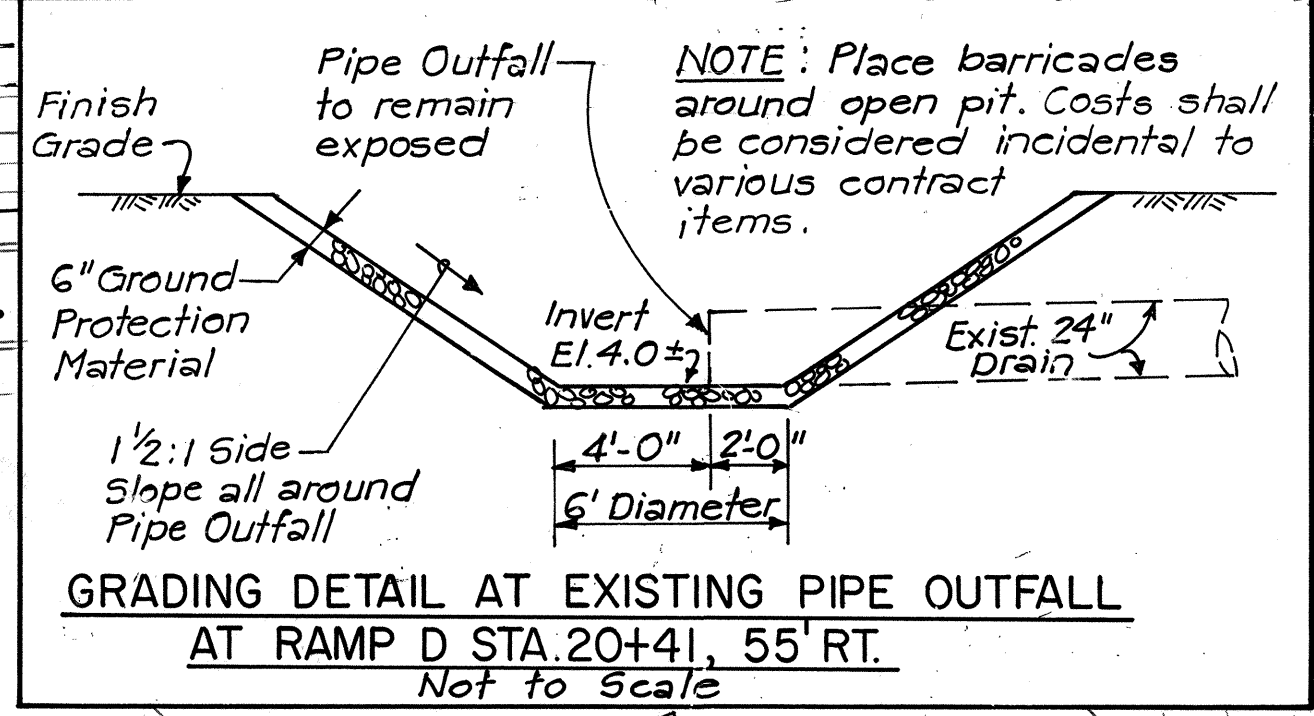
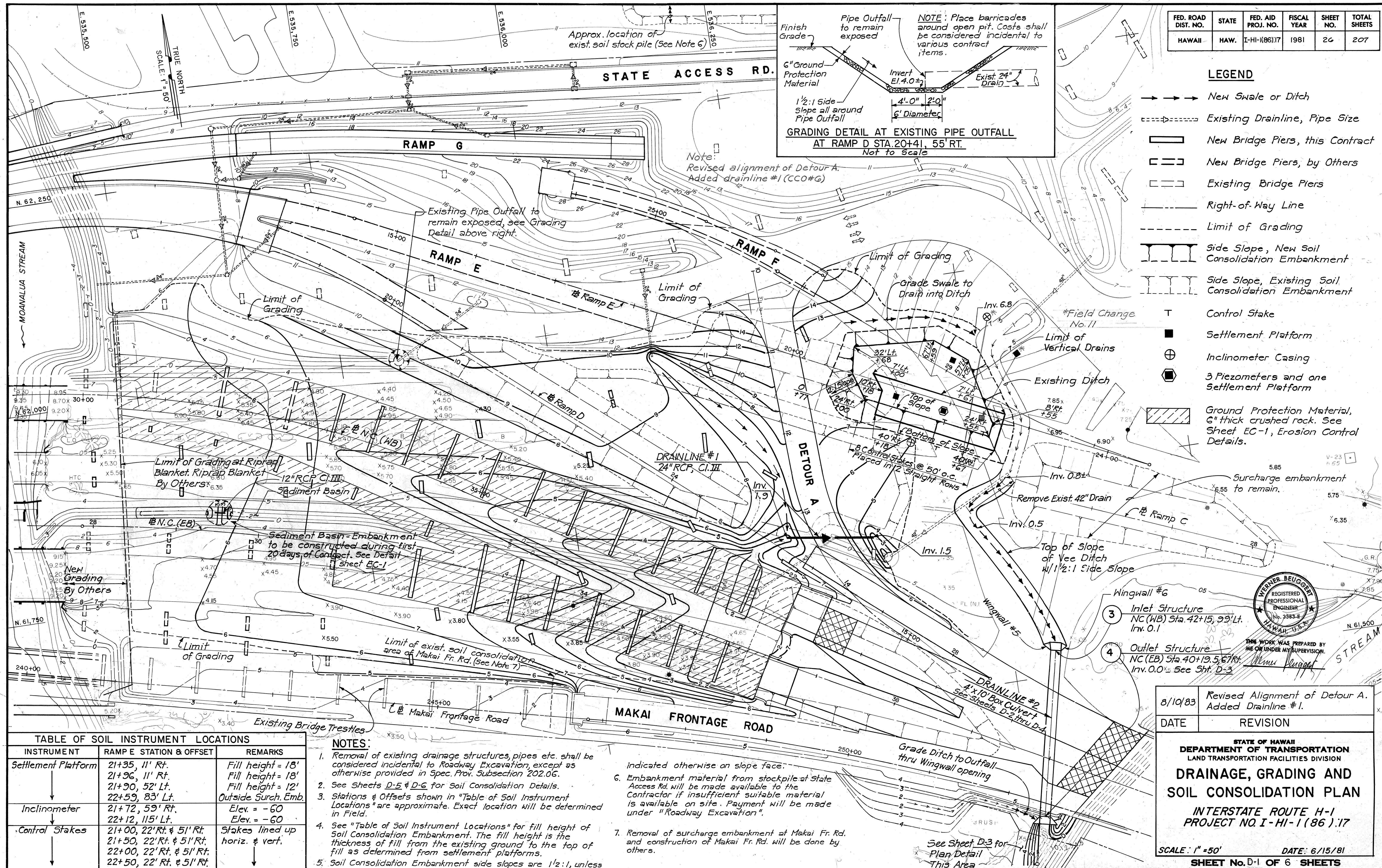


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(86)17	1981	26	207

LEGEND

- → → New Swale or Ditch
- Existing Drainline, Pipe Size
- ▬ New Bridge Piers, this Contract
- ▬ New Bridge Piers, by Others
- ▬ Existing Bridge Piers
- Right-of-Way Line
- Limit of Grading
- Side Slope, New Soil Consolidation Embankment
- Side Slope, Existing Soil Consolidation Embankment
- T Control Stake
- Settlement Platform
- ⊕ Inclinator Casing
- ⊗ 3 Piezometers and one Settlement Platform
- Ground Protection Material, 6" thick crushed rock. See Sheet EC-1, Erosion Control Details.



Note: Revised alignment of Detour A. Added drainline #1 (CCO #6)

Limit of Grading at Riprap Blanket. Riprap Blanket By Others

Sediment Basin - Embankment to be constructed during first 20 days of Contract. See Detail Sheet EC-1

- 3 Inlet Structure NC (WB) Sta. 42+15, 99' Lt. Inv. 0.1
- 4 Outlet Structure NC (EB) Sta. 40+19.5, 67' Rt. Inv. 0.0 - See Sht. D-3



8/10/83	Revised Alignment of Detour A. Added Drainline #1.
DATE	REVISION

TABLE OF SOIL INSTRUMENT LOCATIONS

INSTRUMENT	RAMP E STATION & OFFSET	REMARKS
Settlement Platform	21+35, 11' Rt. 21+36, 11' Rt. 21+90, 52' Lt. 22+59, 83' Lt.	Fill height = 18' Fill height = 18' Fill height = 12' Outside Surch. Emb.
Inclinometer	21+72, 59' Rt. 22+12, 115' Lt.	Elev. = -60 Elev. = -60
Control Stakes	21+00, 22' Rt. & 51' Rt. 21+50, 22' Rt. & 51' Rt. 22+00, 22' Rt. & 51' Rt. 22+50, 22' Rt. & 51' Rt.	Stakes lined up horiz. & vert.

NOTES:

- Removal of existing drainage structures, pipes etc. shall be considered incidental to Roadway Excavation, except as otherwise provided in Spec. Prov. Subsection 202.06.
- See Sheets D-5 & D-6 for Soil Consolidation Details.
- Stations & Offsets shown in "Table of Soil Instrument Locations" are approximate. Exact location will be determined in field.
- See "Table of Soil Instrument Locations" for fill height of Soil Consolidation Embankment. The fill height is the thickness of fill from the existing ground to the top of fill as determined from settlement platforms.
- Soil Consolidation Embankment side slopes are 1 1/2:1, unless indicated otherwise on slope face.
- Embankment material from stockpile at State Access Rd. will be made available to the Contractor if insufficient suitable material is available on site. Payment will be made under "Roadway Excavation".
- Removal of surcharge embankment at Makai Fr. Rd. and construction of Makai Fr. Rd. will be done by others.

DATE	
SURVEY PLOTTED BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

DRAINAGE, GRADING AND SOIL CONSOLIDATION PLAN

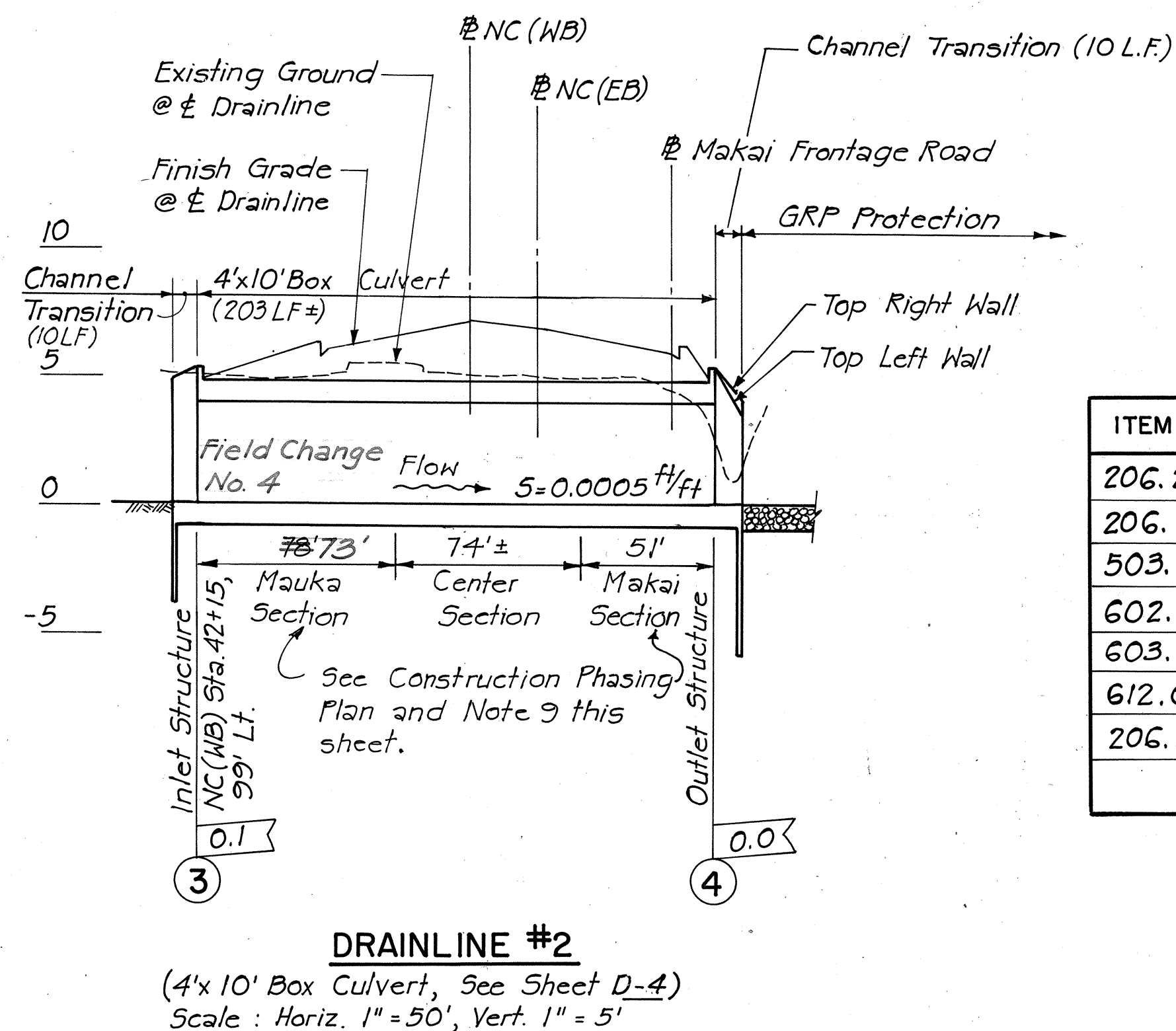
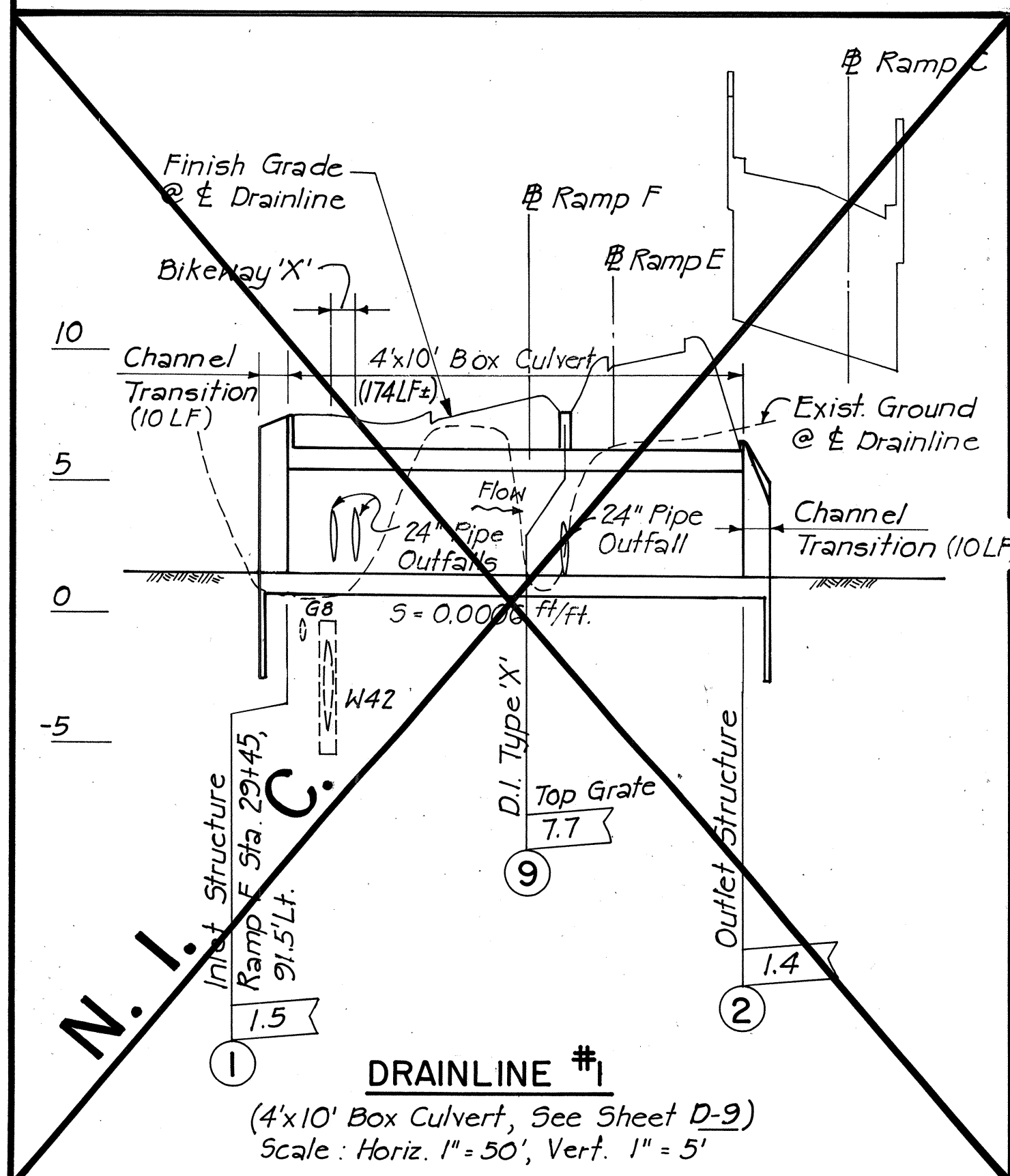
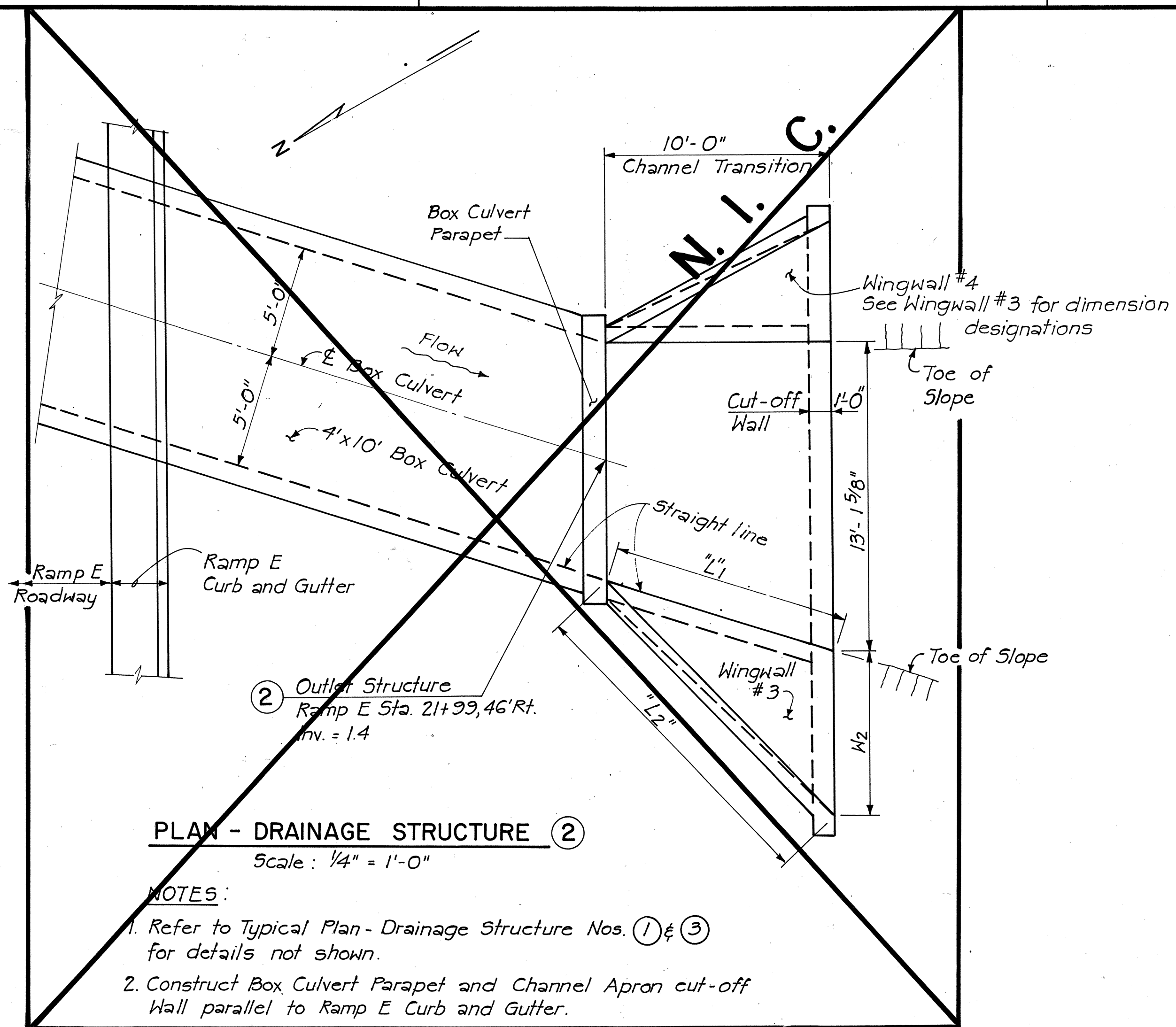
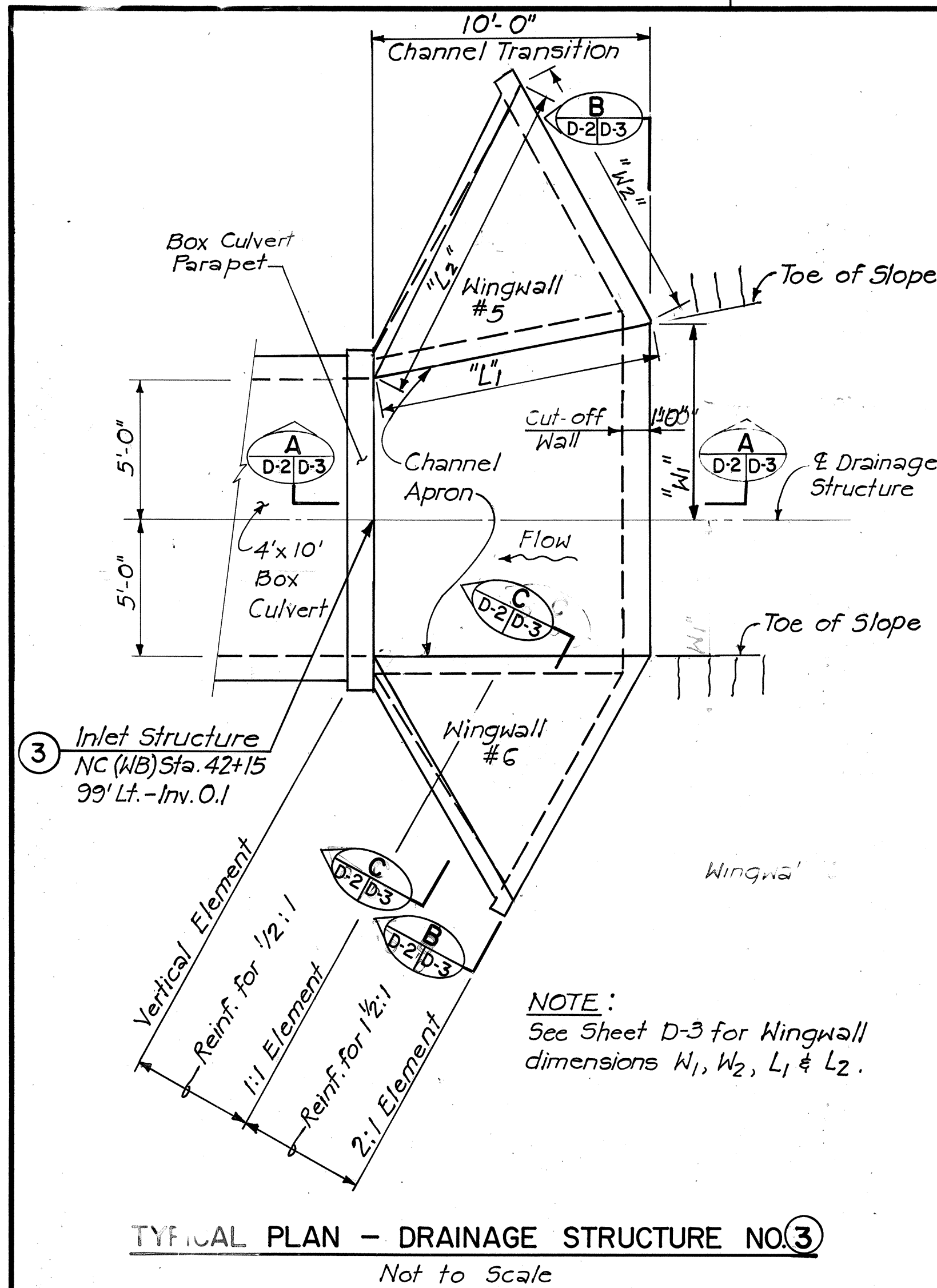
INTERSTATE ROUTE H-1
PROJECT NO. I-HI-1(86)17

SCALE: 1" = 50' DATE: 6/15/81
SHEET No. D-1 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(86)17	1981	27	207

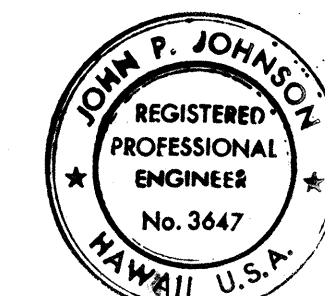
DRAINLINE #2 NOTES

- Design Specifications :
Standard Specifications for Highway Bridges AASHTO Specifications and Interim Specifications of current edition.
- Design Stresses : $f_c' = 3000$ psi, $f_c = 1200$ psi $n = 10$ for concrete
 $f_s = 20,000$ psi for Reinf. Steel
- Materials :
(a) All Reinf. Steel shall be ASTM Designation A 615 Grade 40.
(b) All Concrete shall be Class A, unless noted.
- For Structural Excavation Payment Limits & Joint Details see Sheet No. D-4
- The Contractor shall verify the locations and Elevations of all existing utility lines and notify the respective owners before commencing excavation work for drainlines.
- Except as otherwise noted all exterior corners and re-entrance angles in concrete work shall be chamfered $\frac{3}{4}'' \times \frac{3}{4}''$.
- All dimensions relating to Reinforcing are to centers of bars unless otherwise noted.
- The Contractor shall have the option of furnishing and installing precast $4' \times 10'$ reinforced concrete box culvert sections in lieu of constructing $4' \times 10'$ cast-in-place box culverts. Shop drawings shall be submitted to the Engineer for approval.
- Ends of box culvert sections under existing pavement shall be covered with steel plates. Backfill shall be placed against steel plates.



ESTIMATED QUANTITIES

ITEM NO.	ITEMS	UNIT	QUANTITY
206.2021	Structure Excavation for Box Culvert	C.Y.	600
206.7010	Structure Backfill for Box Culvert	C.Y.	73
503.0021	Concrete for Box Culvert (Class A)	L.S.	(224 C.Y.)
602.0022	Reinforcing Steel in Box Culvert	L.S.	(3900 Lbs.)
603.0020	Bed Course Material for Culvert	C.Y.	59
612.0100	Grouted Rubble Paving	C.Y.	166
206.8000	Filter Material	C.Y.	68



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John P. Johnson

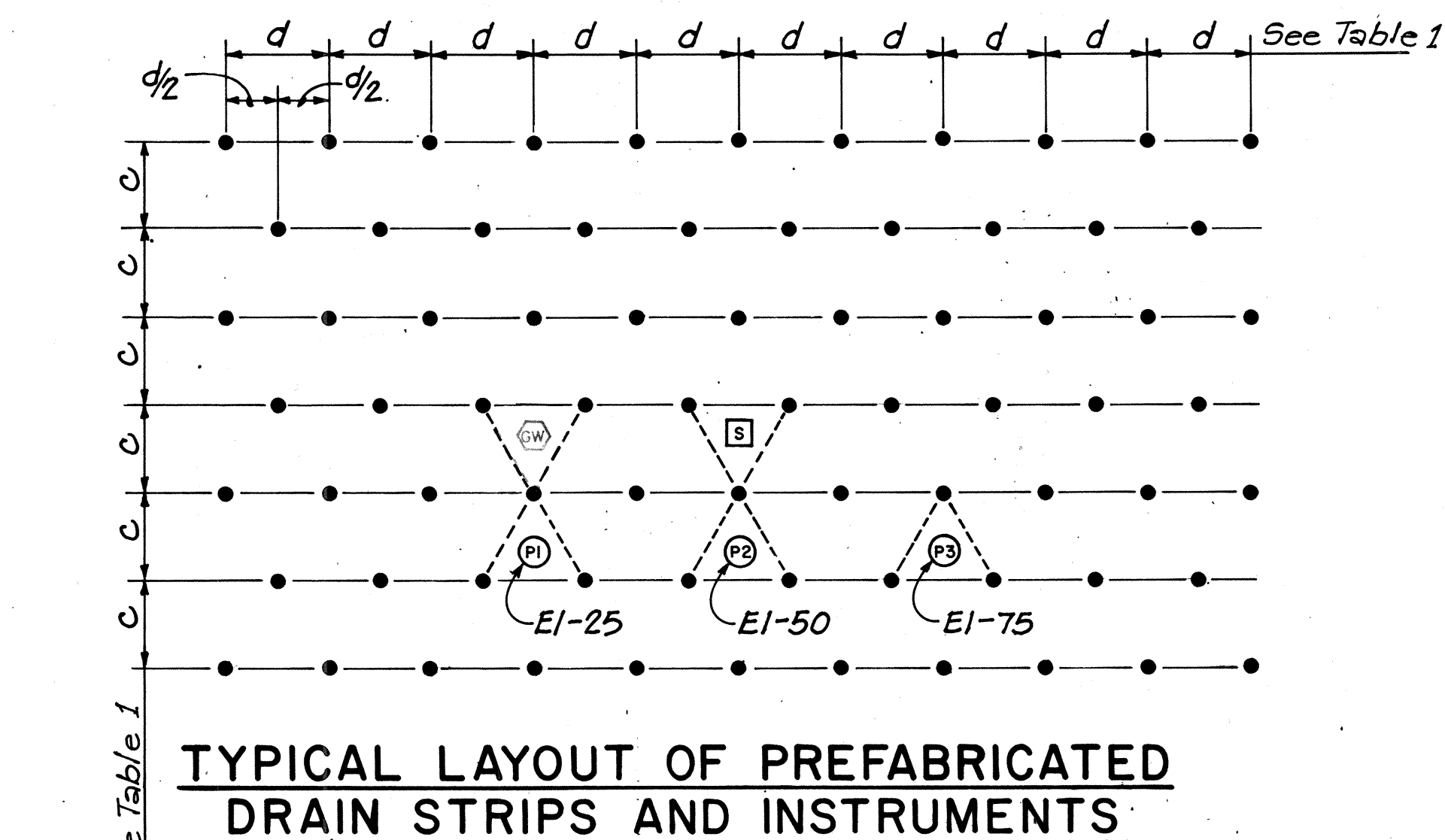
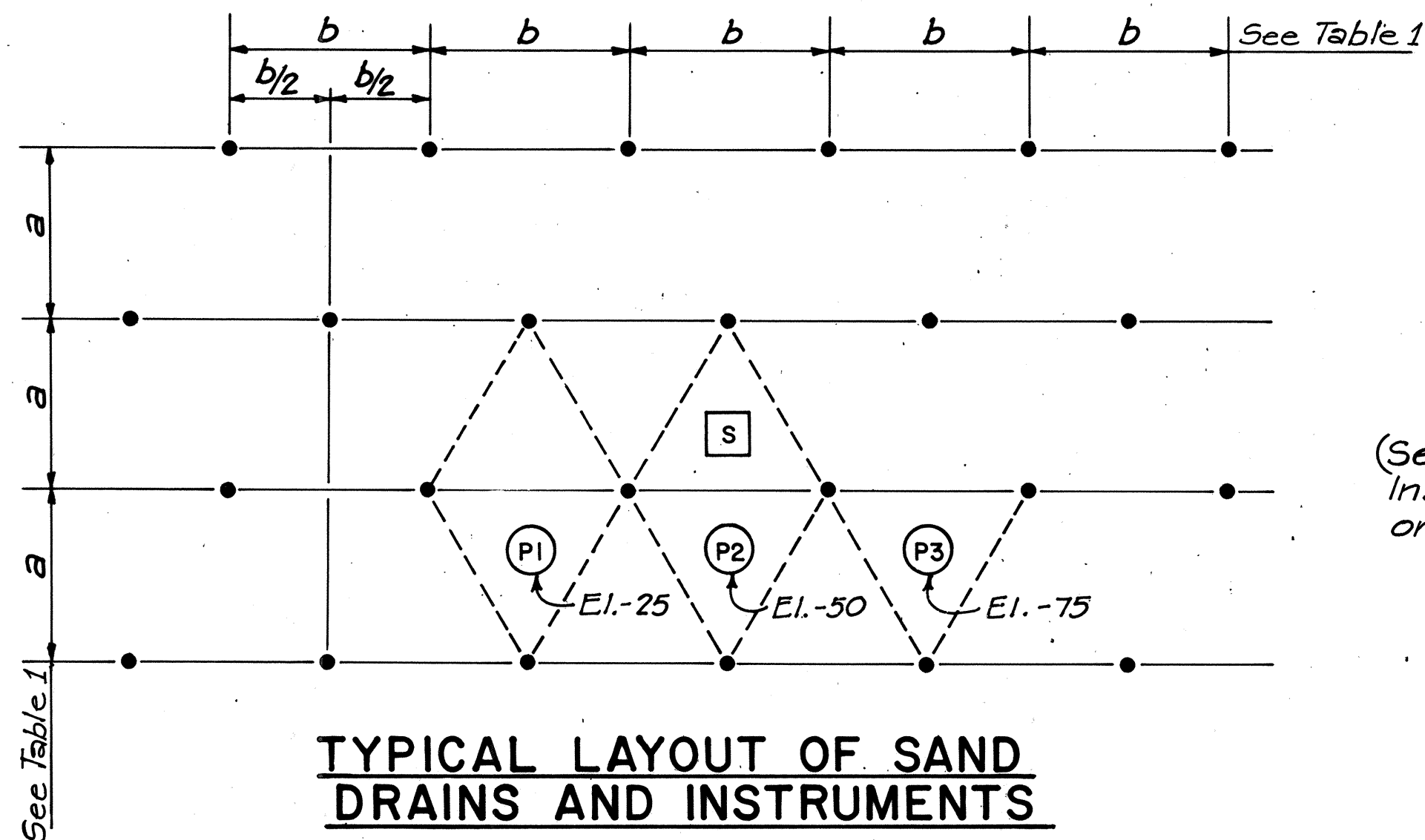
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

DRAINLINE #2

INTERSTATE ROUTE H-1
PROJECT NO. I-HI-1(86)17

SCALE: AS SHOWN DATE: 6/15/81
SHEET NO. D-2 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(86):17	1981	30	207



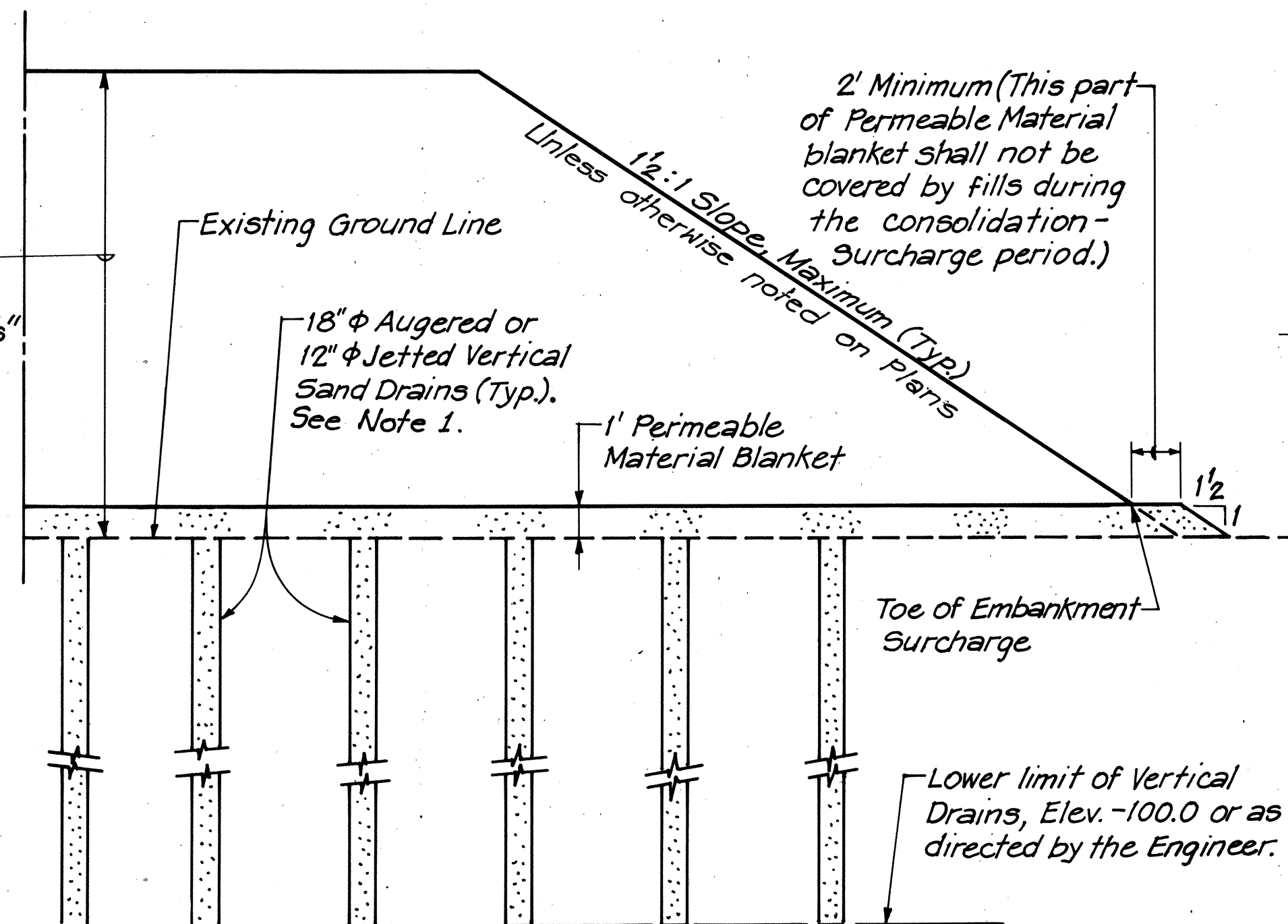
LEGEND

- Vertical Drain
- [S] Settlement Platform
- [P1] Piezometer
- EI-25 Elevation of Piezometer Point
- (GW) Ground Water in Well

NOTE:

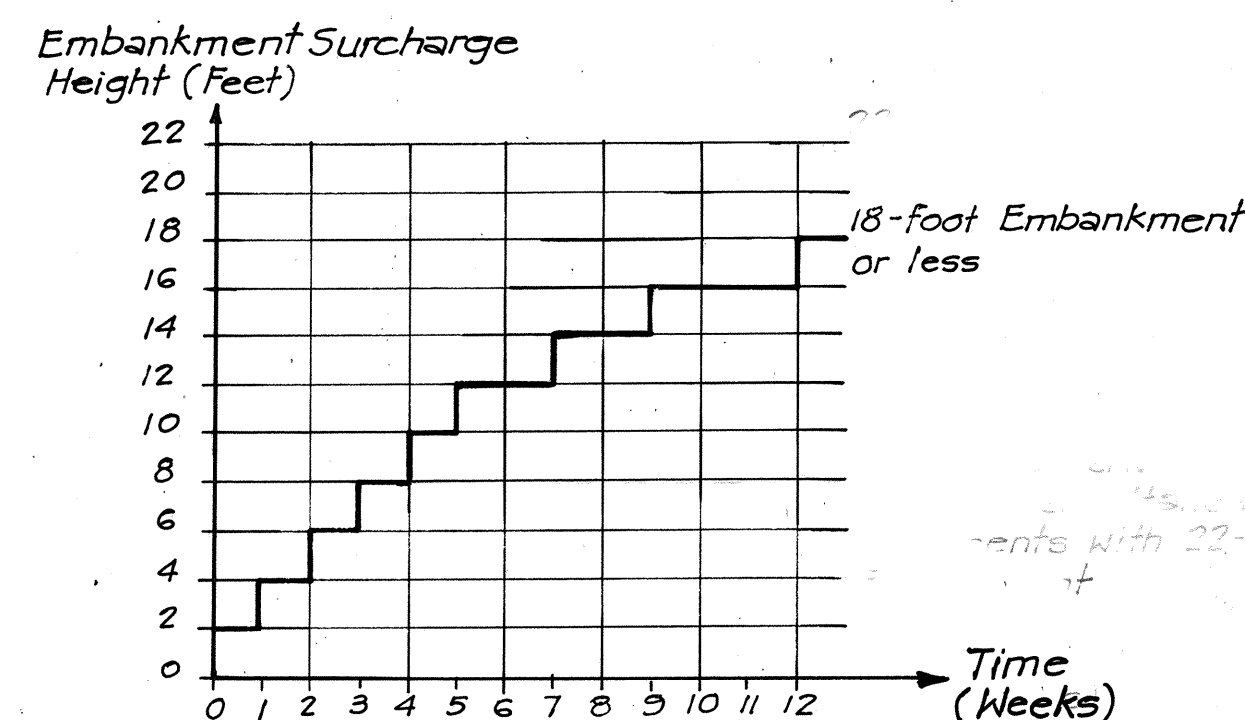
Settlement Platforms & Piezometers shall be installed in center of staggered vertical drain groups, equidistant from drains, as shown. The exact location will be determined in the field.

Fill Height
(See Table of Soil Instrument Locations on Sheet D-1)



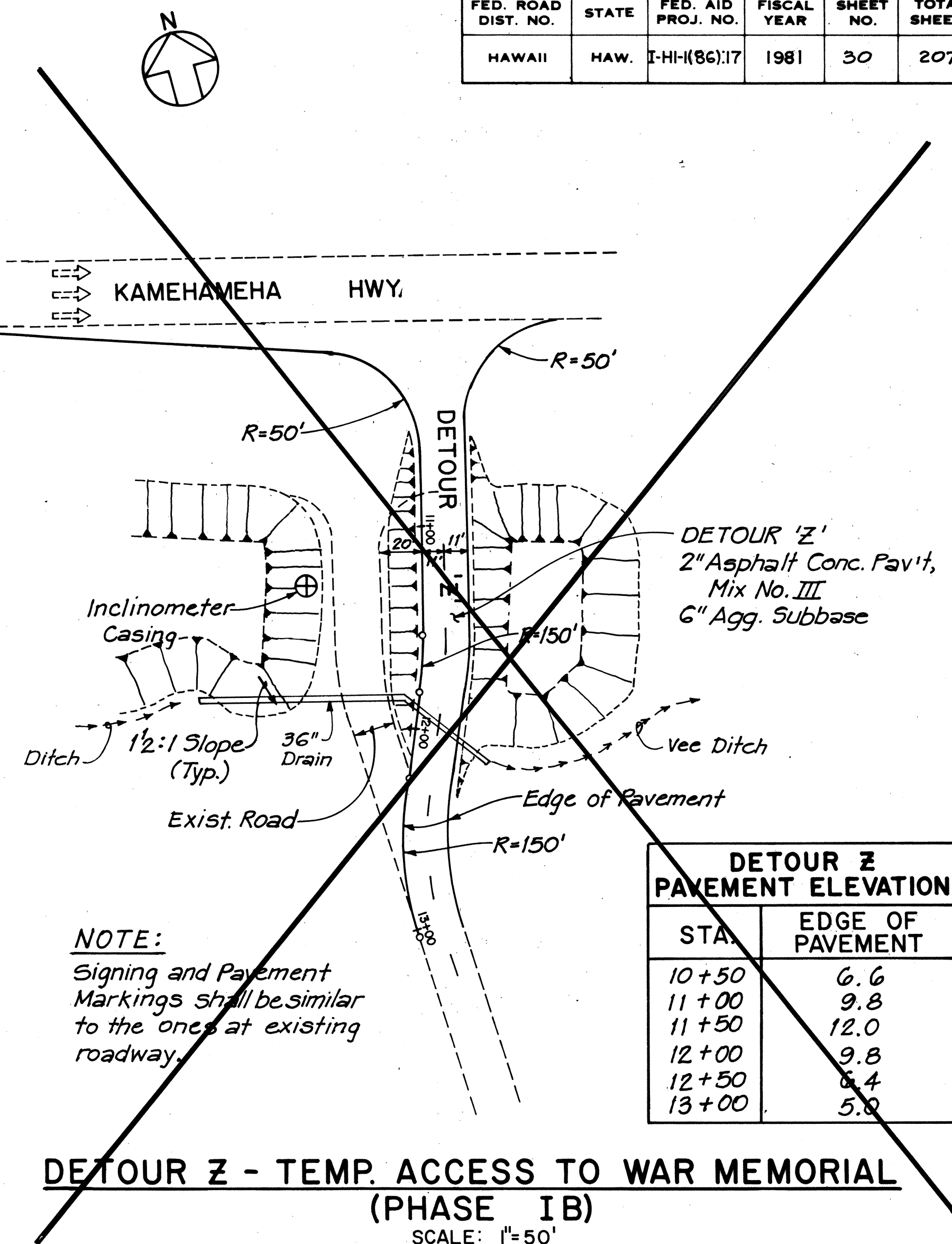
NOTES:

- In lieu of Sand Drains the Contractor may install 'Geodrain' or 'Alidrain' prefabricated drain strips to the elevation indicated for sand drains. See Table 1 on this sheet for required spacings of Vertical Drains.
- It is estimated that the existing ground under the center portion of the sand drain (or prefabricated drains) surcharge embankment will settle 3 to 4 feet during construction of embankment. The total settlements at end of consolidation period are estimated to be 6 to 8 feet.
- Contractor shall place 1' thick permeable material blanket for surcharge embankments without vertical drains, similar to the limits shown on sand drain surcharge embankment detail above.



NOTE:

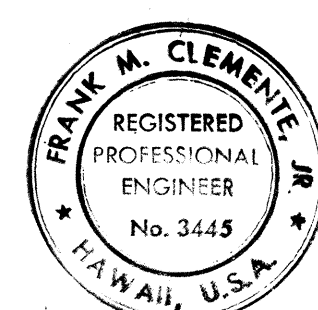
Each increment shall be placed within two working days or less. For increments scheduled to be placed on a weekly basis, a minimum of 6 calendar days shall elapse between completion of one increment and commencement of the next increments. For increments scheduled to be placed on a bi-weekly basis, a minimum of 13 calendar days shall elapse and on a tri-weekly basis a minimum 20 calendar days shall elapse between completion of one increment and commencement of the next increment. The rate of placement may be modified as the Engineer may direct. In case of a delay requested by the Engineer, Subsection 108.07 of the Specifications allows the Contractor to request an extension of time.



DETOUR Z PAVEMENT ELEVATION	
STA.	EDGE OF PAVEMENT
10+50	6.6
11+00	9.8
11+50	12.0
12+00	9.8
12+50	6.4
13+00	5.0

NOTE:

Signing and Pavement Markings shall be similar to the ones at existing roadway.



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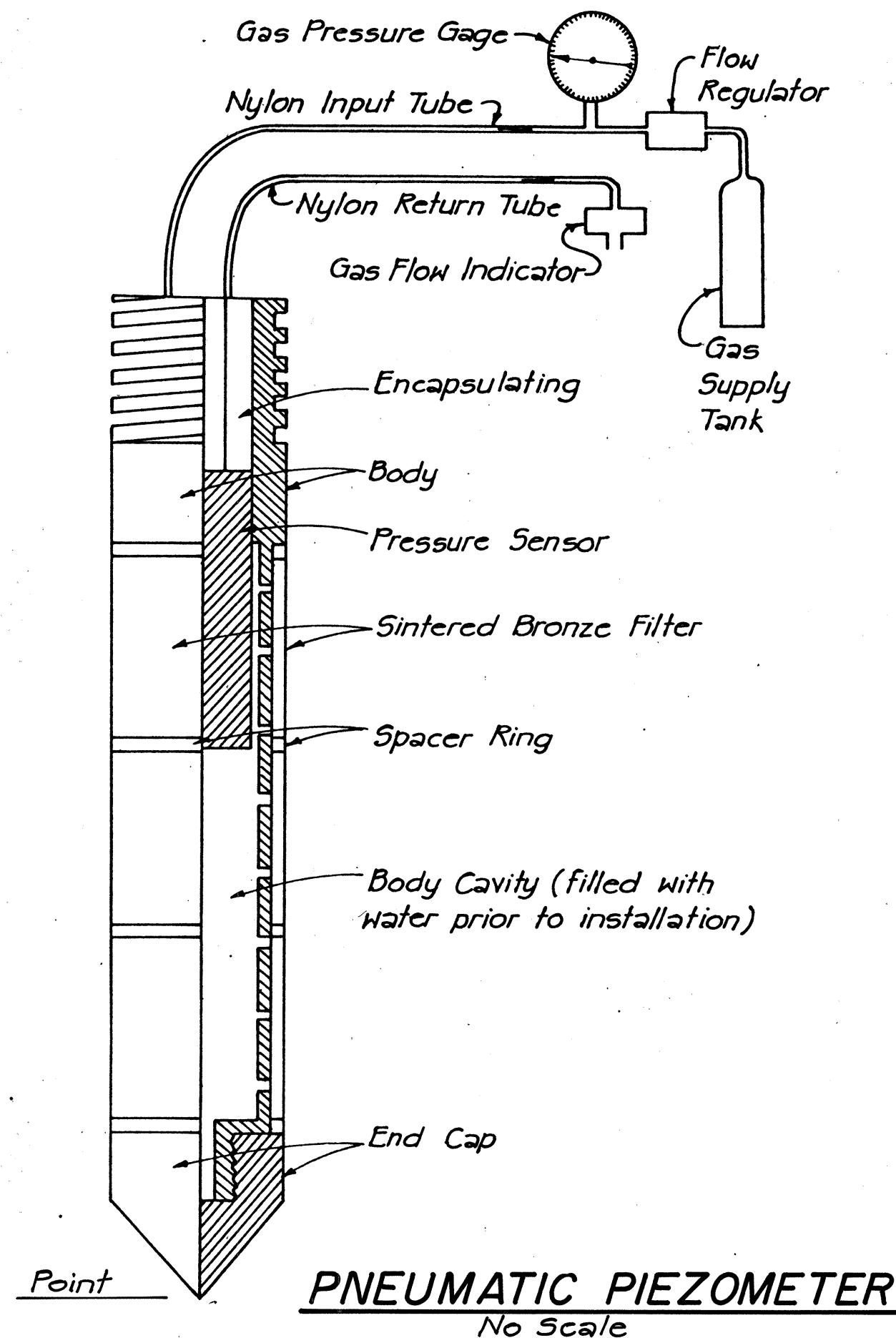
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

SOIL CONSOLIDATION DETAILS

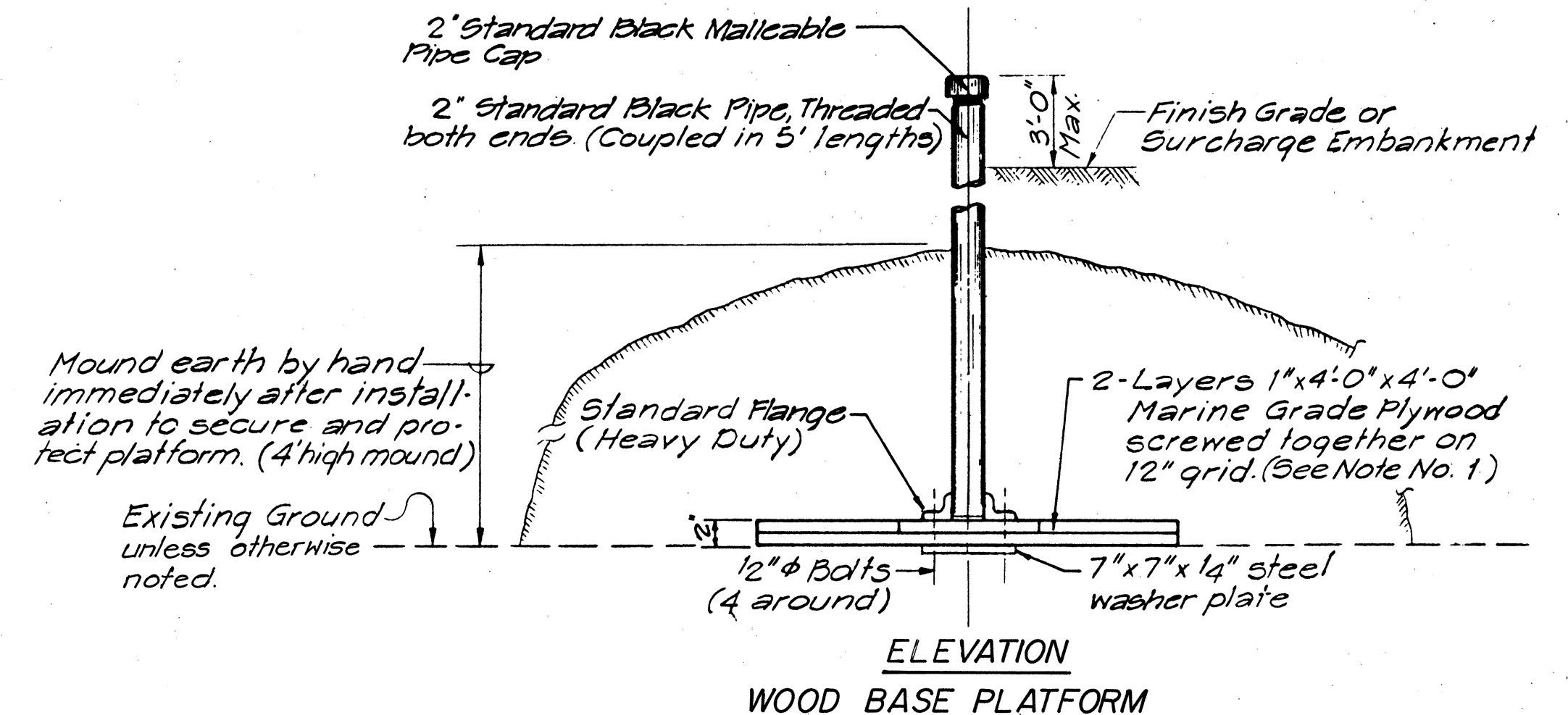
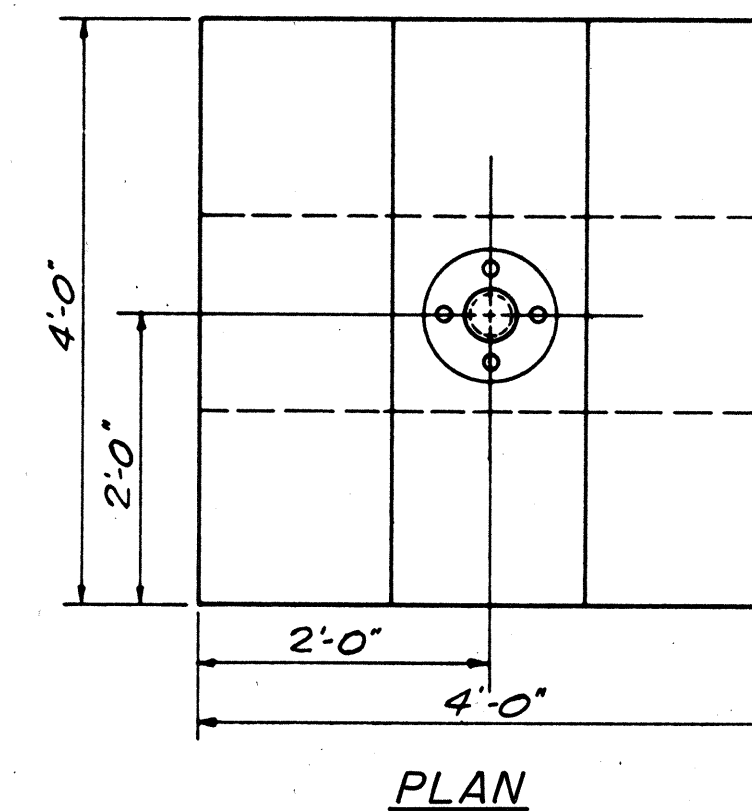
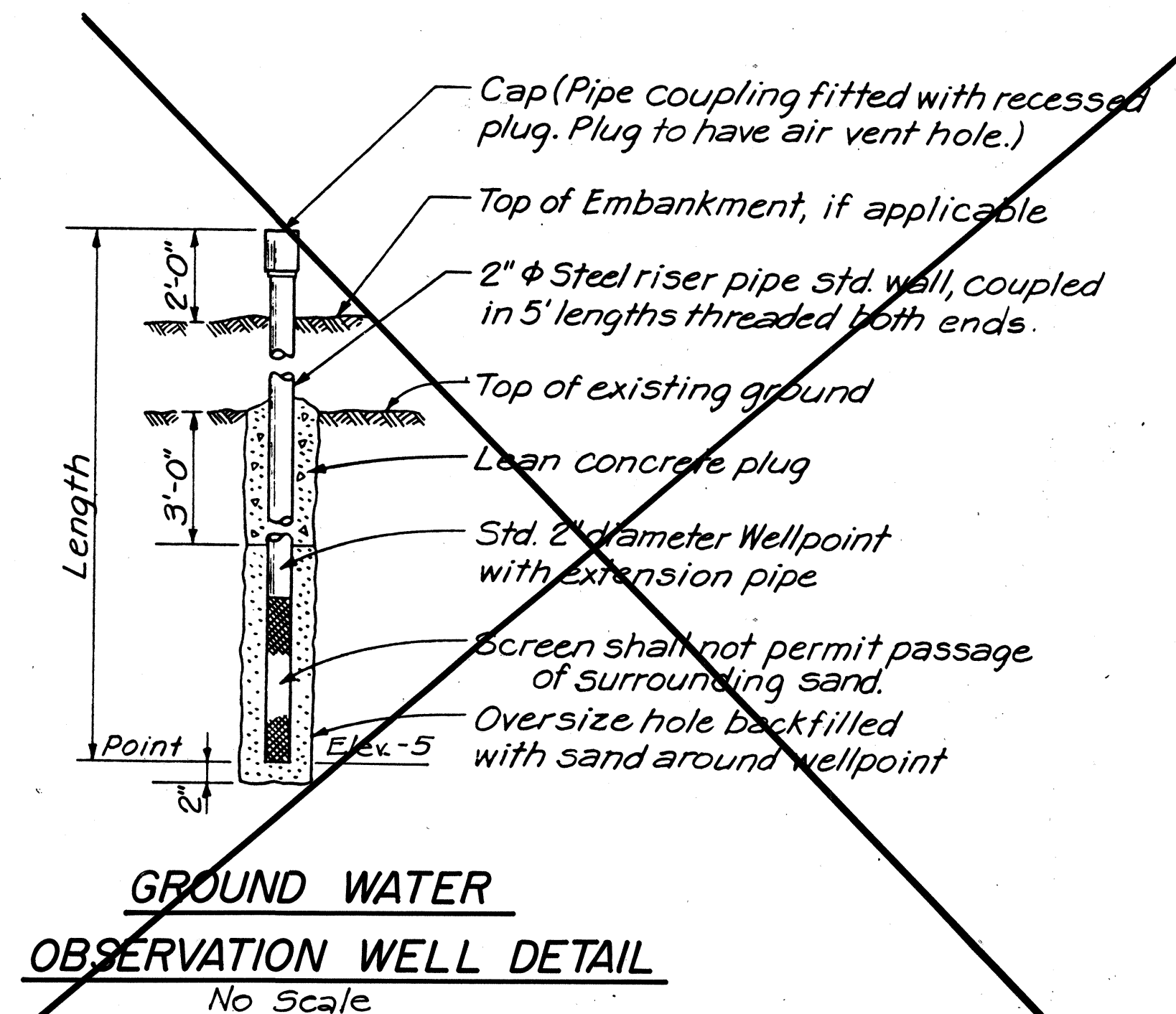
INTERSTATE ROUTE H-1
PROJECT NO. I-HI-1(86):17

SCALE: AS SHOWN DATE: 6/15/81
SHEET NO. D-5 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-(86)17	1981	31	207



PIEZOMETER NOTE:
Piezometers shall be pneumatic type approximately 18 inches long, O.D. flush with EW - Drill Rod & contain pressure transducer.

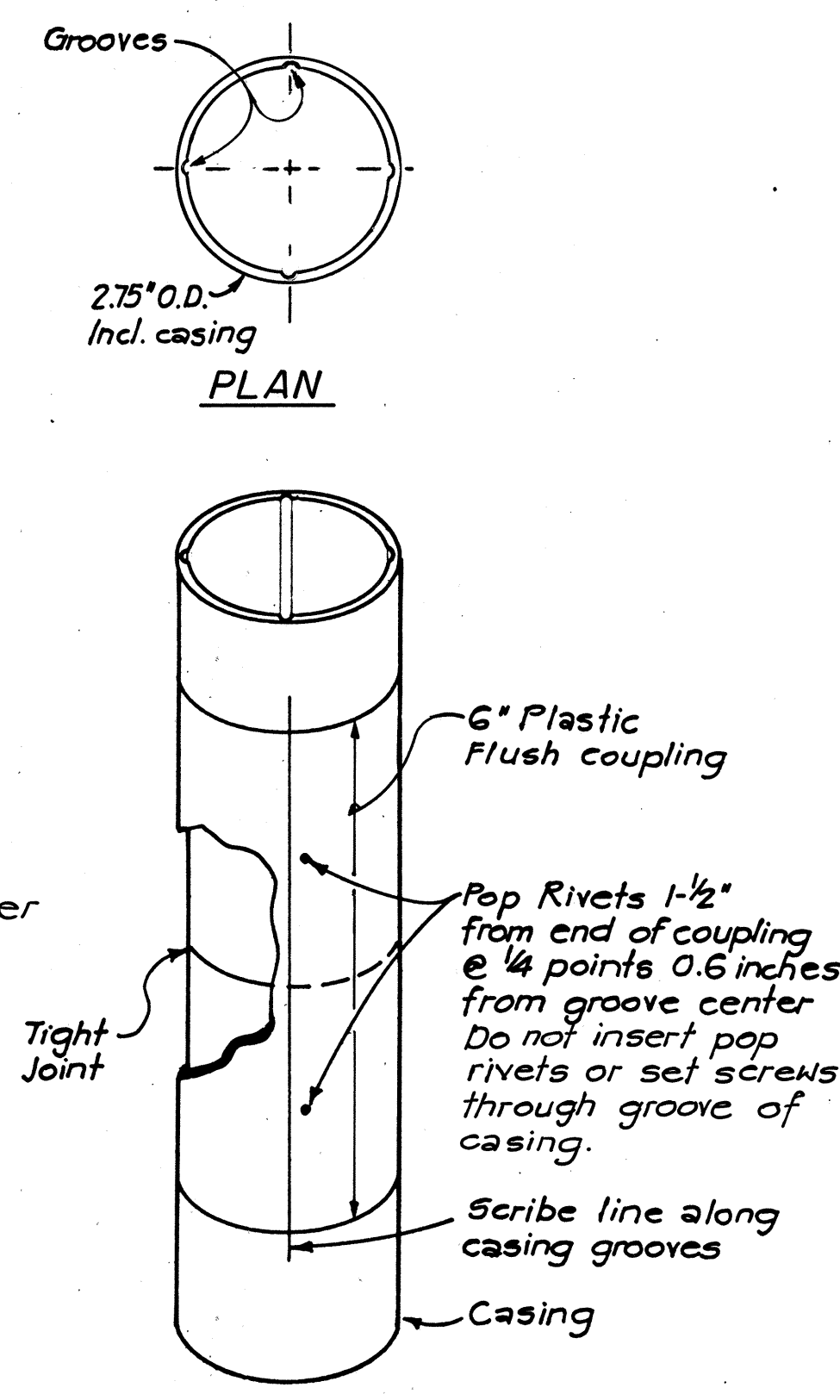
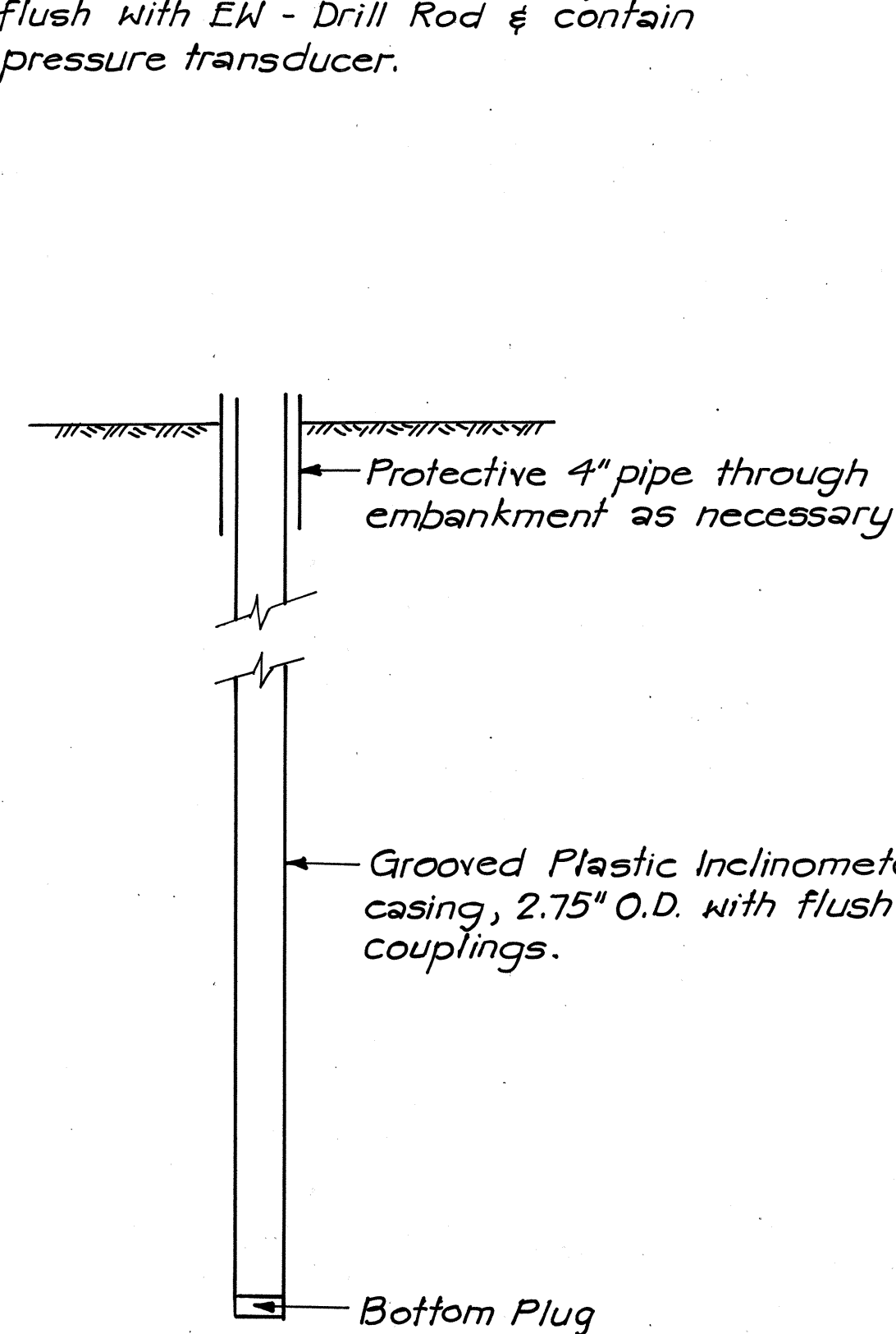
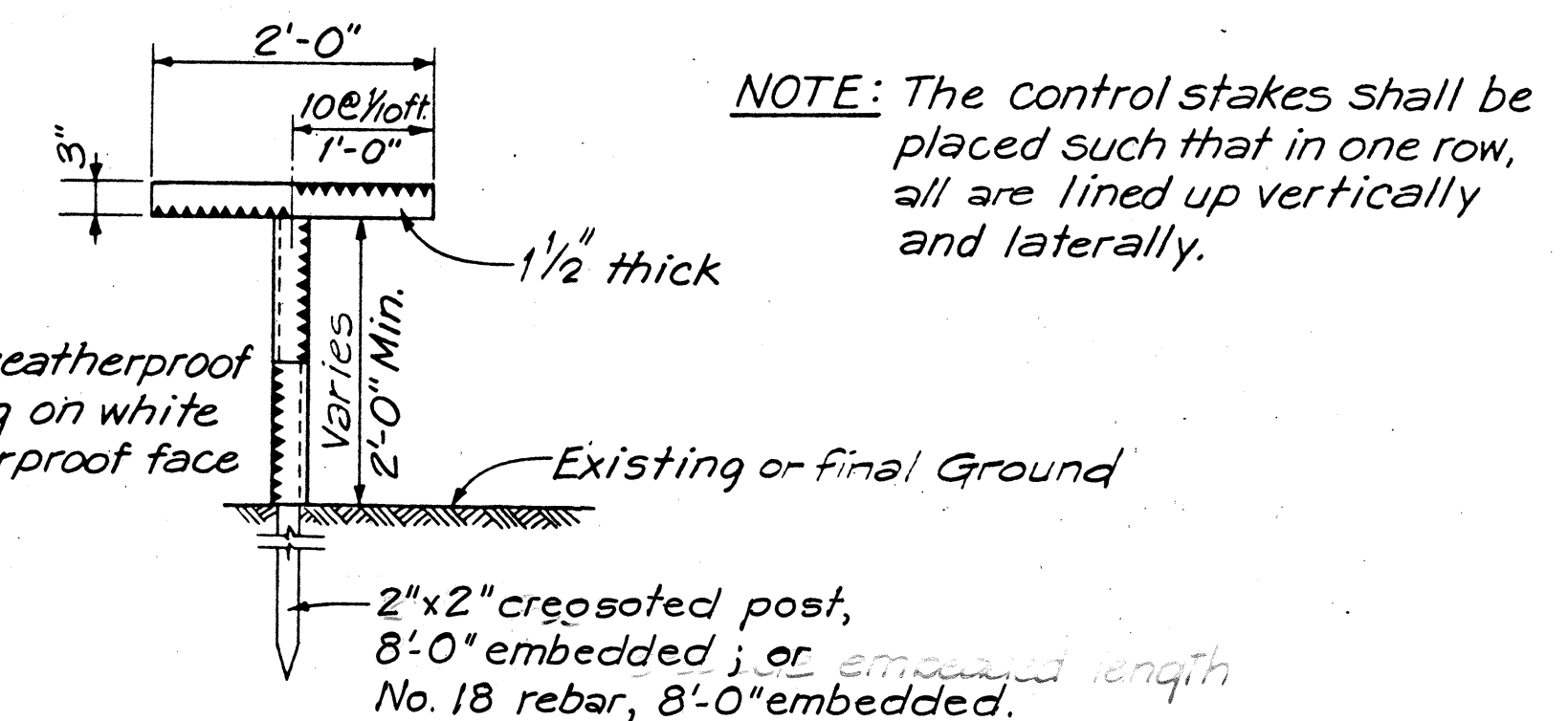


SETTLEMENT PLATFORM DETAIL

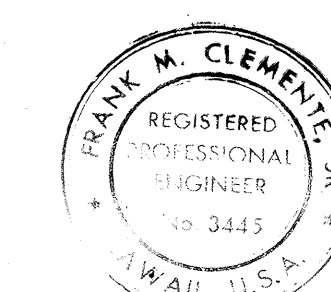
No Scale

SETTLEMENT PLATFORM NOTES:

1. The Contractor shall use sound lumber for Wood Base Settlement Platforms.
2. Contractor to furnish material and labor to extend pipe up through fill.
3. All vertical pipes of Settlement Platforms shall be accurately and consecutively numbered in one foot intervals measured from the bottom of the Settlement Platform base. The numbering and graduations shall be marked on the vertical pipe in durable yellow paint by the Contractor immediately after each section of pipe is added.
4. Settlement Platforms shall be placed on existing ground. Ground shall be made level as necessary. At settlement platform locations where existing pavement is to be removed, the Contractor shall backfill the area to the same elevation which existed prior to removal of pavement, before installing settlement platform.



NOTE:
Grooves of Inclinator Casing to be parallel and perpendicular to the embankment.



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DATE: 6/15/81

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SOIL CONSOLIDATION INSTRUMENTATION DETAILS
INTERSTATE ROUTE H-1
PROJECT NO. I-HI-1(86):17
SCALE: AS SHOWN DATE: 6/15/81
SHEET NO. D-6 OF 6 SHEETS