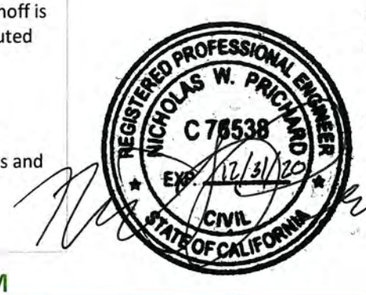
STORM DRAIN HYDRAULIC ANALYSIS
GOLDEN HILLS ROAD AND SURROUNDING SUBDIVISION - PRE BROAD MEADOWS CONNECTION

From meetings with the City of Sutter Creek in regards to the buildout of 10 lots along the north side of Broad Meadows, a modification to the existing storm drainage system is required. Currently, the cul-de-sac at the end of Broad Meadows Court collects the runoff from the south hill side, residential lots, and the paved roadway. This storm runoff is collected by two catch basins that covey the water to the north and discharge it into the neighbors property. The City is requiring that the collected storm water be re-routed into the existing underground storm conveyance system located in Golden Hills Drive. The below hydraulic analysis shows the pre and post Broad Meadows cul-de-sac connection with both 10 and 100 year storm intensity, per Sutter Creek Improvement Standards (1993).

The drainage system information was provided by the As-built drawings for the Golden Hills Estates (dated 12/16/05). The C value used in the calculations are based on a weighted average of roadway hardscape (C=95) and rural residential (C-50). The time of concentration is based on an average travel time of runoff going through tall grass and mild slope Storm intensity is based on the Sutter Creek Rain Fall Intensity Chart SD-4.



Address: Broad Meadows Drive, Sutter Creek, CA
Owner: Stan Gamble / Dave Mabrey
Engineer: Nick Prichard, Giuliani & Kull, Inc.
RCE: 76538
Date: 1/27/2020

STORM DRAINAGE SYSTEM BASED ON A 10 YEAR STORM

HYDROLOGY												CAPACITY						
UP STREAM STRUCTURE	DOWN STREAM STRUCTURE	AREA ID	DRAINAGE AREA	ACRES	RUNOFF COEFF	CxA	SUM ACRES	Tc (MIN)	RAINFALL (IN/HR)	Q=CIA (CFS)	TOTAL Q (CFS)	PIPE DIA (INCHES)	PIPE AREA (SQ FT)	WETTED PERIM (FT)	PIPE SLOPE (FT/FT)	PIPE CAP (CFS) MAX	PIPE CAP (CFS) DESIGN	DESIGN LESS THAN MAX CAPACITY
SDCB-A1	OUTFALL	I	87,296	2.00	0.59	1.18	17.96	15.00	1.90	2.25	20.30	30.00	4.91	7.85	0.010	48.58	20.30	TRUE
SDCB-A3	SDCB-A1	H	136,647	3.14	0.57	1.79	15.96	15.00	1.90	3.40	18.05	24.00	3.14	6.28	0.064	67.78	18.05	TRUE
SDMH-A1	SDCB-A3	A+B+C+D+G	558,464	12.82			12.82				14.65	24.00	3.14	6.28	0.122	93.43	14.65	TRUE
SDCB-B8	SDMH-A1	G	95,852	2.20	0.60	1.32	2.20	15.00	1.90	2.51	2.51	12.00	0.79	3.14	0.010	4.22	2.51	TRUE
SDCB-A5	SDMH-A1	E	133,622	3.07	0.57	1.75	6.45	15.00	1.90	3.32	7.31	18.00	1.77	4.71	0.070	32.92	7.31	TRUE
SDCB-A7	SDCB-A5	D	147,533	3.39	0.62	2.10	3.39	15.00	1.90	3.99	3.99	12.00	0.79	3.14	0.158	16.77	3.99	TRUE
SDCB-B6	SDMH-A1	C	48,483	1.11	0.60	0.67	4.17	15.00	1.90	1.27	4.83	18.00	1.77	4.71	0.010	12.44	4.83	TRUE
SDCB-B4	SDCB-B6	B	36,094	0.83	0.68	0.56	3.05	15.00	1.90	1.07	3.56	12.00	0.79	3.14	0.145	16.07	3.56	TRUE
SDCB-B2	SDCB-B4	A	96,880	2.22	0.59	1.31	2.22	15.00	1.90	2.49	2.49	12.00	0.79	3.14	0.145	16.07	2.49	TRUE

NOTE: FLOW CALCULATIONS ARE BASED ON A 10 YEAR STORM, I=1.9 IN/HR

STORM DRAINAGE SYSTEM BASED ON A 100 YEAR STORM

HYDROLOGY												CAPACITY						
UP STREAM STRUCTURE	DOWN STREAM STRUCTURE	AREA ID	DRAINAGE AREA	ACRES	RUNOFF COEFF	CxA	SUM ACRES	Tc (MIN)	RAINFALL (IN/HR)	Q=CIA (CFS)	TOTAL Q (CFS)	PIPE DIA (INCHES)	PIPE AREA (SQ FT)	WETTED PERIM (FT)	PIPE SLOPE (FT/FT)	PIPE CAP (CFS) MAX	PIPE CAP (CFS) DESIGN	DESIGN LESS THAN MAX CAPACITY
SDCB-A1	OUTFALL	I	87,296	2.00	0.59	1.18	17.96	15.00	2.60	3.07	27.77	30.00	4.91	7.85	0.010	48.58	27.77	TRUE
SDCB-A3	SDCB-A1	H	136,647	3.14	0.57	1.79	15.96	15.00	2.60	4.65	24.70	24.00	3.14	6.28	0.064	67.78	24.70	TRUE
SDMH-A1	SDCB-A3	A+B+C+D+G	558,464	12.82			12.82				20.05	24.00	3.14	6.28	0.122	93.43	20.05	TRUE
SDCB-B8	SDMH-A1	G	95,852	2.20	0.60	1.32	2.20	15.00	2.60	3.43	3.43	12.00	0.79	3.14	0.010	4.22	3.43	TRUE
SDCB-A5	SDMH-A1	E	133,622	3.07	0.57	1.75	6.45	15.00	2.60	4.55	10.01	18.00	1.77	4.71	0.070	32.92	10.01	TRUE
SDCB-A7	SDCB-A5	D+E	147,533	3.39	0.62	2.10	3.39	15.00	2.60	5.46	5.46	12.00	0.79	3.14	0.158	16.77	5.46	TRUE
SDCB-B6	SDMH-A1	C	48,483	1.11	0.60	0.67	4.17	15.00	2.60	1.74	6.61	18.00	1.77	4.71	0.010	12.44	6.61	TRUE
SDCB-B4	SDCB-B6	B	36,094	0.83	0.68	0.56	3.05	15.00	2.60	1.46	4.88	12.00	0.79	3.14	0.145	16.07	4.88	TRUE
SDCB-B2	SDCB-B4	A	96,880	2.22	0.59	1.31	2.22	15.00	2.60	3.41	3.41	12.00	0.79	3.14	0.145	16.07	3.41	TRUE

NOTE: FLOW CALCULATIONS ARE BASED ON A 100 YEAR STORM, I=2.6 IN/HR

STORM DRAIN HYDRAULIC ANALYSIS
GOLDEN HILLS ROAD AND SURROUNDING SUBDIVISION - POST BROAD MEADOWS CONNECTION

This page of calculations shows the Post-Broad Meadows cul-de-sac connection. The table shows the system has a bottle neck at the Golden Hills Drive and Broad Meadows Court intersection. The north catch basin has a 12" pipe and is installed at a shallow 1% slope. This limits the amount of water that can be conveyed through the system. This section of pipe will need to be increased in size to accommodate the increase in storm water flow.

STORM DRAINAGE SYSTEM BASED ON A 10 YEAR STORM

HYDROLOGY												CAPACITY						
UP STREAM STRUCTURE	DOWN STREAM STRUCTURE	AREA ID	DRAINAGE AREA	ACRES	RUNOFF COEFF	CxA	SUM ACRES	Tc (MIN)	RAINFALL (IN/HR)	Q=CIA (CFS)	TOTAL Q (CFS)	PIPE DIA (INCHES)	PIPE AREA (SQ FT)	WETTED PERIM (FT)	PIPE SLOPE (FT/FT)	PIPE CAP (CFS) MAX	PIPE CAP (CFS) DESIGN	DESIGN LESS THAN MAX CAPACITY
SDCB-A1	OUTFALL	I	87,296	2.00	0.59	1.18	21.09	15.00	1.90	2.25	23.56	30.00	4.91	7.85	0.010	48.58	23.56	TRUE
SDCB-A3	SDCB-A1	H	136,647	3.14	0.57	1.79	19.08	15.00	1.90	3.40	21.32	24.00	3.14	6.28	0.064	67.78	21.32	TRUE
SDMH-A1	SDCB-A3	A+B+C+D+E+F+G	694,612	15.95			15.95				17.92	24.00	3.14	6.28	0.122	93.43	17.92	TRUE
SDCB-B8	SDMH-A1	G	95,852	2.20	0.60	1.32	5.33	15.00	1.90	2.51	5.77	12.00	0.79	3.14	0.010	4.22	5.77	FALSE
SDCB-B10	SDCB-B8	F	136,148	3.13	0.55	1.72	3.13	15.00	1.90	3.27	3.27	12.00	0.79	3.14	0.182	17.98	3.27	TRUE
SDCB-A5	SDMH-A1	E	133,622	3.07	0.57	1.75	6.45	15.00	1.90	3.32	7.31	18.00	1.77	4.71	0.070	32.92	7.31	TRUE
SDCB-A7	SDCB-A5	D	147,533	3.39	0.62	2.10	3.39	15.00	1.90	3.99	3.99	12.00	0.79	3.14	0.158	16.77	3.99	TRUE
SDCB-B6	SDMH-A1	C	48,483	1.11	0.60	0.67	4.17	15.00	1.90	1.27	4.83	18.00	1.77	4.71	0.010	12.44	4.83	TRUE
SDCB-B4	SDCB-B6	B	36,094	0.83	0.68	0.56	3.05	15.00	1.90	1.07	3.56	12.00	0.79	3.14	0.145	16.07	3.56	TRUE
SDCB-B2	SDCB-B4	A	96,880	2.22	0.59	1.31	2.22	15.00	1.90	2.49	2.49	12.00	0.79	3.14	0.145	16.07	2.49	TRUE

NOTE: FLOW CALCULATIONS ARE BASED ON A 10 YEAR STORM, I=1.9 IN/HR

STORM DRAINAGE SYSTEM BASED ON A 100 YEAR STORM

HYDROLOGY												CAPACITY						
UP STREAM STRUCTURE	DOWN STREAM STRUCTURE	AREA ID	DRAINAGE AREA	ACRES	RUNOFF COEFF	CxA	SUM ACRES	Tc (MIN)	RAINFALL (IN/HR)	Q=CIA (CFS)	TOTAL Q (CFS)	PIPE DIA (INCHES)	PIPE AREA (SQ FT)	WETTED PERIM (FT)	PIPE SLOPE (FT/FT)	PIPE CAP (CFS) MAX	PIPE CAP (CFS) DESIGN	DESIGN LESS THAN MAX CAPACITY
SDCB-A1	OUTFALL	I	87,296	2.00	0.59	1.18	21.09	15.00	2.60	3.07	30.57	30.00	4.91	7.85	0.010	48.58	30.57	TRUE
SDCB-A3	SDCB-A1	H	136,647	3.14	0.57	1.79	19.08	15.00	2.60	4.65	27.50	24.00	3.14	6.28	0.064	67.78	27.50	TRUE
SDMH-A1	SDCB-A3	A+B+C+D+E+F+G	694,612	15.95			15.95				22.85	24.00	3.14	6.28	0.122	93.43	22.85	TRUE
SDCB-B8	SDMH-A1	G	95,852	2.20	0.60	1.32	5.33	15.00	2.60	3.43	7.90	12.00	0.79	3.14	0.010	4.22	7.90	FALSE
SDCB-B10	SDCB-B8	F	136,148	3.13	0.55	1.72	3.13	15.00	2.60	4.47	4.47	12.00	0.79	3.14	0.182	17.98	4.47	TRUE
SDCB-A5	SDMH-A1	E	133,622	3.07	0.57	1.75	6.45	15.00	2.60	4.55	7.15	18.00	1.77	4.71	0.070	32.92	7.15	TRUE
SDCB-A7	SDCB-A5	D	147,533	3.39	0.62	2.10	3.39	10.00	15.00	2.60	2.60	12.00	0.79	3.14	0.158	16.77	2.60	TRUE
SDCB-B6	SDMH-A1	C	48,483	1.11	0.60	0.67	4.17	10.00	15.00	2.60	7.80	18.00	1.77	4.71	0.010	12.44	7.80	TRUE
SDCB-B4	SDCB-B6	B	36,094	0.83	0.68	0.56	3.05	10.00	15.00	2.60	5.20	12.00	0.79	3.14	0.145	16.07	5.20	TRUE
SDCB-B2	SDCB-B4	A	96,880	2.22	0.59	1.31	2.22	10.00	15.00	2.60	2.60	12.00	0.79	3.14	0.145	16.07	2.60	TRUE

NOTE: FLOW CALCULATIONS ARE BASED ON A 100 YEAR STORM, I=2.6 IN/HR

STORM DRAIN HYDRAULIC ANALYSIS
GOLDEN HILLS ROAD AND SURROUNDING SUBDIVISION - POST BROAD MEADOWS CONNECTION - PIPE UPGRADE (12" to 18")

This page of calculations shows the Post-Broad Meadows cul-de-sac connection with an up-sized pipe connecting the existing catch basin to the existing manhole in the Golden Hills Drive and Broad Meadows Court intersection. The existing pipeline will need to be up-sized from 12" to 18" to pass the calculated 100 year storm. The table shows the system can operate successfully at a 100 year storm.

STORM DRAINAGE SYSTEM BASED ON A 10 YEAR STORM

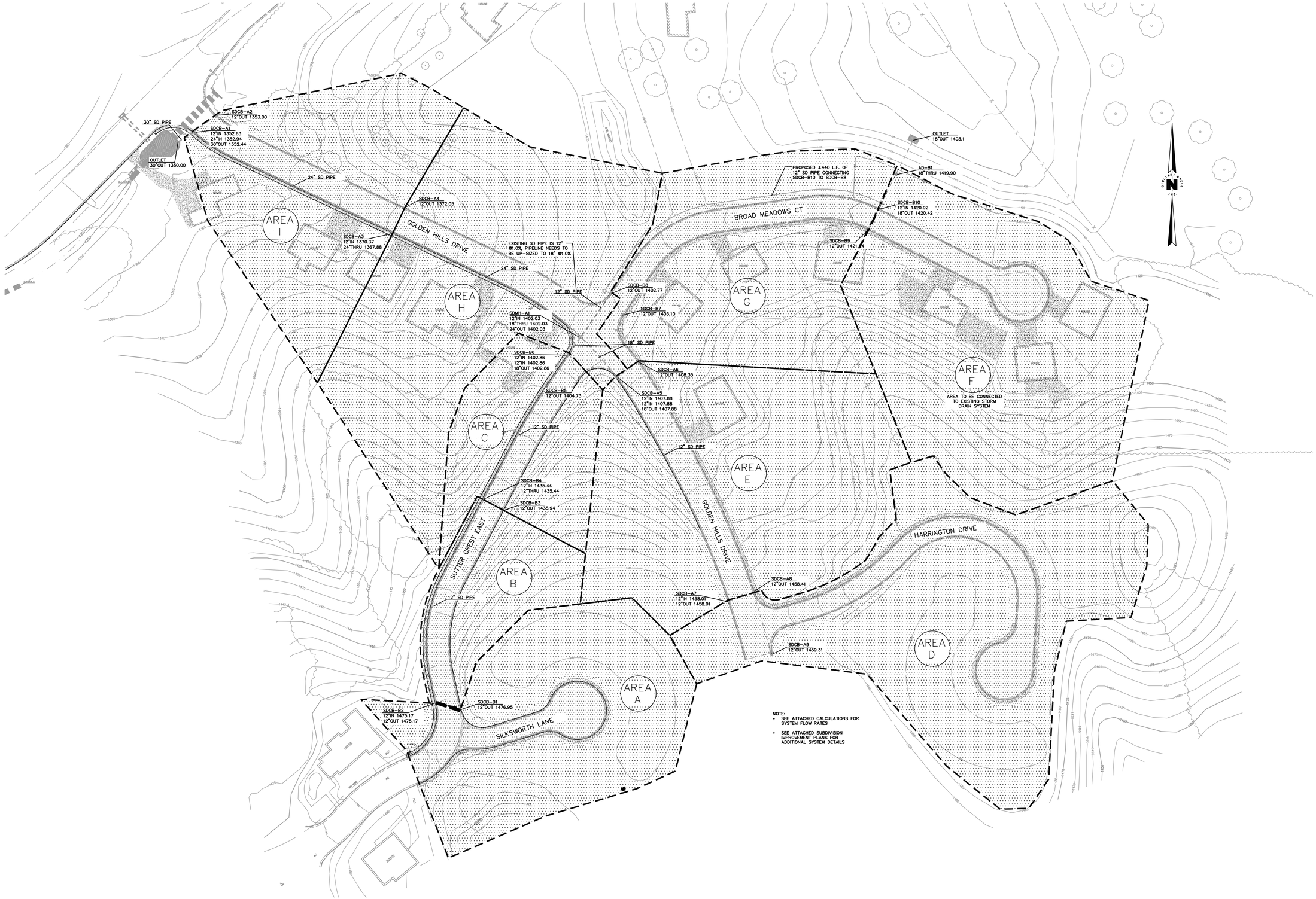
HYDROLOGY												CAPACITY						
UP STREAM STRUCTURE	DOWN STREAM STRUCTURE	AREA ID	DRAINAGE AREA	ACRES	RUNOFF COEFF	CxA	SUM ACRES	Tc (MIN)	RAINFALL (IN/HR)	Q=CIA (CFS)	TOTAL Q (CFS)	PIPE DIA (INCHES)	PIPE AREA (SQ FT)	WETTED PERIM (FT)	PIPE SLOPE (FT/FT)	PIPE CAP (CFS) MAX	PIPE CAP (CFS) DESIGN	DESIGN LESS THAN MAX CAPACITY
SDCB-A1	OUTFALL	I	87,296	2.00	0.59	1.18	21.09	15.00	1.90	2.25	23.56	30.00	4.91	7.85	0.010	48.58	23.56	TRUE
SDCB-A3	SDCB-A1	H	136,647	3.14	0.57	1.79	19.08	15.00	1.90	3.40	21.32	24.00	3.14	6.28	0.064	67.78	21.32	TRUE
SDMH-A1	SDCB-A3	A+B+C+D+E+F+G	694,612	15.95			15.95				17.92	24.00	3.14	6.28	0.122	93.43	17.92	TRUE
SDCB-B8	SDMH-A1	G	95,852	2.20	0.60	1.32	5.33	15.00	1.90	2.51	5.77	18.00	1.77	4.71	0.010	12.44	5.77	TRUE
SDCB-B10	SDCB-B8	F	136,148	3.13	0.55	1.72	3.13	15.00	1.90	3.27	3.27	12.00	0.79	3.14	0.182	17.98	3.27	TRUE
SDCB-A5	SDMH-A1	E	133,622	3.07	0.57	1.75	6.45	15.00	1.90	3.32	7.31	18.00	1.77	4.71	0.070	32.92	7.31	TRUE
SDCB-A7	SDCB-A5	D	147,533	3.39	0.62	2.10	3.39	15.00	1.90	3.99	3.99	12.00	0.79	3.14	0.158	16.77	3.99	TRUE
SDCB-B6	SDMH-A1	C	48,483	1.11	0.60	0.67	4.17	15.00	1.90	1.27	4.83	18.00	1.77	4.71	0.010	12.44	4.83	TRUE
SDCB-B4	SDCB-B6	B	36,094	0.83	0.68	0.56	3.05	15.00	1.90	1.07	3.56	12.00	0.79	3.14	0.145	16.07	3.56	TRUE
SDCB-B2	SDCB-B4	A	96,880	2.22	0.59	1.31	2.22	15.00	1.90	2.49	2.49	12.00	0.79	3.14	0.145	16.07	2.49	TRUE

NOTE: FLOW CALCULATIONS ARE BASED ON A 10 YEAR STORM, I=1.9 IN/HR

STORM DRAINAGE SYSTEM BASED ON A 100 YEAR STORM

HYDROLOGY												CAPACITY						
UP STREAM STRUCTURE	DOWN STREAM STRUCTURE	AREA ID	DRAINAGE AREA	ACRES	RUNOFF COEFF	CxA	SUM ACRES	Tc (MIN)	RAINFALL (IN/HR)	Q=CIA (CFS)	TOTAL Q (CFS)	PIPE DIA (INCHES)	PIPE AREA (SQ FT)	WETTED PERIM (FT)	PIPE SLOPE (FT/FT)	PIPE CAP (CFS) MAX	PIPE CAP (CFS) DESIGN	DESIGN LESS THAN MAX CAPACITY
SDCB-A1	OUTFALL	I	87,296	2.00	0.59	1.18	21.09	15.00	2.60	3.07	30.57	30.00	4.91	7.85	0.010	48.58	30.57	TRUE
SDCB-A3	SDCB-A1	H	136,647	3.14	0.57	1.79	19.08	15.00	2.60	4.65	27.50	24.00	3.14	6.28	0.064	67.78	27.50	TRUE
SDMH-A1	SDCB-A3	A+B+C+D+E+F+G	694,612	15.95			15.95				22.85	24.00	3.14	6.28	0.122	93.43	22.85	TRUE
SDCB-B8	SDMH-A1	G	95,852	2.20	0.60	1.32	5.33	15.00	2.60	3.43	7.90	18.00	1.77	4.71	0.010	12.44	7.90	TRUE
SDCB-B10	SDCB-B8	F	136,148	3.13	0.55	1.72	3.13	15.00	2.60	4.47	4.47	12.00	0.79	3.14	0.182	17.98	4.47	TRUE
SDCB-A5	SDMH-A1	E	133,622	3.07	0.57	1.75	6.45	15.00	2.60	4.55	7.15	18.00	1.77	4.71	0.070	32.92	7.15	TRUE
SDCB-A7	SDCB-A5	D	147,533	3.39	0.62	2.10	3.39	10.00	15.00	2.60	2.60	12.00	0.79	3.14	0.158	16.77	2.60	TRUE
SDCB-B6	SDMH-A1	C	48,483	1.11	0.60	0.67	4.17	10.00	15.00	2.60	7.80	18.00	1.77	4.71	0.010	12.44	7.80	TRUE
SDCB-B4	SDCB-B6	B	36,094	0.83	0.68	0.56	3.05	10.00	15.00	2.60	5.20	12.00	0.79	3.14	0.145	16.07	5.20	TRUE
SDCB-B2	SDCB-B4	A	96,880	2.22	0.59	1.31	2.22	10.00	15.00	2.60	2.60	12.00	0.79	3.14	0.145	16.07	2.60	TRUE

NOTE: FLOW CALCULATIONS ARE BASED ON A 100 YEAR STORM, I=2.6 IN/HR



DIGALERT
1-800-227-2600
CALL 2 FULL WORKING DAYS IN ADVANCE

REVISIONS

REV #	DESCRIPTION	DATE	APPROVED

Giuliani & Kull, Inc.
Engineers ● Planners ● Surveyors
440 S. Yosemite Avenue, Suite A, Oakdale, CA 95361
(209) 847-8726 Fax (209) 847-7323
Auburn ● San Jose ● Oakdale

REGISTERED PROFESSIONAL ENGINEER
NICHOLAS W. PRICHARD
No. C76538
EXP. 12/31/20
CIVIL
STATE OF CALIFORNIA

STORM DRAINAGE AREA MAP
BROAD MEADOWS ESTATES

BROADMEADOWS DRIVE
SUTTER CREEK, CA

SCALE	1"=60'
DRAWN BY	NWP
DESIGNED BY	NWP
CHECKED BY	JAH
DATE	1/24/20

SHEET
SM-1
OF 1

JOB NO.
18215

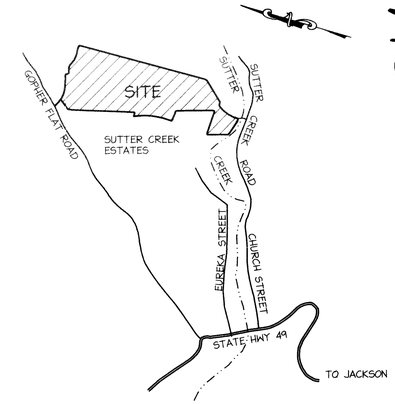
P:\2018\18215\Docs\Storm Calcs\Storm Drainage Report\STORM DRAINAGE MAP.dwg 1/24/2020 12:57pm

GOLDEN HILLS ESTATES

IMPROVEMENT PLANS

UNIT TWO

SUTTER CREEK, CALIFORNIA



VICINITY MAP

LEGEND

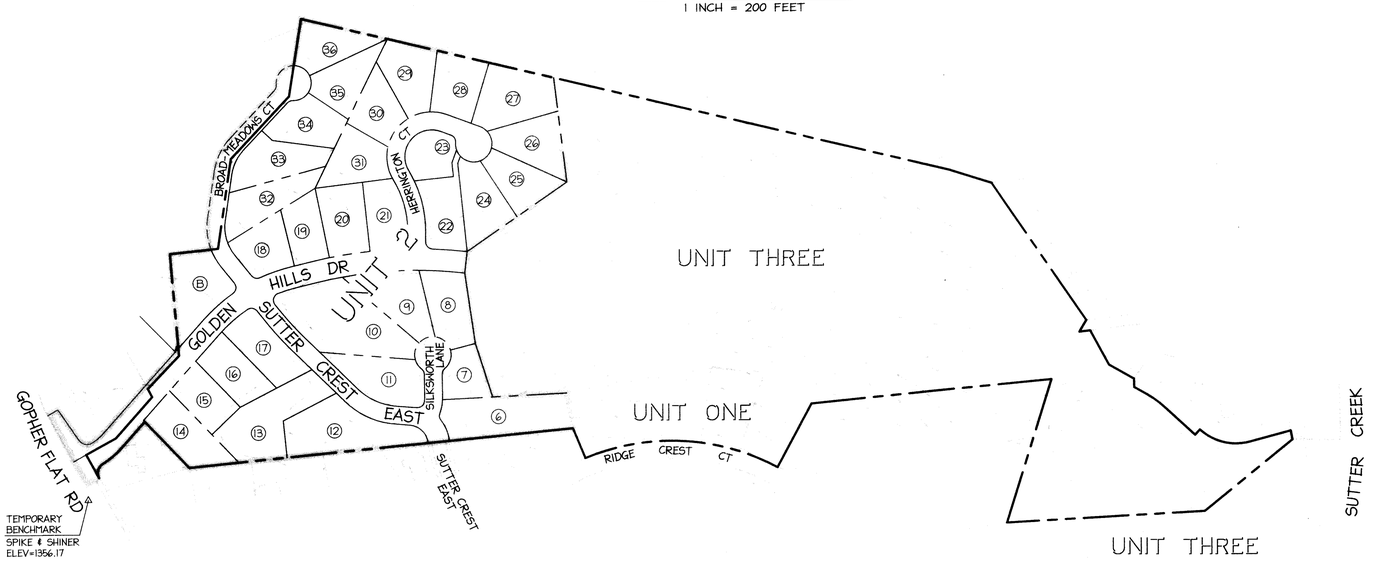
NOTE: NOT ALL SYMBOLS MAY BE USED IN DRAWING

PROPOSED	EXISTING	DESCRIPTION
		PROPERTY LINE
		EASEMENT (AS NOTED)
		CENTERLINE
		EDGE OF PAVEMENT
		CURB AND GUTTER
		VERTICAL CURB
		VALLEY GUTTER
		BUILDING FACE/LINE
		PCC PAVEMENT
		RETAINING WALL
		STORM DRAIN
		SANITARY SEWER
8" W		WATER MAIN
JT		JOINT UTILITY TRENCH
G		GAS MAIN
		OVERHEAD UTILITY LINE/WIRE
		STORM DRAIN INLET
		STORM DRAIN MANHOLE
		SANITARY MANHOLE
		CLEANOUT
		FIRE HYDRANT
		VALVE -AS NOTED
		UTILITY POLE
		ELECTROLIER
		UTILITY BOX -AS NOTED
X		FENCE LINE -AS NOTED
		TREE -AS NOTED
		TREE DRIP/BRUSH LINE
TC123.45		SPOT ELEVATION
345		ELEVATION CONTOUR
R		RIDGE LINE
		TOP OF BANK

GRAPHIC SCALE

200 0 100 200 400

1 INCH = 200 FEET



GENERAL SITE LAYOUT

ABBREVIATIONS

(NOTE: NOT ALL ABBREVIATIONS MAY BE USED IN THIS PROJECT)

AC,ACC	ASPHALTIC CEMENT CONCRETE
AD	AREA DRAIN
AGG	AGGREGATE
AP	ANGLE POINT
ARCH	ARCHITECTUAL
AVRV	AIR VACUUM RELEASE VALVE
BC	BEGIN CURVE
BVC	BACK OF CURB
BLDG	BUILDING
BOV	BLOW-OFF VALVE
CB	CATCH BASIN
CL	CENTERLINE
CLR	CLEAR
CMP	CORRAGATED METAL PIPE
CO	CLEANOUT
CONTR	CONTRACTOR
DI	DROP INLET
DIP	DUCTILE IRON PIPE
DWY	DRIVEWAY
E	EXISTING
EXIST	EXISTING
EC	END OF CURVE
ER	END OF RADIUS
EP	EDGE OF PAVEMENT
FC	FACE OF CURB
FF	FINISH FLOOR ELEVATION
FG	FINISH PAVEMENT GRADE
FL	FLOWLINE
G	GAS
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HP	HIGH PRESSURE
IE	INVERT ELEVATION
LT	LEFT
MH	MANHOLE
MIN	MINIMUM
OH,OHW	OVERHEAD WIRE
P	PROPOSED
PCC	PORTLAND CEMENT CONCRETE
PL	PROPERTY LINE
PRC	POINT OF REVERSE CURVE
PVC	POLYVINYL CHLORIDE PIPE
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RT	RIGHT
SD	STORM DRAIN
SL	SANITARY SEWER LATERAL
SS	SANITARY SEWER
STA	STATION
SWLK	SIDEWALK
T,TEL	TELPHONE
TC	TOP OF CURB
TG	TOP OF GRATE
TOB,TB	TOP OF BANK
TOE	TOE OF BANK
VCP	VITRIFIED CLAY PIPE
W	WATER
WM	WATER METER
WWF	WELDED WIRE FABRIC

UTILITIES/SERVICES:

WATER: WATER WILL BE SUPPLIED BY THE AMADOR WATER AGENCY. A DISTRIBUTION AND MAIN SYSTEM WILL BE INSTALLED BY THE DEVELOPER

SEWER: SEWER SERVICE WILL BE SUPPLIED BY THE CITY OF SUTTER CREEK BY A COLLECTION SYSTEM INSTALLED BY THE DEVELOPER

STORM DRAINAGE: MAINTANED BY CITY OF SUTTER CREEK AND INSTALLED BY DEVELOPER.

ELECTRICAL/GAS: ELECTRICITY AND GAS WILL BE SUPPLIED BY PG&E AND PLACED UNDERGROUND

TELEPHONE: TELEPHONE WILL BE SERVICE BY PACIFIC TELEPHONE AND PLACED UNDERGROUND

FIRE DISTRICT: FIRE PROTECTION WILL BE SERVED BY THE SUTTER CREEK VOLUNTEER FIRE DEPARTMENT

APPROVAL

AMADOR WATER AGENCY — DATE 12/21/04

SUTTER CREEK FIRE DEPARTMENT — DATE 11/29/04

*SUTTER CREEK CITY ENGINEER RCE 22295 — DATE 12/22/2004

SEE DBC 12/20/04 CONDITIONS LETTER

REVIEWED BY

SUTTER CREEK SANITARY DISTRICT — DATE 11-23-04

PROJECT INFORMATION

APPLICANT/OWNER:
TRAFALGAR
247 N. FIRST STREET
SAN JOSE, CA 95112
PHONE: (408) 292-0797

ENGINEER:
GIULIANI AND KULL, INC.
11899 EDGEWOOD ROAD, SUITE "Q"
AUBURN, CA 95603
PHONE: (530) 885-5107

AS BUILT

These as-built plans are based on information provided by owner per 6735.6(b) B&P code

12/16/05 WATER SYST.

SHEET INDEX

PLANS PREPARED UNDER THE SUPERVISION OF:

Kevin Mayol 11.15.04

KEVIN E. MAYOL, PE

REGISTERED PROFESSIONAL ENGINEER KEVIN E. MAYOL NO. C56348 EXP. 3-31-06 CIVIL STATE OF CALIFORNIA

DATE	REVISIONS
12/22/04	1 REVISIONS PER CITY
2/1/05	2 COAST REVISIONS
5/11/05	3 WATER & SEWER SERVICES
12/16/05	4 "AS-BUILT" (WATER SYS)

SCALE AS SHOWN | DRAWN BY KM | DESIGNED BY KM | CHECKED BY

GK Giuliani & Kull, Inc.
Engineers • Planners • Surveyors
11899 Edgewood Road, Suite Q, Auburn, CA 95603
(530) 885-5107 Fax (530) 885-5157
Auburn • San Jose • Oakdale

GOLDEN HILLS ESTATES
UNIT TWO
CITY OF SUTTER CREEK, CALIFORNIA

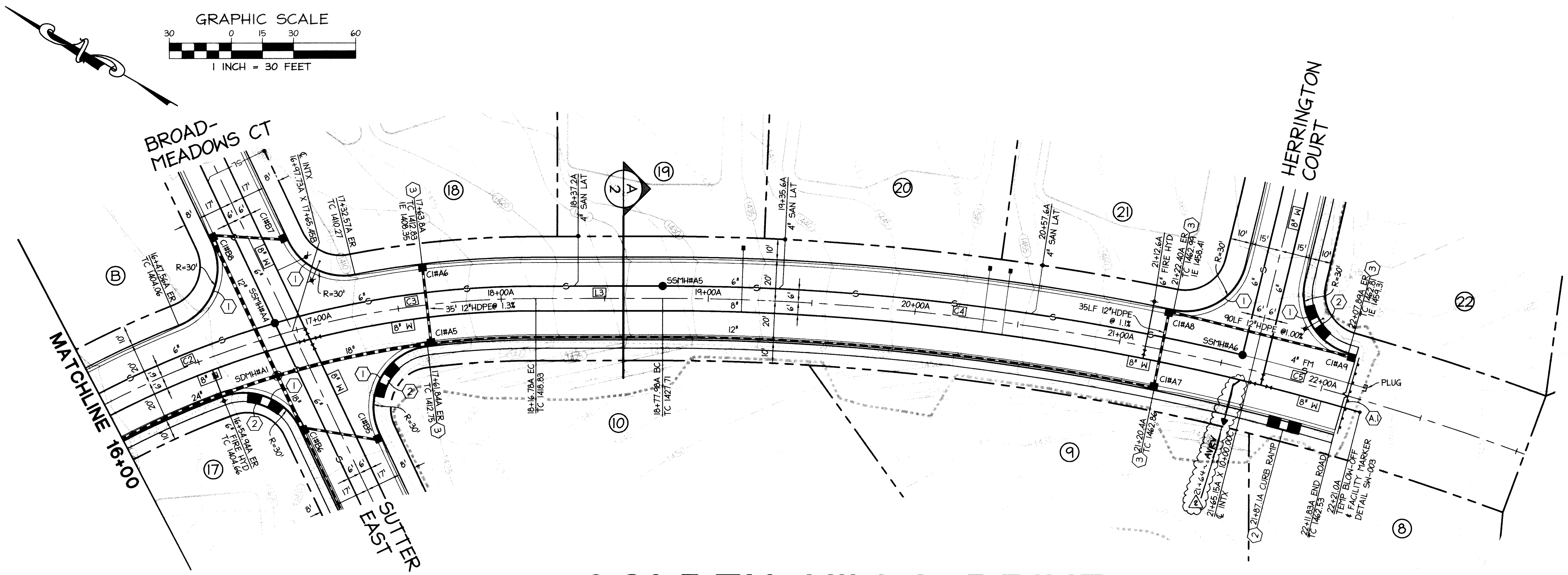
IMPROVEMENT PLANS
COVER SHEET

SHEET 1 OF 15 SHEETS

DRAWING NO. PH202197CO

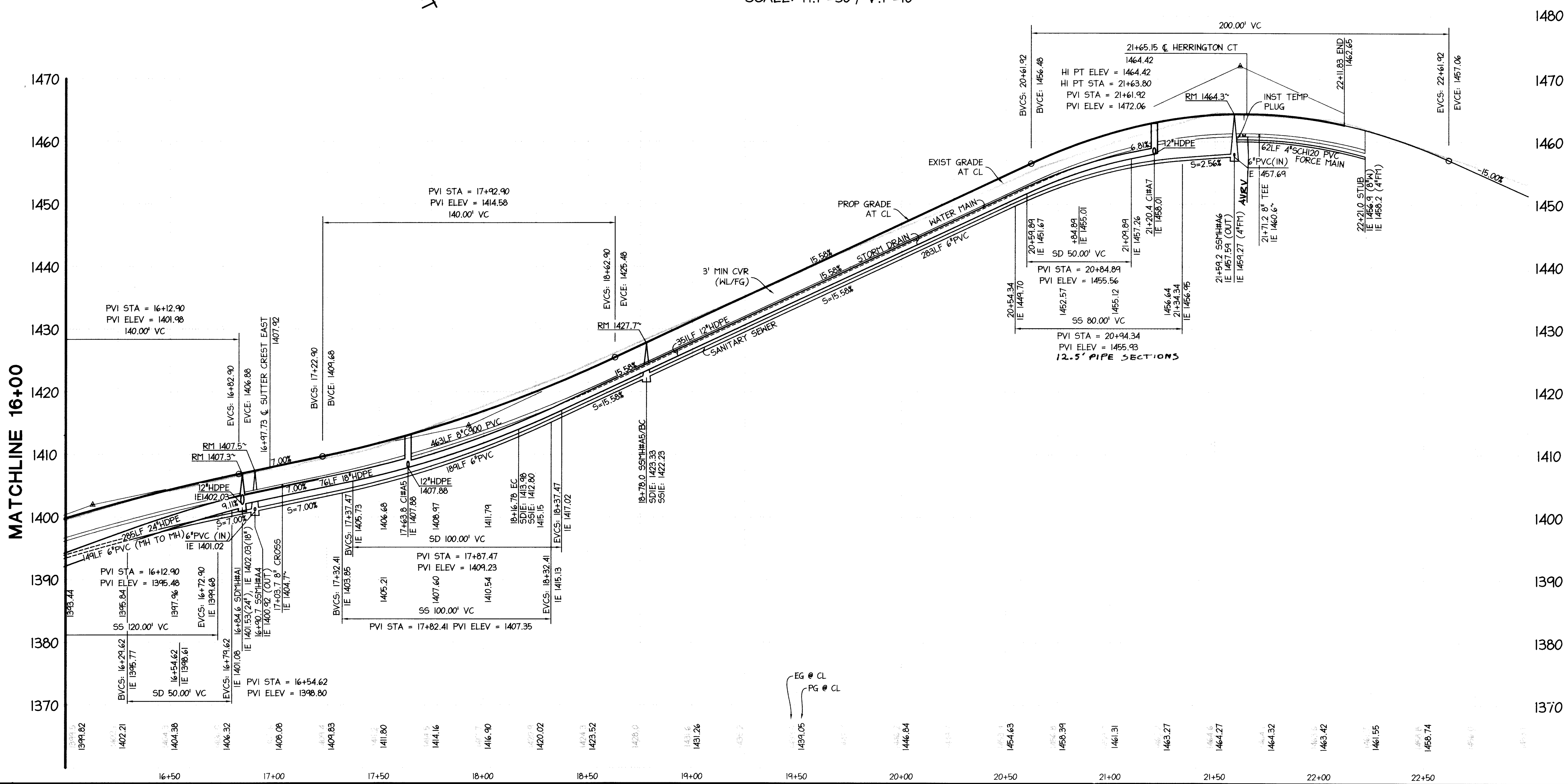
DATE NOVEMBER 10, 2004

JOB NO. 02197



GOLDEN HILLS DRIVE

SCALE: H.1"=30'; V.1"=10'



CURVE TABLE			
CURVE	LENGTH	DELTA	RADIUS
C1	65.62'	19°16'50"	195.00'
C2	154.38'	19°39'21"	450.00'
C3	119.04'	15°09'25"	450.00'
C4	287.16'	13°42'40"	1200.00'
C5	137.95'	6°35'12"	1200.00'

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S45°35'05"E	60.01'
L2	S64°51'55"E	417.73'
L3	S30°03'09"E	61.20'

KEY NOTES

1. CONSTRUCT VERTICAL CURB AT RETURN PER CITY STANDARD ST/3.
2. CONSTRUCT CURB RAMP PER DETAIL SHEET 2.
3. INSTALL STANDARD TYPE II CURB INLET PER CITY DETAIL SD/2.

A.1 CONSTRUCT GUARD PANEL (BARRICADE) PER CITY DETAIL ST/16.

E-6

DATE	REVISIONS
12/01/05	2 "AS-BUILT" WATER

SCALE 1"=30'
DRAWN BY KM
DESIGNED BY KM
CHECKED BY

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GOLDEN HILLS ESTATES
UNIT TWO
CITY OF SUTTER CREEK, CALIFORNIA

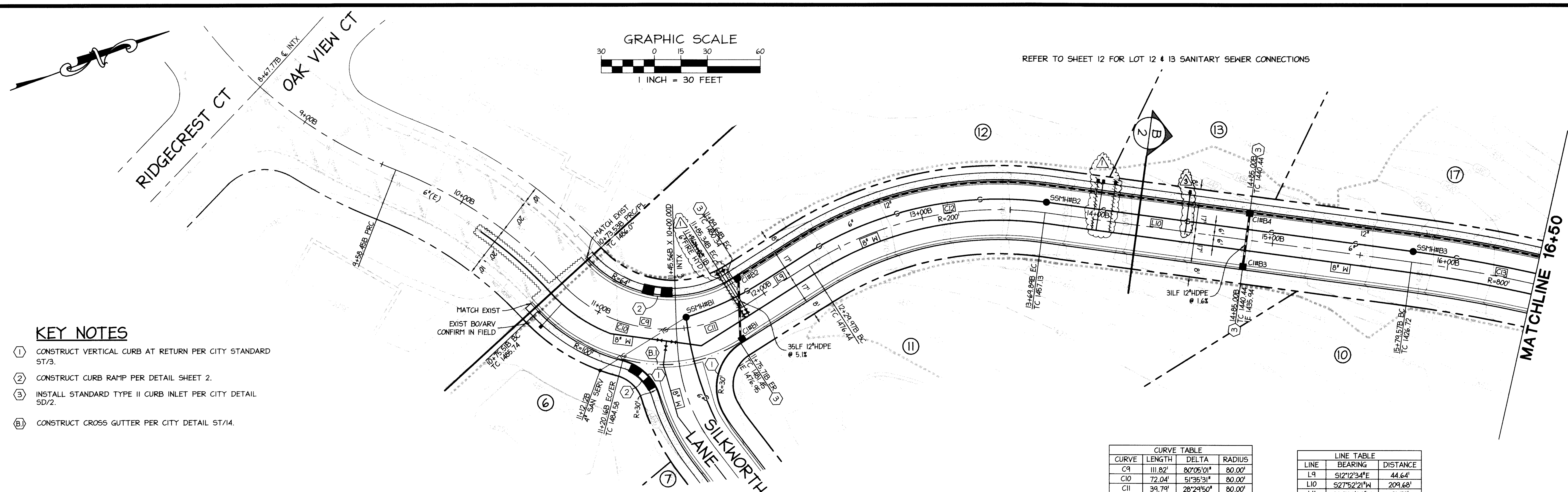
IMPROVEMENT PLANS
PLAN AND PROFILE
GOLDEN HILLS DRIVE
STATIONS 16+00 TO 22+13

SHEET 5 OF 15 SHEETS

DRAWING NO. PH202197GHD

DATE NOVEMBER 10, 2004

JOB NO. 02197



KEY NOTES

1. CONSTRUCT VERTICAL CURB AT RETURN PER CITY STANDARD ST/3.
2. CONSTRUCT CURB RAMP PER DETAIL SHEET 2.
3. INSTALL STANDARD TYPE II CURB INLET PER CITY DETAIL SD/2.

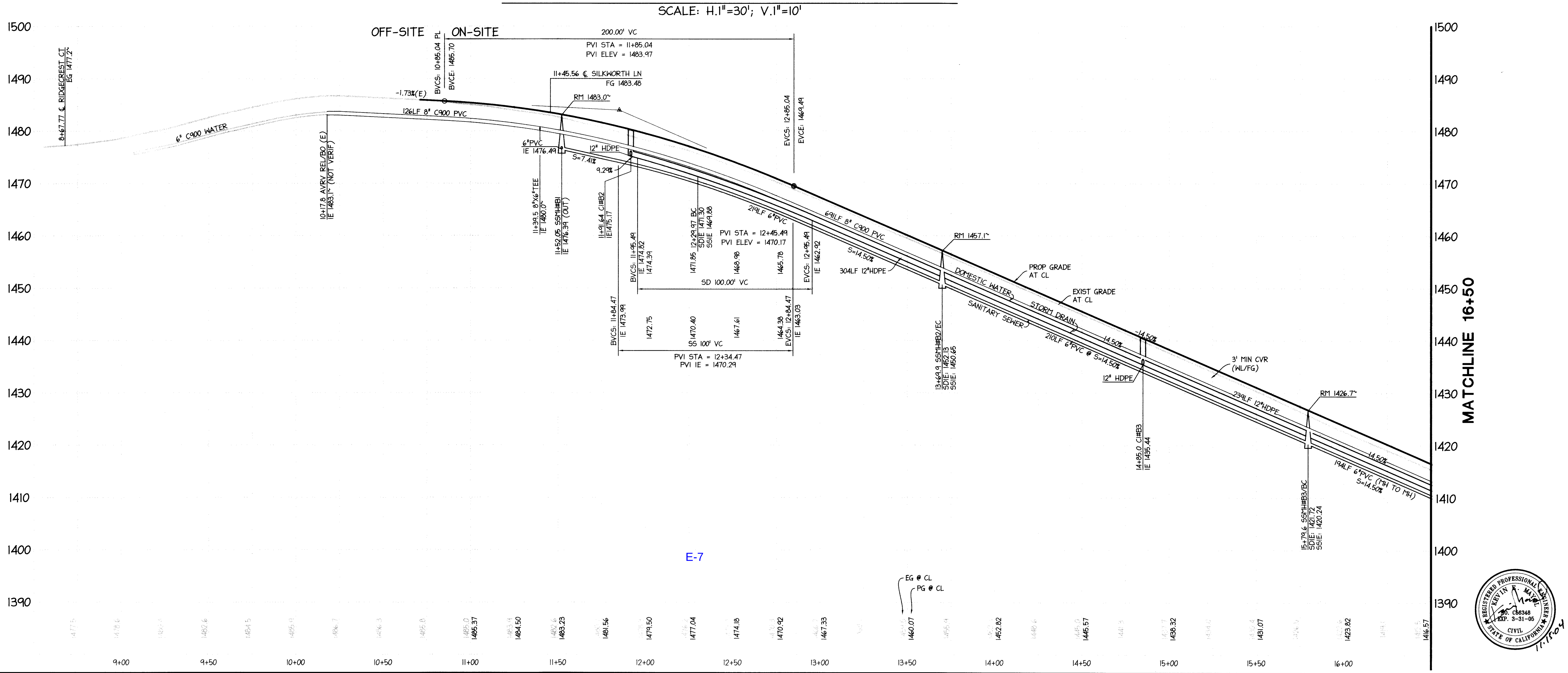
B1. CONSTRUCT CROSS GUTTER PER CITY DETAIL ST/14.

CURVE TABLE			
CURVE	LENGTH	DELTA	RADIUS
C9	111.82'	80°05'01"	80.00'
C10	72.04'	51°35'31"	80.00'
C11	39.79'	28°29'50"	80.00'
C12	139.91'	40°04'55"	200.00'
C13	94.08'	6°44'18"	800.00'
C14	123.74'	47°15'56"	150.00'
C15	91.40'	34°54'48"	150.00'

LINE TABLE		
LINE	BEARING	DISTANCE
L9	S12°12'34"E	44.64'
L10	S27°52'21"W	209.68'
L11	S34°36'39"W	91.79'
L12	S34°36'39"W	114.91'
L13	N81°52'35"E	130.93'
L14	S63°12'37"E	232.86'

SUTTER CREST EAST

SCALE: H.1"=30'; V.1"=10'



E-7

IMPROVEMENT PLANS
PLAN AND PROFILE
SUTTER CREST EAST
STATIONS 8+68 TO 16+50

GOLDEN HILLS ESTATES
UNIT TWO
CITY OF SUTTER CREEK, CALIFORNIA

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DATE	REVISIONS
2/1/05	1 CONST. REVISIONS
12/01/05	3 "AS-BUILT" WATER

SCALE 1"=30'
DRAWN BY KM
DESIGNED BY KM
CHECKED BY

SHEET 6 OF 15 SHEETS
DRAWING NO. PH202197SCE
DATE NOVEMBER 10, 2004
JOB NO. 02197

REGISTERED PROFESSIONAL ENGINEER KEVIN M. MAYE[?] No. C56348 EXP. 3-31-05 CIVIL STATE OF CALIFORNIA

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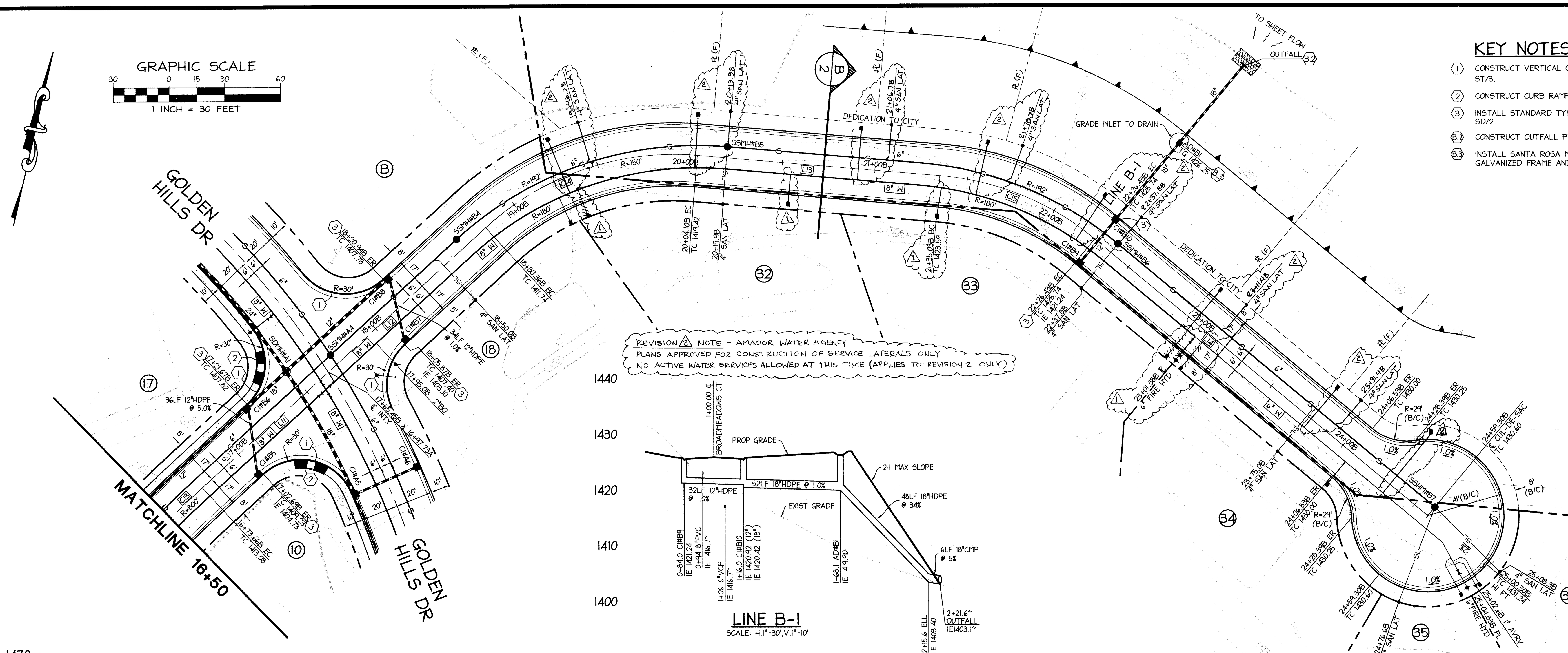
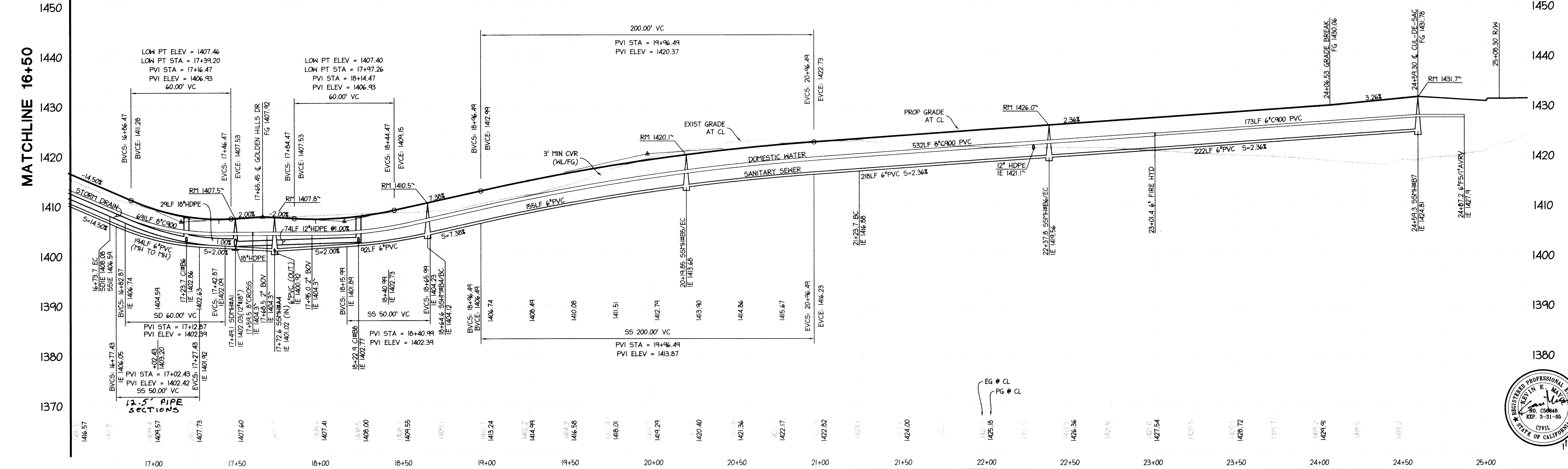


LINE B-1

SCALE: H.1"=30';V.1"=10'



BROADMEADOWS COURT

SCALE: H.1"=30'; V.1"=10'

KEY NOTES

(1) CONSTRUCT VERTICAL CURB AT RETURN PER CITY STANDARD ST/3.

(2) CONSTRUCT CURB RAMP PER DETAIL SHEET 2.

(3) INSTALL STANDARD TYPE II CURB INLET PER CITY DETAIL SD/2.

(B.2) CONSTRUCT OUTFALL PER DETAIL SHEET 2.

(B.3) INSTALL SANTA ROSA MODEL IM AREA DRAIN WITH GALVANIZED FRAME AND GRATE.

CURVE TABLE

CURVE	LENGTH	DELTA	RADIUS
C9	111.82'	80°05'01"	80.00'
C10	72.04'	51°35'31"	80.00'
C11	39.79'	28°29'50"	80.00'
C12	139.91'	40°04'55"	200.00'
C13	94.08'	6°44'18"	800.00'
C14	123.74'	47°15'56"	150.00'
C15	91.40'	34°54'48"	150.00'

LINE TABLE

LINE	BEARING	DISTANCE
L9	S12°12'34"E	44.64'
L10	S27°52'21"W	209.68'
L11	S34°36'39"W	91.79'
L12	S34°36'39"W	114.91'
L13	N81°52'35"E	130.93'
L14	S63°12'37"E	232.86'

DATE	REVISIONS
2/1/05	1 CONST REVISIONS
8/11/05	2 WATER & SEWER SERVICES

SCALE 1"=30'

DRAWN BY KM

DESIGNED BY KM

CHECKED BY

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GOLDEN HILLS ESTATES
UNIT TWO
CITY OF SUTTER CREEK, CALIFORNIA

IMPROVEMENT PLANS
PLAN AND PROFILE
BROADMEADOWS COURT
STATIONS 16+50 TO END

REGISTERED PROFESSIONAL ENGINEER KEVIN E. MAY No. C56848 EXP. 3-31-05 CIVIL STATE OF CALIFORNIA

11.30.04

SHEET 7 OF 15 SHEETS

DRAWING NO. PH202197SCE

DATE NOVEMBER 10, 2004

JOB NO. 02197

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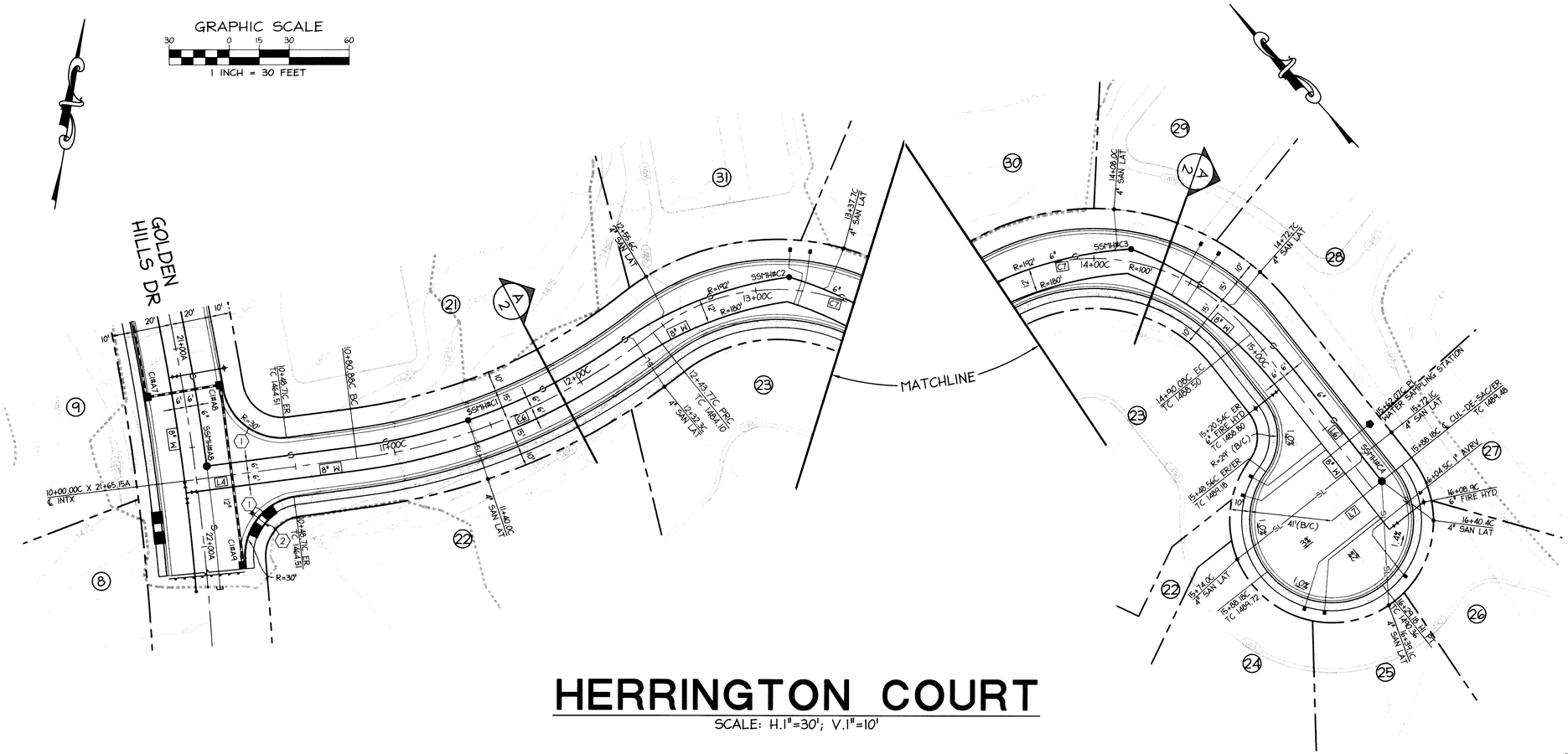
GRAPHIC SCALE
30 0 15 30 60
1 INCH = 30 FEET

CURVE TABLE			
CURVE	LENGTH	DELTA	RADIUS
C6	162.84'	31°06'33"	100.00'
C7	246.32'	141°07'46"	100.00'

LINE TABLE		
LINE	BEARING	DISTANCE
L4	N73°39'31"E	80.88'
L5	S03°40'43"W	98.01'
L6	S86°19'17"E	26.00'



HERRINGTON COURT

SCALE: H.1"=30'; V.1"=10'

KEY NOTES

1. CONSTRUCT VERTICAL CURB AT RETURN PER CITY STANDARD ST/3.
2. CONSTRUCT CURB RAMP PER DETAIL SHEET 2.

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DATE	REVISIONS	SCALE 1"=30'	DRAWN BY KM	DESIGNED BY KM	CHECKED BY

GOLDEN HILLS ESTATES
UNIT TWO
CITY OF SUTTER CREEK, CALIFORNIA

IMPROVEMENT PLANS
PLAN AND PROFILE
HERRINGTON COURT
STATIONS 10+00 TO END

SHEET 8
OF 15 SHEETS
DRAWING NO. PH202197GHC
DATE NOVEMBER 10, 2004
JOB NO. 02197

REGISTERED PROFESSIONAL ENGINEER
KEVIN M. KULL
No. 056348
EXP. 3-31-06
CIVIL
STATE OF CALIFORNIA

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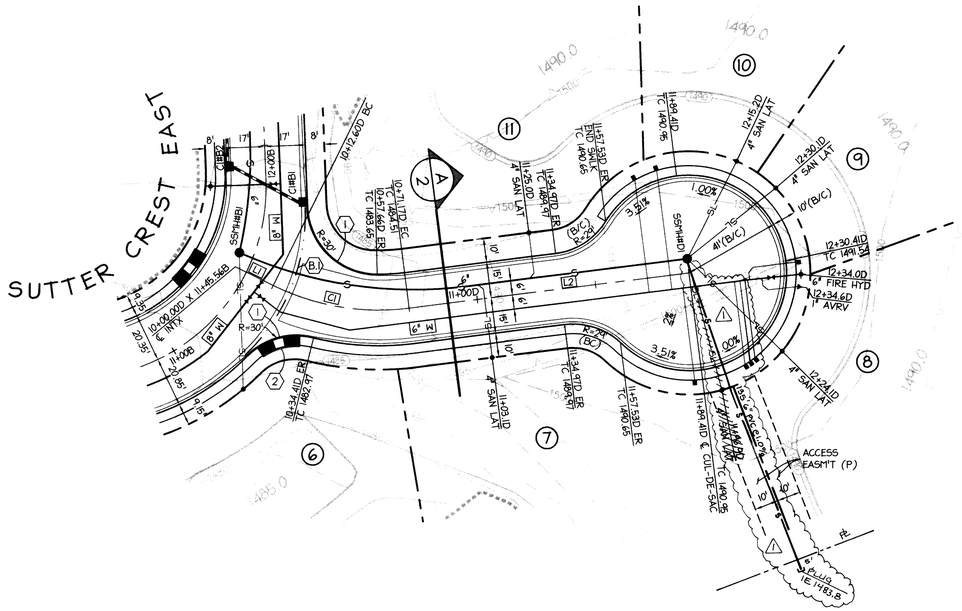
GRAPHIC SCALE

30 0 15 30 60

1 INCH = 30 FEET

CURVE TABLE			
CURVE	LENGTH	DELTA	RADIUS
C1	58.56'	33°33'17"	100.00'

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S73°43'04"E	12.60'
L2	N72°43'39"E	118.24'

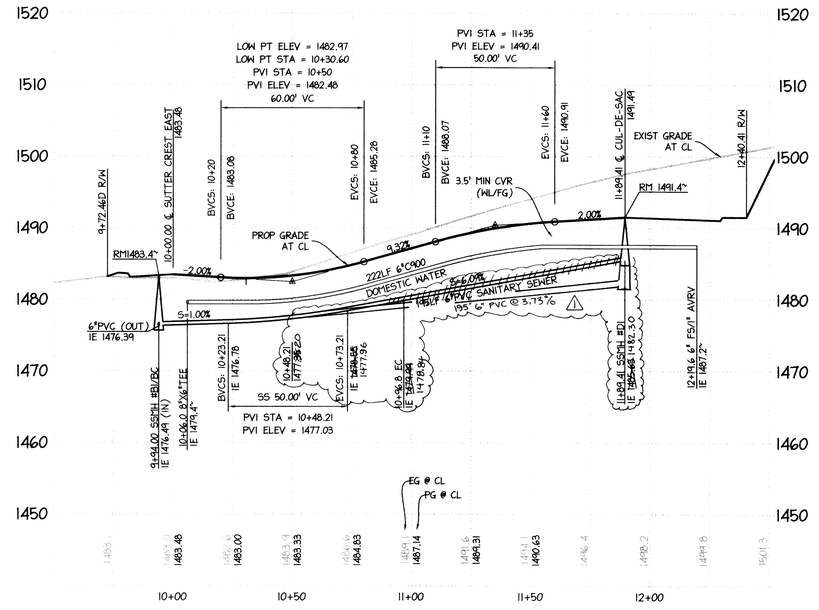


KEY NOTES

1. CONSTRUCT VERTICAL CURB AT RETURN PER CITY STANDARD ST/3.
2. CONSTRUCT CURB RAMP PER DETAIL SHEET 2.

SILKWORTH LANE

SCALE: H.1"=30'; V.1"=10'



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REVISIONS	DATE	SCALE	DRAWN BY	DESIGNED BY	CHECKED BY
1 CONST REVISIONS	2/1/05	1"=30'	KM	KM	

GOLDEN HILLS ESTATES
UNIT TWO
CITY OF SUTTER CREEK, CALIFORNIA

IMPROVEMENT PLANS
PLAN AND PROFILE
SILKWORTH LANE
STATIONS 10+00 TO END

SHEET 9 OF 15 SHEETS

DRAWING NO. PH202197SCC

DATE NOVEMBER 10, 2004

JOB NO. 02197

REGISTERED PROFESSIONAL ENGINEER KEVIN E. MAYER No. C56348 EXP. 3-31-05 CIVIL STATE OF CALIFORNIA

11-30-04

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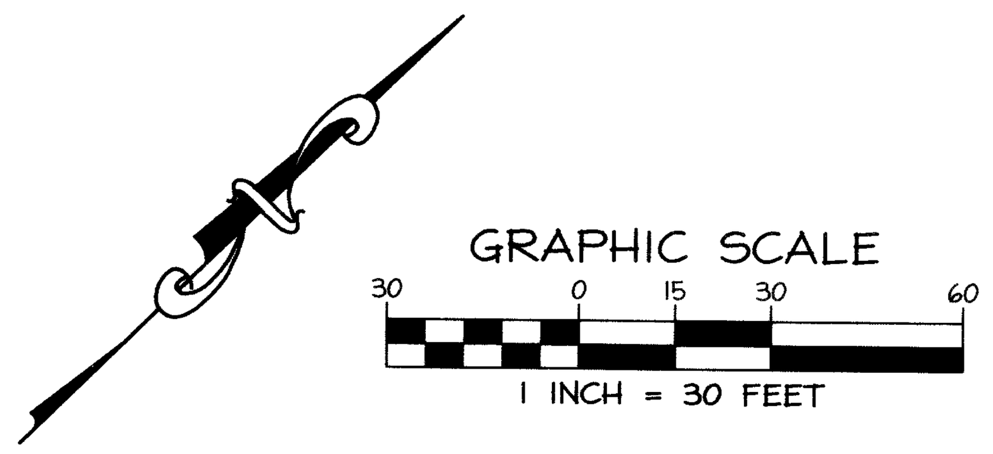
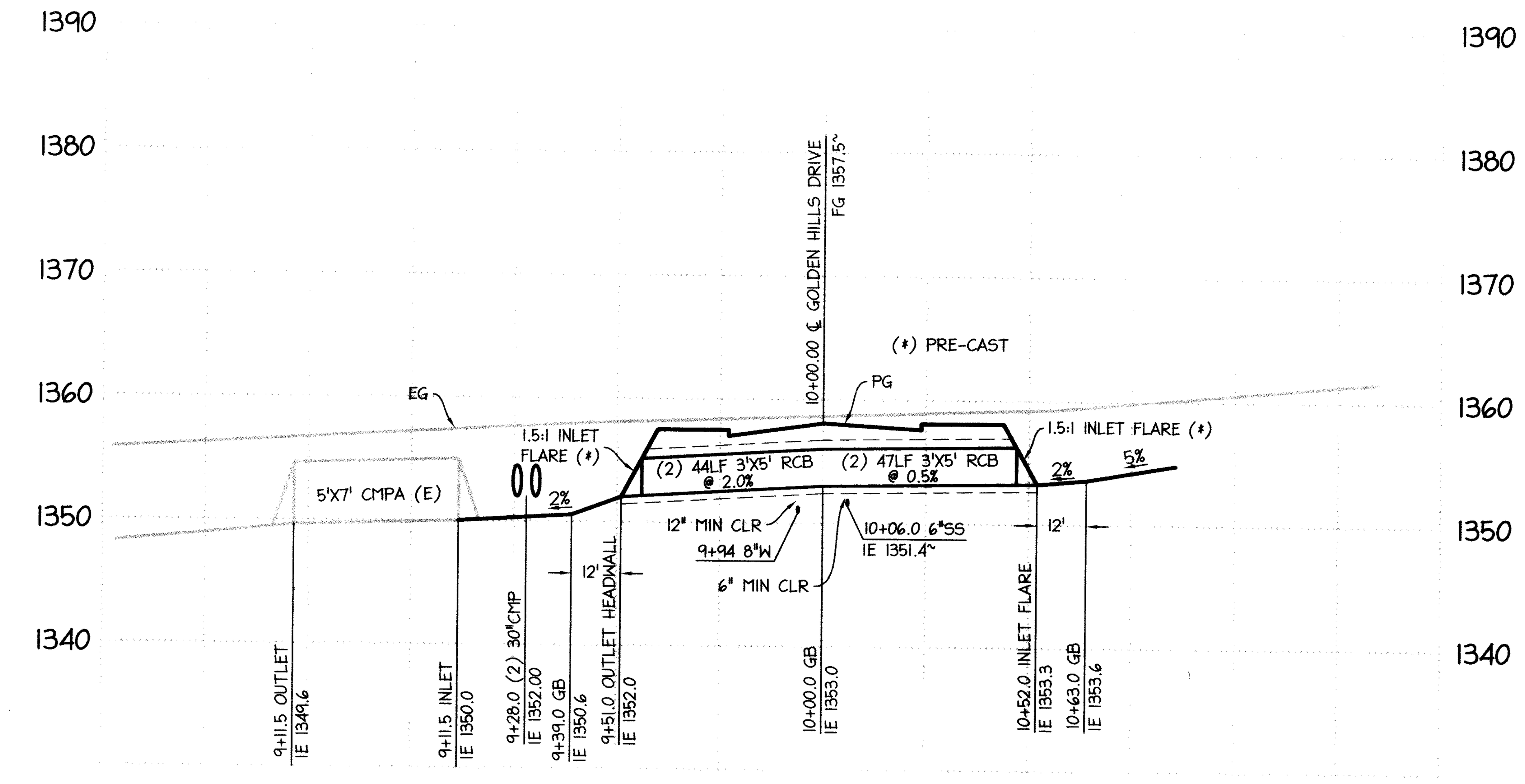




CULVERT PROFILE

SCALE: H.1"=30'; V.1"=10'

CULVERT NOTES:

1. CONCRETE BOX CULVERT SHALL HAVE A MINIMUM H20 LOAD RATING PRIOR TO PAVEMENT INSTALLATION.

2. CONTRACTOR SHALL CONTACT SOILS ENGINEER PRIOR TO INSTALLATION TO CONFIRM AND VERIFY SUBGRADE, BACKFILL AND BEDDING REQUIREMENTS.

3. CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO ASSURE CONCTRETE BOX CULVERTS ARE NOT DAMAGED DURING CONSTRUCTION DUE TO HEAVY EQUIPMENT AXLE LOADS.

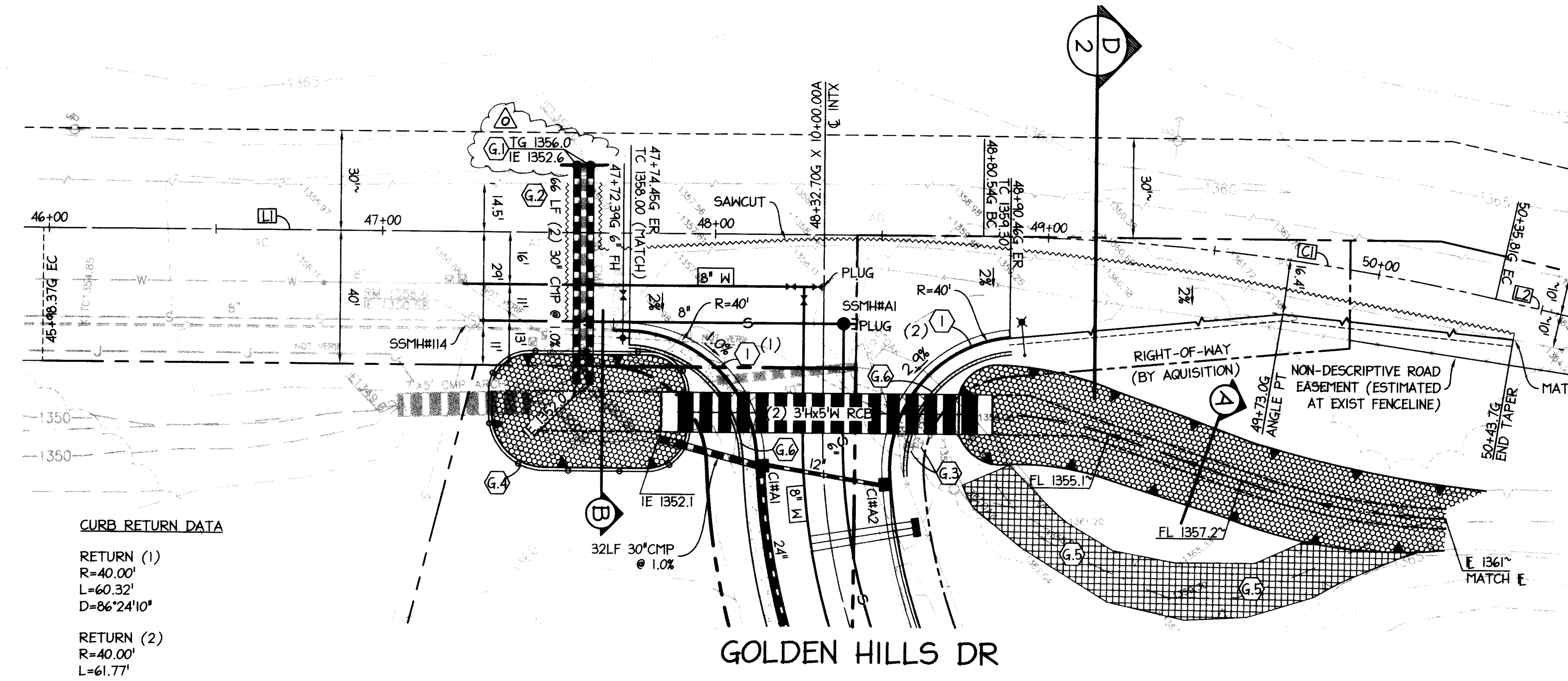
4. JENSEN PRECAST 3' HIGH X 5' WIDE TYPE I SPLIT BOX CULVERT USED FOR DESIGN. CONTRACTOR WARNED TO CONFIRM OUTSIDE DIMENSIONS OF ANY OTHER MANUFACTURE OF BOX DUE TO LIMITED CLEARANCES OF INSTALLATION. ALL EQUIVALENT PIPE SECTIONS SHALL BE APPROVED BY ENGINEER PRIOR TO INSTALLATION.

5. CONTRACTOR SHALL OBSERVE ALL APPLICABLE BEDDING AND PIPE REQUIREMENTS FOR ANY UTILITIES THAT PASS UNDERNEATH CONCRETE BOX CULVERTS.

6. ALL CORRAGATED METAL CULVERTS SHALL HAVE A MINIMUM H20 LOAD RATING AFTER PAVEMENT INSTALLATION.

CURVE TABLE			
CURVE	LENGTH	DELTA	RADIUS
C1	155.27'	12°42'33"	700.00'

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N44°24'55"E	282.17'
L2	N57°07'28"E	338.60'



CURB RETURN DATA

RETURN (1)
R=40.00'
L=60.32'
D=86°24'10"

RETURN (2)
R=40.00'
L=61.77'
D=88°28'50"

KEY NOTES

(1) CONSTRUCT VERTICAL CURB AT RETURN PER CITY STANDARD ST/3.

(0) (G.1) CONSTRUCT (2) CALTRANS ~~TYPE GMP INLETS~~ HEADWALL PER STANDARD DRAWING ~~D75A.~~ D89.

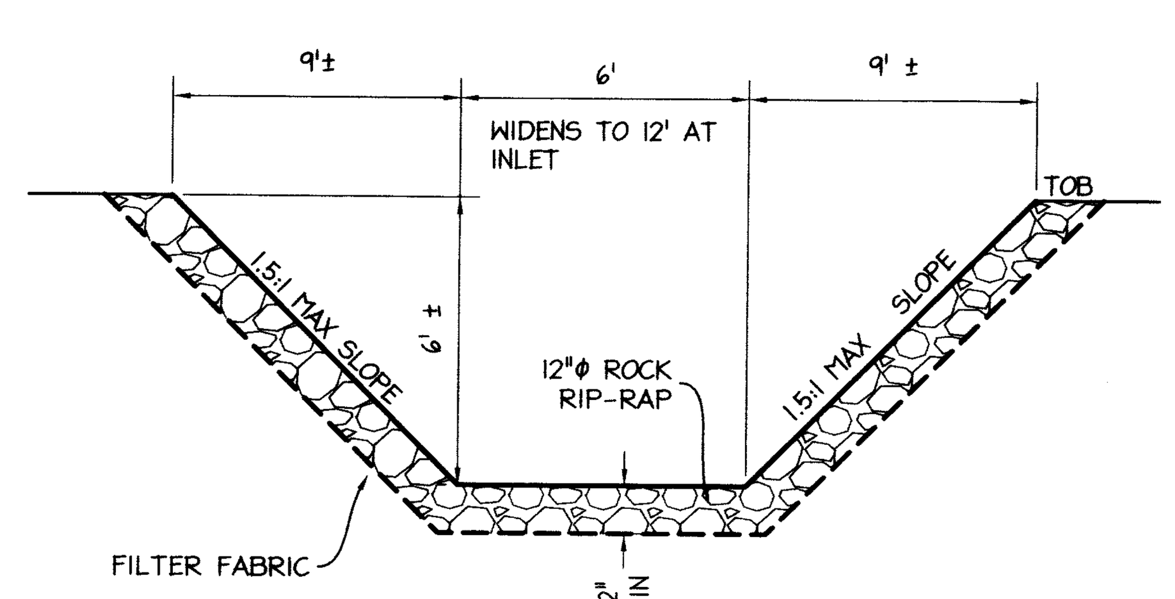
(G.2) REMOVE EXISTING 36" CULVERT AND REPLACE WITH (2) 30" CMP CULVERTS TO CLEAR PROPOSED 8" SANITARY SEWER EXTENSION.

(G.3) EXISTING WATER SERVICES TO BE REMOVED PER AWA STANDARDS REFER TO SHEET 4 FOR REPLACEMENT.

(G.4) CONSTRUCT 6' CHAINLINK FENCE AROUND BASIN (OR AS DIRECTED BY CITY). INSTALL ACCESS GATE ON SIDE OF GOPHER FLAT ROAD DESIGN SHALL BE APPROVED BY CITY ENGINEER PRIOR TO CONSTRUCTION. (SCEMATIC LOCATION SHOWN)

(G.5) BACKFILL EXISTING DITCH AS DIRECTED BY SOILS ENGINEER IN FIELD.

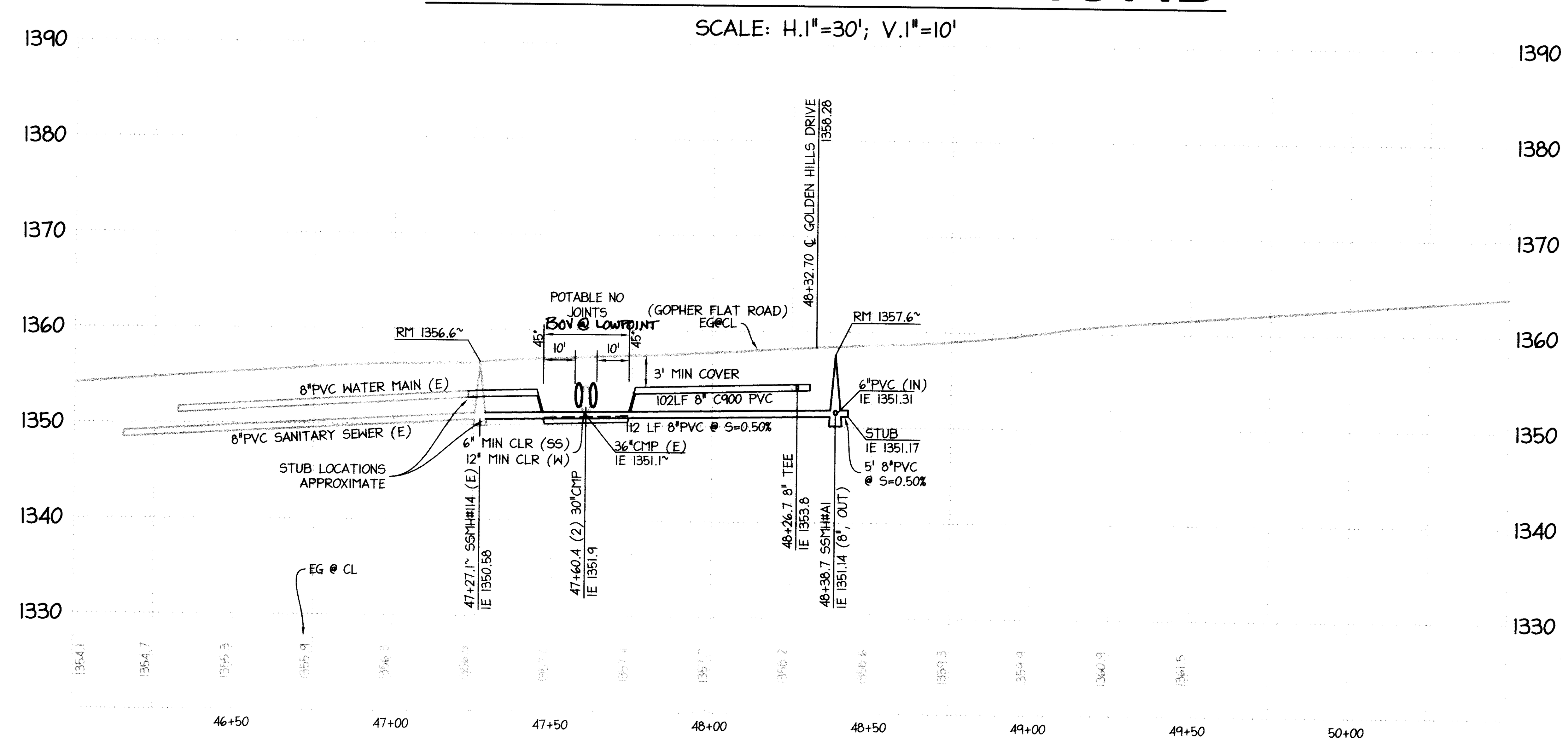
(G.6) DECORATIVE ENTRY WALL/FENCE. DESIGN TO BE APPROVED BY CITY PRIOR TO CONSTRUCTION. (SCHEMATIC LOCATION SHOWN)

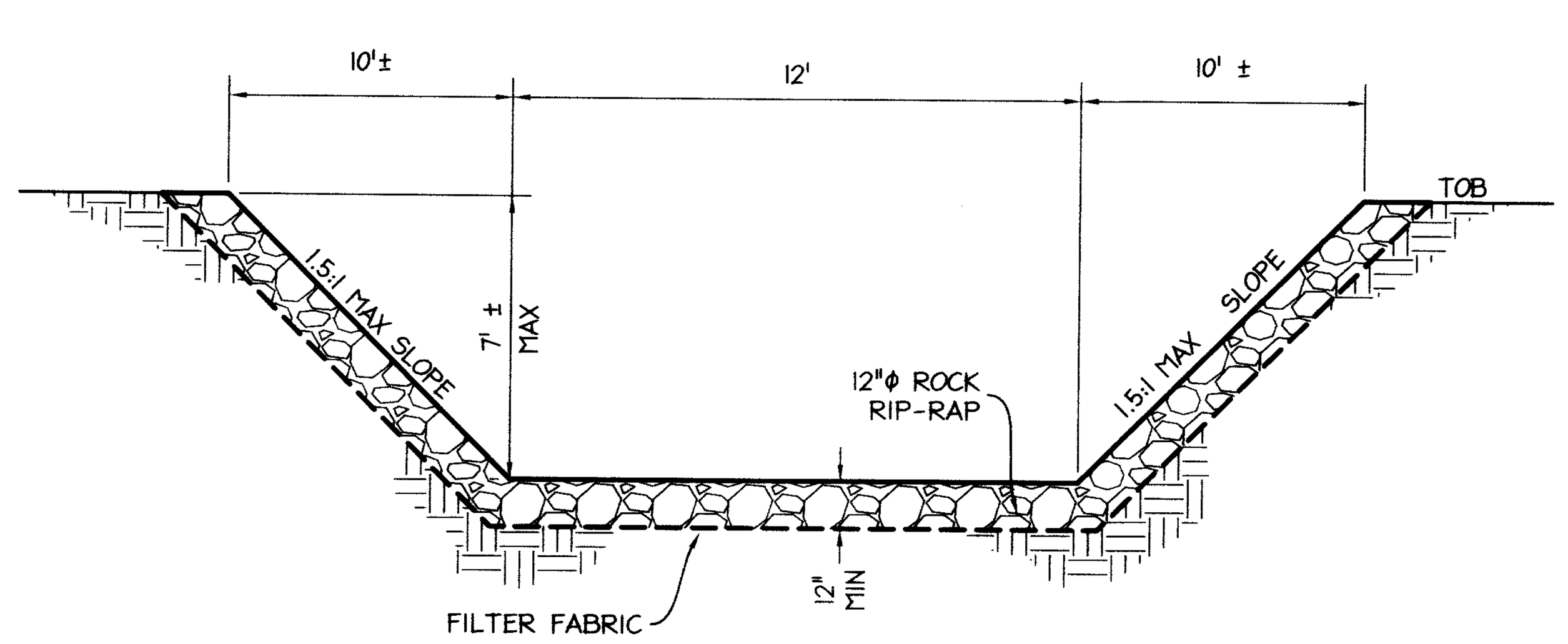


(A) INLET CHANNEL

GOPHER FLAT ROAD

SCALE: H.1"=30'; V.1"=10'





(B) RIP-RAP BASIN/APRON SECTION

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SCALE	DRAWN BY	DESIGNED BY	CHECKED BY
1"=30'	KM	KM	

DATE	REVISIONS
12/22/04	(0) REVISIONS PER CITY

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GOLDEN HILLS ESTATES
UNIT TWO
CITY OF SUTTER CREEK, CALIFORNIA

IMPROVEMENT PLANS
PLAN AND PROFILE
GOPHER FLAT ROAD
STATIONS 46+00 TO 49+93

SHEET 10 OF 15 SHEETS

DRAWING NO. PH202197GFR

DATE NOVEMBER 10, 2004

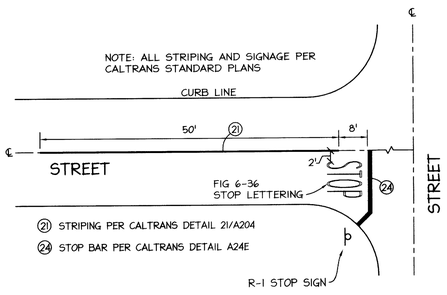
JOB NO. 02197

REGISTERED PROFESSIONAL ENGINEER KEVIN E. KULL No. C36348 EXP. 3-31-05 CIVIL STATE OF CALIFORNIA
11-30-04

GRAPHIC SCALE

60 0 30 60 120

1 INCH = 60 FEET



STRIPING AND SIGNAGE DETAIL

GOPHER FLAT STRIPING NOTE
GOPHER FLAT STRIPING/DELINEATION LAYOUT SHALL BE DETERMINED DURING CONSTRUCTION AND APPROVED BY CITY ENGINEER PRIOR TO CITY ACCEPTANCE OF IMPROVEMENTS.

LEGEND

- (NO) PAVEMENT DELINEATION DETAIL NUMBER (CALTRANS STD SPECIFICATION)
- (B) CONFORM TO EXISTING STRIPING
- //// PAVEMENT MARKING REMOVAL

REGISTERED PROFESSIONAL ENGINEER
KEVIN E. MAYER
NO. C65348
EXP. 3-31-05
CIVIL
STATE OF CALIFORNIA
11/15/04

SCALE	DRAWN BY	DESIGNED BY	CHECKED BY
1"=60'	KM	KM	

DATE	REVISIONS

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GOLDEN HILLS ESTATES
UNIT TWO
CITY OF SUTTER CREEK, CALIFORNIA

IMPROVEMENT PLANS
STRIPING AND SIGNAGE

SHEET 11

OF 15 SHEETS

DRAWING NO. PH202197MG

DATE NOVEMBER 10, 2004

JOB NO. 02197