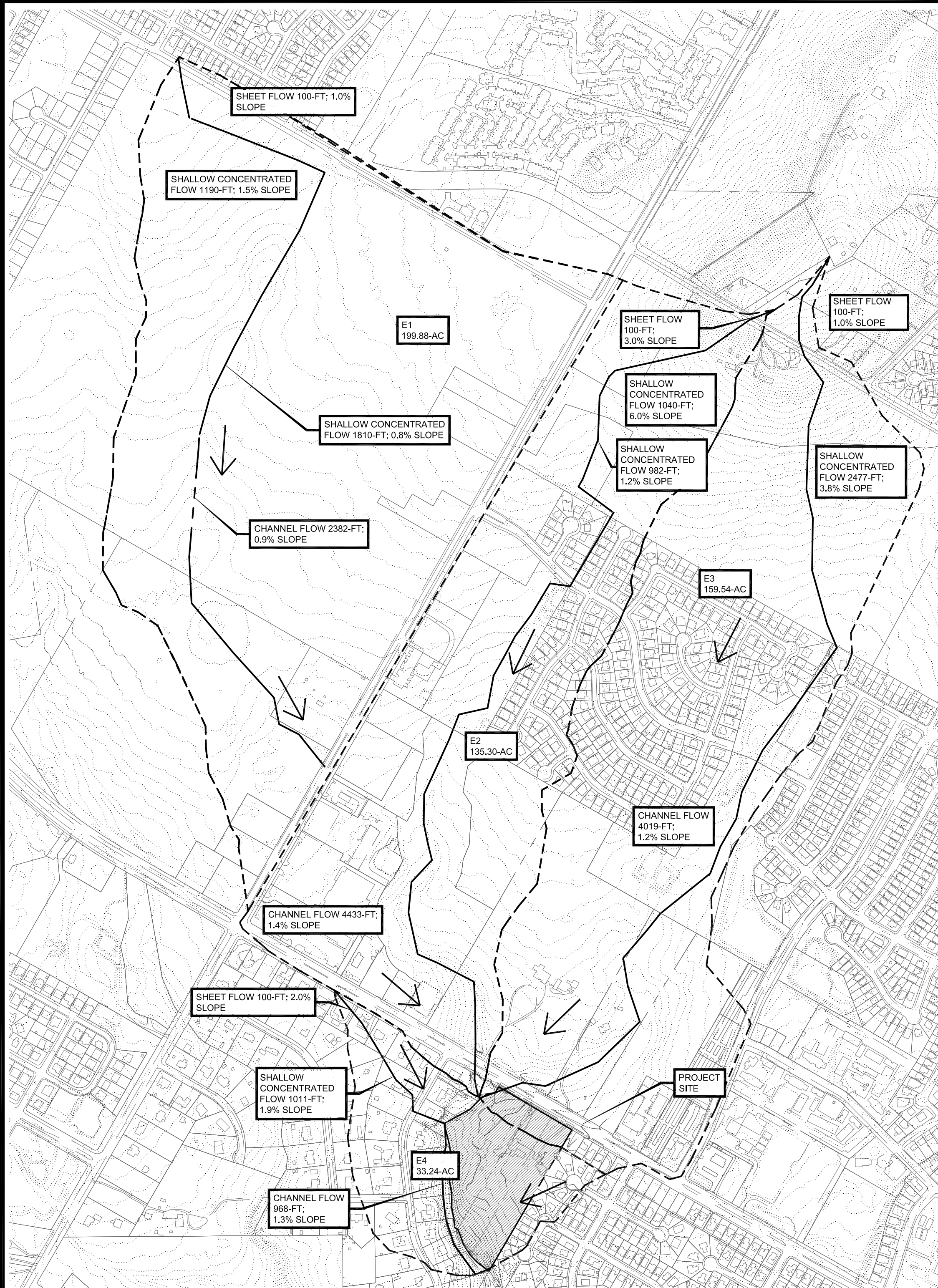




1 DRAINAGE AREAS TO CREEK
SCALE: 1" = 500'

SUMMARY of the Hydrologic Computations (Using the SCS Method)
Project: Parkside - Slaughter Campus

Hydrologic Element	Drain Area (MI2)	2-yr Peak Disch (CFS)	10-yr Peak Disch (CFS)	25-yr Peak Disch (CFS)	100-yr Peak Disch (CFS)	Notes
Existing Discharges						
E1	0.3120	165.20	363.40	483.80	688.00	
E2	0.2114	133.20	286.40	378.30	532.10	
E3	0.2493	146.00	317.80	421.40	596.70	
E4	0.0519	47.80	101.20	133.00	186.00	
E-POA	0.8246	458.30	998.80	1331.60	1882.80	

SUMMARY of the Hydraulic Computations (Using HEC-RAS v.4.1)
Project: Parkside - Slaughter Campus
Profile: 100 Year

River Sta	Q Total (CFS)	Min Ch El (CFS)	W.S. Elev (FT)	Crit W.S. (FT)	E.G. Elev (FT)	E.G. Slope (FT/FT)	Vel Chrl (FT/S)	Flow Area (FT2)	Top Width (FT)	Froude # Chl
1347	1800	733.80	738.78		739.26	0.011	5.78	383.10	137.61	0.50
902.5	1900	729.20	734.46		734.94	0.011	5.75	409.15	145.03	0.50
591	1900	724.00	729.95		730.77	0.015	7.37	294.10	84.34	0.59
100	1900	716.70	723.42	721.87	724.21	0.013	7.27	300.52	77.41	0.56

DETERMINING THE TIME OF CONCENTRATION CALCULATIONS USING THE SOIL CONSERVATION SERVICE (SCS) METHOD
Project: Parkside - Slaughter Campus

INPUT PARAMETERS

A) Rainfall Volumes - See US Weather Bureau Technical Paper 40
3.44 2-year, 24-hour Rainfall "P2" (inches)

B) Watershed Factors (excluding any upstream area as noted)

A Sheet Flow (flow depth to 0.1 ft per SCS TR-55, p.3-3 (June 1986))

	E1	E2	E3	E4		
Reach 1	0.15	0.15	0.150	0.150	(n1)	Manning's "n"
	100	100	100	100	(L1)	Length, ft
	0.010	0.030	0.010	0.020	(s1)	Slope, ft/ft
Reach 2	0.20	0.20	0.20	0.20	(n1)	Manning's "n"
	0	0	0	0	(L1)	Length, ft
	0.050	0.050	0.050	0.050	(s1)	Slope, ft/ft

B Shallow Concentrated Flow (R of 0.2 to 0.4 per SCS TR-55, Appendix F (June 1986))

	N	N	N	N		
Reach 1	1190	1040	2477	1011	(L2)	Paved? (Y or N)
	0.015	0.062	0.038	0.019	(s2)	Slope, ft/ft
Reach 2	N	N	N	N		Paved? (Y or N)
	1810	982.000	0	0	(L2)	Length, ft
	0.008	0.012	0.076	0.050	(s2)	Slope, ft/ft

C Channel Flow

	1.9	2.3	2.1	2.2		
	0.009	0.014	0.012	0.013	(V3)	Velocity (ft/s)
	2382	4433	4019	968	(s3)	Slope, ft/ft
					(L3)	Length, ft

RESULTS

	E1	T2	E3	E4		
	12.5	8.0	12.5	9.4	min (Tc-1a)	
	0.0	0.0	0.0	0.0	min (Tc-1b)	
	2.0	4.0	3.2	2.2	V-2a (fps)	
	10.0	4.3	13.1	7.7	min (Tc-2a)	
	1.4	1.8	4.4	3.6	V-2b (fps)	
	21.3	9.2	0.0	0.0	min (Tc-2b)	
	21.3	32.3	31.7	7.2	min = Channel Tc (Tc-3)	
	65.1	53.8	57.2	24.3	Total (min)	
	65.1	53.8	57.2	24.3	Total Used (min)	
	39.1	32.3	34.3	14.6	Lag for HEC-HMS	
	11.3	9.4	10.0	4.2	Min Modeling Increment	

Equations:
Tc1 = 0.007 * (L1 * n1)^0.8 / (P2^0.5 * s1^0.4) in hours
Tc2 = L / V where, per Appendix F V = 16.1345(s)^0.5 (unpaved) or V = 20.3282(s)^0.5 (paved)
Tc3 = L3 / (V3) where, V either assumed or = 1.2*16.1345(s)^0.5 like Tc2 but w/ 20% increase for channel efficiency

07-Feb
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SCS RUN-OFF CURVE NUMBER CALCULATIONS
Project: PARKSIDE-SLAUGHTER CAMPUS

(1) CN Coef	(2) E1 (Ac)	(3) CN*Ac	(4) E2 (Ac)	(5) CN*Ac	(6) E3 (Ac)	(7) CN*Ac	(8) E4 (Ac)	(9) CN*Ac
[From Table 2-2a								
[Pasture/Open Space (Lawns, Parks, etc.)								
- Good Condition (>75% grass)								
A Soils	39	0.00	0.0	0.00	0.0	0.00	0.0	0.00
B Soils	61	0.00	0.0	0.00	0.0	0.00	0.0	0.00
C Soils	74	0.00	0.0	0.00	0.0	0.00	0.0	0.00
D Soils	80	127.05	10163.7	10.37	823.7	14.78	1182.3	0.00
- Fair Condition (50%-75% gr)								
A Soils	49	0.00	0.0	0.00	0.0	0.00	0.0	0.00
B Soils	69	0.00	0.0	0.00	0.0	0.00	0.0	0.00
C Soils	79	0.00	0.0	0.00	0.0	0.00	0.0	0.00
D Soils	84	0.00	0.0	0.00	0.0	0.00	0.0	0.00
- Poor Condition (<50% grass)								
A Soils	68	0.00	0.0	0.00	0.0	0.00	0.0	0.00
B Soils	79	0.00	0.0	0.00	0.0	0.00	0.0	0.00
C Soils	86	0.00	0.0	0.00	0.0	0.00	0.0	0.00
D Soils	89	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Woody-Good								
A Soils	30	0.00	0.0	0.00	0.0	0.00	0.0	0.00
B Soils	55	0.00	0.0	0.00	0.0	0.00	0.0	0.00
C Soils	70	0.00	0.0	0.00	0.0	0.00	0.0	0.00
D Soils	77	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Brush-Good								
A Soils	30	0.00	0.0	0.00	0.0	0.00	0.0	0.00
B Soils	48	0.00	0.0	0.00	0.0	0.00	0.0	0.00
C Soils	65	0.00	0.0	0.00	0.0	0.00	0.0	0.00
D Soils	73	58.17	4246.7	71.08	5189.1	80.77	5896.4	6.45
Impervious Areas (excl ROW)								
All Soils	98	0.00	0.0	16.87	1653.4	2.82	276.2	0.00
Commercial (Impervious 85%)								
A Soils	89	0.00	0.0	0.00	0.0	0.00	0.0	0.00
B Soils	92	0.00	0.0	0.00	0.0	0.00	0.0	0.00
C Soils	94	0.00	0.0	0.00	0.0	0.00	0.0	0.00
D Soils	95	10.21	970.2	18.02	1711.5	3.47	329.9	3.96
Industrial (Impervious 72%)								
A Soils	81	0.00	0.0	0.00	0.0	0.00	0.0	0.00
B Soils	88	0.00	0.0	0.00	0.0	0.00	0.0	0.00
C Soils	91	0.00	0.0	0.00	0.0	0.00	0.0	0.00
D Soils	93	4.45	414.0	2.18	203.1	4.13	384.0	0.00
Residential (1/8 acre or less-impervious 65%)								
A Soils	77	0.00	0.0	0.00	0.0	0.00	0.0	0.00
B Soils	85	0.00	0.0	0.00	0.0	0.00	0.0	0.00
C Soils	90	0.00	0.0	0.00	0.0	0.00	0.0	0.00
D Soils	92	0.00	0.0	0.00	0.0	10.20	938.2	0.00
Residential (1/4 acre-impervious 38%)								
A Soils	61	0.00	0.0	0.00	0.0	0.00	0.0	0.00
B Soils	75	0.00	0.0	0.00	0.0	0.00	0.0	0.00
C Soils	83	0.00	0.0	0.00	0.0	0.00	0.0	0.00
D Soils	87	0.00	0.0	16.78	1459.7	43.37	3773.1	0.00
Residential (1-impervious 20%)								
A Soils	51	0.00	0.0	0.00	0.0	0.00	0.0	0.00
B Soils	68	0.00	0.0	0.00	0.0	0.00	0.0	0.00
C Soils	79	0.00	0.0	0.00	0.0	0.00	0.0	0.00
D Soils	84	0.00	0.0	0.00	0.0	0.00	22.93	1926.2
Total Area (sq mi)								
Composite "C"		199.88	15794.6	135.30	11046.5	159.54	12780.1	33.24
		0.3123	79.02	0.2114	81.64	0.2493	80.11	2763.8

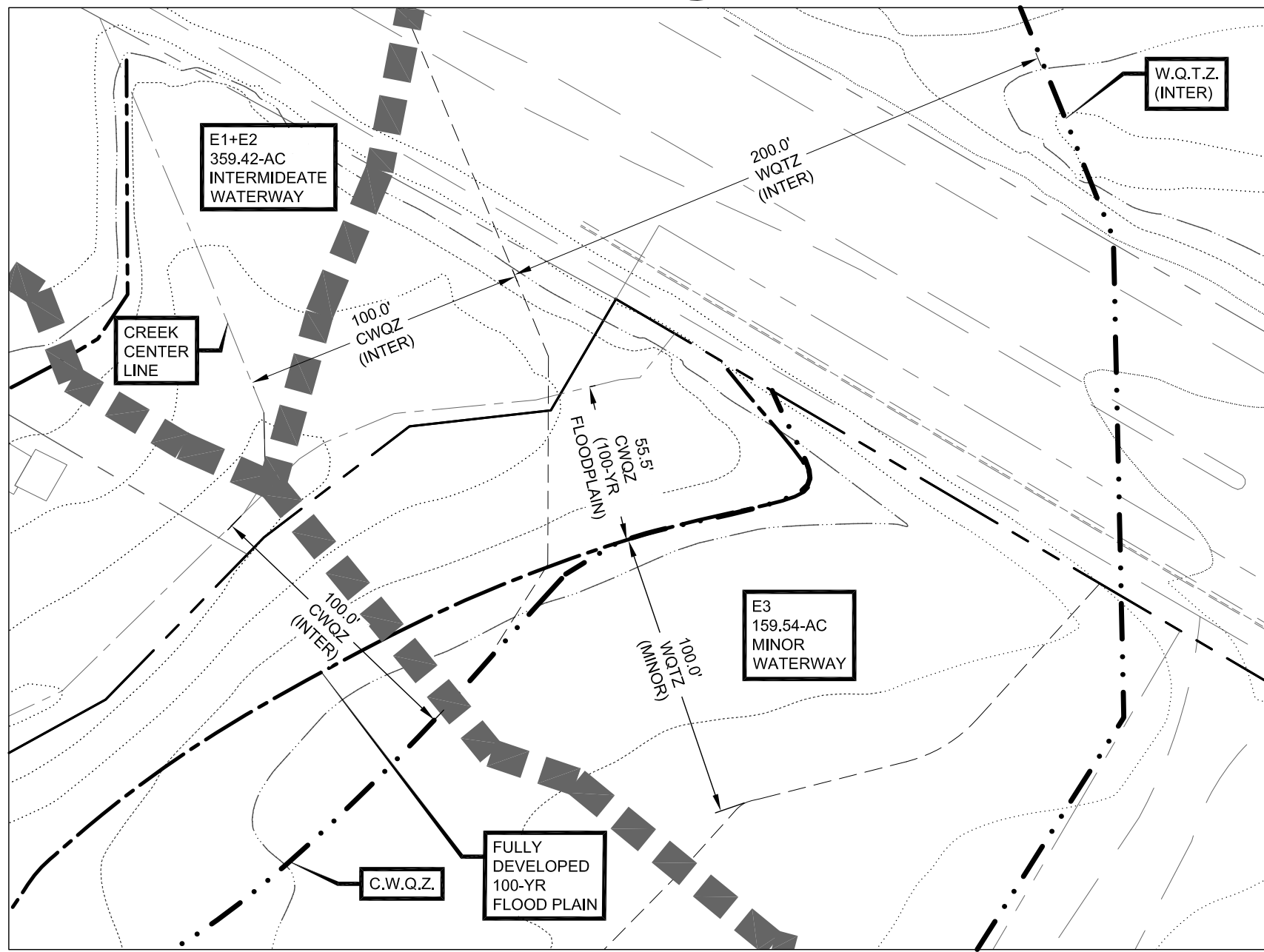
Percent IC

0.0% 12.5% 1.8%

Notes:
1) From Tables in 1986 TR-55 Manual by Soil Conservation Service.
2) Based on existing per GIS. Amount of D soils from WSS web site.



2 FLOODPLAIN CROSS SECTIONS
SCALE: 1" = 100'



3 WQZ DETERMINATION AT CREEK JUNCTION
SCALE: 1" = 50'

5/21/14

SCALE: 1" = 100'

SITE PLAN RELEASE

SITE PLAN APPROVAL SHEET 23 OF 30

FILE NUMBER: SP-2014-0074C APPLICATION DATE: _____

APPROVED BY COMMISSION ON _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.

EXP. DATE (25-5-81, LDC) _____ CASE MGR. _____

PROJECT EXP. DATE (ORD.#970905-A) _____ DWPZ _____ DDZ _____

Director, Planning and Development Review Dept.

RELEASED FOR GEN. COMPLIANCE: _____ ZONING: _____

REV. 1 _____ CORRECTION 1 _____

REV. 2 _____ CORRECTION 2 _____

REV. 3 _____ CORRECTION 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE. IF APPLICABLE, SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN APPROVING THESE PLANS, THE CITY OF AUSTIN MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER.

SP-2014-0074C