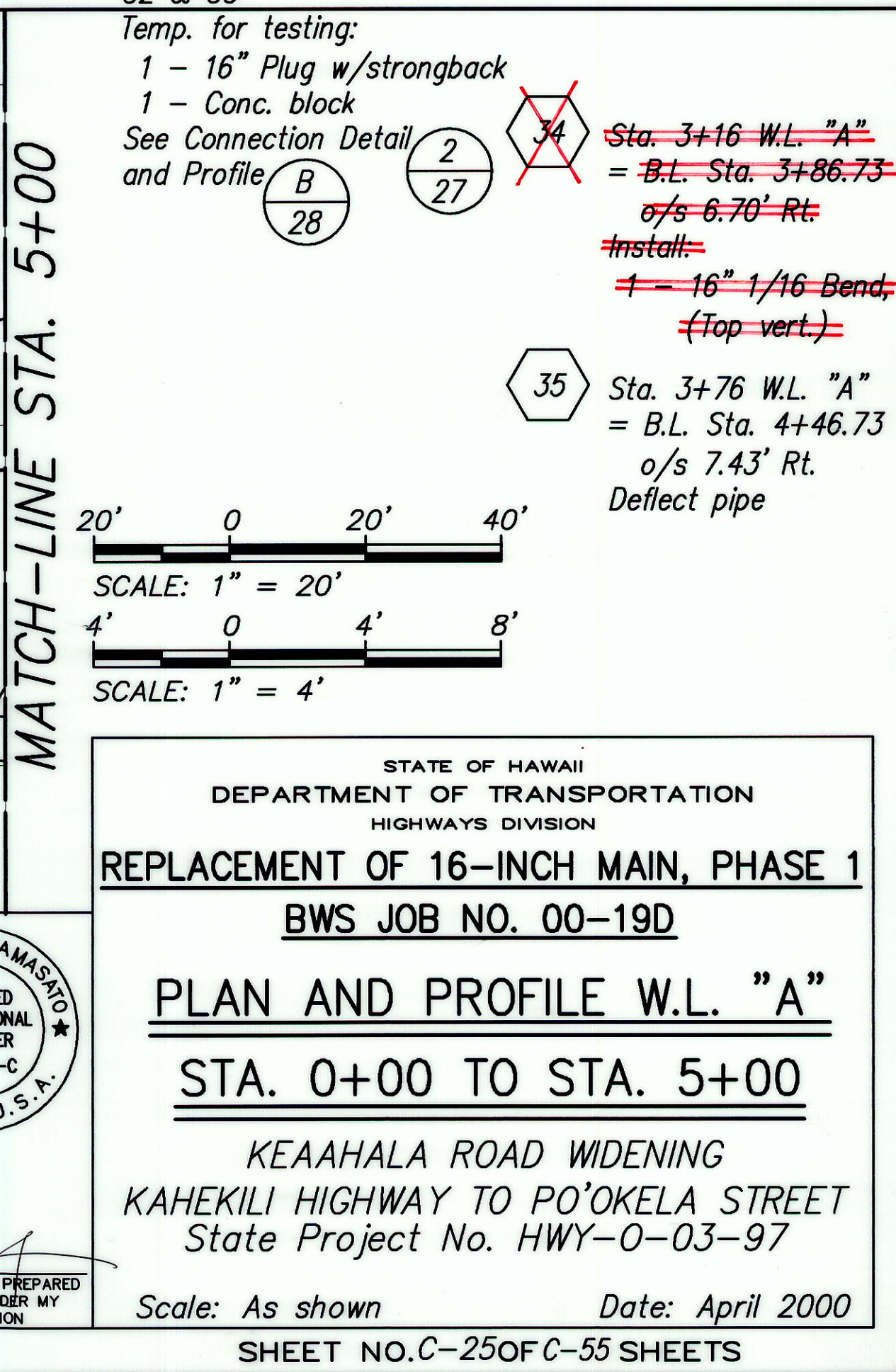
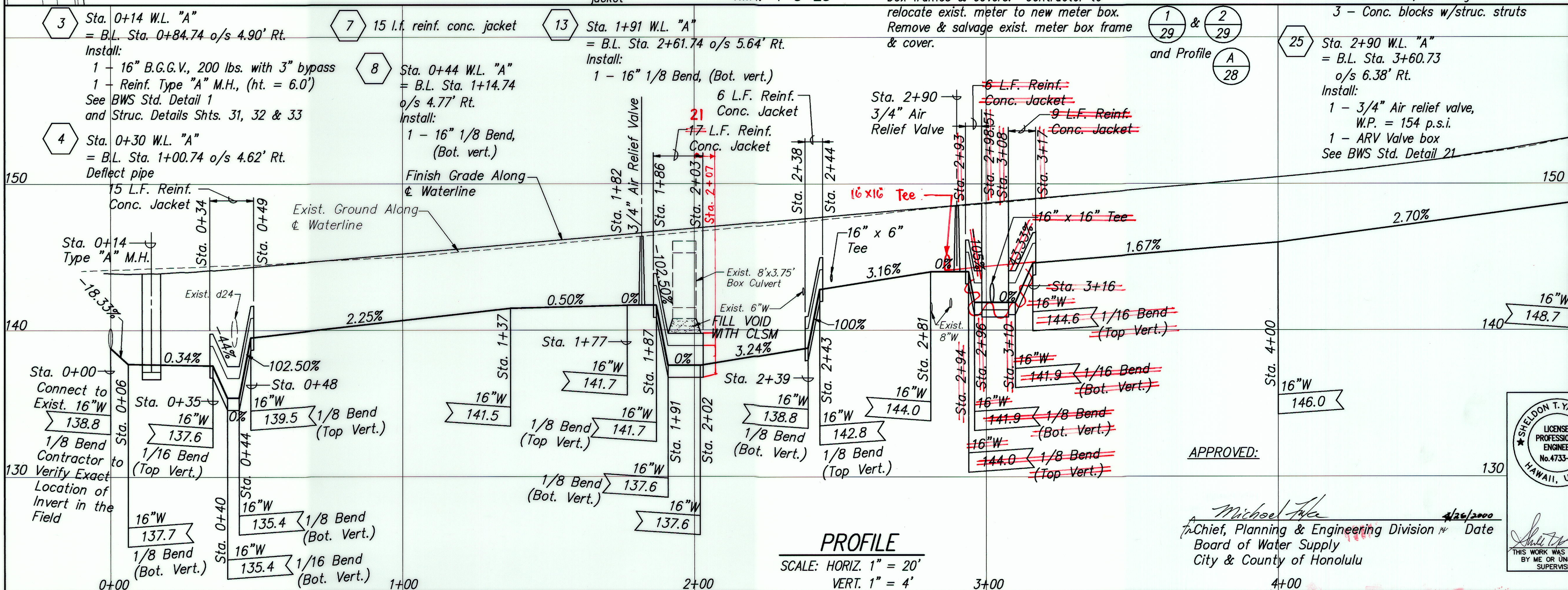
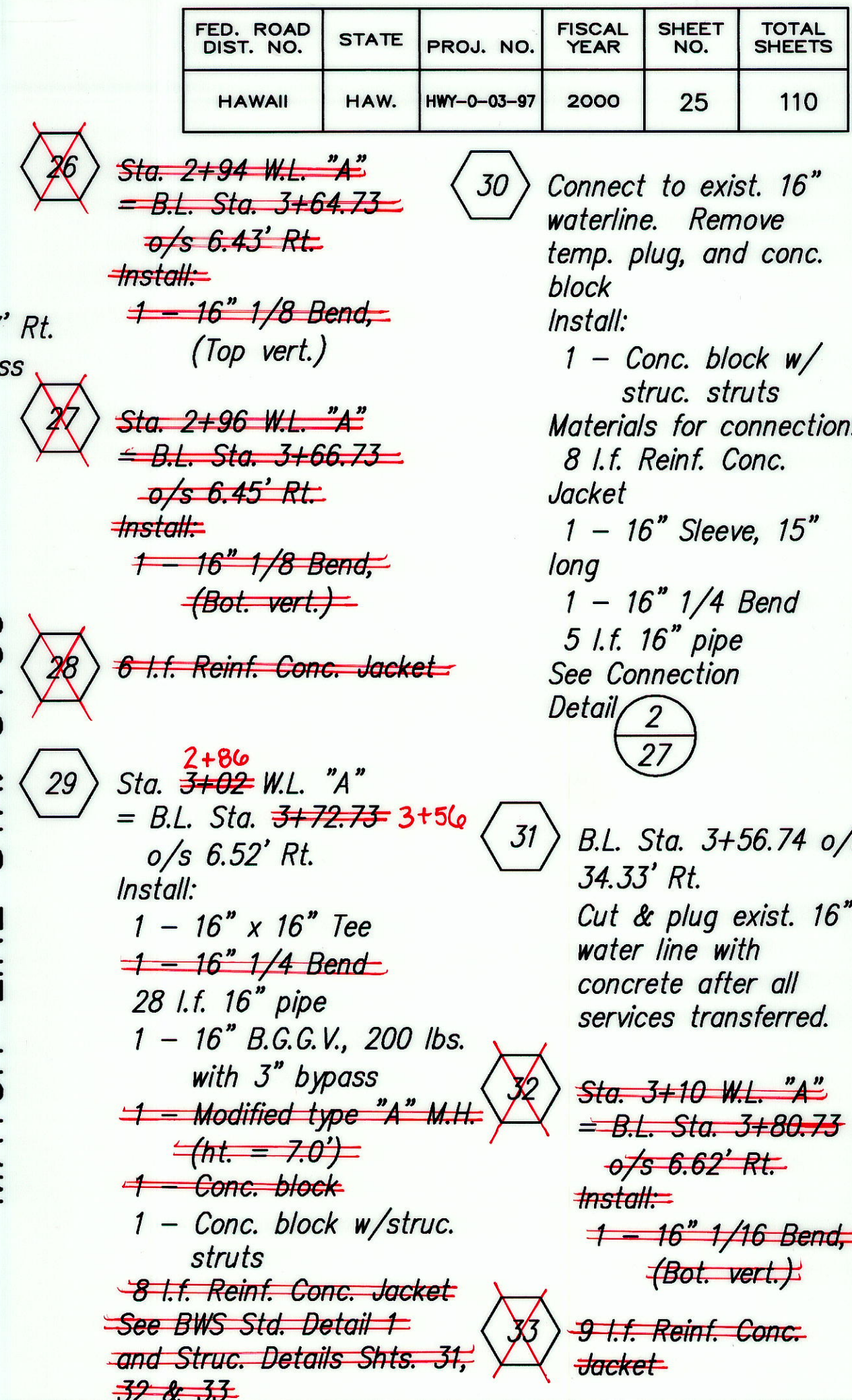
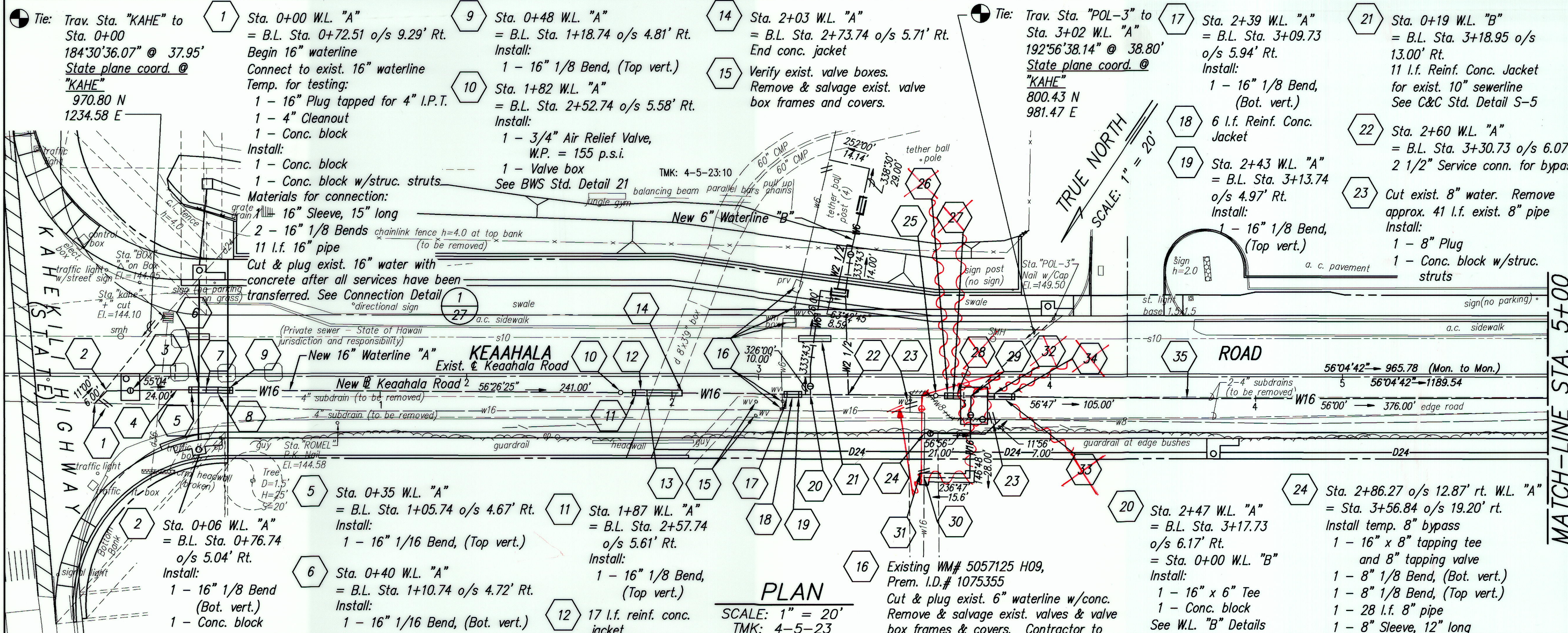


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-97	2000	25	110



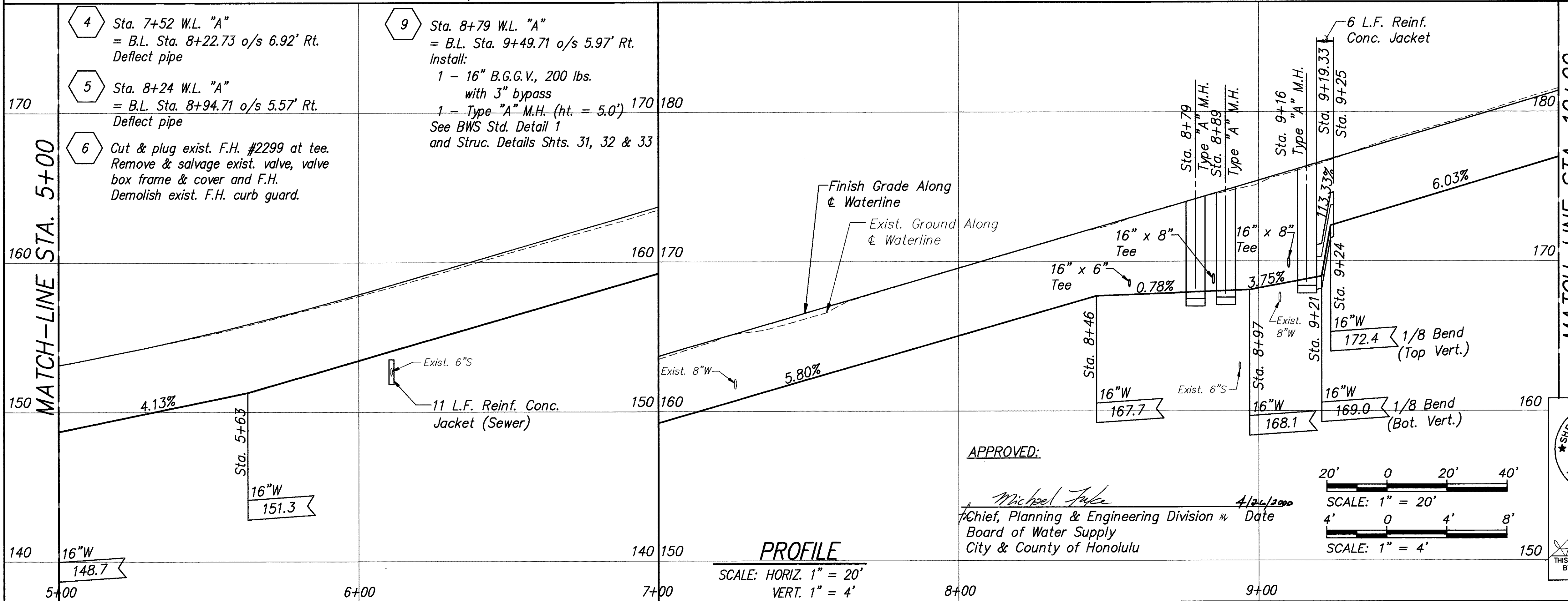
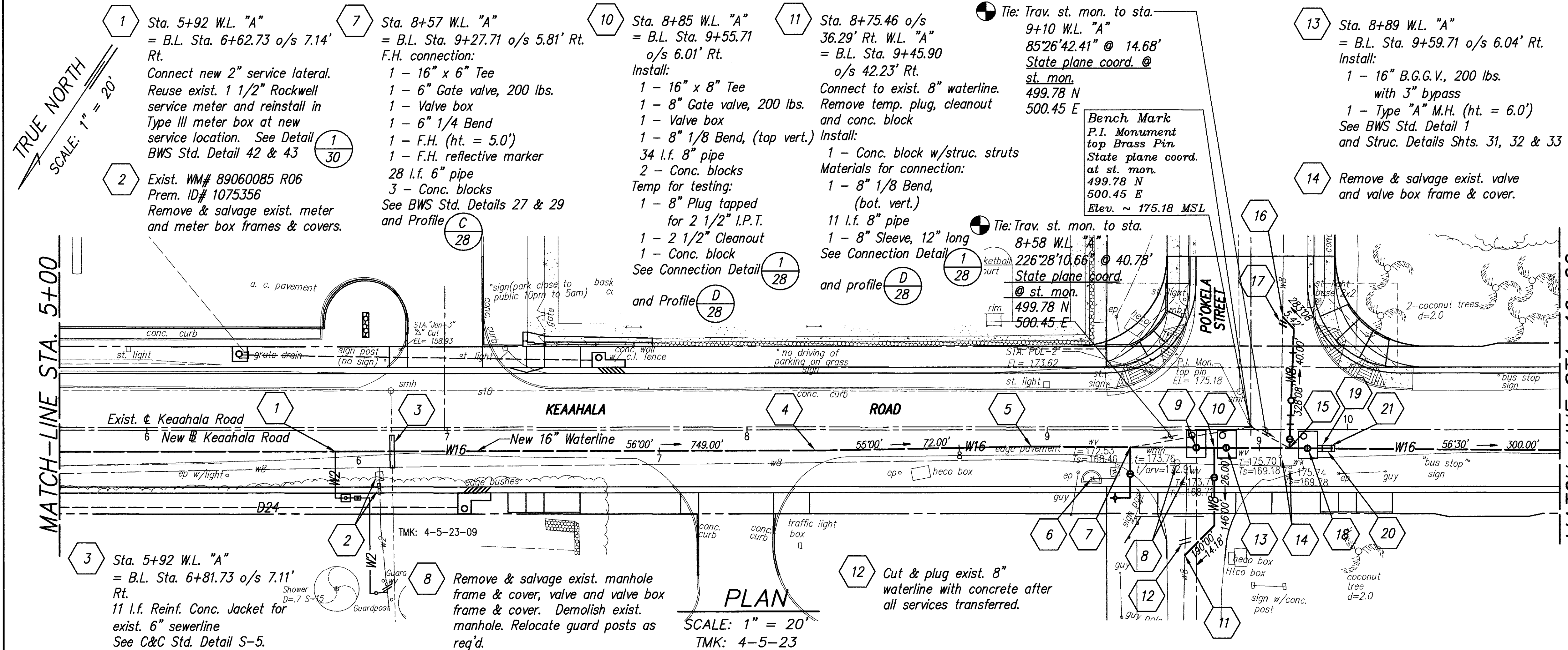
PM: STY 146"
 OPER: CKM, RCO
 REVISED: 4/5/00
 FILE: DOT95141
 SCALE: 1"=20'
 BEG: 1/3/00
 SURVEY PLOTTED BY: DATE: _____
 DRAWN BY: _____
 DESIGNED BY: _____
 CHECKED BY: _____
 ORIGINAL PLAN: _____
 NOTEBOOK: _____
 No. _____

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
REPLACEMENT OF 16-INCH MAIN, PHASE 1
BWS JOB NO. 00-19D
PLAN AND PROFILE W.L. "A"
STA. 0+00 TO STA. 5+00
 KEAAHALA ROAD WIDENING
 KAHEKILI HIGHWAY TO PO'OKELA STREET
 State Project No. HWY-0-03-97
 Scale: As shown Date: April 2000
 SHEET NO. C-25 OF C-55 SHEETS

SHIELDON T. YAMASHIRO
 LICENSED PROFESSIONAL ENGINEER
 No. 4733-C
 HAWAII, U.S.A.
 THIS WORK WAS PREPARED
 BY ME OR UNDER MY
 SUPERVISION

APPROVED: _____
 Michael A. _____
 Chief, Planning & Engineering Division
 Board of Water Supply
 City & County of Honolulu

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-97	2000	26	110



17 Cut & plug exist. 8" waterline with concrete after all services transferred.

18 Sta. 9+16 W.L. "A" = B.L. Sta. 9+86.71 o/s 6.24' Rt. Install: 1 - 16" B.G.G.V., 200 lbs. with 3" bypass 1 - Type "A" M.H. (ht. = 6.0') See BWS Std. Detail 1 and Struc. Details Shts. 31, 32 & 33

19 Sta. 9+21 W.L. "A" = B.L. Sta. 9+91.70 o/s 7.28' Rt. Install: 1 - 16" 1/8 Bend, (Bot. vert.)

20 6 l.f. Reinf. Conc. Jacket

21 Sta. 9+24 W.L. "A" = B.L. Sta. 9+94.70 o/s 7.30' Rt. Install: 1 - 16" 1/8 Bend, (Top vert.)

15 Sta. 9+10 W.L. "A" = B.L. Sta. 9+80.71 o/s 6.20' Rt. Install: 1 - 16" x 8" Tee 1 - 8" Gate valve, 200 lbs. 1 - Valve box 1 - 8" 1/8 Bend (bot. vert.) 1 - 8" 1/8 Bend (top vert.) 1 - 8" 1/32 Bend (top vert.) 1 - 3/4" Air Relief Valve W.P. = 142 p.s.i. 1 - ARV valve box 40 l.f. 8" pipe 3 - Conc. blocks Temp for testing: 1 - 8" Cap tapped for 2 1/2" I.P.T. 1 - 2 1/2" Cleanout 1 - Conc. block See Connection Detail 1 and Profile E 28

16 Remove & salvage exist. valve and valve box frame & cover.

4 Sta. 7+52 W.L. "A" = B.L. Sta. 8+22.73 o/s 6.92' Rt. Deflect pipe

5 Sta. 8+24 W.L. "A" = B.L. Sta. 8+94.71 o/s 5.57' Rt. Deflect pipe

6 Cut & plug exist. F.H. #2299 at tee. Remove & salvage exist. valve, valve box frame & cover and F.H. Demolish exist. F.H. curb guard.

9 Sta. 8+79 W.L. "A" = B.L. Sta. 9+49.71 o/s 5.97' Rt. Install: 1 - 16" B.G.G.V., 200 lbs. with 3" bypass 1 - Type "A" M.H. (ht. = 5.0') See BWS Std. Detail 1 and Struc. Details Shts. 31, 32 & 33

13 Sta. 8+89 W.L. "A" = B.L. Sta. 9+59.71 o/s 6.04' Rt. Install: 1 - 16" B.G.G.V., 200 lbs. with 3" bypass 1 - Type "A" M.H. (ht. = 6.0') See BWS Std. Detail 1 and Struc. Details Shts. 31, 32 & 33

14 Remove & salvage exist. valve and valve box frame & cover.

PLAN

SCALE: 1" = 20'

TMK: 4-5-23

PROFILE

SCALE: HORIZ. 1" = 20'

VERT. 1" = 4'

APPROVED:

Michael Taka

Chief, Planning & Engineering Division

Board of Water Supply

City & County of Honolulu

Date: 4/24/2000

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

REPLACEMENT OF 16-INCH MAIN, PHASE 1

BWS JOB NO. 00-19D

PLAN AND PROFILE W.L. "A"

STA. 5+00 TO STA. 10+00

KEAAHALA ROAD WIDENING

KAHEKILI HIGHWAY TO PO'OKELA STREET

State Project No. HWY-0-03-97

Scale: As shown Date: April 2000

SHEET NO. C-26 OF C-55 SHEETS

PM: STY 146"

OPER: CKM *PGO

REVISED: 04/24/00

FILE: DOT95142

SCALE: 1"=20'

BEG: 1/6/00

SURVEY PLOTTED BY: DATE: *

DRAWN BY: *

DESIGNED BY: *

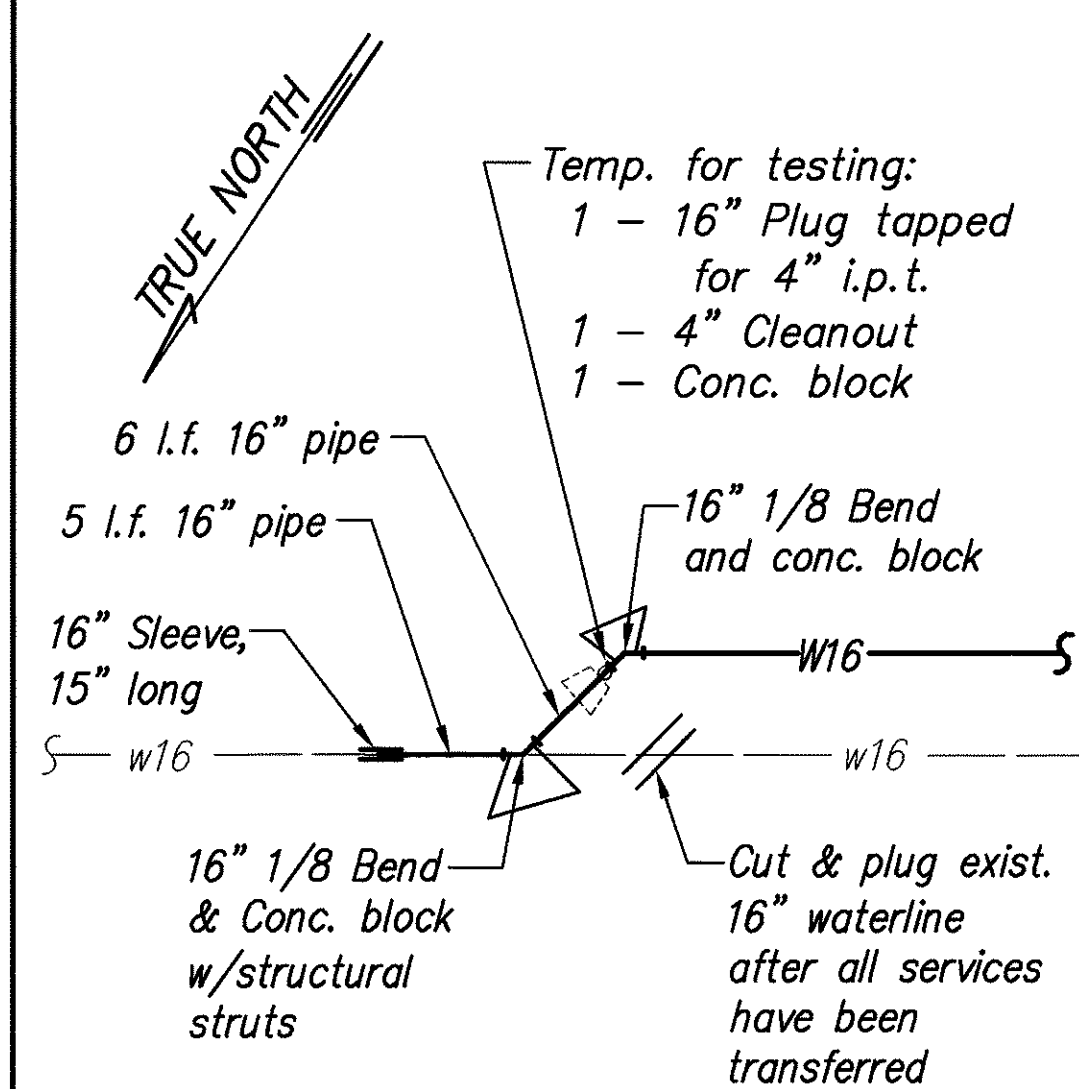
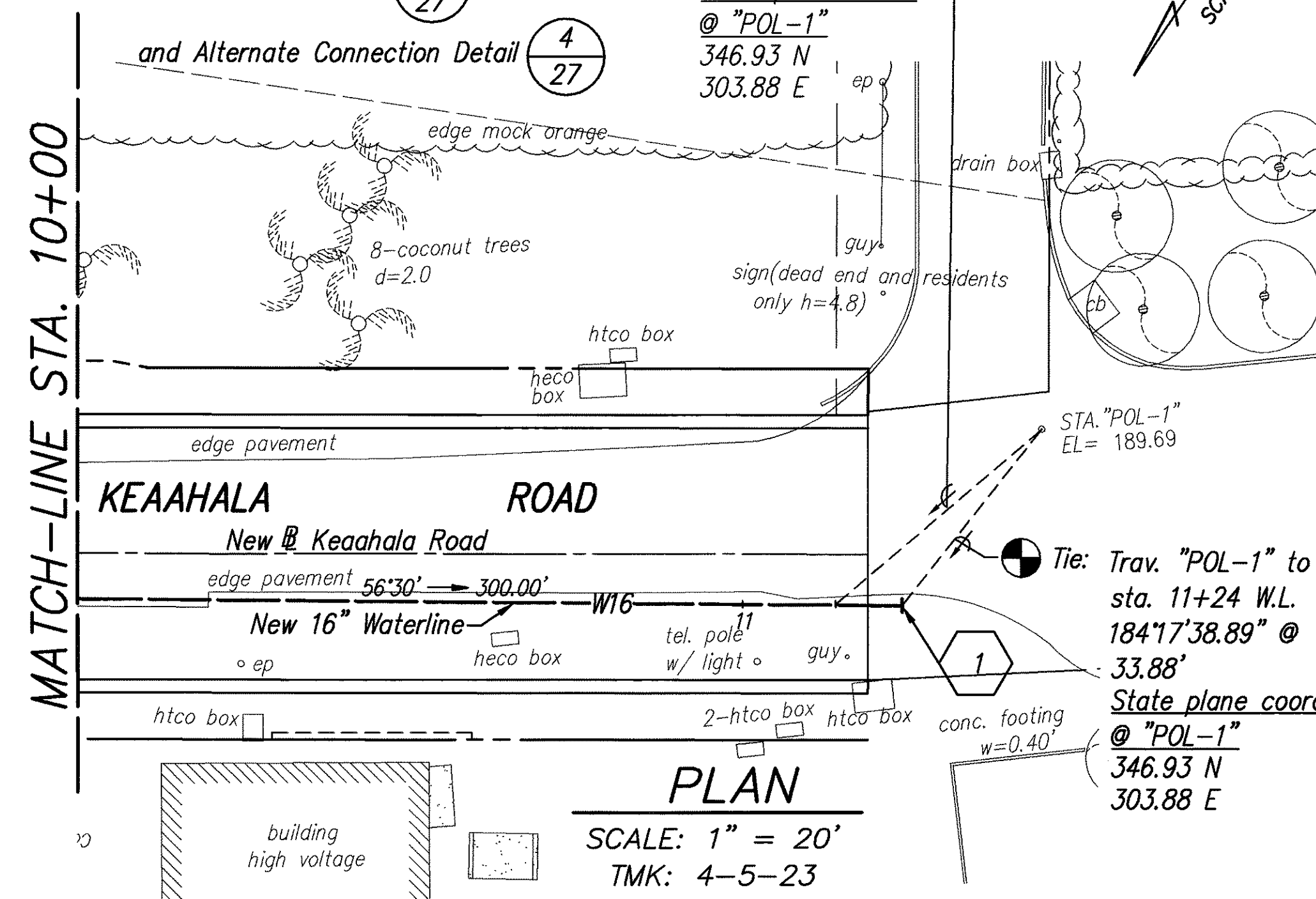
QUANTITIES BY: *

CHECKED BY: *

ORIGINAL PLAN: NO.

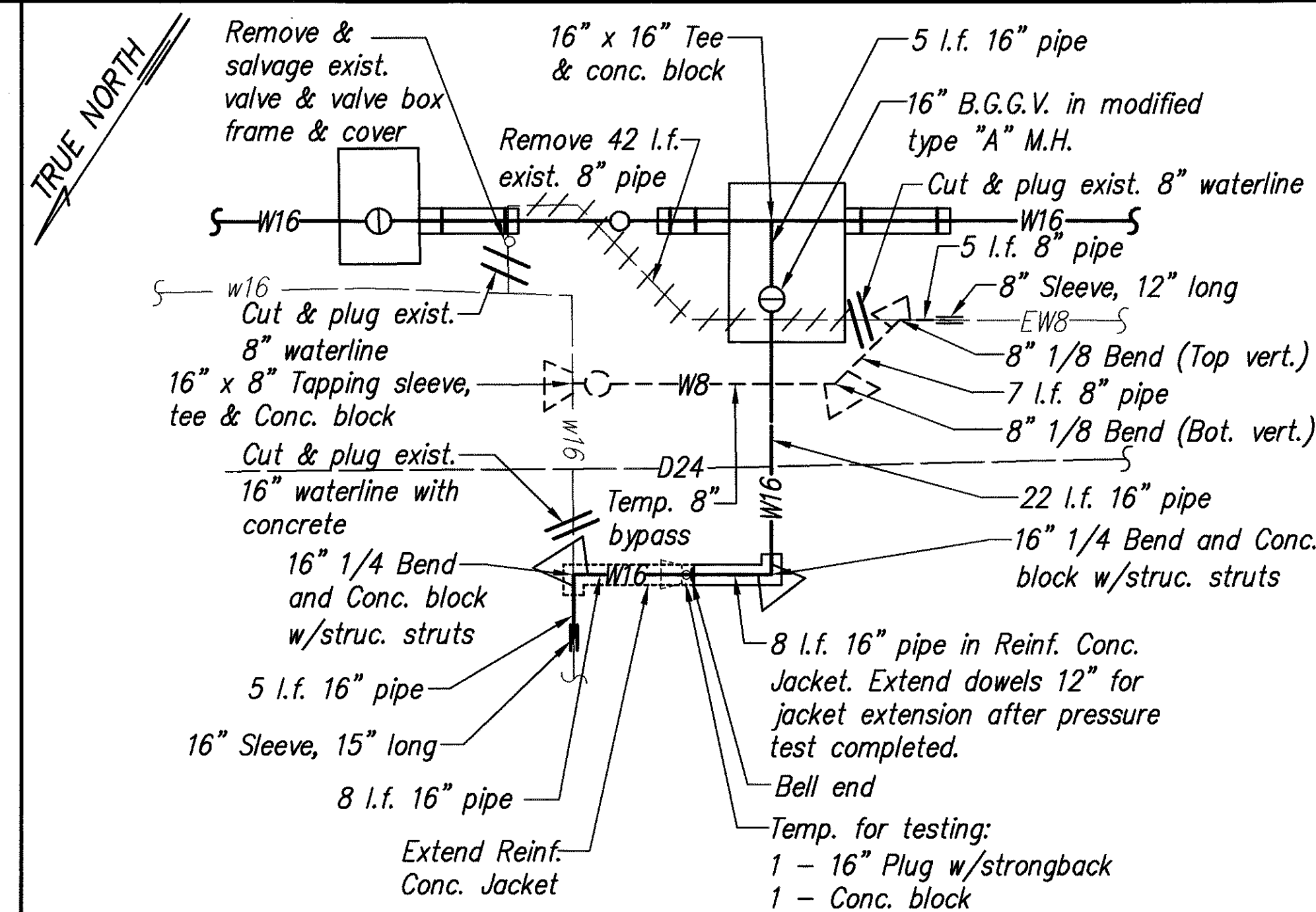
NOTEBOOK: NO.

 *Alternate Tie:* _____
Trav. "POL-1" to
sta. 11+14 W.L. "A
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40.78'
State plane coord.
@ "POL-1"
346.93 N
303.88 E ^{1 ep} }



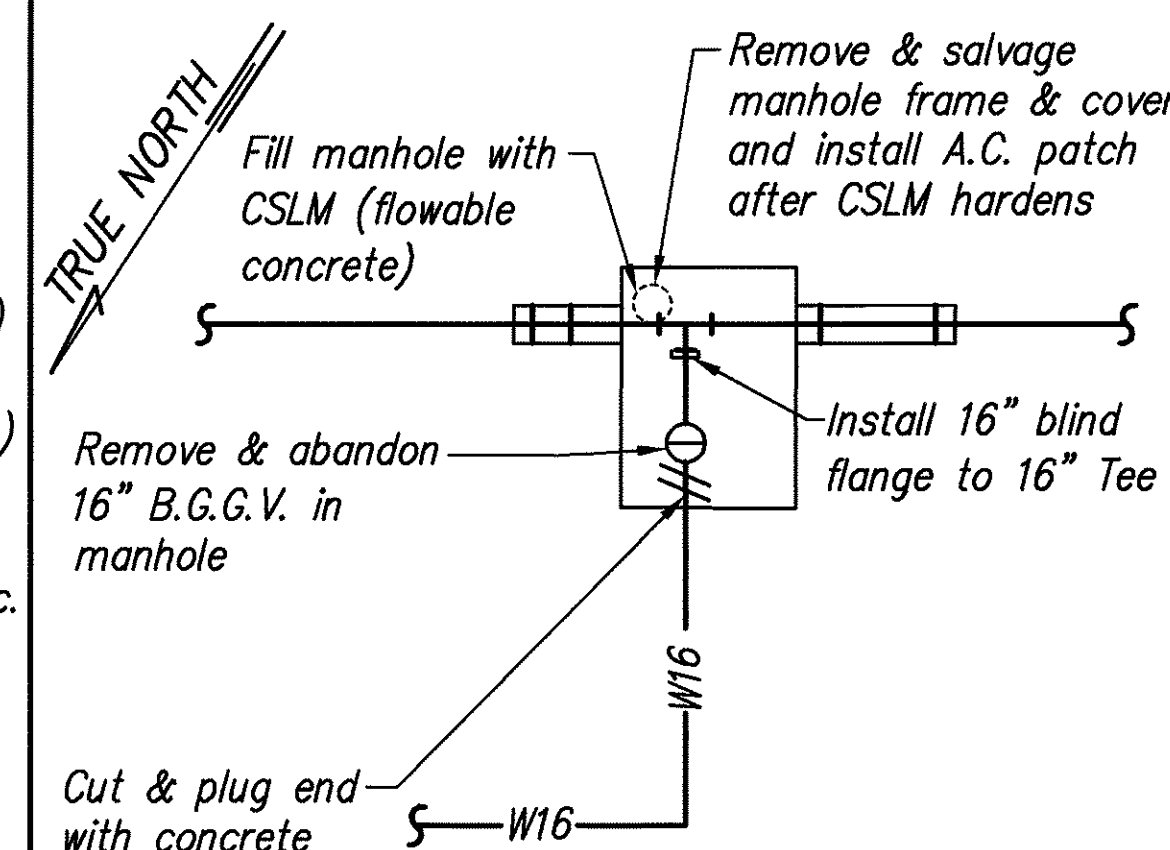
CONNECTION AT

1 STA. 0+00 W.L. "A"
27 NOT TO SCALE



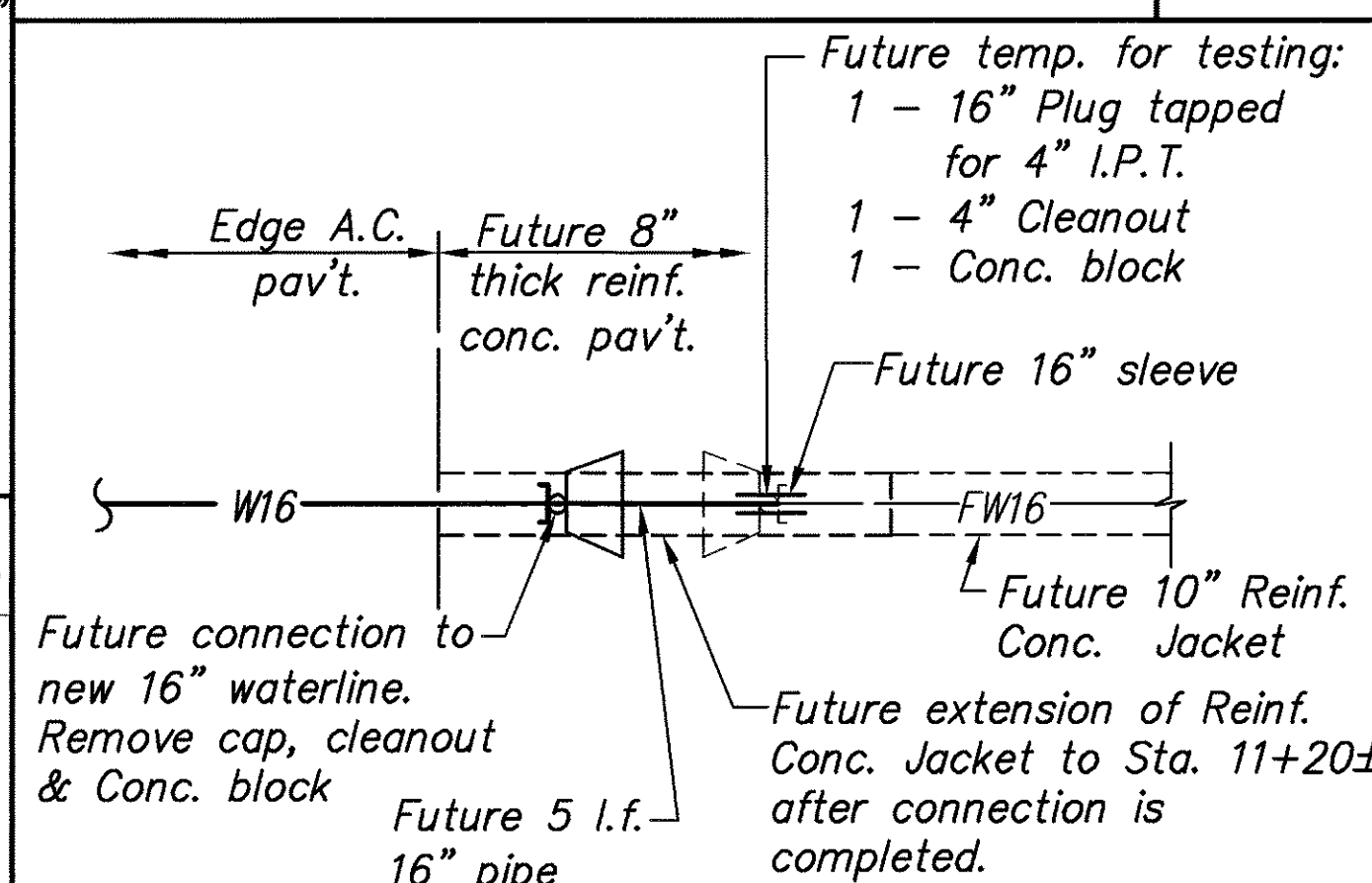
CONNECTION AT STA. 2+85 W.L. "A"

2 CONNECTION AT ST. 27 NOT TO SCALE



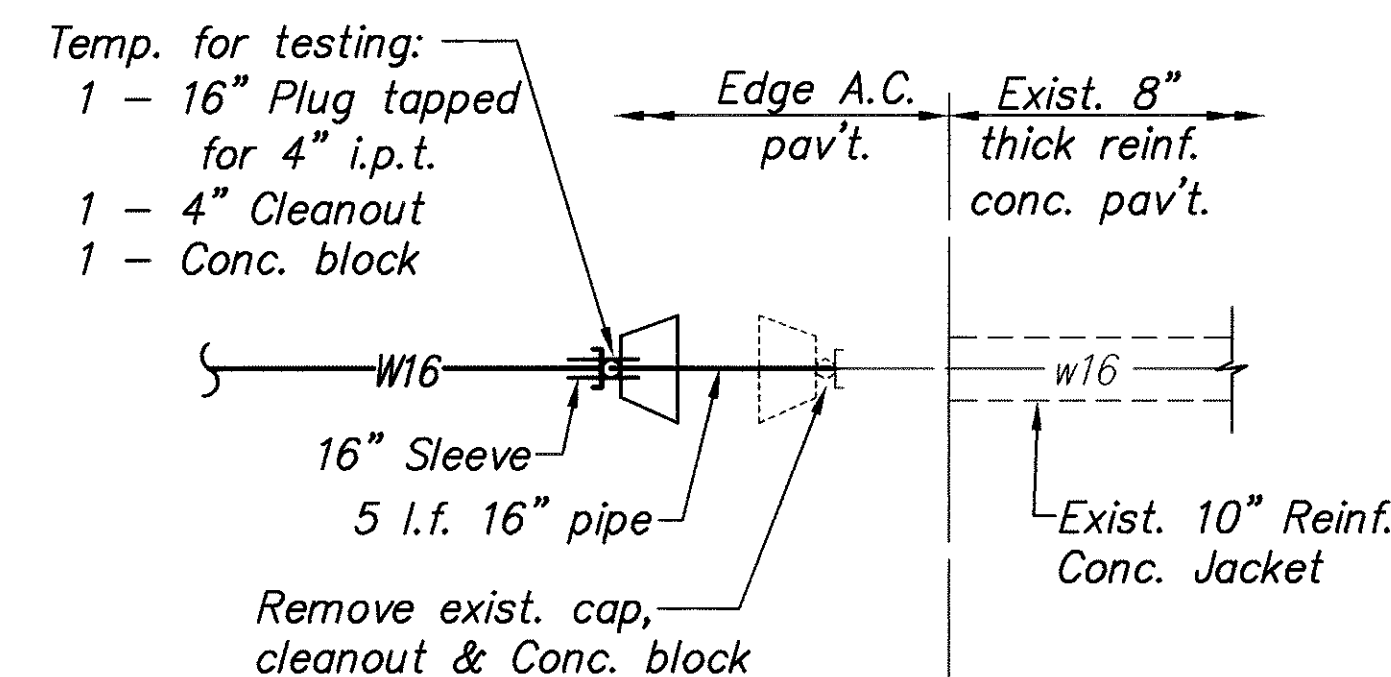
FUTURE CUT & PLUG AT

TEE STA. 2+85 W.L. "A"
NOT TO SCALE



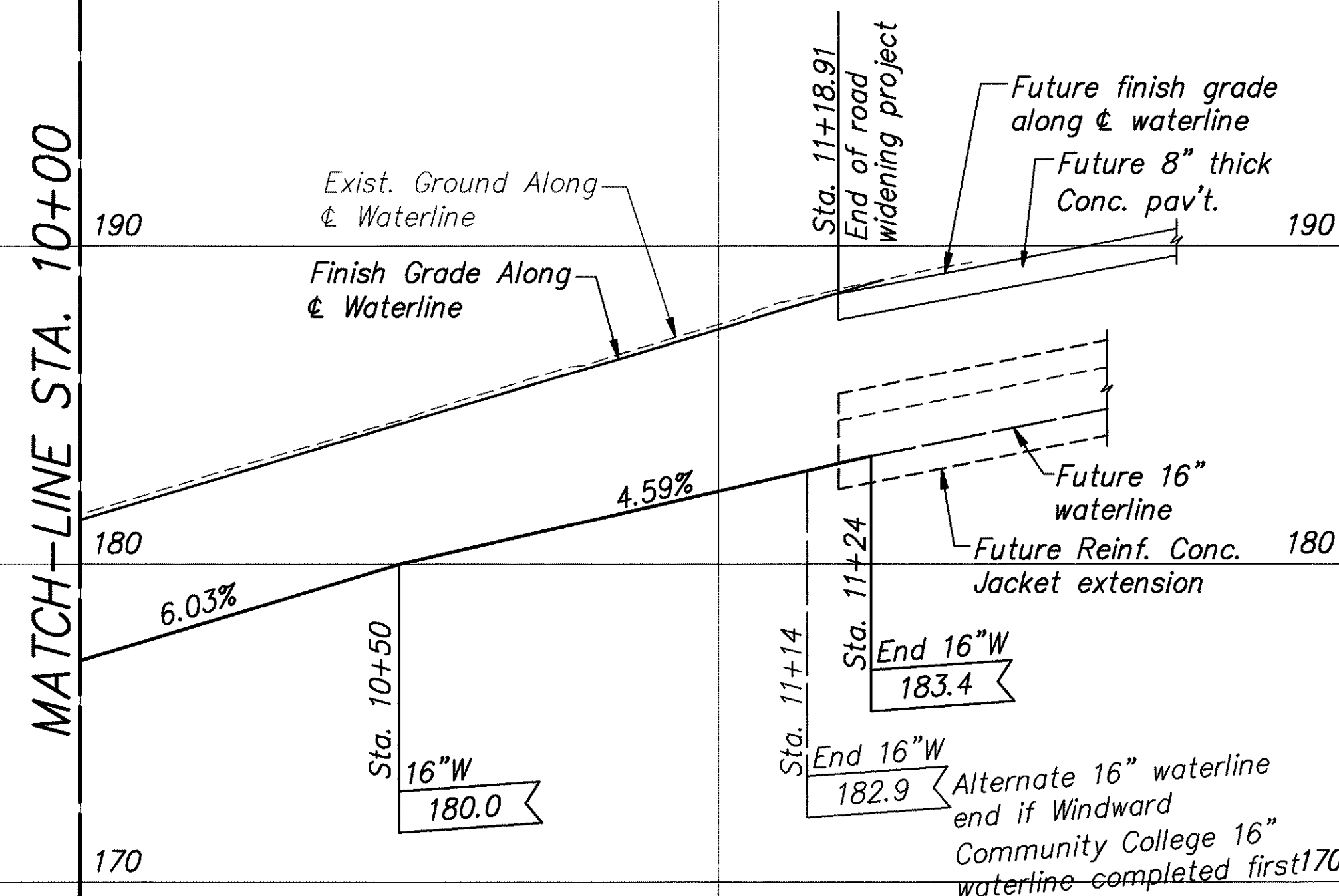
FUTURE CONNECTION DETAIL

3 AT STA. 11+24 W.L. "A"
27 NOT TO SCALE



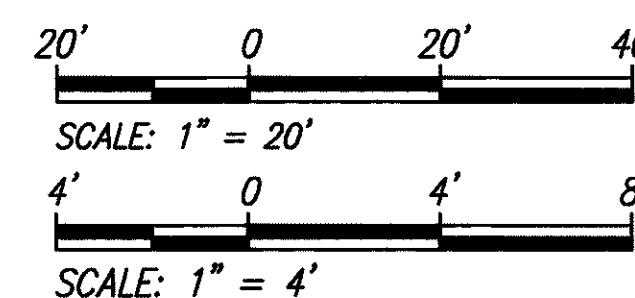
ALTERNATE CONNECTION DETAIL

4 AT STA. 11+14 W.L. "A"
27 NOT TO SCALE



PROFILE

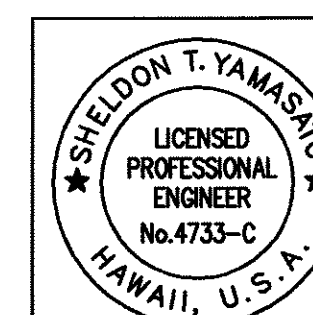
SCALE: HORIZ. 1" = 20'
VERT. 1" = 4'



APPROVED:

Michael Luke *4/26/2000*

 Chief, Planning & Engineering Division ^{PL} Date
 Board of Water Supply
 City & County of Honolulu



THIS WORK WAS PREPARED
BY ME OR UNDER MY
SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
REPLACEMENT OF 16-INCH MAIN, PHASE 1

BWS JOB NO. 00-19D
PLAN AND PROFILE W.L. "A"
STA. 10+00 TO END
& CONNECTION DETAILS

KEAAHALA ROAD WIDENING
KAHEKILI HIGHWAY TO PO'OKELA STREET
State Project No. HWY-0-03-97

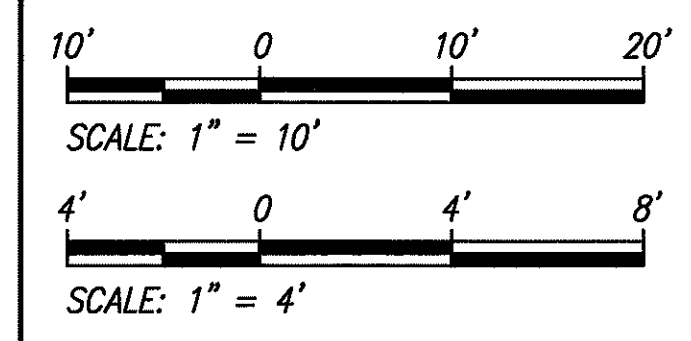
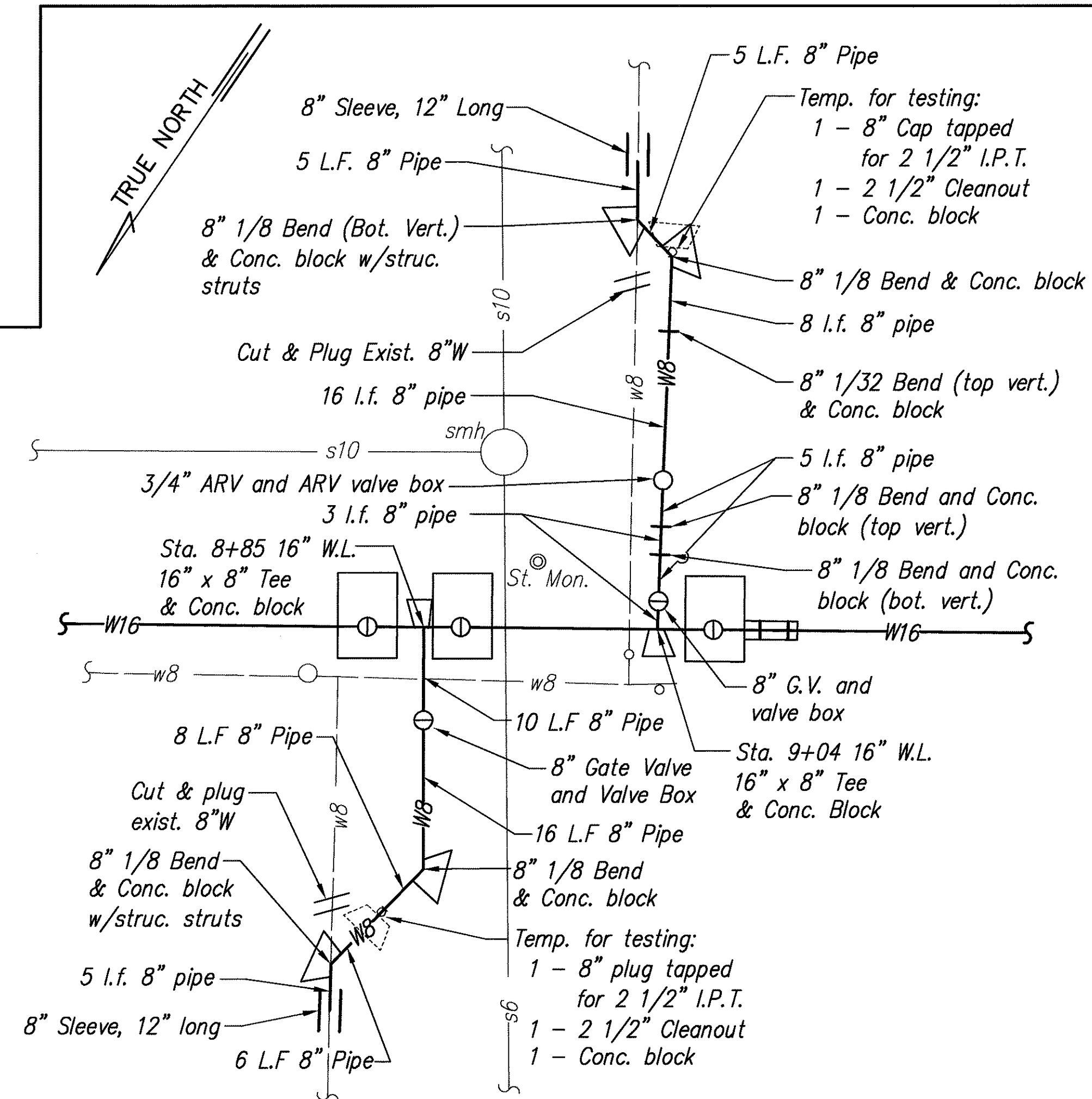
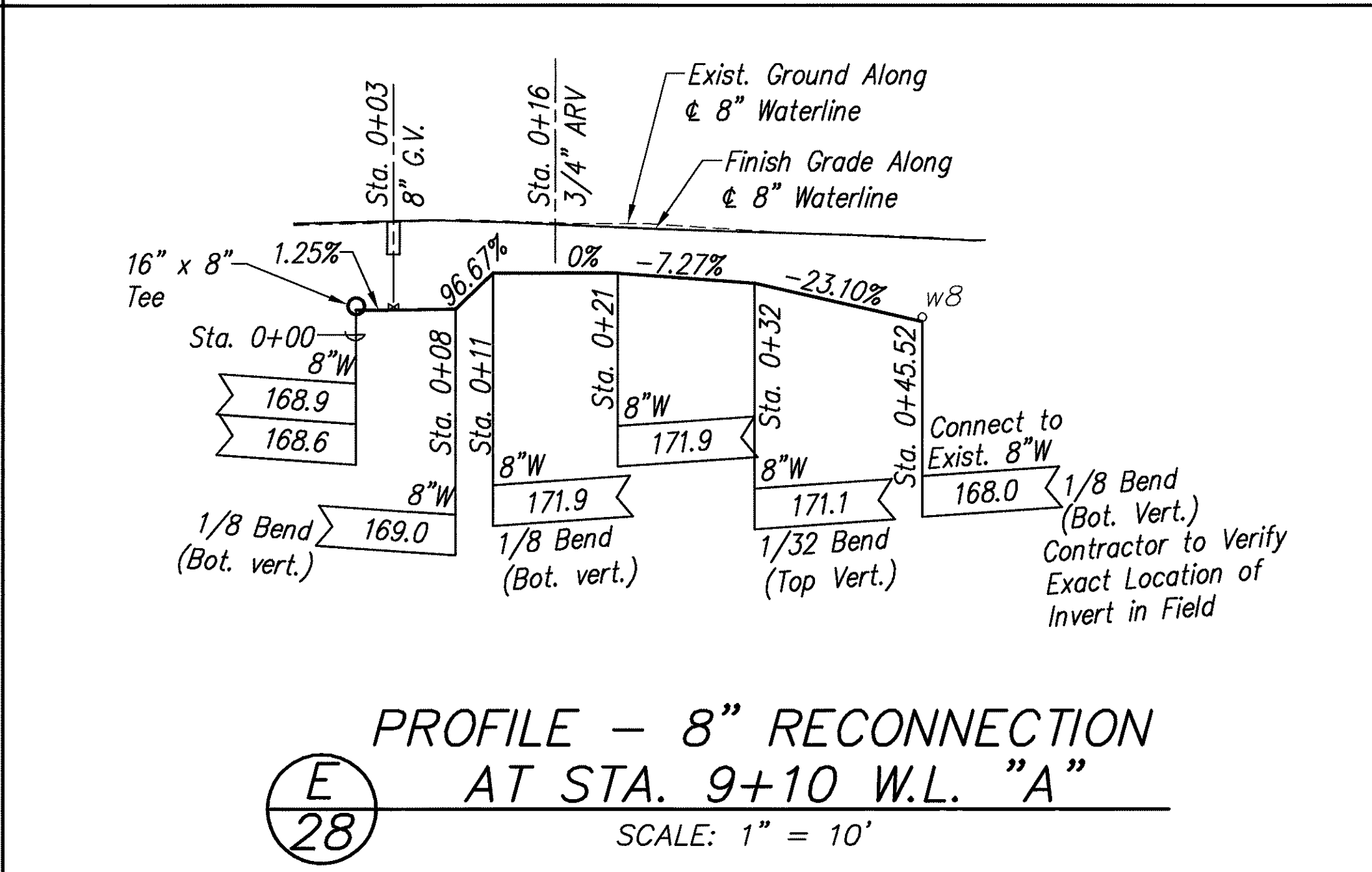
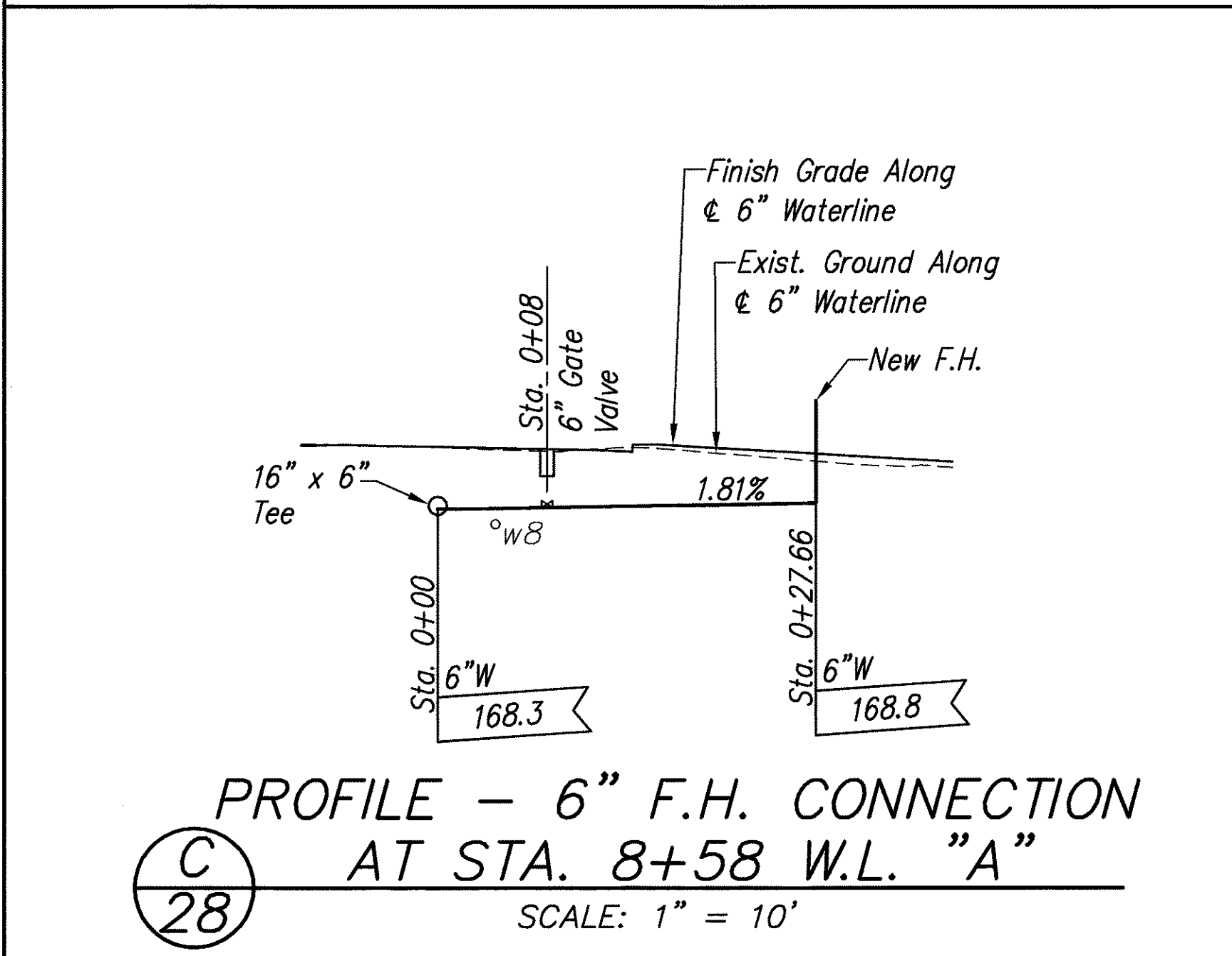
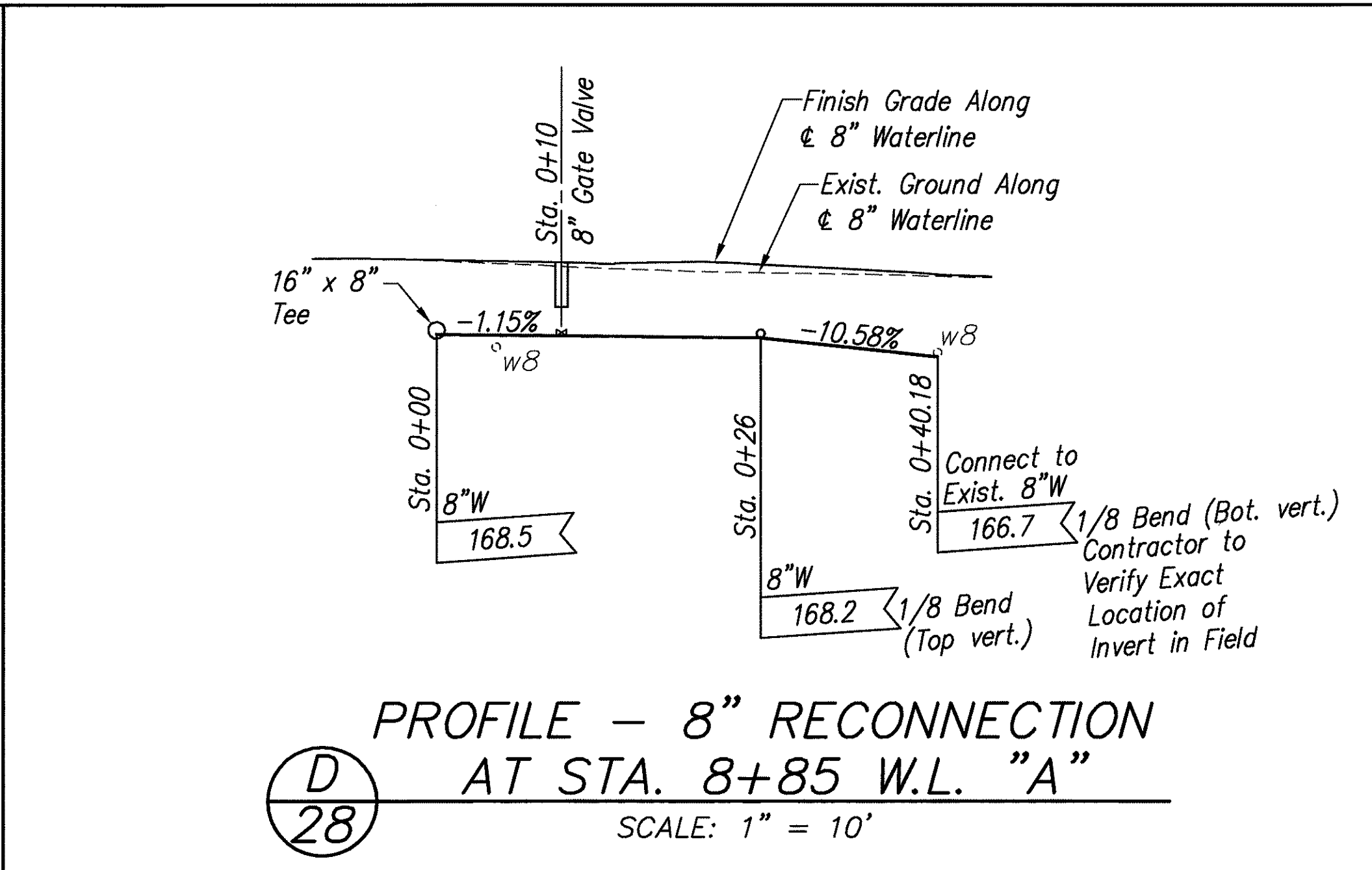
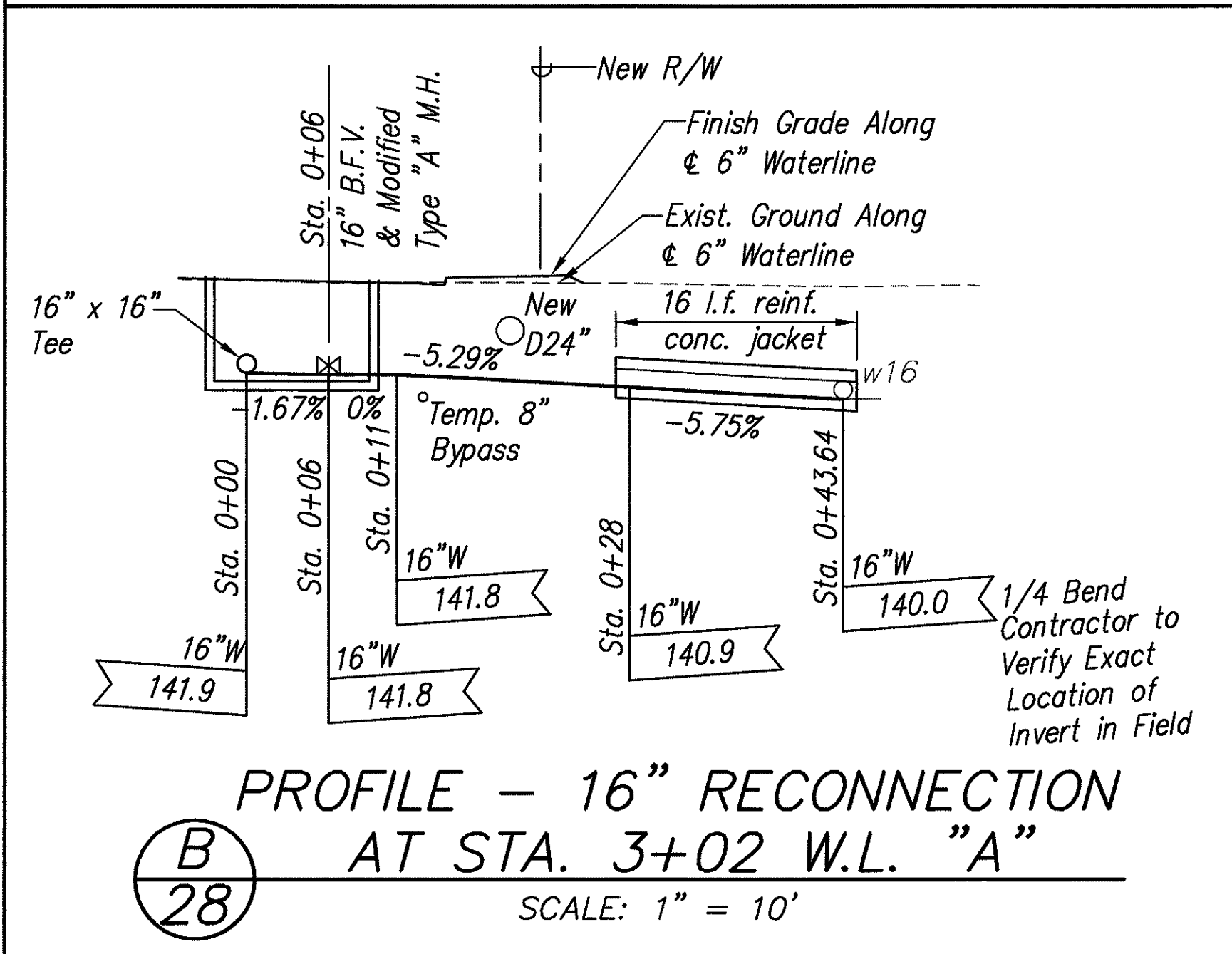
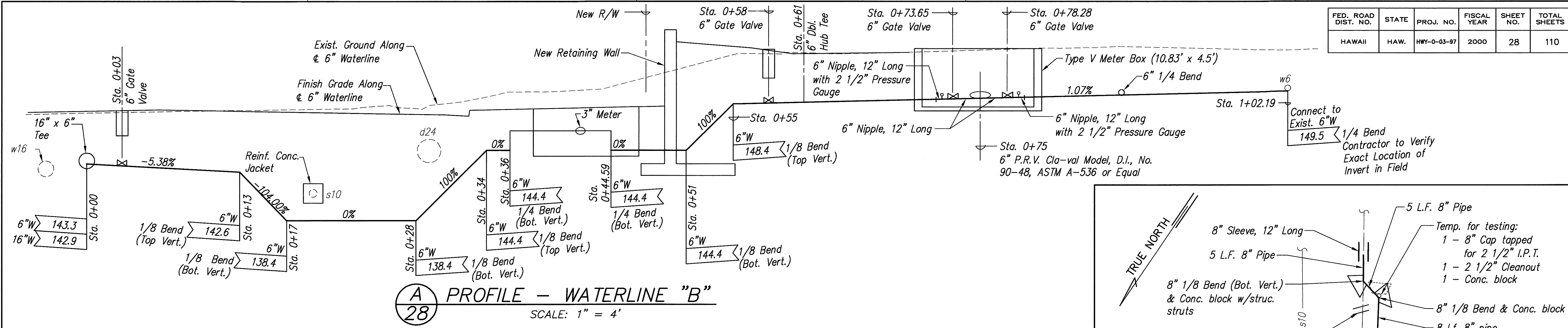
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SHEET NO.C-27OF C-55 SHEETS

PM: STY 146°
OPER:CKM,*RGQ
REVISED: 04/24/00

FILE: DOT95143
SCALE: 1=20
BEG: 1/6/00

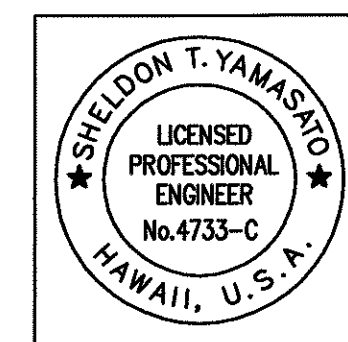
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NOTEBOOK	DRAWN BY _____
	TRACED BY _____
	DESIGNED BY _____
	QUANTITIES BY _____
4c.	CHECKED BY _____

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-97	2000	28	110



APPROVED:

Michael Lee 4/26/2000
Chief, Planning & Engineering Division
Board of Water Supply
City & County of Honolulu



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

REPLACEMENT OF 16-INCH MAIN, PHASE 1

BWS JOB NO. 00-19D

CONNECTION DETAILS

AND PROFILES

KEAAHALA ROAD WIDENING
KAHEKILI HIGHWAY TO PO'OKELA STREET
State Project No. HWY-0-03-97

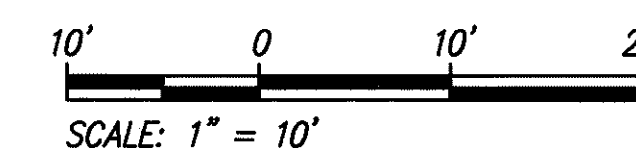
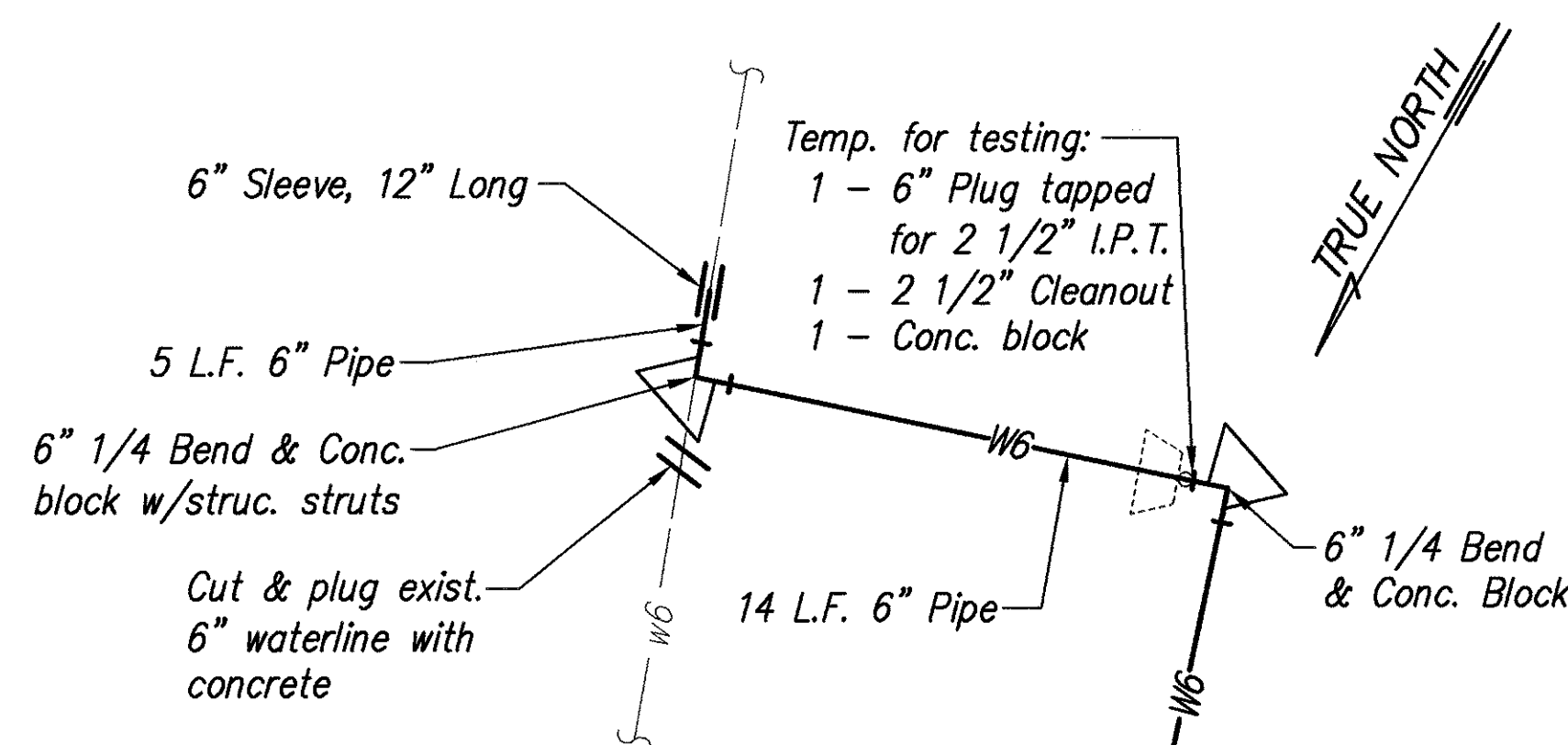
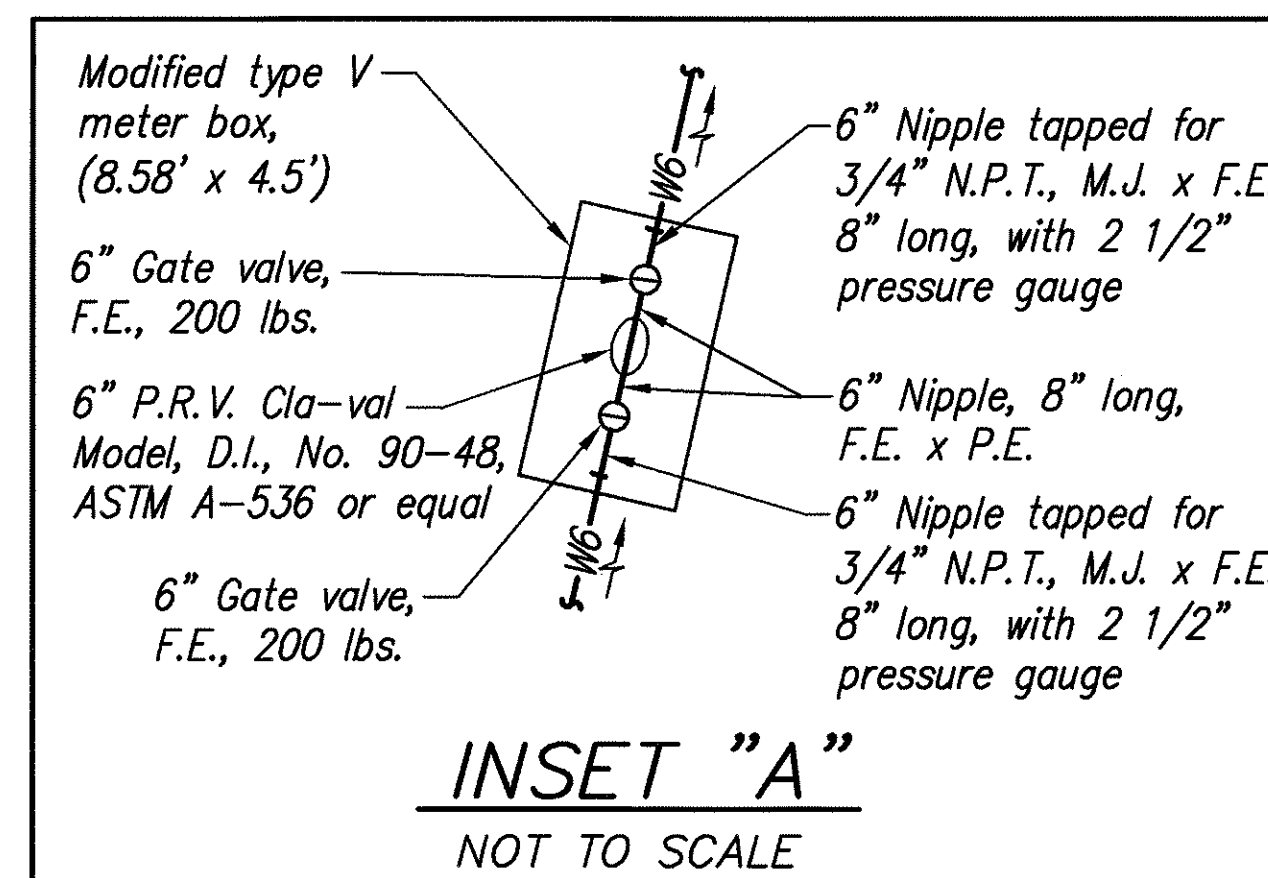
Scale: As shown Date: April 2000
SHEET NO. C-28 OF C-55 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	NO.
NOTES	

PM: STY
OPER: CKM *RGO
REVISED: 04/24/00
FILE: DOT95144
SCALE: 1"=1
BEG: 1/10/00

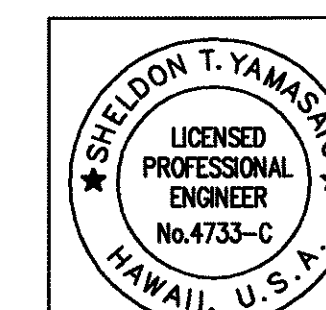
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-97	2000	29	110

- 1 Cut & plug exist. 6" waterline w/conc. Remove & salvage exist. valves & valve box frames & covers. Contractor to relocate exist. meter to new meter box. Remove & salvage exist. meter box frame & cover.
- 2 Sta. 0+03 W.L. "B"
Install:
1 - 6" Gate valve, 200 lbs.
1 - Valve box
- 3 Sta. 0+10 W.L. "B"
Install:
1 - 6" 1/32 Bend
1 - Conc. Block
- 4 Sta. 0+13 W.L. "B"
Install:
1 - 6" 1/8 Bend, (Top vert.)
1 - Conc. Block
- 5 Sta. 0+17 W.L. "B"
Install:
1 - 6" 1/8 Bend, (Bot. vert.)
1 - Conc. Block
- 6 11 l.f. Reinf. Conc. Jacket for exist sewer line. See Sht. 25.
- 7 Sta. 0+28 W.L. "B"
Install:
1 - 6" 1/8 Bend, (Bot. vert.)
1 - Conc. Block
- 8 Sta. 0+34 W.L. "B"
Install:
1 - 6" 1/8 Bend, (Top vert.)
1 - Conc. Block
- 9 Install 3" compound meter with provision for 6" meter. Reuse exist. 3" meter after testing. See BWS Std. Details 51, 52, 57 & 58 for materials
- 10 Install 34 l.f. 2 1/2" copper pipe & appurtenances for bypass. See BWS Std. Detail 57
- 11 Sta. 0+51 W.L. "B"
Install:
1 - 6" 1/8 Bend, (Bot. vert.)
1 - Conc. Block
- 12 Sta. 0+55 W.L. "B"
Install:
1 - 6" 1/8 Bend, (Top vert.)
1 - Conc. Block
- 13 Sta. 0+58 W.L. "B"
Install:
1 - 6" Gate valve, 200 lbs.
1 - Valve box
- 14 Sta. 0+61 W.L. "B"
Install:
1 - 6" Bossed Tee
- 15 Install 18 l.f. 2 1/2" copper pipe & appurtenances for bypass. See BWS Std. Detail 57
- 16 Sta. 0+76 W.L. "B"
Install:
1 - 6" P.R.V. Cla-val model, D.I., No. 90-48, ASTM A-536 or equal
2 - 6" Gate valves, F.E., 200 lbs.
2 - 6" Nipples, 8" long, M.J. x F.E.
2 - 6" Nipples, tapped for 1/4" N.P.T., 8" long, F.E. x P.E.
2 - 2 1/2" Pressure gauges
1 - Type V meter box, (8.58' x 4.5')
See BWS Std. Detail 58 and Inset "A"
- 17 Sta. 0+88 W.L. "B"
Install:
1 - 6" 1/4 Bend
1 - Conc. block
Temp. for testing:
1 - 6" plug tapped for 2 1/2" I.P.T.
1 - 2 1/2" Cleanout
1 - Conc. block
- 18 Sta. 1+02.19 W.L. "B"
Connect to exist. 6" waterline. Remove temp. cap, cleanout and Conc. block
Install:
1 - Conc. block w/struc. struts
Materials for connection:
1 - 6" 1/4 Bend
5 l.f. 6" pipe
1 - 6" Sleeve
See Connection Detail on this sheet and Profile A
- 19 Cut and plug exist. 6" pipe with concrete after service transferred. See connection detail this sheet and profile



APPROVED:

Michael Lake 4/26/2000
Chief, Planning & Engineering Division
Board of Water Supply
City & County of Honolulu



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
REPLACEMENT OF 16-INCH MAIN, PHASE 1
BWS JOB NO. 00-19D

PLAN - WATERLINE "B"

KEAAHALA ROAD WIDENING
KAHEKILI HIGHWAY TO PO'OKELA STREET
State Project No. HWY-0-03-97

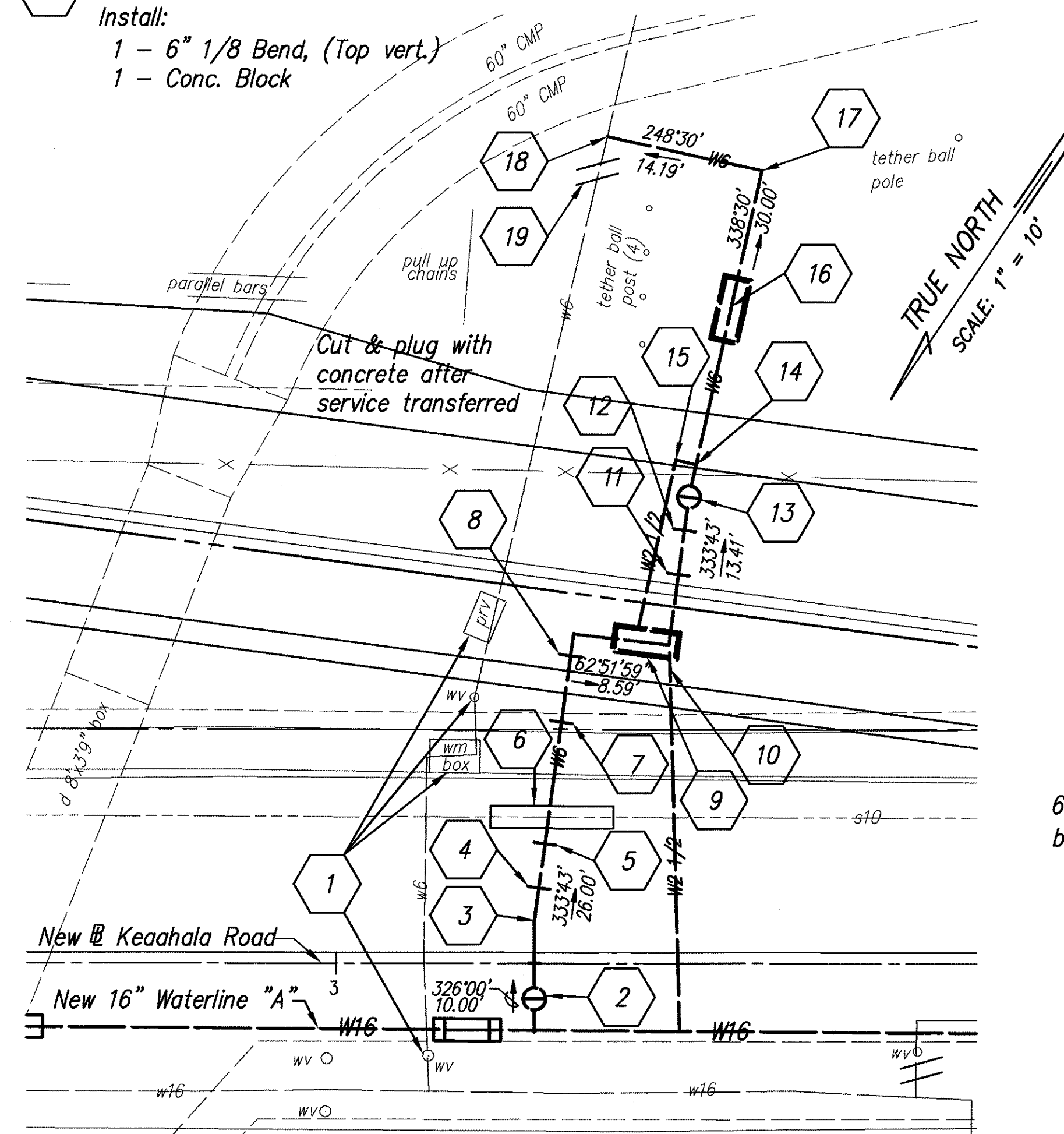
Scale: As shown Date: April 2000

SHEET NO. C-29 OF C-55 SHEETS

146"
PM: STY
OPER: CKM *RGG
REVISED: 04/24/00

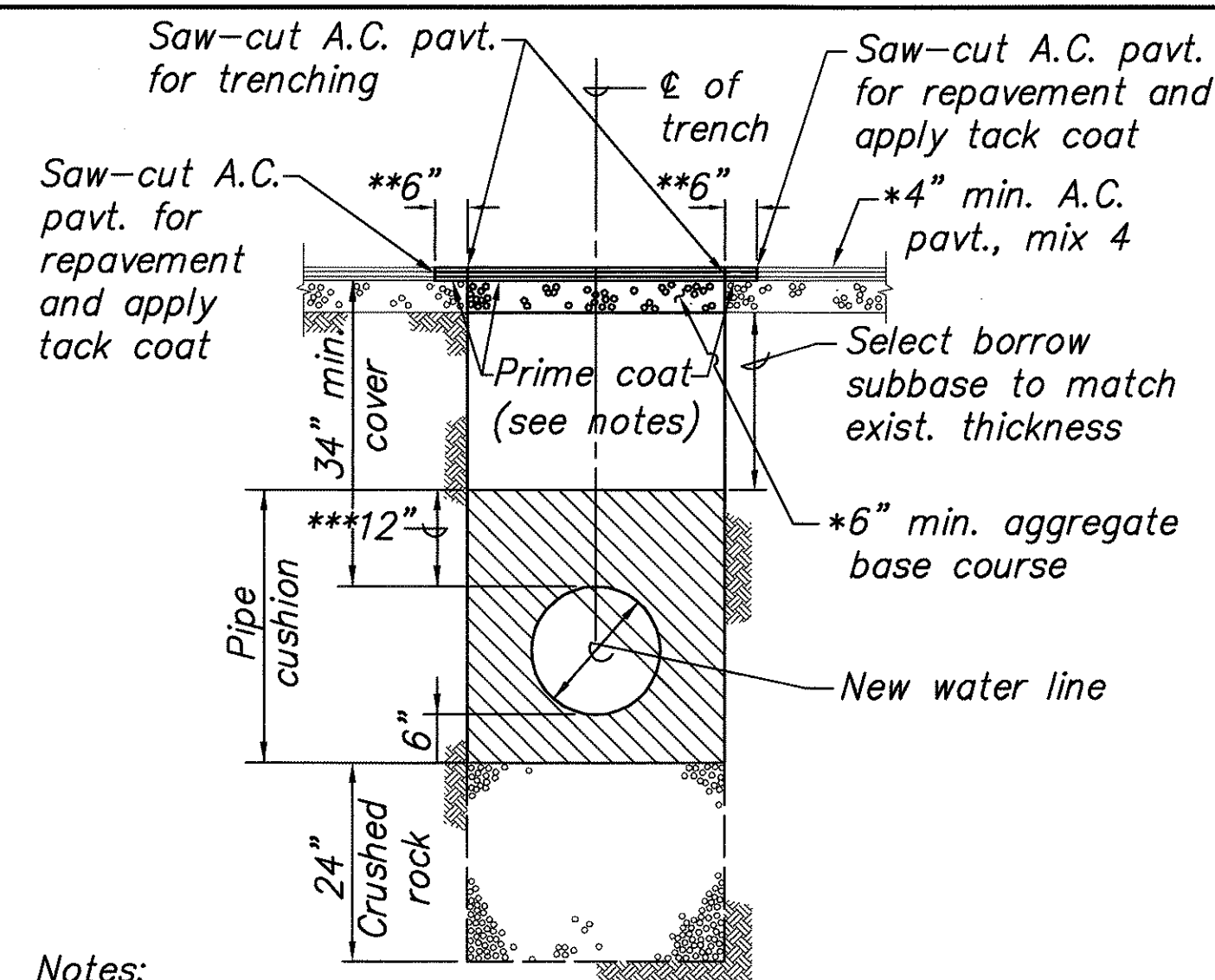
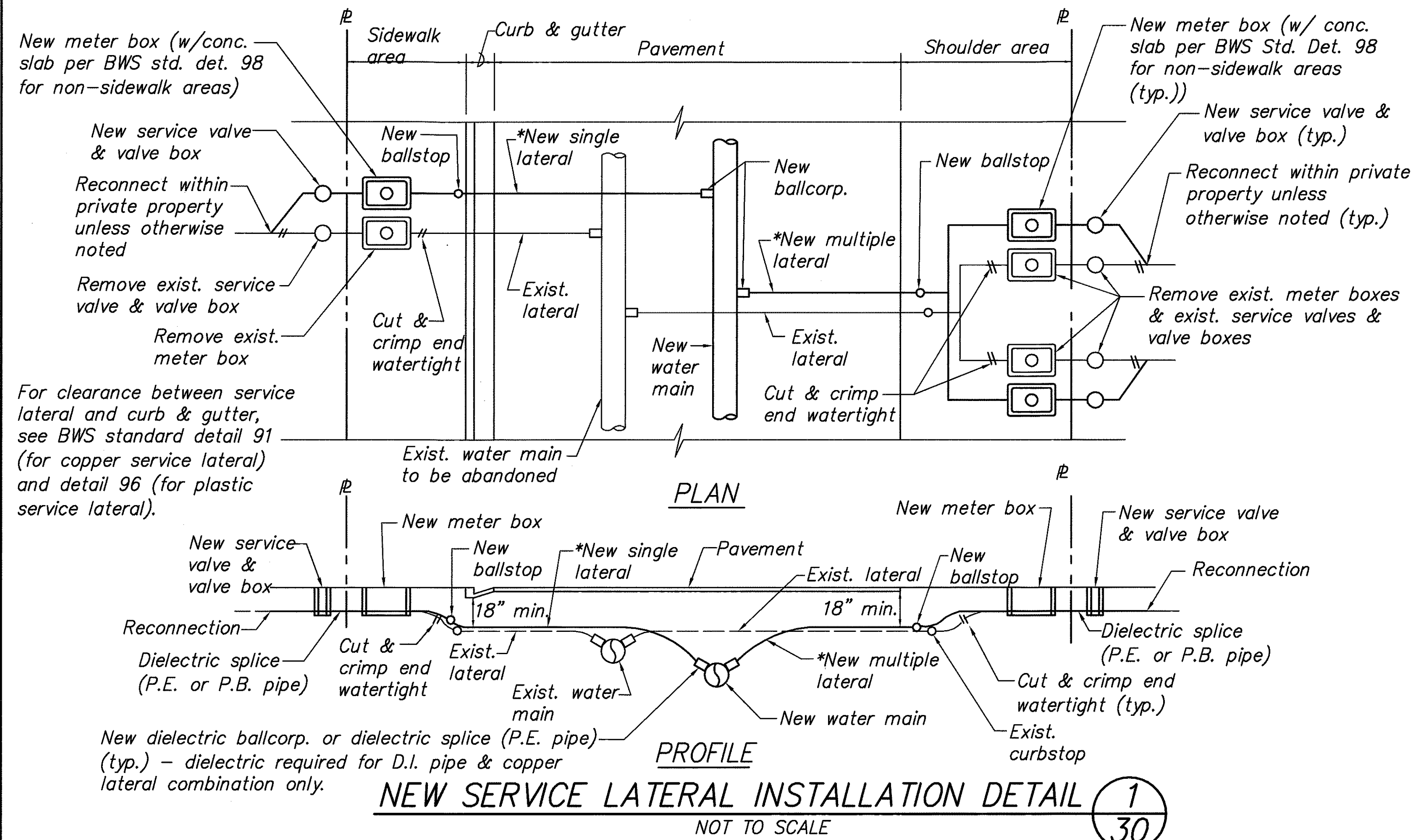
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SCALE: 1"=10'
BEG: 3/6/00

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

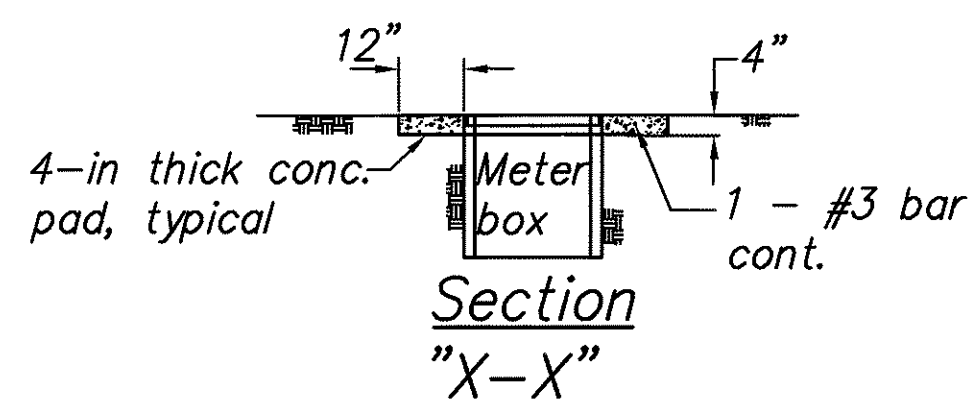
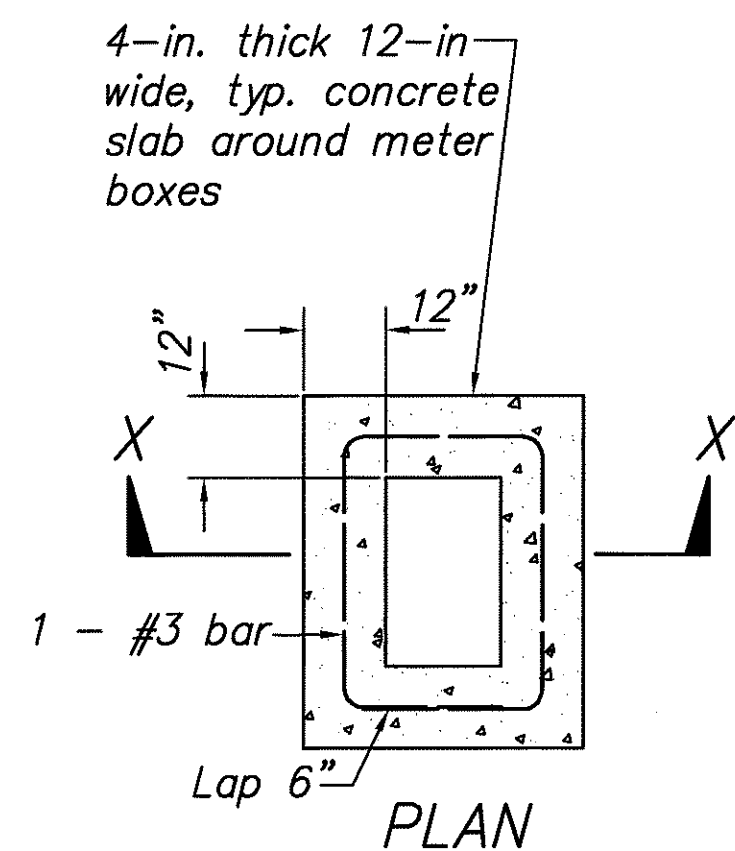


1
29 PLAN - WATERLINE "B"
SCALE: 1" = 10'

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-97	2000	30	110



- Notes:**
1. Pavement structure shall be equal or better than exist. in thickness and quality.
 - *2. A.C. pavement and base course to match exist. thickness or minimum thickness shown, whichever is greater.
 3. For road grades 0 % to 7.99 % and prime coat is not available, none is required. If prime coat is available, use prime coat.
 - **4. Remove and reconstruct A.C. pavement to edge of existing gutter or edge of existing pavement if less than 2'-0" from edge of trench.
 - ***5. 12" of pipe cushion material for pipe 16" or larger. 6" cushion material for pipe 12" or smaller.

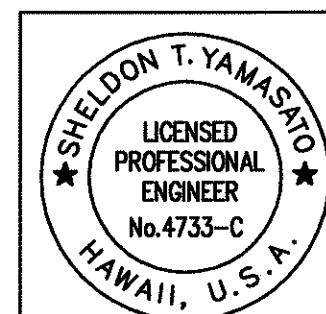


TYPICAL CONCRETE PAD AROUND METER BOXES 3/30
NOT TO SCALE

Approved:

Michael Luke
Chief, Planning & Engineering Division
Board of Water Supply
City & County of Honolulu

4/26/2000
Date



Sheldon T. Yamamoto
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
REPLACEMENT OF 16-INCH MAIN, PHASE 1
BWS JOB NO. 00-19D
TYPICAL DETAILS
KEAAHALA ROAD WIDENING
KAHEKILI HIGHWAY TO PO'OKELA STREET
State Project No. HWY-0-03-97
Scale: As shown Date: April 2000
SHEET NO.C-30 OF C-55 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEET:
HAWAII	HAW.	HWY-0-03-97	2000	31	110

General:

- A. The Contractor shall compare all the contract documents with each other and report in writing to the Board of Water Supply all inconsistencies and omissions.
- B. The Contractor shall take field measurements and verify field conditions and shall compare such field measurements and conditions with the drawings before commencing work. Report in writing to the Board of Water Supply all inconsistencies and omissions. The Contractor shall be responsible for methods of construction, workmanship and job safety. The Contractor shall provide temporary shoring and bracing as required for stability of structural members and systems during all phases of construction. Contractor shall provide for design and installation of all cribbing, sheeting, and shoring necessary to preserve excavations and earth banks.
- D. The Contractor shall be responsible for protection of the adjacent properties, structures, streets and utilities during the construction period.
- E. Details notes as typical on the structural drawings shall apply in all conditions unless specifically shown or noted.

Design Criteria:

- A. Design Vehicle Loads
1. HS20 (AASHTO)
- B. Soil Parameters (Assumed)
1. Allowable Soil Bearing _____ 1,500 PSF
2. Lateral Earth Pressure
- a. Above the water table _____ 60 PCF
- b. Below the water table _____ 85 PCF

Foundation:

- A. Bottom of new footings shall be as indicated on the drawings and shall bear on firm properly compacted fill.
- B. Any loose or soft soil encountered during excavation or subgrade compacted operations shall be removed to firm soil and replaced with properly compacted fill.
- C. All fill and backfill material shall be placed in loose lifts not exceeding 6 inches and shall be compacted to at least 95 percent of the maximum dry density, as determined by ASTM D1557-91, Procedure "C".
- D. All backfill material next to new footings and along new subsurface boxes shall be properly compacted in order to provide proper lateral earth resistance to minimize settlement of ground surface adjacent to footings and boxes.
- E. Contractor shall brace or protect all walls below grade from lateral loads until structural members are completely in place and have attained their full design strength

Concrete:

- A. Concrete construction shall conform to American Concrete Institute ACI 318R-95.
- B. BWS 3500 concrete shall be regular weight hard rock concrete and shall have the following minimum 28 day compressive strength of 3,500 psi, unless noted otherwise.
- C. All inserts, anchor bolts, plates, and other items to be cast in the concrete shall be hot-dipped galvanized unless otherwise noted.
- D. Reinforcing bars, anchor bolts, inserts, and other items to be cast in the concrete shall be secured in position prior to placement of concrete.
- E. Conduits, pipes, and sleeves passing through a slab or footing and not conforming to typical details shall be located and submitted to the Board of Water Supply for approval.
- F. Non-shrink grout shall be premixed non-metallic formula, capable of developing a minimum compressive strength of 3,000 psi in 1 day and 5,000 psi in 28 days.

Reinforcing Steel:

- A. Reinforcing steel shall be deformed bars conforming to ASTM A615, Grade 60.
- B. Clear concrete cover for reinforcing bars shall be as follows, unless otherwise noted:
1. Concrete cast against earth _____ 3"
 2. Concrete formed and exposed to earth or weather _____ 2"
 3. Walls
 - a. Faces exposed to earth or weather
 - #5 Bars and smaller _____ 1½"
 - #6 Bars and larger _____ 2"
 - b. Interior faces _____ 1½"
 4. Structural slabs
 - a. faces exposed to earth or weather _____ 1½"
 - b. interior faces _____ 1½"
- C. Reinforcing steel shall be spliced where indicated on plans. Provide lap splice length 48 bar diameter or 2'-0" whichever is greater, unless otherwise noted.
- D. Bar bends and hooks shall be "Standard Hooks" in accordance with ACI 318

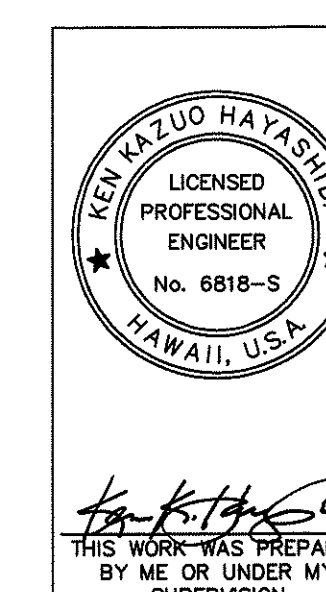
Dewatering

- A. In locations where water is present in the trench and pumping must be resorted to, the trench shall be kept free of water during installation and until backfilling is completed. The Contractor shall provide proper facilities for delivering pumped water to existing underground drains. No water shall be discharged into street gutters without the approval of the Board of Water Supply and the engineer.

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

APPROVED:

Michael Lee
for Chief, Planning & Engineering Division *4/26/2008* Date
Board of Water Supply
City & County of Honolulu



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

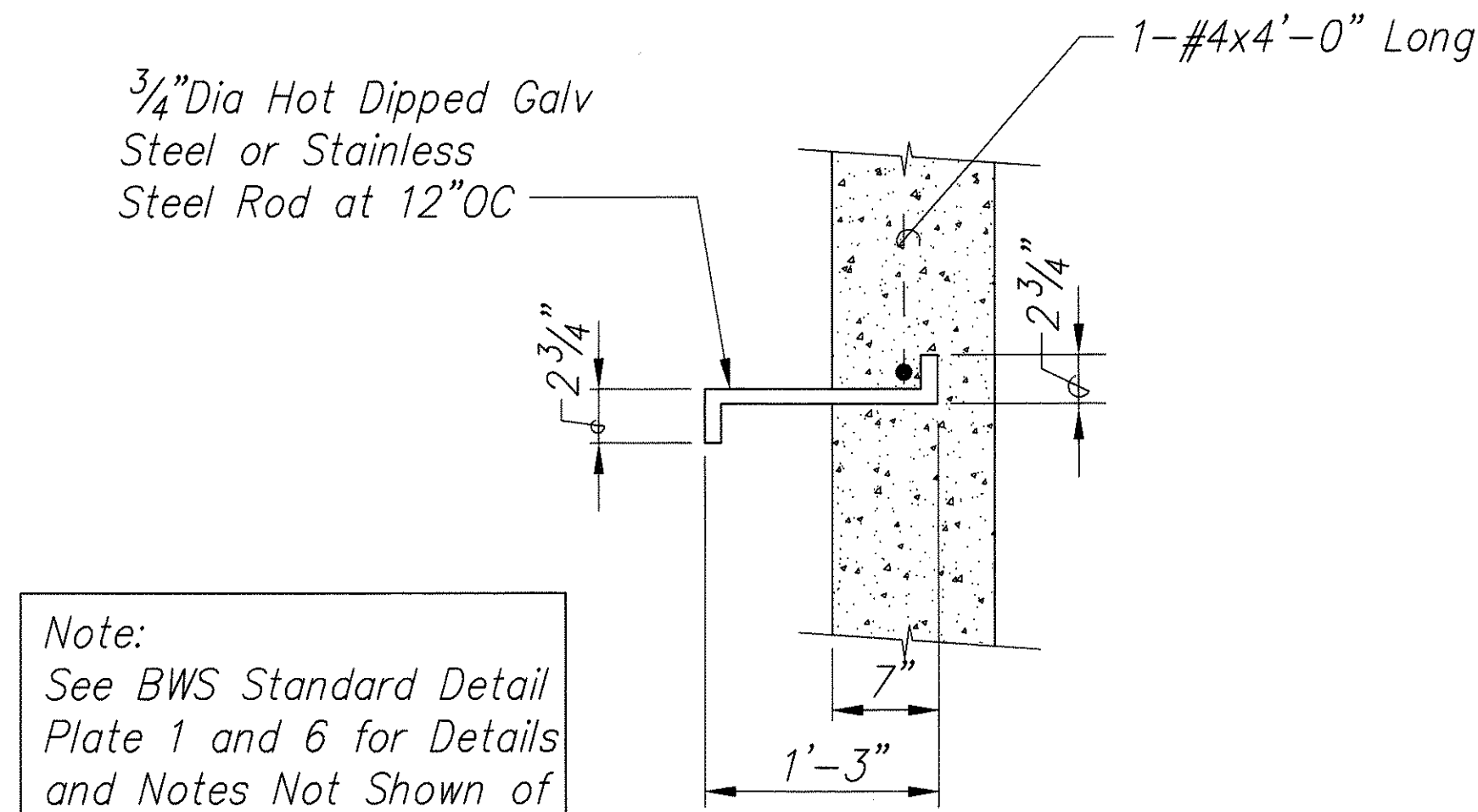
REPLACEMENT OF 16-INCH MAIN, PHASE 1
BWS JOB NO. 00-19D

TYPICAL TYPE A MANHOLE
GENERAL NOTES

KEAAHALA ROAD WIDENING
KAHEKILI HIGHWAY TO PO'OKELA STREET
State Project No. HWY-0-03-97

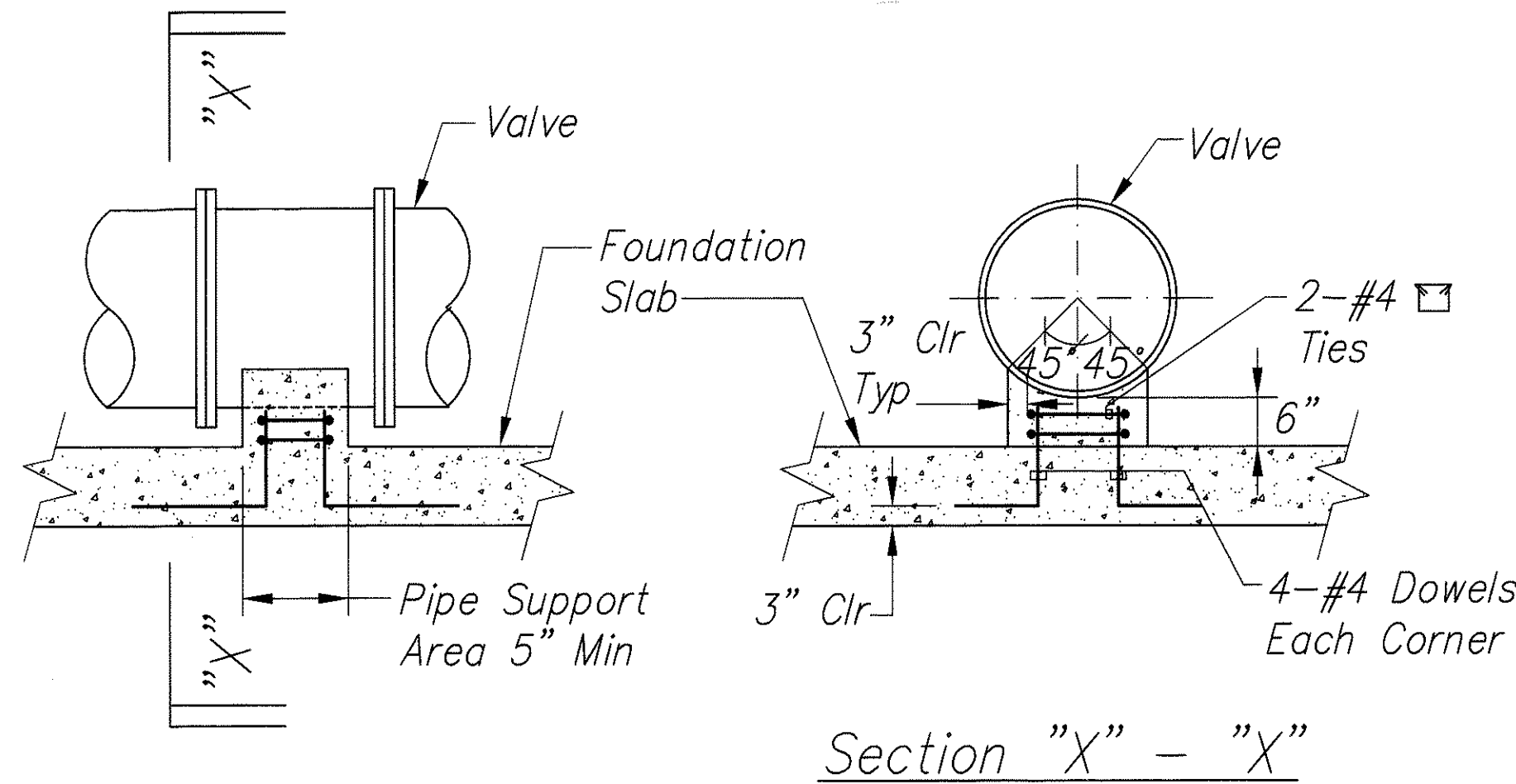
Scale: As shown Date: April 2000

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-97	2000	32	110

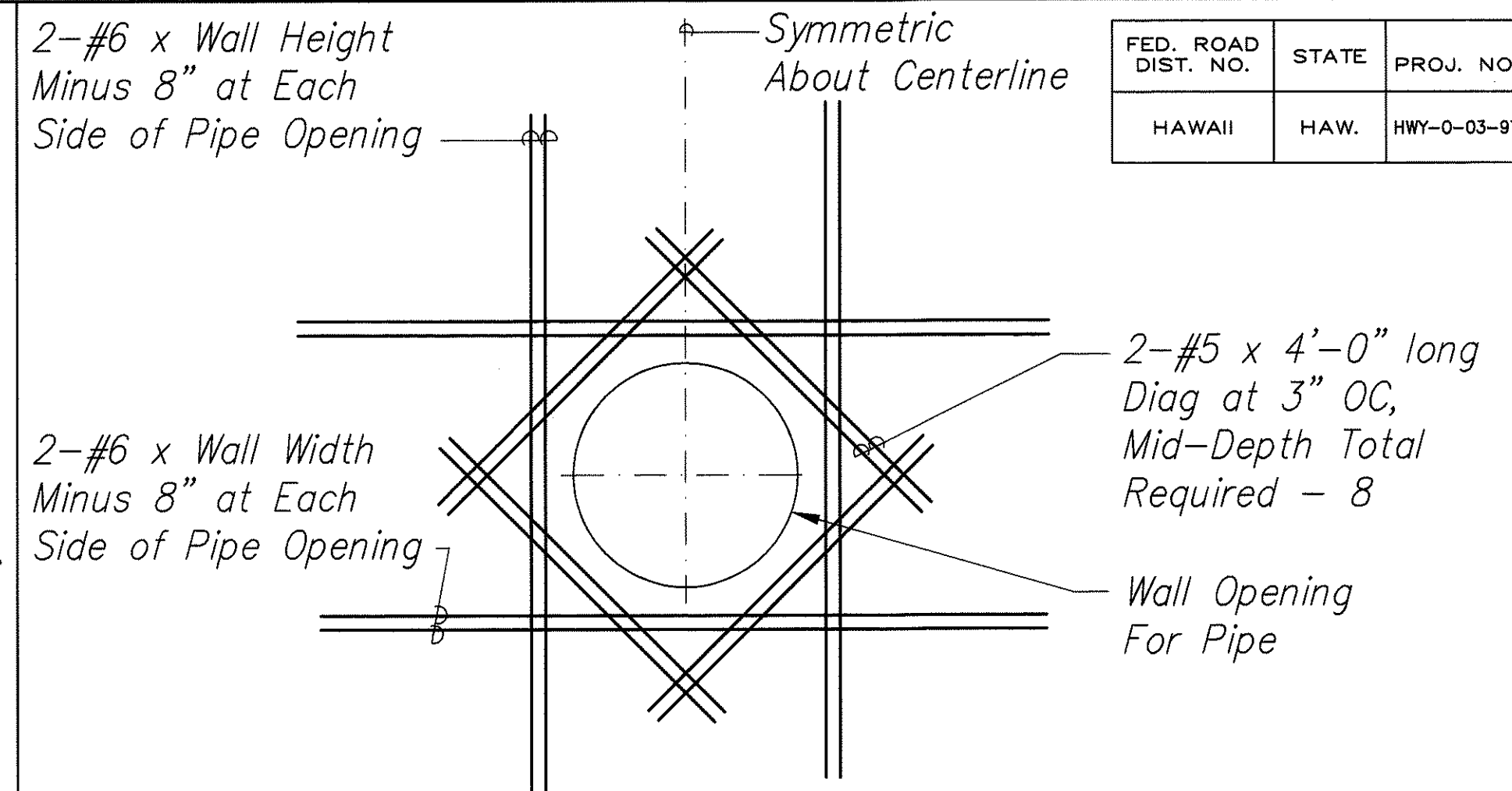


Note:
See BWS Standard Detail Plate 1 and 6 for Details and Notes Not Shown or Specified Here

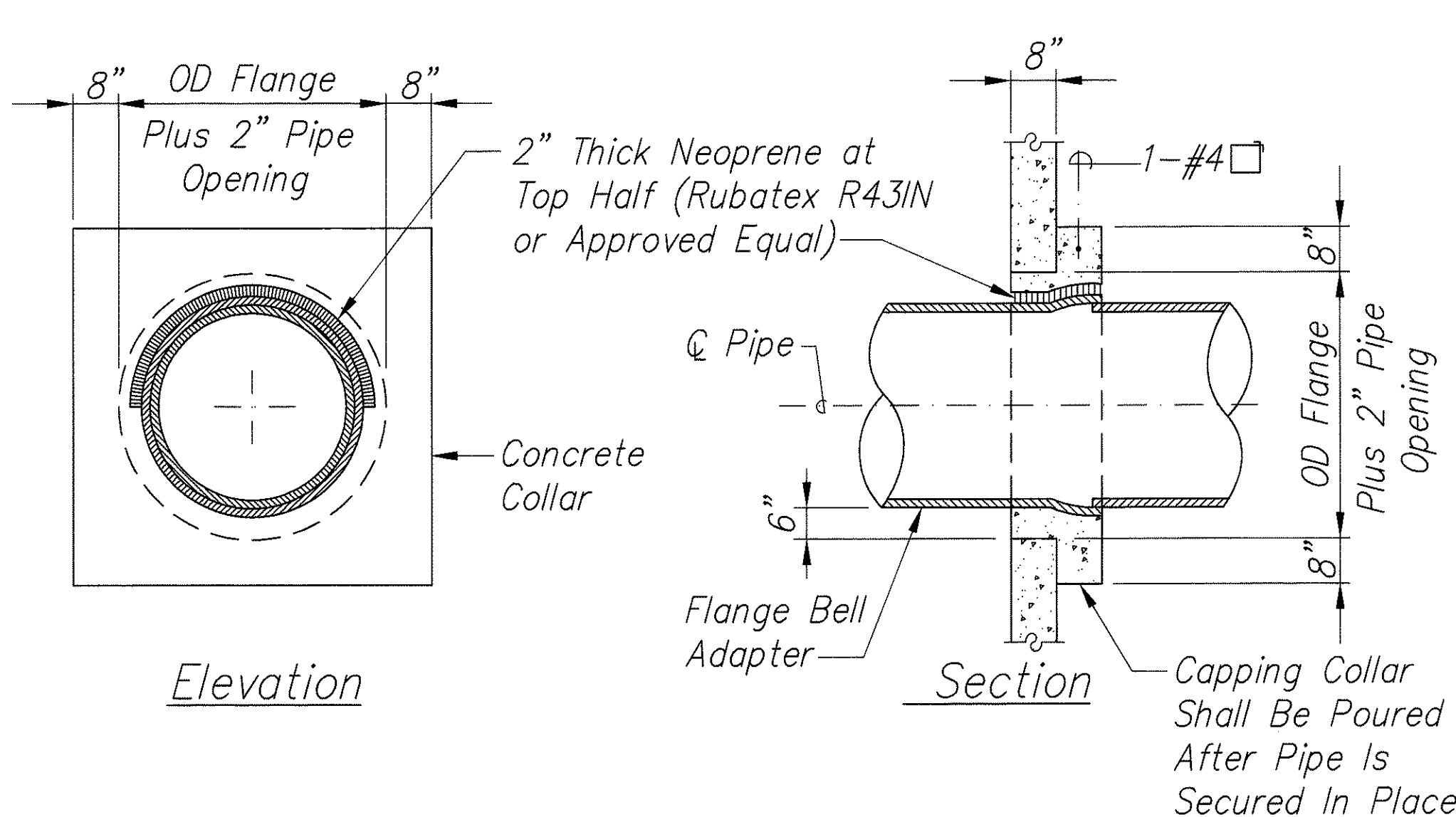
1 Typical Rung Detail
Scale: NTS



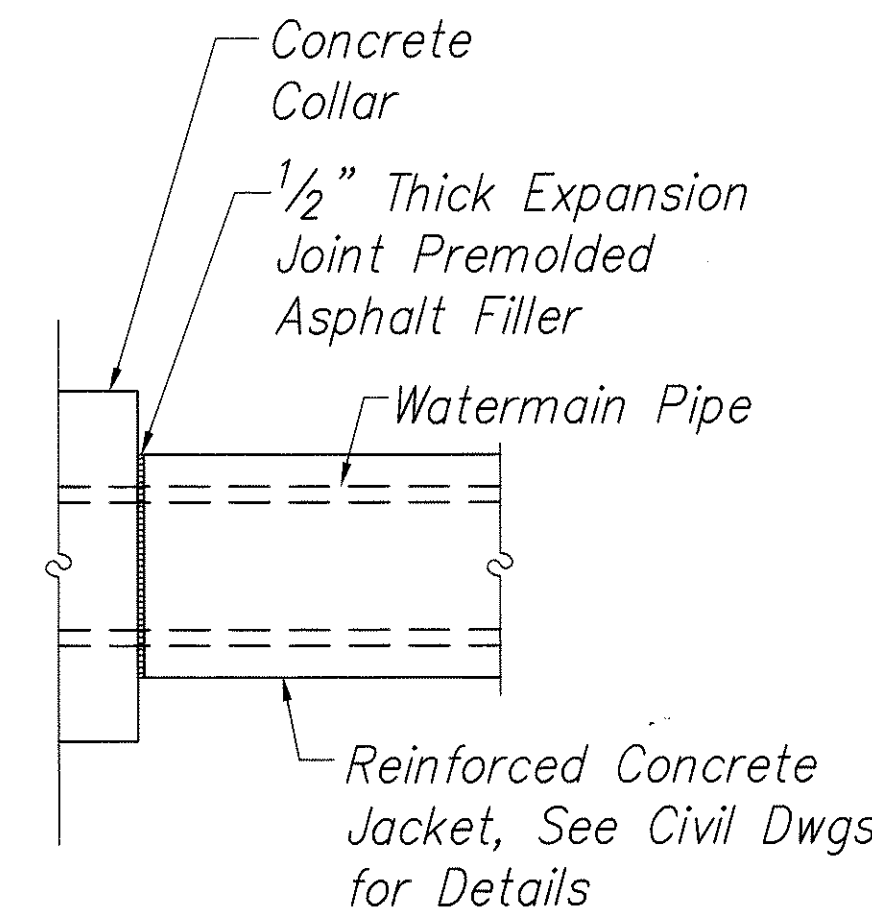
2 Typical Pedestal Detail
Scale: NTS



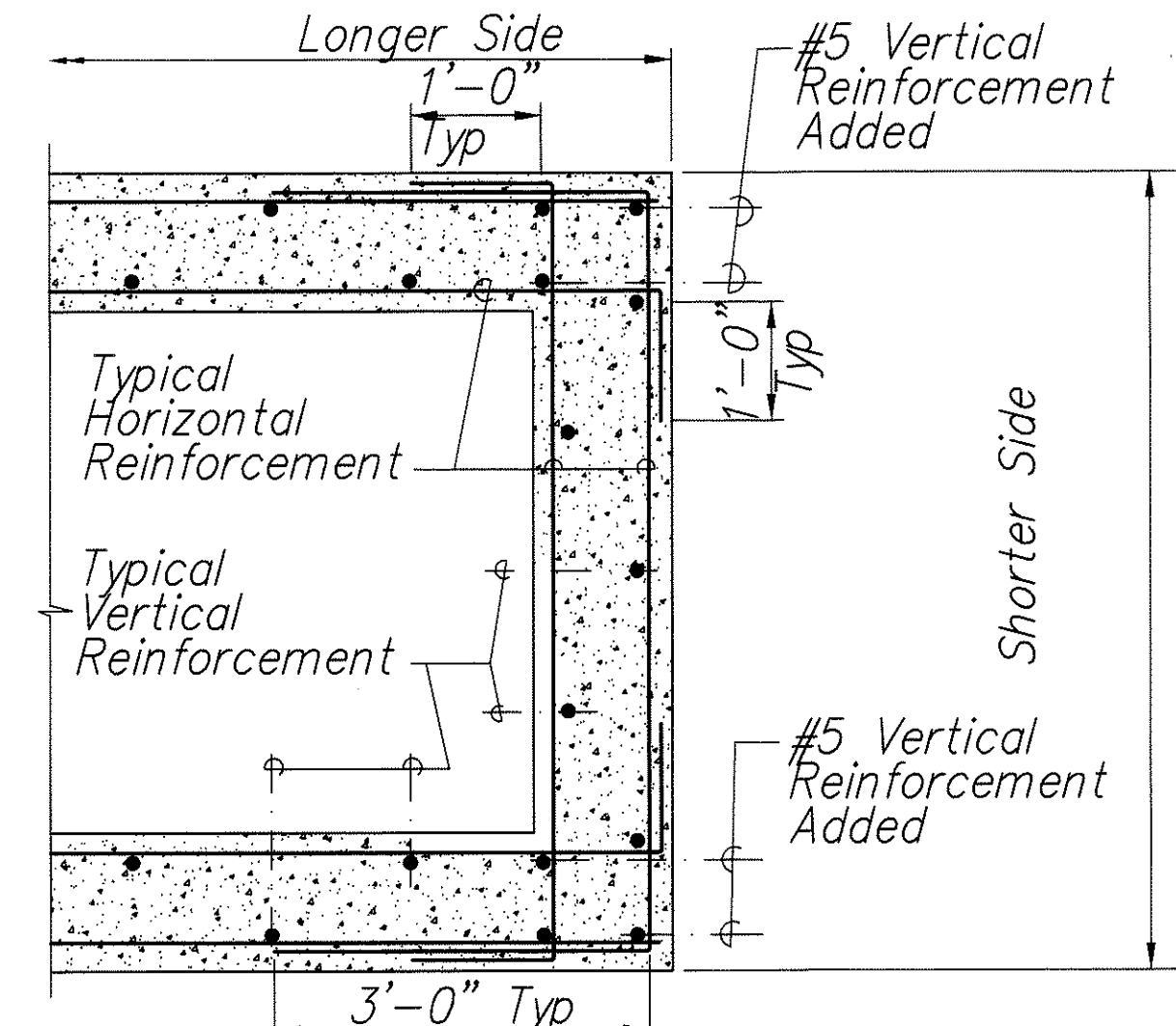
3 Typical Wall Pipe Opening Added Rebars Detail
Scale: NTS



4 Typical Capping Collar Detail
Scale: NTS

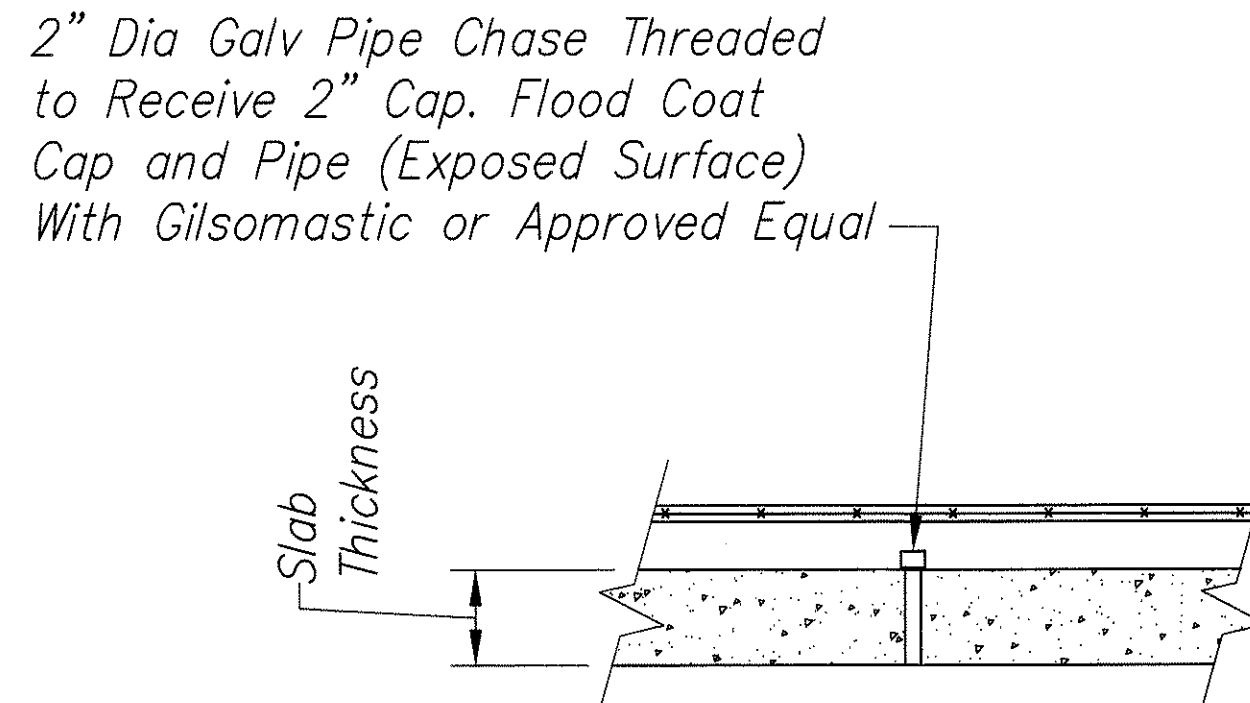


5 Typical Exp Joint for Reinf Concrete Jacket Detail
Scale: NTS

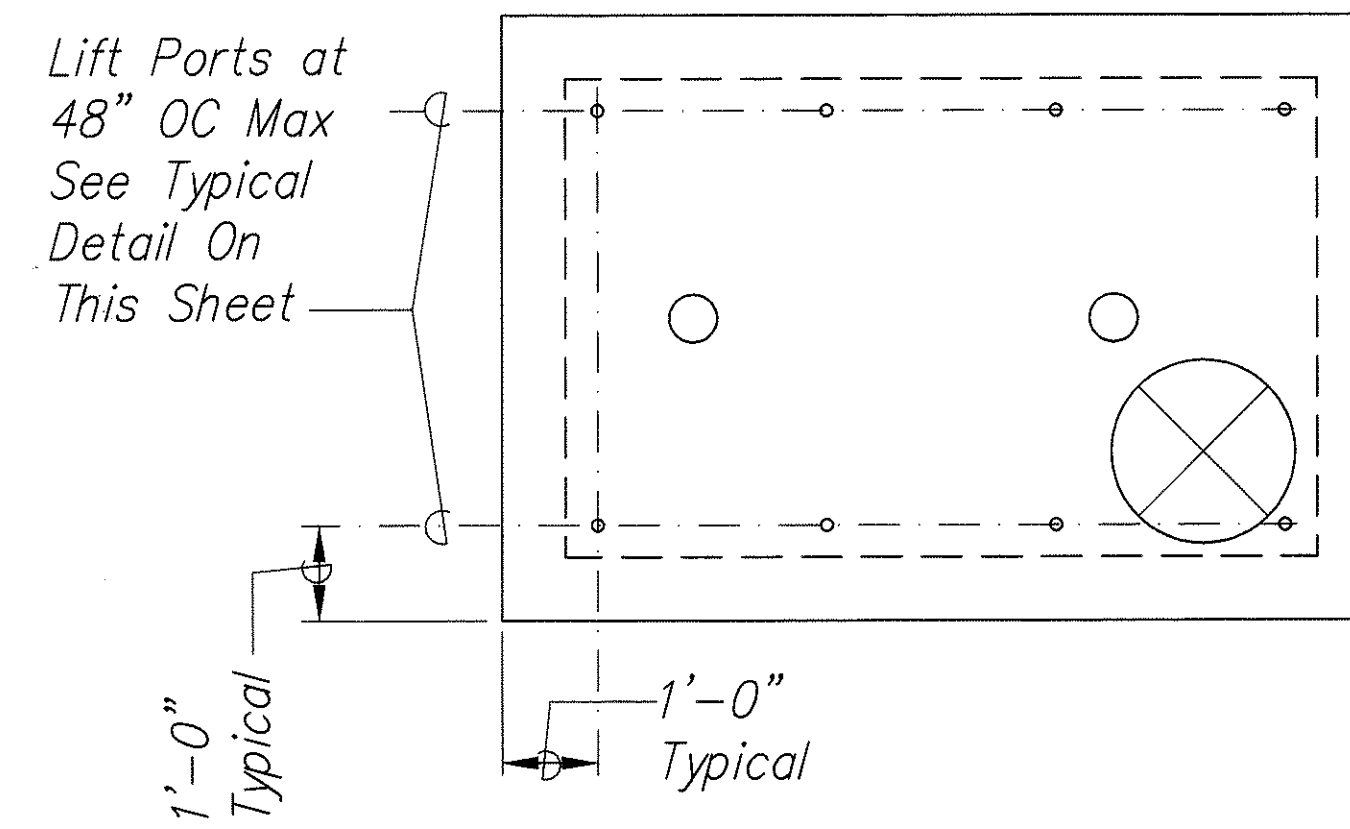


8 Typical Concrete Wall Detail (Plan View)
Scale: NTS

APPROVED:

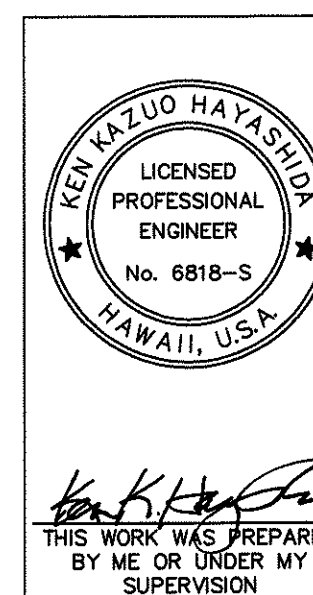


6 Typical Lift Port Detail
Scale: NTS



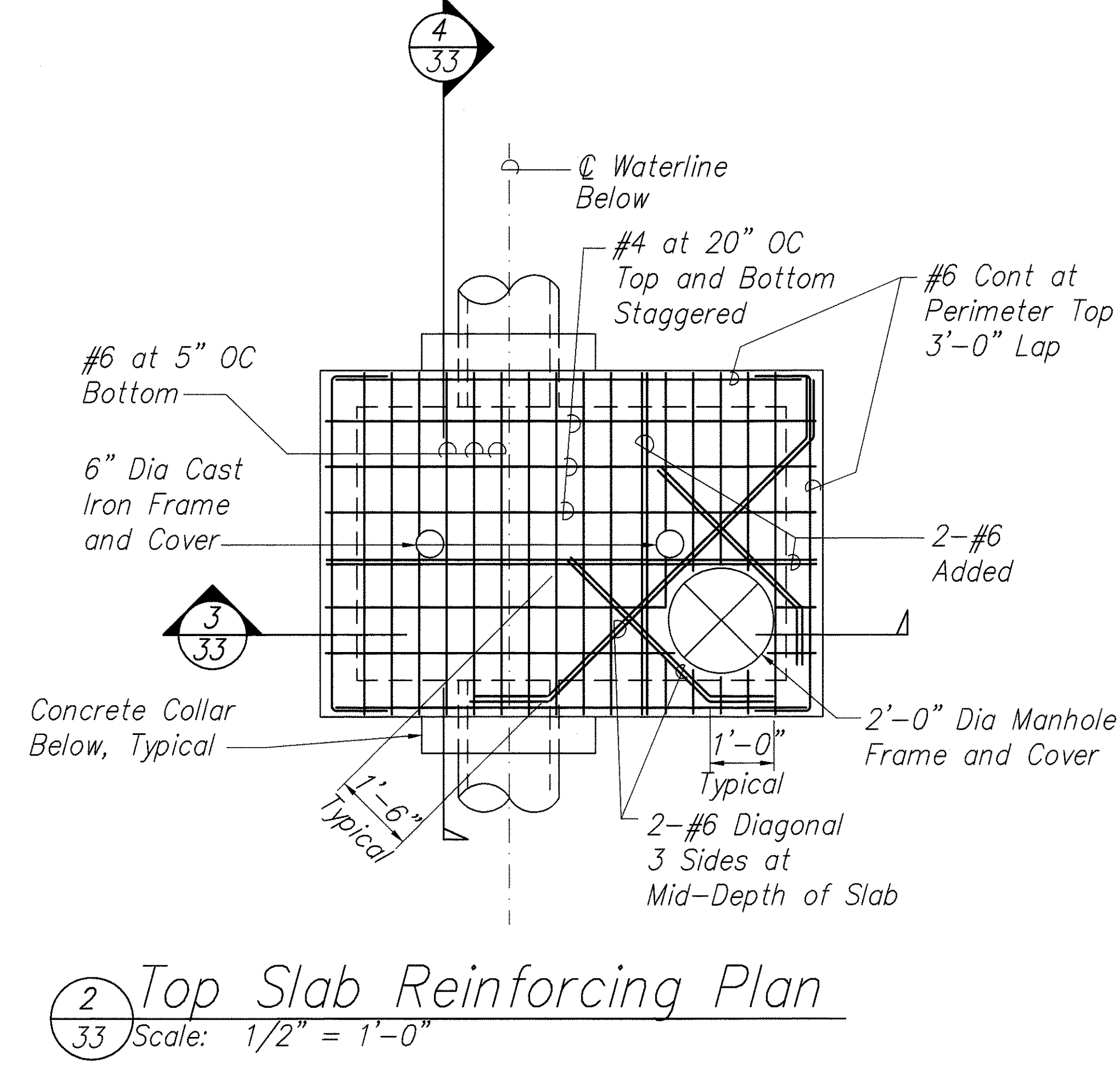
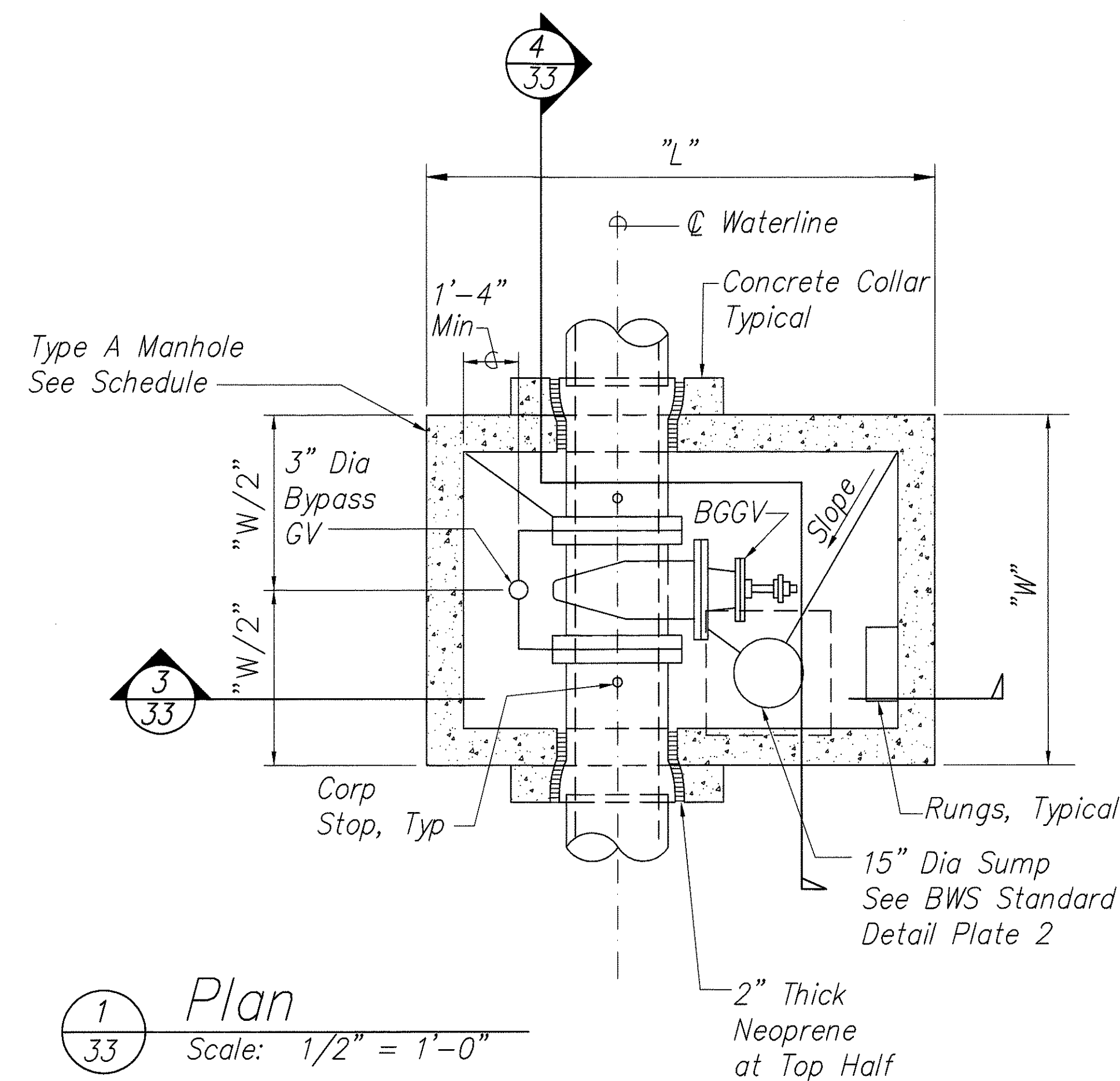
7 Typical Lifting Port Layout Plan
Scale: NTS

Michael Tule
Chief, Planning & Engineering Division
Board of Water Supply
City & County of Honolulu
Date: 4/20/2000

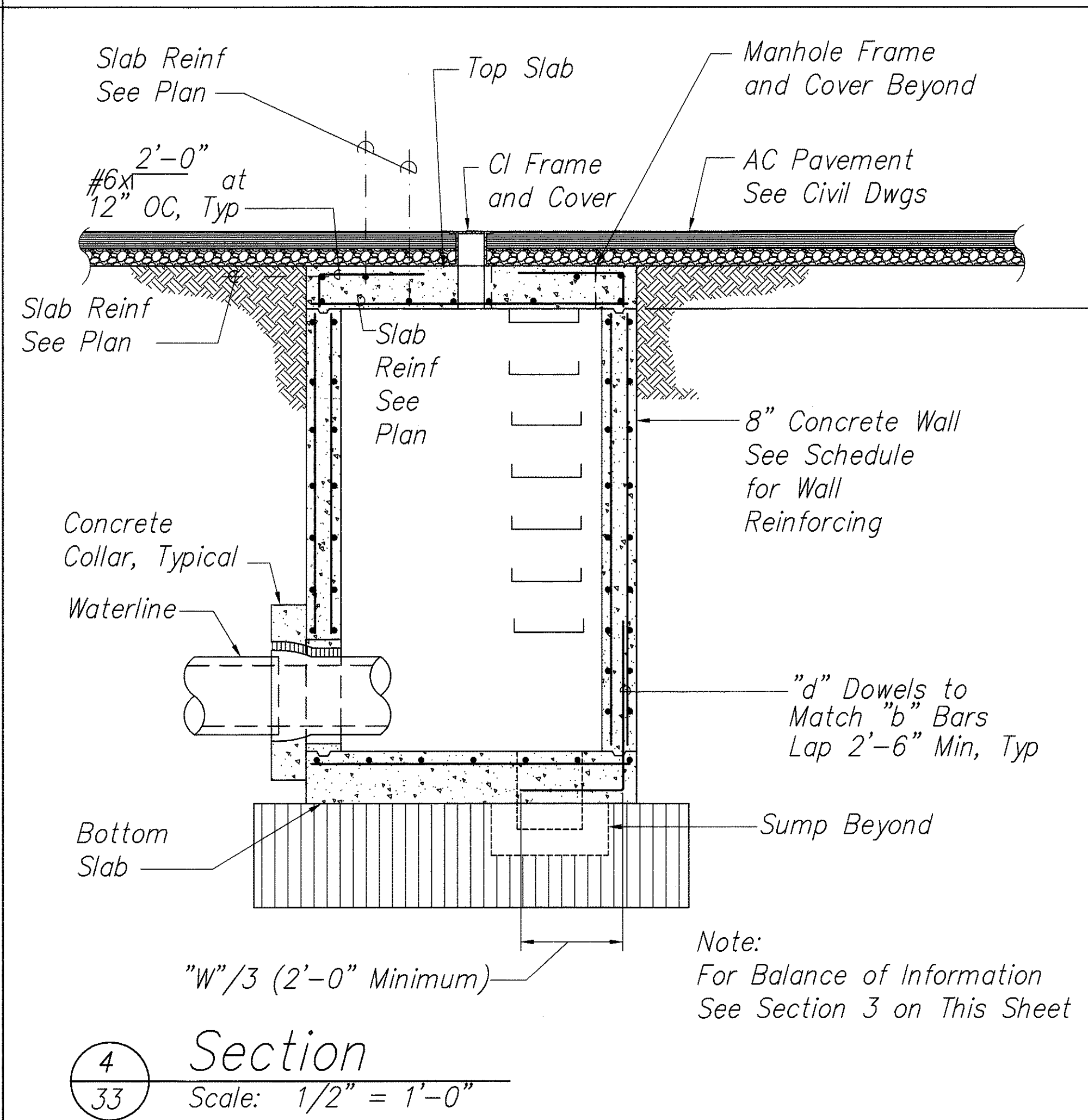
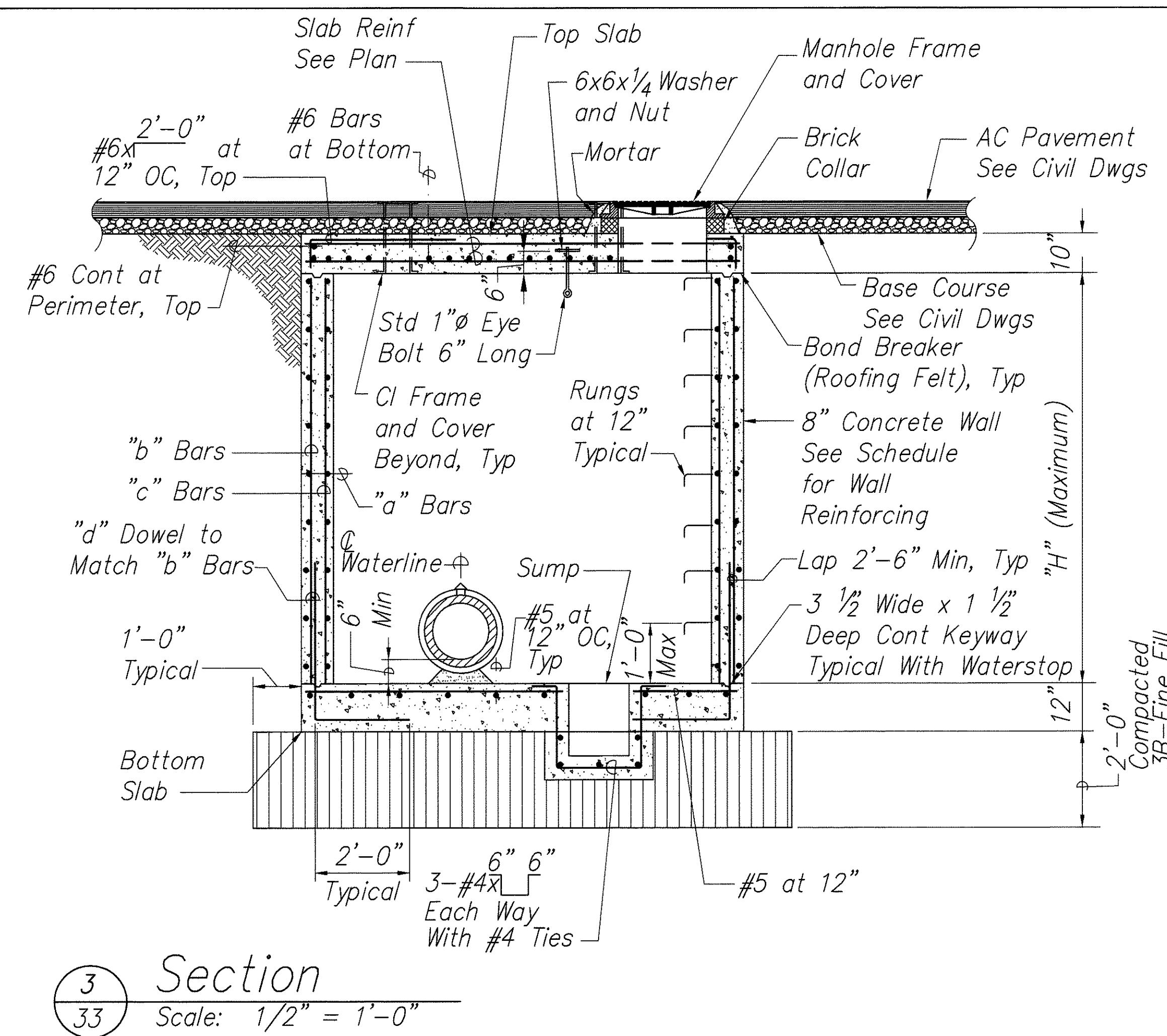


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
REPLACEMENT OF 16-INCH MAIN, PHASE 1
BWS JOB NO. 00-19D
TYPICAL TYPE A MANHOLE
TYPICAL DETAILS
KEAAHALA ROAD WIDENING
KAHEKILI HIGHWAY TO PO'OKELA STREET
State Project No. HWY-0-03-97
Scale: As shown
Date: April 2000
SHEET NO. C-32 OF C-55 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-97	2000	33	110



Type A Manhole Schedule						
"L"	"W"	"H"(Max)	Wall Reinforcing			
			"a"	"b"	"c"	"d"
9'-2"	6'-4"	6'-0"	#5 at 12" Each Face	#5 at 12"	#5 at 12"	#5 at 12"
12'-8"	9'-2"	7'-0"	#5 at 9" Each Face	#5 at 9"	#5 at 9"	#5 at 9"



Note:
Compacted 3B-Fine Fill shall
be considered incidental to the
Type "A" Manhole Structure.

APPROVED:

Michael Luke 4/26/2000
 To: Chief, Planning & Engineering Division * Date
 Board of Water Supply
 City & County of Honolulu

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

REPLACEMENT OF 16-INCH MAIN, PHASE 1

BWS JOB NO. 00-19D

TYPICAL TYPE A MANHOLE
PLAN AND SECTIONS

KEAAHALA ROAD WIDENING
KAHEKILI HIGHWAY TO PO'OKELA STREET
State Project No. HWY-0-03-97

Scale: As shown Date: April 2000

SHEET NO. C-33 OF C-55 SHEETS



KEN KAZUO HAYASHI
 LICENSED
 PROFESSIONAL
 ENGINEER
 No. 6818-S
 HAWAII, U.S.A.

Ken K. Hayashi
 THIS WORK WAS PREPARED
 BY ME OR UNDER MY
 SUPERVISION

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