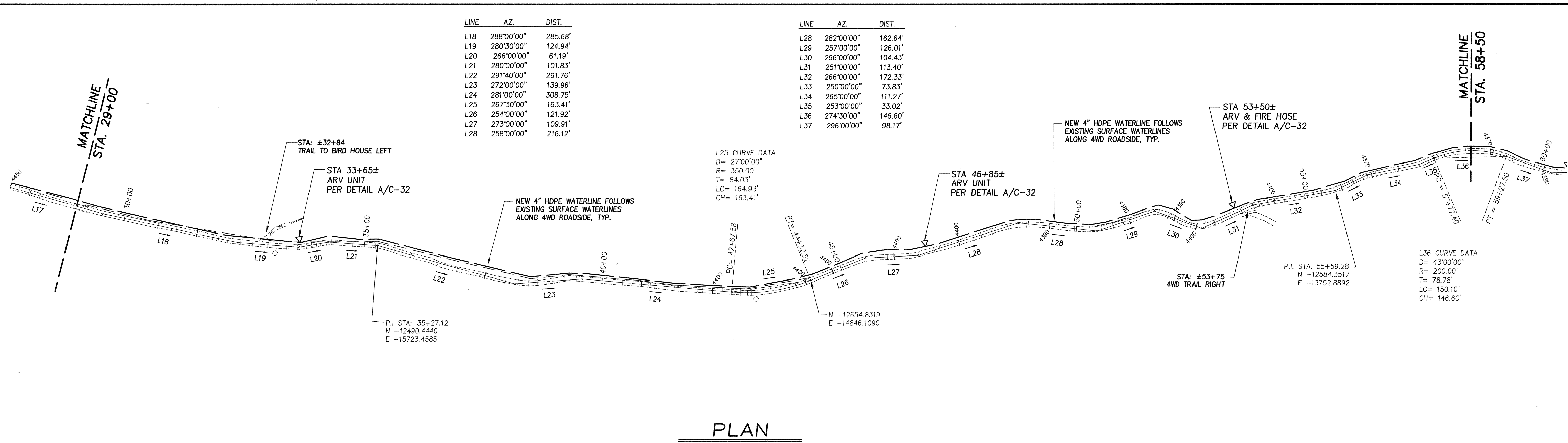


LINE	AZ.	DIST.
L18	288°00'00"	285.68'
L19	280°30'00"	124.94'
L20	266°00'00"	61.19'
L21	280°00'00"	101.83'
L22	291°40'00"	291.76'
L23	272°00'00"	139.96'
L24	281°00'00"	308.75'
L25	267°30'00"	163.41'
L26	254°00'00"	121.92'
L27	273°00'00"	109.91'
L28	258°00'00"	216.12'

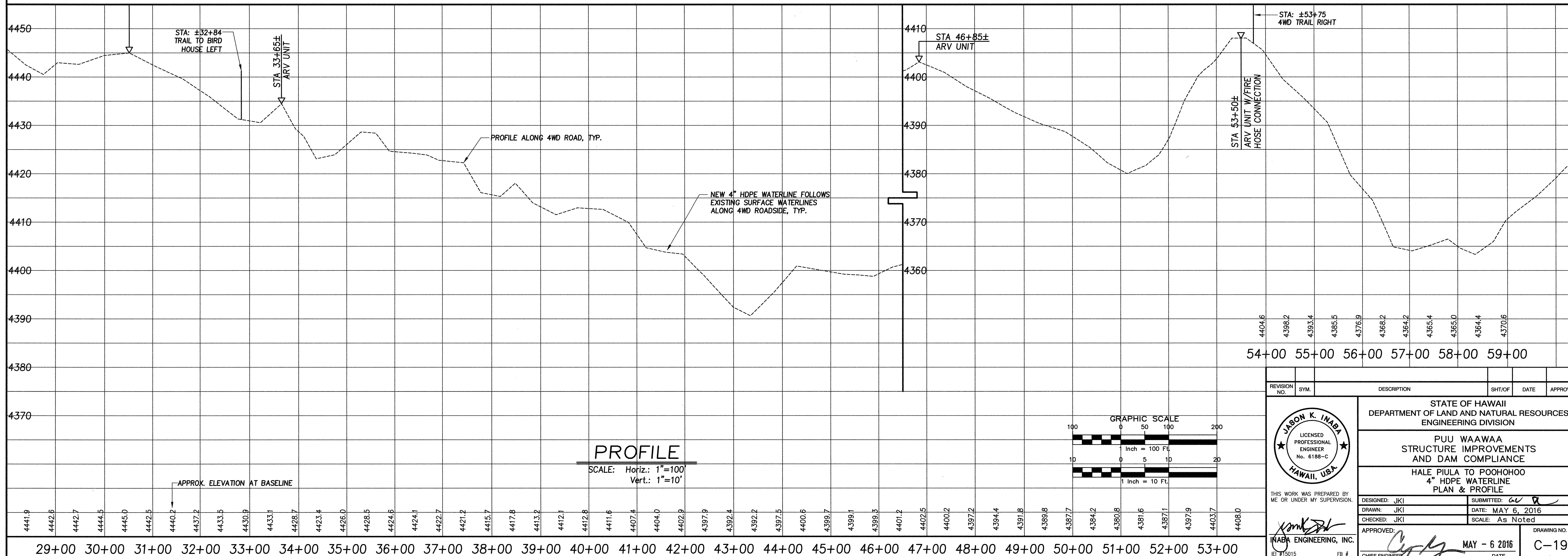
LINE	AZ.	DIST.
L28	282°00'00"	162.64'
L29	257°00'00"	126.01'
L30	296°00'00"	104.43'
L31	251°00'00"	113.40'
L32	266°00'00"	172.33'
L33	250°00'00"	73.83'
L34	265°00'00"	111.27'
L35	253°00'00"	33.02'
L36	274°30'00"	146.60'
L37	296°00'00"	98.17'

L25 CURVE DATA
D= 27°00'00"
R= 350.00'
T= 84.03'
LC= 164.93'
CH= 163.41'

L36 CURVE DATA
D= 43°00'00"
R= 200.00'
T= 78.78'
LC= 150.10'
CH= 146.60'



PLAN



PROFILE

REVISION NO.	SYM.	DESCRIPTION	SHT/OF	DATE	APPROVED

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

PUU WAAWAA
STRUCTURE IMPROVEMENTS
AND DAM COMPLIANCE

HALE PIULA TO POOHOOO
4" HDPE WATERLINE
PLAN & PROFILE

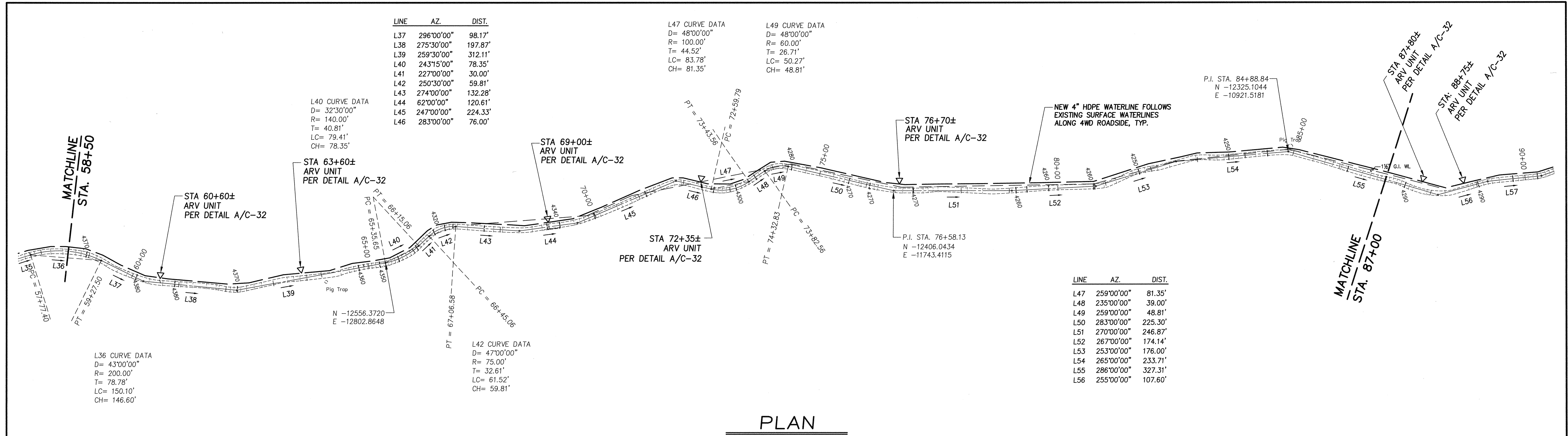
DESIGNED: JKI
DRAWN: JKI
CHECKED: JKI
APPROVED: *[Signature]*

DATE: MAY 6, 2016
SCALE: As Noted

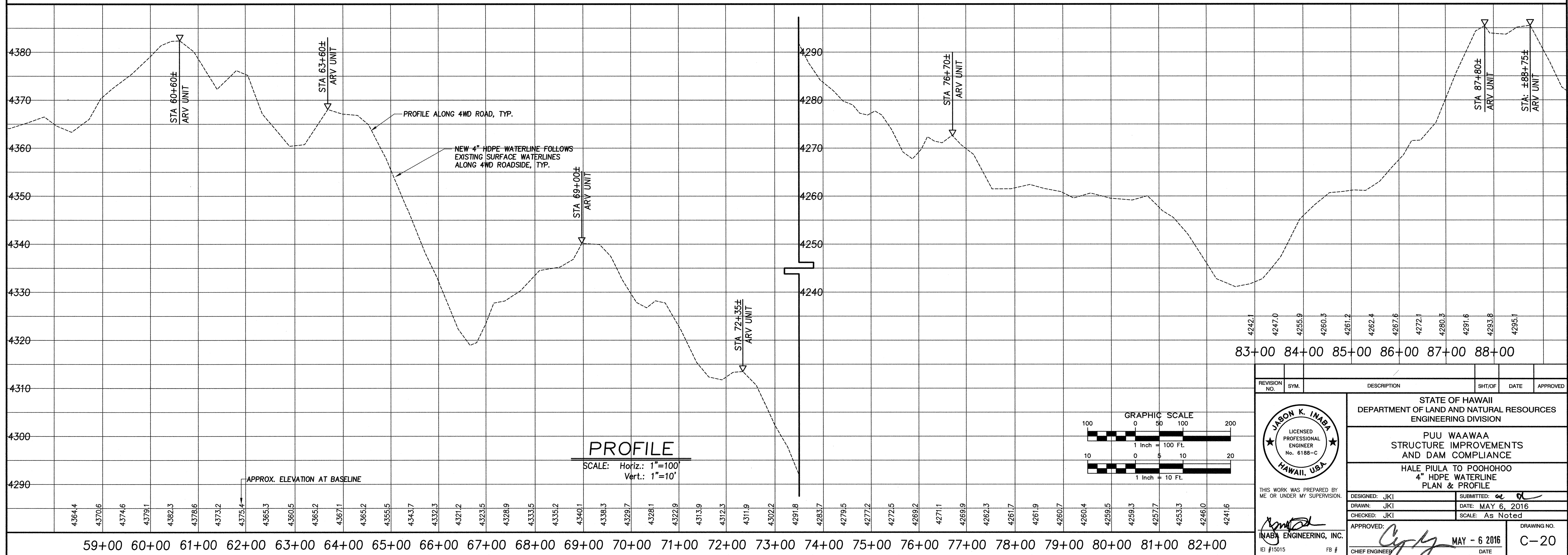
DATE: MAY - 6 2016
DATE: *[Signature]*

JOB NO. 500CH15A SHEET NO. 25 OF 38 SHEETS

20-WATERLINEPRO1.DWG DATE:

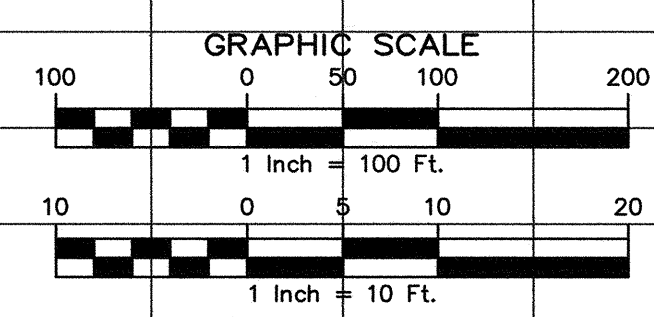


PLAN



PROFILE

SCALE: Horiz.: 1"=100'
Vert.: 1"=10'



REVISION NO.	SYM.	DESCRIPTION	SHT/OF	DATE	APPROVED

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

PUU WAAWAA
STRUCTURE IMPROVEMENTS
AND DAM COMPLIANCE

HALE PIULA TO POOHOHO
4" HDPE WATERLINE
PLAN & PROFILE

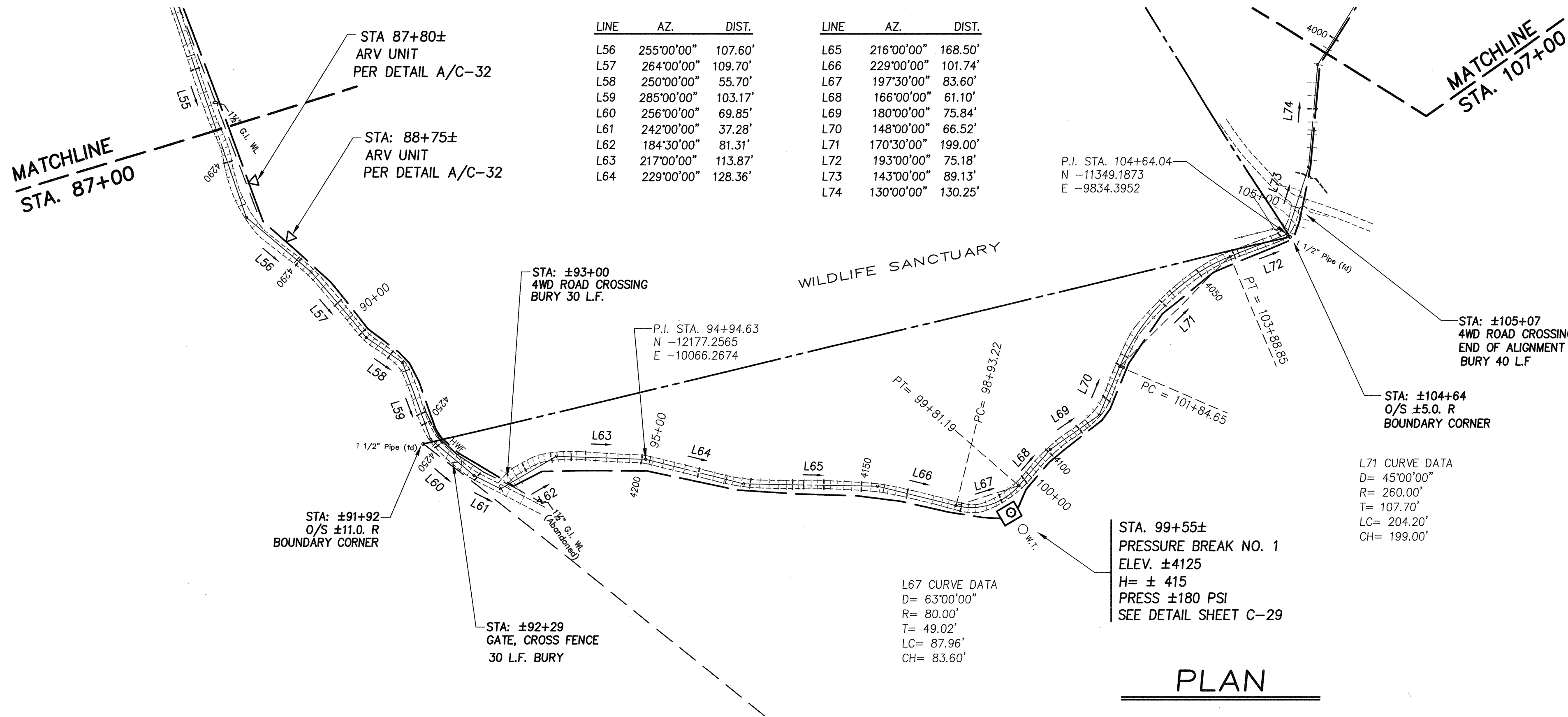
DESIGNED: JKI
DRAWN: JKI
CHECKED: JKI
APPROVED: *[Signature]*
SUBMITTED: *[Signature]*
DATE: MAY 6, 2016
SCALE: As Noted

INABA ENGINEERING, INC.
15015 IEI #15015
FB #

DRAWING NO. C-20
DATE: MAY - 6 2016

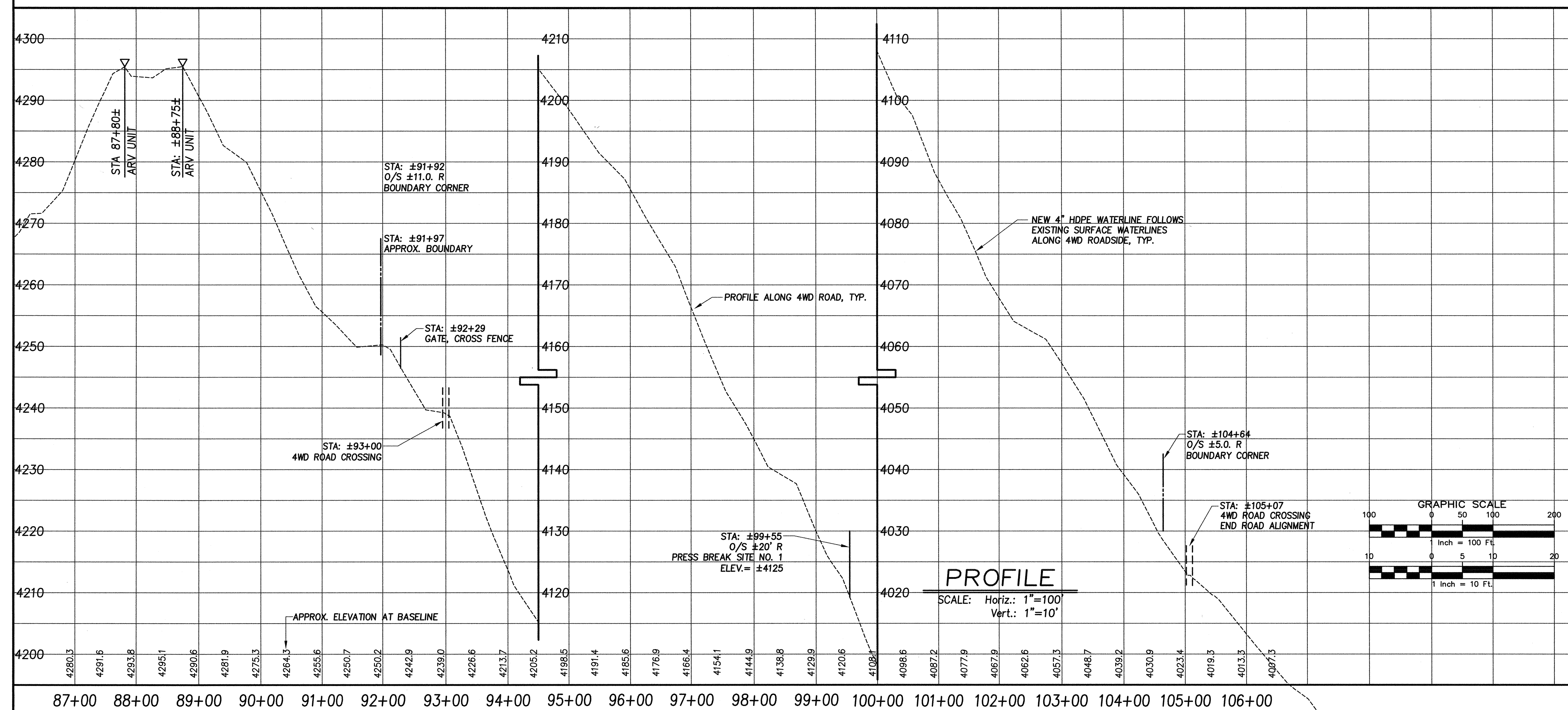
JOB NO. 500CH15A
SHEET NO. 26 OF 38 SHEETS

DATE: 20-WATERLINEPROT.DWG

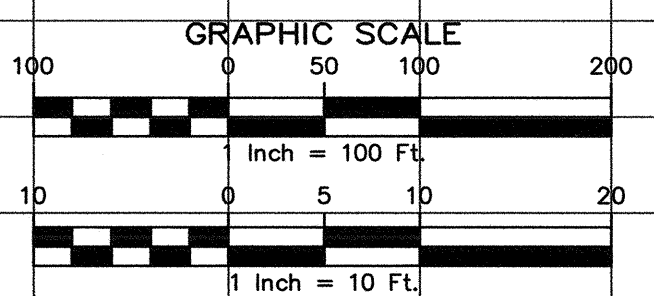


LINE	AZ.	DIST.	LINE	AZ.	DIST.
L56	255°00'00"	107.60'	L65	216°00'00"	168.50'
L57	264°00'00"	109.70'	L66	229°00'00"	101.74'
L58	250°00'00"	55.70'	L67	197°30'00"	83.60'
L59	285°00'00"	103.17'	L68	166°00'00"	61.10'
L60	256°00'00"	69.85'	L69	180°00'00"	75.84'
L61	242°00'00"	37.28'	L70	148°00'00"	66.52'
L62	184°30'00"	81.31'	L71	170°30'00"	199.00'
L63	217°00'00"	113.87'	L72	193°00'00"	75.18'
L64	229°00'00"	128.36'	L73	143°00'00"	89.13'
			L74	130°00'00"	130.25'

PLAN



PROFILE
SCALE: Horiz.: 1"=100'
Vert.: 1"=10'



REVISION NO.	SYM.	DESCRIPTION	SHT/OF	DATE	APPROVED

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Jason K. Inaba
INABA ENGINEERING, INC.
IEI #15015

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

PUU WAAWAA
STRUCTURE IMPROVEMENTS
AND DAM COMPLIANCE

HALE PIULA TO POOHOHOO
4" HDPE WATERLINE
PLAN & PROFILE

DESIGNED: JKI
DRAWN: JKI
CHECKED: JKI
APPROVED: *Cyly*
CHIEF ENGINEER

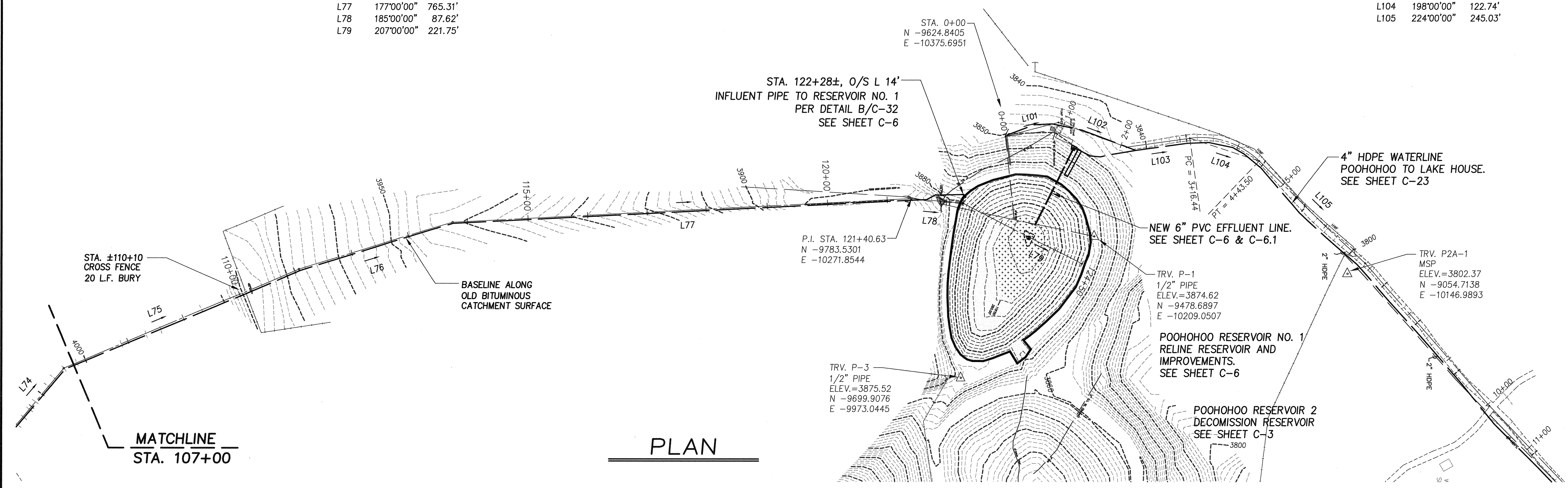
DATE: MAY 6, 2016
SCALE: As Noted

DRAWING NO. C-21

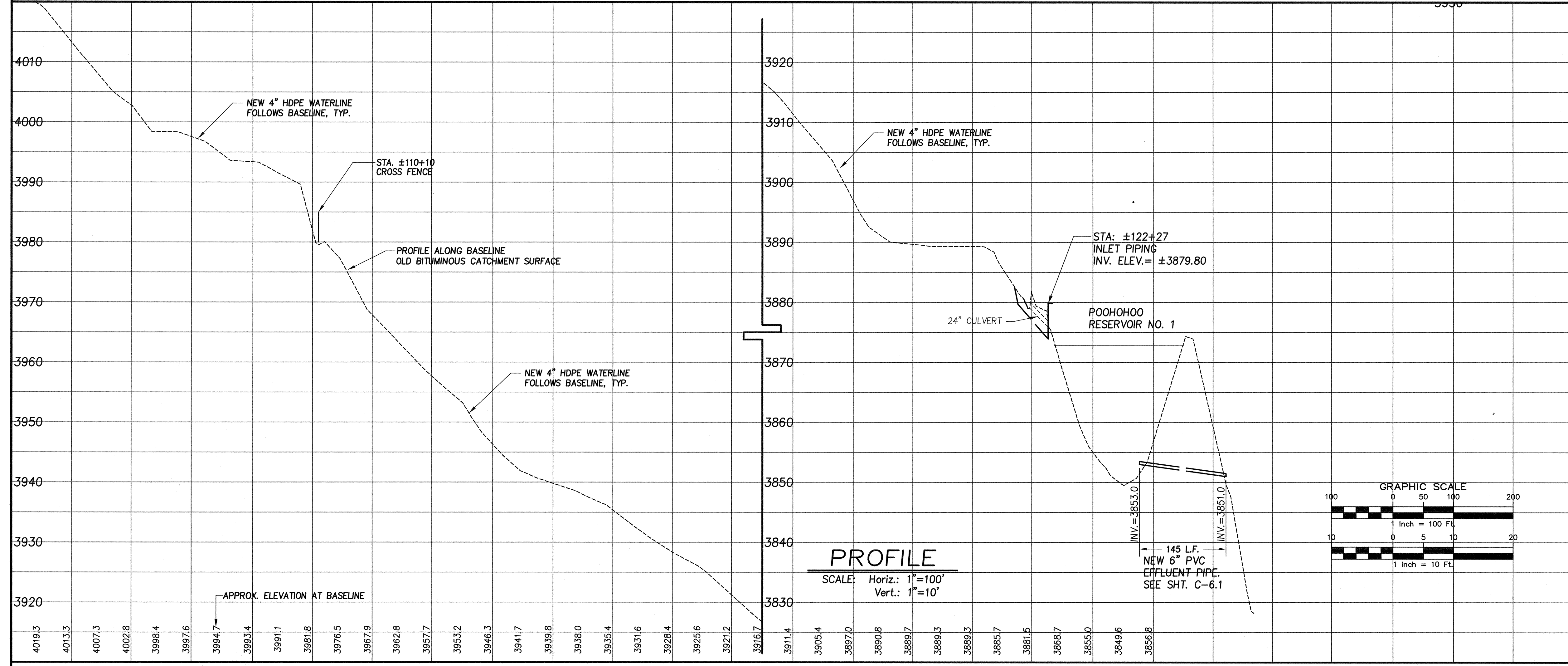
20-WATERLINEPRO1.DWG DATE:

LINE	AZ.	DIST.
L74	130°00'00"	130.25'
L75	157°00'00"	423.92'
L76	163°00'00"	267.98'
L77	177°00'00"	765.31'
L78	185°00'00"	87.62'
L79	207°00'00"	221.75'

LINE	AZ.	DIST.
L101	165°00'00"	90.00'
L102	200°00'00"	119.78'
L103	172°00'00"	106.66'
L104	198°00'00"	122.74'
L105	224°00'00"	245.03'

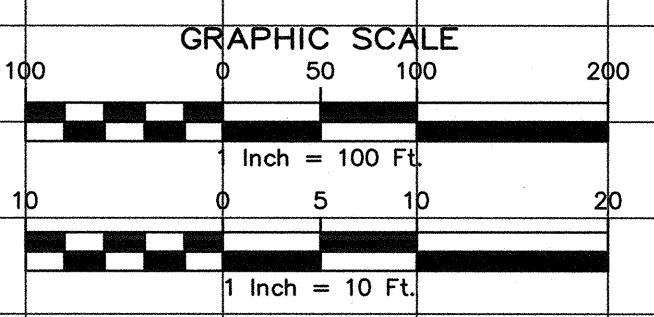


PLAN



PROFILE

SCALE: Horiz.: 1"=100'
Vert.: 1"=10'



REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

PUU WAAWAA
STRUCTURE IMPROVEMENTS
AND DAM COMPLIANCE

HALE PIULA TO POOHOOHO
4" HDPE WATERLINE
PLAN & PROFILE

JASON K. IMABA
LICENSED PROFESSIONAL ENGINEER
No. 6188-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

DESIGNED: JKI
DRAWN: JKI
CHECKED: JKI

SUBMITTED: *al*
DATE: MAY 6, 2016
SCALE: As Noted

APPROVED: *[Signature]*
INABA ENGINEERING, INC.
IEI #15015

DATE: MAY - 6 2016

DRAWING NO. C-22

JOB NO. 500CH15A SHEET NO. 28 OF 38 SHEETS

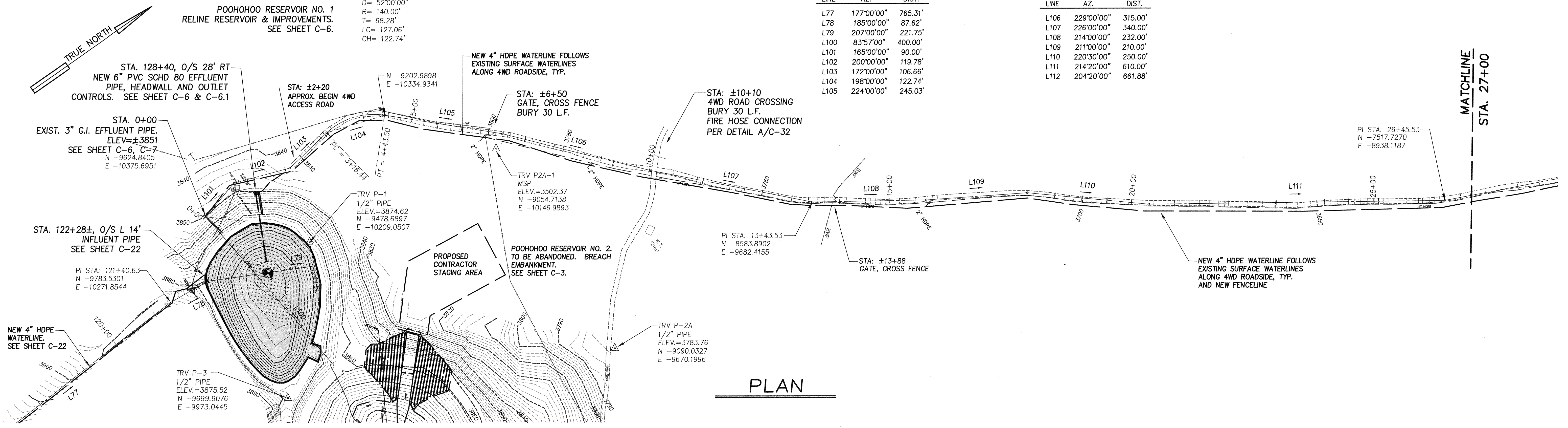
DATE: 20-WATERLINEPRO1.DWG

POHOHOO RESERVOIR NO. 1
RELINER RESERVOIR & IMPROVEMENTS.
SEE SHEET C-6.

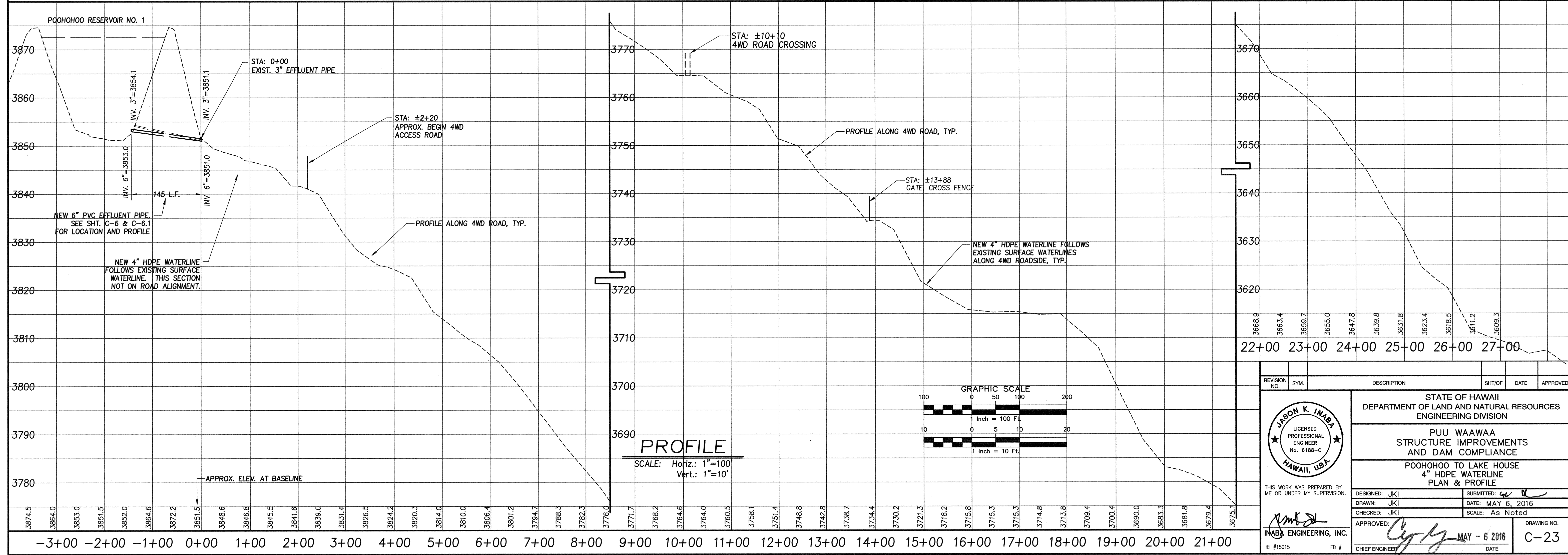
L104 CURVE DATA:
D= 52'00"00"
R= 140.00'
T= 68.28'
LC= 127.06'
CH= 122.74'

LINE	AZ.	DIST.
L77	177°00'00"	765.31'
L78	185°00'00"	87.62'
L79	207°00'00"	221.75'
L100	83°57'00"	400.00'
L101	165°00'00"	90.00'
L102	200°00'00"	119.78'
L103	172°00'00"	106.66'
L104	198°00'00"	122.74'
L105	224°00'00"	245.03'

LINE	AZ.	DIST.
L106	229°00'00"	315.00'
L107	226°00'00"	340.00'
L108	214°00'00"	232.00'
L109	211°00'00"	210.00'
L110	220°30'00"	250.00'
L111	214°20'00"	610.00'
L112	204°20'00"	661.88'

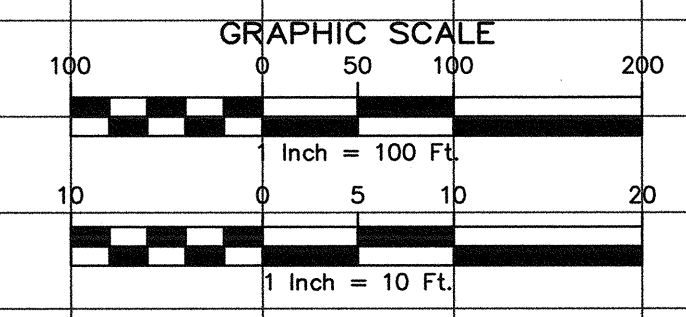


PLAN



PROFILE

SCALE: Horiz.: 1"=100'
Vert.: 1"=10'



REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

PUU WAAWAA
STRUCTURE IMPROVEMENTS
AND DAM COMPLIANCE

POHOHOO TO LAKE HOUSE
4" HDPE WATERLINE
PLAN & PROFILE

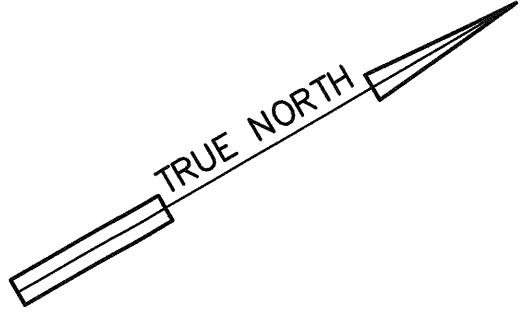
DESIGNED: JKI
DRAWN: JKI
CHECKED: JKI
APPROVED: *[Signature]*

SUBMITTED: *[Signature]*
DATE: MAY 6, 2016
SCALE: As Noted

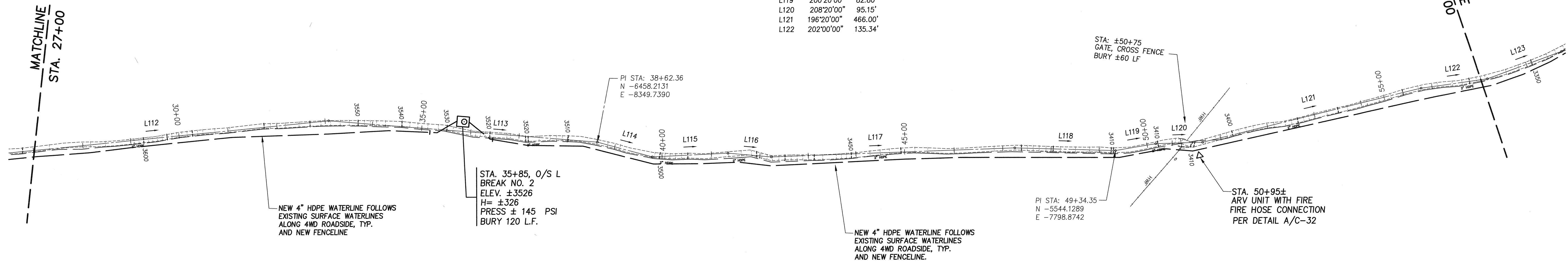
INABA ENGINEERING, INC.
151515 FB #

DATE: MAY - 6 2016
DRAWING NO. C-23

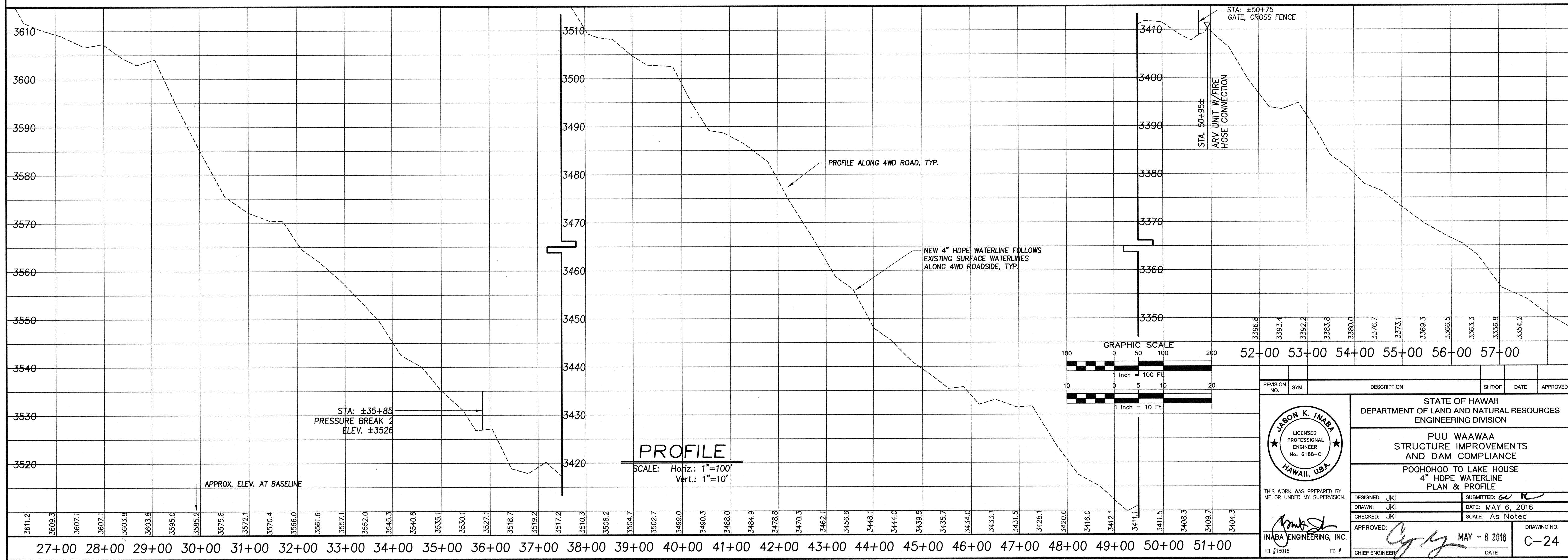
25-WaterlinePro2.dwg



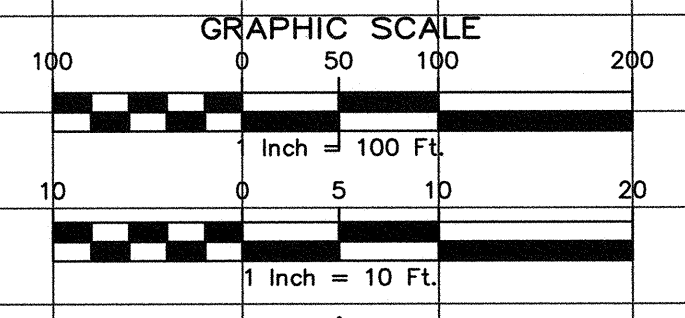
LINE	AZ.	DIST.
L112	204°20'00"	661.88'
L113	214°40'00"	554.95'
L114	225°00'00"	118.33'
L115	207°20'00"	153.11'
L116	215°00'00"	90.00'
L117	208°00'00"	500.00'
L118	211°40'00"	210.55'
L119	200°20'00"	82.80'
L120	208°20'00"	95.15'
L121	196°20'00"	466.00'
L122	202°00'00"	135.34'



PLAN



PROFILE
 SCALE: Horiz.: 1"=100'
 Vert.: 1"=10'



REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED

STATE OF HAWAII
 DEPARTMENT OF LAND AND NATURAL RESOURCES
 ENGINEERING DIVISION

**PUU WAAWAA
 STRUCTURE IMPROVEMENTS
 AND DAM COMPLIANCE**

POOHOOO TO LAKE HOUSE
 4" HDPE WATERLINE
 PLAN & PROFILE

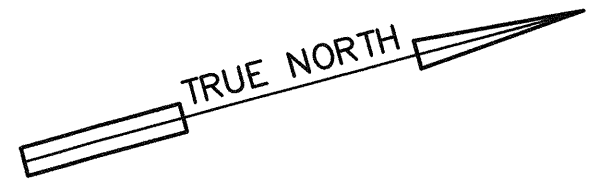
JASON K. INABA
 LICENSED PROFESSIONAL ENGINEER
 No. 6188-C
 HAWAII, U.S.A.

DESIGNED: JKI
 DRAWN: JKI
 CHECKED: JKI
 APPROVED: *[Signature]*
 INABA ENGINEERING, INC.
 IEI #15015

DATE: MAY 6, 2016
 SCALE: As Noted
 DATE: MAY - 6 2016
 DATE

DRAWING NO. C-24

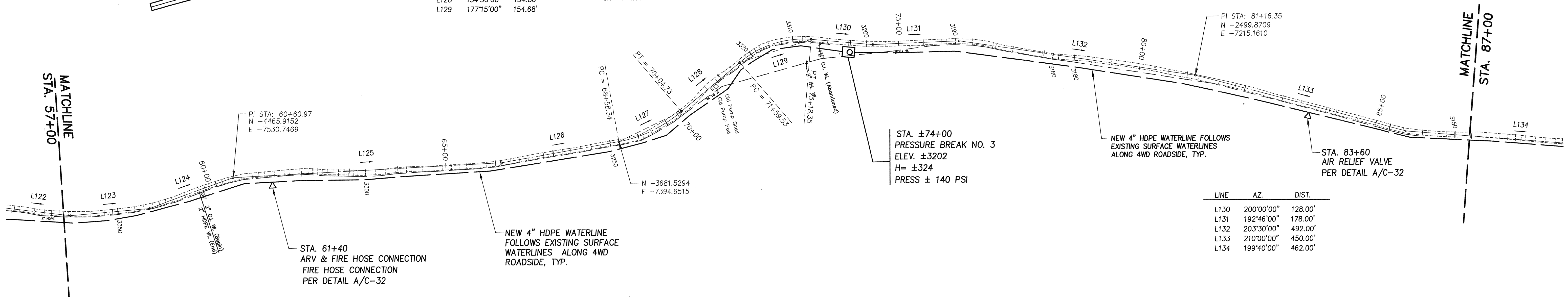
25-WaterlinePro2.dwg



LINE	AZ.	DIST.
L123	190°00'00"	163.79'
L124	175°00'00"	183.53'
L125	192°00'00"	551.52'
L126	185°00'00"	245.85'
L127	169°45'00"	144.67'
L128	154°30'00"	154.80'
L129	177°15'00"	154.68'

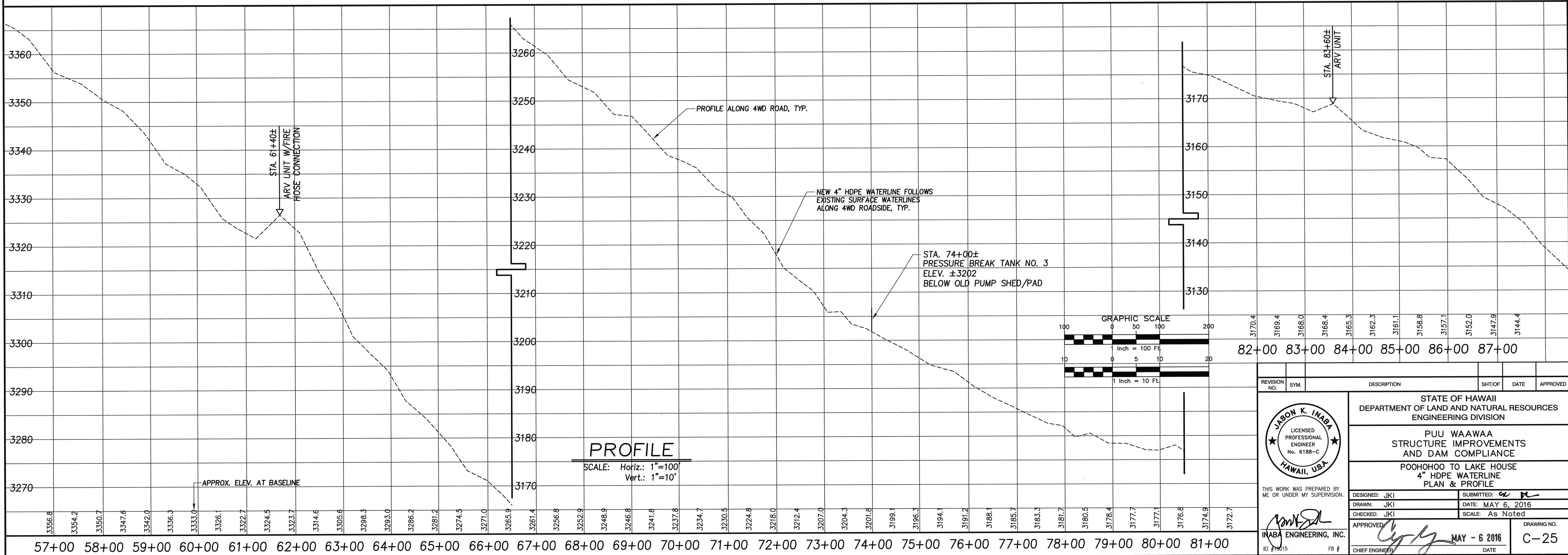
L127 CURVE DATA:
 D= 30°30'00"
 R= 275.00'
 T= 74.97'
 LC= 146.39'
 CH= 144.67'

L129 CURVE DATA:
 D= 45°30'00"
 R= 200.00'
 T= 83.87'
 LC= 158.82'
 CH= 154.68'



LINE	AZ.	DIST.
L130	200°00'00"	128.00'
L131	192°46'00"	178.00'
L132	203°30'00"	492.00'
L133	210°00'00"	450.00'
L134	199°40'00"	462.00'

PLAN



REVISION NO.	SYM.	DESCRIPTION	SHT/OF	DATE	APPROVED

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

INABA ENGINEERING, INC.
 EI #15015 FB #

STATE OF HAWAII
 DEPARTMENT OF LAND AND NATURAL RESOURCES
 ENGINEERING DIVISION

PUU WAAWAA
 STRUCTURE IMPROVEMENTS
 AND DAM COMPLIANCE

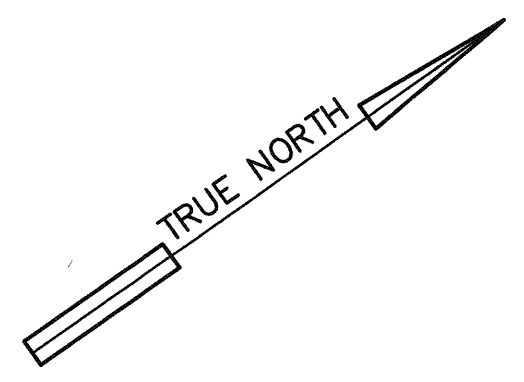
POOHOOHOO TO LAKE HOUSE
 4" HDPE WATERLINE
 PLAN & PROFILE

DESIGNED: JK1
 DRAWN: JK1
 CHECKED: JK1
 APPROVED: *[Signature]*
 CHIEF ENGINEER

DATE: MAY 6, 2016
 SCALE: As Noted

DRAWING NO.
C-25

JOB NO. 500CH15A SHEET NO. 31 OF 38 SHEETS

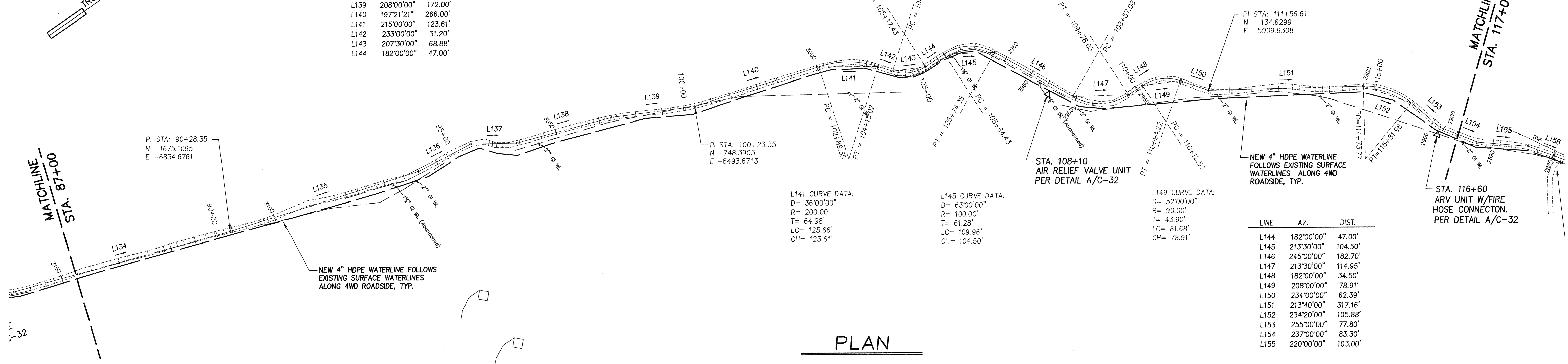


LINE	AZ.	DIST.
L134	199°40'00"	462.00'
L135	197°30'00"	404.00'
L136	188°00'00"	123.00'
L137	214°00'00"	94.00'
L138	200°00'00"	202.00'
L139	208°00'00"	172.00'
L140	197°21'21"	266.00'
L141	215°00'00"	123.61'
L142	233°00'00"	31.20'
L143	207°30'00"	68.88'
L144	182°00'00"	47.00'

L143 CURVE DATA:
 D= 51'00"00"
 R= 80.00'
 T= 38.16'
 LC= 71.21'
 CH= 68.88'
 PT = 103+77.43 PC = 104+46.22

L147 CURVE DATA:
 D= 63'00"00"
 R= 110.00'
 T= 67.41'
 LC= 120.95'
 CH= 114.95'
 PT = 109+78.03 PC = 108+57.08

L152 CURVE DATA:
 D= 41'20"00"
 R= 150.00'
 T= 56.58'
 LC= 108.21'
 CH= 105.88'
 PT = 115+81.98 PC = 114+73.77



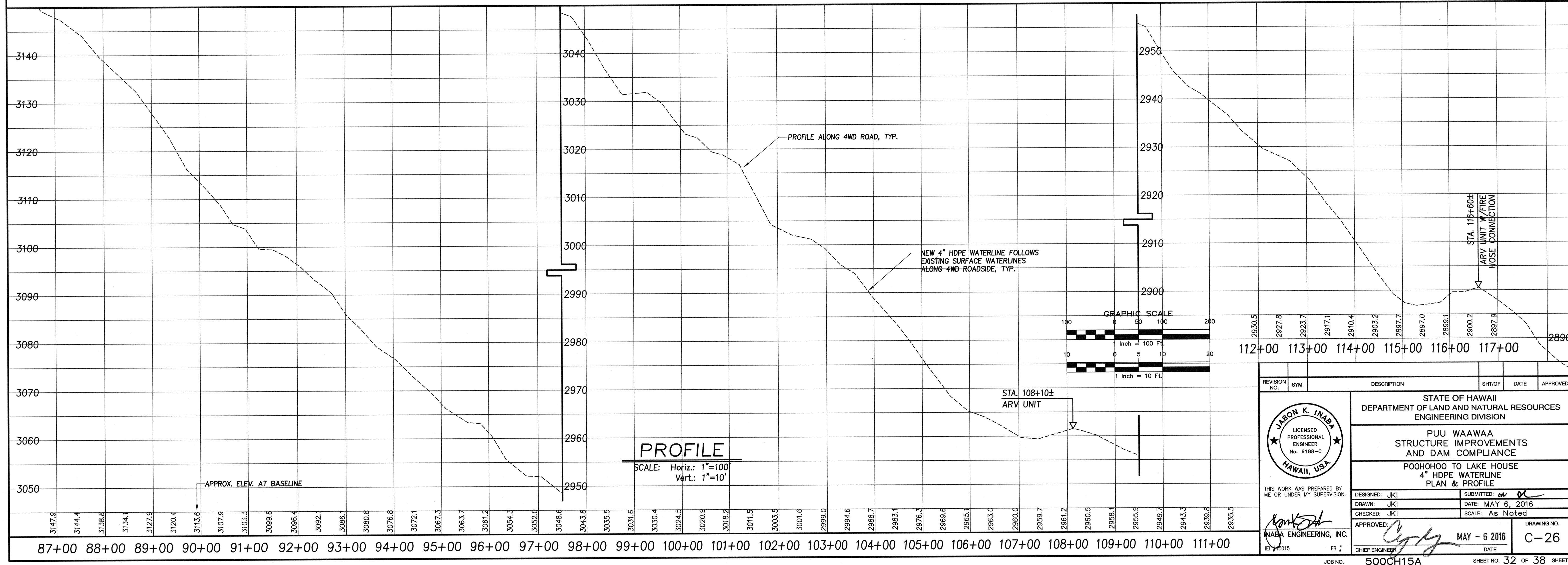
L141 CURVE DATA:
 D= 36'00"00"
 R= 200.00'
 T= 64.98'
 LC= 125.66'
 CH= 123.61'
 PT = 102+88.35 PC = 104+18.02

L145 CURVE DATA:
 D= 63'00"00"
 R= 100.00'
 T= 61.28'
 LC= 109.96'
 CH= 104.50'
 PT = 106+74.38 PC = 105+64.45

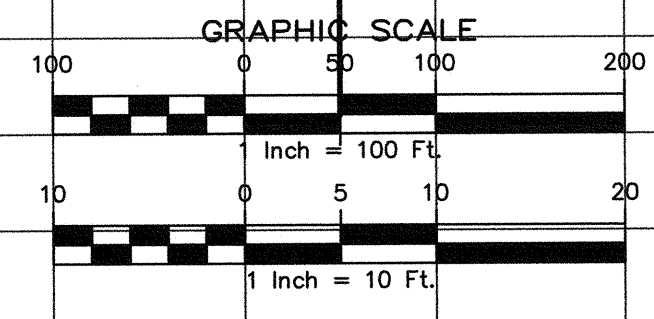
L149 CURVE DATA:
 D= 52'00"00"
 R= 90.00'
 T= 43.90'
 LC= 81.68'
 CH= 78.91'
 PT = 110+84.22 PC = 110+12.53

LINE	AZ.	DIST.
L144	182°00'00"	47.00'
L145	213°30'00"	104.50'
L146	245°00'00"	182.70'
L147	213°30'00"	114.95'
L148	182°00'00"	34.50'
L149	208°00'00"	78.91'
L150	234°00'00"	62.39'
L151	213°40'00"	317.16'
L152	234°20'00"	105.88'
L153	255°00'00"	77.80'
L154	237°00'00"	83.30'
L155	220°00'00"	103.00'

PLAN



PROFILE
 SCALE: Horiz.: 1"=100'
 Vert.: 1"=10'



REVISION NO.	SYM.	DESCRIPTION	SHT/OF	DATE	APPROVED

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Jason K. Inaba
 NABA ENGINEERING, INC.
 FB #

STATE OF HAWAII
 DEPARTMENT OF LAND AND NATURAL RESOURCES
 ENGINEERING DIVISION

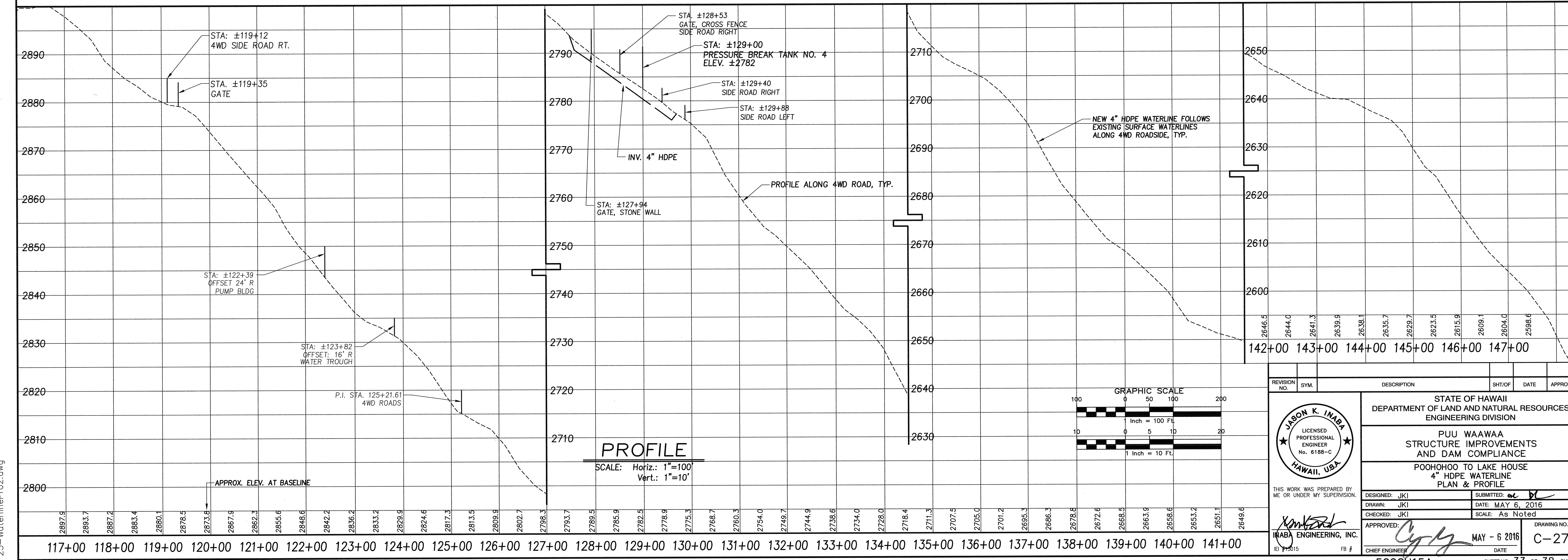
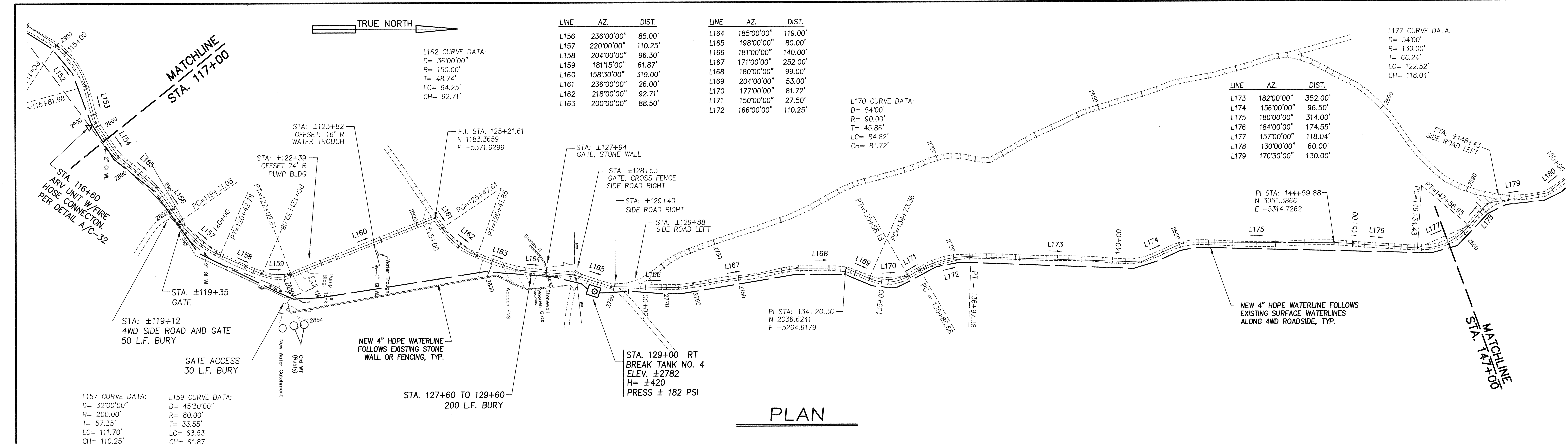
PUU WAAWAA
 STRUCTURE IMPROVEMENTS
 AND DAM COMPLIANCE

POOHOOO TO LAKE HOUSE
 4" HDPE WATERLINE
 PLAN & PROFILE

DESIGNED: JKI
 DRAWN: JKI
 CHECKED: JKI
 APPROVED: *Cy*
 DATE: MAY 6, 2016
 SCALE: As Noted

87+00	88+00	89+00	90+00	91+00	92+00	93+00	94+00	95+00	96+00	97+00	98+00	99+00	100+00	101+00	102+00	103+00	104+00	105+00	106+00	107+00	108+00	109+00	110+00	111+00
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------

JOB NO. 500CH15A SHEET NO. 32 OF 38 SHEETS



REVISION NO.	SYM.	DESCRIPTION	SHT/OF	DATE	APPROVED

STATE OF HAWAII
 DEPARTMENT OF LAND AND NATURAL RESOURCES
 ENGINEERING DIVISION

PUU WAAWAA
 STRUCTURE IMPROVEMENTS
 AND DAM COMPLIANCE

POOHOOO TO LAKE HOUSE
 4" HDPE WATERLINE
 PLAN & PROFILE

DESIGNED: JKI
 DRAWN: JKI
 CHECKED: JKI
 APPROVED: *[Signature]*

DATE: MAY 6, 2016
 SCALE: As Noted

INABA ENGINEERING, INC.
 LICENSED PROFESSIONAL ENGINEER
 No. 6188-C
 HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

MAY - 6 2016
 DATE

CHIEF ENGINEER

JOB NO. 500CH15A
 SHEET NO. 33 OF 38 SHEETS

25-WaterlinePro2.dwg

L177 CURVE DATA:
 D= 54'00"
 R= 130.00'
 T= 66.24'
 LC= 122.52'
 CH= 118.04'

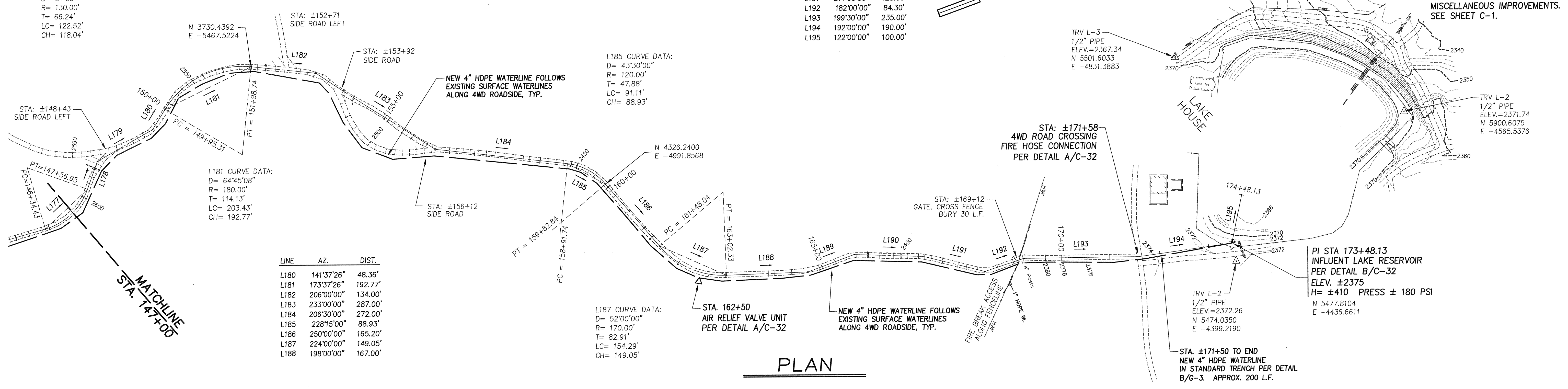
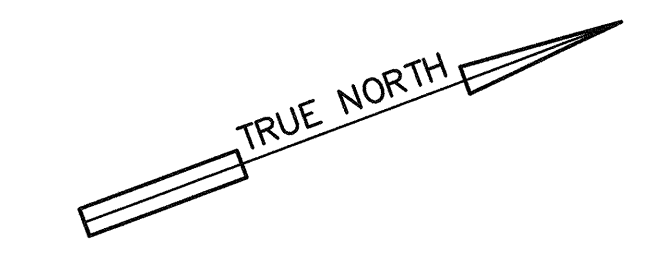
N 3730.4392
 E -5467.5224

L181 CURVE DATA:
 D= 64'45"08"
 R= 180.00'
 T= 114.13'
 LC= 203.43'
 CH= 192.77'

L185 CURVE DATA:
 D= 43'30"00"
 R= 120.00'
 T= 47.88'
 LC= 91.11'
 CH= 88.93'

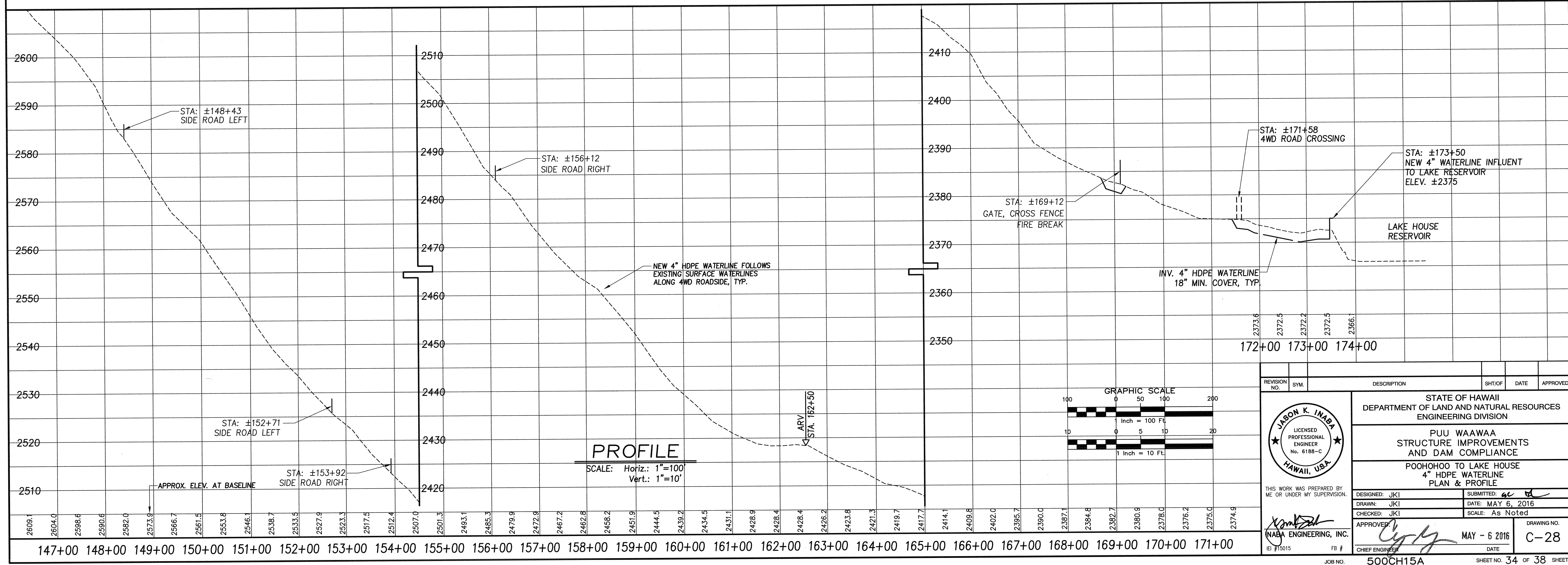
L187 CURVE DATA:
 D= 52'00"00"
 R= 170.00'
 T= 82.91'
 LC= 154.29'
 CH= 149.05'

LINE	AZ.	DIST.
L189	180°00'00"	102.00'
L190	202°00'00"	139.00'
L191	214°00'00"	128.50'
L192	182°00'00"	84.30'
L193	199°30'00"	235.00'
L194	192°00'00"	190.00'
L195	122°00'00"	100.00'

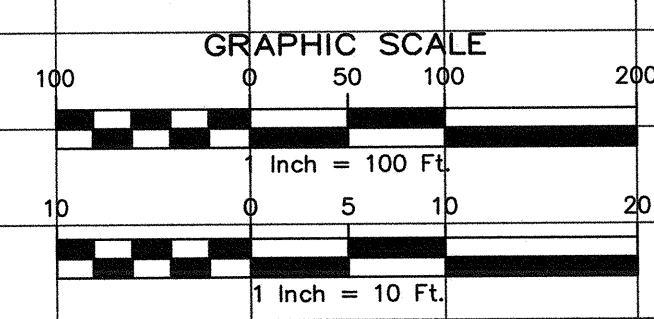


LINE	AZ.	DIST.
L180	141°37'26"	48.36'
L181	173°37'26"	192.77'
L182	206°00'00"	134.00'
L183	233°00'00"	287.00'
L184	206°30'00"	272.00'
L185	228°15'00"	88.93'
L186	250°00'00"	165.20'
L187	224°00'00"	149.05'
L188	198°00'00"	167.00'

PLAN



PROFILE
 SCALE: Horiz.: 1"=100'
 Vert.: 1"=10'



REVISION NO.	SYM.	DESCRIPTION	SHT/OF	DATE	APPROVED

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Jason K. Inaba
 NABA ENGINEERING, INC.
 IEI 151015 FB #

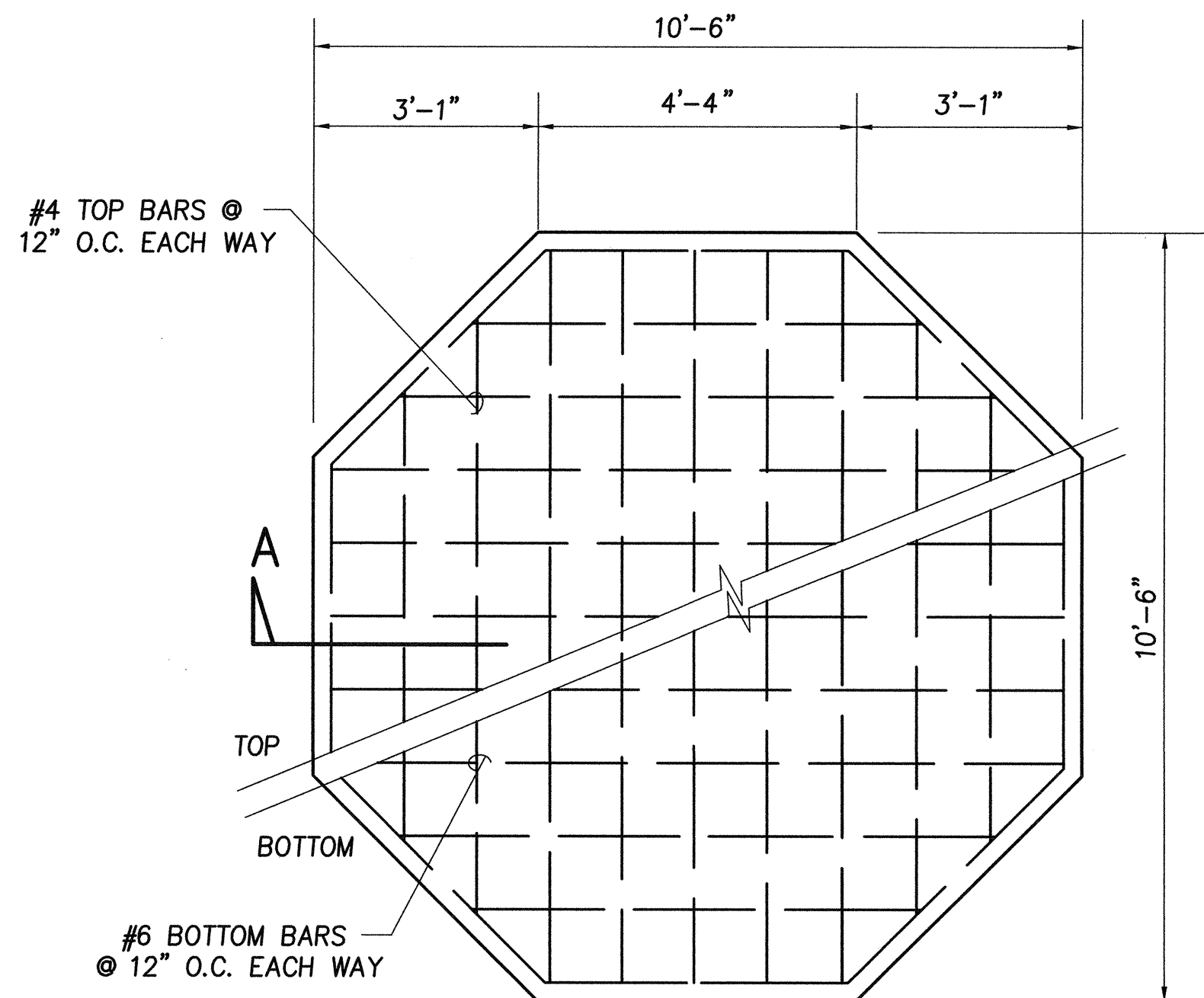
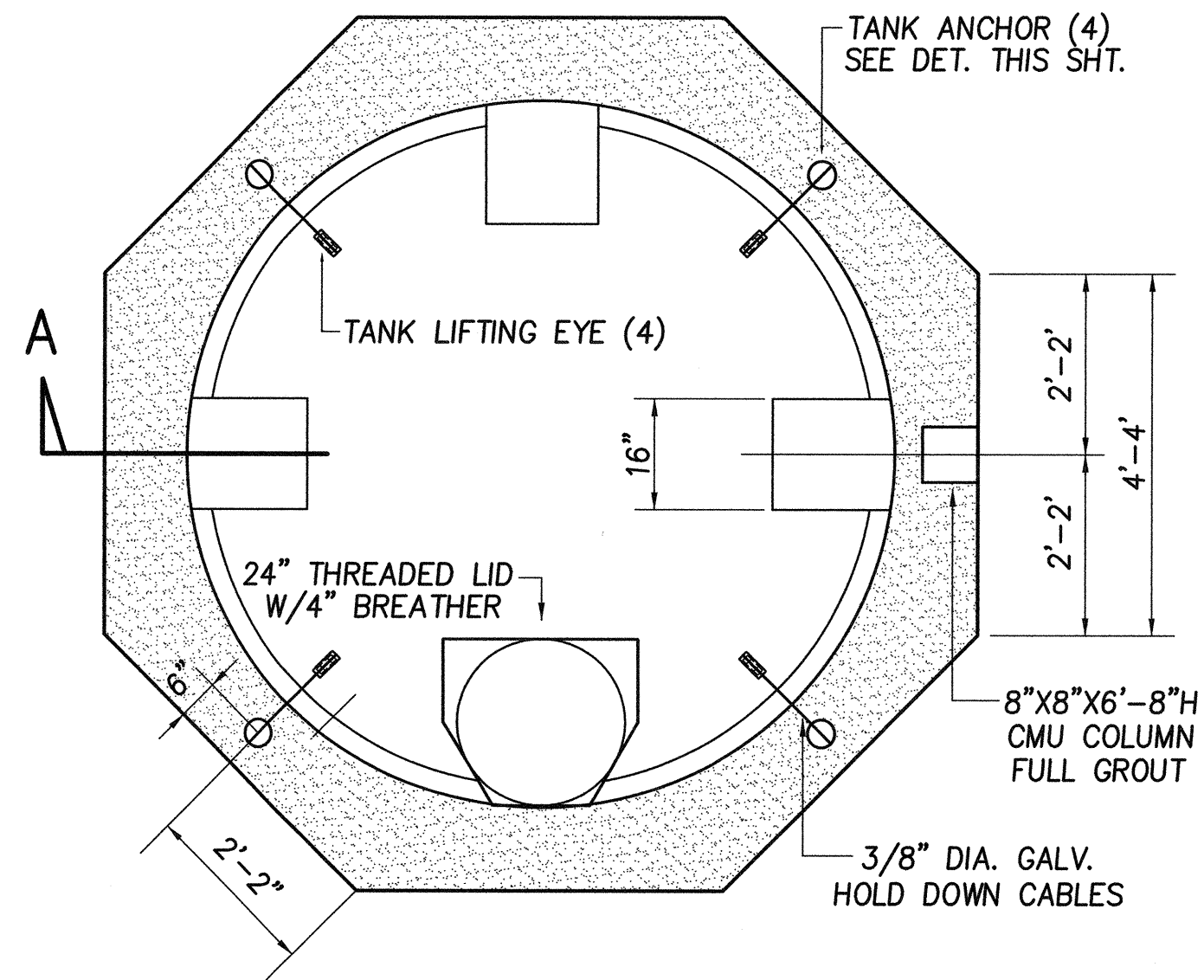
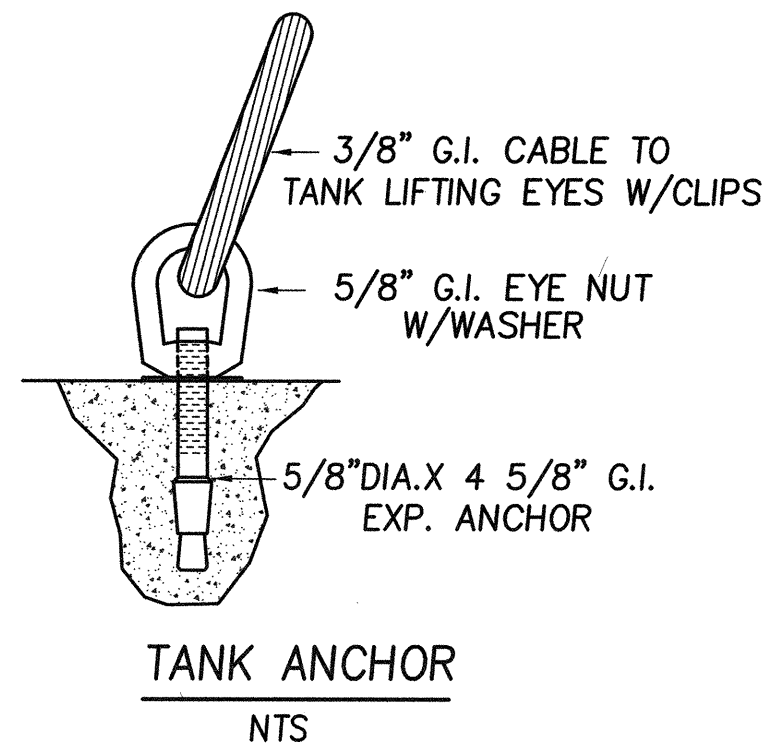
STATE OF HAWAII
 DEPARTMENT OF LAND AND NATURAL RESOURCES
 ENGINEERING DIVISION

PUU WAAWAA
 STRUCTURE IMPROVEMENTS
 AND DAM COMPLIANCE

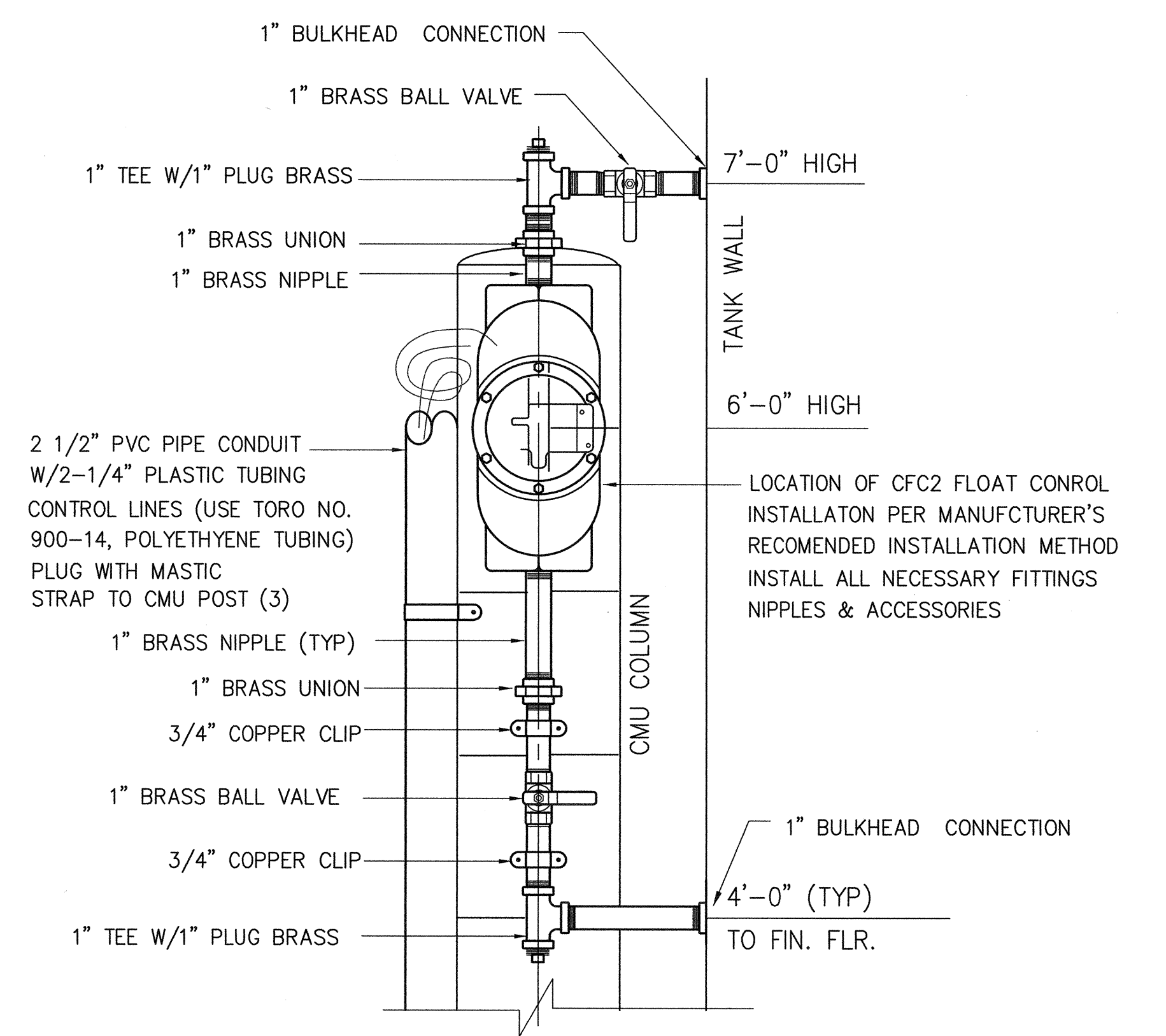
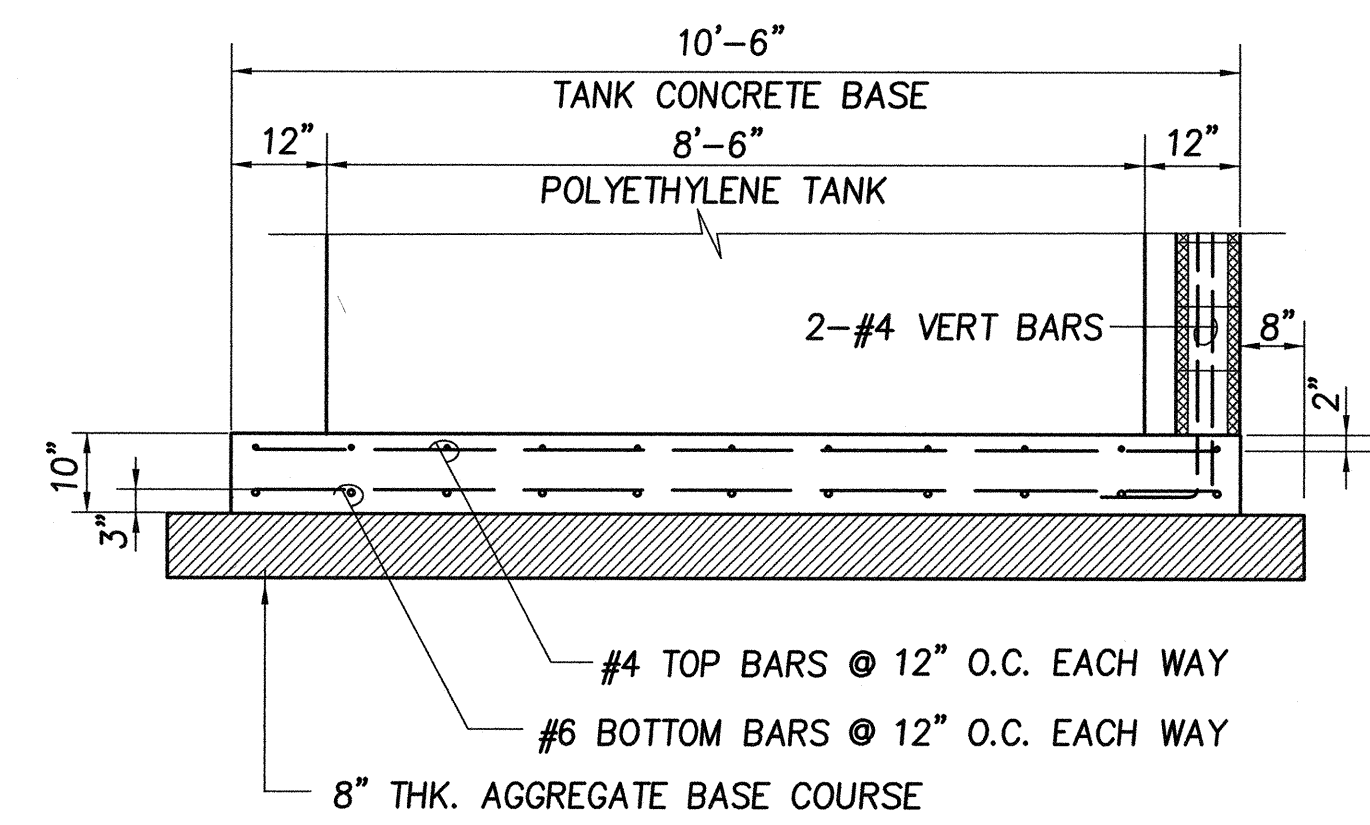
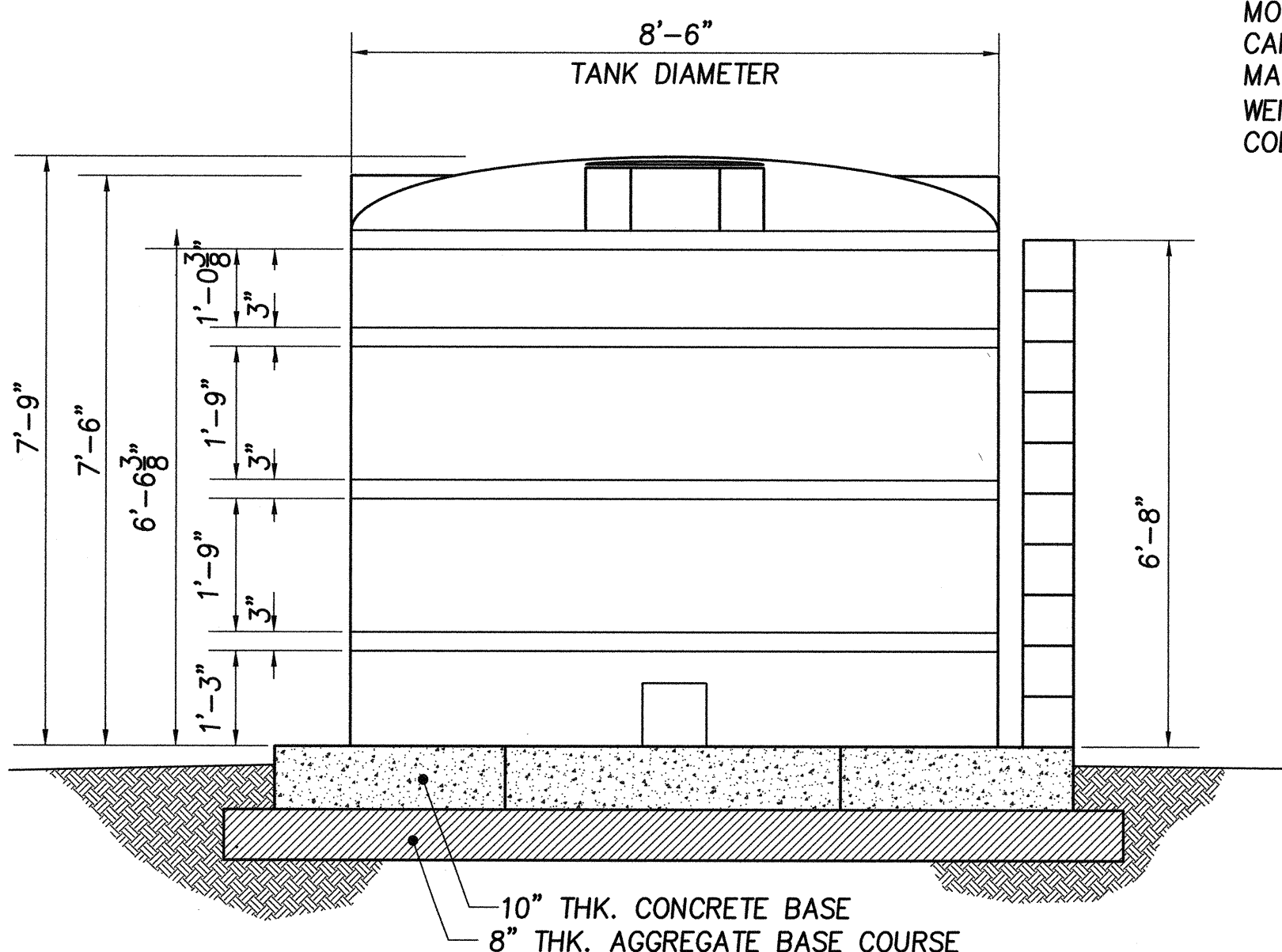
POOHOHOO TO LAKE HOUSE
 4" HDPE WATERLINE
 PLAN & PROFILE

DESIGNED: JKI
 DRAWN: JKI
 CHECKED: JKI
 APPROVED: *Jason K. Inaba*
 DATE: MAY 6, 2016
 SCALE: As Noted

DRAWING NO. C-28



MANUFACTURER: PLASTIC-MART
MODEL NO: CRMI-3000VTHD
CAPACITY: 3,000 GAL.
MATERIAL: POLYETHYLENE TANK
WEIGHT: 850 LBS (HD) RATED 2.0 SG
COLOR: DARK GREEN



NOTE: ALL NIPPLES, FITTINGS, PIPING AND ACCESSORIES SHALL BE BRASS UNLESS OTHERWISE NOTED ON THE PLAN.

B CFC2-C1 FLOAT CONTROL DETAIL
NOT TO SCALE

A PRESSURE BREAK TANK & BASE DETAILS
SCALE: 1/2"=1'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT/OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION PUU WAAWAA STRUCTURE IMPROVEMENTS AND DAM COMPLIANCE PRESSURE BREAK TANK TYPICAL LAYOUT, DETAILS					
		THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. DESIGNED: MKI DRAWN: MKI CHECKED: MKI APPROVED: <i>Melvin K. Inaba</i> INABA ENGINEERING, INC. I.E.I. #15015 FB #			
		SUBMITTED: <i>at</i> DATE: MAY 6, 2016 SCALE: As Noted		DRAWING NO. C-30 DATE: MAY - 6 2016	
JOB NO. 500CH15A SHEET NO. 36 OF 38 SHEETS					

DLNR/15015-Puuwaawaa/01-Drawings/13-SteelTanks-PipeDetails

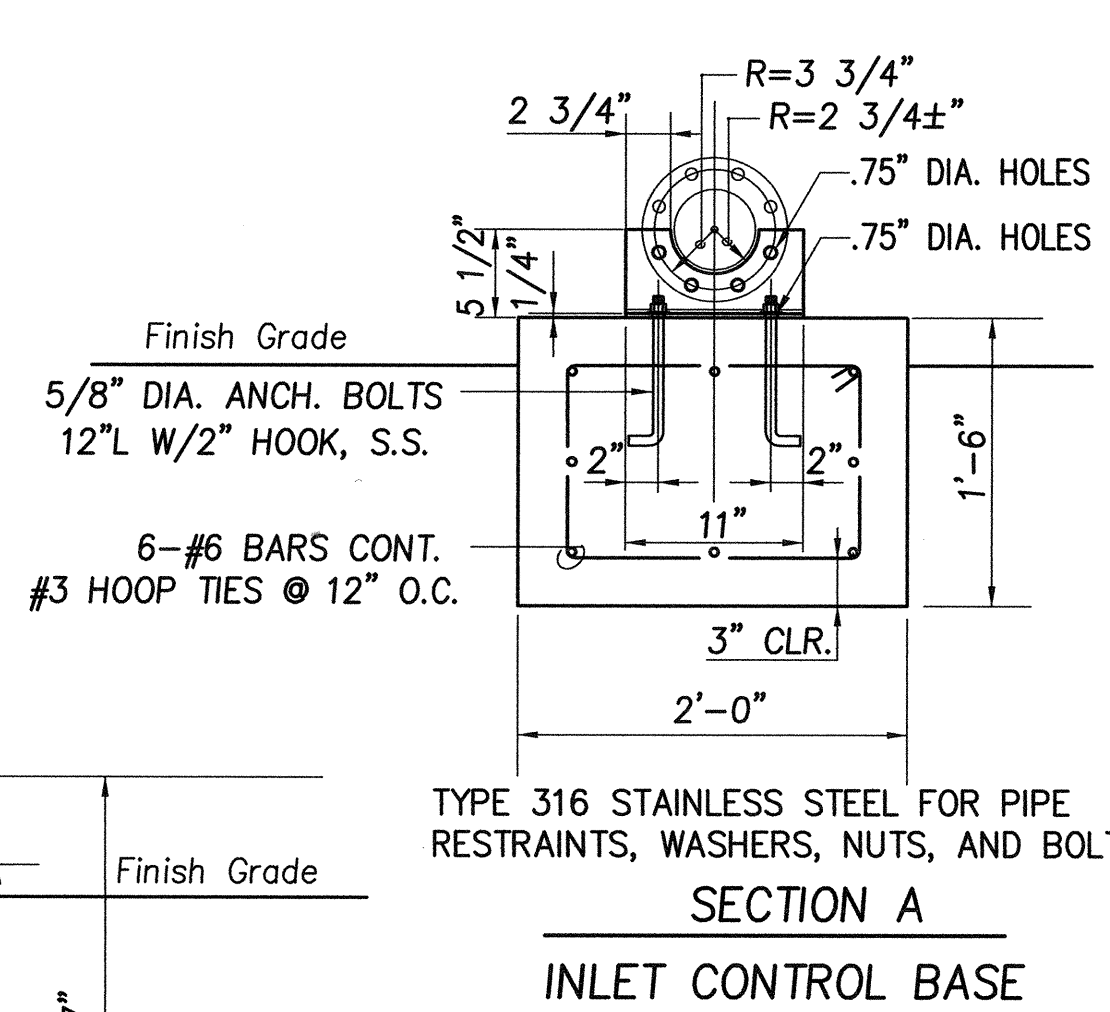
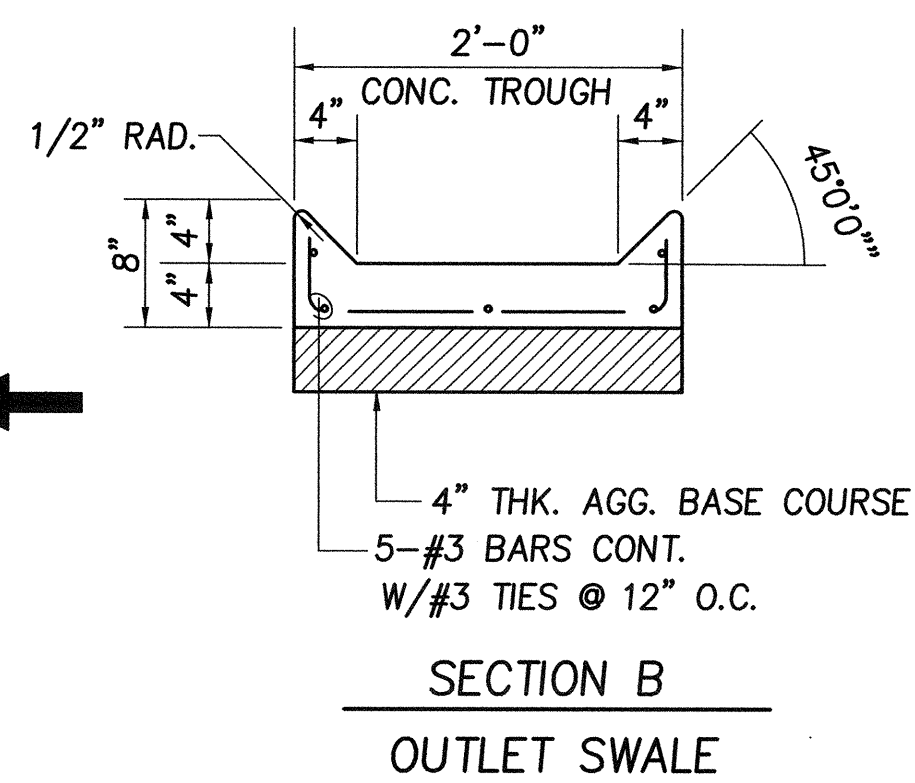
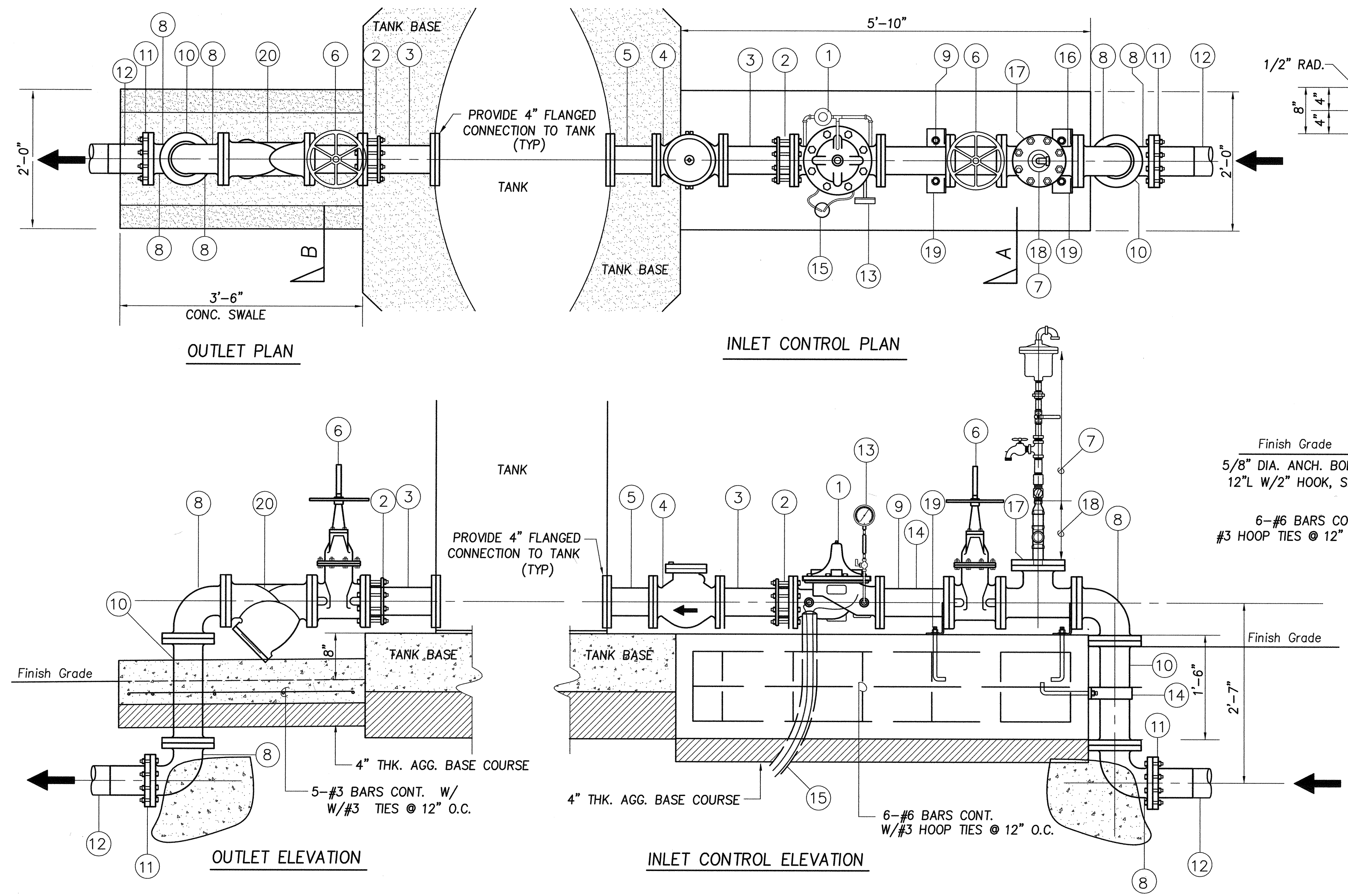
INLET/OUTLET CONTROL MATERIAL LIST

NO.	DESCRIPTION
1	4" CLAYTON NO. 56 COMBINATION PRESSURE RELIEF AND REMOTE CONTROL VALVE WITH PRESSURE SENSITIVE CLOSING FEATURE, FLANGED, & CFC2 FLOAT CONTROL UNIT
2	4" FLANGE COUPLING ADAPTER, SS NUTS AND BOLTS
3	4" D.I. ADAPTER, F.E.XP.E., 12" LONG, CUT TO FIT
4	4" SWING TYPE GRAVITY OPERATED CHECK VALVE, FLXFL (MUELLER A-2602-6)
5	4"x8" D.I. SPOOL, F.E.
6	4" GATE VALVE, F.E., CL. 125, OS&Y WITH HANDWHEEL
7	1/2" CRISPEN AIR VALVE AND HOSE BIB UNIT (SEE DETAIL "B")
8	4" D.I. 90° BEND, F.E.
9	4"x12" D.I. SPOOL, F.E.
10	4"x18" D.I. SPOOL, F.E.
11	4" HDPE FLANGE ADAPTOR W/BACK-UP RINGS
12	4" HDPE PIPELINE
13	MARSH STANDARD PRESSURE GAUGE, TYPE 1, 0-200 PSI (SEE DETAIL A)
14	3/8"x 2" S.S. STRAP WITH 5/8" DIA S.S. ANCHOR BOLTS, NUT & WASHER (SEE DET. "C")
15	2 1/2" PVC PIPE CONDUIT FOR REMOTE CONTROL VALVE TO FLOAT CONTROL UNIT. SEAL ENDS OF PIPE WITH MASTIC. TWO 1/4" PLASTIC TUBING CONTROL LINES. (USE TORO NO. 900-14, POLYETHYLENE TUBING)
16	4" D.I. TEE, F.E.,
17	4" BLIND FLANGE, 1.5" IPT
18	FIRE HOSE CONNECTION INCLUDING; 1 1/2" NIPPLES, 1 1/2" TEE, 1 1/2" BALL VALVE, 1 1/2"x 3/4" REDUCER, 1 1/2" FIRE HOSE ADAPTOR WITH CAP, ALL FITTINGS VALVES AND ACCESSORIES SHALL BE BRASS.
19	FITTING RESTRAINT, STAINLESS STEEL, SEE DETAIL THIS SHT.
20	4" "Y" STRAINER, FL X FL (MUELLER 752)

-ALL CLAYTON VALVES SHALL BE EPOXY COATED INTERNALLY AND EXTERNALLY AND EQUIPPED WITH X101 VALVE STEM INDICATOR.
 -CLAYTON VALVES SHALL BE CLASS 150. (CAST STEEL 275 PSI MAX.)
 -ALL FLANGE BOLTS SHALL BE STAINLESS STEEL OR SILICON BRONZE

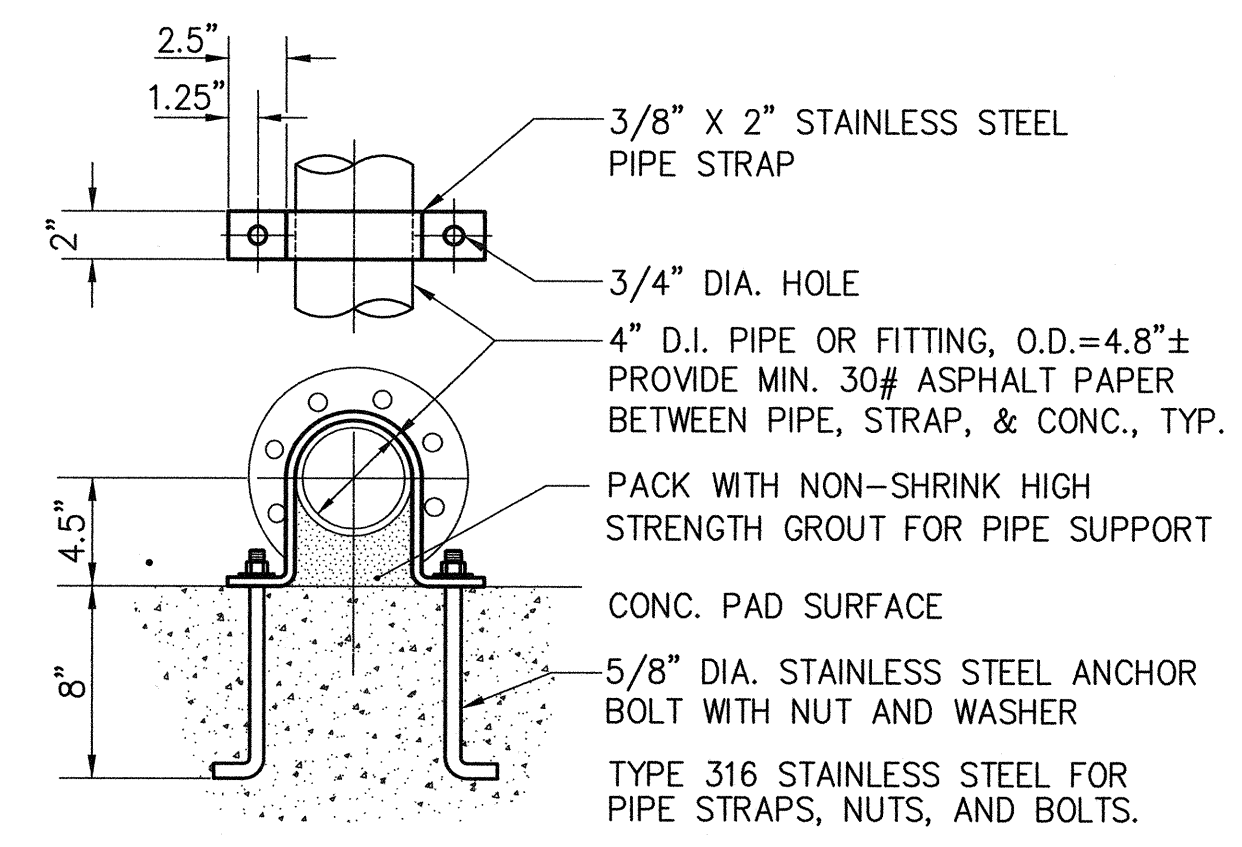
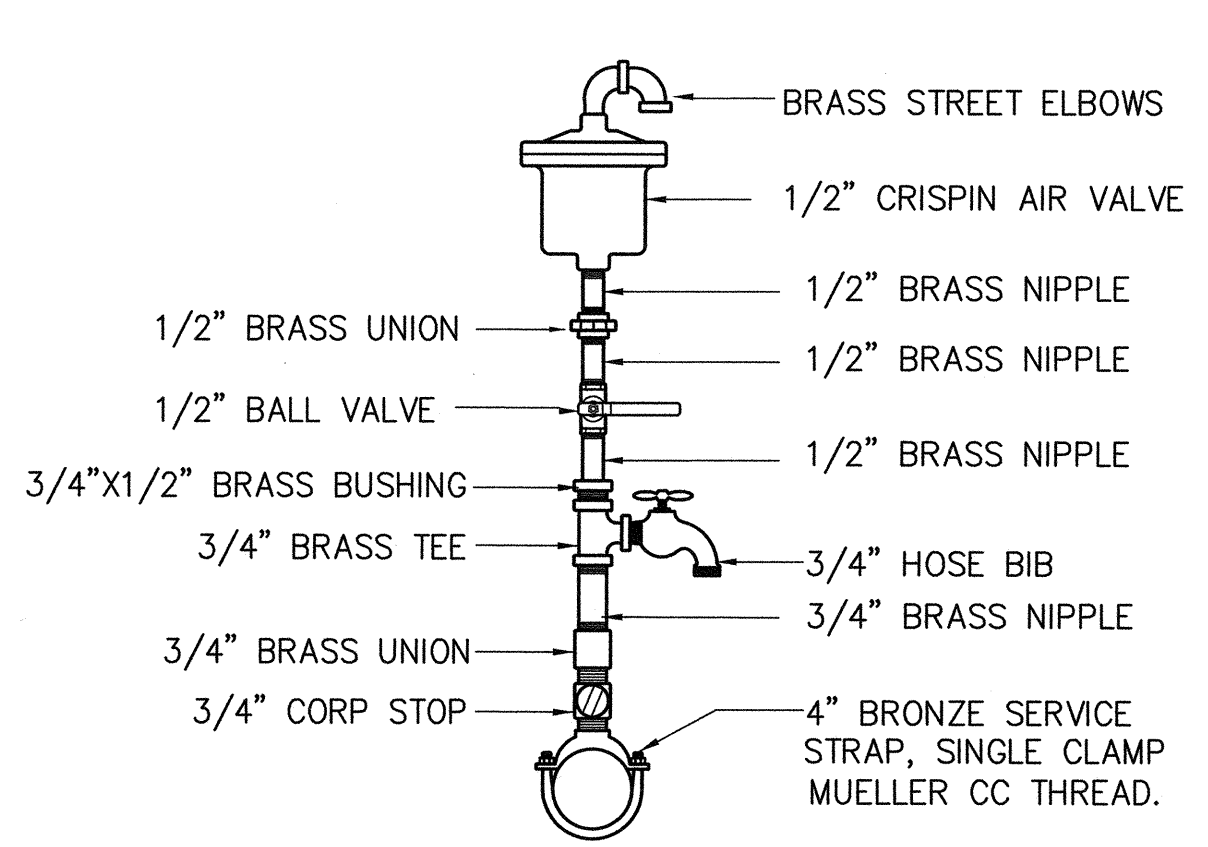
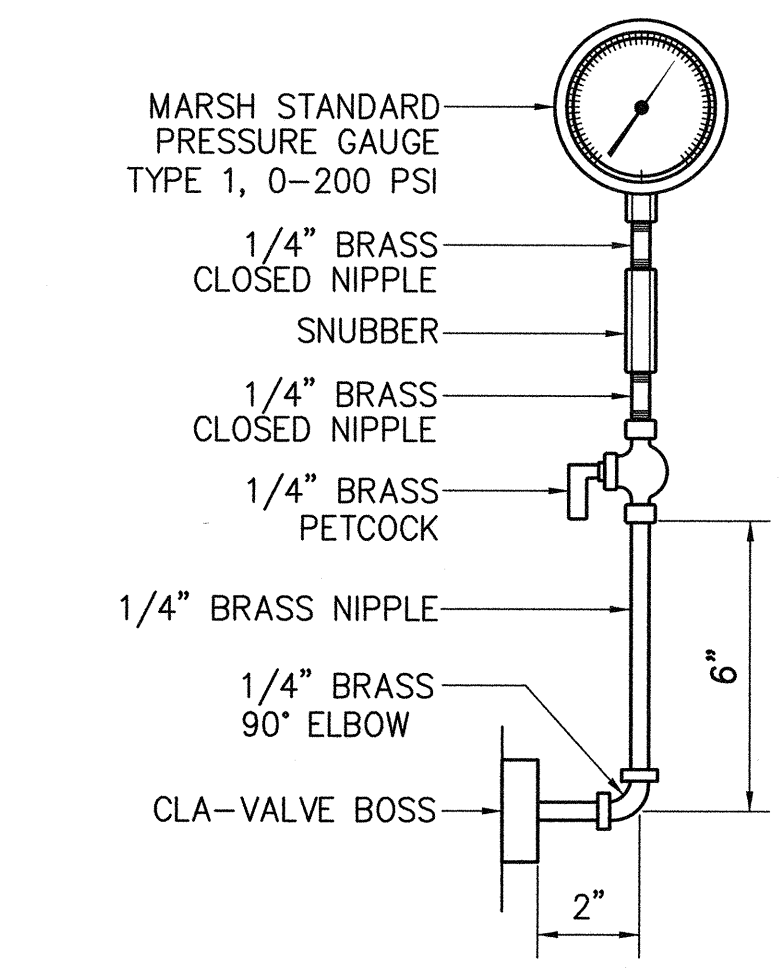
INLET CONTROL NOTES

1. PROVIDE 3/4" CHAMFER ON ALL EXPOSED CONCRETE EDGES.
2. CONCRETE STRENGTH FOR INLET PAD SHALL BE DWS 3,000 PSI AT 28 DAYS.
3. CONCRETE PAD FINISH SHALL BE SLOPED TO DRAIN WATER OFF SLAB.
4. THE CONTRACTOR SHALL VERIFY AND CONFIRM ALL DIMENSIONS PRIOR TO FABRICATION AND INSTALLATION.
5. ALL NUTS AND BOLTS SHALL STAINLESS STEEL OR SILICON BRONZE.
6. PROVIDE TWO LAYERS ASPHALT FELT MATERIAL BETWEEN ALL METAL TO METAL SURFACES AND BETWEEN CONCRETE TO METAL SURFACES. (IE, METAL STRAPS AND CONCRETE SUPPORTS FOR PIPES AND FITTINGS.)
7. PROVIDE CONCRETE THRUST BLOCKS FOR ALL UNDERGROUND BENDS, HORIZONTAL AND VERTICAL.
8. REINFORCING SHALL BE GRADE 60 UNLESS OTHERWISE NOTED.



D PRESSURE BREAK TANK - CONTROL DETAIL

SCALE: 1"=1'-0"



A PRESSURE GAGE UNIT

NOT TO SCALE

B AIR RELIEF VALVE UNIT & HOSE BIB

NOT TO SCALE

C 4" D.I. PIPE STRAP

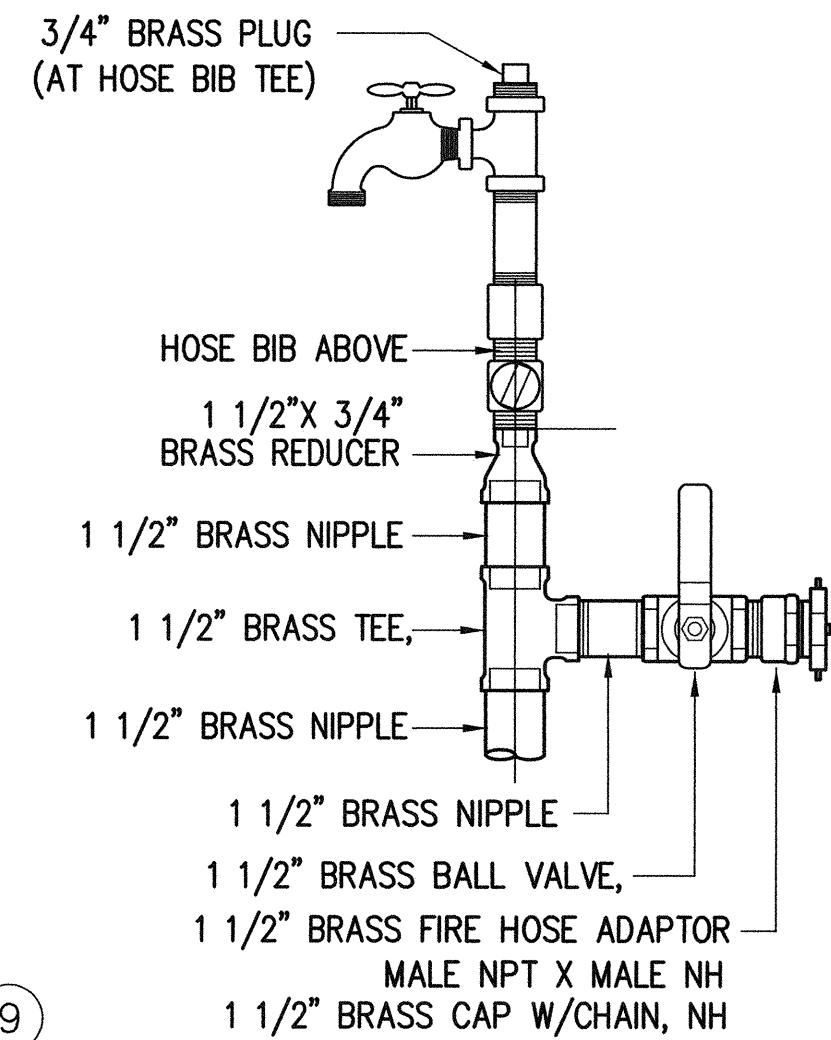
1 1/2"=1'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT/OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION					
PUU WAAWAA STRUCTURE IMPROVEMENTS AND DAM COMPLIANCE PRESSURE BREAK TANK TYPICAL LAYOUT, DETAILS					
DESIGNED: MKI		SUBMITTED: <i>av</i>		DRAWING NO.	
DRAWN: MKI		DATE: MAY 6, 2016		C-31	
CHECKED: MKI		SCALE: As Noted		APPROVED: <i>Cy</i>	
INABA ENGINEERING, INC.		MAY - 6 2016		DATE	
EI #15015		FB #		JOB NO. 500CH15A	

DLNP/15015-Puuwaa/01-Drawings/13-SteelTanks-PipeDetails

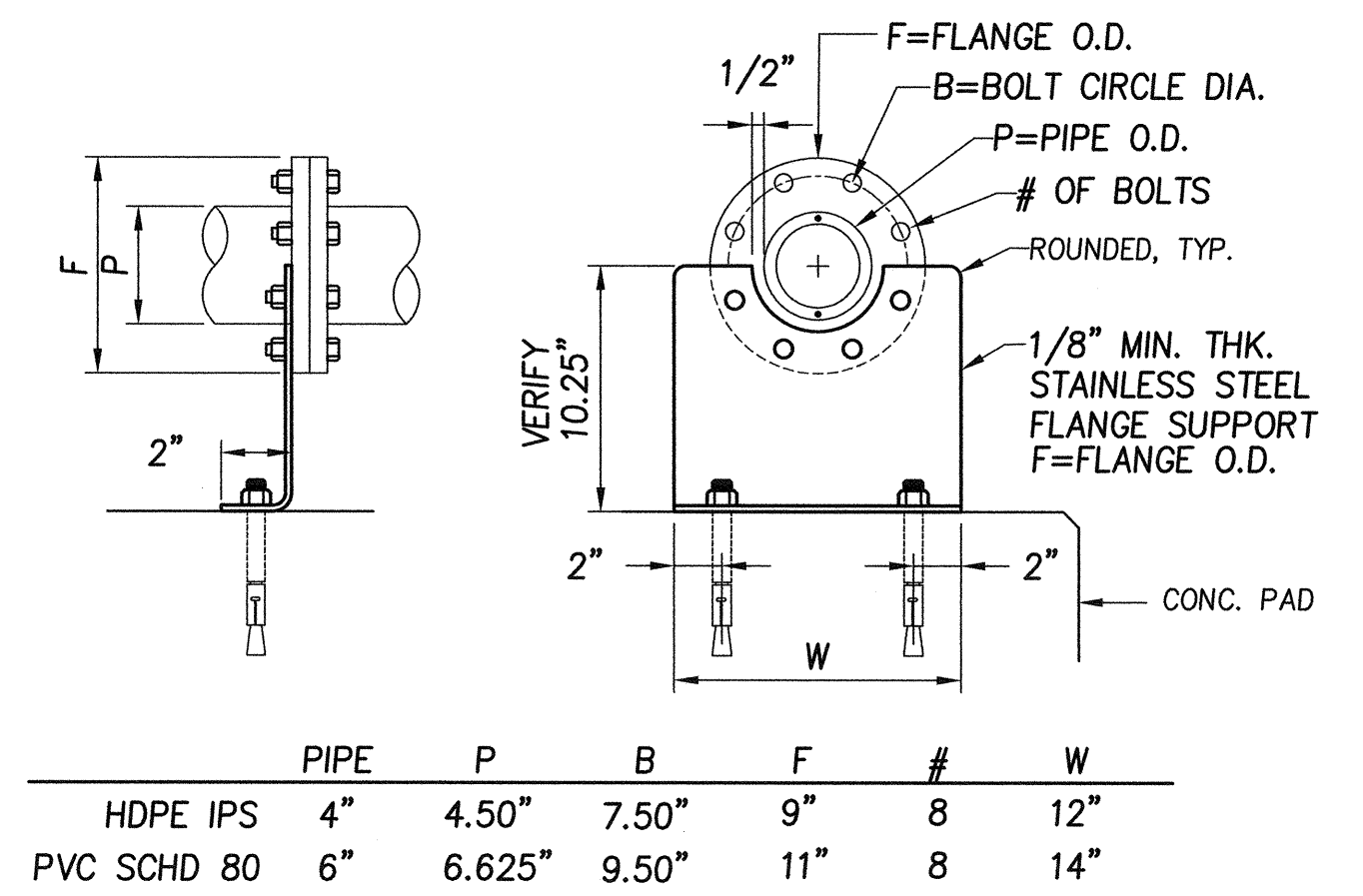
FIRE HOSE CONNECTION / ARV UNIT

NO.	DESCRIPTION
1	FIRE HOSE CONNECTION INCLUDING: 1 1/2" NIPPLES, 1 1/2" TEE, 1 1/2" BALL VALVE, 1 1/2" X 3/4" REDUCER, 1 1/2" FIRE HOSE ADAPTOR WITH CAP & CHAIN. ALL FITTINGS VALVES, AND ACCESSORIES SHALL BE BRASS.
2	4" BLIND FLANGE, 1.5" IPT (3/4" IPT FOR ARV UNIT ONLY)
3	4" D.I. TEE, FL
4	4" D.I. 45° BEND, FL
5	4" D.I. SPOOL, FL 40" LONG
6	1/2" AIR RELIEF VALVE UNIT W/HOSE BIB (SEE DETAIL B SHT. C-31)
7	FITTING RESTRAINT, STAINLESS STEEL, SEE DETAIL THIS SHT.
8	4" HDPE FLANGE ADAPTOR W/BACK-UP RINGS
9	4" HDPE PIPELINE
FOR FIRE HOSE CONNECTION ONLY PROVIDE 1 1/2" PLUG.	

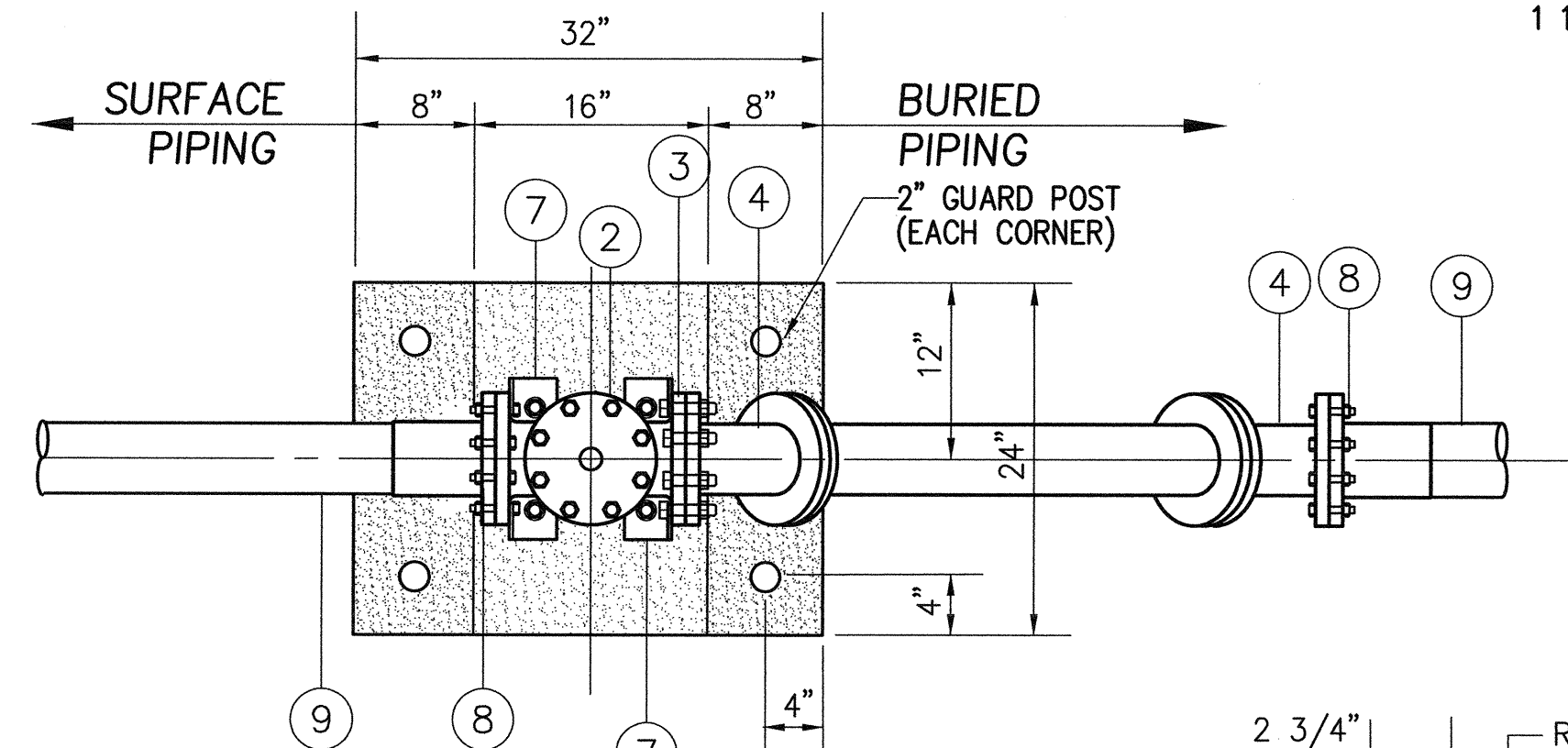


FIRE HOSE CONN.

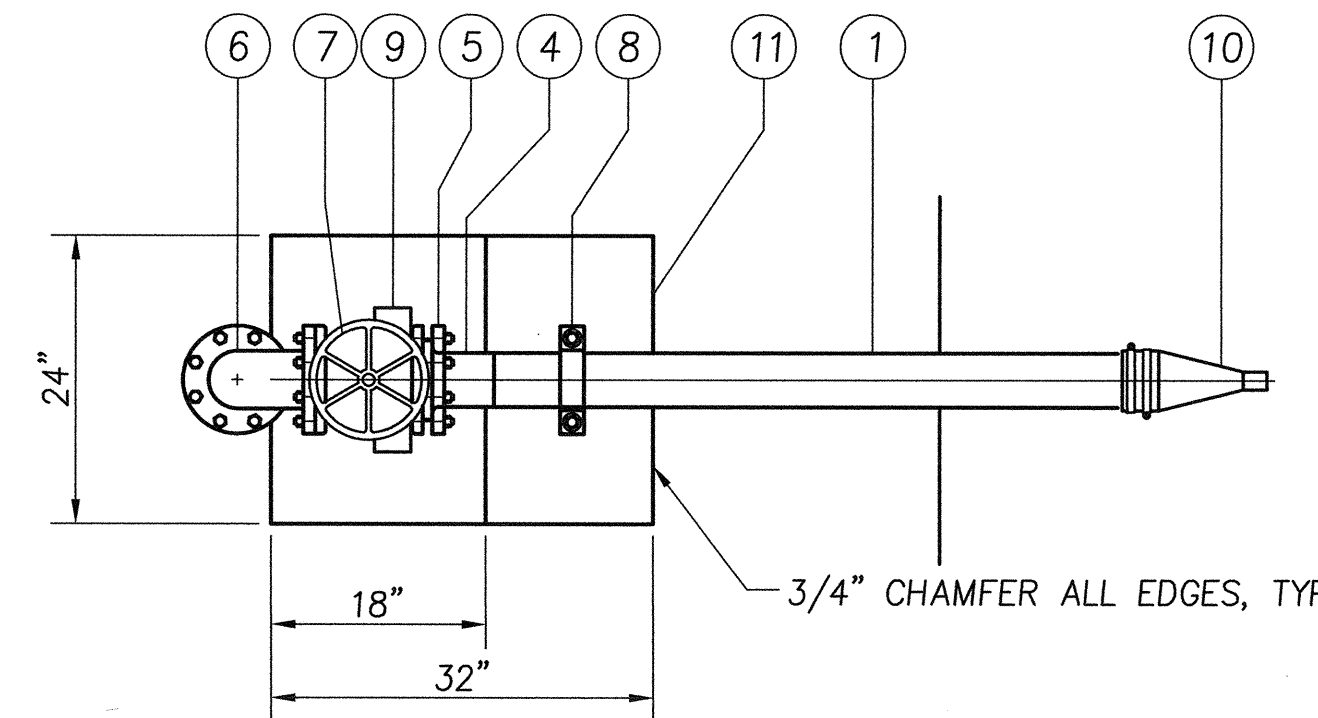
MATERIAL SCHEDULE	
ITEM	DESCRIPTION
1	4" HDPE IPS PIPE, DR 11 200 PSI
2	4" HDPE IPS ELECTROFUSION COUPLING
3	4" HDPE IPS MOLDED 90
4	4" HDPE IPS FLANGE ADAPTER
5	4" DI BACK UP FLANGE
6	4" 90° BEND FXF
7	4" D.I. GATE VALVE FXF, OS&Y
8	1/8"X2" STAINLESS STEEL PIPE STRAP PER DETAIL
9	STAINLESS STEEL PIPE FLANGE SUPPORT PER DETAIL
10	4" DUCKBILL CHECK VALVE, CLA-VAL DBO
11	CONCRETE PIPE PEDESTAL



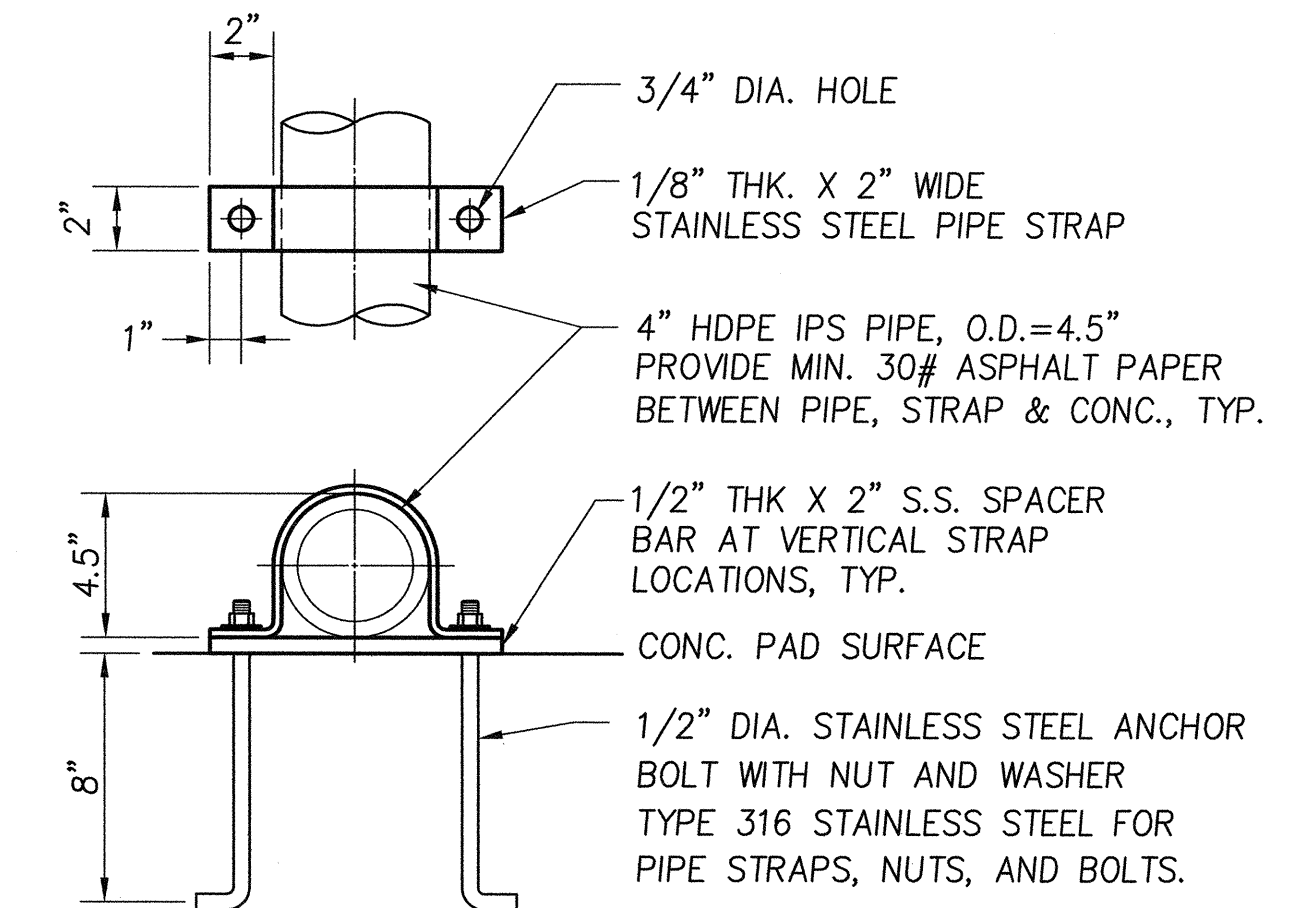
2 PIPE FLANGE SUPPORT, TYP. DETAIL
NOT TO SCALE



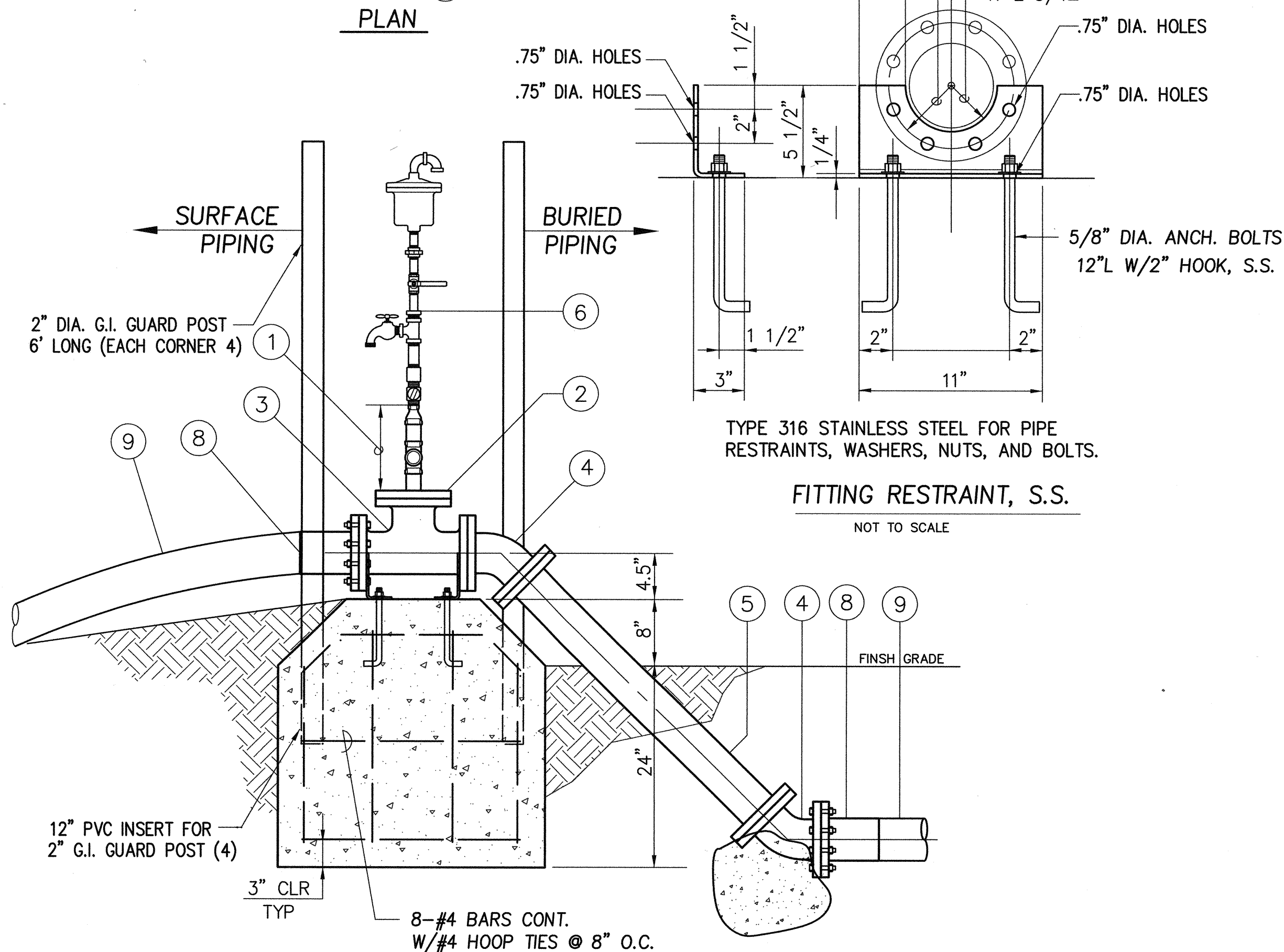
PLAN



PLAN



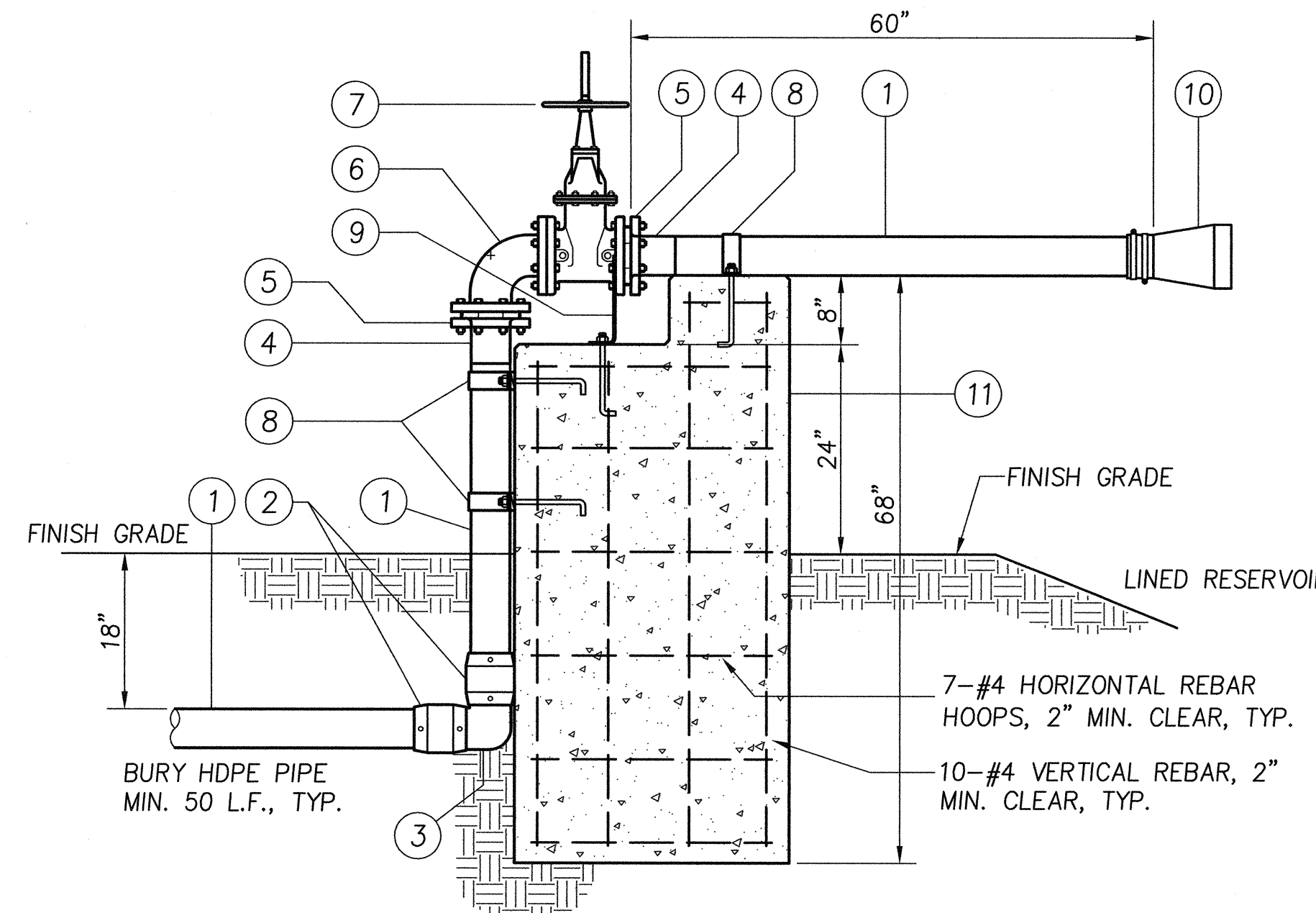
1 STRAP FOR 4" HDPE IPS PIPE
NOT TO SCALE



ELEVATION

NOTE: FOR FIRE HOSE CONNECTION ONLY, PROVIDE 3/4" PLUG AT HOSE BIB TEE.
CONTRACTOR SHALL PROVIDE ADEQUATE PIPE LENGTH ALLOWANCE FOR THERMAL EXPANSION/CONACTION ON BOTH SIDES OF THE CONCRETE BLOCK.

A TYPICAL FIRE HOSE CONNECTION/ARV UNIT
NOT TO SCALE



ELEVATION

B INFLUENT PIPE AND CONCRETE PEDESTAL
NOT TO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT/OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION PUU WAAWAA STRUCTURE IMPROVEMENTS AND DAM COMPLIANCE FIRE HOSE CONNECTION / AIR RELIEF VALVE INFLUENT PIPE & PEDESTAL					
		DESIGNED: MKI DRAWN: MKI CHECKED: MKI APPROVED: <i>[Signature]</i> INABA ENGINEERING, INC. IEI #15015			
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.		SUBMITTED: <i>[Signature]</i> DATE: MAY 6, 2016 SCALE: As Noted		DRAWING NO. C-32 DATE MAY - 6 2016	
JOB NO. 500CH15A SHEET NO. 38 OF 38 SHEETS					