

Metro Area Right Of Way Application for Work

City: WINDSOR HEIGHTS

Date of Application: 11-1-16

APPLICANT INFORMATION

Applicant Name: American Traffic Solutions Applicant Phone: 480-221-7516 Applicant FAX: 480-966-2507

Applicant Address: 1150 N. Alma School Applicant Email: brookie.baker@atsol.com

FACILITY OWNER INFORMATION Check if same as applicant

Facility Owner Name: _____ Facility Owner Phone: _____

Facility Owner Address: _____ Facility Owner Email: _____

CONTRACTOR INFORMATION

Contractor (Person performing the work): Gustner Electric, Inc. License Number: 6E184

Contractor Address: 2400 Cassens Dr. Eton, IA 52006 Contractor Phone: 636-349-5999

Contractor Email: SGustner@gustnerelectric.com

Person in Charge of Job (name): Ryan Conrath 24 hr Phone #: 314-280-7683

Does the contractor have a bond on file with the city? Yes No If no please attach copy

PROJECT INFORMATION

WORK ORDER # _____

Construction Type: Sewer Pavement Gas Water Telecommunications Electric

Trees Sidewalks Driveway Approach Other Speed Cameras

Description of work to be performed (include details of all streets; where mobilization of contractor equipment will be located; access to driveways and sidewalks): See attached plans.

University Ave - between 64th Street and Hyvee Store entrance

Start Date: 11/8/2016

Approximate Completion Date: 12/6/2016

REQUIRED ATTACHMENTS

- Bond (if not on file with city) - W-9 / ELECTRICAL PERMIT /
- Construction Documents i.e. drawings, traffic control, GIS Plans, etc Please
- check the city code for comprehensive list of required attachments
- Payment - \$60

INDEMNIFICATION: Please read the following city code for indemnification requirements- Chapter 135 & 141

I have read, agreed and completed the indemnification requirements.

24 HR Notification required before starting work please call permitting jurisdiction-see <http://www.ci.windsorheights.ia.us>

Contractor Signature: [Signature] Date: 11/1/2016

Facility Owner Signature: Brookie Baker Date: 11/1/16

CITY USE ONLY:

Date submitted: 11-1-16

Permit # (if applicable): _____

Approval Granted By: Doug Stowe - Pub Works

Remarks: WORK NOT PERMITTED UNTIL A COPY OF (SURETY BOND) (W-9 FORM) + STATE ELECTRICAL PERMIT IS ON FILE

Received By: [Signature]
Form of Payment Cash Check CC
Permit Valid Until 6-6-2017

Updated 1/23/14



GOVERNING SPECIFICATIONS:
 THE MOST CURRENT EDITION OF IOWA STATEWIDE URBAN
 SPECIFICATIONS FOR PUBLIC IMPROVEMENTS MANUAL
 (SUDAS) SHALL APPLY TO ALL WORK ON THE PROJECT
 EXCEPT MODIFIED HEREIN.

UTILITY INFORMATION

CITY OF CLIVE (515) 223-6220
 CITY OF DES MOINES - SEWER (515) 283-4500
 WINSTREAM COMMUNICATIONS (866) 445-5880
 MEDIACOM COMMUNICATIONS CORP (855) 633-4226
 CITY OF WINDSOR HEIGHTS (515) 279-3662
 DES MOINES - WATER WORKS (515) 283-4500
 CITY OF DES MOINES - TRAFFIC (515) 283-4500
 UNITE PRIVATE NETWORKS, LLC (402) 817-1394
 IOWA COMMUNICATIONS NETWORK (515) 725-4692
 MIDAMERICAN - ELECTRIC (888) 427-5632
 MIDAMERICAN - GAS (888) 427-5632
 CENTURYLINK (877) 837-5738

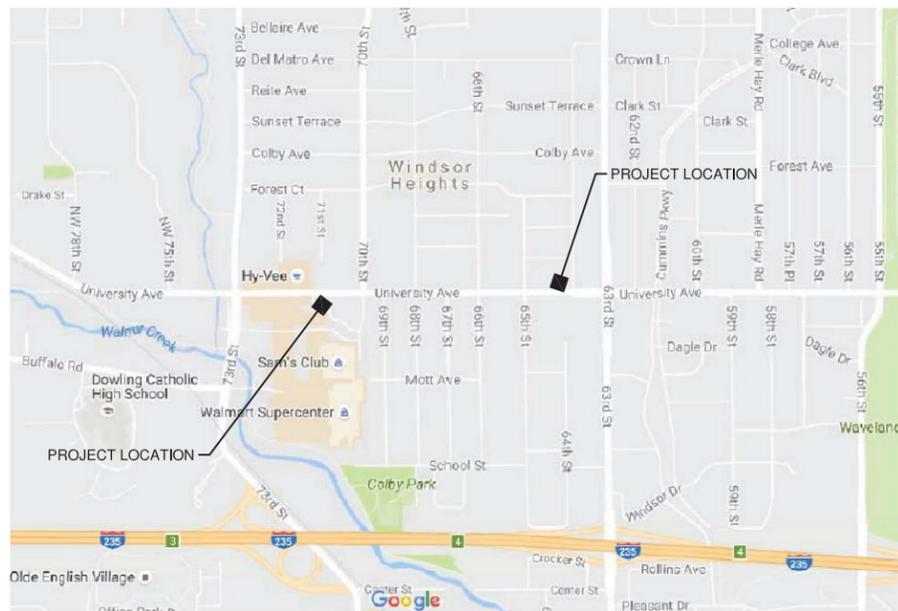
WINDSOR HEIGHTS, IOWA

PROJECT PLANS FOR THE CONSTRUCTION OF
SPEED ENFORCEMENT PROGRAM
 AT THE LOCATION OF
6400 & 7100 BLOCK AT UNIVERSITY AVE

SHEET INDEX

SHEET NO.	SITE ID	DESCRIPTION
1		COVER SHEET
2	WH001	INTERSECTION PLAN - EB 7100 BLOCK
3	WH002	INTERSECTION PLAN - WB 6600 BLOCK
4		ATS STANDARD DETAILS
5		REAR POLE DETAILS
6		DRILLED ANCHOR FOUNDATION
7		REINFORCED CONCRETE FOUNDATION
8-10		SPREAD FOOTING DETAILS
11		TRAFFIC SIGNAL DETAILS
12		TRAFFIC CONTROL PLAN 402
13		TRAFFIC CONTROL PLAN 419

VICINITY MAP



HY-VEE
7101 UNIVERSITY AVE
WINDSOR HEIGHTS, IA 50324

LEGEND			
	UNDERGROUND CONDUIT (TRENCH)		EXISTING FIRE HYDRANT
	DIRECTIONAL BORE		EXISTING SIGNAL HEAD
	REAR MONITOR CAMERA ON ATS POLE		EXISTING MANHOLE
	DETECTION TARGET ZONE		EXISTING PULL/JUNCTION BOX
	17" x 30" PULL/JUNCTION BOX		EXISTING LOOPS
	OVERHEAD LINE		EXISTING TRAFFIC CONTROLLER
	ATS METER PEDESTAL		EXISTING METER PEDESTAL
	EXISTING UNDERGROUND CONDUIT		EXISTING WOOD POLE
	EXISTING STREET LIGHT		EXISTING CONCRETE POLE

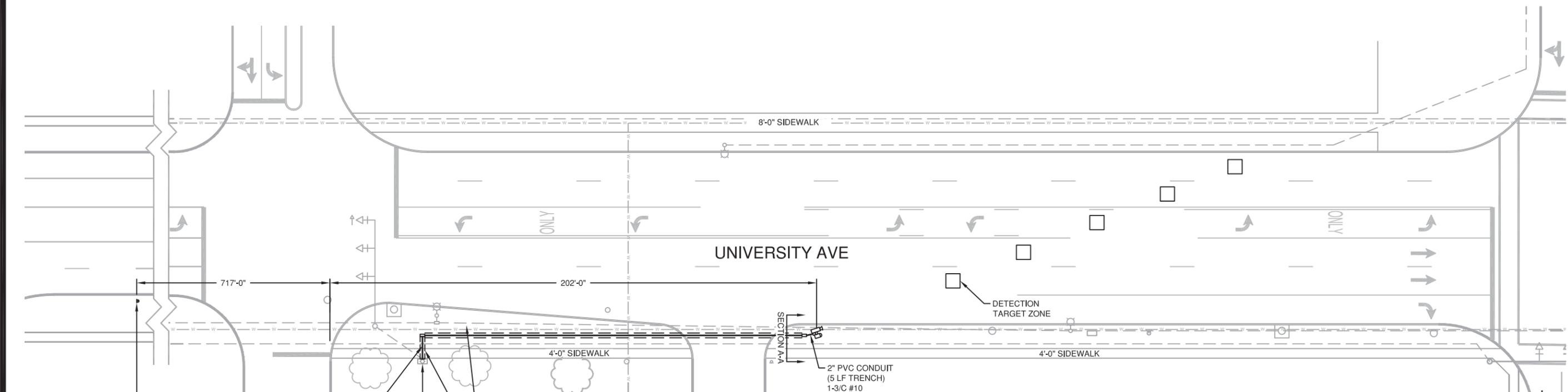


PHOTO ENFORCED SIGN. SEE
DETAIL "B" ON SHEET 4.

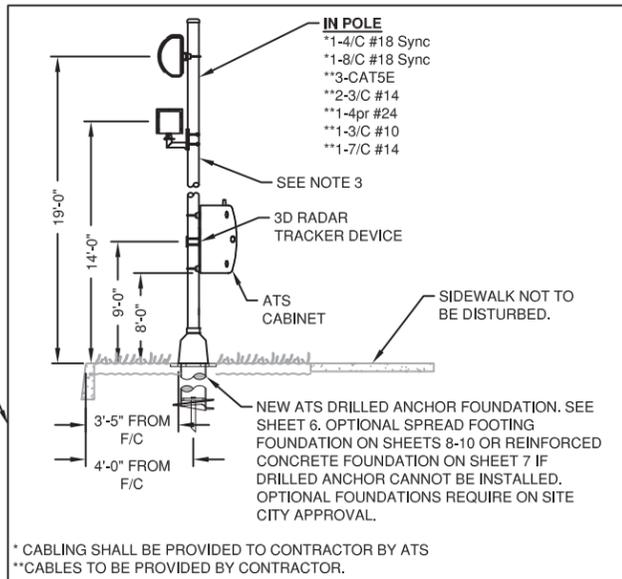
2" PVC CONDUIT
(10 LF TRENCH)
1-3/C #10

TERMINATE AT EXISTING TRAFFIC
CONTROLLER POWER SOURCE FOR
POWER.

2" PVC CONDUIT
(158 LF DIRECTIONAL BORE)
1-3/C #10

AREA UNDER SIDEWALK TO BE
TUNNELED. RESTORE LANDSCAPE
IN KIND. IF SIDEWALK IS DISTURBED,
SIDEWALK CONSTRUCTION SHALL
BE IN ACCORDANCE WITH SECTION
9010 OF SUDAS SPECIFICATIONS.

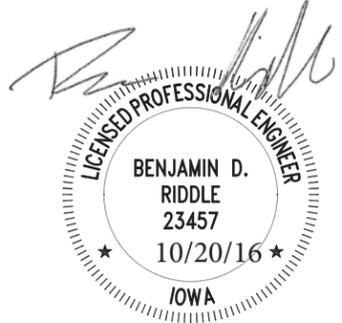
CONTROLLER CABINET (ON RIGHT), REAR
SCENE CAMERA ASSEMBLY (ON LEFT), 300
WATT-SECOND STROBE (ON LEFT) AND 3D
TRACKER DEVICE (ON FRONT) MOUNTED ON
NEW 20 FT ATS POLE WITH FRANGIBLE BASE.
CONTAINS EVDO MODEM.



* CABLING SHALL BE PROVIDED TO CONTRACTOR BY ATS
** CABLES TO BE PROVIDED BY CONTRACTOR.

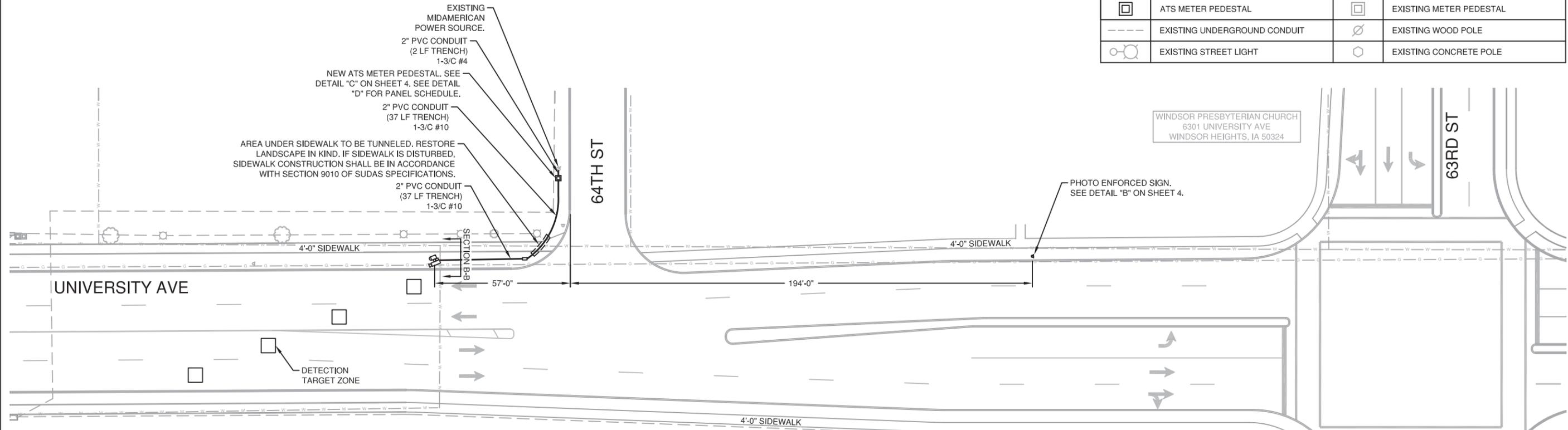
SECTION A-A
(NOT TO SCALE)

BANKERS TRUST BANK
7000 UNIVERSITY AVE
WINDSOR HEIGHTS, IA 50324

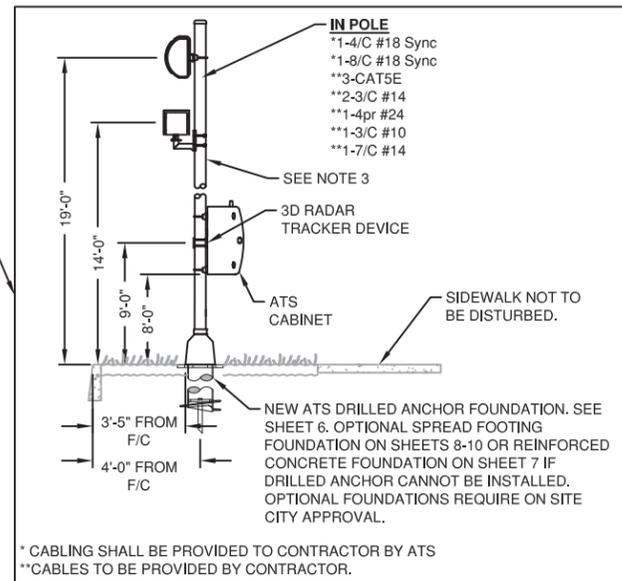


- NOTES:
- CONTRACTOR SHALL VERIFY THE LOCATION OF ALL CONFLICTING UNDERGROUND UTILITIES PRIOR TO DIRECTIONAL DRILL AND MAINTAIN 2 FT CLEARANCE.
 - EARTH TO GROUND RESISTANCE NEEDS TO BE 25 OHMS OR ADDITIONAL GROUNDING RODS MAY BE NEEDED.
 - ATS POLES TO BE PAINTED TO MATCH EXISTING INFRASTRUCTURE - CUSTOM FINISH MATCH VALMONT DARK GREEN 293 (RAL #6005).

LEGEND			
	UNDERGROUND CONDUIT (TRENCH)		EXISTING FIRE HYDRANT
	DIRECTIONAL BORE		EXISTING SIGNAL HEAD
	REAR MONITOR CAMERA ON ATS POLE		EXISTING MANHOLE
	DETECTION TARGET ZONE		EXISTING PULL/JUNCTION BOX
	17' x 30' PULL/JUNCTION BOX		EXISTING LOOPS
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	ATS METER PEDESTAL		EXISTING METER PEDESTAL
	EXISTING UNDERGROUND CONDUIT		EXISTING WOOD POLE
	EXISTING STREET LIGHT		EXISTING CONCRETE POLE



CONTROLLER CABINET (ON RIGHT), REAR SCENE CAMERA ASSEMBLY (ON LEFT), 300 WATT-SECOND STROBE (ON LEFT) AND 3D TRACKER DEVICE (ON FRONT) MOUNTED ON NEW 20 FT ATS POLE WITH FRANGIBLE BASE. CONTAINS EVDO MODEM.

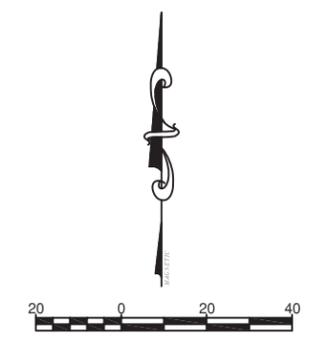


SECTION B-B
(NOT TO SCALE)

- NOTES:
- CONTRACTOR SHALL VERIFY THE LOCATION OF ALL CONFLICTING UNDERGROUND UTILITIES PRIOR TO DIRECTIONAL DRILL AND MAINTAIN 2 FT CLEARANCE.
 - EARTH TO GROUND RESISTANCE NEEDS TO BE 25 OHMS OR ADDITIONAL GROUNDING RODS MAY BE NEEDED.
 - ATS POLES TO BE PAINTED TO MATCH EXISTING INFRASTRUCTURE - CUSTOM FINISH MATCH VALMONT DARK GREEN 293 (RAL #6005).

WINDSOR PRESBYTERIAN CHURCH
6301 UNIVERSITY AVE
WINDSOR HEIGHTS, IA 50324

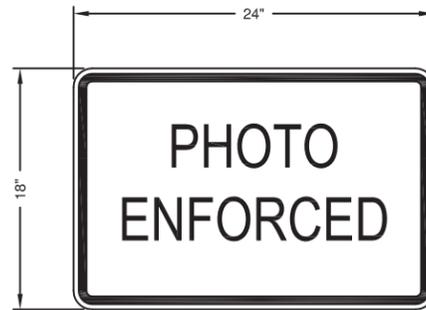
EISENLAUER TEAM
6300 UNIVERSITY AVE
WINDSOR HEIGHTS, IA 50310



	1150 N. ALMA SCHOOL RD MESA, AZ 85201 USA TEL: (480)443-7000 FAX: (480)607-0901 WWW.ATSOL.COM	ENGINEER OF RECORD: BENJAMIN D. RIDDLE, P.E. REG. #23457	WB 6600 BLOCK INTERSECTION PLAN				6400 & 7100 BLOCK AT UNIVERSITY AVE WINDSOR HEIGHTS, IA				NO. BY DATE REVISION 1 BDR 10-10-16 PER CITY COMMENTS	NO. BY DATE REVISION	FINAL SUBMITTAL DESIGNED BY: BDR DATE: 9-18-16 APPROVED BY: BDR APPROVAL DATE:	JOB NUMBER 1472 SITE ID(S) WH001-002	SHEET NUMBER 3 OF 13 SHEETS
			SPEED ENFORCEMENT PROGRAM		6400 & 7100 BLOCK AT UNIVERSITY AVE WINDSOR HEIGHTS, IA										

GENERAL & CONSTRUCTION NOTES

- SEPARATE RIGHT-OF-WAY PERMITS ARE REQUIRED FOR WORK WITHIN PUBLIC AGENCY RIGHT-OF-WAY. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING APPLICATION PERMITS & FEES, AND COMPLY WITH ALL PUBLIC REQUIREMENTS.
- UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE BASED ON AVAILABLE INFORMATION. CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT DESIGNATED AGENCY TO LOCATE ALL UNDERGROUND UTILITIES 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- CONTRACTOR SHALL BE RESPONSIBLE TO APPLY AND OBTAIN AN APPROVED TRAFFIC CONTROL PLAN IN ACCORDANCE WITH MUTCD AND LOCAL STANDARDS AS REQUIRED.
- CONTRACTOR SHALL BE RESPONSIBLE TO RESTORE ALL DISTURBED AREAS TO ORIGINAL CONDITION TO AGENCY SATISFACTION AT NO ADDITIONAL COMPENSATION.
- CONTRACTOR SHALL TERMINATE ALL POWER CIRCUITS INTO ATS CABINET(S).
- INSTALL INLINE 30 AMP FUSE INSIDE HAND HOLE ON ATS CAMERA POLES.
- INSTALL FOUNDATION POLE AND GROUNDING WIRE FOR ATS EQUIPMENT. SEE LOCATIONS IN DRAWINGS AND POLE FOUNDATION DETAIL.
- INSTALL PULL/JUNCTION BOX OF THE REQUIRED SIZE AND TYPE PER LOCAL AGENCY STANDARDS.
- SCHEDULE 80 PVC CONDUIT TO BE BORED UNDER ROADWAY - 36" COVER MINIMUM. SEE SIZES AND LOCATION IN DRAWINGS.
- CONTRACTOR SHALL CALL CITY TRAFFIC SIGNAL SUPERVISOR, DOUG STONE 515-402-3208, AT LEAST 72 HOURS IN ADVANCE TO COORDINATE THE POWER DROP INTO THE AGENCIES METER PEDESTAL.
- THE CONTRACTOR SHALL HAVE A LEVEL II IMSA CERTIFIED TECHNICIAN / ELECTRICIAN ON-SITE AT ALL TIMES DURING CONSTRUCTION. CONDUCTOR SPLICES AND TERMINATIONS SHALL BE MADE BY A QUALIFIED JOURNEYMAN ELECTRICIAN, WHO HAS SUCCESSFULLY COMPLETED A RECOGNIZED FOUR (4) YEAR APPRENTICESHIP PROGRAM UNDER THE DIRECT SUPERVISION OF A JOURNEYMAN ELECTRICIAN.
- ALL WORK SHALL CONFORM TO ALL APPLICABLE ELECTRICAL CODES EXCEPT WHEN CITY STANDARDS SUPERSEDE.
- AT LOCATIONS WHERE EXISTING ENFORCEMENT EQUIPMENT MAY EXIST, CONTRACTOR SHALL COORDINATE WITH THE OWNER AND ATS PROJECT MANAGER FOR REMOVAL & SALVAGE.
- CONTRACTOR SHALL COORDINATE WITH CITY TRAFFIC SIGNAL SUPERVISOR, DOUG STONE 515-402-3208, AND LAW ENFORCEMENT TO HAVE AN OFFICER PRESENT WHEN TRAFFIC SIGNAL POWER IS TURNED OFF FOR CONNECTION TO POWER PEDESTAL. SIGNAL SHUTOFFS REQUIRE A MINIMUM OF 48 HOURS OF NOTIFICATION SO THAT IT CAN BE POSTED ON THE CITY'S WEBSITE.
- CONNECT POLE TO SOLID BARE BOND GROUND & GROUNDING ROD (OR COIL 25' OF NO. 6 BARE COPPER) IN POLE FOUNDATION & TO SYSTEM GROUND BONDED BACK TO ATS CABINET.
- CONTRACTOR TO LABEL EACH END OF ALL CABLE RUNS.
- CONTRACTOR TO INSTALL AND LEAVE IN PLACE NYLON DRAW STRING IN ALL CONDUIT RUNS.



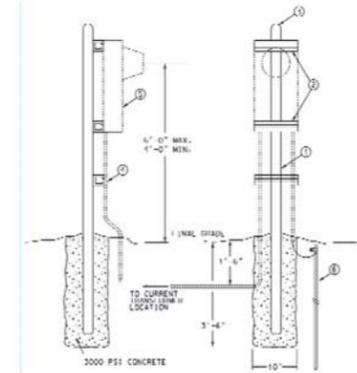
R10-19aP
RED LIGHT PHOTO ENFORCED

SIGN COLORS:
LEGEND - BLACK
BACKGROUND - WHITE

DETAIL "B" PHOTO ENFORCEMENT SIGN DETAIL

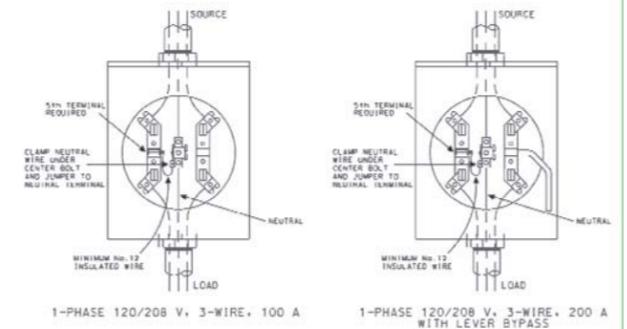
(NOT TO SCALE)

**PHOTO ENFORCED SIGN WILL BE A SUPPLEMENTAL SIGN TO THE EXISTING SPEED LIMIT SIGN.



Customer furnishes and installs the following equipment:

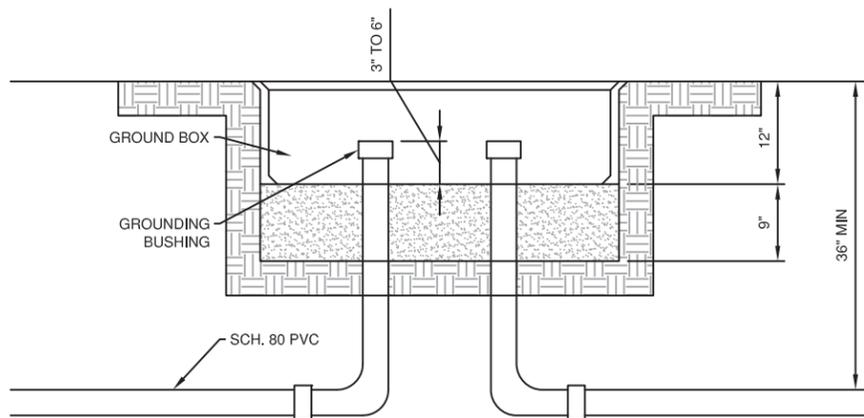
- Pedestal support - 3 inch (minimum size) standard steel pipe or galvanized steel conduit, or 2 inch (minimum size) uni-strut, or 2 inch by 1/4 inch (minimum size) channel/angle iron.
- Meter socket/conduit brackets - Weld or bolt uni-strut brackets to pedestal support. Length of brackets and vertical spacing will be determined by meter socket and conduit dimensions.
- Cap - Pedestal support shall have either a welded or threaded cap or be filled with concrete and rounded on top.
- Conduit - 1 inch rigid galvanized steel or schedule 80 PVC conduit shall be installed between meter socket and padmount transformer.
- Meter socket meeting Company specifications with test switches (not shown).
 - Company approved location within 35 circuit feet of transformer.
 - Finished pedestal to be either primed and painted or galvanized.
- Driven ground rod.



- The meter sockets shall meet Company specifications, see Appendix A.
- Working space in front of service entrance equipment and meter sockets shall be in accordance with NEC Section 110.26. Refer to page 21 for Meter Clearances.
- When using aluminum conductors, wire brush the conductors and apply oxide inhibitor on all connections.
- When the neutral is not continuous through the meter socket, a dual lug neutral connector shall be used.
- 120/208 V 3 wire is normally available only from a 3 phase 120/208 V 4 wire service entrance. 200 ampere service may be available in certain areas. Consult your Company representative.
- Spring, clip type add-on 5th terminals are not allowed.
- Commercial installations require a manual clamping jaw lever bypass.

DETAIL "C" METER DETAIL

(NOT TO SCALE)



**DETAIL "A"
TYPICAL JUNCTION BOX DETAIL**

(NOT TO SCALE)

ATS PANEL SCHEDULE

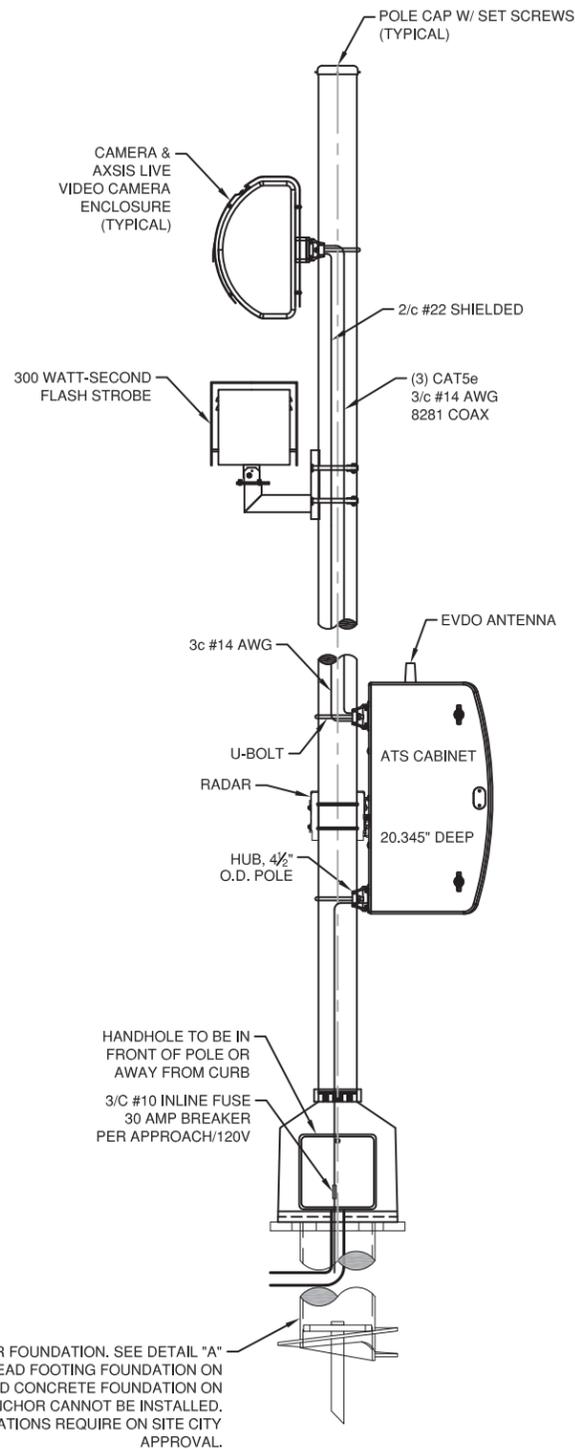
MANUFACTURER - SQUARE D OR EQUAL		12 CIRCUIT, 100 AMP RATING		SINGLE PHASE, 120/240V											
22 KAIC		70 MAIN BREAKER		LOCATION - METER PEDESTAL											
LOAD	CONDUIT	WIRE	TRIP	1P/2P	VOLTS	DESCRIPTION	CKT	CKT	DESCRIPTION	VOLTS	1P/2P	TRIP	WIRE	CONDUIT	LOAD
			30A	2P		SURGE ARRESTOR	1	2	RLC	120	1P	30A	#10	2"	2135
						SPACE	3	4							
						SPACE	5	6							
						SPACE	7	8							
						SPACE	9	10							
						SPACE	11	12							
TOTAL LOAD: 2135 WATTS								TOTAL AMPS: 28 AMPS							

**DETAIL "D"
PANEL SCHEDULE**

(NOT TO SCALE)

REAR CAMERA POLE

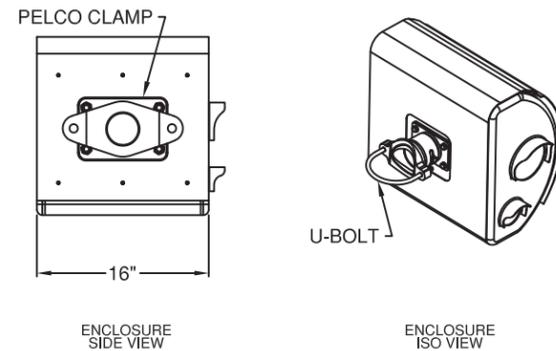
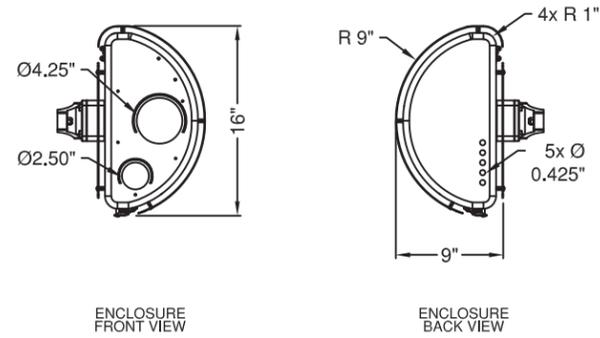
20' - 4.5" O.D. SCHEDULE 80
(6061 T6 ALUMINUM)
(NOT TO SCALE)



NEW ATS DRILLED ANCHOR FOUNDATION. SEE DETAIL "A" ON SHEET 6. OPTIONAL SPREAD FOOTING FOUNDATION ON SHEETS 8-10 OR REINFORCED CONCRETE FOUNDATION ON SHEET 7 IF DRILLED ANCHOR CANNOT BE INSTALLED. OPTIONAL FOUNDATIONS REQUIRE ON SITE CITY APPROVAL.

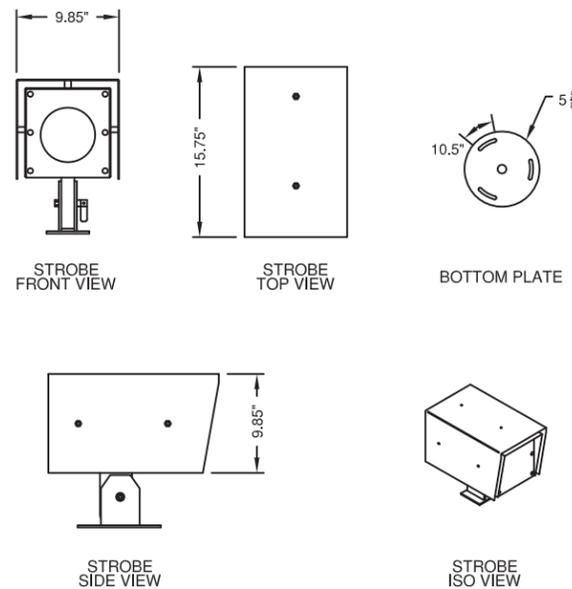
CAMERA & VIDEO CAMERA ENCLOSURE

(NOT TO SCALE)



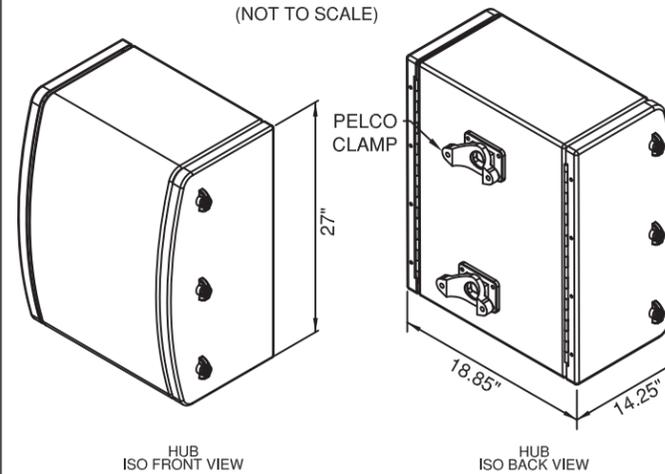
FLASH STROBE

(NOT TO SCALE)



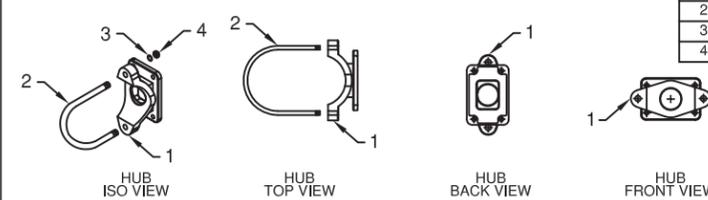
ATS CABINET

(NOT TO SCALE)



PELCO CLAMPS

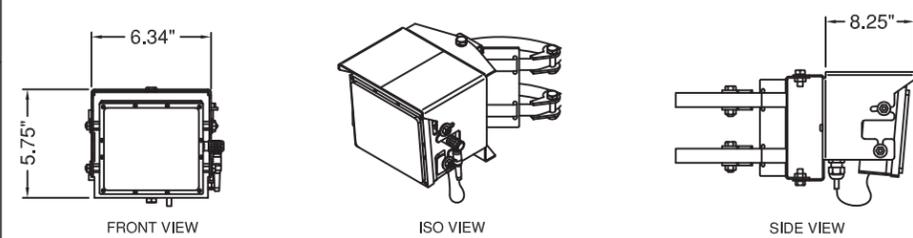
(NOT TO SCALE)



ITEM	DESCRIPTION	PART NO.
1	HUB, 4 1/2" O.D. POLE	SE-0384
2	U-BOLT, 3/8"-16 x 4-7/8" x 1-3/8"	FS-2501
3	LOCKWASHER, SPLIT, 3/8"	FS-4205
4	NUT, HEX, 3/8"-16	FS-1003

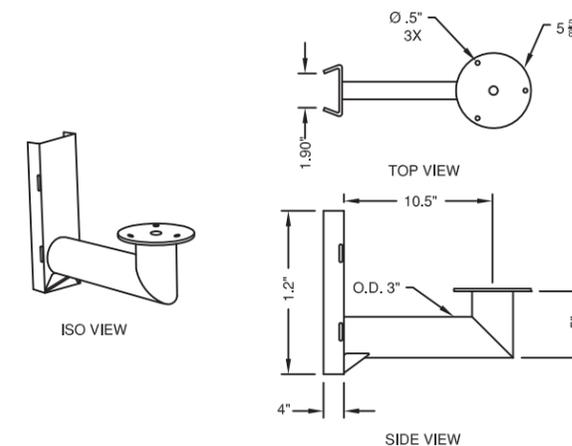
RADAR

(NOT TO SCALE)



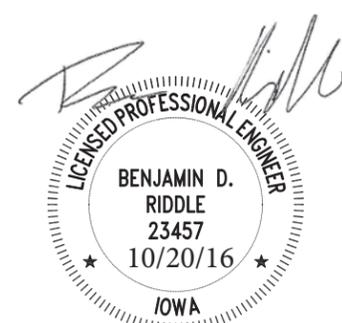
STROBE MOUNT

(NOT TO SCALE)

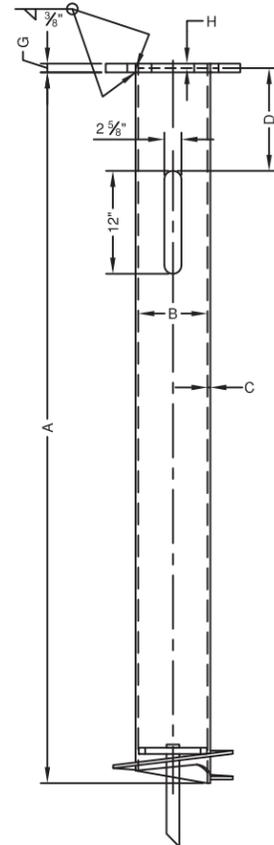
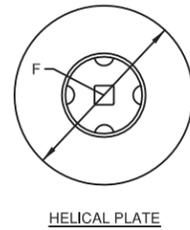
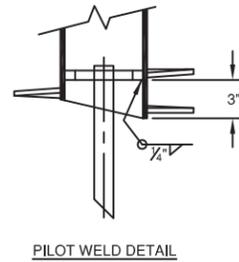
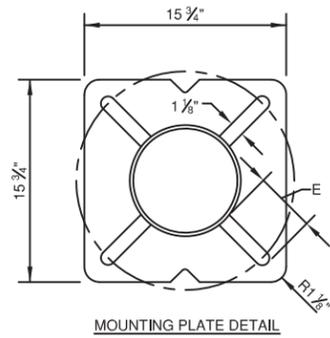


NOTES:

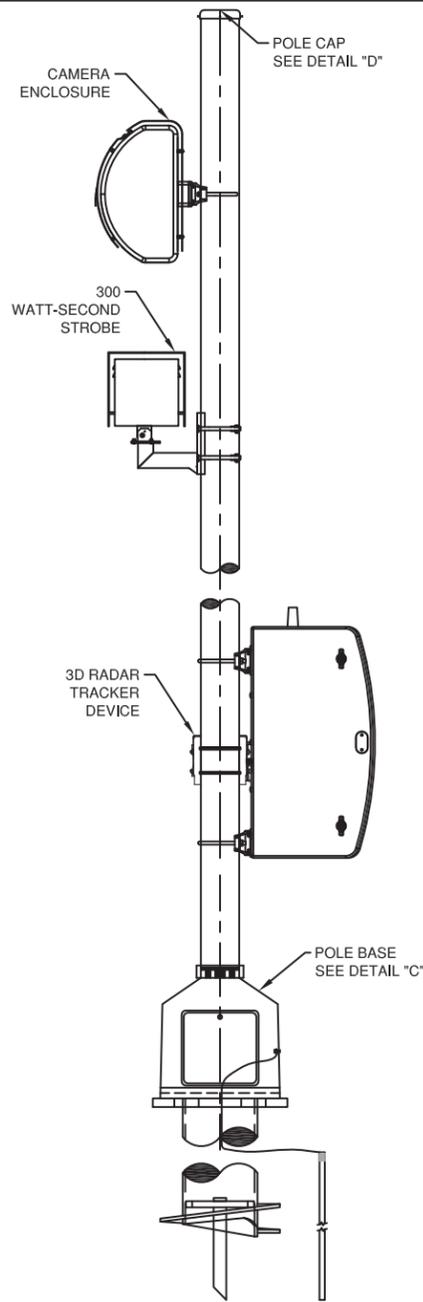
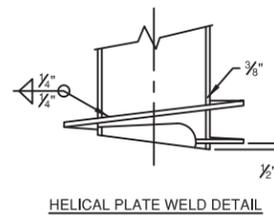
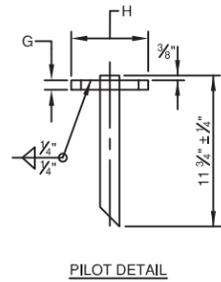
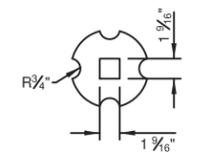
- CABINET TO BE ROTATED PERPENDICULAR TO CURB.
- ORIENT (AIM) RADAR TOWARDS THE MIDDLE OF THE TOTAL NUMBER OF LANES ON THE FRONT SIDE OF THE FRONT POLE.
- LOCATE POLE PER PLAN.



NO.	BY	DATE	REVISION	NO.	BY	DATE	REVISION
1	BDR	10-10-16	PER CITY COMMENTS				



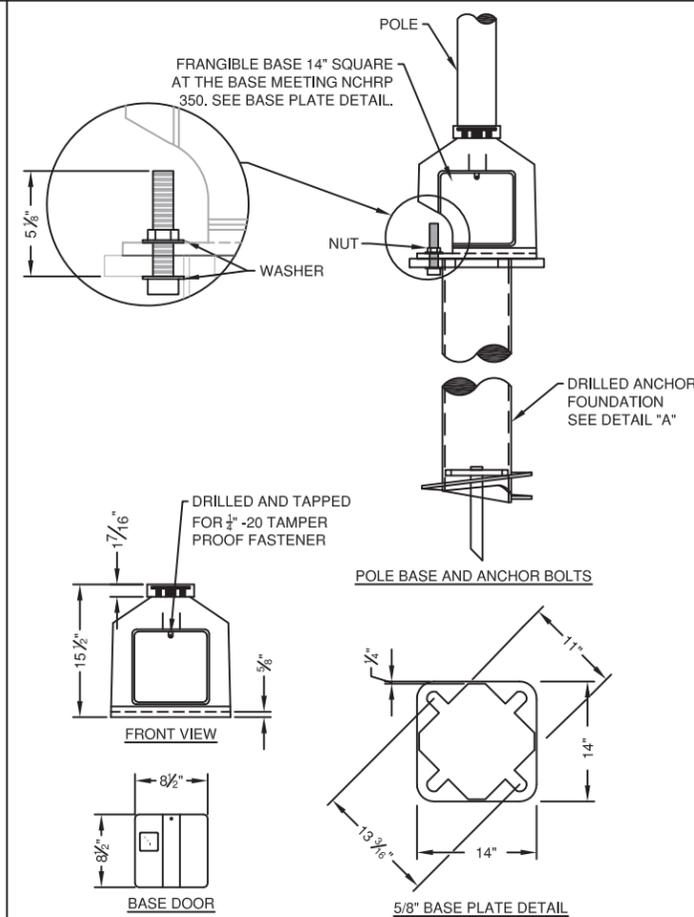
DETAIL "A"
DRILLED ANCHOR FOUNDATION DETAIL
(NOT TO SCALE)



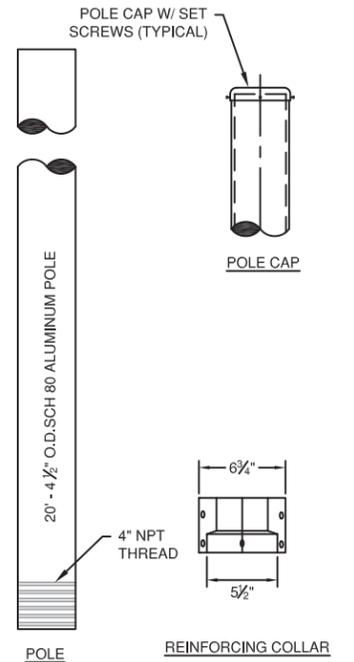
DETAIL "B"
TYPICAL ALUMINUM POLE DETAIL
(NOT TO SCALE)

DRILLED ANCHOR FOUNDATION DATA

POLE HEIGHT	ANCHOR SHAFT			HAND HOLE	BASE PLATE	HELICAL PLATE	PILOT DETAIL	
	A	B	C	D	E	F	G	H
20'	84"	6 5/8"	1/4"	18"	5 1/2"	14"	1"	5 15/16"



DETAIL "C"
POLE BASE DETAIL
(NOT TO SCALE)



DETAIL "D"
POLE DETAIL
(NOT TO SCALE)

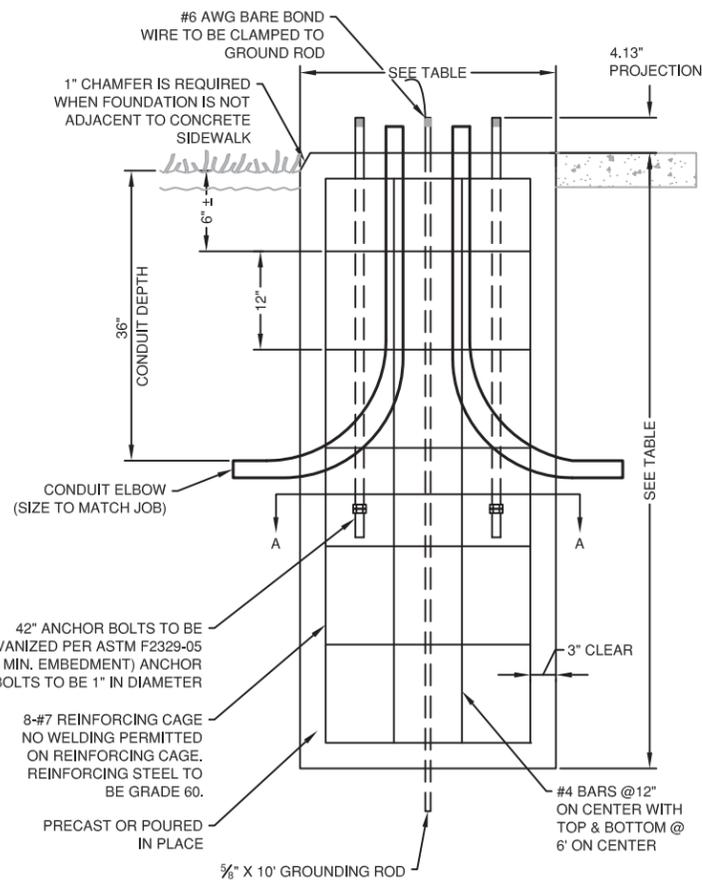
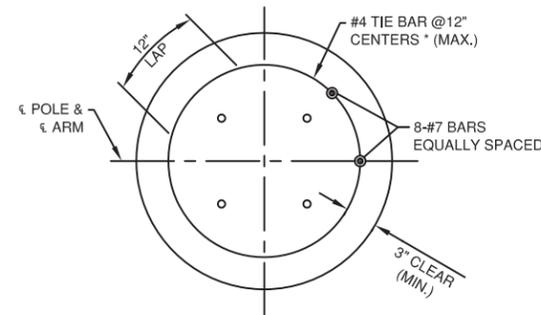
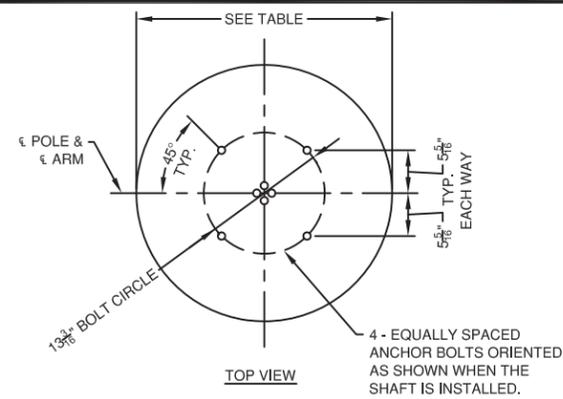
GENERAL NOTES:

- DESIGN SHALL BE IN ACCORDANCE WITH 2009 (5TH) EDITION AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS AND INTERIMS.
- POLE MATERIAL SHALL BE SCHEDULE 80 ALUMINUM POLE FABRICATED USING 6061-T6 ALUMINUM ALLOY, THREADED ONE END NPT CUT TO LENGTH.
- ALL NUTS, BOLTS, WASHERS AND THREADED BARS/STUDS SHALL BE GALVANIZED PER F2329-05.
- UNLESS OTHERWISE NOTED ON THE PLANS, LOCATE HANDHOLE 180 DEGREES FROM CURB & GUTTER (FACING SIDEWALK).
- PROVIDE NUT AND WASHER WITH EACH BOLT.
- THREADS OF BOLTS SHALL BE COATED WITH PIPE JOINT COMPOUND PRIOR TO INSTALLATION OF UPPER NUTS WHEN ERECTING POLE. AFTER POLE IS PLUMBED AND IN PERMANENT ALIGNMENT, THE EXPOSED THREADS OF PAINTED BOLTS SHALL BE CLEANED AND AN ADDITIONAL COATING OF ZINC-RICH PAINT APPLIED TO SEAL THE BOLT THREAD-NUT JOINT.
- HELICAL PLATE SHALL BE HOT DIP GALVANIZED PER ASTM A123 GRADE 100 KSI.
- SQUARE BAR PILOT SHALL BE PER ASTM A576.

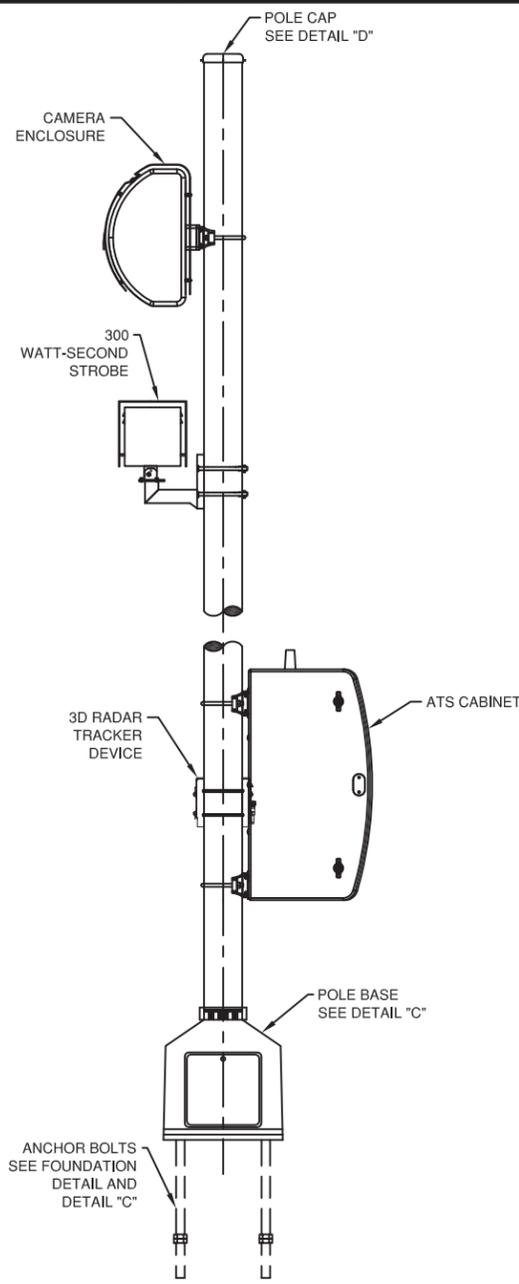
POLE DATA

POLE TUBE			POLE BASE			ANCHOR BOLT		
POLE O.D.	LENGTH	WALL THK	SQUARE	BOLT CIRCLE	THK	DIA	LENGTH	THREAD LENGTH
4 1/2"	20'	49/128"	14"	13 3/16"	5/8"	1"	5 1/8"	5 3/8"





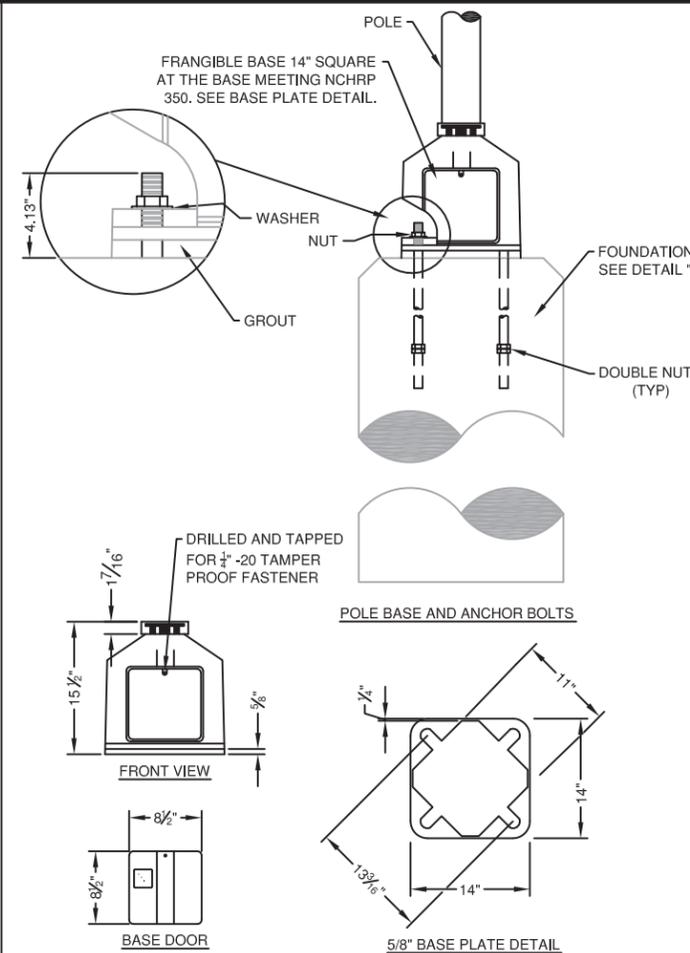
DETAIL "A"
ALUMINUM POLE CONCRETE FOUNDATION DETAIL
(NOT TO SCALE)



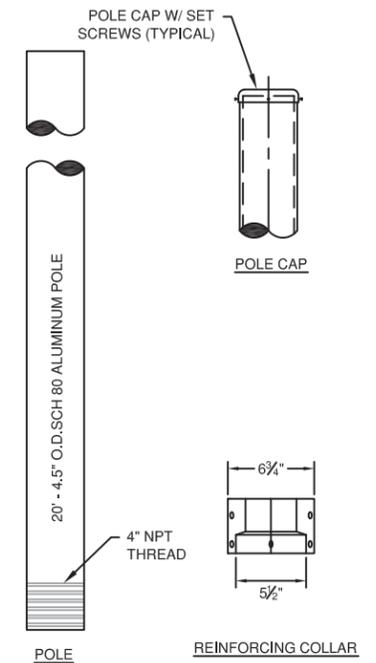
REAR POLE
DETAIL "B"
TYPICAL ALUMINUM POLE DETAIL
(NOT TO SCALE)

GENERAL NOTES:

- DESIGN SHALL BE IN ACCORDANCE WITH 2009 (5TH) EDITION AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS AND INTERIMS.
- POLE MATERIAL SHALL BE SCHEDULE 80 ALUMINUM POLE FABRICATED USING 6061-T6 ALUMINUM ALLOY, THREADED ONE END NPT CUT TO LENGTH.
- ANCHOR BOLTS SHALL BE PER ASTM F1554 GRADE 55 KSI.
- REINFORCING STEEL SHALL BE ASTM A615 GRADE 60 KSI.
- ALL NUTS, BOLTS, WASHERS AND THREADED BARS/STUDS SHALL BE GALVANIZED PER F2329-05.
- UNLESS OTHERWISE NOTED ON THE PLANS, LOCATE HANDHOLE 180 DEGREES FROM CURB & GUTTER (FACING SIDEWALK).
- PROVIDE NUT AND WASHER WITH EACH ANCHOR BOLT.
- ANCHOR BOLT THREADS SHALL BE TAPED PRIOR TO POURING CONCRETE. THREADS OF ANCHOR BOLTS SHALL BE COATED WITH PIPE JOINT COMPOUND PRIOR TO INSTALLATION OF UPPER NUTS WHEN ERECTING POLE. AFTER POLE IS PLUMBED AND IN PERMANENT ALIGNMENT. THE EXPOSED THREADS OF PAINTED BOLTS SHALL BE CLEANED AND AN ADDITIONAL COATING OF ZINC-RICH PAINT APPLIED TO SEAL THE BOLT THREAD-NUT JOINT.
- ALL EXPOSED FOUNDATION SHALL BE FINISHED SMOOTH AND SHALL BE FLUSH WITH ADJACENT SIDEWALKS WHEN APPLICABLE.



DETAIL "C"
POLE BASE DETAIL
(NOT TO SCALE)



DETAIL "D"
POLE DETAIL
(NOT TO SCALE)

POLE DATA

POLE O.D. (IN)	POLE TUBE		POLE BASE		ANCHOR BOLT			FOUNDATION		
	LENGTH (FT)	WALL THK (IN)	SQUARE (IN)	BOLT CIRCLE (IN)	THK (IN)	DIA (IN)	LENGTH (IN)	THREAD LENGTH (IN)	WIDTH (IN)	DEPTH (IN)
4.50	20.00	0.337	14.00	13.18	0.63	1.00	42.00	3.5	24.00	60.00



NO.	BY	DATE	REVISION	NO.	BY	DATE	REVISION
1	BDR	10-10-16	PER CITY COMMENTS				

GENERAL NOTES

1. SOIL SHOULD BE COMPACTED EVENLY AND FREE OF ORGANIC MATERIAL. EXERCISE CAUTION TO AVOID DAMAGE TO EXISTING UTILITIES.
2. PROTECT ADJACENT STRUCTURES AND FACILITIES. RESTORE ALL DAMAGED ITEMS (INCLUDING GRASSED AREAS) TO ORIGINAL CONDITION.
3. TOP OF FOUNDATION SHALL MATCH THE ADJACENT EXISTING SIDEWALK ELEVATION AND SHALL MATCH THE LONGITUDINAL GRADE & TRANSVERSE CROSS-SLOPE OF THE EXISTING SIDEWALK.
4. NEW SIDEWALKS SHALL MATCH EXISTING GRADE, CROSS-SLOPE, & ELEVATION OF EXISTING SIDEWALKS.
5. PROVIDE A BROOM FINISH ON TOP OF THE FOUNDATION AND NEW SIDEWALKS. ENSURE THAT SURFACE VARIATIONS DO NOT EXCEED 1/4" UNDER A 10 FOOT STRAIGHTEDGE OR 1/8" UNDER A 5 FOOT TRANSVERSE SECTION. FINISH EDGES WITH AN EDGING TOOL HAVING A 1/2 INCH RADIUS.
6. VERIFY UTILITIES (TYPE, LOCATION, & CONDITION) BEFORE STARTING CONSTRUCTION.

DESIGN CRITERIA

1. THE SPREAD FOUNDATIONS ARE DESIGNED TO SUPPORT ALUMINUM POLES WITH NEW GENERATION EQUIPMENT SHOWN.
2. DESIGN CONFORMS TO THE AASHTO *STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS* (CURRENT EDITION).
3. DESIGN WIND SPEED: 150 MPH
4. TO ALLOW FOR WIND FROM VARYING ANGLES, A TRANSVERSE COMPONENT OF 20% OF THE NORMAL WIND LOAD FORCES IS APPLIED SIMULTANEOUS WITH THE NORMAL WIND FORCES.
5. MAXIMUM ALLOWABLE DESIGN BEARING PRESSURE = 1000 PSF
6. FOUNDATIONS ARE DESIGNED TO LIMIT UPLIFT TO A MAXIMUM OF ONE CORNER AND TO LIMIT THE TENSION AREA TO LESS THAN 25% OF FOUNDATION AREA.

EQUIPMENT DATA

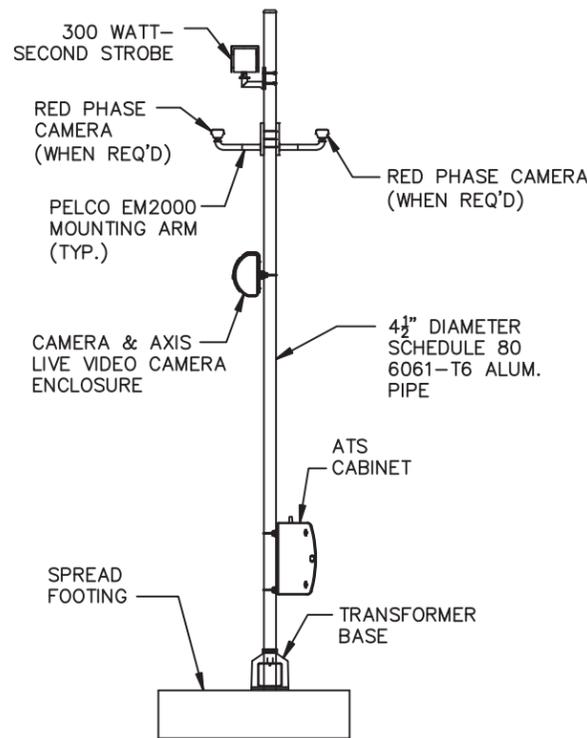
	WEIGHT (LBS)	EPA (SF) OR DIMENSION
300 WATT- SECOND STROBE:	34	1.00
WVD ANTENNA:	5	0.25
RED PHASE CAMERA (EACH):	40	0.60
CAMERA & AXIS LIVE VIDEO CAMERA ENCLOSURE:	100	2.50
ATS CABINET:	125	14.25" X 18.85" X 27"
		Cd=1.70

TRANSFORMER BASE: COMPONENT PRODUCTS, INC. CPI-BAS-1P

DESIGN LOADING

WIND DIRECTION LOADING TYPE	CASE 1 TRANSVERSE UNIAXIAL	CASE 2 TRANSVERSE BIAxIAL	CASE 3 LONGITUDINAL UNIAXIAL	CASE 4 LONGITUDINAL BIAxIAL
POLE/EQUIPMENT AXIAL	480	480	480	480
POLE/EQUIPMENT MOMENT (MZ)	0	0	0	0
WIND SHEAR (VX)	1,190	1,190	0	240
WIND SHEAR (VZ)	0	240	1,190	1,190
WIND MOMENT (MX)	0	2,150	11,120	11,120
WIND MOMENT (MZ)	11,120	11,120	0	2,150

AXIAL AND SHEAR FORCES ARE IN LBS.
MOMENTS ARE IN FOOT*LBS



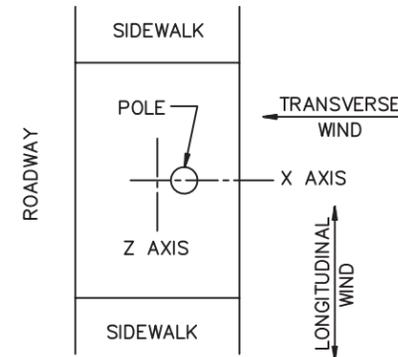
APPLICABILITY

THE DETAILS HEREIN ARE FOR SPREAD FOUNDATIONS FOR USE WITH THE AMERICAN TRAFFIC SOLUTIONS ALUMINUM REAR POLE WITH NEW GENERATION EQUIPMENT AS SHOWN.

THESE FOUNDATIONS ARE NOT APPLICABLE FOR USE WITH OTHER TYPES OF POLES AND/OR EQUIPMENT.

MATERIAL NOTES

1. CONCRETE: CLASS C (28-DAY MINIMUM COMPRESSIVE STRENGTH = 3,600 PSI)
2. REINFORCING STEEL: ASTM A615, GRADE 60
3. ANCHOR RODS:
 - A. RODS: ASTM F1554, GRADE 55
 - B. NUTS: ASTM A563, GRADE A HEAVY HEX
 - C. GALVANIZE RODS & NUTS IN ACCORDANCE WITH ASTM F2329.
4. CONCRETE COVER: 3" TOP, 3" SIDES, 3" BOTTOM



LOADING DIAGRAM

THESE SPREAD FOUNDATIONS SHALL NOT BE USED OVER:

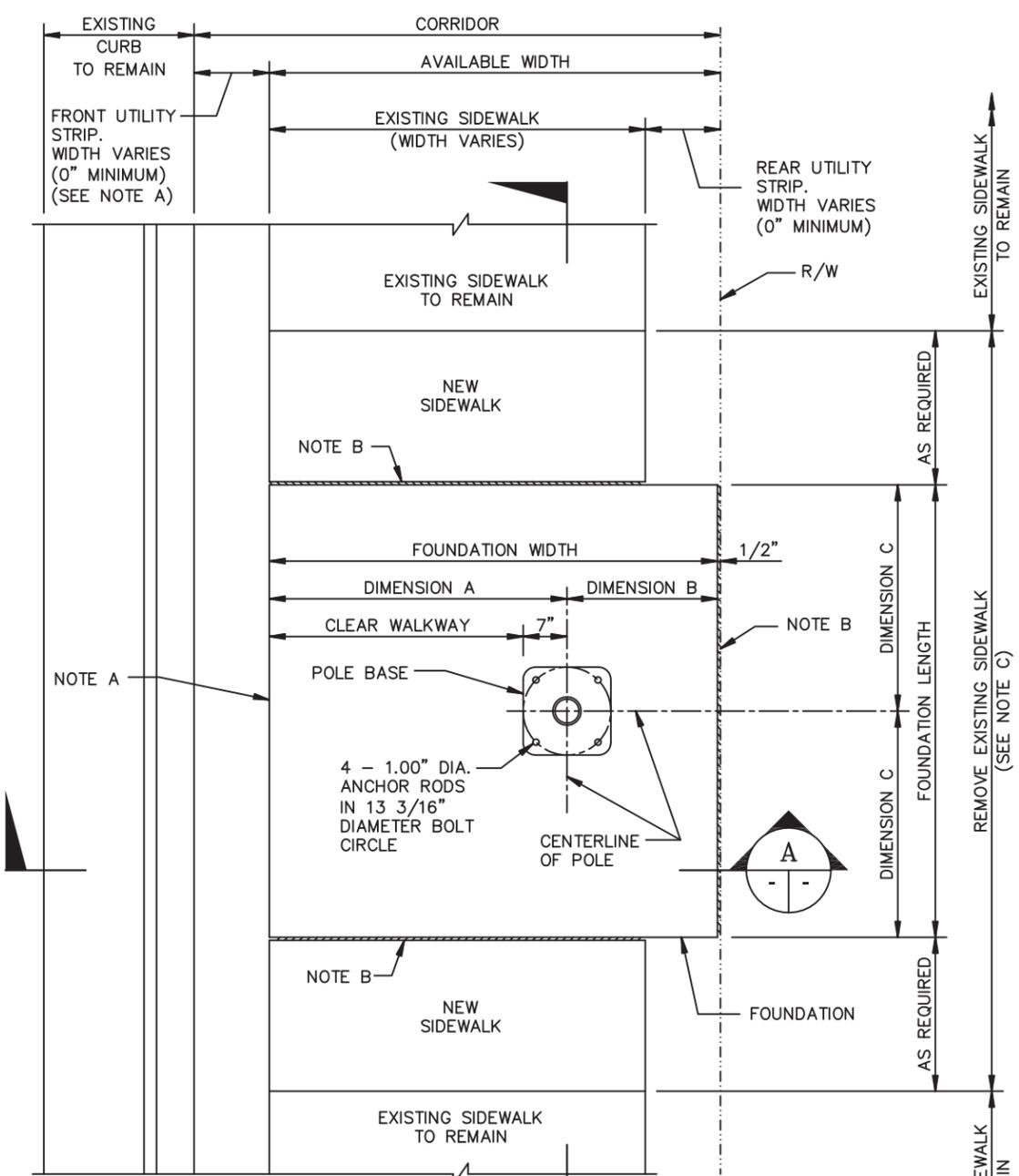
- 1) GAS, PROPANE, LNG, OR OTHER FLAMMABLE UTILITIES;
- 2) CONCRETE ENCASED DUCTBANK;
- 3) CONDUITS OTHER THAN PVC CONDUITS OR
- 4) MULTIPLE UTILITIES

WITHOUT THE PRIOR REVIEW AND SIGNED & SEALED WRITTEN APPROVAL OF A REGISTERED PROFESSIONAL ENGINEER.

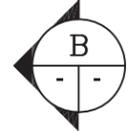


ALUMINUM REAR POLE WITH NEW GENERATION EQUIPMENT
(NOT TO SCALE)

NO.	BY	DATE	REVISION	NO.	BY	DATE	REVISION
1	BDR	10-10-16	PER CITY COMMENTS				



NOTE A:
 WHEN CURB ABUTS FOUNDATION
 (FRONT UTILITY STRIP WIDTH = 0"),
 PROVIDE 1/2" EXPANSION JOINT
 MATERIAL BETWEEN FOUNDATION AND
 EXISTING CURB (FULL DEPTH OF CURB)

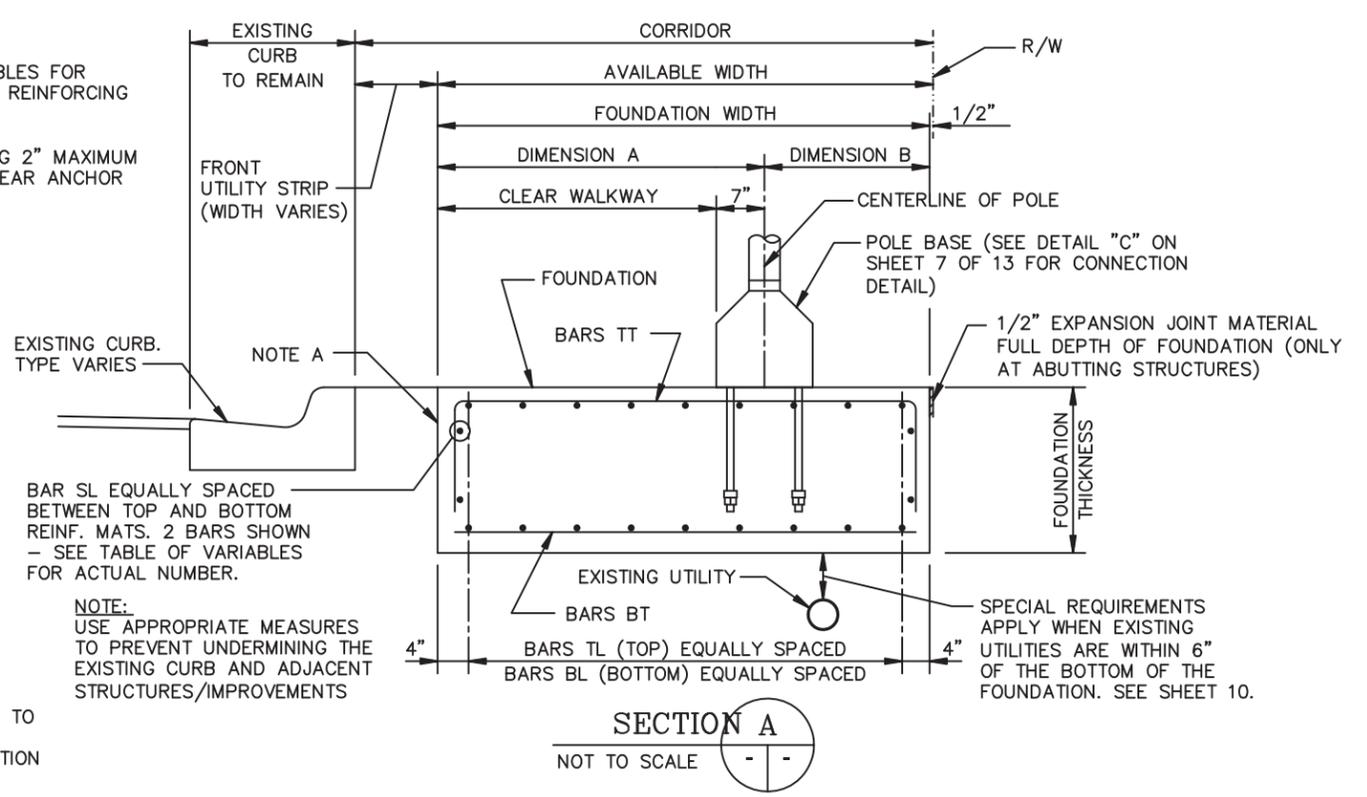


NOTE B:
 PROVIDE 1/2" EXPANSION JOINT
 MATERIAL BETWEEN FOUNDATION AND
 1) NEW SIDEWALK
 2) ADJACENT STRUCTURES AS APPLICABLE

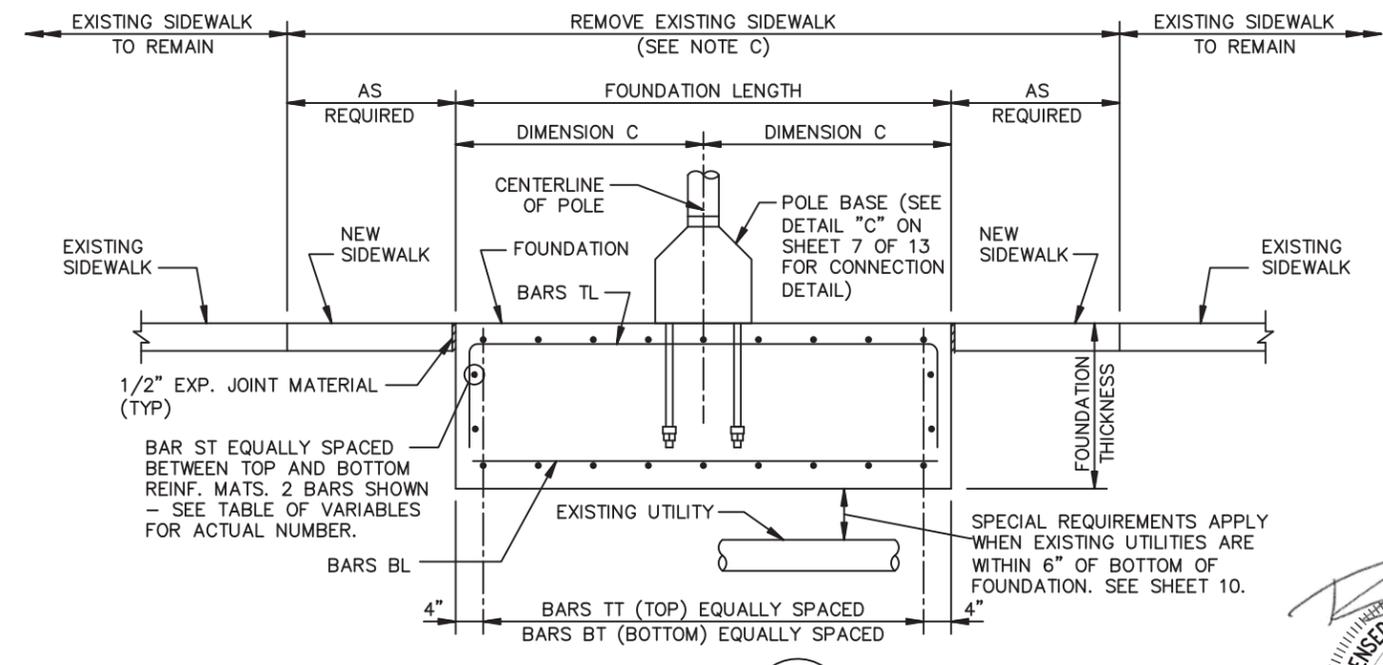
PLAN
 NOT TO SCALE

REINFORCING NOTES:

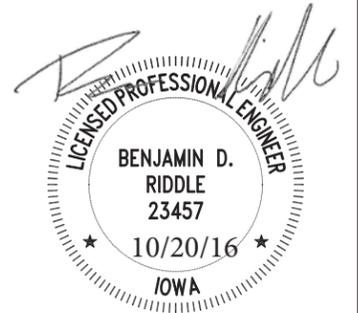
1. SEE TABLE OF VARIABLES FOR NUMBER AND SIZE OF REINFORCING BARS.
2. SHIFT TOP REINFORCING 2" MAXIMUM WHERE NEEDED TO CLEAR ANCHOR RODS.



SECTION A
 NOT TO SCALE



SECTION B
 NOT TO SCALE

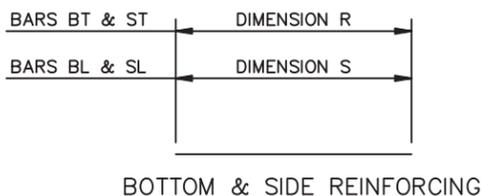
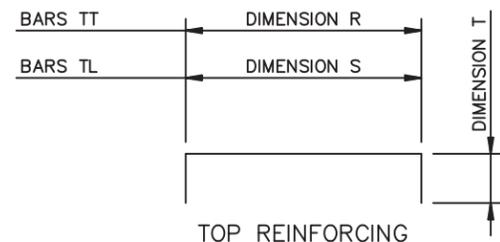


NO.	BY	DATE	REVISION	NO.	BY	DATE	REVISION
1	BDR	10-10-16	PER CITY COMMENTS				

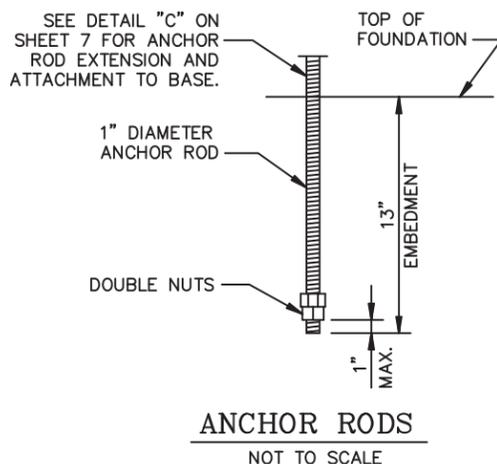
TABLE OF VARIABLES

	AVAILABLE WIDTH					
	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"
FOUNDATION WIDTH ①	4'-11 1/2"	5'-5 1/2"	5'-11 1/2"	6'-5 1/2"	6'-11 1/2"	7'-5 1/2"
FOUNDATION LENGTH	8'-6"	8'-6"	9'-0"	8'-6"	7'-6"	7'-0"
FOUNDATION THICKNESS	34"	27"	20"	18"	18"	18"
REINFORCING BARS TT	13 - #4	10 - #4	11 - #4	11 - #4	9 - #4	9 - #4
REINFORCING BARS TL	8 - #4	7 - #4	7 - #4	8 - #4	9 - #4	10 - #4
REINFORCING BARS ST	3 - #5	2 - #5	1 - #5	1 - #5	1 - #5	1 - #5
REINFORCING BARS SL	3 - #5	2 - #5	1 - #5	1 - #5	1 - #5	1 - #5
REINFORCING BARS BT	13 - #5	10 - #5	11 - #5	11 - #5	9 - #5	9 - #5
REINFORCING BARS BL	8 - #5	7 - #5	7 - #5	8 - #5	9 - #5	10 - #5
CLEAR WALKWAY ①	2'-8 1/2"	2'-8 1/2"	3'-0 1/2"	3'-6 1/2"	3'-6 1/2"	3'-6 1/2"
DIMENSION A ①	3'-3 1/2"	3'-3 1/2"	3'-7 1/2"	4'-1 1/2"	4'-1 1/2"	4'-1 1/2"
DIMENSION B	1'-8"	2'-2"	2'-4"	2'-4"	2'-10"	3'-4"
DIMENSION C	4'-3"	4'-3"	4'-6"	4'-3"	3'-9"	3'-6"
DIMENSION R	4'-5"	4'-11"	5'-5"	5'-11"	6'-5"	6'-11"
DIMENSION S	8'-0"	8'-0"	8'-6"	8'-0"	7'-0"	6'-6"
DIMENSION T	2'-1"	1'-6"	0'-11"	0'-9"	0'-9"	0'-9"

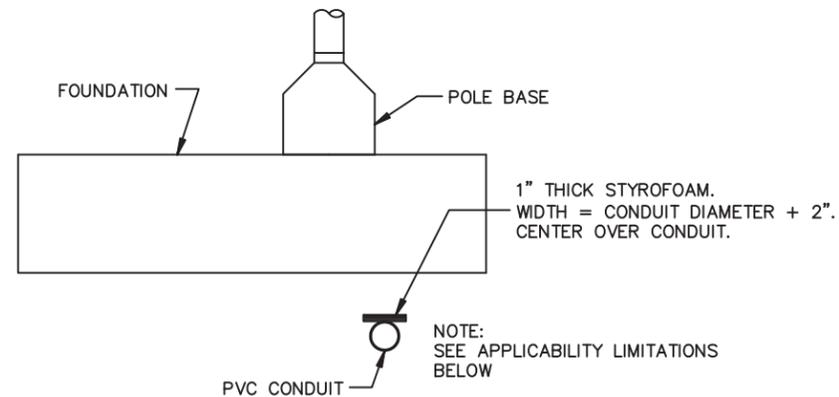
① DECREASE DIMENSION BY 1/2" IF CURB ABUTS FRONT FACE OF SIDEWALK



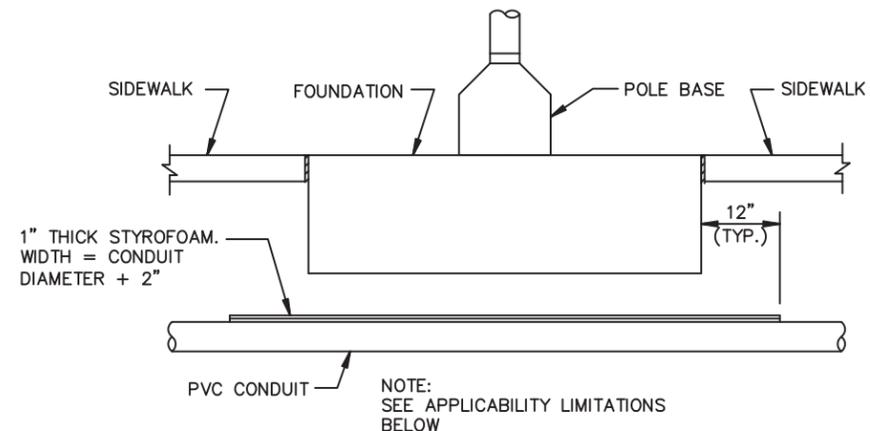
REINFORCING BARS



ANCHOR RODS NOT TO SCALE



TRANSVERSE SECTION



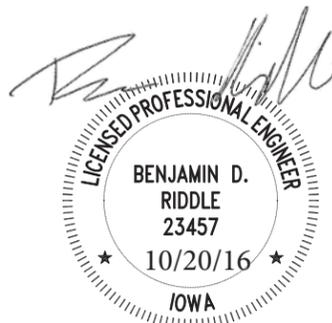
LONGITUDINAL SECTION

SPECIAL REQUIREMENTS AT UTILITIES

NOT TO SCALE

APPLICABILITY LIMITATIONS:

1. DETAILS SHOWN ARE APPLICABLE ONLY FOR A SINGLE PVC CONDUIT WITH A MINIMUM OF 1" CLEAR DISTANCE FROM THE TOP OF THE CONDUIT TO THE UNDERSIDE OF THE FOUNDATION.
2. NO MODIFICATIONS ARE NEEDED FOR A SINGLE PVC CONDUIT WITH MORE THAN 6" CLEAR DISTANCE FROM THE TOP OF THE CONDUIT TO THE UNDERSIDE OF THE FOUNDATION.
3. ALL OTHER CONDITIONS (DIFFERENT TYPE OF CONDUIT, MULTIPLE CONDUITS, ETC.) REQUIRE THE REVIEW AND APPROVAL OF A PROFESSIONAL ENGINEER.

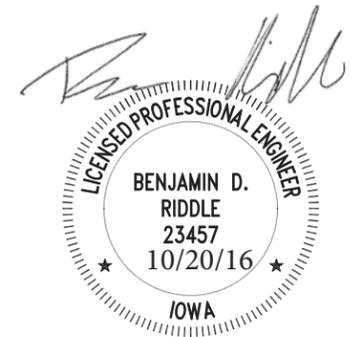


LEGEND

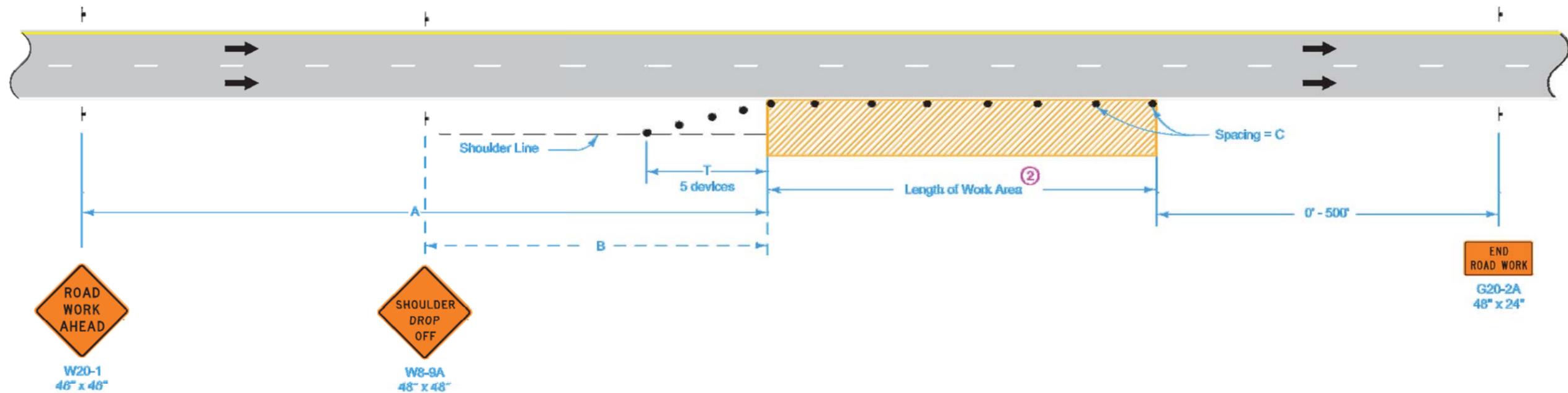
-  BREAKAWAY BARRICADES
-  BREAKAWAY BARRICADES WITH SIGN
-  CONSTRUCTION SIGNS
-  DRUMS
-  CONE
-  PRECAST CONCRETE CURB CONSTRUCTION BARRIER (TYPE SPECIFIED)
-  DIRECTION OF TRAFFIC FLOW
-  FLAGGER
-  ILLUMINATED FLASHING ARROW MOUNTED ON TOWING VEHICLE SHOWING CAUTION MODE
-  ILLUMINATED FLASHING ARROW MOUNTED ON TOWING VEHICLE SHOWING ARROW PATTERN (Left, Right, Both)
-  TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION AND ARROW BOARD SHOWING CAUTION MODE
-  TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION AND ARROW BOARD SHOWING ARROW PATTERN (Left, Right, Both)
-  TEMPORARY CRASH CUSHION, INERTIAL BARRIER SYSTEM
-  TEMPORARY CRASH CUSHION, (all other approved)
-  BUFFER ZONE
-  WORK AREA
-  PAINT STRIPING TRUCK OR OTHER OPERATING VEHICLE

GENERAL NOTES:

1. ADVANCE WARNING SIGNS, DISTANCES, AND TAPER LENGTHS MAY BE EXTENDED, AT DIRECTION OF THE ENGINEER, TO ADJUST FOR REDUCED VISIBILITY DUE TO HORIZONTAL AND VERTICAL CURVATURE OF THE ROADWAY.
2. THE APPROXIMATE LOCATIONS OF THE ILLUMINATED FLASHING ARROW BOARDS ARE SHOWN ON THE TRAFFIC CONTROL PLANS. THESE LOCATIONS MAY BE MODIFIED TO ADJUST FOR VISIBILITY DUE TO HORIZONTAL OR VERTICAL CURVATURE OF THE ROADWAY OR TO POSITION AT A SAFER LOCATION. ILLUMINATED FLASHING ARROW BOARDS ARE TO BE USED FOR TEMPORARY LANE CLOSINGS AND AT LOCATIONS SHOWN ON THE TRAFFIC CONTROL PLANS.
3. PRIOR TO ANY ROAD CONSTRUCTION, TRAFFIC CONTROL SIGNS AND DEVICES SHALL BE IN PLACE.
4. RAMPS AND/OR SIDE STREETS ENTERING THE ROADWAY AFTER THE FIRST ADVANCE WARNING SIGN SHALL BE PROVIDED WITH AT LEAST ONE W20-IF SIGN (ROAD WORK AHEAD) AS A MINIMUM.
5. ALL EXISTING ROAD SIGNS, PAVEMENT MARKINGS AND/OR FLOWABLE PAVEMENT REFLECTORS WHICH CONFLICT WITH THE PROPOSED TRAFFIC CONTROL PLAN SHALL BE COVERED, REMOVED OR RELOCATED AS DIRECTED BY THE ENGINEER.
6. CONFLICTING OR NON-OPERATING SIGNAL INDICATIONS ON EITHER THE EXISTING, TEMPORARY, OR PROPOSED TRAFFIC SIGNAL SYSTEMS SHALL BE BAGGED OR COVERED.
7. MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES - PART VI "STANDARDS AND GUIDES FOR TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY, AND INCIDENT MANAGEMENT OPERATIONS", UNLESS OTHERWISE NOTED IN THE PLANS AND SPECIFICATIONS, AND SHALL BE APPROVED BY THE ENGINEER.
8. A W1-6 (ARROW) SIGN MOUNTED ON A BREAKAWAY BARRICADE AND CENTERED ON THE CLOSED WIDTH SHALL BE LOCATED 100 FEET BEYOND EACH INTERSECTION OR MAIN ACCESS POINT WITHIN THE AREA OF A LANE OR SHOULDER CLOSURE.
9. CONSTRUCTION SIGNS R11-4 (ROAD CLOSED TO THRU TRAFFIC) SHALL BE PLACED AT THE INTERSECTING STREETS WHICH ARE CLOSED TO TRAFFIC BECAUSE OF CONSTRUCTION.
10. MOVING WORK AREAS IN A PERMANENT LANE CLOSURE REQUIRE A TRAILER MOUNTED ILLUMINATED FLASHING TRUCK MOUNTED CRASH CUSHION THAT SHALL MOVE WITH THE WORK AREAS TO KEEP A 75 FOOT MINIMUM AND 175 FOOT MAXIMUM BUFFER IN ADVANCE OF EACH WORK AREA.
11. THE CONTRACTOR SHALL SUBMIT A PLAN FOR THE SAFE ACCESS OF CONSTRUCTION VEHICLES THROUGHOUT THE WORK SITE WHERE SPACE CONSTRAINTS PREVENT THE USE OF LANE CLOSURES. THE PLAN SHALL BE SUBMITTED TO THE ENGINEER IN ACCORDANCE WITH SECTION 617 OF THE STANDARD SPECIFICATIONS.
12. WHERE REQUIRED, THE CONTRACTOR SHALL MAKE PROVISIONS FOR MAINTAINING PEDESTRIAN CROSSING LOCATIONS AND TYPE AS DIRECTED BY THE ENGINEER.
13. THE SPEED LIMIT, R2-1 (BLACK ON WHITE) SIGN SHALL BE LOCATED THROUGH WORK AREAS AS DIRECTED BY THE REGIONAL TRAFFIC ENGINEER.
14. THE REDUCED SPEED AHEAD SIGN, R2-5A(S) (BLACK ON WHITE) SHALL BE LOCATED IN ADVANCE OF SPEED LIMIT R2-1 SIGNS WHICH REDUCE THE NORMAL POSTED SPEED LIMIT THROUGH THE CONSTRUCTION ZONE.
15. TRAFFIC CONTROL DEVICES FOR LANE CLOSURES INCLUDING SIGNS, CONES, BARRICADES, ETC. SHALL BE PLACED AS SHOWN ON PLANS. SIGNS SHALL NOT BE PLACED WITHOUT ACTUAL LANE CLOSURES AND SHALL BE IMMEDIATELY REMOVED UPON REMOVAL OF THE CLOSURES.
16. CONES MAY BE SUBSTITUTED FOR DRUMS AND INSTALLED UPON THE APPROVAL OF THE ENGINEER.



NO.	BY	DATE	REVISION	NO.	BY	DATE	REVISION
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When a pavement edge drop-off exists, install a SHOULDER DROP-OFF sign.

No pavement edge drop-offs greater than pavement depth will be allowed during non-working hours.

Shoulder edge drop-offs shall be mitigated according to Article 1107.08.L2 of the Standard Specifications.

For work lasting less than one hour, refer to TC-1.

Possible Contract Item:
Traffic Control

LEGEND

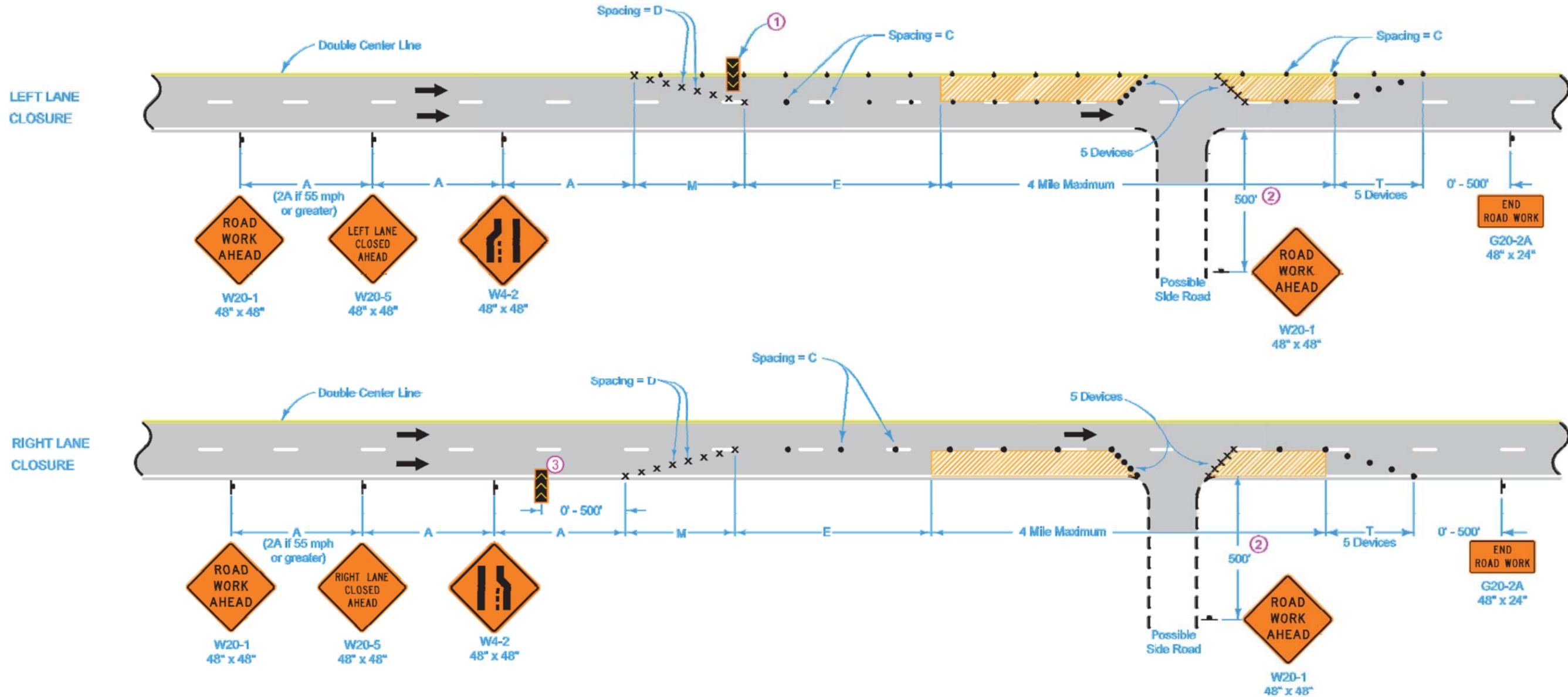
- Traffic Sign
- 42" Channelizer
- Work Area
- Direction of Traffic

SPEED LIMIT (mph)	A	B	C ^②	T
40 or less	500'	250'	40'	100'
45 - 50	700'	350'	80' ①	200'
55 - 60	1500'	500'	100' ①	200'
65 - 70	1500'	500'	100' ①	230'

- ① When the length of a pavement edge drop-off is 1000 feet or less, the temporary fillet requirement of Article 1107.08 of the Standard Specifications does not apply. Reduce channelizer spacing to 40 feet.
- ② For work areas less than 200 feet long, use channelizers spaced at 20 foot centers or use a vehicle with an amber revolving light or amber strobe light.



NO.	BY	DATE	REVISION	NO.	BY	DATE	REVISION
1	BDR	10-10-16	PER CITY COMMENTS				



LEGEND

- Traffic Sign
- Drum
- 42" Channelizer
- Arrow Board
- Work Area
- Direction of Traffic

SPEED LIMIT (mph)	A	C	D	E	M	T
35 or less	250'	40'	35'	0'-200'	245'	50'
40	500'	80'	40'	0'-300'	320'	50'
45	700'	80'	45'	0'-400'	630'	100'
50	700'	80'	45'	400'	630'	100'
55 - 60	1000'	100'	55'	600'	770'	100'

Where there is a lane line drop-off or rise, do not allow traffic to cross over the drop-off or rise, except for ramp locations where a BUMP (W8-1) sign is placed.

Lane line drop-offs greater than a nominal 4 inches are not allowed during non-working hours.

- ① Place arrow board within the closed lane behind the drums and as close to the beginning of the taper as practical.
- ② Where side road speed limit is 40 mph or less, a distance of 200 feet is allowed.
- ③ When there is no shoulder, place arrow board within the closed lane behind the drums and as close to the beginning of the taper as practical.

Possible Contract Item:
Traffic Control



NO.	BY	DATE	REVISION	NO.	BY	DATE	REVISION
1	BDR	10-10-16	PER CITY COMMENTS				