



Putting Essex County First

# COUNTY OF ESSEX DEPARTMENT OF PUBLIC WORKS OFFICE OF THE COUNTY ENGINEER

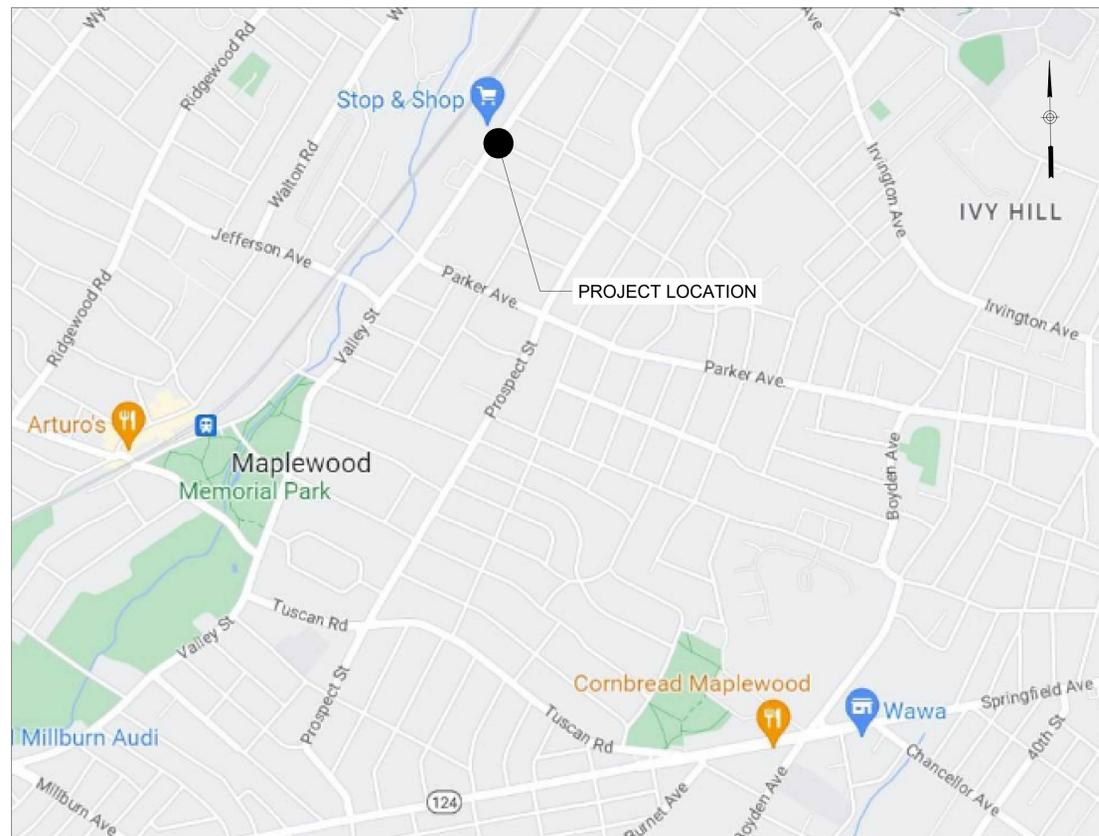
## TRAFFIC SIGNAL IMPROVEMENTS VALLEY STREET (CR 638) AND ARNOLD TERRACE TOWNSHIP OF SOUTH ORANGE VILLAGE, ESSEX COUNTY, NJ

### ESSEX COUNTY CONTRACT NUMBER 24-240 OCTOBER 2024

INDEX OF SHEETS	
SHEET NUMBERS	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES AND LEGEND PLAN
3	QUANTITY ESTIMATES
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8	SIGNING AND STRIPING PLAN
9	CURB RAMP PLAN
10	CURB RAMP DETAILS
11-12	TRAFFIC CONTROL PLANS 01 TO 02
13 - 19	ELECTRICAL DETAILS 01 TO 07

PUBLIC UTILITIES		
UTILITIES	SERVICE	800-436-7734
ELECTRIC	PSE&G	800-436-7734
ELECTRIC	JCP&L	800-662-3115
TELEPHONE	COMCAST XFINITY	800-934-6489
TELEPHONE	VERIZON WIRELESS	800-922-0204
CABLE	COMCAST	800-934-6489
CABLE	VERIZON	800-922-0204
GAS	PSE&G	800-436-7734
GAS	JCP&L	800-662-3115
WATER	TOWNSHIP OF SOUTH ORANGE	973-378-7741
SEWER	TOWNSHIP OF SOUTH ORANGE	973-378-7741

**NOTE:-**  
LOCATIONS OF UTILITIES AS SHOWN ON THESE PLANS ARE PLOTTED FROM DATA PROVIDED BY UTILITY COMPANIES, AND ARE NOT GUARANTEED AS TO EXACTNESS. THE CONTRACTOR SHALL CONTACT UTILITY COMPANIES 72 HOURS PRIOR TO ANY CONSTRUCTION TO DETERMINE EXACT LOCATION AND DEPTH OF ALL UTILITIES. THE CONTRACTOR SHALL USE THE UTILITY LOCATIONS SHOWN AS AN AID IN DETERMINING EXACT LOCATIONS.



**KEY MAP**  
N.T.S.

THE NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF 2019 TO GOVERN

NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD ROADWAY CONSTRUCTION/TRAFFIC CONTROL/BRIDGE CONSTRUCTION DETAILS (2016) AND ELECTRICAL DETAILS (2007) ARE APPLICABLE TO THIS PROJECT EXCEPT FOR THOSE DETAILS CONTAINED HEREIN.

APPROVED BY:  
JOSEPH N. DIVINCENZO  
ESSEX COUNTY EXECUTIVE

JOSEPH N. DIVINCENZO, JR.  
COUNTY EXECUTIVE

10/17/2024  
DATE

APPROVED BY:  
SANJEEV VARGHESE, P.E., P.P.  
PROFESSIONAL ENGINEER N.J. LIC NO. 40597  
COUNTY ENGINEER

SANJEEV VARGHESE, P.E., P.P.  
COUNTY ENGINEER

10/17/2024  
DATE

PREPARED AND RECOMMENDED FOR APPROVAL BY:  
RUDOLF J. GEDEON, P.E.  
PROFESSIONAL ENGINEER N.J. LIC NO. 24GE39479  
GEDEON GRC CONSULTING

10/17/2024  
DATE

# NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD LEGEND

## LINEAR FEATURES

EXISTING	PROPOSED	
- - - - -		STORM DRAINS
- - - - -	- - - - -	EDGE OF PAVEMENT
- - - - -		RIGHT OF WAY LINES (ACCESS PERMITTED)
- - - - -		SANITARY SEWERS
- - - - -		GAS LINE
- - - - -		OVERHEAD WIRE
(O) (O) (O)		ROCK WALL
/ / / / /		STONE WALL
/ / / / /		SLATE WALL
= = = = =	= = = = =	CURBS
( ) ( ) ( )		EVERGREEN DRIP LINE
( ) ( ) ( )		GUARD RAIL
( ) ( ) ( )		WOOD FENCE
[ ] [ ] [ ] [ ]		TRENCH DRAIN
	[ ] [ ] [ ] [ ]	4" TRAFFIC MARKING LINES
	[ ] [ ] [ ] [ ]	12" TRAFFIC MARKING LINES
	[ ] [ ] [ ] [ ]	24" TRAFFIC MARKING LINES

## TOPOGRAPHICAL FEATURES

EXISTING	PROPOSED	
[Symbol]	[Symbol]	STREET/PARKING SIGN
[Symbol]		BOULDERS
[Symbol]		UTILITY POLE
[Symbol]		ROCK
[Symbol]		SAFETY MAT
[Symbol]	[Symbol]	INLET
[Symbol]		TREE
[Symbol]	[Symbol]	MANHOLE
[Symbol]		FLASHING TRAFFIC LIGHT
[Symbol]		WATER VALVE
[Symbol]		TREE STUMP
[Symbol]		PINE TREE
[Symbol]		STREET SIGN
[Symbol]		FIRE HYDRANT
[Symbol]		UTILITY POLE WITH GUY WIRE
[Symbol]		GAS VALVE
[Symbol]		HEDGES
[Symbol]	[Symbol]	SIGNAL HEAD
[Symbol]	[Symbol]	IMAGE DETECTOR
[Symbol]	[Symbol]	TRAFFIC CONTROLLER CABINET
[Symbol]	[Symbol]	PEDESTRIAN PUSH BUTTON
[Symbol]	[Symbol]	TRAFFIC SIGNAL POLE
[Symbol]	[Symbol]	JUNCTION BOX
[Symbol]	[Symbol]	MAST ARM SIGN
[Symbol]	[Symbol]	CONDUIT
[Symbol]	[Symbol]	PEDESTRIAN SIGNAL HEAD

## MISCELLANEOUS SYMBOLS

[Symbol]	MILLING
[Symbol]	FULL DEPTH PAVEMENT REPAIR
[Symbol]	SIDEWALK INSTALLATION
[Symbol]	TOP SOILING, FERTILIZING, AND SEEDING, STRAW MULCHING

NORTH ARROW TO BE USED ON STANDARD CONSTRUCTION SHEETS WHERE BEARINGS REFER TO N.J. PLANE COORDINATE SYSTEM N.T.S.

### GENERAL NOTES:

1. THE INFORMATION SHOWN ON THESE PLANS CONCERNING TYPE AND LOCATIONS OF UTILITIES IS BASED ON INFORMATION AVAILABLE AT THE TIME OF DESIGN AND IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERE TO.
2. EXCAVATE AND REPLACE ANY UNSTABLE SUBGRADE MATERIALS WITH DENSE-GRADED AGGREGATE.
3. TOPOGRAPHIC AND RIGHT OF WAY INFORMATION SHOWN ON THESE PLANS TAKEN FROM SURVEY PERFORMED BY GEORGE J. ANDERSON, L.L.C.
4. UNSOUND PATCHES AND WEAK AREAS OF PAVEMENT SHALL BE REPAIRED PRIOR TO RESURFACING/OVERLAY IN ACCORDANCE WITH 2019 NJDOT STANDARD SPECIFICATION ITEM "HOT MIX ASPHALT PAVEMENT REPAIR."
5. ALL MAINTENANCE OF TRAFFIC SHALL BE IN STRICT CONFORMANCE WITH 2016 NJDOT TRAFFIC CONTROL DETAILS.
6. CONTRACTOR TO PROVIDE WRITTEN NOTICE TO ALL THE RESIDENTS WITHIN 1000' RADIUS OF THE WORK SITE SEVEN DAYS PRIOR TO THE START OF CONSTRUCTION.

J:\M\_Colburn\_Traffic\_Signal\_CSD\Drawings\CDT\Traffic\Signal\Gedeon\Notes & Legend.dwg/Sheet 2 of 2024/11/20/2024

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NEW JERSEY DEPARTMENT OF TRANSPORTATION

GENERAL NOTES AND LEGEND PLAN

TRAFFIC SIGNAL IMPROVEMENTS VALLEY STREET (CR 638) AND ARNOLD TERRACE

TOWNSHIP OF SOUTH ORANGE VILLAGE, ESSEX COUNTY, NJ

RUDOLF J. GEDEON

NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: 24GE39479

SCALE	DATE	DRAWN BY	CHECKED BY
AS SHOWN	08/2024	JS	ZI
PROJECT NUMBER	DRAWING NAME		
24-240	GNLP		
SHEET NUMBER:			
2 OF 19			

PAY ITEM NO.	ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY	IF AND WHERE DIRECTED	PLAN SHEET QUANTITY	ELECTRICAL PLAN	STRIPING PLAN	CONSTRUCTION PLAN
							SHEET E-1	SHEET TSS-1	SHEET C-1
1.	151006M	PERFORMANCE BOND AND PAYMENT BOND	LS	1	1				
2.	154003P	MOBILIZATION	LS	1	1				
3.	157004M	CONSTRUCTION LAYOUT	LS	1	1				
4.	161003P	FINAL CLEANUP	LS	1	1				
5.	159015M	CONSTRUCTION IDENTIFICATION SIGN, 4' X 8'	UNIT	2	2				
6.	159108M	TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION	UNIT	2	2				
7.	159027M	ARROW BOARD, 4' X 8'	UNIT	2	2				
8.	159012M	CONSTRUCTION SIGNS	SF	200	200				
9.	159141M	TRAFFIC DIRECTOR, FLAGGER	HOUR	480	480				
10.	159NS1	POLICE TRAFFIC DIRECTORS	ALLOWANCE	1	1				
11.	159003M	BREAKAWAY BARRICADE	UNIT	40	40				
12.	159006M	DRUM	UNIT	60	60				
13.	201003P	CLEARING SITE	LS	1	1				
14.	202006M	EXCAVATION, TEST PIT	CY	10	10				
15.	202009P	EXCAVATION, UNCLASSIFIED	CY	20	6.4	13.6			13.6
16.	202021P	REMOVAL OF PAVEMENT	SY	30	8.3	21.7			21.7
17.	302042P	DENSE-GRADED AGGREGATE BASE COURSE, 8" THICK	SY	10	4.4	5.6			5.6
18.	401009P	HMA MILLING, 3" OR LESS	SY	1050	90	960			960
19.	104027M	POLYMERIZED JOINT ADHESIVE	LF	130	13	117			117
20.	401030M	TACK COAT	GAL	200	200	200			200
21.	401036M	PRIME COAT	GAL	30	10	20			20
22.	401042M	HOT MIX ASPHALT 9.5 M 64 SURFACE COURSE	TON	100	25	75			75
23.	401099M	HOT MIX ASPHALT 25 M 64 BASE COURSE	TON	10	5	5			5
24.	602099M	RESET EXISTING CASTING	UNIT	2		2			2
25.	606021P	CONCRETE SIDEWALK, 8" THICK	SY	100	18	82			82
26.	606084P	DETECTABLE WARNING SURFACE	UNIT	8		8			8
27.	607021P	9" X 18" CONCRETE VERTICAL CURB	LF	110	17	93			93
28.	610013M	TRAFFIC MARKING LINES 4"	LF	550	24	526		526	
29.	610016M	TRAFFIC MARKING LINES 12"	LF	750	48	702		702	
30.	610017M	TRAFFIC MARKING LINES 24"	LF	90	15	85		85	
31.	612003P	REGULATORY AND WARNING SIGN	SF	15		15		15	
32.	N612007	OVERHEAD STREET NAME SIGNS	SF	27		27	27		
33.	651255M	RESET WATER VALVE BOX	UNIT	5	5				
34.	652432M	REST MANHOLE, SANITARY SEWER, USING EXISTING CASTING	UNIT	4	4				
35.	701027P	2" RIGID NONMETALLIC CONDUIT	LF	70	20	50	50		
36.	701030P	3" RIGID NONMETALLIC CONDUIT	LF	350	45	305	305		
37.	701102M	18" X 36" JUNCTION BOX	UNIT	4	13	4	4		
38.	N701008	FOUNDATION, TYPE ECS-STANDARD	UNIT	4		4	4		
39.	701168M	METER CABINET, TYPE T	UNIT	1		1	1		
40.	701192P	GROUND WIRE, NO. 8 AWG	LF	500	32	468	468		
41.	701213P	SERVICE WIRE, NO. 6 AWG	LF	250	40	210	210		
42.	701132M	FOUNDATION, TYPE P-MC	UNIT	1		1	1		
43.	N702010	18" CABINET SKIRT W/BATTERY BACK-UP	UNIT	1		1	1		
44.	N702016	CONTROLLER, 12 PHASE	UNIT	1		1	1		
45.	N702011	TRAFFIC SIGNAL STANDARD, ECS-8 X .250"	UNIT	1		1	1		
46.	N702012	TRAFFIC SIGNAL STANDARD, ECS-10 X .250"	UNIT	3		3	3		
47.	N702013	TRAFFIC SIGNAL MAST ARM, TYPE ECS-15MA	UNIT	1		1	1		
48.	N702014	TRAFFIC SIGNAL MAST ARM, TYPE ECS-25MA	UNIT	3		3	3		
49.	702027P	TRAFFIC SIGNAL CABLE, 2 CONDUCTOR	LF	500	32	468	468		
50.	702030P	TRAFFIC SIGNAL CABLE, 5 CONDUCTOR	LF	1450	46	1404	1404		
51.	702033P	TRAFFIC SIGNAL CABLE, 10 CONDUCTOR	LF	1350	56	1294	1294		
52.	702036M	TRAFFIC SIGNAL HEAD	UNIT	10		10	10		
53.	702039M	PEDESTRIAN SIGNAL HEAD	UNIT	6		6	6		
54.	702042M	PUSH BUTTON	UNIT	4		4	4		
55.	702044P	IMAGE DETECTOR CABLE	LF	250	26	224	224		
56.	702045M	IMAGE DETECTOR	UNIT	2		2	2		
57.	702060M	CONTROLLER TURN-ON	UNIT	1		1	1		
58.	N702017	PORTABLE WASHROOM MAINTENANCE	MONTH	7	7				
59.	8040004P	TOPSOIL SPREADING, 4" THICK	SY	60	10	50			50
60.	806006P	FERTILIZING AND SEEDING, TYPE A-3	SY	30	5	25			25
61.	809003M	STRAW MULCHING	SY	30	5	25			25
62.	16007M	ASPHALT PRICE ADJUSTMENT	DOLLAR	0	0				
63.	16004M	FUEL PRICE ADJUSTMENT	DOLLAR	100	100				
64.	702NS6	UNDERGROUND ELECTRIC SERVICE CONNECTION BY PSE&G	ALLOWANCE	1	1				

J:\M\_Colman\_Traffic\_Signals\_CSD\Drawings\Drawings\CAD\Traffic\Sheet3\Quantity Estimate.dwg (Sheet 3) 8/2/2024

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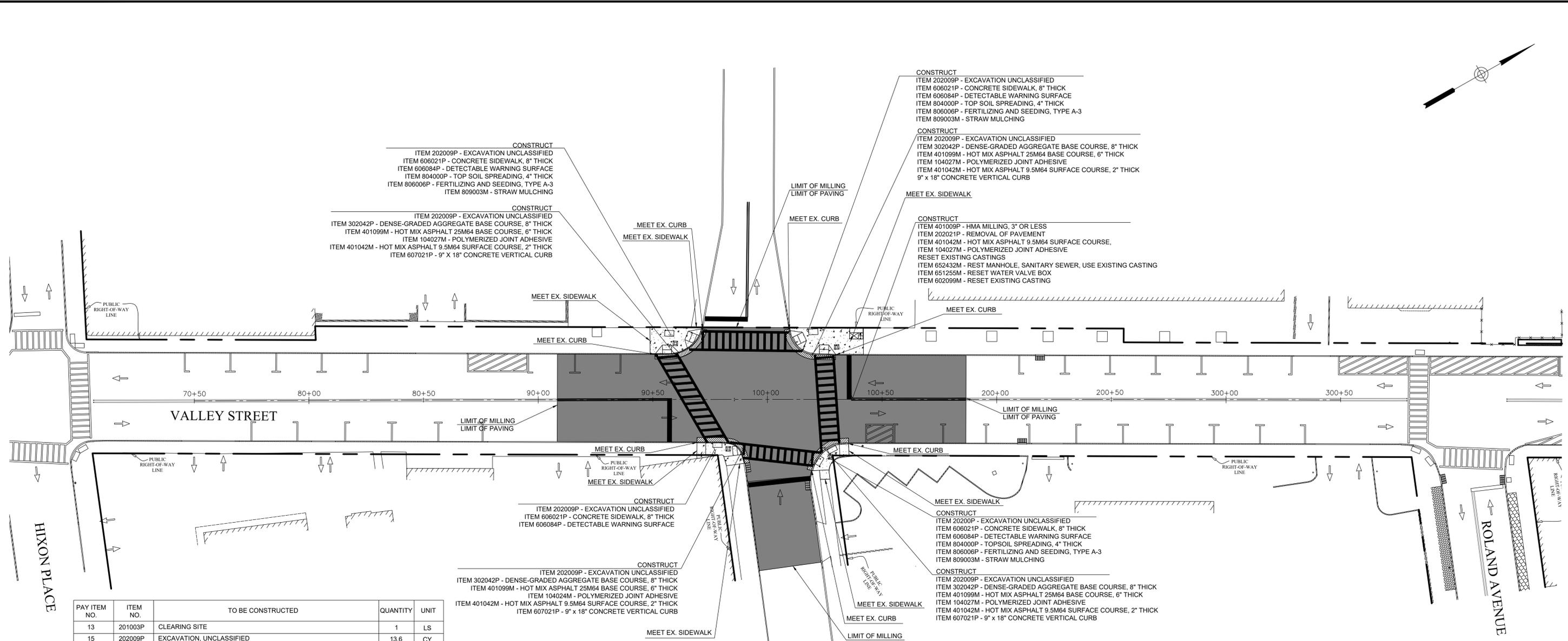
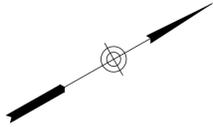
QUANTITY ESTIMATE

TRAFFIC SIGNAL IMPROVEMENTS VALLEY STREET (CR 638) AND ARNOLD TERRACE

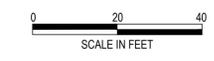
TOWNSHIP OF SOUTH ORANGE VILLAGE, ESSEX COUNTY, NJ

**RUDOLF J. GEDEON**  
 NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: 24GE39479

SCALE	DATE	DRAWN BY	CHECKED BY
AS SHOWN	08/2024	JG	ZI
PROJECT NUMBER	DRAWING NAME		SHEET NUMBER
24-240	QE-01		3 OF 19



PAY ITEM NO.	ITEM NO.	TO BE CONSTRUCTED	QUANTITY	UNIT
13	201003P	CLEARING SITE	1	LS
15	202009P	EXCAVATION, UNCLASSIFIED	13.6	CY
16	202021P	REMOVAL OF PAVEMENT	21.7	SY
17	302042P	DENSE-GRADED AGGREGATE BASE COURSE, 8" THICK	5.5	SY
18	401009P	HMA MILLING, 3" OR LESS	960	SY
19	104027M	POLYMERIZED JOINT ADHESIVE	117	LF
20	401030M	TACK COAT	200	GAL
21	401036M	PRIME COAT	20	GAL
22	401042M	HOT MIX ASPHALT 9.5 M 64 SURFACE COURSE	75	TON
23	401099M	HOT MIX ASPHALT 25 M 64 BASE COURSE	5	TON
24	602099M	RESET EXISTING CASTING	2	UNIT
25	606021P	CONCRETE SIDEWALK, 8" THICK	82	SY
26	606084P	DETECTABLE WARNING SURFACE	8	UNIT
27	607021P	9" X 18" CONCRETE VERTICAL CURB	93	LF
33	651255M	RESET WATER VALVE BOX	5	UNIT
34	652432M	RESET MANHOLE SANITARY SEWER USING EXISTING CASTING	4	UNIT
59	804000P	TOPSOIL SPREADING, 4" THICK	50	SY
60	806006P	FERTILIZING AND SEEDING, TYPE A-3	25	SY
61	809003M	STRAW MULCHING	25	SY



J.M. Collins, Traffic Signal, CSD, Date: 08/20/24, Drawing: CDDT-166/Construction PLAN, 8/20/24, 4

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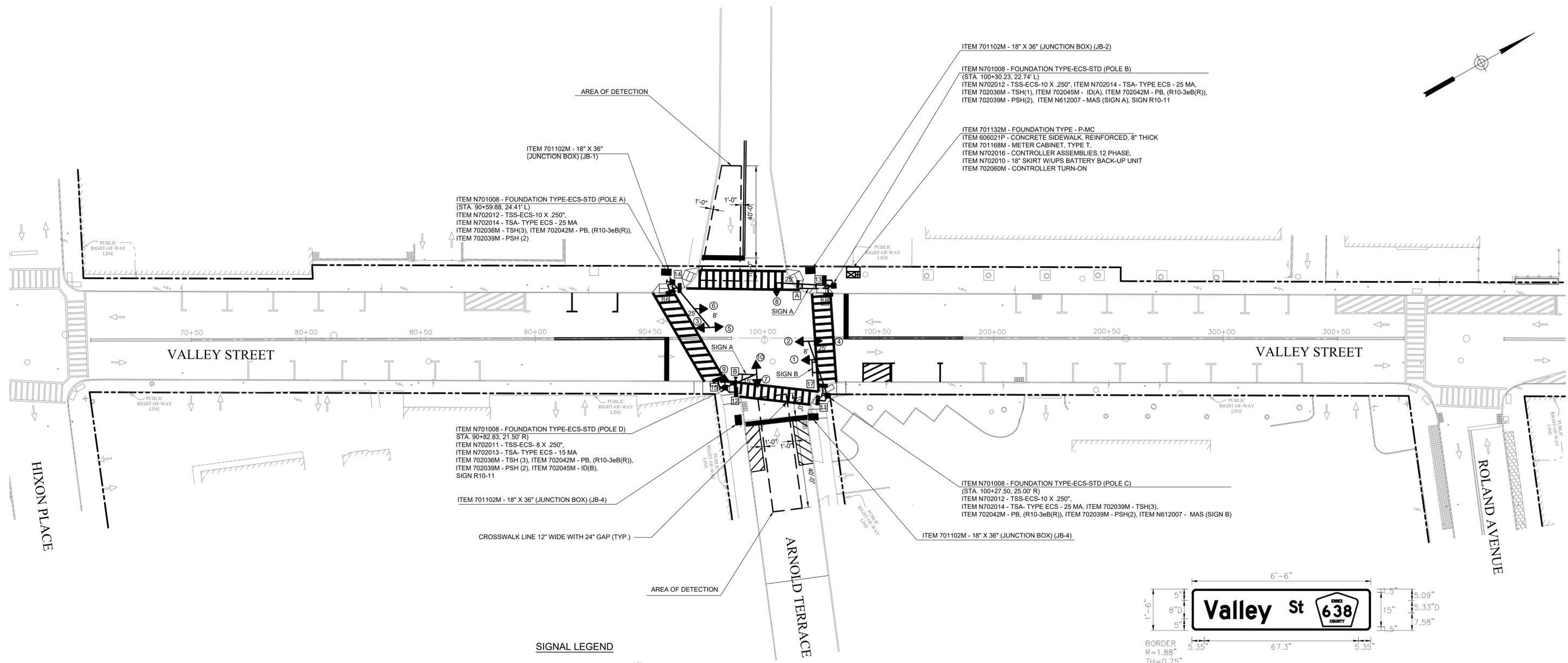
CONSTRUCTION PLAN

TRAFFIC SIGNAL IMPROVEMENTS VALLEY STREET (CR 638) AND ARNOLD TERRACE

TOWNSHIP OF SOUTH ORANGE VILLAGE, ESSEX COUNTY, NJ

**RUDOLF J. GEDEON**  
 NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: 24GE39479

SCALE	DATE	DRAWN BY	CHECKED BY
AS SHOWN	08/20/24	JS	ZI
PROJECT NUMBER	DRAWING NAME		SHEET NUMBER
24-240	CP		4 OF 19



ITEM N701008 - FOUNDATION TYPE-ECS-STD (POLE A)  
 (STA. 90+59.88, 24.41' L)  
 ITEM N702012 - TSS-ECS-10 X .250"  
 ITEM N702014 - TSA- TYPE ECS - 25 MA  
 ITEM 702036M - TSH(1), ITEM 702042M - PB, (R10-3eB(R)),  
 ITEM 702039M - PSH (2)

ITEM 701102M - 18" X 36" (JUNCTION BOX) (JB-2)  
 ITEM N701008 - FOUNDATION TYPE-ECS-STD (POLE B)  
 (STA. 100+30.23, 22.74' L)  
 ITEM N702012 - TSS-ECS-10 X .250", ITEM N702014 - TSA- TYPE ECS - 25 MA,  
 ITEM 702036M - TSH(1), ITEM 702045M - ID(A), ITEM 702042M - PB, (R10-3eB(R)),  
 ITEM 702039M - PSH(2), ITEM N612007 - MAS (SIGN A), SIGN R10-11

ITEM 701132M - FOUNDATION TYPE - P-MC  
 ITEM 606021P - CONCRETE SIDEWALK, REINFORCED, 8" THICK  
 ITEM 701168M - METER CABINET, TYPE T,  
 ITEM N702016 - CONTROLLER ASSEMBLIES, 12 PHASE,  
 ITEM N702010 - 18" SKIRT W/UPS BATTERY BACK-UP UNIT  
 ITEM 702060M - CONTROLLER TURN-ON

ITEM N701008 - FOUNDATION TYPE-ECS-STD (POLE D)  
 (STA. 90+82.83, 21.50' R)  
 ITEM N702011 - TSS-ECS- 8 X .250",  
 ITEM N702013 - TSA- TYPE ECS - 15 MA  
 ITEM 702036M - TSH (3), ITEM 702042M - PB, (R10-3eB(R)),  
 ITEM 702039M - PSH (2), ITEM 702045M - ID(B),  
 SIGN R10-11

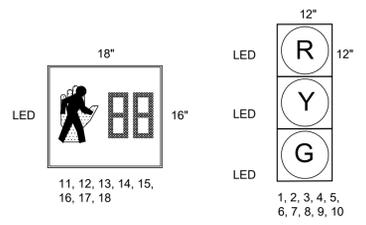
ITEM N701008 - FOUNDATION TYPE-ECS-STD (POLE C)  
 (STA. 100+27.50, 25.00' R)  
 ITEM N702012 - TSS-ECS-10 X .250",  
 ITEM N702014 - TSA- TYPE ECS - 25 MA, ITEM 702039M - TSH(3),  
 ITEM 702042M - PB, (R10-3eB(R)), ITEM 702039M - PSH(2), ITEM N612007 - MAS (SIGN B)

ITEM 701102M - 18" X 36" (JUNCTION BOX) (JB-4)

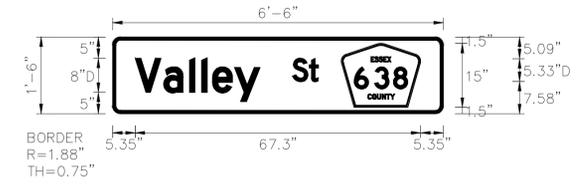
ITEM 701102M - 18" X 36" (JUNCTION BOX) (JB-4)

CROSSWALK LINE 12" WIDE WITH 24" GAP (TYP.)

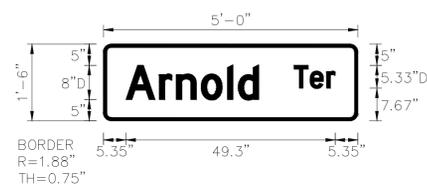
**SIGNAL LEGEND**



**NOTES:**  
 1. ALL TRAFFIC SIGNAL EQUIPMENTS SHALL BE POWDER COATED BLACK.



**SIGN "A"**



**SIGN "B"**



J:\M\_Colman\_Traffic\_Signal\_CSD\Drawings\Drawings\Traffic\_Signal\Plan\Plan.dwg 8/23/24

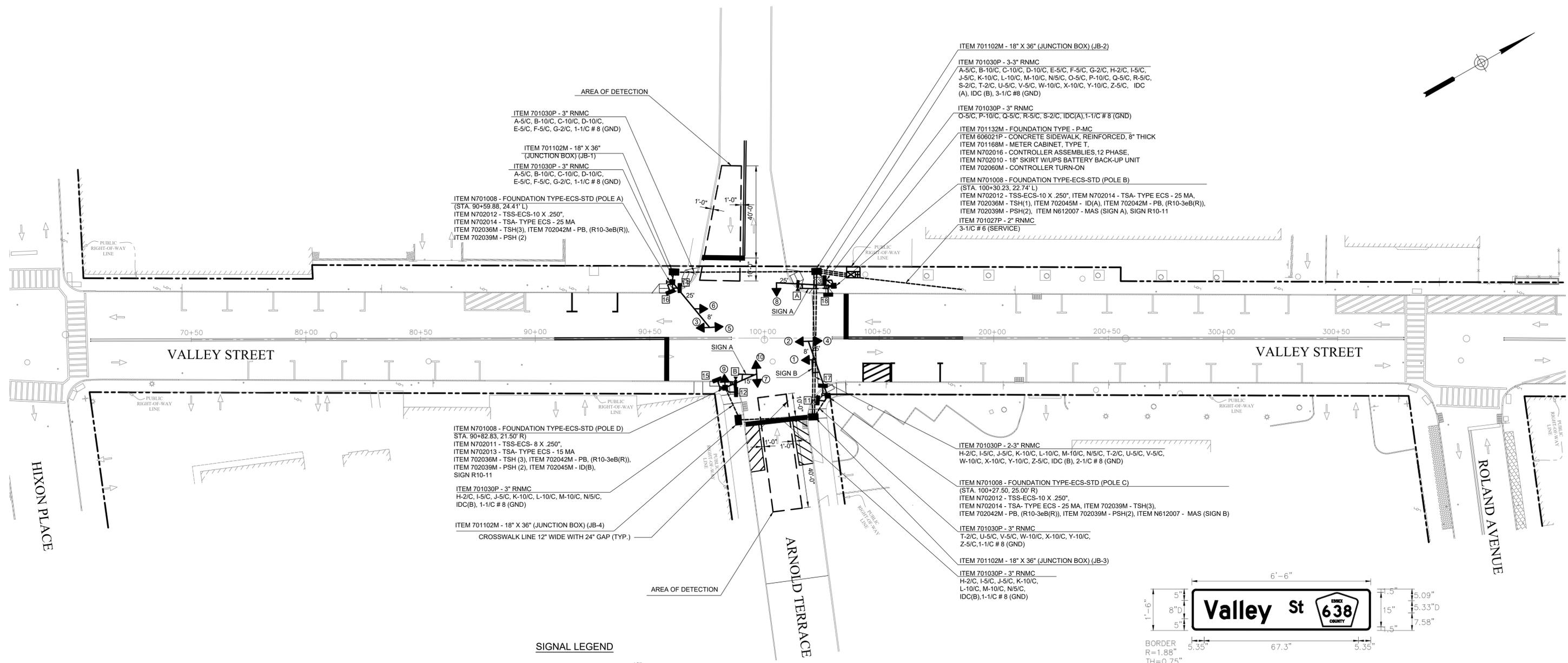
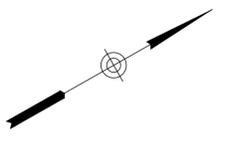
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NEW JERSEY DEPARTMENT OF TRANSPORTATION  
**TRAFFIC SIGNAL PLAN**  
 TRAFFIC SIGNAL IMPROVEMENTS VALLEY STREET (CR 638) AND ARNOLD TERRACE  
 TOWNSHIP OF SOUTH ORANGE VILLAGE, ESSEX COUNTY, NJ

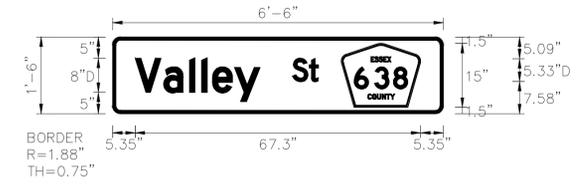
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 NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: 24GE39479

SCALE	DATE	DRAWN BY	CHECKED BY
AS SHOWN	08/2024	JS	ZI
PROJECT NUMBER	24-240	DRAWING NAME	TSP
SHEET NUMBER	5 OF 19		

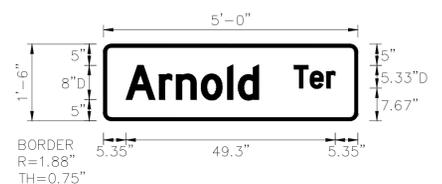


- ITEM 701102M - 18" X 36" (JUNCTION BOX) (JB-2)
- ITEM 701030P - 3-3" RNMC  
A-5/C, B-10/C, C-10/C, D-10/C, E-5/C, F-5/C, G-2/C, H-2/C, I-5/C, J-5/C, K-10/C, L-10/C, M-10/C, N-5/C, O-5/C, P-10/C, Q-5/C, R-5/C, S-2/C, T-2/C, U-5/C, V-5/C, W-10/C, X-10/C, Y-10/C, Z-5/C, IDC (A), IDC (B), 3-1/C #8 (GND)
- ITEM 701030P - 3" RNMC  
O-5/C, P-10/C, Q-5/C, R-5/C, S-2/C, IDC(A), 1-1/C #8 (GND)
- ITEM 701132M - FOUNDATION TYPE - P-MC
- ITEM 606021P - CONCRETE SIDEWALK, REINFORCED, 8" THICK
- ITEM 701168M - METER CABINET, TYPE T
- ITEM N702016 - CONTROLLER ASSEMBLIES, 12 PHASE
- ITEM N702010 - 18" SKIRT W/UPS BATTERY BACK-UP UNIT
- ITEM 702060M - CONTROLLER TURN-ON
- ITEM N701008 - FOUNDATION TYPE-ECS-STD (POLE B)  
(STA. 100+30.23, 22.74' L)
- ITEM N702012 - TSS-ECS-10 X .250", ITEM N702014 - TSA- TYPE ECS - 25 MA, ITEM 702036M - TSH(1), ITEM 702045M - ID(A), ITEM 702042M - PB, (R10-3eB(R)), ITEM 702039M - PSH(2), ITEM N612007 - MAS (SIGN A), SIGN R10-11
- ITEM 701027P - 2" RNMC  
3-1/C #6 (SERVICE)

- ITEM N701008 - FOUNDATION TYPE-ECS-STD (POLE D)  
STA. 90+82.83, 21.50' R)
- ITEM N702011 - TSS-ECS- 8 X .250"
- ITEM N702013 - TSA- TYPE ECS - 15 MA
- ITEM 702036M - TSH (3), ITEM 702042M - PB, (R10-3eB(R)), ITEM 702039M - PSH (2), ITEM 702045M - ID(B), SIGN R10-11
- ITEM 701030P - 3" RNMC  
H-2/C, I-5/C, J-5/C, K-10/C, L-10/C, M-10/C, N-5/C, IDC(B), 1-1/C #8 (GND)
- ITEM 701102M - 18" X 36" (JUNCTION BOX) (JB-4)  
CROSSWALK LINE 12" WIDE WITH 24" GAP (TYP.)
- ITEM 701030P - 2-3" RNMC  
H-2/C, I-5/C, J-5/C, K-10/C, L-10/C, M-10/C, N-5/C, T-2/C, U-5/C, V-5/C, W-10/C, X-10/C, Y-10/C, Z-5/C, IDC (B), 2-1/C #8 (GND)
- ITEM N701008 - FOUNDATION TYPE-ECS-STD (POLE C)  
(STA. 100+27.50, 25.00' R)
- ITEM N702012 - TSS-ECS-10 X .250"
- ITEM N702014 - TSA- TYPE ECS - 25 MA, ITEM 702039M - TSH(3), ITEM 702042M - PB, (R10-3eB(R)), ITEM 702039M - PSH(2), ITEM N612007 - MAS (SIGN B)
- ITEM 701030P - 3" RNMC  
T-2/C, U-5/C, V-5/C, W-10/C, X-10/C, Y-10/C, Z-5/C, 1-1/C #8 (GND)
- ITEM 701102M - 18" X 36" (JUNCTION BOX) (JB-3)
- ITEM 701030P - 3" RNMC  
H-2/C, I-5/C, J-5/C, K-10/C, L-10/C, M-10/C, N-5/C, IDC(B), 1-1/C #8 (GND)



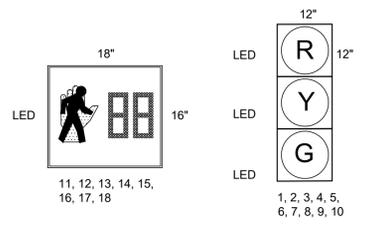
SIGN "A"



SIGN "B"



SIGNAL LEGEND



NOTE:  
1. THE CROSSWALKS ARE NOT SHOWN FOR CLARITY. REFER TO SIGNING AND SIGNING PLAN FOR CROSSWALK INFORMATION.

PAY ITEM NO.	ITEM NO.	TO BE CONSTRUCTED	QUANTITY	UNIT
32	N612007	OVERHEAD STREET NAME SIGNS	27	SF
35	701027P	2" RIGID NONMETALLIC CONDUIT	50	LF
36	701030P	3" RIGID NONMETALLIC CONDUIT	305	LF
37	701102M	18" X 36" JUNCTION BOX	4	UNIT
38	N701008	FOUNDATION, TYPE ECS-STANDARD	4	UNIT
39	701168M	METER CABINET, TYPE T	1	UNIT
40	701192P	GROUND WIRE, NO. 8 AWG	468	LF
41	701213P	SERVICE WIRE, NO. 6 AWG	210	LF
42	701132M	FOUNDATION, TYPE P-MC	1	UNIT
43	N702010	18" CABINET SKIRT W/BATTERY BACK-UP	1	UNIT
44	N702016	CONTROLLER, 12 PHASE	1	UNIT
45	N702011	TRAFFIC SIGNAL STANDARD, ECS-8 X .250"	1	UNIT
46	N702012	TRAFFIC SIGNAL STANDARD, ECS-10 X .250"	3	UNIT
47	N702013	TRAFFIC SIGNAL MAST ARM, TYPE ECS-15MA	1	UNIT
48	N702014	TRAFFIC SIGNAL MAST ARM, TYPE ECS-25MA	3	UNIT
49	702027P	TRAFFIC SIGNAL CABLE, 2 CONDUCTOR	468	LF
50	702030P	TRAFFIC SIGNAL CABLE, 5 CONDUCTOR	1404	LF
51	702033P	TRAFFIC SIGNAL CABLE, 10 CONDUCTOR	1294	LF
52	702036M	TRAFFIC SIGNAL HEAD	10	UNIT
53	702039M	PEDESTRIAN SIGNAL HEAD	6	UNIT
54	702042M	PUSH BUTTON	4	UNIT
55	702044P	IMAGE DETECTOR CABLE	224	LF
56	702045M	IMAGE DETECTOR	2	UNIT
57	702060M	CONTROLLER TURN-ON	1	UNIT



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ELECTRICAL PLAN 1

TRAFFIC SIGNAL IMPROVEMENTS VALLEY STREET (CR 638) AND ARNOLD TERRACE

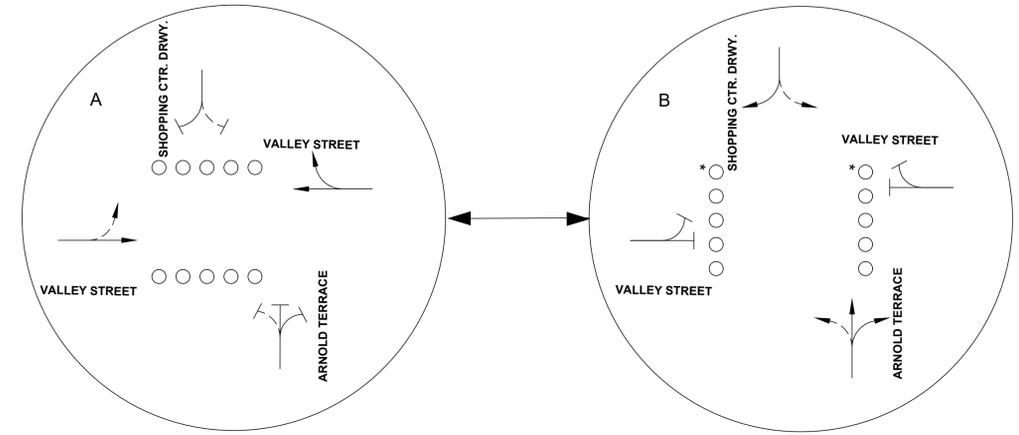
TOWNSHIP OF SOUTH ORANGE VILLAGE, ESSEX COUNTY, NJ

**RUDOLF J. GEDEON**  
NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: 246E39479

SCALE: AS SHOWN	DATE: 08/2024	DRAWN BY: JS	CHECKED BY: ZI
PROJECT NUMBER: 24-240	DRAWING NAME: EP		SHEET NUMBER:

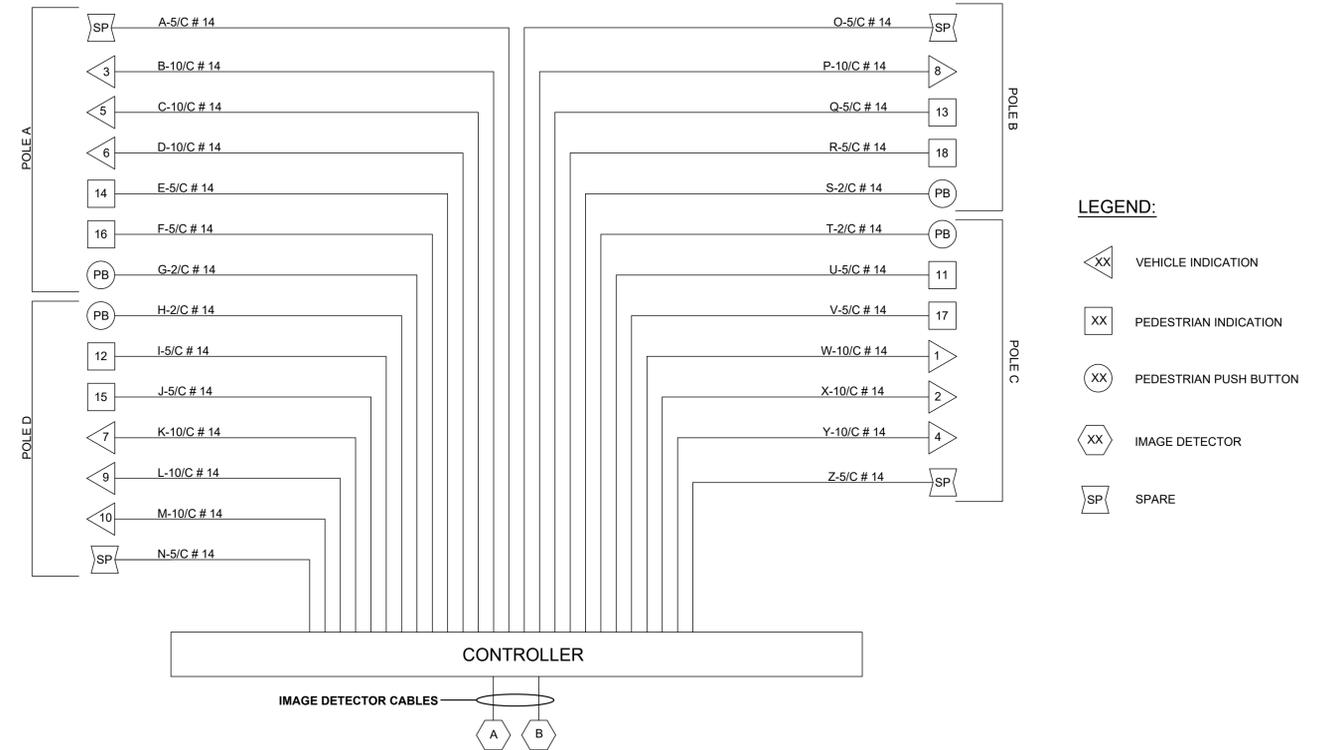
6 OF 19

J.M. Colonna, Traffic Signal Designer, CADD/Technical/Electrical Plan, 01 Aug 2024, R. ZOBAL



\* ONLY OCCURS AT PEDESTRIAN ACTUATION

### BLOCK WIRING DIAGRAM



### VEHICLE ACTUATION

PHASE		1-6	7-10	11,12,13,14	15,16,17,18	TIMING PLAN I
A.	VALLEY STREET R.O.W.	G	R	W	DW	42-32
	PEDESTRIAN CLEARANCE	G	R	FDW	DW	11
	CHANGE	Y	R	DW	DW	4
	CLEARANCE	R	R	DW	DW	2
B.	ARNOLD TERR./SHOPPING CTR. DRWY. R.O.W.	R	G	DW	DW	19-29
	CHANGE	R	Y	DW	DW	3
	CLEARANCE	R	R	DW	DW	3
	EMERGENCY FLASH	Y	R	DARK	DARK	-

### PEDESTRIAN ACTUATION

PHASE		1-6	7-10	11,12,13,14	15,16,17,18	TIMING PLAN I
A.	VALLEY STREET R.O.W.	G	R	W	DW	42
	PEDESTRIAN CLEARANCE	G	R	FDW	DW	11
	CHANGE	Y	R	DW	DW	4
	CLEARANCE	R	R	DW	DW	2
B.	ARNOLD TERR./SHOPPING CTR. DRWY. R.O.W.	R	G	DW	W	8
	PEDESTRIAN CLEARANCE	R	G	DW	FDW	11
	CHANGE	R	Y	DW	DW	3
	CLEARANCE	R	R	DW	DW	3

### NOTES:

1. THE MEMORY CIRCUITS ARE TO BE DISCONNECTED.
2. THE VEHICLE EXTENSION SHALL BE SET AT 2 SECONDS.
3. THE MANUAL CONTROL IS TO BE DISCONNECTED.
4. PHASE A SHALL BE FOLLOWED BY PHASE B.
5. THE SIGNAL SHALL BE SET TO FREE MODE, SOFT RECALL, AND REST IN PHASE A VALLEY STREET R.O.W. DON'T WALK.

### HOURS OF OPERATION (REGULAR OPERATION):

TIMING PLAN I - ALL TIME

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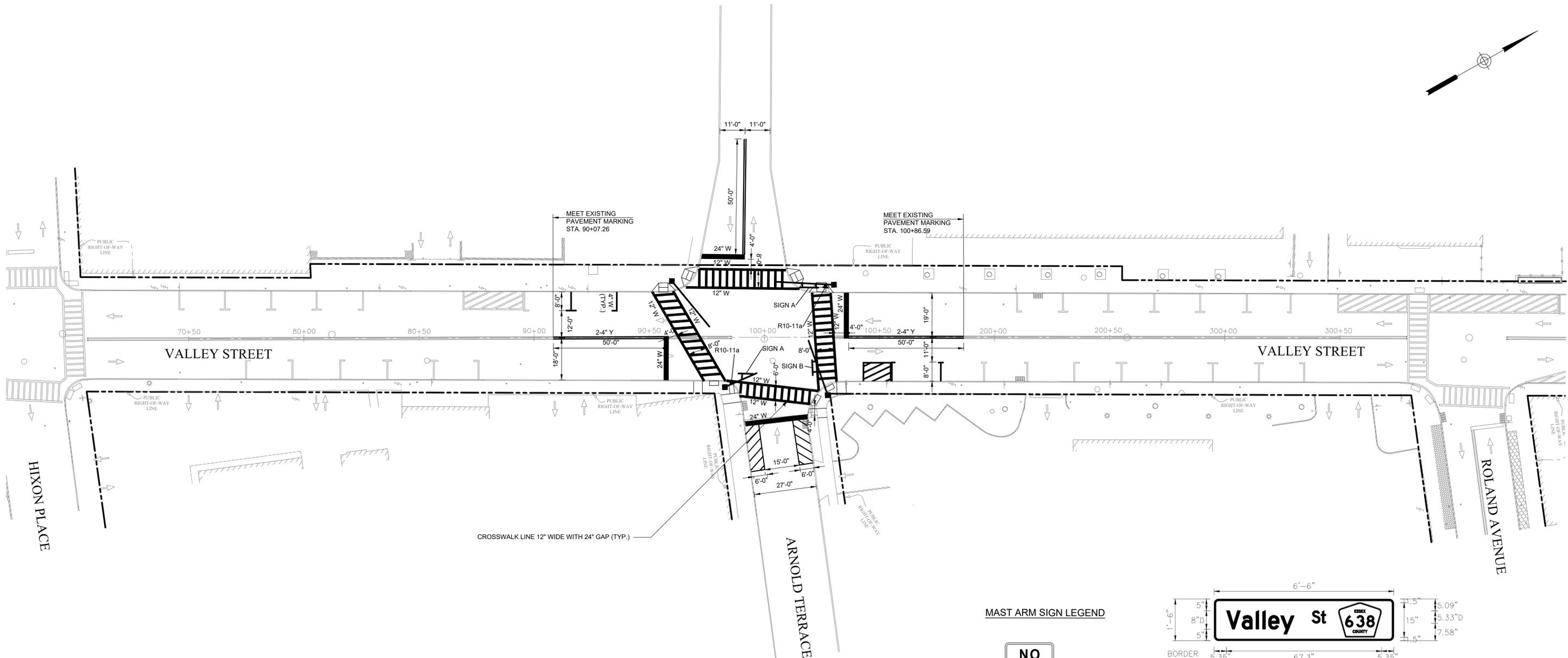
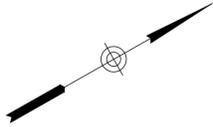
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NEW JERSEY DEPARTMENT OF TRANSPORTATION  
 ELECTRICAL PLAN - II  
 TRAFFIC SIGNAL IMPROVEMENTS VALLEY STREET (CR 638) AND ARNOLD TERRACE  
 TOWNSHIP OF SOUTH ORANGE VILLAGE, ESSEX COUNTY, NJ

**RUDOLF J. GEDEON**  
 NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: 24GE39479

SCALE: AS SHOWN	DATE: 08/2024	DRAWN BY: JS	CHECKED BY: ZI
PROJECT NUMBER: 24-240	DRAWING NAME: EP-II		

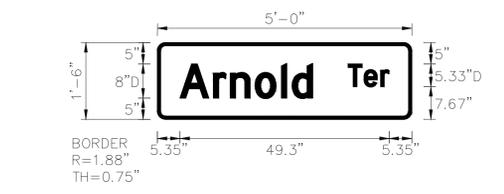
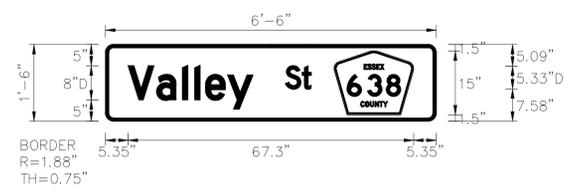
SHEET NUMBER: 7 OF 19



**MAST ARM SIGN LEGEND**



R10-11a  
30" X 36"  
NTS



PAY ITEM NO.	ITEM NO.	TO BE CONSTRUCTED	QUANTITY
28	610013M	TRAFFIC MARKING LINES 4"	526 LF
29	610016M	TRAFFIC MARKING LINES 12"	702 LF
30	610017M	TRAFFIC MARKING LINES 24"	85 LF
31	612003P	REGULATORY AND WARNING SIGN	15 SF

**PAVEMENT MARKING LEGEND**

UNLESS OTHERWISE SHOWN, PAVEMENT MARKING SHALL CONFORM TO THE FOLLOWING:  
 STOP LINE 24" WIDE WHITE LINE  
 CENTER LINE 2.4" WIDE YELLOW LINES  
 CROSSWALK LINES 12" WIDE WHITE LINES

- NOTES:
- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
  - 2) NEAREST CROSSWALK LINE IS TO BE LOCATED A MINIMUM OF 4' FROM STOP LINE.
  - 3) ALL CONFLICTING SIGNS, TREES AND OTHER OBSTRUCTIONS SHALL BE REMOVED AS PART OF THIS CONSTRUCTION.
  - 4) W = WHITE STRIPE  
Y = YELLOW STRIPE

- NOTES:
1. ALL EXISTING SIGNS NOT CALLED OUT FOR REMOVAL SHALL REMAIN.

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SIGNING AND STRIPING PLAN 1

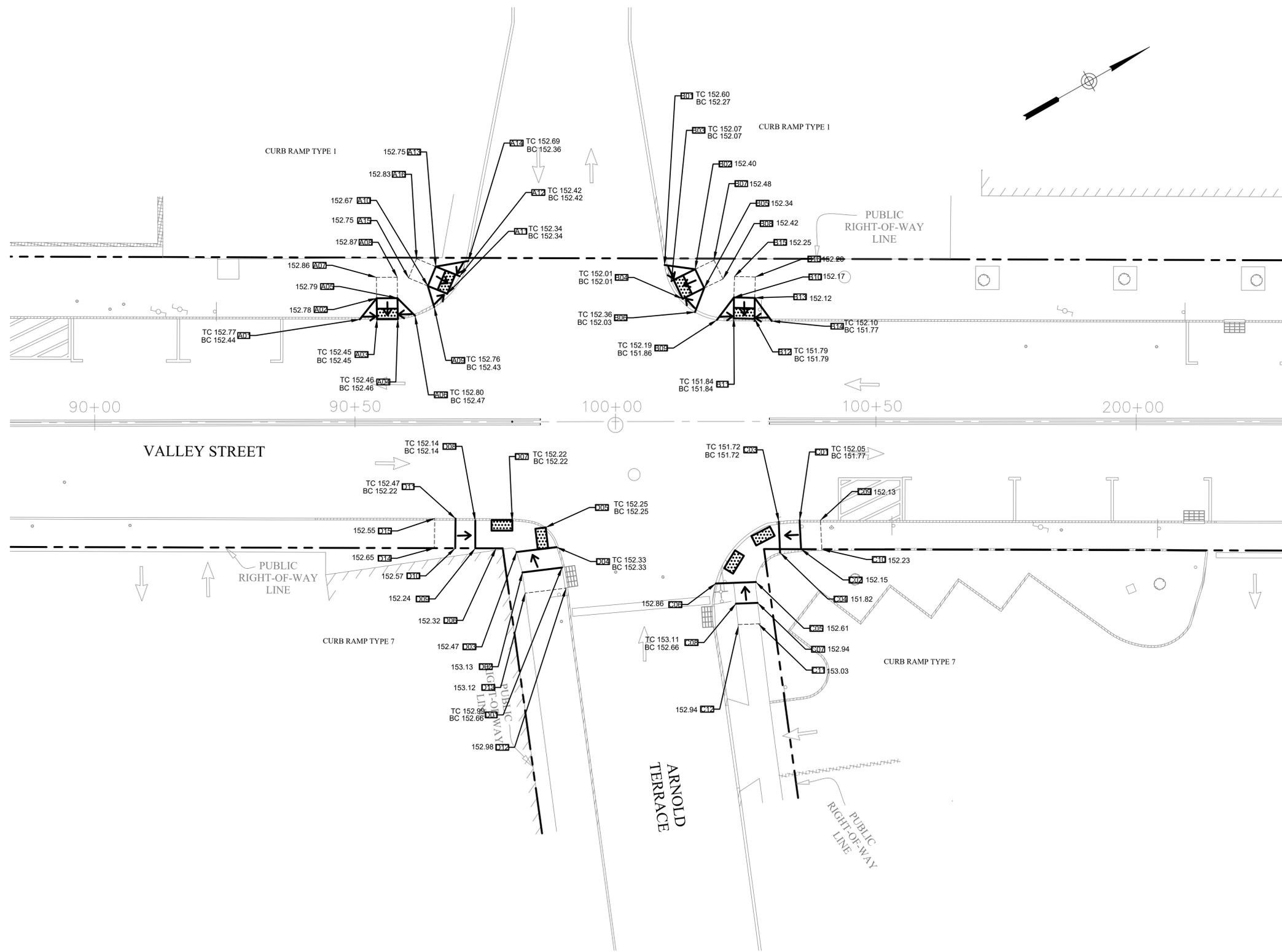
TRAFFIC SIGNAL IMPROVEMENTS VALLEY STREET (CR 638) AND ARNOLD TERRACE

TOWNSHIP OF SOUTH ORANGE VILLAGE, ESSEX COUNTY, NJ

**RUDOLF J. GEDEON**  
NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: 24GE39479

SCALE: AS SHOWN	DATE: 08/2024	DRAWN BY: JS	CHECKED BY: ZI
PROJECT NUMBER: 24-240	DRAWING NAME: PVM		
SHEET NUMBER: 8 OF 19			

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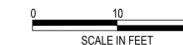


Point No.	Station	Offset
A01	90+50.92	19.59' L
A02	90+54.17	23.63' L
A03	90+54.25	19.63' L
A04	90+58.25	19.65' L
A05	90+58.17	23.65' L
A06	90+61.54	20.27' L
A07	90+54.15	27.63' L
A08	90+58.14	27.65' L
A09	90+65.23	21.89' L
A10	90+64.00	25.99' L
A11	90+67.77	24.51' L
A12	90+70.15	27.82' L
A13	90+65.54	29.66' L
A14	90+71.79	30.75' L
A15	90+60.31	27.50' L
A16	90+61.85	31.19' L
B01	100+09.46	29.92' L
B02	100+15.33	29.12' L
B03	100+10.76	26.86' L
B04	100+12.93	23.46' L
B05	100+17.06	25.51' L
B06	100+15.29	20.92' L
B07	100+18.93	30.85' L
B08	100+20.66	27.24' L
B09	100+19.48	19.42' L
B10	100+22.77	23.72' L
B11	100+22.73	19.78' L
B12	100+26.73	19.63' L
B13	100+26.77	23.63' L
B14	100+30.02	19.21' L
B15	100+22.86	27.72' L
B16	100+26.86	27.63' L

Point No.	Station	Offset
C01	100+35.34	18.89' R
C02	100+35.61	24.42' R
C03	100+31.36	19.10' R
C04	100+31.59	25.09' R
C05	100+27.00	30.74' R
C06	100+19.25	30.97' R
C07	100+27.27	34.68' R
C08	100+23.11	34.83' R
C09	100+39.34	18.90' R
C10	100+39.62	24.43' R
C11	100+27.75	38.67' R
C12	100+23.53	38.82' R
D01	90+89.70	27.90' R
D02	90+82.10	28.81' R
D03	90+80.93	24.87' R
D04	90+88.68	23.99' R
D05	90+86.58	20.22' R
D06	90+77.03	24.20' R
D07	90+80.16	18.81' R
D08	90+73.06	18.93' R
D09	90+73.05	24.18' R
D10	90+69.20	24.17' R
D11	90+69.26	18.50' R
D12	90+90.48	31.85' R
D13	90+82.62	32.78' R
D14	90+65.20	24.12' R
D15	90+65.26	18.48' R

**NOTE:**

- PLEASE REFER TO DETAILS PLAN FOR ADA RAMP REQUIREMENTS.



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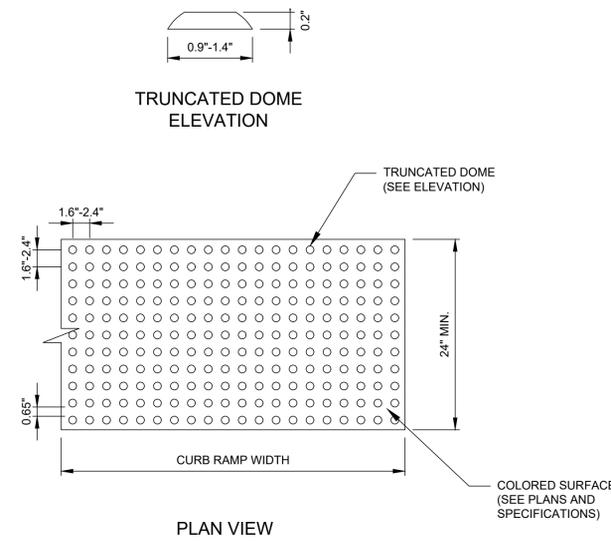
**CURB RAMP PLAN 1**

TRAFFIC SIGNAL IMPROVEMENTS VALLEY STREET (CR 638) AND ARNOLD TERRACE

TOWNSHIP OF SOUTH ORANGE VILLAGE, ESSEX COUNTY, NJ

**RUDOLF J. GEDEON**  
 NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: 24GE39479

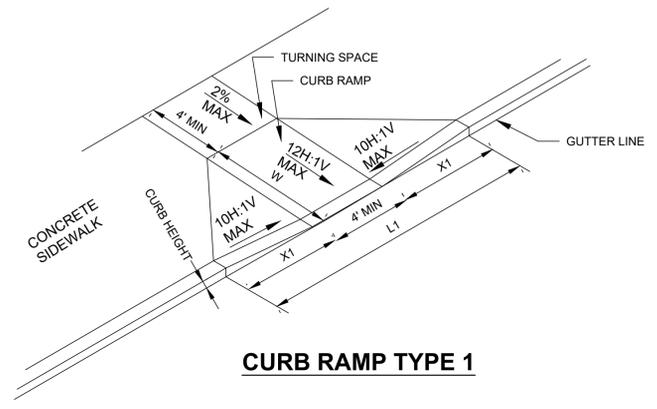
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PROJECT NUMBER	DRAWING NAME		SHEET NUMBER
24-240	CRP		9 OF 19



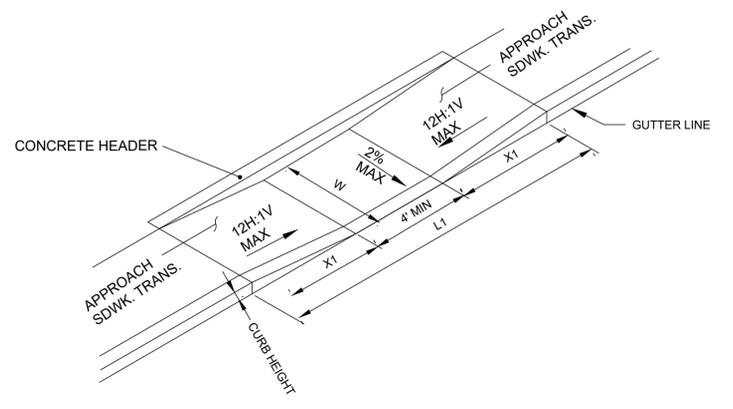
**DETECTABLE WARNING SURFACE DETAIL**  
N.T.S.

**DETECTABLE WARNING SURFACE NOTES:**

1. THE SIZE OF THE DETECTABLE WARNING SURFACE SHALL BE 24" IN THE DIRECTION OF TRAVEL AND SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLASH SURFACE.
2. THE DETECTABLE WARNING SURFACE SHALL BE PLACED SUCH THAT THE ROWS OF DOMES ARE PERPENDICULAR TO THE GRADE BREAK, AND THUS PARALLEL TO THE DIRECTION OF TRAVEL.



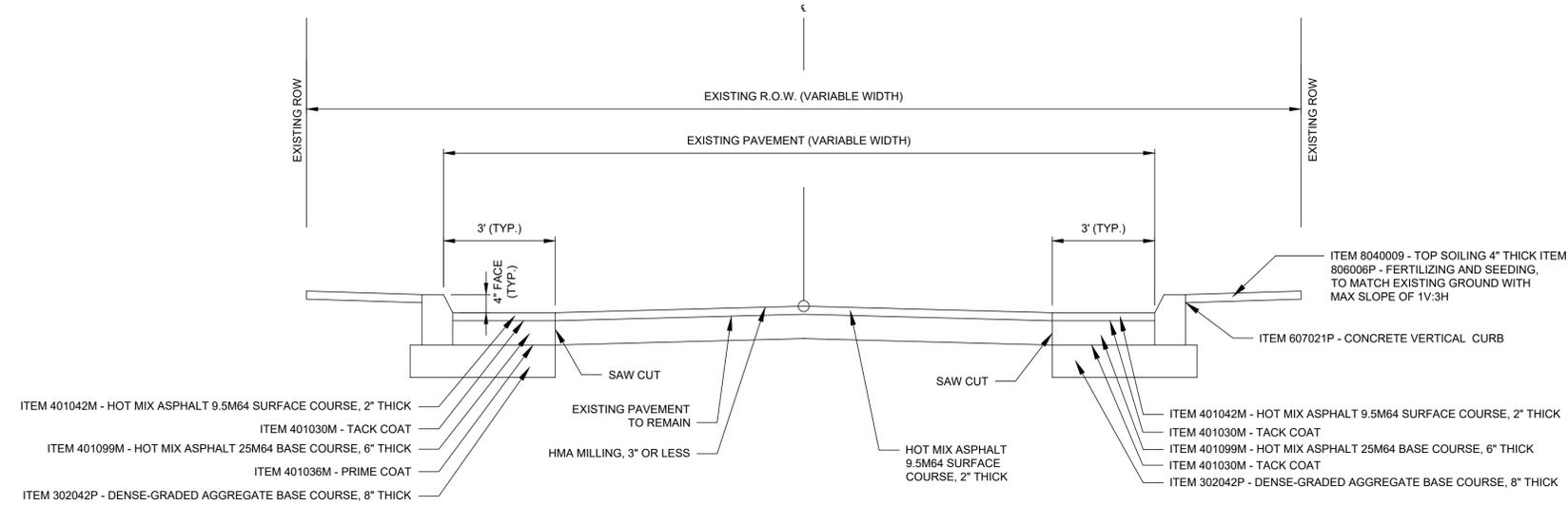
**CURB RAMP TYPE 1**



**CURB RAMP TYPE 7  
(LIMITED ROW)**

**CURB RAMP NOTES:**

1. THE LOCATION AND ORIENTATION TO CURB RAMPS SHALL BE AS SHOWN ON THE CONSTRUCTION PLAN.
2. CONCRETE SIDEWALK ALONG PROJECT FRONTAGE LIMITS AND AT CURB RAMPS SHALL HAVE A MAXIMUM CROSS-SLOPE OF 2.00%. HANDICAP RAMPS MUST BE IN STRICT CONFORMANCE TO THE "2010 ADA STANDARDS FOR ACCESSIBLE DESIGN" AND "PROPOSED ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT-OF-WAY." ALL MAXIMUM SLOPES CANNOT BE EXCEEDED. THE CONTRACTOR IS RESPONSIBLE FOR POST-CONSTRUCTION SETTLEMENT AND SHOULD PROVIDE LESS THAN MAXIMUM SLOPES AS NEEDED. WHERE ELEVATION OF THE CURB AND SIDEWALK VARY DRASTICALLY IN AREAS OF THE PROPOSED RAMPS, THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING THE RAMP SIZE SO THAT SLOPE REQUIREMENTS ARE NOT EXCEEDED.
3. THE RUNNING SLOPE OF A CURB RAMP SHALL BE 20H:1V (5%) MINIMUM AND 12H:1V (8.33%) MAXIMUM.
4. THE CROSS SLOPE OF THE CURB RAMPS SHOULD BE AS FLAT AS POSSIBLE, NOT TO EXCEED 50H:1V (2%).
5. THE RUNNING AND CROSS SLOPES ON LANDINGS IS 50H: 1V (2%) MAXIMUM.
6. THE VERTICAL ALIGNMENT OF A CURB RAMP SHALL BE PLANAR. GRADE BREAKS SHALL BE FLUSH AND PERPENDICULAR TO THE DIRECTION OF RAMP RUN.
7. RAMP TRANSITIONS BETWEEN WALKS, LANDINGS, GUTTERS, OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT VERTICAL CHANGES (1/4" MAX).
8. LANDINGS SHALL HAVE A MINIMUM CLEAR DIMENSION OF 4'-0" BY 4'-0" AND MAY BE SHARED BY ADJACENT RAMPS.
9. THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE FOOT OF A CURB RAMP, LANDING, OR BLENDED TRANSITION SHALL BE 5% MAXIMUM.
10. CURB RAMPS SHALL NOT BE POURED MONOLITHICALLY BUT RATHER HAVE CLEARLY DEFINED GRADE BREAKS AS SHOWN IN THE DETAILS, DELINEATED AS NECESSARY WITH EXPANSION JOINT FILLER THAT COMPLIES WITH APPLICABLE SURFACE REQUIREMENTS.
11. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL TRAFFIC CONTROL DEVICES, UTILITY LOCATIONS, SIGNS, STREET FURNITURE, AND DRAINAGE TO ENSURE A CONTINUOUS PEDESTRIAN ACCESS ROUTE AT ALL CURB RAMP LOCATIONS.
12. RAMPS MUST FALL WITHIN CROSSWALK LIMITS.



**TYPICAL ROADWAY CROSS-SECTION WITH PAVEMENT REPAIR**  
N.T.S.

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DETAILS  
TRAFFIC SIGNAL IMPROVEMENTS VALLEY STREET (CR 638) AND ARNOLD TERRACE  
TOWNSHIP OF SOUTH ORANGE VILLAGE, ESSEX COUNTY, NJ

**RUDOLF J. GEDEON**  
NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: 24GE39479

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AS SHOWN	08/2024	JS	ZI
PROJECT NUMBER	DRAWING NAME		SHEET NUMBER
24-240	DTL		10 OF 19

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**GENERAL NOTES:**

-  CONSTRUCTION SIGNS
-  DRUMS
-  DIRECTION OF TRAFFIC FLOW
-  TRAFFIC DIRECTOR, FLAGGER
-  TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION AND ARROW BOARD SHOWING CAUTION MODE
-  BUFFER ZONE
-  WORK AREA

1. ADVANCE WARNING SIGNS DISTANCES AND TAPER LENGTHS MAY BE EXTENDED, AT DIRECTION OF THE DEPARTMENT, TO ADJUST FOR REDUCED VISIBILITY DUE TO HORIZONTAL AND VERTICAL CURVATURE OF THE ROADWAY.
2. THE APPROXIMATE LOCATIONS OF THE ILLUMINATED FLASHING ARROW BOARDS ARE SHOWN ON THE TRAFFIC CONTROL PLANS. THESE LOCATIONS MAY BE MODIFIED AS APPROVED BY RE TO ADJUST FOR VISIBILITY DUE TO HORIZONTAL OR VERTICAL CURVATURE OF THE ROADWAY OR TO POSITION AT A SAFER LOCATION. ILLUMINATED FLASHING ARROW BOARDS ARE TO BE USED FOR TEMPORARY LANE CLOSINGS AND AT LOCATIONS SHOWN ON THE TRAFFIC CONTROL PLANS.
3. PRIOR TO ANY ROAD CONSTRUCTION, TRAFFIC CONTROL SIGNS AND DEVICES ARE TO BE IN PLACE.
4. RAMPS AND/OR SIDE STREETS ENTERING THE ROADWAY AFTER THE FIRST ADVANCE WARNING SIGN ARE TO BE PROVIDED WITH AT LEAST ONE W20-IF SIGN (ROAD WORK AHEAD) AS A MINIMUM.
5. ALL EXISTING ROAD SIGNS, PAVEMENT MARKINGS, AND / OR PLOWABLE PAVEMENT REFLECTORS WHICH CONFLICT WITH THE PROPOSED TRAFFIC CONTROL PLAN ARE TO BE COVERED, REMOVED, OR RELOCATED AS DIRECTED BY THE RE.
6. CONFLICTING OR NON-OPERATING SIGNAL INDICATIONS ON EITHER THE EXISTING, TEMPORARY, OR PROPOSED TRAFFIC SIGNAL SYSTEMS ARE TO BE BAGGED OR COVERED.
7. MAINTENANCE AND PROTECTION OF TRAFFIC TO BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PART VI "STANDARDS AND GUIDES FOR TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY, AND INCIDENT MANAGEMENT OPERATIONS", UNLESS OTHERWISE NOTED IN THE PLANS AND SPECIFICATIONS.
8. CONSTRUCTION SIGN W99-2 (GIVE US A BRAKE) TO BE LOCATED 200 FEET IN ADVANCE OF PROJECT LIMITS.
9. A W1-6 (ARROW) SIGN MOUNTED ON A BREAKAWAY BARRICADE AND CENTERED ON THE CLOSED WIDTH TO BE LOCATED 100 FEET BEYOND EACH INTERSECTION OR MAIN ACCESS POINT WITHIN THE AREA OF A LANE OR SHOULDER CLOSURE.
10. CONSTRUCTION SIGNS R11-4 (ROAD CLOSED TO THRU TRAFFIC) TO BE PLACED AT THE INTERSECTING STREETS WHICH ARE CLOSED TO TRAFFIC BECAUSE OF CONSTRUCTION.
11. CONSTRUCTION SIGNS W8-9A (SYMBOL FOR UNEVEN PAVEMENT) AND WB-14A (GROOVED PAVEMENT) TO BE USED WHEN SUCH PAVEMENT CONDITIONS EXIST. THE PLACEMENT OF THESE SIGNS TO BE AS DIRECTED BY THE RE.
12. MOVING WORK AREAS IN A LANE CLOSURE REQUIRE A TRAILER MOUNTED ILLUMINATED FLASHING ARROW TO REMAIN AT THE END OF THE TAPER, THE TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION THAT IS TO MOVE WITH THE WORK AREAS TO KEEP A 70 FEET MIN. AND 150 FEET MAX. BUFFER IN ADVANCE OF EACH WORK AREA.
13. THE CONTRACTOR TO SUBMIT A PLAN FOR THE SAFE ACCESS OF CONSTRUCTION VEHICLES THROUGHOUT THE WORK SITE WHERE SPACE CONSTRAINTS PREVENT THE USE OF LANE CLOSURES. THE PLAN TO BE SUBMITTED TO THE RE AS SPECIFIED IN THE SPECIFICATIONS.
14. BACKFILL ALL EXCAVATED AREAS WITHIN OR ADJACENT TO THE ROADWAY AND PLACE ON AT LEAST 6H:1V SLOPE BEFORE THE END OF EACH WORKDAY. OTHER EXCAVATED AREA WITHIN THE CLEAR ZONE ARE TO BE BACKFILLED.
15. WHERE REQUIRED, THE CONTRACTOR IS TO MAKE PROVISIONS FOR MAINTAINING PEDESTRIAN CROSSING LOCATIONS AND TYPE AS DIRECTED BY THE RE.
16. BITUMINOUS CONCRETE PLACED DURING THE VARIOUS CONSTRUCTION STAGES TO BE TRANSITIONED ON A MINIMUM 20H:1V SLOPE TO MEET THE ADJACENT EXISTING GRADE AT THE LONGITUDINAL AND TRANSVERSE LIMITS OF THE STAGE CONSTRUCTION AREAS UNLESS OTHERWISE NOTED ON THE STAGE CONSTRUCTION PLANS.
17. THE PLACEMENT AND / OR RELOCATION OF CONSTRUCTION BARRIER CURB TO BE DONE DURING APPROVED OFF-PEAK HOURS WHEN TRAFFIC MAY BE REDUCED TO ONE LANE IN EACH DIRECTION.
18. CONSTRUCTION ZONE SPEED LIMIT WILL BE DETERMINED BY THE BUREAU OF TRAFFIC ENGINEERING, REGIONAL TRAFFIC ENGINEER - WORK ZONE, AT THE TIME OF OR DURING CONSTRUCTION, AS REQUESTED BY THE RE.
19. THE SPEED LIMIT, R2-1 (BLACK ON WHITE) WITH ADDED WORK ZONE PLATE (BLACK ON ORANGE) SIGNS TO BE LOCATED THROUGH WORK AREAS AS DIRECTED BY THE BUREAU OF TRAFFIC ENGINEERING, REGIONAL TRAFFIC ENGINEER - WORK ZONE.
20. TRAFFIC FINES DOUBLED IN WORK AREA R(NJ)5-17(S) , 4 FEET BY 2.5 FEET SIGN TO TRAFFIC FINES DOUBLED IN WORK AREA R(NJ)5-17(S) , 4 FEET BY 2.5 FEET SIGN TO BE LOCATED 500 FEET AFTER THE FIRST ADVANCE WARNING SIGN, (W20 SERIES) AT EACH WORK AREA LOCATED WITHIN URBAN AREAS. THIS SIGN TO ALSO BE USED ON PROJECTS REQUIRING MOVING OPERATIONS IN WHICH CASE THE SIGN IS TO BE MOUNTED ON A SLOW MOVING CONSTRUCTION VEHICLE.
21. DO NOT CONSTRUCT THE FINAL HMA SURFACE PAVEMENT UNTIL THE FINAL STAGE OF THE PROJECT UNLESS OTHERWISE DIRECTED BY THE RE OR INDICATED ON THE PLANS. SET MANHOLES AND INLETS TO FINISHED GRADE AND CONSTRUCT TEMPORARY PAVEMENT RAMPS AROUND THEM WITH A MINIMUM 20H:1V SLOPE IN ALL DIRECTIONS USING HOT MIX ASPHALT PAVEMENT. THIS TEMPORARY MATERIAL WILL BE REMOVED IMMEDIATELY PRIOR TO PLACING THE SURFACE COURSE.

22. PLACE TRAFFIC CONTROL DEVICES FOR LANE CLOSURES INCLUDING SIGNS, CONES, BARRICADES, ETC. AS SHOWN ON PLANS. NO SIGNS ARE TO BE PLACED WITHOUT ACTUAL LANE CLOSURES AND REMOVE IMMEDIATELY UPON REMOVAL OF THE CLOSURES.
23. CONES MAY BE SUBSTITUTED FOR DRUMS AND INSTALLED UPON THE APPROVAL OF THE RE.
24. TRAFFIC IMPACT NOTICES AND CHANGES

A. TERMS:

WHEN THE FOLLOWING TERMS ARE USED, THE INTENT AND MEANING IS AS FOLLOWS:

- I. IMPACTS TO NORMAL TRAFFIC FLOW - WORK THAT REQUIRES A PORTION OF THE PAVED ROADWAY BEING BLOCKED OR CLOSED WITH SAFETY DEVICES OR VEHICLES, INCLUDING, BUT NOT LIMITED TO, FULL OR PARTIAL LANE CLOSURES, FULL OR PARTIAL RAMP CLOSURES, SHOULDER CLOSURES, MOVING OPERATIONS SUCH AS TRAFFIC STRIPING OR SWEEPING, LANE SHIFTS, OR ALTERNATING TRAFFIC. THIS APPLIES EVEN WHEN DETOURS ARE PROVIDED.
- II. TEMPORARY LANE CLOSURES - WORK DESCRIBED UNDER "IMPACTS TO NORMAL TRAFFIC FLOW" WHICH IS ROUTINELY SET UP AND REMOVED ON A DAILY BASIS.
- III. PERMANENT LANE CLOSURES - WORK DESCRIBED UNDER "IMPACTS TO NORMAL TRAFFIC FLOW" WHICH REMAINS IN PLACE CONTINUOUSLY FOR 24 HOURS OR MORE.

B. ADVANCE NOTICES

FOR THE INITIAL START OF WORK THAT REQUIRES "IMPACTS TO NORMAL TRAFFIC FLOW", THE CONTRACTOR IS TO NOTIFY THE RE IN WRITING, ON THE ADVANCE FORM TO-103 PROVIDED BY THE DEPARTMENT, OF THE PROPOSED DATE. THE NOTICE IS TO BE SUBMITTED AT LEAST TWENTY-EIGHT CALENDAR DAYS, BUT NOT MORE THAN SIXTY CALENDAR DAYS, BEFORE THE PROPOSED DATE. START OF WORK THAT IMPACTS NORMAL TRAFFIC FLOW WILL NOT BE PERMITTED PRIOR TO THE DATE STATED IN THE NOTICE. THE CONTRACTOR IS TO CONFIRM, IN WRITING TO THE RE, THE PROPOSED DATE SEVEN (AND/OR FOURTEEN) CALENDAR DAYS BEFORE STARTING THE ESTABLISHMENT OF THE TRAFFIC CONTROL MEASURES FOR THE TRAFFIC IMPACT. THE CONTRACTOR IS TO IMMEDIATELY NOTIFY THE RE IF THE PROPOSED ESTABLISHMENT CANNOT BE COMPLETED ON THE PROPOSED DATE.

FOR A "PERMANENT LANE CLOSURE", THE CONTRACTOR IS TO NOTIFY THE RE IN WRITING, ON ADVANCE FORM TO-103, OF THE PROPOSED DATE A NEW TRAFFIC PATTERN WILL BE ESTABLISHED. THE NOTICE IS TO BE SUBMITTED AT LEAST TWENTY-EIGHT CALENDAR DAYS, BUT NOT MORE THAN SIXTY CALENDAR DAYS, IN ADVANCE OF THE PROPOSED DATE. START OF A NEW TRAFFIC PATTERN WILL NOT BE PERMITTED PRIOR TO THE DATE STATED IN THE NOTICE. THE CONTRACTOR

IS TO CONFIRM, IN WRITING TO THE RE, THE PROPOSED DATE OF THE NEW TRAFFIC PATTERN SEVEN (AND/OR FOURTEEN) DAYS BEFORE STARTING TRAFFIC CONTROL MEASURES FOR THE ESTABLISHMENT OF THE NEW PATTERN. THE CONTRACTOR IS TO IMMEDIATELY NOTIFY THE RE IF THE PROPOSED ESTABLISHMENT CANNOT BE COMPLETED ON THE PROPOSED DATE.

STARTING THE ESTABLISHMENT OF A NEW PERMANENT TRAFFIC PATTERN IS TO BEGIN NO EARLIER THAN 11:00 PM FRIDAY AND BE COMPLETED AND READY FOR OPERATIONS BY 6:00 PM THE FOLLOWING SUNDAY. THE ESTABLISHMENT IS TO BE COMPLETED IN ACCORDANCE WITH THE LANE CLOSURE HOURS SPECIFIED IN THE CONTRACT.

ADVANCE NOTICES SENT PRIOR TO THE PRE-CONSTRUCTION MEETING ARE TO BE ADDRESSED TO THE CONTACT PERSON AS SPECIFIED IN SUBSECTION 101.04 OF THE SPECIAL PROVISIONS.

C. PROGRESS NOTICES

ALL "IMPACTS TO NORMAL TRAFFIC FLOW" SCHEDULED FOR THE SEVEN DAY PERIOD STARTING ON THE FOLLOWING MONDAY ARE TO BE SUBMITTED TO THE RE BY 9:00 AM OF EACH FRIDAY ON WEEKLY FORM TO-101 PROVIDED BY THE DEPARTMENT

EACH DAY OF "TEMPORARY LANE CLOSURES" ARE TO BE SUBMITTED TO THE RE BY 9:00 AM THE DAY IN ADVANCE OF THE START OF THOSE OPERATIONS ON DAILY FORM TO-101 PROVIDED BY THE DEPARTMENT.

"TEMPORARY LANE CLOSURES" FOR WEEKENDS ARE TO BE SUBMITTED TO THE RE BY 9:00 AM ON THE IMMEDIATELY PRECEDING FRIDAY ON THE DAILY FORM TO-101 PROVIDED BY THE DEPARTMENT.

D. CHANGES TO THE SCHEDULED CLOSURES

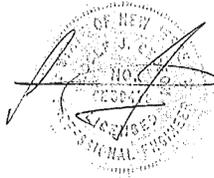
REQUEST FOR A CHANGE TO THE TRAFFIC CONTROL REQUIREMENTS IN THE CONTRACT DOCUMENTS ARE TO BE SUBMITTED IN WRITING TO THE RE AS FOLLOWS:

CHANGES TO THE SCHEDULED HOURS FOR "TEMPORARY LANE CLOSURES" ARE TO BE SUBMITTED TO THE RE AT LEAST EIGHT CALENDAR DAYS IN ADVANCE OF WHEN THE CHANGE IS PROPOSED TO START.

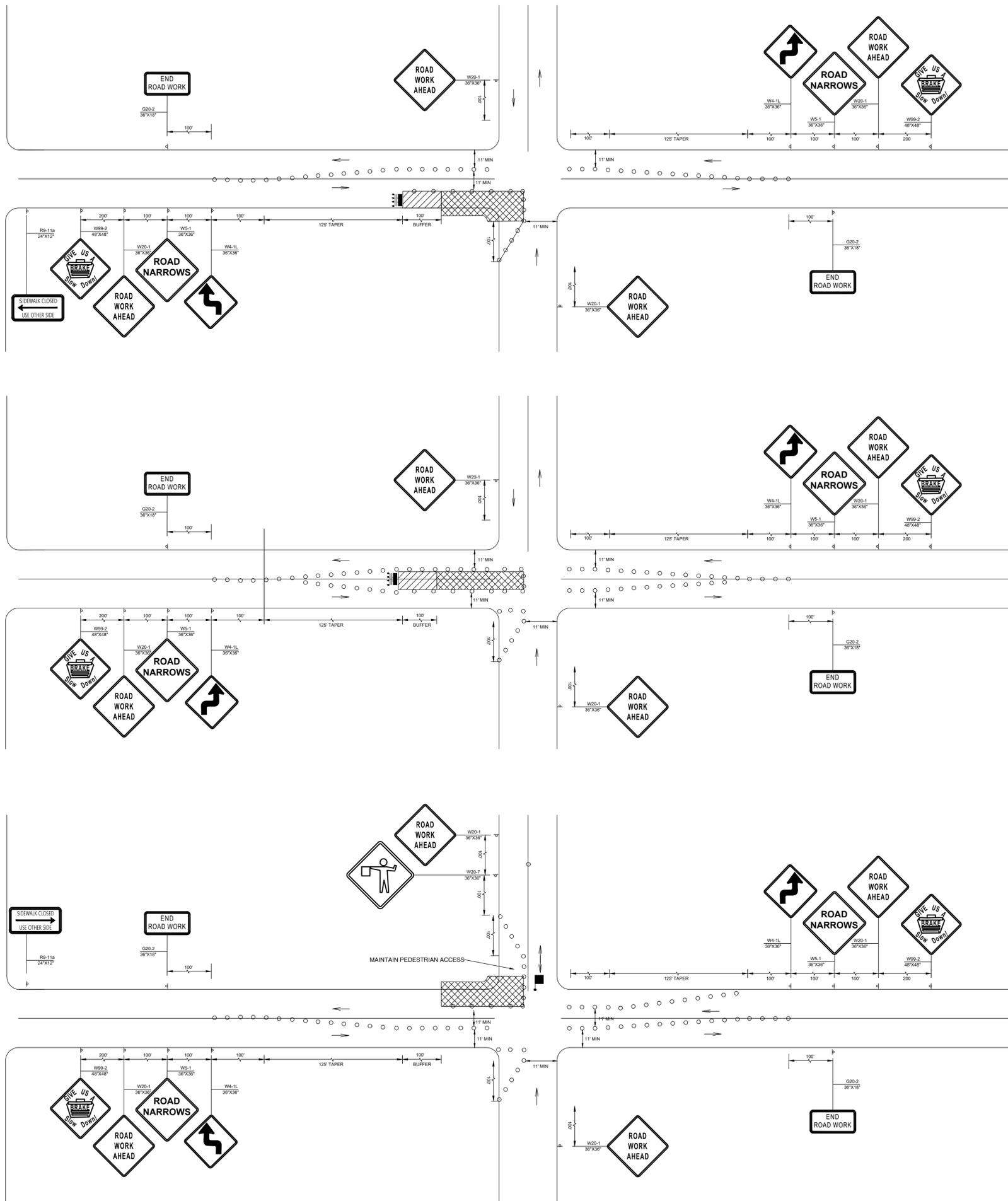
OTHER PROPOSED CHANGES TO "TEMPORARY LANE CLOSURES" AND ALL CHANGES TO "PERMANENT LANE CLOSURES" ARE TO BE SUBMITTED TO THE RE AS SPECIFIED IN THE SPECIFICATIONS.

25. WHERE MILLING OR HMA PAVING IS PERFORMED AND THE LANE IS TO BE RE-OPENED TO TRAFFIC EACH DAY, APPLY TEMPORARY TRAFFIC STRIPES.

J:\M\_Colman\_Traffic\_Signal\_CSD\Drawings\CAD\Traffic\Signal\Traffic Control Plans\Jed0811.dwg 08/11/2024

 <p>PROTECT YOURSELF ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE Know what's below. Call before you dig. FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM</p>	<p><b>GEDEON GRC CONSULTING</b> ENGINEERS • PLANNERS • CONSTRUCTION MANAGERS 211 WARREN STREET, SUITE 517 NEWARK, NJ 07103</p> 	<p>NEW JERSEY DEPARTMENT OF TRANSPORTATION</p> <p><b>TRAFFIC CONTROL PLAN 1</b></p> <p>TRAFFIC SIGNAL IMPROVEMENTS VALLEY STREET (CR 638) AND ARNOLD TERRACE</p> <p>TOWNSHIP OF SOUTH ORANGE VILLAGE, ESSEX COUNTY, NJ</p>												
		 <p><b>RUDOLF J. GEDEON</b> NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: 24GE39479</p>												
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>SCALE: AS SHOWN</td> <td>DATE: 08/2024</td> <td>DRAWN BY: JS</td> <td>CHECKED BY: ZI</td> </tr> <tr> <td>PROJECT NUMBER: 24-240</td> <td colspan="3">DRAWING NAME: GNLP</td> </tr> <tr> <td colspan="4">SHEET NUMBER: 11 OF 19</td> </tr> </table>	SCALE: AS SHOWN	DATE: 08/2024	DRAWN BY: JS	CHECKED BY: ZI	PROJECT NUMBER: 24-240	DRAWING NAME: GNLP			SHEET NUMBER: 11 OF 19			
SCALE: AS SHOWN	DATE: 08/2024	DRAWN BY: JS	CHECKED BY: ZI											
PROJECT NUMBER: 24-240	DRAWING NAME: GNLP													
SHEET NUMBER: 11 OF 19														

J:\M\_Collins\_Traffic\_Signal\_CSD\Drawings\CAD\TrafficControl\TrafficControlPlan2.dwg (Sheet 12) - R. ZOGAL



**NOTE:**  
1. USE MIRROR SETUP FOR THE OTHER SIDE OF WORK.

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TRAFFIC CONTROL PLAN 2

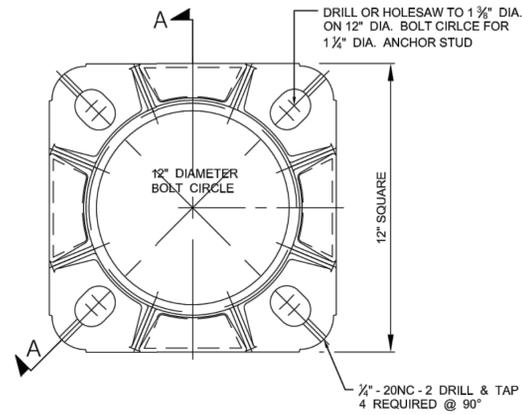
TRAFFIC SIGNAL IMPROVEMENTS VALLEY STREET (CR 638) AND ARNOLD TERRACE

TOWNSHIP OF SOUTH ORANGE VILLAGE, ESSEX COUNTY, NJ

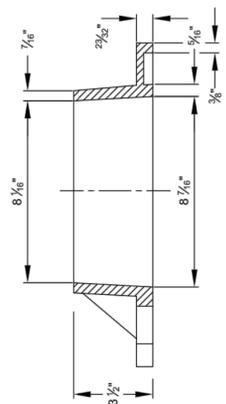
**RUDOLF J. GEDEON**  
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SHEET NUMBER:			

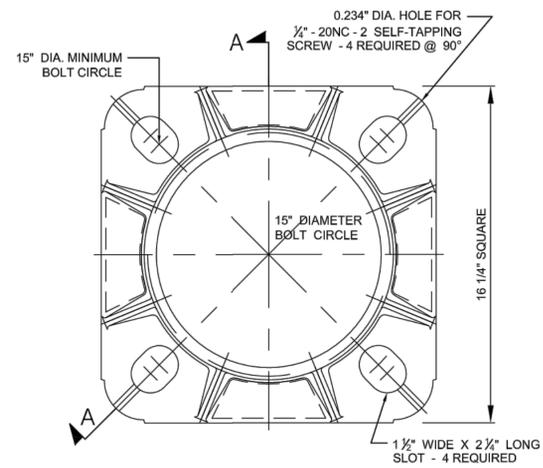
12 OF 19



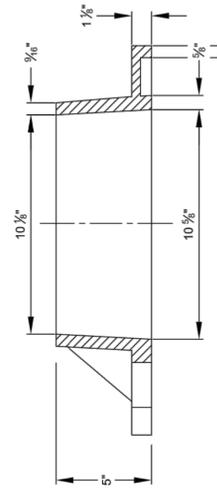
**8 IN. SHOE BASE DETAIL**



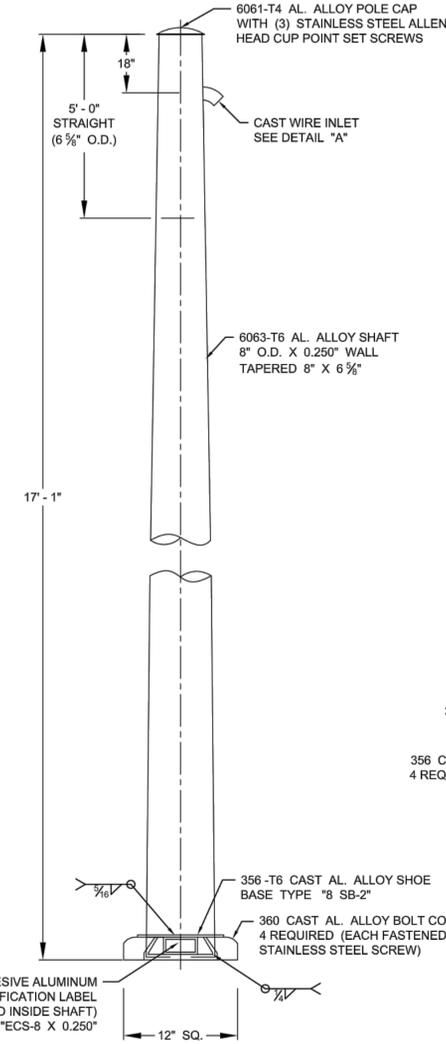
**SECTION "A-A"**



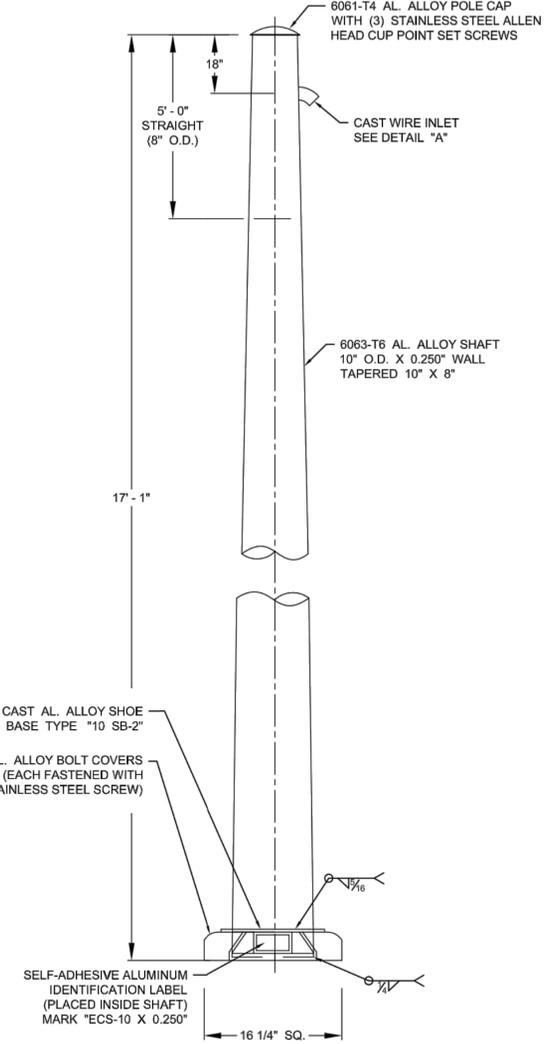
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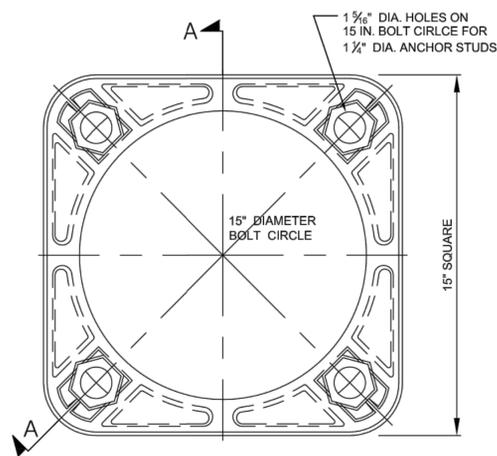
**SECTION "A-A"**



**8 IN. POLE STANDARD**

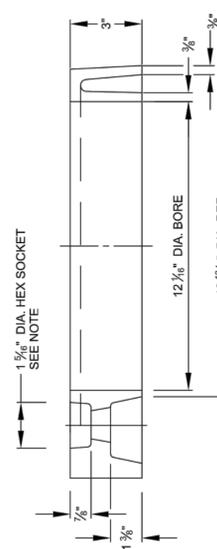


**10 IN. POLE STANDARD**



**12 IN. SHOE BASE DETAIL**

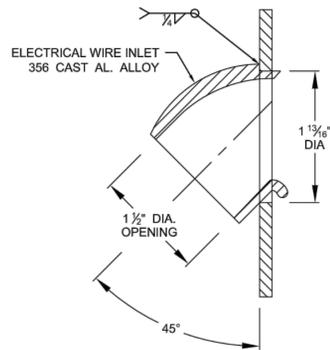
NOTE: HEX SOCKETS TO HAVE AL. ALLOY SPACER INSTALLED SO AS TO PROVIDE FLAT SURFACE ON TOP OF BASE CASTING



**SECTION "A-A"**

NOTE:  
 1. - USE 4043 WELD WIRE.  
 2. - 6063 ASSEMBLY 0.375 IN. WALL OR LESS TO BE HEAT-TO T6 TEMPER AFTER WELDING.

**DETAIL "A"**



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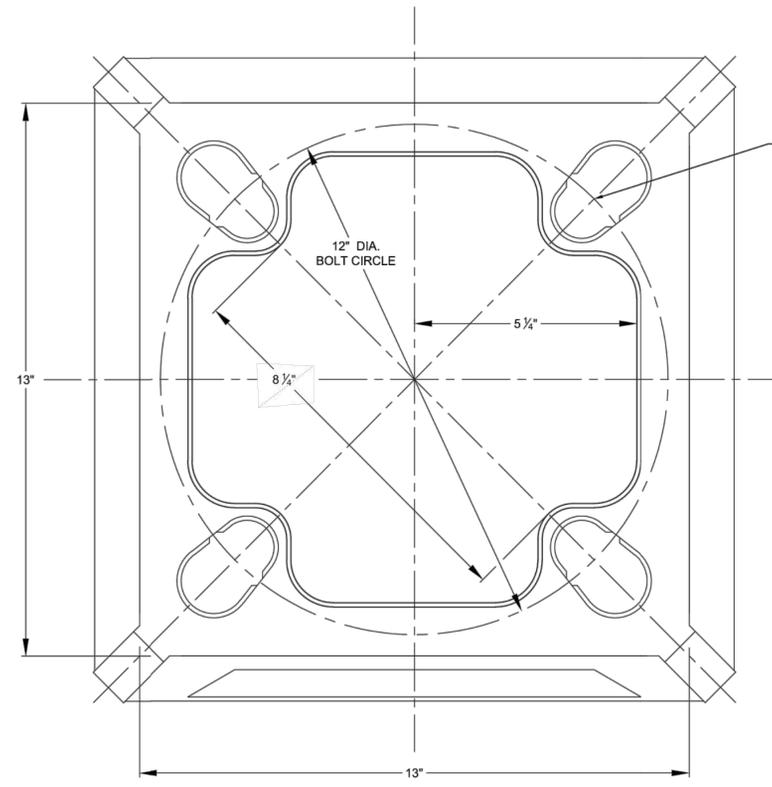
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NEW JERSEY DEPARTMENT OF TRANSPORTATION  
 ELECTRICAL DETAILS - 01  
 TRAFFIC SIGNAL IMPROVEMENTS VALLEY STREET (CR 638) AND ARNOLD TERRACE  
 TOWNSHIP OF SOUTH ORANGE VILLAGE, ESSEX COUNTY, NJ

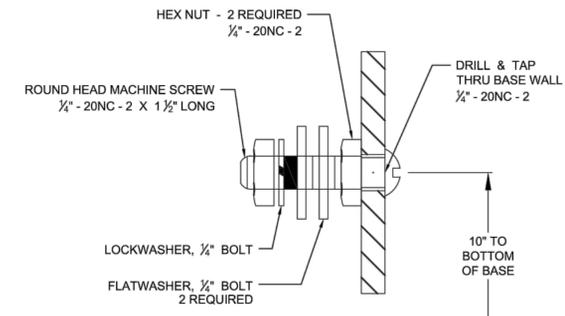
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PROJECT NUMBER	24-240	DRAWING NAME	ED-01
SHEET NUMBER: 13 OF 19			



TOP VIEW

DRILL OR HOLESAW WITH TEMPLATE TO 1 1/2" DIA. ON 12" DIA. BOLT CIRCLE (4) HOLES REQUIRED FOR 1 1/2" DIA. ANCHOR STUD

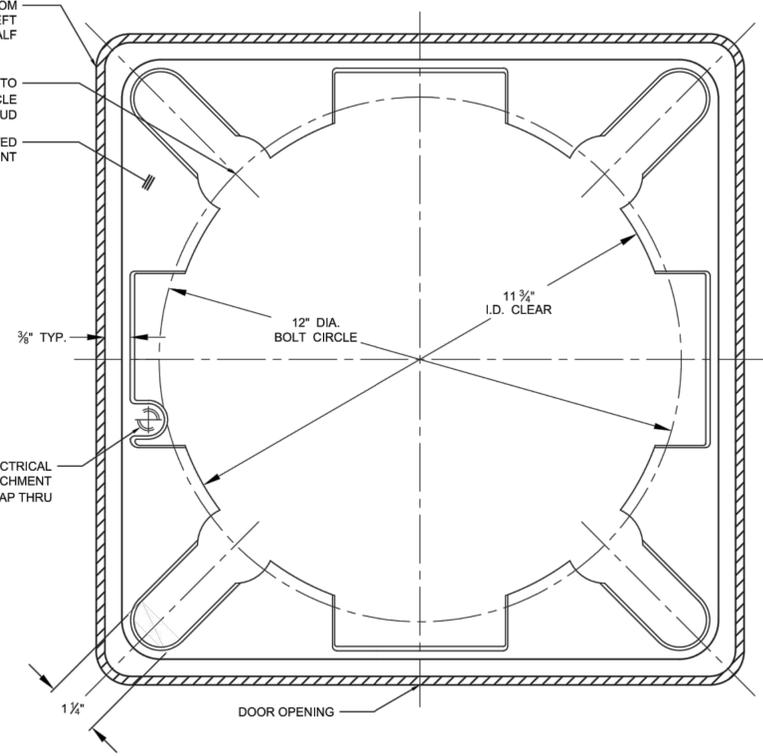


GROUNDING - DETAIL "B"  
(ALL HARDWARE STAINLESS STEEL - PASSIVATED)

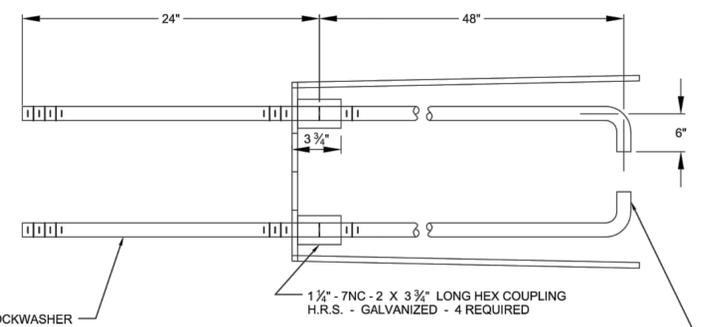
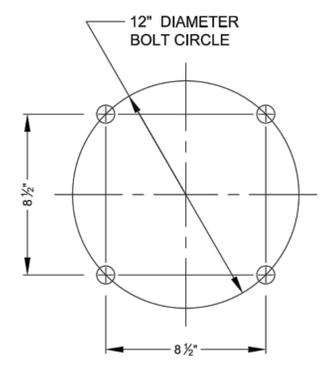
BEFORE WELDING POSITION BASE BOTTOM HALF SO THAT GROUND BOSS IS TO LEFT OF DOOR OPENING IN BASE TOP HALF

DRILL OR HOLESAW WITH TEMPLATE TO 1 1/2" DIA. ON 12" DIA. BOLT CIRCLE 4 REQUIRED FOR 1 1/2" DIA. ANCHOR STUD

BOTTOM OF BASE TO BE COATED WITH BITUMINOUS PAINT



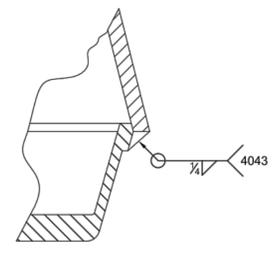
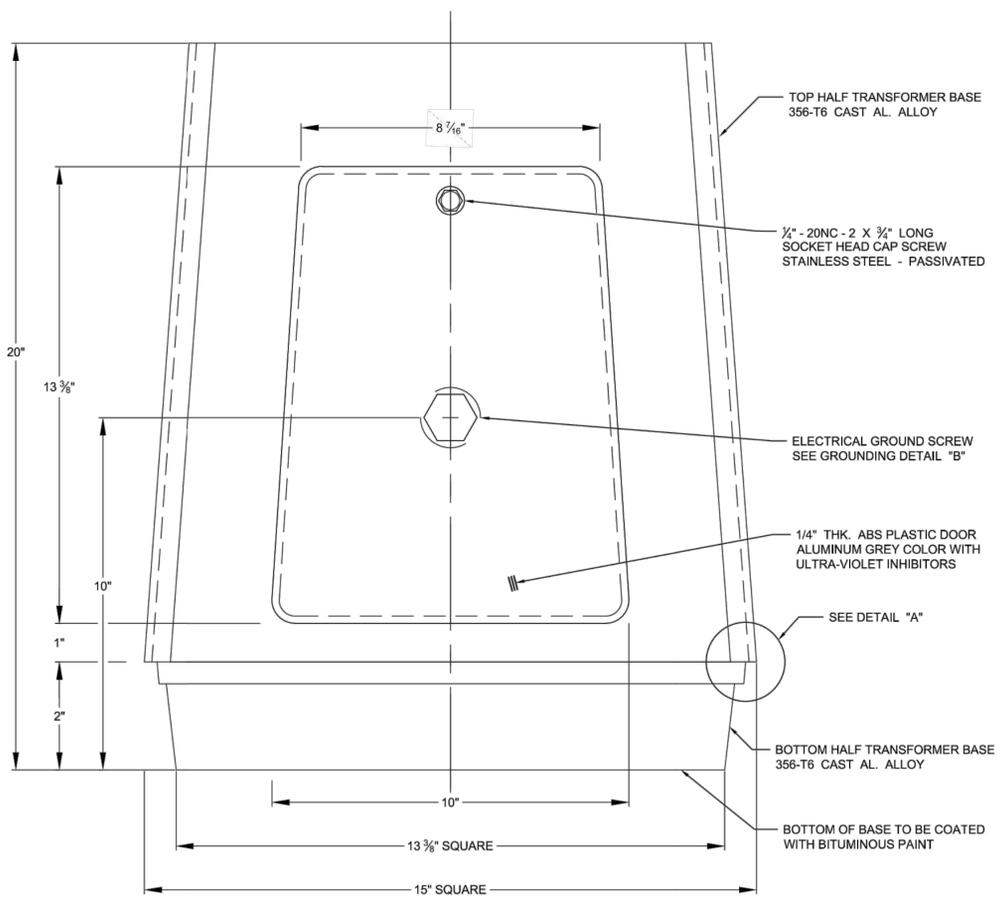
BOTTOM VIEW



1 1/2" DIA. ANCHOR STUD WITH HEX NUT, LOCKWASHER AND FLATWASHER - H.R.S. GALVANIZED (4 OF EACH REQUIRED) STUD TO BE ASTM A576 STEEL WITH 55,000 PSI MIN. YIELD STRENGTH - GALVANIZED PER ASTM A-153 (FULL LENGTH)

NOTE:  
1. - SEE BASE BOTTOM VIEW DETAIL BEFORE WELDING.  
2. - COMPLETE BASE ASSEMBLY TO BE HEAT-TREATED TO T6 TEMPER AFTER WELDING.

TRANSFORMER BASE DETAILS FOR 8" POLE



DETAIL "A"

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ELECTRICAL DETAILS - 02

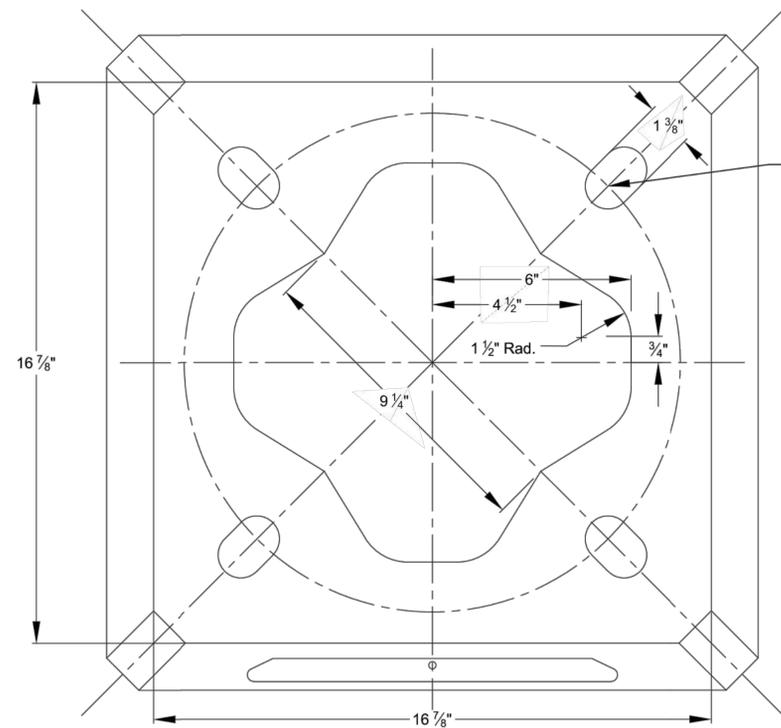
TRAFFIC SIGNAL IMPROVEMENTS VALLEY STREET (CR 638) AND ARNOLD TERRACE

TOWNSHIP OF SOUTH ORANGE VILLAGE, ESSEX COUNTY, NJ

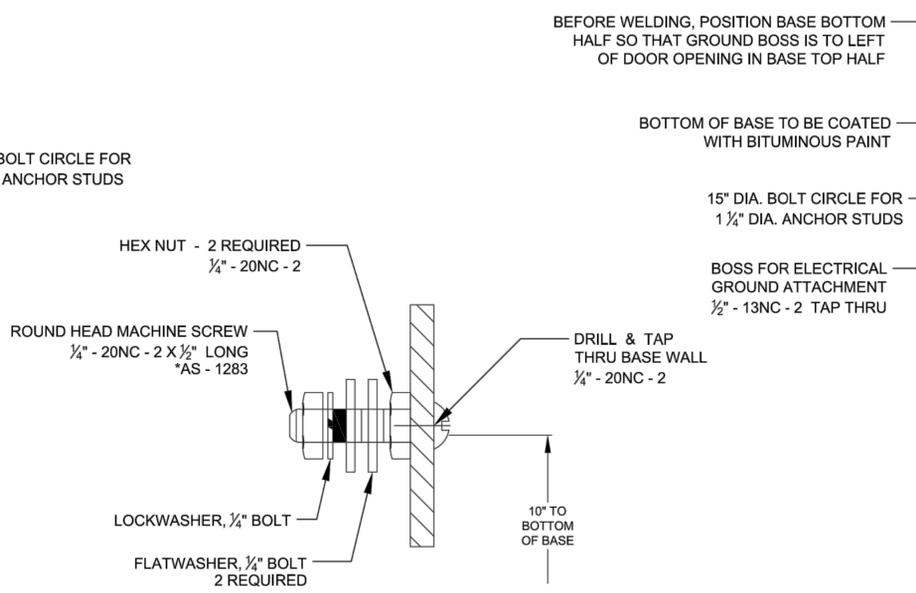
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PROJECT NUMBER: 24-240	DRAWING NAME: ED-02		
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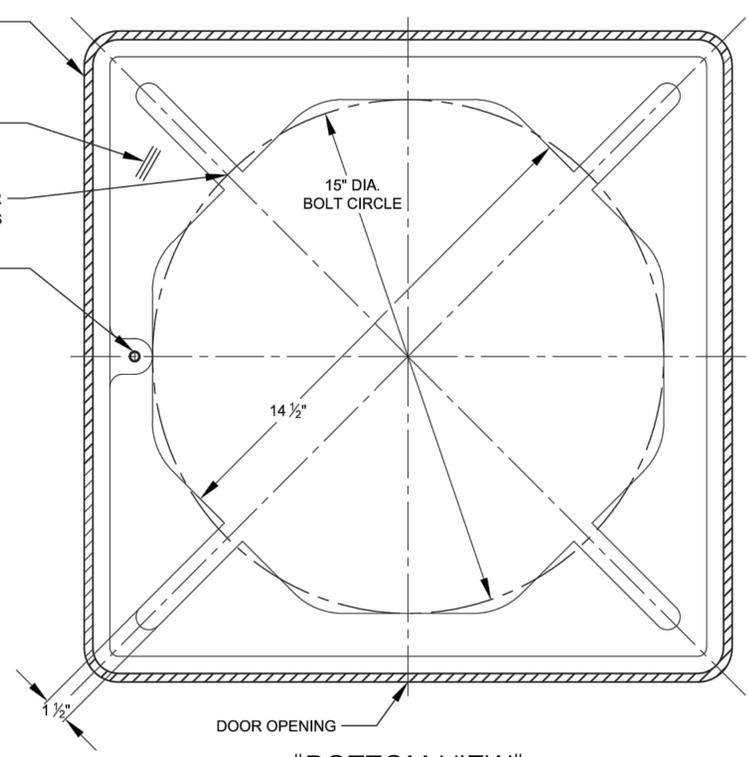
J:\M\_Colman\_Traffic\_Signal\_CSD\Drawings\Drawings\ED-02\ED-02.dwg 08/20/24 11:20 AM



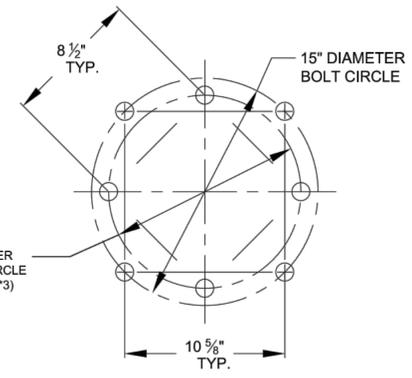
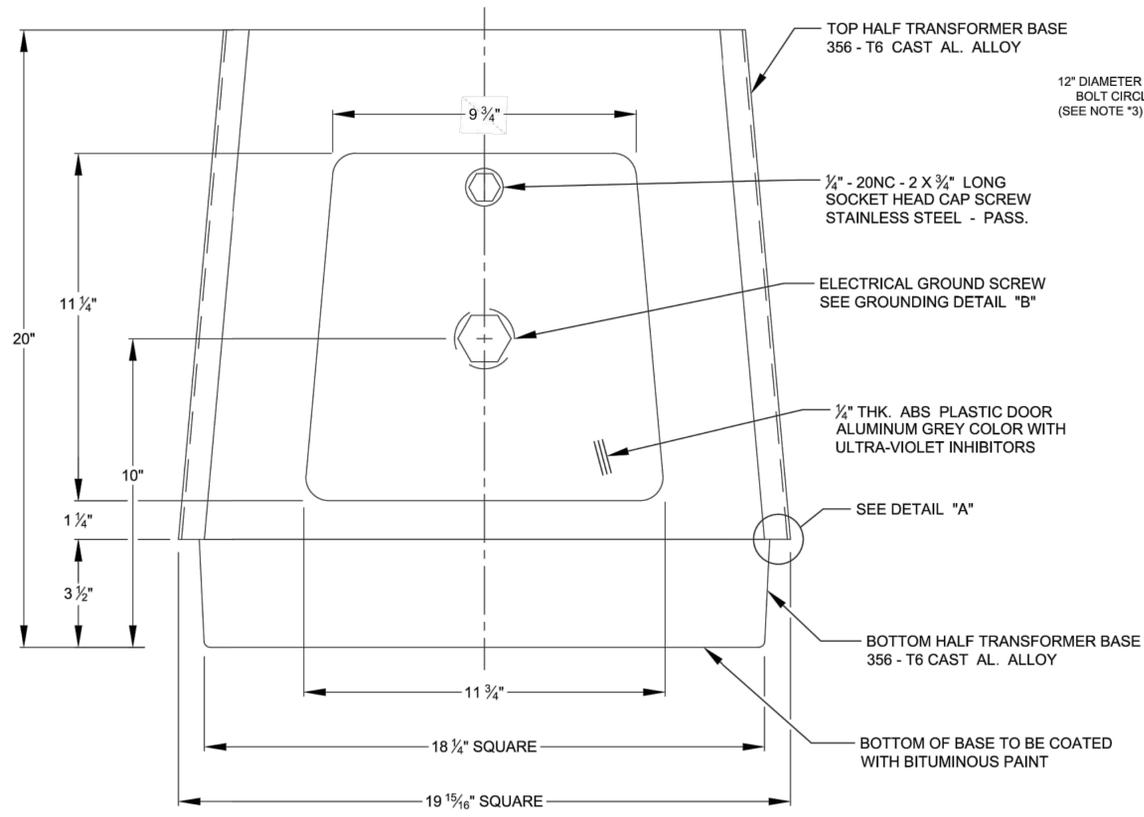
"TOP VIEW"



GROUNDING - DETAIL "B"  
(ALL HARDWARE STAINLESS STEEL - PASSIVATED)

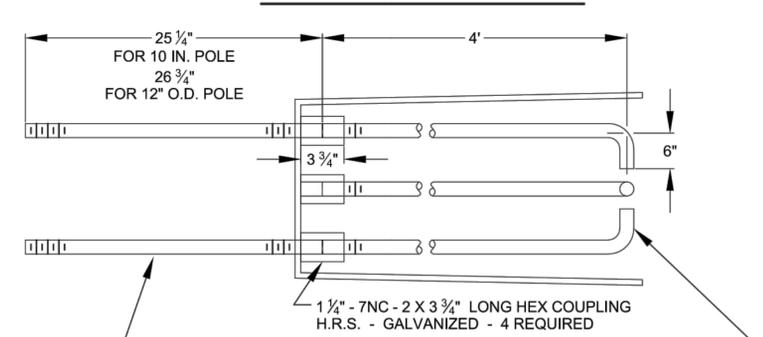


"BOTTOM VIEW"



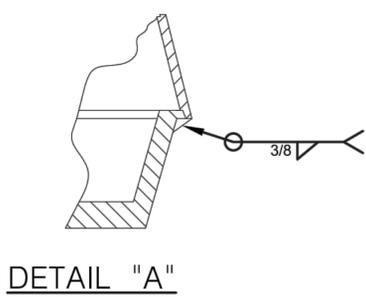
TRANSFORMER BASE DETAILS FOR 10" AND 12" POLES

1 1/4" DIA. ANCHOR STUD WITH HEX NUT, LOCKWASHER, AND FLATWASHER - H.R.S. GALVANIZED. STUD TO BE ASTM A576 STEEL WITH 55,000 PSI MINIMUM YIELD STRENGTH - GALVANIZED PER ASTM A-153 (FULL LENGTH). 4 REQUIRED ON 15" DIAMETER BOLT CIRCLE



1 1/4" DIA. X 54" LONG ANCHOR ROD WITH HEX NUT, LOCKWASHER AND FLATWASHER (4 OF EACH REQUIRED). ANCHOR ROD TO BE 55,000 PSI MIN. YIELD STRENGTH PER AASHTO M314-90, GRADE 55. TOP 18" OF ROD TO BE GALVANIZED PER AASHTO M232 CLASS C, (ASTM A 153).  
NOTE:  
1. - SEE BASE BOTTOM VIEW DETAIL BEFORE WELDING.  
2. - COMPLETE BASE ASSEMBLY TO BE HEAT - TREATED TO T6 TEMPER AFTER WELDING.  
3. - NO ANCHOR STUDS TO BE PROVIDED FOR 12" DIAMETER BOLT CIRCLE.

NOTE: ALL DIMENSIONS SHOWN ON THIS SHEET ARE IN INCHES UNLESS OTHERWISE NOTED.



DETAIL "A"

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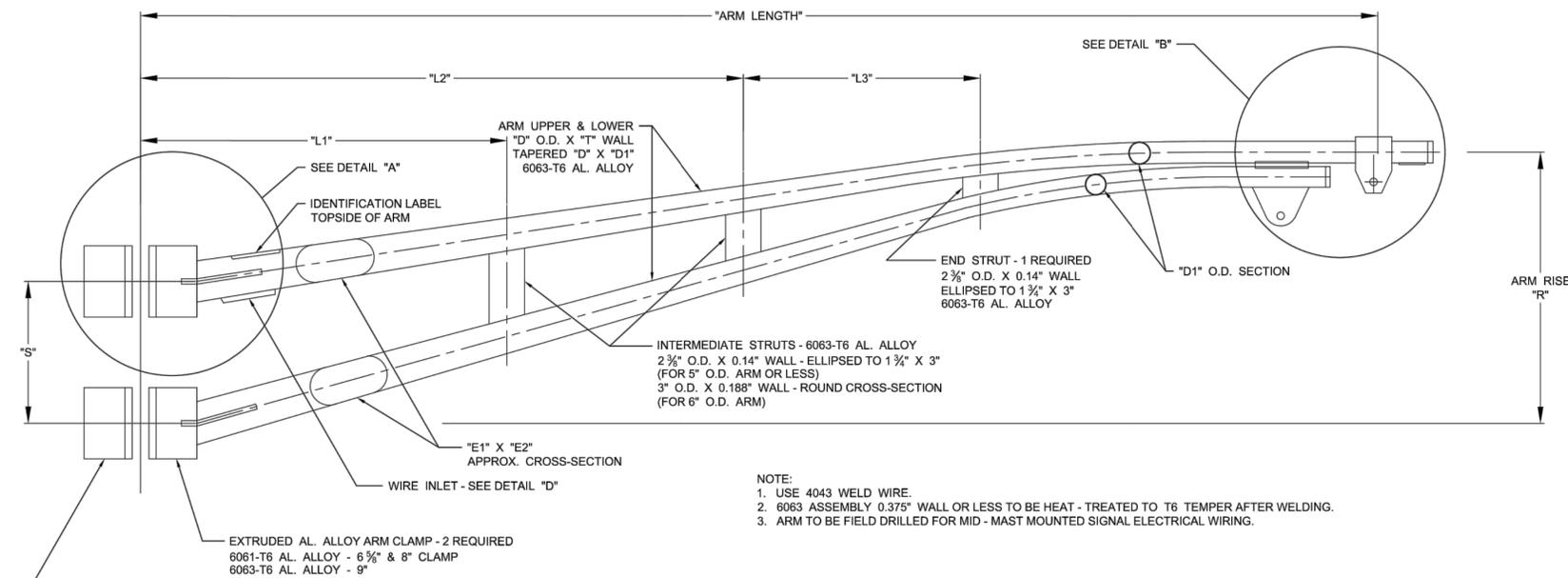
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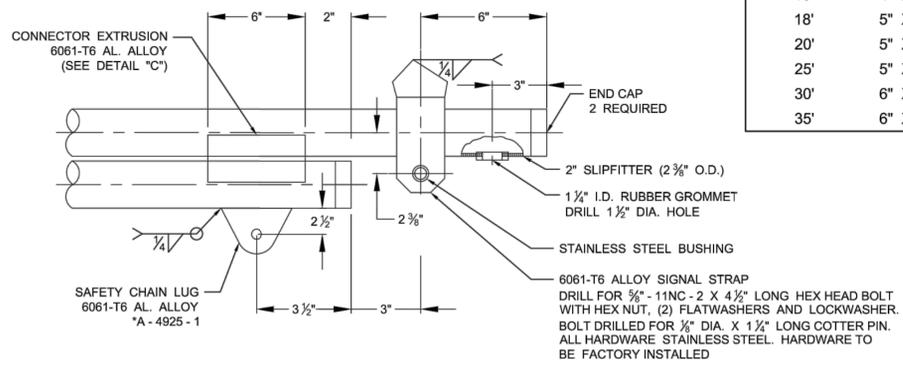
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PROJECT NUMBER	DRAWING NAME		SHEET NUMBER
24-240	ED-03		15 OF 19

J:\M\_Colman\_Traffic\_Signal\_CSD\Drawings\Drawings\Electrical\Detail - 03.dwg/Sheet 15 of 20.dwg

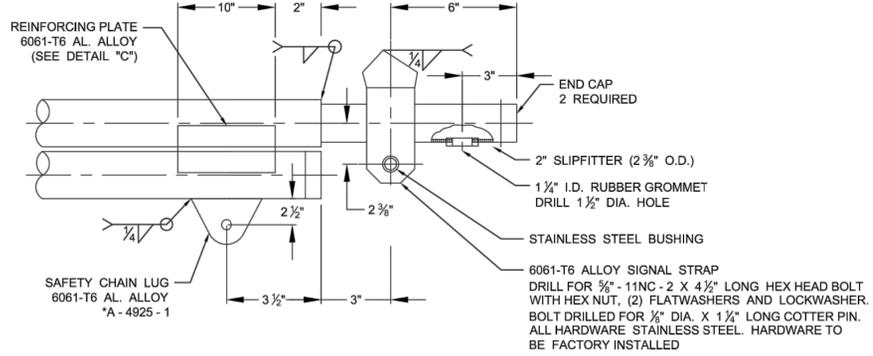


- NOTE:  
 1. USE 4043 WELD WIRE.  
 2. 6063 ASSEMBLY 0.375" WALL OR LESS TO BE HEAT - TREATED TO T6 TEMPER AFTER WELDING.  
 3. ARM TO BE FIELD DRILLED FOR MID - MAST MOUNTED SIGNAL ELECTRICAL WIRING.

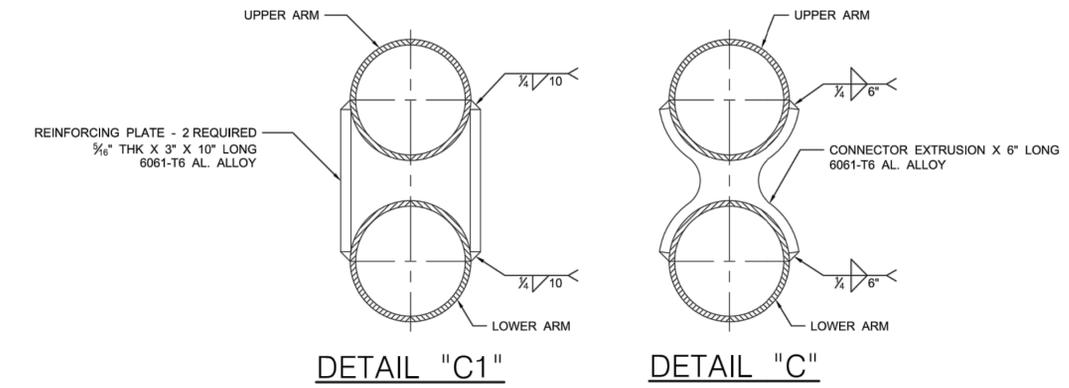
ARM LENGTH (FT)	MAST ARM SIZE "D" X "T"	MAST ARM TAPER "D" X "D1"	ARM ELLIPSE "E1" X "E2"	"S"	"L1"	"L2"	"L3"	ARM RISE "R"	IDENTIFICATION MARKING
10'	3 1/2" X 0.156W	3 1/2" X 2 3/8"	4 1/4" X 2 3/8"	30"	----	3' - 1"	2' - 3"	5' - 9"	"ECS - 10MA"
12'	3 1/2" X 0.156W	3 1/2" X 2 3/8"	4 1/4" X 2 3/8"	30"	----	3' - 11"	3' - 11"	5' - 9"	"ECS - 12MA"
15'	4" X 0.156W	4" X 2 3/8"	5 5/8" X 2 3/8"	30"	----	4' - 7"	4' - 7"	5' - 9"	"ECS - 15MA"
18'	5" X 0.156W	5" X 2 3/8"	6 3/4" X 2 3/8"	30"	3' - 11"	7' - 10"	3' - 11"	5' - 9"	"ECS - 18MA"
20'	5" X 0.156W	5" X 2 3/8"	6 3/4" X 2 3/8"	30"	4' - 7"	9' - 2"	4' - 7"	5' - 9"	"ECS - 20MA"
25'	5" X 0.188W	5" X 2 3/8"	6 3/4" X 2 1/2"	30"	6' - 9"	13' - 2"	5' - 2"	5' - 9"	"ECS - 25MA"
30'	6" X 0.156W	6" X 2 7/8"	7 5/8" X 3 1/2"	42"	7' - 0"	14' - 0"	7' - 0"	6' - 9"	"ECS - 30MA"
35'	6" X 0.188W	6" X 2 7/8"	7 5/8" X 3 1/2"	42"	9' - 0"	18' - 0"	9' - 0"	6' - 9"	"ECS - 35MA"



END CONSTRUCTION - DETAIL "B"  
(FOR 5" O.D. ARM OR LESS)

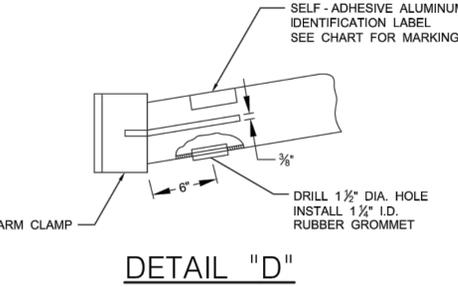


END CONSTRUCTION - DETAIL "B"  
(FOR 6" O.D. ARM)

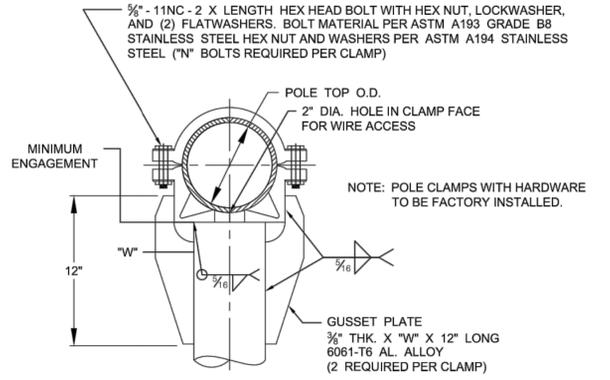


DETAIL "C1"

DETAIL "C"

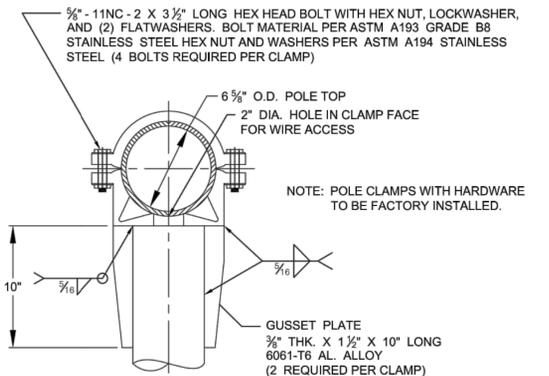


DETAIL "D"



DETAIL "A"

ARM LENGTH (FT)	POLE TOP O.D.	MINIMUM ENGAGEMENT	PLATE WIDTH "W"	NO. OF BOLTS "N"	BOLT LENGTH
15'	6 5/8"	2"	2 1/2"	4	3 1/2"
18'	8"	2 1/2"	3"	4	3 1/2"
20'	8"	2 1/2"	3"	4	3 1/2"
25'	8"	2 1/2"	3"	4	3 1/2"
30'	9"	2 1/2"	2 1/2"	6	6"
35'	9"	2 1/2"	2 1/2"	6	6"



DETAIL "A"  
(FOR 10' + 12' ARMS ONLY)

MAST ARM DETAILS

J.M. Colonna, Traffic Signal Design, CADD, Electrical, Signal Design, 34 August 14, 14:20AM

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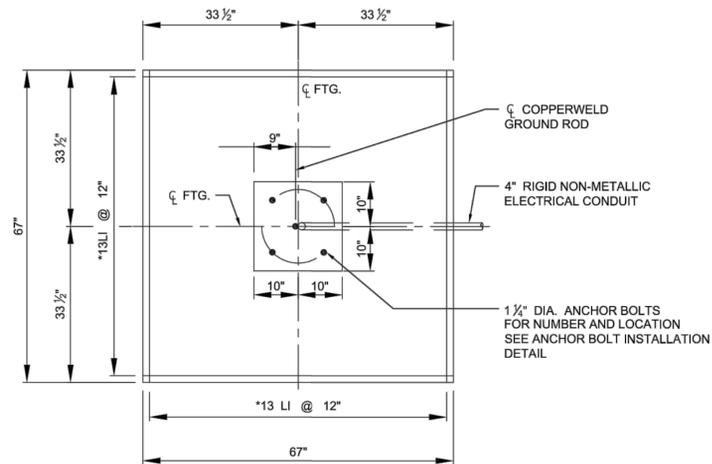
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NEW JERSEY DEPARTMENT OF TRANSPORTATION  
 ELECTRICAL DETAILS - 04  
 TRAFFIC SIGNAL IMPROVEMENTS VALLEY STREET (CR 638) AND ARNOLD TERRACE  
 TOWNSHIP OF SOUTH ORANGE VILLAGE, ESSEX COUNTY, NJ

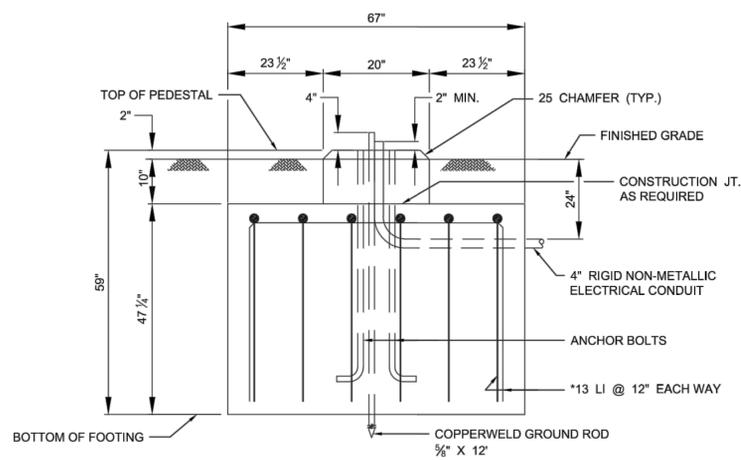
**RUDOLF J. GEDEON**  
 NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: 24GE39479

SCALE: AS SHOWN	DATE: 08/2024	DRAWN BY: JS	CHECKED BY: ZI
PROJECT NUMBER: 24-240	DRAWING NAME: ED-04		SHEET NUMBER:

16 OF 19

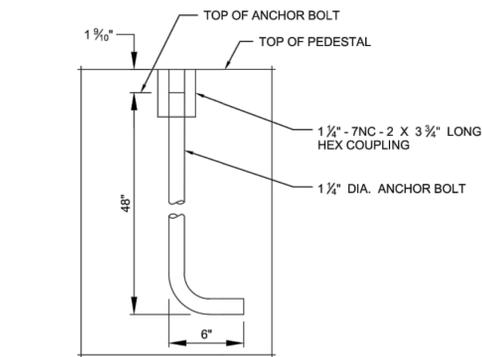


PLAN



ELEVATION FOUNDATION

TYPE ECS - STD



ANCHOR BOLT DETAIL

**GENERAL NOTES:**

**DESIGN SPECIFICATIONS:**

1996 A.A.S.H.T.O. "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" (WITH INTERIMS) AND 1994 A.A.S.H.T.O. "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS."

**MATERIAL AND FABRICATION:**

2007 NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND SUPPLEMENTARY SPECIFICATIONS.

ALL CONCRETE SHALL BE CLASS "A"

**CONCRETE DESIGN STRESSES:**

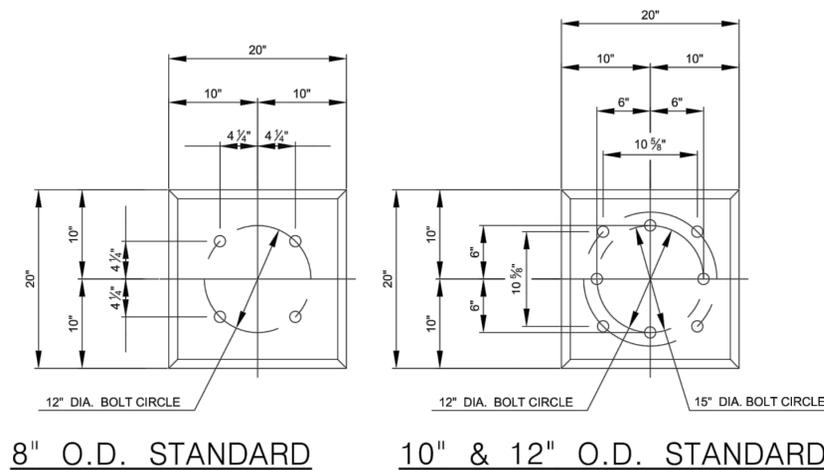
SPECIFIED COMPRESSIVE STRENGTH  $f_c$  - 3045.792 PSI  
EXTREME FIBER IN COMPRESSION  $f_c$  - 1160.302 PSI

**REINFORCEMENT STEEL:**

A.S.T.M. DESIGNATION A615-GRADE 400  $f_s$  - 23931.23 PSI

**ANCHOR BOLTS:**

ANCHOR BOLTS - ASTM A-576  $f_y$  - 55114.34 PSI  
ANCHOR BOLTS, NUTS, WASHERS, AND COUPLINGS SHALL BE GALVANIZED CONFORMING TO ASTM - A153



8" O.D. STANDARD 10" & 12" O.D. STANDARD

**ANCHOR BOLT INSTALLATION DETAIL**

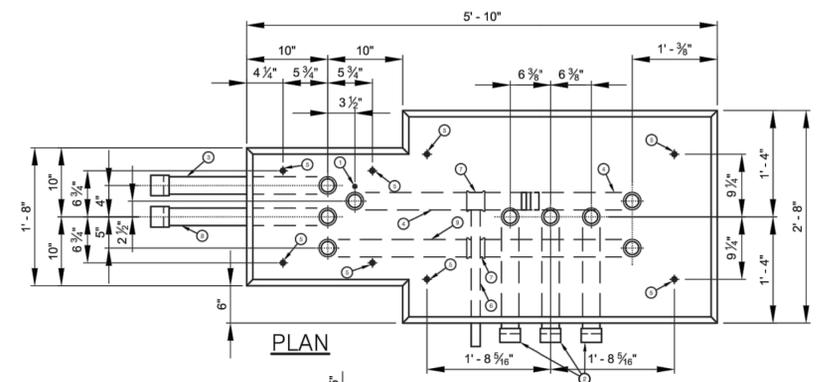
**FOUNDATION TYPE "ECS" AND ANCHOR BOLT INSTALLATION DETAILS**

**Item**

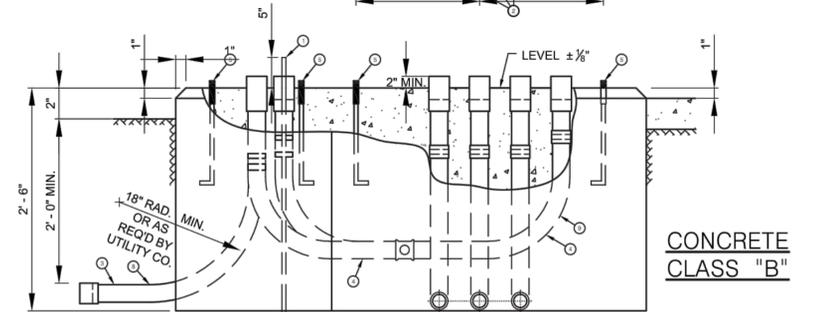
- ① 3/8" X 12' L.G. GROUND ROD
- ② 4" DIA. RIGID NON-METALLIC CONDUIT (EXTEND TO JUNCTION BOX)
- ③ RIGID NON-METALLIC CONDUIT (SERVICE CONDUIT). SEE GENERAL PLAN FOR DIRECTION AND SIZE
- ④ 2" DIA. RIGID NON-METALLIC CONDUIT (SERVICE CONDUIT)
- ⑤ 3/4" DIA. ANCHOR BOLTS
- ⑥ DRAIN 1" DIA. RIGID NON-METALLIC CONDUIT (PITCH TO JUNCTION BOX)
- ⑦ 2" X 2" X 1" PVC TEE FITTING
- ⑧ RIGID NON-METALLIC CONDUIT (INTERCONNECT CONDUIT). SEE GENERAL PLAN FOR DIRECTION AND SIZE. IF NOT SPECIFIED 2" DIA. RNMC SHALL BE INSTALLED
- ⑨ 2" DIA. RIGID NON-METALLIC CONDUIT (INTERCONNECT CONDUIT)

**NOTES:**

- 1. INSTALL ALL CONDUIT 2" MIN. ABOVE TOP OF CONCRETE FOUNDATION.
- 2. J-BOLT INSERTED 1 1/2" ± 1/16" INTO 3" COUPLING
- 3. ALL FOUNDATIONS POURED MONOLITHIC



PLAN



ELEVATION FOUNDATION TYPE "P-MC"

CONCRETE CLASS "B"

J.M. Collins, Traffic Signal, CSD, Drawing, CADD, Electrical Detail, 8/14/2024, 17

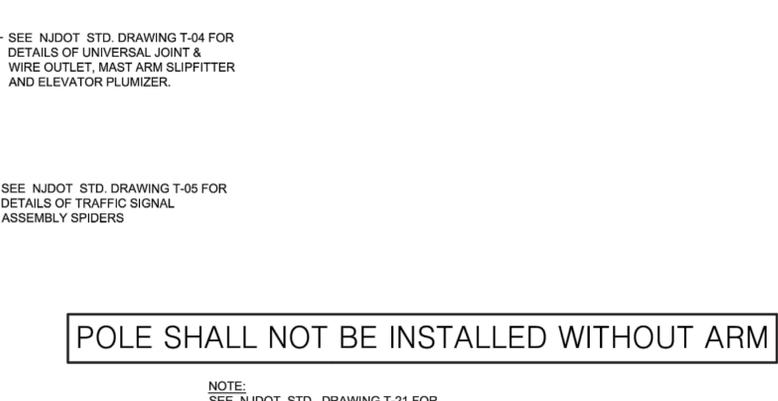
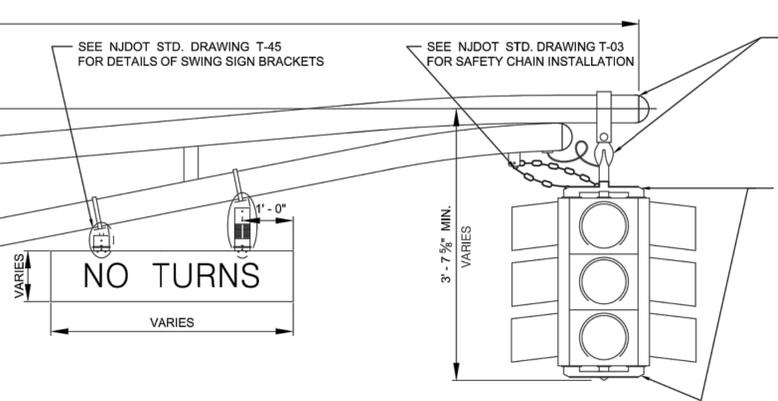
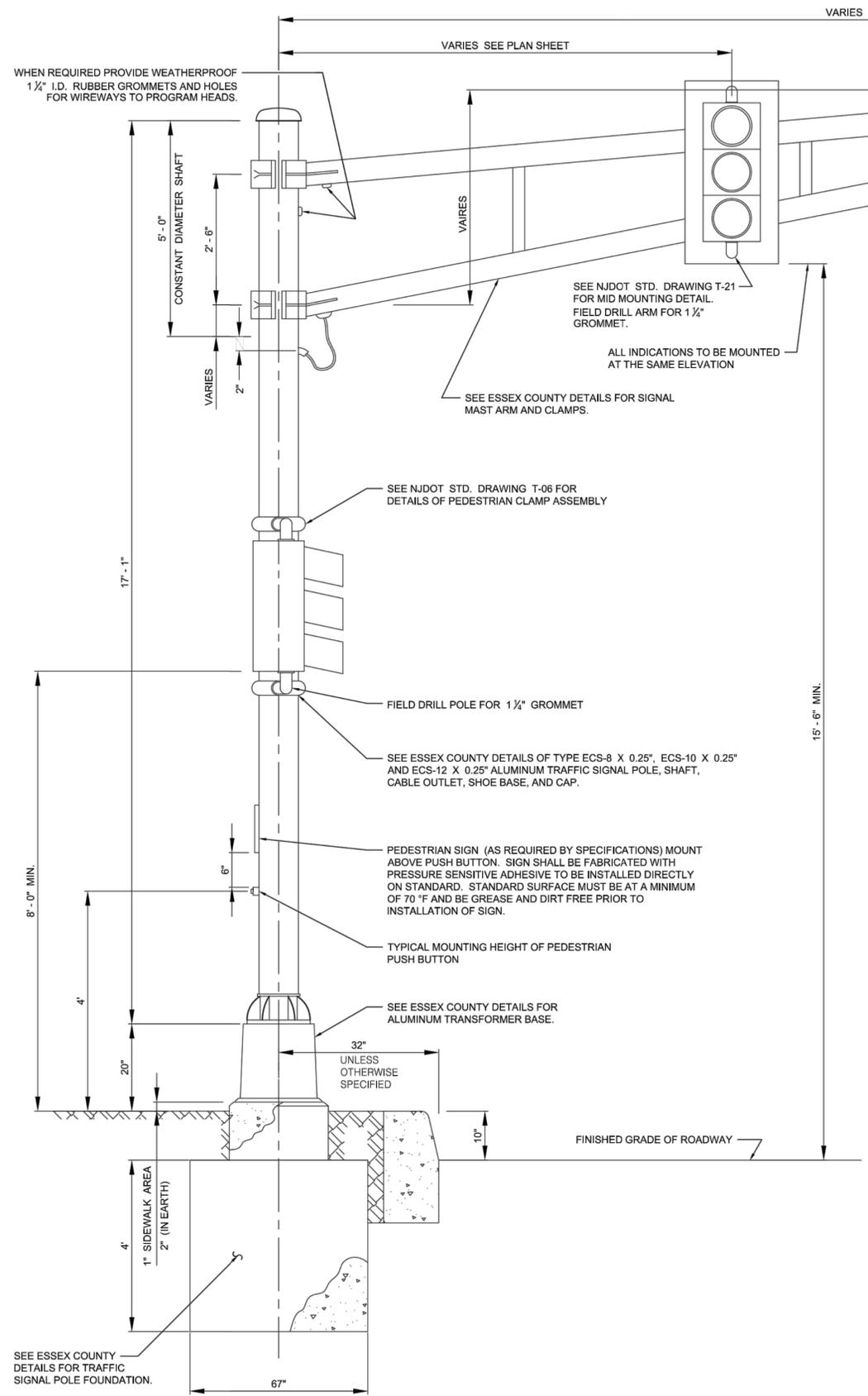
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TOWNSHIP OF SOUTH ORANGE VILLAGE, ESSEX COUNTY, NJ

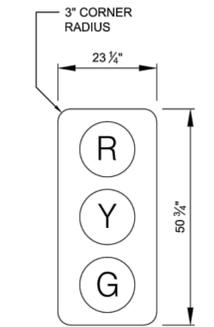
**RUDOLF J. GEDEON**  
NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: 24GE39479

SCALE	DATE	DRAWN BY	CHECKED BY
AS SHOWN	08/2024	JS	ZI
PROJECT NUMBER	DRAWING NAME		SHEET NUMBER
24-240	ED-05		17 OF 19

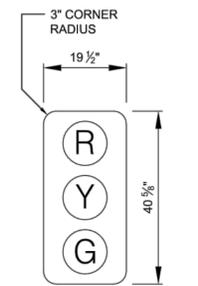


**POLE SHALL NOT BE INSTALLED WITHOUT ARM**

NOTE:  
SEE NJDOT STD. DRAWING T-21 FOR FIVE SECTION INSTALLATION

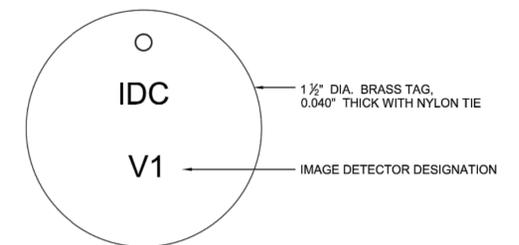


**BACKPLATE FOR 12" SIGNAL HEAD**

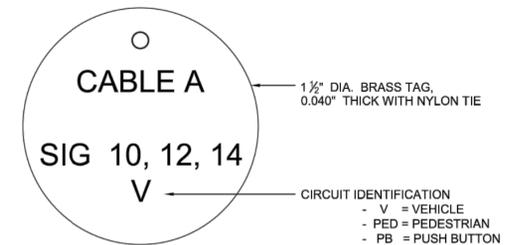


**BACKPLATE FOR 8" SIGNAL HEAD**

- NOTES:**
- MATERIAL: 0.125 BLACK ABS WITH HAIRCELL FINISH FRONT SIDE.
  - FABRICATION: VACUUM FORMED.
  - BACKPLATES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
  - IF A BACKPLATE IS USED, THE CLEARANCE SHALL BE 15' - 6" MINIMUM FROM THE BOTTOM OF THE BACKPLATE TO THE FINISHED GRADE OF ROADWAY



**CABLE IDENTIFICATION TAG DETAIL ( IMAGE DETECTOR )**



**CABLE IDENTIFICATION TAG DETAIL ( TRAFFIC SIGNAL )**



**TYPICAL INSTALLATION**

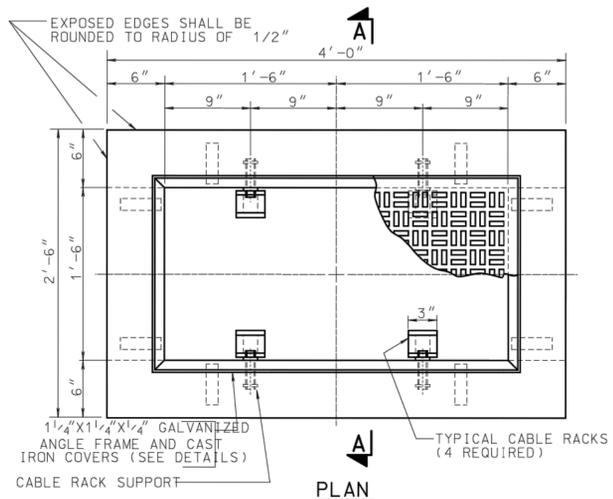
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TOWNSHIP OF SOUTH ORANGE VILLAGE, ESSEX COUNTY, NJ

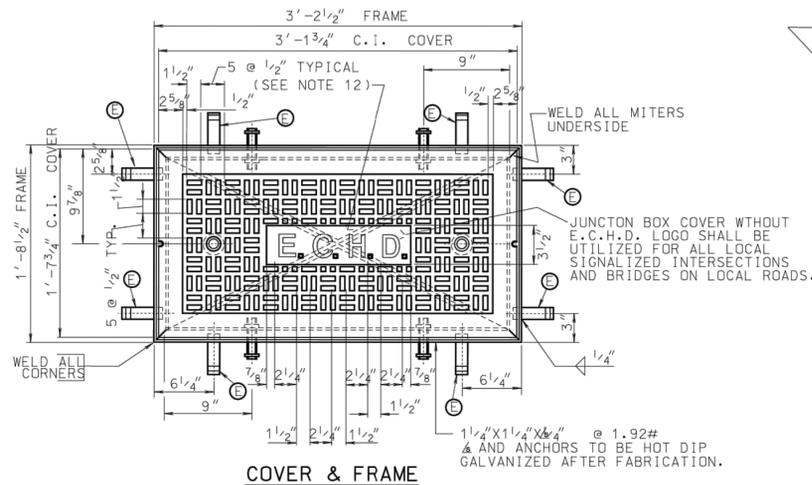
**RUDOLF J. GEDEON**  
NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: 24GE39479

SCALE: AS SHOWN	DATE: 08/2024	DRAWN BY: JS	CHECKED BY: ZI
PROJECT NUMBER: 24-240	DRAWING NAME: ED-06		
SHEET NUMBER: 18 OF 19			

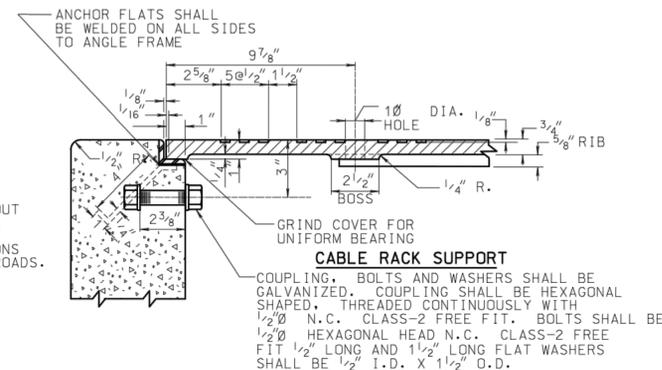


**18" X 36" JUNCTION BOX - CLASS "JB"**  
 CONCRETE CLASS "B"  
 USING APPROVED 5/8" AGGREGATE  
 0.8 CU. YD.

**NOTES**  
 MINIMUM WEIGHT OF FRAME = 16 LBS.  
 MINIMUM WEIGHT OF C.I. COVER = 150 LBS.  
 FRAME AND ANCHORS OF STRUCTURAL STEEL.  
 (C) - DENOTES 1" X 1/4" X 6" STL. ANCHORS (8 REQUIRED)

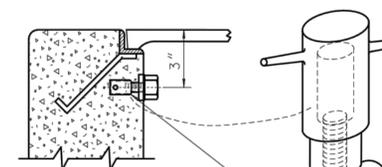


**COVER & FRAME**

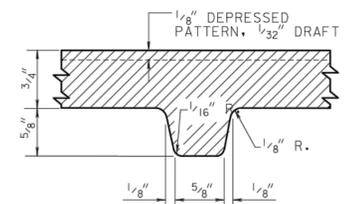


**SECTION THRU JUNCTION BOX**

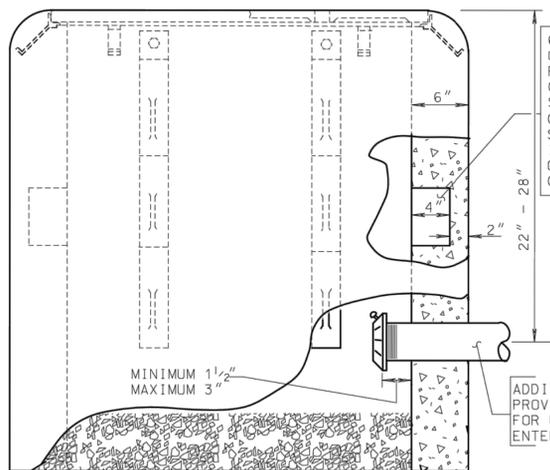
**ALTERNATE CABLE RACK SUPPORT**



THREADED INSERT TAPPED FOR 1/2" DIA. BOLT N.C. CLASS-2 FREE FIT THREAD. FURNISH WITH BOLT 1/2" N.C. CLASS-2 FREE FIT THREAD, 1 1/2" LONG AND FLAT WASHER 1/2" I.D. X 1 1/2" O.D. BOLTS AND WASHERS SHALL BE GALVANIZED. INSERTS SHALL BE GALVANIZED STEEL OR GLASS FILLED THERMOPLASTIC MATERIAL. FURNISH HARDWARE AS REQUIRED ABOVE.

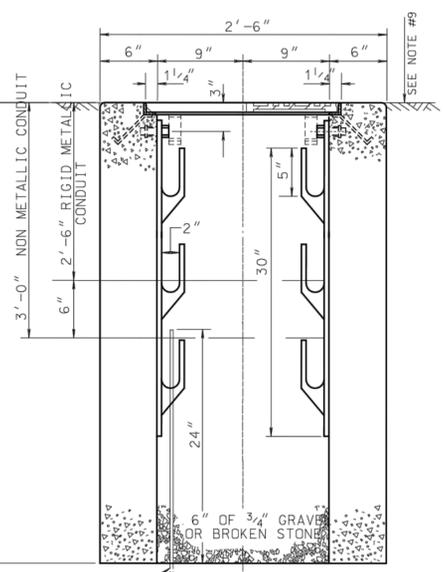


**SECTION OF RIB**

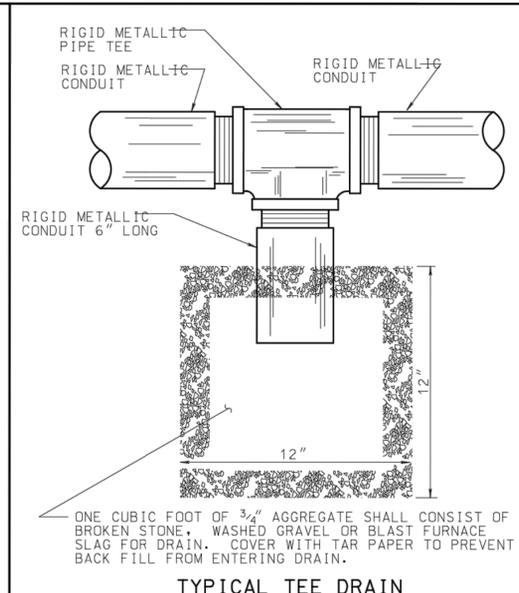


**ELEVATION**

6"X18"X4" RECESS IN END WALLS OF JUNCTION BOX FOR INSERTING REQUIRED CONDUITS. NUMBER OF CONDUITS ENTERING JUNCTION BOX SHALL BE DETERMINED FROM THE GENERAL PLANS. WALL OF RECESS SHALL BE BROKEN. CONDUIT(S) INSERTED AND REMAINING AREA OF WALL AND RECESS SHALL BE COMPLETELY SEALED WITH GROUT.  
 ADDITIONAL OPENINGS SHALL BE PROVIDED AT APPROVED ELEVATIONS FOR UNDER ROADWAY CONDUITS ENTERING JUNCTION BOX - TYPICAL.



**SECTION A-A**

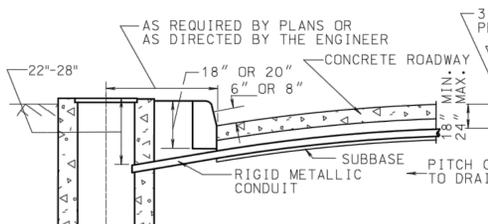


**TYPICAL TEE DRAIN**

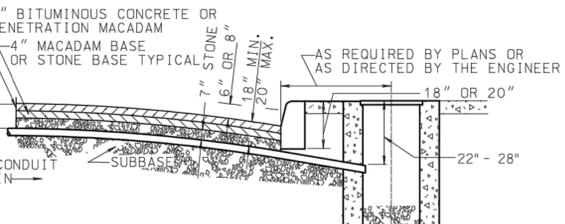
**NOTES:**

- JUNCTION BOX FOUNDATION SHALL BE SET PARALLEL TO THE CURB AND TOP OF JUNCTION BOX SHALL BE SET AT GRADE IN SIDEWALK, PAVED AREA, IN GRASS OR DIRT AREAS.
- CABLE RACKS FURNISHED AND INSTALLED AS INDICATED.
- BONDING AND GROUNDING INSULATED BUSHINGS SHALL BE INSTALLED ON METALLIC CONDUITS TERMINATING IN JUNCTION BOXES AND/OR FOUNDATIONS AND SHALL HAVE A FITTING TO PREVENT ENTRY OF FOREIGN MATTER PRIOR TO
- A NYLON CORD, 125 POUND MINIMUM TEST STRENGTH, SHALL BE FURNISHED AND INSTALLED IN ALL CONDUITS. SEE SPECIFICATIONS.
- CONDUITS SHALL ENTER JUNCTION BOX PERPENDICULAR TO WALLS OR AS APPROVED BY THE ENGINEER. A 2" SEPARATION SHALL BE MAINTAINED BETWEEN ADJACENT WALLS, CONDUITS, AND CABLE RACK LOCATIONS.
- TERMINAL ENDS OF ALL METALLIC CONDUIT SHALL BE THREADED.
- ALL NON-METALLIC CONDUITS SHALL TERMINATE WITH BELL END CONSTRUCTION IN JUNCTION BOX.
- ALL UNUSED CONDUITS SHALL BE PLUGGED OR CAPPED.
- ENGINEER MAY REQUIRE TOP OF JUNCTION BOX TO BE INCLINED IN ORDER TO CONFORM WITH FIELD CONDITIONS. JUNCTION BOX SHALL BE SET TO GRADE IN SIDEWALK AREA AND IN ALL OTHER AREAS.
- WARNING TAPE SHALL BE A RED 4 MIL. FLEXIBLE POLYETHYLENE FILM WHICH IS RESISTANT TO ACIDS, BASES, HYDROCARBONS AND WATER.
- IN INCLINE AREA, NO PART OF THE JUNCTION BOX SHALL EXTEND MORE THAN 4" ABOVE THE FINISH GRADE.
- JUNCTION BOX COVER WITHOUT D.O.T. LOGO SHALL BE UTILIZED FOR ALL LOCAL SIGNALIZED INTERSECTIONS AND BRIDGES ON LOCAL ROADS.

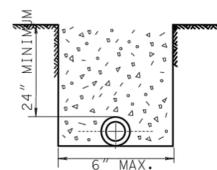
**RIGID METALLIC CONDUIT INSTALLED IN SUBBASE OF CONCRETE ROAD**



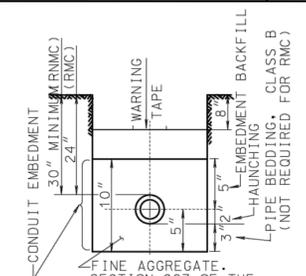
**RIGID METALLIC CONDUIT INSTALLED IN SUBBASE OF BITUMINOUS SURFACE ROAD**



**TYPICAL INSTALLATION OF UNDER ROADWAY RIGID METALLIC CONDUITS AND TYPICAL JUNCTION BOXES (18"X36") INSTALLATION**  
 SUBJECT TO APPROVAL OF THE ENGINEER



**CONDUITS INSTALLATION- OPEN CUT METHOD**



**NON METALLIC CONDUIT & CUG INSTALLATION**

WARNING TAPE  
**CAUTION CAUTION CAUTION**  
 ELECTRIC LINE BURIED BELOW  
 6" TYP. BLACK LETTERS ON RED BACKGROUND

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 TRAFFIC SIGNAL IMPROVEMENTS VALLEY STREET (CR 638) AND ARNOLD TERRACE  
 TOWNSHIP OF SOUTH ORANGE VILLAGE, ESSEX COUNTY, NJ

SCALE: AS SHOWN	DATE: 08/2024	DRAWN BY: JS	CHECKED BY: ZI
PROJECT NUMBER: 24-240	DRAWING NAME: ED-07	SHEET NUMBER:	

**RUDOLF J. GEDEON**  
 NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: 246039479