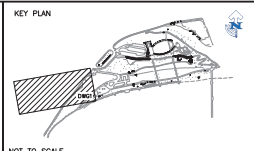
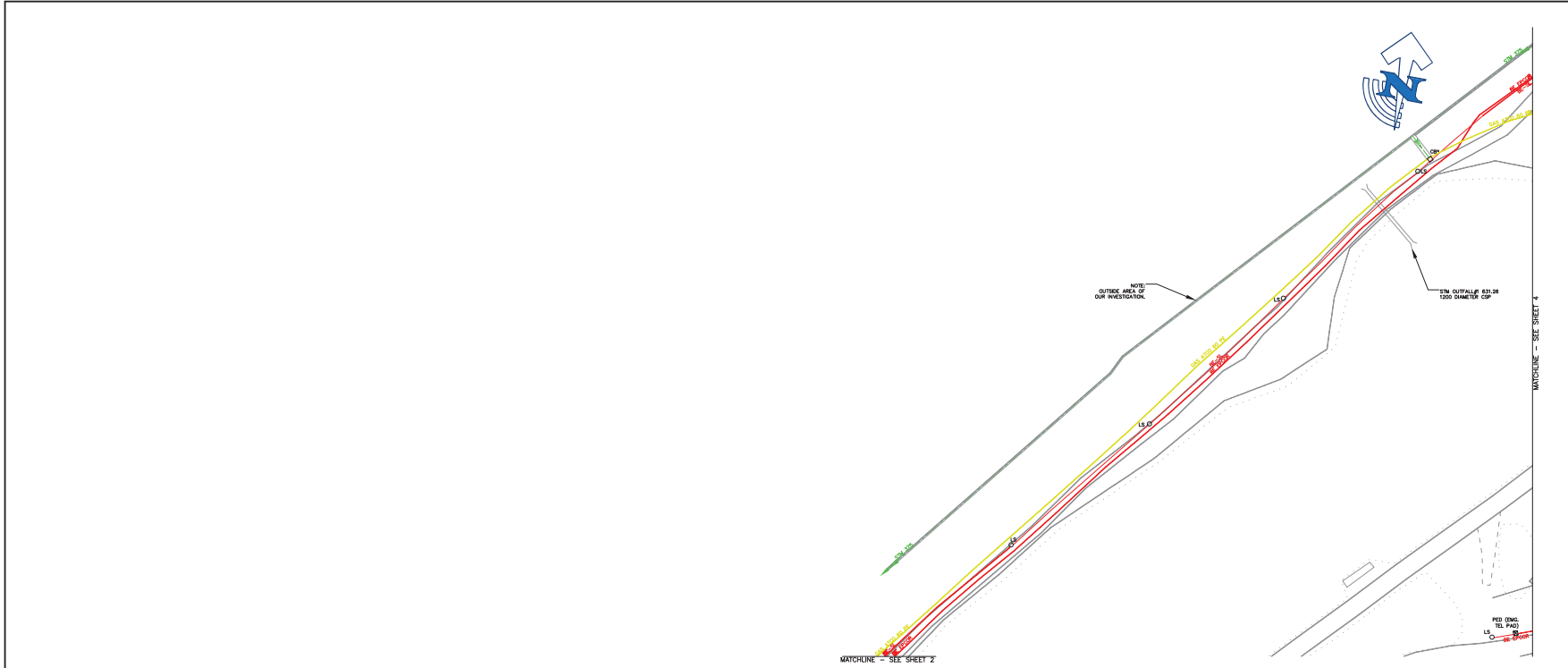


Appendix F: LMRP Subsurface Utilities (T2 Utility Engineers 2013)



- KEY PLAN**
- NOT TO SCALE
- GENERAL NOTES**
- TZUE'S SITE FIELD INVESTIGATION WAS PERFORMED NOVEMBER 12-17, 2012. THE TEST HOLE PHASE WAS PERFORMED MARCH 2-5, 2013. CHANGES TO UTILITIES THAT OCCURRED FOLLOWING OUR INVESTIGATION MAY NOT BE SHOWN. CONSIDERATION SHOULD BE GIVEN TO UPDATING THIS PLAN PRIOR TO FINAL DESIGN AND CONSTRUCTION.
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 - UTILITY WIDTHS ON DRAWING ARE BASED ON RECORDS RECEIVED.
 - SEE PROJECT REPORT FOR ADDITIONAL INFORMATION.

ASCE QUALITY LEVELS

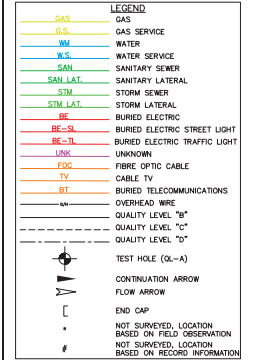
THE UTILITY INFORMATION SHOWN ON THIS DRAWING WAS COLLECTED IN ACCORDANCE TO ASCE STANDARD 38-02. THE INFORMATION IS SHOWN BY QUALITY LEVEL WHICH INDICATES THE LEVEL OF EFFORT USED TO DETERMINE THE LOCATION OF THE DATA.

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N QUALITY LEVEL "C" - INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE GROUND UTILITY FEATURES AND BY USING PROFESSIONAL JUDGEMENT IN CORRELATING THIS INFORMATION TO THE QUALITY LEVEL "D" INFORMATION.

C QUALITY LEVEL "B" - INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF THE UTILITIES.

R QUALITY LEVEL "A" - PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES.



TEST HOLE INFORMATION

TH	Date	Depth (m)	Elevation (m)	Remarks	Surface Layer		Soil	Utility	Status
					Material	Thickness (m)			
TH-1	03/28/13	1.0	100.00	Gas leak detected at 0.5m depth	Gravel	0.15	Gravel	Gas	Surf
TH-2	03/28/13	1.0	100.00	Water detected at 0.5m depth	Gravel	0.15	Gravel	Water	Surf
TH-3	03/28/13	1.0	100.00	Sanitary sewer detected at 0.5m depth	Gravel	0.15	Gravel	Sanitary Sewer	Surf
TH-4	03/28/13	1.0	100.00	Storm sewer detected at 0.5m depth	Gravel	0.15	Gravel	Storm Sewer	Surf
TH-5	03/28/13	1.0	100.00	Electric detected at 0.5m depth	Gravel	0.15	Gravel	Electric	Surf
TH-6	03/28/13	1.0	100.00	Electric detected at 0.5m depth	Gravel	0.15	Gravel	Electric	Surf
TH-7	03/28/13	1.0	100.00	Electric detected at 0.5m depth	Gravel	0.15	Gravel	Electric	Surf
TH-8	03/28/13	1.0	100.00	Electric detected at 0.5m depth	Gravel	0.15	Gravel	Electric	Surf
TH-9	03/28/13	1.0	100.00	Electric detected at 0.5m depth	Gravel	0.15	Gravel	Electric	Surf
TH-10	03/28/13	1.0	100.00	Electric detected at 0.5m depth	Gravel	0.15	Gravel	Electric	Surf
TH-11	03/28/13	1.0	100.00	Electric detected at 0.5m depth	Gravel	0.15	Gravel	Electric	Surf
TH-12	03/28/13	1.0	100.00	Electric detected at 0.5m depth	Gravel	0.15	Gravel	Electric	Surf

- NOTES**
- TH-1: Went down 1.0m looking for gas until a hard layer was hit. Then went one 1.0m in each direction from self. gas in center of hole. Prior signal, previous pipe may have been removed. Went down 2.0m total to make sure it was not there. No sign of anything.
 - TH-2: Reached down looking for water and found hard 100% top ground at approximately 0.5m down. Able to break through on south end but unable to find anything. 2.0m depth trench was 2.0m long.
 - TH-3: Looking for sanitary. Made a hole 2.0m long, went down 1.0m, and was unable to find anything.
 - TH-4: Found concrete at 1.0m in hole. Began trenching 50m x 1.0m.
 - TH-5: Got down to 0.5m and there had asphalt. Went over 0.5m and did not find anything.
 - TH-6: Went down 0.5m with a 0.5m long trench. Unable to find it on 0.5m.
 - TH-7: Test hole was completed at the point where the service line to the public wastewater line into the water main. It was made out of approximately 200mm, which is likely due to the soil being.
 - TH-8: EOP hole based on possible alignment of man. 2.4m down and 0.5m long trench.
 - TH-9: Located for 100 based on alignment of water and power entry into park area. Went down 0.5m service line at water. Unable to find main, could be on a change angle.
 - TH-10: Located at 0.5m by 0.5m deep trench. Looking for water main located beyond all possible position of man going from 90° or road 100% at each corner building and man. Unable to find 100.

REVISIONS

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PREPARED BY:

1-855-222-TZUE | WWW.TZUE.COM

THE ENGINEER'S SEAL HEREON IS TO CERTIFY THAT THE UTILITIES SHOWN HAVE BEEN INVESTIGATED IN ACCORDANCE WITH STANDARD PRACTICES AND INDUSTRY PRACTICES. ALL OTHER INFORMATION HEREON HAS BEEN PROVIDED BY OTHERS AND IS NOT A PART OF THIS CERTIFICATION.

DATE (MM/DD/YY): 03/28/13

DRAWN: A. JACKSON-WYATT

CHECKED: R. ORBON

APPROVED: L. ARCANO

PROJECT: LOUISE MCKINNEY RIVERFRONT PARK EDMONTON, AB

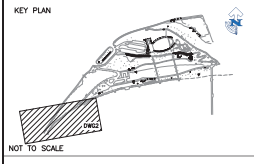
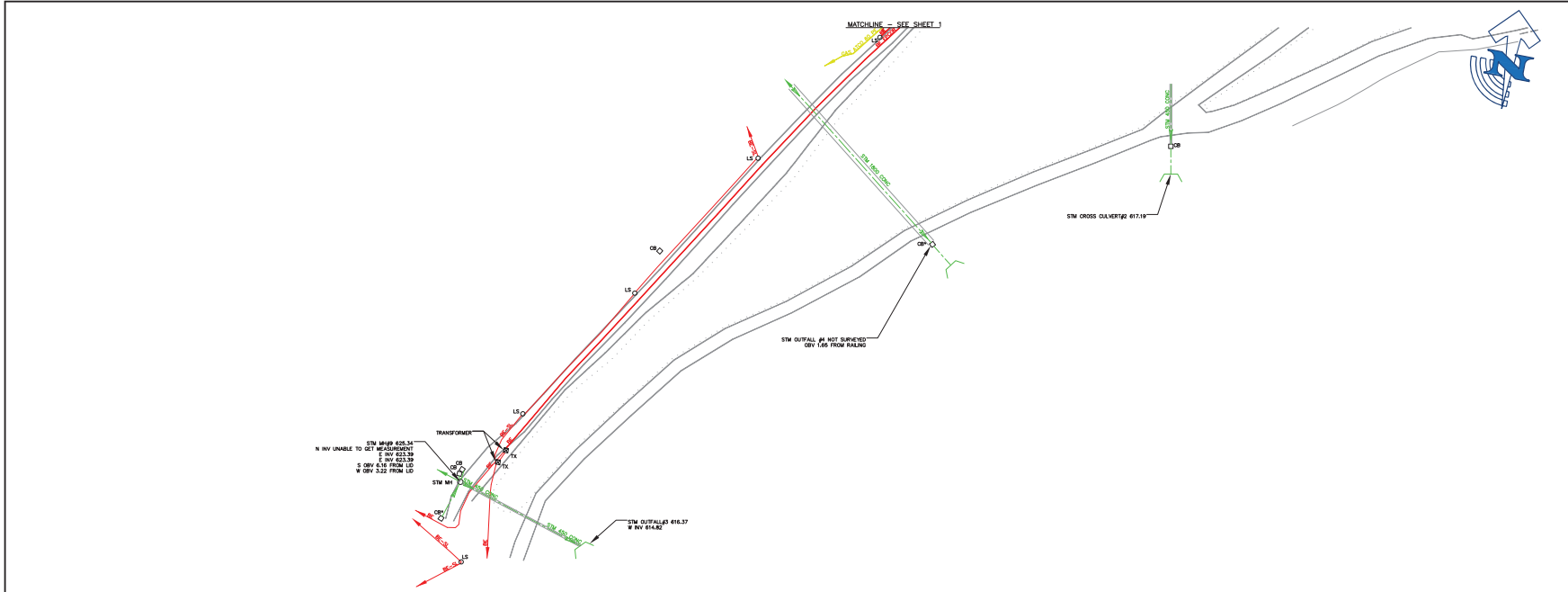
DRAWING: SUBSURFACE UTILITY ENGINEERING MAPPING SERVICES

CLIENT: AECOM

PROJECT NO.: 61000100

SHEET NO.: 01 OF 06





- GENERAL NOTES**
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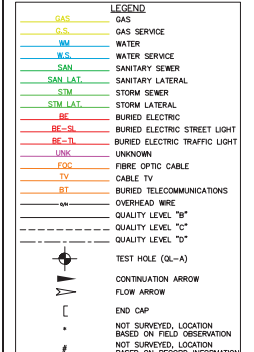
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U

L

I QUALITY LEVEL "A" - PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES.

Y



TEST HOLE INFORMATION

No.	Date	Depth (m)	Location	Utility Status		Remarks
				Found	Not Found	
1	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37
2	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37
3	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37
4	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37
5	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37
6	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37
7	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37
8	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37
9	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37
10	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37
11	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37
12	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37
13	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37
14	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37
15	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37
16	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37
17	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37
18	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37
19	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37
20	2013-03-02	1.0	STW 614.37	Yes	No	STW 614.37

REVISIONS

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DATE (MM/DD/YY): 03/28/13

DRAWN: A. JACKSON-WYATT

CHECKED: R. ORBON

APPROVED: L. ARCANO

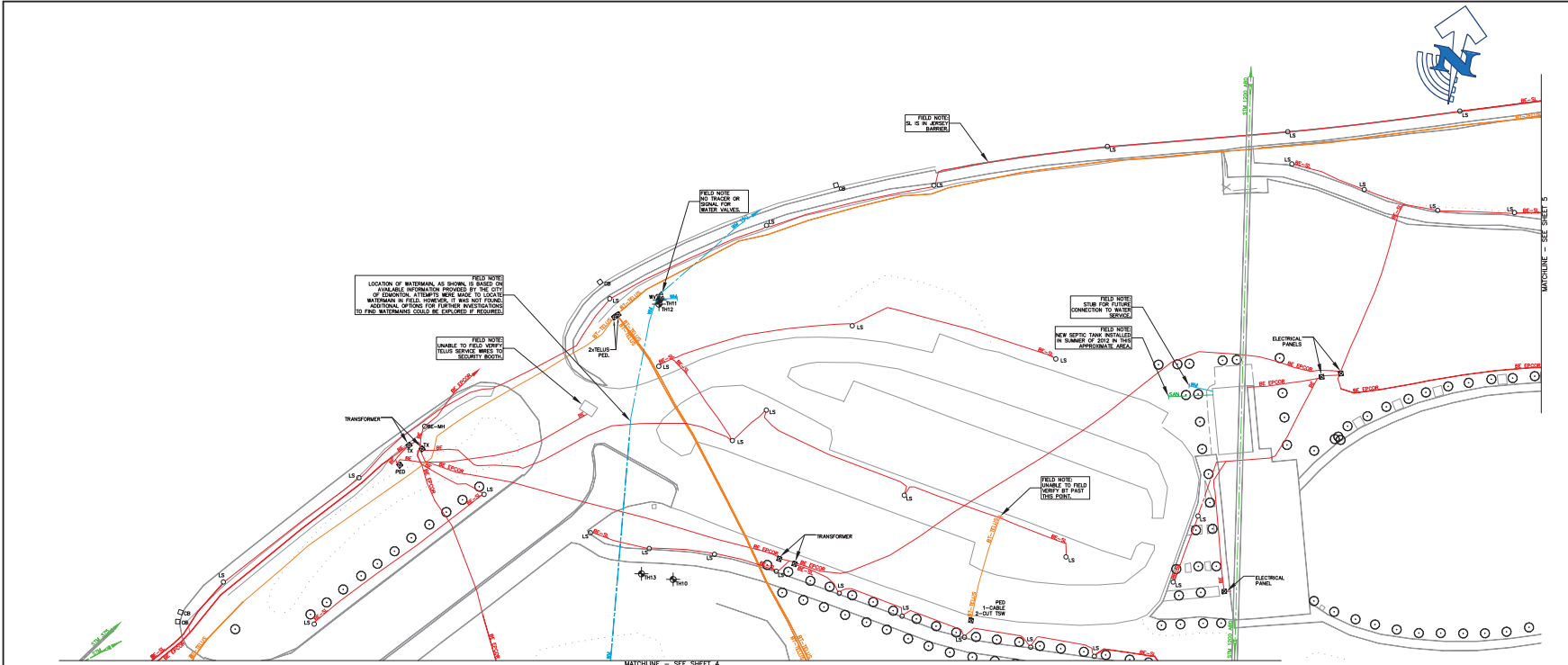
PROJECT: LOUISE MCKINNEY RIVERFRONT PARK EDMONTON, AB

DRAWING: SUBSURFACE UTILITY ENGINEERING MAPPING SERVICES

CLIENT: AECOM

PROJECT NO.: 61000100

SHEET NO.: 02 OF 06



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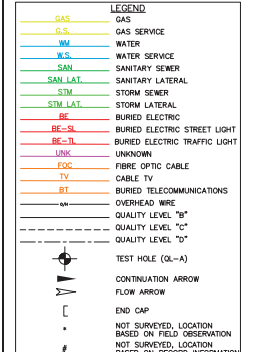
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Y

TEST HOLE INFORMATION

No.	Date	Depth	Location	Soil		Remarks	Notes
				Top	Bottom		
1	03/28/13	1.0	...	...	...	...	...
2	03/28/13	1.0	...	...	...	...	...
3	03/28/13	1.0	...	...	...	...	...
4	03/28/13	1.0	...	...	...	...	...
5	03/28/13	1.0	...	...	...	...	...
6	03/28/13	1.0	...	...	...	...	...
7	03/28/13	1.0	...	...	...	...	...
8	03/28/13	1.0	...	...	...	...	...
9	03/28/13	1.0	...	...	...	...	...
10	03/28/13	1.0	...	...	...	...	...
11	03/28/13	1.0	...	...	...	...	...
12	03/28/13	1.0	...	...	...	...	...
13	03/28/13	1.0	...	...	...	...	...
14	03/28/13	1.0	...	...	...	...	...
15	03/28/13	1.0	...	...	...	...	...
16	03/28/13	1.0	...	...	...	...	...
17	03/28/13	1.0	...	...	...	...	...
18	03/28/13	1.0	...	...	...	...	...
19	03/28/13	1.0	...	...	...	...	...
20	03/28/13	1.0	...	...	...	...	...

- NOTES**
- Went down 1.0m looking for gas until a hard layer was hit. Then went up 1.0m in each direction from self. gas in center of hole. From signal, previous pipe may have been removed. When down 2.0m total to make sure it was not there. No sign of anything.
 - Went down looking for unknown and found hard 1000 psi gravel at approximately 1.0m down. Able to break through on each end but unable to find anything. 2.0m depth trench was 2.0m long.
 - Looking for unknown. Made a hole 1.0m long, went down 1.0m, and was unable to find anything.
 - Found concrete at 1.0m in hole. Begin trenching 30.0 x 1.0m.
 - Got down to 1.0m and there is asphalt. Went over 1.0m and will be asphalt.
 - Went down 3.0m with a 2.0m trench. Unable to find a hole.
 - Test hole was completed at the point where the source due to the public easement line into the water main. It was made out of approximately 200mm, which is likely due to the use being.
 - Went down 1.0m based on possible alignment of water. 2.0m down and 2.0m trench.
 - Went down 1.0m based on alignment of water and power entry into park area. Went down 1.0m across front of water. Unable to find main. Must be on a change angle.
 - Went down a 2.0m by 1.0m deep trench. Looking for unknown location based on probable position of main going from 90° to road 100% at each house building and water. Unable to find 90°.



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DATE (MM/DD/YY): 03/28/13

DRAWN: A. JACKSON-WYATT

CHECKED: R. ORBON

APPROVED: L. ARCANO

SCALE: 1:500

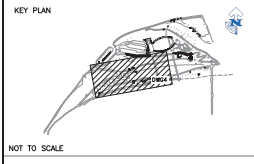
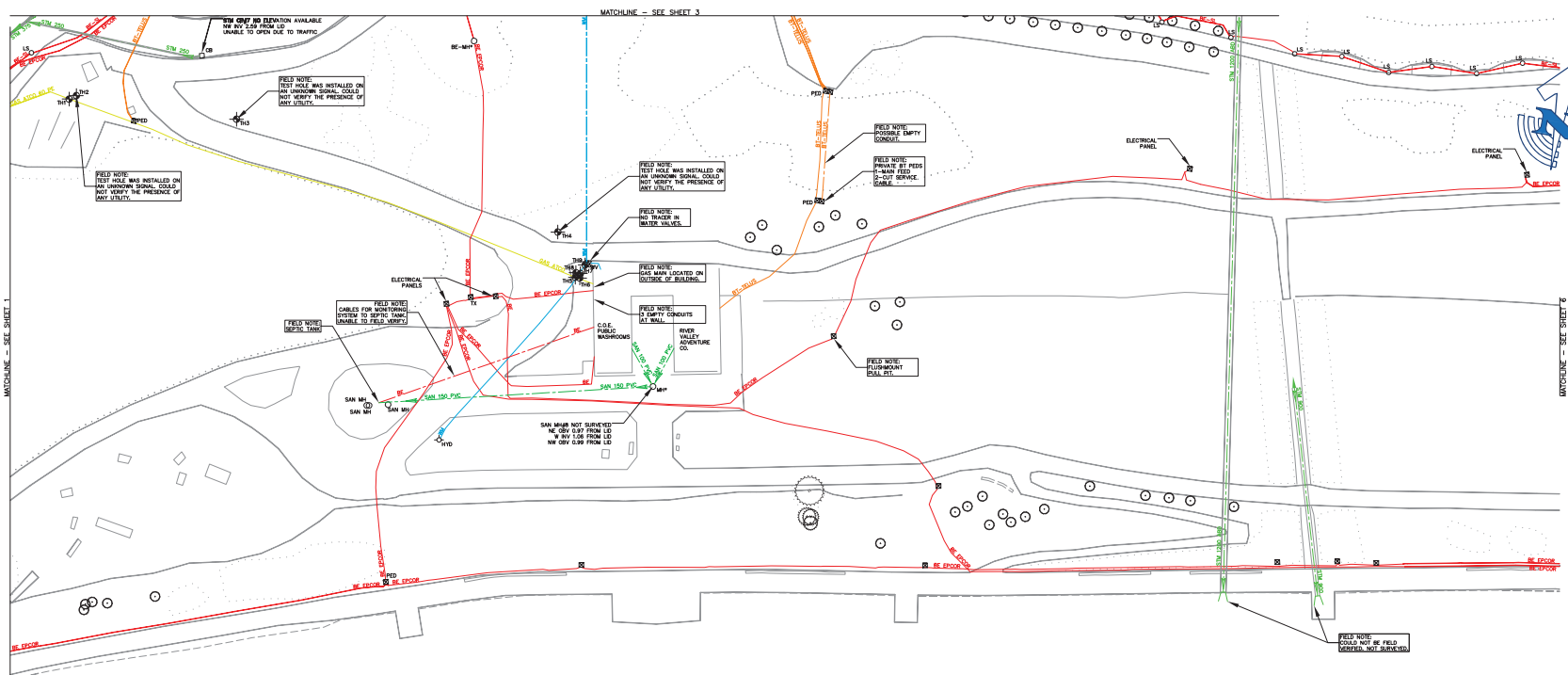
PROJECT: LOUISE MCKINNEY RIVERFRONT PARK EDMONTON, AB

DRAWING: SUBSURFACE UTILITY SERVICES MAPPING SERVICES

CLIENT: AECOM

PROJECT NO.: 61000100

SHEET NO.: 03 OF 06



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 - D
 - U QUALITY LEVEL "A" - PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES.
 - T
 - Y

- LEGEND**
- GAS — GAS
 - G.S. — GAS SERVICE
 - W — WATER
 - W.S. — WATER SERVICE
 - SAN — SANITARY SEWER
 - SAN LAT. — SANITARY LATERAL
 - STM — STORM SEWER
 - STM LAT. — STORM LATERAL
 - BE — BURIED ELECTRIC
 - BE-ST — BURIED ELECTRIC STREET LIGHT
 - BE-TL — BURIED ELECTRIC TRAFFIC LIGHT
 - UNK — UNKNOWN
 - FOC — FIBRE OPTIC CABLE
 - TV — CABLE TV
 - BT — BURIED TELECOMMUNICATIONS
 - SW — OVERHEAD WIRE
 - B — QUALITY LEVEL "B"
 - C — QUALITY LEVEL "C"
 - D — QUALITY LEVEL "D"
- TEST HOLE (OL-A)
 CONTINUATION ARROW
 FLOW ARROW
 END CAP
 NOT SURVEYED, LOCATION BASED ON FIELD OBSERVATION
 NOT SURVEYED, LOCATION BASED ON RECORD INFORMATION

TEST HOLE INFORMATION

Test Hole	Depth (m)	Soil Type	Utility	Notes
T1	1.2	CL	Gas	Gas service line, 1.2m depth.
T2	1.5	CL	Water	Water service line, 1.5m depth.
T3	1.8	CL	Sanitary Sewer	Sanitary sewer line, 1.8m depth.
T4	2.1	CL	Storm Sewer	Storm sewer line, 2.1m depth.
T5	2.4	CL	Electric	Buried electric line, 2.4m depth.
T6	2.7	CL	Electric	Buried electric line, 2.7m depth.
T7	3.0	CL	Electric	Buried electric line, 3.0m depth.
T8	3.3	CL	Electric	Buried electric line, 3.3m depth.
T9	3.6	CL	Electric	Buried electric line, 3.6m depth.
T10	3.9	CL	Electric	Buried electric line, 3.9m depth.
T11	4.2	CL	Electric	Buried electric line, 4.2m depth.
T12	4.5	CL	Electric	Buried electric line, 4.5m depth.

- NOTES**
- Went down 1.2m looking for gas until a hard layer was hit. Then went one 1.5m in each direction from soil pit to center of hole. Prior signal, previous pipe may have been removed. When down 2.7m total to make sure it was not there the age of anything.
 - Went down looking for unknown and found hard 1000 psi gravel at approximately 2.1m down. Able to break through on each end but unable to find anything. 2.1m depth, trench was 2.1m long.
 - Looking for unknown. Made a hole 1.8m long, went down 1.8m, and was unable to find anything.
 - Found concrete at 1.8m in hole. Begins trenching 30 to 1.2m.
 - Got down to 1.8m and then hit asphalt. Went over 0.6m to 2.4m and still hit asphalt.
 - Went down 3.0m with a 2.0m long trench. Unable to hit in one shot.
 - Test hole was completed at the point where the source line to the public electric line into the water main. It was made at approximately 2.8m, which is likely due to the soil being.
 - Went down 3.3m based on possible alignment of main. 2.4m down and 0.9m long trench.
 - Went down 3.6m based on alignment of water and sewer into site past area. Went down 0.9m across from end of water. Unable to find main. Must be on a change angle.
 - Went down 3.9m to 2.7m by 1.2m deep trench. Looking for unknown location based on possible position of main.
 - Went down 4.2m to 3.0m by 1.2m deep trench. Looking for unknown location based on possible position of main.
 - Went down 4.5m to 2.7m by 1.8m deep trench. Looking for unknown location based on possible position of main.

REVISIONS

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PREPARED BY:

1-855-222-TZUE | WWW.TZUE.COM

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LOUISE MCKINNEY
ENGINEER
1978 REGISTRATION NO. 12345

DATE (M/D/Y): 03/28/13

DRAWN: A. JACKSON-WYATT

CHECKED: R. ORBON

APPROVED: L. ARCANO

SCALE: 1:500

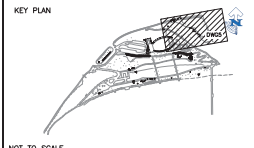
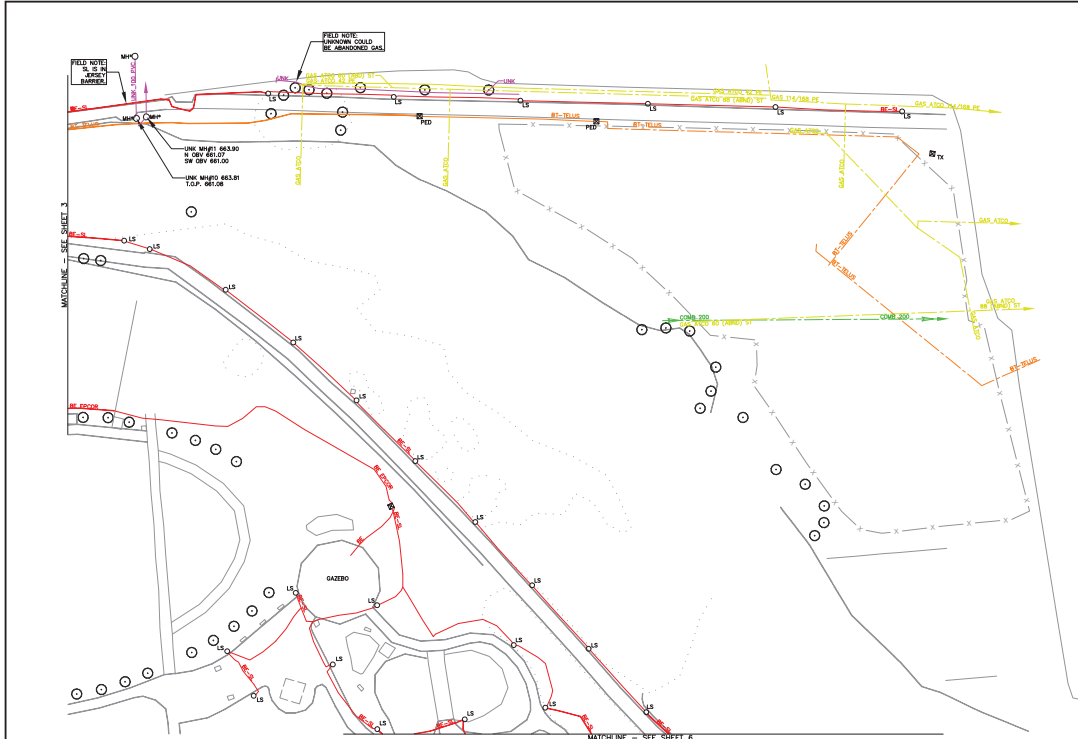
PROJECT: LOUISE MCKINNEY RIVERFRONT PARK EDMONTON, AB

DRAWING: SUBSURFACE UTILITY ENGINEERING MAPPING SERVICES

CLIENT: AECOM

PROJECT NO.: 61000100

SHEET NO.: 04 OF 06



- GENERAL NOTES**
1. T2UE'S SITE FIELD INVESTIGATION WAS PERFORMED NOVEMBER 12-17, 2012. THE TEST HOLE PHASE WAS PERFORMED MARCH 2-5 2013. CHANGES TO UTILITIES THAT OCCURRED FOLLOWING OUR INVESTIGATION MAY NOT BE SHOWN. CONSIDERATION SHOULD BE GIVEN TO UPDATING THIS PLAN PRIOR TO FINAL DESIGN AND CONSTRUCTION.
 2. LIMIT OF INVESTIGATION: PROPERTY LIMITS OF LOUISE MCKINNEY RIVERFRONT PARK.
 3. FIELD VERIFICATION OF UTILITIES WAS COMPLETED USING A COMBINATION OF ELECTROMAGNETIC PIPE AND CABLE LOCATE EQUIPMENT.
 4. EMPTY CONDUITS, SERVICES, LATERALS TO BUILDINGS, ABANDONED FACILITIES SUCH AS STREET LIGHT CABLES, WITHIN THE INVESTIGATION AREA MAY NOT BE SHOWN ON THE DRAWING.
 5. T2UE USED AVAILABLE MEANS IN AN ATTEMPT TO DETERMINE THE LOCATION OF UNDOCUMENTED UTILITIES HOWEVER CANNOT BE RESPONSIBLE FOR FINDING ALL UNDOCUMENTED UTILITIES.
 6. SURVEY OF T2UE'S UNDERGROUND UTILITY INFORMATION WAS COMPLETED BY ASCOM.
 7. THE BASEPLAN WAS PROVIDED BY THE CLIENT, THEREFORE T2UE IS NOT RESPONSIBLE FOR ITS ACCURACY.
 8. UTILITY MATERIAL SIZES AND FLOW SHOWN ON DRAWING ARE BASED ON RECORDS INFORMATION RECEIVED AND PROFESSIONAL JUDGEMENT OR FIELD INVESTIGATION.
 9. UTILITY WIDTHS ON DRAWING ARE BASED ON RECORDS RECEIVED.
 10. SEE PROJECT REPORT FOR ADDITIONAL INFORMATION.

ASCE QUALITY LEVELS

THE UTILITY INFORMATION SHOWN ON THIS DRAWING WAS COLLECTED IN ACCORDANCE TO ASCE STANDARD 38-02. THE INFORMATION IS SHOWN BY QUALITY LEVEL WHICH INDICATES THE LEVEL OF EFFORT USED TO DETERMINE THE LOCATION OF THE DATA.

I QUALITY LEVEL "D" - INFORMATION DERIVED FROM EXISTING RECORDS OR VERBAL RECOLLECTIONS.

N

C

R QUALITY LEVEL "C" - INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE GROUND UTILITY FEATURES AND BY USING A PROFESSIONAL JUDGEMENT IN CORRELATING THIS INFORMATION TO THE QUALITY LEVEL "D" INFORMATION.

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Q QUALITY LEVEL "B" - INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF THE UTILITIES.

U

L

I QUALITY LEVEL "A" - PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES.

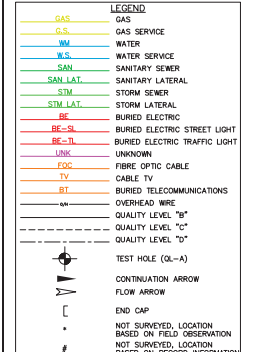
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TEST HOLE INFORMATION

No.	Date	Depth	Remarks	Surface Data		Remarks	Remarks
				Depth	Remarks		
1	03/02/13	1.0	Gas	1.0	Gas	Gas	Gas
2	03/02/13	1.0	Water	1.0	Water	Water	Water
3	03/02/13	1.0	Sanitary Sewer	1.0	Sanitary Sewer	Sanitary Sewer	Sanitary Sewer
4	03/02/13	1.0	Storm Sewer	1.0	Storm Sewer	Storm Sewer	Storm Sewer
5	03/02/13	1.0	Electric	1.0	Electric	Electric	Electric
6	03/02/13	1.0	Unknown	1.0	Unknown	Unknown	Unknown
7	03/02/13	1.0	Optic Cable	1.0	Optic Cable	Optic Cable	Optic Cable
8	03/02/13	1.0	Telecommunications	1.0	Telecommunications	Telecommunications	Telecommunications
9	03/02/13	1.0	Overhead Wire	1.0	Overhead Wire	Overhead Wire	Overhead Wire
10	03/02/13	1.0	Quality Level "B"	1.0	Quality Level "B"	Quality Level "B"	Quality Level "B"
11	03/02/13	1.0	Quality Level "C"	1.0	Quality Level "C"	Quality Level "C"	Quality Level "C"
12	03/02/13	1.0	Quality Level "D"	1.0	Quality Level "D"	Quality Level "D"	Quality Level "D"

- NOTES**
1. Test hole 1.0m depth for gas until a hard layer was hit. Then went down 1.0m in each direction from off gas to center of hole. From original previous pipe may have been removed. When done 2.0m total to make sure it was not there. No sign of anything.
 2. Test hole 2.0m depth for unknown and found hard 100mm pipe ground at approximately 1.0m down. Able to break through on each end but unable to find anything. 2.0m depth trench was 2.0m long.
 3. Test hole 3.0m depth for water. Made a hole 1.0m long, went down 1.0m, and was unable to find anything.
 4. Found concrete at 1.0m in hole. Begins trenching 50 to 1.0m.
 5. Cut down to 1.0m and then to depth. Went over 1.0m and did not adjust.
 6. Test hole 3.0m with a 2.0m long trench. Unable to hit or see 100mm.
 7. Test hole was completed at the point where the source line to the public wastewater line into the water main. It was measured at approximately 200mm, which is likely due to the soil being.
 8. Test hole based on possible alignment of man. 2.0m down and 2.0m long trench.
 9. Located for 100mm based on alignment of water and sewer entry into park area. Went down 1.0m across front of water. Unable to find man. Must be on a change angle.
 10. Located on a 2.0m by 2.0m deep trench. Looking for unknown location based on possible position of man going from 100 to road 100% at each man building and man. Unable to hit 100mm.



REVISIONS

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PREPARED BY:

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DATE (MM/DD/YY): 03/28/13

DRAWN: A. JACKSON-WYATT

CHECKED: R. ORBON

APPROVED: L. ARCANO

PROJECT: LOUISE MCKINNEY RIVERFRONT PARK EDMONTON, AB

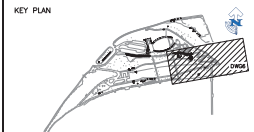
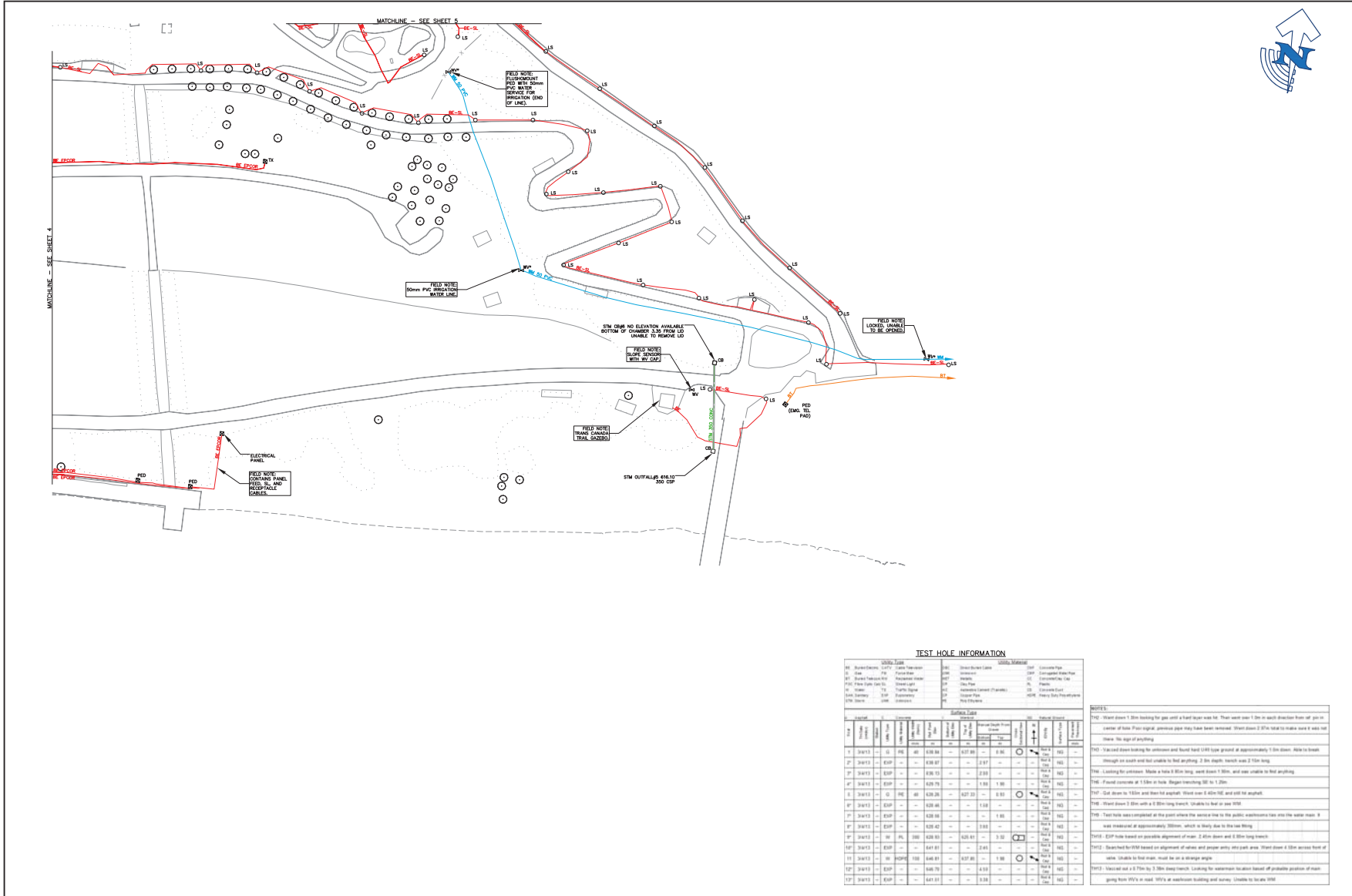
DRAWING: SUBSURFACE UTILITY ENGINEERING MAPPING SERVICES

CLIENT: AECOM

PROJECT NO.: 61000100

SHEET NO.: 05 OF 06





NOT TO SCALE

- GENERAL NOTES**
1. T2UE'S SITE FIELD INVESTIGATION WAS PERFORMED NOVEMBER 12-17, 2012. THE TEST HOLE PHASE WAS PERFORMED MARCH 2-5 2013. CHANGES TO UTILITIES THAT OCCURRED FOLLOWING OUR INVESTIGATION MAY NOT BE SHOWN. CONSIDERATION SHOULD BE GIVEN TO UPDATING THIS PLAN PRIOR TO FINAL DESIGN AND CONSTRUCTION.
 2. LIMIT OF INVESTIGATION: PROPERTY LINES OF LOUISE MCKINNEY RIVERFRONT PARK.
 3. FIELD VERIFICATION OF UTILITIES WAS COMPLETED USING A COMBINATION OF ELECTROMAGNETIC PIPE AND CABLE LOCATE EQUIPMENT.
 4. EMPTY CONDUITS, SERVICES, LATERALS TO BUILDINGS, ABANDONED FACILITIES SUCH AS STREET LIGHT CABLES, WITHIN THE INVESTIGATION AREA MAY NOT BE SHOWN ON THE DRAWING.
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 9. UTILITY WIDTHS ON DRAWING ARE BASED ON RECORDS RECEIVED.
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I QUALITY LEVEL "D" - INFORMATION DERIVED FROM EXISTING RECORDS OR VERBAL RECOLLECTIONS.

N

C

R QUALITY LEVEL "C" - INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE GROUND UTILITY FEATURES AND BY USING A PROFESSIONAL JUDGEMENT IN CORRELATING THIS INFORMATION TO THE QUALITY LEVEL "D" INFORMATION.

E

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P QUALITY LEVEL "B" - INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF THE UTILITIES.

U

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I QUALITY LEVEL "A" - PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES.

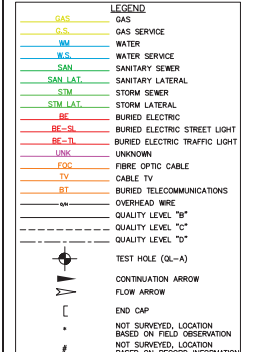
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TEST HOLE INFORMATION

TH	Location	Depth (m)	Findings	Notes
TH-01
TH-02
TH-03
TH-04
TH-05
TH-06
TH-07
TH-08
TH-09
TH-10
TH-11
TH-12

- NOTES**
1. TH-01: Went down 1.0m looking for gas until a hard layer was hit. Then went down 1.0m in each direction from off-pipe center of hole. From signal, pressure pipe may have been removed. Went down 2.0m total to make sure it was not there. No sign of anything.
 2. TH-02: Traced down looking for unknown and found hard 100mm pipe ground at approximately 1.0m down. Able to break through on each end but unable to find anything. 2.0m depth, trench was 1.0m long.
 3. TH-03: Looking for unknown. Made a hole 1.0m long, went down 1.0m, and was unable to find anything.
 4. TH-04: Found concrete at 1.0m in hole. Began trenching 50 x 1.0m.
 5. TH-05: Cut down to 1.0m and then to 2.0m. Went over 0.40m HDPE and did not adjust.
 6. TH-06: Went down 1.0m with a 0.75m long trench. Unable to find in one shot.
 7. TH-07: Test hole was completed at the point where the source line to the public wastewater line into the water main. It was measured at approximately 280mm, which is likely due to the soil being.
 8. TH-08: EOP hole based on possible alignment of man 2.40m down and 0.75m long trench.
 9. TH-09: Located the 100mm based on alignment of water and sewer entry into park area. Went down 0.75m across front of water. Unable to find main. Must be air or change angle.
 10. TH-10: Located end of 0.75m by 0.75m deep trench. Looking for unknown location based off probable position of man going from 90° to road. 100% at each man building and sewer. Unable to find 100.



REVISIONS

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DATE (MM/DD/YY): 03/28/13

DRAWN: A. JACKSON-WYATT

CHECKED: R. ORBON

APPROVED: L. ARCANO

SCALE: 1:500

PROJECT: LOUISE MCKINNEY RIVERFRONT PARK EDMONTON, AB

DRAWING: SUBSURFACE UTILITY ENGINEERING MAPPING SERVICES

PROJECT NO.: 61000100

SHEET NO.: 06 OF 06