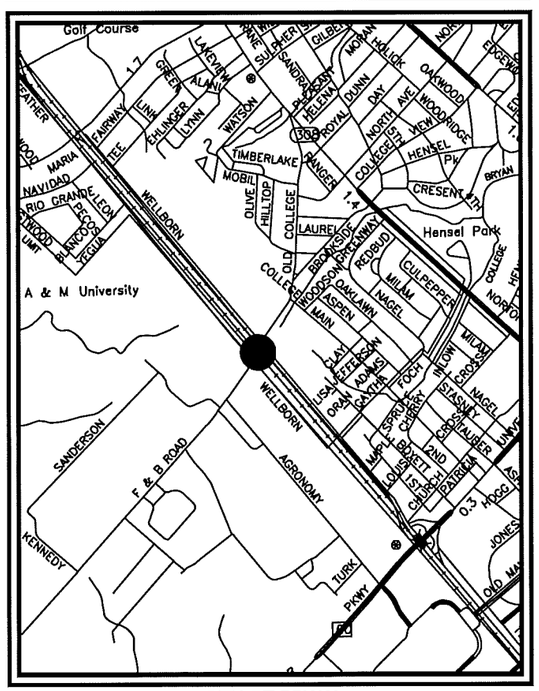
The City of Bryan, Texas

Construction Plans for

Wellborn Road at Old College Road and F&B Road

Traffic Signal Designs

LOCATION MAP:



CITY OF BRYAN
VICINITY MAP
N.T.S.

N

CITY OF BRYAN
The Good Life, Texas Style.™

STATE OF TEXAS
C. B. SHAMBURGER
86377
LICENSED
PROFESSIONAL ENGINEER

C. Brian Shamburger 6-18-13

FIRM # 928
KIMLEY-HORN AND ASSOCIATES, INC.

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY C. Brian Shamburger, P.E., PTOE LICENSE NO. 86377 ON JUNE 18, 2013.

RELEASED FOR CONSTRUCTION

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PREPARED FOR:
CITY OF BRYAN
300 SOUTH TEXAS AVE.
BRYAN, TEXAS 77840
Ph. (979) 209-5030
Fax (979) 209-5035

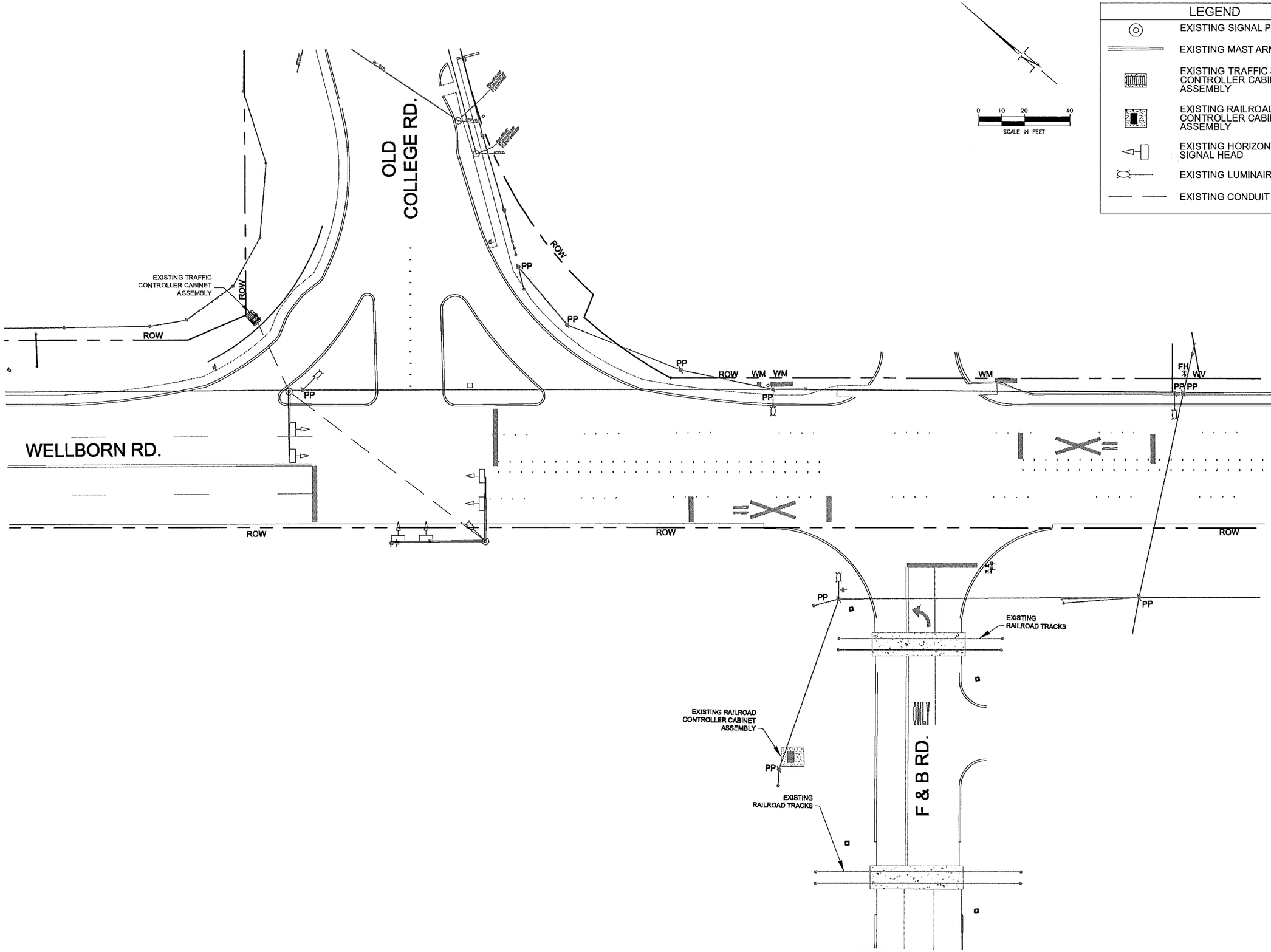
PREPARED BY:
Kimley-Horn and Associates, Inc.
801 CHERRY STREET, UNIT 11, SUITE 950
FORT WORTH, TEXAS 76102
TEXAS REGISTERED ENGINEERING FIRM F-928
Tel. No. (817) 335-6511
Fax No. (817) 335-5070

JUNE 2013

DESIGN SPEED = 45 MPH

WELLBORN ROAD AT OLD COLLEGE ROAD AND F&B ROAD - BRYAN, TEXAS

KHA JOB #: 061271604
CITY JOB #: 750-D7-1010



Kimley-Horn and Associates, Inc.

No.	Revision	By	Date

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6-18-13

City of Bryan, Texas

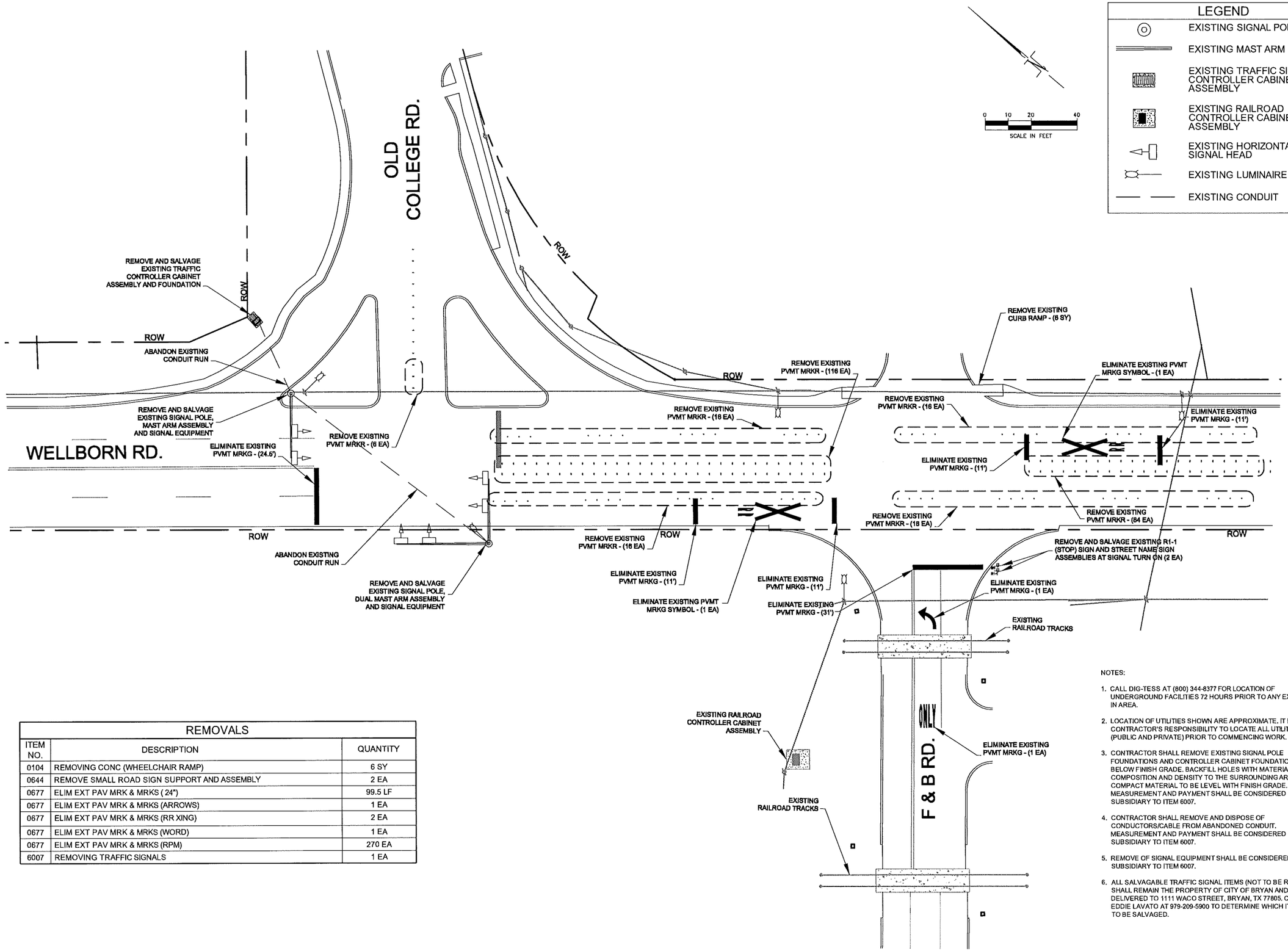
Traffic Signal Design

CITY OF BRYAN
The Good Life, Texas Style

Traffic Signal Wellborn Road at Old College Rd. and F & B Rd. Existing Conditions

DATE: JUNE 2013
DESIGN: EPE
DRAWN: EPE
CHECKED: CBS
KHA NO.: 061271604
CITY NO.: 750-D7-1010

SHEET
21



REMOVALS		
ITEM NO.	DESCRIPTION	QUANTITY
0104	REMOVING CONC (WHEELCHAIR RAMP)	6 SY
0644	REMOVE SMALL ROAD SIGN SUPPORT AND ASSEMBLY	2 EA
0677	ELIM EXT PAV MRK & MRKS (24")	99.5 LF
0677	ELIM EXT PAV MRK & MRKS (ARROWS)	1 EA
0677	ELIM EXT PAV MRK & MRKS (RR XING)	2 EA
0677	ELIM EXT PAV MRK & MRKS (WORD)	1 EA
0677	ELIM EXT PAV MRK & MRKS (RPM)	270 EA
6007	REMOVING TRAFFIC SIGNALS	1 EA

NOTES:

1. CALL DIG-TESS AT (800) 344-8377 FOR LOCATION OF UNDERGROUND FACILITIES 72 HOURS PRIOR TO ANY EXCAVATION IN AREA.
2. LOCATION OF UTILITIES SHOWN ARE APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES (PUBLIC AND PRIVATE) PRIOR TO COMMENCING WORK.
3. CONTRACTOR SHALL REMOVE EXISTING SIGNAL POLE FOUNDATIONS AND CONTROLLER CABINET FOUNDATION 2 FT. BELOW FINISH GRADE. BACKFILL HOLES WITH MATERIAL EQUAL IN COMPOSITION AND DENSITY TO THE SURROUNDING AREA AND COMPACT MATERIAL TO BE LEVEL WITH FINISH GRADE. MEASUREMENT AND PAYMENT SHALL BE CONSIDERED SUBSIDIARY TO ITEM 6007.
4. CONTRACTOR SHALL REMOVE AND DISPOSE OF CONDUCTORS/CABLE FROM ABANDONED CONDUIT. MEASUREMENT AND PAYMENT SHALL BE CONSIDERED SUBSIDIARY TO ITEM 6007.
5. REMOVE OF SIGNAL EQUIPMENT SHALL BE CONSIDERED SUBSIDIARY TO ITEM 6007.
6. ALL SALVAGABLE TRAFFIC SIGNAL ITEMS (NOT TO BE RELOCATED) SHALL REMAIN THE PROPERTY OF CITY OF BRYAN AND SHALL BE DELIVERED TO 1111 WACO STREET, BRYAN, TX 77805. CONTACT EDDIE LAVATO AT 979-209-5900 TO DETERMINE WHICH ITEMS ARE TO BE SALVAGED.

Kimley-Horn and Associates, Inc.
801 Cherry St., Suite 900, Unit 11, Ft. Worth, TX 76102 817-336-6511
Firm Registration No. F-928

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City of Bryan, Texas
Traffic Signal Design

CITY OF BRYAN
The Good Life, Texas Style

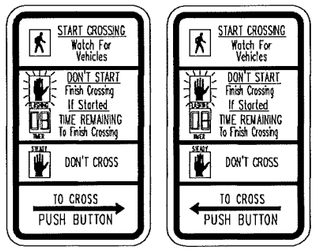
Traffic Signal Wellborn Road at Old College Rd. and F & B Rd. Removal Layout

DATE: JUNE 2013
DESIGN: EPE
DRAWN: EPE
CHECKED: CBS
KHA NO.: 061271604
CITY NO.: 750-07-1010

SHEET
22

File: K:\FTW_TPTO\061271604\CADD\SHEETS\Working_Items_Layout_SIGNAL.dwg 8/16/2013 9:13am
Xrefs: x-signal x-barrier1117 fx2154 Images: 546212.tif 546212.tif

TYPICAL POLE MOUNTED
APS PED PUSH BUTTON SIGNS



R10-3eR
(9"x15")
PB1, PB3, PB6
PB8, PB10

R10-3eL
(9"x15")
PB2, PB4, PB5
PB7, PB9

R10-12
(30"x36")
S4, S8

R3-2 LED
(36"x36")
S6

R3-1 LED
(36"x36")
S10

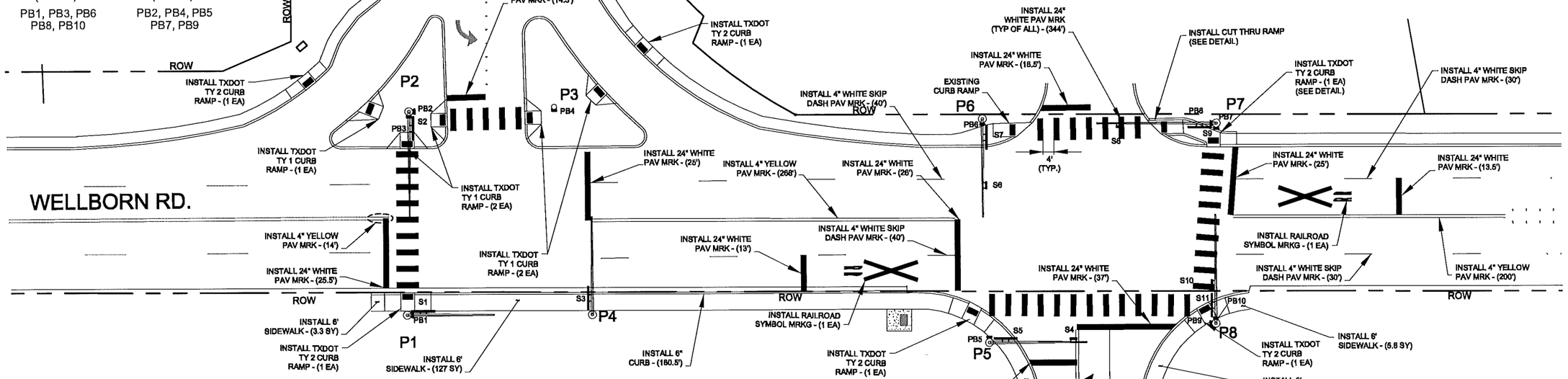
TRAFFIC SIGNAL SIGNS SUMMARY

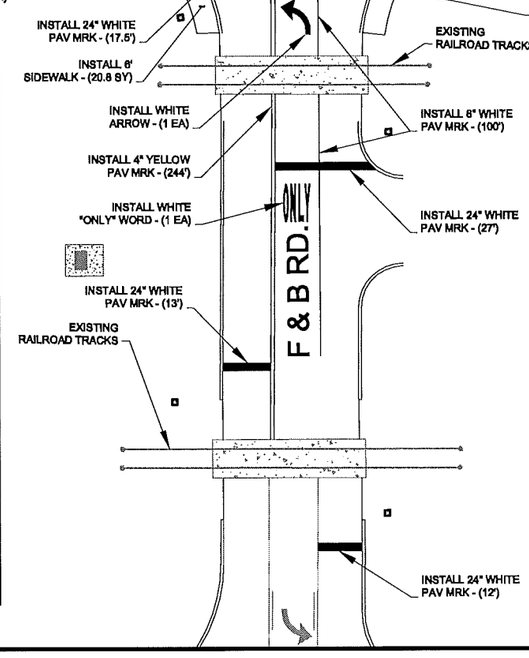
ID	TYPE	LEGEND	INSTALL	FURNISH & INSTALL	LOCATION
S1	SN	WELLBORN RD.		1	P-1 ARM
S2	SN	OLD COLLEGE RD.		1	P-2 ARM
S3	SN	OLD COLLEGE RD.		1	P-4 ARM
S4	R10-12	LEFT TURN YIELD ON GREEN		1	P-5 ARM
S5	SN	WELLBORN RD.		1	P-5 ARM
S6	R3-2 LED	NO LEFT TURN		1	P-6 ARM
S7	SN	F&B RD.		1	P-6 ARM
S8	R10-12	LEFT TURN YIELD ON GREEN		1	P-7 ARM
S9	SN	WELLBORN RD.		1	P-7 ARM
S10	R3-1 LED	NO RIGHT TURN		1	P-8 ARM
S11	SN	F&B RD.		1	P-8 ARM
		TOTAL		11	

ALL SIGNS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH TxDOT SIGN DETAILS AND SPECIAL SPECIFICATIONS. MEASUREMENT AND PAYMENT SHALL BE CONSIDERED SUBSIDIARY TO TXDOT ITEM 680.

LEGEND

- PROPOSED SIGNAL POLE
- PROPOSED MAST ARM
- EXISTING RAILROAD CONTROLLER CABINET ASSEMBLY
- PB1 — PROPOSED PUSH BUTTON AND NUMBER
- S7 — PROPOSED MAST ARM SIGN AND NUMBER



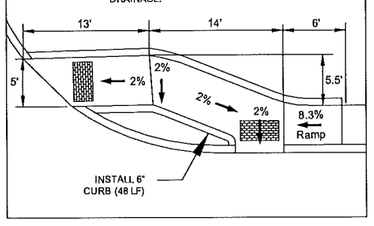


NOTES:

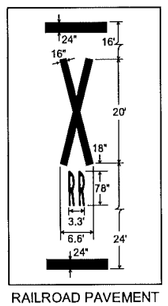
1. REFER TO TXDOT DETAIL SHEETS FOR ALL RAMPS AND PAVEMENT MARKING AND MARKER INSTALLATIONS.
2. REFER TO CITY OF BRYAN DETAIL SHEETS FOR ALL SIDEWALK AND CURB AND GUTTER INSTALLATIONS.
3. CONTRACTOR SHALL GRADE THE BACK SLOPE ALONG THE WEST SIDE OF WELLBORN RD. AS NECESSARY TO INSTALL THE SIGNAL CABINET AND SIDEWALK. MEASUREMENT AND PAYMENT SHALL BE CONSIDERED SUBSIDIARY TO ITEM 680.
4. CONTRACTOR SHALL TIE IN SKIP DASH PAVEMENT MARKING WITH EXISTING RPMS ON SOUTH SIDE OF WELLBORN RD.
5. CALL DIG-TEES AT (800) 344-8377 FOR LOCATION OF UNDERGROUND FACILITIES 72 HOURS PRIOR TO ANY EXCAVATION IN AREA.
6. LOCATION OF UTILITIES SHOWN ARE APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES (PUBLIC AND PRIVATE) PRIOR TO COMMENCING WORK.
7. ACCESSIBLE PEDESTRIAN SIGNALS (APS) SHALL BE INSTALLED FOR THIS PROJECT. THESE UNITS WILL NEED TO HAVE SPEECH FUNCTIONS INCLUDED IN ACCORDANCE WITH SECTION 4E.10, LINE 03, OF THE 2011 TEXAS MUTCD. THE APS SYSTEM SHALL BE A 2-WIRE SYSTEM WITH THE CENTRAL CONTROL UNIT (CCU) LOCATED INSIDE THE CONTROLLER CABINET. PUSH BUTTON STATIONS SHALL CONSIST OF A SINGLE FIXTURE THAT CONTAINS THE VIBROTACTILE 2" ADA-COMPLIANT PEDESTRIAN PUSH BUTTON WITH DIRECTIONAL TACTILE ARROW, A WEATHERPROOF SPEAKER, AND THE APPROPRIATE SIGN FOR EACH LOCATION (R10-3E L/R). THE PUSH BUTTON SIGNS SHALL BE 9" X 15".

NOTES:

1. THE CONTRACTOR SHALL GRADE THE CUT-THRU RAMP WITH 2% MAXIMUM CROSS SLOPES AS NECESSARY FOR PROPER DRAINAGE.



MODIFIED TXDOT TY 2 WHEELCHAIR RAMP AND CUT-THRU RAMP
(AT POLE P-7)



RAILROAD PAVEMENT MARKING SYMBOL DETAIL

CURB RAMPS & PAVEMENT MARKINGS

ITEM NO.	DESCRIPTION	QUANTITY
0360	CONC CURB (CITY STANDARD)	180.5 LF
0531	6' CONC SIDEWALK (CITY STANDARD)	177.4 SY
0531	CURB RAMPS (TY 1)	5 EACH
0531	CURB RAMPS (TY 2)	6 EACH
0531	CURB RAMPS (SPECIAL - CUT-THRU)	1 EACH
0666	REFL PAV MRK TY I (YELLOW) SOLID (4") (100 MIL)	726 LF
0666	REFL PAV MRK TY I (WHITE) SOLID (4") (100 MIL)	140 LF
0666	REFL PAV MRK TY I (WHITE) SOLID (8") (100 MIL)	100 LF
0666	REFL PAV MRK TY I (WHITE) SOLID (24") (100 MIL)	611.5 LF
0666	REFL PAV MRK TY I (WHITE) ARROW (100 MIL)	1 EACH
0666	REFL PAV MRK TY I (WHITE) RR XING (100 MIL)	2 EACH
0666	REFL PAV MRK TY I (WHITE) WORD (100 MIL)	1 EACH
0666	REFL PAV MRK TY II (YELLOW) SOLID (4")	726 LF
0666	REFL PAV MRK TY II (WHITE) SOLID (4")	140 LF
0666	REFL PAV MRK TY II (WHITE) SOLID (8")	100 LF
0666	REFL PAV MRK TY II (WHITE) SOLID (24")	611.5 LF
0666	REFL PAV MRK TY II (WHITE) ARROW	1 EACH
0666	REFL PAV MRK TY II (WHITE) RR XING	2 EACH
0666	REFL PAV MRK TY II (WHITE) WORD	1 EACH
0678	PAV SURF PREP FOR MRK (4")	866 LF
0678	PAV SURF PREP FOR MRK (8")	100 LF
0678	PAV SURF PREP FOR MRK (24")	611.5 LF
0678	PAV SURF PREP FOR MRK (ARROW)	1 EACH
0678	PAV SURF PREP FOR MRK (RR XING)	2 EACH
0678	PAV SURF PREP FOR MRK (WORD)	1 EACH

ALL PAVEMENT MARKINGS AND MARKERS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH TxDOT PAVEMENT MARKING DETAILS.

Kimley-Horn and Associates, Inc.
801 Cherry St., Suite 950, Unit 15, Ft. Worth, TX 76102 817-332-6551
Firm Registration No. F-928

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Traffic Signal Design

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Traffic Signal Wellborn Road at Old College Rd. and F & B Rd. Installation Layout

DATE: JUNE 2013
DESIGN: EPE
DRAWN: EPE
CHECKED: CBS
KHA NO.: 061271604
CITY NO.: 750-07-1010

SHEET
23

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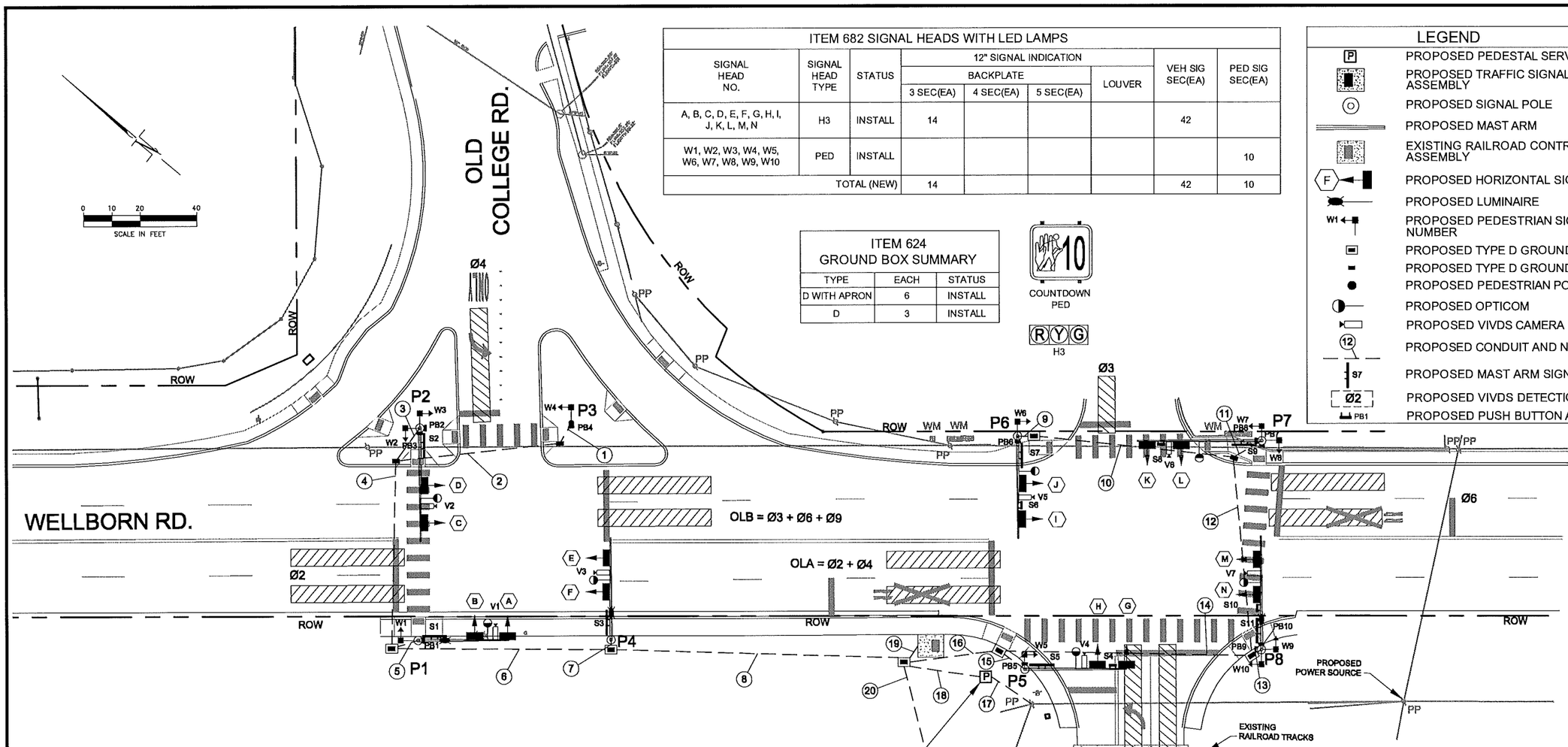


ITEM 682 SIGNAL HEADS WITH LED LAMPS

SIGNAL HEAD NO.	SIGNAL HEAD TYPE	STATUS	12" SIGNAL INDICATION				VEH SIG SEC(EA)	PED SIG SEC(EA)
			BACKPLATE			LOUVER		
			3 SEC(EA)	4 SEC(EA)	5 SEC(EA)			
A, B, C, D, E, F, G, H, I, J, K, L, M, N	H3	INSTALL	14				42	
W1, W2, W3, W4, W5, W6, W7, W8, W9, W10	PED	INSTALL						10
TOTAL (NEW)			14				42	10

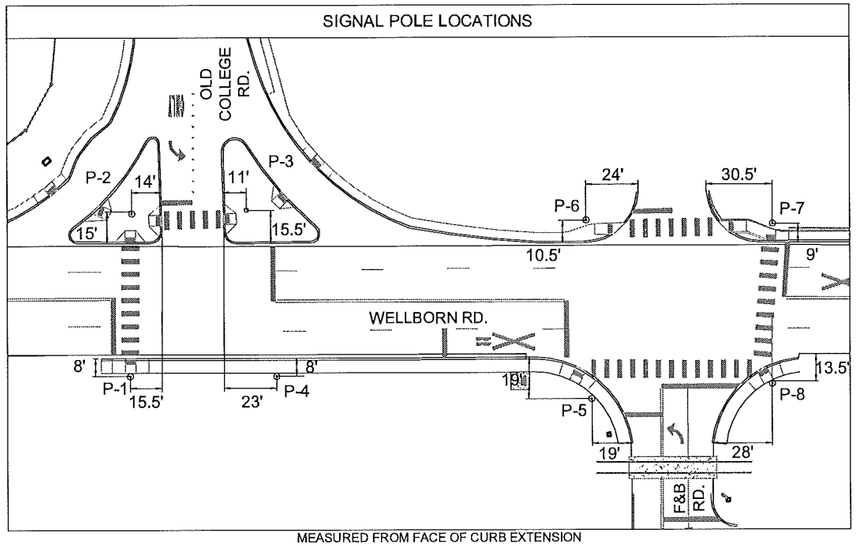
ITEM 624 GROUND BOX SUMMARY

TYPE	EACH	STATUS
D WITH APRON	6	INSTALL
D	3	INSTALL

LEGEND

- PROPOSED PEDESTAL SERVICE
- PROPOSED TRAFFIC SIGNAL CONTROLLER ASSEMBLY
- PROPOSED SIGNAL POLE
- PROPOSED MAST ARM
- EXISTING RAILROAD CONTROLLER CABINET ASSEMBLY
- PROPOSED HORIZONTAL SIGNAL HEAD
- PROPOSED LUMINAIRE
- PROPOSED PEDESTRIAN SIGNAL HEAD NUMBER
- PROPOSED TYPE D GROUND BOX W/APRON
- PROPOSED TYPE D GROUND BOX
- PROPOSED PEDESTRIAN POLE
- PROPOSED OPTICOM
- PROPOSED VIVDS CAMERA
- PROPOSED CONDUIT AND NUMBER
- PROPOSED MAST ARM SIGN AND NUMBER
- PROPOSED VIVDS DETECTION ZONE
- PROPOSED PUSH BUTTON AND NUMBER

SIGNAL POLE LOCATIONS



MEASURED FROM FACE OF CURB EXTENSION

MAST ARM ASSEMBLY SUMMARY

POLE NUMBER	MAST ARM LENGTH (FT)	NO. OF HEADS	10' LUM ARM	FND. TYPE	FND. DEPTH (FT)
P-1	32	2	1	30-A	11
P-2	40	2	-	36-A	13
P-3	PEDESTAL POLE	-	-	24-A	6
P-4	36	2	1	36-A	13
P-5	36	2	-	36-A	13
P-6	36	2	-	36-A	13
P-7	44	2	-	36-A	13
P-8	40	2	1	36-A	13

NOTES:

1. 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, THE CITY OF BRYAN AT 979-209-5936, AND ALL AFFECTED UTILITY COMPANIES FOR UTILITY LOCATES PRIOR TO ANY DRILLING OR EXCAVATION ON THE PROJECT.
2. THE SERVICE PANEL SHALL BE TYPE D(120/240)060(NS)SS(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).
3. RED-SIGNAL INDICATION CONFIRMATION LIGHTS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR ON POLES P-1, P-2, P-4, P-5, P-6, P-7, AND P-8.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL BATTERY BACK-UP (BBU) SYSTEM AND HOUSING COMPATIBLE WITH INTELIGHT X-2, TS 2 TYPE 2 CONTROLLER AND NEMA CABINET SIZE 6, BASE MOUNT, 16 POSITION, WITH TIMER, WITHOUT LOOP DETECTORS. PAYMENT WILL BE AT THE UNIT PRICE, IN ACCORDANCE WITH SPECIAL SPECIFICATION ITEM 8317 "BATTERY BACK-UP SYSTEM FOR SIGNAL CABINETS".
5. THE CONTRACTOR SHALL STAKE ALL SIGNAL POLE LOCATIONS, CONTROLLER FOUNDATION LOCATION, AND GROUND BOX LOCATIONS AFTER UTILITY LOCATES ARE FINALIZED. THE CITY MUST APPROVE THESE LOCATIONS PRIOR TO ANY DRILLING OR EXCAVATION ON THE PROJECT.
6. THE CONTRACTOR 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) ITERIS VEHICLE IMAGE VEHICLE DETECTION SYSTEM (VIVDS) CAMERAS, CABLE, AND MOUNTING HARDWARE
   - (C) OPTICOM DETECTORS, LEAD-IN CABLE, AND CABINET EQUIPMENT
   - (D) BACK PLATES AND LED VEHICLE SIGNAL SECTIONS
   - (E) COUNT DOWN PED DISPLAYS
   - (F) ELECTRICAL PEDESTAL ENCLOSURE AND SERVICE PANEL
   - (G) TRAFFIC SIGNAL AND PEDESTAL POLE ASSEMBLIES AND LUMINAIRE ARMS
   - (H) ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS
   - (I) STREET NAME SIGN BLADES
   - (J) INTELIGHT X-2, TS2 TYPE 2 SIGNAL CONTROLLER
7. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL LUMINARIES, WHICH SHALL BE 250 WATT HIGH PRESSURE SODIUM (HPS) WITH A CLEAR FLAT-GLASS INSERT.
8. THE CONTRACTOR SHALL GRADE THE BACK SLOPE ALONG THE WEST SIDE OF WELLBORN RD. AS NECESSARY TO INSTALL THE SIGNAL CABINET AND SIDEWALK. MEASUREMENT AND PAYMENT SHALL BE CONSIDERED SUBSIDIARY TO ITEM 680.
9. THE CONTRACTOR SHALL NOTIFY EDDIE LAVATO AT 979-209-5900 AT LEAST 48 HOURS PRIOR TO THE SIGNAL TURN-ON. A SIGNAL TECHNICIAN FROM THE CITY SHALL BE PRESENT WHEN THE NEW SIGNAL IS PLACED INTO OPERATION. THE INTERSECTION SHALL REMAIN IN 3-WAY FLASH FOR AT LEAST 3 DAYS PRIOR TO BEING PLACED IN STOP-AND-GO-OPERATION. DURING THIS TIME, THE CITY WILL PROVIDE ALL TIMING FOR THE CONTROLLER. PROPER TRAFFIC CONTROL SHOULD BE COORDINATED WITH THE CITY OF BRYAN POLICE.

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SHEET
24

CONDUIT / CABLE RUNS

RUN NO.	CONDUIT STATUS	1.5" RM MOUNTED	2" PVC TRENCHED	2" PVC BORED	3" PVC TRENCHED	3" PVC BORED	4" PVC TRENCHED	4" PVC BORED	CABLE STATUS	NO.4 XHHW WIRE	NO. 6 XHHW WIRE	NO. 6 BARE WIRE	NO. 8 XHHW WIRE (LUMINAIRE)	VIVDS CABLE	OPTICOM CABLE	6/C #12 RR CABLE	10 CNDR 14 AWG	20 CNDR 14 AWG	LENGTH OF RUN	RUN NO.
	ITEM 618 SIZE/TYPE CONDUIT (FT)									ITEM 620 ELECTRICAL CONDUCTORS							ITEM 684 TYPE A			
1	I							10		I			1				1		10	1
2	I								65	I			1				1		65	2
3	I							20		I			1	1	1			1	20	3
	I*		20																20	
4	I								70	I			1	1	1		1	1	70	4
	I*			70															70	
5	I							15		I			1	2	1	1		1	15	5
	I*		15																15	
6	I							80		I			1	2	2	2	1	2	80	6
	I*		80																80	
7	I							10		I			1	4	1	1		1	10	7
	I*		10																10	
8	I							105		I			1	2	3	3	1	3	105	8
	I*		105																105	
9	I							10		I			1		1	1		1	10	9
	I*		10																10	
10	I								75	I			1		1	1		1	75	10
	I*			75															75	
11	I							15		I			1		1	1		1	15	11
	I*		15																15	
12	I								75	I			1		2	2		2	75	12
	I*			75															75	
13	I							10		I			1	2	1	1		1	10	13
	I*		10																10	
14	I								95	I			1	2	3	3		3	95	14
	I*			95															95	
15	I							15		I			1		1	1		1	15	15
	I*		15																15	
16	I							40		I			1	2	4	4		4	40	16
	I*		40																40	
17	I							25		I	2		1						25	17
18	I							35		I	2		1	4					35	18
19	I		15							I	3								15	19
	I							15		I			1		7	7			15	
	I							15		I			1				1	7	15	
20	I								95	I			1				1		95	20
TOT. (NEW)			335	315			420	475		165		895	870	1,415	1,415	95	345	1,415		

STATUS: E = EXISTING, I = INSTALL,* = FUTURE USE

NOTE: CONDUIT RUN 20 SHALL BE BORED A MINIMUM OF 3 FEET BELOW BASE OF RAIL.

CABLE/WIRE INSIDE POLE (FEET)

POLE NUMBER	ITEM 684 TY-A CABLE		ITEM 620	VIVDS CABLE	OPTICOM CABLE
	5 CNDR 14 AWG	7 CNDR 14 AWG	NO. 12 XHHW *		
P-1	15	95	140	50	50
P-2	30	100	50	50	50
P-3	15	-	-	-	-
P-4	-	90	140	50	45
P-5	15	105	50	45	40
P-6	15	90	50	45	35
P-7	30	115	50	55	45
P-8	30	95	140	50	45
TOTAL	150	690	620	345	310

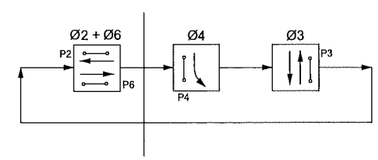
* FOR LUMINAIRES AND RED-SIGNAL INDICATORS

PEDESTRIAN DETAILS

PED INDICATION	LOCATION	STATUS	PED BUTTONS (EA)
Ø2	P-5, P-8	INSTALL	2
Ø3	P-7, P-8	INSTALL	2
Ø4	P-1, P-2	INSTALL	2
Ø6	P-2, P-3, P-6, P-7	INSTALL	4
		TOTAL	10

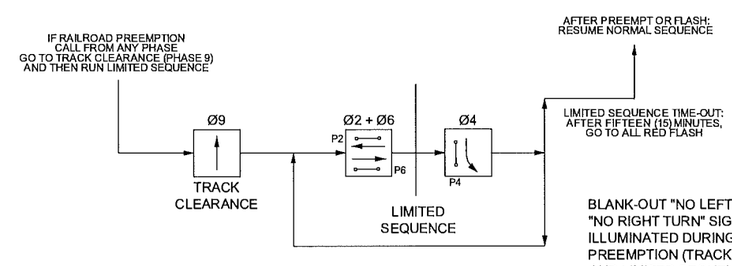
CABLE TERMINATION CHART

CNDR. NO.	CONDUCTOR COLOR	CABLE 1 20 CNDR. FROM P-1 TO CNTRL.	CABLE 2 20 CNDR. FROM P-2 TO CNTRL.	CABLE 3 10 CNDR. FROM P-3 TO CNTRL.	CABLE 4 20 CNDR. FROM P-4 TO CNTRL.	CABLE 5 20 CNDR. FROM P-5 TO CNTRL.	CABLE 6 20 CNDR. FROM P-6 TO CNTRL.	CABLE 7 20 CNDR. FROM P-7 TO CNTRL.	CABLE 8 20 CNDR. FROM P-8 TO CNTRL.	CNDR. NO.
1	BLACK	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	1
2	WHITE	SIGNAL COM	SIGNAL COM	SPARE	SIGNAL COM	SIGNAL COM	SIGNAL COM	SIGNAL COM	SIGNAL COM	2
3	RED	SH A, B R	SH C, D R	SH W4 DW	SH E, F R	SH G, H R	SH I, J R	SH K, L R	SH M, N R	3
4	GREEN	SH A, B G	SH C, D G	SH W4 W	SH E, F G	SH G, H G	SH I, J G	SH K, L G	SH M, N G	4
5	ORANGE	SH A, B Y	SH C, D Y	SH W4 PED CALL	SH E, F Y	SH G, H Y	SH I, J Y	SH K, L Y	SH M, N Y	5
6	BLUE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	6
7	WHITE/BLACK	PB COM	PB COM	PB COM	SPARE	PB COM	PB COM	PB COM	PB COM	7
8	RED/BLACK	SPARE	SH W3 DW	SPARE	SPARE	SH W5 DW	SH W6 DW	SH W7 DW	SH W10 DW	8
9	GREEN/BLACK	SPARE	SH W3 W	APS COMMON	SPARE	SH W5 W	SH W6 W	SH W7 W	SH W10 W	9
10	ORANGE/BLACK	SPARE	SH W3 PED CALL	APS POWER	SPARE	SH W5 PED CALL	SH W6 PED CALL	SH W7 PED CALL	SH W10 PED CALL	10
11	BLUE/BLACK	SPARE	SPARE		SPARE	SPARE	SPARE	SPARE	SPARE	11
12	BLACK/WHITE	SPARE	SPARE		SPARE	SPARE	SPARE	SPARE	SPARE	12
13	RED/WHITE	SPARE	SPARE		SPARE	SPARE	SPARE	SPARE	SPARE	13
14	GREEN/WHITE	SH W1 W	SH W2 W		SPARE	SPARE	SPARE	SH W8 W	SH W9 W	14
15	BLUE/WHITE	SH W1 DW	SH W2 DW		SPARE	SPARE	SPARE	SH W8 DW	SH W9 DW	15
16	BLACK/RED	SH W1 PED CALL	SH W2 PED CALL		SPARE	SPARE	SPARE	SH W8 PED CALL	SH W9 PED CALL	16
17	WHITE/RED	Ø4 RED	SPARE		Ø2 RED	Ø3 RED	Ø6 RED	SPARE	SPARE	17
18	ORANGE/RED	APS COMMON	APS COMMON		SPARE	APS COMMON	APS COMMON	APS COMMON	APS COMMON	18
19	BLUE/RED	APS POWER	APS POWER		SPARE	APS POWER	APS POWER	APS POWER	APS POWER	19
20	RED/GREEN	SPARE	SPARE		SPARE	SPARE	BLANK-OUT SIGN S6	SPARE	BLANK-OUT SIGN S10	20



OLA = Ø2 + Ø4
OLB = Ø3 + Ø6+ Ø9
OLC = Ø3 + Ø9

NORMAL PHASE SEQUENCE



BLANK-OUT "NO LEFT TURN" AND "NO RIGHT TURN" SIGNS SHALL BE ILLUMINATED DURING RAILROAD PREEMPTION (TRACK CLEARANCE AND LIMITED SEQUENCE).

PREEMPTION PHASE SEQUENCE

PROPOSED ELECTRICAL SERVICE DATA

SERVICE TYPE	ELECTRICAL SERVICE DESCRIPTION SEE ED(4)	SERVICE CONDUIT SIZE (RMC)	SERVICE CONDUCTORS NO./SIZE	MAIN DISCONNECT CKT. BKR. POLE/AMP	TWO-POLE CONTACTOR AMPS	PANELBD./ LOADCENTER AMP RATING (MIN.)	CIRCUIT NO.	BRANCH CKT. BRK. POLE/AMPS	KVA LOAD
TYPE D	D (120/240) 060 (NS) SS (E) PS (U)	1 1/4"	3/#4	2P/60	30	100	T.S. Lighting Photocell	1P/50 2P/15 1P/15	5.8

Kimley-Horn and Associates, Inc.
801 Cherry St., Suite 950, Unit 11, Ft. Worth, TX 76102 817-335-6511
Firm Registration No. F-928

No.	Revision	By	Date

STATE OF TEXAS
C. B. SHAMBURGER
86377
LICENSED
PROFESSIONAL ENGINEER
6-18-13

City of Bryan, Texas

Traffic Signal Design

CITY OF BRYAN
The Good Life, Texas Style.

Traffic Signal
Wellborn Road at
Old College Rd. and F & B Rd.
Summary Charts

DATE: JUNE 2013
DESIGN: EPE
DRAWN: EPE
CHECKED: CBS
KHA NO.: 061271604
CITY NO.: 750-D7-1010

SHEET
25

File: K:\FTW_TPTO\061271604\CADD\SHEETS\Summary_Charts.dwg 6/18/2013 9:13am
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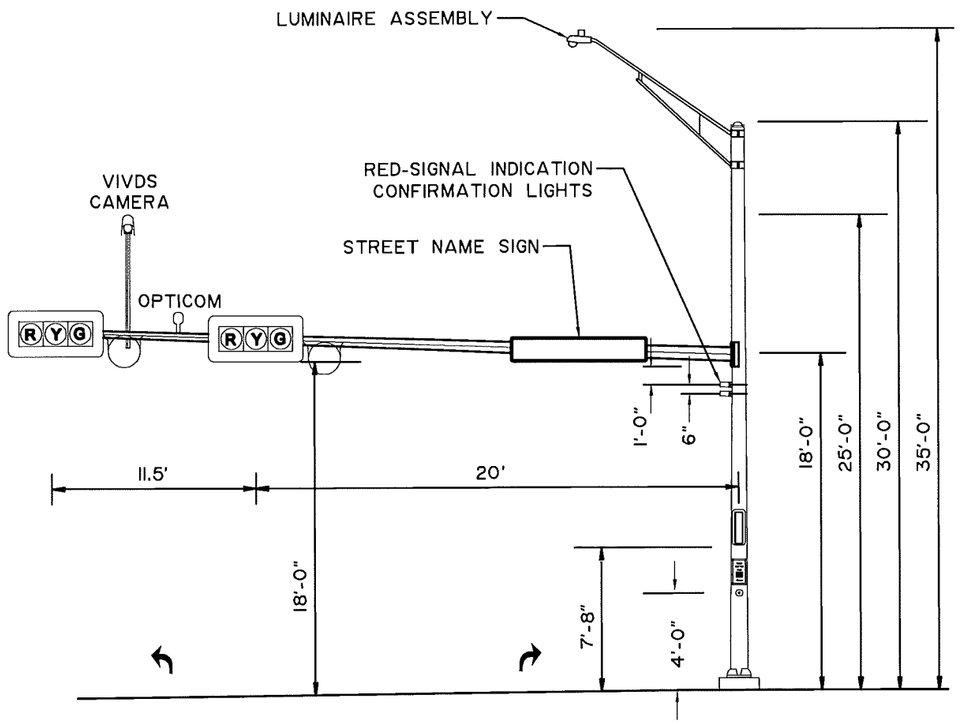
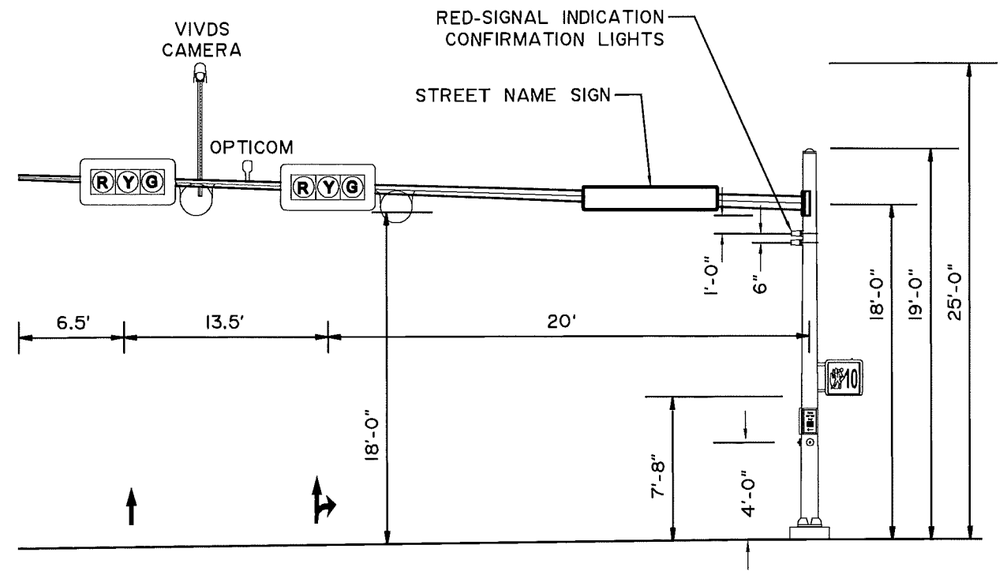
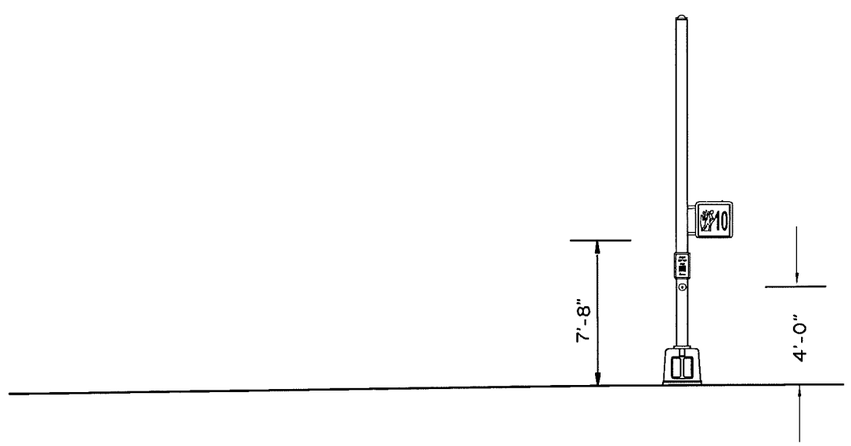
Images:



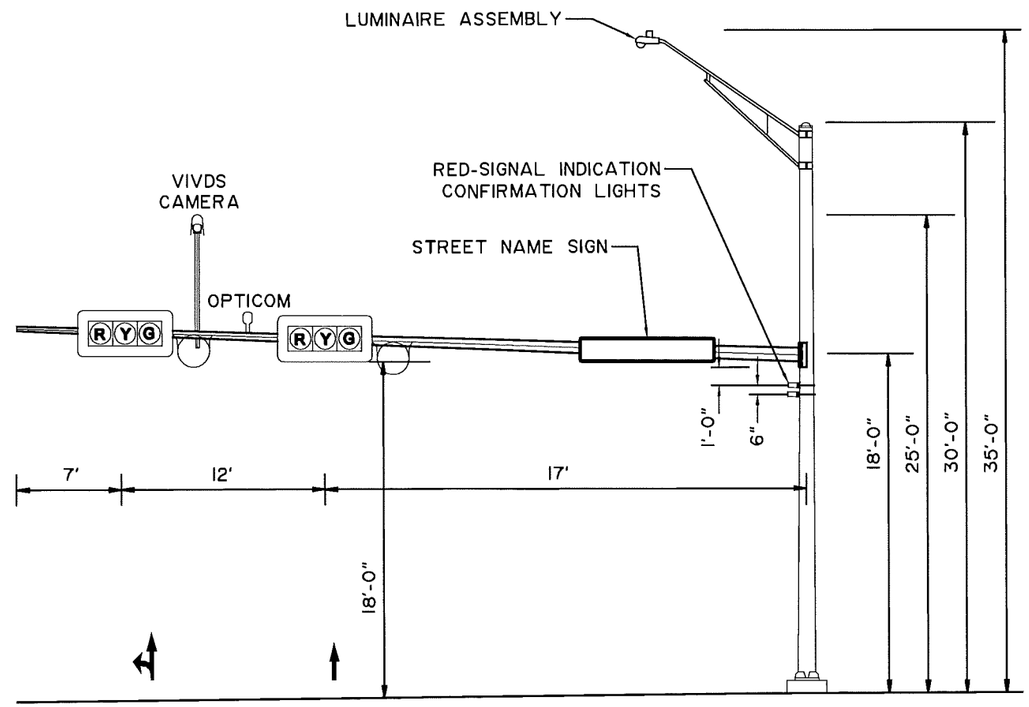
POLE 1 - 32' SINGLE MAST ARM



POLE 2 - 40' SINGLE MAST ARM



POLE 3 - PEDESTAL POLE



POLE 4 - 36' SINGLE MAST ARM

Kimley-Horn and Associates, Inc.
801 Cherry St., Suite 900, Unit 11, Ft. Worth, TX 76102 817-332-6351
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STATE OF TEXAS
C. B. SHAMBURGER
86377
LICENSED
PROFESSIONAL ENGINEER

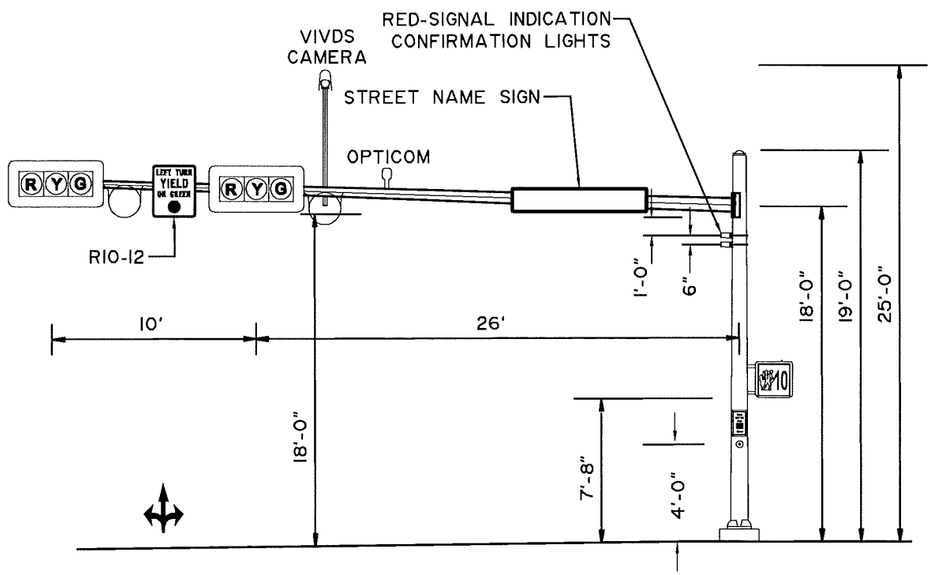
City of Bryan, Texas
Traffic Signal Design

CITY OF BRYAN
The Good Life, Texas Style.

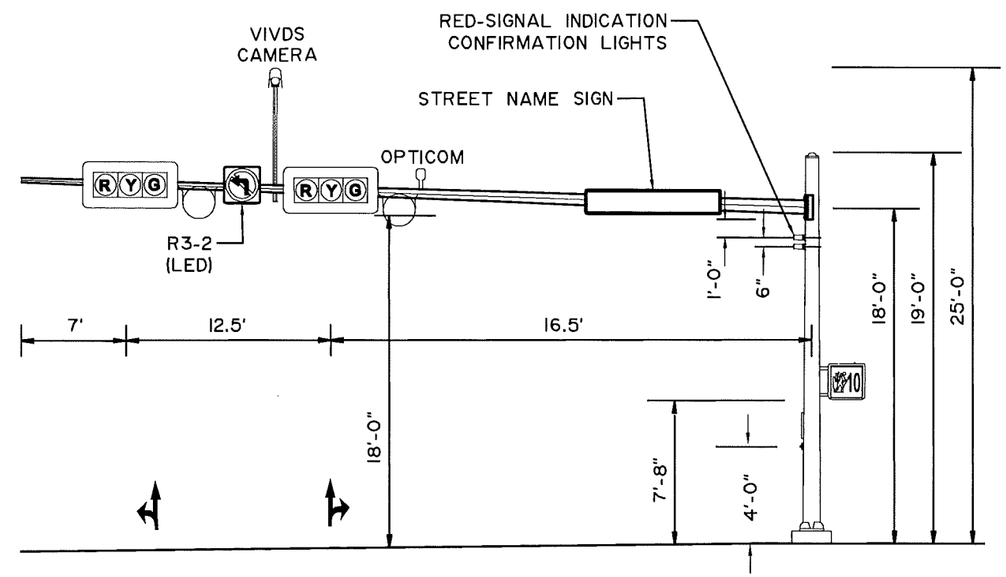
Traffic Signal
Wellborn Road at
Old College Rd.
Signal Elevations

DATE: JUNE 2013
DESIGN: EPE
DRAWN: EPE
CHECKED: CBS
KHA NO.: 061271604
CITY NO.: 750-07-1010

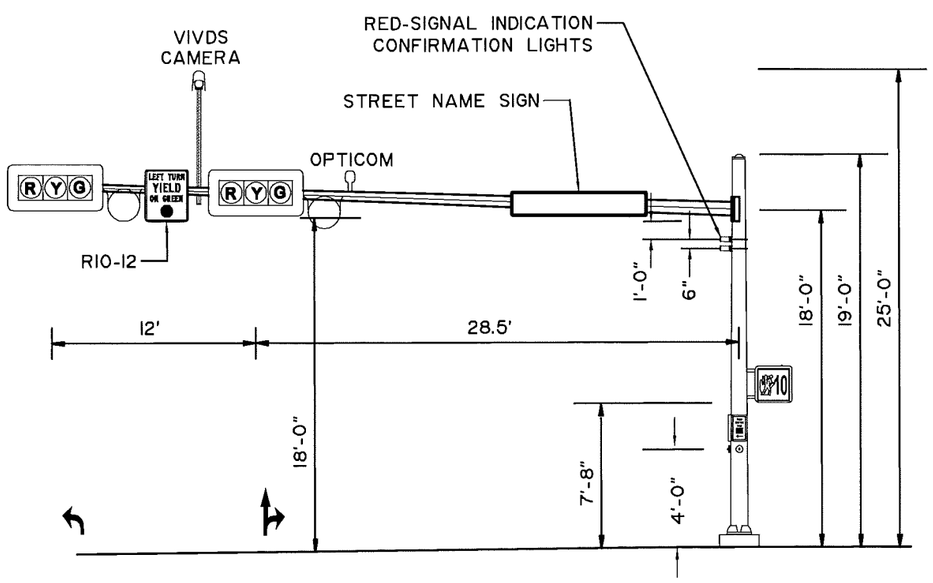
SHEET
26



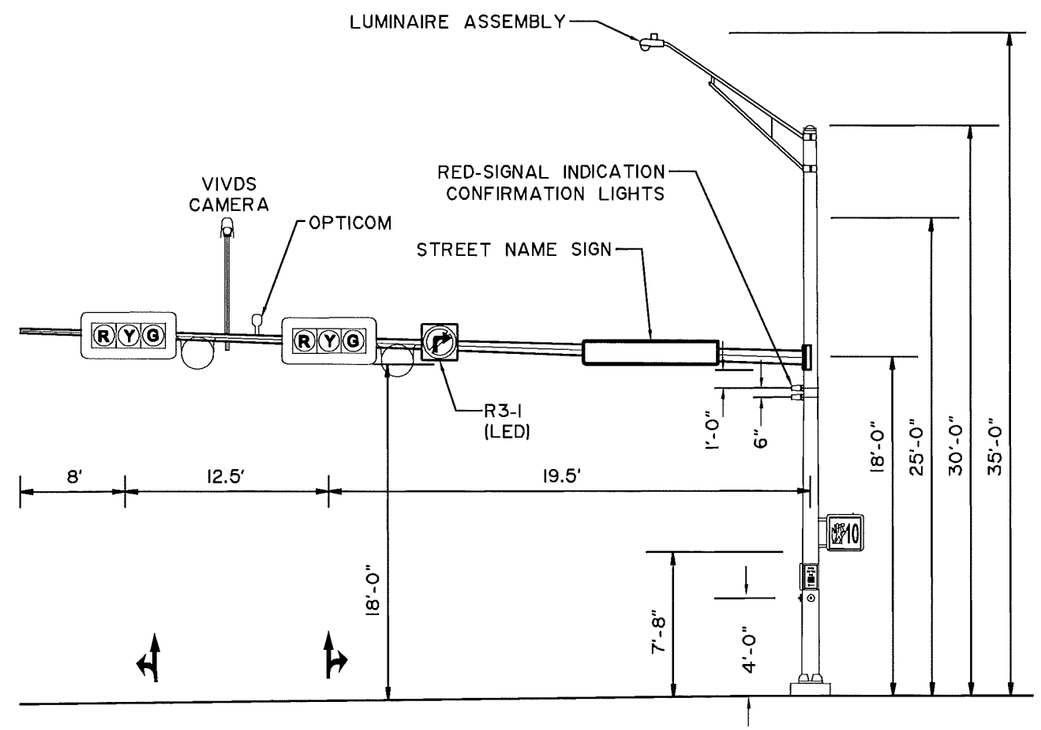
POLE 5 - SIGN S4, 36' SINGLE MAST ARM



POLE 6 - SIGN S6, 36' SINGLE MAST ARM



POLE 7 - SIGN S8, 44' SINGLE MAST ARM



POLE 8 - SIGN S10, 40' SINGLE MAST ARM

Kimley-Horn and Associates, Inc.
801 Cherry St., Suite 900, Unit 11, Ft. Worth, TX 76102 817-332-6651
Firm Registration No. F-928

No.	Revision	By	Date

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STATE OF TEXAS
C. B. SHAMBURGER
86377
LICENSED
PROFESSIONAL ENGINEER

City of Bryan, Texas
Traffic Signal Design

CITY OF BRYAN
The Good Life, Texas Style

Traffic Signal
Wellborn Road at F&B Rd.
Signal Elevations

DATE: JUNE 2013
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KHA NO.: 061271604
CITY NO.: 750-07-1010

SHEET
27