Phase Diagram	Phase No.	1	2	3	4	5	6	7	8
	Phase 1&5	←G / R	R	←G / R	R	R	R	R	R
	Change 1&5	Phase 1&5 Change to Phase 1&6 or to Phase 2&5							
	Phase 1&6	←G / G	G	R	R	R	R	R	R
	Change 1&6	←Y / Y	Y	R	R	R	R	R	R
	Phase 2&5	R	R	←G / G	G	R	R	R	R
	Change 2&5	R	R	←Y / Y	Y	R	R	R	R
	Phase 2&6	G	G	G	G	R	R	R	R
	Change 2&6	Y	Y	Y	Y	R	R	R	R
	Phase 3&7	R	R	R	R	←G / R	R	←G / R	R
	Change 3&7	Phase 3&7 change to Phase 4&7 or to Phase 3&8							
	Phase 4&7	R	R	R	R	R	R	←G / G	G
	Change 4&7	R	R	R	R	R	R	←Y / Y	Y
	Phase 3&8	R	R	R	R	←G / G	G	R	R
	Change 3&8	R	R	R	R	←Y / Y	Y	R	R
	Phase 4&8	R	R	R	R	G	G	G	G
	Change 4&8	R	R	R	R	Y	Y	Y	Y
	Flash	FL. Y	FL. Y	FL. Y	FL. Y	FL. R	FL. R	FL. R	FL. R

NOTES : ←G green arrow
←Y yellow arrow
– Phase 1&5 and phase 2&7 may be skipped

ALL 12" HEADS

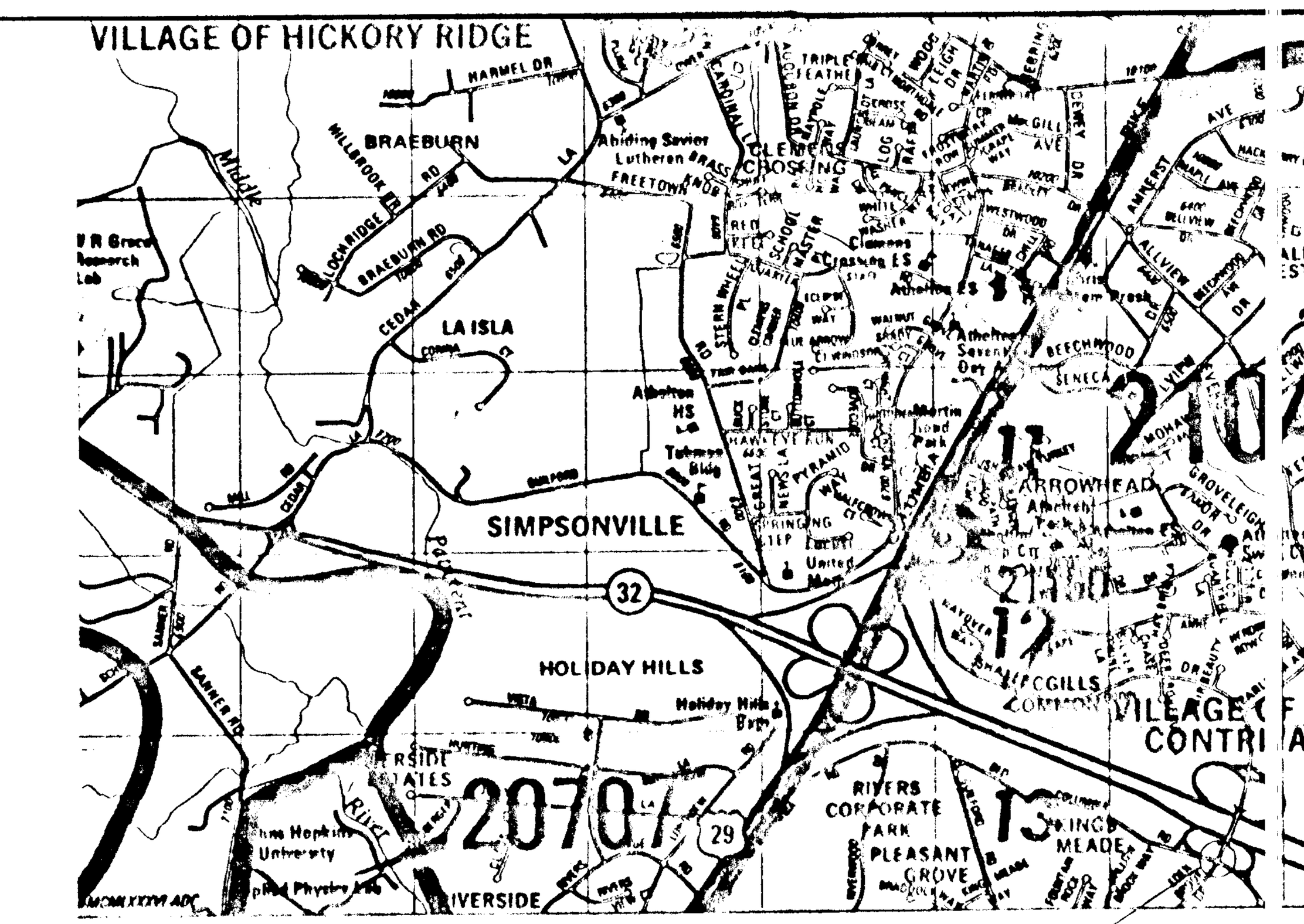
9

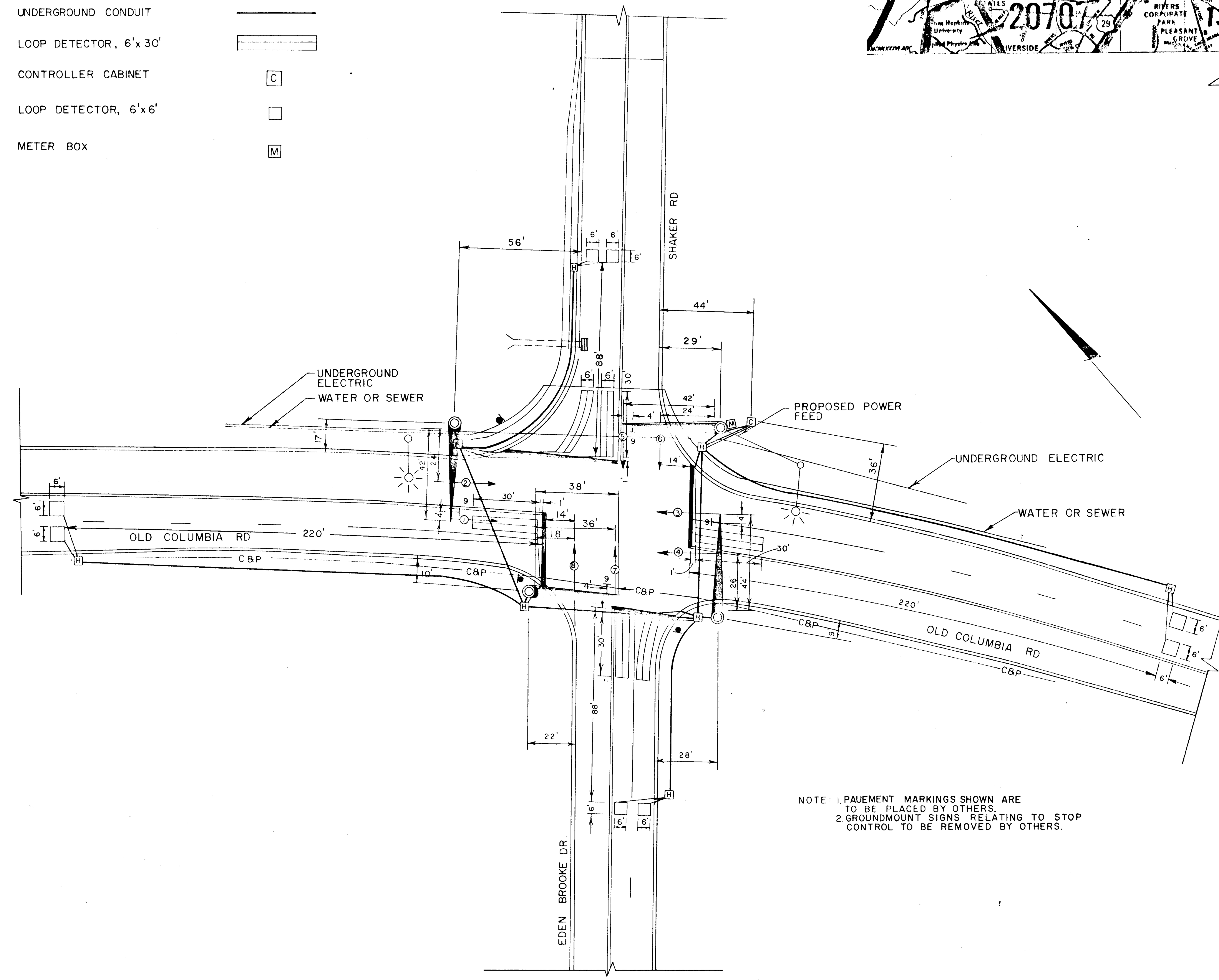
LEFT TURN
YIELD
ON GREEN

R10-12
30" x 42"

LEGEND

	PROPOSED	EXISTING
STEEL POLE	◎	
MAST ARM		
SIGNAL HEAD		
LUMINAIRE		
SIGN GROUNDMOUNTED		
SIGN MAST ARM MOUNT	⊥	
HAND BOX	H	
UNDERGROUND CONDUIT		
LOOP DETECTOR, 6'x 30'		
CONTROLLER CABINET	C	
LOOP DETECTOR, 6'x6'	□	
METER BOX	M	





NOTE: 1. PAVEMENT MARKINGS SHOWN ARE TO BE PLACED BY OTHERS.
2. GROUNDMOUNT SIGNS RELATING TO STOP CONTROL TO BE REMOVED BY OTHERS.

SCALE: 1 INCH = 30 FEET

C1470A01

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 8/12/87
Acting CHIEF, BUREAU OF ENGINEERING — DATE 8-12-87
Elizabeth A. Calia 8/12/87
CHIEF, DIV. ROADS, BRIDGES & STM. DRNS.

DES: AG
DRN: JSL
CHK: TAR
DATE: 8/10/87

BY	NO.	REVISION	DATE

600' SCALE MAP NO. ______ BLOCK NO. ______

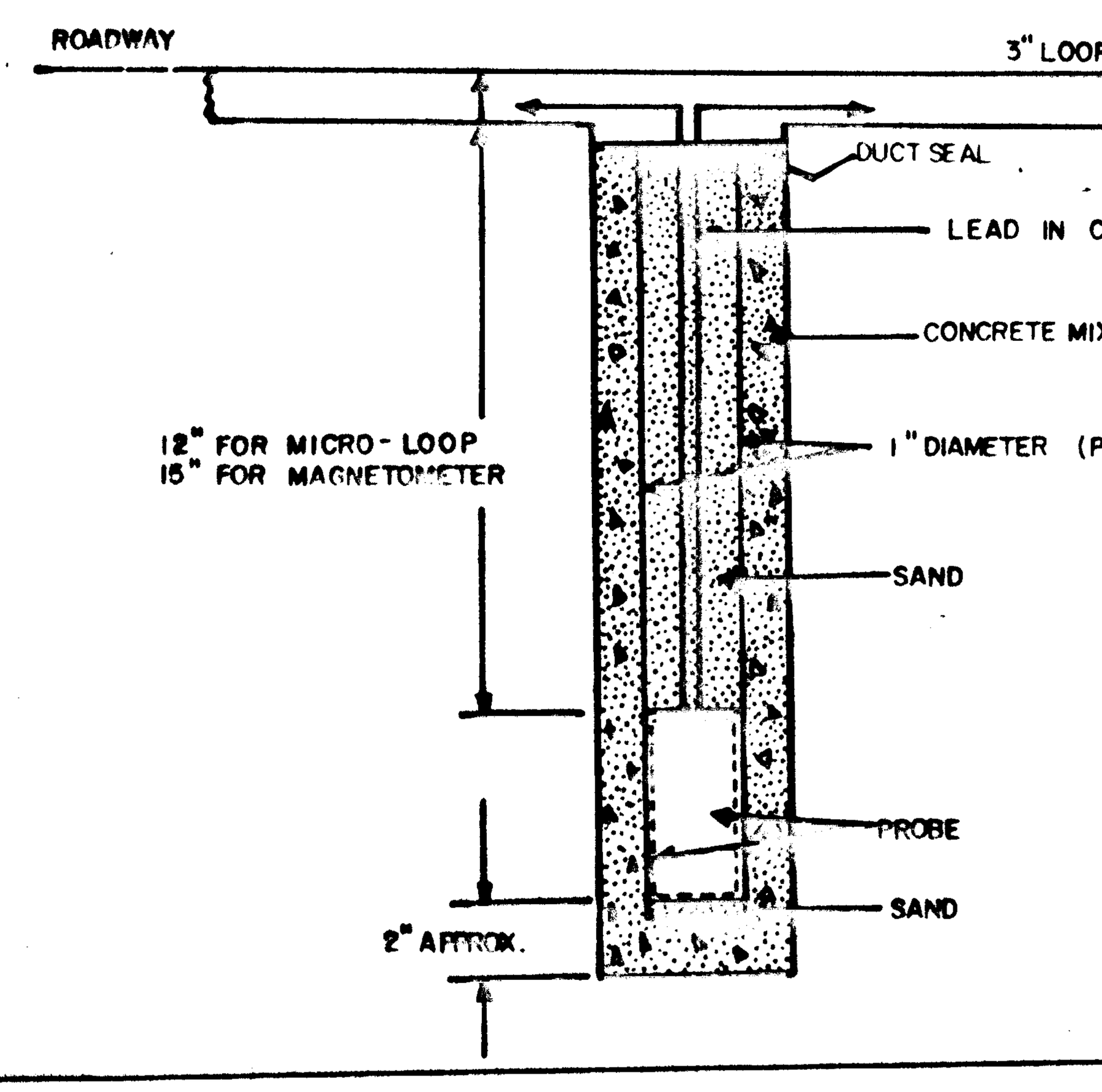
TRAFFIC CONTROL
SIGNAL PLAN

SHAKER RD / OLD COLUMBIA RD / EDEN BROOKE
CAPITAL PROJECT NO. T-7023
SIGNAL NO. TF-264
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

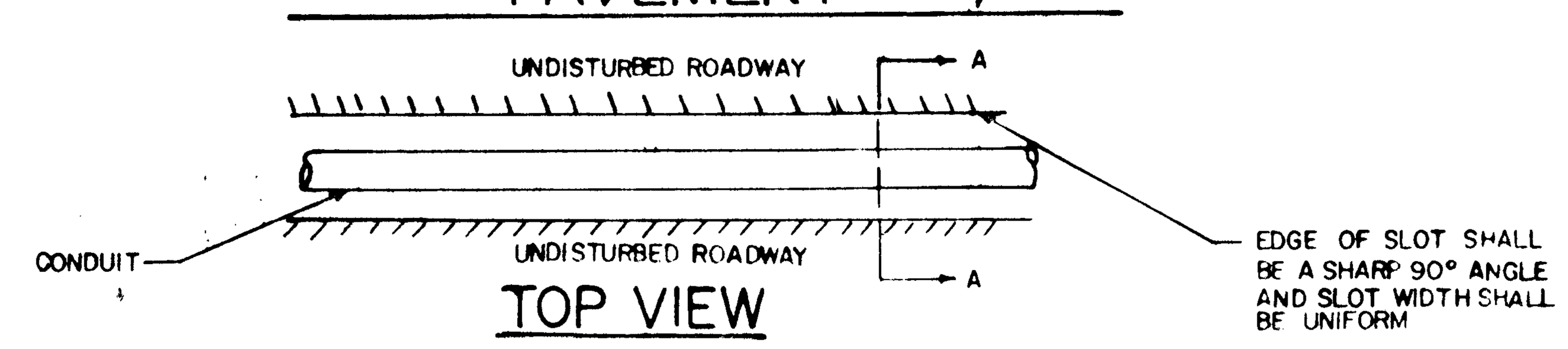
BRUNING 69150

TYPICAL FOR MICRO - LOOP/MAGNETOMETER INSTALLATION

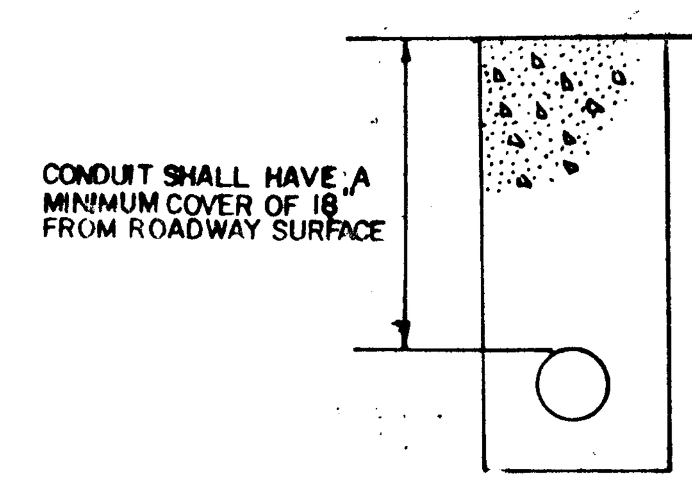


NOTE:
INSTALLATION OF MICRO - LOOP PROBE SHALL INCLUDE 1" P.V.C CONDUIT, CONCRETE AND SAND. THESE THREE ITEMS WILL NOT BE MEASURED BUT SHALL BE INCIDENTAL TO THE PAY ITEM "INSTALLATION OF MICRO -LOOP".

SLOT TRENCH CONDUIT IN PAVEMENT

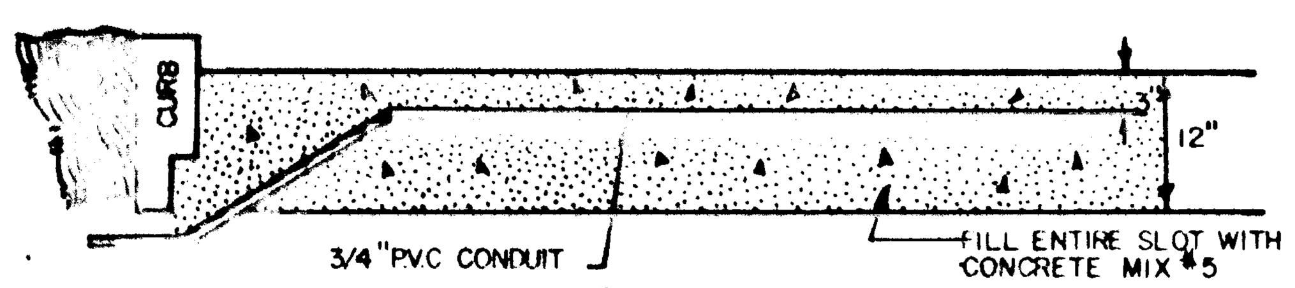


TOP VIEW

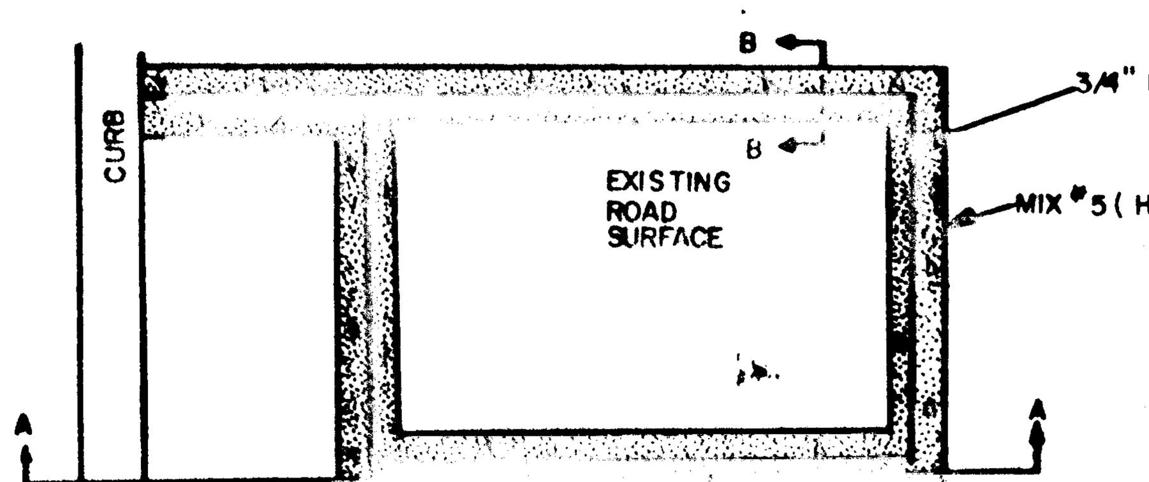


SECTION A-A

TYPICAL FOR P.V.C LOOP PLACEMENT

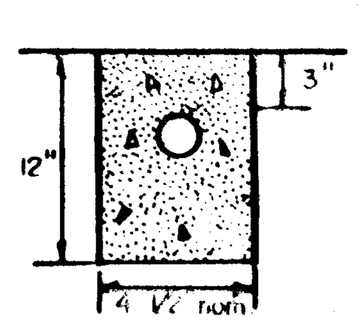


SECTION A-A



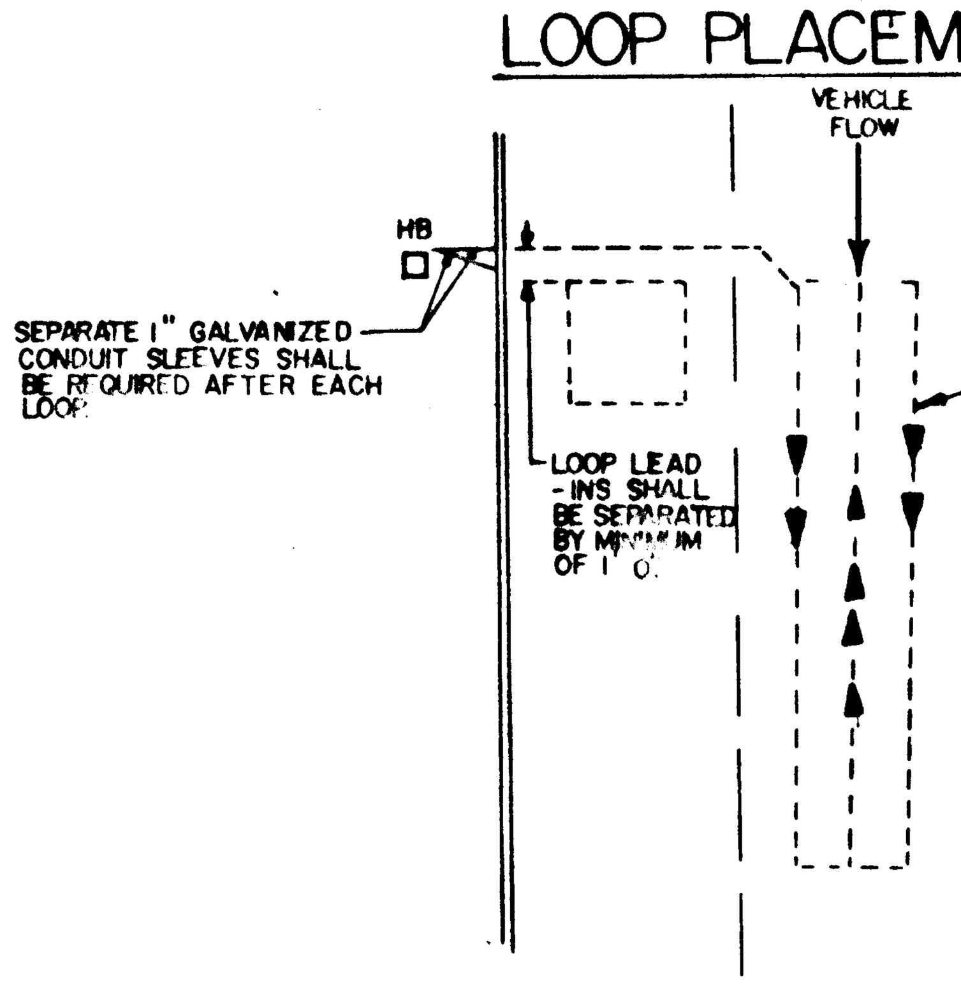
TOP VIEW

NOTE ALL CONDUIT ELBOWS & TEES SHALL HAVE ACCESS COVERS FOR EASE OF WIRE INSTALLATION



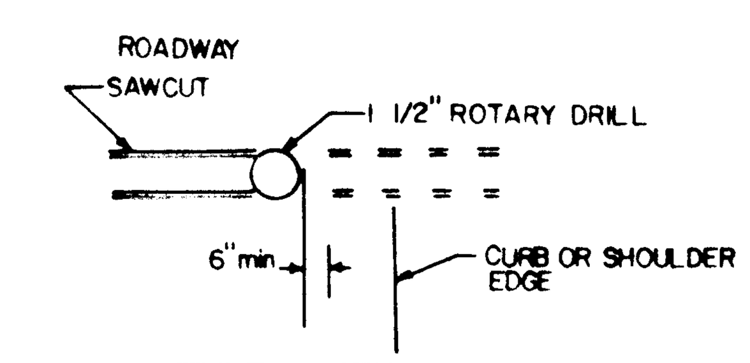
SECTION B-B

LOOP PLACEMENT

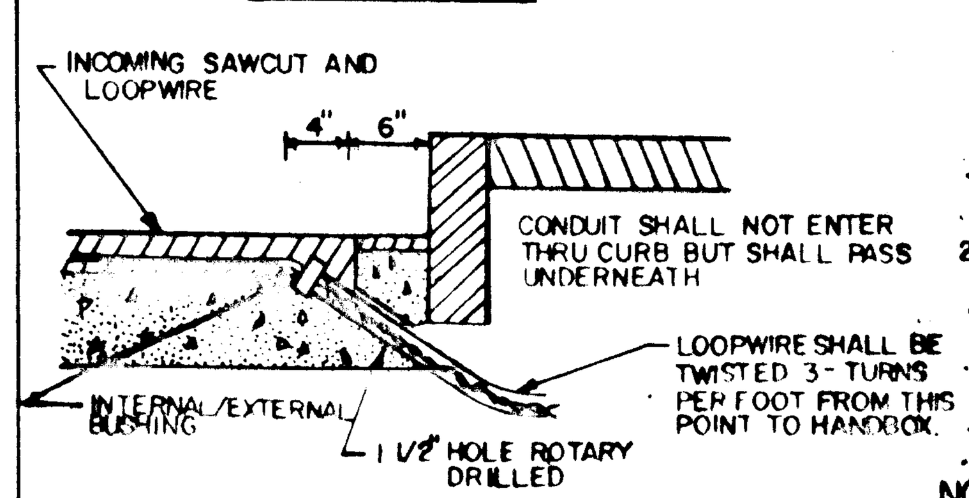


NOTES:
1. WHEN A LOOP CROSSES A ROADWAY JOINT, THE LOOP SHALL BE PLACED IN TWO SECTIONS.
2. THE LOOPS ARE TO BE PLACED IN THE CENTER OF THE LANE UNLESS OTHERWISE NOTED ON PLANS.

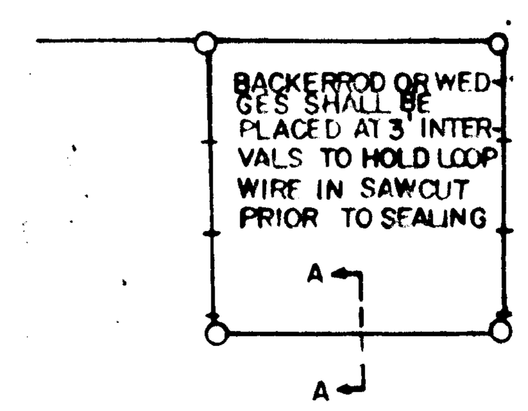
SAWCUT & CURB ENTRANCE DETAIL

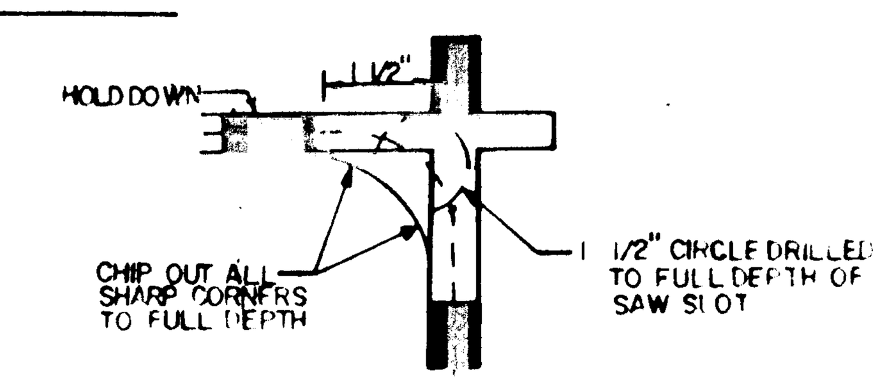


TOP VIEW

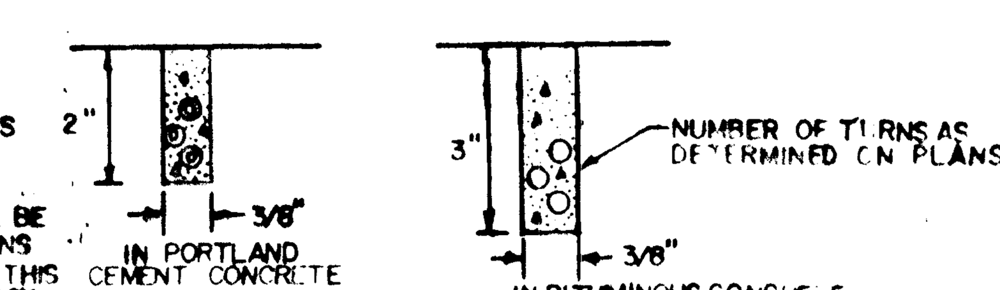


SIDE VIEW





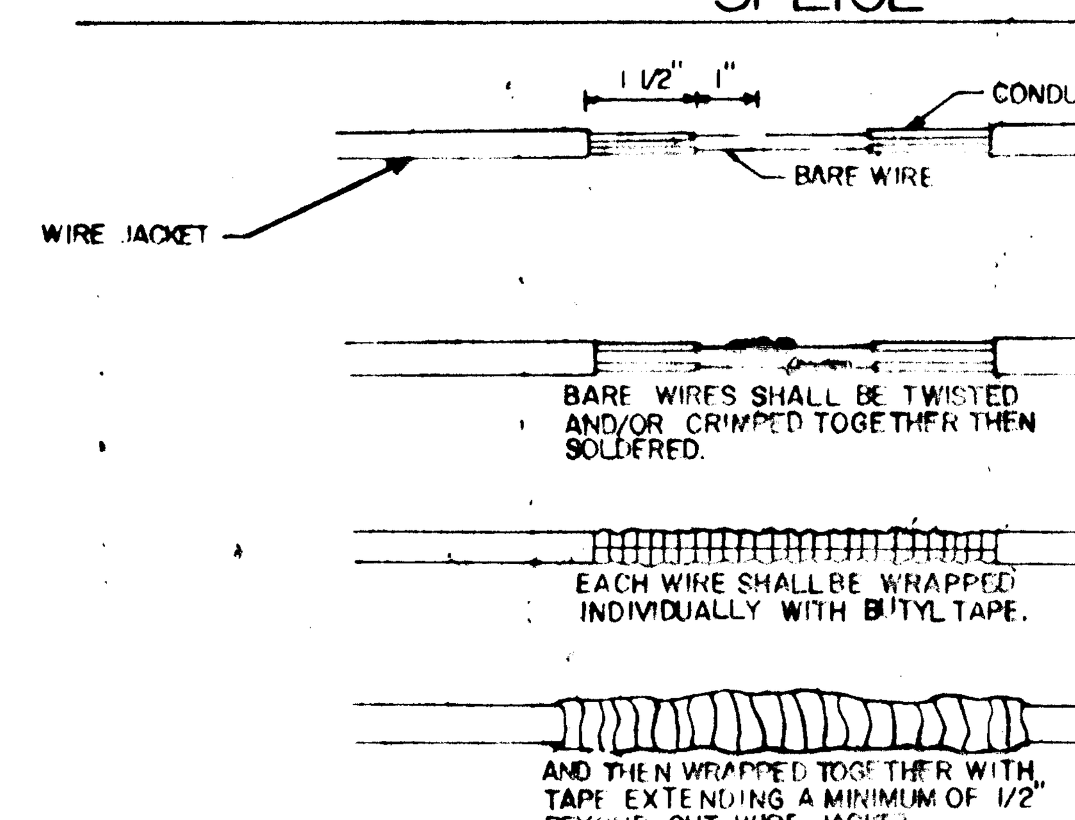
NOTES:
1. PLACE THE LOOPWIRE NEAR THE CENTER OF THE CORNER TO ALLOW THE SEALANT TO FLOW ON BOTH SIDES OF THE WIRE.
2. THERE SHALL BE NO SPLICING ALLOWED EXCEPT IN HANDBOX AND SPLICE SHALL CONFORM TO TYPICAL.



SECTION A-A

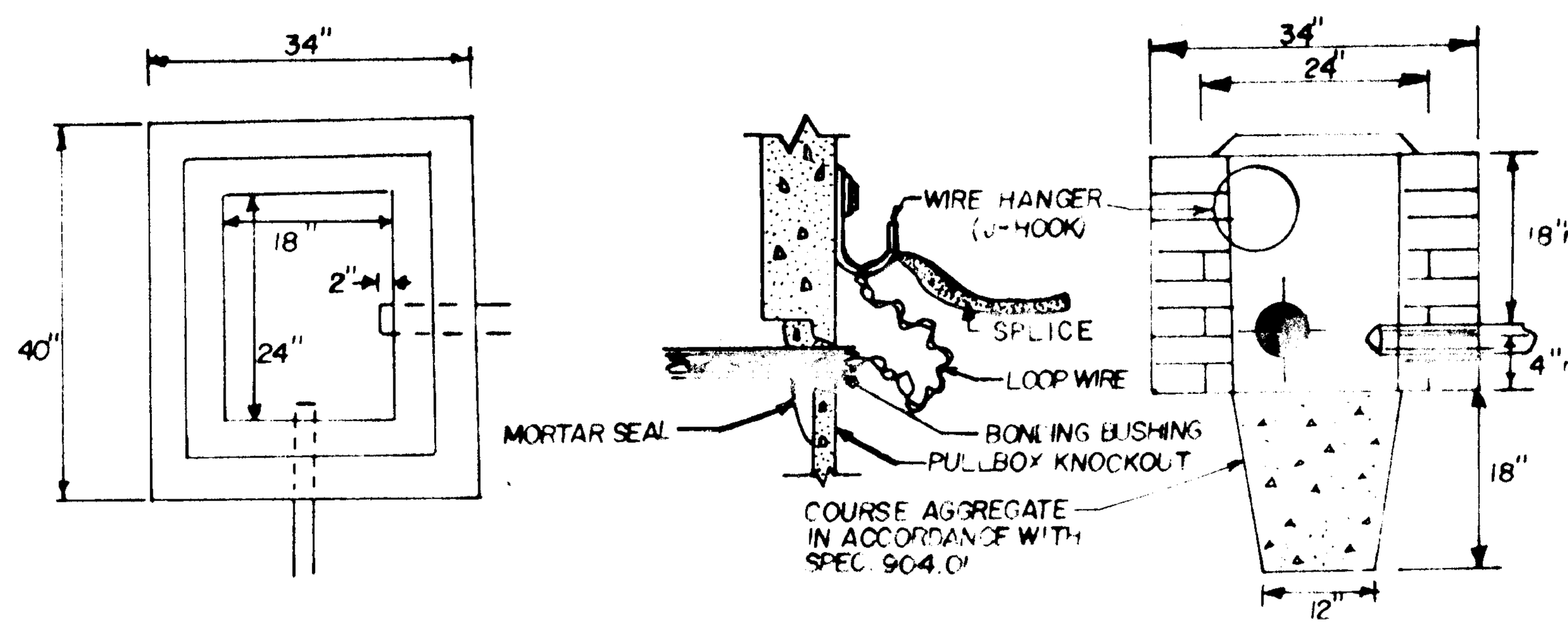
NOTES:
1. ALL ROTARY DRILL HOLES TO BE DONE PRIOR TO SAWCUTTING.
2. ENTIRE SLOT SHALL BE FILLED WITH LOOP SEALANT.

LOOP DETECTOR LEAD IN TO SHIELDED CABLE SPLICE



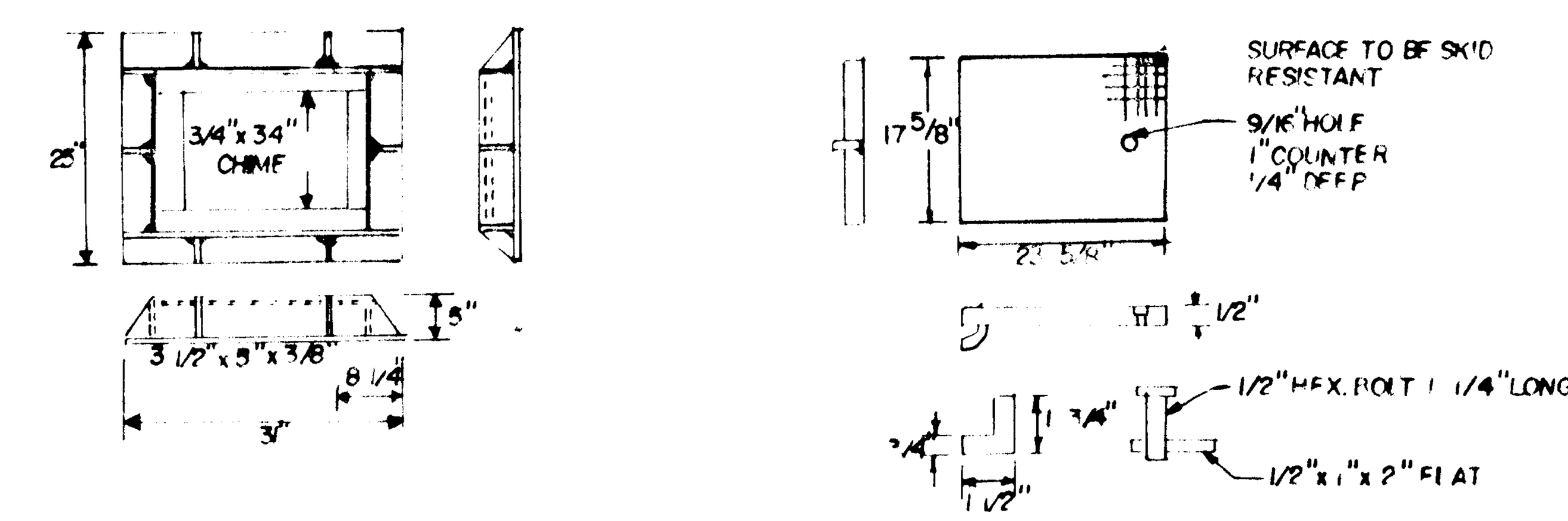
NOTE:
THE FINISHED SPLICE SHALL BE TREATED WITH WATERPROOF SCOTCH GUARD COATING OR A HEAT SHRINK TUBING

TYPICAL FOR HANDBOX CONSTUCTION

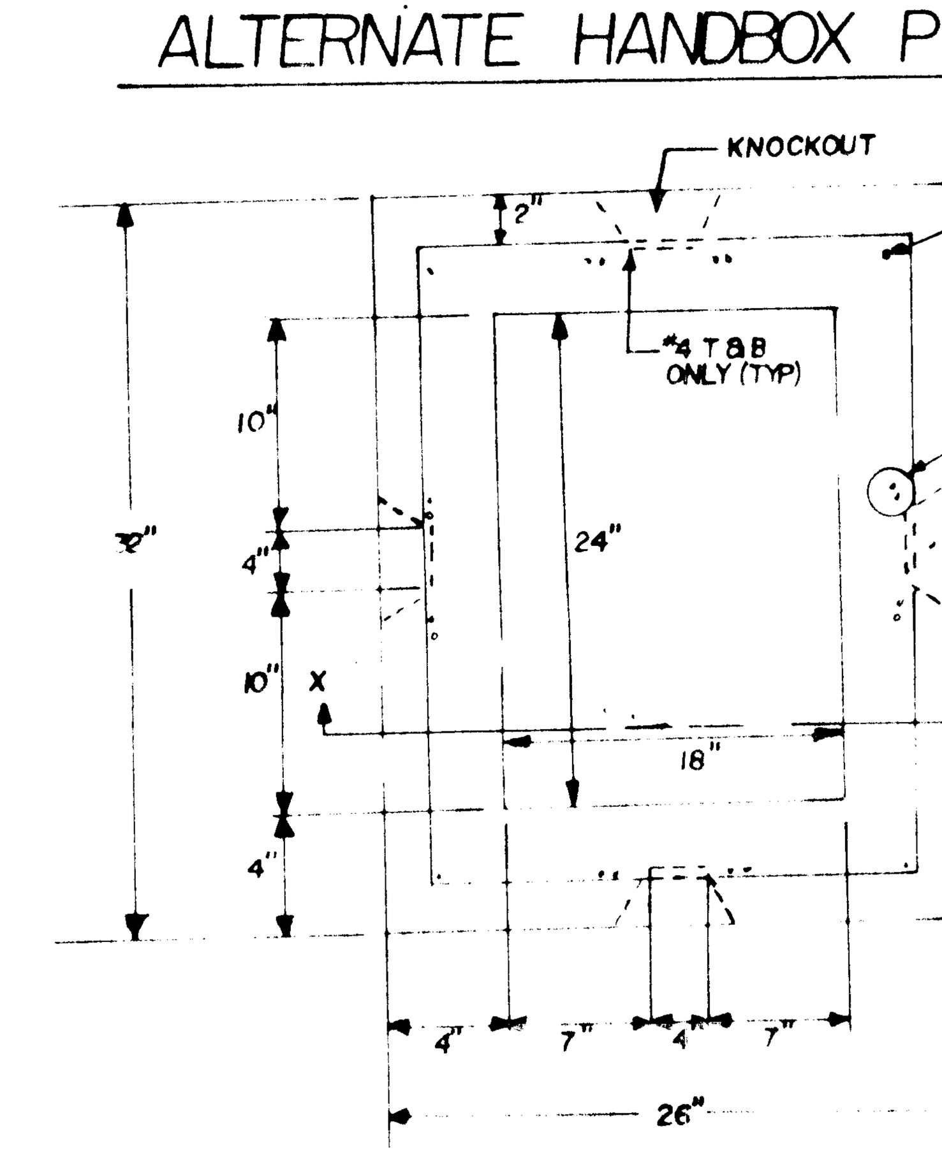


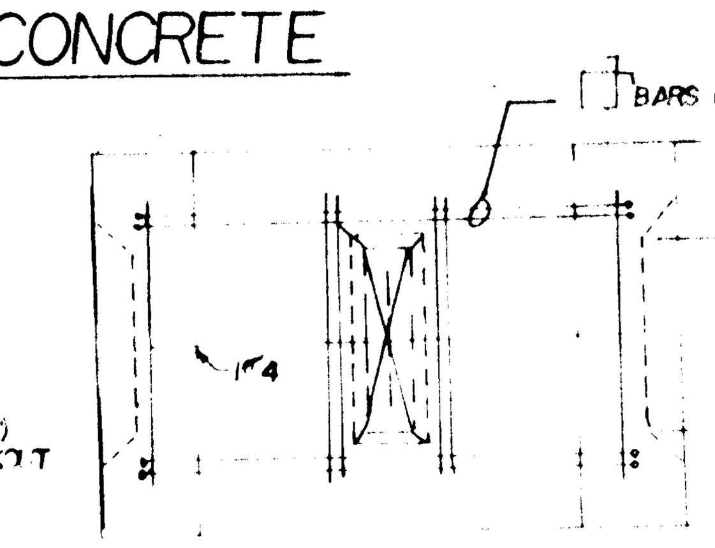
NOTES
1) ANY SPACES BETWEEN THE CONDUIT AND THE HANDBOX WALL SHALL BE PATCHED WITH CONCRETE OR OTHER SEALER APPROVED BY THE ENGINEER.
2) ALL METAL CONDUIT ENDS SHALL BE BONDED WITH OTHER CONDUIT ENDS BY USING BONDING BUSHINGS AND NO.8 AWG COPPER WIRE.
3) ALL ELECTRICAL CABLES ARE REQ'D TO HAVE 3' SLACK IN HANDBOX. THIS WIRE IS TO BE SECURED IN THE HANDBOX SO IT DOES NOT LAY ON THE BOTTOM OF THE HANDBOX
4) HANDBOX FRAME & COVER SHALL BE GALVANIZED PER ASTM A 123
5) WHEN ALL CONDUIT AND ELECTRICAL WIRE IS IN PLACE, THE END OF THE CONDUITS SHALL BE SEALED WITH DUCT SEALER OR OTHER PLIABLE MATERIAL AS APPROVED BY THE ENGINEER.
6) WALLS (IF APPLICABLE) SHALL BE BRICK OR CONCRETE BLOCK (NO CINDER BLOCK). ONLY FINAL COURSE SHALL BE CAPPED (NO VOIDS USING CONCRETE BLOCK).

TYPICAL HANDBOX FRAME AND COVER



ALTERNATE HANDBOX PRECAST CONCRETE





SECTION X-X

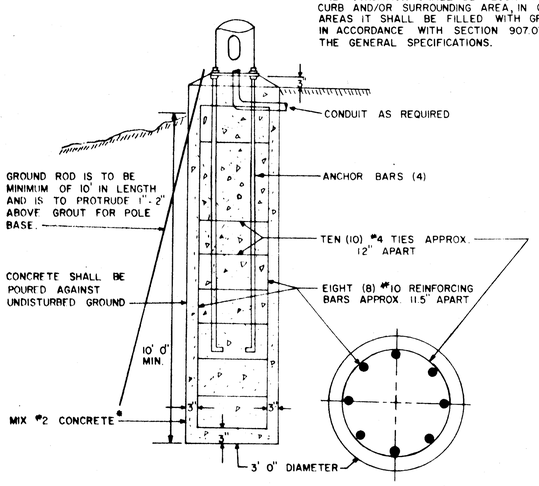
NOTES
1) CONCRETE 5000 PSI
2) NO REBAR KNOCKOUTS

SHEET 2 OF 3

APPROVAL CHIEF SIGNAL DESIGN SECTION		STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION BUREAU OF TRAFFIC ENGINEERING OFFICE OF TRAFFIC
APPROVAL DISTRICT TRAFFIC ENGINEER		TYPICAL SHEET NO. I
APPROVAL CHIEF BUREAU OF TRAFFIC ENGINEERING		SCALE DATE 4-30-85 DRAWN BY REGGIE
APPROVAL DEPUTY CHIEF ENGINEER OFFICE OF TRAFFIC		DESIGNED BY CHECKED BY TS-

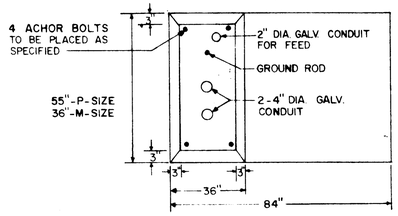
FOUNDATIONS

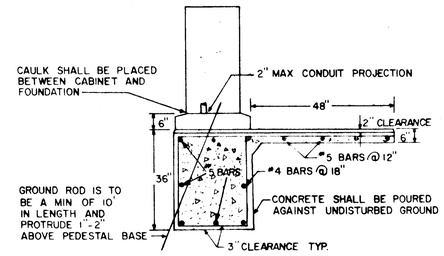
STRAIN POLE AND MAST ARM POLE



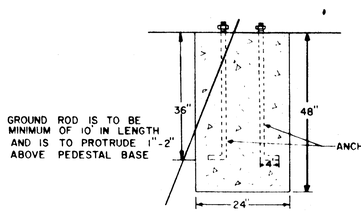
*SEE ITEMS 3.25 AND 3.26 ON PAGE 19.

BASE MOUNTED CABINET



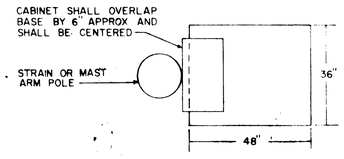


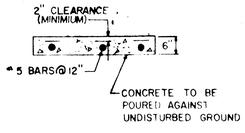
BREAKAWAY PEDESTAL POLE

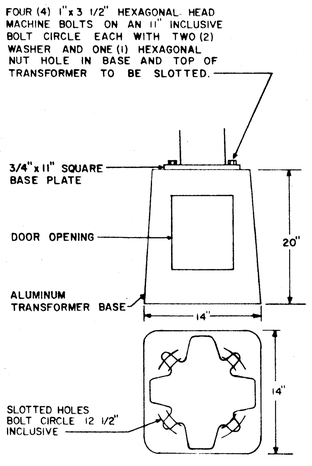


NOTE: CONCRETE SHALL BE POURED AGAINST UNDISTURBED GROUND

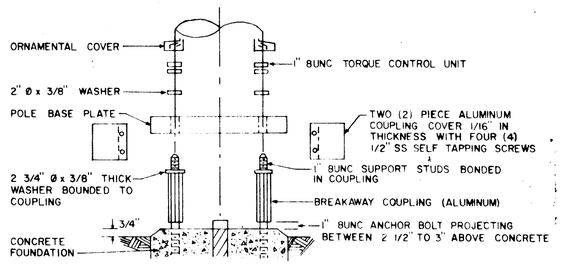
POLE MOUNTED CABINET





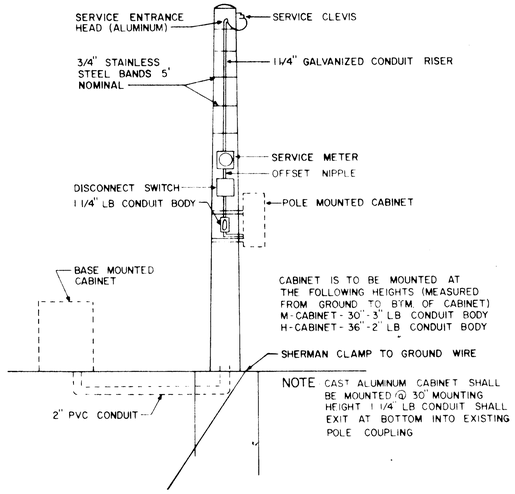


TRANSFORMER BASE

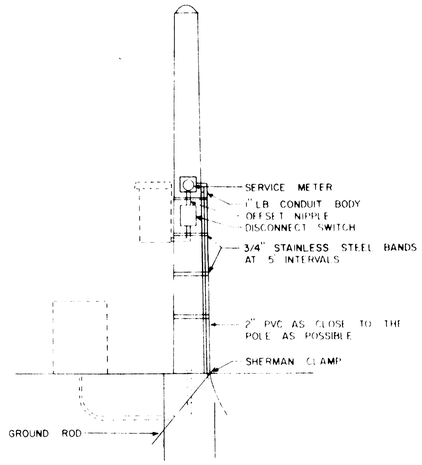


BREAKAWAY COUPLINGS

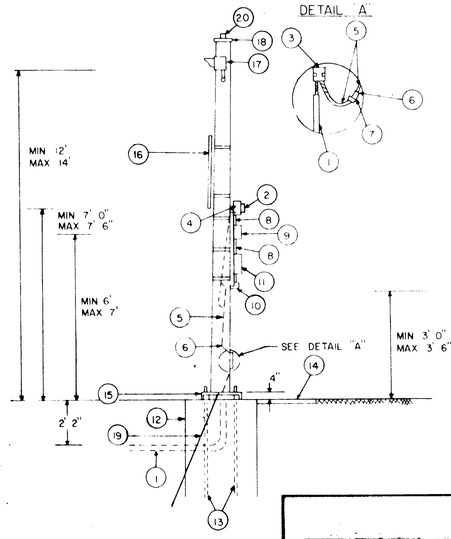
OVERHEAD SERVICE ATTACHMENT



UNDERGROUND SERVICE ATTACHMENT



H.I.B. TYPICAL



CONSTRUCTION DETAIL

POWER COMPANY FURNISHES AND INSTALLS

1. SERVICE LATERAL
2. WATTHOUR METER
3. CONNECTION TO CONTRACTOR'S WIRING (BURNDY YPC2ABUV, MECH #11-030 DIE-WB6I CRIMP

CONTRACTOR/POWER COMPANY FURNISHES AND CONTRACTOR INSTALLS

4. METER SOCKET
5. 3-WIRE #8 TYPE THWN SERVICE ENTRANCE WIRING COLORS, RED, BLACK, WHITE
6. LEAVE 18" FOR CONNECTIONS
7. QUICK DISCONNECT, IN LINE CONNECTORS
   TYPE L, UNFUSED FOR AC NEUTRAL (SHA TYPE I)
   TYPE L, FUSED FOR AC + (SHA TYPE II)
8. 1" GALVANIZED CONDUIT WITH 3/4 SS BANDING
9. SERVICE DISCONNECT SWITCH
10. 2" GALVANIZED L.B CONDUIT BODY MOUNTED INTO FACTORY 2" BLIND COUPLING

    FOR FLASHER CABINET
11. FLASHER CABINET
12. POLE BASE (24" DIA x 48" DEPTH)
13. ANCHOR BARS
14. CABINET PAD (SEE TYPICAL)
15. BREAKAWAY SUPPORT COUPLING SYSTEM (SEE TYPICAL)
16. SIGN WITH 3/4" SS BANDING
17. 12" SIGNAL HEADS, SPACED 60° ℄ TO ℄
18. POLE CAP
19. GROUND ROD, BONDING TO BE CONTINUOUS RUN FROM GROUND ROD TO POLE TO SERVICE DISCONNECT AND A SECOND CONTINUOUS RUN FROM GROUND ROD TO REMOTE TERMINAL CABINET GROUND BAR ALL BUSHINGS TO BE BONDED
20. PHOTOCELL TO BE ORIENTED IN THE NORTH DIRECTION

NOTE ITEMS 2 & 9 FOR POTOMAC EDISON SERVICE AREA SHALL BE INSTALLED ON POWER COMPANY'S POLE

APPROVAL CHIEF SIGNAL DESIGN SECTION

APPROVAL DISTRICT TRAFFIC ENGINEER

APPROVAL CHIEF BUREAU OF TRAFFIC ENGINEERING

APPROVAL DEPUTY CHIEF ENGINEER OFFICE OF TRAFFIC

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BUREAU OF TRAFFIC ENGINEERING
OFFICE OF TRAFFIC

TYPICAL SHEET NO. 2

DRAWN BY MICHAEL B. SCHNEIDER COUNTY

DESIGNED BY: SIGNAL NO.

CHECKED BY: DRAWING NO. TS-