

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

CONSTRUCTION PLAN FOR TRAFFIC CONTROL SIGNAL SYSTEM

County State Aid Highway No. 51

Between AT UNIVERSITY AVE. ELEM. SCHOOL And _____

From _____ To _____
Give proper reference to Sections, Township and Range.

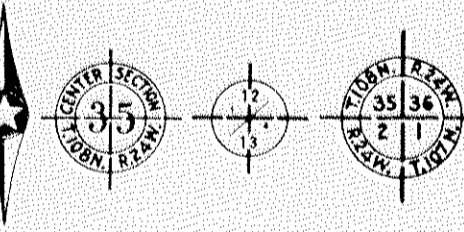
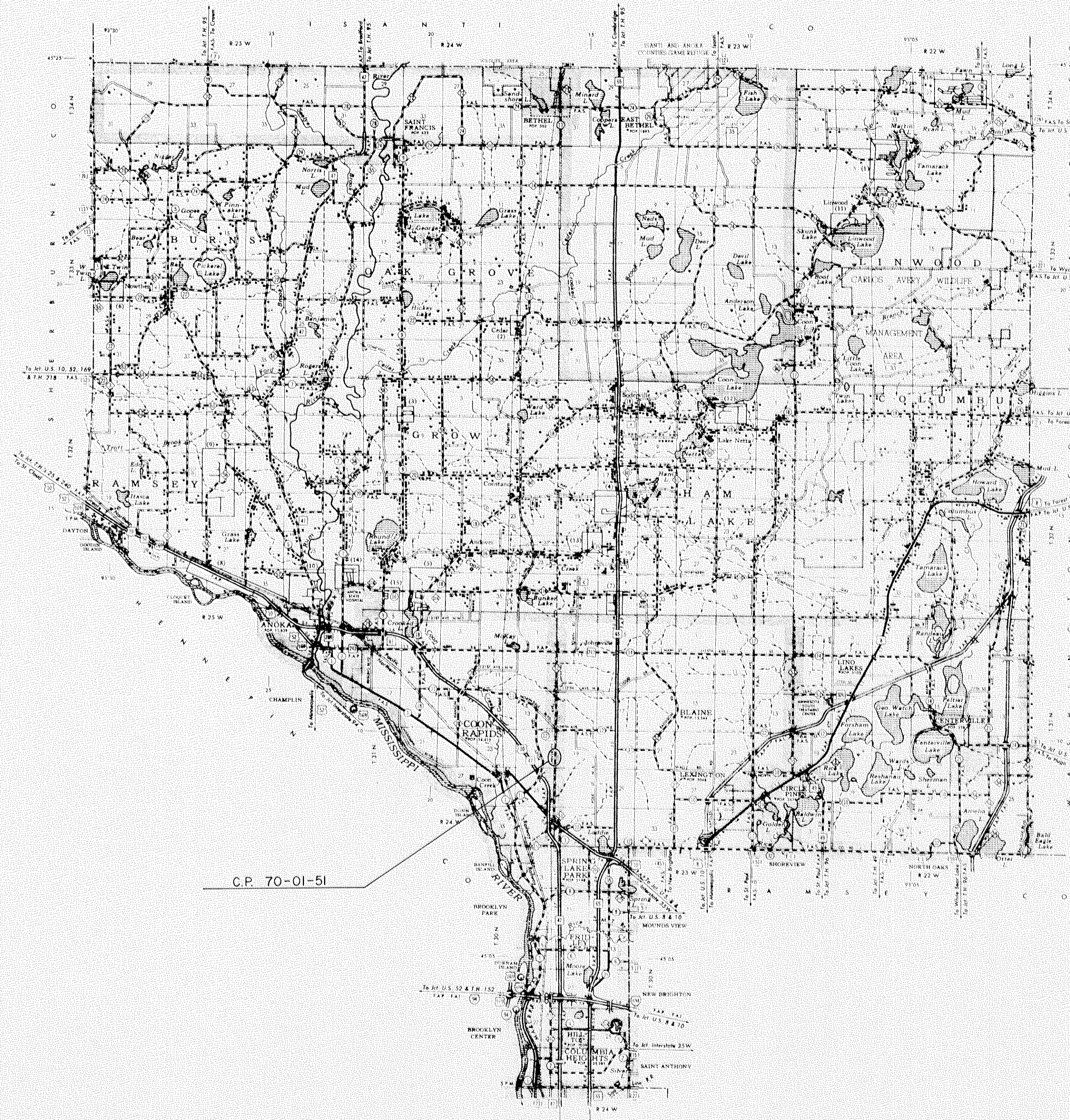
GROSS LENGTH _____ FEET _____ MILES
BRIDGES LENGTH _____ FEET _____ MILES
EXCEPTIONS LENGTH _____ FEET _____ MILES
NET LENGTH _____ FEET _____ MILES

INDEX OF SHEETS

- Sheet No. 1 Title Sheet & Layout Map
- No. 2 DETAILS
- No. 3 INTERSECTION LAYOUT
- No. 4 FIELD WIRING DIAGRAM

CONVENTIONAL SIGNS

- STATE LINE
- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- RIGHT-OF-WAY LINE
- PRESBY. RIGHT-OF-WAY LINE
- CONTROL OF ACCESS LINE
- PROPERTY LINE (Elevated Land)
- VACATED PLATTED PROPERTY
- CORPORATE OR CITY LIMITS
- TRAIL HIGHWAY CENTER LINE
- RETAINING WALL
- RAILROAD
- RAILROAD RIGHT-OF-WAY LINE
- RIVER OR CREEK
- DRY RUN
- DRAINAGE DITCH
- ELECTRIC POWER LINE
- TELEPHONE OR TELEGRAPH LINE
- JOINT TELEPHONE AND POWER CONDUIT
- TELEPHONE CABLE AERIAL
- TELEPHONE CABLE UNDERGROUND
- POWER CABLE UNDERGROUND
- GAS MAIN
- CULVERT
- DRAIN INLET
- GUARD RAIL
- BARBED WIRE FENCE
- WOODEN WIRE FENCE
- CHAIN LINK FENCE
- RAILROAD SNOW FENCE
- STONE WALL OR FENCE
- WATER PIPE
- SEWER PIPE
- DRAIN TILE
- SPRINGS
- MARSH
- TIMBER
- ORCHARD
- BRUSH
- NURSERY
- CATCH BASIN
- MANHOLE
- FIRE HYDRANT
- STREET LIGHT
- RAILROAD CROSSING SIGN
- RAILROAD CROSSING BELL
- ELECTRIC WARNING SIGN
- CROSSING GATE
- CATTLE GUARD
- OVERPASS (Highway Over)
- UNDERPASS (Highway Under)
- BRIDGE
- BUILDING (One Story Frame)
- F FRAME
- C CONCRETE
- S STONE
- T TILE
- B BRICK
- ST STUCCO
- IRON PIPE OR ROD
- MONUMENT (STONE, CONCRETE, OR METAL)
- WOODEN HUB
- GRAVEL PIT
- SAND PIT
- BERM PIT
- ROCK QUARRY
- MEANDED CORNER



DESIGN DESIGNATION

ADT (CURRENT YEAR) _____
ADT (FUTURE YEAR) _____
T (HEAVY COMMERCIAL) _____
Ton Design _____
Design Speed _____ MPH
Design Speed not achieved at:
STA. _____ TO STA. _____ MPH _____
STA. _____ TO STA. _____ MPH _____

— SPECIFICATIONS —

THE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION", DATED JAN. 1, 1968, SHALL GOVERN.

ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH, IN THE CONSTRUCTION OF THIS PROJECT.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

COUNTY ENGINEER _____ DATE _____
Carl J. Lundheim COUNTY REG. NO. 2581
RECOMMENDED FOR APPROVAL _____ 19____
DISTRICT ENGINEER
RECOMMENDED FOR APPROVAL _____ 19____
APPROVED _____ 19____
STATE AID ENGINEER

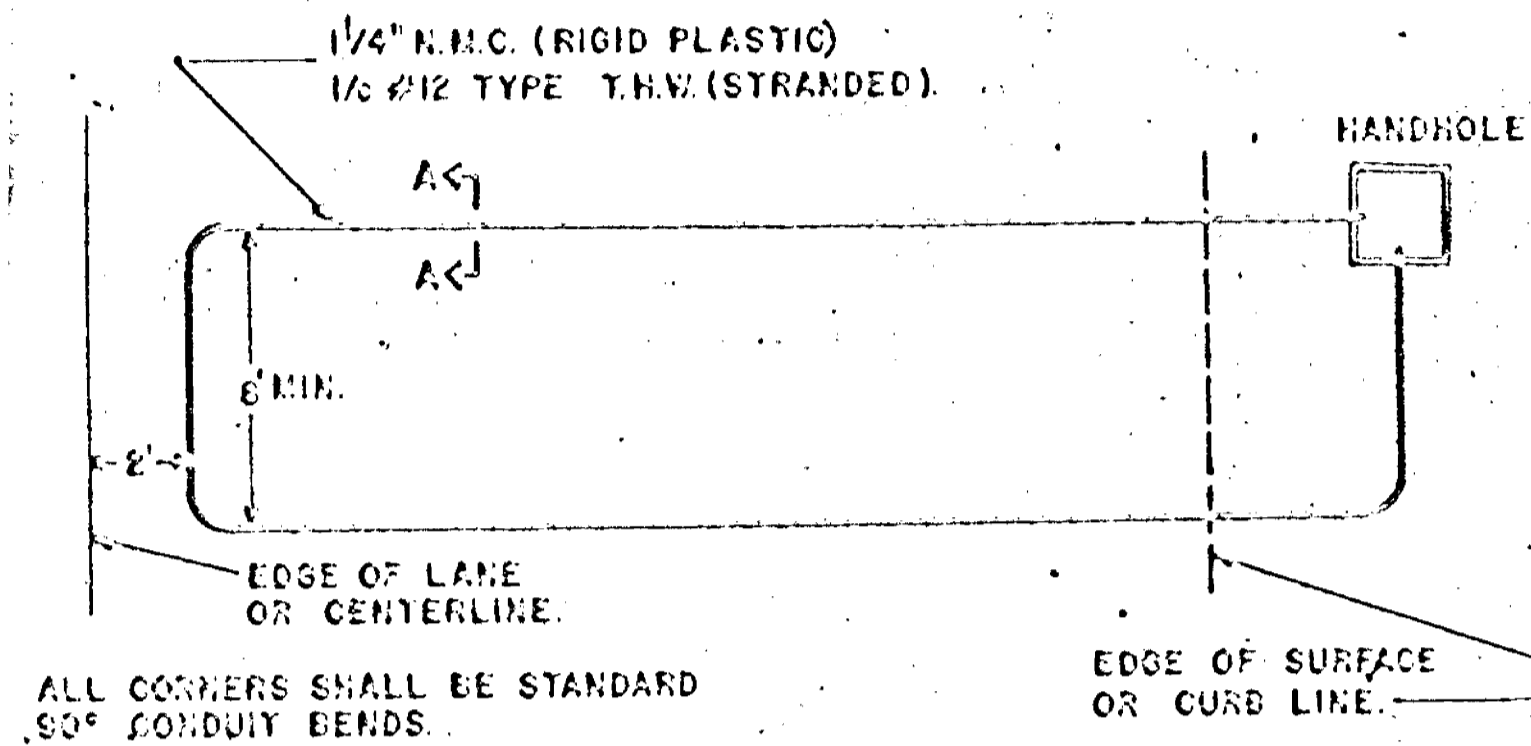
Minn. Proj. No. _____ County Proj. No. 70-01-51
State Proj. No. _____ S. A. P. _____

LOOP DETECTOR DETAIL

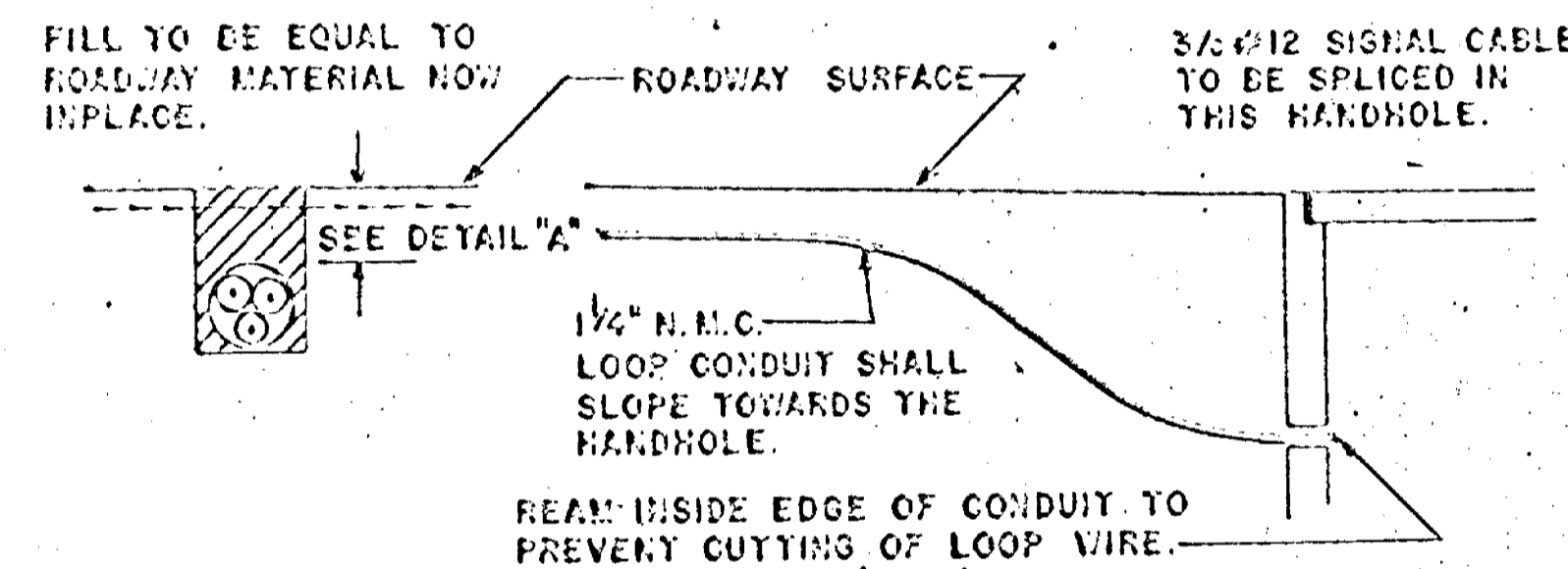
SCALE NONE

LOOP NUMBER OF TURNS IN THE LOOPS SHALL BE AS SPECIFIED BY THE MANUFACTURER OF THE LOOP DETECTOR EQUIPMENT.

THE LOOP SHALL BE ONE CONTINUOUS WIRE WITH NO SPLICES AND EACH TURN SHALL BE PULLED TIGHT WITH NO SLACK IN THE HANDHOLE.



SEC. A-A



STANDARD DETAIL PLATES	
PLATE NO.	DESCRIPTION
8110A	SIGNAL ASSEMBLY
8112A	PEDESTAL FOUNDATION
8113A	MAGNETIC VEHICLE DETECTOR INSTALLATION
8115A	PEDESTRAIN PUSH BUTTON INSTALLATION
8116A	STEEL GUARD POSTS
8117A	PRECAST CONCRETE HANDHOLE
8118A	SERVICE EQUIPMENT & POLE
8119A	GROUND MOUNTED CONTROLLER FOUNDATION
8120A	MAST ARM SIGNAL FOUNDATION
8122A	PEDESTALS
8123A	POLE AND MAST ARM
8124A	SIGNAL HEAD MOUNTS

STATEMENT OF ESTIMATED QUANTITIES			
ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES
2565.501	FULL TRAFFIC ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM	SIGNAL SYS.	1

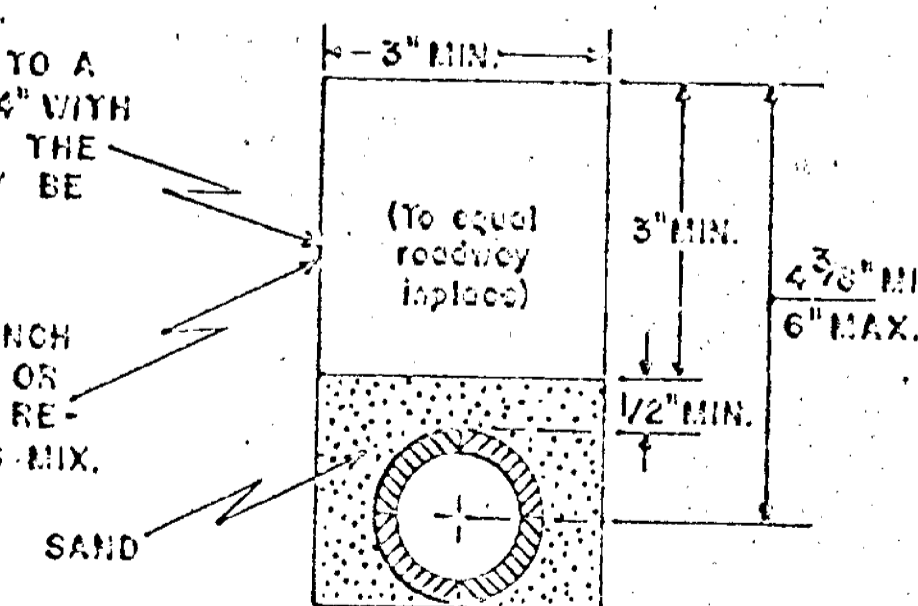
CONDUIT INSTALLATION DETAIL FOR LOOP DETECTOR

SCALE NONE

TRENCH TO BE CUT TO A DEPTH OF APPROX. 4" WITH A POWER SAW, ONLY THE LOWER PORTION MAY BE CHISELED OUT.

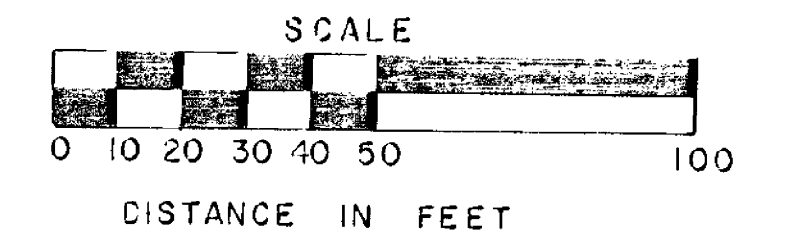
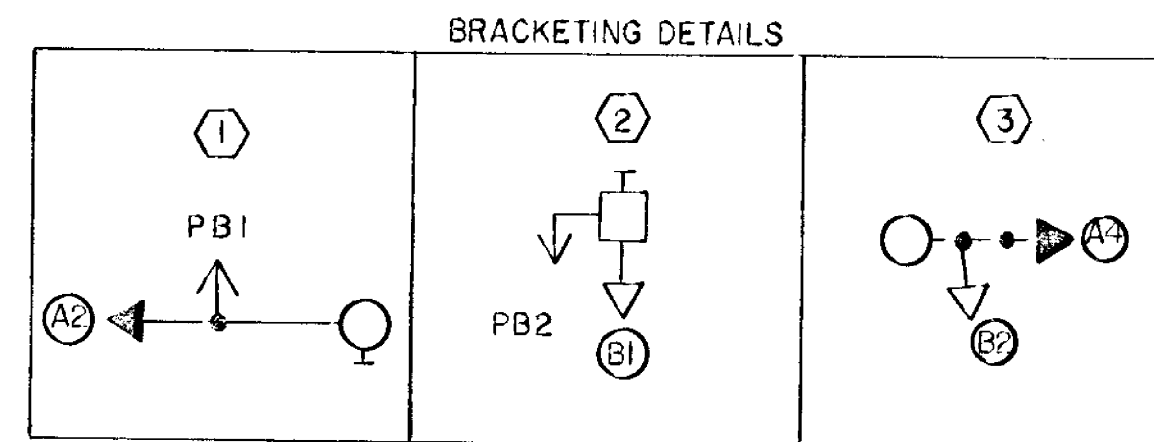
PAINT SIDES OF TRENCH WITH CUT-BACK (MC-1 OR MC-2) OIL WHEN REPLACING BITUMINOUS MIX.

1/4" NON-METALLIC CONDUIT (RIGID PLASTIC).

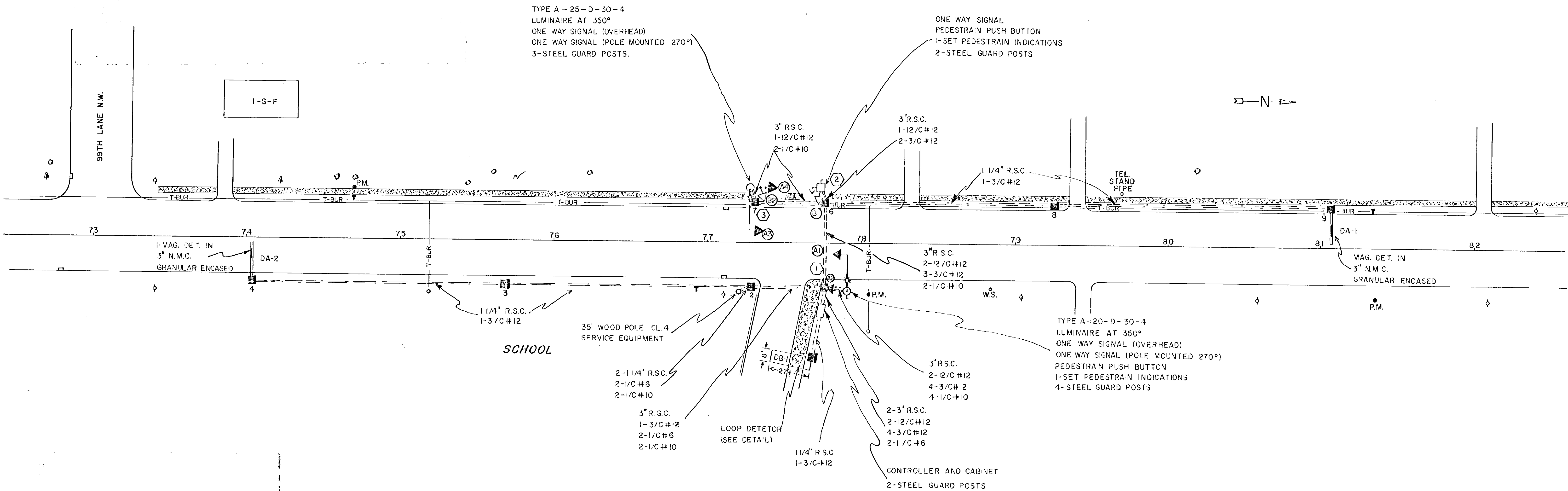


FULL ACTUATED TRAFFIC CONTROL SIGNAL "DETAILS"

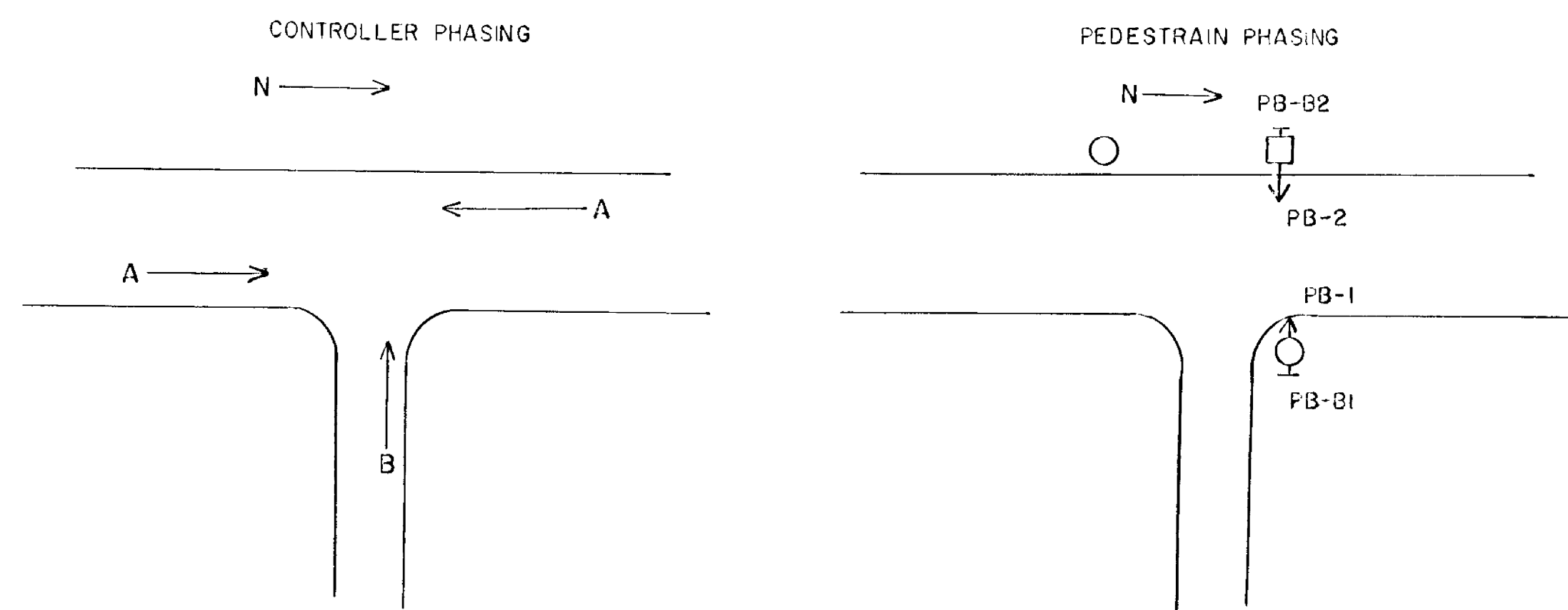
LEGEND OF SYMBOLS	
	CONTROLLER AND CABINET
	HANDHOLE (PULLBOX)
	RIGID STEEL CONDUIT (R.S.C.)
	PEDESTAL
	SIGNAL FACE
	SIGNAL FACE WITH BACKGROUND SHIELD
	PEDESTRIAN INDICATIONS
	PEDESTRIAN PUSH BUTTON ON PEDESTAL OR POLE
	MAST ARM AND POLE
	MAST ARM AND LUMINAIRE
	MAG DET. IN NON-METALLIC CONDUIT (N.M.C.)
	SOURCE OF POWER (S.O.P.)
	WOOD POLE



NOTE: 1/C#6 AND 1/C#10 SHALL BE R.H.W. OR T.H.W.

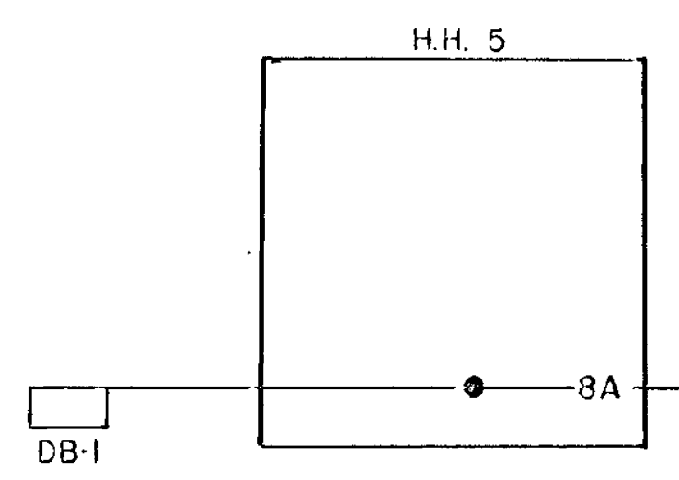


FACE	PHASE	FLASH	INDICATION SIZE			←	↑	→
			R	Y	G			
A1	A	Y	12"	12"	12"	—	—	—
A2	A	Y	12"	12"	12"	—	—	—
A3	A	Y	12"	12"	12"	—	—	—
A4	A	Y	12"	12"	12"	—	—	—
B1	B	R	12"	12"	12"	—	—	—
B2	B	R	12"	12"	12"	—	—	—



FULL ACTUATED
TRAFFIC CONTROL SIGNAL
INTERSECTION LAYOUT

INTERSECTION CO. RD. 51 AT UNIV. SCHOOL



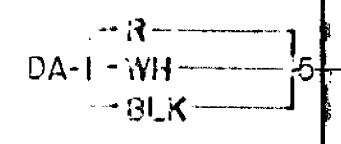
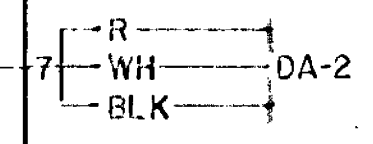
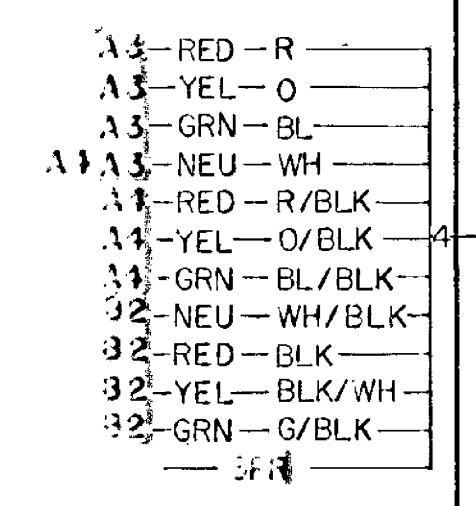
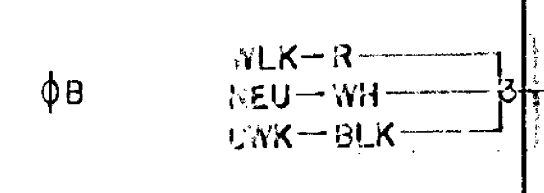
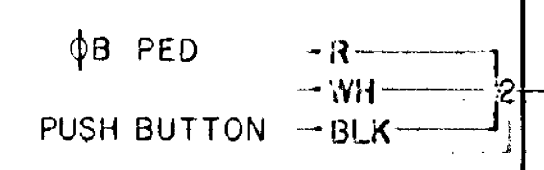
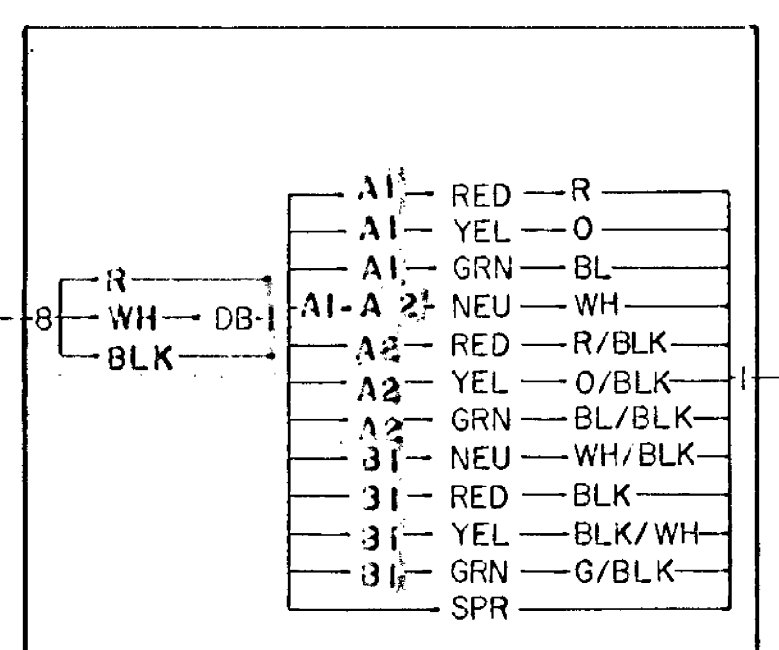
ABBREVIATIONS

EQUIPMENT AND INDICATIONS

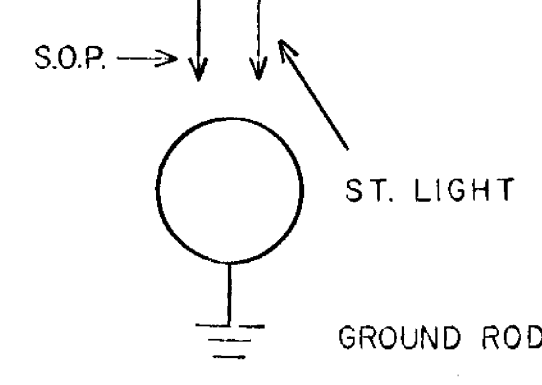
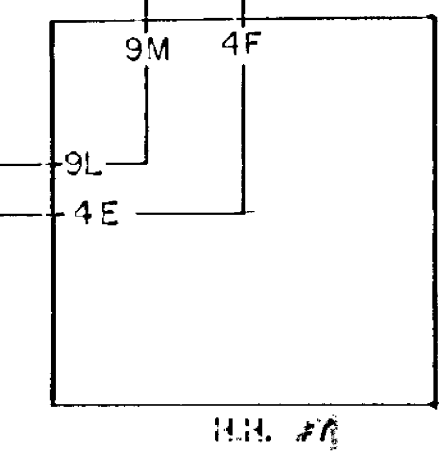
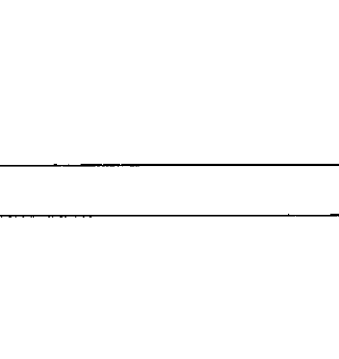
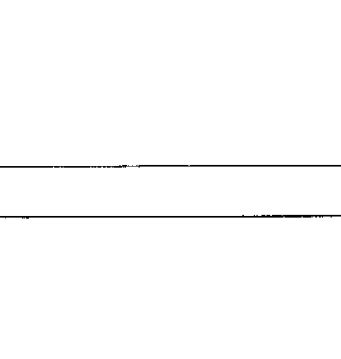
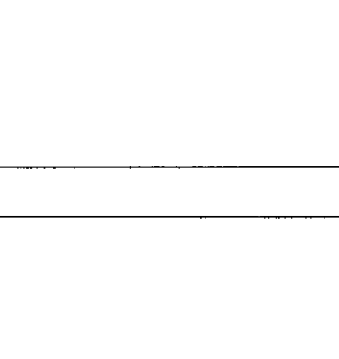
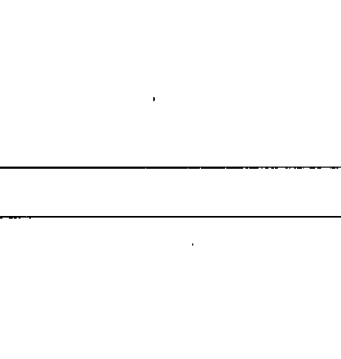
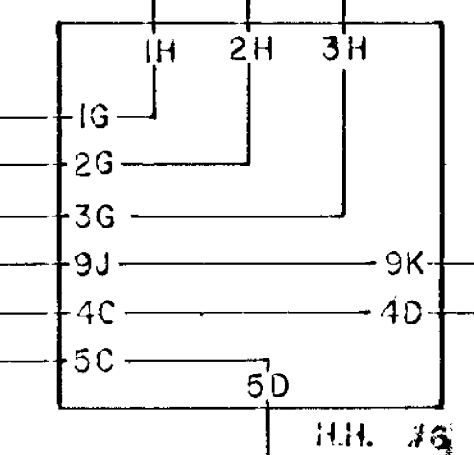
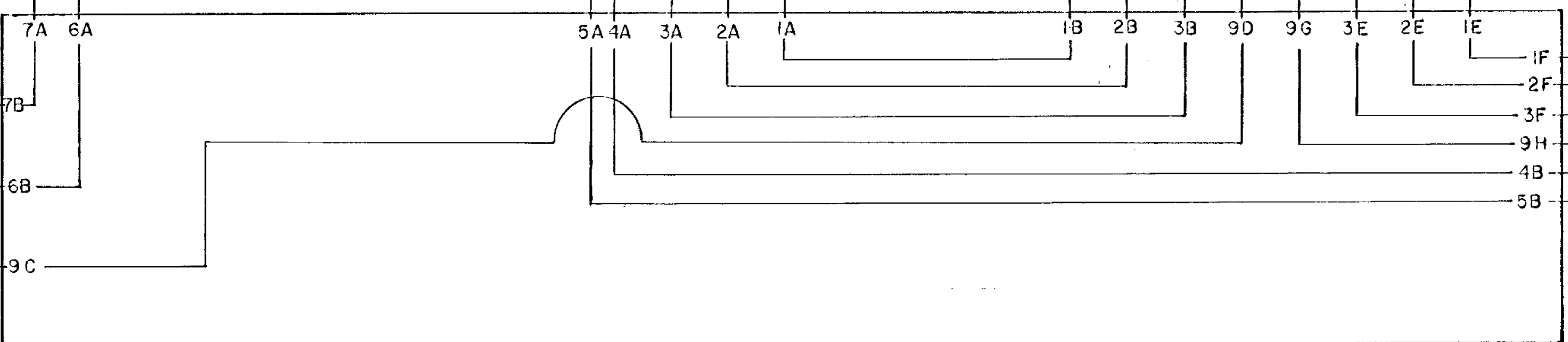
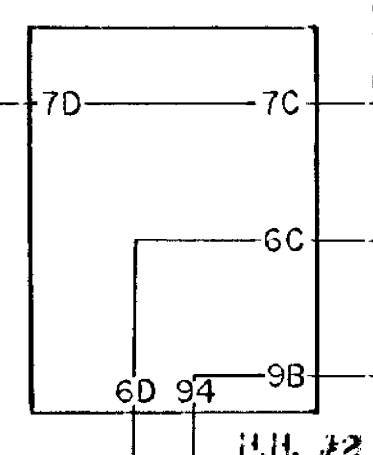
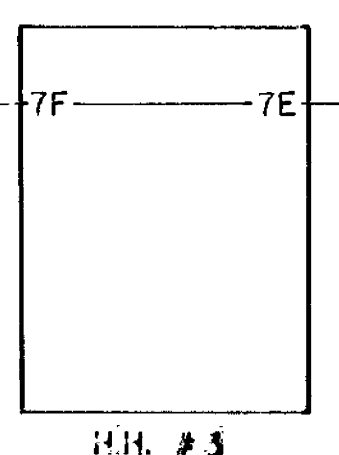
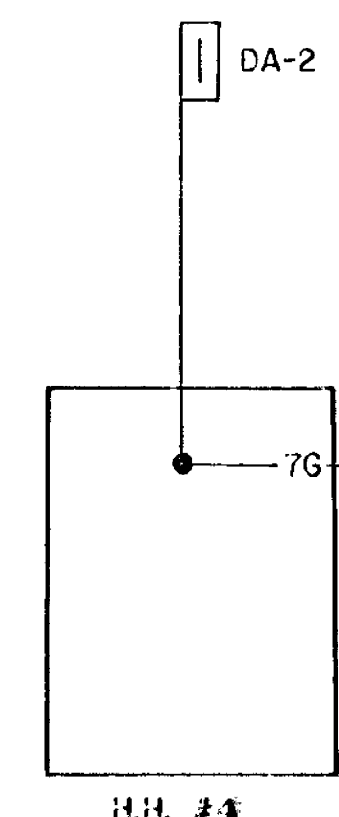
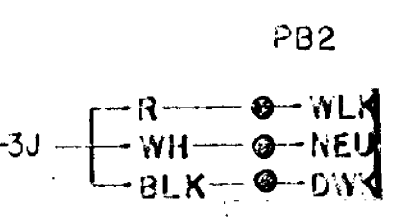
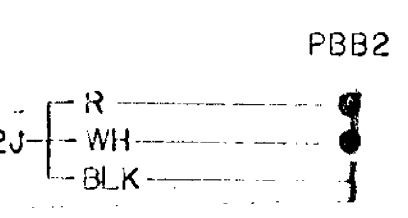
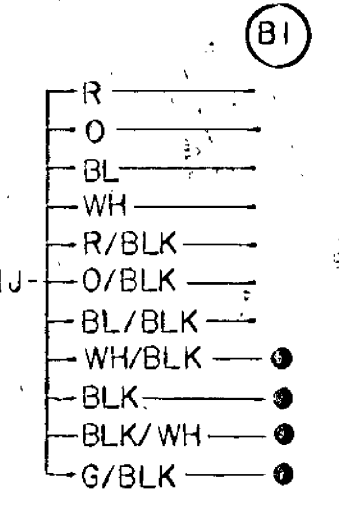
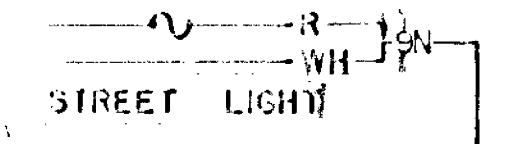
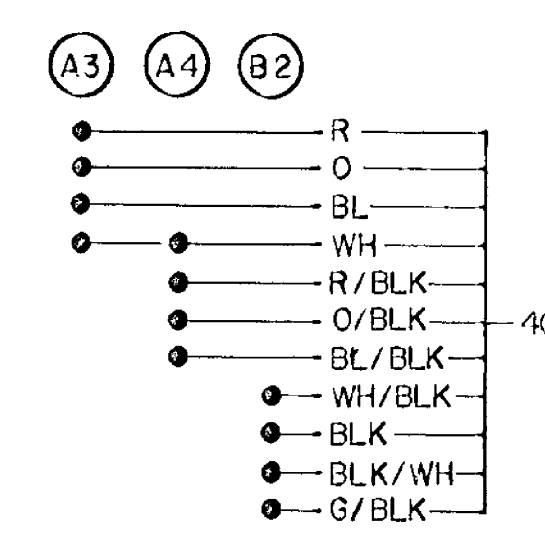
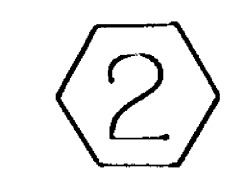
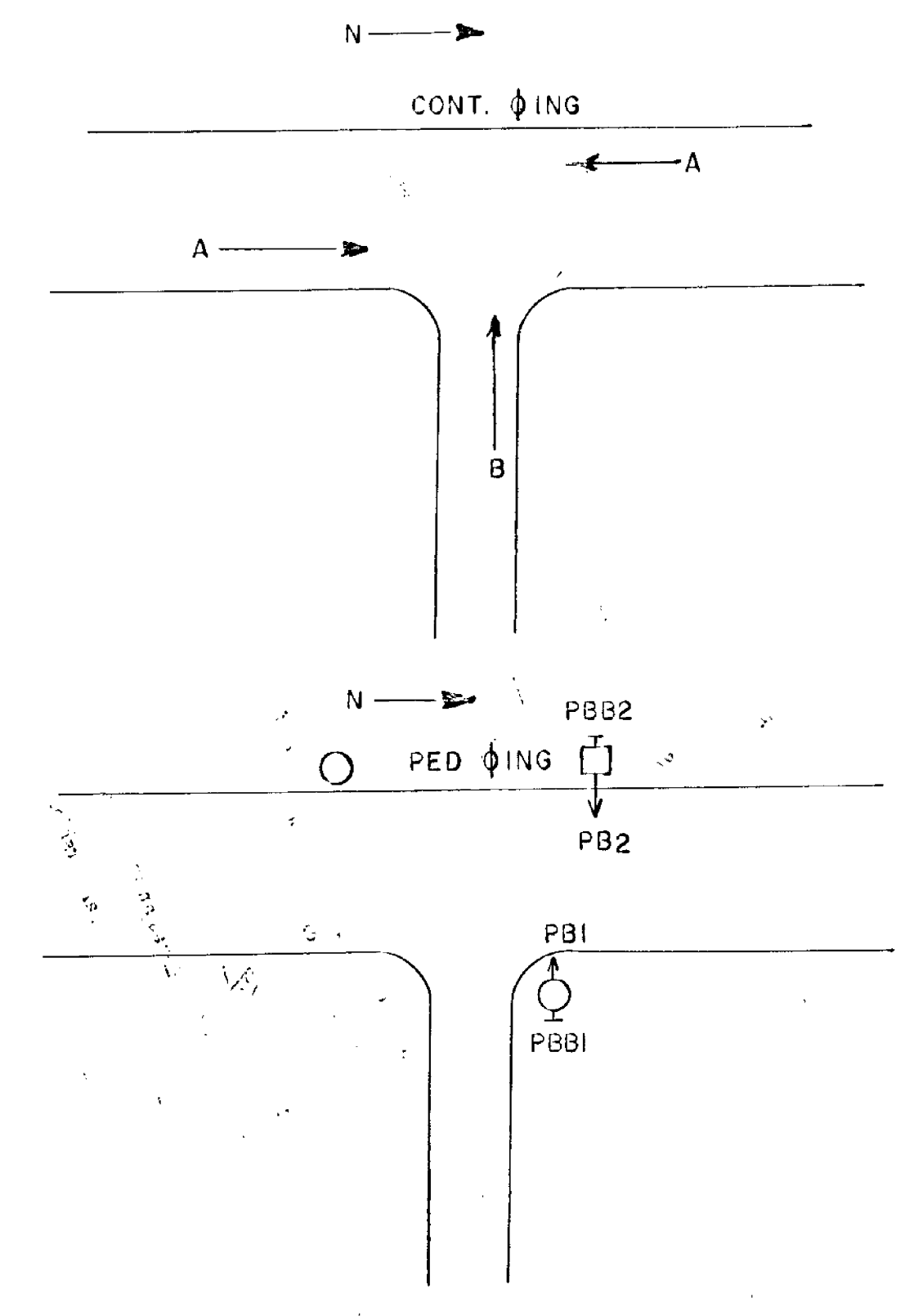
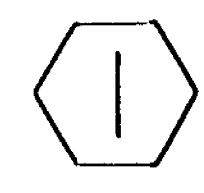
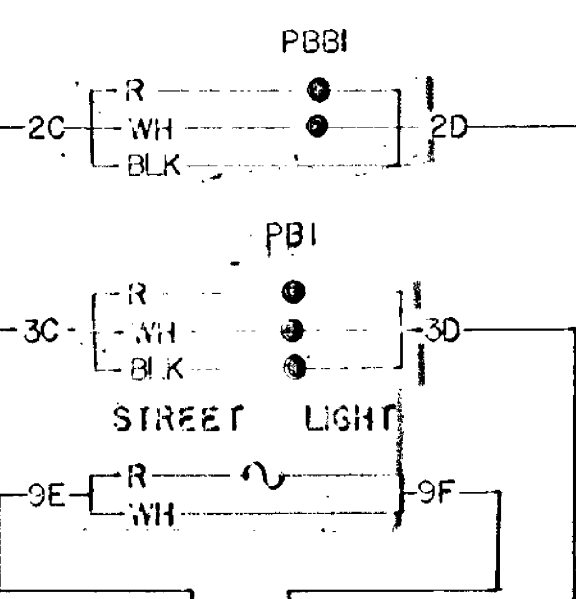
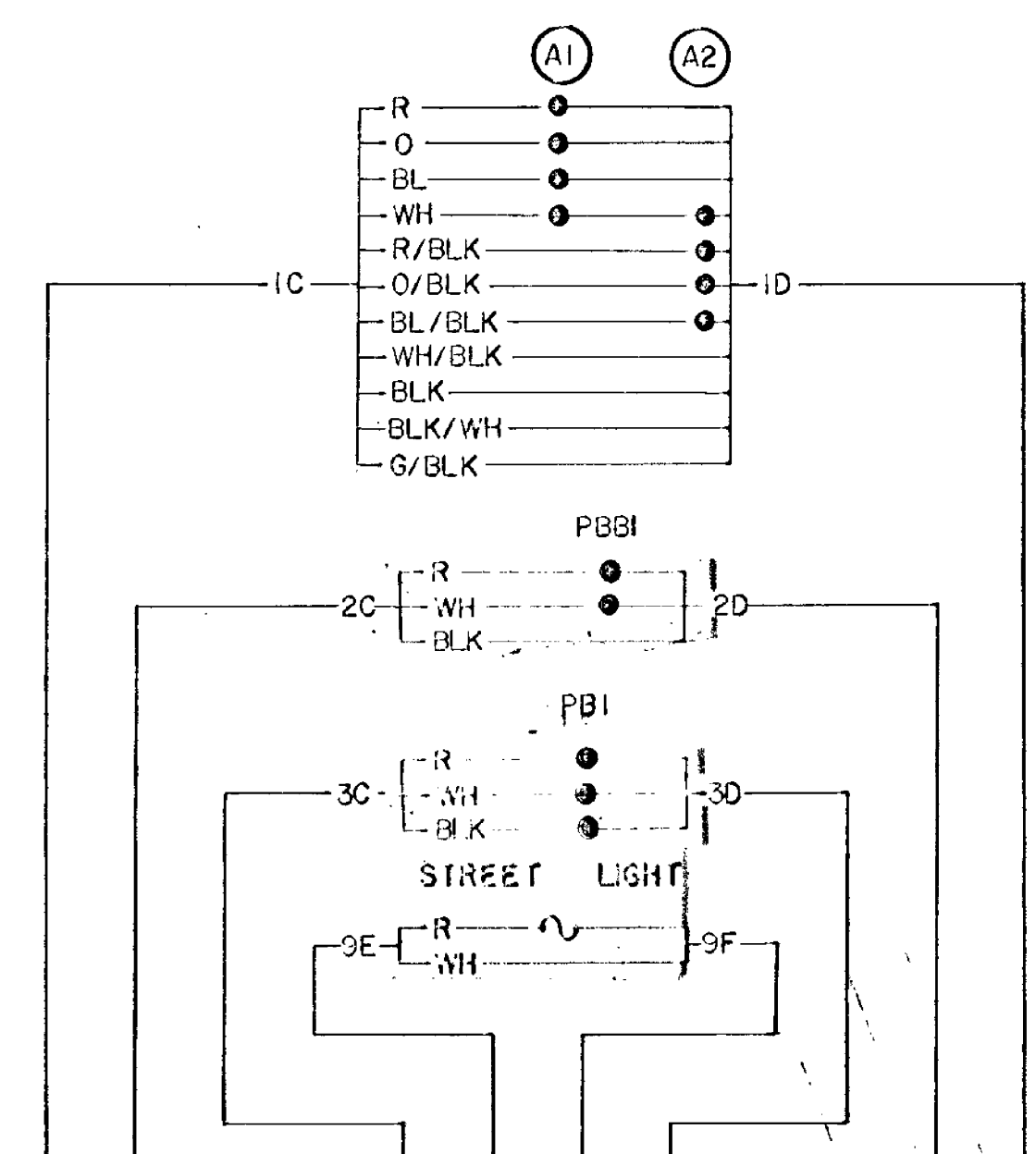
- | | |
|----------------------------|---|
| RED - RED | PAI(eg) - PEDESTRIAN INDICATION - "A" PHASE |
| YEL - YELLOW | PBB2(eg) - PUSH BUTTON - "B" PHASE |
| GRN - GREEN | C3(eg) - SIGNAL HEAD - "C" PHASE |
| LTA - LEFT TURN ARROW | DA-4(eg) - DETECTOR - "A" PHASE |
| THA - THRU ARROW | HH - HANDHOLE |
| RTA - RIGHT TURN ARROW | GR.R. - GROUND ROD |
| TRA - THRU AND RIGHT ARROW | SERV - SERVICE |
| WLK - WALK | PEC - PHOTOELECTRIC CELL |
| NEU - NEUTRAL | ST. LHT - STREET LIGHT |
| DWK - DON'T WALK | CH - CHECK |
| SW - SWITCH | S.O.P. - SOURCE OF POWER |
| SWD - SWITCHED | EGG - EQUIPMENT GROUND |
| LUM - LUMINAIRE | SPR - SPARE CONDUCTOR |
| DNL - DOWNLIGHT | ● - SPLICE |

CONDUCTOR COLOR CODE

- R - RED
- O - ORANGE
- BL - BLUE
- WH - WHITE
- R/BLK - RED WITH BLACK TRACER
- O/BLK - ORANGE WITH BLACK TRACER
- BL/BLK - BLUE WITH BLACK TRACER
- WH/BLK - WHITE WITH BLACK TRACER
- BLK - BLACK
- BLK/WH - BLACK WITH WHITE TRACER
- G/BLK - GREEN WITH BLACK TRACER
- G - GREEN



CONTROLLER CABINET



**FULL ACTUATED
TRAFFIC CONTROL SIGNAL
FIELD WIRING DIAGRAM**
INTERSECTION CO. RD. 51 AT UNIV. SCHOOL