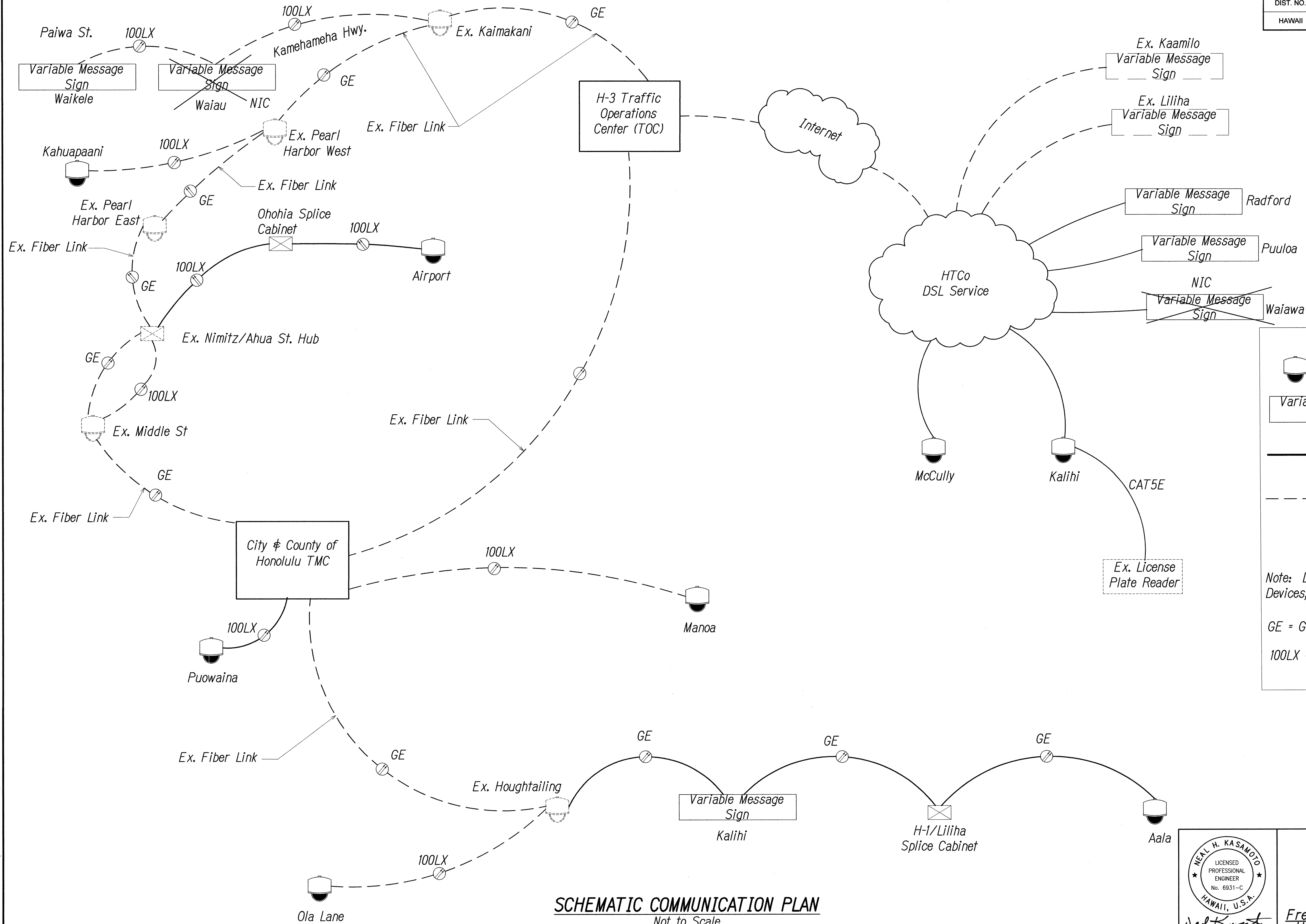
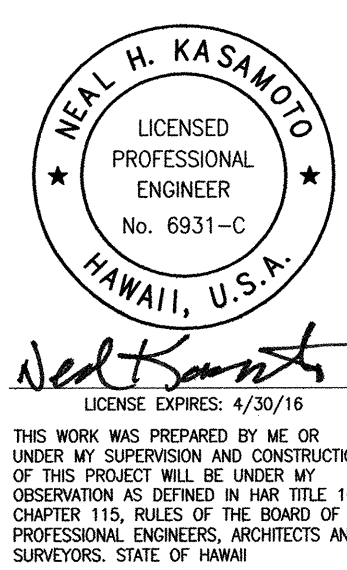


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-0300(138)	2014	36	220



SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
DESIGNED BY	
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ORIGINAL PLAN	
NOTEBOOK	
No.	

FILE: \\SEA-45\96-45\96-4627\COMMUNICATION NETWORK\SY-1 COMM.DWG Oct 10, 2014-11:18 AM



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

COMMUNICATIONS PLAN

Freeway Management System, Interstate H-1, H-2 & Moanalua Freeway (H-201)
Phase 1C, Part 2
Federal Aid Project No. 1M-0300(138)

Scale: NTS Date: 8/7/14

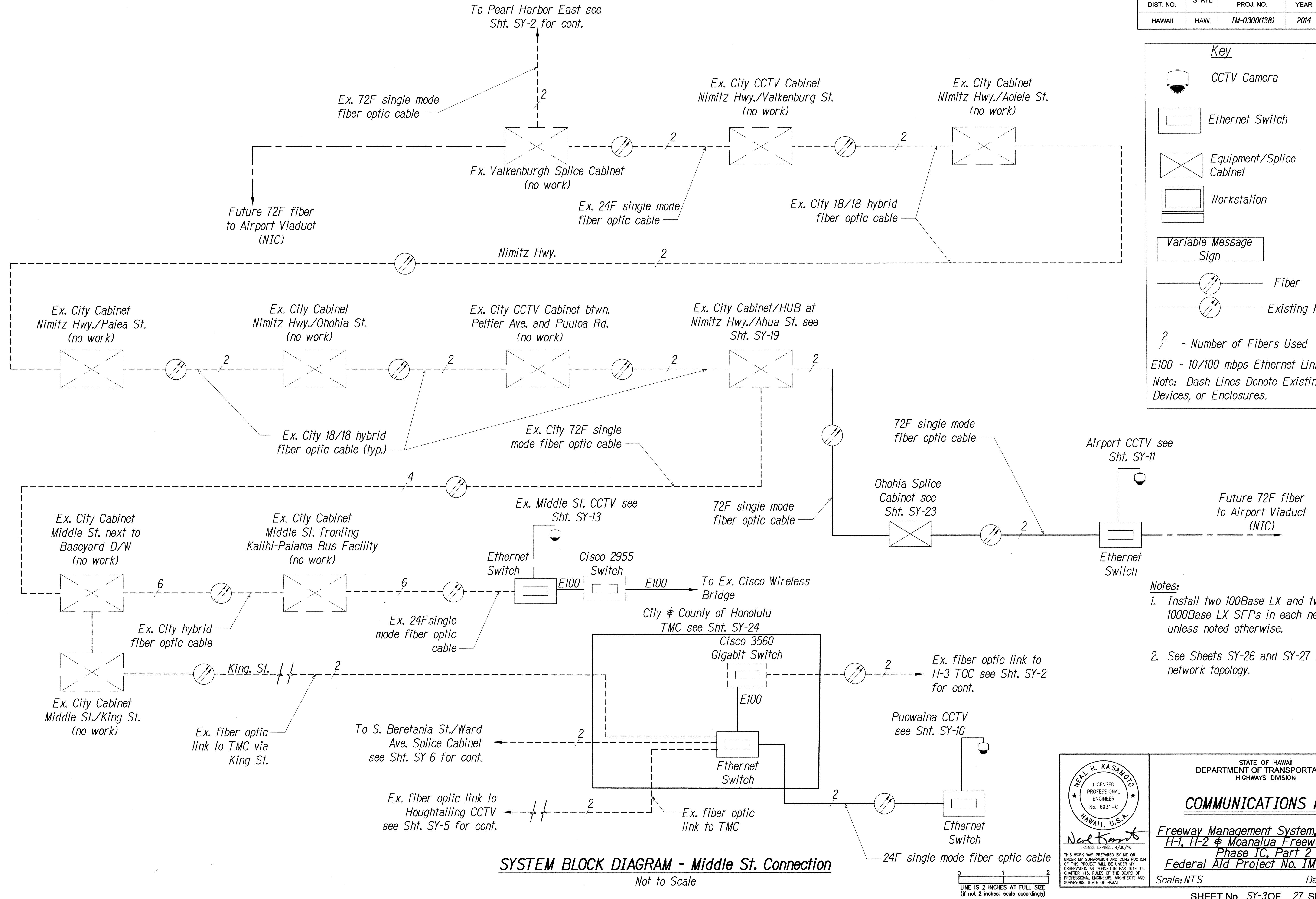
SHEET No. SY-1 OF 27 SHEETS

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(if not 2 inches: scale accordingly)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-0300(138)	2014	38	220

Key

- CCTV Camera
- Ethernet Switch
- Equipment/Splice Cabinet
- Workstation
- Variable Message Sign
- Fiber
- Existing Fiber
- 2 - Number of Fibers Used
- E100 - 10/100 mbps Ethernet Link
- Note: Dash Lines Denote Existing Cables, Devices, or Enclosures.



- Notes:**
1. Install two 100Base LX and two 1000Base LX SFPs in each new switch unless noted otherwise.
 2. See Sheets SY-26 and SY-27 for network topology.

SURVEY PLOTTED BY	DATE
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DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTEBOOK	
NO.	

PLAN: 98-46-96-46-27 COMMUNICATION NETWORK(S)-3 BLOCK MIDDLE.DWG Oct 13, 2014-2:42 PM

SYSTEM BLOCK DIAGRAM - Middle St. Connection
Not to Scale

NEAL H. KASAMOD
LICENSED PROFESSIONAL ENGINEER
No. 6931-C
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

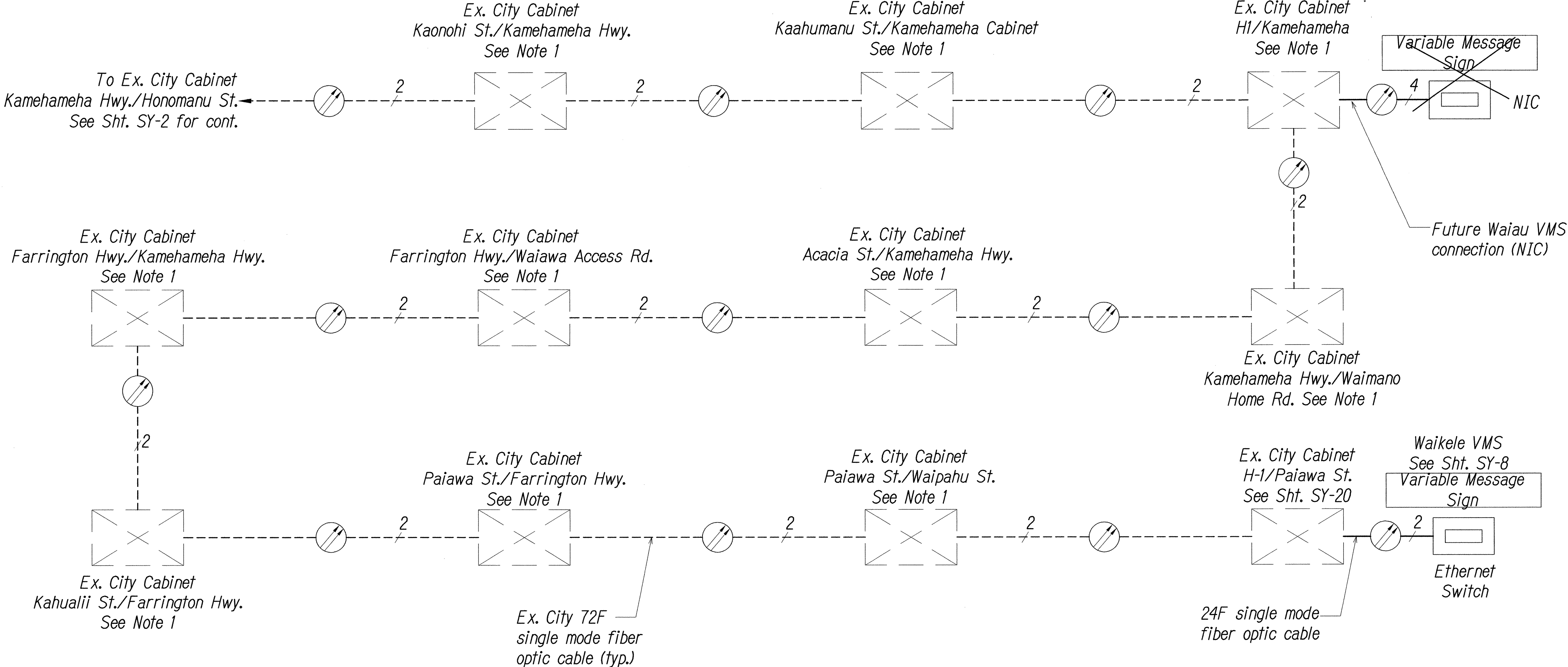
COMMUNICATIONS PLAN

Freeway Management System, Interstate H-1, H-2 & Moanalua Freeway (H-201)
Phase IC, Part 2
Federal Aid Project No. 1M-0300(138)

Scale: NTS Date: 8/7/14

SHEET No. SY-30F 27 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-0300(138)	2014	39	220



Key

- CCTV Camera
- Ethernet Switch
- Equipment/Splice Cabinet
- Workstation
- Fiber
- Existing Fiber
- 2 - Number of Fibers Used
- E100 - 10/100 mbps Ethernet Link

Note: Dash Lines Denote Existing Cables, Devices, or Enclosures.

- Notes:**
- Contractor shall verify if fiber is spliced through at cabinet. If fiber is not spliced through, Contractor shall test and determine fiber assignment and splice fibers. Coordinate and verify with City DTS & Engineer before performing any splicing. Contractor shall document all fiber assignments used. Work shall be under pay item in Section 681 - "Modifications in Existing Cabinets" per location.
 - Install two 100Base LX and two 1000Base LX SFPs in each new switch unless noted otherwise.
 - See Sheets SY-26 and SY-27 for network topology.

SURVEY PLOTTED BY	DATE
DRAWN BY	
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DESIGNED BY	
CHECKED BY	
NO.	

FILE: \98-461\98-462\COMMUNICATION NETWORK\SY-4 WAIKELE AND WAIU BLOCK DIAGRAMING Oct 10, 2014-11:23 AM

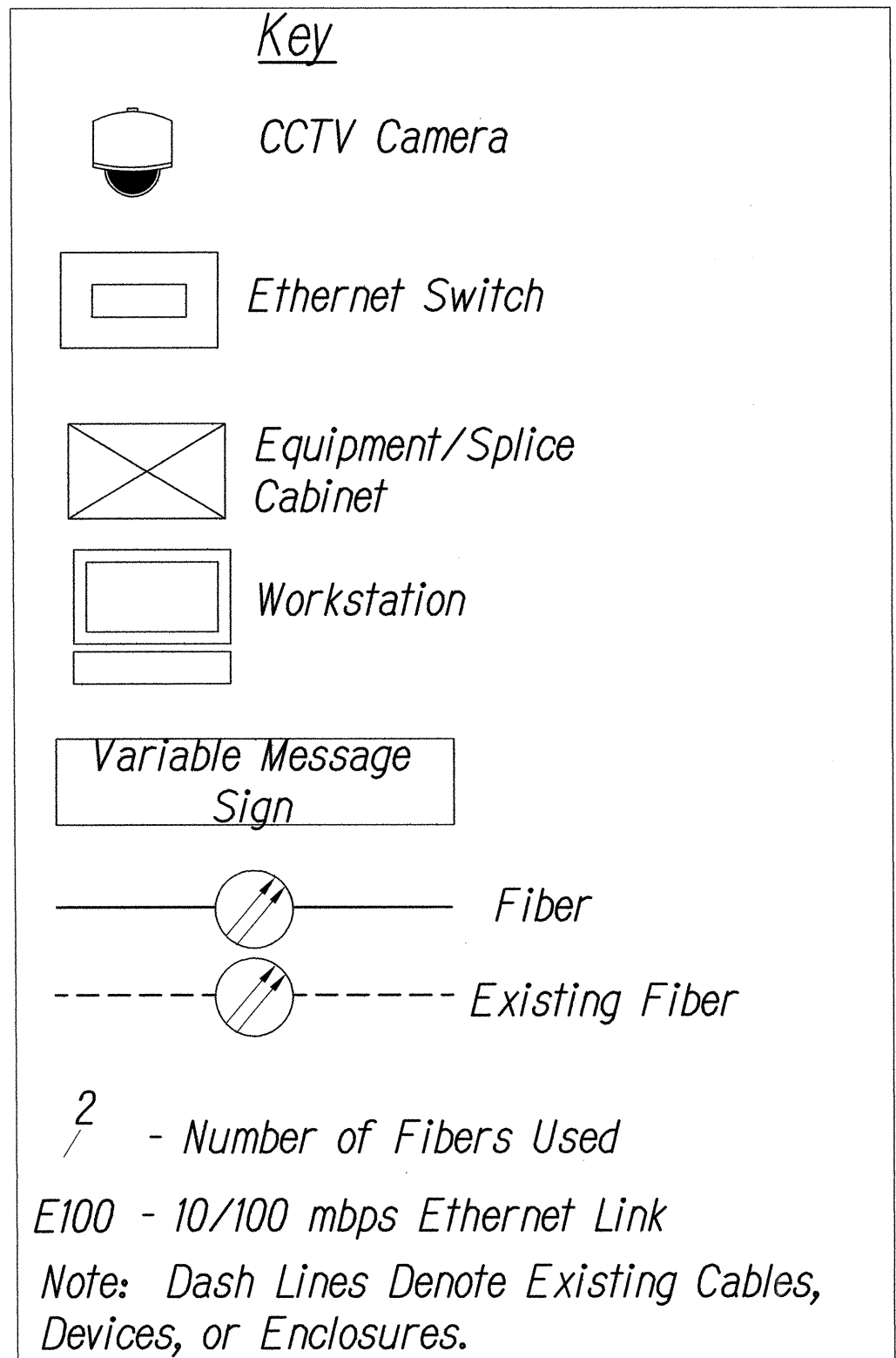
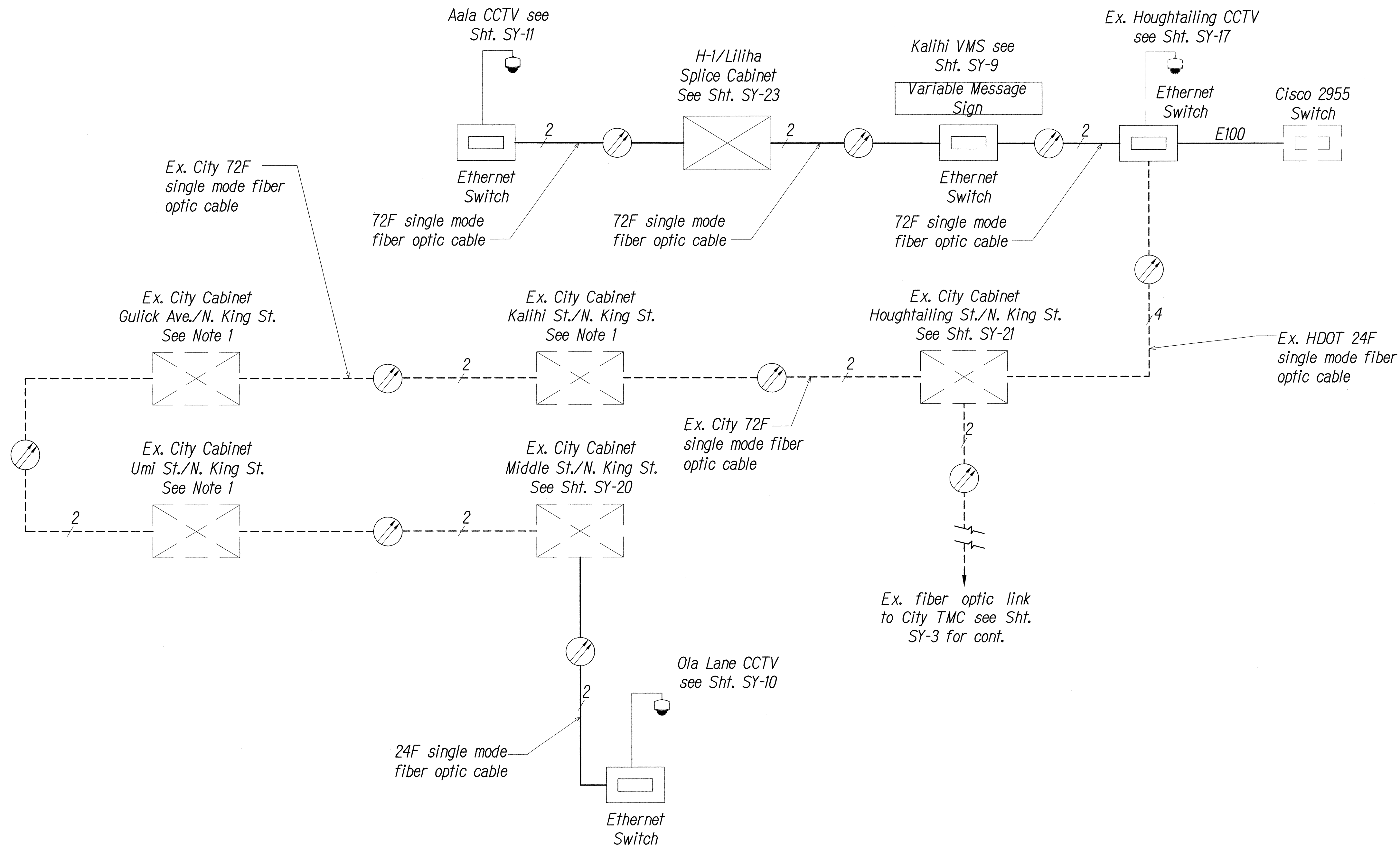
SYSTEM BLOCK DIAGRAM - Waikele & Waiau Connection
Not to Scale

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If not 2 inches: scale accordingly)

NEAL H. KASAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6931-C
HAWAII, U.S.A.
Date: 8/7/14

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
COMMUNICATIONS PLAN
Freeway Management System, Interstate
H-1, H-2 & Moanalua Freeway (H-201)
Phase IC, Part 2
Federal Aid Project No. IM-0300(138)
Scale: NTS Date: 8/7/14

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-0300(138)	2014	40	220



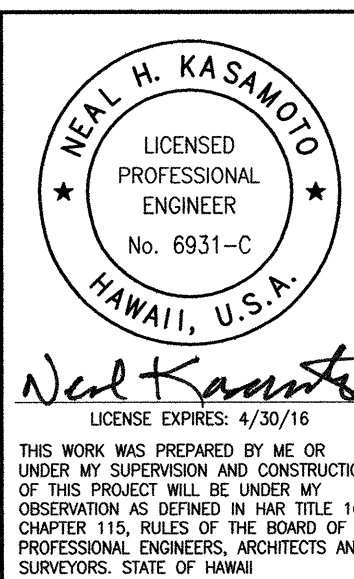
Notes:

- Contractor shall verify if fiber is spliced through at cabinet. If fiber is not spliced through, Contractor shall test and determine fiber assignment and splice fibers. Coordinate and verify with City DTS & Engineer before performing any splicing. Contractor shall document all fiber assignments used. Work shall be under pay item in Section 681 - "Modifications in Existing Cabinets" per location.
- Install two 100Base LX and two 1000Base LX SFPs in each new switch unless noted otherwise.
- See Sheets SY-26 and SY-27 for network topology.

SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTEBOOK	
No.	

FILE: \\96-46-27\COMMUNICATION NETWORK\SY-5 HOUGHTAILING TO MIDDLE AND TO AALA BLOCK DIAGRAMING Oct 10, 2014-11:24 AM

SYSTEM BLOCK DIAGRAM - Ola Lane & Aala Connection
Not to Scale



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

COMMUNICATIONS PLAN

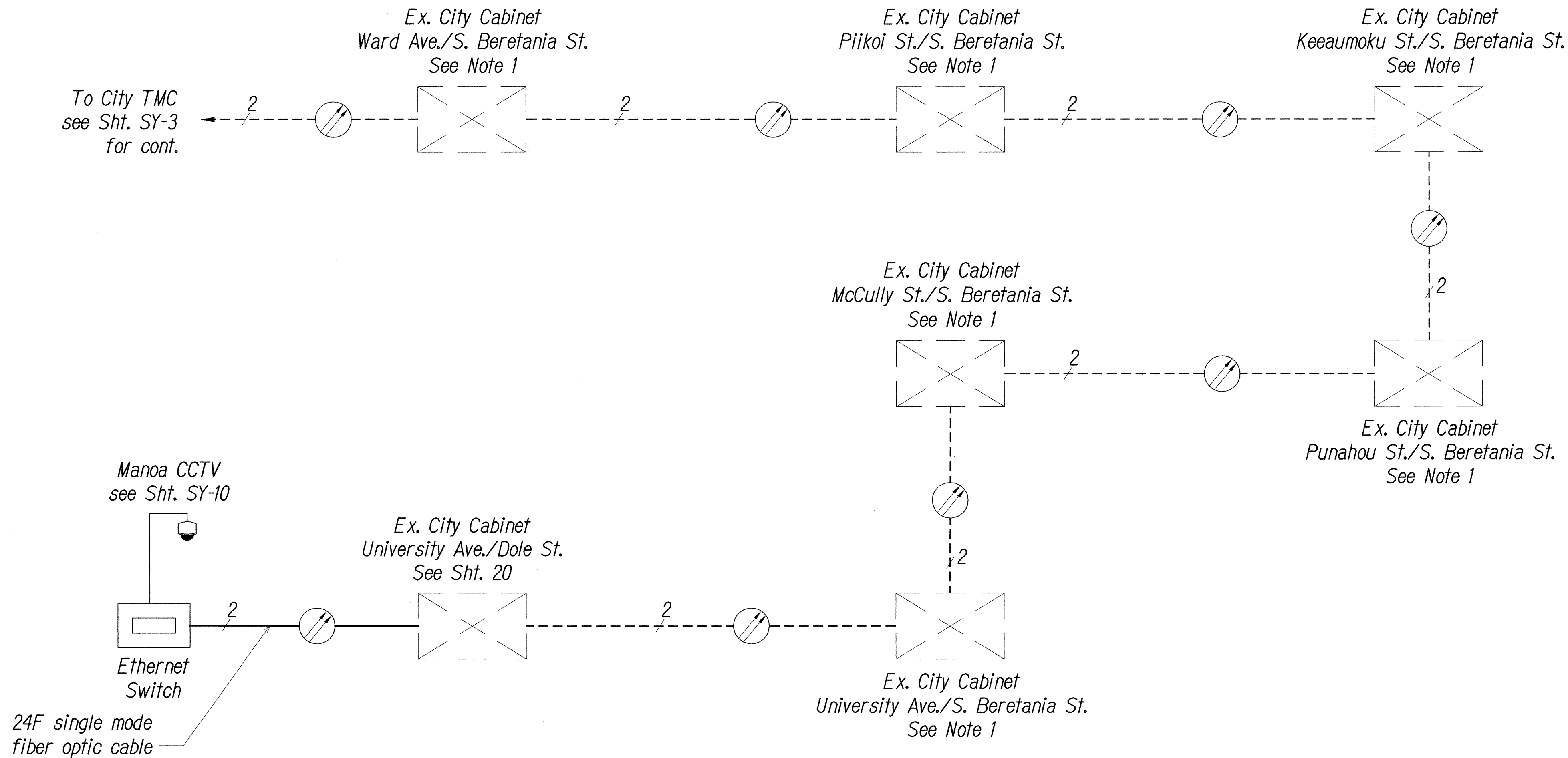
Freeway Management System, Interstate H-1, H-2 & Moanalua Freeway (H-201)
Phase 1C, Part 2
Federal Aid Project No. IM-0300(138)

Scale: NTS Date: 8/7/14

SHEET No. SY-5 OF 27 SHEETS

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If not 2 inches: scale accordingly)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-0300(138)	2014	41	220



Key

- CCTV Camera
- Ethernet Switch
- Equipment/Splice Cabinet
- Workstation
- Variable Message Sign
- Fiber
- Existing Fiber
- 2 - Number of Fibers Used
- E100 - 10/100 mbps Ethernet Link
- Note: Dash Lines Denote Existing Cables, Devices, or Enclosures.

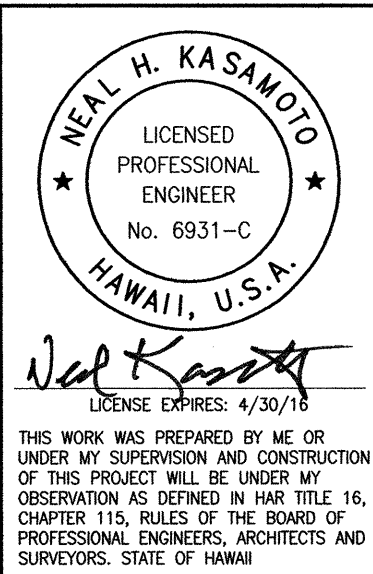
- Notes:**
- Contractor shall verify if fiber is spliced through at cabinet. If fiber is not spliced through, Contractor shall test and determine fiber assignment and splice fibers. Coordinate and verify with City DTS & Engineer before performing any splicing. Contractor shall document all fiber assignments used. Work shall be under pay item in Section 681 - "Modifications in Existing Cabinets" per location.
 - Install two 100Base LX and two 1000Base LX SFPs in each new switch unless noted otherwise.
 - See Sheets SY-26 and SY-27 for network topology.

SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
CHECKED BY	
QUANTITIES BY	
CHECKED BY	
No.	

FILE: \\S:\96-46\96-46-27\COMMUNICATION NETWORK\SY-6 BERETANIA ST BLOCK DIAGRAM.DWG Oct 10, 2014 11:25 AM

SYSTEM BLOCK DIAGRAM - Beretania St. Connection
Not to Scale

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If not 2 inches: scale accordingly)



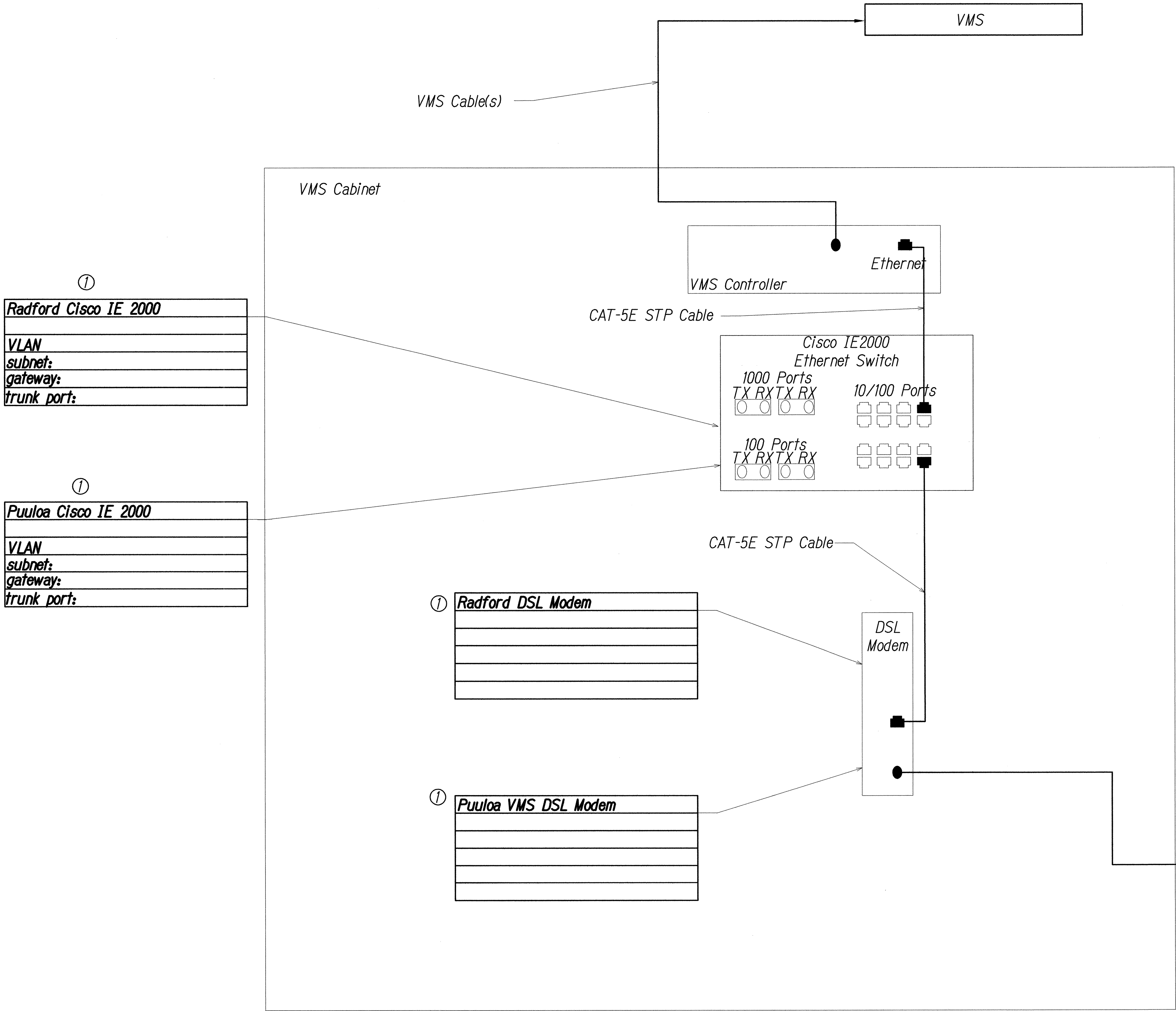
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

COMMUNICATIONS PLAN

Freeway Management System, Interstate
H-1, H-2 & Moanalua Freeway (H-201)
Phase IC, Part 2
Federal Aid Project No. IM-0300(138)

Scale: NTS Date: 8/7/14

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-0300(138)	2014	42	220

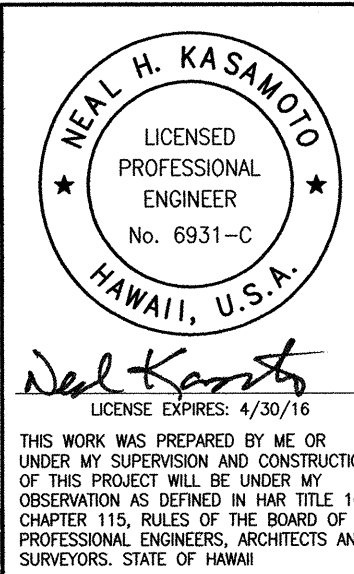


Note:
① IP addresses to be provided by the Engineer.

DSL CONNECTION DETAIL - Radford/Puuloa VMS
Not to Scale

SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTEBOOK	
No.	

PLA\36-46-96-46-27\COMMUNICATION NETWORK\SY-7 TRADFORD\PUULOA VMS (DSL).DWG Oct 10, 2014--11:34 AM



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

COMMUNICATIONS PLAN

*Freeway Management System, Interstate
H-1, H-2 & Moanalua Freeway (H-201)
Phase 1C, Part 2
Federal Aid Project No. IM-0300(138)*

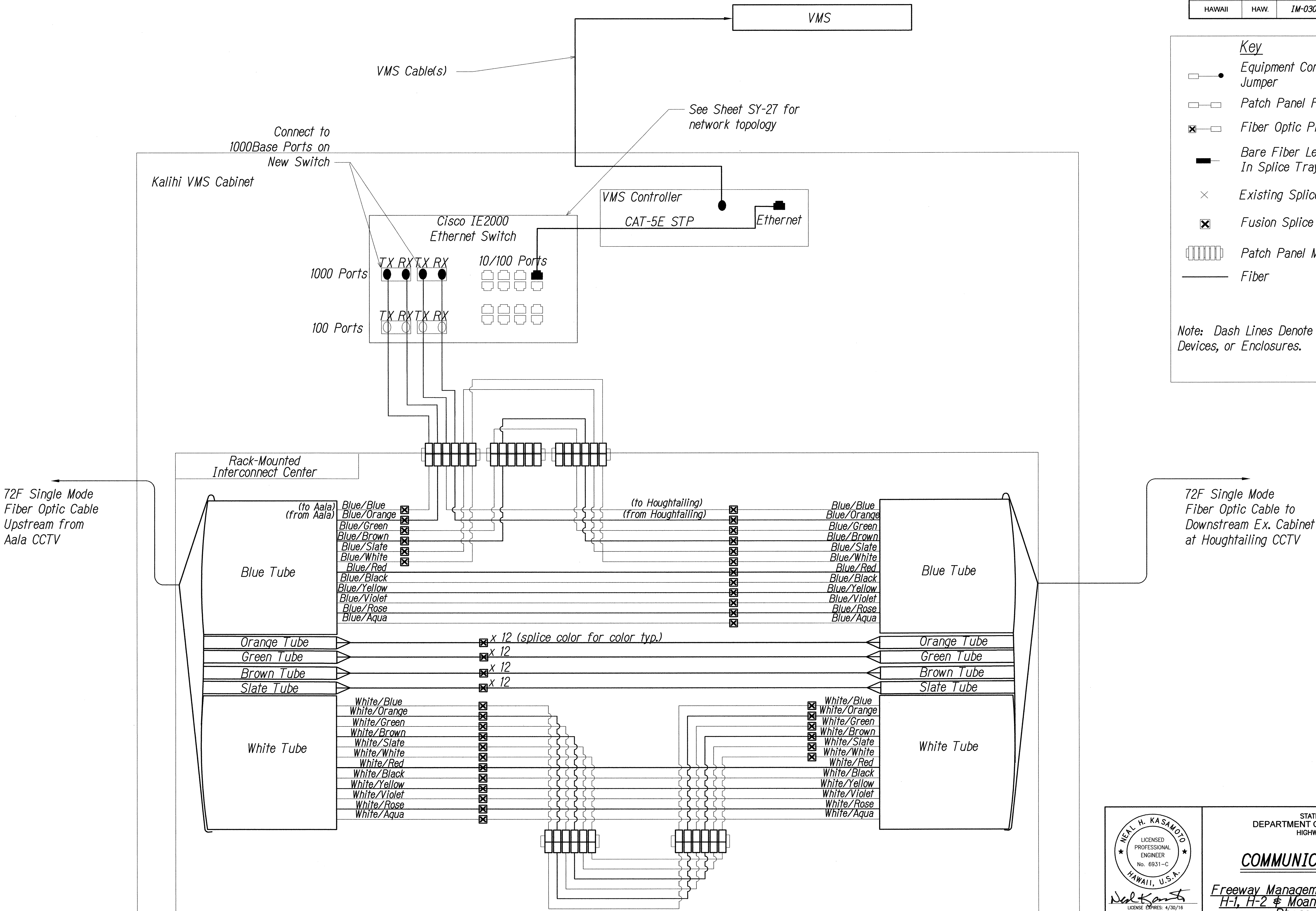
Scale: NTS Date: 8/7/14

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If not 2 inches: scale accordingly)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-0300(138)	2014	44	220

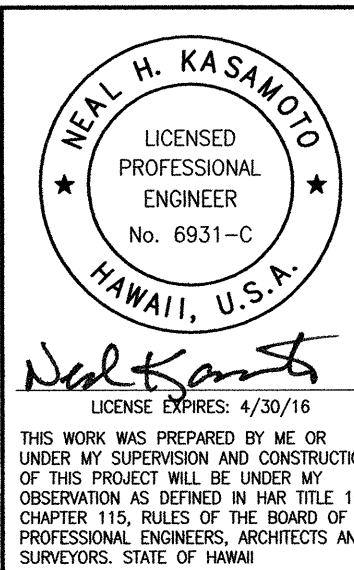
- Key
- Equipment Connection Fiber Optic Jumper
 - Patch Panel Fiber Optic Jumper
 - Fiber Optic Pigtail
 - Bare Fiber Left Coiled In Splice Tray
 - Existing Splice
 - Fusion Splice
 - Patch Panel Module
 - Fiber

Note: Dash Lines Denote Existing Cables, Devices, or Enclosures.



SPLICING AND CONNECTION DETAIL - Kalihi VMS
Not to Scale

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If not 2 inches: scale accordingly)



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

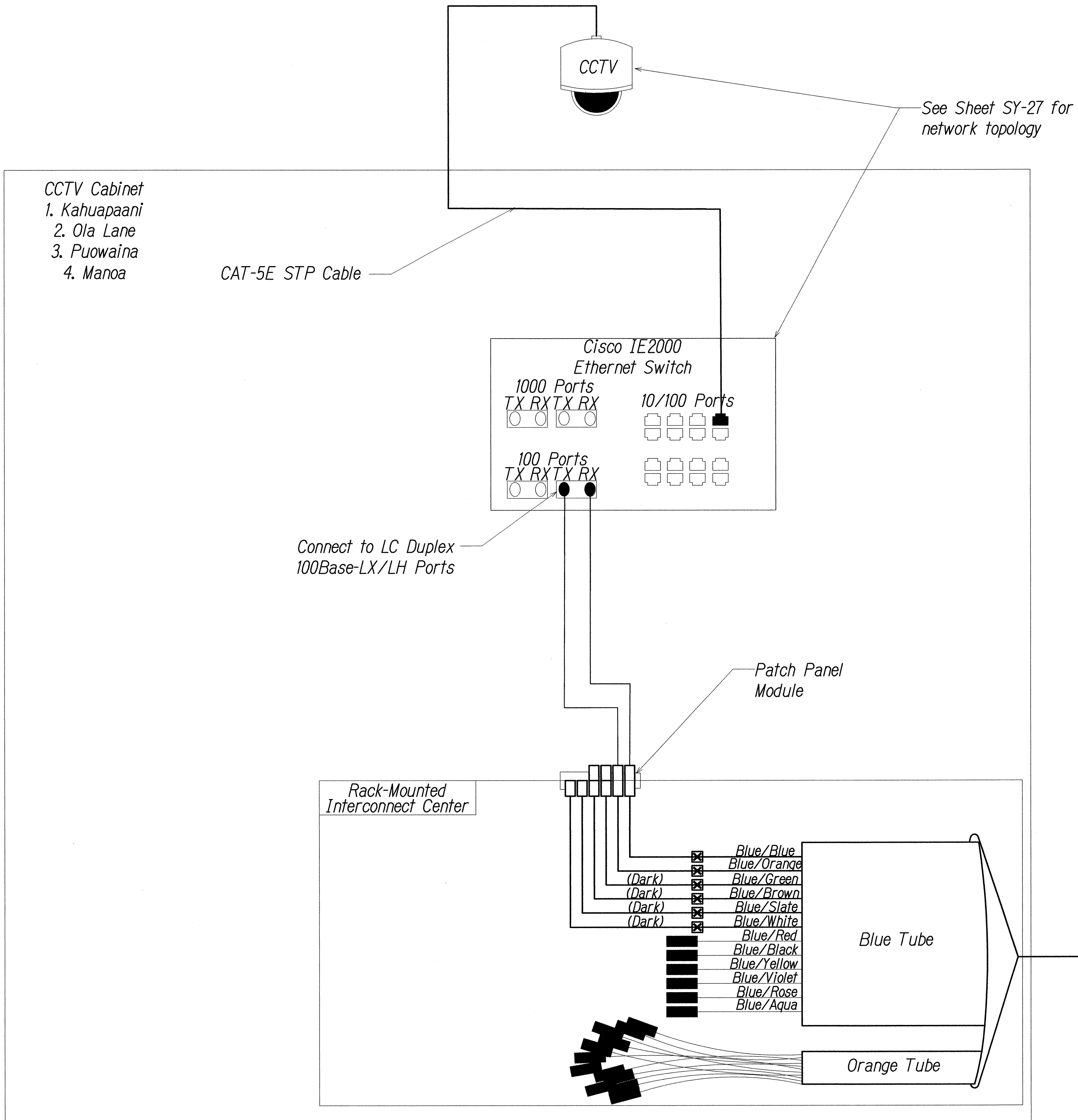
COMMUNICATIONS PLAN

Freeway Management System, Interstate
H-1, H-2 & Moanalua Freeway (H-201)
Phase 1C, Part 2
Federal Aid Project No. 1M-0300(138)

Scale: NTS Date: 8/7/14

SHEET No. SY-9OF 27 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-0300(138)	2014	45	220



Key

- Equipment Connection Fiber Optic Jumper
- Preterminated Fiber Optic Pigtail
- Unterminated Dark Fiber Left Coiled In Splice Tray
- Existing Splice
- Fusion Splice
- Patch Panel Module
- Fiber

Note: Dash Lines Denote Existing Cables, Devices, or Enclosures.

24F Single Mode Fiber Optic Cable to Ex. City cabinet:
1. Kahuapaani St./Salt Lake Blvd
2. King St./Middle St.
3. to City TMC
4. University/Dole

SPLICING AND CONNECTION DETAIL - Kahuapaani/Ola Lane/Puowaina/Manoa CCTV

Not to Scale

SURVEY PLOTTED BY	DATE
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DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTEBOOK	
No.	

FILE:\98-46-98-4627\COMMUNICATION NETWORK\SY-10 KAHUAPAANI-OLA-PUOWAINA-MANOA CCTV.DWG Oct. 10, 2014-12:03 PM

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If not 2 inches: scale accordingly)

NEAL H. KASAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6931-C
HAWAII, U.S.A.
License Expires: 4/30/16
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS DEFINED IN HAWAII TITLE 16, CHAPTER 115, RULES OF THE BOARD OF PROFESSIONAL ENGINEERS, ARCHITECTS AND SURVEYORS, STATE OF HAWAII.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
COMMUNICATIONS PLAN
Freeway Management System, Interstate H-1, H-2 & Moanalua Freeway (H-201)
Phase IC, Part 2
Federal Aid Project No. 1M-0300(138)
Scale: NTS Date: 8/7/14

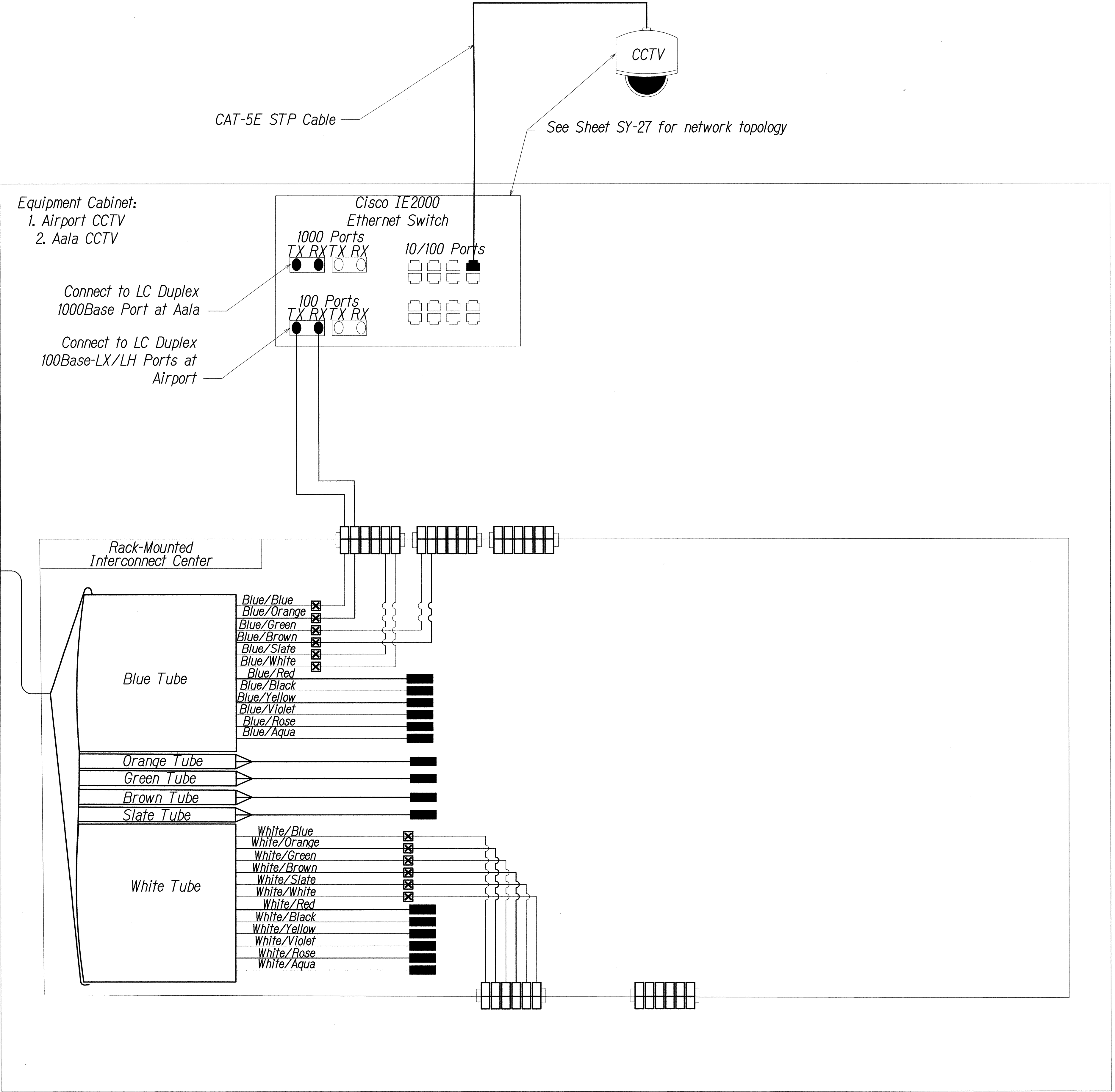
SHEET No. SY-10 OF 27 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-0300(138)	2014	46	220

- Key
- Equipment Connection Fiber Optic Jumper
 - Patch Panel Fiber Optic Jumper
 - Fiber Optic Pigtail
 - Bare Fiber Left Coiled In Splice Tray
 - Existing Splice
 - Fusion Splice
 - Patch Panel Module
 - Fiber

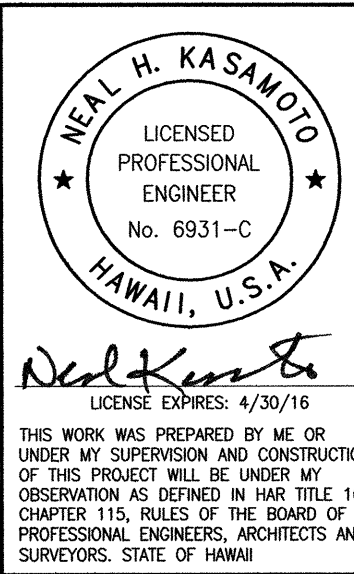
Note: Dash Lines Denote Existing Cables, Devices, or Enclosures.

72F Single Mode
Fiber Optic Cable to:
1. Ohohia Cabinet
2. Kalihi VMS Cabinet



SPLICING AND CONNECTION DETAIL - Aala & Airport CCTV
Not to Scale

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If not 2 inches: scale accordingly)



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

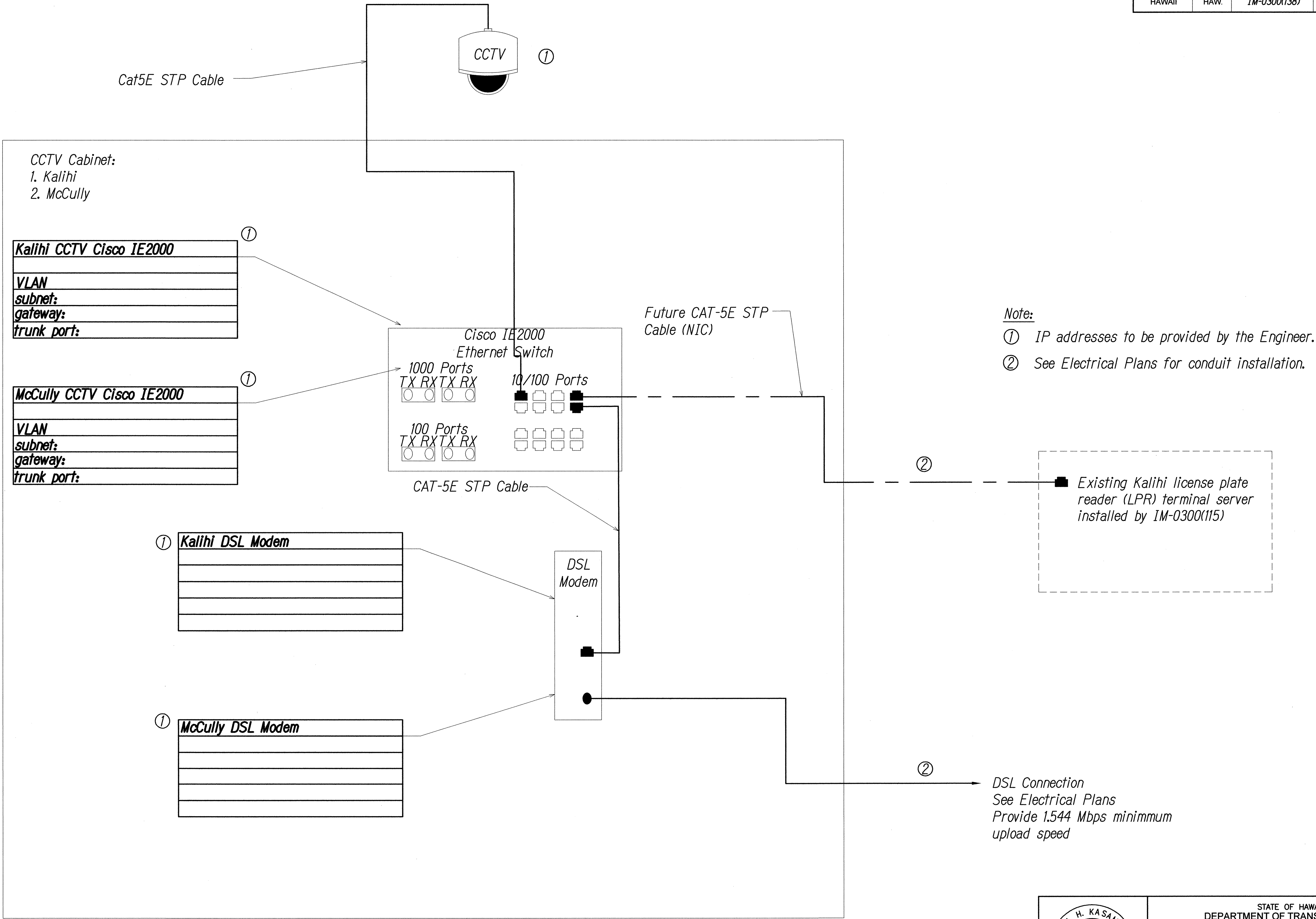
COMMUNICATIONS PLAN

*Freeway Management System, Interstate
H-1, H-2 & Moanalua Freeway (H-201)
Phase IC, Part 2
Federal Aid Project No. IM-0300(138)*

Scale: NTS Date: 8/7/14

SHEET No. SY-11 OF 27 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-0300(138)	2014	47	220



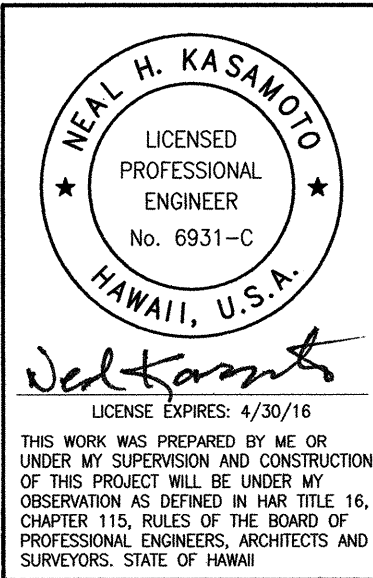
DSL CONNECTION DETAIL - Kalihi & McCully CCTV

Not to Scale

SURVEY PLOTTED BY	DATE
DRAWN BY	
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QUANTITIES BY	
CHECKED BY	
No.	

\\FIA\98-46\98-4627\COMMUNICATION NETWORK\SY-12 7KALHI-MCCULLY CCTV (DSL).DWG Oct 10, 2014 11:58 AM

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If not 2 inches: scale accordingly)



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

COMMUNICATIONS PLAN

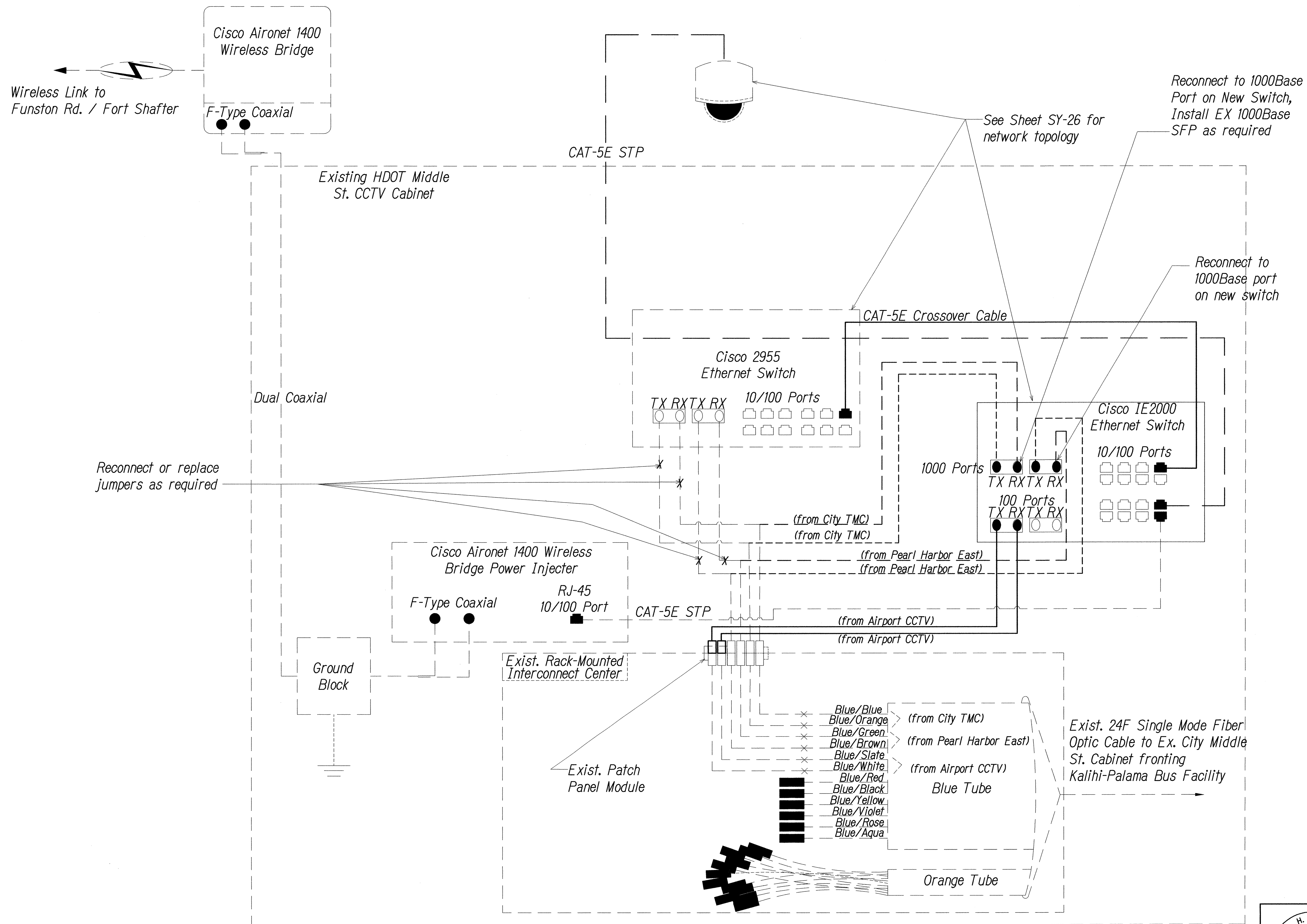
Freeway Management System, Interstate
H-1, H-2 & Moanalua Freeway (H-201)
Phase IC, Part 2
Federal Aid Project No. 1M-0300(138)

Scale: NTS

Date: 8/7/14

SHEET No. SY-12 OF 27 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-0300(138)	2014	48	220



Key

- Equipment Connection Fiber Optic Jumper
- Preterminated Fiber Optic Pigtail
- Unterminated Dark Fiber Left Coiled In Splice Tray
- Existing Splice
- Fusion Splice
- Patch Panel Module
- Fiber

Note: Dash Lines Denote Existing Cables, Devices, or Enclosures.

SPlicing and Connection Detail - MIDDLE ST.
Not to Scale

SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTEBOOK	
No.	

FILE: \\36-46-96-46-27\COMMUNICATION NETWORK\SY-13 9MIDDLE.DWG Oct 10, 2014-11:59 AM

NEAL H. KASAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6931-C
HAWAII, U.S.A.
N. Kasamoto
LICENSE EXPIRES: 4/30/16
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS DEFINED IN HAW. TITLE 16, CHAPTER 115, RULES OF THE BOARD OF PROFESSIONAL ENGINEERS, ARCHITECTS AND SURVEYORS, STATE OF HAWAII.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

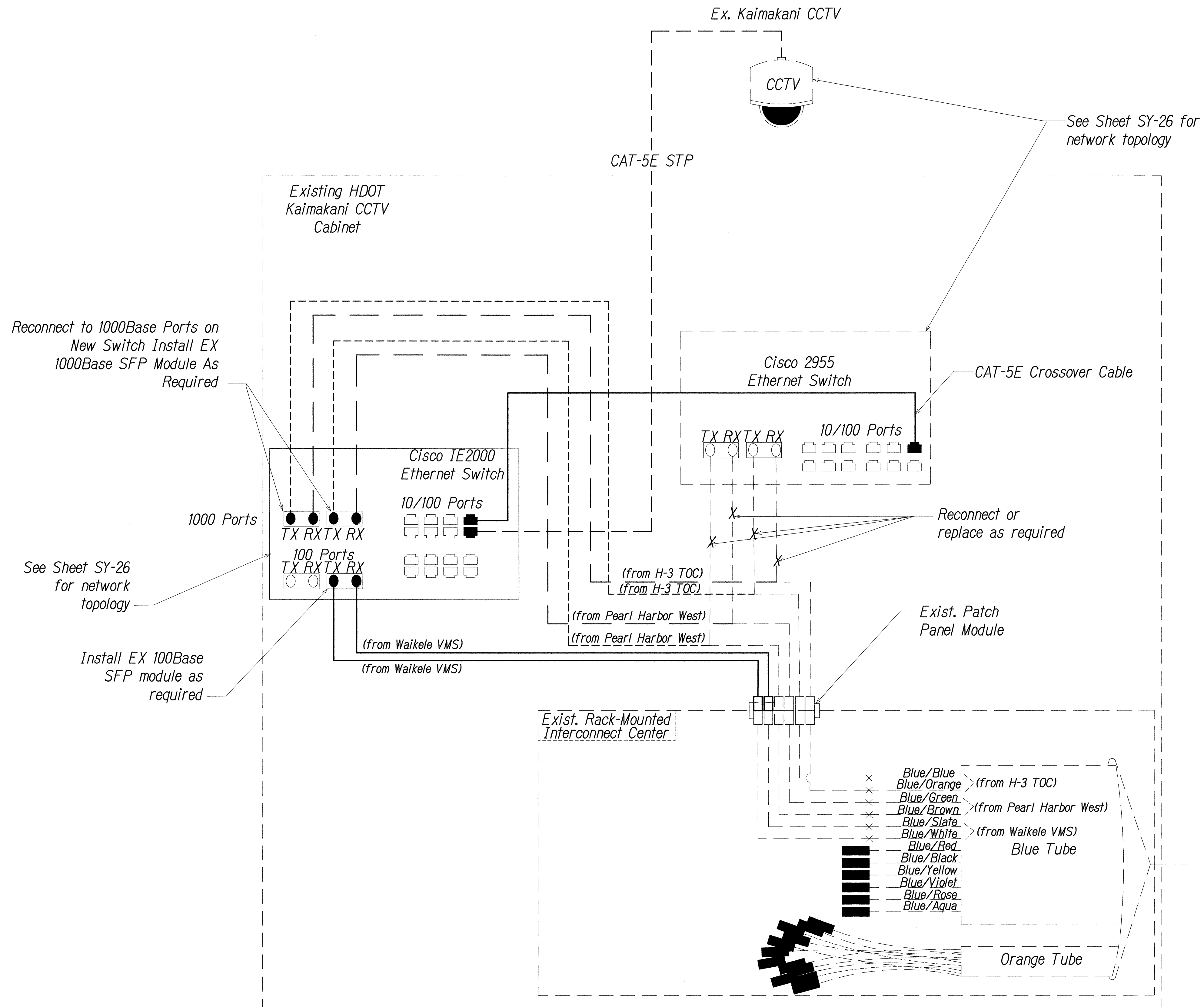
COMMUNICATIONS PLAN

Freeway Management System, Interstate
H-1, H-2 & Moanalua Freeway (H-201)
Phase 1C, Part 2
Federal Aid Project No. 1M-0300(138)

Scale: NTS Date: 8/7/14

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If not 2 inches: scale accordingly)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-0300(138)	2014	49	220



Key

- Equipment Connection Fiber Optic Jumper
- Preterminated Fiber Optic Pigtail
- Unterminated Dark Fiber Left Coiled In Splice Tray
- Existing Splice
- Fusion Splice
- Patch Panel Module
- Fiber

Note: Dash Lines Denote Existing Cables, Devices, or Enclosures.

SPlicing AND CONNECTION DETAIL - Kaimakani
Not to Scale

SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	

NEAL H. KASAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6931-C
HAWAII, U.S.A.
LICENSE EXPIRES: 4/30/16

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

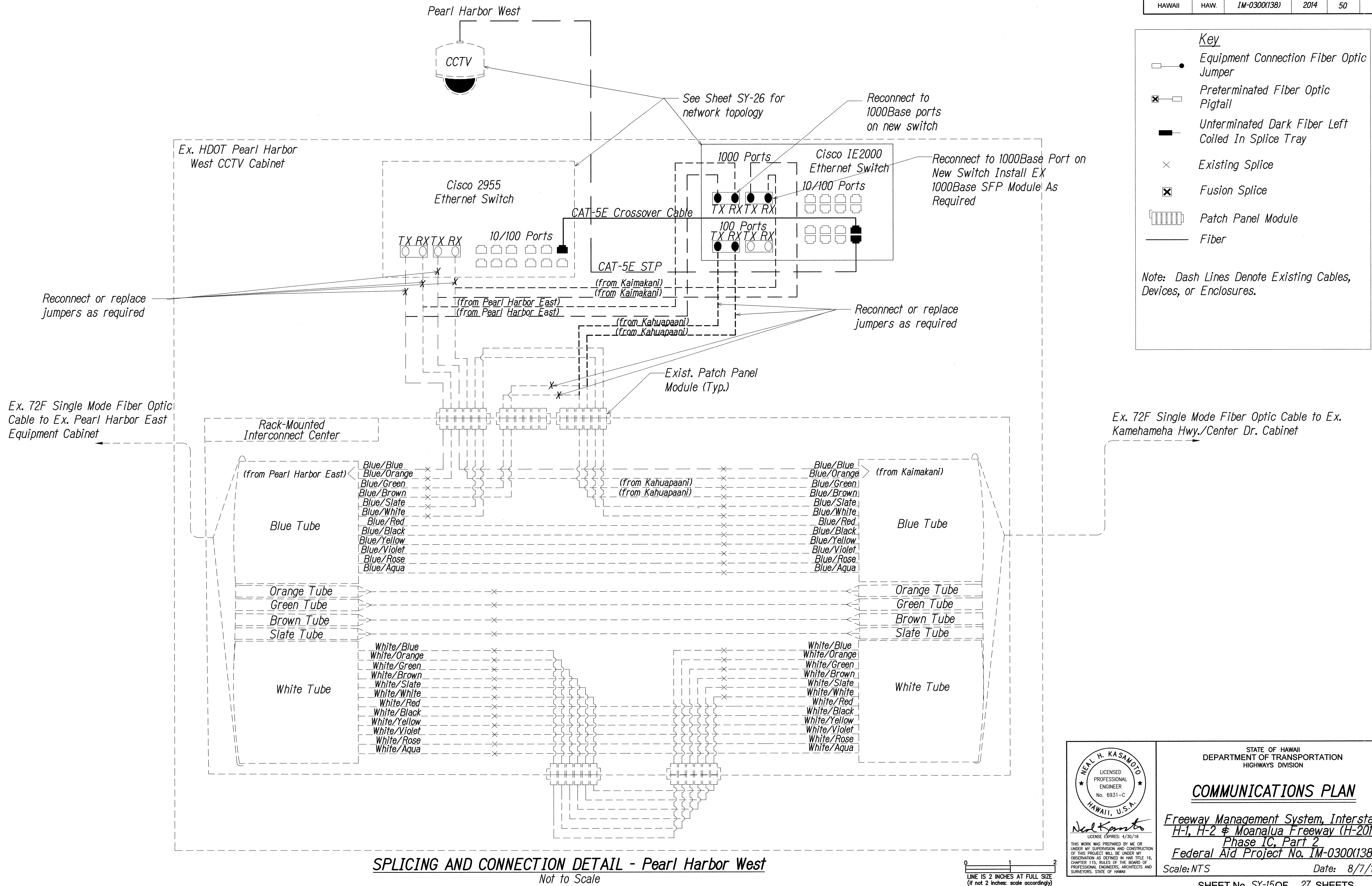
COMMUNICATIONS PLAN

Freeway Management System, Interstate
H-1, H-2 & Moanalua Freeway (H-201)
Phase 1C, Part 2
Federal Aid Project No. 1M-0300(138)

Scale: NTS Date: 8/7/14

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If not 2 inches: scale accordingly)

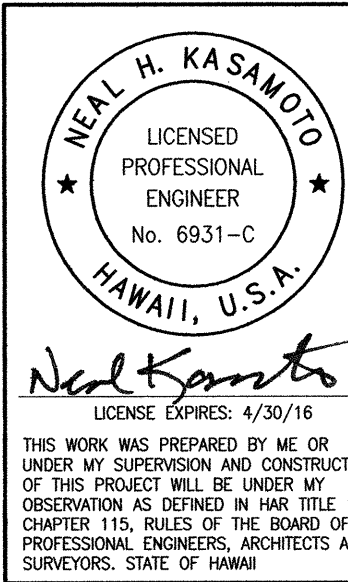
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-0300(138)	2014	50	220



SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

ORIGINAL PLAN	NO.
NOTEBOOK	

FILE: 96-46-98-4627 COMMUNICATION NETWORK SY-15 11PM WEST LING Oct 13, 2014-7:42 AM



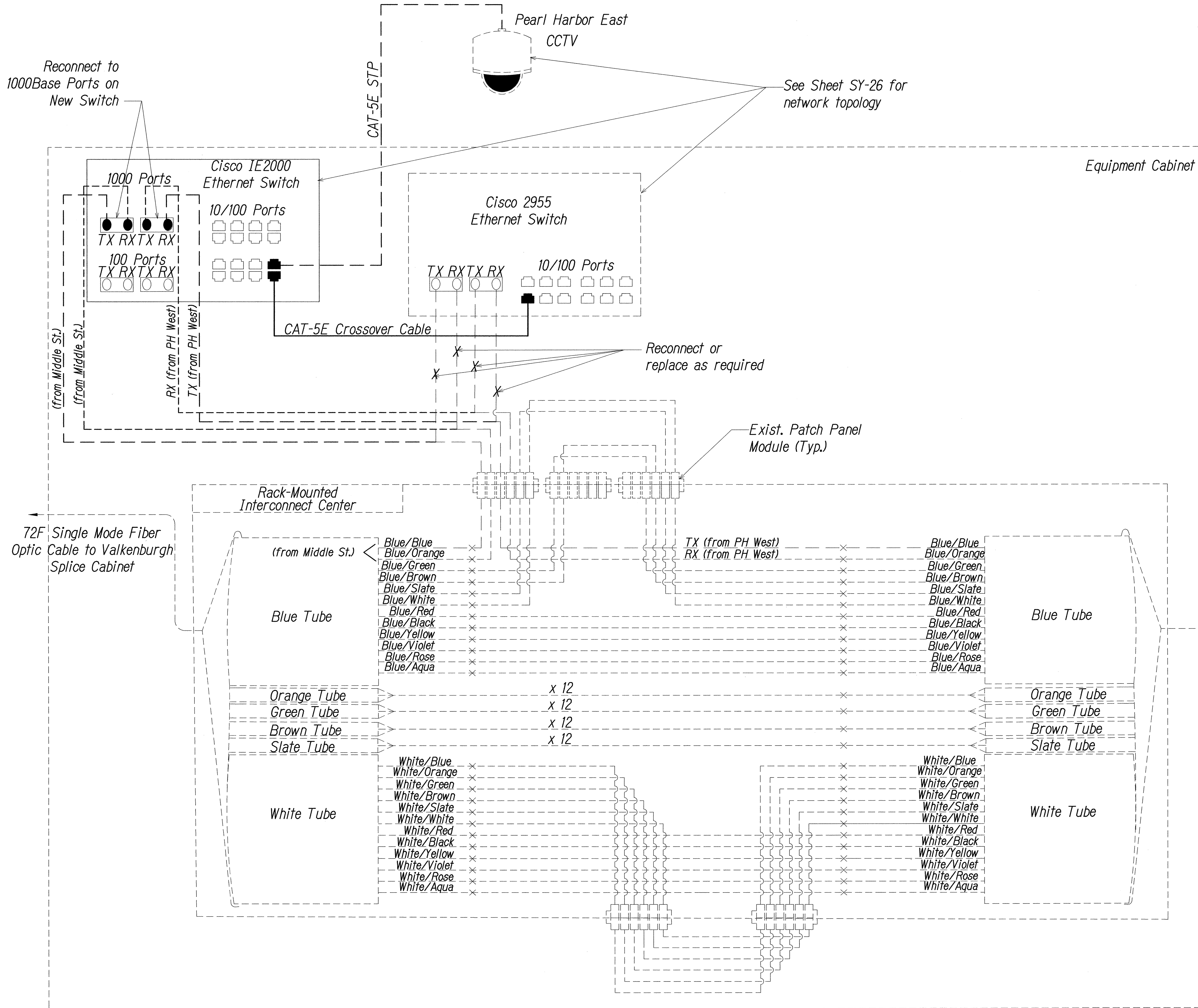
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

COMMUNICATIONS PLAN

Freeway Management System, Interstate H-1, H-2 & Moanalua Freeway (H-201)
Phase 1C, Part 2
Federal Aid Project No. 1M-0300(138)

Scale: NTS Date: 8/7/14

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-0300(138)	2014	51	220



Key

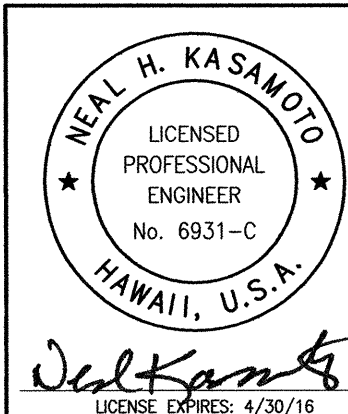
- Equipment Connection Fiber Optic Jumper
- Preterminated Fiber Optic Pigtail
- Unterminated Dark Fiber Left Coiled In Splice Tray
- Existing Splice
- Fusion Splice
- Patch Panel Module
- Fiber

Note: Dash Lines Denote Existing Cables, Devices, or Enclosures.

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTEBOOK	
No.	

P:\A\96-46-96-46-27\COMMUNICATION NETWORK\SY-16 PHEAST IE2000.DWG Oct 13, 2014-7:47 AM

SPLICING AND CONNECTION DETAIL - Pearl Harbor East
Not to Scale



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS DEFINED IN HAWAII TITLE 16, CHAPTER 115, RULES OF THE BOARD OF PROFESSIONAL ENGINEERS, ARCHITECTS AND SURVEYORS, STATE OF HAWAII.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

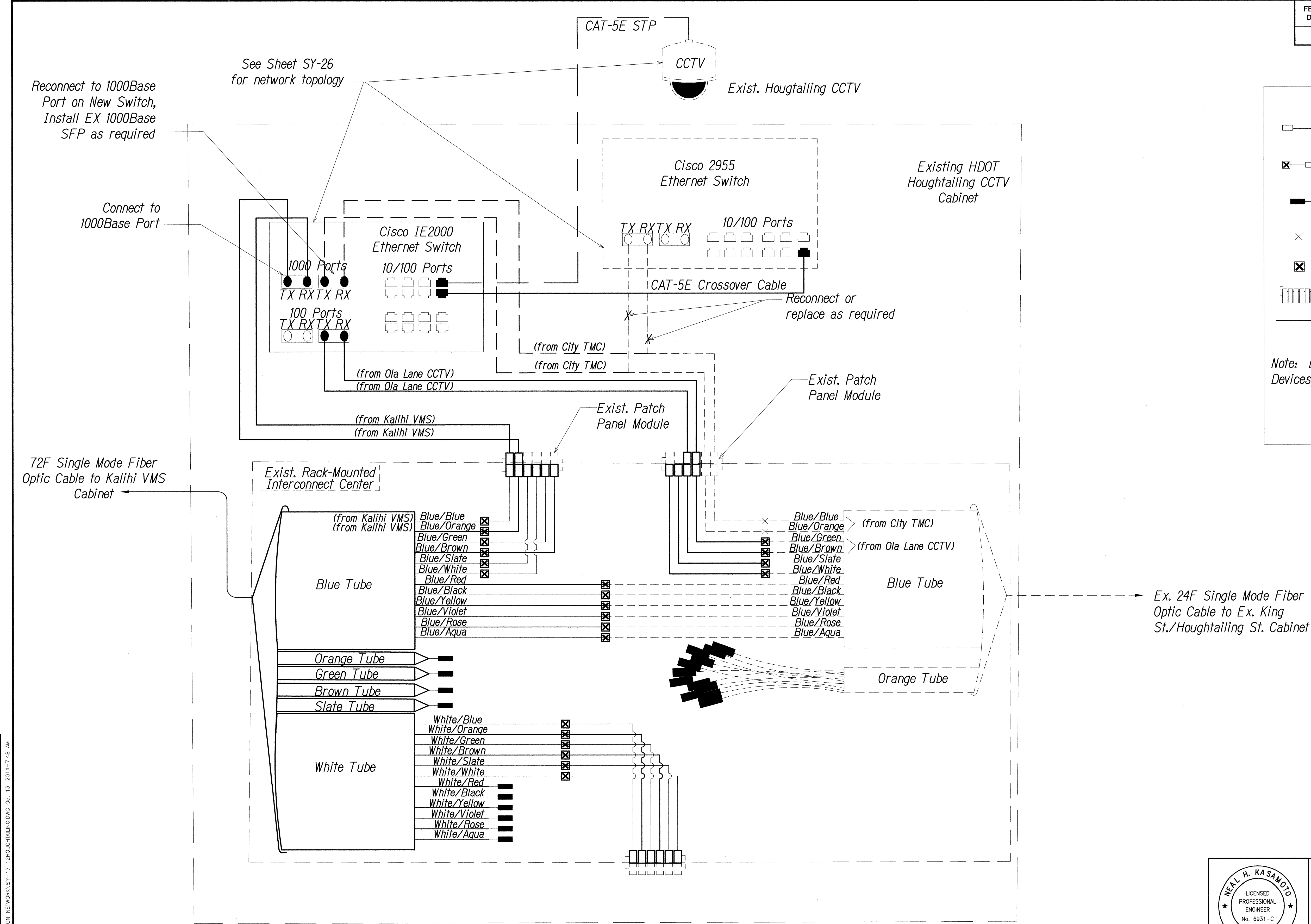
COMMUNICATIONS PLAN

Freeway Management System, Interstate H-1, H-2 & Moanalua Freeway (H-201)
Phase IC, Part 2
Federal Aid Project No. 1M-0300(138)

Scale: NTS Date: 8/7/14

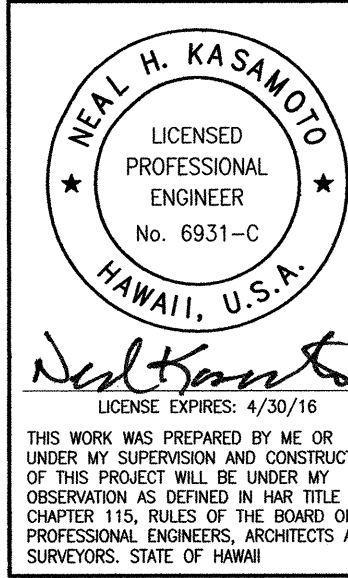
0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If not 2 inches, scale accordingly)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-0300(138)	2014	52	220



SPLICING AND CONNECTION DETAIL - Houghtailing

Not to Scale



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

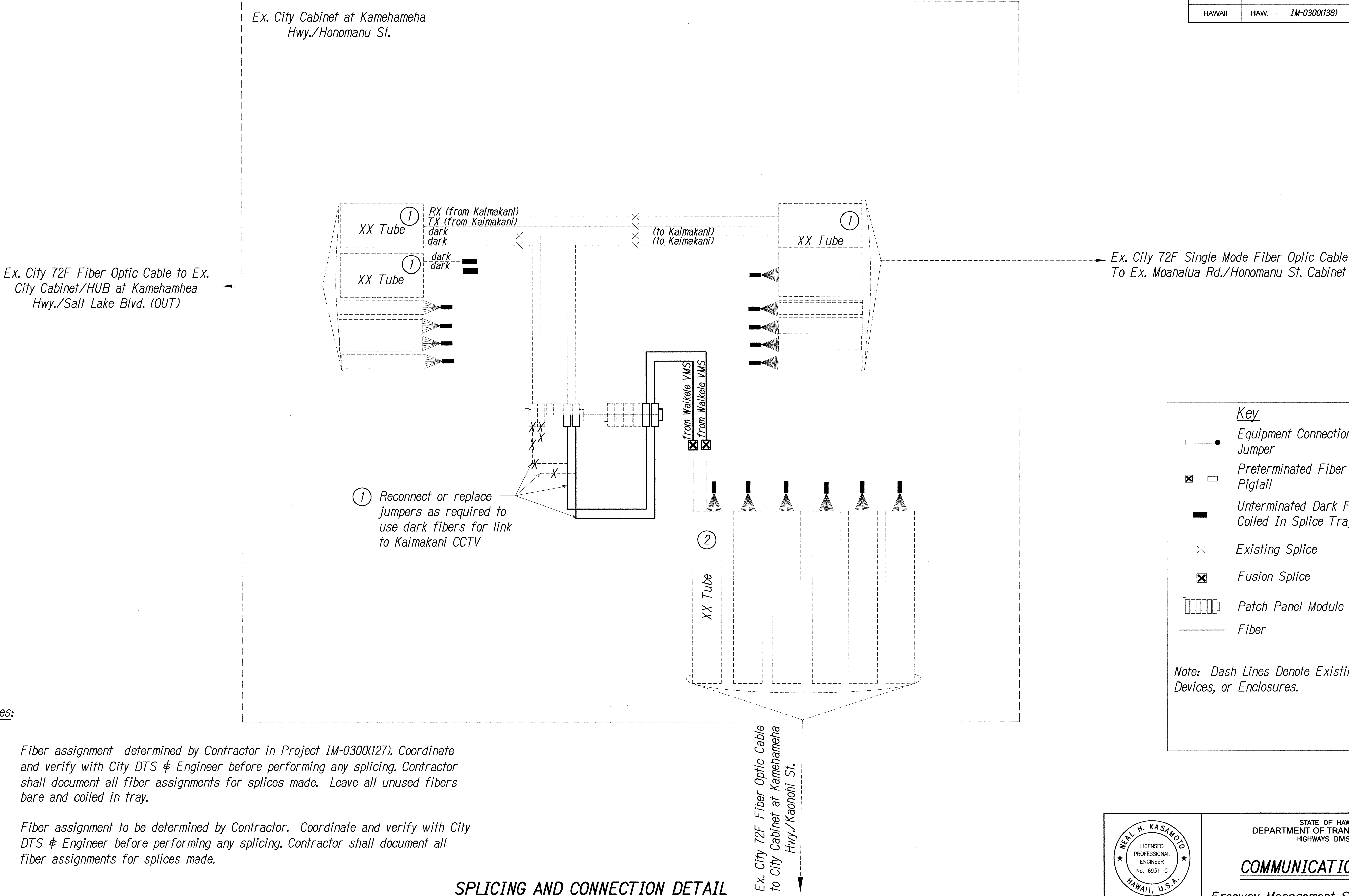
COMMUNICATIONS PLAN

Freeway Management System, Interstate
H-1, H-2 & Moanalua Freeway (H-201)
Phase 1C, Part 2
Federal Aid Project No. 1M-0300(138)

Scale: NTS Date: 8/7/14

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If not 2 inches: scale accordingly)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-0300(138)	2014	53	220



Key

- Equipment Connection Fiber Optic Jumper
- Preterminated Fiber Optic Pigtail
- Unterminated Dark Fiber Left Coiled In Splice Tray
- Existing Splice
- Fusion Splice
- Patch Panel Module
- Fiber

Note: Dash Lines Denote Existing Cables, Devices, or Enclosures.

Notes:

- 1 Fiber assignment determined by Contractor in Project IM-0300(127). Coordinate and verify with City DTS & Engineer before performing any splicing. Contractor shall document all fiber assignments for splices made. Leave all unused fibers bare and coiled in tray.
- 2 Fiber assignment to be determined by Contractor. Coordinate and verify with City DTS & Engineer before performing any splicing. Contractor shall document all fiber assignments for splices made.

SPLICING AND CONNECTION DETAIL
Not to Scale

NEAL H. KASAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6931-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 AS DEFINED IN HAWAII TITLE 10, CHAPTER 115, RULES OF THE BOARD OF PROFESSIONAL ENGINEERS, ARCHITECTS AND SURVEYORS, STATE OF HAWAII.

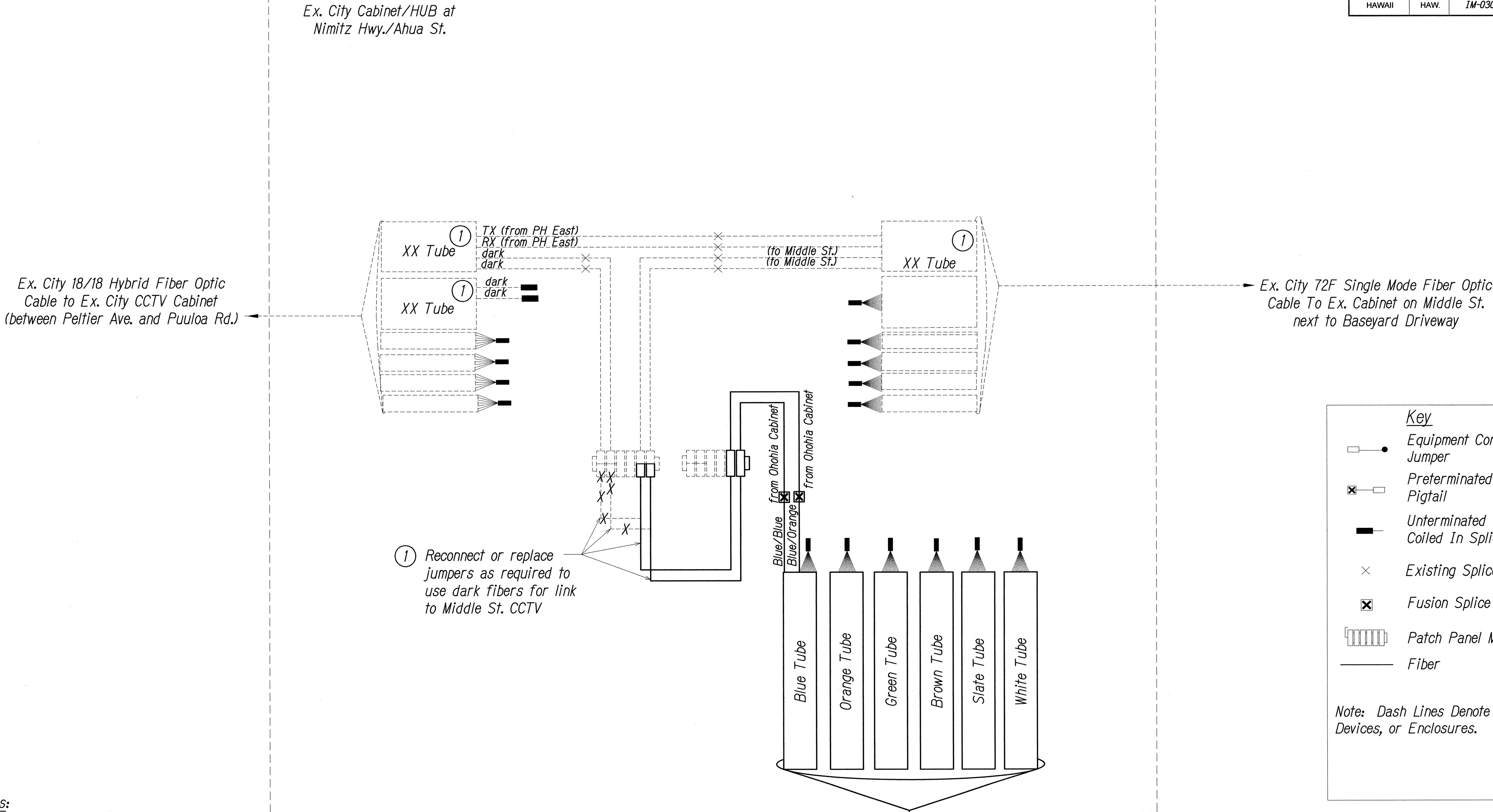
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

COMMUNICATIONS PLAN

Freeway Management System, Interstate H-1, H-2 & Moanalua Freeway (H-201)
Phase 1C, Part 2
Federal Aid Project No. IM-0300(138)

Scale: NTS Date: 8/7/14

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-0300(138)	2014	54	220



Key

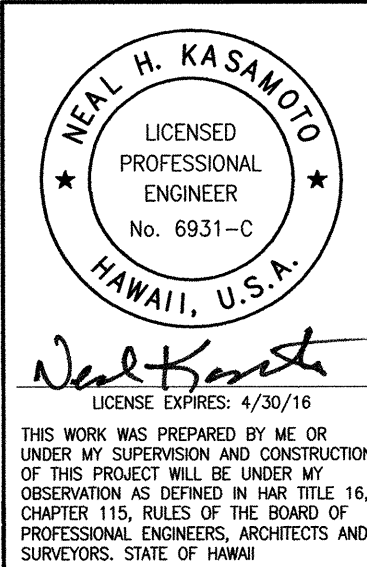
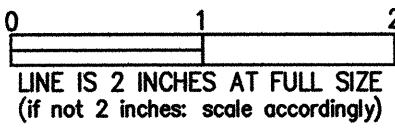
- Equipment Connection Fiber Optic Jumper
- Preterminated Fiber Optic Pigtail
- Unterminated Dark Fiber Left Coiled In Splice Tray
- Existing Splice
- Fusion Splice
- Patch Panel Module
- Fiber

Note: Dash Lines Denote Existing Cables, Devices, or Enclosures.

Notes:

- ① Fiber assignment determined by Contractor in Project IM-0300(127). Coordinate and verify with City DTS & Engineer before performing any splicing. Contractor shall document all fiber assignments for splices made. Leave all unused fibers bare and coiled in tray.

SPLICING AND CONNECTION DETAIL
Not to Scale



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

COMMUNICATIONS PLAN

Freeway Management System, Interstate
H-1, H-2 & Moanalua Freeway (H-201)
Phase IC, Part 2
Federal Aid Project No. 1M-0300(138)

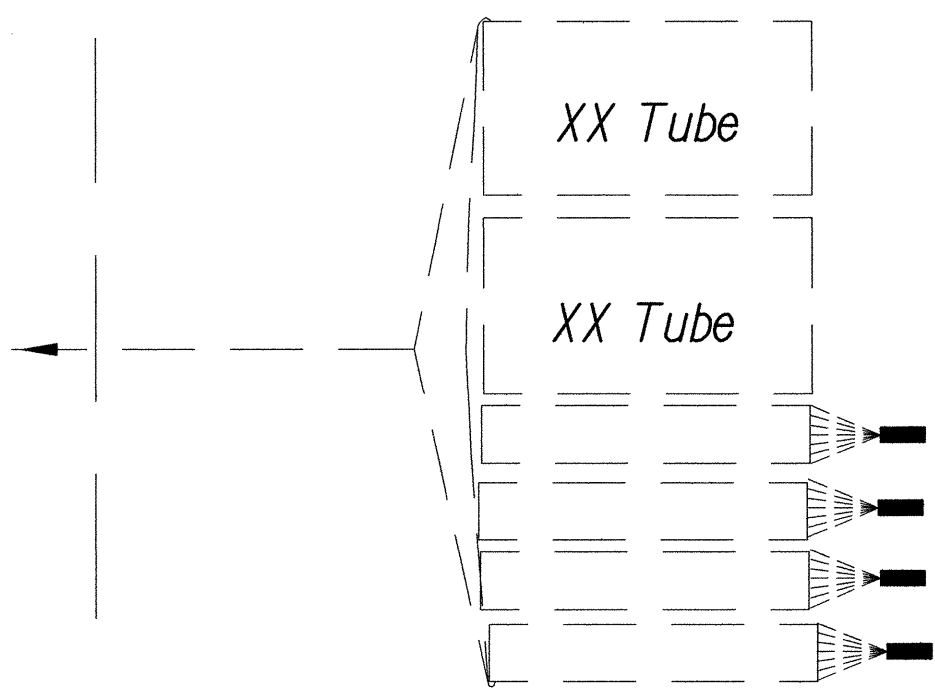
Scale: NTS Date: 8/7/14

SHEET No. SY-19 OF 27 SHEETS

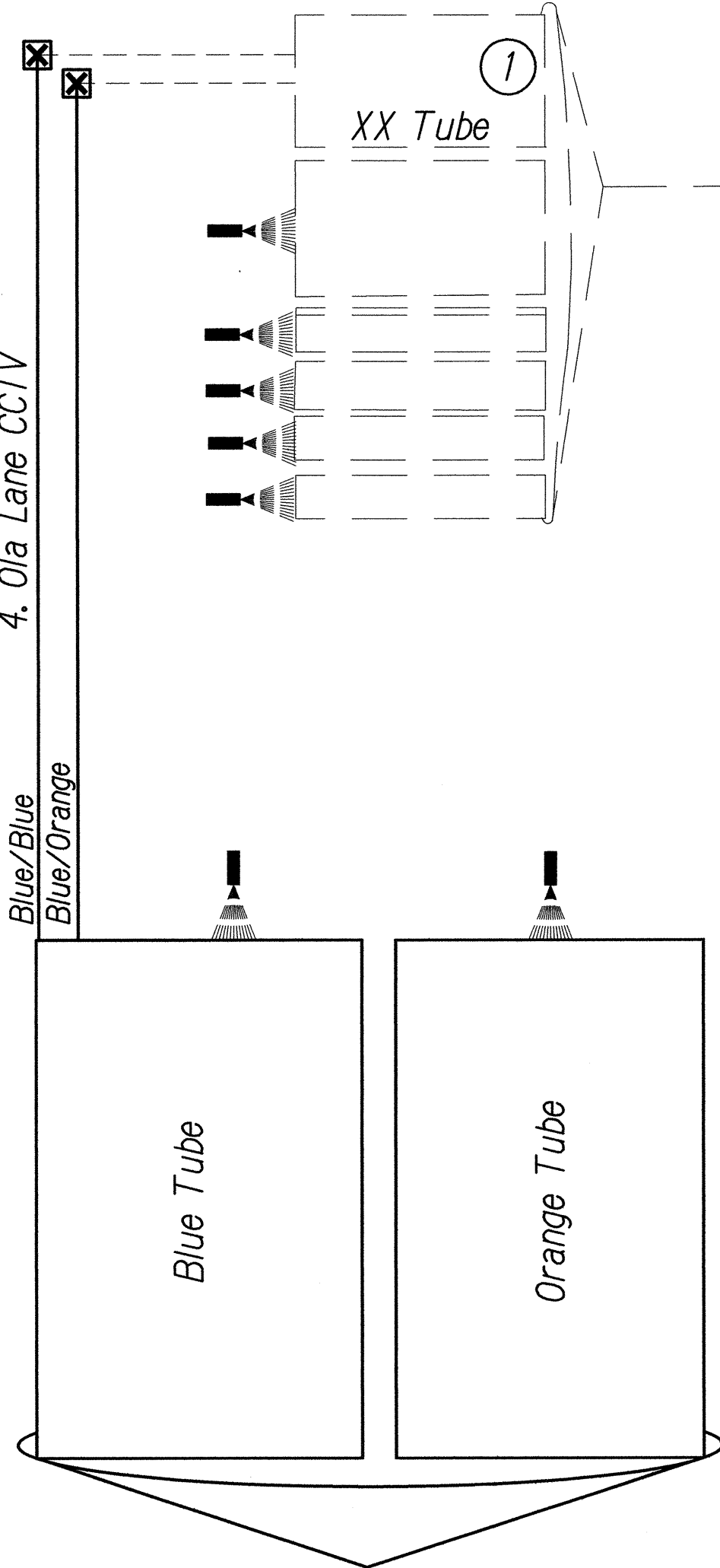
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-0300(138)	2014	55	220

Ex. City Cabinet at:

1. Kahuapaani St./Salt Lake Blvd.
2. H-1/Paiwia St.
3. Dole St./University Ave.
4. King St./Middle St.



from:
1. Kahuapaani CCTV
2. Waikale VMS
3. Manoa CCTV
4. Ola Lane CCTV



24F Fiber Optic Cable to :
1. Kahuapaani CCTV
2. Waikale VMS
3. Manoa CCTV
4. Ola Lane CCTV

Ex. City 72F Single Mode Fiber Optic Cable To Ex. Cabinet at:
1. Kamehameha Hwy./Salt Lake Blvd. (OUT)
2. Paiwa St./Waipahu St.
3. Beretania St./University Ave.
4. King St./Umi St.

Key

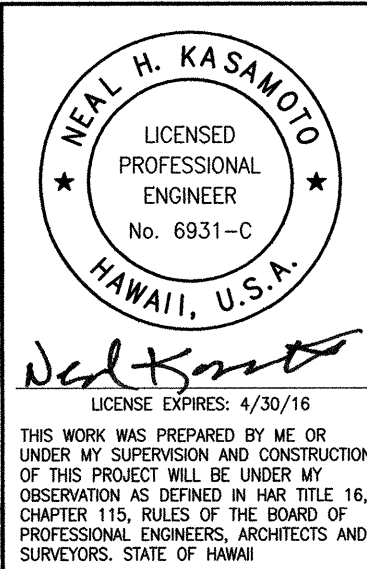
- Equipment Connection Fiber Optic Jumper
- Preterminated Fiber Optic Pigtail
- Unterminated Dark Fiber Left Coiled In Splice Tray
- Existing Splice
- Fusion Splice
- Patch Panel Module
- Fiber

Note: Dash Lines Denote Existing Cables, Devices, or Enclosures.

Notes:

1. Fiber assignment to be determined by Contractor. Coordinate and verify with City DTS & Engineer before performing any splicing. Contractor shall document all fiber assignments for splices made.

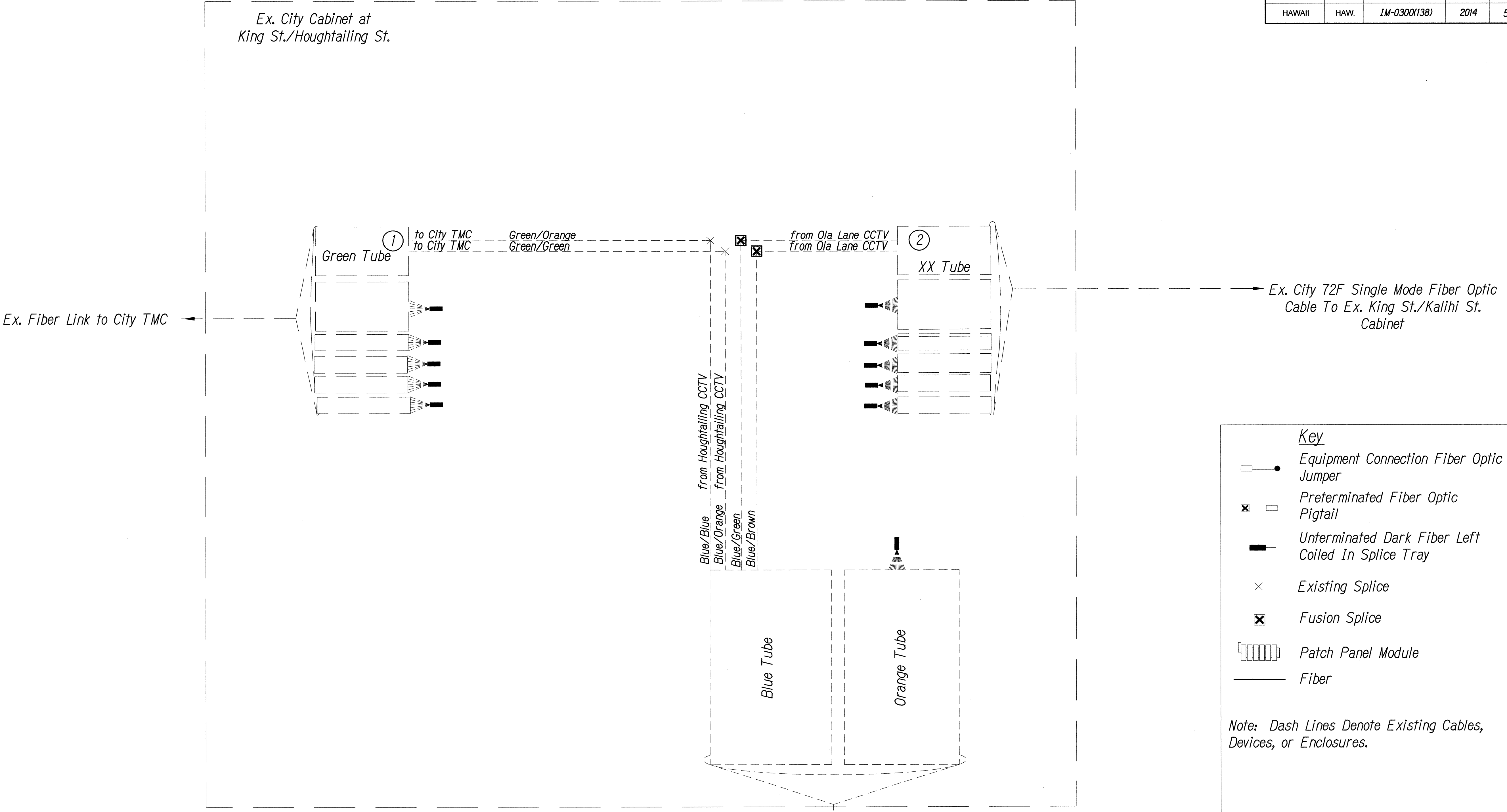
SPLICING AND CONNECTION DETAIL
Not to Scale



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
COMMUNICATIONS PLAN
Freeway Management System, Interstate H-1, H-2 & Moanalua Freeway (H-201)
Phase 1C, Part 2
Federal Aid Project No. 1M-0300(138)
Scale: NTS Date: 8/7/14

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If not 2 inches, scale accordingly)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-0300(138)	2014	56	220



Notes:

- ① Fiber assignment determined by Contractor in Project NH-0300(107). Coordinate and verify with City DTS & Engineer before performing any splicing. Contractor shall document all fiber assignments for splices made. Leave all unused fibers bare and coiled in tray.
- ② Fiber assignment to be determined by Contractor. Coordinate and verify with City DTS & Engineer before performing any splicing. Contractor shall document all fiber assignments for splices made.

SPLICING AND CONNECTION DETAIL

Not to Scale

0 1 2

LINE IS 2 INCHES AT FULL SIZE
(If not 2 inches: scale accordingly)



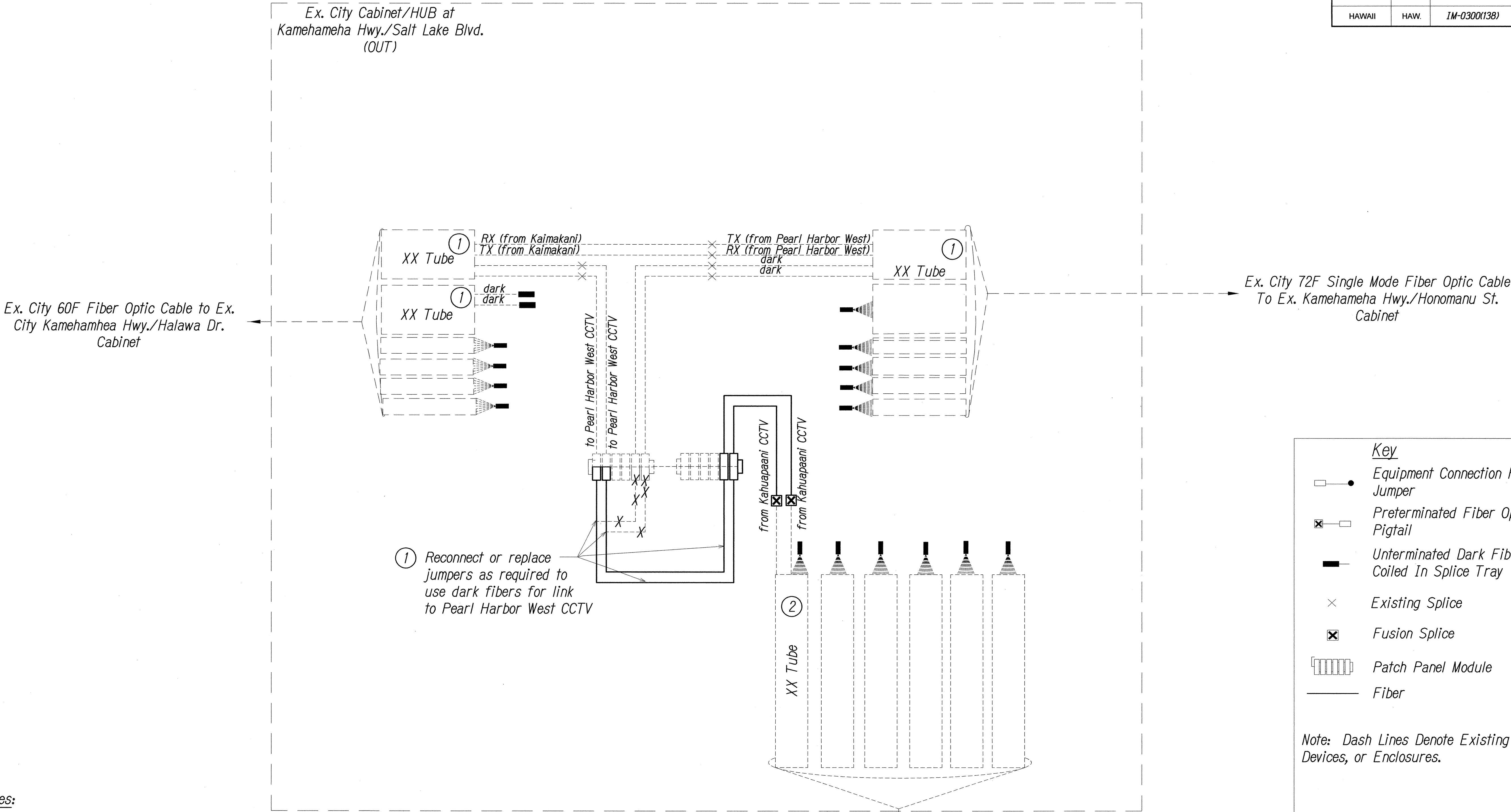
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

COMMUNICATIONS PLAN

Freeway Management System, Interstate
H-1, H-2 & Moanalua Freeway (H-201)
Phase IC, Part 2
Federal Aid Project No. 1M-0300(138)

Scale: NTS Date: 8/7/14

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-0300(138)	2014	57	220



Notes:

- ① Fiber assignment determined by Contractor in Project IM-0300(127). Coordinate and verify with City DTS & Engineer before performing any splicing. Contractor shall document all fiber assignments for splices made. Leave all unused fibers bare and coiled in tray.
- ② Fiber assignment to be determined by Contractor. Coordinate and verify with City DTS & Engineer before performing any splicing. Contractor shall document all fiber assignments for splices made.

SPLICING AND CONNECTION DETAIL
Not to Scale

NEAL H. KASAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6931-C
HAWAII, U.S.A.
LICENSE EXPIRES: 4/30/16

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS DEFINED IN HAWAII TITLE 16, CHAPTER 115, RULES OF THE BOARD OF PROFESSIONAL ENGINEERS, ARCHITECTS AND SURVEYORS, STATE OF HAWAII

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

COMMUNICATIONS PLAN

Freeway Management System, Interstate H-1, H-2 & Moanalua Freeway (H-201)
Phase 1C, Part 2
Federal Aid Project No. IM-0300(138)

Scale: NTS Date: 8/7/14

SHEET No. SY-22OF 27 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	NOTED
No.	

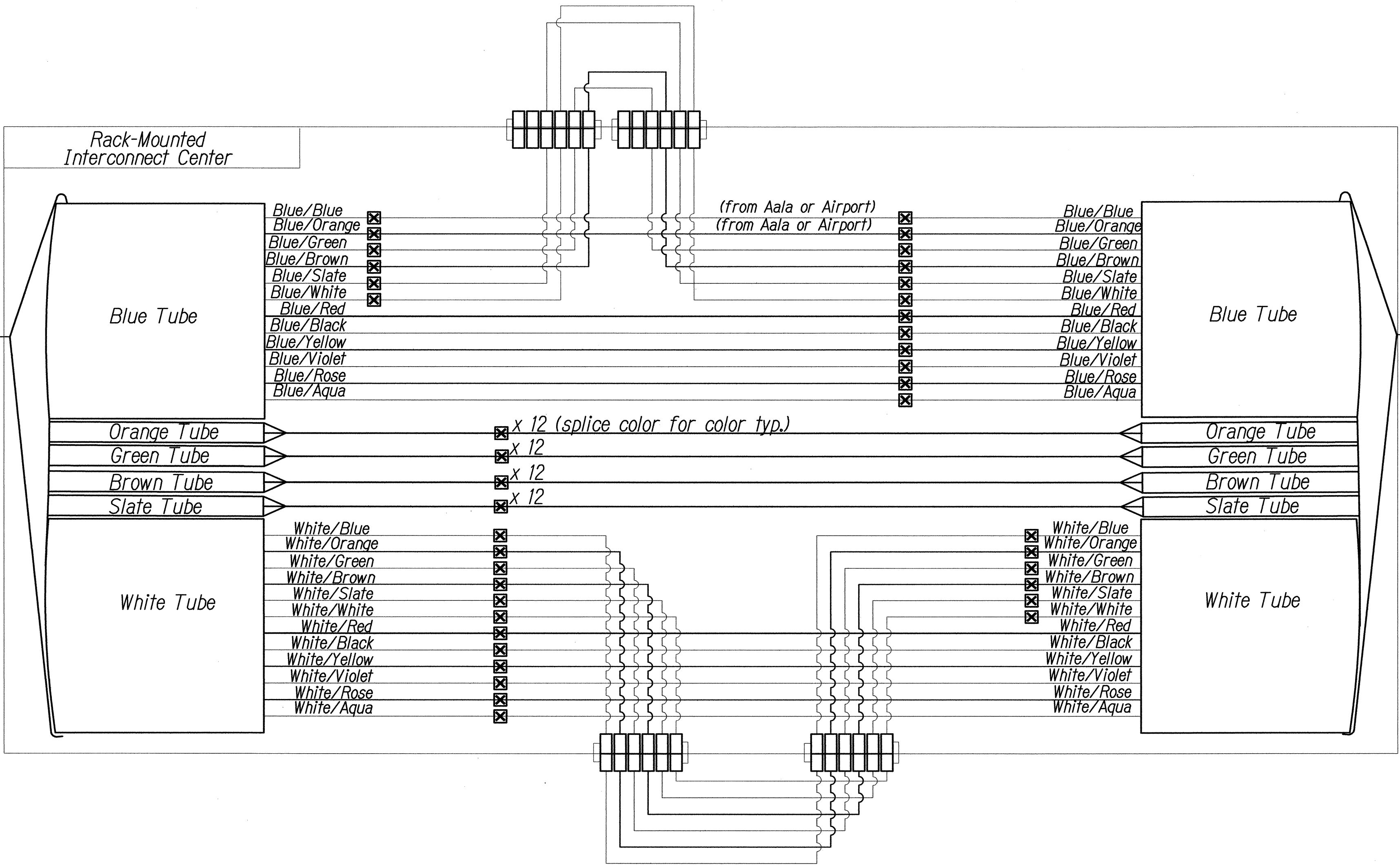
FILE: 96-46-96-46.27 COMMUNICATION NETWORK SY-22 17KAM-SALDIMG Oct 13, 2014-8:24 AM

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(if not 2 inches: scale accordingly)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-0300(138)	2014	58	220

New Splice Cabinet at:
1. H-1/Liliha
2. Ohohia/Nimitz

72F Single Mode
Fiber Optic Cable to:
1. Aala CCTV
2. Nimitz/Ahua Cabinet

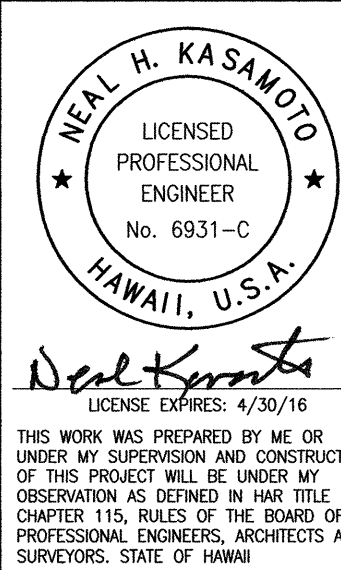


72F Single Mode
Fiber Optic Cable to:
1. Kalihi VMS
2. Airport CCTV

- Key**
- Equipment Connection Fiber Optic Jumper
 - Preterminated Fiber Optic Pigtail
 - Unterminated Dark Fiber Left Coiled In Splice Tray
 - Existing Splice
 - Fusion Splice
 - Patch Panel Module
 - Fiber

Note: Dash Lines Denote Existing Cables, Devices, or Enclosures.

SPLICING AND CONNECTION DETAIL - H-1/Liliha & Ohohia Splice Cabinets
Not to Scale



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

COMMUNICATIONS PLAN

Freeway Management System, Interstate
H-1, H-2 & Moanalua Freeway (H-201)
Phase 1C, Part 2
Federal Aid Project No. IM-0300(138)

Scale: NTS Date: 8/7/14

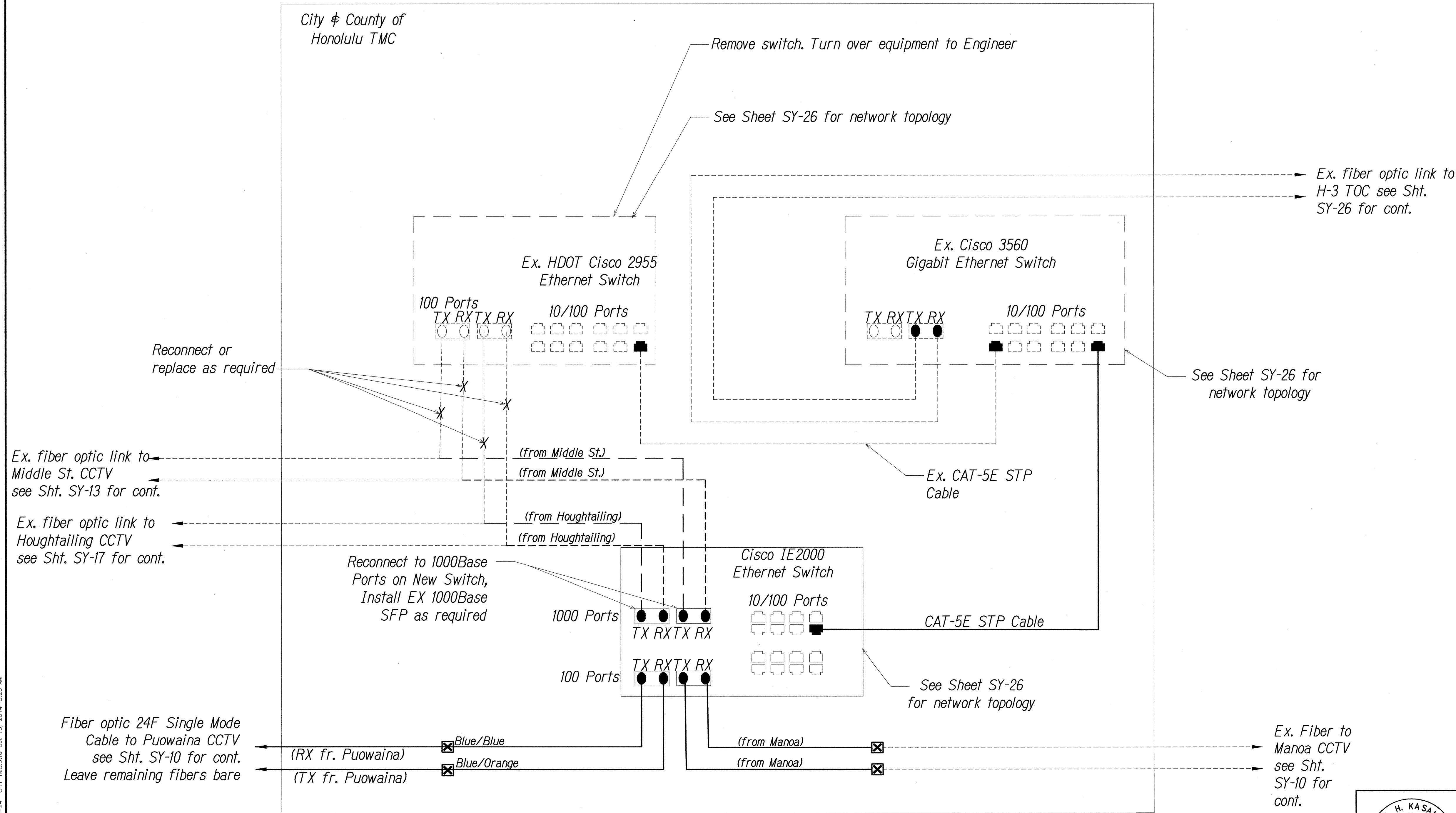
0 1 2
LINE IS 2 INCHES AT FULL SIZE
(if not 2 inches: scale accordingly)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-0300(138)	2014	59	220

Key

- Equipment Connection Fiber Optic Jumper
- Fiber Optic Pigtail
- Bare Fiber Left Coiled In Splice Tray
- Existing Splice
- Fusion Splice
- Patch Panel Module
- Fiber

Note: Dash Lines Denote Existing Cables, Devices, or Enclosures.



SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTEBOOK	
No.	

PLA\96-46\96-46-27 COMMUNICATION NETWORK\SY-24 CITY TMC.DWG Oct 13, 2014-8:26 AM

SPLICING AND CONNECTION DETAIL - City TMC
Not to Scale

NEAL H. KASAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6931-C
HAWAII, U.S.A.

Neal Kasamoto

LICENSE EXPIRES: 4/30/16

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

COMMUNICATIONS PLAN

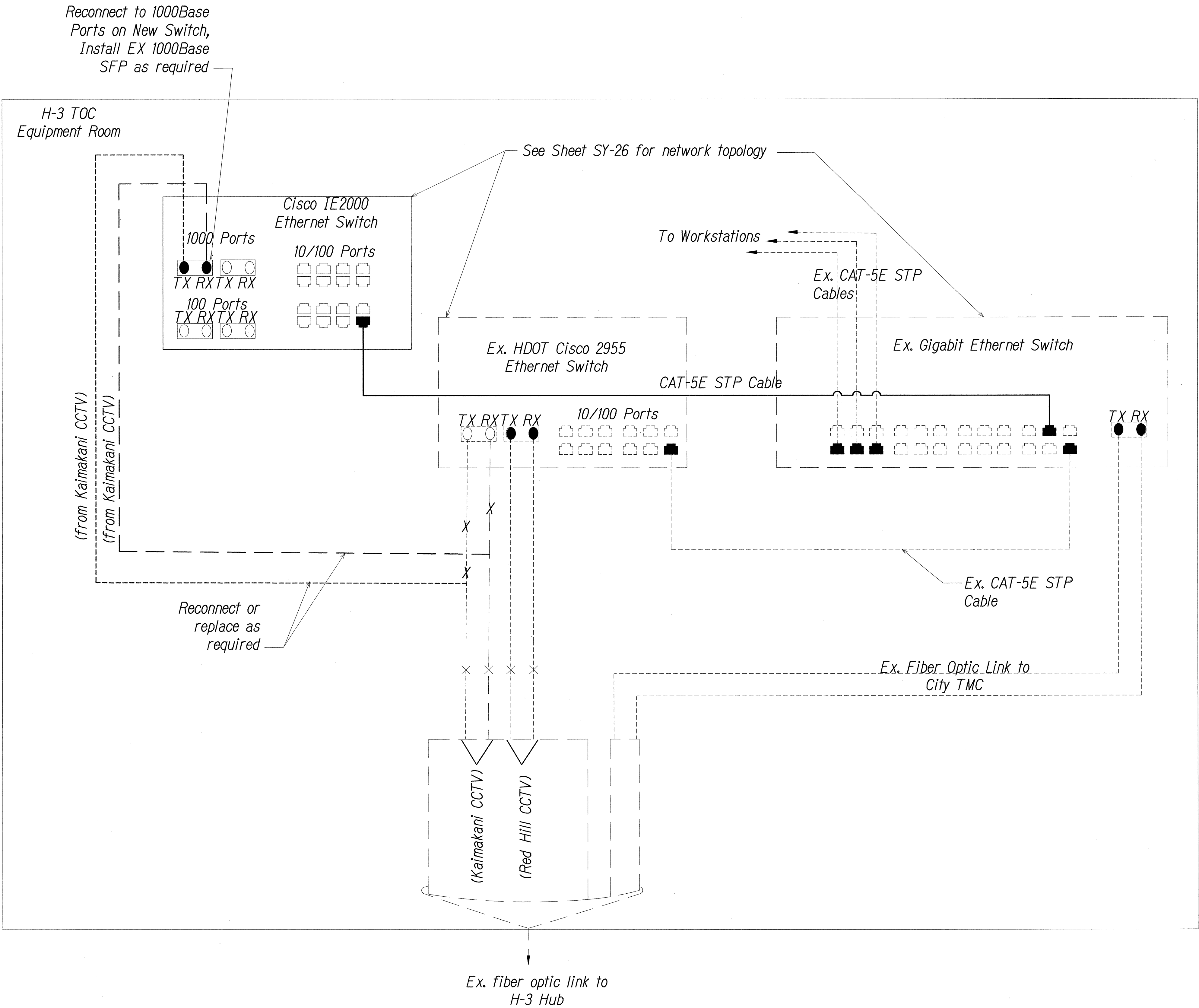
Freeway Management System, Interstate H-1, H-2 & Moanalua Freeway (H-201) Phase 1C, Part 2

Federal Aid Project No. 1M-0300(138)

Scale: NTS Date: 8/7/14

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If not 2 inches: scale accordingly)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-0300(138)	2014	60	220



Key

- Equipment Connection Fiber Optic Jumper
- Fiber Optic Pigtail
- Bare Fiber Left Coiled In Splice Tray
- Existing Splice
- Fusion Splice
- Patch Panel Module
- Fiber

Note: Dash Lines Denote Existing Cables, Devices, or Enclosures.

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTED	
NO.	

FILE: \\96-46-96-46-27\COMMUNICATION NETWORK\SY-26 H3TOC.DWG Oct 13, 2014-9:26 AM

SPLICING AND CONNECTION DETAIL - H-3 TOC
Not to Scale

NEAL H. KASAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6931-C
HAWAII, U.S.A.
LISCENSE EXPIRES: 4/30/16
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS DEFINED IN HAW. TITLE 10, CHAPTER 115, RULES OF THE BOARD OF PROFESSIONAL ENGINEERS, ARCHITECTS AND SURVEYORS, STATE OF HAWAII.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

COMMUNICATIONS PLAN

Freeway Management System, Interstate H-1, H-2 & Moanalua Freeway (H-201)
Phase 1C, Part 2
Federal Aid Project No. 1M-0300(138)

Scale: NTS Date: 8/7/14

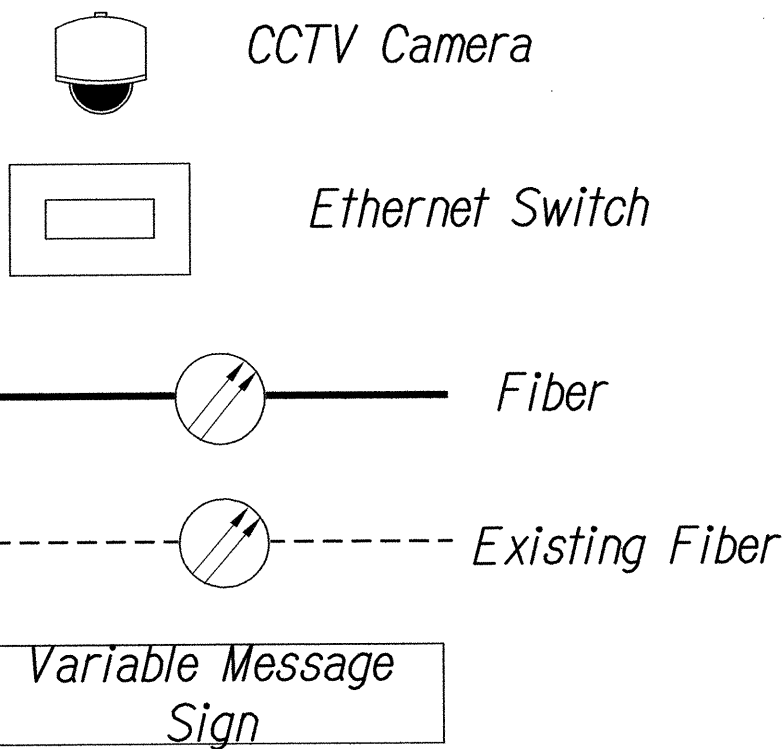
0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If not 2 inches: scale accordingly)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-0300(138)	2014	62	220

Notes:

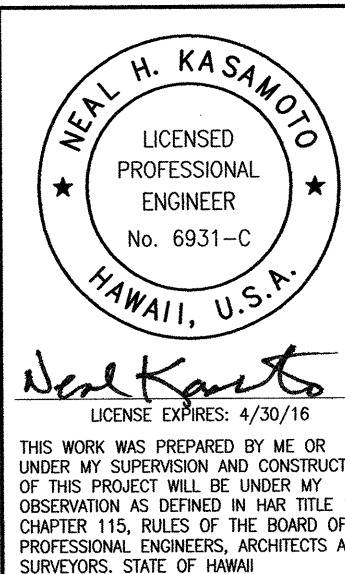
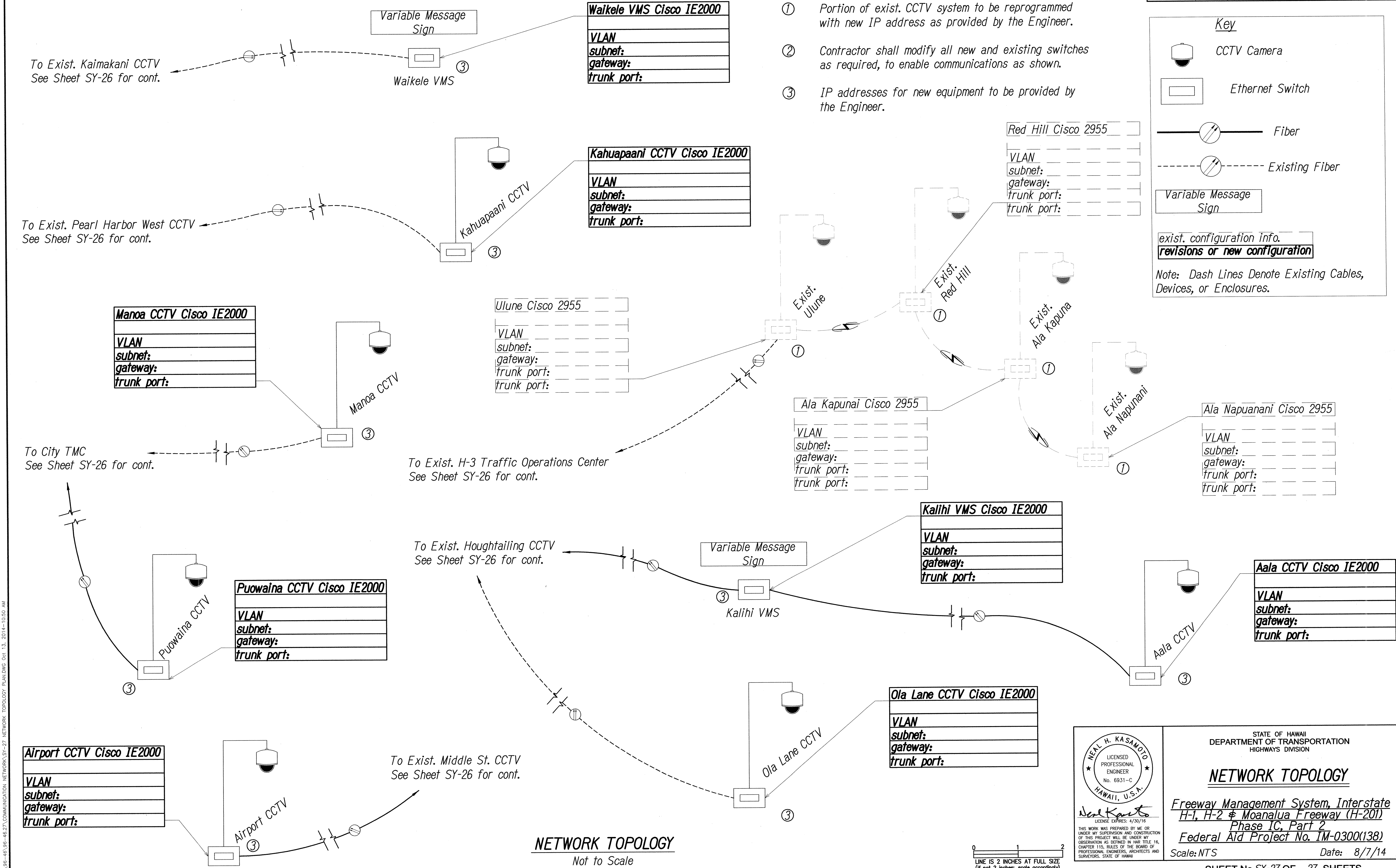
- Portion of exist. CCTV system to be reprogrammed with new IP address as provided by the Engineer.
- Contractor shall modify all new and existing switches as required, to enable communications as shown.
- IP addresses for new equipment to be provided by the Engineer.

Key



exist. configuration info.
revisions or new configuration

Note: Dash Lines Denote Existing Cables, Devices, or Enclosures.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

NETWORK TOPOLOGY
Freeway Management System, Interstate
H-1, H-2 & Moanalua Freeway (H-201)
Phase 1C, Part 2
Federal Aid Project No. 1M-0300(138)
Scale: NTS
Date: 8/7/14

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
NO.	

PWA\36-46\36-46-27\COMMUNICATION NETWORK\SY-27 NETWORK TOPOLOGY PLAN.DWG Oct 13, 2014-10:50 AM

LINE IS 2 INCHES AT FULL SIZE
(If not 2 inches: scale accordingly)

NETWORK TOPOLOGY
Not to Scale