

STATE OF MAINE

DEPARTMENT OF TRANSPORTATION



KITTERY

YORK COUNTY

NATIONAL HIGHWAY SYSTEM

PROJECT NO. IM-95-8138(00)E

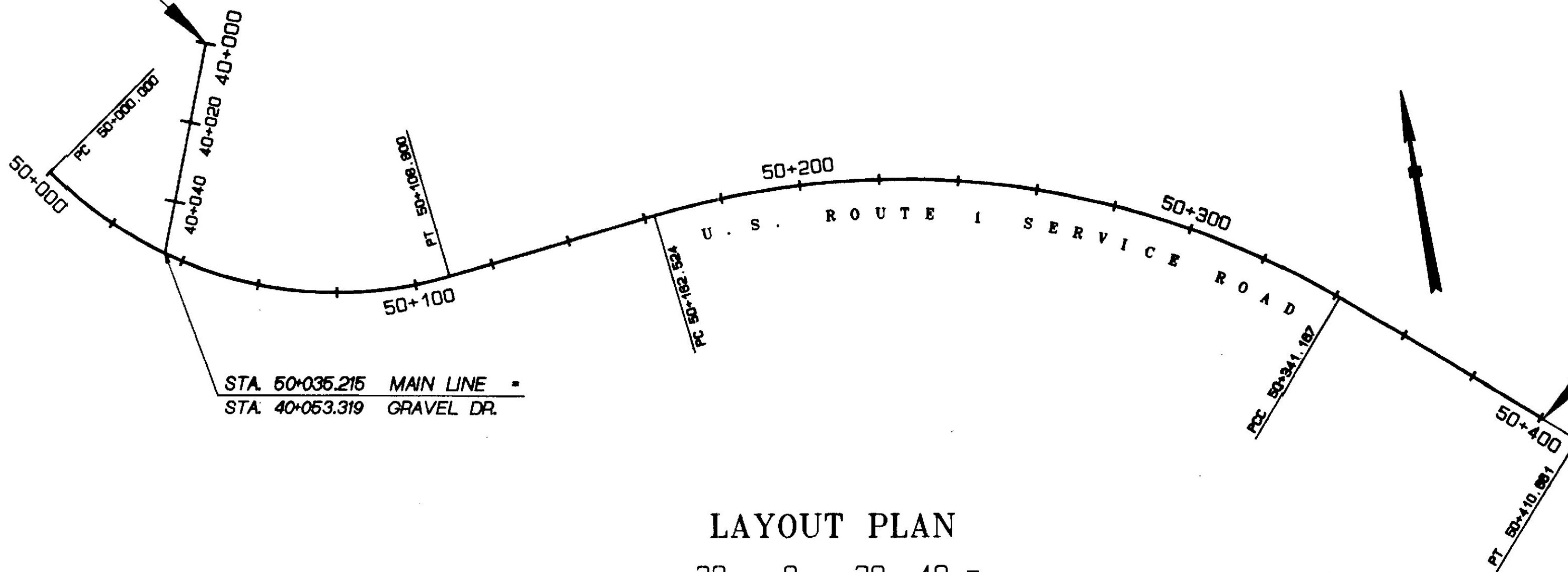
PROJECT LENGTH: 421.480 METERS

KITTERY TOURIST INFORMATION CENTER

PUMP STATION & SEWER IMPROVEMENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATED QUANTITIES & GENERAL NOTES
3-5	PLAN SHEETS
6-9	PROFILE SHEETS
8	B.M.P. GENERAL NOTES
	DETAIL SHEETS :
10-11	PUMP STATION DETAILS
12	SPECIAL DETAILS
13-14	PUMP HOUSE MODIFICATIONS

STA. 40+000 BEGIN PROPOSED PROJECT NO. IM-95-8138(00)E

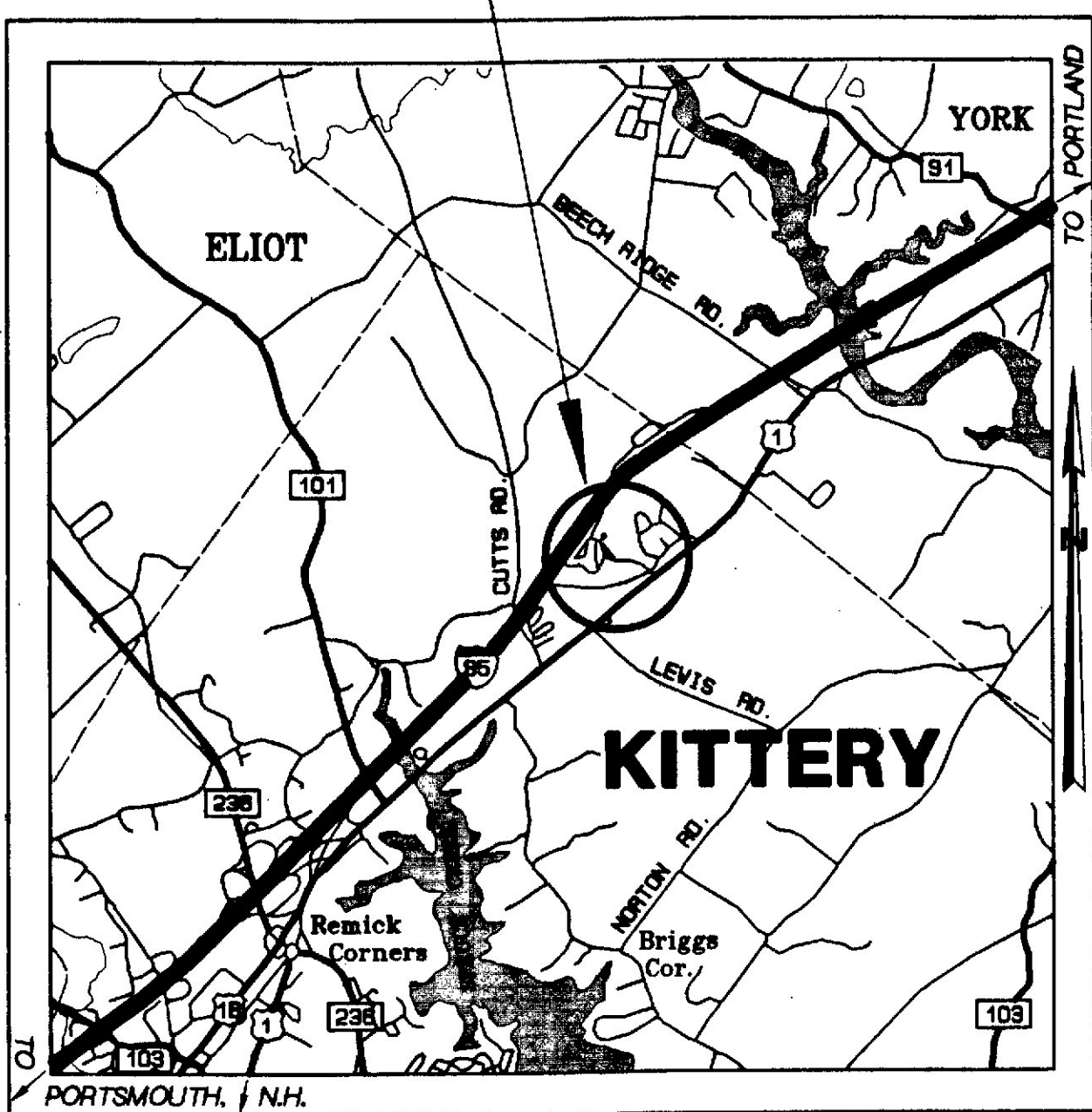


STA. 50+400.75 END PROPOSED PROJECT NO. IM-95-8138(00)E

LAYOUT PLAN

20 0 20 40 m

SCALE



A PORTION OF YORK COUNTY

1 0 1 2

SCALE IN KILOMETERS

A.A.D.T.	1998	1130
A.A.D.T.	2018	1700
D.H.V.		204
T.(%D.H.V.)		2
D.(%D.H.V.)		100
V.	40 KPH / 25 MPH	
P.S.D.(%)	N/A	
80 kN		30

NOTE

ALL WORK CONTEMPLATED UNDER THIS CONTRACT TO BE GOVERNED BY AND BE IN CONFORMITY WITH THE STANDARD SPECIFICATIONS (REVISIONS OF APRIL 1995) AND SUPPLEMENTALS THERETO, TOGETHER WITH THE STANDARD DETAILS (REVISION APRIL 1997) AND SUPPLEMENTALS THERETO, AS MODIFIED BY THE PLANS OR SPECIFICATION SPECIAL PROVISIONS.

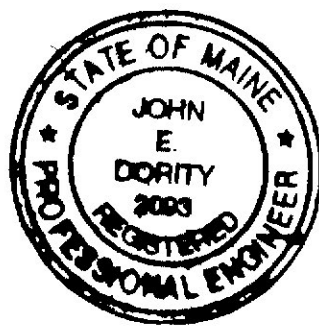
APPROVED:

STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

COMMISSIONER

CHIEF ENGINEER



2/2/98

DATE

8/6/98

DATE

UNITED STATES

DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

REGION 1

APPROVED:

DIVISION ADMINISTRATOR

DATE

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	IM-95-8138(00)E	2	14

ESTIMATED QUANTITIES

GENERAL NOTES

- STATE OF MAINE
-
- DEPARTMENT OF TRANSPORTATION

KITTERY

ESTIMATED QUANTITIES
&
GENERAL NOTES

SHEET OF AUGUSTA, MAINE

KITTERY TOURIST INFORMATION CENTER

PLANS	DESIGN-DETAILED	BY	DATE
	CHECKED	M. DAVIES	7-'98
	REVISED		
	FIELD CHANGES		

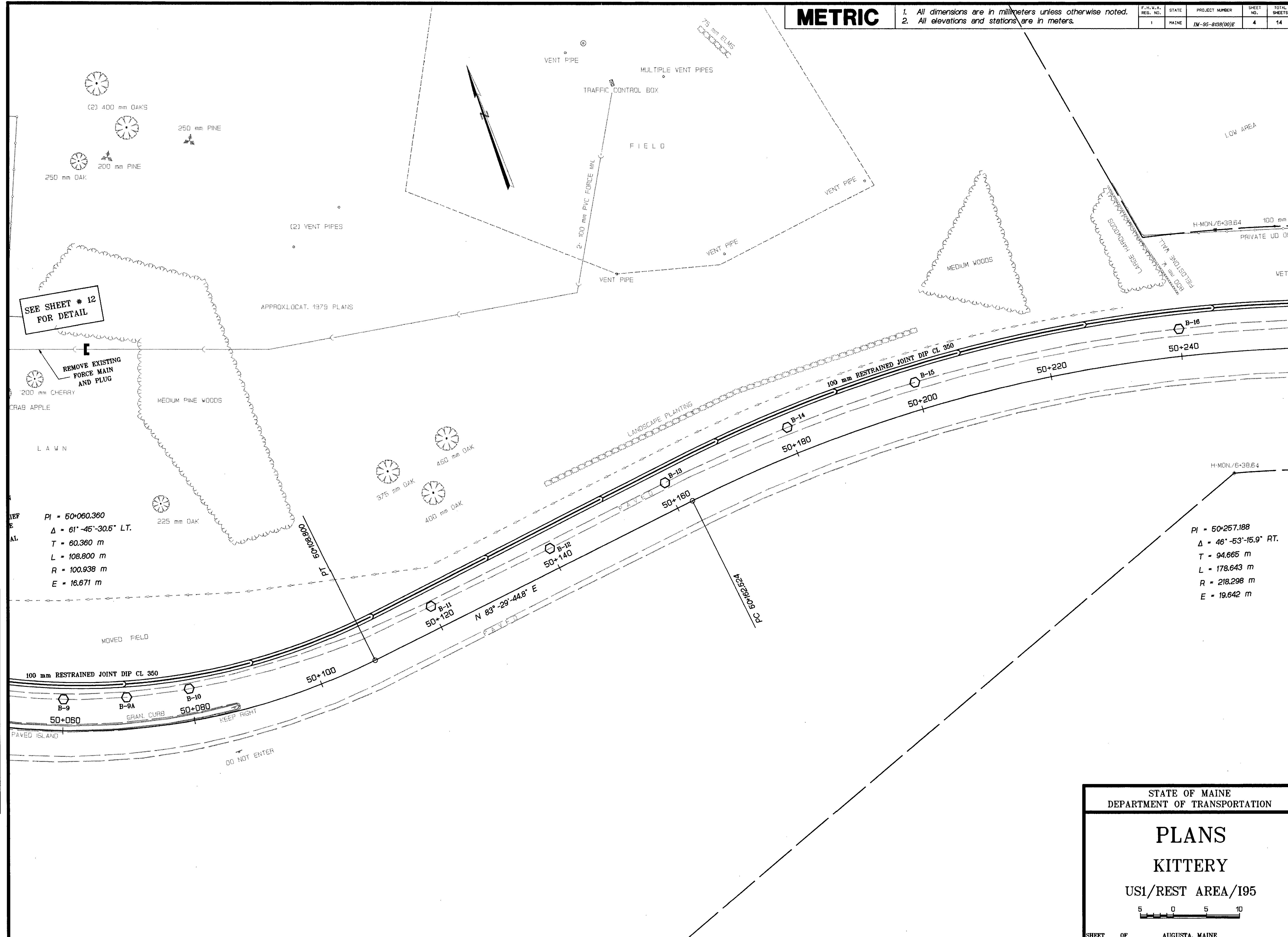
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METRIC

1. All dimensions are in millimeters unless otherwise noted.
2. All elevations and stations are in meters.

F.H.V.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	IM-95-8138(00)E	4	14



SEE SHEET # 12
FOR DETAIL

REMOVE EXISTING
FORCE MAIN
AND PLUG

PI = 50+060.360
Δ = 61°-45'-30.5" LT.
T = 60.360 m
L = 108.800 m
R = 100.938 m
E = 16.671 m

PI = 50+257.188
Δ = 46°-53'-15.9" RT.
T = 94.665 m
L = 178.643 m
R = 218.298 m
E = 19.642 m

PROJECT DESIGN ENGINEER	DATE
CHECKED	04/98
REVISIONS	
FIELD CHANGES	
PLANS	

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

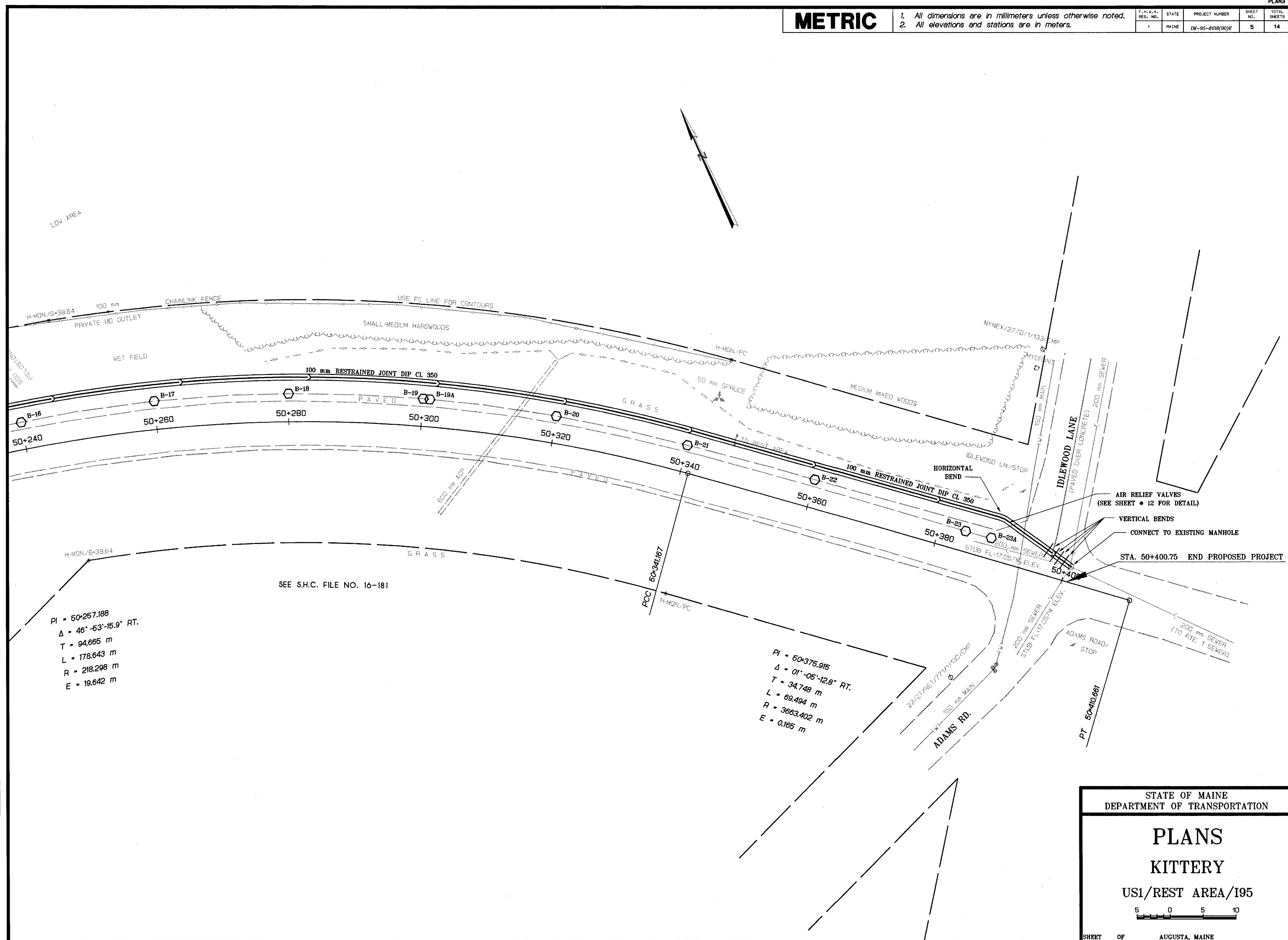
PLANS
KITTERY
US1/REST AREA/195

5 0 5 10

SHEET OF AUGUSTA, MAINE

PROJECT DESIGN ENGINEER	DATE
DESIGN-DETAILED	04/98
CHECKED	
REVISIONS	
FIELD CHANGES	

PLANS



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS
KITTERY
US1/REST AREA/I95

5 0 5 10

SHEET OF AUGUSTA, MAINE

METRIC

1. All dimensions are in millimeters unless otherwise noted.
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F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	IM-95-8138(00)E	6	14

KITTERY

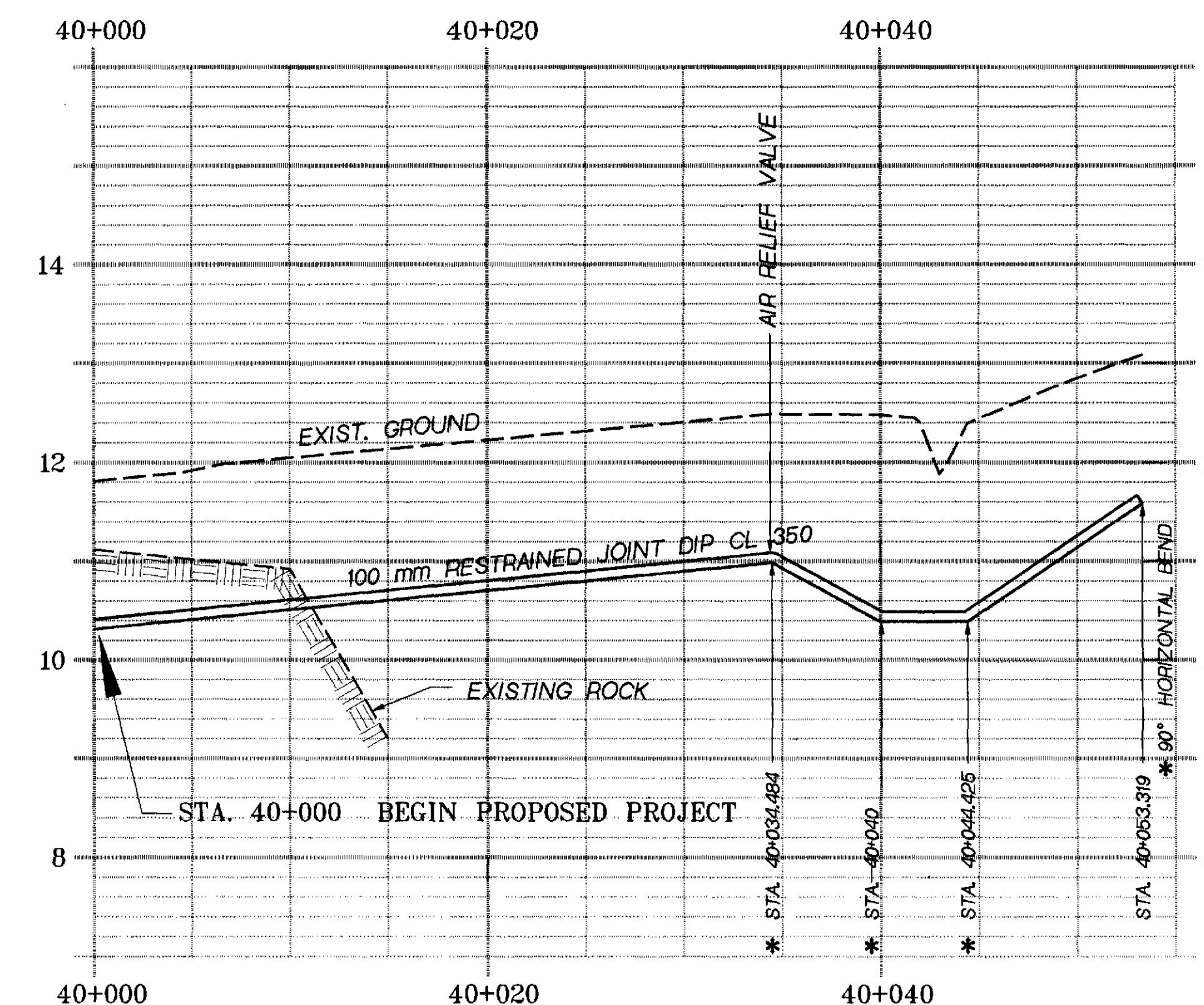
B.M.P. GENERAL NOTES

EROSION AND SEDIMENT CONTROL MEASURES

All erosion and sedimentation measures shall be in strict accordance with Department of Transportation, Best Management Practice (Special Provision 107). The contractor shall be thoroughly familiar with all applicable measures contained therein which may be pertinent to this project. The purpose of such measures shall be to preclude the transport of all waterborne sediments resulting from construction activities from entering onto adjacent properties or state waters. All sediments must be confined to the project site. If field inspections reveal the inadequacy of the plan to confine sediment to the project site, Appropriate modifications will be made to correct any plan deficiencies.

Permanent soil stabilization shall be applied to all denuded areas within 2 weeks after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied daily to denuded areas that may be at final grade, but will remain dormant (undisturbed) for longer than seven days. Permanent stabilization shall be applied to areas that are to be left dormant for more than three months. During construction of the project, soil stock piles shall be stabilized or protected with sediment trapping measures. The contractor is responsible for the temporary protection and permanent stabilization of all soil stockpiles on site as well as soil intentionally transported from the project site. A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that, in the opinion of the Resident Engineer, is uniform, mature enough to survive and will inhibit erosion. Sediment basins and traps, perimeter dikes sediment barriers and other measures intended to trap sediment shall be constructed as a first step in any land disturbing activity and shall be made functional before upslope land disturbance takes place. Cut and fill slopes shall be designed and constructed in a manner that will minimize erosions. Slopes that are found to be eroding excessively within one year of permanent stabilization shall be provided with additional slope stabilizing measures until the problem is corrected. All storm sewer inlets which may be subject to excavated sediment during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment. No more than 90 meters of trench for underground utility lines (sanitary sewer, storm sewer, water line or other underground utilities) may be opened at one time. Any effluent from dewatering operations shall be filtered or passed through an approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property. Where construction vehicle access routes intersect paved public roads, provisions shall be made to minimize the transport of sediment by vehicular tracking onto the paved surface. Where sediment is transported onto a public road surface, the road shall be cleaned immediately. Sediment shall be removed from the roads by shoveling or sweeping and transported to a sediment control disposal area. Street washing shall be allowed only after sediment is removed in this manner. This provision shall apply to all construction activities. All temporary erosion and sediment control measures shall be removed within thirty days after final site stabilization or after the temporary measures are no longer needed, unless otherwise authorized by the resident engineer. Trapped sediment and the disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation. Final vegetative cover (stabilization) shall consist of topsoiling, liming fertilizing, seeding and mulching to assure successful germination and establishment of a stable grass cover. Final vegetative cover shall be proved in accordance with the contract specifications. Irrigation shall be required as necessary to ensure establishment of grass cover. All erosion and sediment control structures and systems shall be maintained, inspected and repaired as needed to ensure continued performance of their intended function. All disturbed areas shall be topsoiled and seeded in accordance with Department of Transportation's current Best Management Practice for Erosion and Sediment Control.

PROPOSED 100 mm FORCE MAIN PROFILE FOR KITTERY - I95 (REST AREA) - PIN 8138.00



* ALL VERTICAL AND HORIZONTAL BEND SHALL BE M.J. FITTING WITH MEGA-LUG RESTRAINTS AND CONC. THRUST BLOCK.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

FORCE MAIN PROFILE
&
B.M.P. GENERAL NOTES

KITTERY
TOURIST INFORMATION CENTER

Pin. # 8138.00

SHEET 1 OF 4 AUGUSTA, MAINE

KITTERY TOURIST INFORMATION CENTER

PROJECT DESIGN ENGINEER	DATE	BY	DATE
DESIGN-DETAILED	07/28	J.H.	
CHECKED		MIKE MAYES	
REVISIONS			
FIELD CHANGES			

PLANS

11AUG98-075950

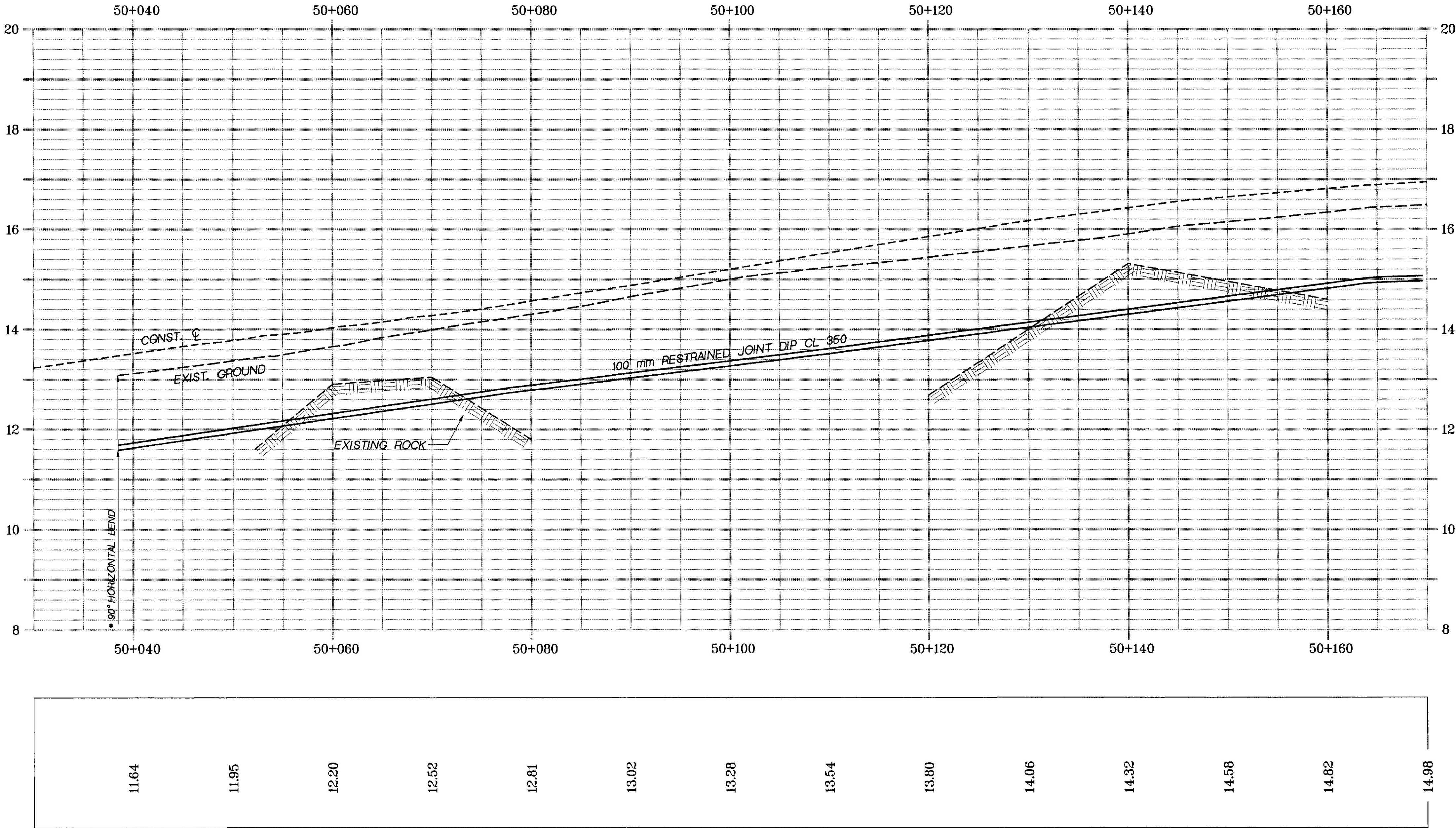
METRIC

1. All dimensions are in millimeters unless otherwise noted.
2. All elevations and stations are in meters.

F.H.V.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	IN-95-8198(00)E	7	14

KITTERY

PROPOSED 100 mm FORCE MAIN PROFILE FOR KITTERY - I95 (REST AREA) - PIN 8138.00



* ALL VERTICAL AND HORIZONTAL BEND
SHALL BE M.J. FITTING WITH MEGA-LUG
RESTRAINTS AND CONC. THRUST BLOCK.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

FORCE MAIN PROFILE

KITTERY
TOURIST INFORMATION CENTER

Pin. # 8138.00

SHEET 2 OF 4 AUGUSTA, MAINE

KITTERY TOURIST INFORMATION CENTER

PROJECT DESIGN ENGINEER	DATE
DESIGN-DETAILED	07/98
CHECKED	
REVISIONS	
FIELD CHANGES	

PLANS

11AUG98-075950

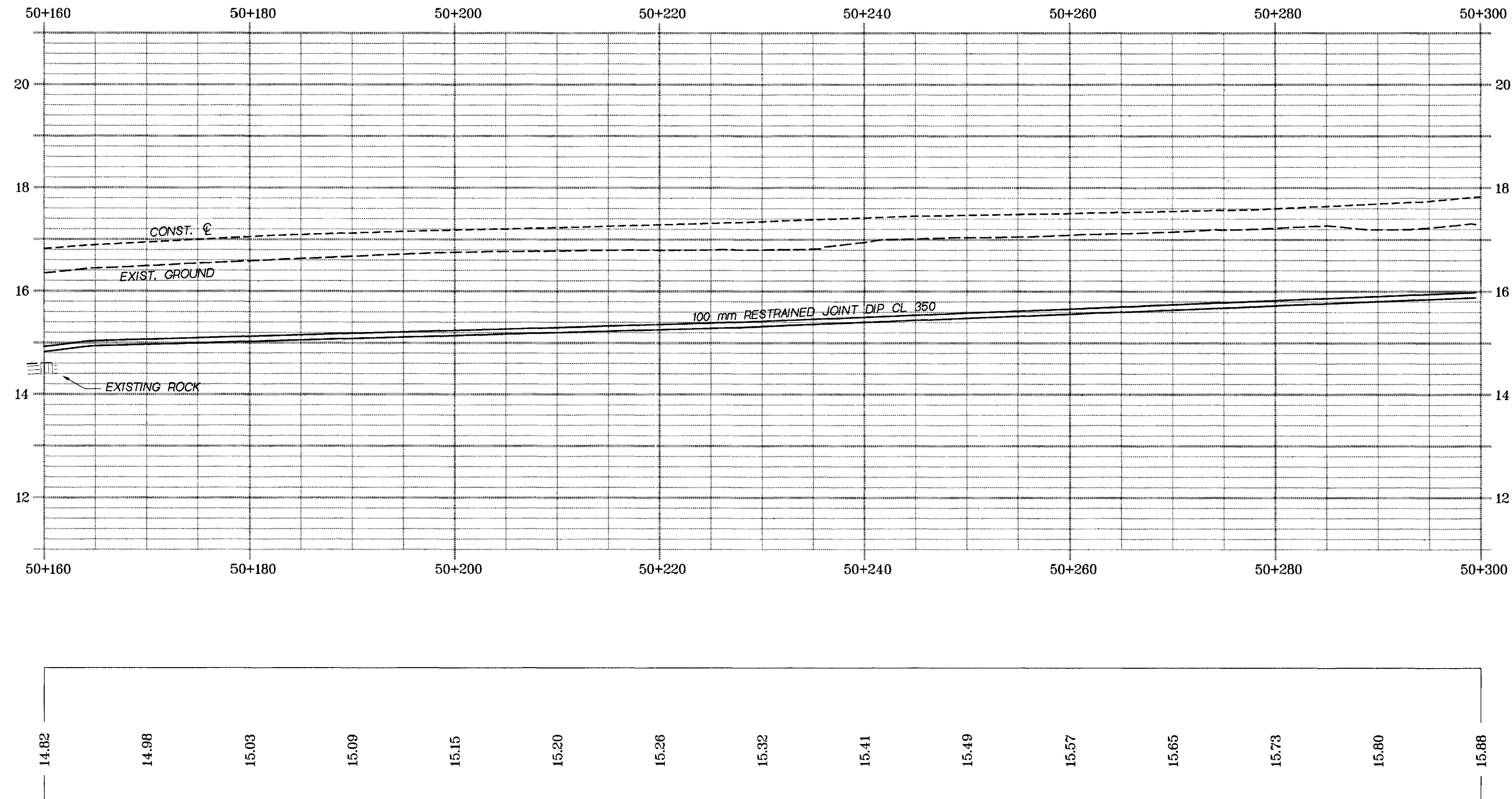
METRIC

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F.H.V.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	IM-95-8138(100)E	8	14

KITTERY

PROPOSED 100 mm FORCE MAIN PROFILE FOR KITTERY - I95 (REST AREA) - PIN 8138.00



PROJECT DESIGN ENGINEER	DATE
DESIGN-DETAILED	07/98
CHECKED	
REVISIONS	
FIELD CHANGES	

PLANS

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

FORCE MAIN PROFILE

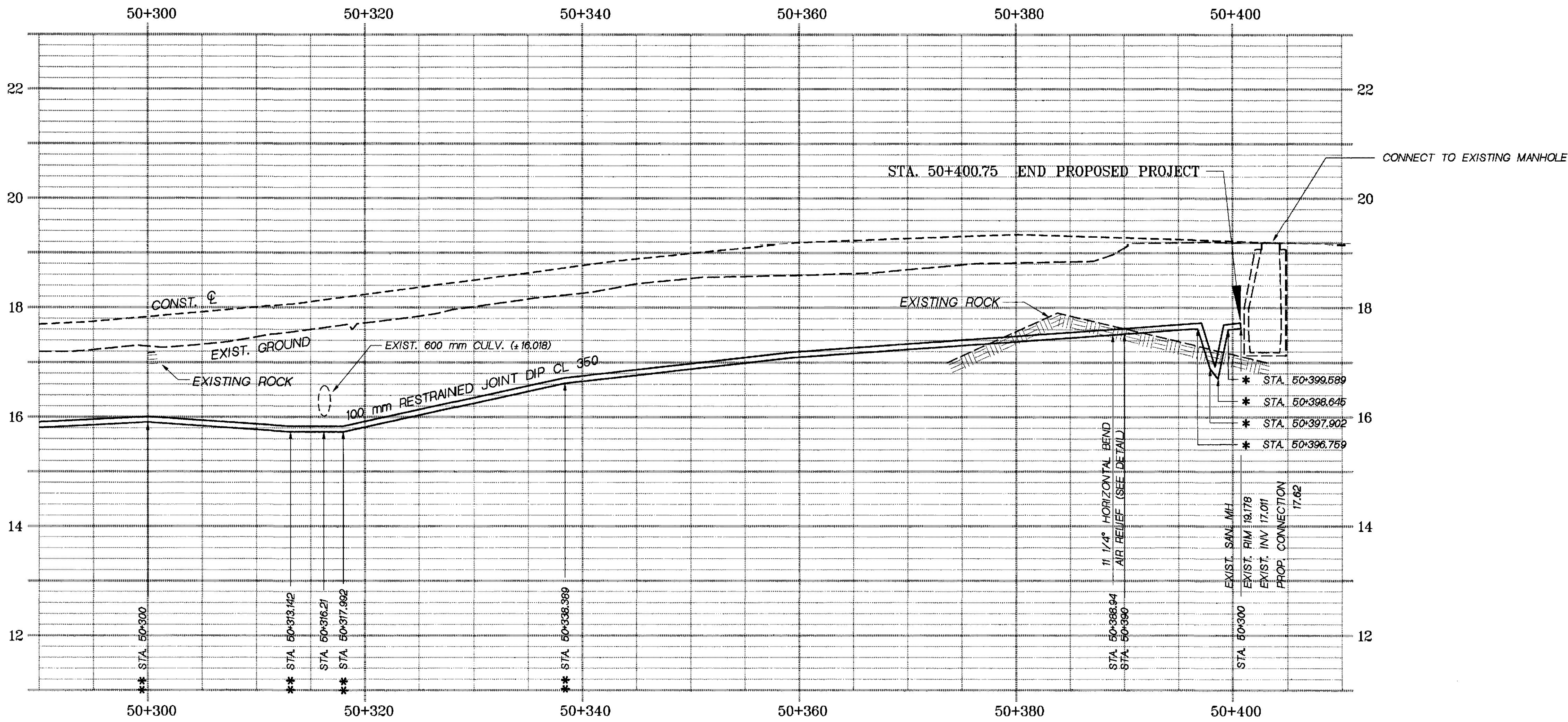
KITTERY
TOURIST INFORMATION CENTER

Pin. # 8138.00

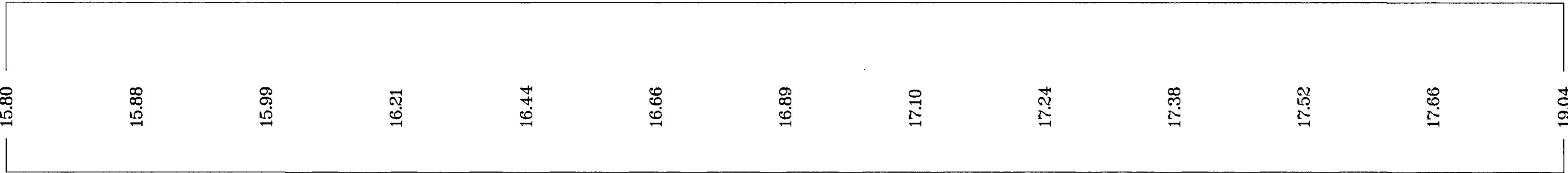
SHEET 3 OF 4 AUGUSTA, MAINE

KITTERY TOURIST INFORMATION CENTER

PROPOSED 100 mm FORCE MAIN PROFILE FOR KITTERY - 195 (REST AREA) - PIN 8138.00



** DEFLECT PIPE JOINT (NOT TO EXCEED 4°)



* ALL VERTICAL AND HORIZONTAL BEND
SHALL BE M.J. FITTING WITH MEGA-LUG
RESTRAINTS AND CONC. THRUST BLOCK.

PROJECT DESIGN ENGINEER	DATE
DESIGN-DETAILED	07/98
CHECKED	JH
REVISIONS	
FIELD CHANGES	

11AUG98-07/5950

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

FORCE MAIN PROFILE

KITTERY
TOURIST INFORMATION CENTER

Pin. # 8138.00

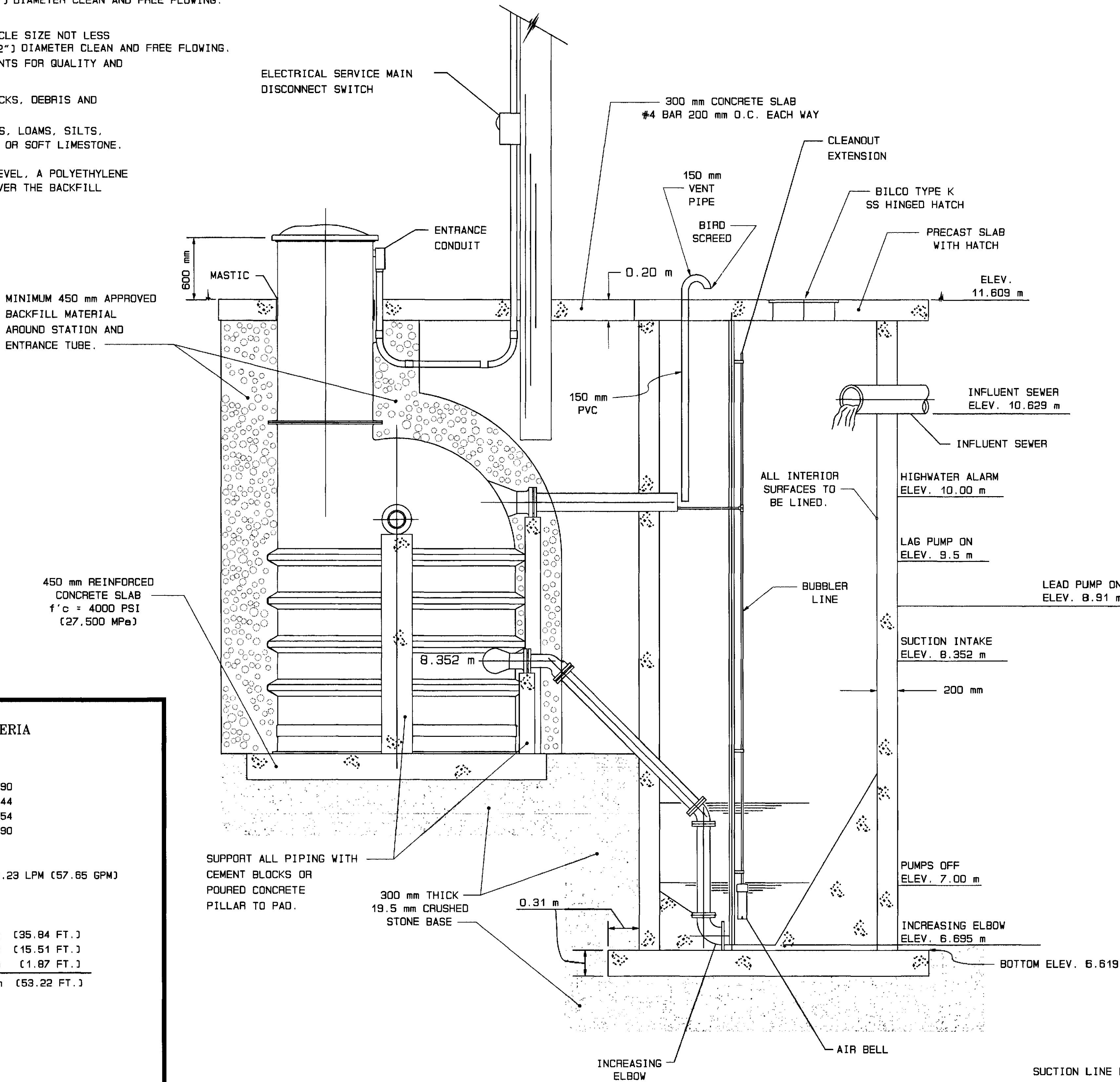
BACKFILL INSTALLATION REQUIREMENTS

1. PEA GRAVEL TYPE MATERIAL.
USE NATURALLY-ROUNDED AGGREGATE WITH PARTICLE SIZE NOT LESS THAN 3.175 mm (1/8") OR MORE THAN 20 mm (3/4") DIAMETER CLEAN AND FREE FLOWING.
2. STONE OR GRAVEL CRUSHINGS.
AS AN ALTERNATE ANGULAR MATERIAL WITH PARTICLE SIZE NOT LESS THAN 3.175 mm (1/8") OR MORE THAN 15 mm (1/2") DIAMETER CLEAN AND FREE FLOWING.
THIS MATERIAL MUST MEET ASTM C-33 REQUIREMENTS FOR QUALITY AND SOUNDNESS.

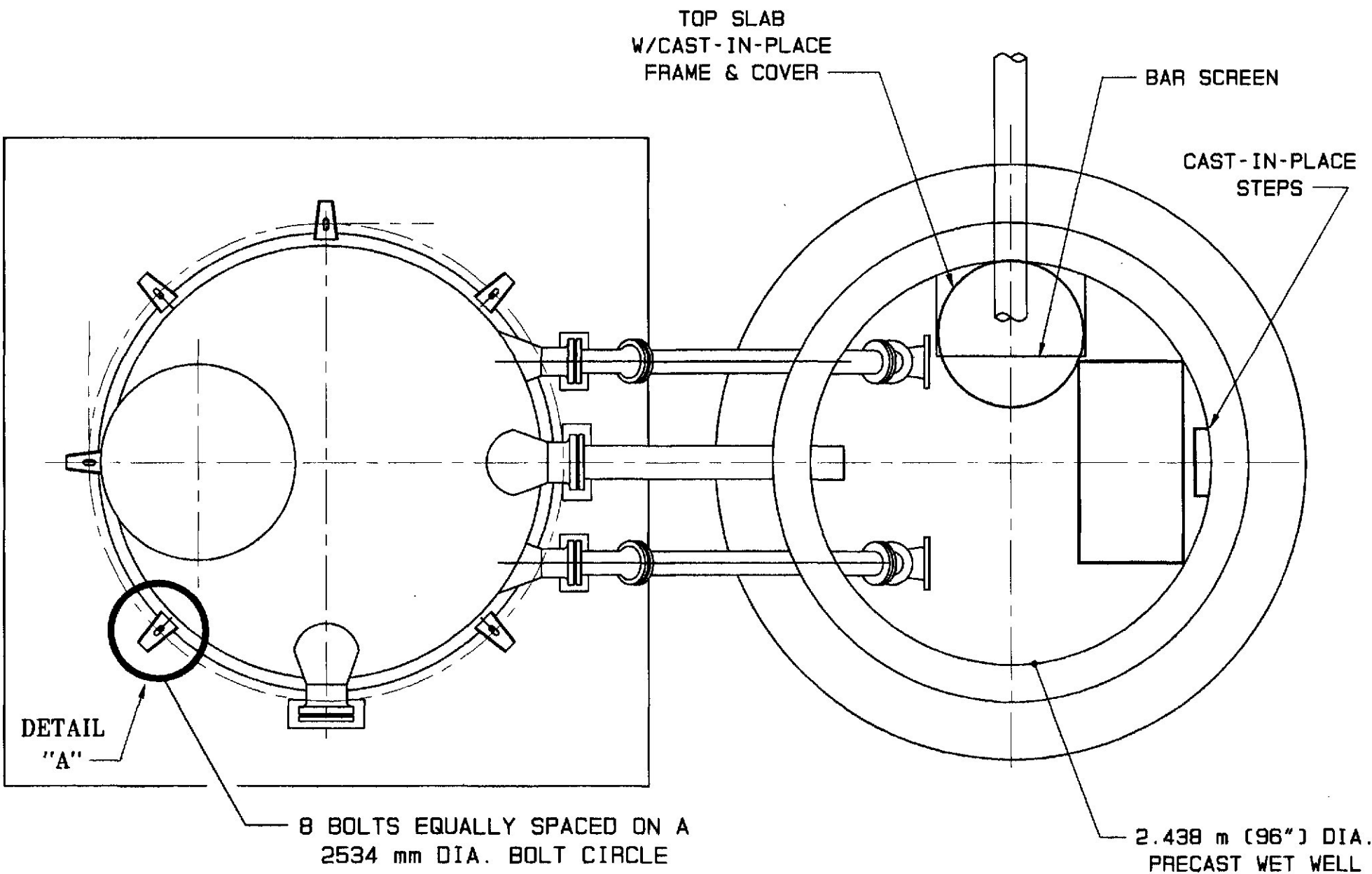
CAUTION: BACKFILL MATERIAL MUST BE FREE OF ROCKS, DEBRIS AND FROZEN SECTIONS.

CAUTION: DO NOT USE SHALE, CLAY, SLAG, CINDERS, LOAMS, SILTS, STONE SCREENINGS, STONE DUST, SHELLS OR SOFT LIMESTONE.

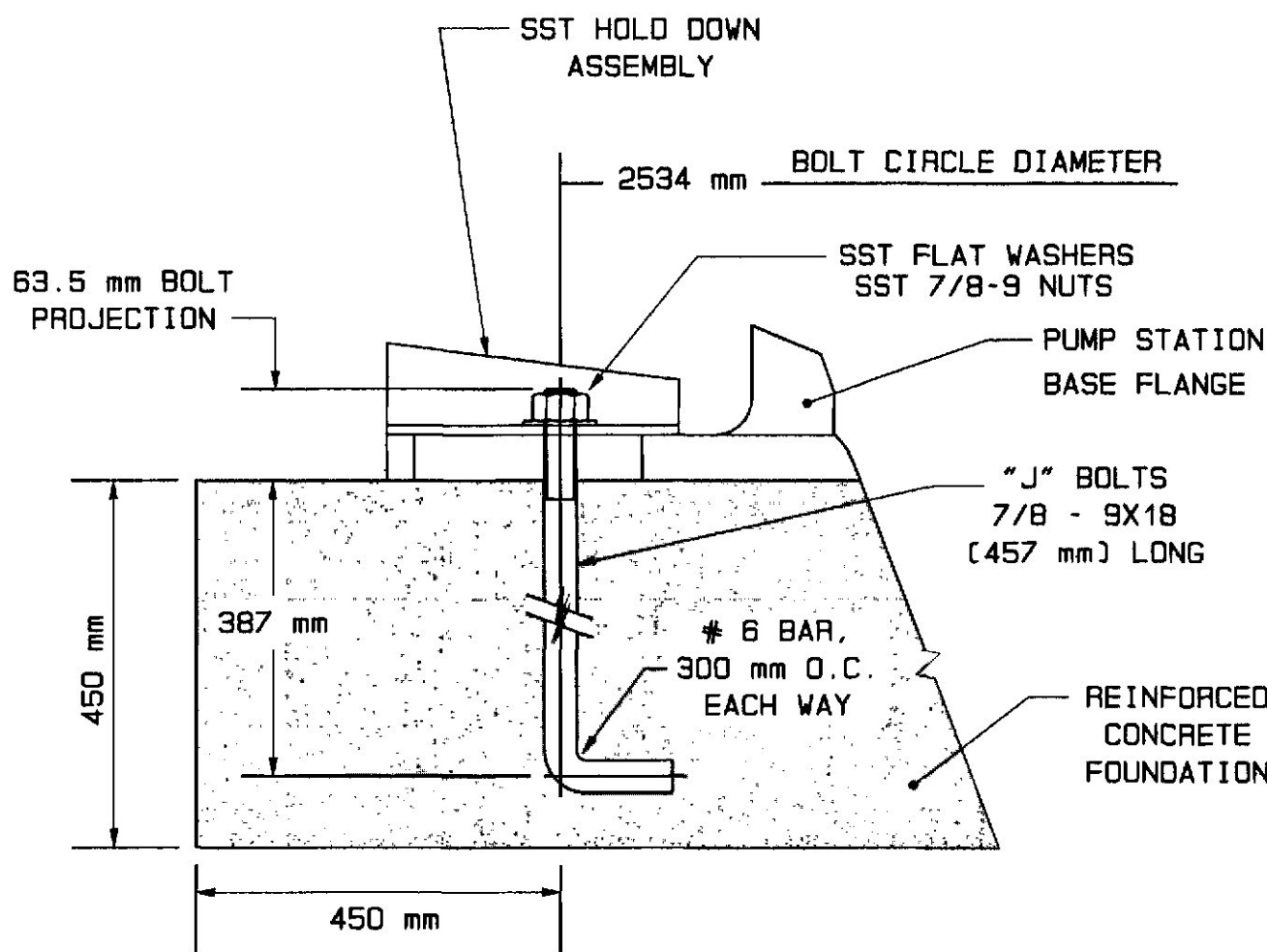
IF ANOTHER MATERIAL IS USED TO FILL TO GRADE LEVEL, A POLYETHYLENE FILM OR SUITABLE SUBSTITUTE MUST BE USED TO COVER THE BACKFILL.



ELEVATION VIEW



PLAN VIEW
FOUNDATION BOLT LAYOUT



DETAIL "A"

SUCTION LINE NOTE:
SLOPE SUCTION LINES FROM STATION CONNECTION TO VERTICAL SUCTION LINES IN WETWELL.

WET WELL NOTE:
THE DIAMETER OF THE WET WELL AND THE DISTANCE FROM THE INVERT OF THE INFLUENT LINE TO THE CONCRETE PAD SHOULD BE OF PROPER DESIGN TO ALLOW AT LEAST 3 TO 5 MINUTES LAPSED TIME BETWEEN SUCCESSIVE STARTS OF A PUMP TO PREVENT SHORT CYCLING OF ELECTRIC MOTOR AND CONTROL.

PUMP STATION DESIGN CRITERIA

1.0 DESIGN FLOW :

- A.0 MAXIMUM VISITORS / 8 HOUR PERIOD 5590
- B.0 MINIMUM 144
- C.0 AVERAGE 1454
- D.0 DESIGN BASIS 5590
- E.0 MAXIMUM WETWELL INFLUENT FLOW RATE (5590 MAX. VISITORS / 8 HOURS) (4.95 GAL. / VISITOR)(1 HR. / 60 MIN.) = 218.23 LPM (57.65 GPM)

2.0 TOTAL DYNAMIC HEAD :

- A.0 STATIC HEAD 10.925 m (35.84 FT.)
- B.0 FRICTION HEAD 4.727 m (15.51 FT.)
- C.0 MINOR LOSSES 0.570 m (1.87 FT.)
- 16.222 m (53.22 FT.)

3.0 DISCHARGE MAIN :

- A.0 100 mm (4") RESTRAINING JOINT DIP CL-350

4.0 PUMP SELECTION :

- A.0 MANUFACTURER GORMAN-RUPP
- B.0 MODEL T3A-B 75 mm x 75 mm (3"x3")
- C.0 MOTOR 10 HP
- D.0 IMPELLER 200 mm (8")
- E.0 RPM's 1650
- F.0 VOLTAGE 208V 3PH
- G.0 MAXIMUM SOLIDS 63.5 m (2.5")

5.0 OPERATION CONDITIONS :

- Q = 454.25 LPM (120 GPM)
- TDM = 16.222 m (53.22 FT.)
- VELOCITY = 0.933 m (3.06 FT.) / SEC.

PROJECT DESIGN ENGINEER	DATE
BY	
DESIGN-DETAILED	
CHECKED	
REVISIONS	
FIELD CHANGES	

PLANS

11AUG98-075930

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

KITTERY
TOURIST INFORMATION CENTER

PUMP STATION DETAIL
(NOT TO SCALE)

SHEET 1 OF 2 AUGUSTA, MAINE

KITTERY TOURIST INFORMATION CENTER

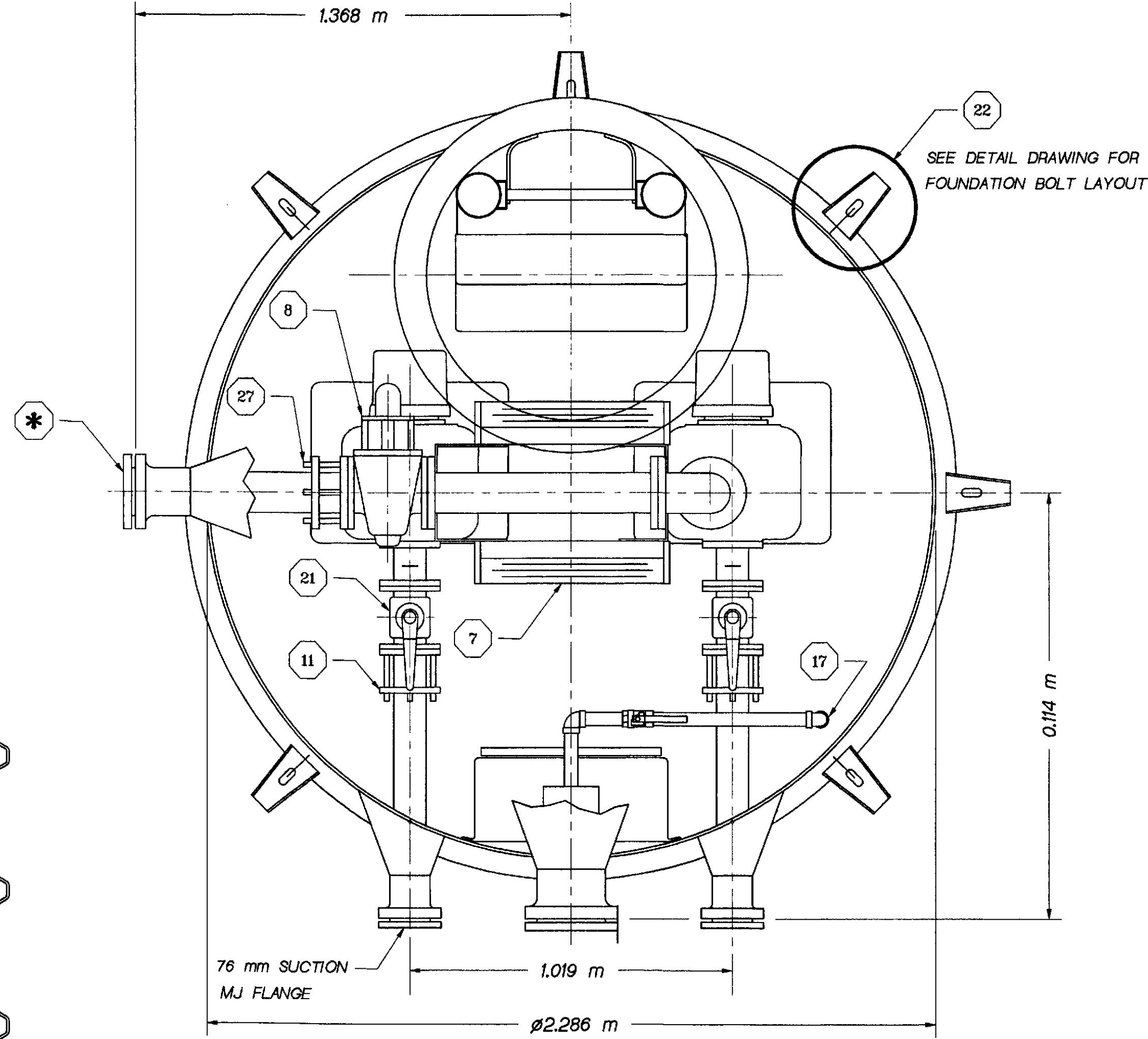
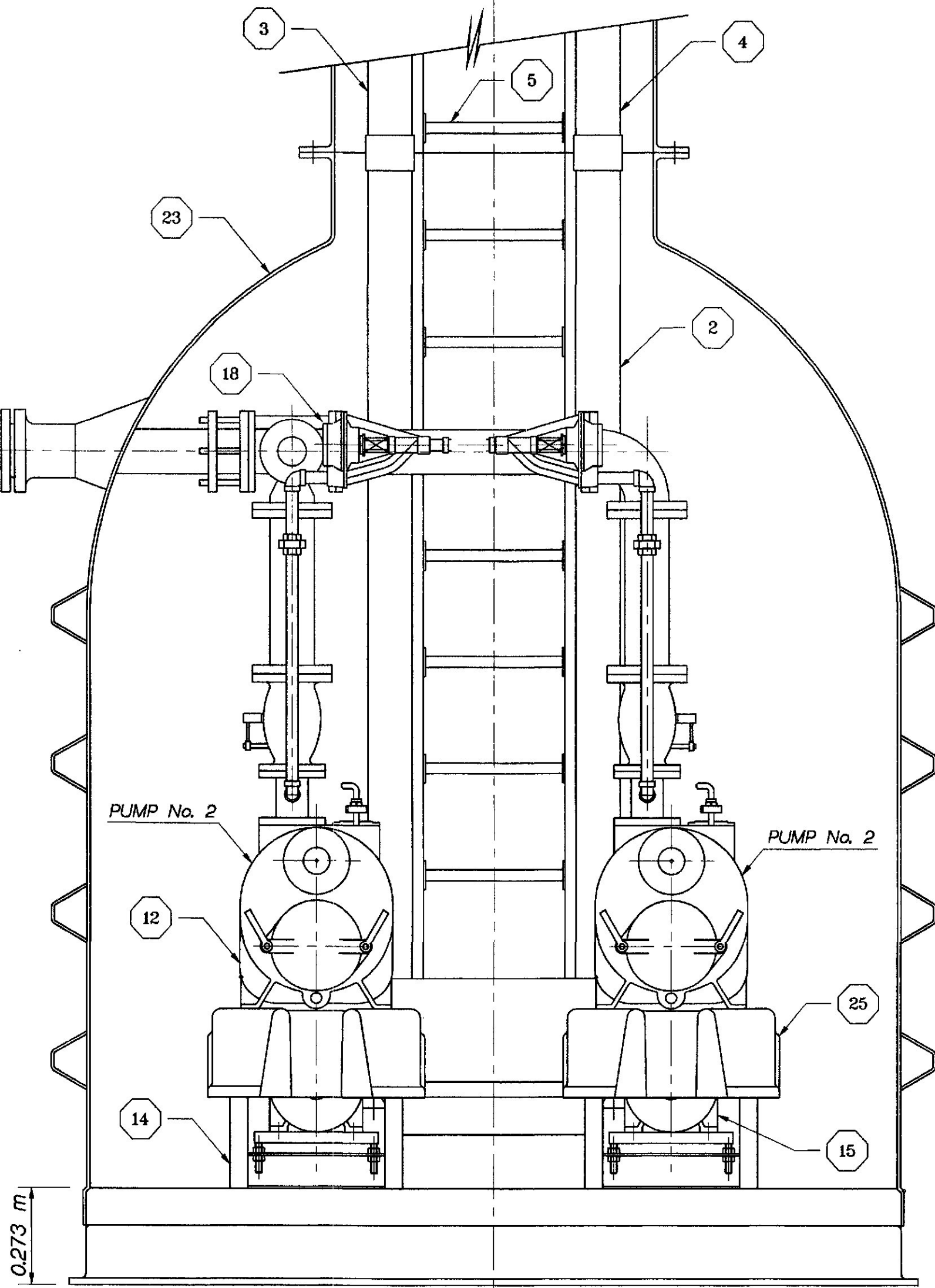
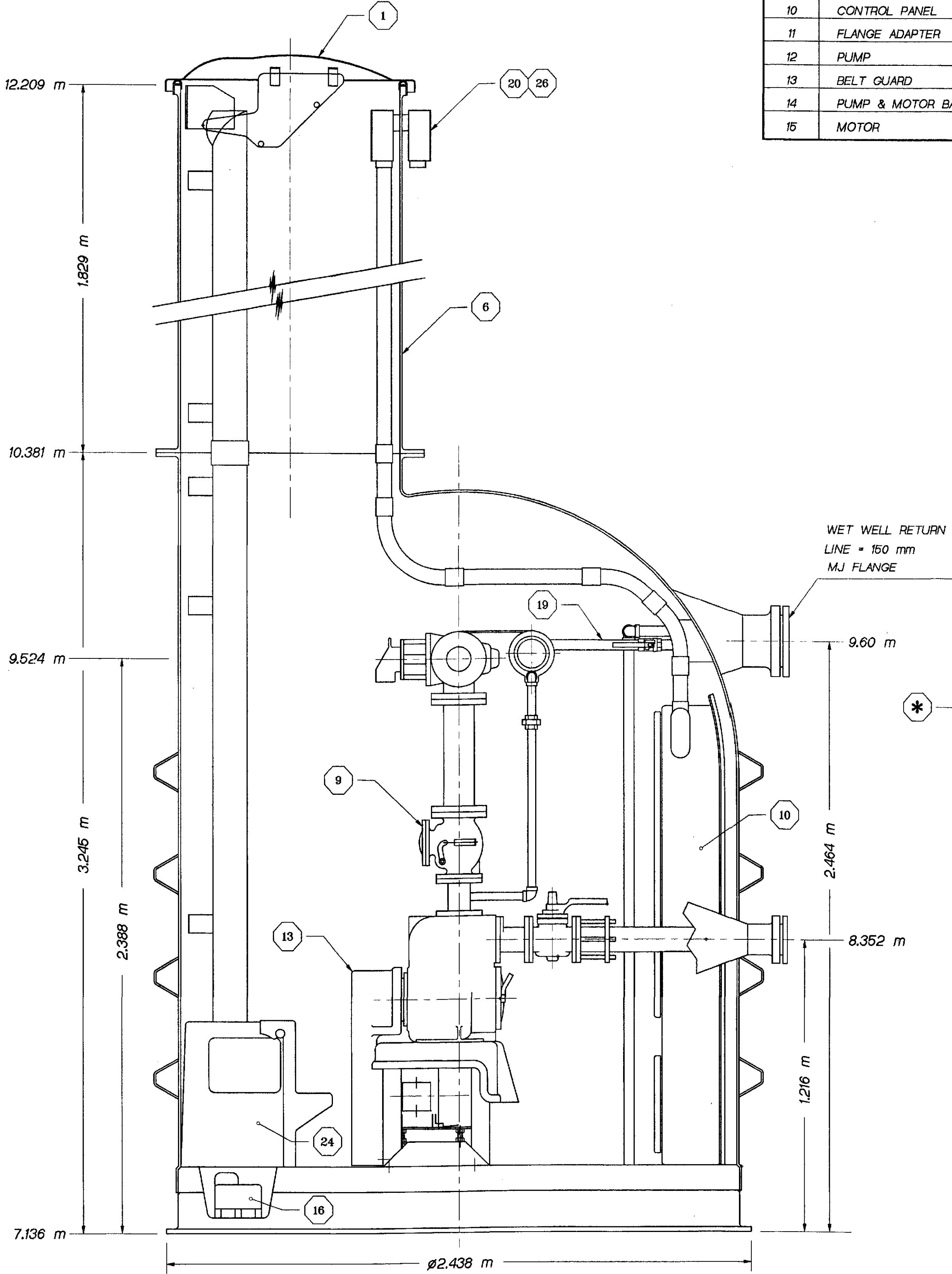
ITEM	DESCRIPTION	MATERIAL & SIZE
1	ENTRANCE TUBE COVER	FRP 1026 mm ø
2	DISCHARGE AIR DUCT	PVC 125 mm ø
3	BLOWER & DEHUMID. HOUSING	PVC 125 mm ø
4	LADDER RAIL	FRP
5	LADDER RUNG	ALUM. 30 mm ø
6	ENTRANCE TUBE	FRP 900 mm
7	FLUORESCENT LIGHT	2-20 WATT TUBES
8	DISCHARGE PLUG VALVE	CAST IRON 100 mm 3 WAY
9	DISCHARGE CHECK VALVE	CAST IRON 75 mm X 100 mm
10	CONTROL PANEL	FRP
11	FLANGE ADAPTER	CAST IRON 75 mm
12	PUMP	CAST IRON T3A3-B
13	BELT GUARD	FRP
14	PUMP & MOTOR BASE	STEEL
15	MOTOR	CAST IRON 10.0 HP

ITEM	DESCRIPTION	MATERIAL & SIZE
16	SUMP PUMP	CI 1000 GPH @ 6.096 m
17	SUMP PUMP DISCHARGE	PVC 30 mm
18	AIR RELEASE VALVE	CAST IRON 25 mm
19	AIR RELEASE DISCHARGE	PVC 30 mm (FLEX.)
20	ENTRANCE CONDUIT	PVC
21	SUCTION PLUG VALVE	CAST IRON 75 MM
22	HOLD DOWN BRACKET	STAINLESS STEEL
23	STATION SHELL	FRP 2286 m ø
24	BLOWER & DEHUMID. HOUSING	FRP
25	DRIPSHIELD	FRP
26	ALARM CONDUIT	PVC 18 mm
27	FLANGE ADAPTER	CAST IRON 100 mm
*	100 mm DISCHARGE / MJ FLANGE	

PROJECT DESIGN ENGINEER	BY	DATE
DESIGN-DETAILED		
CHECKED		
REVISIONS		
FIELD CHANGES		

14FEB98-010000

PLANS



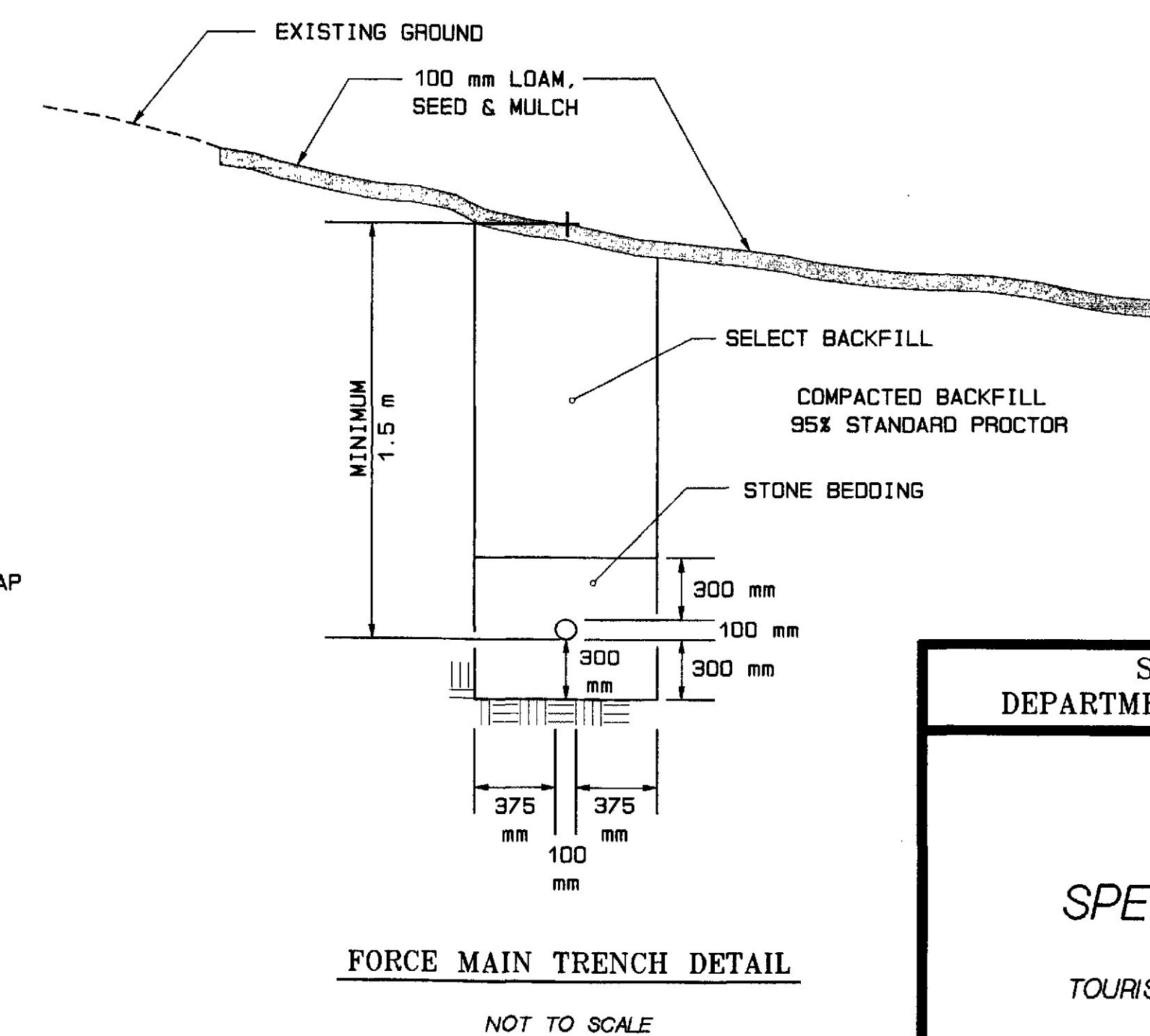
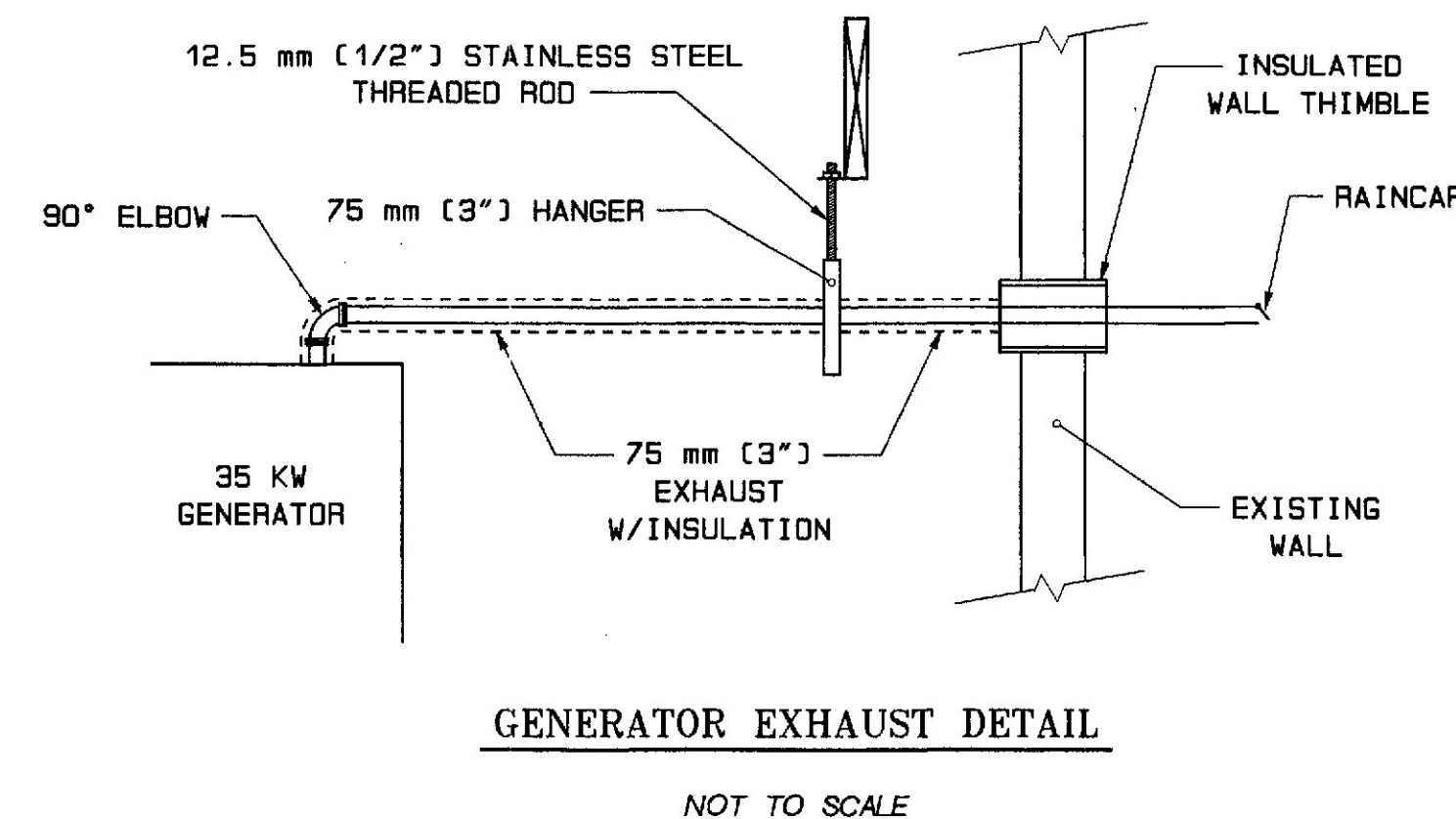
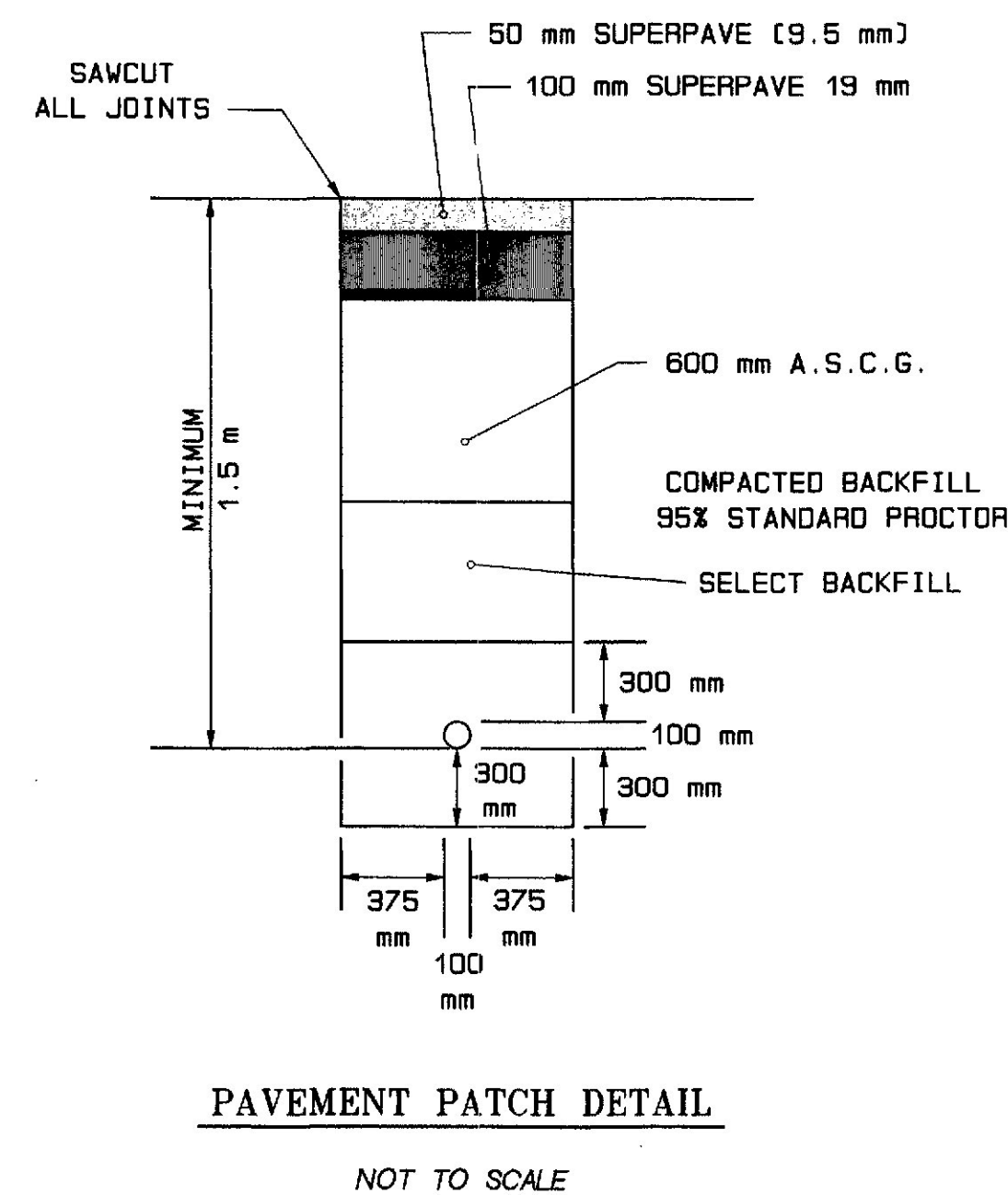
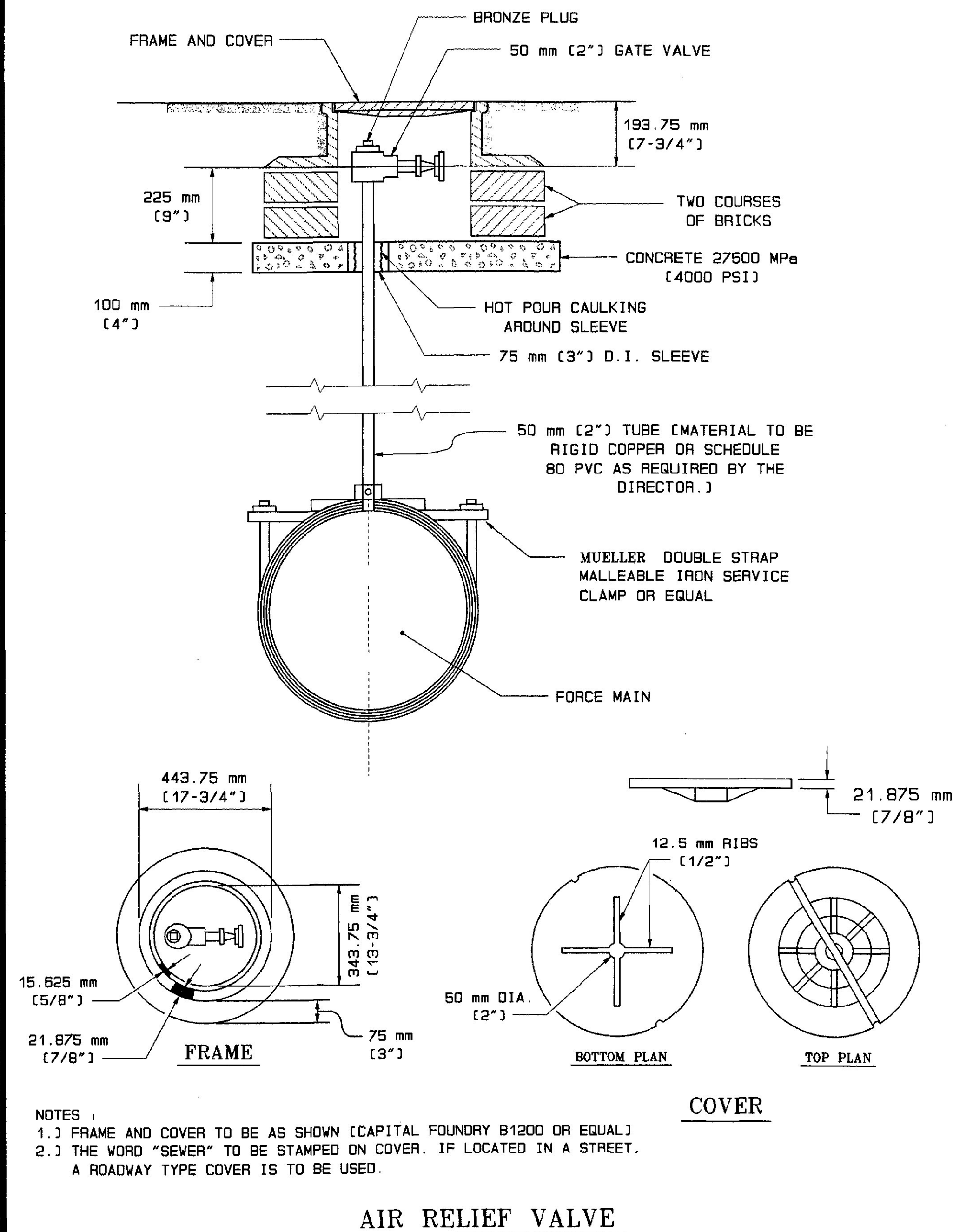
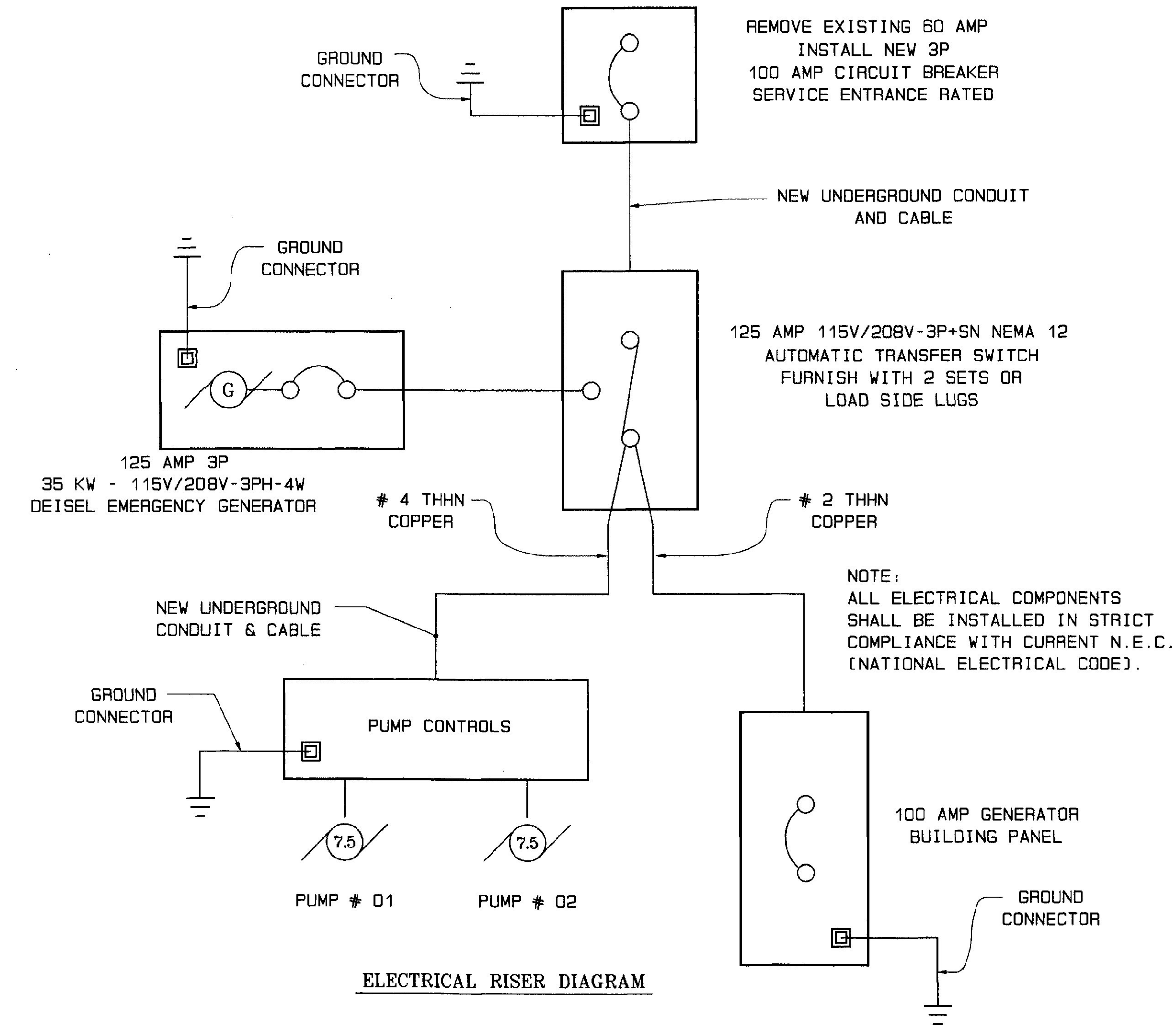
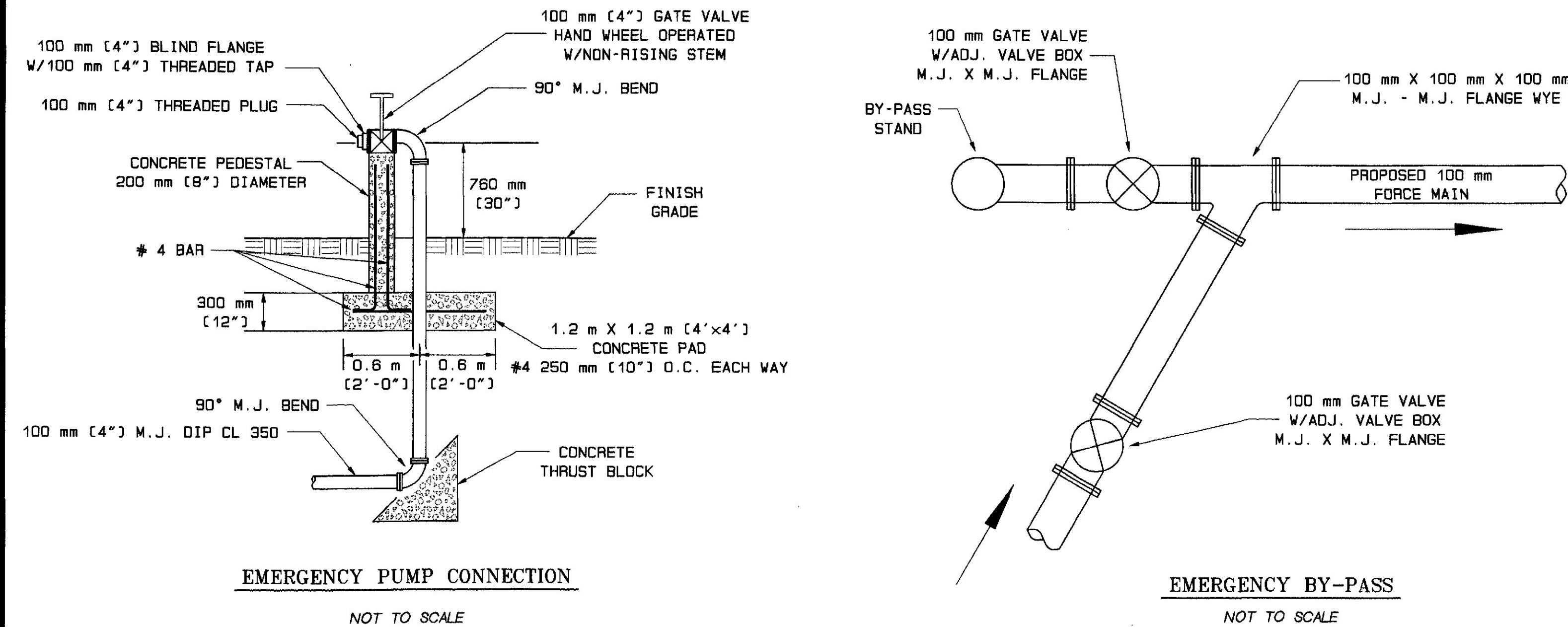
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

KITTERY
TOURIST INFORMATION CENTER

PUMP STATION DETAIL
(NOT TO SCALE)

SHEET 2 OF 2 AUGUSTA, MAINE

METRIC		1. All dimensions are in millimeters unless otherwise noted. 2. All elevations and stations are in meters.		P.E. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
				1	MAINE	1W-95-8198(00)E	12	14



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

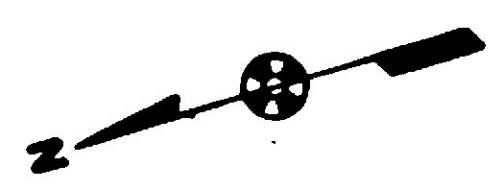
KITTERY

SPECIAL DETAILS

TOURIST INFORMATION CENTER
(NOT TO SCALE)

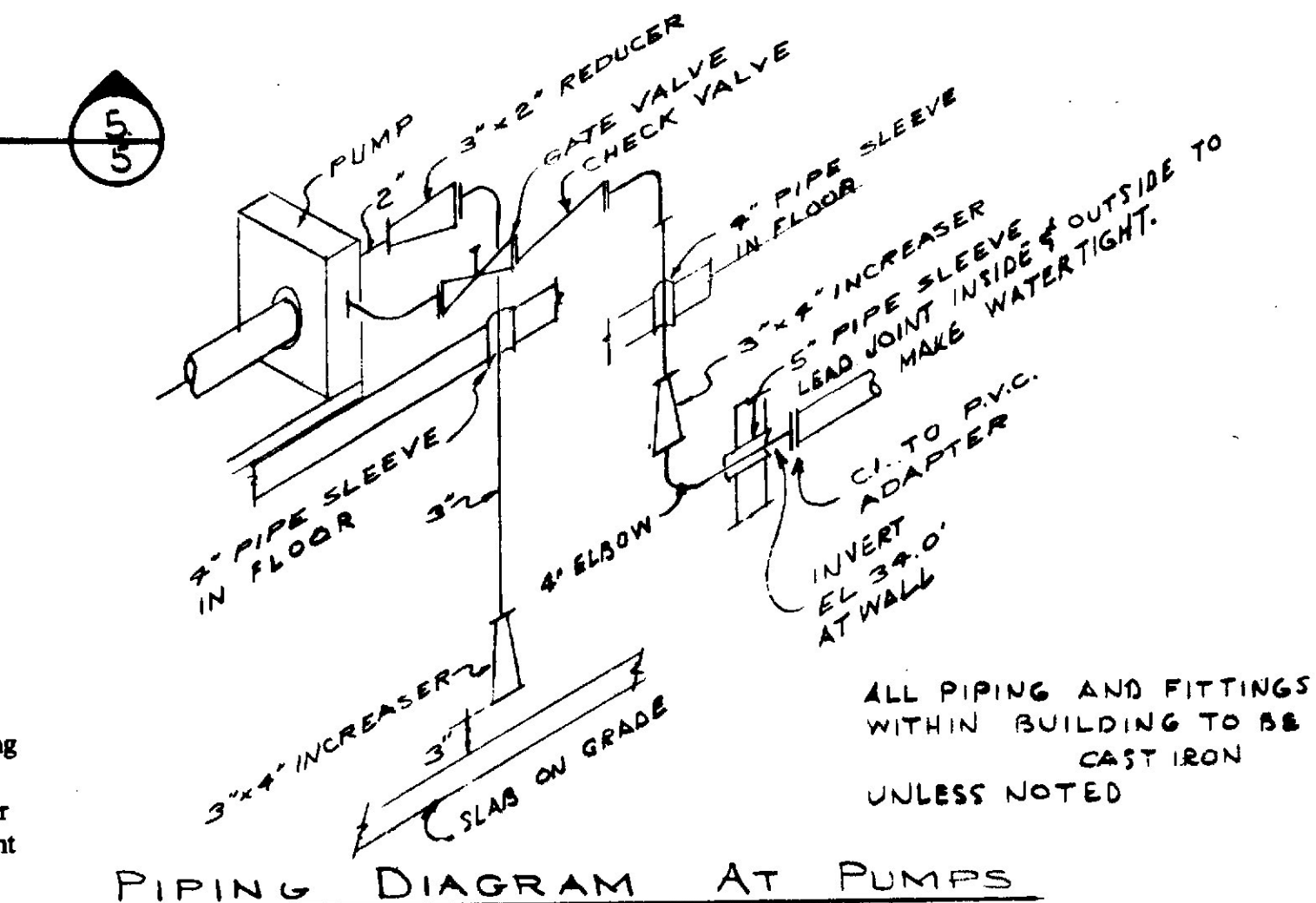
PROJECT DESIGN	INSPECTOR	DATE
DESIGN-DETAILED	BY	7-98
CHECKED	M. DAVIES	J.L.H.
REVISIONS		
FIELD CHANGES		
PLANS		

14FEB98-01.00.10



The floor plan illustrates the layout of a generator room with the following specifications and components:

- Generator:** A 35 kW, 208V, 3 PH ONAN (or equal) Generator is to be skid-mounted. The skid dimensions are 48" wide and 82.8" high. A 40" wide duct is indicated for the generator.
- Exhaust System:** An insulated exhaust pipe with a rain cap is shown. A new duct is to be installed for the exhaust.
- Electrical System:**
 - Proposed Incoming Underground Electrical Service enters the room.
 - A 100 AMP Service Disconnect Switch is located near the entrance.
 - A 125 AMP Automatic Transfer Switch is installed.
 - A 5 kW - 208V 1 PH Heating Unit is shown.
 - Three wall-mounted switches are indicated.
- Safety and Access:**
 - Exhaust Ventilation Louvers are to be installed at the top.
 - Intake Louvers are to be installed at the bottom.
 - Insulated Wall Thimble is shown for the exhaust pipe.
- Grounding:** Multiple GFCI (Ground Fault Circuit Interrupter) locations are marked throughout the room.



1. Contractor shall remove and properly dispose of all existing electrical (excluding lighting fixtures) and mechanical equipment within the existing pump station. Existing pumps and motors shall remain the property of Maine Department of Transportation. Contractor shall remove and deliver pumps, motors, and any equipment determined salvageable by the resident engineer to DOT York Camp on route 1 in York, Maine.
2. Existing intake and exhaust louvers shall be removed and properly disposed of. Install new louvers as shown on plans. Walls, interior and exterior, shall be repaired to like conditions.
3. Existing wet well and sledge well shall be thoroughly cleaned, all wastewater byproducts shall be removed and disposed of in strict compliance with current State and Federal regulations. Both wet well and sludge separation well shall be filled completely with flow able fill, 2000 psi concrete.
4. Interior concrete surface shall be thoroughly cleaned and repainted with approved concrete floor paint (gray). Existing wood surface shall be thoroughly cleaned and repainted with approved latex semi-gloss paint (white).
5. All exterior surfaces shall be thoroughly cleaned. The existing shingles shall be painted with approved cedar shingles sealant (clear) and the wood trim and door shall be painted to match existing.
6. Existing shrubbery around the perimeter of the existing pump house shall be removed and properly disposed of.
7. All influent and effluent piping shall be removed and plug as indicated on the plans. Existing wall and floor penetrations shall be sealed water tight.
8. Remove and replace all existing electrical wiring and conduit. All new conduit and wiring shall be installed to meet current N.E.C. and shall include a separate ground wire.
9. Install new 35 kW - 208 V - 3 PH with skid mounted fuel tank and vibration isolators as shown on the plans and in accordance with Manufacturers recommendations.

DETAIL SHOWS PIPING AT WET WALL
PUMPS. PIPING AT SLUDGE PUMP SIMILAR.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

KITTERY

SPECIAL DETAILS

TOURIST INFORMATION CENTER

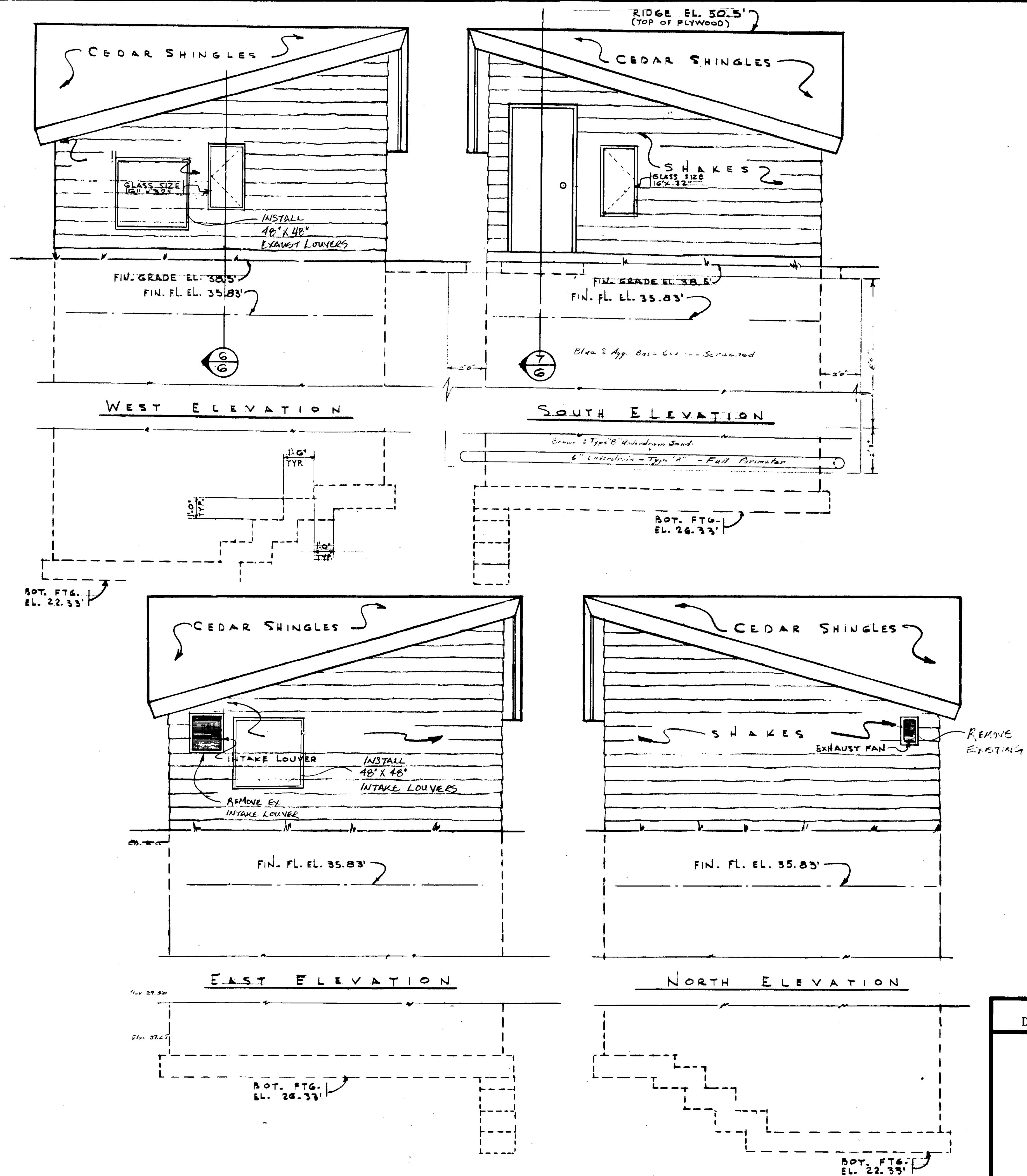
PROJECT DESIGN ENGINEER	BY	DATE
DESIGN-DETAILED	M. DAVIES J.L.H.	7-'98
CHECKED		
REVISED		
FIELD CHANGES		

PLANS

14FEB98-01.00.10

F.H.V.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	14-75-0100-14	14	14

KITTERY



PROJECT DESIGN ENGINEER	DATE
DESIGN-DETAILED	7-78
CHECKED	J.L.H.
REVISIONS	
FIELD CHANGES	

14FEB98-0100.10

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

KITTERY

SPECIAL DETAILS

TOURIST INFORMATION CENTER

SHEET OF AUGUSTA, MAINE

KITTERY TOURIST INFORMATION CENTER