

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

STANDARDS AND SYMBOLS FOR PHOTOGRAMMETRIC MAPPING (SSPM)

US SURVEY FOOT EDITION

PREPARED BY:
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION'S
DIVISION OF ENGINEERING SERVICES
OFFICE OF PHOTOGRAMMETRY

MAILING AND SHIPPING:
OFFICE OF PHOTOGRAMMETRY
1820 ALHAMBRA BLVD, MS-35
SACRAMENTO, CA 95816-7005

PHYSICAL ADDRESS:
OFFICE OF PHOTOGRAMMETRY
MAPPING BRANCH
1727 30th St. FIRST FLOOR
SACRAMENTO, CA
(916) 227-7654

REVISED: May 2013
<http://www.dot.ca.gov/hq/esc/photogrammetry/>

PREFACE

The purpose of this preface is to indicate changes that have been made in this version of the Standards and Symbols for Photogrammetric Mapping (SSPM).

- C-6 Added another line to indicate the annotation of the photo centers and how they are orientated with the direction of flight.
 - R-4 Break the curb line at driveways
 - R-5 Break the curb line at driveways
 - M-10 RR=600 is scaled for railroad at 1"=50' mapping
 - F-2 Added a ph-fFence for fences on top of structures
 - D-1 Mass points (LV=11, CO=7, WT=0, LC=0)
- Microstation Line Codes (styles) are now referred to as LC=

TABLE OF CONTENTS

LEVEL	PAGE No.
1 CONTROL.....	4-5
2 MANMADE PLANIMETRY.....	6-7
2 FENCES AND WALLS	8
3 STATE, COUNTY AND CITY ROADS.....	9-10
3 TRAVELED WAY.....	11-14
4 VEGETATION AND NATURAL FEATURES	15-16
5 UTILITIES AND DRAINAGE	17-18
6 WATER	19
7 CONTOURS	20
8 SPOT ELEVATIONS.....	21
9 BLANK PAGE (FOR FUTURE USE).....	22
10 FILE IDENTIFICATION	23
11 DATA FOR DTM.....	24
12 GRID TICS AND GRID ANNOTATION	25
MAP SCALES	26
NOTES.....	27
PHOTOGRAMMETRY CUSTOM LIFESTYLES.....	28-29

CONTROL

LEVEL 1 - COLOR 5

SHOW ALL FIELD CONTROL AND ANALYTICAL POINTS IN MODELS USED.
 ALL CONTROL SHALL BE ROTATED IN THE DIRECTION OF THE FLIGHT LINE
 CONTROL CELLS NEED TO BE POINT CELLS AND VIEW INDEPENDENT.

OoP RERERENCE CODE	EXAMPLE	WT	CELL OR LIFESTYLE NAME	DESCRIPTION
C-0	9101020 ⊕ 12345.12	0	ATC	ANALYTICAL (PUG) POINT DECIMAL PLACES: ENGLISH X,Y=2; Z=1 METRIC X,Y=3; Z=2
C-1	VC-1A ⊖ <u>12345.123</u>	0	VC	VERTICAL FIELD CONTROL POINT DECIMAL PLACES: ENGLISH X,Y=2; Z=1 METRIC X,Y=3; Z=2
C-2	HC-1A △	0	HC	HORIZONTAL FIELD CONTROL POINT. PLACE AT X,Y,Z GIVEN IN CONTROL FILE.
C-3	HVC-1A △ <u>12345.123</u>	0	HVC	HORIZONTAL AND VERTICAL FIELD CONTROL POINT DECIMAL PLACES: ENGLISH X,Y=2; Z=1 METRIC X,Y=3; Z=2
C-4	AT&T #15C ◇ 12345.12	0	C4	MISCELLANEOUS ANALYTICAL POINT DECIMAL PLACES: ENGLISH X,Y=2; Z=1 METRIC X,Y=3; Z=2
C-5	P C 10A† 1234	0	PC	PHOTO CENTERS SHALL BE ORIENTED SO THAT THEIR TEXT IS RIGHT - READING WHEN THE EXPOSURE NUMBERS INCREASE FROM LEFT TO RIGHT. (ACTIVE ANGLE IN THE DIRECTION OF THE OF THE FLIGHT LINE)

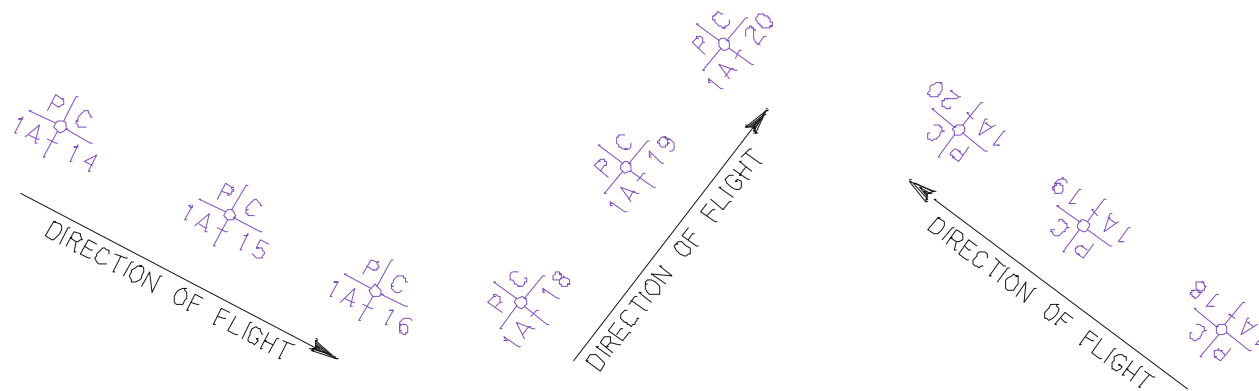
CONTROL

LEVEL 1 - COLOR 5

OoP
REFERENCE
CODE

EXAMPLE OF PHOTO
CENTER LAYOUT

C-6

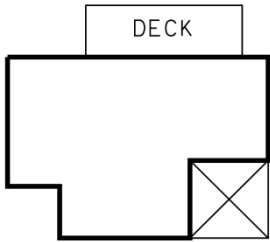


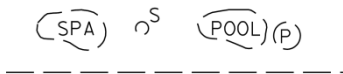

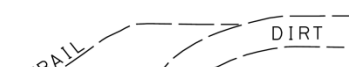






PLACE CONTROL AND PHOTO CENTERS IN TOP VIEW, NOT A ROTATED VIEW.
ALL CONTROL AND PHOTO CENTERS SHOULD BE PLACED AT THE TRUE
GROUND ELEVATION.

TIP: SET ACTIVE ANGLE TO DIRECTION OF FLIGHT LINE. USE PLACPNT01.BAS MACRO TO LOAD
CONTROL POINTS AND PHOTO CENTERS FROM DATA IN THE OFFICE OF PHOTOGRAMMETRY
SUPPLIES .GPE FILE.

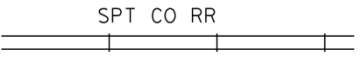

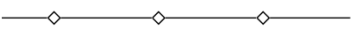





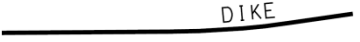

MANMADE PLANIMETRY

LEVEL 2 - COLOR 4

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESYLE NAME	DESCRIPTION
M-1		0	ph-Deck	A) LABEL DECKS, USE `D' FOR SMALL DECKS.
		2	ph-Build	B) BUILDINGS AND MOBILE HOMES. DO NOT SHOW TRAVEL TRAILERS. DRAW AT TOP OF STRUCTURE ELEVATION.
		0	ph-Deck	C) COVERED PORCH, CARPORT, PATIO, AND APARTMENT COVERED PARKING. DRAW AT TOP OF STRUCTURE ELEVATION.
M-2		0	LC=0	LABEL TANKS - DO NOT SHOW TANKS 5ft (1.5m) IN DIAMETER OR SMALLER.
M-3		0	POLE SP	POST, FLAGPOLE, WINDMILL, LABEL AS SHOWN.
M-4		0	LC=3	CONCRETE LIMIT LINE: DRIVEWAY, PATIO, SIDEWALK, GUTTER, LABEL POOL AND SPA.
M-5		0	LC=0	MISCELLANEOUS BOUNDARY: STAIRS, RAMP, BOARDWALK. LABEL AS NECESSARY TO CLARIFY. LABEL `RUINS' AND CONSTRUCTION AREAS `UC'.
M-6		0	ph-Dirt	A) LABEL TRAILS.
M-6A		0	ph-Dirt	B) DIRT ROADS.
M-7		0	ph-Cattle	C) CATTLE GUARD.
M-8		0	LC=0	FREEWAY AND BUSINESS ADVERTISING SIGNS. SHOW POST LOCATION, DO NOT SHOW CATWALK.
M-9		0	SIGN1 SIGN2	ROADSIDE SIGNS AND BILLBOARDS. MINIMUM SIZE 0.08in (2mm) ON MAP. (NOT SHOWN AT 1:1000 OR 1"=100')

MANMADE PLANIMETRY

LEVEL 2 - COLOR 4

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LIFESTYLE NAME	DESCRIPTION
M-10		0	ph-RR600	RAILROAD: USE ph-RR600 FOR 1"=50' USE ph-RR1K FOR 1"=100' CONTOURS AND SPOT ELEVATIONS ARE PLACED ON TOP OF RAILROAD TIES.
M-11		0	ph-RR1K	LABEL RAILROAD NAME.
M-12		0	ph-MedBar ph-fMedBar	MEDIAN BARRIER - ALL TYPES.
M-13		0	ph-GrdRail	GUARD RAIL.
M-14		0	SP	CRASH CUSHIONS: LABEL AS SHOWN.
M-15		0	LC=2	MISC. BOUNDARY: LABEL DIRT PILES AS SHOWN.
M-16		0	ph-Asph	EDGE OF ASPHALT FOR DRIVEWAYS, PRIVATE ROADS, PARKING AREAS, PLAYGROUNDS, ETC. ALSO, SEE R-3 ON LEVEL 3, PAGE 6.
M-17		2	ph-Curb ph-fCurb	BARRIER CURB IN PARKING LOTS, DRIVEWAYS, ETC. (IF STATE, COUNTY, OR CITY ROADS USE R-5). ALSO, SEE LEVEL 3, SEE PAGE 6.
M-18		2	ph-Dike	SYMBOLIZE AND LABEL ASPHALT DIKE AS SHOWN FOR PARKING LOTS.
M-19		0	ph-LnStrp ph-fLnStrp	SYMBOLIZE LANE STRIPES FOR SHOPPING CENTERS AND PRIVATE PARKING LOTS.






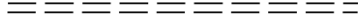
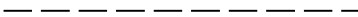

FENCES AND WALLS

LEVEL 2 - COLOR 4

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LIFESTYLE NAME	DESCRIPTION
F-1		2	ph-RWall F	RETAINING WALL WITH FENCE ON TOP WITH THE "V" POINTING TOWARDS THE HIGH SIDE. (ADD D-2 BREAKLINE NEAR FRONT AND BACK OF WALL).
F-2		0	ph-Fence ph-fFence	(A)FENCE (B)GATE.
F-3		0	ph-MWall	MASONRY WALL OR SOUNDWALL.
F-4		2	ph-RWall	RETAINING WALL WITH FENCE ON TOP WITH THE "V" POINTING TOWARDS THE HIGH SIDE.
F-5		2	ph-Rwall M	RETAINING WALL WITH MASONRY WALL. (ADD D-2 BREAKLINE NEAR FRONT AND BACK OF WALL).
F-6		0	ph-Mwall F	MASONRY WALL WITH FENCE ON TOP.

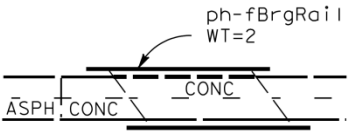


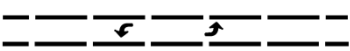
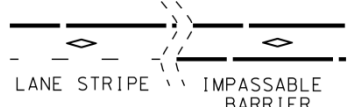
STATE, COUNTY AND CITY ROADS

LEVEL 3 - COLOR 4

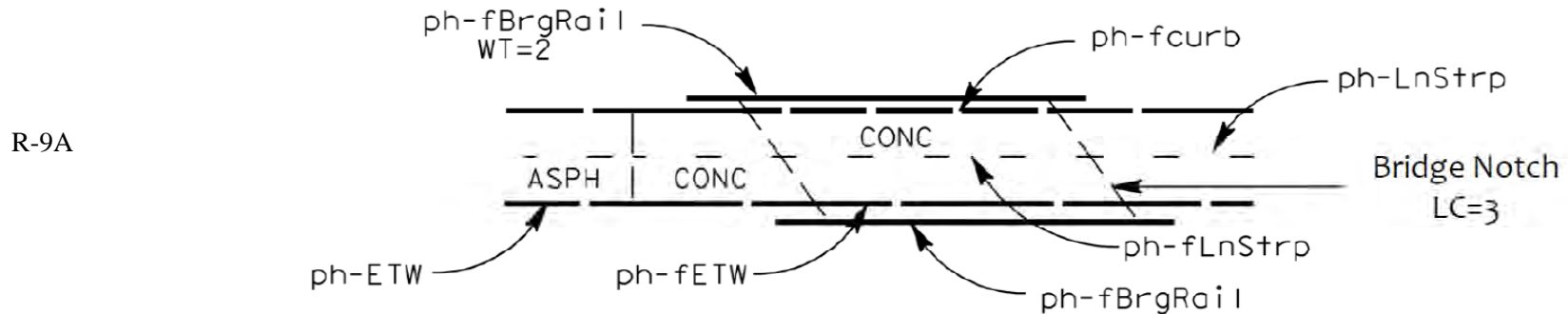
OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LIFESTYLE NAME	DESCRIPTION
R-1		2	ph-ETW ph-fETW	EDGE OF TRAVELED WAY FOR STATE HIGHWAY. SEE TRAVELED WAY NOTES AND EXAMPLES ON PAGES 11 THRU 14.
R-2		2	ph-ETW2 ph-fETW2	EDGE OF TRAVELED WAY FOR RAMPS, COUNTY ROADS AND CITY STREETS. SEE TRAVELED WAY NOTES. SEE PAGES 8 THRU 10.
R-3		0	ph-Asph	EDGE OF ASPHALT FOR STATE, COUNTY ROADS AND CITY STREETS. ALSO, SEE M-16 LEVEL 2.
R-4		2	ph-Curb ph-fCurb	CONCRETE BARRIER CURB, (GUTTER IS LS=3, WT=0) BREAK CURB AT DRIVEWAYS.
R-5		2	ph-Curb ph-fCurb	CONCRETE BARRIER CURB, NO GUTTER. BREAK CURB AT DRIVEWAYS.
R-6		0	LC=3	ROLLED CURB & GUTTER.
R-7		0	LC=3	CONCRETE LIMIT LINE.
R-8		2	ph-Dike	SYMBOLIZE AND LABEL ASPHALT DIKE AS SHOWN.

STATE, COUNTY AND CITY ROADS

LEVEL 3 - COLOR 4

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINSTYLE NAME	DESCRIPTION
R-9		2	ph-fBrgRail	BRIDGE: SHOW RAILS, CURB, AND ENDS OF BRIDGE. LABEL SURFACE TYPE. LABEL PEDESTRIAN OVERCROSSINGS 'PED OC'. SEE BRIDGE DETAIL BELOW.
R-10		0	ph-LnStrp ph-fLnStrp	LANE STRIPING. (SEE TW 8 AND E-7, E-9)
R-11		2	LC=0	CROSSWALK AND STOPLINE/LIMIT LINE.
R-12		2	ph-ETW2 LTA	LEFT TURN LANE ARROWS - SYMBOLIZE EXISTING OR ONCE PER MODEL AS NEEDED. DO NOT PLOT OTHER TRAFFIC ARROWS.
R-13		2	ph-ETW DIAMND ph-LnStrp	HIGH OCCUPANCY VEHICLE (HOV) LANE. SYMBOLIZE EXISTING DIAMONDS OR AS NEEDED.

BRIDGE DETAIL



TYPICAL TRAVELED WAY (TW)

LEVEL 3 - COLOR 4

NOTES FOR R-1 AND R-2

OoP REFERENCE CODE	PHOTO	MAPPING
TW-1	CONCRETE	PLACE TW ON EDGES OF CONCRETE.
TW-2	ASPHALT	A) PLACE TW ON FOG STRIPES (EDGE LINES). B) IF FOG STRIPE IS LESS THAN 3FT (1m) FROM EDGE OF ASPHALT, ONLY SHOW FOG STRIPE.
TW-3	CURB AND/OR GUTTER	PLACE IN LIEU OF TW IF CURB IS WITHIN ONE METER OF THE FOG STRIPE.
TW-4	BIKE LANE	PLACE TW ON ROADWAY SIDE OF BIKE LANE. LABEL 'BIKE LANE'.
TW-5	IF NO VISIBLE FOG STRIPE	PLACE TW AT EDGE OF ASPHALT.
TW-6	CONTINUOUS LEFT TURN	PLACE TW ON BOTH SIDES OF LEFT TURN LANE. PLACE LEFT TURN ARROWS.
TW-7	LEFT TURN CHANNELIZING	PLACE TW IN LIEU OF CHANNELIZED STRIPING.
TW-8	TWO LANE HIGHWAY	PLACE R-10 (LANE STRIPE), NOT TW ON CENTER LINES.
TW-9	INTERSECTIONS & RAMPS	DO NOT PLACE TW ACROSS RAMP ENTRANCES, EXITS, OR INTERSECTIONS.

IF IT IS NOT TYPICAL OR OBVIOUS WHERE TRAVELED WAY SHOULD BE PLACED, CALL THE OFFICE OF PHOTOGRAMMETRY IN SACRAMENTO FOR GUIDANCE. PLEASE REFER TO TYPICAL TRAVELED WAY EXAMPLES.

TYPICAL TRAVELED WAY EXAMPLES

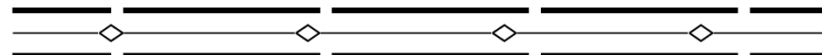
OoP
REFERENCE
CODE

CONCRETE FREEWAY



E-1

ALL TYPES MEDIAN BARRIER

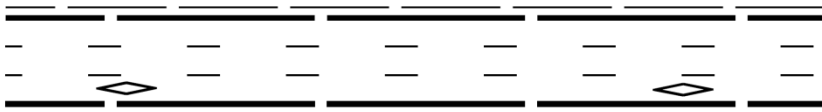


ASPHALT FREEWAY

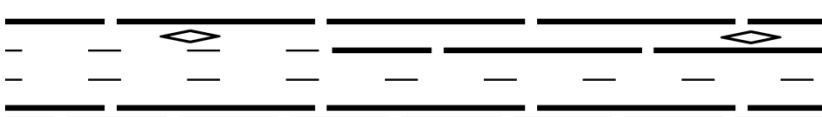


E-2

HIGH OCCUPANCY VEHICLE
(HOV)



(HOV) WITH BARRIER



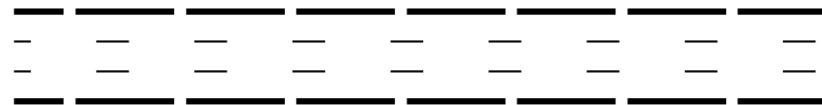
E-3

UNDIVIDED MULTI-LANE
STREET (TWO WAY)



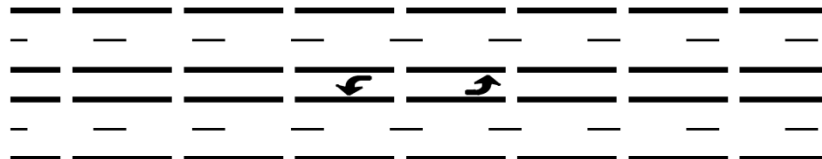
E-4

MULTILANE STREET
(ONE WAY)



E-5

MULTI-LANE STREET
WITH CONTINUOUS
TWO WAY
LEFT TURN ONLY



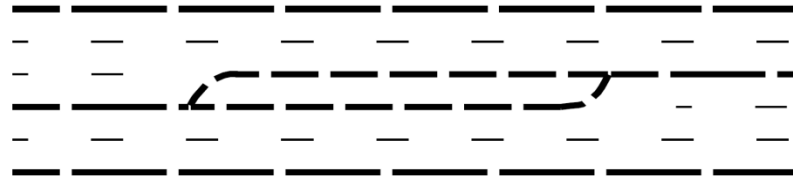
TYPICAL TRAVELED WAY EXAMPLES

**OoP
REFERENCE
CODE**

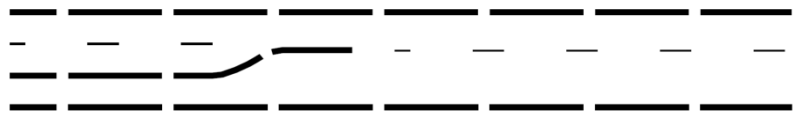
E-6 TWO LANE STREET WITH
CONTINUOUS TWO WAY
LEFT TURN ONLY



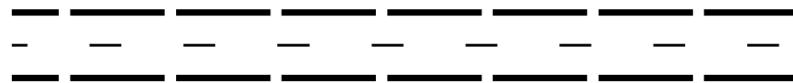
E-7 MULTILANE STREET WITH
LEFT TURN "POCKETS" AT
INTERSECTIONS (TWO WAY)



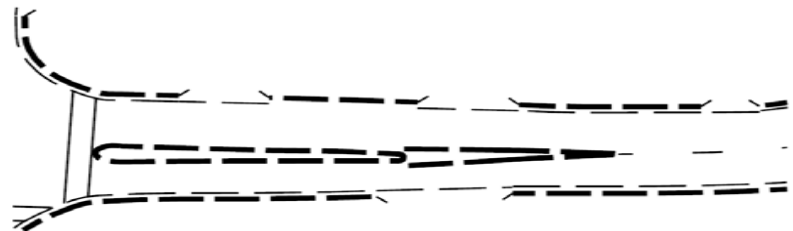
E-8 TWO LANE STREET
WITH LEFT TURN
"POCKET" AT
INTERSECTIONS



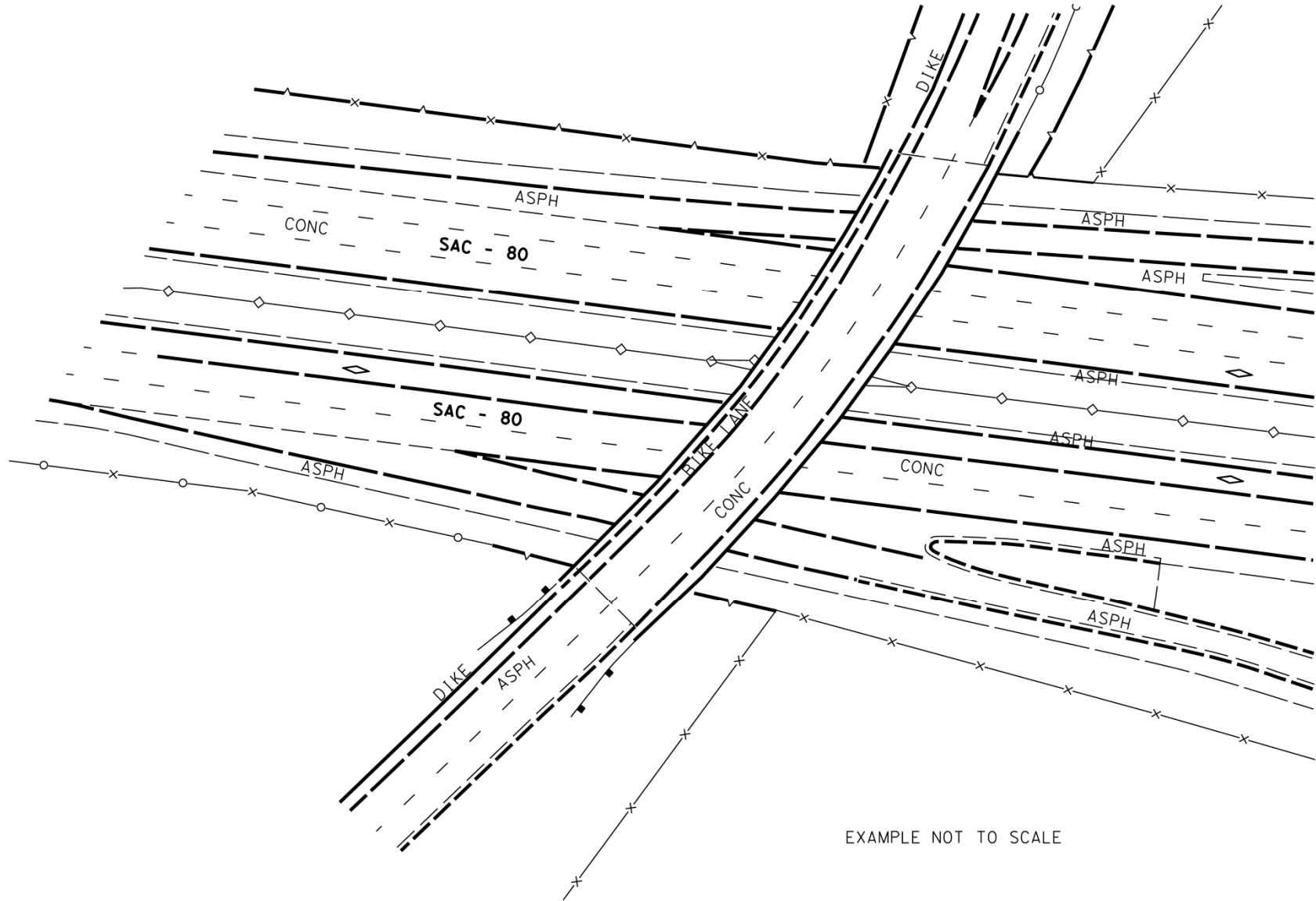
E-9 TWO LANE STREET WITH
LEFT TURN "POCKET" AT
INTERSECTIONS



E-10 PLACE CURB IN LIEU
OF TRAVELED WAY IF CURB
IS WITHIN THREE FEET
OF THE FOG STRIPE



TYPICAL TRAVELED WAY FOR "ON" AND "OFF" RAMPS






VEGETATION AND NATURAL FEATURES

LEVEL 4 - COLOR 2

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESYLE NAME	DESCRIPTION
V - 1		0	TR4 TR8	ORCHARDS: PERMETER TREES TO SCALE, USE A 'DOT' FOR INTERIOR TREES, 'X' FOR MISSING TREES. 'X' = FONT 2, TEXT SIZE 5FT FOR 1" = 50'. DRIP LINE OF TREE COMPILED AT TOP OF FOILAGE.
V - 2		0	ph - Vines	VINYARDS: LINES SHOW ROW DIRECTION, LINESYLE ph - Vines PLACES THE 'V' AT THE ENDS.
V - 3		0	ph - Trees	FOR SCALES 1" = 100' OR SMALLER: SYMBOL AROUND PERIMETER AND LABLE AS SHOWN NOTE: FOR SCALES 1" = 50' OR GREATER, PLOT PERIMETER TREES AND ROWS

VEGETATION AND NATURAL FEATURES

LEVEL 4 - COLOR 2

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LIFESTYLE NAME	DESCRIPTION
V - 4	 <p><u>REQUIRED LABELS</u></p> <p>CULTIVATED SCATTERED/ ROCKS BRUSH</p> <p>DENSE/ TREES BRUSH GROUND COVER CROPS</p> <p>GNV</p>	0	ph - Trees TR8 TR4	<p>(A) LABEL PALM TREES WITH THE LETTER "P" IN THE CENTER. TREES & PALMS, BRUSH, GROUND COVER GREATER THAN 1/2 CONTOUR INTERVAL, HEDGES AND ROWS OF NARROW TREES.</p> <p>(B) LABEL ONLY AND DO NOT SYMBOLIZE LARGE AREAS. (USE REQUIRED LABELS)</p> <p>(C) LABEL, SYMBOLIZE, AND DASH CONTOURS THROUGH AREAS WITH GROUND COVER OVER ONE HALF CONTOUR INTERVAL HIGH. DO NOT DASH CONTOURS THROUGH SINGLE TREES. (USE REQUIRED LABELS)</p> <p>(D) DO NOT USE GNV IN SMALL AREAS* OF DENSE TREES. USE ONLY IF THERE ARE NO OPENINGS TO PLACE A SPOT ELEVATION IN LARGE DENSE TREE AREAS.</p> <p>* PLOTTED AREA LESS THAN 2"x 2"n (50mm x 50 mm)</p>
V - 5		0	LC=2	DO NOT CONTOUR LARGE ROCKS (HIGHER THAN ONE CONTOUR INTERVAL) - SYMBOLIZE (LC=2), LABEL, AND PLACE A SPOT ELEVATION ON TOP.
V - 6		0	MRSH	MARSH OR SWAMP.


UTILITIES AND DRAINAGE

LEVEL 5 - COLOR 6

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESYLE NAME	DESCRIPTION
U - 1	<p>TS or RS</p>	0	EL ELT PP	ELECTROLIER, ALUMINUM POLE, TRAFFIC OR RAILROAD SIGNAL (LABEL TS OR RS), AND POLE WITH WIRES AND ELECTROLIER
U - 2		0	POLE PP ANCHT	WOOD POLE, POLES WITH WIRES AND GUY WIRE
U - 3		0	WIRE TRNTOW	TRANSMISSION TOWER (TO SCALE) & LINES
U - 4		0	MH	MANHOLE DIAMETER = 0.12" (3 mm)
U - 5	<p>VC SP WELL UB RS</p>	0	SP	VALVE COVER, STANDPIPE, WELL, UTILITY LABEL AS SHOWN (RECTANGLE SIZE IS NOT BOX, AND RAILROAD CROSSING STANDARD, STANDARD - (SHOW ACTUAL SIZE)
U - 6		0	DI RDI	DRAINAGE DROP INLET 0.08"x 0.05" (2mm x 1.3 mm) ROUND DROP INLET DIAMETER = 0.08in (2 mm)
U - 7		0	FH	FIRE HYDRANT - OVERALL LENGTH 0.24in (6 mm).
U - 8		2	LC=0	HEADWALLS: D-2 BREAKLINES SHOULD BE PLACED ON GROUND NEAR BOTH FRONT AND BACK OF HEADWALLS.
U - 9		0	LC=0	LABEL ABOVE GROUND PIPES.

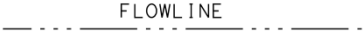
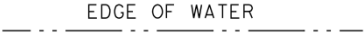
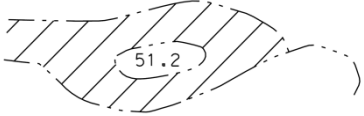
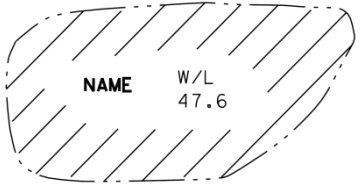

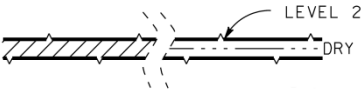

UTILITIES AND DRAINAGE

LEVEL 5 - COLOR 6

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESYLE NAME	DESCRIPTION
U - 10	<u> </u> U/G PIPE <u> </u> -	0	LC=3	DO NOT SHOW UNDERGROUND PIPES UNLESS SPECIFIED TO DO SO.
U - 11		0	CBX	CALL BOX 0.12" (3 mm) SQUARE

WATER

LEVEL 6 - COLOR 1

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LIFESTYLE NAME	DESCRIPTION
W-1	DRY WASH	0		LABEL - DO NOT CROSSHATCH OR SHOW WATER SYMBOL. CONTOURS AND SPOT ELEVATIONS WILL SHOW GENERAL BOUNDARIES.
W - 2		0	ph-FL	SMALL NATURAL STREAM OR UNLINED DITCH, SHOW WATER LINE EVEN IF DRY.
W - 2A		0	ph-Water	SHOW SHORELINE OR WATERS EDGE WITH A BODY OF WATER.
W - 3		0		LARGER NATURAL STREAMS: CROSSHATCH AREA AND LABEL NAMES, CROSSHATCHING SHOULD BE APPROXIMATELY 45 DEGREES TO EDGE OF WATER GRADUALLY ROTATE AS STREAM CHANGES DIRECTION, DO NOT CHANGE DIRECTION BETWEEN DESIGN FILES.
W - 4		0	ph-Water	STANDING BODIES OF WATER: WATER. LABEL BODY OF WATER WITH NAME. LABEL WATER LEVEL AS SHOWN. CROSSHATCH AROUND EDGE APPROX. 0.6" (15 mm) INTO
W - 5		0	ph-FL	CONCRETE LINED "V" DITCH, SHOW FLOW LINE, EVEN IF DRY.
W - 6		0	ph-FL	CONCRETE LINED CHANNEL WITH VERTICAL SIDES IF DRY, LABEL 'DRY' AND DO NOT CROSSHATCH.
W - 7		0	ph-FL	CONCRETE LINED CHANNEL WITH SLOPING SIDES IF DRY, LABEL 'DRY' AND DO NOT CROSSHATCH. PLACE WATER SYMBOL AT TOE OF SIDES.

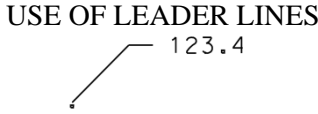

CONTOURS

LEVEL 7 - COLOR 7

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESYLE NAME	DESCRIPTION
K - 1		0/2	LS=0	SOLID CONTOUR LINES - OPEN AREAS AND AREAS OF SCATTERED VEGETATION. INDEX CONTOURS WT=2, INTERMEDIATE CONTOURS WT=0.
K - 2		0/2	ph-GNV	GROUND NOT VISIBLE - DASH CONTOUR LINES - IN DENSE AREAS, PLACE A SPOT ELEVATION IN OPEN AREAS WHERE POSSIBLE.
K - 3				OMIT INTERMEDIATE CONTOURS WHERE THE INDEX CONTOURS ARE CLOSER THAN 0.5" (13 mm).
K - 4				INDEX CONTOURS ONLY IN VERY DENSE AREAS WHERE GROUND IS NOT VISIBLE. FOR LABELS SEE V-4(D). DO NOT LEAVE ANY AREAS BLANK.
K - 5		0/2 0/2	ph-DepCont ph-DepGNV	USE DEPRESSION CONTOUR LINESYLE TO INDICATE DEPRESSIONS. DEPRESSION TICS TO POINT DOWNHILL.
K - 6				NOTE: FOR INDEX CONTOUR ANNOTATION (SEE LEVEL 8).
K - 7		0/2	ph-fCont ph-fDepCont	FLOAT DEPRESSION CONTOUR FOR BRIDGE SURFACE. FLOAT CONTOUR FOR BRIDGE SURFACE.

SPOT ELEVATIONS

LEVEL 8 - COLOR 7

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESYLE NAME	DESCRIPTION
E - 1	1234.1	0		<p>A) DECIMAL POINT IS THE LOCATION OF THE ELEVATION.</p> <p>B) THE SPOT ELEVATION TEXT SHALL BE PLACED AT THE TRUE ELEVATION.</p> <p>C) THE TEXT JUSTIFICATION SHALL CORRESPOND TO THE DECIMAL POINT - CENTER BOTTOM JUSTIFICATION AND ROTATED IN THE DIRECTION OF THE FLIGHTLINE</p> <p>D) ANNOTATE 1 DECIMAL PLACE FOR 1"=50' AND 2 DECIMAL PLACES FOR 1:500 (METRIC)</p> <p>E) SEE ALSO LEVEL 11 "DATA FOR DTM". USE LS=0 FOR LEVEL 11 GROUND POINTS. USE LS= ph-float FOR LEVEL 11 POINTS ON ELEVATED STRUCUTRES</p>
E - 2	ROADWAYS AND RAILROADS			<p>PLACE A SPOT ELEVATION EVERY 2in (50 mm) IF THERE ARE NO CONTOURS. CENTER SPOT ELEVATIONS BETWEEN TWO CONTOURS IF CONTOURS ARE 2"-4"(50-100 mm) APART.</p>
E - 3	SLOPING GROUND			<p>PLACE A ROW OF SPOT ELEVATIONS 2" (50 mm) APART, CENTERED BETWEEN TWO CONTOURS, IF CONTOURS ARE 2 TO 4 in (50 TO 100 mm) APART.</p>
E - 4	FLAT GROUND			<p>PLACE ON A FLEXIBLE 2 in (50 mm) GRID AT LEAST 1.5"(30 mm) AWAY FROM A CONTOUR.</p>
E - 5	EXTRA SPOT ELEVATIONS	0		<p>PLACE ON TOPS, SADDLES, RIDGES, DEPRESSIONS, DITCHES, ETC.</p>
E - 6	USE OF LEADER LINES 	0		<p>USE LEADERLINES SPARINGLY, ONLY WHEN CLARIFICATION IS NECESSARY.</p>
E - 7		0		<p>DO NOT BREAK LINE TO PLACE LABLE. LABEL INDEX CONTOURS EVERY 10" (25 cm) OR CLOSER IN RUGGED TERRAIN (PLACE ANNOTATION ON LEVEL 8). ANNOTATION SHALL BE PLACED AT TRUE GROUND AND INDEX ANNOTATION IS WT=0.</p>

FOR FUTURE USE
LEVEL 9

(THIS PAGE IS LEFT BLANK INTENTIONALLY)

FILE IDENTIFICATION

LEVEL 10 - COLOR 0

OoP
REFERENCE
CODE

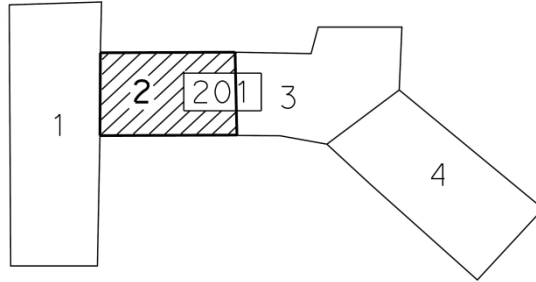
EXAMPLE

W
T

CELL OR
LINESTYL
E NAME

DESCRIPTION

T - 1



ORIENT THE FILE LAYOUT DIAGRAM SO THAT THE NORTH DIRECTION IS THE SAME AS MAP. LAYOUT DIAGRAM SHOULD OUTLINE MAPPING LIMITS OF EACH FILE. CROSSHATCH THE AREA COVERED BY CURRENT MAP FILE.

201 IS A 1"=20' (1:200) SCALE MAP INSIDE OF 1"=50' (1:500) SCALE MAPPING.

T - 2

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	
12-QBA-55-----	PM.17.2/17.9----- FILE 1----- OF 1-----
PHOTO ASC: 0513-153A---	PHOTO DATE: 03-11-05 PHOTO SCALE 1:-----
MAP ASC: 0501-16e---	MAP COMPLETION DATE: 03-23-05
FILENAME: C05016E0501.DGN	
DIGITAL COMPILATION BY:	
-----ABC.MAPPING.COMPANY-----	
VERTICAL DATUM: NGVD 1929	
COORDINATE SYSTEM: CCS 83_(1991.35)----- ZONE 6	
UNITS: US_SURVEY_FEET MAP SCALE 1"= 50' CONTOUR INTERVAL: .2'	
DESIGN PLANE: 4--- GO= 5853251.6352,1941251.6352,-214748.6352---	

1

TBE

THE TITLE BLOCK DATA ENTERED IN THIS CELL IS SUPPLIED BY THE OFFICE OF PHOTOGRAMMETRY IN THE MAPPING ORDER LETTER. THE CONTRACTOR IS REQUIRED TO FILL IN ALL BLANK SPACES IN THE ENTER DATA FIELDS OF THE TITLE BLOCK.
TBE = ENGLISH TITLE BLOCK
THE TITLE BLOCK IS ORIENTATEDE AND READS LEFT TO RIGHT IN THE DIRECTION OF THE FLIGHT LINE.

T - 5



1

NA

NORTH ARROW

DATA FOR DTM

LEVEL 11 - COLOR AS NOTED

OoP
REFERENCE
CODE

DESCRIPTION

POINT ELEMENTS: AT THE SAME DIGITIZED SPOT ELEVATION DECIMAL POINT ON LEVEL 8, PLACE AN **ACTIVE POINT** ON LEVEL 11 FOR EACH SPOT ELEVATION. ANNOTATE ON LEVEL 8. POINT ELEMENT IS PLACED AT TEXT NODE (DECIMAL POINT). (ELEMENT TYPE=3, LV=11, CO=7, WT=0, LC=0)
HELPFUL HINT: WHEN PLACING SPOT ELEVATIONS WITH MORE THAN ONE DIGIT TO THE LEFT OF THE DECIMAL POINT. PLACE AN EQUAL NUMBER OF BLANK SPACES AFTER THE DIGIT ON THE RIGHT TO KEEP THE TEXT JUSTIFICATION "CENTER BOTTOM".

D - 1

1234.1
 **ACTIVE POINT**

MASS POINTS: (LV=11, CO=7, WT=0, LC=0)

TERRAIN BREAKLINES: TRUE GROUND ELEVATION. (LV=11, CO=3, WT=0, LC=0)

LINE WEIGHT=0, LINE CODE=0, COLOR=3

A) COMPILER AT SIGNIFICANT CHANGES IN THE SLOPE OF THE TERRAIN, MANMADE OR NATURAL.

EXAMPLES:

- 1) TOP AND TOE OF CUT OR FILL SLOPE.
- 2) EDGE OF CUT SLOPE BENCH.
- 3) ACROSS THE CREST OF A HILL.

D - 2

4) ACROSS THE BOTTOM OF A DEPRESSION.

5) GROUND AS NEAR THE FRONT OF RETAINING AND HEADWALLS AS POSSIBLE.

6) GROUND AS NEAR THE BACK OF RETAINING AND HEADWALLS AS POSSIBLE.

B) DISTANCE BETWEEN POINTS ALONG THESE ELEMENTS SHALL NOT EXCEED 100 FT. (GROUND DISTANCE).

C) BREAK LINES SHALL NOT CROSS OTHER BREAKLINES.

D) WHERE BREAKLINES CROSS PLANIMETRIC OR CONTOUR LINES, ELEVATION AT MUST BE THE SAME.

E) BREAKLINE INTENDED TO SHOW AN OFFSET IN DISTANCE AND ELEVATION WILL NOT CROSS (i.e. CURBLINE AND FLOWLINE OR GUTTER).

AN "f" IN FRONT OF A LIFESTYLE NAME INDICATES A FLOATING LIFESTYLE WILL BE USED

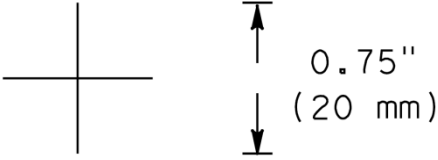
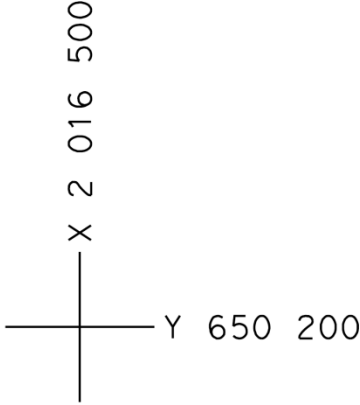
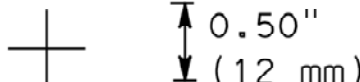
D - 3

THESE ELEVATED LIFESTYLES WILL APPEAR IDENTICAL TO THEIR GROUND COUNTERPARTS, EXCEPT THEY ARE FOR ELEVATED STRUCTURES SUCH AS A BRIDGE. (ie. ph-fcurb).

A LOWER CASE "f" IN FRONT OF THE NAME IN ORDER TO SEPERATE THEM FROM TRUE GROUND LIFESTYLES. THESE LIFESTYLES WILL BE REMOVED DURING PRODUCTION OF A DTM.

GRID TICS AND ANNOTATION

LEVEL 11 - COLOR 5

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYL E NAME	DESCRIPTION
G - 1		0	TIC	GRID TICK - (A POINT CELL, VIEW INDEPENDENT)
G - 2		0		A) LABEL GRID COORDINATES ON THE OUTSIDE PERIMETER GRID TICS ONLY. PLACE LABELS ON THE OUTSIDE OF THE GRID TICK, AWAY FROM THE MAPPING. B) TEXT SHALL BE ORIENTED ON GRID TICS SUCH THAT LABELS ARE LEGIBLE RELATIVE TO THE DIRECTION OF THE FLIGHT LINE.
G - 3		0		SUPPLEMENTAL OR ALTERNATE COORDINATE SYSTEM GRID TICK.

ENGLISH MAP

	<u>MAP SCALE</u>	<u>GRID SPACING</u>	<u>AT EVEN COORDINATES</u>
	1"=20'	100'	100'
G - 4	1"=50'	500'	500'
	1"=100'	1000'	1000'
	1"=200'	2000'	2000'

G - 5 AT LEAST 3 GRID TICS MUST BE COMMON BETWEEN FILES, PLOTTED SHEETS AND ADJOINING PROJECTS.

MAP SCALES

OoP REFERENCE CODE	MAPPING SCALE	C.I.	INDEX C.I.	SPOT ELEV	GRAPHIC SCALE	TEXT SIZE	MAPPING USED IN CONJUNCTION WITH:
S - 1	1" = 20'	1 FT.	5 FT.	0.00	0.4	3 FT.	STRUCTURES DESIGN.
S - 2	1" = 50'	2 FT.	10 FT.	0.0	1.0	6 FT.	ROADWAY DESIGN.
S - 3	1" = 100'	5 FT.	25 FT.	0.0	2.0	12 FT.	STUDIES: e.g. ENVIRONMENTAL, FEASIBILITY, AND PRELIMINARY DESIGN.
S - 4	1" = 200'	10 FT.	50 FT.	0.0	4.0	24 FT.	PRELIMINARY STUDIES: e.g. NEW ROUTE LOCATION, BYPASS, MASS TRANSPORTATION.

























NOTES

OoP REFERENCE CODE





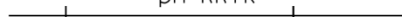


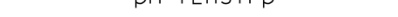

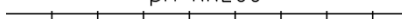

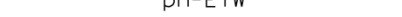
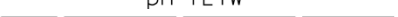








DESCRIPTION

- N - 1 SMALL CIRCLES AND SQUARES SHALL BE 0.08" (2 mm) UNLESS OTHERWISE NOTED.
- N - 2 SPACES IN DASHED LINES SHALL BE 0.06" (1.5 mm) UNLESS OTHERWISE NOTED.
- TOPOGRAPHY SHALL BE DRAFTED WITH TWO LINE WEIGHTS, FINE AND THICK.
HIGHWAY, STREET, AND PROPER NAMES SHALL BE DRAFTED WITH MEDIUM WEIGHT.
- N - 3 FINE - MicroStation WT=0, (0.3 mm)
MEDIUM - MicroStation WT=1, (0.5 mm)
THICK - MicroStation WT=2, (0.6 mm)
- N - 4 THE FLIGHT LINE ANGLE WILL BE THE ACTIVE ANGLE FOR TEXT IN THE MODEL.
- N - 5 TEXT SHALL BE UPPER CASE, VIEW DEPENDENT, LS=0, CALTRANS FONT 2, AND 0.12" (3 mm) SQUARE.
ALLOWABLE EXCEPTIONS TO FONT AND SIZE ARE IN CERTAIN CELLS AND DIAGRAMS. (i.e. TITLE BLOCKS AND FILE LAYOUT DIAGRAMS).
- N - 6 STATE HIGHWAYS SHALL BE LABELED WITH COUNTY ABBREVIATION AND ROUTE NUMBER; e.g. SAC - 80.
HIGHWAY, STREET, AND PROPER NAMES ARE SPACED AT ABOUT 1000 FEET ON THE GROUND OR AS NEEDED.
LABELS SHALL BE AT OR NEAR THE ELEVATION OF WHAT IS BEING ANNOTATED; e.g. PACIFIC OCEAN (LV=6, LC=0, WT=1, CO=1). AN EXCEPTION TO THIS IS CONTOUR ANNOTATION AND SPOT ELEVATIONS WHICH ARE ON LEVEL 8 (SPOT ELEV) INSTEAD OF LEVEL 7.
- N - 7 SURFACE TYPES ON LEVELS 2,3,4,5 AND 6 SHALL BE LABELED A MAXIMUM OF 20" (500 mm) APART (ASPH, CONC, DIRT, GRASS AND GNV)
- N - 8 LABEL STRUCTURE AND BUILDING "SHADOWS" WHERE THE GROUND IS NOT VISIBLE.
THE DESIGN FILE WILL HAVE WORKING PARAMETERS:
Unit Names
Master Units: FT
Sub Units: TN
- N - 9 **Resolution**
10 TN Per FT
1000 Pos Units Per TN

PHOTOGRAMMETRY CUSTOM LIFESTYLES

WEIGHT	LEVEL	LIFESTYLE APPEARANCE AND NAME	WEIGHT	LEVEL	LIFESTYLE APPEARANCE AND NAME
2	2/3	ph-Curb 	2	2	ph-Build 
0/2	7	ph-DepCont 	0	2	ph-Deck 
0/2	7	ph-DepGNV 	2	2/3	ph-Dike 
0	2	ph-Dirt 	0	6	ph-FL 
0	2/3	ph-Asph 	0	4	ph-Hedge 
0	2	ph-Fence 	0	2	ph-MWall 
0/2	7	ph-GNV 	0	11	ph-fBreak 
0	2	ph-GrdRail 	2	3	ph-fBrgRail 
0	2/3	ph-LnStrp 	0/2	2/3	ph-fConc 
0		ph-Levee 	7		ph-fCont 
0	2	ph-MWall 	0/2	7	ph-fGNV 
0	2	ph-MedBar 	0/2	7	ph-fDepCont 

PHOTOGRAMMETRY CUSTOM LIFESTYLES

WEIGHT	LEVEL	LIFESTYLE APPEARANCE AND NAME	WEIGHT	LEVEL	LIFESTYLE APPEARANCE AND NAME
2	2	 ph-RWall	0	6	 ph-Water
0	2	 ph-RR1KC	0/2	7	 ph-fDepGNV
0	2	 ph-RR1K	2	2/3	 ph-fCurb
0	2	 ph-RR600	0	2/3	 ph-fLnStrp
0	2	 ph-RR500			
0	2	 ph-RR200	0	2	 ph-fMedBar
0	3	 ph-ETW	2	3	 ph-fETW
2	3	 ph-ETW2	2	3	 ph-fETW2
0	4	 ph-Trees	0	11	 ph-Hidden
2	2	 ph-RWallF	0	2	 ph-Cattle
2	2	 ph-RWallM	0	4	 ph-Vines