

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H2-1(30)	2000	4	64

GENERAL NOTES

A. CONCRETE

1. ALL CONCRETE SHALL HAVE A MINIMUM 28 DAYS COMPRESSIVE STRENGTH (fc') AS FOLLOWS:
ALL CAST-IN-PLACE CONCRETE fc' = 4,000 PSI
2. CHAMFER ALL EXPOSED EDGES OF PEDESTAL, WALLS, AND COLUMNS 1/2" X 1/2" UNLESS OTHERWISE NOTED ON THE PLANS.
3. UNLESS OTHERWISE NOTED ON THE DRAWINGS, MINIMUM CLEAR CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE PROVIDED AS FOLLOWS:

MINIMUM COVER (INCHES)	
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3
CONCRETE EXPOSED TO EARTH OR WEATHER: PRIMARY REINFORCEMENT	2
STIRRUPS, TIES, AND SPIRALS	1 1/2

B. REINFORCING STEEL

1. ALL REINFORCING STEEL SHALL CONFORM TO THE FOLLOWING:
#4 AND LARGER ASTM A615, GRADE 60 KSI
STIRRUPS ASTM A615, GRADE 40 KSI
2. ALL BARS MARKED CONTINUOUS (CONT.) ON THE PLANS SHALL BE LAPPED 40 BARS DIAMETERS AT ALL LAPS, SPLICES, INTERSECTIONS, AND CORNERS. LAP TOP BARS AT MIDSPAN AND BOTTOM BARS AT SUPPORTS.
3. REINFORCING SHALL BE DETAILED IN ACCORDANCE WITH THE LATEST EDITION OF THE ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCE CONCRETE HIGHWAY STRUCTURES UNLESS OTHERWISE NOTED.

C. DESIGN NOTES

WIND VELOCITY 100 MPH

D. CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UNDERGROUND, SURFACE, AND OVERHEAD UTILITIES WITHIN AND ADJACENT TO THE PROJECT SITE DURING CONSTRUCTION. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY HIM AT HIS OWN EXPENSE.
2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS SHOWN PRIOR TO CONSTRUCTION AND FABRICATION OF ALL MEMBERS. NOTIFY THE DIRECTOR OF ANY DISCREPANCIES BEFORE STARTING WORK.
3. CONTRACTOR SHALL VERIFY ALL LIGHT POLE ANCHOR BOLT LOCATIONS AND POSITIONING PRIOR TO COMMENCING WORK ON NEW LIGHT POLE CONCRETE PEDESTALS.
4. NEW LIGHT POLE CONCRETE PEDESTAL LOCATION SHALL BE ADJUSTED TO BE AWAY FROM JERSEY BARRIER CONSTRUCTION AND EXPANSION JOINT AS SHOWN ON THE DRAWING.

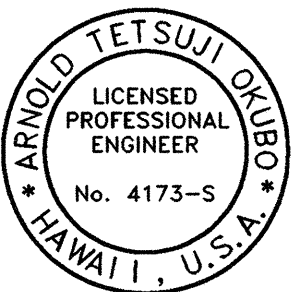
E. LOCATING EXISTING POST-TENSION TENDON AT BRIDGE DECK

1. THE CONTRACTOR SHALL X-RAY THE BRIDGE DECK TO LOCATE THE EXISTING POST-TENSION TENDON LOCATIONS PRIOR TO STARTING WORK. DRILLED HOLES FOR NEW REINFORCING BARS SHALL BE AWAY FROM POST-TENSION TENDON LOCATION. X-RAY OF THE BRIDGE DECK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION OF THE VARIOUS CONTRACT ITEMS.

F. LIGHT POLE

1. ANCHOR BOLTS FOR LIGHT POLE BASE SHALL BE DESIGNED AND PROVIDED BY LIGHT POLE MANUFACTURER. WIND VELOCITY SHALL BE AS NOTED ON "C. DESIGN NOTES" ON THIS SHEET. ANCHOR BOLTS SHALL BE HOT DIPPED GALVANIZED.

S-1



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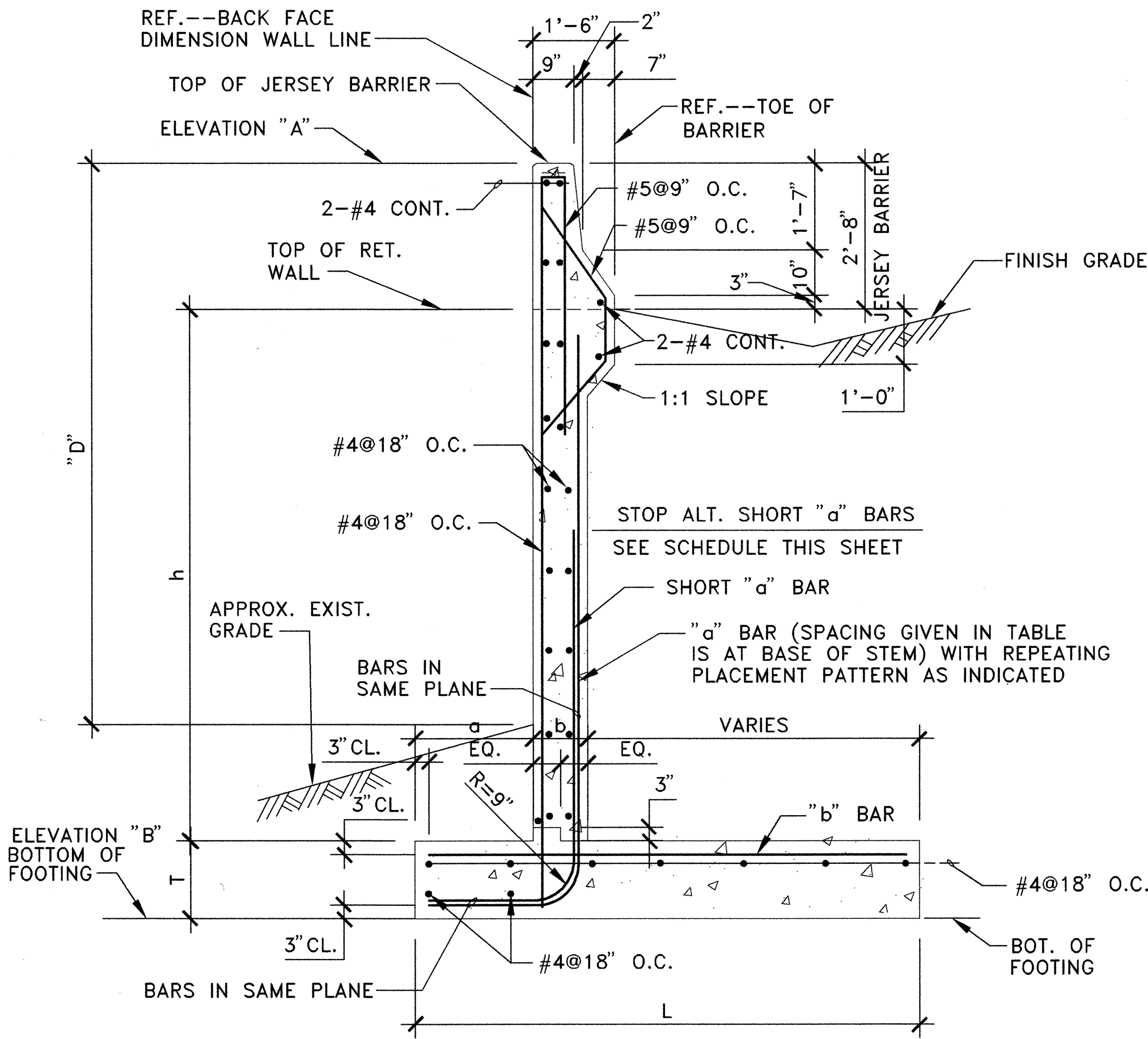
GENERAL NOTES

INTERSTATE ROUTE H-2
INSTALLATION OF HIGHWAY LIGHTING
LEILEHUA INTERCHANGE TO WAIAWA INTERCHANGE
F.A. PROJECT NO. IM-H2-1(30)

SCALE: AS SHOWN DATE: AUGUST 1999

SHEET No. 1 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H2-1(30)	2000	5	64



SEE SCHEDULE NO. 1 FOR ADDITIONAL INFORMATION

SECTION

EXISTING RETAINING WALL SECTION
AND REINFORCING DETAILS AT FILL SIDE

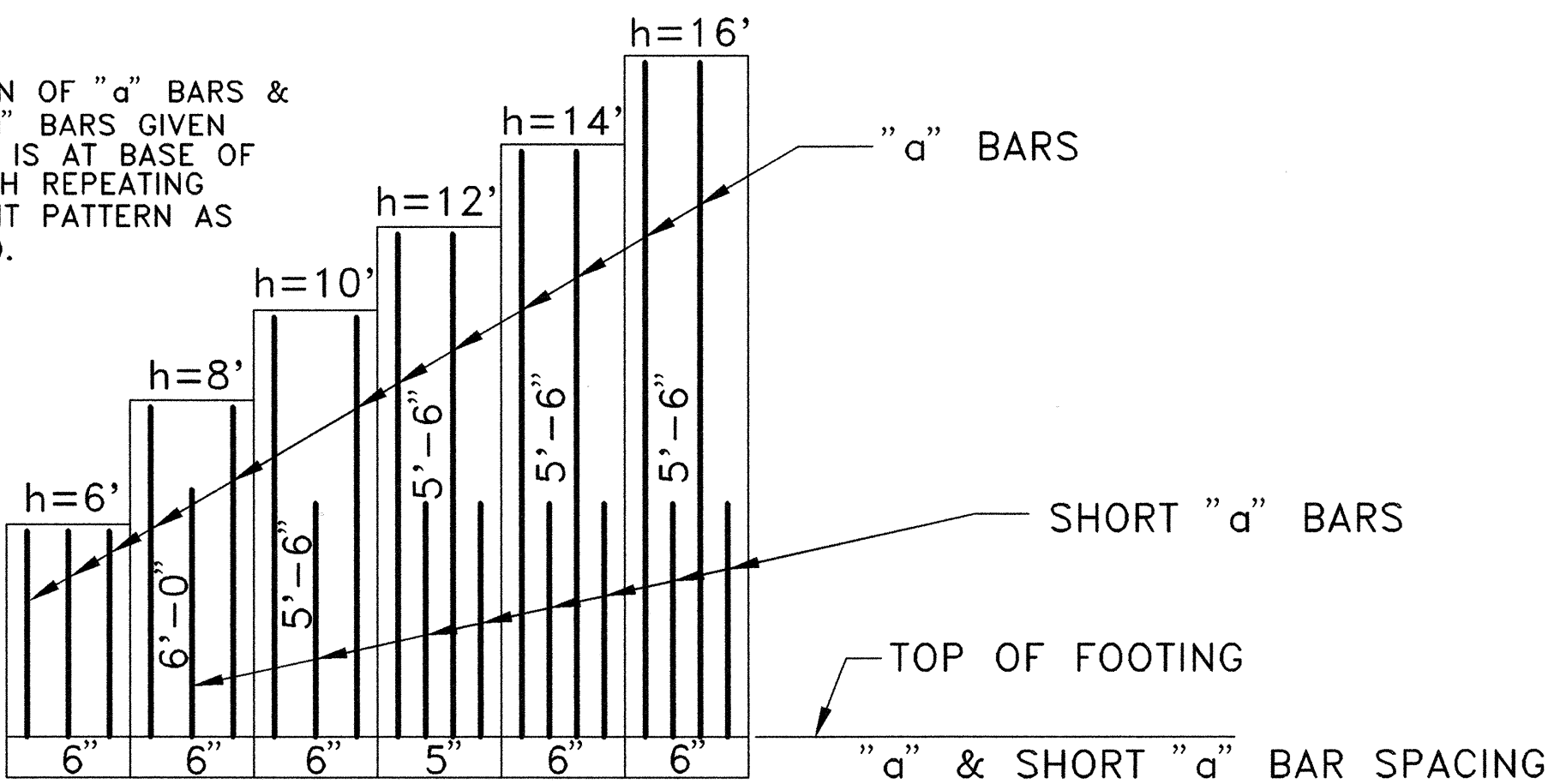
1
S-2

SCALE: 1/2" = 1'-0"

SCHEDULE OF DIMENSIONS & REINFORCING STEEL AT FILL SIDE						
MAXIMUM h	6'	8'	10'	12'	14'	16'
a	1'-0"	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"
b	12"	12"	12"	14"	16"	18"
t	14"	14"	15"	18"	21"	24"
L	8'-6"	9'-0"	9'-6"	11'-0"	12'-6"	14'-0"
"a" bars	#5@6"	#6@12"	#7@12"	#7@10"	#8@12"	#9@12"
Short "a" bars	---	#6@12"	#7@12"	#7@10"	#8@12"	#9@12"
"b" bars	#6@6"	#7@6"	#8@6"	#8@5"	#10@7"	#10@6"

NOTE:

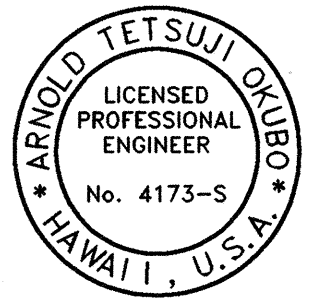
DIMENSION OF "a" BARS & SHORT "a" BARS GIVEN IN TABLE IS AT BASE OF STEM WITH REPEATING PLACEMENT PATTERN AS INDICATED.



VERTICAL REINFORCING STEEL
ARRANGEMENT AT FILL SIDE

N.T.S.

S-2



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HIGHWAYS DIVISION
**EXISTING RETAINING WALL SECTIONS
& SCHEDULE**
INTERSTATE ROUTE H-2
INSTALLATION OF HIGHWAY LIGHTING
LEILEHUA INTERCHANGE TO WAIAWA INTERCHANGE
F.A. PROJECT NO. IM-H2-1(30)
SCALE: AS SHOWN DATE: AUGUST 1999
SHEET No. 2 OF 9 SHEETS

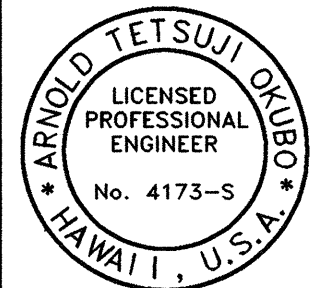
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H2-1(30)	2000	6	64

SCHEDULE NO. 1 – RETAINING WALL MODIFICATION FOR HIGHWAY LIGHT STANDARD CONCRETE BASE							
HIGHWAY LIGHT STANDARD NO. ON PLAN	STATION	INBOUND (IB) OUTBOUND (OB)	NEW BASE TYPE	RETAINING WALL TYPE USED (MAX. HT. = h)	ELEVATION "A" TOP OF CONCRETE JERSEY BARRIER/ GUARD RAIL	ELEVATION "B" BOTTOM OF FOOTING	HEIGHT, "D" FROM TOP OF JERSEY BARRIER/ GUARD RAIL TO EXIST. GRADE
119	254+64	OB	B	h=12'	684.01	669.25	10'-5"
121	256+66	OB	B	h=14'	696.45	679.00	9'-11"
123	258+68	OB	A	h=6'	703.18	694.67	4'-5"
137	272+82	OB	A	h=10'	717.22	704.85	6'-10"
143	278+88	OB	A	h=10'	705.65	694.08	6'-8"
148	278+50	IB	A	h=8'	705.06	693.92	6'-6"
145	280+82	OB	A	h=8'	700.24	689.83	6'-11"
150	280+41	IB	B	h=12'	696.65	683.08	8'-7"
147	282+92	OB	A	h=10'	693.56	681.83	6'-11"
152	282+42	IB	B	h=12'	685.71	671.83	7'-10"
149	284+94	OB	A	h=10'	683.77	671.33	7'-2"
154	284+43	IB	B	h=14'	678.61	660.58	9'-1"
151	286+96	OB	A	h=10'	674.00	661.83	7'-6"
156	286+44	IB	A	h=10'	665.29	651.75	8'-9"
153	288+98	OB	A	h=8'	662.34	652.08	5'-2"
163	299+08	OB	B	h=12'	603.26	589.17	9'-2"
165	301+10	OB	A	h=10'	592.86	580.42	8'-2"
167	303+12	OB	A	h=10'	584.17	571.92	6'-9"
169	305+14	OB	B	h=12'	672.67	559.17	9'-0"
171	307+16	OB	B	h=12'	570.30	556.17	9'-7"
173	309+18	OB	B	h=12'	566.71	552.17	9'-5"
187	323+32	OB	A	h=10'	536.00	523.76	7'-9"
189	325+34	OB	A	h=8'	530.71	519.76	6'-11"
191	327+36	OB	A	h=8'	525.44	514.34	4'-11"
193	329+38	OB	A	h=8'	520.48	510.09	3'-11"
239	375+58	OB	A	h=6'	404.10	394.80	6'-1"
246	376+74	IB	A	h=8'	410.36	400.80	4'-0"
257	395+44	OB	B	h=12'	311.69	297.50	6'-0"
265	403+32	OB	B	h=14'	273.13	256.30	7'-8"
267	405+29	OB	B	h=16'	268.12	249.00	7'-9"
269	407+26	OB	B	h=12'	262.18	246.50	6'-9"
274	404+97	IB	B	h=12'	270.13	255.50	8'-2"
276	406+98	IB	B	h=12'	263.72	248.50	8'-7"
278	408+80	IB	B	h=14'	259.03	242.80	8'-10'
277	415+14	OB	A	h=8'	249.84	237.80	7'-1"
282	412+82	IB	A	h=12'	249.13	234.50	7'-0"
279	417+11	OB	A	h=10'	246.99	235.80	6'-0"
284	414+83	IB	A	h=12'	241.49	226.50	8'-0"
281	419+08	OB	B	h=8'	243.66	235.80	0"
286	416+84	IB	B	h=10'	234.40	220.80	7'-6"
288	418+85	IB	B	h=10'	229.10	216.80	7'-5"

NOTE:

- SEE SHEET S-4 AND S-5 FOR BASE DETAILS.
- CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS OF ELEVATION "A", ELEVATION "B", AND HEIGHT "D" PRIOR TO SUBMISSION OF BID. NOTIFY ENGINEER OF ANY CHANGES OR DISCREPANCIES.
- LOCATIONS OF NEW HIGHWAY LIGHT STANDARD CONCRETE BASE SHALL BE AT LEAST 5 FEET MINIMUM AWAY FROM JERSEY BARRIER/CONCRETE RAIL EXPANSION JOINT AND CONTROL JOINT LOCATION; AND ALSO 3 FEET MINIMUM AWAY FROM DRAIN INLET LOCATION.
- CONTRACTOR SHALL RE-VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO FABRICATION AND CONSTRUCTION OF HIGHWAY LIGHT STANDARD CONCRETE BASE.

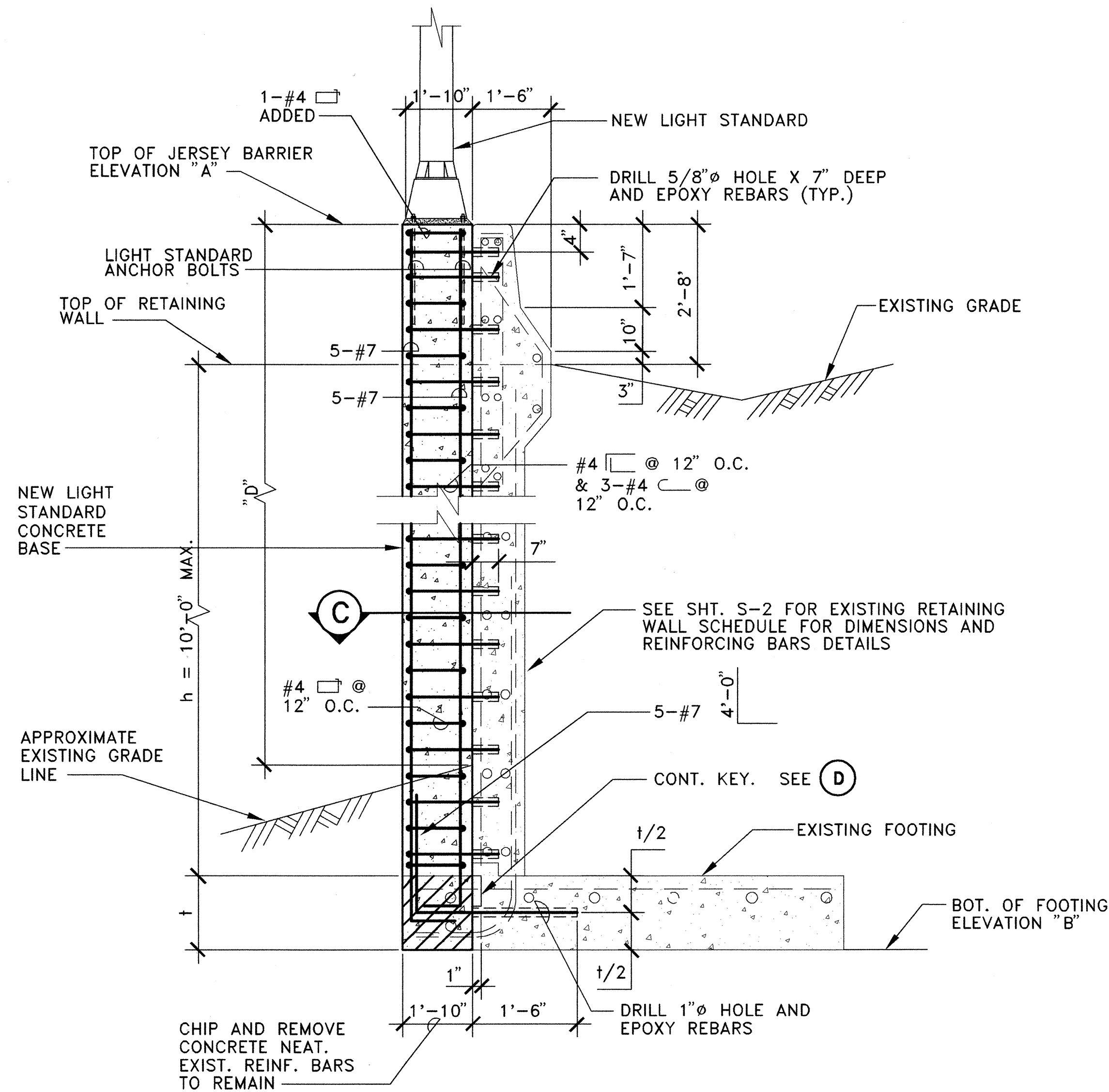
S-3



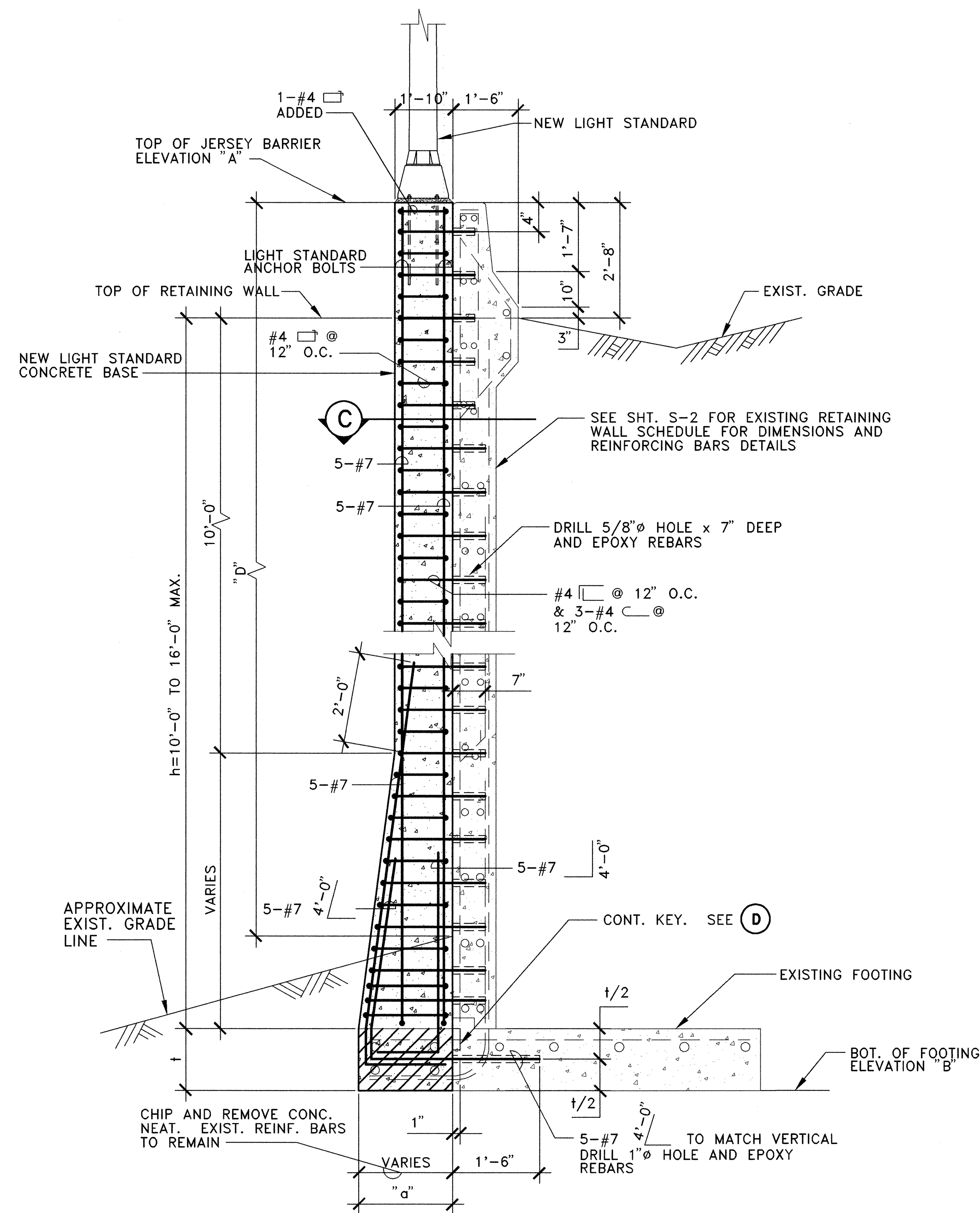
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RETAINING WALL MODIFICATION
SCHEDULE
INTERSTATE ROUTE H-2
INSTALLATION OF HIGHWAY LIGHTING
LEILEHUA INTERCHANGE TO WAIAWA INTERCHANGE
F.A. PROJECT NO. IM-H2-1(30)
SCALE: AS SHOWN DATE: AUGUST 1999
SHEET No. 3 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H2-1(30)	2000	7	64

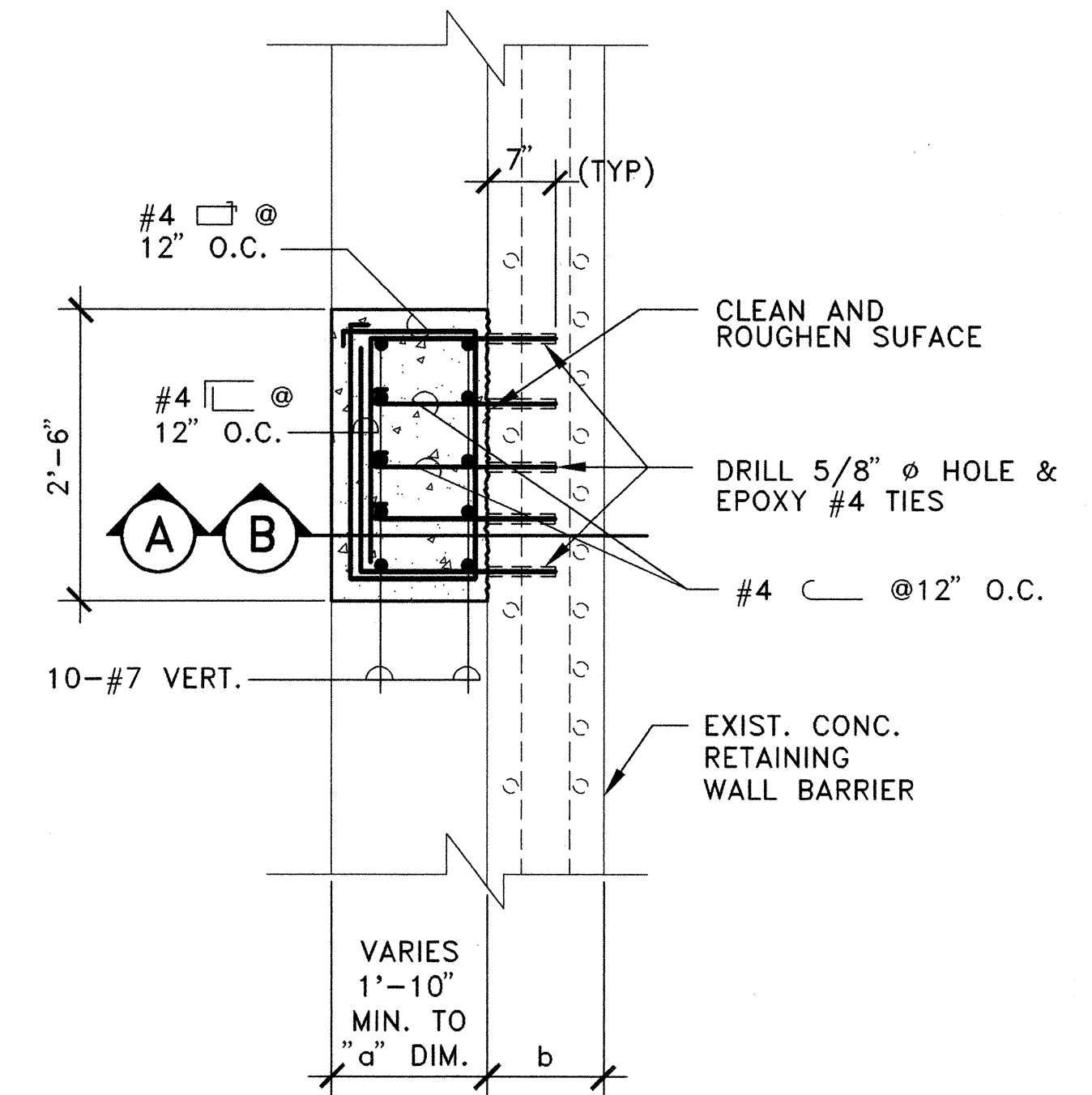


A TYPE "A" BASE
SCALE: NOT TO SCALE

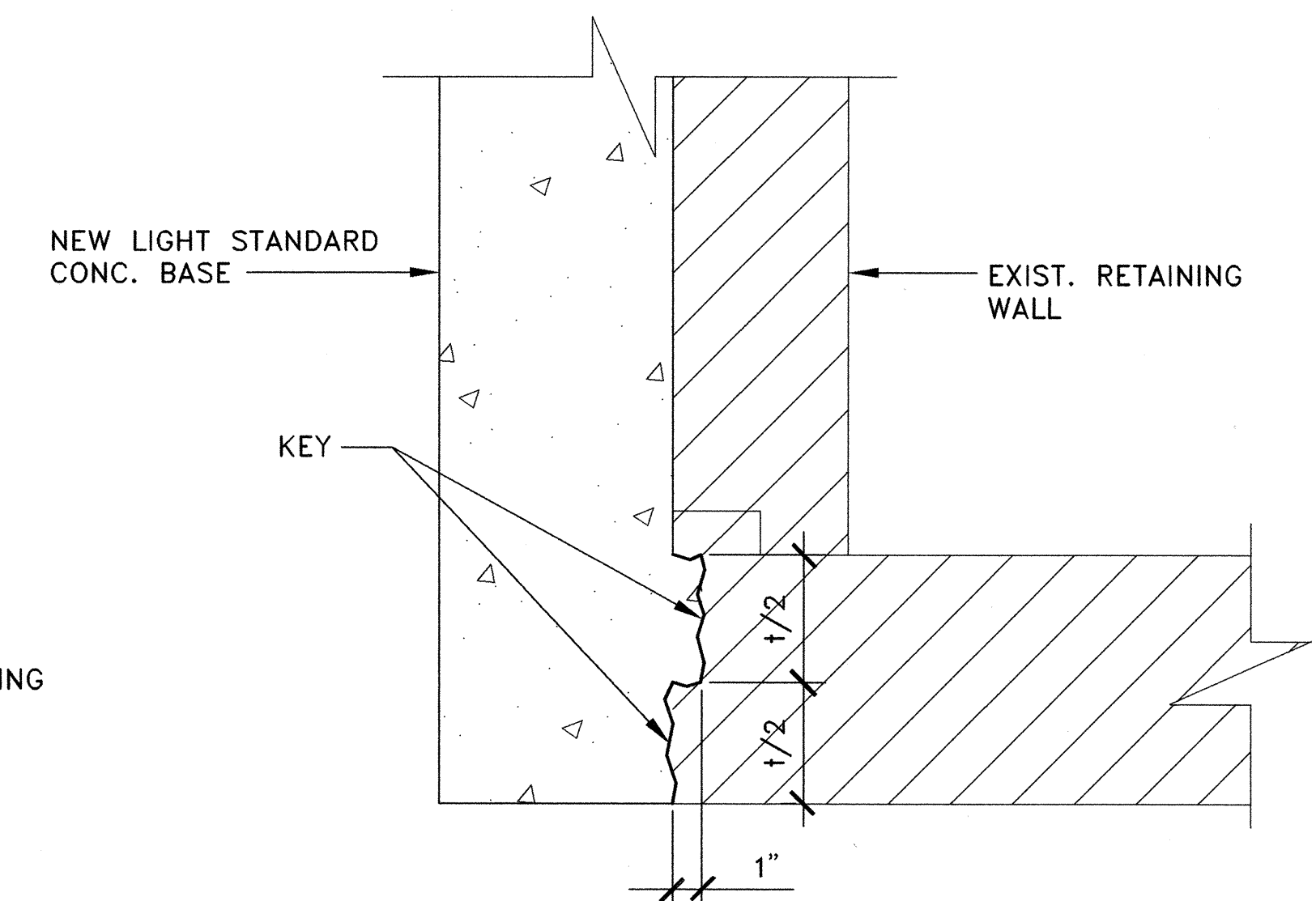


B TYPE "B" BASE
SCALE: NOT TO SCALE

1 TYPICAL CONCRETE BASE TYPES
SCALE: AS SHOWN

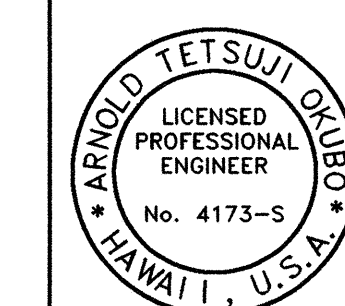


C PLAN/SECTION
SCALE: 3/4" = 1'-0"



D KEY
SCALE: NOT TO SCALE

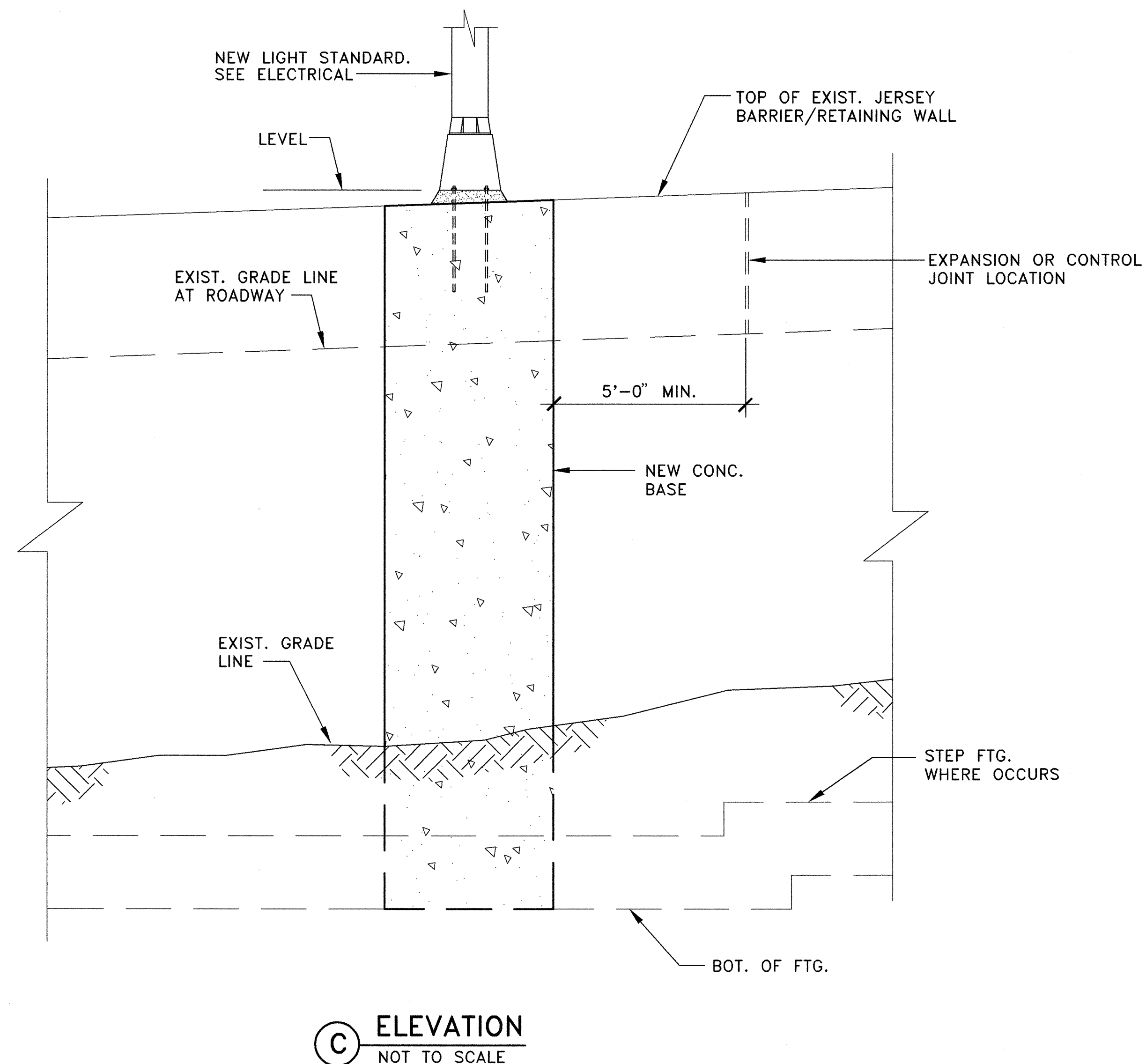
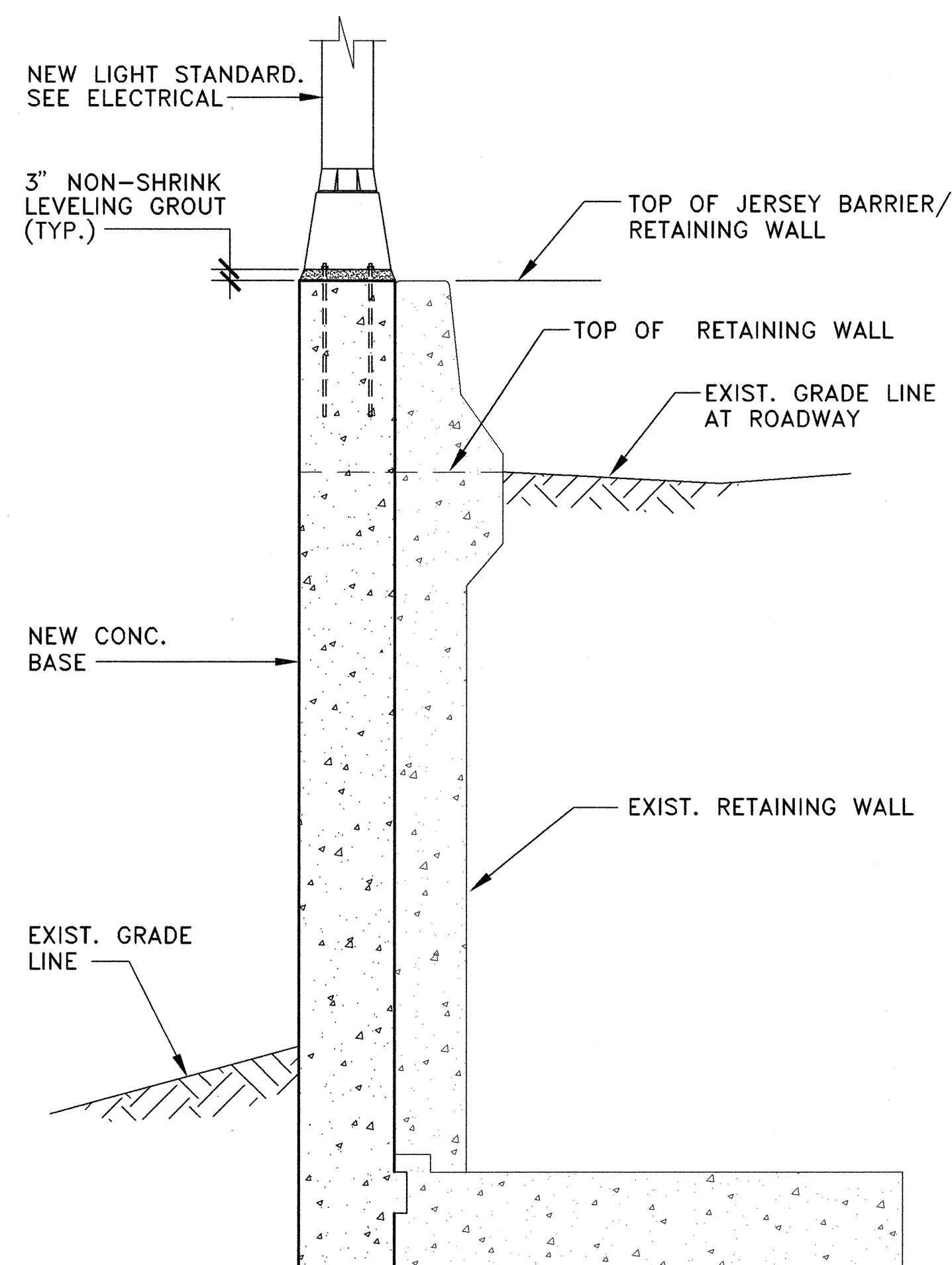
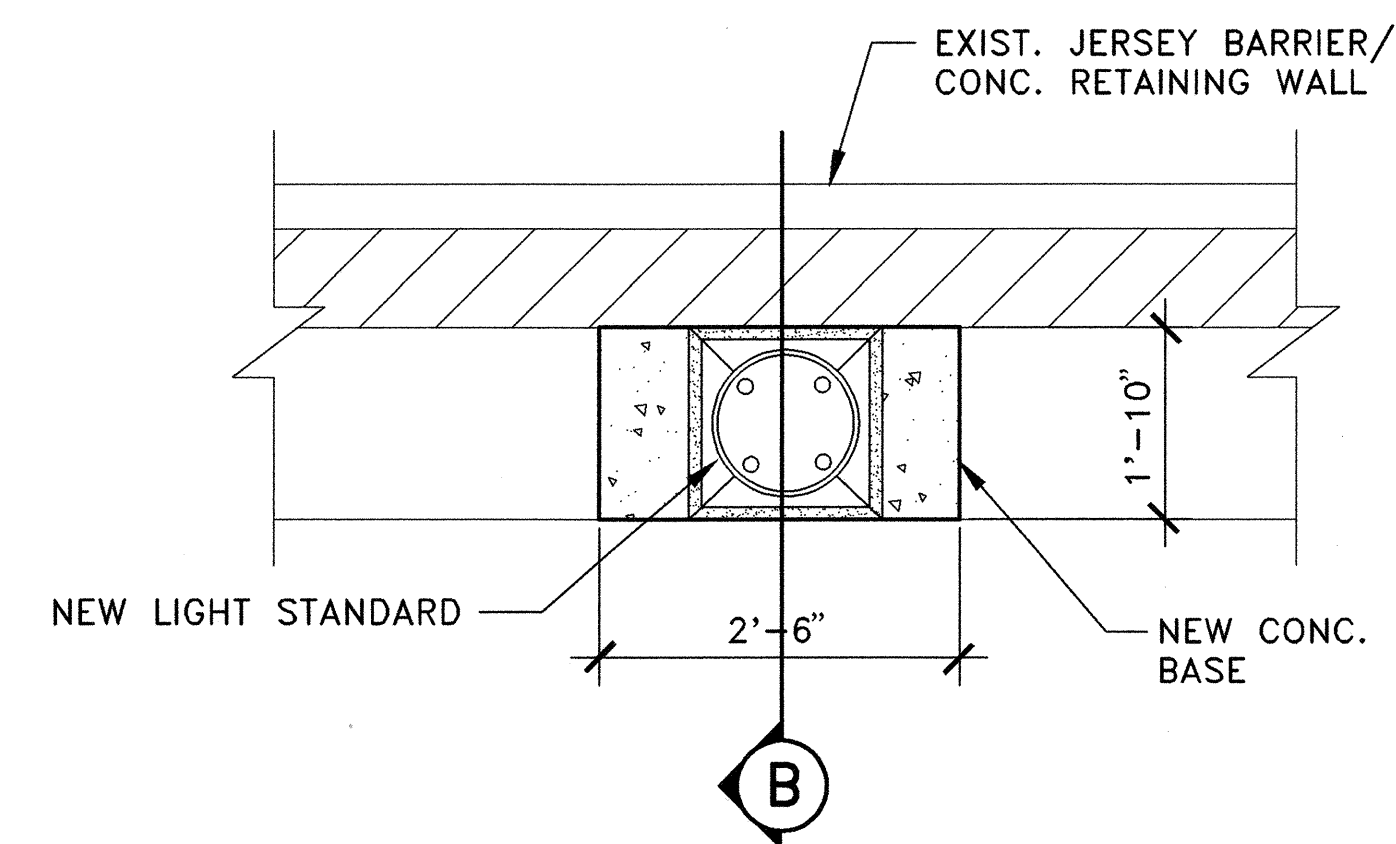
S-4



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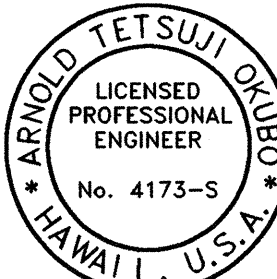
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
RETAINING WALL MODIFICATIONS FOR LIGHT
STANDARD CONCRETE BASE-PLANS & SECTIONS
INTERSTATE ROUTE H-2
INSTALLATION OF HIGHWAY LIGHTING
LEILEHUA INTERCHANGE TO WAIKAWA INTERCHANGE
F.A. PROJECT NO. IM-H2-1(30)
SCALE: AS SHOWN DATE: AUGUST 1999
SHEET No. 4 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H2-1(30)	2000	8	64

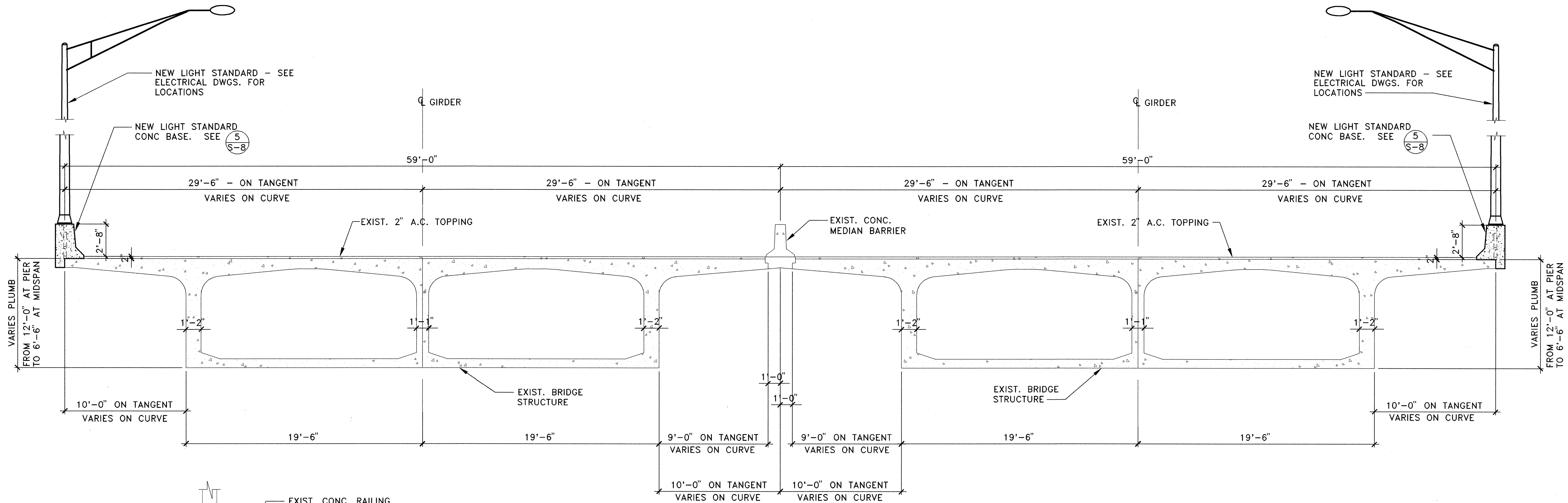


1 TYPICAL CONCRETE RETAINING WALL DETAILS
S-5 SCALE: AS SHOWN

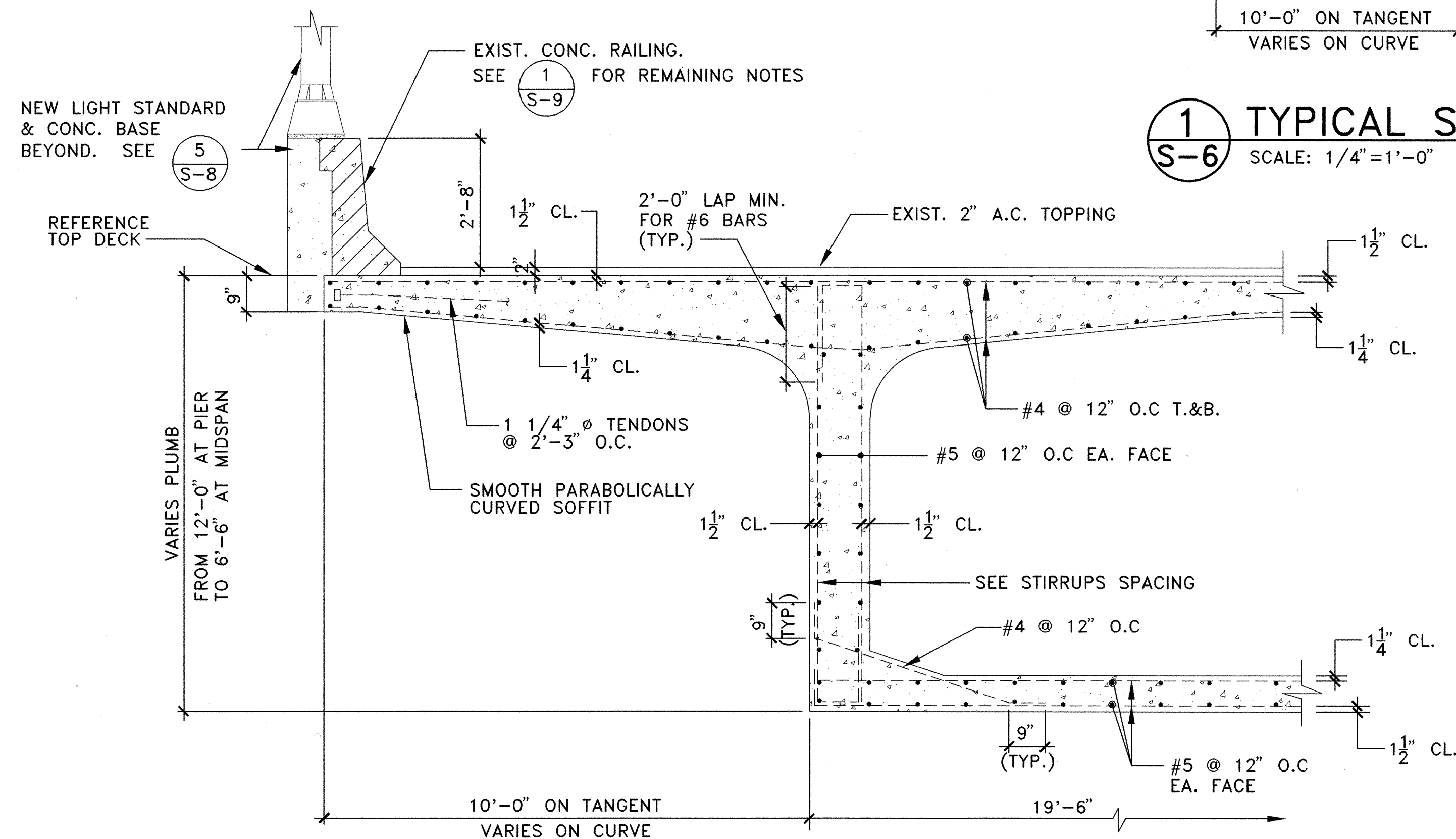
S-5

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	TYPICAL CONCRETE RETAINING WALL DETAILS	
	INTERSTATE ROUTE H-2 INSTALLATION OF HIGHWAY LIGHTING LEILEHUA INTERCHANGE TO WAIAWA INTERCHANGE F.A. PROJECT NO. IM-H2-1(30)	
	SCALE: AS SHOWN	DATE: AUGUST 1999
	SHEET No. 5 OF 9 SHEETS	

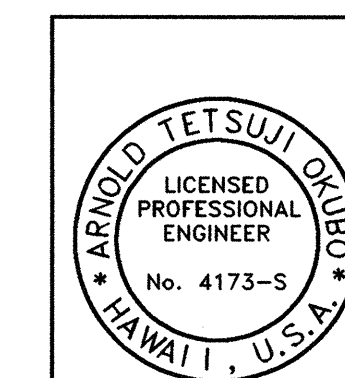
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H2-1(30)	2000	9	64



1 TYPICAL SECTION AT KIPAPA STREAM BRIDGE
S-6 SCALE: 1/4"=1'-0"



2 PARTIAL DECK SECTION-EXISTING REINFORCING DETAIL
S-6 SCALE: 1/2"=1'-0"

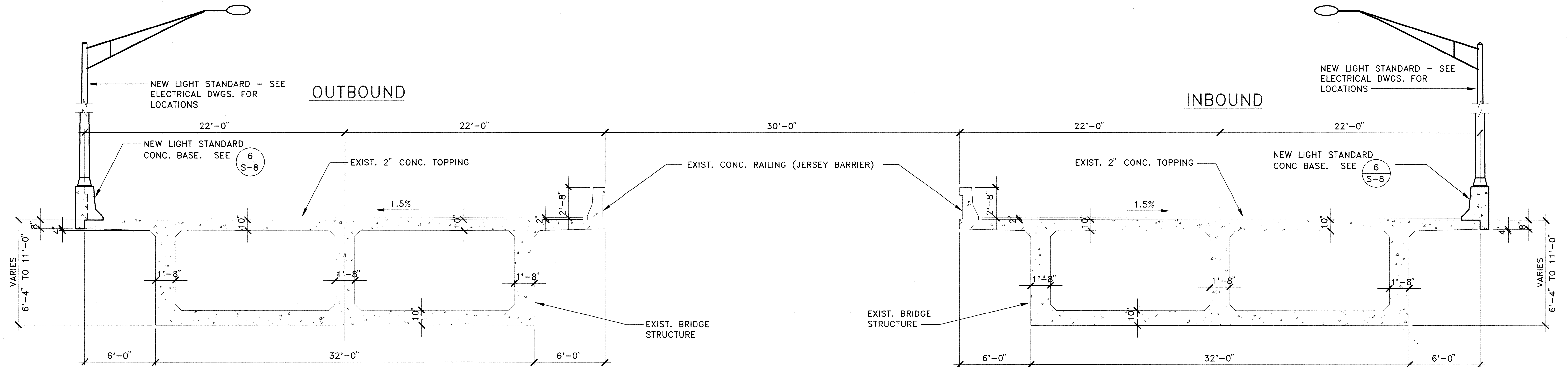


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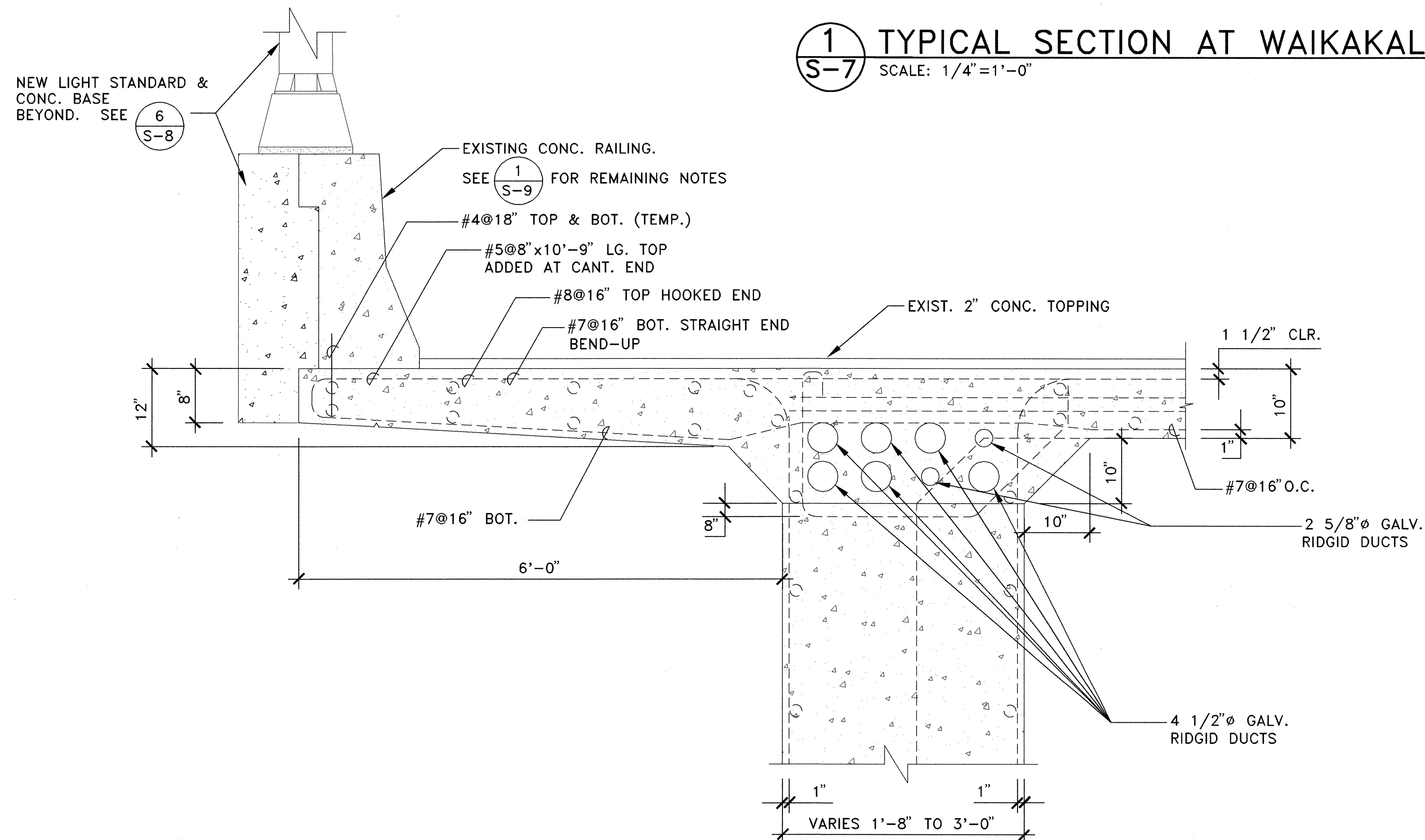
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KIPAPA STREAM BRIDGE -
TYPICAL SECTIONS
INTERSTATE ROUTE H-2
INSTALLATION OF HIGHWAY LIGHTING
LEILEHUA INTERCHANGE TO WAIAWA INTERCHANGE
F.A. PROJECT NO. IM-H2-1(30)
SCALE: AS SHOWN DATE: AUGUST 1999
SHEET No. 6 OF 9 SHEETS

S-6

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H2-1(30)	2000	10	64

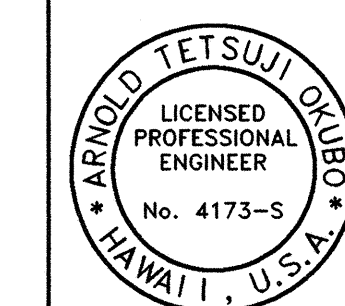


1 TYPICAL SECTION AT WAIKAKALAUA STREAM BRIDGE
SCALE: 1/4"=1'-0"



2 PARTIAL DECK SECTION-EXISTING REINFORCING DETAIL
SCALE: 1"=1'-0"

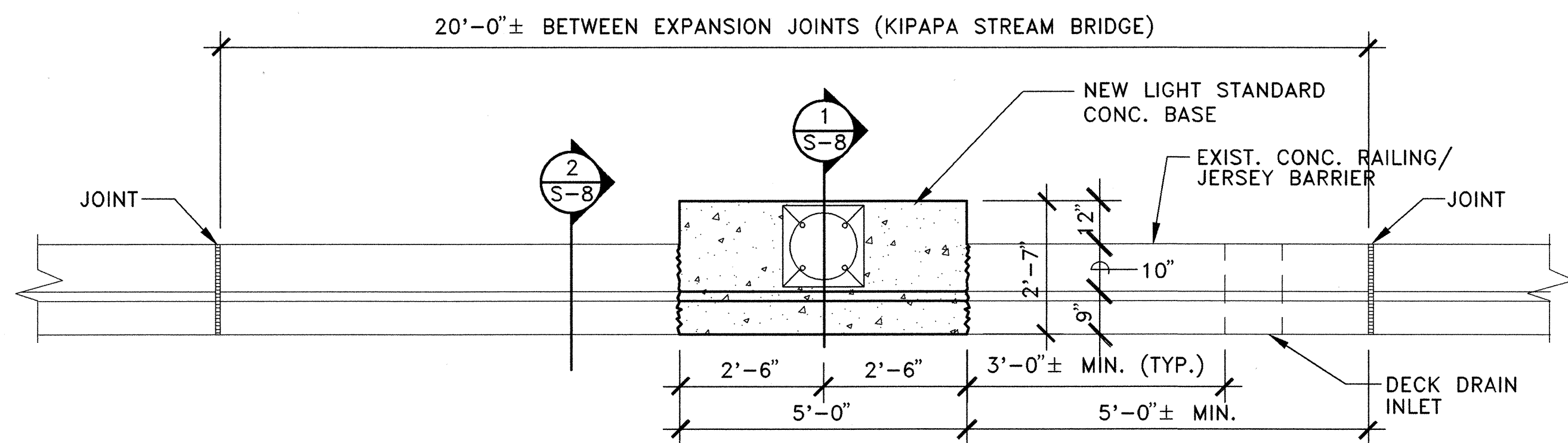
S-7



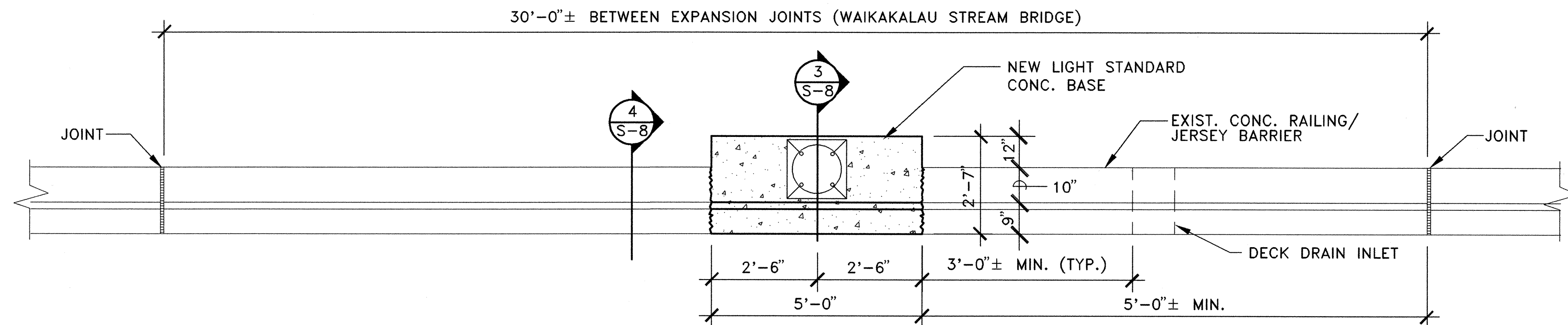
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HIGHWAYS DIVISION
**WAIKAKALAUA STREAM BRIDGE -
TYPICAL SECTIONS**
INTERSTATE ROUTE H-2
INSTALLATION OF HIGHWAY LIGHTING
LEILEHUA INTERCHANGE TO WAIAWA INTERCHANGE
F.A. PROJECT NO. IM-H2-1(30)
SCALE: AS SHOWN DATE: AUGUST 1999
SHEET No. 7 OF 9 SHEETS

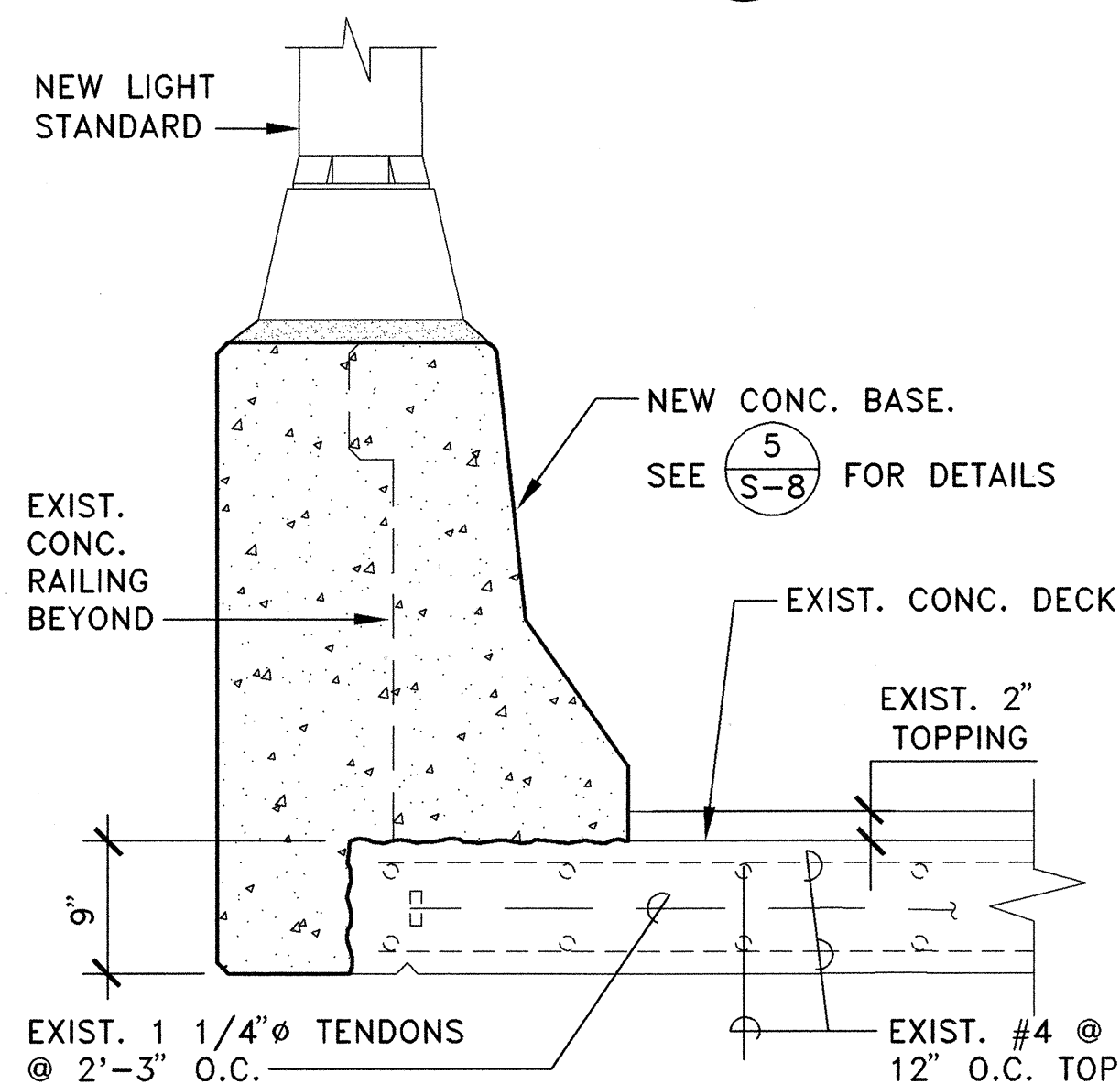
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H2-1(30)	2000	11	64



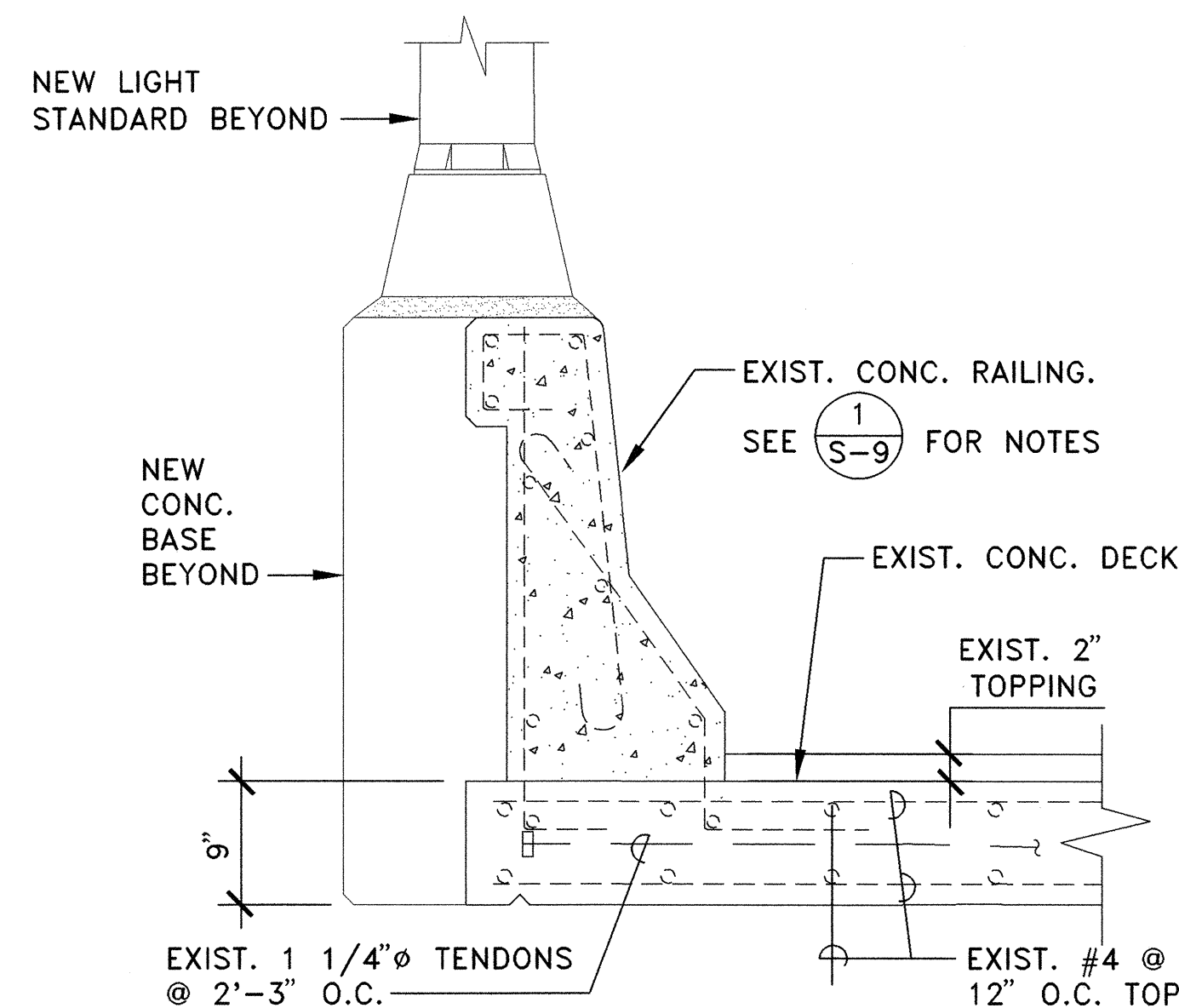
(A) PLAN - AT KIPAPA STREAM BRIDGE
SCALE: 1/2" = 1'-0"



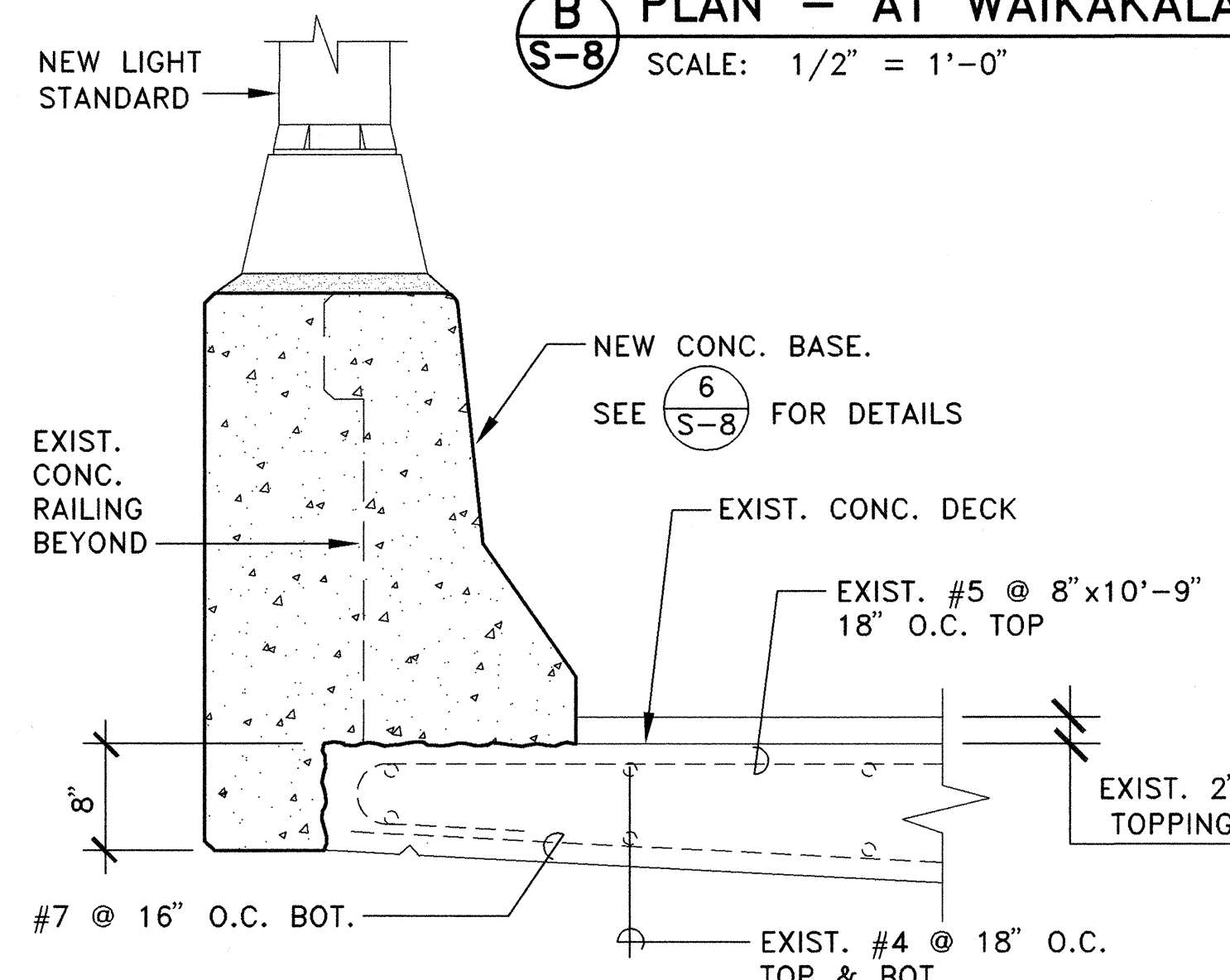
(B) PLAN - AT WAIKAKALAU STREAM BRIDGE
SCALE: 1/2" = 1'-0"



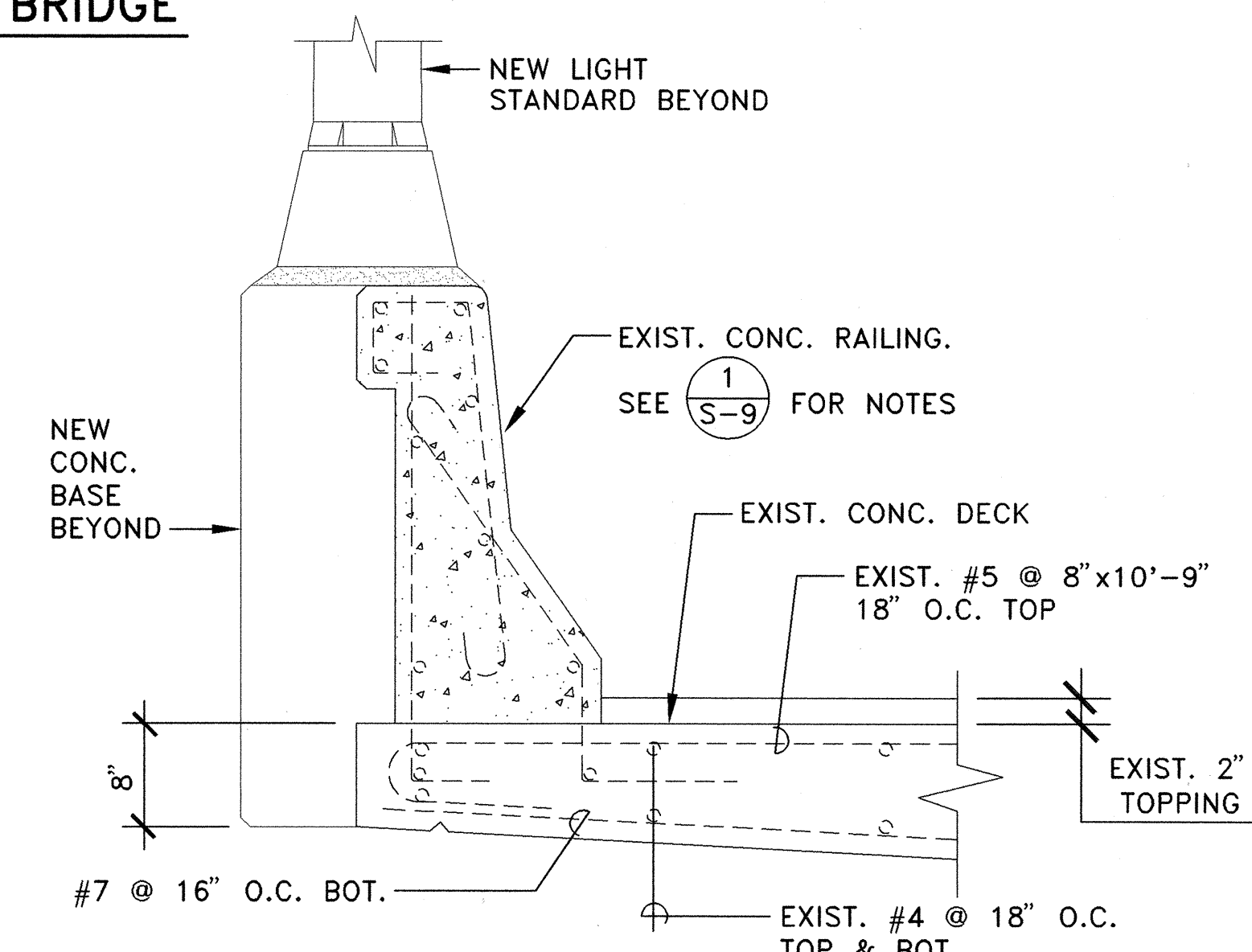
(1) SECTION
SCALE: 1" = 1'-0"



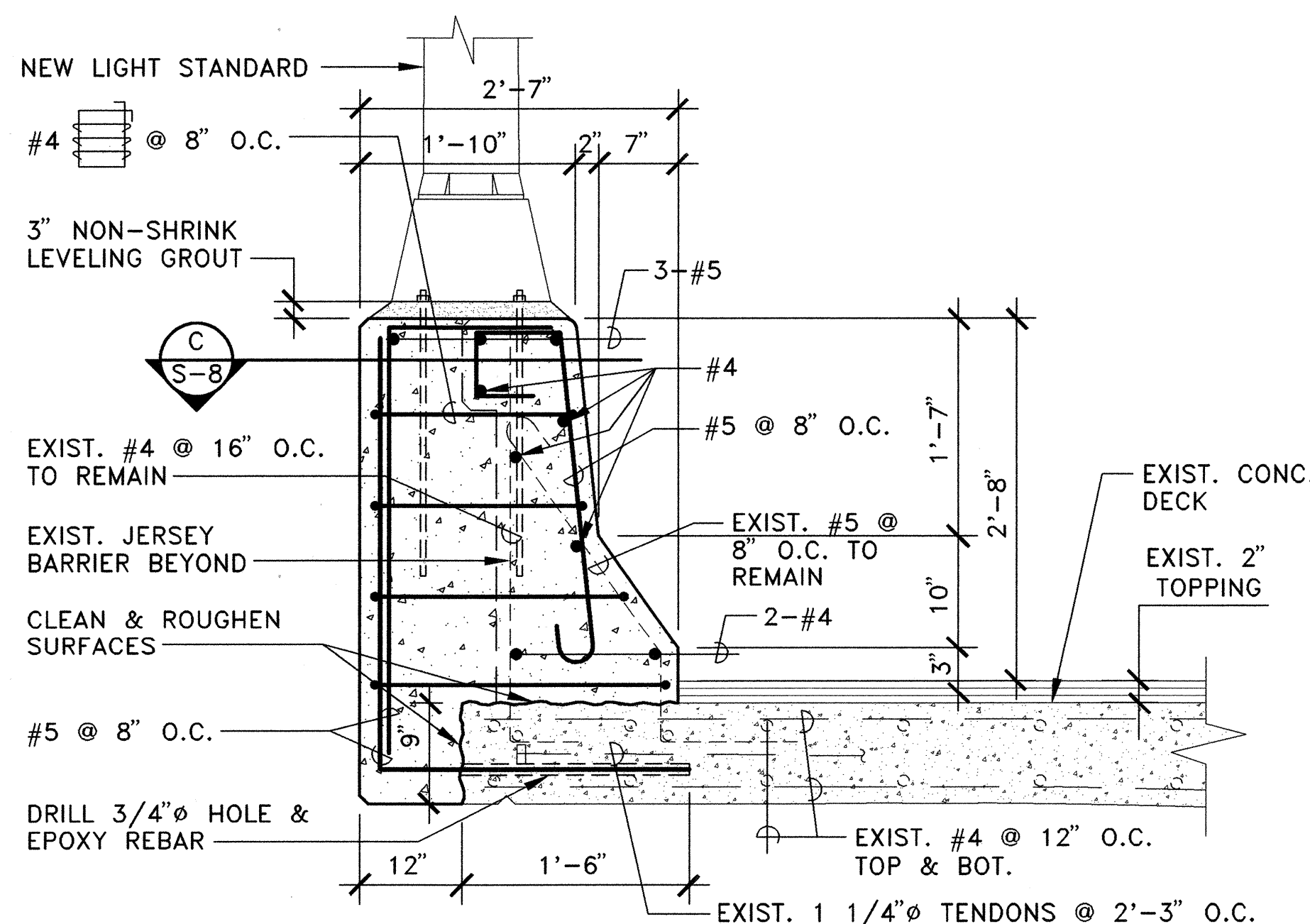
(2) SECTION
SCALE: 1" = 1'-0"



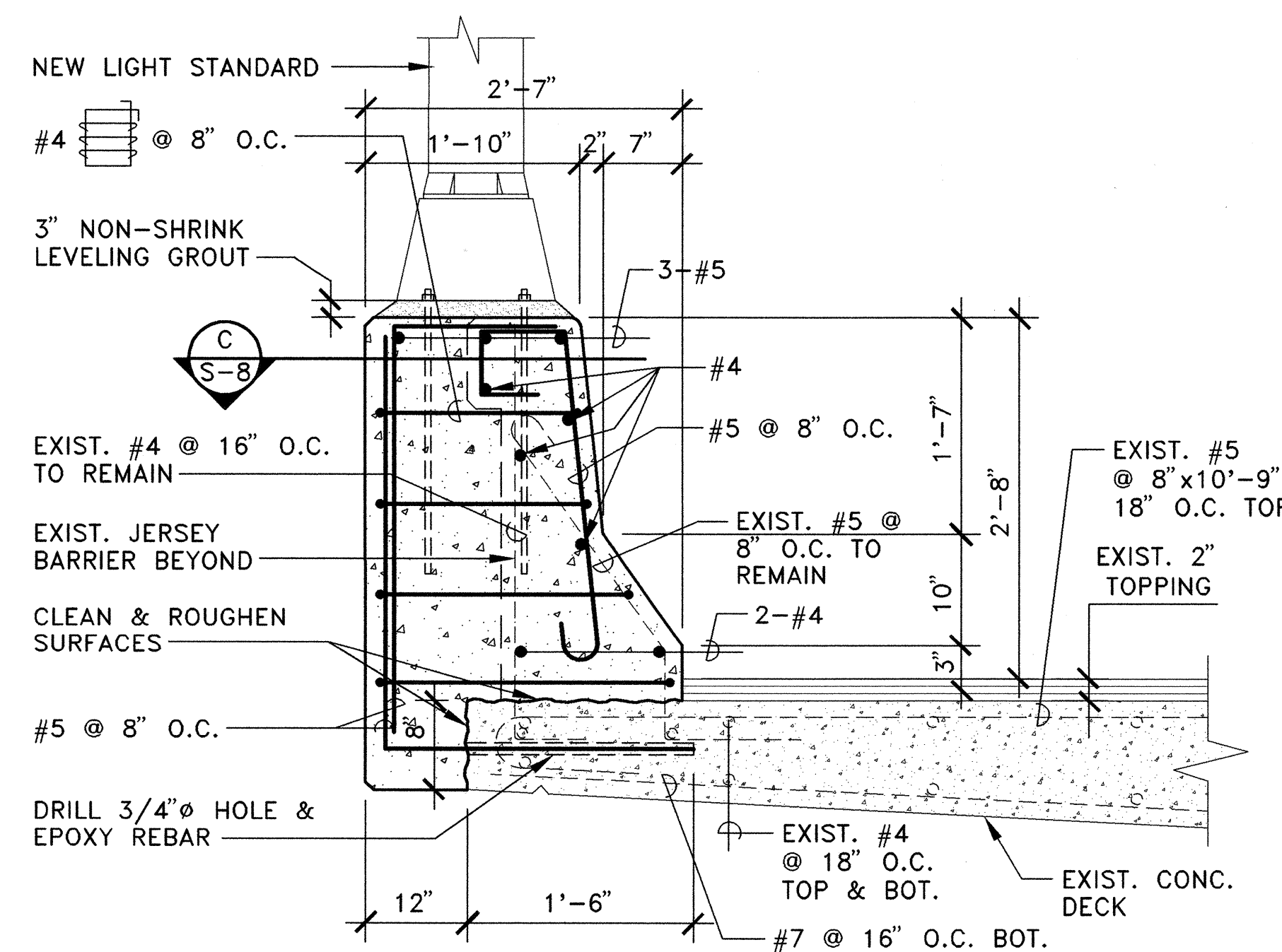
(3) SECTION
SCALE: 1" = 1'-0"



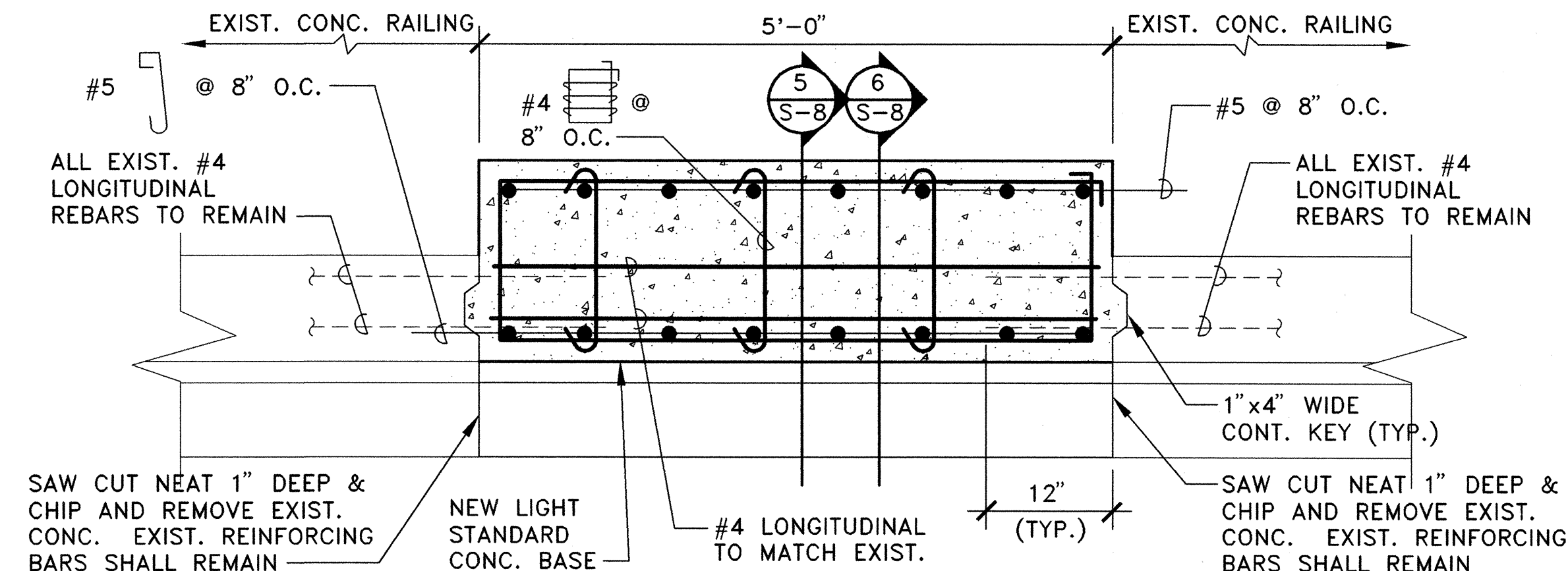
(4) SECTION
SCALE: 1" = 1'-0"



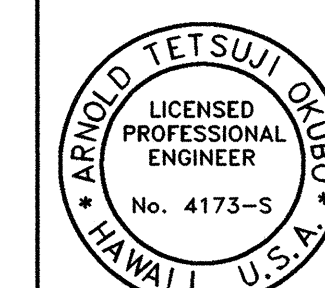
(5) SECTION - AT KIPAPA STREAM BRIDGE
SCALE: 1" = 1'-0"



(6) SECTION - AT WAIKAKALAU STREAM BRIDGE
SCALE: 1" = 1'-0"



(C) PLAN/SECTION
SCALE: 1" = 1'-0"



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
NEW CONCRETE BASE - PLANS & SECTIONS
INTERSTATE ROUTE H-2
LEILEHUA INTERCHANGE TO WAIKAKALAU INTERCHANGE
F.A. PROJECT NO. IM-H2-1(30)
SCALE: AS SHOWN DATE: AUGUST 1999
SHEET No. 8 OF 9 SHEETS

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