CITY OF BRYAN
The Good Life, Texas Style

CITY OF BRYAN

DEPARTMENT OF ENGINEERING SERVICES

INTERSECTION IMPROVEMENTS
VILLA MARIA ROAD & TEXAS AVENUE
RFB# 14-055

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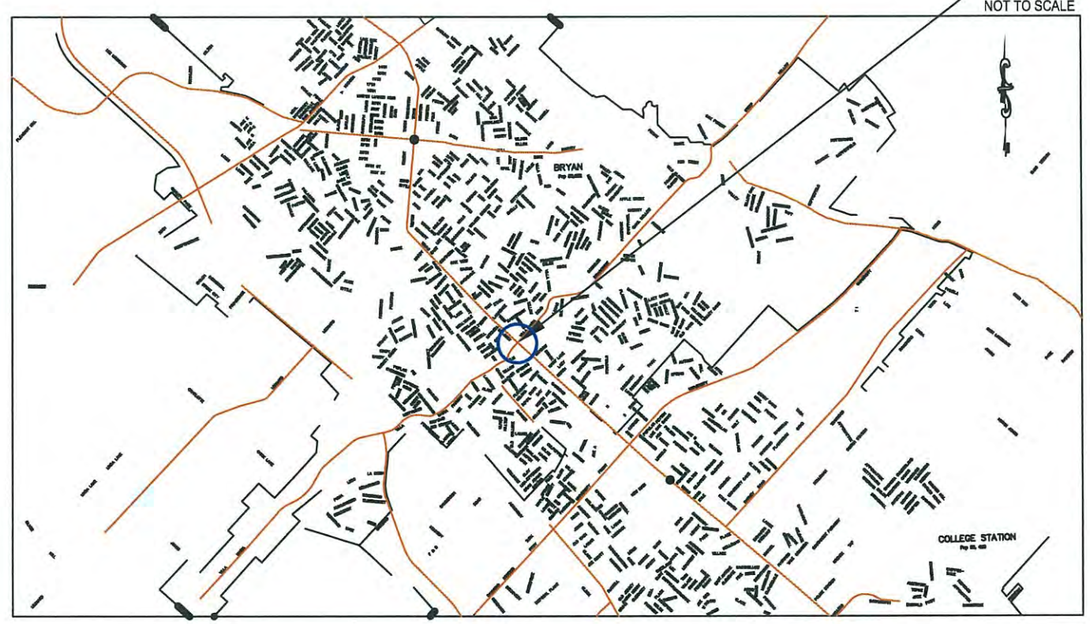
VILLA MARIA ROAD & TEXAS AVENUE

NOT TO SCALE



CITY OF BRYAN CITY COUNCIL

JASON BIENSKI - Mayor
AL SAENZ - Single Member District 1
RAFAEL PENA III - Single Member District 2
GREG OWENS - Single Member District 3
MIKE SOUTHERLAND- Single Member District 4
ART HUGHES - Single Member District 5
CHUCK KONDERLA - Place 6 - At Large

W. PAUL KASPAR, PE - City Engineer

Prepared By:

DON DURDEN, INC.
d.b.a. CIVIL ENGINEERING CONSULTANTS
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214

PROJECT MANAGER P.E. DATE 11/16/15

STATE OF TEXAS
JOE F. NIX
41591
REGISTERED PROFESSIONAL ENGINEER

POSTED SPEED LIMIT= 35 MPH - VILLA MARIA ROAD
40 MPH - TEXAS AVENUE

NOTE:
UTILITIES SHOWN ARE BASED ON VISUAL OBSERVATION AND ON INFORMATION PROVIDED BY RESPECTIVE UTILITY AGENCIES. CONTRACTOR TO VERIFY LOCATION OF UNDERGROUND UTILITIES

SCALE: 1"=40'

VILLA MARIA

ONLY

TEXAS AVENUE

ONLY

REV	DATE	DESCRIPTION

DESIGNED BY:
DRAWN BY:
CHECKED BY:
DATE: December 2010
JOB NUMBER: E0368202

CIVIL ENGINEERING CONSULTANTS
DON DURDEN, INC.
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City of Bryan, Texas
Traffic Signal Design

CITY OF BRYAN

Traffic Signal
Villa Maria & Texas Avenue
Existing Utilities

SIGNAL HEAD TYPE H3 | SIGNAL HEAD TYPE H3L | SIGNAL HEAD TYPE H5

NOTES:

1. CONTRACTOR SHALL CONTACT THE CITY TRAFFIC ENGINEER (979-209-5153), AT LEAST 48 HOURS PRIOR TO THE SIGNAL TURN-ON OF THE NEW EQUIPMENT. THE EXISTING TEMPORARY SIGNAL WILL REMAIN OPERATIONAL UNTIL THAT TIME. TEMPORARY SIGNAL POLES TO BE REMOVED WHEN NEW POLES ARE OPERATIONAL. A SIGNAL TECHNICIAN FROM THE CITY SHALL BE PRESENT WHEN THE NEW SIGNAL IS PLACED INTO OPERATION. THE INTERSECTION SHALL REMAIN IN ALL-WAY FLASH FOR AT LEAST 3 DAYS PRIOR TO BEING PLACED IN STOP-AND-GO OPERATION DURING THIS TIME, UNLESS OTHERWISE DIRECTED BY CITY TRAFFIC ENGINEER

2. THE CITY WILL PROVIDE ALL TIMING FOR THE CONTROLLER. PROPER TRAFFIC CONTROL SHOULD BE COORDINATED WITH THE CITY TRAFFIC ENGINEER FOR APPROVAL.

4. ALL BURIED CONDUIT TO BE SCHEDULE 40 PVC ELECTRICAL CONDUIT, CONFORMING TO SPECIFICATIONS. ALL EXPOSED CONDUIT TO BE GALVANIZED RMC

5. SEVERAL UTILITIES EXIST IN THE AREA AND ALL UTILITIES (OVERHEAD AND UNDERGROUND) SHOWN ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING 1-800-DIG-TESS, 8-1-1 LOCALLY, BRYAN TEXAS UTILITIES AT 979-821-5700, THE CITY OF COLLEGE STATION UTILITIES AT 979-764-3535 AND ALL AFFECTED UTILITY COMPANIES FOR UTILTIY LOCATES PRIOR TO ANY DRILLING OR EXCAVACTION ON THE PROJECT.

6. THE ELECTRIC SERVICE PANEL SHALL BE TYPE D(120/240)070(NS)GS(E)PS(U) AND SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL INSTALL THE SERVICE PANEL WITHIN 10 DAYS AFTER IT IS RECEIVED AND CONTACT BRYAN TEXAS UTILITIES TO OBTAIN POWER FOR THE PANEL (LEAD TIMES CAN BE AS LONG AS 60-90 DAYS).

7. RED-INDICATION CONFIRMATION LIGHTS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR ON POLES P1, P2, P4, AND P5.

8. THE CONTRACTOR SHALL STAKE ALL SIGNAL POLE LOCATIONS, CONTROLLER FOUNDATION LOCATION, AND PULL-BOX LOCATIONS AFTER THE UTILITY LOCATES ARE FINALIZED. THE CITY MUST APPROVE THESE LOCATIONS PRIOR TO ANY DRILLING OR EXCAVATION ON THE PROJECT.

9. THE CONTRCTOR SHALL FURNISH AND INSTALL THE FOLLOWING EQUIPMENT ITEMS REQUIRED BY THE PROJECT. LABOR AND EQUIPMENT SUBSIDIARY TO ITEM 680 TO INSTALL THE FOLLOWING ITEMS:
(A) SIGNAL CABINET AND ALL INTERNAL COMPONENTS;
(B) VEHICLE IMAGE VEHICLE DETECTION SYSTEM (VIVDS) CAMERAS AND CABLE;
(C) OPTICOM DETECTORS, LEAD-IN CABLE, AND CABINET EQUIPMENT;
(D) BACK PLATES AND LED SECTIONS;
(E) COUNTDOWN PEDS DISPLAYS;
(F) ELECTRICAL PEDESTAL ENCLOSURE AND SERVICE PANEL;
(G) TRAFFIC SIGNAL AND PEDESTAL POLE ASSEMBLIES;
(H) PEDESTRIAN PUSHBUTTONS AND SIGNS;
(I) ILSN (LED) SIGNS

EQUIPMENT SCHEDULE

NEW ELECTRIC SERVICE PEDESTAL WITH METER ON FOUNDATION

NEW ELECTRIC SERVICE DISCONNECT

NEW NEMA SIEMANS LINUX NS2 CONTROLLER IN SIEMENS TYPE TS2-1 CABINET.

P1 NEW SMA 80 STEEL POLE WITH 44' MAST ARM (SAME LOCATION AS EXISTING POLE TO BE REMOVED), TWO (2) TYPE H3 LED SIGNAL HEAD, ONE (1) TYPE H3L LED SIGNAL HEAD MOUNTED ON MAST ARM CENTERED OVER LANES, ONE (1) VIVDS CAMERA, ONE (1) OPTICOM PRIORITY VEHICLE DETECTOR, TWO (2) LED COUNTDOWN PEDESTRIAN SIGNALS WITH PUSHBUTTONS AND R10-3b SIGNS MOUNTED ON POLE, AND ONE (1) STANDARD ALUMINUM STREET NAME SIGN ON MAST ARM.

P2 NEW SMA 80 STEEL POLE WITH 55' MAST ARM, ONE (1) TYPE H5 LED SIGNAL HEAD, TWO (2) TYPE H3 LED SIGNAL HEADS MOUNTED ON MAST ARM AND CENTERED OVER LANES, ONE (1) VIVDS CAMERA, TWO (2) LED COUNTDOWN PEDESTRIAN SIGNALS WITH PUSHBUTTONS AND R10-3b SIGNS MOUNTED ON POLE, AND ONE (1) STANDARD ALUMINUM STREET NAME SIGN ON MAST ARM.

P3 EXISTING STEEL POLE AND MAST ARM REMOVED BY TxDOT

P4 NEW SMA 80 STEEL POLE WITH 44' MAST ARM (SAME LOCATION AS EXISTING POLE TO BE REMOVED), TWO (2) TYPE H3 LED SIGNAL HEAD, ONE (1) TYPE H3L LED SIGNAL HEAD MOUNTED ON MAST ARM CENTERED OVER LANES, ONE (1) VIVDS CAMERA, TWO (2) LED COUNTDOWN PEDESTRIAN SIGNALS WITH PUSHBUTTONS AND R10-3b SIGNS MOUNTED ON POLE, AND ONE (1) STANDARD ALUMINUM STREET NAME SIGN ON MAST ARM.

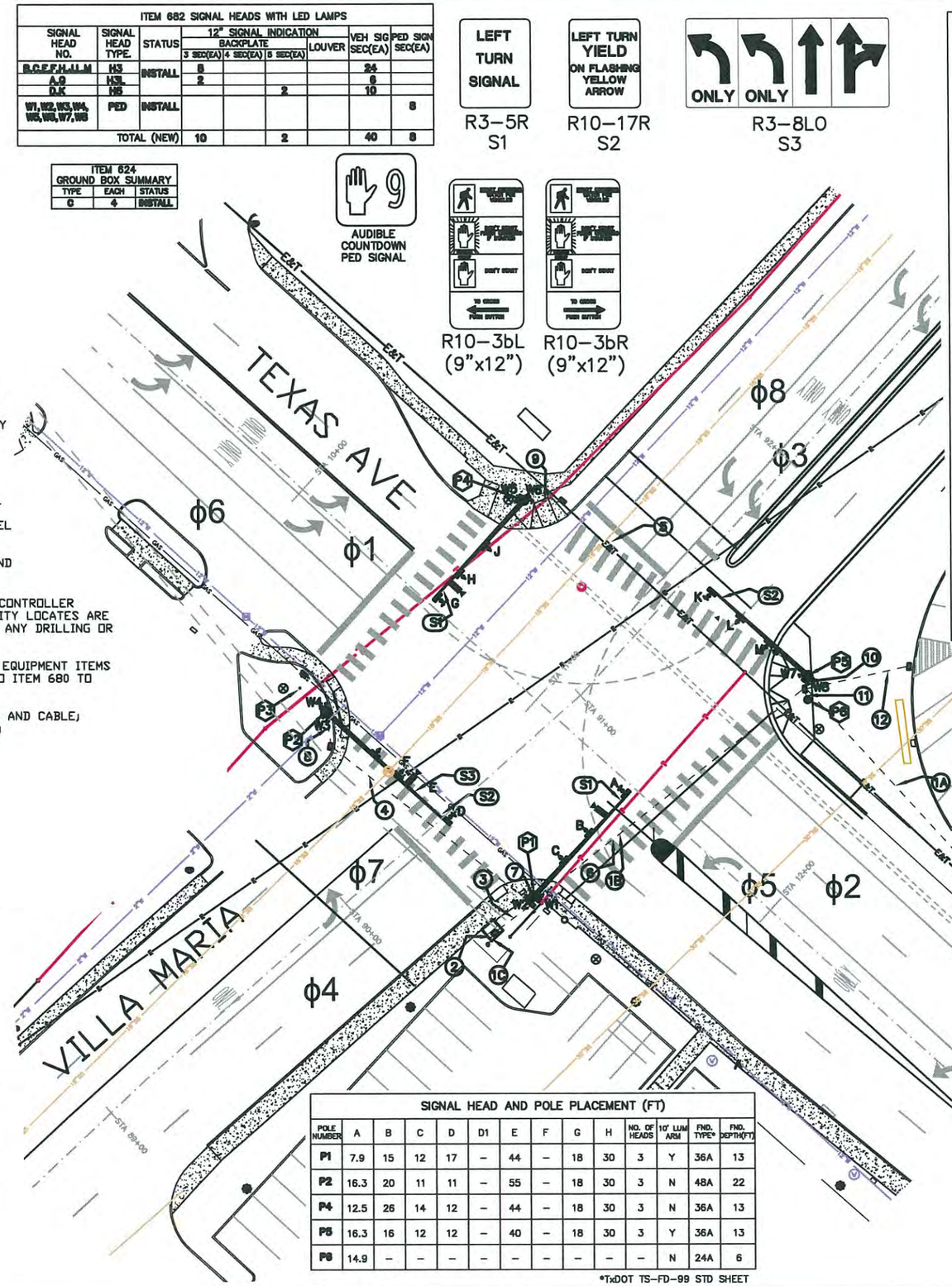
P5 NEW SMA 80 STEEL POLE WITH 40' MAST ARM AND LED LUMINAIRE, ONE (1) TYPE H5 LED SIGNAL HEAD, TWO (2) TYPE H3 LED SIGNAL HEADS MOUNTED ON MAST ARM AND CENTERED OVER LANES, ONE (1) VIVDS CAMERA, TWO (2) LED COUNTDOWN PEDESTRIAN SIGNALS WITH PUSHBUTTON AND R10-3b SIGN MOUNTED ON POLE, AND ONE (1) STANDARD ALUMINUM STREET NAME SIGN ON MAST ARM.

P6 NEW PEDESTRIAN POLE ASSEMBLY WITH ONE (1) PUSHBUTTON AND R10-3b SIGN

P7 EXISTING STEEL POLED AND MAST ARM REMOVED BY TxDOT

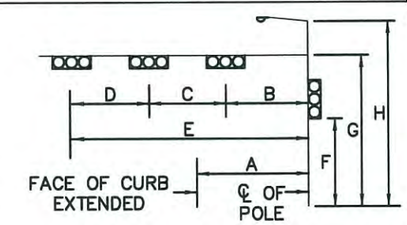
ITEM 682 SIGNAL HEADS WITH LED LAMPS							
SIGNAL HEAD NO.	SIGNAL HEAD TYPE.	STATUS	12" SIGNAL INDICATION BACKPLATE 3 SEC(EA)	4 SEC(EA)	5 SEC(EA)	LOUVER	VEH SIG SEC(EA)	PED SIGN SEC(EA)
B,C,E,F,H,J,L,M	H3	INSTALL	8				24	
A,G	H3L		2				6	
D,K	H5				2		10	
W1,W2,W3,W4,W5,W6,W7,W8	PED	INSTALL						8
TOTAL (NEW)			10		2		40	8

ITEM 624 GROUND BOX SUMMARY		
TYPE	EACH	STATUS
C	4	INSTALL



LEGEND

- EXTG MAST ARM POLE
- EXTG SIGNAL HEAD W/ BACKPLATE
- EXTG SIGNAL HEAD W/ BACKPLATE & LEFT TURN INDICATION
- EXTG CONTROLLER & CABINET
- EXTG SIGN MOUNTED ON MAST ARM
- EXTG GROUND BOX
- EXTG CONDUIT RUN
- POLE IDENTIFIER
- CONDUIT RUN NUMBER
- SIGN NUMBER
- PROPOSED MAST ARM POLE
- PROPOSED PEDESTRIAN POLE
- PROPOSED SIGNAL HEAD W/ BACKPLATE
- PROPOSED SIGNAL HEAD W/ BACKPLATE & LEFT TURN INDICATION
- PROPOSED CONTROLLER & CABINET
- PROPOSED ELECTRIC SERVICE PEDESTAL
- PROPOSED VIVDS CAMERA
- PROPOSED SIGN MOUNTED ON MAST ARM
- PROPOSED SIGN MOUNTED ON POST
- PROPOSED GROUND BOX (TYPE C)
- PROPOSED PEDESTRIAN SIGNAL & PUSH BUTTON
- PROPOSED CONDUIT RUN
- TEMPORARY TRAFFIC SIGNAL POLE



SIGNAL POLE PLACEMENT (FT)
MEASURED FROM CENTER OF POLE ALONG TEXAS AVE

POLE	℄ STATION	OFF-SET
P1	11+41.5	47.0' R
P2	10+52	47.7' R
P4	10+54.5	44.7' L
P5	11+59	63.6' L
P6	11+64	57.8' L

SIGNAL HEAD AND POLE PLACEMENT (FT)													
POLE NUMBER	A	B	C	D	D1	E	F	G	H	NO. OF HEADS	10' LUM ARM	FND. TYPE*	FND. DEPTH(FT)
P1	7.9	15	12	17	–	44	–	18	30	3	Y	36A	13
P2	16.3	20	11	11	–	55	–	18	30	3	N	48A	22
P4	12.5	26	14	12	–	44	–	18	30	3	N	36A	13
P5	16.3	16	12	12	–	40	–	18	30	3	Y	36A	13
P6	14.9	–	–	–	–	–	–	–	–	–	N	24A	6

*TxDOT TS-FD-99 STD SHEET

STATE OF TEXAS
JOE F. NIX
41591
REGISTERED PROFESSIONAL ENGINEER
11/16/15

SCALE: 1"=40'

REV	DATE	DESCRIPTION

DESIGNED BY:
DRAWN BY:
CHECKED BY:
DATE: December 2010
JOB NUMBER: E0382/02

CIVIL ENGINEERING CONSULTANTS
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City of Bryan, Texas
Traffic Signal Design

CITY OF BRYAN

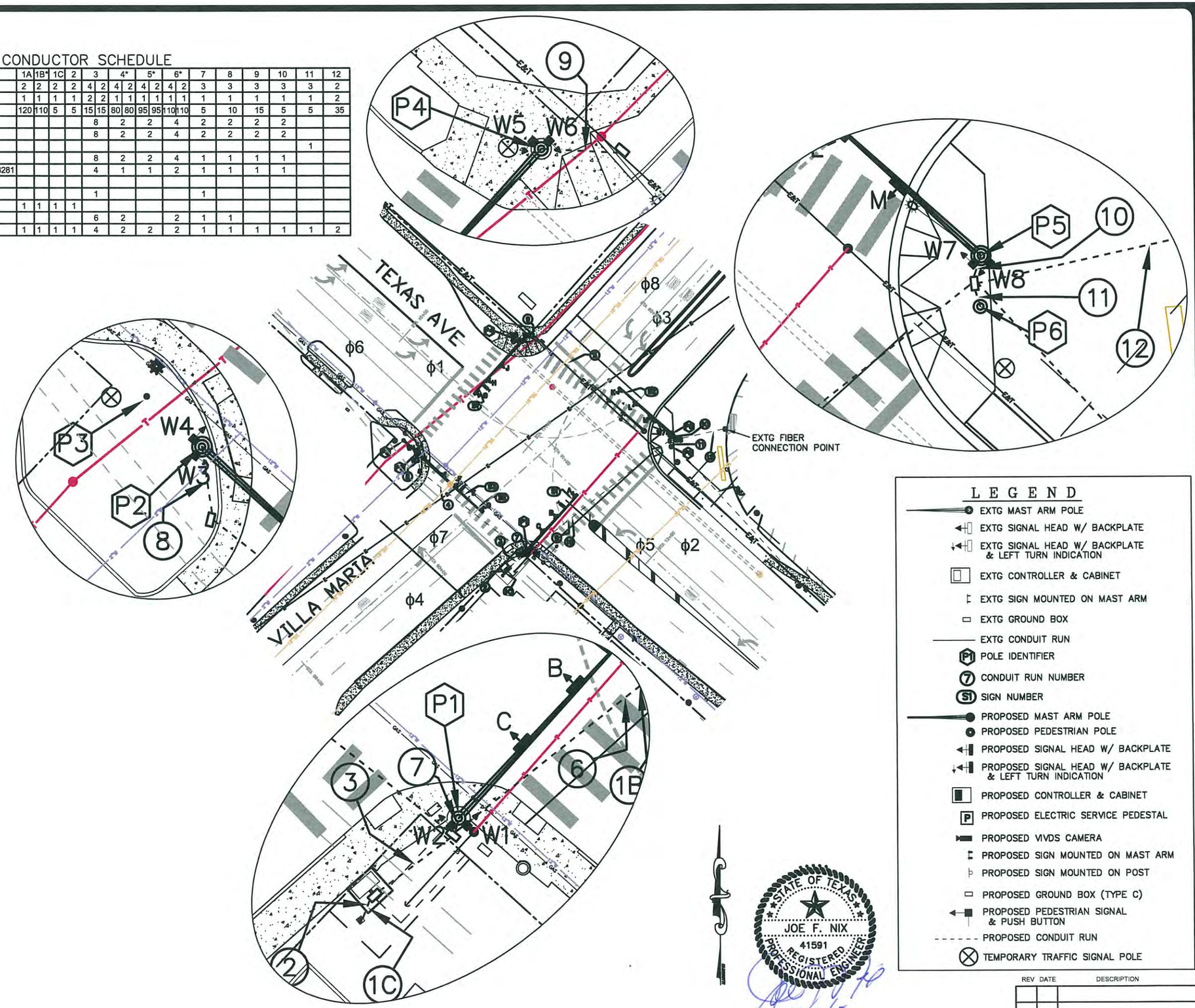
Traffic Signal
Villa Maria & Texas Avenue
Intersection Layout

5A

CONDUIT AND CONDUCTOR SCHEDULE

CONDUIT RUN NUMBER		1A	1B*	1C	2	3	4*		5*		6*		7	8	9	10	11	12
CONDUIT SIZE (INCHES)		2	2	2	2	4	2	4	2	4	2	4	2	3	3	3	3	3	2
CONDUIT QUANTITY		1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	2
CONDUIT LENGTH (FEET)		120	110	5	5	15	15	80	80	95	95	110	110	5	10	15	5	5	35
VEHICLE SIGNAL	7/C-#12 AWG					8		2		2		4		2	2	2	2		
PEDESTRIAN SIGNAL	5/C-#12 AWG					8		2		2		4		2	2	2	2		
PED PUSHBUTTON	2/C-#12 AWG																	1	
WHITE INDICATOR	2/C-#8 XHHW					8		2		2		4		1	1	1	1		
VIVDS	3/C-#16 AWG BELDEN 8281					4		1		1		2		1	1	1	1		
FIBER INTERCONNECT	(by others)																		
OPTICOM	Opticom cable					1								1					
POWER	2/C-#4 XHHW	1	1	1	1														
LUMINAIRE	2/C-#8 XHHW					6		2				2		1	1				
GROUND	1/C-#6 BARE	1	1	1	1	4		2		2		2		1	1	1	1	1	2

* - CONDUIT BORED UNDER ROADWAY



LEGEND

- EXTG MAST ARM POLE
- EXTG SIGNAL HEAD W/ BACKPLATE
- EXTG SIGNAL HEAD W/ BACKPLATE & LEFT TURN INDICATION
- EXTG CONTROLLER & CABINET
- EXTG SIGN MOUNTED ON MAST ARM
- EXTG GROUND BOX
- EXTG CONDUIT RUN
- POLE IDENTIFIER
- CONDUIT RUN NUMBER
- SIGN NUMBER
- PROPOSED MAST ARM POLE
- PROPOSED PEDESTRIAN POLE
- PROPOSED SIGNAL HEAD W/ BACKPLATE
- PROPOSED SIGNAL HEAD W/ BACKPLATE & LEFT TURN INDICATION
- PROPOSED CONTROLLER & CABINET
- PROPOSED ELECTRIC SERVICE PEDESTAL
- PROPOSED VIVDS CAMERA
- PROPOSED SIGN MOUNTED ON MAST ARM
- PROPOSED SIGN MOUNTED ON POST
- PROPOSED GROUND BOX (TYPE C)
- PROPOSED PEDESTRIAN SIGNAL & PUSH BUTTON
- PROPOSED CONDUIT RUN
- TEMPORARY TRAFFIC SIGNAL POLE

STATE OF TEXAS
JOE F. NIX
41591
REGISTERED PROFESSIONAL ENGINEER
11/16/15

REV	DATE	DESCRIPTION

DESIGNED BY:
DRAWN BY:
CHECKED BY:
DATE: December 2010
JOB NUMBER: E0368/202

CIVIL ENGINEERING CONSULTANTS
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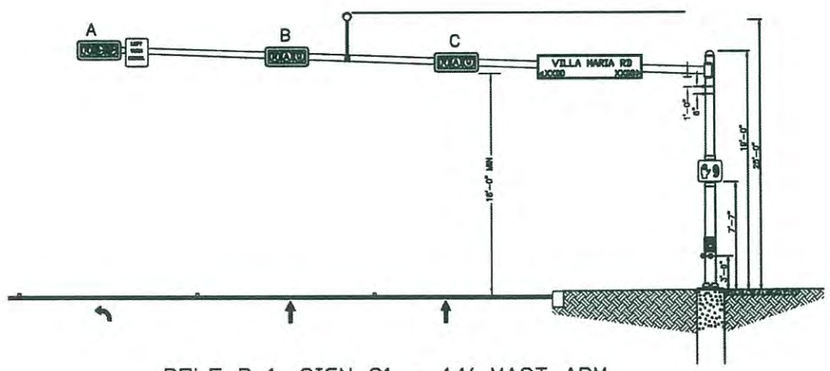
Engineering F-2214 & Surveying 100410

City of Bryan, Texas

Traffic Signal Design

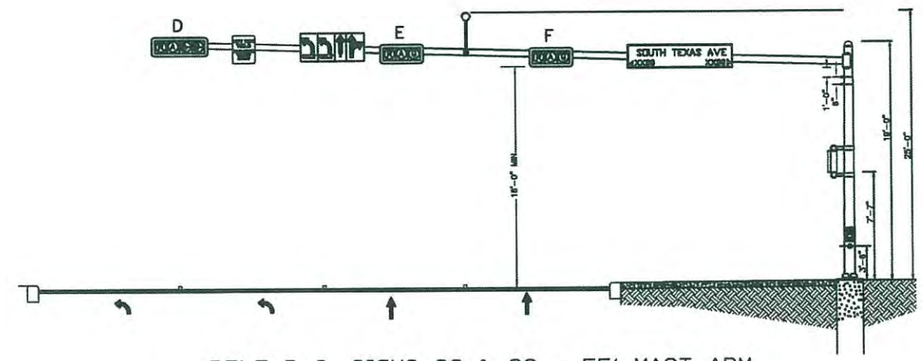
Traffic Signal
Villa Maria & Texas Avenue
Intersection Layout

5B



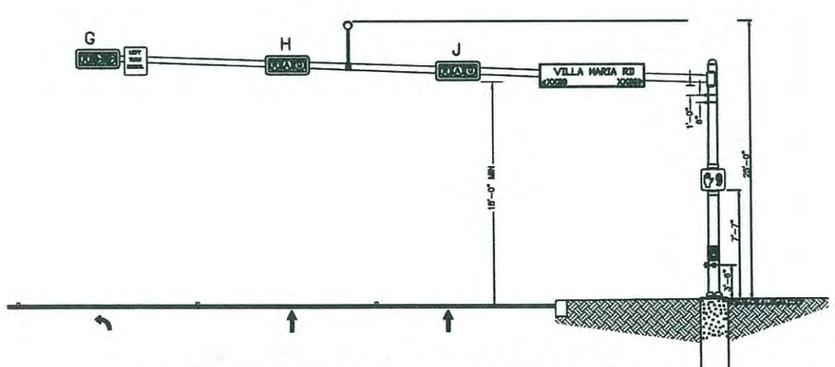
POLE P-1, SIGN S1 - 44' MAST ARM

N.T.S.



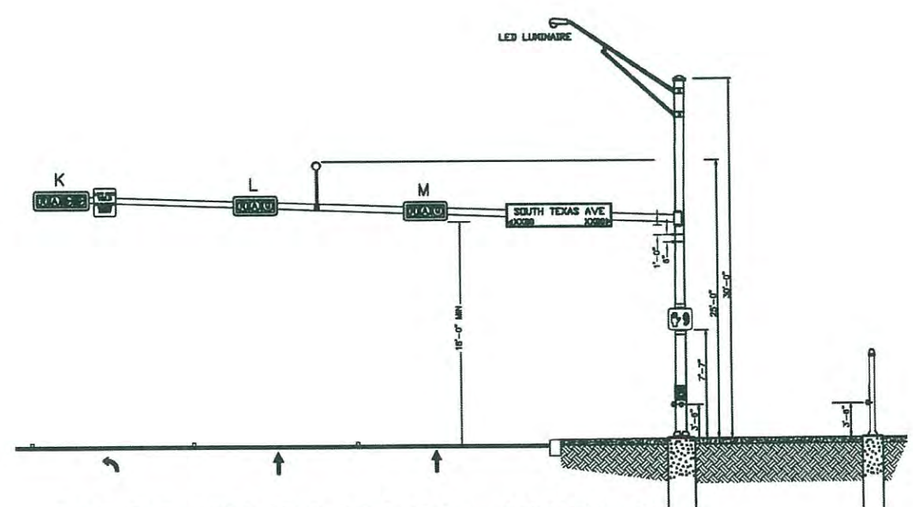
POLE P-2, SIGNS S2 & S3 - 55' MAST ARM

N.T.S.



POLE P-4, SIGN S1 - 44' MAST ARM

N.T.S.



POLE P-5, SIGN S2 & S3 & P-6 - 40' MAST ARM

N.T.S.

REV	DATE	DESCRIPTION

DESIGNED BY:
DRAWN BY:
CHECKED BY:
DATE: December 2010
JOB NUMBER: E0380202

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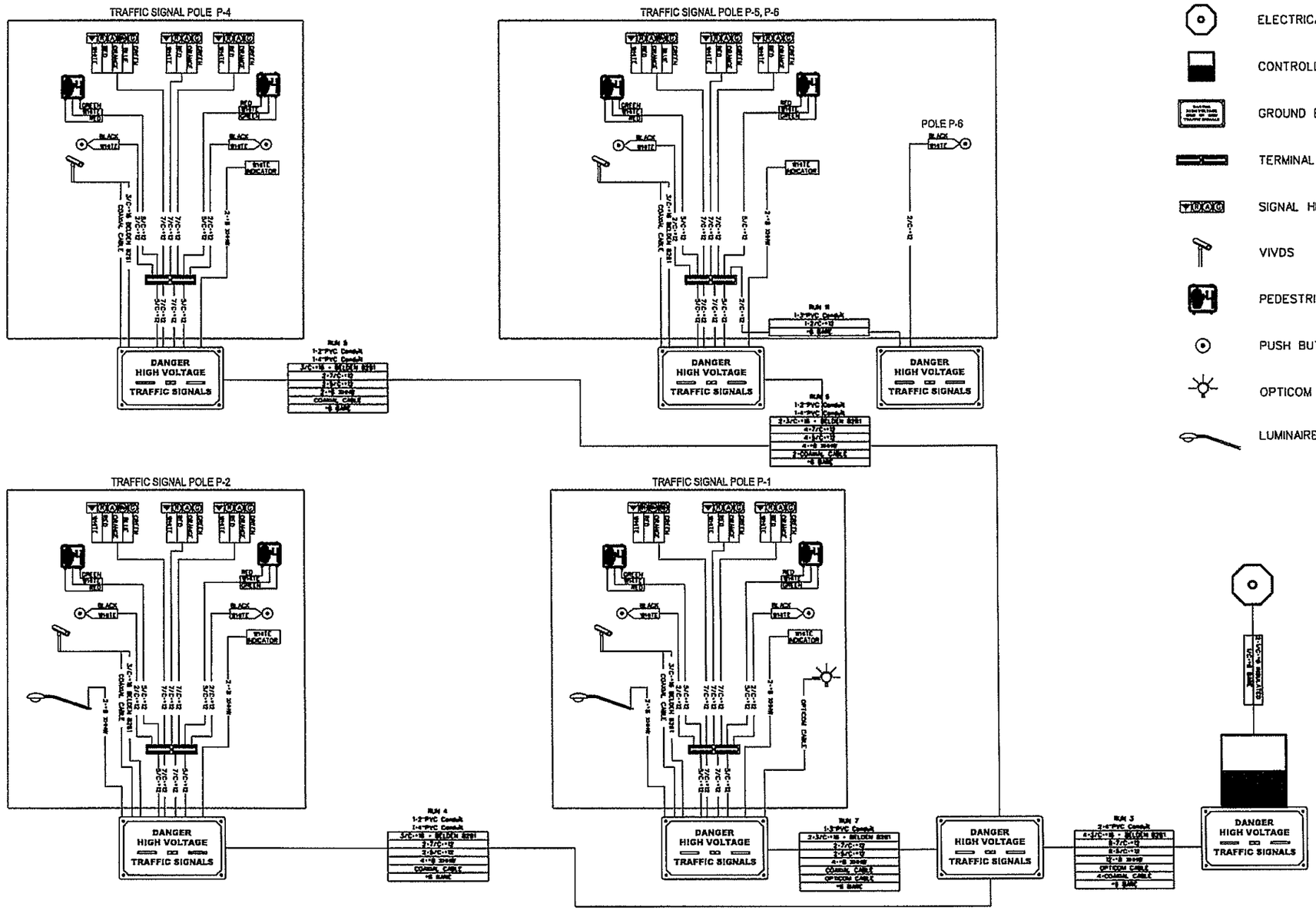
City of Bryan, Texas

Traffic Signal Design

CITY OF BRYAN

Traffic Signal
Villa Maria & Texas Avenue
Elevations



LEGEND

- ELECTRICAL SERVICE
- CONTROLLER
- GROUND BOX
- TERMINAL BLOCK
- SIGNAL HEAD
- VIVDS
- PEDESTRIAN SIGNAL
- PUSH BUTTON
- OPTICOM PRE-EMPT
- LUMINAIRE

DESIGNED BY:
DRAWN BY:
CHECKED BY:
DATE: December 2010
JOB NUMBER: E0065202

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City of Bryan, Texas

Traffic Signal Design

CITY OF BRYAN

Traffic Signal
Villa Maria & Texas Avenue
Wiring Diagram