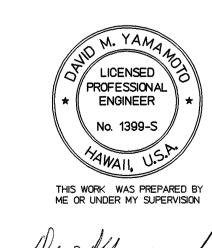
LIST OF ABBREVIATIONS AND SYMBOLS

FED. ROAD	STATE	FED. AID	FISCAL	SHEET	TOTAL
DIST. NO.		PROJ. NO.	YEAR	NO.	SHEETS
HAWAII	HAW.	BR-19-2(45)	1999	3	20

Ø Diameter Hotz Hotzontal (E) Existing HDPE High Density Polyethyla (N) New ID. Inside Diameter AC. At Lg Long Abut. Asphaltic Concrete Min Minimum Approx. Approximate O.H. Opposite Hand AZ. Azimuth oc On Center Beg Beginning Pav*t, Pavm*t Pavement BOT Bottom PL Plate CP. Complete Penetration psi Pounds Per Square Inc clr Clear PVC Polyvinyl Chloride conc Concrete Reinf Reinforcing cont. Continuous Sht Sheet Cy Cubic yard Sim. Similar Det. Detail Specs Specifications Ea Each Specs Specifications Ea Each Stl. Street Ei Ele	ą_	Centerline	11	
(N) New Ibs Pounds A.C. At Abut. Asphaltic Concrete Approx. Approximate A.Z. Azimuth Beg Beginning BOT Bottom C.P. Complete Penetration clr Clear Conc. Concrete Cont. Continuous Cy Cubic yard Det. Detail Dia Diameter Ea Each Et, Elev Elevation Et, Elev Elevation Et, Elev Each Way EXC. Excavation EXC. Excavation EXC. Excavation Exist. Existng F.P. Full Penetration ffc Specified Minimum Yield Stress of Steel gr. Grade GRP. Granted Ruthle Polymement ID. Inside Diameter Ibs Pounds Po		Diameter	Horiz	Horizontal
AC. At Lg Lg Long Abut: Asphaltic Concrete Approx. Approximate AZ. Azimuth Beg. Beginning BOT Bottom CP. Complete Penetration CIr Clear Conc. Concrete Conc. Concrete Cont. Continuous Cy Cubic yard Cy Cubic yard CE, Beach CE, Beach CE, Beach CE, Cetach Conc. Continuous CS, Sht Sheet CY Cubic Ward CE, Cottinuous CS, Sht Sheet CY Cubic Stan Station CE, Specifications CE, Specifications CE, Cottinuous CS, Sht Sheet CY Cubic Stan Station CE, Specifications CE, Specifications CE, Cottinuous CS, Sht Sheet CS, Specifications COTION COTI	(E)	Existing		
A.C. A1 Abut. Asphaltic Concrete Approx. Approximate AZ. Azimuth Beg. Beginning BOT Bottom C.P. Complete Penetration clr Clear Conc Concrete Cont. Continuous Cy Cubic yard Det. Detail Dia Diameter Ea Each El, Elev Elevation El, Elev Elevation EMB Embedment EQ EW Each Way EXC. Excavotion EXIST. Existing EXIST. Exis	(N)	New		
Abut. Asphaltic Concrete Approx. Approximate AZ. Azimuth Beg. Beginning BOT Bottom C.P. Complete Penetration C.P. Complete Penetration C.Oncrete Conc. Concrete Cont. Continuous C.Y. Cubic yard Det. Detail Dia Diameter Ea Each Elevation El, Elev Elevation Emb Embedment EQ Equal EW Each Way EXC. Excavation Exist. Existing F.P. Full Penetration AZimuth Azimut	A.C.	At		
Approx. Approximate AZ. Azimuth Beg. Beginning BOT Bottom C.P. Complete Penetration cr Clear Conc. Concrete Cont. Continuous Cy Cubic yard Det. Detail Bi Diameter Each Elev Elevation El, Elev Elevation EW Each Way EXC. Excavation Exist. Existing F.P. Full Penetration AZ. Azimuth AZ. On Center AZ. Azimuth AZ. On Center AZ. Azimuth AZ. On Center AZ. On	Abut.	Asphaltic Concrete		_
AZ. Azimuth oc On Center Beg. Beginning Pav't, Pavm't Pavement BOT Bottom PL Plate C.P. Complete Penetration clr Clear PVC Polyvinyl Chloride conc Concrete cont. Continuous Cy Cubic yord Sim. Similar Det. Detail SP Space Each Specs Specifications El, Elev Elevation Sit. Station El, Elev Each Way Struct. Structural EW Each Way Struct. Structural EXECUTE Excavation T & B Top and Bottom Exist. Existing T hut occurred to no Concrete Ft. Feet Fy. Full Penetration f'C Specified Compressive Strength of Concrete Ft. Feet fy, Fy Specified Minimum Yield Stress of Steel GRP Grave On Center Pav't, Pavm't Pavement Pavement Pavement Pavement Pavement Pavement Pavement Puthe Pavement	Approx.	Approximate		
Beg.BeginningPav't, Pavm'tPavementBOTBottomPLPlateC.P.Complete PenetrationpsiPounds Per Square IncclrClearPVCPolyvinyl ChlorideconcConcreteReinfReinforcingcont.ContinuousShtSheetCyCubic yardSim.SimilarDet.DetailSPSpaceDiaDiameterSpecsSpecificationsEaEachSta.SlationEl, ElevElevationStiff.SliffenerEmbEmbedmentSt.SteelEOEqualstruct.StructuralEWEach WaySySquare YardEXC.ExcavationT & BTop and BottomExist.ExistingThkThickF.P.Full PenetrationTOTTotalf'CSpecified Compressive Strength of ConcreteTSTubular SteelFt.FeetTyp.Typicalfy, FySpecified Minimum Yield Stress of SteelVert.Vert.Verticalgr.GradeGrouted Rutble Pavement		Azimuth		• •
BOT Bottom C.P. Complete Penetration clr Clear Conc Concrete cont. Continuous Cy Cubic yard Det. Detail Dia Diameter Ea Each El, Elev Elevation Emb Embedment EW Each Way EXC. Excavation EXC. Excavation Exist. Existing F.P. Full Penetration f'C Specified Compressive Strength of Concrete Ft. Feet fy, Fy Specified Minimum Yield Stress of Steel conc. Concrete PVC Polyvinyl Chloride Reinf Reinforcing Reinf Reinforcing Sht Sheet Sht Sheet Space Space Space Specifications Sim. Similar Space Specifications Sta. Station Stiff. Stiffener Stiff. Stiff. Stiffener Struct. Structural Struct. Structural Sy Square Yard T & B Top and Bottom Total Total Total Ft. Feet fy, Fy Specified Minimum Yield Stress of Steel GRP Grouted Rubble Payement	Beg.	Beginning		_
C.P. Complete Penetration clr Clear Conc Concrete cont. Continuous Cy Cubic yard Det. Detail Diameter Ea Each El, Elev Elevation EW Each Way EW Each Way EXC. Excavation Exist. Existng F.P. Full Penetration f'c Specified Compressive Strength of Concrete fy, Fy Specified Minimum Yield Stress of Steel cont. Continuous Reinf Reinforcing Sht Sheet Reinf Reinforcing Sht Sheet Reinf Reinforcing Sht Sheet Reinf Reinforcing Sht Sheet Specs Specifications Sim. Similar Spece Space Space Space Specs Specifications Sta. Station Stiff. Stiffener Stil. Steel Stu. Steel Struct. Structural Struct. Structural Sy Square Yard Thk Thick Total Total Total Total Fig. Feet Typ. Typical Vert. Vertical GRP. Grouted Rubble Payement	_	Bottom		
ClrClearPVCPolyvinyl ChlorideconcConcreteReinfReinforcingcont.ContinuousShtSheetCyCubic yardSim.SimilarDet.DetailSPSpaceDiaDiameterSPSpaceEaEachSta.StationEl, ElevElevationStiff.StiffenerEmbEmbedmentSti.SteelEQEqualstruct.StructuralEWEach WaySySquare YardEXC.ExcavationT & BTop and BottomExist.ExistngThkThickF.P.Full PenetrationTOTTotalf'cSpecified Compressive Strength of ConcreteTSTubular SteelFt.FeetTyp.Typicalfy, FySpecified Minimum Yield Stress of SteelVert.VerticalGRPGrauted Rubble PayementW/With	C.P.	Complete Penetration		
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Det. Detail SP Space Dia Diameter Specs Specifications Ea Each Sta. Station El, Elev Elevation Stiff. Stiffener Emb Embedment Sti. Steel EQ Equal Struct. Structural EW Each Way Sy Square Yard EXC. Excavation T & B Top and Bottom Exist. Existng Thk Thick F.P. Full Penetration TOT Total f'c Specified Compressive Strength of Concrete TS Tubular Steel fy, Fy Specified Minimum Yield Stress of Steel Vert. Vertical gr. Grade GRP Grouted Rubble Payement		Cubic yard		
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f'c Specified Compressive Strength of Concrete Ft. Feet fy, Fy Specified Minimum Yield Stress of Steel gr. Grade GRP Grouted Rubble Pavement		_		
Ft. Feet fy, Fy Specified Minimum Yield Stress of Steel gr. Grade GRP Grouted Rubble Payement		Specified Compressive Strenath of Concrete		
fy, Fy Specified Minimum Yield Stress of Steel gr. Grade GRP Grouted Rubble Pavement		·		
gr. Grade vertical w/ With			• •	• •
GRP Grouted Rubble Pavement w/ With		· ·		
WF, wf Wide Flange				
			WF, wf	Wide Flange



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

LIST OF ABBREVIATIONS AND SYMBOLS

HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES,
VICINITY OF OOKALA
FEDERAL AID PROJECT NO. BR-19-2(45)

DATE: AUGUST 1998

SHEET No. 1 OF 1 SHEETS

SATO & ASSOCIATES, INC.