

Technical Appendices
Addendum to SWMP for 34 lot alternative
Major Stormwater Management Plan
/ Hydro Modification

Analysis for
HOSKINGS RANCH
Highway 78 and 79, Julian
SAN DIEGO COUNTY, CALIFORNIA
TM 5312 RPL-3

Preparation/Revision Date:
Preparation Date – March 6, 2013

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TABLE OF CONTENTS

REPORT:

Storm Water Management Plan (SWMP) For Major Projects

ATTACHMENTS:

Attachment 'A' – Project Location Map

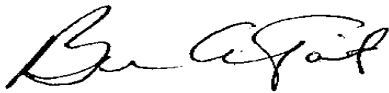
Attachment 'B' – Site Map

Attachment 'C' – LID and Treatment BMP location Map (figures 01-06)

Attachment 'D' – Calculations Worksheets - BMP calculation worksheets – LID design

Technical Appendices - Addendum to SWMP for 34 lot alternative.

The following Figures 01-06 and preliminary calculation spreadsheet are to support and prove the Hoskins Ranch 34 lot alternative meets the Hydro modification and SWMP criteria as a viable alternative in the EIR. The project alternative has ample development area to treat all storm water runoff and meet all hydro modification criteria.



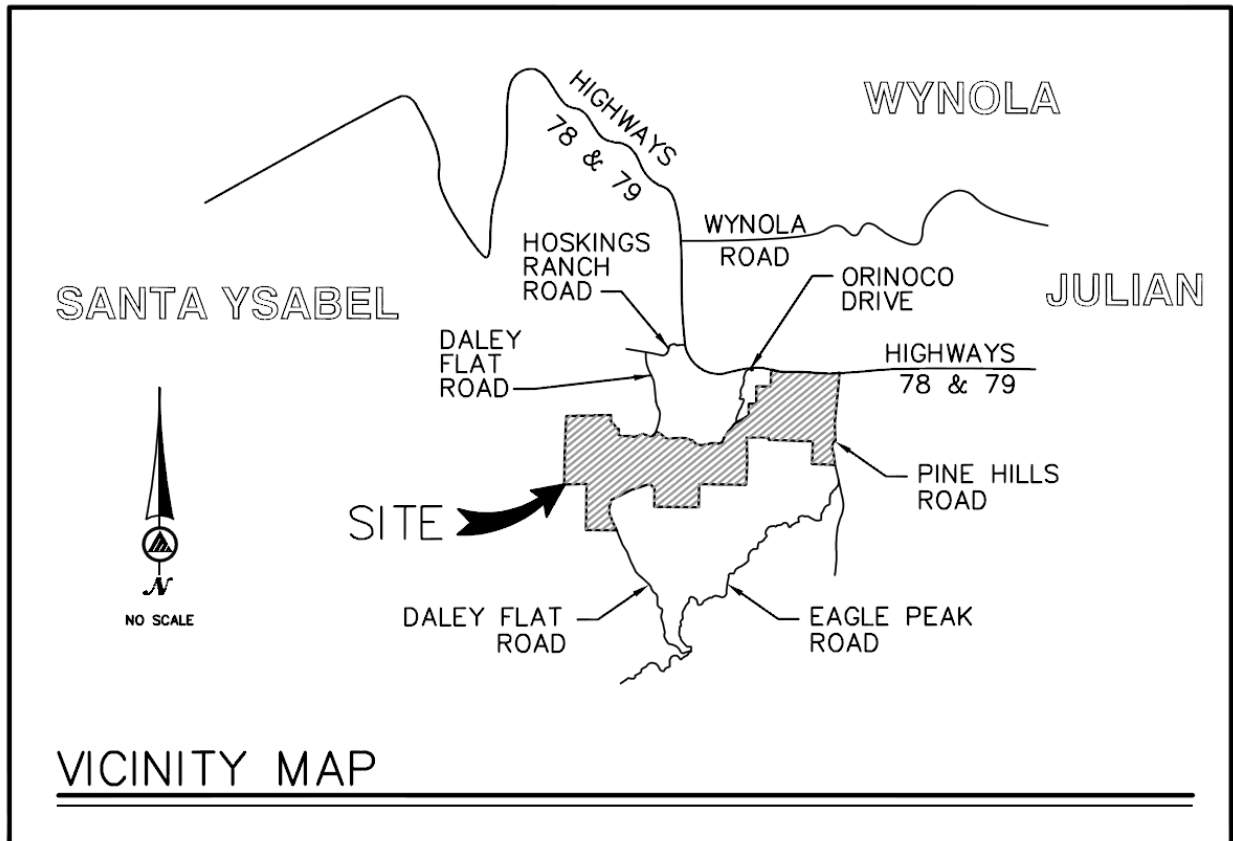
By: _____ Date: March, 13, 2013
Bruce A. Tait RCE NO. 32247



Date: March, 2013

Attachment 'A'

Project Location Map



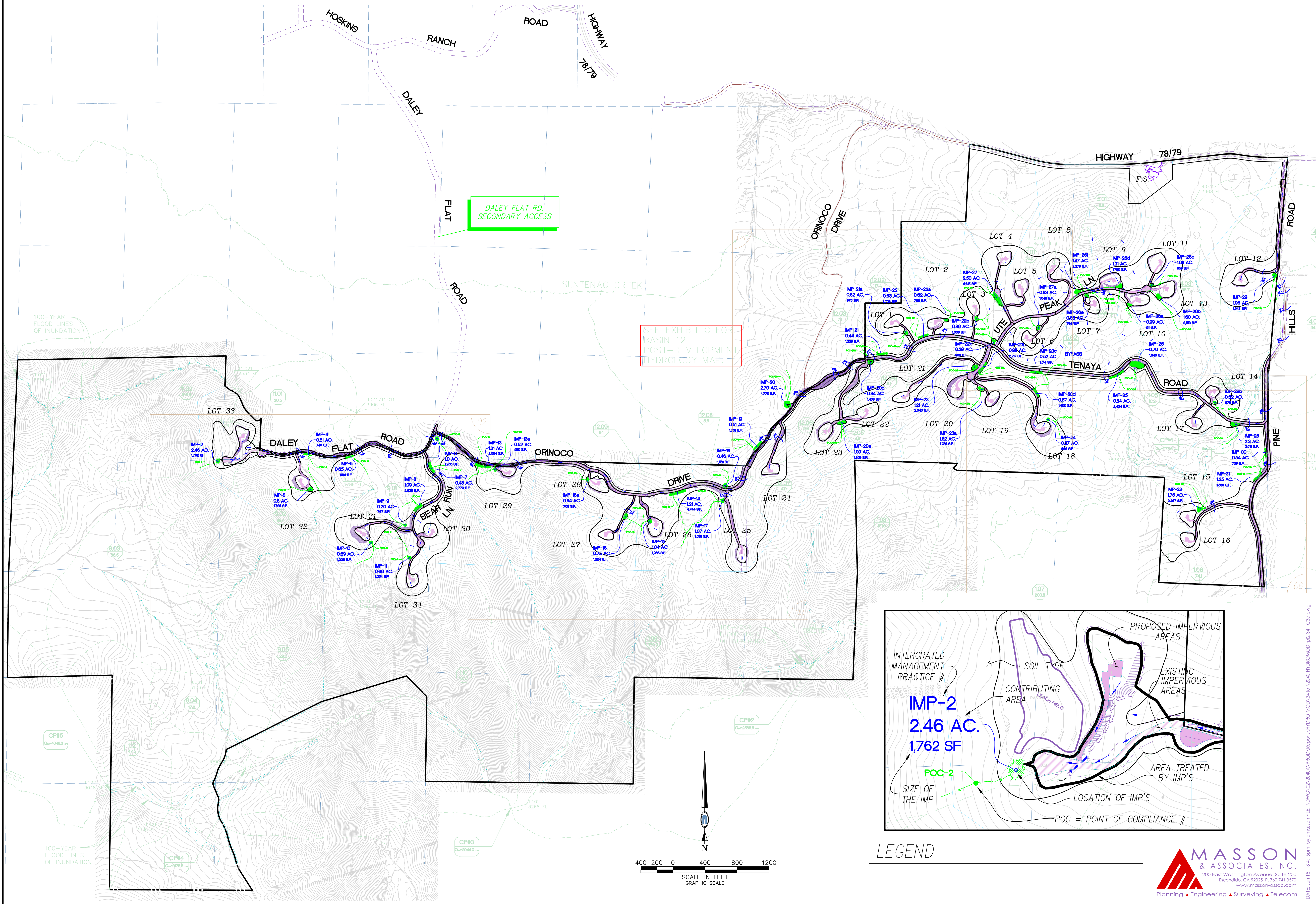
Attachment 'B'

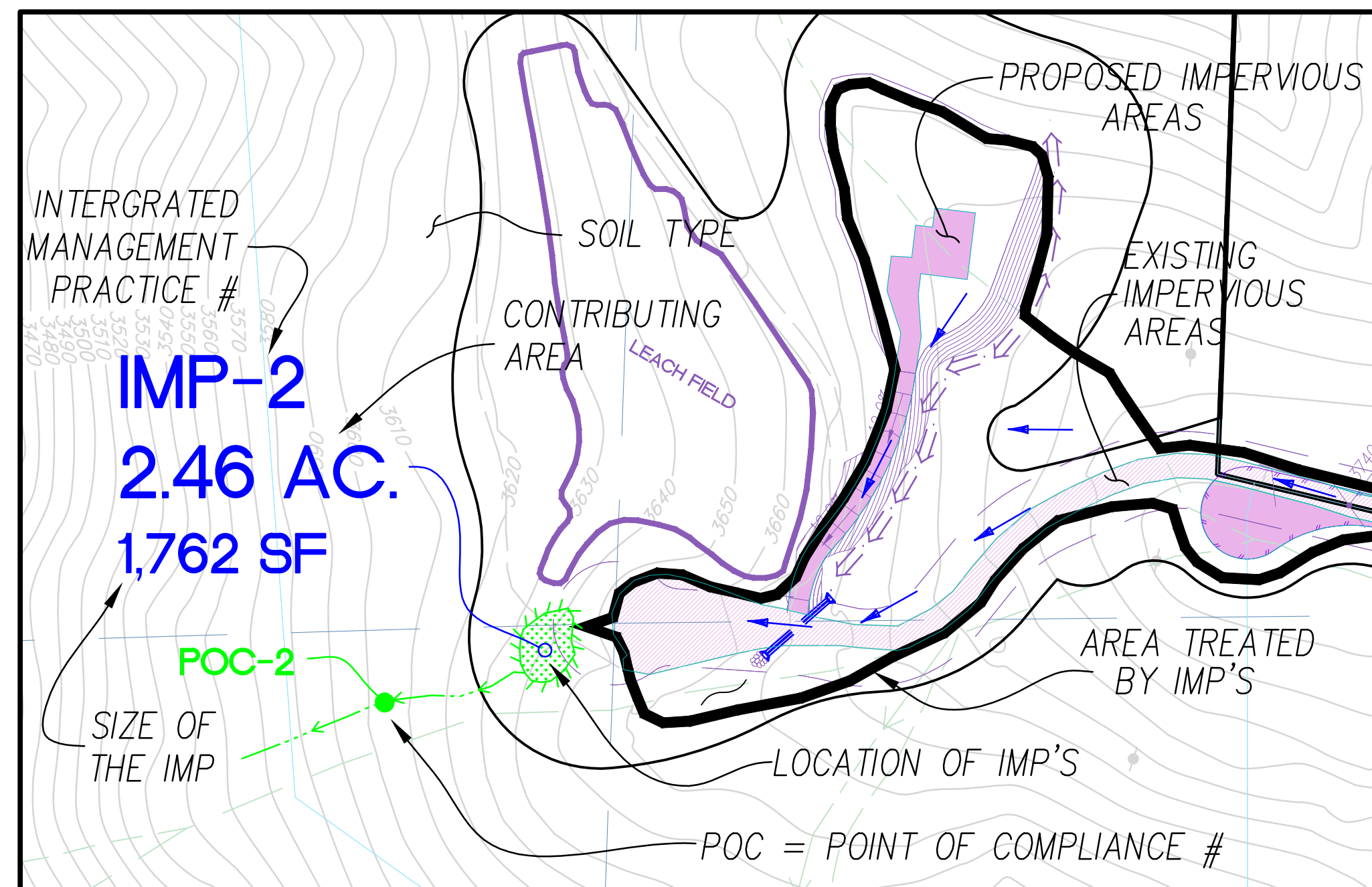
Site Map

Attachment 'C'

LID and Treatment BMP location Map (Figures 01-06)

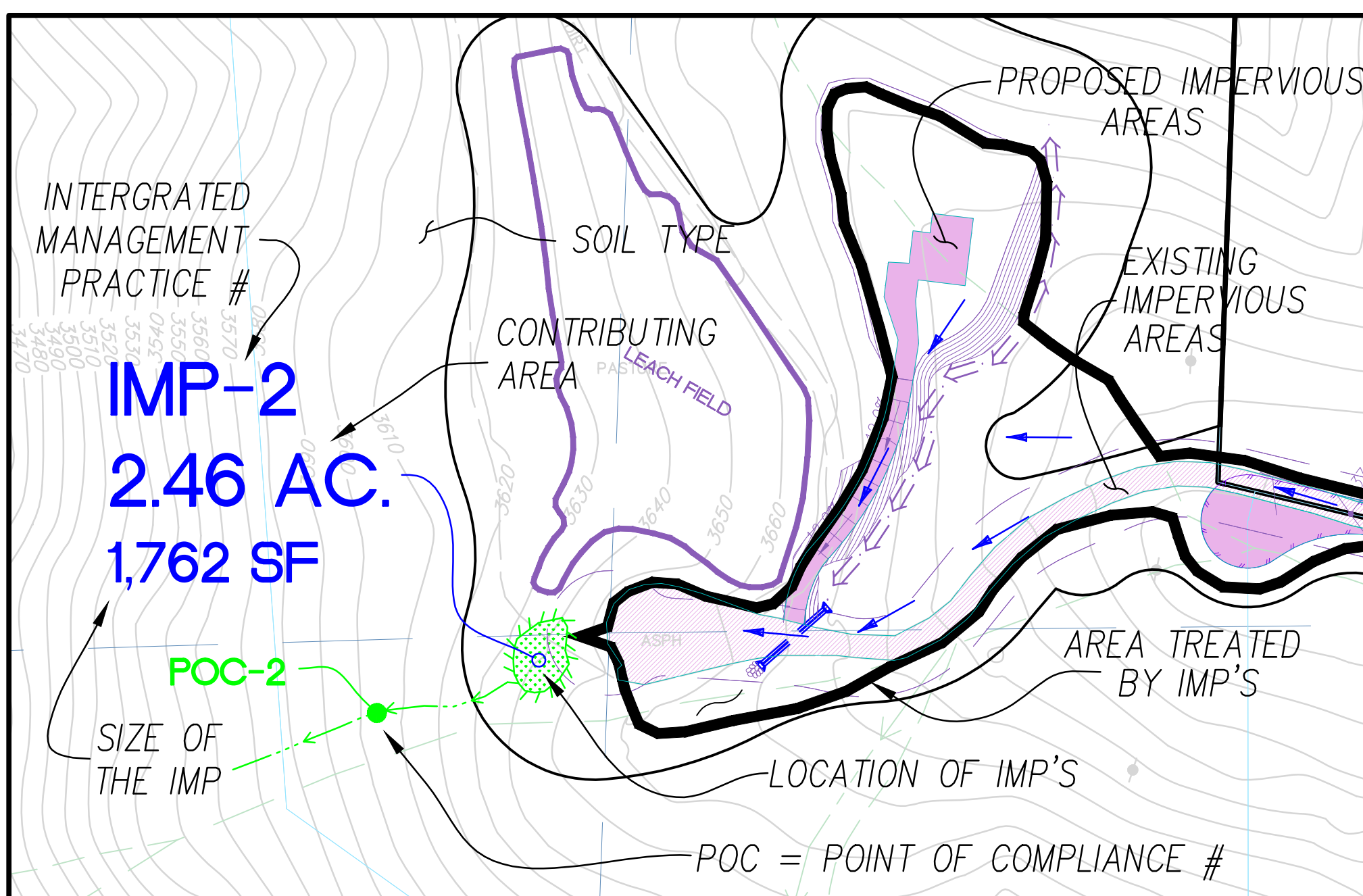
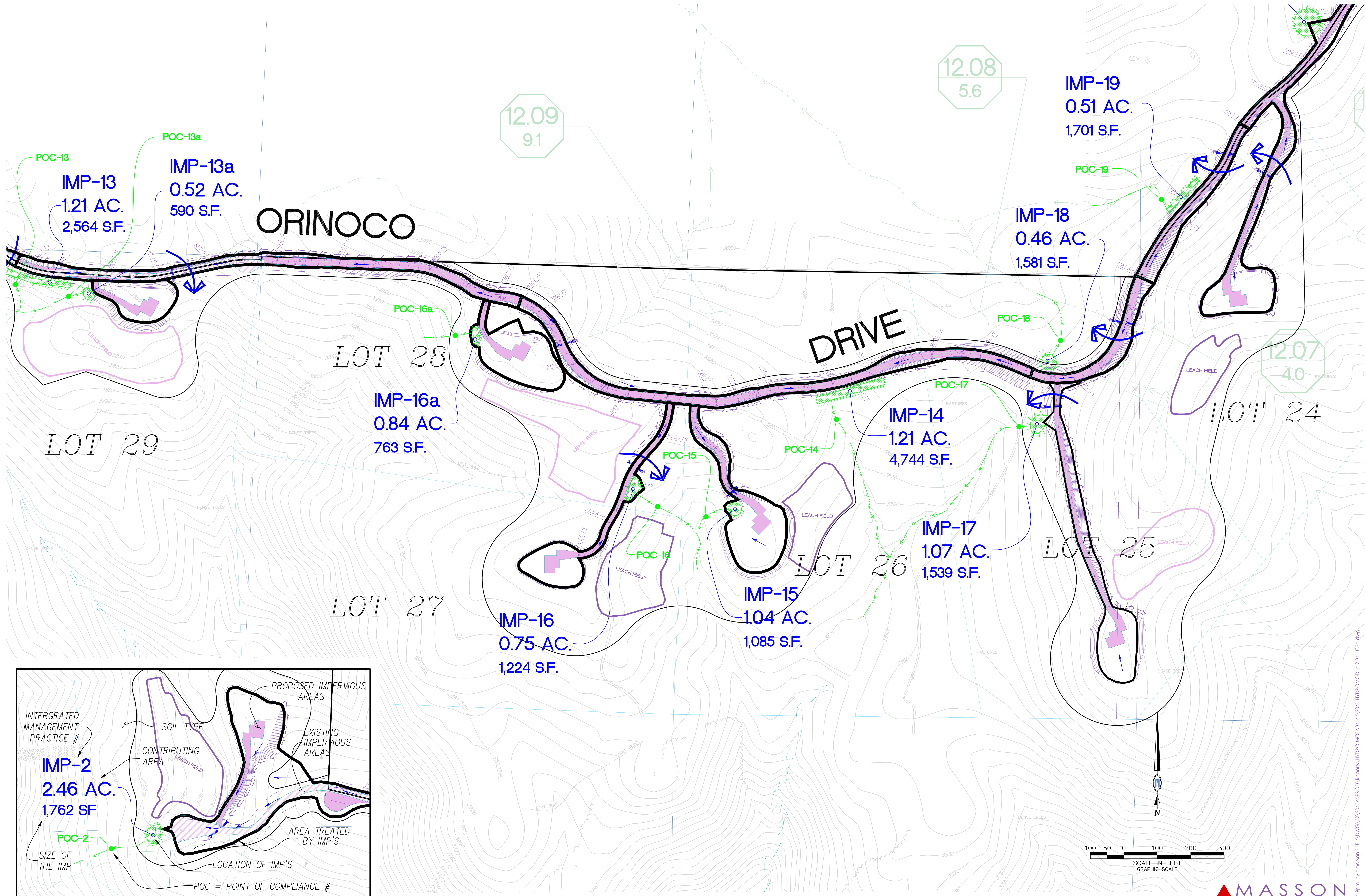
FIGURE 01



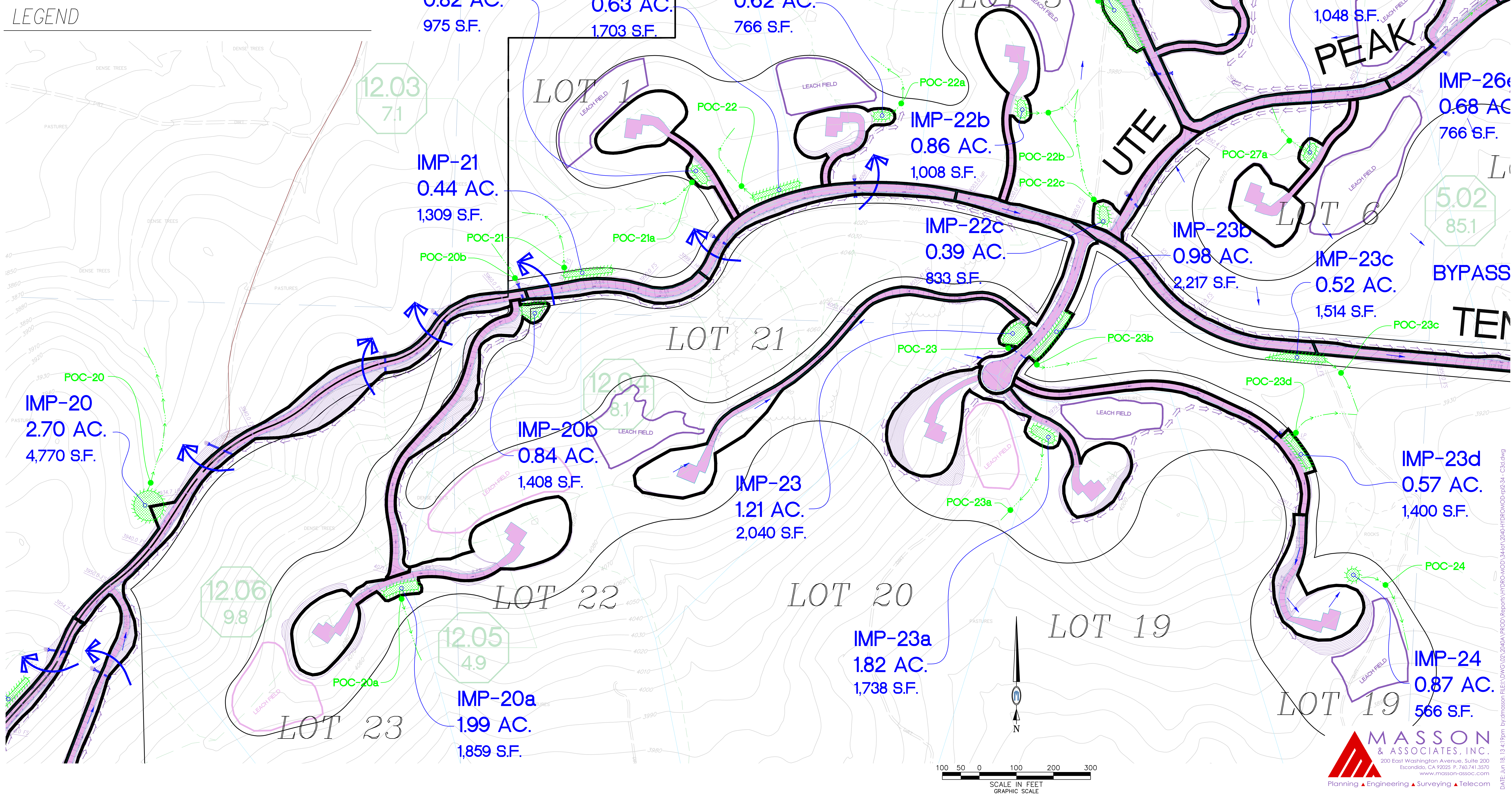
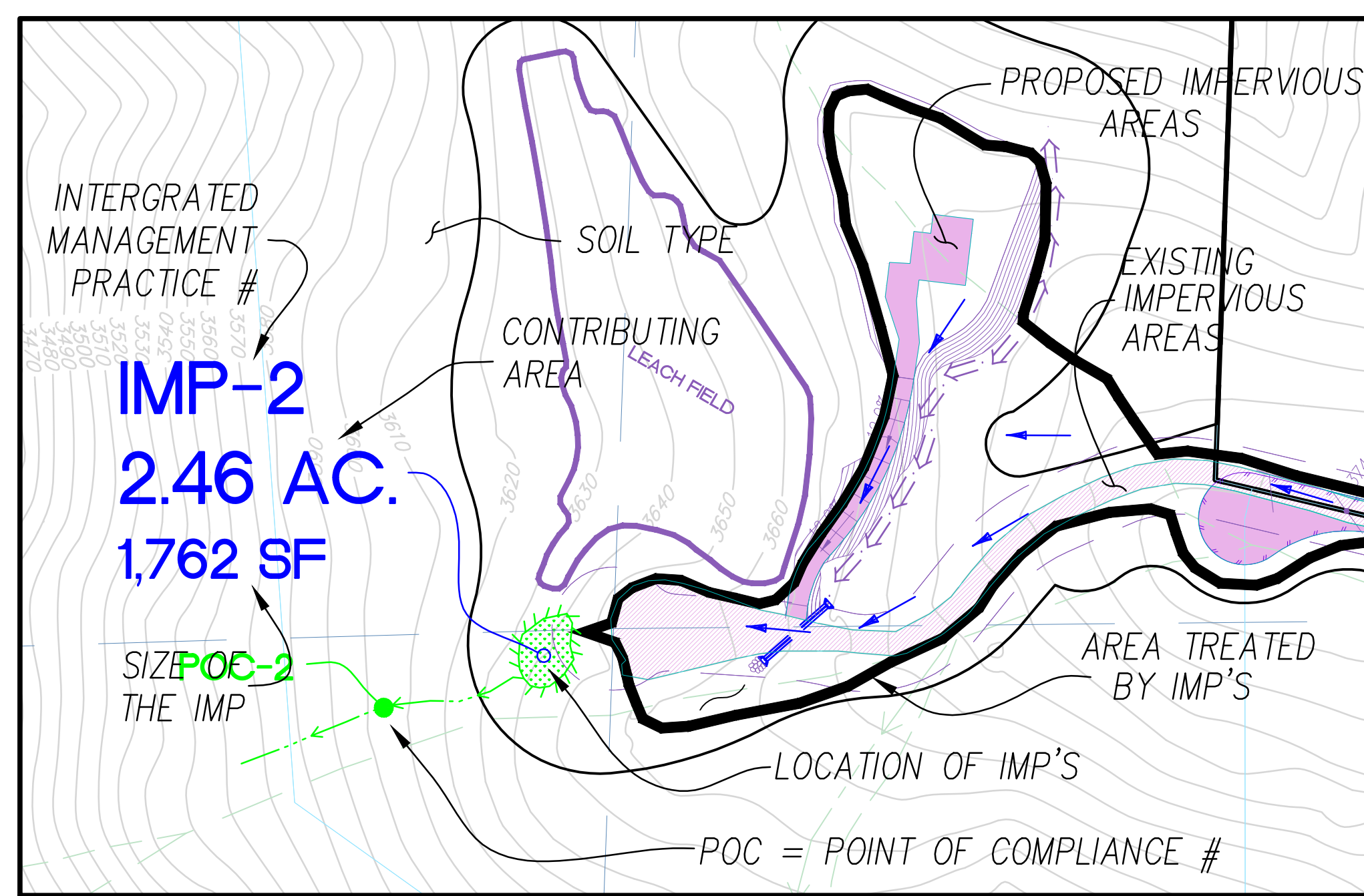


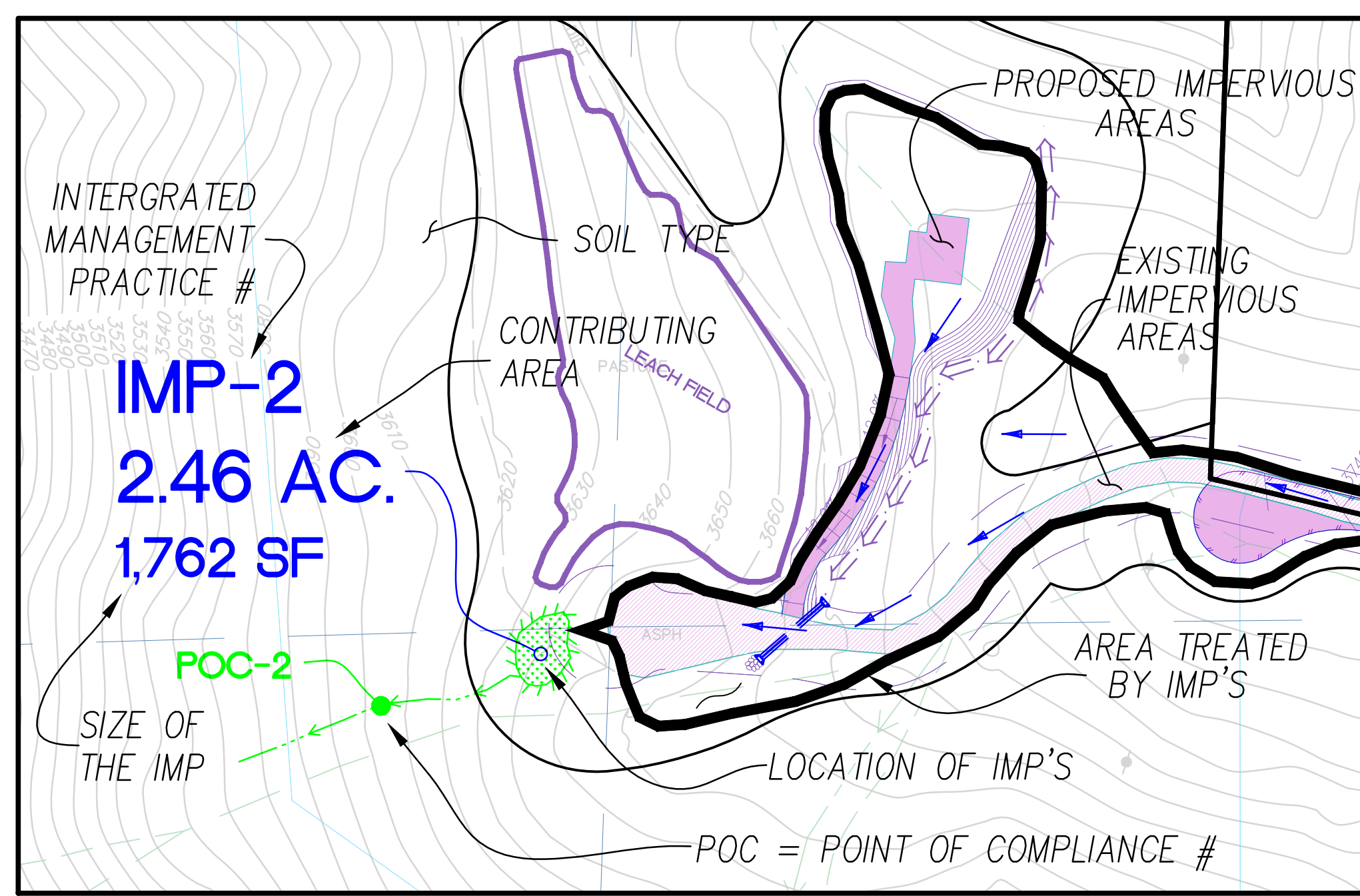
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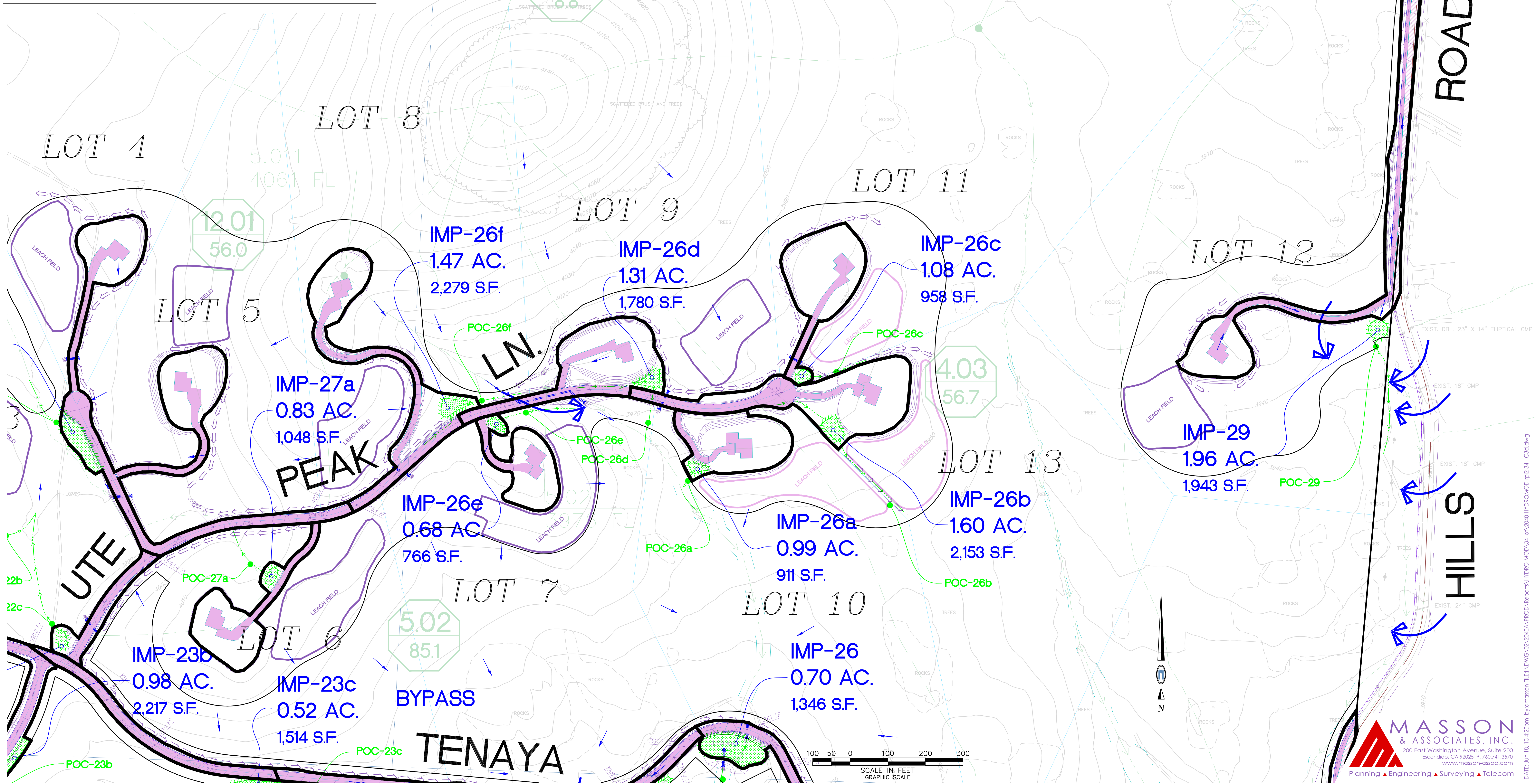


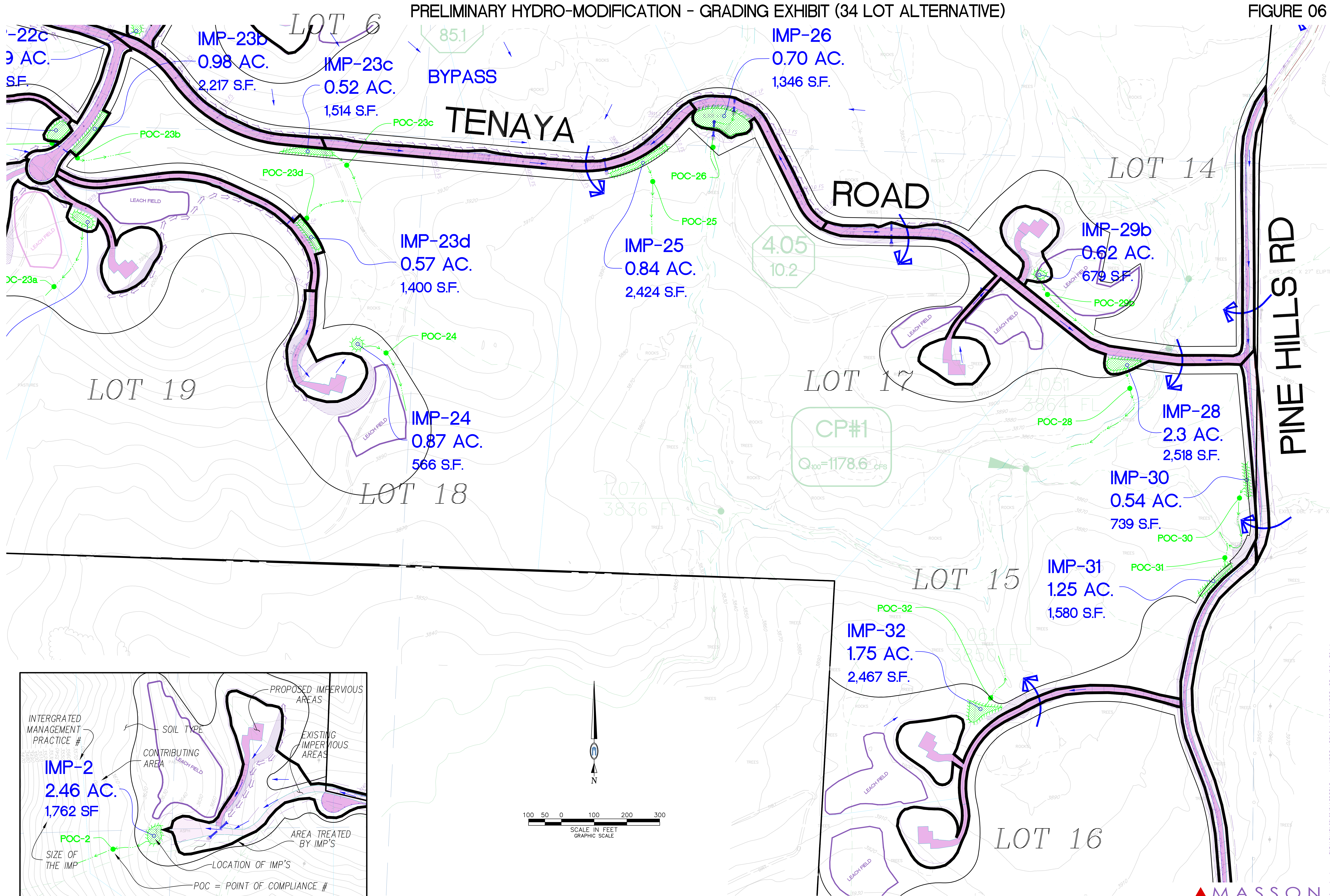
LEGEND





LEGEND





Attachment 'D'

Calculations Worksheets - BMP calculation Worksheets

BMP CALCULATION WORKSHEETS - LID DESIGN

IMP - 1	Removed Lot			
Basin No. N/A		0.00 AC	-	Total area S.F.

IMP - 2	Lot 33 - No Change from 24 lot project			
Basin No. 11.02		2.46 AC	107,282	Total area S.F.

IMP - 3	Lot 32 - No Change from 24 lot project			
Basin No. 9.02		0.80 AC	34,731	Total area S.F.

IMP - 4	Street Flow No Change from 24 lot project			
Basin No. 9.02		0.51 AC	22,256	Total area S.F.

IMP - 5	Street Flow No Change from 24 lot project			
Basin No. 9.01		0.51 AC	22,256	Total area S.F.

IMP - 6	Street Flow No Change from 24 lot project			
Basin No. 1.09		1.00 AC	43,529	Total area S.F.

IMP - 7	Street Flow No Change from 24 lot project			
Basin No. 1.09		0.48 AC	21,004	Total area S.F.

IMP - 8	Street Flow Lot 30 - No Change from 24 lot project			
Basin No. 9.01		1.09 AC	47,434	Total area S.F.

IMP - 9	Street Flow Lot 31 dwy - No Change from 24 lot project			
Basin No. 9.01		0.20 AC	8,562	Total area S.F.

IMP - 10	Lot 31 - No Change from 24 lot project			
Basin No. 9.02		0.69 AC	29,972	Total area S.F.

IMP - 11	Lot 34 - No Change from 24 lot project			
Basin No. 9.01		0.66 AC	28,727	Total area S.F.

IMP - 12	Removed Lot			
Basin No. N/A		0.00 AC	-	Total area S.F.

IMP - 13	Street Flow No Change from 24 lot project			
Basin No. 1.09		1.21 AC	52,799	Total area S.F.

IMP 13a		Lot 29 - New Basin						
Basin No. 1.09		0.52 AC		22,779		Total area S.F.		
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME : IMP 13a			IMP AREA
	5,273	House, Dwy	1	5,273	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA	
	0	Streets	1	0				
	17,506	LS / Agg	0.1	1,751				
Total	22,779		Total	7,024	0.04	281	590	
Composite Runoff Factor			31%					

IMP - 14	Street Flow No Change from 24 lot project			
Basin No. 1.09		1.21 AC	52,627	Total area S.F.

IMP - 15		Lot 26 - Revised Area						
Basin No. 1.09		1.04 AC		45,273		Total area S.F.		
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME : IMP - 15			IMP AREA
	9,325	House, Dwy	1	9,325	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA	
	0	Streets	1	0				
	35,948	LS / Agg	0.1	3,595				
Total	45,273		Total	12,920	0.04	517	1,085	
Composite Runoff Factor			29%					

IMP - 16		Lot 27 - Moved Bain and Revised Area						
Basin No. 1.09		0.75 AC		32,538		Total area S.F.		
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME : IMP - 16			IMP AREA
	12,571	House, Dwy	1	12,571	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA	
	0	Streets	1	0				
	19,967	LS / Agg	0.1	1,997				
Total	32,538	Total		14,568	0.04	583	1,224	
Composite Runoff Factor			45%					

IMP - 16a		Lot 28 - Added New Basin						
Basin No. 1.09		0.84 AC		36,592		Total area S.F.		
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME : IMP - 16a			IMP AREA
	6,025	House, Dwy	1	6,025	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA	
	0	Streets	1	0				
	30,567	LS / Agg	0.1	3,057				
Total	36,592	Total		9,082	0.04	363	763	
Composite Runoff Factor			25%					

IMP - 17 Removed lot and Basin								
Basin No. N/A		0.00 AC		-		Total area S.F.		

IMP - 18 Street Flow No Change from 24 lot project								
Basin No. 12.08		0.46 AC		19,954		Total area S.F.		

IMP - 19 Street Flow No Change from 24 lot project								
Basin No. 12.08		0.51 AC		22,283		Total area S.F.		

IMP - 20 Street Flow Lot 25 - No Change from 24 lot project								
Basin No. 12.06		2.70 AC		117,719		Total area S.F.		

IMP - 20a		Lot 23 & 24 - Added New Basin						
Basin No. 1.08		1.99 AC		86,780		Total area S.F.		
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME : IMP - 20a			IMP AREA
	14,951	House, Dwy	1	14,951	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA	
	0	Streets	1	0				
	71,829	LS / Agg	0.1	7,183				
Total	86,780	Total		22,134	0.04	885	1,859	
Composite Runoff Factor			26%					

IMP - 20b		Lot 23 & 24 Driveway and Added New Basin						
Basin No. 12.04		0.84 AC		36,726		Total area S.F.		
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME : IMP - 20b			IMP AREA
	14,539	House, Dwy	1	14,539	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA	
	0	Streets	1	0				
	22,187	LS / Agg	0.1	2,219				
Total	36,726	Total		16,757	0.04	670	1,408	
Composite Runoff Factor			46%					

IMP - 21	Street Flow	No Change from 24 lot project		
Basin No. 12.03	0.44 AC	19,166	Total area S.F.	

IMP - 21a		Lot 1 - Added New Basin					
Basin No. 12.03		0.82 AC		35,718 Total area S.F.			
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME : IMP - 21a		
	8,923	House, Dwy	1	8,923	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA
	0	Streets	1	0			
	26,796	LS / Agg	0.1	2,680			
Total	35,718		Total	11,602	0.04	464	975
Composite Runoff Factor			32%				
IMP AREA							

IMP - 22	Street Flow	No Change from 24 lot project		
Basin No. 12.02	0.63 AC	27,487	Total area S.F.	

IMP - 22a					Lot 2 - Added New Basin			
Basin No. 12.02		0.62 AC		26,932 Total area S.F.				
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME : IMP - 22a			IMP AREA
	7,140	House, Dwy	1	7,140	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA	
	0	Streets	1	0				
	19,792	LS / Agg	0.1	1,979				
Total	26,932		Total	9,119	0.04	365	766	
Composite Runoff Factor			34%					

IMP - 22b		Lot 3 - Added New Basin					
Basin No. 12.01		0.86 AC		37,558 Total area S.F.			
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME : IMP - 22b		
	9,158	House, Dwy	1	9,158	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA
	0	Streets	1	0			
	28,400	LS / Agg	0.1	2,840			
Total	37,558		Total	11,998	0.04	480	1,008
Composite Runoff Factor			32%				
IMP AREA							

IMP - 22c		Street Flow		Added New Basin				
Basin No. 12.01				0.39 AC	16,940	Total area S.F.		
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME : IMP - 22c			IMP AREA
	0	House, Dwy	1	0	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA	
	9,140	Streets	1	9,140				
	7,800	LS / Agg	0.1	780				
Total	16,940	Total		9,920	0.04	397	833	
Composite Runoff Factor			59%					

IMP - 23		Lot 22 - Moved and Resized Basin						
Basin No. 5.02		1.21 AC		52,911		Total area S.F.		
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME : IMP - 23			IMP AREA
	21,110	House, Dwy	1	21,110	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA	
	0	Streets	1	0				
	31,801	LS / Agg	0.1	3,180				
Total	52,911		Total	24,290	0.04	972	2,040	
Composite Runoff Factor			46%					

IMP - 23a					Lot 20 - 21 - Added New Basin			
Basin No. 1.07		1.82 AC		79,420 Total area S.F.				
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME : IMP - 23a			IMP AREA
	14,164	House, Dwy	1	14,164	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA	
	0	Streets	1	0				
	65,256	LS / Agg	0.1	6,526				
Total	79,420		Total	20,690	0.04	828	1,738	
Composite Runoff Factor			26%					

IMP - 23b								
Basin No. 5.02		Street Flow - Added New Basin						
		0.98 AC		42,757		Total area S.F.		
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME : IMP - 23b			IMP AREA
	0	House, Dwy	1	0	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA	
	24,575	Streets	1	24,575				
	18,182	LS / Agg	0.1	1,818				
Total	42,757		Total	26,393	0.04	1,056	2,217	
Composite Runoff Factor			62%					

IMP - 23c									
Street Flow - Added New Basin									
Basin No. 5.02		0.52 AC		22,652		Total area S.F.			
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME :		IMP - 23c		
	0	House, Dwy	1	0	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA		
	17,506	Streets	1	17,506					
	5,146	LS / Agg	0.1	515					
Total	22,652		Total	18,021	0.04		721	1,514	
Composite Runoff Factor			80%						
IMP AREA									

IMP - 23d										
Lot 19 and Driveway - Added New Basin										
Basin No. 5.02		0.57 AC 24,714 Total area S.F.								
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME :			IMP - 23d		
	15,768	House, Dwy	1	15,768	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA		IMP AREA	
	0	Streets	1	0						
	8,946	LS / Agg	0.1	895						
Total	24,714		Total	16,663	0.04	667	1,400			
Composite Runoff Factor			67%							

IMP - 24 Lot 19 - No Change from 24 lot project								
Basin No. 1.07		0.87 AC		37,683		Total area S.F.		

IMP - 25 Street Flow No Change from 24 lot project								
Basin No. 5.02		0.84 AC		36,692		Total area S.F.		

IMP - 25a								
Lot 18 and Driveway - Added New Basin								
Basin No. 5.02		0.47 AC		20,584		Total area S.F.		
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME : IMP - 25a			IMP AREA
	4,918	House, Dwy	1	4,918	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA	
	0	Streets	1	0				
	15,666	LS / Agg	0.1	1,567				
Total	20,584		Total	6,485	0.04	259	545	
Composite Runoff Factor			32%					

IMP - 26d		Lot 7 - New basin							
Basin No. 5.02		0.68 AC		29,718		Total area S.F.			
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR					
					SOIL TYPE: IMP NAME : IMP - 26d				
	6,825	House, Dwy	1	6,825	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA	IMP AREA	
	0	Streets	1	0					
	22,893	LS / Agg	0.1	2,289					
Total	29,718		Total	9,114	0.04	365	766		
Composite Runoff Factor 21%									

IMP - 27 Street Flow Lot 4 - 5 Revised Size & Added IMP's up stream									
Basin No. 12.01		2.50 AC		108,809		Total area S.F.			
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME : IMP - 27				
	21,744	House, Dwy	1	21,744	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA	IMP AREA	
	27,213	Streets	1	27,213					
	59,852	LS / Agg	0.1	5,985					
Total	108,809		Total	54,942	0.04	2,198	4,615		
Composite Runoff Factor			50%						

IMP - 27a									
Lot 6 - New Basin									
Basin No. 12.01		0.83 AC		36,294		Total area S.F.			
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME : IMP - 27a			IMP AREA	
	9,831	House, Dwy	1	9,831	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA		
	0	Streets	1	0					
	26,463	LS / Agg	0.1	2,646					
Total	36,294		Total	12,477	0.04	499	1,048		
Composite Runoff Factor			34%						

IMP - 28 Street Flow No Change from 24 lot project									
Basin No. 4.05		2.30 AC		100,200		Total area S.F.			

IMP - 29 Street Flow Lot 12 - No Change from 24 lot project									
Basin No. 4.02		1.95 AC		84,973		Total area S.F.			

IMP - 29a					Lot 13 - New Basin				
Basin No. 4.03		1.13 AC		49,371		Total area S.F.			
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME : IMP - 29a			IMP AREA	
	18,641	House, Dwy	1	18,641	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA		
	0	Streets	1	0					
	30,730	LS / Agg	0.1	3,073					
Total	49,371	Total		21,714	0.04	869	1,824		
Composite Runoff Factor			44%						

IMP - 29b									
Lot 14 - New Basin									
Basin No. 4.03		0.65 AC		28,364		Total area S.F.			
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME : IMP - 29b			IMP AREA	
	4,755	House, Dwy	1	4,755	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA		
	0	Streets	1	0					
	23,609	LS / Agg	0.1	2,361					
Total	28,364	Total		7,116	0.04	285	598		
Composite Runoff Factor			25%						

IMP - 30 Street Flow No Change from 24 lot project									
Basin No. 1.05		0.54 AC		23,415		Total area S.F.			

IMP - 31 Street Flow No Change from 24 lot project									
Basin No. 1.05		1.25 AC		54,391		Total area S.F.			

IMP - 32									
Lot 15 - 16 - Increased Area									
Basin No. 1.06		1.75 AC		76,029		Total area S.F.			
DMA NAME	DMA AREA (SF)	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	SOIL TYPE: IMP NAME :			IMP - 32	
	24,178	House, Dwy	1	24,178	IMP SIZING FACTOR	MINIMUM AREA	Hydro-Mod PROPOSED AREA		
	0	Streets	1	0					
	51,851	LS / Agg	0.1	5,185					
Total	76,029		Total	29,363	0.04	1,175	2,467		
IMP AREA									