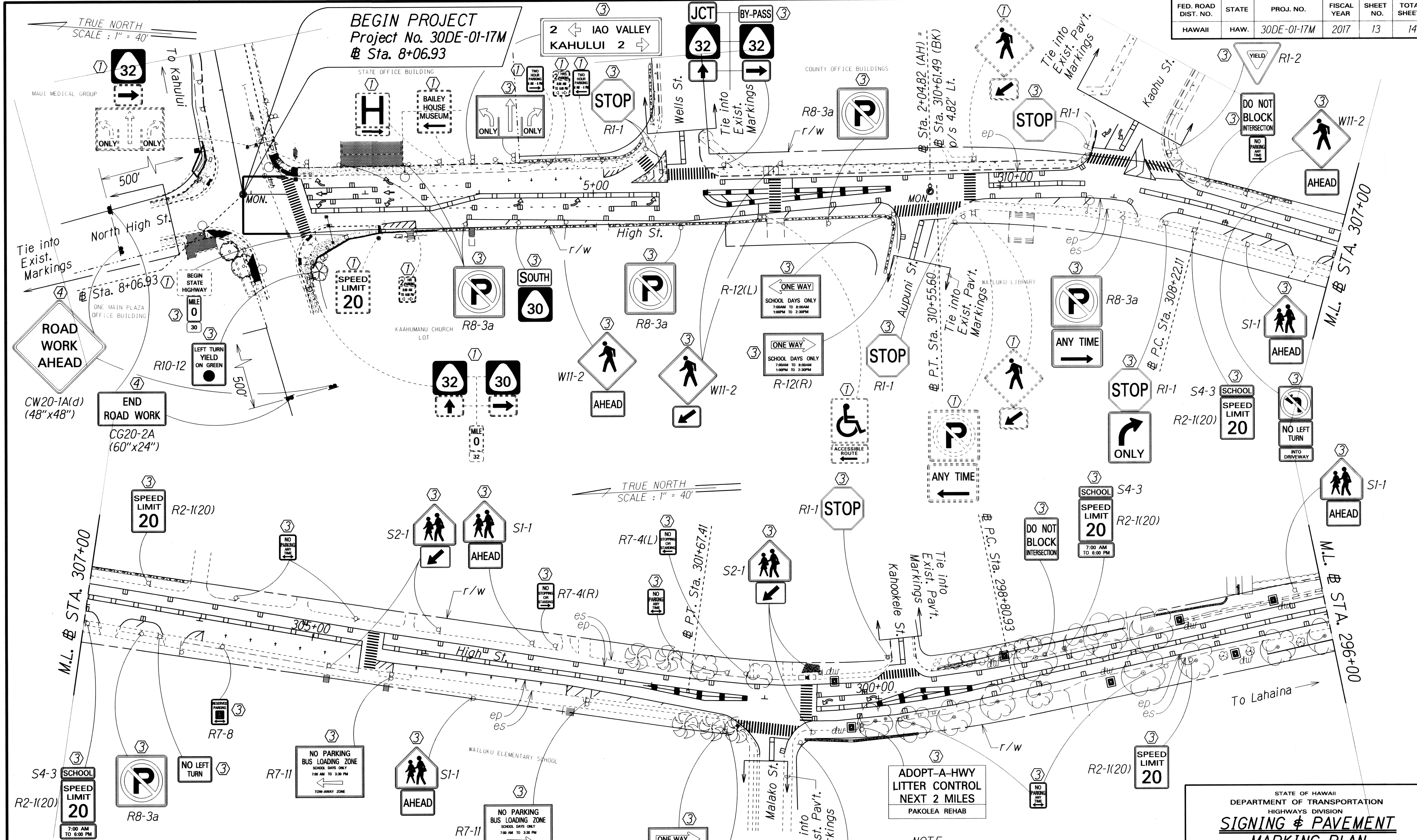
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	30DE-01-17M	2017	13	14



TRUE NORTH
SCALE : 1" = 40'
BEGIN PROJECT
Project No. 30DE-01-17M
℄ Sta. 8+06.93
2 IAO VALLEY
KAHULUI 2
JCT
BY-PASS
32
30
STATE OFFICE BUILDING
BAILEY HOUSE MUSEUM
ONLY
STOP
R1-1
Wells St.
Tie into Exist. Markings
R8-3a
r/w
COUNTY OFFICE BUILDINGS
℄ Sta. 2+04.82 (AH) = ℄ Sta. 310+61.49 (BK) o/s 4.82' Lt.
Kaohu St.
YIELD
R1-2
DO NOT BLOCK INTERSECTION
NO PARKING ANY TIME
W11-2
AHEAD
MAUI MEDICAL GROUP
To Kahului
500'
North High St.
Tie into Exist. Markings
MON.
5+00
High St.
310+00
℄ Sta. 8+06.93
BEGIN STATE HIGHWAY
MILE 0
ONE MAIN PLAZA OFFICE BUILDING
SPEED LIMIT 20
SOUTH
KAAHUMANU CHURCH LOT
R-12(L)
ONE WAY
SCHOOL DAYS ONLY
7:00AM TO 8:00AM
1:00PM TO 2:30PM
R-12(R)
Aupuni St.
℄ P.T. Sta. 310+55.60
Tie into Exist. Pav't. Markings
WAILUKU LIBRARY
ANY TIME
℄ P.C. Sta. 308+22.11
S1-1
ROAD WORK AHEAD
CW20-1A(d) (48"x48")
LEFT TURN YIELD ON GREEN
R10-12
END ROAD WORK
CG20-2A (60"x24")
ACCESSIBLE ROUTE
S4-3
SCHOOL
R2-1(20)
NO LEFT TURN INTO DRIVEWAY
M.L. ℄ STA. 307+00
S2-1
R7-4(L)
R7-4(R)
NO STOPPING OR STANDING
℄ P.T. Sta. 301+67.41
Kahookele St.
℄ P.C. Sta. 298+80.93
7:00 AM TO 6:00 PM
M.L. ℄ STA. 296+00
305+00
300+00
To Lahaina
ep
es
R7-8
RESERVED PARKING
R7-11
NO PARKING BUS LOADING ZONE
SCHOOL DAYS ONLY
7:00 AM TO 3:30 PM
TOW-AWAY ZONE
WAILUKU ELEMENTARY SCHOOL
Malako St.
ADOPT-A-HWY LITTER CONTROL NEXT 2 MILES
PAKOLEA REHAB

KEY:

1. Exist. Sign(s) & Post(s) to Remain
2. Remove Exist. Sign(s) & Post(s)
3. Remove Exist. & Install New Sign(s) & Post(s)
4. Install New Sign(s) & Post(s)

NOTE:

1. Install RM-3 on all existing and new signs. Payment shall be paid under Contract Item No. 632.4100.
2. All pedestrian signs shall be flourescent yellow color.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIGNING & PAVEMENT MARKING PLAN

HIGH STREET RESURFACING

Main Street to Keanu Street

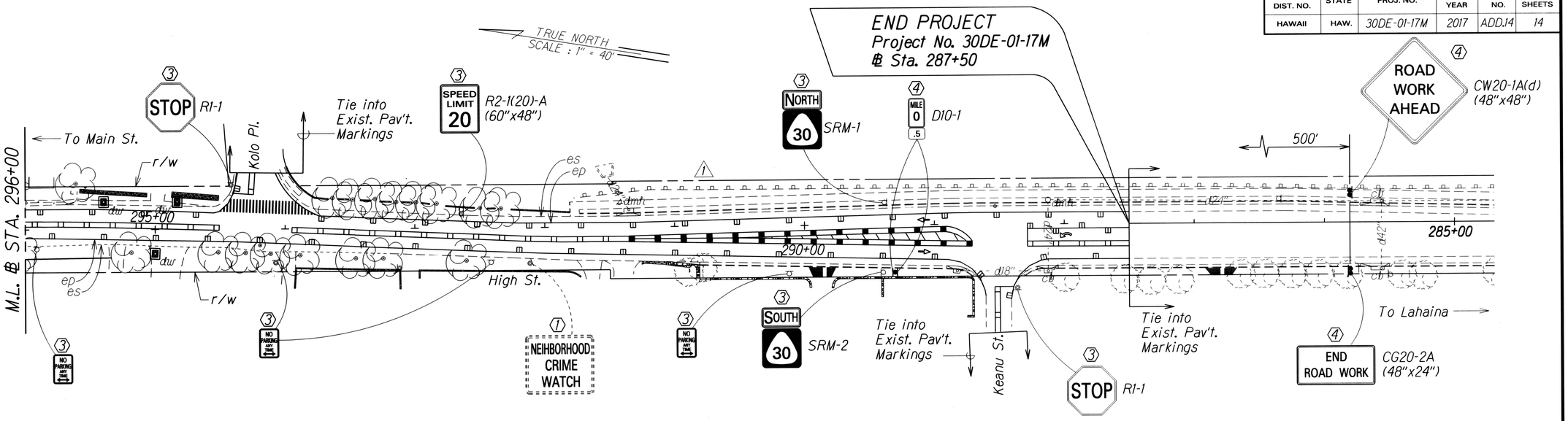
Project No. 30DE-01-17M

Scale: 1" =40' Date: February, 2017

SHEET No. 1 OF 2 SHEETS

ORIGINAL PLAN		DATE
SURVEY PLOTTED BY		
DRAWN BY	AH	
TRACED BY	AH	
DESIGNED BY		
QUANTITIES BY		
CHECKED BY		
NOTE BOOK No.		

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	30DE-01-17M	2017	ADD.14	14



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY AF	
NOTE BOOK	TRACED BY	
	DESIGNED BY AF	
	QUANTITIES BY	
No.	CHECKED BY	

KEY:

⟨1⟩ Exist. Sign(s) & Post(s) to Remain
⟨2⟩ Remove Exist. Sign(s) & Post(s)
⟨3⟩ Remove Exist. & Install New Sign(s) & Post(s)
⟨4⟩ Install New Sign(s) & Post(s)

DATE	REVISION
5-25-17	⟨1⟩ Detail of EVC Counting Station.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIGNING & PAVEMENT MARKING PLAN

HIGH STREET RESURFACING
Main Street to Keanu Street
Project No. 30DE-01-17M

Scale: 1" =40' Date: February, 2017

SHEET No. 2 OF 2 SHEETS

ADD. 14

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	30DE-01-17M	2017	ADD.14S-1	14

ELECTRONIC VEHICLE COUNTING (EVC) SYSTEM NOTES

1. The location of new sensor loops and piezo sensors shall be staked out in the field by the Contractor and approved by the Engineer prior to installation.
2. The Contractor shall inform the Engineer at least three days prior to saw-cutting pavement and installing sensor loops and piezo sensors.
3. Pull in in-bound lanes sensor loop cable and piezo sensor lead cables into conduit, where indicated. Cables shall be tested for acceptance before and after installation into conduit.
4. Piezo lead cables shall be continuous with no splices.
5. The Contractor shall restore all affected areas to their original condition. This item of work shall not be paid for separately, but shall be considered incidental to work of other paid items.
6. The Contractor shall verify the location of the existing utilities and underground structures whether or not it is shown on the plans.
7. The Contractor shall assume that existing undergound utilities not shown on the plans may exists. The Contractor shall be responsible for contacting the different utility companies for information and toning.
8. The Contractor shall be held liable for any damages incurred to the existing utilities and underground structures as a result of his operations. All damaged portions shall be replaced in accordance with the standards and specifications of the affected utility company at no cost to the State.
9. Changes to the contract plans and specifications will not be permitted, unless approved by the Engineer in writing.
10. All cables are to be terminated within the EVC cabinet and shall have a minimum 12" additional slack.
11. Highway crossing conduit shall be provided with 36" cover.
12. Vacuum, pressure wash and air dry by air compressor and clean sawcut thoroghly before installing sensors and/or cables and filling with epoxy loop sealant or PU200 Piezo Installation Resin.
13. All Saw-cutting Slurry shall be Wet Vacuumed, either simultaneous with or immediately after the Saw-cutting operations. The collected Slurry shall be disposed of appropriately (i.e., either, placed in a Filter Fabric Lined Filtration Box or in a Filter Fabric Lined Dug Up Retention/Percolation Basin, and after Filtration/Percolation, the Filter Fabric and the retained sediments, disposed of appropriately).
14. Dry saw-cutting shall not be permitted.

SENSOR LOOP LAYOUT NOTES

1. Detector loop shall consist of four turns of IC #14 cable meeting IMSA Spec 51-3 or equivalent embedded in a 3/8" wide by 4" deep sawcut, except as noted. Detector loop shall be provided a minimum 2" cover.
2. Sensor loop and lead cable shall be one continuous wire. Lead wires from the same loop shall be twisted in pairs, five twists per foot from the edge of paved shoulder to the pullbox. Do not twist one loop pair with another loop pair.
3. Continuity of sensor loops and lead-in wires shall be tested and warranted for one year from the date of accepatance by the Contractor.
4. Sensor loop lead cables shall be spliced only at the final pullbox to the EVC cabinet. Splice point of cables must be suspended near the top of the pullbox with a j-hook.
5. Splices shall be made by use of a splice kit.
6. All sensor loop lead cables shall be crimped with open end lugs that will fit into the terminal board slots snugly.
7. Stagger sensor loops on roadways with lanes that are less than 12 feet in width.
8. The Contractor shall connect the sensor loop wires on each terminal slot, as shown on plans.
9. The left lane in the direction of traffic flow is designated as lane 1, and the next lane to its right as lane 2 and so on as indicated on plans.
10. All sensor loop lead wires in the EVC cabinet and the pullboxes shall be identified and labeled by direction of traffic flow and lane number as shown on plans.
11. Only one sensor loop shall be placed per saw cut.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 10/16
	DRAWN BY alex r.	
NOTE BOOK	TRACED BY	
No. Vol.	DESIGNED BY gabe l.	
	QUANTITIES BY	
	CHECKED BY	

DATE	REVISION
5/25/17	Additional Traffic Counting Station Details.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EVC TRAFFIC COUNTING SYSTEM NOTES

HIGH STREET RESURFACING

Main Street to Keanu Street

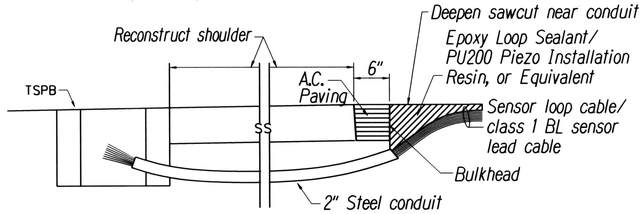
Project No. 30DE-01-17M

Date: May, 2017

SHEET No. 1 OF 3 SHEETS

ADD. 14S-1

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	30DE-01-17M	2017	ADDJ4S-2	14

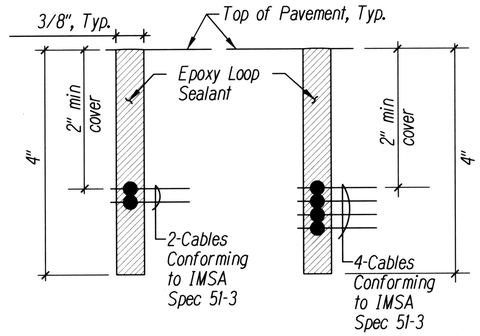


NOTES ON CONSTRUCTION AT END OF SAWCUT

1. Seal roadway end of conduit after installation of conductors
2. Install bulkhead across conduit trench.
3. Place Epoxy Loop Sealant or PU200 Piezo Installation Resin or Equivalent in sawcut
4. Backfill over conduit with new A.C.
5. Reconstruct curb and gutter as required.

DETAIL OF SENSOR LOOP/ CLASS 1 BL SENSOR AT EDGE OF ROADWAY

Not to Scale

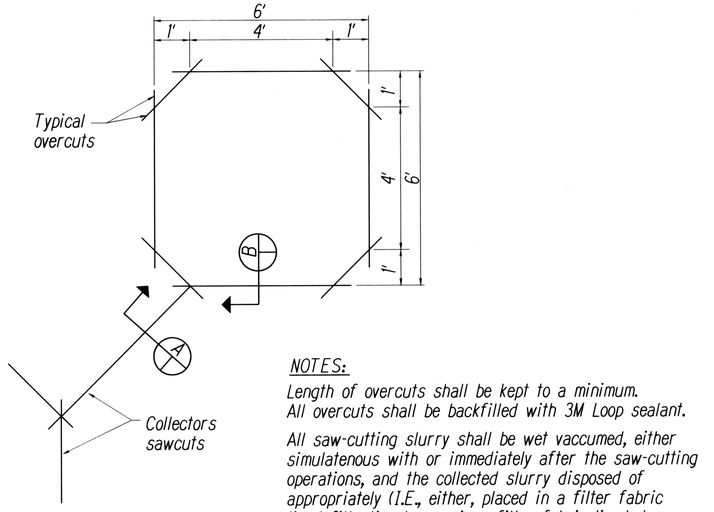


SECTION A / 00 Not to Scale

SECTION B / 00 Not to Scale

TYPICAL SECTION THROUGH SENSOR LOOP

Not to Scale



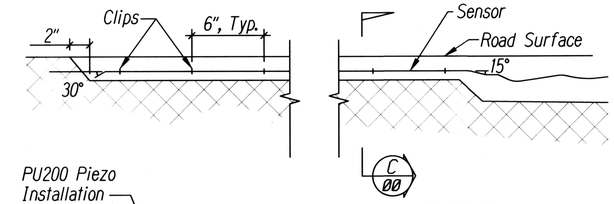
NOTES:

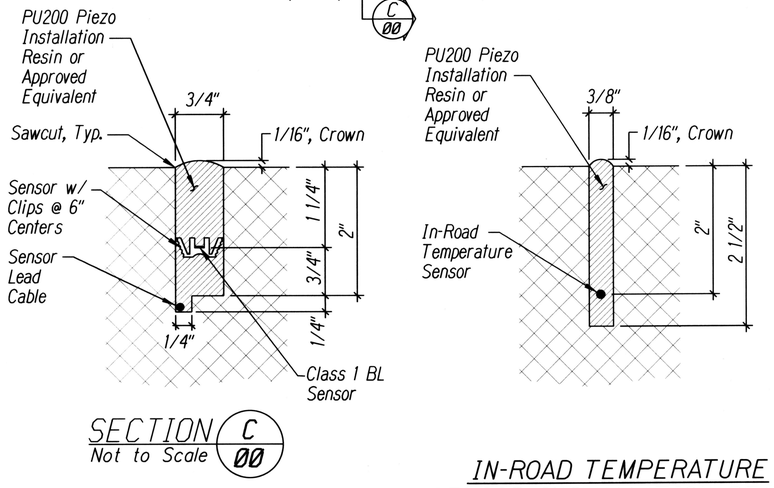
Length of overcuts shall be kept to a minimum. All overcuts shall be backfilled with 3M Loop sealant.

All saw-cutting slurry shall be wet vaccumed, either simulatenous with or immediately after the saw-cutting operations, and the collected slurry disposed of appropriately (I.E., either, placed in a filter fabric lined filtration box or in a filter fabric lined dug up retention/percolation basin, and after filtration/percolation, the filter fabric and the retained sediments, disposed of appropriately).

TYPICAL SENSOR LOOP SAWCUT DETAIL

Not to Scale





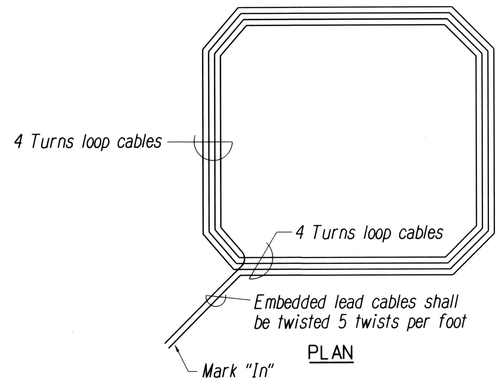
SECTION C / 00 Not to Scale

PIEZOELECTRIC SENSOR INSTALLATION DETAILS

Not to Scale

IN-ROAD TEMPERATURE SENSOR INSTALLATION DETAIL

Not to Scale



PLAN

TYPICAL SENSOR LOOP WIRING DIAGRAM

Not to Scale

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	
No.		

DATE	REVISION
1 5/25/17	Additional Traffic Counting Station Details.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC COUNTING STATION DETAILS

HIGH STREET RESURFACING
Main Street to Keanu Street
Project No. 30DE-01-17M

Scale: As Shown Date: May, 2017

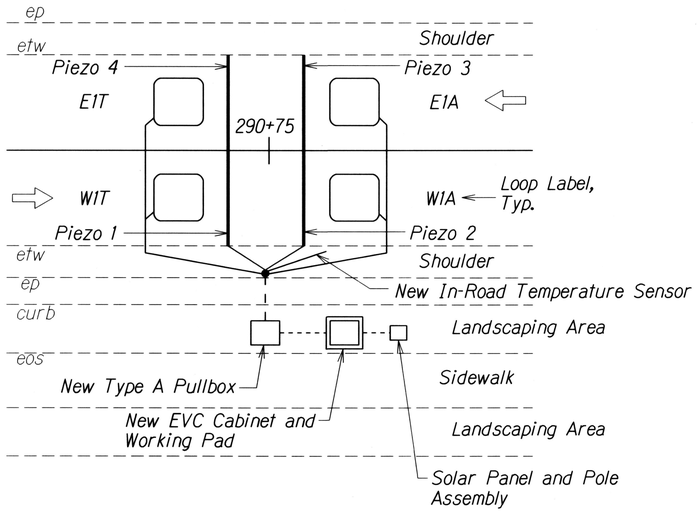
SHEET No. 2 OF 3 SHEETS

ADD. 14S-2

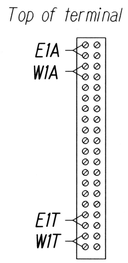
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	30DE-01-17M	2017	ADD14S-3	14

E2T
- Indicates approaching or trailing loop
- Indicates lane number
- Indicates direction*

LOOP LABEL LEGEND:
E = East
W = West
A = Approaching
T = Trailing

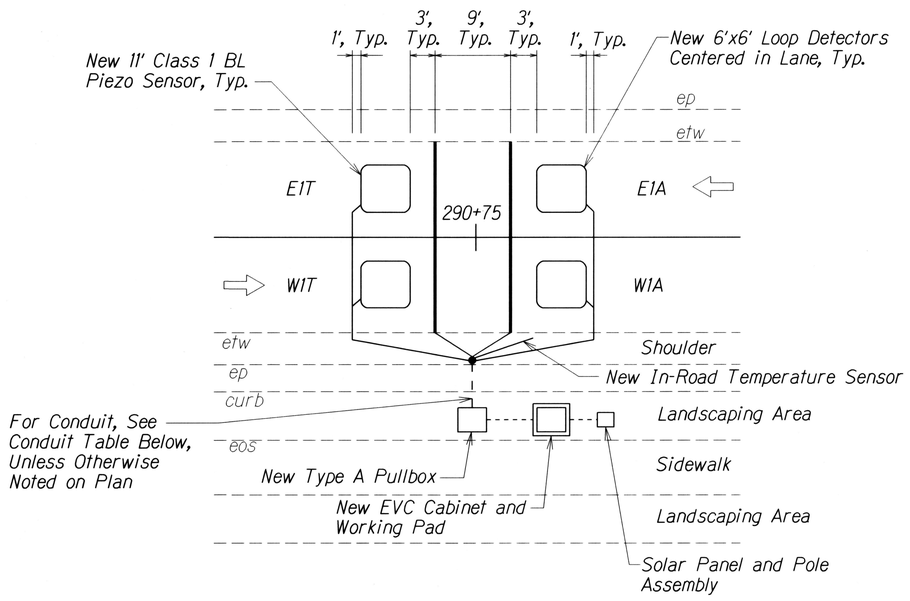


LABELING OF LOOPS AND PIEZOS
Not to Scale



Connecting layout of loop lead-in wires to terminal block inside cabinet

TYPICAL TWO-LANE ROADWAY TERMINAL BLOCK WIRING DETAILS
Not to Scale



Conduit "A" Table:

Conduit* #-Size	Class 1 BL Sensor Lead Cables	2C #18 Loop Detector Cable
Existing	4	4

*Conduits under pavement and at utility crossings shall be concrete encased.

*NOTES:
1. All dimensions and callouts are typical unless otherwise noted on plan.
2. Contractor shall coordinate service agreements and connections to electrical and communication service. Contractor shall also contact the appropriate State Dept of Transportation Representative for service agreement. (Highways Planning, Contact, Goro Sulijoadikusumo, P.E., at 587-1839).

EVC COUNTING SYSTEM LAYOUT DETAIL
Not to Scale

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	
	No.	

DATE	REVISION
5/25/17	Additional Traffic Counting Station Details.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC COUNTING STATION DETAILS

HIGH STREET RESURFACING
Main Street to Keanu Street
Project No. 30DE-01-17M

Scale: As Shown Date: May, 2017

SHEET No. 3 OF 3 SHEETS

ADD. 14S-3