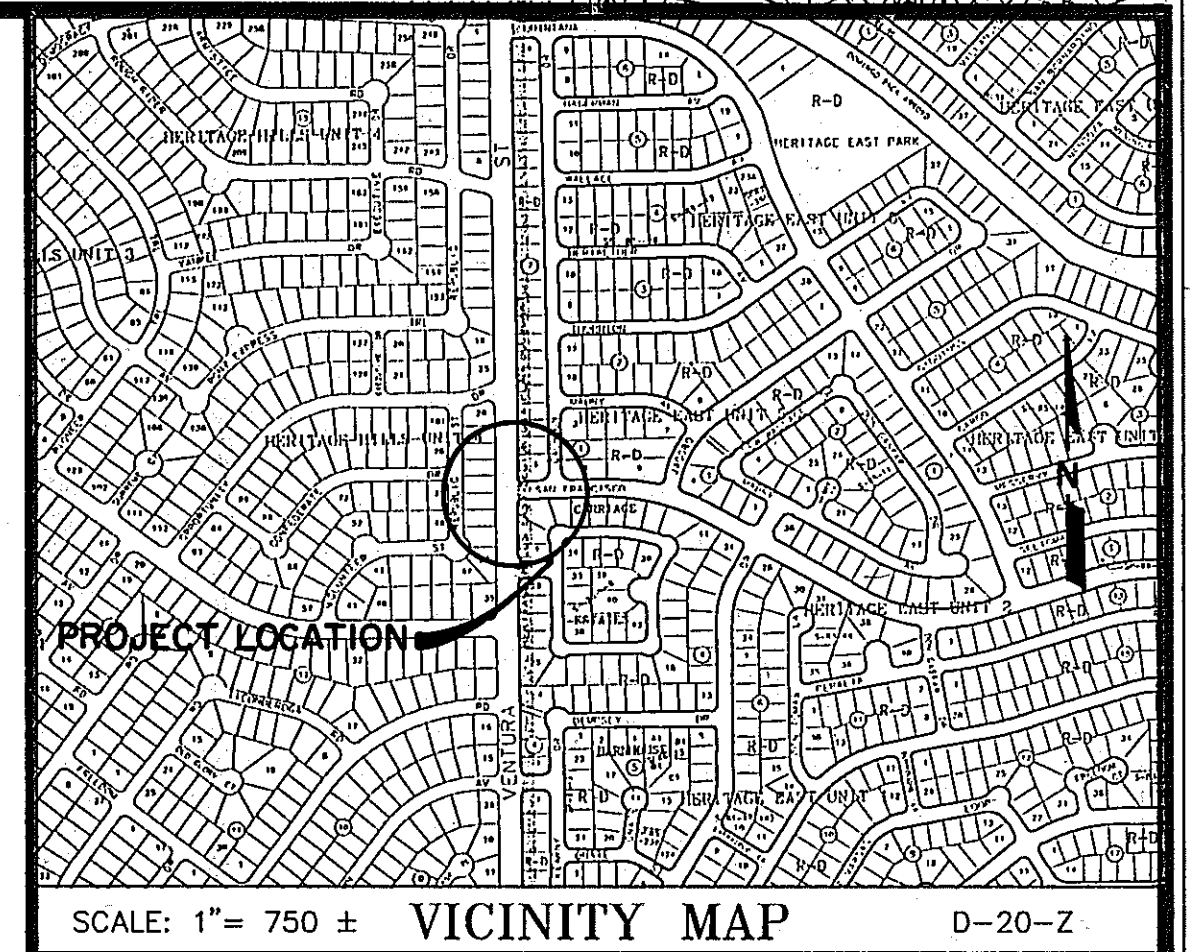


QUINTESSENCE SUBDIVISION

CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO INFRASTRUCTURE IMPROVEMENTS FOR TRAFFIC SIGNALS AT SAN FRANCISCO RD. AND VENTURA ST.



INDEX TO DRAWINGS

SHEET NO.	DESCRIPTION
1	INDEX TO DRAWINGS
2	NOTES AND LEGEND
3-6	TRAFFIC SIGNAL AT SAN FRANCISCO ROAD AND VENTURA STREET (SPECIFICATIONS)
7	TRAFFIC SIGNAL MASTARM DETAILS (TYPE II, STANDARD)
8	TRAFFIC SIGNAL MASTARM DETAILS (FOUNDATION DETAILS, TYPE II AND TYPE III STANDARDS)
9	CONTROLLER CABINET AND PEDESTAL FOUNDATION DETAILS
10	PULL BOX DETAILS
11	LOOP DETECTOR DETAILS
12	ELECTRICAL SERVICE DETAILS

Handwritten signature and date:
7/26/95

APPROVAL OF AS BUILT DRAWINGS
CHIEF CONSTRUCTION ENGINEER
Handwritten signature: Peter Chang
DATE 6-16-99

WARNING - EXISTING UTILITY LINE LOCATIONS ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. THE LOCATION OF ANY SUCH EXISTING LINES IS BASED UPON INFORMATION PROVIDED BY THE UTILITY COMPANY, THE OWNER, OR BY OTHERS, AND THE INFORMATION MAY BE INCOMPLETE OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES.

THE ENGINEER HAS UNDERTAKEN LIMITED FIELD VERIFICATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UNDERGROUND UTILITY LINES, MAKES NO REPRESENTATION PERTAINING THERETO AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFORE. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY, AND PRESERVE ANY AND ALL EXISTING UTILITIES. THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES IN PLANNING AND CONDUCTING EXCAVATION, WHETHER BY CALLING OR NOTIFYING THE UTILITIES, COMPLYING WITH (BLUE STAKES) PROCEDURES, OR OTHERWISE.

ENGINEER'S RECORD DRAWING CERTIFICATE
I, the undersigned engineer, a duly qualified Registered Professional Engineer under the laws of the State of New Mexico, do hereby certify that the Record Drawing information shown on these drawings was obtained from field construction and post-construction information obtained by me or under my direct supervision, that the Record Drawing information shown on these drawings was added by me or under my direct supervision, and that this Record Drawing information is true and correct to the best of my knowledge and belief. Responsibility for the design concepts, design engineering and calculations, or intent of the Record Drawings resides with others.
Handwritten signature: Elery A. Blathrow, Jr. 08-29-96
Elery A. Blathrow, Jr., P.E. New Mexico Civil Registration No. 12070

REV.	1	SHEETS	CITY ENGINEER	DATE	USER DEPARTMENT	DATE	USER DEPARTMENT	DATE
ENGINEER'S SEAL				DATE: SEPT. 1995 SCALE: AS SHOWN DESIGNED: DLH DRAWN: LJD JOB NO: 32306		community sciences corporation LAND PLANNING P.O. Box 1329 ENGINEERING Corrales, N.M. 87048 SURVEYING		APPROVED FOR CONSTRUCTION <i>Handwritten signature</i> CITY ENGINEER 1/23/96 DATE
PROJECT NO.				5206.91		SHEET 1 OF 12		

SIGNAL AND LIGHTING NOTES

1. ALL WORK ON THESE PLANS TO BE PERFORMED UNDER THIS CONTRACT SHALL CONFORM TO THE CURRENT NATIONAL ELECTRIC CODE, AND THE STANDARDS OF THE NATIONAL BOARD OF FIRE UNDERWRITERS FOR ELECTRICAL WIRING AND APPARATUS.
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 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 IS WARNED THAT EXISTING CONDUITS MAY CONTAIN AC POWER AND CAUTION SHALL BE EXERCISED IN INTERCEPTING OR INSTALLING CABLE IN EXISTING CONDUIT.
4. 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.
5. 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 FOR TRAFFIC SIGNALS MCC WILL BE PERMITTED IN LARGE PULL BOXES INCLUDING LARGE MEDIAN PULL BOXES.
6. ALL LOOP LEAD-IN CABLES SHALL BE TAGGED AT CABINET TO IDENTIFY EACH CABLE BY PHASE AND LOOP NUMBER.
7. 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.
8. THE CONTRACTOR SHALL NOTIFY THE CITY OF ALBUQUERQUE TRAFFIC ENGINEERING OPERATIONS (857-8000) TWO WORKING DAYS IN ADVANCE OF ANY ANTICIPATED WORK ON SIGNALS, LIGHTING, AND POWER SERVICES. TRAFFIC ENGINEERING OPERATIONS PERSONNEL WILL ASSIST THE CONTRACTOR IN FIELD LOCATION OF EQUIPMENT, COLOR CODING OF WIRING, AND MUST BE PRESENT WHEN SIGNALS AND LIGHTING ARE SHUT-OFF OR TURNED ON. THE CONTRACTOR SHALL ALSO NOTIFY THE CITY OF ALBUQUERQUE TRAFFIC ENGINEERING OPERATIONS EACH TIME A TRAFFIC SIGNAL CONTROL DOOR IS OPENED.
9. 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.
10. THE CONTRACTOR SHALL REMOVE ALL CONFLICTING SIGNING AND DELIVER TO THE CITY YARDS WHEN TRAFFIC SIGNALS ARE PUT INTO OPERATION.
11. 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.
12. 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.
13. 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.
14. THE CITY OF ALBUQUERQUE TRAFFIC ENGINEERING OPERATIONS PERSONNEL WILL PROVIDE TRAFFIC SIGNAL TIMING PLANS AND WILL PROGRAM TRAFFIC SIGNAL CONTROLLERS.
15. EXISTING CONDUITS TO BE REMOVED OR ABANDONED SHALL HAVE ALL WIRING REMOVED.
16. EXISTING CONDUITS SHALL BE REPAIRED, ADJUSTED, OR REPLACED AS DIRECTED BY THE PROJECT MANAGER WHERE ELECTRICAL PULLBOXES OR TRAFFIC MANHOLES ARE INSTALLED OR REPLACED.
17. 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.
18. THE CONTRACTOR SHALL ARRANGE TO HAVE OFF-DUTY POLICE OFFICERS DIRECT TRAFFIC WHEN SIGNALS ARE TURNED OFF.
19. 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.
- * 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. ALL TRAFFIC SIGNAL CONTROLLERS SUPPLIED FOR THIS PROJECT SHALL BE Multisonics B20A
- B. ALL TRAFFIC SIGNAL CONTROLLER CABINETS SUPPLIED FOR THIS PROJECT SHALL BE Multisonics MSX
2. SPLICE CABINETS SHALL BE HOFFMAN A-302008 LP WITH BACK PANEL A-30P20 OR APPROVED EQUAL. LOW VOLTAGE SPLICE BARS SHALL BE 50 UNITS TO THE FOOT, WITH EACH SPLICE BAR CAPABLE OF HANDLING 25 PAIR CABLE (NUMBER OF SPLICE BARS IN EACH CABINET CAPABLE OF HANDLING NO. OF CONDUCTORS SHOWN ON PLANS). BELL SYSTEMS PART #66B3-50 OR APPROVED EQUAL.
3. INTERCONNECT CABLES SHALL COMPLY WITH REA SPECIFICATION PE-39. INTERCONNECT CABLE SHALL CONTAIN THE NUMBER OF WIRE PAIRS SHOWN ON THE PLANS AND THE INDIVIDUAL CONDUCTORS SHALL BE NO. 19 SOLID.
4. 3M "OPTICOM" MODEL 562, PHASE SELECTORS, MOUNTED ON 3M "OPTICOM" MODEL 360 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. 3M "OPTICOM" MODEL 511, OPTICAL DETECTORS, SINGLE DIRECTION, SIGNAL CHANNEL (1D/1C), OR APPROVED EQUAL. 3M "OPTICOM" MODEL 138, DETECTOR CABLE OR APPROVED EQUAL.

TRAFFIC SIGNAL LEGEND

NEW	EXISTING	ITEM
		PULL BOX
		SERVICE POLE
		METER PEDESTAL
		CONTROLLER CABINET
		CONDUIT RUN
		LOOP DETECTOR
		TRAFFIC SIGNAL PEDESTAL POLE
		CONDUIT RUN NUMBER
		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

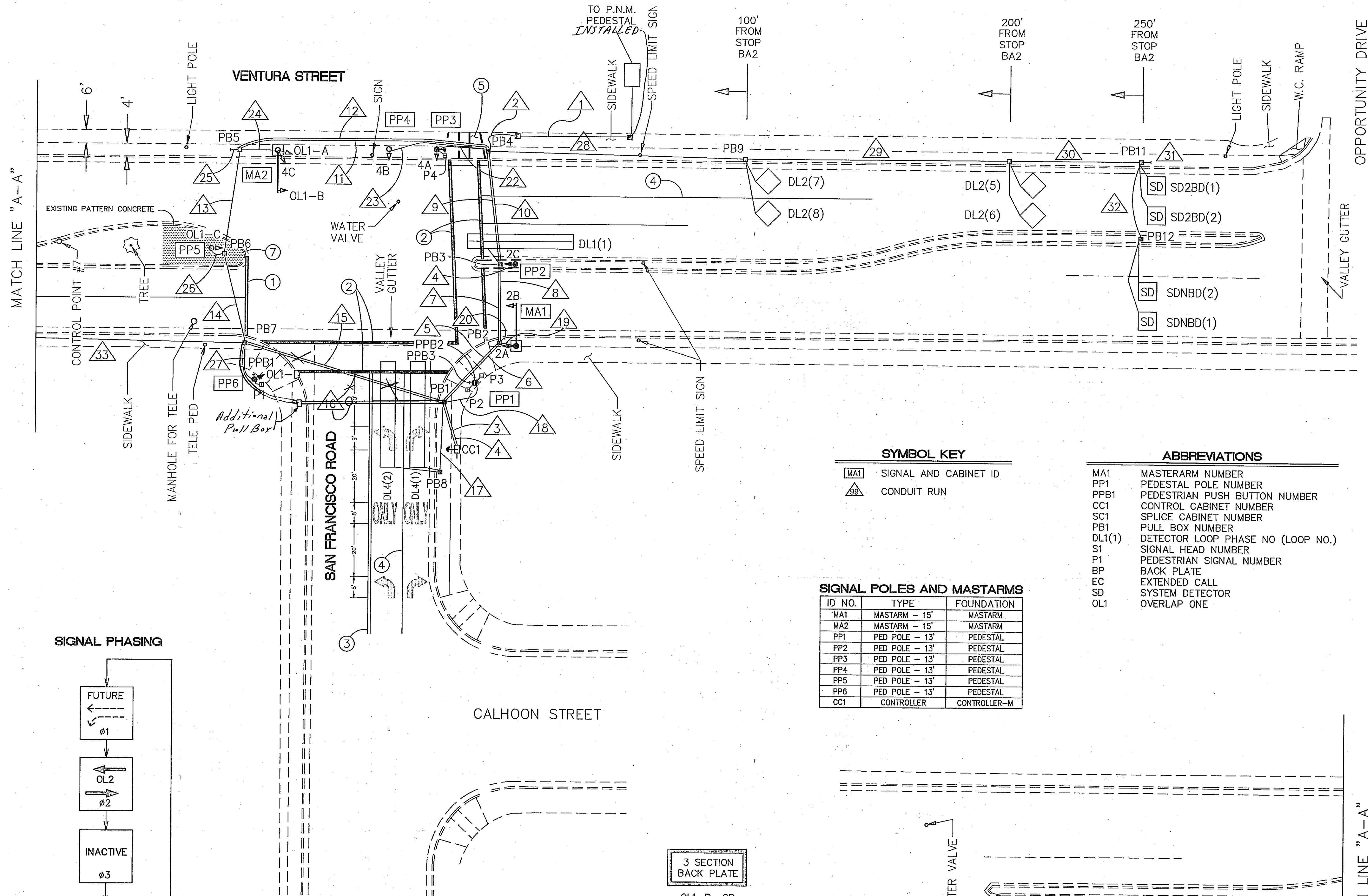
1. "ENGINEER" - FOR THE PURPOSES OF THIS PROJECT, THE TERM "ENGINEER" IS SYNONYMOUS WITH THE TERM "PROJECT MANAGER".

ENGINEER'S RECORD DRAWING CERTIFICATE
I, the undersigned engineer, a duly qualified Registered Professional Engineer under the laws of the State of New Mexico, do hereby certify that the Record Drawing information shown on these drawings was obtained from field construction and post-construction information obtained by me or under my direct supervision, that the construction information shown on these drawings was added by me or under my direct supervision, and that this Record Drawing Information is true and correct to the best of my knowledge and belief. Responsibility for the design concepts, design engineering and calculations, or intent of the Record Drawings resides with others.

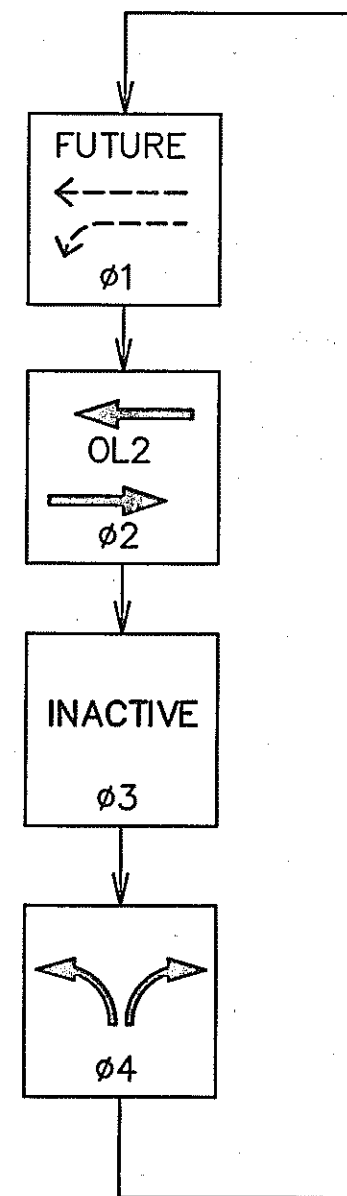
Elery A. Blathrow, Jr. 08-29-96
Elery A. Blathrow, Jr., P.E. New Mexico Civil Registration No. 12070

CITY OF ALBUQUERQUE PUBLIC WORKS ENGINEERING					
TITLE: TRAFFIC SIGNAL NOTES AND LEGEND					
APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
ORC CHAIRMAN	<u>B. G. B. B.</u>	11-16-95	WATER	<u>N/A RWK</u>	10-27-95
TRANSPORTATION	<u>N/A RWK</u>	11-16-95	WASTE WATER	<u>N/A RWK</u>	10-27-95
HYDROLOGY	<u>N/A RWK</u>	11-16-95	TRAF. OPER.	<u>ARC</u>	11-20-95
DRAWING NO. 5206.91		MAP NO.		SHEET 2 OF 12	

AS-BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL		REVISIONS		DESIGN		DATE 2-94		DATE 2-94		DATE 2-94	
CONTRACTOR	DATE	CONTRACTOR	DATE	NO.	BY	NO.	BY	NO.	BY	NO.	BY	NO.	BY	NO.	BY	NO.	BY
<u>Sundance</u>	8/16	<u>Sundance</u>	8/16														
INSPECTOR'S	DATE	INSPECTOR'S	DATE														
<u>E. Blathrow Jr.</u>	8/16	<u>E. Blathrow Jr.</u>	8/16														
FIELD	DATE	FIELD	DATE														
<u>Blathrow Jr.</u>	8/16	<u>Blathrow Jr.</u>	8/16														
RECORDED BY	DATE	RECORDED BY	DATE														
<u>Blathrow Jr.</u>	8/16	<u>Blathrow Jr.</u>	8/16														
NO.		NO.															



SIGNAL PHASING



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Elery A. Blathrow 08-29-96
Elery A. Blathrow, Jr., P.E. New Mexico Civil Registration No. 12070

SYMBOL KEY

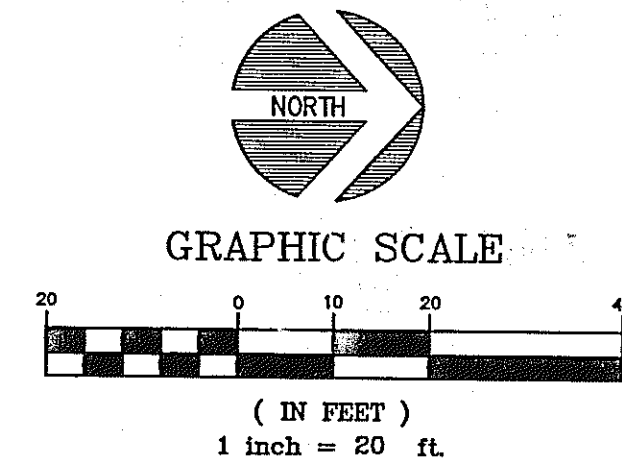
MA1	SIGNAL AND CABINET ID
98	CONDUIT RUN

SIGNAL POLES AND MASTARMS

ID NO.	TYPE	FOUNDATION
MA1	MASTARM - 15'	MASTARM
MA2	MASTARM - 15'	MASTARM
PP1	PED POLE - 13'	PEDESTAL
PP2	PED POLE - 13'	PEDESTAL
PP3	PED POLE - 13'	PEDESTAL
PP4	PED POLE - 13'	PEDESTAL
PP5	PED POLE - 13'	PEDESTAL
PP6	PED POLE - 13'	PEDESTAL
CC1	CONTROLLER	CONTROLLER-M

ABBREVIATIONS

MA1	MASTERARM NUMBER
PP1	PEDESTAL POLE NUMBER
PPB1	PEDESTRIAN PUSH BUTTON NUMBER
CC1	CONTROL CABINET NUMBER
SC1	SPLICE CABINET NUMBER
PB1	PULL BOX NUMBER
DL1(1)	DETECTOR LOOP PHASE NO (LOOP NO.)
S1	SIGNAL HEAD NUMBER
P1	PEDESTRIAN SIGNAL NUMBER
BP	BACK PLATE
EC	EXTENDED CALL
SD	SYSTEM DETECTOR
OL1	OVERLAP ONE



KEY NOTES:

1. INSTALL 12" WHITE CROSS BAR AS SHOWN.
2. INSTALL 12" CROSSWALK WITH 12" WHITE LINES AS SHOWN.
3. INSTALL 4" DOUBLE YELLOW STRIPE AS SHOWN.
4. INSTALL 4" SOLID WHITE STRIPE AS SHOWN.
5. INSTALL HANDI-CAP RAMP AS PER C.O.A. DRAWING NO. 2441.
6. PULL BOXES 1 THROUGH 7 ARE LARGE SIZE AND PULL BOXES 8 THROUGH 14 ARE STANDARD SIZE.
7. MATCH EXISTING PATTERN CONCRETE.

GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO C.O.A. INTERIM DRAFT SPECIFICATIONS FOR SIGNAL CONSTRUCTION.
2. ALL PAVEMENT MARKINGS SHALL BE PLASTIC.
3. CONTRACTOR TO SUPPLY 4 PHASE XXXX CABINET AS PER PLAN & SPECS AND 8 PHASE CONTROLLER AS PER SPECS.

AS BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL		REVISIONS		DESIGN		NO. DATE		REMARKS		DESIGNED BY: TOB		DRAWN BY: TOB		CHECKED BY: TOB		DATE: 07/95		DATE: 07/95		DATE: 07/95																									
CONTRACTOR	Submittal	DATE	8/16	STANDARD	BY	DATE	8/16	INSPECTOR'S	DATE	8/16	FIELD	DATE	8/16	VERIFICATION	DATE	8/16	CORRECTED	DATE	8/16	RECORDED	DATE	8/16	FILED	DATE	8/16	NO.	DATE	REMARKS	DESIGNED BY: TOB	DRAWN BY: TOB	CHECKED BY: TOB	DATE: 07/95	DATE: 07/95	DATE: 07/95																	
TERRY O. BROWN, P.E.		P. O. Box 92051		Albuquerque, NM 87199		(505) 888-8807		CITY OF ALBUQUERQUE		PUBLIC WORKS DEPARTMENT		ENGINEERING GROUP		TITLE:		THE QUINTESSENCE		INFRASTRUCTURE IMPROVEMENT PLANS		TRAFFIC SIGNAL AT SAN FRANCISCO / VENTURA		APPROVALS		ENGINEER		DATE		DRC CHAIRMAN		N/A		RWC		10-27-95		TRANSPORTATION		N/A		RWC		10-27-95		HYDROLOGY		N/A		RWC		11-27-95	
PROJECT NO.		5206.91		MAP NO.		D-20-Z		SHEET		4 OF 12		PROJECT NO.		5206.91		MAP NO.		D-20-Z		SHEET		4 OF 12		PROJECT NO.		5206.91		MAP NO.		D-20-Z		SHEET		4 OF 12		PROJECT NO.		5206.91		MAP NO.		D-20-Z		SHEET		4 OF 12					

CONDUIT AND CONDUCTOR REQUIREMENTS																
CONDUIT LENGTH, SIZE AND TYPE					CONDUIT FILL BY CONDUCTOR LENGTH AND TYPE											
RUN ID	SIZE	LENGTH	TYPE	REMARKS	MCC 5	MCC 7	MCC 20	SCC #8	SCC #6	SCC #4	SCC #2	DLIC	CC 6	CC 12	OPTICOM	OTHER
	1'	2'	3'		(# @ FT)	(# @ FT)	(# @ FT)	(# @ FT)	(# @ FT)	(# @ FT)	(# @ FT)	(# @ FT)	(# @ FT)	(# @ FT)	(# @ FT)	(# @ FT)
1		300		REC	POWER TO METER						3 @ 155					
2		30		REC	METER TO CONT.						3 @ 40					
3			20	REC	CONT. TO PB1	1 @ 30		1 @ 30	1 @ 30							
4			20	REC	CONT. TO PB1						3 @ 25	9 @ 30				
5			30	REC	PB1 TO PB2	1 @ 30		1 @ 30	1 @ 30							
6			30	REC	PB1 TO PB2						3 @ 35	7 @ 35				
7			30	REC	PB2 TO PB3	1 @ 30		1 @ 30	1 @ 30							
8			30	REC	PB2 TO PB3						3 @ 35	7 @ 35				
9			45	REC	PB3 TO PB4	1 @ 50		1 @ 50	1 @ 50							
10			45	REC	PB3 TO PB4						3 @ 50	6 @ 50				
11			98	REC	PB4 TO PB5	1 @ 105		1 @ 105	1 @ 105							
12			98	REC	PB4 TO PB5											
13			40	REC	PB5 TOPB6	1 @ 45		1 @ 45	1 @ 45							
14			35	REC	PB6 TOPB7	1 @ 40		1 @ 40	1 @ 40							
15			85	REC	PB7 TO PB1	1 @ 90		1 @ 90	1 @ 90							
16			85	REC	PB7 TO PB1							2 @ 90				
17			25	REC	PB1 TO PB8							2 @ 30				
18			16	REC	PB1 TO PP1	3 @ 21										
19			10	REC	PB2 TO MA1	2 @ 15										
20			5	REC	STUB OUT											
21			5	REC	PB3 TO PP2	1 @ 10										
22			20	REC	PB4 TO PP3	3 @ 25										
23			40	REC	PB4 TO PP4	1 @ 45										
24			16	REC	PB5 TO MA2	3 @ 21										
25			5	REC	STUB OUT											
26			8	REC	PB6 TO PP5	1 @ 13										
27			18	REC	PB7 TO PP6	3 @ 23										
28			96	REC	PB4 TO PB9							6 @ 101				
29			100	REC	PB9 TO PB10							6 @ 101				
30			50	REC	PB10 TO PB11							4 @ 55				
31			5	REC	STUB OUT											
32			30	REC	PB11 TO PB12							2 @ 35				
33			100	REC	PB7 TO PB13							2 @ 105				
34			100	REC	PB13 TO PB14							2 @ 105				
35			5	REC	STUB OUT											
MA1				REC	BASE TO 2A	1 @ 35										
				REC	BASE TO 2B	1 @ 20										
MA2				REC	BASE TO DL1-B	1 @ 35										
				REC	BASE TO 4C	1 @ 20										
				REC	BASE TO DL1-A	1 @ 20										
PP1				REC	BASE TO P2	1 @ 15										
				REC	BASE TO P3	1 @ 15										
				REC	BASE TO PPB2 & 3	1 @ 5										
PP2				REC	BASE TO 2C	1 @ 15										
PP3				REC	BASE TO 4A	1 @ 15										
				REC	BASE TO P4	1 @ 15										
				REC	BASE TO PPB4	1 @ 5										
PP4				REC	BASE TO 4B	1 @ 15										
PP5				REC	BASE TO DL1-C	1 @ 15										
PP6				REC	BASE TO DL1-D	1 @ 15										
					BASE TO P1	1 @ 15										
					BASE TO PPB1	1 @ 15										
TOTALS		1246	429			1078		420	420		1020	3342				

ENGINEER'S RECORD DRAWING CERTIFICATE
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Ellery A. Blathrow, Jr. 88-29-96
Ellery A. Blathrow, Jr., P.E. New Mexico Civil Registration No. 12070

Terry O. Brown, P.E.
P. O. Box 92051
Albuquerque, NM 87199
(505) 889-8807

DESIGNED BY: TOB
DRAWN BY: TOB
CHECKED BY: TOB

DATE: 07/95
DATE: 07/95
DATE: 07/95

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE:
THE QUINTESSENCE
INFRASTRUCTURE IMPROVEMENT PLANS
TRAFFIC SIGNAL AT SAN FRANCISCO / VENTURA

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC CHAIRMAN	<u>B.G. Sockley</u>	11-16-95	WATER	<u>N/A RWE</u>	10-27-95
TRANSPORTATION	<u>N/A RWE</u>	11-01-95	WASTE WATER	<u>N/A RWE</u>	10-27-95
HYDROLOGY	<u>N/A RWE</u>	11-02-95	Trail Eng Op.	<u>ADP</u>	11-20-95

PROJECT NO. 5206.91

MAP NO. D-20-Z

SHEET 5 OF 12

CONTRACTOR
Sundance
NO.

WORK STARTED BY
DATE 8/96

FIELD ACCEPTANCE BY
DATE 8/96

FIELD CORRECTION BY
DATE

RECORDED BY
DATE

CONTRACTOR
Sundance
NO.

WORK STARTED BY
DATE 8/96

FIELD ACCEPTANCE BY
DATE 8/96

FIELD CORRECTION BY
DATE

RECORDED BY
DATE

CONTRACTOR
Sundance
NO.

WORK STARTED BY
DATE 8/96

FIELD ACCEPTANCE BY
DATE 8/96

FIELD CORRECTION BY
DATE

RECORDED BY
DATE

DETECTOR LOOPS										
LOOP ID	MODE	VEHICLE CALL	DETECTOR UNIT NO	CHANNEL	LOOP TYPE	LOOP DIMENSIONS				PAVEMENT SAW CUT
						L	W	S	T	
DL1(1)	PRES		2	1	QP	40	6	6	2	365
DL2(1)	PRES	EXT 2	4	1	EC	6	6	6	2	93
DL2(2)	PRES	EXT 2	4	1	EC	6	6	18	2	117
DL2(3)	PRES	EXT 2	4	1	EC	6	6	6	2	93
DL2(4)	PRES	EXT 2	4	1	EC	6	6	18	2	117
DL2(5)	PRES	EXT 2	4	2	EC	6	6	6	2	93
DL2(6)	PRES	EXT 2	4	2	EC	6	6	18	2	117
DL2(7)	PRES	EXT 2	4	2	EC	6	6	6	2	93
DL2(8)	PRES	EXT 2	4	2	EC	6	6	18	2	117
DL4(1)	PRES	DELAY 3	3	1	QP	40	6	6	2	365
DL4(2)	PRES		3	2	QP	40	6	18	2	389
SDSBA(1)	PULSE		6	1	SD-4 TURN	6	6	6	2	112
SDSBA(2)	PULSE		6	2	SD-4 TURN	6	6	18	2	136
SDNBD(1)	PULSE		7	1	SD-4 TURN	6	6	18	2	136
SDNBD(2)	PULSE		7	2	SD-4 TURN	6	6	30	2	160
TOTALS										2503
										902

FUNCTION CHART - 24 VOLT CIRCUIT			
MULTI CONDUCTOR CABLE 5			
CONDUCTOR NUMBER	BASE COLOR	FUNCTION	FIELD CONNECTION
1	BLACK	PHASE 2 PPB	PPB1, PPB2
2	WHITE	COMMON	
3	RED	PHASE 4 PPB	PPB3, PPB4
4	GREEN	PHASE 6 PPB	
5	ORANGE	PHASE 8 PPB	

QUANTITY ESTIMATING ASSUMPTIONS:

LOOP WIRE

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

PAVEMENT SAWCUT

6' X 30' OP LOOP = (3*W) + (2*W) + S = 102 + S
 6' X 40' OP LOOP = (3*W) + (2*W) + S = 132 + S
 6' X 50' OP LOOP = (3*W) + (2*W) + S = 162 + S
 6' X 6' EC LOOP = (2*W) + (2*W) + S = 24 + S
 6' X 6' SYS LOOP = (2*W) + (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 BULL BOX (FROM PLAN)

DETECTOR RACK ASSIGNMENTS										
UNIT NUMBER	POWER SUPPLY	1	2	3	4	5	6	7	8	9
CHANNEL 1		?1	?2	?4	?2EC	?4EC	SD1	SD3	SD5	OPTICOM 1
CHANNEL 2		?3	?2	?4	?2EC	?4EC	SD2	SD4	SD6	OPTICOM 2
DETECTOR MODULE REQUIRED	✓ *		✓	✓	✓		✓	✓		✓ *

* INCIDENTAL TO CONSTRUCTION

FUNCTION CHART - 115 VOLT CIRCUIT									
CONDUCTOR			RING 1 - MCC 20 - 1				RING 2 - MCC 20 - 2		
CONDUCTOR NUMBER	BASE COLOR	TRACER	RING 1		RING 2		RING 2		
			FUNCTION	FIELD CONNECTION	FUNCTION	FIELD CONNECTION	FUNCTION	FIELD CONNECTION	
1	BLACK		SPARE		SPARE				
2	WHITE		SPARE		SPARE				
3	RED		PHASE 1 - RED	FUTURE	PHASE 5-RED				
4	GREEN		PHASE 1-GREEN	FUTURE	PHASE 5-GREEN				
5	ORANGE		PHASE 1-YELLOW	FUTURE	PHASE 5-YELLOW				
6	BLUE		SPARE		SPARE				
7	WHITE	BLACK	SPARE		SPARE				
8	RED	BLACK	PHASE 2-RED	NORTH BOUND RED 2A, 2B, 2C	PHASE 6-RED				
9	GREEN	BLACK	PHASE 2-GREEN	NORTH BOUND GREEN 2A, 2B, 2C	PHASE 6-GREEN				
10	ORANGE	BLACK	PHASE 2-YELLOW	NORTH BOUND YELLOW 2A, 2B, 2C	PHASE 6-YELLOW				
11	BLUE	BLACK	PHASE 2-WALK	NORTH BOUND WALK P1, P2	PHASE 6-WALK				
12	BLACK	WHITE	PHASE 2-DW	NORTH BOUND DW P1, P2	PHASE 6-DW				
13	RED	WHITE	OVER LAP 1-RED	SOUTH BOUND RED DL1-A, DL1-B, DL1-C, DL1-D	PHASE 7-RED				
14	GREEN	WHITE	OVER LAP 1-GREEN	SOUTH BOUND GREEN DL1-A, DL1-B, DL1-C, DL1-D	PHASE 7-GREEN				
15	BLUE	WHITE	OVER LAP 1-YELLOW	SOUTH BOUND YELLOW DL1-A, DL1-B, DL1-C, DL1-D	PHASE 7-YELLOW				
16	BLACK	RED	PHASE 4-RED	WEST BOUND RED 4A, 4B, 4C	PHASE 8-RED				
17	WHITE	RED	PHASE 4-GREEN	WEST BOUND GREEN 4A, 4B, 4C	PHASE 8-GREEN				
18	ORANGE	RED	PHASE 4-YELLOW	WEST BOUND YELLOW 4A, 4B, 4C	PHASE 8-YELLOW				
19	BLUE	RED	PHASE 4-WALK	WEST BOUND WALK P3, P4	PHASE 8-WALK				
20	RED	GREEN	PHASE 4-DW	WEST BOUND DW P3, P4	PHASE 8-DW				

NOTES:

- IDENTIFY CONDUCTORS LISTED AS '115 VOLTS.'
- WRAP RING 2 CABLE AT EACH SPLICE POINT WITH COLORED ELECTRICAL TAPE. THE IDENTIFICATION MARKINGS SHALL BE PROVIDED ON EACH RING 2 CABLE AT EACH SPLICE BOX AND LOCATED 6" BACK FROM THE END.
- 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.
- 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.

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
 SDWBA - SYSTEM DETECTOR WEST BOUND APPROACH
 SDWBD - SYSTEM DETECTOR WEST BOUND DEPARTURE
 SDEBA - SYSTEM DETECTOR EAST BOUND APPROACH
 SDEBD - SYSTEM DETECTOR EAST BOUND DEPARTURE
 SDNBA - SYSTEM DETECTOR NORTH BOUND APPROACH
 SDNBD - SYSTEM DETECTOR NORTH BOUND DEPARTURE
 SDSBA - SYSTEM DETECTOR SOUTH BOUND APPROACH
 SDSBD - SYSTEM DETECTOR SOUTH BOUND DEPARTURE

ENGINEER'S RECORD DRAWING CERTIFICATE

I, the undersigned engineer, a duly qualified Registered Professional Engineer under the laws of the State of New Mexico, do hereby certify that the Record Drawing information shown on these drawings was obtained from field construction and post-construction information obtained by me or under my direct supervision, that the Record Drawing information shown on these drawings was added by me or under my direct supervision, and that this Record Drawing information is true and correct to the best of my knowledge and belief. Responsibility for the design concepts, design engineering and calculations, or intent of the Record Drawings resides with others.

Mary A. Blithrow, Jr., P.E. No. 27-96
 Elroy A. Blithrow, Jr., P.E. No. 27-96

AS BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL	
CONTRACTOR	DATE	NO.	BY	NO.	BY	NO.	BY
WORK STAKED BY	DATE	NO.	BY	NO.	BY	NO.	BY
FIELD INSPECTION BY	DATE	NO.	BY	NO.	BY	NO.	BY
REVISIONS	DATE	NO.	BY	NO.	BY	NO.	BY
DESIGNED BY	DATE	NO.	BY	NO.	BY	NO.	BY
DRAWN BY	DATE	NO.	BY	NO.	BY	NO.	BY
CHECKED BY	DATE	NO.	BY	NO.	BY	NO.	BY

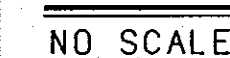
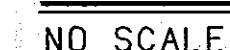
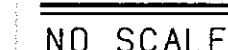
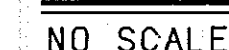
Terry O. Brown, P.E.
 P. O. Box 92051
 Albuquerque, NM 87199
 (505) 883-8807

CITY OF ALBUQUERQUE
 PUBLIC WORKS DEPARTMENT
 ENGINEERING GROUP

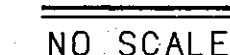
TITLE: THE QUINTESSENCE
 INFRASTRUCTURE IMPROVEMENT PLANS
 TRAFFIC SIGNAL AT SAN FRANCISCO / VENTURA

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRG CHAIRMAN	11/16/95	WATER	N/A	RWK	10-27-95
TRANSPORTATION	11/21/95	WASTE WATER	N/A	RWK	10-27-95
HYDROLOGY	11/21/95	TRAIL ENGR	RWK		11/21/95

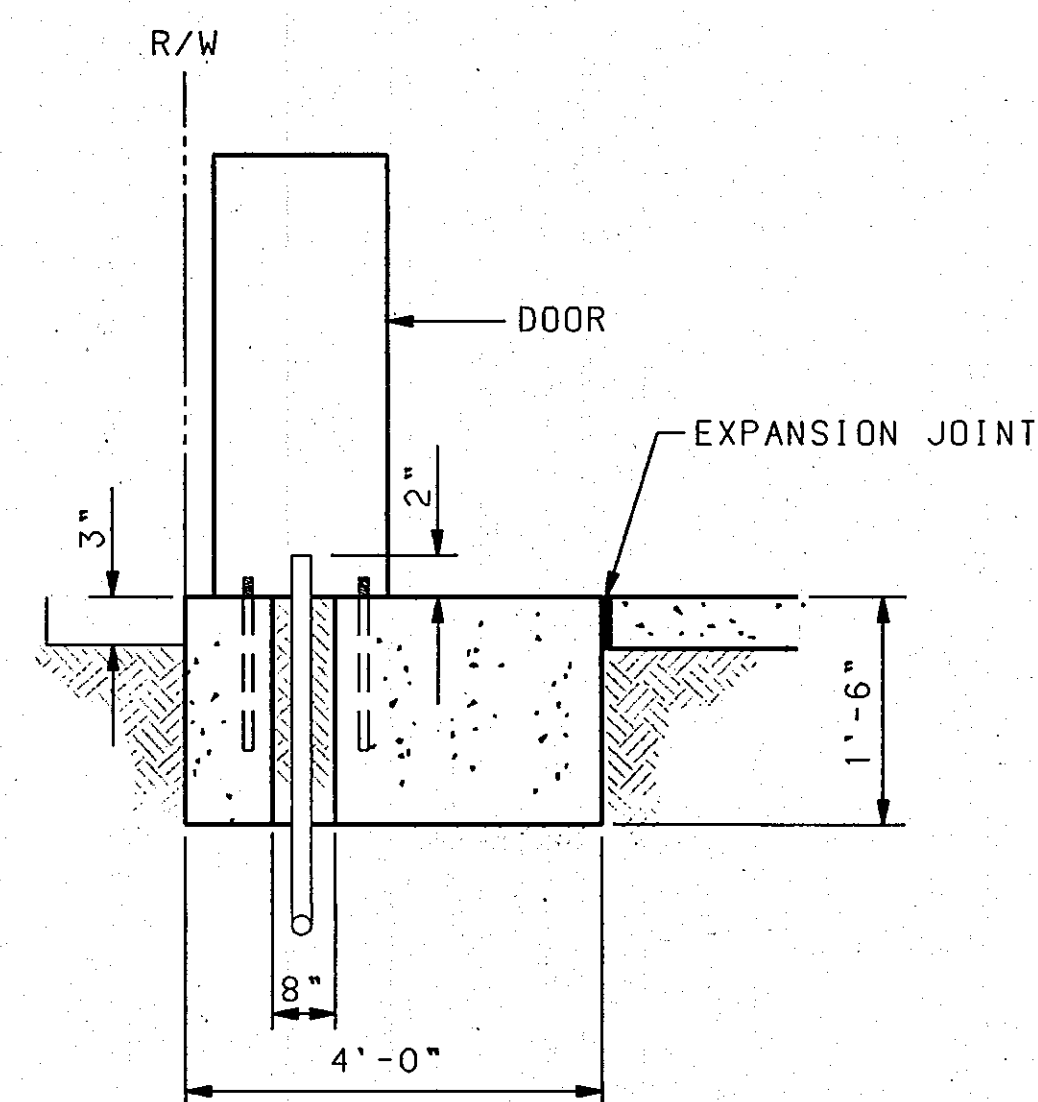
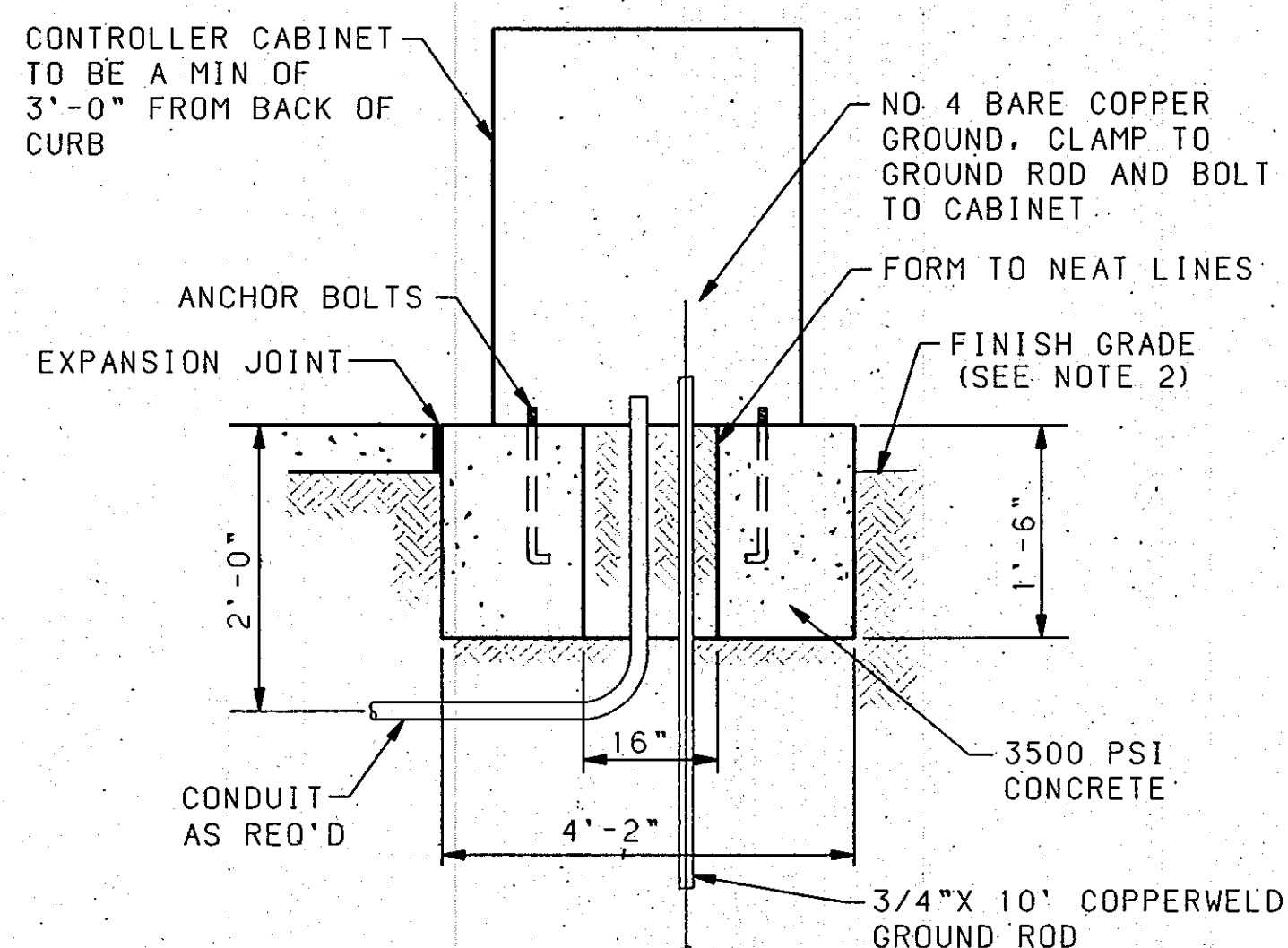
PROJECT NO. 5206.91
 MAP NO. D-20-Z
 SHEET 6 OF 12



Elly A. Blathrow Jr 08-29-96



- TRAN4:CTTOVHD.CITYJCOASIGFND.GRI

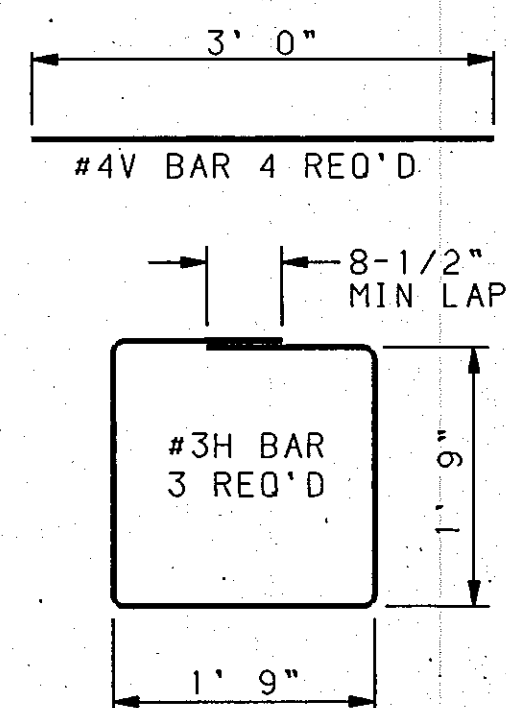
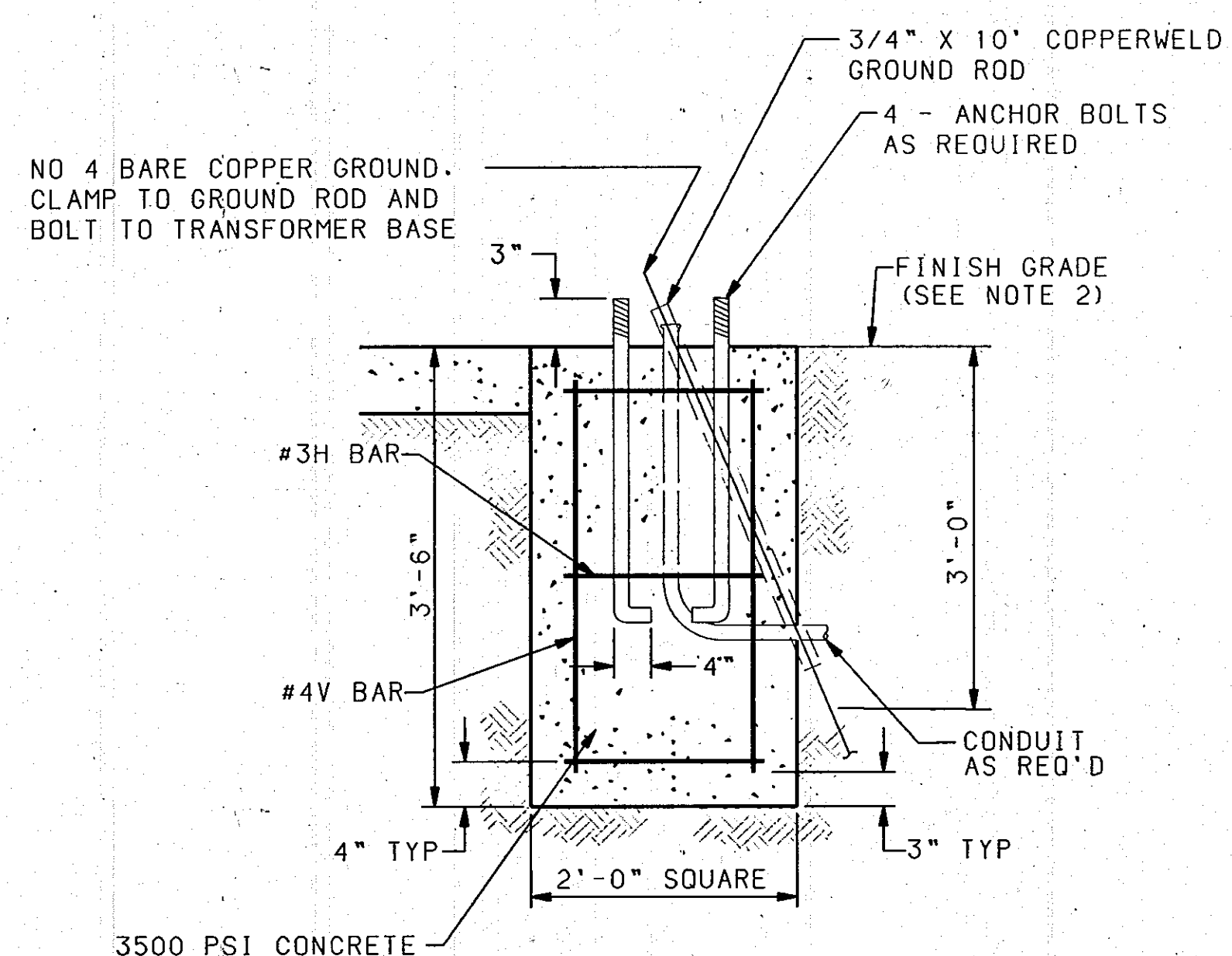


SECTION A

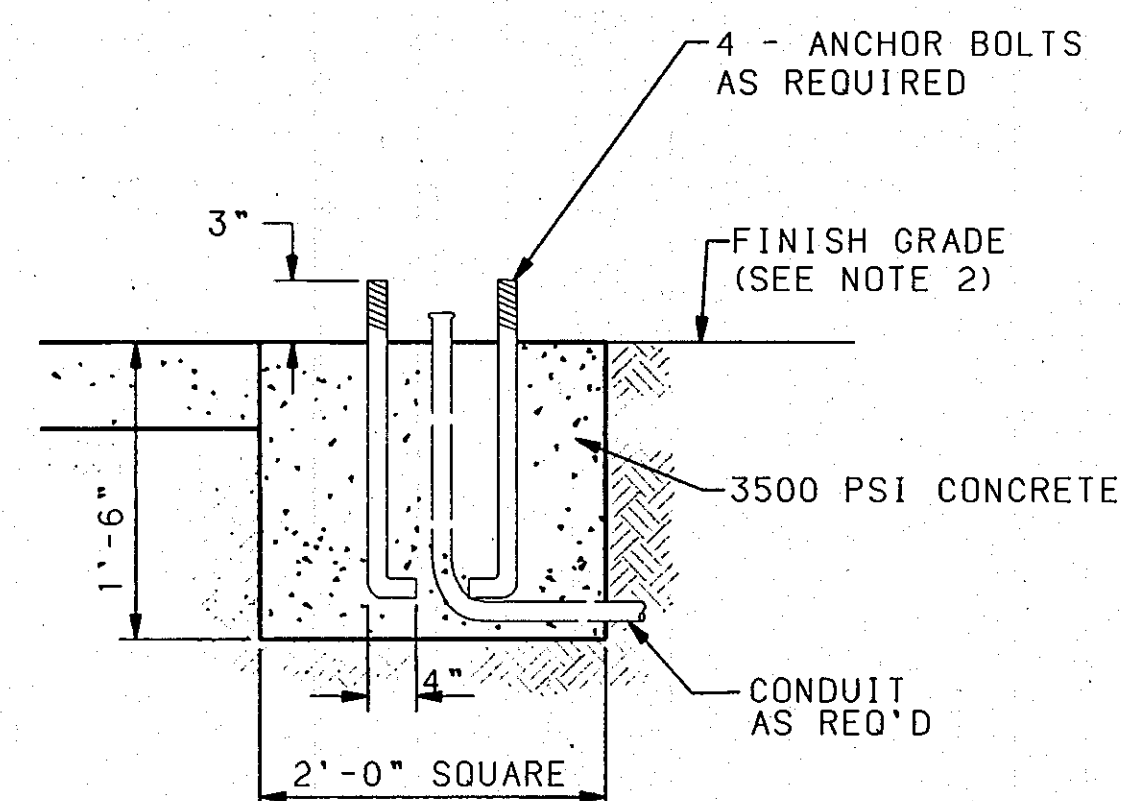
SECTION B

CONTROLLER FOUNDATION DETAIL

IN THE EVENT THE SUPPLIED CABINET WOULD OVERLAP THE SIDES OF ABOVE FOUNDATION. THE FOUNDATION SHALL BE INCREASED IN SIZE AS DIRECTED BY THE ENGINEER.



REINFORCING STEEL



SPLICE CABINET FOUNDATION DETAIL

PEDESTAL FOUNDATION DETAIL

ESTIMATED QUANTITIES		
FOUNDATION TYPE	3500 PSI CONCRETE CU YD	REINFORCING BARS POUNDS
PEDESTAL FOUNDATION	0.52	17
CONTROLLER FOUNDATION (TYPE M & P)	0.88	--
SPLICE CABINET FOUNDATION	0.13	--

(FOR CONTRACTORS INFORMATION ONLY)

ENGINEER'S RECORD DRAWING CERTIFICATE

I, the undersigned engineer, a duly qualified Registered Professional Engineer under the laws of the State of New Mexico, do hereby certify that the Record Drawing information shown on these drawings was obtained from field construction and first construction information obtained by me or under my direct supervision, that the Record Drawing information shown on these drawings was added by me or under my direct supervision, and that the Record Drawing information is true and correct to the best of my knowledge and belief. Responsibility for the design concepts, design and construction, and intent of the Record Drawings resides with others.

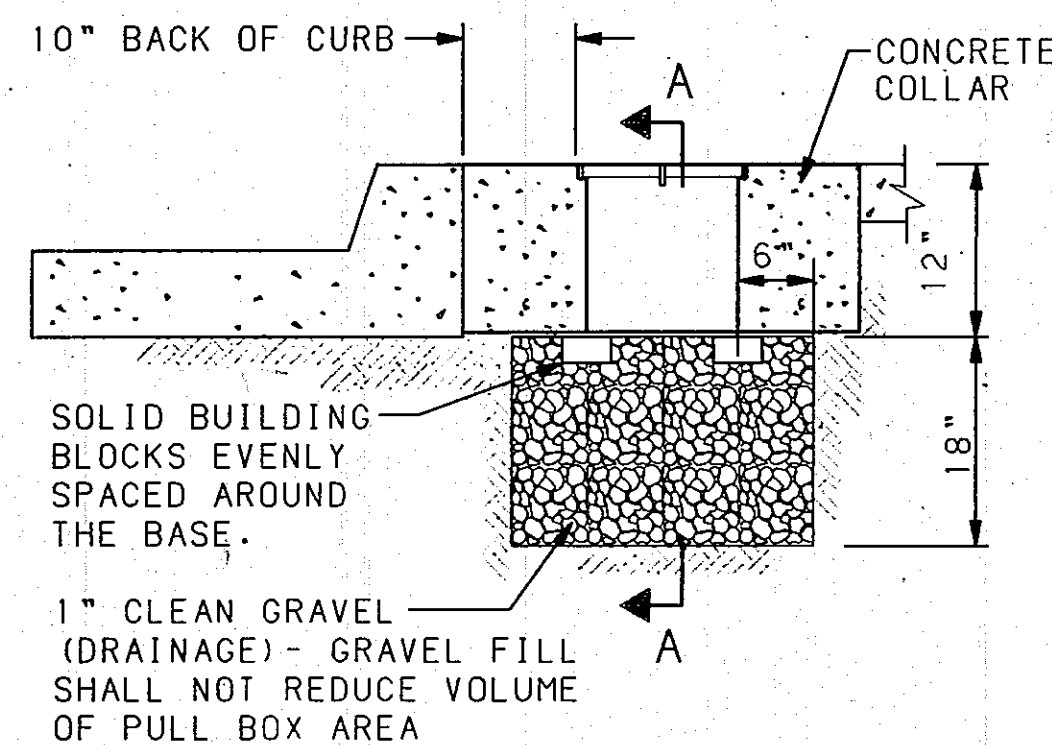
Elery A. Brathrow, Jr. 08-29-96
Elery A. Brathrow, Jr., P.E. New Mexico Civil Registration No. 12070

TRAFFIC SIGNAL FOUNDATION NOTES

1. ALL FOUNDATIONS SHALL INCLUDE COPPERWELD GROUND RODS. ALL GROUND RODS SHALL BE 3/4" Øx10'-0" AND WILL BE CONSIDERED INCIDENTAL TO THE FOUNDATION BID ITEMS.
2. FINISHED GRADE FOR ALL FOUNDATIONS TO BE DETERMINED IN THE FIELD BY THE PROJECT ENGINEER. FOUNDATIONS MAY BE SLOPED TO MATCH SIDEWALKS. SLOPES SHALL CONFORM TO THE AMERICANS WITH DISABILITIES ACT REQUIREMENTS.

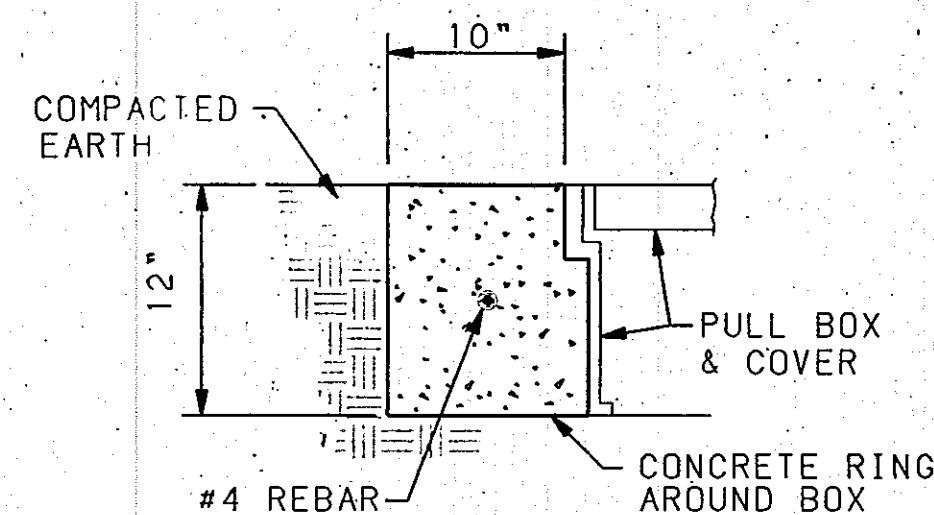
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		NO.	BY	DATE			
					CONTRACTOR	DATE	8/82
					DESIGNED BY	DATE	8/82
					INSPECTED BY	DATE	8/82
					ACCEPTANCE BY	DATE	8/82
					CERTIFICATION BY	DATE	8/82
					DRAWINGS	DATE	8/82
					CORRECTED BY	DATE	8/82
					MICRO-FILM INFORMATION		
					RECORDED BY	DATE	
					NO.		

CITY OF ALBUQUERQUE PUBLIC WORKS ENGINEERING					
TITLE:		TRAFFIC SIGNAL CONTROLLER CABINET & PEDESTAL FOUNDATION DETAILS			
APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC CHAIRMAN	<i>B.G. Buckley</i>	<i>11-16-95</i>	WATER	<i>N/A RWK</i>	<i>10-27-95</i>
TRANSPORTATION	<i>N/A RWK</i>	<i>11-01-95</i>	WASTE WATER	<i>N/A RWK</i>	<i>10-27-95</i>
HYDROLOGY	<i>M. G. Thompson</i>	<i>4/2/95</i>	TRAF. OPER.	<i>LRK</i>	<i>11/22/95</i>
DRAWING NO.	5206.91		MAP NO.	SHEET 9 OF 12	

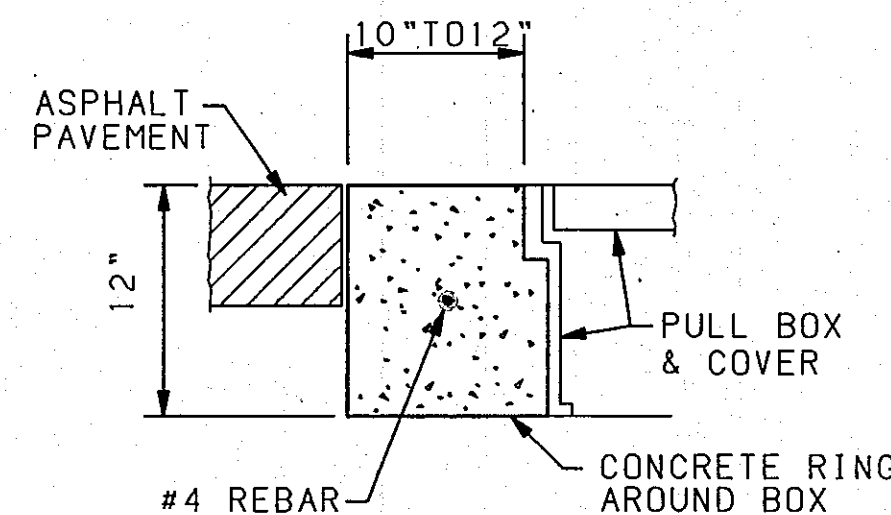


TYPICAL PULLBOX INSTALLATION

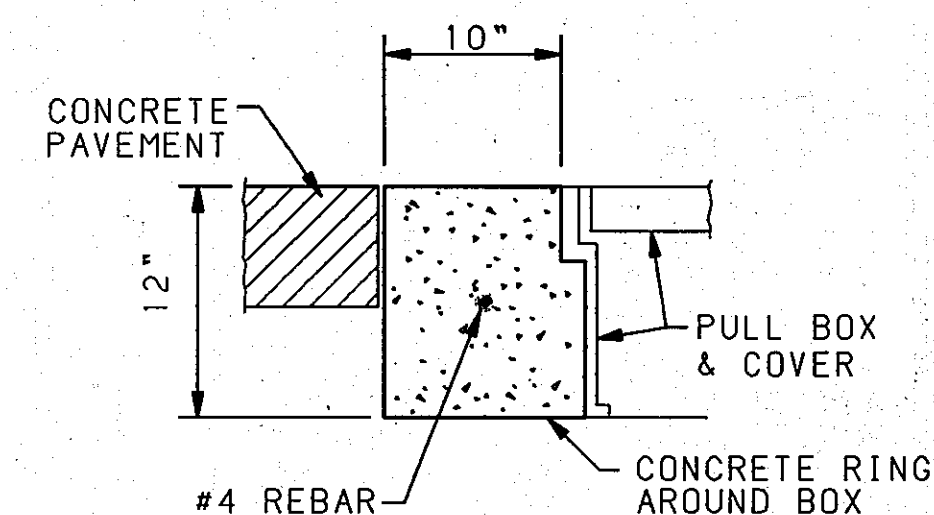
NOTE: SEE "CONCRETE COLLAR DETAILS"



IN COMPACTED EARTH



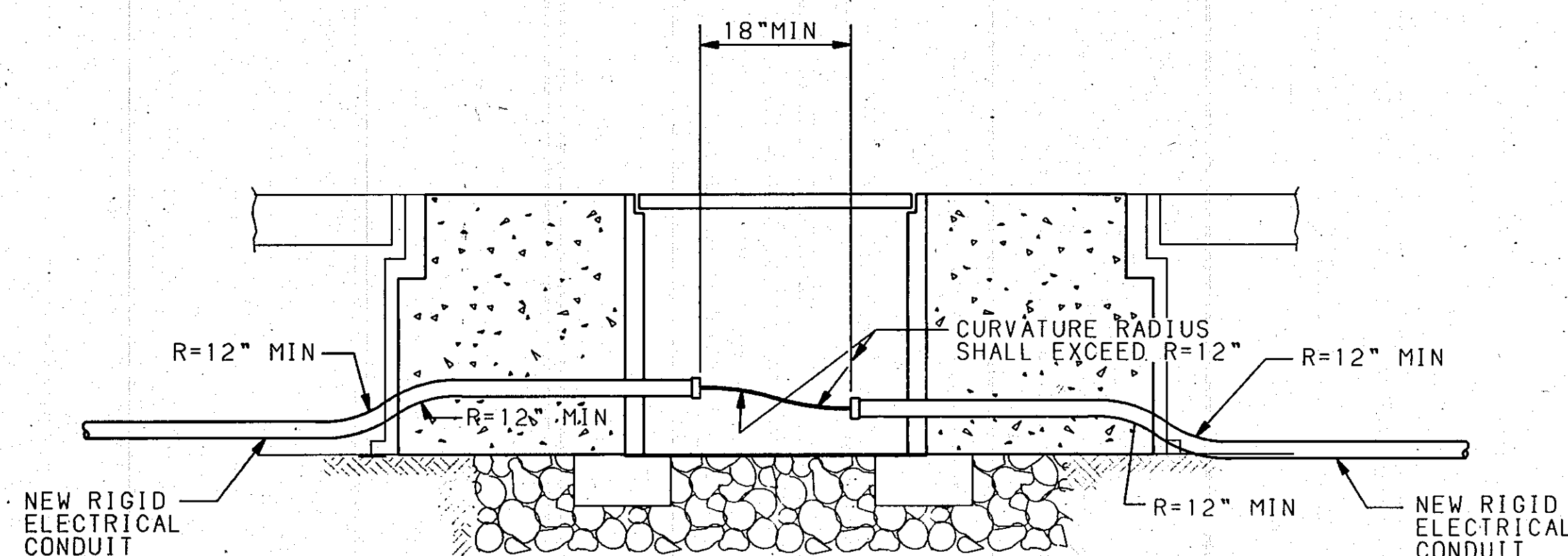
IN ASPHALT PAVEMENTS



IN CONCRETE PAVEMENTS

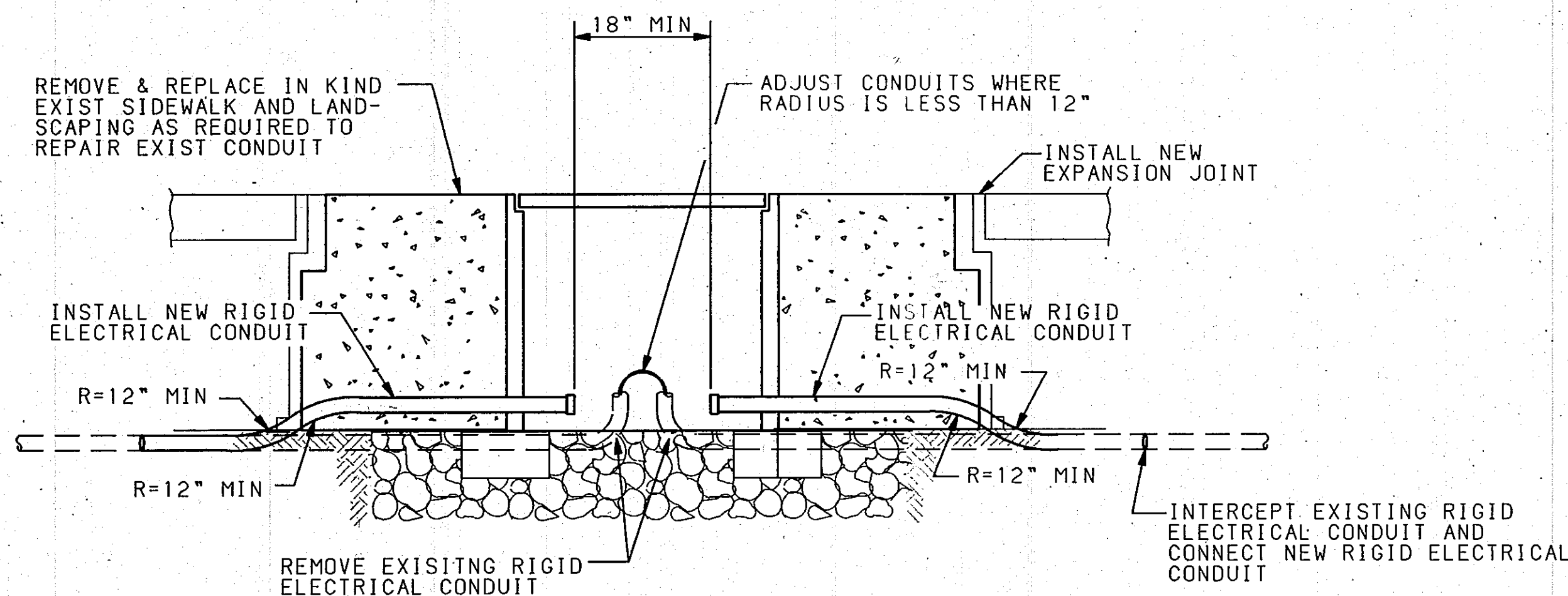
CONCRETE COLLAR DETAILS

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



SECTION A-A

TRAFFIC SIGNAL PULLBOX (TYPICAL) NEW CONDUIT INSTALLATION

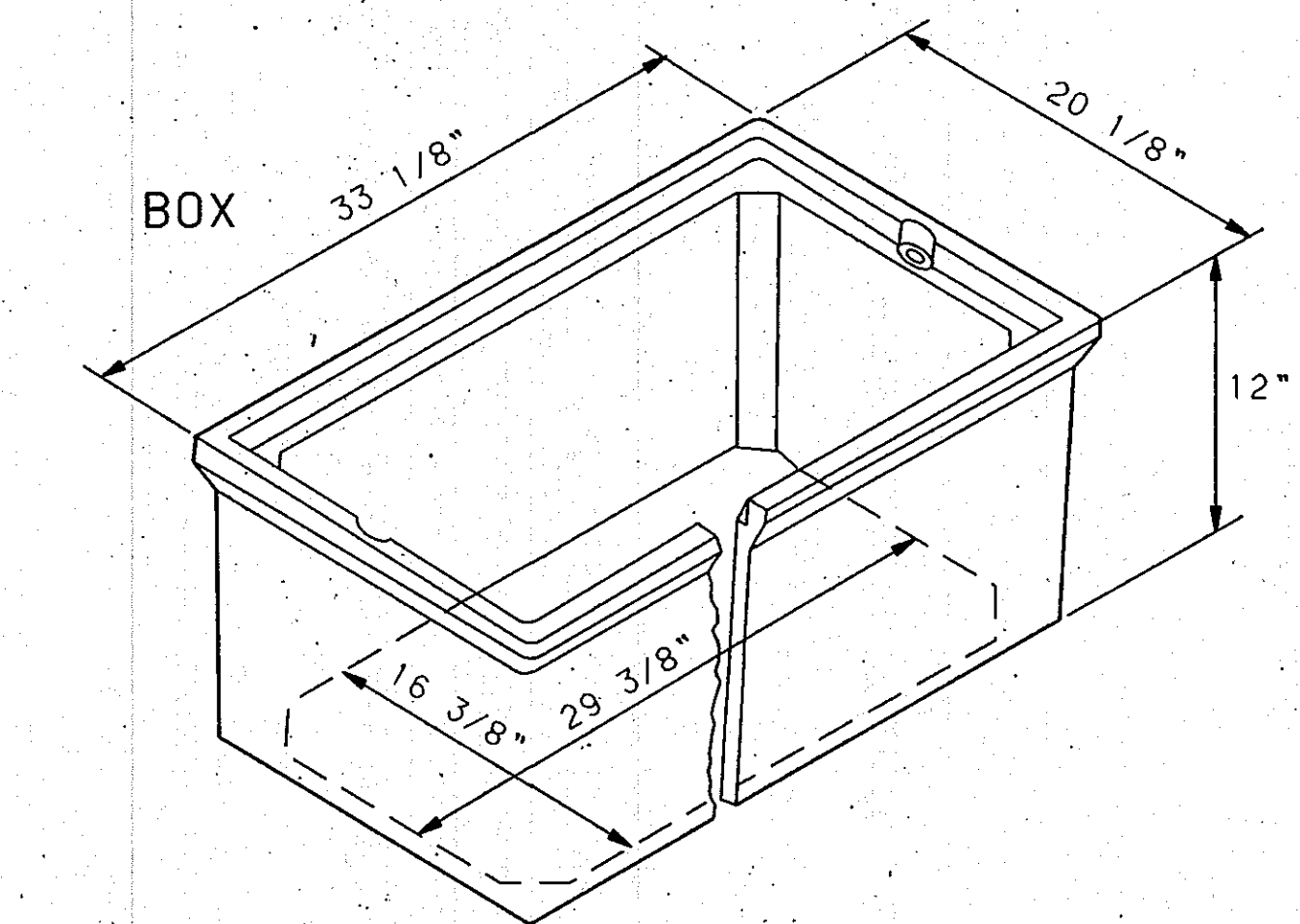
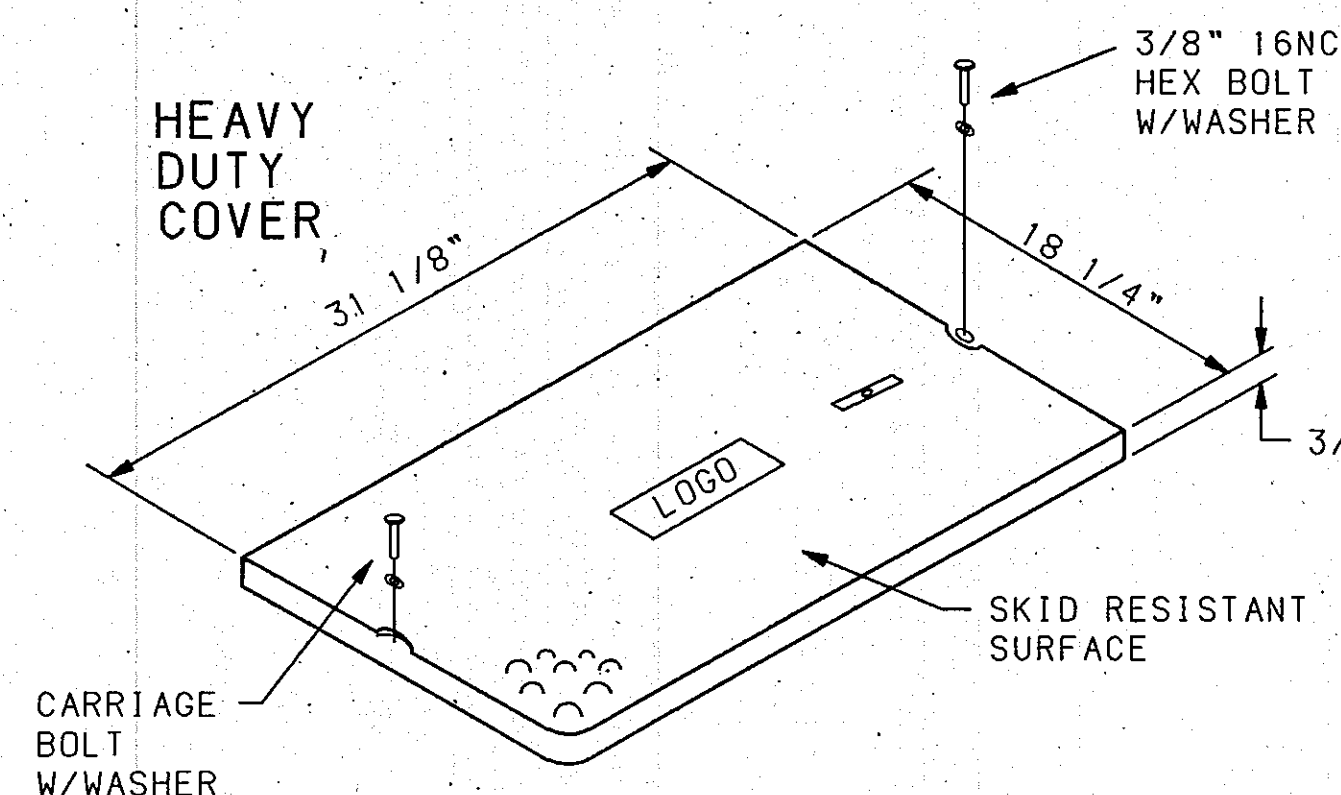


TRAFFIC SIGNAL PULLBOX (TYPICAL) RETROFIT INSTALLATION

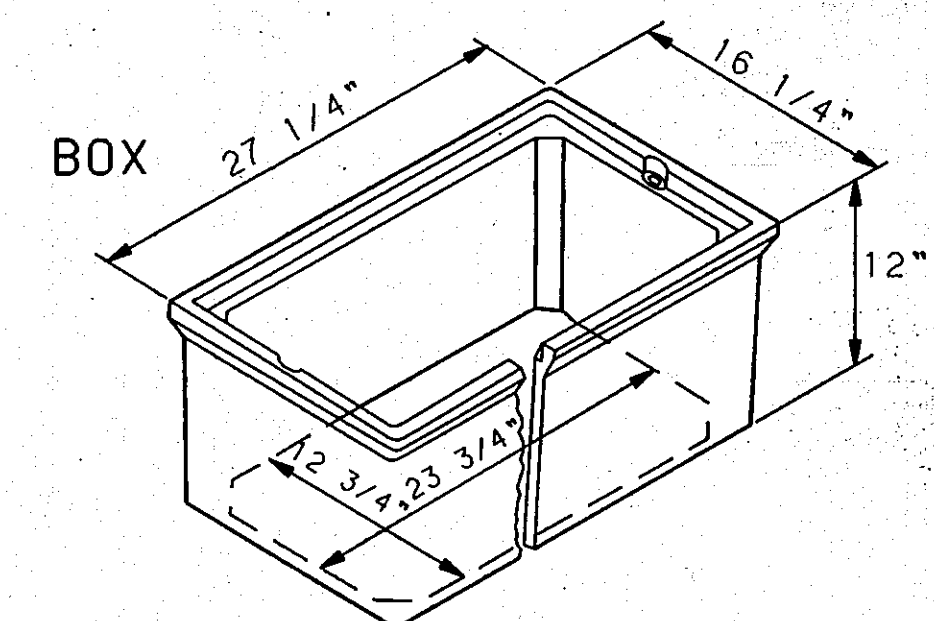
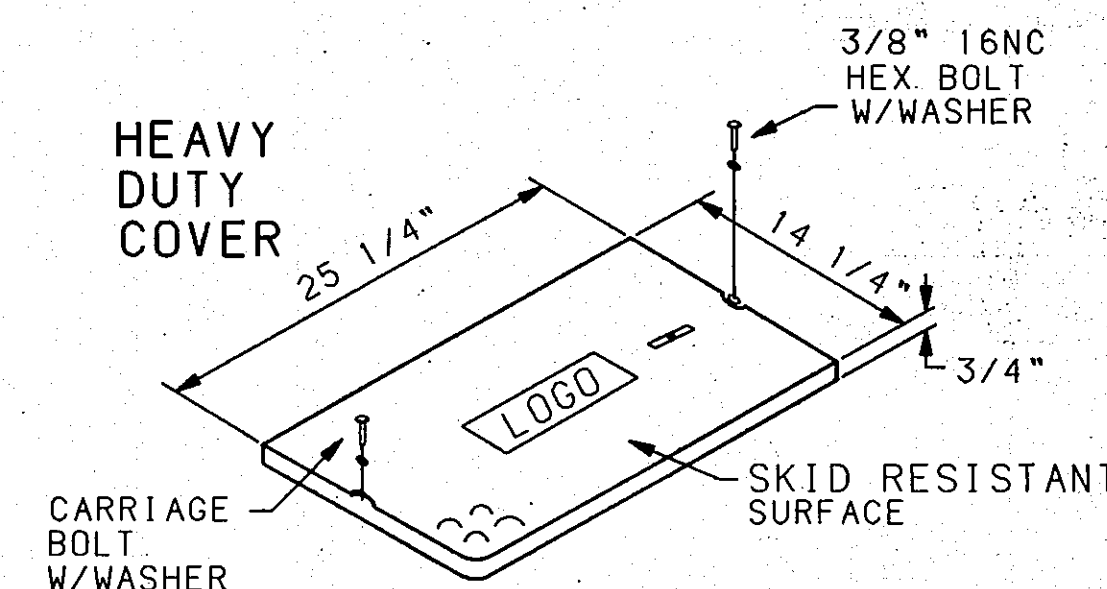
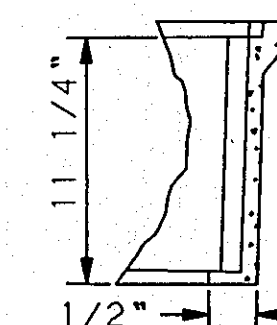
ENGINEER'S RECORD DRAWING CERTIFICATE

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Elery A. Blathrow, Jr. 08-29-96
Elery A. Blathrow, Jr., P.E. New Mexico Civil Registration No. 12070



LARGE PULL BOX



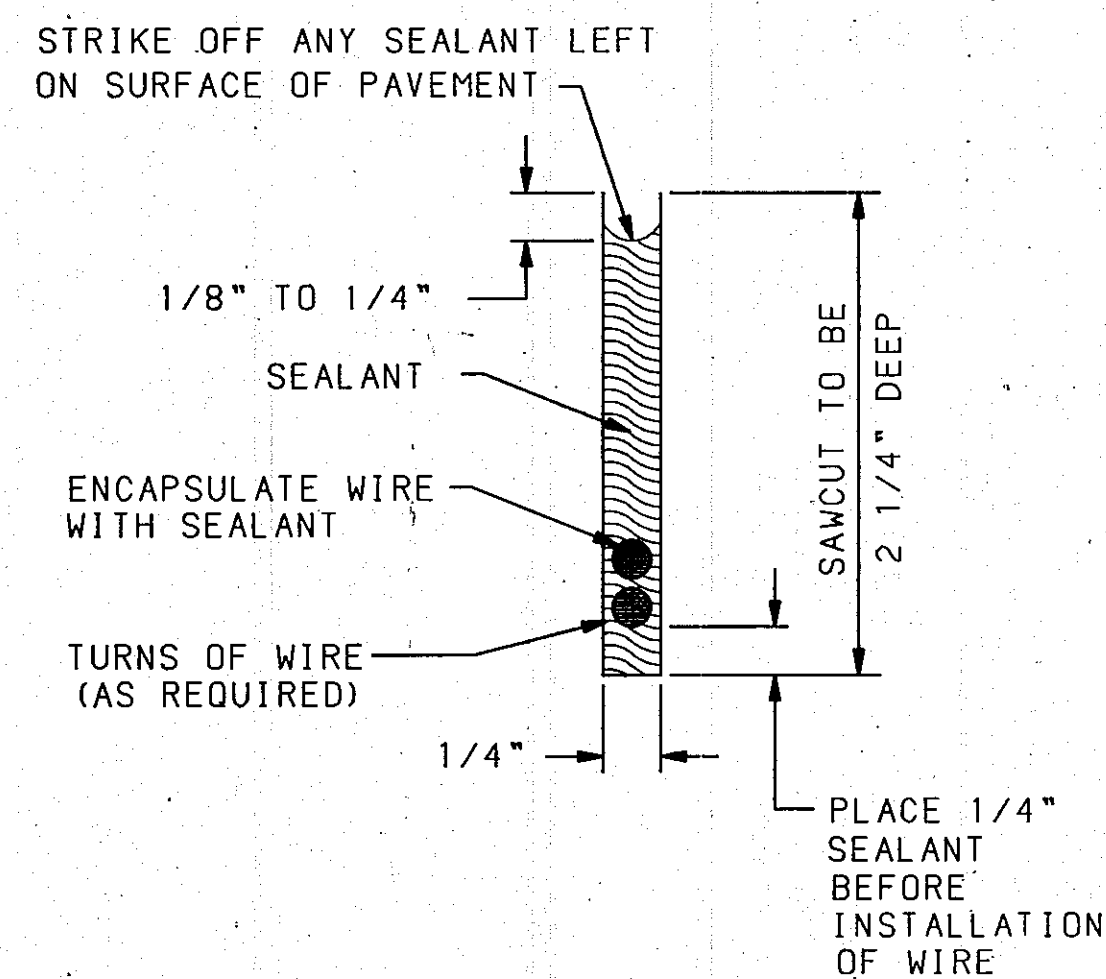
STANDARD PULL BOX

PULL BOX DETAILS

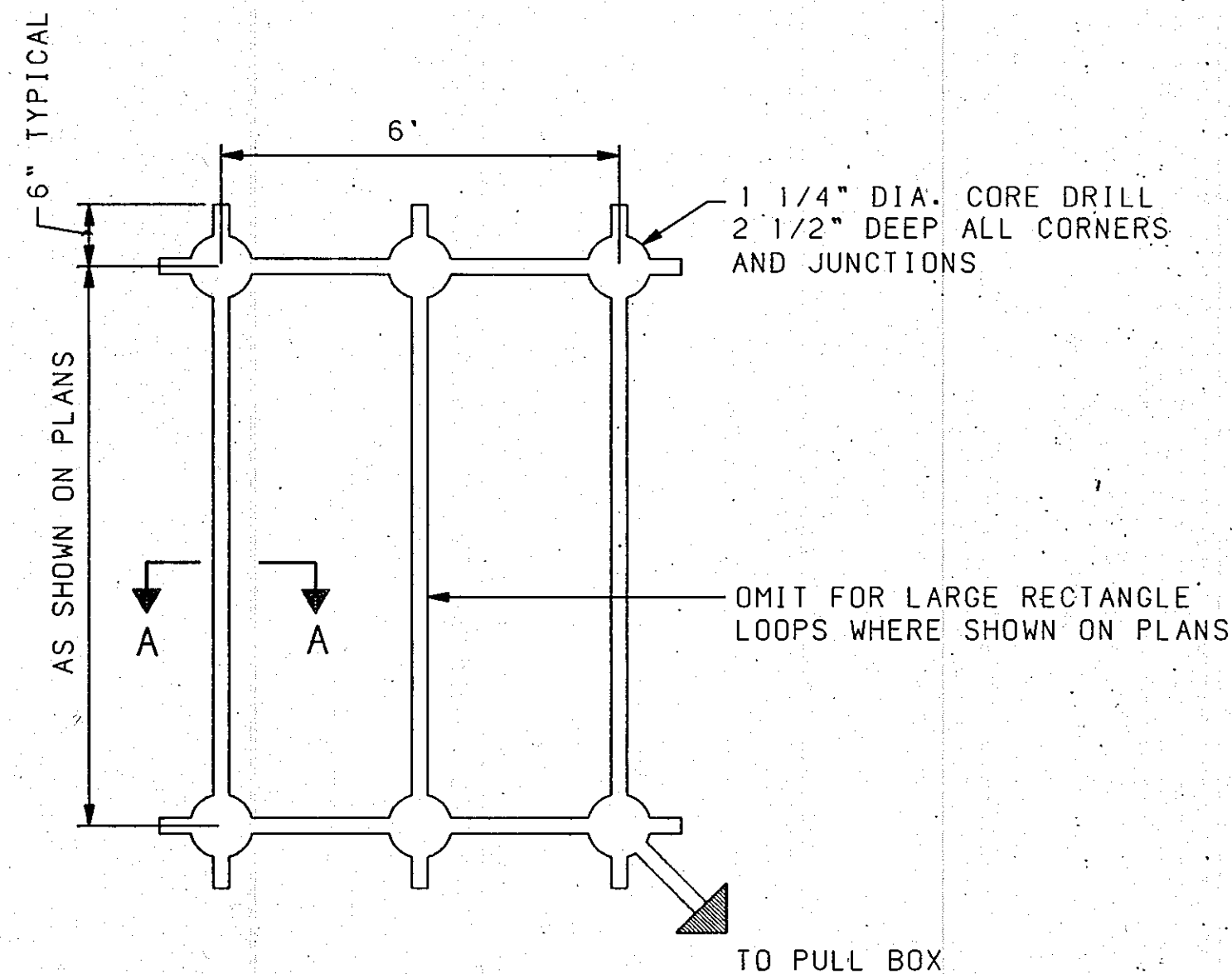
NOTES FOR HEAVY DUTY REINFORCED POLYMER MORTAR PULL BOXES AND COVERS

- MATERIAL TO BE AN AGGREGATE CONSISTING OF SAND AND GRAVEL BOUND TOGETHER WITH A POLYMER AND REINFORCED WITH A HEAVY WEAVE FIBERGLASS. THE MATERIAL MUST HAVE THE FOLLOWING MECHANICAL PROPERTIES: COMPRESSIVE STRENGTH - 11,000 PSI. TENSILE STRENGTH - 1700 PSI. FLEXURAL STRENGTH - 7500 PSI.
- ALL PULL BOX COVERS SHALL BE HEAVY DUTY REINFORCED POLYMER MORTAR, HAVING A SERVICE LOAD OF 15,000 LBS. OVER A 10" SQUARE (150 PSI). NO CONCRETE OR STEEL COVERS WILL BE ACCEPTABLE.
- ELECTRICAL PULL BOX (SMALL) SHALL BE A HEAVY DUTY REINFORCED POLYMER MORTAR PULL BOX AND COVER MEASURING 12-7/8" X 12-7/8" X 3/4".

CITY OF ALBUQUERQUE PUBLIC WORKS ENGINEERING					
TITLE: TRAFFIC SIGNAL PULL BOX DETAILS					
APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC CHAIRMAN	<i>R. G. Smith</i>	11-16-95	WATER	<i>NIA RINK</i>	10-27-95
TRANSPORTATION	<i>NIA RINK</i>	11-01-95	WASTE WATER	<i>NIA RINK</i>	10-27-95
HYDROLOGY	<i>NIA RINK</i>	11-01-95	TRAF. OPER.	<i>NIA RINK</i>	11-21-95
DRAWING NO. 5206.91		MAP NO.		SHEET 10 OF 12	

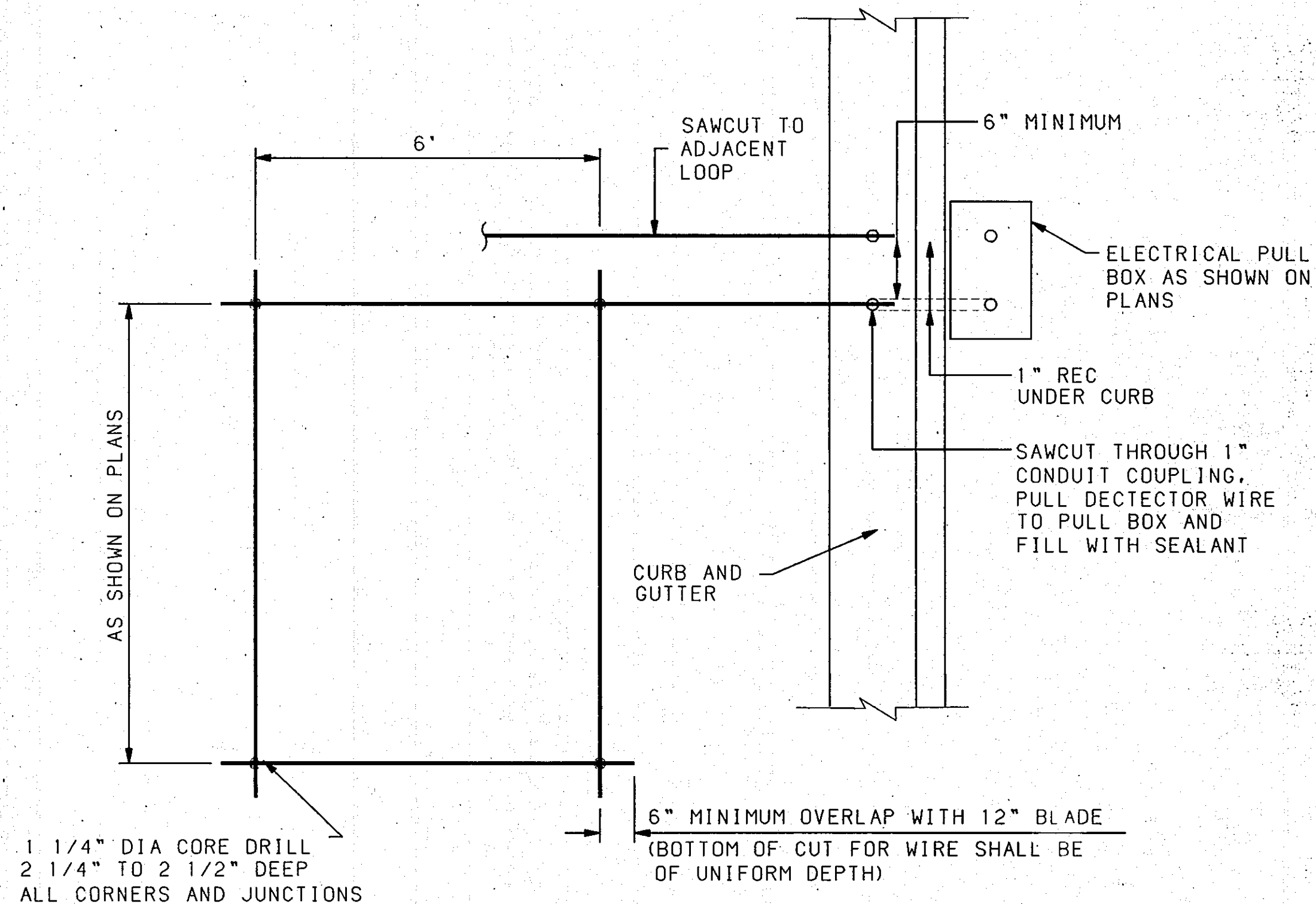


SECTION A-A

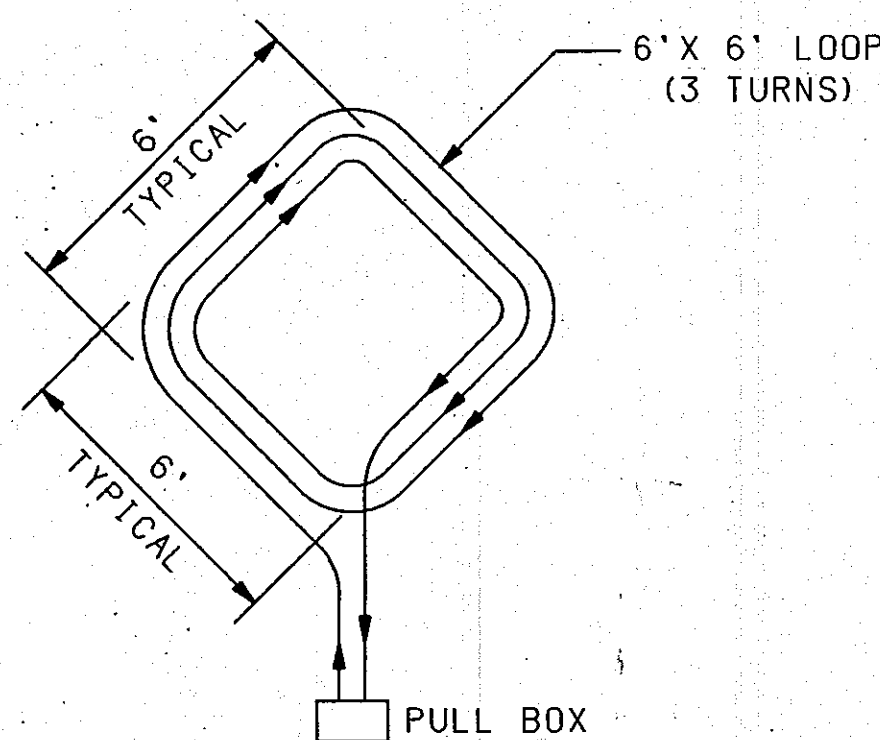


PLAN VIEW

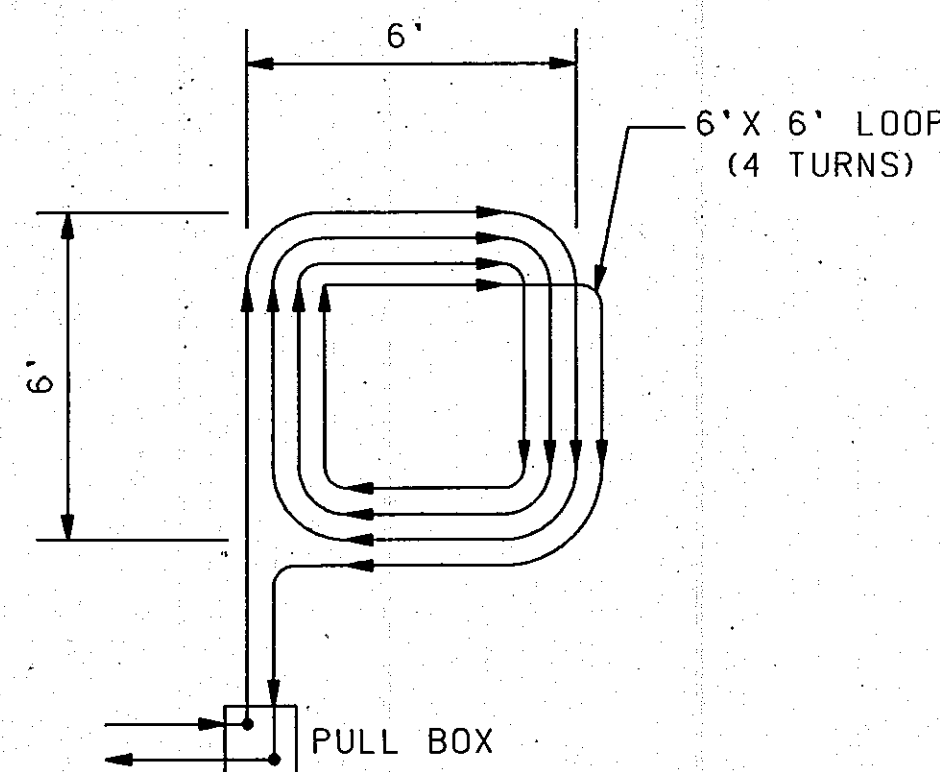
TYPICAL ROADWAY LOOP SAWCUT DETAIL



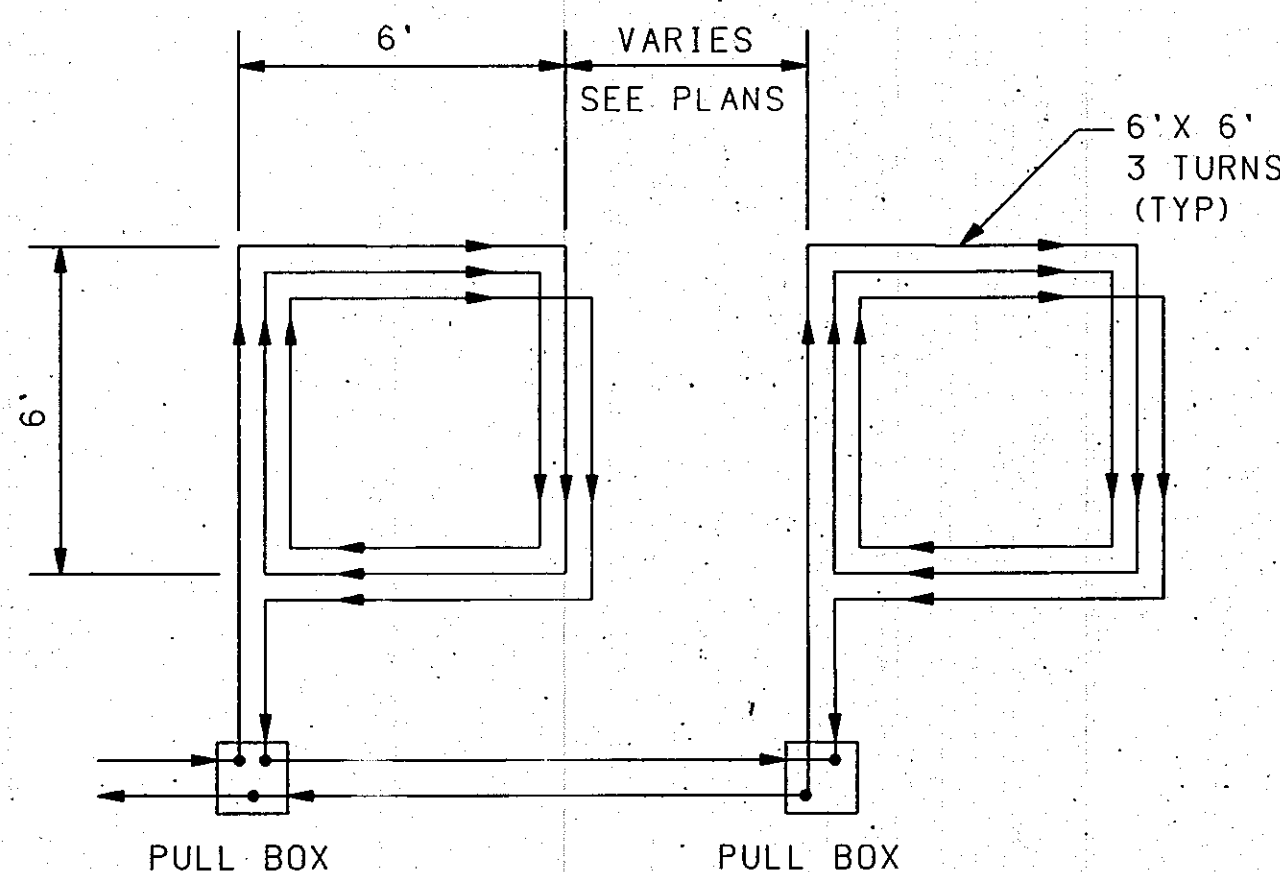
PLAN VIEW



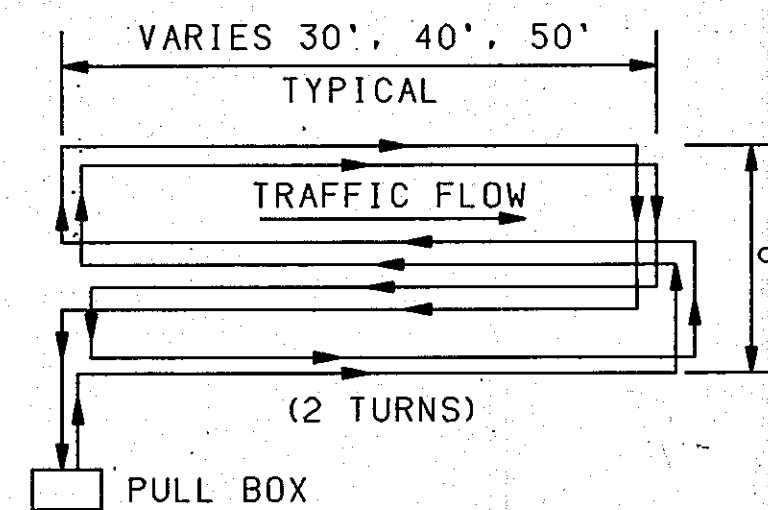
EXTEND CALL LOOP WIRING DETAIL



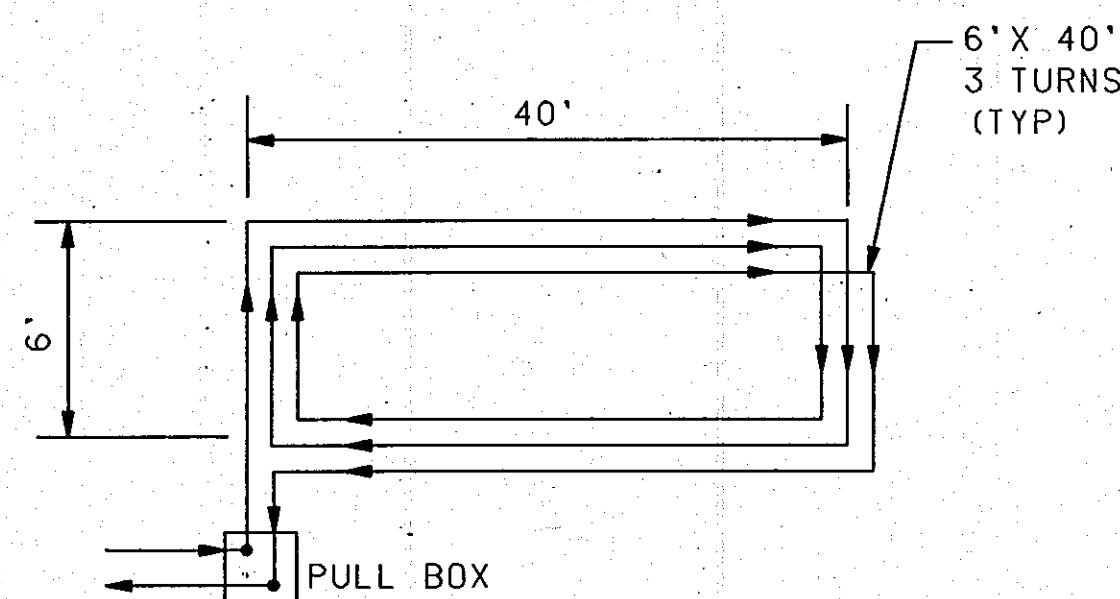
SYSTEM LOOP WIRING DETAIL



SERIES LOOP WIRING DETAIL



QUADRUPOLE LOOP WIRING DETAIL

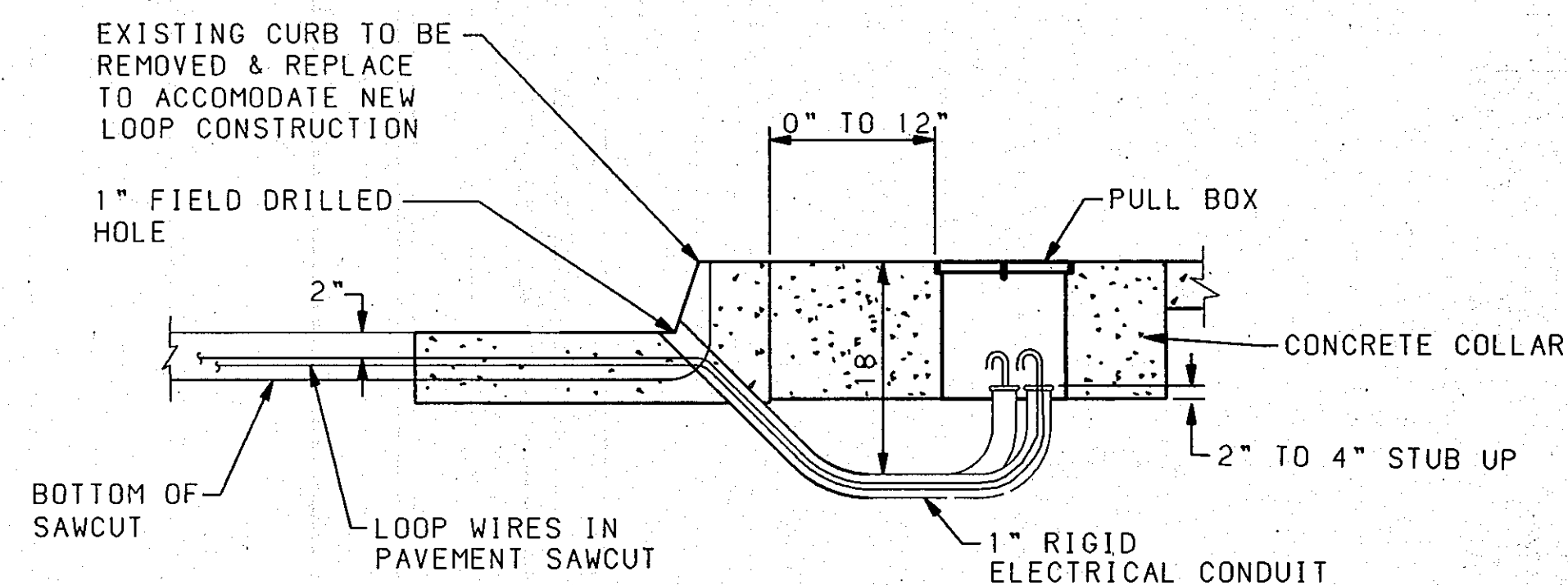


LARGE RECTANGULAR LOOP WIRING DETAIL

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

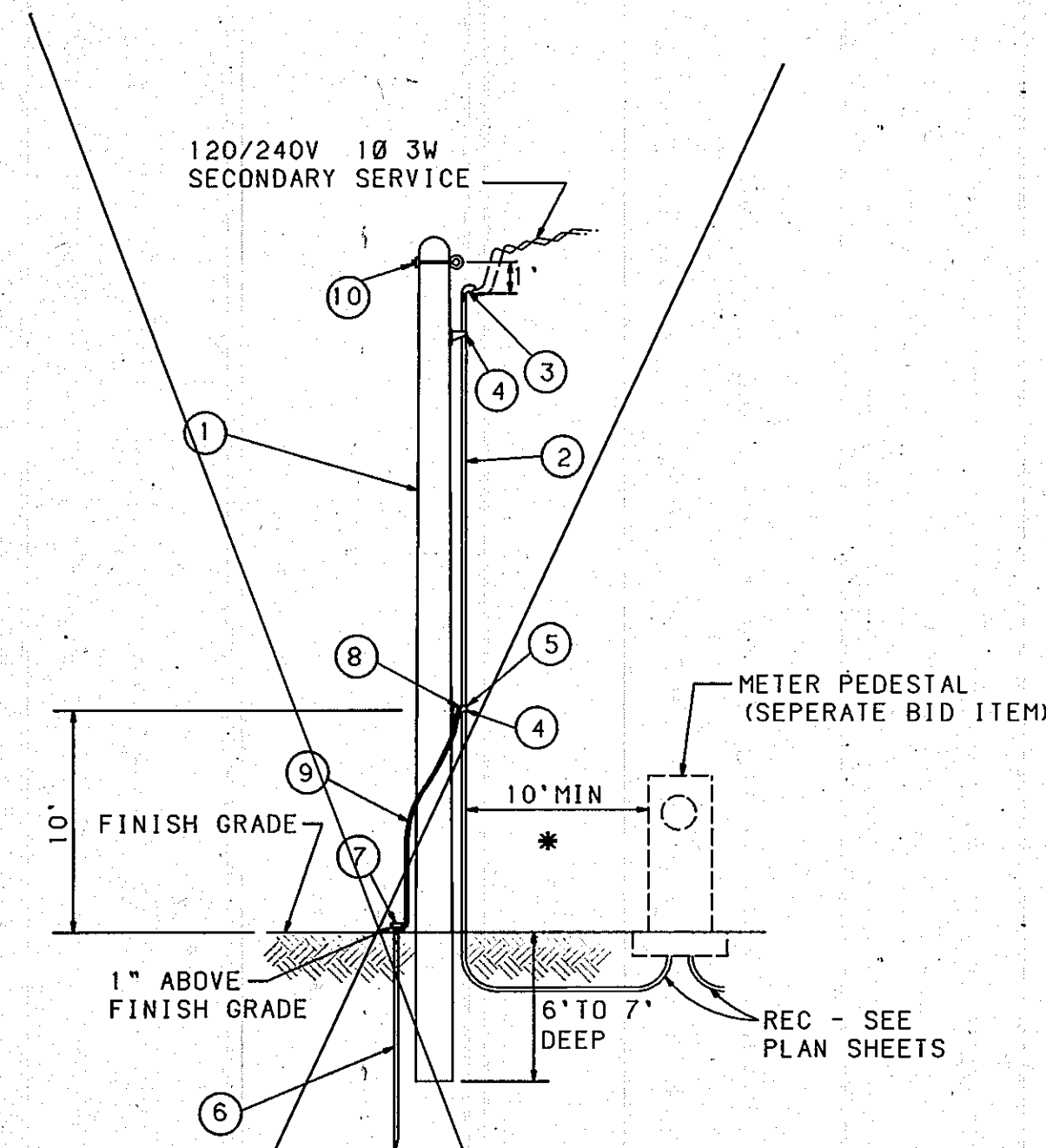
LOOP WIRE TERMINATION DETAILS

LOOP DETECTOR NOTES

1. ALL LOOP DETECTOR WIRE SHALL BE NO. 14 AWG STRANDED COPPER WIRE WITH CROSSLINKED POLYETHYLENE INSULATION (INDUSTRY TYPE XHHW) CONFORMING TO THE REQUIREMENTS OF I.M.S.A. SPECIFICATIONS NO 51-3 1984. BACKER ROD SHALL NOT BE USED IN THE INSTALLATION OF LOOP (EXCEPT PIECES LESS THAN 12\"/>

CITY OF ALBUQUERQUE PUBLIC WORKS ENGINEERING					
TITLE: TRAFFIC SIGNAL LOOP DETECTOR DETAILS					
APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRG CHAIRMAN	<i>RA Bally</i>	11-16-95	WATER	NIA RWC	10-27-95
TRANSPORTATION	<i>MA RHO</i>	11-01-95	WASTE WATER	NIA RWC	10-27-95
HYDROLOGY	<i>W. H. H. H.</i>	11-21-95	TRAF. OPER.	<i>AR</i>	11-27-95
DRAWING NO. 5206.91		MAP NO.		SHEET 11 OF 12	

ENGINEER'S RECORD DRAWING CERTIFICATE
I, the undersigned engineer, a duly qualified Registered Professional Engineer under the laws of the State of New Mexico, do hereby certify that the Record Drawing Information shown on these drawings was obtained from field construction and post construction information obtained by me or under my direct supervision and under my direct supervision and that the Record Drawing Information is true and correct to the best of my knowledge and belief. Responsibility for the design, conception, design engineering and calculations, or other of the Record Drawings rests with others.
William A. Bally 08-29-96
William A. Bally, Jr., P.E. New Mexico Civil Registration No. 12070



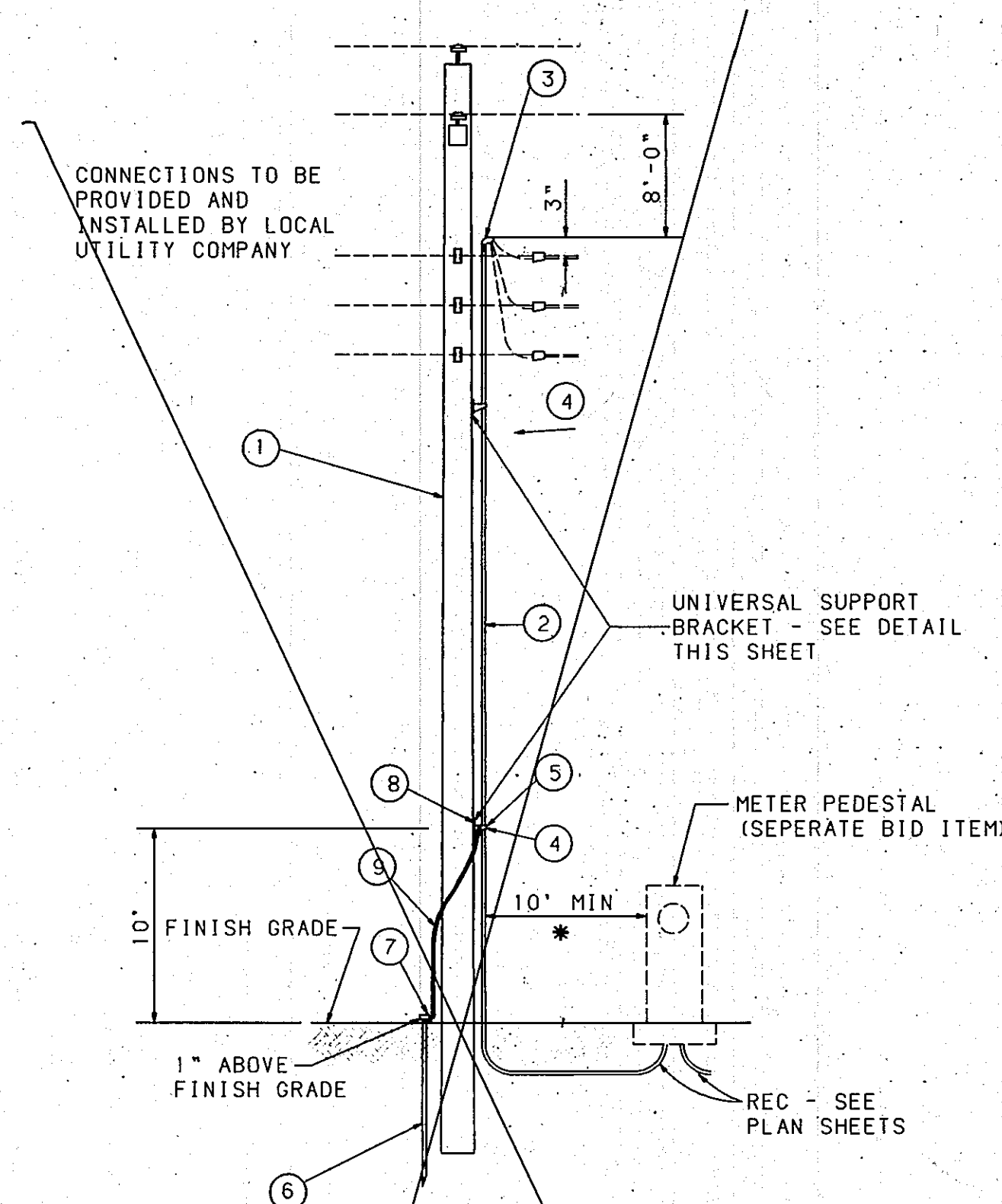
MATERIAL LIST

1	25' TREATED POLE
2	30' 2" GALVANIZED CONDUIT
3	1 2" WEATHER HEAD
4	2 UNIVERSAL SUPPORT BRACKET
5	1 2" PIPE STRAP KIT
6	1 COPPERWELD 3/4"x10'-0" GROUND ROD
7	1 GROUND ROD CLAMP
8	1 GROUND LUG
9	10' NO 6 BARE COPPER GROUND WIRE
10	1 5/8" EYE BOLT
11	40' 1/C NO 2 THW BLACK
12	40' 1/C NO 2 THW WHITE
13	40' 1/C NO 2 THW RED

SERVICE POLE (SIGNAL)

Detail Not Used

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



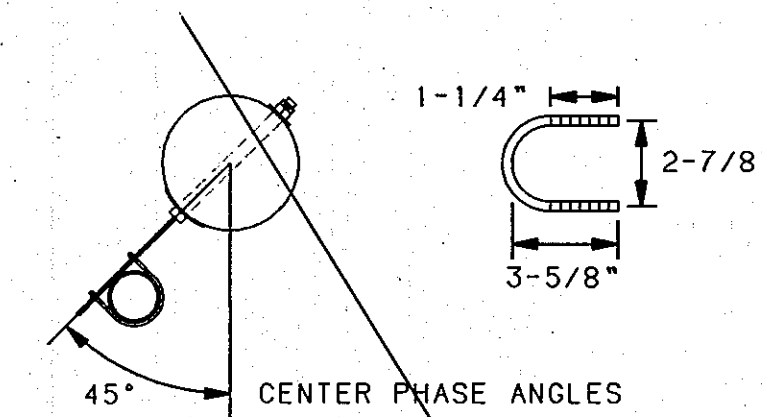
MATERIAL LIST

1	EXISTING POLE
2	40' 2" GALVANIZED CONDUIT
3	1 2" WEATHER HEAD
4	2 UNIVERSAL SUPPORT BRACKET
5	1 2" PIPE STRAP KIT
6	1 COPPERWELD 3/4"x10'-0" GROUND ROD
7	1 GROUND ROD CLAMP
8	1 GROUND LUG
9	10' NO. 6 BARE COPPER GROUND WIRE
10	1/C NO 2 THW BLACK
11	1/C NO 2 THW WHITE
12	1/C NO 2 THW RED

SERVICE RISER (SIGNAL)

Detail Not Used

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

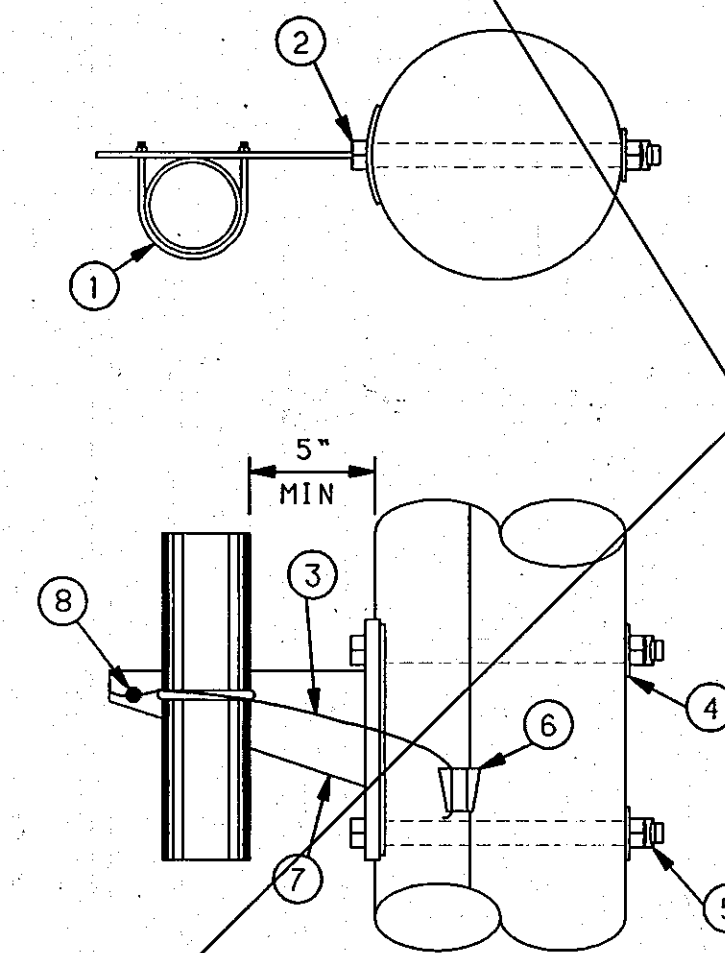


MATERIAL LIST

1	U BOLT
2	5/8" MACHINE BOLTS
3	#4 SOL CU WIRE
4	2-1/4" SQUARE WASHER
5	5/8" NF LOCKNUT
6	LINE TAP
7	SUPPORT BRACKET
8	GROUNDING LUG

UNIVERSAL SUPPORT BRACKET NOTES:

- BRACKET TO BE FASTENED TO POLE WITH 5/8" GALVANIZED MACHINE BOLTS.
- BRACKET SUITABLE FOR TWO 2" CONDUITS.
- 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.

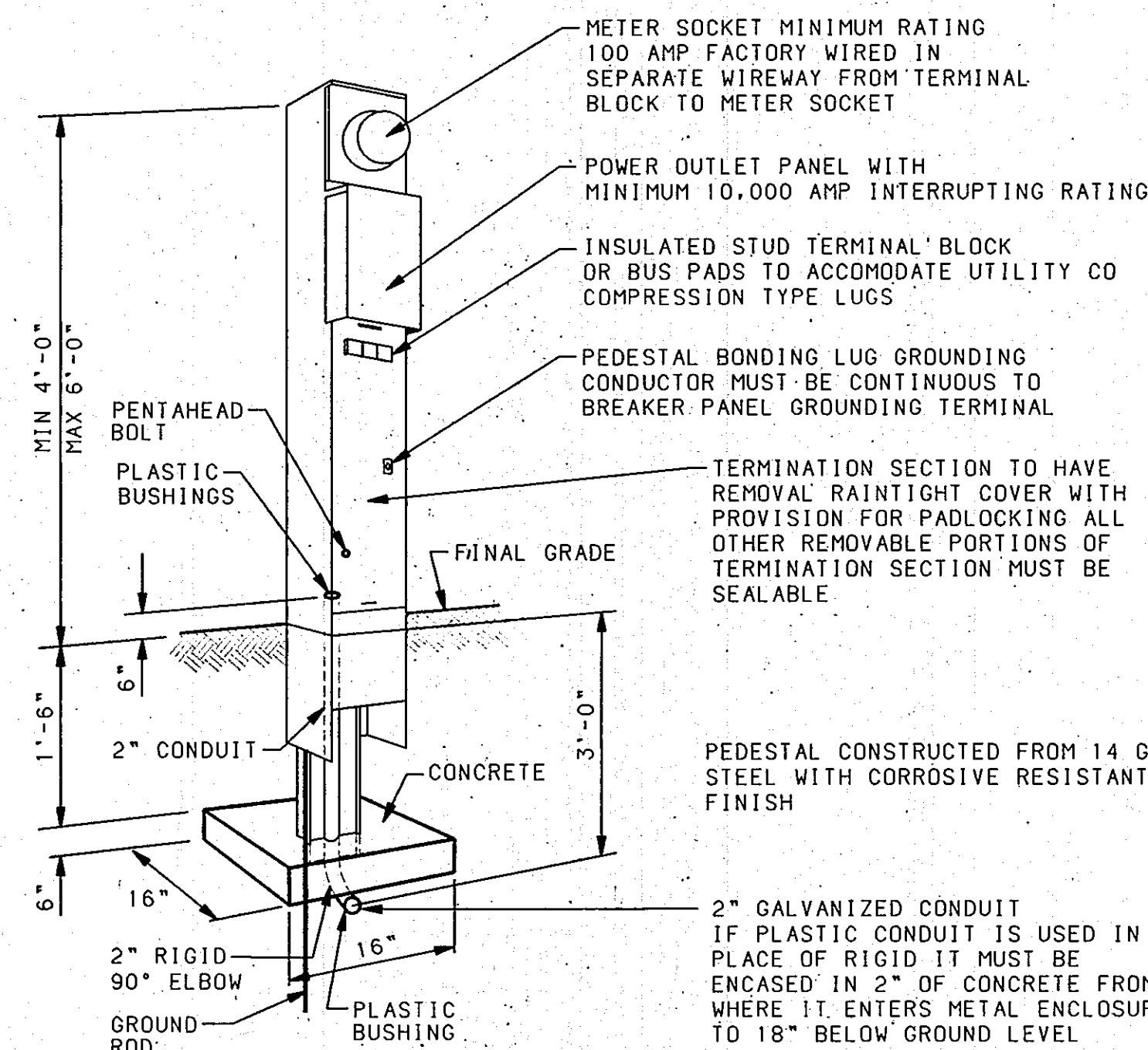


UNIVERSAL SUPPORT BRACKET

Detail Not Used

SIGNAL SERVICE NOTES

- ALL SIGNAL SERVICE DETAILS, MATERIALS, & INSTALLATION SHALL CONFORM TO PNM ELECTRIC SERVICE GUIDE, LATEST EDITION.
- CONTACT PNM CUSTOMER SERVICES FOR POLE QUADRANT FOR RISERS.
- ALL ABOVE GRADE CONDUIT SHALL BE GALVANIZED.
- RISER BRACKET ASSEMBLY MUST BE GROUNDED PER LOCAL UTILITY COMPANY REQUIREMENTS.
- CONDUIT AND WIRE EXTENDING MORE THAN 10' FROM POLE WILL BE MEASURED AND PAID PER ACTUAL FOOTAGE USED.
- PROVIDE ONE 50A, SINGLE POLE, 120V CIRCUIT FOR CONTROLLER SIGNALS.
- METER PEDESTAL GROUNDING INCLUDING PULL BOX WITH CONCRETE COLLAR, 1/2" CONDUIT, NO. 2 COPPER WIRE AND GROUND ROD WILL BE CONSIDERED INCIDENTAL TO THE METER PEDESTAL.
- UNIVERSAL SUPPORT BRACKETS WILL BE CONSIDERED INCIDENTAL TO THE SERVICE RISER.
- 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.



METER PEDESTAL (SIGNAL)

NO SCALE

ENGINEER'S RECORD DRAWING CERTIFICATE

I, the undersigned engineer, a duly qualified Registered Professional Engineer under the laws of the State of New Mexico, do hereby certify that the Record Drawing information shown on these drawings was obtained from field construction and post-construction information obtained by me or under my direct supervision, that the Record Drawing information shown on these drawings was added by me or under my direct supervision, and that this Record Drawing information is true and correct to the best of my knowledge and belief. Responsibility for the design concepts, design engineering and calculations, or intent of the Record Drawings resides with others.

Elroy A. Blithrow, Jr. 08-29-96
Elroy A. Blithrow, Jr., P.E. New Mexico Civil Registration No. 12070

CITY OF ALBUQUERQUE PUBLIC WORKS ENGINEERING

TITLE: TRAFFIC SIGNAL ELECTRICAL SERVICE DETAILS

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC CHAIRMAN	<i>[Signature]</i>	11-16-95	WATER	N/A RWL	10-27-95
TRANSPORTATION	<i>[Signature]</i>	11-01-95	WASTE WATER	N/A RWL	10-27-95
HYDROLOGY	<i>[Signature]</i>	11-16-95	TRAF. OPER.	<i>[Signature]</i>	11-20-95

DRAWING NO.	5206.91	MAP NO.	SHEET 12 OF 12
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