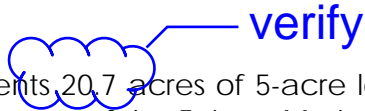


5.0 EXISTING CONDITION HYDROLOGY SUMMARY

In addition to the DBPS, a site specific analysis of the existing conditions was completed. The flows determined by the DBPS for the creek tributary entering the site from the north, were used in combination with rational method analysis for the surrounding onsite/offsite flows.

 verify

O1 represents 20.7 acres of 5-acre lots to the north of the Courtyards at Woodmen Hills West, northwest of the Falcon Marketplace site. A swale along the northern boundary of the Courtyards at Woodmen Hills West development is proposed to capture runoff from the north. Runoff rates of $Q_5=6.6$ cfs and $Q_{100}=19.4$ cfs discharge on to the northwest corner of the Falcon Marketplace site. This flow is to be routed into the proposed pond SR4.

O1A represents the easterly boundary of the Courtyards at Woodmen Hills West and is currently graded to discharge to the east, onto the Falcon Marketplace site as overland flow.

Basin O2 covers the westerly lanes of Meridian Road that discharge into a roadside swale and travel southerly towards a curb cut. The curb cut discharges into the SE corner of the Falcon Marketplace site.

Existing storm sewer infrastructure in the median of Meridian Road was identified as part of this project. Currently, flows generated in the Meridian Road median travel in open landscaped swales, and culverts under roadway intersections, from Woodmen Hills Road to approximately 500 ft north of E. Woodmen Road. The flow approaching E. Woodmen Road is intercepted by a Type D inlet and piped to the south.

Basin O3 generates flows along E. Woodmen Road adjacent to the Falcon Marketplace project site, and from a high point approximately 500 ft to the west, traveling easterly via roadside ditch towards the existing triple 48" culverts.

Existing Design Point 1 combines the flows, to result in $Q_5=196.7$ cfs and $Q_{100}=780.4$ cfs culminating at the existing triple 48" culverts under E. Woodmen Road. This value is comparable to the DBPS determined $Q_{100}=757$ cfs determined for the same location.

The two sets of existing triple 48" RCP culverts discharge to the south across E. Woodmen Road, into an existing storm sewer system. A Type D grate inlet in the median of E. Woodmen Road intercepts median flows and also discharges to the south.

PROJECT INFORMATION

PROJECT: Falcon Marketplace
 PROJECT NO: 20988-00CSCV
 DESIGN BY: KGV
 REV. BY: TDM
 AGENCY: El Paso County
 REPORT TYPE: Preliminary
 DATE: 8/31/2018



Drexel, Barrell & Co.

verify

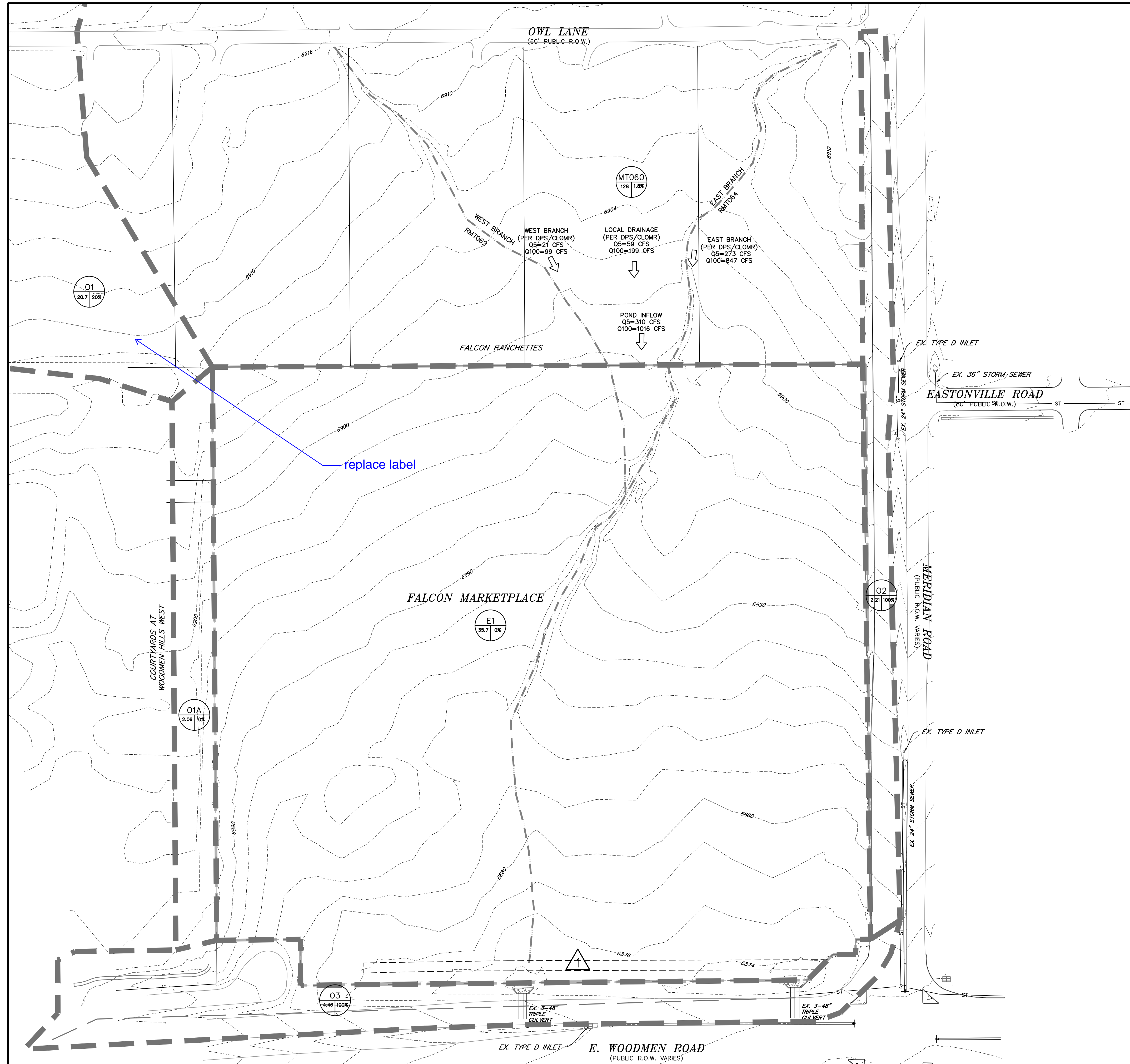
	C2*	C5*	C10*	C100*	% IMPERV
Commercial Development		0.81		0.88	95
5-acre residential		0.20		0.35	20
Open Space		0.08		0.35	0
Asphalt Roadway		0.90		0.96	100

*C-Values and Basin Imperviousness based on Table 5-1, City of Colorado Springs and El Paso County "Drainage Criteria Manual"

SUB-BASIN	SURFACE DESIGNATION	AREA ACRE	COMPOSITE RUNOFF COEFFICIENTS				% IMPERV
			C2	C5	C10	C100	
O1	Commercial Development	0.00		0.81		0.88	95
	5-acre residential	20.70		0.20		0.35	20
	Asphalt Roadway	0.00		0.90		0.96	100
TOTAL O1	WEIGHTED AVERAGE	20.70		0.20		0.35	20
O1A	Commercial Development	0.00		0.81		0.88	95
	Open Space	2.06		0.08		0.35	0
	Asphalt Roadway	0.00		0.90		0.96	100
TOTAL O1A	WEIGHTED AVERAGE	2.06		0.08		0.35	0
O2	Commercial Development	0.00		0.81		0.88	95
	Open Space	0.00		0.08		0.35	0
	Asphalt Roadway	2.21		0.90		0.96	100
TOTAL O2	WEIGHTED AVERAGE	2.21		0.90		0.96	100
O3	Commercial Development	0.00		0.81		0.88	95
	Open Space	0.00		0.08		0.35	0
	Asphalt Roadway	4.46		0.90		0.96	100
TOTAL O3	WEIGHTED AVERAGE	4.46		0.90		0.96	100
E1	Commercial Development	0.00		0.81		0.88	95
	Open Space	35.70		0.08		0.35	0
	Asphalt Roadway	0.00		0.90		0.96	100
TOTAL E1	WEIGHTED AVERAGE	35.70		0.08		0.35	0

Show and label all offsite sub-basins.

Show existing FEMA floodplain and DBPS floodplain.



LEGEND

PROPERTY LINE - - - - -

EX. MINOR CONTOUR - - - - -

EX. MAJOR CONTOUR - - - - - 6800

BASIN BOUNDARY - - - - -

FLOW DIRECTION - - - - -

DESIGN POINT (X)

BASIN DESCRIPTION:

BASIN AREA (ACRES) (X)

IMPERVIOUS COVERAGE PERCENTAGE (X)

North Arrow

Scale: 1"=100'

100 0 100 200

RUNOFF SUMMARY

BASIN	Area (Ac.)	Q ₅ (CFS)	Q ₁₀₀ (CFS)
O1	20.70	6.6	19.4
O1A	2.06	0.7	4.9
O2	2.21	6.7	12.0
O3	4.46	14.2	25.4
E1	35.70	6.3	46.3
DBPS (N)		310.0	1016.0
DP1		344.4	1124.0

PREPARED BY:

DREXEL, BARRELL & CO.
Engineers-Surveyors
3 SOUTH 7TH STREET
COLORADO SPGS, COLORADO 80905
CONTACT: TIM D. McCONNELL, P.E.
(719)260-0887
BOULDER • COLORADO SPRINGS

CLIENT:

HUMMEL INVESTMENTS, LLC
8117 PRESTON ROAD, SUITE 120
DALLAS, TEXAS 75225
(214) 416-9820

PRELIMINARY PLAN FOR

FALCON MARKETPLACE

FALCON, COLORADO

ISSUE	DATE
INITIAL ISSUE	3-23-17
REVISION	8-31-18

DESIGNED BY: TDM
DRAWN BY: KGV
CHECKED BY: TDM
FILE NAME:

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF DREXEL, BARRELL & CO.

DRAWING SCALE:
HORIZONTAL: 1"=100'
VERTICAL: N/A

EXISTING DRAINAGE CONDITIONS

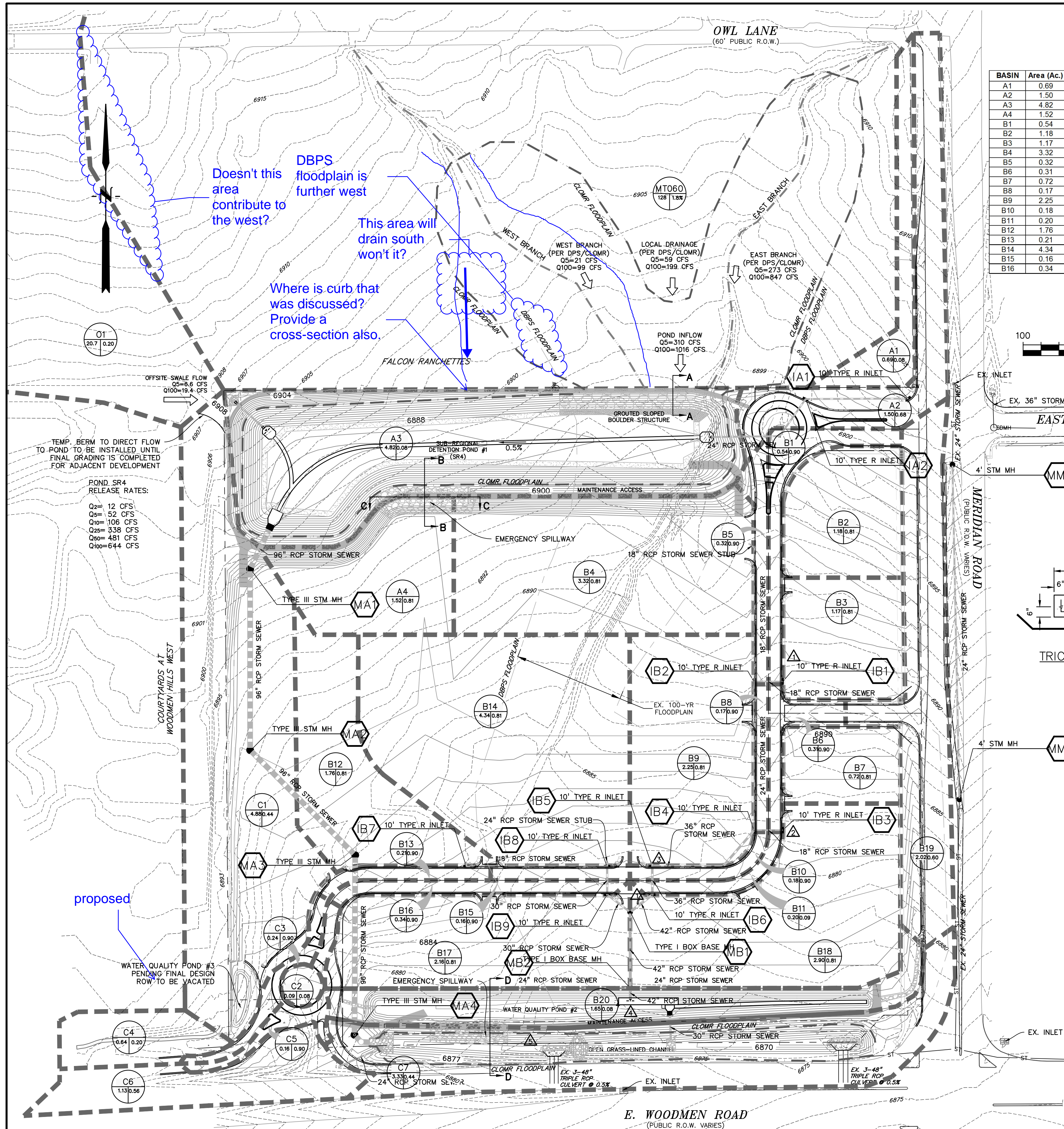
PROJECT NO. 20988-00CSCV
DRAWING NO.

ED-1

SHEET: 1 OF 1

Show and label all offsite design points and sub-basins.

Provide calculations showing width and depth of flows entering pond at all applicable locations.

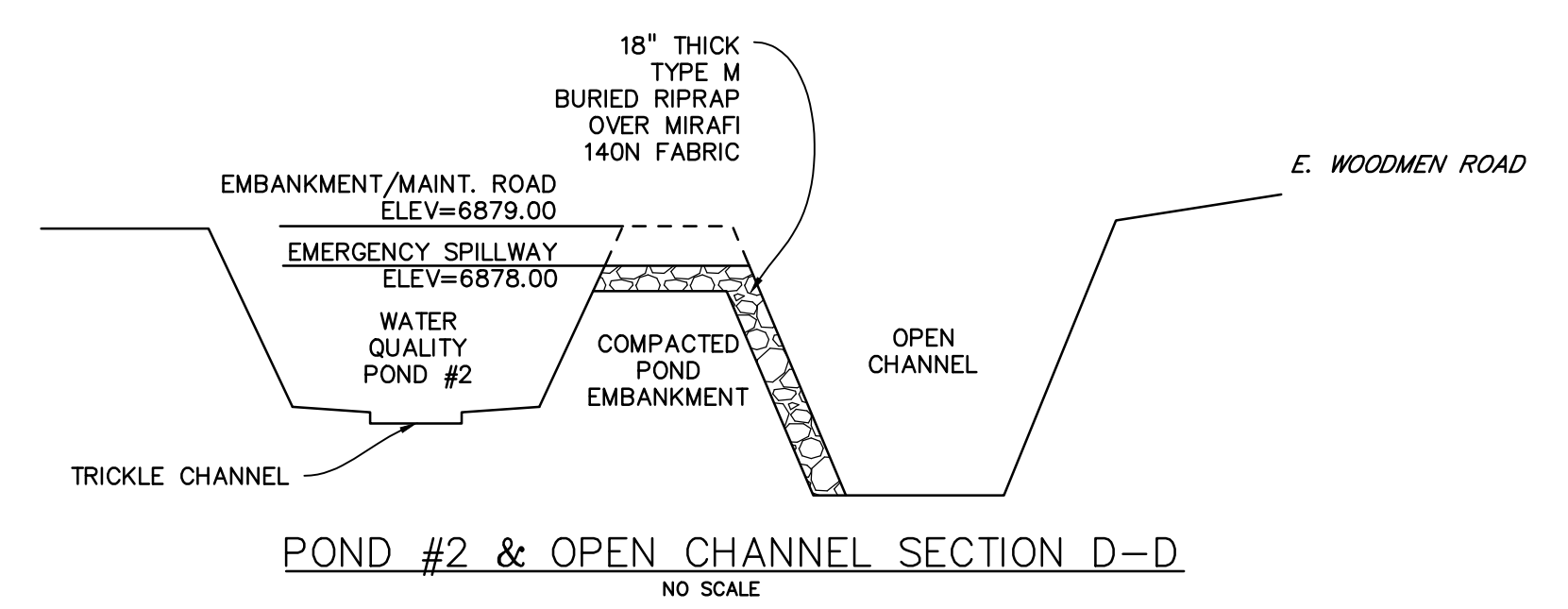
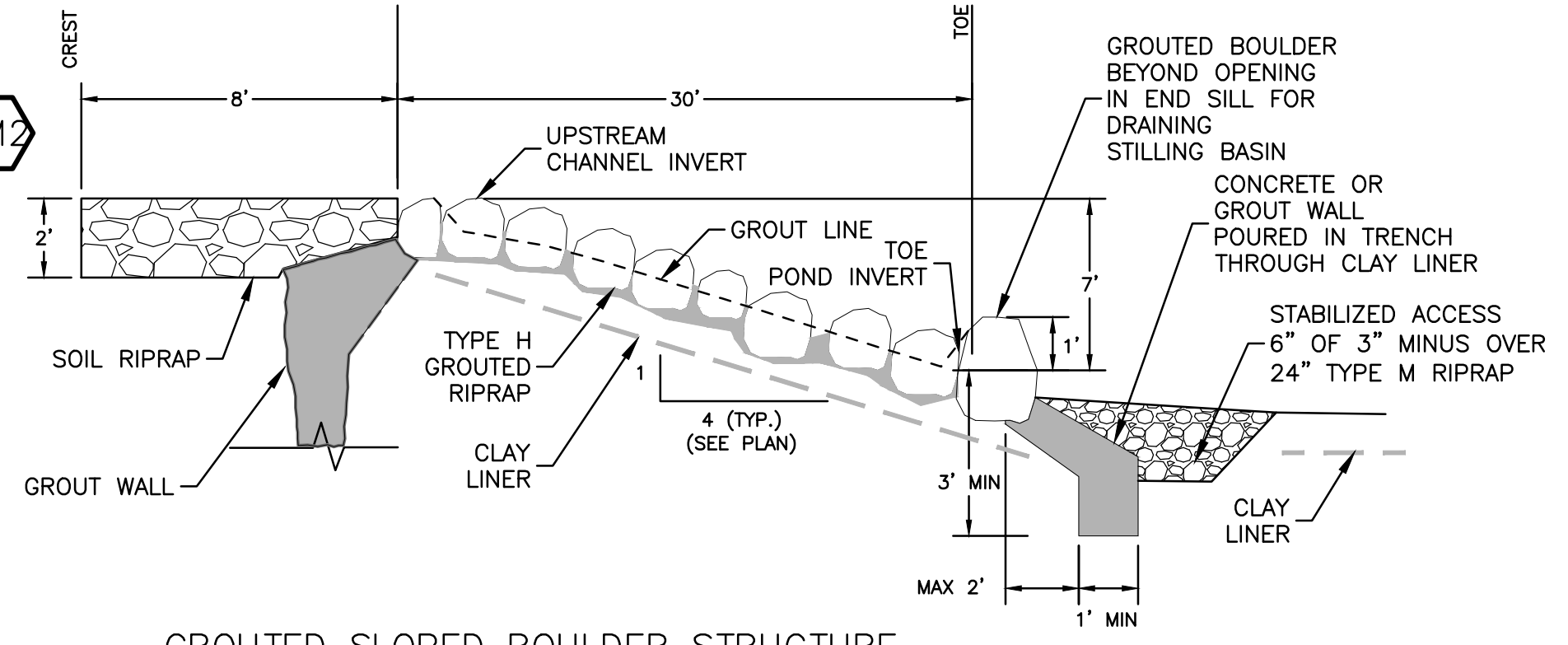
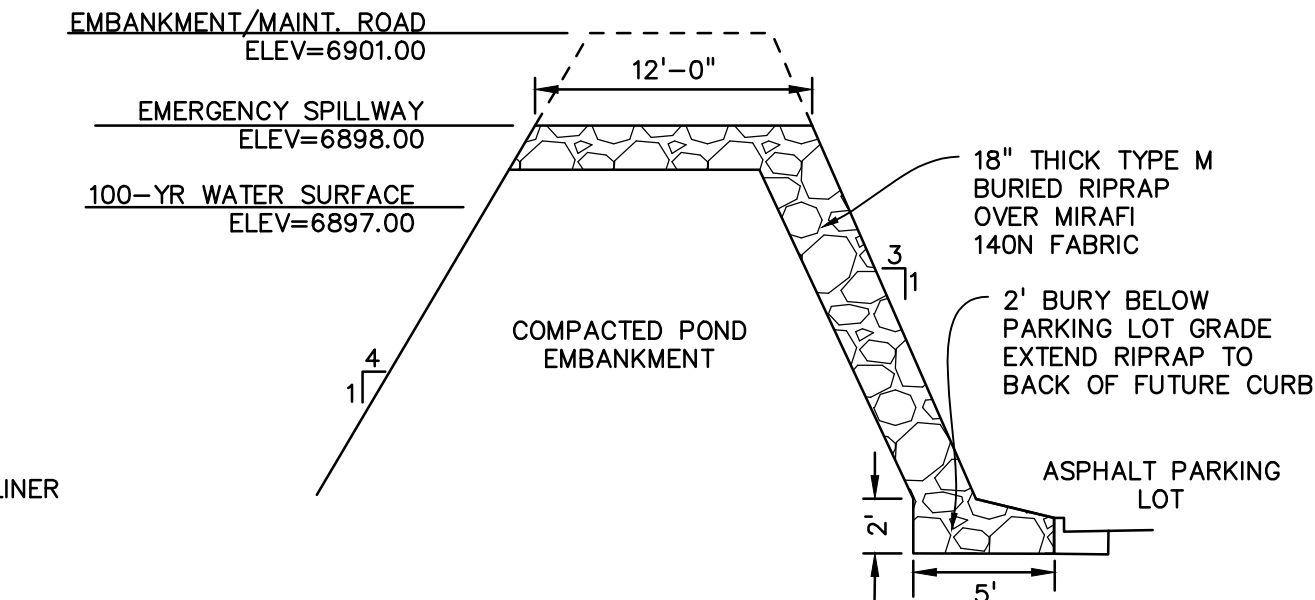
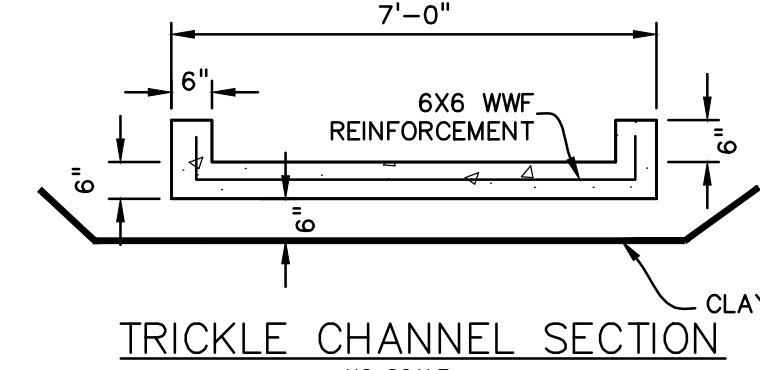
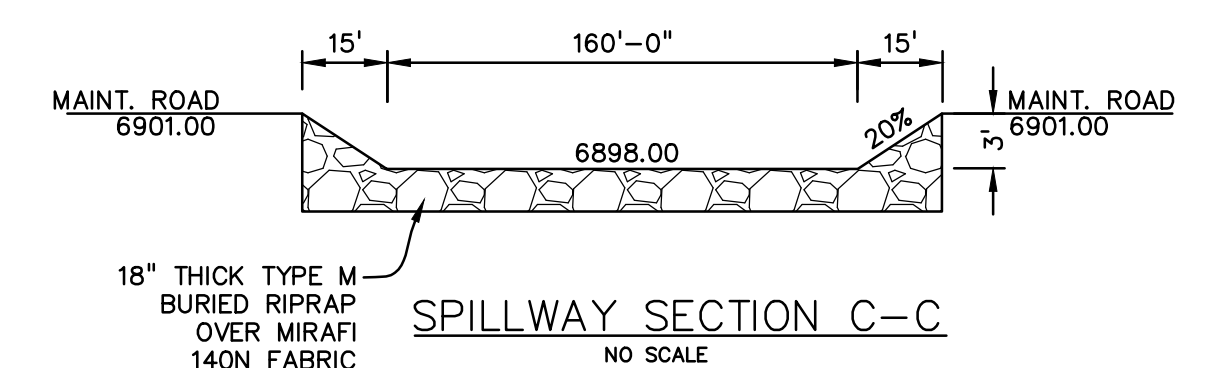
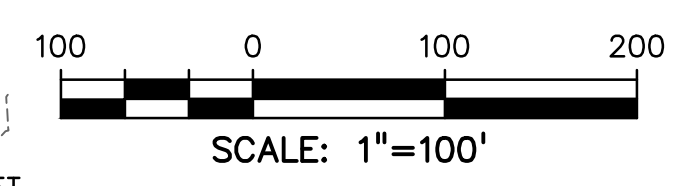
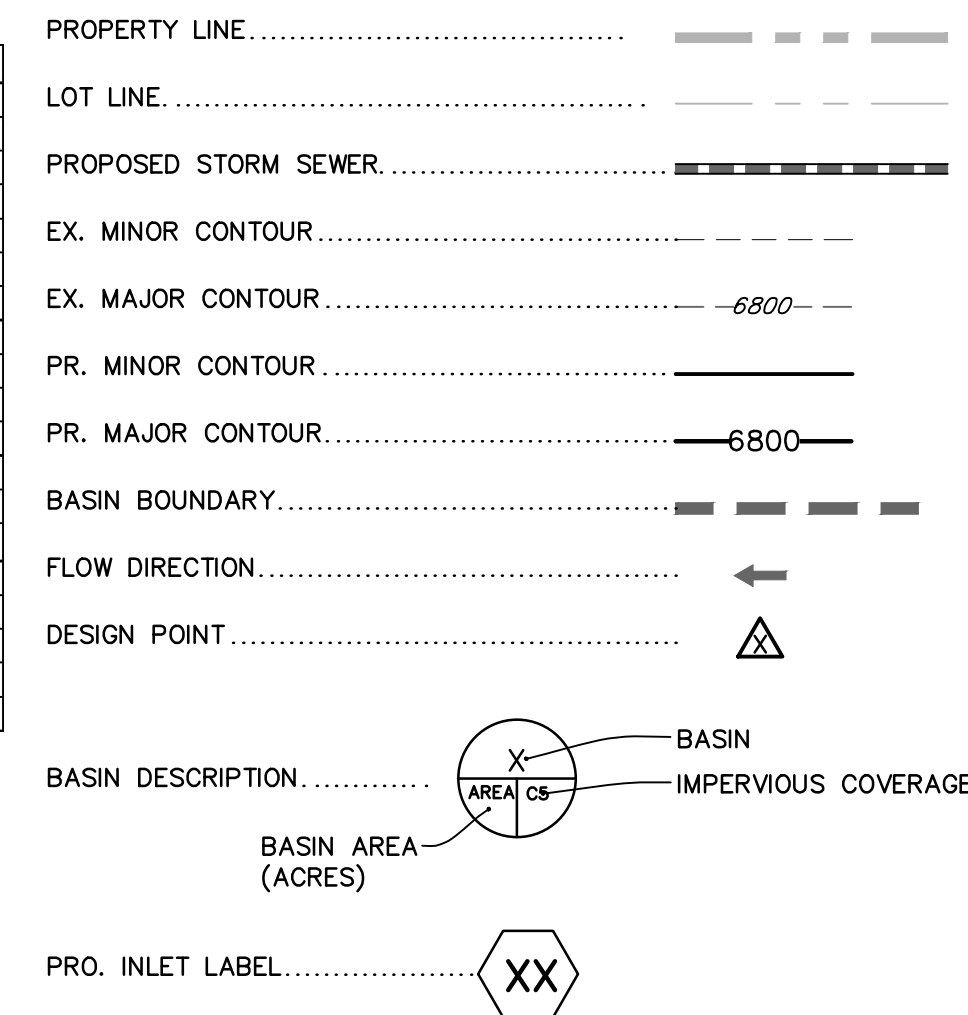


RUNOFF SUMMARY

BASIN	Area (Ac.)	Q ₂ (CFS)	Q ₁₀₀ (CFS)	BASIN	Area (Ac.)	Q ₂ (CFS)	Q ₁₀₀ (CFS)
A1	0.89	0.2	1.4	B17	2.16	8.9	16.2
A2	1.50	5.2	10.2	B18	2.90	11.3	20.7
A3	4.82	1.2	8.8	B19	2.02	5.4	11.1
A4	1.52	5.6	10.2	B20	1.65	0.4	3.3
B1	0.54	2.4	4.3	C1	4.88	8.2	19.1
B2	1.18	4.9	8.9	C2	0.24	1.1	2.0
B3	1.17	4.3	7.9	C3	0.64	0.5	1.7
B4	3.32	9.6	17.6	C4	0.09	0.0	0.2
B5	0.32	1.5	2.6	C5	0.12	0.5	1.0
B6	0.31	1.4	2.5	C6	0.16	0.7	1.3
B7	0.72	3.0	5.4	C7	1.13	2.9	6.1
B8	0.17	0.8	1.4	C8	3.33	5.0	11.8
B9	2.25	8.8	16.1				
B10	0.18	0.8	1.5				
B11	0.20	0.9	1.6				
B12	1.76	6.1	11.2				
B13	0.21	1.0	1.7				
B14	4.34	16.2	29.6				
B15	0.16	0.7	1.3				
B16	0.34	1.5	2.6				

DP	Area (Ac.)	Q ₂ (CFS)	Q ₁₀₀ (CFS)
DP1	2.89	10.9	19.8
DP2	1.03	4.4	8.0
DP3	2.43	9.6	16.1
DP4	25.90	66.3	124.3
DP5	45.02	-	754.0

LEGEND



PREPARED BY:

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PRELIMINARY PLAN FOR
FALCON MARKETPLACE
 FALCON, COLORADO

ISSUE	DATE
INITIAL ISSUE	1-17-17
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DESIGNED BY: TDM
 DRAWN BY: KGV
 CHECKED BY: TDM
 FILE NAME:

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF DREXEL, BARRELL & CO.
 DRAWING SCALE:
 HORIZONTAL: 1"=100'
 VERTICAL: N/A

PROPOSED DRAINAGE CONDITIONS

PROJECT NO. 20988-00CSCV
 DRAWING NO.

D-1

SHEET: 1 OF 1