KEY PLAN

1. SURVEY DONE BY JMS SURVEY LTD. ON OCT 07 2019.
2. ALL DIMENSIONS IN METERS AND DECIMALS THEREOF, UNLESS NOTED OTHERWISE.
3. ALL ELEVATIONS ARE GEODETIC, UNLESS NOTED OTHERWISE.

LEGEND

ENGINEER'S STAMP	PERMIT STAMP

NO.	DATE	DESCRIPTION	BY	CHE	ENG	APP
A	27-MAR-20	ISSUED FOR REVIEW	TS	MB	TT	

REVISIONS

DRAWN BY:	DATE:	CHECKED BY:	DATE:
ENGINEER:	DATE:	APPROVED:	DATE:

SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

LOCATION PLAN
SUMMER VILLAGE DRAINAGE UPGRADE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE:	CLIENT:
1:2000	SV OF ROSS HAVEN

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JOB NUMBER:	DWG NUMBER:	REV:
19-D-005	GA-19D007-01	A

KEY PLAN

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LEGEND

ENGINEER'S STAMP

PROFESSIONAL ENGINEER
TRENT THOMPSON
ALBERTA
MAY 30, 2020

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NO.	DATE	DESCRIPTION	BY	CHE	ENG	APP
0	27–MAY–20	ISSUED FOR CONSTRUCTION	TS	TT	TT	
A	24–APR–20	ISSUED FOR REVIEW	TS	MB	TT	

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SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

2ND STREET KEY PLAN
SUMMER VILLAGE DRAINAGE UPGRADE

LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:2000

CLIENT: SV OF ROSS HAVEN

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JOB NUMBER:	DWG NUMBER:	REV:
20–D–002	GA–20D002–02	0

KEY PLAN

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2. ALL DIMENSIONS IN METERS AND DECIMALS THEREOF, UNLESS NOTED OTHERWISE.
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PROFESSIONAL ENGINEER ALBERTA
TRENT THOMPSON
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NO.	DATE	DESCRIPTION	BY	CHE	ENG	APP
0	27–MAY–20	ISSUED FOR CONSTRUCTION	TS	TT	TT	
A	24–APR–20	ISSUED FOR REVIEW	TS	MB	TT	

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ENGINEER:	DATE:	APPROVED:	DATE:

SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

3RD STREET KEY PLAN
SUMMER VILLAGE DRAINAGE UPDATE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:2000

CLIENT: SV OF ROSS HAVEN

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JOB NUMBER:	DWG NUMBER:	REV:
19–D–005	GA–20D002–03	0

KEY PLAN

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LEGEND

ENGINEER'S STAMP

PROFESSIONAL ENGINEER ALBERTA
TRENT THOMPSON
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A	24-APR-20	ISSUED FOR REVIEW	TS	MB	TT	

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ENGINEER:	DATE:	APPROVED:	DATE:

SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

4TH STREET KEY PLAN
SUMMER VILLAGE DRAINAGE UPGRADE

LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:2000

CLIENT: SV OF ROSS HAVEN

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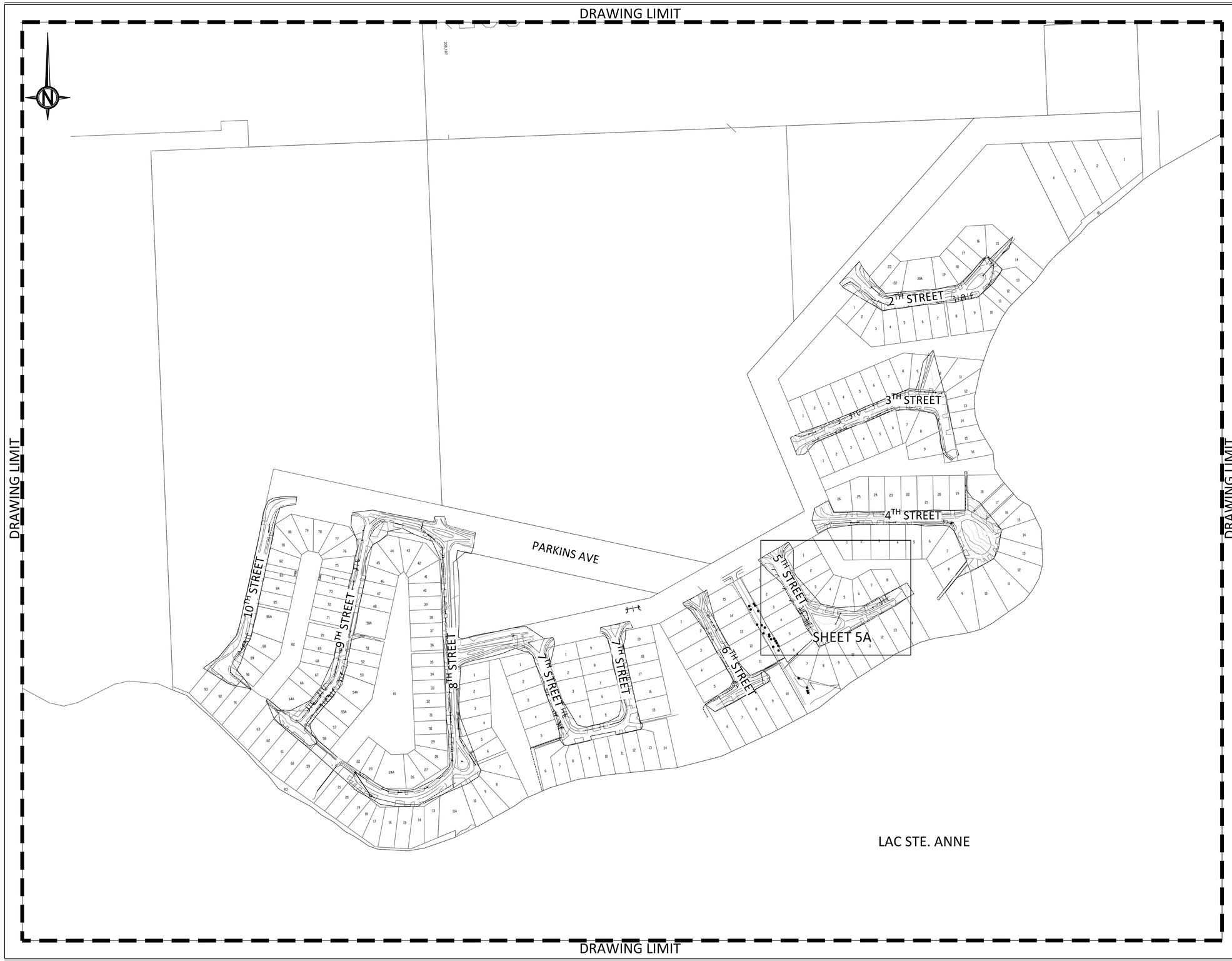
JOB NUMBER:	DWG NUMBER:	REV:
20-D-002	GA-20D002-4A	0



KEY PLAN

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PROFESSIONAL ENGINEER ALBERTA
TRENT THOMPSON
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A	24–APR–20	ISSUED FOR REVIEW	TS	MB	TT	

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ENGINEER:	DATE:	APPROVED:	DATE:

SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

5TH STREET KEY PLAN
SUMMER VILLAGE DRAINAGE UPDATE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:2000

CLIENT: SV OF ROSS HAVEN

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JOB NUMBER:	DWG NUMBER:	REV:
20–D–002	GA–20D002–5A	0

KEY PLAN

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PROFESSIONAL ENGINEER ALBERTA
TRENT THOMPSON
MAY 30, 2020

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NO.	DATE	DESCRIPTION	BY	CHE	ENG	APP
0	29–MAY–20	ISSUED FOR CONSTRUCTION	TS	TT	TT	
A	27–MAR–20	ISSUED FOR REVIEW	TS	MB	TT	

REVISIONS

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ENGINEER:	DATE:	APPROVED:	DATE:

SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

6TH STREET KEY PLAN
SUMMER VILLAGE DRAINAGE UPDATE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:2000

CLIENT: SV OF ROSS HAVEN

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JOB NUMBER:	DWG NUMBER:	REV:
20–D–002	GA–20D002–06	0

KEY PLAN

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PROFESSIONAL ENGINEER ALBERTA
TRENT THOMPSON
MAY 30, 2020

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NO.	DATE	DESCRIPTION	BY	CHE	ENG	APP
0	29–MAY–20	ISSUED FOR CONSTRUCTION	TS	TT	TT	
A	24–APR–20	ISSUED FOR REVIEW	TS	MB	TT	

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SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

7TH STREET KEY PLAN
SUMMER VILLAGE DRAINAGE UPDATE

LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:2000

CLIENT: SV OF ROSS HAVEN

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JOB NUMBER:	DWG NUMBER:	REV:
20–D–002	GA–20D002–07	0

KEY PLAN

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LEGEND

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PROFESSIONAL ENGINEER TRENT THOMPSON ALBERTA MAY 30, 2020

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Date MAY 30, 2020
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NO.	DATE	DESCRIPTION	BY	CHE	ENG	APP
0	29-MAY-20	ISSUED FOR CONSTRUCTION	TS	TT	TT	
A	24-APR-20	ISSUED FOR REVIEW	TS	MB	TT	

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SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

8TH STREET KEY PLAN
SUMMER VILLAGE DRAINAGE UPDATE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:2000

CLIENT: SV OF ROSS HAVEN

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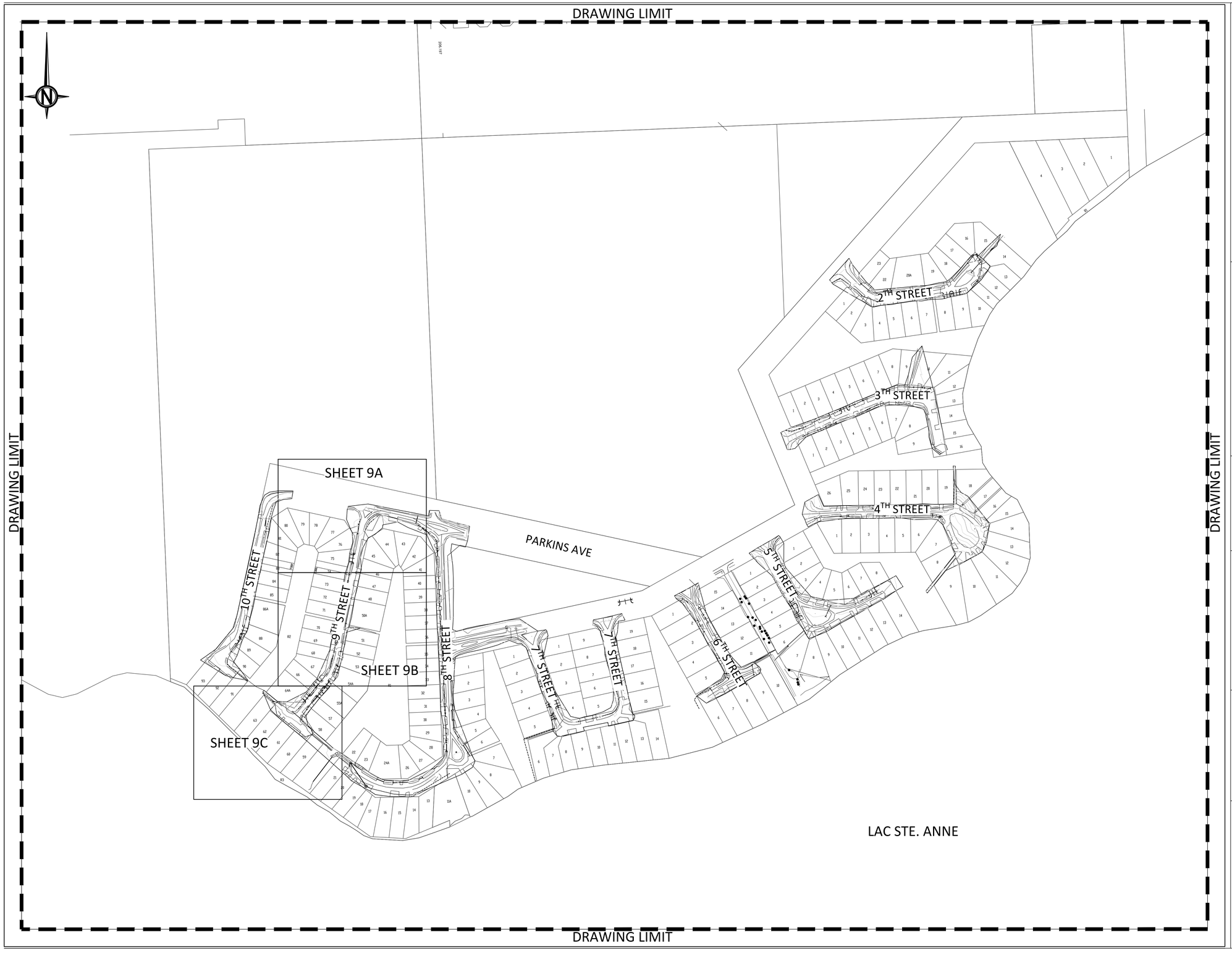
JOB NUMBER:	DWG NUMBER:	REV:
20-D-002	GA-20D002-08	0



KEY PLAN

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LEGEND

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PROFESSIONAL ENGINEER TRENT THOMPSON ALBERTA MAY 30, 2020

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Date MAY 30, 2020
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NO.	DATE	DESCRIPTION	BY	CHE	ENG	APP
0	29-MAY-20	ISSUED FOR CONSTRUCTION	TS	TT	TT	
A	24-APR-20	ISSUED FOR REVIEW	TS	MB	TT	

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ENGINEER:	DATE:	APPROVED:	DATE:

SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

9TH STREET KEY PLAN
SUMMER VILLAGE DRAINAGE UPGRADE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:2000

CLIENT: SV OF ROSS HAVEN

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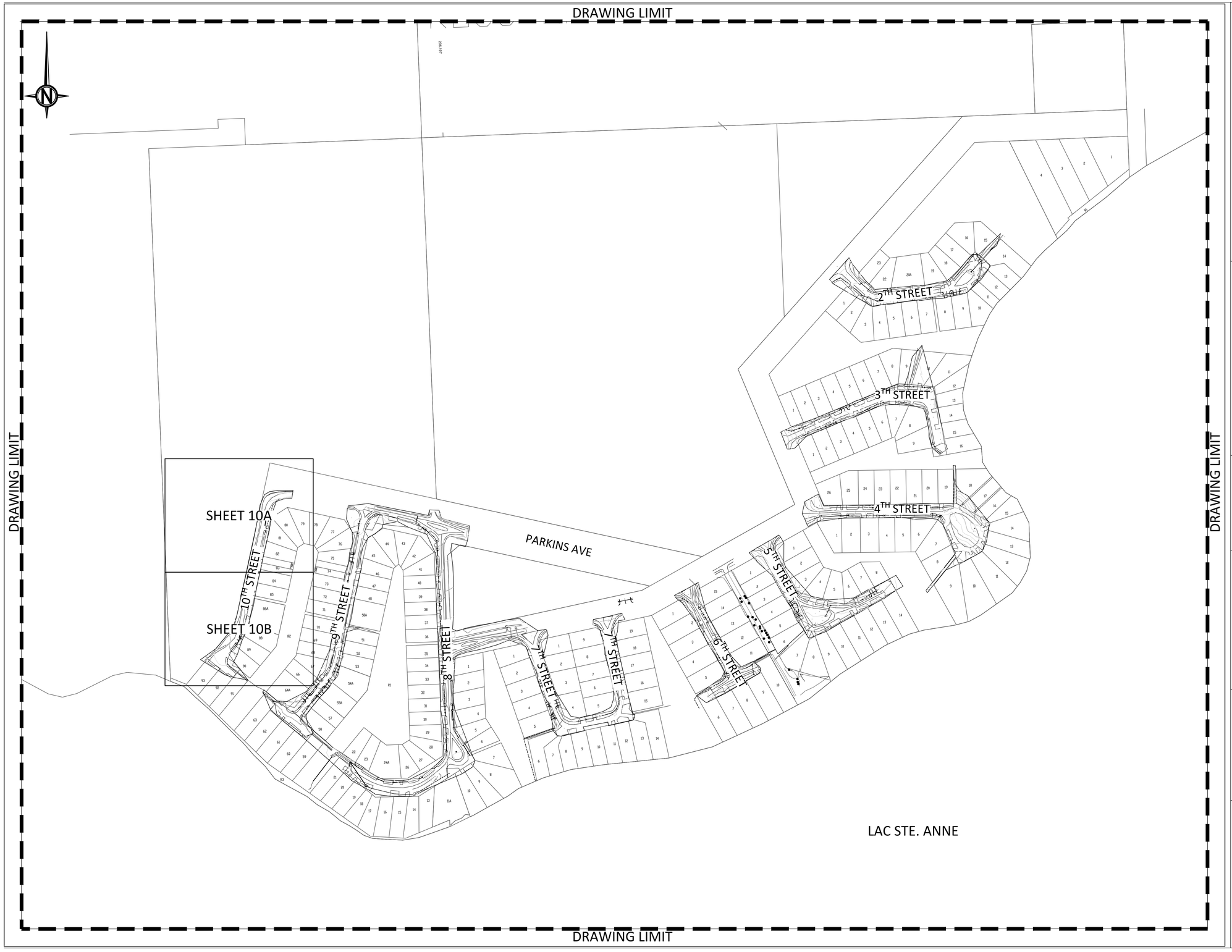
JOB NUMBER:	DWG NUMBER:	REV:
20-D-002	GA-20D002-09	0



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LEGEND

ENGINEER'S STAMP

PROFESSIONAL ENGINEER TRENT THOMPSON ALBERTA
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Date MAY 30, 2020
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0	29–MAY–20	ISSUED FOR CONSTRUCTION	TS	TT	TT	
A	24–APR–20	ISSUED FOR REVIEW	TS	MB	TT	

REVISIONS

DRAWN BY:	DATE:	CHECKED BY:	DATE:
ENGINEER:	DATE:	APPROVED:	DATE:

SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

10TH STREET KEY PLAN
SUMMER VILLAGE DRAINAGE UPGRADE

LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:2000

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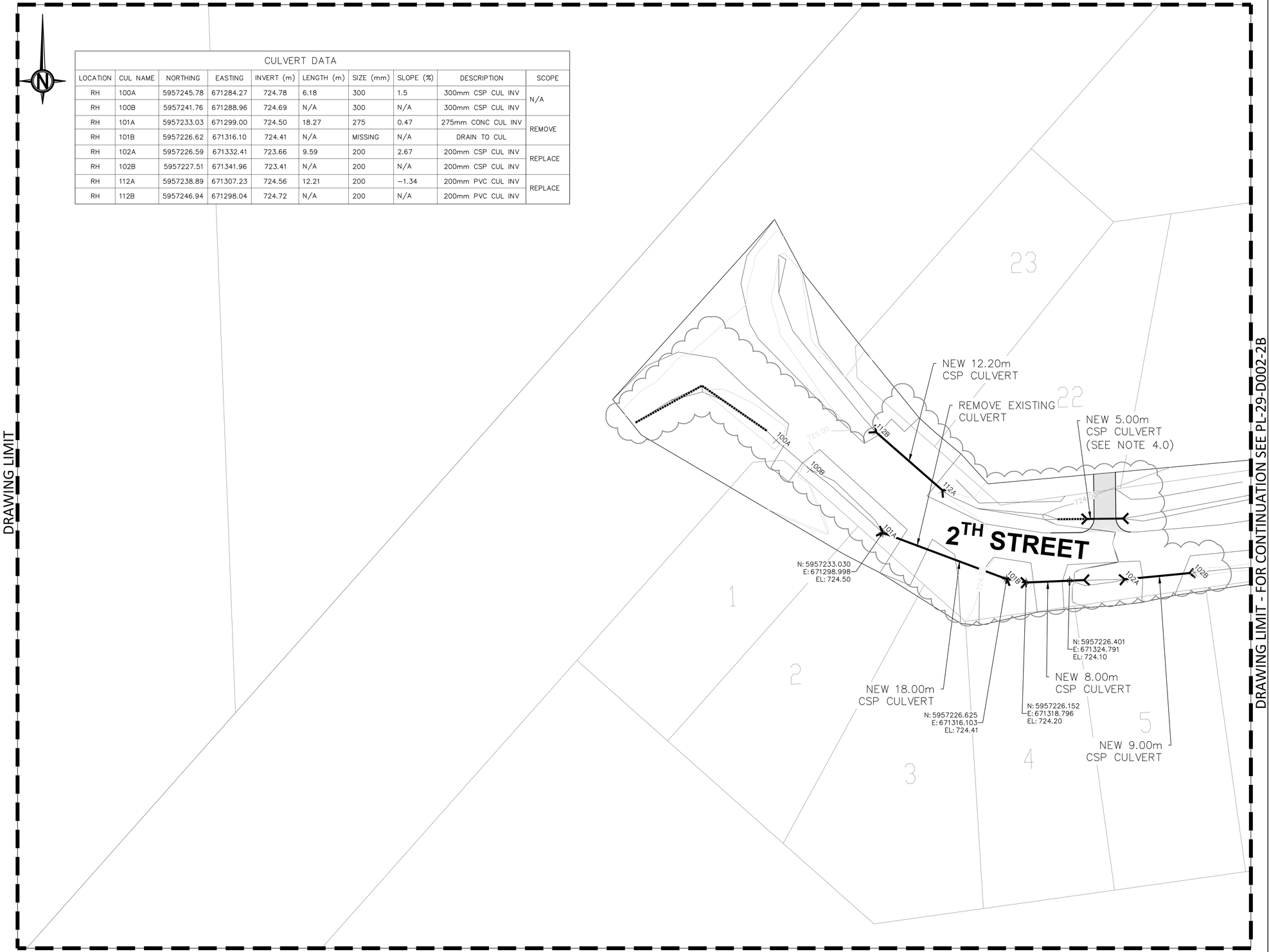
JOB NUMBER:	DWG NUMBER:	REV:
20–D–002	GA–20D002–10	0

DRAWING LIMIT

CULVERT DATA									
LOCATION	CUL NAME	NORTHING	EASTING	INVERT (m)	LENGTH (m)	SIZE (mm)	SLOPE (%)	DESCRIPTION	SCOPE
RH	100A	5957245.78	671284.27	724.78	6.18	300	1.5	300mm CSP CUL INV	N/A
RH	100B	5957241.76	671288.96	724.69	N/A	300	N/A	300mm CSP CUL INV	
RH	101A	5957233.03	671299.00	724.50	18.27	275	0.47	275mm CONC CUL INV	REMOVE
RH	101B	5957226.62	671316.10	724.41	N/A	MISSING	N/A	DRAIN TO CUL	
RH	102A	5957226.59	671332.41	723.66	9.59	200	2.67	200mm CSP CUL INV	REPLACE
RH	102B	5957227.51	671341.96	723.41	N/A	200	N/A	200mm CSP CUL INV	
RH	112A	5957238.89	671307.23	724.56	12.21	200	−1.34	200mm PVC CUL INV	REPLACE
RH	112B	5957246.94	671298.04	724.72	N/A	200	N/A	200mm PVC CUL INV	



DRAWING LIMIT

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KEY PLAN

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4. FIELD VERIFY LOCATION AND ELEVATION OF CULVERT AND APPROACH.

LEGEND

SCOPE CLOUD

NEW SWALE

NEW 300mm CSP CULVERT

NEW GRAVEL APPROACH

ENGINEER'S STAMP

PROFESSIONAL ENGINEER
TRENT THOMPSON
ALBERTA
JUNE 12, 2020

PERMIT STAMP

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NO.	DATE	DESCRIPTION	BY	CHE	ENG	APP
1	12–JUN–20	RE–ISSUED FOR CONSTRUCTION	TS	TT	TT	
0	27–MAY–20	ISSUED FOR CONSTRUCTION	TS	TT	TT	
A	24–APR–20	ISSUED FOR REVIEW	TS	MB	TT	

REVISIONS

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ENGINEER:	DATE:	APPROVED:	DATE:

SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

SHEET 2A
SUMMER VILLAGE DRAINAGE UPGRADE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:250

CLIENT: SV OF ROSS HAVEN

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DWG NUMBER: PL–20D002–2A

REV: 1

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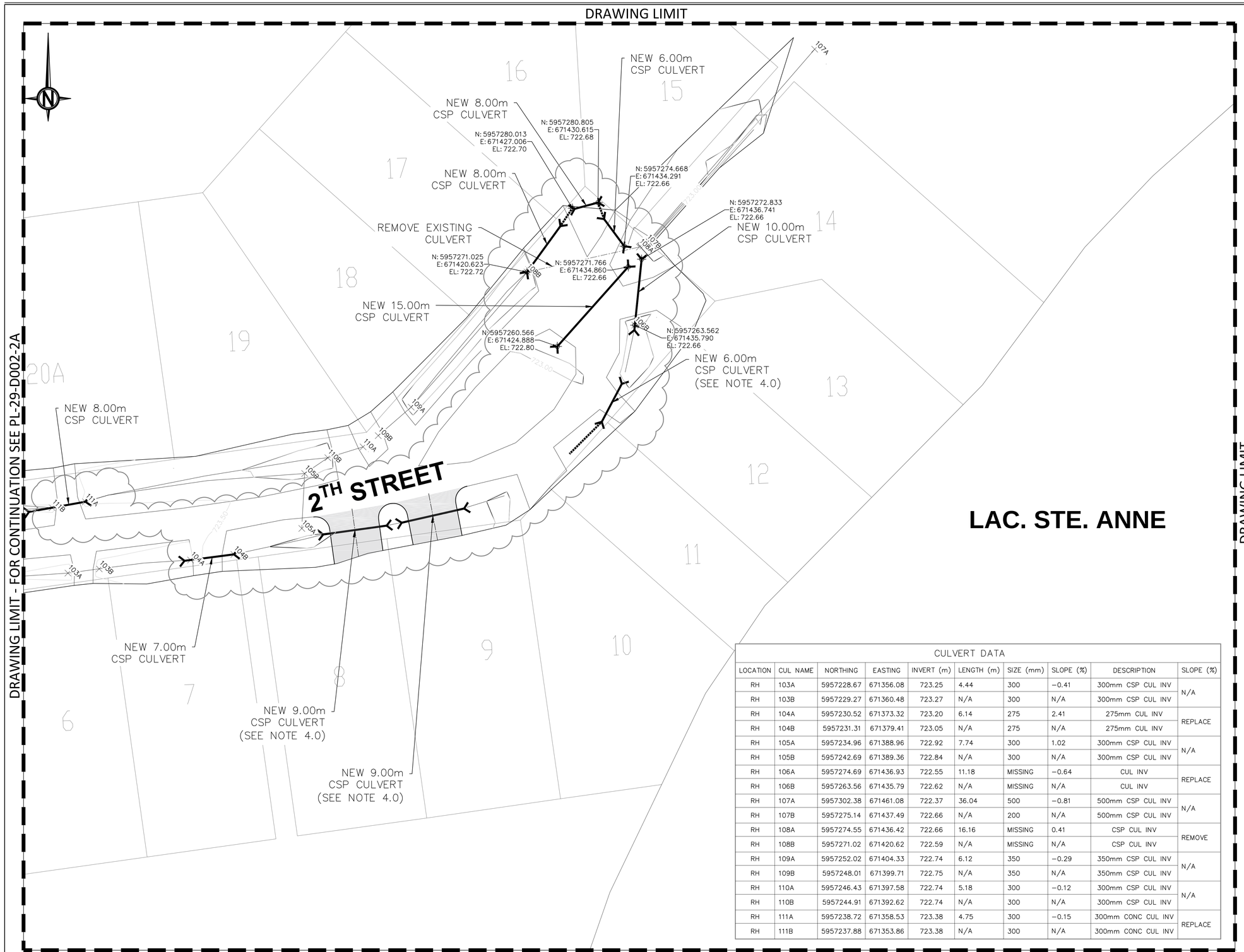

CULVERT DATA

LOCATION	CUL NAME	NORTHING	EASTING	INVERT (m)	LENGTH (m)	SIZE (mm)	SLOPE (%)	DESCRIPTION	SLOPE (%)
RH	103A	5957228.67	671356.08	723.25	4.44	300	−0.41	300mm CSP CUL INV	N/A
RH	103B	5957229.27	671360.48	723.27	N/A	300	N/A	300mm CSP CUL INV	
RH	104A	5957230.52	671373.32	723.20	6.14	275	2.41	275mm CUL INV	REPLACE
RH	104B	5957231.31	671379.41	723.05	N/A	275	N/A	275mm CUL INV	
RH	105A	5957234.96	671388.96	722.92	7.74	300	1.02	300mm CSP CUL INV	N/A
RH	105B	5957242.69	671389.36	722.84	N/A	300	N/A	300mm CSP CUL INV	
RH	106A	5957274.69	671436.93	722.55	11.18	MISSING	−0.64	CUL INV	REPLACE
RH	106B	5957263.56	671435.79	722.62	N/A	MISSING	N/A	CUL INV	
RH	107A	5957302.38	671461.08	722.37	36.04	500	−0.81	500mm CSP CUL INV	N/A
RH	107B	5957275.14	671437.49	722.66	N/A	200	N/A	500mm CSP CUL INV	
RH	108A	5957274.55	671436.42	722.66	16.16	MISSING	0.41	CSP CUL INV	REMOVE
RH	108B	5957271.02	671420.62	722.59	N/A	MISSING	N/A	CSP CUL INV	
RH	109A	5957252.02	671404.33	722.74	6.12	350	−0.29	350mm CSP CUL INV	N/A
RH	109B	5957248.01	671399.71	722.75	N/A	350	N/A	350mm CSP CUL INV	
RH	110A	5957246.43	671397.58	722.74	5.18	300	−0.12	300mm CSP CUL INV	N/A
RH	110B	5957244.91	671392.62	722.74	N/A	300	N/A	300mm CSP CUL INV	
RH	111A	5957238.72	671358.53	723.38	4.75	300	−0.15	300mm CONC CUL INV	REPLACE
RH	111B	5957237.88	671353.86	723.38	N/A	300	N/A	300mm CONC CUL INV	

KEY PLAN

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LEGEND

SCOPE CLOUD
NEW SWALE
NEW 300mm CSP CULVERT
NEW GRAVEL APPROACH

ENGINEER'S STAMP

PROFESSIONAL ENGINEER ALBERTA
TRENT THOMPSON
JUNE 12, 2020

PERMIT STAMP

PERMIT TO PRACTICE
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Signature
Date JUNE 12, 2020
PERMIT NUMBER: P11382
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0	27–MAY–20	ISSUED FOR CONSTRUCTION	TS	TT	TT	
A	24–APR–20	ISSUED FOR REVIEW	TS	MB	TT	

REVISIONS

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ENGINEER:	DATE:	APPROVED:	DATE:

SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

SHEET 2B
SUMMER VILLAGE DRAINAGE STUDY
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:250

CLIENT: SV OF ROSS HAVEN

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JOB NUMBER:	DWG NUMBER:	REV:
20–D–002	PL–20D002–2B	1

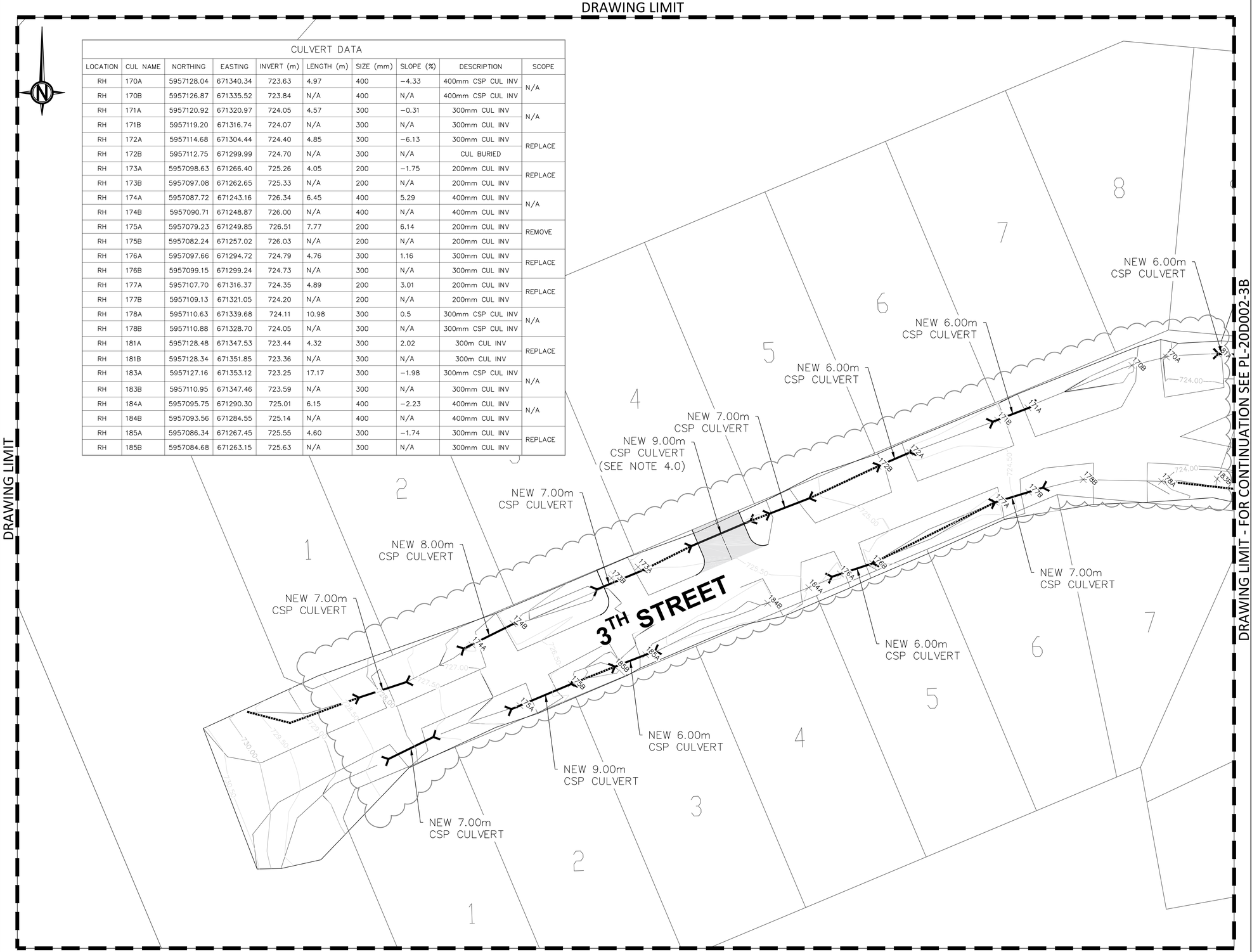
DRAWING LIMIT

DRAWING LIMIT

DRAWING LIMIT - FOR CONTINUATION SEE PL-20D002-3B

DRAWING LIMIT

CULVERT DATA									
LOCATION	CUL NAME	NORTHING	EASTING	INVERT (m)	LENGTH (m)	SIZE (mm)	SLOPE (%)	DESCRIPTION	SCOPE
RH	170A	5957128.04	671340.34	723.63	4.97	400	−4.33	400mm CSP CUL INV	N/A
RH	170B	5957126.87	671335.52	723.84	N/A	400	N/A	400mm CSP CUL INV	
RH	171A	5957120.92	671320.97	724.05	4.57	300	−0.31	300mm CUL INV	N/A
RH	171B	5957119.20	671316.74	724.07	N/A	300	N/A	300mm CUL INV	
RH	172A	5957114.68	671304.44	724.40	4.85	300	−6.13	300mm CUL INV	REPLACE
RH	172B	5957112.75	671299.99	724.70	N/A	300	N/A	CUL BURIED	
RH	173A	5957098.63	671266.40	725.26	4.05	200	−1.75	200mm CUL INV	REPLACE
RH	173B	5957097.08	671262.65	725.33	N/A	200	N/A	200mm CUL INV	
RH	174A	5957087.72	671243.16	726.34	6.45	400	5.29	400mm CUL INV	N/A
RH	174B	5957090.71	671248.87	726.00	N/A	400	N/A	400mm CUL INV	
RH	175A	5957079.23	671249.85	726.51	7.77	200	6.14	200mm CUL INV	REMOVE
RH	175B	5957082.24	671257.02	726.03	N/A	200	N/A	200mm CUL INV	
RH	176A	5957097.66	671294.72	724.79	4.76	300	1.16	300mm CUL INV	REPLACE
RH	176B	5957099.15	671299.24	724.73	N/A	300	N/A	300mm CUL INV	
RH	177A	5957107.70	671316.37	724.35	4.89	200	3.01	200mm CUL INV	REPLACE
RH	177B	5957109.13	671321.05	724.20	N/A	200	N/A	200mm CUL INV	
RH	178A	5957110.63	671339.68	724.11	10.98	300	0.5	300mm CSP CUL INV	N/A
RH	178B	5957110.88	671328.70	724.05	N/A	300	N/A	300mm CSP CUL INV	
RH	181A	5957128.48	671347.53	723.44	4.32	300	2.02	300m CUL INV	REPLACE
RH	181B	5957128.34	671351.85	723.36	N/A	300	N/A	300m CUL INV	
RH	183A	5957127.16	671353.12	723.25	17.17	300	−1.98	300mm CSP CUL INV	N/A
RH	183B	5957110.95	671347.46	723.59	N/A	300	N/A	300mm CUL INV	
RH	184A	5957095.75	671290.30	725.01	6.15	400	−2.23	400mm CUL INV	N/A
RH	184B	5957093.56	671284.55	725.14	N/A	400	N/A	400mm CUL INV	
RH	185A	5957086.34	671267.45	725.55	4.60	300	−1.74	300mm CUL INV	REPLACE
RH	185B	5957084.68	671263.15	725.63	N/A	300	N/A	300mm CUL INV	



KEY PLAN

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3. ALL ELEVATIONS ARE GEODETIC, UNLESS NOTED OTHERWISE.
4. FIELD VERIFY LOCATION AND ELEVATION OF CULVERT AND APPROACH.

LEGEND

SCOPE CLOUD

NEW SWALE

NEW 300mm CSP CULVERT

NEW GRAVEL APPROACH

ENGINEER'S STAMP

PROFESSIONAL ENGINEER TRENT THOMPSON ALBERTA JUNE 12, 2020

PERMIT STAMP

PERMIT TO PRACTICE
Bolson Engineering and Environmental Services
Signature
Date JUNE 12, 2020
PERMIT NUMBER: P11382
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

NO.	DATE	DESCRIPTION	BY	CHE	ENG	APP
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REVISIONS

DRAWN BY:	DATE:	CHECKED BY:	DATE:
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SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

SHEET 3A
SUMMER VILLAGE DRAINAGE UPGRADE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:250

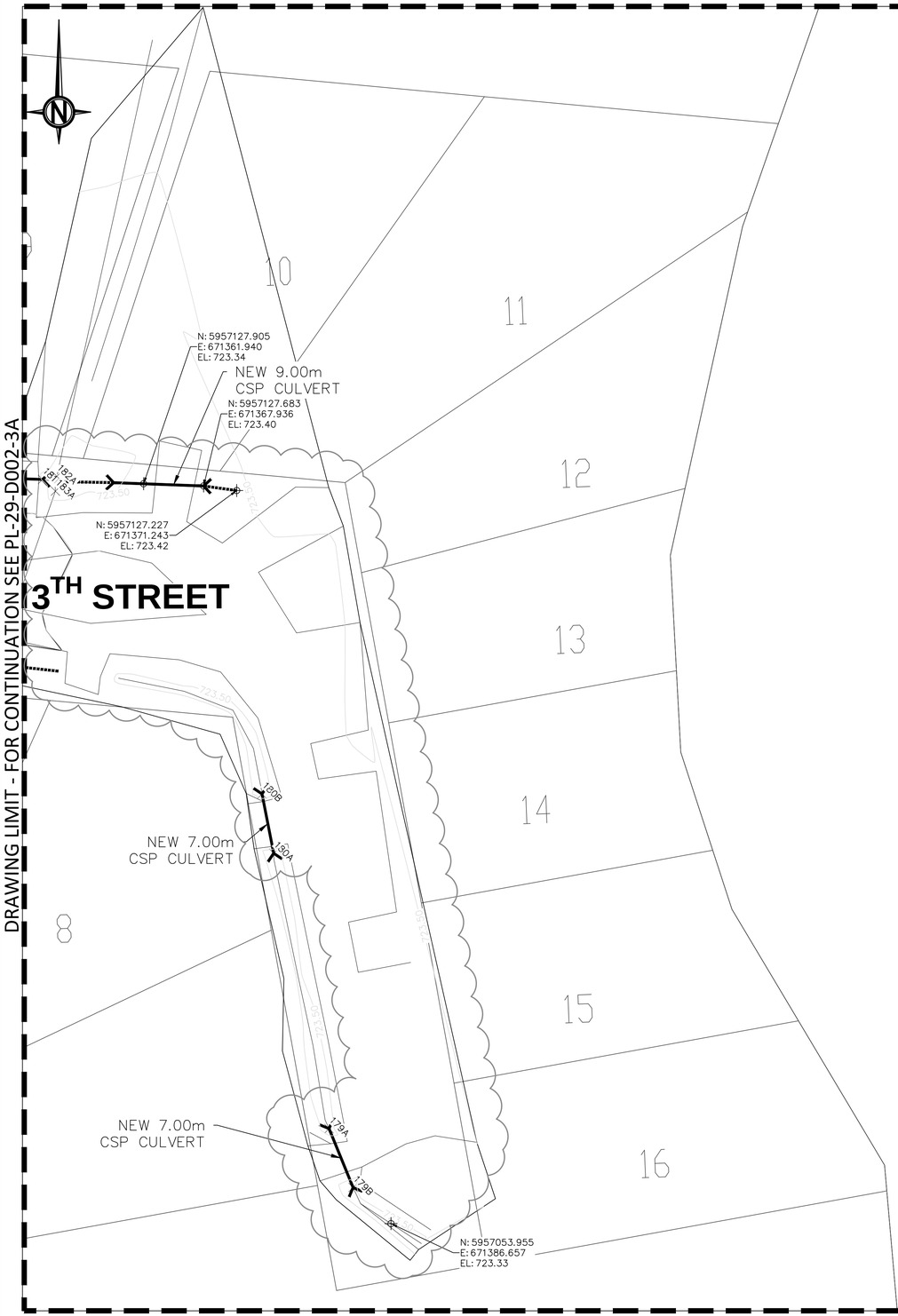
CLIENT: SV OF ROSS HAVEN

BOLSON ENGINEERING AND ENVIRONMENTAL SERVICES

9703–199 St.
EDMONTON, AB
T5T–6E8
www.bolson.ca
PH:780–668–8571
FAX:780–413–8879

JOB NUMBER:	DWG NUMBER:	REV:
20–D–002	PL–20D002–3A	1

DRAWING LIMIT



DRAWING LIMIT - FOR CONTINUATION SEE PL-29-D002-3A

DRAWING LIMIT

LAC. STE. ANNE

CULVERT DATA

LOCATION	CUL NAME	NORTHING	EASTING	INVERT (m)	LENGTH (m)	SIZE (mm)	SLOPE (%)	DESCRIPTION	SCOPE
RH	179A	5957063.44	671380.47	723.22	6.35	300	0.27	300mm CSP CUL INV	REPLACE
RH	179B	5957057.57	671382.87	723.20	N/A	300	N/A	300mm CSP CUL INV	
RH	180A	5957090.97	671374.94	723.31	6.05	300	−0.03	300mm CSP CUL INV	REPLACE
RH	180B	5957096.90	671373.77	723.31	N/A	300	N/A	300mm CSP CUL INV	
RH	181B	5957128.34	671351.85	723.36	N/A	300	N/A	300m CUL INV	REPLACE
RH	182A	5957128.65	671353.27	723.30	N/A	400	Unknown	400m CSP CUL INV TO PUL	N/A
RH	182B	0.00	0.00		N/A	MISSING	N/A		
RH	183A	5957127.16	671353.12	723.25	17.17	300	−1.98	300mm CSP CUL INV	N/A

KEY PLAN

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LEGEND

SCOPE CLOUD

NEW SWALE

NEW 300mm CSP CULVERT

NEW GRAVEL APPROACH

ENGINEER'S STAMP

PROFESSIONAL ENGINEER ALBERTA
TRENT THOMPSON
JUNE 12, 2020

PERMIT STAMP

PERMIT TO PRACTICE
Bolson Engineering and Environmental Services
Signature
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A	24–APR–20	ISSUED FOR REVIEW	TS	MB	TT	

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SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

SHEET 3B
SUMMER VILLAGE DRAINAGE UPGRADE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:250

CLIENT: SV OF ROSS HAVEN

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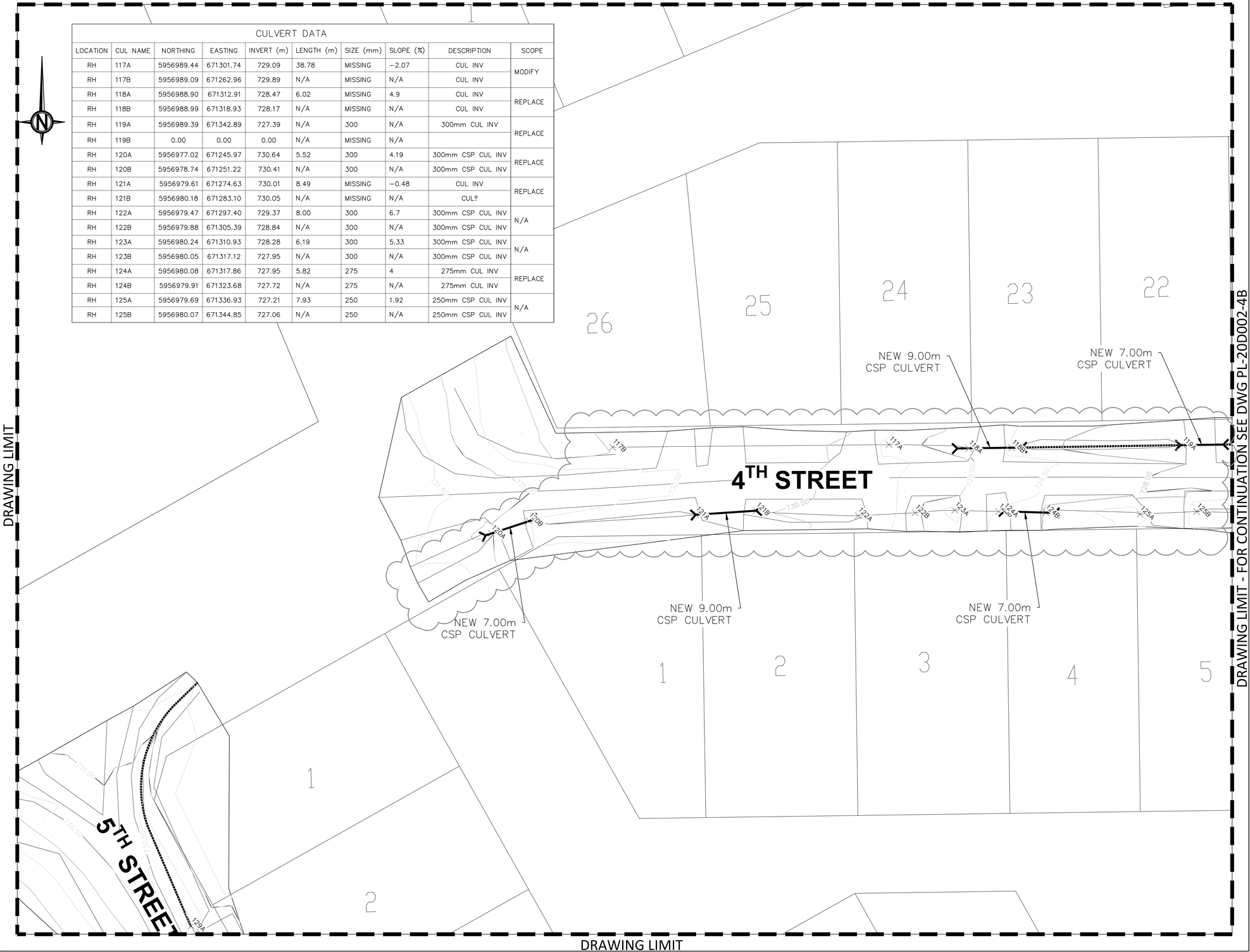
JOB NUMBER:	DWG NUMBER:	REV:
20–D–002	PL–20D002–3B	0

DRAWING LIMIT

DRAWING LIMIT

CULVERT DATA									
LOCATION	CUL NAME	NORTHING	EASTING	INVERT (m)	LENGTH (m)	SIZE (mm)	SLOPE (%)	DESCRIPTION	SCOPE
RH	117A	5956989.44	671301.74	729.09	38.78	MISSING	−2.07	CUL INV	MODIFY
RH	117B	5956989.09	671262.96	729.89	N/A	MISSING	N/A	CUL INV	
RH	118A	5956988.90	671312.91	728.47	6.02	MISSING	4.9	CUL INV	REPLACE
RH	118B	5956988.99	671318.93	728.17	N/A	MISSING	N/A	CUL INV	
RH	119A	5956989.39	671342.89	727.39	N/A	300	N/A	300mm CUL INV	REPLACE
RH	119B	0.00	0.00	0.00	N/A	MISSING	N/A		
RH	120A	5956977.02	671245.97	730.64	5.52	300	4.19	300mm CSP CUL INV	REPLACE
RH	120B	5956978.74	671251.22	730.41	N/A	300	N/A	300mm CSP CUL INV	
RH	121A	5956979.61	671274.63	730.01	8.49	MISSING	−0.48	CUL INV	REPLACE
RH	121B	5956980.18	671283.10	730.05	N/A	MISSING	N/A	CUL?	
RH	122A	5956979.47	671297.40	729.37	8.00	300	6.7	300mm CSP CUL INV	N/A
RH	122B	5956979.88	671305.39	728.84	N/A	300	N/A	300mm CSP CUL INV	
RH	123A	5956980.24	671310.93	728.28	6.19	300	5.33	300mm CSP CUL INV	N/A
RH	123B	5956980.05	671317.12	727.95	N/A	300	N/A	300mm CSP CUL INV	
RH	124A	5956980.08	671317.86	727.95	5.82	275	4	275mm CUL INV	REPLACE
RH	124B	5956979.91	671323.68	727.72	N/A	275	N/A	275mm CUL INV	
RH	125A	5956979.69	671336.93	727.21	7.93	250	1.92	250mm CSP CUL INV	N/A
RH	125B	5956980.07	671344.85	727.06	N/A	250	N/A	250mm CSP CUL INV	



DRAWING LIMIT

DRAWING LIMIT

DRAWING LIMIT - FOR CONTINUATION SEE DWG PL-20D002-4B

KEY PLAN

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5. FIELD VERIFY LOCATION AND ELEVATION OF CULVERT CLEANOUT.

LEGEND

SCOPE CLOUD

NEW SWALE

NEW 300mm CSP CULVERT

NEW GRAVEL APPROACH

ENGINEER'S STAMP

PROFESSIONAL ENGINEER ALBERTA — TRENT THOMPSON — JUNE 12, 2020

PERMIT STAMP

PERMIT TO PRACTICE
Bolson Engineering and Environmental Services
Signature
Date JUNE 12, 2020
PERMIT NUMBER: P11382
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

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SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

SHEET 4A
SUMMER VILLAGE DRAINAGE UPGRADE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:250

CLIENT: SV OF ROSS HAVEN

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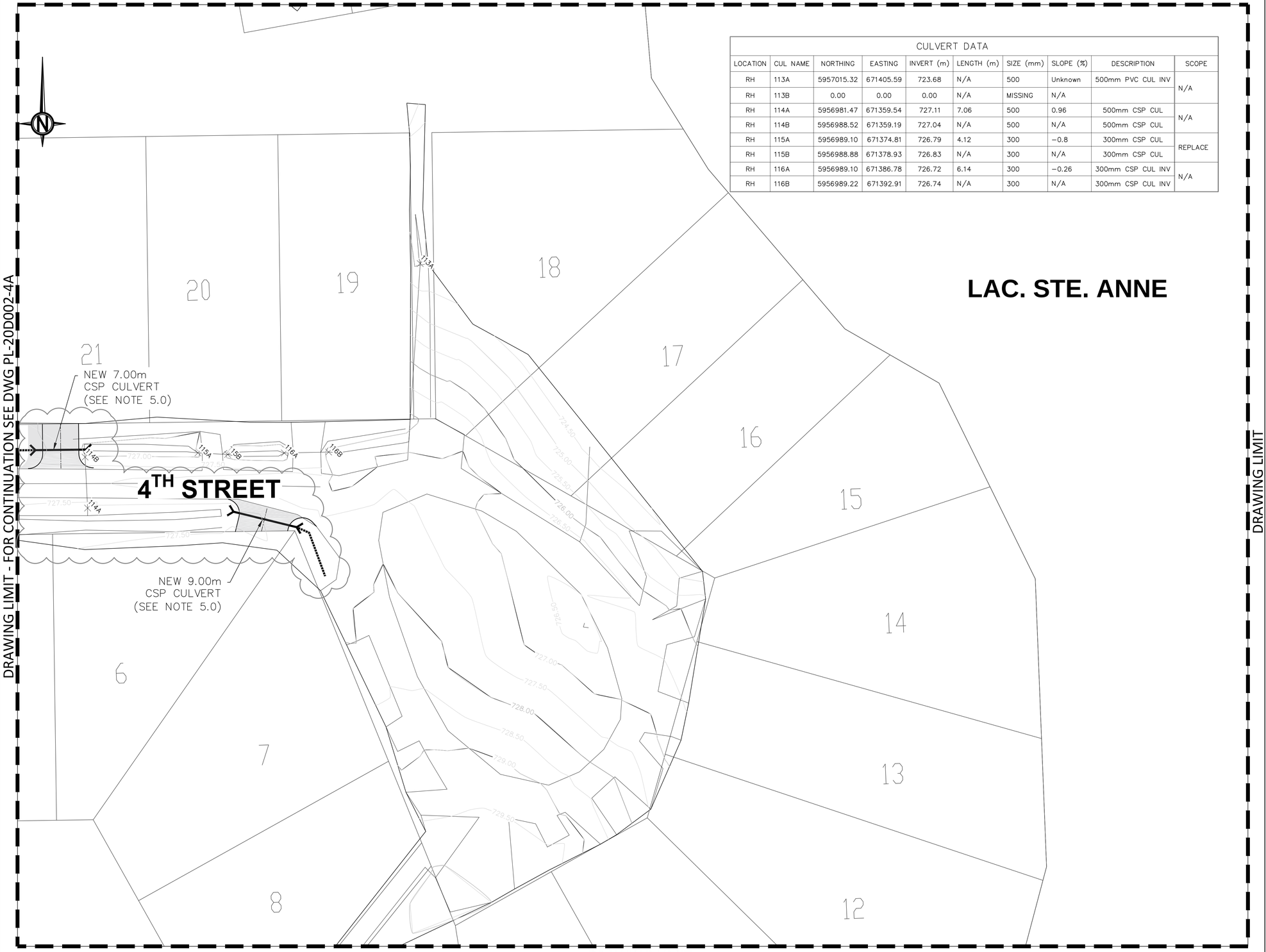

DRAWING LIMIT - FOR CONTINUATION SEE DWG PL-20D002-4A

DRAWING LIMIT

DRAWING LIMIT

CULVERT DATA									
LOCATION	CUL NAME	NORTHING	EASTING	INVERT (m)	LENGTH (m)	SIZE (mm)	SLOPE (%)	DESCRIPTION	SCOPE
RH	113A	5957015.32	671405.59	723.68	N/A	500	Unknown	500mm PVC CUL INV	N/A
RH	113B	0.00	0.00	0.00	N/A	MISSING	N/A		
RH	114A	5956981.47	671359.54	727.11	7.06	500	0.96	500mm CSP CUL	N/A
RH	114B	5956988.52	671359.19	727.04	N/A	500	N/A	500mm CSP CUL	
RH	115A	5956989.10	671374.81	726.79	4.12	300	−0.8	300mm CSP CUL	REPLACE
RH	115B	5956988.88	671378.93	726.83	N/A	300	N/A	300mm CSP CUL	
RH	116A	5956989.10	671386.78	726.72	6.14	300	−0.26	300mm CSP CUL INV	N/A
RH	116B	5956989.22	671392.91	726.74	N/A	300	N/A	300mm CSP CUL INV	

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5. FIELD VERIFY LOCATION AND ELEVATION OF CULVERT AND APPROACH.

LEGEND

SCOPE CLOUD

NEW SWALE

NEW 300mm CSP CULVERT

NEW GRAVEL APPROACH

ENGINEER'S STAMP

PROFESSIONAL ENGINEER TRENT THOMPSON ALBERTA JUNE 12, 2020

PERMIT STAMP

PERMIT TO PRACTICE
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Signature
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SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

SHEET 4B
SUMMER VILLAGE DRAINAGE UPGRADE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:250

CLIENT: SV OF ROSS HAVEN

BOLSON ENGINEERING AND ENVIRONMENTAL SERVICES

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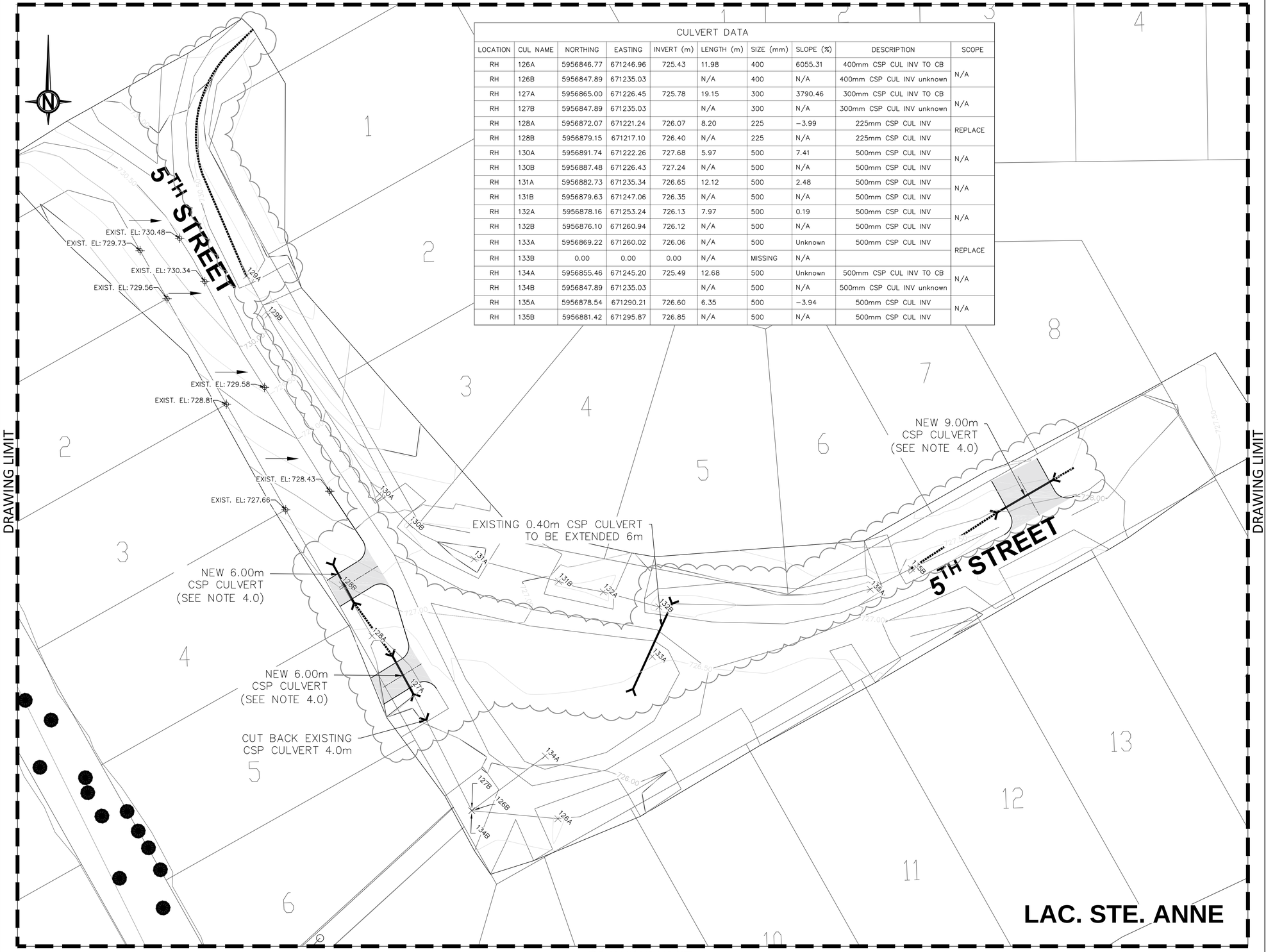

CULVERT DATA

LOCATION	CUL NAME	NORTHING	EASTING	INVERT (m)	LENGTH (m)	SIZE (mm)	SLOPE (%)	DESCRIPTION	SCOPE
RH	126A	5956846.77	671246.96	725.43	11.98	400	6055.31	400mm CSP CUL INV TO CB	N/A
RH	126B	5956847.89	671235.03		N/A	400	N/A	400mm CSP CUL INV unknown	
RH	127A	5956865.00	671226.45	725.78	19.15	300	3790.46	300mm CSP CUL INV TO CB	N/A
RH	127B	5956847.89	671235.03		N/A	300	N/A	300mm CSP CUL INV unknown	
RH	128A	5956872.07	671221.24	726.07	8.20	225	−3.99	225mm CSP CUL INV	REPLACE
RH	128B	5956879.15	671217.10	726.40	N/A	225	N/A	225mm CSP CUL INV	
RH	130A	5956891.74	671222.26	727.68	5.97	500	7.41	500mm CSP CUL INV	N/A
RH	130B	5956887.48	671226.43	727.24	N/A	500	N/A	500mm CSP CUL INV	
RH	131A	5956882.73	671235.34	726.65	12.12	500	2.48	500mm CSP CUL INV	N/A
RH	131B	5956879.63	671247.06	726.35	N/A	500	N/A	500mm CSP CUL INV	
RH	132A	5956878.16	671253.24	726.13	7.97	500	0.19	500mm CSP CUL INV	N/A
RH	132B	5956876.10	671260.94	726.12	N/A	500	N/A	500mm CSP CUL INV	
RH	133A	5956869.22	671260.02	726.06	N/A	500	Unknown	500mm CSP CUL INV	REPLACE
RH	133B	0.00	0.00	0.00	N/A	MISSING	N/A		
RH	134A	5956855.46	671245.20	725.49	12.68	500	Unknown	500mm CSP CUL INV TO CB	N/A
RH	134B	5956847.89	671235.03		N/A	500	N/A	500mm CSP CUL INV unknown	
RH	135A	5956878.54	671290.21	726.60	6.35	500	−3.94	500mm CSP CUL INV	N/A
RH	135B	5956881.42	671295.87	726.85	N/A	500	N/A	500mm CSP CUL INV	

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LEGEND

- SCOPE CLOUD
- NEW SWALE
- NEW 300mm CSP CULVERT
- NEW GRAVEL APPROACH
- GRADING ARROW

ENGINEER'S STAMP

PROFESSIONAL ENGINEER TRENT THOMPSON ALBERTA

PERMIT STAMP

PERMIT TO PRACTICE
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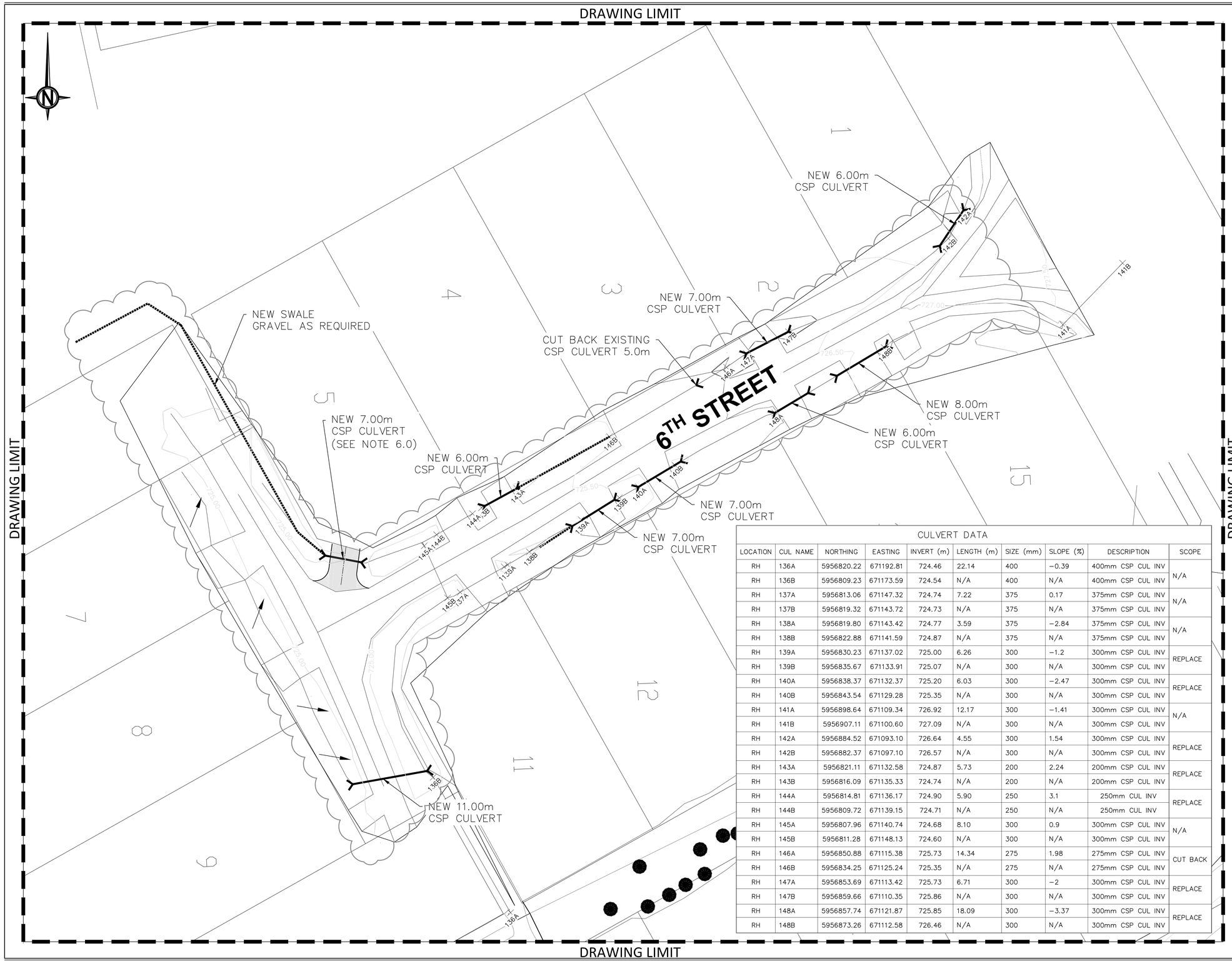

CULVERT DATA									
LOCATION	CUL NAME	NORTHING	EASTING	INVERT (m)	LENGTH (m)	SIZE (mm)	SLOPE (%)	DESCRIPTION	SCOPE
RH	136A	5956820.22	671192.81	724.46	22.14	400	−0.39	400mm CSP CUL INV	N/A
RH	136B	5956809.23	671173.59	724.54	N/A	400	N/A	400mm CSP CUL INV	
RH	137A	5956813.06	671147.32	724.74	7.22	375	0.17	375mm CSP CUL INV	N/A
RH	137B	5956819.32	671143.72	724.73	N/A	375	N/A	375mm CSP CUL INV	
RH	138A	5956819.80	671143.42	724.77	3.59	375	−2.84	375mm CSP CUL INV	N/A
RH	138B	5956822.88	671141.59	724.87	N/A	375	N/A	375mm CSP CUL INV	
RH	139A	5956830.23	671137.02	725.00	6.26	300	−1.2	300mm CSP CUL INV	REPLACE
RH	139B	5956835.67	671133.91	725.07	N/A	300	N/A	300mm CSP CUL INV	
RH	140A	5956838.37	671132.37	725.20	6.03	300	−2.47	300mm CSP CUL INV	REPLACE
RH	140B	5956843.54	671129.28	725.35	N/A	300	N/A	300mm CSP CUL INV	
RH	141A	5956898.64	671109.34	726.92	12.17	300	−1.41	300mm CSP CUL INV	N/A
RH	141B	5956907.11	671100.60	727.09	N/A	300	N/A	300mm CSP CUL INV	
RH	142A	5956884.52	671093.10	726.64	4.55	300	1.54	300mm CSP CUL INV	REPLACE
RH	142B	5956882.37	671097.10	726.57	N/A	300	N/A	300mm CSP CUL INV	
RH	143A	5956821.11	671132.58	724.87	5.73	200	2.24	200mm CSP CUL INV	REPLACE
RH	143B	5956816.09	671135.33	724.74	N/A	200	N/A	200mm CSP CUL INV	
RH	144A	5956814.81	671136.17	724.90	5.90	250	3.1	250mm CUL INV	REPLACE
RH	144B	5956809.72	671139.15	724.71	N/A	250	N/A	250mm CUL INV	
RH	145A	5956807.96	671140.74	724.68	8.10	300	0.9	300mm CSP CUL INV	N/A
RH	145B	5956811.28	671148.13	724.60	N/A	300	N/A	300mm CSP CUL INV	
RH	146A	5956850.88	671115.38	725.73	14.34	275	1.98	275mm CSP CUL INV	CUT BACK
RH	146B	5956834.25	671125.24	725.35	N/A	275	N/A	275mm CSP CUL INV	
RH	147A	5956853.69	671113.42	725.73	6.71	300	−2	300mm CSP CUL INV	REPLACE
RH	147B	5956859.66	671110.35	725.86	N/A	300	N/A	300mm CSP CUL INV	
RH	148A	5956857.74	671121.87	725.85	18.09	300	−3.37	300mm CSP CUL INV	REPLACE
RH	148B	5956873.26	671112.58	726.46	N/A	300	N/A	300mm CSP CUL INV	

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3. ALL ELEVATIONS ARE GEODETIC, UNLESS NOTED OTHERWISE.
4. FIELD VERIFY LOCATION AND ELEVATION OF CLEANOUT.
5. REPLACE EXISTING CULVERT WITH 10.0m REGRADE DITCHES TO USE EXISTING CULVERT ELEVATIONS.
6. FIELD VERIFY APPROACH AND CULVERT, LOCATION AND ELEVATION.

LEGEND

- SCOPE CLOUD
- NEW SWALE
- NEW 300mm CSP CULVERT
- NEW GRAVEL APPROACH
- GRADING ARROW

ENGINEER'S STAMP

PROFESSIONAL ENGINEER — TRENT THOMPSON — ALBERTA — JUNE 12, 2020

PERMIT STAMP

PERMIT TO PRACTICE
Bolson Engineering and Environmental Services
Signature
Date JUNE 12, 2020
PERMIT NUMBER: P11382
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

NO.	DATE	DESCRIPTION	BY	CHE	ENG	APP
1	12–JUN–20	RE–ISSUED FOR CONSTRUCTION	TS	TT	TT	
0	29–MAY–20	ISSUED FOR CONSTRUCTION	TS	TT	TT	
A	24–APR–20	ISSUED FOR REVIEW	TS	MB	TT	

REVISIONS

DRAWN BY:	DATE:	CHECKED BY:	DATE:
ENGINEER:	DATE:	APPROVED:	DATE:

SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

SHEET 6A
SUMMER VILLAGE DRAINAGE UPGRADE
LAC. STE. ANNE COUNTY, ROSS HAVEN

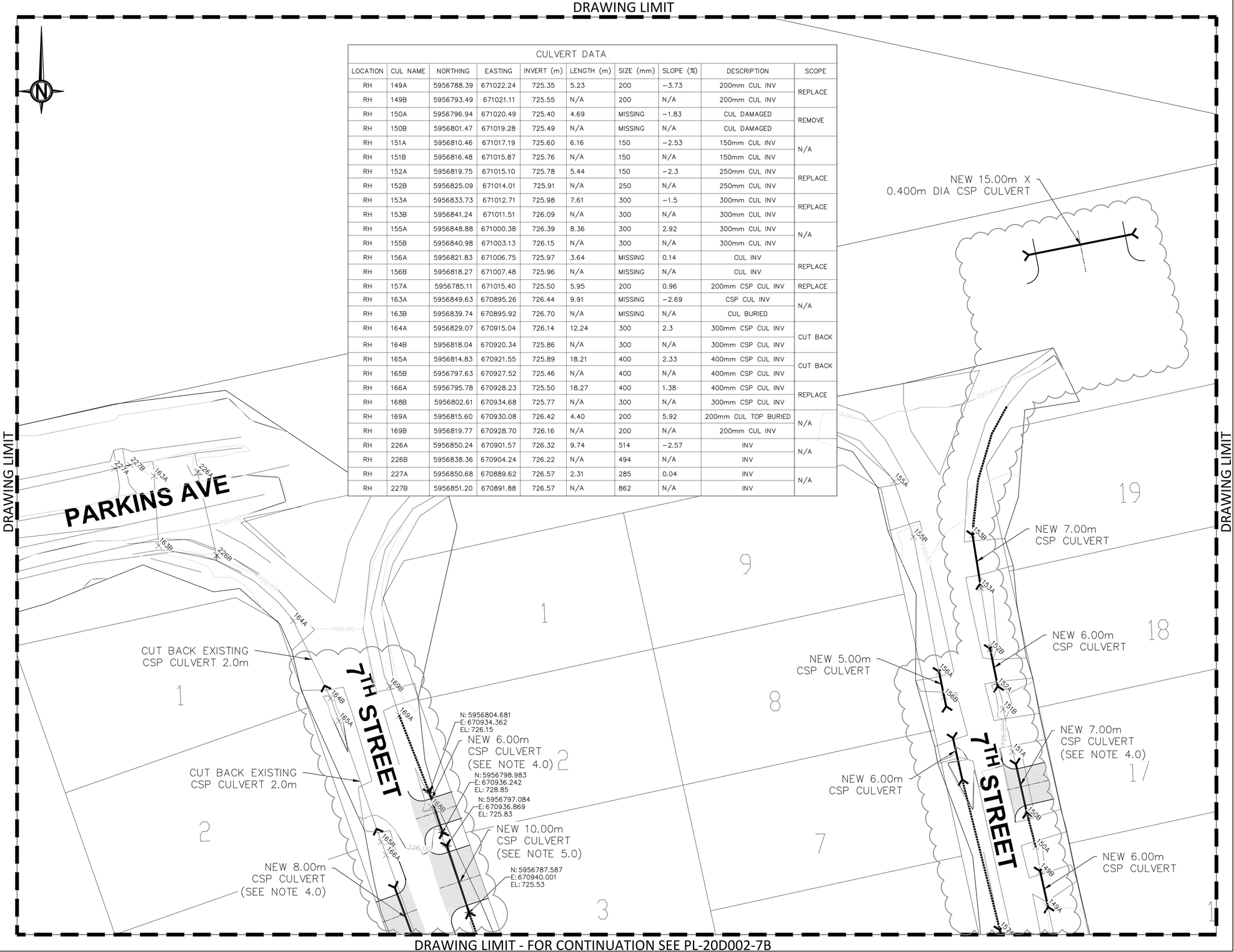
SCALE: 1:250

CLIENT: SV OF ROSS HAVEN

BOLSON ENGINEERING AND ENVIRONMENTAL SERVICES
9703–199 St.
EDMONTON, AB
T5T–6E8
www.bolson.ca
PH:780–668–8571
FAX:780–413–8879

JOB NUMBER:	DWG NUMBER:	REV:
20–D–002	PL–20D002–6A	1

DRAWING LIMIT



CULVERT DATA

LOCATION	CUL NAME	NORTHING	EASTING	INVERT (m)	LENGTH (m)	SIZE (mm)	SLOPE (%)	DESCRIPTION	SCOPE
RH	149A	5956788.39	671022.24	725.35	5.23	200	−3.73	200mm CUL INV	REPLACE
RH	149B	5956793.49	671021.11	725.55	N/A	200	N/A	200mm CUL INV	
RH	150A	5956796.94	671020.49	725.40	4.69	MISSING	−1.83	CUL DAMAGED	REMOVE
RH	150B	5956801.47	671019.28	725.49	N/A	MISSING	N/A	CUL DAMAGED	
RH	151A	5956810.46	671017.19	725.60	6.16	150	−2.53	150mm CUL INV	N/A
RH	151B	5956816.48	671015.87	725.76	N/A	150	N/A	150mm CUL INV	
RH	152A	5956819.75	671015.10	725.78	5.44	150	−2.3	250mm CUL INV	REPLACE
RH	152B	5956825.09	671014.01	725.91	N/A	250	N/A	250mm CUL INV	
RH	153A	5956833.73	671012.71	725.98	7.61	300	−1.5	300mm CUL INV	REPLACE
RH	153B	5956841.24	671011.51	726.09	N/A	300	N/A	300mm CUL INV	
RH	155A	5956848.88	671000.38	726.39	8.36	300	2.92	300mm CUL INV	N/A
RH	155B	5956840.98	671003.13	726.15	N/A	300	N/A	300mm CUL INV	
RH	156A	5956821.83	671006.75	725.97	3.64	MISSING	0.14	CUL INV	REPLACE
RH	156B	5956818.27	671007.48	725.96	N/A	MISSING	N/A	CUL INV	
RH	157A	5956785.11	671015.40	725.50	5.95	200	0.96	200mm CSP CUL INV	REPLACE
RH	163A	5956849.63	670895.26	726.44	9.91	MISSING	−2.69	CSP CUL INV	N/A
RH	163B	5956839.74	670895.92	726.70	N/A	MISSING	N/A	CUL BURIED	
RH	164A	5956829.07	670915.04	726.14	12.24	300	2.3	300mm CSP CUL INV	CUT BACK
RH	164B	5956818.04	670920.34	725.86	N/A	300	N/A	300mm CSP CUL INV	
RH	165A	5956814.83	670921.55	725.89	18.21	400	2.33	400mm CSP CUL INV	CUT BACK
RH	165B	5956797.63	670927.52	725.46	N/A	400	N/A	400mm CSP CUL INV	
RH	166A	5956795.78	670928.23	725.50	18.27	400	1.38	400mm CSP CUL INV	REPLACE
RH	168B	5956802.61	670934.68	725.77	N/A	300	N/A	300mm CSP CUL INV	
RH	169A	5956815.60	670930.08	726.42	4.40	200	5.92	200mm CUL TOP BURIED	N/A
RH	169B	5956819.77	670928.70	726.16	N/A	200	N/A	200mm CUL INV	
RH	226A	5956850.24	670901.57	726.32	9.74	514	−2.57	INV	N/A
RH	226B	5956838.36	670904.24	726.22	N/A	494	N/A	INV	
RH	227A	5956850.68	670889.62	726.57	2.31	285	0.04	INV	N/A
RH	227B	5956851.20	670891.88	726.57	N/A	862	N/A	INV	

DRAWING LIMIT - FOR CONTINUATION SEE PL-20D002-7B

KEY PLAN

1. SURVEY DONE BY JMS SURVEY LTD. ON OCT 07 2019.
2. ALL DIMENSIONS IN METERS AND DECIMALS THEREOF, UNLESS NOTED OTHERWISE.
3. ALL ELEVATIONS ARE GEODETIC, UNLESS NOTED OTHERWISE.
4. FIELD VERIFY LOCATION AND ELEVATION OF CULVERT AND APPROACH.
5. REPLACE EXISTING CULVERT WITH 10.0m REGRADE DITCHES TO USE EXISTING CULVERT ELEVATIONS.

LEGEND

- SCOPE CLOUD
- NEW SWALE
- NEW 300mm CSP CULVERT
- NEW GRAVEL APPROACH
- GRADING ARROW

ENGINEER'S STAMP

PROFESSIONAL ENGINEER TRENT THOMPSON ALBERTA JUNE 12, 2020

PERMIT STAMP

PERMIT TO PRACTICE
Bolson Engineering and Environmental Services
Signature
Date JUNE 12, 2020
PERMIT NUMBER: P11382
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

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0	29–MAY–20	ISSUED FOR CONSTRUCTION	TS	TT	TT	
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REVISIONS

DRAWN BY:	DATE:	CHECKED BY:	DATE:
ENGINEER:	DATE:	APPROVED:	DATE:

SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

SHEET 7A
SUMMER VILLAGE DRAINAGE UPDATE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:250

CLIENT: SV OF ROSS HAVEN

BOLSON ENGINEERING AND ENVIRONMENTAL SERVICES
9703–199 St.
EDMONTON, AB
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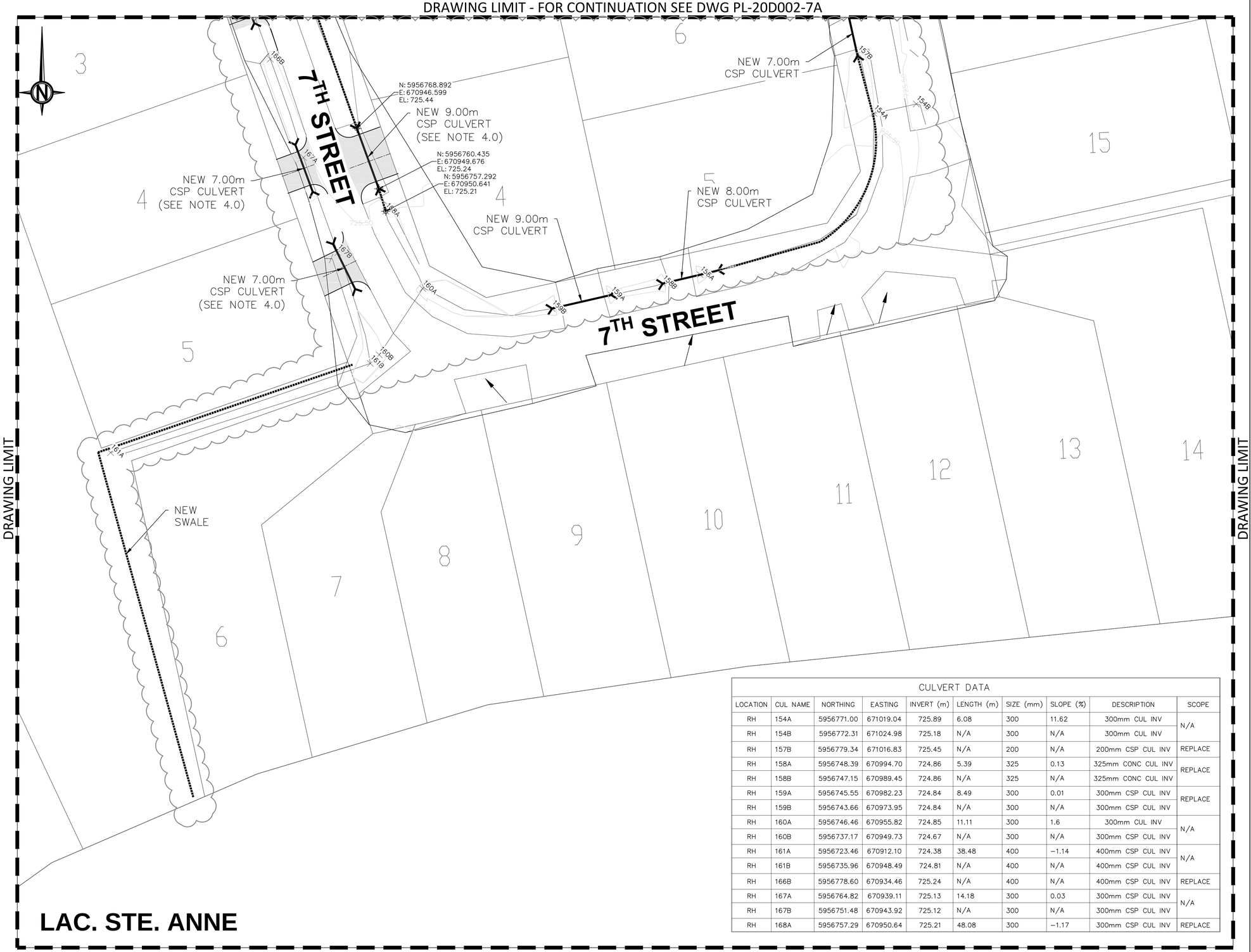
JOB NUMBER:	DWG NUMBER:	REV:
20–D–002	PL–20D002–7A	1

DRAWING LIMIT - FOR CONTINUATION SEE DWG PL-20D002-7A



CULVERT DATA									
LOCATION	CUL NAME	NORTHING	EASTING	INVERT (m)	LENGTH (m)	SIZE (mm)	SLOPE (%)	DESCRIPTION	SCOPE
RH	154A	5956771.00	671019.04	725.89	6.08	300	11.62	300mm CUL INV	N/A
RH	154B	5956772.31	671024.98	725.18	N/A	300	N/A	300mm CUL INV	
RH	157B	5956779.34	671016.83	725.45	N/A	200	N/A	200mm CSP CUL INV	REPLACE
RH	158A	5956748.39	670994.70	724.86	5.39	325	0.13	325mm CONC CUL INV	REPLACE
RH	158B	5956747.15	670989.45	724.86	N/A	325	N/A	325mm CONC CUL INV	
RH	159A	5956745.55	670982.23	724.84	8.49	300	0.01	300mm CSP CUL INV	REPLACE
RH	159B	5956743.66	670973.95	724.84	N/A	300	N/A	300mm CSP CUL INV	
RH	160A	5956746.46	670955.82	724.85	11.11	300	1.6	300mm CUL INV	N/A
RH	160B	5956737.17	670949.73	724.67	N/A	300	N/A	300mm CSP CUL INV	
RH	161A	5956723.46	670912.10	724.38	38.48	400	−1.14	400mm CSP CUL INV	N/A
RH	161B	5956735.96	670948.49	724.81	N/A	400	N/A	400mm CSP CUL INV	
RH	166B	5956778.60	670934.46	725.24	N/A	400	N/A	400mm CSP CUL INV	REPLACE
RH	167A	5956764.82	670939.11	725.13	14.18	300	0.03	300mm CSP CUL INV	N/A
RH	167B	5956751.48	670943.92	725.12	N/A	300	N/A	300mm CSP CUL INV	
RH	168A	5956757.29	670950.64	725.21	48.08	300	−1.17	300mm CSP CUL INV	REPLACE

KEY PLAN

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3. ALL ELEVATIONS ARE GEODETIC, UNLESS NOTED OTHERWISE.
4. REPLACE EXISTING CULVERT WITH 10.0m REGRADE DITCHES TO USE EXISTING CULVERT ELEVATIONS.

LEGEND

SCOPE CLOUD
NEW SWALE
NEW 300mm CSP CULVERT
NEW GRAVEL APPROACH
GRADING ARROW

ENGINEER'S STAMP

PROFESSIONAL ENGINEER TRENT THOMPSON ALBERTA
JUNE 12, 2020

PERMIT STAMP

PERMIT TO PRACTICE
Bolson Engineering and Environmental Services
Signature
Date JUNE 12, 2020
PERMIT NUMBER: P11382
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

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0	29–MAY–20	ISSUED FOR CONSTRUCTION	TS	TT	TT	
A	27–MAR–20	ISSUED FOR REVIEW	TS	MB	TT	

REVISIONS

DRAWN BY:	DATE:	CHECKED BY:	DATE:
ENGINEER:	DATE:	APPROVED:	DATE:

SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

SHEET 7B
SUMMER VILLAGE DRAINAGE UPGRADE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:250

CLIENT: SV OF ROSS HAVEN

BOLSON ENGINEERING AND ENVIRONMENTAL SERVICES
9703–199 St.
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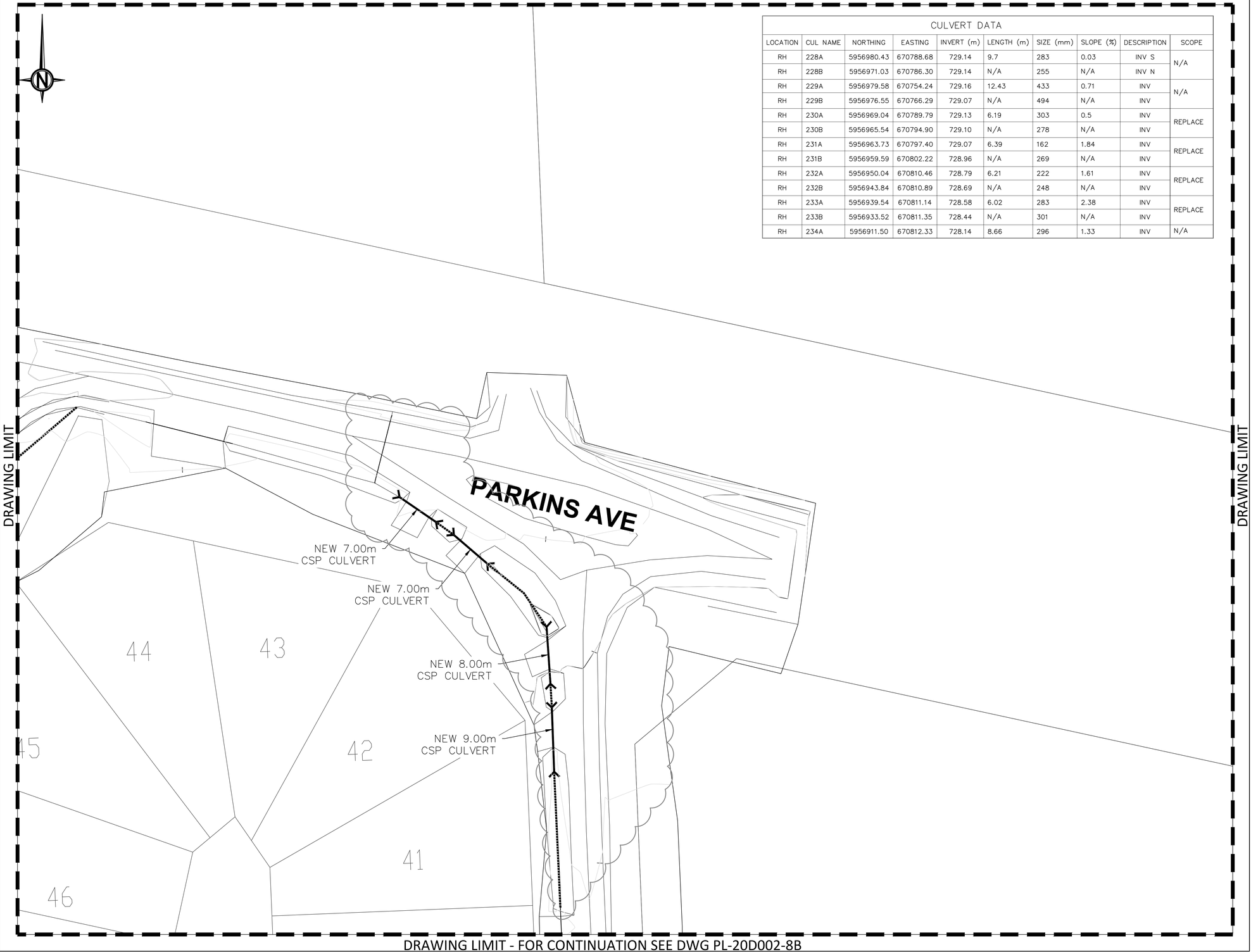
JOB NUMBER: 19–D–007
DWG NUMBER: PL–19D007–7B
REV: 1

DRAWING LIMIT



CULVERT DATA

LOCATION	CUL NAME	NORTHING	EASTING	INVERT (m)	LENGTH (m)	SIZE (mm)	SLOPE (%)	DESCRIPTION	SCOPE
RH	228A	5956980.43	670788.68	729.14	9.7	283	0.03	INV S	N/A
RH	228B	5956971.03	670786.30	729.14	N/A	255	N/A	INV N	
RH	229A	5956979.58	670754.24	729.16	12.43	433	0.71	INV	N/A
RH	229B	5956976.55	670766.29	729.07	N/A	494	N/A	INV	
RH	230A	5956969.04	670789.79	729.13	6.19	303	0.5	INV	REPLACE
RH	230B	5956965.54	670794.90	729.10	N/A	278	N/A	INV	
RH	231A	5956963.73	670797.40	729.07	6.39	162	1.84	INV	REPLACE
RH	231B	5956959.59	670802.22	728.96	N/A	269	N/A	INV	
RH	232A	5956950.04	670810.46	728.79	6.21	222	1.61	INV	REPLACE
RH	232B	5956943.84	670810.89	728.69	N/A	248	N/A	INV	
RH	233A	5956939.54	670811.14	728.58	6.02	283	2.38	INV	REPLACE
RH	233B	5956933.52	670811.35	728.44	N/A	301	N/A	INV	
RH	234A	5956911.50	670812.33	728.14	8.66	296	1.33	INV	N/A

DRAWING LIMIT - FOR CONTINUATION SEE DWG PL-20D002-8B

KEY PLAN

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LEGEND

SCOPE CLOUD

NEW SWALE

NEW 300mm CSP CULVERT

NEW GRAVEL APPROACH

GRADING ARROW

ENGINEER'S STAMP

PROFESSIONAL ENGINEER TRENT THOMPSON ALBERTA JUNE 12, 2020

PERMIT STAMP

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REVISIONS

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ENGINEER:	DATE:	APPROVED:	DATE:

SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

SHEET 8A
SUMMER VILLAGE DRAINAGE UPDATE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:250

CLIENT: SV OF ROSS HAVEN

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JOB NUMBER: 20-D-002

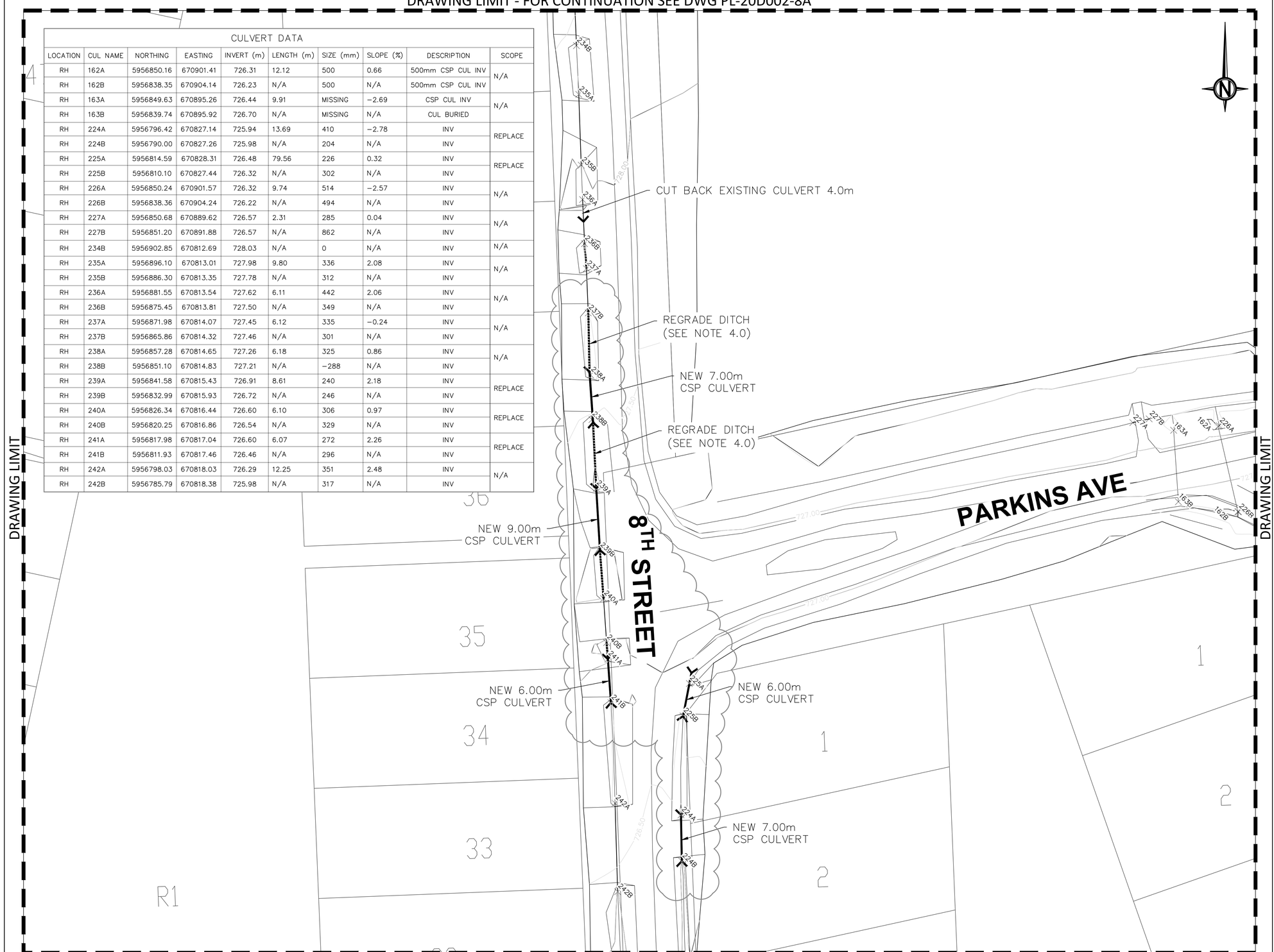
DWG NUMBER: PL-20D002-8A

REV: 1

DRAWING LIMIT - FOR CONTINUATION SEE DWG PL-20D002-8A

CULVERT DATA

LOCATION	CUL NAME	NORTHING	EASTING	INVERT (m)	LENGTH (m)	SIZE (mm)	SLOPE (%)	DESCRIPTION	SCOPE
RH	162A	5956850.16	670901.41	726.31	12.12	500	0.66	500mm CSP CUL INV	N/A
RH	162B	5956838.35	670904.14	726.23	N/A	500	N/A	500mm CSP CUL INV	
RH	163A	5956849.63	670895.26	726.44	9.91	MISSING	−2.69	CSP CUL INV	N/A
RH	163B	5956839.74	670895.92	726.70	N/A	MISSING	N/A	CUL BURIED	
RH	224A	5956796.42	670827.14	725.94	13.69	410	−2.78	INV	REPLACE
RH	224B	5956790.00	670827.26	725.98	N/A	204	N/A	INV	
RH	225A	5956814.59	670828.31	726.48	79.56	226	0.32	INV	REPLACE
RH	225B	5956810.10	670827.44	726.32	N/A	302	N/A	INV	
RH	226A	5956850.24	670901.57	726.32	9.74	514	−2.57	INV	N/A
RH	226B	5956838.36	670904.24	726.22	N/A	494	N/A	INV	
RH	227A	5956850.68	670889.62	726.57	2.31	285	0.04	INV	N/A
RH	227B	5956851.20	670891.88	726.57	N/A	862	N/A	INV	
RH	234B	5956902.85	670812.69	728.03	N/A	0	N/A	INV	N/A
RH	235A	5956896.10	670813.01	727.98	9.80	336	2.08	INV	N/A
RH	235B	5956886.30	670813.35	727.78	N/A	312	N/A	INV	
RH	236A	5956881.55	670813.54	727.62	6.11	442	2.06	INV	N/A
RH	236B	5956875.45	670813.81	727.50	N/A	349	N/A	INV	
RH	237A	5956871.98	670814.07	727.45	6.12	335	−0.24	INV	N/A
RH	237B	5956865.86	670814.32	727.46	N/A	301	N/A	INV	
RH	238A	5956857.28	670814.65	727.26	6.18	325	0.86	INV	N/A
RH	238B	5956851.10	670814.83	727.21	N/A	−288	N/A	INV	
RH	239A	5956841.58	670815.43	726.91	8.61	240	2.18	INV	REPLACE
RH	239B	5956832.99	670815.93	726.72	N/A	246	N/A	INV	
RH	240A	5956826.34	670816.44	726.60	6.10	306	0.97	INV	REPLACE
RH	240B	5956820.25	670816.86	726.54	N/A	329	N/A	INV	
RH	241A	5956817.98	670817.04	726.60	6.07	272	2.26	INV	REPLACE
RH	241B	5956811.93	670817.46	726.46	N/A	296	N/A	INV	
RH	242A	5956798.03	670818.03	726.29	12.25	351	2.48	INV	N/A
RH	242B	5956785.79	670818.38	725.98	N/A	317	N/A	INV	



DRAWING LIMIT - FOR CONTINUATION SEE DWG PL-20D002-8C

KEY PLAN

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2. ALL DIMENSIONS IN METERS AND DECIMALS THEREOF, UNLESS NOTED OTHERWISE.
3. ALL ELEVATIONS ARE GEODETIC, UNLESS NOTED OTHERWISE.
4. REGRADE DITCH BETWEEN EXISTING CULVERT INVERTS.

LEGEND

SCOPE CLOUD

NEW SWALE

NEW 300mm CSP CULVERT

NEW GRAVEL APPROACH

GRADING ARROW

ENGINEER'S STAMP

PROFESSIONAL ENGINEER ALBERTA — TRENT THOMPSON — JUNE 12, 2020

PERMIT STAMP

PERMIT TO PRACTICE
Bolson Engineering and Environmental Services
Signature
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SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

SHEET 8B
SUMMER VILLAGE DRAINAGE UPDATE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:250

CLIENT: SV OF ROSS HAVEN

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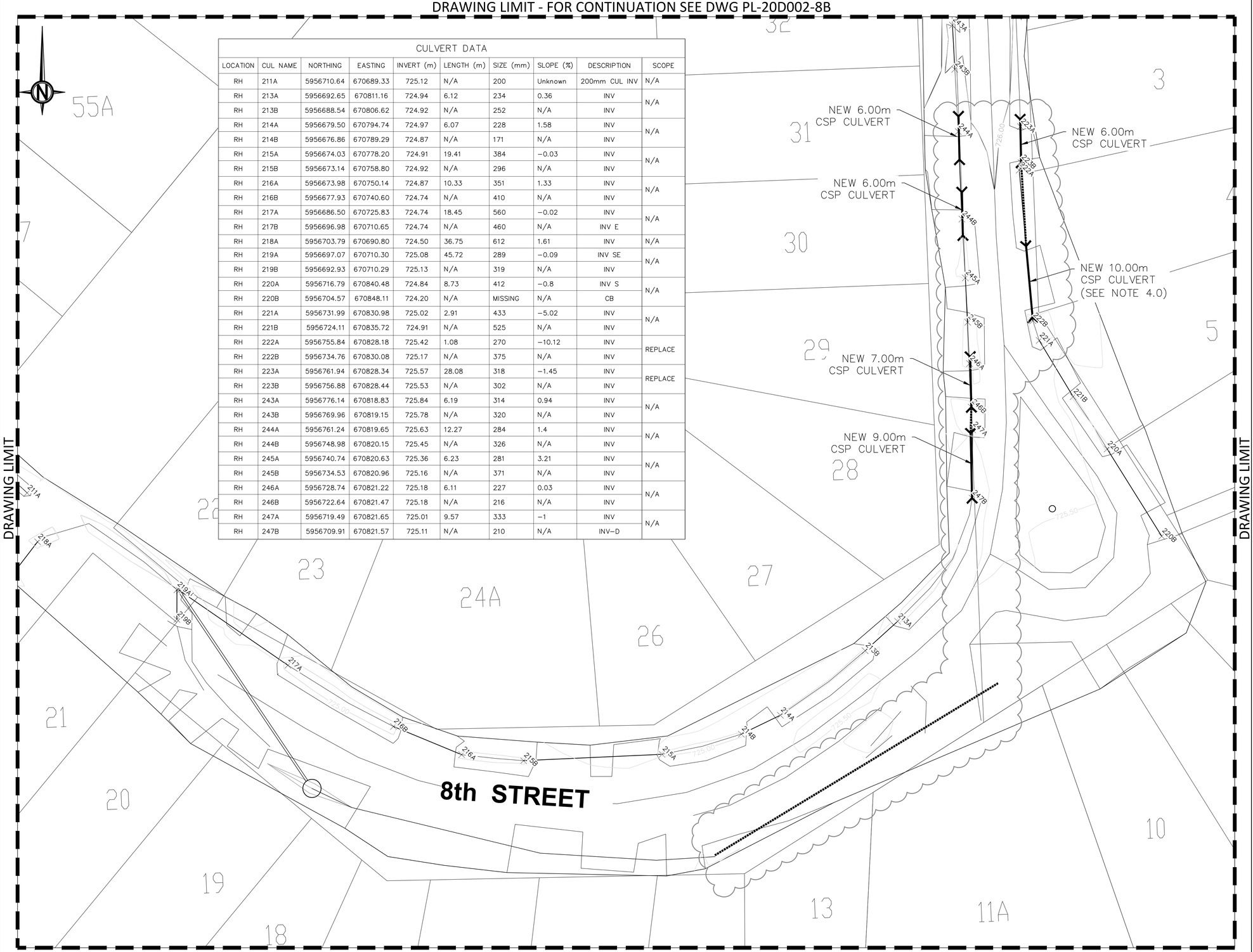
JOB NUMBER:	DWG NUMBER:	REV:
20–D–002	PL–20D002–8B	1

DRAWING LIMIT - FOR CONTINUATION SEE DWG PL-20D002-8B



CULVERT DATA

LOCATION	CUL NAME	NORTHING	EASTING	INVERT (m)	LENGTH (m)	SIZE (mm)	SLOPE (%)	DESCRIPTION	SCOPE
RH	211A	5956710.64	670689.33	725.12	N/A	200	Unknown	200mm CUL INV	N/A
RH	213A	5956692.65	670811.16	724.94	6.12	234	0.36	INV	N/A
RH	213B	5956688.54	670806.62	724.92	N/A	252	N/A	INV	
RH	214A	5956679.50	670794.74	724.97	6.07	228	1.58	INV	N/A
RH	214B	5956676.86	670789.29	724.87	N/A	171	N/A	INV	
RH	215A	5956674.03	670778.20	724.91	19.41	384	−0.03	INV	N/A
RH	215B	5956673.14	670758.80	724.92	N/A	296	N/A	INV	
RH	216A	5956673.98	670750.14	724.87	10.33	351	1.33	INV	N/A
RH	216B	5956677.93	670740.60	724.74	N/A	410	N/A	INV	
RH	217A	5956686.50	670725.83	724.74	18.45	560	−0.02	INV	N/A
RH	217B	5956696.98	670710.65	724.74	N/A	460	N/A	INV E	
RH	218A	5956703.79	670690.80	724.50	36.75	612	1.61	INV	N/A
RH	219A	5956697.07	670710.30	725.08	45.72	289	−0.09	INV SE	N/A
RH	219B	5956692.93	670710.29	725.13	N/A	319	N/A	INV	
RH	220A	5956716.79	670840.48	724.84	8.73	412	−0.8	INV S	N/A
RH	220B	5956704.57	670848.11	724.20	N/A	MISSING	N/A	CB	
RH	221A	5956731.99	670830.98	725.02	2.91	433	−5.02	INV	N/A
RH	221B	5956724.11	670835.72	724.91	N/A	525	N/A	INV	
RH	222A	5956755.84	670828.18	725.42	1.08	270	−10.12	INV	REPLACE
RH	222B	5956734.76	670830.08	725.17	N/A	375	N/A	INV	
RH	223A	5956761.94	670828.34	725.57	28.08	318	−1.45	INV	REPLACE
RH	223B	5956756.88	670828.44	725.53	N/A	302	N/A	INV	
RH	243A	5956776.14	670818.83	725.84	6.19	314	0.94	INV	N/A
RH	243B	5956769.96	670819.15	725.78	N/A	320	N/A	INV	
RH	244A	5956761.24	670819.65	725.63	12.27	284	1.4	INV	N/A
RH	244B	5956748.98	670820.15	725.45	N/A	326	N/A	INV	
RH	245A	5956740.74	670820.63	725.36	6.23	281	3.21	INV	N/A
RH	245B	5956734.53	670820.96	725.16	N/A	371	N/A	INV	
RH	246A	5956728.74	670821.22	725.18	6.11	227	0.03	INV	N/A
RH	246B	5956722.64	670821.47	725.18	N/A	216	N/A	INV	
RH	247A	5956719.49	670821.65	725.01	9.57	333	−1	INV	N/A
RH	247B	5956709.91	670821.57	725.11	N/A	210	N/A	INV−D	

KEY PLAN

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3. ALL ELEVATIONS ARE GEODETIC, UNLESS NOTED OTHERWISE.
4. REPLACE EXISTING CULVERT WITH 10.0m REGRADE DITCHES TO USE EXISTING CULVERT ELEVATIONS.

LEGEND

SCOPE CLOUD
NEW SWALE
NEW 300mm CSP CULVERT
NEW GRAVEL APPROACH
GRADING ARROW

ENGINEER'S STAMP

PROFESSIONAL ENGINEER TRENT THOMPSON ALBERTA JUNE 12, 2020

PERMIT STAMP

PERMIT TO PRACTICE
Bolson Engineering and Environmental Services
Signature
Date JUNE 12, 2020
PERMIT NUMBER: P11382
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

NO.	DATE	DESCRIPTION	BY	CHE	ENG	APP
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0	29−MAY−20	ISSUED FOR CONSTRUCTION	TS	TT	TT	
A	24−APR−20	ISSUED FOR REVIEW	TS	MB	TT	

REVISIONS

DRAWN BY:	DATE:	CHECKED BY:	DATE:
ENGINEER:	DATE:	APPROVED:	DATE:

SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

SHEET 8C
SUMMER VILLAGE DRAINAGE UPDATE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:250

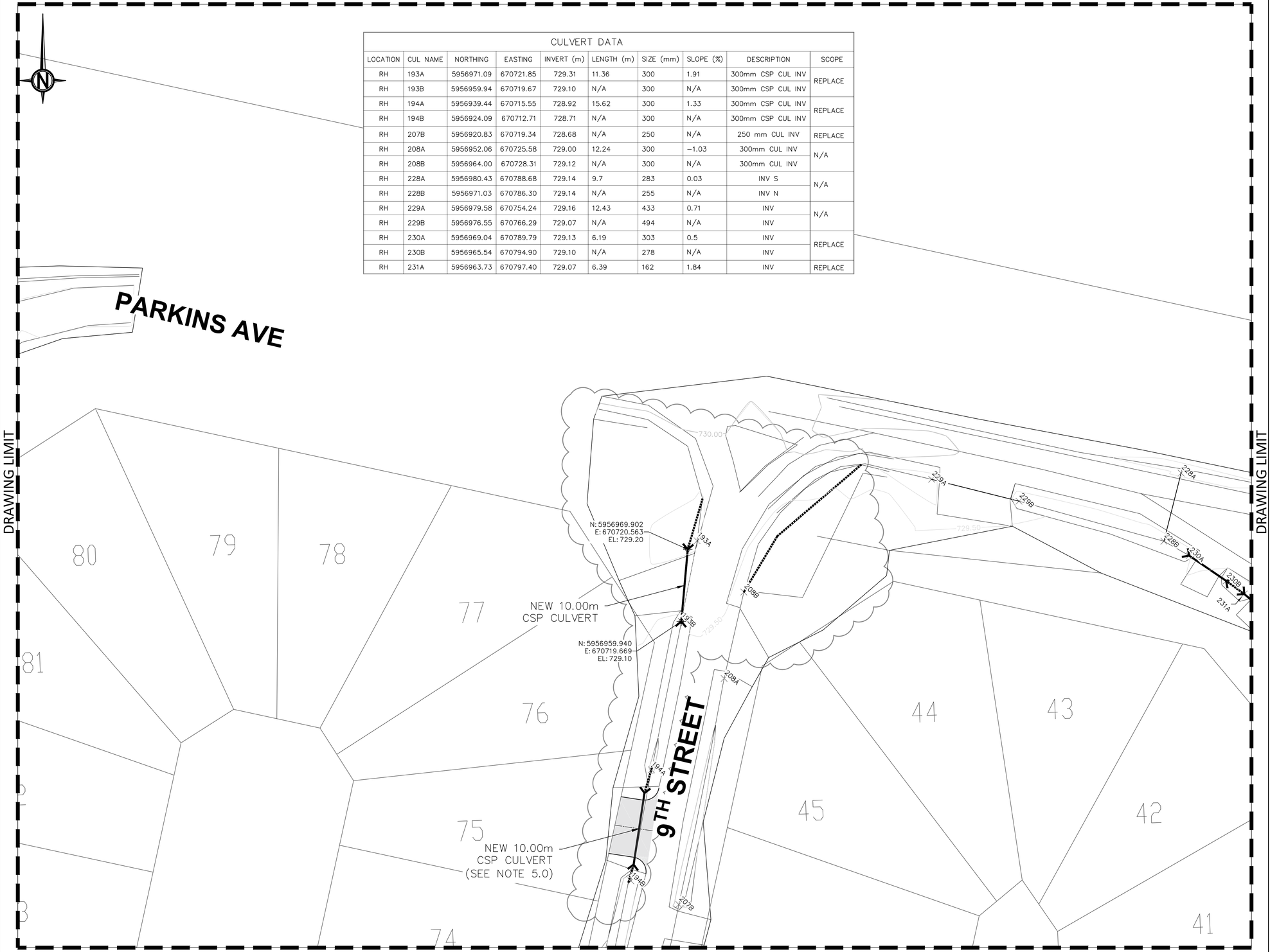
CLIENT: SV OF ROSS HAVEN

BOLSON ENGINEERING AND ENVIRONMENTAL SERVICES
9703−199 St.
EDMONTON, AB
T5T−6E8
www.bolson.ca
PH:780−668−8571
FAX:780−413−8879

JOB NUMBER:	DWG NUMBER:	REV:
20−D−002	PL−20D002−8C	1

DRAWING LIMIT

CULVERT DATA									
LOCATION	CUL NAME	NORTHING	EASTING	INVERT (m)	LENGTH (m)	SIZE (mm)	SLOPE (%)	DESCRIPTION	SCOPE
RH	193A	5956971.09	670721.85	729.31	11.36	300	1.91	300mm CSP CUL INV	REPLACE
RH	193B	5956959.94	670719.67	729.10	N/A	300	N/A	300mm CSP CUL INV	
RH	194A	5956939.44	670715.55	728.92	15.62	300	1.33	300mm CSP CUL INV	REPLACE
RH	194B	5956924.09	670712.71	728.71	N/A	300	N/A	300mm CSP CUL INV	
RH	207B	5956920.83	670719.34	728.68	N/A	250	N/A	250 mm CUL INV	REPLACE
RH	208A	5956952.06	670725.58	729.00	12.24	300	−1.03	300mm CUL INV	N/A
RH	208B	5956964.00	670728.31	729.12	N/A	300	N/A	300mm CUL INV	
RH	228A	5956980.43	670788.68	729.14	9.7	283	0.03	INV S	N/A
RH	228B	5956971.03	670786.30	729.14	N/A	255	N/A	INV N	
RH	229A	5956979.58	670754.24	729.16	12.43	433	0.71	INV	N/A
RH	229B	5956976.55	670766.29	729.07	N/A	494	N/A	INV	
RH	230A	5956969.04	670789.79	729.13	6.19	303	0.5	INV	REPLACE
RH	230B	5956965.54	670794.90	729.10	N/A	278	N/A	INV	
RH	231A	5956963.73	670797.40	729.07	6.39	162	1.84	INV	REPLACE



DRAWING LIMIT - FOR CONTINUATION SEE DRAWING PL-20D002-9B

KEY PLAN

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3. ALL ELEVATIONS ARE GEODETIC, UNLESS NOTED OTHERWISE.
4. FIELD VERIFY LOCATION AND ELEVATION OF CULVERT AND APPROACH.
5. REPLACE EXISTING CULVERT WITH 10.0m REGRADE DITCHES TO USE EXISTING CULVERT ELEVATIONS.

LEGEND

SCOPE CLOUD

NEW SWALE

NEW 300mm CSP CULVERT

NEW GRAVEL APPROACH

GRADING ARROW

ENGINEER'S STAMP

PROFESSIONAL ENGINEER ALBERTA
TERRY THOMPSON
JUNE 12, 2020

PERMIT STAMP

PERMIT TO PRACTICE
Bolson Engineering and Environmental Services
Signature
Date JUNE 12, 2020
PERMIT NUMBER: P11382
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

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REVISIONS

DRAWN BY:	DATE:	CHECKED BY:	DATE:
ENGINEER:	DATE:	APPROVED:	DATE:

SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

SHEET 9A
SUMMER VILLAGE DRAINAGE UPGRADE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:250

CLIENT: SV OF ROSS HAVEN

BOLSON ENGINEERING AND ENVIRONMENTAL SERVICES

9703–199 St.
EDMONTON, AB
T5T–6E8
www.bolson.ca
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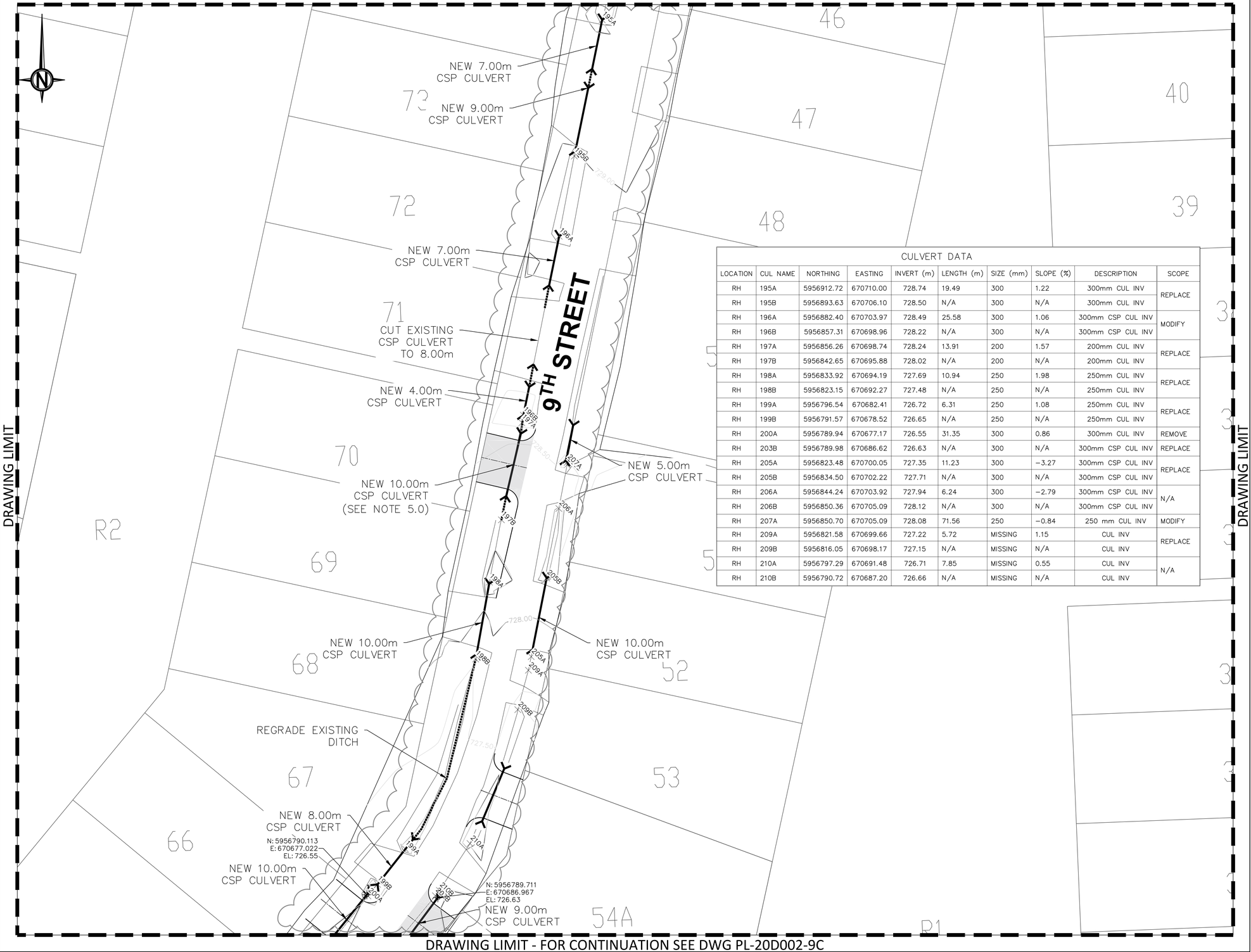
JOB NUMBER:	DWG NUMBER:	REV:
20–D–002	PL–20D002–9A	1

DRAWING LIMIT - FOR CONTINUATION SEE DWG PL-20D002-9A



CULVERT DATA									
LOCATION	CUL NAME	NORTHING	EASTING	INVERT (m)	LENGTH (m)	SIZE (mm)	SLOPE (%)	DESCRIPTION	SCOPE
RH	195A	5956912.72	670710.00	728.74	19.49	300	1.22	300mm CUL INV	REPLACE
RH	195B	5956893.63	670706.10	728.50	N/A	300	N/A	300mm CUL INV	
RH	196A	5956882.40	670703.97	728.49	25.58	300	1.06	300mm CSP CUL INV	MODIFY
RH	196B	5956857.31	670698.96	728.22	N/A	300	N/A	300mm CSP CUL INV	
RH	197A	5956856.26	670698.74	728.24	13.91	200	1.57	200mm CUL INV	REPLACE
RH	197B	5956842.65	670695.88	728.02	N/A	200	N/A	200mm CUL INV	
RH	198A	5956833.92	670694.19	727.69	10.94	250	1.98	250mm CUL INV	REPLACE
RH	198B	5956823.15	670692.27	727.48	N/A	250	N/A	250mm CUL INV	
RH	199A	5956796.54	670682.41	726.72	6.31	250	1.08	250mm CUL INV	REPLACE
RH	199B	5956791.57	670678.52	726.65	N/A	250	N/A	250mm CUL INV	
RH	200A	5956789.94	670677.17	726.55	31.35	300	0.86	300mm CUL INV	REMOVE
RH	203B	5956789.98	670686.62	726.63	N/A	300	N/A	300mm CSP CUL INV	REPLACE
RH	205A	5956823.48	670700.05	727.35	11.23	300	−3.27	300mm CSP CUL INV	REPLACE
RH	205B	5956834.50	670702.22	727.71	N/A	300	N/A	300mm CSP CUL INV	
RH	206A	5956844.24	670703.92	727.94	6.24	300	−2.79	300mm CSP CUL INV	N/A
RH	206B	5956850.36	670705.09	728.12	N/A	300	N/A	300mm CSP CUL INV	
RH	207A	5956850.70	670705.09	728.08	71.56	250	−0.84	250 mm CUL INV	MODIFY
RH	209A	5956821.58	670699.66	727.22	5.72	MISSING	1.15	CUL INV	REPLACE
RH	209B	5956816.05	670698.17	727.15	N/A	MISSING	N/A	CUL INV	
RH	210A	5956797.29	670691.48	726.71	7.85	MISSING	0.55	CUL INV	N/A
RH	210B	5956790.72	670687.20	726.66	N/A	MISSING	N/A	CUL INV	

DRAWING LIMIT - FOR CONTINUATION SEE DWG PL-20D002-9C

KEY PLAN

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3. ALL ELEVATIONS ARE GEODETIC, UNLESS NOTED OTHERWISE.
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5. REPLACE EXISTING CULVERT WITH 10.0m REGRADE DITCHES TO USE EXISTING CULVERT ELEVATIONS.

LEGEND

- SCOPE CLOUD
- NEW SWALE
- NEW 300mm CSP CULVERT
- NEW GRAVEL APPROACH
- GRADING ARROW

ENGINEER'S STAMP

PROFESSIONAL ENGINEER ALBERTA — TRENT THOMPSON — 2020 — JUNE 12, 2020

PERMIT STAMP

PERMIT TO PRACTICE
Bolson Engineering and Environmental Services
Signature
Date JUNE 12, 2020
PERMIT NUMBER: P11382
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

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REVISIONS

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ENGINEER:	DATE:	APPROVED:	DATE:

SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

SHEET 9B
SUMMER VILLAGE DRAINAGE STUDY
LAC. STE. ANNE COUNTY, ROSS HAVEN

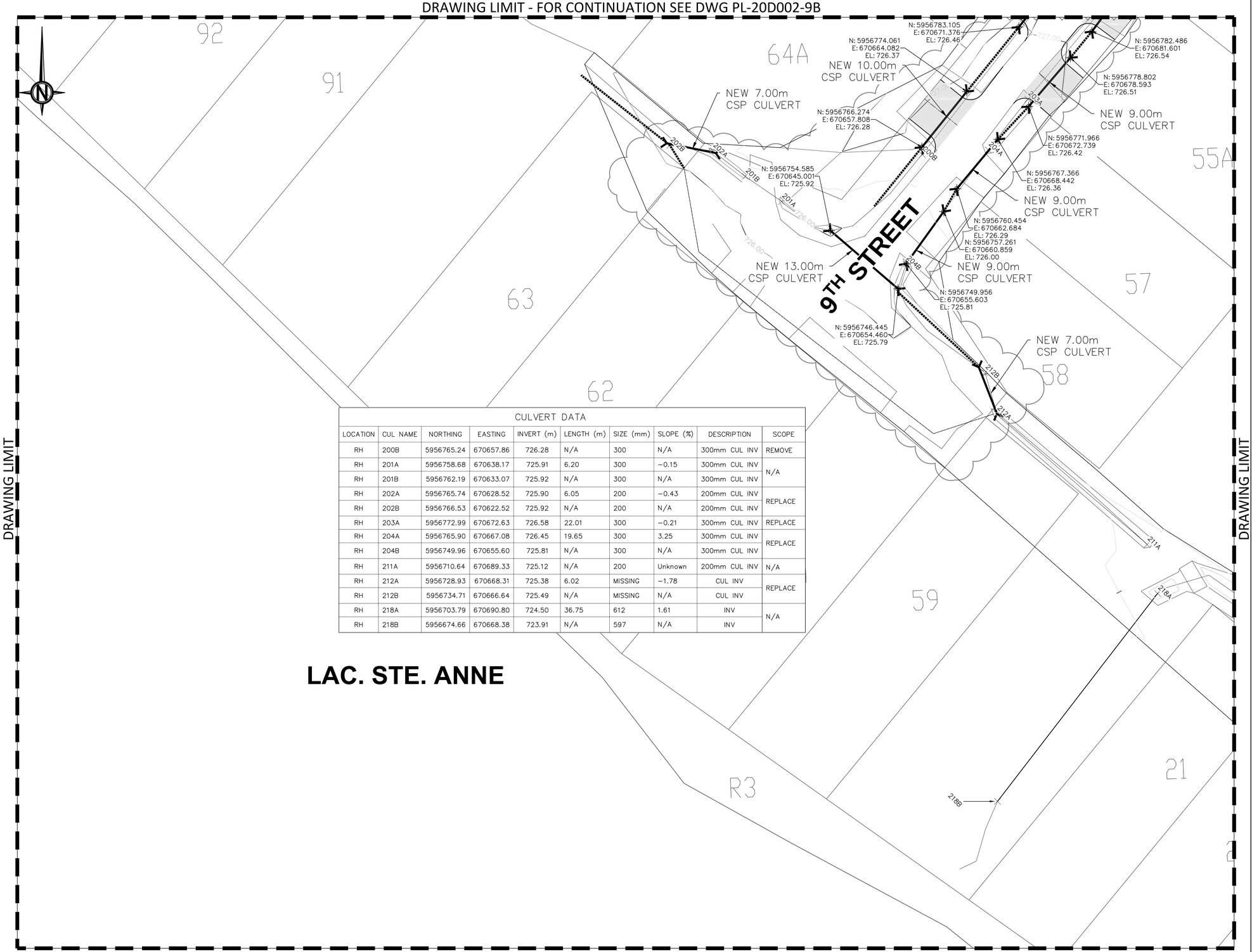
SCALE: 1:250

CLIENT: SV OF ROSS HAVEN

BOLSON ENGINEERING AND ENVIRONMENTAL SERVICES
9703–199 St.
EDMONTON, AB
T5T–6E8
www.bolson.ca
PH:780–668–8571
FAX:780–413–8879

JOB NUMBER:	DWG NUMBER:	REV:
20–D–002	PL–20D002–9B	1

DRAWING LIMIT - FOR CONTINUATION SEE DWG PL-20D002-9B



CULVERT DATA									
LOCATION	CUL NAME	NORTHING	EASTING	INVERT (m)	LENGTH (m)	SIZE (mm)	SLOPE (%)	DESCRIPTION	SCOPE
RH	200B	5956765.24	670657.86	726.28	N/A	300	N/A	300mm CUL INV	REMOVE
RH	201A	5956758.68	670638.17	725.91	6.20	300	−0.15	300mm CUL INV	N/A
RH	201B	5956762.19	670633.07	725.92	N/A	300	N/A	300mm CUL INV	
RH	202A	5956765.74	670628.52	725.90	6.05	200	−0.43	200mm CUL INV	REPLACE
RH	202B	5956766.53	670622.52	725.92	N/A	200	N/A	200mm CUL INV	
RH	203A	5956772.99	670672.63	726.58	22.01	300	−0.21	300mm CUL INV	REPLACE
RH	204A	5956765.90	670667.08	726.45	19.65	300	3.25	300mm CUL INV	REPLACE
RH	204B	5956749.96	670655.60	725.81	N/A	300	N/A	300mm CUL INV	
RH	211A	5956710.64	670689.33	725.12	N/A	200	Unknown	200mm CUL INV	N/A
RH	212A	5956728.93	670668.31	725.38	6.02	MISSING	−1.78	CUL INV	REPLACE
RH	212B	5956734.71	670666.64	725.49	N/A	MISSING	N/A	CUL INV	
RH	218A	5956703.79	670690.80	724.50	36.75	612	1.61	INV	N/A
RH	218B	5956674.66	670668.38	723.91	N/A	597	N/A	INV	

LAC. STE. ANNE

DRAWING LIMIT

KEY PLAN

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LEGEND

- SCOPE CLOUD
- NEW SWALE
- NEW CONCRETE SWALE
- NEW 300mm CSP CULVERT
- NEW GRAVEL APPROACH
- GRADING ARROW

ENGINEER'S STAMP

PROFESSIONAL ENGINEER TRENT THOMPSON ALBERTA JUNE 12, 2020

PERMIT STAMP

PERMIT TO PRACTICE
Bolson Engineering and Environmental Services
Signature
Date JUNE 12, 2020
PERMIT NUMBER: P11382
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REVISIONS

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SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

SHEET 9C
SUMMER VILLAGE DRAINAGE UPGRADE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:250

CLIENT: SV OF ROSS HAVEN

BOLSON ENGINEERING AND ENVIRONMENTAL SERVICES
9703–199 St.
EDMONTON, AB
T5T–6E8
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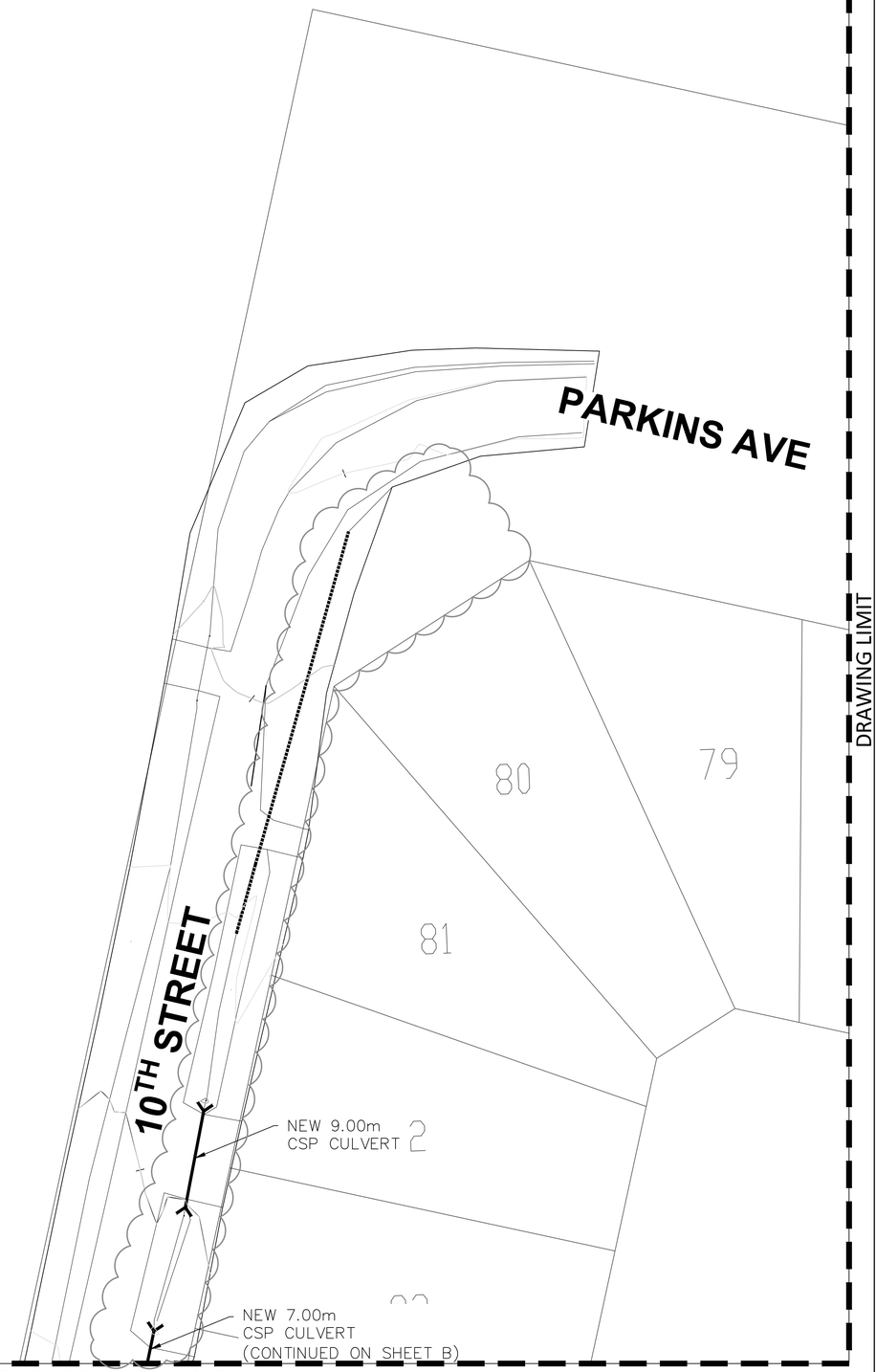
JOB NUMBER:	DWG NUMBER:	REV:
20–D–002	PL–20D002–9C	1

DRAWING LIMIT

DRAWING LIMIT

DRAWING LIMIT



CULVERT DATA									
LOCATION	CUL NAME	NORTHING	EASTING	INVERT (m)	LENGTH (m)	SIZE (mm)	SLOPE (%)	DESCRIPTION	SCOPE
RH	190A	5956939.25	670608.75	728.92	10.89	250	2.67	250mm CUL INV	REPLACE
RH	190B	5956928.56	670606.71	728.62	N/A	250	N/A	250mm CUL INV	
RH	191A	5956982.34	670609.10	729.82	6.10	200	1.92	200mm CUL INV	N/A
RH	191B	5956976.36	670607.92	729.71	N/A	200	N/A	200mm CUL INV	
RH	192A	5956917.86	670603.95	728.45	N/A	300	N/A	300mm CUL INV	REPLACE
RH	192B	0.00	0.00		N/A	MISSING	N/A		

DRAWING LIMIT - FOR CONTINUATION SEE DWG PL-20D002-10B

KEY PLAN

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LEGEND

SCOPE CLOUD

NEW SWALE

NEW 300mm CSP CULVERT

NEW GRAVEL APPROACH

GRADING ARROW

ENGINEER'S STAMP

PROFESSIONAL ENGINEER ALBERTA
TRENT THOMPSON
JUNE 12, 2020

PERMIT STAMP

PERMIT TO PRACTICE
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REVISIONS

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SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

SHEET 10A
SUMMER VILLAGE DRAINAGE UPGRADE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:250

CLIENT: SV OF ROSS HAVEN

BOLSON ENGINEERING AND ENVIRONMENTAL SERVICES
9703-199 St.
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JOB NUMBER:	DWG NUMBER:	REV:
20-D-002	PL-20D002-10A	1

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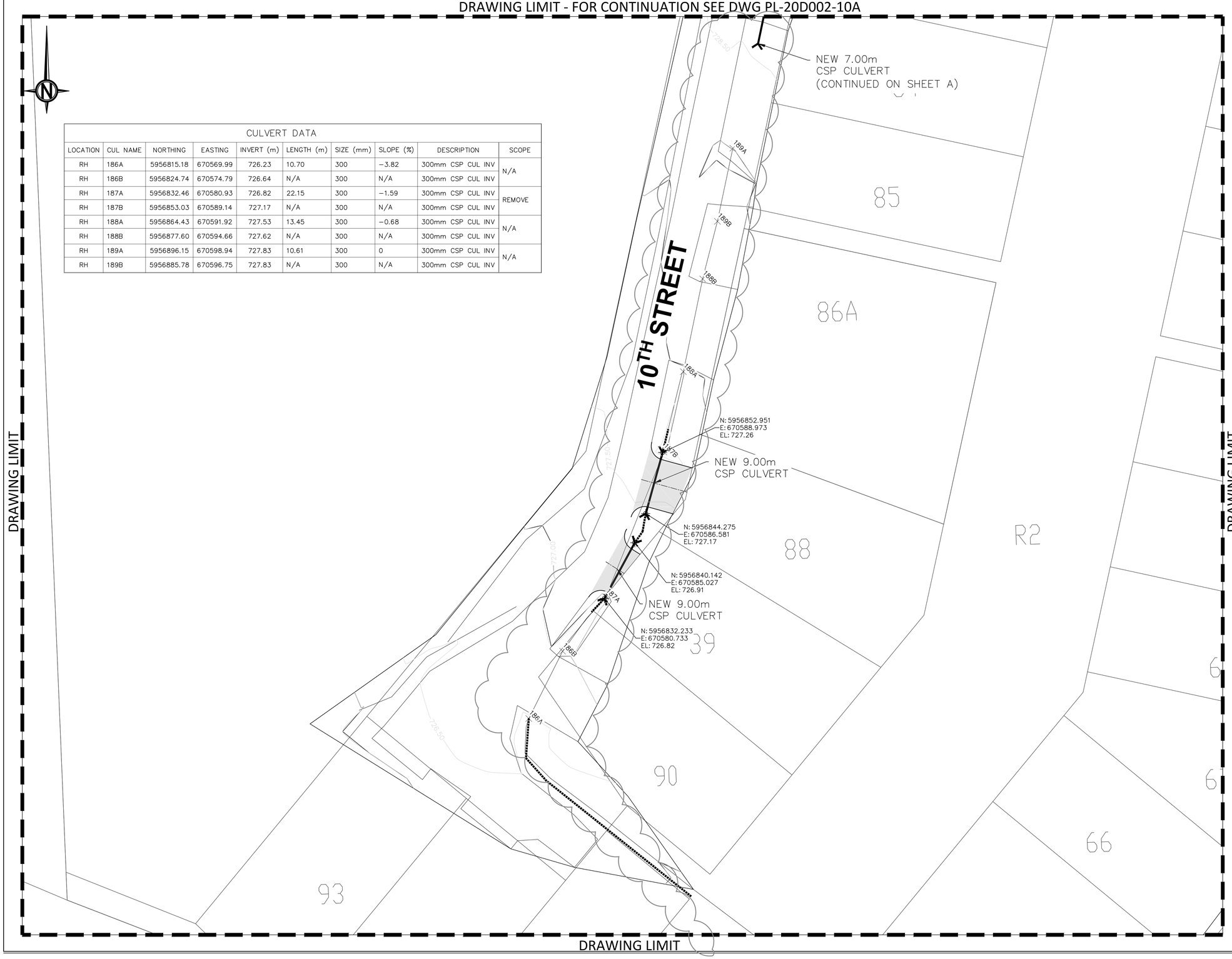

CULVERT DATA

LOCATION	CUL NAME	NORTHING	EASTING	INVERT (m)	LENGTH (m)	SIZE (mm)	SLOPE (%)	DESCRIPTION	SCOPE
RH	186A	5956815.18	670569.99	726.23	10.70	300	−3.82	300mm CSP CUL INV	N/A
RH	186B	5956824.74	670574.79	726.64	N/A	300	N/A	300mm CSP CUL INV	
RH	187A	5956832.46	670580.93	726.82	22.15	300	−1.59	300mm CSP CUL INV	REMOVE
RH	187B	5956853.03	670589.14	727.17	N/A	300	N/A	300mm CSP CUL INV	
RH	188A	5956864.43	670591.92	727.53	13.45	300	−0.68	300mm CSP CUL INV	N/A
RH	188B	5956877.60	670594.66	727.62	N/A	300	N/A	300mm CSP CUL INV	
RH	189A	5956896.15	670598.94	727.83	10.61	300	0	300mm CSP CUL INV	N/A
RH	189B	5956885.78	670596.75	727.83	N/A	300	N/A	300mm CSP CUL INV	

KEY PLAN

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LEGEND

SCOPE CLOUD
NEW SWALE
NEW 300mm CSP CULVERT
NEW GRAVEL APPROACH
GRADING ARROW

ENGINEER'S STAMP

PROFESSIONAL ENGINEER TRENT THOMPSON ALBERTA JUNE 12, 2020

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SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

SHEET 10B
SUMMER VILLAGE DRAINAGE UPGRADE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:250

CLIENT: SV OF ROSS HAVEN

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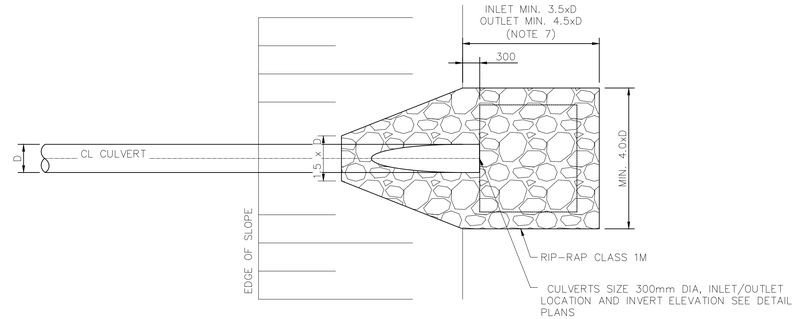
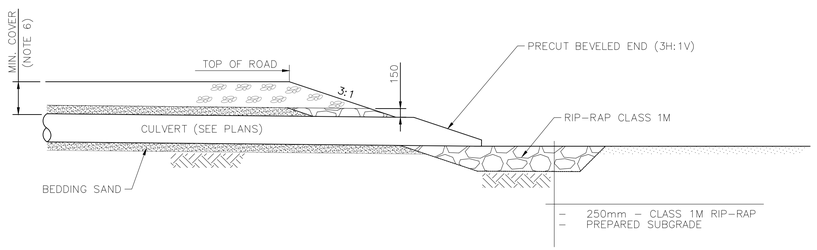


PLAN



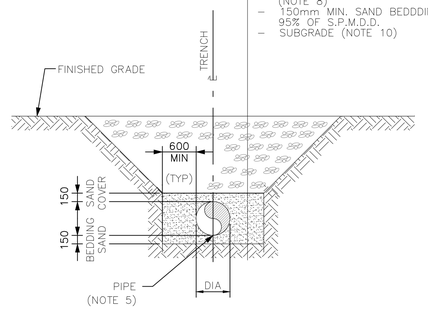
CROSS SECTION

TYPICAL CULVERT INLET/OUTLET DETAIL

NTS

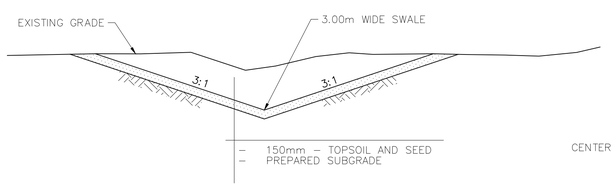
STRUCTURE

- BACKFILL OF SELECTED NATIVE OR IMPORTED COHESIVE SOIL COMPACTED TO 98% S.P.M.D.D., ROADS AND SERVICE AREAS TOP 300mm COMPACTED TO 100% S.P.M.D.D.
- SAND BROUGHT UP EVENLY ON BOTH SIDES OF PIPES IN MAXIMUM 150mm LIFTS WITH EACH LIFT COMPACTED TO MIN. 95% OF S.P.M.D.D. (NOTE 8)
- 150mm MIN. SAND BEDDDING COMPACTED TO MIN. 95% OF S.P.M.D.D.
- SUBGRADE (NOTE 10)



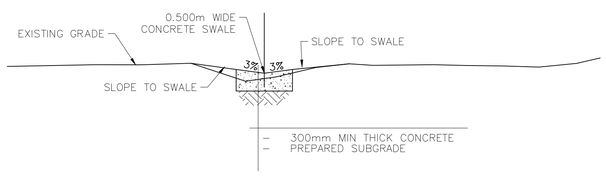
TYPICAL CULVERT TRENCH DETAIL

NTS



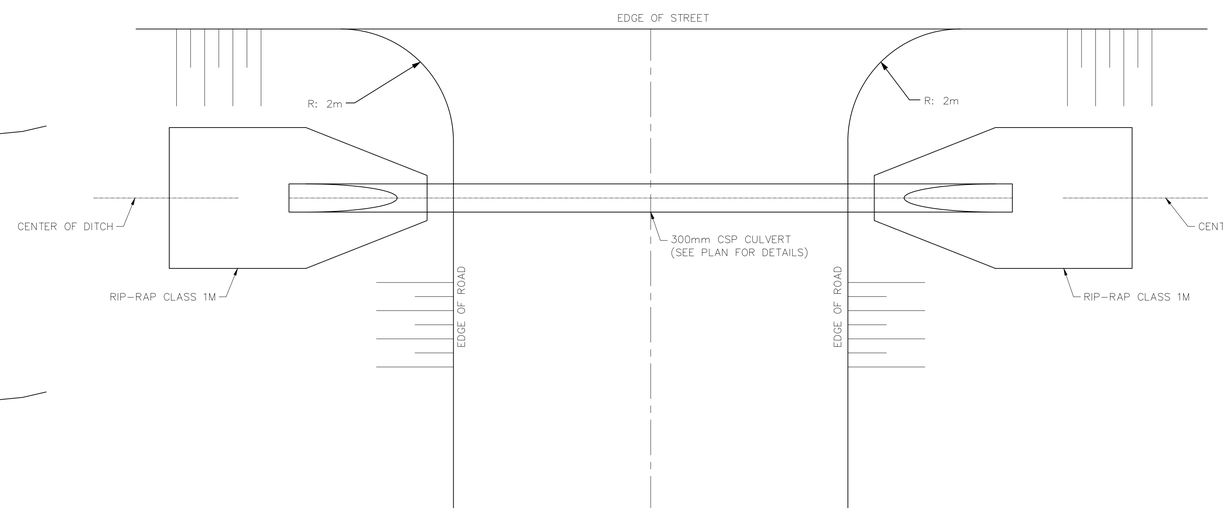
TYPICAL SWALE SECTION

NTS



TYPICAL SWALE SECTION

NTS



KEY PLAN

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES. COORDINATES AND ELEVATIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. SUBGRADE SHALL BE SCARIFIED TO DEPTH OF 150mm AND RE-COMPACTED TO 98% S.P.M.D.D. A
3. GRANULAR MATERIAL SHALL BE PLACED IN MAXIMUM 200mm LIFTS AND COMPACTED TO 100% S.P.M.D.D.
4. FOR CULVERT COORDINATES AND ELEVATIONS, SEE FINISHED GRADING PLANS.
5. COVER OVER CULVERTS SHALL BE 150mm MIN. WHEN UNDER ROADWAYS, AND 100mm MIN ELSEWHERE.
6. WHERE CULVERT OUTLET IS PERPENDICULAR TO DITCH EXTEND RIP-RAP UP THE OPPOSITE DITCH SLOPE TO AN ELEVATION 150mm ABOVE THE TOP OF CULVERT.
7. IF COMPACTION AROUND THE CULVERT (BETWEEN THE SPRING LINE AND THE BEDDING SAND) CAN NOT BE ACHIEVED, USE FILLCRETE UP TO SPRING LINE. IF REQUIRED, ANCHOR CULVERT TO PREVENT FROM FLOATING.
8. ALLOW SUFFICIENT CULVERT LENGTH TO OFFSET THICKNESS OF RIP RAP
9. IN THE EVENT OF OVER EXCAVATION OR UNSUITABLE TRENCH BOTTOM, COMPACTED FREE DRAINING GRAVEL 500mm THICKNESS MINIMUM WRAPPED IN LP10 NON-WOVEN GEOTEXTILE OR APPROVED EQUAL SHALL BE USED FOLLOWED BY PIPE BEDDING. GRAVEL COMPACTION TO 95% S.P.M.D.D.

LEGEND

ENGINEER'S STAMP | PERMIT STAMP

ISSUED FOR TENDER

NO.	DATE	DESCRIPTION	BY	CHE	ENG	APP
A	24-APR-20	ISSUED FOR REVIEW	TS	MB	TT	

REVISIONS

DRAWN BY:	DATE:	CHECKED BY:	DATE:
ENGINEER:	DATE:	APPROVED:	DATE:

SUMMER VILLAGE OF ROSS HAVEN, ALBERTA

TYPICAL SECTIONS
SUMMER VILLAGE DRAINAGE UPGRADE
LAC. STE. ANNE COUNTY, ROSS HAVEN

SCALE: 1:2000

CLIENT: SV OF ROSS HAVEN

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20-D-002	DD-20D002-01	A