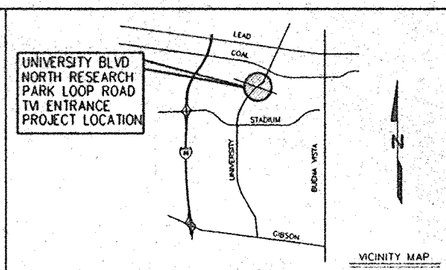
PUBLIC INFRASTRUCTURE CONSTRUCTION PLANS
TRAFFIC SIGNAL INSTALLATION
UNIVERSITY BOULEVARD
NORTH RESEARCH PARK LOOP ROAD
TVI ENTRANCE

INDEX OF SHEETS



VICINITY MAP
NOT TO SCALE
L-15

NOTICE TO CONTRACTORS

1. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986 EDITION AND SHALL INCLUDE UPDATE No.6.
2. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM (260-1990) FOR LOCATION OF EXISTING UTILITIES.
3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR SURVEYOR IMMEDIATELY SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
4. THREE (3) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO CONSTRUCTION COORDINATION DIVISION A DETAILED CONSTRUCTION SCHEDULE. TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN A BARRICADING PERMIT FROM THE CONST COORDINATION DIVISION. CONTRACTOR SHALL NOTIFY BARRICADE ENGINEER (768-2551) PRIOR TO OCCUPYING AN INTERSECTION. REFER TO SECTION 19 OF THE GENERAL CONDITIONS OF THE STANDARD SPECIFICATIONS.
5. ALL STREET STRIPING ALTERED OR DESTROYED SHALL BE REPLACED [redacted] BY CONTRACTOR TO LOCATION [redacted] AS EXISTING OR AS INDICATED BY THIS PLAN SET.
6. CONTRACTOR SHALL NOTIFY THE ENGINEER NOT LESS THAN SEVEN (7) DAYS PRIOR TO STARTING WORK IN ORDER THAT THE CITY SURVEYOR MAY TAKE NECESSARY MEASURES TO INSURE THE PRESERVATION OF SURVEY MONUMENTS. CONTRACTOR SHALL NOT DISTURB PERMANENT SURVEY MONUMENTS WITHOUT THE CONSENT OF THE CITY SURVEYOR AND SHALL NOTIFY THE CITY SURVEYOR AND BEAR THE EXPENSE OF REPLACING ANY THAT MAY BE DISTURBED WITHOUT PERMISSION. REPLACEMENT SHALL BE DONE ONLY BY THE CITY SURVEYOR. WHEN A CHANGE IS MADE IN THE FINISHED ELEVATIONS OF THE PAVEMENT OF ANY ROADWAY IN WHICH A PERMANENT SURVEY MONUMENT IS LOCATED, CONTRACTOR SHALL, AT HIS OWN EXPENSE, ADJUST THE MONUMENT COVER TO THE NEW GRADE UNLESS OTHERWISE SPECIFIED. REFER TO SECTION 4.4 OF THE GENERAL CONDITIONS OF THE STANDARD SPECIFICATIONS. ANY PERMANENT SURVEY MONUMENT LOCATED WITHIN 50' OF THE PROJECT LIMITS NOT SHOWN ON THE PLANS THAT IS DESTROYED DURING CONSTRUCTION WILL BE REPLACED AT DESIGNER'S EXPENSE.
7. ANY WORK WITHIN AN ARTERIAL ROADWAY REQUIRES TWENTY-FOUR HOUR CONSTRUCTION.
8. ANY DAMAGE TO THE EXISTING FACILITIES (CURB, GUTTER, PAVEMENT, CONDUITS, LANDSCAPING, UTILITY LINES, ETC.,) DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.

THE FOLLOWING NOTES ALSO APPLY WHEN CHECKED

- ☐ ALL UTILITIES AND UTILITY SERVICE LINES SHALL BE INSTALLED PRIOR TO PAVING.
- ☐ BACKFILL COMPACTION SHALL BE ACCORDING TO SPECIFIED STREET USE.
- ☐ TACK COAT REQUIREMENTS SHALL BE DETERMINED BY THE CITY ENGINEER.
- ☐ SIDEWALKS AND WHEELCHAIR RAMPS WITHIN THE CURB RETURNS SHALL BE CONSTRUCTED WHEREVER A NEW CURB RETURN IS CONSTRUCTED.
- ☐ IF CURB IS DEPRESSED FOR A DRIVEPAD, THE DRIVEPAD SHALL BE CONSTRUCTED PRIOR TO ACCEPTANCE OF CURB AND GUTTER.
- ☐ ALL STORM DRAINAGE FACILITIES SHALL BE COMPLETED PRIOR TO FINAL ACCEPTANCE.
- ☐ THE REQUESTOR OR DEVELOPER SHALL BE RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ALL CURB AND GUTTER OR SIDEWALK DAMAGED AFTER APPROVAL BY THE CITY ENGINEER OF WORK COMPLETED BY THE CONTRACTOR.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL ABIDE BY ALL LOCAL, STATE, AND FEDERAL LAWS, RULES AND REGULATIONS WHICH APPLY TO THE CONSTRUCTION OF THESE IMPROVEMENTS.
2. ALL ELECTRICAL, TELEPHONE, CABLE TV, GAS AND OTHER UTILITY LINES, CABLES, AND APPURTENANCES ENCOUNTERED DURING CONSTRUCTION THAT REQUIRE RELOCATION, SHALL BE COORDINATED WITH THAT UTILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL NECESSARY UTILITY ADJUSTMENTS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR DELAYS OR INCONVENIENCES CAUSED BY UTILITY COMPANY WORK CREWS. THE CONTRACTOR MAY BE REQUIRED TO RESCHEDULE HIS ACTIVITIES TO ALLOW UTILITY CREWS TO PERFORM THEIR REQUIRED WORK.
3. A DISPOSAL SITE FOR ALL EXCESS EXCAVATION MATERIAL, AND UNSUITABLE MATERIAL SHALL BE OBTAINED BY THE CONTRACTOR IN COMPLIANCE WITH APPLICABLE ENVIRONMENTAL REGULATIONS AND APPROVED BY THE CONSTRUCTION OBSERVER. ALL COSTS INCURRED IN OBTAINING A DISPOSAL SITE AND HAUL THERETO SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE EXISTING UTILITY LINES WITHIN THE CONSTRUCTION AREA. ANY DAMAGE TO EXISTING FACILITIES CAUSED BY CONSTRUCTION ACTIVITY SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE AND APPROVED BY THE CONSTRUCTION OBSERVER.
5. CONSTRUCTION ACTIVITY SHALL BE LIMITED TO THE PROPERTY AND/OR PROJECT LIMITS. ANY DAMAGE TO ADJACENT PROPERTIES RESULTING FROM THE CONSTRUCTION PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR. ANY COSTS INCURRED FOR REPAIRS SHALL BE THE COST OF THE CONTRACTOR.
6. OVERNIGHT PARKING OF CONSTRUCTION EQUIPMENT SHALL NOT OBSTRUCT DRIVEWAYS OR DESIGNATED TRAFFIC LANES. THE CONTRACTOR SHALL NOT STORE ANY EQUIPMENT OR MATERIAL WITHIN THE PUBLIC RIGHT-OF WAY ON PRIVATE LAND WITHOUT WRITTEN PERMISSION.
7. THE CONTRACTOR SHALL OBTAIN ALL THE NECESSARY PERMITS FOR THE PROJECT PRIOR TO COMMENCING CONSTRUCTION (I.E. BARRICADING, TOPSOIL DISTURBANCE AND EXCAVATION PERMITS, ETC.)
8. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE AT HIS EXPENSE ANY AND ALL PROPERTY CORNERS DESTROYED DURING CONSTRUCTION. ALL PROPERTY CORNERS MUST BE RESET BY A REGISTERED LAND SURVEYOR.
9. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE AT HIS EXPENSE ANY AND ALL PROPERTY CORNERS DESTROYED DURING CONSTRUCTION. ALL PROPERTY CORNERS MUST BE RESET BY A REGISTERED LAND SURVEYOR.
10. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES DURING CONSTRUCTION.
11. THE CONTRACTOR SHALL PLACE THE PERMANENT REFLECTORIZED PAVEMENT MARKINGS AS SHOWN ON THE DRAWING.

FOR INFORMATION ONLY

As-builts and Closeout package not submitted.
Construction field-verified by surface inspection.

By: Jim Roeder Date: 7-16-2019

REV	SHEETS	CITY ENGINEER	DATE	USER DEPARTMENT	DATE	USER DEPARTMENT	DATE
1	3,4,5,6	Billy J. Berkley	4-2-97	Jim Boeder	3-4-97		

ENGINEERS STAMP & SIGNATURE	APPROVALS	ENGINEER	DATE
CHARLES W. TRASK NEW MEXICO 6878 REGISTERED PROFESSIONAL ENGINEER 10-10-96	DRC Chairman	Billy J. Berkley	11-9-96
	Transportation	[illegible]	11-1-96
	Water/Wastewater	N/A	10-11-96
	Hydrology	N/A	10/29/96
	Parks		
	Const. Mngmt.		
	NMUI		

APPROVED FOR CONSTRUCTION
City Engineer Date 5/22/98

CITY PROJECT NO 4913.92

SHEET 1 OF 20

BOHANNAN-HUSTON INC.
ENGINEERS • PLANNERS • PHOTOGRAMMETRISTS • SURVEYORS • LANDSCAPE ARCHITECTS
ALBUQUERQUE LAS CRUCES SANTA FE

TRANS [98282A2211 SHEETS GENERAL]UNICOVER.DWG

SIGNAL NOTES

1. ALL WORK ON THESE PLANS TO BE PERFORMED UNDER THIS CONTRACT SHALL CONFORM TO THE CURRENT NATIONAL ELECTRIC CODE, THE STANDARDS OF THE NATIONAL BOARD OF FIRE UNDERWRITERS FOR ELECTRICAL WIRING AND APPARATUS, AND THE CITY'S TRAFFIC ENGINEERING OPERATIONS THIRD DRAFT SPECIFICATIONS (JUNE 1994).

2. LOCATIONS OF CONDUITS, FOUNDATIONS, CONTROL CABINETS, POLES, PULL BOXES, MANHOLES, AND SPLICE CABINETS SHOWN ON THE PLANS ARE SCHEMATIC AND SHALL BE ADJUSTED IN THE FIELD TO MAXIMIZE CLEAR SPACE AVAILABLE FOR PEDESTRIANS AND WHEELCHAIRS TO COMPLY WITH THE AMERICANS WITH DISABILITIES ACT. THE CONTRACTOR SHALL MEET WITH THE CITY'S TRAFFIC ENGINEERING OPERATIONS PERSONNEL IN THE FIELD AT ALL LOCATIONS TO SPOT EQUIPMENT BEFORE BEGINNING THE WORK. ALL SUCH EQUIPMENT SHALL BE INSTALLED WITHIN THE RIGHT-OF-WAY.

3. THE CONTRACTOR SHALL BORE, DRILL, OR PUSH WHEN CROSSING EXISTING PAVEMENTS AND ANY DRIVEWAYS FOR SIDE STREET CROSSINGS. BEFORE CONDUIT CAN BE BORED, DRILLED, OR PUSHED THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES. THE CONTRACTOR SHALL LOCATE AND EXPOSE GAS LINES WHICH CROSS ANY PROPOSED BORES. THESE EXCAVATIONS SHALL REMAIN OPEN UNTIL AFTER THE BORE IS COMPLETE. CONTRACTOR SHALL REMOVE AND REPLACE IN KIND ANY SIDEWALK OR PAVEMENT REQUIRED TO EXPOSE SUCH LINES. THE CONTRACTOR MAY CUT, TRENCH, AND REPLACE EXISTING PAVEMENT ONLY WHEN APPROVED BY THE PROJECT MANAGER.

4. SPLICING OF COMMUNICATIONS CABLE WILL NOT BE PERMITTED IN PULL BOXES. SPLICING OF COMMUNICATIONS CABLE (CONNECTIONS) WILL BE PERMITTED ONLY AT SPLICE CABINETS OR CONTROLLER CABINETS WITH SPLICE BARS. SPLICING OF TRAFFIC SIGNALS MCC WILL BE PERMITTED IN LARGE PULL BOXES INCLUDING LARGE MEDIAN PULL BOXES. SPLICING OF OPTICAL DETECTOR CABLE WILL NOT BE PERMITTED FROM THE DETECTOR TO THE CONTROLLER CABINET.

5. ALL LOOP LEAD-IN CABLES SHALL BE TAGGED AT THE CONTROL CABINET TO IDENTIFY EACH CABLE BY PHASE AND LOOP NUMBER. ALL OPTICAL DETECTOR CABLE SHALL BE TAGGED AT THE CONTROL BOX TO IDENTIFY EACH BY DIRECTION AND LOCATION.

6. ALL PULL BOXES SHALL BE REINFORCED POLYMER MORTAR HEAVY DUTY TYPE WITH REINFORCED POLYMER MORTAR HEAVY DUTY COVERS. CONCRETE COVERS, STEEL COVERS, AND CONCRETE PULL BOXES WILL NOT BE ACCEPTABLE.

7. THE CONTRACTOR SHALL NOTIFY THE CITY OF ALBUQUERQUE TRAFFIC ENGINEERING OPERATIONS(857-8000) THREE WORKING DAYS IN ADVANCE OF ANY ANTICIPATED WORK ON TRAFFIC SIGNALS. TRAFFIC ENGINEERING OPERATIONS PERSONNEL WILL ASSIST THE CONTRACTOR IN FIELD LOCATION OF EQUIPMENT, AND MUST BE PRESENT WHEN SIGNALS ARE SHUT-OFF OR TURNED ON. THE CONTRACTOR SHALL NOTIFY THE CITY OF ALBUQUERQUE TRAFFIC ENGINEERING OPERATIONS EACH TIME A TRAFFIC SIGNAL CONTROL DOOR IS OPENED.

8. THE CONTRACTOR SHALL NOTIFY PUBLIC SERVICE COMPANY 30 DAYS IN ADVANCE OF ANTICIPATED POWER SERVICE CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WITH PUBLIC SERVICE COMPANY TO ESTABLISH ELECTRICAL SERVICE IN THE CITY'S NAME. THE CONTRACTOR SHALL PAY THE LOCAL POWER COMPANY ALL COSTS TO PROVIDE ELECTRICAL SERVICE. THIS WORK WILL BE CONSIDERED INCIDENTAL TO CONSTRUCTION.

9. THE CONTRACTOR SHALL REMOVE ALL CONFLICTING SIGNING AND DELIVER TO THE CITY TRAFFIC ENGINEERING YARDS WHEN TRAFFIC SIGNALS ARE PUT INTO OPERATION.

10. LIVE UNUSED CONDUCTORS WILL NOT BE ALLOWED AT MASTARM POLES AND PEDESTAL POLES. ALL SUCH UNUSED CONDUCTORS SHALL BE DISCONNECTED AT THE LARGE PULL BOX ADJACENT TO THE POLE.

11. IF TRENCH WIDTHS LESS THAN 12" ARE PROPOSED BY THE CONTRACTOR, APPROVED COMPACTION METHODS SHALL BE USED DURING BACKFILL TO PREVENT LATENT TRENCH FAILURES. THE CONTRACTOR SHALL USE GROUT OR LEAN FILL AS APPROVED BY THE PROJECT MANAGER IN LIEU OF EARTH BACKFILL.

12. FOR CONDUITS CONTAINING ONLY LOW VOLTAGE COMMUNICATIONS CABLES, THE REQUIREMENTS FOR A SINGLE CONDUCTOR BARE COPPER #8 AWG MAY BE WAIVED WHERE PERMITTED BY THE NATIONAL ELECTRIC CODE.

13. THE CITY OF ALBUQUERQUE TRAFFIC ENGINEERING OPERATIONS PERSONNEL WILL PROVIDE TRAFFIC SIGNAL TIMING PLANS AND WILL PROGRAM TRAFFIC SIGNAL CONTROLLERS.

14. EXISTING CONDUITS SHALL BE REPAIRED, ADJUSTED, OR REPLACED AS DIRECTED BY THE PROJECT MANAGER WHERE ELECTRICAL PULLBOXES OR TRAFFIC MANHOLES ARE INSTALLED OR REPLACED.

15. CONTRACTOR SHALL COIL EXCESS INTERCONNECT CABLE AT ALL NEW OR EXISTING TRAFFIC MANHOLES BETWEEN SPLICE CABINET OR CONTROL CABINETS WITH SPLICE BARS. IF MORE THAN ONE MANHOLE EXISTS BETWEEN SPLICE CABINETS OR CONTROL CABINETS WITH SPLICE BARS, THEN COILING IS ONLY REQUIRED AT ONE OF THE MANHOLES. THE FOLLOWING QUANTITIES OF COMMUNICATION CABLE SHALL BE COILED:

    12 PAIR – 50 FT
    25 PAIR – 50 FT
    50 PAIR – 25 FT
    75 PAIR – 25 FT

16. THE CONTRACTOR SHALL ARRANGE TO HAVE OFF-DUTY POLICE OFFICERS DIRECT TRAFFIC WHEN SIGNALS ARE TURNED OFF.

17. ALL DATA SHOWN HEREIN CONCERNING EXISTING UTILITIES HAS BEEN OBTAINED FROM "AS-BUILT" DRAWINGS AND FROM FIELD OBSERVATIONS WHICH MAY OR MAY NOT BE ACCURATE. THE CONTRACTOR WILL BE RESPONSIBLE FOR EXPLORATORY TRENCHING. IF NECESSARY, TO MORE SPECIFICALLY LOCATE UTILITY LINES. COST OF LOCATING UTILITY LINES INCLUDING EXPLORATORY TRENCHING WILL BE CONSIDERED INCIDENTAL TO CONSTRUCTION.

INCIDENTAL ITEMS *

1. REMOVAL OF EXISTING PULL BOXES, CONDUITS, OR OTHER SIGNAL EQUIPMENT FOR INSTALLATION OF NEW SIGNAL EQUIPMENT.
2. CABLE TESTING AND DIAGRAMS.
3. BORING, DRILLING, PUSHING, AND TRENCHING, INCLUDING REMOVAL AND REPLACEMENT OF PAVEMENT, SIDEWALKS, DRIVEPADS, VALLEY GUTTERS, WHEELCHAIR RAMPS, CURB & GUTTER, AND LANDSCAPING (INCLUDING SPRINKLERS), FOR INSTALLATION OF PULL BOXES, CONDUITS, AND SIGNAL FOUNDATIONS, EXCEPT AS NOTED ON THE PLANS.
4. LOCATION OF UTILITY LINES INCLUDING EXPLORATORY TRENCHING AND EXPOSING OF GAS LINES WHEN BORING.
5. DESIGN, MATERIALS, INSTALLATION AND REMOVAL OF SAFETY BARRIER FOR SHIELDING EQUIPMENT OR MATERIAL.
6. APPRISING PUBLIC THROUGH THE LOCAL NEWS MEDIA.
7. HAULING OF MATERIAL TO BE DISPOSED TO CITY LANDFILL.
8. REMOVAL, SALVAGE, AND TRANSPORTATION OF EXISTING SIGNAL EQUIPMENT TO THE CITY TRAFFIC ENGINEERING OPERATIONS YARD.
9. LEAN FILL FOR CONDUIT TRENCHES.
10. PULL BOX ADJUSTMENT TO GRADE.
11. OFF-DUTY POLICE OFFICER FOR TRAFFIC CONTROL.
12. REMOVAL AND REPLACEMENT IN KIND OR BETTER OF LANDSCAPING INCLUDING SPRINKLERS, FOR INSTALLATION OF PULL BOXES, CONDUITS AND SIGNAL FOUNDATIONS.
13. COST FOR PUBLIC SERVICE COMPANY TO PROVIDE ELECTRICAL SERVICE.

* ITEMS LISTED ARE ONLY A GENERAL DESCRIPTION OF THE REQUIRED WORK AND MATERIALS, AND MAY NOT BE COMPLETE. THIS LIST DOES NOT INCLUDE ANY INCIDENTAL WORK OR MATERIALS REQUIRED BY THE SPECIAL PROVISIONS SERIALS (STANDARD DETAILS), SUPPLEMENTAL SPECIFICATIONS, OR THE STANDARD SPECIFICATIONS.

TRAFFIC SIGNAL EQUIPMENT REQUIREMENTS

1. THIS PROJECT IS AN EXTENSION OF AN EXISTING SIGNAL SYSTEM. THEREFORE THE CONTRACTOR SHALL FURNISH AND INSTALL THE FOLLOWING:
   A. THE TRAFFIC SIGNAL CONTROLLERS SUPPLIED FOR THIS PROJECT SHALL BE ECONOLITE ASC 2/2100.
   B. THE TRAFFIC SIGNAL CONTROLLER CABINETS SUPPLIED FOR THIS PROJECT SHALL BE ECONOLITE 8 PHASE SYSTEM AND PRE-EMPT READY (P SIZE).
2. SPLICE CABINETS SHALL BE AS DETAILED ON THE PLANS. LOW VOLTAGE SPLICE BLOCKS SHALL BE 50 UNITS TO THE FOOT, WITH EACH SPLICE BLOCK CAPABLE OF HANDLING 25 PAIR CABLE (NUMBER OF SPLICE BLOCKS IN EACH CABINET CAPABLE OF HANDLING NUMBER OF CONDUCTORS SHOWN ON PLANS). SPLICE BLOCKS SHALL BE BELL SYSTEMS PART #66B3-50 OR APPROVED EQUAL. ALL COMMUNICATION CABLE PAIRS SHALL BE TERMINATED AT THE SPLICE BLOCK INCLUDING INACTIVE PAIRS.
3. INTERCONNECT CABLES SHALL COMPLY WITH REA SPECIFICATION PE-22. INTERCONNECT CABLE SHALL CONTAIN THE NUMBER OF WIRE PAIRS SHOWN ON THE PLANS AND THE INDIVIDUAL CONDUCTORS SHALL BE 19 AWG SOLID.
4. EMERGENCY VEHICLE PRE-EMPT EQUIPMENT SHALL BE 3M "OPTICOM" MODEL 562 PHASE SELECTORS MOUNTED ON 3M "OPTICOM" MODEL 560 RACKS, OR APPROVED EQUAL. ALL RACKS SHALL BE CAPABLE OF PROVIDING FOUR CHANNELS OF DETECTION. PHASE SELECTOR MODULES SHALL BE CAPABLE OF TWO CHANNELS OF DETECTION EACH. OPTICAL DETECTORS SHALL BE 3M "OPTICOM" MODEL 511, 1 CHANNEL, 1 DIRECTION OR APPROVED EQUAL. OPTICAL DETECTOR CABLE SHALL BE 3M "OPTICOM" MODEL 138 OR EQUAL. OPTICAL EMITTERS SHALL BE 3M "OPTICOM" MODEL 592 WITH POWER SUPPLY, CABLE, AND SWITCHES, OR APPROVED EQUAL. A MANUFACTURERS REPRESENTATIVE SHALL ASSIST THE CONTRACTOR IN THE FIELD AS WORK PROGRESSES TO COMPLETE THE INSTALLATION OF ALL PRE-EMPTION EQUIPMENT AND ASSIST IN SETTING UP, TURNING ON, PROGRAMMING AND FIELD TESTING PREEMPTION EQUIPMENT INCLUDING EMITTERS TO INSURE THAT THE EQUIPMENT IS OPERATIONAL.
5. ALL SIGNAL ASSEMBLIES, PEDESTRIAN SIGNALS, PEDESTRIAN PUSH BUTTONS, CABINETS, AND FITTINGS SHALL COMPLY WITH THE CITY OF ALUQUERQUE TYPE AND COLOR REQUIREMENTS.

TRAFFIC SIGNAL LEGEND

NEW	EXISTING	ITEM
		PULL BOX
		SERVICE POLE
		METER PEDESTAL
		CONTROLLER CABINET
		CONDUIT RUN (SIGNALS)
		CONDUIT RUN (INTERCONNECT)
		LOOP DETECTOR
		TRAFFIC SIGNAL PEDESTAL POLE
		CONDUIT RUN NUMBER (SIGNAL)
		CONDUIT RUN NUMBER (POWER SERVICE)
		CONDUIT RUN NUMBER (INTERCONNECT)
		POLE WITH MASTARM, TRAFFIC SIGNAL AND BACKPLATE
		PEDESTRIAN PUSH BUTTON (MOUNTED TO SIDE OF POLE WHERE INDICATED)
		PEDESTRIAN SIGNALS (MOUNTED TO SIDE OF POLE WHERE INDICATED)
		SPLICE CABINET
		TRAFFIC MANHOLE

DEFINITIONS

1. "ENGINEER" – FOR THE PURPOSES OF THIS PROJECT, THE TERM "ENGINEER" IS SYNONYMOUS WITH THE TERM "PROJECT MANAGER".

AS-BUILT INFORMATION | CONTRACTOR | STAKED BY | INSPECTOR'S ACCEPTANCE BY | FIELD VERIFICATION BY | DRAWINGS CORRECTED BY | DATE

MICRO-FILM INFORMATION | RECORDED BY | DATE | NO.

BENCH MARKS

SURVEY INFORMATION | FIELD NOTES | NO. | BY | DATE

ENGINEER'S SEAL: CHARLES W. TRASK III, NEW MEXICO, 8876, REGISTERED PROFESSIONAL ENGINEER, 10-10-96

NO. | DATE | REMARKS | REVISIONS | BY

DESIGN | DESIGNED BY BHI, DATE 9-96 | DRAWN BY BHI, DATE 9-96 | CHECKED BY BHI, DATE 9-96

BOHANNAN-HUSTON INC.
ENGINEERS • PLANNERS • PHOTOGRAMMETRISTS • SURVEYORS • LANDSCAPE ARCHITECTS
ALBUQUERQUE LAS CRUCES SANTA FE

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TRAFFIC SIGNAL
NOTES AND LEGEND

APPROVED NOV - 9 1996 DESIGN REVIEW COMMITTEE | CITY ENGINEER APPROVAL | MO./DAY/YR. | MO./DAY/YR. | LAST DESIGN UPDATE

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
4913.92	L-15	2	20

ABSGNTS.DWG

TRAFFIC SIGNAL ESTIMATED QUANTITIES

ITEM NO	ITEM DESCRIPTION	UNIT	LOCATION: UNIVERSITY/ N RESEARCH	LOCATION: INTER-CONNECT	TOTAL	
0421.05	SERVICE RISER (SIGNAL)	EACH	1	0	1	
0421.11	METER PEDESTAL (SIGNAL)	EACH	1	0	1	
0422.03	TRAFFIC SIGNAL PEDESTAL POLE, 13 FOOT	EACH	2	0	2	
0422.14	TRAFFIC SIGNAL MASTARM, 25 FOOT ARM, TYPE II, TROMBONE	EACH	1	0	1	
0422.16	TRAFFIC SIGNAL MASTARM, 30 FOOT ARM, TYPE II, TROMBONE	EACH	1	0	1	
0422.18	TRAFFIC SIGNAL MASTARM, 35 FOOT ARM, TYPE II, TROMBONE	EACH	2	0	2	
0422.110	TRAFFIC SIGNAL MASTARM, ANY SIZE, REMOVE AND SALVAGE	EACH	1	0	1	
0423.01	TRAFFIC SIGNAL FOUNDATION FOR PEDESTAL POLE	EACH	2	0	2	
0423.02	TRAFFIC SIGNAL MASTARM FOUNDATION	EACH	4	0	4	
0423.03	TRAFFIC CONTROLLER FOUNDATION (TYPE M & P CABINETS)	EACH	1	0	1	
0423.101	TRAFFIC SIGNAL MASTARM FOUNDATION, REMOVE AND DISPOSE	EACH	1	0	1	
0424.02	RIGID ELECTRICAL CONDUIT, 1" INCLUDING TRENCH, BACKFILL, PATCHING, PUSHING, BORING & JACKING	LIN FT	65	0	65	
0424.06	RIGID ELECTRICAL CONDUIT, 2" INCLUDING TRENCH, BACKFILL, PATCHING, PUSHING, BORING & JACKING	LIN FT	225	10	235	
0424.11	RIGID ELECTRICAL CONDUIT, 3" INCLUDING TRENCH, BACKFILL, PATCHING, PUSHING, BORING & JACKING	LIN FT	335	40 ~~1165~~	375 ~~1500~~	△1
0425.02	ELECTRICAL PULL BOX, (STANDARD)	EACH	4	0	4	
0425.03	ELECTRICAL PULL BOX, (LARGE)	EACH	2	0 ~~8~~	2 ~~8~~	△1
0425.12	SPLICE CABINET, GROUND MOUNT (LARGE)	EACH	0	1	1	
0425.20	TRAFFIC SIGNAL MANHOLE	EACH	0	1	1	
0426.02	SINGLE CONDUCTOR, 4	LIN FT	225	0	225	
0426.04	SINGLE CONDUCTOR, 8	LIN FT	520	0	520	
0426.10	MULTI-CONDUCTOR CABLE 5	LIN FT	1765	0	1765	
0426.11	MULTI-CONDUCTOR CABLE 7	LIN FT	175	0	175	
0426.14	MULTI-CONDUCTOR CABLE 20	LIN FT	1040	0	1040	
0426.20	COMMUNICATION CABLE 6 PAIR	LIN FT	0	15	15	
~~0426.22~~	~~COMMUNICATION CABLE 25 PAIR~~	~~LIN FT~~	~~0~~	~~1725~~	~~1725~~	△1
0427.02	3 SECTION TRAFFIC SIGNAL ASSEMBLY	EACH	11	0	11	
0427.04	5 SECTION TRAFFIC SIGNAL ASSEMBLY	EACH	3	0	3	
0427.21	PEDESTRIAN SIGNAL ASSEMBLY (NEON)	EACH	8	0	8	
0427.31	3 SECTION BACKPLATE	EACH	6	0	6	

TRAFFIC SIGNAL ESTIMATED QUANTITIES

ITEM NO	ITEM DESCRIPTION	UNIT	LOCATION: UNIVERSITY/ N RESEARCH	LOCATION: INTER-CONNECT	TOTAL
0428.01	LOOP VEHICLE DETECTOR	EACH	4	0	4
0428.10	PEDESTRIAN PUSH BUTTON STATION	EACH	8	0	8
0428.21	LOOP DETECTOR WIRE	LIN FT	3354	0	3354
0428.50	LOOP LEAD-IN CABLE	LIN FT	2995	0	2995
0428.60	DETECTOR SAW CUT	LIN FT	1168	0	1168
0428.71	PHASE SELECTOR MODULE, 2 CHANNEL	EACH	1	0	1
0428.75	OPTICAL DETECTOR 1D/1C	EACH	2	0	2
0428.78	OPTICAL DETECTOR CABLE	LIN FT	410	0	410
0429.01	TRAFFIC ACTUATED CONTROLLER	EACH	1	0	1
0429.21	EIGHT PHASE DUAL RING CONTROLLER CABINET	EACH	1	0	1

NOTE:
SEE SHEET 18 FOR PERMANENT SIGNING AND STRIPING ESTIMATED QUANTITIES.

AS-BUILT INFORMATION
CONTRACTOR | DATE
WORK STAKED BY | DATE
INSPECTOR'S ACCEPTANCE BY | DATE
FIELD VERIFICATION BY | DATE
DRAWINGS CORRECTED BY | DATE

MICRO-FILM INFORMATION
RECORDED BY | DATE
NO.

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES
NO. | BY | DATE

ENGINEER'S SEAL
CHARLES W. TRASK III, NEW MEXICO, 8679, REGISTERED PROFESSIONAL ENGINEER
10-30-96

NO.	DATE	REMARKS	BY
△1	12-96	REVISED INTERCONNECT	BHI
		REVISIONS	

DESIGN
DESIGNED BY BHI | DATE 10-96
DRAWN BY BHI | DATE 10-96
CHECKED BY BHI | DATE 10-96

BOHANNAN-HUSTON INC.
ENGINEERS • PLANNERS • PHOTOGRAMMETRISTS • SURVEYORS • LANDSCAPE ARCHITECTS
ALBUQUERQUE LAS CRUCES SANTA FE

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TRAFFIC SIGNAL
ESTIMATED QUANTITIES

DESIGN REVIEW COMMITTEE: APPROVED NOV - 9 1996 DESIGN REVIEW COMMITTEE
CITY ENGINEER APPROVAL
LAST DESIGN UPDATE | MO./DAY/YR. | MO./DAY/YR.

CITY PROJECT NO. 4913.92 | ZONE MAP NO. L-15 | SHEET 3 OF 20

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ABSQQUAN.DWG

LOOP LEAD-IN CABLE

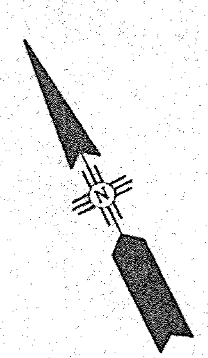
FROM	TO	CONDUIT TRACE	NO PAIR x LENGTH	TOTAL LENGTH
PB7	CONTROLLER	17- 4- 3- 2	1 @ 230'	230'
PB8	CONTROLLER	15- 5- 4- 3- 2	3 @ 285'	855'
PB9	CONTROLLER	18- 8- 2	1 @ 115'	115'
PB10	CONTROLLER	16- 2	2 @ 50'	100'
PB11	CONTROLLER	19-17- 4- 3- 2	3 @ 335'	1005'
PB12	CONTROLLER	20-18- 8- 2	3 @ 230'	690'
			TOTAL	2995'

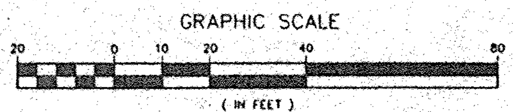
OPTICAL DETECTOR CABLE

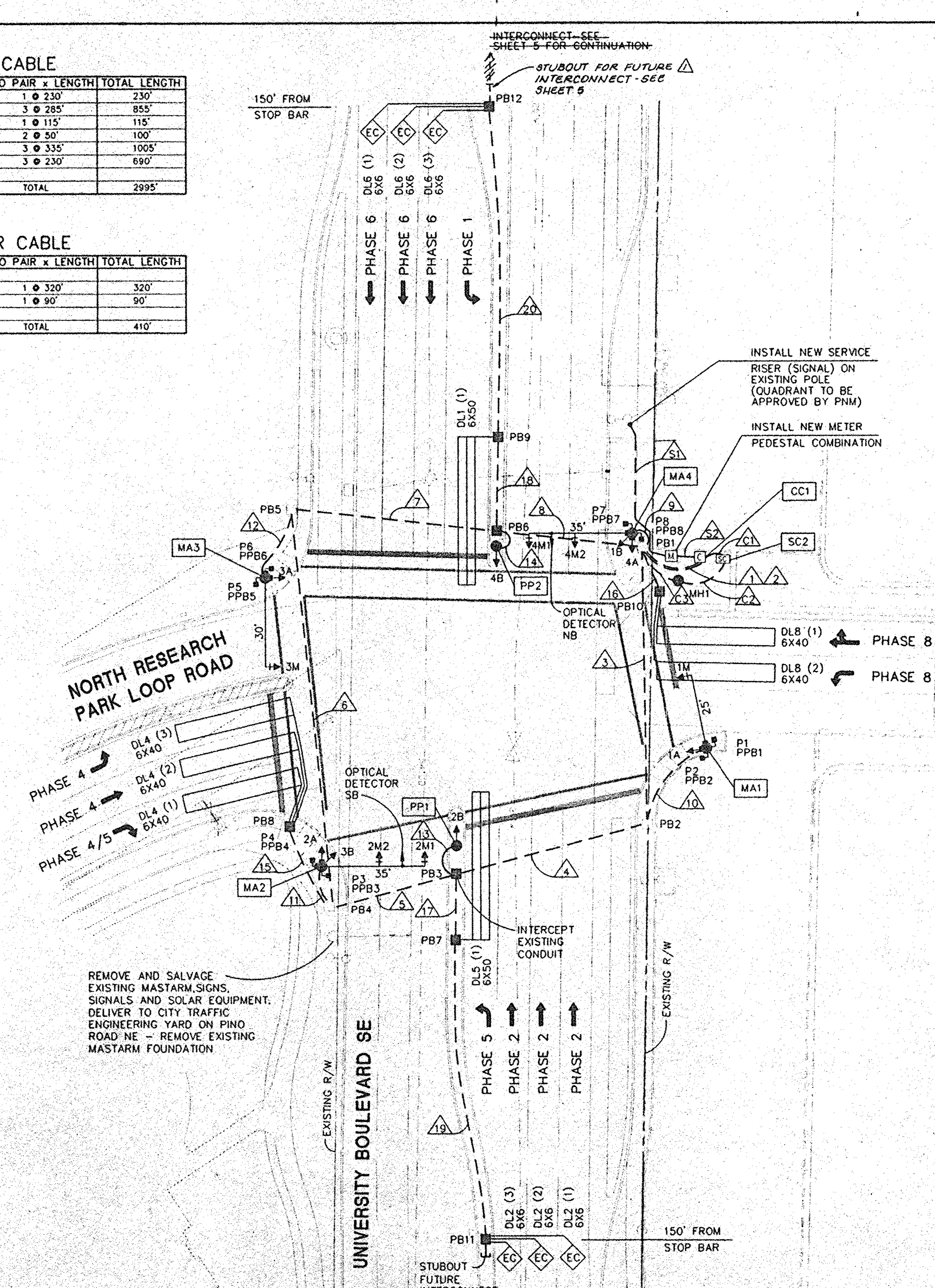
FROM	TO	CONDUIT TRACE	NO PAIR x LENGTH	TOTAL LENGTH
MA2	CONTROLLER	MA2-11- 5- 4- 3- 2	1 @ 320'	320'
MA4	CONTROLLER	MA4- 9- 2	1 @ 90'	90'
			TOTAL	410'

SIGNAL POLES AND MASTARMS

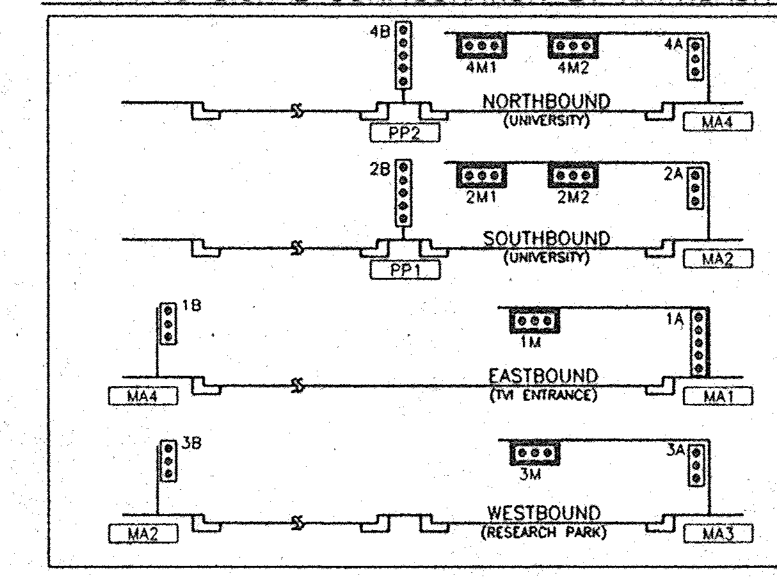
ID #	TYPE
MA1	MASTARM - 25'
MA2	MASTARM - 35'
MA3	MASTARM - 30'
MA4	MASTARM - 35'
PP1	PED POLE - 13'
PP2	PED POLE - 13'



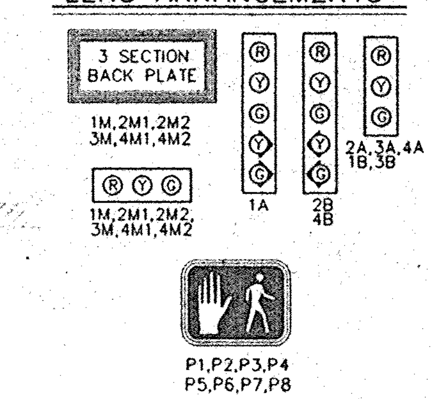




TRAFFIC SIGNAL CONFIGURATION BY APPROACH

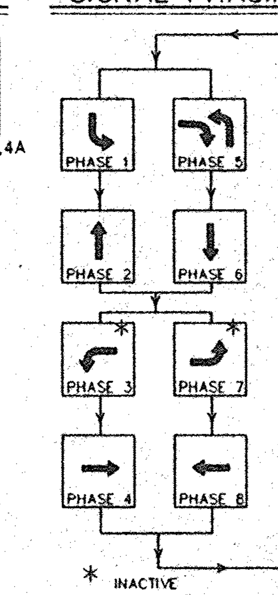


TYPICAL SIGNAL FACE LENS ARRANGEMENTS



PEDESTRIAN PUSH BUTTON DESIGNATION SIGNS
PPB 1, 3, 5, 7 RIO - 4b R
PPB 2, 4, 6, 8 RIO - 4b L

SIGNAL PHASING



FLASH CONDITION *

RED BALL	→	HEADS,	1A,1B,1M 3A,3B,3M
RED BALL	→	HEADS,	2A,2B,2M1,2M2 4A,4B,4M1,4M2

INITIALIZATION

ALL RED, THEN PHASE 2 AND 6 GREEN

NOTES

1. PULL BOXES 1, 2, 4 AND 5 ARE EXISTING. PULL BOXES 3 AND 6 ARE LARGE SIZE AND PULL BOXES 7, 8, 9 AND 10 ARE STANDARD
2. EXISTING CONDUITS CROSING UNIVERSITY BLVD ARE TO BE INTERCEPTED AT THE MEDIAN AND CONNECTED TO NEW PULL BOXES 3 & 6

△3. SEE SHEET 5 FOR INTERCONNECT PLAN.

ABBREVIATIONS

MA1	MASTARM NUMBER
PP1	PEDESTAL POLE NUMBER
PPB1	PEDESTRIAN PUSH BUTTON NUMBER
CC1	CONTROL CABINET NUMBER
PB1	PULL BOX NUMBER (SIGNALS)
PBC1	PULL BOX NUMBER (INTERCONNECT)
DL1(1)	DETECTOR LOOP PHASE # (LOOP #)
3A	SIGNAL HEAD NUMBER
P1	PEDESTRIAN SIGNAL NUMBER
EC	EXTENDED CALL LOOP DETECTOR

SYMBOL KEY

MA1	SIGNAL & CABINET ID
△99	CONDUIT RUN ID (SIGNALS)
△S1	CONDUIT RUN ID (POWER SERVICE)
△C1	CONDUIT RUN ID (INTERCONNECT)

AS-BUILT INFORMATION
CONTRACTOR — DATE
WORK STARTED BY — DATE
INSPECTOR'S ACCEPTANCE BY — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE

MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES
NO. — BY — DATE

ENGINEER'S SEAL
CHARLES H. TRASK III, 6070, REGISTERED PROFESSIONAL ENGINEER
10-30-96

REVISIONS

NO.	DATE	REMARKS	BY
△	12-96	REVISED INTERCONNECT	BHI

DESIGN		
DESIGNED BY BHI	DATE 10-96	
DRAWN BY BHI	DATE 10-96	
CHECKED BY BHI	DATE 10-96	

BOHANNAN-HUSTON INC.
ENGINEERS • PLANNERS • PHOTOGRAMMETRISTS • SURVEYORS • LANDSCAPE ARCHITECTS
ALBUQUERQUE — LAS CRUCES — SANTA FE

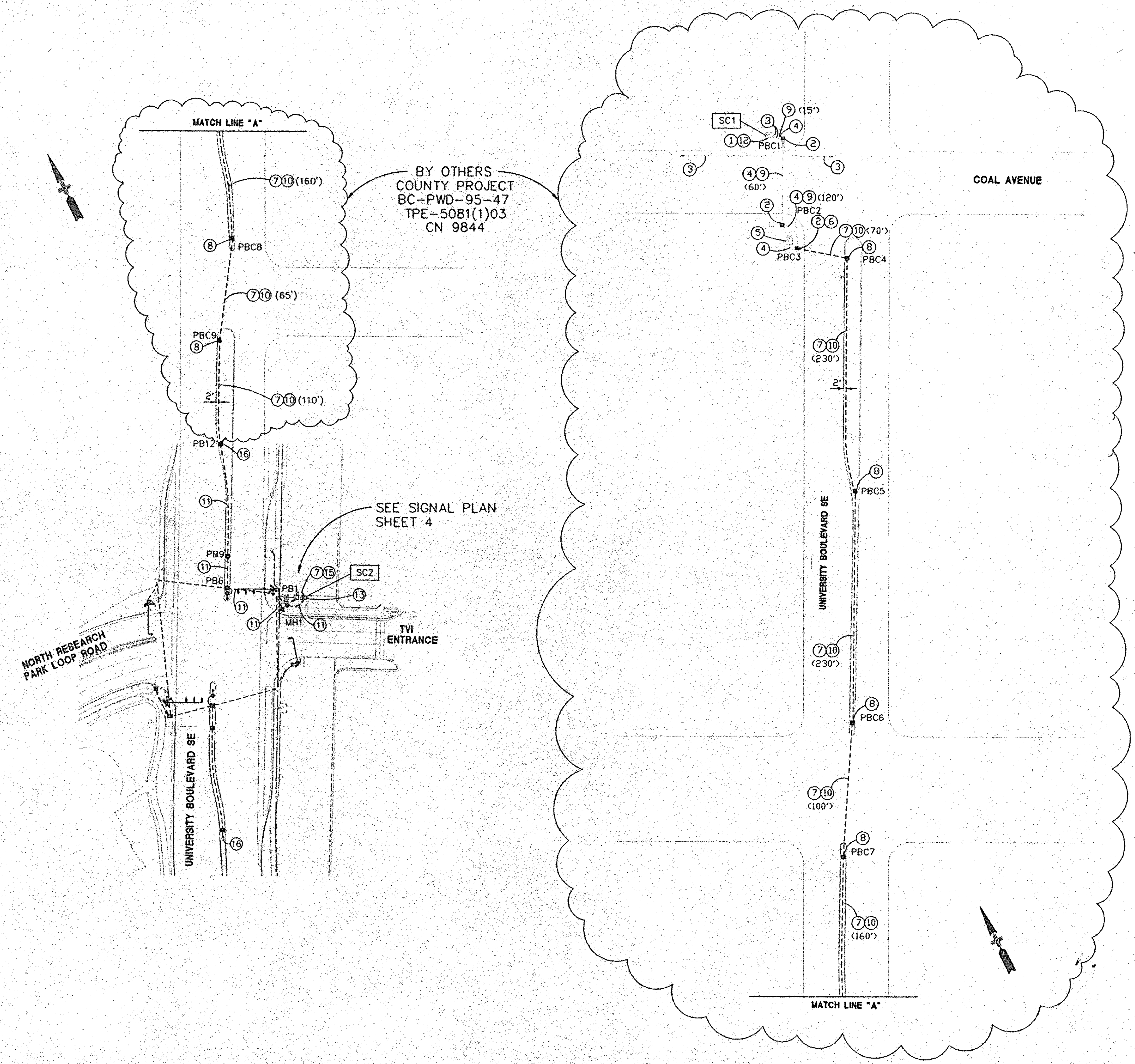
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TRAFFIC SIGNAL PLAN
UNIVERSITY BLVD/NORTH RESEARCH PARK LOOP ROAD

APPROVED — NOV - 9 1996 — DESIGN REVIEW COMMITTEE
CITY ENGINEER APPROVAL
LAST DESIGN UPDATE — MO./DAY/YR. — MO./DAY/YR.

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
4913.92	L-15	4	20

SPGL_UNIV.DWG 8-26-96



KEYED NOTES

1. EXISTING SPLICE CABINET TO REMAIN
2. EXISTING ELECTRICAL PULL BOX TO REMAIN
3. EXISTING ELECTRICAL CONDUIT (2") WITH EXISTING COMMUNICATION CABLE 25 PAIR TO REMAIN
4. EXISTING ELECTRICAL CONDUIT (2") WITH EXISTING COMMUNICATION CABLE 6 PAIR TO REMAIN
5. EXISTING CONTROLLER CABINET TO REMAIN
6. INTERCEPT EXISTING ELECTRICAL PULL BOX
7. INSTALL NEW ELECTRICAL CONDUIT (3")
8. INSTALL NEW ELECTRICAL PULL BOX (LARGE SIZE)
9. PULL NEW COMMUNICATION CABLE 25 PAIR IN EXISTING ELECTRICAL CONDUIT (2")
10. PULL NEW COMMUNICATION CABLE 25 PAIR IN NEW ELECTRICAL CONDUIT (3")
11. SEE SIGNAL PLAN
12. CONNECT NEW COMMUNICATION CABLE 25 PAIR TO EXISTING SPLICE CABINET
13. INSTALL NEW SPLICE CABINET, GROUND MOUNT, LARGE
14. CONNECT NEW COMMUNICATION CABLE 25 PAIR TO NEW SPLICE CABINET
15. PULL NEW COMMUNICATION CABLE 6 PAIR FROM NEW SPLICE CABINET TO NEW CONTROLLER CABINET AND CONNECT AT SPLICE BLOCKS
16. STUBOUT FOR FUTURE INTERCONNECT.

AS-BUILT INFORMATION: CONTRACTOR / DATE; WORK STAKED BY / DATE; INSPECTOR'S ACCEPTANCE BY / DATE; FIELD VERIFICATION BY / DATE; DRAWINGS CORRECTED BY / DATE

MICRO-FILM INFORMATION: RECORDED BY / DATE; NO.

BENCH MARKS

SURVEY INFORMATION: FIELD NOTES — NO. / BY / DATE

ENGINEER'S SEAL: CHARLES W. TRASK III, NEW MEXICO, 6076, REGISTERED PROFESSIONAL ENGINEER, 2-20-97

NO.	DATE	REMARKS	BY
1	12-96	This sheet replaces original	BHI

REVISIONS

DESIGN

DESIGNED BY BHI	DATE 12-96
DRAWN BY BHI	DATE 12-96
CHECKED BY BHI	DATE 12-96

BOHANNAN-HUSTON INC.
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ALBUQUERQUE LAS CRUCES SANTA FE

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TRAFFIC SIGNAL
INTERCONNECT PLAN

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.
APPROVED				

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
4913.92	L-15	5	20

TRANS\96282\4221\SHEETS\SIGNAL\INTER1.DWG

INTER1.DWG

SIGNAL CONDUIT AND CONDUCTOR REQUIREMENTS

SIGNAL CONDUIT AND CONDUCTOR REQUIREMENTS

RUN ID ⚠4	SIZE/LENGTH 1"	2"	3"	TYPE	REMARKS	MCC 5 (# ø ft)	MCC 7 (# ø ft)	MCC 20 (# ø ft)	SCC #4 (# ø ft)	SCC #8 (# ø ft)	SCC#10 (# ø ft)	DLLIC (# ø ft)	CC 6 PR (# ø ft)	OPTICOM (# ø ft)	CC 25 PR (# ø ft)	
SIGNALS																
S1		55'		REC	POWER TO METER				3 ø 60'							
S2		10'		REC	METER TO CONTROLLER				3 ø 15'							
1			20'	REC	CC1 TO PB1	1 ø 25'		2 ø 25'		1 ø 25'						
2			20'	REC	CC1 TO PB1							13 ø 25'		2 ø 25'		
3			(95')	EXIST	PB1 TO PB2	1 ø 100'		2 ø 100'		1 ø 100'		7 ø 100'		1 ø 100'		
4			(70')	EXIST	PB2 TO PB3	1 ø 75'		2 ø 75'		1 ø 75'		7 ø 75'		1 ø 75'		
5			(45')	EXIST	PB3 TO PB4	1 ø 50'		2 ø 50'		1 ø 50'		3 ø 50'		1 ø 50'		
6			(135')	EXIST	PB4 TO PB5	1 ø140'		2 ø140'		1 ø140'						
7			(70')	EXIST	PB5 TO PB6	1 ø 75'		2 ø 75'		1 ø 75'						
8			(50')	EXIST	PB6 TO PB1	1 ø 55'		2 ø 55'		1 ø 55'		4 ø 55'			~~1 ø 55'~~	⚠1
9		10'		REC	PB1 TO MA4	8 ø 15'								1 ø 15'		
10		40'		REC	PB2 TO MA1	5 ø 45'	1 ø 45'									
11		15'		REC	PB4 TO MA2	8 ø 20'								1 ø 20'		
12		25'		REC	PB5 TO MA3	6 ø 30'										
13		10'		REC	PB3 TO PP1		1 ø 15'									
14		10'		REC	PB6 TO PP2		1 ø 15'									
15		30'		REC	PB4 TO PB8							3 ø 35'				
16		20'		REC	PB1 TO PB10							2 ø 25'				
17			25'	REC	PB7 TO PB3							4 ø 30'				
18			30'	REC	PB9 TO PB6							4 ø 35'			~~1 ø 35'~~	⚠1
19			100'	REC	PB11 TO PB7							3 ø 105'				
20			110'	REC	PB12 TO PB9							3 ø 115'			~~1 ø 115'~~	⚠1
			10'	REC	PB11 TO STUBOUT											
	65'			REC	LOOP TERMINATIONS											
			10'	REC	PB3-INTERCEPTION											
			10'	REC	PB6-INTERCEPTION											
		(195')		REC	SC1 TO PBC3										~~1 ø 220'~~	⚠1
		~~1125'~~		REC	PBC3 TO PB12										~~1 ø 1200'~~	⚠1
C1		10'		REC	CC1 TO SC2								1 ø 15'			
C2			10'	REC	SC2 TO MH1										~~1 ø 15'~~	⚠1
C3			30'	REC	MH1 TO PB1										~~1 ø 35'~~	⚠1
					MH1 COIL										~~1 ø 50'~~	⚠1
SUBTOTALS	65'	235'	~~1500'~~ 378'			1315'	75'	1040'	225'	520'	0	2995'	15'	310'	~~1725'~~	⚠1

* ITEMS IN PARENTHESIS INDICATE EXISTING CONDUIT

SIGNAL CONDUIT AND CONDUCTOR REQUIREMENTS

RUN ID ⚠4	SIZE/LENGTH 1"	2"	3"	TYPE	REMARKS	MCC 5 (# ø ft)	MCC 7 (# ø ft)	MCC 20 (# ø ft)	SCC #4 (# ø ft)	SCC #8 (# ø ft)	SCC#10 (# ø ft)	DLLIC (# ø ft)	CC 6 PR (# ø ft)	OPTICOM (# ø ft)	CC 25 PR (# ø ft)	
MA1					BASE TO SIGNAL 1A		1 ø 15'									
MA1					BASE TO SIGNAL 1M	1 ø 40'										
MA1					BASE TO P1 & P2	2 ø 15'										
MA1					BASE TO PPB1 & PPB2	2 ø 5'										
MA2					BASE TO SIGNAL 2A	1 ø 15'										
MA2					BASE TO SIGNAL 3B	1 ø 15'										
MA2					BASE TO SIGNAL 2M1		1 ø 55'									
MA2					BASE TO SIGNAL 2M2	1 ø 45'										
MA2					BASE TO P3 & P4	1 ø 15'										
MA2					BASE TO PPB3 & PPB4	2 ø 15'										
MA2					BASE TO OPTICOM	2 ø 5'								1 ø 50'		
MA3					BASE TO SIGNAL 3A	1 ø 15'										
MA3					BASE TO SIGNAL 3M	1 ø 40'										
MA3					BASE TO P5 & P6	2 ø 15'										
MA3					BASE TO PPB5 & PPB6	2 ø 5'										
MA4					BASE TO SIGNAL 4A	1 ø 15'										
MA4					BASE TO SIGNAL 1B	1 ø 15'										
MA4					BASE TO SIGNAL 4M1	1 ø 55'										
MA4					BASE TO SIGNAL 4M2	1 ø 45'										
MA4					BASE TO P7 & P8	2 ø 15'										
MA4					BASE TO PPB7 & PPB8	2 ø 15'										
MA4					BASE TO OPTICOM	2 ø 5'								1 ø 50'		
PP1					BASE TO SIGNAL 2B		1 ø 15'									
PP2					BASE TO SIGNAL 4B		1 ø 15'									
SUBTOTALS	0	0	0			450'	100'	0	0	0	0	0	0	100'	0	
TOTALS	65'	235'	~~1500'~~ 378'			1765'	175'	1040'	225'	520'	0	2995'	15'	410'	~~1725'~~ 0	⚠1

AS-BUILT INFORMATION
CONTRACTOR DATE
PROFESSIONAL ENGINEER STAMP BY DATE
CITY OF ALBUQUERQUE ACCEPTANCE BY DATE
FIELD VERIFICATION BY DATE
DRAWING CORRECTED BY DATE
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL
CHARLES W. TEASLEY NEW MEXICO 6876 REGISTERED PROFESSIONAL ENGINEER
10-30-96

NO.	DATE	REVISIONS	BY
⚠1	12-96	REVISED INTERCONNECT	BHI

DESIGN — DATE 10-96
DESIGNED BY BHI
DRAWN BY BHI — DATE 10-96
CHECKED BY BHI — DATE 10-96

BOHANNAN-HUSTON INC.
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ALBUQUERQUE LAS CRUCES SANTA FE

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TRAFFIC SIGNAL CONDUITS & CABLES
UNIVERSITY BLVD/NORTH RESEARCH PARK LOOP ROAD

DESIGN DEVELOPMENT COMMITTEE — APPROVED — NOV - 8 1996 — DESIGN REVIEW COMMITTEE
CITY ENGINEER APPROVAL
LAST DESIGN UPDATE — MO./DAY/YR.

CITY PROJECT NO 4913.92
ZONE MAP NO L-15
SHEET 6 OF 20

DETECTOR LOOPS

LOOP ID	VEHICLE DETECTOR MODE	CALL	UNIT NO	CHANNEL	LOOP TYPE	LOOP DIMENSIONS L	W	S	T	LOOP WIRE	PAVEMENT SAWCUT
DL1(1)	PRESENCE		ONE	CH 1	OP	50'	6'	6'	5'	451'	168'
DL2(1)	PRESENCE	EXTEND 3	FOUR	CH 1	EC	6'	6'	30'	5'	147'	54'
DL2(2)	PRESENCE	EXTEND 3	FOUR	CH 1	EC	6'	6'	20'	5'	127'	44'
DL2(3)	PRESENCE	EXTEND 3	FOUR	CH 1	EC	6'	6'	10'	5'	107'	34'
DL4(1)	PRESENCE		SIX	CH 1	RECT	40'	6'	12'	5'	310'	104'
DL4(2)	PRESENCE		SIX	CH 1	RECT	40'	6'	25'	5'	336'	117'
DL4(3)	PRESENCE		SIX	CH 1	RECT	40'	6'	48'	5'	382'	140'
DL5(1)	PRESENCE		ONE	CH 2	OP	50'	6'	6'	5'	451'	168'
DL6(1)	PRESENCE	EXTEND 3	FOUR	CH 2	EC	6'	6'	30'	10'	157'	54'
DL6(2)	PRESENCE	EXTEND 3	FOUR	CH 2	EC	6'	6'	20'	10'	137'	44'
DL6(3)	PRESENCE	EXTEND 3	FOUR	CH 2	EC	6'	6'	10'	10'	117'	34'
DL8(1)	PRESENCE		SEVEN	CH 1	RECT	40'	6'	7'	5'	300'	92'
DL8(2)	PRESENCE		SEVEN	CH 1	RECT	40'	6'	23'	5'	332'	115'
TOTALS										3354 LF	1168 LF

DETECTOR RACK ASSIGNMENTS

UNIT NUMBER →	POWER SUPPLY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
CHANNEL 1 →		Φ1	Φ2	Φ6	Φ2 EC	Φ3	Φ4	Φ8	Φ4 EC	DUAL LEFT Φ1	DUAL LEFT Φ3	SD 1	SD 3	SD 5	SD 7	SD 9	PED ISOLATION	OPTICOM 1	OPTICOM 3
CHANNEL 2 →		Φ5	Φ2	Φ6	Φ6 EC	Φ7	Φ4	Φ8	Φ8 EC	DUAL LEFT Φ5	DUAL LEFT Φ7	SD 2	SD 4	SD 6	SD 8	SD 10		OPTICOM 2	OPTICOM 4
DETECTOR MODULE REQUIRED →	*	✓			✓		✓	✓										✓	

* INCIDENTAL TO CONSTRUCTION

FUNCTION CHART – 115 VOLT CIRCUIT 1/

CONDUCTOR NUMBER	BASE COLOR	TRACER	RING 1 – MULTI CONDUCTOR CABLE 20: FUNCTION	RING 1: FIELD CONNECTION	RING 2 – MULTI CONDUCTOR CABLE 20 2/: FUNCTION	RING 2: FIELD CONNECTION
1	BLACK	–	SPARE	SPARE	SPARE	SPARE
2	WHITE	–	SPARE	SPARE	SPARE	SPARE
3	RED	–	PHASE 1 RED	SPARE	PHASE 5 RED	SPARE
4	GREEN	–	PHASE 1 GREEN	GREEN LEFT TURN ARROW 2B, 2C	PHASE 5 GREEN	GREEN LEFT TURN ARROW 4B GREEN RIGHT TURN ARROW 1A
5	ORANGE	–	PHASE 1 YELLOW	YELLOW LEFT TURN ARROW 2B, 2C	PHASE 5 YELLOW	YELLOW LEFT TURN ARROW 4B YELLOW RIGHT TURN ARROW 1A
6	BLUE	–	SPARE	SPARE	SPARE	SPARE
7	WHITE	BLACK	SPARE	SPARE	SPARE	SPARE
8	RED	BLACK	PHASE 2 RED	RED BALL 4A, 4B, 4M1, 4M2	PHASE 6 RED	RED BALL 2A, 2B, 2M1, 2M2
9	GREEN	BLACK	PHASE 2 GREEN	GREEN BALL 4A, 4B, 4M1, 4M2	PHASE 6 GREEN	GREEN BALL 2A, 2B, 2M1, 2M2
10	ORANGE	BLACK	PHASE 2 YELLOW	YELLOW BALL 4A, 4B, 4M1, 4M2	PHASE 6 YELLOW	YELLOW BALL 2A, 2B, 2M1, 2M2
11	BLUE	BLACK	PHASE 2 WALK	PEDESTRIAN WALK P1, P8	PHASE 6 WALK	PEDESTRIAN WALK P4, P5
12	BLACK	WHITE	PHASE 2 DON'T WALK	PEDESTRIAN DON'T WALK P1, P8	PHASE 6 DON'T WALK	PEDESTRIAN DON'T WALK P4, P5
13	RED	WHITE	PHASE 3 RED	SPARE	PHASE 7 RED	SPARE
14	GREEN	WHITE	PHASE 3 GREEN	SPARE	PHASE 7 GREEN	SPARE
15	BLUE	WHITE	PHASE 3 YELLOW	SPARE	PHASE 7 YELLOW	SPARE
16	BLACK	RED	PHASE 4 RED	RED BALL 1A, 1C, 1M	PHASE 8 RED	RED BALL 3A, 3C, 3M
17	WHITE	RED	PHASE 4 GREEN	GREEN BALL 1A, 1C, 1M	PHASE 8 GREEN	GREEN BALL 3A, 3C, 3M
18	ORANGE	RED	PHASE 4 YELLOW	YELLOW BALL 1A, 1C, 1M	PHASE 8 YELLOW	YELLOW BALL 3A, 3C, 3M
19	BLUE	RED	PHASE 4 WALK	PEDESTRIAN WALK P2, P3	PHASE 8 WALK	PEDESTRIAN WALK P6, P7
20	RED	GREEN	PHASE 4 DON'T WALK	PEDESTRIAN DON'T WALK P2, P3	PHASE 8 DON'T WALK	PEDESTRIAN DON'T WALK P6, P7

ABBREVIATIONS

DL – DETECTOR LOOP
EC – EXTENDED CALL LOOP
L – DETECTOR LOOP LENGTH
W – DETECTOR LOOP WIDTH
S – SAWCUT LOOP TO CURB
T – TERMINAL LENGTH
OP – QUADRAPOLE LOOP

QUANTITY ESTIMATING ASSUMPTIONS:

LOOP WIRE
6' X 30' OP LOOP =(8*L) + (4*W) + (2*S) + (2*T) + 5 = 269 + 2(S+T)
6' X 40' OP LOOP =(8*L) + (4*W) + (2*S) + (2*T) + 5 = 349 + 2(S+T)
6' X 50' OP LOOP =(8*L) + (4*W) + (2*S) + (2*T) + 5 = 429 + 2(S+T)
6' X 40' RECT LOOP =(6*L) + (6*W) + (2*S) + (2*T) + 5 = 276 + 2(S+T)
6' X 6' RECT LOOP =(6*L) + (6*W) + (2*S) + (2*T) + 5 = 72 + 2(S+T)
6' X 6' EC LOOP =(6*L) + (6*W) + (2*S) + (2*T) + 5 = 77 + 2(S+T)
6' X 6' SYS LOOP =(8*L) + (8*W) + (2*S) + (2*T) + 5 = 96 + 2(S+T)

PAVEMENT SAWCUT
6' X 30' OP LOOP =(3*L) + (2*W) + S =102 + S
6' X 40' OP LOOP =(3*L) + (2*W) + S =132 + S
6' X 50' OP LOOP =(3*L) + (2*W) + S =162 + S
6' X 40' RECT LOOP =(2*L) + (2*W) + S =92 + S
6' X 6' RECT LOOP =(2*L) + (2*W) + S =24 + S
6' X 6' EC LOOP =(2*L) + (2*W) + S =24 + S
6' X 6' SYS LOOP =(2*L) + (2*W) + S =24 + S

WHERE:
L = DETECTOR LOOP LENGTH (FROM PLAN)
W = DETECTOR LOOP WIDTH (FROM PLAN)
S = SAWCUT LENGTH FROM DETECTOR LOOP TO FACE OF CURB (FROM PLAN)
T = LOOP WIRE TERMINAL LENGTH FROM FACE OF CURB TO PULL BOX (FROM PLAN)

NOTES:

1/ IDENTIFY CONDUCTORS LISTED AS "115 VOLTS".

2/ WRAP RING 2 CABLE AT EACH SPLICE POINT WITH COLORED ELECTRICAL TAPE. THE IDENTIFICATION MARKING SHALL BE PROVIDED ON EACH RING 2 CABLE AT EACH SPLICE BOX AND LOCATED 6" BACK FROM THE END.

3/ IDENTIFY CONDUCTORS LISTED AS "PPB – LOW VOLTAGE" AT EACH SPLICE POINT. FIVE (5) CONDUCTOR CABLE SHALL BE 24 VOLTS AND USED FOR PUSH BUTTONS ONLY.

4/ CONDUCTOR CABLE RUNS TO TRAFFIC SIGNALS, PEDESTRIAN SIGNALS, AND PEDESTRIAN PUSH BUTTONS SHALL BE SPLICED INTO THE MAIN CONDUCTORS AT THE NEAREST PULLBOX AND RUN WITHOUT ADDITIONAL SPLICES INTO EACH SIGNAL HEAD OR PUSH BUTTON ASSEMBLY.

FUNCTION CHART – 24 VOLT CIRCUIT 3/

MULTI CONDUCTOR CABLE 5

CONDUCTOR NUMBER	BASE COLOR	FUNCTION	FIELD CONNECTION
1	BLACK	PHASE 2 PPB	PPB1 & PPB8
2	WHITE	COMMON	PPB1 THRU PPB8
3	RED	PHASE 4 PPB	PPB1 & PPB4
4	GREEN	PHASE 6 PPB	PPB3 & PPB6
5	ORANGE	PHASE 8 PPB	PPB5 & PPB8

AS-BUILT INFORMATION: CONTRACTOR / DATE; WORK STAKED BY / DATE; INSPECTOR'S ACCEPTANCE BY / DATE; FIELD VERIFIED BY / DATE; DRAWINGS CORRECTED BY / DATE

MICRO-FILM INFORMATION: RECORDED BY / DATE; NO.

BENCH MARKS

SURVEY INFORMATION: FIELD NOTES — NO. | BY | DATE

ENGINEER'S SEAL: CHARLES W. TRASK — NEW MEXICO — 6870 — REGISTERED PROFESSIONAL ENGINEER — 10-10-96

NO.	DATE	REMARKS / REVISIONS	BY
		DESIGN	

DESIGNED BY BHI\COA — DATE 9-96
DRAWN BY BHI\COA — DATE 9-96
CHECKED BY BHI\COA — DATE 9-96

BOHANNAN-HUSTON INC.
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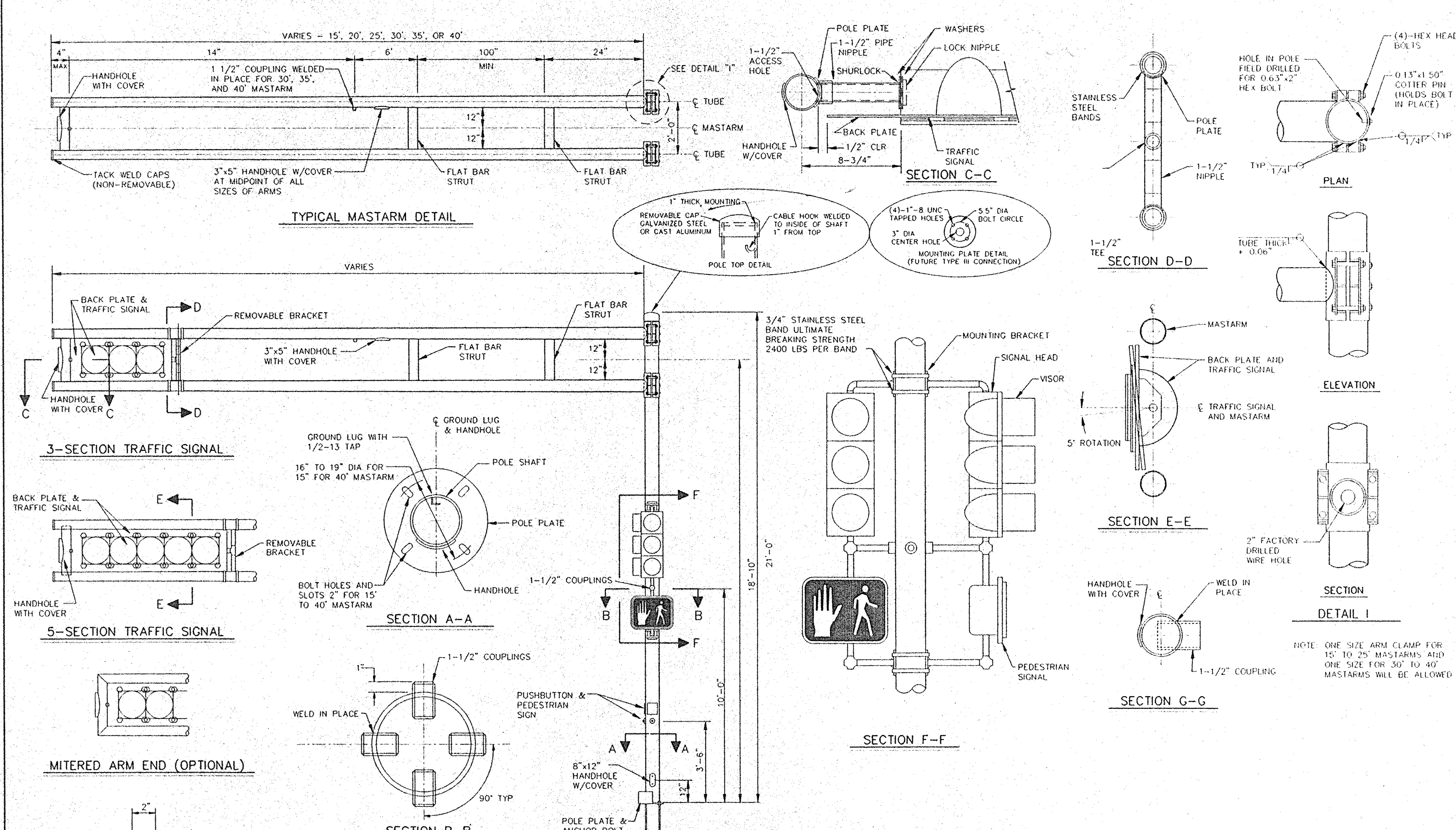
ALBUQUERQUE LAS CRUCES SANTA FE

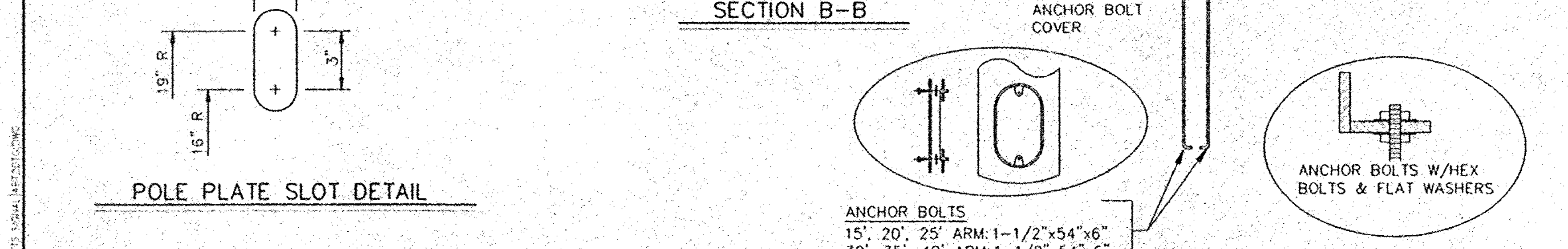
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TRAFFIC SIGNAL FUNCTIONS & DETECTORS
UNIVERSITY BLVD/NORTH RESEARCH PARK LOOP ROAD

DESIGN REVIEW COMMITTEE: APPROVED — NOV -0 1996 — DESIGN REVIEW COMMITTEE
CITY ENGINEER APPROVAL | LAST DESIGN UPDATE | MO./DAY/YR | MO./DAY/YR

CITY PROJECT NO 4913.92 | ZONE MAP NO L-15 | SHEET 7 OF 20





TRAFFIC SIGNAL MASTARM NOTES:

1. DESIGN IN ACCORDANCE WITH 1985 AASHTO SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES, AND TRAFFIC SIGNALS FOR AN 80 MPH WIND ZONE.
2. POLES AND MASTARMS SHAFTS SHALL CONFORM TO ASTM A-595 GRADE A (MIN YIELD 55 KSI)
3. BASE PLATE AND SIGNAL ARM CLAMP SHALL BE ASTM A-36 (MIN YIELD 36 KSI)
4. ANCHOR BOLTS SAHLL BE ASTM A-36 MOD 55 (MIN YIELD 55 KSI)
5. SIGNAL ARM CONNECTING BOLTS SHALL BE ASTM A-325.
6. WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN WELDING SOCIETY SPECIFICATIONS AWS D1.1, LATEST EDITION. ALL WELDS SHALL BE FREE FROM CRACKS, EXCESSIVE UNDERCUT, AND POROSITY. ANY WELD DEFECTS SHALL BE REPAIRED BY REMOVING THE DEFECTIVE MATERIAL AND REPLACING IT WITH SOUND WELD MATERIAL.
7. ALL HOLES SHALL BE DRILLED AND DEBURRED.
8. ALL POLES, MASTARMS, AND BOLTS SHALL BE GALVANIZED TO ASTM A-123 & A-153.
9. MASTARM SHALL BE MARKED TO DESCRIBE WHICH IS TOP AND WHICH IS BOTTOM. POLE PLATE COVER SHALL BE MARKED IN MATED PAIRS. POLE SHAFTS SHALL BE MARKED "ALB" "15-25" OR "30-40", AND DATE OF FABRICATION (MOUNTH/YEAR)

AS-BUILT INFORMATION

MICRO-FILM INFORMATION

BENCH MARKS

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

NO.	DATE	BY	REMARKS REVISIONS
			DESIGN

DESIGNED BY BHI\COA DATE 9-96

DRAWN BY BHI\COA DATE 9-96

CHECKED BY BHI\COA DATE 9-96

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PUBLIC WORKS DEPARTMENT

ENGINEERING DEVELOPMENT GROUP

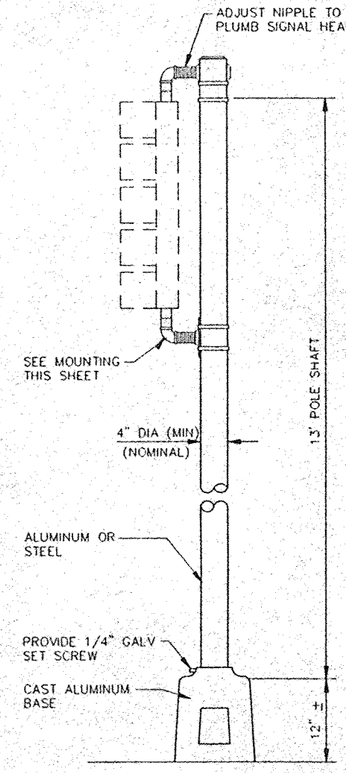
TRAFFIC SIGNAL

MASTARM DETAILS-TYPE II STANDARD/GALV STEEL

DESIGN REVIEW COMMITTEE | CITY ENGINEER APPROVAL | MO./DAY/YR. | MO./DAY/YR.

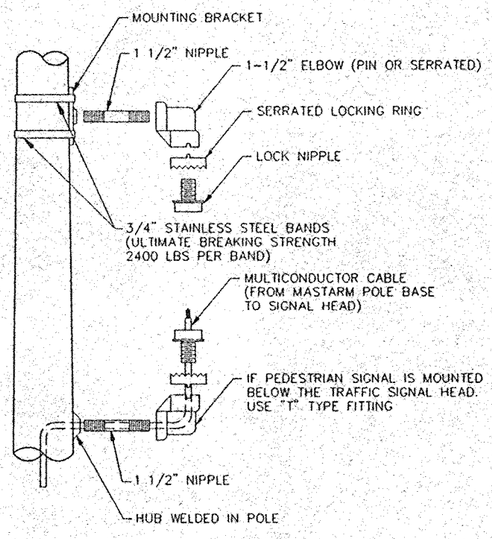
LAST DESIGN UPDATE

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
4913.92	L-15	8	20



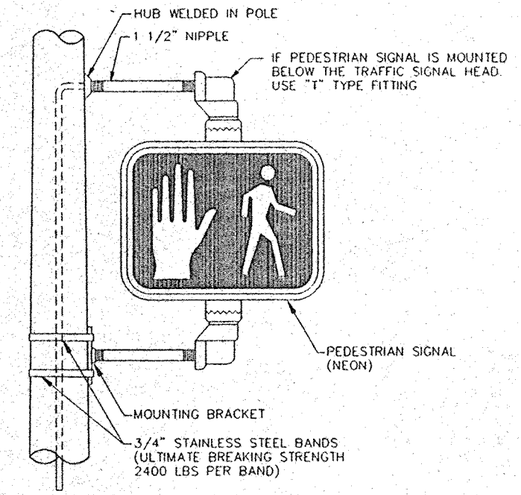
NOTE:
14' MINIMUM FROM BOTTOM OF BASE (ASSEMBLED LENGTH)

MOUNTING DETAIL

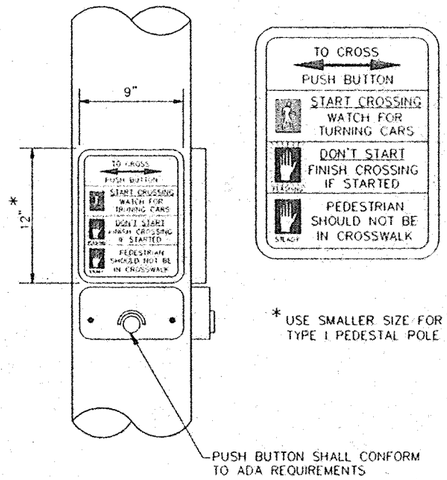


SIDE VIEW

PEDESTRIAN SIGNAL DETAILS



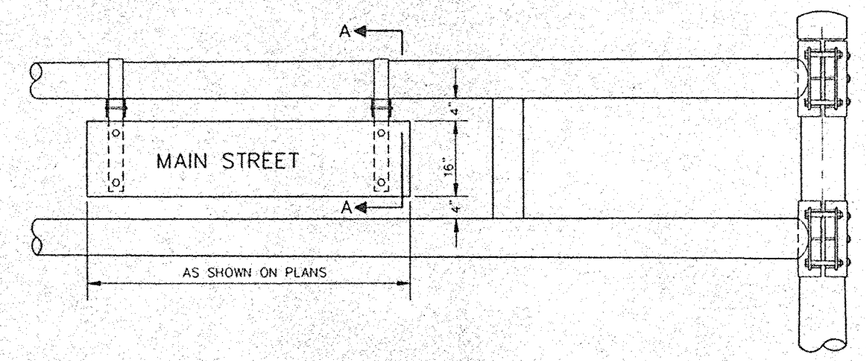
PEDESTRIAN PUSH BUTTON DETAIL



NOTE:

PEDESTRIAN ACTUATED CROSSING SHALL BE A MAXIMUM OF 42" (1065 mm) ABOVE THE FINISHED PUBLIC SIDEWALK. A STABLE, FIRM, AND SLIP-RESISTANT AREA - 30"x48" (915 mm x 1220 mm) - SHALL BE PROVIDED TO ALLOW FOR A FOWARD OR A PARALLEL APPROACH TO THE CONTROLS. WHERE A PARALLEL IS PROVIDED, CONTROLS SHALL BE WITHIN 10" (255 mm) HORIZONTALLY OF AND CENTERED ON THE CLEAR GROUND SPACE.

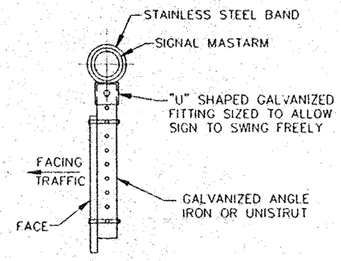
TYPE I PEDESTAL POLE DETAILS



NOTES:

1. STREET NAME SIGNS REQUIRED AS SHOWN ON SIGN PLAN SHEETS.
2. SIGN SHALL BE 16" WIDE WITH 8" SERIES "C" LETTERS UP TO 12 SQUARE FEET TOTAL AREA AND SHALL HAVE HIGH INTENSITY REFLECTIVE LEGEND, BORDER AND BACKGROUND COLORS: WHITE ON GREEN. SIGN PANELS SHALL BE SINGLE SHEET 6061-T6 ALUMINUM .120 MINIMUM THICKNESS.

STREET NAME SIGN DETAILS



SECTION "A-A"

AS-BUILT INFORMATION
BENCH MARKS
CONTRACTOR — DATE
STAKED BY — DATE
INSPECTOR'S FIELD INFORMATION BY — DATE
CORRECTED BY — DATE
MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

SURVEY INFORMATION
FIELD NOTES
NO. | BY | DATE

ENGINEER'S SEAL
JAMES W. TRASK
NEW MEXICO 6878
REGISTERED PROFESSIONAL ENGINEER
10-10-96

NO	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	
		DESIGNED BY BH\COA	DATE 9-96
		DRAWN BY BH\COA	DATE 9-96
		CHECKED BY BH\COA	DATE 9-96

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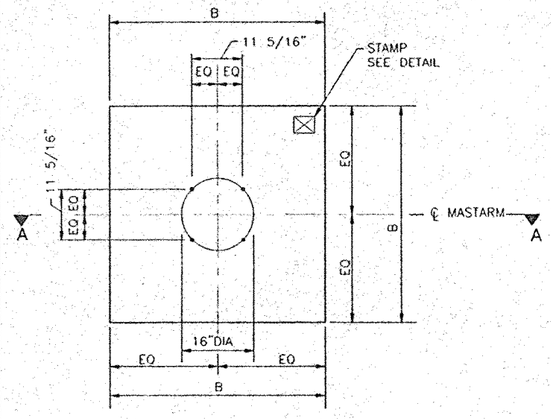
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TRAFFIC SIGNAL
MISCELLANEOUS DETAILS

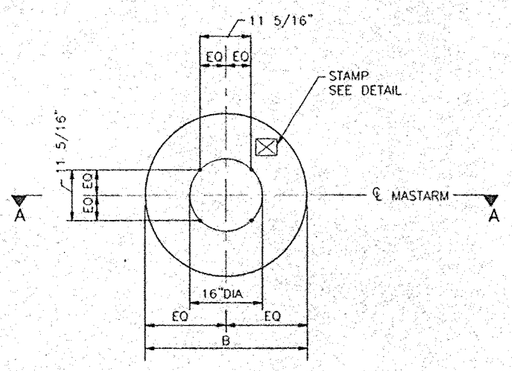
DESIGN REVIEW COMMITTEE — APPROVED — NOV - 9 1996 — DESIGN REVIEW COMMITTEE
CITY ENGINEER APPROVAL
LAST DESIGN UPDATE — MO./DAY/YR.

CITY PROJECT NO	ZONE MAP NO	SHEET	OF
4943.92	L-15	9	20



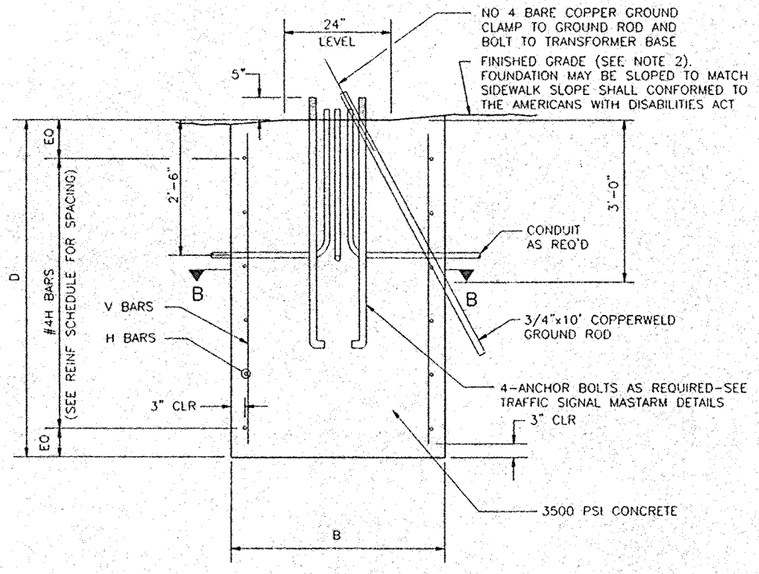
PLAN VIEW (SQUARE)

NO SCALE



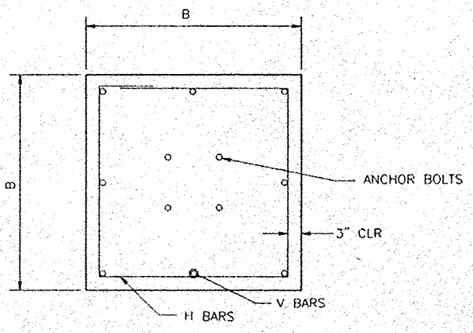
PLAN VIEW (ROUND)

NO SCALE



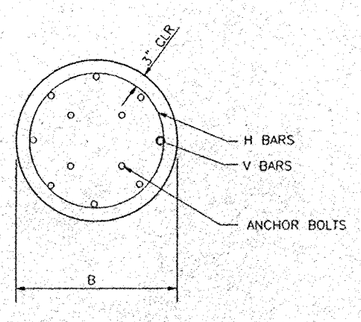
SECTION A-A (ROUND OR SQUARE)

NO SCALE



SECTION B-B (SQUARE)

NO SCALE



SECTION B-B (ROUND)

NO SCALE

TRAFFIC SIGNAL MASTARM FOUNDATION NOTES

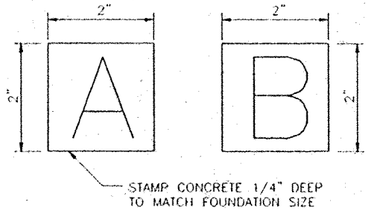
1. REFER TO THE PLANS FOR LOCATIONS OF TRAFIC SIGNAL MASTARM FOUNDATIONS.
2. FINISHED GRADE FOR THE FOUNDATIONS SHALL BE ESTABLISHED IN THE FIELD BY THE PROJECT MANAGER.
3. THE FOUNDATIONS SHOWN HERE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CURRENT REVISION.
4. CONCRETE SHALL BE 3500 PSI FOR EXTERIOR STRUCTURES. REFER TO TABLE 101.C OF THE SPECIFICATIONS.
5. REINFORCING STEEL SHALL CONFORM TO ASTM A-615 GRADE 60.
6. THE TOP 6 INCHES OF THE FOUNDATION PEDESTAL SHALL BE FORMED TO THE DIMENSIONS SHOWN ON THIS SHEET TO FORM NEAT LINES. CONCRETE BELOW 6 LINES MAY BE CAST AGAINST THE EARTH.
7. THE CONCRETE SHALL GAIN 80% OF THE DESIGN STRENGTH PRIOR TO INSTALLING THE TRAFFIC SIGNAL MASTARM.
8. ALL FOUNDATIONS SHALL INCLUDE COPPERWELD GROUND RODS. ALL GROUND RODS SHALL BE 3/4" DIA X 10'-0" AND WILL BE CONSIDERED INCIDENTAL TO THE FOUNDATIONS BID ITEMS.
9. ALL FOUNDATIONS SHALL BE STAMPED EITHER "A" OR "B" TO SHOW TYPE CONSTRUCTED (SEE STAMP DETAIL).

FOUNDATION DIMENSIONS AND QUANTITIES

FOUNDATION TYPE	SIGNAL ARM SPAN(FT)	DIMENSION B (WIDTH)	DIMENSION D (DEPTH)	REINFORCING V BARS MARK	REINFORCING H BARS MARK	REBAR POUNDS	3500 PSI CONCRETE CUBIC YARDS	NOTES
TYPE A (SQUARE)	15 20 25	3'-6" " "	5'-0" " "	#4V2 " "	#3H2 " "	49.1	2.27 " "	
TYPE B (SQUARE)	30 35 40	4'-0" " "	6'-3" " "	#5V1 " "	#3H1 " "	82.6	3.70 " "	
TYPE A (ROUND)	15 20 25	2'-6" " "	8'-6" " "	#6V4 " "	#3H4 " "	98.1	1.55 " "	ROUND SHAPE TO BE USED ONLY WHERE SPECIFICALLY NOTED ON PLANS OR WHEN APPROVED BY THE PROJECT MANAGER.
TYPE B (ROUND)	30 35 40	3'-0" " "	11'-9" " "	#7V3 " "	#3H3 " "	179.7	3.08 " "	

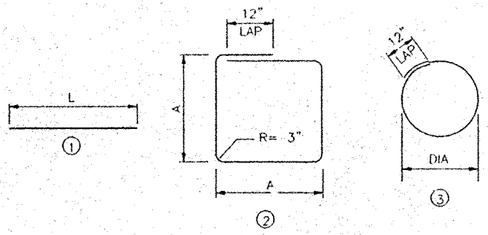
REINFORCING SCHEDULE (GRADE 60 BARS)

MARK	QUANT	TYPE	SIZE	LENGTH	COMMENTS
#5V1	8	1	5	5'-9"	
#4V2	8	1	4	4'-6"	
#7V3	6	1	7	11'-3"	
#6V4	6	1	6	8'-0"	
#3H1	6	2	3	15'-4"	A = 42",TIES AT 14" OC
#3H2	5	2	3	13'-4"	A = 36",TIES AT 12" OC
#3H3	12	3	3	9'-3"	DIA = 30",TIES AT 12" OC
#3H4	9	3	3	7'-8"	DIA = 24",TIES AT 12" OC



STAMP DETAIL

NO SCALE



BAR BENDING DIAGRAM

AS-BUILT INFORMATION
CONTRACTOR DATE
STAKED BY DATE
INSPECTOR'S COMPLIANCE BY DATE
FIELD INSPECTION BY DATE
CORRECTED BY DATE

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

ENGINEER'S SEAL
NEW MEXICO 6878 CHARLES W. TRASK REGISTERED PROFESSIONAL ENGINEER
9-10-96

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	
		DESIGNED BY BH\COA	DATE 9-96
		DRAWN BY BH\COA	DATE 9-96
		CHECKED BY BH\COA	DATE 9-96

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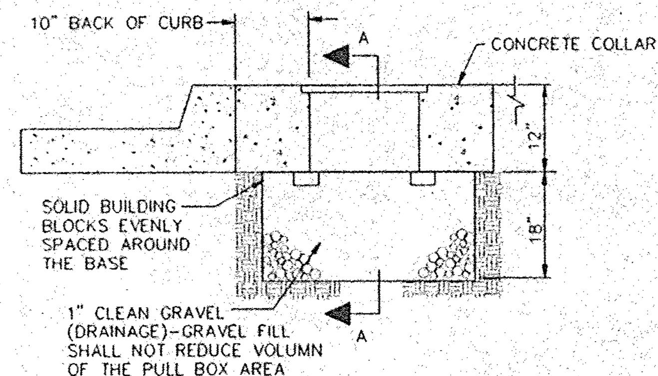
TRAFFIC SIGNAL FOUNDATION DETAILS
TYPE II AND TYPE III STANDARDS

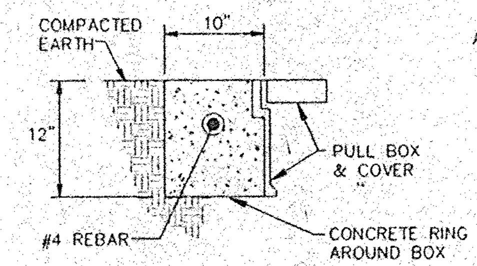
DESIGN REVIEW COMMITTEE APPROVED NOV -9 1996 DESIGN REVIEW COMMITTEE
CITY ENGINEER APPROVAL
LAST DESIGN UPDATE MO./DAY/YR MO./DAY/YR

CITY PROJECT NO 4913.92
ZONE MAP NO L-15
SHEET 10 OF 20

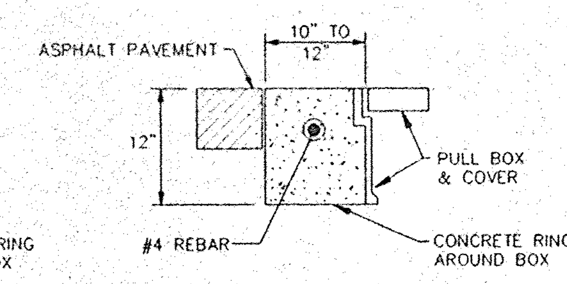


TYPICAL PULLBOX INSTALLATION

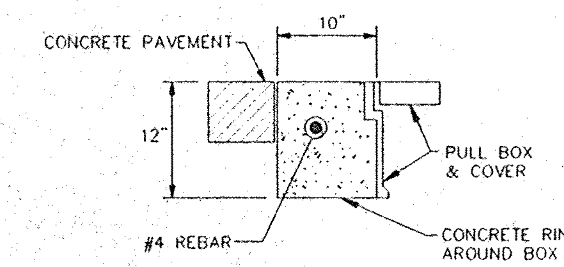
NOTE: SEE "CONCRETE COLLER DETAIL"



IN COMPACTED EARTH



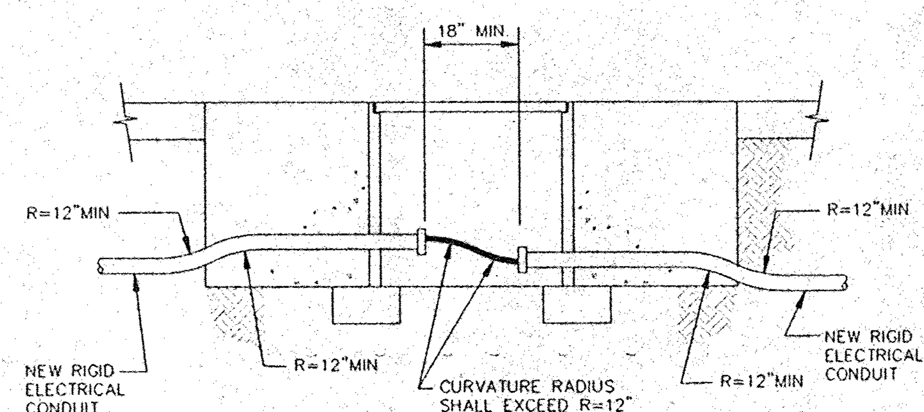
IN ASPHALT PAVEMENTS



IN CONCRETE PAVEMENTS

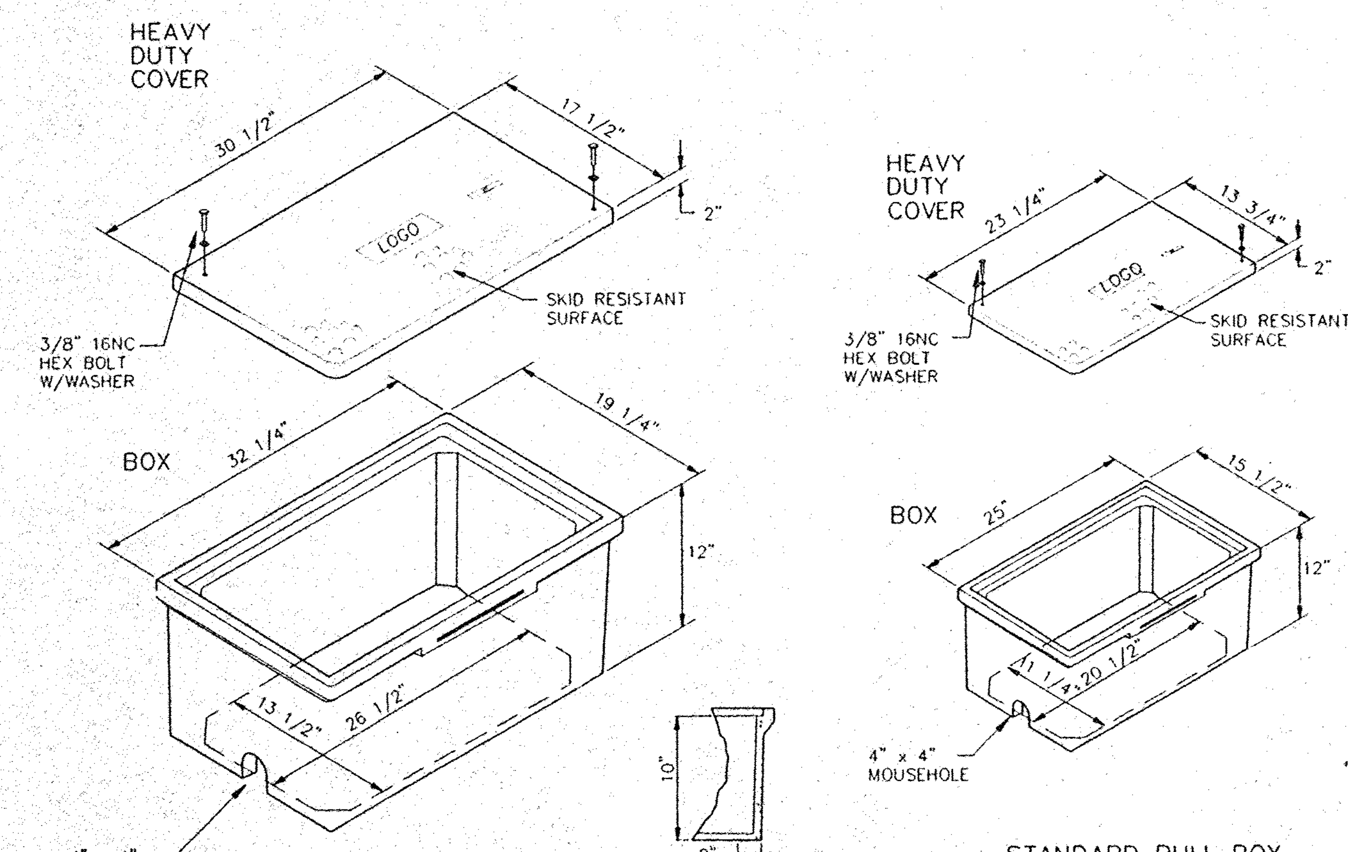
CONCRETE COLLAR DETAILS

NOTE: THE CONCRETE COLLAR FOR THE PULL BOXES WILL BE CONSIDERED INCIDENTAL TO THE PULL BOX BID ITEMS



TRAFFIC SIGNAL PULL BOX (TYPICAL)

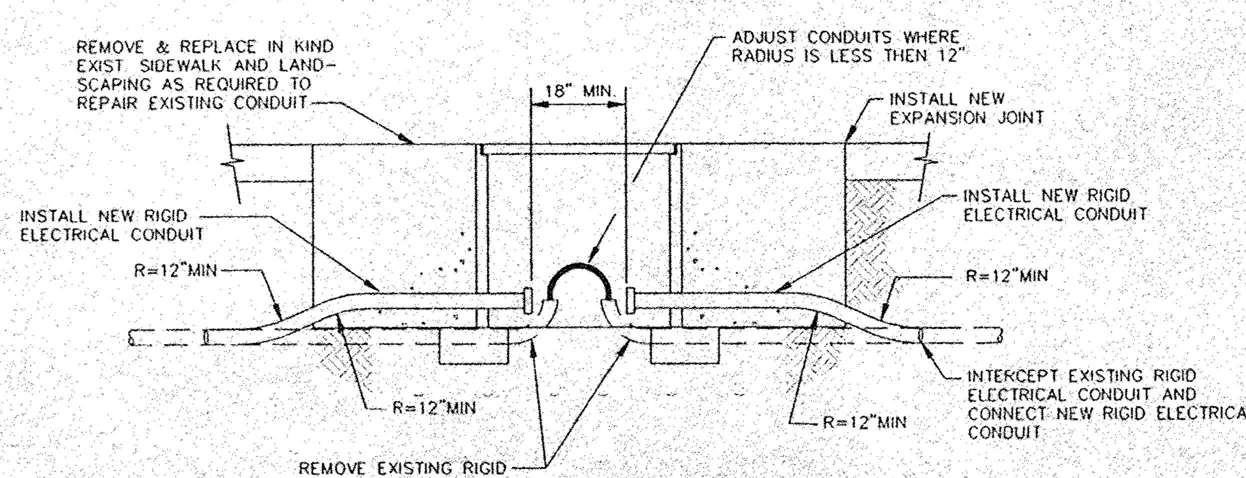
NEW CONDUIT INSTALLATION



LARGE PULL BOX

STANDARD PULL BOX

PULL BOX DETAILS



TRAFFIC SIGNAL PULL BOX (TYPICAL)

RETROFIT INSTALLATION

NOTES FOR HEAVY DUTY REINFORCED POLYMER MORTAR PULL BOX AND COVERS

1. MATERIAL TO BE AN AGGREGATE CONSISTING OF SAND AND GRAVEL BOUND TOGETHER WITH A POLYMER AND REINFORCED WITH CONTINUOUS WOVEN GLASS STRANDS. THE MATERIAL MUST HAVE THE FOLLOWING MECHANICAL PROPERTIES: COMPRESSIVE STRENGTH – 11,000 PSI, TENSILE STRENGTH – 1,700 PSI, FLEXURAL STRENGTH – 7,500 PSI.
2. ALL PULL BOX COVERS SHALL BE HEAVY DUTY REINFORCED POLYMER MORTAR, HAVING A SERVICE LOAD OF 22,568 LBS. OVER 10" SQUARE (225 PSI).
3. PULL BOX TYPE AND LOGO SHALL BE APPROVED BY THE PROJECT MANAGER.
4. THE DIMENSIONS OF THE PULL BOXES SHOWN ARE NOMINAL DIMENSIONS AND MAY VARY AS TO THE MANUFACTURER'S RECOMENDATIONS. ALL DIMENSIONS SHALL BE VERIFIED BY THE PROJECT MANAGER.
5. ELECTRICAL PULL BOX (STANDARD) SHALL BE A HEAVY DUTY REINFORCED POLYMER MORTAR PULL BOX AND COVER MEASURING 13 3/4" x 23 1/4" x 2".

AS-BUILT INFORMATION: CONTRACTOR / DATE; WORK STAKED BY / DATE; INSPECTOR'S ACCEPTANCE BY / DATE; FIELD VERIFICATION BY / DATE; DRAWINGS CORRECTED BY / DATE

MICRO-FILM INFORMATION: RECORDED BY / DATE; NO.

BENCH MARKS

SURVEY INFORMATION: FIELD NOTES — NO. | BY | DATE

ENGINEER'S SEAL: CHARLES W. TRASK III, NEW MEXICO, 6876, REGISTERED PROFESSIONAL ENGINEER — 10-10-96

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	

DESIGNED BY BHI\COA — DATE 9-96
DRAWN BY BHI\COA — DATE 9-96
CHECKED BY BHI\COA — DATE 9-96

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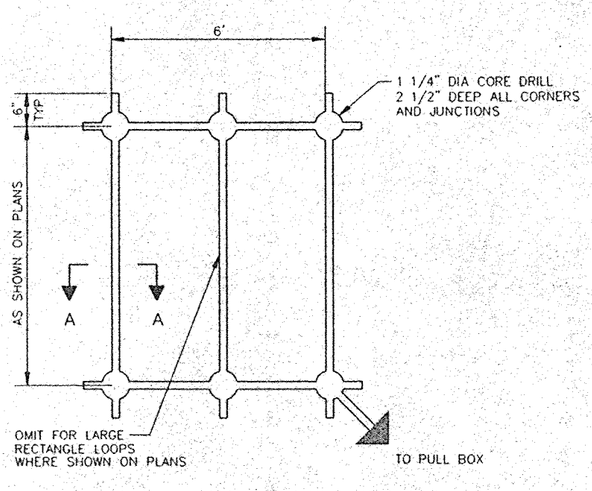
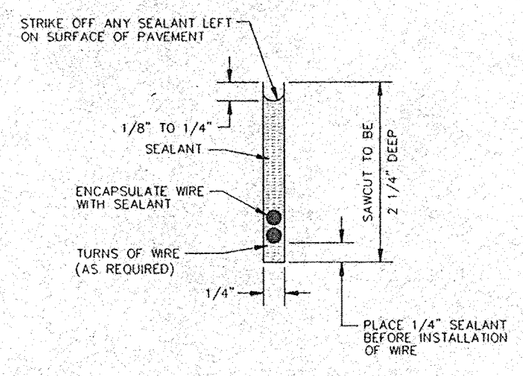
TRAFFIC SIGNAL
PULL BOX DETAILS

DESIGN REVIEW COMMITTEE — APPROVED — NOV - 9 1996
CITY ENGINEER APPROVAL — MO./DAY/YR — MO./DAY/YR
LAST DESIGN UPDATE

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
4913.92	L-15	11	20

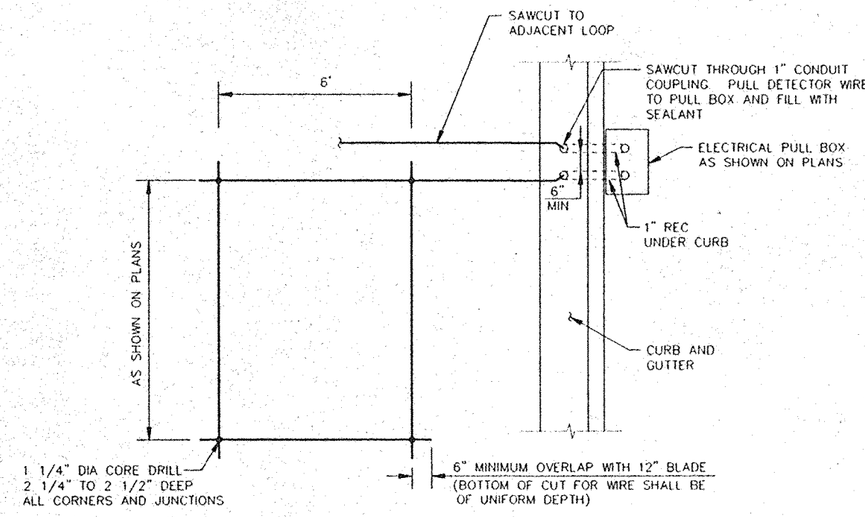


PLAN VIEW

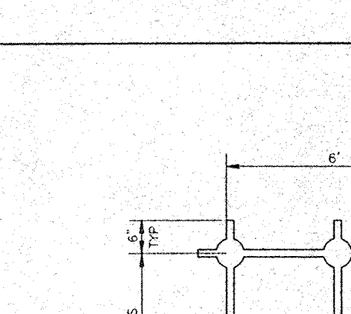


SECTION A–A

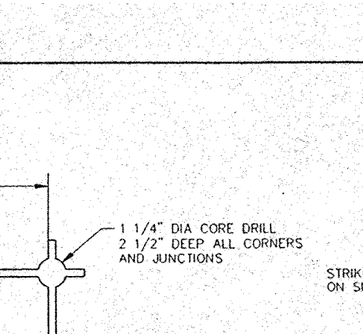
TYPICAL ROADWAY LOOP SAWCUT DETAIL



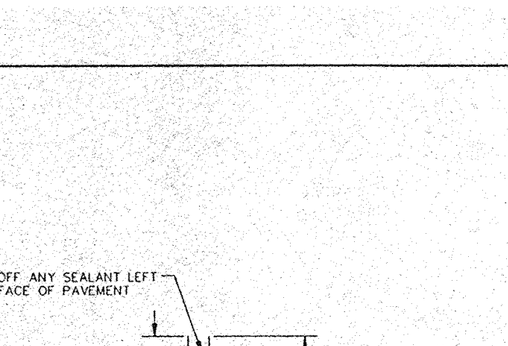
PLAN VIEW



EXTEND CALL LOOP WIRING DETAIL



SYSTEM LOOP WIRING DETAIL



SERIES LOOP WIRING DETAIL

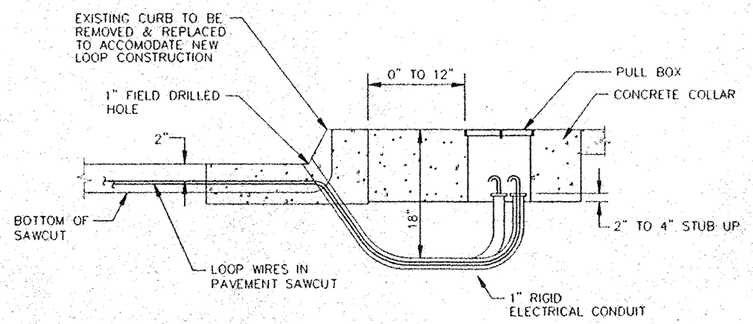
QUADRUPOLE LOOP WIRING DETAIL

LARGE RECTANGULAR LOOP WIRING DETAIL

TYPICAL LOOP WIRE PLACEMENT DETAILS

NOTES

1. WIRES MUST BE WOUND IN THE DIRECTION SHOWN.
2. QUADRUPOLE LOOPS SHALL HAVE 2 TURNS.
3. EXTEND CALL LOOPS SHALL HAVE 3 TURNS.
4. SYSTEM DETECTOR LOOPS SHALL HAVE 4 TURNS.
5. LARGE RECTANGLE LOOPS SHALL HAVE 3 TURNS.



SECTION

LOOP WIRE TERMINATION DETAILS

LOOP DETECTOR NOTES

1. ALL LOOP DETECTOR WIRE SHALL BE #14 AWG STRANDED COPPER WIRE WITH CROSS-LINKED POLYETHYLENE INSULATION (INDUSTRY TYPE XHHW) CONFORMING TO THE REQUIREMENTS OF IMSA SPECIFICATIONS #51-3 1984. BACKER ROD SHALL NOT BE USED IN THE INSTALLATION OF LOOP (EXCEPT PIECES LESS THAN 12" WHICH MAY BE PLACED OVER THE WIRE AT THE SAWCUT CORNERS TO HOLD THE WIRE. A 1/4" LAYER OF SEALANT SHALL BE PLACED IN THE SAWCUT BEFORE PLACEMENT OF THE WIRE AND THEN THE WIRE SHALL BE ENCAPSULATED WITH SEALANT. HOT-MELT RUBBERIZED ASPHALT LOOP DETECTOR SEALANT MANUFACTURED BY CRAFCO SHALL AN ACCEPTABLE SEALANT ALTERNATE.
2. ALL LOOP LEAD IN CABLES SHALL BE TAGGED AT CABINET TO IDENTIFY. EACH CABLE BY LOOP AND PHASE NUMBER.
3. GROUND LOOP LEAD IN CABLE SHIELDING IN CONTROL CABINET.
4. SEPARATE 1" RIGID ELECTRICAL CONDUITS ARE REQUIRED FOR EACH PAIR OF DETECTOR WIRES.

AS-BUILT INFORMATION
CONTRACTOR DATE
INSPECTED BY DATE
FIELD MODIFICATIONS BY DATE
FIELD VERIFICATION BY DATE
DRAWING CORRECTED BY DATE

MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

ENGINEER'S SEAL
CHARLES W. TRASK
NEW MEXICO 8578
REGISTERED PROFESSIONAL ENGINEER
10-10-96

NO	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	
		DESIGNED BY BHI\COA	DATE 9-96
		DRAWN BY BHI\COA	DATE 9-96
		CHECKED BY BHI\COA	DATE 9-96

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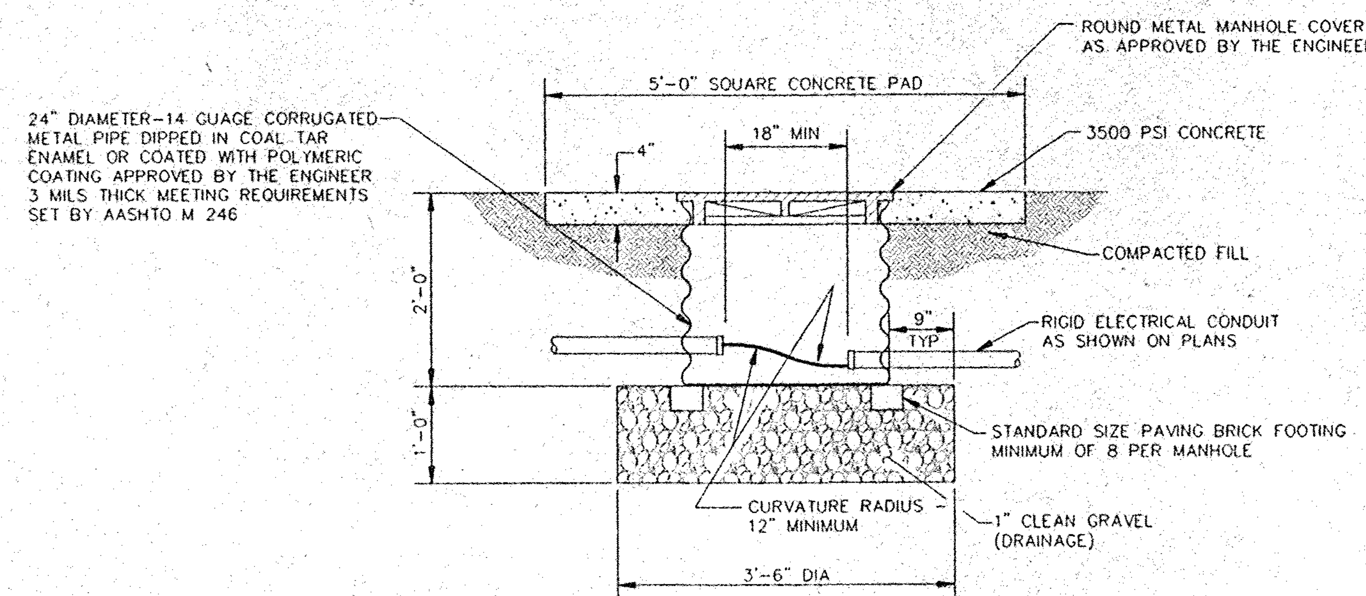
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TRAFFIC SIGNAL
LOOP DETECTOR DETAILS

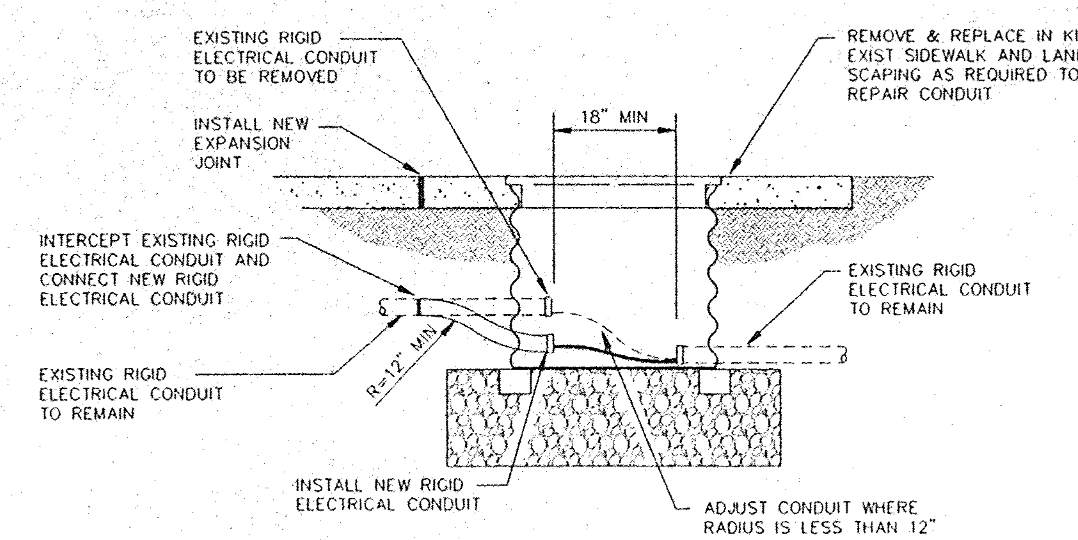
DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.

CITY PROJECT NO	ZONE MAP NO	SHEET	OF
4913.92	L-15	12	20

TRANS TYP\PROJECT SHEETS SIGNAL\ADET.DWG
ADET.DWG



TRAFFIC SIGNAL MANHOLE (TYPICAL)
NEW CONDUIT INSTALLATION



TRAFFIC SIGNAL MANHOLE (TYPICAL)
RETROFIT INSTALLATION

NOTES:

1. TRAFFIC SIGNAL MANHOLE TO BE CONSTRUCTED IN AREAS NOT NORMALLY ACESSIBLE TO VEHICULAR TRAFFIC.

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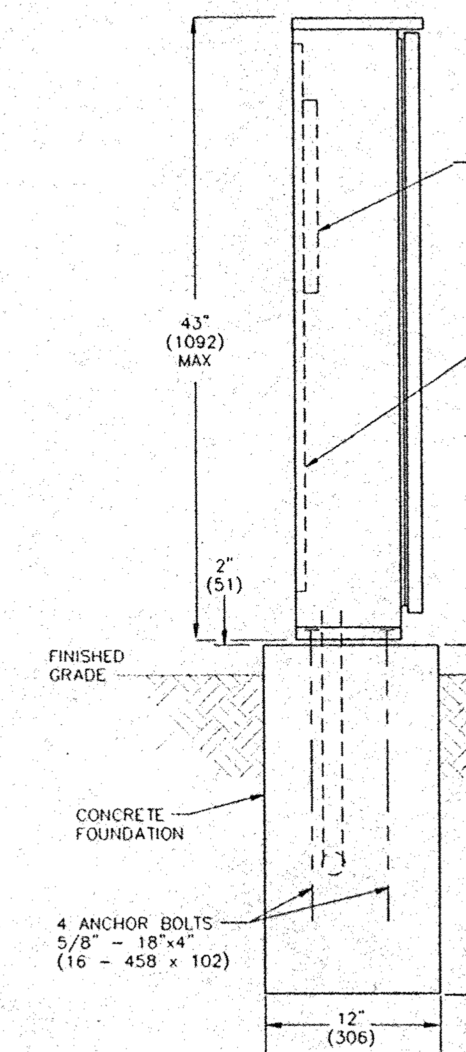
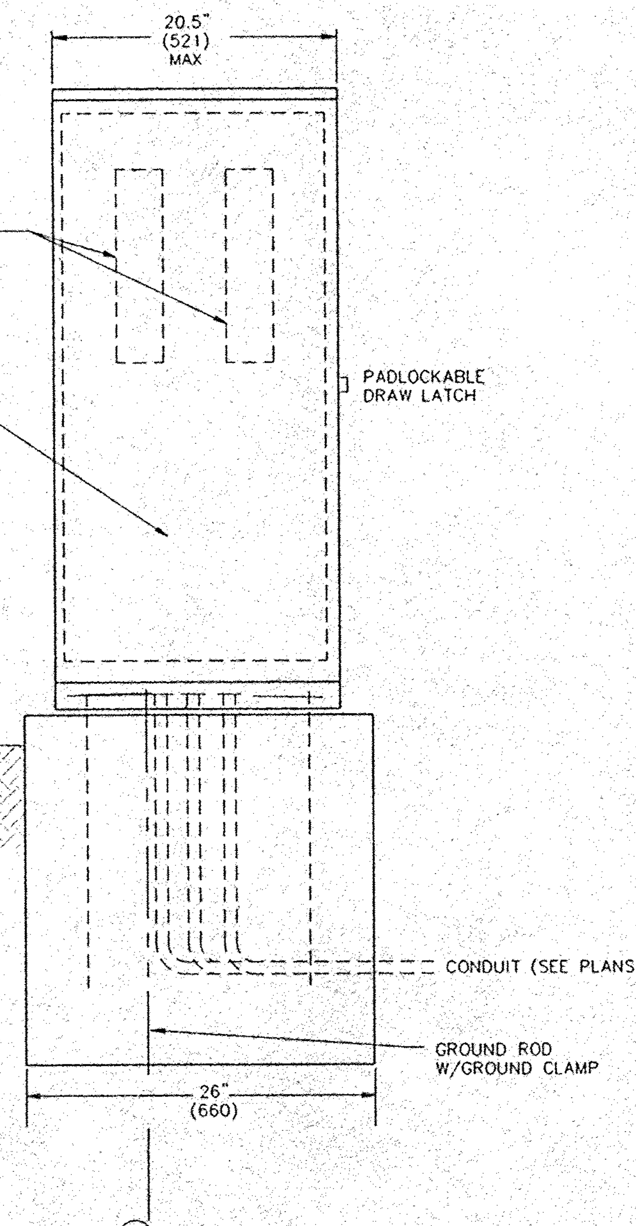
TRAFFIC SIGNAL
MANHOLE DETAILS

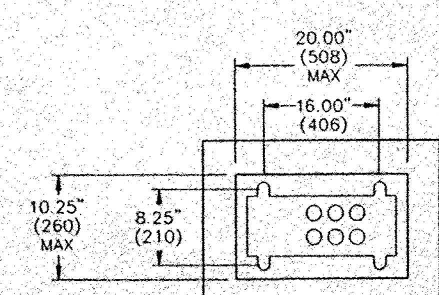
CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
4913.92	L-15	13	20



LEFT SIDE



FRONT VIEW



BASE PLAN

SCALE: NONE
DIMENSIONS ARE - #.##", (###) MILLIMETERS

CONSTRUCTION MATERIALS AND FINISH

- [X] 12 GA HD GALVANIZED SHEET STEEL
  - [X] POWDER COATED ________
- [ ] 14 GA #304 STAINLESS STEEL SHEET
  - [ ] POWDER COATED COLOR: ________
  - [ ] NATURAL
- [ ] 0.125" ALUMINUM SHEET
  - [ ] POWDER COATED COLOR: ________
  - [ ] NATURAL
  - [ ] ANODIZED

POWDER COAT COLORS

- [X] WHITE
- [ ] RANCH GREEN
- [ ] MINT GREEN
- [ ] OTHER ________
- [ ] CAMEL

SPLICE CABINET CONSTRUCTION NOTES

1. SPLICE CABINET SHALL BE UL LISTED "INDUSTRIAL CONTROL PANEL" PER UL 508.
2. CONSTRUCTION SHALL BE NEMA 3R AND 12, RAIN TIGHT AND DUST TIGHT. ELECTRICALLY WELDED AND REINFORCED WHERE REQUIRED.
3. ALL NUTS, BOLTS, SCREWS AND HINGES SHALL BE STAINLESS STEEL. ELECTRICALLY WELDED AND REINFORCED WHERE REQUIRED.
4. NUTS, BOLTS, AND SCREWS SHALL NOT BE VISIBLE FROM OUTSIDE OF SPLICE CABINET.
5. PHENOLIC NAME PLATES SHALL BE PROVIDED AS REQUIRED.
6. ALL POWDER COATED CABINETS SHALL HAVE A CORROSION RESISTANT COATING WHICH INCLUDES A FIVE STEP DIP TANK METAL PREPARATION PROCESS:
   A. ALKALINE CLEANER 160° F.
   B. CLEAR WATER RINSE.
   C. IRON PHOSPHATE APPLICATION 150°.
   D. CLEAR WATER RINSE.
   E. INHIBITIVE RINSE TO SEAL PHOSPHATED SURFACES 120°.
   FINISHED WITH AN ELECTROSTATICALLY APPLIED DRY POLYESTER POWDER COATING THEN BAKED @ 380° TO CURE.
7. FOUNDATIONS, INCLUDING EXCAVATION, CONCRETE AND ANCHOR BOLTS, COMPLETE-IN PLACE AND BACK FILLED, SHALL BE CONSIDERED INCIDENTAL TO THE SPICE CABINET.

AS-BUILT INFORMATION: CONTRACTOR / DATE; WORK STAKED BY / DATE; INSPECTOR'S ACCEPTANCE BY / DATE; FIELD VERIFICATION BY / DATE; DRAWINGS CORRECTED BY / DATE

MICRO-FILM INFORMATION: RECORDED BY / DATE; NO.

BENCH MARKS

SURVEY INFORMATION — FIELD NOTES: NO. / BY / DATE

ENGINEER'S SEAL: CHARLES W. TRASK III, NEW MEXICO, 8876, REGISTERED PROFESSIONAL ENGINEER — 10-10-96

NO.	DATE	REMARKS / REVISIONS / DESIGN	BY
		DESIGNED BY: BHI\COA	DATE 9-96
		DRAWN BY: BHI\COA	DATE 9-96
		CHECKED BY: BHI\COA	DATE 9-96

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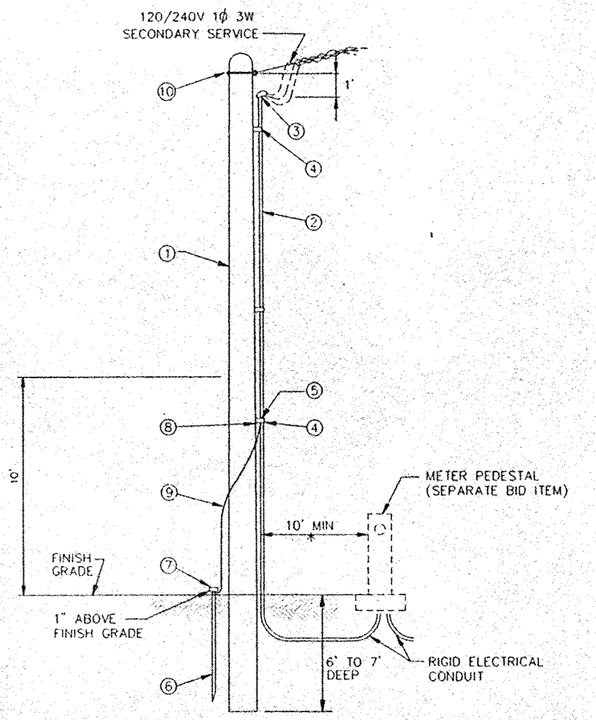
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TRAFFIC SIGNAL
SPLICE CABINET GROUND MOUNT (LARGE)

DESIGN REVIEW COMMITTEE: APPROVED — DESIGN REVIEW COMMITTEE
CITY ENGINEER APPROVAL
LAST DESIGN UPDATE — MO./DAY/YR. — MO./DAY/YR.

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
4913.92	L-15	14	20

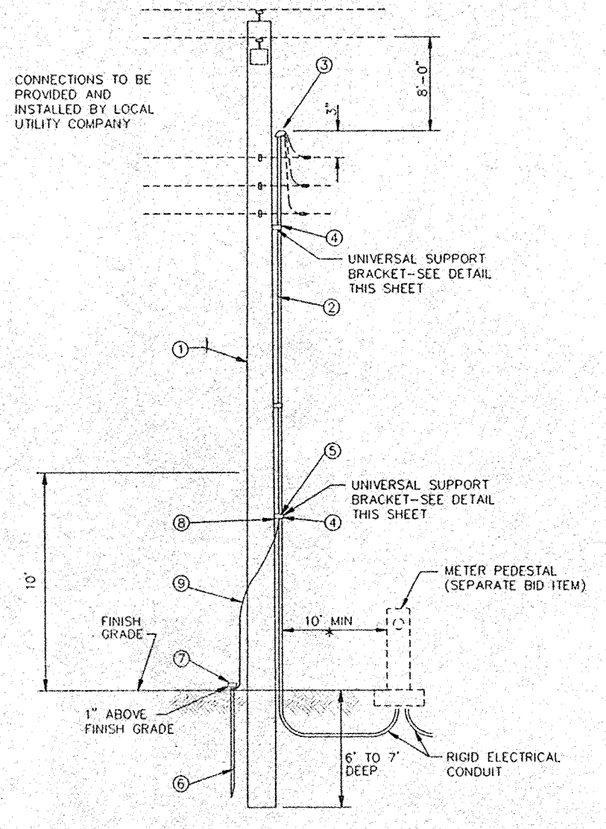


MATERIAL LIST

①	1	25' TREATED POLE
②	30'	2" GALVANIZED CONDUIT
③	1	2" WEATHER HEAD
④	2	UNIVERSAL SUPPORT BRACKET
⑤	2	2" PIPE STRAP KIT
⑥	1	COPPERWELD 3/4"x10'-0" GROUND ROD
⑦	1	GROUND ROD CLAMP
⑧	1	GROUND LUG
⑨	10'	#6 BARE COPPER GROUND WIRE
⑩	1	5/8" EYE BOLT 40' I/C #2 THW BLACK 40' I/C #2 THW WHITE 40' I/C #2 THW RED

SERVICE POLE (SIGNAL)

* CONDUIT AND WIRE EXTENDING MORE THAN 10' FROM POLE WILL BE MEASURED AND PAID PER ACTUAL FOOTAGE USED.

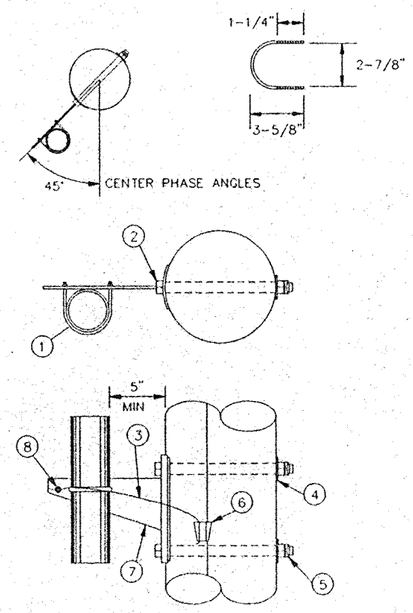


MATERIAL LIST

①	1	EXISTING POLE
②	40'	2" GALVANIZED CONDUIT
③	1	2" WEATHER HEAD
④	2	UNIVERSAL SUPPORT BRACKET
⑤	2	2" PIPE STRAP KIT
⑥	1	COPPERWELD 3/4"x10'-0" GROUND ROD
⑦	1	GROUND ROD CLAMP
⑧	1	GROUND LUG
⑨	10'	#6 BARE COPPER GROUND WIRE 50' I/C #2 THW BLACK 50' I/C #2 THW WHITE 50' I/C #2 THW RED

SERVICE RISER (SIGNAL)

* CONDUIT AND WIRE EXTENDING MORE THAN 10' FROM POLE WILL BE MEASURED AND PAID PER ACTUAL FOOTAGE USED



MATERIAL LIST

①	1	U BOLT
②	2	5/8" MACHINE BOLTS
③	3'	#4 SOLID COPPER WIRE
④	2	2-1/4" SQUARE WASHER
⑤	2	5/8" MF LOCKNUT
⑥	1	LINE TAP
⑦	1	SUPPORT BRACKET
⑧	1	GROUNDING LUG

UNIVERSAL SUPPORT BRACKETS NOTES:

1. BRACKET TO BE FASTENED TO POLE WITH 5/8" GALVANIZED MACHINE BOLTS.
2. BRACKET SUITABLE FOR TWO 2" CONDUITS.
3. TWO HOLE STRAPS ATTACHED AT 30" INTERVALS WITH 2" LAG SCREWS MAY BE USED INSTEAD OF THE SUPPORT BRACKET WHEN THE CONDUIT IS 1" OR LESS. A MAXIMUM OF TWO CONDUITS MAY BE STRAPPED DIRECTLY TO THE POLE.

SIGNAL SERVICE NOTES

1. ALL SIGNAL SERVICE DETAILS, MATERIALS, & INSTALLATION SHALL CONFORM TO THE LOCAL POWER COMPANY REQUIREMENTS.
2. CONTACT LOCAL POWER COMPANY CUSTOMER SERVICES FOR POLE QUADRANT FOR RISERS.
3. ALL ABOVE GRADE CONDUIT SHALL BE GALVANIZED.
4. RISER BRACKET ASSEMBLY MUST BE GROUNDED PER LOCAL POWER COMPANY REQUIREMENTS.
5. CONDUIT AND WIRE EXTENDING MORE THEN 10' FROM POLE WILL BE MEASURED AND PAID PER ACTUAL FOOTAGE USED.
6. UNIVERSAL SUPPORT BRACKETS WILL BE CONSIDERED INCIDENTAL.
7. DRILLING HOLES IN EXISTING STEEL POLES FOR UNIVERSAL SUPPORT BRACKETS WILL NOT BE PERMITTED. BRACKETS SHALL BE MOUNTED ON STEEL POLES WITH STAINLESS STEEL BANDS.
8. PROVIDE ONE 50A, SINGLE POLE, 120V CIRCUIT FOR CONTROLLER SIGNALS.

UNIVERSAL SUPPORT BRACKETS

AS-BUILT INFORMATION
CONTRACTOR — DATE
STAKED BY — DATE
MONUMENTS BY — DATE
FIELD VERIFICATIONS BY — DATE
PLANS CORRECTED BY — DATE

SURVEY INFORMATION
BENCH MARKS
FIELD NOTES BY — DATE

MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

ENGINEER'S SEAL
IRA W. TRASK III
NEW MEXICO 6876
REGISTERED PROFESSIONAL ENGINEER
10-10-96

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	
		DESIGNED BY BHI\COA	DATE 9-96
		DRAWN BY BHI\COA	DATE 9-96
		CHECKED BY BHI\COA	DATE 9-96

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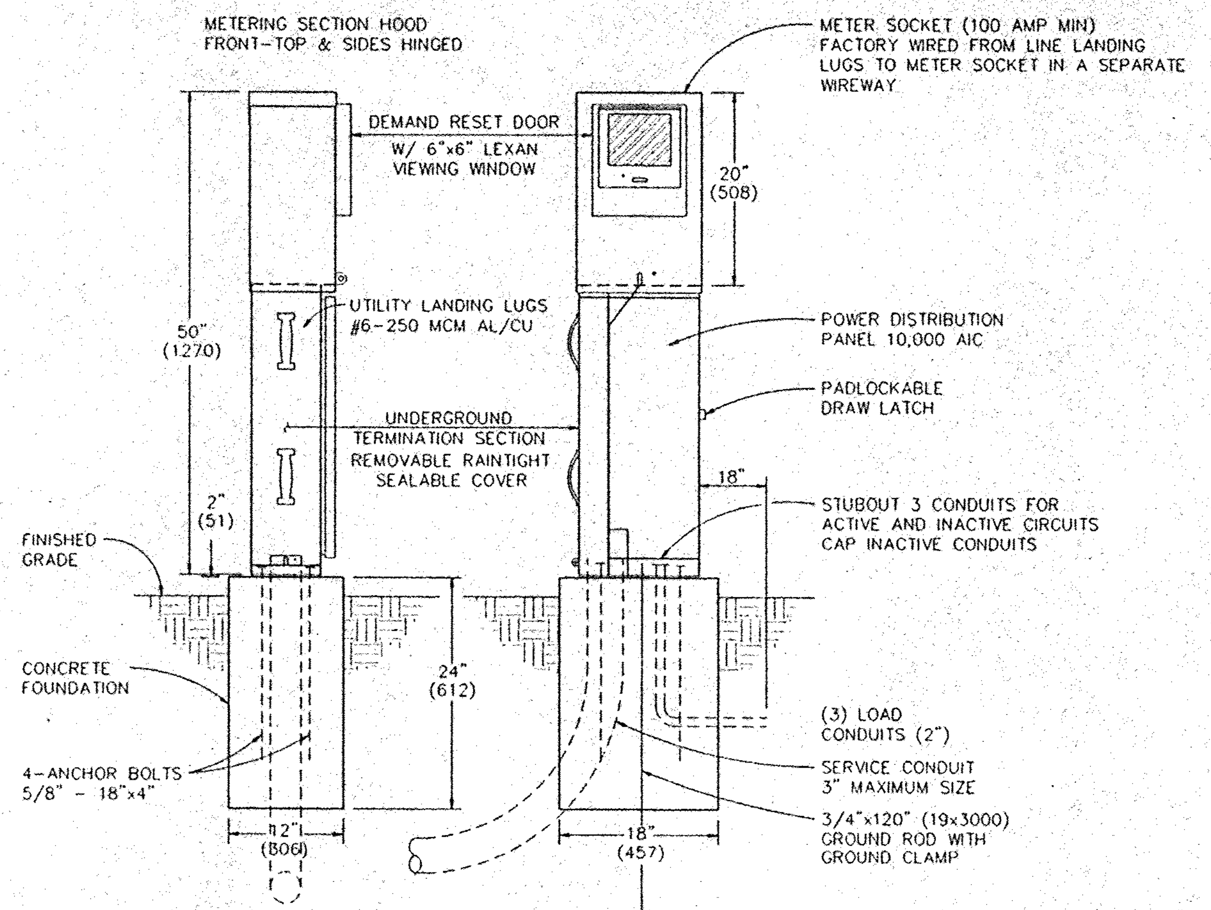
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TRAFFIC SIGNAL
ELECTRICAL SERVICE DETAILS FOR SIGNALS

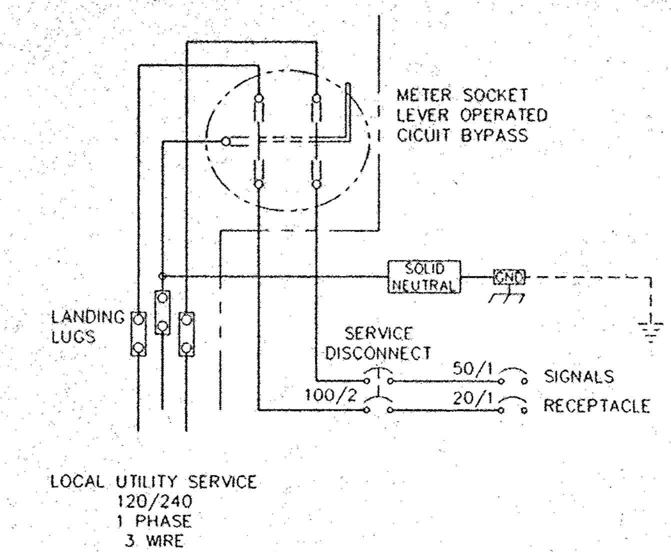
DESIGN REVIEW COMMITTEE — APPROVED — NOV - 8 1996 — DESIGN
CITY ENGINEER APPROVAL
LAST DESIGN UPDATE — MO./DAY/YR. — MO./DAY/YR.

CITY PROJECT NO. 4913.92 | ZONE MAP NO. L-15 | SHEET 15 OF 20



LEFT SIDE

FRONT VIEW



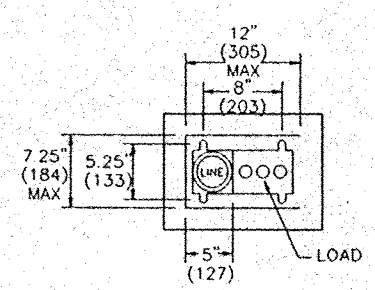
SERVICE EQUIPMENT WIRING DIAGRAM "A"

CONSTRUCTION MATERIALS AND FINISH

- [X] 12 GA HD GALVANIZED STEEL
  - [X] POWDER COATED
- [ ] 14 GA #304 STAINLESS STEEL SHEET
  - [ ] POWDER COATED COLOR ________
  - [ ] NATURAL
- [ ] 0.125" ALUMINUM SHEET
  - [ ] POWDER COATED COLOR ________
  - [ ] NATURAL
  - [ ] ANODIZED

POWDER COAT COLORS

- [ ] WHITE
- [ ] RANCH GREEN
- [ ] MINT GREEN
- [ ] OTHER ________
- [X] CAMEL



BASE PLAN

METER PEDESTAL CONSTRUCTION NOTES

1. METER PEDESTAL SHALL BE UL LISTED "INDUSTRIAL CONTROL PANEL" PER UL 508.
2. METER PEDESTAL SHALL MEET THE ELECTRIC UTILITY SERVICE EQUIPMENT REQUIRMENTS COMMITTEE (EUSERC) GUIDELINES.
3. CONSTRUCTION SHALL BE NEMA 3R AND 12, RAIN TIGHT AND DUST TIGHT. ELECTRICALLY WELDED AND REINFORCED WHERE REQUIRED.
4. ALL NUTS, BOLTS, SCREWS AND HINGES SHALL BE STAINLESS STEEL.
5. NUTS, BOLTS, AND SCREWS SHALL NOT BE VISIBLE FROM OUTSIDE OF METER PEDESTAL.
6. PHENOLIC NAME PLATES SHALL BE PROVIDED AS REQUIRED.
7. CIRCUIT BREAKERS SHALL BE CABLE IN-CABLE OUT WITH LINE ON TOP & LOAD ON THE BOTTOM. HANDLE POSITION UP="ON", MIDDLE="TRIPPED", DOWN="OFF".
8. A PLASTIC COVERED WIRING DIAGRAM SHALL BE ATTACHED TO THE INSIDE OF THE FRONT DOOR.
9. METER PEDESTAL SHALL BE FACTORY WIRED AND CONFORM TO REQUIRED NEMA STANDARDS.
10. ALL POWDER COATED METER PEDESTAL SHALL HAVE A CORROSION RESISTANT COATING WHICH INCLUDES A FIVE STEP DIP TANK METAL PREPARATION PROCESS:
    A. ALKALINE CLEANER 160° F.
    B. CLEAR WATER RINSE.
    C. IRON PHOSPHATE APPLICATION 150°.
    D. CLEAR WATER RINSE.
    E. INHIBITIVE RINSE TO SEAL PHOSPHATED SURFACES 120°.

    FINISHED WITH AN ELECTROSTATICALLY APPLIED DRY POLYESTER POWDER COATING THEN BAKED @ 380° TO CURE.
11. CONCRETE FOUNDATIONS INCLUDING EXCAVATION AND BACKFILL, CONCRETE, AND ANCHOR BOLTS, COMPLETE-IN PLACE, WILL BE CONSIDERED INCIDENTAL TO THE METER PEDESTAL.

SCALE: NONE
DIMENSIONS ARE - #.##" INCHES, (###) MILLIMETER

AS-BUILT INFORMATION: CONTRACTOR / DATE; WORK STAKED BY / DATE; INSPECTOR'S ACCEPTANCE BY / DATE; FIELD VERIFICATION BY / DATE; DRAWINGS CORRECTED BY / DATE

MICRO-FILM INFORMATION: RECORDED BY / DATE; NO.

BENCH MARKS

SURVEY INFORMATION: FIELD NOTES — NO. / BY / DATE

ENGINEER'S SEAL: CHARLES W. TRASK III, NEW MEXICO 6876, REGISTERED PROFESSIONAL ENGINEER — 10-10-96

REVISIONS: NO. / DATE / REMARKS / BY — DESIGN
DESIGNED BY BHI\COA — DATE 9-96
DRAWN BY BHI\COA — DATE 9-96
CHECKED BY BHI\COA — DATE 9-96

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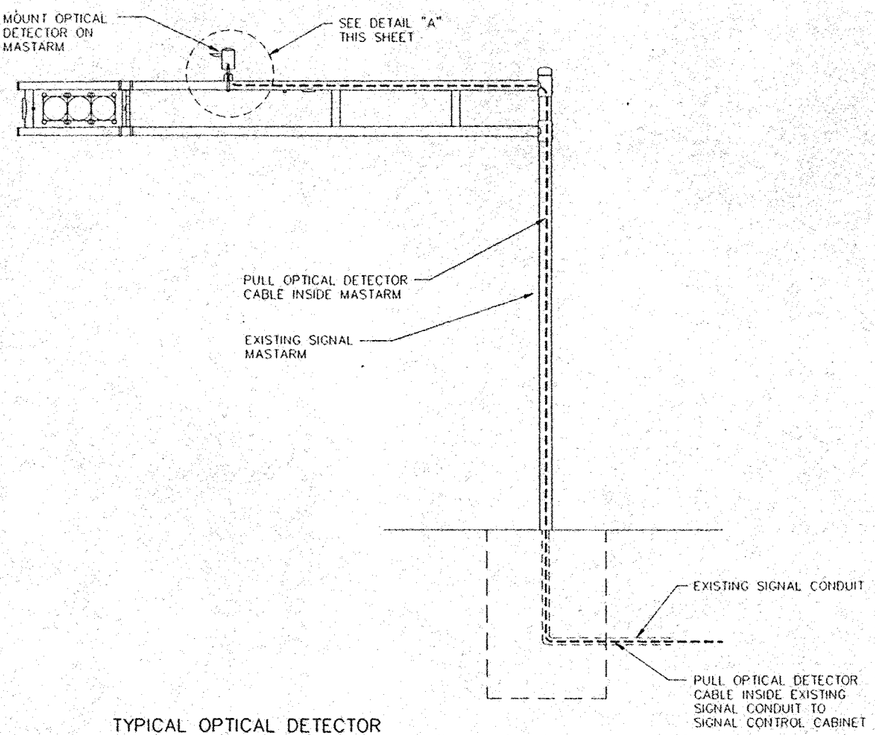
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

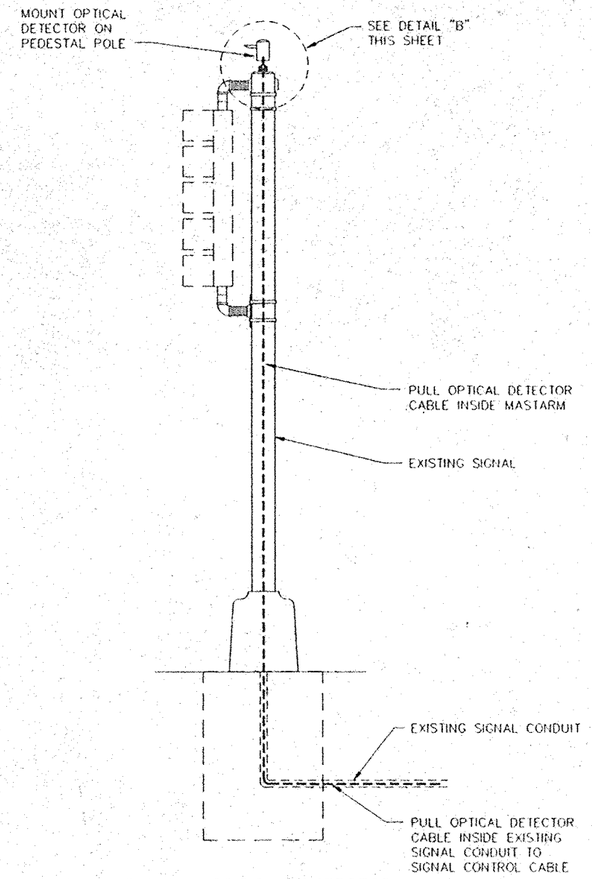
TRAFFIC SIGNAL
METER PEDESTAL DETAILS FOR SIGNALS

DESIGN REVIEW COMMITTEE — NOV - 9 1998 — DESIGN REVIEW COMMITTEE
CITY ENGINEER APPROVAL | MO./DAY/YR. | MO./DAY/YR.
LAST DESIGN UPDATE

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
4913.92	L-15	16	20



TYPICAL OPTICAL DETECTOR INSTALLATION – MASTARM

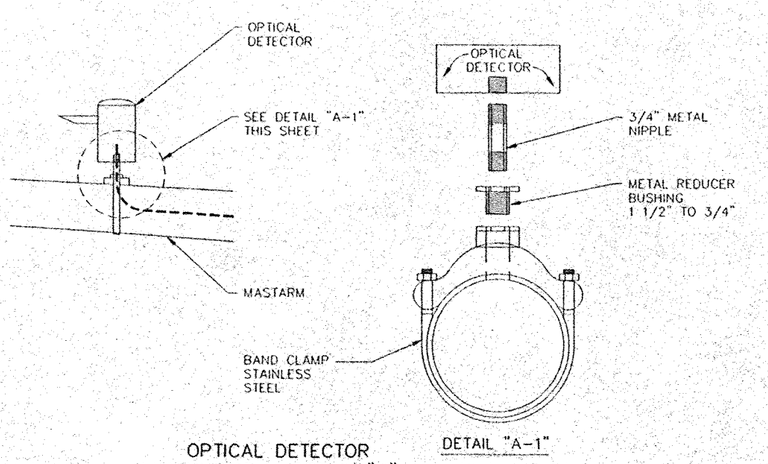


TYPICAL OPTICAL DETECTOR INSTALLATION – PEDESTAL POLE

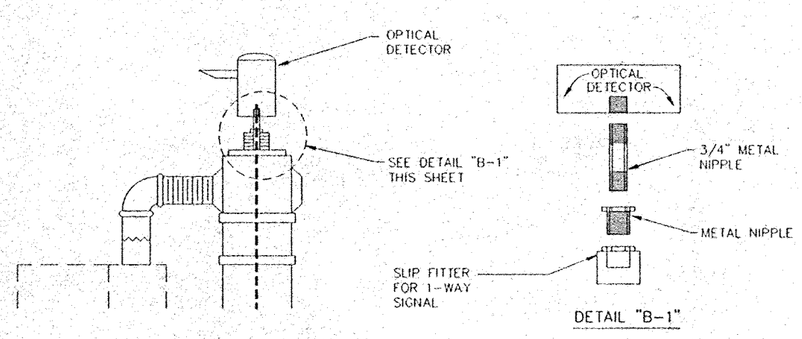
NOTE: OPTICAL DETECTOR SHALL ONLY BE MOUNTED ON PEDESTAL POLES WHEN THERE IS NO MASTARM.

NOTES:

1. ALL OPTICAL DETECTOR MOUNTING HARDWARE SHALL CONFORM TO OPTICAL DETECTOR MANUFACTURER'S REQUIREMENTS.



OPTICAL DETECTOR MOUNTING – DETAIL "A"



OPTICAL DETECTOR MOUNTING – DETAIL "B"

AS-BUILT INFORMATION

BENCH MARKS

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

CONTRACTOR — DATE

STAKED BY — DATE

INSPECTOR'S REVIEWED BY — DATE

FIELD INSPECTION BY — DATE

CORRECTED BY — DATE

MICRO-FILM INFORMATION

RECORDED BY — DATE

NO.

ENGINEER'S SEAL

CHARLES W. TRASK — NEW MEXICO — 6878 — REGISTERED PROFESSIONAL ENGINEER — 10-10-96

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	
	DATE 9-96	DESIGNED BY BHI/COA	
	DATE 9-96	DRAWN BY BHI/COA	
	DATE 9-96	CHECKED BY BHI/COA	

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ENGINEERING DEVELOPMENT GROUP

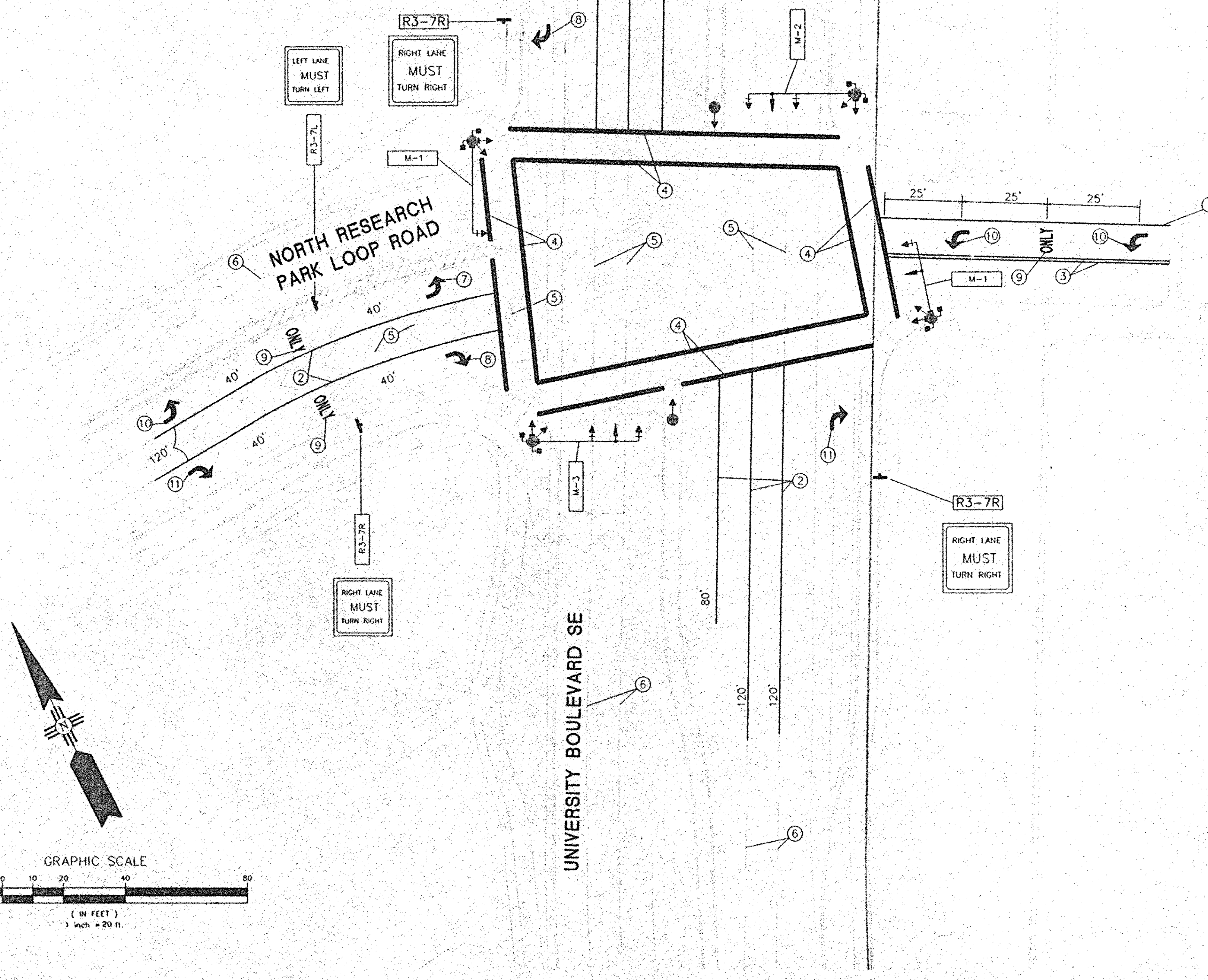
TRAFFIC SIGNAL
OPTICAL DETECTOR INSTALLATION DETAILS

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
4913.92	L-15	17	20

ESTIMATED QUANTITIES

ITEM	DESCRIPTION	UNIT	QUAN
0440.01	REFLECTORIZED PAINTED MARKING	LIN FT	1800
0440.10	REFLECTORIZED PAINTED ARROW RIGHT	EACH	2
0440.11	REFLECTORIZED PAINTED ARROW LEFT	EACH	1
0441.01	REFLECTORIZED PAINTED ARROW LEFT	LIN FT	255
0441.04	REFLECTORIZED PLASTIC PAVEMENT MARKINGS, 4" WIDTH	LIN FT	680
0441.10	REFLECTORIZED PLASTIC ARROW RIGHT	EACH	2
0441.11	REFLECTORIZED PLASTIC ARROW LEFT	EACH	3
0441.20	REFLECTORIZED PLASTIC WORD "ONLY"	EACH	3
0443.101	REMOVAL OF PAVEMENT STRIPE ANY WIDTH PLASTIC OR PAINTED	LIN FT	400
0450.01	ALUMINUM PANEL SIGN	SQ FT	56
0450.10	SQUARE TUBE STEEL POST & BASE POST FOR ALUMINUM PANEL SIGN	LIN FT	52

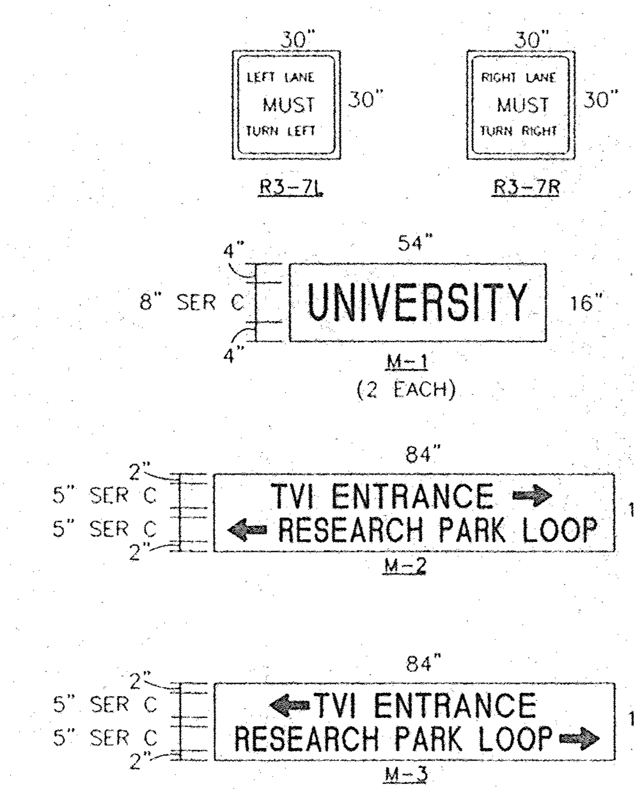


KEYED NOTES

1. 4" SOLID WHITE STRIPE, REFLECTORIZED PLASTIC
2. 4" SOLID WHITE STRIPE, REFLECTORIZED PAINT (2 COATS)
3. 4" SOLID DOUBLE YELLOW STRIPE, REFLECTORIZED PLASTIC
4. 12" SOLID WHITE CROSSWALK, REFLECTIVE PLASTIC 3M STAMARK INTERSECTION GRADE TAPE SERIES 420
5. REMOVE EXISTING STRIPING
6. EXISTING STRIPING TO REMAIN
7. LEFT ARROW REFLECTORIZED PAINT OVER EXISTING ARROW
8. RIGHT ARROW REFLECTORIZED PAINT OVER EXISTING ARROW
9. ONLY WORD, REFLECTORIZED PLASTIC
10. LEFT ARROW, REFLECTORIZED PLASTIC
11. RIGHT ARROW, REFLECTORIZED PLASTIC

LEGEND

SIGN



SIGN FACE DETAILS

AS-BUILT INFORMATION
CONTRACTOR | DATE
WORK STAKED BY | DATE
INSPECTOR'S ACCEPTANCE BY | DATE
FIELD VERIFICATION BY | DATE
DRAWINGS CORRECTED BY | DATE
MICRO-FILM INFORMATION
RECORDED BY | DATE
NO.

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES
NO. | BY | DATE

ENGINEER'S SEAL
CHARLES W. TRASK, III
NEW MEXICO 6870
REGISTERED PROFESSIONAL ENGINEER
10-10-96

NO. | DATE | REMARKS | BY
REVISIONS
DESIGN
DESIGNED BY BHI DATE 9-96
DRAWN BY BHI DATE 9-96
CHECKED BY BHI DATE 9-96

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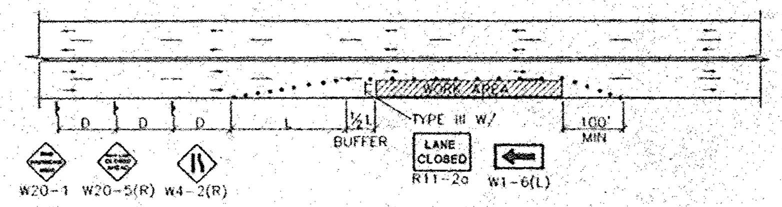
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

PERMANENT SIGNING AND STRIPING PLAN
UNIVERSITY BLVD/NORTH RESEARCH PARK LOOP ROAD

APPROVED
CITY ENGINEER APPROVAL | MO./DAY/YR | MO./DAY/YR
LAST DESIGN UPDATE

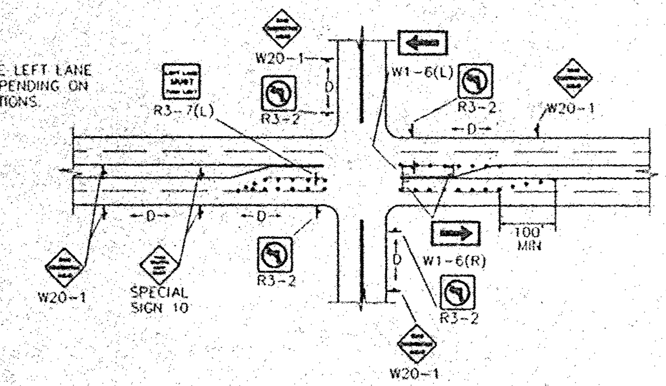
CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
4913.92	L-15	18	20

UNV_STRP.DWG 8-26-96



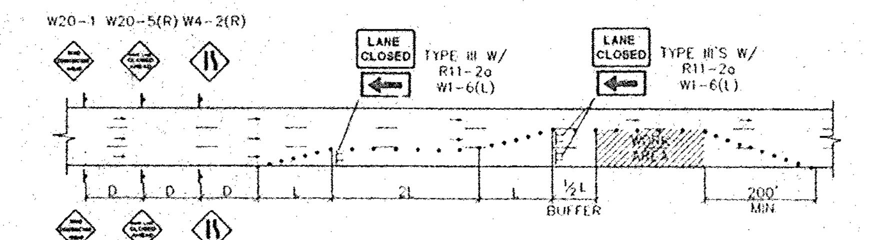
TYPICAL RIGHT LANE CLOSURE

NOTE:
MAY REQUIRE LEFT LANE CLOSURE DEPENDING ON FIELD CONDITIONS.

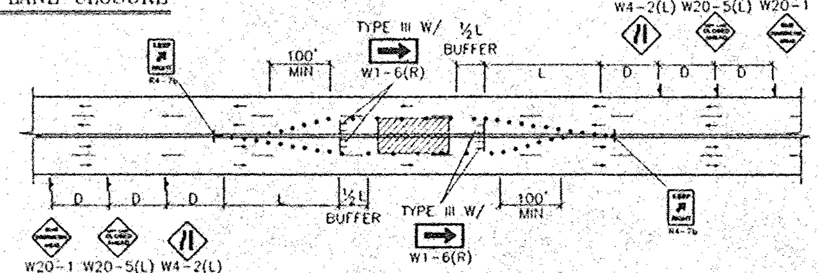


TYPICAL LANE CLOSURE AT INTERSECTION

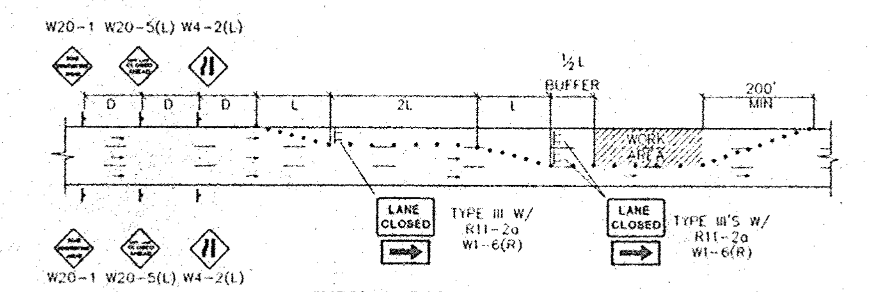
NOTE: DEPENDING ON WORK ZONE LOCATION



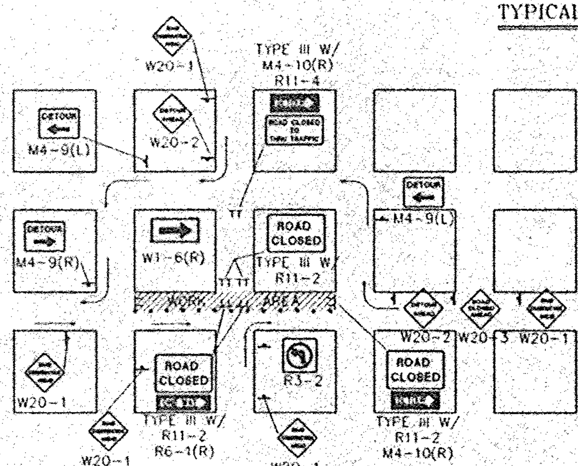
TYPICAL DOUBLE RIGHT LANE CLOSURE



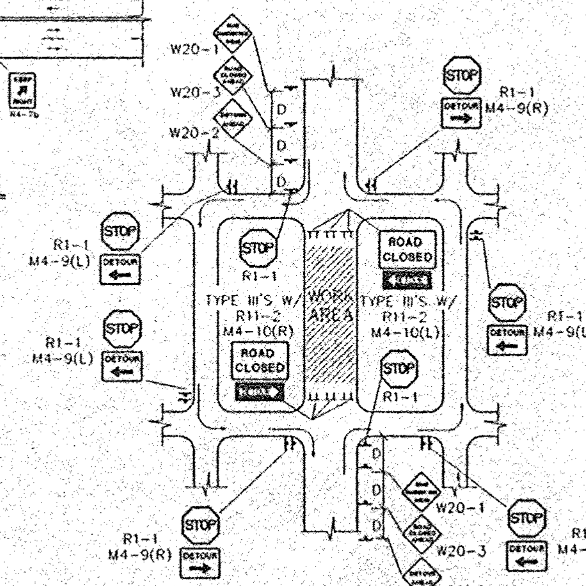
TYPICAL LEFT LANE CLOSURE



TYPICAL DOUBLE LEFT LANE CLOSURE

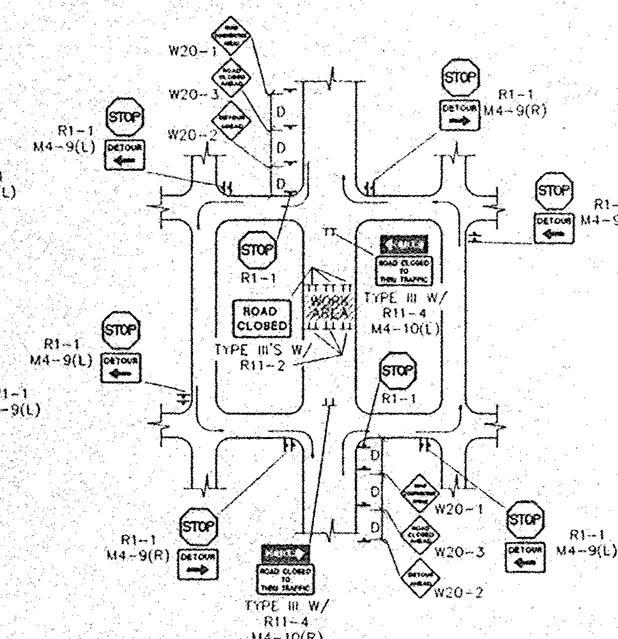


TYPICAL ONE DIRECTION DETOUR



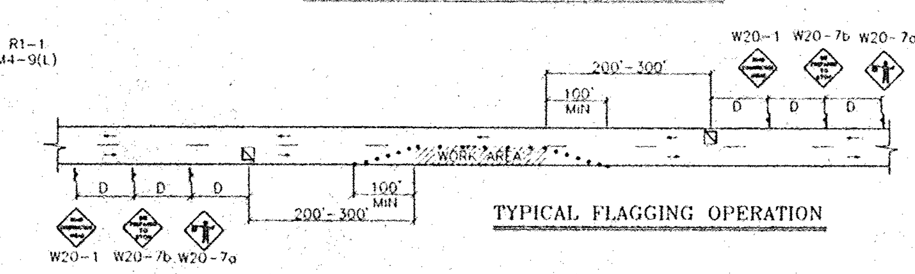
TYPICAL STREET CLOSURE

NOTE: (R1-1) BASED ON FIELD CONDITIONS

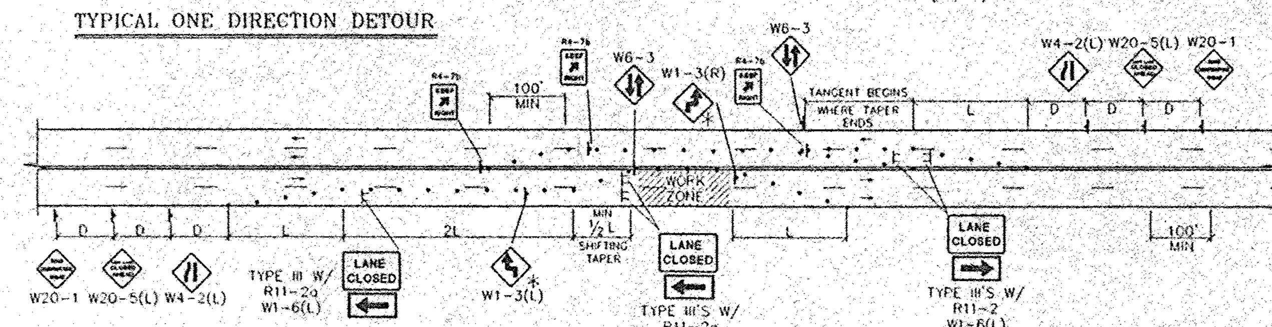


TYPICAL MID-BLOCK CLOSURE

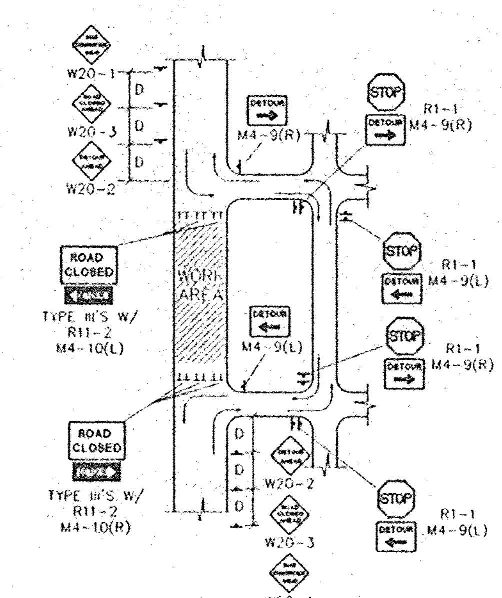
NOTE: (R1-1) BASED ON FIELD CONDITIONS



TYPICAL FLAGGING OPERATION

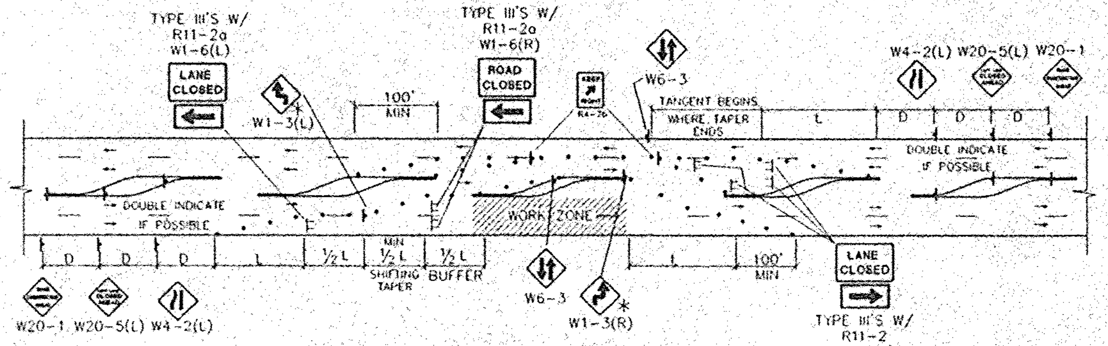


TYPICAL LEFT LANE CLOSURE



TYPICAL STREET CLOSURE

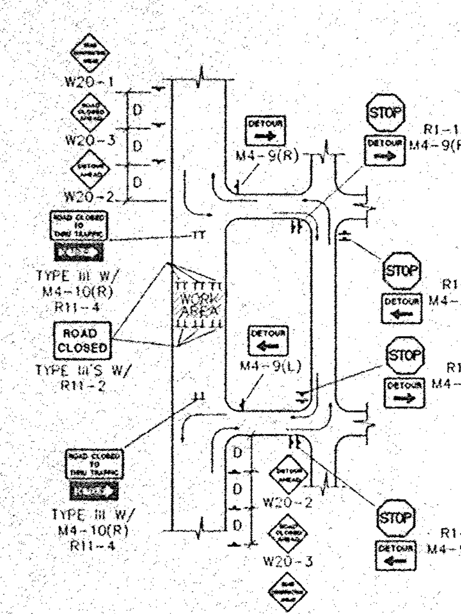
NOTE: (R1-1) BASED ON FIELD CONDITIONS



TYPICAL TRAFFIC SPLIT - (RAISED MEDIAN)

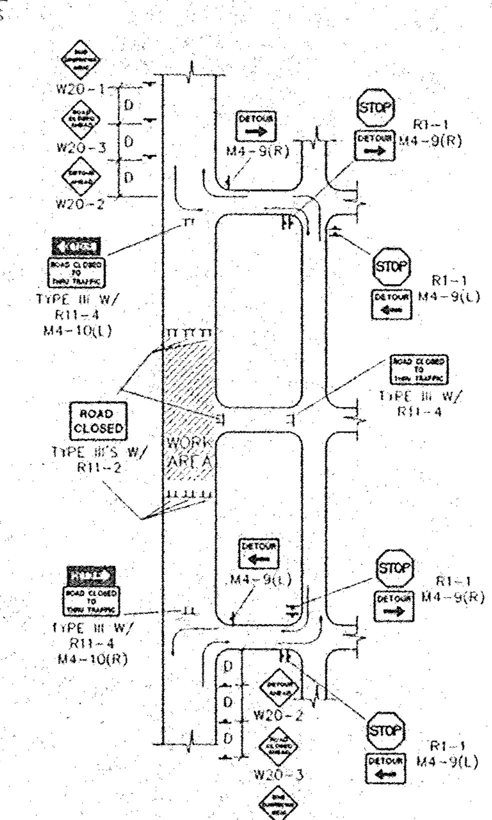
TRAFFIC SPLIT NOTES:

1. THE OFFSET DISTANCE MUST BE CALCULATED IN ALL SHIFTING TAPERS. THE OFFSET DISTANCES SHALL INCLUDE LANE WIDTHS PLUS MEDIAN WIDTHS.
2. 1/2 L IS THE MINIMUM DISTANCE FOR SHIFTING TAPERS.
3. REVERSE CURVES MAY BE IMPLEMENTED. ALL CURVE DATA SHALL BE CALCULATED.
4. MEDIAN REMOVAL SHALL BE REQUIRED IS 1/2 L OR REVERSE CURVE IS NOT SUFFICIENT. MEDIAN REMOVAL SHALL TAKE PLACE BEFORE SPLITS.
5. REDUCED SPEED MAY BE CONSIDERED.
6. * USE 1-3 FOR 30 MPH OR LESS, W1-4 FOR SPEED 35 MPH OR GREATER



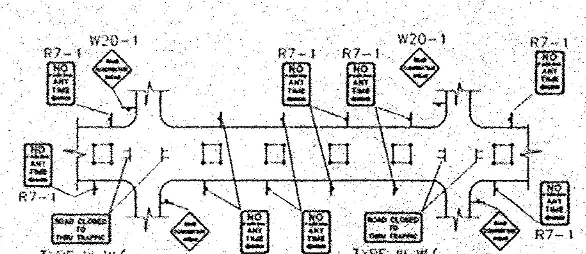
TYPICAL STREET CLOSURE

NOTE: (R1-1) BASED ON FIELD CONDITIONS



TYPICAL STREET CLOSURE

NOTE: (R1-1) BASED ON FIELD CONDITIONS



TYPICAL SANITARY SEWER SLIPLINING OPERATION

- ALL PITS TO HAVE TYPE A FLASHING LIGHTS
- ALL PITS TO HAVE FLAGLINE

AS-BUILT INFORMATION

CONTRACTOR | DATE
WORK STARTED BY | DATE
INSPECTOR'S ACCEPTANCE BY | DATE
FIELD VERIFICATION BY | DATE
DRAWINGS CORRECTED BY | DATE

MICRO-FILM INFORMATION

RECORDED BY | DATE
NO.

BENCH MARKS

SURVEY INFORMATION

FIELD NOTES

NO. | BY | DATE

ENGINEER'S SEAL

CHARLES W. TRAUSCH, NEW MEXICO, 6876, REGISTERED PROFESSIONAL ENGINEER

10-10-96

REMARKS

REVISIONS

NO. | DATE | BY

DESIGN

DESIGNED BY: BHI | DATE:
DRAWN BY: | DATE: 9-96
CHECKED BY: | DATE:

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TITLE:

UNIVERSITY BOULEVARD TRAFFIC CONTROL
TRAFFIC CONTROL STANDARDS

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
4913.92	L-15	19	20

TRANS{1962B2A2211 SHEETS SIGNAL}CITYTRAF.DWG

CONSTRUCTION TRAFFIC CONTROL GENERAL NOTES

1. CONTRACTOR MUST OBTAIN FROM CONSTRUCTION COORDINATION AN EXCAVATION/BARRICADING PERMIT BEFORE ENGAGING IN ANY CONSTRUCTION, MAINTENANCE OR REPAIR WORK IN ANY OF THE CITY OF ALBUQUERQUE'S RIGHTS-OF-WAY. EMERGENCY WORK THAT WOULD PRESERVE LIFE OR PROPERTY IS EXCLUDED WITH THE UNDERSTANDING, THAT A PERMIT SHALL BE OBTAINED WITHIN 24 TO 48 HOURS.

2. CONTRACTOR SHALL AT THE TIME OF PERMIT REQUEST, SUBMIT FOR APPROVAL BY CONSTRUCTION COORDINATION, A TRAFFIC CONTROL PLAN DETAILING ALL EXISTING TOPOGRAPHY SUCH AS LANE WIDTHS, DRIVEWAYS, AND BUSINESS/RESIDENTIAL ACCESSES. THE TRAFFIC CONTROL PLAN SHALL INCLUDE ALL PHASES OF WORK AND SCHEDULES INVOLVED IN THE CONSTRUCTION PROJECT. ANY SEPERATE PHASES OF A CONSTRUCTION PROJECT SHALL BE GIVEN AN INDIVIDUAL PERMIT EACH. BLANKET PERMITS WILL NOT BE ISSUED.

3. THESE TYPICAL TRAFFIC CONTROL PLANS DO NOT REFLECT THE EXISTING TOPOGRAPHY SUCH AS DRIVEWAYS, LANE WIDTHS, AND BUSINESS/RESIDENTIAL ACCESSES. EVERY LOCATION THAT REQUIRES CONSTRUCTION TRAFFIC CONTROL SHALL HAVE A DETAILED TRAFFIC CONTROL PLAN SHOWING ALL EXISTING TOPOGRAPHY.

4. CONSTRUCTION SHALL NOT BEGIN UNLESS A TRAFFIC CONTROL PLAN HAS BEEN APPROVED AND VERIFIED BY CONSTRUCTION COORDINATION.

5. CONSTRUCTION COORDINATION SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY TRAFFIC CONTROL CHANGES NEEDED BY CONTRACTOR, THAT WERE NOT PREVIOUSLY APPROVED. THESE TRAFFIC CONTROL CHANGES SHALL BE REQUESTED IN WRITING ACCOMPANIED WITH A TRAFFIC CONTROL PLAN REFLECTING SUCH CHANGES.

6. ALL CONSTRUCTION TRAFFIC CONTROL DEVICES SHALL COMPLY TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL SERVICE AND SHALL NOT BE REMOVED OR ALTERED IN ANY WAY WITHOUT THE APPROVAL OF CONSTRUCTION COORDINATION, PER SECTION 6A-4 OF THE MUTCD, LATEST EDITION.

7. THE CONSTRUCTION TRAFFIC CONTROL INITIAL SET-UP SHALL BE BY AN AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) CERTIFIED WORKSITE TRAFFIC SUPERVISOR. THE MAINTENANCE AND SERVICING SHALL ALSO BE DONE BY AN ATSSA CERTIFIED WORKSITE TRAFFIC SUPERVISOR OR EQUIVALENT.

8. CONTRACTOR IS RESPONSIBLE TO MAINTAIN AND SERVICE ALL TRAFFIC CONTROL DEVICES 24 HOURS A DAY, 7 DAYS A WEEK THROUGHOUT LENGTH OF PROJECT. CONTRACTOR IS RESPONSIBLE THAT ALL TRAFFIC CONTROL DEVICES COMPLY WITH THE MUTCD, LATEST EDITION.

9. ALL ADVANCE WARNING SIGNS SHALL BE DOUBLE INDICATED WHENEVER THERE ARE MULTI-LANE TRAFFIC IN ANY ONE GIVEN DIRECTION AND THERE IS SUFFICIENT MEDIAN SPACE.

10. ALL BARRICADES IN ALL TAPERS AND TANGENTS SHALL BE PLACED APART, A DISTANCE MEASURED IN FEET, EQUAL TO THAT OF THE POSTED SPEED LIMIT. NO EXCEPTIONS UNLESS APPROVED BY CONSTRUCTION COORDINATION PER MUTCD SECTION 6A-4.

11. CONTRACTOR SHALL NOT BEGIN WORK BEFORE 8:30 A.M. OR END WORK AFTER 4:00 P.M. WITHOUT THE APPROVAL OF CONSTRUCTION COORDINATION.

12. CONTRACTOR IS RESPONSIBLE TO PROVIDE CONSTRUCTION COORDINATION, A WEEKLY LOG OF DAILY INSPECTIONS OF BARRICADE AND MAINTENANCE SCHEDULES ON PROJECTS THAT ARE OVER ONE WEEK DURATION.

13. EQUIPMENT OR MATERIALS SHALL NOT BE STORED WITHIN 15 FEET OF A TRAVELED TRAFFIC LANE DURING NON-WORKING HOURS WITHOUT THE APPROVAL OF CONSTRUCTION COORDINATION.

14. CONTRACTOR SHALL PROVIDE AND MAINTAIN A SAFE AND ADEQUATE MEANS OF CHANNELIZING PEDESTRIAN TRAFFIC AROUND AND THROUGH THE CONSTRUCTION AREA.

15. CONTRACTOR IS RESPONSIBLE FOR OBLITERATION OF ANY CONFLICTING STRIPING AND RESPONSIBLE FOR ALL TEMPORARY STRIPING.

16. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL FACILITIES, BUSINESSES AND/OR RESIDENTS AT ALL TIMES.

17. CONTRACTOR SHALL PROVIDE ACCESS SIGNS FOR BUSINESSES LOCATED WITHIN THE CONSTRUCTION AREA UNDER THE SUPERVISION OF CONSTRUCTION COORDINATION. EACH ACCESS SIGN SHALL HAVE 5 INCH, WHITE OPAQUE LETTERING
ON BLUE REFLECTORIZED BACKGROUND. ACCESS SIGNS SHALL BE CONSIDERED INCIDENTAL TO THE BID AND NOT PART OF THE CONTRACT UNLESS OTHERWISE STATED. NO MORE THAN 3 BUSINESSES SHALL BE LISTED ON A ACCESS SIGN. SHOPPING CENTERS AND MALLS SHALL BE LISTED AS SUCH.

18. ALL ADVANCE WARNING SIGNS SHALL MEET THE MINIMUM REFLECTIVE INTENSITY REQUIREMENTS SET FORTH BY THE CITY OF ALBUQUERQUE. CONSTRUCTION COORDINATION SHALL DETERMINE ALL REQUIREMENTS AND APPROVE OR DISAPPROVE ANY ADVANCE WARNING SIGN PER SECTION 6A-4 OF THE MUTCD, LATEST EDITION.

19. 24 HOURS PRIOR TO OCCUPYING OR CLOSING OF A RIGHT-OF-WAY, CONTRACTOR SHALL NOTIFY: POLICE, FIRE DEPARTMENT, SCHOOLS, HOSPITALS, TRANSIT AUTHORITY, BUSINESSES AND/OR RESIDENTS THAT WILL BE AFFECTED BY THE CONSTRUCTION.

20. ANY FIELD ADJUSTMENTS SHALL BE APPROVED BY CONSTRUCTION COORDINATION.

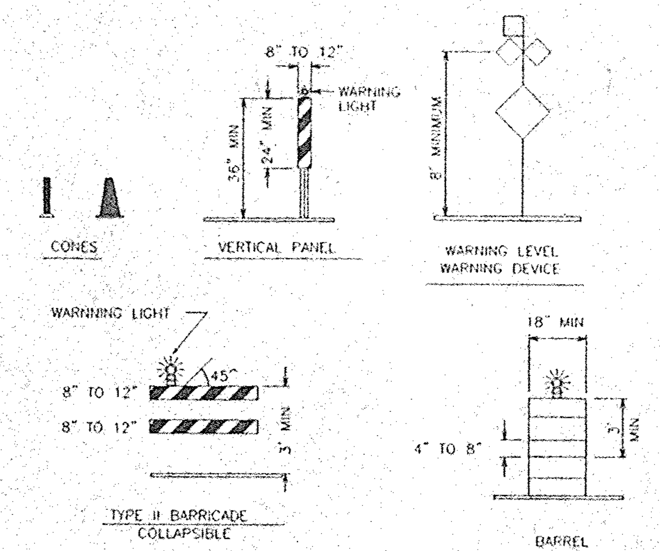
21. EXCAVATIONS SHALL BE PLATED, TEMPORARILY PATCHED OR RESURFACED PRIOR TO OPENING OF TRAFFIC. A MINIMUM OF 11 FEET SHALL BE PROVIDED FOR TRAFFIC IN ANY GIVEN DIRECTION. CONTRACTOR IS RESPONSIBLE FOR ANY WORK INVOLVED IN SATISFYING THESE REQUIREMENTS.

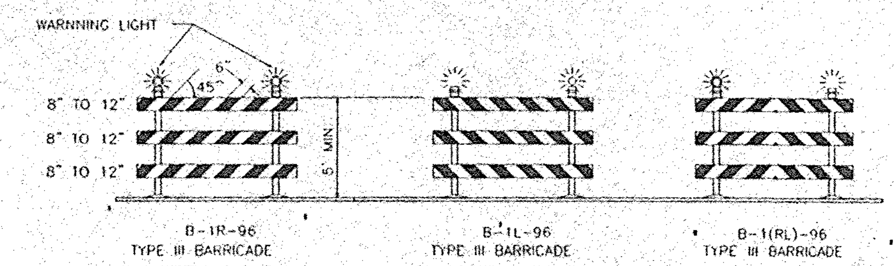
22. CONTRACTOR SHALL AT ALL TIMES COMPLY WITH THE FOLLOWING:
   1. STANDARDS AND REQUIREMENTS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
   2. THE CITY OF ALBUQUERQUE TRAFFIC CODE, LATEST EDITION.
   3. SECTION 19 OF THE CITY OF ALBUQUERQUE'S STANDARD SPECIFICATIONS FOR PUBLIC WORK CONSTRUCTION, AS WELL AS OTHER SECTIONS.

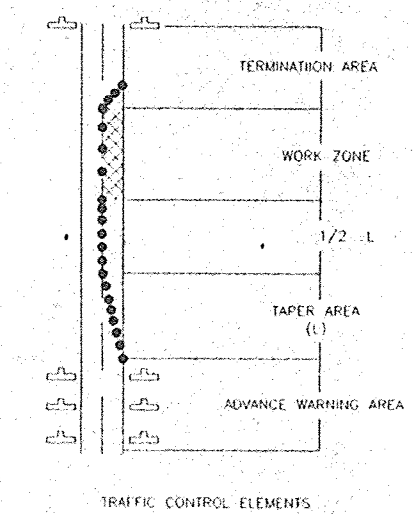
23. FAILURE TO COMPLY WITH ANY OF THE ABOVE MENTIONED, WILL BE ADEQUATE CAUSE TO CEASE ALL WORK ON ANY CONSTRUCTION PROJECT. WORK WILL NOT RESUME UNTIL ALL REQUIREMENTS ARE ADDRESSED AND APPROVED BY CONSTRUCTION COORDINATION.

24. ALL TRAFFIC CONTROL DEVICES SHALL BE KEPT IN NEW-CLEAN CONDITION. WASHING OF EQUIPMENT IS INCIDENTAL TO IT'S PLACEMENT AND MAINTENANCE.

25. TRAFFIC CONTROL STANDARDS APPLY WHERE THE CONSTRUCTION TRAFFIC CONTROL PLANS ARE NOT SPECIFIC.



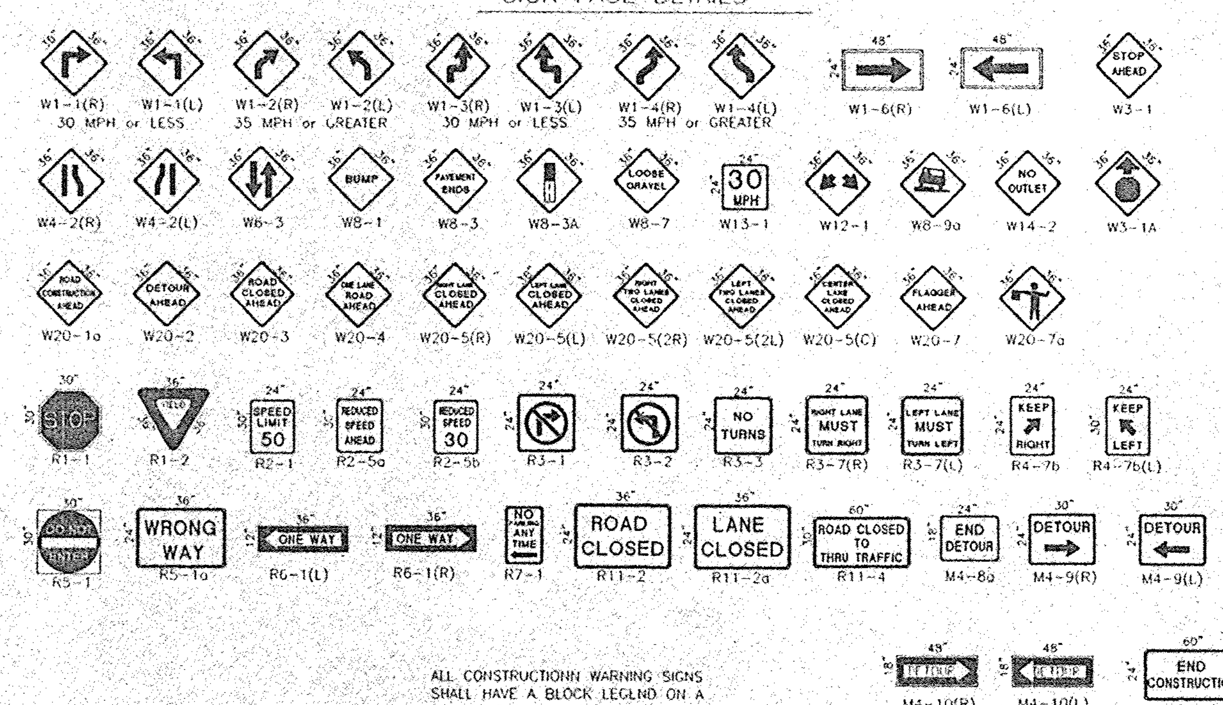




PROJECT SPECIFIC CONSTRUCTION LIMITATIONS

THE CONTRACTOR SHALL MAINTAIN THREE THRU LANES EACH WAY ON UNIVERSITY BOULEVARD DURING THE FOLLOWING TIMES BETWEEN 6:30 AM AND 9:00 AM AND BETWEEN 3:00 PM TO 6:00 PM MONDAY-FRIDAY AND ALL TIMES DURING SPECIAL EVENTS. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO MAINTAIN ACCESS TO ALL ENTRANCES THROUGHOUT THE PROJECT CONSTRUCTION OTHER THAN THE SIGNAL INTER-CONNECT IS OFF LINE FROM UNIVERSITY BOULEVARD AND WILL BE CONFINED WITHIN THE UNIVERSITY BOULEVARD RIGHT OF WAY AND THE TWO PRIVATE ENTRANCES AT THE NEW TRAFFIC SIGNAL LOCATION.

SIGN FACE DETAILS



ALL CONSTRUCTIONN WARNING SIGNS SHALL HAVE A BLOCK LEGEND ON A ORANGE BACKGROUND.

ALL ADVANCE WARNING SIGNS SHALL BE THIRTY-SIX (36) INCHES BY THIRTY-SIX (36) INCHES. SUPER ENGINEERING GRADE OR GREATER.

LEGEND

- WORK AREA
- • BARRICADE - TYPE I, TYPE II, OR BARREL
- BARRICADE - TYPE III
- VERTICAL PANEL
- WARNING SIGN
- D DISTANCE BETWEEN SIGNS - A DISTANCE MEASURED IN FEET EQUAL TO A VALUE OF TEN TIMES THE SPEED LIMIT OF THE STREET
- FLAGMAN POSITION
- S SPACING BETWEEN BARRICADES - A DISTANCE MEASURED IN FEET EQUAL TO THE STREET LIMIT OF THE STREET
- L TAPER LENGTH - SEE CHART BELOW

THE TANGENT LENGTH IS EQUAL TO THE TAPER LENGTH FOR A GIVEN STREET.

SPEED LIMIT (MPH)	TAPER LENGTH (FEET)			MINIMUM NUMMBER OF DEVICES FOR TAPER	MAXIMUM DEVICE SPACING IN FEET	
	10' LANE	11' LANE	12' LANE		ALONG TAPER	ALONG TAPER
20	70	75	80	5	20	20
25	105	115	125	6	25	25
30	150	165	180	7	30	30
35	205	225	245	8	35	35
40	270	295	320	9	40	40
45	450	495	540	13	45	45
50	500	550	600	13	50	50
55	550	605	660	13	55	55

RECOMMENDED SIGN SPACING FOR ADVANCE WARNING SIGN SERIES

SPEED MILES PER HOUR	MINIMUM DISTANCE IN FEET BETWEEN SIGNS	MINIMUM DISTANCE IN FEET FROM LAST SIGN TO TAPER
0-20	10 X SPEED LIMIT	10 X SPEED LIMIT
25-30	10 X SPEED LIMIT	10 X SPEED LIMIT
30-35	10 X SPEED LIMIT	10 X SPEED LIMIT
40-45	10 X SPEED LIMIT	10 X SPEED LIMIT
50-60	10 X SPEED LIMIT	10 X SPEED LIMIT

TAPER CRITERIA

TYPE OF TAPER	TAPER LENGTH
UPSTREAM TAPER.	
MERGING TAPER	L MINIMUM
SHIFTING TAPER	1/2 L MINIMUM
SHOULDER TAPER	1/2 L MINIMUM
TWO-WAY TRAFFIC TAPER	100 FEET MAXIMUM
DOWNSTREAM TAPERS	100 FEET PER LANE

TAPER LENGTH COMPUTATION

SPEED LIMIT	
40 MPH OR LESS	$L = \frac{WS^2}{60}$
40 MPH OR GREATER	$L = W \times S$

L = TAPER LENGTH
W = WIDTH OF OFFSET IN FEET
S = POSTED SPEED OR OFF-PEAK 85-PERCENT SPEED IN MPH

AS-BUILT INFORMATION: CONTRACTOR / DATE; WORK STAKED BY / DATE; INSPECTOR'S ACCEPTANCE BY / DATE; FIELD VERIFICATION BY / DATE; DRAWINGS CORRECTED BY / DATE

MICRO-FILM INFORMATION: RECORDED BY / DATE; NO.

BENCH MARKS

SURVEY INFORMATION: FIELD NOTES; NO. / BY / DATE

ENGINEER'S SEAL

REMARKS / REVISIONS / DESIGN: NO. / DATE / BY

DESIGNED BY RICARDO ROYBAL P.E. DATE AUG. 1992
DRAWN BY CADD DATE AUG. 1992
CHECKED BY DATE

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TITLE:

SIGNING AND CONSTRUCTION
GENERAL NOTES & SEQUENCE OF CONSTRUCTION

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
4913.92	L-15	20	20