

MEMORANDUM OF UNDERSTANDING

THIS MEMORANDUM OF UNDERSTANDING ("Agreement") made this day by and between the CITY OF CAMAS, a municipal corporation of the State of Washington, hereinafter referred to as "City", and ARCHERY HOLDINGS LLC, a Washington limited liability company, hereinafter referred to as "Archery".

R E C I T A L S

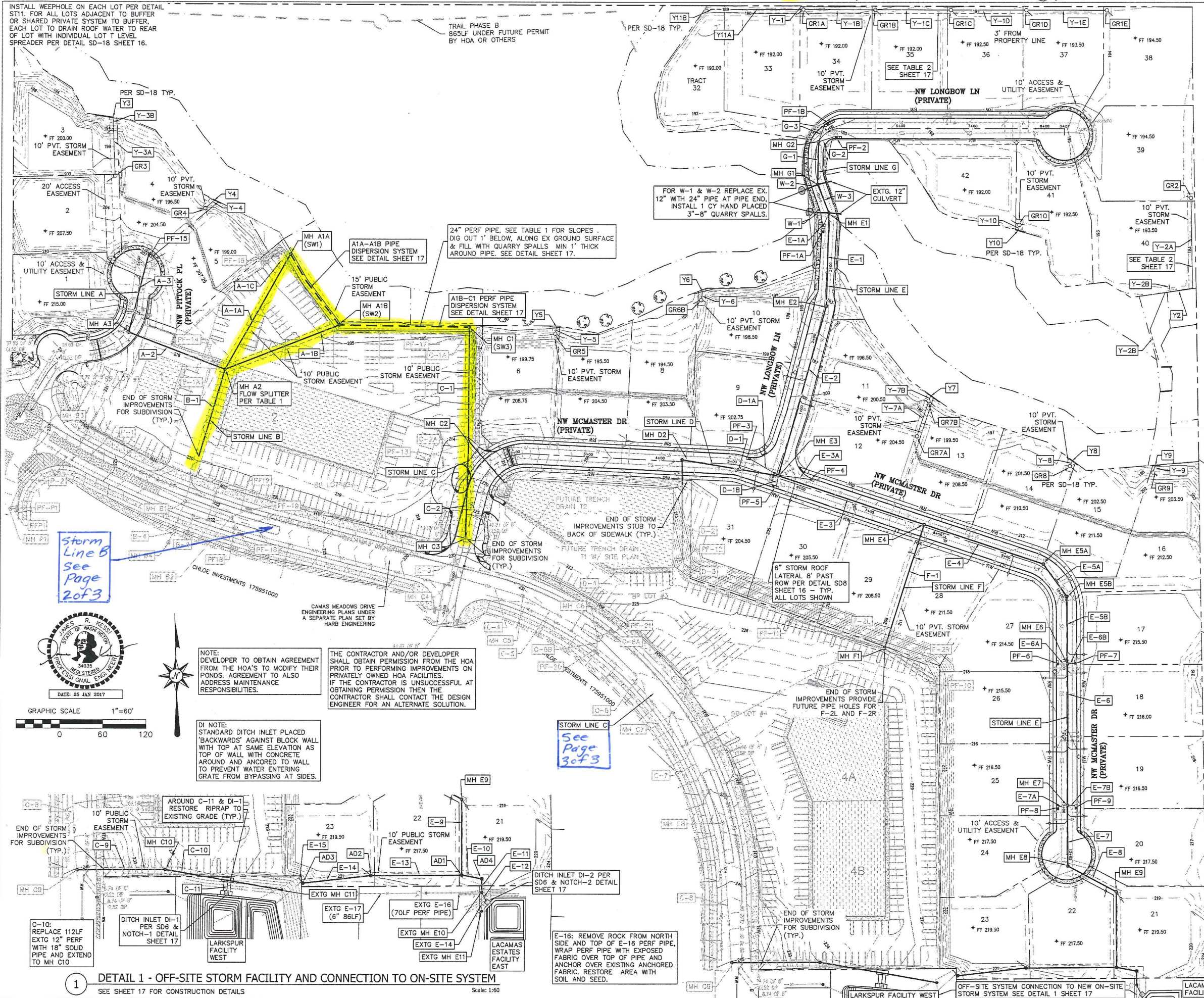
1. "Archery" owns or controls certain real property which is located in the City of Camas, Washington.
2. "Archery" submitted a subdivision application under City File No. SUB15-03, and a Final Plat map thereof was approved by the City on November 6, 2017.
3. During the course of development of the subdivision as noted herein, "Archery" has caused to be installed a storm water collection main line (Main) for the benefits of the "Archery" property, which line has been upsized. See Exhibit "A".
4. The City has determined that the upsizing of the Main benefits the Larkspur Street Improvement Project (Project), as well as to certain real properties located to the west thereof.
5. Attached as Exhibit "B" is a cost analysis associated with the alteration of the storm water main line.
6. Said cost analysis indicates that the overall reimbursement for the upsizing is the amount of \$20,942.64, which the City has agreed to pay pursuant to this agreement.

NOW, THEREFORE, IN CONSIDERATION OF THE MUTUAL COVENANTS CONTAINED HEREIN, CITY AND ARCHERY AGREE AS FOLLOWS:

1. The City will collect the storm water from the Project and, at its discretion, direct the storm water through the Main.
2. Within 30 days of execution of this memorandum, the City shall pay the sum of \$20,942.64 to "Archery".

TABLE 1 - STORM SYSTEM SUMMARY
SEE SHEET 9.1

EXHIBIT A
PAGE 1 OF 3



INSTALL WEEPHOLE ON EACH LOT PER DETAIL ST11. FOR ALL LOTS ADJACENT TO BUFFER OR SHARED PRIVATE SYSTEM TO BUFFER, EACH LOT TO DRAIN ROOF WATER TO REAR OF LOT WITH INDIVIDUAL LOT T LEVEL SPREADER PER DETAIL SD-18 SHEET 16.

TRAIL PHASE B
865LF UNDER FUTURE PERMIT
BY HOA OR OTHERS

PER SD-18 TYP.

SEE TABLE 2
SHEET 17

SEE TABLE 2
SHEET 17

SEE TABLE 2
SHEET 17

FOR W-1 & W-2 REPLACE EX.
12" WITH 24" PIPE AT PIPE END,
INSTALL 1 CY HAND PLACED
3"-8" QUARRY SPALLS.

24" PERF PIPE, SEE TABLE 1 FOR SLOPES.
DIG OUT 1' BELOW, ALONG EX GROUND SURFACE
& FILL WITH QUARRY SPALLS MIN 1' THICK
AROUND PIPE, SEE DETAIL SHEET 17.

A1A-A1B PIPE
DISPERSION SYSTEM
SEE DETAIL SHEET 17

A1B-C1 PERF PIPE
DISPERSION SYSTEM
SEE DETAIL SHEET 17

END OF STORM
IMPROVEMENTS STUB TO
BACK OF SIDEWALK (TYP.)

FUTURE TRENCH DRAIN
IN W/SITE PLAN

END OF STORM
IMPROVEMENTS FOR SUBDIVISION
(TYP.)

6" STORM ROOF
LATERAL 8" PAST
ROW PER DETAIL SD8
SHEET 16 - TYP.
ALL LOTS SHOWN

END OF STORM
IMPROVEMENTS PROVIDE
FUTURE PIPE HOLES FOR
F-2L AND F-2R

END OF STORM
IMPROVEMENTS FOR SUBDIVISION
(TYP.)

Storm Line C
See Page
3 of 3

NOTE:
DEVELOPER TO OBTAIN AGREEMENT
FROM THE HOA'S TO MODIFY THEIR
PONDS, AGREEMENT TO ALSO
ADDRESS MAINTENANCE
RESPONSIBILITIES.

THE CONTRACTOR AND/OR DEVELOPER
SHALL OBTAIN PERMISSION FROM THE HOA
PRIOR TO PERFORMING IMPROVEMENTS ON
PRIVATELY OWNED HOA FACILITIES.
IF THE CONTRACTOR IS UNSUCCESSFUL AT
OBTAINING PERMISSION THEN THE
CONTRACTOR SHALL CONTACT THE DESIGN
ENGINEER FOR AN ALTERNATE SOLUTION.

DI NOTE:
STANDARD DITCH INLET PLACED
'BACKWARDS' AGAINST BLOCK WALL
WITH TOP AT SAME ELEVATION AS
TOP OF WALL WITH CONCRETE
AROUND AND ANCHORED TO WALL
TO PREVENT WATER ENTERING
GRATE FROM BYPASSING AT SIDES.

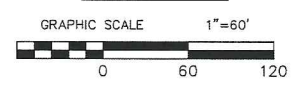
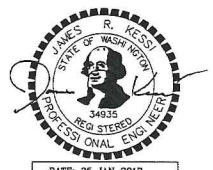
AROUND C-11 & DI-1
RESTORE RIPRAP TO
EXISTING GRADE (TYP.)

DITCH INLET DI-2 PER
SD8 & NOTCH-2 DETAIL
SHEET 17

E-16: REMOVE ROCK FROM NORTH
SIDE AND TOP OF E-16 PERF PIPE.
WRAP PERF PIPE WITH EXPOSED
FABRIC OVER TOP OF PIPE AND
ANCHOR OVER EXISTING ANCHORED
FABRIC. RESTORE AREA WITH
SOIL AND SEED.

1 DETAIL 1 - OFF-SITE STORM FACILITY AND CONNECTION TO ON-SITE SYSTEM
SEE SHEET 17 FOR CONSTRUCTION DETAILS

Scale: 1"=60'



RECORD DRAWINGS JUNE 2018

KESSI ENGINEERING
CONSULTING
PLANNING
DESIGN
CIVIL ENGINEERING
PROJECT MANAGEMENT

DATE:
19 JAN 2017
JUNE 2018

PARKLANDS AT CAMAS MEADOWS
STORM FACILITY PLAN

SHEET
9

PIPE SYSTEMS TO BENEFIT FROM LARKSPUR IMPROVEMENTS

STORM LATERAL/ C.O. TABLE

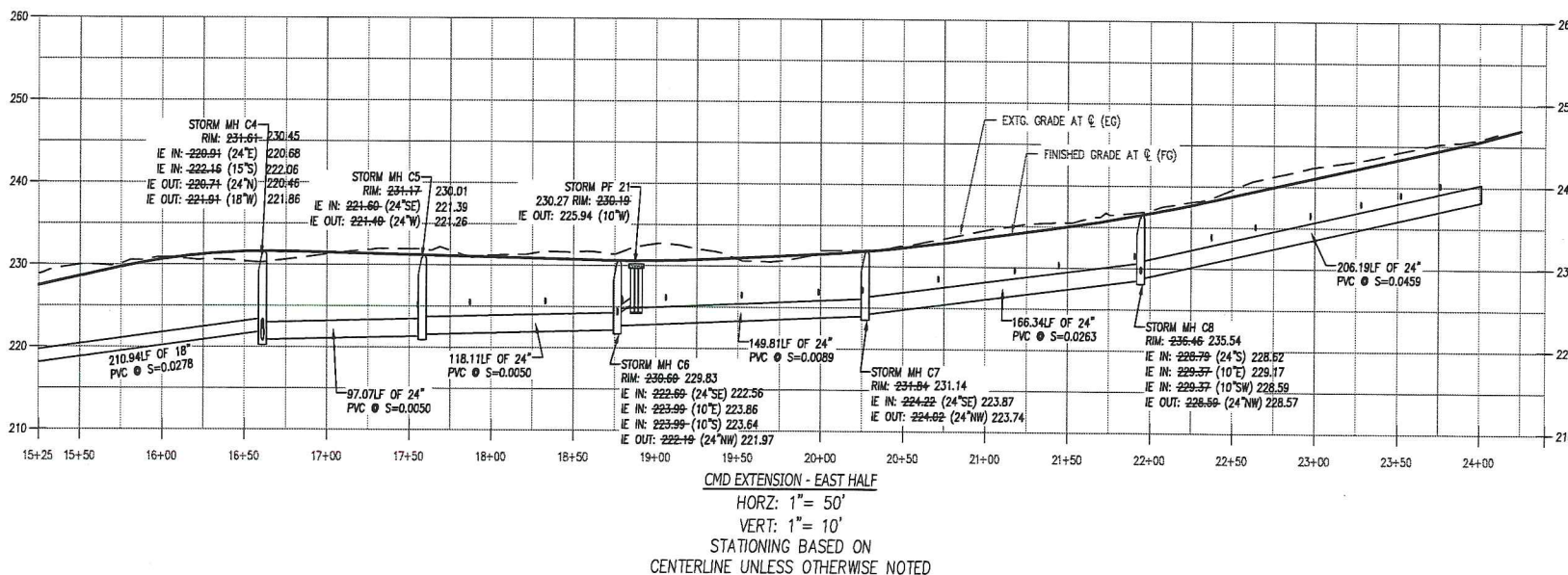
LOT #	RIM	DEPTH ±	IE	PIPE	SUMP	SLOPE	LENGTH**	ALIGNMENT	STATION		
1	231.46	232.25	-8.74- 7.68	224.76	226.57	8" PVC	2.000	0.0245	33.70 LF	CAMAS MEADOWS DR. - EXTENSION	17+54.744
2	231.33	232.39	-8.21- 7.65	225.13	226.74	8" PVC	2.000	0.0252	31.32 LF	CAMAS MEADOWS DR. - EXTENSION	17+87.356
3	231.11	234.19	-7.79- 8.11	225.31	228.08	8" PVC	2.000	0.0250	30.53 LF	CAMAS MEADOWS DR. - EXTENSION	18+32.615
4	230.91	233.96	-7.32- 7.44	225.59	228.52	8" PVC	2.000	0.0241	34.30 LF	CAMAS MEADOWS DR. - EXTENSION	18+78.349
5	230.93	233.33	-7.13- 6.70	225.61	228.63	8" PVC	2.000	0.0255	30.09 LF	CAMAS MEADOWS DR. - EXTENSION	19+06.938
6	231.29	233.19	-7.16- 6.70	225.13	228.49	8" PVC	2.000	0.0256	27.94 LF	CAMAS MEADOWS DR. - EXTENSION	19+52.171
7	231.75	233.42	-7.24- 6.74	226.54	228.63	8" PVC	2.000	0.0251	29.84 LF	CAMAS MEADOWS DR. - EXTENSION	19+87.845
8	232.10	234.87	-7.29- 6.80	226.81	230.07	8" PVC	2.000	0.0241	33.56 LF	CAMAS MEADOWS DR. - EXTENSION	20+24.067
9	233.14	235.09	-6.94- 7.04	226.29	230.05	8" PVC	2.000	0.0260	27.92 LF	CAMAS MEADOWS DR. - EXTENSION	20+72.227
10	234.19	236.41	-7.69- 6.78	229.31	231.63	8" PVC	2.000	0.0258	26.59 LF	CAMAS MEADOWS DR. - EXTENSION	21+17.880
11	235.12	236.66	-7.14- 6.94	229.98	231.72	8" PVC	2.000	0.0253	27.73 LF	CAMAS MEADOWS DR. - EXTENSION	21+44.011
12	236.58	238.84	-7.43- 6.97	231.16	233.87	8" PVC	2.000	0.0243	32.84 LF	CAMAS MEADOWS DR. - EXTENSION	21+89.320
13	238.57	240.06	-7.67- 6.73	233.51	235.33	8" PVC	2.000	0.0253	28.89 LF	CAMAS MEADOWS DR. - EXTENSION	22+38.292
14	239.75	241.60	-7.69- 6.73	234.76	236.87	8" PVC	2.000	0.0258	27.32 LF	CAMAS MEADOWS DR. - EXTENSION	22+64.426
15	241.22	245.05	-7.06- 6.75	236.16	238.34	8" PVC	2.000	0.0256	27.57 LF	CAMAS MEADOWS DR. - EXTENSION	22+97.153
16	242.61	244.26	-7.03- 6.68	237.58	239.58	8" PVC	2.000	0.0249	29.81 LF	CAMAS MEADOWS DR. - EXTENSION	23+27.762
17	243.69	244.82	-6.99- 6.66	238.71	240.16	8" PVC	2.000	0.0249	31.08 LF	CAMAS MEADOWS DR. - EXTENSION	23+51.757
18	244.77	245.55	-6.94- 6.65	239.63	240.90	8" PVC	2.000	0.0247	32.53 LF	CAMAS MEADOWS DR. - EXTENSION	23+75.755

** INSTALL C.O. 3' INSIDE OF R/W

STORM STRUCTURE TABLE

BASIN # AND STRUCTURE TYPE	RIM	IE IN	IE OUT	SUMP	RIM TO SUMP HEIGHT*	PIPE	SLOPE	LENGTH	DS MH	STATION & OFFSET	ALIGNMENT	
STORM CB V2	231.26	230.89	227.06	227.28	1.50'	5.64 5.11	10" PVC	0.0100	37.28 LF	STORM PF V1	16+80.63 60.62 R	CAMAS MEADOWS DR. - EXTENSION
STORM PF 20	230.19	230.22	225.94	0.00'	4.25	10" PVC	0.0826	23.60 LF	STORM MH C6	18+87.58 20.00 R	CAMAS MEADOWS DR. - EXTENSION	
STORM PF 21	230.19	230.27	225.94	0.00'	4.25	10" PVC	0.0811	24.03 LF	STORM MH C6	18+88.05 20.00 L	CAMAS MEADOWS DR. - EXTENSION	
STORM PF 22	236.38	236.44	232.13	0.00'	4.25	10" PVC	0.1274	21.65 LF	STORM MH C8	22+02.81 20.00 R	CAMAS MEADOWS DR. - EXTENSION	
STORM PF 23	236.51	236.59	232.26	0.00'	4.25	10" PVC	0.1240	23.27 LF	STORM MH C8	22+05.98 20.00 L	CAMAS MEADOWS DR. - EXTENSION	
STORM PF V1	236.94	230.93	226.69	226.69	0.00'	4.25	10" PVC	0.0664	16.71 LF	STORM MH V1	16+43.43 52.35 R	CAMAS MEADOWS DR. - EXTENSION

* IF NO SUMP THEN HEIGHT IS MEASURED TO LOWEST INVERT



STORM SEWER NOTES:

- SEE CITY OF CAMAS STANDARD NOTES SD1 ON SHEET C310
- ALL STORM CATCH BASINS AND PERKILERS SHALL HAVE A STORM WATER MEDALLION PLACED ON TOP OF THE ADJACENT CURB, SEE DETAIL ON SHEET C310
- ALL STORM MANHOLES (MH) SHALL BE 48" STANDARD MANHOLES CONSTRUCTED PER DETAILS SD9 AND SD12 ON SHEET C310
- ALL PERKILERS (PF) SHALL BE INSTALLED PER OLDCASTLE STORMWATER SOLUTIONS DETAIL ON SHEET C310
- ALL STORM STUBS AND STORM LATERALS W/ C.O. SHALL HAVE AN END CAP AND 2"x4" BOARD INSTALLED PER DETAIL SD8 ON SHEET C310

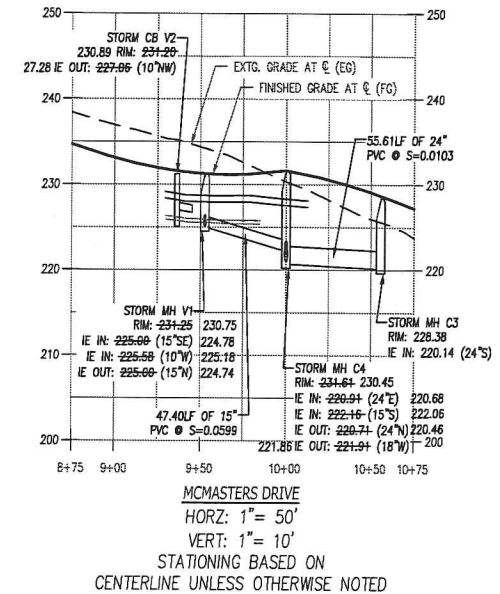
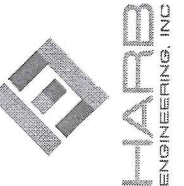


EXHIBIT A
PAGE 3 OF 3

HARB ENGINEERING

LAND DEVELOPMENT PLANNING ENGINEERING
CONSTRUCTION MANAGEMENT

701 COLUMBIA STREET, SUITE 111 VANCOUVER, WA 98660
PHONE: (360) 695-6520 WWW.HARBENGINEERING.COM



CAMAS MEADOWS
DRIVE EXTENSION
(PUBLIC IMPROVEMENTS)
AS-BUILTS

SHEET NAME:
STORM DRAINAGE
PLAN AND PROFILES

DRAWN BY:
G.G.H.
DESIGNED BY:
G.G.H.
CHECKED BY:
G.G.H.

SHEET #
C-301

Larkspur Street
Improvements
North End

INSTALL 40LF 15" STORM PIPE @ S=0.0100
END IE=241.25 (EXTG GRADE=248) 10'AP
AND PLUG END, INSTALL 2X4 MARKER

STORM MH C-9 (BY KEYS)
24" IE = 237.25 OUT (10)
CORE AND BOOT NEW 15" IE (SW)
AT ELEV 237.25± ADJUST TO
TO MATCH IE OUT.

STORM PIPE ADDED 12-14-2017

EXHIBIT B COST ANALYSIS
INSTALLED COST DIFFERENCE FOR PIPE SYSTEMS (AS-BUILT) AND SIZED FOR
PARKLANDS THE VILLAGE DEVELOPED AND THE OFFSITE AREA AS PRESENT CONDITION

Determine pipe size installed cost totals

Offsite Pre-developed - Line A and B						Extg Condition		As-Built (FBO)	
	Upstream Structure ID	Downstream Structure ID	Pipe Length ID	Pipe Length cntr to cntr (ft)	Pipe Size (in)	Install Cost (\$/LF)	Total Cost (\$)	Install Cost (\$/LF)	Total Cost (\$)
FBO	MH C4	MH B4	---	210.9	18			75.79	\$15,987.14
EXTG					18	75.79	\$15,987.14		
FBO	MH B4	MH B2	---	111.2	18			75.79	\$8,429.36
EXTG					18	75.79	\$8,429.36		
FBO	MH B2	MH B1	B-2	111.4	18			75.37	\$8,394.71
EXTG					12	61.37	\$6,835.39		
FBO	MH B1	MH A2	B-1	188.8	18			81.57	\$15,400.42
EXTG					18	81.57	\$15,400.42		
FBO	MH A2	MH A1A	A-1A	184.0	15			88.91	\$16,359.44
EXTG					15	88.91	\$16,359.44		
FBO	MH A2	MHA1B	A-1B	170.0	15			89.79	\$15,264.30
EXTG					15	89.79	\$15,264.30		
FBO	MH A1B	MH C1	A1B-C1	180.0	24			87.73	\$15,791.40
EXTG					18	72.75	\$13,095.00		
FBO	MH A1A	MH A1B	A1A-A1B	124.0	24			90.81	\$11,260.44
EXTG					18	74.36	\$9,220.64		
1069.4						Total	\$100,591.69	Total	\$106,887.21
								Increase	\$6,295.52

						Extg Condition		As-Built (FBO)	
	Upstream Structure ID	Downstream Structure ID	Pipe Length ID	Pipe Length cntr to cntr (ft)	Pipe Size (in)	Install Cost (\$/LF)	Total Cost (\$)	Install Cost (\$/LF)	Total Cost (\$)
FBO	MH C9	MH C8	C-8	200.0	24			102.21	\$20,442.00
EXTG					18	85.78	\$17,156.00		
FBO	MH C8	MH C7	C-7	166.3	24			121.85	\$20,263.66
EXTG					18	85.78	\$14,265.21		
FBO	MH C7	MH C6	C-6	149.8	24			91.91	\$13,768.12
EXTG					24	91.91	\$13,768.12		
FBO	MH C6	MH C5	C-5	118.1	24			94.76	\$11,191.16
EXTG					24	94.76	\$11,191.16		
FBO	MH C5	MH C4	C-4	96.4	24			98.63	\$9,507.93
EXTG					24	98.63	\$9,507.93		
FBO	MH C4	MH C3	C-3	55.6	24			95.94	\$5,334.26
EXTG					24	95.94	\$5,334.26		
FBO	MH C3	MH C2	C-2	134.0	18			73.79	\$9,887.86
EXTG					15	69.83	\$9,357.22		
FBO	MH C2	MH C1	C-1	158.5	18			73.79	\$11,695.72
EXTG					15	69.73	\$11,052.21		
Total						\$91,632.11		Total	\$102,090.70
								Increase	\$10,458.59

Extg Condition	As-Built (FBO)
\$100,591.69	\$106,887.21
\$91,632.11	\$102,090.70
\$192,223.80	\$208,977.91

Cost Difference **\$16,754.11**

Total Reimbursement with Additional 25% for engineering, design, and development costs **\$ 20,942.64**