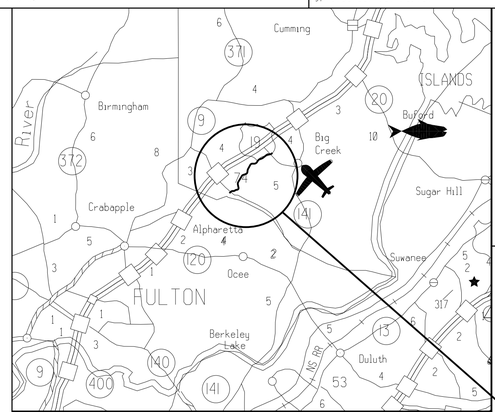
FORSYTH COUNTY ENGINEERING DEPARTMENT

PLAN AND PROFILE OF PROPOSED
RONALD REAGAN BOULEVARD EXTENSION
FROM MCFARLAND PARKWAY TO MAJORS ROAD

FORSYTH COUNTY



LOCATION SKETCH

SPEED DESIGN: 40/45 MPH

PROJECT LOCATION

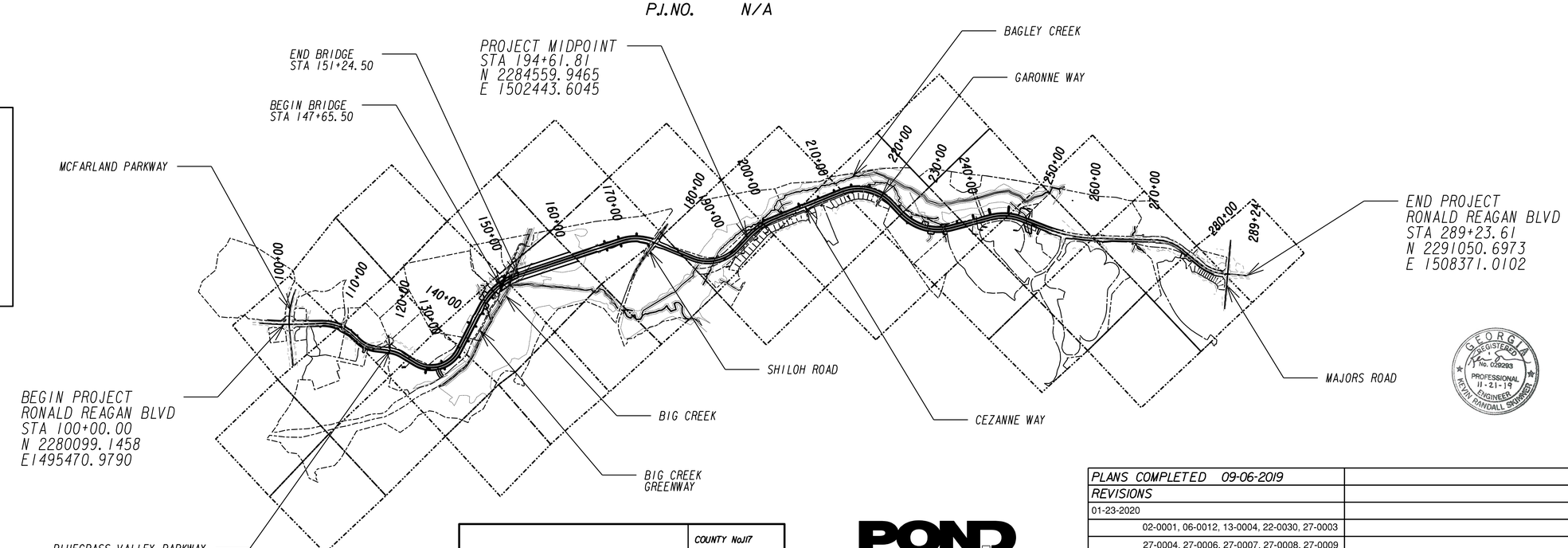
FEDERAL ROUTE * N/A
STATE ROUTE * N/A
P.I.NO. N/A

FUNCTIONAL CLASS:
URBAN MINOR ARTERIAL

THIS PROJECT IS 100% IN FORSYTH COUNTY AND IS 100% IN CONG.DIST.NO.7.

PROJECT DESIGNATION:
DESIGNED IN ENGLISH UNITS.

THIS PROJECT HAS BEEN PREPARED USING THE HORIZONTAL GEORGIA COORDINATE SYSTEM OF 1984 (NAD 1983)/94 WEST ZONE, AND THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.



LENGTH OF PROJECT	COUNTY No.117 Project No. N/A
	MILES
NET LENGTH OF ROADWAY	3.516
NET LENGTH OF BRIDGES	0.068
NET LENGTH OF PROJECT	3.584
NET LENGTH OF EXCEPTIONS	0.000
GROSS LENGTH OF PROJECT	3.584

POND
Architects ▪ Engineers ▪ Planners

SCALE IN FEET
0 1000 2000 4000

GEORGIA REGISTERED No. 029293 PROFESSIONAL ENGINEER 11-21-19 KEVIN RANDALL SKINNER

PLANS COMPLETED 09-06-2019	
REVISIONS	
01-23-2020	
02-0001, 06-0012, 13-0004, 22-0030, 27-0003	
27-0004, 27-0006, 27-0007, 27-0008, 27-0009	
27-0010, 27-0011, 27-0012, 27-0013, 27-0014	
27-0015, 27-0016, 27-0017	

DRAWING No.
01-0001

THE DATA, TOGETHER WITH ALL OTHER INFORMATION SHOWN ON THESE PLANS OR IN ANYWAY INDICATED THEREBY, WHETHER BY DRAWINGS OR NOTES, OR IN ANY OTHER MANNER, ARE BASED UPON FIELD INVESTIGATIONS AND ARE BELIEVED TO BE INDICATIVE OF ACTUAL CONDITIONS. HOWEVER, THE SAME ARE SHOWN AS INFORMATION ONLY, ARE NOT GUARANTEED, AND DO NOT BIND FORSYTH COUNTY IN ANY WAY. THE ATTENTION OF BIDDER IS SPECIFICALLY DIRECTED TO SUBSECTIONS 102.04, 102.05, AND 104.03 OF THE LATEST GDOT SPECIFICATIONS.

DRAWING NO.	DESCRIPTION	
1 - 0001	COVER SHEET	
2 - 0001	INDEX SHEETS	
3 - 0001	REVISION SUMMARY	
4 - 0001-0004	GENERAL NOTES	
5 - 0001-0007	TYPICAL SECTIONS	
6 - 0001-0012	SUMMARY OF QUANTITIES	
7 - 0001	QUANTITIES (AMENDMENT)	
11 - 0001-0002	CONSTRUCTION LAYOUT	
13 - 0001-0014	MAINLINE ROADWAY	
15 - 0001-0013	MAINLINE PROFILE	
16 - 0001-0002	CROSSROAD PROFILE	
17 - 0001-0002	DRIVEWAY PROFILES	
21 - 0001-0004	DRAINAGE AREA MAP	
22 - 0001-0032	DRAINAGE PROFILES	
23 - 0001-0115	CROSS SECTIONS	
24 - 0000-0014	UTILITY PLANS	
26 - 0001-0015	SIGNING AND MARKING PLANS	
27 - 0001-0017	SIGNAL PLANS	
31 - 0001-0005	RETAINING WALL ENVELOPES	
35 - 0001-0034	BRIDGE PLANS	
38 - 0001	SPECIAL CONSTRUCTION PLANS	
44 - 0001-0022	WATER AND SEWER RELOCATION PLANS	
50 - 0001	EROSION COVER SHEET	
51 - 0001-0005	ESPC GENERAL NOTES SHEET	
52 - 0001-0007	EROSION CONT. LEGEND	
53 - 0001-0004	ESPCP DRAINAGE AREA MAP	
54 - 0001-0042	BMP LOCATION DETAILS	
55 - 0001	EC WATERSHED MAP-SITE MONITORING	
	GEORGIA STANDARDS	DATE PUBLISHED
1011A	BRICK MANHOLES	10/81
1011AP	PRECAST REINFORCED CONCRETE MANHOLE	06/75
1019A	DROP INLETS	08/99
1019AP	PRECAST DROP INLETS	08/99
1030D1	CONCRETE & METAL PIPE CULVERTS SHT 1 OF 3	09/01
1030D2	CONCRETE & METAL PIPE CULVERTS SHT 2 OF 3	09/01
1030D3	CONCRETE & METAL PIPE CULVERTS SHT 3 OF 3	09/01
1033D	CATCH BASINS (FOR USE WITH 6" OR 8" HT. CURB AND GUTTER)	08/82
1033DP	PRECAST CATCH BASINS (FOR USE WITH 6" OR 8" HT. PRECAST CURB AND GUTTER)	09/82
1033G	CATCH BASINS - (FOR USE WITH 6" MOUNTABLE CURB & GUTTER)	12/85
1033GP	PRECAST CATCH BASINS (FOR USE WITH 6" MOUNTABLE PRECAST CURB & GUTTER)	12/85
1034D	CATCH BASINS - (FOR USE WITH 6" OR 8" CURB & GUTTER IN SAGS OR LOW POINTS)	08/82
1034DP	PRECAST CATCH BASINS (FOR USE WITH 6" OR 8" CURB & PRECAST GUTTER IN SAGS OR LOW POINTS)	09/82
1034G	CATCH BASINS - FOR USE WITH CURB (6" MOUNTABLE) AND GUTTER (IN SAGS OR LOW POINTS)	12/85
1034GP	PRECAST CATCH BASINS - FOR USE WITH CURB (6" MOUNTABLE) & GUTTER (IN SAGS OR LOW POINTS)	12/85
1040	CIRCULAR BASE UNITS AND RISERS FOR CATCH BASINS AND DROP INLETS	11/99
1120	FLARED END SECTIONS FOR PIPES	06/06
1125	INLET HEADWALL - OUTLET HEADWALL	10/99
1401	PAVEMENT PATCHING DETAILS (STORM DRAIN OR UTILITY INSTALLATIONS BY OPEN CUT ACROSS EXISTING PAVEMENT)	08/99
2401-2-D	REINFORCED CONCRETE SINGLE BOX CULVERT 6'X3' AND 6'X4' (SHEET 2-D OF 3)	09/17
2402-2-D	REINFORCED CONCRETE DOUBLE BOX CULVERT 6'X3' AND 6'X4' (SHEET 2-D OF 3)	09/17
2402-2-M	REINFORCED CONCRETE DOUBLE BOX CULVERT 10'X5', 10'X6', 10'X7', 10'X8' (SHEET 2-M OF 3)	09/17
2402-2-N	REINFORCED CONCRETE DOUBLE BOX CULVERT 10'X9', 10'X10', 10'X11', 10'X12' (SHEET 2-N OF 3)	09/17
3054	END POST AND END POST GUARDRAIL ATTACHMENT DETAILS	09/02
3901	BAR BENDING DETAILS	08/69
4000W	GUARDRAIL WARRANT GUIDES	01/16
4360	REFLECTORIZED GUARDRAIL WASHERS AND ANCHORAGE NOSE STRIPING	10/14
4380	"W" BEAM GUARDRAIL 31 IN GUARDRAIL HEIGHT	01/16
4381	POST AND OFFSET BLOCKS FOR "W" AND "T" BEAM GUARDRAIL 31 INCH GUARDRAIL HEIGHT	01/16
4382	GUARDRAIL CONNECTION AT BRIDGE END OR AT CONCRETE BARRIER END FOR 31 INCH HIGH GUARDRAIL	01/16

DRAWING NO.	DESCRIPTION	
4383	GUARDRAIL ANCHORAGE TYPE 1 31 INCH GUARDRAIL HEIGHT	08/11
4384	TYPE 12 31 INCH GUARDRAIL HEIGHT	01/16
4385	"T" BEAM GUARDRAIL CONNECTION TO 31 INCH HEIGHT "W" BEAM	08/11
4386	GUARDRAIL LOCATIONS IN MEDIANS GUARDRAIL LOCATIONS AT TURNOUTS 31 INCH GUARDRAIL HEIGHT	01/16
4387	GUARDRAIL LOCATION DETAILS FOR MULTI-LANE DIVIDED HIGHWAYS AND ROADS (WITH SHOULDERS	01/16
	ADJACENT TO THE ROADWAY) 31 INCH GUARDRAIL HEIGHT	
4391	GUARDRAIL LOCATION (ON ROADS WITH CURB & GUTTER, HEADER CURB, OR INTEGRAL CURB) 31 INCH	01/16
	GUARDRAIL HEIGHT	
4948B	CONCRETE SIDE BARRIER TYPES 2, 2A, 2B, AND 2C	01/07
4960	CONCRETE BARRIER - TEMPORARY (END TREATMENT OPTIONS)	05/07
4961	DETAILS OF PRECAST TEMPORARY BARRIER	08/85
4962	TEMPORARY TRAFFIC IMPACT ATTENUATOR - SAND LOADED MODULES	05/99
9003	FEDERAL AID AND STATE PROJECT MARKERS; RIGHT OF WAY MARKERS; COUNTY LINE MARKER	04/06
9017R	REINFORCED CONCRETE APPROACH SLAB WITH ASPHALT INLAY- 30 FT LENGTH\	09/02
	(TYPICAL USE: WHERE SHOULDER IS ADJACENT TO ROADWAY AND/OR BRIDGE)	
9029B	PERFORATED UNDERDRAIN	08/83
9031L	GRAVITY WALL TYPICAL SECTIONS, RAISING HEADWALL, AND TYPICAL PIPE PLUG	09/16
9031L2	GSE9031L2	06/98
9031N	CHAIN-LINK WIRE FENCE	08/85
9031S	MEDIAN DROP INLET (PRECAST OR BUILT-IN-PLACE) AND CONCRETE APRON	04/96
9031U	JUNCTION BOXES (PRECAST OR BUILT-IN-PLACE) PIPE COLLARS, PIPE ELBOW AND PIPE	07/85
	CURVED ALIGNMENT	
9032B	CONCRETE CURB AND BUTTER, CONCRETE CURBS, CONCRETE MEDIANS	11/11
9037	TYPICAL FILL DETAIL AT END OF BRIDGE	09/99
9039	PERMANENT TIMBER TYPE BARRICADE	03/06
9100	TRAFFIC CONTROL GENERAL NOTES, STANDARD LEGEND, AND MISCELLANEOUS DETAILS	03/06
9102	TRAFFIC CONTROL DETAIL FOR LANE CLOSURE ON TWO-LANE HIGHWAY	03/06
		DATE PUBLISHED
	CONSTRUCTION DETAILS	
A1	DRIVEWAYS WITH TAPERED ENTRANCES CONCRETE VALLEY GUTTERS	07/11
A2	CONCRETE VALLEY GUTTER AT STREET INTERSECTION 6	07/11
A3	CONCRETE SIDEWALK DETAILS CURB CUT (WHEELCHAIR) RAMPS	09/16
A4	DETECTABLE WARNING SURFACE TRUNCATED DOME SIZE, SPACING AND ALIGNMENT REQUIREMENTS	06/09
D19	TEMPORARY PIPE SLOPE DRAIN WITH DRAIN INLET	02/00
D20	SILT CONTROL GATES FOR STRUCTURES TYPE - 1, 2, AND 3	04/16
D24A	TEMPORARY SILT FENCE (SHEET 1 OF 4)	01/11
D24B	TEMPORARY SILT FENCE BERM DITCH, INSTALLATION, BRUSH BARRIER (SHEET 2 OF 4)	01/11
D24C	TEMPORARY SILT FENCE J-HOOKS, INLET SEDIMENT TRAPS (SHEET 3 OF 4)	01/11
D24D	TEMPORARY SILT FENCE FABRIC CHECK DAMS (SHEET 4 OF 4)	07/15
D41	CONSTRUCTION EXIT	04/16
D42	INLET SEDIMENT TRAPS	05/08
D43	ROCK FILTER DAM	04/16
D55A	RIPRAP OUTLET PROTECTION (SHEET 1 OF 2)	04/16
D55B	RIPRAP OUTLET PROTECTION (SHEET 2 OF 2)	04/16
N1A	FOUNDATION AND POST DETAILS	04/14
N1B	FOUNDATION AND POST DETAILS	04/15
P7	PAVEMENT EDGE TREATMENT ASPHALT AND CONCRETE PAVEMENT	11/11
PRW-1	SPECIAL DETAIL PARAPET RETAINING WALL, TYPE P1, P2, AND P3	12/17
T02	DETAILS FOR TYPICAL FRAMING	03/00
T03A	TYPE 7, 8, AND 9 SQUARE TUBE POST INSTALLATION DETAIL	07/02
T03B	DETAILS OF SQUARE TUBE POST (BREAKAWAY SUPPORT)	07/02
T05C	DETAILS OF WARNING SIGNS	01/00
T11A	DETAILS OF PAVEMENT MARKING PLACEMENT ON NON-LIMITED ACCESS ROADWAY	09/16
T12A	DEATILS OF PAVEMENT MARKING ARROW LOCATION	01/00
T12B	DETAILS OF PAVEMENT MARKINGS - ARROWS	04/00
T14	DETAILS OF PAVEMENT MARKING HATCHING	11/08
T15C	DETAILS OF RAISED PAVEMENT MARKERS	09/11
T22B	DETAILS FOR BRIDGE DELINEATION ON DIVIDED HIGHWAY TWO WAY OPERATION	09/06

FORSYTH COUNTY
ENGINEERING DEPARTMENT

POND
Architects ▪ Engineers ▪ Planners

REVISION DATES
01-23-2020

INDEX

RONALD REAGAN BLVD EXTENSION

CHECKED: DATE:
BACKCHECKED: DATE:
CORRECTED: DATE:
VERIFIED: DATE:

DRAWING No.
02-0001

DATE	DRAWING NO.	REVISION
01-23-2020	02-0001	ADD 7-0001 QUANTITIES (AMENDMENT) SHEET
01-23-2020	06-0012	REVISED TWO SPECIAL DESIGN CULVERTS TO STANDARD DETAIL CULVERTS, REVISED NECESSARY QUANTITIES.
01-23-2020	13-0004	REVISED CULVERT DIMENSION AT STA 143+65
01-23-2020	22-0030	REVISED CULVERT DIMENSION AT STA 143+65
01-23-2020	27-0003	ADDED PROPOSED STRAIN POLE FOR UTILITY REFERENCING
01-23-2020	27-0004	REVISED FORMAT OF CALLOUTS
01-23-2020	27-0006, 27-0007, 27-0008,	REVISED SIGNAL CONFIGURATION FROM SPAN WIRE TO MAST ARM
	27-0009, 27-0010, 27-0011,	
	27-0012, 27-0013, 27-0014,	
	27-0015, 27-0016, 27-0017	

DATE	DRAWING NO.	REVISION

FORSYTH COUNTY
ENGINEERING DEPARTMENT

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REVISION DATES

REVISION SUMMARY

RONALD REAGAN BLVD EXTENSION

CHECKED:		DATE:	
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CORRECTED:		DATE:	
VERIFIED:		DATE:	

DRAWING No.
03-0001

SUMMARY OF QUANTITIES

REINFORCED CONCRETE BRIDGE CULVERTS

STATION	BARRELS	SKEW	LENGTH	SIZE	GA. STD. FOR WINGWALLS AND PARAPETS	DESIGN FOR BARREL	CHANNEL EXCAV.	FOUND. BACKFILL MATERIAL	CLASS "AA" CONCRETE CU YDS.		BAR REINF. STEEL LBS.		CONCRETE APRONS STD. 2332		CONCRETE VEINS D-48	
													CLASS "A" CONCRETE	BAR REINF. STEEL	CLASS "A" CONCRETE	BAR REINF. STEEL
			LIN FT.	FTXFT			CU YDS.	CU YDS.	BARREL	WW&PAR	BARREL	WW&PAR	CU YDS.	LBS.	CU YDS.	LBS.
143+65	DOUBLE	50	185	10x9	2402-2-N	2402-2-N		174	596	15.7	58738	2128				
230+50	DOUBLE	48	155	6x3	2402-2-D	2402-2-D		94	160	7.3	20801	1292				
233+48	SINGLE	79	131	6x3	2401-2-D	2401-2-D		45	71	2.7	11122	610				
247+72	DOUBLE	42	431	10x6	2402-2-M	2402-2-M		426	1932	16.4	219121	2255				

SPECIAL DESIGN CULVERTS

186+72	DOUBLE 72x11 ARCH	62° SKEW	184 LF	1 LS

EQUALIZATION PIPES

STATION	SIZE	LENGTH	FOUND. BACKFILL MATERIAL	OUTLET HEADWALLS GA STD. 1125 CLASS "A" CONC. INCL. REINFORCED STEEL
153+00	DOUBLE 48 INCH	130 LF	58 CY	18 CY

THERMOPLASTIC TRAFFIC STRIPE

DESCRIPTION	UNIT	QUANTITY THERMOPLASTIC
5" SOLID WHITE	LIN FT	46262
8" SOLID WHITE	LIN FT	20173
5" SKIP WHITE	GROSS LIN FT	36562
24" SOLID WHITE	LIN FT	1596
5" SOLID YELLOW	LIN FT	35597

ARROWS (EACH)

DESCRIPTION	QUANTITY THERMOPLASTIC
TYPE 2	40
TYPE 6	33
TYPE 7	6
TYPE 1	4

THERMOPLASTIC TRAFFIC STRIPE, YELLOW (SY)

138 SY

THERMOPLASTIC TRAFFIC STRIPE, WHITE (SY)

277 SY

RAISED PAVEMENT MARKERS TP 1

200 EA

RAISED PAVEMENT MARKERS TP 3

1300 EA

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ENGINEERING DEPARTMENT

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REVISION DATES
01-23-2020

SUMMARY QUANTITIES
RONALD REAGAN BLVD EXTENSION

CHECKED: DATE:
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CORRECTED: DATE:
VERIFIED: DATE:

DRAWING No.
06-0012

QUANTITIES REQUIRED BY AMENDMENT

DATE	ITEM NO.	AMENDMENT DATE	AMENDMENT NUMBER	DESCRIPTION	UNIT	ORIGINAL QUANTITY	REQUIRED BY AMENDMENT QUANTITY
01-23-2020	500-3002	01-23-2020	1	CLASS AA CONCRETE ADDED FOR CULVERTS, CLASS A CONCRETE REMOVED	CY	0	2802
01-23-2020	511-3002	01-23-2020	1	BAR REINFORCING STEEL QUANTITY REVISED	LB	30683	316067
01-23-2020	207-0203	01-23-2020	1	FOUNDATION BACKFILL MATERIAL QUANTITY REVISED FOR CULVERTS	CY	998	1585
01-23-2020	615-1100	01-23-2020	1	DIRECTIONAL BORE, 3 IN, REVISED FOR MAST ARM CONFIGURATION	LF	225	235
01-23-2020	615-1100	01-23-2020	1	DIRECTIONAL BORE, 7 IN, ADDED FOR MAST ARM CONFIGURATION	LF	0	1410
01-23-2020	639-2002	01-23-2020	1	SPAN WIRE STRAND CABLE REVISED FOR MAST ARM CONFIGURATION	LF	1345	95
01-23-2020	639-3004	01-23-2020	1	MAST ARM, 40', ADDED FOR MAST ARM CONFIGURATION	EA	0	1
01-23-2020	639-3004	01-23-2020	1	MAST ARM, 45', ADDED FOR MAST ARM CONFIGURATION	EA	0	1
01-23-2020	639-3004	01-23-2020	1	MAST ARM, 50', ADDED FOR MAST ARM CONFIGURATION	EA	0	1
01-23-2020	639-3004	01-23-2020	1	MAST ARM, 55', ADDED FOR MAST ARM CONFIGURATION	EA	0	4
01-23-2020	639-3004	01-23-2020	1	MAST ARM, 60', ADDED FOR MAST ARM CONFIGURATION	EA	0	5
01-23-2020	639-3004	01-23-2020	1	MAST ARM, 65', ADDED FOR MAST ARM CONFIGURATION	EA	0	4
01-23-2020	639-5000	01-23-2020	1	PRESTRESSED CONCRETE STRAIN POLE REVISED FOR MAST ARM CONFIGURATION	EA	13	1
01-23-2020	682-6233	01-23-2020	1	CONDUIT REVISED FOR MAST ARM CONFIGURATION	EA	680	5730

FORSYTH COUNTY
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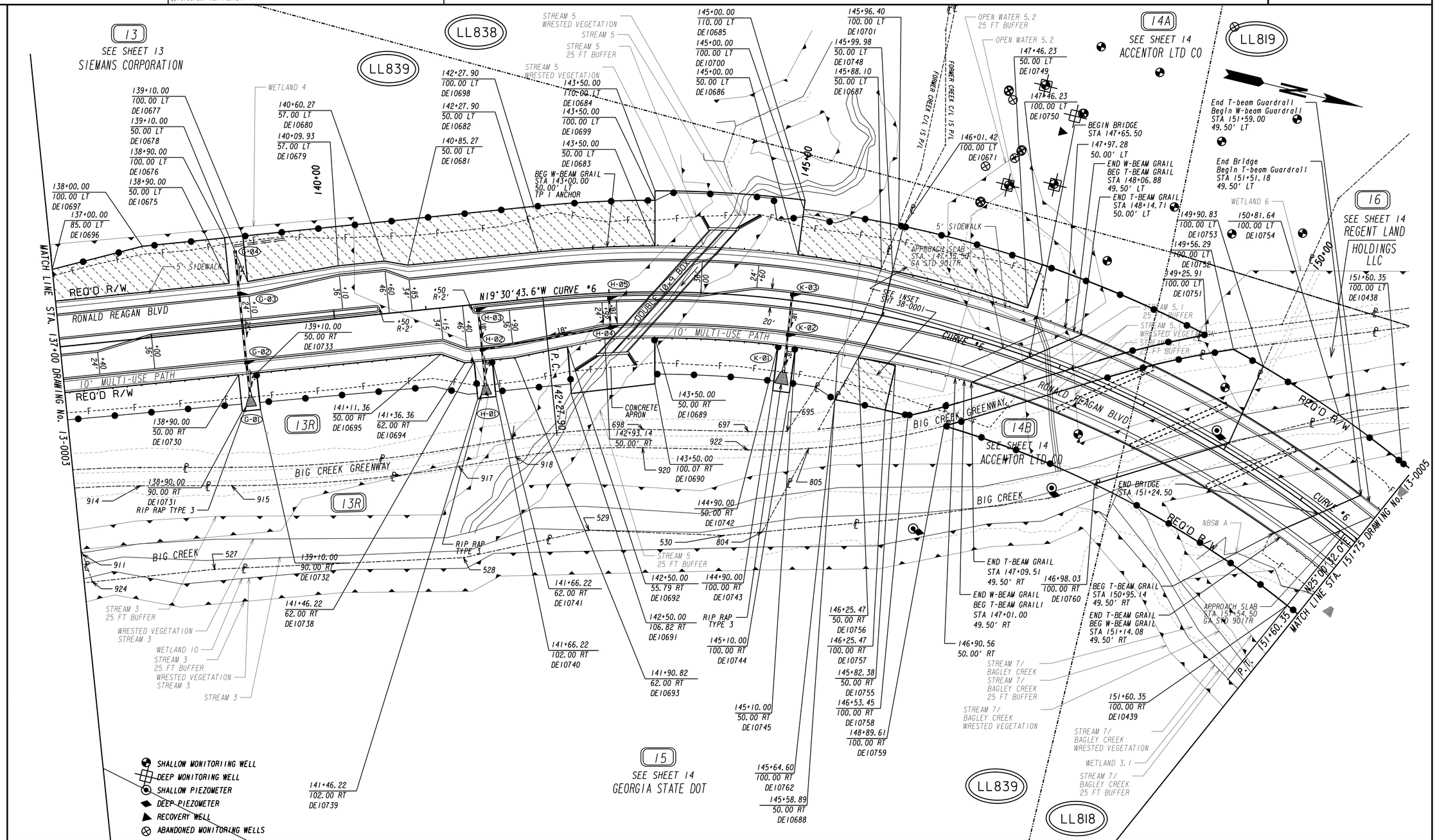
REVISION DATES

QUANTITIES (AMENDMENT)
RONALD REAGAN BLVD EXTENSION

CHECKED:		DATE:	
BACKCHECKED:		DATE:	
CORRECTED:		DATE:	
VERIFIED:		DATE:	

DRAWING No.
07-0001



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

FORSYTH COUNTY
ENGINEERING DEPARTMENT

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SCALE IN FEET
0 50 100 200

REVISION DATES
01-23-2020

CONSTRUCTION PLAN
RONALD REAGAN BLVD EXTENSION

CHECKED:		DATE:		DRAWING No.
BACKCHECKED:		DATE:		13-0004
CORRECTED:		DATE:		
VERIFIED:		DATE:		

10/23/2015 GPLN

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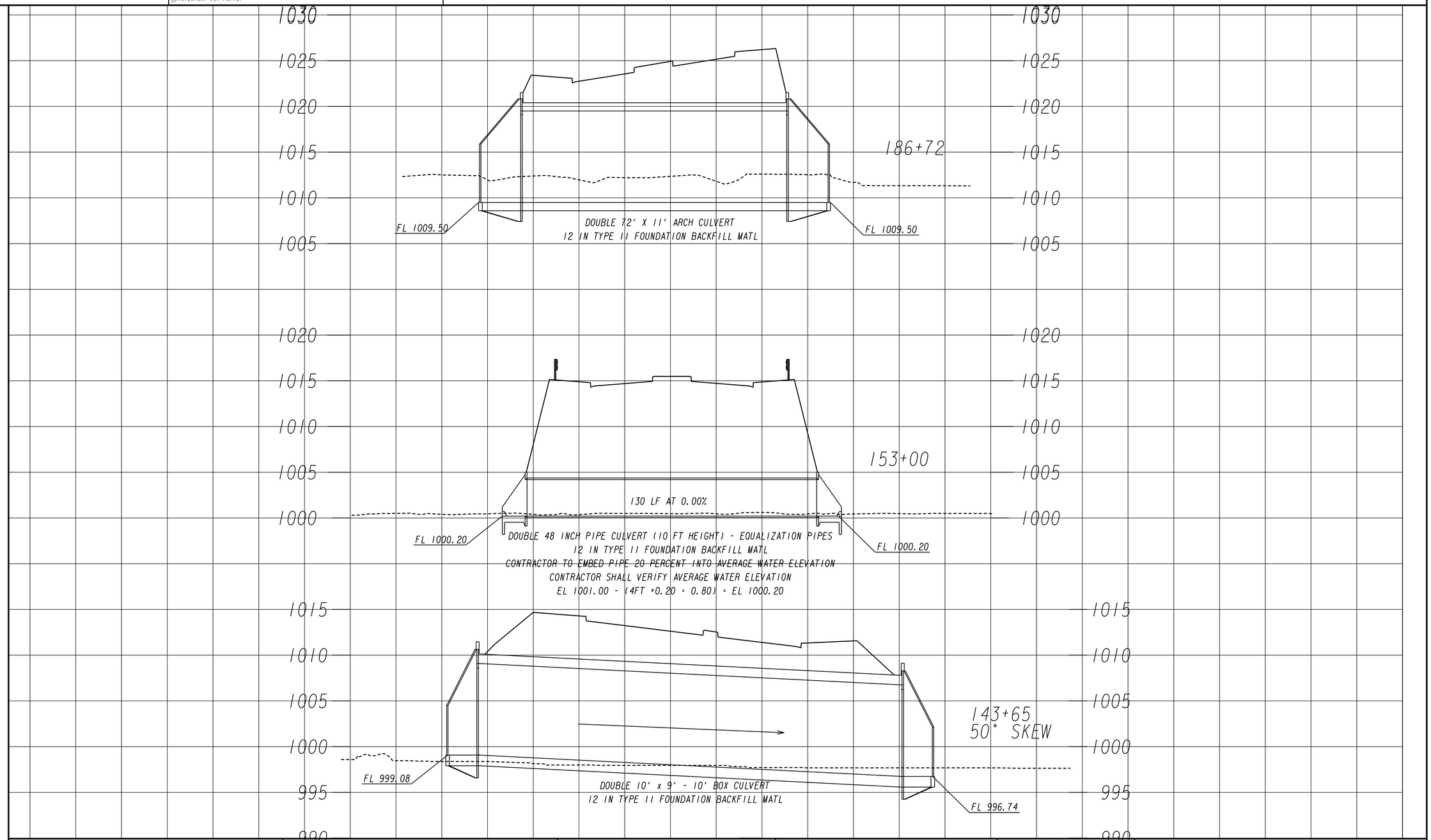

FORSYTH COUNTY
ENGINEERING DEPARTMENT

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SCALE 1 inch ▪ 5 feet Vert.
SCALE 1 inch ▪ 20 feet Horz.

REVISION DATES
01-23-2020

DRAINAGE PROFILES
RONALD REAGAN BLVD EXTENSION

CHECKED:		DATE:	
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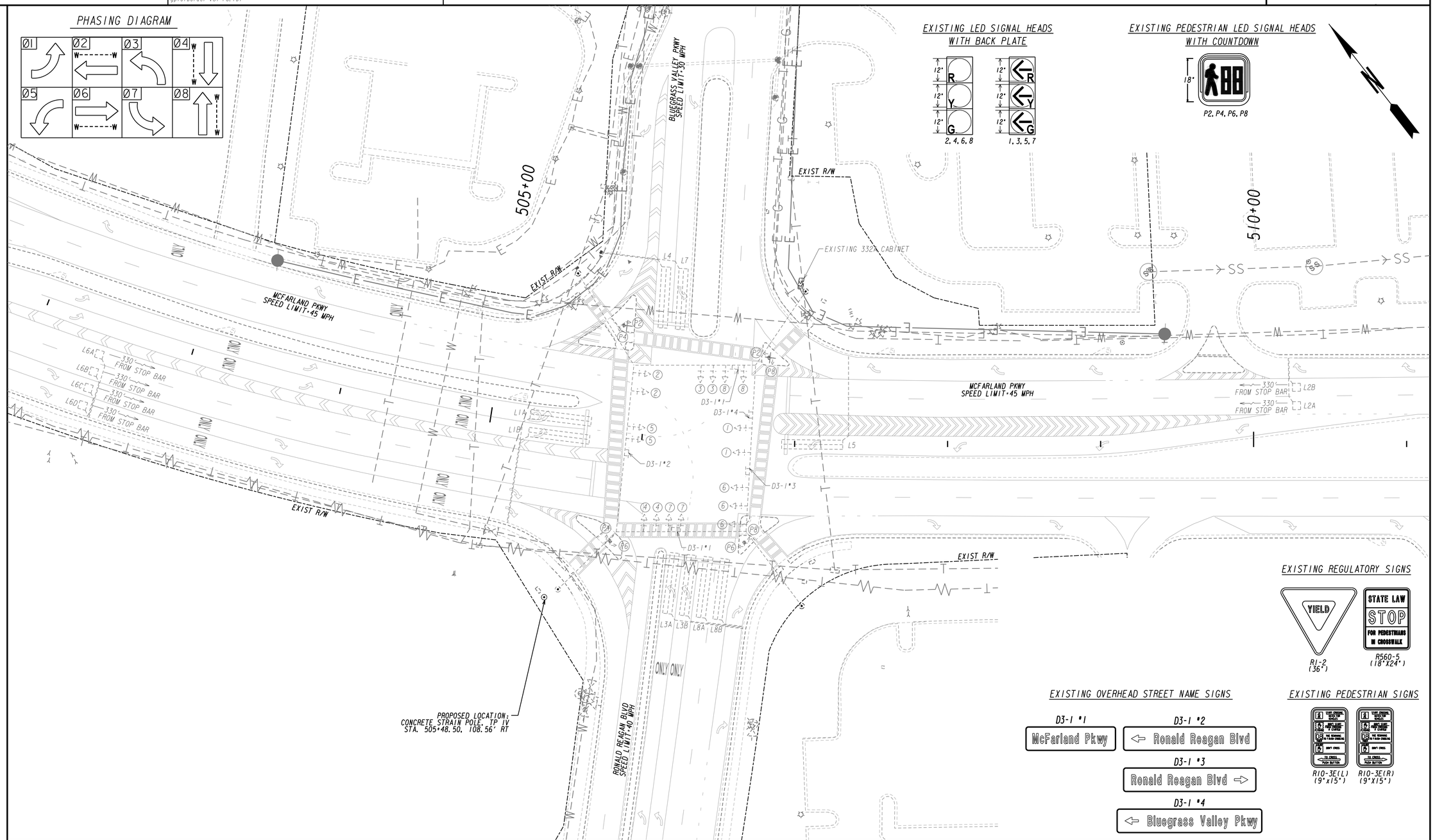
VERIFIED:		DATE:	

DRAWING No.
22-0030

10/23/2015 GPLN



SIGNAL LEGEND

- PROPOSED SIGNAL HEAD
- PROPOSED 4-SECTION SIGNAL HEAD
- EXISTING SIGNAL HEAD
- PROPOSED 5-SECTION OR 4-SECTION SIGNAL HEAD
- RELOCATED SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD

DETECTION LEGEND

- PROPOSED VIRTUAL DETECTION ZONE
- PROPOSED INDUCTIVE LOOP
- PROPOSED VIDEO DETECTION CAMERA
- PROPOSED MAGNETOMETER
- PROPOSED RADAR

FORSYTH COUNTY
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SCALE IN FEET
0 30 60 120

REVISION DATES
01/23/2020

SIGNAL PLANS

EXISTING CONDITIONS

RONALD REAGAN BLVD AT MCFARLAND PKWY

CHECKED:		DATE:		DRAWING No.
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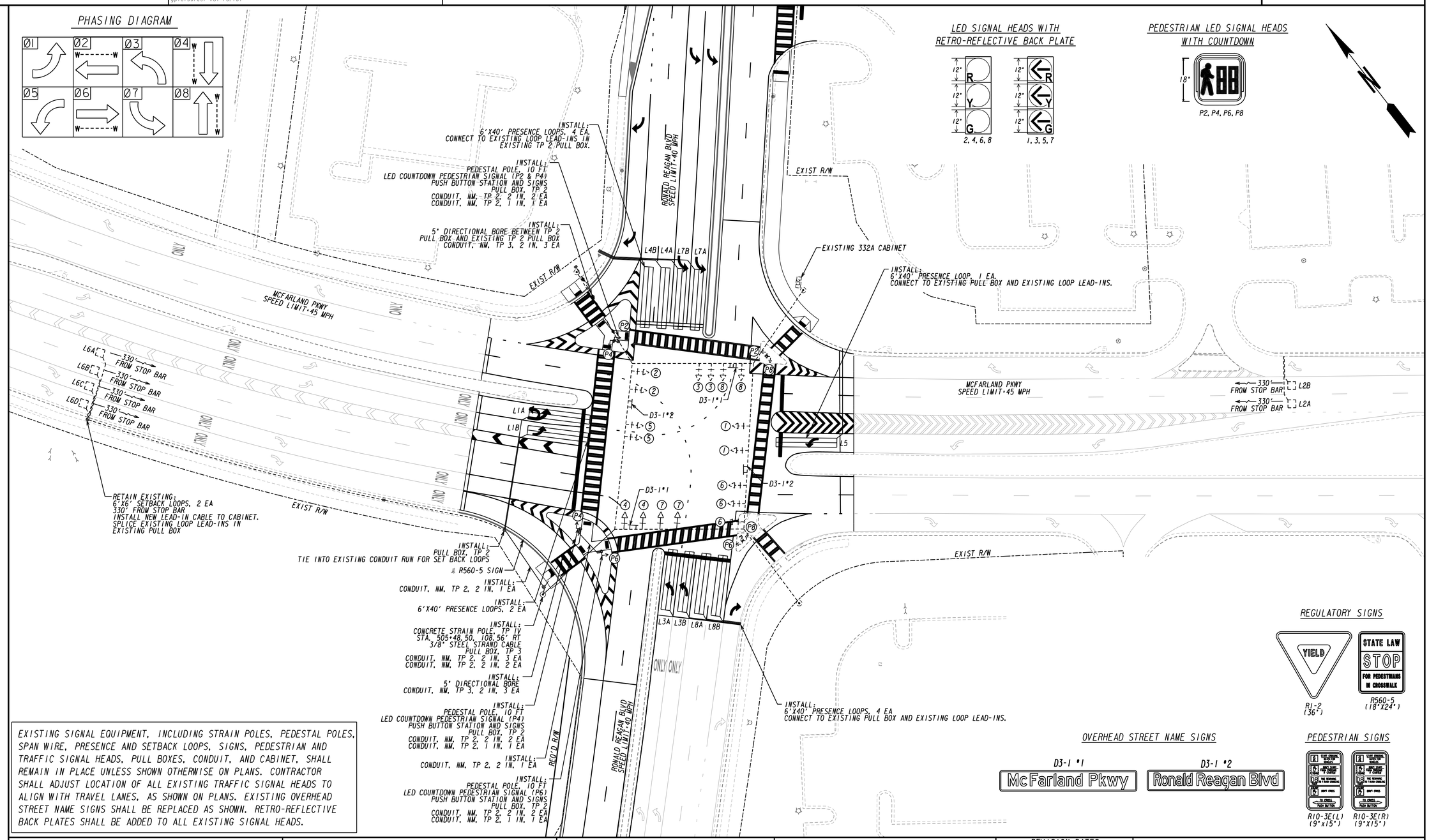
10/23/2015 GPLN

PHASING DIAGRAM

LED SIGNAL HEADS WITH RETRO-REFLECTIVE BACK PLATE

PEDESTRIAN LED SIGNAL HEADS WITH COUNTDOWN



EXISTING SIGNAL EQUIPMENT, INCLUDING STRAIN POLES, PEDESTAL POLES, SPAN WIRE, PRESENCE AND SETBACK LOOPS, SIGNS, PEDESTRIAN AND TRAFFIC SIGNAL HEADS, PULL BOXES, CONDUIT, AND CABINET, SHALL REMAIN IN PLACE UNLESS SHOWN OTHERWISE ON PLANS. CONTRACTOR SHALL ADJUST LOCATION OF ALL EXISTING TRAFFIC SIGNAL HEADS TO ALIGN WITH TRAVEL LANES, AS SHOWN ON PLANS. EXISTING OVERHEAD STREET NAME SIGNS SHALL BE REPLACED AS SHOWN. RETRO-REFLECTIVE BACK PLATES SHALL BE ADDED TO ALL EXISTING SIGNAL HEADS.

REGULATORY SIGNS

R1-2 (36") R560-5 (18"X24")

OVERHEAD STREET NAME SIGNS

D3-1 *1

D3-1 *2

PEDESTRIAN SIGNS

R10-3E(L) (9"x15") R10-3E(R) (9"x15")

SIGNAL LEGEND

- PROPOSED SIGNAL HEAD
- PROPOSED 4-SECTION SIGNAL HEAD
- EXISTING SIGNAL HEAD
- PROPOSED 5-SECTION OR 4-SECTION SIGNAL HEAD
- RELOCATED SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD

DETECTION LEGEND

- PROPOSED VIRTUAL DETECTION ZONE
- PROPOSED INDUCTIVE LOOP
- PROPOSED VIDEO DETECTION CAMERA
- PROPOSED MAGNETOMETER
- PROPOSED RADAR

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SCALE IN FEET
0 30 60 120

REVISION DATES
01/23/2020

SIGNAL PLANS

TRAFFIC SIGNAL INSTALLATION NO. 1
RONALD REAGAN BLVD AT MCFARLAND PKWY

CHECKED:		DATE:	DRAWING No.
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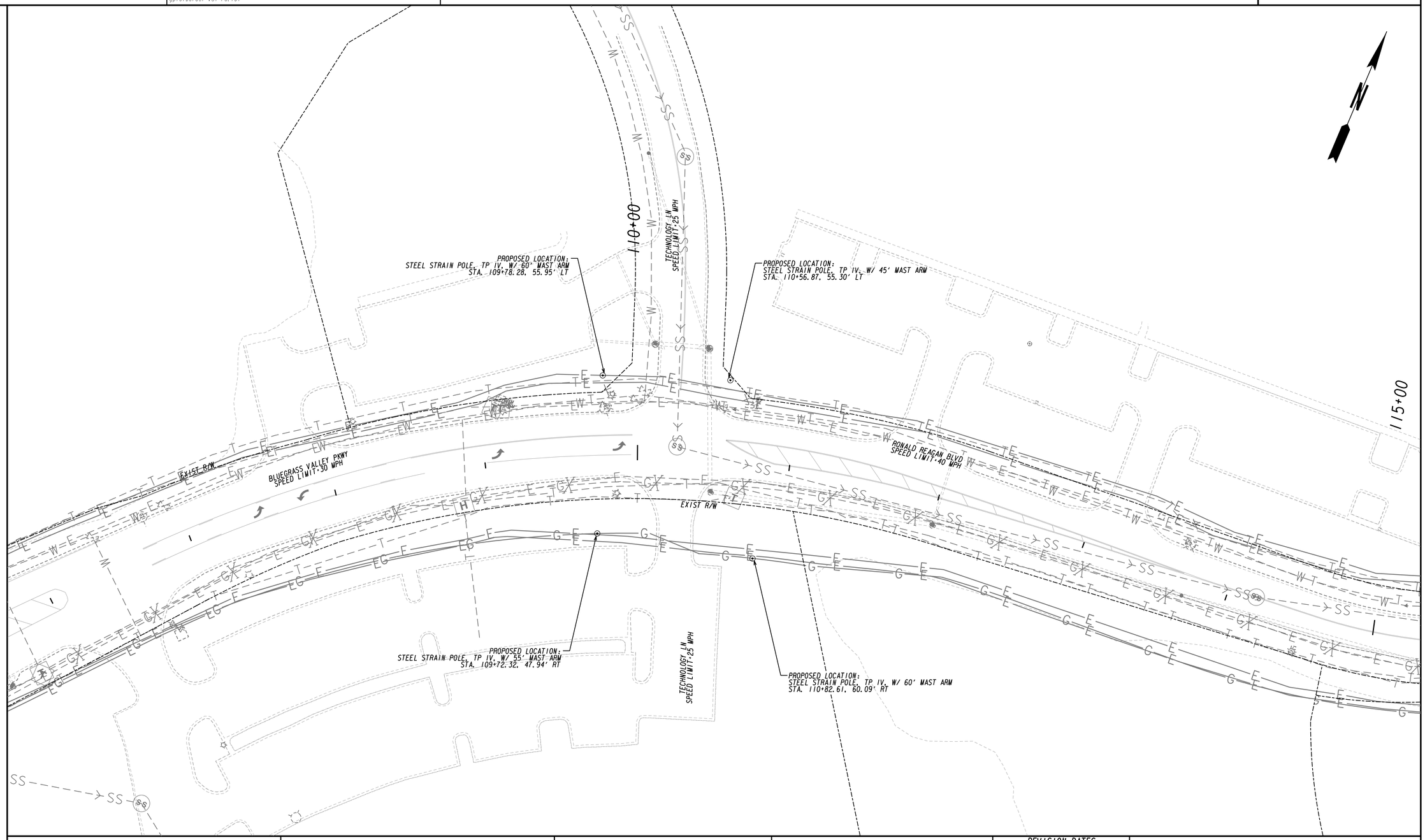


SIGNAL LEGEND

- PROPOSED SIGNAL HEAD
- PROPOSED 4-SECTION SIGNAL HEAD
- EXISTING SIGNAL HEAD
- PROPOSED 5-SECTION OR 4-SECTION SIGNAL HEAD
- RELOCATED SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD

DETECTION LEGEND

- PROPOSED VIRTUAL DETECTION ZONE
- PROPOSED INDUCTIVE LOOP
- PROPOSED VIDEO DETECTION CAMERA
- PROPOSED MAGNETOMETER
- PROPOSED RADAR

FORSYTH COUNTY
ENGINEERING DEPARTMENT

POND

SCALE IN FEET
0 30 60 120

REVISION DATES		
01/23/2020		

SIGNAL PLANS

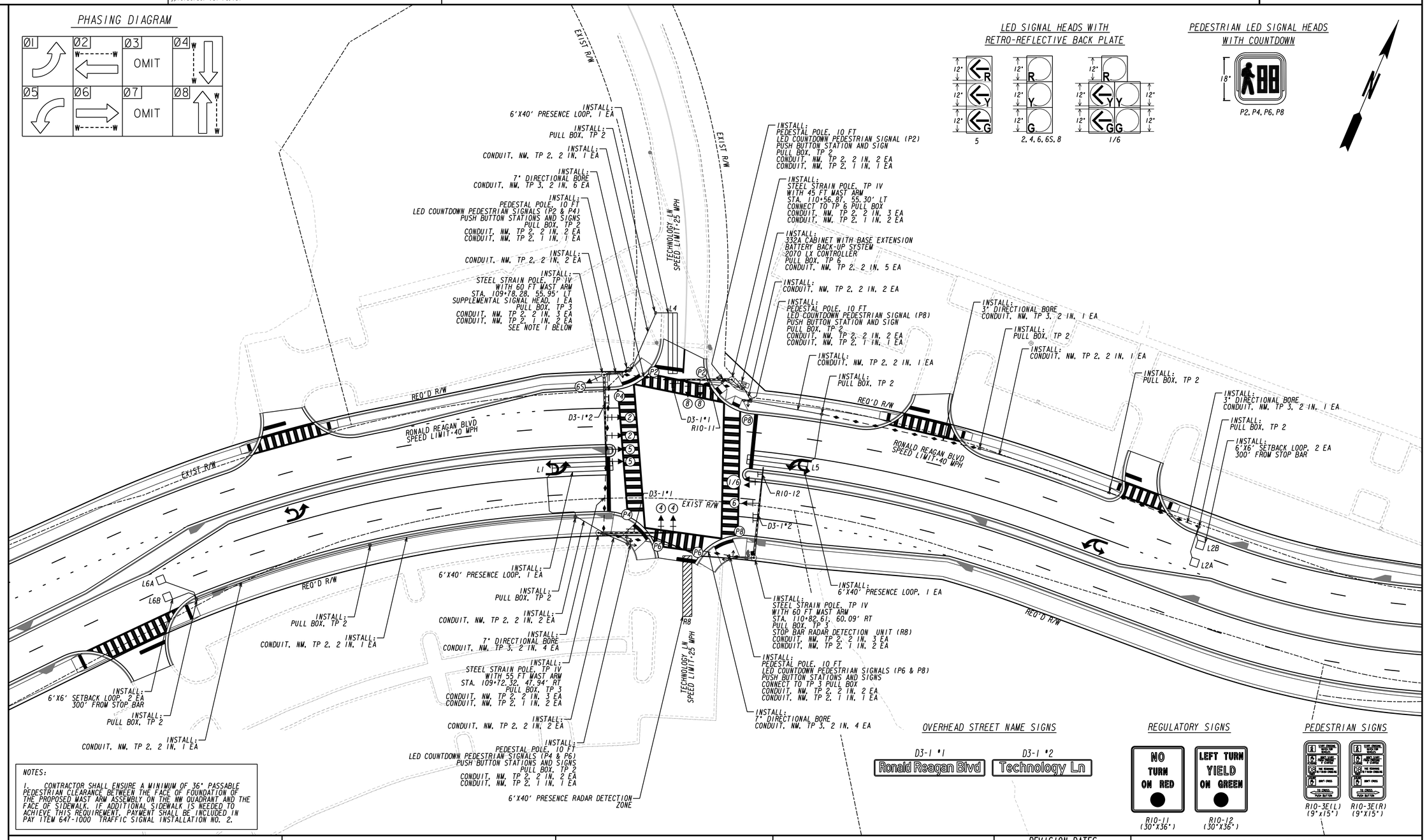
EXISTING CONDITIONS

RONALD REAGAN BLVD AT TECHNOLOGY LN

CHECKED:		DATE:		DRAWING No.
BACKCHECKED:		DATE:		27-0006
CORRECTED:		DATE:		
VERIFIED:		DATE:		

10/23/2015 GPLN

PHASING DIAGRAM



LED SIGNAL HEADS WITH RETRO-REFLECTIVE BACK PLATE

PEDESTRIAN LED SIGNAL HEADS WITH COUNTDOWN

P2, P4, P6, P8

OVERHEAD STREET NAME SIGNS

D3-1 *1 Ronald Reagan Blvd

D3-1 *2 Technology Ln

REGULATORY SIGNS

R10-11 (30"X36") R10-12 (30"X36")

PEDESTRIAN SIGNS

R10-3E(L) (9"x15") R10-3E(R) (9"X15")

NOTES:

1. CONTRACTOR SHALL ENSURE A MINIMUM OF 36" PASSABLE PEDESTRIAN CLEARANCE BETWEEN THE FACE OF FOUNDATION OF THE PROPOSED MAST ARM ASSEMBLY ON THE NW QUADRANT AND THE FACE OF SIDEWALK. IF ADDITIONAL SIDEWALK IS NEEDED TO ACHIEVE THIS REQUIREMENT, PAYMENT SHALL BE INCLUDED IN PAY ITEM 647-1000 TRAFFIC SIGNAL INSTALLATION NO. 2.

SIGNAL LEGEND

- PROPOSED SIGNAL HEAD
- PROPOSED 4-SECTION SIGNAL HEAD
- EXISTING SIGNAL HEAD
- PROPOSED 5-SECTION OR 4-SECTION SIGNAL HEAD
- RELOCATED SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD

DETECTION LEGEND

- PROPOSED VIRTUAL DETECTION ZONE
- PROPOSED INDUCTIVE LOOP
- PROPOSED VIDEO DETECTION CAMERA
- PROPOSED MAGNETOMETER
- PROPOSED RADAR

FORSYTH COUNTY
ENGINEERING DEPARTMENT

POND

SCALE IN FEET
0 30 60 120

REVISION DATES
01/23/2020

SIGNAL PLANS

TRAFFIC SIGNAL INSTALLATION NO. 2
RONALD REAGAN BLVD AT TECHNOLOGY LN

CHECKED:		DATE:		DRAWING No.
BACKCHECKED:		DATE:		27-0007
CORRECTED:		DATE:		
VERIFIED:		DATE:		

LIST OF MATERIALS

LIST OF MATERIALS IS FOR INFORMATION PURPOSES ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL MATERIALS AND QUANTITIES REQUIRED FOR INSTALLATION.

MATERIALS	UNIT	QUANTITY
CABINET CONTROLLER ASSEMBLIES		
A. CONTROLLER UNIT, MODEL 2070LX	EA	1
E. CABINET ASSEMBLY, MODEL 332	EA	1
F. SWITCH PACK (LOAD SWITCH)	EA	10
G. DC ISOLATOR	EA	3
H. LOOP DETECTOR, 2-CHANNEL	EA	5
L. 2010 SIGNAL MONITOR, TYPE B (ETHERNET)	EA	1
BATTERY BACKUP SYSTEM - EXTERNAL MOUNTED (PER GDOT SPEC)	EA	1
332 PREFABRICATED CONTROLLER CABINET BASE W/ BBS EXTENTION	EA	1
PC642-200 (OR EQUIVALENT), SURGE PROTECTOR	EA	1
LOOP/PED LEAD-IN WIRE (SHIELDED, TWISTED/1000 FT)		
A. 3 PAIR 18 AWG	REEL	2
SIGNAL CABLE (14AWG)		
A. 7 CONDUCTOR, PER 1000 FT	REEL	3
B. 10 CONDUCTOR, PER 1000 FT	REEL	1
LOOP DETECTOR WIRE (14 AWG, STRANDED/1000 FT)	REEL	2
3-SECTION, 12" SIGNAL HEAD LED-, YELLOW HOUSING W/BLACK FRONT, PLASTIC	EA	10
5-SECTION, (CLUSTER) 12" SIGNAL HEAD LED-, YELLOW HOUSING W/BLACK FRONT, PLASTIC	EA	1
1-SECTION, 16"X18" LED COUNTDOWN PEDESTRIAN SIGNAL HEAD, FULL HAND/MAN OVERLAP (9" HIGH NUMBER & 12" SYMBOLS)	EA	8
PEDESTRIAN PUSH BUTTON STATIONS, W/ BUTTONS AND SIGNS: 9"X15", R10-3E, (L)EFT OR (R)IGHT, COUNTDONW		
1. 9"X15", R10-3EL, COUNTDOWN	EA	4
2. 9"X15", R10-3ER, COUNTDOWN	EA	4
BACKPLATE FOR ONE-WAY, 3 SECTION, 12" SIGNAL HEAD, ABS PLASTIC, BLACK W/ RETROREFLECTIVE STRIP	EA	10
BACKPLATE FOR ONE-WAY, 5 SECTION, (CLUSTER) 12" SIGNAL HEAD, ABS PLASTIC, BLACK W/ RETROREFLECTIVE STRIP	EA	1
HARDWARE FOR MAST ARM MOUNTING	EA	10
HARDWARE FOR SIDE-OF-POLE MOUNTING, ONE-WAY BRACKET ASSEMBLY - STEEL POLE (3-SECTION SIGNAL HEAD)	EA	1
HARDWARE FOR PEDESTAL POLE, TOP POST MOUNTING, ONE-WAY BRACKET ASSEMBLY	EA	2
HARDWARE FOR PEDESTAL POLE, TOP POST MOUNTING, TWO-WAY BRACKET ASSEMBLY	EA	3
10' PEDESTAL POLE & SQUARE BASE	EA	5
PULL BOX, PB-2	EA	12
PULL BOX, PB-3	EA	3
PULL BOX, PB-6	EA	1
LOOP SAW CUT	LF	910
CONDUIT, 1"	LF	115
CONDUIT, 2"	LF	740
R10-11, NO TURN ON RED SIGN	EA	1
R10-12, LEFT TURN YIELD ON GREEN SIGN	EA	1
MISC. MATL. TO COMPLETE INSTALLATION	LUMP	LUMP

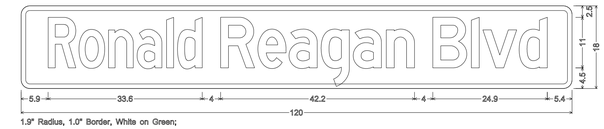
PAY ITEMS

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
647-1000	TRAFFIC SIGNAL INSTALLATION NO. 2	LUMP SUM	LUMP SUM
615-1100	DIRECTIONAL BORE PIPE - 3 IN.	LF	180
615-1100	DIRECTIONAL BORE PIPE - 7 IN.	LF	315
636-1041	HIGHWAY SIGNS, TP 2 MATL, REFL SHEETING, TP 9	SF	57
639-3004	STEEL STRAIN POLE, TP IV, W/ 45' MAST ARM	EA	1
639-3004	STEEL STRAIN POLE, TP IV, W/ 55' MAST ARM	EA	1
639-3004	STEEL STRAIN POLE, TP IV, W/ 60' MAST ARM	EA	2
682-6233	CONDUIT, NONMETAL, TP 3, 2 IN	LF	1500
682-8525	ELECTRICAL POWER SERVICE ASSEMBLY (UNDERGROUND SERVICE POINT)	EA	1
937-6000	MICROWAVE RADAR DETECTION ASSEMBLY	EA	1
937-8020	TESTING - MICROWAVE DETECTION SYSTEM	LUMP SUM	LUMP SUM
937-8520	TRAINING - MICROWAVE DETECTION SYSTEM	LUMP SUM	LUMP SUM

RONALD REAGAN BLVD AT TECHNOLOGY LN

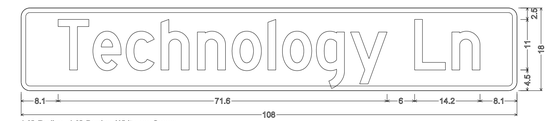
D3-1 OVERHEAD STREET NAME SIGN DETAILS

D3-1 #1



1.9" Radius, 1.0" Border, White on Green;
"Ronald" C " Reagan Blvd" D 30% spacing;

D3-1 #2



1.9" Radius, 1.0" Border, White on Green;
"Technology Ln" D 50% spacing;

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	TBA	TBA	DC	DC	DC
	CARD	2-CH	2-CH				2-CH						DC 150	DC 150	DC 150
CHANNEL 1	C1 PIN	56	39	63	47	58	41	65	49	60		80	67	68	81
	FUNCTION	L1	L2A				L4						Ø2 PED	Ø6 PED	FLASH SENSE
	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

CHANNEL 2	C1 PIN	56	43	76	47	58	45	78	49	62		53	69	70	82
	FUNCTION		L2B										Ø4 PED	Ø8 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	TBA	TBA	DC	DC	DC
	CARD	2-CH	2-CH												
CHANNEL 1	C1 PIN	55	40	64	48	57	42	66	50	59		54	71	72	51
	FUNCTION	L5	L6A				R8								
	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

CHANNEL 2	C1 PIN	55	44	77	48	57	46	79	50	61		75	73	74	52
	FUNCTION		L6B												
	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

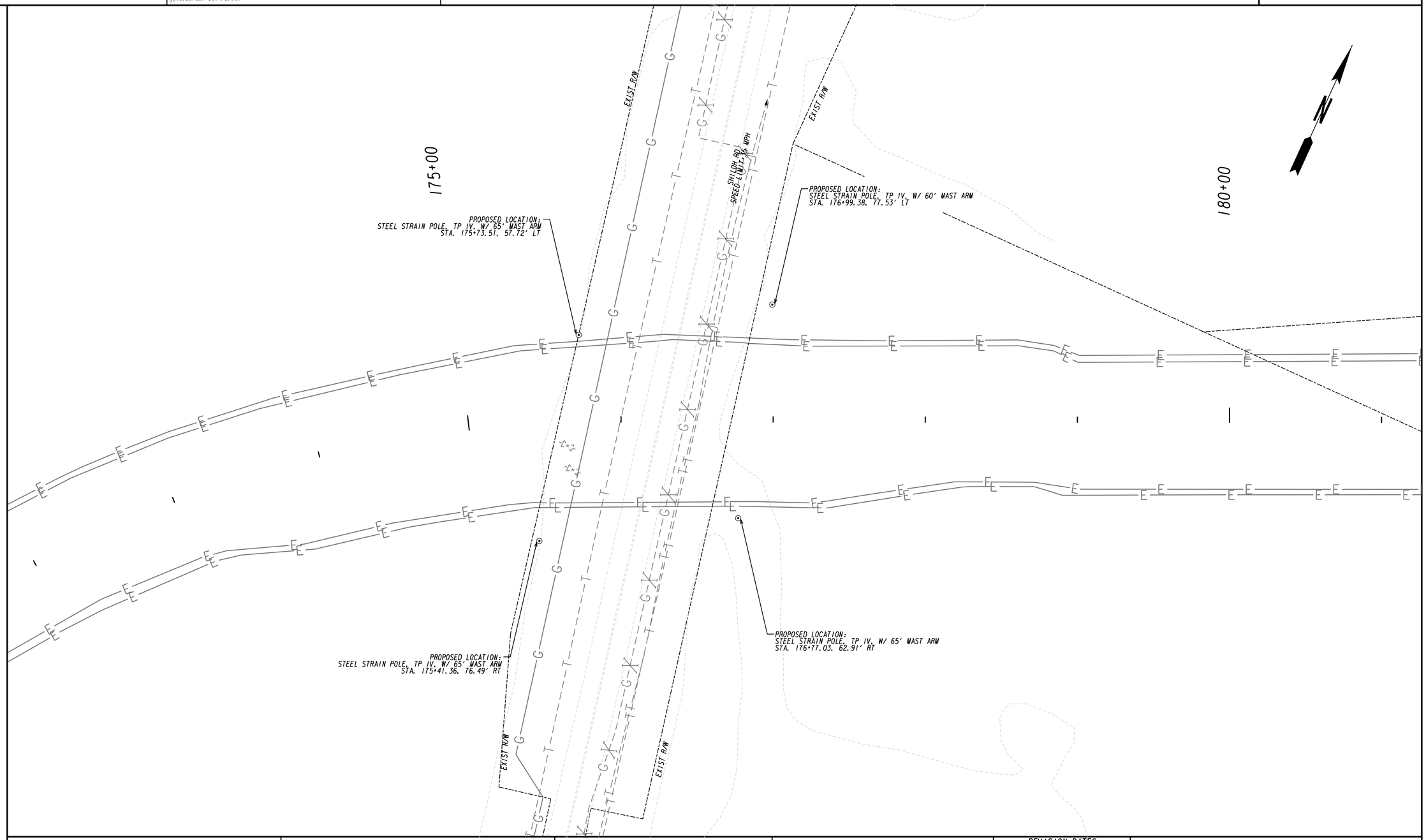
FORSYTH COUNTY
ENGINEERING DEPARTMENT

POND

REVISION DATES		
01/23/2020		

SIGNAL PLANS
RONALD REAGAN BLVD EXTENSION
SUMMARY OF QUANTITIES

CHECKED:		DATE:		DRAWING No.
BACKCHECKED:		DATE:		27-0008
CORRECTED:		DATE:		
VERIFIED:		DATE:		



SIGNAL LEGEND		DETECTION LEGEND	
PROPOSED SIGNAL HEAD	PROPOSED 4-SECTION SIGNAL HEAD	PROPOSED VIRTUAL DETECTION ZONE	
EXISTING SIGNAL HEAD	PROPOSED 5-SECTION OR 4-SECTION SIGNAL HEAD	PROPOSED INDUCTIVE LOOP	
RELOCATED SIGNAL HEAD	PEDESTRIAN SIGNAL HEAD	PROPOSED VIDEO DETECTION CAMERA	
		PROPOSED MAGNETOMETER	PROPOSED RADAR

FORSYTH COUNTY
ENGINEERING DEPARTMENT

POND

SCALE IN FEET
0 30 60 120

REVISION DATES		
01/23/2020		

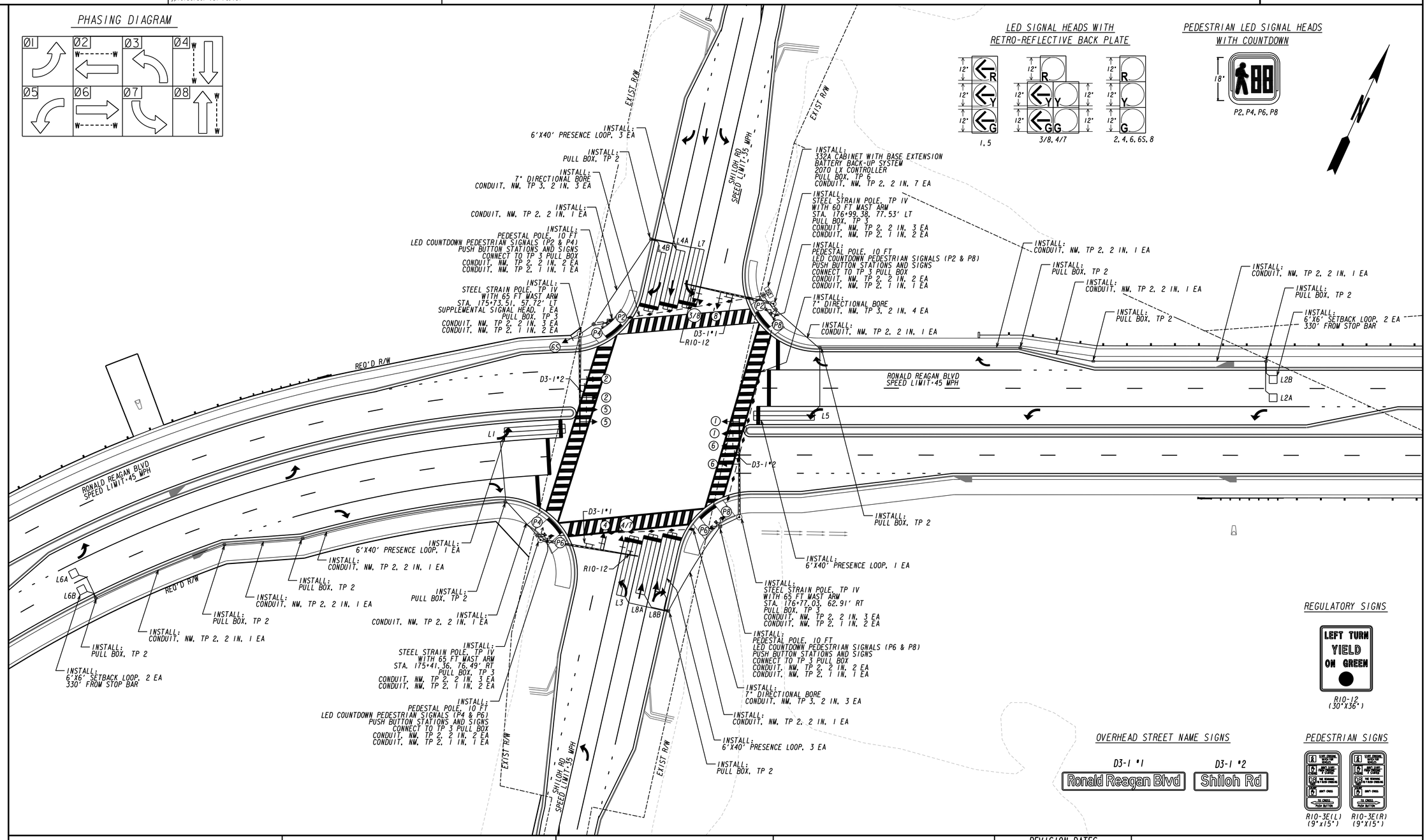
SIGNAL PLANS

EXISTING CONDITIONS

RONALD REAGAN BLVD AT SHILOH RD

CHECKED:		DATE:		DRAWING No.
BACKCHECKED:		DATE:		27-0009
CORRECTED:		DATE:		
VERIFIED:		DATE:		

PHASING DIAGRAM



SIGNAL LEGEND

- PROPOSED SIGNAL HEAD
- PROPOSED 4-SECTION SIGNAL HEAD
- EXISTING SIGNAL HEAD
- PROPOSED 5-SECTION OR 4-SECTION SIGNAL HEAD
- RELOCATED SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD

DETECTION LEGEND

- PROPOSED VIRTUAL DETECTION ZONE
- PROPOSED INDUCTIVE LOOP
- PROPOSED VIDEO DETECTION CAMERA
- PROPOSED MAGNETOMETER
- PROPOSED RADAR

FORSYTH COUNTY
ENGINEERING DEPARTMENT

POND

SCALE IN FEET
0 30 60 120

REVISION DATES
01/23/2020

SIGNAL PLANS

TRAFFIC SIGNAL INSTALLATION NO. 3
RONALD REAGAN BLVD AT SHILOH RD

CHECKED:		DATE:	DRAWING No.
BACKCHECKED:		DATE:	27-0010
CORRECTED:		DATE:	
VERIFIED:		DATE:	

LIST OF MATERIALS

LIST OF MATERIALS IS FOR INFORMATION PURPOSES ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL MATERIALS AND QUANTITIES REQUIRED FOR INSTALLATION.

MATERIALS	UNIT	QUANTITY
CABINET CONTROLLER ASSEMBLIES		
A. CONTROLLER UNIT, MODEL 2070LX	EA	1
E. CABINET ASSEMBLY, MODEL 332	EA	1
F. SWITCH PACK (LOAD SWITCH)	EA	12
G. DC ISOLATOR	EA	3
H. LOOP DETECTOR, 2-CHANNEL	EA	8
L. 2010 SIGNAL MONITOR, TYPE B (ETHERNET)	EA	1
BATTERY BACKUP SYSTEM - EXTERNAL MOUNTED (PER GDOT SPEC)	EA	1
332 PREFABRICATED CONTROLLER CABINET BASE W/ BBS EXTENTION	EA	1
PC642-200 (OR EQUIVALENT), SURGE PROTECTOR	EA	1
LOOP/PED LEAD-IN WIRE (SHIELDED, TWISTED/1000 FT)		
A. 3 PAIR 18 AWG	REEL	3
SIGNAL CABLE (14AWG)		
A. 7 CONDUCTOR, PER 1000 FT	REEL	3
B. 10 CONDUCTOR, PER 1000 FT	REEL	1
LOOP DETECTOR WIRE (14 AWG, STRANDED/1000 FT)	REEL	4
3-SECTION, 12" SIGNAL HEAD LED-, YELLOW HOUSING W/BLACK FRONT, PLASTIC	EA	11
5-SECTION, (CLUSTER) 12" SIGNAL HEAD LED-, YELLOW HOUSING W/BLACK FRONT, PLASTIC	EA	2
1-SECTION, 16"X18" LED COUNTDOWN PEDESTRIAN SIGNAL HEAD, FULL HAND/MAN OVERLAP (9" HIGH NUMBER & 12" SYMBOLS)	EA	8
PEDESTRIAN PUSH BUTTON STATIONS, W/ BUTTONS AND SIGNS: 9"X15", R10-3E, (L)EFT OR (R)IGHT, COUNTDONW		
1. 9"X15", R10-3EL, COUNTDOWN	EA	4
2. 9"X15", R10-3ER, COUNTDOWN	EA	4
BACKPLATE FOR ONE-WAY, 3 SECTION, 12" SIGNAL HEAD, ABS PLASTIC, BLACK W/ RETROREFLECTIVE STRIP	EA	11
BACKPLATE FOR ONE-WAY, 5 SECTION, (CLUSTER) 12" SIGNAL HEAD, ABS PLASTIC, BLACK W/ RETROREFLECTIVE STRIP	EA	2
HARDWARE FOR MAST ARM MOUNTING	EA	12
HARDWARE FOR SIDE-OF-POLE MOUNTING, ONE-WAY BRACKET ASSEMBLY - STEEL POLE (3-SECTION SIGNAL HEAD)	EA	1
HARDWARE FOR PEDESTAL POLE, TOP POST MOUNTING, TWO-WAY BRACKET ASSEMBLY	EA	4
10' PEDESTAL POLE & SQUARE BASE	EA	4
PULL BOX, PB-2	EA	10
PULL BOX, PB-3	EA	4
PULL BOX, PB-6	EA	1
LOOP SAW CUT	LF	1900
CONDUIT, 1"	LF	125
CONDUIT, 2"	LF	975
R10-12, LEFT TURN YIELD ON GREEN SIGN	EA	2
MISC. MATL. TO COMPLETE INSTALLATION	LUMP	LUMP

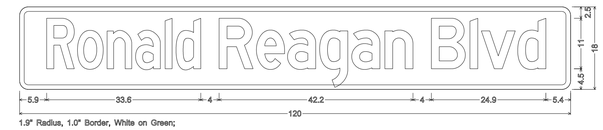
PAY ITEMS

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
647-1000	TRAFFIC SIGNAL INSTALLATION NO. 3	LUMP SUM	LUMP SUM
615-1100	DIRECTIONAL BORE PIPE - 7 IN.	LF	415
636-1041	HIGHWAY SIGNS, TP 2 MATL, REFL SHEETING, TP 9	SF	48
639-3004	STEEL STRAIN POLE, TP IV, W/ 60' MAST ARM	EA	1
639-3004	STEEL STRAIN POLE, TP IV, W/ 65' MAST ARM	EA	3
682-6233	CONDUIT, NONMETAL, TP 3, 2 IN	LF	1400
682-8525	ELECTRICAL POWER SERVICE ASSEMBLY (UNDERGROUND SERVICE POINT)	EA	1

RONALD REAGAN BLVD AT SHILOH RD

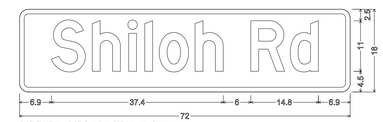
D3-1 OVERHEAD STREET NAME SIGN DETAILS

D3-1 #1



1.9" Radius, 1.0" Border, White on Green;
"Ronald" C " Reagan Blvd" D 30% spacing;

D3-1 #2



1.9" Radius, 1.0" Border, White on Green;
"Shiloh Rd" D 50% spacing;

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	TBA	TBA	DC	DC	DC
	CARD	2-CH	2-CH			2-CH	2-CH						DC 150	DC 150	DC 150
CHANNEL 1	CI PIN	56	39	63	47	58	41	65	49	60		80	67	68	81
	FUNCTION	L1	L2A			L3	L4A						Ø2 PED	Ø6 PED	FLASH SENSE
	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

CHANNEL 2	CI PIN	56	43	76	47	58	45	78	49	62		53	69	70	82
	FUNCTION		L2B				L4B						Ø4 PED	Ø8 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	TBA	TBA	DC	DC	DC
	CARD	2-CH	2-CH			2-CH	2-CH								
CHANNEL 1	CI PIN	55	40	64	48	57	42	66	50	59		54	71	72	51
	FUNCTION	L5	L6A			L7	L8A								
	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

CHANNEL 2	CI PIN	55	44	77	48	57	46	79	50	61		75	73	74	52
	FUNCTION		L6B				L8B								
	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

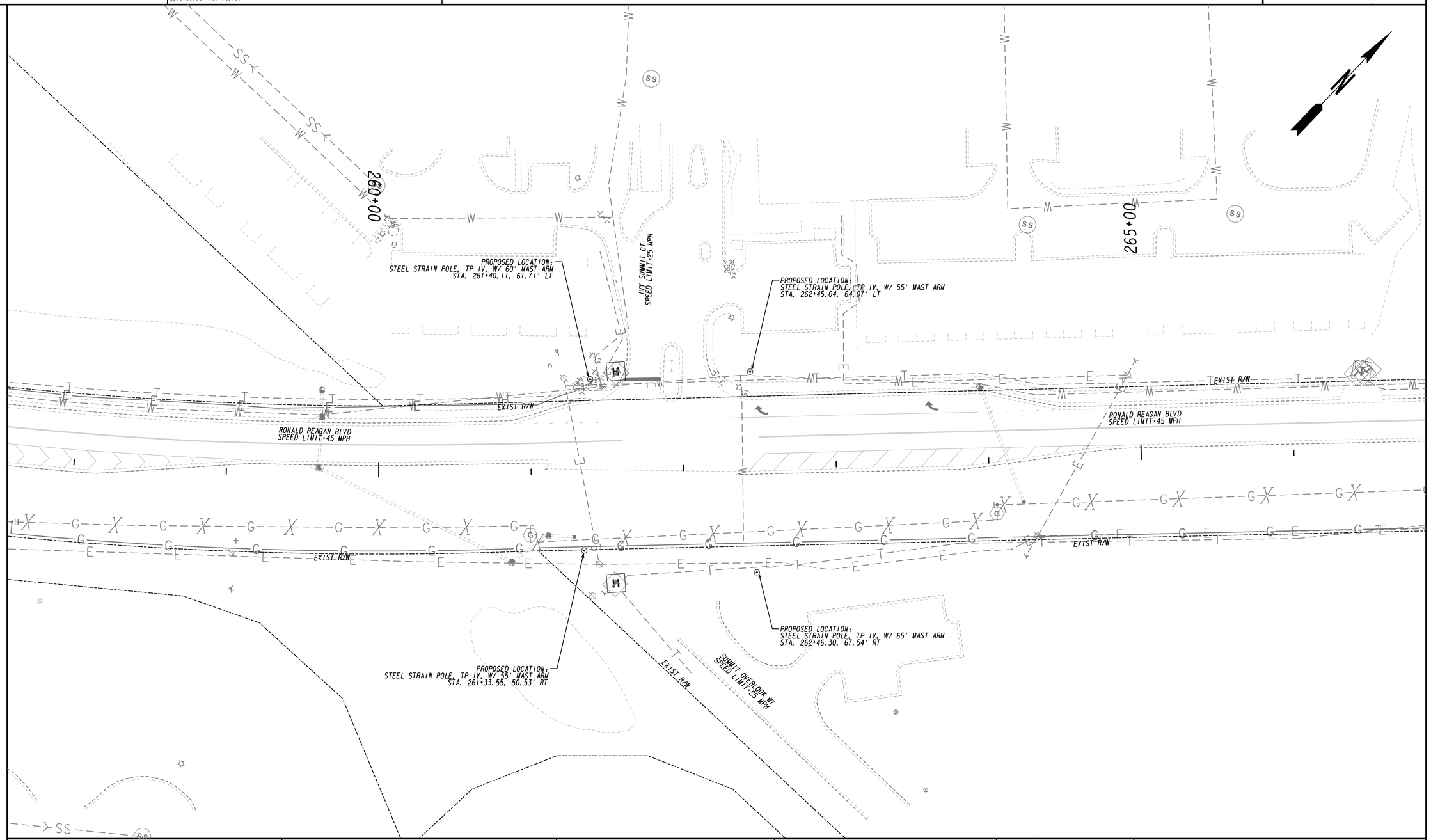
FORSYTH COUNTY
ENGINEERING DEPARTMENT

POND

REVISION DATES		
01/23/2020		

SIGNAL PLANS
RONALD REAGEN BLVD EXTENSION
SUMMARY OF QUANTITIES

CHECKED:		DATE:		DRAWING No.
BACKCHECKED:		DATE:		27-0011
CORRECTED:		DATE:		
VERIFIED:		DATE:		



SIGNAL LEGEND

- PROPOSED SIGNAL HEAD
- PROPOSED 4-SECTION SIGNAL HEAD
- EXISTING SIGNAL HEAD
- PROPOSED 5-SECTION OR 4-SECTION SIGNAL HEAD
- RELOCATED SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD

DETECTION LEGEND

- PROPOSED VIRTUAL DETECTION ZONE
- PROPOSED INDUCTIVE LOOP
- PROPOSED VIDEO DETECTION CAMERA
- PROPOSED MAGNETOMETER
- PROPOSED RADAR

FORSYTH COUNTY
ENGINEERING DEPARTMENT

POND

SCALE IN FEET
0 30 60 120

REVISION DATES		
01/23/2020		

SIGNAL PLANS

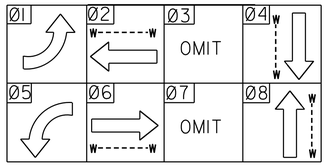
EXISTING CONDITIONS

RONALD REAGAN BLVD AT IVY SUMMIT CT/SUMMIT OVERLOOK WY

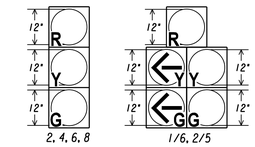
CHECKED:		DATE:		DRAWING No.
BACKCHECKED:		DATE:		27-0012
CORRECTED:		DATE:		
VERIFIED:		DATE:		

10/23/2015 GPLN

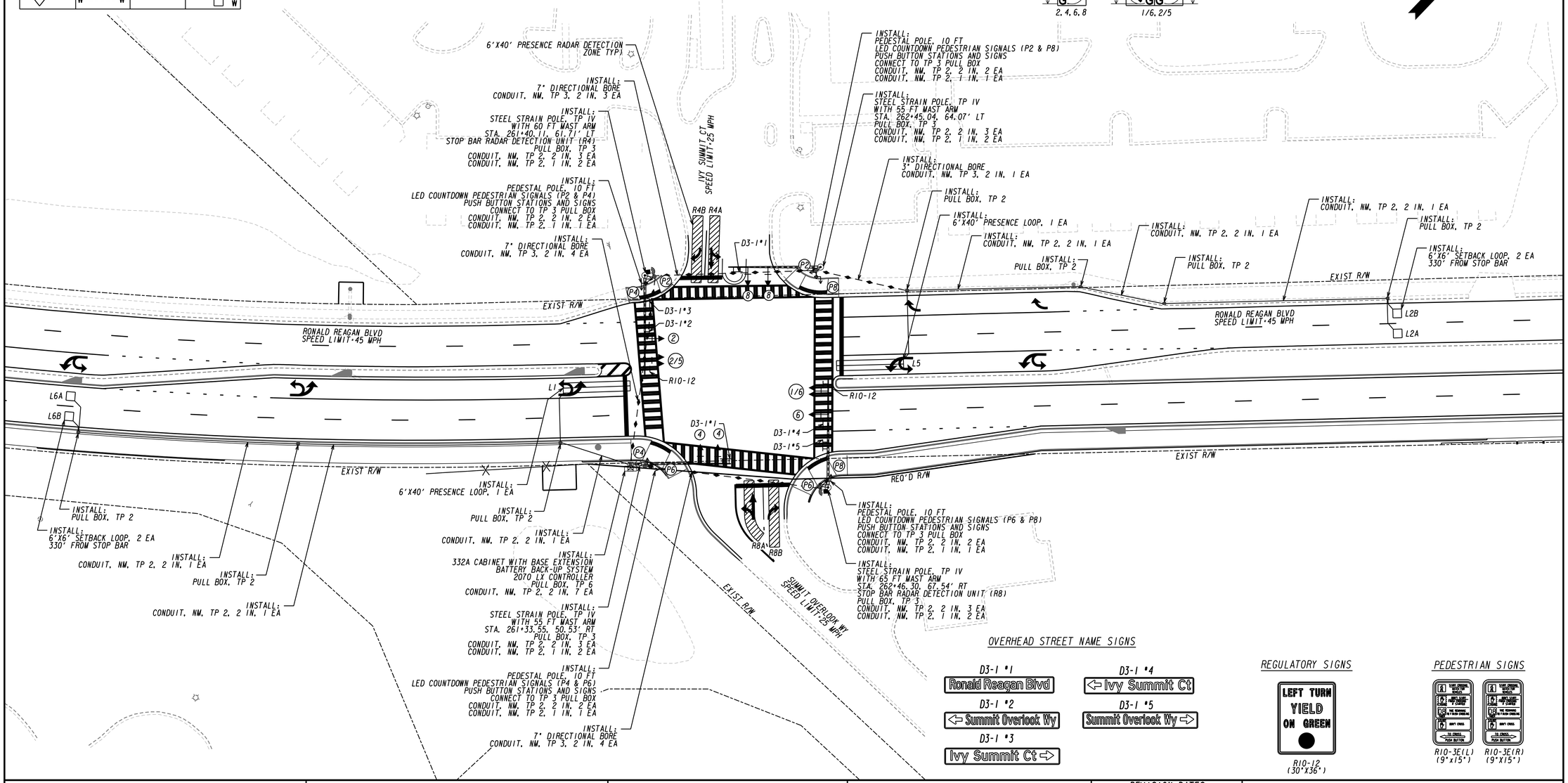
PHASING DIAGRAM



LED SIGNAL HEADS WITH RETRO-REFLECTIVE BACK PLATE



PEDESTRIAN LED SIGNAL HEADS WITH COUNTDOWN



OVERHEAD STREET NAME SIGNS

D3-1 *1 Ronald Reagan Blvd
D3-1 *2 ⇦ Summit Overlook Wy
D3-1 *3 Ivy Summit Ct ⇨
D3-1 *4 ⇦ Ivy Summit Ct
D3-1 *5 Summit Overlook Wy ⇨

REGULATORY SIGNS

R10-12 (30"X36")

PEDESTRIAN SIGNS

R10-3E(L) (9"x15") R10-3E(R) (9"X15")

SIGNAL LEGEND

- PROPOSED SIGNAL HEAD
- PROPOSED 4-SECTION SIGNAL HEAD
- EXISTING SIGNAL HEAD
- PROPOSED 5-SECTION OR 4-SECTION SIGNAL HEAD
- RELOCATED SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD

DETECTION LEGEND

- PROPOSED VIRTUAL DETECTION ZONE
- PROPOSED INDUCTIVE LOOP
- PROPOSED VIDEO DETECTION CAMERA
- PROPOSED MAGNETOMETER
- PROPOSED RADAR

FORSYTH COUNTY ENGINEERING DEPARTMENT

POND

SCALE IN FEET
0 30 60 120

REVISION DATES		
01/23/2020		

SIGNAL PLANS

TRAFFIC SIGNAL INSTALLATION NO. 4

RONALD REAGAN BLVD AT IVY SUMMIT CT/SUMMIT OVERLOOK WY

CHECKED:		DATE:		DRAWING No.
BACKCHECKED:		DATE:		27-0013
CORRECTED:		DATE:		
VERIFIED:		DATE:		

RONALD REAGAN BLVD AT IVY SUMMIT CT/SUMMIT OVERLOOK WY

LIST OF MATERIALS

LIST OF MATERIALS IS FOR INFORMATION PURPOSES ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL MATERIALS AND QUANTITIES REQUIRED FOR INSTALLATION.

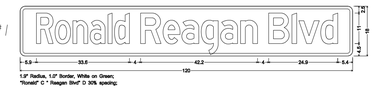
MATERIALS	UNIT	QUANTITY
CABINET CONTROLLER ASSEMBLIES		
A. CONTROLLER UNIT, MODEL 2070LX	EA	1
E. CABINET ASSEMBLY, MODEL 332	EA	1
F. SWITCH PACK (LOAD SWITCH)	EA	10
G. DC ISOLATOR	EA	3
H. LOOP DETECTOR, 2-CHANNEL	EA	4
L. 2010 SIGNAL MONITOR, TYPE B (ETHERNET)	EA	1
BATTERY BACKUP SYSTEM - EXTERNAL MOUNTED (PER GDOT SPEC)	EA	1
332 PREFABRICATED CONTROLLER CABINET BASE W/ BBS EXTENTION	EA	1
PC642-200 (OR EQUIVALENT), SURGE PROTECTOR	EA	1
LOOP/PED LEAD-IN WIRE (SHIELDED, TWISTED/1000 FT)		
A. 3 PAIR 18 AWG	REEL	2
SIGNAL CABLE (14AWG)		
A. 7 CONDUCTOR, PER 1000 FT	REEL	2
B. 10 CONDUCTOR, PER 1000 FT	REEL	1
LOOP DETECTOR WIRE (14 AWG, STRANDED/1000 FT)	REEL	2
3-SECTION, 12" SIGNAL HEAD LED-, YELLOW HOUSING W/BLACK FRONT, PLASTIC	EA	6
5-SECTION, (CLUSTER) 12" SIGNAL HEAD LED-, YELLOW HOUSING W/BLACK FRONT, PLASTIC	EA	2
1-SECTION, 16"X18" LED COUNTDOWN PEDESTRIAN SIGNAL HEAD, FULL HAND/MAN OVERLAP (9" HIGH NUMBER & 12" SYMBOLS)	EA	8
PEDESTRIAN PUSH BUTTON STATIONS, W/ BUTTONS AND SIGNS: 9"X15", R10-3E, (L)EFT OR (R)IGHT, COUNTDONW		
1. 9"X15", R10-3EL, COUNTDOWN	EA	4
2. 9"X15", R10-3ER, COUNTDOWN	EA	4
BACKPLATE FOR ONE-WAY, 3 SECTION, 12" SIGNAL HEAD, ABS PLASTIC, BLACK W/ RETROREFLECTIVE STRIP	EA	6
BACKPLATE FOR ONE-WAY, 5 SECTION, (CLUSTER) 12" SIGNAL HEAD, ABS PLASTIC, BLACK W/ RETROREFLECTIVE STRIP	EA	2
HARDWARE FOR MAST ARM MOUNTING	EA	8
HARDWARE FOR PEDESTAL POLE, TOP POST MOUNTING, TWO-WAY BRACKET ASSEMBLY	EA	4
10' PEDESTAL POLE & SQUARE BASE	EA	4
PULL BOX, PB-2	EA	7
PULL BOX, PB-3	EA	4
PULL BOX, PB-6	EA	1
LOOP SAW CUT	LF	625
CONDUIT, 1"	LF	70
CONDUIT, 2"	LF	750
R10-12, LEFT TURN YIELD ON GREEN SIGN	EA	2
MISC. MATL. TO COMPLETE INSTALLATION	LUMP	LUMP

PAY ITEMS

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
647-1000	TRAFFIC SIGNAL INSTALLATION NO. 4	LUMP SUM	LUMP SUM
615-1100	DIRECTIONAL BORE PIPE - 3 IN.	LF	55
615-1100	DIRECTIONAL BORE PIPE - 7 IN.	LF	340
636-1041	HIGHWAY SIGNS, TP 2 MATL, REFL SHEETING, TP 9	SF	93
639-3004	STEEL STRAIN POLE, TP IV, W/ 55' MAST ARM	EA	2
639-3004	STEEL STRAIN POLE, TP IV, W/ 60' MAST ARM	EA	1
639-3004	STEEL STRAIN POLE, TP IV, W/ 65' MAST ARM	EA	1
682-6233	CONDUIT, NONMETAL, TP 3, 2 IN	LF	1250
682-8525	ELECTRICAL POWER SERVICE ASSEMBLY (UNDERGROUND SERVICE POINT)	EA	1
937-6000	MICROWAVE RADAR DETECTION ASSEMBLY	EA	2
937-8020	TESTING - MICROWAVE DETECTION SYSTEM	LUMP SUM	LUMP SUM
937-8520	TRAINING - MICROWAVE DETECTION SYSTEM	LUMP SUM	LUMP SUM

D3-1 OVERHEAD STREET NAME SIGN DETAILS

D3-1 #1

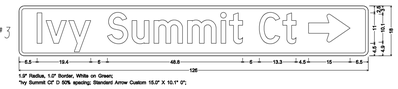


D3-1 #4

D3-1 #2

D3-1 #5

D3-1 #3



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	TBA	TBA	DC	DC	DC
	CARD	2-CH	2-CH				MR						DC 150	DC 150	DC 150
CHANNEL 1	C1 PIN	56	39	63	47	58	41	65	49	60		80	67	68	81
	FUNCTION	L1	L2A				R4A						Ø2 PED	Ø6 PED	FLASH SENSE
	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
CHANNEL 2	C1 PIN	56	43	76	47	58	45	78	49	62		53	69	70	82
	FUNCTION		L2B				R4B						Ø4 PED	Ø8 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	TBA	TBA	DC	DC	DC
	CARD	2-CH	2-CH				MR								
CHANNEL 1	C1 PIN	55	40	64	48	57	42	66	50	59		54	71	72	51
	FUNCTION	L5	L6A				R8A								
	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
CHANNEL 2	C1 PIN	55	44	77	48	57	46	79	50	61		75	73	74	52
	FUNCTION		L6B				R8B								
	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

FORSYTH COUNTY
ENGINEERING DEPARTMENT

POND

REVISION DATES		
01/23/2020		

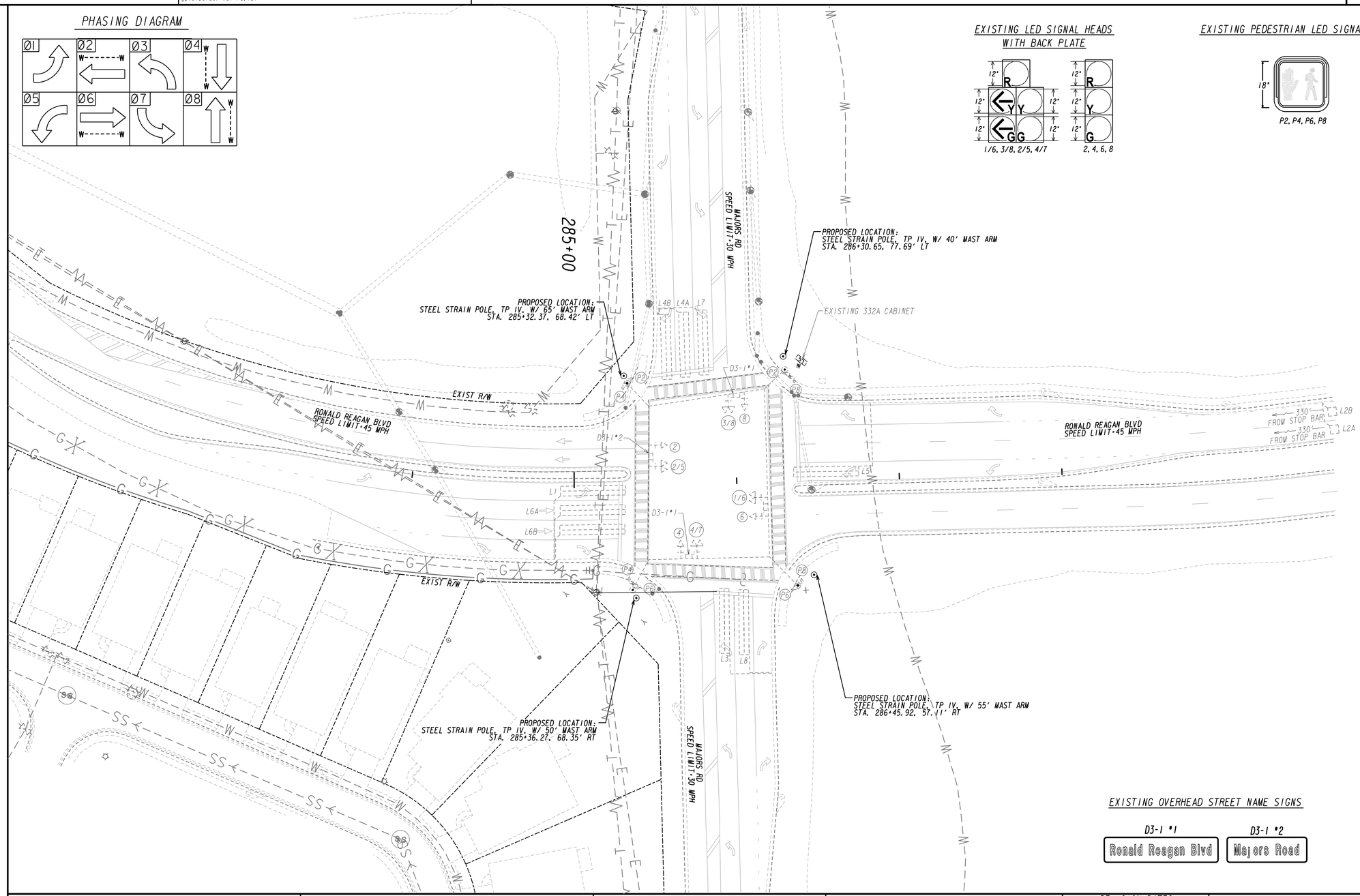
SIGNAL PLANS
RONALD REAGAN BLVD EXTENSION
SUMMARY OF QUANTITIES

CHECKED:		DATE:		DRAWING No.
BACKCHECKED:		DATE:		27-0014
CORRECTED:		DATE:		
VERIFIED:		DATE:		

PHASING DIAGRAM

EXISTING LED SIGNAL HEADS WITH BACK PLATE

EXISTING PEDESTRIAN LED SIGNAL HEADS



EXISTING OVERHEAD STREET NAME SIGNS

D3-1 *1

D3-1 *2

EXISTING PEDESTRIAN SIGNS

R10-3E(L) (9"x15") R10-3E(R) (9"x15")

SIGNAL LEGEND

- PROPOSED SIGNAL HEAD
- PROPOSED 4-SECTION SIGNAL HEAD
- EXISTING SIGNAL HEAD
- PROPOSED 5-SECTION OR 4-SECTION SIGNAL HEAD
- RELOCATED SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD

DETECTION LEGEND

- PROPOSED VIRTUAL DETECTION ZONE
- PROPOSED INDUCTIVE LOOP
- PROPOSED VIDEO DETECTION CAMERA
- PROPOSED MAGNETOMETER
- PROPOSED RADAR

FORSYTH COUNTY
ENGINEERING DEPARTMENT

POND

SCALE IN FEET
0 30 60 120

REVISION DATES		
01/23/2020		

SIGNAL PLANS

EXISTING CONDITIONS

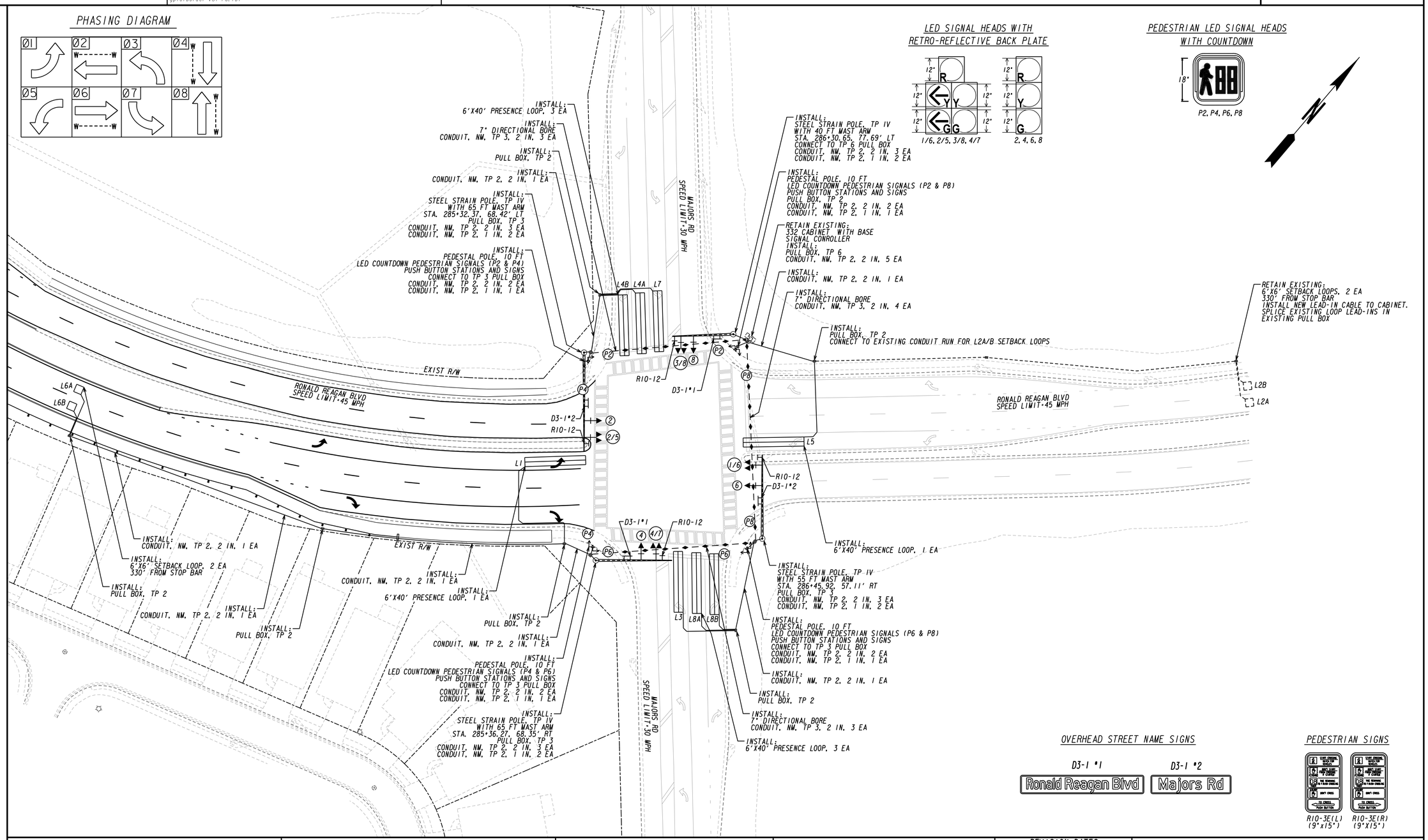
RONALD REAGAN BLVD AT MAJORS RD

CHECKED:		DATE:		DRAWING No.
BACKCHECKED:		DATE:		27-0015
CORRECTED:		DATE:		
VERIFIED:		DATE:		

PHASING DIAGRAM

LED SIGNAL HEADS WITH RETRO-REFLECTIVE BACK PLATE

PEDESTRIAN LED SIGNAL HEADS WITH COUNTDOWN



OVERHEAD STREET NAME SIGNS

D3-1 *1

D3-1 *2

PEDESTRIAN SIGNS

R10-3E(L) (9"x15") R10-3E(R) (9"x15")

SIGNAL LEGEND

- PROPOSED SIGNAL HEAD
- PROPOSED 4-SECTION SIGNAL HEAD
- EXISTING SIGNAL HEAD
- PROPOSED 5-SECTION OR 4-SECTION SIGNAL HEAD
- RELOCATED SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD

DETECTION LEGEND

- PROPOSED VIRTUAL DETECTION ZONE
- PROPOSED INDUCTIVE LOOP
- PROPOSED VIDEO DETECTION CAMERA
- PROPOSED MAGNETOMETER
- PROPOSED RADAR

FORSYTH COUNTY
ENGINEERING DEPARTMENT

POND

SCALE IN FEET
0 30 60 120

REVISION DATES		
01/23/2020		

SIGNAL PLANS

TRAFFIC SIGNAL INSTALLATION NO. 5
RONALD REAGAN BLVD AT MAJORS RD

CHECKED:		DATE:		DRAWING No.
BACKCHECKED:		DATE:		27-0016
CORRECTED:		DATE:		
VERIFIED:		DATE:		

10/23/2015 GPLN

LIST OF MATERIALS

LIST OF MATERIALS IS FOR INFORMATION PURPOSES ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL MATERIALS AND QUANTITIES REQUIRED FOR INSTALLATION.

MATERIALS	UNIT	QUANTITY
LOOP/PED LEAD-IN WIRE (SHIELDED, TWISTED/1000 FT)		
A. 3 PAIR 18 AWG	REEL	2
SIGNAL CABLE (14AWG)		
A. 7 CONDUCTOR, PER 1000 FT	REEL	2
B. 10 CONDUCTOR, PER 1000 FT	REEL	1
LOOP DETECTOR WIRE (14 AWG, STRANDED/1000 FT)	REEL	4
3-SECTION, 12" SIGNAL HEAD LED-, YELLOW HOUSING W/BLACK FRONT, PLASTIC	EA	4
5-SECTION, (CLUSTER) 12" SIGNAL HEAD LED-, YELLOW HOUSING W/BLACK FRONT, PLASTIC	EA	4
1-SECTION, 16"X18" LED COUNTDOWN PEDESTRIAN SIGNAL HEAD, FULL HAND/MAN OVERLAP (9" HIGH NUMBER & 12" SYMBOLS)	EA	8
PEDESTRIAN PUSH BUTTON STATIONS, W/ BUTTONS AND SIGNS: 9"X15", R10-3E, (L)EFT OR (R)IGHT, COUNTDONW		
1. 9"X15", R10-3EL, COUNTDOWN	EA	4
2. 9"X15", R10-3ER, COUNTDOWN	EA	4
BACKPLATE FOR ONE-WAY, 3 SECTION, 12" SIGNAL HEAD, ABS PLASTIC, BLACK W/ RETROREFLECTIVE STRIP	EA	4
BACKPLATE FOR ONE-WAY, 5 SECTION, (CLUSTER) 12" SIGNAL HEAD, ABS PLASTIC, BLACK W/ RETROREFLECTIVE STRIP	EA	4
HARDWARE FOR MAST ARM MOUNTING	EA	8
HARDWARE FOR PEDESTAL POLE, TOP POST MOUNTING, TWO-WAY BRACKET ASSEMBLY	EA	4
10' PEDESTAL POLE & SQUARE BASE	EA	4
PULL BOX, PB-2	EA	7
PULL BOX, PB-3	EA	3
PULL BOX, PB-6	EA	1
LOOP SAW CUT	LF	1820
CONDUIT, 1"	LF	175
CONDUIT, 2"	LF	650
R10-12, LEFT TURN YIELD ON GREEN SIGN	EA	4
MISC. MATL. TO COMPLETE INSTALLATION	LUMP	LUMP

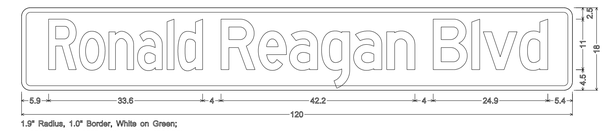
PAY ITEMS

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
647-1000	TRAFFIC SIGNAL INSTALLATION NO. 5	LUMP SUM	LUMP SUM
615-1100	DIRECTIONAL BORE PIPE - 7 IN.	LF	340
636-1041	HIGHWAY SIGNS, TP 2 MATL, REFL SHEETING, TP 9	SF	50
639-3004	STEEL STRAIN POLE, TP IV, W/ 40' MAST ARM	EA	1
639-3004	STEEL STRAIN POLE, TP IV, W/ 50' MAST ARM	EA	1
639-3004	STEEL STRAIN POLE, TP IV, W/ 55' MAST ARM	EA	1
639-3004	STEEL STRAIN POLE, TP IV, W/ 65' MAST ARM	EA	1
682-6233	CONDUIT, NONMETAL, TP 3, 2 IN	LF	1250

RONALD REAGAN BLVD AT MAJORS RD

D3-1 OVERHEAD STREET NAME SIGN DETAILS

D3-1 #1



1.9" Radius, 1.0" Border, White on Green;
"Ronald" C " Reagan Blvd" D 30% spacing;

D3-1 #2

1.9" Radius, 1.0" Border, White on Green;
"Majors Rd" D 50% spacing;

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	TBA	TBA	DC	DC	DC
	CARD	2-CH	2-CH			2-CH	2-CH						DC 150	DC 150	DC 150
CHANNEL 1	CI PIN	56	39	63	47	58	41	65	49	60		80	67	68	81
	FUNCTION	L1	L2A			L3	L4A						Ø2 PED	Ø6 PED	FLASH SENSE
	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

CHANNEL 2	CI PIN	56	43	76	47	58	45	78	49	62		53	69	70	82
	FUNCTION		L2B				L4B						Ø4 PED	Ø8 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	TBA	TBA	DC	DC	DC
	CARD	2-CH	2-CH			2-CH	2-CH								
CHANNEL 1	CI PIN	55	40	64	48	57	42	66	50	59		54	71	72	51
	FUNCTION	L5	L6A			L7	L8A								
	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

CHANNEL 2	CI PIN	55	44	77	48	57	46	79	50	61		75	73	74	52
	FUNCTION		L6B				L8B								
	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

FORSYTH COUNTY
ENGINEERING DEPARTMENT

POND

REVISION DATES		
01/23/2020		

SIGNAL PLANS
RONALD REAGAN BLVD EXTENSION
SUMMARY OF QUANTITIES

CHECKED:		DATE:		DRAWING No.
BACKCHECKED:		DATE:		27-0017
CORRECTED:		DATE:		
VERIFIED:		DATE:		