



April 26, 2021

RE: Quote to Provide Mast Arms/Poles & Related Hardware
Intersection of SR 44/Lake Oconee Parkway & Scott Road

The Putnam County Board of Commissioners is seeking a quote (lump sum) for the referenced materials. This quote is for the complete cost of materials; including shipping cost, to the address on the attached "Request for Quote" form. The materials must be in accordance with the Georgia Department of Transportation (GDOT) specifications. The State department of Transportation Bridge Design Division will also require submittals for the mast arm, pole and all associated hardware as identified in the attached example submittal. For structural load purposes, you will also note that in addition to the signal heads, an internally illuminated sign will be placed on the mast arm. Attached is the signal plan sheet providing details of the project.

The deadline to submit a quote will be 5:00 PM; May 17, 2021. The quote shall be emailed to the Mr. Paul Van Haute; County Manager and Lynn Butterworth, County Clerk; at the following email addresses.

Paul Van Haute; County Manager
pvanhaute@putnamcountyga.us

Lynn Butterworth
lbutterworth@putnamcountyga.us

All questions regarding this "Request for a Quote" shall be to the following:

Larry Kaiser, P.E.
kaiser@co-infra-services.com
404-909-5619

Any addendum issued for this project will be placed on the Putnam County web site;
<http://www.putnamcountyga.us>, by no later than 5:00 PM; May 13, 2021.

The county selection process will be based on the following:

- (a) Cost of materials (Lump Sum Bid) – bid shall include delivery cost
- (b) Number of calendar days for material submittal (s) to GDOT upon notification of selection by the county
- (c) Number of calendar days for material delivery to the county after the county issues a NTP to the vendor

The selected vendor will be required to provide all submittals to GDOT before the County provides payment for the materials. The County will issue payment to the selected bidder within one (1) week of receiving approval from GDOT on the submittals.

Thank you for your interest in this project.

Larry Kaiser, P.E.
Collaborative Infrastructure Services, Inc.

Cc: Paul Van Haute; County Manager
Putnam County

Attachments: Bid Schedule of Items for the Quote
Signal Plans
Example of a Submittal to GDOT

I. BID SCHEDULE OF ITEMS

GDOT PAY ITEM	ITEM DESCRIPTION	UNITS	QTY
639-3004	STEEL STRAIN POLE, TYPE IV (WI 35' MAST ARM) – BLACK POWDER COATED	EA	1
639-3004	STEEL STRAIN POLE, TYPE IV (WI 55' MAST ARM) – BLACK POWER COATED	EA	1
639-3004	STEEL STRAIN POLE, TYPE IV (WI 60' MAST ARM) – BLACK POWDER COATED	EA	1
NA	Misc. materials not included in the above (please specify) below ¹	LS	LS
TOTAL LUMP SUM BID			\$

Note: 1: _____

Print Total LUMP SUM Bid Price: (print) _____

II. NUMBER OF CALENDAR DAYS FOR MATERIAL SUBMITTAL (S) TO GDOT UPON NOTIFICATION OF VENDOR SELECTION BY THE COUNTY: _____

III. NUMBER OF CALENDAR DATES FOR DELIVERY OF THE MATERIALS TO THE COUNTY AFTER COUNTY ISSUANCE OF THE NOTICE TO PROCEED (NTP) FOR FABRICATION: _____

In compliance with the attached Specifications, the undersigned offers and agrees that if this Lump Sum Bid is accepted (which includes delivery cost) by the Putnam County Board of Commissioners, materials will be delivered within the calendar days included in the bid submittal.

COMPANY _____

ADDRESS _____

AUTHORIZED SIGNATURE _____

PRINT / TYPE NAME _____

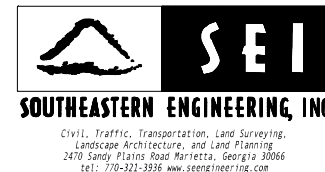
TITLE _____

The selected bidder will deliver the materials to the following address:

Putnam County Public Works Department
 115 West Forrest Street
 Eatonton, GA 31024

TRAFFIC SIGNAL GENERAL NOTES





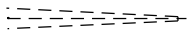
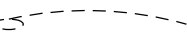









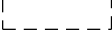

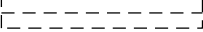
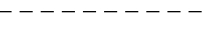


1. THE COMPLETE SIGNAL INSTALLATION SHALL CONFORM TO THE CURRENT EDITION OF THE FOLLOWING: GEORGIA DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR THE CONSTRUCTION OF TRANSPORTATION SYSTEMS, INCLUDING ALL SUPPLEMENTAL SPECIFICATIONS (SPECIFICALLY SECTIONS 647 & 925), THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, THE NATIONAL ELECTRIC CODE AND GEORGIA DEPARTMENT OF TRANSPORTATION'S STANDARDS AND DETAILS.
2. SIGNAL HEADS SHALL BE ERECTED TO PROVIDE AT LEAST 17 FEET BUT NO MORE THAN 19 FEET CLEARANCE FROM BOTTOM OF SIGNAL HEADS TO TOP OF ROAD SURFACE AND A MINIMUM OF 8 FEET MEASURED HORIZONTALLY BETWEEN CENTERS OF SIGNAL FACES.
3. 3-PAIR 18 AWG SHIELDED STRANDED CABLE WILL BE USED FOR DETECTOR RUNS AS SHOWN ON THE DETAIL SHEET, DETECTORS SHALL HAVE SEPARATE LEAD-INS TO THE CONTROL CABINET. ONLY ONE (1) PHASE PER LEAD-IN CABLE WILL BE ALLOWED.
4. THE CONTRACTOR SHALL LOCATE UNDERGROUND UTILITIES IN VICINITY OF NEW TRAFFIC SIGNAL POLES PRIOR TO ORDERING. AT THE DISCRETION OF THE ENGINEER, MINOR SHIFTS, (UP TO A MAXIMUM OF 5 FEET), IN LOCATION OF NEW SIGNAL POLES, ARE ACCEPTABLE TO AVOID UNDERGROUND UTILITIES. MINIMUM CLEARANCES FROM EDGE OF PAVEMENT SHALL BE MAINTAINED. PLACEMENT OF THE SIGNAL HEADS SHALL BE RETAINED AS SHOWN ON THE PLANS.
5. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL NEW GUYS ON EXISTING UTILITY TIMBER POLES WHEN ATTACHING SPAN WIRE OR INTERCONNECT CABLE TO THE POLES UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
6. MATERIAL CERTIFICATION AND APPROVAL BY GDOT TRAFFIC SIGNAL MANAGER AND/OR DEPARTMENT DESIGNEE IS REQUIRED PRIOR TO ORDERING ANY SIGNAL EQUIPMENT OR BEGINNING ANY INSTALLATION WORK. USE ONLY EQUIPMENT AND MATERIALS THAT ARE ON THE DEPARTMENT'S QUALIFIED PRODUCTS LIST (QPL). THE CONTRACTOR SHALL FOLLOW PROCEDURES OUTLINED IN THE LATEST EDITION OF THE GEORGIA DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR THE CONSTRUCTION OF TRANSPORTATION SYSTEMS, INCLUDING ALL SUPPLEMENTAL SPECIFICATIONS (SPECIFICALLY SECTIONS 647 & 925).
7. INSTALLATION IS TO BE CHECKED AND ACCEPTED BY THE DISTRICT TRAFFIC SIGNAL MANAGER PRIOR TO FINAL ACCEPTANCE. NOTIFICATION OF REQUEST FOR INSPECTION MUST BE SENT IN WRITING OR VIA E-MAIL TO THE DISTRICT SIGNAL MANAGER AT "GEORGIA DEPARTMENT OF TRANSPORTATION, 643 HIGHWAY 15 SOUTH TENNILLE, GEORGIA 31089, ATTENTION: DISTRICT SIGNAL MANAGER" A MINIMUM OF ONE WEEK PRIOR TO THE DATE OF INSPECTION.
8. FOR STRAIN POLE FOUNDATION SIZE AND REINFORCEMENT, SEE STRAIN POLE AND MAST ARM POLE FOUNDATION SHEET.
9. THE INSTALLATIONS OF TRAFFIC SIGNALS ON THE STATE ROUTE SYSTEM SHALL BE CAPABLE OF MONITORING OVER IP NETWORKS FROM EXISTING CENTRAL COMPUTERS. CENTRAL COMPUTERS ARE LOCATED AT 935 EAST UNITED AVENUE BLDG. 24 ATLANTA, GEORGIA 30316. NETWORK ABILITIES DEMONSTRATION IS REQUIRED AT CENTRAL SITES PRIOR TO FINAL ACCEPTANCE.
10. ALL EXISTING STOP BARS, WORDS, ARROWS, AND CROSSWALKS THAT ARE NOT REMOVED OR RELOCATED SHALL BE REPLACED IN ACCORDANCE WITH CURRENT GDOT STANDARDS.
11. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL VERTICAL AND HORIZONTAL OVERHEAD UTILITY CLEARANCES PER NEC AND GDOT SPECIFICATIONS. ANY EXISTING OVERHEAD UTILITIES THAT ARE IN CONFLICT WITH THE TRAFFIC SIGNAL INSTALLATION WILL HAVE TO BE ADJUSTED. MINOR SHIFTS (UP TO 5 FT) IN NEW STRAIN POLE LOCATIONS AT THE DISCRETION OF THE ENGINEER ARE ACCEPTABLE TO AVOID OVERHEAD UTILITIES. CONTRACTORS SHALL COORDINATE WITH UTILITY OWNERS TO MAKE UTILITY HEIGHT ADJUSTMENTS WHENEVER NEEDED TO ACCOMMODATE SIGNAL SPAN WIRE. THE SIGNAL SPAN SHALL BE 40 INCHES BELOW THE POWER LINE NEUTRAL. A 10' CLEAR ZONE SHALL BE MAINTAINED BETWEEN OVERHEAD POWER UTILITIES AND SIGNAL EQUIPMENT.
12. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL FEES ASSOCIATED WITH MODIFYING AND ESTABLISHING NEW POWER AND COMMUNICATIONS SERVICES FOR TRAFFIC SIGNALS, DETECTION SYSTEMS, AND/OR CCTV CAMERAS ON THIS PROJECT. IF A UTILITY TRANSFORMER IS REQUIRED FOR TRAFFIC SIGNAL EQUIPMENT, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INCLUDE AS PART OF THEIR BID PRICE, FOR THAT TRAFFIC SIGNAL INSTALLATION IF THE RESPECTIVE UTILITY REQUIRES PAYMENT FOR INSTALLATION.
13. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL MONTHLY POWER AND COMMUNICATION SERVICE TO THE TRAFFIC SIGNAL INSTALLATION AND SUPPORT DEVICES, UNTIL THE NEW TRAFFIC SIGNAL INSTALLATION HAS SATISFACTORILY COMPLETED A TEST PERIOD OF UNINTERRUPTED OPERATION, FOR THIRTY (30) DAYS. UPON COMPLETION OF THE TEST PERIOD, AND THE LETTER OF ACCEPTANCE FROM THE DISTRICT SIGNAL ENGINEER, THE CONTRACTOR WILL COMPLETE A TRANSFER OF UTILITY COST TO PUTNAM COUNTY BOARD OF COMMISSIONERS.
14. PROPOSED ATTACHMENT HEIGHT LOCATIONS ARE PROVIDED AS GENERAL GUIDELINES TO THE TRAFFIC SIGNAL INSTALLER. ACTUAL ATTACHMENT HEIGHTS SHALL BE FIELD DETERMINED BY INSTALLER PRIOR TO ORDERING SIGNAL POLES TO PROVIDE REQUIRED SIGNAL HEAD MOUNTING HEIGHTS AND CLEARANCE FROM EXISTING UTILITIES.
15. ALL PEDESTRIAN SIGNAL HARDWARE (PEDESTRIAN SIGNAL HEADS, MOUNTING BRACKETS, PUSH BUTTON STATIONS, PUSH BUTTON STATION ADAPTERS, PEDESTAL POLES AND BASES, ETC) ARE TO BE BLACK. ALL SPAN WIRE/MAST ARM MOUNTED SIGNAL HARDWARE (SIGNAL HEADS, MOUNTING BRACKETS, GOOSENECKS, ETC) ARE TO BE BLACK.
16. AS PER SOME POWER COMPANIES, IT IS REQUIRED THAT ALL TRAFFIC CONTROL DEVICES BE METERED. IF A METER IS REQUIRED, THE METER AND THE DISCONNECT BOX WILL NEED TO BE INSTALLED ON A PEDESTAL MOUNTED STRUCTURE BLACK IN COLOR (SEE POWER SERVICE ASSEMBLY DETAIL). THE SIGNAL CONTRACTOR IS TO COORDINATE WITH THE LOCAL POWER COMPANY FOR POWER CONNECTION AND METERING REQUIREMENTS.
17. THE METER BASE WILL BE SUPPLIED BY THE LOCAL POWER COMPANY. IT WILL BE A 200 AMP COMMERCIAL TYPE WITH A MANUAL BY-PASS SWITCH.
18. THE DISCONNECT NEEDS TO BE 60 AMP NONFUSABLE OUTDOOR TYPE. THE DISCONNECT WILL NEED TO BE A LOCKABLE TYPE. CONTRACTOR IS TO PROVIDE LOCKS AND KEYS.
19. A COMPLETE SIGNAL TIMING PROGRAM IS TO BE DEVELOPED AND INSTALLED IN THE SIGNAL CONTROLLER. SEE GEORGIA DEPARTMENT OF TRANSPORTATION, STATE OF GEORGIA SPECIAL PROVISION SECTION 687 - TRAFFIC SIGNAL TIMING.
20. UPON THE ISSUANCE OF NOTICE TO PROCEED ANY EXISTING TRAFFIC SIGNAL EQUIPMENT RESPONSIBILITIES FOR MAINTENANCE, OPERATIONS, AND RESPONSE TO TRAFFIC SIGNAL MALFUNCTIONS BECOME THE RESPONSIBILITY OF THE CONTRACTOR AND WILL END WHEN THE DEPARTMENT ACCEPTS THE SIGNAL. PROVISIONS OF SUBSECTION 647.3.07, "CONTRACTOR WARRANT AND MAINTENANCE", APPLY.



















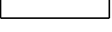
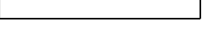
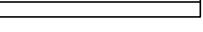






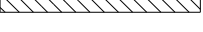
REVISION DATES

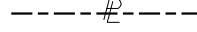
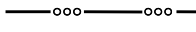


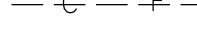




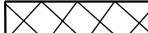
PUTNAM COUNTY BOARD OF COMMISSIONERS	
COLLABORATIVE INFRASTRUCTURE SERVICES	
SIGNAL PLANS	
SR 44 AT SCOTT RD	DRAWING No.
SIGNAL NOTES	27-0000

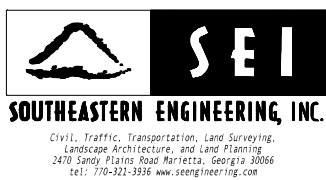
EXISTING SIGNAL

-  CONTROLLER CABINET
-  STRAIN POLE
-  TIMBER POLE
-  DOWN GUY
-  MAST ARM
-  STREET LIGHT
-  3 SECTION HEAD
-  4 SECTION HEAD W/BACKPLATE
-  4/5 SECTION (CLUSTER/T-SHAPE) HEAD
-  OVERHEAD SIGN
-  PEDESTAL POLE
-  PED SIGNAL HEAD
-  CURB CUT RAMP
-  PULLBOX, (TYPE TO BE CALLED OUT)
-  6X6 PULSE LOOP
-  6X18 CALL LOOP
-  6X40 PRESENCE LOOP (DIPOLE)
-  6X40 PRESENCE LOOP (QUADRUPOLE)
-  CONDUIT
-  RAILROAD CONTROLLER
-  SIGN POST

PROPOSED SIGNAL

-  CONTROLLER CABINET
-  STRAIN POLE
-  TIMBER POLE
-  DOWN GUY
-  MAST ARM
-  STREET LIGHT
-  3 SECTION HEAD
-  3 SECTION HEAD W/ BACKPLATE
-  4 SECTION HEAD
-  4/5 SECTION (CLUSTER/T-SHAPE) HEAD
-  OVERHEAD SIGN
-  PEDESTAL POLE
-  PED SIGNAL HEAD
-  CURB CUT RAMP - (SEE ADA DETAIL)
-  PULLBOX, (TYPE TO BE CALLED OUT)
-  6x6 PULSE LOOP
-  6x18 CALL LOOP
-  6x40 PRESENCE LOOP (DIPOLE)
-  6x40 PRESENCE LOOP (QUADRUPOLE)
-  CONDUIT, (TYPE TO BE CALLED OUT)
-  RAILROAD CONTROLLER
-  SIGN POST
-  RADAR DETECTION DEVICE
-  MAGNETOMETER DETECTION DEVICE
-  VIDEO DETECTION DEVICE
-  VIRTUAL DETECTION ZONE (RADAR, VIDEO, ETC.)

PROPERTY AND EXISTING R/W LINE		BEGIN LIMIT OF ACCESS.....BLA	
REQUIRED R/W LINE		END LIMIT OF ACCESS.....ELA	
CONSTRUCTION LIMITS		LIMIT OF ACCESS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES		REQ'D R/W & LIMIT OF ACCESS	
EASEMENT FOR CONSTR OF SLOPES			
EASEMENT FOR CONSTR OF DRIVES			



REVISION DATES	

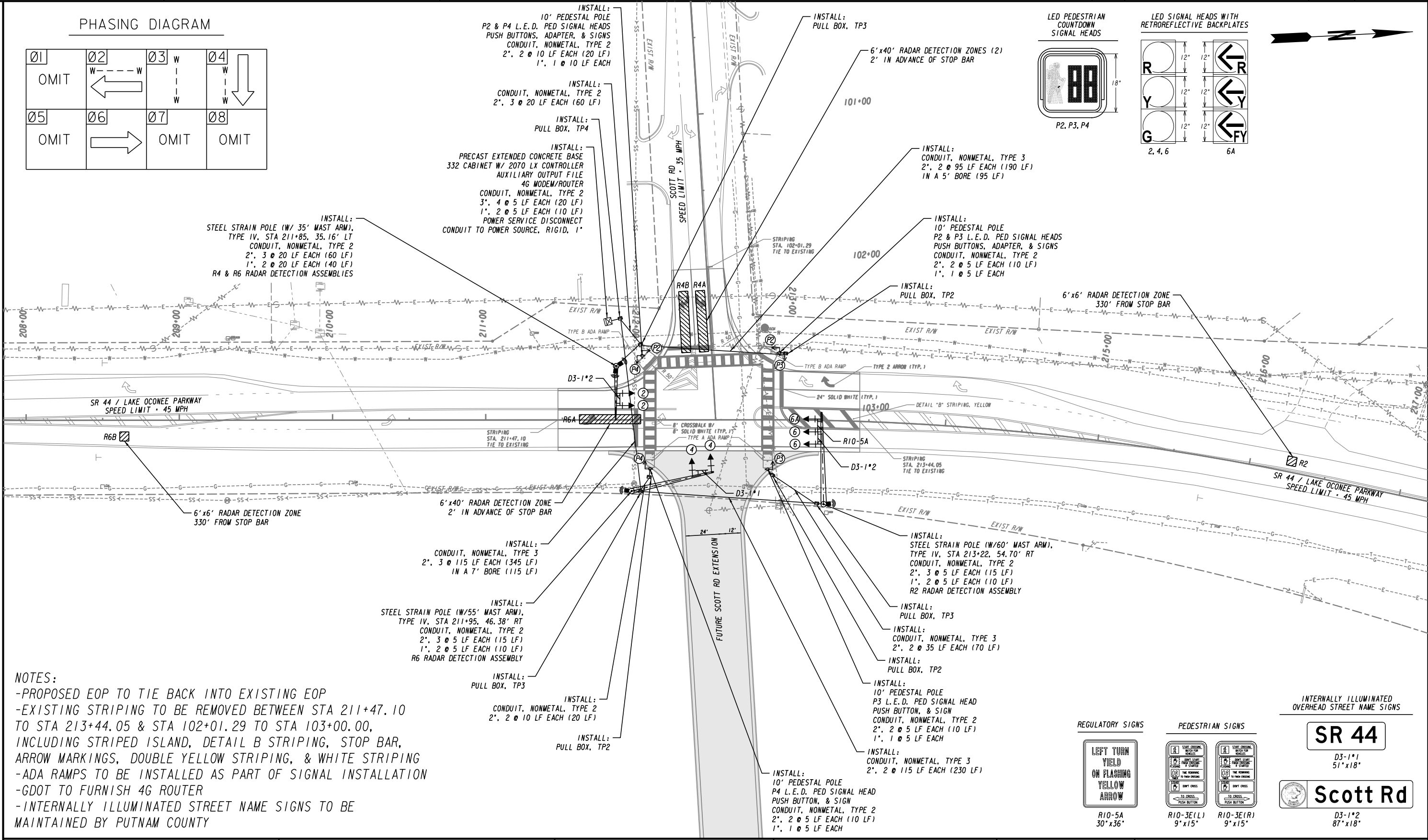
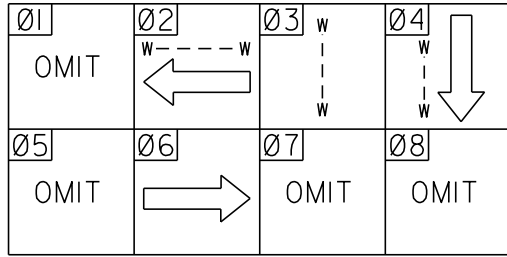
PUTNAM COUNTY
BOARD OF COMMISSIONERS
COLLABORATIVE INFRASTRUCTURE SERVICES

SIGNAL PLANS

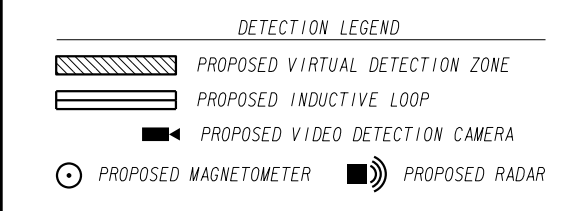
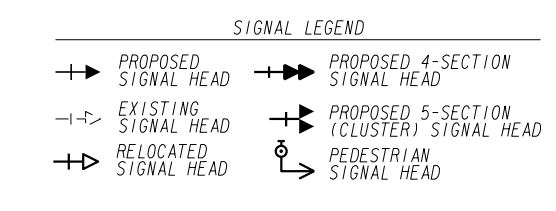
SR 44 AT SCOTT RD
SIGNAL LEGEND

DRAWING No.
27-0001

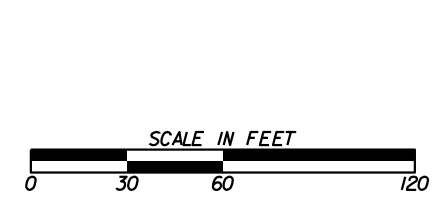
PHASING DIAGRAM



NOTES:
 -PROPOSED EOP TO TIE BACK INTO EXISTING EOP
 -EXISTING STRIPING TO BE REMOVED BETWEEN STA 211+47.10 TO STA 213+44.05 & STA 102+01.29 TO STA 103+00.00, INCLUDING STRIPED ISLAND, DETAIL B STRIPING, STOP BAR, ARROW MARKINGS, DOUBLE YELLOW STRIPING, & WHITE STRIPING
 -ADA RAMPS TO BE INSTALLED AS PART OF SIGNAL INSTALLATION
 -GDOT TO FURNISH 4G ROUTER
 -INTERNALLY ILLUMINATED STREET NAME SIGNS TO BE MAINTAINED BY PUTNAM COUNTY



Civil, Traffic, Transportation, Land Surveying, Landscape Architecture, and Land Planning
 2470 Sandy Plains Road Marietta, Georgia 30066
 tel: 770-321-3936 www.seengineering.com

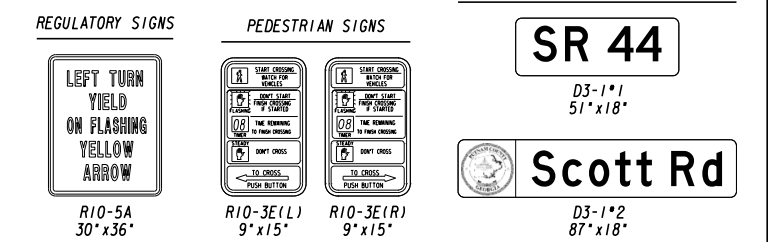
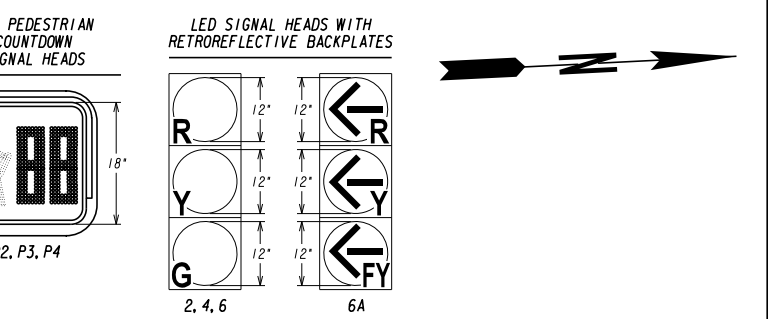


REVISION DATES

PUTNAM COUNTY BOARD OF COMMISSIONERS
 COLLABORATIVE INFRASTRUCTURE SERVICES
SIGNAL PLANS

SR 44 AT SCOTT RD PROPOSED

DRAWING No. 27-0002



INTERSECTION OF SR 44 | LAKE OCONEE PARKWAY & SCOTT ROAD

LIST OF MATERIALS

MATERIALS	UNIT	QUANTITY
CONTROL CABINET ASSEMBLIES		
A. CONTROLLER UNIT, MODEL 2070LX (PREFERRED)	EACH	1
B. CABINET ASSEMBLY, MODEL 332 (EIGHT PHASE)	EACH	1
C. SWITCH PACK (LOAD SWITCH)	EACH	7
D. DC ISOLATOR	EACH	3
E. 2010 SIGNAL MONITOR, TYPE B (ETHERNET) (PREFERRED)	EACH	1
F. AUXILIARY OUTPUT FILE	EACH	1
332 PREFABRICATED CONTROLLER CABINET BASE		
PC642-200 (OR EQUIVALENT), SURGE PROTECTOR	EACH	1
LOOP/PEL LEAD-IN WIRE (SHIELDED, TWISTED/1000 FT); 3 PAIR, 18 AWG	REEL	1
SIGNAL CABLE (14 AWG); 7 CONDUCTOR, PER 1000 FT	REEL	2
3-SECTION, 12" SIGNAL HEAD LED "INCANDESCENT LOOK" BLACK HOUSING WITH BLACK FRONT, PLASTIC	EACH	6
3-SECTION, 12" SIGNAL HEAD LED "INCANDESCENT LOOK" BLACK HOUSING WITH BLACK FRONT, PLASTIC (RED LEFT ARROW, YELLOW LEFT ARROW, AND FLASHING YELLOW LEFT ARROW)	EACH	1
BACK PLATE FOR ONE-WAY, 3-SECTION, 12" SIGNAL HEAD, ABS PLASTIC, LOUVERED, BLACK WITH RETROREFLECTIVE STRIP	EACH	7
BLACK HARDWARE FOR MAST ARM MOUNTING - ASTRO TYPE BRACKETS	EACH	7
1-SECTION, 18" LED COUNTDOWN BLACK PEDESTRIAN SIGNAL HEAD, FULL, HAND/MAN OVERLAP, 9" HIGH NUMBERS & 12" SYMBOLS	EACH	6
BLACK PEDESTRIAN PUSHBUTTON STATIONS ADAPTERS (ONLY) 9"x15", DOUBLE PUSH BUTTON STATION ADAPTER FOR 4" DIA PEDESTRIAN POLE, ADJUSTABLE	EACH	2
BLACK PEDESTRIAN PUSHBUTTON STATIONS, WITH BUTTONS AND SIGNS, 9"x15", R10-3E, (L)LEFT OR (R)RIGHT, COUNTDOWN	EACH	6
BLACK HARDWARE FOR PEDESTAL POLE, TOP POST MOUNTING, ONE-WAY BRACKET ASSEMBLY	EACH	2
BLACK HARDWARE FOR PEDESTAL POLE, TOP POST MOUNTING, TWO-WAY BRACKET ASSEMBLY	EACH	2
BLACK PEDESTAL POLE & SQUARE BASE	EACH	4
PULLBOX, TP2	EACH	3
PULLBOX, TP3	EACH	3
CONDUIT, NONMETAL, TP2, 1"	LF	95
CONDUIT, NONMETAL, TP2, 2"	LF	220
CONDUIT, NONMETAL, TP2, 3"	LF	20
CONDUIT, NONMETAL, TP3, 2"	LF	720
R10-5A, LEFT TURN ON FLASHING YELLOW SIGN	EACH	1
MISCELLANEOUS MATERIALS NEEDED TO COMPLETE INSTALLATIONS	LUMP	LUMP

332 CABINET INPUT ASSIGNMENT

SLOT	1	2	3	4	5	6	7	8	9	10	11	12	13	14
------	---	---	---	---	---	---	---	---	---	----	----	----	----	----

UPPER INPUT FILE

TYPE	DET	DET	DET	DET	DET	DET	DET	DET	DET	DET	TBA	TBA	DC	DC	DC
CARD		2-CH					2-CH						DC 150	DC 150	DC 150
CI PIN	56	39	63	47	58	41	65	49	60		80		67	68	81
FUNCTION		R2				R4A							Ø2 PED		FLASH
FIELD TERM	TB2 1,2	TB2 5,6	TB2 9,10	TB4 1,2	TB4 5,6	TB4 9,10	TB6 1,2	TB6 5,6	TB6 9,10				TB8 4,6	TB8 7,9	N/C

CI PIN	56	43	76	47	58	45	78	49	62		53	69	70	82
FUNCTION						R4B						Ø4 PED	Ø3 PED	STOP TIME
FIELD TERM	TB2 3,4	TB2 7,8	TB2 11,12	TB4 3,4	TB4 7,8	TB4 11,12	TB6 3,4	TB6 7,8	TB6 11,12			TB8 5,6	TB8 8,9	N/C

LOWER INPUT FILE

TYPE	DET	DET	DET	DET	DET	DET	DET	DET	DET	DET	TBA	TBA	DC	DC	DC
CARD		2-CH													
CI PIN	55	40	64	48	57	42	66	50	59		54		71	72	51
FUNCTION		R6A													
FIELD TERM	TB3 1,2	TB3 5,6	TB3 9,10	TB5 1,2	TB5 5,6	TB5 9,10	TB7 1,2	TB7 5,6	TB7 9,10				TB9 4,6	TB9 7,9	TB9 10,12

CI PIN	55	44	77	48	57	46	79	50	61		75	73	74	52
FUNCTION		R6B												
FIELD TERM	TB3 3,4	TB3 7,8	TB3 11,12	TB5 3,4	TB5 7,8	TB5 11,12	TB7 3,4	TB7 7,8	TB7 11,12			TB9 5,6	TB9 8,9	TB9 11,12

ROADWAY PAY ITEMS

PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
150-1000	TRAFFIC CONTROL	LUMP	LUMP
205-0100	CONSTRUCTION ALLOWANCE	LUMP	LUMP
210-0100	GRADING COMPLETE	LUMP	LUMP
310-5060	GR AGGR BASE CRS, 6 INCH, INCL MATL	SY	30
402-3130	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	TN	2
441-7011	CURB CUT WHEELCHAIR RAMP, TYPE A	EACH	2
441-7012	CURB CUT WHEELCHAIR RAMP, TYPE B	EACH	2
500-9999	CLASS B CONC, BASE OR P/MT WIDENING	CY	5
610-9001	REMOVE SIGN	EACH	2
653-0120	THERMOPLASTIC P/MT MARKING, ARROW, TP 2	EACH	4
653-1501	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	LF	563
653-1502	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	LF	419
653-1704	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	LF	80
653-1804	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	LF	743
653-6006	THERMOPLASTIC TRAF STRIPING, YELLOW	SY	50
656-0050	REMOVE EXIST SOLID TRAF STRIPE, 5 IN, THERMOPLASTIC	LF	1231
656-0080	REMOVE EXIST SOLID TRAF STRIPE, 8 IN, THERMOPLASTIC	LF	90
656-0120	REMOVE EXIST SOLID TRAF STRIPE, 12 IN, THERMOPLASTIC	LF	154
656-0240	REMOVE EXIST SOLID TRAF STRIPE, 24 IN, THERMOPLASTIC	LF	80
656-5000	REMOVE EXIST TRAF MARKINGS	EACH	4

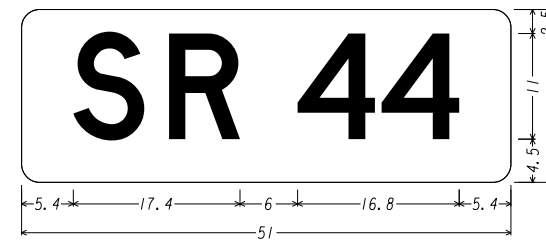
TRAFFIC SIGNAL PAY ITEMS

PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
639-3004	STEEL STRAIN POLE, TYPE IV (W/ 35' MAST ARM) [BLACK POWDER COATED]	EACH	1
639-3004	STEEL STRAIN POLE, TYPE IV (W/ 55' MAST ARM) [BLACK POWDER COATED]	EACH	1
639-3004	STEEL STRAIN POLE, TYPE IV (W/ 60' MAST ARM) [BLACK POWDER COATED]	EACH	1
647-1000	TRAFFIC SIGNAL INSTALLATION #1	LUMP	LUMP
647-2140	PULL BOX, PB-4	EACH	1
647-3000	INTERNALLY ILLUMINATED STREET SIGN (SINGLE-SIDED)	EACH	3
647-3100	INTERNALLY ILLUMINATED STREET NAME SIGN CONTROL ASSEMBLY	EACH	1
682-9950	DIRECTIONAL BORE, 5"	LF	95
682-9950	DIRECTIONAL BORE, 7"	LF	115
687-1000	TRAFFIC SIGNAL TIMING	LUMP	LUMP
937-6000	MICROWAVE RADAR DETECTION ASSEMBLY	EACH	4
937-8020	TESTING - MICROWAVE DETECTION SYSTEM	LUMP	LUMP
937-8520	TRAINING - MICROWAVE DETECTION SYSTEM	LUMP	LUMP

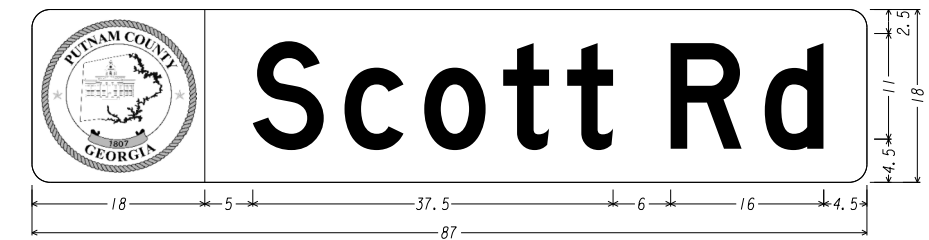
NOTES

QUANTITIES ARE FOR INFORMATION PURPOSES ONLY - CONTRACTOR TO FIELD VERIFY PRIOR TO ORDERING MATERIALS.

INTERNALLY ILLUMINATED OVERHEAD STREET NAME SIGNS



Identifier : D3-1 *1;
 1.875" Radius, 0.0" Border, White on Green;
 SR D; *44* D;



Identifier : D3-1 *2;
 1.875" Radius, 0.0" Border, White on Green; 16" Logo on White;
 Scott D; *Rd* D;

REVISION DATES

PUTNAM COUNTY
 BOARD OF COMMISSIONERS
 COLLABORATIVE INFRASTRUCTURE SERVICES
SIGNAL PLANS

SR 44 AT SCOTT RD
 LIST OF MATERIALS

DRAWING No.
27-0003



Pole C

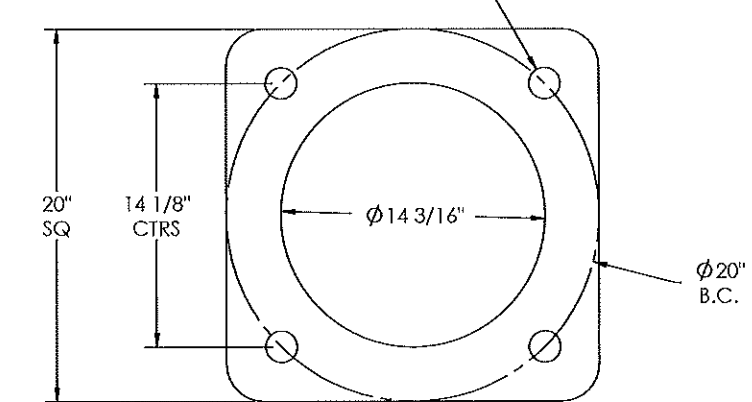
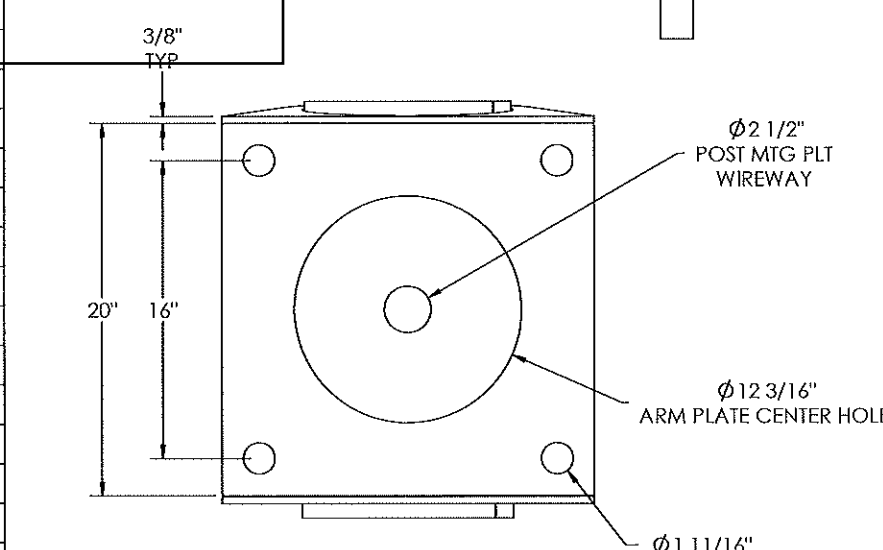
DATE: 09/06/2019
 Approved in general. Details not checked. This approval shall not relieve the Contractor of any responsibility for conformity with the contract Plans and Specifications.

Georgia DOT
 Office of Bridge Design
 By: DLW



EXAMPLE OF MAST ARM SUBMITTAL. ACTUAL SUBMITTAL VARIES WITH MANUFACTURES.

ITEM NO.	DESCRIPTION	QTY.
1	WLDMT POLE SIG RD 1/4X22'0"/20' (1/4X14'10.92X22'0")	1
2	WLDMT ARM RD 3/16X40'-0" (3/16X12.0X6.40X40'-0)	1
3	CAP FITS 10.75 - 11.25 POLE DIA	1
4	CAP CAP FITS 6.25 - 6.75 POLE DIA	1
5	COVER HH M34 5X8	1
6	COVER HH M15 3X5 FORMED	1
7	M34 (5 X 8) HH LATCH	1
8	COVER NUT WITH SET SCREWS FOR 1 1/2 NUTS AND BELOW	4
9	LATCH HH M15 3X5	1
10	BOLT HX HD 1-2-13NC X 3-4 F593C SS	1
11	BOLT HVYHXHD 1-1-2-6 X 5 A325GV	4
12	NUT HVY HX 1-1-2-6NC A194 GV(2H)	4
13	SCRWA HX SK FL HD 5-16-18NC X 2 SS	1
14	SCRW TPPHXKBTHTD 5-16-18NC X 2" 304 SS ASTM 593 CW1	1
15	SCRWSLDRHDMACH 1-4-20NCX3 ASME B18.6.3 SS	2
16	WASH F.56 IDX1.375ODX.091 THK BRASS COMM. BRASS	2
17	WASHER FLAT 1/4 SS 5/8 OD ASME B18.22.1 SS	2
18	WASHER LOCK 1-1/2 ASTM F436 GV	4
19	1 1/2-6 BOLT W/ 2 NUTS 1 LOCK AND 2 FLAT WASHERS	4



GEORGIA DOT YIELD MOMENTS					
POLE DIA (IN)	WALL (IN)	FY (PSI)	S (IN3)	YIELD Mb (K-FT)	
14	.25	50000	37.10	152.0	

FOUNDATION DESIGN			
WASHINGTON COUNTY			
POLE	DIA	DEPTH	REBAR
C	3'-0"	13'-6"	8 - #9'S

2-7915

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT

MATERIAL SPECIFICATIONS	
POST:	ASTM A572 GR50
BASE PLATE:	ASTM A709 GR 36
MAST ARM:	ASTM A572 GR 50
MOUNTING PLATE:	ASTM A709 GR 36
LUMINAIRE ARM:	
HARDWARE FINISH:	ASTM A153
ANCHOR BOLTS:	ASTM F1554 GR55 FULLY GV SIZE: 1 1/2"

DESIGN CRITERIA	
1994 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS ON HIGHWAY SIGNS, LUMINAIRES & TRAFFIC SIGNALS.	
WINDS: 80 MPH	1.3
FATIGUE CAT: I	VORTEX SHED: N/A
NATURAL WIND GUST: NO	GALLOPING: NO
	TRUCK GUST: NO

WELD SPECIFICATION	
THE POST AND MAST ARM TO BE A TAPERED TUBE FABRICATION WITH ONE SUBMERGED ARC LONGITUDINAL SEAM WELD WITH 100% PENETRATION 6" FROM BASE PLATE AND 60% FOR REMAINDER. GAS METAL ARC WELDING PROCESS WITH 60% PENETRATION MAY BE USED FOR REMAINDER OF WELDED FABRICATION.	
WELD TESTING: 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (CJP) WELDS ULTRASONIC TESTED (UT) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS.	
< 6MM (0.25 IN) MT	UT
≥ 6MM (0.25 IN) MT	UT
A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).	

FINISH SPECIFICATION	
GALV. OR PRIME COAT:	HOT DIP GALV PER ASTM A123
FINISH COAT:	PT-1-17-FTU-017-FR
COLOR:	SEMI-GLOSS BLACK
FEDERAL OR RAL SPEC.:	
WEIGHT W/GALV.:	2004.51
WEIGHT W/GALV. & PAINT:	
WEIGHT W/PAINT:	
SURFACE AREA:	54298.2
GAL. OF PAINT:	

622 6TH ST. SO.
 WINSTED, MN 55395

THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION AND IS THE PROPERTY OF MILLERBERND MFG AND MAY NOT BE COPIED, REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT THE EXPRESS WRITTEN CONSENT FROM MILLERBERND MFG

SALES ORDER NO.:	QTY:	STATE:	SHEET
90851	1	GA	1 OF 1

DESCRIPTION:	
SHIP POLE SIG RD 1/4X22'/20' W/40'-0 MAST ARM	

EST. WEIGHT:	DRAWING NO.:
1943.3	90851-1

PROJECT NAME:	
PI# 0006463 / SR 15 & SR 24 WASHINGTON COUNTY	

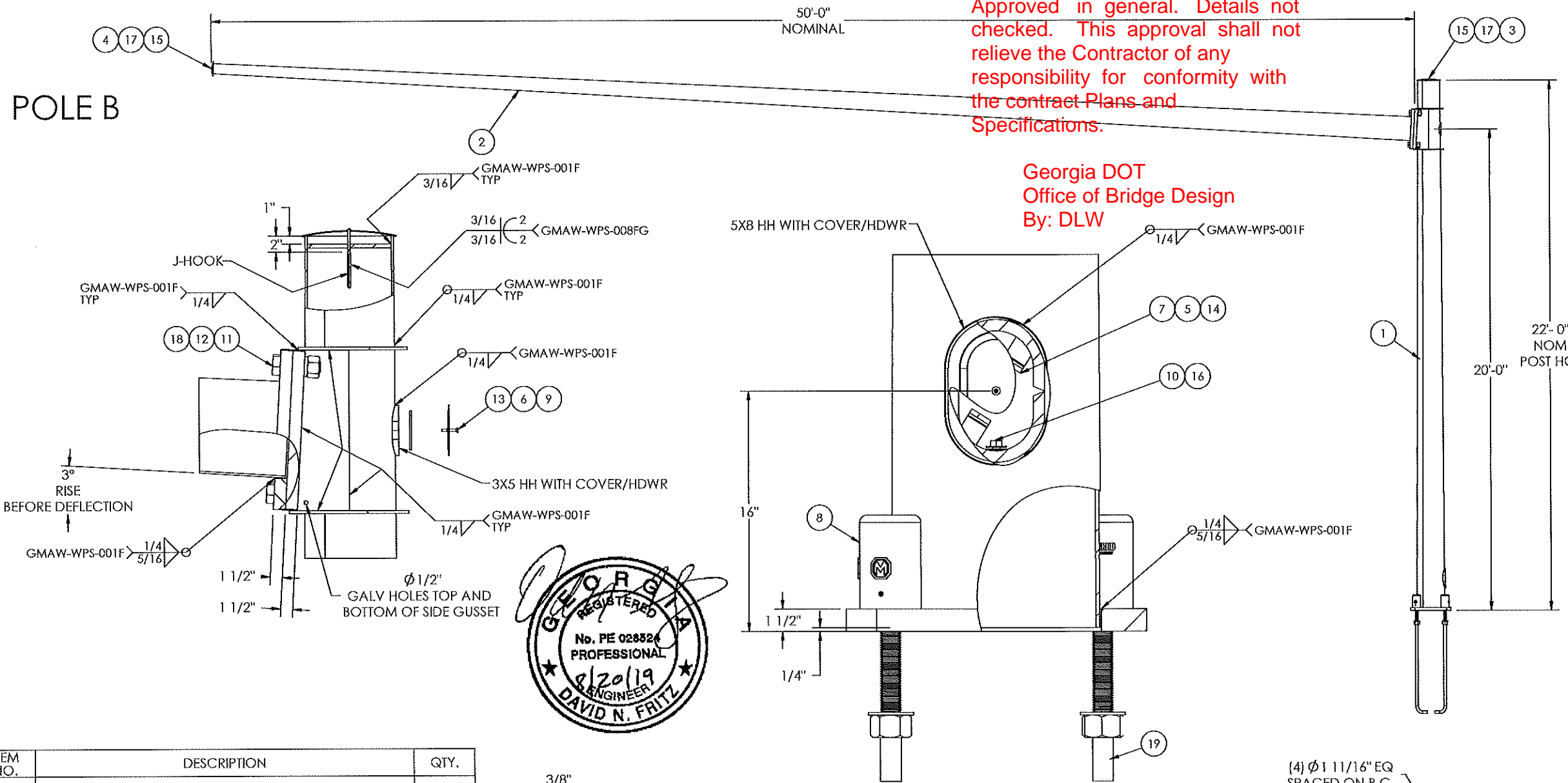
PROJECT LOCATION:	
GEORGIA	

DWN BY:	DATE:
TRAVIS K	08-14-2019

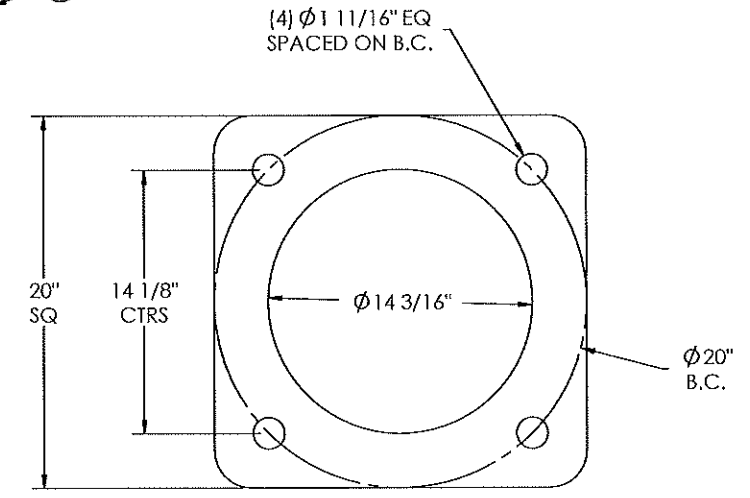
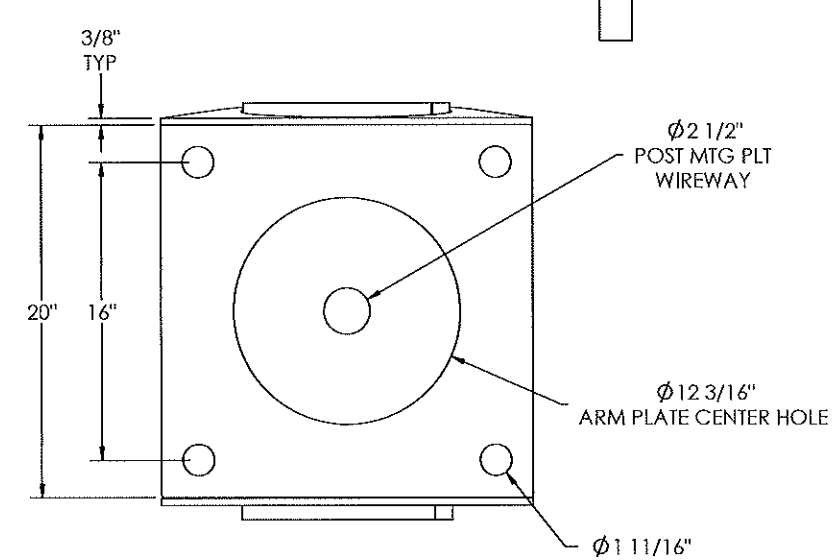
CHK BY:	DATE:

DATE: 09/06/2019
 Approved in general. Details not checked. This approval shall not relieve the Contractor of any responsibility for conformity with the contract Plans and Specifications.

POLE B



Georgia DOT
 Office of Bridge Design
 By: DLW



ITEM NO.	DESCRIPTION	QTY.
1	WLDMT POLE SIG RD 1/4X22'-0"/20'0 (1/4X14X10.92X22'-0")	1
2	WLDMT ARM RD 1/4X50'-0" (1/4X12.0X5.0X50'-0)	1
3	CAP FITS 10.75 - 11.25 POLE DIA	1
4	CAP CAP FITS 6.25 - 6.75 POLE DIA	1
5	COVER HH M34 5X8	1
6	COVER HH M15 3X5 FORMED	1
7	M34 (5 X 8) HH LATCH	1
8	COVER NUT WITH SET SCREWS FOR 1 1/2 NUTS AND BELOW	4
9	LATCH HH M15 3X5	1
10	BOLT HX HD 1-2-13NC X 3-4 F593C SS	1
11	BOLT HVYHXHD 1-1-2-6 X 5 A325GV	4
12	NUT HVY HX 1-1-2-6NC A194 GV(2H)	4
13	SCRWA HX SK FL HD 5-16-18NC X 2 SS	1
14	SCRW TTPHXSKBTHD 5-16-18NC X 2" 304 SS ASTM 593 CW1	1
15	SCRWSLDRHDMACH 1-4-20NCX3 ASME B18.6.3 SS	2
16	WASH F.56 IDX1.375ODX.091 THK BRASS COMM. BRASS	2
17	WASHER FLAT 1/4 SS 5/8 OD ASME B18.22.1 SS	2
18	WASHER LOCK 1-1/2 ASTM F436 GV	4
19	1 1/2-6 BOLT W/ 2 NUTS 1 LOCK AND 2 FLAT WASHERS	4

GEORGIA DOT YIELD MOMENTS				
POLE DIA (IN)	WALL (IN)	FY (PSI)	S (IN3)	YIELD Mb (K-FT)
14	.25	50000	37.10	152.0

FOUNDATION DESIGN			
WASHINGTON COUNTY			
POLE	DIA	DEPTH	REBAR
B	3'-0"	13'-6"	8 - #9'S

2-7915

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT

MATERIAL SPECIFICATIONS	
POST:	ASTM A572 GR50
BASE PLATE:	ASTM A709 GR 36
MAST ARM:	ASTM A572 GR 50
MOUNTING PLATE:	ASTM A709 GR 36
LUMINAIRE ARM:	
HARDWARE FINISH:	ASTM A153
ANCHOR BOLTS:	ASTM F1554 GR55 FULLY GV SIZE: 1 1/2"

DESIGN CRITERIA	
1994 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS ON HIGHWAY SIGNS, LUMINAIRES & TRAFFIC SIGNALS.	
WINDS: 80 MPH	1.3
FATIGUE CAT: I	VORTEX SHED: N/A
NATURAL WIND GUST: NO	GALLOPING: NO
	TRUCK GUST: NO

WELD SPECIFICATION	
THE POST AND MAST ARM TO BE A TAPERED TUBE FABRICATION WITH ONE SUBMERGED ARC LONGITUDINAL SEAM WELD WITH 100% PENETRATION 6" FROM BASE PLATE AND 60% FOR REMAINDER. GAS METAL ARC WELDING PROCESS WITH 60% PENETRATION MAY BE USED FOR REMAINDER OF WELDED FABRICATION.	
WELD TESTING: 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (CJP) WELDS ULTRASONIC TESTED (UT) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT	
A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).	

FINISH SPECIFICATION	
GALV. OR PRIME COAT:	HOT DIP GALV PER ASTM A123
FINISH COAT:	PT-1-17-FTU-017-FR
COLOR:	SEMI-GLOSS BLACK
FEDERAL OR RAL SPEC.:	
WEIGHT W/GALV.:	2394.52
WEIGHT W/GALV.&PAINT:	
WEIGHT W/PAINT:	
SURFACE AREA:	58289.0
GAL. OF PAINT:	

622 6TH ST. SO.
WINSTED, MN 55395

THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION AND IS THE PROPERTY OF MILLERBERND MFG AND MAY NOT BE COPIED, REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT THE EXPRESS WRITTEN CONSENT FROM MILLERBERND MFG

SALES ORDER NO.:	QTY:	STATE:	SHEET
90851	1	GA	1 OF 1

DESCRIPTION: SHIP POLE SIG RD 1/4X22'/20' W/50'-0 MASTARM

EST. WEIGHT:	DRAWING NO.:
2321.4	90851-2

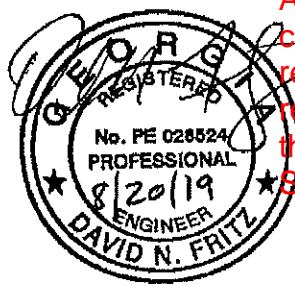
PROJECT NAME: PI# 0006463 / SR 15 & SR 24 WASHINGTON COUNTY

PROJECT LOCATION: GEORGIA

DWN BY: TRAVIS K	DATE: 08-14-2019
CHK BY:	DATE:

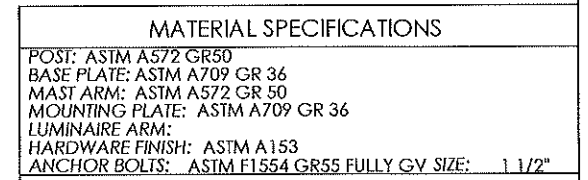
POLE D

DATE: 09/06/2019
 Approved in general. Details not checked. This approval shall not relieve the Contractor of any responsibility for conformity with the contract Plans and Specifications.



Georgia DOT
 Office of Bridge Design
 By: DLW

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT



MATERIAL SPECIFICATIONS	
POST:	ASTM A572 GR50
BASE PLATE:	ASTM A709 GR 36
MAST ARM:	ASTM A572 GR 50
MOUNTING PLATE:	ASTM A709 GR 36
LUMINAIRE ARM:	
HARDWARE FINISH:	ASTM A153
ANCHOR BOLTS:	ASTM F1554 GR55 FULLY GY SIZE: 1 1/2"

DESIGN CRITERIA

1994 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS ON HIGHWAY SIGNS, LUMINAIRES & TRAFFIC SIGNALS.
 WINDS: 80 MPH 1.3 VORTEX SHED: N/A
 FATIGUE CAT: I GALLOPING: NO
 NATURAL WIND GUST: NO TRUCK GUST: NO

WELD SPECIFICATION

THE POST AND MAST ARM TO BE A TAPERED TUBE FABRICATION WITH ONE SUBMERGED ARC LONGITUDINAL SEAM WELD WITH 100% PENETRATION 6" FROM BASE PLATE AND 60% FOR REMAINDER. GAS METAL ARC WELDING PROCESS WITH 60% PENETRATION MAY BE USED FOR REMAINDER OF WELDED FABRICATION.
 WELD TESTING: 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (CJP) WELDS ULTRASONIC TESTED (UT) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS.
 < 6MM (0.25 IN) MT
 ≥ 6MM (0.25 IN) UT
 A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).

FINISH SPECIFICATION

GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123
 FINISH COAT: PT-1-17-FTU-01-FR
 COLOR: SEMI-GLOSS BLACK
 FEDERAL OR RAL SPEC.:
 WEIGHT W/GALV.: 3043.96
 WEIGHT W/GALV.&PAINT:
 SURFACE AREA: 82088.1
 GAL. OF PAINT:



THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION AND IS THE PROPERTY OF MILLERBERND MFG AND MAY NOT BE COPIED, REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT THE EXPRESS WRITTEN CONSENT FROM MILLERBERND MFG

SALES ORDER NO.:	QTY:	STATE:	SHEET
90851	1	GA	1 OF 1

DESCRIPTION:
 SHIP POLE SIG TW RD 1/4X22'/20' W/35'-0/40'-0" MASTARM

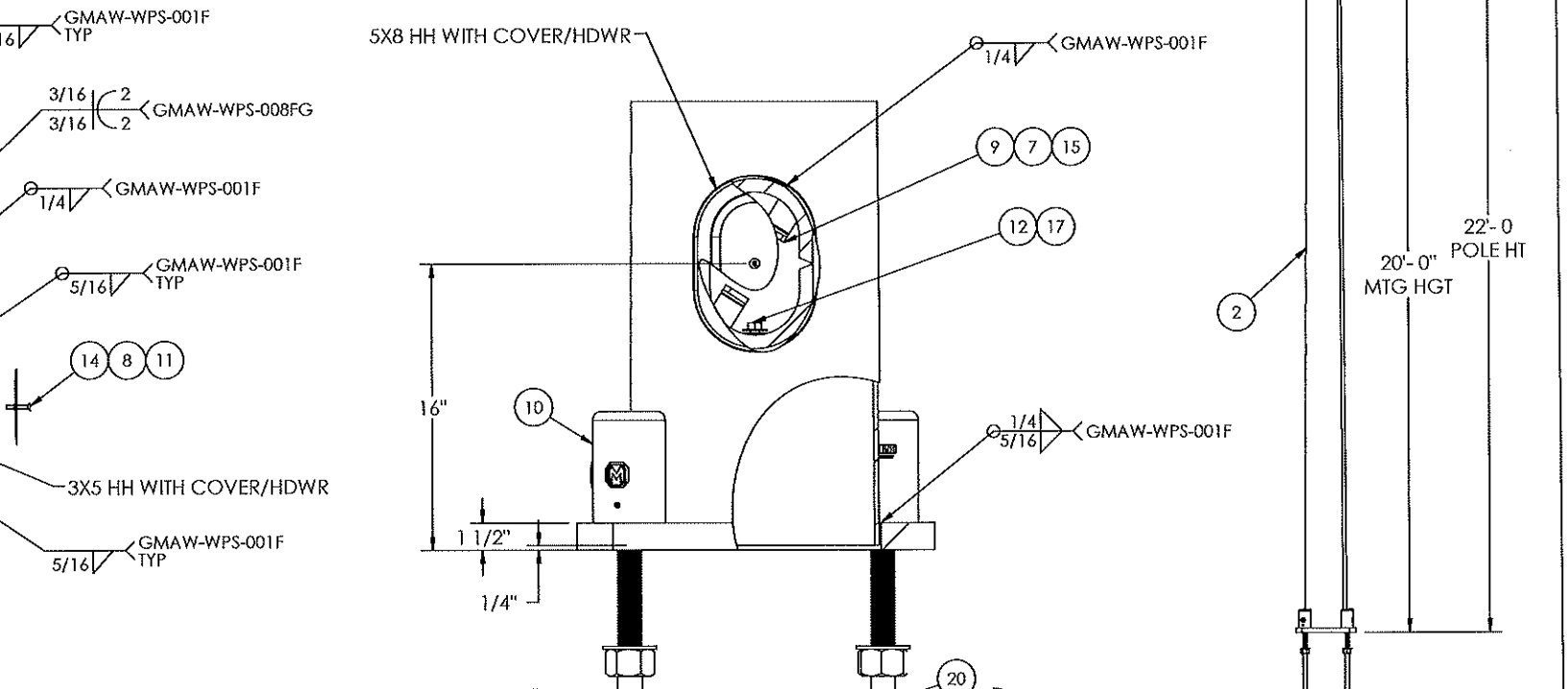
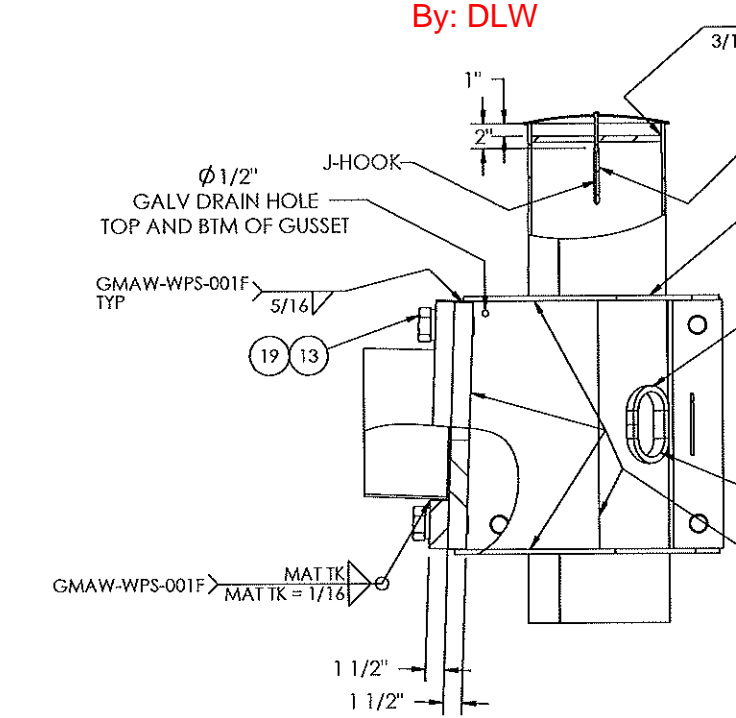
EST. WEIGHT:	DRAWING NO.:
2951.0	90851-3

PROJECT NAME:
 PI# 0006463 / SR 15 & SR 24

WASHINGTON COUNTY

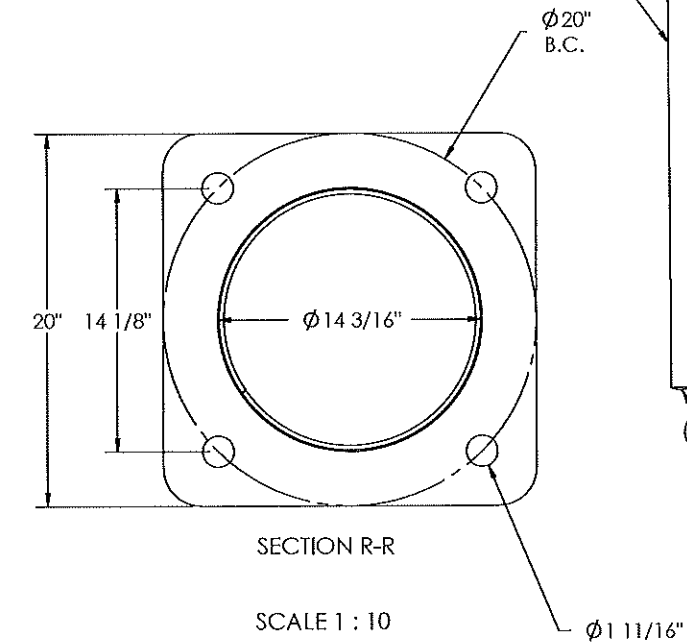
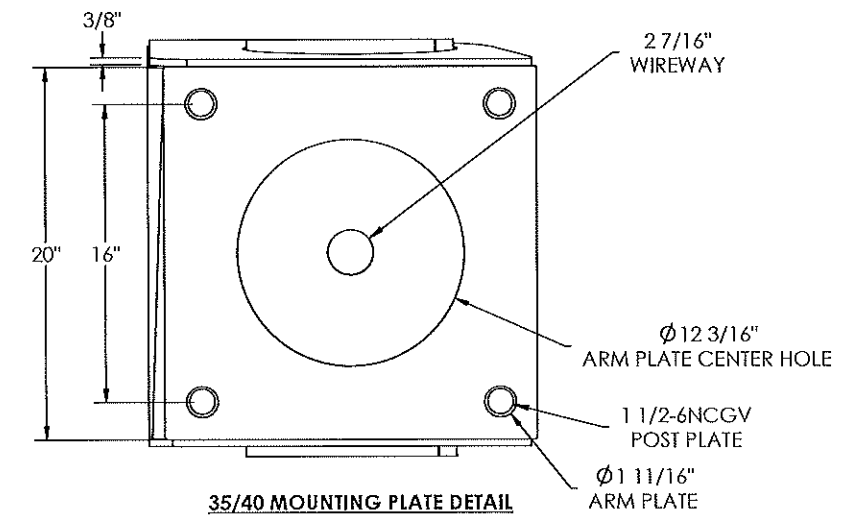
PROJECT LOCATION:
 GEORGIA

DWN BY: TRAVIS K	DATE: 08-16-2019
CHK BY:	DATE:



ITEM NO.	DESCRIPTION	QTY.
1	WLDMT ARM RD 3/16X40'-0" (3/16X12.0X6.40X40'-0)	1
2	WLDMT POLE SIG TW RD 1/4X22'-0"/20'0 (1/4X14X10.92X22'-0")	1
3	WLDMT ARM RD 3/16X35'-0" (3/16X12.0X7.1X35'-0)	1
4	CAP FITS 10.75 - 11.25 POLE DIA	1
5	CAP CAP FITS 6.25 - 6.75 POLE DIA	1
6	CAP CAP FITS 6.75 - 7.25 POLE DIA	1
7	COVER HH M34 5X8	1
8	COVER HH M15 3X5 FORMED	1
9	M34 (5 X 8) HH LATCH	1
10	COVER NUT WITH SET SCREWS FOR 1 1/2 NUTS AND BELOW	4
11	LATCH HH M15 3X5	1
12	BOLT HX HD 1-2-13NC X 3-4 F593C SS	1
13	BOLT HVYHXHD 1-1-2-6 X 3-1-2 A325GV	8
14	SCRWA HX SK FL HD 5-16-18NC X 2 SS	1
15	SCRW TTPHXSKBTHD 5-16-18NC X 2" 304 SS ASTM 593 CW1	1
16	SCRWSLDRHDMACH 1-4-20NCX3 ASME B18.6.3 SS	3
17	WASH F.56 IDX1.375ODX.091 THK BRASS COMM. BRASS	2
18	WASHER FLAT 1/4 SS 5/8 OD ASME B18.22.1 SS	3
19	WASHER LOCK 1-1/2 ASTM F436 GV	8
20	1 1/2-6 BOLT W/ 2 NUTS 1 LOCK AND 2 FLAT WASHERS	4

FOUNDATION DESIGN			
WASHINGTON COUNTY			
POLE	DIA	DEPTH	REBAR
D	3'-0"	13'-6"	8 - #9'S



GEORGIA DOT YIELD MOMENTS				
POLE DIA (IN)	WALL (IN)	FY (PSI)	S (IN3)	YIELD Mb (K-FT)
14	.25	50000	37.10	152.0

2-7915

DATE: 09/06/2019

Approved in general. Details not checked. This approval shall not relieve the Contractor of any responsibility for conformity with the contract Plans and Specifications.

CUSTOMER TO VERIFY 90° ORIENTATION OF ARMS ARM LOCATIONS

POLE A

Georgia DOT Office of Bridge Design By: DLW

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT

MATERIAL SPECIFICATIONS	
POST:	ASTM A572 GR50
BASE PLATE:	ASTM A709 GR 36
MAST ARM:	ASTM A572 GR 50
MOUNTING PLATE:	ASTM A709 GR 36
LUMINAIRE ARM:	
HARDWARE FINISH:	ASTM A153
ANCHOR BOLTS:	ASTM F1554 GR55 FULLY GV SIZE: 1 3/4

DESIGN CRITERIA	
1994 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS ON HIGHWAY SIGNS, LUMINAIRES & TRAFFIC SIGNALS.	
WINDS:	80 MPH 1.3
FATIGUE CAT:	I
NATURAL WIND GUST:	NO
VORTEX SHED:	N/A
GALLOPING:	NO
TRUCK GUST:	NO

WELD SPECIFICATION	
THE POST AND MAST ARM TO BE A TAPERED TUBE FABRICATION WITH ONE SUBMERGED ARC LONGITUDINAL SEAM WELD WITH 100% PENETRATION 6" FROM BASE PLATE AND 60% FOR REMAINDER. GAS METAL ARC WELDING PROCESS WITH 60% PENETRATION MAY BE USED FOR REMAINDER OF WELDED FABRICATION.	
WELD TESTING: 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (CJP) WELDS ULTRASONIC TESTED (UT) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS.	
< 6MM (0.25 IN) MT	≥ 6MM (0.25 IN) UT
A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).	

FINISH SPECIFICATION	
GALV. OR PRIME COAT:	HOT DIP GALV PER ASTM A123
FINISH COAT:	PT-1-17-FTU-017-FR
COLOR:	SEMI-GLOSS BLACK
FEDERAL OR RAL SPEC.:	
WEIGHT W/GALV.:	4252.57
WEIGHT W/GALV.&PAINT:	
SURFACE AREA:	94987.9
GAL. OF PAINT:	

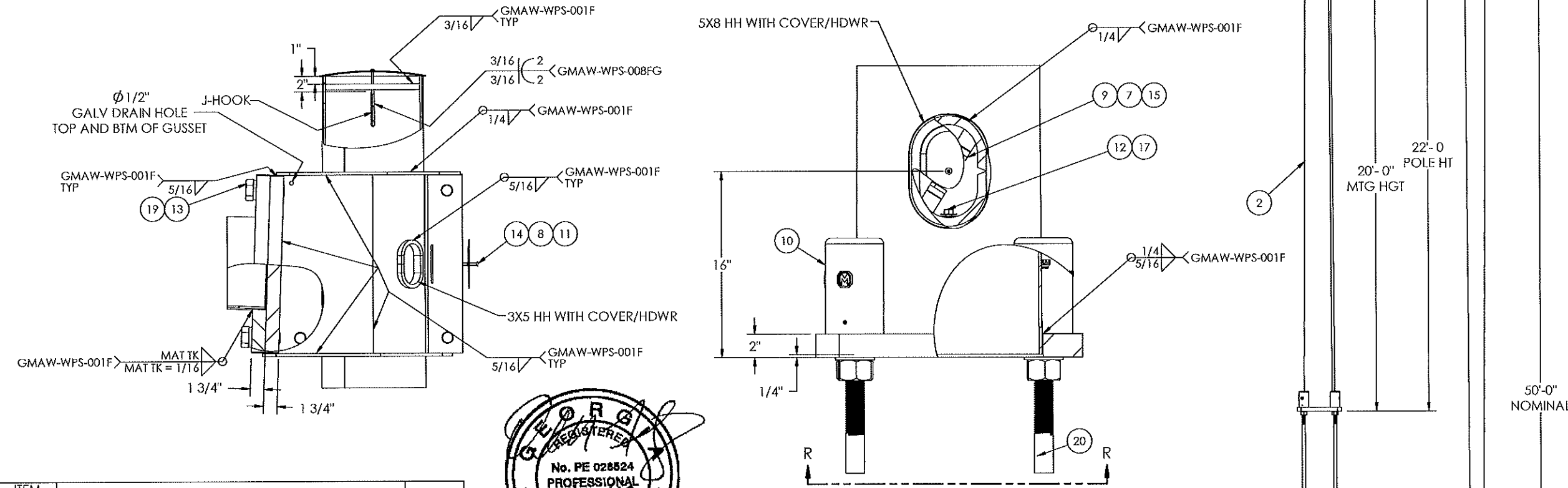
MILLERBERND	
622 6TH ST. SO.	WINSTED, MN 55395
THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION AND IS THE PROPERTY OF MILLERBERND MFG AND MAY NOT BE COPIED, REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT THE EXPRESS WRITTEN CONSENT FROM MILLERBERND MFG	

SALES ORDER NO.:	QTY:	STATE:	SHEET
90851	1	GA	1 OF 1

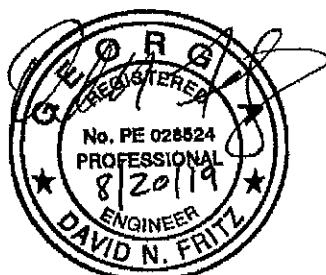
DESCRIPTION:	
SHIP POLE SIG TW RD 1/4X22'/20' W/40'-0'/50'-0" MASTARM	
EST. WEIGHT:	DRAWING NO:
4122.7	90851-4

PROJECT NAME:	
PI# 0006463 / SR 15 & SR 24	
PROJECT LOCATION:	
GEORGIA	

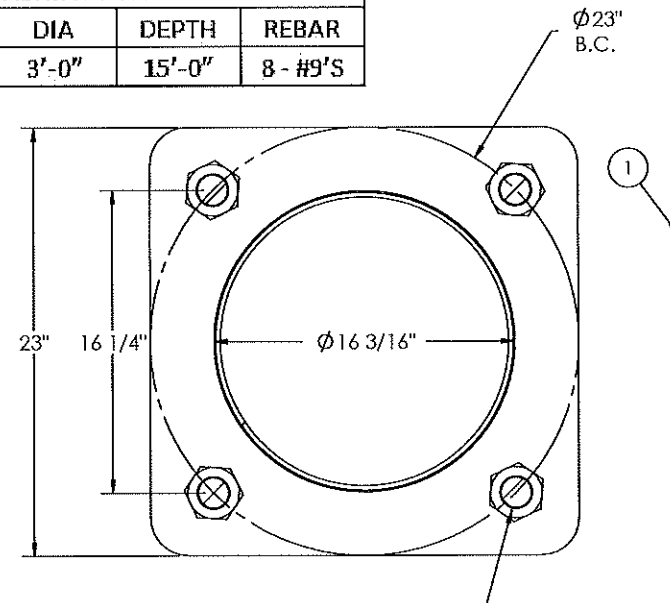
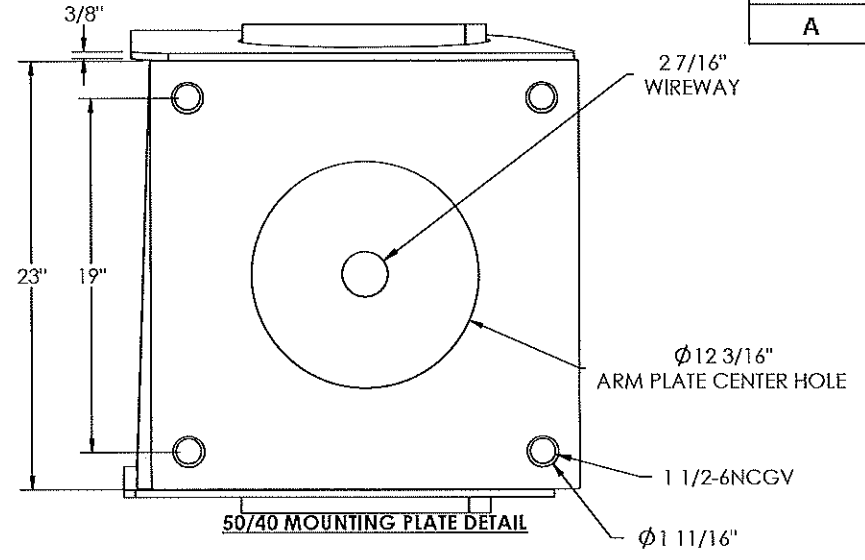
DWN BY:	DATE:
TRAVIS K	08-19-2019
CHK BY:	DATE:



ITEM NO.	DESCRIPTION	QTY.
1	WLDMT ARM RD 1/4X50'-0" (1/4X12.0X5.0X50'-0)	1
2	WLDMT POLE SIG TW RD 1/4X22'-0"/20'0" (1/4X16X12.92X22'-0")	1
3	WLDMT ARM RD 3/16X40'-0" (3/16X12.0X6.40X40'-0)	1
4	CAP FITS 12.75 - 13.25 POLE DIA	1
5	CAP CAP FITS 4.75 - 5.25 POLE DIA	1
6	CAP CAP FITS 6.25 - 6.75 POLE DIA	1
7	COVER HH M34 5X8	1
8	COVER HH M15 3X5 FORMED	1
9	M34 [5 X 8] HH LATCH	1
10	COVER NUT WITH SET SCREWS FOR 1 3/4-2 1/4 NUTS	4
11	LATCH HH M15 3X5	1
12	BOLT HX HD 1-2-13NC X 3-4 F593C SS	1
13	BOLT HVYHXHD 1-1-2-6 X 4 A325GV	8
14	SCRWA HX SK FL HD 5-16-18NC X 2 SS	1
15	SCRW TTPHXSKBTHD 5-16-18NC X 2" 304 SS ASTM 593 CW1	1
16	SCRWSLDRHDMACH 1-4-20NCX3 ASME B18.6.3 SS	3
17	WASH F.56 IDX1.375ODX.091 THK BRASS COMM. BRASS	2
18	WASHER FLAT 1/4 SS 5/8 OD ASME B18.22.1 SS	3
19	WASHER LOCK 1-1/2 ASTM F436 GV	8
20	ANCHOR BOLT 1 3/4-5X60 HOOKED GR 55 W/2 NUTS & 2 FLAT WASHERS & 1 LOCK WASHER	4



FOUNDATION DESIGN			
WASHINGTON COUNTY			
POLE	DIA	DEPTH	REBAR
A	3'-0"	15'-0"	8 - #9'S



GEORGIA DOT YIELD MOMENTS				
POLE DIA (IN)	WALL (IN)	FY (PSI)	S (IN3)	YIELD Mb (K-FT)
16	.25	50000	48.68	199.8

2-7915

SECTION R-R SCALE 1:10

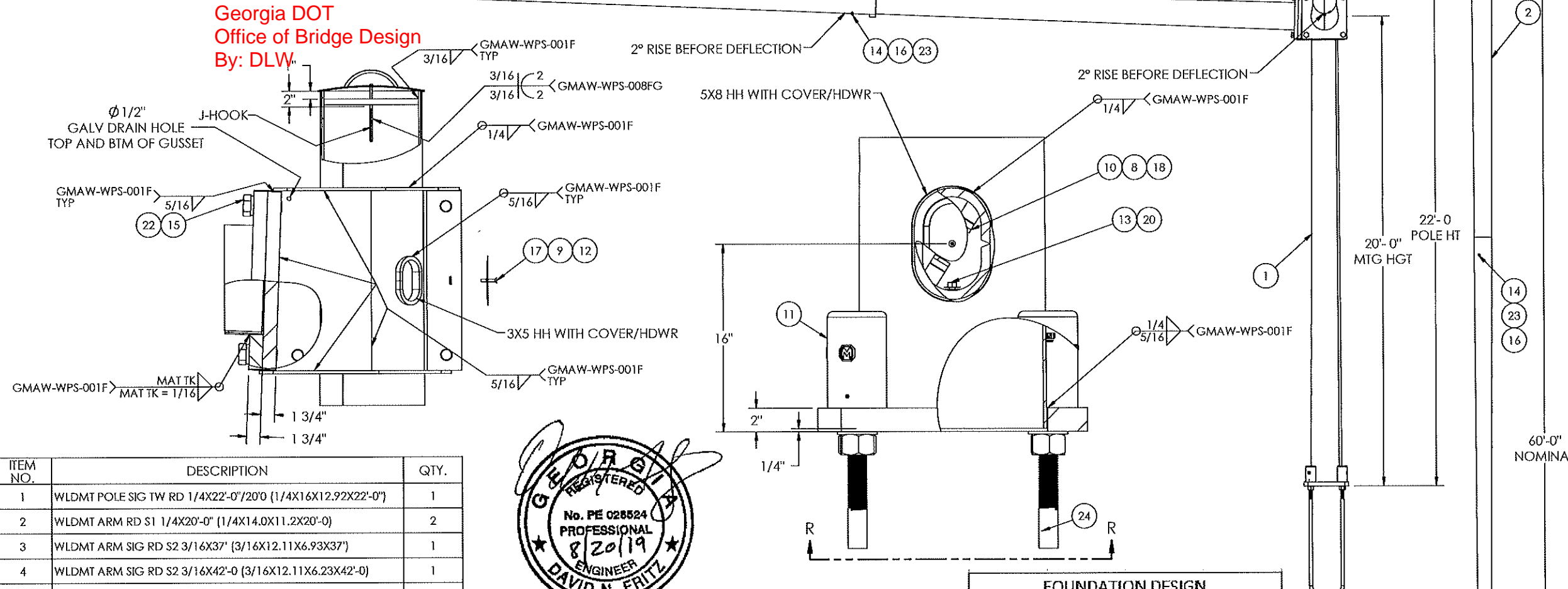
16 18 5

DATE: 09/06/2019

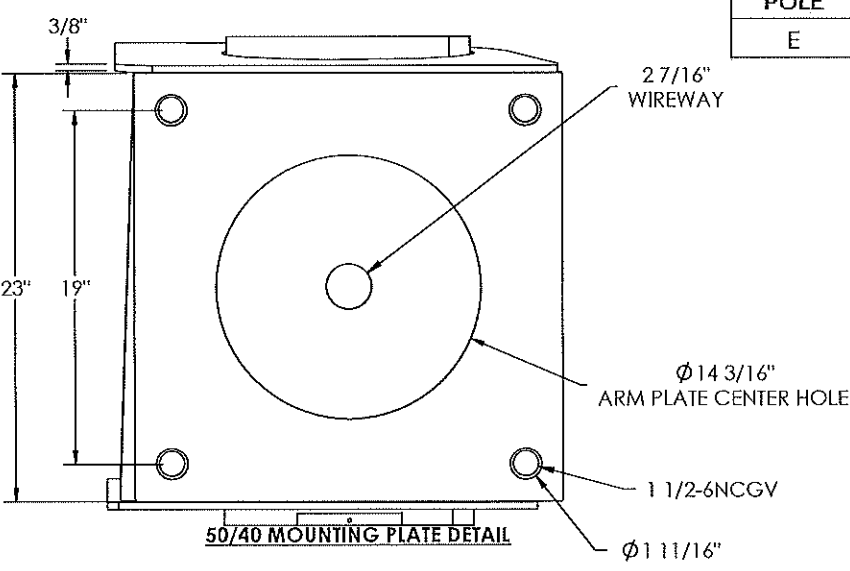
CUSTOMER TO VERIFY 90° ORIENTATION OF ARMS ARM LOCATIONS

Approved in general. Details not checked. This approval shall not relieve the Contractor of any responsibility for conformity with the contract Plans and Specifications.

Georgia DOT
Office of Bridge Design
By: DLW

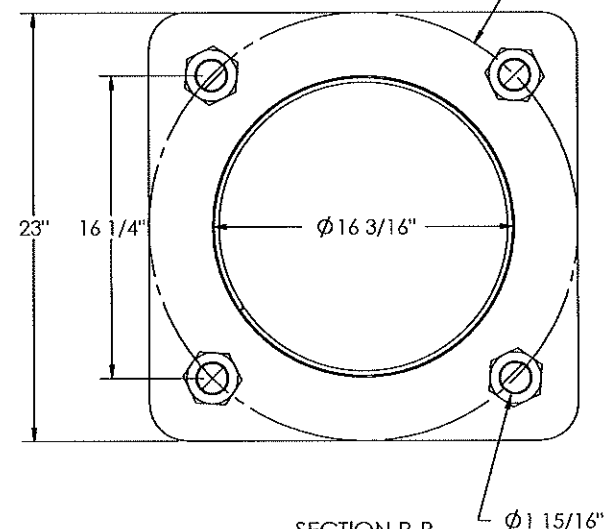


ITEM NO.	DESCRIPTION	QTY.
1	WLDMT POLE SIG TW RD 1/4X22'-0"/20'0 (1/4X16X12.92X22'-0")	1
2	WLDMT ARM RD S1 1/4X20'-0" (1/4X14.0X11.2X20'-0)	2
3	WLDMT ARM SIG RD S2 3/16X37' (3/16X12.11X6.93X37')	1
4	WLDMT ARM SIG RD S2 3/16X42'-0 (3/16X12.11X6.23X42'-0)	1
5	CAP FITS 12.75 - 13.25 POLE DIA	1
6	CAP CAP FITS 6.25 - 6.75 POLE DIA	1
7	CAP CAP FITS 6.75 - 7.25 POLE DIA	1
8	COVER HH M34 5X8	1
9	COVER HH M15 3X5 FORMED	1
10	M34 (5 X 8) HH LATCH	1
11	COVER NUT WITH SET SCREWS FOR 1 3/4-2 1/4 NUTS	4
12	LATCH HH M15 3X5	1
13	BOLT HX HD 1-2-13NC X 3-4 F593C SS	1
14	BOLT HX HD 3-4-10NC X 13" A307GV	2
15	BOLT HVYHXHD 1-1-2-6 X 4 A325GV	8
16	NUT HX 3-4-10NC G2 GV	2
17	SCRWA HX SK FL HD 5-16-18NC X 2 SS	1
18	SCRW TPPHXSKBTHD 5-16-18NC X 2" 304 SS ASTM 593 CW1	1
19	SCRWSLDRHDMACH 1-4-20NCX3 ASME B18.6.3 SS	3
20	WASH F.56 IDX1.375ODX.091 THK BRASS COMM. BRASS	2
21	WASHER FLAT 1/4 SS 5/8 OD ASME B18.22.1 SS	3
22	WASHER LOCK 1-1/2 ASTM F436 GV	8
23	WASHER LOCK 3/4 GV	2
24	ANCHOR BOLT 1 3/4-5X60 HOOKED GR 55 W/2 NUTS & 2 FLAT WASHERS & 1 LOCK WASHER	4



GEORGIA DOT YIELD MOMENTS					
POLE DIA (IN)	WALL (IN)	FY (PSI)	S (IN3)	YIELD Mb (K-FT)	
16	.25	50000	48.68	199.8	

FOUNDATION DESIGN			
WASHINGTON COUNTY			
POLE	DIA	DEPTH	REBAR
E	3'-0"	15'-0"	8 - #9'S



2-7915 SECTION R-R SCALE 1:10

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
5	21	19	

MATERIAL SPECIFICATIONS	
POST: ASTM A572 GR50	
BASE PLATE: ASTM A709 GR 36	
MAST ARM: ASTM A572 GR 50	
MOUNTING PLATE: ASTM A709 GR 36	
LUMINAIRE ARM:	
HARDWARE FINISH: ASTM A153	
ANCHOR BOLTS: ASTM F1554 GR55 FULLY GV SIZE: 1 3/4	

DESIGN CRITERIA	
1994 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS ON HIGHWAY SIGNS, LUMINAIRES & TRAFFIC SIGNALS.	
WINDS: 80 MPH 1.3	VORTEX SHED: N/A
FATIGUE CAT: I	GALLOPING: NO
NATURAL WIND GUST: NO	TRUCK GUST: NO

WELD SPECIFICATION	
THE POST AND MAST ARM TO BE A TAPERED TUBE FABRICATION WITH ONE SUBMERGED ARC LONGITUDINAL SEAM WELD WITH 100% PENETRATION 6" FROM BASE PLATE AND 60% FOR REMAINDER. GAS METAL ARC WELDING PROCESS WITH 60% PENETRATION MAY BE USED FOR REMAINDER OF WELDED FABRICATION.	
WELD TESTING: 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (CJP) WELDS ULTRASONIC TESTED (UT) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS.	
< 6MM (0.25 IN) MT	
≥ 6MM (0.25 IN) UT	
A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).	

FINISH SPECIFICATION	
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123	
FINISH COAT: PT-1-17-FTU-017-FR	
COLOR: SEMI-GLOSS BLACK	
FEDERAL OR RAL SPEC.:	
WEIGHT W/GALV.: 5188.65	
WEIGHT W/GALV.&PAINT:	
WEIGHT W/PAINT:	
SURFACE AREA: 128593.9	
GAL. OF PAINT:	

MILLERBERND 622 6TH ST. SO. WINSTED, MN 55395

THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION AND IS THE PROPERTY OF MILLERBERND MFG AND MAY NOT BE COPIED, REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT THE EXPRESS WRITTEN CONSENT FROM MILLERBERND MFG

SALES ORDER NO.:	QTY:	STATE:	SHEET
90851	1	GA	1 OF 1

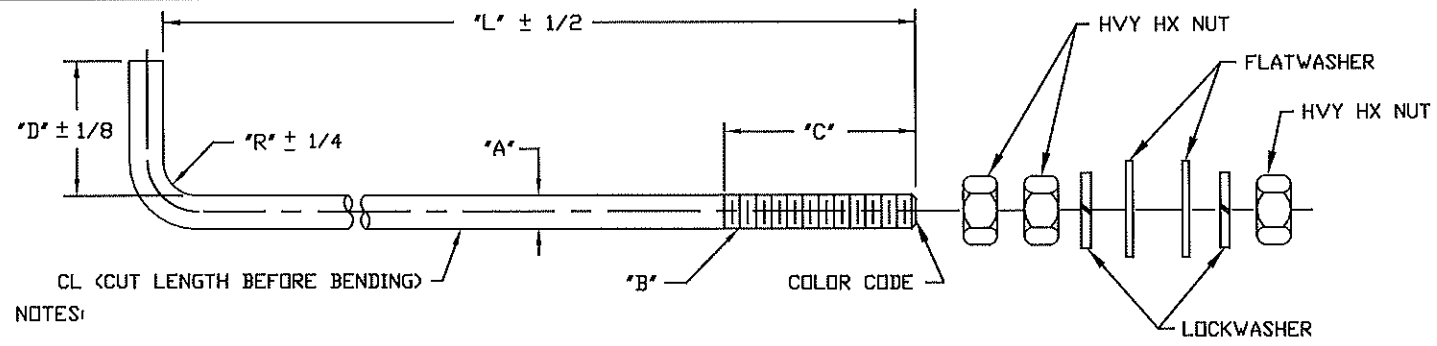
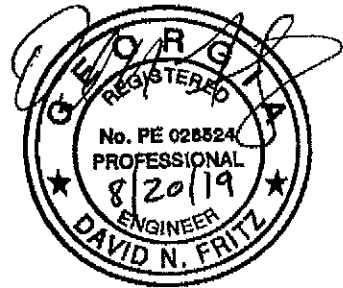
DESCRIPTION: SHIP POLE SIG TW RD 1/4X22'/20' W/55'-0'/60'-0" MASTARM

EST. WEIGHT: 5030.2	DRAWING NO: 90851-5
---------------------	---------------------

PROJECT NAME: PI# 0006463 / SR 15 & SR 24 WASHINGTON COUNTY

PROJECT LOCATION: GEORGIA

DWN BY: TRAVIS K	DATE: 08-19-2019
CHK BY:	DATE:



MMC SO#090851 /
PI# 0006463
ST15 & SR 24

NOTES:

- ANCHOR BOLT PER ASTM F1554 GRADE 55 S1 &/OR AASHTO M314-90 GRADE 55. YIELD STRENGTH = 55,000 PSI MIN YIELD TENSILE STRENGTH = 75,000-95,000 PSI
- FULLY HOT DIP GALVANIZE PER ASTM A153.
- THREAD TO BE CLASS 2A PER AMERICAN STD. B 1.1 .030 OVER SIZE AFTER GALVANIZING
- ALL BOLTS ROLLED THREAD
- GALVANIZED HEAVY HEX NUTS (A563GV) PER ASTM A563 GR DH (.030 OVER SIZE) OR (A194 2H EQUIVALENT)
- NO WELDING IS ALLOWED ON ANCHOR BOLTS
- GALVANIZED FLAT WASHERS PER ASTM F436.
- GALVANIZED LOCKWASHERS
- THE END OF ANCHOR BOLT TO PROJECT FROM THE CONCRETE PAINTED PER COLOR CODE

POLES B, C, D

PART NO BOLT (ONLY)	PART NO BOLT W/3 NUTS, 2 LOCK & 2 FLAT WASHERS	PART NO BOLT W/3 NUTS & 2 FLAT WASHERS	PART NO BOLT W/2 NUTS, 1 LOCK & 2 FLAT WASHERS	PART NO BOLT W/2 NUTS, 2 LOCK & 2 FLAT WASHERS	PART NO BOLT W/2 NUTS & 2 FLAT WASHERS	PART NO BOLT W/2 NUTS	PART NO BOLT W/1 NUT	"A"	CL	"B" THD SIZE	"C" EFF MIN THD LG	"L"	"D"	"R"	COLOR CODE	QTY BOLTS	QTY NUTS	QTY LOCK WASHERS	QTY FLAT WASHERS
460A579-1	460A579-1TNW	460A579-1TNFW	460A579-1DNW	460A579-1DNLW	460A579-1DNFW	460A579-1DN	460A579-1N	.91	40"	1-8	6"	36"	4"	2 1/2	YELLOW				
460A579-2	460A579-2TNW	460A579-2TNFW	460A579-2DNW	460A579-2DNLW	460A579-2DNFW	460A579-2DN	460A579-2N	1.148	48"	1 1/4-7	8"	42"	6"	2 1/2	YELLOW				
460A579-3	460A579-3TNW	460A579-3TNFW	460A579-3DNW	460A579-3DNLW	460A579-3DNFW	460A579-3DN	460A579-3N	1.381	60"	1 1/2-6	10"	54"	6"	3 3/8	YELLOW	12	24	12	24
460A579-4	460A579-4TNW	460A579-4TNFW	460A579-4DNW	460A579-4DNLW	460A579-4DNFW	460A579-4DN	460A579-4N	1.613	90"	1 3/4-5	10"	84"	6"	3 1/2	YELLOW				
460A579-5	460A579-5TNW	460A579-5TNFW	460A579-5DNW	460A579-5DNLW	460A579-5DNFW	460A579-5DN	460A579-5N	1.845	90"	2-4 1/2	10"	84"	6"	4"	YELLOW				
460A579-6	460A579-6TNW	460A579-6TNFW	460A579-6DNW	460A579-6DNLW	460A579-6DNFW	460A579-6DN	460A579-6N	2.148	96"	2 1/4-4 1/2	12"	89"	7"	4 1/2	YELLOW				
460A579-7	460A579-7TNW	460A579-7TNFW	460A579-7DNW	460A579-7DNLW	460A579-7DNFW	460A579-7DN	460A579-7N	1.845	96"	2-4 1/2	10"	90"	6"	4"	YELLOW				
460A579-8	460A579-8TNW	460A579-8TNFW	460A579-8DNW	460A579-8DNLW	460A579-8DNFW	460A579-8DN	460A579-8N	1.148	40"	1 1/4-7	6"	36"	4"	2 1/2	YELLOW				
460A579-9	460A579-9TNW	460A579-9TNFW	460A579-9DNW	460A579-9DNLW	460A579-9DNFW	460A579-9DN	460A579-9N	1.148	51"	1 1/4-7	6"	45"	6"	2 1/2	YELLOW				
460A579-10	460A579-10TNW	460A579-10TNFW	460A579-10DNW	460A579-10DNLW	460A579-10DNFW	460A579-10DN	460A579-10N	1.381	66"	1 1/2-6	10"	60"	6"	3 3/8	YELLOW				
460A579-11	460A579-11TNW	460A579-11TNFW	460A579-11DNW	460A579-11DNLW	460A579-11DNFW	460A579-11DN	460A579-11N	1.148	48"	1 1/4-7	10"	42"	6"	2 1/2	YELLOW				
460A579-12	460A579-12TNW	460A579-12TNFW	460A579-12DNW	460A579-12DNLW	460A579-12DNFW	460A579-12DN	460A579-12N	1.381	60"	1 1/2-6	10"	54"	6"	3 3/8	YELLOW				
460A579-13	460A579-13TNW	460A579-13TNFW	460A579-13DNW	460A579-13DNLW	460A579-13DNFW	460A579-13DN	460A579-13N	.91	42"	1-8	6"	38"	4"	2 1/2	YELLOW				
460A579-14	460A579-14TNW	460A579-14TNFW	460A579-14DNW	460A579-14DNLW	460A579-14DNFW	460A579-14DN	460A579-14N	1.845	66"	2-4 1/2	10"	60"	6"	4"	YELLOW				
460A579-15	460A579-15TNW	460A579-15TNFW	460A579-15DNW	460A579-15DNLW	460A579-15DNFW	460A579-15DN	460A579-15N	1.148	54"	1 1/4-7	9"	48"	6"	2 1/2	YELLOW				
460A579-16	460A579-16TNW	460A579-16TNFW	460A579-16DNW	460A579-16DNLW	460A579-16DNFW	460A579-16DN	460A579-16N	.91	96"	1-8	6"	90"	4"	2 1/2	YELLOW				
460A579-17	460A579-17TNW	460A579-17TNFW	460A579-17DNW	460A579-17DNLW	460A579-17DNFW	460A579-17DN	460A579-17N	1.381	90"	1 1/2-6	10"	84"	6"	3 3/8	YELLOW				
460A579-18	460A579-18TNW	460A579-18TNFW	460A579-18DNW	460A579-18DNLW	460A579-18DNFW	460A579-18DN	460A579-18N	.91	46"	1-8	6"	42"	4"	2 1/2	YELLOW				
460A579-19	460A579-19TNW	460A579-19TNFW	460A579-19DNW	460A579-19DNLW	460A579-19DNFW	460A579-19DN	460A579-19N	1.381	80"	1 1/2-6	10"	72"	6"	3 3/8	YELLOW				
460A579-20	460A579-20TNW	460A579-20TNFW	460A579-20DNW	460A579-20DNLW	460A579-20DNFW	460A579-20DN	460A579-20N	1.148	90"	1 1/4-7	10"	84"	6"	2 1/2	YELLOW				
460A579-21	460A579-21TNW	460A579-21TNFW	460A579-21DNW	460A579-21DNLW	460A579-21DNFW	460A579-21DN	460A579-21N	1.613	80"	1 3/4-5	10"	72"	6"	3 1/2	YELLOW				
460A579-22	460A579-22TNW	460A579-22TNFW	460A579-22DNW	460A579-22DNLW	460A579-22DNFW	460A579-22DN	460A579-22N	1.148	96"	1 1/4-7	12"	90"	6"	2 1/2	YELLOW				
460A579-23	460A579-23TNW	460A579-23TNFW	460A579-23DNW	460A579-23DNLW	460A579-23DNFW	460A579-23DN	460A579-23N	1.381	96"	1 1/2-6	12"	90"	6"	3 3/8	YELLOW				
460A579-24	460A579-24TNW	460A579-24TNFW	460A579-24DNW	460A579-24DNLW	460A579-24DNFW	460A579-24DN	460A579-24N	1.613	96"	1 3/4-5	12"	90"	6"	3 1/2	YELLOW				

REV 01/31/19 CHANGED ALL A.B. TO FULLY GALVANIZED TK
REV 2-16-18 ADDED SHEET -29 TO CHART - JD
REV 1-9-17 ADDED SHEET 2 AND -25 AND -26 TO CHART
REV 12-16-16 ADDED -22,-23 AND -24 TO CHART
REV 12-8-16 ADDED 460A579-21
REV 9-29-15 -10 "L" WAS 54"
REV 6-30-15 ADDED 460A579-13
REV 9-6-13 -9 CL WAS 40"
REV 11-28-11 CHANGE "C" ON -1 FROM 8" TO 6",
"C" ON -3,-4 & -5 FROM 12" TO 10" AND "L" ON
-6 FROM 90" TO 89" AND "D" FROM 6" TO 7"

2-7915

DWN: JAMIE D.
DATE: 08-16-11
CHK: FLOYD F.
SCALE: NTS

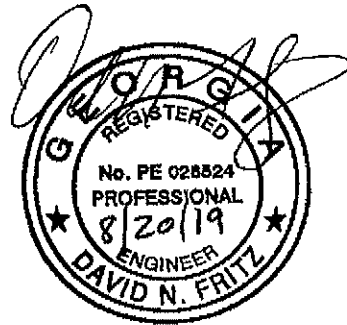
ANCHOR BOLTS
F1554 GRADE 55 FULLY GALV
Millerbernd MANUFACTURING CO.
WINSTED, MN

SHEET 1 OF 2
460A579

DATE: 09/06/2019
Approved in general. Details not checked. This approval shall not relieve the Contractor of any responsibility for conformity with the contract Plans and Specifications.

Georgia DOT
Office of Bridge Design
By: DLW

PART NO BOLT (ONLY)	PART NO BOLT W/3 NUTS, 2 LOCK & 2 FLAT WASHERS	PART NO BOLT W/3 NUTS & 2 FLAT WASHERS	PART NO BOLT W/2 NUTS, 1 LOCK & 2 FLAT WASHERS	PART NO BOLT W/2 NUTS, 2 LOCK & 2 FLAT WASHERS	PART NO BOLT W/2 NUTS & 2 FLAT WASHERS	PART NO BOLT W/2 NUTS	PART NO BOLT W/1 NUT	'A'	CL	'B' THD SIZE	'C' EFF HR THD LG	'L'	'D'	'R'	COLOR CODE	QTY BOLTS	QTY NUTS	QTY LOCK WASHERS	QTY FLAT WASHERS
460A579-25	460A579-25TNW	460A579-25TNFW	460A579-25DNW	460A579-25DNLW	460A579-25DNFW	460A579-25DN	460A579-25N	1.148	57"	1 1/4-7	8"	51"	6"	2 1/2	YELLOW				
460A579-26	460A579-26TNW	460A579-26TNFW	460A579-26DNW	460A579-26DNLW	460A579-26DNFW	460A579-26DN	460A579-26N	1.613	94"	1 3/4-5	10"	88"	6"	3 1/2	YELLOW				
460A579-27	460A579-27TNW	460A579-27TNFW	460A579-27DNW	460A579-27DNLW	460A579-27DNFW	460A579-27DN	460A579-27N	.91	66"	1-8	6"	60"	4"	2 1/2	YELLOW				
460A579-28	460A579-28TNW	460A579-28TNFW	460A579-28DNW	460A579-28DNLW	460A579-28DNFW	460A579-28DN	460A579-28N	2.148	105"	2 1/4-4 1/2	12"	96"	4"	2 1/2	YELLOW				
460A579-29	460A579-29TNW	460A579-29TNFW	460A579-29DNW	460A579-29DNLW	460A579-29DNFW	460A579-29DN	460A579-29N	1.148	60"	1 1/4-7	8"	54"	6"	2 1/2	YELLOW				
460A579-30	460A579-30TNW	460A579-30TNFW	460A579-30DNW	460A579-30DNLW	460A579-30DNFW	460A579-30DN	460A579-30N	1.613	90"	1 3/4-5	8"	84"	6"	3 1/2	YELLOW				
460A579-31	460A579-31TNW	460A579-31TNFW	460A579-31DNW	460A579-31DNLW	460A579-31DNFW	460A579-31DN	460A579-31N	2.148	95"	2 1/4-4 1/2	12"	88"	7"	4 1/2	YELLOW				
460A579-32	460A579-32TNW	460A579-32TNFW	460A579-32DNW	460A579-32DNLW	460A579-32DNFW	460A579-32DN	460A579-32N	.91	30"	1-8	6"	26"	4"	2 1/2	YELLOW				
460A579-33	460A579-33TNW	460A579-33TNFW	460A579-33DNW	460A579-33DNLW	460A579-33DNFW	460A579-33DN	460A579-33N	1.845	90"	2-4 1/2	10"	84"	6"	4"	YELLOW				



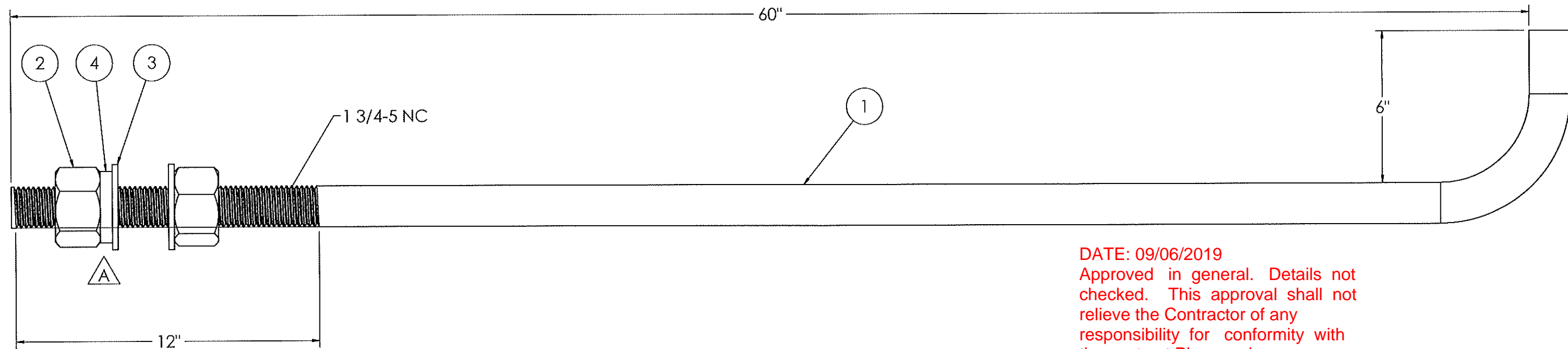
MMC SO#090851 /
PI# 0006463
ST15 & SR 24

DWN: JAMIE D.	ANCHOR BOLTS F1554 GRADE 55 FULLY GALV	SHEET 2 OF 2 460A579
DATE: 08-16-11		
CHK: FLOYD F.	Millerbernd MANUFACTURING CO. WINSTED, MN	
SCALE: NTS		

DATE: 09/06/2019
Approved in general. Details not checked. This approval shall not relieve the Contractor of any responsibility for conformity with the contract Plans and Specifications.

Georgia DOT
Office of Bridge Design
By: DLW

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
A	ADDED LOCK WASHER	12/14/2018	AJS



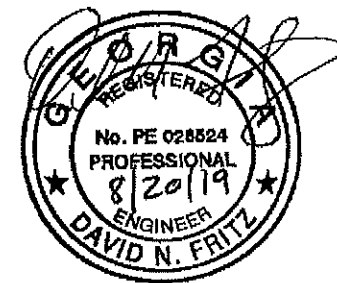
DATE: 09/06/2019
 Approved in general. Details not checked. This approval shall not relieve the Contractor of any responsibility for conformity with the contract Plans and Specifications.

QTY: 8

Georgia DOT
 Office of Bridge Design
 By: DLW
 POLES A & E

NOTE:

1. HIGH STRENGTH STEEL ANCHOR BOLT PER ASTM F1554 GRADE 55 MATERIAL
2. HOT DIP GALVANIZE PER ASTM A153.
3. THREAD TO BE CLASS 2A PER AMERICAN STD. B 1.1 .030 OVER SIZE AFTER GALVANIZING
4. ALL BOLTS ROLLED THREAD
5. HEAVY HEX NUTS PER ASTM A563 GR DH (.030 OVER SIZE) OR (A194 2H EQUIVALENT)
6. NO WELDING IS ALLOWED ON ANCHOR BOLTS
7. GALVANIZED FLATWASHER PER ASTM F436
8. THE END OF ANCHOR BOLT TO PROJECT FROM CONCRETE PAINTED YELLOW



2-7915

MMC SO#090851 /
 PI# 0006463
 ST15 & SR 24

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	9900291	ANCHOR BOLT 1 3/4-5 X 54" HOOKED GR 55	1
2	NUTHVYHX1-3/4-5A563HGV	NUT HVY HX 1-3/4-5NC A563F2329	2
3	WASHFLAT1-3/4GV	WASHER FLAT 1-3/4 GV	2
4	WASHLOCK1-3/4HGV	WASHER LOCK 1-3/4 HGV	1

THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION AND IS THE PROPERTY OF MILLERBERND MFG AND MAY NOT BE COPIED, REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT THE EXPRESS WRITTEN CONSENT FROM MILLERBERND MFG

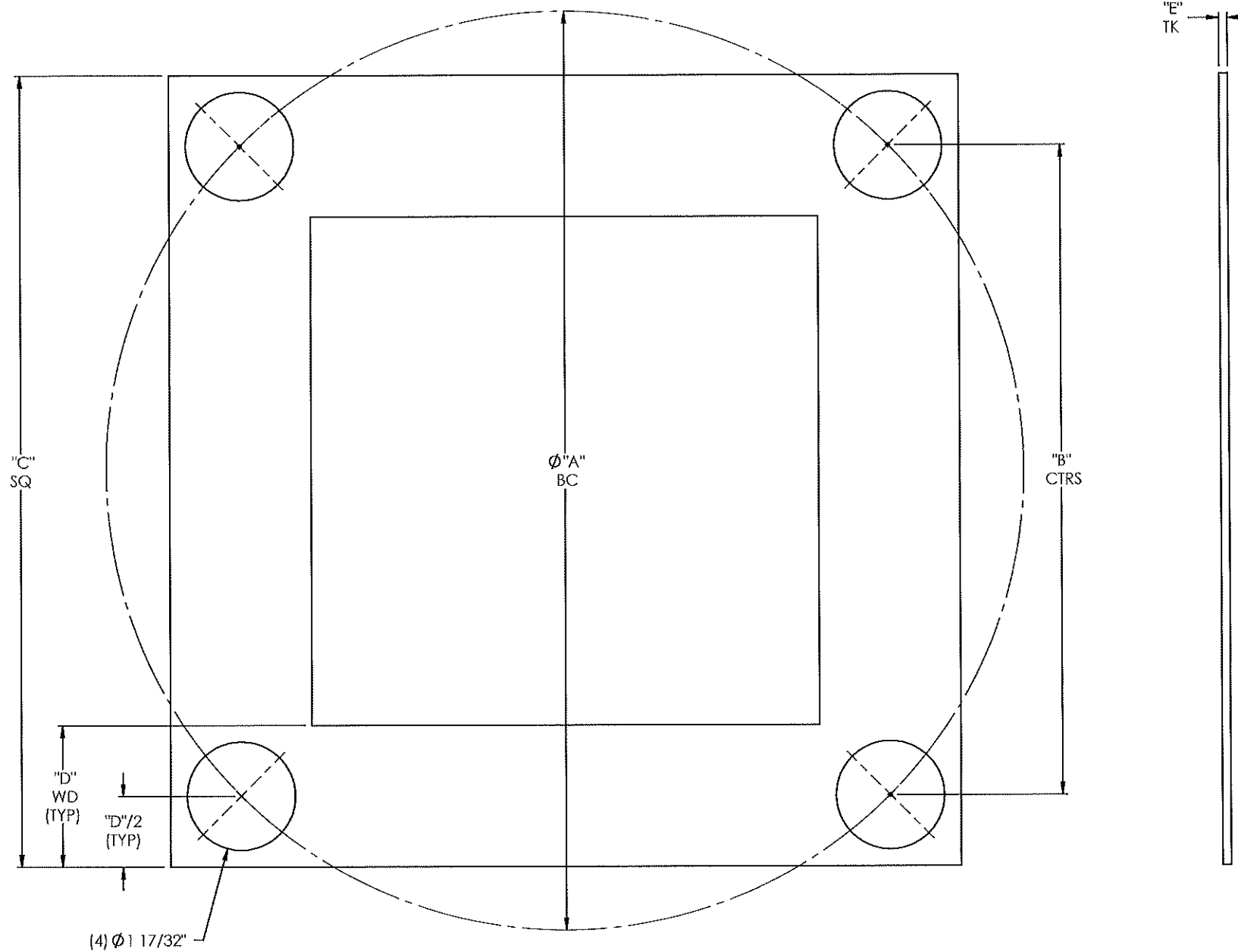
MILLERBERND 622 6TH ST. SO. WINSTED, MN 55395

DWN: STEVE H. DATE: 10-04-2018
 CHK BY: DATE:
 MATERIAL: SEE BOM

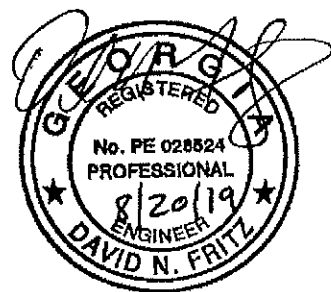
DESCRIPTION:
 ANCHOR BOLT 1 3/4-5X60 HOOKED GR 55 W/2 NUTS & 2 FLAT WASHERS & 1 LOCK WASHER

WEIGHT: 43.0 LBS.	SURFACE AREA: 482.2 SQ IN	SCALE: 1:4	DRWG NO.: 9900288	SHEET 1 OF 1	B
----------------------	------------------------------	---------------	----------------------	-----------------	----------

DASH NO	QTY	"A" DIABC	"B" CTRS	"C" SQ	"D" WD	"E" TK
460B138-1		13"	9 3/16	11 3/16	2"	11GA
460B138-2		13 1/2	9 17/32	11 17/32	2"	11GA
460B138-3		14"	9 29/32	11 29/32	2"	11GA
460B138-4		15"	10 19/32	12 19/32	2"	11GA
460B138-5		16"	11 5/16	13 5/16	2"	11GA
460B138-6		16 7/8	11 15/16	13 15/16	2"	11GA
460B138-7		17"	12 1/32	14 1/32	2"	11GA
460B138-8		18"	12 23/32	14 23/32	2"	11GA
460B138-9		18 3/4	13 1/4	15 3/4	2 1/2	11GA
460B138-10		19 7/16	13 3/4	16 1/4	2 1/2	11GA
460B138-11	3	20"	14 5/32	16 21/32	2 1/2	11GA
460B138-12		22"	15 9/16	18 1/16	2 1/2	11GA
460B138-13		18 1/2	13 3/32	15 19/32	2 1/2	11GA
460B138-14		17 1/2	12 3/8	14 3/8	2"	11GA
460B138-15		14 1/2	10 1/4	12 1/4	2"	11GA
460B138-16		16 1/2	11 21/32	13 21/32	2"	11GA
460B138-17		17 1/4	12 3/16	14 3/16	2"	11GA
460B138-18		15 1/2	11"	13"	2"	11GA
460B138-19		27"	19 1/16	21 9/16	2 1/2	11GA
460B138-20		19"	13 7/16	15 15/16	2 1/2	11GA
460B138-21		32"	22 5/8	25 1/8	2 1/2	11GA
460B138-22		21"	14 7/8	17 3/8	2 1/2	11GA
460B138-23		27 1/2	19 7/16	21 7/16	2"	11GA
460B138-24		12 1/2	8 27/32	10 27/32	2"	11GA
460B138-25		22 5/8	16"	18"	2"	11GA
460B138-26		17"	12"	14"	2"	1/4
460B138-27		24"	17"	19"	2"	11GA
460B138-28		26 1/2	18 3/4	20 3/4	2"	11 GA
460B138-29		16"	11 5/16	13 5/16	2"	1/4
460B138-30		31 1/2	22 1/4	24 1/4	2"	11 GA
460B138-31		19 1/2	13 13/16	15 13/16	2"	11 GA
460B138-32		23 1/2	16 5/8	18 5/8	2"	11 GA



MMC SO#090851 /
PI# 0006463
ST15 & SR 24



DATE: 09/06/2019
Approved in general. Details not checked. This approval shall not relieve the Contractor of any responsibility for conformity with the contract Plans and Specifications.

Georgia DOT
Office of Bridge Design
By: DLW

2-7915

NOTE:

1. MATERIAL - LOW CARBON 36,000 PSI MIN YIELD (ASTM A36)
2. FINISH - BARE UNFINISHED

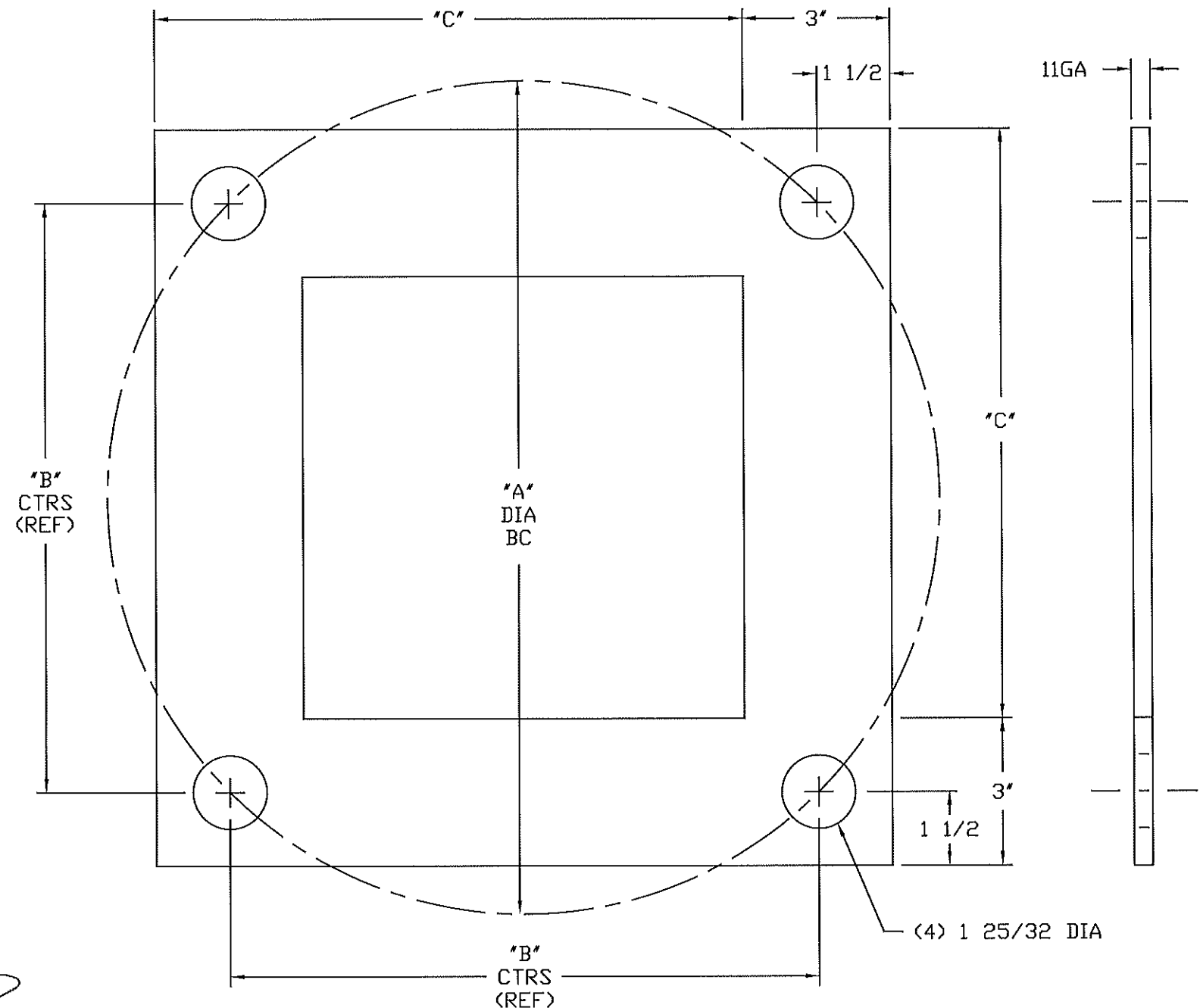
POLES B, C, D

DWN: WADE L.	TEMPLATE (4) 1 1/2 BOLTS	
DATE: 3-21-96		
CHK: FLOYD F.	Millerbernd	MANUFACTURING CO. WINSTED, MN
SCALE: NTS		

MMC SO#090851 /
 PI# 0006463
 ST15 & SR 24

24	15"	10 5/8"	10 5/8"
23	14 1/2"	10 1/4"	10 1/4"
22	16 1/2"	11 11/16"	11 11/16"
21	24 1/2"	17 5/16"	17 5/16"
20	20 1/2"	14 1/2"	14 1/2"
19	22 1/2"	15 15/16"	15 29/32"
18	25"	17 11/16"	17 21/32"
17	22"	15 9/16"	15 9/16"
16	25 1/2"	18"	18"
15	17"	12"	11 31/32"
14	17 1/2"	12 3/8"	12 11/32"
13	16"	11 5/16"	11 9/32"
12	23"	16 1/4"	16 7/32"
11	27 1/2"	19 7/16"	19 13/32"
10	21 1/2"	15 3/16"	15 5/32"
9	19 1/2"	13 25/32"	13 3/4"
8	18 1/2"	13 1/16"	13 1/32"
7	19"	13 7/16"	13 13/32"
6	21"	14 7/8"	14 27/32"
5	20"	14 1/8"	14 3/32"
4	15"	10 5/8"	10 19/32"
3	24"	17"	16 31/32"
2	18"	12 3/4"	12 23/32"
1	15 29/32"	11 1/4"	11 3/16"
DASH NO	"A" DIA BC	"B" CTRS	"C"

QTY : 2



DATE: 09/06/2019
 Approved in general. Details not checked. This approval shall not relieve the Contractor of any responsibility for conformity with the contract Plans and Specifications.

- NOTE:
1. MATERIAL- LOW CARBON 36,000 PSI MIN YIELD (ASTM A36)
 2. FINISH- BARE UNFINISHED

Georgia DOT
 Office of Bridge Design
 By: DLW

POLES A&E

2-7915

REV 4-30-18: REMOVED WELD (PR)
 REV 5-10-17: DASH-24 "B" & "C" WERE 17 15/16
 REV 8-25-17: ADDED DASH-22, 23 & 24

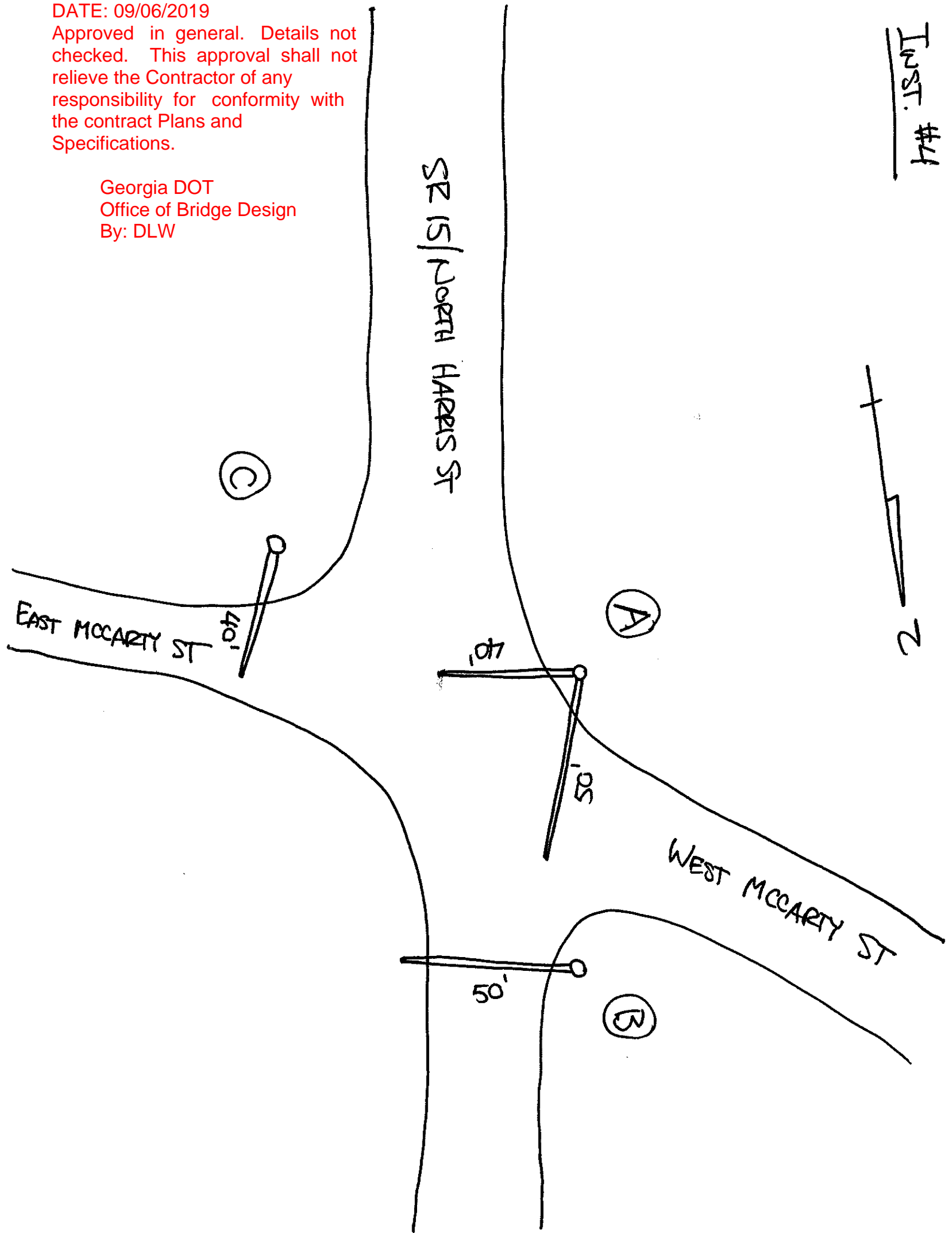
DWN: CHAD G.	TEMPLATE (4) 1 3/4 BOLTS		460B208
DATE: 3-25-02			
CHK:			
SCALE: NTS			

DATE: 09/06/2019

Approved in general. Details not checked. This approval shall not relieve the Contractor of any responsibility for conformity with the contract Plans and Specifications.

Georgia DOT
Office of Bridge Design
By: DLW

Inst. #44



DATE: 09/06/2019

Approved in general. Details not checked. This approval shall not relieve the Contractor of any responsibility for conformity with the contract Plans and Specifications.

Georgia DOT
Office of Bridge Design
By: DLW

LIST #5

