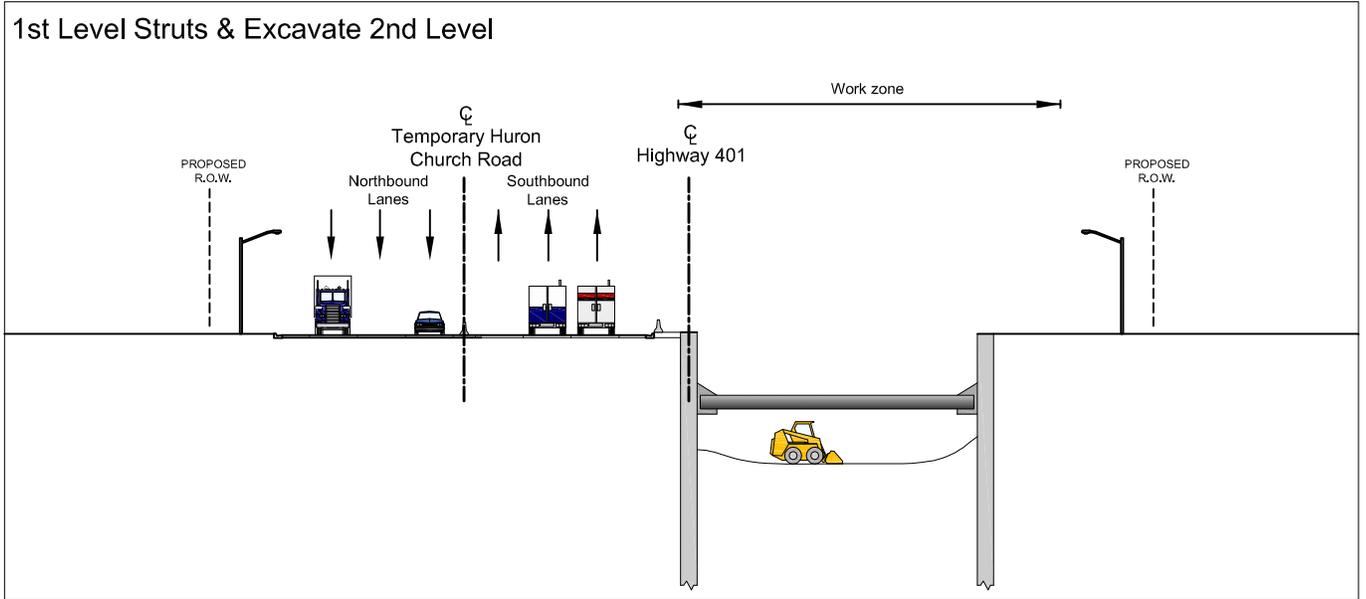


Excavate 1st Level

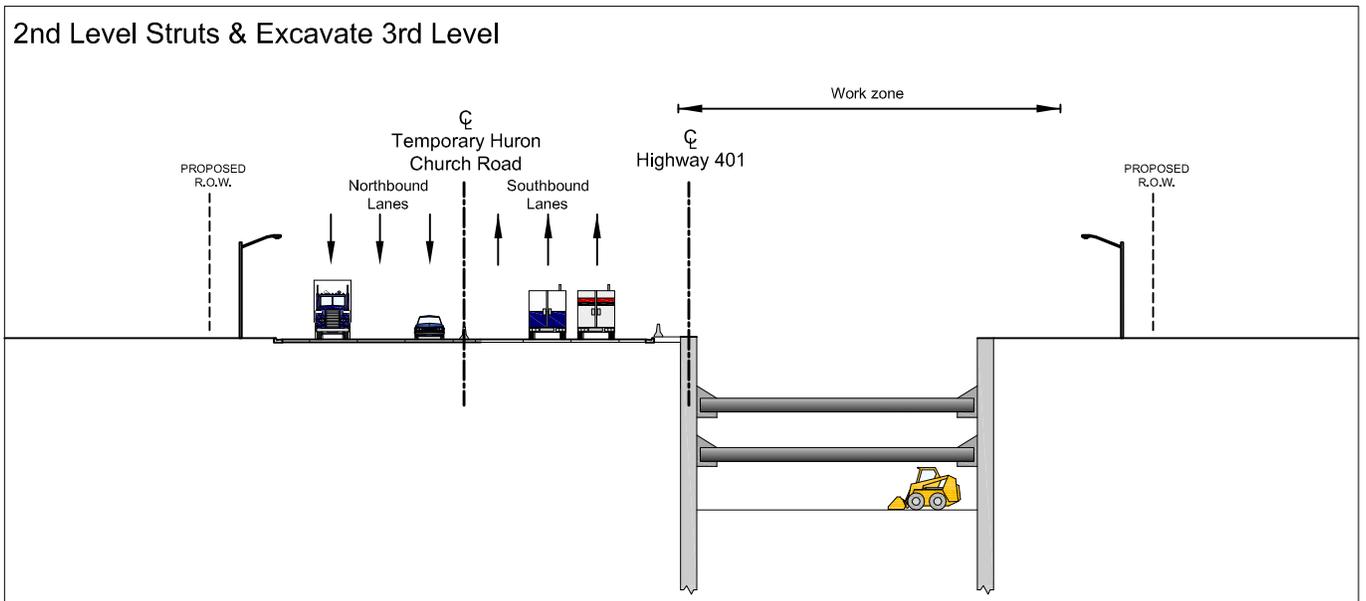


ALTERNATIVE 3 (CON'T)

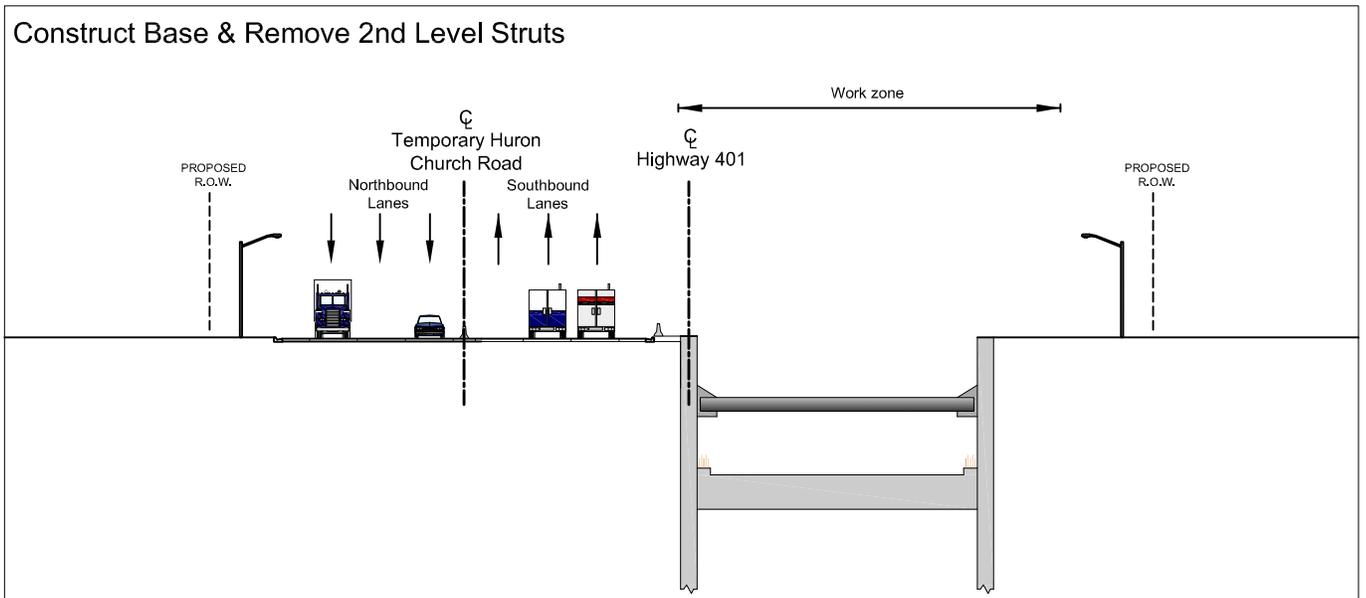
1st Level Struts & Excavate 2nd Level



2nd Level Struts & Excavate 3rd Level

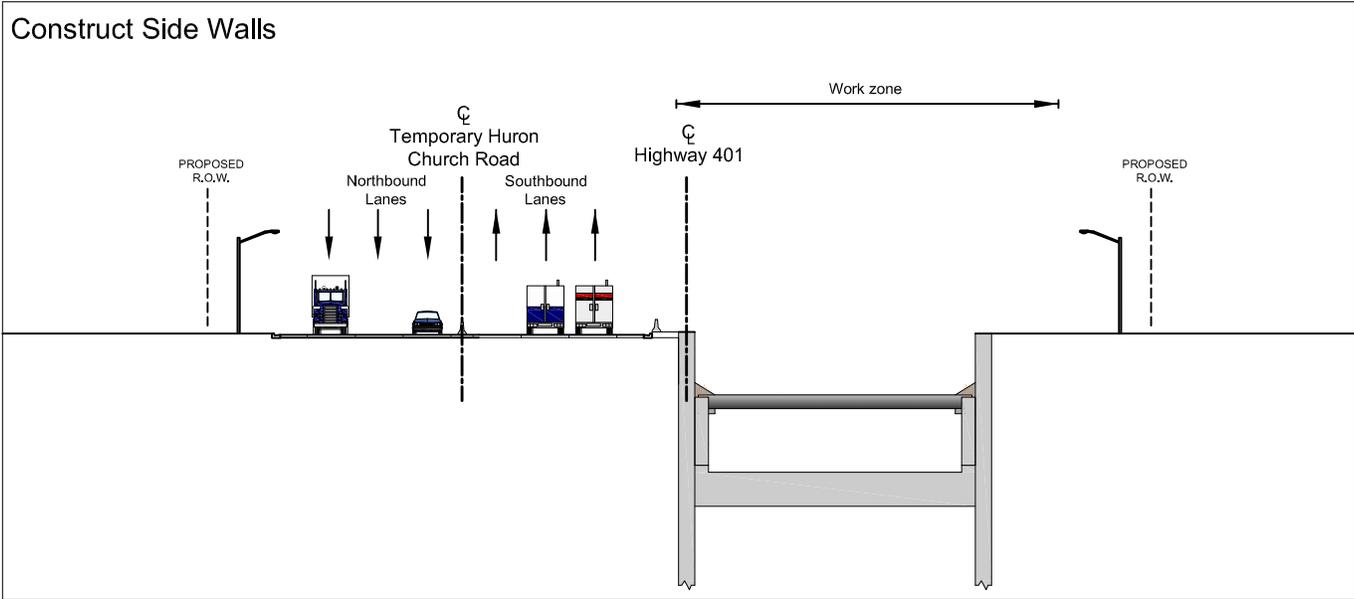


Construct Base & Remove 2nd Level Struts

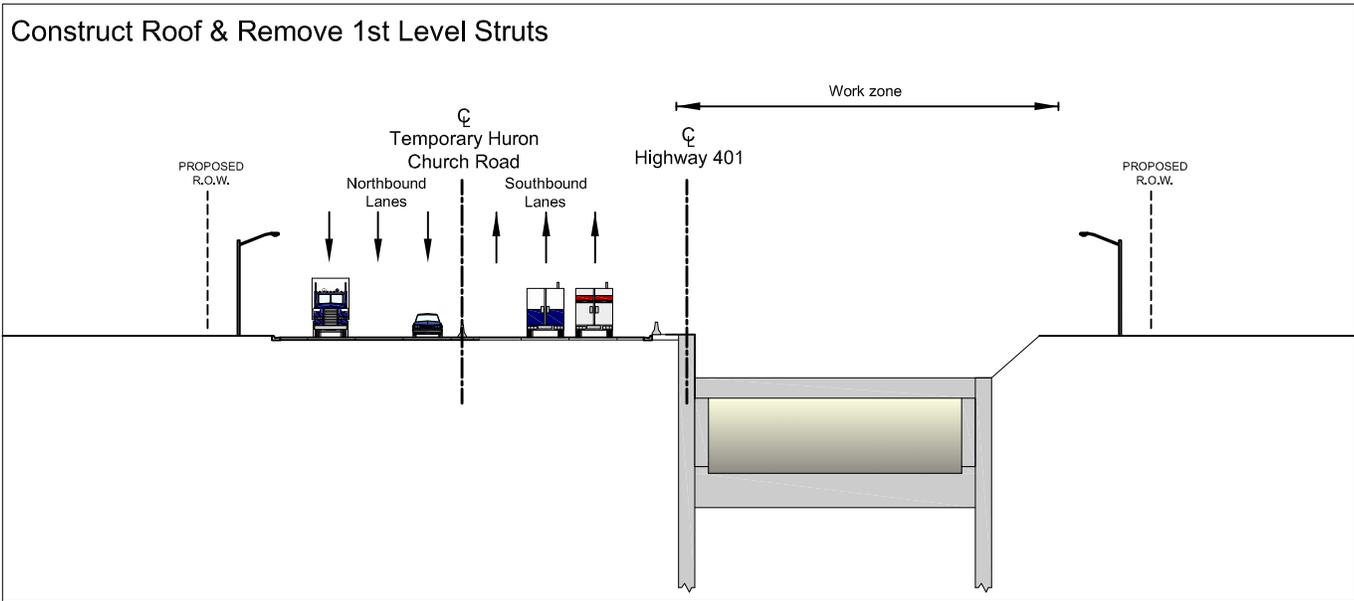


ALTERNATIVE 3 (CON'T)

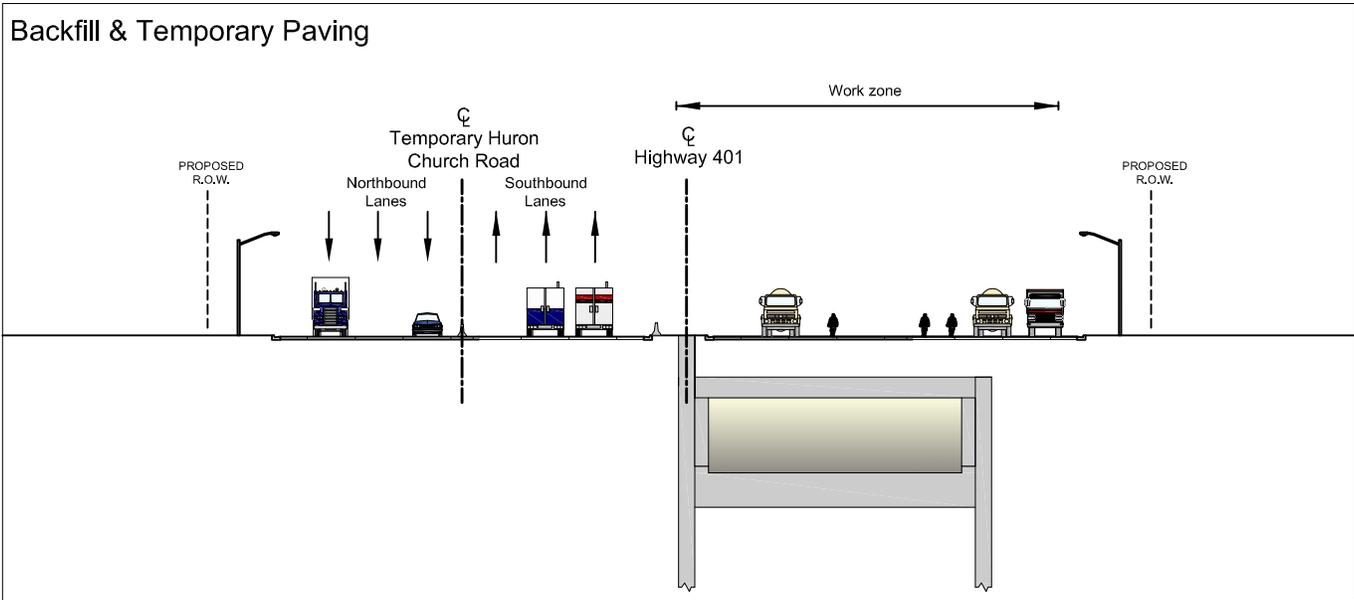
Construct Side Walls



Construct Roof & Remove 1st Level Struts

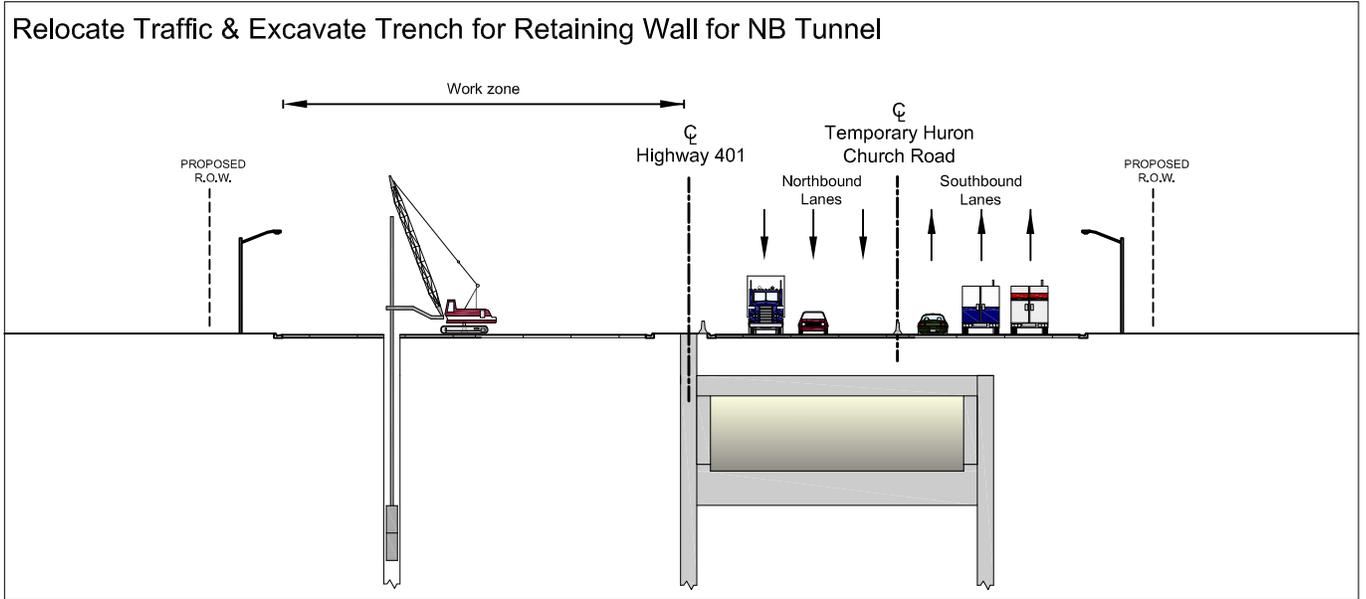


Backfill & Temporary Paving

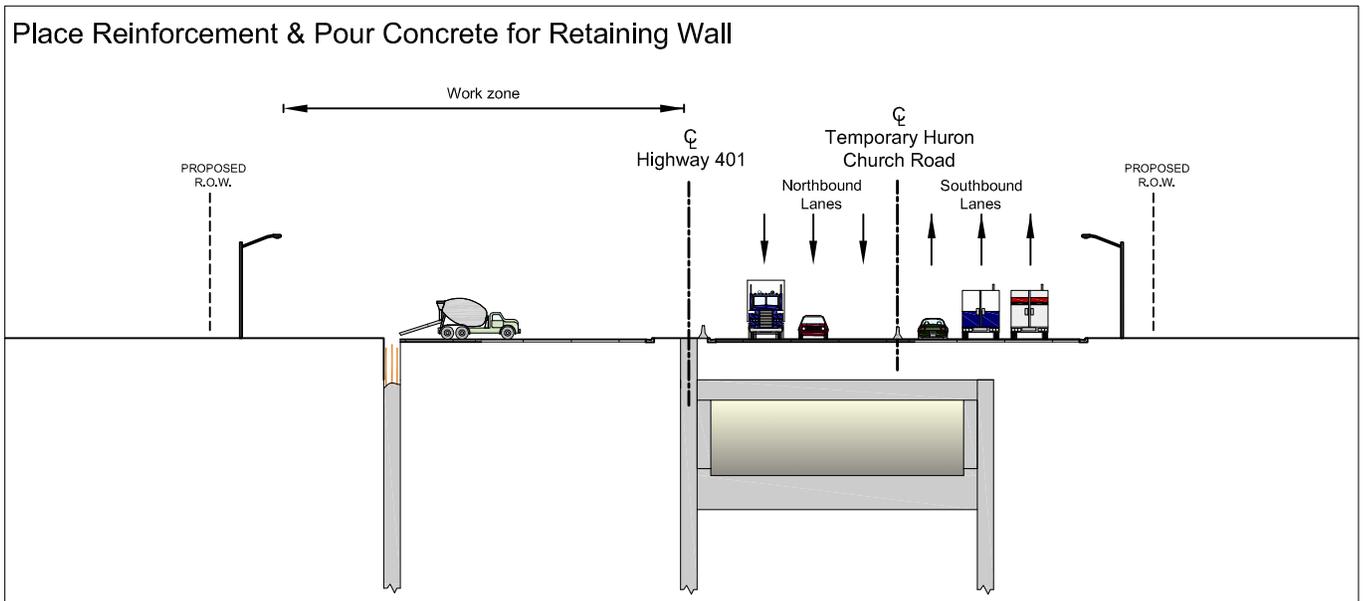


ALTERNATIVE 3 (CON'T)

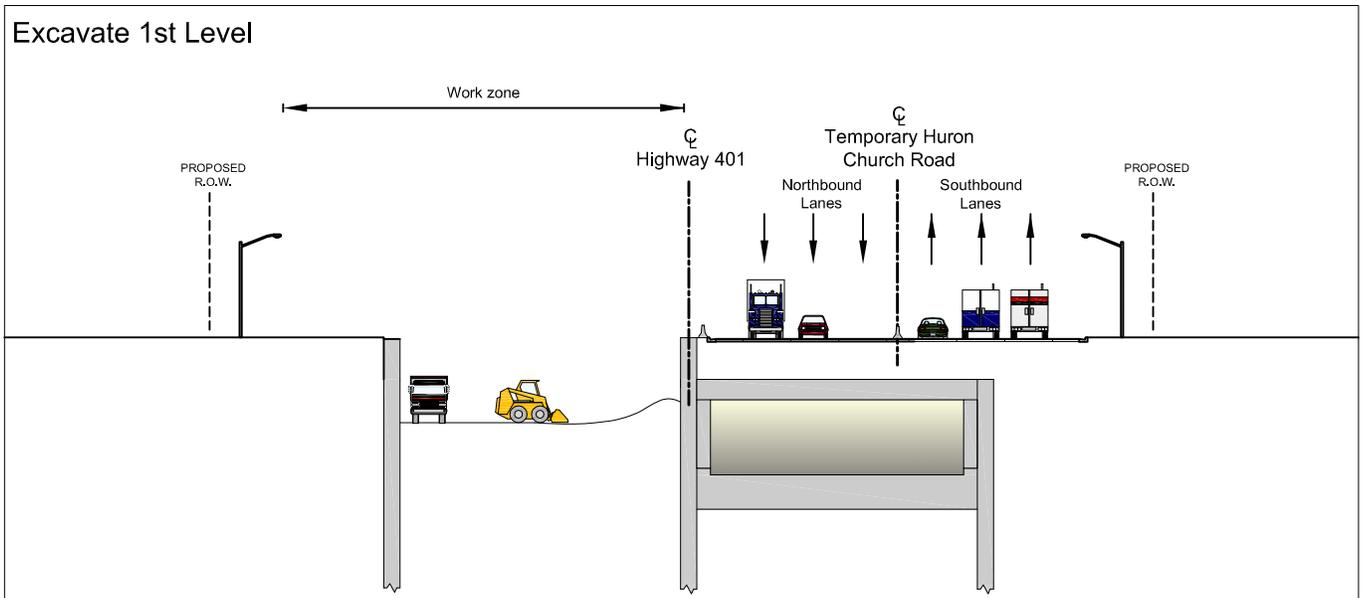
Relocate Traffic & Excavate Trench for Retaining Wall for NB Tunnel



Place Reinforcement & Pour Concrete for Retaining Wall

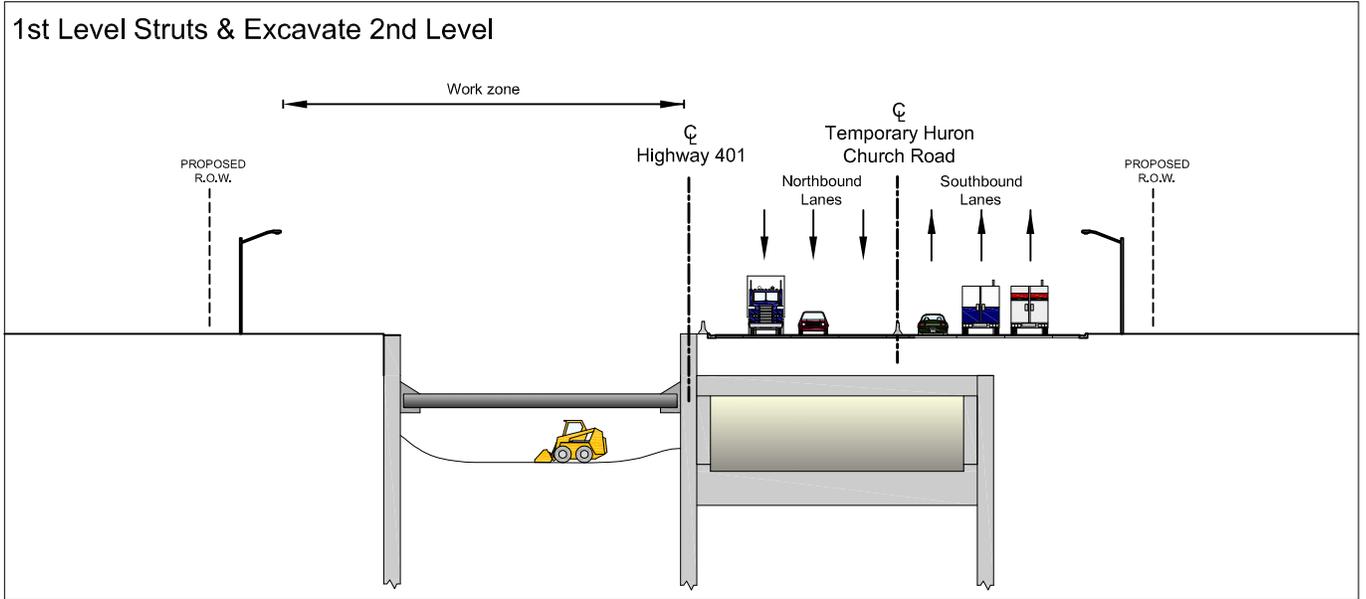


Excavate 1st Level

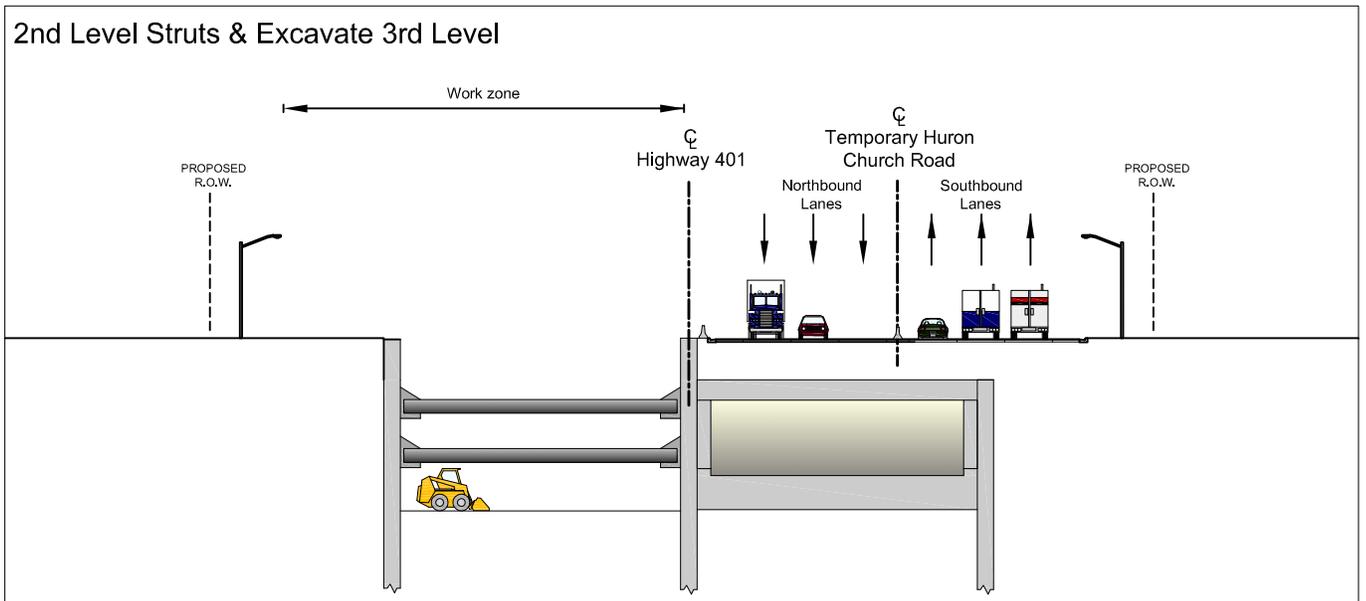


ALTERNATIVE 3 (CON'T)

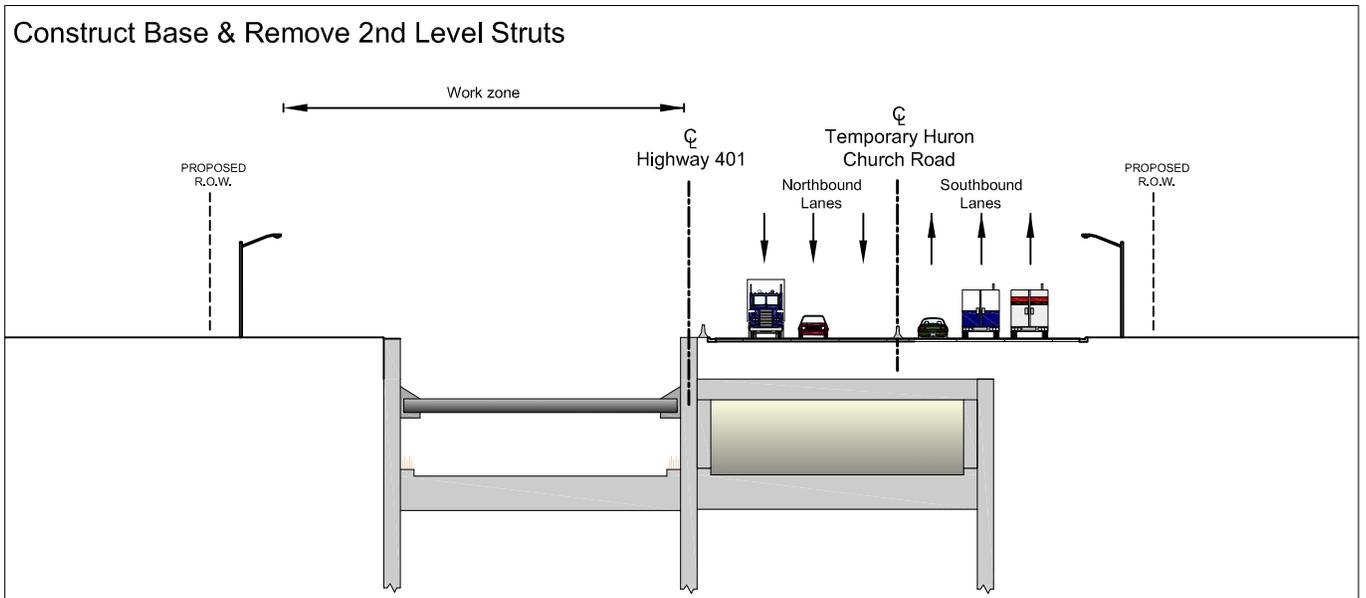
1st Level Struts & Excavate 2nd Level



2nd Level Struts & Excavate 3rd Level

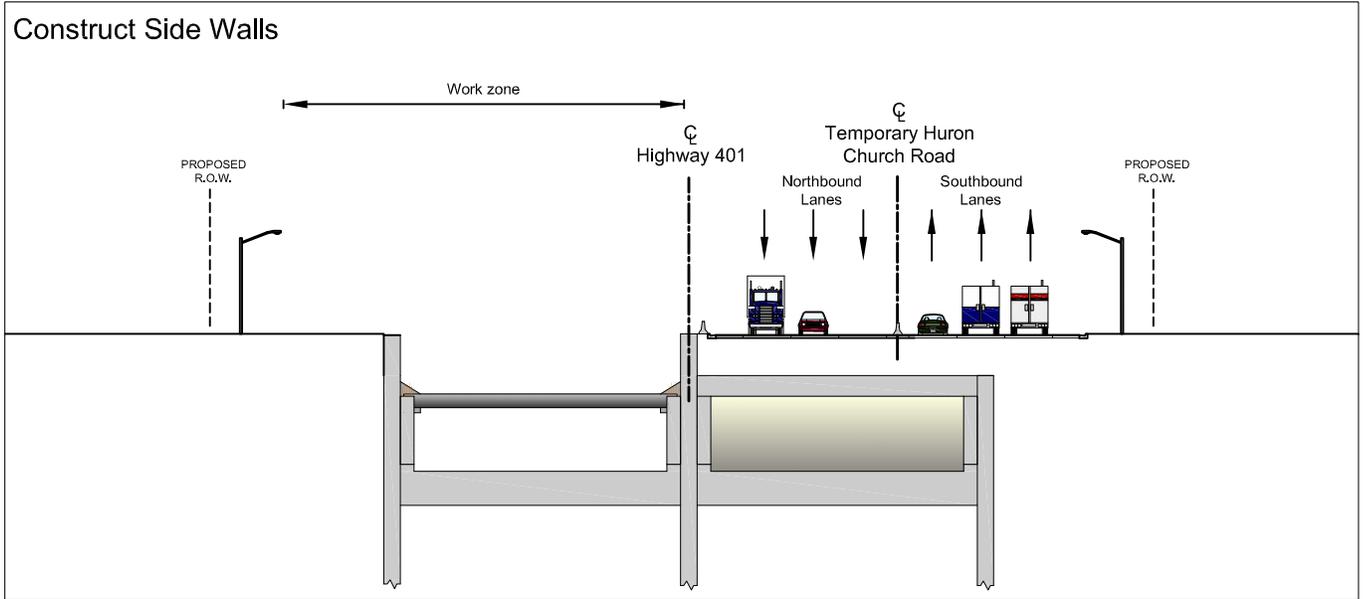


Construct Base & Remove 2nd Level Struts

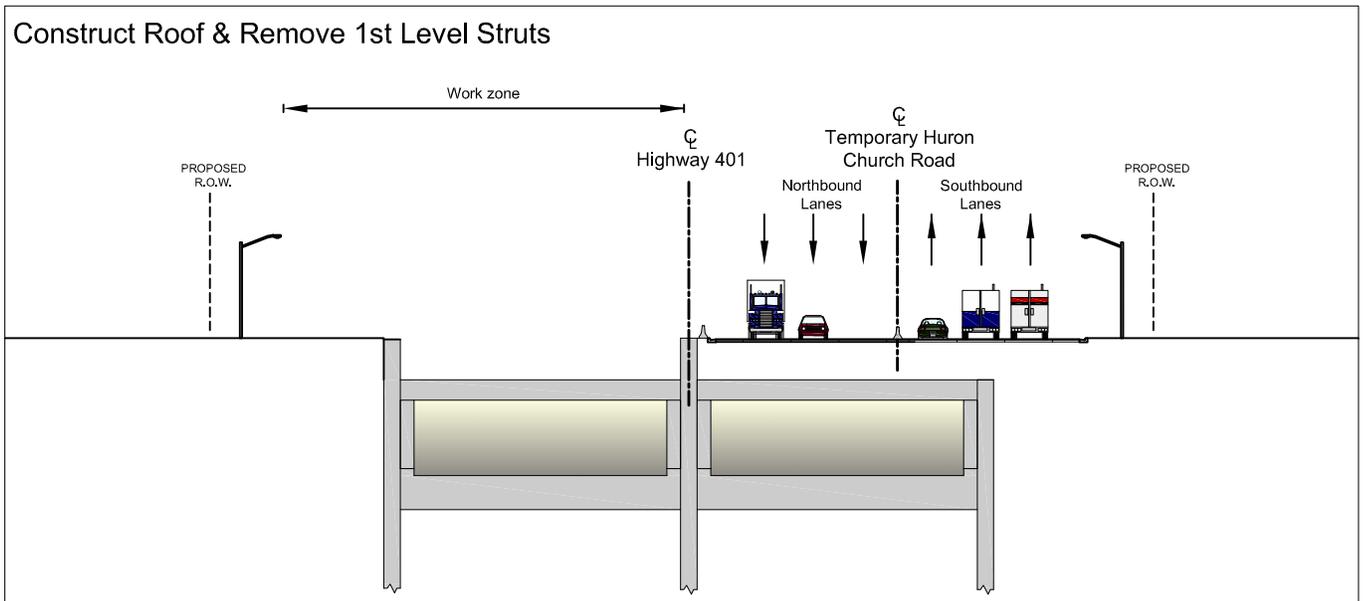


ALTERNATIVE 3 (CON'T)

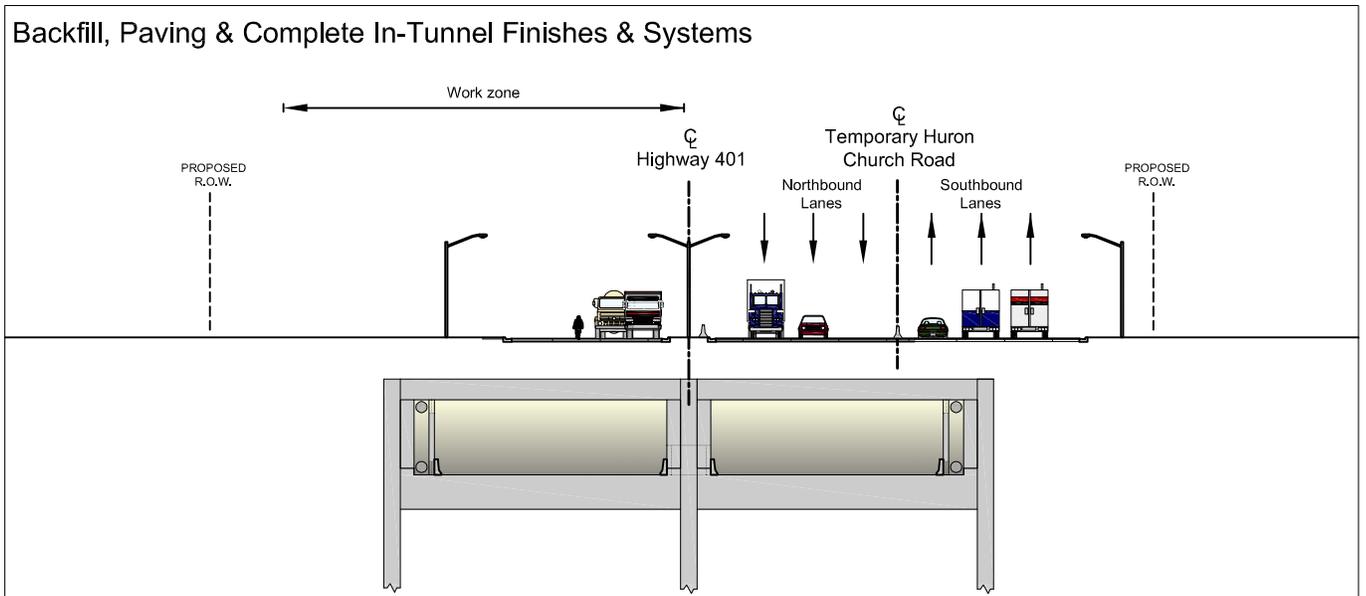
Construct Side Walls



Construct Roof & Remove 1st Level Struts

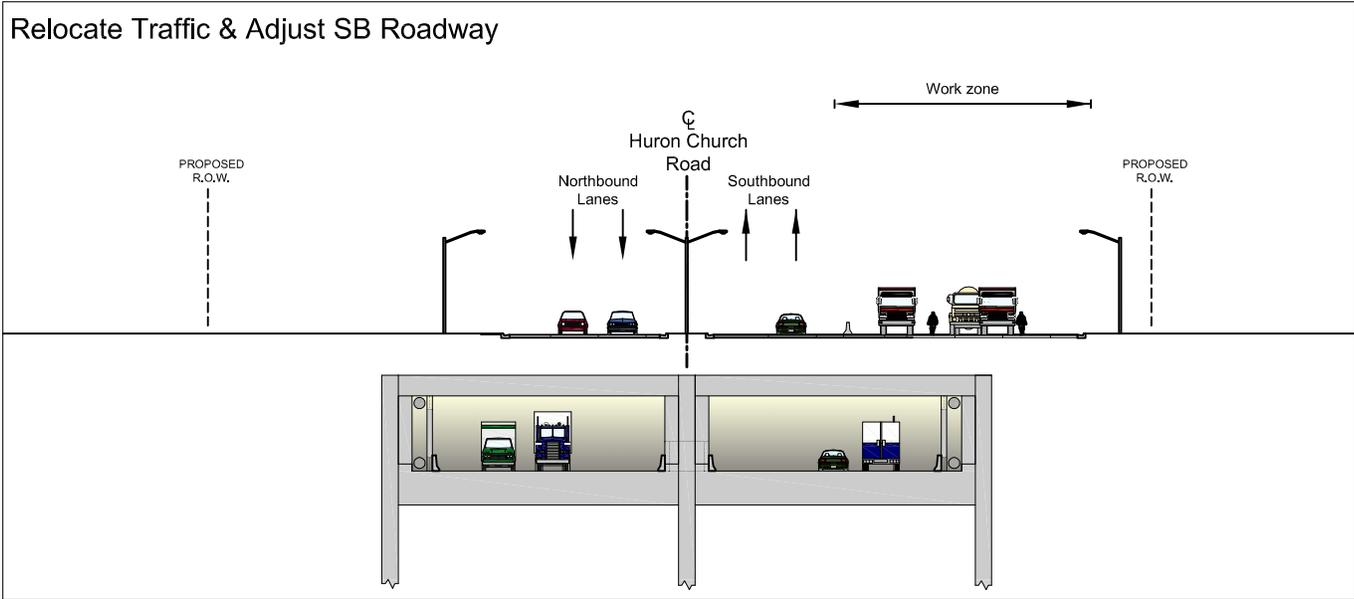


Backfill, Paving & Complete In-Tunnel Finishes & Systems

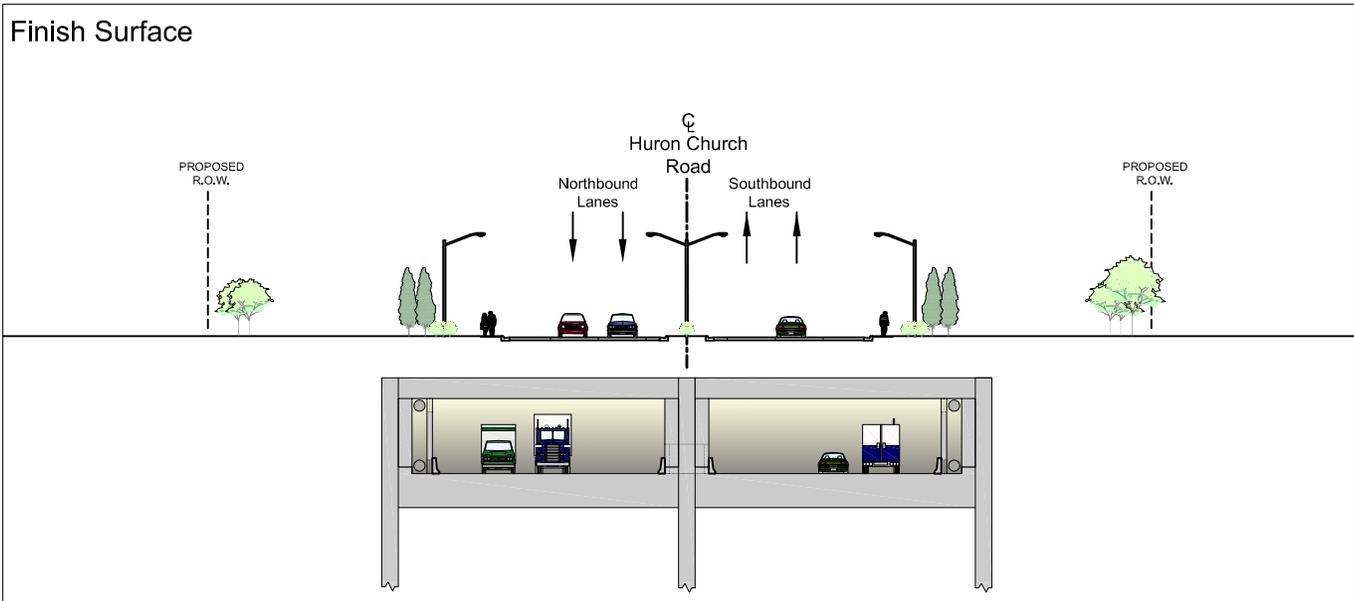


ALTERNATIVE 3 (CON'T)

Relocate Traffic & Adjust SB Roadway



Finish Surface



Appendix D

Conceptual Construction Staging Cross-Sections and Plans

METRIC

PLATE No
CONT No XXXX-XXXX
WP No XXX-XX-XX

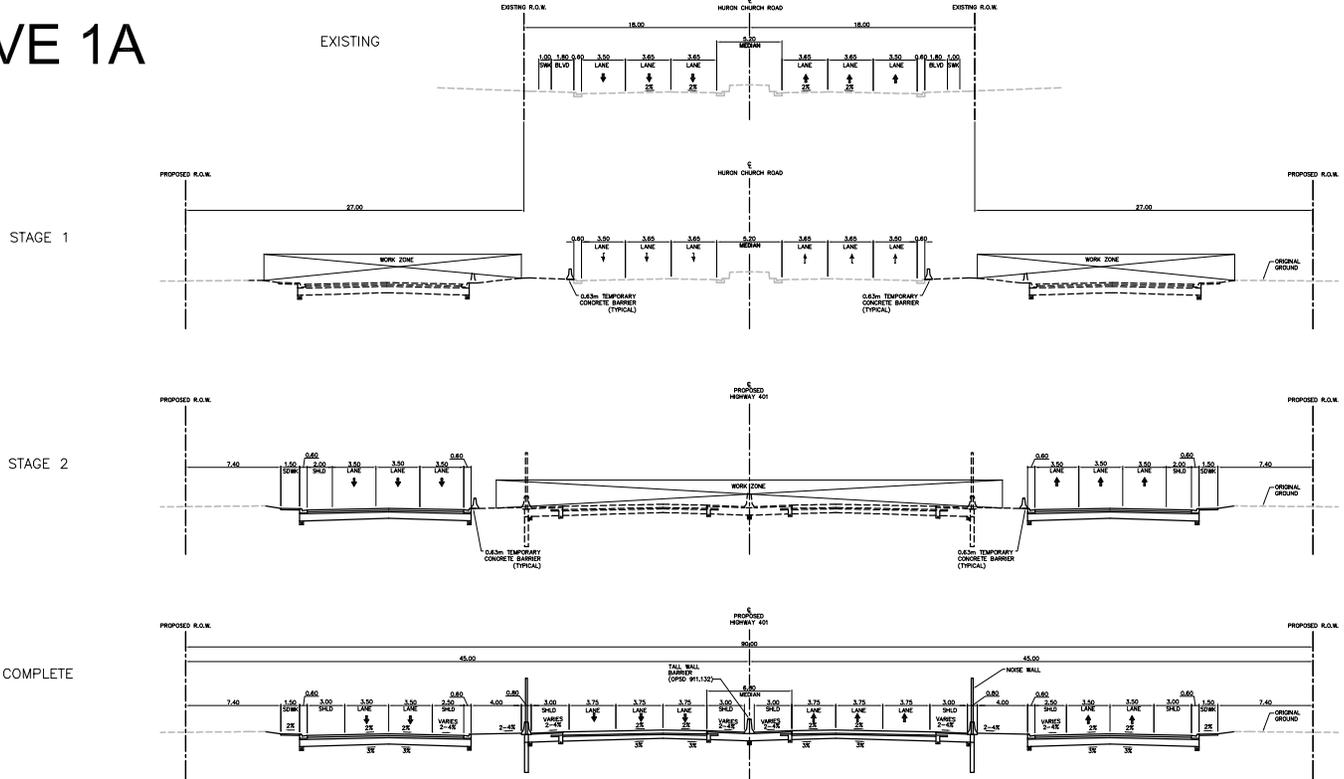


TYPICAL SECTIONS

SHEET
XXX

DETROIT RIVER INTERNATIONAL CROSSING
CONCEPTUAL CONSTRUCTION
STAGING CROSS-SECTIONS
HURON CHURCH ROAD CORRIDOR
WIDEN EQUALLY ON BOTH SIDES

ALTERNATIVE 1A



CONCEPTUAL

SCALE



METRIC

PLATE No
CONT No XXXX-XXXX
WP No XXX-XX-XX

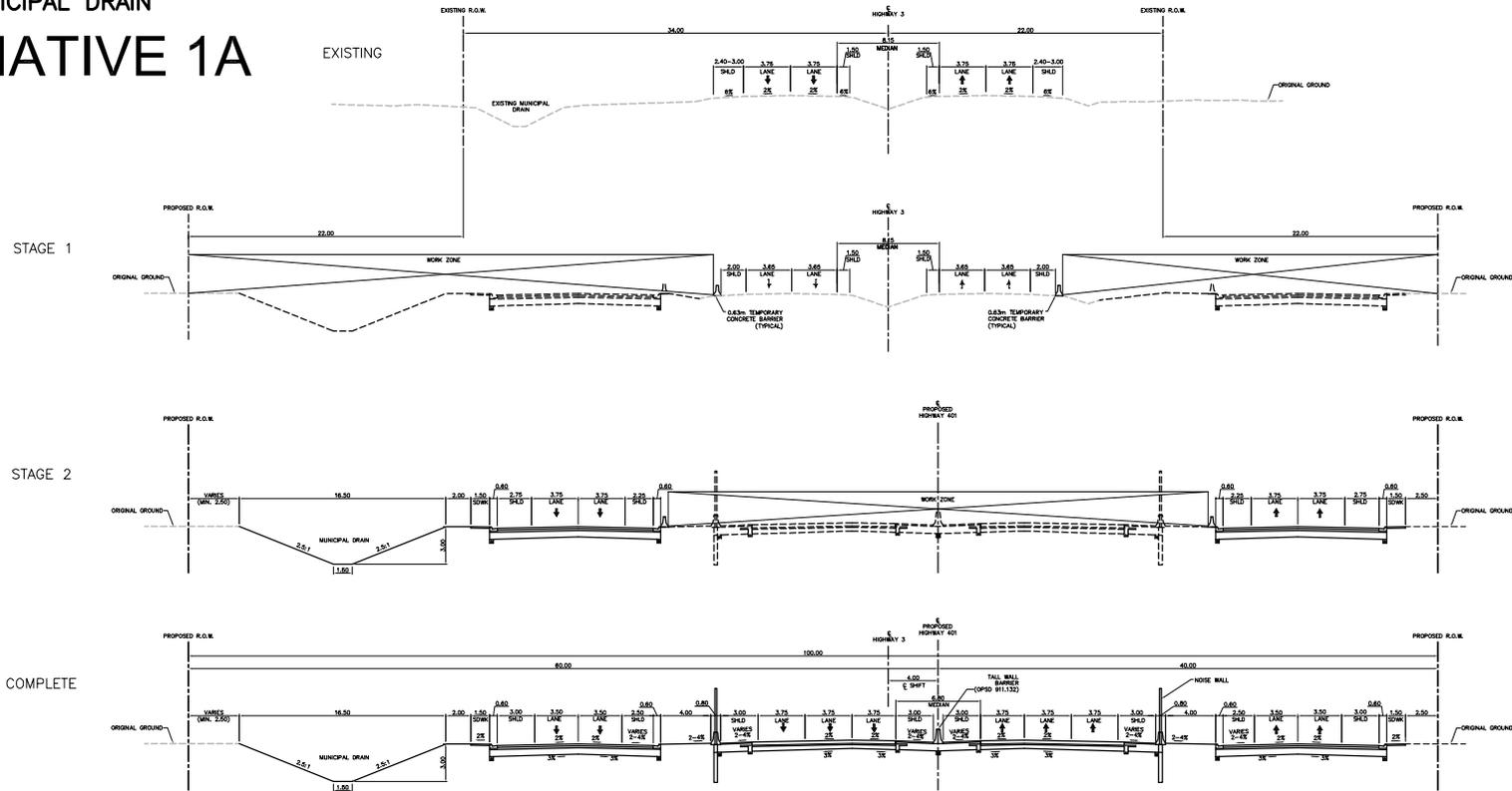


TYPICAL SECTIONS

SHEET
XXX

DETROIT RIVER INTERNATIONAL CROSSING
CONCEPTUAL CONSTRUCTION
STAGING CROSS-SECTIONS
HIGHWAY 3 CORRIDOR
WIDEN EQUALLY ON BOTH SIDES
REALIGN MUNICIPAL DRAIN

ALTERNATIVE 1A



CONCEPTUAL

SCALE



METRIC

PLATE No
CONT No XXXX-XXXX
WP No XXX-XX-XX

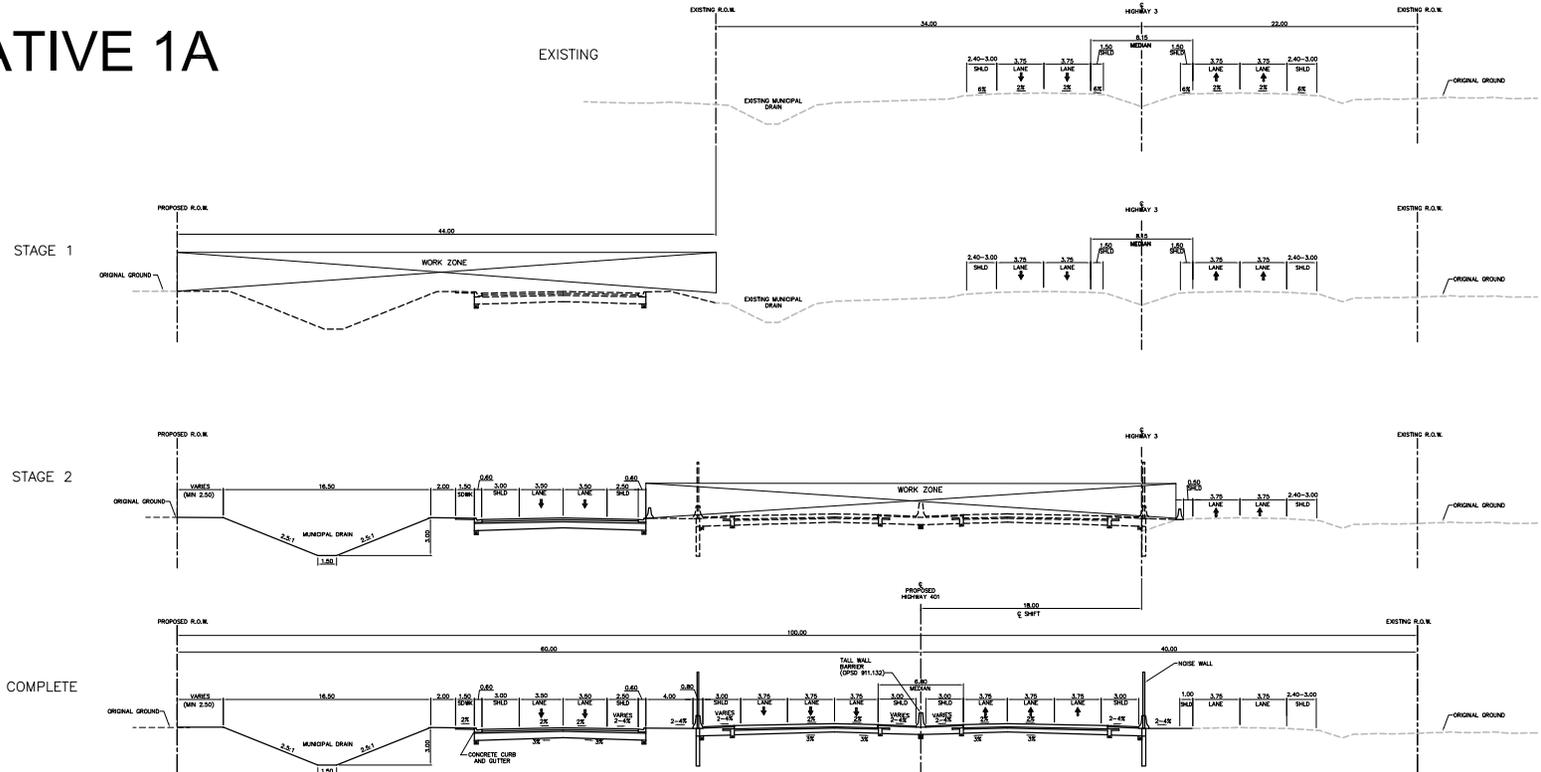


TYPICAL SECTIONS

SHEET
XXX

DETROIT RIVER INTERNATIONAL CROSSING
CONCEPTUAL CONSTRUCTION
STAGING CROSS-SECTIONS
HIGHWAY 3 CORRIDOR
WIDEN MINIMUM TO NORTH
REALIGN MUNICIPAL DRAIN

ALTERNATIVE 1A



CONCEPTUAL

SCALE



DETROIT RIVER INTERNATIONAL CROSSING
 CONCEPTUAL CONSTRUCTION
 STAGING CROSS-SECTIONS
 HURON CHURCH ROAD CORRIDOR

WIDEN EQUALLY ON BOTH SIDES
ALTERNATIVE 1B

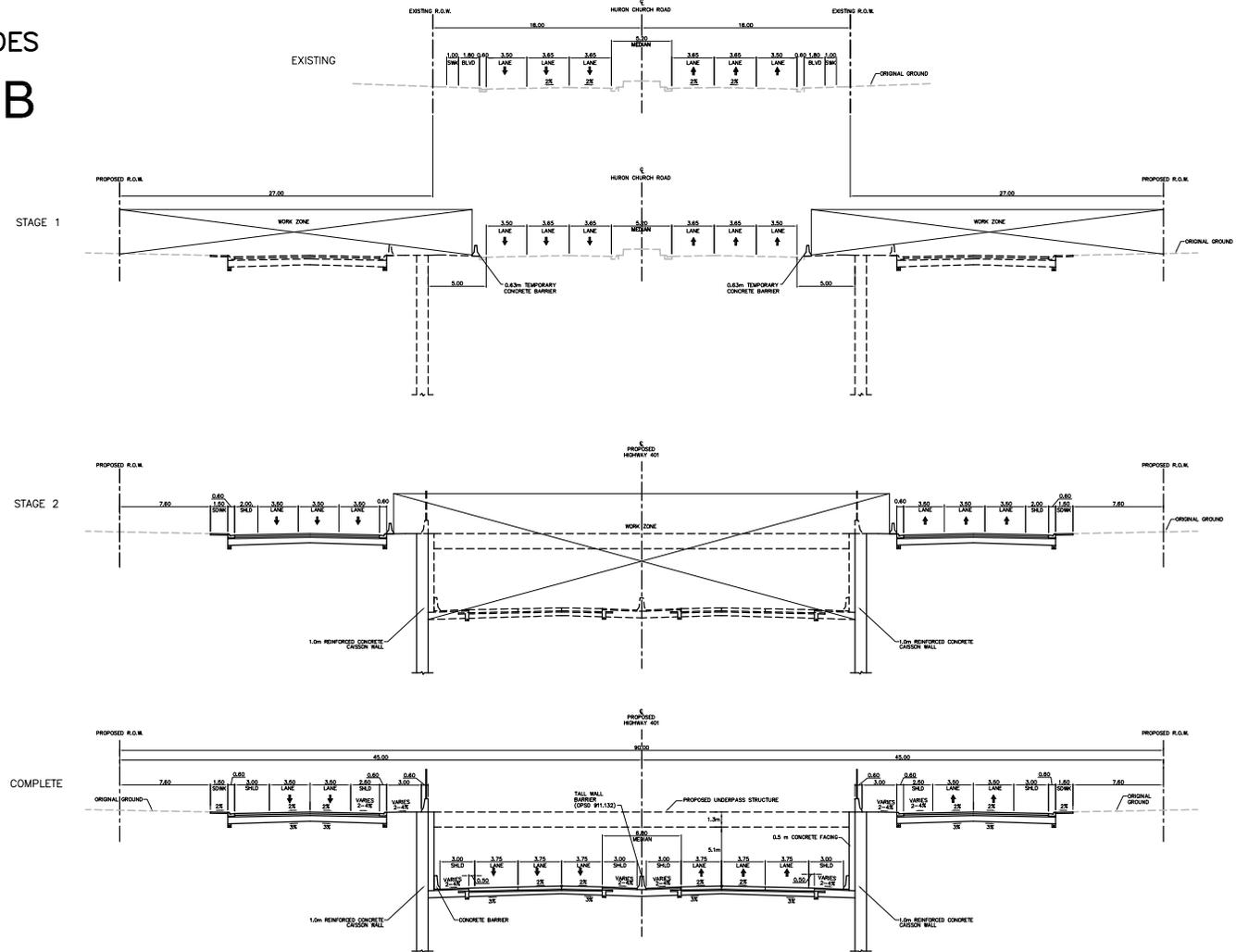
METRIC

PLATE No
 CONT No XXXX-XXXX
 WP No XXX-XX-XX



TYPICAL SECTIONS

SHEET
 XXX



CONCEPTUAL

SCALE



DETROIT RIVER INTERNATIONAL CROSSING
 CONCEPTUAL CONSTRUCTION
 STAGING CROSS-SECTIONS
 HIGHWAY 3 CORRIDOR

WIDEN EQUALLY ON BOTH SIDES
 REALIGN MUNICIPAL DRAIN

ALTERNATIVE 1B

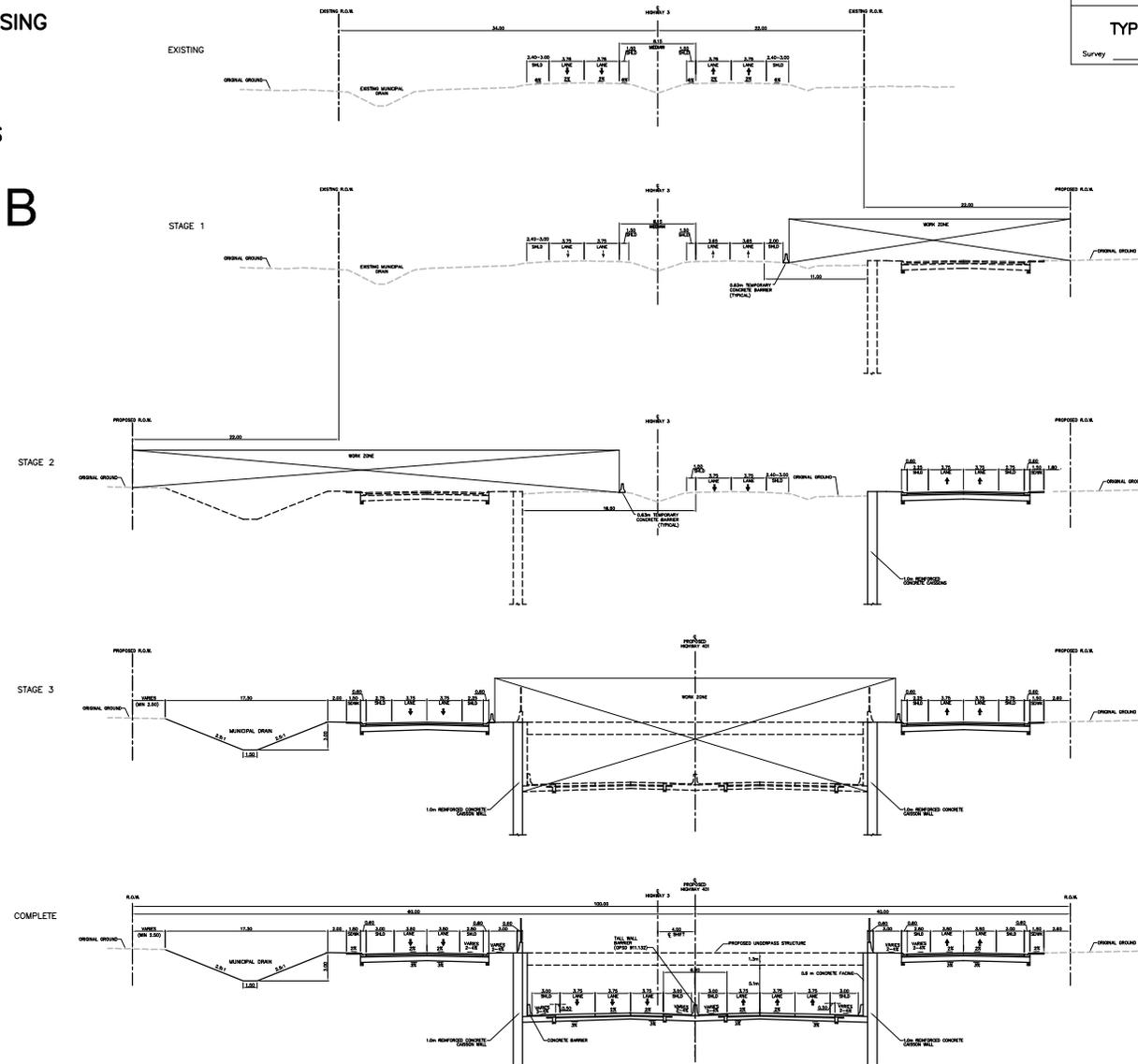
METRIC

PLATE No
 CONT No XXXX-XXXX
 WP No XXX-XX-XX

TYPICAL SECTIONS

Survey _____ Revised _____

SHEET
 XXX



CONCEPTUAL

SCALE
 1:500
 Horizontal

DETROIT RIVER INTERNATIONAL CROSSING
 CONCEPTUAL CONSTRUCTION
 STAGING CROSS-SECTIONS
 HIGHWAY 3 CORRIDOR

WIDEN MINIMUM TO SOUTH
 MAINTAIN EXISTING DRAIN

ALTERNATIVE 1B

METRIC

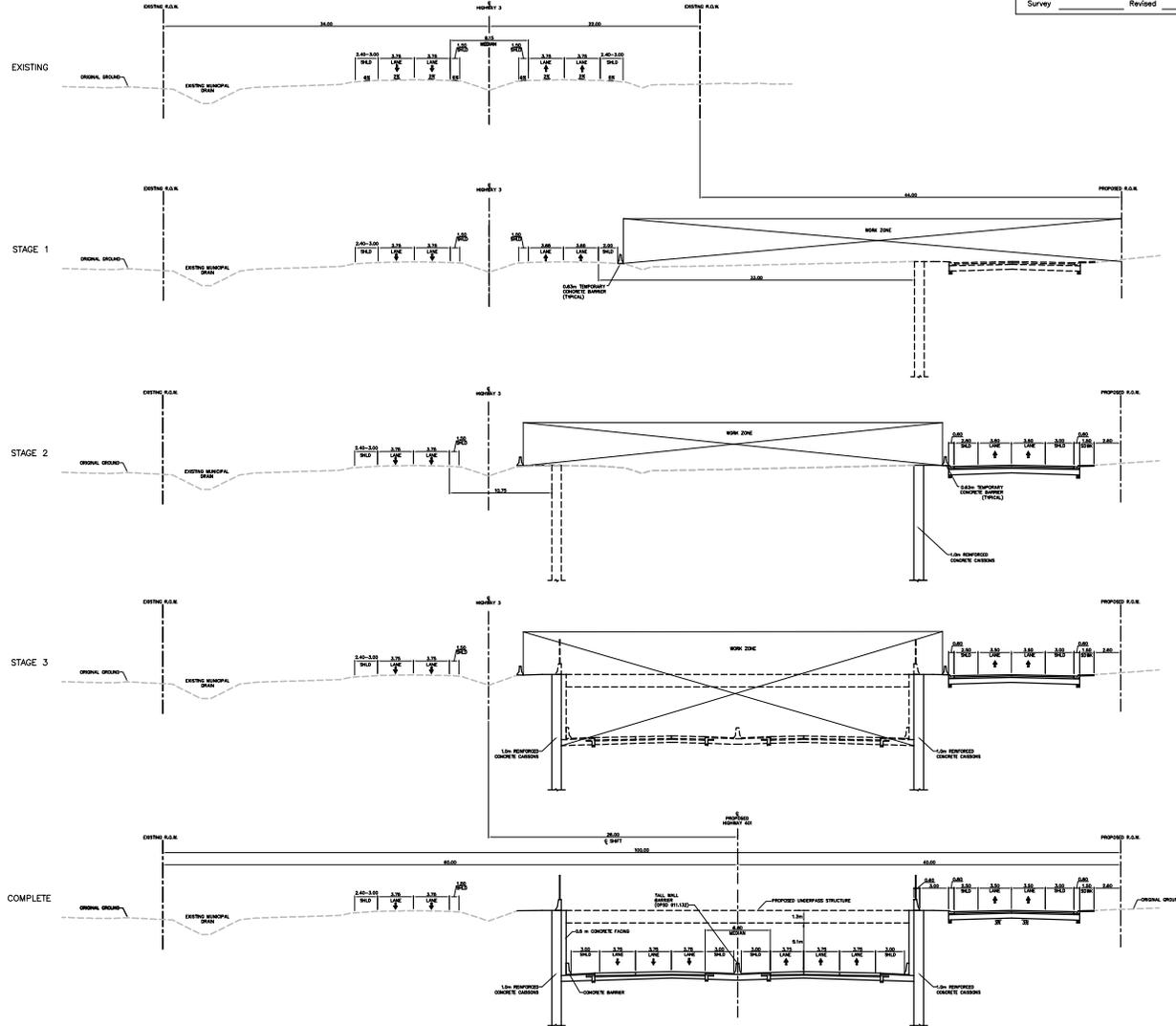
PLATE No
 CONT No XXXX-XXXX
 WP No XXX-XX-XX



TYPICAL SECTIONS

SHEET
 XXX

Survey _____ Revised _____



CONCEPTUAL

SCALE
 1" = 10'

DETROIT RIVER INTERNATIONAL CROSSING
 CONCEPTUAL CONSTRUCTION
 STAGING CROSS-SECTIONS
 HURON CHURCH ROAD CORRIDOR
 WIDEN EQUALLY ON BOTH SIDES

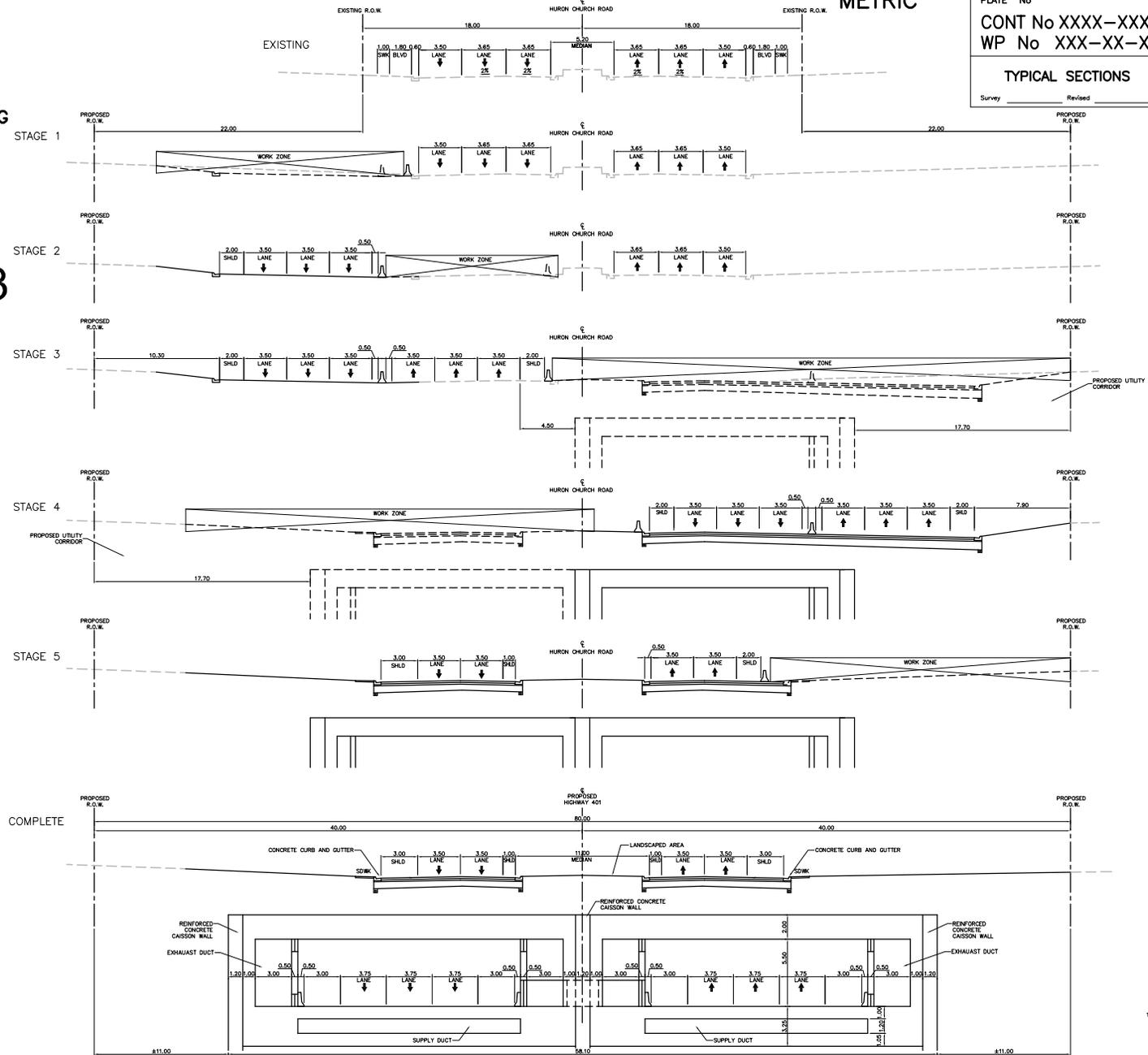
ALTERNATIVE 3

CONCEPTUAL

METRIC

PLATE No	
CONT No XXXX-XXXX WP No XXX-XX-XX	
TYPICAL SECTIONS	
Survey	Revised

SHEET
XXX



SCALE



METRIC

PLATE No
 CONT No XXXX-XXXX
 WP No XXX-XX-XX

TYPICAL SECTIONS

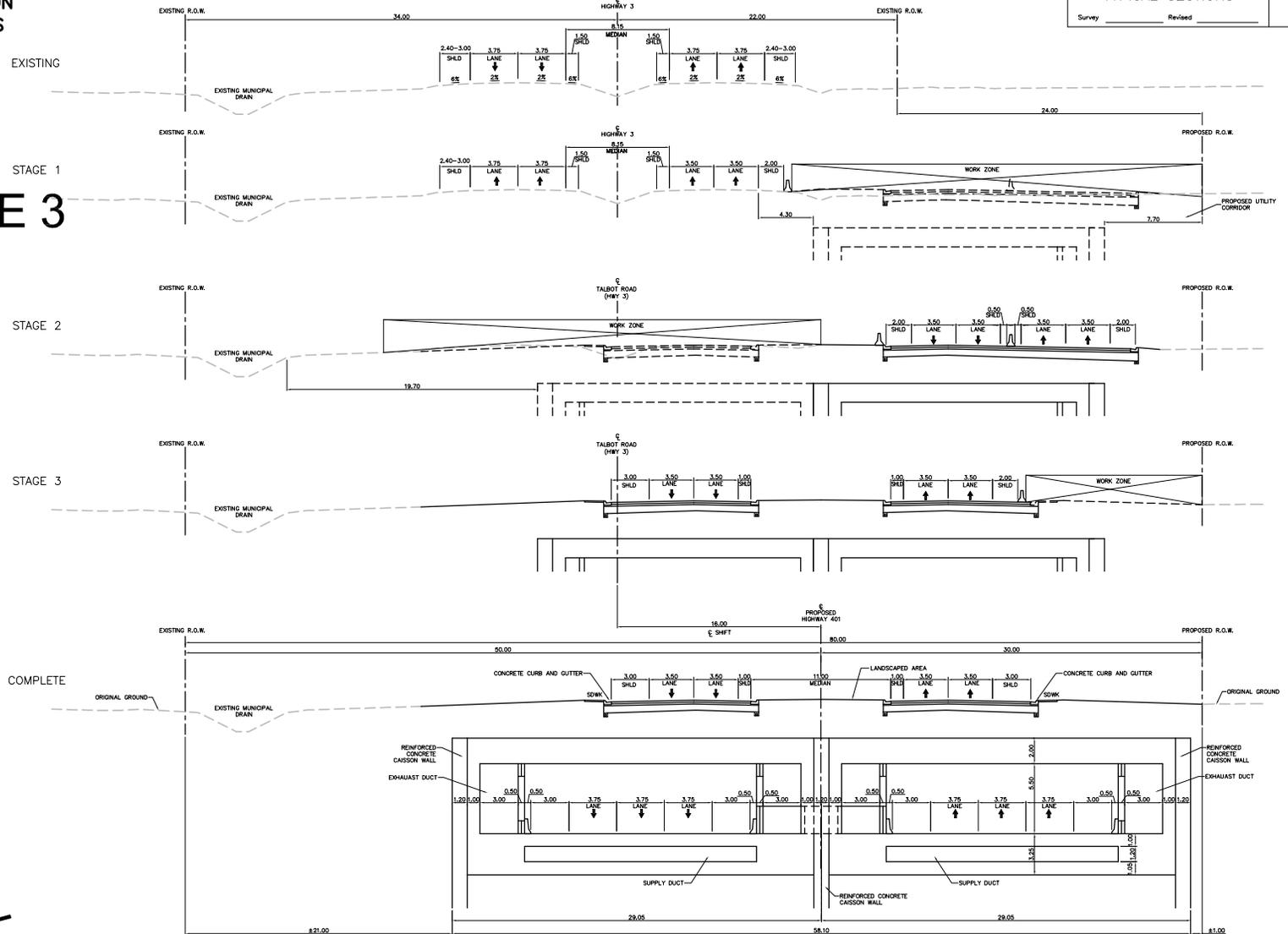
Survey _____ Revised _____

SHEET XXX

DETROIT RIVER INTERNATIONAL CROSSING
 CONCEPTUAL CONSTRUCTION
 STAGING CROSS-SECTIONS
 HIGHWAY 3 CORRIDOR

WIDEN TO SOUTH
 MAINTAIN EXISTING DRAIN

ALTERNATIVE 3

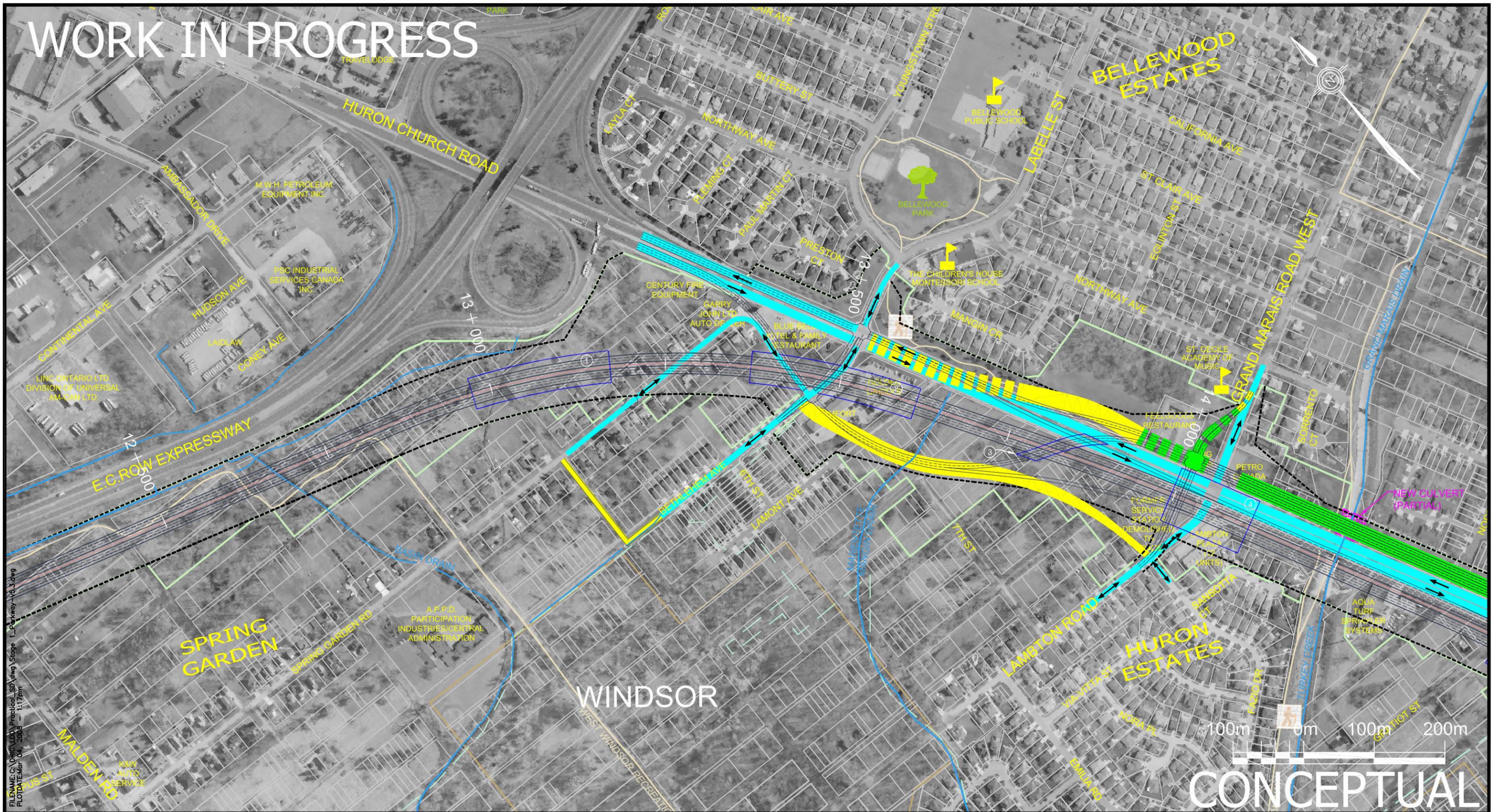


CONCEPTUAL

SCALE



WORK IN PROGRESS



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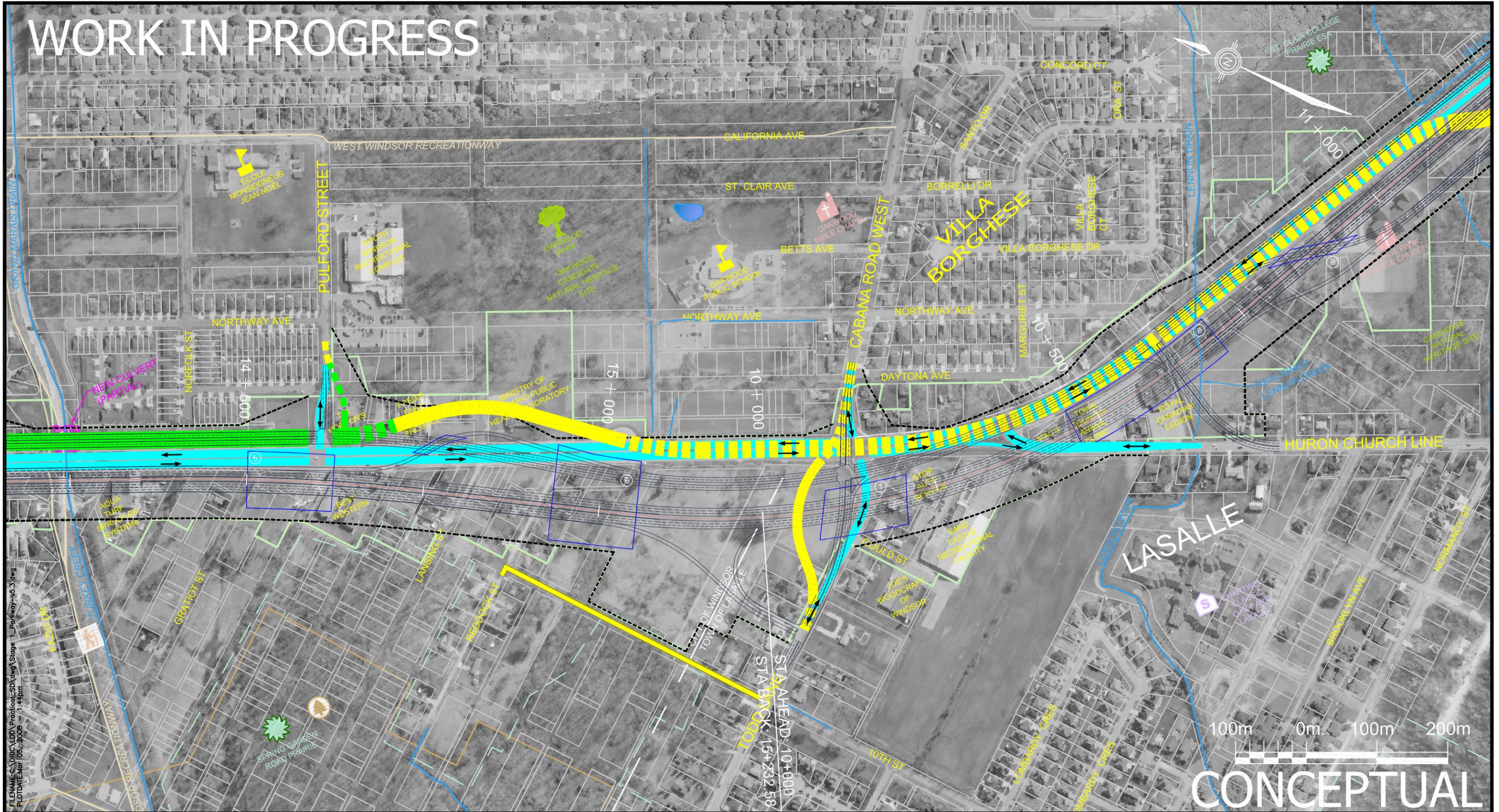
PARKWAY - CONSTRUCTION STAGE 1

FEBRUARY 2008



<p>STAGE - TRAFFIC DETOUR</p> <p>STAGE - TRAFFIC DIRECTION</p> <p>ROAD CLOSE</p>	<p>UNDER CONSTRUCTION</p> <p>ABOVE GRADE</p> <p>ABOVE GRADE TRANSITION</p> <p>AT GRADE</p> <p>BELOW GRADE TRANSITION</p> <p>BELOW GRADE</p> <p>STRUCTURE</p>	<p>UNDER CONSTRUCTION</p> <p>DETOUR ON 1 ACROSS</p> <p>EXISTING ROADWAY</p> <p>REMOVAL - STRUCTURE</p> <p>REMOVAL - DETOUR</p>	<p>PROPOSED PARKWAY & SERVICE ROAD</p> <p>PROPOSED STRUCTURE</p> <p>COMPLETED CONSTRUCTION</p> <p>COMPLETED STRUCTURE</p>
<p>SCALE 1:5000</p>	<p>1</p>		

WORK IN PROGRESS



FILENAME: C:\DPRIC\LD\Practical\SD\dwg\Stage 1_Parkway-10.3.dwg
 PLOTDATE: Mar 05, 2008 - 1:44pm

PARKWAY - CONSTRUCTION STAGE 1

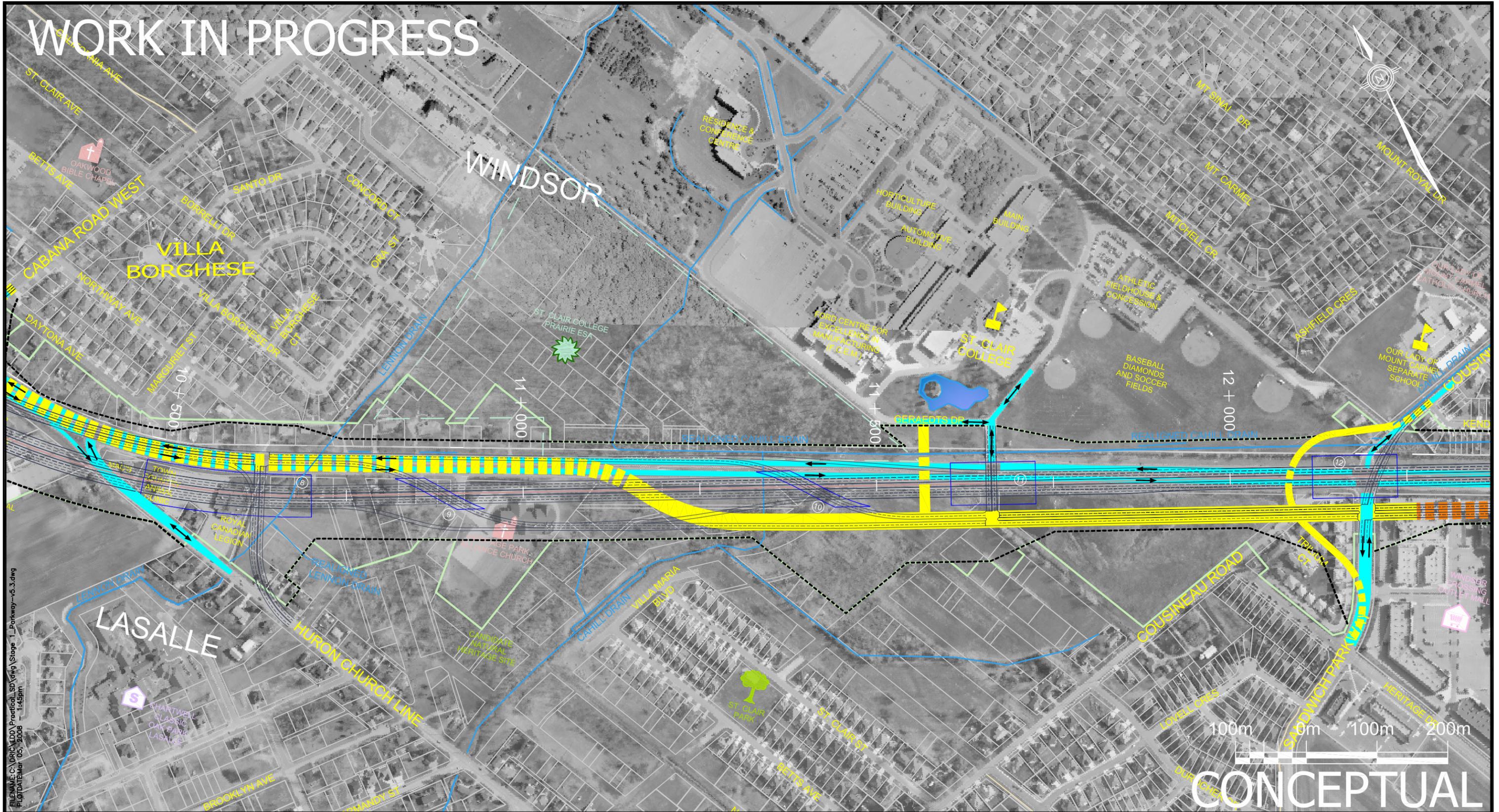
FEBRUARY 2008

<p>STAGE - TRAFFIC DETOUR</p> <p>STAGE - TRAFFIC DIRECTION</p> <p>ROAD CLOSE</p>	<p>UNDER CONSTRUCTION</p> <p>ABOVE GRADE</p> <p>ABOVE GRADE TRANSITION</p> <p>AT GRADE</p> <p>BELOW GRADE TRANSITION</p> <p>BELOW GRADE</p> <p>STRUCTURE</p>	<p>UNDER CONSTRUCTION</p> <p>DETOUR ON 1 ACROSS</p> <p>EXISTING ROADWAY</p> <p>REMOVAL - STRUCTURE</p> <p>REMOVAL - DETOUR</p>	<p>PROPOSED PARKWAY & SERVICE ROAD</p> <p>PROPOSED STRUCTURE</p> <p>COMPLETED CONSTRUCTION</p> <p>COMPLETED STRUCTURE</p>
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SCALE 1:5000



WORK IN PROGRESS



FILENAME: C:\DRIC\DDA\Practical_SA.dwg Stage 1_Parkway-v5.3.dwg
 PLOTDATE: Mar 05, 2008 1:45pm

PARKWAY - CONSTRUCTION STAGE 1

FEBRUARY 2008



- STAGE - TRAFFIC DETOUR ———
- STAGE - TRAFFIC DIRECTION ↔ / ↔
- ROAD CLOSE ———

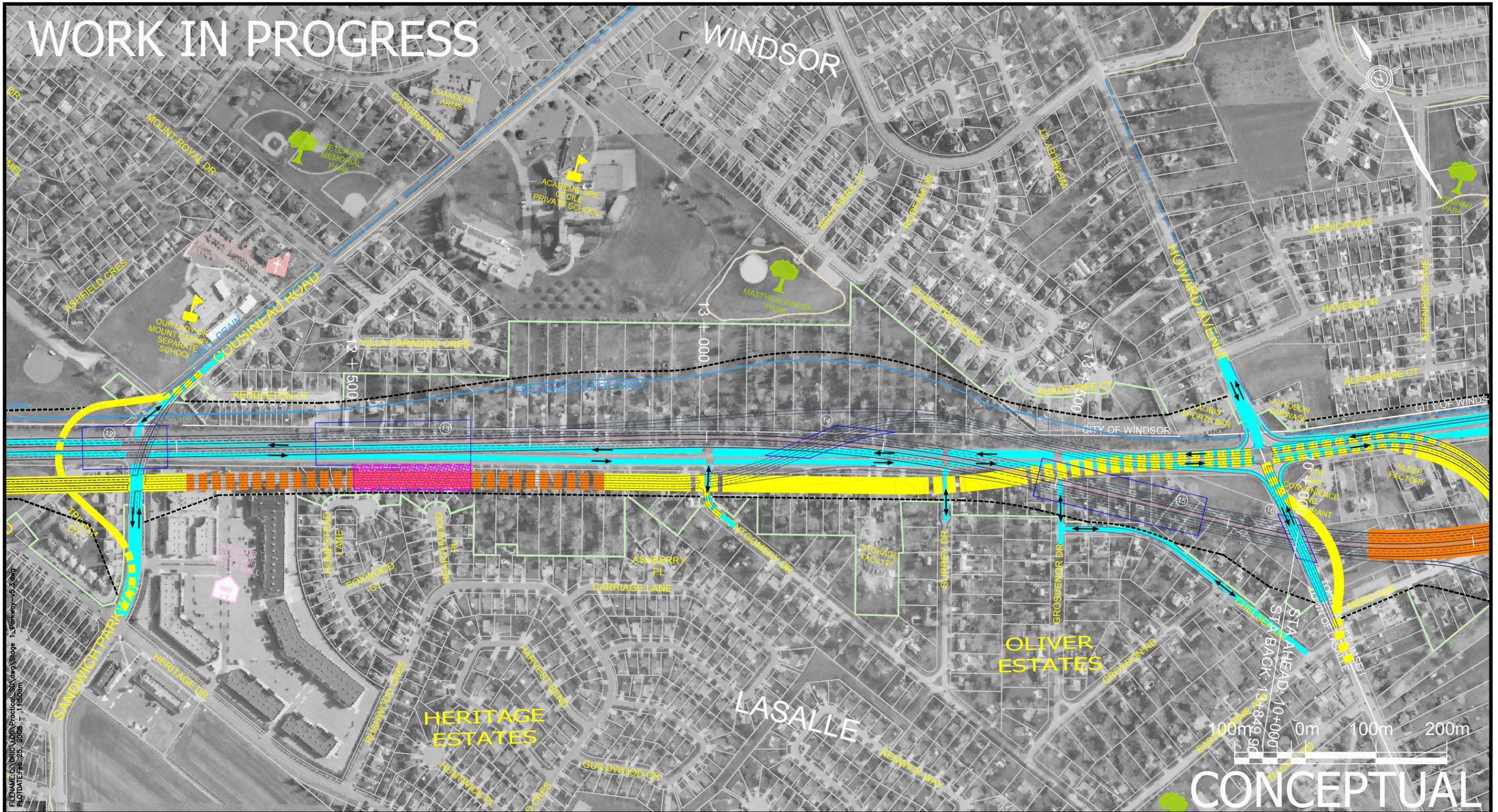
- UNDER CONSTRUCTION
- ABOVE GRADE ———
- AT GRADE ———
- BELOW GRADE ———
- TRANSITION ———
- BELOW GRADE ———
- STRUCTURE ———

- UNDER CONSTRUCTION
- DETOUR ON 1 ACROSS EXISTING ROADWAY - - - -
- REMOVAL - STRUCTURE ▨▨▨▨
- REMOVAL - DETOUR / / / /

- PROPOSED PARKWAY & SERVICE ROAD ———
- PROPOSED STRUCTURE □
- COMPLETED CONSTRUCTION ———
- COMPLETED STRUCTURE ■

SCALE 1:5000

WORK IN PROGRESS



FILENAME: C:\DRICA\LDN\Practical_S01.dwg Stage 1_Parkway-v5.3.dwg
 PLOTDATE: Feb. 25, 2008 - 11:35am



PARKWAY - CONSTRUCTION STAGE 1

FEBRUARY 2008

<p>STAGE - TRAFFIC DETOUR</p> <p>STAGE - TRAFFIC DIRECTION</p> <p>ROAD CLOSE</p>	<p>UNDER CONSTRUCTION</p> <p>ABOVE GRADE</p> <p>ABOVE GRADE TRANSITION</p> <p>AT GRADE</p> <p>BELOW GRADE TRANSITION</p> <p>BELOW GRADE</p> <p>STRUCTURE</p>	<p>UNDER CONSTRUCTION</p> <p>DETOUR ON 1 ACROSS EXISTING ROADWAY</p> <p>REMOVAL - STRUCTURE</p> <p>REMOVAL - DETOUR</p>	<p>PROPOSED PARKWAY & SERVICE ROAD</p> <p>PROPOSED STRUCTURE</p> <p>COMPLETED CONSTRUCTION</p> <p>COMPLETED STRUCTURE</p>
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SCALE 1:5000

CONCEPTUAL

WORK IN PROGRESS



FILENAME: C:\DRIC\LDA\Practical_SA.dwg Stage 1_Parkway-16.3.dwg
 PLOTDATE: Feb 25, 2008 - 12:48pm



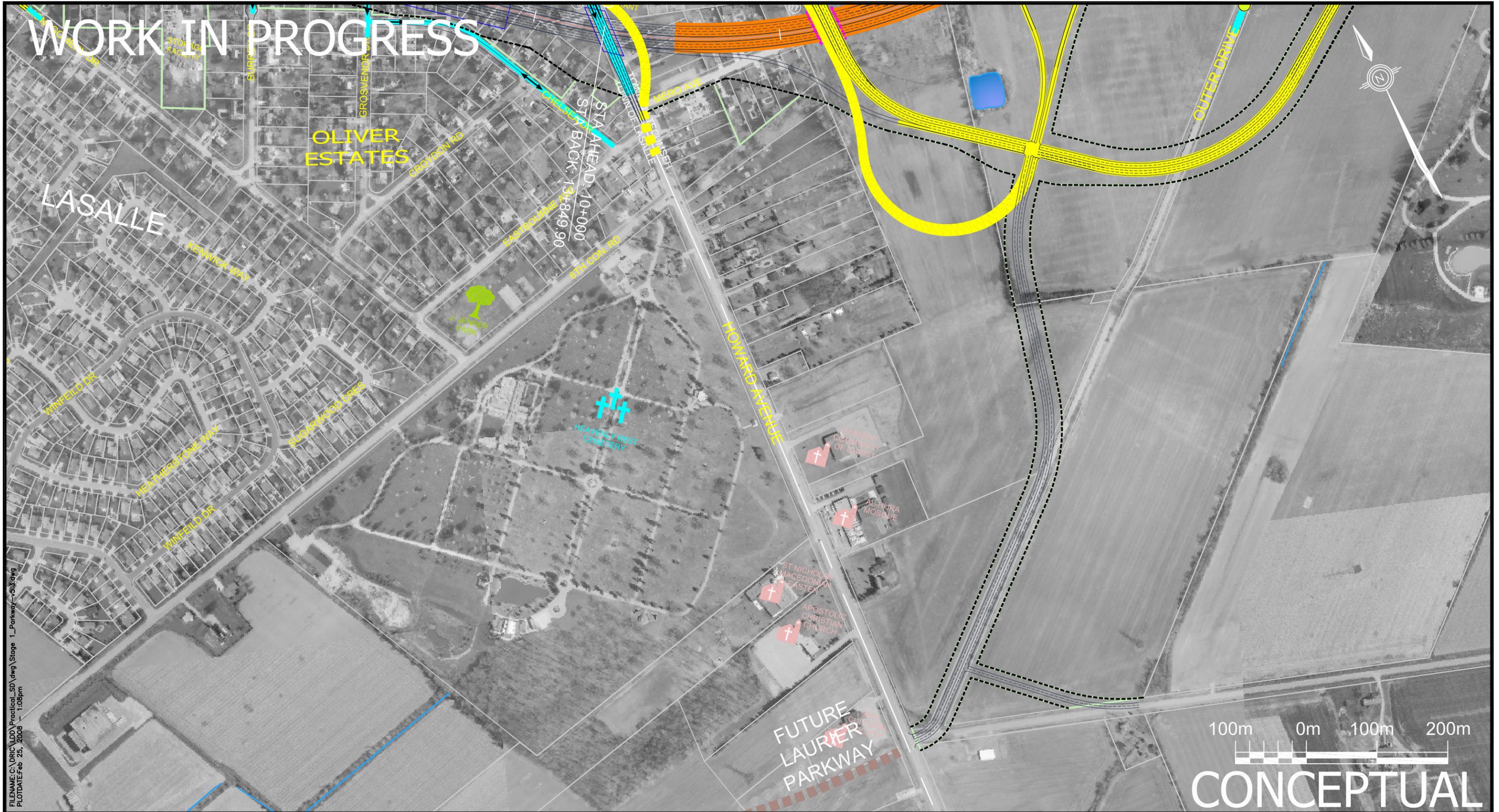
PARKWAY - CONSTRUCTION STAGE 1

FEBRUARY 2008

<p>STAGE - TRAFFIC DETOUR</p>	<p>UNDER CONSTRUCTION</p> <p>ABOVE GRADE</p> <p>AT GRADE</p> <p>BELOW GRADE</p> <p>STRUCTURE</p>	<p>UNDER CONSTRUCTION</p> <p>DETOUR ON 1 ACROSS EXISTING ROADWAY</p> <p>REMOVAL - STRUCTURE</p> <p>REMOVAL - DETOUR</p>	<p>PROPOSED PARKWAY & SERVICE ROAD</p> <p>PROPOSED STRUCTURE</p> <p>COMPLETED CONSTRUCTION</p> <p>COMPLETED STRUCTURE</p>
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SCALE 1:5000

WORK IN PROGRESS



FILENAME: C:\DRIC\DDA\Practical_SA\dwg\Stage 1_Parkway-v53.dwg
 PLOTDATE: Feb 25, 2008 1:09pm

PARKWAY - CONSTRUCTION STAGE 1

FEBRUARY 2008



- STAGE - TRAFFIC DETOUR
- STAGE - TRAFFIC DIRECTION
- ROAD CLOSE

- UNDER CONSTRUCTION
- ABOVE GRADE
- ABOVE GRADE TRANSITION
- AT GRADE
- BELOW GRADE TRANSITION
- BELOW GRADE
- STRUCTURE

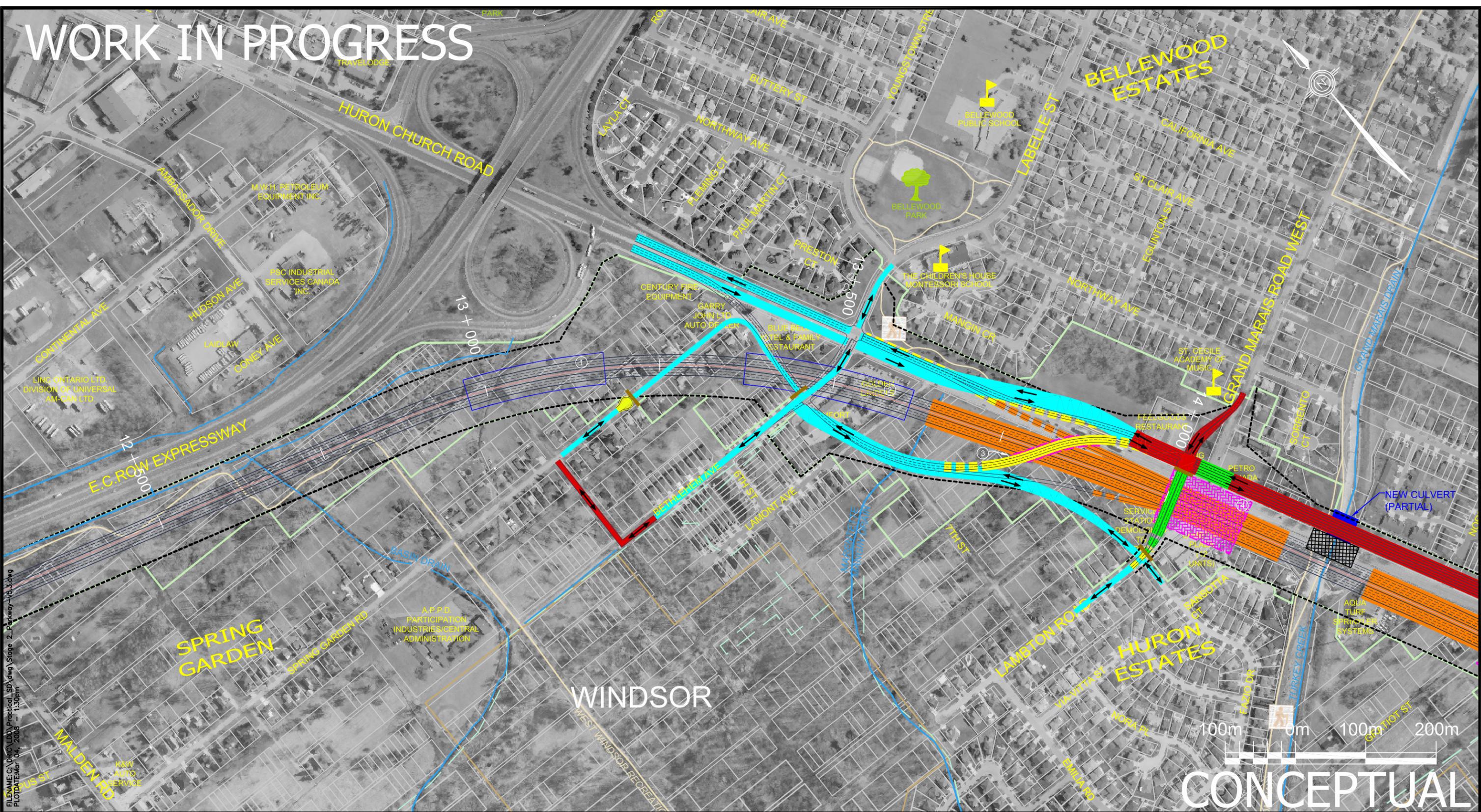
- UNDER CONSTRUCTION
- DETOUR ON 1 ACROSS EXISTING ROADWAY
- REMOVAL - STRUCTURE
- REMOVAL - DETOUR

- PROPOSED PARKWAY & SERVICE ROAD
- PROPOSED STRUCTURE
- COMPLETED CONSTRUCTION
- COMPLETED STRUCTURE

SCALE 1:5000

CONCEPTUAL

WORK IN PROGRESS



FILENAME: C:\proj\101\Practical_S01.dwg Stage 2 Parkway-V3.sldwg
 PLOT DATE: Mar 04, 2008 - 1:30pm

PARKWAY - CONSTRUCTION STAGE 2

FEBRUARY 2008



- STAGE - TRAFFIC DETOUR ———
- STAGE - TRAFFIC DIRECTION ↔ / →
- ROAD CLOSE ———

- UNDER CONSTRUCTION
- ABOVE GRADE ———
- ABOVE GRADE TRANSITION - - -
- AT GRADE ———
- BELOW GRADE TRANSITION ———
- BELOW GRADE - - -
- STRUCTURE [Pattern]

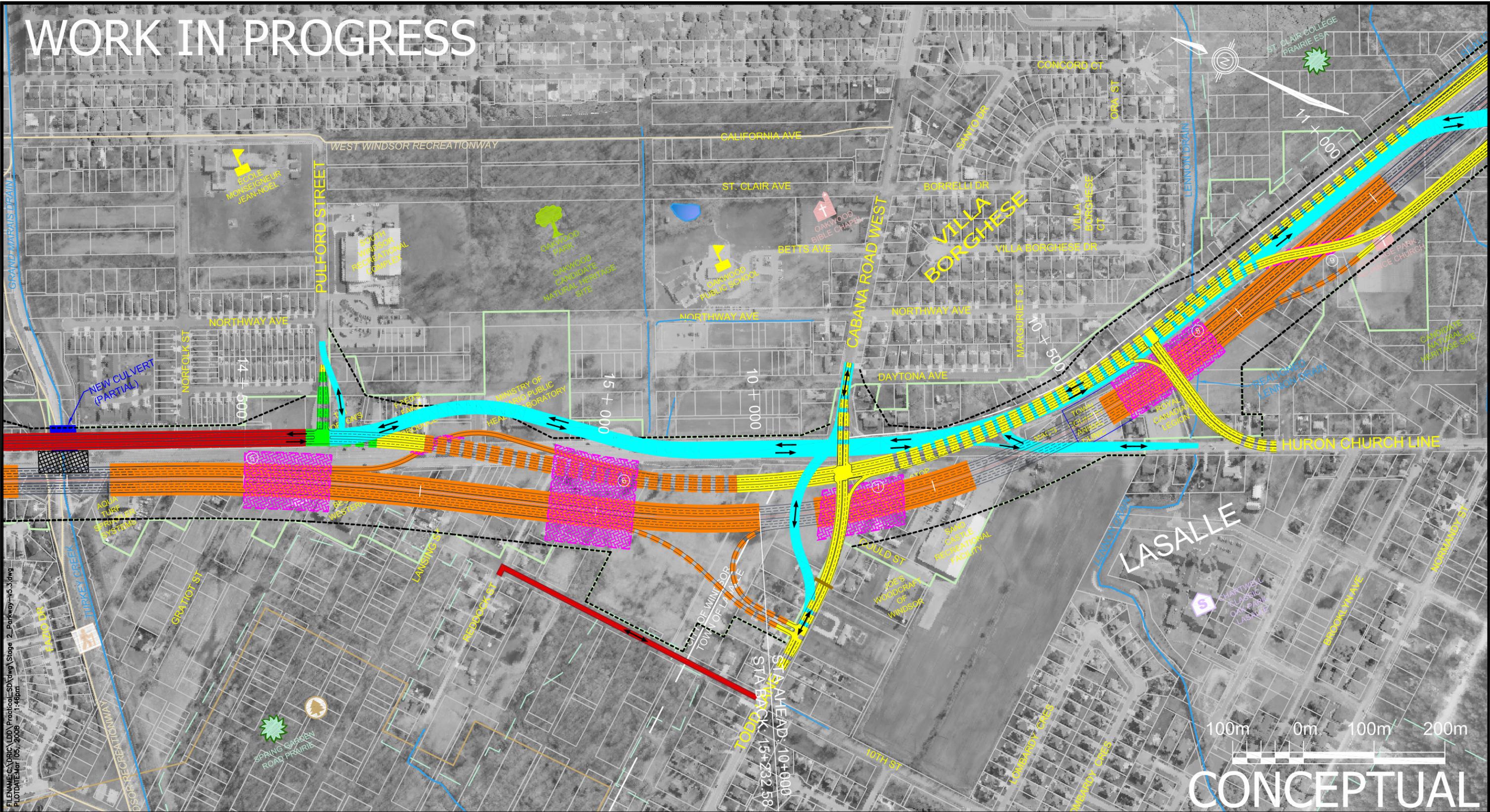
- UNDER CONSTRUCTION
- DETOUR ON / ACROSS EXISTING ROADWAY - - -
- REMOVAL - STRUCTURE [Cross-hatch]
- REMOVAL - DETOUR [Diagonal lines]

- PROPOSED PARKWAY & SERVICE ROAD [Dotted line]
- PROPOSED STRUCTURE [Outline]
- COMPLETED CONSTRUCTION ———
- COMPLETED STRUCTURE [Solid]

SCALE 1:5000

CONCEPTUAL

WORK IN PROGRESS



FILENAME: C:\DPRIC\DDA\Practical\SD\dwg Stage 2_Parkway-ws3.dwg
 PLOTDATE: Mar 05, 2008 1:46pm

PARKWAY - CONSTRUCTION STAGE 2

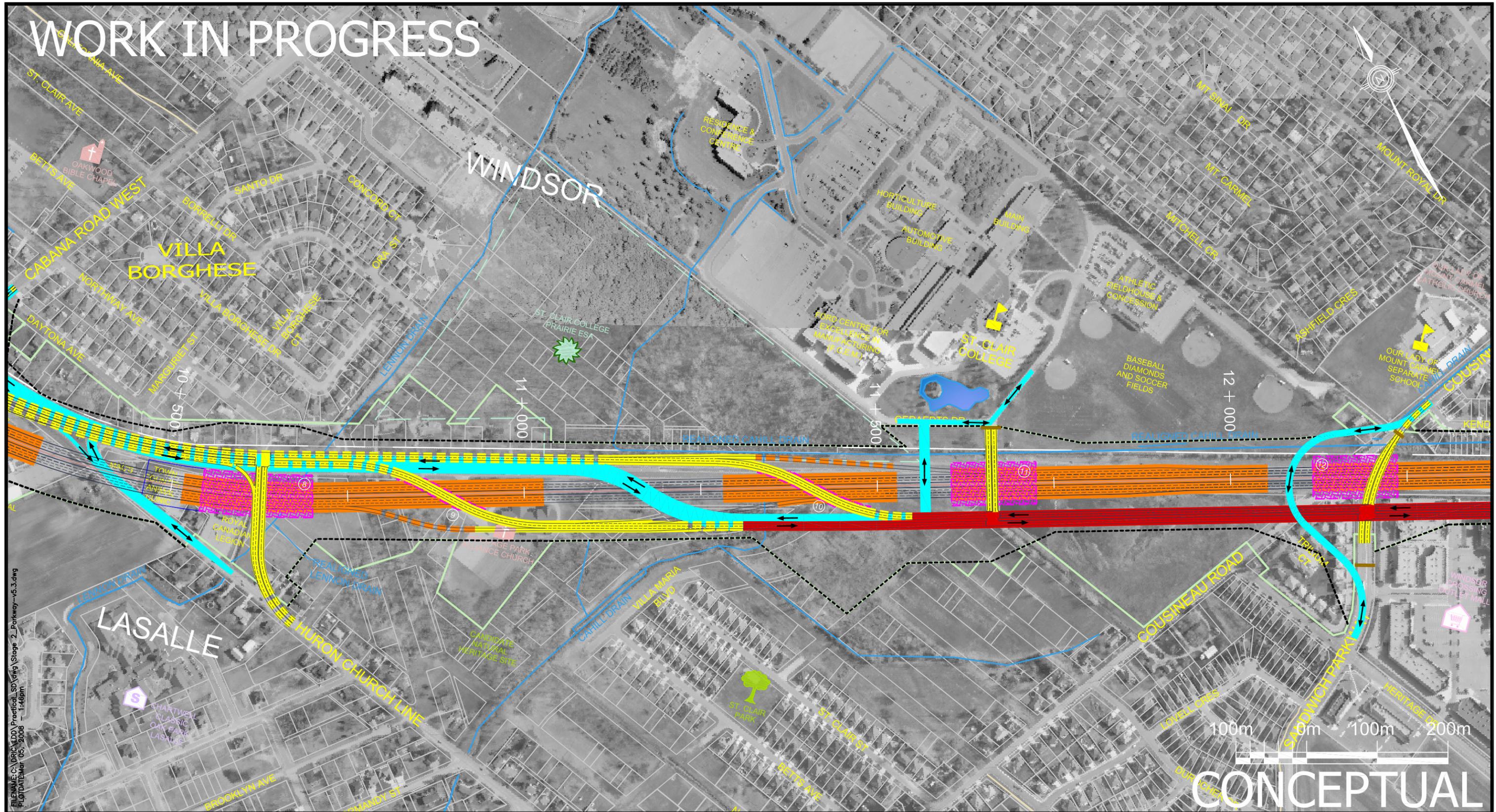
FEBRUARY 2008



<p>STAGE - TRAFFIC DETOUR</p>	<p>UNDER CONSTRUCTION</p> <p>ABOVE GRADE</p> <p>AT GRADE</p> <p>BELOW GRADE</p> <p>TRANSITION</p> <p>BELOW GRADE</p> <p>STRUCTURE</p>	<p>UNDER CONSTRUCTION</p> <p>DETOUR ON A/CROSS</p> <p>EXISTING ROADWAY</p> <p>REMOVAL - STRUCTURE</p> <p>REMOVAL - DETOUR</p>	<p>PROPOSED PARKWAY & SERVICE ROAD</p> <p>PROPOSED STRUCTURE</p> <p>COMPLETED CONSTRUCTION</p> <p>COMPLETED STRUCTURE</p>
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SCALE 1:5000
2

WORK IN PROGRESS



FILENAME: C:\PRICM\DDA\Practical_SD\wg Stage 2_Parkway-v5.3.dwg
 PLOTDATE: Mar 05, 2008 1:46pm

PARKWAY - CONSTRUCTION STAGE 2

FEBRUARY 2008



- STAGE - TRAFFIC DETOUR ———
- STAGE - TRAFFIC DIRECTION ↔ / ↔
- ROAD CLOSE ———

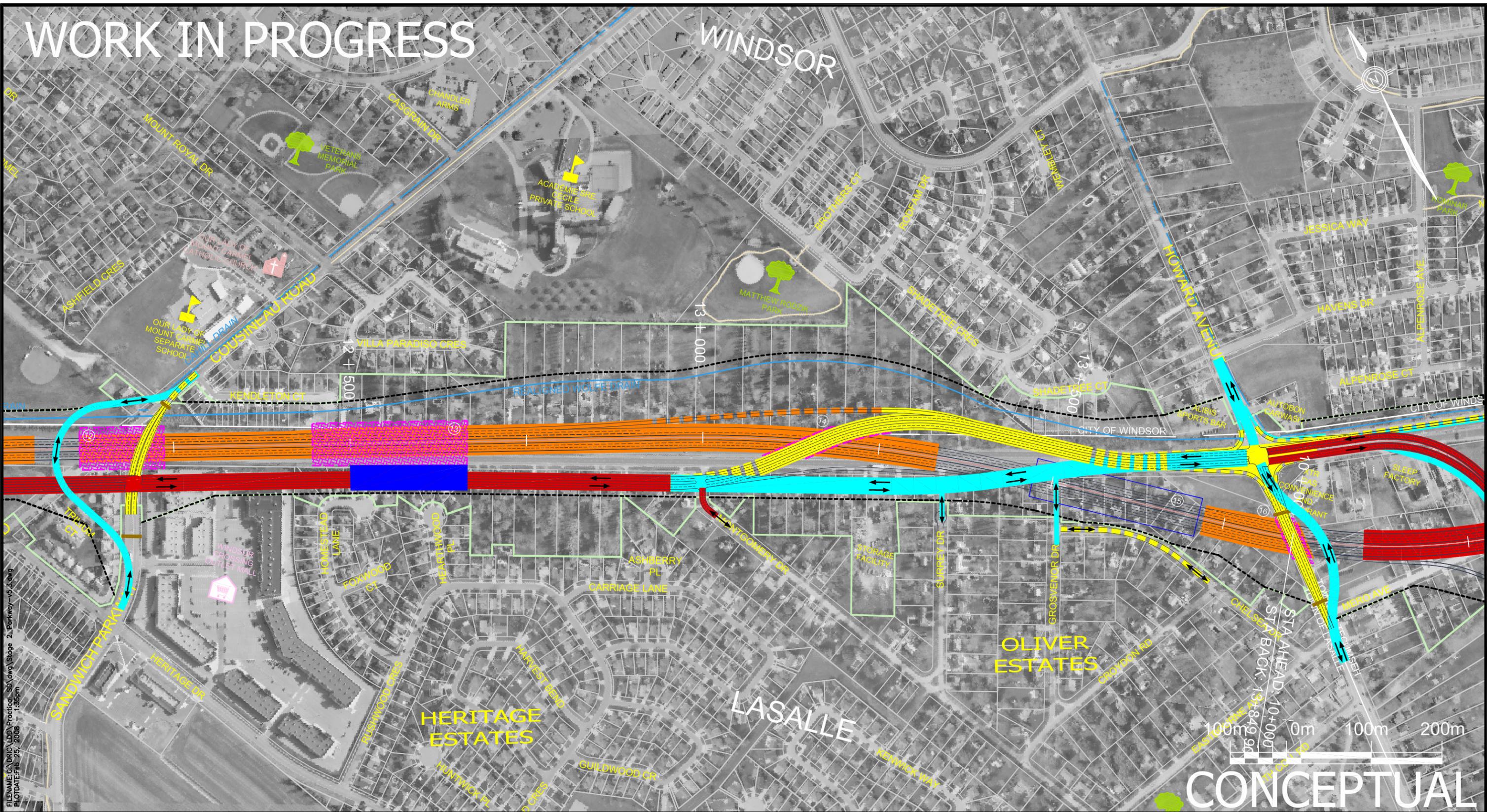
- UNDER CONSTRUCTION
- ABOVE GRADE ———
- AT GRADE ———
- BELOW GRADE ———
- STRUCTURE [Pattern]

- UNDER CONSTRUCTION
- DETOUR ON / ACROSS EXISTING ROADWAY - - - - -
- REMOVAL - STRUCTURE [Cross-hatch]
- REMOVAL - DETOUR [Diagonal lines]

- PROPOSED PARKWAY & SERVICE ROAD [Dashed lines]
- PROPOSED STRUCTURE [Box]
- COMPLETED CONSTRUCTION ———
- COMPLETED STRUCTURE [Box]

SCALE 1:5000

WORK IN PROGRESS



FILENAME: C:\D:\CADD\Practical_SBA\wg Stage 2_Parkway-v5.dwg
 PLOT DATE: Feb 25, 2008 1:30pm

CONCEPTUAL



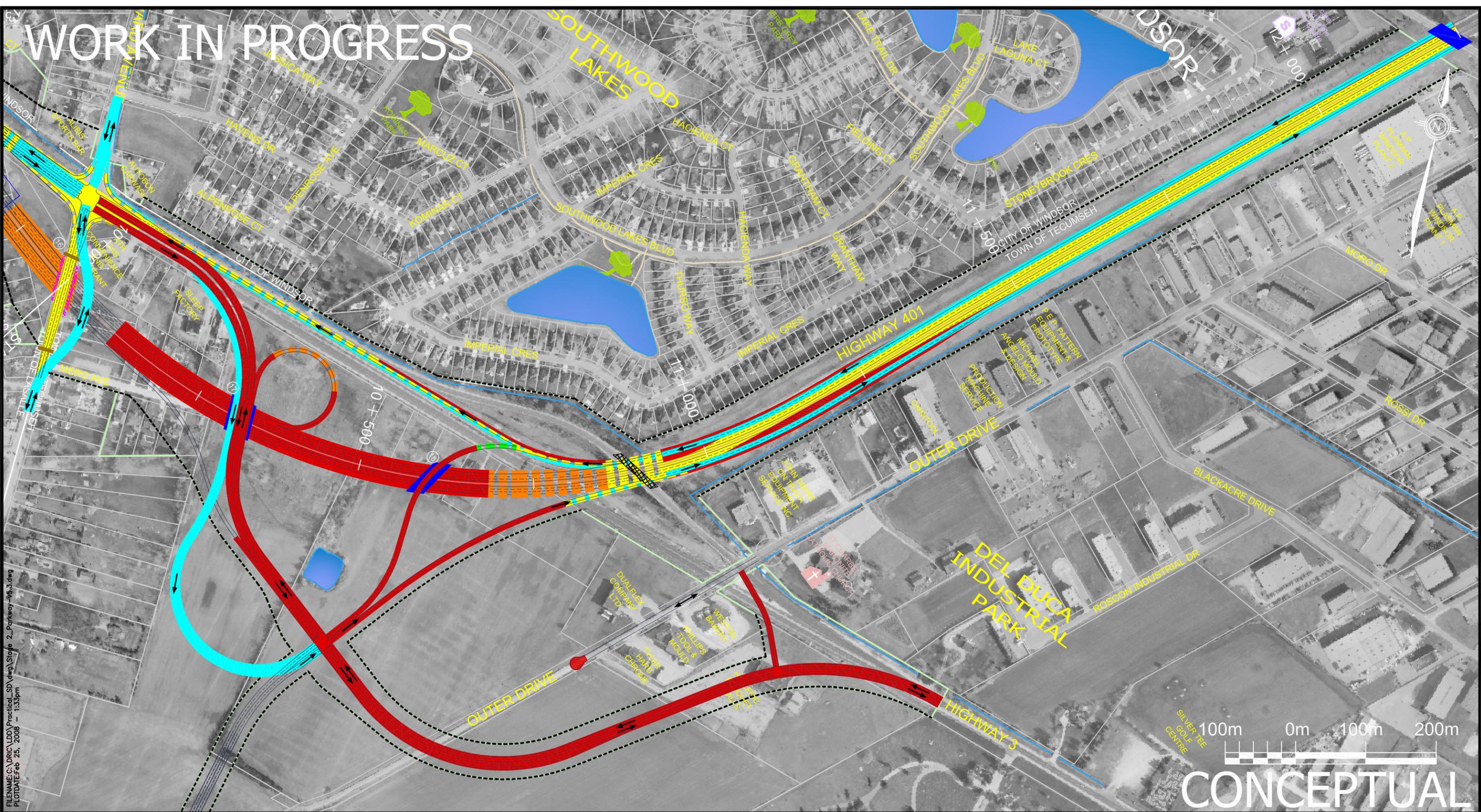
PARKWAY - CONSTRUCTION STAGE 2

FEBRUARY 2008

<p>STAGE - TRAFFIC DETOUR</p>	<p>UNDER CONSTRUCTION</p> <p>ABOVE GRADE</p> <p>AT GRADE</p> <p>BELOW GRADE</p> <p>STRUCTURE</p>	<p>UNDER CONSTRUCTION</p> <p>DETOUR ON / ACROSS EXISTING ROADWAY</p> <p>REMOVAL - STRUCTURE</p> <p>REMOVAL - DETOUR</p>	<p>PROPOSED PARKWAY & SERVICE ROAD</p> <p>PROPOSED STRUCTURE</p> <p>COMPLETED CONSTRUCTION</p> <p>COMPLETED STRUCTURE</p>
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SCALE 1:5000

WORK IN PROGRESS



FILENAME: C:\DRIC\LD\Practical_SD\dwg\Stage 2_Parkway-453.dwg
 PLOT DATE: Feb 25, 2008 - 1:59pm

PARKWAY - CONSTRUCTION STAGE 2

FEBRUARY 2008



- STAGE - TRAFFIC DETOUR ———
- STAGE - TRAFFIC DIRECTION ↔ / →
- ROAD CLOSE ———

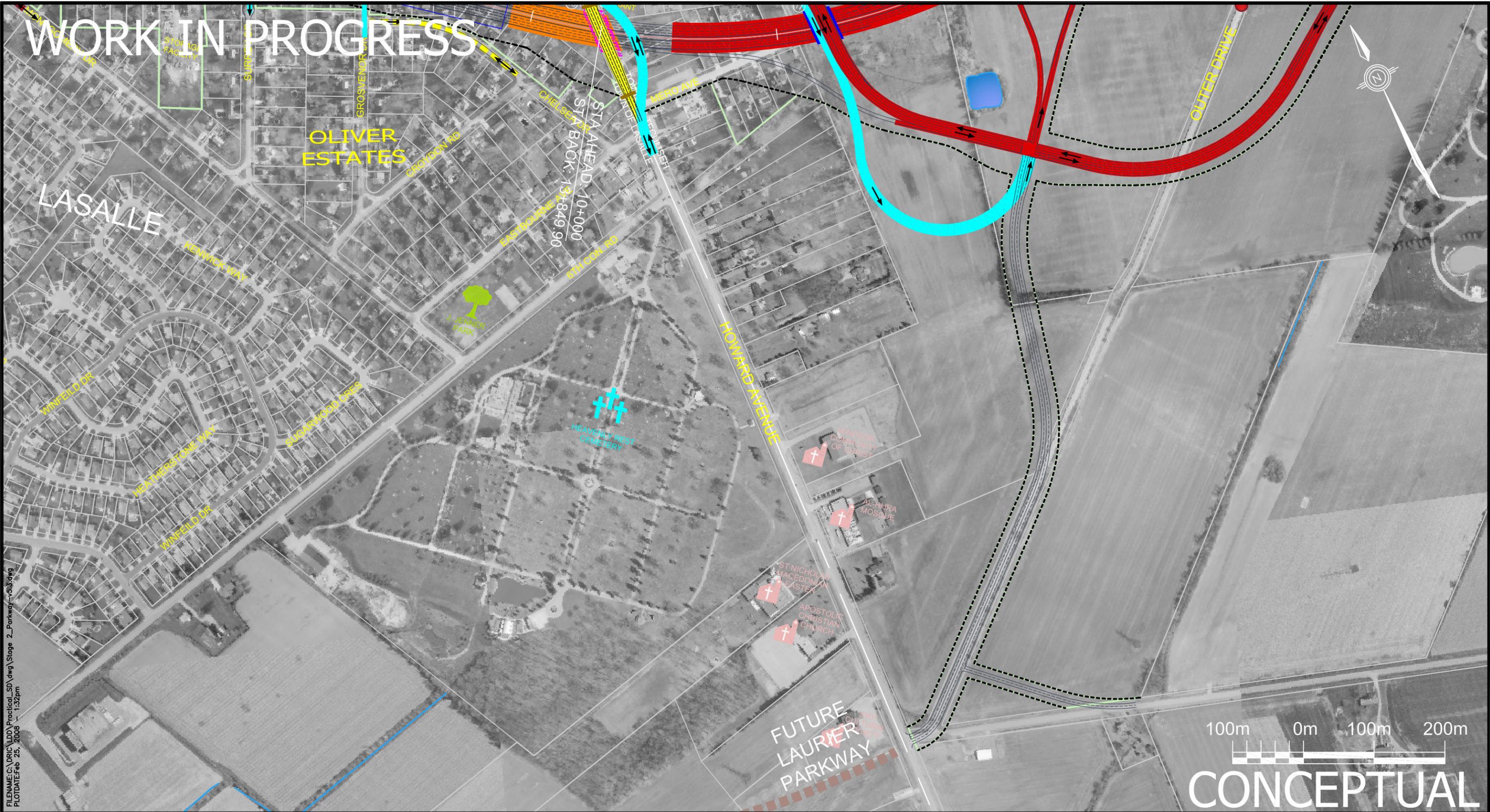
- UNDER CONSTRUCTION
- ABOVE GRADE ———
- ABOVE GRADE TRANSITION - - -
- AT GRADE ———
- BELOW GRADE TRANSITION - - -
- BELOW GRADE ———
- STRUCTURE [Pattern]

- UNDER CONSTRUCTION
- DETOUR ON / ACROSS EXISTING ROADWAY - - -
- REMOVAL - STRUCTURE [Cross-hatch]
- REMOVAL - DETOUR [Diagonal lines]

- PROPOSED PARKWAY & SERVICE ROAD [Dashed lines]
- PROPOSED STRUCTURE [Box]
- COMPLETED CONSTRUCTION ———
- COMPLETED STRUCTURE [Box]

SCALE 1:5000

WORK IN PROGRESS



FILENAME: C:\PRIC\DD\Practical_SD\dwg Stage 2_Parkway-v53.dwg
 PLOTDATE: Feb 25, 2008 1:34pm

CONCEPTUAL

PARKWAY - CONSTRUCTION STAGE 2

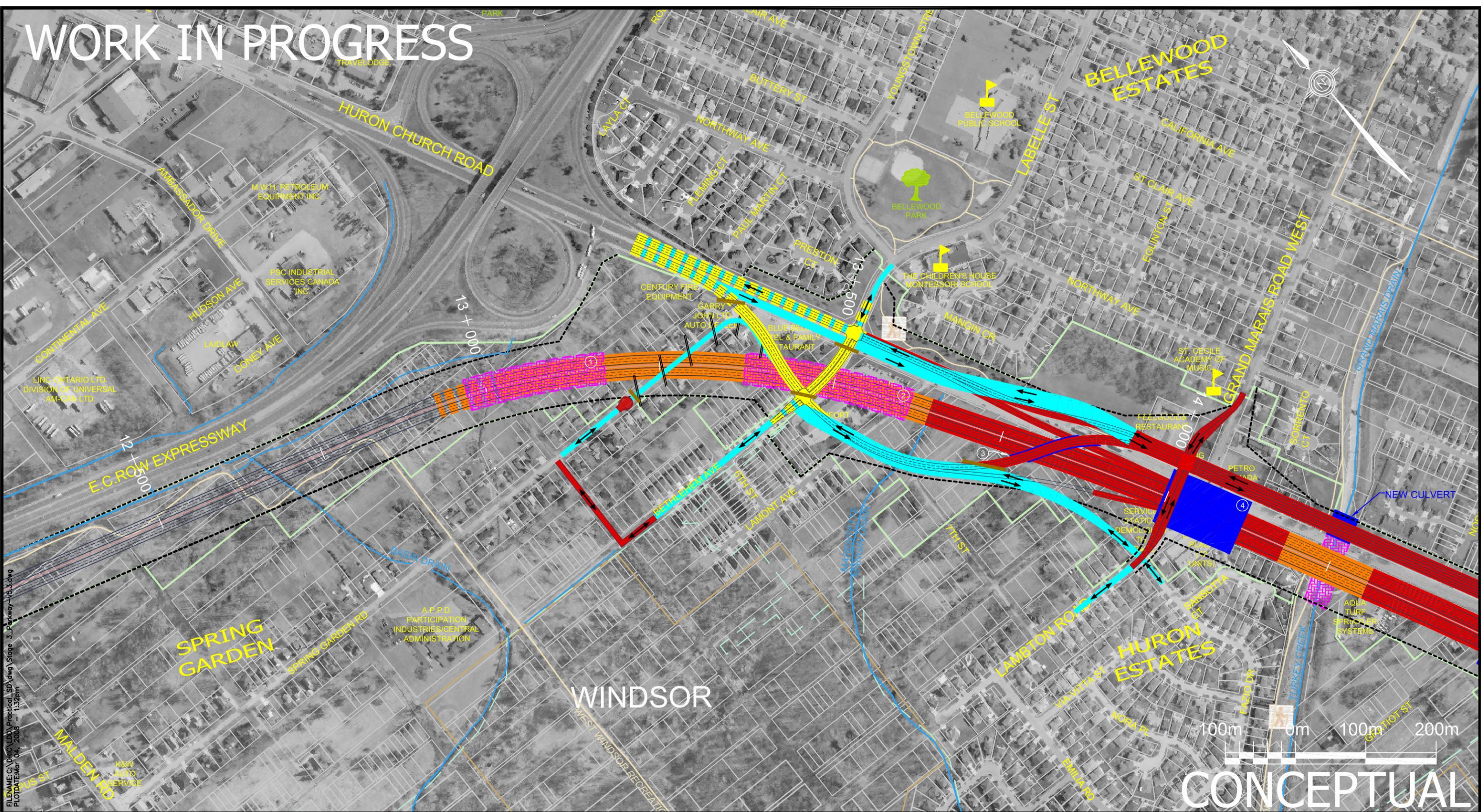
FEBRUARY 2008



<p>STAGE - TRAFFIC DETOUR</p> <p>STAGE - TRAFFIC DIRECTION</p> <p>ROAD CLOSE</p>	<p>UNDER CONSTRUCTION</p> <p>ABOVE GRADE</p> <p>ABOVE GRADE TRANSITION</p> <p>AT GRADE</p> <p>BELOW GRADE TRANSITION</p> <p>BELOW GRADE</p> <p>STRUCTURE</p>	<p>UNDER CONSTRUCTION</p> <p>DETOUR ON / ACROSS EXISTING ROADWAY</p> <p>REMOVAL - STRUCTURE</p> <p>REMOVAL - DETOUR</p>	<p>PROPOSED PARKWAY & SERVICE ROAD</p> <p>PROPOSED STRUCTURE</p> <p>COMPLETED CONSTRUCTION</p> <p>COMPLETED STRUCTURE</p>
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SCALE 1:5000

WORK IN PROGRESS



FILENAME: C:\proj\LDN\Practical_S03\dwg\Stage 3_Parkway-V3.sldwg
 PLOT DATE: Mar 04, 2008 - 1:52pm

PARKWAY - CONSTRUCTION STAGE 3

FEBRUARY 2008



- STAGE - TRAFFIC DETOUR
- STAGE - TRAFFIC DIRECTION
- ROAD CLOSE

- UNDER CONSTRUCTION
- ABOVE GRADE
- ABOVE GRADE TRANSITION
- AT GRADE
- BELOW GRADE TRANSITION
- BELOW GRADE
- STRUCTURE

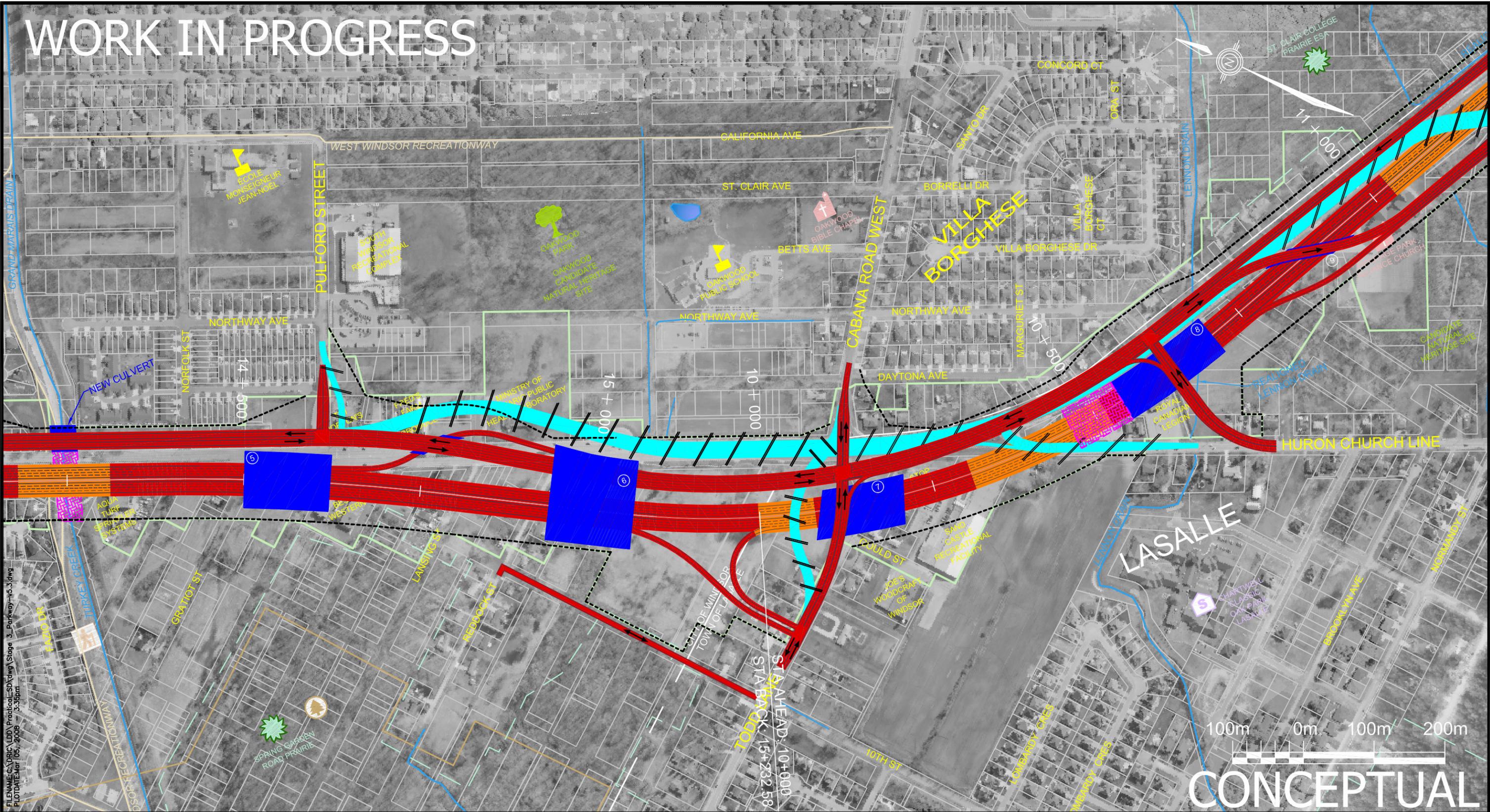
- UNDER CONSTRUCTION
- DETOUR ON / ACROSS EXISTING ROADWAY
- REMOVAL - STRUCTURE
- REMOVAL - DETOUR

- PROPOSED PARKWAY & SERVICE ROAD
- PROPOSED STRUCTURE
- COMPLETED CONSTRUCTION
- COMPLETED STRUCTURE

SCALE 1:5000

CONCEPTUAL

WORK IN PROGRESS



FILENAME: C:\DPRIC\DDA\Practical\SD\dwg Stage 3_Parkway-ws3.dwg
 PLOTDATE: Mar 05, 2008 7:33:59pm

PARKWAY - CONSTRUCTION STAGE 3

FEBRUARY 2008

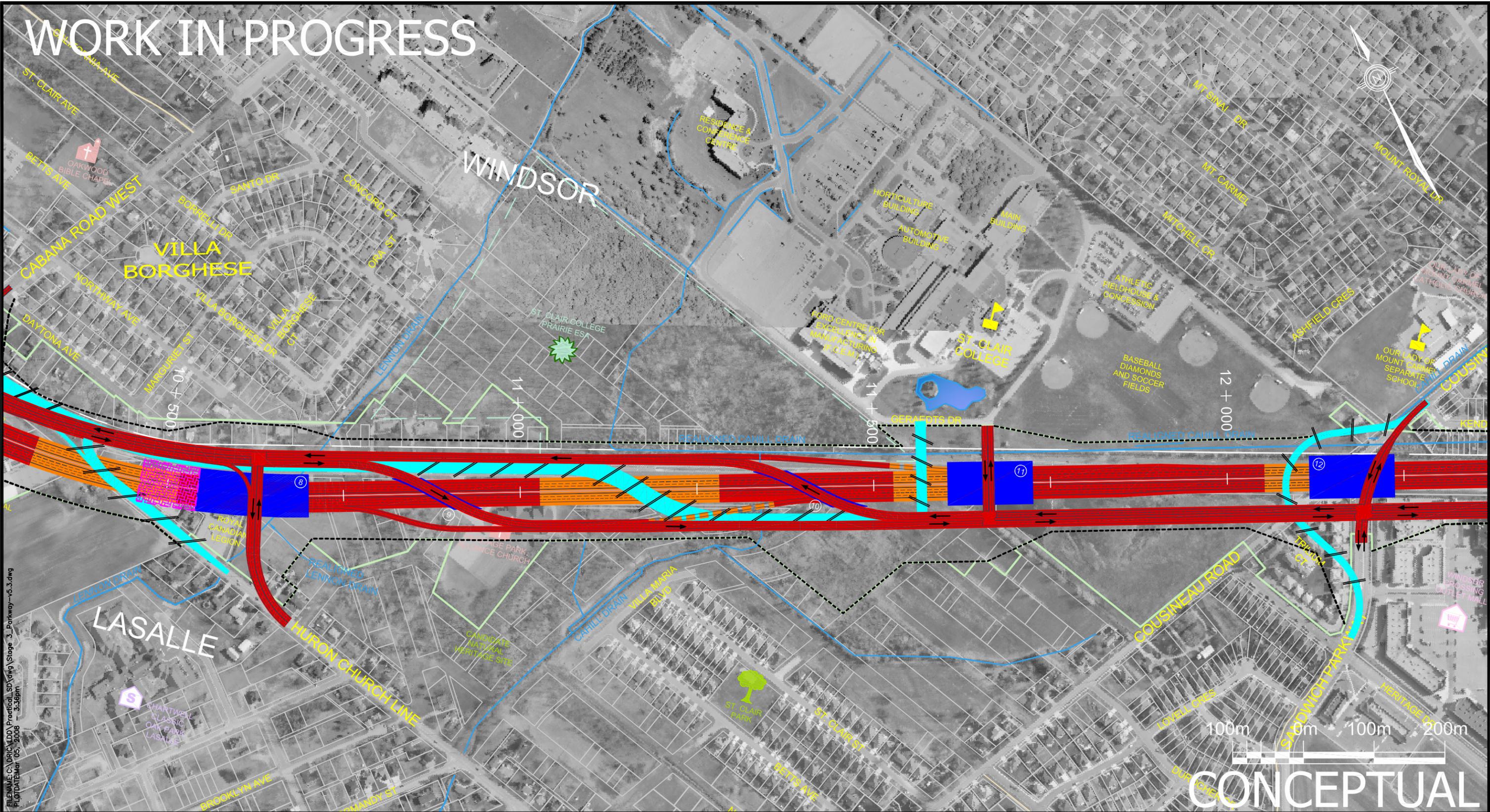


STAGE - TRAFFIC DETOUR STAGE - TRAFFIC DIRECTION ROAD CLOSE	 	UNDER CONSTRUCTION ABOVE GRADE ABOVE GRADE TRANSITION AT GRADE BELOW GRADE TRANSITION BELOW GRADE STRUCTURE	 	UNDER CONSTRUCTION DETOUR ON A/CROSS EXISTING ROADWAY REMOVAL - STRUCTURE REMOVAL - DETOUR	 	PROPOSED PARKWAY & SERVICE ROAD PROPOSED STRUCTURE COMPLETED CONSTRUCTION COMPLETED STRUCTURE	
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SCALE 1:5000

CONCEPTUAL

WORK IN PROGRESS



FILENAME: C:\PRICM\DDA\Practical_SD\wg Stage 3_Parkway-v5.3.dwg
 PLOTDATE: Mar 05, 2008 3:59pm

PARKWAY - CONSTRUCTION STAGE 3

FEBRUARY 2008

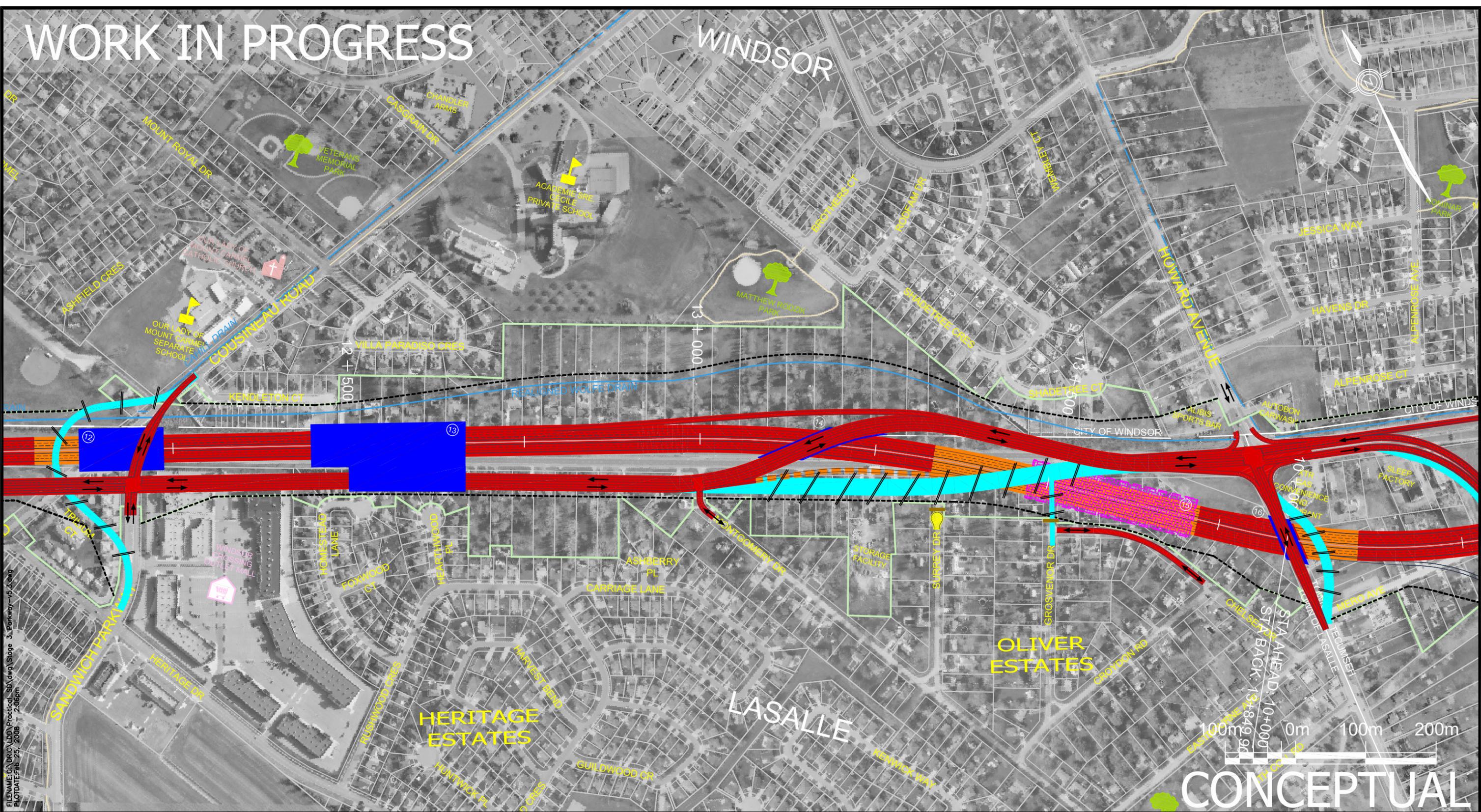


<p>STAGE - TRAFFIC DETOUR</p> <p>STAGE - TRAFFIC DIRECTION</p> <p>ROAD CLOSE</p>	<p>UNDER CONSTRUCTION</p> <p>ABOVE GRADE</p> <p>ABOVE GRADE TRANSITION</p> <p>AT GRADE</p> <p>BELOW GRADE TRANSITION</p> <p>BELOW GRADE</p> <p>STRUCTURE</p>	<p>UNDER CONSTRUCTION</p> <p>DETOUR ON / ACROSS EXISTING ROADWAY</p> <p>REMOVAL - STRUCTURE</p> <p>REMOVAL - DETOUR</p>	<p>PROPOSED PARKWAY & SERVICE ROAD</p> <p>PROPOSED STRUCTURE</p> <p>COMPLETED CONSTRUCTION</p> <p>COMPLETED STRUCTURE</p>
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SCALE 1:5000

CONCEPTUAL

WORK IN PROGRESS



FILENAME: C:\D:\DRA\Practical_S3\wg Stage 3_Parkway-v5.dwg
 PLOT DATE: Feb 25, 2008 7:20:06pm

PARKWAY - CONSTRUCTION STAGE 3

FEBRUARY 2008

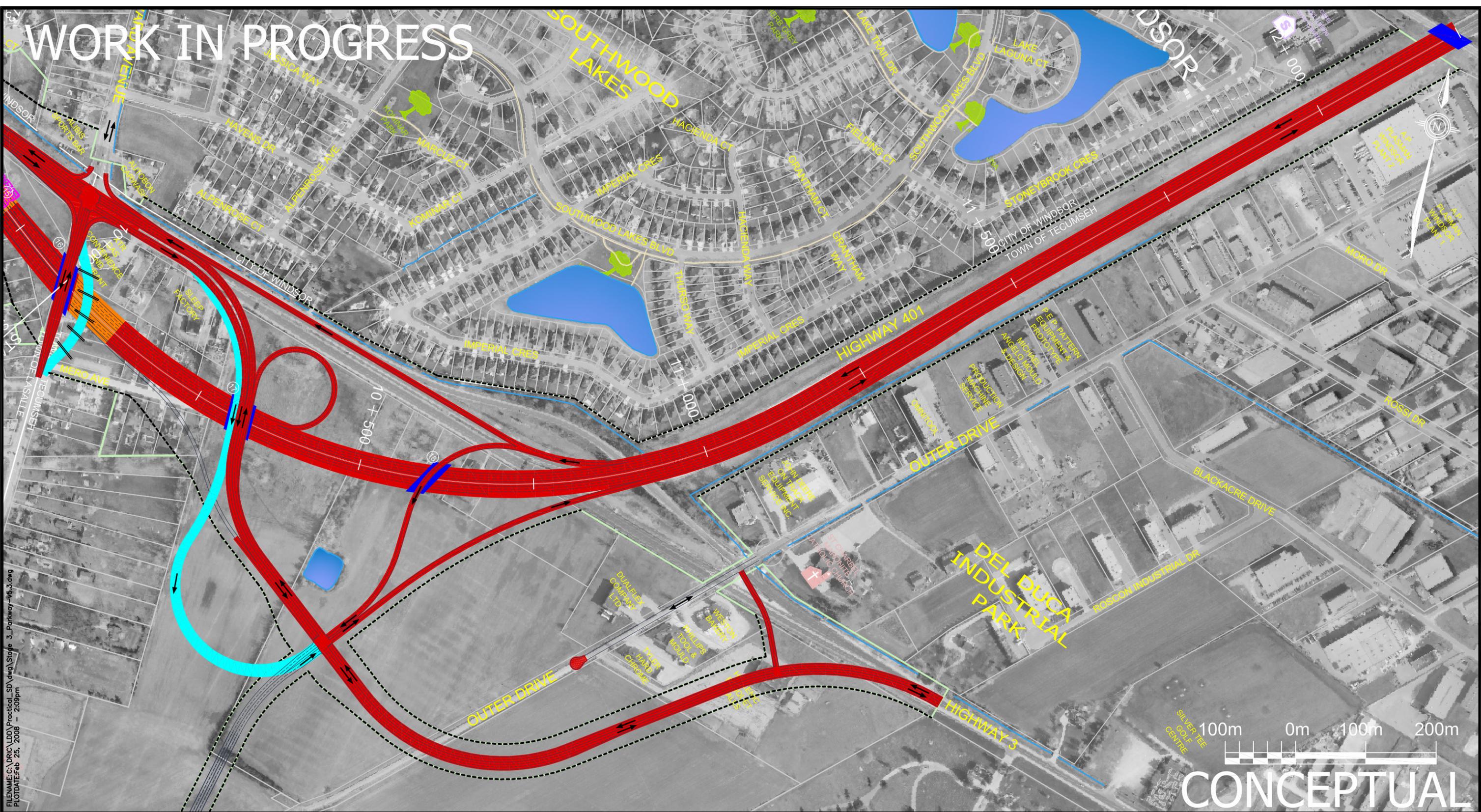


STAGE - TRAFFIC DETOUR STAGE - TRAFFIC DIRECTION ROAD CLOSE	 	UNDER CONSTRUCTION ABOVE GRADE ABOVE GRADE TRANSITION AT GRADE BELOW GRADE TRANSITION BELOW GRADE STRUCTURE	 	UNDER CONSTRUCTION DETOUR ON / ACROSS EXISTING ROADWAY REMOVAL - STRUCTURE REMOVAL - DETOUR	 	PROPOSED PARKWAY & SERVICE ROAD PROPOSED STRUCTURE COMPLETED CONSTRUCTION COMPLETED STRUCTURE	
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SCALE 1:5000

CONCEPTUAL

WORK IN PROGRESS



FILENAME: C:\PRIC\LD\Practical_SD\dwg\Stage 3_Parkway-v5.3.dwg
 PLOT DATE: Feb 25, 2008 - 2:09pm

PARKWAY - CONSTRUCTION STAGE 3

FEBRUARY 2008



- STAGE - TRAFFIC DETOUR
- STAGE - TRAFFIC DIRECTION
- ROAD CLOSE

- UNDER CONSTRUCTION
- ABOVE GRADE
- ABOVE GRADE TRANSITION
- AT GRADE
- BELOW GRADE TRANSITION
- BELOW GRADE
- STRUCTURE

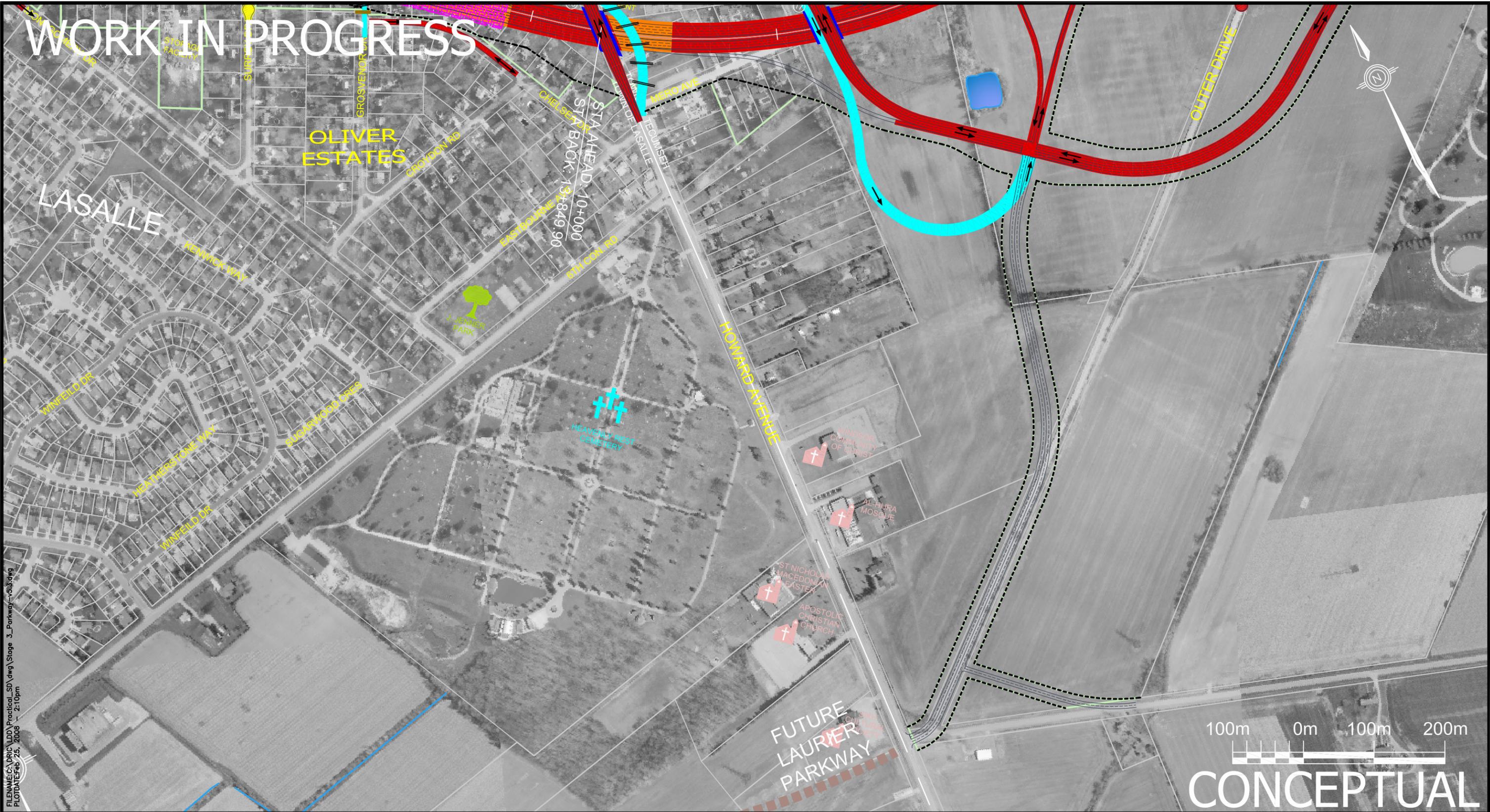
- UNDER CONSTRUCTION
- DETOUR ON / ACROSS EXISTING ROADWAY
- REMOVAL - STRUCTURE
- REMOVAL - DETOUR

- PROPOSED PARKWAY & SERVICE ROAD
- PROPOSED STRUCTURE
- COMPLETED CONSTRUCTION
- COMPLETED STRUCTURE

SCALE 1:5000

CONCEPTUAL

WORK IN PROGRESS



FILENAME: C:\DPRIC\DDA\Practical_SD\dwg\Stage 3_Parkway-v53.dwg
 PLOTDATE: Feb 25, 2008 2:10pm



CONCEPTUAL



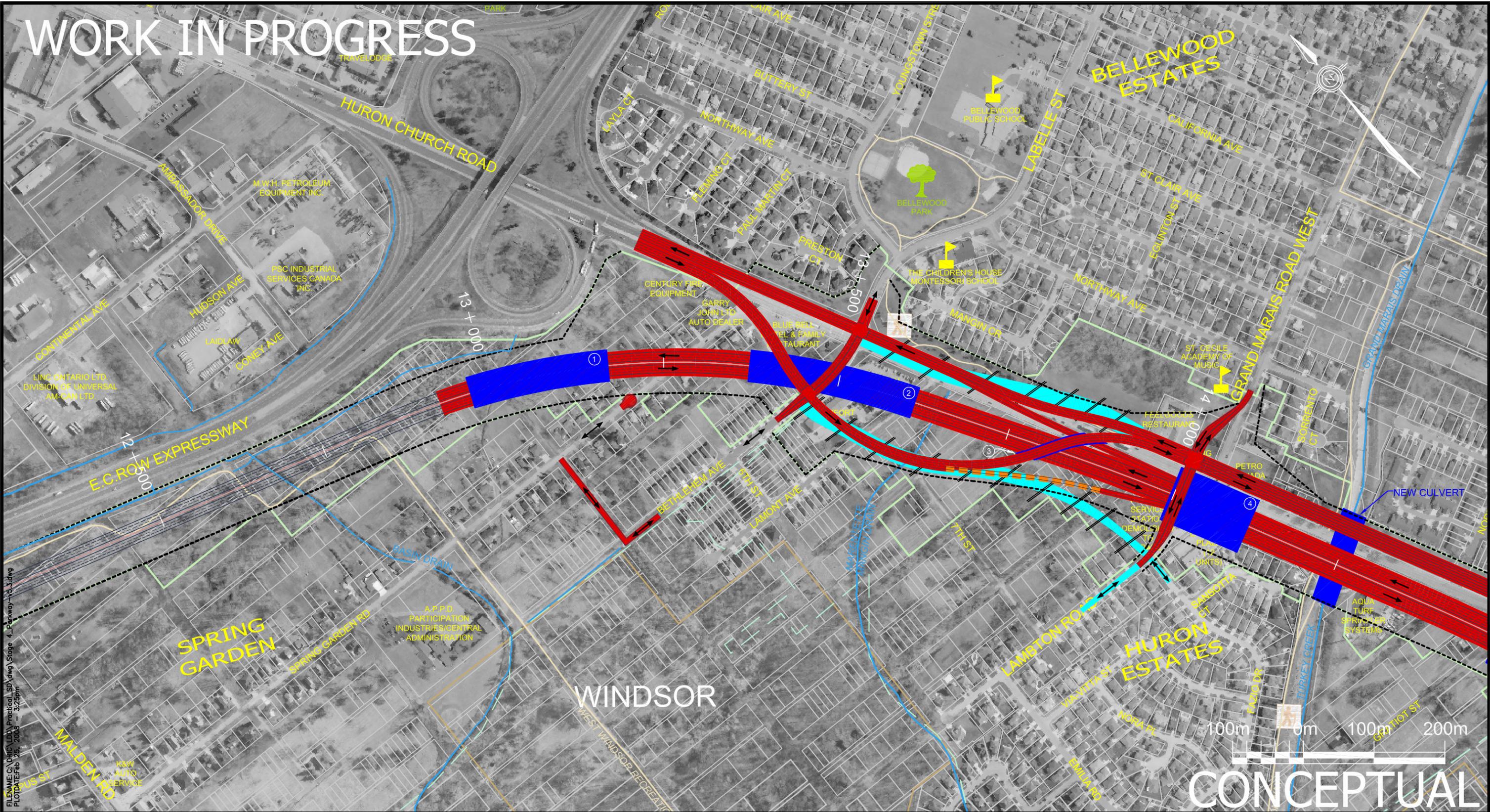
PARKWAY - CONSTRUCTION STAGE 3

FEBRUARY 2008

<p>STAGE - TRAFFIC DETOUR</p> <p>STAGE - TRAFFIC DIRECTION</p> <p>ROAD CLOSE</p>	<p>UNDER CONSTRUCTION</p> <p>ABOVE GRADE</p> <p>ABOVE GRADE TRANSITION</p> <p>AT GRADE</p> <p>BELOW GRADE TRANSITION</p> <p>BELOW GRADE</p> <p>STRUCTURE</p>	<p>UNDER CONSTRUCTION</p> <p>DETOUR ON / ACROSS EXISTING ROADWAY</p> <p>REMOVAL - STRUCTURE</p> <p>REMOVAL - DETOUR</p>	<p>PROPOSED PARKWAY & SERVICE ROAD</p> <p>PROPOSED STRUCTURE</p> <p>COMPLETED CONSTRUCTION</p> <p>COMPLETED STRUCTURE</p>
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SCALE 1:5000

WORK IN PROGRESS



FILENAME: C:\proj\LDN\Practical_S04.dwg Stage 4 Parkway-V3.dwg
 PLOT DATE: Feb 13, 2008 - 3:29pm

PARKWAY - CONSTRUCTION STAGE 4

FEBRUARY 2008

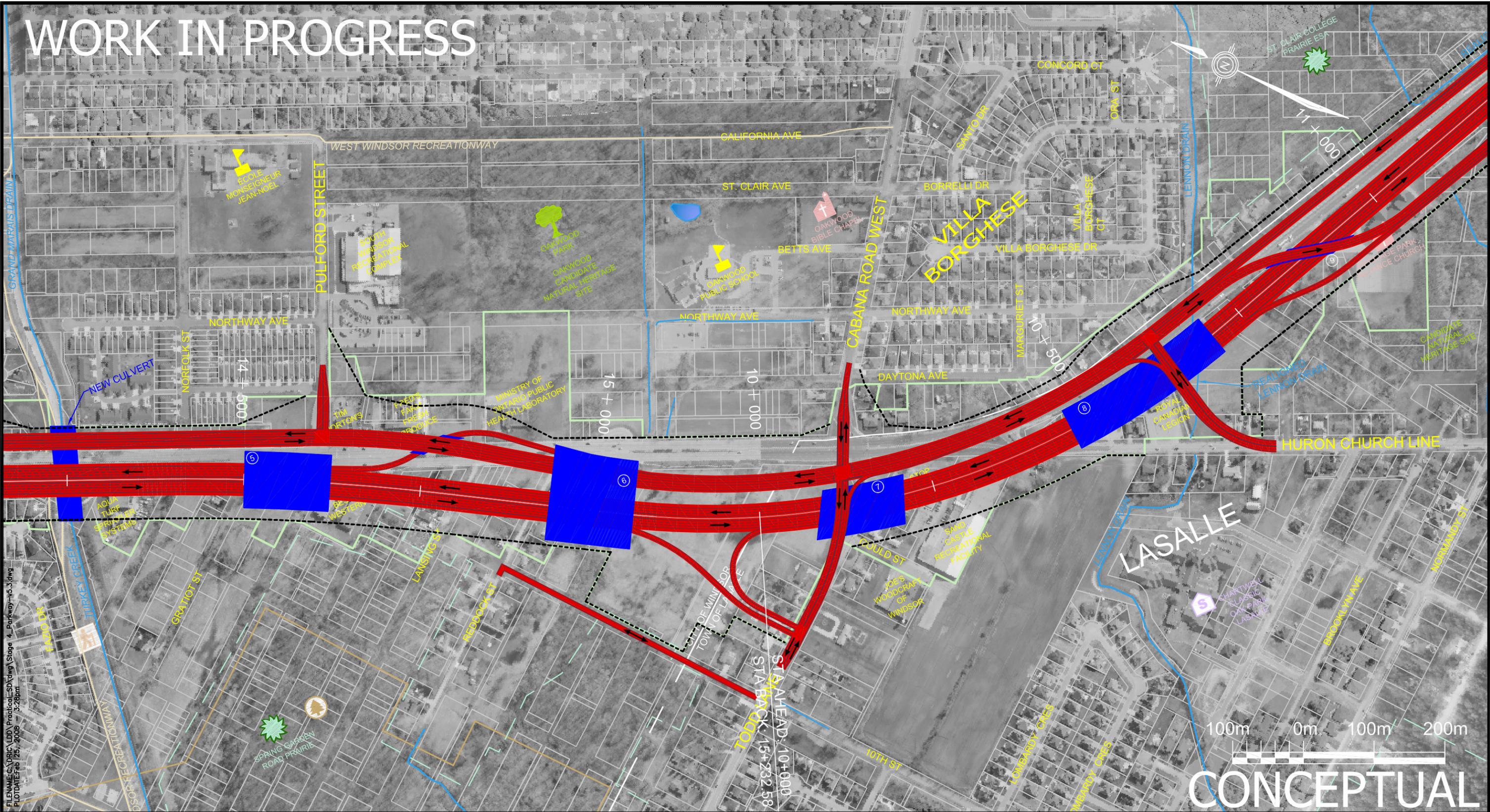


<p>STAGE - TRAFFIC DETOUR</p>	<p>UNDER CONSTRUCTION</p> <p>ABOVE GRADE</p> <p>AT GRADE</p> <p>BELOW GRADE</p> <p>STRUCTURE</p>	<p>UNDER CONSTRUCTION</p> <p>DETOUR ON / ACROSS EXISTING ROADWAY</p> <p>REMOVAL - STRUCTURE</p> <p>REMOVAL - DETOUR</p>	<p>PROPOSED PARKWAY & SERVICE ROAD</p> <p>PROPOSED STRUCTURE</p> <p>COMPLETED CONSTRUCTION</p> <p>COMPLETED STRUCTURE</p>
<p>STAGE - TRAFFIC DIRECTION</p>			
<p>ROAD CLOSE</p>			

SCALE 1:5000

CONCEPTUAL

WORK IN PROGRESS



FILENAME: C:\DPRIC\DDA\Practical\SD\dwg Stage 4_Parkway-45.3.dwg
 PLOTDATE: Feb 25, 2008 3:28pm



PARKWAY - CONSTRUCTION STAGE 4

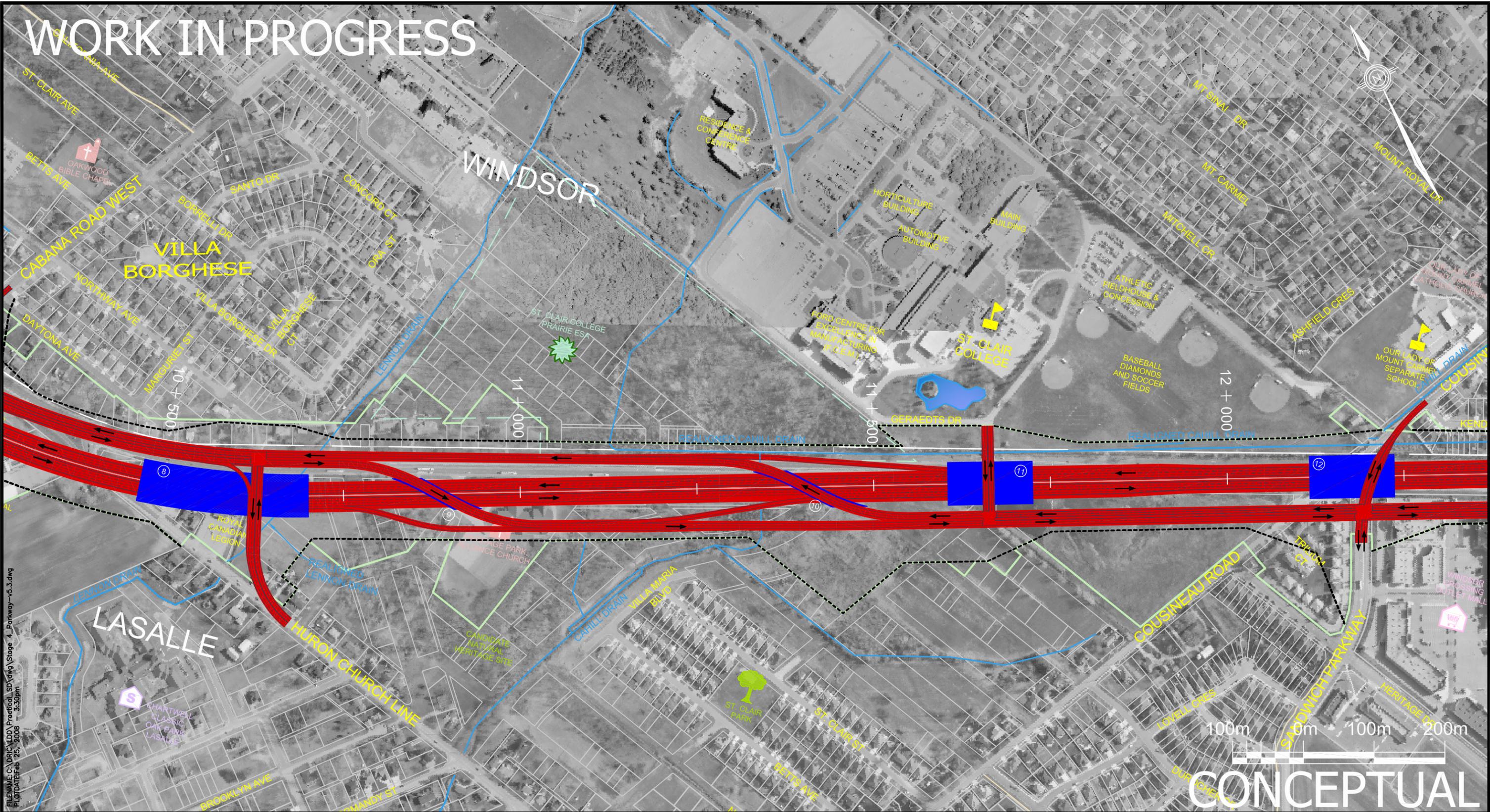
FEBRUARY 2008

<p>STAGE - TRAFFIC DETOUR</p> <p>STAGE - TRAFFIC DIRECTION</p> <p>ROAD CLOSE</p>	<p>UNDER CONSTRUCTION</p> <p>ABOVE GRADE</p> <p>ABOVE GRADE TRANSITION</p> <p>AT GRADE</p> <p>BELOW GRADE TRANSITION</p> <p>BELOW GRADE</p> <p>STRUCTURE</p>	<p>UNDER CONSTRUCTION</p> <p>DETOUR ON A/CROSS EXISTING ROADWAY</p> <p>REMOVAL - STRUCTURE</p> <p>REMOVAL - DETOUR</p>	<p>PROPOSED PARKWAY & SERVICE ROAD</p> <p>PROPOSED STRUCTURE</p> <p>COMPLETED CONSTRUCTION</p> <p>COMPLETED STRUCTURE</p>
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SCALE 1:5000

CONCEPTUAL

WORK IN PROGRESS



FILENAME: C:\PRIC\DDA\Practical_SD\wg Stage 4_Parkway-v5.3.dwg
 PLOTDATE: Feb 25, 2008 1:35:09pm

PARKWAY - CONSTRUCTION STAGE 4

FEBRUARY 2008



- STAGE - TRAFFIC DETOUR
- STAGE - TRAFFIC DIRECTION
- ROAD CLOSE

- UNDER CONSTRUCTION
- ABOVE GRADE
- ABOVE GRADE TRANSITION
- AT GRADE
- BELOW GRADE TRANSITION
- BELOW GRADE
- STRUCTURE

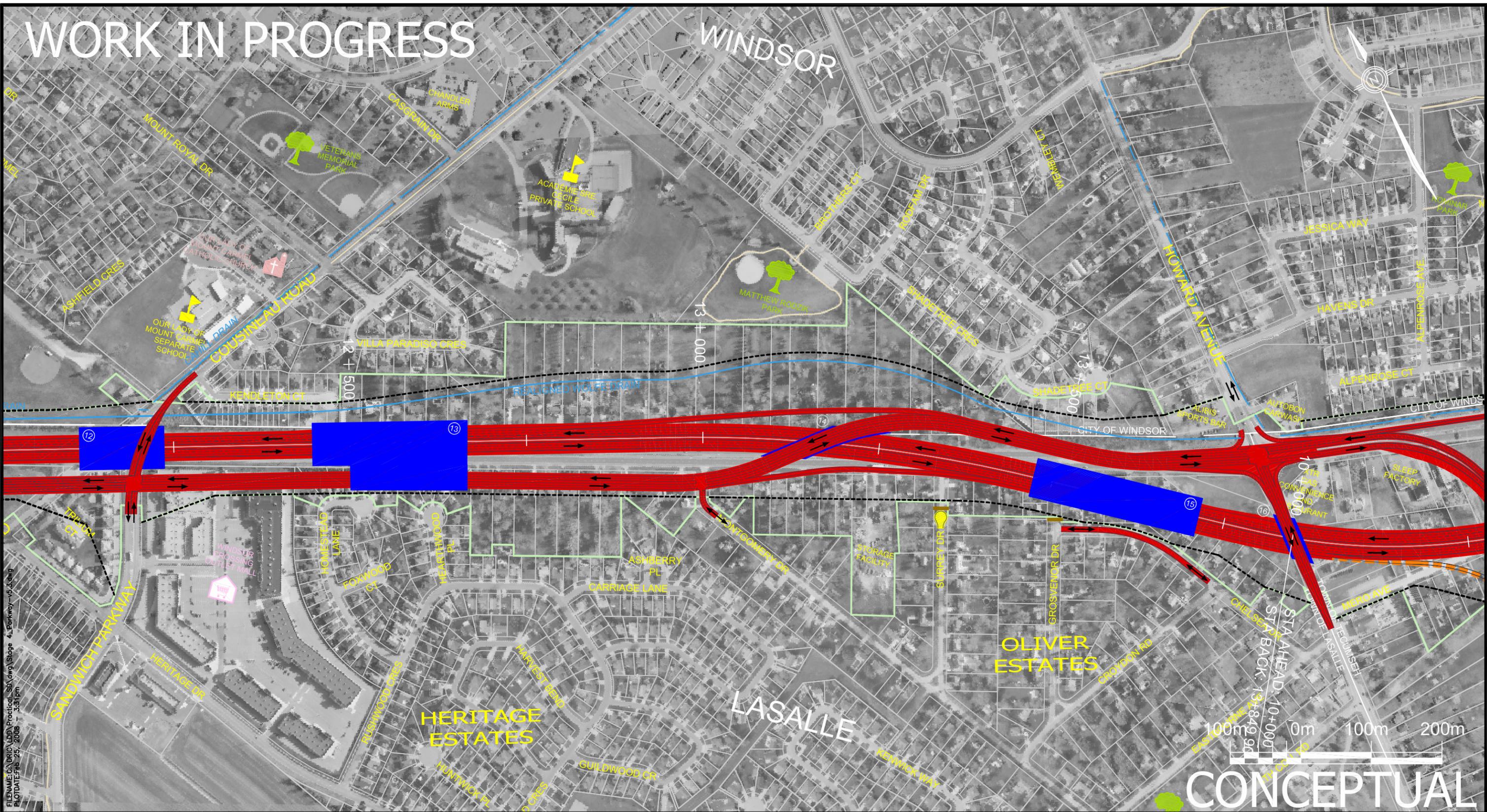
- UNDER CONSTRUCTION
- DETOUR ON / ACROSS EXISTING ROADWAY
- REMOVAL - STRUCTURE
- REMOVAL - DETOUR

- PROPOSED PARKWAY & SERVICE ROAD
- PROPOSED STRUCTURE
- COMPLETED CONSTRUCTION
- COMPLETED STRUCTURE

SCALE 1:5000

CONCEPTUAL

WORK IN PROGRESS



FILENAME: C:\D:\D:\D\Practical_S&W\Stage 4_Parkway-v5.dwg
 PLOT DATE: Feb 25, 2008 7:53:10pm

PARKWAY - CONSTRUCTION STAGE 4

FEBRUARY 2008

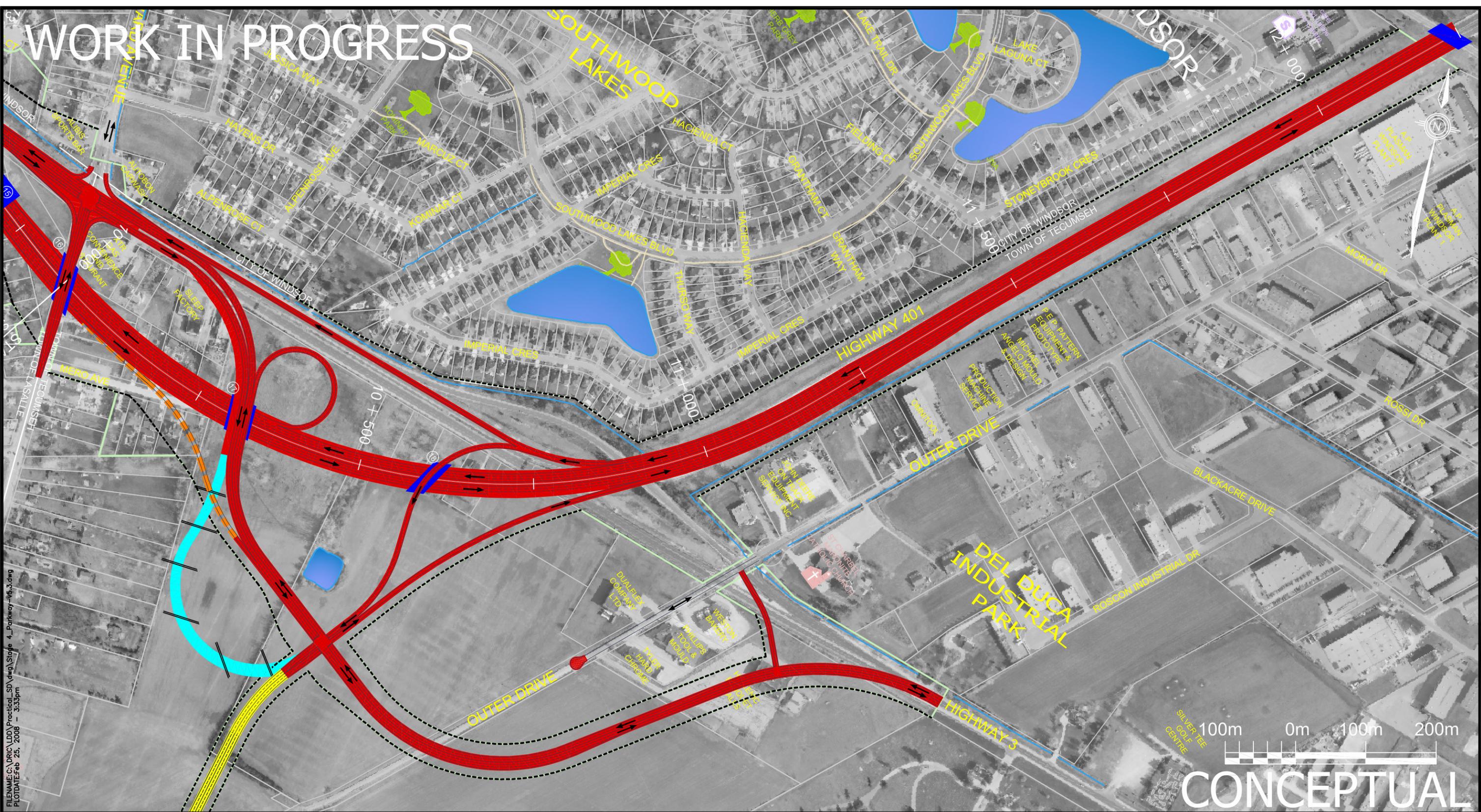


<p>STAGE - TRAFFIC DETOUR</p> <p>STAGE - TRAFFIC DIRECTION</p> <p>ROAD CLOSE</p>	<p>UNDER CONSTRUCTION</p> <p>ABOVE GRADE</p> <p>AT GRADE</p> <p>BELOW GRADE</p> <p>BELOW GRADE</p> <p>STRUCTURE</p>	<p>UNDER CONSTRUCTION</p> <p>DETOUR ON / ACROSS EXISTING ROADWAY</p> <p>REMOVAL - STRUCTURE</p> <p>REMOVAL - DETOUR</p>	<p>PROPOSED PARKWAY & SERVICE ROAD</p> <p>PROPOSED STRUCTURE</p> <p>COMPLETED CONSTRUCTION</p> <p>COMPLETED STRUCTURE</p>
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SCALE 1:5000

CONCEPTUAL

WORK IN PROGRESS



FILENAME: C:\PRIC\LD\Practical_SD\dwg\Stage 4_Parkway-453.dwg
 PLOT DATE: Feb 25, 2008 - 3:39pm

PARKWAY - CONSTRUCTION STAGE 4

FEBRUARY 2008



- STAGE - TRAFFIC DETOUR
- STAGE - TRAFFIC DIRECTION
- ROAD CLOSE

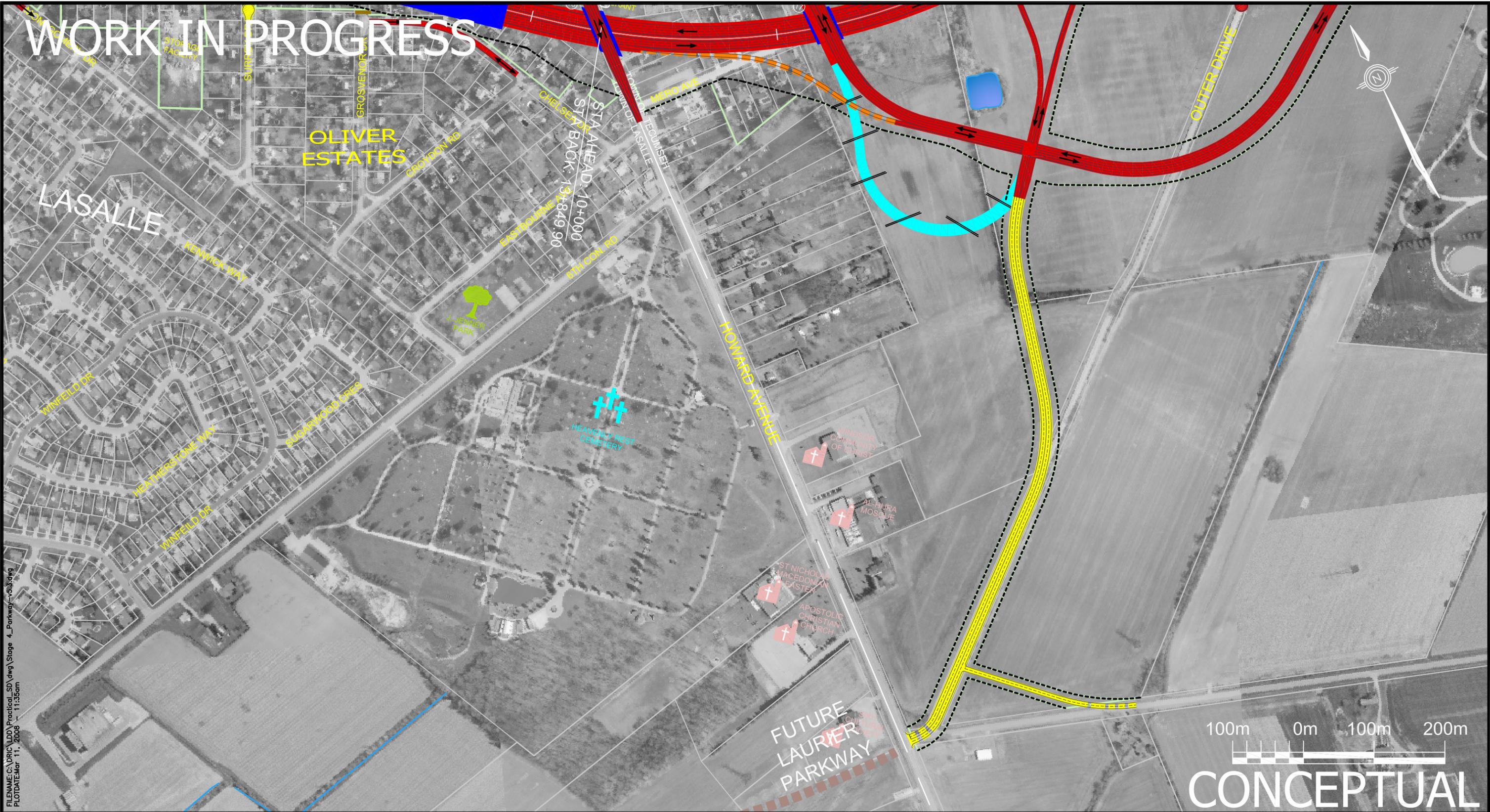
- UNDER CONSTRUCTION
- ABOVE GRADE
- ABOVE GRADE TRANSITION
- AT GRADE
- BELOW GRADE TRANSITION
- BELOW GRADE
- STRUCTURE

- UNDER CONSTRUCTION
- DETOUR ON / ACROSS EXISTING ROADWAY
- REMOVAL - STRUCTURE
- REMOVAL - DETOUR

- PROPOSED PARKWAY & SERVICE ROAD
- PROPOSED STRUCTURE
- COMPLETED CONSTRUCTION
- COMPLETED STRUCTURE

SCALE 1:5000

WORK IN PROGRESS



FILENAME: C:\DPRIC\DDA\Practical_SD\dwg\Stage 4_Parkway-v53.dwg
 PLOTDATE: Mar 11, 2008 11:35am

PARKWAY - CONSTRUCTION STAGE 4

FEBRUARY 2008



- STAGE - TRAFFIC DETOUR
- STAGE - TRAFFIC DIRECTION
- ROAD CLOSE

- UNDER CONSTRUCTION
- ABOVE GRADE
- ABOVE GRADE TRANSITION
- AT GRADE
- BELOW GRADE TRANSITION
- BELOW GRADE
- STRUCTURE

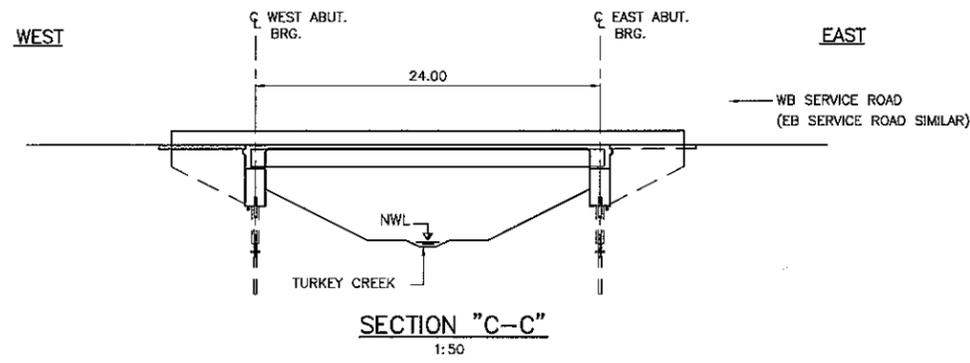
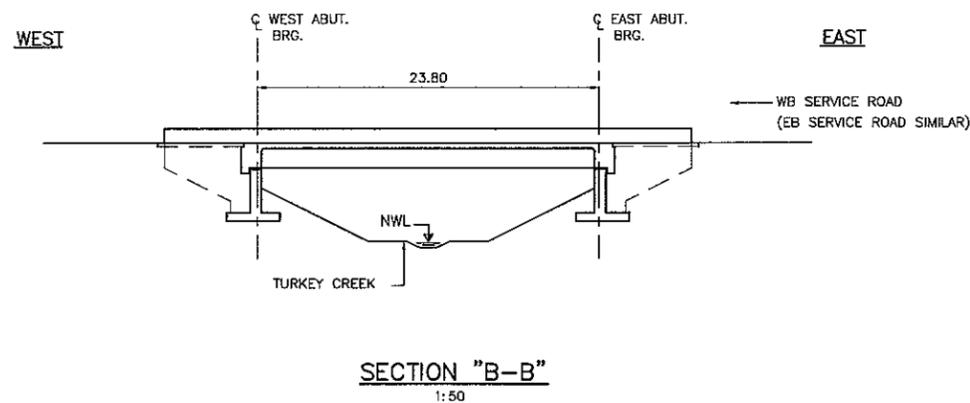
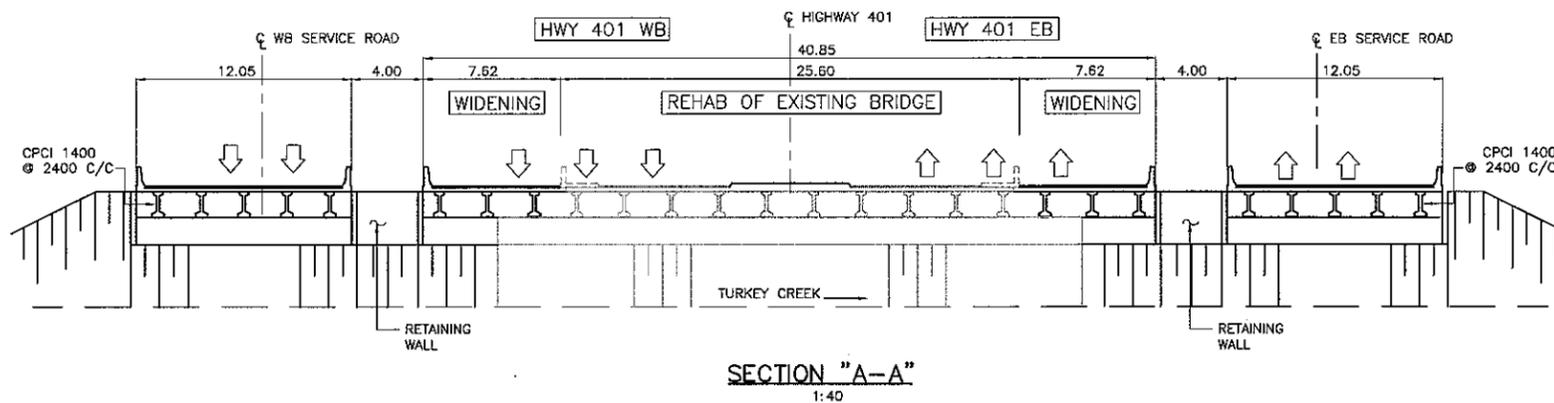
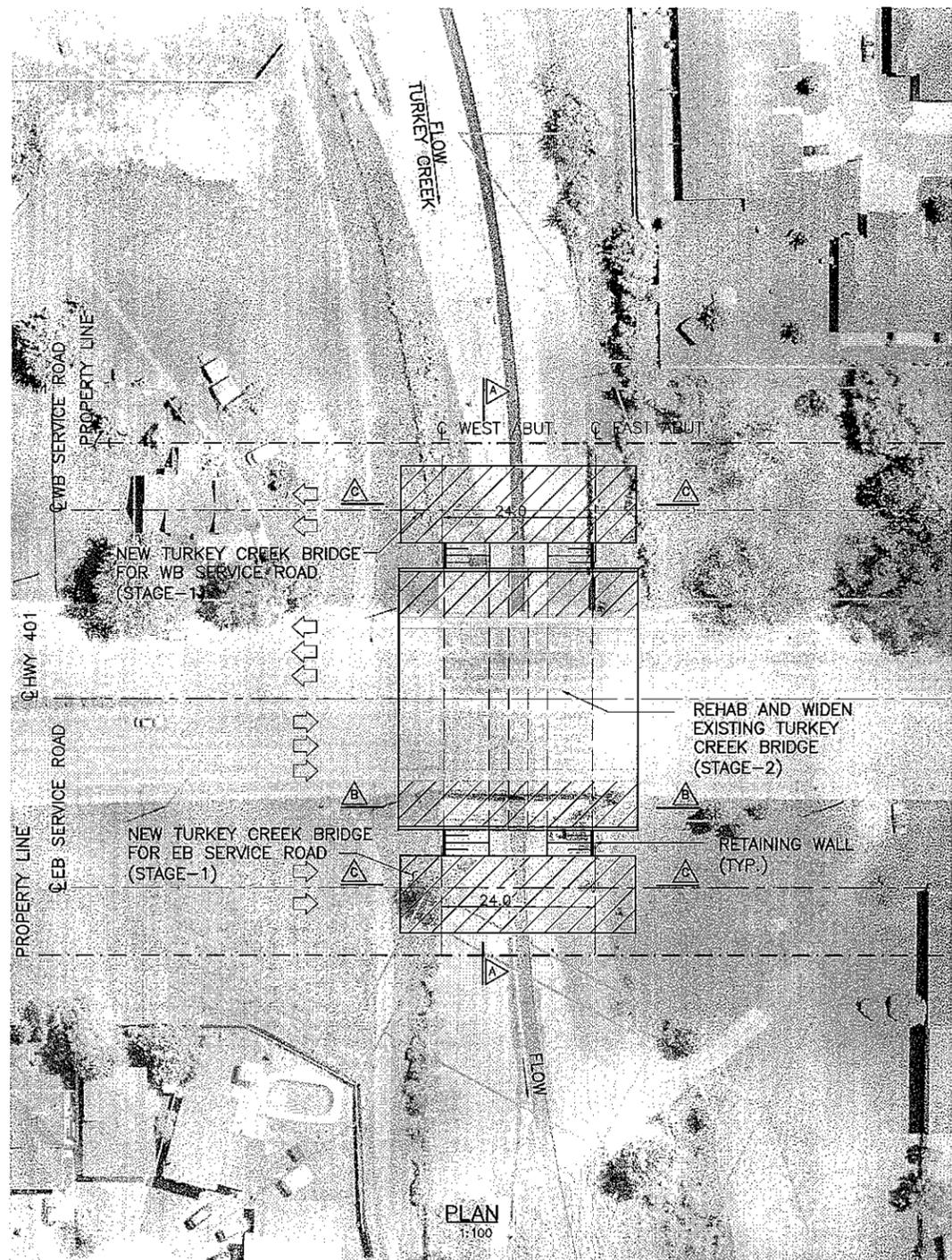
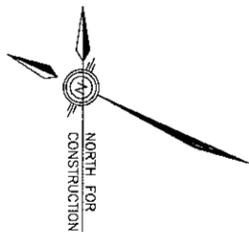
- UNDER CONSTRUCTION
- DETOUR ON / ACROSS EXISTING ROADWAY
- REMOVAL - STRUCTURE
- REMOVAL - DETOUR

- PROPOSED PARKWAY & SERVICE ROAD
- PROPOSED STRUCTURE
- COMPLETED CONSTRUCTION
- COMPLETED STRUCTURE

SCALE 1:5000

Appendix E

Concepts at Municipal Drain Crossings



29.45
29.45

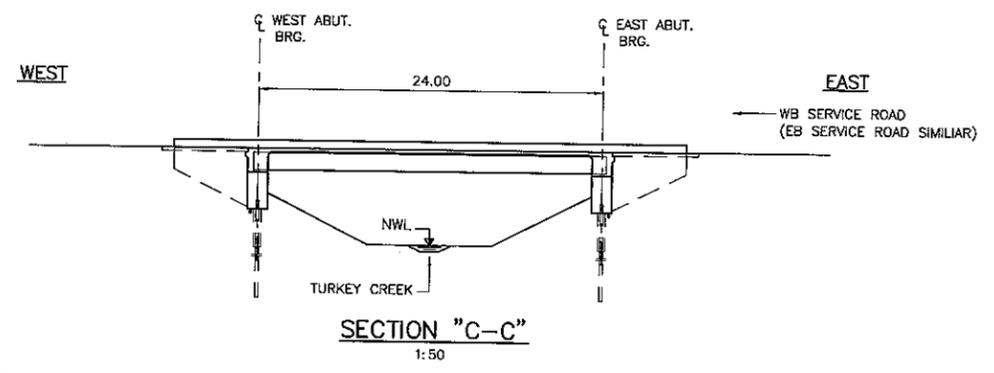
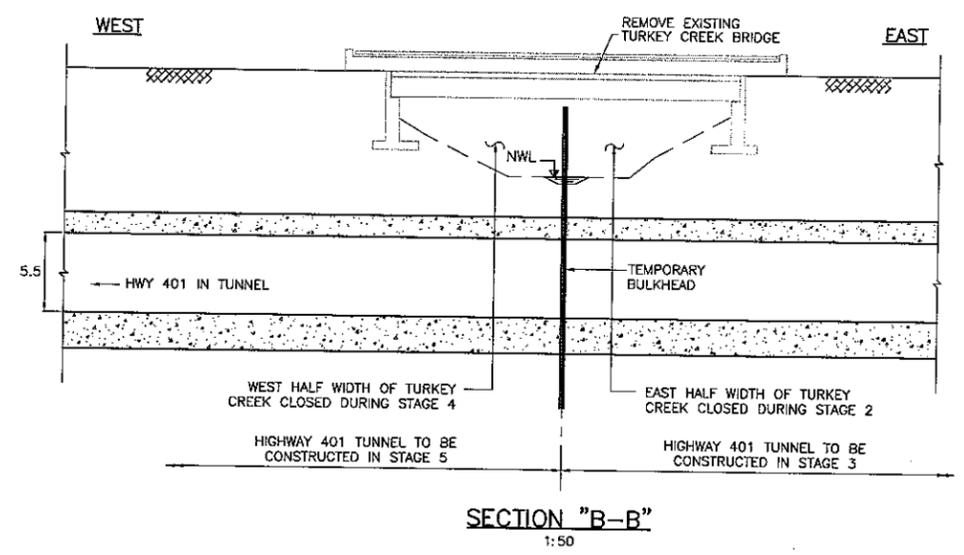
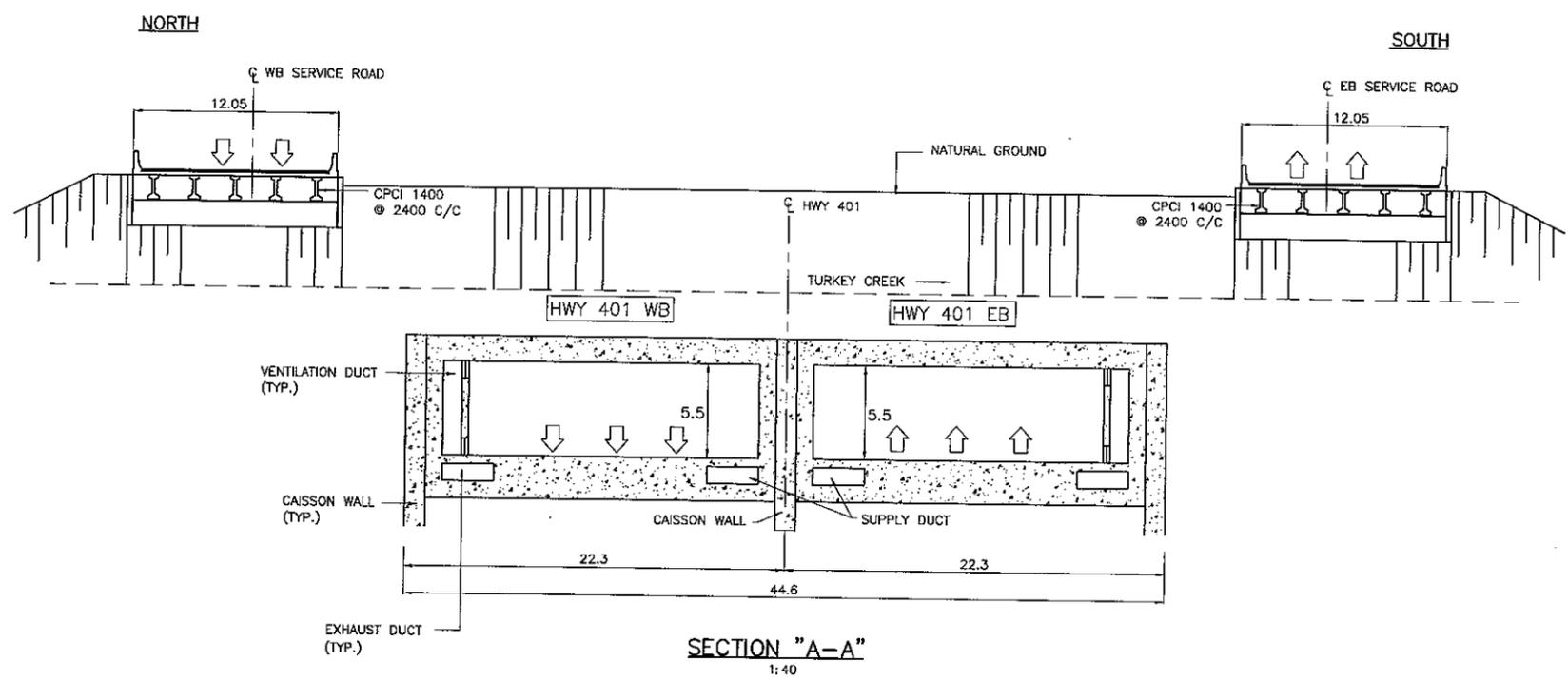
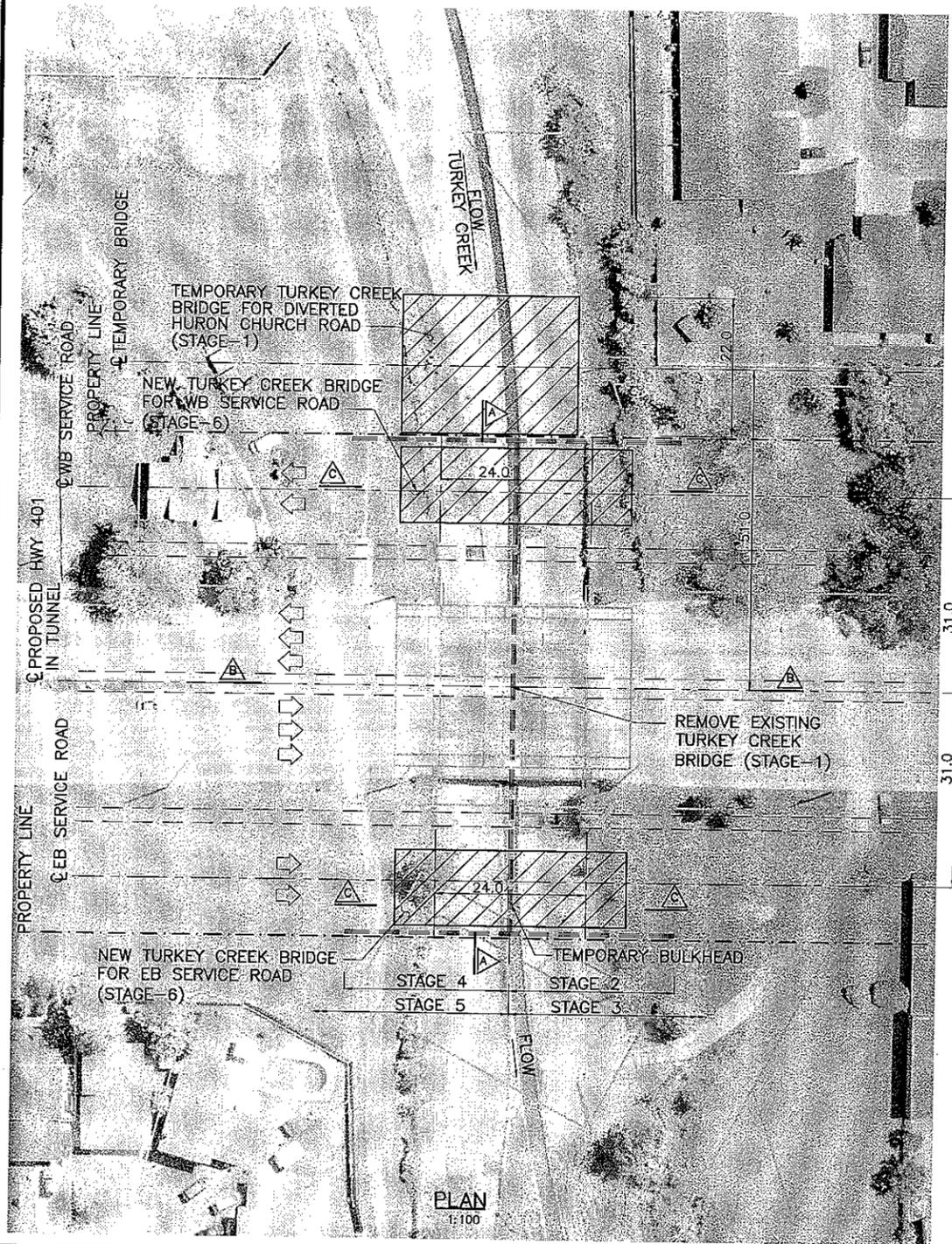
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PLDATE: Feb 06, 2007 - 4:24pm



DRIC-PRACTICAL ALTERNATIVES
ALTERNATIVE "1A" - HIGHWAY 401 AT GRADE AT TURKEY CREEK
WITH WB AND EB SERVICE ROADS ON THE SIDES RESPECTIVELY

METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

SKETCH 1



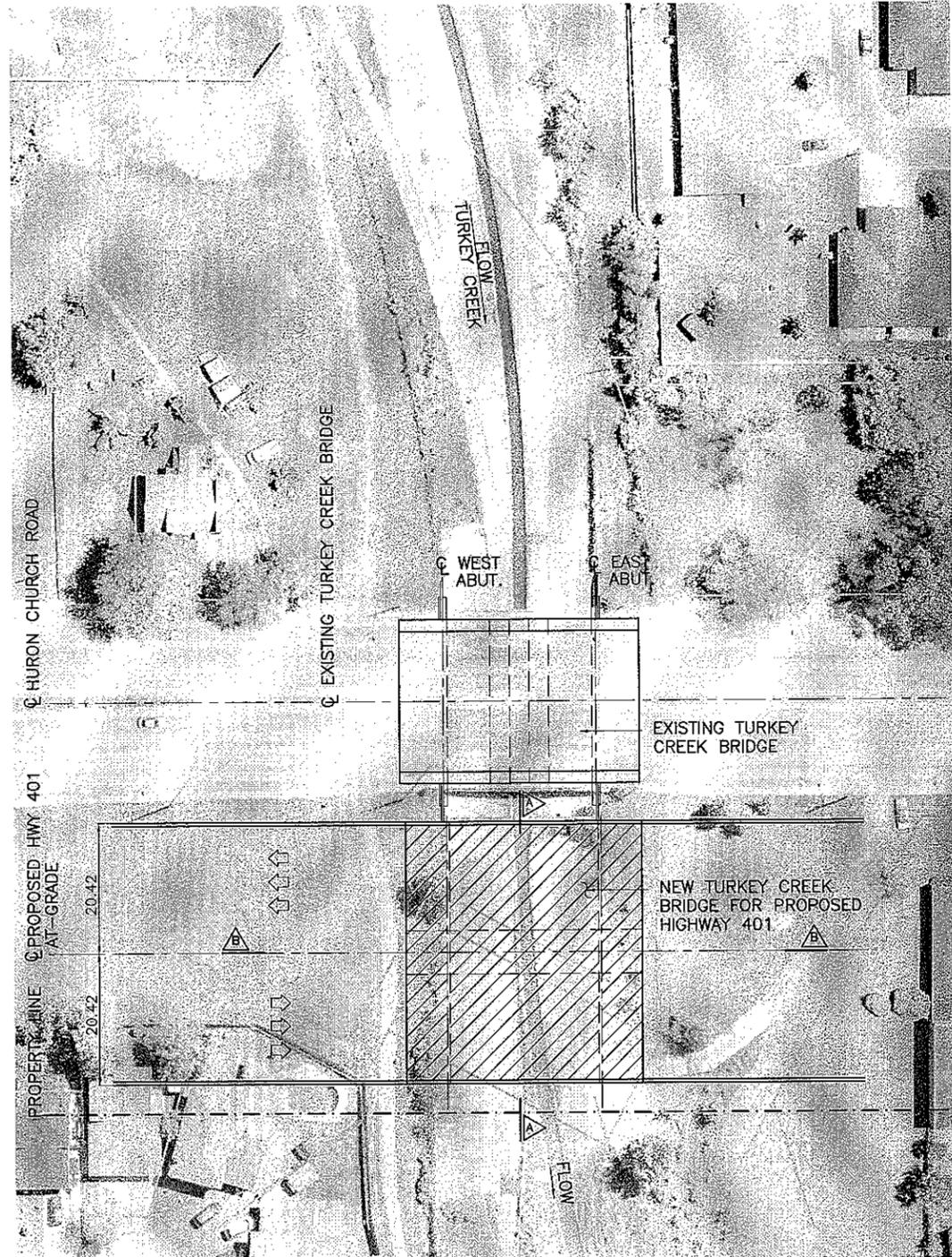
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 PLOTDATE: Feb 06, 2007 4:25pm

URS

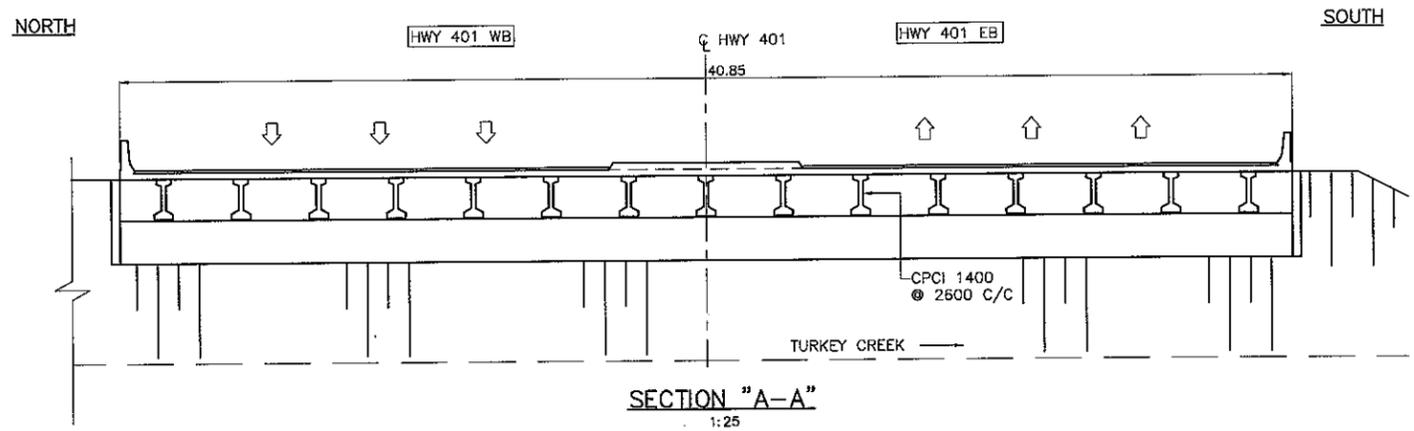
DRIC-PRACTICAL ALTERNATIVES
 ALTERNATIVE "1B" - HIGHWAY 401 IN TUNNEL UNDER TURKEY CREEK
 WITH WB AND EB SERVICE ROADS ON THE SIDES RESPECTIVELY

METRIC
 DIMENSIONS ARE IN METRES
 AND/OR MILLIMETRES

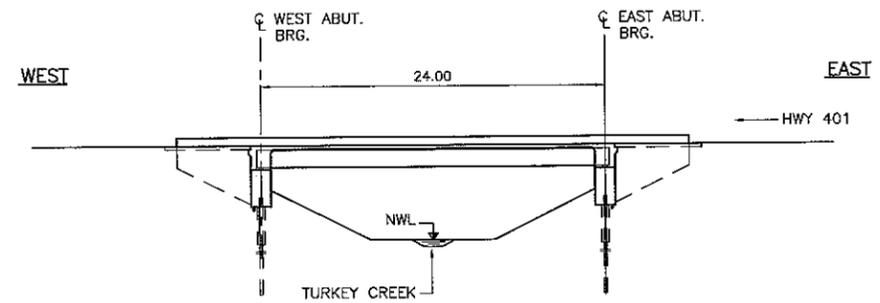
SKETCH 2



PLAN
1:100



SECTION "A-A"
1:25



SECTION "B-B"
1:50

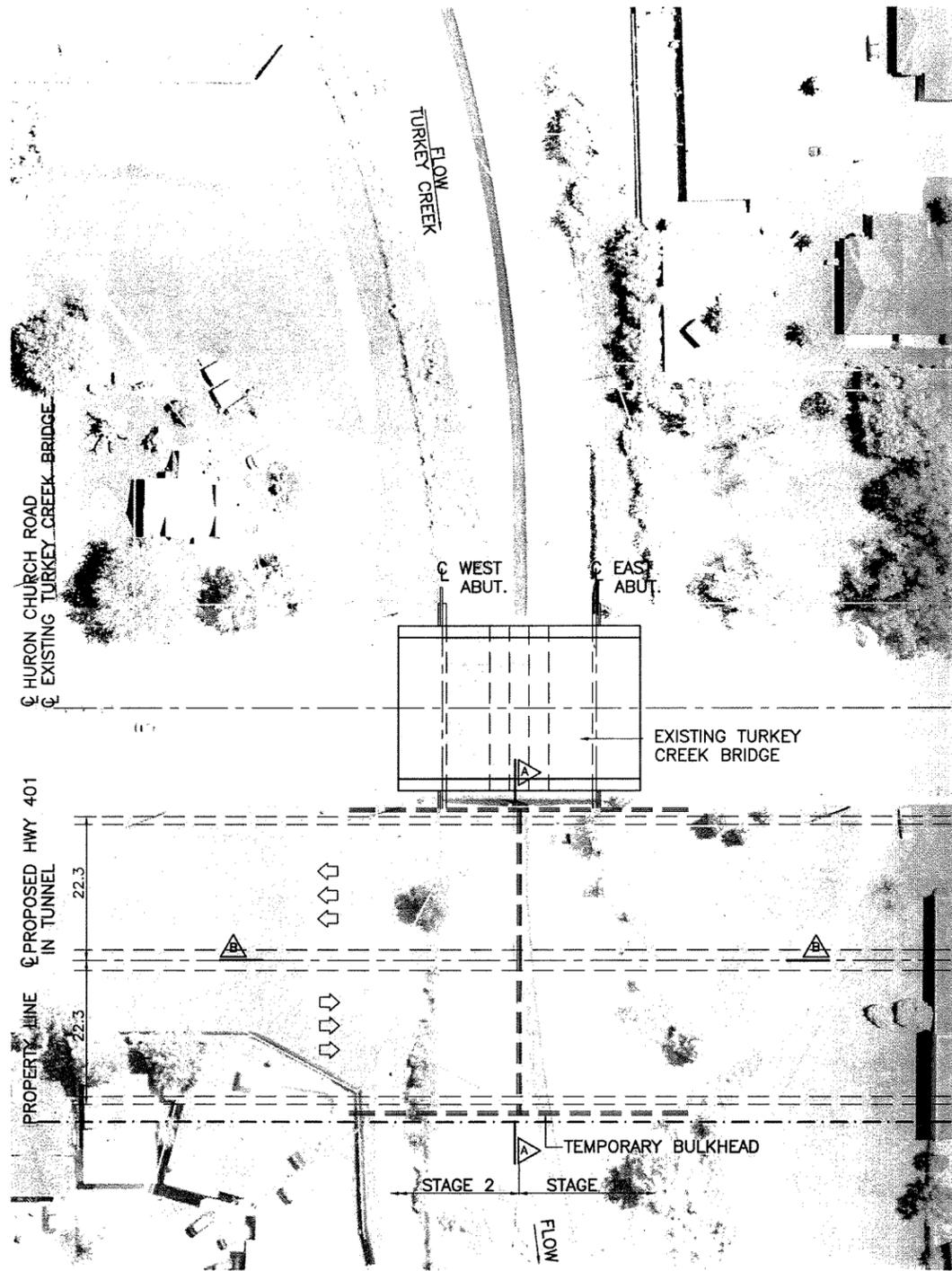
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PLOTDATE: Feb 05, 2007 - 4:28pm



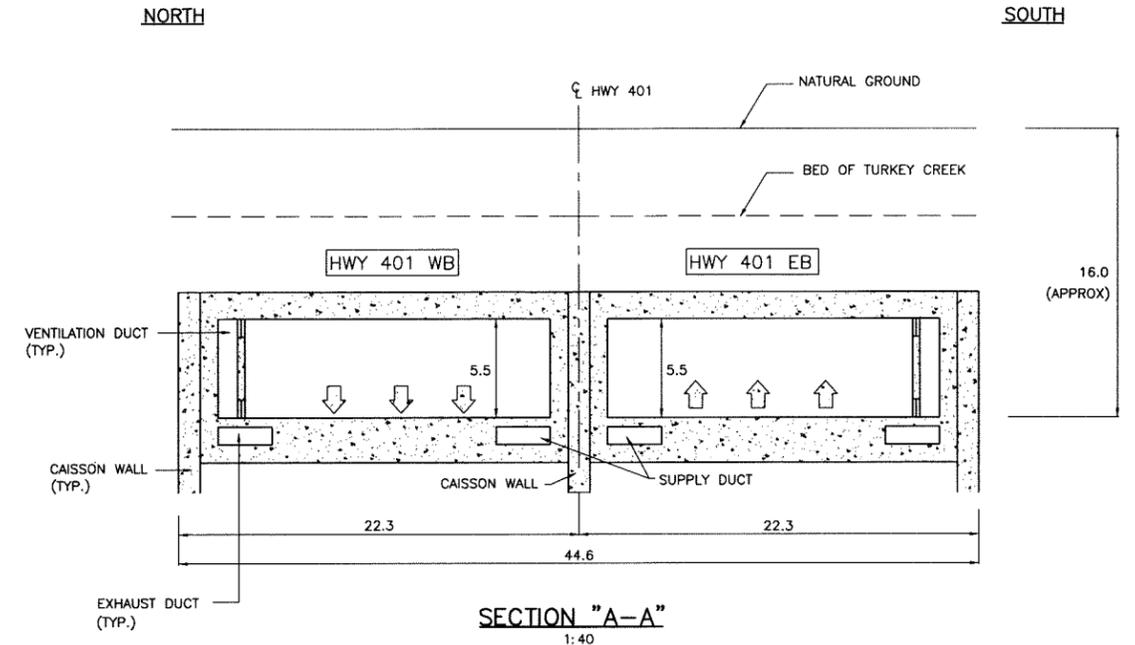
DRIC-PRACTICAL ALTERNATIVES
ALTERNATIVE "2A" - HIGHWAY 401 AT GRADE AT TURKEY CREEK,
SOUTH OF HWY 3 (TALBOT ROAD/HURON CHURCH ROAD)

METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

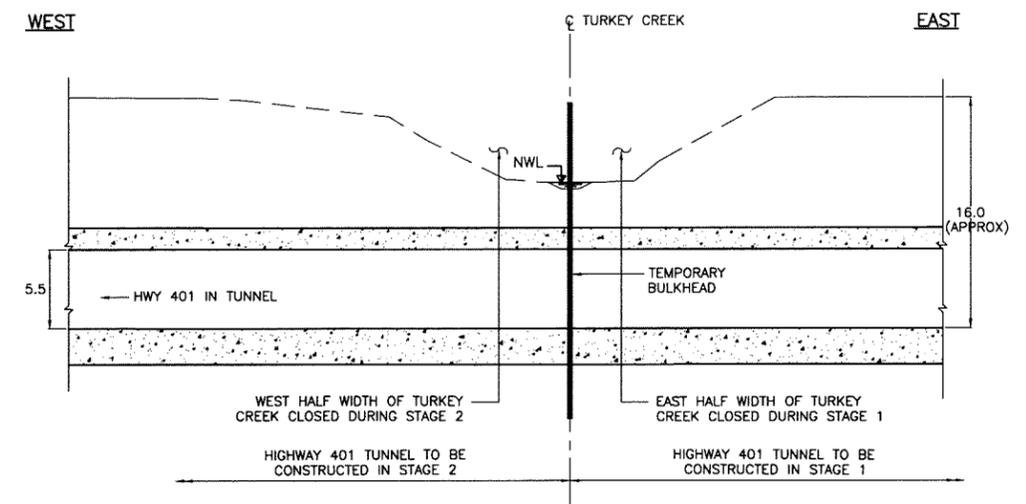
SKETCH 3



PLAN
1:100



SECTION "A-A"
1:40



SECTION "B-B"
1:50

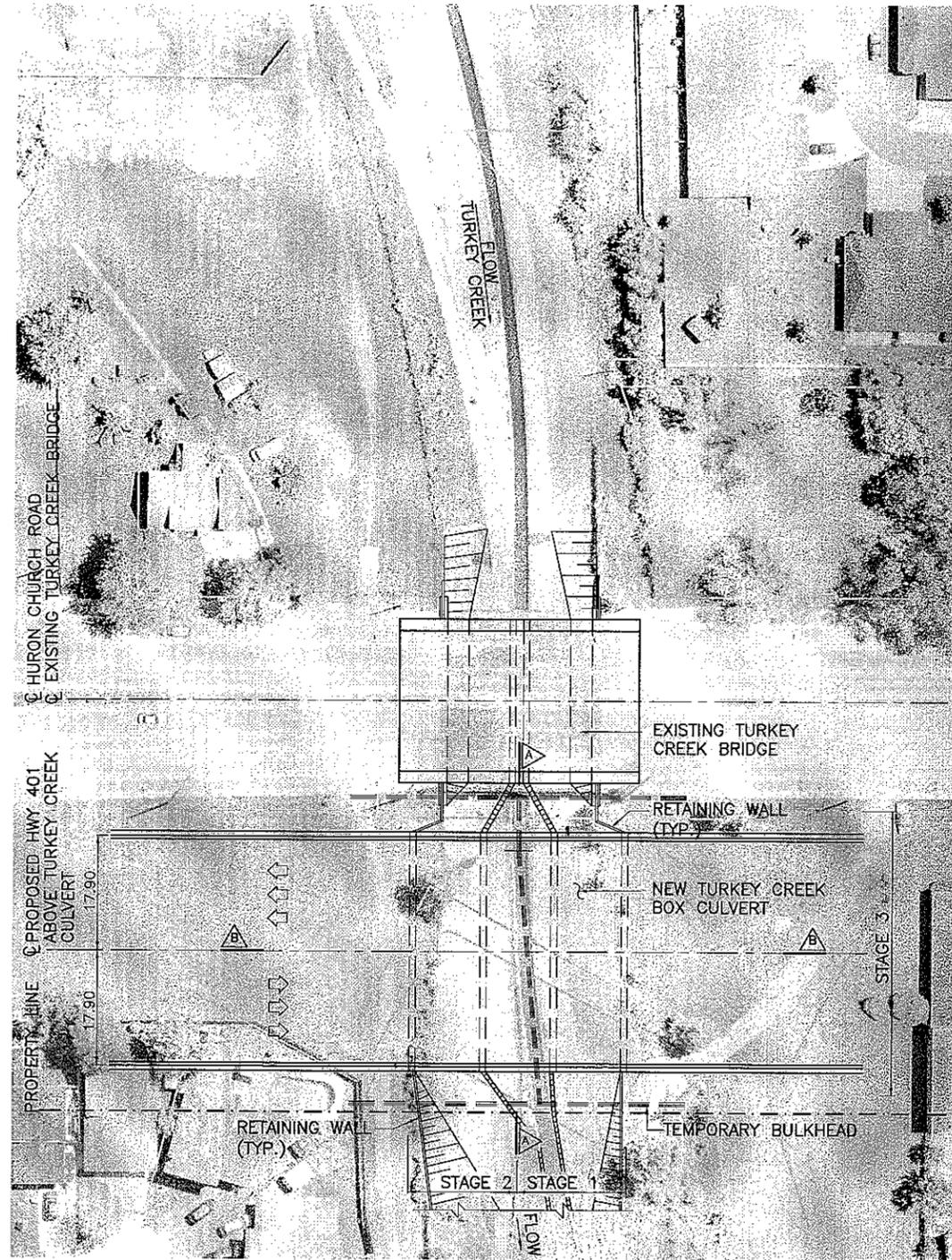
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PLOTDATE: Feb 05, 2007 - 2:12pm



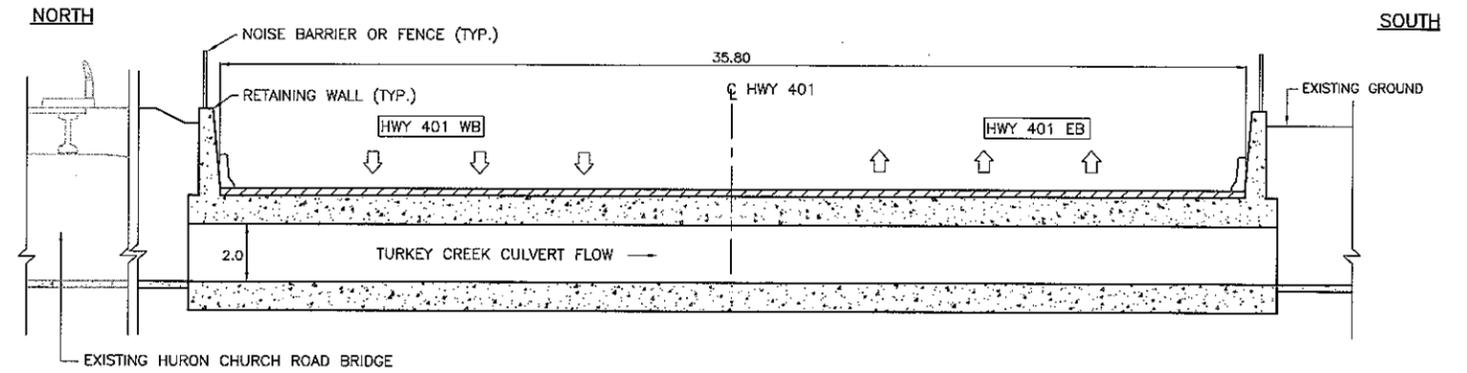
DRIC-PRACTICAL ALTERNATIVES
ALTERNATIVE "2B" - HIGHWAY 401 IN TUNNEL UNDER TURKEY CREEK,
SOUTH OF HWY 3 (TALBOT ROAD/HURON CHURCH ROAD)

METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

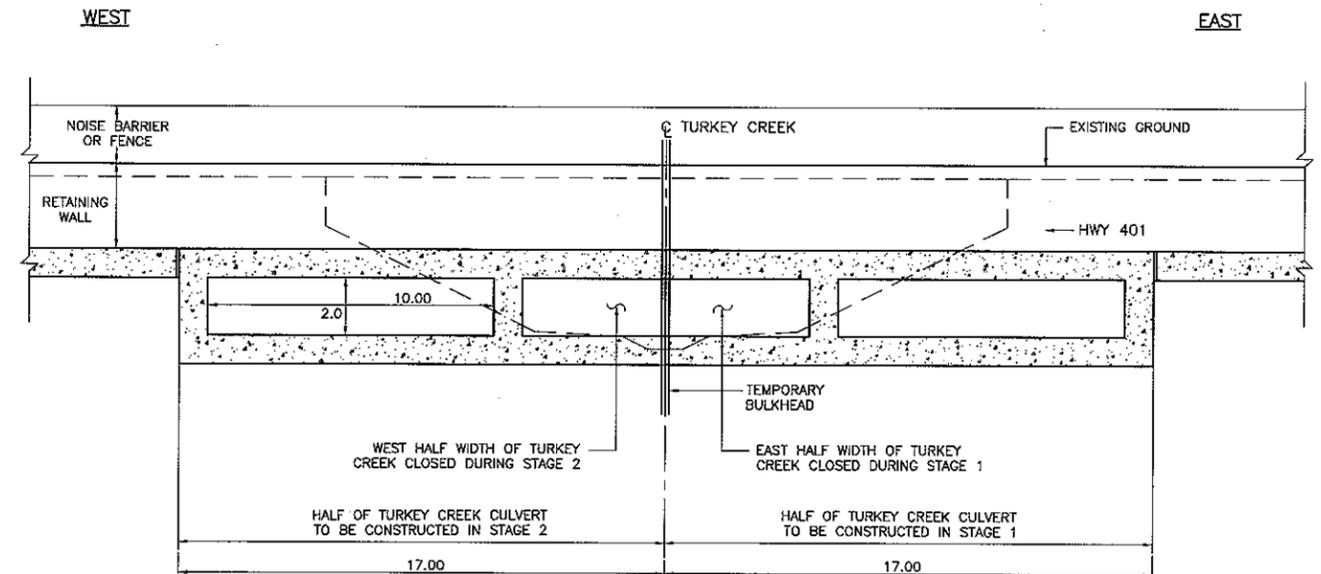
SKETCH 4



PLAN
1:100



SECTION "A-A"
1:25



SECTION "B-B"
1:25

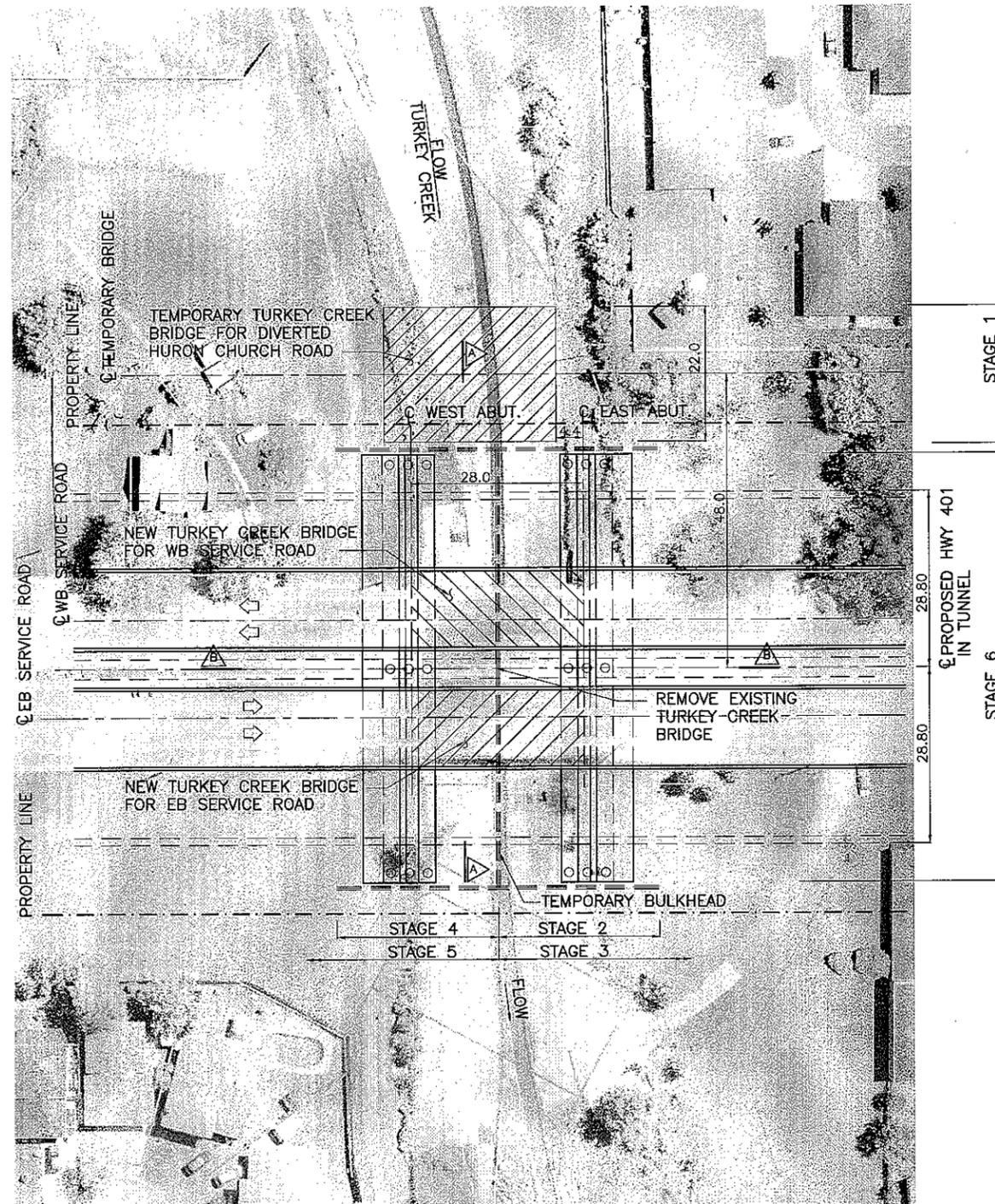
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 PLOTDATE: Feb 05, 2007 - 4:37 pm

URS

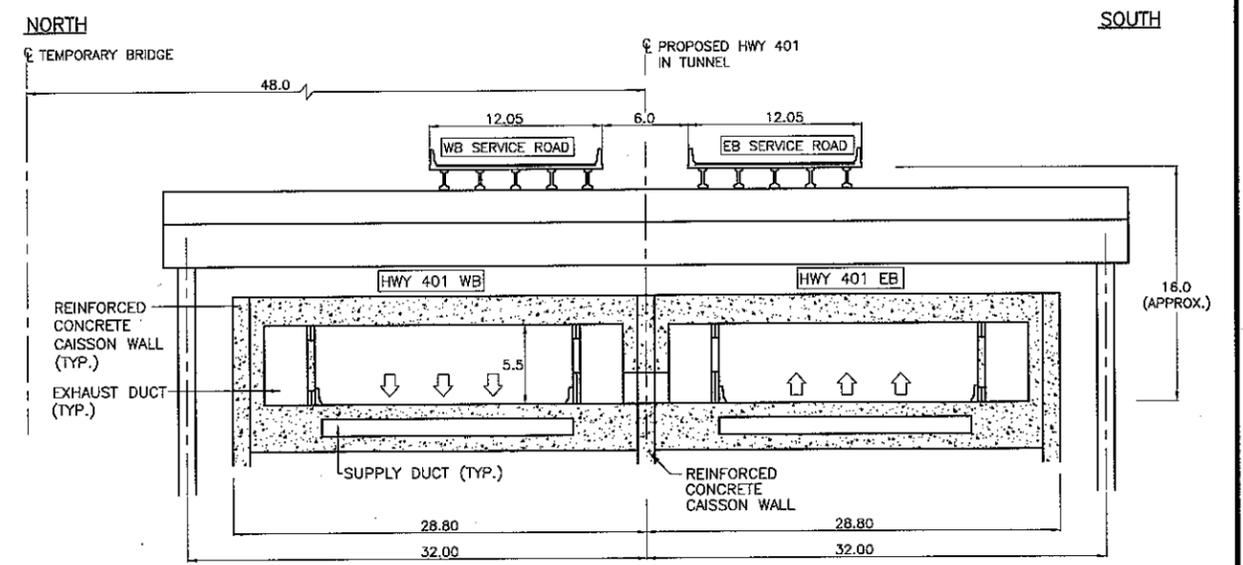
DRIC-PRACTICAL ALTERNATIVES
 ALTERNATIVE "2B-MODIFIED" - HWY 401 ABOVE TURKEY CREEK CULVERT,
 SOUTH OF HEY 3 (TALBOT ROAD AND HURON CHURCH ROAD)

METRIC
 DIMENSIONS ARE IN METRES
 AND/OR MILLIMETRES
 UNLESS OTHERWISE SHOWN

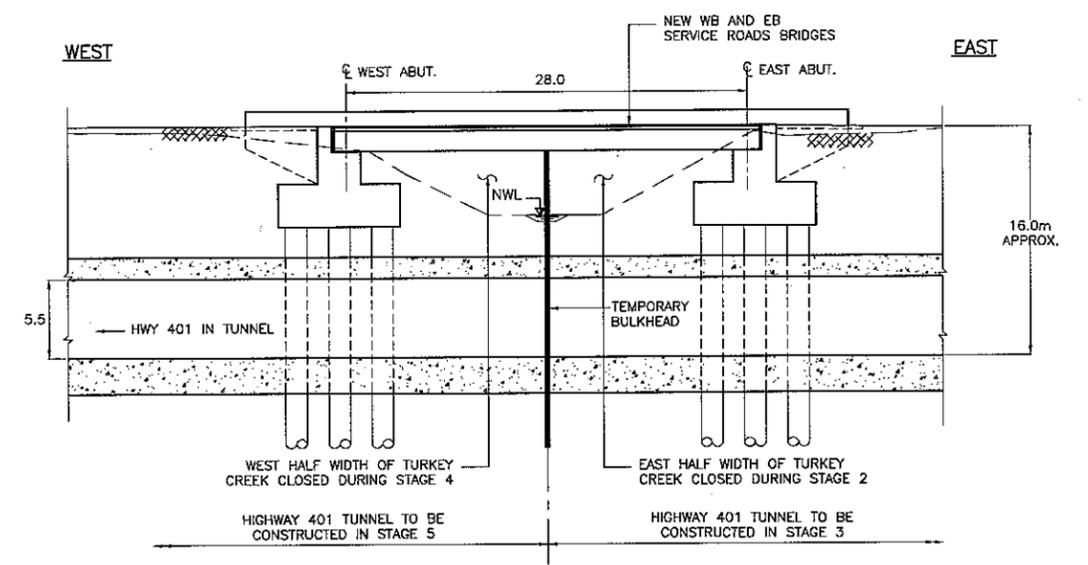
SKETCH 5



PLAN
1:100



SECTION "A-A"
1:50



SECTION "B-B"
1:50

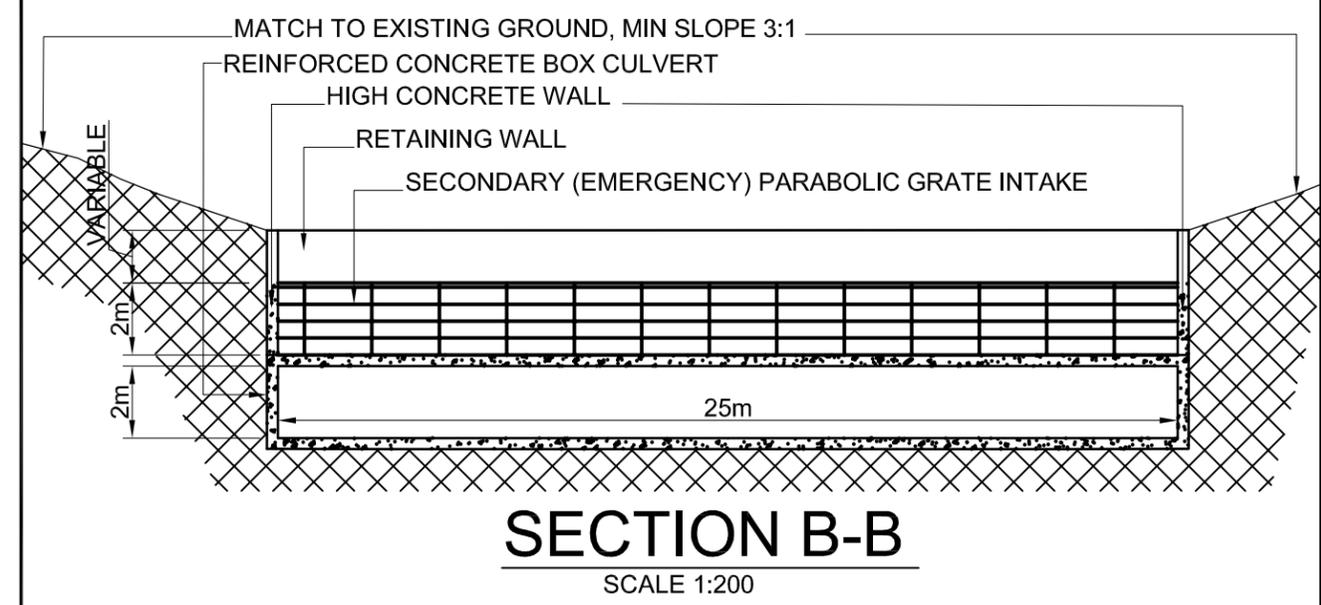
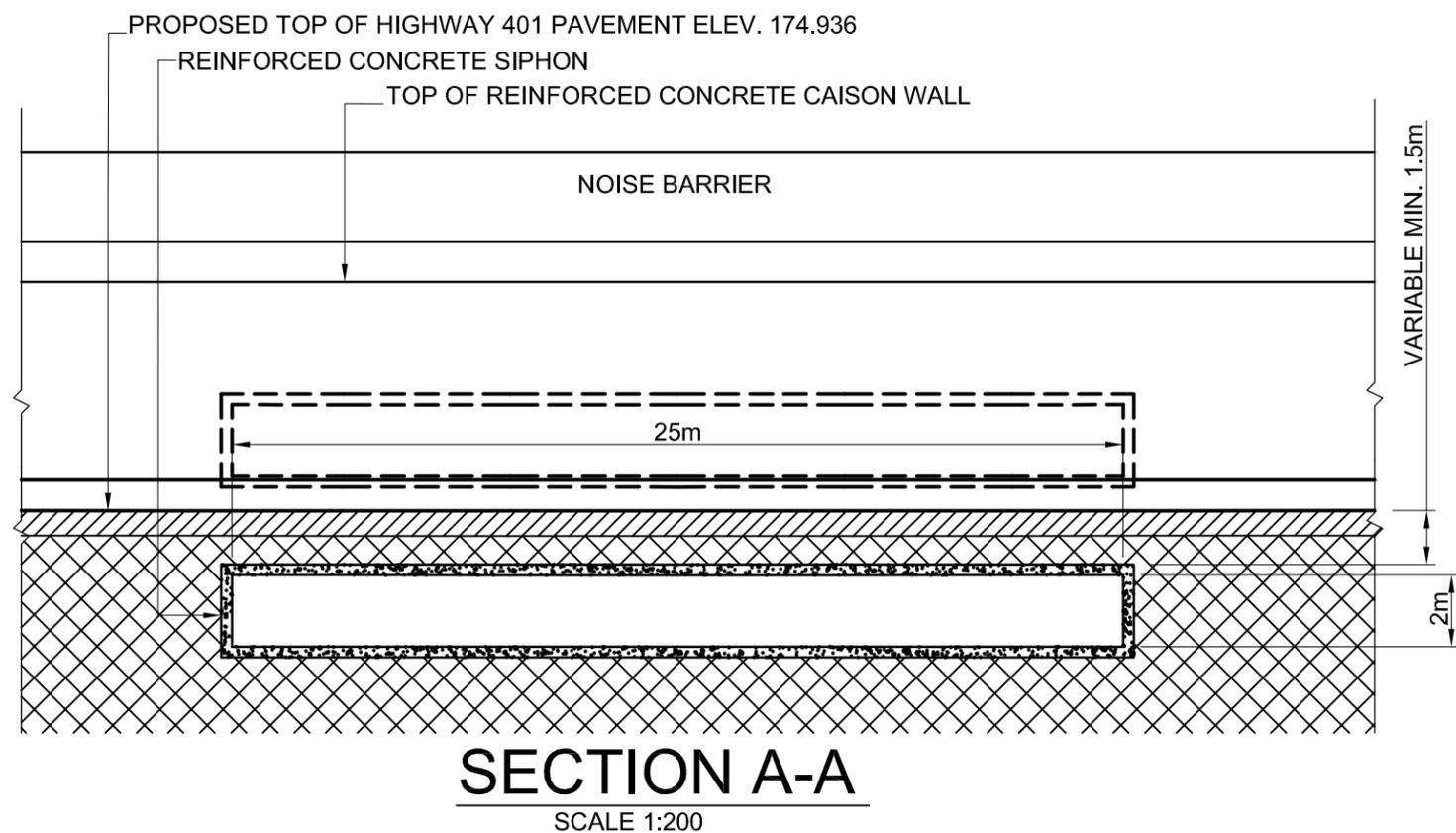
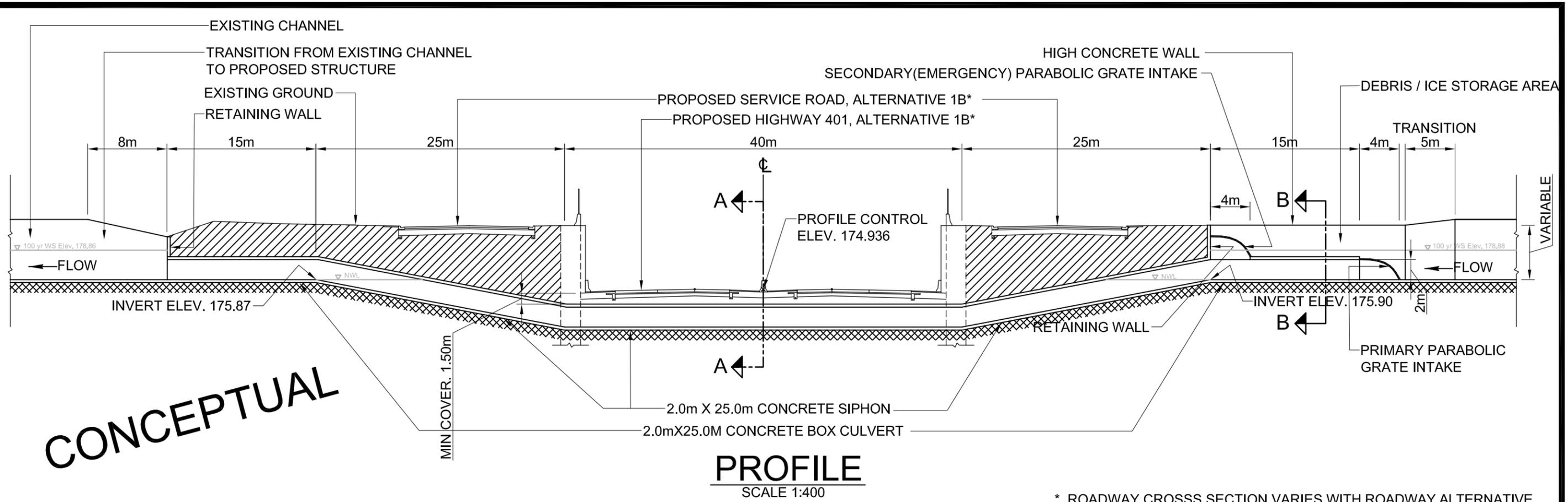
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 PLOTDATE: 05, 2007 - 2:29pm



DRIC-PRACTICAL ALTERNATIVES
 ALTERNATIVE "3" - HIGHWAY 401 IN TUNNEL UNDER TURKEY CREEK
 WITH WB AND EB SERVICE ROADS ABOVE THE TUNNEL

METRIC
 DIMENSIONS ARE IN METRES
 AND/OR MILLIMETRES
 UNLESS OTHERWISE SHOWN

SKETCH 6



FILENAME: O:\DRIC\19_WaterResources\Cadd\Siphon_Profile_Typical.dwg
 PLOTDATE: Feb 13, 2007 - 1:03pm
 PLOTTED BY: sxdrummo

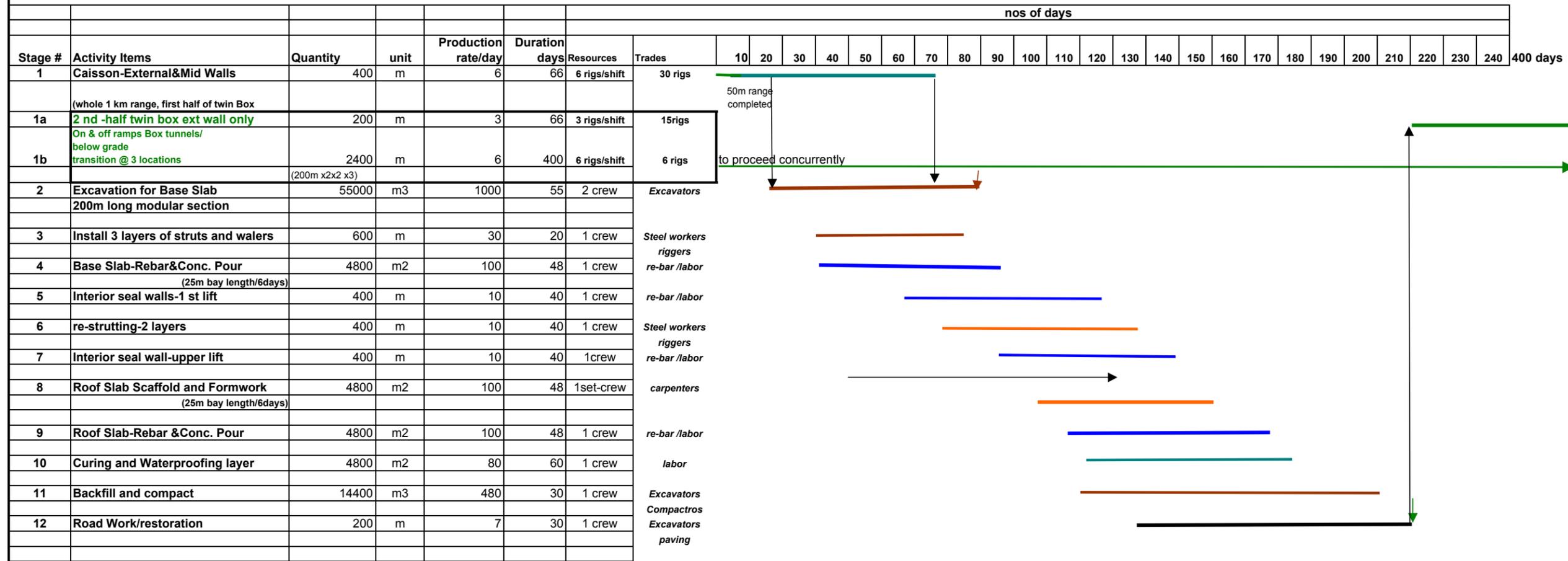
DETROIT RIVER INTERNATIONAL CROSSING STORMWATER MANAGEMENT STUDY SIPHON OPTION		FIGURE 5-1 JANUARY 2007 AS INDICATED

Appendix F

Construction Duration and Resource Requirements

**Basic Tunnel Civil Structural Works (Caisson Wall System)
Schedule Estimation**

Cycle time for a tunnel -half twin box 200 m modular length item 2-12



Schedule Allow the construction of the ramps concurrently with the box tunnel section construction within the 3 year time frame(750 working days)

Method Assume 4m or less below grade using no caisson wall, by open cut method for shallow grade transition

Design Propose to use caisson wall as permanent wall integrating with concrete wall for the entire tunnel and ramp sections

Design Propose to allow the caisson to a deeper toe level to achieve lateral resistance and water level cut off .Thus omitting the use slab footing for the retaining wall. Space ,time and cost saving can be achieved

210 net working days for 1 st cycle of 200m half-twin box thus, 1000m(1 km) it need 5 X 200m section-crews
 $210 + 85 \times 5 = 635$ net workingdays, ie 2.6 years for 1st half 6km
 $635 + 210 = 845$ working days ie 3.4 years for the 2 nd half 6 km
To complete within 4.7 years, including all Civil /M&E works
 Propose to use 51 caisson drilling rigs for full swing construction period
10 crew /10 hour day shift for both twin section, North &South bounds.

10 hour day shift
51 caisson drilling rigs /day shift **Detail breakdown:**
 30 (6# drill rigs/200m-section) x 5 sections/1 km x 1 half-twin box section
 15 drill rigs for the 6km 2nd -half twin box
 6 drill rigs for 6 ramp-tunnels
 30 Excavator CAT320 Front end loader/dozers (500m3/day/equipment)
 15 Cranes (50 ton)
 120 Tri-axle Trucks(20 ton) (10 loads /truck/day)

Overall Construction Schedule Estimation	
Basic tunnel and Ramp Structures and at grade roadworks	3.4 years
M& E supply and installation	1 year
Testing and commissioning	0.3 year
Target Total Required Time	4.7 years

Concrete Pour Estimation		Excavation Estimation at peak period	
Caisson Wall	51x 16= 820 m3/day	92 truck-round trips/day	base Slab 10k m3/day
Slabs	24x25x1.5x2=1800m3/day	200 truck-round trips/day	5 x 2 x half twin box section 1000m3/crew
roof./ base crew@2 half twinbox zone, ie 4 pours/day			ramp: 2k m3/day
Peak period Total	2620m3/day	292 truck-round trips/day	12k m3/day Total Volume /day
		6 round -trip/truck	1200 truck-round trips/ 10 loads/truck/day
		49 trucks/day	120 trucks/day

Reference Caisson production rate project records:			
DVP high mast light, 2001	1m dia	12-18 m deep	1#/rig/ day shift by Anchor Shoring
Kennedy/Morningside	1.2m-dia	9m deep	1#/night shift
Singapore MRT Yishun Line 1986	1m dia	20-25m deep	1#/rig/day shift by GTM-Coignet/Trevi 960# in 10months, with no casing, using bentonite slurry to stabilise borehole

Basic Civil Works (At Grade Road Alternative)

Schedule Estimation -Use range approach

Cycle time for a modular range of 1500m (1.5 km)

(Exact Material Quantity To Be determined in cost estimate)

Areas	Activity Items	Quantity	unit	Production rate/day	Estimated Duration days	Target months	Equipment	nos. of months																																															
								1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Typical Items For the Expressway																																																							
	site clearance/top soil removal		L.S.			3	excavator dozer, backhoe	[Gantt bar from month 1 to 3]																																															
	grading-cut and fill		L.S.			3	scraper	[Gantt bar from month 2 to 5]																																															
	underground services		L.S.				excavator	[Gantt bar from month 3 to 6]																																															
	subgrade compaction		L.S.			3	30 ton compactor	[Gantt bar from month 4 to 7]																																															
	Catch Basin																																																						
	subdrain	10,500	m	400	27	1.5		[Gantt bar from month 5 to 7.5]																																															
	Granular A 300mm thk.	15,000	m-lane	250	60	3	truck dozer	[Gantt bar from month 6 to 12]																																															
	100 mm open grade Drainage Layer	15,000	m-lane	250	60	3	front-end loader compactor	[Gantt bar from month 7 to 13]																																															
	260 mm thk. Plain Conc Pavement	9,000	m-lane	400	23	1.5	paving machine truck	[Gantt bar from month 10 to 12.5]																																															
	Shoulder Paving 4 X 3m wide	6,000	m-lane	400	15	1		[Gantt bar from month 11 to 12.5]																																															
	Barrier Wall	4,500	m	300	15	1	crane	[Gantt bar from month 13 to 14.5]																																															
	Noise Wall	3,000	m	60	50	2		[Gantt bar from month 14 to 16]																																															
	Light pole(High Mast)	15	ea		2	2		[Gantt bar from month 15 to 17]																																															
								1 st CREW for 3 km Freeway complete in 19 months																																															
								2 CREWs for 6 km Freeway complete in 19 months																																															
								2 x 1st crew for the 3 km Service Road complete in 21 months																																															
Typical Items For the Services Road(optional)																																																							
	site clearance/top soil removal		L.S.			3	excavator dozer, backhoe	[Gantt bar from month 1 to 3]																																															
	grading-cut and fill		L.S.			3	scraper	[Gantt bar from month 2 to 5]																																															
	underground services		L.S.				excavator	[Gantt bar from month 3 to 6]																																															
	subgrade compaction		L.S.			2	30 ton compactor	[Gantt bar from month 4 to 6]																																															
	Catch Basin																																																						
	subdrain	6,000	m	400	15	1		[Gantt bar from month 5 to 6.5]																																															
	Granular B 500 mm thk	12,000	m-lane	200	60	3	truck dozer	[Gantt bar from month 6 to 12]																																															
	Granular A 300mm thk.	12,000	m-lane	250	50	2	front-end loader compactor	[Gantt bar from month 7 to 12]																																															
	Conc. Curb and Gutter	6,000	m	200	30	1.5		[Gantt bar from month 8 to 11]																																															
	150 mm thk. Hot Mix	12,000	m-lane	400	30	1.5	paving machine	[Gantt bar from month 10 to 11.5]																																															
	Shoulder	3,000	m	400	75	4		[Gantt bar from month 11 to 15]																																															
	Sidewalk	3,000	m	100	30	1.5		[Gantt bar from month 12 to 13.5]																																															
	Landscape Area	12,000	m2	600	20	1		[Gantt bar from month 15 to 16]																																															

Basic Civil Works (At Grade Road Alternative)

Schedule Estimation -Use range approach

Cycle time for a modular range of 1500m (1.5 km)

(Exact Material Quantity To Be determined in cost estimate)

Areas	Activity Items	Quantity	unit	Production rate/day	Estimated Duration days	Target months	Equipment	nos. of months																																															
								1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
								Use 4 crews for the entire 6km Service Roads in 21 months																																															
	Light pole																																																						
	Underpass for the entire 6km range, proceed in 2- 3km zones concurrently.																																																						
	Caisson wall	6,400	m	28	230	11	14 Drill rigs/3km zone	[Blue bar from month 1 to 11]																																															
	2x(1600+1600x2/2)=6400m																																																						
	Excavation	750,000	m3	3000	250	12	8 excavators	[Brown bar from month 1 to 12]																																															
	(1600+3200/2)x 6.5x 36						8 dozers/loaders																																																
	Seal Wall	6,400	m	40	160	8		[Grey bar from month 13 to 21]																																															
	grading and road refer to the main road Schedule																																																						
	Road/Bridge Crossings and Creek Crossing	10	Ea				2-3 crews, 1 crew /bridge																																																
	Caisson foundation						Drill rigs	[Blue bars for 1st 5-bridges (months 1-5) and 2nd 5-bridges (months 13-17)]																																															
	Foundation capping beam							[Black bars for 1st 5-bridges (months 1-5) and 2nd 5-bridges (months 13-17)]																																															
	Piers							[Black bars for 1st 5-bridges (months 1-5) and 2nd 5-bridges (months 13-17)]																																															
	Bridge Beam Placing						crane	[Black bars for 1st 5-bridges (months 1-5) and 2nd 5-bridges (months 13-17)]																																															
	Bridge Deck						truck	[Grey bars for 1st 5-bridges (months 1-5) and 2nd 5-bridges (months 13-17)]																																															
	Bridge furniture							[Green bars for 1st 5-bridges (months 1-5) and 2nd 5-bridges (months 13-17)]																																															
	Paving						paving machine	[Black bars for 1st 5-bridges (months 1-5) and 2nd 5-bridges (months 13-17)]																																															

Earth moving	underpass: 3000m3max/day @peak period, ie 300 loads/day (300 truck-trips/day)	30 trucks/day	10 loads/truck/day
	initial overall excavation/grading: 300 loads/day (300 truck-trips/day)	30 trucks/day	10 loads/truck/day
	road grading total say 40mx6kmx1m		
	240,000m3		
	underpass total 750,000m3		
	overall total 1,000,000m3 approx.		

Concrete caisson volume 28#x14 m3/# =400 m3/day