

## GENERAL CONSTRUCTION NOTES:

INSTALLATION AND CONSTRUCTION SHALL CONFORM TO THE STATE DEPARTMENT OF TRANSPORTATION STANDARDS SPECIFICATIONS SECTIONS APPLICABLE AND STANDARD PLANS DATED AND EFFECTIVE FOR THE CURRENT YEAR AND ANY SPECIAL MUNICIPALITY CODE PROVISIONS.

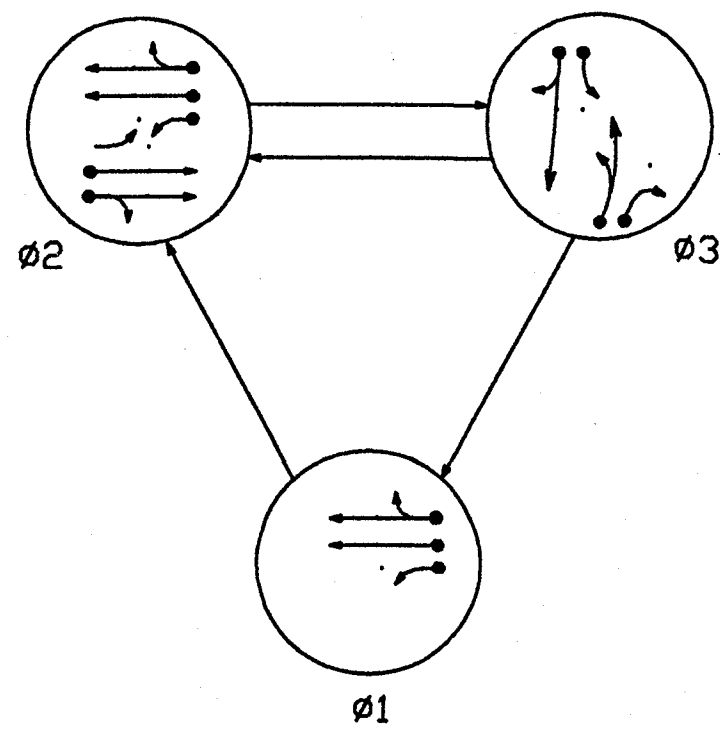
1. THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES IS APPROXIMATE. THE SUBCONTRACTOR SHALL DETERMINE THE LOCATION AND DEPTH OF ALL UTILITIES INCLUDING THOSE NOT SHOWN ON PLANS AND VERIFY ALL JOBSITE CONDITIONS. HAND EXCAVATE FOUNDATION UNTIL CLEAR OF ALL SUBSTRUCTURES AND PROTECT ALL FACILITIES DURING CONSTRUCTION. SUBCONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS FOR UNDERGROUND UTILITY REMOVAL OR LOCATION WITH RESPECTIVE UTILITY OWNERS AS MAY BE REQUIRED SUFFICIENTLY IN ADVANCE TO PREVENT DELAY IN OPERATIONS.
2. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND UTILITIES ENCOUNTERED IN AREAS WHERE EXCAVATIONS ARE INDICATED AND SHALL REPAIR ANY SUCH DAMAGE AT OWN EXPENSE. WHERE UTILITY LINES MUST BE MAINTAINED UNDER STRUCTURE, THEY SHALL BE PROPERLY SLEEVED THROUGH FOUNDATION.
3. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT OR REPAIR OF ANY DAMAGE CAUSED BY THEM OR THEIR SUBCONTRACTORS.
4. THE SUBCONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND NOTIFY ALL UTILITIES AND THE CITY AT LEAST 72 HOURS IN ADVANCE OF CONSTRUCTION.
5. THE SUBCONTRACTOR IS REQUIRED AND MUST SUBMIT A WEEKLY SCHEDULE PRIOR TO START OF WORK EACH WEEK. (NO EXCEPTIONS)
6. POLE DETECTOR AND EQUIPMENT LOCATIONS SHALL BE AS SHOWN ON SITE PLAN. THE SUBCONTRACTOR SHALL VERIFY EQUIPMENT FIELD LOCATIONS WITH THE CITY TRAFFIC ENGINEER OR LOCAL AND/OR EXCAVATION AUTHORITY AND ACS PRIOR TO INSTALLATION.
7. THE SUBCONTRACTOR SHALL SUPPLY AND INSTALL ALL CONDUCTORS NECESSARY FOR THE INTENDED OPERATION AS NOTED ON THESE PLANS, NEC AND ALL APPLICABLE MUNICIPALITY CODES.
8. PROVIDE ANCHOR BOLT NUT COVERS FOR ALL STANDARDS.
9. ALL PULLBOXES AND COVERS SHALL BE CONCRETE OR PVC AS REQUIRED BY THE MUNICIPALITY. ALL PULLBOXES SHALL BE NO. 5 UNLESS OTHERWISE NOTED OR REQUIRED BY THE MUNICIPALITY.
10. ALL CONCRETE FORMS ARE TO BE INSPECTED BY LOCAL AUTHORITIES BEFORE CONCRETE IS PLACED.
11. THE SUBCONTRACTOR SHALL PROVIDE ALL NECESSARY TRAFFIC CONTROL DEVICES DURING TRAFFIC SIGNAL INSTALLATION.
12. INDUCTIVE LOOPS SHALL BE 40" x 80" OR APPLICABLE (SEE DETAIL IN THE TECHNICAL SPECIFICATIONS) WITH FOUR (4) TURNS. UNLESS OTHERWISE SPECIFIED ON PLAN, OF IMSA SPECIFICATION 51-5 XLPE APPROVED LOOP DETECTOR WIRE AND ELASTOMERIC SEALANT, PER LOCAL CODES THE LEAD IN RUNS WILL BE INSTALLED WITH FIVE (5) TURNS PER FOOT INTO THE SUBROUT PER CITY AND DOT STANDARDS. ALL DLCS SHALL MEET IMSA SPECIFICATION 50-2. ALL CONDUITS SHALL BE PVC, 2" MINIMUM INSIDE DIAMETER, UNLESS OTHERWISE SPECIFIED ON PLAN.
13. THERE SHALL BE A MINIMUM OF 36" BETWEEN EXISTING LOOPS AND PROPOSED INDUCTIVE LOOPS.
14. INDUCTIVE LOOP CABLE INTO NEW NO. 5 PULLBOX SHALL BE THROUGH 2" MINIMUM PVC CONDUIT SPACING 8" APART TO ISOLATE AND PREVENT INTERFERENCE.
15. ALL CUT LINES SHALL HAVE A MINIMUM SPACING OF 12".
16. ALL INDUCTIVE LOOPS AND CUT LINES SHALL BE PLACED A MINIMUM OF 40" FROM ANY METAL COVERS AND/OR GRATING IN ROAD SURFACES.
17. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING AND COORDINATION WITH THE SERVING (ELECTRICAL) UTILITY COMPANY AND PAY REQUIRED FEES FOR SERVICE CONNECTIONS.
18. THE SUBCONTRACTOR TO OBTAIN A NO FEE ENCROACHMENT PERMIT FROM THE CITY PRIOR TO COMMENCEMENT OF WORK. ALL WORK SHALL BE INSPECTED BY CITY FORCES. AT COMPLETION OF PROJECT CONTACT THE CITY TRAFFIC ENGINEER 24 HOURS PRIOR TO COMPLETION OF WORK.
19. THE SUBCONTRACTOR IS TO BUILD AND MAINTAIN A CONSTRUCTION BARRICADE (ALL NECESSARY LIGHTS, SIGNS, ETC. IF REQUIRED) FOR PROTECTION OF THE PUBLIC AS DIRECTED BY THE LOCAL AUTHORITIES.
20. ALL SUBCONTRACTORS TO PROVIDE LIABILITY INSURANCE AND WORKERS COMPENSATION BENEFITS IN ACCORDANCE WITH STATE LAW FOR ALL WORKERS AND AGENTS WHO WILL BE ON THE SITE AT ANY TIME WHILE PERFORMING WORK ON THIS PROJECT.
21. ALL WORK SHALL BE IN ACCORDANCE WITH NEC, ALL LOCAL, STATE AND FEDERAL CODES, ORDINANCES AND ANY APPLICABLE AMENDMENTS.
22. ALL DEBRIS, EXCESS MATERIAL, ETC. IS TO BE REMOVED BY THE SUBCONTRACTOR BY THE END OF THE JOB. JOB TO BE LEFT SUFFICIENTLY CLEAN AS TO WARRANT CITY APPROVAL.
23. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS, FEES AND INSPECTIONS AS MAY BE REQUIRED FOR COMPLETION OF THE JOB AS PER ALL GOVERNING AGENCIES.
24. THE SUBCONTRACTOR TO PROVIDE COST ESTIMATE FOR ALL WORK SHOWN ON DRAWINGS AND WORK NORMALLY REQUIRED TO CARRY OUT THE DESIGN INTENT OF THESE DRAWINGS.
25. DRAWINGS ARE NOT TO BE SCALED. WORK SHALL BE GOVERNED BY DIMENSION ONLY. DISCREPANCIES BETWEEN THE DRAWINGS AND/OR THE EXISTING SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF ACS IMMEDIATELY.
26. RLC EQUIPMENT SHALL NOT BE INSTALLED ON MEDIANS LESS THAN FIVE FEET (5') IN WIDTH.
27. RLC RELATED EQUIPMENT SHALL NOT BE INSTALLED WITHIN FIVE FEET (5') OF FIRE HYDRANT.
28. RLC RELATED EQUIPMENT SHALL NOT BE INSTALLED WITHIN FOUR FEET (4') OF ADA RAMP.
29. SUBCONTRACTOR SHALL SUPPLY AS-BUILT DRAWINGS TO ACS ENGINEERING DEPARTMENT WITHIN THIRTY (30) DAYS OF CONSTRUCTION COMPLETION.
30. SUBCONTRACTOR SHALL COMPLETE A "RLC POST CONSTRUCTION INSTALLATION ACCEPTANCE FORM" FOR EACH RLC INSTALLED. COMPLETED FORMS SHALL BE FORWARDED TO ACS CONSTRUCTION DEPARTMENT.
31. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE RESPECTIVE OWNERS AND OTHER AGENCIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.
32. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING LOOPS, LEAD-INS OR OTHER TRAFFIC SIGNAL EQUIPMENT. ANY DAMAGE TO LOOPS, LEAD-INS OR OTHER SIGNAL EQUIPMENT SHALL BE REPAIRED IN ACCORDANCE WITH CURRENT NCDOT SIGNAL STANDARDS.

- CONTACT: CITY OF RALEIGH PUBLIC WORKS DEPT., TRAFFIC ENGINEERING DIV.
- GAS COMPANY
  - WATER DISTRICT
  - PHONE COMPANY
  - CABLE COMPANY
  - LOCAL AND/OR STATE EXCAVATION AUTHORITY

## SPECIFIC CONSTRUCTION NOTES:

1. THE SUBCONTRACTOR SHALL INSTALL ALL SUBSTRUCTURES ACCORDING TO LOCAL GOVERNING AGENCY POST LINE REQUIREMENTS WHERE APPLICABLE.
2. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING PHOTO ENFORCEMENT SIGNAGE PER CITY STANDARDS.
3. THE SUBCONTRACTOR SHALL SUPPLY AND INSTALL "TRANSPO, INC." BREAKAWAY BOLTS ONTO 1" AFS. THREADED BOLT SHALL NOT PROTRUDE MORE THAN 2-1/2" ABOVE FINISHED CONCRETE SURFACE.
4. PULLBOX COVERS SHALL HAVE MARKING "TRAFFIC SIGNAL".

## PHASING DIAGRAM



## PHASING DIAGRAM DETECTION LEGEND

- ← PULSE DETECTION
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

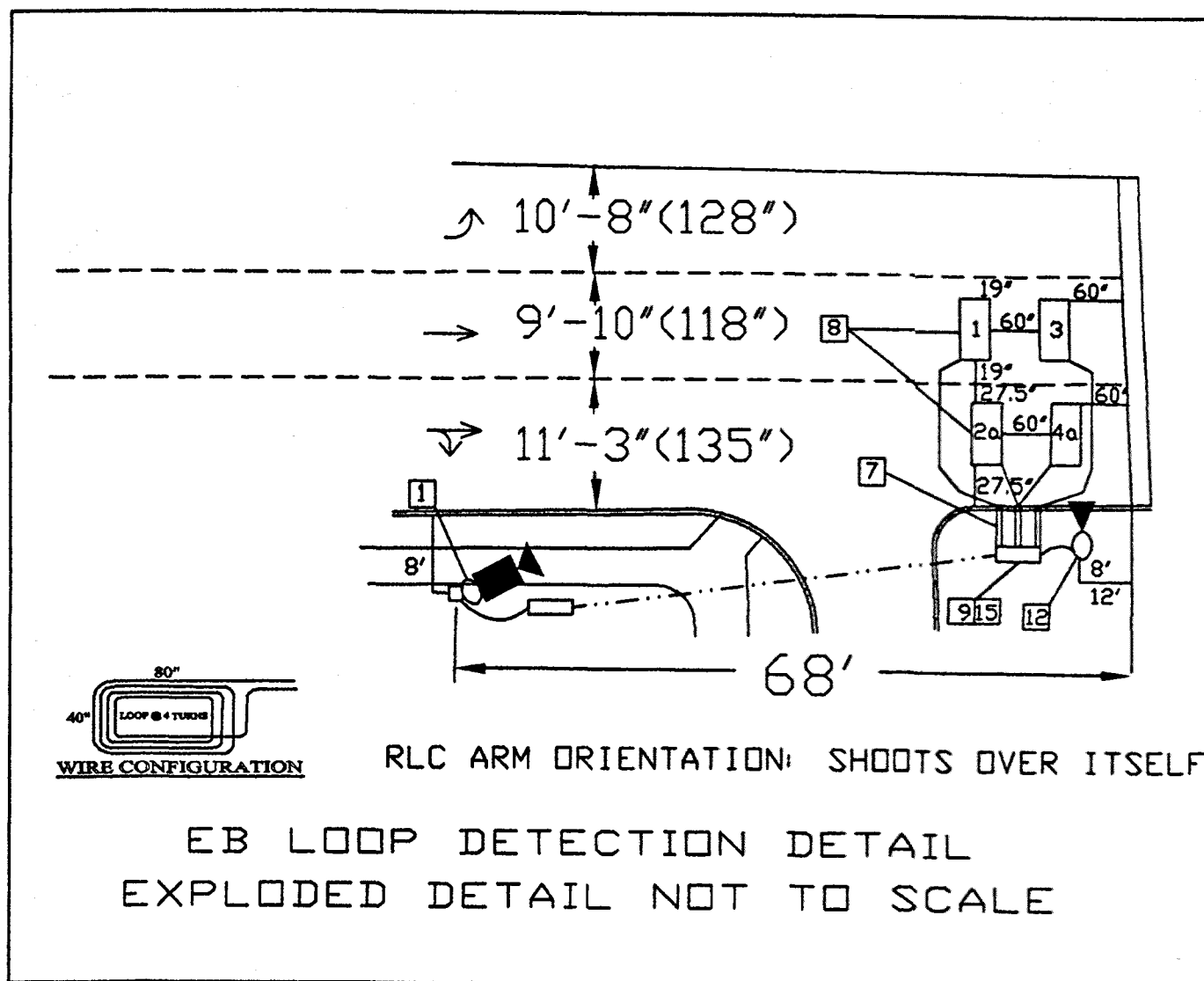
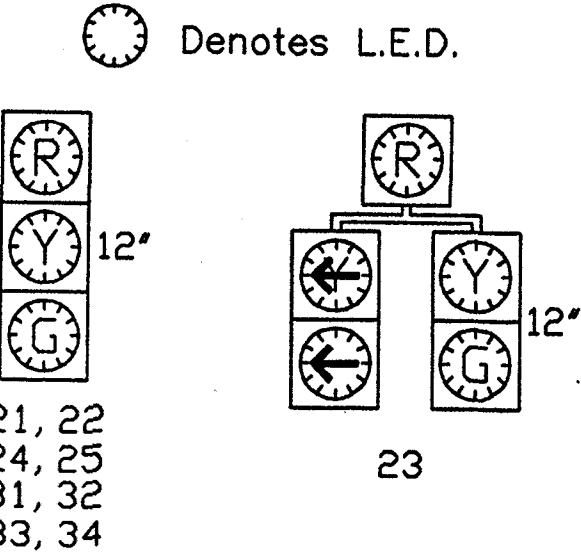


TABLE OF OPERATION				
SIGNAL FACE	PHASE			F L A S H
	Ø 1	Ø 2	Ø 3	
21, 22	R	G	R	Y
23		G	R	Y
24, 25	G	G	R	Y
31, 32	R	R	G	R
33, 34	R	R	G	R

## SIGNAL FACE I.D.



3 Phase  
Fully Actuated  
(Raleigh City Signal System)

## LEGEND

- VIDEO DETECTION CAMERA
- RLC POLE ASSEMBLY
- AUXILIARY FLASH ASSEMBLY
- NO. 5 PULLBOX
- POWER PEDESTAL

## CONSTRUCTION LEGEND

1. ACS TO PROVIDE POLE CAMERA UNIT. SUBCONTRACTOR TO PROVIDE 2' x 2' x 30" PCC FOUNDATION. SUBCONTRACTOR SHALL INSTALL 4" CAP AT LEAST 30" WIDE. POLES SHALL BE 36" MIN. FROM CURB FACE UNLESS OTHERWISE NOTED ON DRAWING.
2. INSTALL 3 # 10 THW CABLE FOR 120 VAC POWER. COLOR CODE BLACK, WHITE & GREEN.
3. INSTALL 2" PVC CONDUIT PER CITY SPECIFICATIONS, STUB INTO NEW OR EXISTING PULL BOX.
4. CONNECT 3 WIRE CIRCUIT TO CONTROLLER OR TRAFFIC SIGNAL POWER. ROUTE TO ALL RLC CAMERAS.
5. INSTALL 3 CONDUCTOR # 14 SHIELDED CABLE FOR 120 VAC RED AND YELLOW PHASE CONTROL ROUTE FROM RLC CAMERA TO TRAFFIC SIGNAL POLE TAP BOX. REFER TO CR 9321 MAGNETIC MODULE WIRING DETAIL ON SHEET 2.
6. INSTALL (4) 2 CONDUCTOR SHIELDED DLCS WITH DRAIN WIRE. (4) 2, 12 AWG CABLE TO EACH ACS POLE. (4) EACH CABINET.
7. INSTALL LOOP STUB OUT TO PULL BOX. EACH LOOP LEAD WIRE SHALL BE CUT IN SEPARATE CHANNELS TO STUB OUT.
8. INSTALL (4) LOOP DETECTORS: IMSA 51-7, 14 AWG CABLE.
9. INSTALL NEW PULL BOX. ALL PULL BOXES SHALL BE NO. 5 UNLESS OTHERWISE NOTED ON DRAWING.
10. INSTALL IN-LINE FUSE HOLDERS RATED AT 20 AMPS FOR POWER. INSTALL IN-LINE FUSE HOLDERS RATED AT 5 AMPS FOR PHASE CONDUCTORS.
11. INSTALL 3 PAIR # 14 THW AND 6 PAIR IMSA 59-2, #22 AWG FOR AUXILIARY FLASH POWER AND TRIGGERING FOR EACH AUXILIARY FLASH UNIT.
12. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING AND INSTALLING 9' AUXILIARY FLASH POLE. INSTALL PELCO TYPE 1A FOOTING WITH A 12" BOLT CIRCLE FOR FLASH POLE.
13. NOTE: INSTALL TO LOCAL & NEC SPECIFICATIONS, 10' GROUND ROD AND # 10 SOLID GROUND WIRE TO EACH AUX FLASH POLE FRAME AS EQUIPMENT BOND. SUBCONTRACTOR SHALL SUPPLY & INSTALL TRANSPO # 4100 BREAK AWAY BOLTS. SUBCONTRACTOR SHALL SUPPLY CEMENT CAP AT BASE OF POLE.
14. INSTALL 6 PAIR IMSA 59-2, # 22 AWG FOR RLC ROUTER INTERFACE CABLE. ROUTE FROM TELEPHONE JUNCTION BOX TO EACH GTCD POLE.
15. SUB CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING AND INSTALLING NEW OVERHEAD WIRING AND LASHING.
16. SPLICE & SOLDER LOOP DETECTOR LEAD INS TO DLCS CABLES AND INSTALL 3M COUPLERS OR EQUIVALENT IN THE PULL BOX.
17. TELEPHONE ISDN TERMINATIONS.
18. INSTALL POWER PEDESTAL TO DOT SPECIFICATIONS. POWER PEDESTAL LOCATION TO BE DETERMINED BY SERVICE PLANNER.
19. INSTALL CR 9321 MAGNETIC MODULE AT TRAFFIC SIGNAL CONTROLLER CABINET. SEE CR 9321 WIRING DIAGRAM ON SHEET 2. INSTALL 3 # 10 THW CABLE FOR 120 VAC POWER FOR MAGNETIC SWITCH. COLOR CODE BLACK, WHITE & GREEN.
20. UPGRADE ALL SIGNAL HEADS TO L.E.D. INDICATIONS.

LOOP & DETECTOR UNIT INSTALLATION CHART											
INDUCTIVE LOOPS						DETECTOR UNITS					
LOOP NO.	SIZE (ft)	TURNS	DIST. FROM STOPBAR (ft)	EXISTING	NEW	UNIT NO.	NE	SE	SW	NEMA PHASE	TIMING
2A, 2B	6' X 6'	Existing	70'	X	1	1	1	1	1	Ø1	15 SEC.
2C, 2D	6' X 6'	Existing	70'	X	2	2	2	2	2	Ø2	15 SEC.
2E	6' X 60'	Existing	0'	X	2	2	2	2	2	Ø1	15 SEC.
3A	6' X 60'	Existing	0'	X	3	3	3	3	3	Ø3	15 SEC.
3B	6' X 60'	Existing	0'	X	4	4	4	4	4	Ø3	15 SEC.
3C	6' X 60'	Existing	0'	X	4	4	4	4	4	Ø3	15 SEC.
3D	6' X 60'	Existing	0'	X	4	4	4	4	4	Ø3	15 SEC.

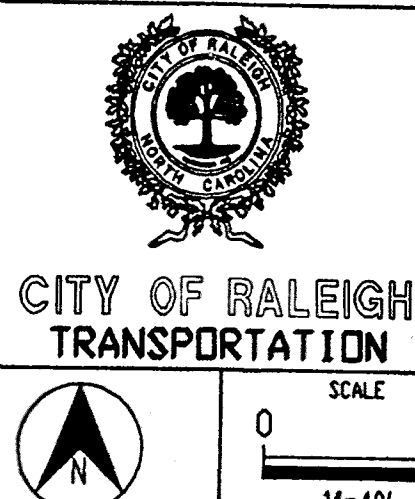
## TIMING CHART

PHASE	Ø1	Ø2	Ø3
MINIMUM GREEN	7 SEC.	10 SEC.	7 SEC.
PASSAGE/GAP	1.0 SEC.	3.0 SEC.	1.0 SEC.
YELLOW CHANGE INT.	4.0 SEC.	4.0 SEC.	4.0 SEC.
RED CLEARANCE	2.0 SEC.	2.0 SEC.	2.0 SEC.
MAX. 1	15 SEC.	30 SEC.	20 SEC.
MAX. 2	20 SEC.	40 SEC.	30 SEC.
RECALL POSITION	NONE	MIN. RECALL	NONE
VEH. CALL MEMORY	NONLOCK	LOCK	NONLOCK
WALK	— SEC.	— SEC.	— SEC.
FLASHING DON'T WALK	— SEC.	— SEC.	— SEC.

ACS STATE AND LOCAL SOLUTIONS  
PUBLIC SAFETY SOLUTIONS  
1400 N. 7TH STREET, SUITE B  
BOYDTON, AL 36008  
TEL: 404-396-3397 FAX: 404-396-1972

RED LIGHT PHOTO ENFORCEMENT PLAN  
CITY OF RALEIGH  
EB, PEACE ST @ WEST STREET

Signal Upgrade  
Prepared in the Offices of:  
Ramey Kemp & Associates, Inc.  
Transportation Engineers  
1000 Peachtree St. NE, Suite 2000  
Atlanta, GA 30309  
(404) 525-1111 Fax: (404) 525-1112

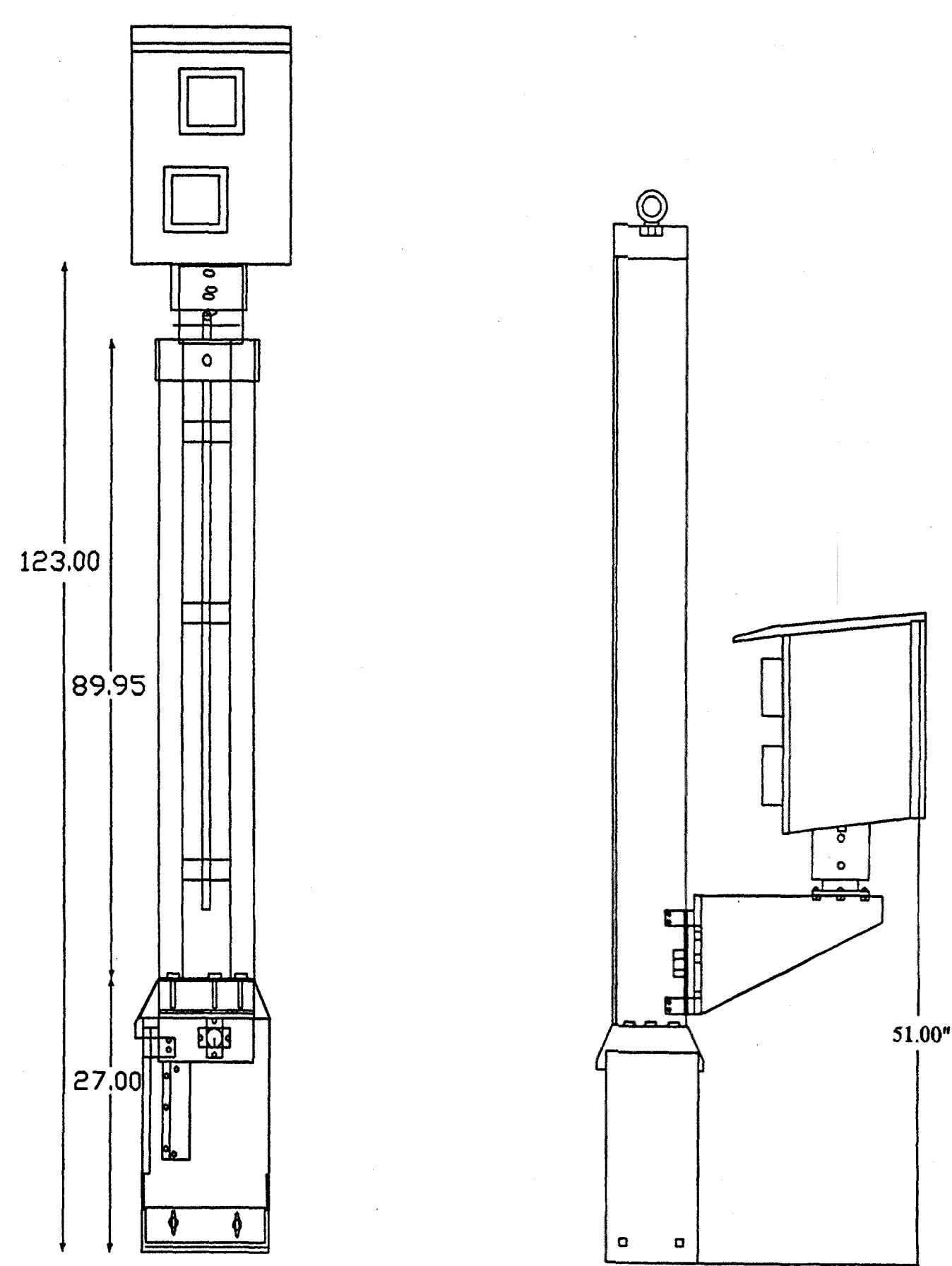
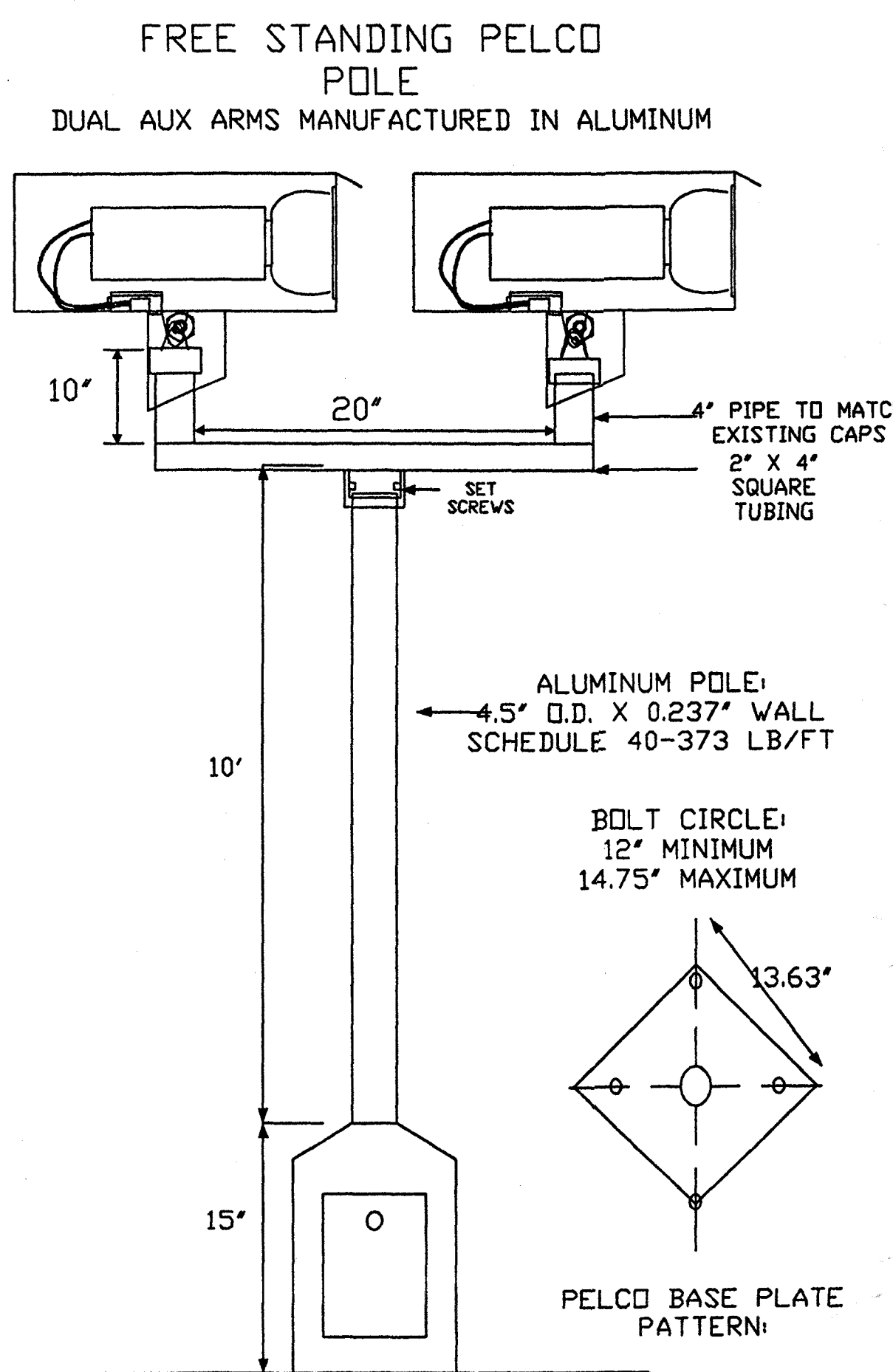


SCALE  
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1"=40'

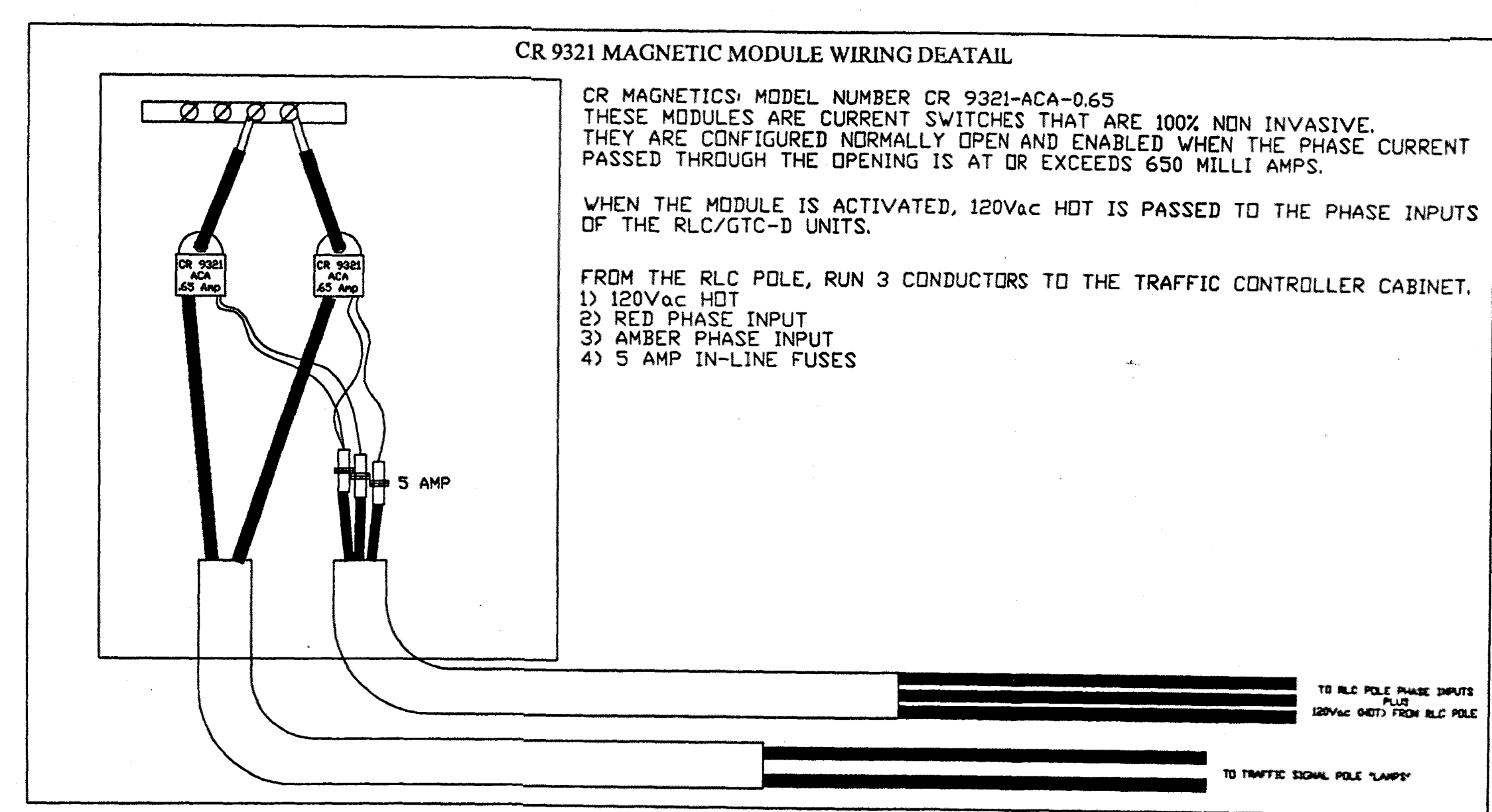
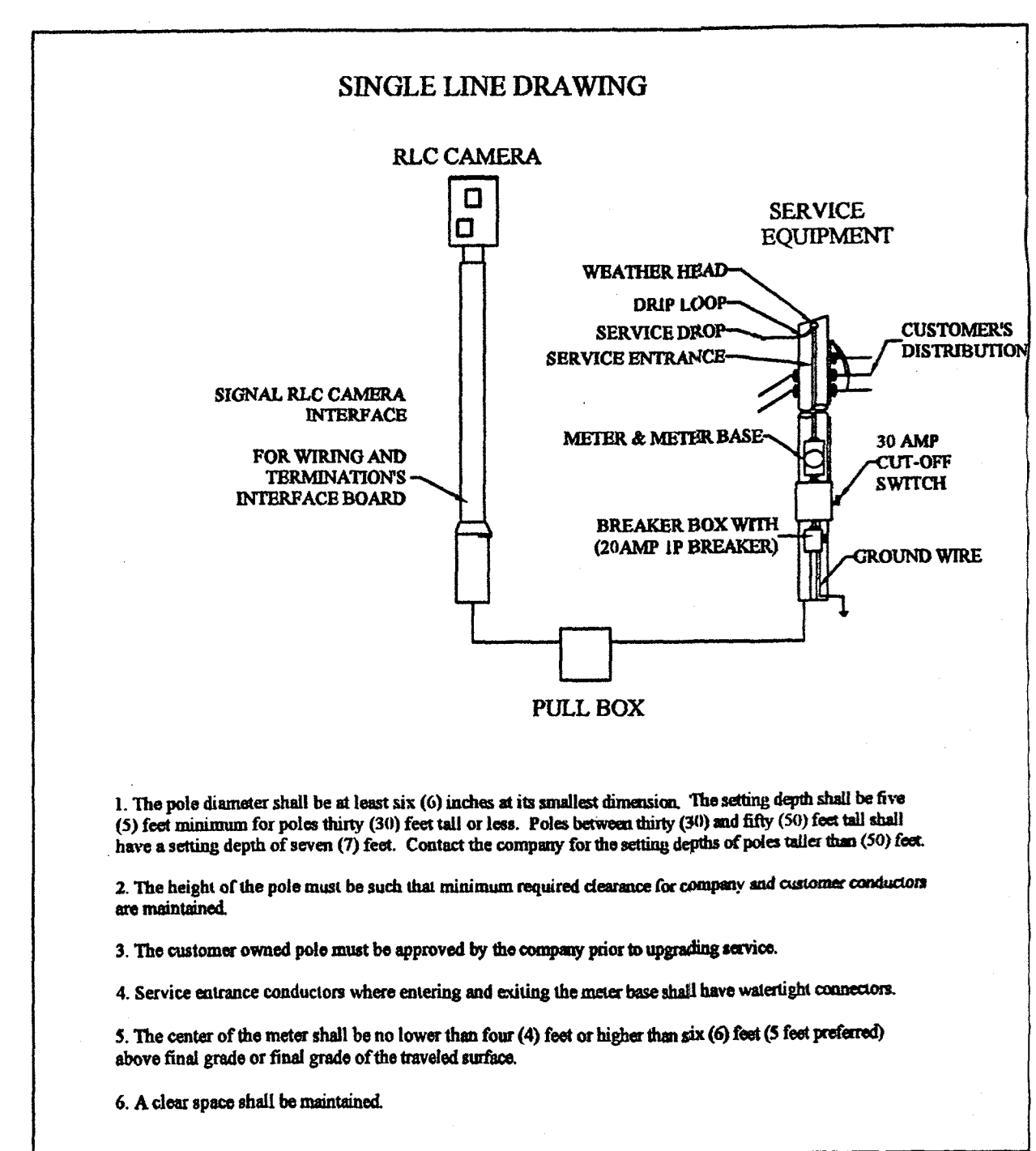
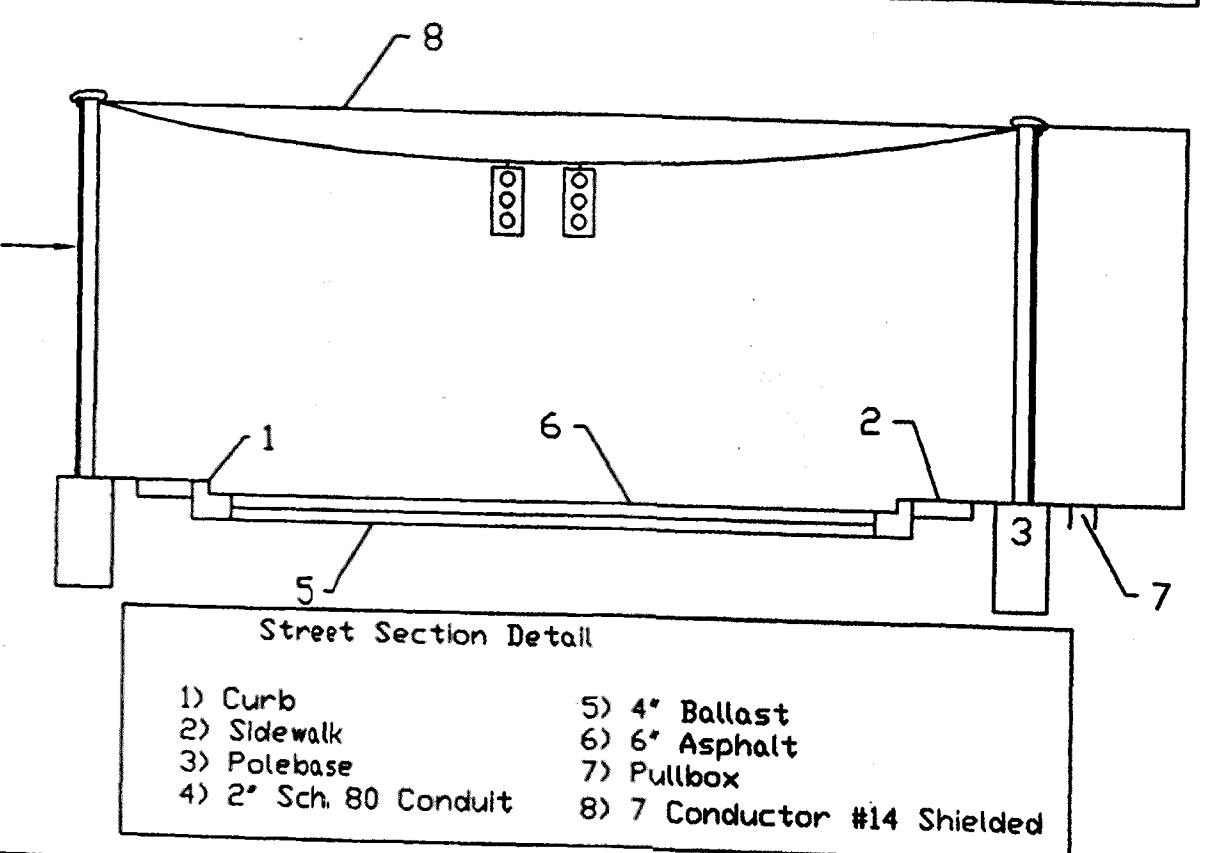
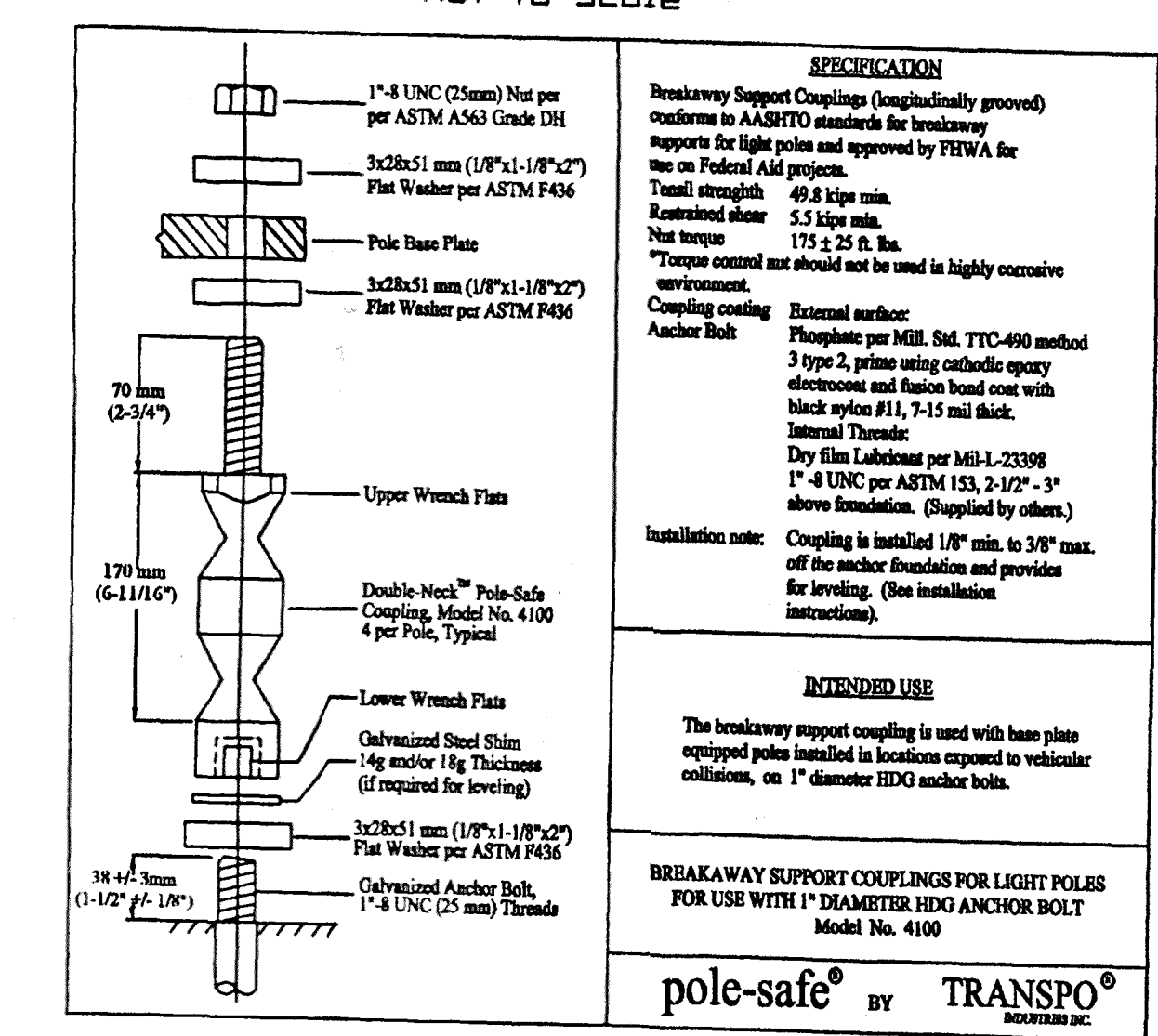
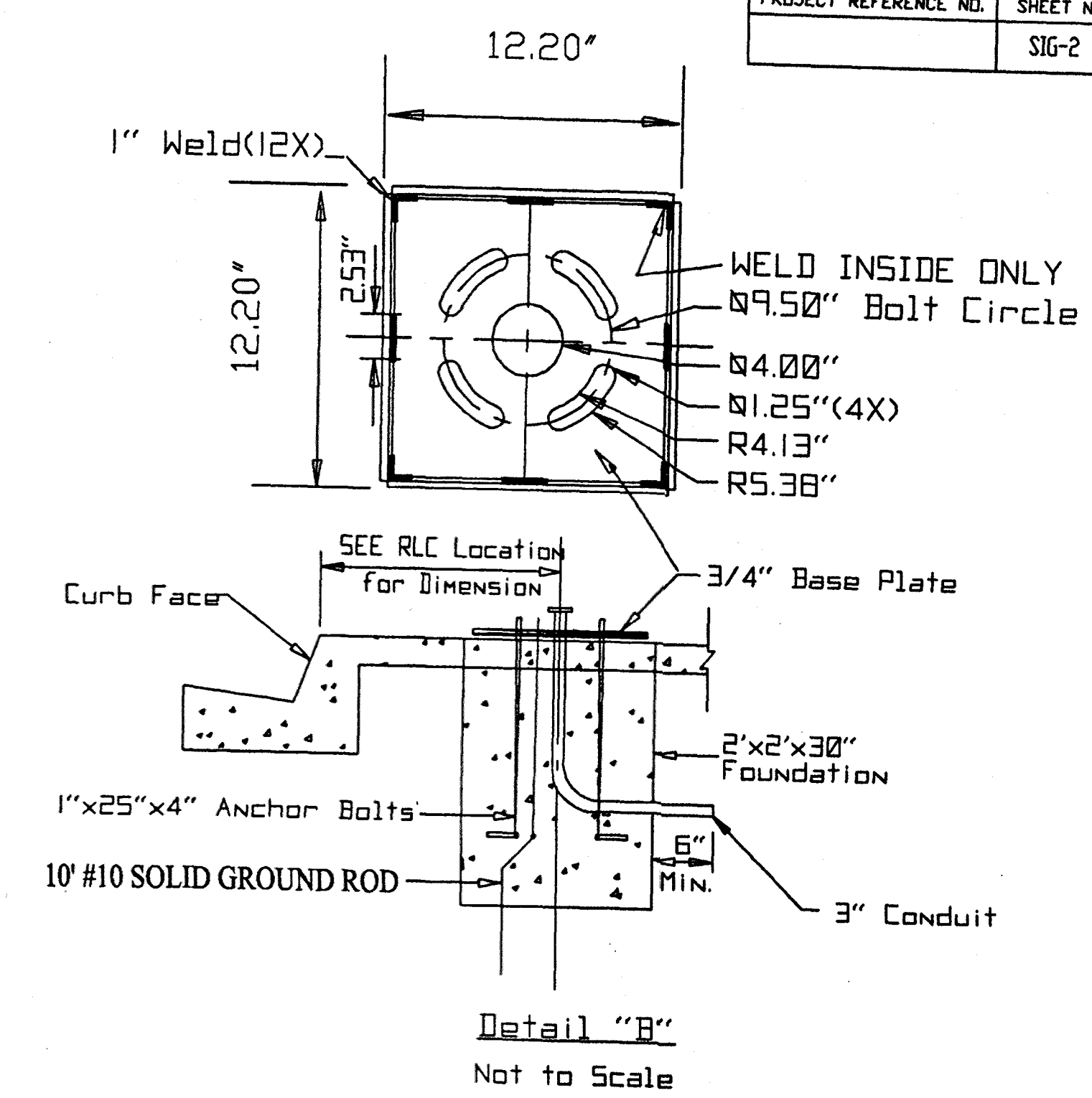
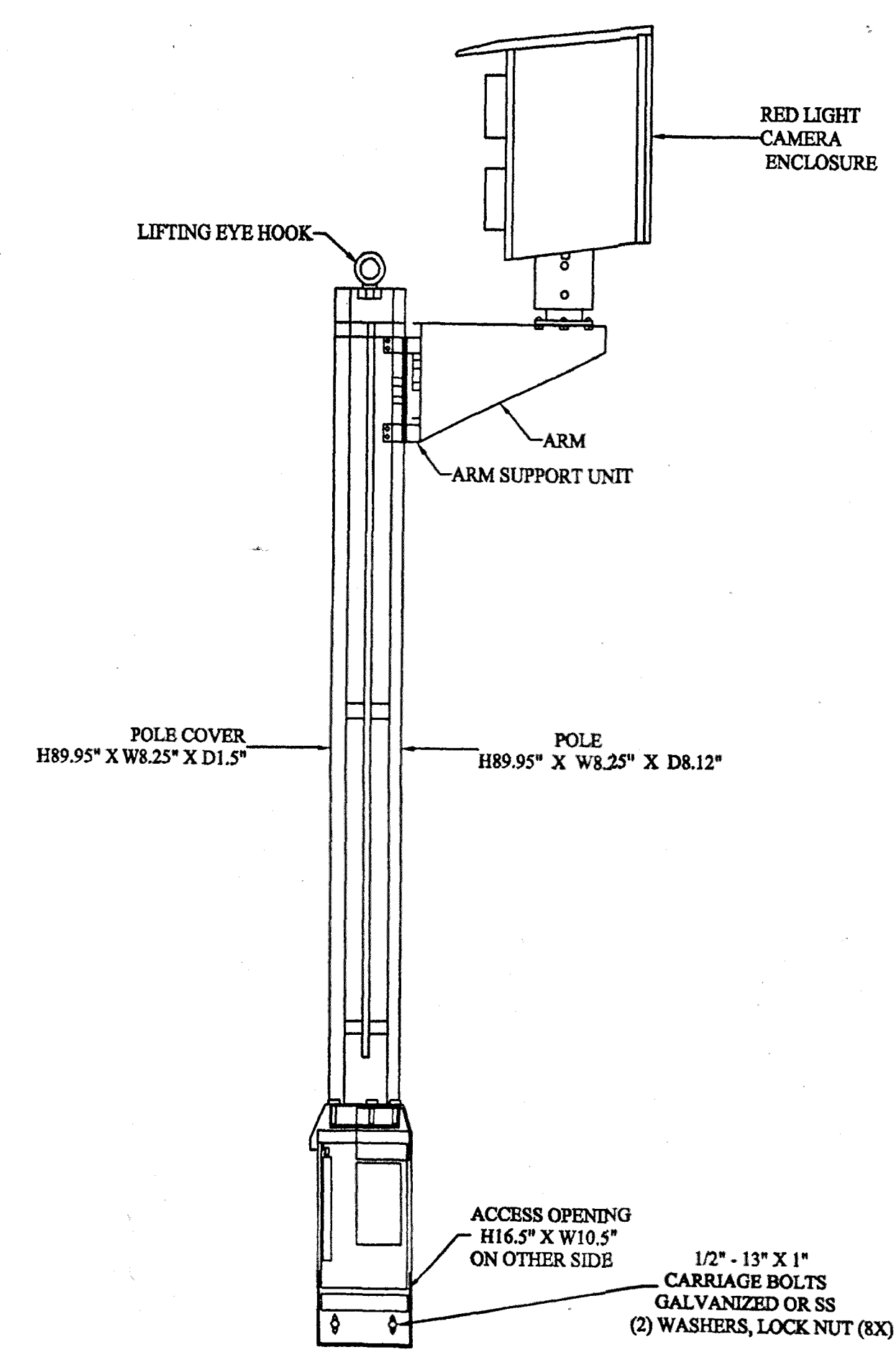
Peace Street  
at  
West Street

Division 05 Wake County Raleigh  
PLAN DATE: 4-16-04 REVIEWED BY: [Signature]  
PREPARED BY: [Signature] RKA PROJ. NO: 04052 (040)  
REVISIONS: [Table with columns for INIT. and DATE]  
SIGNATURE: [Signature] DATE: 4/22/04  
SIS INVENTORY NO. CITY:

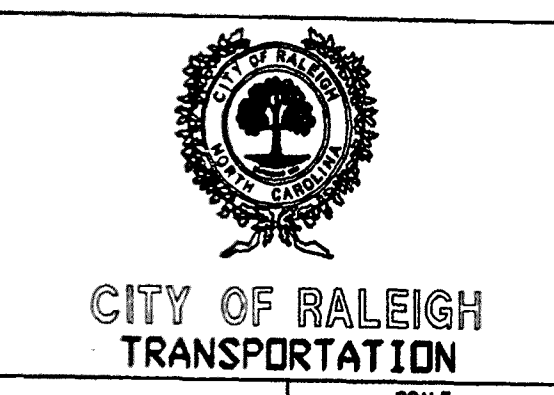




**RLC MECHANICAL  
MOTORIZED POLE DETAIL**



Signal Upgrade  
Prepared in the Offices of:  
**Ramey Kemp & Associates, Inc.**  
Transportation Engineers  
10000 Peachtree Dunwoody Rd., Suite 300  
Atlanta, GA 30328  
(404) 412-2112 Fax (404) 412-2113



Peace Street  
at  
West Street

Division 05 Wake County Raleigh

PLAN DATE: REVIEWED BY: RKA PROJ. NO. 04052 (040)

PREPARED BY: REVISIONS: INT. DATE

SEAL

4/28/04

ACS STATE AND LOCAL SOLUTIONS  
PUBLIC SAFETY SOLUTIONS

**RED LIGHT PHOTO ENFORCEMENT PLAN**  
CITY OF RALEIGH  
EB, PEACE STREET & WEST STREET

SCALE: NONE