



**LEGEND**

PROPOSED	DESCRIPTION
	TRAFFIC SIGNAL POLE WITH SPAN WIRE
	PEDESTAL POLE
	TRAFFIC SIGNAL CONTROLLER AND CABINET
	PULL BOX (36"x24"x18"d)
	PULL BOX (17"x30"x18"d)
	POWER METER
	LUMINAIRE
	TRAFFIC CONDUIT

**SIGNAL POLE SCHEDULE**

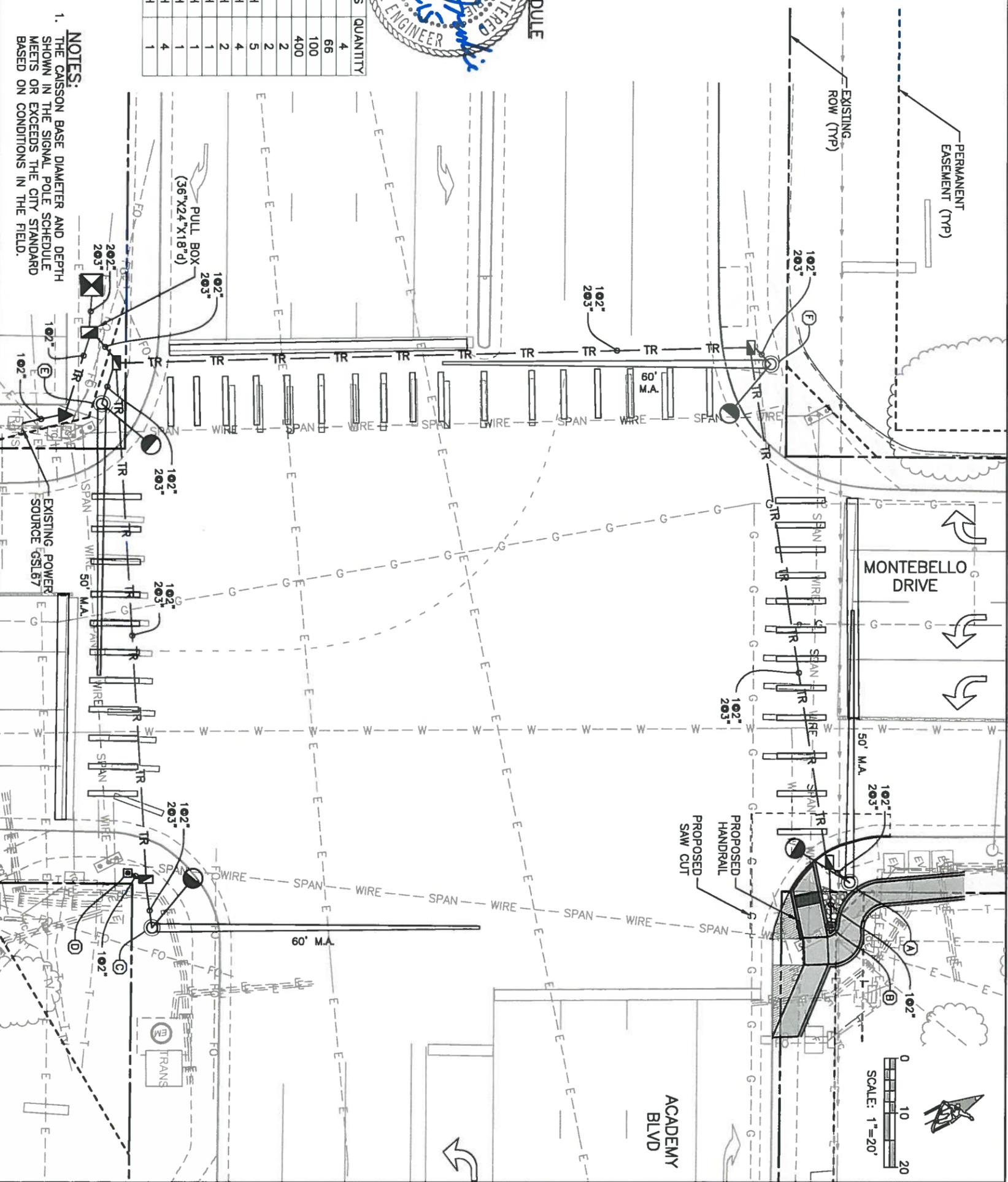
POLE NUMBER	A	C	E	F
LOCATION	NE CORNER	SE CORNER	SW CORNER	NW CORNER
NORTHING	1392404.29	1392286.38	1392321.07	1392433.78
EASTING	3205598.24	3205548.59	3205458.10	3205506.46
MAST ARM LENGTHS	50'	60'	50'	60'
BASE DIA.	36"	16"	36"	16"
DEPTH	16"	17'	36"	17'

**PEDESTAL AND PEDESTRIAN PUSH BUTTON POLE SCHEDULE**

POLE NUMBER	B	D
POLE TYPE	PUSH BUTTON	PUSH BUTTON
LOCATION	NE CORNER	SE CORNER
NORTHING	1392397.67	1392286.90
EASTING	3205603.94	3205537.39
POLE MATERIAL	ALUMINUM	ALUMINUM
BASE DIA.	18"	2"
DEPTH	18"	2"

**TABULATION OF TRAFFIC SIGNAL ITEMS**

ITEM DESCRIPTION	UNITS	QUANTITY
DRILLED CAISSON (18 INCH)	LF	4
DRILLED CAISSON (36 INCH)	LF	66
2 INCH ELECTRICAL CONDUIT	LF	100
ONE 2" & TWO 3" ELECTRICAL CONDUIT (SAME TRENCH/BORE)	LF	400
TRAFFIC SIGNAL LIGHT POLE STEEL (1-50 FOOT MAST ARM)	LF	2
TRAFFIC SIGNAL LIGHT POLE STEEL (1-60 FOOT MAST ARM)	LF	2
PULL BOX (36" x 24" x 18" @ 1) (30" x 17" x 12" @ 4)	EACH	5
TRAFFIC SIGNAL LIGHT POLE STEEL	EACH	4
CONTROLLER (SAFETRIAN 332)	EACH	2
CONTROLLER CABINET ROCKFIBER BASE	EACH	1
POWER METER	EACH	1
LED LUMINAIRE	EACH	4
FURNISH AND INSTALL ELECTRICAL SERVICE	EACH	1



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**NOTES:**  
 1. THE CAISSON BASE DIAMETER AND DEPTH SHOWN IN THE SIGNAL POLE SCHEDULE SHEETS OR EXCEEDS THE CITY STANDARD BASED ON CONDITIONS IN THE FIELD.

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Sheet Revisions	
(R-X)	Date
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	Initials

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 Colorado Springs, CO 80903  
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 Revised:  
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ACADEMY BLVD./MONTEBELLO DR.  
 SIGNAL POLE, MAST ARM  
 AND CONDUIT PLAN

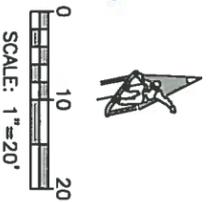
Project No./Code  
 115175-01

Designer: TSF  
 Detailer: C.J.L.  
 Subst: SIGNAL Sheets: TRF 1 of 2

Sheet Number  
 2

**LEGEND**

- PROPOSED**
- TRAFFIC SIGNAL POLE WITH MAST ARM
  - PEDESTRIAN PUSH BUTTON
  - PEDESTAL POLE
  - TRAFFIC SIGNAL HEAD WITH BACKPLATE
  - PROTECTED/PERMISSIVE LEFT TURN SIGNAL HEAD
  - LEFT TURN SIGNAL HEAD
  - TRAFFIC SIGNAL CONTROLLER AND CABINET
  - PULL BOX (36"x24"x18"Ø)
  - PULL BOX (17"x30"x18"Ø)
  - VEHICLE DETECTOR CAMERA
  - LUMINAIRE
  - ILLUMINATED STREET NAME SIGN
  - MOUNTED STREET SIGN
  - SIGNAL HEAD PED



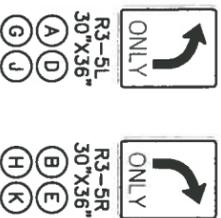
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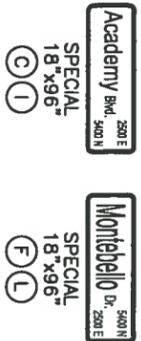
**PROPOSED PEDESTRIAN SIGNS**



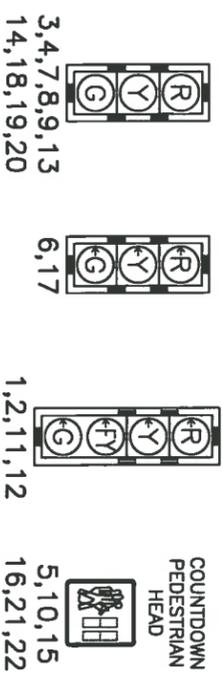
**PROPOSED TRAFFIC SIGNS**



**PROPOSED ILLUMINATED SIGNS**



**PROPOSED SIGNAL HEADS**

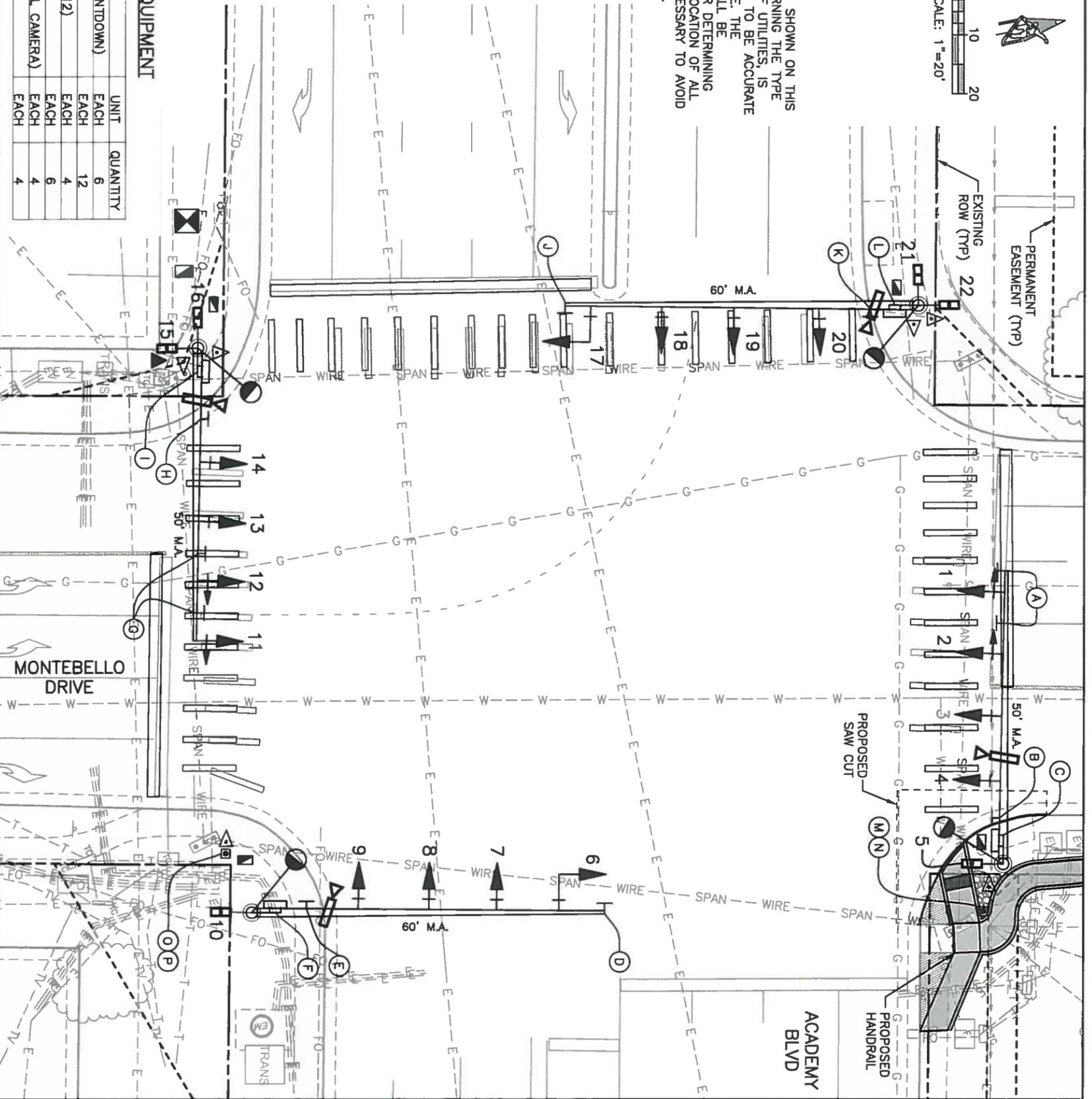


**NOTES**

1. EACH PEDESTRIAN PUSH BUTTON SHALL BE ACCOMPANIED BY A 9"x15" R10-3e PEDESTRIAN SIGN. THIS SIGN SHALL BE INCLUDED IN THE PEDESTRIAN PUSH BUTTON PAY ITEM.
2. ALL VEHICLE SIGNAL HEADS SHALL BE ALUMINUM WITH 12-INCH SECTIONS AND TUNNEL VISORS.
3. ALL VEHICLE AND PEDESTRIAN SIGNAL HEADS SHALL BE BLACK IN COLOR.
4. ALL RED, YELLOW AND GREEN "BALL & ARROW" VEHICLE INDICATIONS; AND ALL PEDESTRIAN "SYMBOL" INDICATIONS SHALL BE APPROVED L.E.D. TYPE.

**TABULATION OF SIGNAL EQUIPMENT**

ITEM DESCRIPTION	UNIT	QUANTITY
PEDESTRIAN SIGNAL FACE-16 (COUNTDOWN)	EACH	6
TRAFFIC SIGNAL FACE (12-12-12)	EACH	12
TRAFFIC SIGNAL FACE (12-12-12-12)	EACH	4
PEDESTRIAN PUSH BUTTON	EACH	6
VEHICLE DETECTION SYSTEM (SIGNAL CAMERA)	EACH	4
ILLUMINATED STREET NAME SIGN	EACH	4



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Fax: 719.314.1804

Sheet Revisions

Date	Comments	Initials

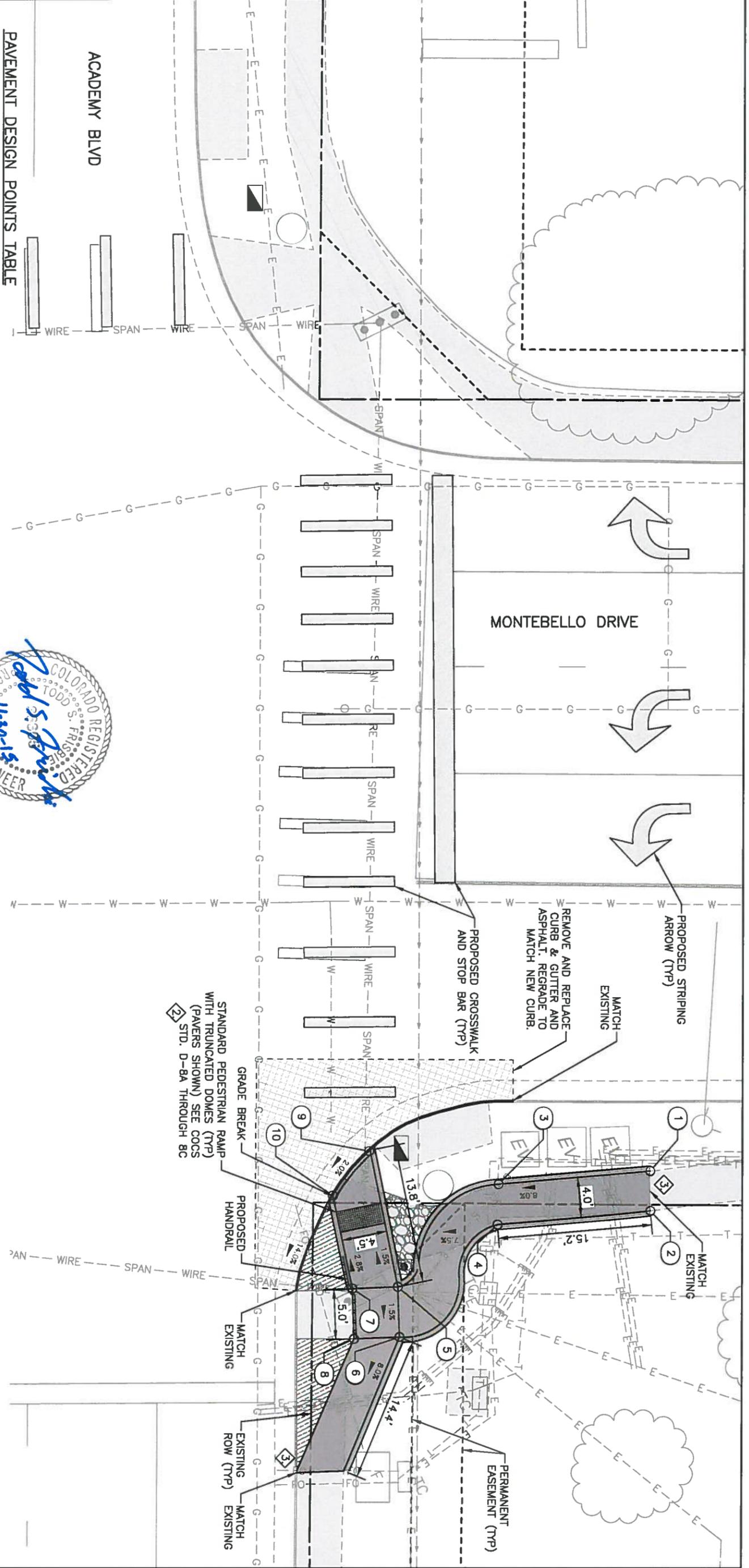


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As Constructed	ACADEMY BLVD./MONTEBELLO DR. SIGNAL HEAD AND SIGNALING PLAN	Project No./Code
No Revisions:		115175-01
Revised:	Designer: TSF Detailer: C.J.L.	
Void:	Subset: SIGNAL	Sheet Number
	TRF 2 of 2	3

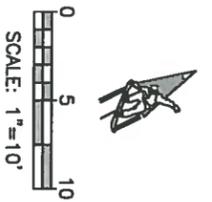
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2	1392421.94	3205609.91	6463.39
3	1392409.68	3205600.80	6463.07
4	1392407.81	3205604.34	6462.99
5	1392396.24	3205605.43	6461.95
6	1392394.18	3205609.98	6461.88
7	1392392.15	3205603.57	6461.88
8	1392390.08	3205608.12	6461.81
9	1392389.83	3205592.08	6461.75 FL
10	1392394.53	3205594.45	6461.63 FL



- NOTES**
1. ALL ITEMS SHALL MEET THE LATEST COLORADO SPRINGS STANDARDS.
  2. A PEDESTRIAN RAMP DETECTABLE WARNING ZONE TYPE OF EITHER PANELS OR PAVERS IS TO BE DETERMINED BY THE ENGINEER.
  3. A DISTANCE OF 5 FEET SHALL BE USED TO THE IN-PROPOSED CURB & GUTTER.

- LEGEND**
- EXISTING CONCRETE SIDEWALK/PEDESTRIAN RAMP
  - PROPOSED CONCRETE SIDEWALK/PEDESTRIAN RAMP
  - PROPOSED ASPHALT
  - SAW CUT



Print Date: 11/16/2015 12:24:10 PM  
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**Sheet Revisions**

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**As Constructed**

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**ACADEMY BLVD./MONTEBELLO DR. INTERSECTION DETAIL**

Designer: TSF  
 Detailer: CUL  
 Subset: INT

**Project No./Code**  
 115175-01

Sheet Number: 4

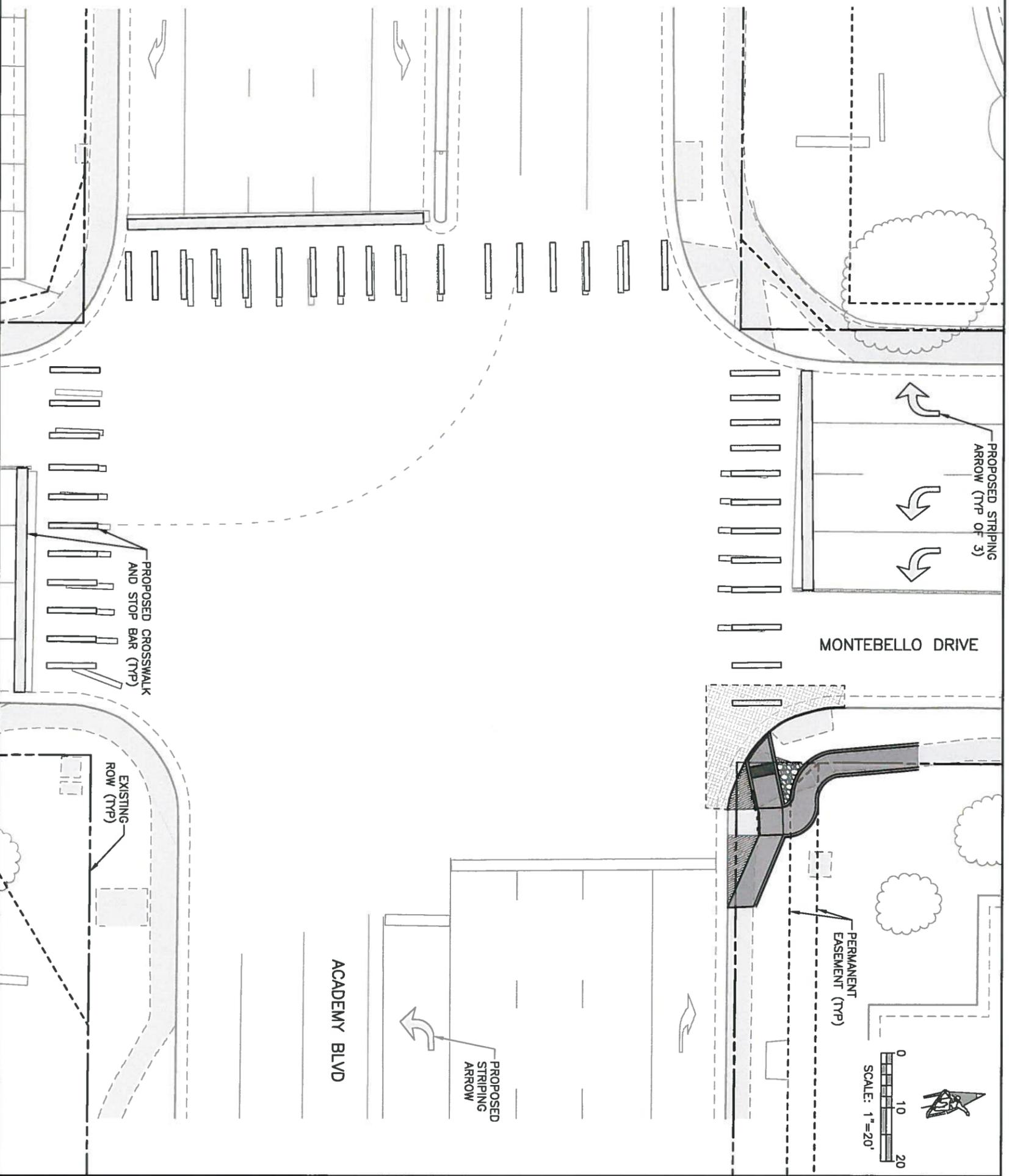
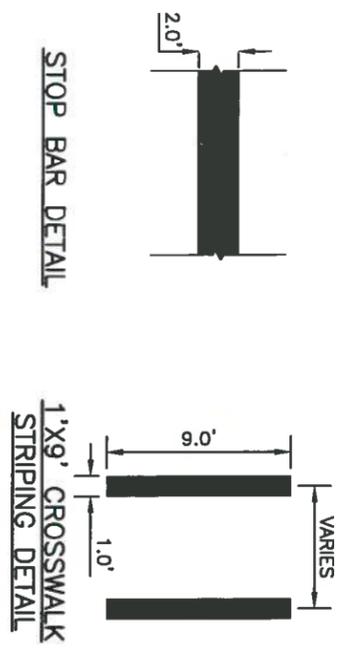
- LEGEND**
-  EXISTING CONCRETE SIDEWALK/PEDESTRIAN RAMP
  -  PROPOSED CONCRETE SIDEWALK/PEDESTRIAN RAMP
  -  PROPOSED ASPHALT
  -  SAW CUT

- NOTES**
1. ALL ITEMS SHALL MEET THE LATEST COLORADO SPRINGS STANDARDS.



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**ACADEMY BLVD./MONTEBELLO DR. PAVEMENT MARKING PLAN**

Designer: TSF  
 Detailer: CUL  
 Subst: STRIPING

Structure Numbers  
 Sheets: PMP 1 of 1

Project No./Code: 115175-01  
 Sheet Number: 5



# CITY OF COLORADO SPRINGS

## ENGINEERING - TRAFFIC OPERATIONS

Project Number: 115175-02

### ACADEMY BLVD AND LEHMAN DRIVE PROPOSED SIGNAL

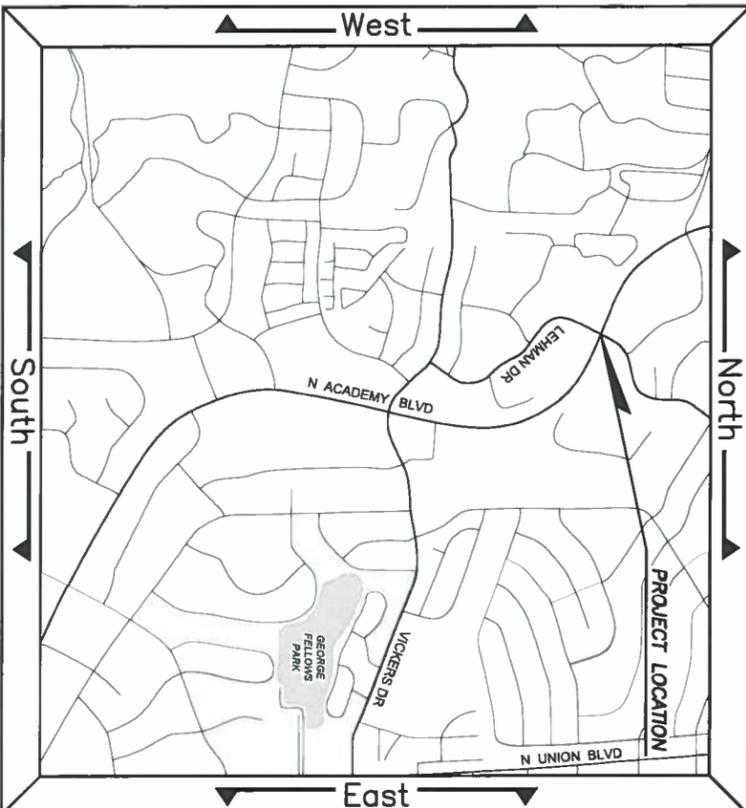
SHEET NO.            INDEX OF SHEETS

1	TITLE SHEET	
2	SIGNAL POLE MAST ARM & CONDUIT PLAN	
3	SIGNAL HEAD AND SIGNING PLAN	
4	INTERSECTION DETAIL PLAN	
5	PAVEMENT MARKING PLAN	



**GENERAL SIGNAL NOTES**

1. WORK WILL BE DONE IN ACCORDANCE WITH: ALL THE STANDARDS SET BY THE TRAFFIC ENGINEER, OR DESIGNER, AT THE PRE-CONSTRUCTION MEETING.
2. IN ACCORDANCE WITH THE STANDARDS SET FORTH IN THE "THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS."
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF UTILITIES PRIOR TO ANY EXCAVATING; AND IF CHANGES ARE REQUIRED, HAVING THE TRAFFIC ENGINEER OR DESIGNER RELOCATE THE FACILITY.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BARRICADING, SAFETY PRECAUTIONS (CFR1926), AND REMOVAL OF EXCESS DIRT AND MATERIALS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DIGGING OF POLE BASE HOLE, PROVIDING FORMS, SET UP OF BOLTS, CONDUIT STUBBOLTS, J-BOX AND THE FORMING, POURING AND FINISHING OF CONCRETE. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS.
6. CONCRETE TO BE STATE CLASS BZ POURED AGAINST VIRGIN (UNDISTURBED) SOIL. ALL BASES SHALL BE VIBRATED TO ELIMINATE AIR POCKETS. A COPY OF SIGNED BATCH TICKET MUST ACCOMPANY BILLING.
7. BASE SHALL BE TROWEL FINISHED WITH STUB OUT DIRECTIONS SCRIBED AT EDGE. (SEE FIG. 1-3)
8. CONTRACTOR SHALL CONTACT THE TRAFFIC ENGINEER, OR DESIGNER, FOR INSPECTION OF FORM, BOLTS AND STUBOUT LAYOUT 24 HOURS PRIOR TO INTENT OF POUR, AND (2-HOUR MINIMUM CONFIRMATION) PRIOR TO POURING CONCRETE. (POURING BASES WITHOUT AN INSPECTION WILL RESULT IN CONTRACTOR REMOVING SAID BASE AND INSTALLING A NEW ONE AT CONTRACTOR EXPENSE WITHIN ONE WEEK). EXPOSED BOLT THREADS AND NUTS SHALL BE FREE OF CONCRETE AND DEBRIS. THE TRAFFIC SIGNAL INSPECTOR PRIOR TO ACCEPTANCE SHALL INSPECT FINISHED BASE.
9. CONTRACTOR MUST SUPPLY VERIFICATION OF POLE DATA WHEN FURNISHING OWN POLES.
10. FINISHED PRODUCT SHOULD CONFORM TO CURRENT COLORADO SPRINGS CITY TRAFFIC SIGNALS STANDARDS FOR COSMETICS & QUALITY IN WORKMANSHIP AS STATED IN THIS DOCUMENT. IF CONTRACTOR HAS ANY QUESTIONS OR DOESN'T UNDERSTAND SOMETHING, THEN ASK FOR INTERPRETATION BEFORE CONTINUING WORK TO AVOID DOING SOMETHING TWICE.
11. CONDITIONAL ACCEPTANCE: ONCE CONSTRUCTION OF A TRAFFIC SIGNAL HAS BEEN SATISFACTORILY COMPLETED, THE SIGNALS ARE "CONDITIONALLY ACCEPTED" BY OWNER. AT THIS TIME THE SIGNAL IS TURNED ON AND THE "BURN-IN" PERIOD BEGINS. THE BURN-IN PERIOD WILL LAST 15 DAYS. DURING THE BURN-IN PERIOD THE SIGNAL SYSTEM IS ALLOWED TO OPERATE UNDER REAL WORLD CONDITIONS. ANY MALFUNCTION OCCURRING DURING THIS PERIOD WILL REQUIRE A REPAIR OR REPLACEMENT AND IF THE MALFUNCTION IS SERIOUS ENOUGH, THE BURN-IN PERIOD MUST BE RESTARTED.



**VICINITY MAP**  
NTS

<b>CITY OF COLORADO SPRINGS</b>	
MATTHEW KRAGER, CITY TRAFFIC ENGINEER <i>Mike Krager</i> CITY ENGINEER DATE: 12/16/15	DATE: 12/16/15
CSU ELECTRIC <i>Chris Lowry</i> DATE: 12/18/15	DATE: 12/18/15
CSU WATER DATE: 12/18/15	DATE: 12/18/15

**GENERAL SIGNAL NOTES CONTINUED**

12. FINAL ACCEPTANCE: AFTER THE BURN-IN PERIOD IS COMPLETED, ALL PUNCH LIST ITEMS HAVE BEEN CORRECTED AND THE CONTRACTOR HAS MET ALL CONTRACT REQUIREMENTS (SUCH AS FINAL CLEAN UP OF WORK SITE). THE SIGNAL WILL BE ACCEPTED.
13. CONTRACTOR SHALL GUARANTEE MATERIALS AND WORKMANSHIP FOR A PERIOD OF TWO YEARS.
14. CITY OF COLORADO SPRINGS TRAFFIC SIGNALS DIVISION RESERVES THE RIGHT TO BILL CONTRACTOR FOR MATERIALS AND LABOR FOR REPAIR AND/OR REPLACEMENT OF CONTRACT WORK DUE TO FAULTY CRAFTSMANSHIP DURING WARRANTY PERIOD.
15. IF CONTRACTOR REQUESTS SIGNALS PERSONNEL DURING NON-DUTY HOURS, (AFTER BUSINESS HOURS, WEEKENDS AND HOLIDAYS) CONTRACTOR WILL BE BILLED FOR ANY OVERTIME OF PERSONNEL. MINIMUM BILLING FOR OVERTIME PERSONNEL AND VEHICLES IS 2 HOURS AT STANDARD OVERTIME RATES.
16. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL SUBMIT AN "AS-BUILT" OR CORRECTED PLAN SHOWING, IN DETAIL, ALL CONSTRUCTION CHANGES INCLUDING BUT NOT LIMITED TO, WIRING, CABLE, POLES, CONTROLLER CABINET, DETECTION SYSTEMS AND LOCATION OF CONDUITS.
17. ALL TRAFFIC SIGNAL EQUIPMENT THAT IS REMOVED SHALL REMAIN THE PROPERTY OF CITY OF COLORADO SPRINGS. SUCH PROPERTY IS TO BE RETURNED BY THE CONTRACTOR TO THE 404 W. FONTANERO, CITY TRAFFIC SIGNALS SHOP. CONTRACTOR MUST CONTACT SIGNAL SHOP (719-385-6720) TO MAKE ARRANGEMENTS FOR DELIVERY. ALL TRAFFIC SIGNAL EQUIPMENT SHALL BE RETURNED IN THE SAME CONDITION AS REMOVED. POLES WILL BE STRIPPED CLEAN OF ALL ATTACHED PARTS BEFORE DELIVERY.
18. CONTRACTOR SHALL AT HIS SOLE EXPENSE, REPLACE OR RECONSTRUCT SIDEWALKS, CURBS, GUTTERS, PAVEMENT AND ANY OTHER IMPROVEMENTS REMOVED, BROKEN OR DAMAGED BY HIM WITH MATERIAL AND METHODS THAT CONFORM TO CURRENT CITY STANDARDS.
19. CITY OF COLORADO SPRINGS' TRAFFIC SIGNAL SHOP OR APPROVED CONTRACTOR SHALL INSTALL ALL VIDEO DETECTION. ONLY TRAFICON SYSTEM SHALL BE USED.
20. THE CONTRACTOR SHALL HAVE FULL MAINTENANCE RESPONSIBILITY OF THE TRAFFIC SIGNAL FROM THE TIME OF NOTICE TO PROCEED TO THE INITIAL ACCEPTANCE AND/OR COMPLETION OF REMOVALS IN THE CASE OF REBUILD OR MODIFICATIONS.
21. ALL NEW INSTALLATIONS REQUIRE ALL VEHICLE AND PEDESTRIAN INDICATIONS TO BE CITY OF COLORADO SPRINGS APPROVED LEOS. ALL NEW THREE SECTION SIGNAL HEADS MOUNTED ON MAST ARMS SHALL HAVE ONE PIECE BACK-PLATES.
22. CONTRACTORS THAT DAMAGE TRAFFIC SIGNAL SYSTEMS WILL BE BILLED FOR ALL MATERIALS USED AS WELL AS DOUBLE TIME FOR STAFF WHOM ARE PULLED OFF EXISTING JOBS TO MAKE THE REPAIRS.

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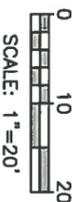
<b>ACADEMY BLVD AND LEHMAN DRIVE PROPOSED SIGNAL DESIGN TITLE SHEET</b>	<b>Project No./Code 115175-02</b>
Designer: <b>TSF</b> Designer: <b>PBB</b> Subst: <b>TTL</b>	Structure: <b>NTS</b> Numbers: <b>1</b> Sheets: <b>TTL 1 of 1</b> Sheet Number: <b>1</b>

**LEGEND**

**PROPOSED**

**DESCRIPTION**

- TRAFFIC SIGNAL POLE WITH SPAN WIRE
- PEDESTAL POLE
- TRAFFIC SIGNAL CONTROLLER AND CABINET
- PULL BOX (36"x24"x18"D)
- PULL BOX (17"x30"x18"D)
- POWER METER
- LUMINAIRE
- TRAFFIC CONDUIT



**SIGNAL POLE SCHEDULE**

POLE NUMBER	A	C	F	H
LOCATION	NE CORNER	SE CORNER	SW CORNER	NW CORNER
NORTHING	1396901.91	1396790.75	1396807.11	1396931.54
EASTING	3202049.24	3201992.00	3201921.95	3201951.52
SPAN WIRE LENGTHS	126'	72'	128'	109'
BASE DIA. DEPTH	36" 16"	36" 16"	36" 16"	36" 16"

**PEDESTAL AND PEDESTRIAN PUSH BUTTON POLE SCHEDULE**

POLE NUMBER	B	D	E	G	I
POLE TYPE	PUSH BUTTON				
LOCATION	NE CORNER	SE CORNER	SE CORNER	SW CORNER	NW CORNER
NORTHING	1396899.10	1396798.41	1396796.18	1396811.05	1396930.98
EASTING	3202046.02	3201987.90	3201975.92	3201923.03	3201953.94
POLE MATERIAL	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM
BASE DIA. DEPTH	18" 2'	18" 2'	18" 2'	18" 2'	18" 2'

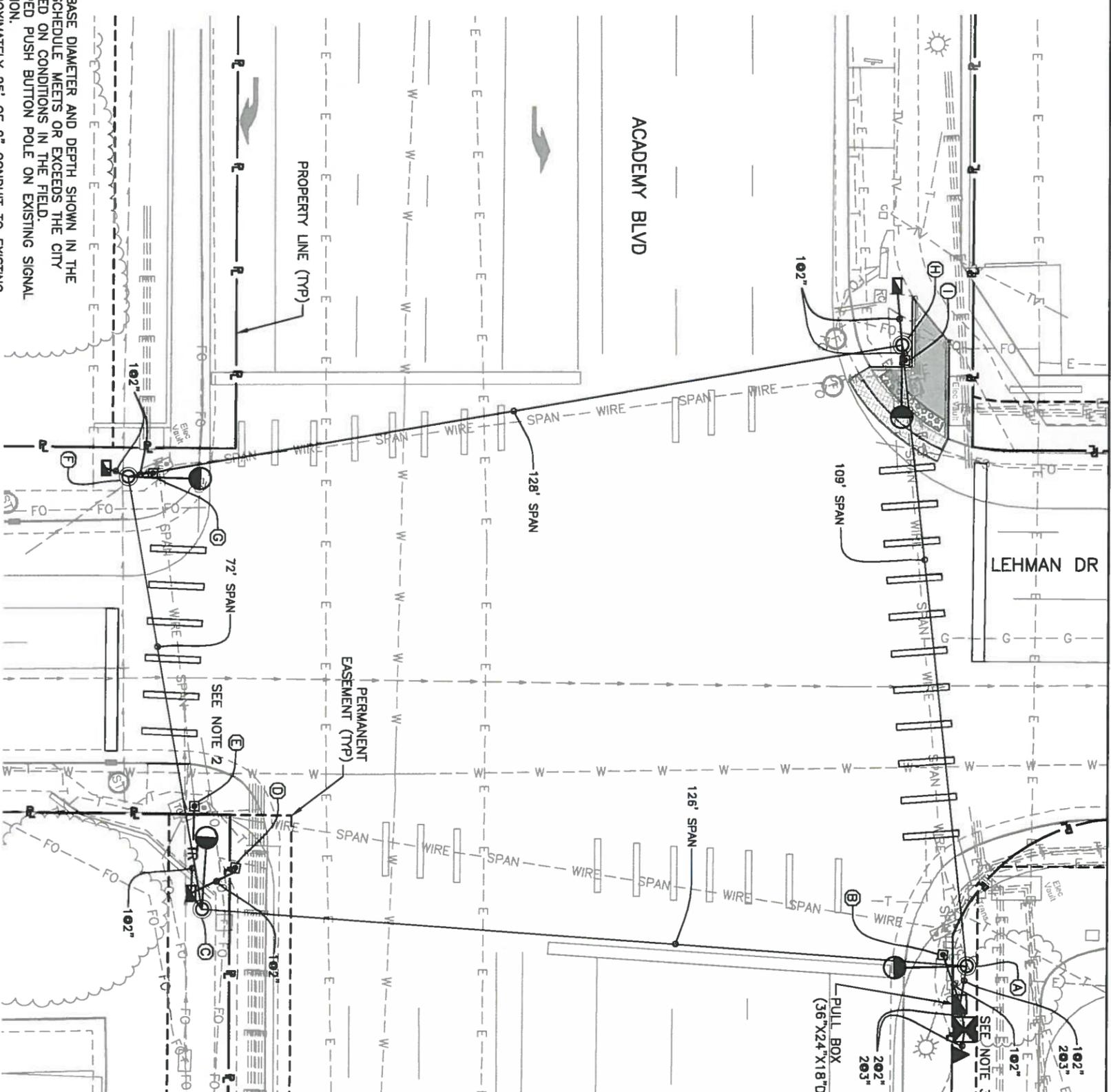
**TABULATION OF TRAFFIC SIGNAL ITEMS**

ITEM DESCRIPTION	UNITS	QUANTITY
DRILLED CAISSON (18 INCH)	LF	10
DRILLED CAISSON (36 INCH)	LF	64
2 INCH ELECTRICAL CONDUIT	LF	60
ONE 2" & TWO 3" ELECTRICAL CONDUIT (SAME TRENCH/BORE)	LF	20
SPAN WIRE CABLE	LF	450
PULL BOX (36" x 24" x 18" @ 1) (30" x 17" x 12" @ 3)	EACH	4
TRAFFIC SIGNAL LIGHT POLE STEEL	EACH	4
TRAFFIC SIGNAL PEDESTRIAN PUSH BUTTON	EACH	5
CONTROLLER (SAFETLAN 332)	EACH	1
CONTROLLER CABINET ROCKFIBER BASE	EACH	1
POWER METER	EACH	1
LED LUMINAIRE	EACH	4
FURNISH AND INSTALL ELECTRICAL SERVICE	EACH	1



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- NOTES:**
1. THE CAISSON BASE DIAMETER AND DEPTH SHOWN IN THE SIGNAL POLE SCHEDULE MEETS OR EXCEEDS THE CITY STANDARD BASED ON CONDITIONS IN THE FIELD.
  2. INSTALL NEW PED PUSH BUTTON POLE ON EXISTING SIGNAL POLE FOUNDATION.
  3. CONNECT APPROXIMATELY 25' OF 2" CONDUIT TO EXISTING POWER SOURCE TRANSFORMER G5198 IN NORTHEAST CORNER.



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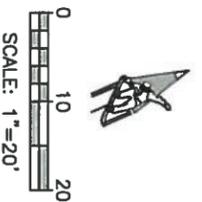
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As Constructed	ACADEMY BLVD AND LEHMAN DRIVE	Project No./Code
No Revisions:	SIGNAL POLE, MAST ARM AND CONDUIT PLAN	115175-02
Revised:	Designer: TSF	
	Detailer: PBB	
	Structure Numbers:	
	Signal Sheets: TRF 1 of 2	Sheet Number
		2

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Fax: 719.314.1804

**LEGEND**  
**PROPOSED**  
**DESCRIPTION**

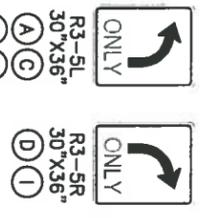
- TRAFFIC SIGNAL POLE WITH SPAN WIRE
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- TRAFFIC SIGNAL HEAD
- PROTECTED/PERMISSIVE LEFT TURN SIGNAL HEAD
- LEFT TURN SIGNAL HEAD
- TRAFFIC SIGNAL CONTROLLER AND CABINET
- PULL BOX (36"x24"x18"D)
- PULL BOX (17"x30"x18"D)
- VEHICLE DETECTOR CAMERA
- LUMINAIRE
- ILLUMINATED STREET NAME SIGN
- MOUNTED STREET SIGN
- SIGNAL HEAD PED



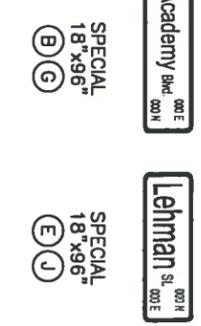
**PROPOSED PEDESTRIAN SIGNS**



**PROPOSED TRAFFIC SIGNS**



**PROPOSED ILLUMINATED SIGNS**



**PROPOSED SIGNAL HEADS**



- 1,2,5,6,7,10 3,4,8,9,12
- 11,14,15,16 13,16,17,18

ITEM DESCRIPTION	UNIT	QUANTITY
PEDESTRIAN SIGNAL FACE-16 (COUNTDOWN)	EACH	8
TRAFFIC SIGNAL FACE (12-12-12)	EACH	10
PEDESTRIAN PUSH BUTTON	EACH	8
VEHICLE DETECTION SYSTEM (SIGNAL CAMERA)	EACH	4
ILLUMINATED STREET NAME SIGN	EACH	4

**811**  
Knew what's below.  
Call before you dig.

THE INFORMATION SHOWN ON THIS DRAWING, CONCERNING THE TYPE AND LOCATION OF UTILITIES, IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE TYPE AND LOCATION OF ALL UTILITIES AS NECESSARY TO AVOID DAMAGE THERETO.

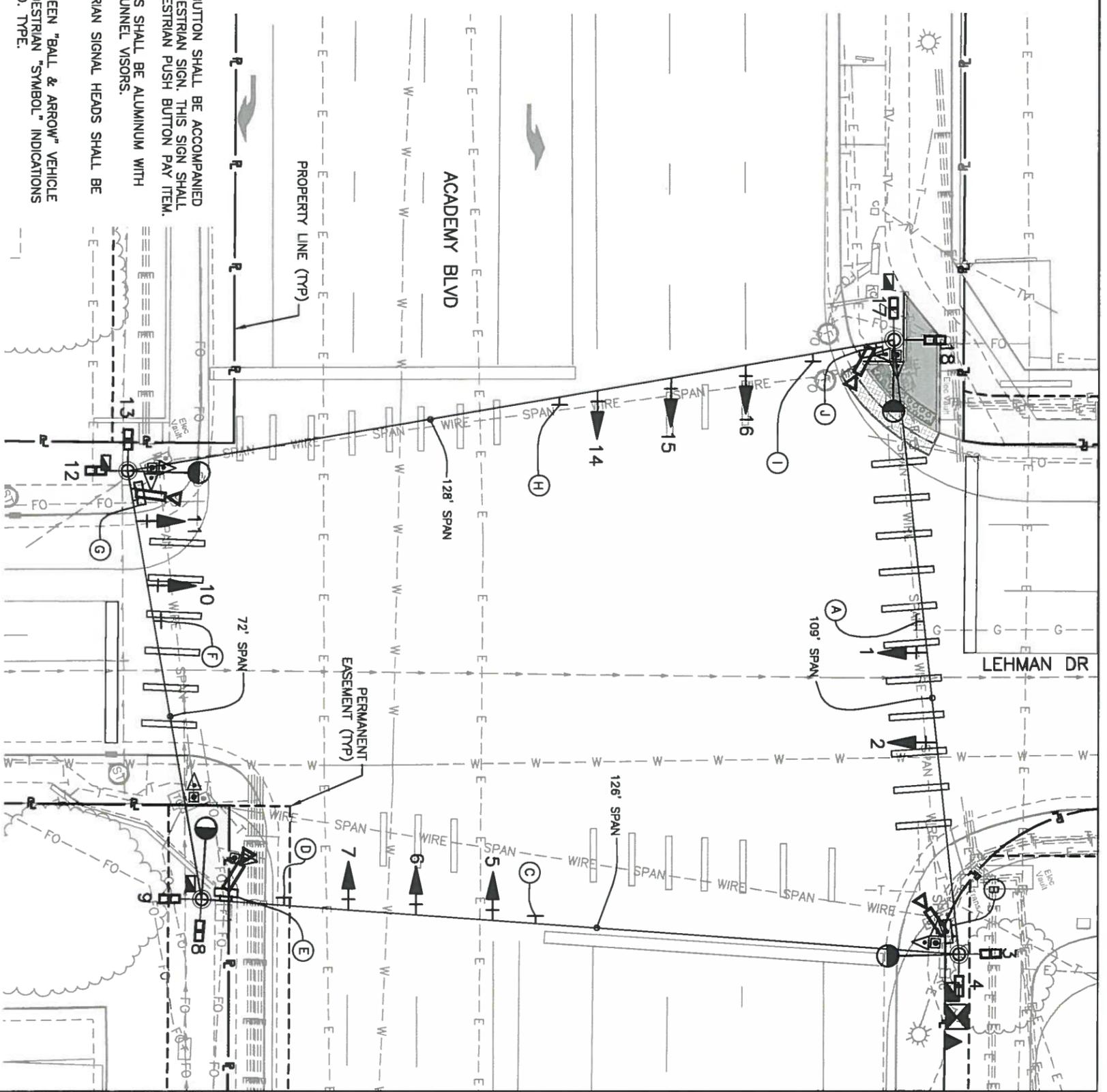
**NOTES**

EACH PEDESTRIAN PUSH BUTTON SHALL BE ACCOMPANIED BY A 9"x15" R10-3e PEDESTRIAN SIGN. THIS SIGN SHALL BE INCLUDED IN THE PEDESTRIAN PUSH BUTTON PAY ITEM.

ALL VEHICLE SIGNAL HEADS SHALL BE ALUMINUM WITH 12-INCH SECTIONS AND TUNNEL VISORS.

ALL VEHICLE AND PEDESTRIAN SIGNAL HEADS SHALL BE BLACK IN COLOR.

ALL RED, YELLOW AND GREEN "BALL & ARROW" VEHICLE INDICATIONS; AND ALL PEDESTRIAN "SYMBOL" INDICATIONS SHALL BE APPROVED L.E.D. TYPE.



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Sheet Revisions		
Date	Comments	Initials

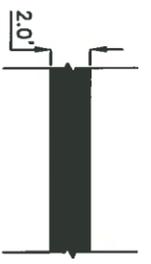
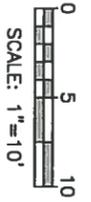
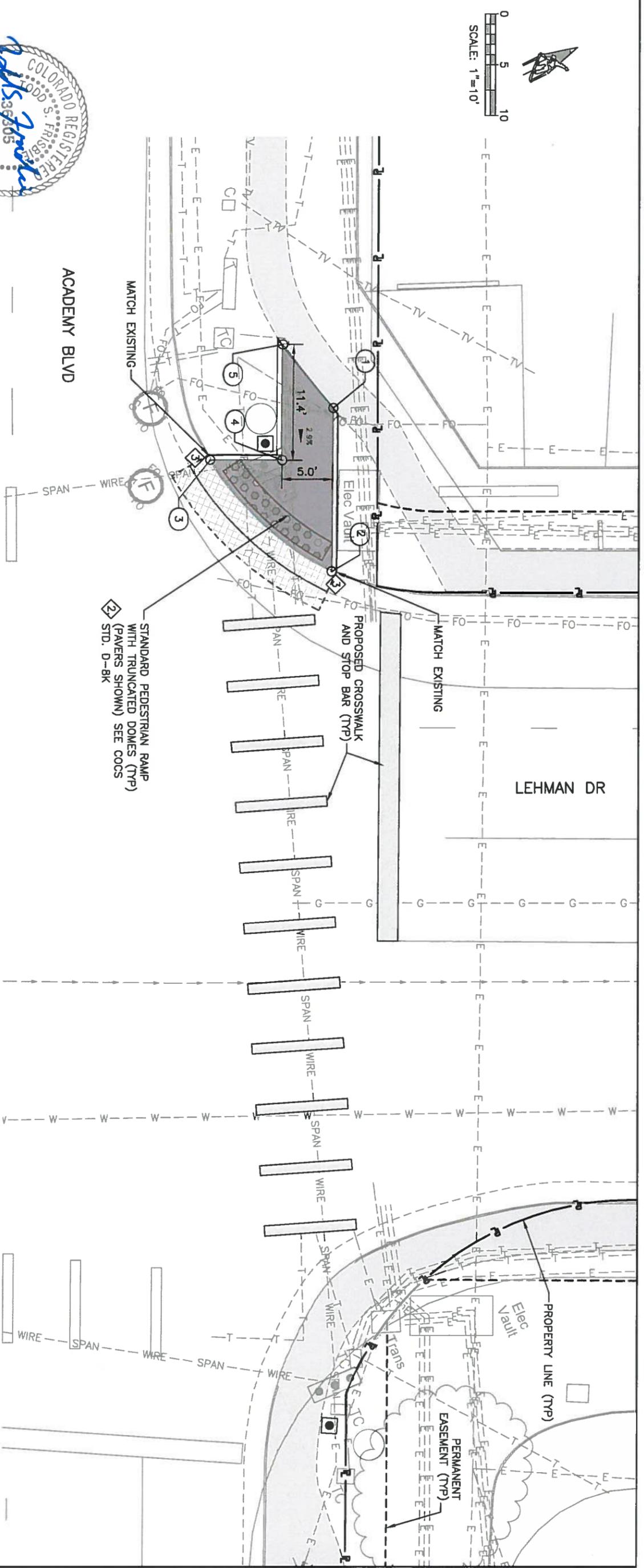
PO Box 1575, Mail Code 410  
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Colorado Springs, CO 80903  
Phone (719) 385-5918  
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As Constructed  
No Revisions:

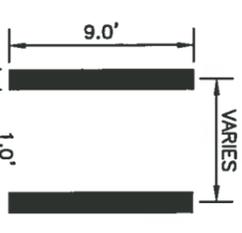
ACADEMY BLVD AND LEHMAN DRIVE  
SIGNAL HEAD  
AND SIGNING PLAN

Designer: TSF Structures  
Deteller: PBB Numbers  
Subset: SIGNAL Sheets: TRF 2 of 2

Project No./Code  
115175-02  
Sheet Number  
3



**STOP BAR DETAIL**



**1'X9' CROSSWALK STRIPING DETAIL**

**DESIGN POINTS TABLE**

NORTHWEST SIDEWALK AND RAMP DATA			
Point Number	Northing (Y)	Easting (X)	Elevation (Z)
1	1396938.72	3201954.12	6446.51
2	1396932.09	3201968.18	6446.17
3	1396925.36	3201953.28	6446.28
4	1396931.87	3201956.10	6446.36
5	1396936.34	3201945.79	6446.69

**DESIGN POINTS TABLE**

**LEGEND**

- EXISTING CONCRETE SIDEWALK/PEDESTRIAN RAMP
- PROPOSED CONCRETE SIDEWALK/PEDESTRIAN RAMP
- PROPOSED ASPHALT
- SAW CUT

**NOTES**

1. ALL ITEMS SHALL MEET THE LATEST COLORADO SPRINGS STANDARDS.
2. A PEDESTRIAN RAMP DETECTABLE WARNING ZONE TYPE OF EITHER PANELS OR PAVERS IS TO BE DETERMINED BY THE ENGINEER.
3. A DISTANCE OF 5 FEET SHALL BE USED TO TIE-IN PROPOSED CURB & GUTTER TO EXISTING CURB & GUTTER.

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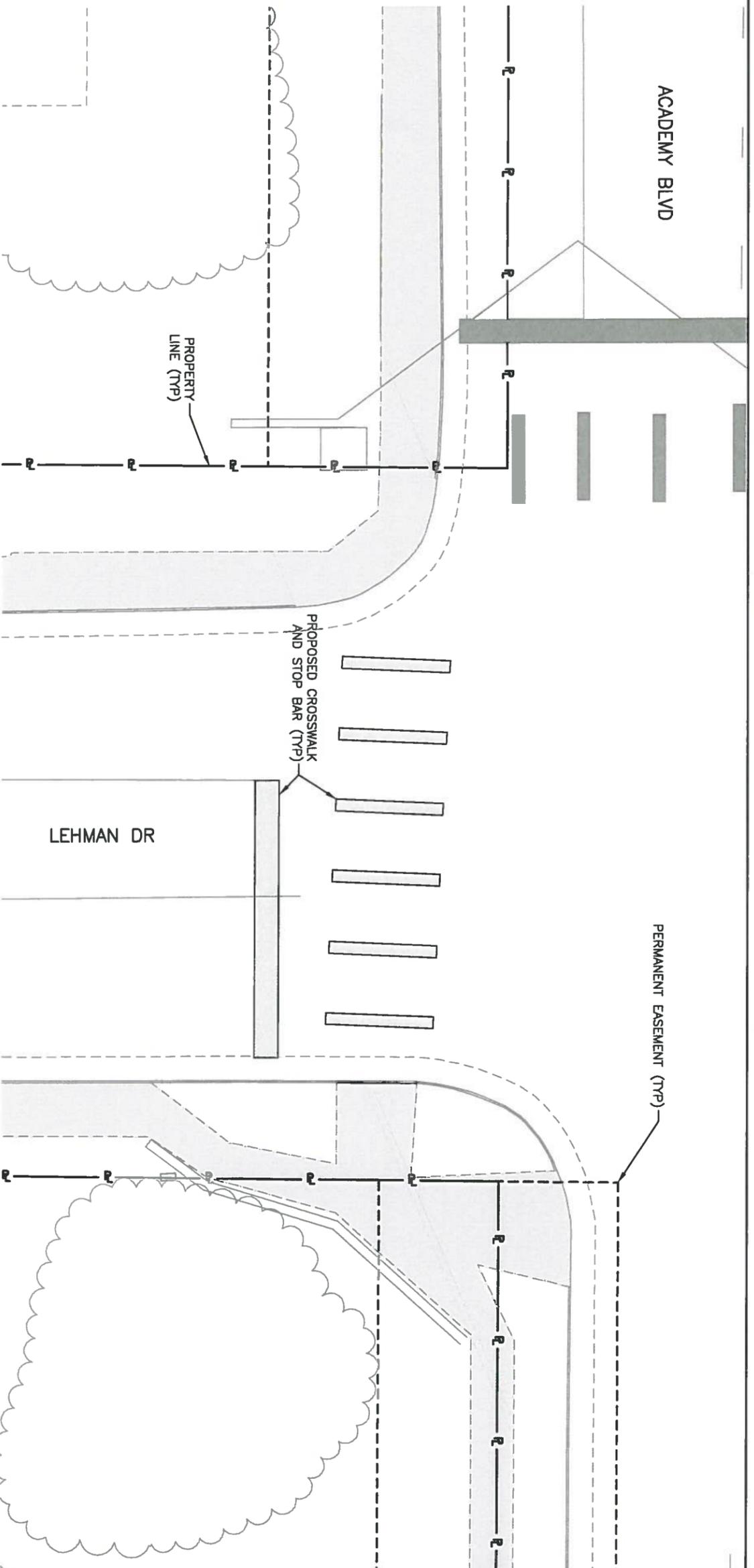
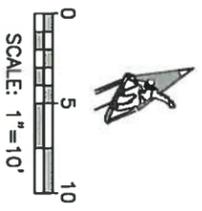
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Date	Comments	Initials

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**As Constructed**  
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 Revised:  
 Void:

**ACADEMY BLVD AND LEHMAN DRIVE INTERSECTION DETAIL**  
 Designer:  
 Detailer:  
 Subst:

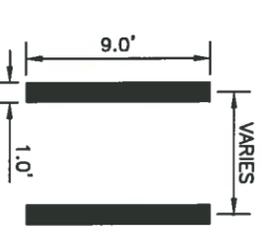
**Project No./Code**  
 115175-02  
 TSF Structure  
 PBB8 Numbers  
 INT 1 of 1  
 Sheet Number  
 4



- NOTES**
1. ALL ITEMS SHALL MEET THE LATEST COLORADO SPRINGS STANDARDS.



**STOP BAR DETAIL**



**1'X9' CROSSWALK STRIPING DETAIL**

- LEGEND**
- EXISTING CONCRETE SIDEWALK/PEDESTRIAN RAMP
  - PROPOSED CONCRETE SIDEWALK/PEDESTRIAN RAMP
  - PROPOSED ASPHALT
  - SAW CUT

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Date	Comments

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**As Constructed**  
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 Revised:  
 Void:

**ACADEMY BLVD AND LEHMAN DRIVE PAVEMENT MARKING PLAN**

Designer: TSF  
 Detailer: PBB  
 Subst: STRIPING

Project No./Code: 115175-02  
 Sheet Number: 5

**FINAL SET (100%)**

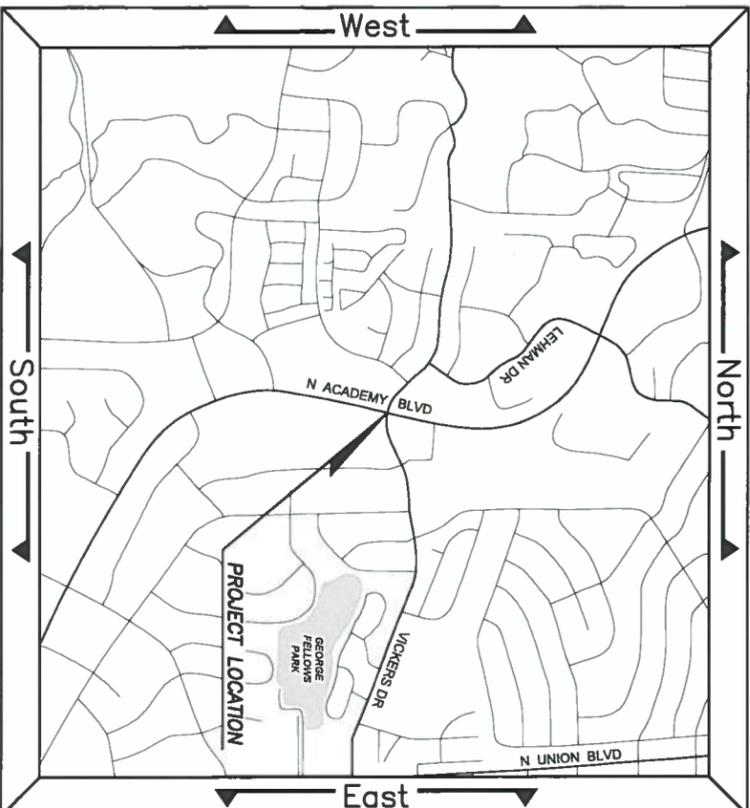


**CITY OF COLORADO SPRINGS**  
**ENGINEERING - TRAFFIC OPERATIONS**  
 Project Number: 115175-03  
**ACADEMY BLVD AND VICKERS DRIVE**  
**PROPOSED SIGNAL**



**GENERAL SIGNAL NOTES**

1. WORK WILL BE DONE IN ACCORDANCE WITH: ALL THE STANDARDS SET BY THE TRAFFIC ENGINEER, OR DESIGNEE, AT THE PRE-CONSTRUCTION MEETING.
2. IN ACCORDANCE WITH THE STANDARDS SET FORTH IN THE "THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS."
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF UTILITIES PRIOR TO ANY EXCAVATING; AND IF CHANGES ARE REQUIRED, HAVING THE TRAFFIC ENGINEER OR DESIGNEE RELOCATE THE FACILITY.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BARRICAADING, SAFETY PRECAUTIONS (CFR1928), AND REMOVAL OF EXCESS DIRT AND MATERIALS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DIGGING OF POLE BASE HOLE, PROVIDING FORMS, SET UP OF BOLTS, CONDUIT STUBOUTS, J-BOX AND THE FORMING, POURING AND FINISHING OF CONCRETE. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS.
6. CONCRETE TO BE STATE CLASS BZ POURED AGAINST VIRGIN (UNDISTURBED) SOIL. ALL BASES SHALL BE VIBRATED TO ELIMINATE AIR POCKETS. A COPY OF SIGNED BATCH TICKET MUST ACCOMPANY BILLING.
7. BASE SHALL BE TROWEL FINISHED WITH STUB OUT DIRECTIONS SCRIBED AT EDGE. (SEE FIG. 1-3)
8. CONTRACTOR SHALL CONTACT THE TRAFFIC ENGINEER, OR DESIGNEE, FOR INSPECTION OF FORM, BOLTS AND STUBOUT LAYOUT 24 HOURS PRIOR TO INTENT OF POUR, AND (2-HOUR MINIMUM CONFIRMATION) PRIOR TO POURING CONCRETE. (POURING BASES WITHOUT AN INSPECTION WILL RESULT IN CONTRACTOR REMOVING SAID BASE AND INSTALLING A NEW ONE AT CONTRACTOR EXPENSE WITHIN ONE WEEK). EXPOSED BOLT THREADS AND NUTS SHALL BE FREE OF CONCRETE AND DEBRIS. THE TRAFFIC SIGNAL INSPECTOR PRIOR TO ACCEPTANCE SHALL INSPECT FINISHED BASE.
9. CONTRACTOR MUST SUPPLY VERIFICATION OF POLE DATA WHEN FURNISHING OWN POLES.
10. FINISHED PRODUCT SHOULD CONFORM TO CURRENT COLORADO SPRINGS CITY TRAFFIC SIGNALS STANDARDS FOR COSMETICS & QUALITY IN WORKMANSHIP AS STATED IN THIS DOCUMENT. IF CONTRACTOR HAS ANY QUESTIONS OR DOESN'T UNDERSTAND SOMETHING, THEN ASK FOR INTERPRETATION BEFORE CONTINUING WORK TO AVOID DOING SOMETHING TWICE.
11. CONDITIONAL ACCEPTANCE: ONCE CONSTRUCTION OF A TRAFFIC SIGNAL HAS BEEN SATISFACTORILY COMPLETED, THE SIGNALS ARE "CONDITIONALLY ACCEPTED" BY OWNER. AT THIS TIME THE SIGNAL IS TURNED ON AND THE "BURN-IN" PERIOD BEGINS. THE BURN-IN PERIOD WILL LAST 15 DAYS. DURING THE BURN-IN PERIOD THE SIGNAL SYSTEM IS ALLOWED TO OPERATE UNDER REAL WORLD CONDITIONS. ANY MALFUNCTION OCCURRING DURING THIS PERIOD WILL REQUIRE A REPAIR OR REPLACEMENT AND IF THE MALFUNCTION IS SERIOUS ENOUGH, THE BURN-IN PERIOD MUST BE RESTARTED.



**VICINITY MAP**

**GENERAL SIGNAL NOTES CONTINUED**

12. FINAL ACCEPTANCE: AFTER THE BURN-IN PERIOD IS COMPLETED, ALL PUNCH LIST ITEMS HAVE BEEN CORRECTED AND THE CONTRACTOR HAS MET ALL CONTRACT REQUIREMENTS (SUCH AS FINAL CLEAN UP OF WORK SITE), THE SIGNAL WILL BE ACCEPTED.
13. CONTRACTOR SHALL GUARANTEE MATERIALS AND WORKMANSHIP FOR A PERIOD OF TWO YEARS.
14. CITY OF COLORADO SPRINGS TRAFFIC SIGNALS DIVISION RESERVES THE RIGHT TO BILL CONTRACTOR FOR MATERIALS AND LABOR FOR REPAIR AND/OR REPLACEMENT OF CONTRACT WORK DUE TO FAULTY CRAFTSMANSHIP DURING WARRANTY PERIOD.
15. IF CONTRACTOR REQUESTS SIGNALS PERSONNEL DURING NON-DUTY HOURS, (AFTER BUSINESS HOURS, WEEKENDS AND HOLIDAYS) CONTRACTOR WILL BE BILLED FOR ANY OVERTIME OF PERSONNEL. MINIMUM BILLING FOR OVERTIME PERSONNEL AND VEHICLES IS 2 HOURS AT STANDARD OVERTIME RATES.
16. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL SUBMIT AN "AS-BUILT" OR CORRECTED PLAN SHOWING, IN DETAIL, ALL CONSTRUCTION CHANGES INCLUDING BUT NOT LIMITED TO, WIRING, CABLE, POLES, CONTROLLER CABINET, DETECTION SYSTEMS AND LOCATION OF CONDUITS.
17. ALL TRAFFIC SIGNAL EQUIPMENT THAT IS REMOVED SHALL REMAIN THE PROPERTY OF CITY OF COLORADO SPRINGS. SUCH PROPERTY IS TO BE RETURNED BY THE CONTRACTOR TO THE 404 W. FONTANERO, CITY TRAFFIC SIGNALS SHOP. CONTRACTOR MUST CONTACT SIGNAL SHOP (719-385-6720) TO MAKE ARRANGEMENTS FOR DELIVERY. ALL TRAFFIC SIGNAL EQUIPMENT SHALL BE RETURNED IN THE SAME CONDITION AS REMOVED. POLES WILL BE STRIPPED CLEAN OF ALL ATTACHED PARTS BEFORE DELIVERY.
18. CONTRACTOR SHALL AT HIS SOLE EXPENSE, REPLACE OR RECONSTRUCT SIDEWALKS, CURBS, GUTTERS, PAVEMENT AND ANY OTHER IMPROVEMENTS REMOVED, BROKEN OR DAMAGED BY HIM WITH MATERIAL AND METHODS THAT CONFORM TO CURRENT CITY STANDARDS.
19. CITY OF COLORADO SPRINGS' TRAFFIC SIGNAL SHOP OR APPROVED CONTRACTOR SHALL INSTALL ALL VIDEO DETECTION. ONLY TRAFICON SYSTEM SHALL BE USED.
20. THE CONTRACTOR SHALL HAVE FULL MAINTENANCE RESPONSIBILITY OF THE TRAFFIC SIGNAL FROM THE TIME OF NOTICE TO PROCEED TO THE INITIAL ACCEPTANCE AND/OR COMPLETION OF REMOVALS IN THE CASE OF REBUILD OF MODIFICATIONS.
21. ALL NEW INSTALLATIONS REQUIRE ALL VEHICLE AND PEDESTRIAN INDICATIONS TO BE CITY OF COLORADO SPRINGS APPROVED LEDS. ALL NEW THREE SECTION SIGNAL HEADS MOUNTED ON MAST ARMS SHALL HAVE ONE PIECE BACK-PLATES.
22. CONTRACTORS THAT DAMAGE TRAFFIC SIGNAL SYSTEMS WILL BE BILLED FOR ALL MATERIALS USED AS WELL AS DOUBLE TIME FOR STAFF WHOM ARE PULLED OFF EXISTING JOBS TO MAKE THE REPAIRS.

SHEET NO.	INDEX OF SHEETS
1	TITLE SHEET
2	SIGNAL POLE, SPAN WIRE & CONDUIT PLAN
3	SIGNAL HEAD AND SIGNING PLAN
4	PAVEMENT MARKING PLAN

**CITY OF COLORADO SPRINGS**  
 CITY TRAFFIC ENGINEER

KATHLEEN KRUGER, CITY TRAFFIC ENGINEER  
 DATE: 12/21/15

CITY ENGINEER  
 DATE: 12/16/15

CSU ELECTRIC  
 DATE: 12/8/15

CSU WATER  
 DATE: 12/14/15

DATE: \_\_\_\_\_

Print Date: 11/17/2015 12:05:51 PM  
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Sheet Revisions	
Date	Comments

**CITY OF COLORADO SPRINGS**  
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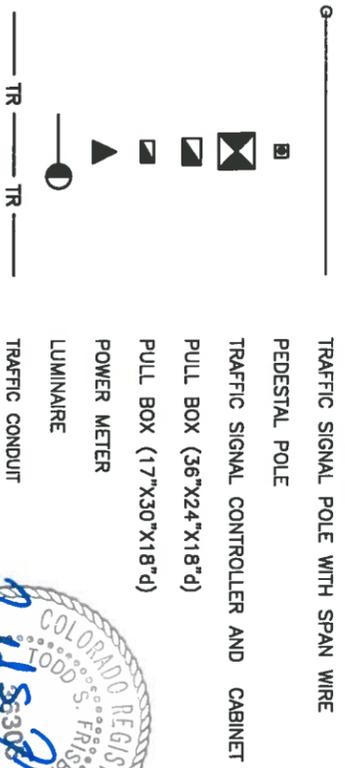
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 Colorado Springs, CO 80903  
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 Fax (719) 385-5537

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 Revised: \_\_\_\_\_  
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**ACADEMY BLVD AND VICKERS DRIVE**  
**PROPOSED SIGNAL DESIGN**  
 TITLE SHEET

Project No./Code: 115175-03  
 Designer: TSF  
 Detailer: C.J.L.  
 Subst: \_\_\_\_\_  
 Title: \_\_\_\_\_  
 Sheets: \_\_\_\_\_  
 TTL 1 of 1  
 Sheet Number: 1

**LEGEND**



**SIGNAL POLE SCHEDULE**

POLE NUMBER	A	C	E	H
LOCATION	NE CORNER	SE CORNER	SW CORNER	NW CORNER
NORTHING	1395290.36	1395187.62	1395205.69	1395295.56
EASTING	3204009.22	3204009.46	3203865.95	3203887.30
SPAN WIRE LENGTHS	103'	145'	93'	123'
BASE DIA.	36"	16"	36"	16"
DEPTH	18"	2"	18"	3"

**PEDESTAL AND PEDESTRIAN PUSH BUTTON POLE SCHEDULE**

POLE NUMBER	B	D	F	G
POLE TYPE	PUSH BUTTON	PEDESTAL	PEDESTAL	PEDESTAL
LOCATION	NE CORNER	SE CORNER	SW CORNER	SW CORNER
NORTHING	1395287.69	1395178.40	1395206.02	1395213.86
EASTING	3204011.39	3203994.56	3203875.32	3203867.84
POLE MATERIAL	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM
BASE DIA.	18"	2"	18"	3"
DEPTH	18"	2"	18"	3"

**TABULATION OF TRAFFIC SIGNAL ITEMS**

ITEM DESCRIPTION	UNITS	QUANTITY
DRILLED CAISSON (18 INCH)	LF	11
DRILLED CAISSON (36 INCH)	LF	64
2 INCH ELECTRICAL CONDUIT	LF	150
ONE 2" & TWO 3" ELECTRICAL CONDUIT (SAME TRENCH/BORE)	LF	50
SPAN WIRE CABLE	LF	500
PULL BOX (36" x 24" x 18" @ 1) (30" x 17" x 18" @ 4)	EACH	5
TRAFFIC SIGNAL LIGHT POLE STEEL	EACH	4
TRAFFIC SIGNAL PEDESTRIAN PUSH BUTTON	EACH	4
CONTROLLER (SAFETRAN 332)	EACH	1
CONTROLLER CABINET ROCKFIBER BASE	EACH	1
POWER METER	EACH	1
LED LUMINAIRE	EACH	4
FURNISH AND INSTALL ELECTRICAL SERVICE	EACH	1

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Fax: 719.314.1804

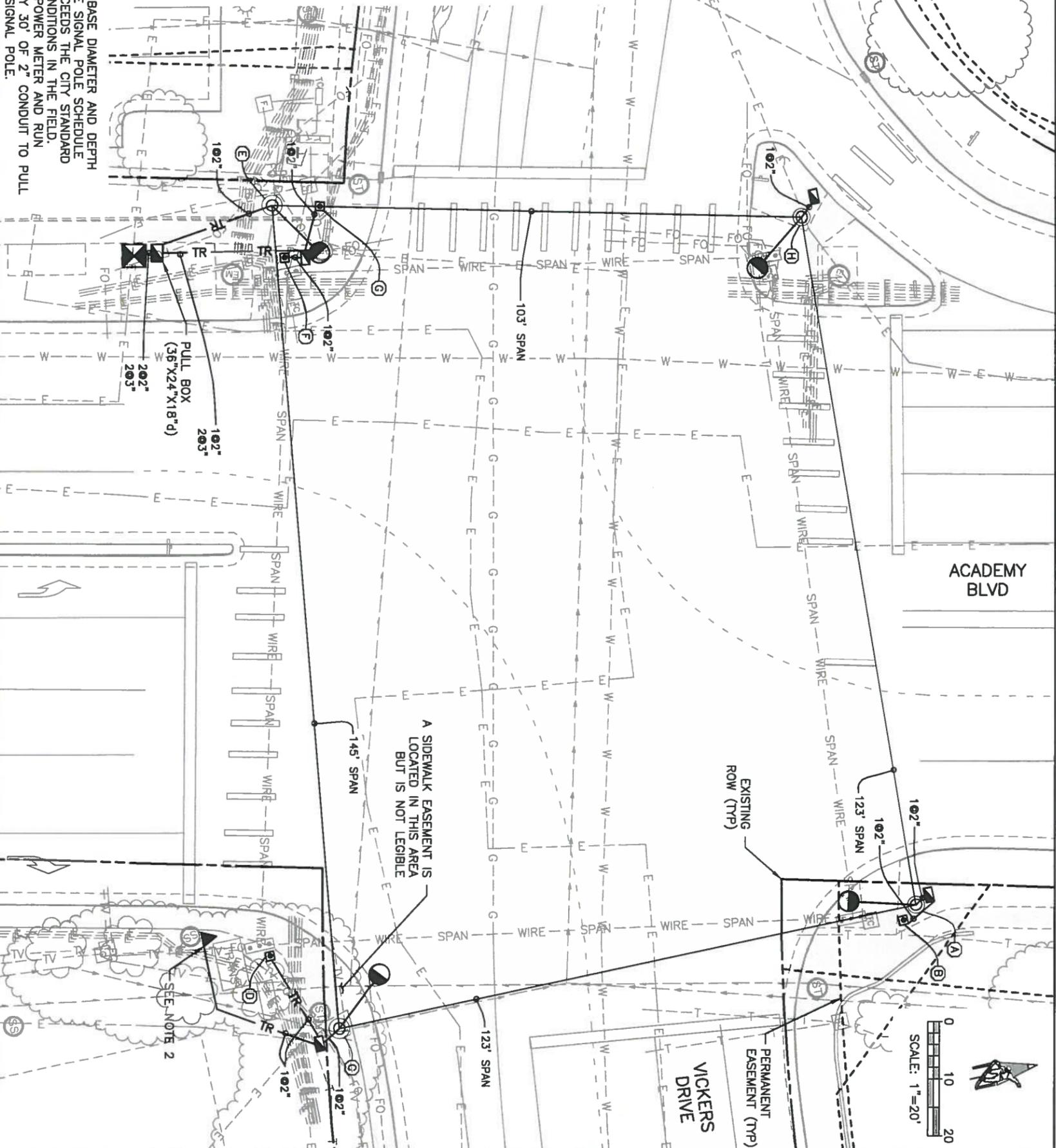
Date	Comments	Initials

**Sheet Revisions**

- NOTES:**
- THE CAISSON BASE DIAMETER AND DEPTH SHOWN IN THE SIGNAL POLE SCHEDULE MEETS OR EXCEEDS THE CITY STANDARD BASED ON CONDITIONS IN THE FIELD.
  - INSTALL NEW POWER METER AND RUN APPROXIMATELY 30' OF 2" CONDUIT TO PULL BOX AT NEW SIGNAL POLE.



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<b>As Constructed</b>	<b>ACADEMY BLVD AND VICKERS DRIVE SIGNAL POLE, SPAN WIRE AND CONDUIT PLAN</b>	<b>Project No./Code</b>
No Revisions:	Designer: TSF Structure	115175-03
Revised:	Detailer: C.J.L. Numbers	
Void:	Subset: SIGNAL Sheets:	
	TRF 1 of 2	Sheet Number
		2

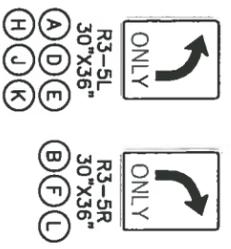
**LEGEND**

- PROPOSED**
- TRAFFIC SIGNAL POLE WITH SPAN WIRE
  - PEDESTRIAN PUSH BUTTON
  - TRAFFIC SIGNAL HEAD
  - PROTECTED/PERMISSIVE LEFT TURN SIGNAL HEAD
  - LEFT TURN SIGNAL HEAD
  - TRAFFIC SIGNAL CONTROLLER AND CABINET
  - PULL BOX (36"x24"x18"d)
  - PULL BOX (17"x30"x18"d)
  - VEHICLE DETECTOR CAMERA
  - LUMINAIRE
  - ILLUMINATED STREET NAME SIGN
  - MOUNTED STREET SIGN
  - SIGNAL HEAD PED

**PROPOSED PEDESTRIAN SIGNS**



**PROPOSED TRAFFIC SIGNS**



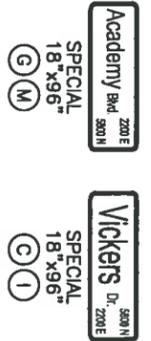
**PROPOSED SIGNAL HEADS**



**NOTES**

- EACH PEDESTRIAN PUSH BUTTON SHALL BE ACCOMPANIED BY A 9"x15" R10-3e PEDESTRIAN SIGN. THIS SIGN SHALL BE INCLUDED IN THE PEDESTRIAN PUSH BUTTON PAY ITEM.
- ALL VEHICLE SIGNAL HEADS SHALL BE ALUMINUM WITH 12-INCH SECTIONS AND TUNNEL VISORS.
- ALL VEHICLE AND PEDESTRIAN SIGNAL HEADS SHALL BE BLACK IN COLOR.
- ALL RED, YELLOW AND GREEN "BALL & ARROW" VEHICLE INDICATIONS; AND ALL PEDESTRIAN "SYMBOL" INDICATIONS SHALL BE APPROVED L.E.D. TYPE.

**PROPOSED ILLUMINATED SIGNS**



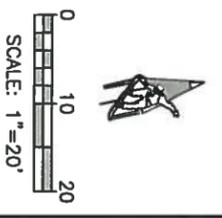
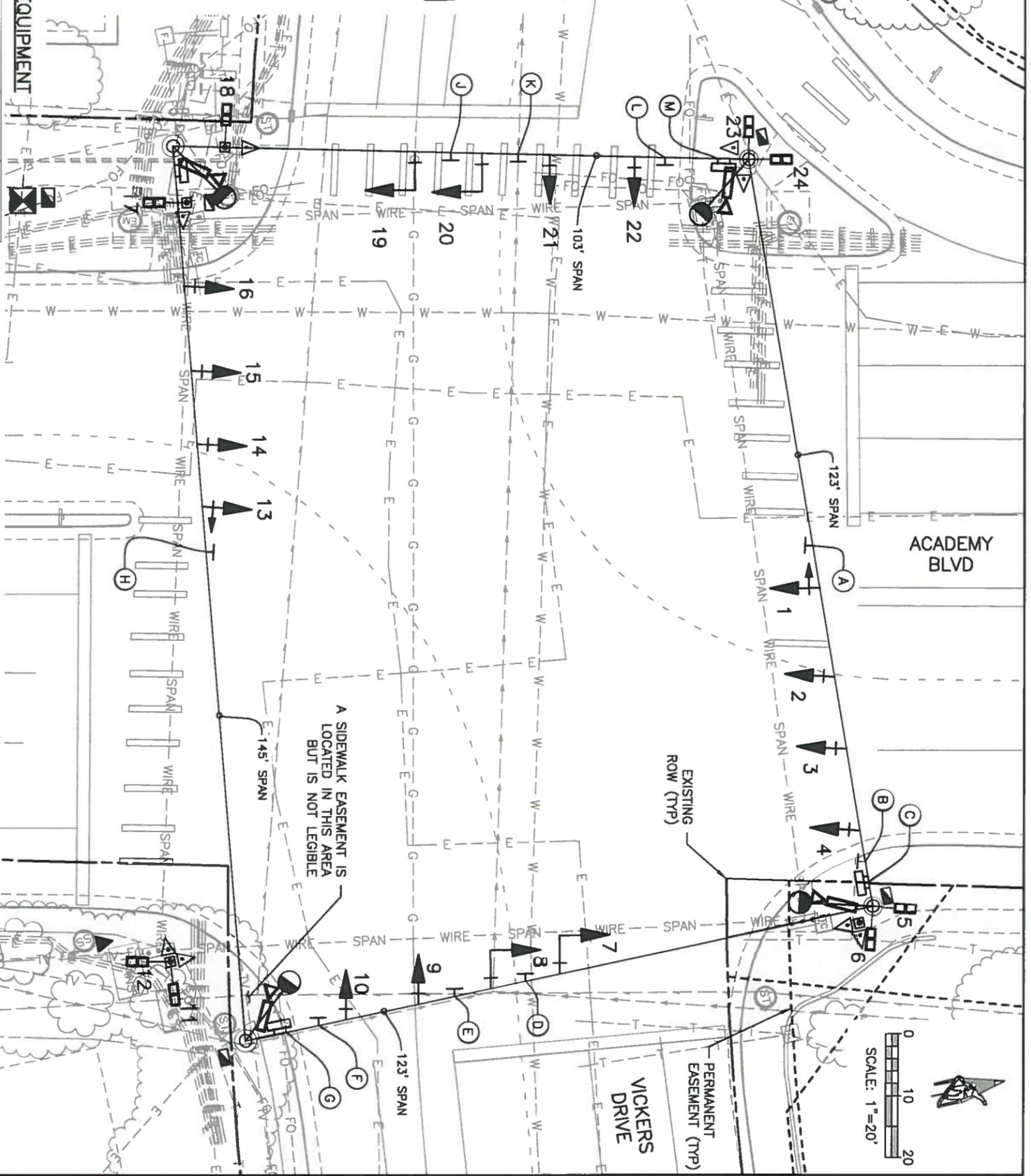
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7,8,19,20  
1,13  
5,6,11,12  
17,18,23,24

**TABULATION OF SIGNAL EQUIPMENT**

ITEM DESCRIPTION	UNIT	QUANTITY
PEDESTRIAN SIGNAL FACE-16 (COUNTDOWN)	EACH	8
TRAFFIC SIGNAL FACE (12-12-12)	EACH	14
TRAFFIC SIGNAL FACE (12-12-12-12)	EACH	2
PEDESTRIAN PUSH BUTTON	EACH	8
VEHICLE DETECTION SYSTEM (SIGNAL CAMERA)	EACH	4
ILLUMINATED STREET NAME SIGN	EACH	4



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ACADEMY BLVD AND VICKERS DRIVE  
SIGNAL HEAD  
AND SIGNING PLAN

Project No./Code  
115175-03

Designer: TSF  
Detailer: CUL  
Structure Numbers: TRF 2 of 2

Revised: Void: Sheet Number 3

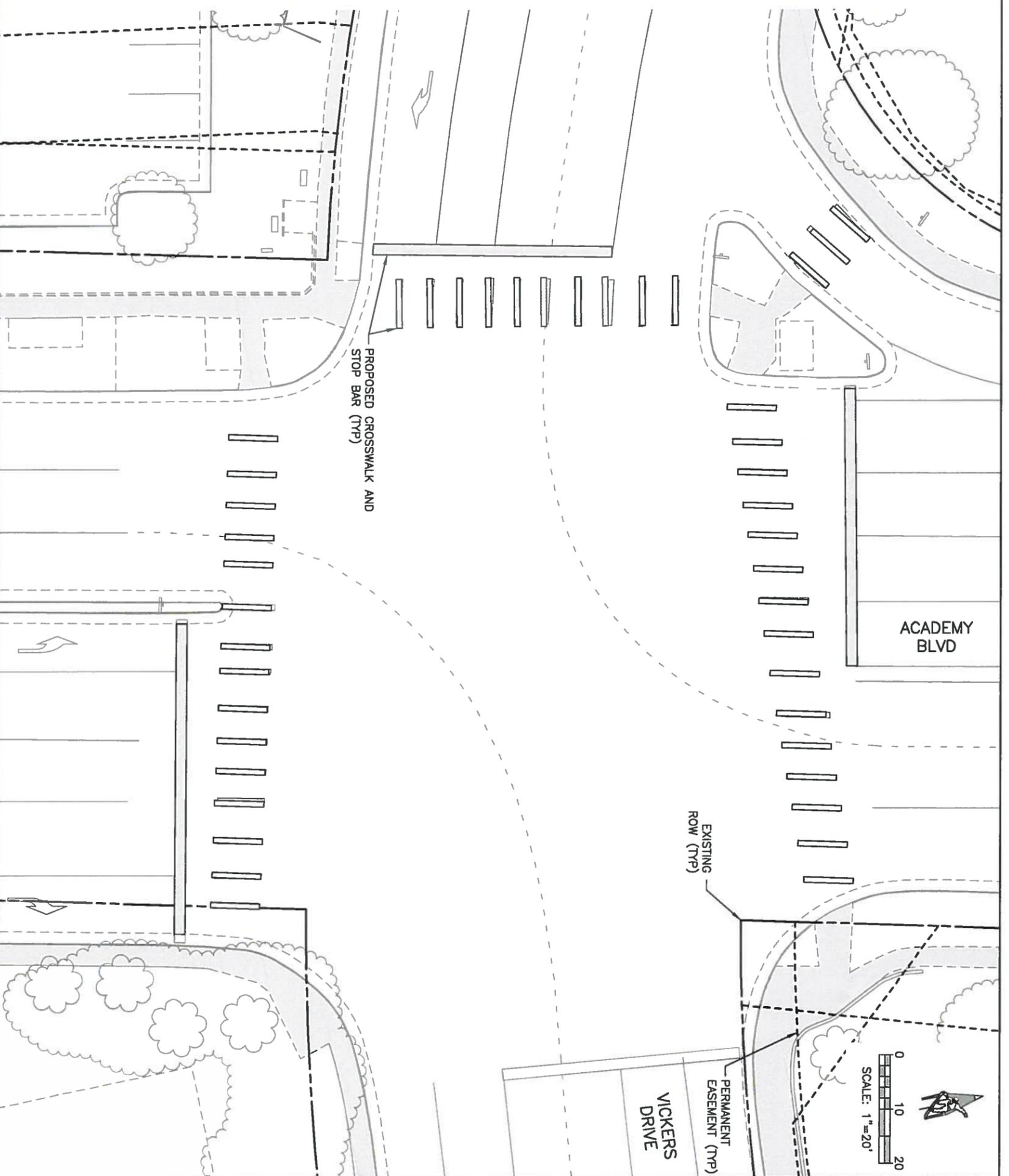
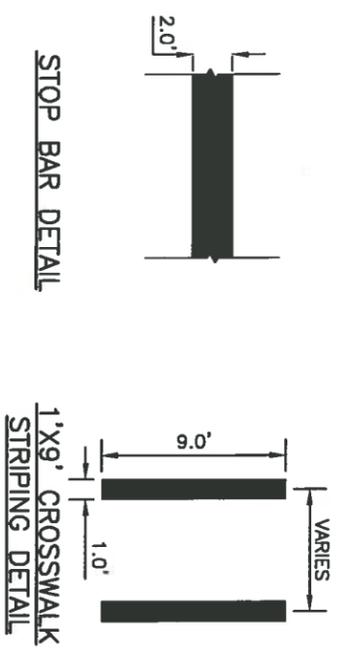
**LEGEND**  
 EXISTING CONCRETE SIDEWALK/PEDESTRIAN RAMP

**NOTES**

1. ALL ITEMS SHALL MEET THE LATEST COLORADO SPRINGS STANDARDS.



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 Revised:  
 Void:

**ACADEMY BLVD AND VICKERS DRIVE PAVEMENT MARKING PLAN**  
 Designer: TSF  
 Detailer: C.J.L.  
 Subset: STRIPING  
 Structure Numbers  
 Sheets: PMP 1 of 1

**Project No./Code**  
 115175-03  
**Sheet Number**  
 4

# CITY OF COLORADO SPRINGS

ENGINEERING - TRAFFIC OPERATIONS

## N. ACADEMY BLVD. / AUSTIN BLUFFS PARKWAY TRAFFIC SIGNAL DESIGN

Project Number XX-XXX-XX

REVIEWED BY

CITY ENGINEERING  
BY: *Mike Hansen* DATE: 12/14/15

TRAFFIC ENGINEERING  
BY: *Kathy Kelly* DATE: 12/22/15

WATER DEPARTMENT  
BY: *[Signature]* DATE: 12/14/15

WASTEWATER DEPARTMENT  
BY: *[Signature]* DATE: 12/14/15

ELECTRIC DEPARTMENT  
BY: *[Signature]* DATE: 12/18/15

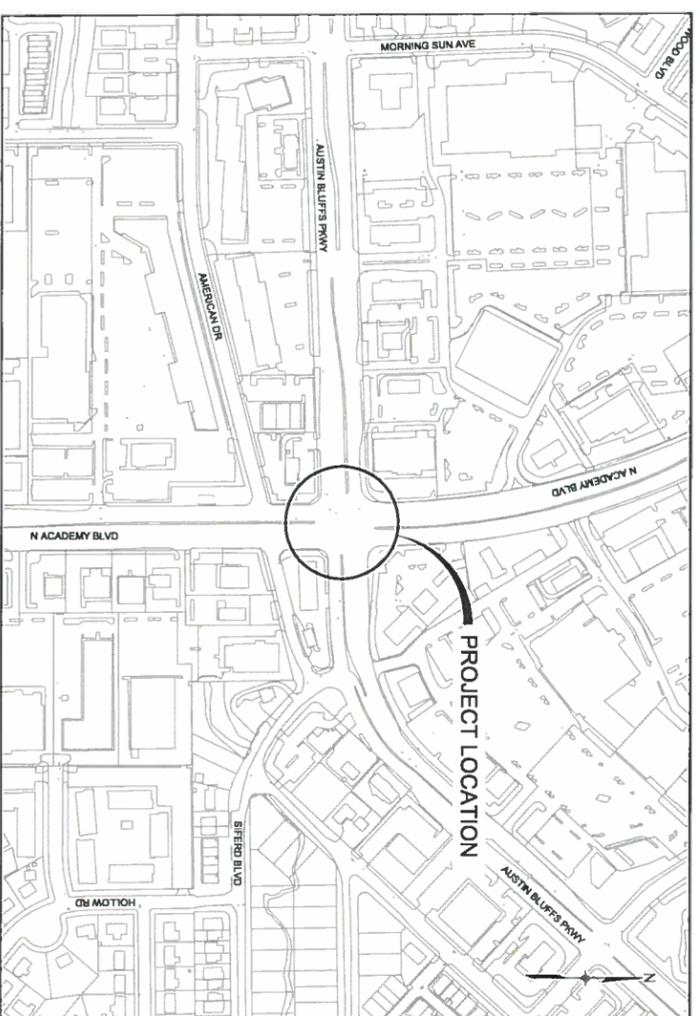
GAS DEPARTMENT  
BY: *[Signature]* DATE: 12/18/15

INDEX OF SHEETS

SHEET NO.	DESCRIPTION	DRAWING NO.
1	TITLE SHEET	TS01
2	ABBREVIATIONS / LEGEND	GEN01
3	SUMMARY OF APPROXIMATE QUANTITIES	QT01
4	TRAFFIC SIGNAL NOTES / TRAFFIC DETAILS	SG01
5	TRAFFIC SIGNAL PLAN	SG02
6	SIGNAL POLE, MAST ARM & CONDUIT PLAN	SG03

**BASIS OF BEARINGS:**  
BEARINGS FOR THIS PROJECT ARE REFERENCED TO GRID NORTH OF THE COLORADO STATE PLANE SYSTEM NAD 83 (CENTRAL ZONE), BASED UPON GPS OBSERVATIONS.

**VERTICAL DATUM:**  
THE ELEVATIONS ON THIS PROJECT ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988. THE PRIMARY BENCHMARK USED TO REFERENCE THIS VERTICAL NETWORK IS A NGS VERTICAL CONTROL MONUMENT DESIGNATED "P-396" (PID JK0868) BEING A FOUR METER STAINLESS STEEL ROD DRIVEN INTO THE GROUND HAVING A PUBLISHED ELEVATION OF 6474.18 FEET. THE SECONDARY (LOCAL) BENCHMARK TO CONTROL THIS PROJECT IS A FOUND 3-1/4" ALUMINUM DISK MONUMENT DESIGNATED "S 8" OF THE COLORADO SPRINGS FIMS VERTICAL NETWORK HAVING A SURVEYED ELEVATION OF 6427.03 PER THE NORTH AMERICAN VERTICAL DATUM OF 1988. NOTE THE PUBLISHED FIMS NETWORK ELEVATION FOR THIS MONUMENT IS IN TERMS OF NGVD 1929 AND WAS NOT USED FOR THIS PROJECT.



LOCATION MAP  
NTS

ACCEPTANCE BY THE CITY OF COLORADO SPRINGS OF DESIGN WORK BY DESIGN PROFESSIONALS CONSTITUTES BELIEF THAT THE WORK HAS BEEN DONE IN ACCORDANCE WITH THE CITY STANDARDS AND ORDINANCES. WORK PRODUCTS ARE THE RESPONSIBILITY OF THE DESIGN PROFESSIONAL AND CITY ACCEPTANCE DOES NOT RELIEVE THE PROFESSIONAL OF SAID RESPONSIBILITY.

GERRIT SLATTER, PE  
COLORADO P.E. NO. 34907

DATE

PREPARED UNDER MY DIRECT SUPERVISION, FOR AND ON BEHALF OF  
MATRIX DESIGN GROUP



COMPUTER FILE INFORMATION		REVISIONS		STATEMENT:		DESIGNED BY:		CITY OF COLORADO SPRINGS		CITY OF COLORADO SPRINGS	
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Acad Ver:	2011	Scale:	AS SHOWN								
				<p>THE CITY OF COLORADO SPRINGS RECOGNIZES THE DESIGN ENGINEER AS HAVING RESPONSIBILITY FOR THE DESIGN. THE CITY HAS LIMITED ITS SCOPE OF REVIEW ACCORDINGLY.</p>							
				<p>CALL 3 - BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE OR EXCAVATE OR THE MARKING OF UNDERGROUND MEMBER UTILITIES</p>							
				<p>811</p>							
				<p>REVISIONS</p>							
				<p>CITY OF COLORADO SPRINGS</p>							
				<p>Academy Blvd. / Austin Bluffs Parkway</p>							
				<p>TITLE SHEET</p>							
				<p>Subject: TS</p>							
				<p>Subst: TS</p>							
				<p>Subst Sheets: TS01 of TS01</p>							
				<p>Sheet No: 1</p>							

**ABBREVIATIONS**

ABC	AGGREGATE BASE COURSE	MAX	MAXIMUM
AD	ALGEBRAIC DIFFERENCE	MFGR	MANUFACTURER
ASSY	ASSEMBLY	MH	MANHOLE
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS	MID	MIDDLE OR MIDPOINT
APPROX	APPROXIMATE OR APPROXIMATELY	MIN	MINIMUM
AVE	AVENUE	MJ	MECHANICAL JOINT
B/C	BACK OF CURB	MSL	MEAN SEA LEVEL
B OR BIL	BASELINE	NIC	NOT IN CONTRACT
BLVD	BOULEVARD	NO	NUMBER
BOP	BOTTOM OF PIPE	NOM	NOMINAL
		NTS	NOT TO SCALE
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION	OC	ON CENTER
CI	CAST IRON		
CEN	CENTER	P	PROPOSED
Q OR C/L	CENTERLINE	PC	POINT OF CURVATURE
CLR	CLEAR	PCC	POINT OF COMPOUND CURVE
CMP	CORRUGATED METAL PIPE	PCR	POINT OF CURB RETURN
CONC	CONCRETE	PE	PLAIN END
CONC	CONCRETE CONSTRUCTION	PGL	PROFILE GRADE LINE
CONT	CONTINUOUS	R OR P/L	PROPERTY LINE
		PT	POINT OF REVERSE CURVE
DIA	DIAMETER	PRC	POINT OF TANGENCY
DN	DOWN	PVC	POINT OF TANGENCY
DS	DESIGN SPEED	PVI	POINT OF VERTICAL INTERSECTION
DWG	DRAWING	PWMT	PAVEMENT
EA	EACH	PVT	POINT OF VERTICAL TANGENT
EGL	ENERGY GRADE LINE	R or RAD	RADIUS
ELEV OR EL	ELEVATION	RCP	REINFORCED CONCRETE PIPE
ELL	ELBOW	RED	REDUCER
ESMT	EASEMENT	REF	REFERENCE
EW	EACH WAY	REINF	REINFORCING
EXIST	EXISTING	REQ	REQUIRED
		REV	REVISION
FES	FLARED END SECTION	RT	RIGHT-OF-WAY
FIN	FINISHED	SCH	SCHEDULE
F OR FIL	FLOWLINE	SQ	SQUARE
FLG	FLANGE	ST	STREET
FRP	FOOT/FEET	STA	STATION
	FIBERGLASS REINFORCED PIPE	STD	STANDARD
GAL	GALLON	STL	STEEL
GALV	GALVANIZED	SS	SANITARY SEWER
GAU	GAUGE (MATERIAL)	SW or SW	SIDEWALK
GV	GATE VALVE		
GW	GROUNDWATER		
HBP	HOT BITUMINOUS PAVEMENT	TAN	TANGENT
HGL	HYDRAULIC GRADE LINE	TB	THRUST BLOCK
HMA	HOT MIX ASPHALT	THD	THREADED
HP	HIGH POINT	THICK	THICKNESS
HORIZ	HORIZONTAL	TOP	TOP OF PIPE
HCL	HORIZONTAL CONTROL LINE	TYP	TYPICAL
HR	HOUR	UG	UNDERGROUND
INV	INVERT	UTIL	UTILITY
K	VERTICAL CURVE FACTOR	VC	VERTICAL CURVE
LBS	POUNDS	VERT	VERTICAL
LF	LINEAR FEET	W	WIDTH
LP	LOW POINT	W/	WITH
LS	LANDSCAPING		
LT	LEFT		

**LINETYPES**

	TREE LINE
	BRUSH LINE
	STREAM
	FENCE
	BLOCK WALL
	RAILROAD
	DECK
	BUILDING
	AWNING
	PAINT
	CONCRETE PAD
	CULVERT
	HEADWALL
	UTILITY BOX
	ELECTRIC VAULT
	EXISTING PAVED ROAD
	EXISTING UNDERGROUND UTILITY
	EXISTING CURB & GUTTER
	EXISTING CONTOUR
	EXISTING RIGHT OF WAY
	EXISTING EASEMENT
	PROPOSED CENTERLINE
	PROPOSED UNDERGROUND UTILITY
	PROPOSED DRAINAGE
	PROPOSED CURB & GUTTER
	ENERGY GRADE LINE
	HYDRAULIC GRADE LINE
	SLOPE OR DRAINAGE FLOW
	PROPOSED SAWCUT LINE
	PROPOSED RIGHT OF WAY
	PROPOSED EASEMENT
	PROPOSED TRAFFIC INTERCONNECT CONDUIT W/ PULL BOX
	PROPOSED FENCE

**SYMBOLS**

	EXISTING MANHOLE
	POLE
	LIGHT
	PP-LIGHT
	POLE-LIGHT
	DBL-LIGHT
	HANDYCAP
	SIGN
	CATCH BASIN
	FIRE HYDRANT
	SEWER CLEAN/OUT
	GAS MH OR VALVE
	ELECTRICAL BOX
	WATER METER
	MANHOLE
	TELEPHONE RISER
	TELEPHONE MANHOLE
	POST
	WATER VALVE
	POWER POLE
	POWER POLE ANCHOR
	MAIL BOX
	DRAIN
	TREE
	HORIZONTAL / VERTICAL CONTROL POINT
	PROPOSED MANHOLE
	PROPOSED STORM DRAIN/INLET
	PROPOSED SIGN

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DESIGNED BY: LMG  
 DRAWN BY: LMG  
 CHECKED BY: GLS

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 Colorado Springs, CO 80920  
 Phone 719.575.0100

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 We Create Communities

CITY OF COLORADO SPRINGS  
 Academy Blvd. / Austin Bluffs Parkway

ABREVIATIONS / LEGEND

Subset: GEN    Subset Sheets: GEN01 of GEN01    Sheet No: 2



## SUMMARY OF APPROXIMATE QUANTITIES

ITEM NUMBER	BID ITEMS	UNIT	PLAN QUANTITY	AS CONSTRUCTED
1	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	LS	1	
2	DRILLED CAISSON (18 INCH)	LF	6	
3	DRILLED CAISSON (36 INCH)	LF	68	
4	(1) 2INCH CONDUIT (PVC)	LF	540	
5	(2) 3INCH CONDUIT (PVC)	LF	468	
6	(4) 3INCH CONDUIT (PVC)	LF	16	
7	PULL BOX (30" X 17" X 18")	EA	4	
8	PULL BOX (36" X 24" X 18")	EA	1	
9	CONTROLLER CABINET ROCKFIBER BASE	EA	1	
10	ELECTRIC SERVICE	EA	1	
11	POWER FEED FOR ELECTRIC SERVICE	LF	270	
12	EXCAVATE RECEIVING PIT (OVER 48" DEEP)	EA	3	
13	GROUND RODS	EA	8	
14	POT HOLE UTILITY SINGLE SITE	EA	5	
15	INSTALL TRAFFIC SIGNAL EQUIPMENT (TYPE D)	EA	1	
16	SIGN PANEL	SF	30.0	



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 Phone 719.575.0100



CITY OF COLORADO SPRINGS  
 Academy Blvd. / Austin Bluffs Parkway

SUMMARY OF APPROXIMATE QUANTITIES

**TRAFFIC SIGNAL GENERAL NOTES:**

1. TRAFFIC CONTROL DEVICES AND APPURTENANCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE "COCS" (CITY OF COLORADO SPRINGS) TRAFFIC SIGNAL SPECIFICATIONS, AND THE STANDARDS SET FORTH IN THE "THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
2. THE TRAFFIC ENGINEER, OR DESIGNER, SHALL BE COORDINATE LOCATION OF POLE BASES WITH CONTRACTOR. THIS SHALL BE ACCOMPLISHED BY "STAKING" THE LOCATION FOR THE CONTRACTOR AND INDICATING DIRECTION FOR CONDUIT STUB OUTS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF UTILITIES PRIOR TO ANY EXCAVATING, AND IF CHANGES ARE REQUIRED, HAVING THE TRAFFIC ENGINEER OR DESIGNER RELOCATE THE FACILITY.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DIGGING OF POLE BASE HOLE, PROVIDING FORMS, SET UP OF BOLTS, CONDUIT STUBOUTS, J-BOX AND THE FORMING, POURING AND FINISHING OF CONCRETE. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS.
5. CONCRETE TO BE STATE CLASS BZ POURED AGAINST VIRGIN (UNDISTURBED) SOIL. ALL BASES SHALL BE VIBRATED TO ELIMINATE AIR POCKETS. A COPY OF SIGNED BATCH TICKET MUST ACCOMPANY BILLING.
6. BASE SHALL BE TROWEL FINISHED WITH STUB OUT DIRECTIONS SCRIBED AT EDGE.
7. CONTRACTOR SHALL CONTACT THE TRAFFIC ENGINEER, OR DESIGNER, FOR INSPECTION OF FORM, BOLTS AND STUBOUT LAYOUT 24 HOURS PRIOR TO INTENT OF POUR, AND (2-HOUR MINIMUM CONFIRMATION) PRIOR TO POURING CONCRETE. (POURING BASES WITHOUT AN INSPECTION WILL RESULT IN CONTRACTOR REMOVING SAID BASE AND INSTALLING A NEW ONE AT CONTRACTOR EXPENSE WITHIN ONE WEEK). EXPOSED BOLT THREADS AND NUTS SHALL BE FREE OF CONCRETE AND DEBRIS. THE TRAFFIC SIGNAL INSPECTOR PRIOR TO ACCEPTANCE SHALL INSPECT FINISHED BASE.
8. FINISHED PRODUCT SHOULD CONFORM TO CURRENT COLORADO SPRINGS CITY TRAFFIC SIGNALS STANDARDS FOR COSMETICS AND QUALITY IN WORKMANSHIP AS STATED IN THIS DOCUMENT. IF CONTRACTOR HAS ANY QUESTIONS OR DOESN'T UNDERSTAND SOMETHING, THEN ASK FOR INTERPRETATION BEFORE CONTINUING WORK TO AVOID DOING SOMETHING TWICE.
9. CONDITIONAL ACCEPTANCE: ONCE CONSTRUCTION OF A TRAFFIC SIGNAL HAS BEEN SATISFACTORILY COMPLETED, THE SIGNALS ARE "CONDITIONALLY ACCEPTED" BY OWNER. AT THIS TIME THE SIGNAL IS TURNED ON AND THE "BURN-IN" PERIOD BEGINS. THE BURN-IN PERIOD WILL LAST 15 DAYS. DURING THE BURN-IN PERIOD THE SIGNAL SYSTEM IS ALLOWED TO OPERATE UNDER REAL WORLD CONDITIONS. ANY MALFUNCTION OCCURRING DURING THIS PERIOD WILL REQUIRE A REPAIR OR REPLACEMENT AND IF THE MALFUNCTION IS SERIOUS ENOUGH, THE BURN-IN PERIOD MUST BE RESTARTED.
10. FINAL ACCEPTANCE: AFTER THE BURN-IN PERIOD IS COMPLETED, ALL PUNCH LIST ITEMS HAVE BEEN CORRECTED AND THE CONTRACTOR HAS MET ALL CONTRACT REQUIREMENTS (SUCH AS FINAL CLEAN UP OF WORK SITE), THE SIGNAL WILL BE ACCEPTED.
11. CONTRACTOR SHALL GUARANTEE MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR.
12. CITY OF COLORADO SPRINGS TRAFFIC SIGNALS DIVISION RESERVES THE RIGHT TO BILL CONTRACTOR FOR MATERIALS AND LABOR FOR REPAIR AND/OR REPLACEMENT OF CONTRACT WORK DUE TO FAULTY CRAFTSMANSHIP DURING WARRANTY PERIOD.
13. A MINIMUM OF TWO SIGNAL HEADS SHALL BE MAINTAINED OVER TRAVELED LANES WHEN CONSTRUCTION ON LIVE INTERSECTION REQUIRES TRAFFIC TO MOVE FROM NORMALLY TRAVELED LANES. SIGNAL HEAD NOT OVER TRAVELED LANES SHALL BE BAGGED.
14. IF CONTRACTOR REQUESTS SIGNALS PERSONNEL DURING NON-DUTY HOURS, (AFTER BUSINESS HOURS, WEEKENDS AND HOLIDAYS) CONTRACTOR WILL BE BILLED FOR ANY OVERTIME OF PERSONNEL. MINIMUM BILLING FOR OVERTIME PERSONNEL AND VEHICLES IS 2 HOURS AT STANDARD OVERTIME RATES.
15. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL SUBMIT AN "AS-BUILT" OR CORRECTED PLAN SHOWING, IN DETAIL, ALL CONSTRUCTION CHANGES INCLUDING BUT NOT LIMITED TO, WIRING, CABLE, POLES, CONTROLLER CABINET, DETECTION SYSTEMS AND LOCATION OF ALL CONDUITS.
16. ALL TRAFFIC SIGNAL EQUIPMENT THAT IS REMOVED SHALL REMAIN THE PROPERTY OF CITY OF COLORADO SPRINGS. SUCH PROPERTY IS TO BE RETURNED BY THE CONTRACTOR TO THE 404 W. FONTANERO, CITY TRAFFIC SIGNALS SHOP. CONTRACTOR MUST CONTACT SIGNAL SHOP (719-396-6720) TO MAKE ARRANGEMENTS FOR DELIVERY. ALL TRAFFIC SIGNAL EQUIPMENT SHALL BE RETURNED IN THE SAME CONDITION AS REMOVED. POLES WILL BE STRIPPED CLEAN OF ALL ATTACHED PARTS BEFORE DELIVERY.
17. CONTRACTOR SHALL AT HIS SOLE EXPENSE, REPLACE OR RECONSTRUCT SIDEWALKS, CURBS, GUTTERS, PAVEMENT AND ANY OTHER IMPROVEMENTS REMOVED, BROKEN OR DAMAGED BY HIM WITH MATERIAL AND METHODS THAT CONFORM TO CURRENT CITY STANDARDS.
18. THE CONTRACTOR SHALL HAVE FULL MAINTENANCE RESPONSIBILITY OF THE TRAFFIC SIGNAL FROM THE TIME OF NOTICE TO PROCEED TO THE INITIAL ACCEPTANCE AND/OR ENGINEER DATE COMPLETION OF REMOVALS IN THE CASE OF REBUILD OF MODIFICATIONS.
19. ALL NEW INSTALLATIONS REQUIRE ALL VEHICLE AND PEDESTRIAN INDICATIONS TO BE CITY OF COLORADO SPRINGS APPROVED LEOS. ALL SIGNAL HEADS MOUNTED ON MAST ARMS SHALL HAVE BACK-PLATES.
20. CONTRACTORS THAT DAMAGE TRAFFIC SIGNAL SYSTEMS WILL BE BILLED FOR ALL MATERIALS USED AS WELL AS DOUBLE TIME FOR STAFF WHOM ARE PULLED OFF EXISTING JOBS TO MAKE THE REPAIRS.
21. CONTRACTORS INSTALLING SIGNAL FOUNDATIONS SHALL TERMINATE THE SIGNAL CONDUITS INTO A STANDARD J-BOX WITH BELL ENDS ATTACHED ON CONDUITS. ONE # 6 GROUND ROD SHALL BE INSTALLED IN EACH SIGNAL J-BOX. CONTRACTOR SHALL FURNISH ALL MATERIAL.

**TRAFFIC DETAILS:**

- SECTION 8.7 UNDERGROUND CONDUIT AND PULLBOX INSTALLATION
- SECTION 9.4 SIGN MOUNTING BRACKET INSTALLATION
- SECTION 9.5 SIGN MOUNTING ARM
- SECTION 11.0 TRAFFIC SIGNAL - SPAN WIRE INSTALLATION
- SECTION 11.2 TRAFFIC SIGNAL POLE WITH MAST ARM AND DECORATIVE GLOBE
- SECTION 11.3 TRAFFIC SIGNAL POLE WITH MAST ARM WITH LUMINAIRES
- SECTION 11.4 POLE AND MASTER ARM DETAILS
- SECTION 11.5 POLE AND MAST-ARM SCHEDULE
- SECTION 12.0 LOADING AND SIGNAL HEAD SPACING (MAST-ARM)
- SECTION 12.1 LOADING AND SIGNAL HEAD SPACING (SPAN-WIRE)
- SECTION 13.14 TRAFFIC SIGNAL FOUNDATION (TYPICAL)
- SECTION 14.2 TRAFFIC SIGNAL PEDESTAL DETAIL
- SECTION 15.0 TRAFFIC SIGNAL SCHOOL FLASHER
- SECTION 16.0 TRAFFIC SIGNAL SCHOOL FLASHER FOUNDATION
- SECTION 17.0 STREET LIGHT & TRAFFIC SIGNAL INSTALLATION
- SECTION 25.0 BREAK AWAY TETHER ASSEMBLY
- SECTION 28.0 UPPER ARM ASSEMBLY
- SECTION 30.0 POLE MOUNT FITTINGS
- SECTION 31.0 MAST ARM MOUNTING BRACKET ASSEMBLY
- SECTION 32.0 PEDESTRIAN PUSHBUTTONS
- SECTION 33.0 JUNCTION/PULL BOXES
- SECTION 34.0 ROCK FIBER CONTROLLER BASE

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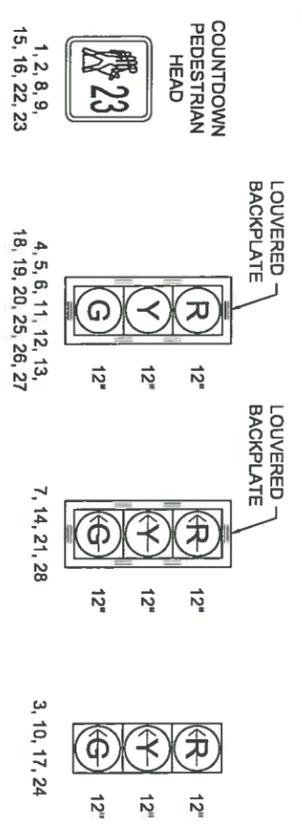
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PROPOSED SIGNAL HEADS



PROPOSED TRAFFIC SIGNS

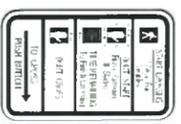


ILLUMINATED STREET SIGNS

Austin Bluffs Pkwy 4100 N 1400 E

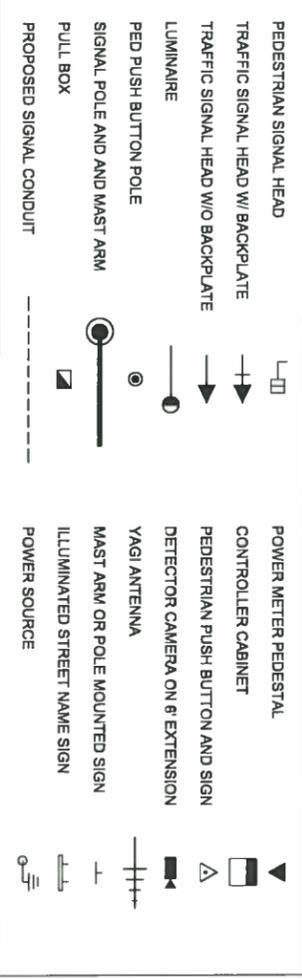
Academy Blvd 4100 N 1400 E

PROPOSED PEDESTRIAN SIGN



EACH PEDESTRIAN PUSH BUTTON SHALL BE ACCOMPANIED BY A 9" x 15" R10-3E PEDESTRIAN SIGN. THIS SIGN SHALL BE INCLUDED IN THE PEDESTRIAN PUSH BUTTON PAY ITEM

SIGNAL EQUIPMENT LEGEND



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TRAFFIC SIGNAL PLAN  
Subsheet: SG Subsheet Sheets: SG02 of SG03 Sheet No: 5

