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SIGNAL INSTALLATION

The Contractor should note that several traffic signal items are installed in, under, and/or adjacent to the proposed sidewalk and pavement. These are most easily installed in coordination with the proposed sidewalk and pavement placement. Pay items for conduit installation are for trenching and not drill/jack/directional bore. If drill/jack/directional bore is chosen, the additional cost will be born by the Contractor. Trenching of the final pavement course or proposed sidewalks will not be allowed.

MAINTENANCE OF TRAFFIC SIGNALS

The Contractor shall furnish and install traffic signal equipment in conformance to these plans and specifications and the 2010 Ohio Department of Transportation Construction and Material Specifications and all Supplemental Specifications. The Contractor shall install all traffic signal equipment in conformance with the Ohio Manual of Uniform Traffic Control Devices for Streets and Highways latest revision, and in conformance with the Ohio Department of Transportation Standard Construction Drawings.

The Contractor shall be responsible for the operation of the existing and new traffic signal from the time he/she first performs any work until the new signal is accepted by the Village of Ashville (hereafter referred to as "Village") or his/her appointed representative for the project (hereafter referred to as the "Engineer"). The work includes maintaining all signal heads, control equipment, detection, power service, poles, other supports, etc. for the existing and new signal installation.

The Contractor shall provide to the Engineer a telephone number at which a maintenance person can be reached 24–hours per day, 7 days per week. The Contractor shall respond to service calls for the existing and new signal as follows:

> Within two (2) hours of notification of a total outage, no indications in one or more directions, signal on flash, signal stuck, short clearances or other malfunctions which in the opinion of the Engineer constitutes a hazard to the traveling public. If the Contractor is unable to correct the hazard within one (1) hour of arrival he/she shall provide at his/her expense the service of a Law Enforcement Officer with Patrol Car to control traffic until the signal is back in operation.
>
> Within the first four (4) hours of the next working day of notification of a single bulb out in one direction, improper timing, false calling or other malfunction which, in the opinion of the Engineer does not constitute a hazard to the public.

MATERIAL INFORMATION SUBMITTAL AND TESTING CERTIFICATION

The Contractor shall submit for the Engineer's approval diagrams, brochures or other descriptive material for the items the Contractor intends to furnish that have not been specified in these plans.

When requested, the manufacturer shall provide a certified letter stating that the controller, conflict monitor, and load switch units have been successfully tested in exact accordance with the NEMA environmental standards and test procedures. Such testing shall have occurred no more than six months prior to the date of this contract. This six month requirement may be waived if the manufacturer can satisfactorily demonstrate to the Engineer that the supplied equipment is identical to the equipment that was previously tested. To waive the six month requirement, the Village requires that the manufacturer state in writing that the supplied equipment is identical to equipment previously tested and that the manufacturer requests this testing requirement be waived. Any redesign or changes of any type, including any component changes which would make the bid control equipment not identical to the tested control equipment, will require the equipment to be re–certified.

TEN DAY TEST REQUIREMENTS

A 10–day test shall be conducted by the Contractor after the signal installation is 100% complete. No partial tests will be conducted. The Contractor shall contact the Engineer stating that the signal installation is 100% complete and request a start date for the ten–day test. If an inspection by the County reveals that the signal is not 100% complete or any malfunction is detected, the ten–day test shall be completely restarted.

POWER SUPPLY FOR TRAFFIC SIGNALS

Electric power shall be obtained from the available power provider at the location indicated on the plans. Power supplied shall be 120 volts.

UTILITY LOCATING

The underground signal items in this plan are being placed in narrow right–of–way along with other proposed, existing, and relocated utilities. Besides the OUPS requirements of this plan and state law, any underground signal plan item that is within 2 feet of any utility shown on this plan or identified by OUPS in the field will be uncovered to verify that its location and depth do not conflict with the signal item.

The cost of uncovering conflicting utilities will be incidental to and included in the contract unit price of the various items making up the signal system.

ITEM 603, 4" CONDUIT, TYPE F

Pull box drains shall be installed in accordance with Item 603 and Standard Construction Drawing HL–30.11 and as directed by the Engineer. Fifteen feet has been included for each pull box.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR

In addition to the requirements of Item 614 and the Ohio Manual of Uniform Traffic Control Devices, a uniformed Law Enforcement Officer with Patrol Car shall be provided for controlling traffic for the traffic signal installation. The Law Enforcement Officer with Patrol Car shall be utilized anytime the Contractor is working in or above traffic lanes.

Law Enforcement Officers should not be used where the Ohio Manual of Uniform Traffic Control Devices intends that flaggers be used. The Law Enforcement Officers are considered to be employed by the Contractor and the Contractor shall be responsible for their actions. Although they are employed by the Contractor, the Engineer may establish control over their placement.

The Contractor shall arrange for these services with the Village of Ashville Police Department.

Village of Ashville Police Department
91 West Main Streeet
Ashville, Ohio 43103
(740) 983–3112

Law Enforcement Officers with Patrol Car shall be paid for on a unit price (hourly) basis under Item 614, Law Enforcement Officer with Patrol Car. The following estimated quantity is provided for the Contractor's use or as directed by the Engineer.

Item 614, Law Enforcement Officer with Patrol Car **20 Hours**

The hours paid shall include minimum show–up time required by the law enforcement agency involved. If Contractors wish to utilize law enforcement officers for flagging and traffic control other than for that required in these plans, they may do so at their own expense. Payment for the excess above the contract requirements will be included under Item 614, Maintaining Traffic.

ITEM 632, REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN

The entire traffic signal installation, including but not limited to signal heads, cable, messenger wire, strain poles, cabinet, controller, etc., shall be removed in accordance with CMS 632.26 and as indicated on the plans. The Contractor shall turn ownership of the controller and signal head over to the Village of Ashville. The Contractor shall deliver the signal head and controller to the Village of Ashville (location and time to be provided by the Engineer). The Contractor shall remove and legally dispose of all other traffic signal items at no additional cost to the project.

The existing signal is mounted to existing utility poles. Those poles shall not be removed or disturbed by the Contractor. Poles shall be removed by the utility company.

ITEM 632, POWER SERVICE, AS PER PLAN

The Contractor shall arrange with South Central Power for the installation when needed.

The Contractor shall construct a complete and operational power service in accordance with the rules and regulations set forth by the Ohio Electric Code and the appropriate electric company. The Contractor shall supply all necessary material, labor, and design necessary as part of this item. Charges made by the power company for establishing of the account, extension of company facilities, connection of customer equipment to the power company facilities and energy will be borne by the Contractor.

The power service shall include a disconnect switch with padlock. The padlock keys will be provided to the Village of Ashville upon final project acceptance.

ITEM 625, LUMINAIRE, CONVENTIONAL, AS PER PLAN

In addition of the requirements of CMS 625 and 725.11, the luminaires shall have the following requirements of features.

1. Each Luminaire shall consist of an assembly using LEDs as the light source. In addition, a complete Luminaire shall consist of a housing, LED array, and electronic driver (power supply).
2. Each Luminaire shall be rated for a minimum operational life of 60,000 hours of operations at an average operating time of 11.5 hours per night.
3. The operating temperature range shall be –30°C to +40°C.
4. Each Luminaire is expected to operate above an ambient temperature of 38°F, but not expected to comply with photometric requirements at elevated temperatures.
5. Photometry must be documented with IESNA LM–79 and shall be conducted at 25°C ambient temperature.
6. Each Luminaire shall meet all parameters of this specification throughout the minimum operational life when operated at the average ambient nighttime temperature.
7. Each Luminaire or all of its components shall be listed with Underwriters Laboratory, Inc. under the appropriate standards or UL1598 for luminaires, or an equivalent standard from a nationally recognized testing laboratory.

Luminaires shall be manufactured by American, General Electric, Cooper Lighting Inc., ECOFIT, BetaLED, or approved equal. Luminaire and mounting bracket shall match support pole and include type II distribution, universal voltage, and 525mA.

Payment shall be made at the unit bid price for each CMS Item 625, Luminaire, Conventional (Type ii, LED, 525 mA) for each luminaire and mounting bracket which shall be full compensation for all labor, materials, and incidentals required to complete this item in a satisfactory and workmanlike manner.

ITEM 632, SIGNAL SUPPORT FOUNDATION, AS PER PLAN

The pole base foundation sides shall be orientated parallel to the sidewalk, back–of–curb or edge–of–pavement as shown on the signal plans. The top of the foundation shall be flush with any adjacent sidewalk, concrete area or pavement except where the ground rises steeply behind the sidewalk, concrete or pavement area. Then the back side of the foundation shall match the ground slope and the street side of the foundation shall be above the sidewalk, concrete or pavement area and completely out of the sidewalk, concrete or pavement area. One spare 2" conduit ell shall be installed in each pole foundation oriented towards the intersection center. Bolt covers shall be installed. The bolts covers and conduit ells are incidental to this item. The Signal Support anchor bolts, conduit ells, and their installation shall be included in the contract price for 632, Signal Support Foundation, As Per Plan.

ITEM 632, LOOP DETECTOR UNITS, DELAY AND EXTENSION TYPE, AS PER PLAN

in addition to the requirements of CMS Item 632 and CMS 732.07 or 732.08, loop detector units shall have the following requirements or features:

The output device shall be a relay, and all contacts shall be in a wiring harness. The unit shall be self tuning. The unit's electrical connection plugs or wiring harness shall allow ready replacement with a single channel amplifier as described in CMS 732.07. Each unit shall be labeled to correspond to its phase and direction. All units will be 2 channel. Delay inhibit shall be connected on all detector harnesses for their respective phase greens.

ITEM 632, COVERING OF (TYPE) SIGNAL HEAD, AS PER PLAN

In addition to 632, heavy duty plastic bags shall be permitted. Two bags per head shall be used. The bags shall be securely lashed down so the wind does not rip them from the signal head. All signal heads while covered shall be dark either by removing, unscrewing, or disconnecting the power to the bulbs. No covered head shall block the view of an operating head. Any existing vehicular signal head that is not functional shall be removed immediately or covered.

ITEM 632, SIGNALIZATION, MISC.: SIGNAL INSTALLATION GUARANTEE

The Contractor shall guarantee that the traffic control items installed as part of the contract shall operate satisfactorily for a period of 120 days following final acceptance of the project. In the event of unsatisfactory operation, the Contractor shall correct faulty installations, make repairs, and replace defective parts with new parts of equal or better quality. Equipment, materials, and labor costs incurred in correcting an unsatisfactory operation shall be borne by the Contractor. The Contractor shall only be responsible for the work undertaken and items installed as part of this project.

Customary manufacturer's guarantees for any items shall be turned over to the Village following acceptance of the equipment.

ITEM 633, GUARANTEE, AS PER PLAN

The Contractor shall guarantee that the traffic control items installed as part of the contract shall operate satisfactorily for a period of 120 days following final acceptance of the project. In the event of unsatisfactory operation, the Contractor shall correct faulty installations, make repairs, and replace defective parts with new parts of equal or better quality. Equipment, materials, and labor costs incurred in correcting an unsatisfactory operation shall be borne by the Contractor. The Contractor shall only be responsible for the work undertaken and items installed as part of this project.

At signal startup, the Contractor shall have a technician on location to make timing adjustments necessary to visually minimize vehicle delay. This same technician will be on–site for the next a.m. (7a.m.–9a.m.) and p.m. (4p.m.–6p.m.) peaks to make the same adjustments. The Contractor shall also be responsible for timing changes to the traffic controller as directed by the Engineer to improve the flow of traffic for 30 days after it is placed in service.

Customary manufacturer's guarantees for any items shall be turned over to the Village of Ashville following acceptance of the equipment.

ITEM 633, CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS1, AS PER PLAN

The controller unit will be a NEMA Econolite, Eagle, or approved equal. The controller cabinet door shall be on the west side of the cabinet. The conflict monitor settings for minimum yellow timing on all channels shall be set at three and one half seconds.

ITEM 633, CABINET FOUNDATION, AS PER PLAN

The foundation shall be installed flush with the adjacent sidewalk and at the same top elevation. The anchor bolts, conduit ell, and their installation shall be incidental to the cost of the foundation.

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TRAFFIC SIGNAL NOTES
STATE ROUTE 752 AND LONG STREET

PIC-752/LONG ST.

T1
T5

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94+82.06 PB 2
69.16' Lt.
18" 725.08
1-1/2" Conduit
2-2/C
In Trench=17'

94+74.99 Controller
57.11' Lt. w/cabinet riser and work pad
2-3" Conduit
1-2/C (Power), 10-2/C, 6-7/C, 2-9C, In Trench=6'
2-3/C Duct Cable (Circuit A & B), Direct-Bury

94+78.22 PB 1
52.98' Lt., 17"x30" 725.06
(6 Connector Kits)
3" Conduit
1-2/C (Power), 2-7/C, 1-9/C, In Trench=10'
1-3/C Duct Cable, Circuit A, Direct-Bury
3" Conduit
8-2/C, 4-7/C, 1-9/C, 1-4/C, In Trench=23'
1-3/C Duct Cable, Circuit A, Direct-Bury

Existing ROW
Proposed Easement

94+71.29 Pole A
46.17' Lt., Elev = 716.05'
w/push button, 2 ped heads, 2 signs
Luminaire, Sta. 94+71.29, 46.17' Lt.
Type II, LED, 525mA, 30.5'

94+67.32 PB 9
32.79' Lt.
17"x30" 725.06

94+55.45 Pedestal 4
31.24' Lt., 4'
w/push button, 2 signs
1-1/2" Conduit
1-2/C
In Trench = 12'
3" Conduit
3-2/C, 1-9/C
In Type B Trench = 67'

L1 L2 L3 L4 L5 L6 L7 L8
+72.75 +42.75 +144.80 +74.80 +54.96 +24.96 +20.11 +50.11
Arm A Arm B Arm C Arm D
Service Entrance
1 2 3 4 5 6 7 8
94+00 95+00 96+00 10+00 11+00
ST SA IP FND

94+23.53 PB 8
19.22' Rt.
18" 725.08
1-1/2" Conduit
2-2/C
In Trench=41'

94+52.29 Pedestal 3
30.26' Rt., 4'
w/push button, 2 signs
1-1/2" Conduit
1-2/C
In Trench=11'

94+63.17 PB 7
33.06' Rt.
17"x30" 725.06
1-1/2" Conduit
1-9/C
In Trench=12'

94+64.70 Pedestal 2
44.24 Rt., 8'
w/push button, 2 ped heads, 2 signs

Proposed Easement

3" Conduit
4-2/C, 4-7/C
1-3/C Dist. Cable, Circuit B
In Type B Trench=55'

95+21.81 Pedestal 1
41.82' Lt., 8',
w/push button, 1 ped heads, 2 signs
1-1/2" Conduit
1-7/C, In Trench=12'
1-3/C Duct Cable, Circuit B, Direct-Bury

95+22.32 PB 3
30.23' Lt., 17"x30" 725.06
(3 Connector Kits)
1-1/2" Conduit
2-2/C
In Trench=55'

95+71.44 PB 4
16.15' Lt.
13"x24" 725.06

Existing ROW

3" Conduit
2-2/C, 3-7/C
1-3/C Dist. Cable, Circuit B
In Type B Trench=64'

95+30.75 PB 5
32.89' Rt., 17"x30" 725.06
(3 Connector Kits)
1-1/2" Conduit
3-7/C, In Trench=13'
1-3/C Duct Cable, Circuit B, Direct-Bury
Luminaire, Sta. 95+27.20, 46.07' Rt.
Type II, LED, 525mA, 30.5'

95+27.20 Pole B
46.07' Rt., Elev.=716.05
w/push button, 1 ped heads, 2 signs

1-1/2" Conduit
2-2/C
In Trench=44'

95+17.27 PB 6
72.46' Rt.
18" 725.08

Proposed Easement

SCALE: 1" = 10'
0 5 10 20
CALCULATED JJG
CHECKED JLG

TRAFFIC SIGNAL PLAN
STATE ROUTE 752 AND LONG STREET

PIC-752/LONG ST.

T2
T5

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CABLE LEGEND:

- 2P — 2/C #4 AWG (Power)
- 3P — 3/C #4 AWG (Power)
- 2C — 2/C #14 AWG (Loop Detector Lead-in Cable)
- 5C — 5/C #14 AWG
- 7C — 7/C #14 AWG *
- 9C — 9/C #14 AWG #
- 3L — 3/C #4 AWG (Lighting)
- 2L — 2/C #10 AWG (Lighting)

* 7/C installed for future 5 section signal heads

\# 9/C installed for future pedestrian signals and push buttons

SYMBOL LEGEND:

- Signal Head
- Pull Box
- Mast Arm Pole
- Pedestrian Pedestal
- Pedestrian Signal
- Pedestrian Push Button
- Disconnect Switch
- SX Signal Head Number
- PPX Pedestrian Pedestal
- PBX Pull Box Number
- LX Loop Number

To Power Service
(to be provided by others but coordinated and paid for by the Contractor

Controller

To Power Service
(to be provided by others but coordinated and paid for by the Contractor. Four hundred feet of Service Cable has be provided if needed and directed by the Engineer.)

PB1 PB2 PB3 PB4 PB5 PB6 PB7 PB8 PB9

L1 L2 L3 L4 L5 L6 L7 L8

PP1 PP2 PP3 PP4

Pole A Pole B

Luminaire Luminaire

S1 S2 S3 S4 S5 S6 S7 S8

CALCULATED JJG
CHECKED JLG

TRAFFIC SIGNAL WIRING DIAGRAM
STATE ROUTE 752 AND LONG STREET

PIC-752/LONG ST.

T3
T5

SIGNAL CONTROLLER TIMING CHART

Start Up

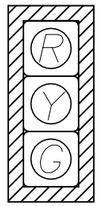
Time For Flash or All Red: 5 sec.
First Phases: 2 & 6
First Interval Displayed: Green

Phase		1	2	3	4	5	6	7	8
Movement		WBLT	EB	NBLT	SB	EBLT	WB	SBLT	NB
Minimum Green (Initial)		8	16	8	16	8	16	8	16
Extension		2	2	2	2	2	2	2	2
Max. Green I		25	65	25	65	25	65	25	65
Max. Green II		25	65	25	65	25	65	25	65
Yellow Change		4.5	4.5	3.5	4.5	3.5	3.5	4.5	3.5
All Red Clearance		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk Time			4		4		4		
Pedestrian Clearance			12		12		12		
Recall	Max/Min/Off	Off	Off	Off	Off	Off	Off	Off	Off
	Pedestrian	Off	Off	Off	Off	Off	Off	Off	Off
Memory		Off	Off	Off	Off	Off	Off	Off	Off

Note: ø4+ø8 No-Skip and ø2+ø6 No-Skip

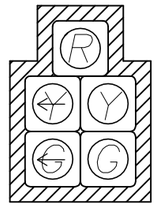
SIGNAL HEAD DETAIL

All lenses shall be 12" LED



S2, S4, S6, S8

All lenses shall be 12" LED



S1, S3, S5, S7

Not To Scale

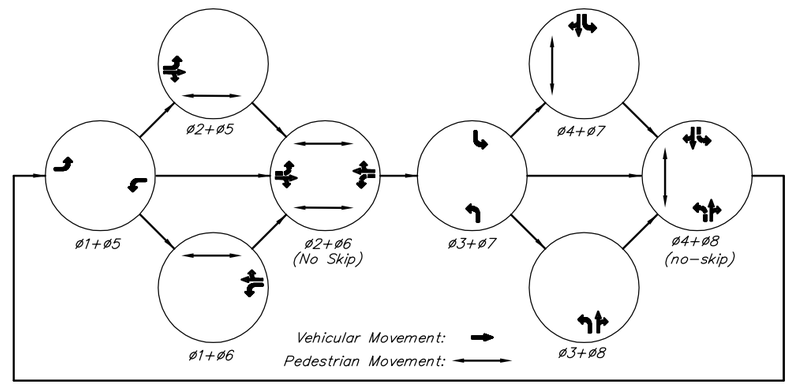
DETECTOR ASSIGNMENTS

Detector	Size (ft.)	No. of Turns	Shape	Pulse or Presence	Loop Delay (sec.)	Inhibit Delay During Ø Green	Connect to Detector		Associated Controller Ø
							Unit#	Ch.#	
L1	25 x 6	3	Rect.	Pres.	8	ø4	1	1	ø4
L2	25 x 6	3	Rect.	Pres.	2	ø7	1	2	ø7
L3	25 x 6	3	Rect.	Pres.	8	ø6	2	1	ø6
L4	25 x 6	3	Rect.	Pres.	2	ø1	2	2	ø1
L5	25 x 6	3	Rect.	Pres.	8	ø8	3	1	ø8
L6	25 x 6	3	Rect.	Pres.	2	ø3	3	2	ø3
L7	25 x 6	3	Rect.	Pres.	8	ø2	4	1	ø2
L8	25 x 6	3	Rect.	Pres.	2	ø5	4	2	ø5

FIELD WIRING HOOK-UP CHART

SIGNAL HEAD #	INDICATION	FIELD TERMINAL	FLASH	SIGNAL HEAD #	INDICATION	FIELD TERMINAL	FLASH
1 (NBLT)	R	ø8 R	R	6 (SB)	R	ø4 R	R
	Y	ø8 Y			Y	ø4 Y	
	G	ø8 G			G	ø4 G	
	◄Y	ø3 Y		7 (WBLT)	R	ø6 R	Y
	◄G	ø3 G			Y	ø6 Y	
2 (NB)	R	ø8 R	R		G	ø6 G	
	Y	ø8 Y			◄Y	ø1 Y	
	G	ø8 G			◄G	ø1 G	
3 (EBLT)	R	ø2 R	Y	8 (WB)	R	ø6 R	Y
	Y	ø2 Y			Y	ø6 Y	
	G	ø2 G			G	ø6 G	
	◄Y	ø5 Y					
	◄G	ø5 G					
4 (EB)	R	ø2 R	Y	South X-Walk	Walk	QLD C (ø6)	OUT
	Y	ø2 Y			Don't Walk	QLD C (ø6)	
	G	ø2 G		West X-Walk	Walk	QLD B (ø4)	OUT
5 (SBLT)	R	ø4 R	R		Don't Walk	QLD B (ø4)	
	Y	ø4 Y		North X-Walk	Walk	QLD A (ø2)	OUT
	G	ø4 G			Don't Walk	QLD A (ø2)	
	◄Y	ø7 Y		OLA = LS 9 OLB = LS 10		OLC = LS 11 OLD = LS 12	
	◄G	ø7 G					

PROPOSED PHASING DIAGRAM



CALCULATED JJG | CHECKED JLG

TRAFFIC SIGNAL TIMING PLAN
STATE ROUTE 752 AND LONG STREET

PIC-752/LONG ST.

T4
T5

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POLE SIZE AND ATTACHMENT HEIGHT

Pole Designation	TC-12.30 Pole Design No.	Min. Pole Height (Ft.)	Arm Length (Ft.)	Attachment Height (Ft.)	Mast Arm "A" Field Orientation Angle (Deg.)
A	6	30.5	A – 43.5	20.5	0
			B – 42.0		
B	6	30.5	C – 41.0	20.5	0
			D – 42.0		

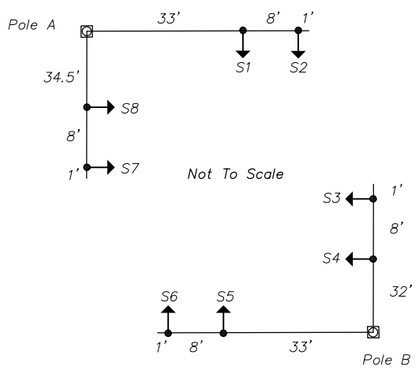
FABRICATION ANGLES FROM MAST ARM A / C (Deg.)

Mast Arm "B"	Handhole	Controller	Bolt Index Line*	Power Service	Unused Conduit Ell 2" Diameter	Pedestrian Head	Pedestrian Push Button	Luminaire
270	117	–	45*	180	88	0, 100	310	315
270	117	–	45*	–	91	3	296	315

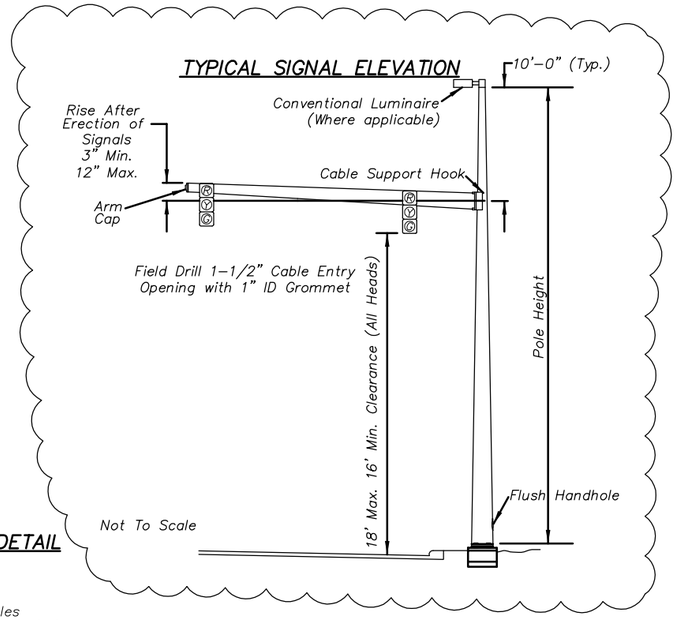
NOTE: *Signal Pole base plate is at 45 degree angle to the orientation of the mast arms – not square to the mast arms.
Anchor bolts/baseplate may or may not be square to the foundation.
Foundations are to be installed square to the adjacent sidewalk and will not be square to the mast arms.

SIGNAL HEAD LOCATIONS

From Mast Arm Face Plate

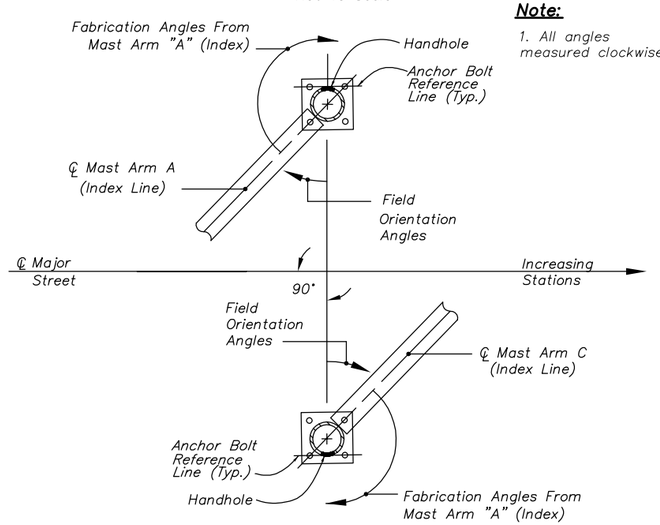


TYPICAL SIGNAL ELEVATION



MAST ARM SIGNAL SUPPORT / PEDESTAL ORIENTATION DETAIL

Not To Scale

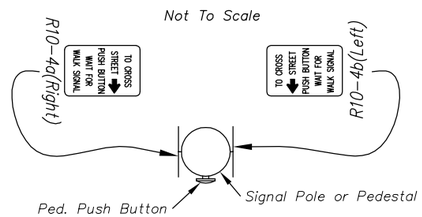


Note:

1. All angles measured clockwise

PUSHBUTTON WITH SIGN DETAIL

Not To Scale



1. Both signs shall be mounted parallel to adjacent crosswalk with bottom of signs immediatly above the top of the ped. button
2. Both signs shall be mounted with arrow on sign pointing to adjacent crosswalk
3. Ped. push button to be oriented as show in these plans.

ESTIMATED QUANTITIES

Item	Quantity	Unit	Description
603	135	Ft.	4" Conduit, Type F
614	20	Hour	Law Enforcement Officer with Patrol Car
625	217	Ft.	Conduit, 1-1/2", 725.04
625	231	Ft.	Conduit, 3", 725.04
625	256	Ft.	Trench
625	186	Ft.	Trench In Paved Area, Type B
625	3	Each	Pull Box, 725.08, 18"
625	1	Each	Pull Box, 725.06, 13"x24"
625	5	Each	Pull Box, 725.06, 17"x30"
625	7	Each	Ground Rod
625	6	Each	Connection, Fused Pull Apart
625	12	Each	Connection, Fused Permanent
625	417	Ft.	No. 4 AWG 5000 Volt Distribution Cable
625	124	Ft.	No. 10 AWG Pole and Bracket Cable
625	59	Ft.	1-1/2" Duct Cable With Three No. 4 AWG 5000 Volt Cables
625	2	Each	Luminaire, Conventional, As Per Plan (Type II, LED, 525 mA)
630	9	Sq. Ft.	Sign, Flat Sheet
632	2	Each	Signal Support, Type TC-12.30 Design 6 Pole, with Mast Arm TC-81.21 Design 11 and Design 11
632	4	Each	Vehicular Signal Head, (LED), Black, 3 Section, 12" Lens, 1-way, with Backplate
632	4	Each	Vehicular Signal Head, (LED), Black, 5 Section, 12" Lens, 1-way, with Backplate
632	6	Each	Pedestrian Signal Head (LED), Type D2
632	8	Each	Covering of Vehicular Signal Head, As Per Plan
632	6	Each	Covering of Pedestrian Signal Head, As Per Plan
632	6	Each	Pedestrian Push Button
632	2	Each	Pedestal, 4', Transformer Base
632	2	Each	Pedestal, 8', Transformer Base
632	4	Each	Pedestal Foundation
632	8	Each	Detector Loop
632	4	Each	Loop Detector Unit, 2-Channel, Delay and Extension Type
632	2	Each	Signal Support Foundation, As Per Plan
632	1	Each	Power Service, As Per Plan
632	72	Ft.	Signal Cable, 5 Conductor, No. 14 AWG
632	1027	Ft.	Signal Cable, 7 Conductor, No. 14 AWG
632	182	Ft.	Signal Cable, 9 Conductor, No. 14 AWG
632	1399	Ft.	Loop Detector Lead-in Cable, 2 Conductor, No. 14 AWG
632	26	Ft.	Power Cable, 2 Conductor, No. 4 AWG
632	30	Ft.	Power Cable, 3 Conductor, No. 4 AWG
632	400	Ft.	Service Cable, 3 Conductor, No. 4 AWG, (If Authorized)
632	1	Each	Removal of Traffic Signal Installation, As Per Plan
633	1	Each	Controller Unit, Type TS2/A2, with Cabinet, Type TS1, As Per Plan
633	1	Each	Controller Work Pad
633	1	Each	Cabinet Riser
633	1	Each	Cabinet Foundation, As Per Plan
Special	Lump Sum		Guarantee, As Per Plan

PEDESTRIAN SIGNAL HEAD PEDESTAL SUPPORT DATA

Pole Designation	Station	Offset	Pole Height (Ft.)	Attachment Height (Ft.)	Handhole Index Angle (Deg.)	ORIENTATION FROM INDEX ANGLE (DEG.) Push Button w/Signs	Ped. Head
1	95+21.81	41.82', Lt.	8'	8'	180	180	180
2	94+64.70	44.24', Rt.	8'	8'	180	245	86, 180
3	94+52.29	30.26', Rt.	4'	–	180	210	–
4	94+55.45	31.24', Lt.	4'	–	180	340	–

Note:

1. Pedestrian signal head to be pedestal mounted per ODOT Std. Dwg. TC-85.10.

CALCULATED JJG
CHECKED JLG

TRAFFIC SIGNAL QUANTITES/POLE DESIGN/DETAILS
STATE ROUTE 752 AND LONG STREET

PIC-752/LONG ST.

T5
T5