

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	901A-01-19	2020	C.O. ADD. 120	167

HAWAIIAN RAILWAY SOCIETY (HRS)

NOTE:

CONSTRUCTION OF THIS RAILROAD AT-GRADE CROSSING SHALL BE COORDINATED WITH HRS (STEVE VENDT, 808-681-5461) FOR RAILROAD OPERATING SCHEDULE. CONSTRUCTION OF THE CROSSING SHALL BE DONE DURING WEEKDAYS (MON-FRI). THE TRACK SHALL BE IN SERVICE FOR ALL SCHEDULED TRAINS AND MAINTENANCE OPERATIONS. CONTRACTOR SHALL NOTIFY HRS AT LEAST TWO WEEKS PRIOR TO ANY TRACK CONSTRUCTION ACTIVITIES.

INDEX:

- RR-1 HRS NOTE, INDEX, LEGEND AND ABBREVIATIONS
RR-2 TRACK PLAN AND PROFILE
RR-3 TRACK DETAILED CROSSING PLAN
RR-4 TYPICAL TRACK SECTIONS
RR-5 TYPICAL TRACK DETAILS
RR-6 FLASHING LIGHT SIGNAL AND GATE ARM INSTALLATION DETAIL
RR-7 CROSSING LOCATION PLAN
RR-8 XP4 CONTROL PLAN
RR-9 RECORDER PLAN
RR-10 GATE 1 AND PEDESTRIAN FLASHER 1 PLAN
RR-11 GATE 2 PLAN
RR-12 GATE 3 PLAN
RR-13 GATE 4 PLAN
RR-14 POWER DISTRIBUTION PLAN
RR-15 CASE LAYOUT PLAN
RR-16 RELAY PLAN

ABBREVIATIONS:

- AAR Association of American Railroads
AASHTO American Association of State Highway Transportation Officials
AB Aggregate Base
AC Asphalt Concrete
ARA American Railway Association
ASCE American Society of Civil Engineering
AREMA American Railway Engineering and Maintenance of Way Association
AVE Avenue
BLDG Building
CL Centerline
CLR PT Clear Point
Conc Concrete
CWR Continuous Welded Rail
CY Cubic Yards
* Degree(s)
DIA Diameter
DR Drive
DWG Drawing
E East
EL Elevation
EOT End of Track
EXIST Existing
' Foot, Feet or Minute(s)
FG Finished Grade
HH Head Hardened
HORIZ Horizontal
HTTO Hand Throw Turnout
" Inch, Inches or Seconds
I Total Intersection Angle
IJ Insulated Joints
INV Invert
Jtd Jointed Rail
L Length
LF Lineal Feet
LH Left Hand
Ls Length of Spiral
LT Left
MAX Maximum
MIN Minimum
MM Mile Marker
MP Mile Post
MPH Miles Per Hour
MT Main Track
MUTCD Manual on Uniform Traffic Control Devices
N North
NIC Not in Contract
NO. Number
NTS Not to Scale
OH Overhead
OTM Other Track Material
Pound
PC Point of Curve
PCC Point of Compound Curve
PCS Point of Curve to Spiral
PERF Perforated
POC Point on Curve
PF 1/2" Point of Frog
PI Point of Intersection

- PITO Point of Intersection of Turnout
POB Point of Beginning
POTO Power Operated Turnout
PROP Proposed
PS Point of Spiral
PSC Point of Spiral to Curve
PT Point of Tangent
PTSW Point of Switch
PVC Point of Vertical Curve/Polyvinyl Chloride
PPVI Point of Vertical Intersection
PVT Point of Vertical Tangent
RH Right Hand
RR Railroad
RT Right
Rwy Railway
R/W Right of Way
SCH Schedule
SECS Seconds
SF Square Feet
SHT Sheet
SLDR Shoulder
S South
ST Street
STA Station
STD Standard
TC Track Centers
TF Track Feet
TO Turnout
T/R Top of Rail
TRK Track
TYP Typical
UG Underground
VERT Vertical
V Velocity
V/L Average Change in Gradient per 100'
W West
XING Crossing
XOVER Cross-Over

SYMBOLS:

- Flashing Light Warning Device
Flashing Light Warning Device with Gate
Milepost
Milemarker

TRACKS:

- Centerline of Track
Typical Walkways at Grade Crossings

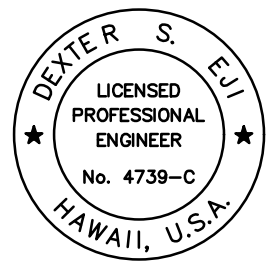
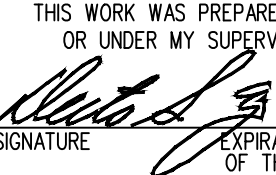
U.S. DOT CROSSING INVENTORY:

DOT: 918996X

RR MP: 19.71

ROAD: FT. BARRETTE ROAD

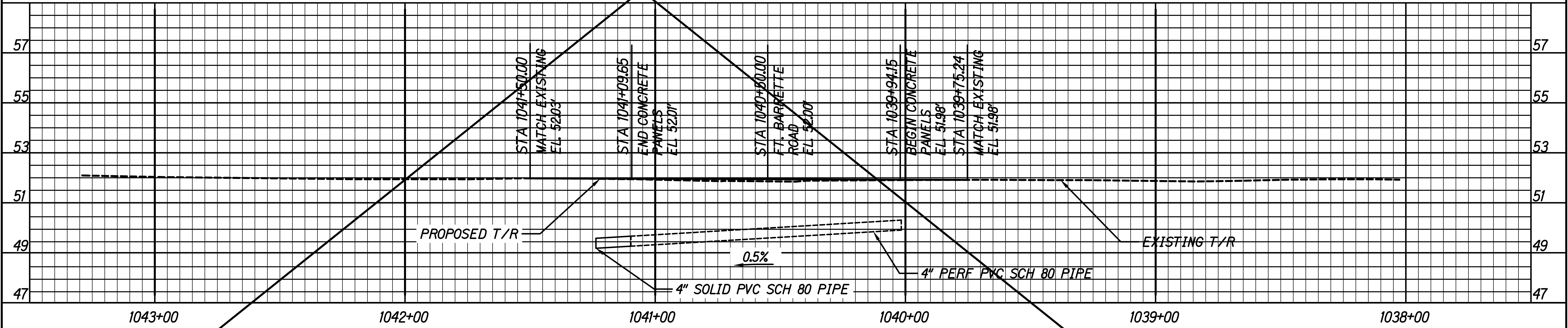
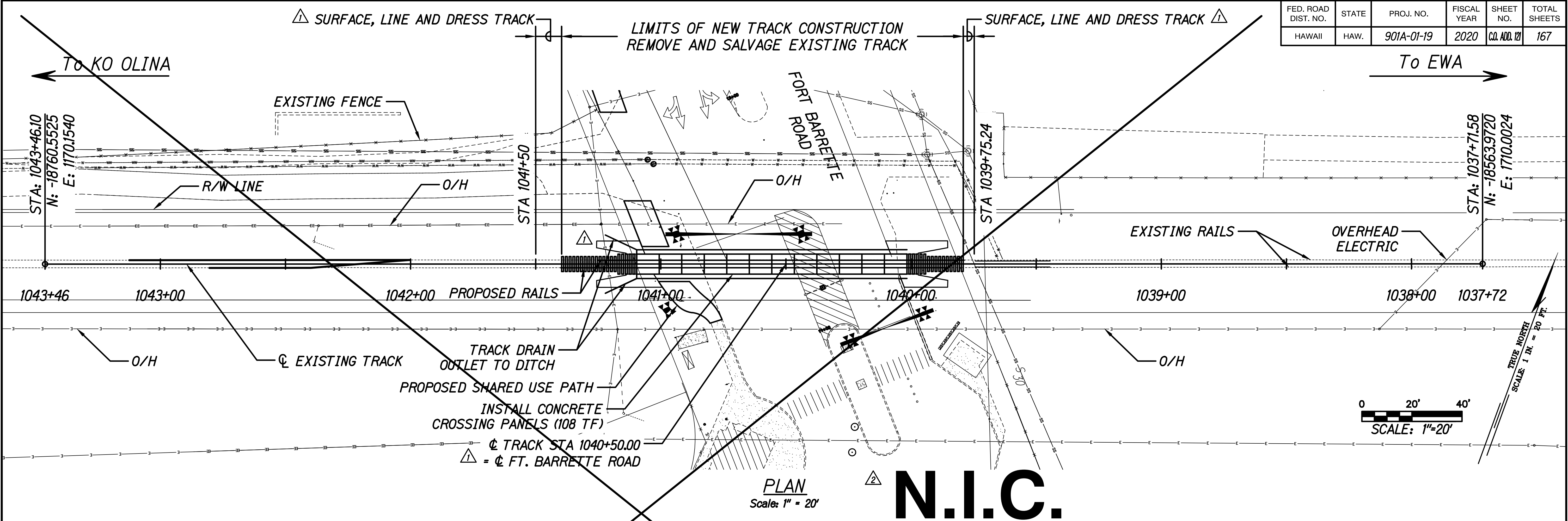
3/3/20	Revised Text.
Date	Revision

 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. SIGNATURE:  EXPIRATION DATE OF THE LICENSE: 04/30/20	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION HRS NOTE, RAILROAD INDEX, LEGEND AND ABBREVIATIONS FORT BARRETTE ROAD OPERATIONAL IMPROVEMENTS Roosevelt Avenue to Farrington Highway Project No. 901A-01-19 Scale: AS NOTED Date: Jan. 2020
	SHEET No. RR-1 OF 16 SHEETS
	C.O. ADD. 120

5/21/20	Delete railroad crossing upgrade.
Date	Revision

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

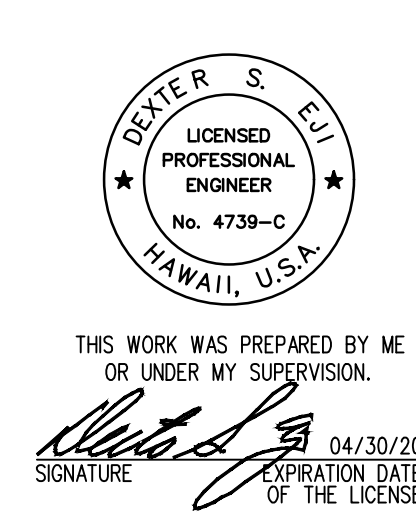
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	901A-01-19	2020	C.O. ADD. 121	167



NOTES:
1. THE CONTRACTOR SHALL VERIFY AVAILABLE CLEARANCES WITH EXISTING OVERHEAD UTILITY LINES PRIOR TO FABRICATION OF GATE STRUCTURES.

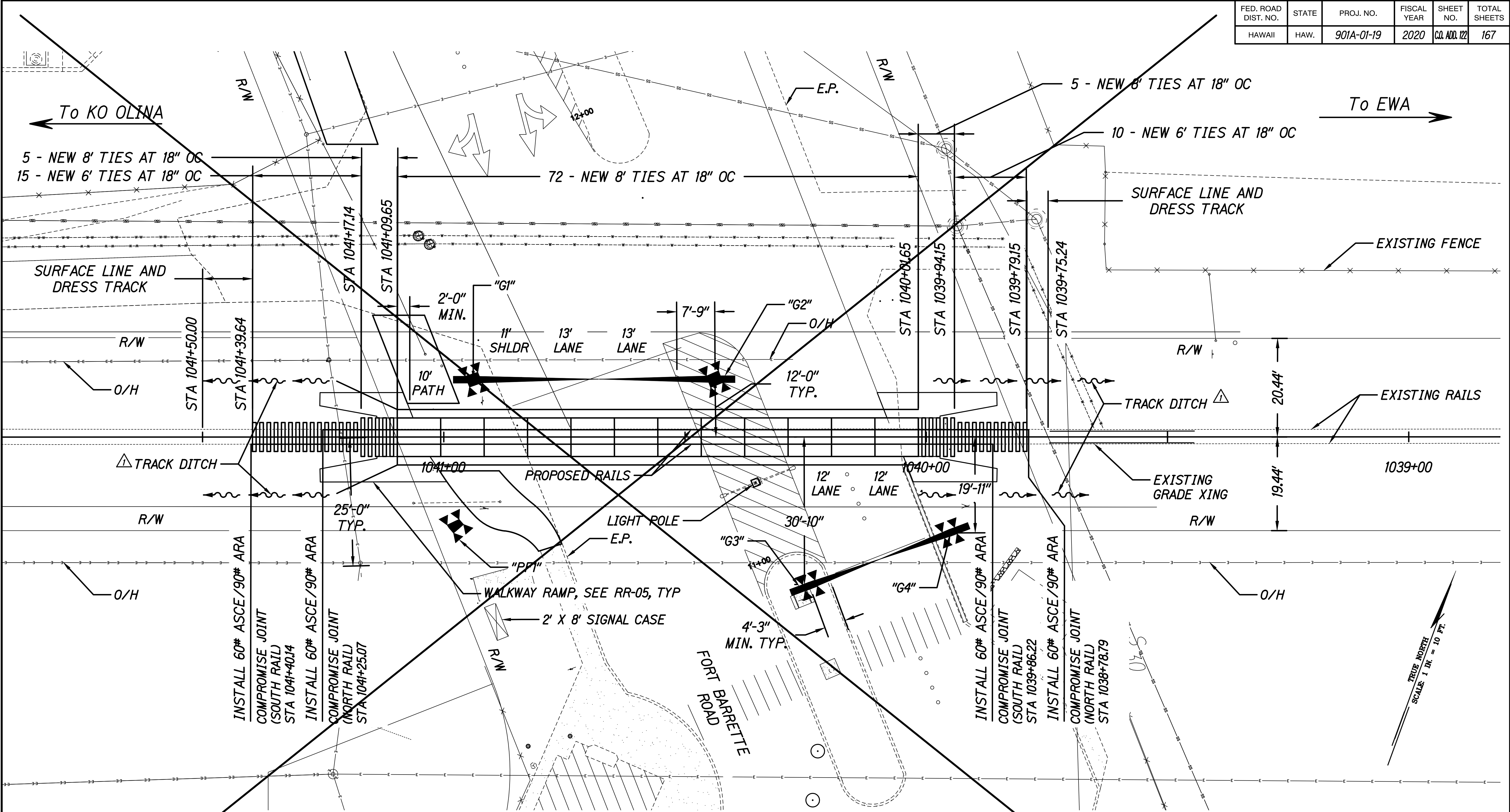
PROFILE
Horiz. Scale: 1" = 20'
Vert. Scale: 1" = 2'

5/21/20	Delete railroad crossing upgrade.
3/3/20	Revised Callout. Added Track Drain Outlet.
Date	Revision



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TRACK PLAN AND PROFILE
FORT BARRETTE ROAD OPERATIONAL IMPROVEMENTS
Roosevelt Avenue to Farrington Highway
Project No. 901A-01-19
Scale: AS NOTED Date: Jan. 2020
SHEET No. RR-2 OF 16 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	901A-01-19	2020	C.O. ADD. 122	167



N.I.C.

NOTES:
1. THE CONTRACTOR SHALL VERIFY AVAILABLE CLEARANCES WITH EXISTING OVERHEAD UTILITY LINES PRIOR TO FABRICATION OF GATE STRUCTURES.

5/21/20	Delete railroad crossing upgrade.
3/3/20	Added Track Drain Outlet. Added Callouts.
Date	Revision

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETAILED CROSSING PLAN

FORT BARRETTE ROAD OPERATIONAL IMPROVEMENTS
Roosevelt Avenue to Farrington Highway
Project No. 901A-01-19

Scale: None Date: Jan. 2020

SHEET No. RR-3 OF 16 SHEETS

DEXTER S. ELLIOTT
LICENSED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

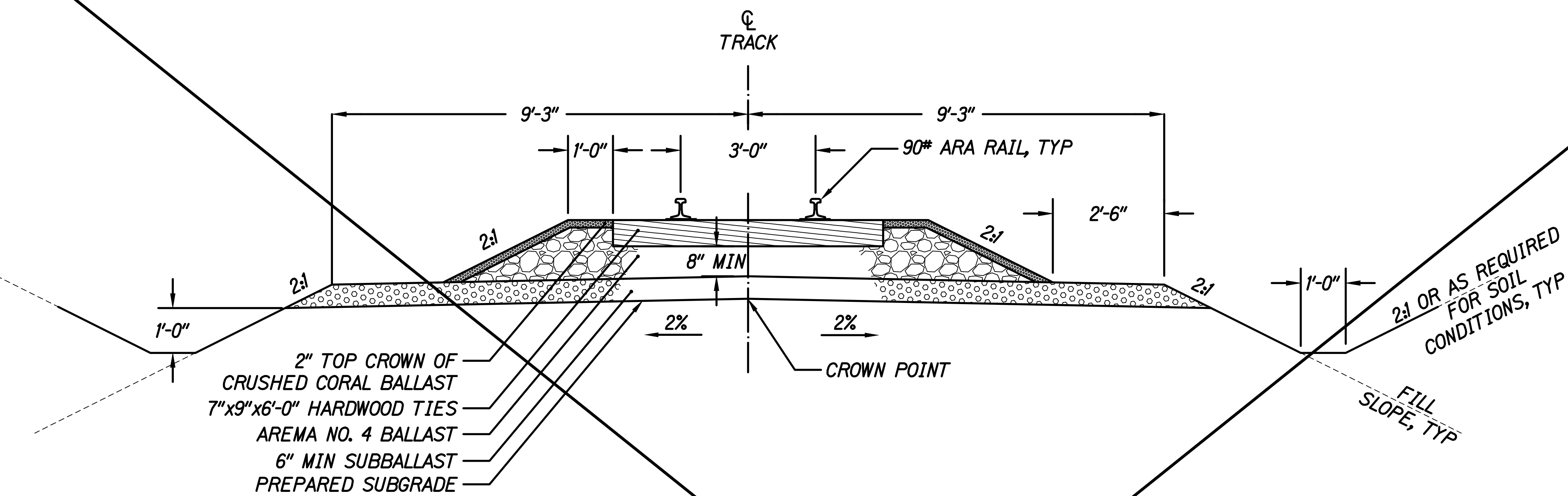
SIGNATURE: [Signature] EXPIRATION DATE OF THE LICENSE: 04/30/20

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

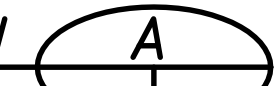
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	901A-01-19	2020	C.O. ADD. 123	167

NOTES:

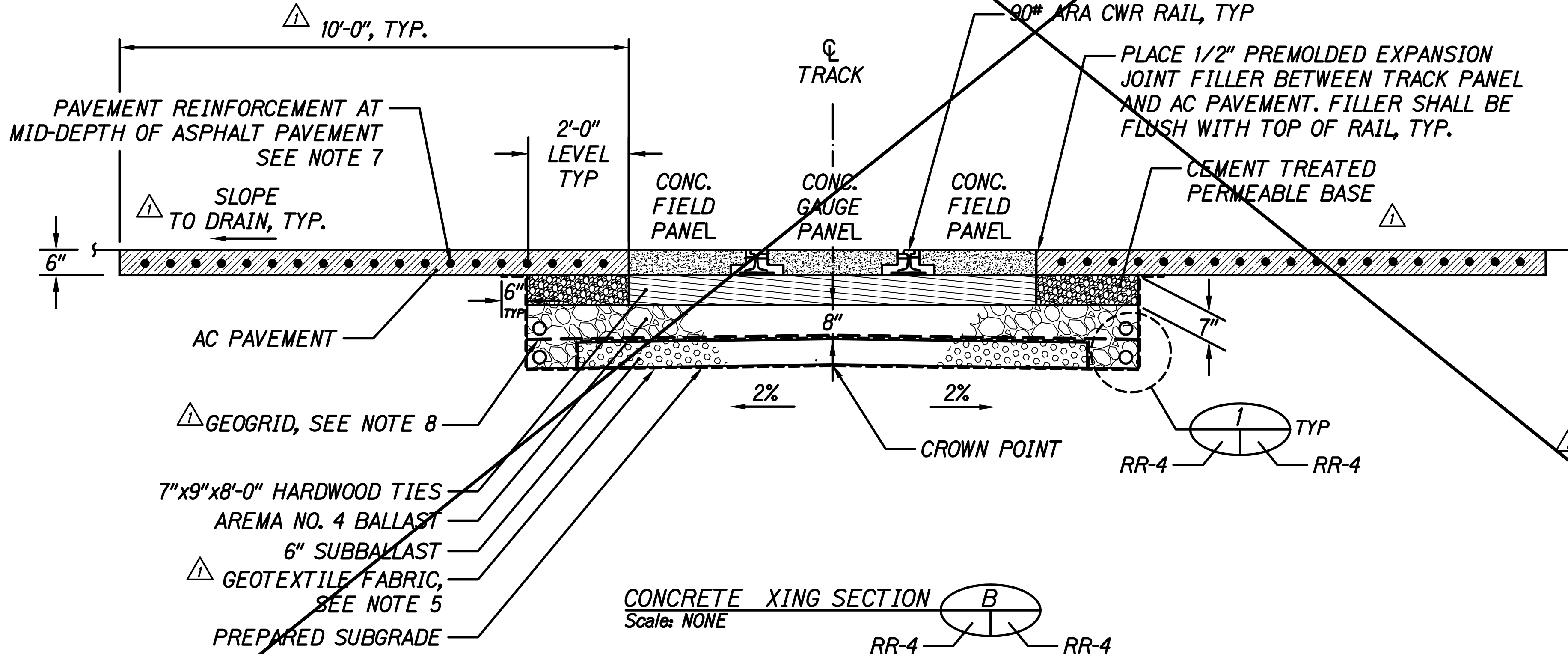
1. THE CONTRACTOR SHALL PROTECT ALL FOUNDATIONS AND EXISTING UNDERGROUND UTILITIES FROM DAMAGE BY EXCAVATION ACTIVITIES.
2. CONTRACTOR SHALL NOTIFY THE ENGINEER FOR INSPECTION OF CROSSING SUBGRADE. CONTRACTOR SHALL NOT COVER UP THE SUBGRADE UNTIL AFTER INSPECTION AND APPROVAL BY ENGINEER.
3. IF ALL OR PART OF THE SUBGRADE CANNOT ATTAIN SUITABLE COMPACTION, CONTRACTOR SHALL OVER EXCAVATE AND PLACE AND COMPACT SUITABLE ORDINARY BACKFILL MATERIAL AS DIRECTED BY THE ENGINEER. REMOVED EXISTING BALLAST MAY BE USED AS ORDINARY BACKFILL UNLESS DETERMINED BY THE ENGINEER TO BE UNSUITABLE.
4. ROADWAY SURFACES SHALL NOT ALLOW STORM WATER TO DRAIN INTO THE TRACK.
5. GEOTEXTILE FABRIC SHALL BE MIRAFI FW403, OR APPROVED EQUIVALENT.
6. AREMA NO. 4 BALLAST TO BE USED BETWEEN WOOD TIES.
7. PAVEMENT REINFORCEMENT SHALL BE GLASGRID 8511 TF, OR APPROVED EQUIVALENT.
8. GEOGRID SHALL BE TENSAR TRIAX TX7, OR APPROVED EQUIVALENT.



OPEN TRACK SECTION
Scale: NONE



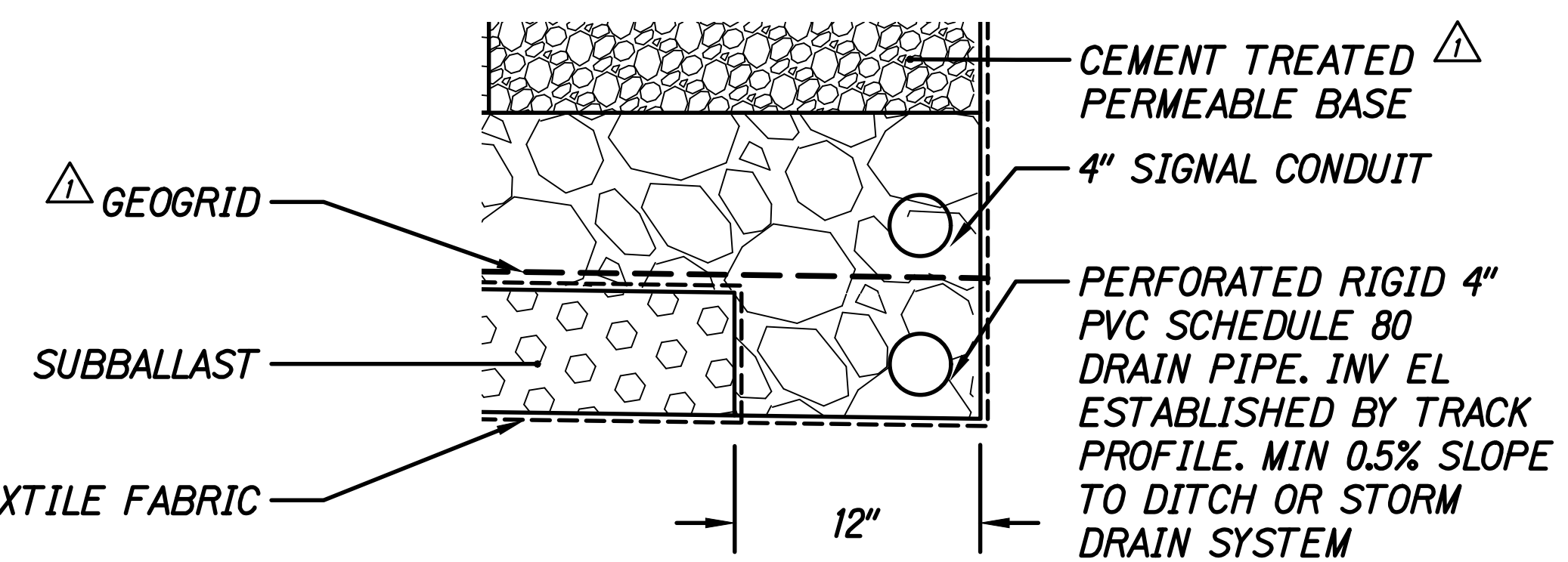
N.I.C.



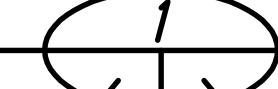
CONCRETE XING SECTION
Scale: NONE



RR-4



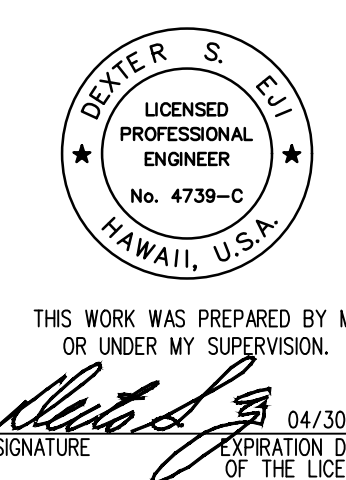
DETAIL
Scale: NONE



RR-4

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

5/21/20	Delete railroad crossing upgrade.
3/3/20	Revised detail, note and callout. Revised Geotextile Fabric and Geogrid on Details.
Date	Revision



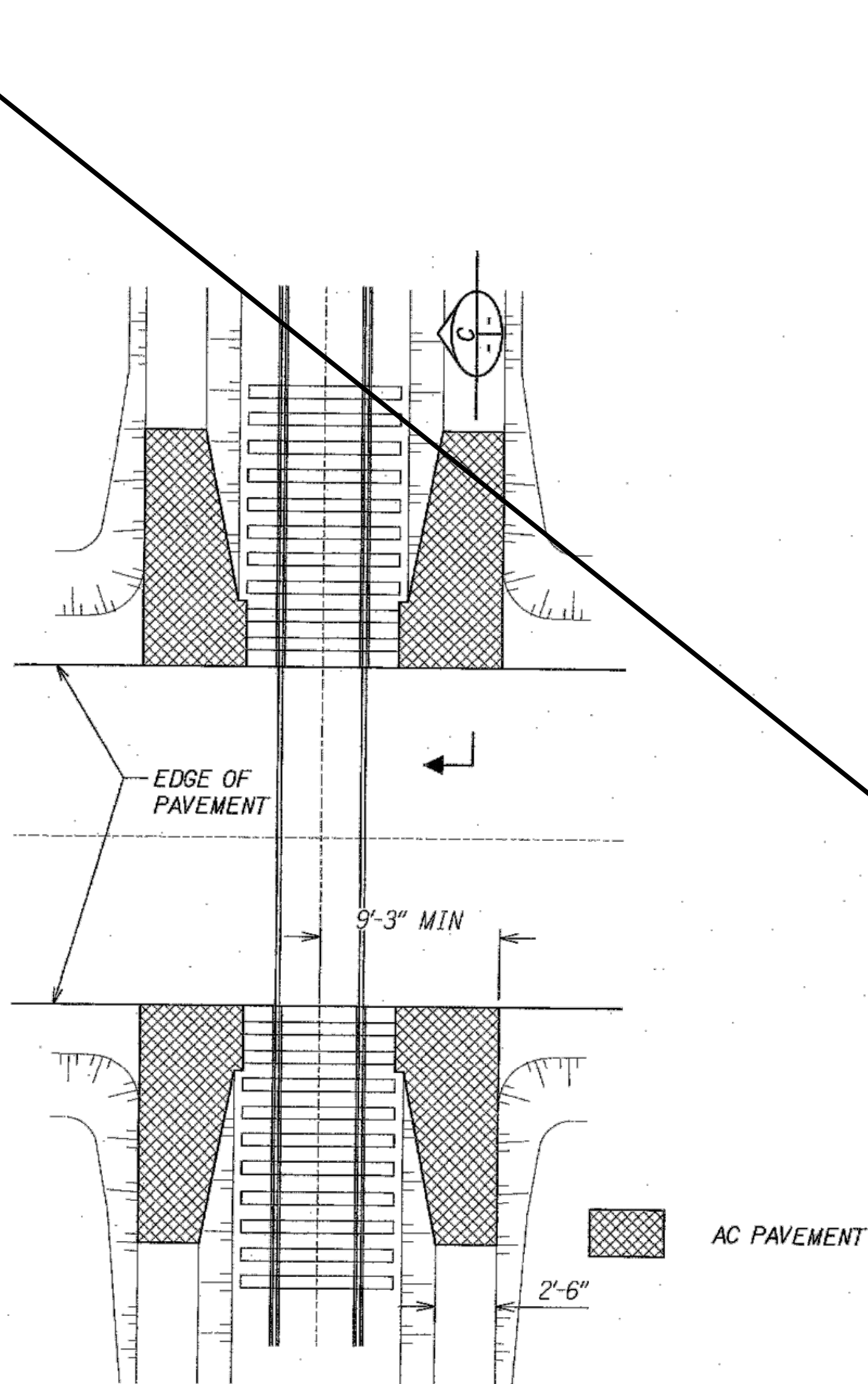
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL TRACK SECTIONS

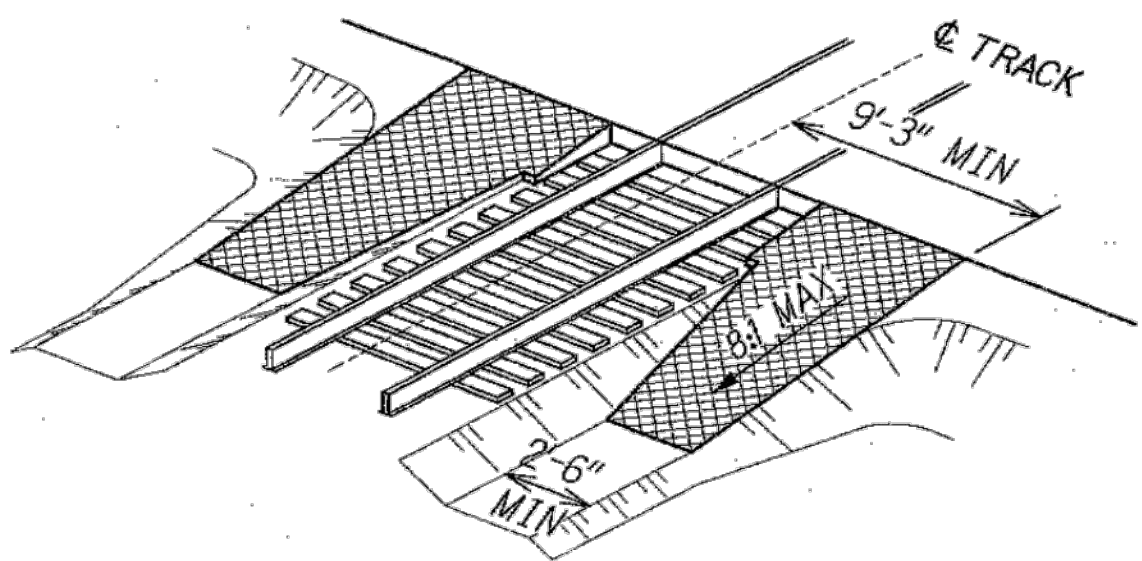
FORT BARRETTE ROAD OPERATIONAL IMPROVEMENTS
Roosevelt Avenue to Farrington Highway
Project No. 901A-01-19

Scale: None Date: Jan. 2020

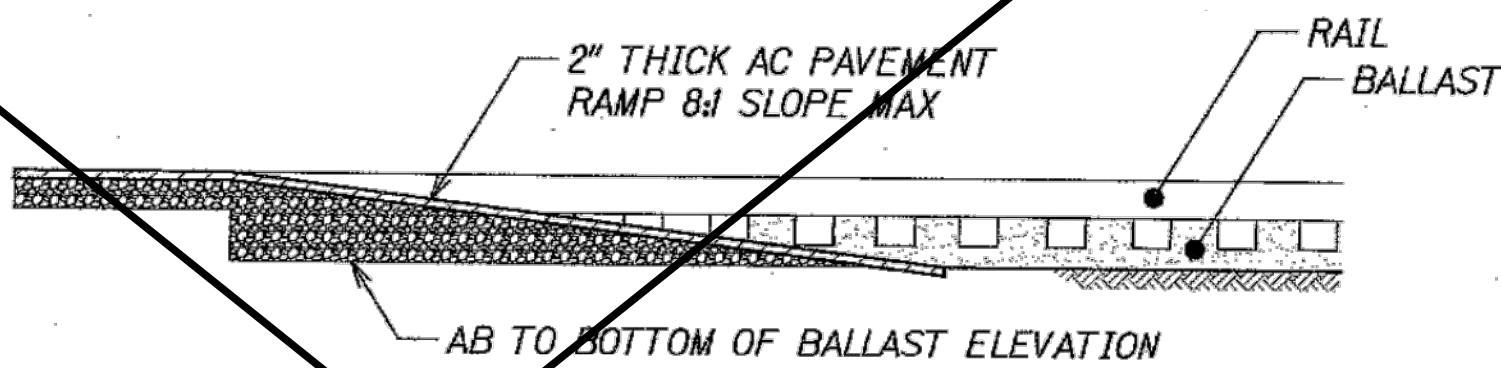
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	901A-01-19	2020	C.O. 124	167



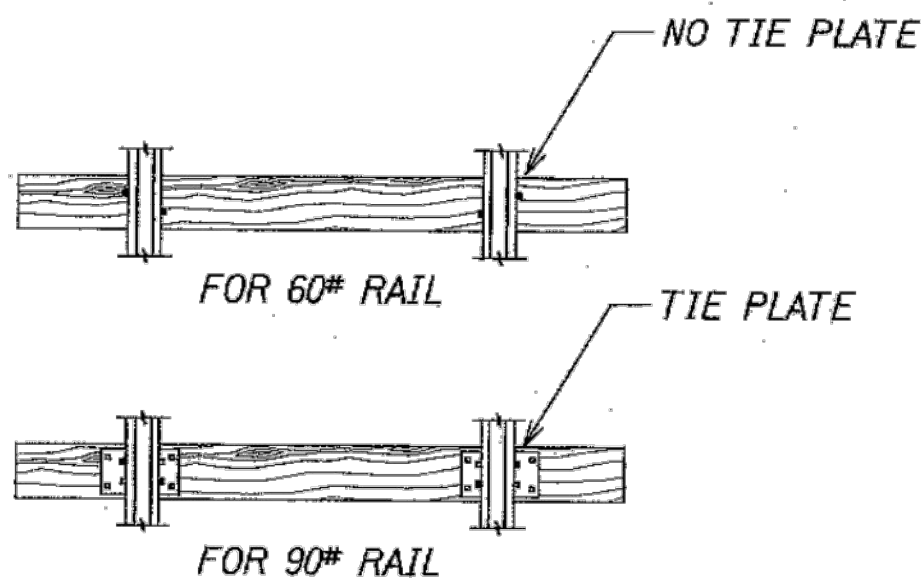
WALKWAY PLAN VIEW
Scale: NONE



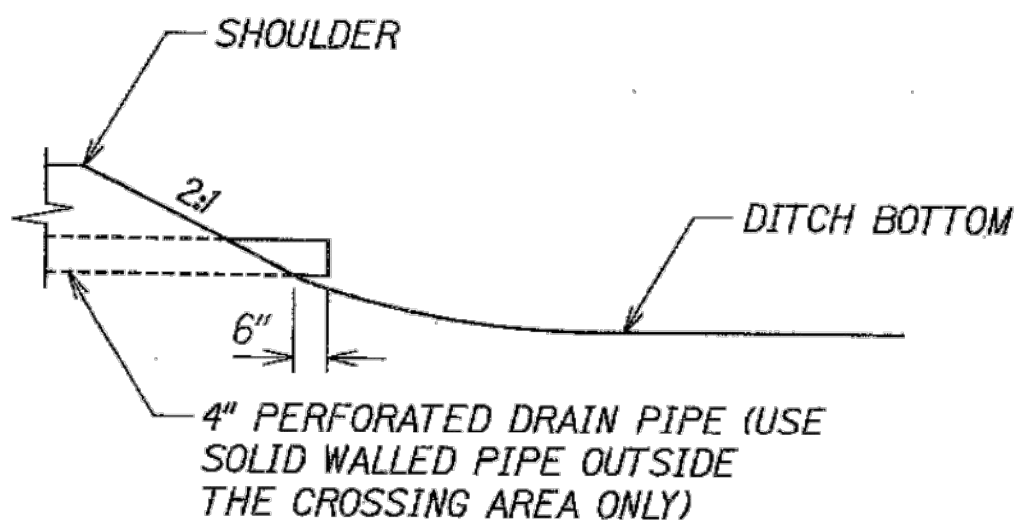
WALKWAY PICTORIAL VIEW
Scale: NONE



SECTION
Scale: NONE



SPIKING PATTERN DETAIL
Scale: NONE



TYPICAL PVC PIPE OUTFALL DETAIL
Scale: NONE

N.I.C.

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

5/21/20	Delete railroad crossing upgrade.
Date	Revision

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

04/30/20

EXPIRATION DATE OF THE LICENSE

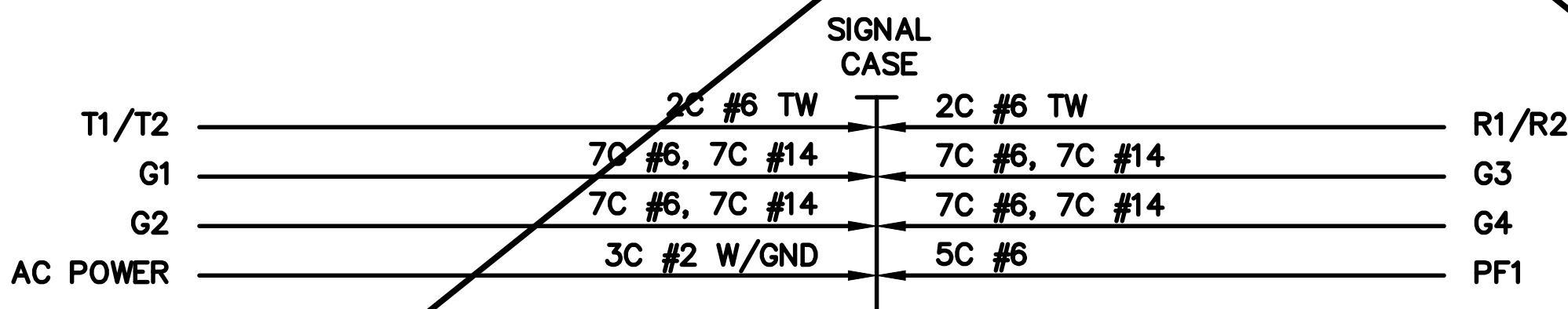
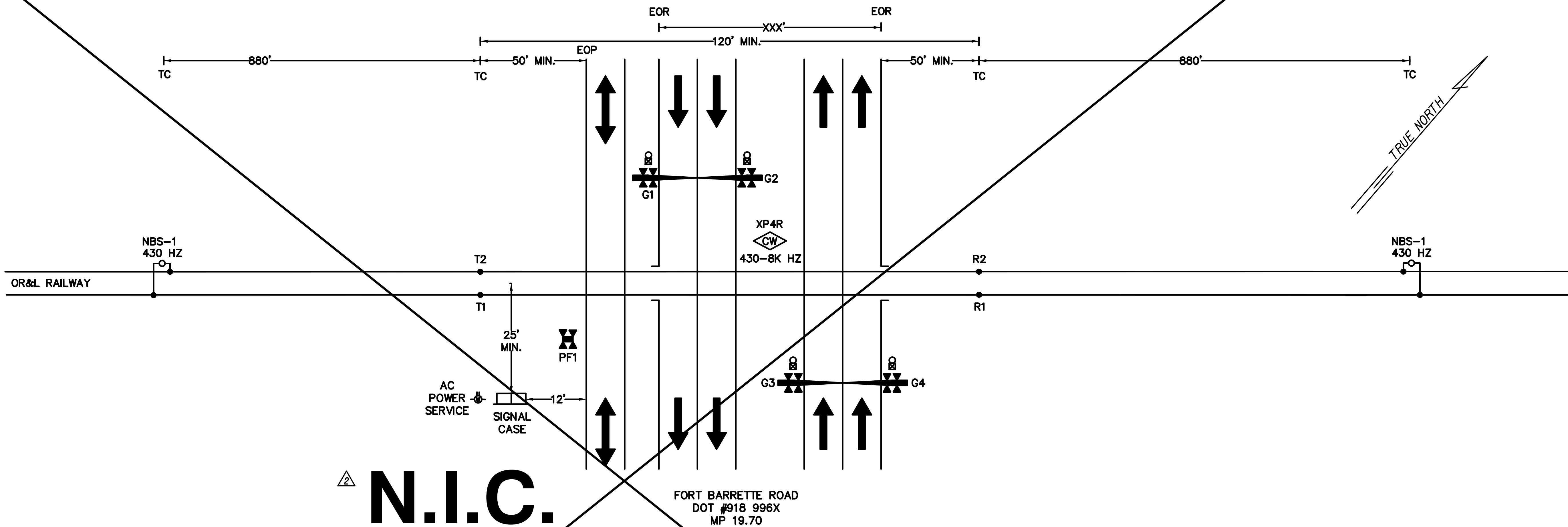
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL TRACK DETAILS

FORT BARRETTE ROAD OPERATIONAL IMPROVEMENTS
Roosevelt Avenue to Farrington Highway
Project No. 901A-01-19

Scale: None Date: Jan. 2020

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	901A-01-19	2020	C.O. ADD. 126	167



SYMBOLS AND ABBREVIATIONS:

- TC - TRACK CONNECTION
EOR - EDGE OF ROADWAY
EOP - EDGE OF PATHWAY
NBS - NARROW BAND SHUNT
CW - CONSTANT WARNING (ALSTOM XP4R, FREQUENCY 430 HZ, 8.0KHZ ISLAND)
BELL
AC POWER SERVICE
FLASHING LIGHTS AND GATE
PEDESTRIAN FLASHING LIGHT UNIT
SIGNAL CASE
TEST TERMINAL
LINE ARRESTER
EQUALIZER
TWISTED WIRE, 2 TURNS PER FOOT

NOTES:

1. MINIMUM ISLAND LENGTH IS 120 FEET
2. SIGNAL CASE TO BE LOCATED MINIMUM 12' FROM ROADWAY SHOULDER AND 25' FROM TRACK CENTERLINE.
3. ALL LAMPS SHALL BE LED.
4. ALL WIRES #16 AWG UNLESS OTHERWISE NOTED.
5. ALL RAIL JOINTS SHALL BE BONDED WITHIN CIRCUIT AREA.

WARNING TIME:

1. EQUIPMENT IS DESIGNED FOR 20 SECONDS MINIMUM WARNING TIME AT 10 MPH.
2. APPROACHES WERE LENGTHENED 0 SECOND(S) FOR WIDE OR ANGLED CROSSING (CT).
3. APPROACHES WERE LENGTHENED 5 SECONDS FOR BUFFER TIME (BT).
4. APPROACHES WERE LENGTHENED 30 SECONDS FOR ADVANCED PREEMPTION (APT).
5. APPROACHES WERE LENGTHENED 5 SECONDS FOR EQUIPMENT RESPONSE TIME (ERT).

5/21/20	Delete railroad crossing upgrade.
3/3/20	Added note
Date	Revision

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

01/30/20

EXPIRATION DATE OF THE LICENSE

01/30/20

EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CROSSING LOCATION PLAN

FORT BARRETTE ROAD OPERATIONAL IMPROVEMENTS
Roosevelt Avenue to Farrington Highway
Project No. 901A-01-19

Scale: None Date: Jan. 2020

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	901A-01-19	2020	C.O. 127	167

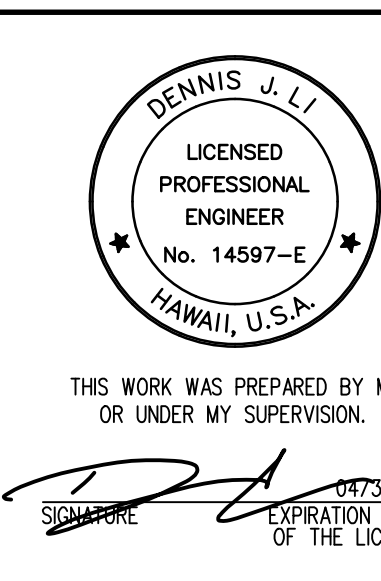
PROGRAM VERSION 7.20 OR LATER
★ = FIELD ADJUSTMENT TO BE MADE ACCORDING TO THE
XP4 INSTRUCTION MANUAL 100323-010 AQO & SUPPLEMENTS.

BASIC APPROACH SETTINGS	
APPROACH TRACK FREQUENCY	TRACK 1 430 HZ
MASTER/SLAVE OPERATION	MASTER
TRANSMITTER CHECK ADJUSTMENT	★
APPROACH TRACK DIRECTION MODE	BI
LUMPED IMPEDANCE ADJUSTMENT	★
NBS COMPENSATION (RX)	★
TRACK ISLAND ASSIGNMENT	ISL1_ASSIGN
APPROACH LENGTH	880 FT
AUTO RX	ENABLE
ADVANCED APPROACH SETTINGS	
MD TIMER ENABLE	TRACK 1 ENABLE
MD TIMER DELAY	10 MIN
FALSE SHUNT ENABLE	DISABLE
FALSE SHUNT RX	0
FALSE SHUNT DELAY	10 MIN
APPROACH RELEASE ENABLE	DISABLE
APPROACH RELEASE RX	0
APPROACH RELEASE DELAY	10 MIN
LOS TIME	16 SEC
IJ-LOS TIME	5 SEC
APPROACH SETTING	NORMAL
MAINTENANCE SETTINGS	
APPROACH ENABLED	TRACK 1 ENABLE
APPROACH DISABLE TIMEOUT	2 HR
BALLAST COMPENSATION	★
PHASE COMPENSATION	★
ISLAND SETTINGS	
ISLAND ENABLED	TRACK 1 ENABLE
ISLAND DISABLE TIMEOUT	2 HR
ISLAND FREQUENCY	8000 HZ
LOS COUNT	2.0
FAULT DELAY	1

MDR CONFIGURATION SETTINGS			
MDR #	MDR 1	MDR 2	MDR 3
WARNING TIME	25 SEC	55 SEC	99 SEC
CONSTANT WARNING (CW) OR MOTION DETECTOR (MD) MODE	CW	CW	MD
ADVANCED PREEMPT TIME	30 SEC	NOT USED	NOT USED
CWE-WT	80 SEC	80 SEC	80 SEC
AUX RECOVERY DELAY	0 SEC	0 SEC	0 SEC
TRACK PARAMETERS			
TRACK #	TRACK 1	TRACK 1	TRACK 1
TRACK ASSIGNMENT	ASSIGNED	ASSIGNED	NOT ASSIGNED
OFFSET DISTANCE	0 FT	0 FT	0 FT
MD-RESTART	0 RX	0 RX	0 RX
SUDDEN SHUNT ZONE	0 RX	0 RX	0 RX
POSITIVE START ENABLE	DISABLE	DISABLE	DISABLE
POSITIVE START DETECTION	0 RX	0 RX	0 RX
POSITIVE START ACTIVE TIME	0 MIN	0 MIN	0 MIN
POST JOINT DETECTION ENABLE	ENABLE	ENABLE	ENABLE
POST JOINT	15 RX	15 RX	15 RX
POST JOINT DELAY	15 SEC	15 SEC	15 SEC

5/21/20 Delete railroad crossing upgrade.

Date Revision



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

XP4 CONTROL PLAN

FORT BARRETTE ROAD OPERATIONAL IMPROVEMENTS
Roosevelt Avenue to Farrington Highway
Project No. 901A-01-19

Scale: None

Date: Jan. 2020

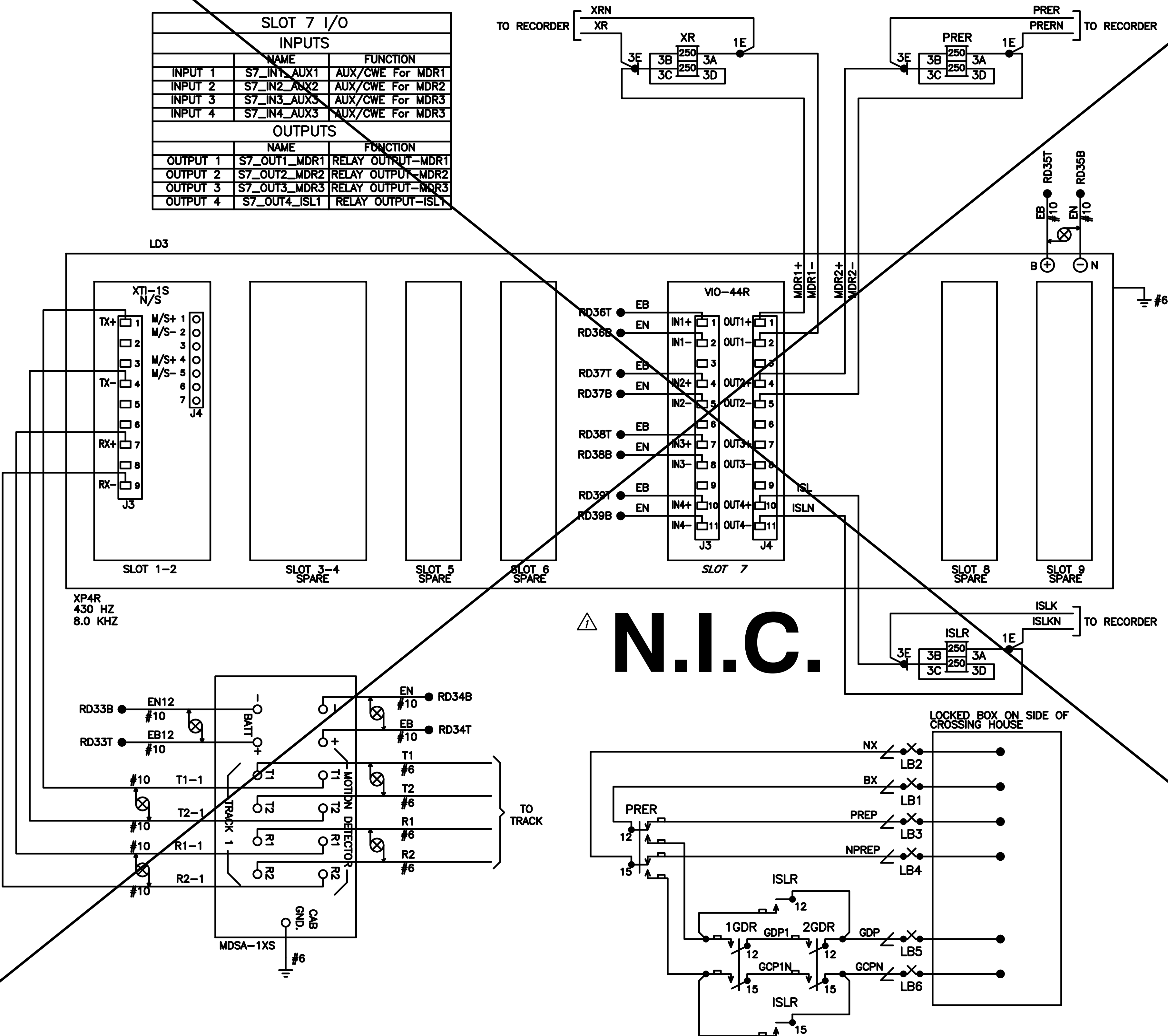
SHEET No. RR-8 OF 16 SHEETS

C.O. 127

APPLICATION SOFTWARE INFO	
TYPE	REDUNDANT
CONFIGURATION	1p
NAME	1r_1p_1l_0x_a
CHECKSUM	1971
CRC	C76A
CHASSIS ID	
DIP NO.	1 2 3 4 5 6 7 8
SHUNT	X X X X X I X X
CHASSIS ID DECIMAL	4

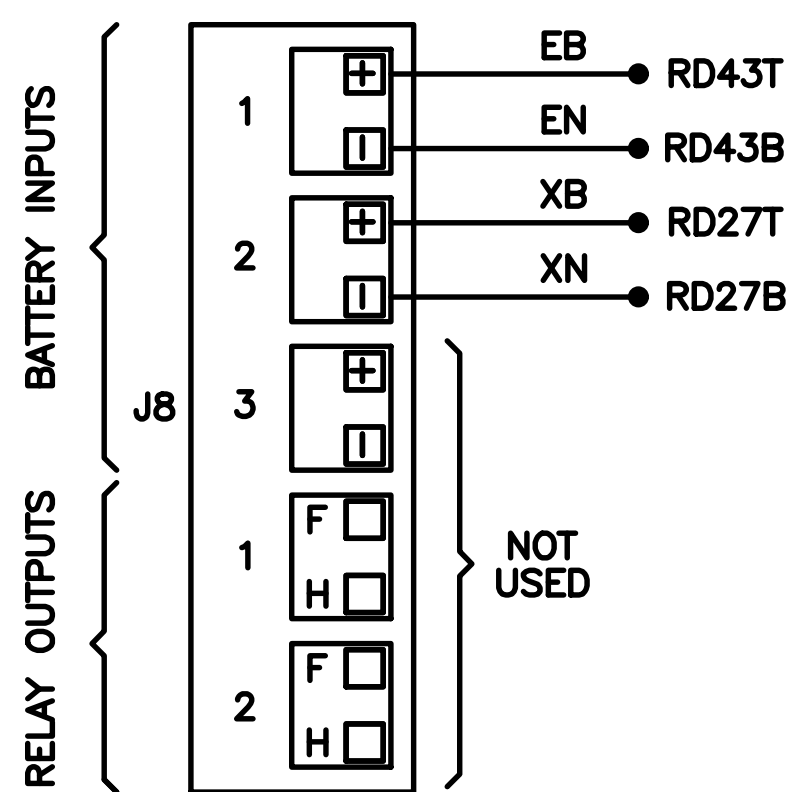
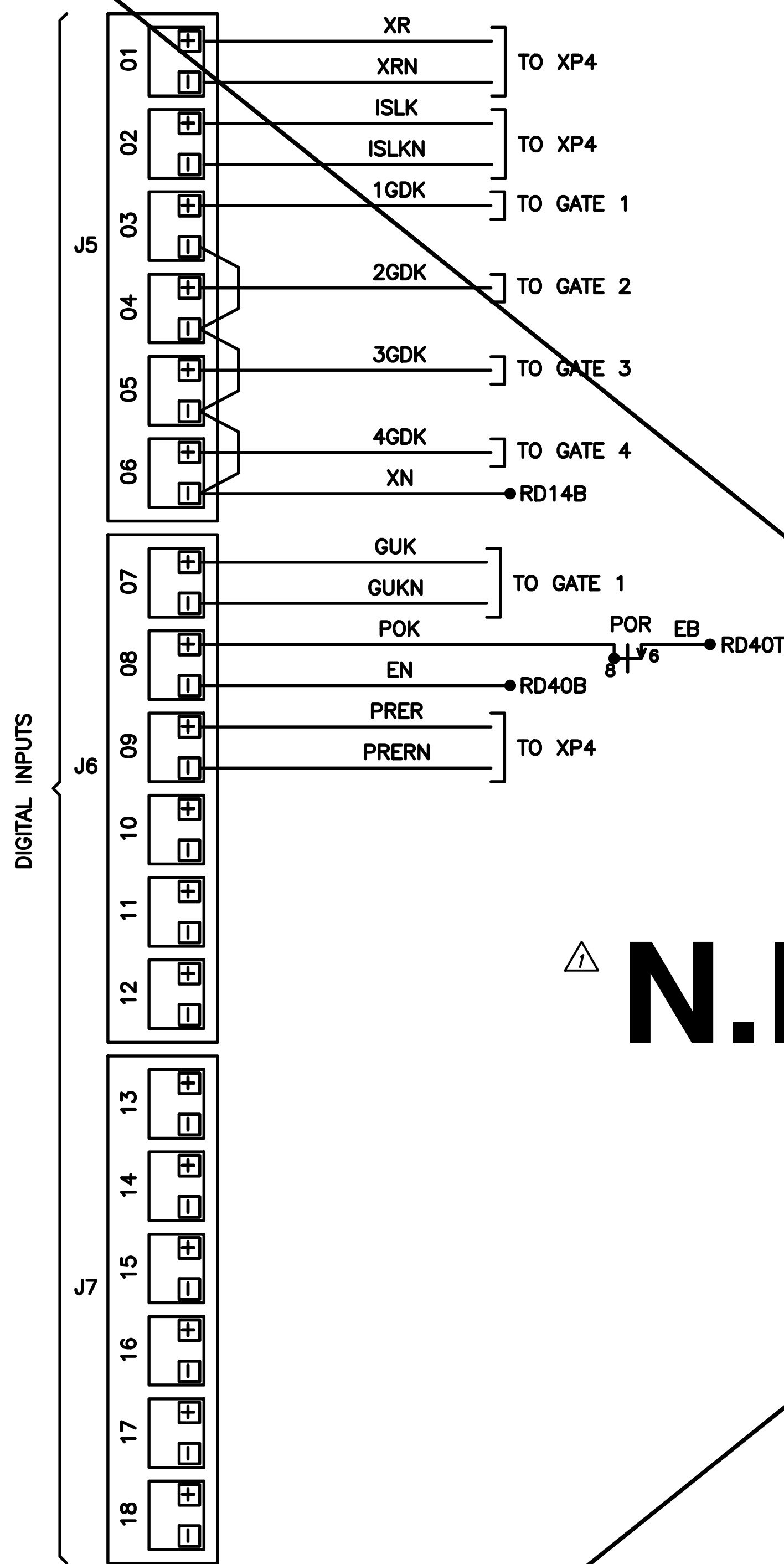
I = TAB INTACT
X = TAB PUNCHED OUT

SLOT 7 I/O		
INPUTS		
INPUT 1	S7_IN1_AUX1	AUX/CWE For MDR1
INPUT 2	S7_IN2_AUX2	AUX/CWE For MDR2
INPUT 3	S7_IN3_AUX3	AUX/CWE For MDR3
INPUT 4	S7_IN4_AUX3	AUX/CWE For MDR3
OUTPUTS		
OUTPUT 1	S7_OUT1_MDR1	RELAY OUTPUT-MDR1
OUTPUT 2	S7_OUT2_MDR2	RELAY OUTPUT-MDR2
OUTPUT 3	S7_OUT3_MDR3	RELAY OUTPUT-MDR3
OUTPUT 4	S7_OUT4_ISL1	RELAY OUTPUT-ISL1

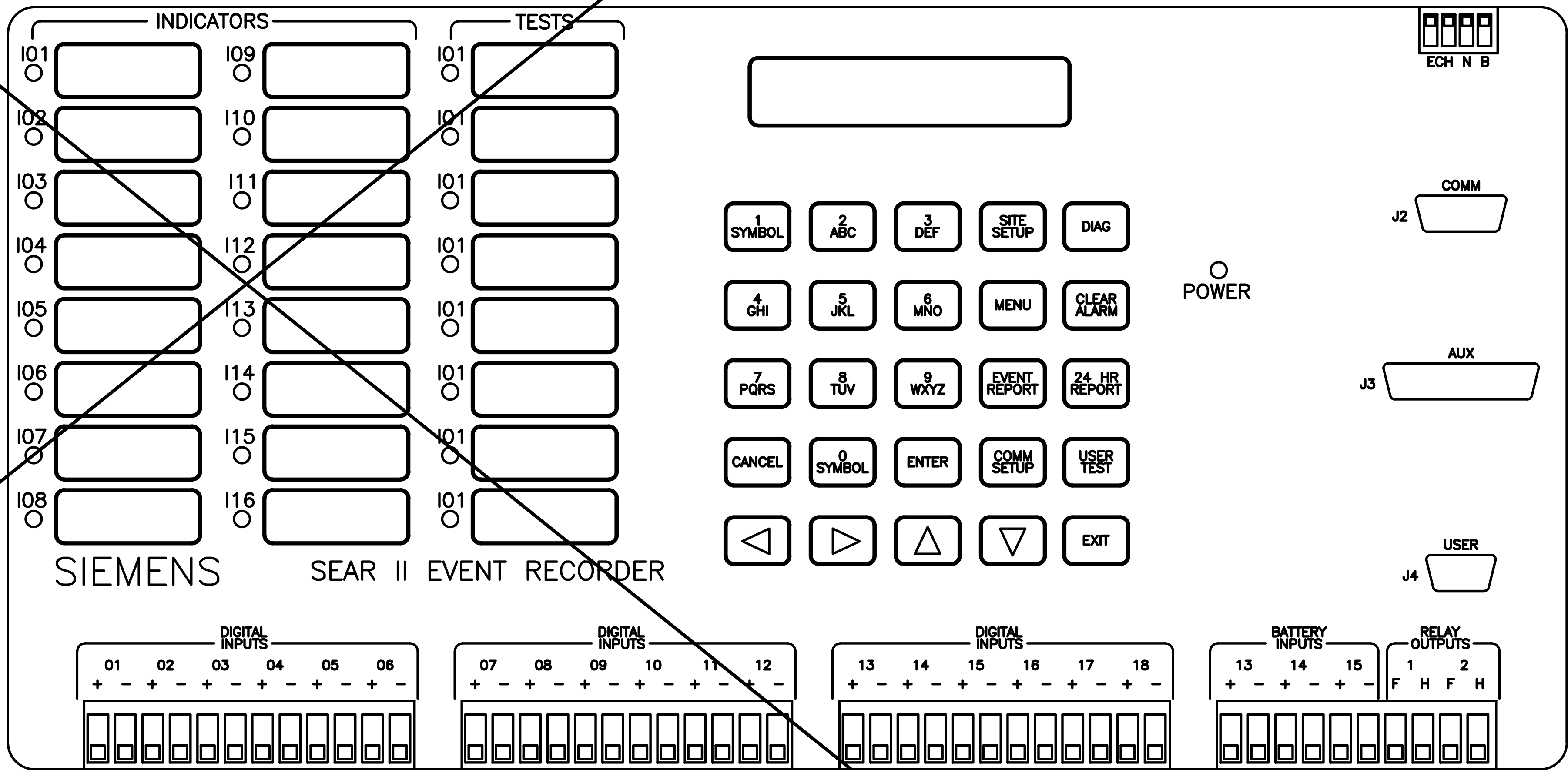


DATE	
SURVEY PLOTTED BY	
ORIGINAL PLAN	
DESIGNED BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
N.	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	901A-01-19	2020	C.O. 128	167

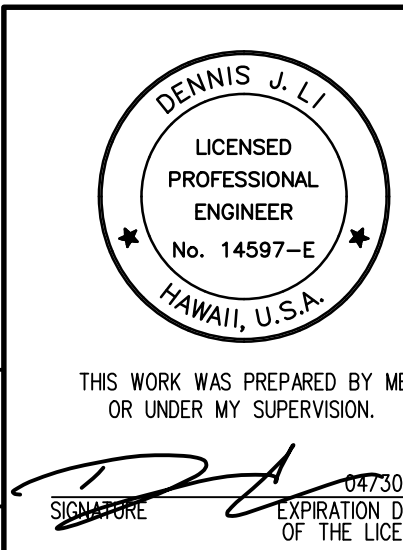


△ N.I.C.



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

△ 5/21/20	Delete railroad crossing upgrade.
Date	Revision



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RECORDER PLAN

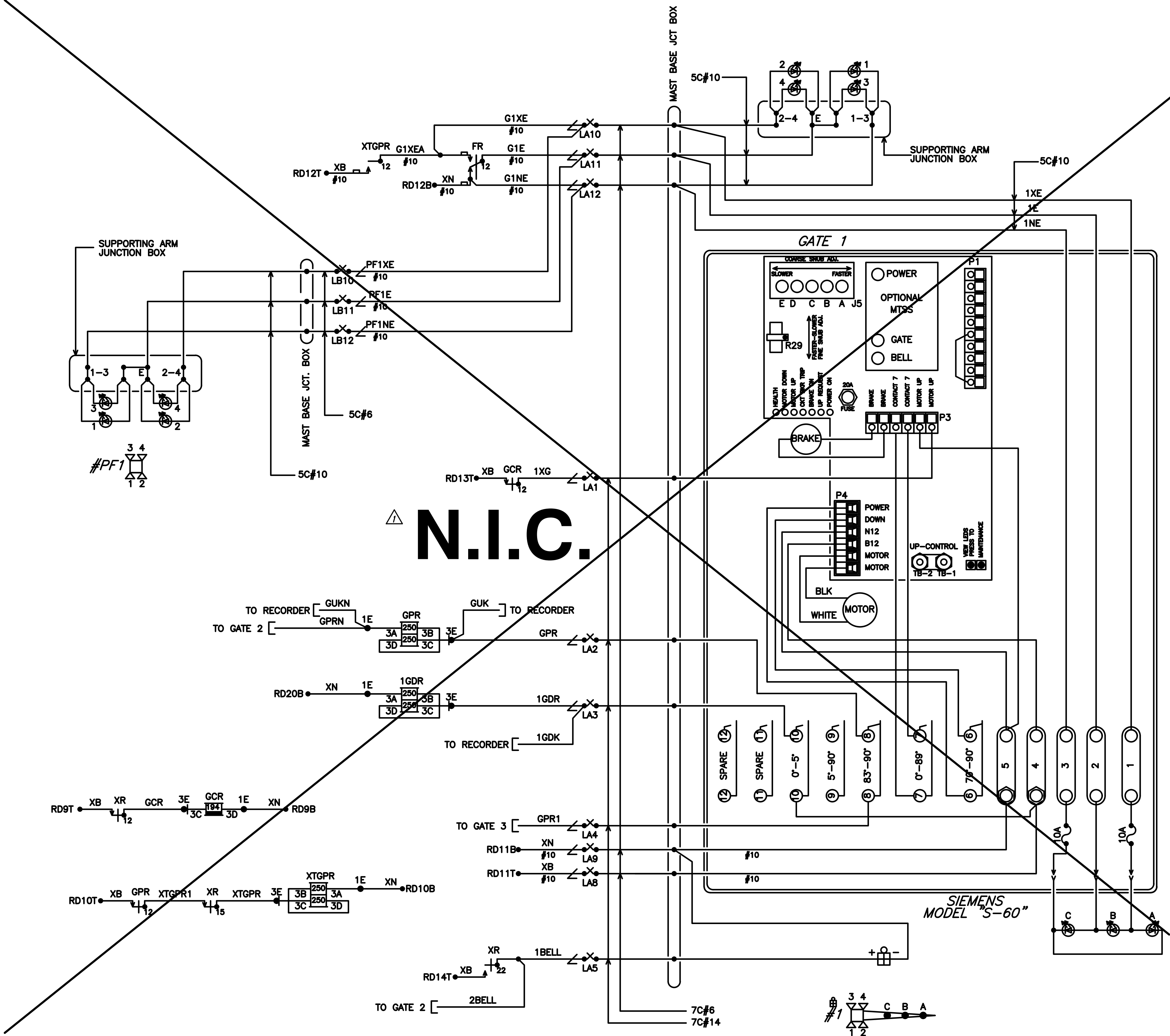
FORT BARRETTE ROAD OPERATIONAL IMPROVEMENTS
Roosevelt Avenue to Farrington Highway
Project No. 901A-01-19

Scale: None Date: Jan. 2020

SHEET No. RR-9 OF 16 SHEETS

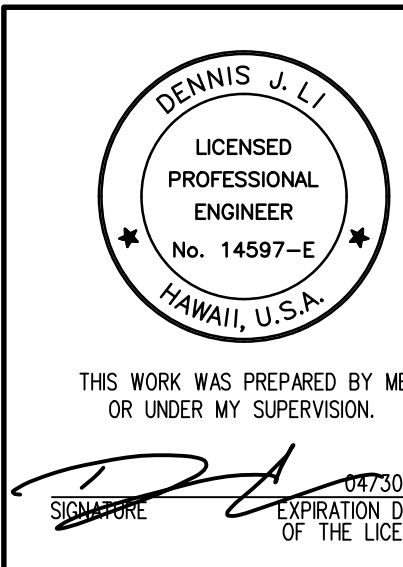
C.O. 128

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	901A-01-19	2020	C.O. 129	167



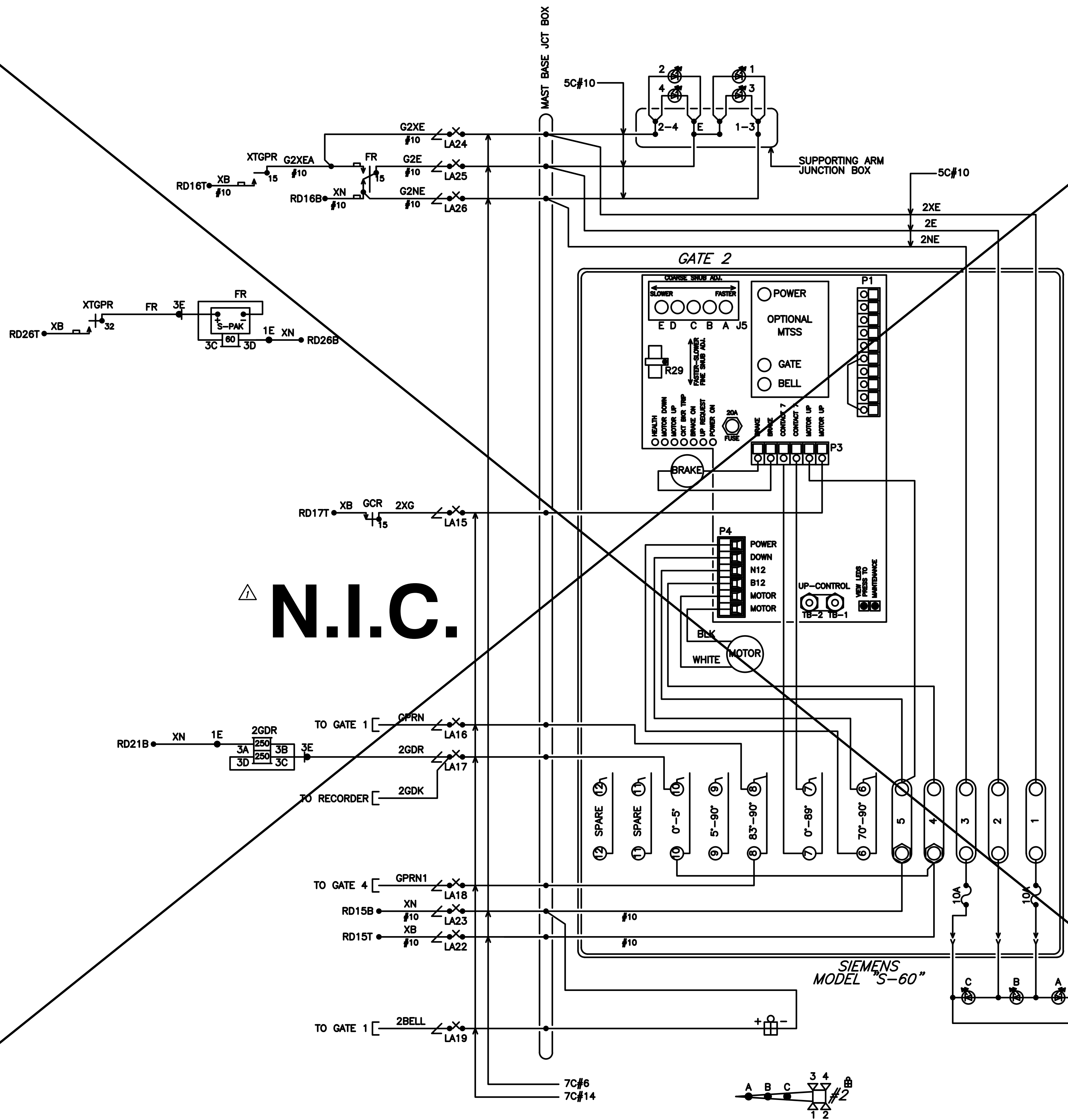
SURVEY PLOTTED BY	DATE
ORIGINAL PLAN	
DESIGNED BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
N.	

5/21/20	Delete railroad crossing upgrade.
Date	Revision

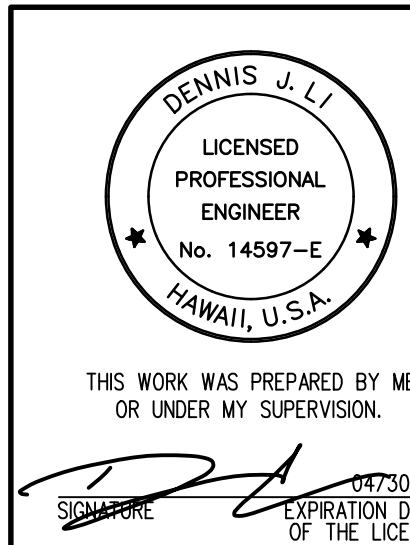


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**GATE 1 AND PEDESTRIAN
FLASHER 1 PLAN**
FORT BARRETTE ROAD OPERATIONAL IMPROVEMENTS
Roosevelt Avenue to Farrington Highway
Project No. 901A-01-19
Scale: None Date: Jan. 2020

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	901A-01-19	2020	C.O. 130	167



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

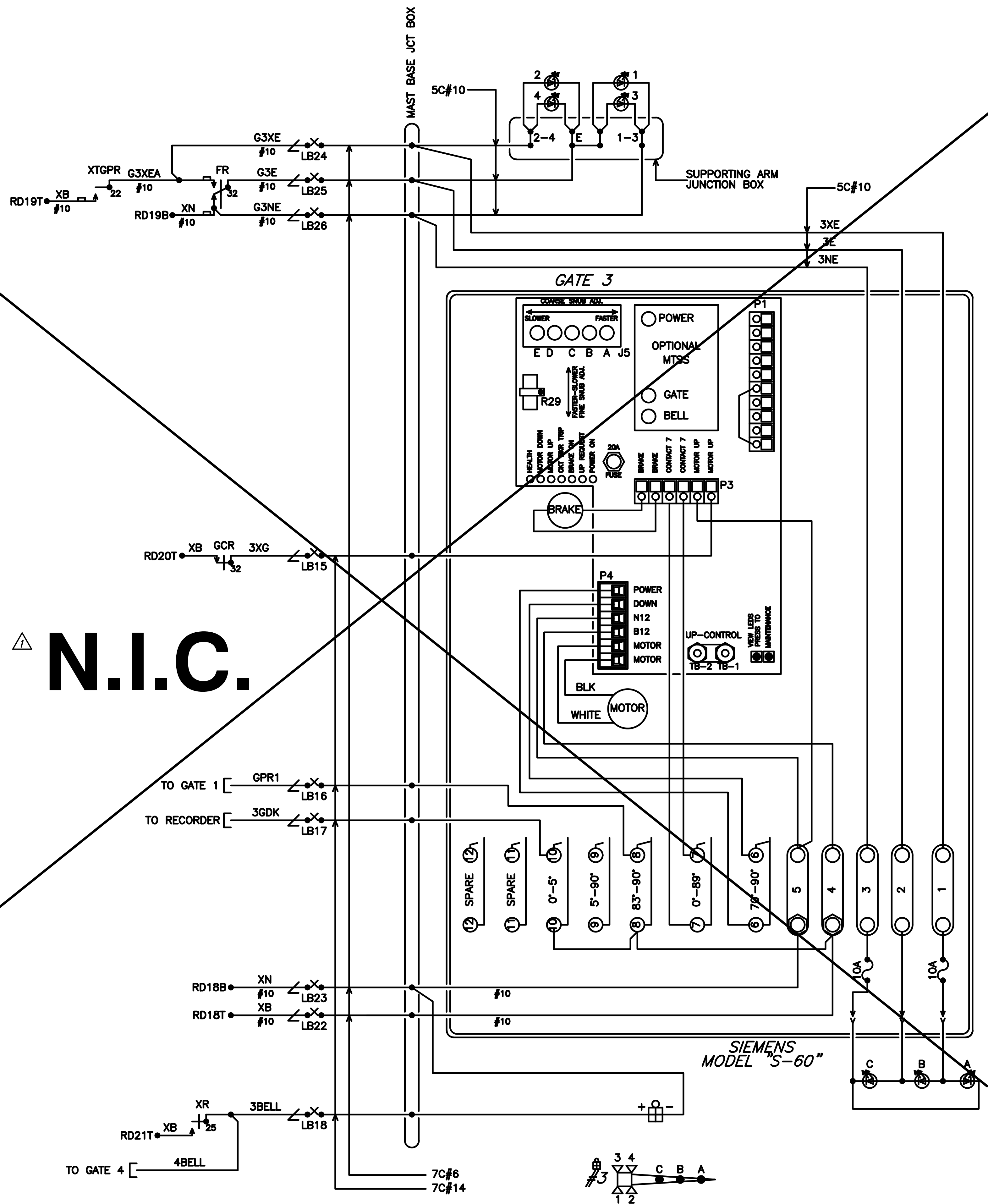


5/21/20	Delete railroad crossing upgrade.
Date	Revision
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
GATE 2 PLAN	
FORT BARRETTE ROAD OPERATIONAL IMPROVEMENTS Roosevelt Avenue to Farrington Highway Project No. 901A-01-19	
Scale: None	Date: Jan. 2020

SHEET No. RR-11 OF 16 SHEETS

C.O. 130

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	901A-01-19	2020	C.O. 131	167



5/21/20	Delete railroad crossing upgrade.
Date	Revision

DEWIS J. LI

LICENSED PROFESSIONAL ENGINEER

No. 14597-E

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

01/30/20

EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

GATE 3 PLAN

FORT BARRETTE ROAD OPERATIONAL IMPROVEMENTS

Roosevelt Avenue to Farrington Highway

Project No. 901A-01-19

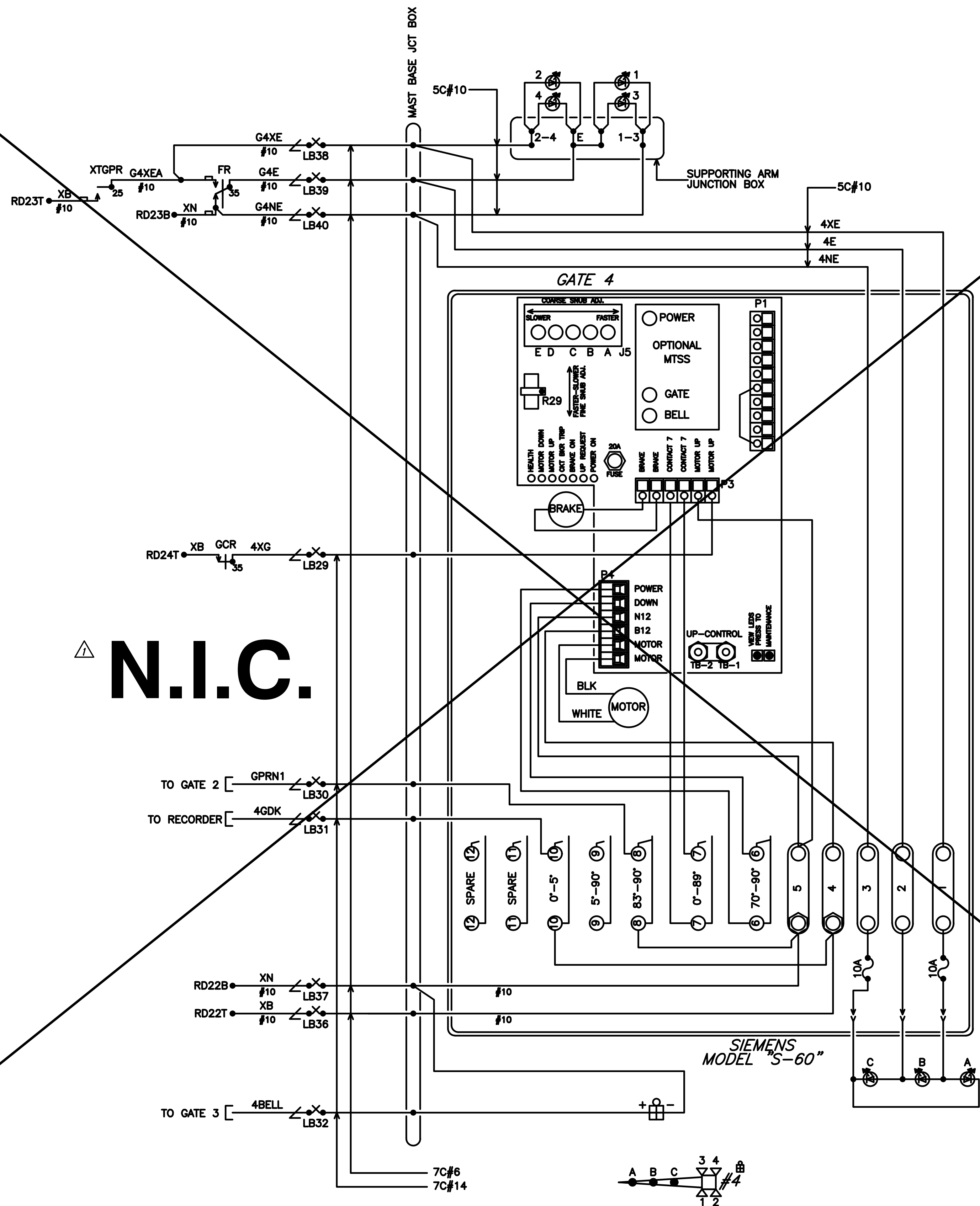
Scale: None

Date: Jan. 2020

SHEET No. RR-12 OF 16 SHEETS

C.O. 131

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	901A-01-19	2020	C.O. 132	167



SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
NOTE BOOK	
N _e	

5/21/20	Delete railroad crossing upgrade.
Date	Revision

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GATE 4 PLAN

FORT BARRETTE ROAD OPERATIONAL IMPROVEMENTS
Roosevelt Avenue to Farrington Highway
Project No. 901A-01-19

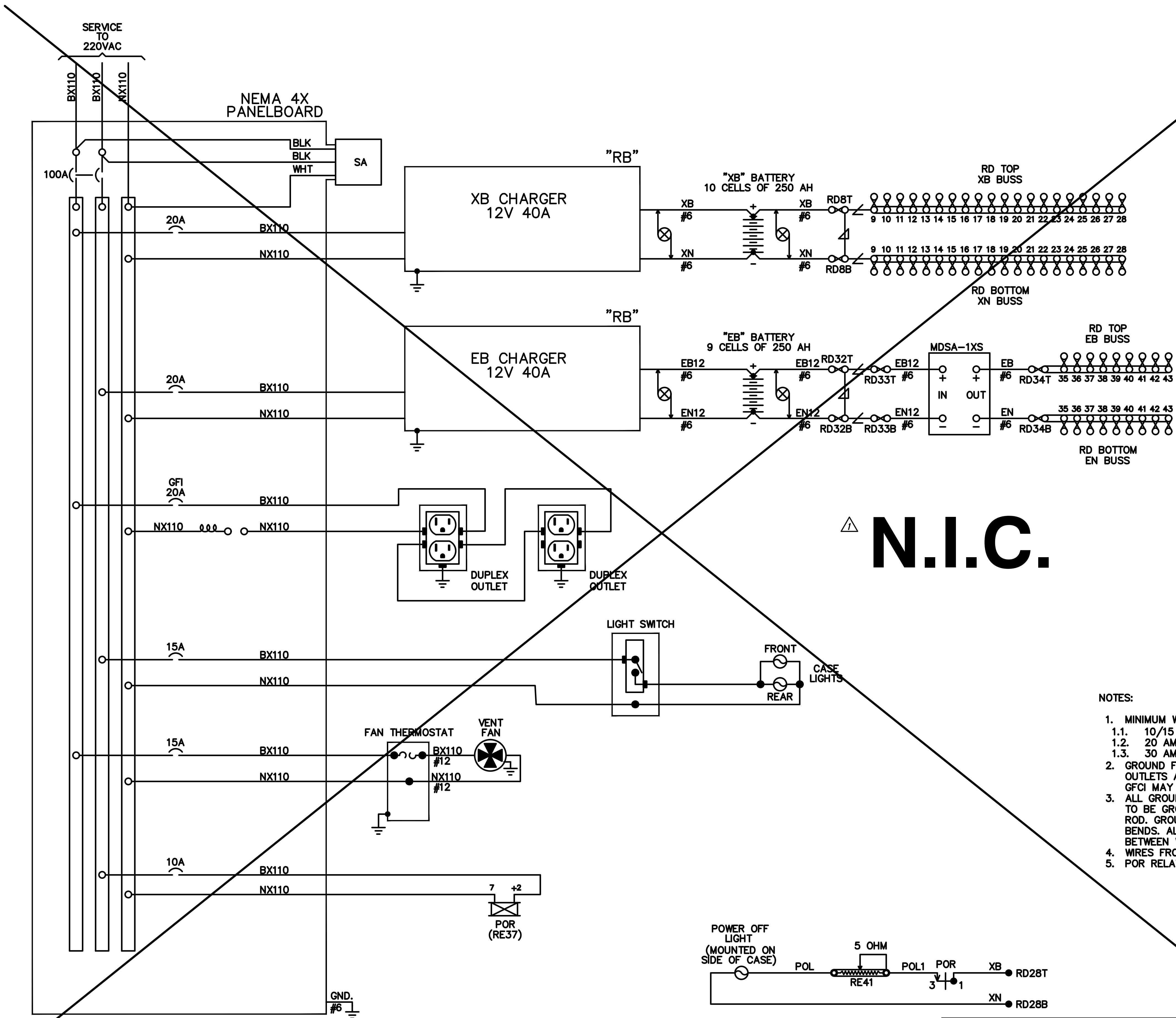
Scale: None Date: Jan. 2020

THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.

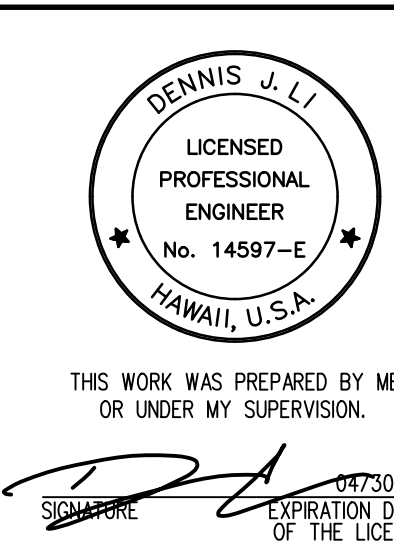
SIGNATURE

01/30/20
EXPIRATION DATE
OF THE LICENSE

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	901A-01-19	2020	C.O. 133	167



- NOTES:
1. MINIMUM WIRE SIZE
 - 1.1. 10/15 AMP - NO. 14 AWG THHN OR THWN SOLID
 - 1.2. 20 AMP - NO 12 AWG THHN OR THWN SOLID
 - 1.3. 30 AMP - NO. 10 AWG THHN OR THWN SOLID
 2. GROUND FAULT INTERRUPT (GFCI) MUST BE USED ON ALL CIRCUITS SERVICE CONVENIENCE OUTLETS AND ANY EQUIPMENT USED OUTSIDE THE SIGNAL CASE. RECEPTACLE MOUNTED GFCI MAY BE USED INSTEAD OF BREAKER TYPE.
 3. ALL GROUND WIRES RUN TO BREAKER BOX GROUND BUSS. NX110 BUSS AND AC ARRESTER TO BE GROUNDED TO AC GROUND STUD. SIGNAL CASE TO BE GROUNDED TO EARTH GROUND ROD. GROUNDING WIRES TO BE #6 SOLID AND KEPT AS SHORT AS POSSIBLE. AVOID SHARP BENDS. ALL GROUND CONNECTIONS TO CASE MUST USE A STAINLESS STEEL STAR WASHER BETWEEN WIRE AND CASE.
 4. WIRES FROM RECTIFIER TO BATTERY TO BE AS SHORT AS POSSIBLE.
 5. POR RELAY TO BE POTTER & BRUMFIELD KRP11AN120V.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER DISTRIBUTION

FORT BARRETTE ROAD OPERATIONAL IMPROVEMENTS
Roosevelt Avenue to Farrington Highway
Project No. 901A-01-19

Scale: None

Date: Jan. 2020

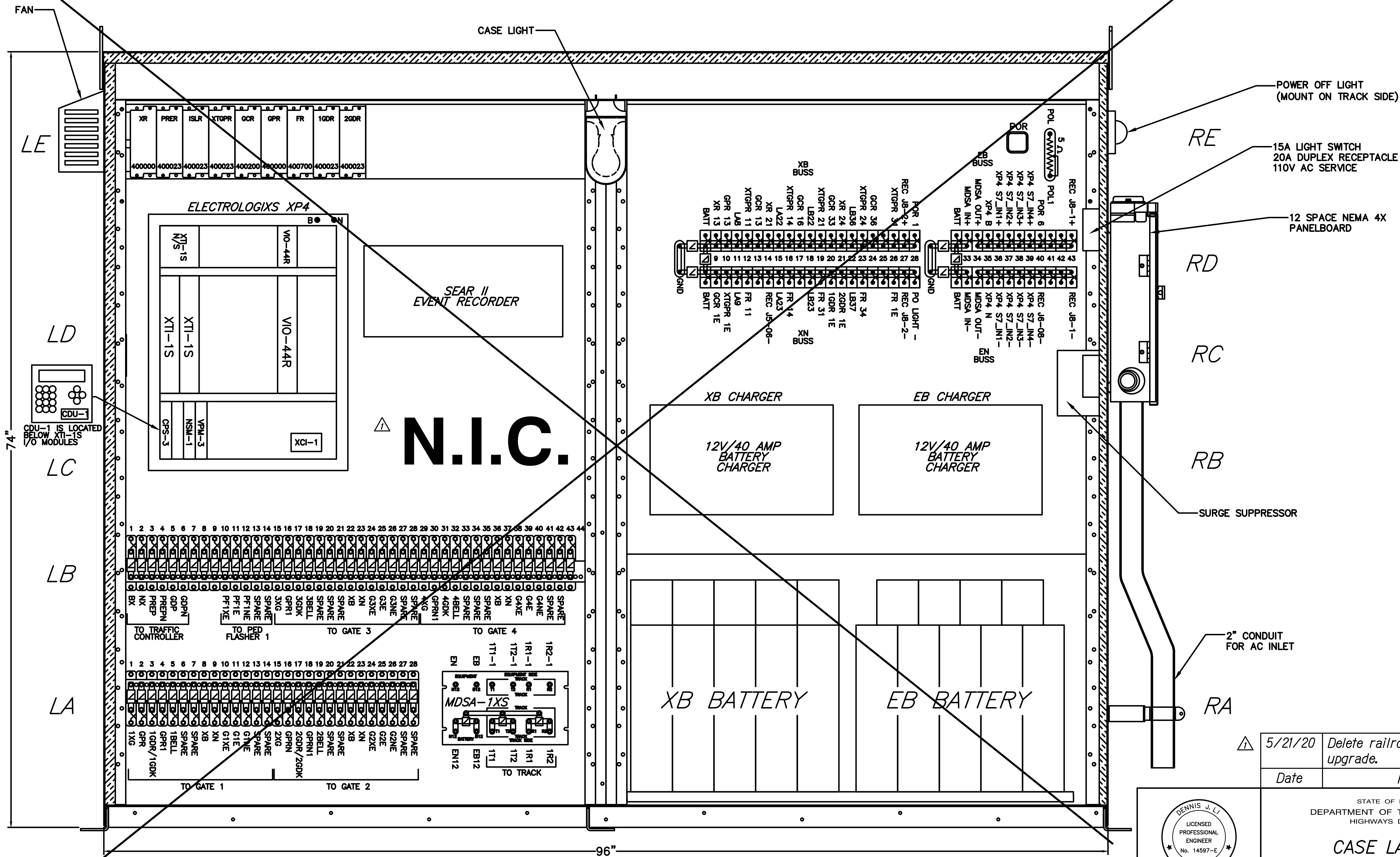
SHEET No. RR-14 OF 16 SHEETS

C.O. 133

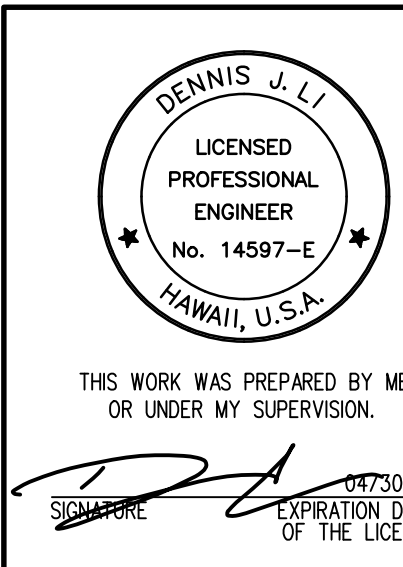
ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
N.	

5/21/20	Delete railroad crossing upgrade.
Date	Revision

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	901A-01-19	2020	C.O. 134	167



DATE	5/21/20
SURVEY PLOTTED BY	DR
DRAWN BY	DR
DESIGNED BY	DR
NOTED BY	DR
CHECKED BY	DR



Date	Revision
5/21/20	Delete railroad crossing upgrade.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

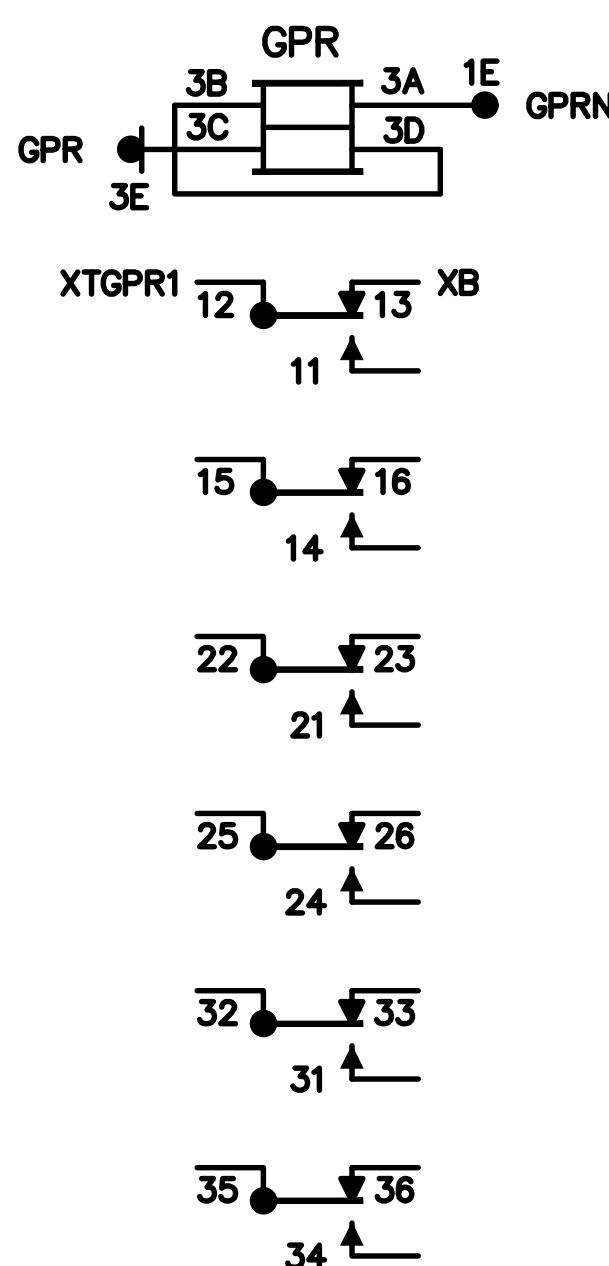
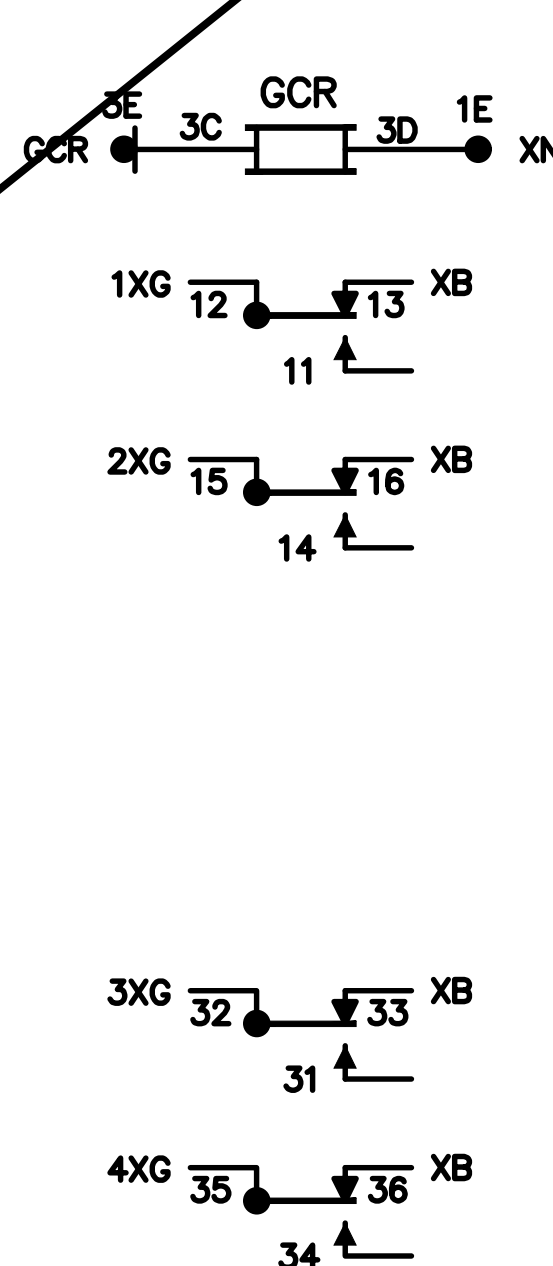
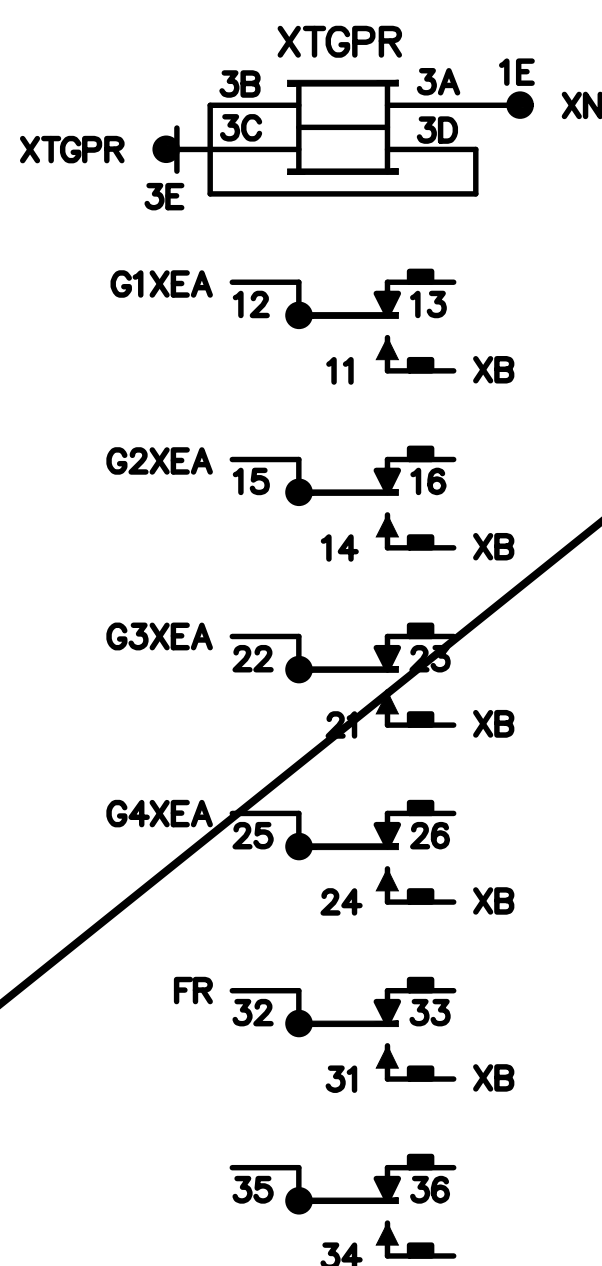
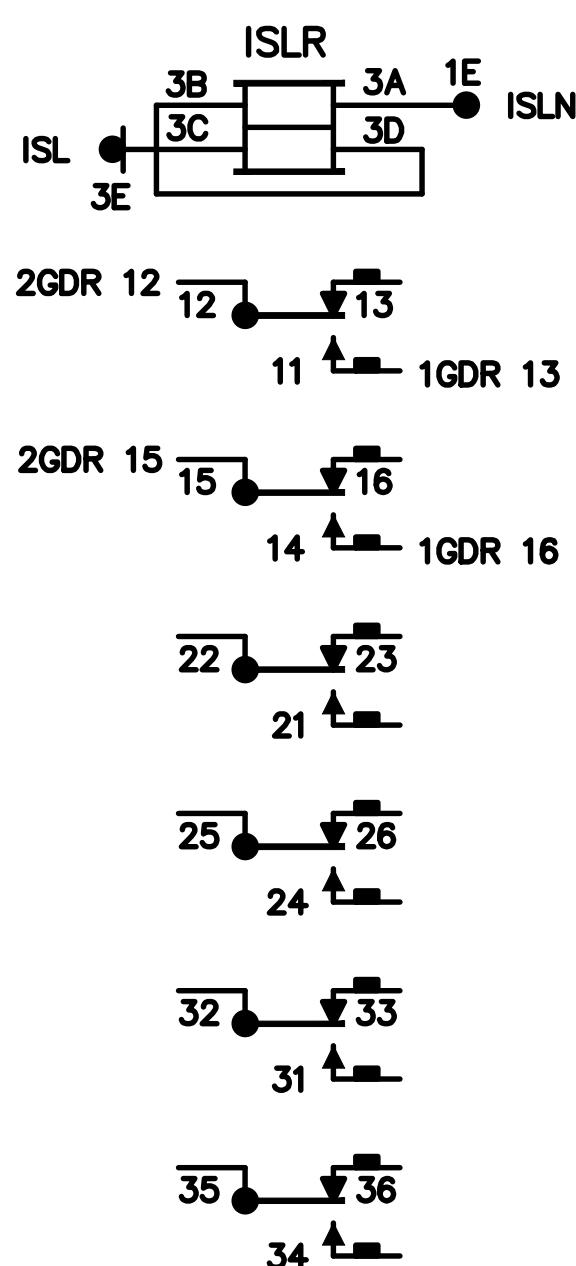
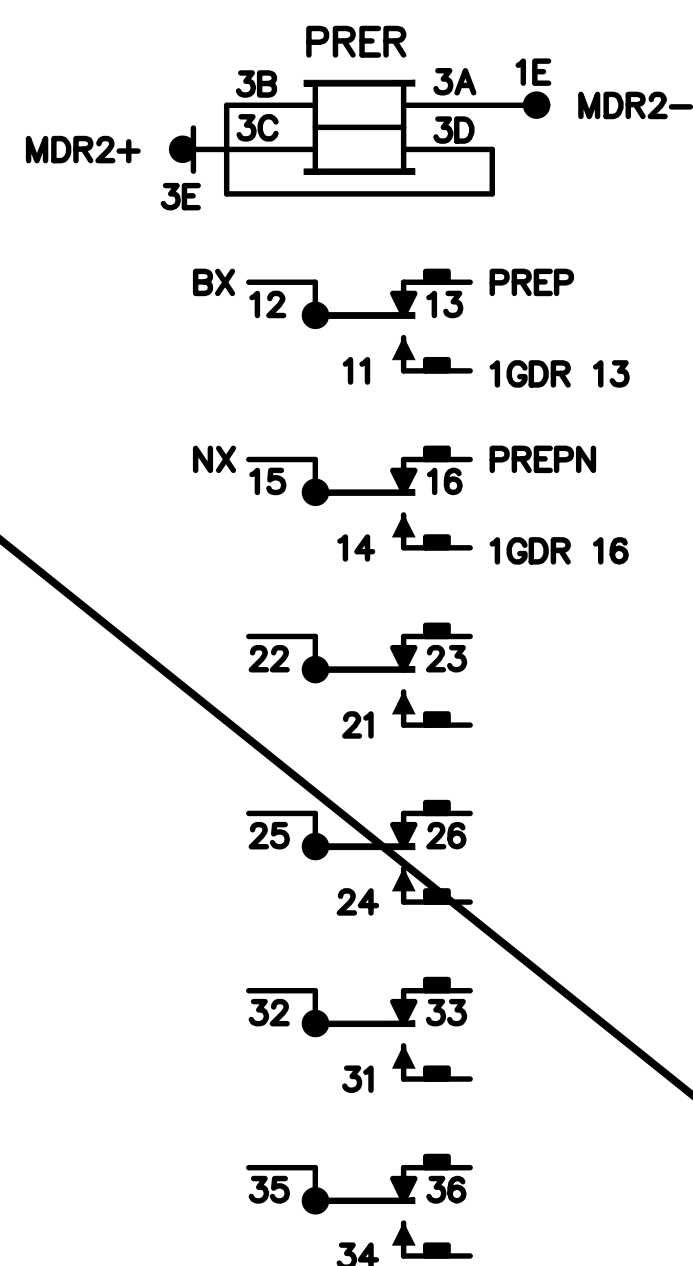
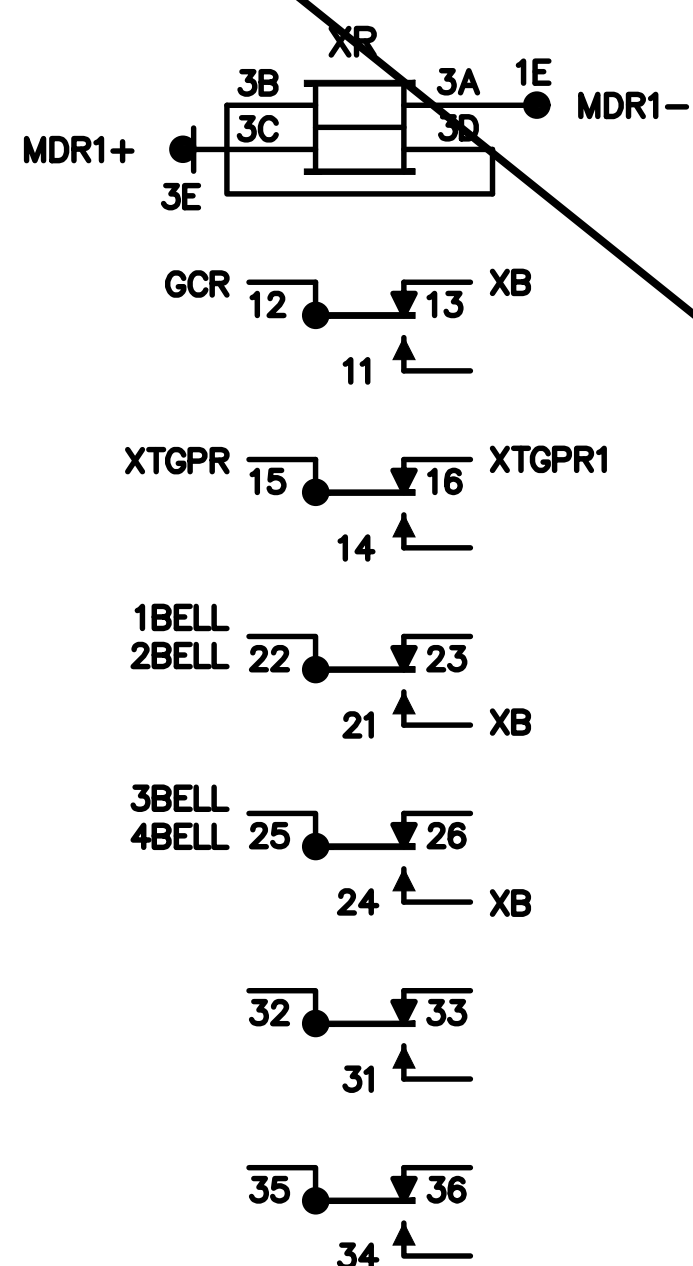
CASE LAYOUT

FORT BARRETTE ROAD OPERATIONAL IMPROVEMENTS
Roosevelt Avenue to Farrington Highway
Project No. 901A-01-19

Scale: None Date: Jan. 2020

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	901A-01-19	2020	C.O. 135	167

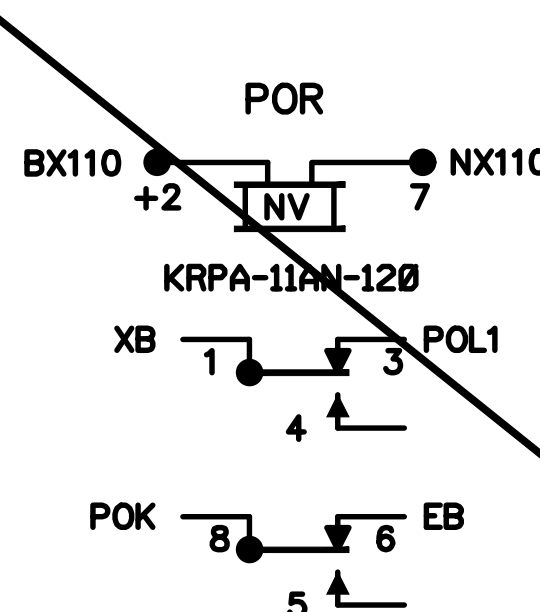
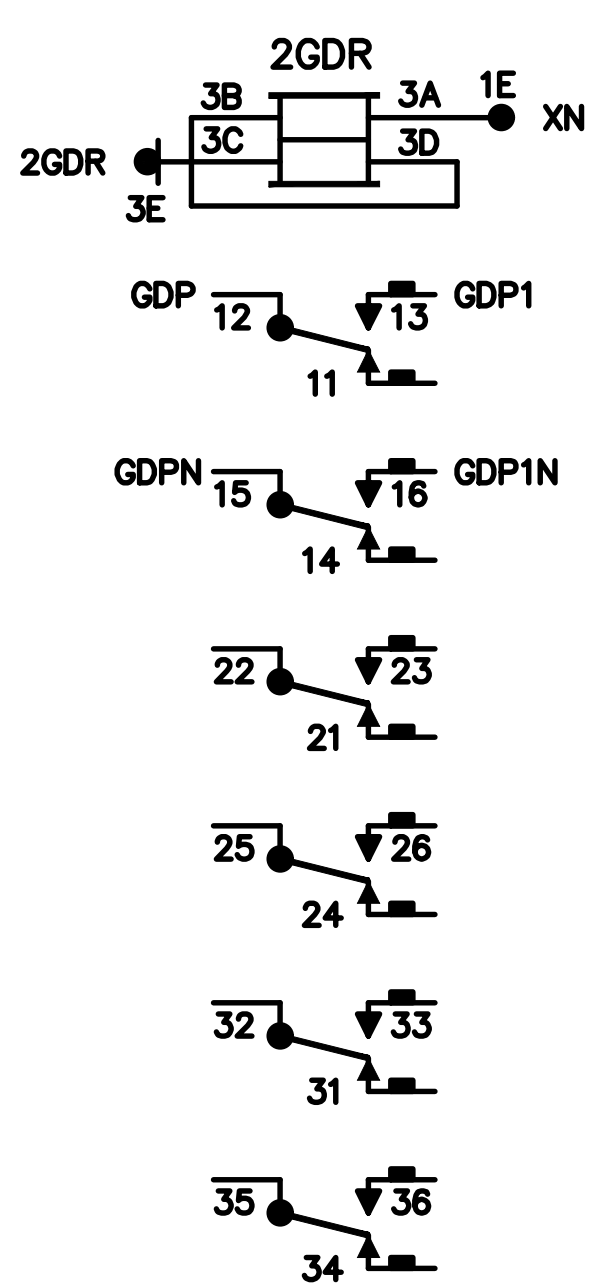
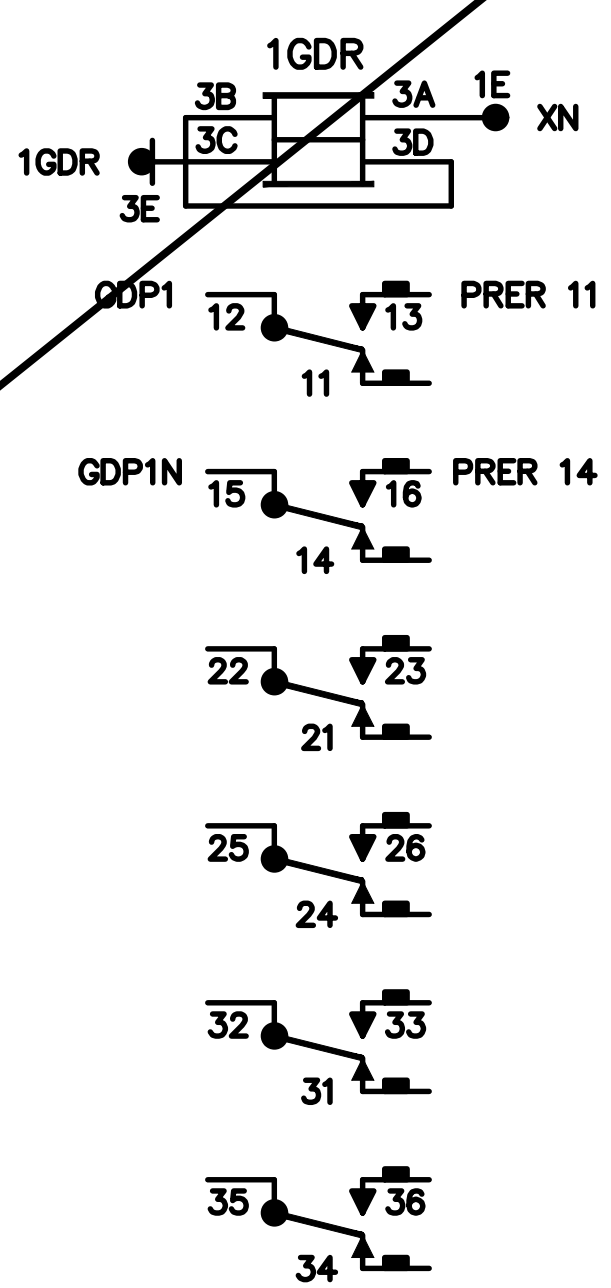
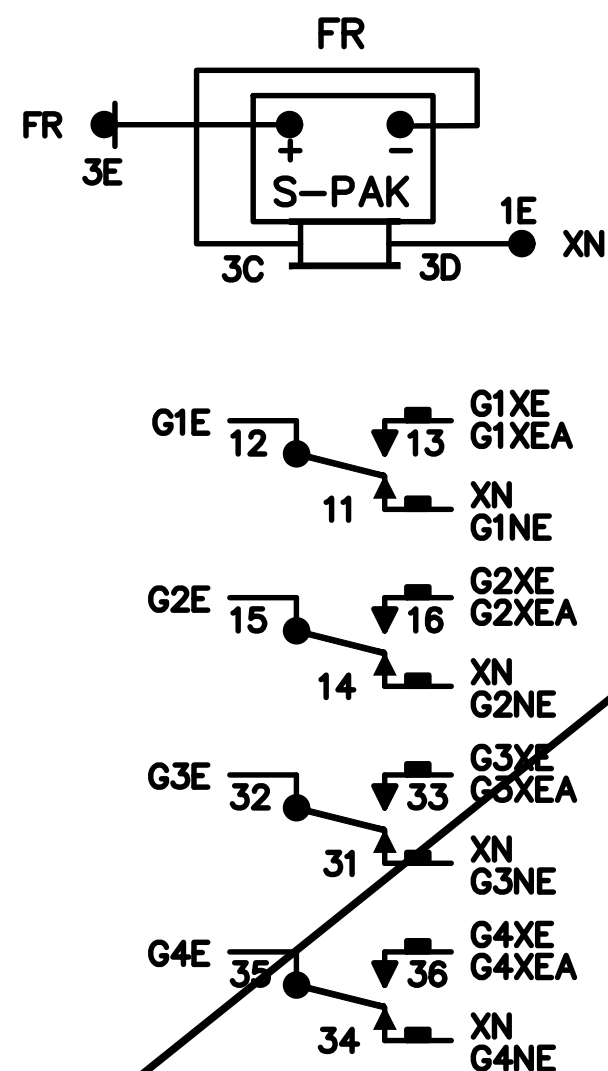
VITAL RELAYS



△ N.I.C.

VITAL RELAYS

NON-VITAL RELAYS



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

△ 5/21/20	Delete railroad crossing upgrade.
Date	Revision

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE: [Signature] EXPIRATION DATE OF THE LICENSE: 01/30/20

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RELAY PLAN

FORT BARRETTE ROAD OPERATIONAL IMPROVEMENTS
Roosevelt Avenue to Farrington Highway
Project No. 901A-01-19

Scale: None Date: Jan. 2020