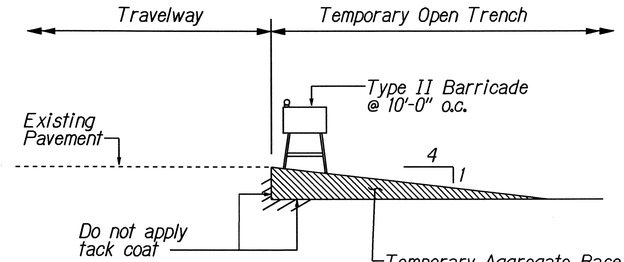
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-099-1(22)	2005	ADD. 30	60

GENERAL NOTES FOR TRAFFIC CONTROL PLAN

1. All lane closures and traffic pattern changes (detours) not shown on the plan shall be submitted to the Engineer for approval in accordance with Specifications Section 645 - Traffic Control. For restrictions on lane closures, detours, construction work during peak hours, and other requirements regarding maintaining vehicular and pedestrian traffic, see Section 107.13 - Public Convenience and Safety, Section 645 - Traffic Control, and Section 104.04 - Maintenance of Traffic.
2. The Contractor shall make minor adjustments at intersections, driveways, bridges, structures, etc., to fit field conditions.
3. Cones or delineators shall be extended to a point where they are visible to approaching traffic.
4. Traffic control devices shall be installed such that the sign or device farthest from the work area shall be placed first. The others shall then be placed progressively toward the work area.
5. Flaggers and/or police officers shall be in sight of each other or in direct communications at all times.
6. Sign spacings (L), taper lengths (T), and spacings of cones or delineators shall be as shown in Table 1 of Section 645 in the Specifications, unless otherwise noted on the Traffic Control Plans.
7. All traffic lanes shall be minimum of 10 feet wide.
8. All construction warning signs shall be promptly removed or covered whenever the message is not applicable or not in use.
9. The backs of all signs for traffic control shall be appropriately covered to preclude the display of inapplicable sign messages (i.e., when signs have messages on both faces).
10. At the end of each day's work or as soon as the work is completed, the Contractor shall remove all traffic control devices no longer needed to permit free and safe passage of public traffic. Removal shall be in the reverse order of installation.
11. Replace permanent pavement markings and traffic signs upon completion of each phase of work.
12. Existing conflicting pavement markings shall be removed and temporary pavement markings shall be installed before traffic patterns are changed. After completion of the work, temporary pavement markings shall be removed. Payment for removal of existing pavement markings and furnishing, installing, and removal of temporary pavement markings, whether or not shown on the Traffic Control Plans shall be considered incidental to the various contract items.
13. The locations of pavement markings, signs, and delineators used in the Traffic Control shall be as shown on the Plans and/or as determined in the field by the Engineer.
14. During working and non-working hours, the Contractor shall furnish, install, and maintain Type II Barricades at 10' spacing in new and existing pavement areas closed to public vehicles.
15. The Contractor shall provide sand bags or other accepted weights for the Type II Barricades, when used. The Contractor shall provide steady burn amber lamps during hours of darkness. The lamps shall be attached on the Type II Barricade end closest to the traveled way. The lamp should be visible to the motorist. Payment for Type II Barricades with amber lamps shall be considered incidental to the various contract items.
16. Contractor shall maintain access to adjacent properties at all times.
17. Cones and signs for night work shall be retroreflective.
18. The Contractor shall provide a transition taper during non-construction hours for open trenches adjacent to the travelway. Se Transition Taper Detail on this sheet.
19. Steel plates for covering trenches shall have a skid resistant surface. Payment for steel plates shall be considered incidental to the various contract items.
20. The Contractor shall limit the extent of trench and excavation work for pavement reconstruction to an area that can be satisfactorily backfilled in one work day.

LEGEND

- Cones
- Tubular Delineator
- Portable Arrow Board
- Portable Electronic Message Board
- Direction of Traffic
- New Sign
- Existing Sign
- Type II Barricade
- Type III Barricade
- Work Area



NOTE:
Contractor shall install & maintain appropriate construction warning signs. Payment for furnishing, installing and removing construction warning signs shall be considered incidental to the various contract items.

Temporary Aggregate Base (Remove prior to pavement construction) Payment for construction and removal of Temporary Aggregate Base shall be considered incidental to the various contract items.

TRANSITION TAPER
Not to Scale

DATE	REVISION
1/14/05	Revised transition taper

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC CONTROL NOTES & LEGEND

KAMEHAMEHA HIGHWAY BIKEWAY
Vicinity of Radford Drive to Arizona Memorial
Federal Aid Project No. CMAQ-099-1(22)

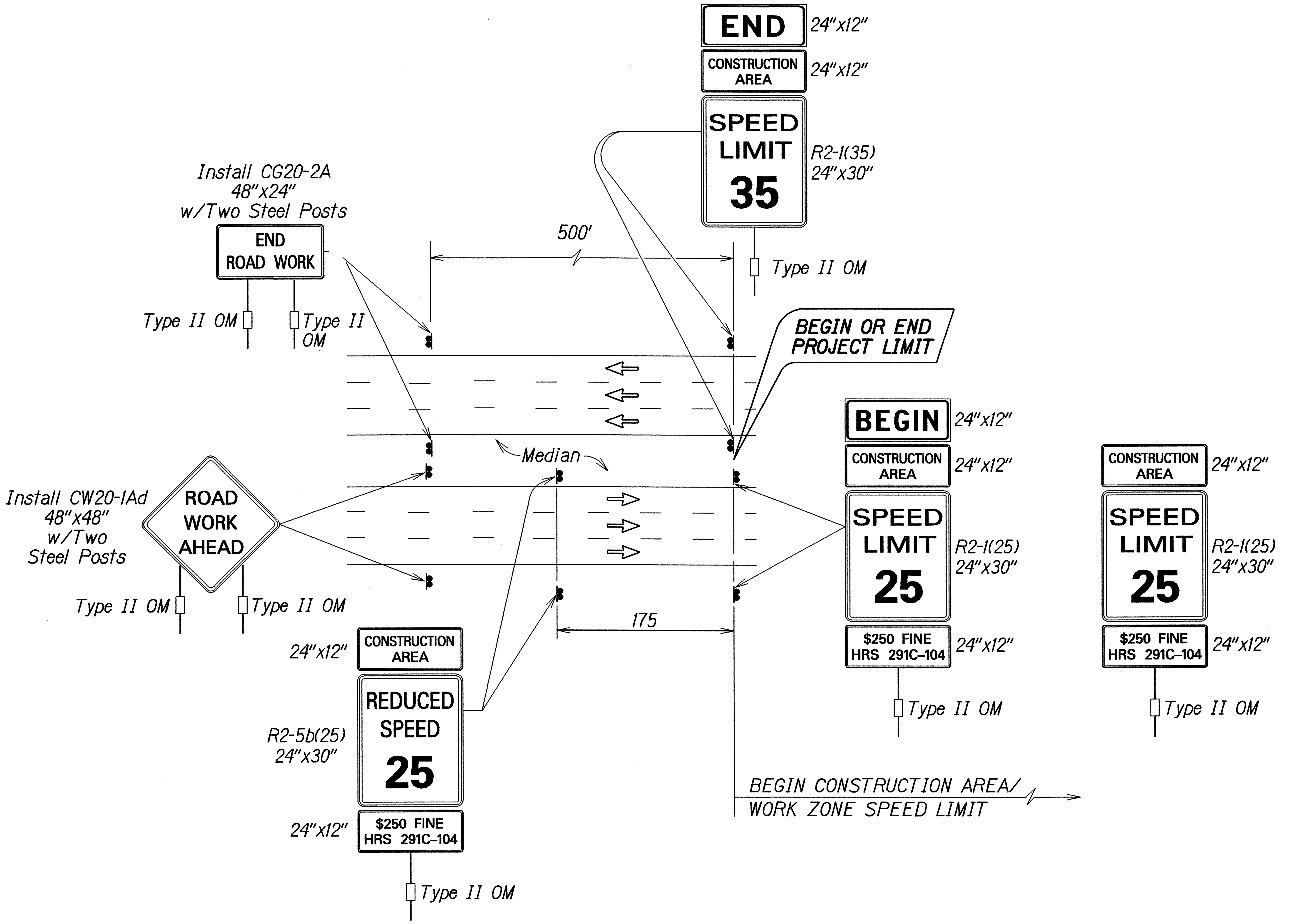
Not to Scale Date: February 2004

SHEET No. T1 OF 8 SHEETS

ADD. 30

ORIGINAL PLAN
NOTE BOOK
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

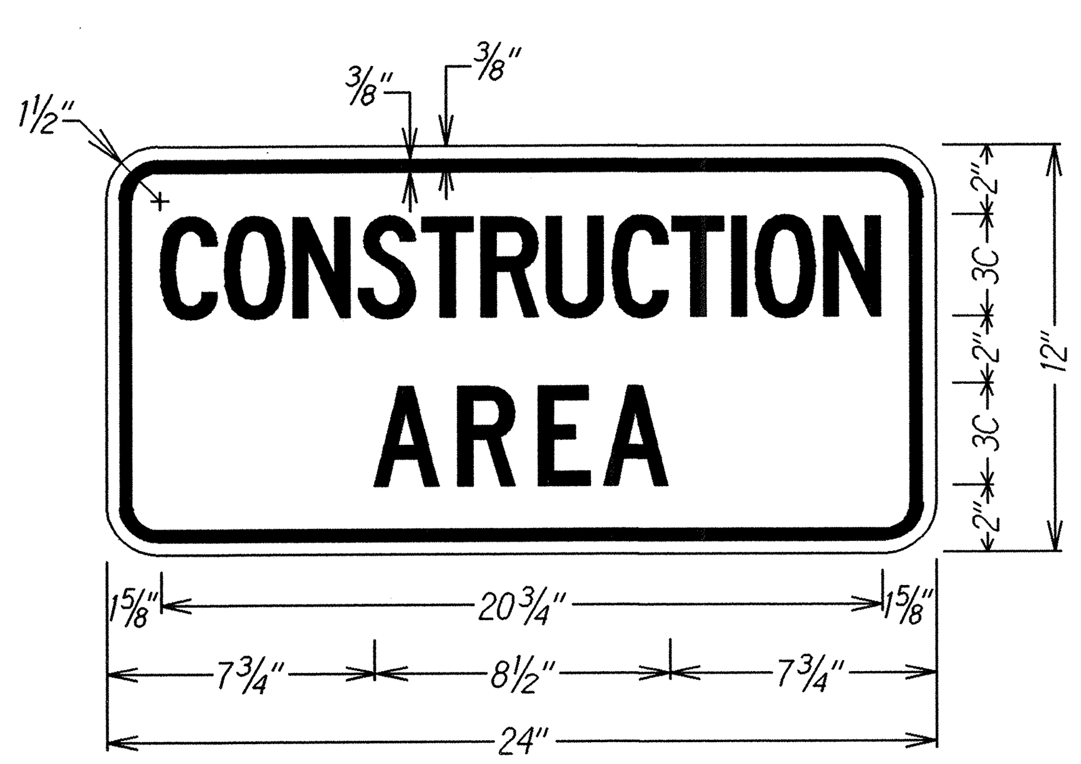
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-099-1(22)	2005	31	60



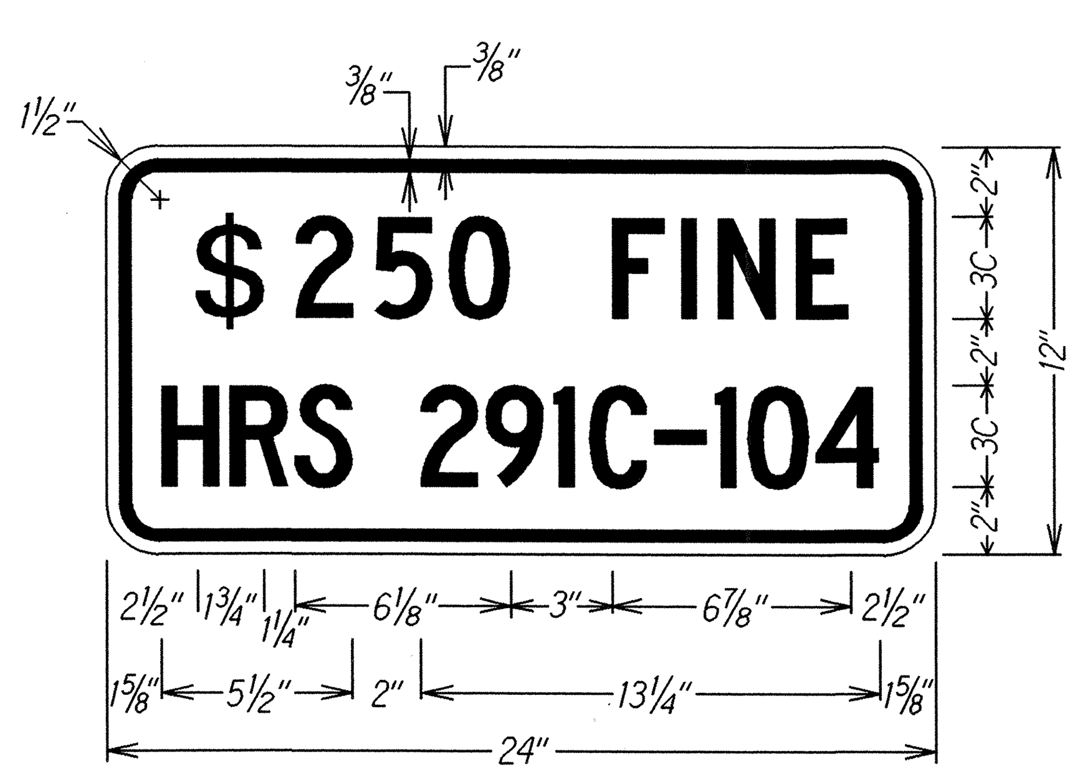
TYPICAL DETAIL FOR CONSTRUCTION SIGNS
ON MULTILANE DIVIDED LOW SPEED HIGHWAY

Work Zone Notes:

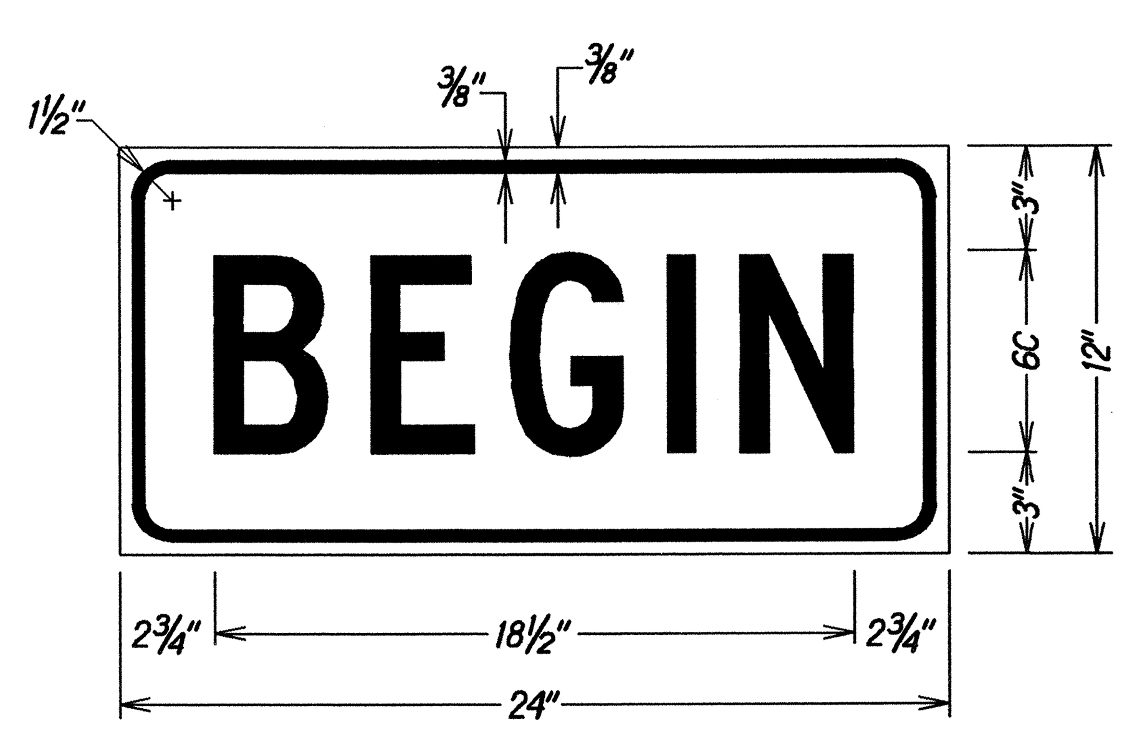
1. This Work Zone Sign Plan is intended for use on long-term stationary work zones/construction phases (3 days or more). All work zones or construction phases less than 3 days duration will use Traffic Control Plans shown in Section 645 of the Special Provisions.
2. All existing regulatory speed limit signs with posts within the work zone/ project limits shall be removed and replaced with work zone speed limit sign assemblies (R2-1(XX) and R2-5b(XX) with "CONSTRUCTION AREA" and "$250 FINE HRS 291C-104" Supplemental Signs).
3. Construction sign assemblies shall be installed on both the approaching and trailing ends of each work zone as shown on this plan.
4. Each construction warning sign shall have a minimum of two (2) Type II OM. Each work zone speed limit assembly shall have a minimum of one (1) Type II OM. Installation of each Type II OM shall be considered incidental to Item No. 621.7100, Construction Sign with Posts.
5. Upon the completion of all physical work or as directed by the Engineer, all construction signs and work zone speed limit assemblies shall be removed. All speed limit signs and posts that were existing at the start of the project within the work zone/project imits shall be restored back to their original locations and configurations.
6. Placement of construction signs shall not obstruct the path of pedestrians and bicyclists.
7. The removal and restoration of existing regulatory speed limit signs shall be considered incidental to Item No. 621.7100, Construction Sign with Posts.
8. The fabrication and initial installation of work zone speed limit sign assemblies shall be paid for under Item No. 621.7100, Construction Sign with Posts.
9. The subsequent relocation, maintenance and removal of work zone speed limit sign assemblies shall be considered incidental to Item No. 621.7100, Construction Sign with Posts.
10. The work zone speed limit signs shall be new and become property of the Contractor at completion of project.



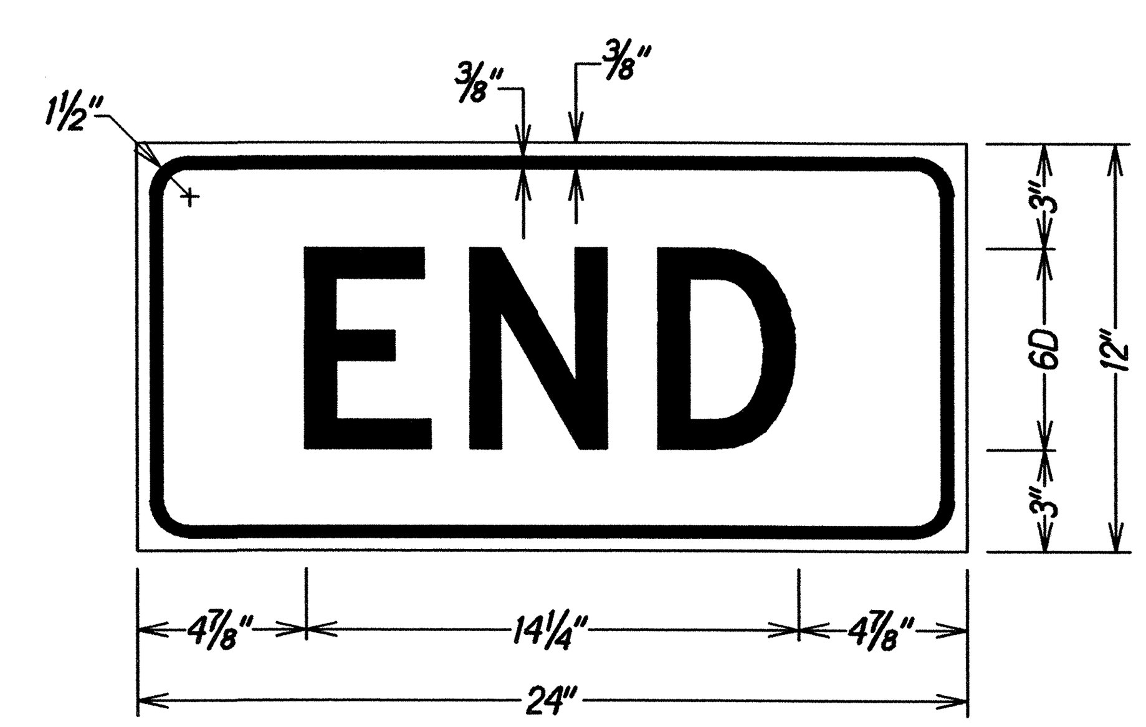
LEGEND: BLACK
BACKGROUND: ORANGE



LEGEND: BLACK
BACKGROUND: WHITE



LEGEND: BLACK
BACKGROUND: ORANGE



LEGEND: BLACK
BACKGROUND: ORANGE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WORK ZONE SIGNING PLAN, NOTES & DETAILS

KAMEHAMEHA HIGHWAY BIKEWAY
Vicinity of Radford Drive to Arizona Memorial
Federal Aid Project No. CMAQ-099-1(22)
Not to Scale — Date: February 2004

SHEET No. T2 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-099-1(22)	2005	ADD. 32	60

LEGEND

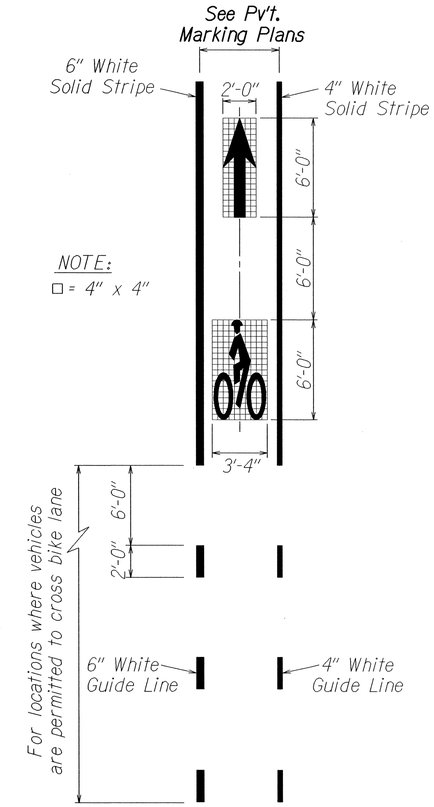
- 4 each Type A Raised Pavement Markers
  Type C Raised Pavement Markers @ 40'-0" o.c.
- 4 each Type J Raised Pavement Markers
  Type D Raised Pavement Markers @ 40'-0" o.c.
- 8" White Stripe with Type C Raised Pavement Markers @ 20'-0" o.c. (Tape, Type I or Thermoplastic Extrusion)
- 4" Double Solid Yellow with Type D Raised Pavement Markers @ 20'-0" o.c. (Tape, Type I or Thermoplastic Extrusion))
- 4" Double Solid Yellow Stripes with Type H Raised Pavement Markers @ 20'-0" o.c. (Tape, Type II or Thermoplastic Exrusion))
- 4" Yellow Edge Stripe with Type H Raised Pavement Markers @ 40'-0" o.c. (Tape, Type II or Thermoplastic Extrusion))
- 4" Double Solid White Stripes with Type C Raised Pavement Markers @ 20'-0" o.c. (Tape, Type I or Thermoplastic Extrusion)
- Lane Change Restriction Marking
  4 each Type A Raised Pavement Markers
  Type C Raised Pavement Markers @ 20'-0" o.c.
  4" White Stripe (Tape, Type I or Thermoplastic Extrusion)
- 4" or 8" White Edge Stripe with Type C Raised Pavement Markers @ 40'-0" o.c. (Tape, Type II or Thermoplastic Extrusion)
- 4" White Guide Lines (Tape, Type III or Thermoplastic Extrusion except for bus bays)
- Transverse Median Marking (Tape, Type II or Thermoplastic Extrusion)
- Transverse Shoulder Marking (Tape, Type II or Thermoplastic Extrusion)
- Channelizing Island or Deceleration Lane Gore (Tape, Type II or Thermoplastic Extrusion)
- ② Crosswalk and Stop Line. All Stop Lines shall be 10'-0" from Crosswalk unless otherwise noted. The circled number indicates the number of lanes for payment (Tape, Type III or Thermoplastic Extrusion)
- Pavement Arrow (Tape, Type III or Thermoplastic Extrusion)
- STOP Pavement Word (Tape, Type III or Thermoplastic Extrusion)
- 4 Each Type J Raised Pavement Markers
  Type D Raised Pavement Markers @ 40'-0" o.c.
  Type H Raised Pavement Markers (Reflective Surface facing no-passing direction)
  4" Single Solid Yellow Stripe (Tape, Type I or Thermoplastic Extrusion)
- 10' 10' 10' 10' Extension of Edge Line, 4" Wide x 2'-0" Long White Stripe @ 10'-0" o.c. w/Type C Markers @ 40'-0" o.c. (Tape, Type III or Thermoplastic Extrusion)

NOTES

1. Layout of pavement markings and striping shall be done by the Contractor and approved by the Engineer prior to any installation work.
2. Existing pavement markings not incorporated in the final traffic pattern shall be removed as directed by the Engineer. Costs shall be incidental to the various pavement marking items.
3. Raised pavement markers shall not be installed within crosswalks.
4. Final locations of all signs shall be approved by the Engineer prior to any installation work.
5. Existing signs not shown on these plans shall remain as posted unless otherwise directed by the Engineer. Removal and disposal of existing signs and/or posts as designated on these plans shall be incidental to the various signing items.
6. Final locations of all Stop Lines shall be approved by the Engineer prior to installation.
7. All pavement striping shall be as noted on the legend or plans.
8. All preformed pavement marking tapes over existing pavement shall be applied with an approved primer as recommended by the tape manufacturer and as approved by the Engineer. The primer shall be allowed to dry to the tacky stage prior to tape application.
9. All pedestrian warning signs with supplemental sign shall be on a fluorescent yellow-green retroreflective background with a black legend and border.

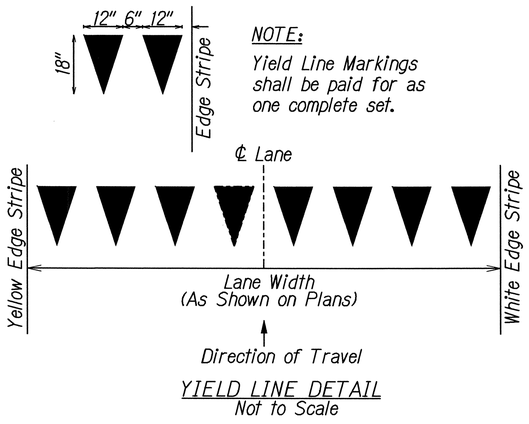
LEGEND:

- FY Reflector Marker (RM-2, Yellow) w/ flexible post
- FW Reflector Marker (RM-2, White) w/ flexible post

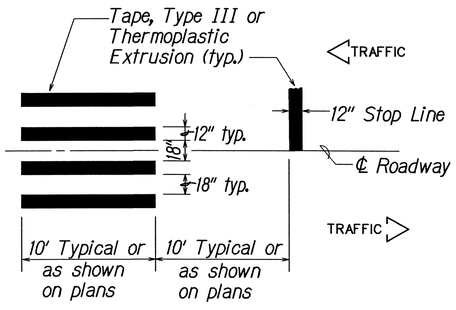


BIKE LANE MARKING DETAIL
Not to Scale

NOTE: All raised pavement markers shall be installed outside the bike lane



YIELD LINE DETAIL
Not to Scale



CROSSWALK STRIPING DETAIL
Not to Scale

DATE	REVISION
1/14/05	Added Bike Lane Marking Detail

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING LEGEND, DETAILS & NOTES

KAMEHAMEHA HIGHWAY BIKEWAY
Vicinity of Radford Drive to Arizona Memorial
Federal aid Project No. CMAQ-099-1(22)

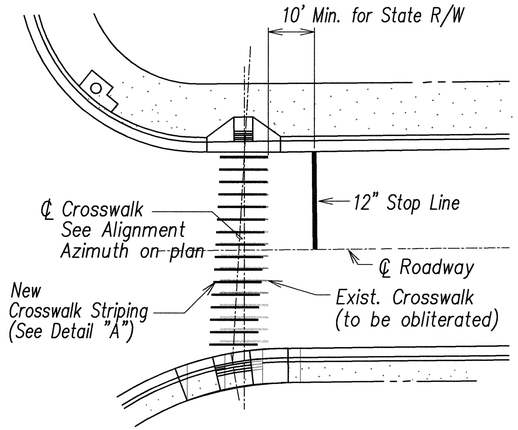
Scale: As Shown Date: February 2004

SHEET No. T3 OF 8 SHEETS

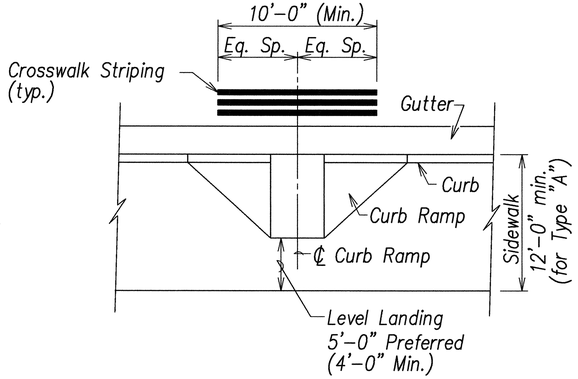
ADD. 32

ORIGINAL PLAN
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE
NOTE BOOK
12/29/04

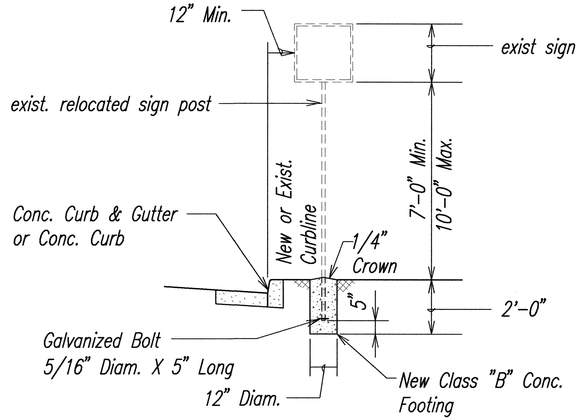
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-099-1(22)	2005	C.O. ADD. 32 S-1	60



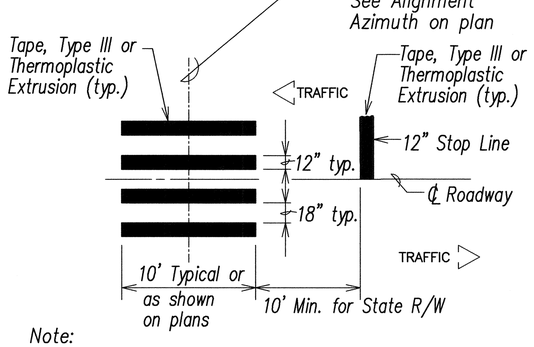
PLAN



TYPICAL CROSSWALK STRIPING
AT CURB RAMP



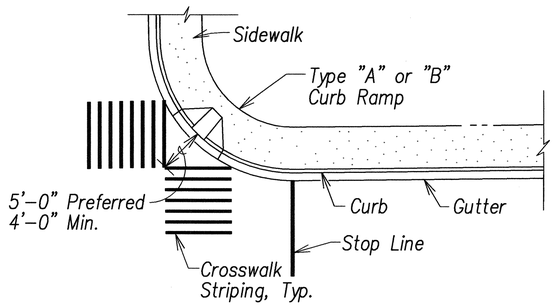
TYPICAL SIGN RELOCATION DETAIL
Not to scale



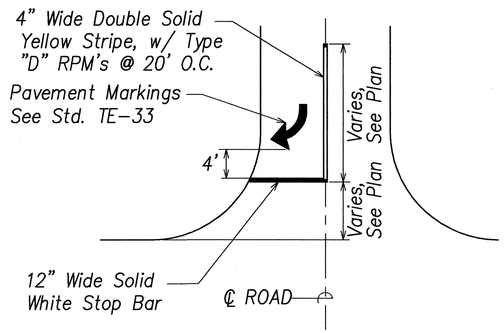
Note:
Longitudinal lines shall be parallel to traffic flow.

DETAIL "A"

CROSSWALK STRIPING DETAIL



TYPICAL CROSSWALK STRIPING
AT DIAGONAL CURB RAMP



MINOR ROAD STRIPING
PAVEMENT ARROW
NOT TO SCALE

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

LANCE S. OYAMA
LICENSED PROFESSIONAL ENGINEER
NO. 5309-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

James S. Oyama 4/30/06
SIGNATURE DATE

"OBSERVATION OF CONSTRUCTION" IS DEFINED IN CHAPTER 16-115, HAWAII ADMINISTRATIVE RULES ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS".

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STRIPING DETAILS

KAMEHAMEHA HIGHWAY BIKEWAY
Vicinity of Radford Drive to Arizona Memorial
Federal Aid Project No. CMAQ-099-1(22)

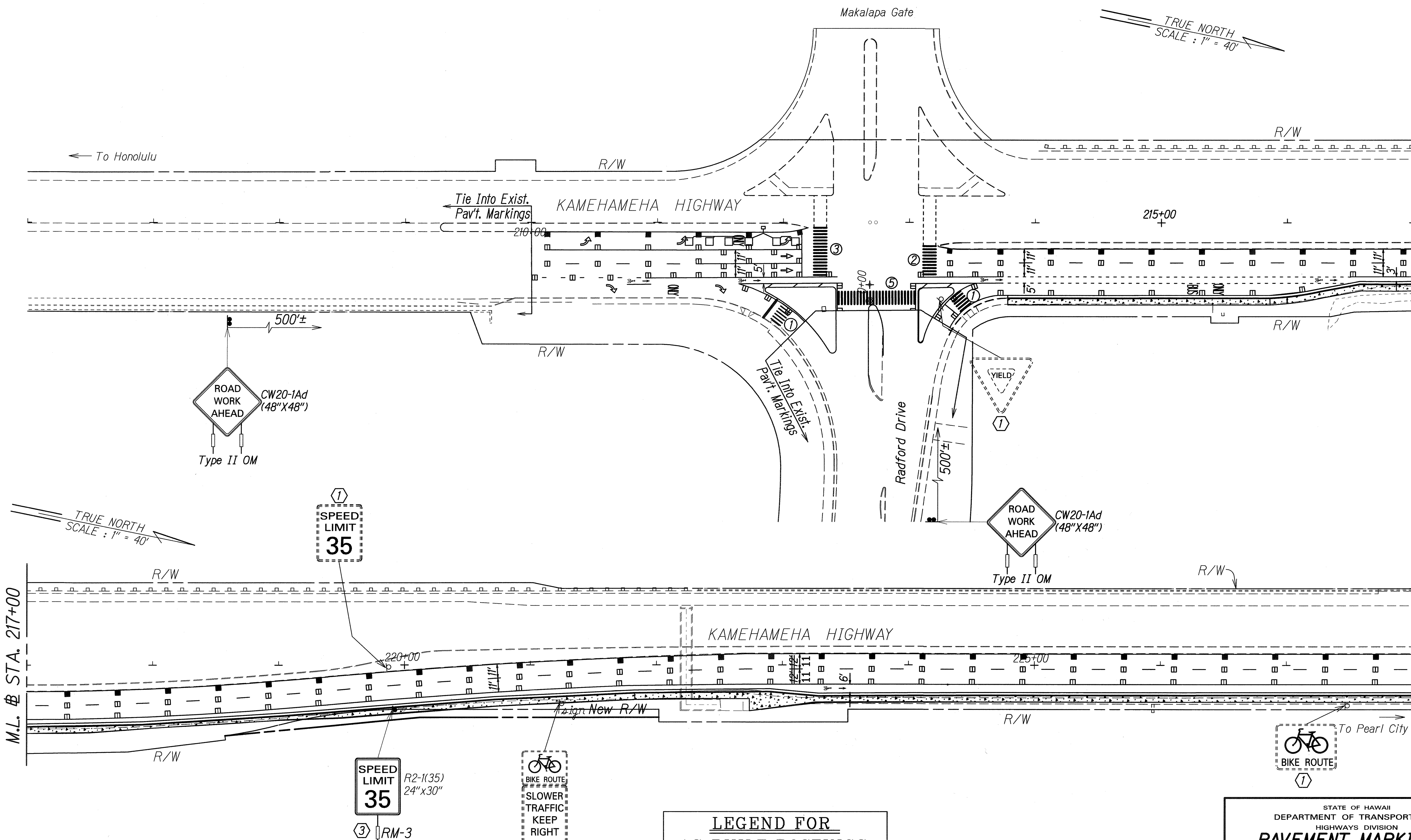
Scale: Date: August 2005

SHEET No. 1 OF 1 SHEETS

C.O. ADD. 32 S-1

Path: Q:\WOC\7282-01 Kam Hwy Redesign\ Filename: C.O. ADD. 32 S-1 Plot date: Aug 26, 2005-05:32:45pm CAD User: eredoble. Xref Filename: | bdr-dothwy | AUTODATE |

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-099-1(22)	2005	ADD. 33	60



KEY:

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

LEGEND FOR AS-BUILT POSTINGS	
~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
1/14/05	Revised object markers on construction signs.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING & SIGNING PLAN

KAMEHAMEHA HIGHWAY BIKEWAY
Vicinity of Radford Drive to Arizona Memorial
Federal Aid Project No. CMAQ-099-1(22)

Scale: 1"=40' Date: Feb., 2004

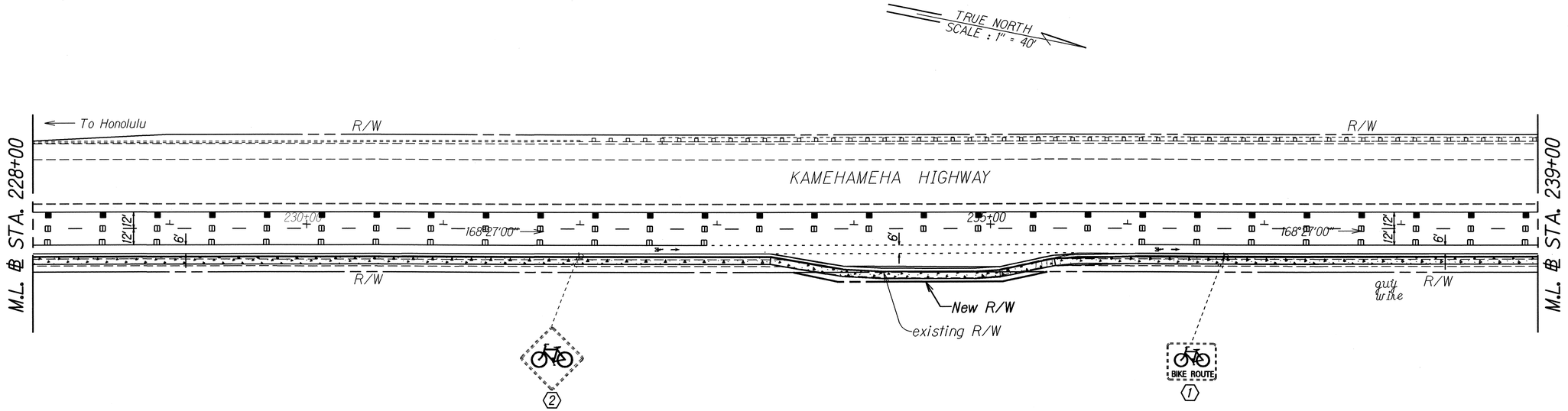
SHEET No. T4 OF 8 SHEETS

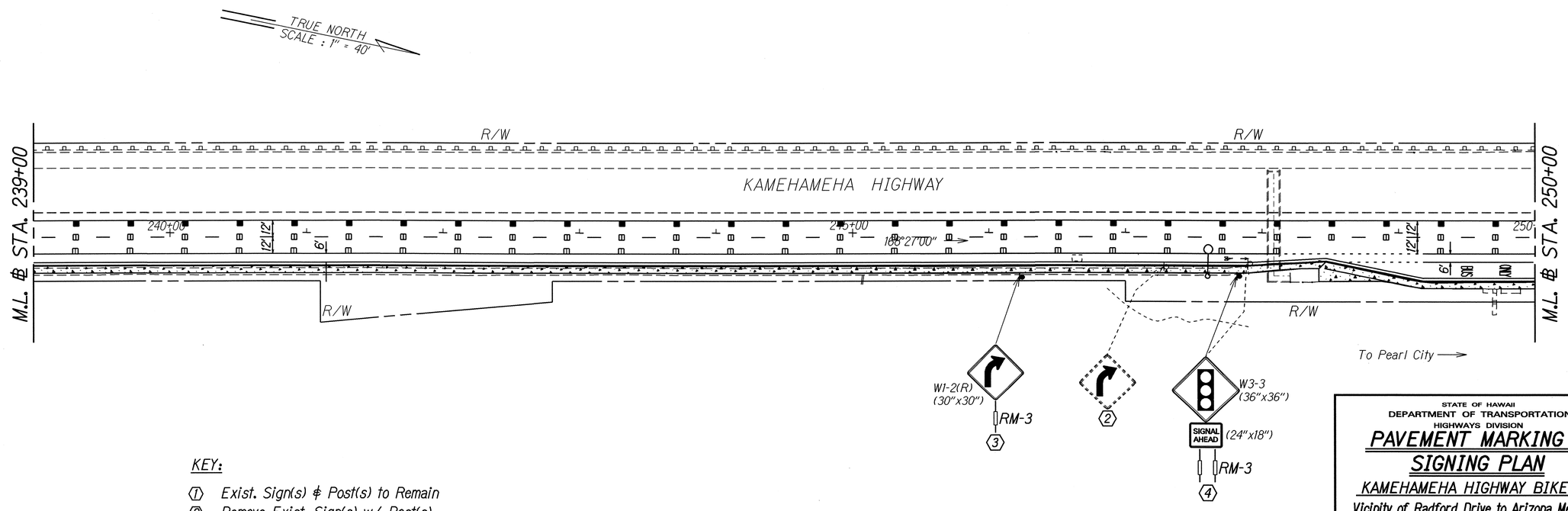
ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY L. Takatsuji | TRACED BY | DESIGNED BY Peter Chan | QUANTITIES BY | CHECKED BY | DATE 1/23/04 | NOTE BOOK

"AS-BUILT"

ADD. 33

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-099-1(22)	2005	34	60





KEY:

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

ORIGINAL PLAN		
	SURVEY PLOTTED BY	DATE 1/23/04
	DRAWN BY M. Takafuji	
	TRACED BY	
	DESIGNED BY Peter Lee	
	NOTE BOOK	
	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

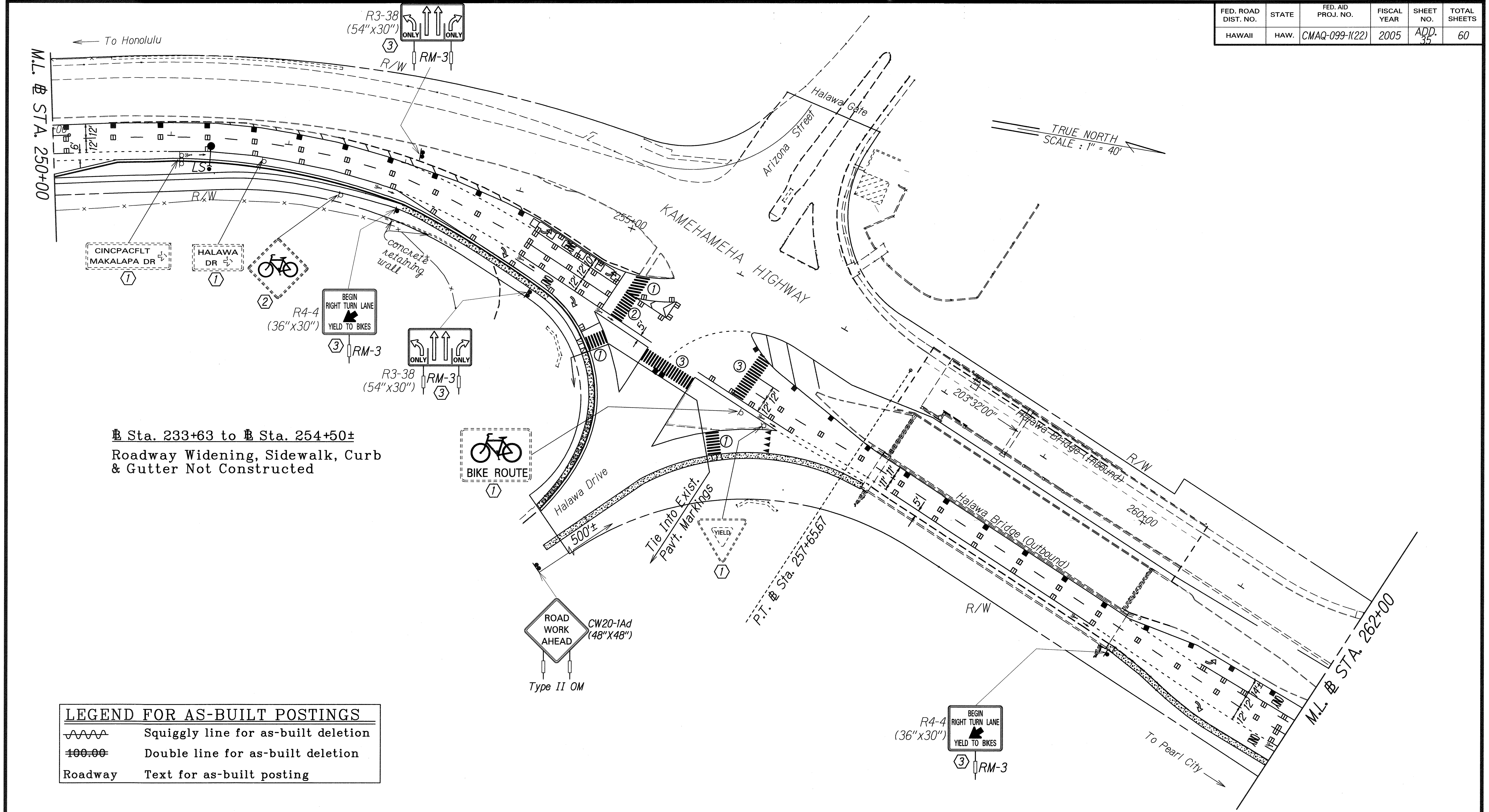
PAVEMENT MARKING & SIGNING PLAN

KAMEHAMEHA HIGHWAY BIKEWAY
Vicinity of Radford Drive to Arizona Memorial
Federal Aid Project No. CMAQ-099-1(22)

Scale: 1"=40' Date: Feb., 2004

SHEET No. T5 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-099-1(22)	2005	ADD. 35	60



℄ Sta. 233+63 to ℄ Sta. 254+50±
Roadway Widening, Sidewalk, Curb & Gutter Not Constructed

LEGEND FOR AS-BUILT POSTINGS

~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

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

ORIGINAL PLAN	
SURVEY PLOTTED BY	
DRAWN BY	J. Takafuji
TRACED BY	
DESIGNED BY	Peter Chan
QUANTITIES BY	
CHECKED BY	
NOTE BOOK	
DATE	1/23/04

DATE	REVISION
1/14/05	Revised object markers on construction signs.

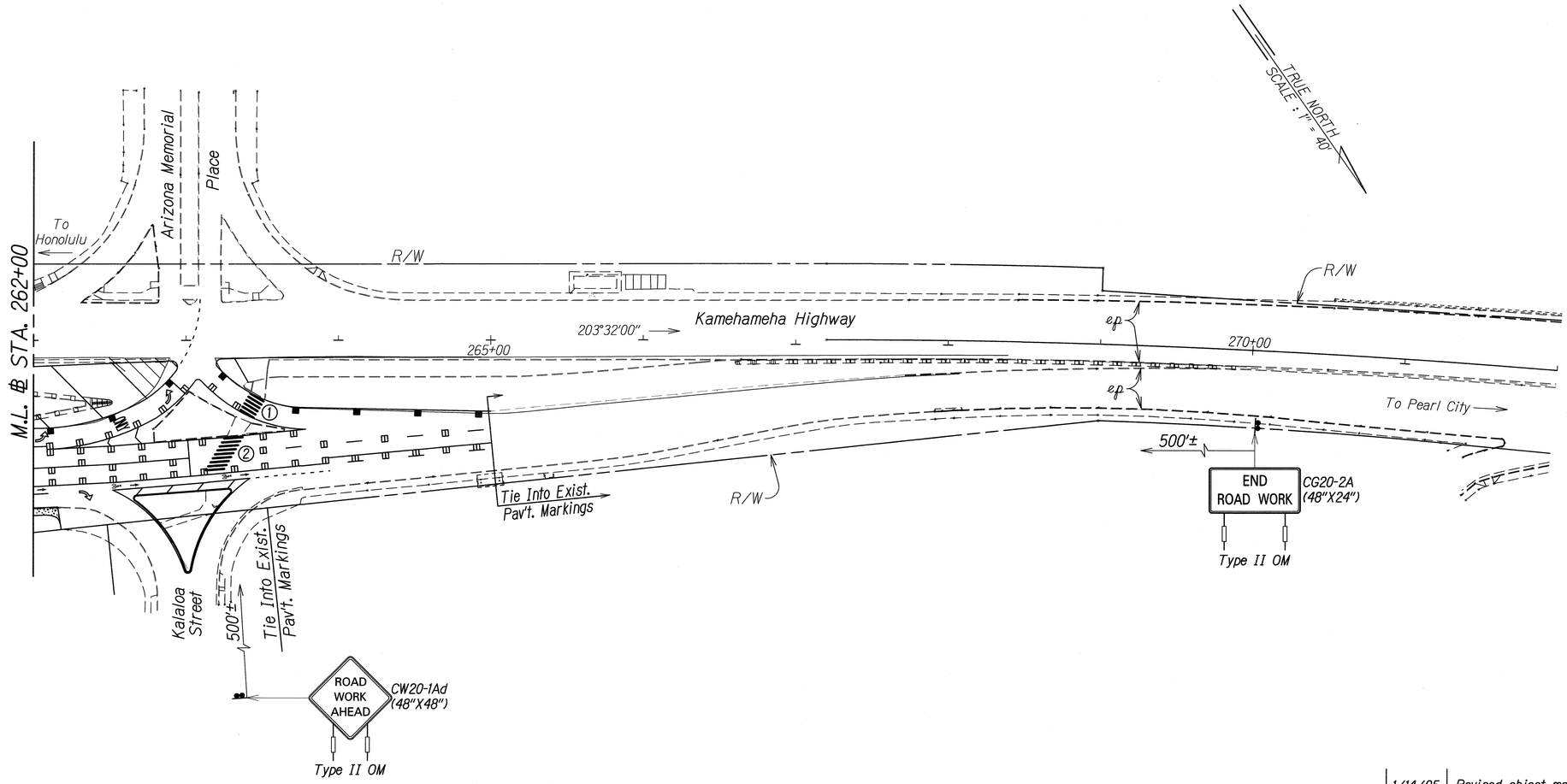
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING & SIGNING PLAN

KAMEHAMEHA HIGHWAY BIKEWAY
Vicinity of Radford Drive to Arizona Memorial
Federal Aid Project No. CMAQ-099-1(22)
Scale: 1"=40' Date: Feb., 2004
SHEET No. T6 OF 8 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-099-1(22)	2005	ADD. 36	60



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 1/20/04
	DRAWN BY M. Takata	
NOTE BOOK	TRACED BY	
	DESIGNED BY Peter Chan	
	QUANTITIES BY	
	CHECKED BY	

LEGEND FOR AS-BUILT POSTINGS

~~^^^^^~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
1/14/05	Revised object markers on construction signs.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING & SIGNING PLAN

KAMEHAMEHA HIGHWAY BIKEWAY
Vicinity of Radford Drive to Arizona Memorial
Federal Aid Project No. CMAQ-099-1(22)

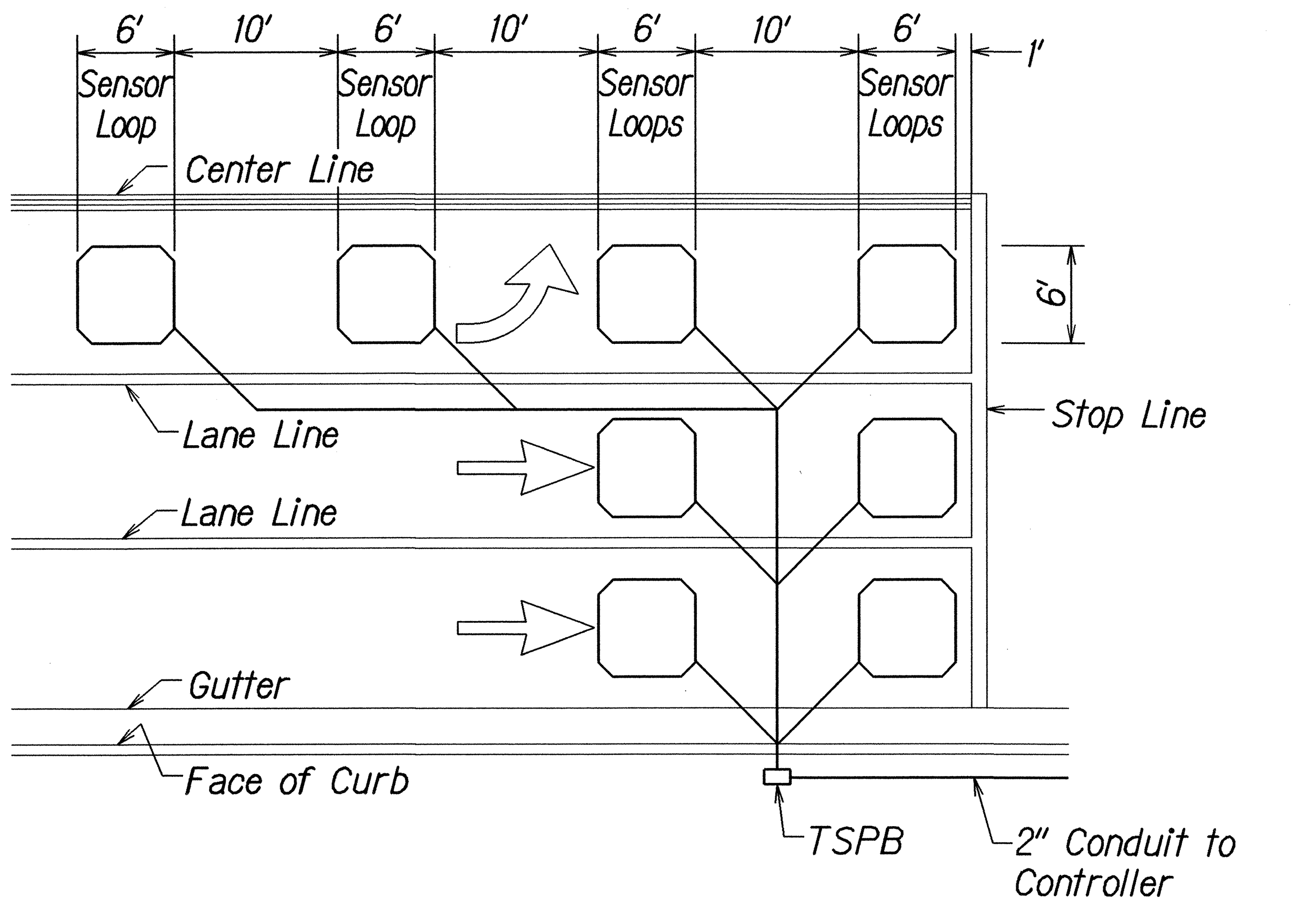
Scale: 1"=40' Date: Feb., 2004

SHEET No. T7 OF 8 SHEETS

"AS-BUILT"

ADD. 36

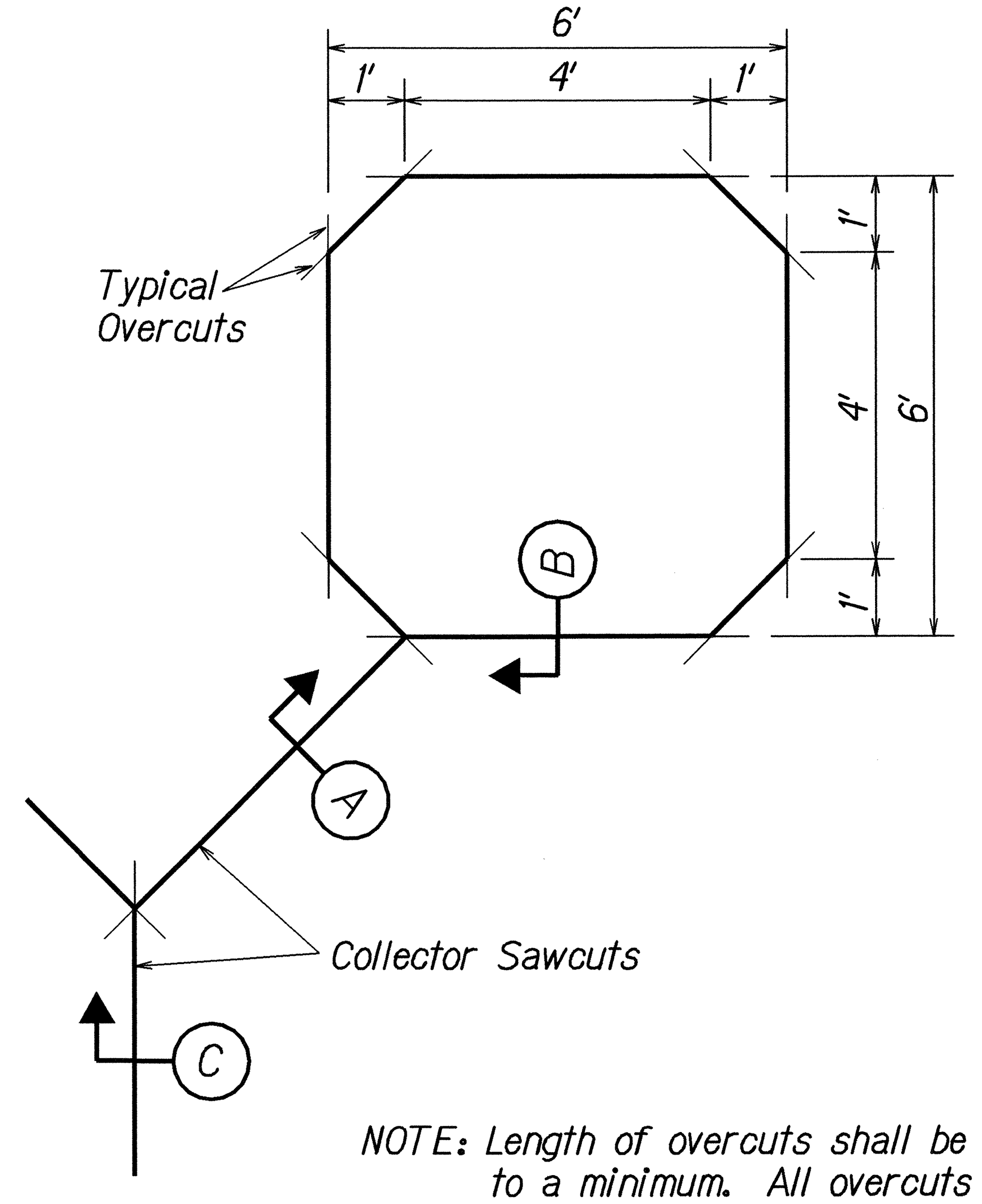
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-099-1(22)	2005	37	60



NOTES:

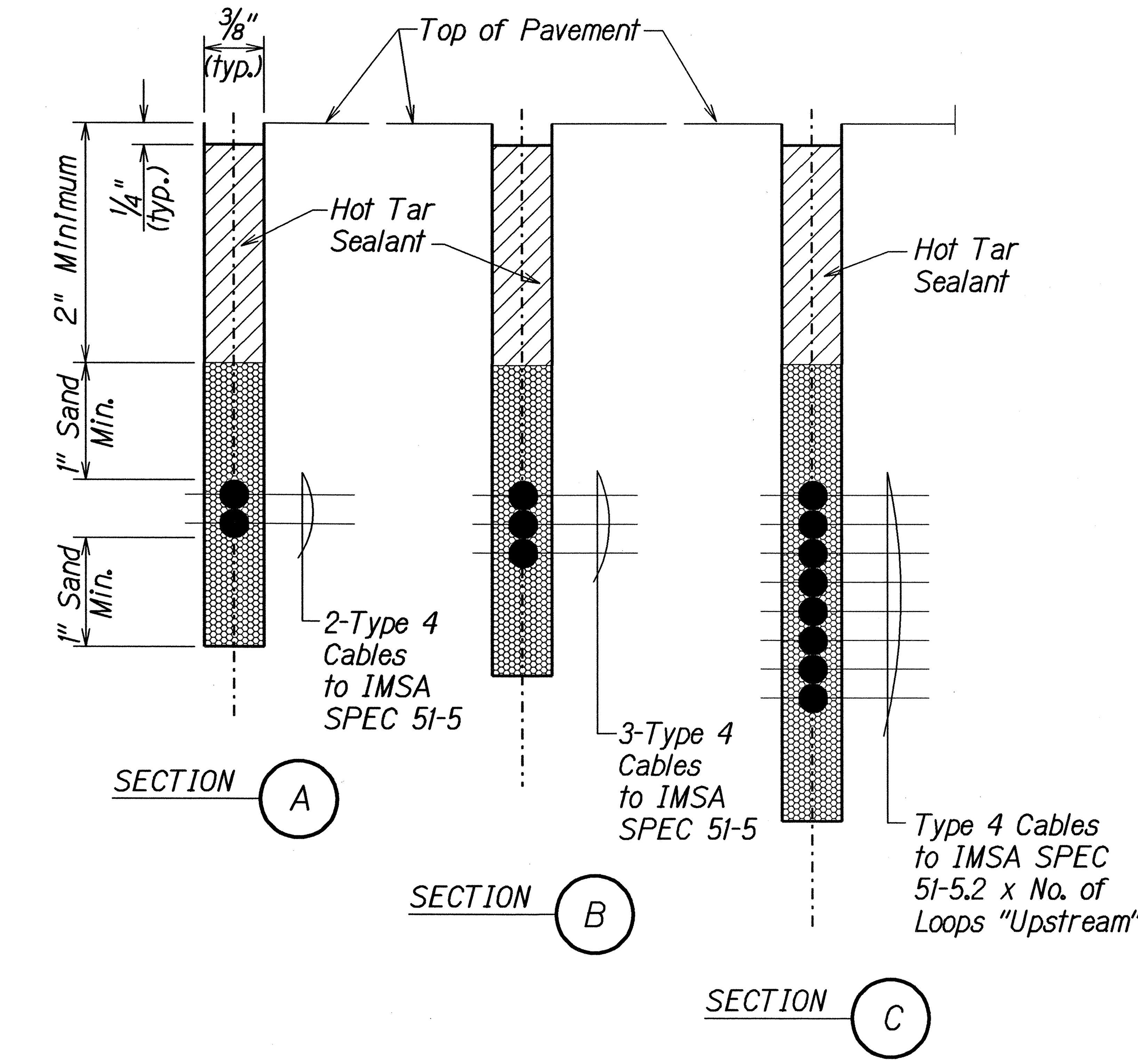
1. Center sensor loops in lanes.
2. Collector cables shall be twisted 2 turns per foot.
3. Number of loops and locations vary. See project plans.
4. Number and locations of collector sawcuts may be varied in the field to suit.

TYPICAL SENSOR LOOP LAYOUT

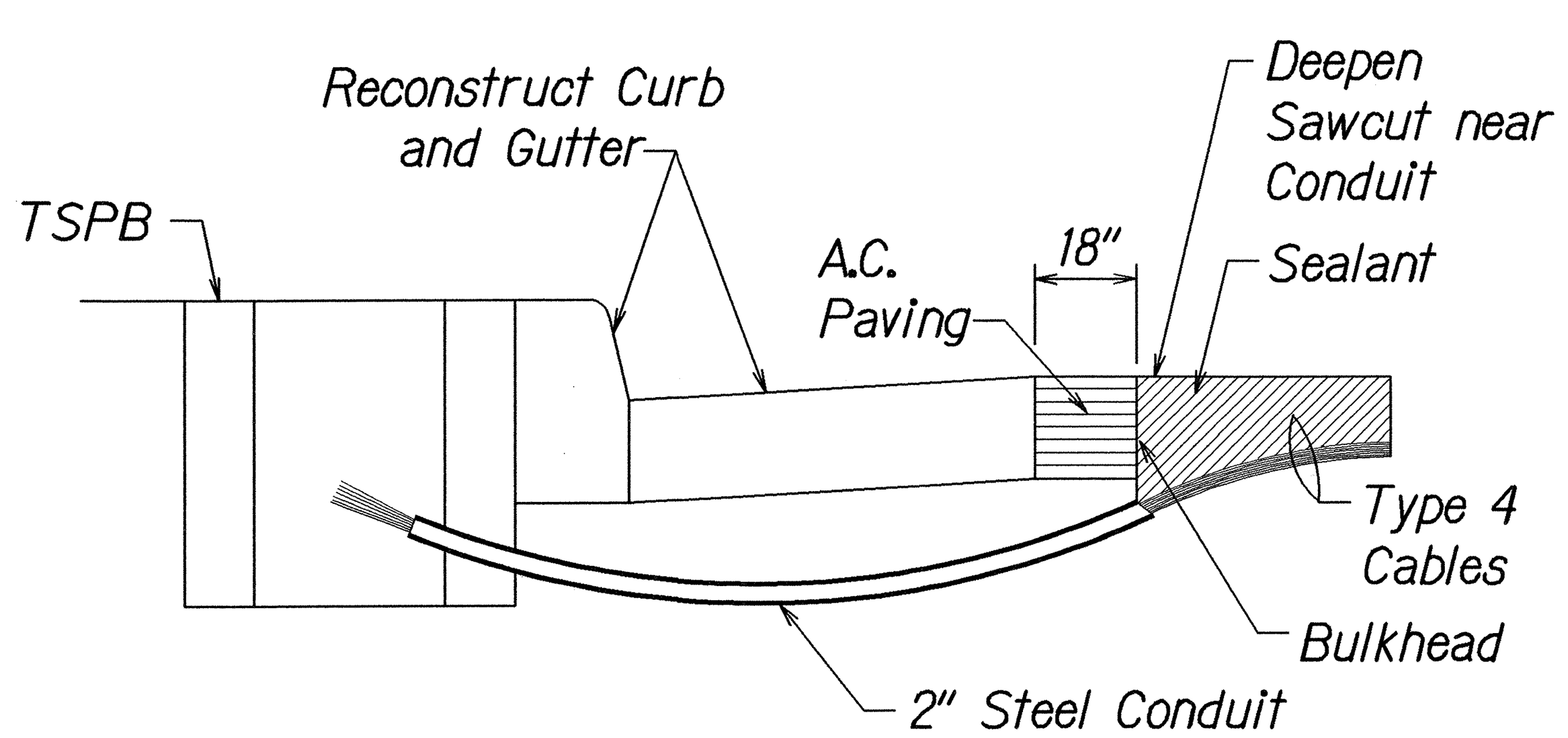


NOTE: Length of overcuts shall be kept to a minimum. All overcuts shall be back filled with hot tar.

TYPICAL SENSOR LOOP SAWCUT DETAIL



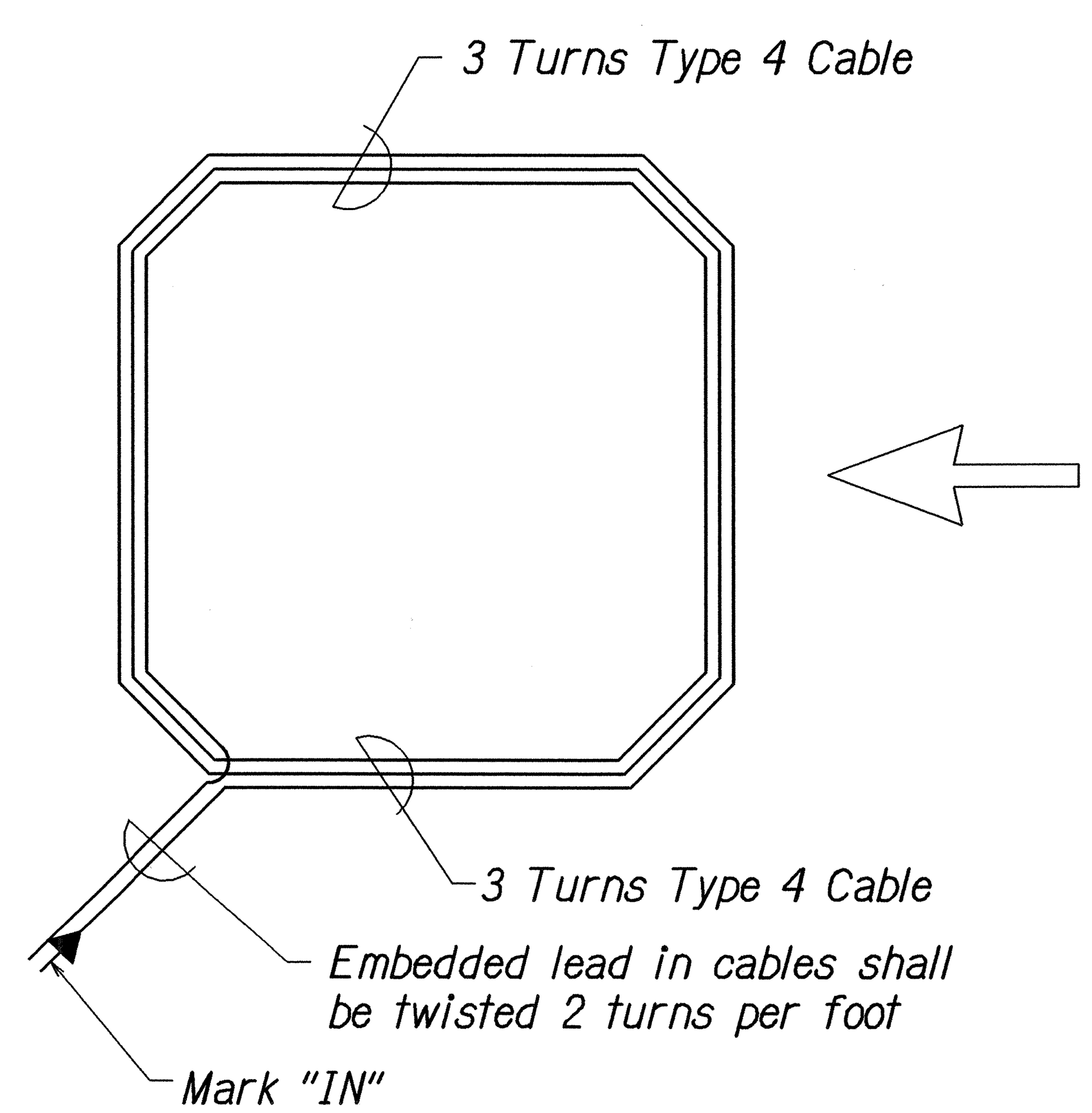
TYPICAL SECTION THROUGH SENSOR LOOP



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 hot tar in sawcut.
4. Backfill over conduit with new A.C.
5. Reconstruct curb and gutter as required.

DETAIL OF SENSOR LOOP INSTALLATION AT EDGE OF ROADWAY



TYPICAL SENSOR LOOP WIRING DIAGRAM

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

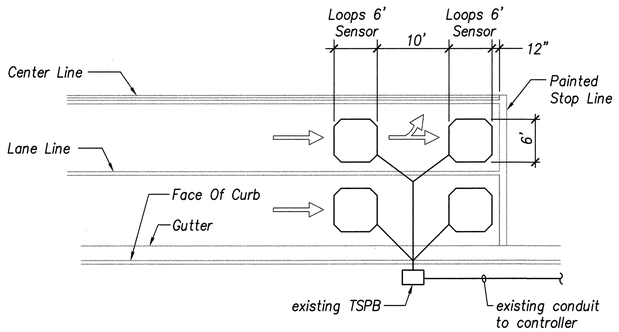
LOOP DETECTOR DETAILS

KAMEHAMEHA HIGHWAY BIKEWAY
Vicinity of Radford Drive to Arizona Memorial
Federal Aid Project No. CMAQ-099-1(22)

Not to Scale — Date: February 2004

SHEET No. T8 OF 8 SHEETS

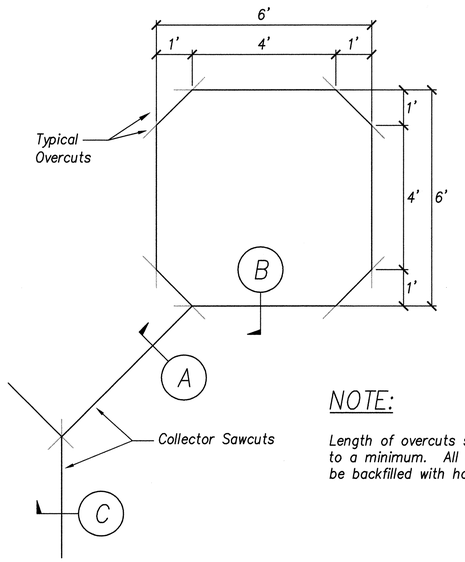
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-099-1(22)	2005	C.O. 37 S-1	60



NOTES:

1. Center sensor loops in lanes.
2. Collector cables shall be twisted 2 turns per foot.
3. Number of loops and locations vary. See project plans.
4. Number and locations of collector sawcuts may be varied in the field to suit.
5. Coordinate final location of sensors with civil striping plan.

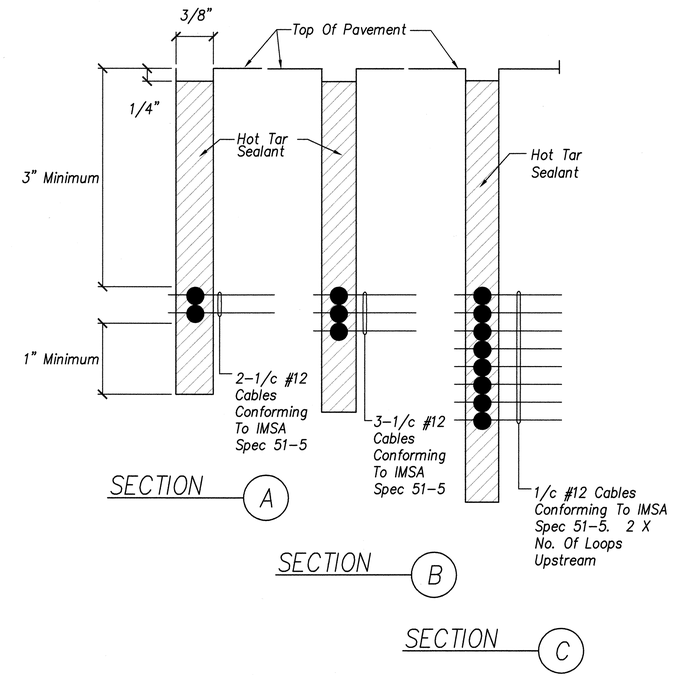
1/S-1 TYPICAL SENSOR LOOP LAYOUT
Not to scale



NOTE:

Length of overcuts shall be kept to a minimum. All overcuts shall be backfilled with hot tar.

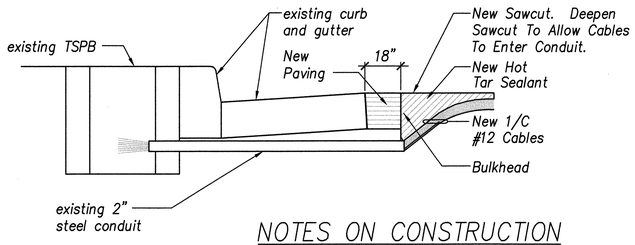
TYPICAL SENSOR LOOP SAWCUT DETAIL



SECTION A

SECTION B

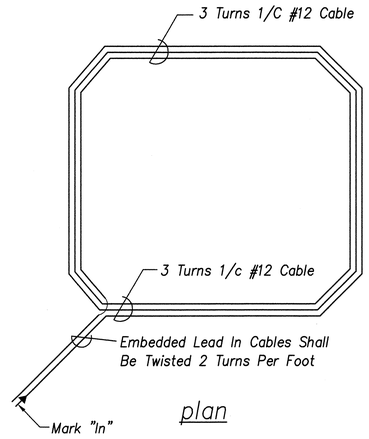
SECTION C



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 hot tar in sawcut.
4. Backfill over conduit with new paving.
5. Reconstruct curb and gutter as required.

DETAIL OF SENSOR LOOP INSTALLATION AT EDGE OF ROADWAY



plan

TYPICAL SENSOR LOOP WIRING DIAGRAM
Not to scale

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

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Lennox K. Nishimura
PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2006
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETECTOR LOOP DETAILS

KAMEHAMEHA HIGHWAY BIKEWAY
Vicinity of Radford Drive to Arizona Memorial
Federal Aid Project No. CMAQ-099-1(22)

Scale: As Shown Date: June 2005

SHEET No. 1 OF 1 SHEETS

C.O. 37 S-1

8/29/05-11:13 Y:\030\030.006\30-6 37 S01.dwg