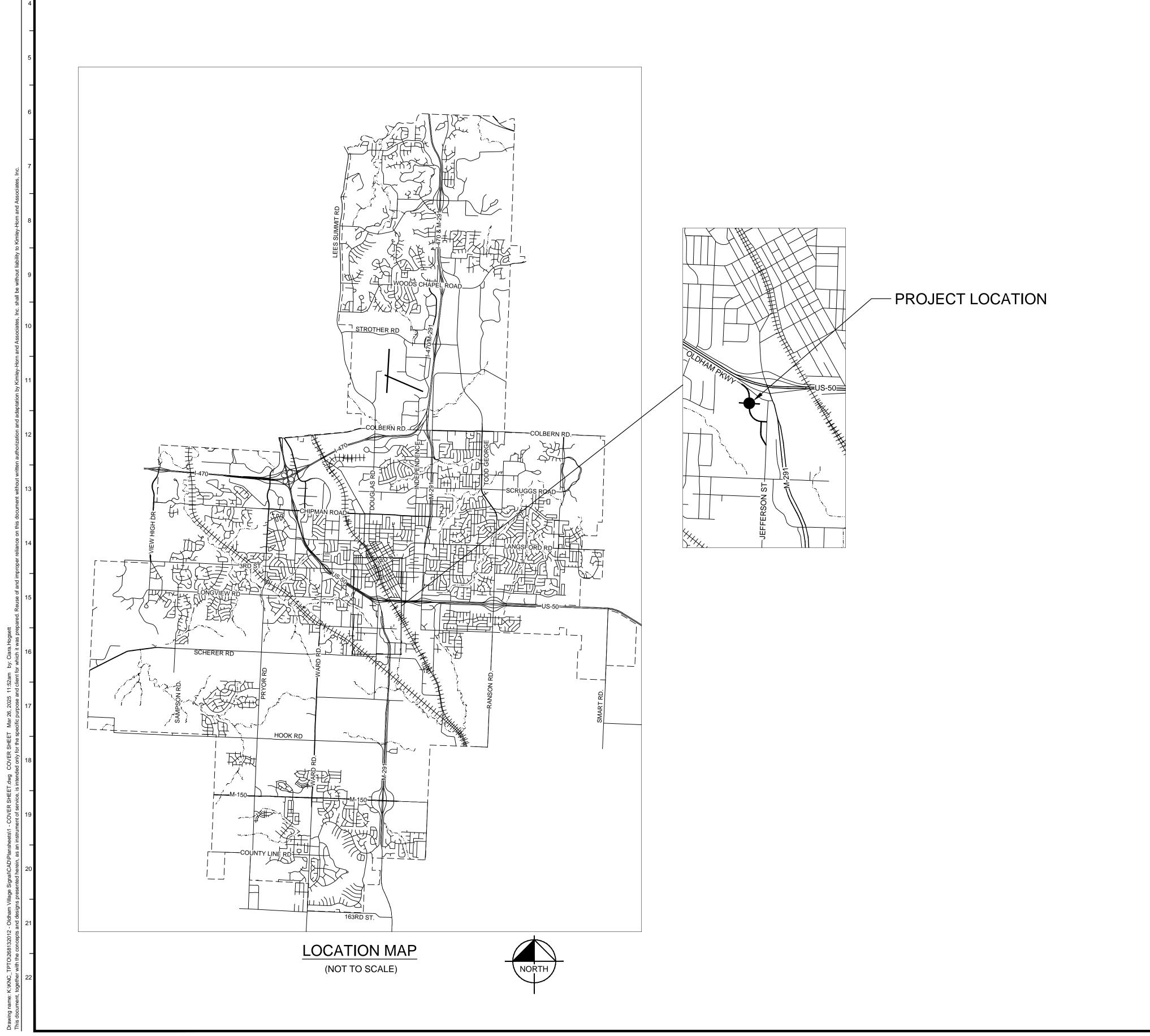
CITY OF LEE'S SUMMIT, MISSOURI PUBLIC WORKS DEPARTMENT TRAFFIC SIGNAL INSTALLATION OLDHAM PARKWAY AND FIELD HOUSE DRIVE



	Sheet List Table
SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	GENERAL NOTES
3	TRAFFIC SIGNAL PLAN
4	TRAFFIC SIGNAL INTERCONNECT PLAN
5	WIRING & PHASING DIAGRAM
6	SUMMARY OF SIGNAL QUANTITIES
7	SIGNAL HEAD MOUNTING DETAILS
8	CONTROLLER CABINET & BASE DETAILS
9	POST BASE DETAILS
10	TUBULAR STEEL POST DETAILS
11	TUBULAR STEEL LOADING REQUIREMENTS
12	PULL BOX DETAILS
13	CONDUIT & DETECTION DETAILS
14	POWER SUPPLY ASSEMBLY
15	POWER SUPPLY ASSEMBLY 120 V
16	TRAFFIC CONTROL DETAILS

UTILITY & GOVERNING AGENCY CONTACTS

AT&T TIM BUSHART TB2697@ATT.COM

EVERGY

MARK PEARSON, 816-896-8914 MARK.PEARSON@EVERGY.COM

CONSOLIDATED COMMUNICATIONS JOHN CASTILOW, 913-322-9785 JOHN.CASTILOW@EVERFASTFIBER.COM

JOHN MEADOWS, 816-918-3088 JOHNMEADOWS@COMCAST.COM

GOOGLE LAUREN MARCUCCI, 913-663-1900 LMARCUCCI@GOOGLE.COM

KINZIE WOODERSON, 816-986-1050 KINZIE.WOODERSON@LEESUMMIT.K12.MO.US LSR7 - TRANSPORTATION

KEITH HENRY, 816-986-2405
KEITH.HENRY@LEESUMMIT.K12.MO.US

SPECTRUM KEVIN STEELE KEVIN.STEELE@CHARTER.COM NG AGENCY CONTACT

SPIRE ENERGY

RICHI.GARCIA@SPIREENERGY.COM

UNITE PRIVATE NETWORKS
BRANDON MYER, 816-206-4257
BRANDON.MYER@UPNFIBER.COM

RICHI GARCIA, 816-507-0713

BLUEBIRD COMMUNICATIONS 314-237-2125

CITY WATER UTILITIES 816-969-1940

CITY STORMWATER - PW OPERATIONS 816-969-1870

CITY FIBER - ITS DEPARTMENT BRYAN HALL, 816-969-1234

NOTE

KNOWN UNDERGROUND UTILITIES IN THE VICINITY OF THE WORK ARE SHOWN ON THESE PLANS, ALTHOUGH OTHERS MAY EXIST. THE LOCATIONS SHOWN ARE BELIEVED TO BE REASONABLY CORRECT, BUT DO NOT PURPORT TO BE ABSOLUTELY SO. BEFORE STARTING WORK, THE CONTRACTOR SHALL GIVE NOTICE TO AND OBTAIN INFORMATION FROM EACH OWNER AND OPERATOR OF EXISTING UNDERGROUND FACILITIES IN ACCORDANCE WITH THE MISSOURI UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION STATUTE (RSMO CHAPTER 319.015 - 319.050).



No. REVISIONS DATE

M © 2025 KIMLEY-HORN AND ASSOCIATES, INC. 805 PENNSYLVANIA AVE, SUITE 150 KANSAS CITY, MO 64105 PHONE: 816-652-0350 WWW.KIMLEY-HORN.COM

DESIGNED BY:

DESIGNED BY:

ORAWN BY:

CHECKED BY:

OVER SHEET

DHAM VILLAGE
RAFFIC SIGNAL
RE'S SUMMIT, MO, 64086

ORIGINAL ISSUE: 01/15/2025 KHA PROJECT NO. 268132012

SHEET NUMBER

GENERAL NOTES:

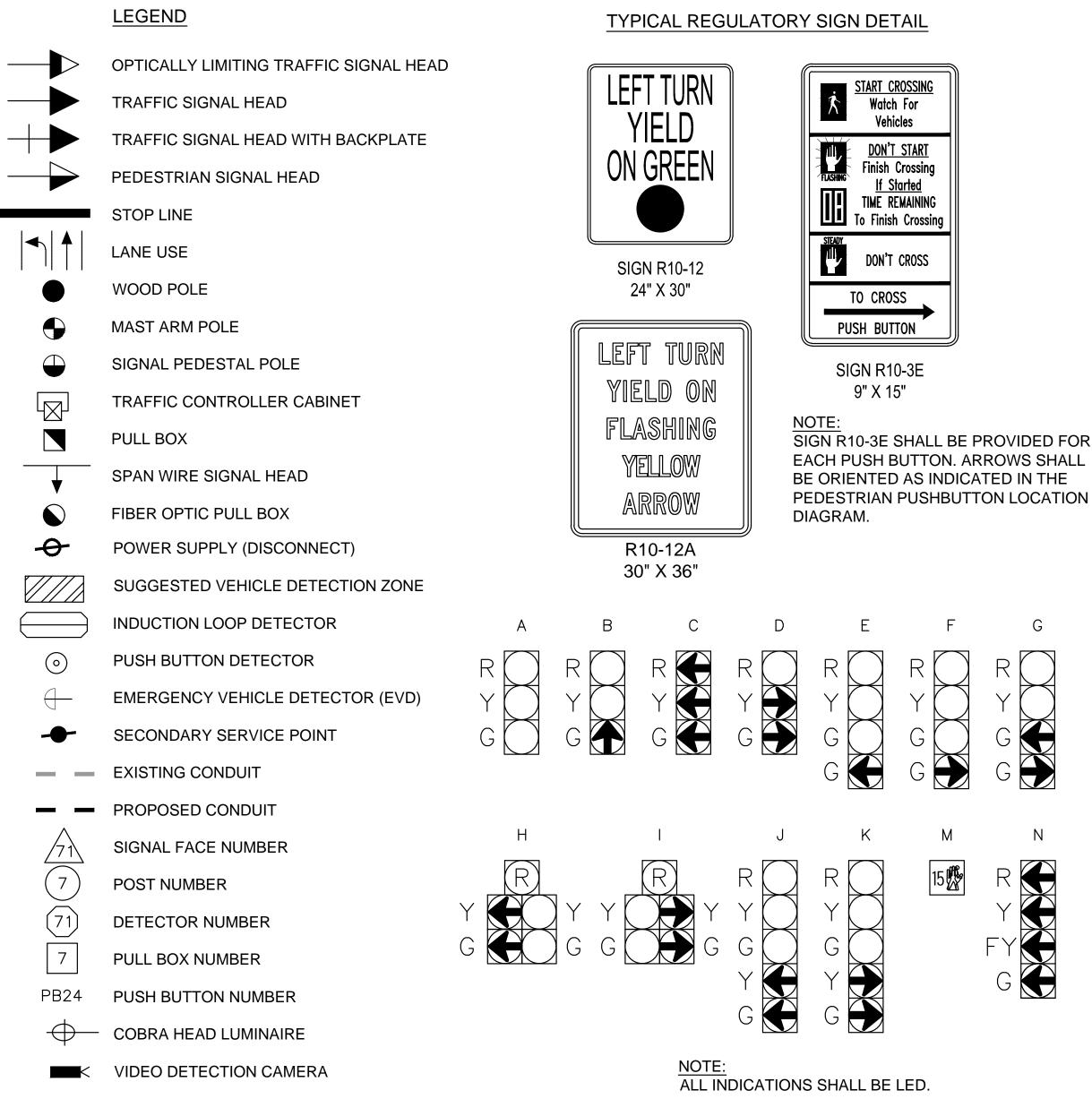
- 1. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE PLANS (APPROVED BY THE CITY OF LEE'S SUMMIT) AND ONE (1) COPY OF THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATION AT THE JOB SITE AT ALL TIMES.
- 2. CONSTRUCTION OF THE IMPROVEMENTS SHOWN OR IMPLIED BY THIS SET OF DRAWINGS SHALL NOT BE INITIATED OR ANY PART THEREOF UNDERTAKEN UNTIL THE DIRECTOR OF PUBLIC WORKS OR HIS AGENT IS NOTIFIED OF SUCH INTENT, AND ALL REQUIRED AND PROPERLY EXECUTED BONDS AND CONTRACT AGREEMENTS ARE RECEIVED AND APPROVED BY THE CITY.
- 3. THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO ALL APPLICABLE STANDARDS AND SPECIFICATIONS OF THE PUBLIC WORKS DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI, IN CURRENT USE. SPECIFICALLY, BUT NOT EXCLUSIVE TO:

TRAFFIC SIGNAL SPECIFICATION: SECTION 2900
TRAFFIC SIGNAL STANDARD DRAWINGS: DRAWINGS TS-1 THROUGH TS-9

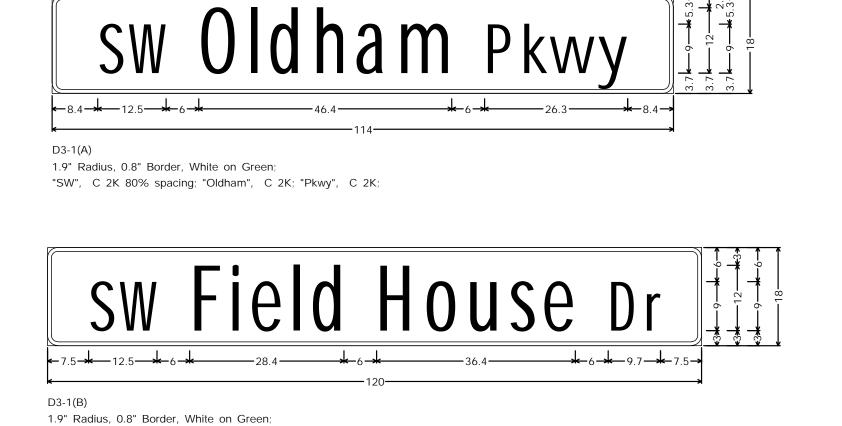
- 4. ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE PUBLIC WORKS DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI.
- 5. RIGHT-OF-WAY LIMITS AND EASEMENTS SHOULD BE CROSS CHECKED BY THE CONTRACTOR AND APPROVED BY THE FIELD INSPECTOR BEFORE UNDERTAKING ANY EXCAVATIONS TO THE SITE.
- 6. THE CONTRACTOR SHALL STAKE THE LOCATION OF ALL POLES, PULL BOXES, AND CONTROLLER CABINET BASE, THEN PROVIDE THE CITY ONE WEEK NOTICE PRIOR TO THE START OF CONSTRUCTION, AND SUBSEQUENT CONSTRUCTION ACTIVITIES, FOR INSPECTION AND APPROVAL. THE CONTRACTOR SHALL PROVIDE A WORK SCHEDULE, CONTACT NAMES, AND PHONE NUMBERS. NOTIFICATION AND COORDINATION SHALL BE WITH THE CITY'S TRAFFIC ENGINEER.
- 7. ALL LOCATIONS INDICATED IN DRAWINGS, INCLUDING CONDUIT RUNS ARE SUBJECT TO ADJUSTMENT TO CLEAR OBSTRUCTIONS AND TO MEET SITE CONDITIONS, IF ANY, BY THE CITY.
- 8. EXISTENCE AND LOCATION OF ANY UNDERGROUND OR OVERHEAD FACILITIES SHOWN ON THESE DRAWINGS OR REFERENCE TO ANY SOIL CONDITIONS, IF MADE, ARE APPROXIMATE ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL SITE CONDITIONS AND LOCATE ALL UTILITIES, INCLUDING DEPTH, BEFORE STARTING CONSTRUCTION SO THAT ANY ADJUSTMENTS TO DESIGN CAN BE MADE PRIOR TO POLE ORDERING OR FABRICATION. IN ADDITION, THE CONTRACTOR SHALL AVOID DISRUPTION OF SERVICES PROVIDED BY THE UTILITIES AND SHALL ENSURE THAT PROPER CLEARANCES (OVERHEAD AND UNDERGROUND) ARE MAINTAINED FOR THE DURATION OF CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES CAUSED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UTILITIES.
- 9. THE CONTRACTOR SHALL COORDINATE WITH THE CITY TRAFFIC ENGINEER FOR ANY NECESSARY CHANGES TO THE TRAFFIC SIGNALS RESULTING FROM EXISTING UTILITIES OR OTHER CONSTRUCTION ISSUES.
- 10. ANY EQUIPMENT DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- 11. SIGNAL EQUIPMENT SHALL NOT FORM AN OBSTRUCTION TO THE MOVEMENT OF PEDESTRIAN AND WHEELCHAIR TRAFFIC AND SHALL BE ADA ACCESSIBLE. WHERE SIDEWALKS ARE PRESENT, A MINIMUM CLEAR WIDTH OF 48 INCHES SHALL BE AVAILABLE FOR PEDESTRIAN AND WHEELCHAIR MOVEMENT. PULL BOXES SHALL NOT BE INSTALLED WITHIN SIDEWALK RAMPS.
- 12. CONDUITS TO BE PLACED OUTSIDE OF PAVED AREAS SHALL BE TRENCHED IN PLACE. ALL COMPACTION AND BACKFILL SHALL MEET CITY OF LEE'S SUMMIT REQUIREMENTS. AT THE OPTION OF THE CONTRACTOR, CONDUITS MAY BE BORED OUTSIDE PAVED AREAS. CONDUITS TO BE PLACED WITHIN THE LIMITS OF PAVEMENT SHALL BE BORED UNLESS OTHERWISE AUTHORIZED BY THE CITY TRAFFIC ENGINEER.
- 13. THE CONTRACTOR SHALL COORDINATE ALL ELECTRICAL POWER REQUIREMENTS AND CONNECTION ACTIVITIES WITH THE ELECTRIC UTILITY COMPANY, INCLUDING LOCATION OF THE METER, CIRCUITRY AND CONNECTION REQUIREMENTS, AND POWERING UP THE COMPLETE SYSTEM. THE CONTRACTOR IS REQUIRED TO REQUEST METER INSTALLATION AND PAY ALL ELECTRIC BILLS AND SERVICE FEES.
- 14. ALL DISTURBED SURFACES SHALL BE MADE GOOD TO MATCH EXISTING AT THE CONTRACTOR'S EXPENSE.
- 15. CONTRACTOR SHALL MAINTAIN VEHICLE AND PEDESTRIAN TRAFFIC AT ALL TIMES.
- 16. FINAL ACCEPTANCE SHALL BE DEFINED AS FINAL WRITTEN APPROVAL AND ACCEPTANCE BY THE CITY, INCLUDING COMPLETION OR CORRECTION OF ALL PUNCH LIST ITEMS AND THE TRAFFIC SIGNAL IS FULLY OPERATIONAL FOR A TIME PERIOD OF FIFTEEN (15) DAYS, WITHOUT ANY DEFICIENCIES, AS NOTED IN THE SPECIFICATIONS.

PROJECT SPECIFIC NOTES:

- 1. ANY WORK NOT COVERED BY THESE DRAWINGS OR SPECIFICATIONS SHALL BE SUBJECT TO THE CITY OF LEE'S SUMMIT DESIGN & CONSTRUCTION MANUAL.
- 2. THE CONTRACTOR SHALL CONTACT THE PUBLIC WORKS OPERATIONS DEPARTMENT (816-969-1870) TO PROGRAM THE SIGNAL CONTROLLER. THE CONTRACTOR SHALL PROVIDE AT LEAST 10 WORKING DAYS NOTICE PRIOR TO INITIATING FLASHING SIGNAL OPERATION.
- 3. NEW SIDEWALKS AND CURB RAMPS WILL BE INSTALLED BY OTHERS.
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISPOSAL OF ALL EQUIPMENT THAT IS NOT SALVAGED.
- 5. THE TOP 6" OF ALL BACKFILL AREAS SHALL BE TOPSOIL. ALL UNPAVED SURFACES DISTURBED BY CONSTRUCTION SHALL BE SODDED.
- 6. PAVEMENT MARKINGS AT THE INTERSECTION WILL BE INSTALLED BY OTHERS.
- 7. INSTALL TRAFFIC SIGNAL CONTROLLER AND POWER SUPPLY ON THE SAME CONCRETE BASE.
- 8. ALL PEDESTRIAN PUSHBUTTONS SHALL BE INSTALLED ADACENT TO ADA COMPLIANT LEVEL LANDING SURFACES. SEE OLDHAM PARKWAY IMPROVEMENT PLANS FOR SIDEWALK PLANS.
- 9. MAINTAIN A 10" MAXIMUM REACH FROM A LEVEL LANDING TO THE PEDESTRIAN PUSHBUTTON. MOUNTING EXTENSION BRACKETS SHALL BE USED IF A 10" MAXIMUM REACH CANNOT BE ACHIEVED.
- 10. SHOP DRAWINGS SHALL BE APPROVED BY THE CITY PRIOR TO INSTALLING SIGNAL EQUIPMENT.



STREET NAME SIGN DETAILS



NOTE: 9" AND 12" SERIES "C", UPPERCASE/LOWERCASE WITH SILVER WHITE, HIGH INTENSITY LETTERS AND 3/4" BORDER ON GREEN, HIGH INTENSITY BACKGROUND.

"SW", C 2K 80% spacing; "Field", C 2K; "House", C 2K; "Dr", C 2K;

| E | S | CITY COMMENTS | 03/25/25 | CNH | S | CITY COMMENTS | 03/25/25 | CNH | S | CITY COMMENTS | 03/25/25 | CNH | S | CITY COMMENTS | CITY

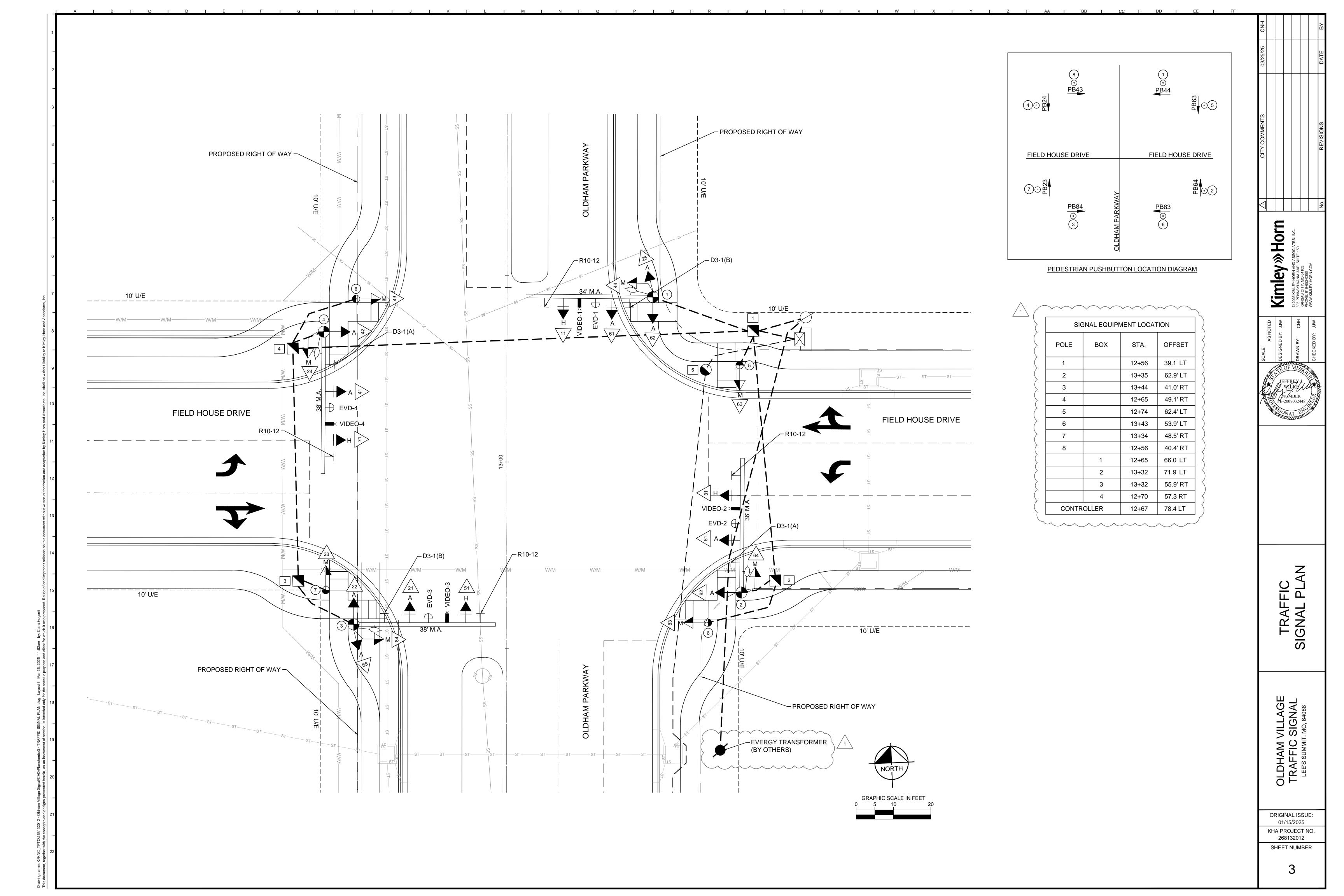
DESIGNED BY: JJW

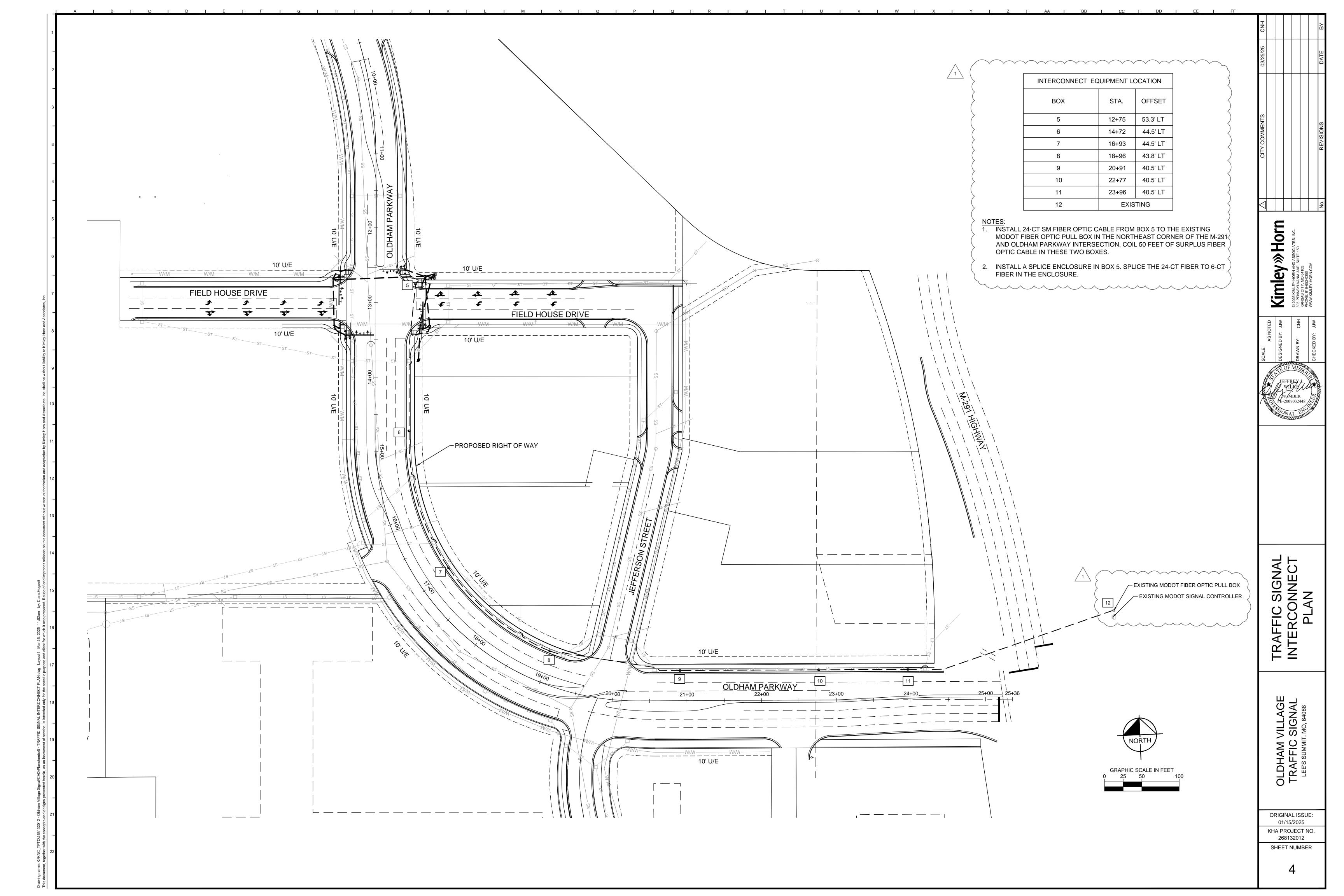
O 2025 K

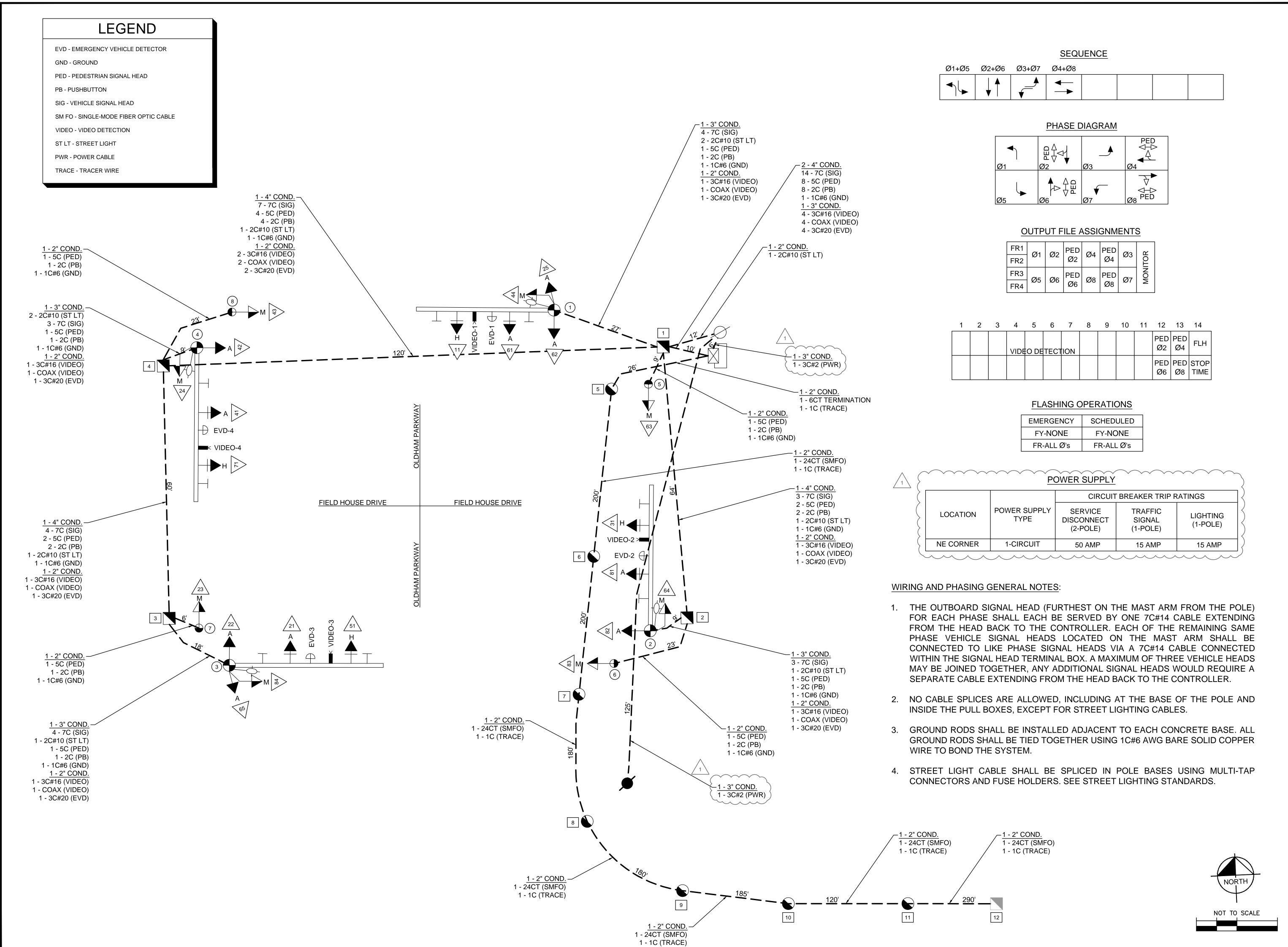
ENERAL NOTES

OLDHAM VILLAGE TRAFFIC SIGNAL LEE'S SUMMIT, MO, 64086

ORIGINAL ISSUE: 01/15/2025 KHA PROJECT NO 268132012 SHEET NUMBER







CITY COMMENTS 03/25/25 1

© 2025 KIMLEY-HORN AND ASSOCIATES, INC. 805 PENNSYLVANIA AVE, SUITE 150 KANSAS CITY, MO 64105 PHONE: 816-652-0350 WWW.KIMLEY-HORN.COM

© 202 © 203 © 204 WANS CHECKED BY: JJW

WIRING & PHASING DIAGRAM

OLDHAM VILLAGE TRAFFIC SIGNAL LEE'S SUMMIT, MO, 64086

ORIGINAL ISSUE: 01/15/2025 KHA PROJECT NO. 268132012

SHEET NUMBER

											POLE	S				
<u>o</u>		DEST			MA AF	ST RM	INCLUDED	5		L HEAI	D		LIGHTING			
POLE NO.	HI	EIGH FEET	IT		LEN	GTH ET)	ANGLE	Α	В	С	D	MOUNTING	12,500 LUMEN		CKET ENGTH	REMARKS
<u> </u>	4	8	15	34	36			Е	F	G	Н	HEIGHT	LED LUMINAIRES	10'	15'	
1	4	0	13	1	30	30		11'	13'			30'	1	10	1	
2					1			14'	12'			30'	1		1	
3					'	1		15'	15'			30'	1		1	
4						1		16'	14'			30'	1		1	
5		1				'		10	14			30	· ·		'	
6		1														
7		1														
8		1														
		'														
TOTALO																
TOTALS		4		1	1	2							4		4	

SIGNAL HEAD SPACING (FEET) MAY BE ADJUSTED TO SITE CONDITIONS AS APPROVED BY THE PROJECT INSPECTOR.

	SIGNS			
SIGN	LEGEND	NO.	S.F.	TOTAL S.F.
R10-12	LEFT TURN YIELD ON GREEN	4	7.5	30
D3-1(A)	OLDHAM PARKWAY	2	14.25	28.5
D3-1(B)	FIELD HOUSE DRIVE	2	15	30

THE TRAFFIC SIGNAL SYSTEM SHALL BE COMPLETE AND THE CONTRACTOR SHALL FURNISH AND INSTALL ALL EQUIPMENT AND MATERIALS NECESSARY FOR THE SATISFACTORY OPERATION OF ELECTRICAL APPARATUS AND FOR COMPLETE OPERATION OF THE TRAFFIC SIGNAL SYSTEM WHETHER SPECIFICALLY MENTIONED OR NOT.

1		\sim		\\\	\\		<u></u>			SWITCH SHOULD R APPROVED EQ		
1				SIGNA	L CONDU	ЛТ			,,, oom/not,	· · · · · · · · · · · · · · · · · · ·	O/1L:	
\neg	}	FROM	10	3" PVC	2" HDPE	3" HDPE	4" HDPE					
		XFMR	Ø			125'						
		Ø	\boxtimes			6'						
	>	Ø	1		12'							
			1			10'	20'					
	\rangle	1	1		27'	27'						
		1	⑤		9'							
	>	1	2		64'		64'					
		2	2		9'	9'						
		2	6		23'							
	7	1	4		120'		120'					
	>	4	4		9'	9']				
		4	8		23'							
		4	3		60'		60'					
		3	3		18'	18'])				
		3	7		6'							
			OTAL ET)		380'	204'	264'			DACEC AND		
	(OTAL ET)		400'	250'	300'		NO		D PULL BOXI	=5
			^		^ ^	_ ^	^ ^	')	NO.	BASES		

																						<u> </u>		<u> </u>	^			~	^	<u> </u>		~	^	<u></u>)		
	SIGNAL HEADS																																				
N	О.						INDICATIONS									VISORS						SECTIONS															
щ	川	HEAD TYPE	OPT. LIMITED	LOUVERS	BACKPLATE				12	2" LEC)'S				복	FLASH DON'T WALK	Ņ	COUNTDOWN INDICATIONS	Т	YPE							МО	TNU	ING	;							
POLE	FACE	出	OPT	2	BAC		ı			1	1	,			WALK	FLA	W/DW	UNTI SICA	TUN.	CUT			1			2			3			4		5	,	6	,
						R	Υ	G	R←	Y←	G←	G1	Y→	G→		8		용불		ο ≸		Р	S	М	Р	s	М	Р	S	М	Р	S	М	Р	М	Р	М
1	44	M																1																			
	25	Α				1	1	1																				1									
	62	Α				1	1	1																				1		$ \bot $							
	61	Α			1	1	1	1																						1							
	11	Н			1	1	1	1		1	1																								1		
2	64	М																1												\Box				Ш			
	82	Α				1	1	1																				1		\Box							
	81	Α			1	1	1	1																						1							
	31	Н			1	1	1	1		1	1																			\Box				Ш	1		
3	84	М																1												\Box				Ш			
	65	Α				1	1	1																				1		\Box							
	22	Α				1	1	1																				1		\Box							
	21	Α			1	1	1	1																						1							
	51	Н			1	1	1	1		1	1																			\Box					1		
4	24	М																1												\Box							
	42	Α				1	1	1																				1									
	41	Α			1	1	1	1																						1							
	71	Н			1	1	1	1		1	1																			\Box					1		
5	63	М																1												\Box							
6	83	М																1												\Box							
7	23	M																1												\Box							
8	43	М																1]	. [. 1	. 1

CONTROLLER AND EQUIPMENT	TOTALS
CABINET AND ACCESSORIES: NEMA TYPE P TS1 CABINET FIBER OPTIC READY	1
CONTROLLER: TYPE 3608 M 60 EAGLE EPAC COMPLETE PER PLANS, INCLUDING SOFTWARE, NTCIP REV 4.57	1
EMERGENCY VEHICLE DETECTION (EVD) SYSTEM (COMPLETE): GTT	1
VIDEO DETECTION SYSTEM (COMPLETE): ITERIS NEXT VIDEO DETECTION SYSTEM	1
SINGLE-METER POWER SUPPLY (UTILITY ENCLOSURE PEDESTAL)	1
GROUND RODS	9
PUSHBUTTON DETECTORS	8

INTERCONNECT EQUIPMENT	TOTALS
FIBER OPTIC DISTRIBUTION UNIT: CORNING WALL-MOUNTABLE INTERCONNECT CENTER	1
FIBER OPTIC DATA LINK SWITCH: TRANSITION SWITCH WITH SEPARATE POWER SUPPLY	1
FIBER OPTIC SPLICE ENCLOSURE: THINCOL FIBER OPTIC SPLICE ENCLOSURE	2

FROM	ρ	GROUND		POWER/I	1			TYPE 20-	1	DETECTION CABLE		CTION	
		#6	2C-10	3C-2	3C-6	3C-10	2C-14	5C-14	7C-14	M-138	3C#14	COAX	
	1						60'	61'	199'	84'	89'	89'	
	2						112'	113'	295'	139'	143'	143'	
\boxtimes	3						243'	244'	575'	272'	277'	277'	
\boxtimes	4						168'	169'	412'	203'	208'	208'	
\boxtimes	⑤						42'	43'					
\boxtimes	6						126'	127'					
\boxtimes	7						231'	232'					
\boxtimes	8						182'	183'					
XFMR	Ø			133'									
Ø	\boxtimes			14'									
Ø	1												
1	2		85			50							
1	1		33			50							
1	4		168			50							
4	3		99			50							
	1												
SY	STEM	378'											
	TOTAL	0.0											
	EET)	378'	385'	147'		200'	1,164'	1,172'	1,481'	698'	717'	717'	
BID.	TOTAL												
	EET)	400'	450'	200'		200'	1,200'	1,200'	1,500'	750'	800'	800'	
	^ ^	^ ^ ^	^ ^	. ^ 4	\ ^		^ ^	^ ^	^ ^	^ ^ ^	. ^ ^	^ ^	^ ^ ^

				E	BASES	AND PU	LL BOX	ES				
N	Ο.			BAS	SES			PULL BOXES				
POLE	PULL BOX	B10	B13	С	EV	POWER SUPPLY	CONC. (C.Y.)	CLASS 1	CLASS 2	CLASS 3	FIBER	
1		1										
2			1									
3			1									
4			1									
5				1								
6				1								
7				1								
8				1								
9				1								
	1									1		
	2								1			
	3								1			
	4									1		
	5										1	
	6										1	
	7										1	
	8										1	
	9										1	
	10										1	
	11										1	
CON	NTR.*				1							
POV	VER*					1						
TOT	ΓALS	1	3	5	1	1			2	2	7	

*INSTALL CONTROLLER CABINET AND POWER SUPPLY CABINET ON THE SAME BASE

			FIBER OPTIC	INTERCONNECT COI	NDUIT & CABLE		
FROM	ОТ	2" CONDUIT HDPE (ORANGE)	2" CONDUIT GRS	24-COUNT FIBER OPTIC CABLE (24-CT SM FO)	#14 STRANDED COPPER TRACER WIRE	PULL STRING	6-COUNT FIBER OPTIC CABLE (6-CT SM FO)
\boxtimes	5	26'			26'	26'	36'
5	6	200'		260'	200'	200'	
6	7	200'		210'	200'	200'	
7	8	180'		190'	180'	180'	
8	9	180'		190'	180'	180'	
9	10	185'		195'	185'	185'	
10	11	120'		130'	120'	120'	
11	12	290'		350'	290'	290'	40'
	TOTAL EET)	1,381		1,525'	1,381	1,381	76'
	TOTAL EET)	1,450		1,600	1,400	1,450	80'

P - POLE MOUNTED SIGNAL HEAD M - MAST ARM MOUNTED SIGNAL HEAD

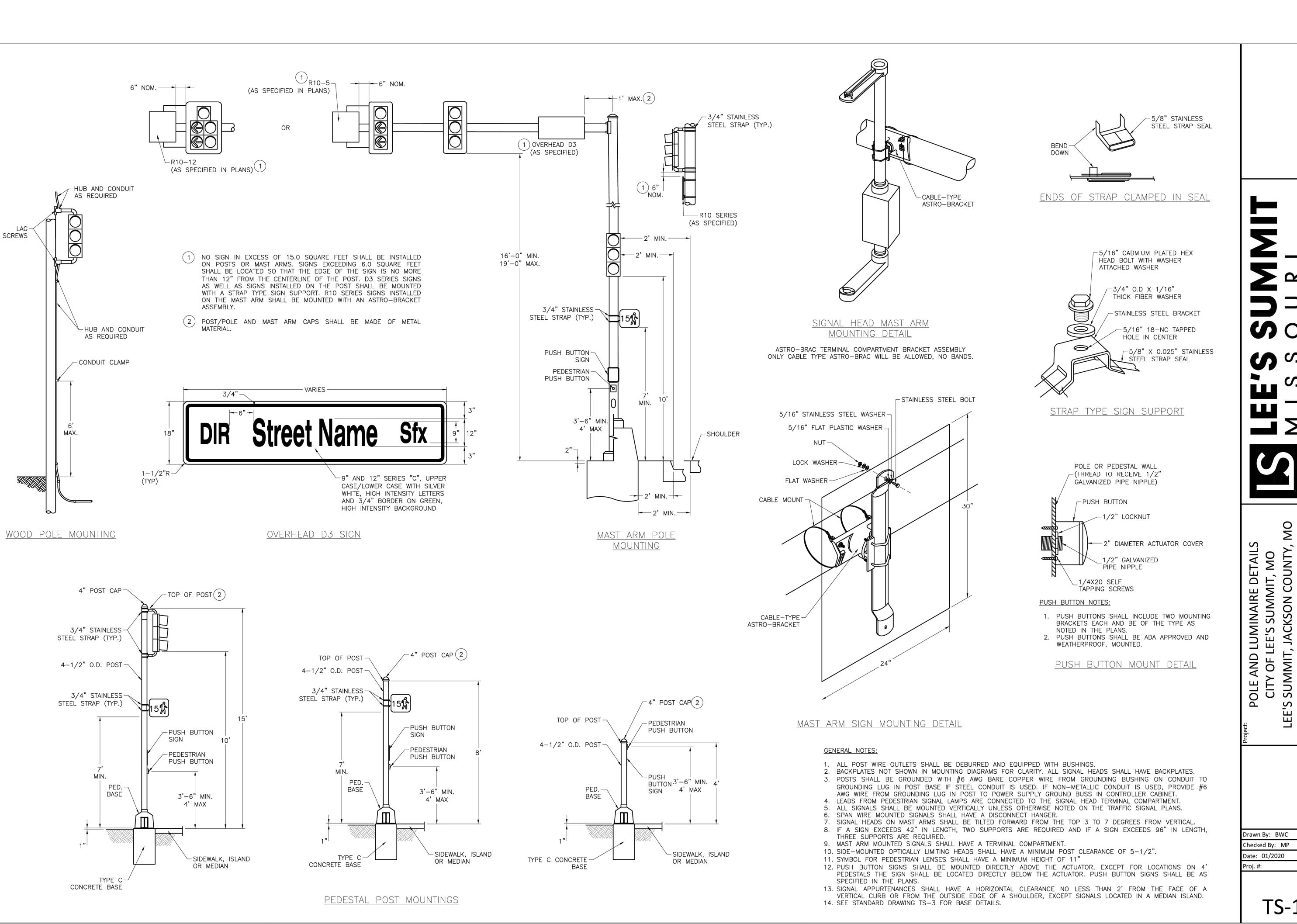
S - SPAN WIRE MOUNTED SIGNAL HEAD

SHEET NUMBER

ORIGINAL ISSUE: 01/15/2025 KHA PROJECT NO. 268132012

OF

SUMMARY O SIGNAL QUANTITIES



MO **DETAIL!** COUNTY MOUNTING CKSON HEAD

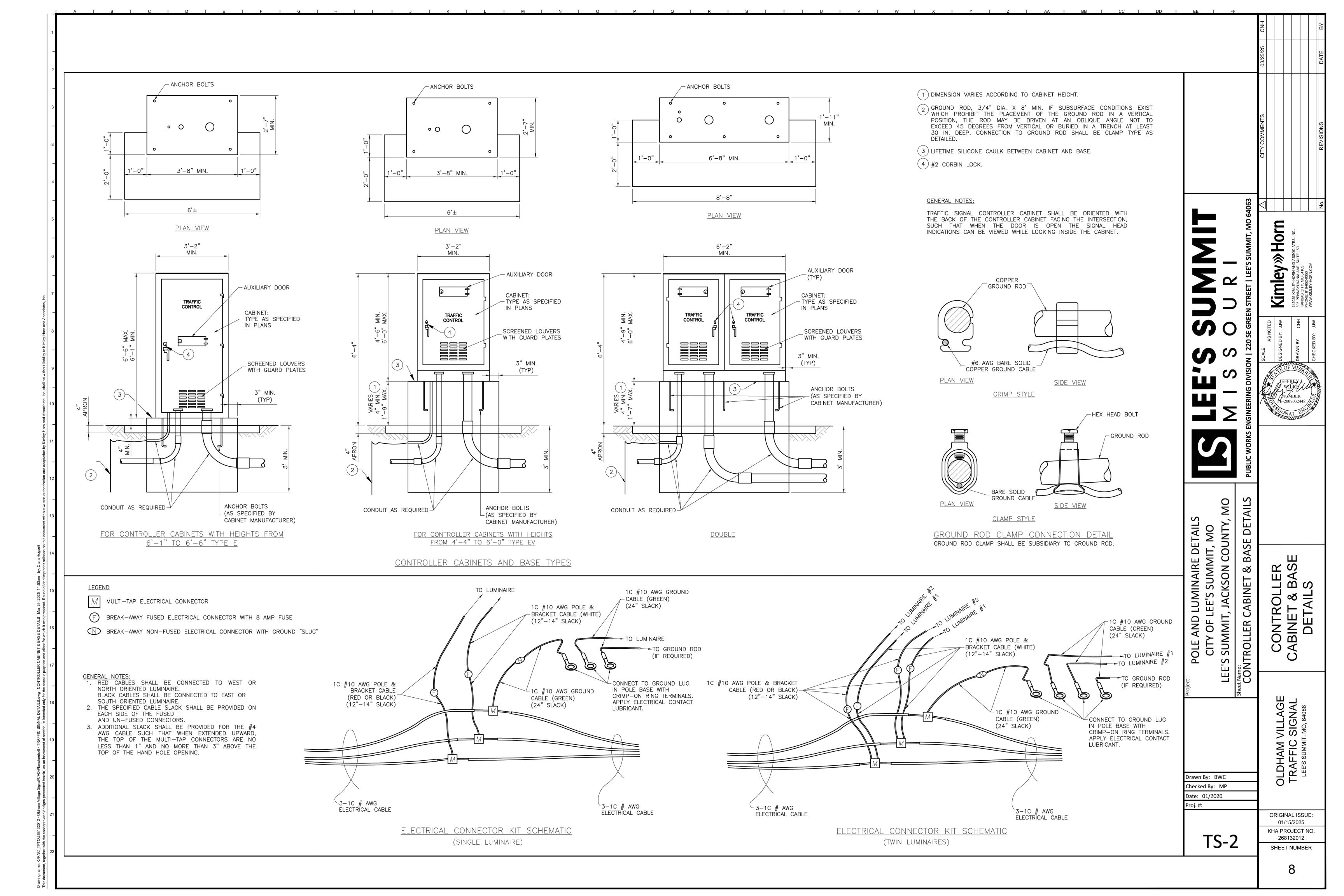
SIGNAL HEAD MOUNTING DETAILS

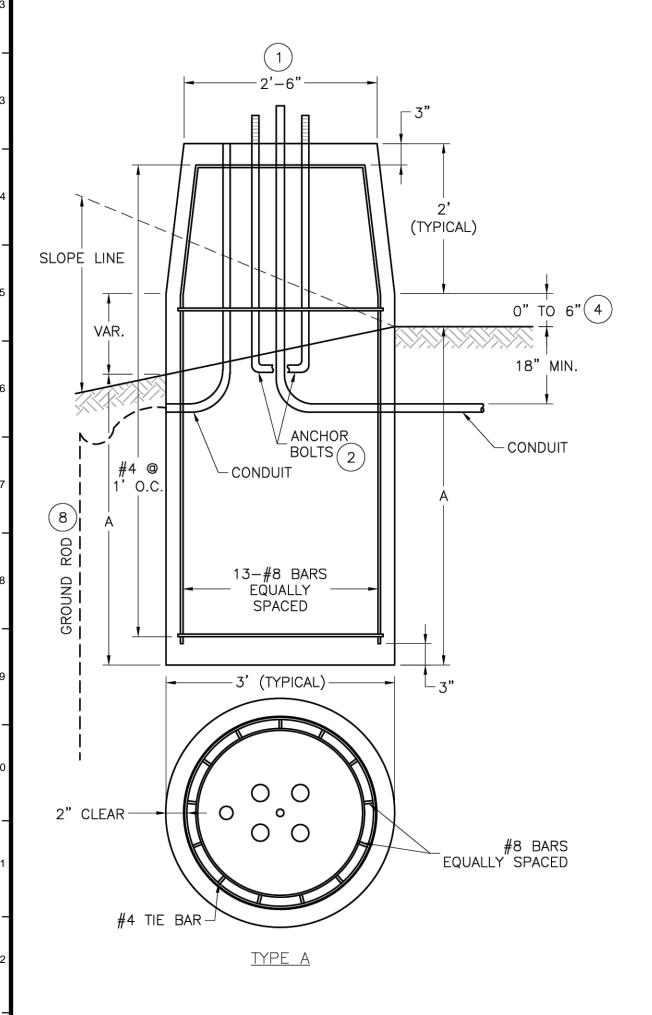
SIGNAL

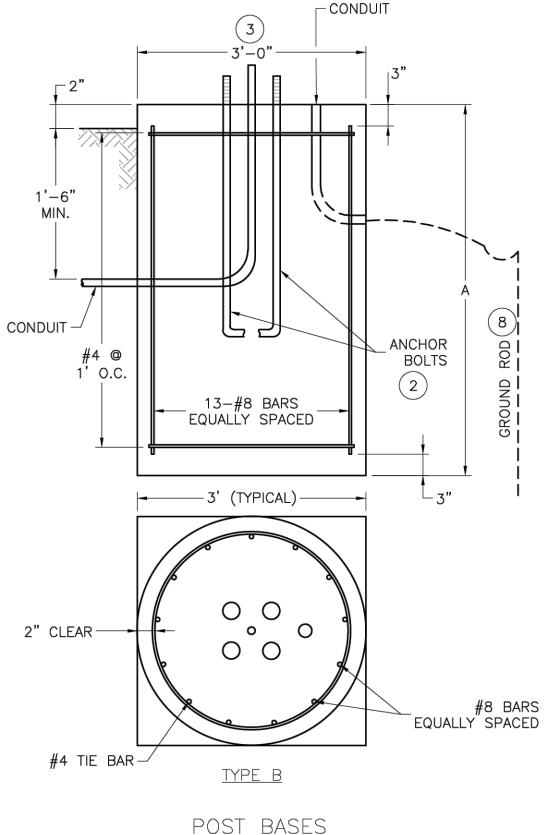
VILLAGE SIGNAL OLDHAM \
TRAFFIC (
LEE'S SUMMIT,

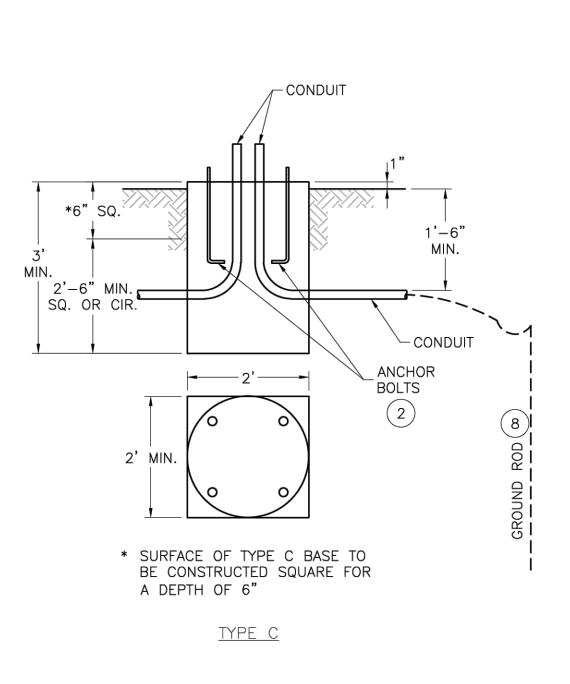
ORIGINAL ISSUE: 01/15/2025 KHA PROJECT NO. 268132012

SHEET NUMBER









	POST BAS	SES
POST TYPE	ARM LENGTH (FT.)	BASE TYPE
B, BL, C & CL	8 - 14	A-8 OR B-8
B, BL, C & CL	15 – 34	A-10 OR B-10
B, BL, C & CL	35 - 54	A-13 OR B-13

ARM LENGTH DETERMINED BY LENGTH OF LONGEST ARM FOR TYPE B & BL SIGNAL POSTS.

BASE TYPE A OR B DETERMINED BY LOCATION OF POST BASE.

SPECIAL DESIGN REQUIREMENTS:

SIGNAL STRUCTURES WHICH WILL EXCEED THE DIMENSION LIMITS SHOWN ON STANDARD DRAWING TS—5 SHALL HAVE ITS POST BASE DESIGNED BY A PROFESSIONAL ENGINEER AND APPROVED BY THE CITY ENGINEER (OR DESIGNEE). A SET OF DRAWINGS INCLUDING SPECIFICATIONS AND DESIGN COMPUTATIONS SHALL BE SUBMITTED FOR RECORD AND REFERENCE. THE SUBMITTED DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER IN ACCORDANCE WITH THE LAWS RELATING TO ARCHITECTS AND PROFESSIONAL ENGINEERS (CHAPTER 327, RSMO) AND SHALL INCLUDE A TITLE BLOCK OR SUMMARY SHEET WHICH LISTS AND CERTIFIES THAT THE FOUNDATION WILL MEET THE DESIGN CRITERIA.

- 1 IF BOLT CIRCLE IS 22 INCHES OR GREATER, USE TYPE B BASE. IF TYPE B BASE IS USED ANYWHERE, ALL TYPE B, BL, C, AND CL POSTS SHALL HAVE TYPE B BASE. BASE PLATE SHALL STAY WITHIN THE TOP OF THE POST BASE DIAMETER.
- 2 ANCHOR BOLT DIMENSIONS ARE SHOWN ON THE MANUFACTURER'S APPROVED DRAWINGS.
- 3 MAXIMUM BOLT CIRCLE DIAMETER IS 26". BASE PLATE SHALL STAY WITHIN THE TOP OF THE POST BASE DIAMETER.
- (4) 0" TO 6" VARIATION IN BASE HEIGHT IS FOR OBTAINING 16'-0" CLEARANCE. 0.13" C.Y. CONCRETE AND 3 LBS. REINFORCING STEEL PER 6".

STEEL & CONCRETE REQUIREMENTS FOR POST BASES												
BASES #8 STEEL BAR												
TYPE	A (10)	LENGTH	WEIGHT LBS 11	CONC. C.Y.								
8-A	8'-0"	9'-6"	399	2.53								
A-10	10'-0"	11'-6"	481	3.06								
A-13	13'-0"	14'-6"	604	3.84								
B-8	8'-0"	7'-6"	317	2.09								
B-10	10'-0"	9'-6"	400	2.62								
B-13	13'-0"	12'-6"	523	3.40								
C*				0.44								
(10) SOIL DEPTH, NO ROCK (11) INCLUDE #4 TIE BAR												

- * SURFACE OF TYPE C BASE TO BE CONSTRUCTED SQUARE FOR A MINIMAL DEPTH OF 6".
- (5) POSTS SHALL BE FURNISHED WITH INDIVIDUAL NUT COVERS.

(6) EXPANSIVE GROUT SHALL BE USED BETWEEN THE POST

BASE PLATE AND CONCRETE BASE.

7 PLATE AND BOLT SIZES SHALL BE SHOWN ON FABRICATORS SHOP DRAWINGS AND SHALL BE SUBJECT TO

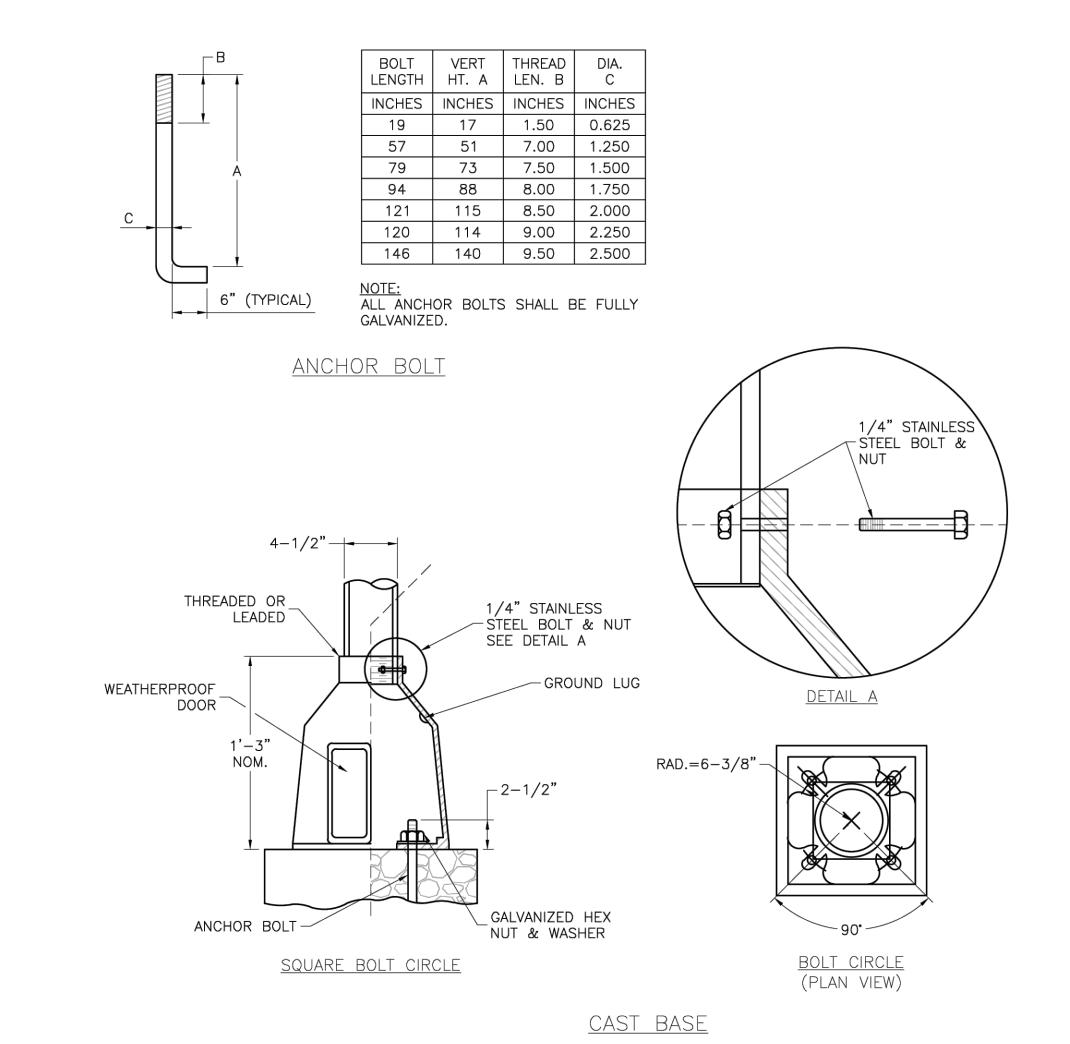
APPROVAL.

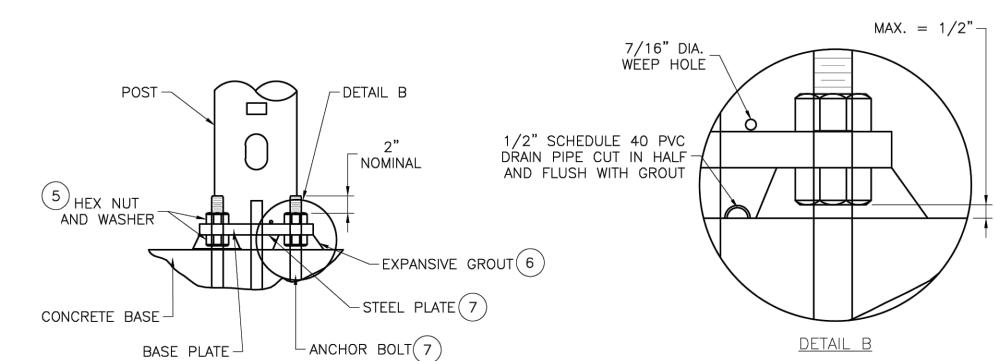
8 3/4" X 8' MINIMUM GROUND ROD. IF SUBSURFACE CONDITIONS EXIST WHICH PROHIBIT THE PLACEMENT OF THE GROUND ROD IN VERTICAL POSITION, THE ROD MAY BE DRIVEN AT AN OBLIQUE ANGLE NOT TO EXCEED 45 DEGREES FROM VERTICAL OR BURIED IN A TRENCH AT LEAST 30 IN. DEEP. CONNECTION TO GROUND ROD SHALL BE CLAMP TYPE AS DETAILED ON STANDARD DRAWING TS-2.

BASE EMBEDMENT IN SOLID ROCK			
	REQUIRED EMBEDMENT FOR BASE TYPE		
SOLID ROCK ENCOUNTER POINT	A-8 B-8	A-10 B-10	A-13 B-13
AT SURFACE	4'-6"	4'-9"	5'-9"
AT ONE-FOURTH NORMAL DEPTH	3'-6"	4'-0"	5'-0"
AT ONE-HALF NORMAL DEPTH	3'-0"	3'-3"	3'-3"
AT THREE-FOURTHS NORMAL DEPTH	1'-3"	1'-3"	1'-0"

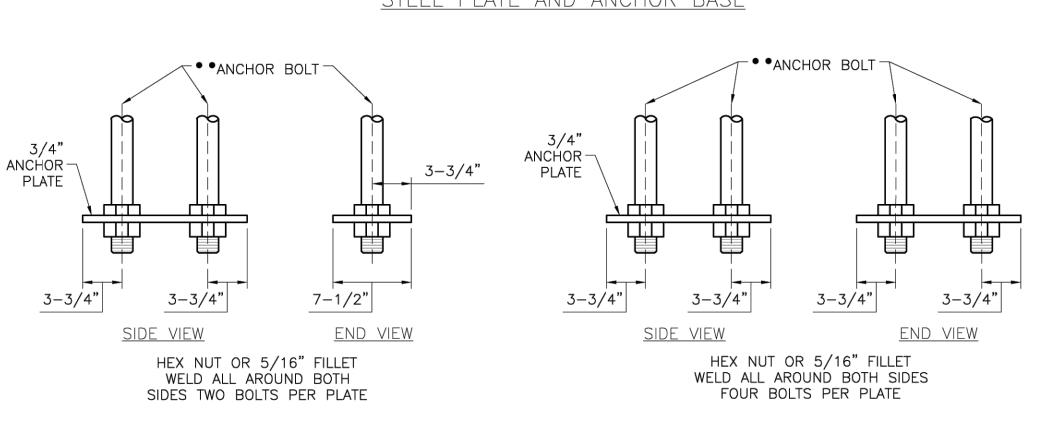
- 1. REQUIRED EMBEDMENT DEPTHS CAN BE INTERPOLATED BETWEEN ENCOUNTER POINTS FOR OTHER SOLID ROCK ENCOUNTER DEPTHS.
- 2. NORMAL LENGTHS FOR ANCHOR BOLTS AND REINFORCING STEEL WILL BE REQUIRED.
- 3. CORE DRILL HOLES FOR ANCHOR BOLTS AND REINFORCING STEEL IN SOLID ROCK SHALL BE PROVIDED. CORE DRILL HOLES SHALL BE TWICE THE DIAMETER OF THE ANCHOR BOLT AND REINFORCING STEEL DIAMETER AND TO WITHIN 3 INCHES OF THE NORMAL BASE DEPTH.
- INCHES OF THE NORMAL BASE DEPTH.

 IF SOIL, SHALE, GRAVEL, FRACTURED ROCK, OR VOIDS ARE ENCOUNTERED DURING CORE DRILLING, THE ROCK SHALL BE REMOVED TO THE POINT OF ENCOUNTER.
- 5. ANCHOR BOLTS AND REINFORCING STEEL SHALL BE GROUTED IN THE CORE DRILL HOLES WITH NON—SHRINK GROUT HAVING A MINIMUM STRENGTH OF 9,000 POUNDS IN 24 HOURS.
- 6. STRAIGHT ANCHOR BOLTS OF THE LENGTH SHOWN IN THE ANCHOR BOLT TABLE UNDER THE COLUMN "BOLT LENGTH"ARE ADEQUATE FOR USE IN GROUTED CORE DRILLED HOLES. NO HEAT INDUCED ALTERATION OR BENDING OF ANCHOR BOLTS WILL BE PERMITTED.





STEEL PLATE AND ANCHOR BASE



OPTIONAL STEEL PLATE FOR ANCHOR BOLTS

LEE'S SUMMIT, MO 64063

LEE'S SUMMIT, MO 64063

SCALE: AS NOTED SCALE: AS NOTE

MO

COUNTY,

JACKSON

SUMMIT,

BASI EE'S

POST 7 OF LI

CITY

Drawn By: BWC

Checked By: MP

TS-3

Date: 01/2020

Proj. #:

DETAIL9

LUMINAIRE

AND

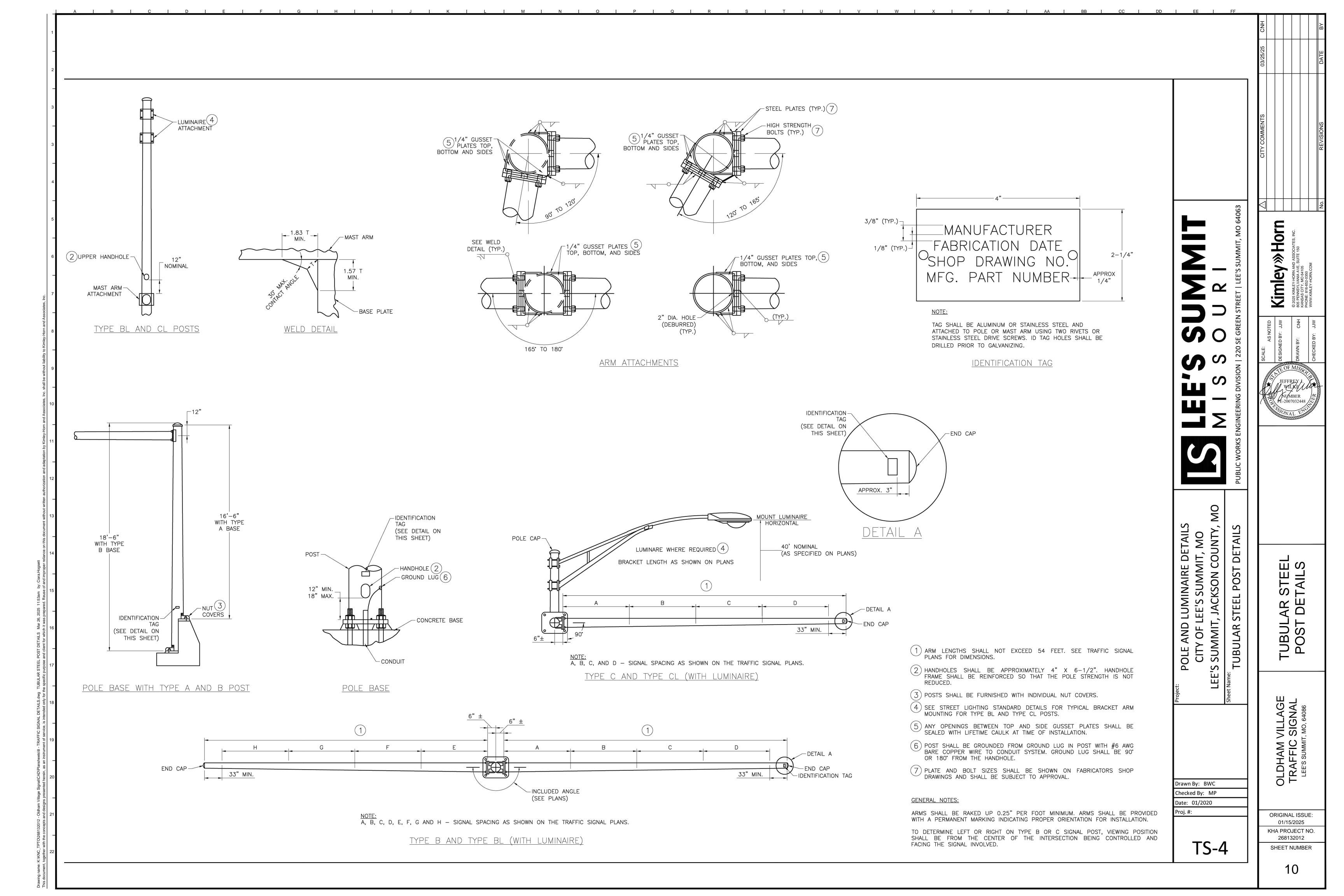
POLE

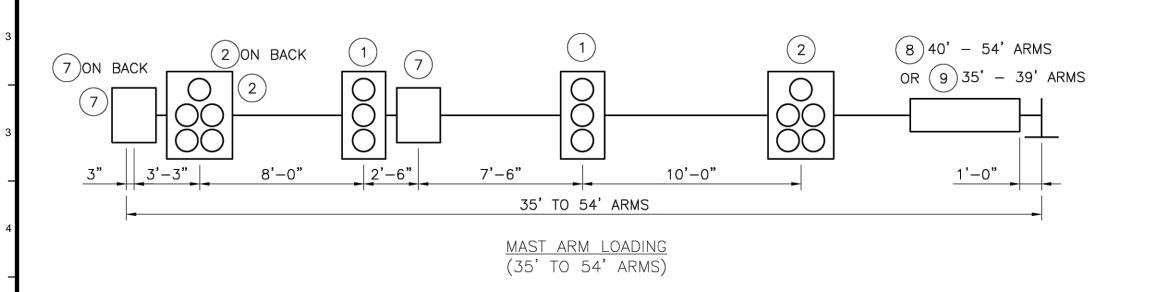
POST BASE DETAILS

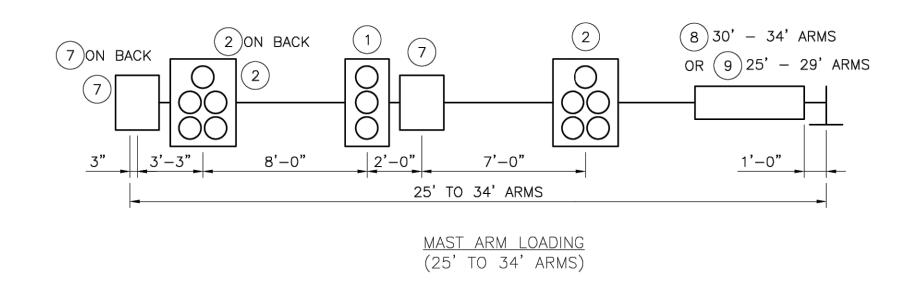
> OLDHAM VILLAGE TRAFFIC SIGNAL LEE'S SUMMIT, MO, 64086

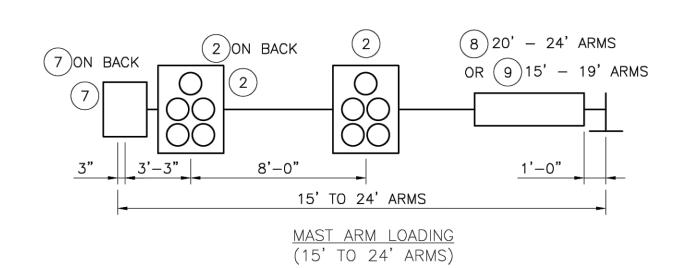
ORIGINAL ISSUE: 01/15/2025

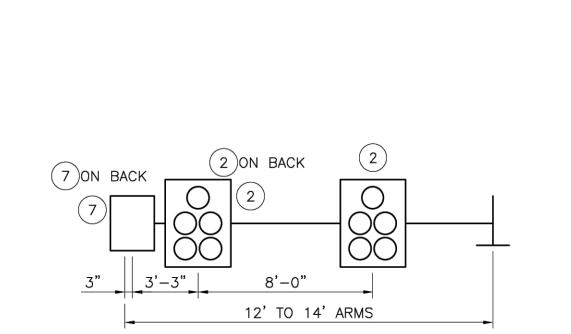
KHA PROJECT NO. 268132012 SHEET NUMBER



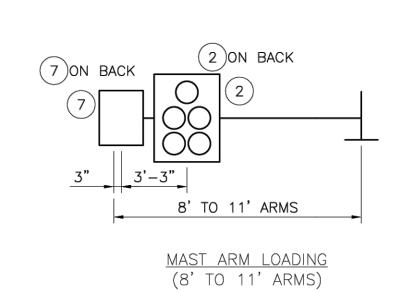








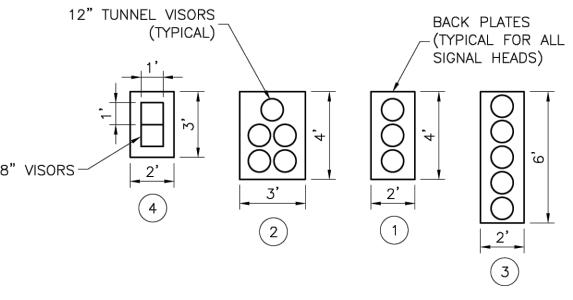
MAST ARM LOADING (12' TO 14' ARMS)



NOTE:
ATTACHMENT LOCATIONS ARE FOR STRUCTURAL DESIGN PURPOSES ONLY.
ACTUAL LOCATIONS ARE SHOWN ON THE PLANS.

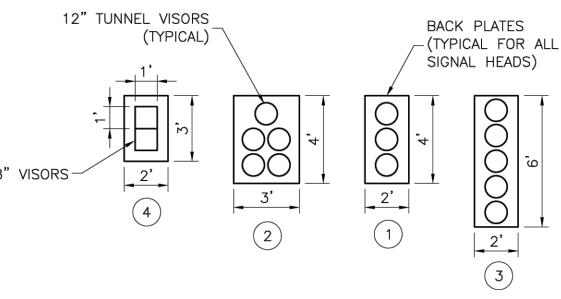
SURFACE PROJ. AREA ITEM DESCRIPTION (SQ. FT.) (LBS.)* NO. (SQ. FT.) 3-SECTION OL HEAD 60.0 8.0 32.5 5-SECTION OL HEAD 100.0 12.0 47.5 VERT. 5-SECTION OL HEAD 100.0 12.0 50.5 23.0 2-SECTION OL HEAD 40.0 6.0 150 WATT LUMINAIRE 30.0 1.0 3.5 2.0 1.1 N/A 9" X 18" SIGN 30" X 36" SIGN 27.0 7.5 N/A 120" X 18" SIGN N/A 25.0 15.0 96" X 16" SIGN 96" X 16" SIGN 20.0 31.0 18.7 N/A 96" X 28" SIGN

* MOUNTING HARDWARE INCLUDED



TRAFFIC SIGNAL HEAD TYPES

OL - OPTICALLY LIMITED



STRUCTURAL DESIGN REQUIREMENTS:

STRUCTURAL SUPPORTS SHALL BE DESIGNED AND FABRICATED TO WITHSTAND THEIR OWN LOADING AND THE ATTACHMENT LOADING SHOWN ON THIS DRAWING OR ON THE PLANS, WHICHEVER IS GREATER. STRUCTURAL MEMBERS INCLUDE POSTS, MAST ARMS AND LUMINAIRES BRACKET ARMS, AS REQUIRED.

DESIGN OF THE STRUCTURAL SUPPORTS SHALL BE BASED ON AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS, 2015 OR LATEST REVISION WITH THESE EXCEPTIONS AND SPECIFICATIONS.

MINIMUM DESIGN WIND SPEED OF 90 MPH AT 30 FEET ABOVE GROUND. GROUP LOADING:

<u>LOADS</u> PERCENT OF ALLOWABLE STRESS* GROUP I - DL 133 GROUP II - DL + W

*NO LOAD REDUCTION FACTORS SHALL BE APPLIED IN CONJUNCTION WITH THESE INCREASED ALLOWABLE STRESSES. ** W TO BE COMPUTED ON THE BASIS OF THE WIND PRESSURE FORMULA. 25 PSF (1197 PA) MINIMUM FOR W FOR GROUP

133

SIGNAL STRUCTURES WHICH WILL EXCEED THE DIMENSION LIMITS SHOWN SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER*** BASED ON AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 2015, 6TH EDITION, INCLUDING ANY INTERIM WITH THE CRITERIA NOTED BELOW:

.. ULTIMATE DESIGN WIND SPEED

GROUP III - DL + ICE + $0.5(W^{**})$

- •• SERVICE DESIGN WIND SPEED
- FATIGUE CATEGORY I .. MEAN RECURRENCE INTERVAL 700 YEARS
- •• 50 YEAR DESIGN LIFE.
- .. SHALL NOT BE SPECIFICALLY DESIGNED FOR TRUCK INDUCED WIND GUSTS. .. SHALL BE SPECIFICALLY DESIGNED TO RESIST PERIODIC GALLOPING FORCES.

***A SET OF SHOP DRAWINGS INCLUDING WELD PROCEDURE SPECIFICATIONS AND DESIGN COMPUTATIONS SHALL BE SUBMITTED FOR RECORD AND REFERENCE. THE SUBMITTED DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER IN ACCORDANCE WITH THE LAWS RELATING TO ARCHITECTS AND PROFESSIONAL ENGINEERS (CHAPTER 327, RSMO) AND SHALL INCLUDE A TITLE BLOCK OR SUMMARY SHEET WHICH LISTS AND CERTIFIES THAT THE PRODUCT MEETS ALL OF THE SPECIFIED DESIGN CRITERIA.

FOR TYPE B AND BL POSTS. ICE AND DEAD LOADING SHALL BE BASED ON THE COMBINED EFFECT OF DESIGN LOADING ON EACH ARM. WIND LOADING IS APPLIED AS DESCRIBED IN SECTION 1.2.5(B) OF THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS, 2015 OR LATEST VERSION.

GENERAL NOTES:

ATTACHMENT LOCATIONS ARE FOR STRUCTURAL DESIGN PURPOSES ONLY. ACTUAL LOCATIONS ARE SHOWN ON THE PLANS.

POLE AND LUMINAIRE DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

Sheet Name: TUBULAR

TUBULAR STEEL LOADING REQUIREMENTS

OLDHAM VILLAGE TRAFFIC SIGNAL LEE'S SUMMIT, MO, 64086

ORIGINAL ISSUE: 01/15/2025 KHA PROJECT NO. 268132012 SHEET NUMBER

TS-5

Drawn By: BWC

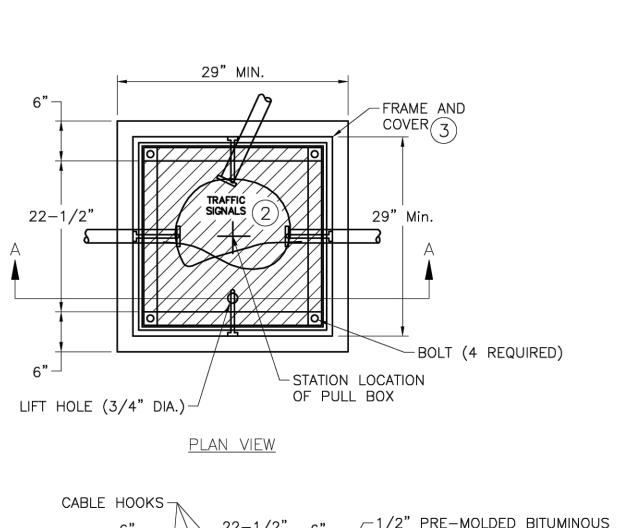
Checked By: MP Date: 01/2020

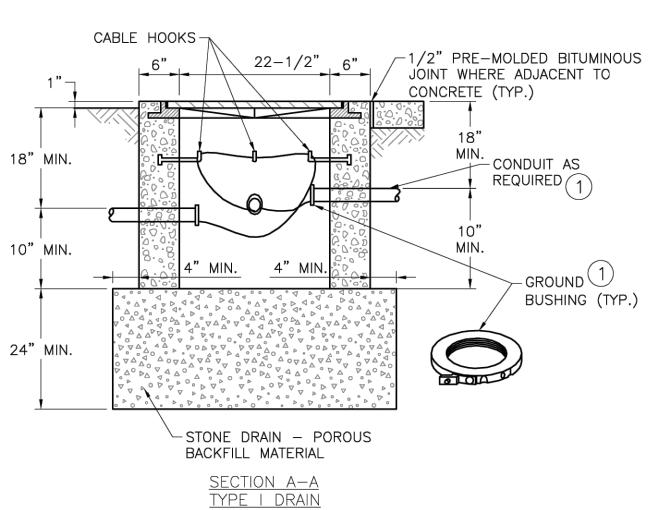
lacksquare_AS REQUIRED PER PLANS 30'-0" TYPICAL TOP VIEW <u>б</u> SECTION A-A 17'-6" 10'-0" TYPE A BASE TYPE B BASE-

TYPICAL POST LOADING

15'-0"

MINIMUM DESIGN LOADING FOR POST AND MAST ARM ATTACHMENTS





SINGLE CONCRETE PULL BOX

- 1) ALL METAL CONDUITS SHALL BE ELECTRICALLY BONDED BY A GROUND BUSHING AND #6 AWG BARE COPPER WIRE. FOR PVC, ALL GROUND WIRES SHALL BË CONNECTED.
- 2 SIGNAL PULL BOX COVERS SHALL BE EMBOSSED "TRAFFIC SIGNALS" OR HAVE COVER LABEL (APPLIED WITH EPOXY). 3 PULL BOX FRAMES AND COVERS SHALL BE CAST IRON AND THE
- 29" X 29" FRAME SIZE: 22 1/2" X 22 1/2" OPENING SIZE: FRAME HEIGHT: 4-1/4" FRAME WEIGHT: 120 LBS. 22-5/8" X 22-5/8" COVER SIZE: COVER THICKNESS: 3/4"

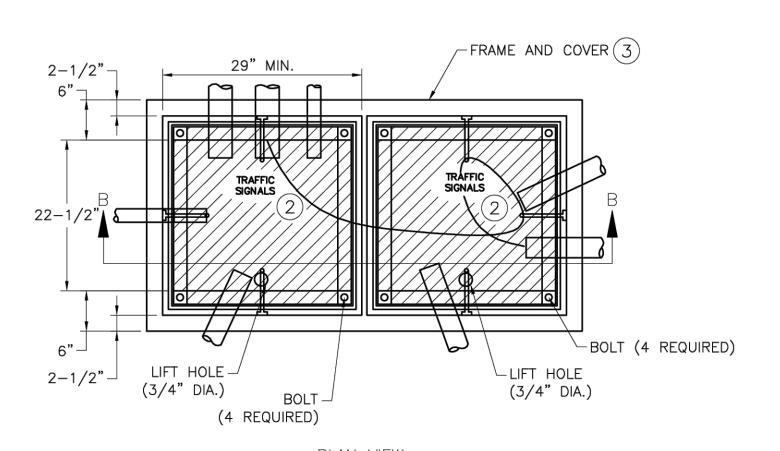
FOLLOWING MINIMUM DIMENSIONS:

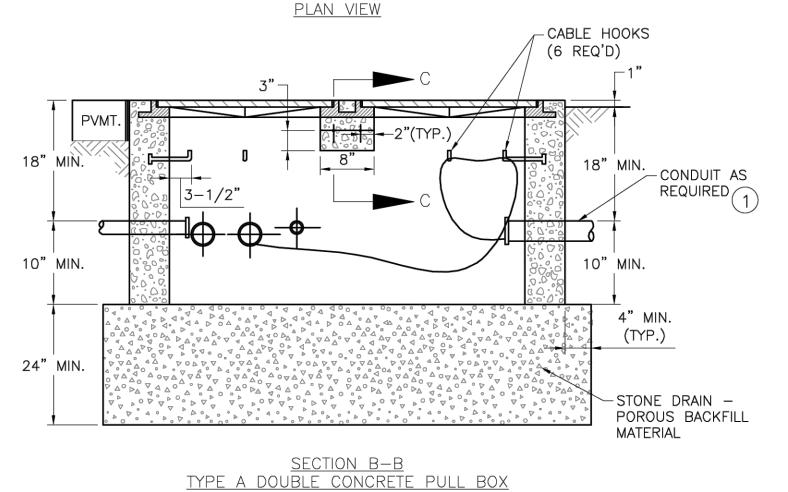
GENERAL NOTES:

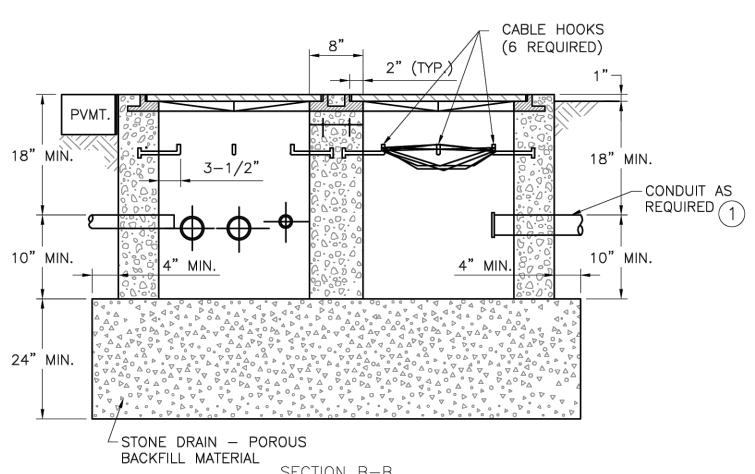
1. ALL DIMENSIONS SHOWN ARE NOMINAL.

COVER WEIGHT: 140 LBS.

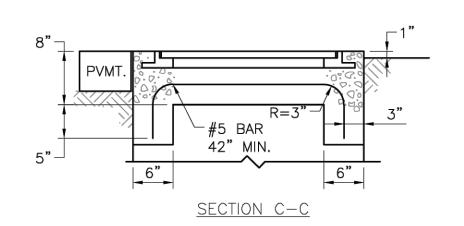
- 2. BOLT CLEANOUT DETAIL SHALL BE APPROVED BY THE CITY TRAFFIC ENGINEER.
- 3. ALL CONCRETE SHALL BE 3,000 PSI MINIMUM, AND SHALL BE SUBSIDIARY TO THE PULL BOX.
- 4. PAVEMENT AND SUBGRADE SHALL BE AS SHOWN ON PLANS.
- 5. STONE DRAIN MATERIAL SHALL BE 1/2" 3/4" CLEAN ROCK. 6. LIFT OPENING REQUIRED ON ALL COVERS.
- 7. PREFORMED BOX WALLS MAY BE EITHER FLARED OR VERTICAL.
- 8. IF AN EXTENSION IS USED WITH A PREFORMED BOX, THE LIP OF THE EXTENSION MAY BE INTERIOR OR EXTERIOR. THE EXTENSION SHALL BE COMPATIBLE AND FROM THE SAME MANUFACTURER.
- 9. IF PREFORMED PULL BOXES ARE SPECIFIED, THE CONTRACTOR MAY USE THE STANDARD CONCRETE PULL BOX IN LIEU OF THE CLASS 1 OR 2 PREFORMED PULL BOX OR THE DOUBLE CONCRETE PULL BOX, TYPE A, IN LIEU OF THE CLASS 3 PREFORMED PULL BOXES.



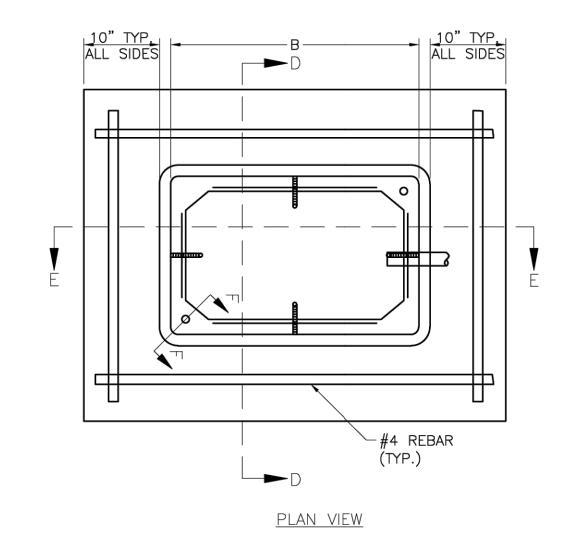


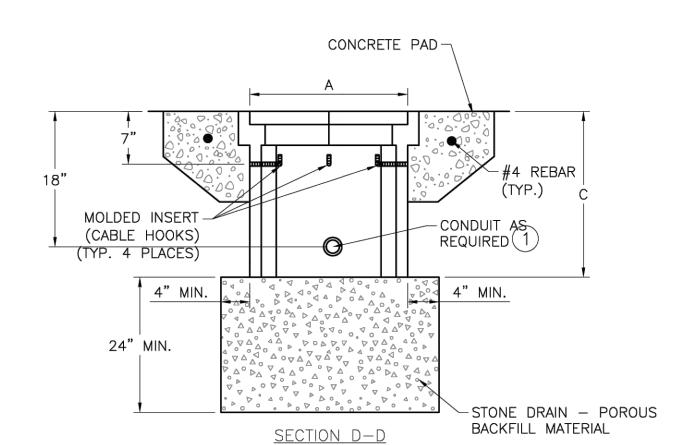


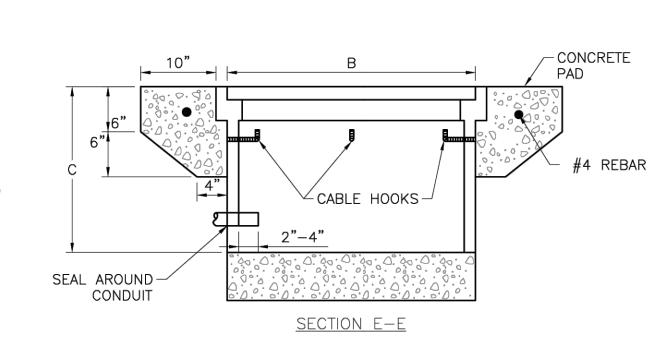




DOUBLE CONCRETE PULL BOX







NUMBER OF

ENTERING

CONDUCTORS

< 23

CLASS

3 – 68	2	24"	36"	24"
> 68	3	30"	48"	24"
			OLT HERE	
SECTION F-F				

PREFORMED PULL BOX

MINIMUM DIMENSIONS

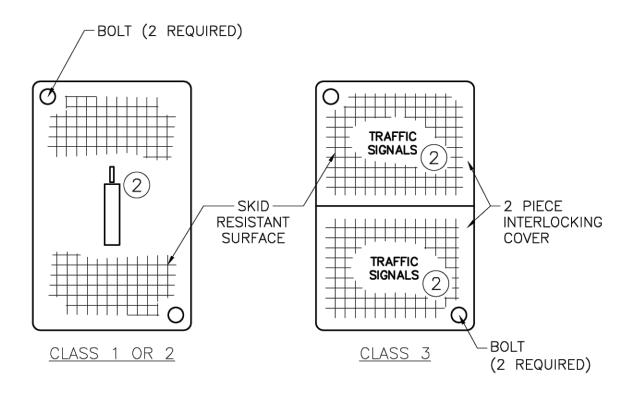
В

30"

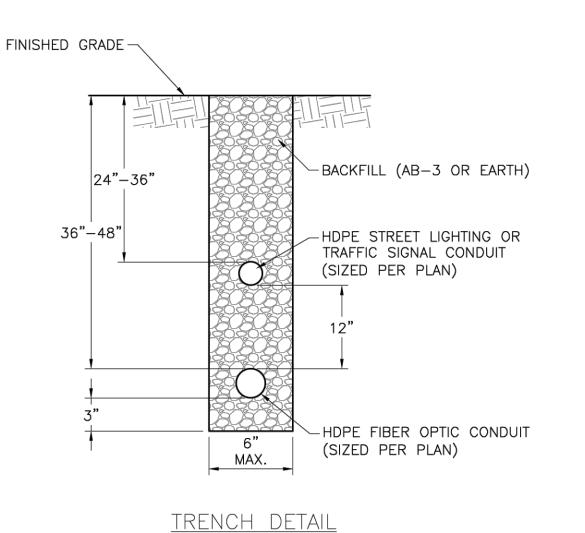
20"

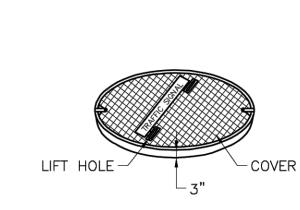
PREFORMED PULL BOX

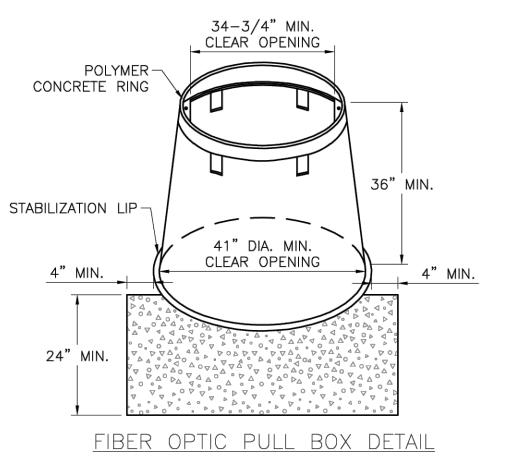
TYPICAL BOLT CLEANOUT



PREFORMED PULL BOX COVER







LEE'S SUMMIT, MO T, JACKSON COUNTY, N TAILS DE BOX OLE AND L CITY OF LE S SUMMIT, . PULL ree's

 M_0

Drawn By: BWC Checked By: MP Date: 01/2020 Proj. #:

ETAIL

O

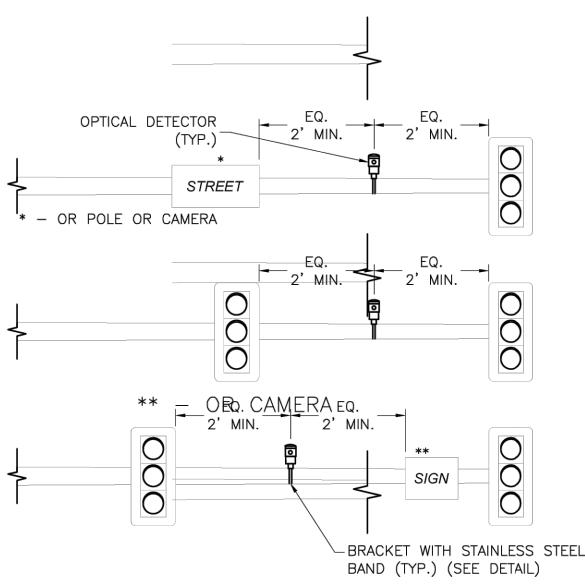
 \Box

VILLAGE SIGNAL

OLDHAM \
TRAFFIC (
LEE'S SUMMIT,

ORIGINAL ISSUE:

01/15/2025 KHA PROJECT NO. 268132012 SHEET NUMBER



WHEN MULTIPLE DETECTOR UNITS ARE MOUNTED ON THE SAME MAST ARM, THEY SHALL BE SPACED APPROXIMATELY 12 INCHES APART.

EMERGENCY VEHICLE DETECTION NOTES:

- 1. THE DETECTOR CABLE SHALL BE CONTINUOUS FROM THE OPTICAL DETECTOR TO THE TRAFFIC SIGNAL CONTROLLER. NO SPLICES SHALL BE ALLOWED.
- THE CONTRACTOR SHALL LABEL THE OPTICAL DETECTOR CABLE IN ALL PULL BOXES BY CHANNELS AS INDICATED ON THE PLANS. THIS SHALL BE ACCOMPLISHED WITH ALUMINUM TAGS ATTACHED TO THE CABLE WITH ALUMINUM WIRE. NO DIRECT PAYMENT SHALL BE MADE FOR THIS WORK.
 OPTICOM SHALL BE MOUNTED INSIDE THE CONTROLLER CABINET. UNLESS OTHERWISE INDICATED ON THE
- 3. OPTICOM SHALL BE MOUNTED INSIDE THE CONTROLLER CABINET. UNLESS OTHERWISE INDICATED ON THE PLANS, THE PLACEMENT OF THE OPTICAL DETECTORS SHALL BE CENTERED BETWEEN THE SIGNAL HEADS AND/OR SIGNAL HEAD AND SIGN LOCATED ON THE MAST ARMS. FURTHER INFORMATION ON OPTICAL DETECTOR PLACEMENT IS SHOWN IN THE DETAILS. THE FINAL PLACEMENT OF THE OPTICAL DETECTOR MAY BE ADJUSTED FOR LINE OF SIGHT REQUIREMENTS.
- 4. THE EQUIPMENT MANUFACTURER SHALL BE RESPONSIBLE FOR PROVIDING ONSITE TECHNICAL ASSISTANCE TO THE CONTRACTOR IN FINAL PLACEMENT OF THE OPTICAL DETECTORS, AS WELL AS IN ALL THE ASPECTS OF THE SYSTEM INSTALLATION.
- 5. PREEMPTION SEQUENCES AND TIMINGS SHALL BE DEVELOPED BY THE EQUIPMENT SUPPLIER. TIMINGS SHALL BE MARKED UP ON THE TIMING SHEETS FROM THE SPECIFIC MODEL OF CONTROLLER AT EACH INTERSECTION AND SUBMITTED FOR REVIEW BY THE CITY PRIOR TO IMPLEMENTATION BY THE SUPPLIER. PRE-EMPTION SEQUENCES SHALL USE AN ALL RED INTERVAL OR OTHER METHODS TO PREVENT THE OCCURRENCE OF "YELLOW TRAPS" AT INTERSECTIONS WITH PROTECTED/PERMITTED LEFT-TURN PHASING.
 6. PREEMPTS ARE TO BE ASSIGNED AS FOLLOWS UNLESS OTHERWISE INDICATED IN THE PLANS:

DIRECTION	PREEMPT NO.	CHANNE
NORTHBOUND	1	Α
SOUTHBOUND	2	В
EASTBOUND	3	С
WESTBOUND	4	D

7. THE CONTRACTOR SHALL INSTALL THE EQUIPMENT CONSISTENT WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES AND INTERFACE DIAGRAMS IN A NEAT AND WORKMANLIKE MANNER. EMERGENCY VEHICLE DETECTION SYSTEM SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR AND SHALL CONSIST OF ALL DETECTORS, PROCESSORS, MOUNTING BRACKETS, ETC FOR A FULLY OPERATIONAL SYSTEM.

OPTICAL DETECTOR

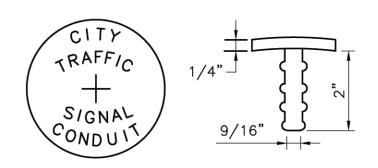
RADAR/VIDEO DETECTION NOTES:

- 1. THE RADAR/VIDEO DETECTION SYSTEM SHALL CONSIST OF VIDEO CAMERA(S), VIDEO DETECTION PROCESSOR (VDP), CABLES,
- BRACKETS, AND ALL OTHER MATERIALS NECESSARY FOR A FULLY FUNCTIONAL SYSTEM.

 2. THE VIDEO DETECTION SYSTEM SHALL INCLUDE SOFTWARE THAT DETECTS VEHICLES IN MULTIPLE LANES OF EACH DIRECTION USING ONLY ONE VIDEO CAMERA. DETECTION ZONES (DZ) SHALL BE DEFINED USING ONLY A VIDEO MENU AND A POINTING DEVICE TO DEFINE AND PLACE ZONES ON A VIDEO IMAGE. UP TO 24 DZ PER CAMERA SHALL BE AVAILABLE.
- 3. THE ACTUAL NUMBER AND LOCATION OF DZ SHALL BE DETERMINED IN THE FIELD BY THE CITY TRAFFIC ENGINEER. THE CITY RESERVES THE RIGHT TO HAVE ADDITIONAL ZONES PROGRAMMED OR MODIFY THOSE SHOWN BASED ON THE FIELD PROGRAMMING PERIOD COMPLETED PRIOR TO TURNING ON THE SIGNAL.
- 4. VIDEO CAMERAS ARE TO BE MOUNTED AS SHOWN ON THE TRAFFIC SIGNAL PLANS. IF THE CAMERA IS MOUNTED ON A TYPE BL
 OR CL POLE, THE CAMERA SHALL BE MOUNTED DIRECTLY TO THE LUMINAIRE BRACKET ARM. IF THE CAMERA IS MOUNTED ON A
 TYPE B OR C POLE, THE CAMERA SHALL BE MOUNTED ON THE MAST ARM USING A 6-FOOT RISER.

 5. VIDEO CAMERA PLACEMENT ADJUSTMENT SETUP AND INITIAL PROGRAMMING SHALL BE AT THE DIRECTION OF THE
- 5. VIDEO CAMERA PLACEMENT, ADJUSTMENT, SETUP AND INITIAL PROGRAMMING SHALL BE AT THE DIRECTION OF THE MANUFACTURERS REPRESENTATIVE. THE MANUFACTURERS REPRESENTATIVE SHALL ASSIST WITH IDENTIFYING OPTICAL CAMERA LOCATIONS, SYSTEM SETUP, PROGRAMMING, AND TURN—ON.

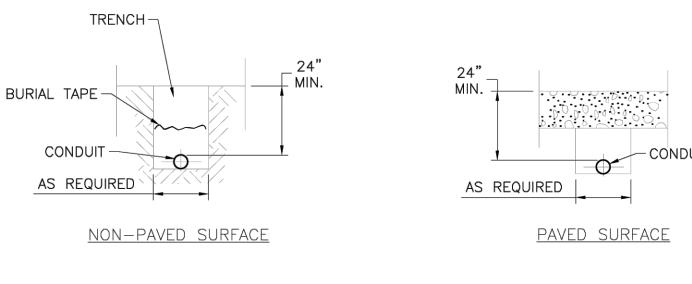
RADAR/VIDEO DETECTION

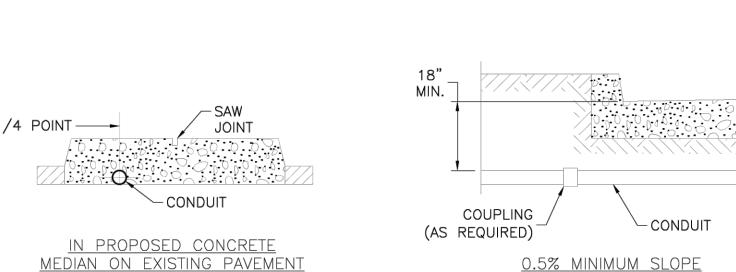


CONDUIT MARKER NOTES:

1. WHEREVER A CONDUIT PASSES BENEATH A CURBED STREET, ALUMINUM CONDUIT MARKERS SHALL BE INSTALLED IN THE CURB IMMEDIATELY OVER THE CONDUIT LOCATION. CONDUIT MARKERS SHALL BE FURNISHED BY THE CONTRACTOR AS DETAILED AND SHALL BE INSTALLED IN THE TOP OF THE CURB BY DRILLING THE CURB AND EPOXYING THE CONDUIT MARKER IN PLACE. CONDUIT MARKERS SHALL BE FLUSH WITH THE CURB. CONDUIT MARKERS SHALL BE SUBSIDIARY TO CONDUIT.

CONDUIT MARKER

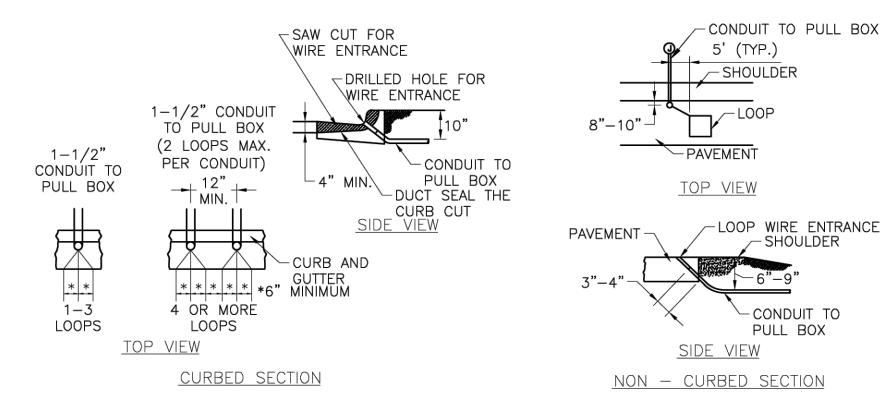




CONDUIT LOCATION NOTES:

- 1. CONDUIT SHALL BE INSTALLED TO DRAIN, AND IF METALLIC ALL ENDS SHALL BE THREADED AND CAPPED.
- 2. THE CONTRACTOR SHALL NOTIFY THE CITY OF LEE'S SUMMIT, DEPARTMENT OF PUBLIC WORKS TRAFFIC DIVISION AT (816) 969-1807 FOR INSPECTION OF THE CONDUIT INSTALLATION. AT LEAST 24 HOURS NOTICE SHALL BE PROVIDED. THE CONDUIT SHALL NOT BE COVERED UNLESS INSPECTED AND APPROVED BY THE ENGINEER OR HIS AUTHORIZED REPRESENTATIVE, SO AS TO ENSURE PROPER DEPTH, CORRECT CONDUIT MATERIAL AND PROPER CONDUIT END TREATMENT AS DESCRIBED ABOVE.

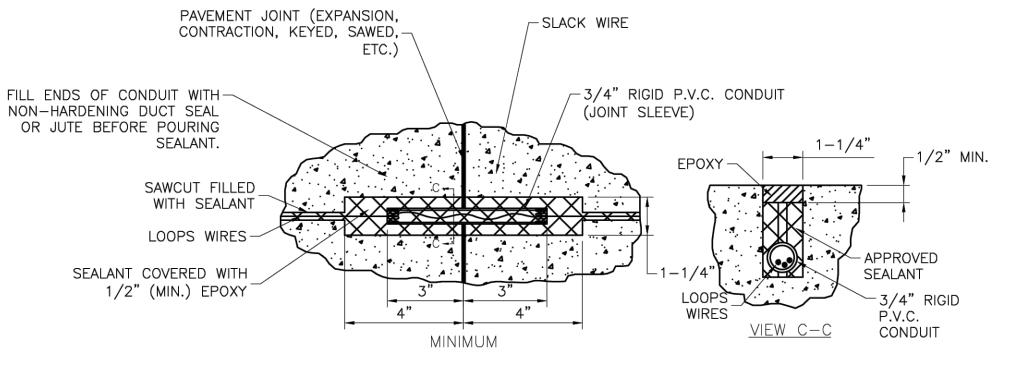
CONDUIT LOCATIONS



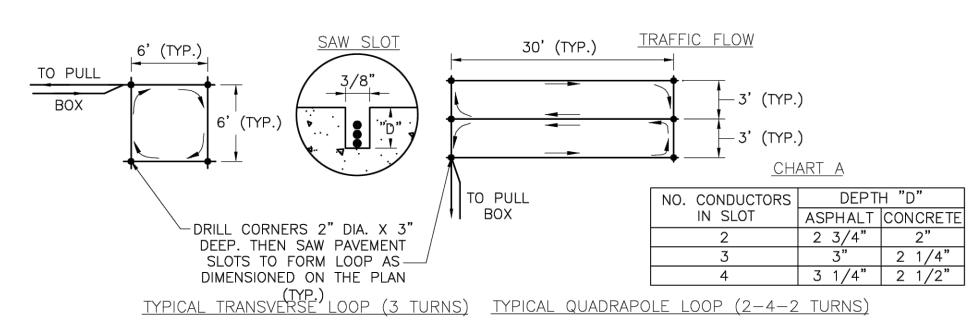
LOOP WIRE ENTRANCE NOTES:

SAW CUT IN THE CURB AND GUTTER SECTION AND CONDUIT ENTRANCE TO BE SEALED WITH A PLIABLE, NON-HARDENING DUCT SEALANT PRIOR TO APPLICATION OF LOOP SEALANT. NO LOOP SEALANT SHALL BE APPLIED IN THE CURB AND GUTTER SECTION OR AT CONDUIT ENTRANCE.
 GROUT AROUND CONDUIT INSERTED INTO CURB OR PAVEMENT SECTION.
 EACH LOOP SHALL HAVE A SEPARATE LEAD-IN-SAW CUT TO THE LOOP WIRE ENTRANCE IN THE CURB OR AT THE EDGE OF PAVEMENT.

LOOP WIRE ENTRANCE DETAIL



JOINT CROSSING DETAIL



TYPICAL LOOP DETAIL

LOOP DETECTION NOTES:

- QUADRAPOLE LOOP TO BE ONE CONTINUOUS WIRE PLACED IN TWO TURNS. ALL LOOPS TO BE WOUND IN SAME DIRECTION, WITH START AND END CLEARLY MARKED AT PULL BOX.
- 2. TRANSVERSE LOOP TO BE ONE CONTINUOUS WIRE PLACED IN THREE TURNS. ALL LOOPS TO BE WOUND IN SAME DIRECTION, WITH START AND END CLEARLY MARKED AT PULL BOX.

3. SLOT IN PAVEMENT FOR LOOPS TO BE CUT 3" WIDE AT MINIMUM DEPTH "D" AS INDICATED IN CHART A. SLOT

- IN PAVEMENT FOR LEAD SHALL BE $\frac{1}{2}$ " WIDE AT MINIMUM DEPTH "D". FILL SLOTS WITH AN APPROVED ASPHALT SEALER (ASPHALT PAVEMENT) OR AN APPROVED ELASTIC EPOXY SEALANT (CONCRETE PAVEMENT) TO WITHIN $\frac{1}{8}$ " OF PAVEMENT SURFACE.

 4. OTHER THAN SOLDERED TYPE SPLICE OR SPLICE MADE WITH WIRE NUTS AT THEIR JUNCITON, FEEDER CABLE AND LOOP WIRE SHALL BE OF CONTINUOUS RUN WITH NO SPLICES. ALL CONNECTIONS TO BE WATERTIGHT
- 4. OTHER THAN SOLDERED TYPE SPLICE OR SPLICE MADE WITH WIRE NUTS AT THEIR JUNCITON, FEEDER CABLE AND LOOP WIRE SHALL BE OF CONTINUOUS RUN WITH NO SPLICES. ALL CONNECTIONS TO BE WATERTIGHT WITH APPROVED SPLICE KITS. WATERTIGHT CONNECTIONS SHALL EXTEND TO AND ENCOMPASS EACH OUTER JACKET OF THE DETECTOR FEEDER AND LOOP WIRE CABLES.
 5. ALL LEADS FOR INDIVIDUAL LOOPS TO BE KEPT SEPARATE AND LOOP WIRE BETWEEN THE LOOP AND THE
- 7. WHERE LOOPS ARE TO BE INSTALLED ON PROJECTS INVOLVING EITHER ASPHALT PAVEMENT CONSTRUCTION OR MILLING AND OVERLAY OF AN EXISTING ASPHALT PAVEMENT, LOOPS SHALL BE INSTALLED IN THE BASE COURSE PRIOR TO PLACEMENT OF THE ASPHALT SURFACE COURSE.

FEEDER CABLE CONNECTION SHALL BE TWISTED THREE TURNS PER FOOT

6. ALL LOOPS SHALL BE WET CUT WITH EQUIPMENT APPROVED BY THE CITY TRAFFIC ENGINEER.

- 8. IF EXISTING LOOPS ARE TO BE ABANDONED AND NEW LOOP INSTALLED, ABANDONED LOOP WIRES SHALL BE REMOVED OR CUT COMPLETELY THROUGH ALONG ALL SLOTS PARALLEL TO VEHICLE FLOW.
- 9. LOOPS SHALL BE #14 AWG STRANDED WIRE IN PVC DUCT MADE UP OF 2 NON-TWISTED TURNS IN SINGLE SLOT OR AS RECOMMENDED BY MANUFACTURER OF THE DETECTOR AMPLIFIER. LOOP SHALL BE PLACED IN SAWED SLOTS IN A FIGURE EIGHT MANNER WITH DEVICE WHICH WILL NOT DAMAGE THE WIRE INSULATION. LEAD-IN CABLE SHALL BE 2-1C #14 AWG TWISTED.

LOOP DETECTION

LEE'S SUMMINICATION OF SOUR IN SECONDARY

E DETAIL! MIT, MO COUNTY,

SUMMI KSON C

SUMMIT

S

Н

Z

CTIO

 ∞

CONDUIT

LUMINAIRE I LEE'S SUMMI

AND

OLE

Drawn By: BWC

Checked By: MP

TS-7

Date: 01/2020

Proj. #:

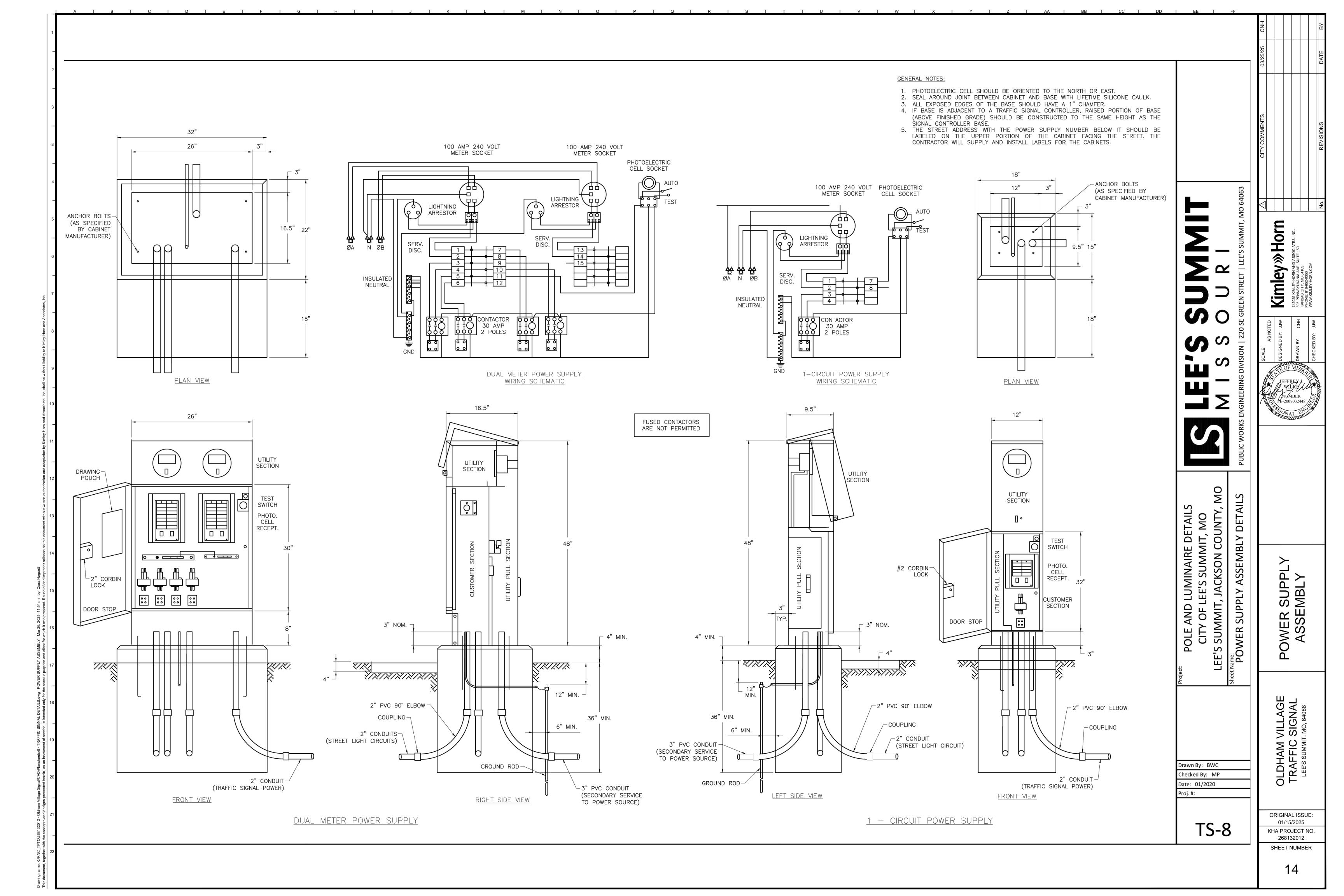
CONDUIT &
DETECTION
DETAILS

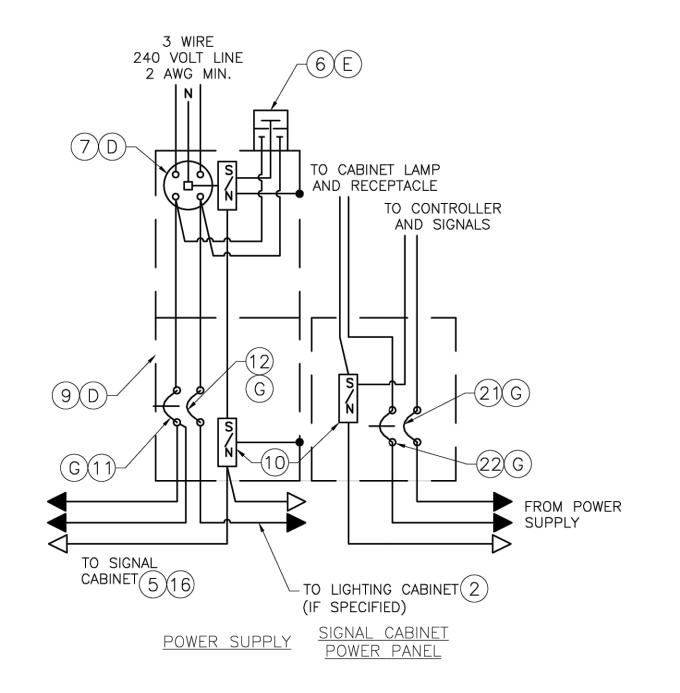
OLDHAM VILLAGE TRAFFIC SIGNAL LEE'S SUMMIT, MO, 64086

ORIGINAL ISSUE: 01/15/2025 KHA PROJECT NO 268132012

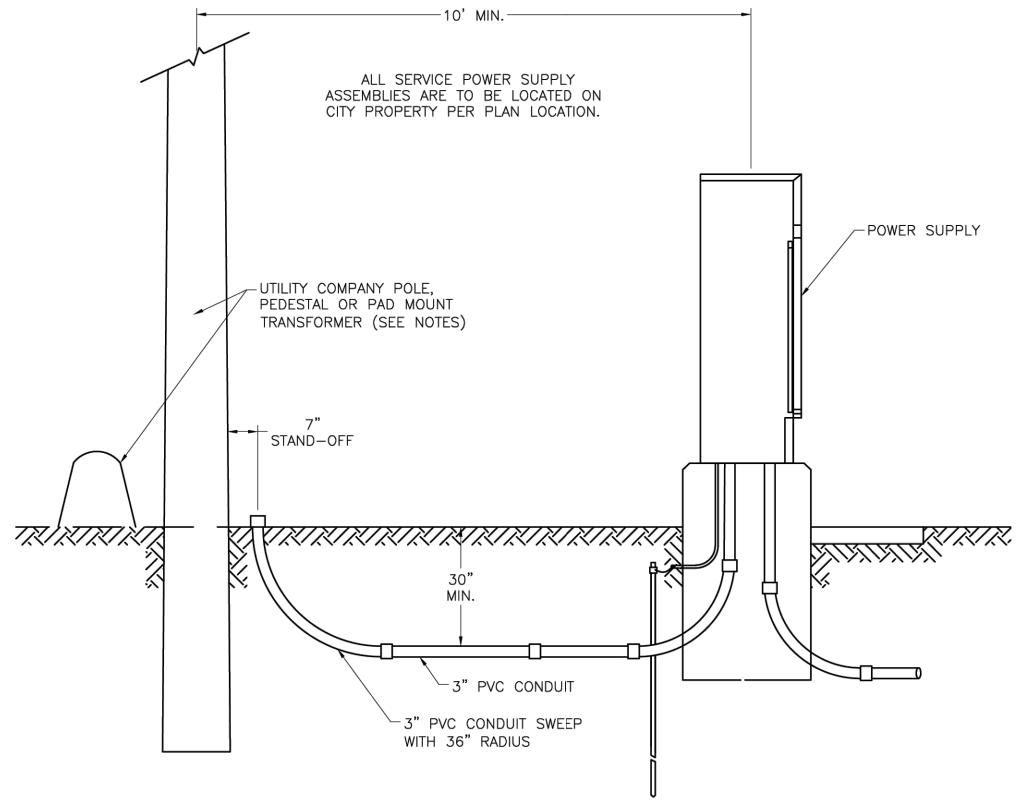
13

SHEET NUMBER





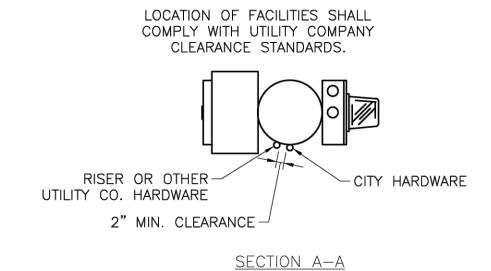
OVERHEAD SERVICE POWER SUPPLY WIRING SCHEMATIC SIGNALS AND/OR LIGHTING



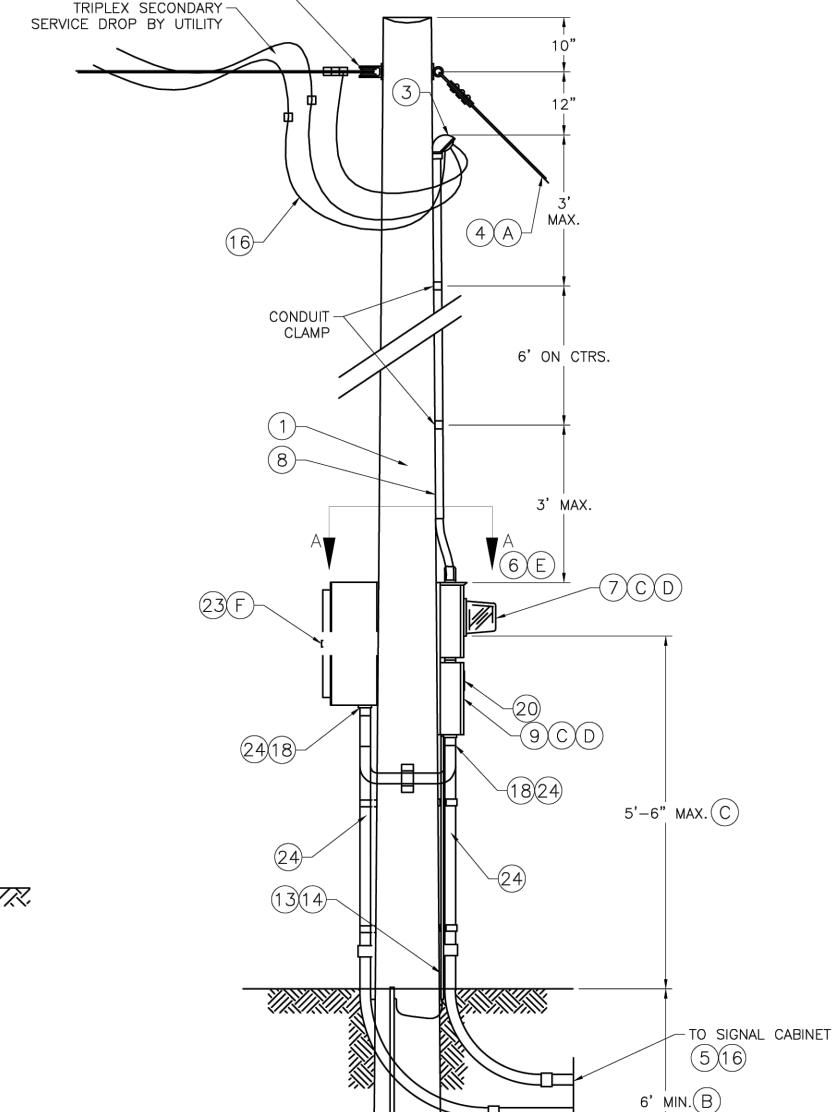
SECONDARY SERVICE CONNECTION DETAILS

NOTES:

- 1. CONTRACTOR SHALL INSTALL A CONDUIT STUB 24" TO 6" ABOVE GROUND AT UTILITY POLES. CONDUIT SHALL BE STUBBED TO THE SIDE OF THE POLE THAT WILL ALLOW A DIRECT RUN UP THE POLE TO THE TRANSFORMER WITHOUT CROSSING OTHER UTILITY LINES OR CABLES. THE END OF THE CONDUIT SHALL BE CAPPED.
- 2. CONTRACTOR SHALL INSTALL CONDUIT IN A TRENCH TO WITHIN 24" OF PEDESTALS OR PAD MOUNT TRANSFORMERS AND LEAVE A 36" X 36" X 36" ACCESS HOLE IN THE GROUND. CONTRACTOR SHALL KEEP OPEN TRENCH COVERED AND PROMPTLY BACKFILL ACCESS HOLE WHEN SERVICE IS COMPLETED.



CLEVIS OR RACK-



OVERHEAD SERVICE POWER SUPPLY TEMPORARY SPAN WIRE SIGNAL ONLY

_TO PULL BOX (5)(19)(2)

(SIGNAL CONDUIT SYSTEM)

15(H)

	LIST OF MATERIALS
ITEM	DESCRIPTION
1	SERVICE POLE 30' MIN., CLASS IV WOOD, CONTRACTOR PROVIDED, CITY OWNED. *
2	#8 AWG MIN. CABLE, 600 VOLT *
3	SERVICE ENTRANCE HEAD
4	GUY CABLE, AS REQUIRED
5	2" MIN. RIGID CONDUIT WITH PREFORMED ELBOWS
6	LIGHTNING ARRESTOR, VALVE TYPE, 2 POLE, 650 VOLT
7	240 VOLT METER SOCKET, 100 AMP FOR SIGNALS
8	2" MIN. RIGID CONDUIT
9	SERVICE DISCONNECT BOX, LOCKING, RAINTIGHT, NEMA 4
10	INSULATED, GROUNDABLE NEUTRAL, 200 AMP MINIMUM
11	SIGNAL BREAKER, SINGLE POLE, 40 AMP MIN., TYPE A OR B
12	LIGHTING BREAKER, SINGLE POLE, 40 AMP, TYPE A OR B
13	METAL CONDUIT, 1/2"
14	GROUND WIRE, #2 AWG MIN.
15	GROUND ROD, 3/4" X 8' MIN.
16	#2 AWG MIN. CABLE, 600 VOLT
17	RESERVED
18	THREADED CONDUIT HUB WITH SEALING WASHERS
19	LIGHTING CABLES *
20	WEATHERPROOF ADHESIVE LABEL (SIGNALS) VINYL RAISED LETTERING
21	TYPE B CONTROLLER AND SIGNAL BREAKER, AS SPECIFIED.
22	TYPE B AUXILIARY BREAKER, 15 AMP
23	LIGHTING CONTROL CABINET
24	2" STEEL CONDUIT (MIN.)
*	SEE PLANS

NOTES:

- A SERVICE POLE SHALL BE GUYED WHEN SPAN OF OVERHEAD WIRE EXCEEDS 50 FEET.
- (B) INCREASE 1 FOOT FOR EACH 5 FEET ABOVE 50 FEET.
- (C)SERVICE DISCONNECT BOXES AND METER BOXES SHALL BE ALUMINUM ´OR STAINLESS STEEL. ALL HARDWARE, HINGES, CATCHES, ETC. SHALL BE STAINLESS STEEL. METER SOCKET AND OTHER EQUIPMENT SHALL BE U.L. APPROVED AND CONFORM TO THE REQUIREMENTS OF THE UTILITY COMPANY PROVIDING POWER.
- (D) SCHEMATIC DIAGRAM SHALL BE MOUNTED ON INSIDE OF DOOR.
- (E)UTILITY COMPANY SHALL DECIDE IF LIGHTING ARRESTERS ARE TO BE CONNECTED ONT HE LOAD SIDE OR LINE SIDE OF THE METER. THE UTILITY COMPANY SHALL ALSO DECIDE IF THE LIGHTING ARRESTER IS TERMINATED IN THE METER OR DISCONNECT CABINET. IF TERMINATED IN THE DISCONNECT CABINET, IT SHALL BE INSTALLED ON THE CONNECT
- F)IF LIGHTING IS SPECIFIED, INSTALL LIGHTING CONTROL ON POWER
- (G) BREAKERS SHALL CONFORM TO THE STANDARD SPECIFICATIONS.
- (H) IF SUBSURFACE CONDITIONS EXIST WHICH PROHIBIT THE PLACEMENT OF THE GROUND ROD IN VERTICAL POSITION, THE ROD MAY BE DRIVEN AT AN OBLIQUE ANGLE NOT TO EXCEED 45 DEGREES BURIED IN A TRENCH AT LEAST 30 IN. DEEP. CONNECTION TO GROUND ROD SHALL BE CLAMP TYPE AS DETAILED ON STANDARD DRAWING TS-2.

GENERAL NOTES:

- 1. FOR CABLE TYPES AND INSTALLATION, SEE STANDARD SPECIFICATIONS. 2. THE TYPE OF POWER SUPPLY ASSEMBLY IS SHOWN ON THE PLANS OR IS DESIGNATED ON THE CONTRACT.
- 3. THE UTILITY COMPANY SHALL BE NOTIFIED 30 DAYS PRIOR TO THE DATE OF SERVICE WILL BE REQUIRED. 4. ALL OPENINGS IN ANY UTILITY ENCLOSURE, SERVICE BOX, OR METER
- SHALL BE COVERED AND SEALED WITH LIFETIME SILICONE CAULK. 5. CONTRACTOR TO PROVIDE SUFFICIENT NUMBER OF GROUND ROD(S) AS
- REQUIRED FOR MAXIMUM OF 25 OHMS RESISTANCE TO GROUND. 6. ALL MATERIALS REQUIRED EXCLUDING REFERENCED ITEMS AS SHOWN ON DRAWING SHALL BE INCLUDED IN PRICE BID FOR POWER SUPPLY ASSEMBLY.

*		
-		
-		
	l	

DETAILS MO COUNTY, LEE'S SUMMIT, MO VOLTS) ASSEMBLY (120 JACKSON SUMMIT, S

OLE

POWER SUPPLY

VILLAGE SIGNAL OLDHAM V TRAFFIC (LEE'S SUMMIT,

TS-9

Drawn By: BWC

Checked By: MP

Date: 01/2020

ORIGINAL ISSUE: 01/15/2025 KHA PROJECT NO. 268132012

15

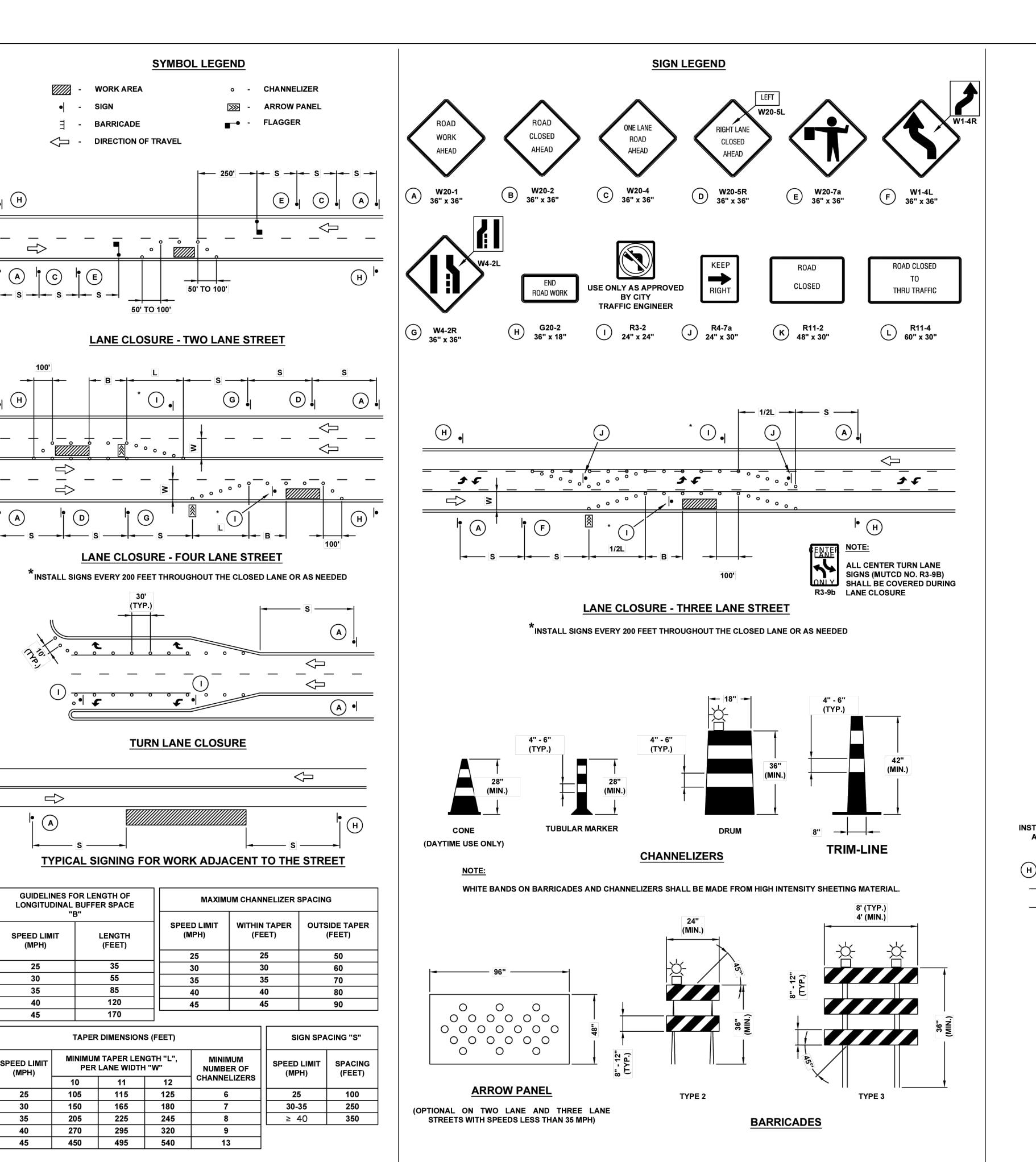
SHEET NUMBER

> >

PL 20

UP Y 1

POWER SASSEMBI

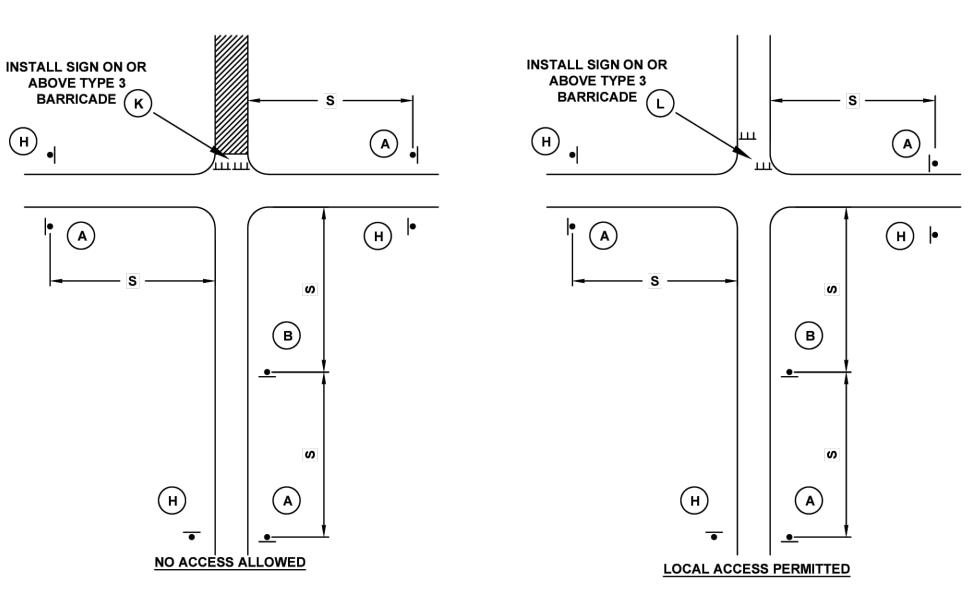


GENERAL NOTES:

- ALL SIGNS, BARRICADES, CHANNELIZERS, MARKINGS AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- ALL TRAFFIC CONTROL DEVICES SHALL BE STANDARD IN SIZE, SHAPE, COLOR, AND MESSAGE, IN GOOD CONDITION, AND RETRO-REFLECTORIZED. ALL SIGNS SHALL BE SECURELY MOUNTED WITH HEIGHT AND LATERAL LOCATION AS DESCRIBED IN THE MUTCD.
- WARNING LIGHTS SHALL BE USED ON BARRICADES IN PLACE AT NIGHT AND ON WARNING SIGNS WHICH ALERT DRIVERS ABOUT A CHANGE IN ALIGNMENT, TRAFFIC CONTROL, LANE CLOSURE, OR ROAD
- FLAGGERS SHALL BE USED WHERE INDICATED ON THE PLANS, WHERE CONSTRUCTION VEHICLES INTERACT WITH NORMAL TRAFFIC, OR WHERE CONSTRUCTION ACTIVITIES IMPOSE A RESTRICTION ON TRAFFIC, AS DIRECTED BY THE CITY TRAFFIC ENGINEER. WHERE FLAGGERS ARE USED, ADVANCE SIGNING SHALL BE ERECTED AS SHOWN IN THE DETAILS OR AS SPECIFIED IN THE MUTCD. FLAGGERS SHALL MEET THE REQUIREMENTS IN THE MUTCD IN REGARD TO CHARACTER, TRAINING, ATTIRE, AND
- 5. TRIM-LINES ARE THE CITY'S PREFERRED CHANNELIZING DEVICE. CONES MAY NOT BE USED AT
- TRAFFIC CONTROL DEVICES NOT IN USE OR NOT APPLICABLE SHALL BE EITHER COVERED OR REMOVED FROM THE WORK AREA.
- THE CONTRACTOR SHALL USE BARRICADES, STREET PLATES, OR FENCING AS NEEDED TO EFFECTIVELY SHIELD PEDESTRIAN AND VEHICULAR TRAFFIC FROM EXPOSED OBJECTS, EXCAVATIONS, AND
- 8. ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS AND SIDE STREETS UNLESS NOTED OTHERWISE ON
- NO STREET SHALL BE CLOSED WITHOUT THE APPROVAL OF THE CITY TRAFFIC ENGINEER. THE CONTRACTOR SHALL NOTIFY THE CITY TRAFFIC ENGINEER AT LEAST 7 DAYS IN ADVANCE OF ANY STREET CLOSURE. IF A DETOUR ROUTE AROUND THE CLOSURE IS TO BE PROVIDED, ALL DETOUR SIGNING SHALL BE AS SHOWN ON A PLAN APPROVED BY THE CITY TRAFFIC ENGINEER.
- 10. CONSTRUCTION VEHICLES PARKED ALONG STREETS SHALL BE LOCATED WITHIN THE WORK AREA (TRAFFIC CONTROL) OR WHERE OTHERWISE NORMALLY PERMITTED. CONSTRUCTION MATERIALS, INCLUDING TRAFFIC CONTROL AND VEHICLES SHALL NOT RESTRICT SIGHT DISTANCE FOR VEHICLES EXITING AT STREETS OR DRIVES.
- 11. CONSTRUCTION MATERIALS SHALL BE KEPT OFF OF SIDEWALKS, CONSOLIDATED IN ONE LOCATION WITHIN CITY RIGHT-OF-WAY, AND REMOVED DAILY UNLESS OTHERWISE APPROVED BY THE INSPECTOR. DIRT, MUD, AND OTHER CONSTRUCTION DEBRIS ON STREETS AND SIDEWALKS SHALL BE REMOVED
- IMMEDIATELY. 12. THE CONTRACTOR SHALL NOT PERFORM ANY WORK THAT WILL RESTRICT VEHICULAR TRAFFIC IN ANY WAY BETWEEN THE HOURS OF 7:00 A.M. AND 9:00 A.M. OR 4:00 P.M. AND 6:00 P.M. MONDAY THROUGH
- FRIDAY UNLESS OTHERWISE INDICATED IN THE SPECIFICATIONS. 13. ALL TRAVEL LANES SHOULD BE AT LEAST 11 FEET WIDE UNLESS OTHERWISE AUTHORIZED BY THE CITY TRAFFIC ENGINEER. A "NARROW LANES" SIGN SHALL BE INSTALLED IN ADVANCE OF A LANE WIDTH
- REDUCTION TO LESS THAN 11 FEET. 14. ALL EDGE DROP-OFFS OF MORE THAN 2 INCHES AND LESS THAN 4 INCHES SHOULD BE PROTECTED BY A WEDGE OR BARRIER AND ALL EDGE DROP-OFFS GREATER THAN 4 INCHES SHALL HAVE EDGE
- 15. THE "WORKERS" SYMBOLIC SIGN (MUTCD NO. W21-1A) MAY BE USED INSTEAD OF THE "ROAD WORK AHEAD" SIGN FOR WORK WITH A DURATION OF 12 HOURS OR LESS. THE "END ROAD WORK" SIGN IS NOT REQUIRED TO BE INSTALLED AFTER THE "WORKERS" SIGN.

PROTECTION (SEE TRAFFIC CONTROL SPECIFICATIONS FOR EDGE TREATMENT REQUIREMENTS).

- 16. NO TRAFFIC SIGNAL SHALL BE ALTERED OR MODIFIED IN ANY WAY WITHOUT A PLAN APPROVED BY THE CITY TRAFFIC ENGINEER.
- 17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TRAFFIC CONTROL DEVICES ON AN AROUND-THE-CLOCK BASIS, WHETHER OR NOT WORK IS ACTIVELY BEING PURSUED AND ANY DEFICIENCIES NOTED SHALL BE CORRECTED IMMEDIATELY.
- 18. THE TRAFFIC CONTROL REQUIREMENTS SHOWN ON THESE PLANS ARE MINIMUM REQUIREMENTS ONLY AND DO NOT ATTEMPT TO ADDRESS IN DEPTH THE VARIETY OF SITUATIONS THAT MAY OCCUR ONCE CONSTRUCTION HAS STARTED. IN NO WAY DO THE REQUIREMENTS SHOWN ON THESE PLANS RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR SELECTING THE PROPER TRAFFIC CONTROL DEVICES AND IMPLEMENTATION PROCEDURES THAT WILL ASSURE THE SAFETY OF DRIVERS, PEDESTRIANS, AND
- **WORKERS AT ALL TIMES.** 19. SHOULD THE CONTRACTOR FAIL TO ENFORCE THE TRAFFIC CONTROL PLAN OR FAIL TO CLEAN, REPLACE OR OTHERWISE MAINTAIN THE TRAFFIC CONTROL DEVICES WHEN DIRECTED TO DO SO BY THE CITY TRAFFIC ENGINEER OR REPRESENTATIVE. THE CITY MAY TAKE ONE OR MORE OF THE FOLLOWING
- A. EMPLOY ANOTHER AGENCY TO CORRECT DEFICIENCIES IN TRAFFIC CONTROL DEVICES AND DEDUCT
- THE COST FROM THE CONTRACTOR'S PAY ESTIMATE. B. STOP THE WORK UNTIL DEFICIENCIES ARE CORRECTED.
- C. SUSPEND ALL PAY ESTIMATES UNTIL DEFICIENCIES ARE CORRECTED, OR
- D. PLACE THE CONTRACTOR IN DEFAULT.



TYPICAL STREET CLOSURE

TR

CONTAILS FIC (DET,

DRAWN BY:

PROJECT #:

DATE:

CHECKED BY:

CNS

MJF

05/13/2024

ORIGINAL ISSUE: 01/15/2025 KHA PROJECT NO 268132012

16

SHEET NUMBER