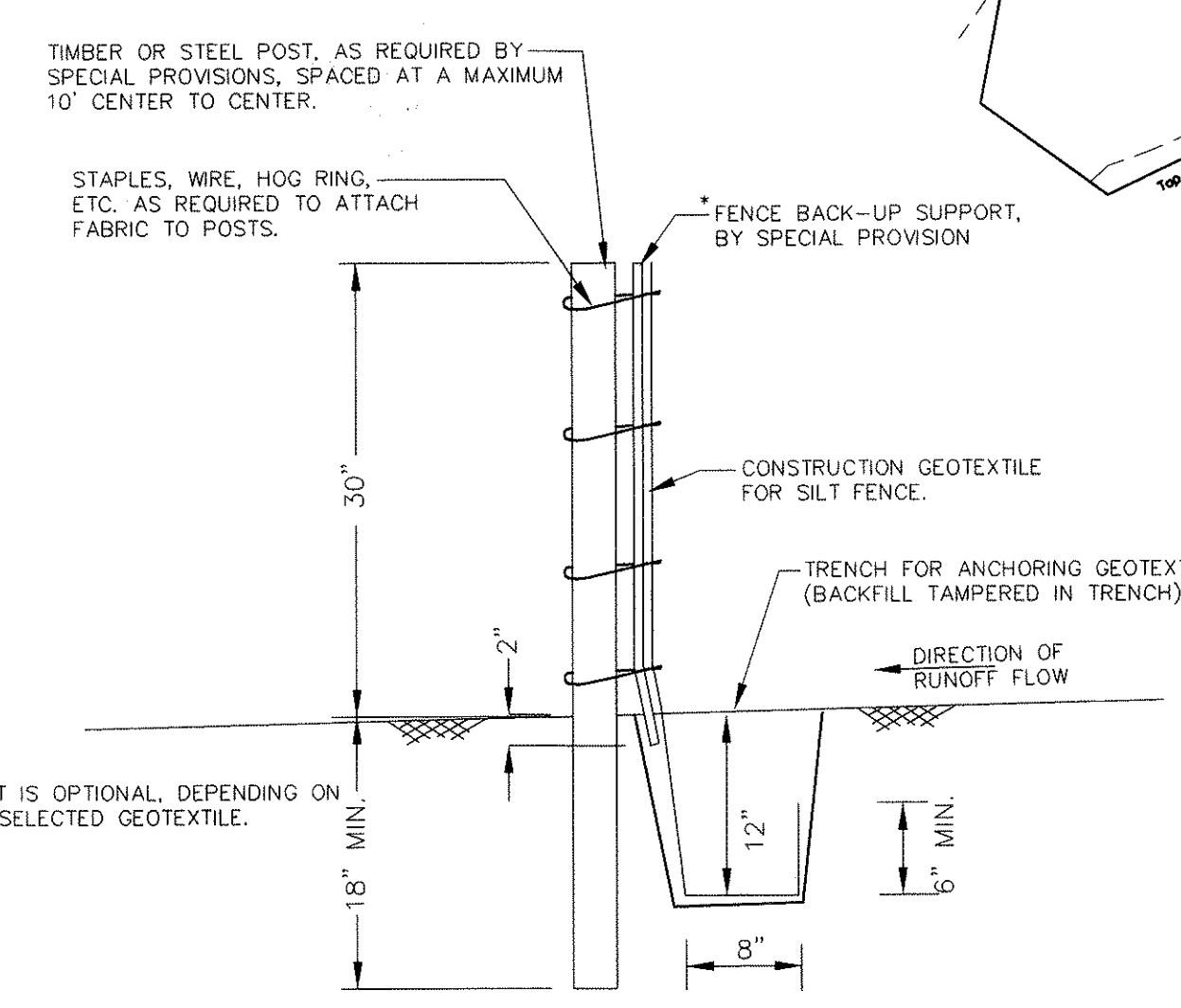
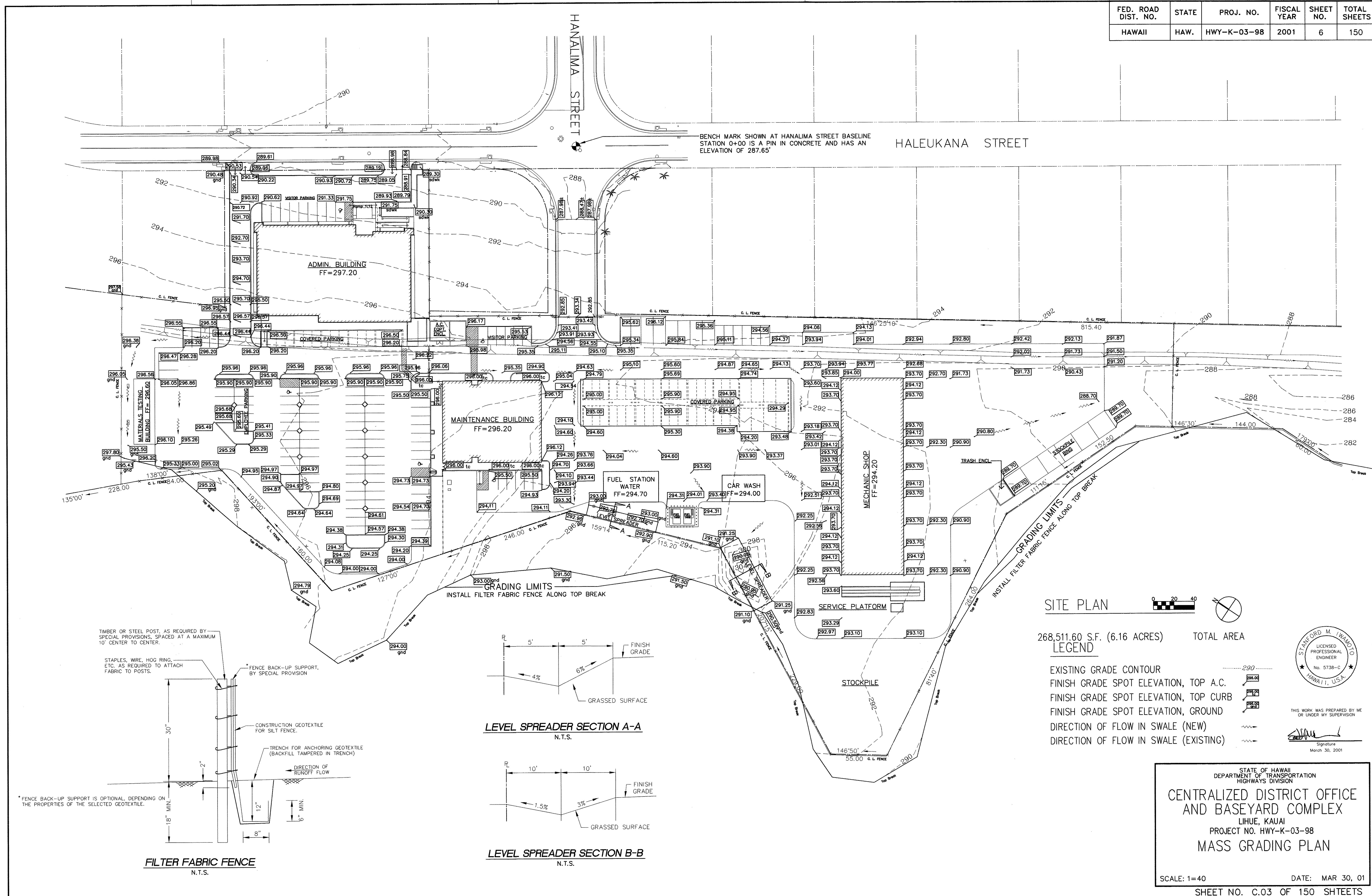
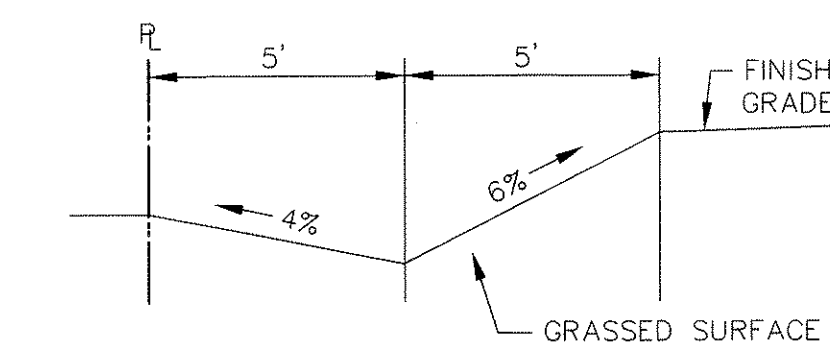


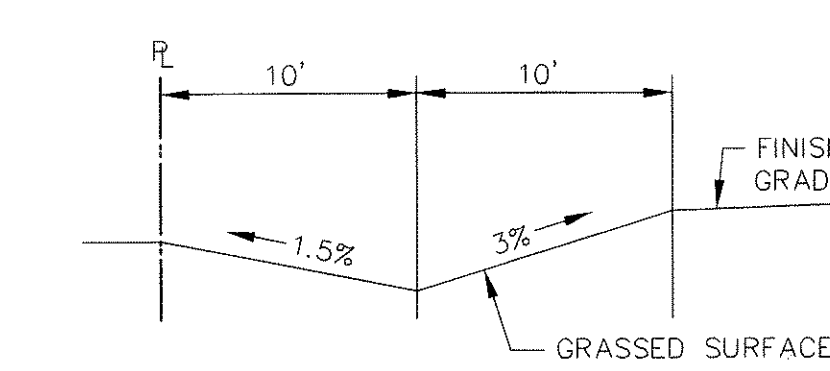
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-K-03-98	2001	6	150



FILTER FABRIC FENCE
N.T.S.

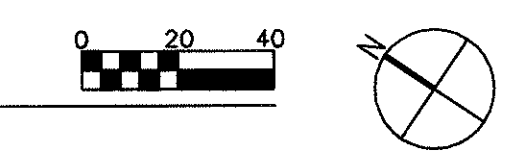


LEVEL SPREADER SECTION A-A
N.T.S.



LEVEL SPREADER SECTION B-B
N.T.S.

SITE PLAN



268,511.60 S.F. (6.16 ACRES) TOTAL AREA
LEGEND

- EXISTING GRADE CONTOUR
- FINISH GRADE SPOT ELEVATION, TOP A.C.
- FINISH GRADE SPOT ELEVATION, TOP CURB
- FINISH GRADE SPOT ELEVATION, GROUND
- DIRECTION OF FLOW IN SWALE (NEW)
- DIRECTION OF FLOW IN SWALE (EXISTING)



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Signature
March 30, 2001

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**CENTRALIZED DISTRICT OFFICE
AND BASEYARD COMPLEX**
LIHUE, KAUAI
PROJECT NO. HWY-K-03-98
MASS GRADING PLAN

SCALE: 1=40 DATE: MAR 30, 01
SHEET NO. C.03 OF 150 SHEETS

			FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
			HAWAII	HAW.	HWY-K-03-98	2001	7	150

NOTES FOR ENVIRONMENTAL PROTECTION

1. In accordance with Chapter 11-60.1, Air Pollution Control, Title 11, State Administrative Rules, the property owner/developer shall be responsible for ensuring that effective control measures are provided to minimize or prevent any visible dust emissions caused by the construction work from impacting the surrounding areas including the off-site roadways used to enter/exit the project. Measures include, but are not limited to the use of water wagons, sprinkler systems, dust fences, etc.

2. In accordance with Chapter 11-55, Water Pollution Control, and Chapter 11-54, Water Quality Standards, Title 11, State Administrative Rules, the property owner/developer shall be responsible for ensuring that Best Management Practices (BMP) to minimize or prevent the discharge of sediment, debris, and other water pollutants into State waters is provided.

3. In accordance with Chapter 11-58.1, Solid Waste Management Control, Title 11, State Administrative Rules, the property owner/developer shall be responsible for ensuring that grub material, demolition wastes, and construction wastes generated by the project are disposed of in a manner or at a site approved by the State Department of Health. Disposal of any of these wastes by burning is prohibited. The contractor shall inform the County Engineer as to the location of the disposal site(s). The disposal site must also fulfill the requirements of the grading ordinance.

4. The property owner/developer shall be responsible for obtaining all applicable permits from the Department of Health including but not limited to National Pollutant Discharge Elimination System (NPDES) Permits for storm water, hydrostatic test and dewatering discharges prior to commencing construction.

5. In accordance with Chapter 11-46, Community Noise Control, State Administrative Rules, the property owner/developer shall be responsible for providing effective control measures to minimize or prevent construction related noise from impacting the residents in the immediate area. If required, noise reduction measures shall be implemented by the contractor during the construction work.

TEMPORARY DUST CONTROL

1. The contractor shall conduct his operations so that excavation, embankment, and imported material shall be dampened to prevent dust problems.

2. Areas within the project site that are cleared of vegetation shall be dampened seven (7) days a week. At the end of each day, the site shall be sufficiently dampened so that the site will remain moistened during the night.

3. The Contractor shall maintain a suitable water system and dampen the project site during the grading/grubbing/trenching operations.

4. In applying for a grading permit, the contractor shall submit plans, schedules and or written measures which provides for dust control. The dust control measures shall contain positive statements which require actions or work that prevent dust problems. No permits will be issued unless the county is assured that dust problems will be minimized. Contractor will need to submit construction schedules.

PUBLIC HEALTH, SAFETY, AND CONVENIENCE NOTES

1. The Contractor shall observe and comply with all Federal, State, and local laws.

2. The Contractor at his own expense, shall keep the project and its surrounding areas free from dust nuisance. The work shall be in conformance with the air pollution standards and regulations of the State Department of Health.

3. The Contractor shall be responsible for the cleaning and removal of all silt and debris generated by his work and deposited and accumulated within downstream waterways, ditches, and drain pipes and on public roadways.

TEMPORARY EROSION CONTROL

Temporary vegetative cover shall be planted within a period of 30 calendar days after the site has been graded or bared of vegetation or if the final grading of the site will be suspended for more than 30 calendar days. Temporary vegetative cover shall consist of 40 lbs. Common rye grass per acre, 400 lbs per acre 10-10-10 or equivalent fertilizer worked into seed bed before planting. Planting and maintenance of grass shall conform to the "Hawaii Standard Specifications for Road, Bridge, and Public Works Construction 1994".

PERMANENT EROSION CONTROL MEASURES (IF APPLICABLE)

1. The Contractor shall grass all exposed areas that have been constructed to final grades within a period of 30 calendar days.

2. The Contractor shall grass the entire project site, except paved areas, with Bermuda grass. The grass shall be planted, fertilized, and maintained in accordance with the "Hawaii Standard Specifications for Road, Bridge, and Public Works Construction 1994".

3. In lieu of grass sprigs (Note 2) the contractor may use hydro mulch with seeds.

WATER POLLUTION AND EROSION CONTROL NOTES

A. GENERAL;

1. The Contractor is reminded of the requirements of Section 209 -Water Pollution and Erosion Control, in the "Hawaii State Specifications for Road, Bridge and Public Works Construction". Section 2.09 describes but Is not limited to: submittal requirements; scheduling of a water pollution and erosion control conference with the Engineer; construction requirements; method of measurement; and basis of payment.

2. The Contractor shall follow the guidelines in the "Best management Practices Manual for Construction Sites in Honolulu, dated May 1999 in developing installing and maintaining the Best Management Practices (BMP) for this project.

3. The Engineer may asses liquidated damages of up to \$25,000 for non compliance of each BMP requirement and each requirement stated in Section 2.09 for every day of non-compliance. There is no limit on the amount assessed per day.

4. The Engineer will deduct the cost from the progress payment for all citations received by the Department for non-compliance, or the Contractor shall reimburse the State for the full amount of the outstanding cost incurred by the State.

B. WASTE DISPOSAL

1. Waste Materials. All waste materials shall be collected and stored in a securely lidded metal dumpster. The dumpster shall meet all local and State solid waste management regulations. All trash and construction debris from the site shall be deposited in the dumpster. The dumpster shall be emptied a minimum of twice per week or as often as deemed necessary. No construction waste materials shall be buried onsite. The Contractor's supervisory personnel shall be instructed regarding the correct procedure for waste disposal. Notices stating these practices shall be posted in the office trailer and the Contractor shall be responsible for seeing that these procedures are followed.

2. Hazardous Wastes. All hazardous waste materials shall be disposed of in the manner specified by the local or State regulations or by the manufacturer. The Contractor's site personnel shall be instructed in these Practices and shall be responsible for seeing that these practices are followed.

3. Sanitary Waste. All sanitary waste shall be collected from the portable units a minimum of once per week, or as required.

C. EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES.

1. All control measures shall be inspected at least once each week and following any rainfall event of 0.5 inches or greater.

2. All measures shall be maintained in good working order. If repair is necessary, it shall be initiated within 24 hours after the inspection.

3. Built-up sediment shall be removed from silt fence when it has reached one-third the height of the fence.

4. Silt screen or fence shall be inspected for depth of sediment, tears, to verify that the fabric is securely attached to the fence posts or concrete slab, and to verify that the fence posts are firmly in the ground.

5. Temporary and permanent seeding and planting shall be inspected for bare spots, washouts, and healthy growth.

6. A maintenance inspection report shall be made promptly after each inspection by the Contractor.

7. The Contractor shall select a minimum of three personnel who shall be responsible for inspections, maintenance and repair activities and filling out the inspection and maintenance report.

8. Personnel selected for the inspection and maintenance responsibilities shall receive training from the Contractor. They shall be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used

D. HOUSEKEEPING BEST MANAGEMENT PRACTICES.
1. Materials Pollution Prevention Plan
 a. Applicable materials or substances listed below are expected to be present onsite during construction. Other materials and substances not listed below shall be added to the inventory.

Concrete	Fertilizers
Detergents	Petroleum Based Products
Paint(enamel and latex)	Cleaning Solvents
Metal Studs	Wood
Tar	Masonry Block

 b. Material Management Practices shall be used to reduce the risk of spills or other incidental exposure of materials and substances to storm water runoff. An effort shall be made to store only enough product as is required to do job.
 c. All materials stored onsite shall be stored in a neat, orderly manner in their appropriate containers and if possible under a roof or other enclosure.
 d. Products shall be kept in their original containers with the original manufacturer's label.
 e. Substances shall not be mixed with one another unless recommended by the manufacturer.
 f. Whenever possible, a product shall be used up completely before disposing of the container.
 g. Manufacturer's recommendations for proper use and disposal shall be followed.
 h. The Contractor shall conduct a daily inspection to ensure proper use and disposal of materials onsite.

2. Hazardous Material Pollution Prevention plan

 a. Products shall be kept in original container unless they are not resealable.
 b. Original labels and material safety data sheets (MSDS) shall retained.
 c. Surplus products shall be disposed of according to manufacturers' instructions and State recommended methods.

3. Onsite and Offsite Product Specific Plan
 a. The following product specific practices shall be followed onsite:
 1.) Petroleum Based Products: All onsite vehicles shall be monitored for leaks and receive regular Preventive Maintenance to reduce the chance for leakage. Petroleum products shall be stored in tightly sealed containers which are clearly labeled. Any asphalt substances used onsite shall be applied according to the manufacturers recommendation.
 2.) Fertilizer shall be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer shall be worked into the soil to limit exposure to storm water. Storage shall be in a covered shed. The contents of any partially used bags of fertilizer shall be transferred to a sealable plastic bin to avoid spills.
 3.) Paints: All containers shall be tightly sealed and stored when not required for use. Excess paint shall not be discharged to the highway drainage but shall be properly disposed of according to manufacturer's instructions or State and local regulations.
 4.) Concrete Trucks. Concrete Trucks shall be allowed to wash out or drum wash water only at designated site. Water shall not be discharged in the highway drainage system or waters of the United State. The Contractor shall contact Drinking Water Branch Department of Health at 566-4258 to receive permission to designate disposal site. The Contractor shall clean disposal site as required or as requested by the owners representative.

 b. Offsite Vehicle Tracking. A stabilized construction entrance shall be provided to help reduce vehicle tracking of sediments. The paved street adjacent to the site entrance shall be cleaned daily or as required to remove any excess mud, cold plated materials, dirt or rock tracked from the site. Dump trucks hauling material from the construction site

4. Spill Control Plan

 a. A spill prevention plan shall be posted to include measures to prevent and clean up each spill.
 b. The Contractor shall be the spill prevention and cleanup coordinator. The contractor shall designate at least three site personnel who shall have spill prevention and cleanup training. These individuals shall each become responsible for a particular phase of prevention and clean-up. The names of responsible spill persons shall be posted in the material storage area and in the office trailer onsite.
 c. Manufacturers' recommended methods for spill cleanup shall be clearly posted and site personnel shall be made aware of the procedures and the location of the information and cleanup supplies.
 d. Materials and Equipment necessary for spill cleanup shall be kept in the material storage area onsite.
 e. All spills shall be cleaned up immediately after discovery.
 f. The spill area shall be kept well ventilated and personnel shall wear protective clothing to event injury from contact with a hazardous substance.
 g. Spills of toxic hazardous material shall be reported to the appropriate State or government agency regardless of the size.

F. PERMIT REQUIREMENTS:

1. National Pollutant Discharge Elimination System (NPDES) Permit is required for Construction Activities of five acres or more. The Contractor shall submit to the Engineer four sets of the Water Pollution and Erosion Control Submittal as detailed in Subsection 209.04 of the specifications.

2. If an NPDES PERMIT for Construction Dewatering is requires, the Contractor shall be responsible to obtain the Permit from the Department of Health, Clean Water Branch.

3. The Contractor shall comply with all applicable State and Federal Permit conditions. Permits may include but are not limited to the following.

 a. NPDES Permit for Construction activities .
 b. NPDES Permit for Construction Dewatering
 c. NPDES Permit for Hydrotesting Waters
 d. Water Quality Certification
 e. Stream Channel Alteration Permit
 f. Section 404 Army Corps of Engineers Permit

STANFORD M. IWAKURA
LICENSED PROFESSIONAL ENGINEER
No. 5738-C
HAWAII, U.S.A.

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EAM

Signature
March 30, 2001

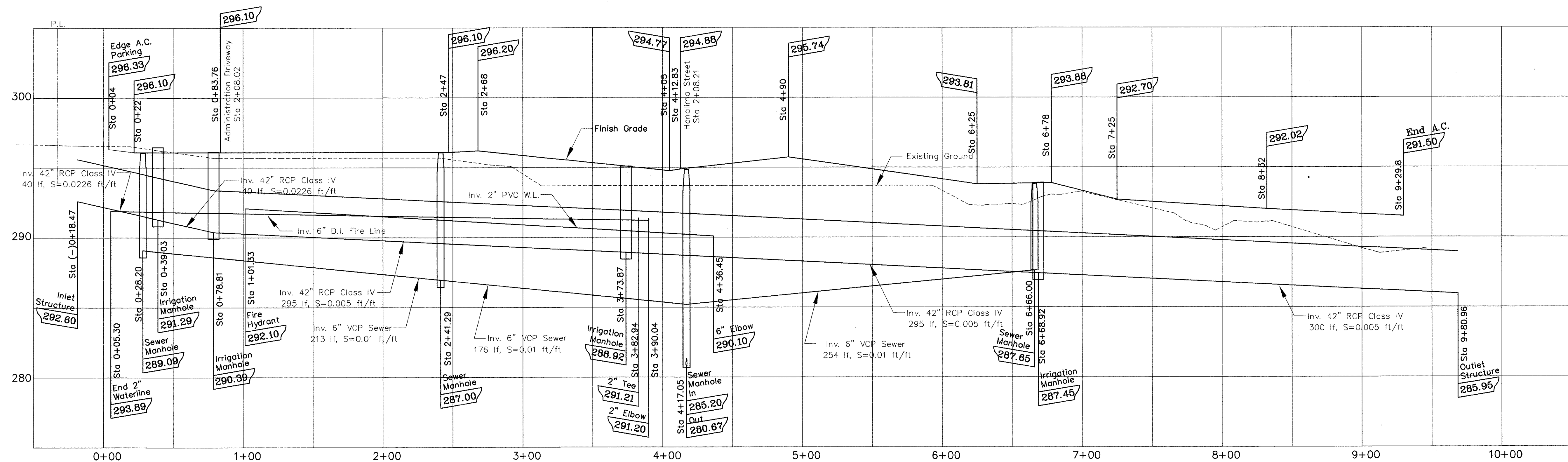
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CENTRALIZED DISTRICT OFFICE
AND BASEYARD COMPLEX
LIHUE, KAUAI
PROJECT NO. HWY-K-03-98
MASS GRADING NOTES

SCALE: 1=40 DATE: MAR 30, 01

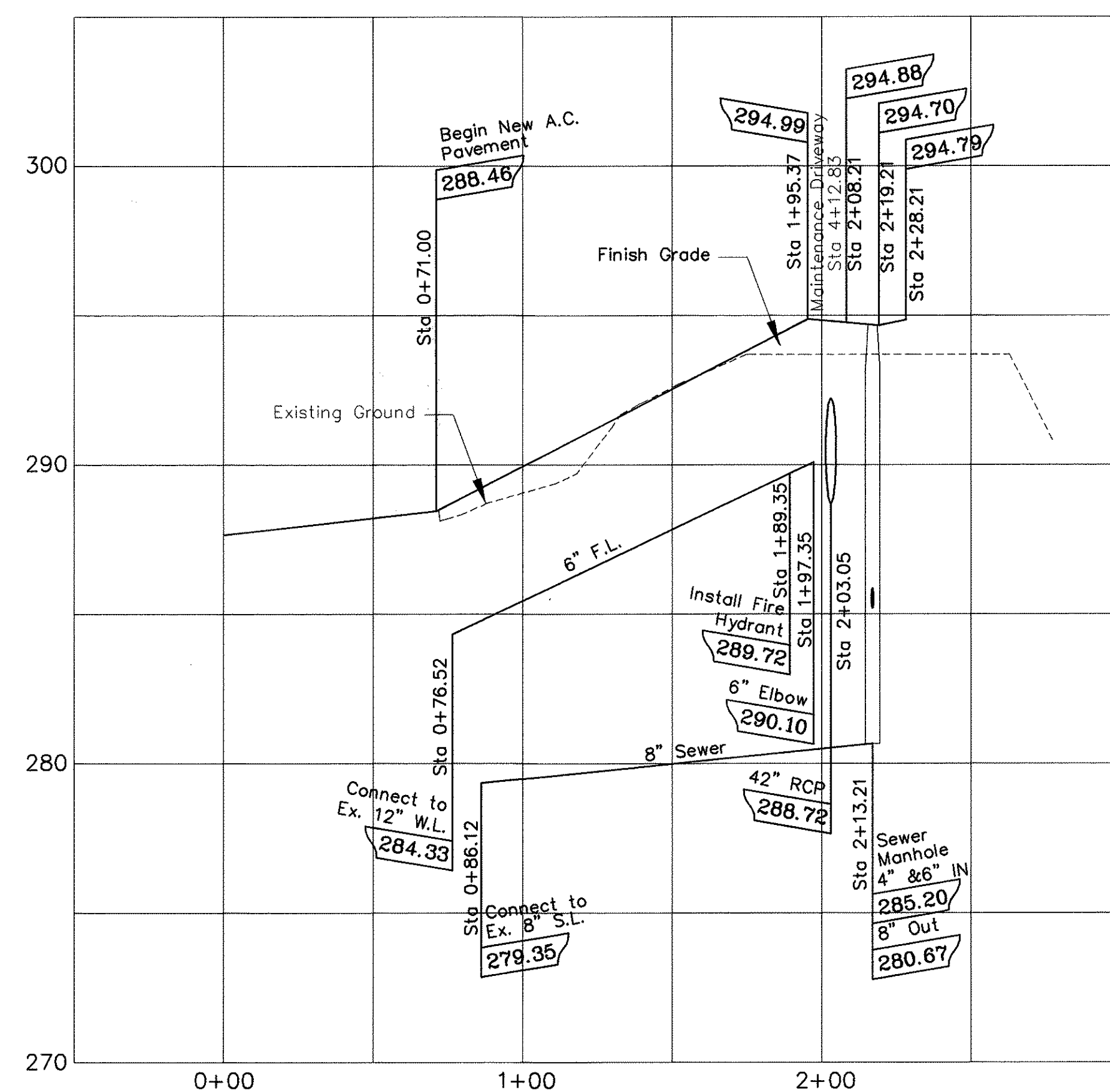
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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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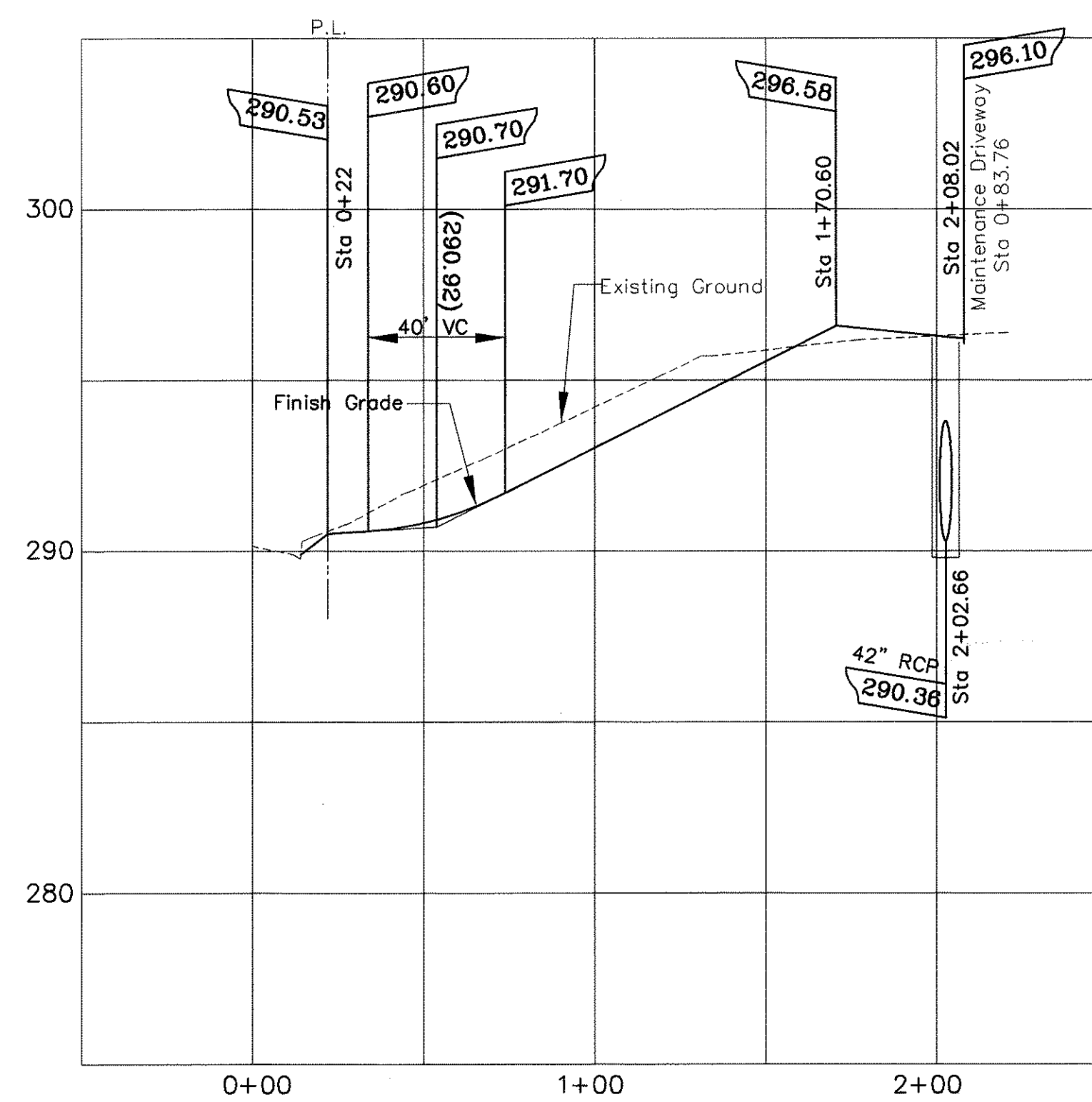
MAINTENANCE DRIVEWAY PROFILE

SCALE: Horizontal 1" = 40'
Vertical 1" = 4'



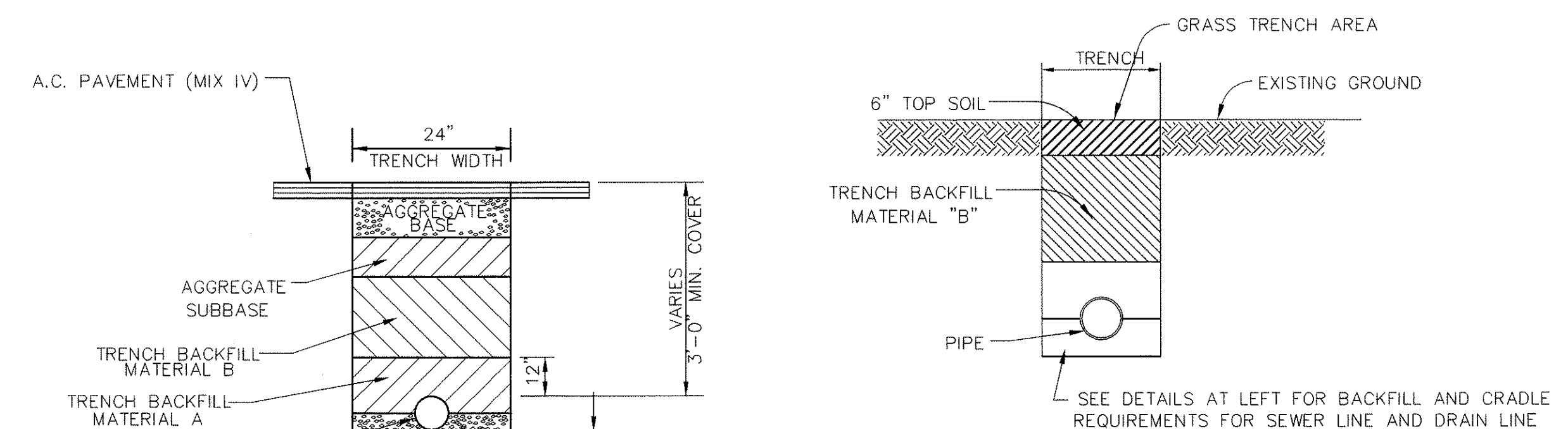
HANALIMA STREET PROFILE

SCALE: Horizontal 1" = 40'
Vertical 1" = 4'



ADMINISTRATION DRIVEWAY PROFILE

SCALE: Horizontal 1" = 40'
Vertical 1" = 4'

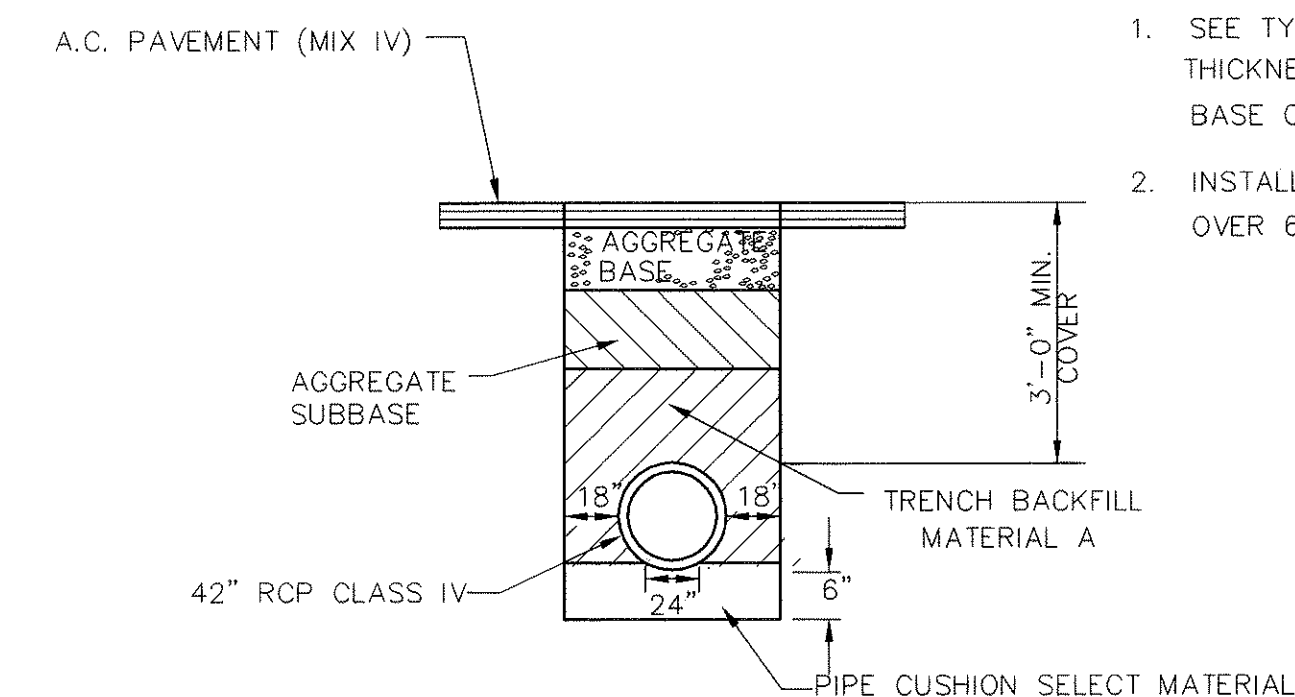


TYPICAL TRENCH DETAIL FOR UNPAVED AREAS

Not to Scale

SEWER TRENCH DETAIL IN PAVED AREA

Not to Scale

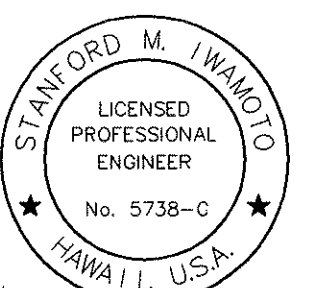


IRRIGATION LINE TRENCH DETAIL IN PAVED AREA

Not to Scale

NOTES:

- SEE TYPICAL SECTION DETAILS ON CIVIL SITE PLAN FOR THICKNESS REQUIREMENTS OF A.C. PAVEMENT, AGGREGATE BASE COURSE, AND AGGREGATE SUB BASE COURSE.
- INSTALL TERRA TAPE "D" STRIP, PLACED IN CONTINUOUS LENGTH OVER 6" AND 2" WATERLINES. INSTALL AT 18" DEPTH.



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Signature
March 30, 2001

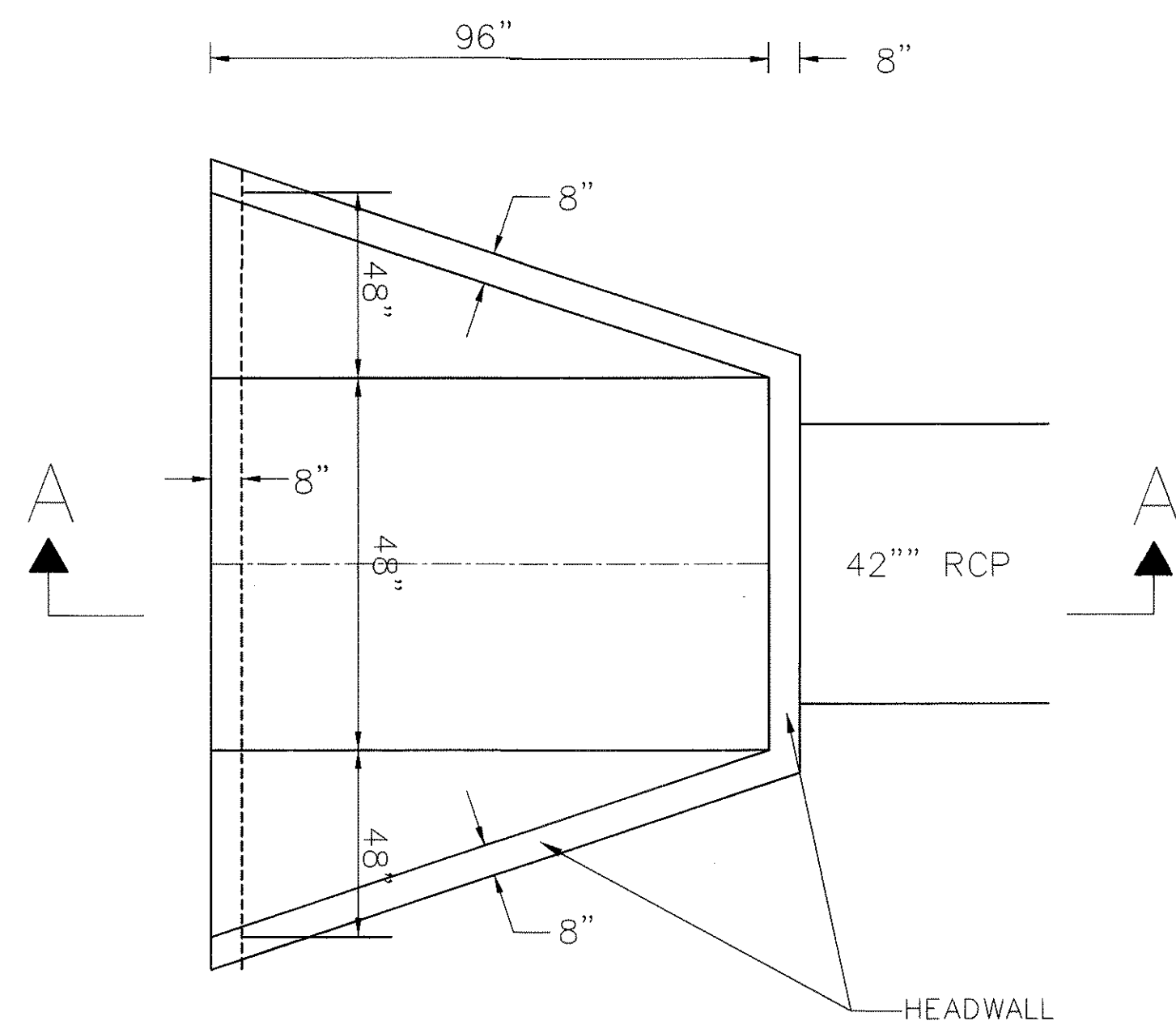
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**CENTRALIZED DISTRICT OFFICE
AND BASEYARD COMPLEX**
LIHUE, KAUAI
PROJECT NO. HWY-K-03-98
**CIVIL
PROFILE SHEET**

SCALE: 1=40

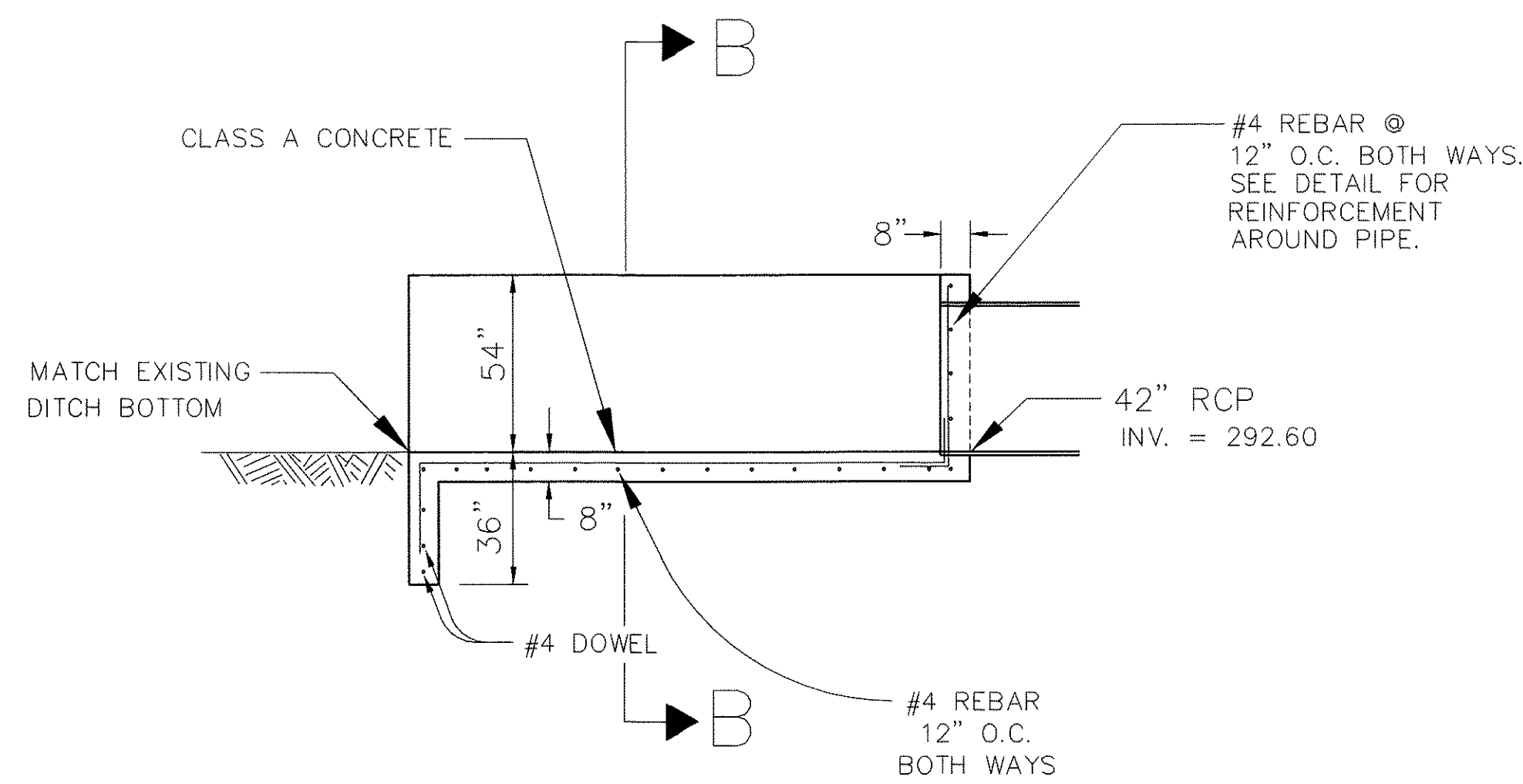
DATE: MAR 30, 01

SHEET NO. C.05 OF 150 SHEETS

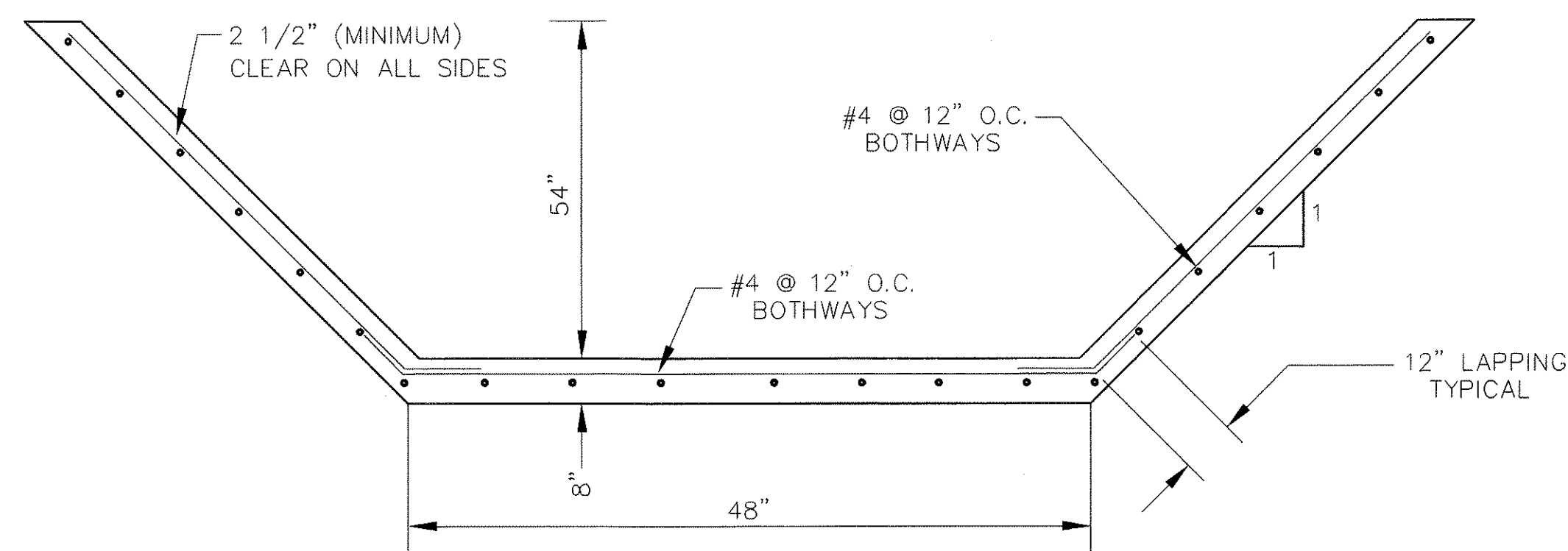
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-K-03-98	2001	9	150



PLAN
N.T.S.

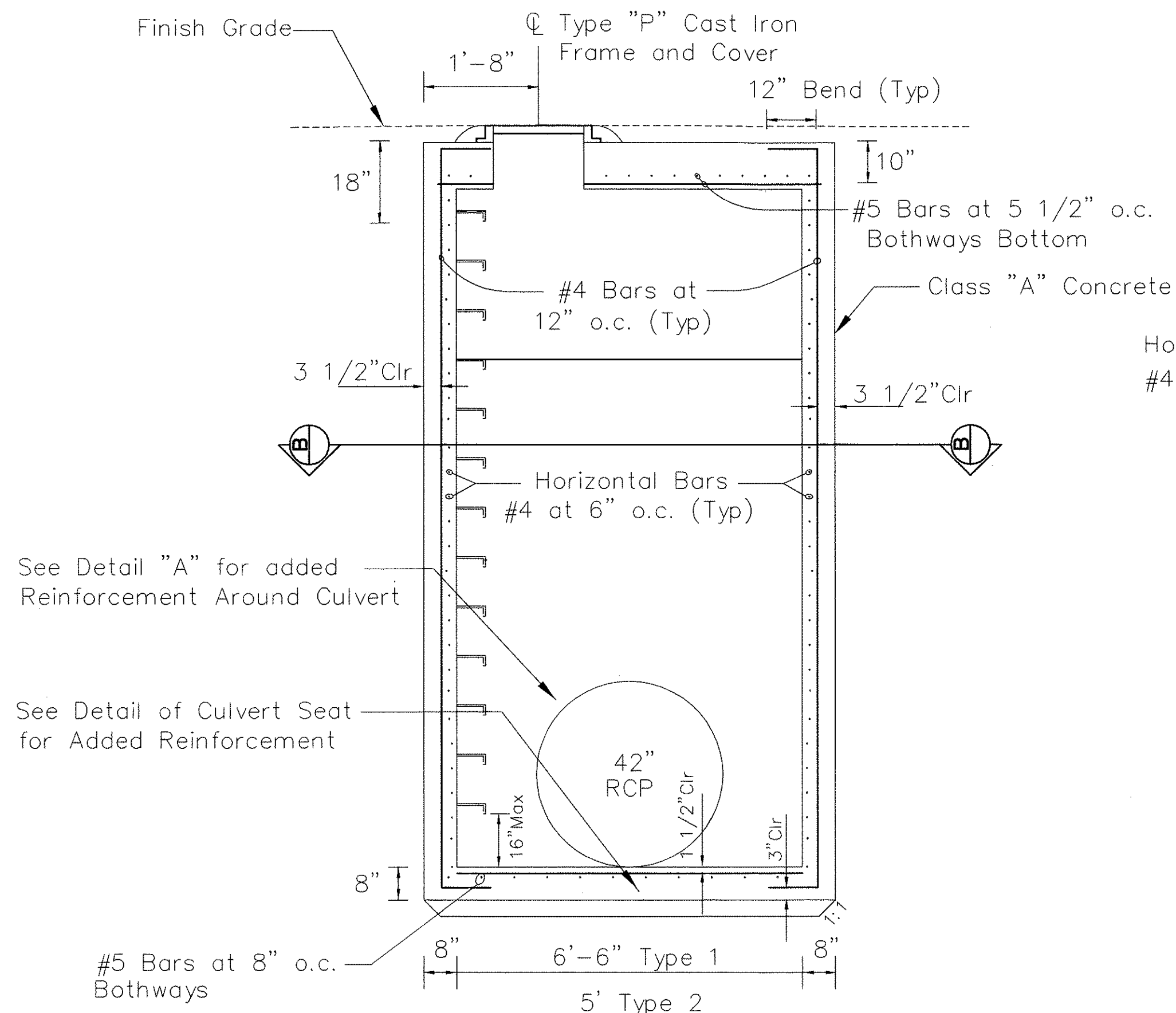


SECTION A-A
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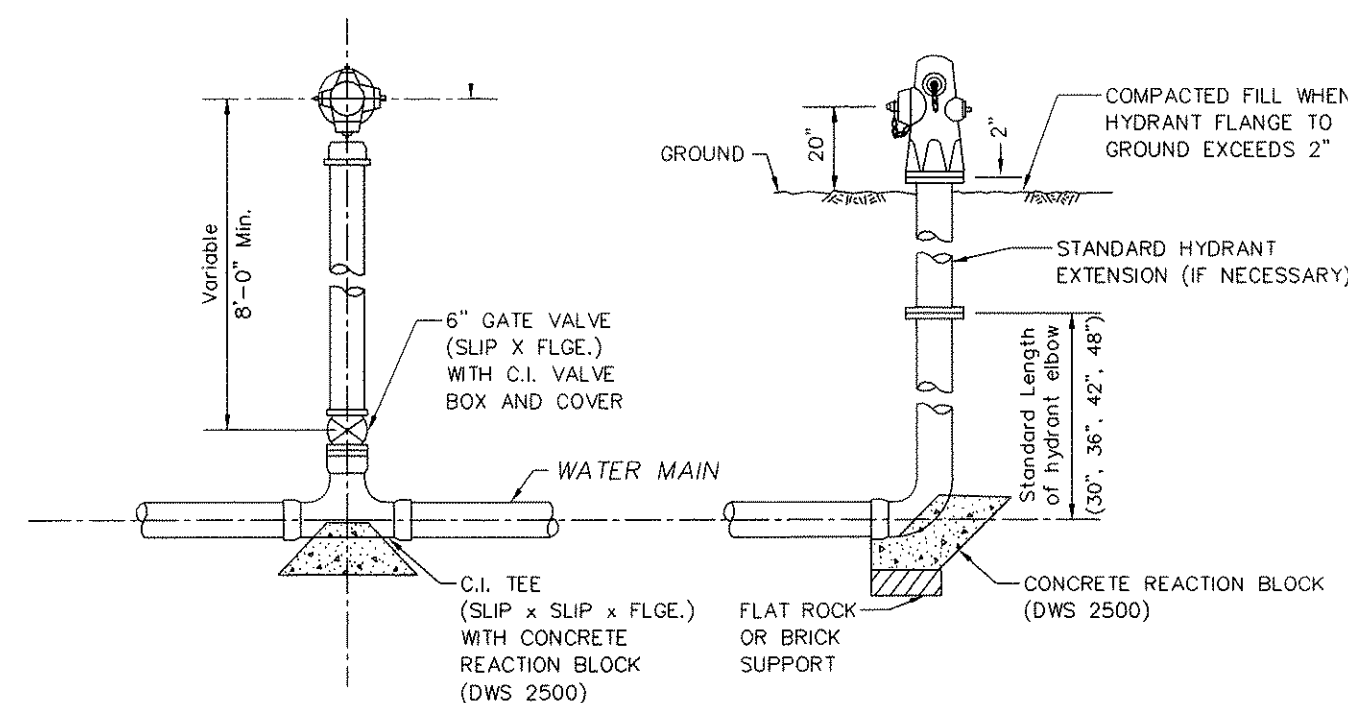


SECTION B-B
N.T.S.

DRAINAGE INLET STRUCTURE
N.T.S.



SECTION A-A
N.T.S.



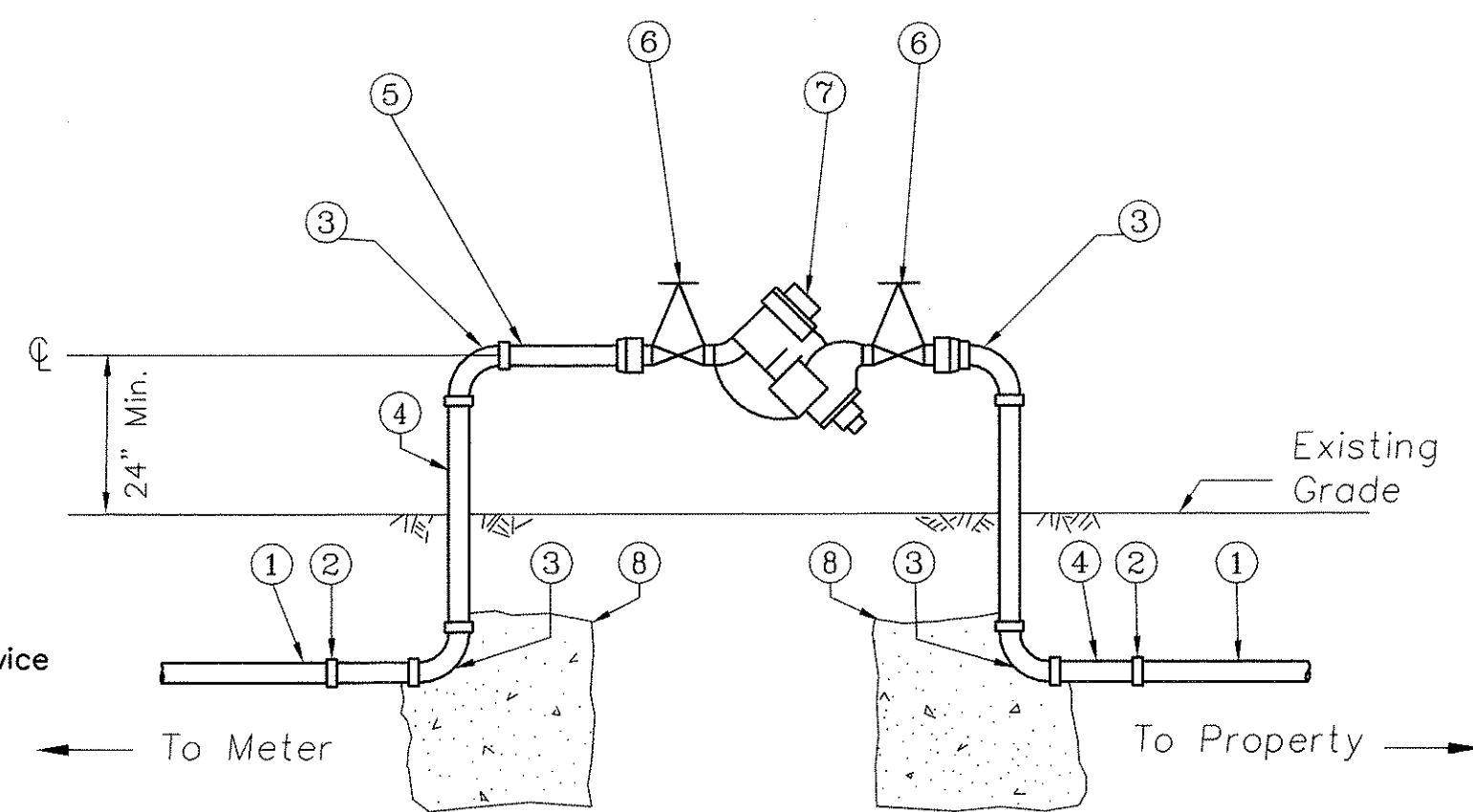
PLAN
N.T.S.

ELEVATION
N.T.S.

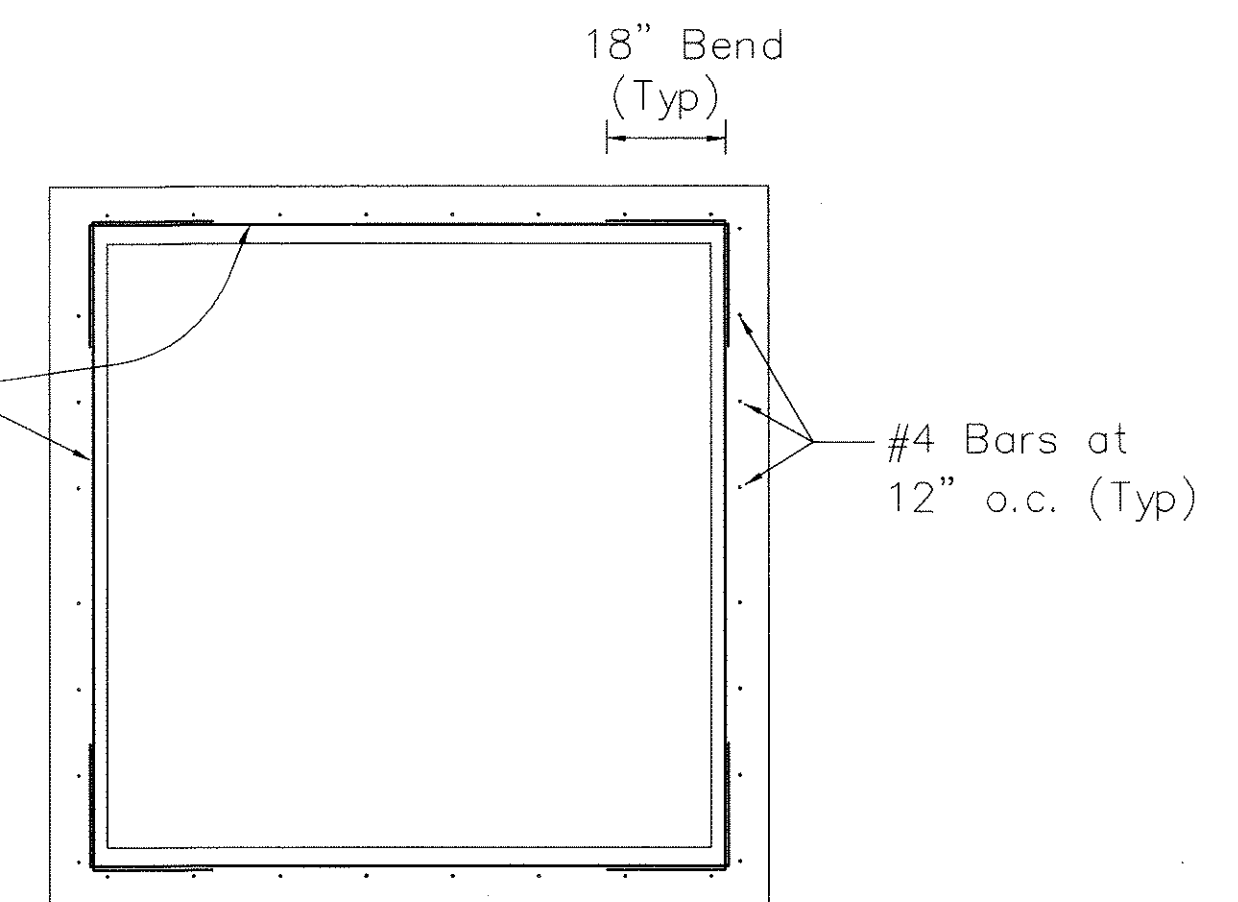
FIRE HYDRANT LAYOUT
N.T.S.

MATERIALS LIST

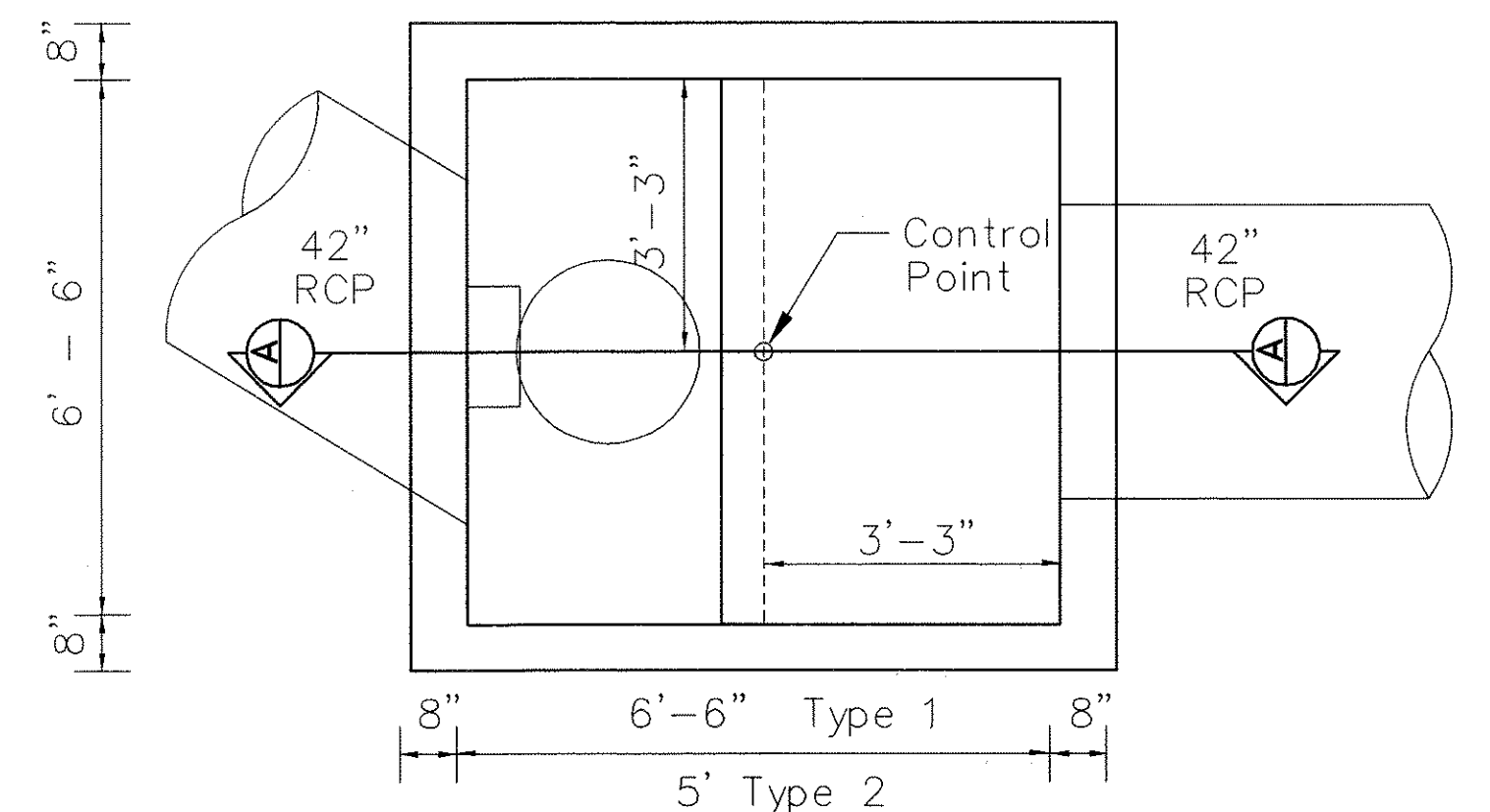
- 1 New 2" Waterline
- 2 Adapters and Bushings as necessary
- 3 2" 1/4 Bend
- 4 2" Nipple
- 5 2" Nipple
- 6 2" Gate Valve
- 7 2" Reduced Pressure Backflow Prevention Device
- 8 Concrete Reaction Block



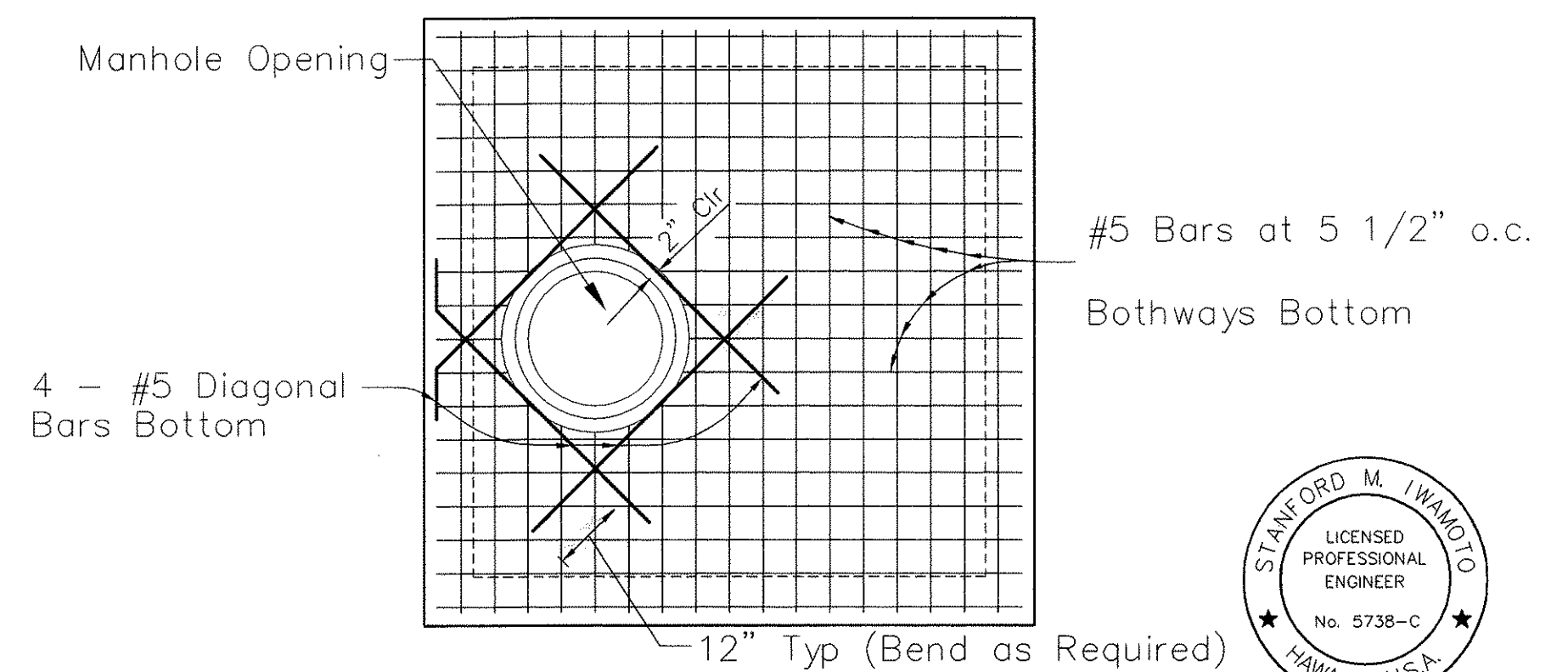
REDUCED PRESSURE BACKFLOW PREVENTER
N.T.S.



SECTION B-B
N.T.S.



PLAN
N.T.S.

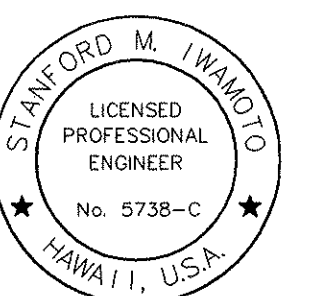


TOP SLAB REINFORCEMENT
N.T.S.

IRRIGATION MANHOLE
N.T.S.

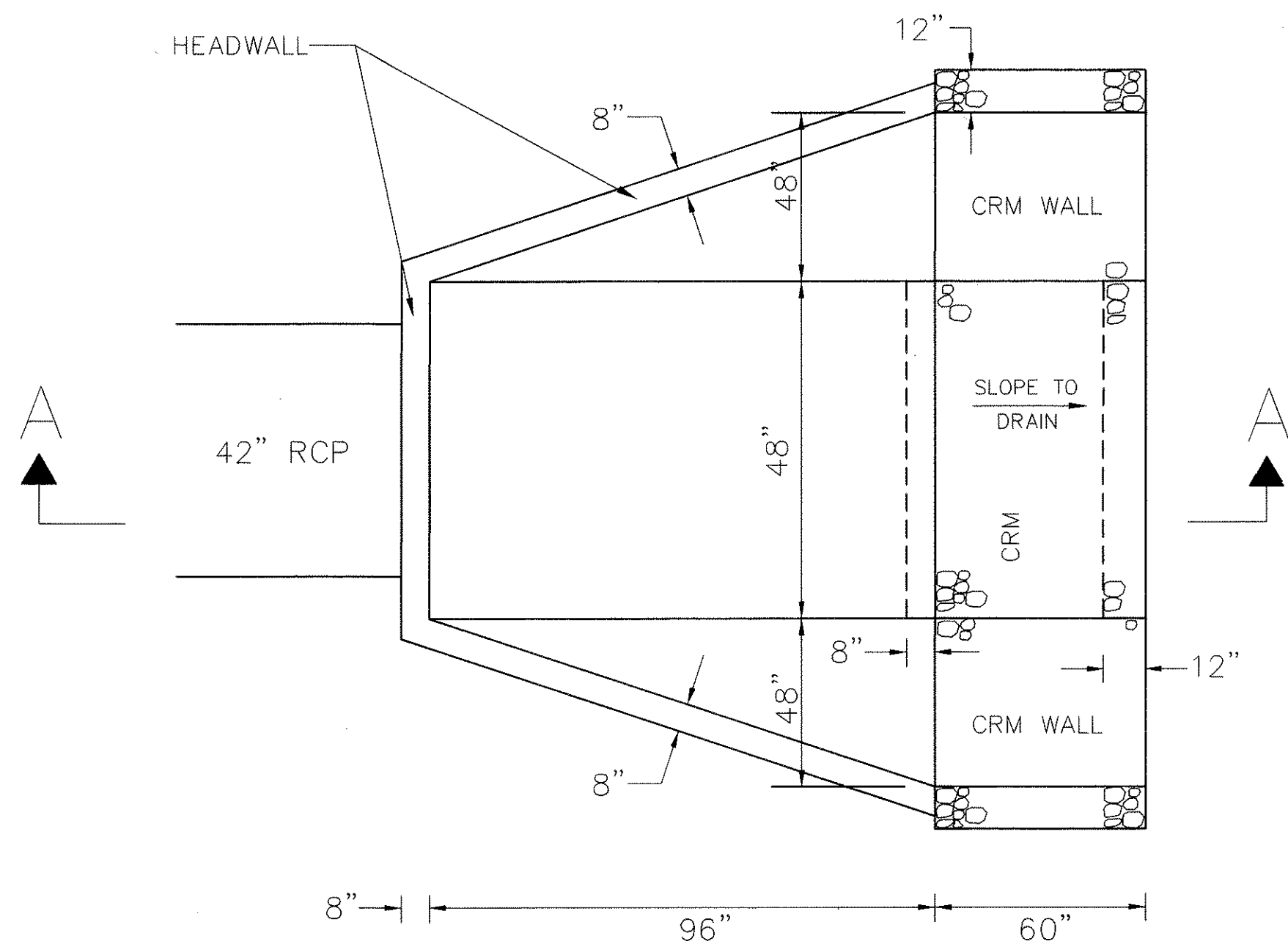
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
CENTRALIZED DISTRICT OFFICE
AND BASEYARD COMPLEX
LIHUE, KAUAI
PROJECT NO. HWY-K-03-98
CIVIL
DETAILS

SCALE: 1=40 DATE: MAR 30, 01
SHEET NO. C.06 OF 150 SHEETS

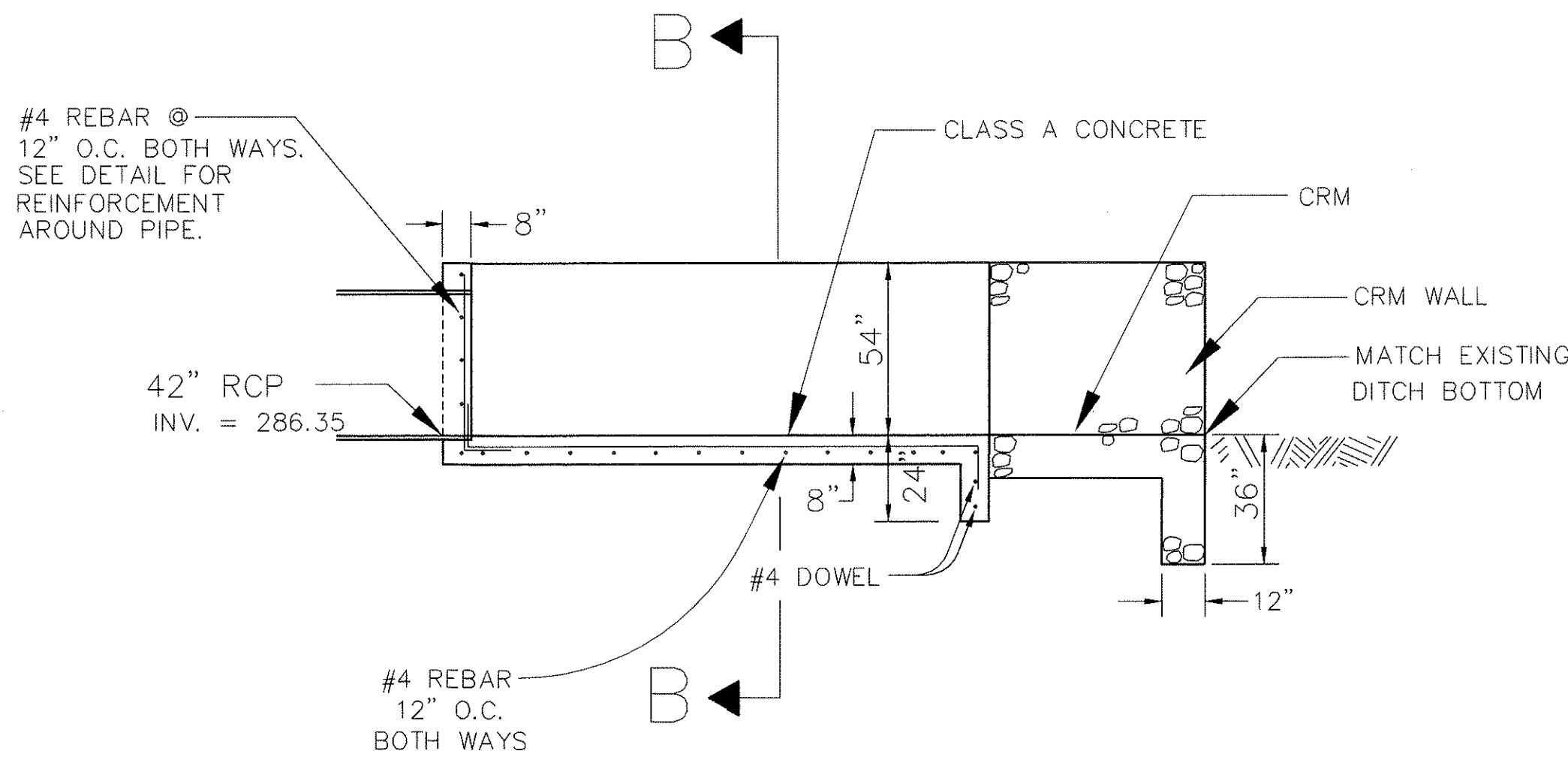


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Signature
March 30, 2001

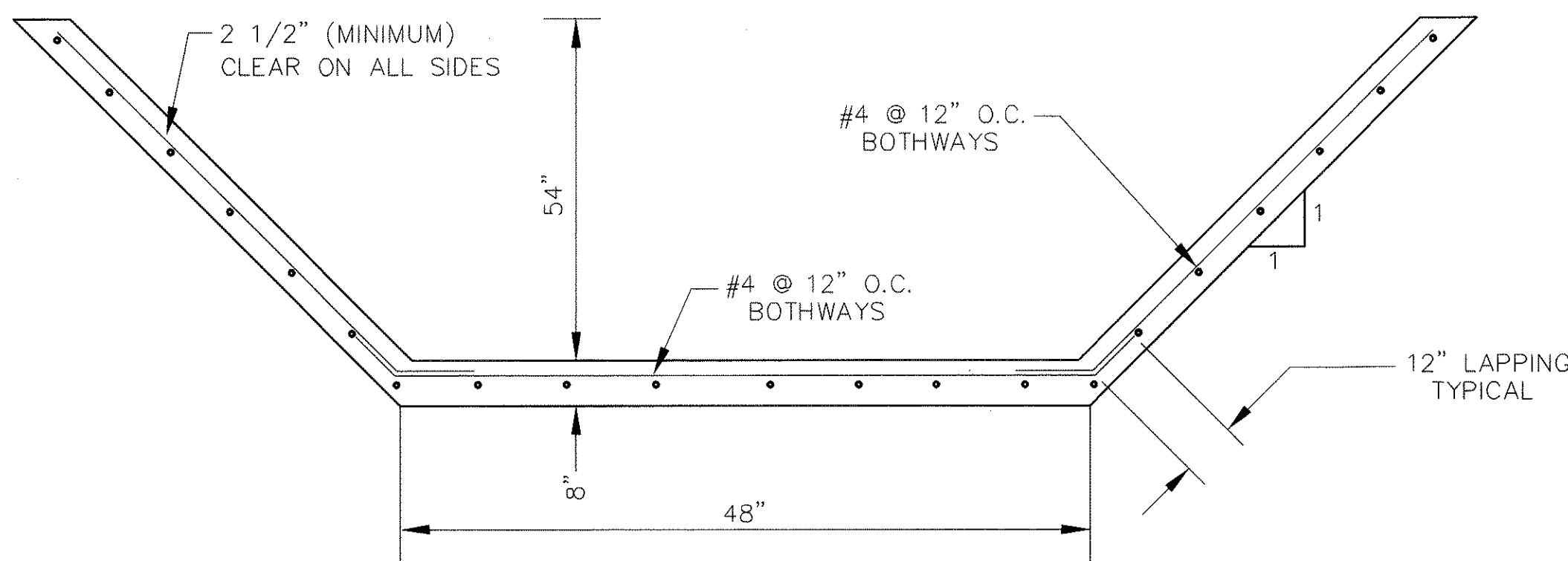
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-K-03-98	2001	10	150



PLAN
N.T.S.

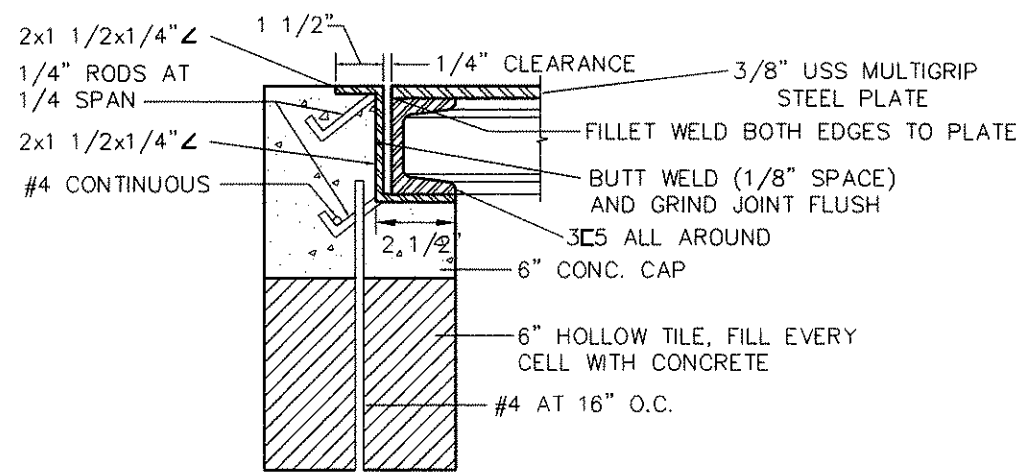


SECTION A-A
N.T.S.

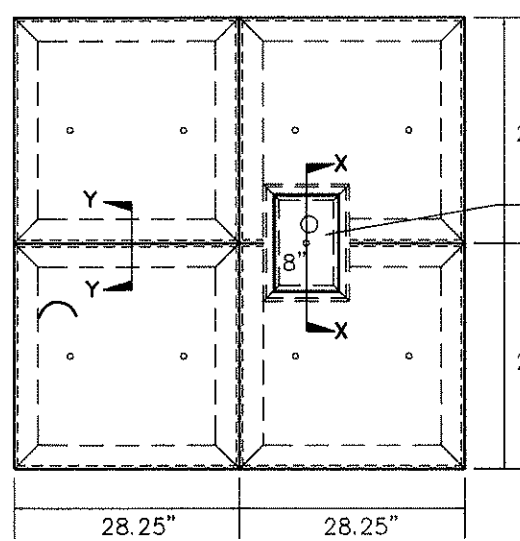


SECTION B-B
N.T.S.

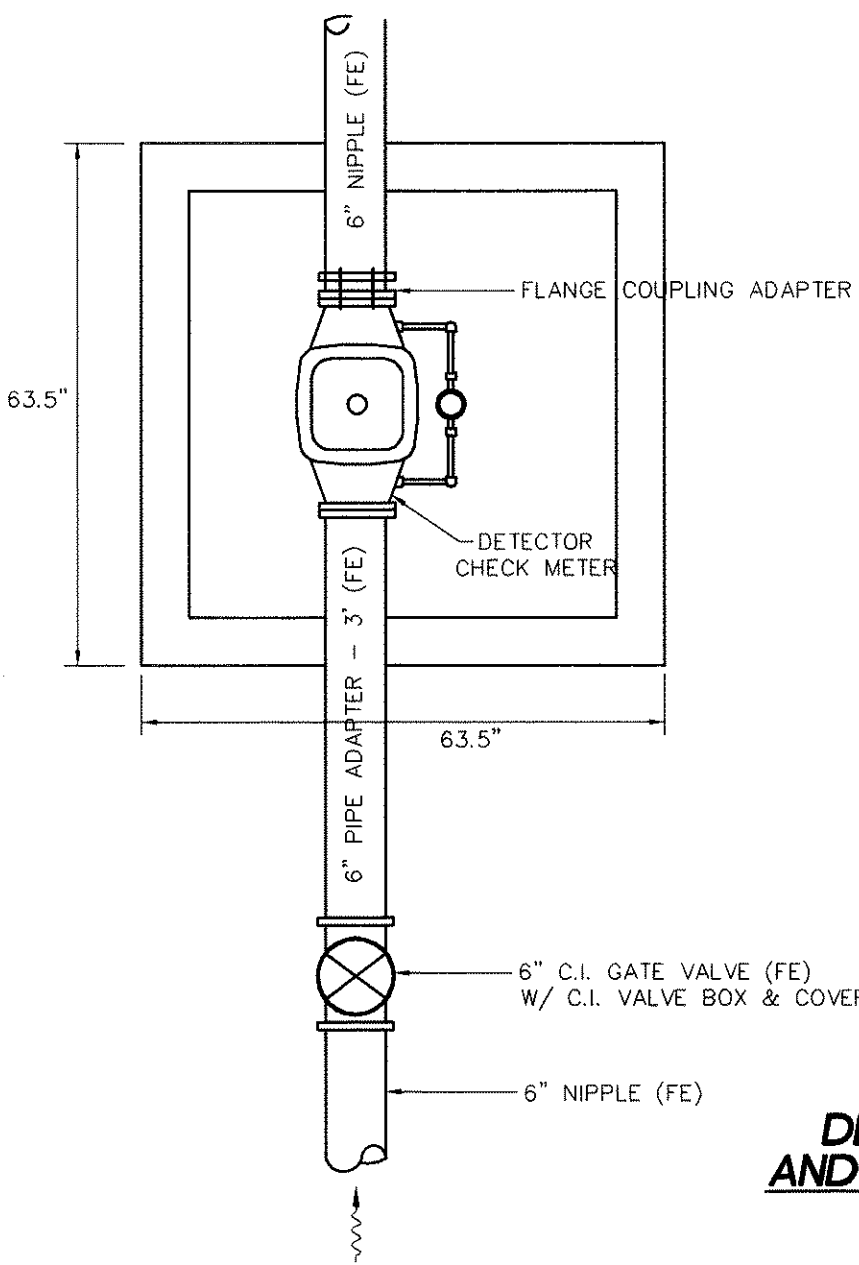
DRAINAGE OUTLET STRUCTURE
N.T.S.



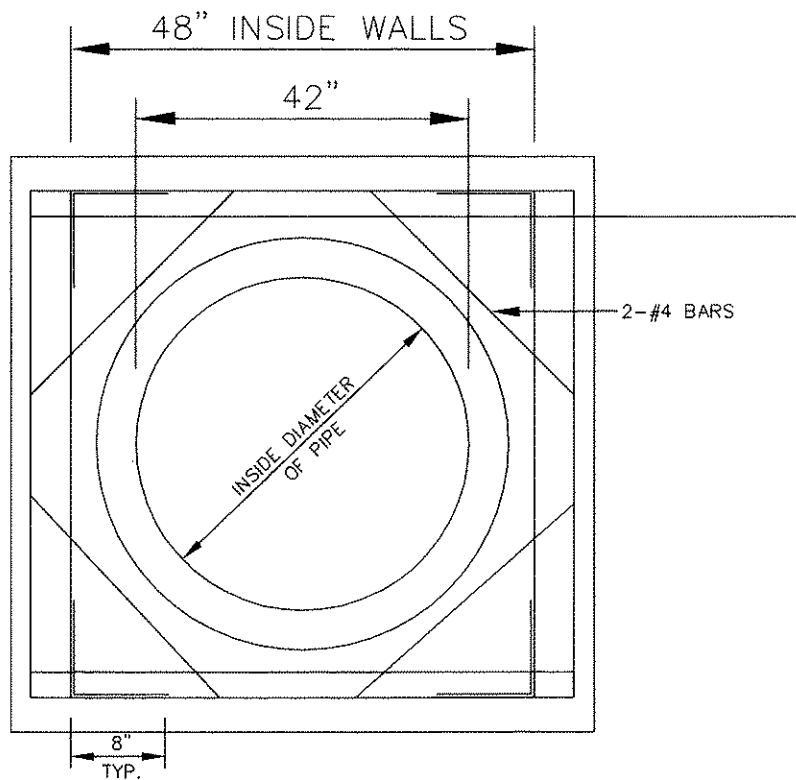
CONCRETE CAP
AND FRAME DETAIL
N.T.S.



DETECTOR CHECK METER
COVER DETAILS
N.T.S.

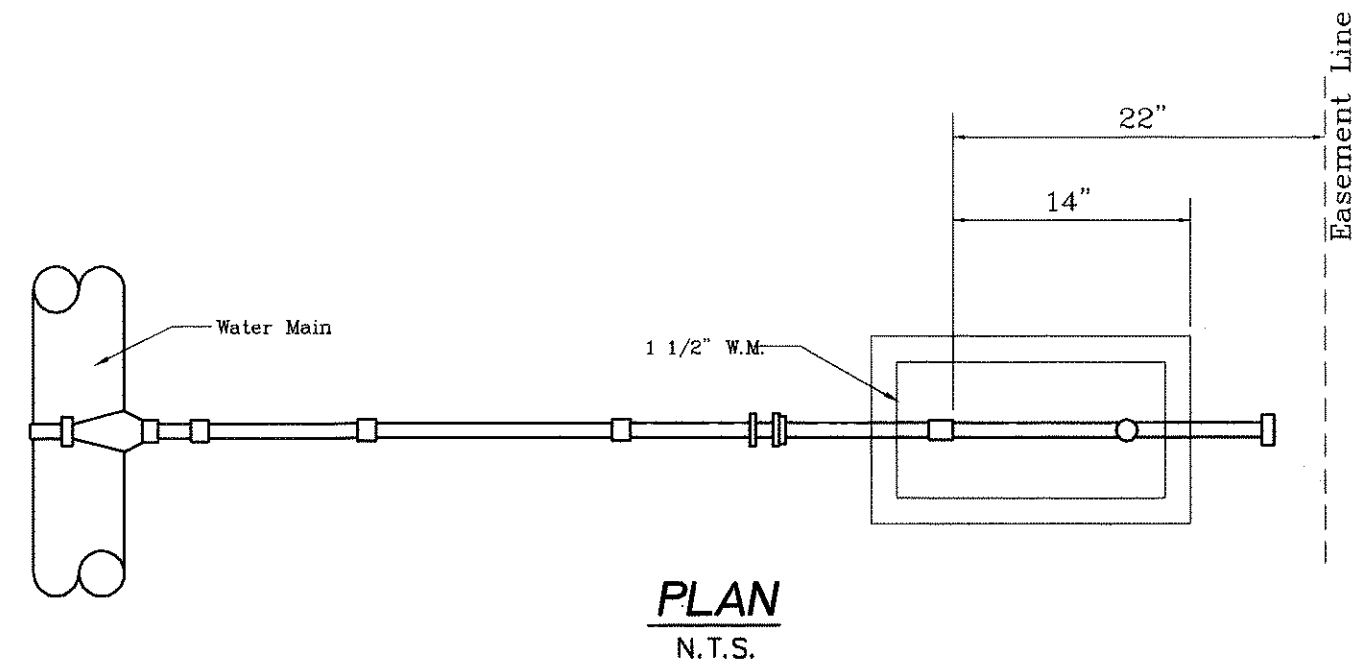


DETECTOR CHECK METER
AND BOX INSTALLATION DETAIL
N.T.S.

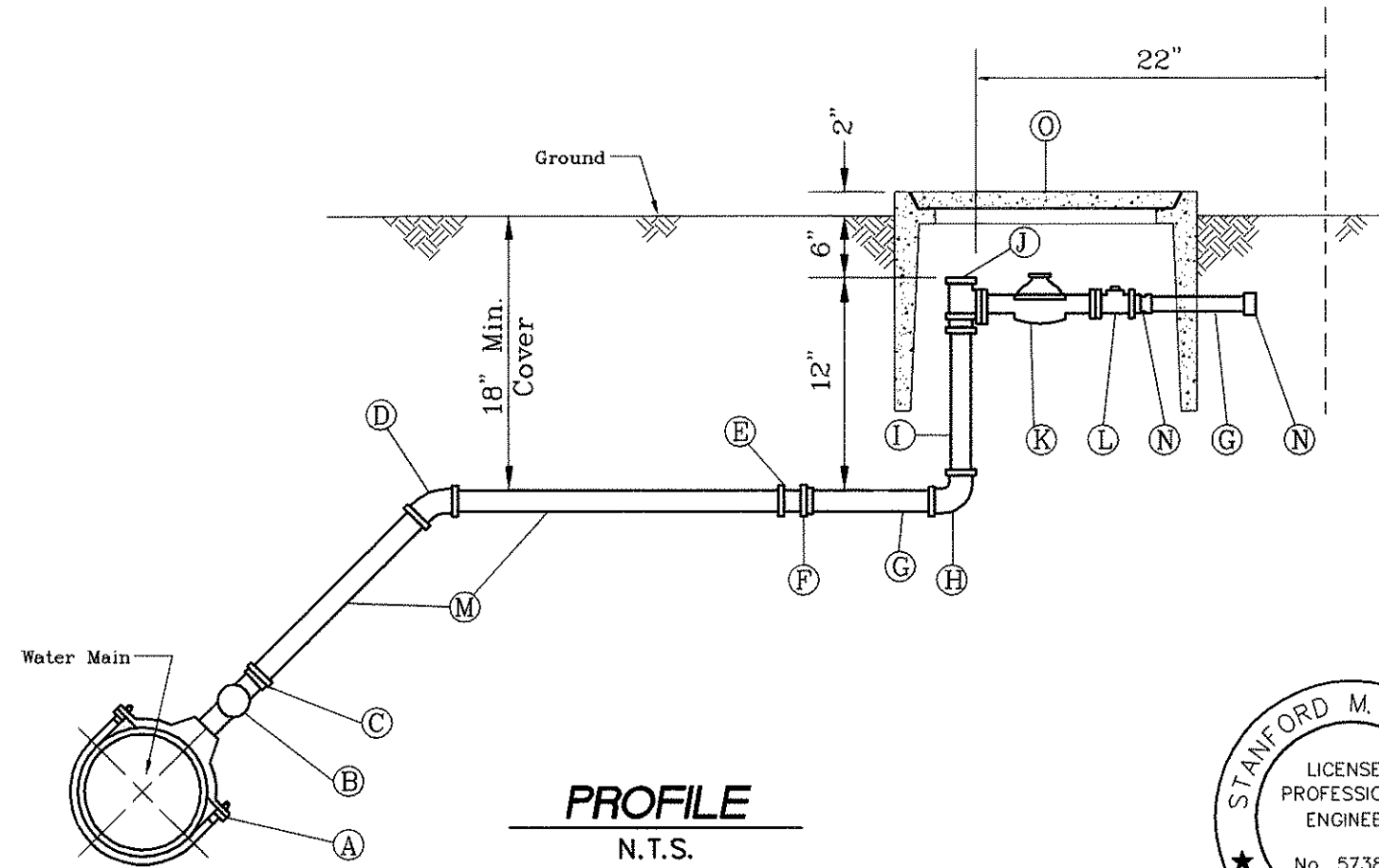


TYPICAL REINFORCEMENT AT PIPE
N.T.S.

SCHEDULE OF FITTINGS		
ITEM	DESCRIPTION	Size
A	12" Service Saddle	1 1/2" CC Tap
B	Ball Corporation Cock	1 1/2" CC x 2" MPT
C	PVC Female Adapter	2"
D	45° PVC Elbow	2"
E	PVC Male Adapter	2"
F	Copper Female Adapter	2"
G	Copper Pipe (18" Long)	2"
H	90° Copper Elbow	2"
I	Copper Pipe	2"
J	Angle Valve (Ford FV 13-676W)	1 1/2"
K	Meter (To be supplied by the Dept. of Water)	1 1/2"
L	Ball Valve (Ford BF 13-676)	1 1/2"
M	PVC Pipe	2"
N	Copper Male Adapter	2"
O	Type "X" Concrete Meter Box with C.I. Cover	-

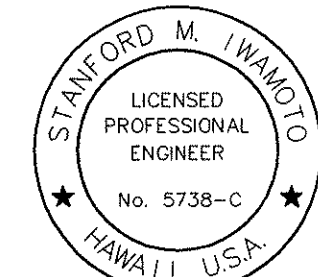


PLAN
N.T.S.



PROFILE
N.T.S.

1 1/2" WATER METER DETAIL
N.T.S.



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March 30, 2001

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
CENTRALIZED DISTRICT OFFICE
AND BASEYARD COMPLEX
LIHUE, KAUAI
PROJECT NO. HWY-K-03-98
CIVIL
DETAILS

SCALE: 1=40
DATE: MAR 30, 01
SHEET NO. C.07 OF 150 SHEETS