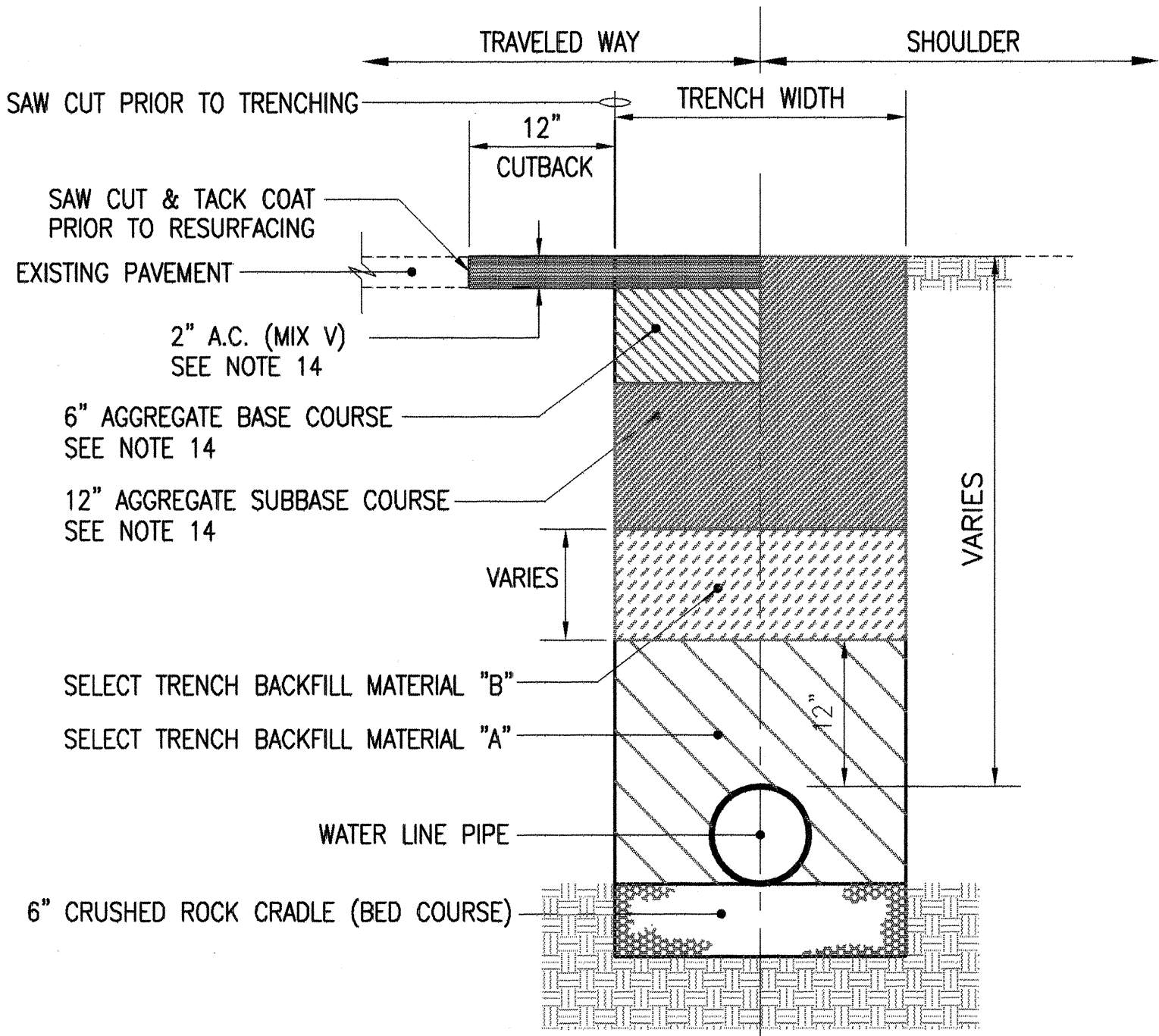


| FED.ROAD<br>DIST.NO. | STATE | FED.AID<br>PROJ.NO. | FISCAL<br>YEAR | SHEET<br>NO. | TOTAL<br>SHEETS |
|----------------------|-------|---------------------|----------------|--------------|-----------------|
| HAWAII               | HAW.  | RS-0130(24)         | 2000           | 55 S-1       | 55              |

WATER NOTES

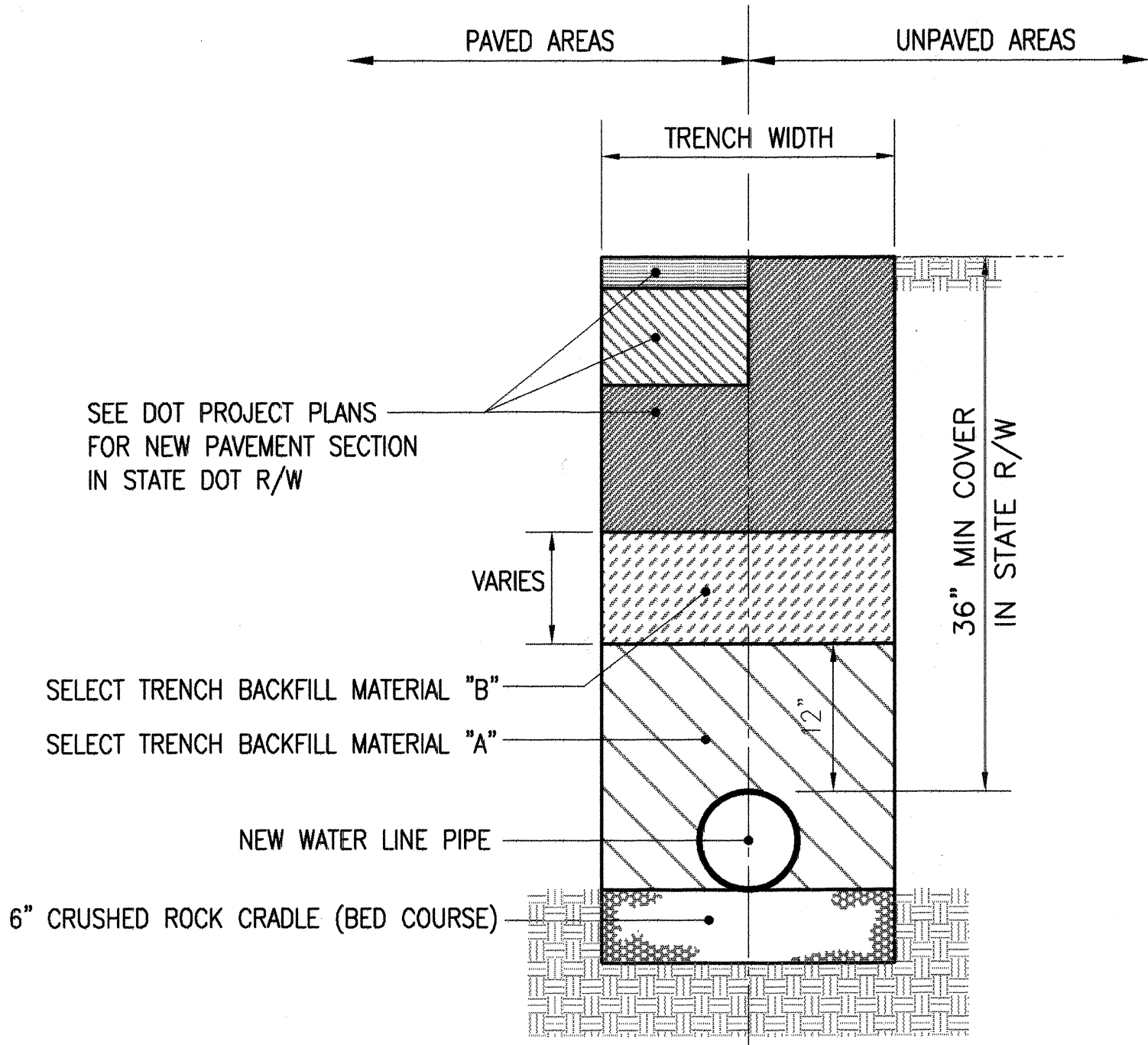
- ALL WORK SHALL CONFORM TO THE DEPARTMENT OF WATER SUPPLY'S "WATER SYSTEM STANDARDS", VOLUMES 1 AND 2, DATED 1985, AS AMENDED.
- THE CONTRACTOR SHALL INFORM THE D.W.S. ENGINEER 72 HOURS PRIOR TO THE BEGINNING OF ANY WATERLINE WORK AND TWO WEEKS PRIOR TO ANY CONNECTION, CHLORINATION, SHUT-OFF OR RELOCATION WORK.
- ALL WORK, EQUIPMENT, AND MATERIAL FURNISHED BY THE D.W.S. SHALL BE PAID FOR BY THE CONTRACTOR.
- ALL EXISTING WATERLINES, WATERLINE APPURTENANCES AND OTHER UTILITY LOCATIONS SHOWN ON THE PLANS ARE OBTAINED FROM LATEST RELIABLE SOURCES. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXACT LOCATION OF ALL UTILITIES IN THE FIELD AND SHALL BEAR ALL COST FOR ALL DAMAGES DURING THE CONTRACT PERIOD.
- ALL CONNECTIONS TO EXISTING WATERLINES SHALL BE DONE BY D.W.S. CONTRACTOR SHALL PERFORM ALL EXCAVATION, BACKFILL, ROAD REPAIR, TRAFFIC CONTROL, AND PROVIDE EQUIPMENT NECESSARY TO COMPLETE THE CONNECTION.
- WHERE WATER SHUT-OFF OF MORE THAN 3 HOURS BECOMES NECESSARY, THE CONTRACTOR, AT HIS OWN COST, SHALL PROVIDE A TEMPORARY BY-PASS LINE. THE BY-PASS SIZE SHALL BE DETERMINED BY THE D.W.S. ENGINEER. IF NECESSARY, THE D.W.S. ENGINEER MAY REQUIRE A BY-PASS LINE, REGARDLESS OF THE EXPECTED WATER SHUT-OFF PERIOD.
- MINIMUM HORIZONTAL CLEARANCE BETWEEN WATERLINES AND OTHER UTILITIES SHALL BE 8 FEET UNLESS OTHERWISE SPECIFIED. MINIMUM VERTICAL CLEARANCE BETWEEN WATERLINE AND OTHER UTILITIES SHALL BE 12" PROVIDED CONCRETE JACKETS ARE USED, AND 18" IF NO JACKETS ARE USED. IN ALL INSTANCES, THE WATERLINES SHALL BE AT A GRADE HIGHER THAN OTHER UTILITIES.
- ALL FITTINGS (CLASS 250), ALL GATE VALVES (CLASS 200), AND ALL BUTTERFLY VALVES (CLASS 250) WITH EPOXY COATED INTERIOR SHALL BE CAST IRON OR DUCTILE IRON WITH MECHANICAL JOINTS UNLESS OTHERWISE SPECIFIED.
- ALL PIPELINES, 4" AND LARGER IN DIAMETER, SHALL BE DUCTILE IRON, PUSH ON JOINT CLASS 52, AND ALL PIPELINES SMALLER THAN 4" IN DIAMETER SHALL BE SOFT COPPER, TYPE K, UNLESS OTHERWISE SPECIFIED.
- THE WATERLINE SHALL BE TESTED AT A MINIMUM OF 225 PSI OR 1 1/2 TIMES THE STATIC PRESSURE, WHICHEVER IS GREATER, AT THE LOW POINT UNDER D.W.S. SUPERVISION JUST PRIOR TO PAVING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CHLORINATION OF THE WATER SYSTEM AND SHALL BEAR ALL COST. THE PERSONS ENGAGED TO DO THE CHLORINATION WORK MUST BE LICENSED BY THE STATE OF HAWAII AND APPROVED BY THE DEPARTMENT OF HEALTH.
- SOLDER AND FLUX SHALL CONTAIN NO MORE THAN 0.2% LEAD.
- THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE DEPARTMENT OF HAWAIIAN HOME LAND (DHHL) FOR COMPACTION TESTING OF THE WATER LINE TRENCHES FROM THE INTERSECTION OF THE HIGHWAY AND KALUAHINE ST. (STA. 211+63) TO THE KEONEPOKO NUI WELL AND RESERVOIR SITE (STA. 233+33).
- FOR REPAIR WORK FOLLOW THICKNESS OF PAVEMENT REPAIR SECTION OR MATCH EXISTING, WHICHEVER IS GREATER.



TYPICAL TRENCH & PAVEMENT REPAIR SECTION  
WITHIN DEPT. OF HAWAIIAN HOME LANDS SUBDIVISION

NOTES:

- 6" CRUSHED ROCK CRADLE**
  - WHERE UTILITIES WITHIN THE WATER TABLE, USE "3F TO "2
  - IN SOFT AREAS, USE SAND EQUIVALENT (S.E.) > 20
- SELECT TRENCH BACKFILL MATERIAL "A"**
  - S.E. > 20
  - 8" MAXIMUM LIFTS
  - 95% COMPACTION
- TRENCH BACKFILL MATERIAL "B"**
  - S.E. MUST NOT BE < THE AREA BEING FILLED AND IN NO CASE SHALL THE S.E. BE < 2 REGARDLESS OF WHERE IT IS USED
  - 8" MAXIMUM LIFTS
  - 95% COMPACTION
- SUBBASE COURSE**
  - S.E. > 25
  - 8" MAXIMUM LIFTS
  - 95% COMPACTION
  - LOCAL MATERIAL MAY BE USED OUTSIDE OF SHOULDER



TYPICAL TRENCH WITHIN STATE RIGHT OF WAY

|                  |      |
|------------------|------|
| ORIGINAL<br>PLAN | DATE |
| NOTE BOOK        |      |
| DESIGNED BY      |      |
| QUANTITIES BY    |      |
| CHECKED BY       |      |
| No.              |      |

Job No. 85-180.9 File 05-NOTES Disk MAXUU(1A) Plot 1=1 05/05/2000 SJA

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
  
**WATER NOTES**  
**STA. 211+63 TO STA. 233+33**  
KEAAU-PAHOA ROAD  
PARADISE PARK SECTION-PHASE II & III  
FED. AID PROJ. NO. RS-0130(24)  
Scale: As Noted Date:  
SHEET No. 2 OF 2 SHEETS