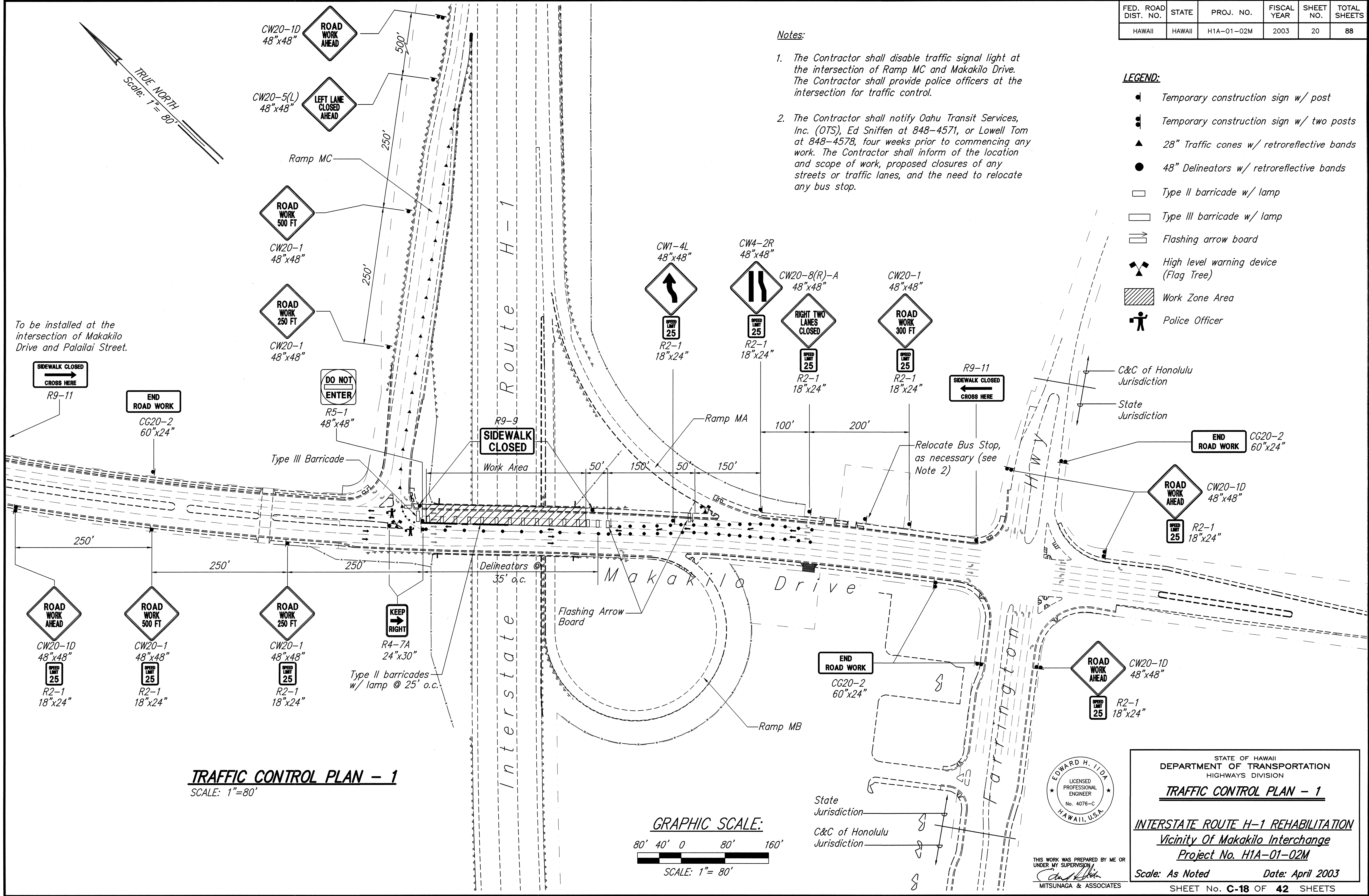


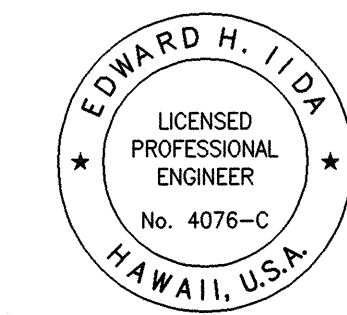
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	H1A-01-02M	2003	20	88

- Notes:
- The Contractor shall disable traffic signal light at the intersection of Ramp MC and Makakilo Drive. The Contractor shall provide police officers at the intersection for traffic control.
 - The Contractor shall notify Oahu Transit Services, Inc. (OTS), Ed Sniffen at 848-4571, or Lowell Tom at 848-4578, four weeks prior to commencing any work. The Contractor shall inform of the location and scope of work, proposed closures of any streets or traffic lanes, and the need to relocate any bus stop.

- LEGEND:
- Temporary construction sign w/ post
 - Temporary construction sign w/ two posts
 - 28" Traffic cones w/ retroreflective bands
 - 48" Delineators w/ retroreflective bands
 - Type II barricade w/ lamp
 - Type III barricade w/ lamp
 - Flashing arrow board
 - High level warning device (Flag Tree)
 - Work Zone Area
 - Police Officer



ORIGINAL PLAN	DATE
NO.	4/02
SURVEY PLOTTED BY	G. LM
DRAWN BY	C. MCKINLEY
DESIGNED BY	C. MCKINLEY
CHECKED BY	C. MCKINLEY



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC CONTROL PLAN - 1

INTERSTATE ROUTE H-1 REHABILITATION
Vicinity Of Makakilo Interchange
Project No. H1A-01-02M

Scale: As Noted Date: April 2003

SHEET No. C-18 OF 42 SHEETS

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
MITSUNAGA & ASSOCIATES

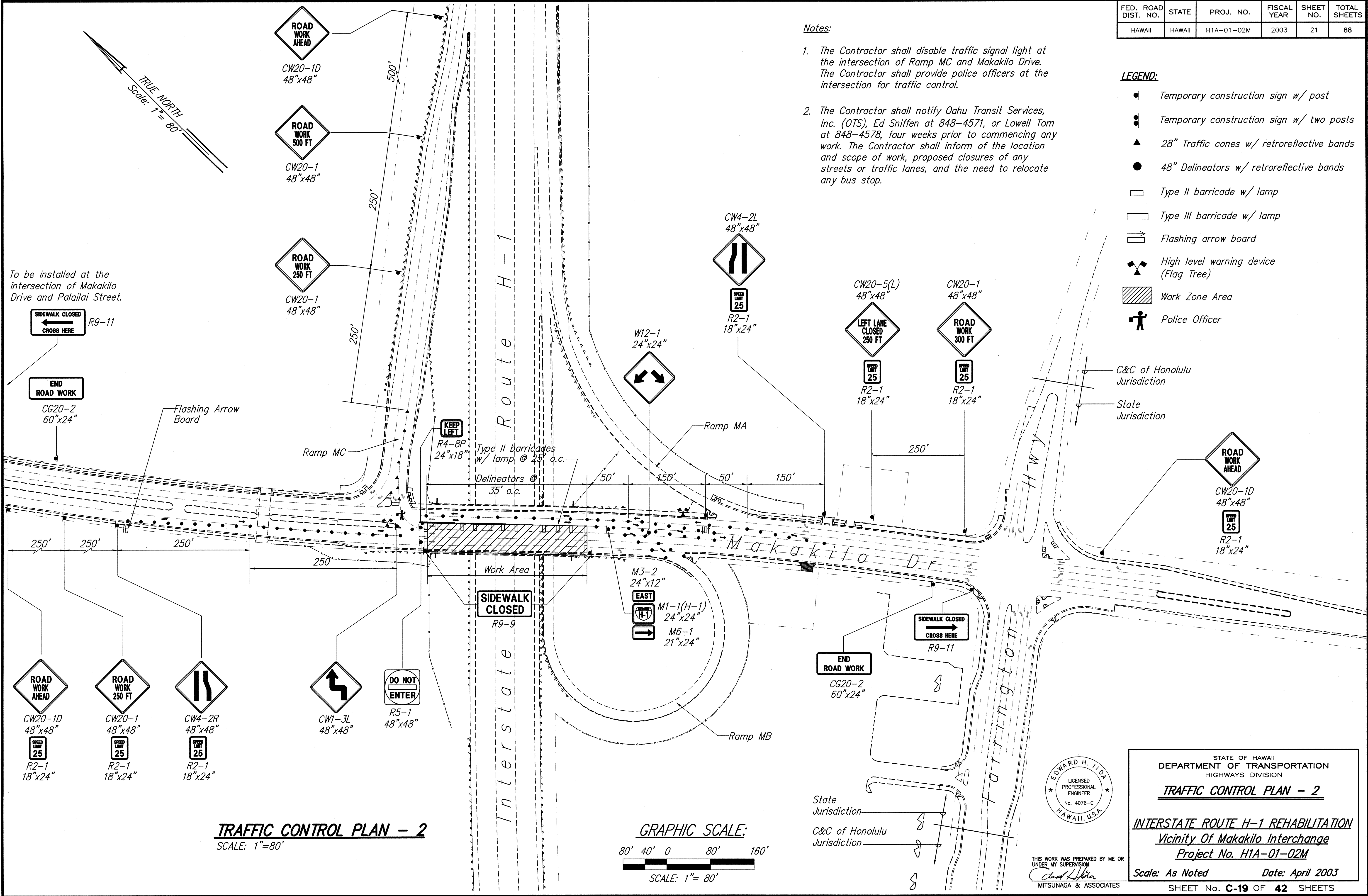
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	H1A-01-02M	2003	21	88

Notes:

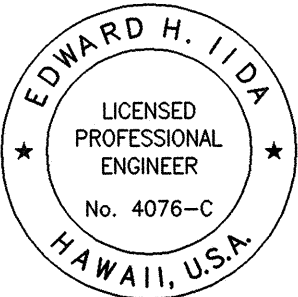
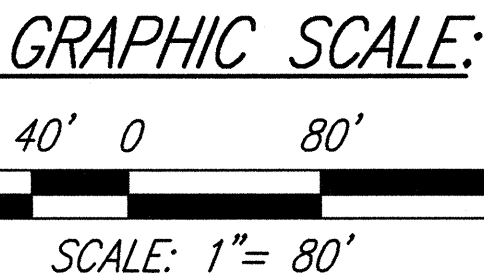
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LEGEND:

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- Temporary construction sign w/ two posts
- 28" Traffic cones w/ retroreflective bands
- 48" Delineators w/ retroreflective bands
- Type II barricade w/ lamp
- Type III barricade w/ lamp
- Flashing arrow board
- High level warning device (Flag Tree)
- Work Zone Area
- Police Officer



TRAFFIC CONTROL PLAN - 2
SCALE: 1"=80'



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TRAFFIC CONTROL PLAN - 2
INTERSTATE ROUTE H-1 REHABILITATION
Vicinity Of Makakilo Interchange
Project No. H1A-01-02M
Scale: As Noted Date: April 2003
SHEET No. C-19 OF 42 SHEETS

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Edward H. Iida
MITSUNAGA & ASSOCIATES

ORIGINAL PLAN	DATE
DESIGNED BY	4/02
TRACED BY	4/02
QUANTITIES BY	4/02
CHECKED BY	4/02
NO.	

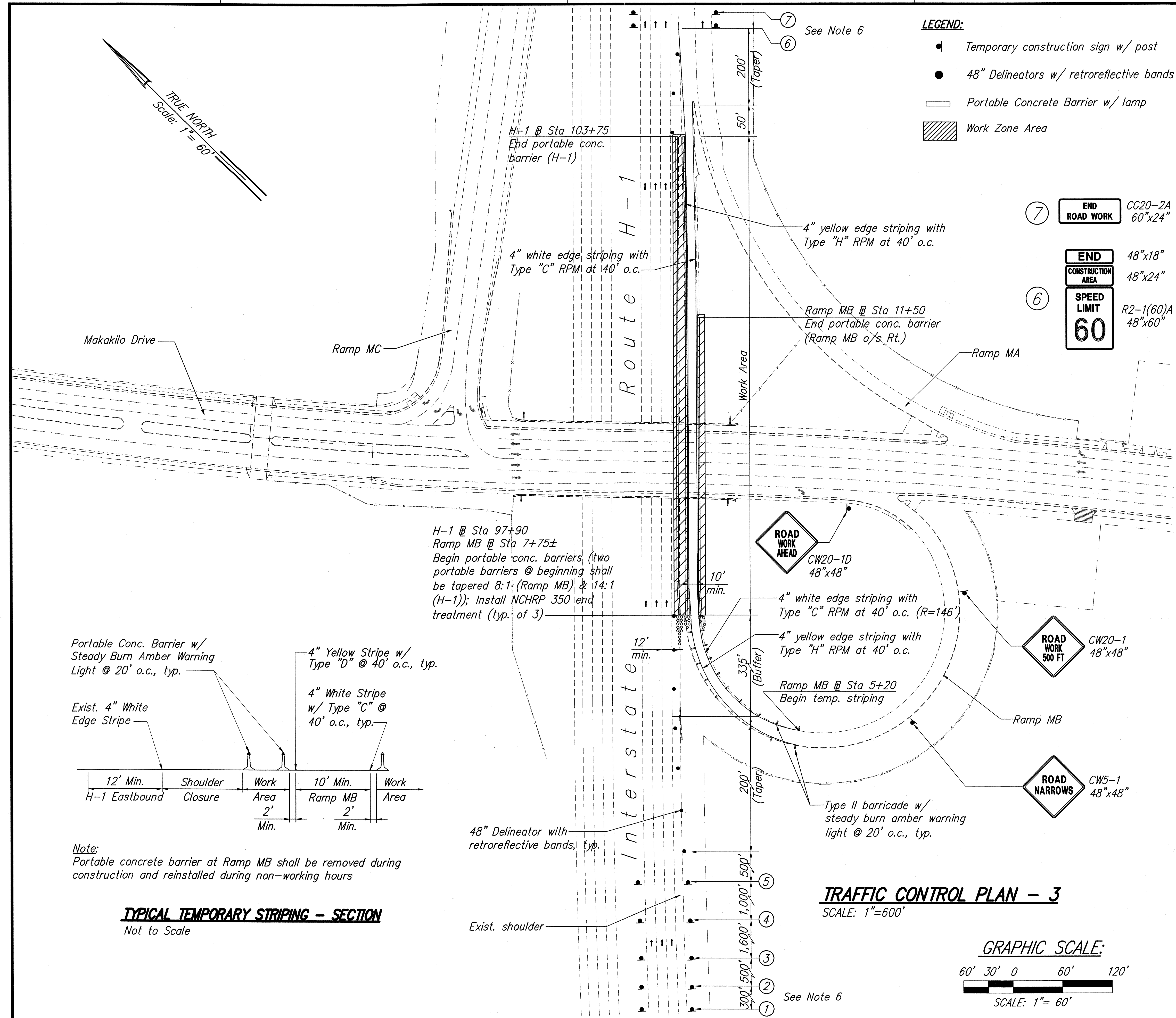
Notes:

1. *No section where guardrails and/or end posts have been removed shall be left unshielded at the end of each work day. Open sections shall be shielded by portable barriers. Transporting, placing, maintaining, relocating and removing State furnished portable barriers shall be considered incidental to Section 649 – Temporary Concrete Barrier.*
2. *Ends of portable barriers shall be protected with Inertial Barrier System as shown on sheet C.O. 21S–3. End treatment installation shall conform to manufacturer's recommendations and shall comply with NCHRP 350.*
3. *No material and/or equipment shall be stockpiled or otherwise stored within the highway right-of-way, except at locations designated in writing and approved by the Engineer. If use of location is approved by the Engineer, the Contractor shall obtain a permit to use the property within the highway right-of-way from the State Right-Of-Way Branch at telephone no. 692–7332.*
4. *The gore between H–1 and Ramp MB shall be graded to properly install inertial barriers and shall be restored upon completion of the work. Cost will be considered incidental to various contract items.*
5. *See sheet C.O. 21S–2 for additional "Work Zone" Traffic Control requirements.*

Diagram illustrating the layout of a two-lane road construction zone with three stations:

- Station 1:**
 - Signs: BEGIN, CONSTRUCTION AREA, SPEED LIMIT 50, 250 FINE HRS 291C-104
 - Dimensions: 48" x 18", 48" x 24", 48" x 60", 48" x 24"
- Station 2:**
 - Signs: RIGHT SHOULDER CLOSED, NEXT 1/2 MILE
 - Dimensions: 48" x 48"
- Station 3:**
 - Sign: ROAD WORK AHEAD
 - Dimensions: 48" x 48"

12/22/03	Sheet Added
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <u>TRAFFIC CONTROL PLAN - 3</u> <u>INTERSTATE ROUTE H-1 REHABILITATION</u> <u>Vicinity Of Makakilo Interchange</u> <u>Project No. H1A-01-02M</u> Scale: As Shown Date: April 2003 SHEET No. C-19 OF 42 SHEETS	



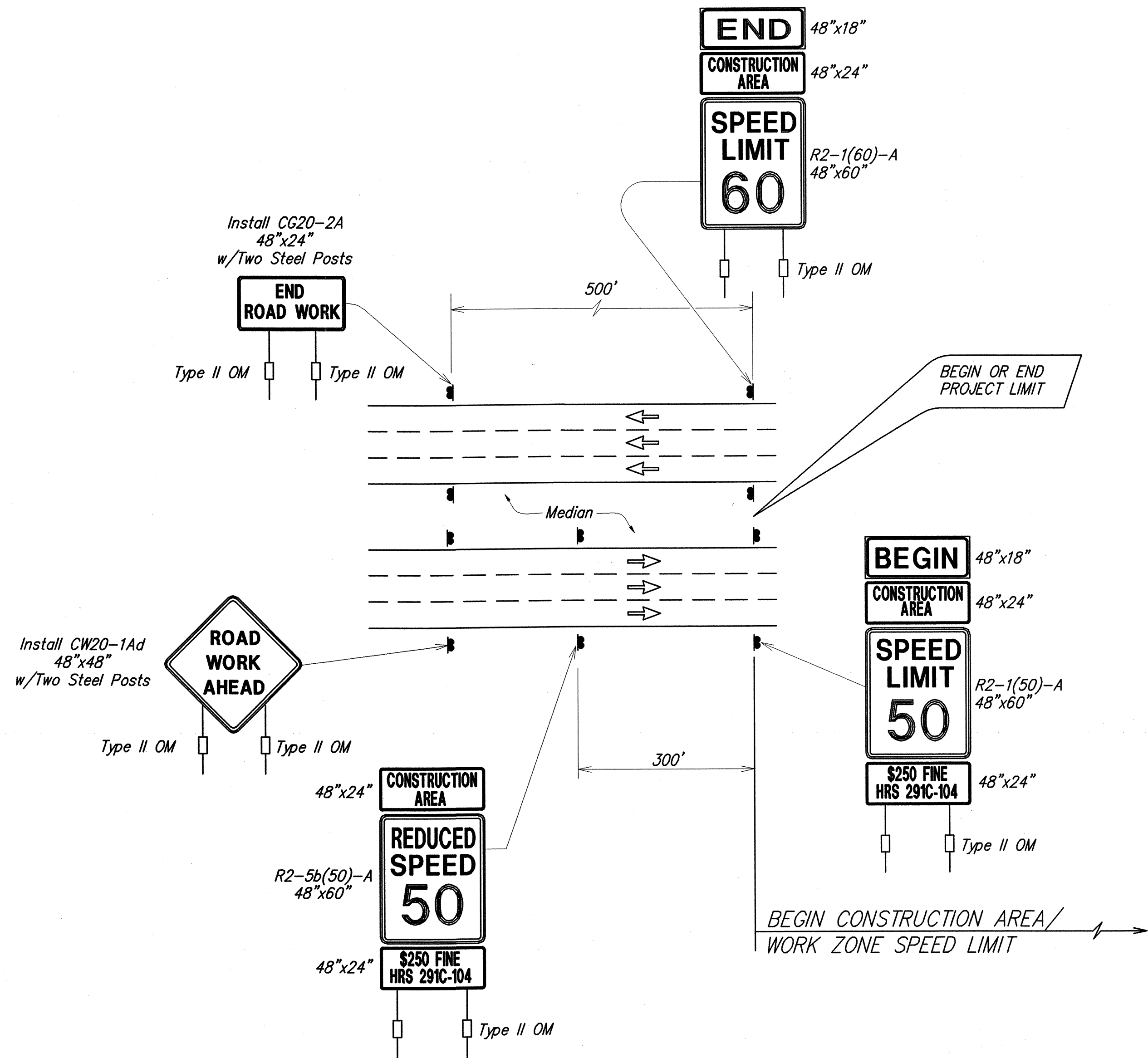
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	6/1/61
	TRACED BY	" "
	DESIGNED BY	" "
	QUANTITIES BY	" "
	CHECKED BY	" "
No.	CHECKED BY	DATE



EDWARD H. IIDA
* *
LICENSED
PROFESSIONAL
ENGINEER
No. 4076-C
HAWAII, U.S.A.

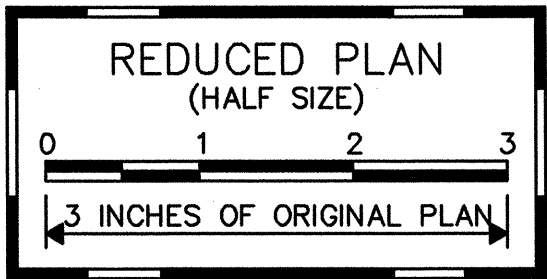
THIS WORK WAS PREPARED BY ME OR
UNDER MY SUPERVISION
Edward H. Iida
MITSUNAGA & ASSOCIATES

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	H1A-01-02M	2003	C.O. 21S-2	88

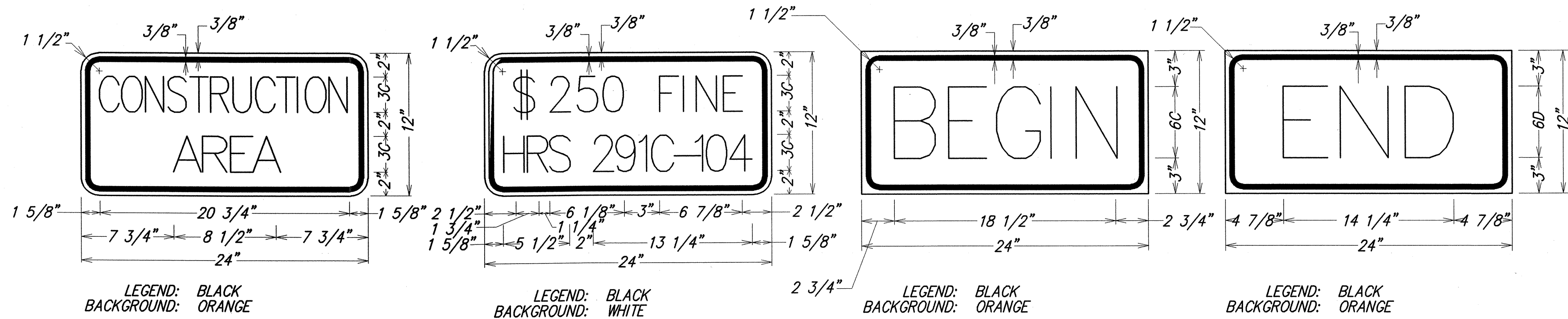


Work Zone Note:

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 within the work zone/project limits shall be covered and work zone speed limit sign assemblies (R2-1(XX)-A and R2-5b(XX)-A with "CONSTRUCTION AREA" and "\$250 FINE HRS 291C-104" Supplemental Signs) shall be displayed during lane closure hours.
3. Upon the removal of the lane closure, all work zone speed limit signs shall be covered and existing speed limit signs within the work zone/ project limits shall be restored.
4. Construction signs shall be installed on both the approaching and trailing ends of each work zone.
5. Each construction sign shall have a minimum of two (2) Type II OM. Installation of each Type II OM shall be considered incidental to various contract items.
6. All work zone speed sign assemblies shall be mounted on three (3) 4.00 lbs./ft. galvanized flanged channel sign posts with a sign clearance height of five (5) feet. Sign stiffeners as specified by Standard Plan Sheet TE-02 shall be installed as needed or as directed by the Engineer.
7. The daily covering and uncovering of existing regulatory speed limit signs along with the installation, maintenance, removal and daily covering and uncovering of work zone speed limit sign assemblies shall be considered incidental to various contract items.

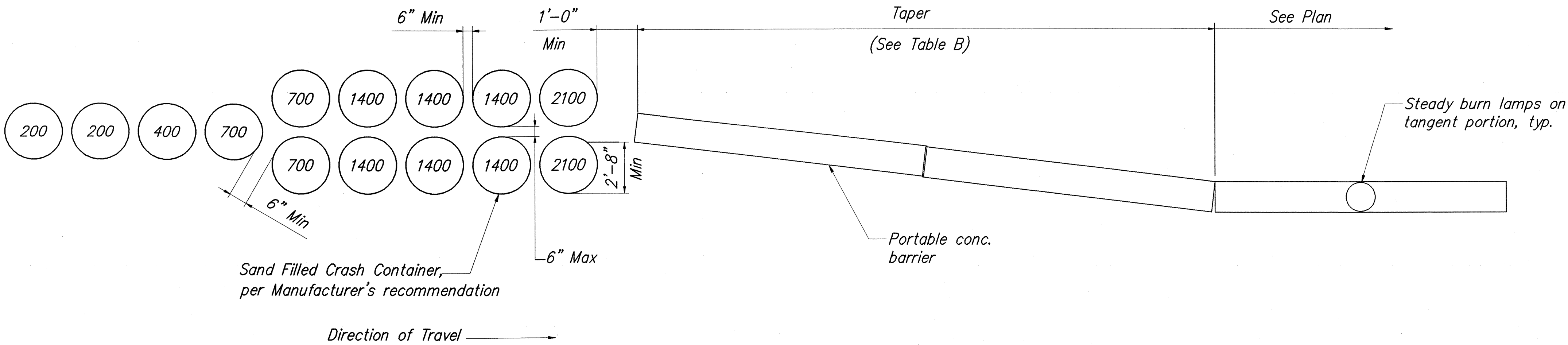


TYPICAL DETAIL FOR CONSTRUCTION SIGNS
ON FREEWAY

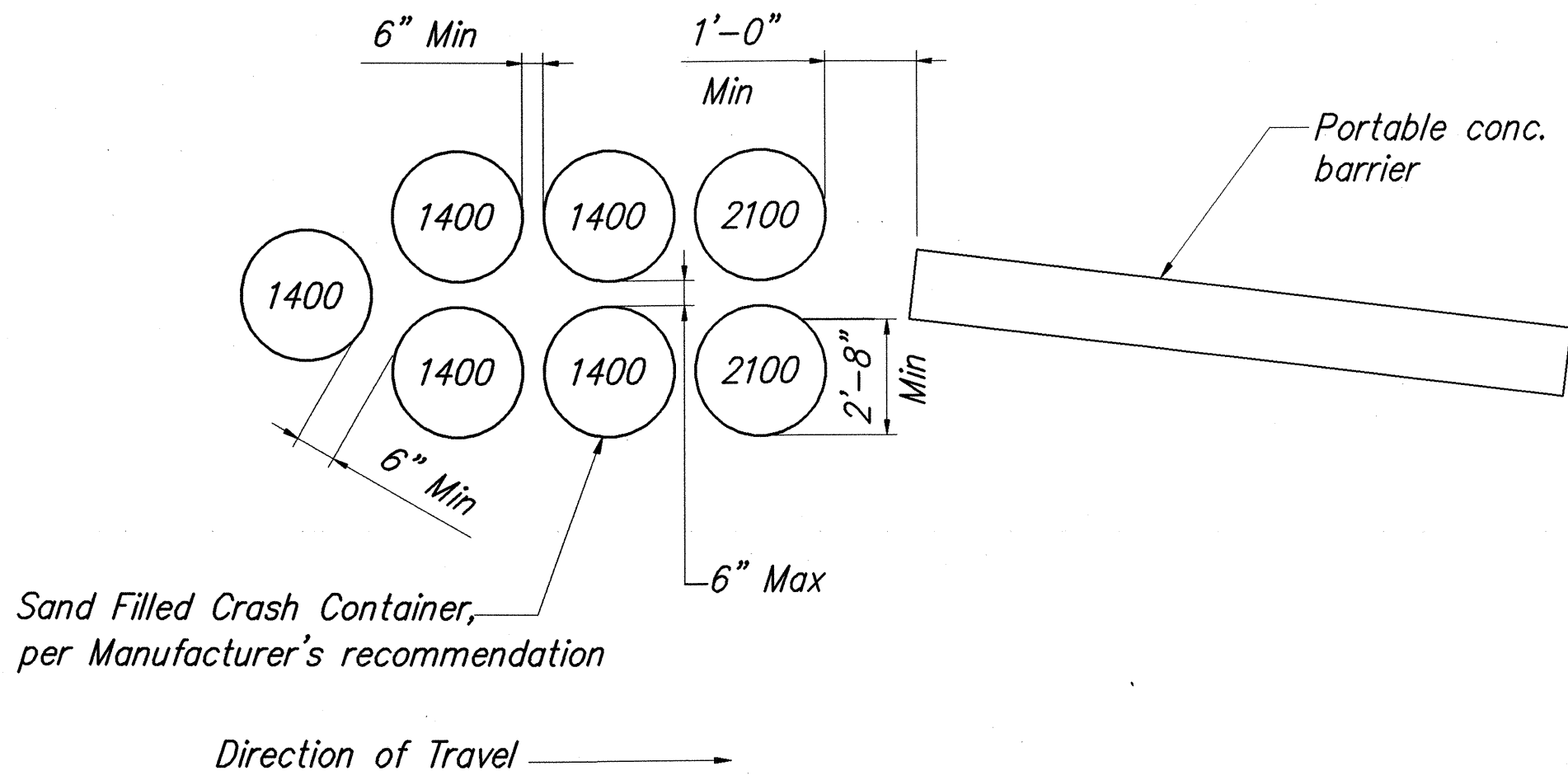


12/22/03	Sheet Added
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION WORK ZONE SIGNING PLAN, NOTES AND DETAILS INTERSTATE ROUTE H-1 REHABILITATION Vicinity Of Makakilo Interchange Project No. H1A-01-02M Scale: As Noted Date: April 2003 SHEET No. C-19 OF 42 SHEETS	

ORIGINAL PLAN	DATE
NOTES	4/01
DESIGNED BY	C. M. M. M.
CHECKED BY	C. M. M. M.
DATE	4/01



CRASH CUSHION ARRAY DETAIL
(Design Speed: 55 MPH)
NCHRP 350 Compliant Attenuator Array
Not To Scale



CRASH CUSHION ARRAY DETAIL
(Design Speed: 30 MPH)
NCHRP 350 Compliant Attenuator Array
Not To Scale

Notes:

1. (xxx) indicates module location and weight of sand in pounds for each module.
2. All sand weights are nominal.
3. Each module is to contain amount of sand indicated, supported according to the manufacturer's instructions.
4. Modules shall be placed on asphalt concrete, epoxy mortar or concrete surface.
5. Weight of sand and outline of each module shall be painted on the surface of each module location.
6. Modules shall be Energy Absorption Systems Energite III, Fitch Universal Module System or approved equal.

TABLE A SHY LINE OFFSETS *	
DESIGN SPEED (mph)	SHY LINE OFFSETS
70	10.0'
65	9.0'
60	8.5'
55	7.0'
50	6.5'
45	6.0'
40	5.0'
35	4.5'
30	3.5'
≤ 25	2.0'

TABLE B MAXIMUM TAPERS FOR CONCRETE BARRIER		
DESIGN SPEED (mph)	TAPER	
	INSIDE SHY LINE	BEYOND SHY LINE
70	30:1	20:1
65	28:1	19:1
60	26:1	18:1
55	24:1	16:1
50	21:1	14:1
45	18:1	12:1
40	17:1	11:1
35	15:1	9:1
≤ 30	13:1	8:1

* Note: Minimum shy line offset for tangent sections shall be 2'-0".

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	4/03
No.	DESIGNED BY	4/03
	QUANTITIES BY	4/03
	CHECKED BY	4/03

12/22/03	Sheet Added
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
INERTIAL BARRIER SYSTEM	
INTERSTATE ROUTE H-1 REHABILITATION Vicinity Of Makakilo Interchange Project No. H1A-01-02M	
Scale: As Noted	Date: April 2003
SHEET No. C-19 OF 42 SHEETS	