Appendix C

EFB Code listing

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AERIAL PANELS

HV###	AERIAL TARGET	Point
HVPP	AERIAL TARGET PICTURE POINT	Point

NOTE! The point number and code should match the target layout sheets.
e.g. locating target 106, the point number should be 106 and coded as HV106.

ALIGNMENT POINTS

CS	CURVE TO SPIRAL	Point
PC	POINT OF CURVATURE	Point
PI	POINT OF INTERSECTION	Point
PT	POINT OF TANGENCY	Point
PCC	POINT ON COMPOUND CURVE	Point
POC	POINT ON CURVE	Point
PRC	POINT ON REVERSE CURVE	Point
POT	POINT ON TANGENT	Point
SC	SPIRAL TO CURVE	Point
ST	SPIRAL TO TANGENT	Point
TS	TANGENT TO SPIRAL	Point

NOTE! Be sure to add a descriptive note about the monument in the field book. State the type, size, depth, condition and any stamping on caps. Also state if monument was found or set. If set, state the method and procedure used to place it. All alignment points will need a sketch with reference ties in field book.

MONUMENTS

BM#	BENCH MARK	Point
TRBR	FOUND BEARING TREE	Point
MONC	FOUND CONCRETE MONUMENT	Point
FND	FOUND MONUMENT	Point
PCR	FOUND PROPERTY CORNER (PRIVATE)	Point
MONR	FOUND REFERENCE MONUMENT	Point
RWMIP	FOUND ROW MONUMENT IRON PIPE	Point
RWMRB	FOUND ROW MONUMENT REBAR	Point
RWMT	FOUND ROW MONUMENT T IRON	Point
WMON	FOUND WELL MONUMENT	Point
AZI	NGS AZIMUTH MARK	Point
REF	NGS REFERENCE MARK	Point
TRI	NGS TRIANGULATION MARK	Point
RWMC	ROW MARKER CONCRETE POST	Point
RWMP	ROW MARKER PLASTIC POST	Point
RWMW	ROW MARKER WOOD POST	Point
SET	SET ALIGNMENT MONUMENT	Point
SPCR	SET PROPERTY CORNER (PRIVATE)	Point
SRWM	SET ROW MONUMENT	Point

NOTE! Be sure to add a descriptive note about the monument in the field book. State the type, size, depth, condition and any stamping on caps. Also state if monument was found or set. If set, state the method and procedure used to place it. All alignment points will need a sketch with reference ties in field book.

When locating Right of Way markers, look for the monument also. Shoot both of them. Again give a good description of the monument.

Also for bench marks the code should be “BM*BMC14” or “BM*D487”. A description should be noted in field book to show information of the bench mark.

SECTION CORNERS

CALCQTR	CALCULATED QUARTER CORNER	Point
CALCSEC	CALCULATED SECTION CORNER	Point
CSEC	CENTER SECTION CORNER	Point
CLCOR	CLOSING SECTION CORNER	Point
EQCOR	EAST QUARTER CORNER	Point
MCOR	MEANDER CORNER	Point
NESEC	NE SECTION CORNER	Point
NQCOR	NORTH QUARTER CORNER	Point
NWSEC	NW SECTION CORNER	Point
SESEC	SE SECTION CORNER	Point
16COR	SIXTEENTH SECTION CORNER	Point
SQCOR	SOUTH QUARTER CORNER	Point
SDCOR	STANDARD SECTION CORNER	Point
SWSEC	SW SECTION CORNER	Point
WQCOR	WEST QUARTER CORNER	Point
WTCOR	WITNESS CORNER	Point

NOTE! Be sure to add a detailed description of the monument in the field book. Definitely describe if the monument was found or set. Give the size, type, depth, and condition of the monument. Also, describe any stamping on the cap even if it is illegible note it.

For section corners, describe which corner it is in the field book. e.g. “Point # 345 is the NW corner of Sec. 9, T145N, R80W. Found a 1” iron pipe with plastic cap stamped John Doe surveying company LS5000. The cap is 8 inches below the surface and in fair condition. Reference ties to this corner can be found in transit book 2 of 3 on page 21.”

Property corners should also have these types of descriptions. But, they do not need reference ties.

TRAVERSE POINTS

CALC	CALCULATED POINT	Point
CHK	CHECK IN POINT	Point
CP	CONTROL POINT	Point
GPS	GPS CONTROL POINT	Point
RP	RANDOM POINT	Point
RTK	RTK-GPS CONTROL POINT	Point
STA	STATION OF OCCUPIED POINT	Point

NOTE! When establishing a new control point (CP), give the code # the same as the point number. e.g. If the next point number is going to be 2010, and you are going to set a CP, the code should be “CP2010”.

Also the check in points (CHK) should have a descriptive note added.
e.g. “CHK*CP2010” or “CHK*HV106”

BRIDGE – BOX CULVERT

BXC	BOX CULVERT CONCRETE	Line
BR	BRIDGE	Line
PIER	PIER	Line
WING	WING WALL	Line

***3-D SURFACE(DTM) ***

ATSEB	ASBUILT BTTM OF EXST TOPSOIL BRK LINE	Line
ATSES	ASBUILT BTTM OF EXST TOPSOIL SPOT	Point
AMKB	ASBUILT BTTM OF MUCK EXST BRK LINE	Line
AMKS	ASBUILT BTTM OF MUCK EXST SPOT	Point
AFGB	ASBUILT FINISHED GRADE BRK LINE	Line
AFGS	ASBUILT FINISHED GRADE SPOT	Point
ATSPB	ASBUILT PPSD BTTM OF TOPSOIL BRK LINE	Line
ATSPS	ASBUILT PPSD BTTM OF TOPSOIL SPOT	Point
TIE	ASBUILT TIE POINT LINE	Line
BRK	DTM BREAK LINE	Line
SPOT	DTM SPOT ELEVATION	Point
GTX	GROUND TRUTH CROSS SECTION	Line
GTBRK	GROUND TRUTH DTM BREAK LINE	Line
GTSPOT	GROUND TRUTH DTM SPOT	Point

NOTE! DO NOT CROSS BREAK LINES or other 3D line styles like asphalt, concrete, curb and gutter etc.

CURB AND GUTTER

CRB6	6 CURB	Line
CRB8	8 CURB	Line
CG18	18 CURB AND GUTTER	Line
CG24	24 CURB AND GUTTER	Line
CG30	30 CURB AND GUTTER	Line
MC24	24 MOUNTABLE CURB AND GUTTER	Line
MC30	30 MOUNTABLE CURB AND GUTTER	Line
PCRB6	6 PORTABLE CURB	Line
PCRB8	8 PORTABLE CURB	Line
GUTT16	16 VALLEY GUTTER	Line
GUTT18	18 VALLEY GUTTER	Line
GUTT24	24 VALLEY GUTTER	Line
GUTT30	30 VALLEY GUTTER	Line

NOTE! All curb and gutters are to be located at the TOP OF THE CURB as close to the face as possible. Add the extension number every time a new line is started. e.g. CRB6; then use CRB61, then CRB62, etc. Shoot the flow line of the gutter as a break line. If there is a concrete sidewalk adjacent to the curb, it is not necessary to shot a concrete edge line at the back of curb. Nor is it necessary to shot an asphalt edge at the lip of the gutter.

DAMS–DRAINS-LAKES–RIPRAP-SCOURS

CLBK	CHANNEL BANK	Line
DRD	DRAINAGE DITCH UNLINED	Line
DRN	DRAINAGE PROFILE/FLOW LINE	Line
DAME	EARTH DAM	Line
DIK	EARTH DIKE OR BERM	Line
SPLE	EARTH SPILL WAY	Line
EOW	EDGE OF WATER	Line
LAK	LAKE OR POND	Line
SPLM	MASONRY OR ROCK SPILLWAY	Line
RIP	RIPRAP	Line
SCR	SCOUR	Line
SLO	SLOUGH	Line
WET	WETLANDS	Line

ELECTRIC

EL	ELECTRIC BOX OR LOCKER	Line
ELM	ELECTRIC METER	Point
EP	ELECTRIC PEDESTAL	Point
EVLT	ELECTRIC VAULT	Line
MHE	MANHOLE ELECTRIC	Point
PBX	PULL BOX (ELECTRICAL CONNECTION)	Point
PTWP	PUSH TO WALK POST	Point
UEC	UNDERGROUND ELECTRICAL CABLE	Line
UMC	UNDERGROUND MISSILE CABLE	Line
UME	UTILITY MARKER ELECTRIC	Point

NOTE! In a field book, show the starting and ending point numbers for the lines, owners, size, and type of line. Also if the lines cross each other, or cross the road at an unusual angle or place, make a note n the field book.

FENCES/GATES

FNB	BARB WIRE FENCE	Line
CTGD	CATTLE GUARD	Line
FNC	CHAIN LINK FENCE	Line
GATE	GATE	Line
FNW	WOOD FENCE	Line
FNWW	WOVEN WIRE FENCE	Line

FUEL AND TANKS

FP	FUEL DISPENSER	Point
FPI	FUEL DISPENSER ISLAND	Line
FFP	FUEL FILLER PIPE	Point
FLS	FUEL LEAK SENSOR MONITOR WELL	Point
FVP	FUEL VENT PIPE	Point
PLO	PETROLEUM PIPELINE	Line
TNKA	TANK ABOVE GROUND	Line
TNKU	TANK UNDER GROUND	Line
UMF	UTILITY MARKER FUEL	Point

GAS

GREG	GAS LINE REGULATOR	Point
GM	GAS MAIN LINE	Line
GMV	GAS MAIN VALVE	Point
GMTR	GAS METER	Point
GS	GAS SERVICE LINE	Line
GSV	GAS SERVICE VALVE	Point
GVB	GAS VALVE BOX	Point
GVP	GAS VENT PIPE	Point
MHG	MANHOLE GAS	Point
PLG	NATURAL GAS PIPELINE	Line
UMG	UTILITY MARKER GAS	Point

NOTE! In a field book, show the starting and ending point numbers for the lines, owners, size, and type of line. Also if the lines cross each other, or cross the road at an unusual angle or place, make a note in the field book.

GUARD RAILS/JERSEY BARRIERS

GDRBB	GUARD RAIL BOX BEAM	Line
GDRWB	GUARD RAIL W-BEAM	Line
GDRWR	GUARD RAIL WIRE ROPE	Line
GDRW	GUARD RAIL WOOD	Line
RAIL	HAND RAIL ATOP WALL	Line
JB	JERSEY BARRIER	Line

INLETS – DRAINS

BH	BEE HIVE INLET	Point
CIPD	CAST IN PLACE DRAIN CONCRETE	Line
CB	CATCH BASIN	Point
CBR	CATCH BASIN ROUND	Point
CBS	CATCH BASIN SQUARE	Point
CI	CURB INLET	Point
GRTD	GRATED TOP FOR CIPD	Line
IM	INLET MANHOLE WITH GRATED TOP	Point
SRCP	SLOTTED DRAIN IN RCP CULVERT	Point
SLTDRN	SLOTTED METAL DRAIN	Line

NOTE! All the inlets and drain type figures should be shot at the center of the item at the flow line. A descriptive note should be added to show the size of the inlet. If there are more than one inlet, shoot all of them.

MISCELLANEOUS

BORE	BORE HOLE	Point
CCT	CARD CONTROL MACHINE	Point
USR	DATA COLLECTOR OPERATOR\USER NAME	Point
MHU	MANHOLE UNIDENTIFIED	Point
MSPOT	MISC SPOT	Point
SLIDE	PLAYGROUND SLIDE	Line
SWSET	PLAYGROUND SWING SET	Line
THRES	THRESHOLD	Point
UMK	UTILITY MARKER UNKNOWN	Point
WSTA	WEATHER STATION FENCE OR ITEM	Point
SCALE	WEIGH STATION SCALE PLATFORM	Line

PIPE CULVERTS

CIP	CAST IRON PIPE	Line
CPP	CORRUGATED PLASTIC PIPE	Line
CPPF	CORRUGATED PLASTIC PIPE W/FLARES	Line
CSP	CORRUGATED STEEL PIPE	Line
CSPF	CORRUGATED STEEL PIPE W/FLARES	Line
EDP	EXPOSED DRAIN PIPE	Line
PVC	PVC PIPE	Line
RCP	REINFORCED CONCRETE PIPE	Line
RCPF	REINFORCED CONCRETE PIPE W/FLARE	Line

NOTE! All culverts are to be shot at the invert of the pipe and a note added to the code stating the condition of the barrel and flare. e.g. "+30RCPF*GG".

RAILROADS

RRBB	RAILROAD BATTERY BOX	Point
RRCB	RAILROAD CROSS BUCK	Point
RRXC	RAILROAD CROSSING CONCRETE	Line
RRXR	RAILROAD CROSSING RUBBER	Line
RRXT	RAILROAD CROSSING TIMBER	Line
XING	RAILROAD CROSSING UNDEFINED	Line
FRG	RAILROAD FROG	Point
RRS	RAILROAD SIGNAL	Point
RRSA	RAILROAD SIGNAL W/ARM	Point
SWT	RAILROAD SWITCH	Line
RR	RAILROAD TRACKS	Line
RRBRK	RR PROFILE BREAK LINE	Line
RRSPOT	RR PROFILE SPOT SHOT	Point

POLES – TOWERS – SIGNALS

BP	BRACE POLE	Point
FGP	FLAG POLE	Point
GP	GUARD POST	Point
GYP	GUY POLE	Point
GY	GUY WIRE	Line
LPC	LIGHT POLE CONCRETE	Point
LPS	LIGHT POLE STEEL	Point
LPTS	LIGHT POLE W/TRAFFIC SIGNAL	Point
LPW	LIGHT POLE WOOD	Point
MB	MAIL BOX	Point
OH	OVERHEAD LINES	Line
POL	POLE	Point
POST	POST	Point
PP	POWER POLE	Point
PPS	POWER POLE STRUCTURE	Point
PPL	POWER POLE W/LIGHT	Point
PPTR	POWER POLE W/TRANSFORMER	Point
TELG	TELEGRAPH POLE	Point
TP	TELEPHONE POLE	Point
TWR	TOWER-RADIO-TV-MICRO WAVE	Point
TSG	TRAFFIC SIGNAL	Point
TSCB	TRAFFIC SIGNAL CONTROL BOX	Point
TSS	TRAFFIC SIGNAL SENSOR	Line
TSWA	TRAFFIC SIGNAL W/ARM	Point
TRLS	TRANSMISSION LINE STRUCTURE	Point

SANITARY SEWER

MHS	MANHOLE SANITARY	Point
MHFS	MANHOLE SANITARY FORCE MAIN	Point
SSCLN	SANITARY CLEANOUT	Point
SAN	SANITARY SEWER LINE	Line
SSGV	SANITARY SYSTEM GATE VALVE	Point
SNVP	SANITARY VENT PIPE	Point
SEP	SEPTIC TANK	Line

Note! Descriptive notes need to be added in the field book on all manholes. The rim elevation, type of structure, number of lift rings, inlet and outlet types, sizes, directions, and invert elevations.

SIGNS

SGNOH	OVERHEAD SIGN STRUCTURE	Line
SIGN	PRIVATE SIGN 1 POLE ONLY	Point
SIGNS	PRIVATE SIGN 2 OR MORE POLES	Line
RM	REFERENCE MARKER (MILE POSTS)	Point
SGN	TRAFFIC SIGN 1 POLE ONLY	Point
SGNS	TRAFFIC SIGN 2 OR MORE POLES	Line

STORM SEWER

MHST	MANHOLE STORM	Point
RSSS	ROUND STORM SEWER STRUCTURE	Line
SDVP	STORM DRAIN VENT PIPE	Point
STO	STORM SEWER LINE	Line
SSO	STORM SEWER OUTLET	Line
SSOF	STORM SEWER OUTLET W/FLARE	Line

TELEVISION

TV	TV CABLE	Line
TVFO	TV FIBER OPTIC	Line
FOTVP	TV FIBER OPTIC PEDESTAL	Point
TVP	TV PEDESTAL	Point
UMTV	UTILITY MARKER TV	Point

STRUCTURES

BGB	BUILDING BRICK	Line
BGC	BUILDING CONCRETE	Line
BGF	BUILDING FRAME	Line
BGM	BUILDING METAL	Line
BGMH	BUILDING MOBILE HOME	Line
BGW	BUILDING WOOD	Line
CAN	CANOPY	Line
DECK	DECK	Line
LFST	LIFT STATION	Line
PLTR	PLANTER	Line
RTWC	RETAINING WALL CONCRETE	Line
RTWR	RETAINING WALL ROCK (MASONRY)	Line
STEP	STEPS	Line

Note! Most of these codes should use the "!" (CLOSE FIGURE) linking code on the last shot. e.g. "!BGW"

SURFACES

ASP	ASPHALT EDGE	Line
CON	CONCRETE EDGE	Line
CRACK	CRACK IN ROAD	Line
DRT	DIRT ROAD-TRAIL	Line
HCR	DISABLED RAMP	Line
FLU	FLUME	Line
GRV	GRAVEL EDGE	Line
DOK	LOADING DOCK (CONCRETE)	Line
GRVP	PIT OR STOCK PILE	Line

NOTE! Shoot a break line down the center line of each road using a "BRK" code. these shots do not have to be directly on the center line alignment. Be sure not to cross these types of line figures. For sidewalks or bike trails use asphalt, concrete, or gravel codes as needed.

TELEPHONE

MHT	MANHOLE TELEPHONE	Point
PTS	PAY TELEPHONE STAND	Point
PVT	PRIVATE TELEPHONE CABLE	Line
TBO	TELEPHONE BOOTH	Line
TB	TELEPHONE BOX OR LOCKER	Line
T	TELEPHONE CABLE	Line
TFO	TELEPHONE FIBER OPTIC	Line
FOTPC	TELEPHONE FIBER OPTIC PEDESTAL	Point
TPC	TELEPHONE PEDESTAL	Point
TVLT	TELEPHONE VAULT	Line
UMT	UTILITY MARKER TELEPHONE	Point

TREES

EVGS	EVERGREEN SMALL UP TO 4	Point
EVGL	EVERGREEN LARGE 5+	Point
HG	HEDGE	Line
SB	SHRUB	Point
STP	STUMP	Point
TRS	TREE SMALL 1-5	Point
TRL1	TREE LARGE 5-10	Point
TRL2	TREE LARGE 10-15	Point
TRL3	TREE LARGE 15-20	Point
TRL4	TREE LARGE 20-25	Point
TRL5	TREE LARGE 25-30	Point
TRL6	TREE LARGE 30-35	Point
TRLX	TREE Large 35+	Point
TRM	TREE MASS	Line
TRMT	TREE W/MULTIPLE TRUNK	Point

WATER

ARV	AIR RELEASE VALVE	Point
ANODE	ANODE	Point
HYD	FIRE HYDRANT	Point
GWM	GROUND WATER MONITOR WELL	Point
HB	HOSE BIB	Point
SMH	MANHOLE STEAM	Point
MHAV	MANHOLE W/AIR RELEASE VALVE	Point
MHW	MANHOLE WATER	Point
MHWM	MANHOLE WATER W/METER	Point
MHWV	MANHOLE WATER W/VALVE	Point
SPK	SPRINKLER HEAD	Point
SPKV	SPRINKLER VALVE	Point
STM	STEAM LINE	Line
UMW	UTILITY MARKER WATER	Point
WF	WATER FOUNTAIN	Point
WGV	WATER GATE VALVE	Point
WM	WATER MAIN LINE	Line
WMV	WATER MAIN VALVE	Point
WMTR	WATER METER	Point
WS	WATER SERVICE LINE	Line
WSV	WATER SERVICE VALVE	Point
WVP	WATER VENT PIPE	Point
WELL	WATER WELL	Point
WML	WIND MILL	Point