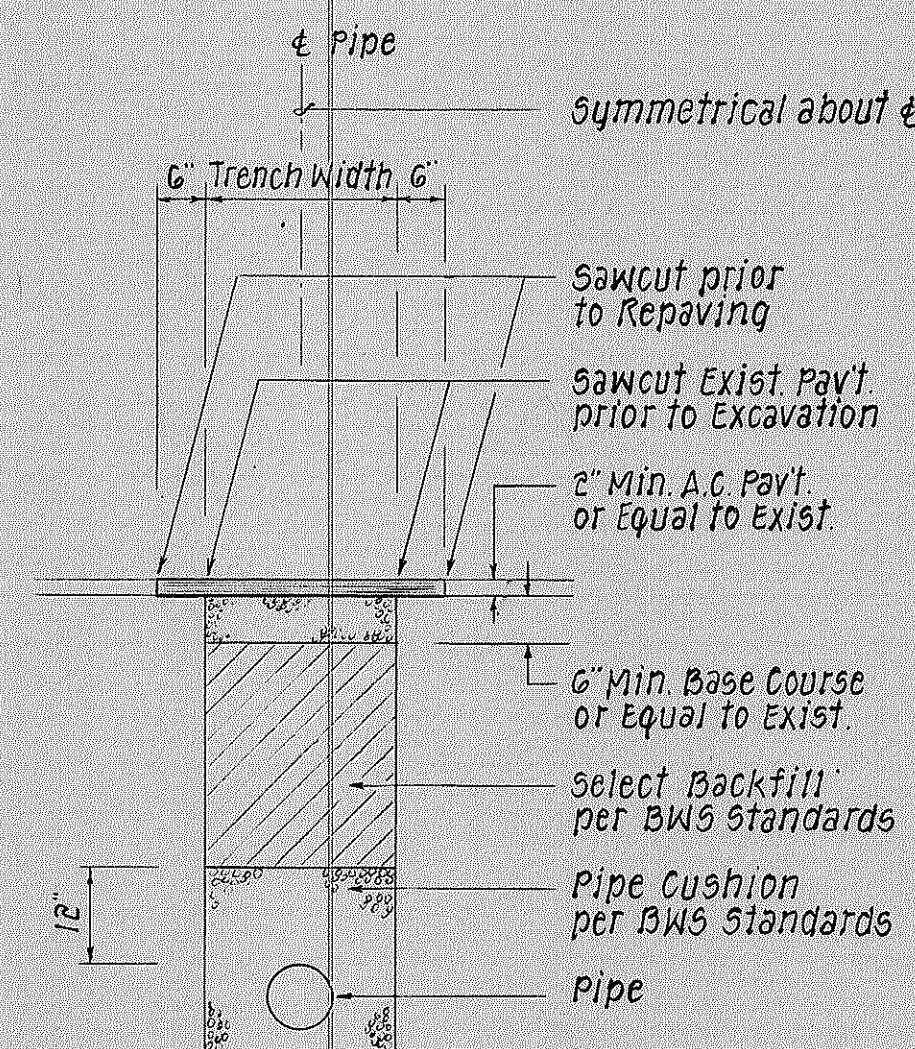


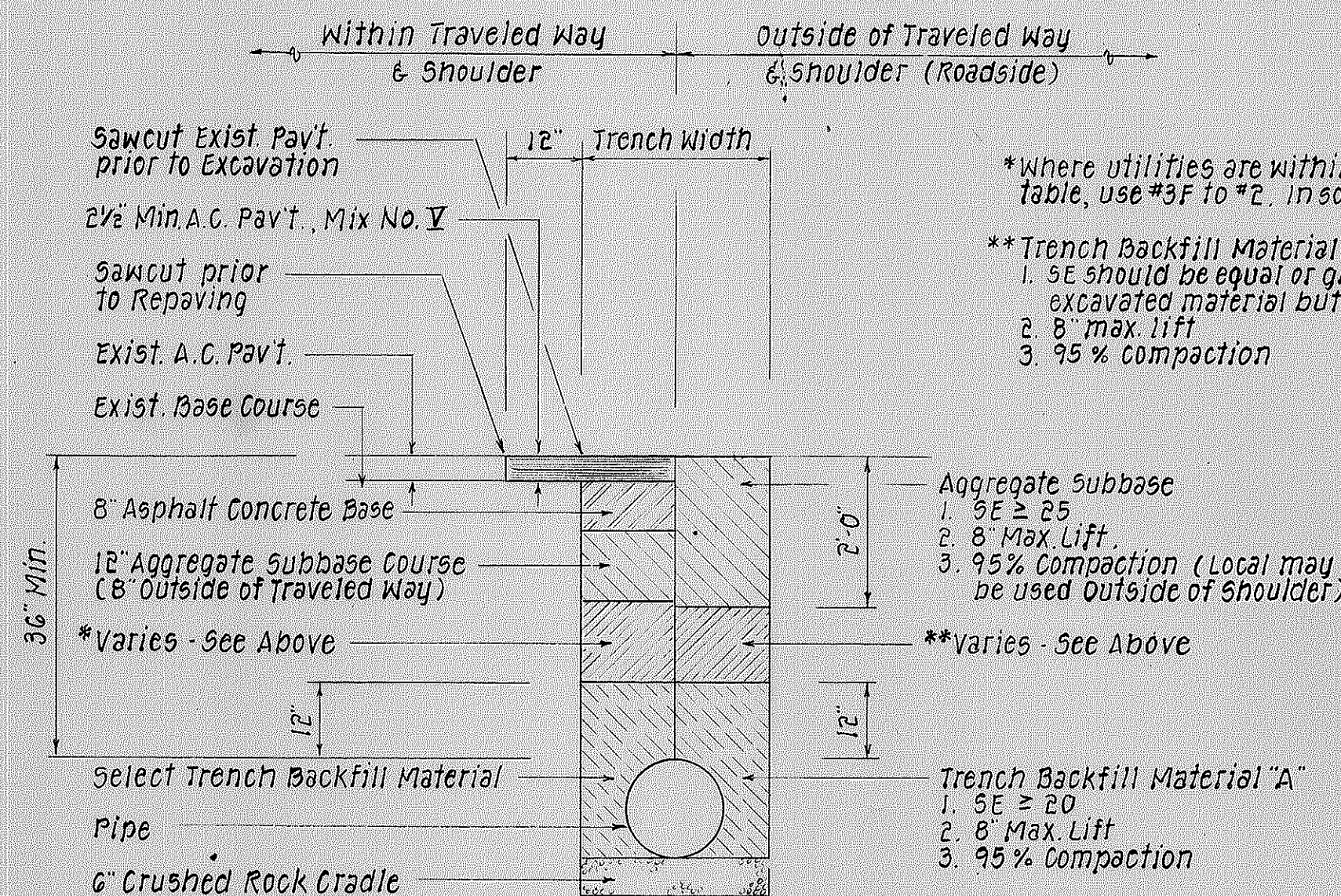
WATER NOTES

- UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND CONSTRUCTION OF WATER SYSTEM FACILITIES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE CITY AND COUNTY OF HONOLULU BOARD OF WATER SUPPLY'S "WATER SYSTEM STANDARDS," VOLUME 1, DATED 1985, AND THE "APPROVED MATERIAL LIST AND STANDARD DETAILS FOR WATER SYSTEM CONSTRUCTION," VOLUME 2, DATED 1985, AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS.
- ALL PLANS APPROVED BY THE BOARD OF WATER SUPPLY ARE BASED SOLELY ON THE ADEQUACY OF THE WATER SUPPLY. ALL OTHER FEATURES OF THE WATER SYSTEM, SUCH AS LINES, GRADES, FITTINGS, ETC., AND DRAINAGE AND OTHER FEATURES OF IMPROVEMENTS SHALL NOT BE THE RESPONSIBILITY OF THE BOARD OF WATER SUPPLY.
- TEST PRESSURE SHALL BE ONE OF THE FOLLOWING:
 - PREVAILING LINE PRESSURE, JOINTS LEFT EXPOSED FOR 24 HOURS TO CHECK FOR LEAKS PRIOR TO BACKFILL.
 - 150 PSI.
- THE CONTRACTOR SHALL NOTIFY THE BOARD OF WATER SUPPLY IN WRITING ONE WEEK PRIOR TO COMMENCING WORK ON THE WATER SYSTEM.
- WATER COMMITMENT SHALL BE CANCELLED IF THE APPROVED CONSTRUCTION PLANS ARE ALLOWED TO LAPSE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL WATER LINES DURING CONSTRUCTION. THE CONTRACTOR SHALL BE ESPECIALLY CAREFUL WHEN EXCAVATING BEHIND WATER LINE TEES AND BENDS WHEREVER THERE IS A POSSIBILITY OF WATER LINE MOVEMENT DUE TO REMOVAL OF THE SUPPORTING EARTH BEYOND THE EXISTING REACTION BLOCKS. THE CONTRACTOR SHALL TAKE WHATEVER MEASURES NECESSARY TO PROTECT THE WATER LINES, SUCH AS CONSTRUCTING SPECIAL REACTION BLOCKS (WITH BWS APPROVAL) AND/OR MODIFYING HIS CONSTRUCTION METHODS.
- THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES AS SHOWN ON THE PLANS ARE FROM THE LATEST AVAILABLE DATA, BUT IS NOT GUARANTEED AS TO THE ACCURACY OR THE ENCOUNTERING OF OTHER OBSTACLES DURING THE COURSE OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL PAY FOR ALL DAMAGES TO EXISTING UTILITIES.
- PRIOR TO INSTALLATION, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL BY THE BOARD OF WATER SUPPLY, THE MANUFACTURER'S CERTIFICATION THAT ALL CAST IRON (GRAY OR DUCTILE) FITTINGS FOR THE PROJECT CONFORM IN ALL RESPECTS TO THE WATER SYSTEM STANDARDS, DATED 1985.
- POLYGON SHAPE FOR MECHANICAL JOINT GLANDS AS DESCRIBED IN AWMA STANDARD C111 SHALL BE "STRAIGHT-SIDED" AND SHALL BE APPLICABLE TO BOTH CAST IRON AND DUCTILE IRON GLANDS.
- AFTER INSTALLATION OF TAPPING SLEEVE AND VALVE PRIOR TO ACTUAL TAPPING OPERATIONS, THE ASSEMBLY SHALL BE TESTED AT 150 PSI ON BOTH SIDES OF THE VALVE.
- CONTRACTOR SHALL CUT AND PLUG ALL EXISTING UNUSED LATERALS AT THE MAIN WHETHER OR NOT SHOWN ON THE PLANS. METER AND VALVE BOXES TO BE OR ALREADY ABANDONED SHALL BE DEMOLISHED OR REMOVED AND PROPERLY DISPOSED OF. THE DAMAGED AREA SHALL BE REPAIRED TO AN EQUAL OR BETTER CONDITION THAN THE IMMEDIATE AREA. ALL WORK SHALL BE DONE AT THE EXPENSE OF THE CONTRACTOR.
- REAPPROVAL SHALL BE REQUIRED IF THIS PROJECT IS NOT UNDER CONSTRUCTION WITHIN A PERIOD OF TWO YEARS.

TRENCH WIDTH	WATER LINE DIAMETER (INCHES)	PAYMENT TRENCH WIDTH (INCHES)
6	6	24
Below 4	Below 4	12



TYPICAL PAVEMENT RESTORATION
(FOR BWS WATERLINES OUTSIDE STATE R/W)
Not to Scale

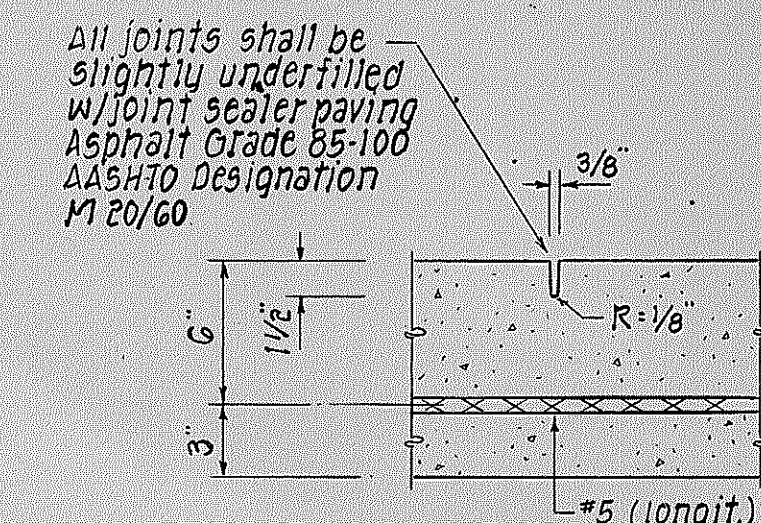


TYPICAL TRENCH RESTORATION
(WITHIN STATE RIGHT-OF-WAY)
Not to Scale

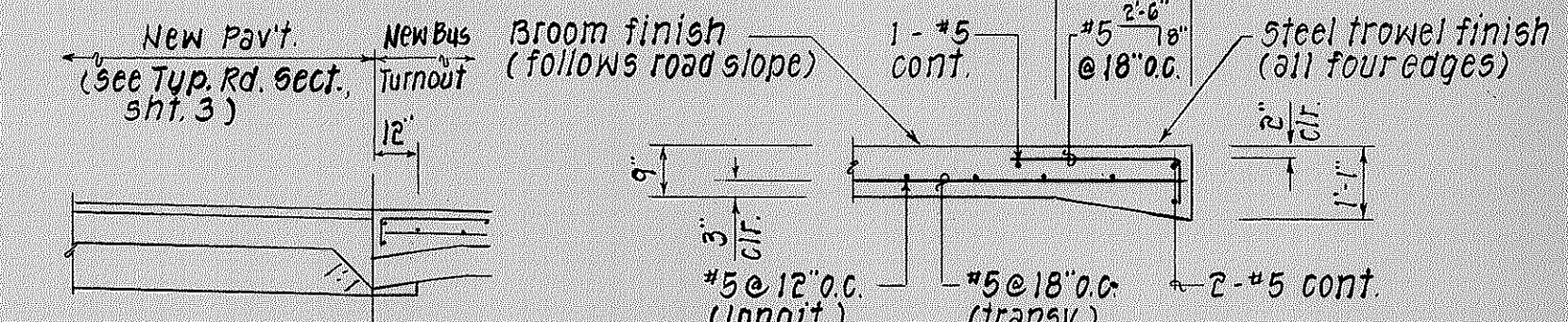
*Where utilities are within the water table, use #3F to #2. In soft areas, use SE > 20

**Trench Backfill Material "B"

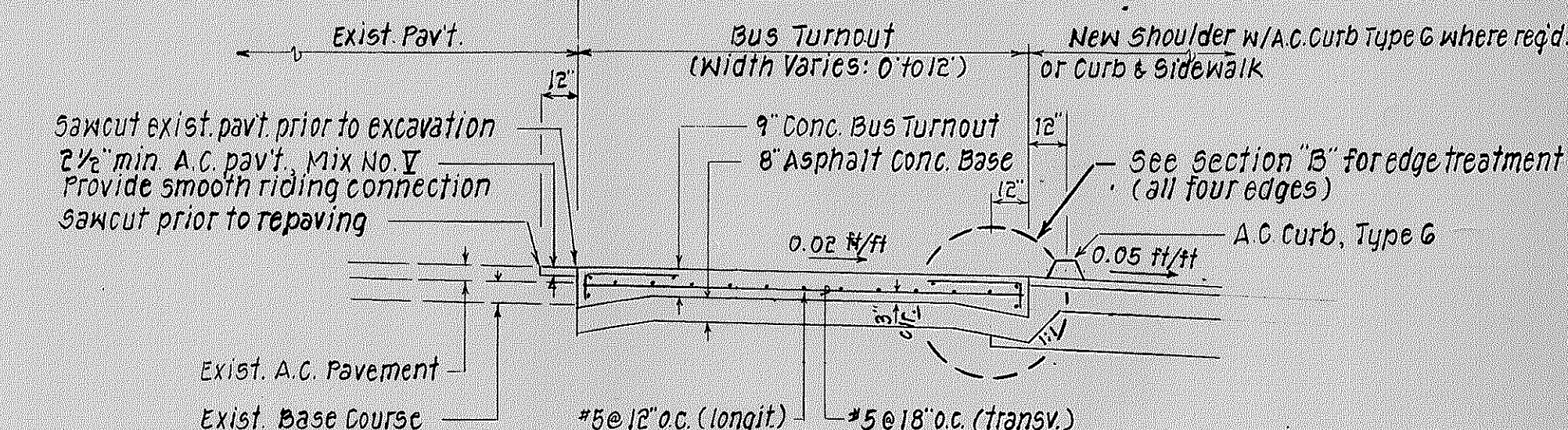
- SE should be equal or greater than SE or excavated material but less than 2.
- 8" max. lift
- 95% compaction



DETAIL "C"
DUMMY GROOVE JOINT
Scale: 1 1/2" = 1'-0"



SECTION "B"
Scale: 3/8" = 1'-0"



TYPICAL SECTION - PAVEMENT FOR BUS TURNOUT
Scale: 1/4" = 1'-0"

- NOTES:**
- Transverse joints shall be weakened plane contraction joints spaced less than 20 feet apart. See Detail "C".
 - Reinforcing steel shall conform to ASTM A615 Grade 40.
 - Concrete shall be Class "A" conforming to Hawaii Standard Specifications for Road and Bridge Construction (1985).

Approved: _____ Date _____

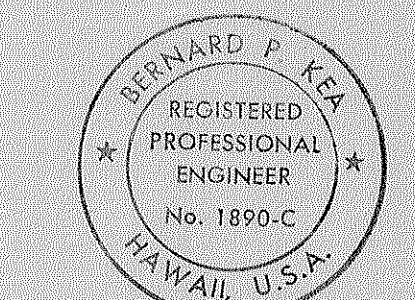
James H. King 12/2/85
Chief, Division of Engineering, D.P.W.
(For Grading & Construction within City R/W only)

John H. P. H. 10-15-89
Director, Dept. of Transportation Services
(For Construction within City R/W only)

John H. P. H. 9/12/89
Chief, Planning & Engineering, BWS

Reapproved due to major changes: _____ Date _____

M. Fukunaga 1/23/90
Chief, Division of Engineering, D.P.W.
(For Grading & Construction within City R/W only)



THIS WORK WAS PREPARED BY
OR UNDER MY SUPERVISION
Bernard P. K. K.
Signature

WATER NOTES **& MISCELLANEOUS DETAILS**

KAMEHAMEHA HIGHWAY WIDENING

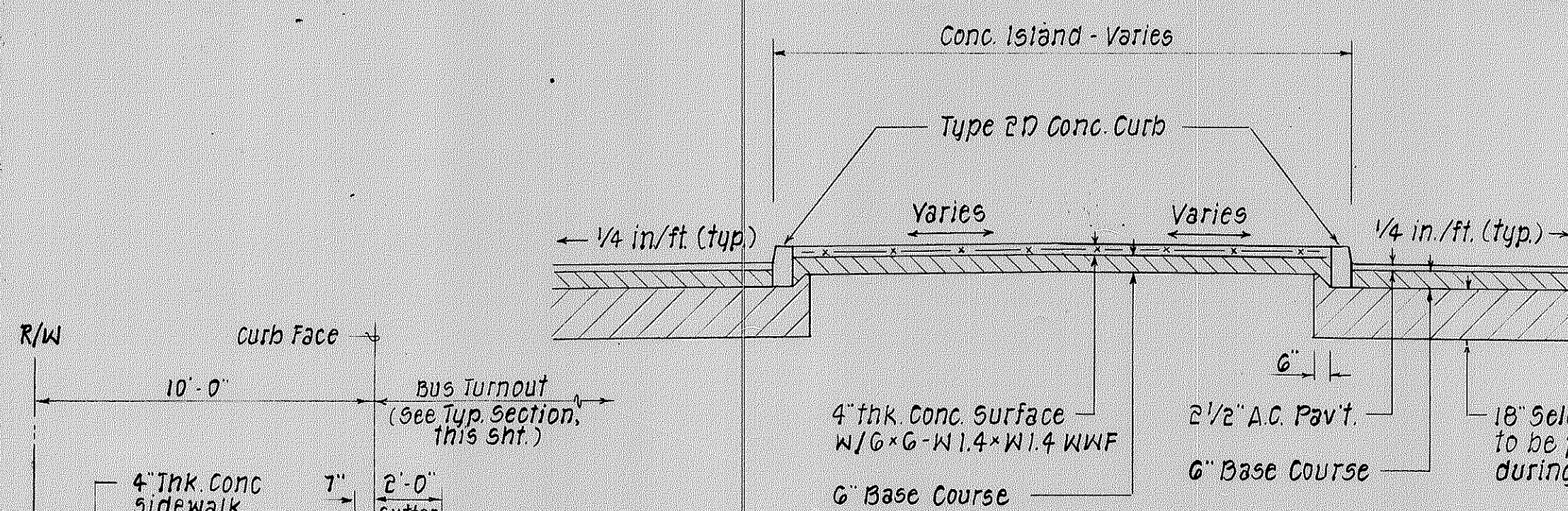
PROJ. NO. 99C-01-90

SCALE: AS NOTED DATE: JAN. 1990

SHEET NO. 1 OF 1 SHEETS

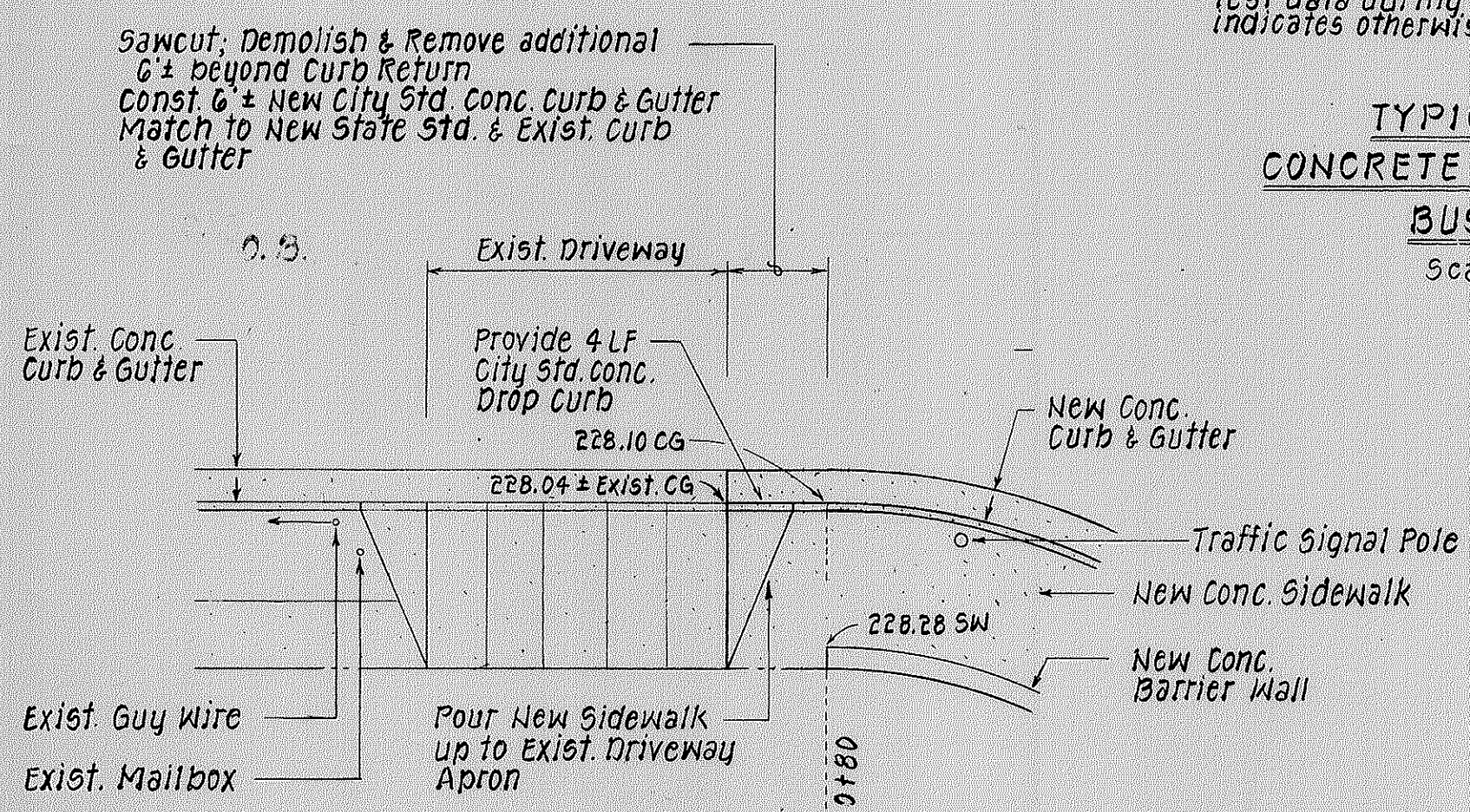
RECORD DRAWINGS

18

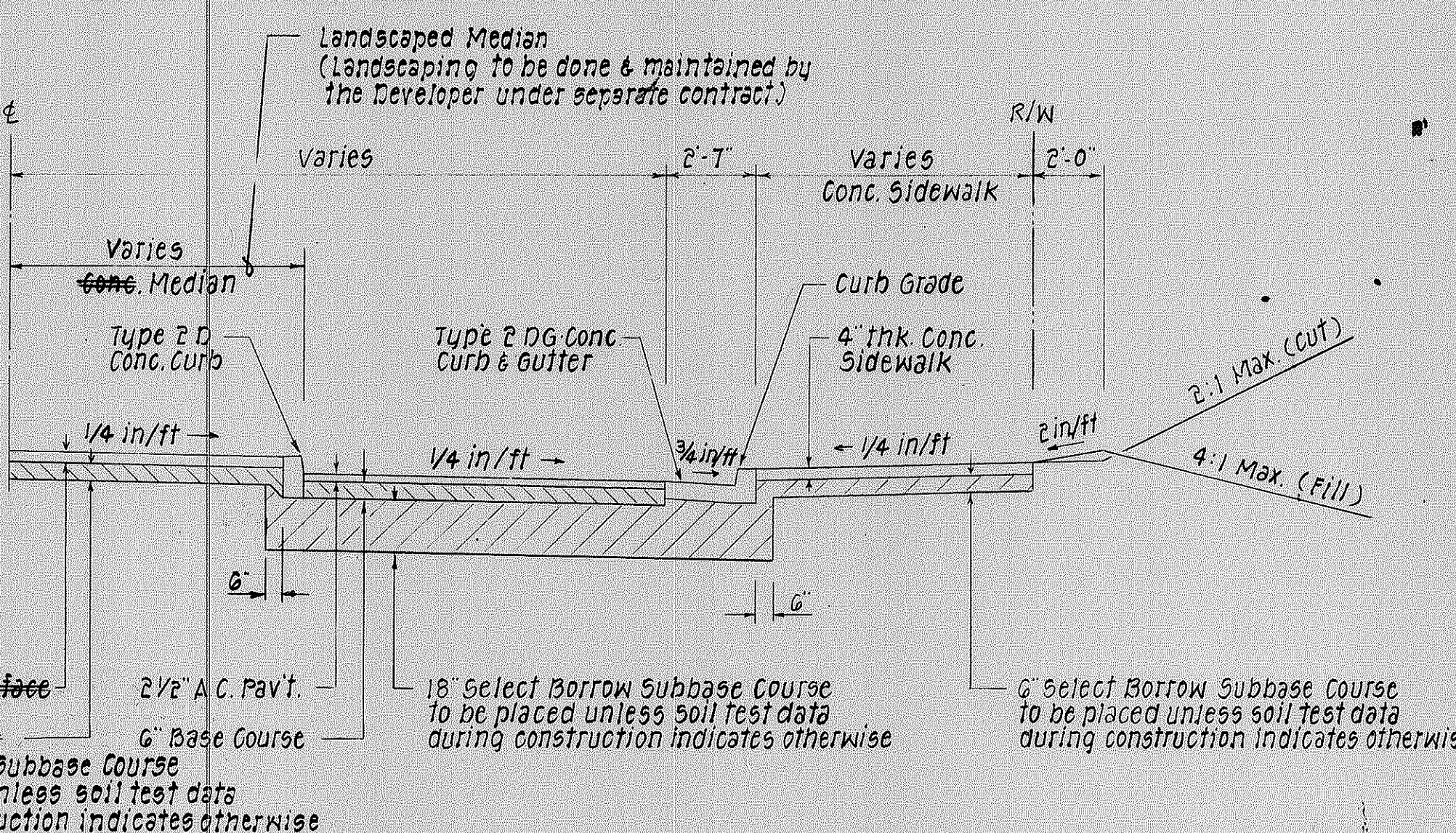


TYPICAL SECTION - TRAFFIC ISLAND
Scale: 1/4" = 1'-0"

TYPICAL SECTION
CONCRETE CURB @ INBOUND
BUS TURNOUT
Scale: 1/4" = 1'-0"



INSET "A"
Scale: 1" = 10"



TYPICAL HALF SECTION - LUMIAUUAU & LUMIAINA ST. EXTS.
Scale: 1/4" = 1'-0"

DATE: _____	DESIGNED BY: _____	CHECKED BY: _____
ORIGINAL PLAN: _____	NOTED BY: _____	NO. _____