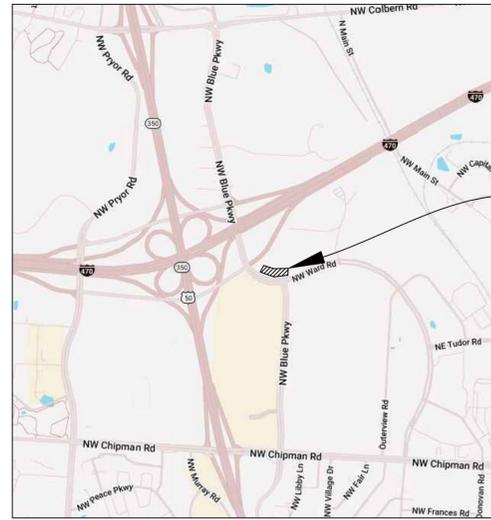


M:\53300 - Premier Automotive Management\53301 Victory Hyundai - Lee's Summit.MO\CAD\Plans\Intersection\Cover Sheet.dwg 5/30/2025 9:29:11 AM petro

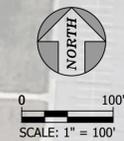
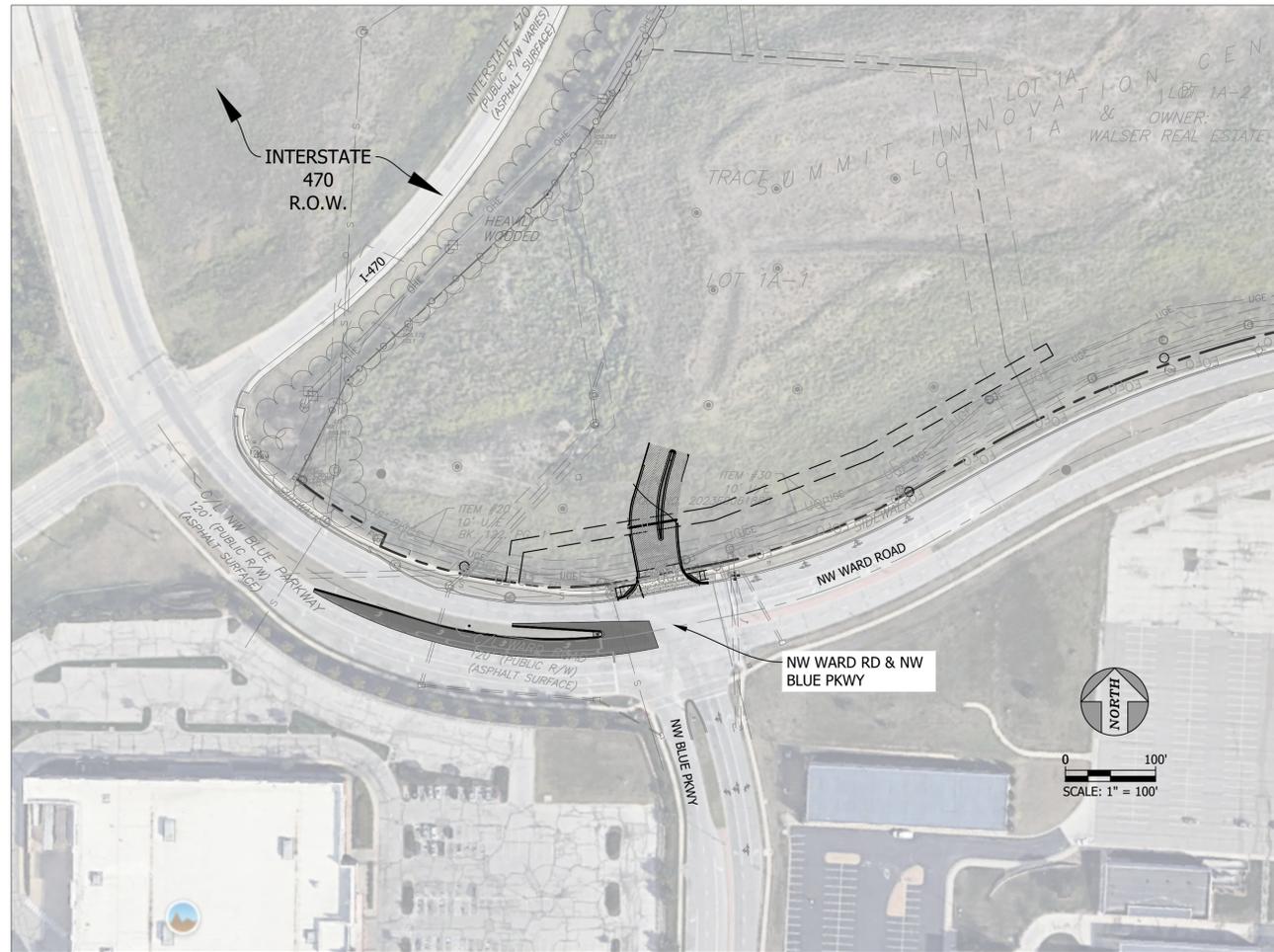
# NW WARD RD & NW BLUE PARKWAY

PUBLIC WORKS DEPARTMENT  
CITY OF LEE'S SUMMIT, MISSOURI



LOCATION MAP  
NOT TO SCALE

PROJECT LOCATION



**UTILITIES**

**LOCATES**

Missouri One Call Inc.  
1022 B Northeast Drive  
Jefferson City, MO 65109  
Phone: 800.344.7483

**WATER & SANITARY SEWER**  
City of Lee's Summit Water Utilities  
1200 SE Hamblen Road  
Lee's Summit, MO  
Phone: 816.969.1900

**ELECTRIC**  
Everygy  
1300 SE Hamblen Rd  
Lee's Summit, MO 64081  
Phone: 816.347.4310

**GAS**  
Spire Gas  
3025 SE Clover Drive  
Lee's Summit, Missouri 64082  
Phone: 816.472.3489

**TELEPHONE**  
AT&T  
215 N. Spring  
Independence, MO  
Phone: 816.325.5619

**CABLE TV**  
Time Warner Cable  
6550 Winchester Avenue  
Kansas City, MO  
Phone: 913.643.1901

Google Fiber  
913.663.1900

The information concerning locations of underground utilities shown hereon which are not visible from the surface, has been taken from the records and field locations of the various utility companies and has not been field verified by this company. These locations are not to be construed as accurate or exact.



**LEGEND**

— OHE —	EXISTING OVERHEAD ELECTRIC
— UGE —	EXISTING UNDERGROUND ELECTRIC
— G —	EXISTING GAS LINE
— W —	EXISTING WATER LINE
— SS —	EXISTING SANITARY SEWER
— UGC —	EXISTING CABLE LINE
— W —	PROPOSED WATER LINE
— G —	PROPOSED GAS LINE
— UGE —	PROPOSED UNDERGROUND ELECTRIC LINE
— — —	PROPOSED SANITARY SEWER
— — —	PROPOSED STORM SEWER

**INDEX TO SHEETS**

1. COVER SHEET
2. GENERAL NOTES & LEGEND
3. PROJECT CONTROL
4. EXISTING SITE / DEMO PLAN
5. PROPOSED SITE PLAN
6. SITE DETAILS
7. GRADING PLAN
8. DETAILED GRADING PLAN
9. TRAFFIC SIGNAL PLAN
10. QUADRANT PLANS
11. MARKING PLANS
12. TRAFFIC SIGNAL WIRING DIAGRAM
13. TRAFFIC SIGNAL QUANTITIES
- 14.-17. TRAFFIC SIGNAL DETAILS
18. ADA RAMP RETROFIT DETAILS
19. TRAFFIC CONTROL DETAILS
- 20.-21. ROADWAY MARKING DETAILS

**Consultant/Applicant:**

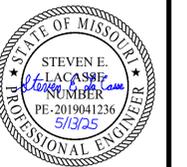
United Engineering Group - Midwest  
Contact: Steve LaCasse, P.E.  
4501 NW Oakley Ave. Ste 232  
Topeka, KS 66618  
785.224.7155

**Prepared For:**

Premier Re of Lees Summit LLC  
13040 I-10 Service Road  
New Orleans, LA 70128



NW WARD ROAD & NW BLUE PKWY  
PUBLIC WORKS DEPARTMENT  
PROJECT:  
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI  
SHEET NAME:  
COVER SHEET

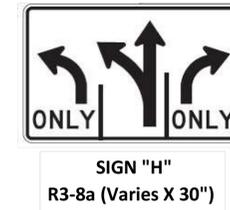
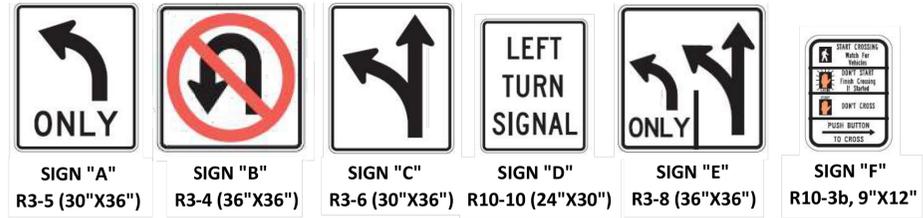


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CHECKED BY: ---  
DATE: 5/13/2025  
PROJECT #PROJECT NUMBER

**GENERAL NOTES**

- 1.) PRELIMINARY INFORMATION:
  - A. ALL WORK SHALL BE CONFINED WITHIN THE CONSTRUCTION LIMITS OR AS OTHERWISE DIRECTED BY THE OWNER.
  - B. ANY WORK PERFORMED PRIOR TO OWNER'S ENGINEER'S REVIEW AND APPROVAL OF THE PERTINENT SUBMITTAL WILL BE AT THE SOLE EXPENSE AND RESPONSIBILITY OF CONTRACTOR.
- COORDINATION AND NOTIFICATIONS:
- 2.) A. FOURTEEN (14) DAYS PRIOR TO ANY STREET CLOSURES, APPROPRIATE NOTIFICATIONS WILL BE DISTRIBUTED.
- B. THE REMOVAL OF TREES, SHEDS, FENCING OR OTHER ITEMS ON PRIVATE PROPERTY ARE NOT AUTHORIZED ON THIS PROJECT. CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY IF ANY SUCH WORK IS PROPOSED. THE OWNER REQUIRES AT LEAST 14 CALENDAR DAY TO NOTIFY PROPERTY OWNER OR RESIDENT, IN ORDER TO GIVE THEM AN OPPORTUNITY TO SALVAGE THESE ITEMS.
- C. PRIOR TO DRIVEWAY DEMOLITION AND RECONSTRUCTION, CONTRACTOR SHALL NOTIFY AND COORDINATE WITH THE PROPERTY OWNER OR RESIDENT. THIS IS TYPICALLY 2 WORKING DAYS.
- D. CONTRACTOR SHALL NOT BE ALLOWED TO WORK WEEKENDS OR HOLIDAYS WITHOUT REQUESTING PRIOR APPROVAL FROM THE OWNER THREE WORKING DAYS IN ADVANCE.
- E. BY ORDINANCE 17-42, WORKING HOURS WITHIN THE CITY OF LEE'S SUMMIT ARE 7:00 A.M. TO 10:00 P.M. REQUESTS TO WORK BEYOND THESE HOURS MUST BE FILED THE OWNER ONE WEEK IN ADVANCE.
- SURVEY:
- 3.) A. CONTRACTOR IS RESPONSIBLE FOR LAYING OUT THE WORK AND SHALL SET THOSE STAKES NECESSARY TO CONSTRUCT THIS PROJECT.
- B. CONTRACTOR SHALL RESET ANY PERMANENT REFERENCE POINTS, PROPERTY CORNERS AND PROPERTY MONUMENTS THAT ARE DISTURBED DURING CONSTRUCTION. THESE POINTS AND MONUMENTS SHALL BE RESET BY A REGISTERED LAND SURVEYOR IN ACCORDANCE WITH STATE LAW. NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK.
- 4.) UNDERGROUND FACILITIES:
  - A. INFORMATION REGARDING UNDERGROUND FACILITIES IS APPROXIMATE.
  - B. CONTRACTOR SHALL VERIFY LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
  - C. ALL EXISTING CONDITIONS SHOWN ON THESE PLANS ARE TO THE BEST KNOWLEDGE OF THE ENGINEER AND SHOULD NOT BE CONSIDERED ALL ENCOMPASSING.
  - D. UNLESS BORED, ALL UNDERGROUND UTILITIES (INCLUDING THE CONTRACTOR'S WORK) THAT CROSS UNDER PROPOSED STREET PAVEMENTS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF THE NEW PAVEMENT.
- 5.) WATER STORM & SANITARY SEWERS:
  - A. WATER CAN BE PURCHASED FROM THE CITY'S WATER UTILITIES DEPARTMENT.
  - B. ALL MANHOLES, VALVE LIDS, METER LIDS, FIRE HYDRANTS AND AIR RELIEF ASSEMBLIES WITH THE CONSTRUCTION LIMITS SHALL BE RELOCATED OR ADJUSTED TO GRADE BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS. ALL VALVE RISERS IN PAVEMENT (WHETHER ADJUSTED, REPLACED OR PLACED) SHALL BE CAST IRON AND CONFORM TO THE SPECIFICATIONS.
- 6.) ENVIRONMENTAL & SAFETY:
  - A. CONTRACTOR SHALL USE ADEQUATE DUST CONTROL MEASURES DURING ALL PHASES OF THE WORK.
  - B. SILTATION AND EROSION CONTROL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL SYSTEMS. REPLACING DAMAGED OR FAILED EROSION CONTROL DEVICES AND INSPECTING THE SITE IN ORDER TO REPAIR THE EROSION CONTROL SYSTEMS WITHIN 24 HOURS AFTER A SIGNIFICATION RAIN EVENT. EROSION AND SEDIMENT CONTROL MUST BE IN PLACE PRIOR TO THE DISTURBANCE OF THE GROUND. FIELD ADJUSTMENTS TO EROSION AND SEDIMENT CONTROL MAY BE REQUIRED DEPENDING ON THE SITE CONDITIONS.
  - C. CONTRACTOR SHALL MAINTAIN THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) ON SITE IN ACCORDANCE WITH DNR REGULATIONS.
- 7.) GRADING, REMOVALS & DAMAGED ITEMS:
  - A. DRIVEWAYS, PARKING LOTS, SIDEWALKS, FENCES, IRRIGATION SYSTEMS AND OTHER ITEMS DISTURBED OR DAMAGED BY THE CONTRACTOR SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE TO A CONDITION EQUAL TO OR BETTER THAN EXISTING BEFORE DAMAGE OCCURRED. UNLESS WAIVED BY OWNER, ALL ITEMS REQUIRING REPLACEMENT SHALL BE REPLACE WITH NEW MATERIALS, AND ALL MATERIALS ARE SUBJECT TO OWNER'S APPROVAL.
  - B. ROOF DRAINS, UNDER DRAINS, AND OTHER SMALL DRAINAGE LINES NOT SHOWN ON THE DRAWINGS THAT

- ARE UNCOVERED OR DAMAGED SHALL BE REPAIRED, AND THE POINT OF DISCHARGE SHALL BE PLACE NO CLOSER THAT FIVE FEET TO ANY ADJOINING PROPERTY LINE INCLUDING THE RIGHT-OF-WAY LINE. UNLESS DIRECTED BY THE CITY ENGINEER, NO DRAIN LINES SHALL BE CONNECTED TO THE STORM SEWER SYSTEM. MATERIALS AND LOCATION ARE SUBJECT TO OWNER'S APPROVAL.
- C. MATERIALS THAT MAY BE CLASSIFIED AS UNSUITABLE OR REQUIRE UNDER GRADING SHALL BE DETERMINED BY THE OWNER OR THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL NOT MAKE THIS DETERMINATION.
- D. SUBGRADE PREPARATION SHALL BE IN ACCORDANCE WITH LEE'S SUMMIT SECTION 2200.
- E. CONTRACTOR SHALL PROVIDE A COPY OF THE WRITTEN AGREEMENT BETWEEN THE PROPERTY OWNER AND THE CONTRACTOR AUTHORIZING USE OF ANY SITE USED FOR DISPOSAL OF MATERIAL.
- 8.) TRAFFIC:
  - A. NO STREETS SHALL BE CLOSED WITHOUT THE APPROVAL OF THE CITY TRAFFIC ENGINEER. THE CONTRACTOR SHALL NOTIFY THE CITY TRAFFIC ENGINEER AT LEAST 10 DAYS IN ADVANCE OF ANY STREET CLOSURE. IF A DETOUR ROUTE AROUND THE CLOSURE IS TO BE PROVIDED. ALL DETOUR SIGNING SHALL BE SHOWN ON A PLAN APPROVED BY THE CITY TRAFFIC ENGINEER.
  - B. UNLESS DIRECTED IN THE CONTRACT DOCUMENTS OR DRAWINGS, CONTRACTOR SHALL MAINTAIN TRAFFIC AND PEDESTRIAN ACCESS AT ALL TIMES.
  - C. APPROPRIATE TRAFFIC CONTROL DEVICES, SIGNAGE AND PAVEMENT MARKINGS SHALL BE ESTABLISHED AND MAINTAINED THROUGHOUT THE PROJECT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND THE MUTCD.
  - D. MINIMUM LANE WIDTH OF 10.0' SHALL BE PERMITTED.
- 9.) QUALITY CONTROL
  - A. CONTRACTOR SHALL ENGAGE A QUALIFIED LABORATORY TO DEVELOP A MOISTURE/DENSITY CURVE (STANDARD PROCTOR).
  - B. QUALITY CONTROL FOR EARTHWORK, SUBGRADES, AND PAVEMENTS SHALL BE IN ACCORDANCE WITH SECTION 1.02 OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL SECTION 1000.
- 10.) MATERIALS:
  - A. AGGREGATE BASE SHALL MEET THE REQUIREMENTS OF APWA 2203.3
  - B. ROCK BLANKET SHALL MEET THE REQUIREMENTS OF APWA 2303.2
  - C. ALL CONCRETE PAVEMENT AND SIDEWALK SHALL MEET THE REQUIREMENTS OF KCMMB 4K CONCRETE
  - D. ALL ASPHALTIC CONCRETE PAVEMENT SHALL MEET THE REQUIREMENTS OF KCMMB A1
  - E. GEOGRID SHALL BE ON THE CITY OF LEE'S SUMMIT PUBLIC WORKS DEPARTMENT "PUBLIC WORKS APPROVED PRODUCT LIST", OR APPROVED SUBSTITUTE
  - F. STREET LIGHTING SHALL BE ON THE CITY OF LEE'S SUMMIT PUBLIC WORKS DEPARTMENT TRAFFIC ENGINEERING "APPROVED MATERIALS LIST FOR STREET LIGHTING", OR APPROVED SUBSTITUTE
  - G. TRAFFIC SIGNALS SHALL BE ON THE CITY OF LEE'S SUMMIT PUBLIC WORKS DEPARTMENT TRAFFIC ENGINEERING "APPROVED MATERIALS LIST FOR TRAFFIC SIGNALS", OR APPROVED SUBSTITUTE
- 11.) RESTORATION:
  - A. ALL DISTURBED AREAS SHALL BE FINISHED IN A CONDITION TO DRAIN, SEEDED/SODDED AND WATERED.
  - B. SPRINKLER HEADS AFFECTED BY CONSTRUCTION SHALL BE CAPPED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION AND NOTICE GIVEN TO THE PROPERTY OWNER. SPRINKLER SYSTEMS LOCATED WITHIN THE EXISTING RIGHT OF WAY WILL NOT BE REPAIRED. IF A SPRINKLER SYSTEM ON PRIVATE PROPERTY IS DAMAGED, IT SHALL BE REPAIRED.
  - C. ALL SURFACE FEATURES DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED BY THE CONTRACTOR TO ITS ORIGINAL CONDITION.



**LEGEND**

Overhead Telephone Line	---OHT---	Overhead Cable	-----OHC-----
Underground Telephone Line	-----UT-----	Underground Cable	-----UC-----
Overhead Electric Line	---[ ]HE---	Underground Electric Line	---[ ]UE---
Water Line	-----W-----	Gas Line	-----G-----
Sanitary Sewer	-----SS-----	Storm Sewer	-----STM-----
Fiber Optic Line	---FO---FO---FO---	Right of Way Line	-----RW-----
Lot Line	-----L-----	Chain link Fence	-----F-----
Control Point	◆	Water Meter	⊞
Property Pin	•	Water Valve	⊞
Power Pole	⊞	Gas Meter	⊞
Telephone Pole	⊞	Gas Valve	⊞
Street Light	⊞	Existing Storm Inlet	⊞
Guy Pole	⊞	Existing Manhole	⊞
Guy Wire	→	Sign	+
Fire Hydrant	⊞	Tree	⊞
MAST ARM POLE	⊞	SIGNAL FACE NUMBER	⊞
SIGNAL PEDESTAL	⊞	POLE/PEDESTAL NUMBER	⊞
CONTROLLER	⊞	JUNCTION/SERVICE BOX NUMBER	⊞
JUNCTION/SERVICE BOX	⊞	PUSH BUTTON NUMBER	⊞
TRAFFIC SIGNAL HEAD	⊞	LUMINAIRE	⊞
TRAFFIC SIGNAL HEAD WITH BACK PLATE	⊞	VEHICLE DETECTION CAMERA	⊞
PEDESTRIAN SIGNAL HEAD	⊞	PUSH BUTTON DETECTOR	⊞
PUSH BUTTON PEDESTAL	⊞	OPTICOM DETECTOR	⊞
BORED CONDUIT	---	RADAR DETECTOR	⊞
TRENCHED CONDUIT	---	POWER SUPPLY ASSEMBLY	⊞
INTERNALLY ILLUMINATED STREET NAME SIGN (IISNS)	⊞	POWER METER	⊞

NOTE: THE OWNER IS THE CITY OF LEE'S SUMMIT. THE DEVELOPER IS PREMIER RE OF LEE'S SUMMIT, LLC.



PROJECT: NW WARD ROAD & NW BLUE PKWY  
PUBLIC WORKS DEPARTMENT  
PROJECT: LEES SUMMIT, JACKSON COUNTY, MISSOURI  
SHEET NAME: GENERAL NOTES

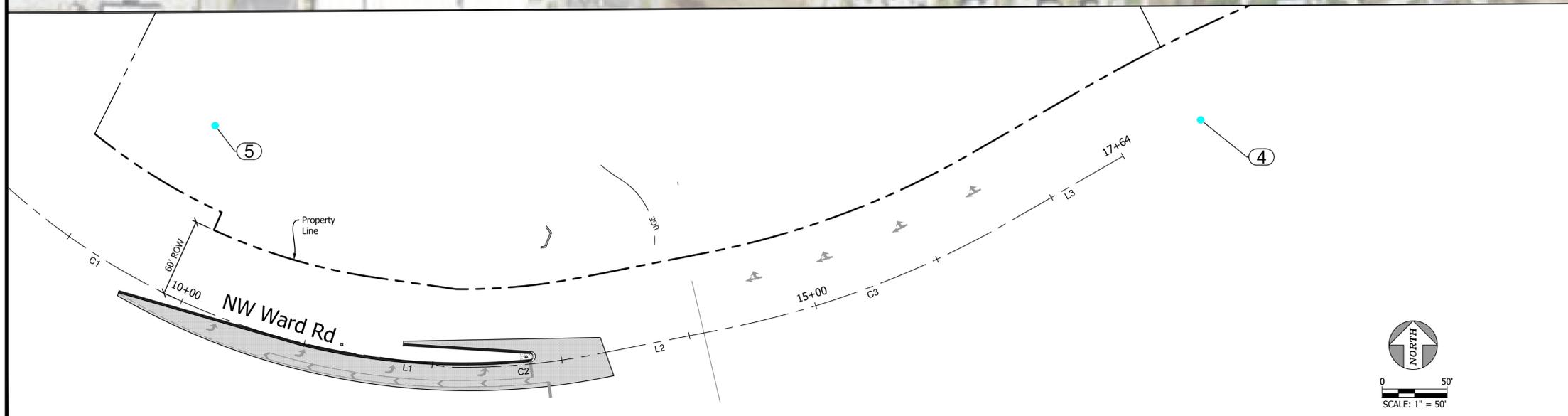


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CHECKED BY: ---  
DATE: 5/13/2025  
PROJECT #PROJECT NUMBER

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NW Ward Rd Centerline				
Description/Parameter	Northing	Easting	Length/Value	Course
C1 PC: 7+04.59 PI: 9+40.95 PT: 11+48.67	1007621.45 1007423.93 1007390.52	2816362.82 2816492.64 2816726.63	Radius: 524.00' Degree of Curve: 10°57' Delta: 48°33'29" Arc Length: 444.09'	Chord Length: 430.92' Chord Bearing: S57° 35' 40"E
L1 Start: 11+48.67 End: 12+13.55	1007390.52 1007381.35	2816726.63 2816790.85	64.87'	S81° 52' 24"E
C2 PC: 12+13.55 PI: 12+70.01 PT: 13+26.04	1007381.35 1007380.30 1007391.20	2816790.85 2816847.30 2816902.70	Radius: 528.00' Degree of Curve: 10°52' Delta: 12°12'25" Arc Length: 112.49'	Chord Length: 112.28' Chord Bearing: N84° 57' 56"E
L2 Start: 13+26.04 End: 14+25.52	1007391.20 1007410.42	2816902.70 2817000.30	99.48'	N78° 51' 43"E
C3 PC: 14+25.52 PI: 15+45.68 PT: 16+63.70	1007410.42 1007433.63 1007493.50	2817000.30 2817118.20 2817222.39	Radius: 728.00' Degree of Curve: 7°53' Delta: 18°44'44" Arc Length: 238.18'	Chord Length: 237.12' Chord Bearing: N69° 29' 21"E
L3 Start: 16+63.70 End: 17+63.70	1007493.50 1007543.33	2817222.39 2817309.10	100.00'	N60° 06' 59"E



**DEVELOPER:**  
Premier Re of Lees Summit LLC  
13040 I-10 Service Road  
New Orleans, LA 70128

**PROPERTY LOCATION:**  
NW Blue Parkway & I-470  
Lee's Summit, MO 64086

MISSOURI STATE PLANE COORDINATES

Point #	Northing	Easting	Elevation	Description
1	1008949.16	2823205.62	1034.76	JA-43
3	1007692.95	2817732.17	979.17	SET IRON BAR
4	1007571.16	2817368.85	984.55	SET IRON BAR
5	1007566.75	2816610.18	975.09	SET IRON BAR

**BENCHMARK:**  
JA-43: Alum Disk Located 0.5 miles South of the I-470 intersection with Douglas Road and near the intersection with NW Victoria Street. It is about 230 feet North of the intersection of Douglas Road and NW Victoria Street.  
Elevation = 1034.76



**LEE'S SUMMIT**  
MISSOURI



united  
engineering  
group

PROJECT: NW WARD ROAD & NW BLUE PKWY  
PUBLIC WORKS DEPARTMENT  
PROJECT: LEES SUMMIT, JACKSON COUNTY, MISSOURI  
SHEET NAME: PROJECT CONTROL PLAN



STEVEN E. LACASSE  
PROFESSIONAL ENGINEER  
NO. PE-2019041236  
5/13/25

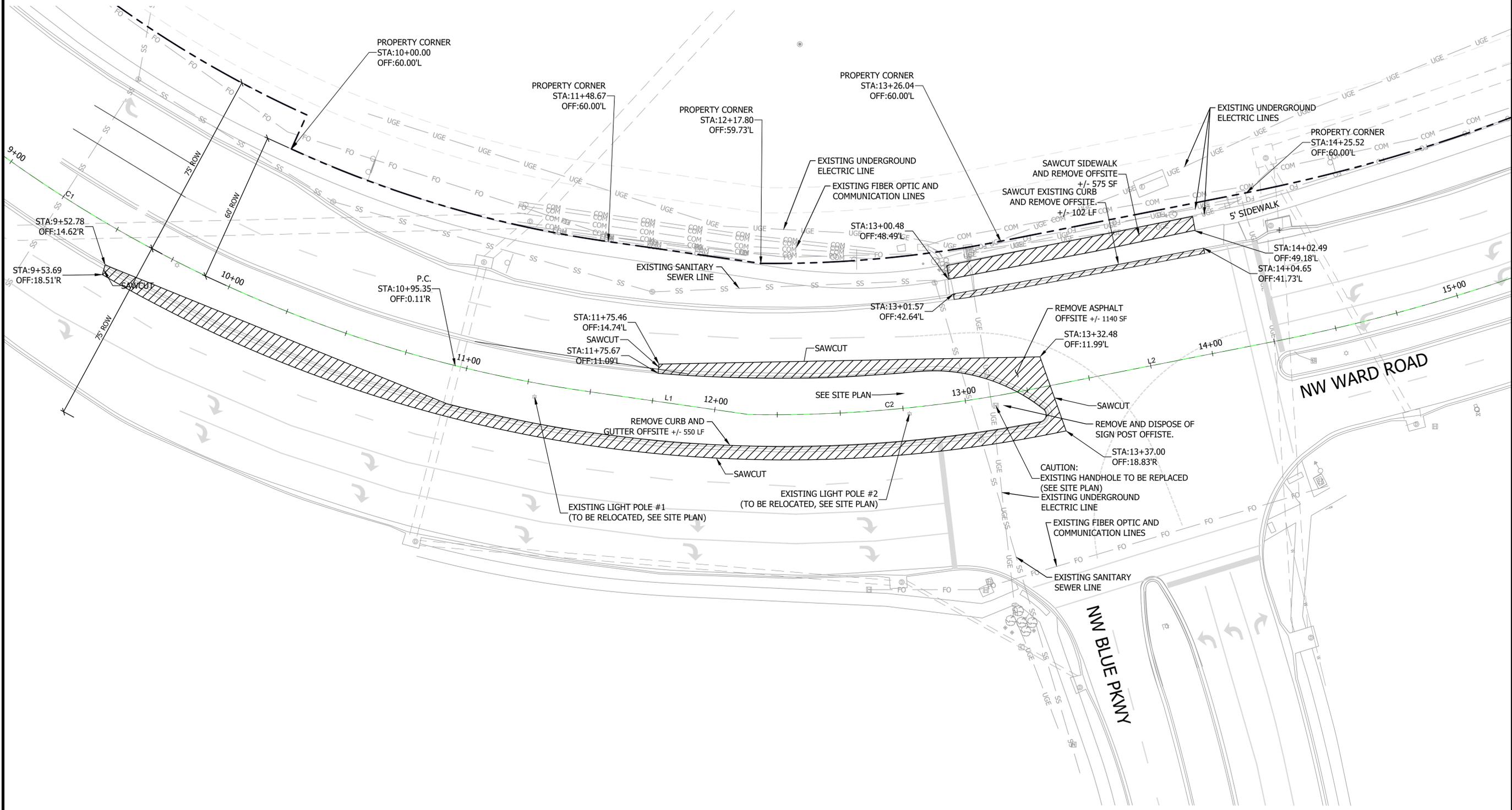
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DATE: 5/13/2025

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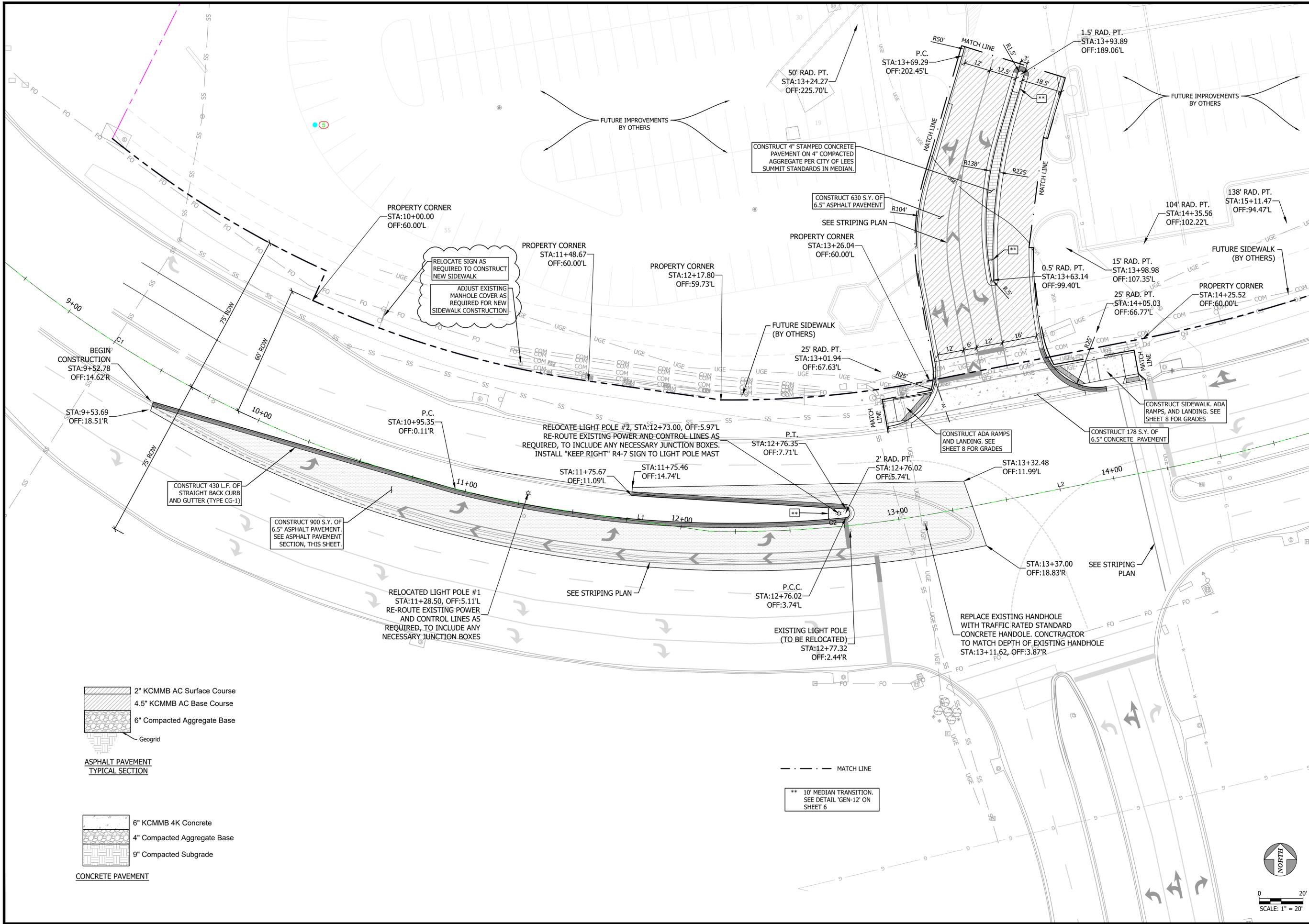
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 PROJECT #PROJECT NUMBER



0 20'  
 SCALE: 1" = 20'



**LEE'S SUMMIT MISSOURI**

PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEES SUMMIT, MO 64063

**united engineering group**

4501 NW Oakley Ave, Suite 232 | Topeka, KS 66618  
Phone: 785.806.2806 | www.unitedeng.com

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**NW WARD ROAD & NW BLUE PKWY**

PUBLIC WORKS DEPARTMENT

PROJECT: LEES SUMMIT, JACKSON COUNTY, MISSOURI

SHEET NAME: PROPOSED SITE PLAN

STATE OF MISSOURI

STEVEN E. LACASSE

REGISTERED PROFESSIONAL ENGINEER

PE-2019041236

5/13/25

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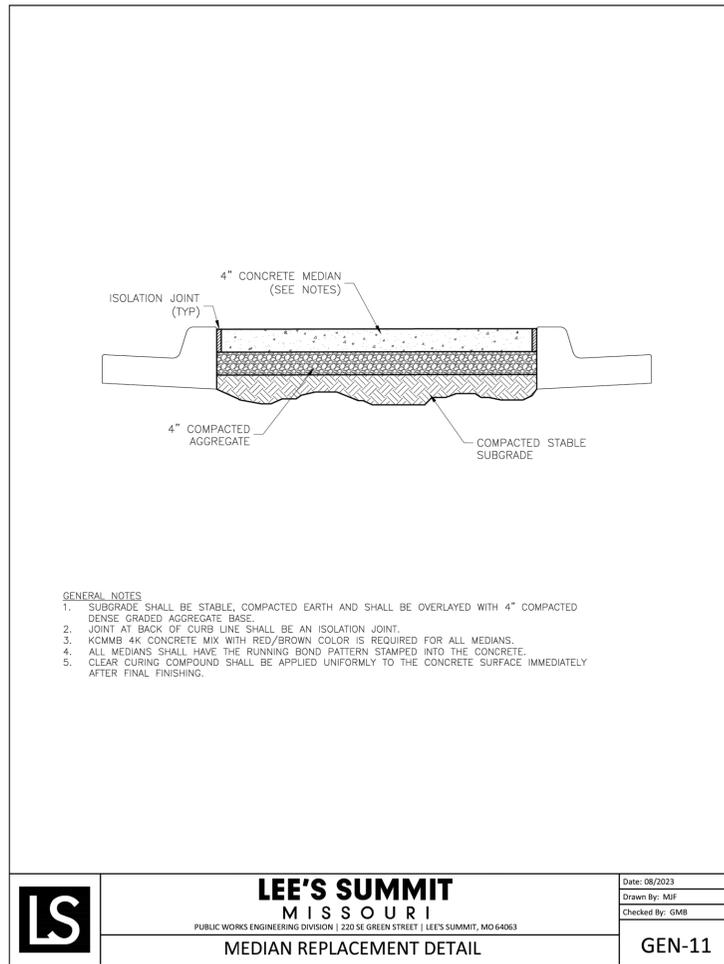
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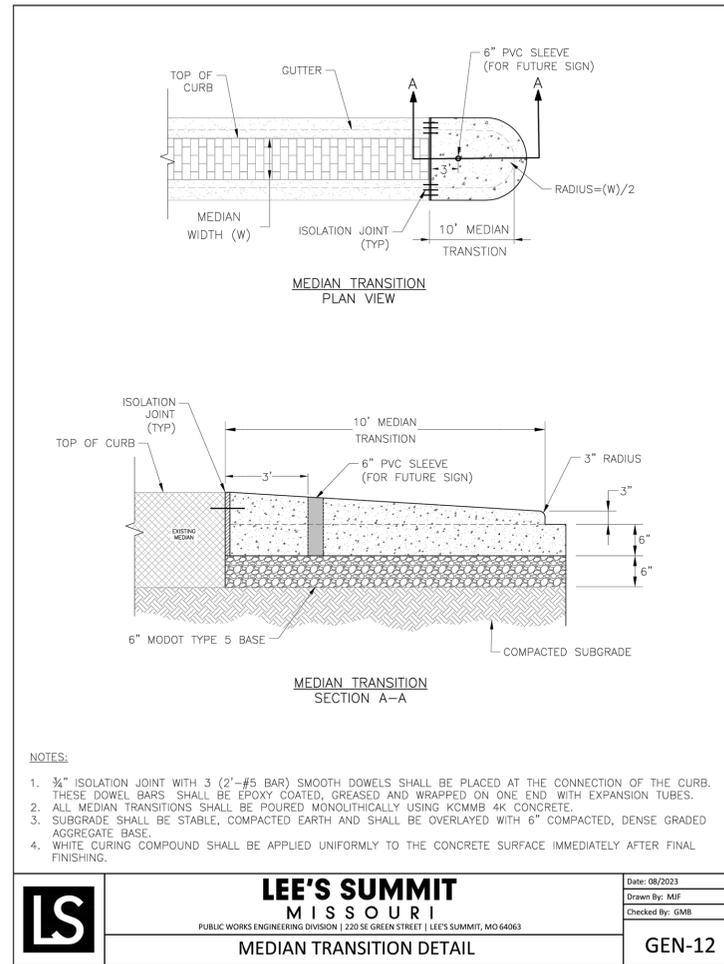
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PROJECT #PROJECT NUMBER

5



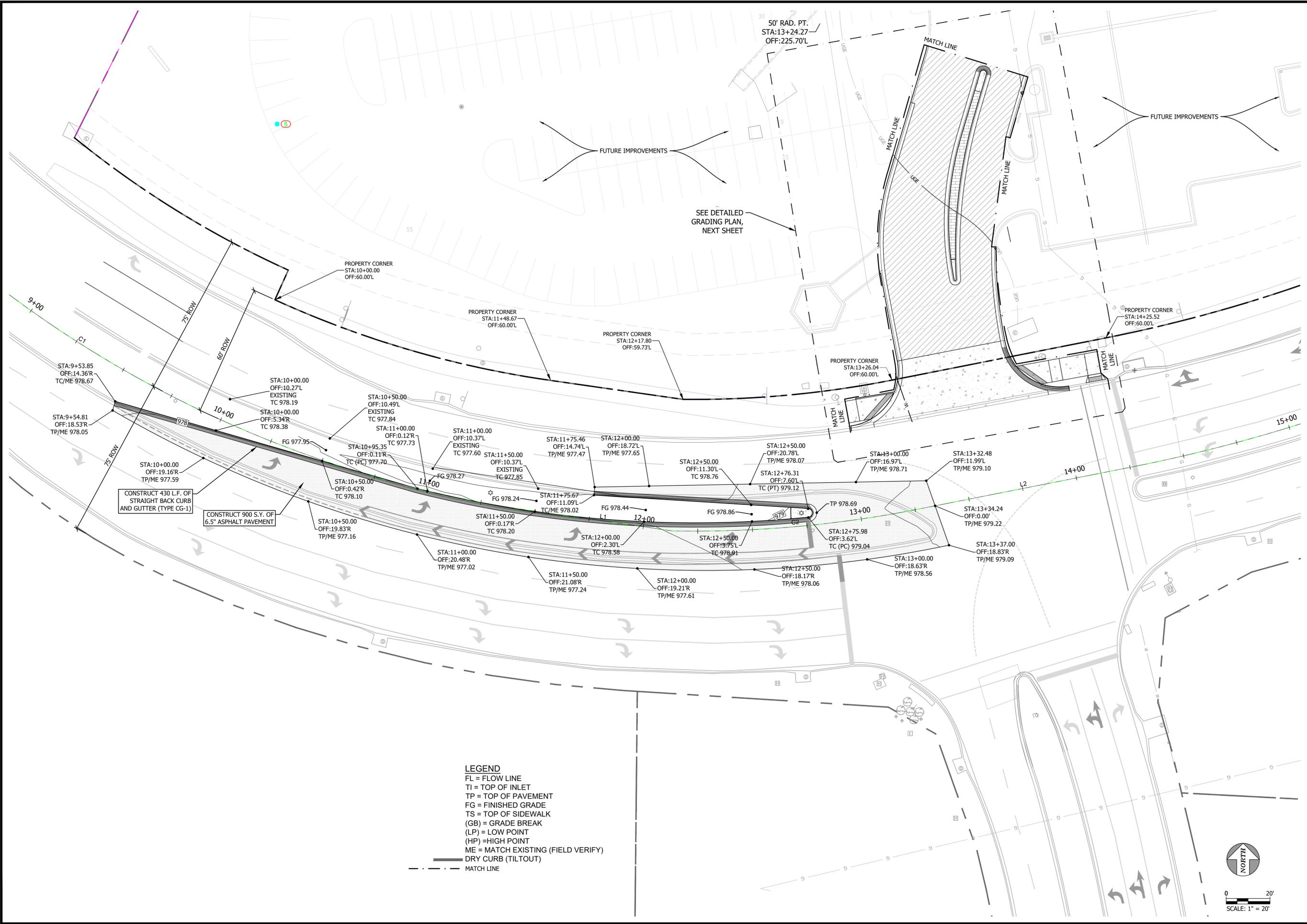
MEDIAN DETAIL 'A'



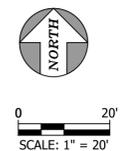
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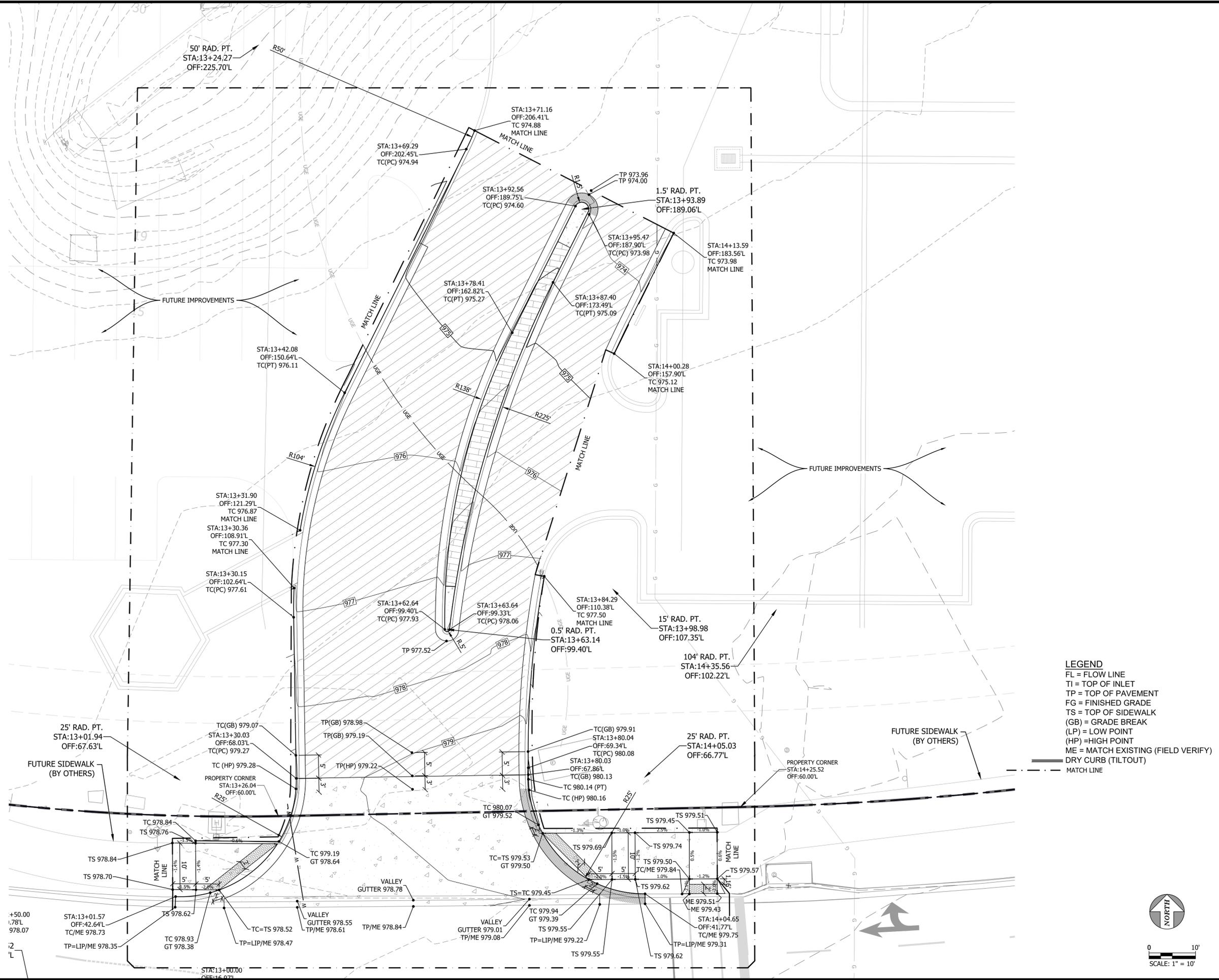
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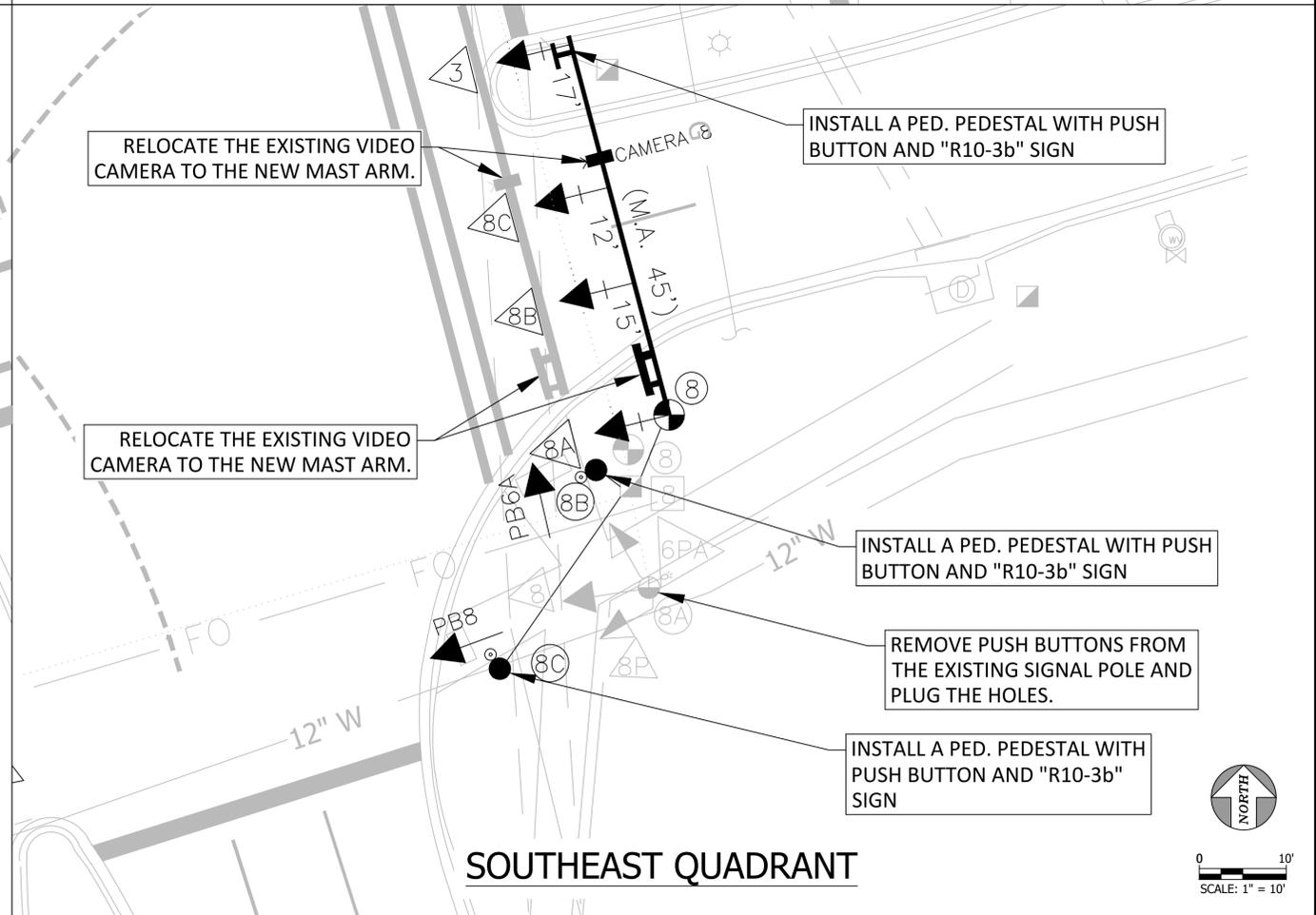
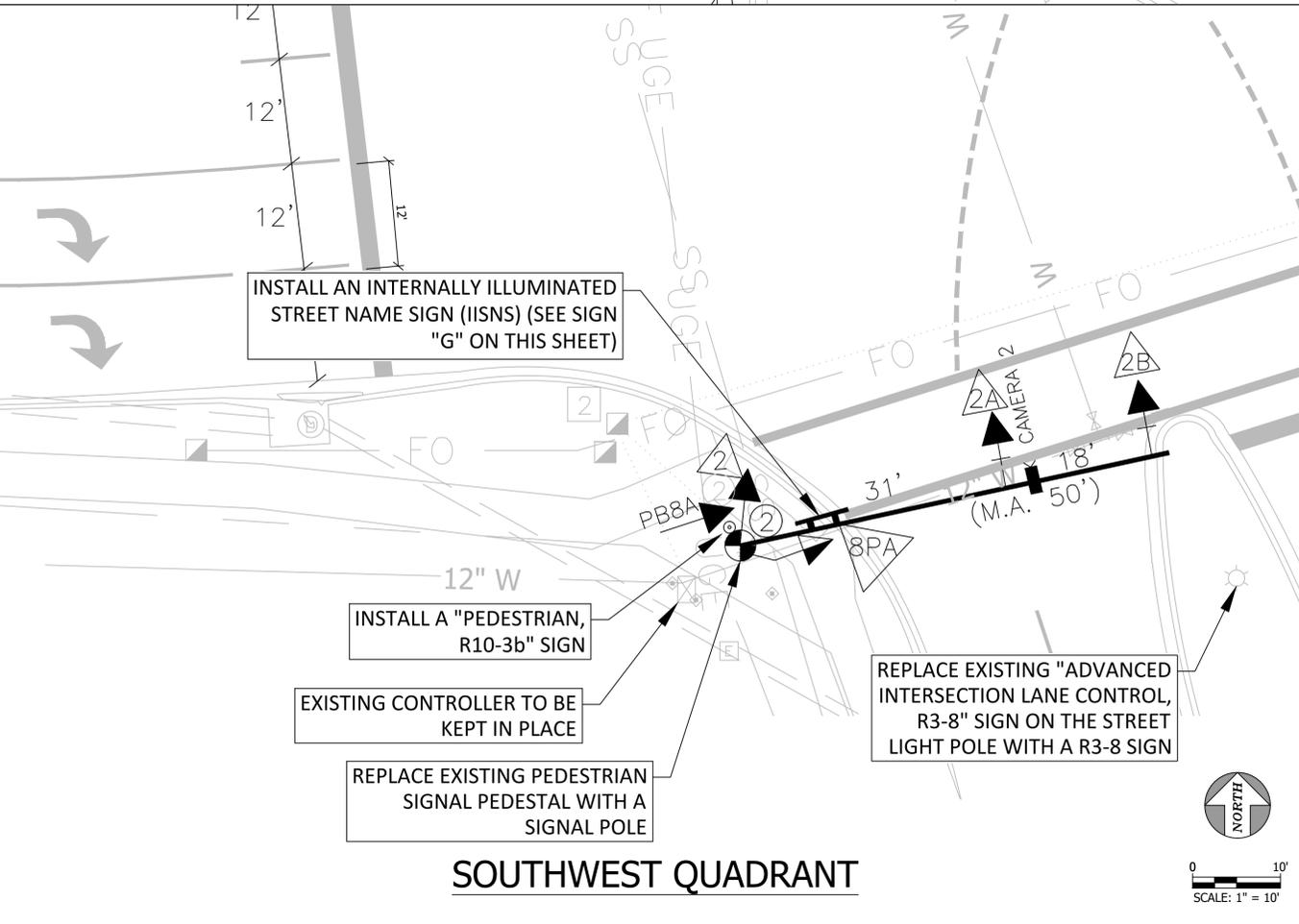
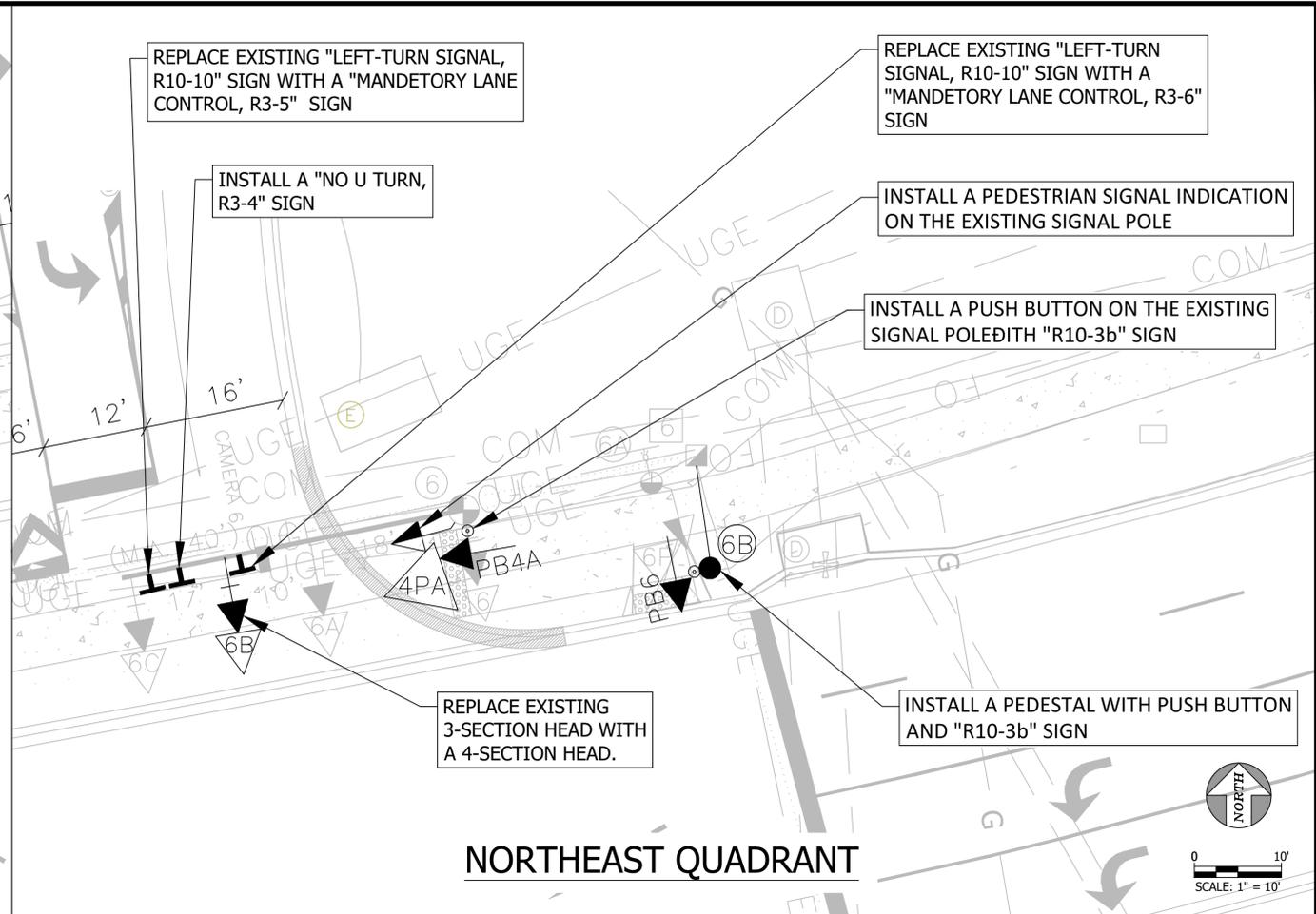
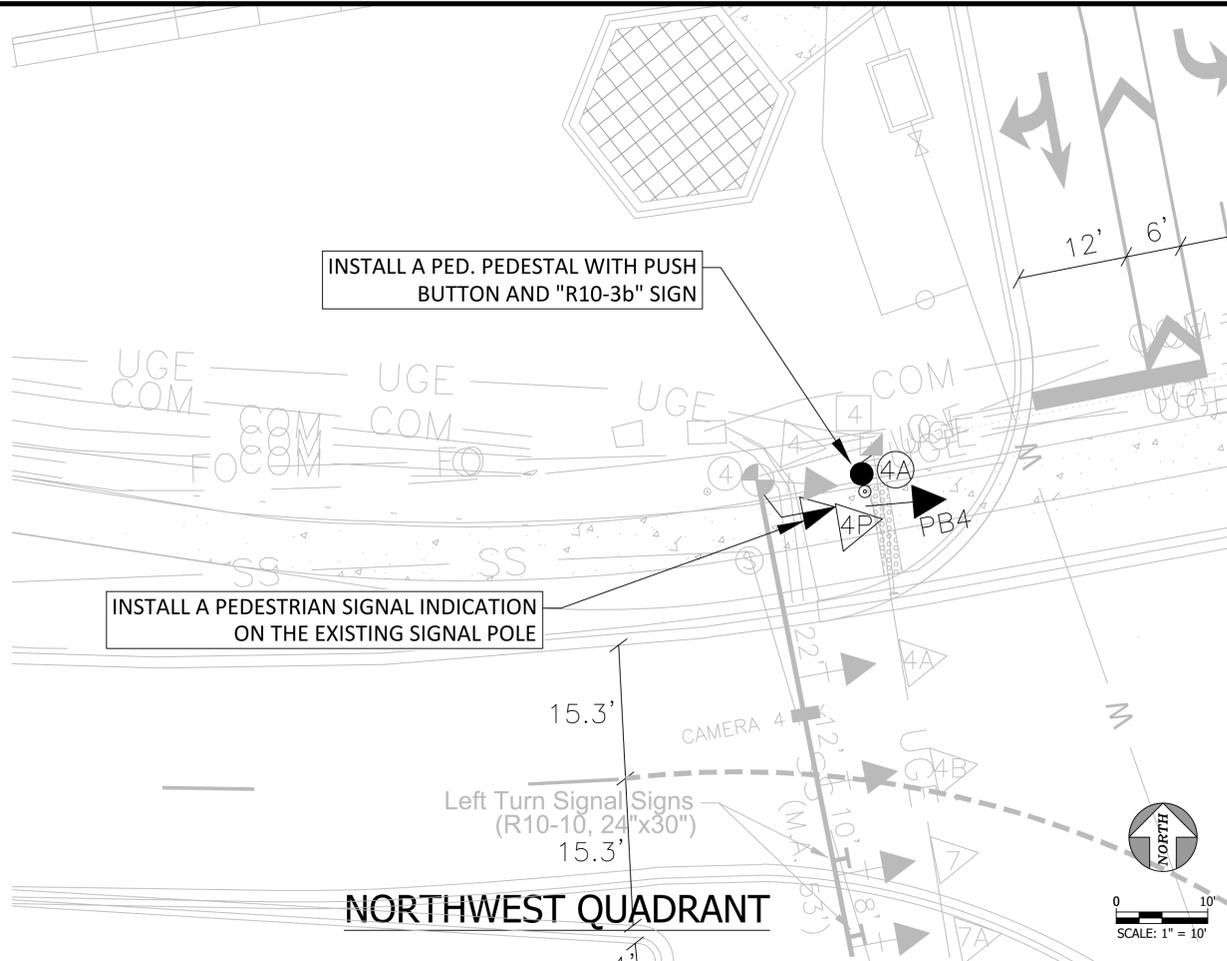
**LEGEND**  
 FL = FLOW LINE  
 TI = TOP OF INLET  
 TP = TOP OF PAVEMENT  
 FG = FINISHED GRADE  
 TS = TOP OF SIDEWALK  
 (GB) = GRADE BREAK  
 (LP) = LOW POINT  
 (HP) = HIGH POINT  
 ME = MATCH EXISTING (FIELD VERIFY)  
 DRY CURB (TILTOUT)  
 --- MATCH LINE



DRAWN BY: ---  
 CHECKED BY: ---  
 DATE: 5/13/2025  
 PROJECT #PROJECT NUMBER





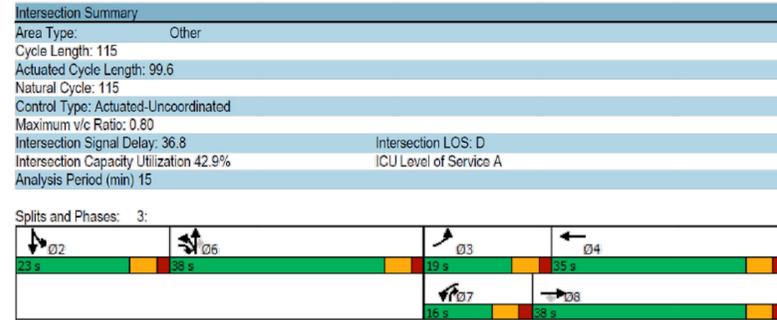




## PROPOSED SIGNAL TIMING (OPTIMUM CYCLE LENGTH, PEAK HOURS, TYPICAL WEEKDAY)

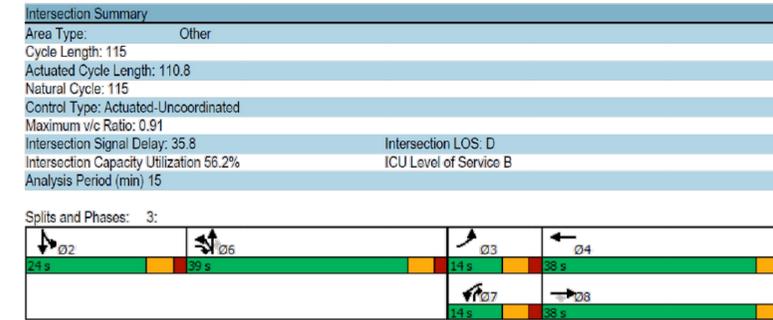
NW Ward Rd. & Blue Pkwy

Future Traffic Volumes per TIS  
Morning Peak Hour, Typical Weekday

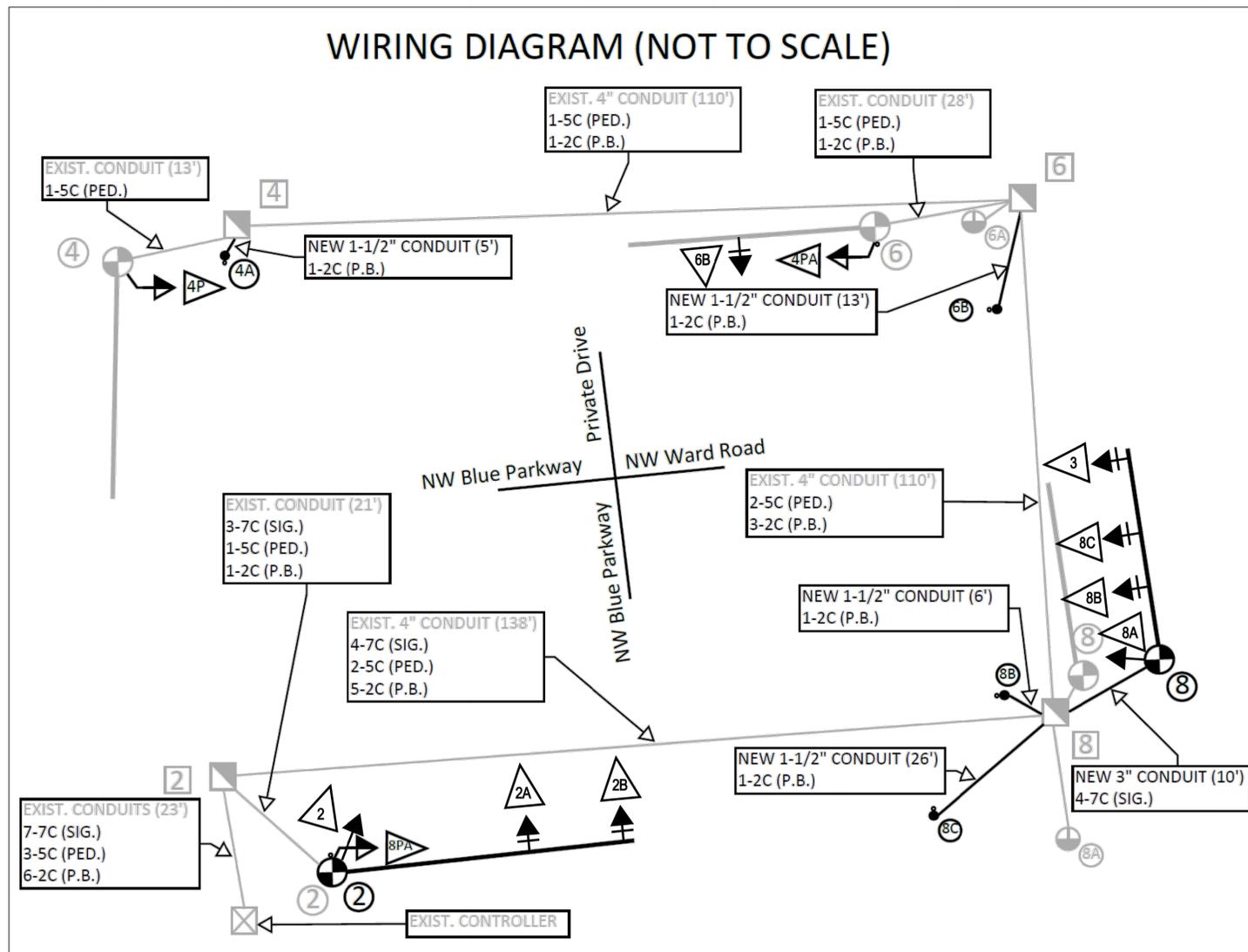


NW Ward Rd. & Blue Pkwy

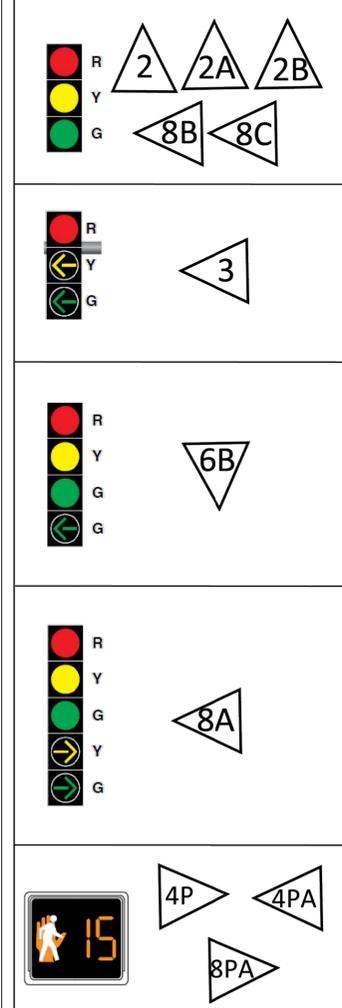
Future Traffic Volumes per TIS  
Afternoon Peak Hour, Typical Weekday



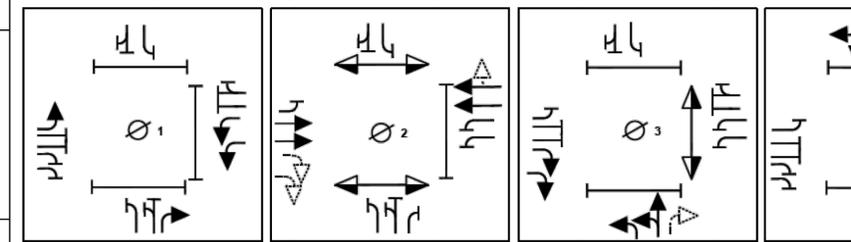
### WIRING DIAGRAM (NOT TO SCALE)



### SIGNAL FACE ARRANGEMENT



### SIGNAL INTERVAL SEQUENCE



APPROACH	FACE NO.	Ø 1			Ø 2				Ø 3			
		1	2	3	1	2	3	4	1	2	3	4
WESTBOUND NW Ward Road	4	R	R	R	G	G	Y	R	R	R	R	R
	4A	R	R	R	G	G	Y	R	R	R	R	R
	4B	R	R	R	G	G	Y	R	R	R	R	R
	7	G <sub>LA</sub>	Y <sub>LA</sub>	R	R	R	R	R	R	R	R	R
	4P	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW
EASTBOUND NW Blue Parkway	8	R	R	R	G	G	Y	R	G <sub>RA</sub>	G <sub>RA</sub>	Y <sub>RA</sub>	R
	8A	R	R	R	G	G	Y	R	G <sub>RA</sub>	G <sub>RA</sub>	Y <sub>RA</sub>	R
	8B	R	R	R	G	G	Y	R	R	R	R	R
	8C	R	R	R	G	G	Y	R	R	R	R	R
	3	G <sub>LA</sub>	Y <sub>LA</sub>	R	R	R	R	R	R	R	R	R
NORTHBOUND NW Blue Parkway	6	G <sub>RA</sub>	Y <sub>RA</sub>	R	R	R	R	R	G	G	Y	R
	6A	R	R	R	R	R	R	R	G	G	Y	R
	6B	R	R	R	R	R	R	R	G, G <sub>LA</sub>	G, G <sub>LA</sub>	Y	R
	6C	R	R	R	R	R	R	R	G	G	Y	R
	6P	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW
SOUTHBOUND Private Drive	2	R	R	R	R	R	R	R	R	R	R	R
	2A	R	R	R	R	R	R	R	R	R	R	R
	2B	R	R	R	R	R	R	R	R	R	R	R
	4B	R	R	R	R	R	R	R	R	R	R	R
	8PA	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW

G<sub>RA</sub> = GREEN RIGHT ARROW, Y<sub>RA</sub> = YELLOW RIGHT ARROW, G<sub>LA</sub> = GREEN LEFT ARROW, Y<sub>LA</sub> = YELLOW LEFT ARROW  
 Bold entries are newly proposed signal indications and intervals. Screened entries are existing signal indications

Topo Survey & Base Drawing By:  
**United Engineering Group**  
 4501 NW Oakley Ave, Suite 232  
 Topeka, KS 66618



Lane Configuration, Pavement Marking & Traffic Signal Design By:



**LEE'S SUMMIT, MISSOURI**  
 Public Works Engineering Division  
 220 Green St.  
 Lee's Summit, MO 64063  
 Phone (816)969-1800

Traffic Signal  
 Blue Parkway & Ward Road

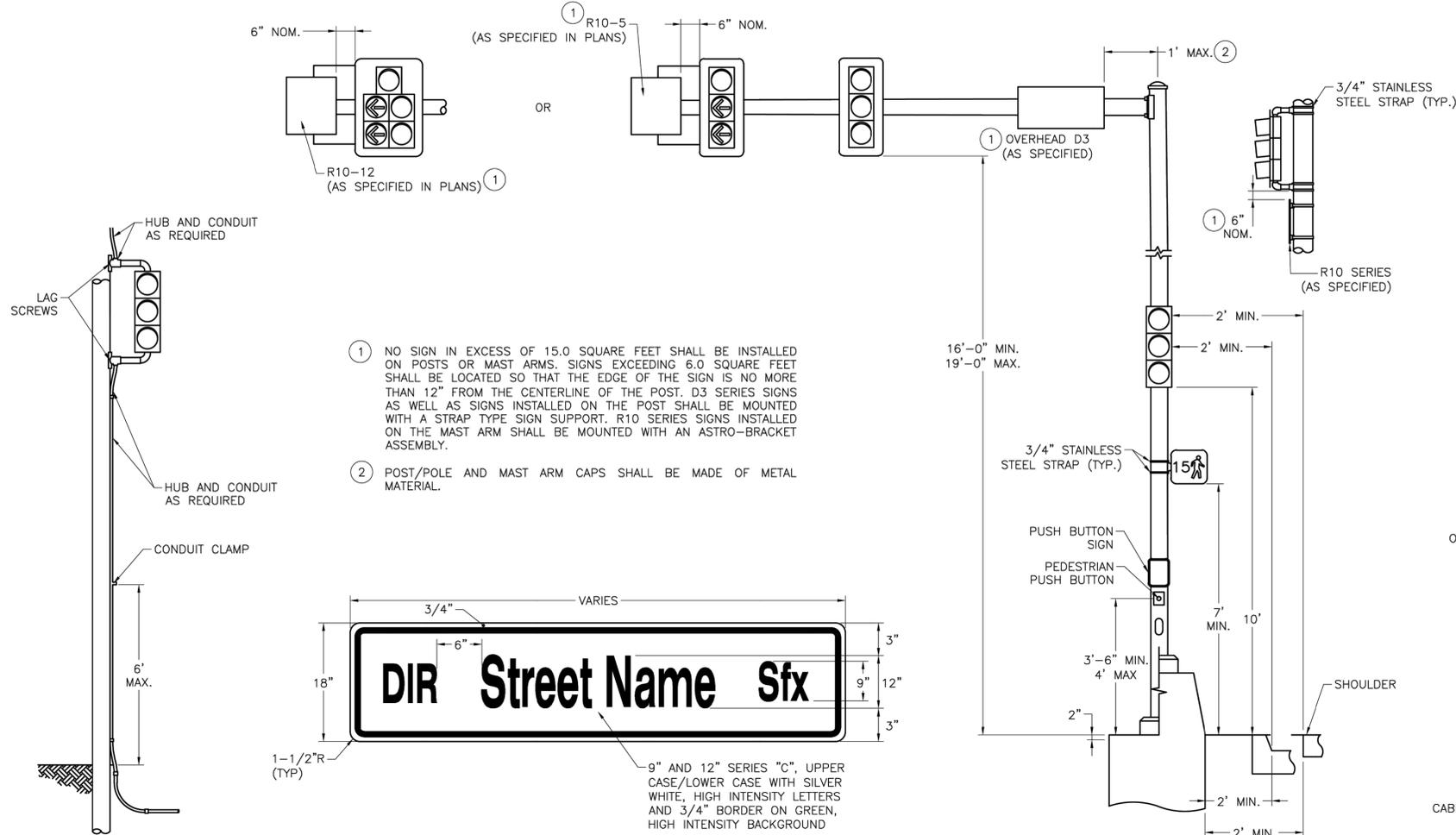
Signal Phasing  
 &  
 Wiring Diagram



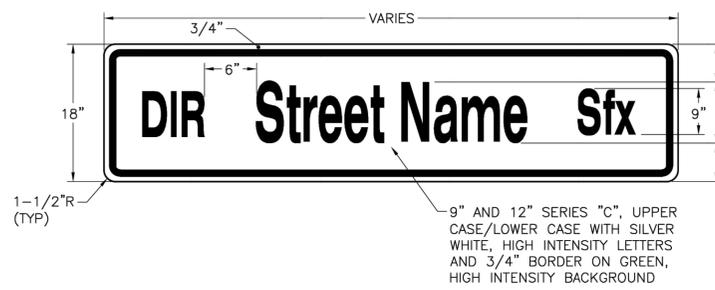
PROJECT: NW WARD ROAD & NW BLUE PKWY  
 PUBLIC WORKS DEPARTMENT  
 PROJECT: LEES SUMMIT, JACKSON COUNTY, MISSOURI  
 SHEET NAME: TRAFFIC SIGNAL WIRING DIAGRAM

DRAWN BY: ---  
 CHECKED BY: ---  
 DATE: 5/13/2025  
 PROJECT #PROJECT NUMBER





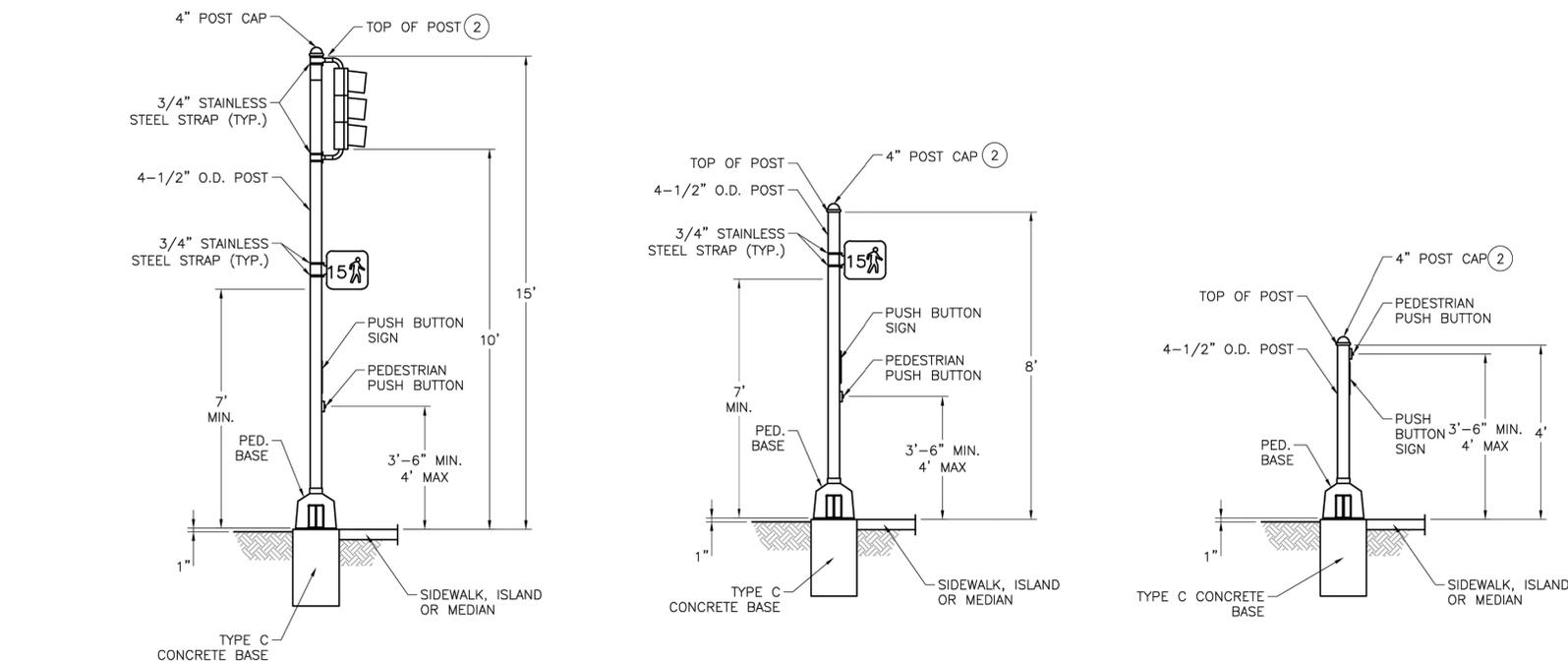
- 1 NO SIGN IN EXCESS OF 15.0 SQUARE FEET SHALL BE INSTALLED ON POSTS OR MAST ARMS. SIGNS EXCEEDING 6.0 SQUARE FEET SHALL BE LOCATED SO THAT THE EDGE OF THE SIGN IS NO MORE THAN 12" FROM THE CENTERLINE OF THE POST. D3 SERIES SIGNS AS WELL AS SIGNS INSTALLED ON THE POST SHALL BE MOUNTED WITH A STRAP TYPE SIGN SUPPORT. R10 SERIES SIGNS INSTALLED ON THE MAST ARM SHALL BE MOUNTED WITH AN ASTRO-BRACKET ASSEMBLY.
- 2 POST/POLE AND MAST ARM CAPS SHALL BE MADE OF METAL MATERIAL.



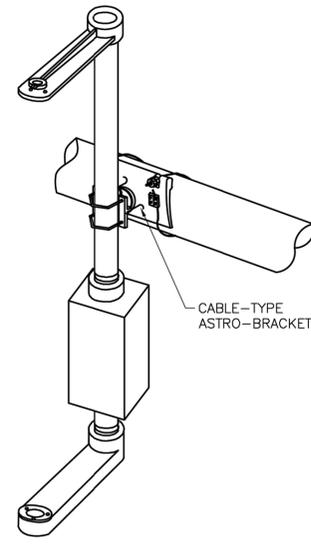
WOOD POLE MOUNTING

OVERHEAD D3 SIGN

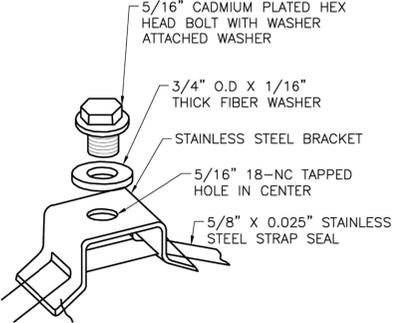
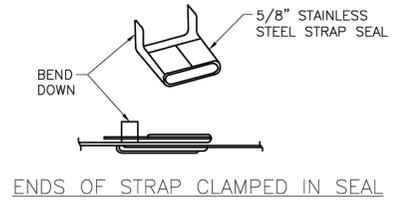
MAST ARM POLE MOUNTING



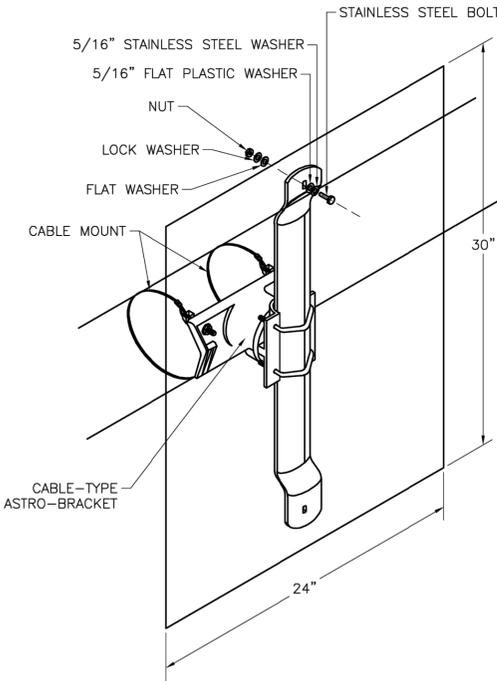
PEDESTAL POST MOUNTINGS



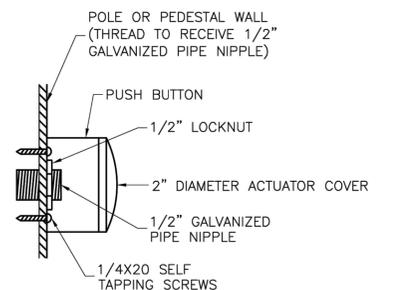
ASTRO-BRAC TERMINAL COMPARTMENT BRACKET ASSEMBLY ONLY CABLE TYPE ASTRO-BRAC WILL BE ALLOWED, NO BANDS.



STRAP TYPE SIGN SUPPORT



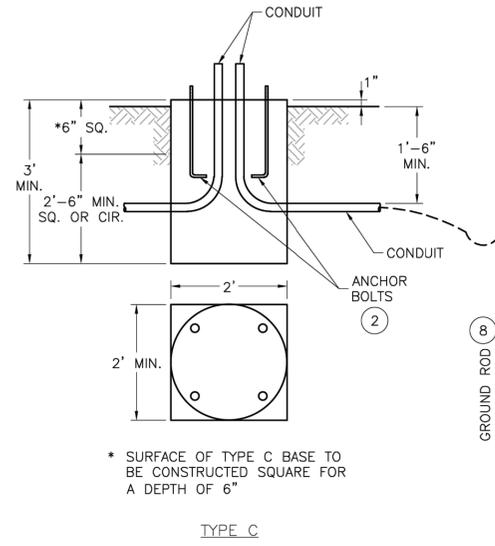
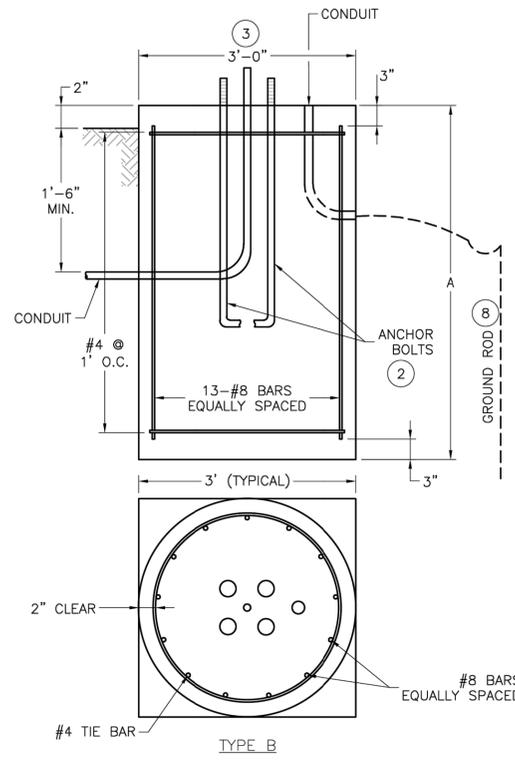
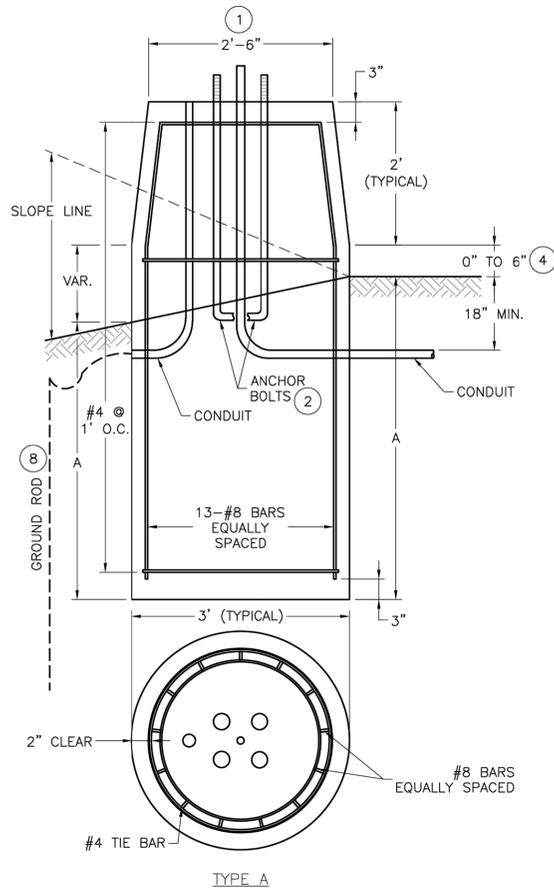
MAST ARM SIGN MOUNTING DETAIL



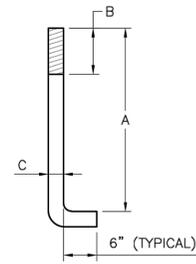
- PUSH BUTTON NOTES:**
1. PUSH BUTTONS SHALL INCLUDE TWO MOUNTING BRACKETS EACH AND BE OF THE TYPE AS NOTED IN THE PLANS.
  2. PUSH BUTTONS SHALL BE ADA APPROVED AND WEATHERPROOF, MOUNTED.

PUSH BUTTON MOUNT DETAIL

- GENERAL NOTES:**
1. ALL POST WIRE OUTLETS SHALL BE DEBURRED AND EQUIPPED WITH BUSHINGS.
  2. BACKPLATES NOT SHOWN IN MOUNTING DIAGRAMS FOR CLARITY. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
  3. POSTS SHALL BE GROUNDED WITH #6 AWG BARE COPPER WIRE FROM GROUNDING BUSHING ON CONDUIT TO GROUNDING LUG IN POST BASE IF STEEL CONDUIT IS USED. IF NON-METALLIC CONDUIT IS USED, PROVIDE #6 AWG WIRE FROM GROUNDING LUG IN POST TO POWER SUPPLY GROUND BUSS IN CONTROLLER CABINET.
  4. LEADS FROM PEDESTRIAN SIGNAL LAMPS ARE CONNECTED TO THE SIGNAL HEAD TERMINAL COMPARTMENT.
  5. ALL SIGNALS SHALL BE MOUNTED VERTICALLY UNLESS OTHERWISE NOTED ON THE TRAFFIC SIGNAL PLANS.
  6. SPAN WIRE MOUNTED SIGNALS SHALL HAVE A DISCONNECT HANGER.
  7. SIGNAL HEADS ON MAST ARMS SHALL BE TILTED FORWARD FROM THE TOP 3 TO 7 DEGREES FROM VERTICAL.
  8. IF A SIGN EXCEEDS 42" IN LENGTH, TWO SUPPORTS ARE REQUIRED AND IF A SIGN EXCEEDS 96" IN LENGTH, THREE SUPPORTS ARE REQUIRED.
  9. MAST ARM MOUNTED SIGNALS SHALL HAVE A TERMINAL COMPARTMENT.
  10. SIDE-MOUNTED OPTICALLY LIMITING HEADS SHALL HAVE A MINIMUM POST CLEARANCE OF 5-1/2".
  11. SYMBOL FOR PEDESTRIAN LENSES SHALL HAVE A MINIMUM HEIGHT OF 11"
  12. PUSH BUTTON SIGNS SHALL BE MOUNTED DIRECTLY ABOVE THE ACTUATOR, EXCEPT FOR LOCATIONS ON 4' PEDESTALS THE SIGN SHALL BE LOCATED DIRECTLY BELOW THE ACTUATOR. PUSH BUTTON SIGNS SHALL BE AS SPECIFIED IN THE PLANS.
  13. SIGNAL APPURTENANCES SHALL HAVE A HORIZONTAL CLEARANCE NO LESS THAN 2' FROM THE FACE OF A VERTICAL CURB OR FROM THE OUTSIDE EDGE OF A SHOULDER, EXCEPT SIGNALS LOCATED IN A MEDIAN ISLAND.
  14. SEE STANDARD DRAWING TS-3 FOR BASE DETAILS.



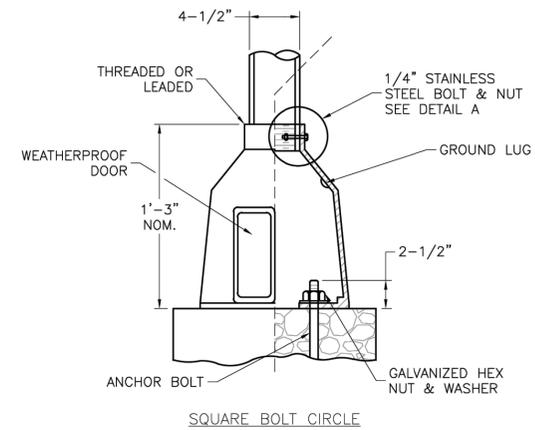
\* SURFACE OF TYPE C BASE TO BE CONSTRUCTED SQUARE FOR A DEPTH OF 6"



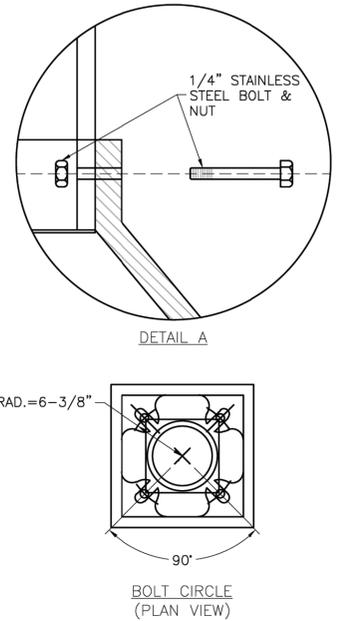
BOLT LENGTH INCHES	VERT HT. A INCHES	THREAD LEN. B INCHES	DIA. C INCHES
19	17	1.50	0.625
57	51	7.00	1.250
79	73	7.50	1.500
94	88	8.00	1.750
121	115	8.50	2.000
120	114	9.00	2.250
146	140	9.50	2.500

NOTE: ALL ANCHOR BOLTS SHALL BE FULLY GALVANIZED.

ANCHOR BOLT



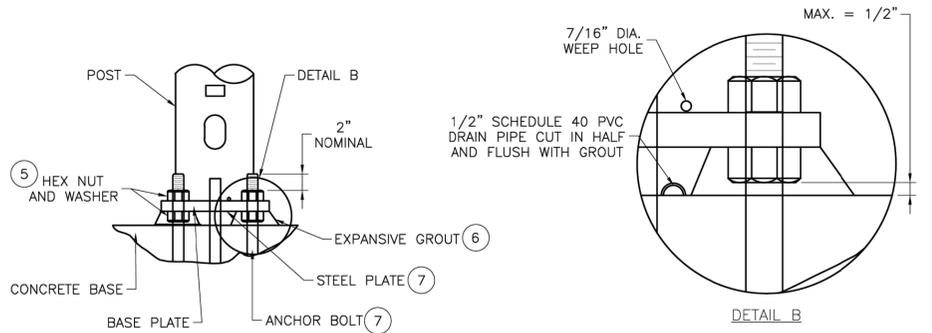
SQUARE BOLT CIRCLE



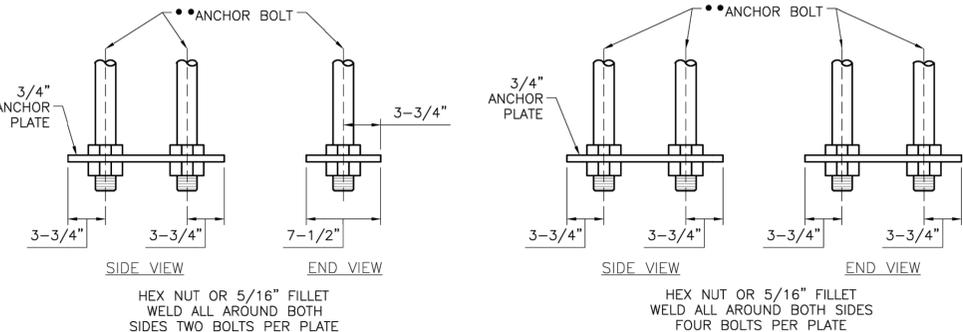
DETAIL A

BOLT CIRCLE (PLAN VIEW)

CAST BASE



STEEL PLATE AND ANCHOR BASE



OPTIONAL STEEL PLATE FOR ANCHOR BOLTS

POST BASES		
POST TYPE	ARM LENGTH (FT.)	BASE TYPE
B, BL, C & CL	8 - 14	A-8 OR B-8
B, BL, C & CL	15 - 34	A-10 OR B-10
B, BL, C & CL	35 - 54	A-13 OR B-13

ARM LENGTH DETERMINED BY LENGTH OF LONGEST ARM FOR TYPE B & BL SIGNAL POSTS.

BASE TYPE A OR B DETERMINED BY LOCATION OF POST BASE.

SPECIAL DESIGN REQUIREMENTS:

SIGNAL STRUCTURES WHICH WILL EXCEED THE DIMENSION LIMITS SHOWN ON STANDARD DRAWING TS-5 SHALL HAVE ITS POST BASE DESIGNED BY A PROFESSIONAL ENGINEER AND APPROVED BY THE CITY ENGINEER (OR DESIGNEE). A SET OF DRAWINGS INCLUDING SPECIFICATIONS AND DESIGN COMPUTATIONS SHALL BE SUBMITTED FOR RECORD AND REFERENCE. THE SUBMITTED DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER IN ACCORDANCE WITH THE LAWS RELATING TO ARCHITECTS AND PROFESSIONAL ENGINEERS (CHAPTER 327, RSMO) AND SHALL INCLUDE A TITLE BLOCK OR SUMMARY SHEET WHICH LISTS AND CERTIFIES THAT THE FOUNDATION WILL MEET THE DESIGN CRITERIA.

STEEL & CONCRETE REQUIREMENTS FOR POST BASES				
TYPE	A (10)	LENGTH	#8 STEEL BAR	
			WEIGHT LBS (11)	CONC. C.Y.
A-8	8'-0"	9'-6"	399	2.53
A-10	10'-0"	11'-6"	481	3.06
A-13	13'-0"	14'-6"	604	3.84
B-8	8'-0"	7'-6"	317	2.09
B-10	10'-0"	9'-6"	400	2.62
B-13	13'-0"	12'-6"	523	3.40
C*				0.44

(10) SOIL DEPTH, NO ROCK (11) INCLUDE #4 TIE BAR

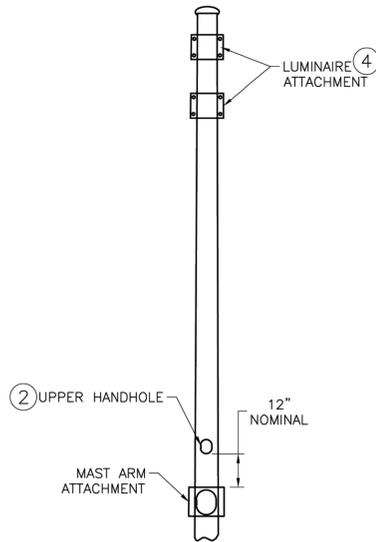
\* SURFACE OF TYPE C BASE TO BE CONSTRUCTED SQUARE FOR A MINIMAL DEPTH OF 6"

SOLID ROCK ENCOUNTER POINT	REQUIRED EMBEDMENT FOR BASE TYPE		
	A-8 B-8	A-10 B-10	A-13 B-13
AT SURFACE	4'-6"	4'-9"	5'-9"
AT ONE-FOURTH NORMAL DEPTH	3'-6"	4'-0"	5'-0"
AT ONE-HALF NORMAL DEPTH	3'-0"	3'-3"	3'-3"
AT THREE-FOURTHS NORMAL DEPTH	1'-3"	1'-3"	1'-0"

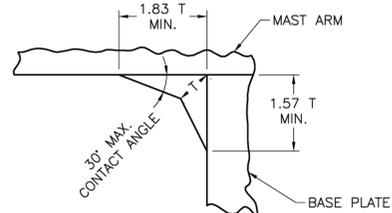
- REQUIRED EMBEDMENT DEPTHS CAN BE INTERPOLATED BETWEEN ENCOUNTER POINTS FOR OTHER SOLID ROCK ENCOUNTER DEPTHS.
- NORMAL LENGTHS FOR ANCHOR BOLTS AND REINFORCING STEEL WILL BE REQUIRED.
- CORE DRILL HOLES FOR ANCHOR BOLTS AND REINFORCING STEEL IN SOLID ROCK SHALL BE PROVIDED. CORE DRILL HOLES SHALL BE TWICE THE DIAMETER OF THE ANCHOR BOLT AND REINFORCING STEEL DIAMETER AND TO WITHIN 3 INCHES OF THE NORMAL BASE DEPTH.
- IF SOIL, SHALE, GRAVEL, FRACTURED ROCK, OR VOIDS ARE ENCOUNTERED DURING CORE DRILLING, THE ROCK SHALL BE REMOVED TO THE POINT OF ENCOUNTER.
- ANCHOR BOLTS AND REINFORCING STEEL SHALL BE GROUTED IN THE CORE DRILL HOLES WITH NON-SHRINK GROUT HAVING A MINIMUM STRENGTH OF 9,000 POUNDS IN 24 HOURS.
- STRAIGHT ANCHOR BOLTS OF THE LENGTH SHOWN IN THE ANCHOR BOLT TABLE UNDER THE COLUMN "BOLT LENGTH" ARE ADEQUATE FOR USE IN GROUTED CORE DRILLED HOLES. NO HEAT INDUCED ALTERATION OR BENDING OF ANCHOR BOLTS WILL BE PERMITTED.

- IF BOLT CIRCLE IS 22 INCHES OR GREATER, USE TYPE B BASE. IF TYPE B BASE IS USED ANYWHERE, ALL TYPE B, BL, C, AND CL POSTS SHALL HAVE TYPE B BASE. BASE PLATE SHALL STAY WITHIN THE TOP OF THE POST BASE DIAMETER.
- ANCHOR BOLT DIMENSIONS ARE SHOWN ON THE MANUFACTURER'S APPROVED DRAWINGS.
- MAXIMUM BOLT CIRCLE DIAMETER IS 26". BASE PLATE SHALL STAY WITHIN THE TOP OF THE POST BASE DIAMETER.
- 0" TO 6" VARIATION IN BASE HEIGHT IS FOR OBTAINING 16'-0" CLEARANCE. 0.13" C.Y. CONCRETE AND 3 LBS. REINFORCING STEEL PER 6".

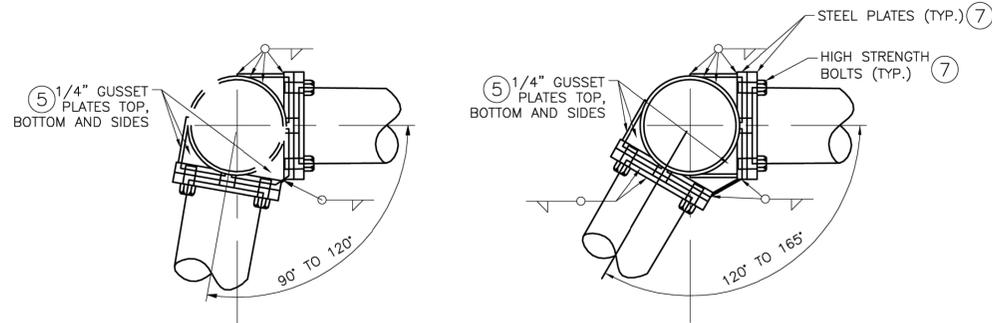
- POSTS SHALL BE FURNISHED WITH INDIVIDUAL NUT COVERS.
- EXPANSIVE GROUT SHALL BE USED BETWEEN THE POST BASE PLATE AND CONCRETE BASE.
- PLATE AND BOLT SIZES SHALL BE SHOWN ON FABRICATOR'S SHOP DRAWINGS AND SHALL BE SUBJECT TO APPROVAL.
- 3/4" X 8' MINIMUM GROUND ROD. IF SUBSURFACE CONDITIONS EXIST WHICH PROHIBIT THE PLACEMENT OF THE GROUND ROD IN VERTICAL POSITION, THE ROD MAY BE DRIVEN AT AN OBLIQUE ANGLE NOT TO EXCEED 45 DEGREES FROM VERTICAL OR BURIED IN A TRENCH AT LEAST 30 IN. DEEP. CONNECTION TO GROUND ROD SHALL BE CLAMP TYPE AS DETAILED ON STANDARD DRAWING TS-2.



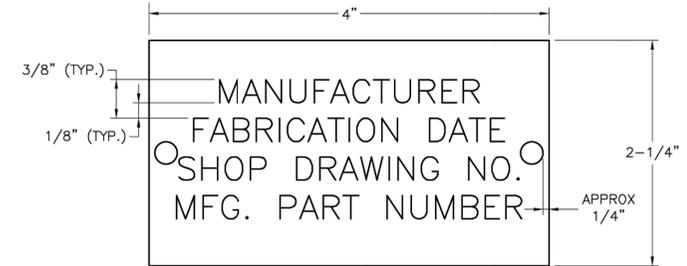
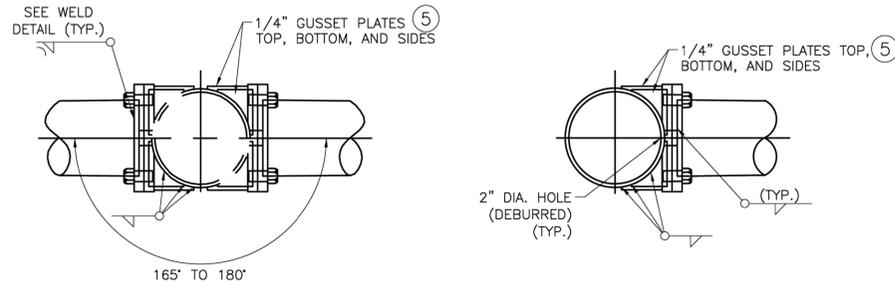
TYPE BL AND CL POSTS



WELD DETAIL



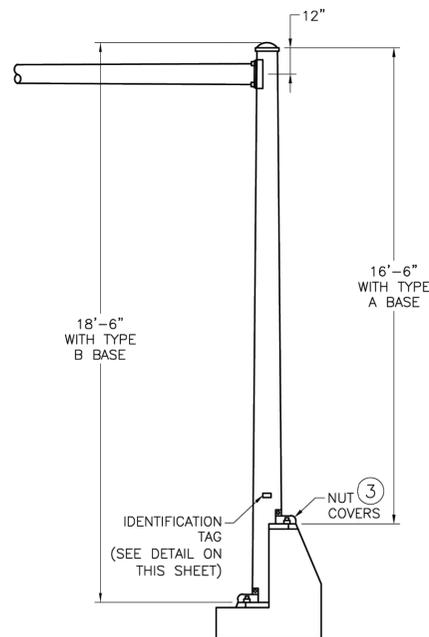
ARM ATTACHMENTS



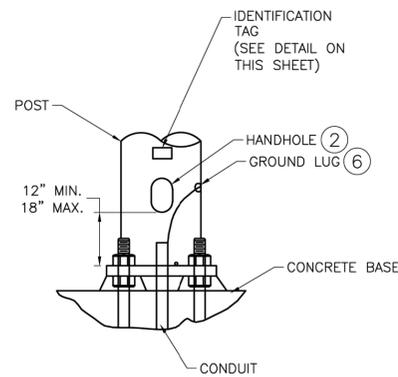
IDENTIFICATION TAG

NOTE:

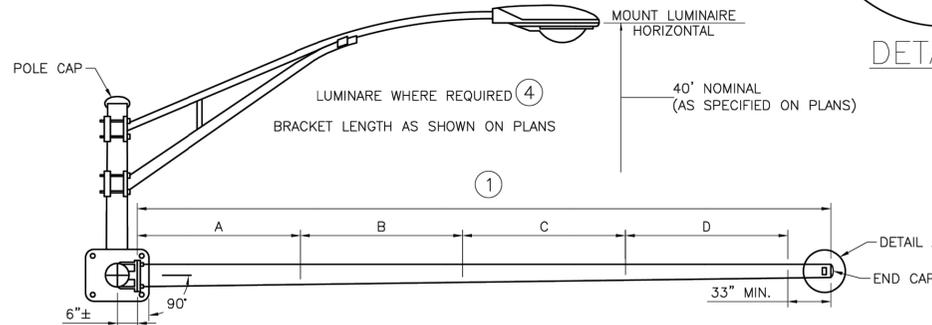
TAG SHALL BE ALUMINUM OR STAINLESS STEEL AND ATTACHED TO POLE OR MAST ARM USING TWO RIVETS OR STAINLESS STEEL DRIVE SCREWS. ID TAG HOLES SHALL BE DRILLED PRIOR TO GALVANIZING.



POLE BASE WITH TYPE A AND B POST

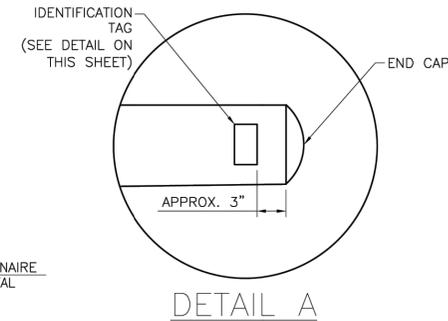


POLE BASE

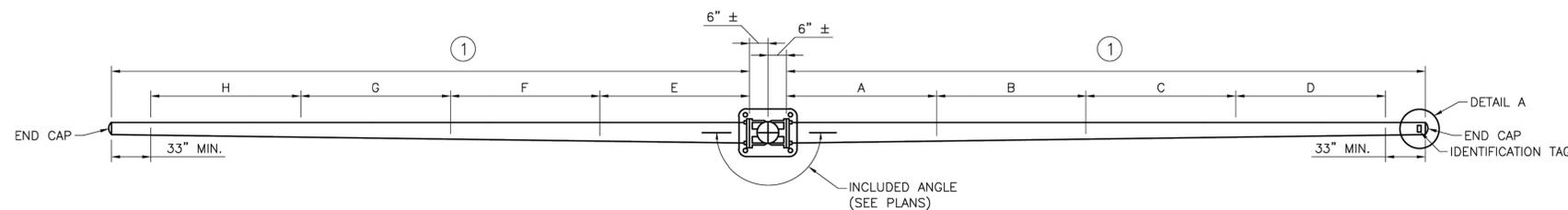


NOTE:  
A, B, C, AND D - SIGNAL SPACING AS SHOWN ON THE TRAFFIC SIGNAL PLANS.

TYPE C AND TYPE CL (WITH LUMINAIRE)



DETAIL A



NOTE:  
A, B, C, D, E, F, G AND H - SIGNAL SPACING AS SHOWN ON THE TRAFFIC SIGNAL PLANS.

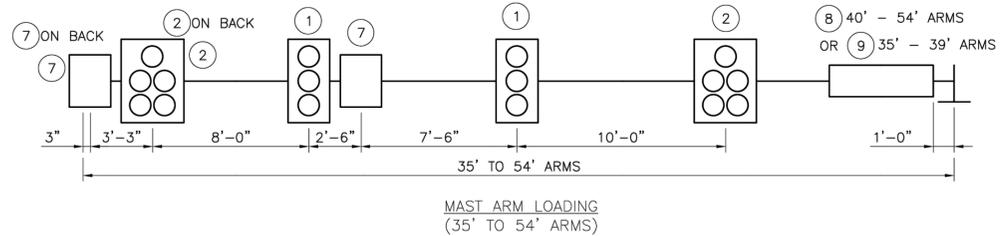
TYPE B AND TYPE BL (WITH LUMINAIRE)

- 1 ARM LENGTHS SHALL NOT EXCEED 54 FEET. SEE TRAFFIC SIGNAL PLANS FOR DIMENSIONS.
- 2 HANDHOLES SHALL BE APPROXIMATELY 4" X 6-1/2". HANDHOLE FRAME SHALL BE REINFORCED SO THAT THE POLE STRENGTH IS NOT REDUCED.
- 3 POSTS SHALL BE FURNISHED WITH INDIVIDUAL NUT COVERS.
- 4 SEE STREET LIGHTING STANDARD DETAILS FOR TYPICAL BRACKET ARM MOUNTING FOR TYPE BL AND TYPE CL POSTS.
- 5 ANY OPENINGS BETWEEN TOP AND SIDE GUSSET PLATES SHALL BE SEALED WITH LIFETIME CAULK AT TIME OF INSTALLATION.
- 6 POST SHALL BE GROUNDED FROM GROUND LUG IN POST WITH #6 AWG BARE COPPER WIRE TO CONDUIT SYSTEM. GROUND LUG SHALL BE 90° OR 180° FROM THE HANDHOLE.
- 7 PLATE AND BOLT SIZES SHALL BE SHOWN ON FABRICATORS SHOP DRAWINGS AND SHALL BE SUBJECT TO APPROVAL.

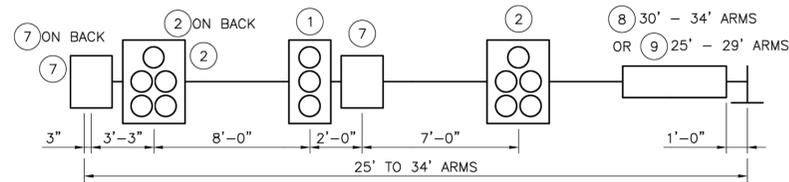
GENERAL NOTES:

ARMS SHALL BE RAKED UP 0.25" PER FOOT MINIMUM. ARMS SHALL BE PROVIDED WITH A PERMANENT MARKING INDICATING PROPER ORIENTATION FOR INSTALLATION.

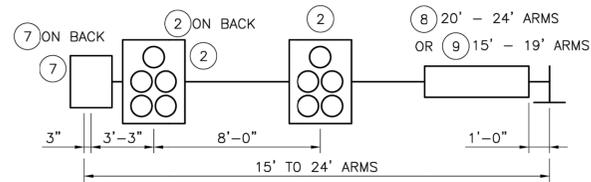
TO DETERMINE LEFT OR RIGHT ON TYPE B OR C SIGNAL POST, VIEWING POSITION SHALL BE FROM THE CENTER OF THE INTERSECTION BEING CONTROLLED AND FACING THE SIGNAL INVOLVED.



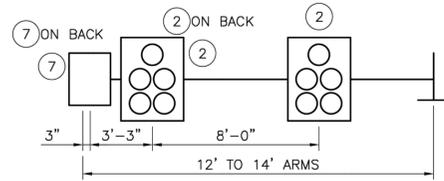
MAST ARM LOADING  
(35' TO 54' ARMS)



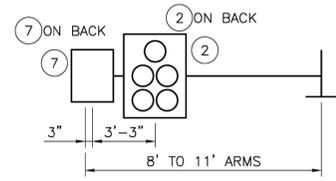
MAST ARM LOADING  
(25' TO 34' ARMS)



MAST ARM LOADING  
(15' TO 24' ARMS)



MAST ARM LOADING  
(12' TO 14' ARMS)



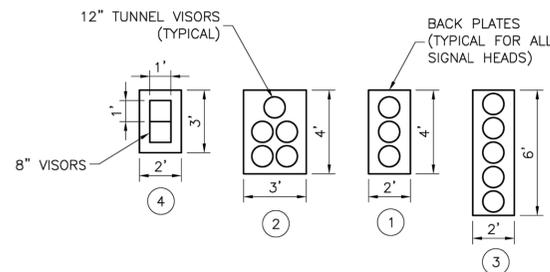
MAST ARM LOADING  
(8' TO 11' ARMS)

NOTE:  
ATTACHMENT LOCATIONS ARE FOR STRUCTURAL DESIGN PURPOSES ONLY.  
ACTUAL LOCATIONS ARE SHOWN ON THE PLANS.

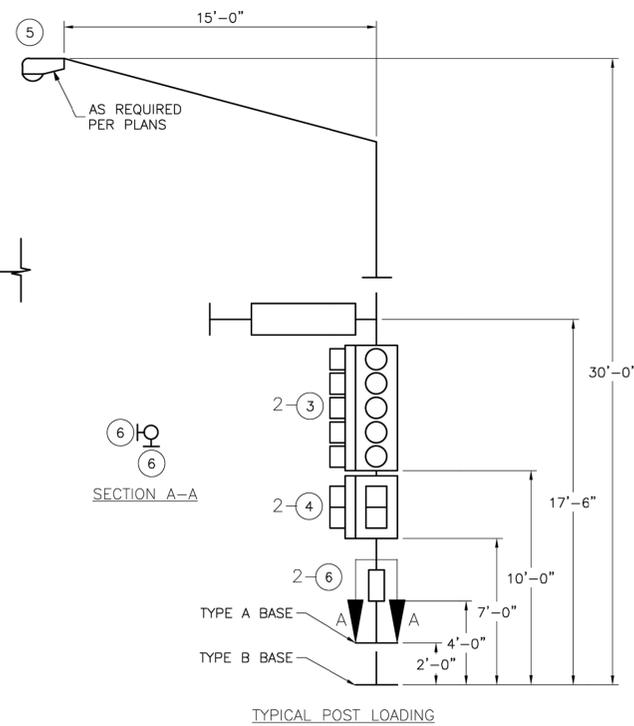
MINIMUM DESIGN LOADING FOR POST AND MAST ARM ATTACHMENTS

ITEM NO.	DESCRIPTION	WEIGHT (LBS.)*	PROJ. AREA (SQ. FT.)	SURFACE AREA (SQ. FT.)
1	3-SECTION OL HEAD	60.0	8.0	32.5
2	5-SECTION OL HEAD	100.0	12.0	47.5
3	VERT. 5-SECTION OL HEAD	100.0	12.0	50.5
4	2-SECTION OL HEAD	40.0	6.0	23.0
5	150 WATT LUMINAIRE	30.0	1.0	3.5
6	9" X 18" SIGN	2.0	1.1	N/A
7	30" X 36" SIGN	27.0	7.5	N/A
8	120" X 18" SIGN	25.0	15.0	N/A
9	96" X 16" SIGN 96" X 16" SIGN 96" X 28" SIGN	18.0 20.0 31.0	10.7 12.0 18.7	N/A N/A N/A

OL - OPTICALLY LIMITED  
\* MOUNTING HARDWARE INCLUDED



TRAFFIC SIGNAL HEAD TYPES



STRUCTURAL DESIGN REQUIREMENTS:

STRUCTURAL SUPPORTS SHALL BE DESIGNED AND FABRICATED TO WITHSTAND THEIR OWN LOADING AND THE ATTACHMENT LOADING SHOWN ON THIS DRAWING OR ON THE PLANS, WHICHEVER IS GREATER. STRUCTURAL MEMBERS INCLUDE POSTS, MAST ARMS AND LUMINAIRES BRACKET ARMS, AS REQUIRED.

DESIGN OF THE STRUCTURAL SUPPORTS SHALL BE BASED ON AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 2015 OR LATEST REVISION WITH THESE EXCEPTIONS AND SPECIFICATIONS.

MINIMUM DESIGN WIND SPEED OF 90 MPH AT 30 FEET ABOVE GROUND.  
GROUP LOADING:

LOADS	PERCENT OF ALLOWABLE STRESS*
GROUP I - DL	100
GROUP II - DL + W	133
GROUP III - DL + ICE + 0.5(W**)	133

\*NO LOAD REDUCTION FACTORS SHALL BE APPLIED IN CONJUNCTION WITH THESE INCREASED ALLOWABLE STRESSES.  
\*\* W TO BE COMPUTED ON THE BASIS OF THE WIND PRESSURE FORMULA. 25 PSF (1197 PA) MINIMUM FOR W FOR GROUP III.

SIGNAL STRUCTURES WHICH WILL EXCEED THE DIMENSION LIMITS SHOWN SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER\*\*\* BASED ON AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 2015, 6TH EDITION, INCLUDING ANY INTERIM WITH THE CRITERIA NOTED BELOW:

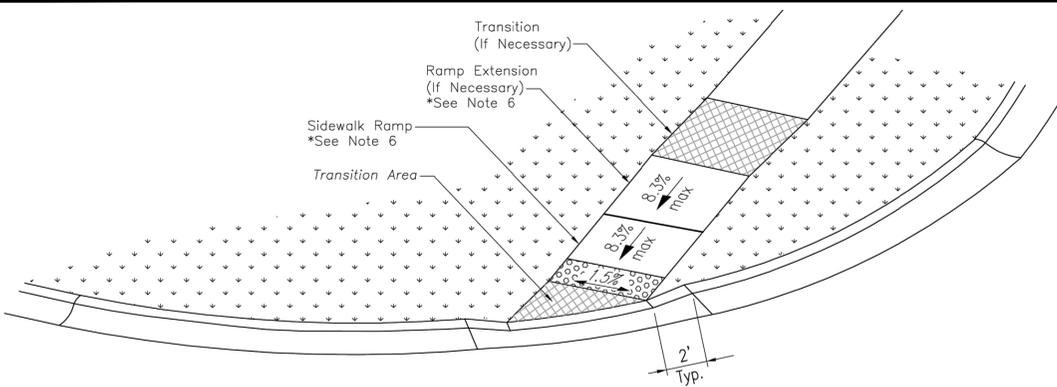
- ULTIMATE DESIGN WIND SPEED
- SERVICE DESIGN WIND SPEED
- FATIGUE CATEGORY I
- MEAN RECURRENCE INTERVAL 700 YEARS
- 50 YEAR DESIGN LIFE.
- SHALL NOT BE SPECIFICALLY DESIGNED FOR TRUCK INDUCED WIND GUSTS.
- SHALL BE SPECIFICALLY DESIGNED TO RESIST PERIODIC GALLOPING FORCES.

\*\*\*A SET OF SHOP DRAWINGS INCLUDING WELD PROCEDURE SPECIFICATIONS AND DESIGN COMPUTATIONS SHALL BE SUBMITTED FOR RECORD AND REFERENCE. THE SUBMITTED DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER IN ACCORDANCE WITH THE LAWS RELATING TO ARCHITECTS AND PROFESSIONAL ENGINEERS (CHAPTER 327, RSMO) AND SHALL INCLUDE A TITLE BLOCK OR SUMMARY SHEET WHICH LISTS AND CERTIFIES THAT THE PRODUCT MEETS ALL OF THE SPECIFIED DESIGN CRITERIA.

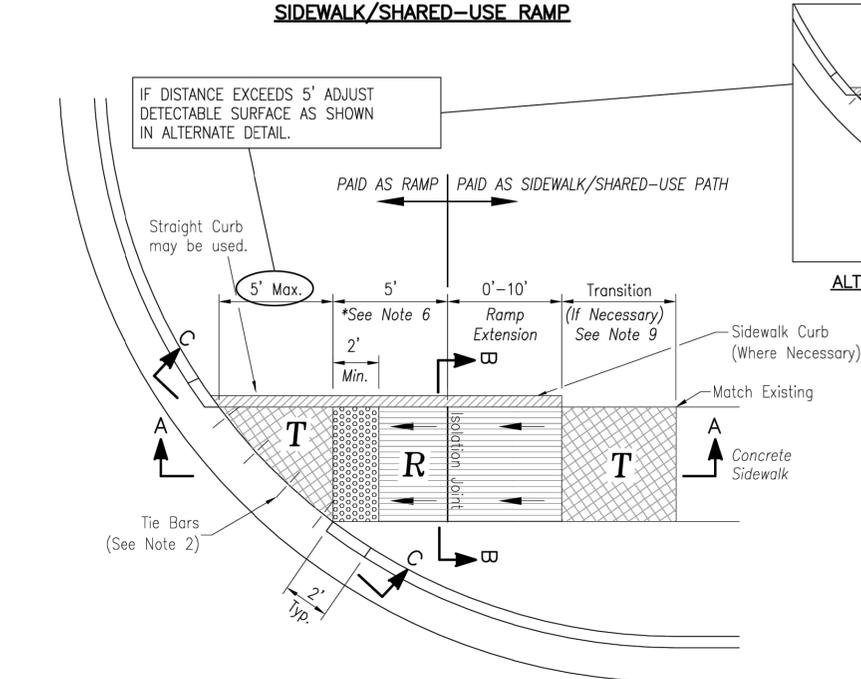
FOR TYPE B AND BL POSTS. ICE AND DEAD LOADING SHALL BE BASED ON THE COMBINED EFFECT OF DESIGN LOADING ON EACH ARM. WIND LOADING IS APPLIED AS DESCRIBED IN SECTION 1.2.5(B) OF THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS, 2015 OR LATEST VERSION.

GENERAL NOTES:

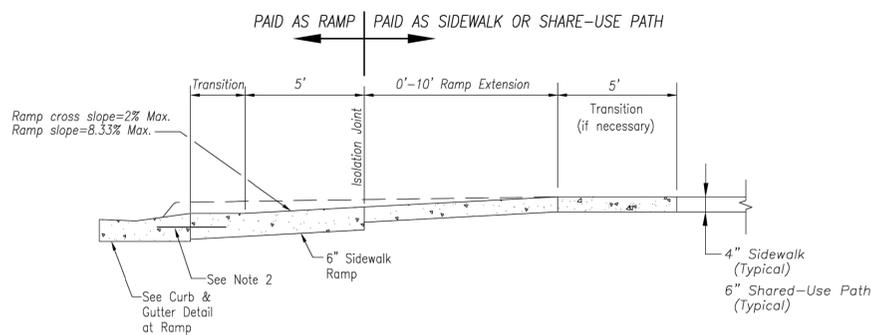
ATTACHMENT LOCATIONS ARE FOR STRUCTURAL DESIGN PURPOSES ONLY. ACTUAL LOCATIONS ARE SHOWN ON THE PLANS.



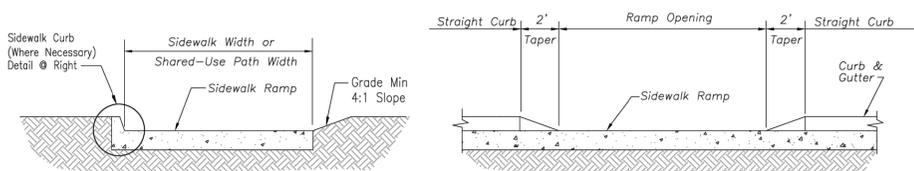
**3-D VIEW TYPE A  
SIDEWALK/SHARED-USE RAMP**



**TYPE A SIDEWALK/SHARED-USE RAMP**  
Not to Scale



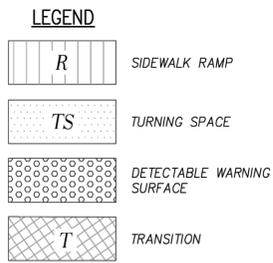
SECTION A-A



SECTION B-B

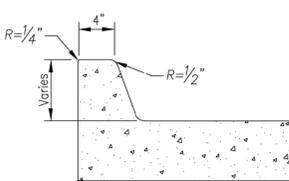
SECTION C-C

**TYPE A & B SIDEWALK RAMP**  
Not to Scale

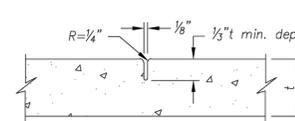


**SIDEWALK/SHARED-USE PATH & SIDEWALK/SHARED-USE RAMP NOTES:**

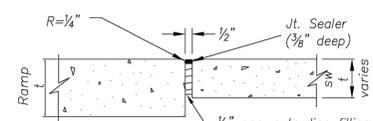
1. CURB RAMP OPENING, NOT INCLUDING FLARES, SHALL MATCH EXISTING SIDEWALK WIDTH AND OPENING SHALL BE AT LEAST 48" WIDE.
2. USE 18" LONG #4 EPOXY COATED TIE BARS @ 24" O.C. EMBED TIE BARS 9" IN EACH DIRECTION.
3. ALL RAMPS, SIDEWALKS, SHARED-USE PATHS SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
4. LONGITUDINAL JOINT SPACING TO MATCH WIDTH OF SIDEWALK.
5. ISOLATION JOINTS SHALL BE PLACED WHERE WALK ABUTS DRIVEWAYS AND SIMILAR STRUCTURES, AND 100' CENTERS MAX.
6. ADA MAXIMUM RAMP SLOPE = 8.33%  
ADA MAXIMUM CROSS SLOPE = 2.0%  
**\*ROADWAY EXCEPTION:** WHERE EXISTING ROAD PROFILE GRADE DOES NOT ALLOW RAMP TO MEET RAMP SLOPE REQUIREMENT OF 8.33% OR LESS, THE RAMP SHALL BE EXTENDED TO A LENGTH OF 15 FEET TO MATCH EXISTING SIDEWALK. CROSS SLOPE OF RAMP SHALL BE 1.5%, ±0.5%.
7. TURNING SPACES SHALL BE 1.5%, ±0.5% SLOPE IN ANY DIRECTION. TURNING SPACES SHALL HAVE A MINIMUM 4'x4' TURNING AREA. TURNING SPACES, WITH A SIDEWALK CURB, SHALL HAVE A 5' TURNING AREA PERPENDICULAR TO THE SIDEWALK CURB.
8. FOR RETROFIT WORK, SLOPES TO BE DETERMINED IN FIELD BY CONTRACTOR AND APPROVED BY CITY INSPECTOR
9. RAMP EXTENSION AREA SHALL NOT BE USED AS TRANSITION TO EXISTING SIDEWALK. ANY TRANSITIONS REQUIRED TO MATCH RAMPS TO EXISTING SIDEWALK SHALL REQUIRE REMOVAL AND REPLACEMENT OF ADDITIONAL SIDEWALK BEYOND THE RAMP AREA. SIDEWALK TRANSITION LENGTH SHALL BE EQUAL TO OR GREATER THAN THE WIDTH OF THE EXISTING SIDEWALK. RAMP EXTENSIONS SHALL BE A CONTINUOUS SLOPE.
10. ALL SIDEWALK AND RAMP CONSTRUCTION SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).



**SIDEWALK CURB DETAIL**  
Not to Scale

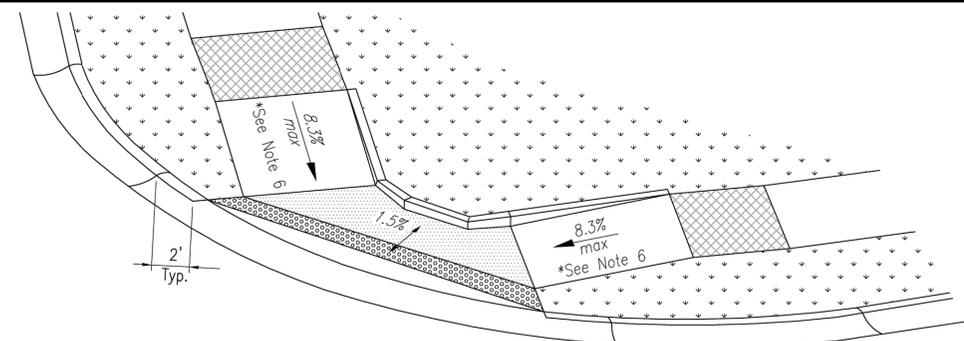


CONTRACTION JOINT

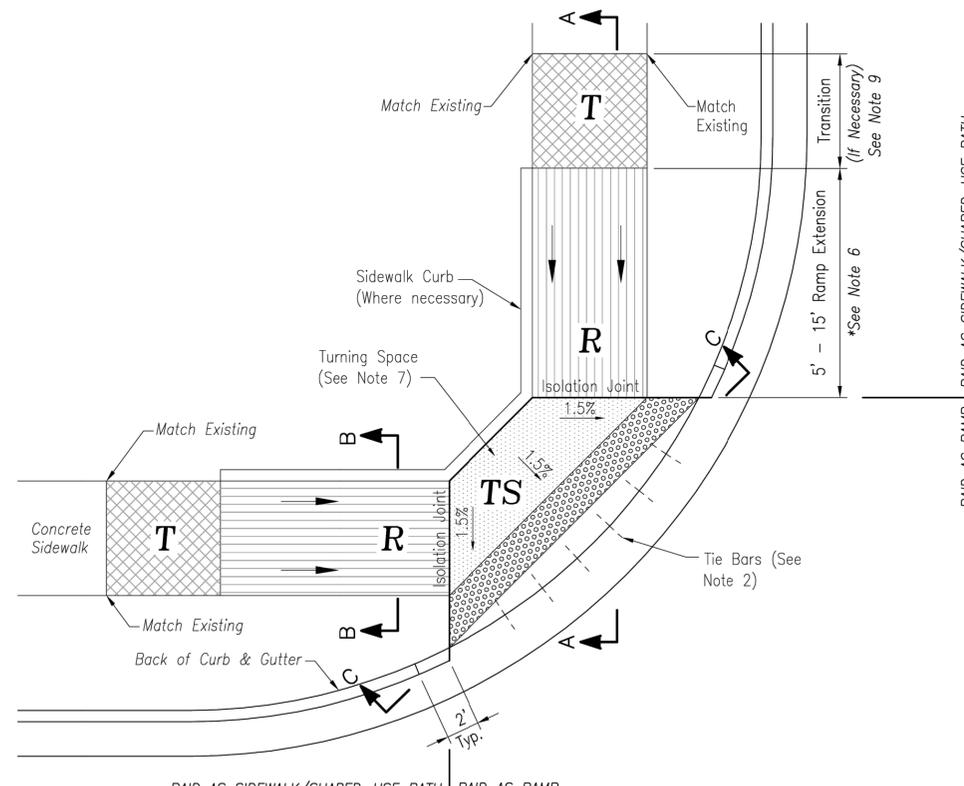


ISOLATION JOINT

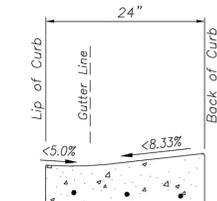
**JOINT DETAILS**  
Not to Scale



**3-D VIEW TYPE B  
SIDEWALK/SHARED-USE RAMP**



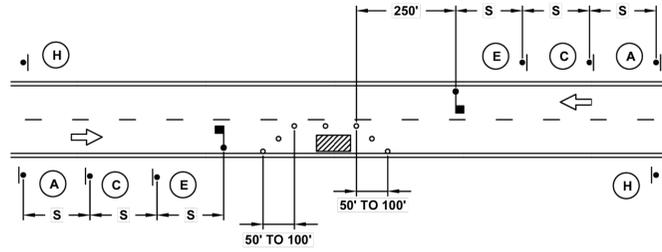
**TYPE B SIDEWALK/SHARED-USE RAMP**  
Not to Scale



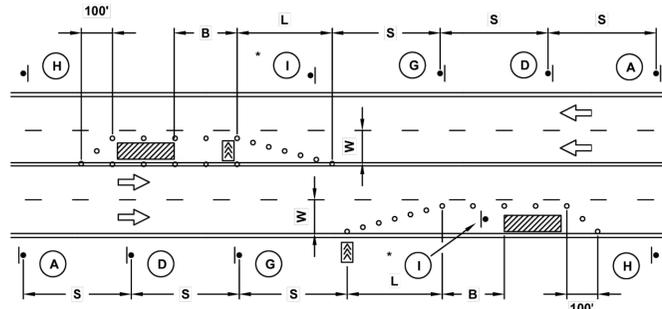
**CURB & GUTTER DETAIL AT RAMP**  
Not to Scale

**SYMBOL LEGEND**

- WORK AREA
- CHANNELIZER
- SIGN
- ARROW PANEL
- BARRICADE
- FLAGGER
- DIRECTION OF TRAVEL

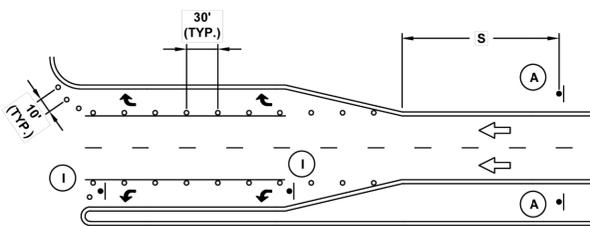


**LANE CLOSURE - TWO LANE STREET**

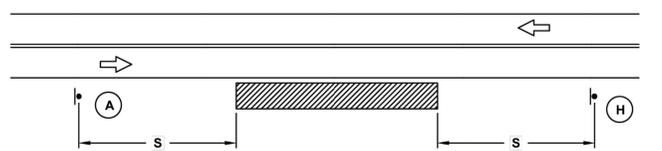


**LANE CLOSURE - FOUR LANE STREET**

\* INSTALL SIGNS EVERY 200 FEET THROUGHOUT THE CLOSED LANE OR AS NEEDED



**TURN LANE CLOSURE**



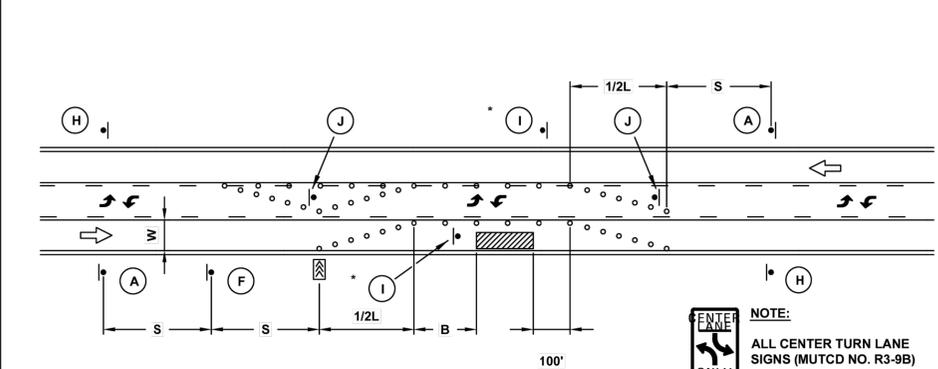
**TYPICAL SIGNING FOR WORK ADJACENT TO THE STREET**

GUIDELINES FOR LENGTH OF LONGITUDINAL BUFFER SPACE "B"		MAXIMUM CHANNELIZER SPACING		
SPEED LIMIT (MPH)	LENGTH (FEET)	SPEED LIMIT (MPH)	WITHIN TAPER (FEET)	OUTSIDE TAPER (FEET)
25	35	25	25	50
30	55	30	30	60
35	85	35	35	70
40	120	40	40	80
45	170	45	45	90

TAPER DIMENSIONS (FEET)				SIGN SPACING "S"	
SPEED LIMIT (MPH)	MINIMUM TAPER LENGTH "L", PER LANE WIDTH "W"			SPEED LIMIT (MPH)	SPACING (FEET)
	10	11	12		
25	105	115	125	25	100
30	150	165	180	30-35	250
35	205	225	245	≥ 40	350
40	270	295	320		
45	450	495	540		

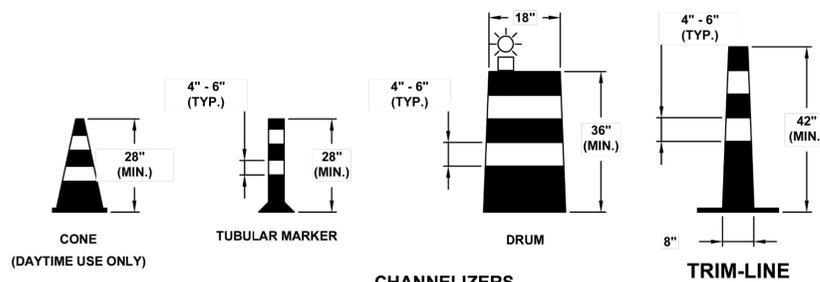
**SIGN LEGEND**

- W20-1 36" x 36"
- W20-2 36" x 36"
- W20-4 36" x 36"
- W20-5R 36" x 36"
- W20-5L 36" x 36"
- W20-7a 36" x 36"
- W1-4L 36" x 36"
- W1-4R 36" x 36"
- W4-2L 36" x 36"
- W4-2R 36" x 36"
- G20-2 36" x 18"
- R3-2 24" x 24"
- R4-7a 24" x 30"
- R11-2 48" x 30"
- R11-4 60" x 30"



**LANE CLOSURE - THREE LANE STREET**

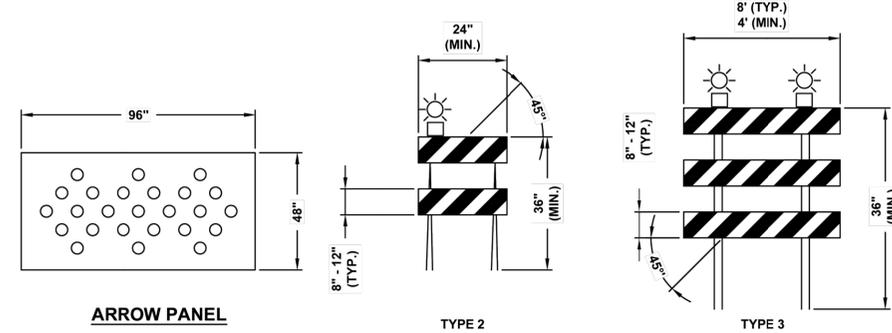
\* INSTALL SIGNS EVERY 200 FEET THROUGHOUT THE CLOSED LANE OR AS NEEDED



**CHANNELIZERS**

**TRIM-LINE**

**NOTE:**  
WHITE BANDS ON BARRICADES AND CHANNELIZERS SHALL BE MADE FROM HIGH INTENSITY SHEETING MATERIAL.



**ARROW PANEL**

**TYPE 2**

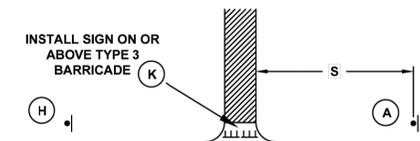
**TYPE 3**

**BARRICADES**

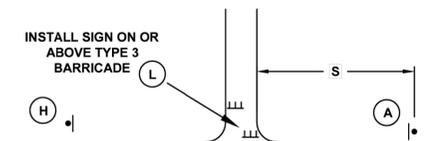
(OPTIONAL ON TWO LANE AND THREE LANE STREETS WITH SPEEDS LESS THAN 35 MPH)

**GENERAL NOTES:**

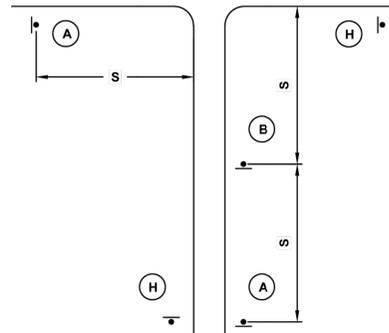
- ALL SIGNS, BARRICADES, CHANNELIZERS, MARKINGS AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- ALL TRAFFIC CONTROL DEVICES SHALL BE STANDARD IN SIZE, SHAPE, COLOR, AND MESSAGE, IN GOOD CONDITION, AND RETRO-REFLECTORIZED. ALL SIGNS SHALL BE SECURELY MOUNTED WITH HEIGHT AND LATERAL LOCATION AS DESCRIBED IN THE MUTCD.
- WARNING LIGHTS SHALL BE USED ON BARRICADES IN PLACE AT NIGHT AND ON WARNING SIGNS WHICH ALERT DRIVERS ABOUT A CHANGE IN ALIGNMENT, TRAFFIC CONTROL, LANE CLOSURE, OR ROAD CLOSURE.
- FLAGGERS SHALL BE USED WHERE INDICATED ON THE PLANS, WHERE CONSTRUCTION VEHICLES INTERACT WITH NORMAL TRAFFIC, OR WHERE CONSTRUCTION ACTIVITIES IMPOSE A RESTRICTION ON TRAFFIC, AS DIRECTED BY THE CITY TRAFFIC ENGINEER. WHERE FLAGGERS ARE USED, ADVANCE SIGNING SHALL BE ERECTED AS SHOWN IN THE DETAILS OR AS SPECIFIED IN THE MUTCD. FLAGGERS SHALL MEET THE REQUIREMENTS IN THE MUTCD IN REGARD TO CHARACTER, TRAINING, ATTIRE, AND BEHAVIOR.
- TRIM-LINES ARE THE CITY'S PREFERRED CHANNELIZING DEVICE. CONES MAY NOT BE USED AT NIGHTTIME.
- TRAFFIC CONTROL DEVICES NOT IN USE OR NOT APPLICABLE SHALL BE EITHER COVERED OR REMOVED FROM THE WORK AREA.
- THE CONTRACTOR SHALL USE BARRICADES, STREET PLATES, OR FENCING AS NEEDED TO EFFECTIVELY SHIELD PEDESTRIAN AND VEHICULAR TRAFFIC FROM EXPOSED OBJECTS, EXCAVATIONS, AND CONSTRUCTION ACTIVITIES.
- ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS AND SIDE STREETS UNLESS NOTED OTHERWISE ON THE PLANS.
- NO STREET SHALL BE CLOSED WITHOUT THE APPROVAL OF THE CITY TRAFFIC ENGINEER. THE CONTRACTOR SHALL NOTIFY THE CITY TRAFFIC ENGINEER AT LEAST 7 DAYS IN ADVANCE OF ANY STREET CLOSURE. IF A DETOUR ROUTE AROUND THE CLOSURE IS TO BE PROVIDED, ALL DETOUR SIGNING SHALL BE AS SHOWN ON A PLAN APPROVED BY THE CITY TRAFFIC ENGINEER.
- CONSTRUCTION VEHICLES PARKED ALONG STREETS SHALL BE LOCATED WITHIN THE WORK AREA (TRAFFIC CONTROL) OR WHERE OTHERWISE NORMALLY PERMITTED. CONSTRUCTION MATERIALS, INCLUDING TRAFFIC CONTROL AND VEHICLES SHALL NOT RESTRICT SIGHT DISTANCE FOR VEHICLES EXITING AT STREETS OR DRIVES.
- CONSTRUCTION MATERIALS SHALL BE KEPT OFF OF SIDEWALKS, CONSOLIDATED IN ONE LOCATION WITHIN CITY RIGHT-OF-WAY, AND REMOVED DAILY UNLESS OTHERWISE APPROVED BY THE INSPECTOR. DIRT, MUD, AND OTHER CONSTRUCTION DEBRIS ON STREETS AND SIDEWALKS SHALL BE REMOVED IMMEDIATELY.
- THE CONTRACTOR SHALL NOT PERFORM ANY WORK THAT WILL RESTRICT VEHICULAR TRAFFIC IN ANY WAY BETWEEN THE HOURS OF 7:00 A.M. AND 9:00 A.M. OR 4:00 P.M. AND 6:00 P.M. MONDAY THROUGH FRIDAY UNLESS OTHERWISE INDICATED IN THE SPECIFICATIONS.
- ALL TRAVEL LANES SHOULD BE AT LEAST 11 FEET WIDE UNLESS OTHERWISE AUTHORIZED BY THE CITY TRAFFIC ENGINEER. A "NARROW LANES" SIGN SHALL BE INSTALLED IN ADVANCE OF A LANE WIDTH REDUCTION TO LESS THAN 11 FEET.
- ALL EDGE DROP-OFFS OF MORE THAN 2 INCHES AND LESS THAN 4 INCHES SHOULD BE PROTECTED BY A WEDGE OR BARRIER AND ALL EDGE DROP-OFFS GREATER THAN 4 INCHES SHALL HAVE EDGE PROTECTION (SEE TRAFFIC CONTROL SPECIFICATIONS FOR EDGE TREATMENT REQUIREMENTS).
- THE "WORKERS" SYMBOLIC SIGN (MUTCD NO. W21-1A) MAY BE USED INSTEAD OF THE "ROAD WORK AHEAD" SIGN FOR WORK WITH A DURATION OF 12 HOURS OR LESS. THE "END ROAD WORK" SIGN IS NOT REQUIRED TO BE INSTALLED AFTER THE "WORKERS" SIGN.
- NO TRAFFIC SIGNAL SHALL BE ALTERED OR MODIFIED IN ANY WAY WITHOUT A PLAN APPROVED BY THE CITY TRAFFIC ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TRAFFIC CONTROL DEVICES ON AN AROUND-THE-CLOCK BASIS, WHETHER OR NOT WORK IS ACTIVELY BEING PURSUED AND ANY DEFICIENCIES NOTED SHALL BE CORRECTED IMMEDIATELY.
- THE TRAFFIC CONTROL REQUIREMENTS SHOWN ON THESE PLANS ARE MINIMUM REQUIREMENTS ONLY AND DO NOT ATTEMPT TO ADDRESS IN DEPTH THE VARIETY OF SITUATIONS THAT MAY OCCUR ONCE CONSTRUCTION HAS STARTED. IN NO WAY DO THE REQUIREMENTS SHOWN ON THESE PLANS RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR SELECTING THE PROPER TRAFFIC CONTROL DEVICES AND IMPLEMENTATION PROCEDURES THAT WILL ASSURE THE SAFETY OF DRIVERS, PEDESTRIANS, AND WORKERS AT ALL TIMES.
- SHOULD THE CONTRACTOR FAIL TO ENFORCE THE TRAFFIC CONTROL PLAN OR FAIL TO CLEAN, REPLACE OR OTHERWISE MAINTAIN THE TRAFFIC CONTROL DEVICES WHEN DIRECTED TO DO SO BY THE CITY TRAFFIC ENGINEER OR REPRESENTATIVE, THE CITY MAY TAKE ONE OR MORE OF THE FOLLOWING ACTIONS:
  - EMPLOY ANOTHER AGENCY TO CORRECT DEFICIENCIES IN TRAFFIC CONTROL DEVICES AND DEDUCT THE COST FROM THE CONTRACTOR'S PAY ESTIMATE.
  - STOP THE WORK UNTIL DEFICIENCIES ARE CORRECTED.
  - SUSPEND ALL PAY ESTIMATES UNTIL DEFICIENCIES ARE CORRECTED, OR
  - PLACE THE CONTRACTOR IN DEFAULT.



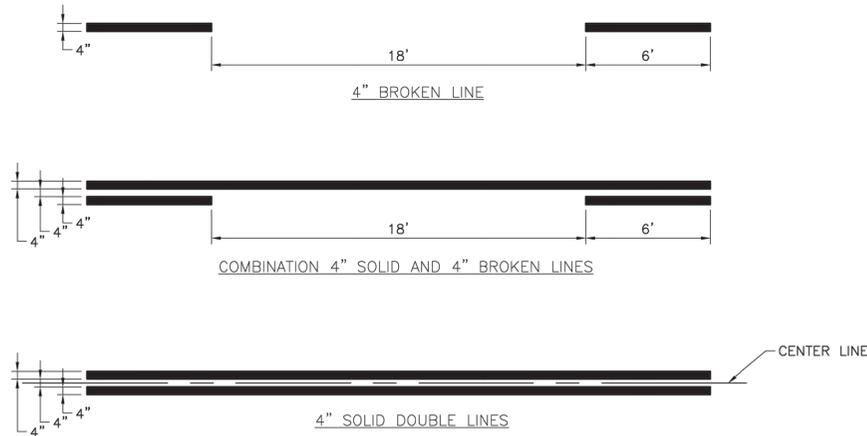
**NO ACCESS ALLOWED**



**LOCAL ACCESS PERMITTED**



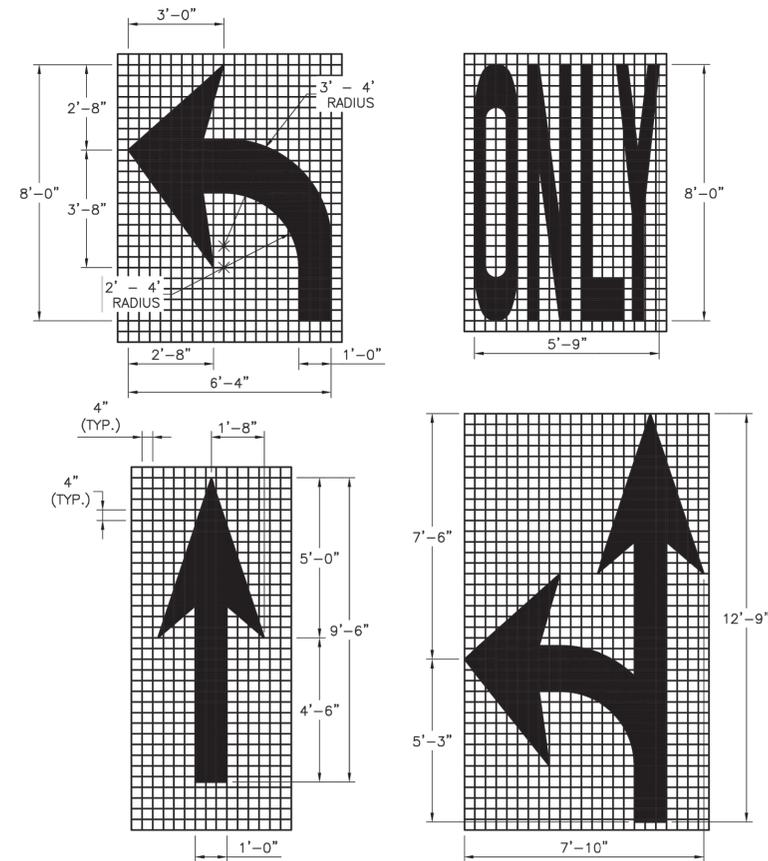
**TYPICAL STREET CLOSURE**



TYPICAL LINE DETAILS

NOTES:

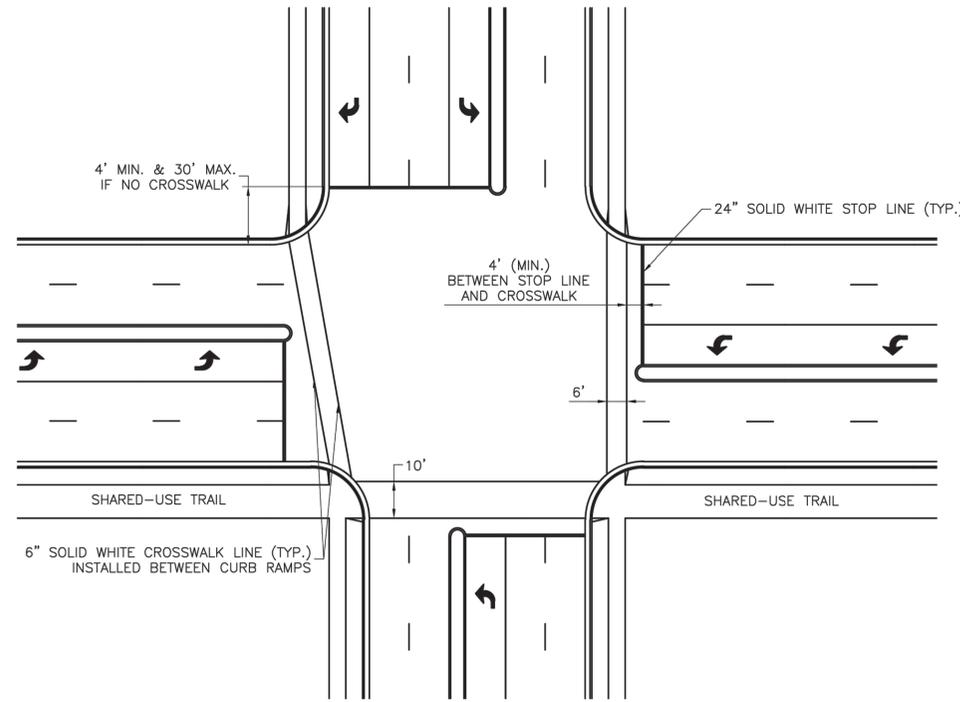
1. ALL EDGE LINE, CENTER LINE, AND LANE LINE PAVEMENT MARKINGS SHALL BE 4" WIDE UNLESS OTHERWISE NOTED.
2. EDGE LINES SHALL BE CONTINUOUS SOLID WHITE OR YELLOW LINES. RIGHT SIDE EDGE LINES SHALL BE SOLID WHITE. MEDIAN OR LEFT SIDE EDGE LINES ON DIVIDED ROADWAYS ARE TO BE SOLID YELLOW. EDGE LINES AND CENTER LINES SHALL BE CONTINUOUS ACROSS DRIVEWAYS.



ARROW AND SYMBOL DETAILS

NOTES:

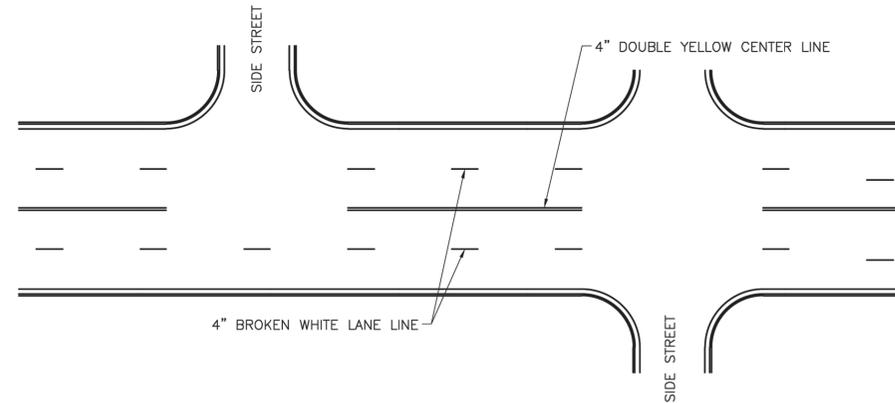
1. ALL ARROW AND SYMBOL MARKINGS SHALL BE WHITE, AND SHALL BE CENTERED IN THEIR RESPECTIVE TRAFFIC LANES.
2. RIGHT-TURN AND COMBINATION RIGHT-TURN/STRAIGHT ARROWS ARE REVERSE OF ARROWS SHOWN.



TYPICAL INTERSECTION MARKINGS

NOTES:

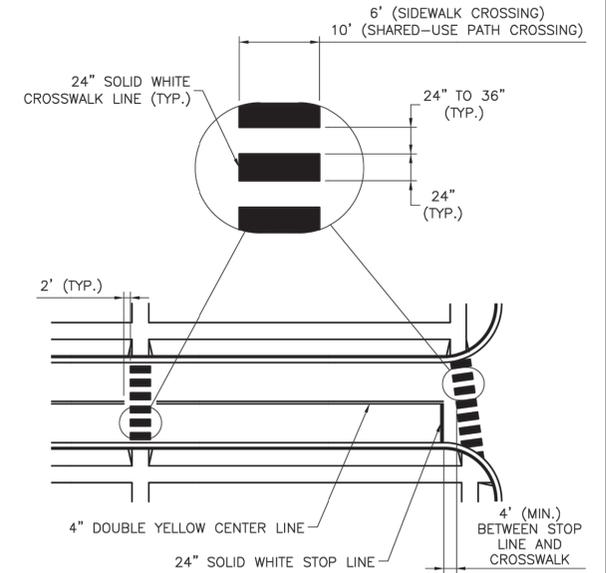
1. TRANSVERSE CROSSWALK LINES SHALL BE INSTALLED SUCH THAT THE DISTANCE BETWEEN LINES IS AT LEAST 6 FEET OR 10 FEET.
2. STOP LINES ARE REQUIRED AT SIGNALIZED INTERSECTIONS, ON MULTI-LANE STOP CONTROLLED APPROACHES, OR ADVANCE OF CROSSWALKS AT CONTROLLED INTERSECTIONS.



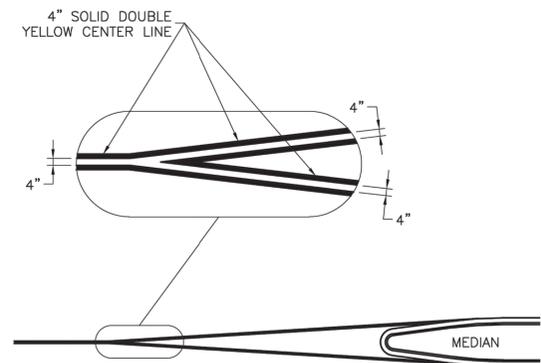
TYPICAL MARKINGS FOR FOUR-LANE UNDIVIDED ROADWAY

PAVEMENT MARKING GENERAL NOTES:

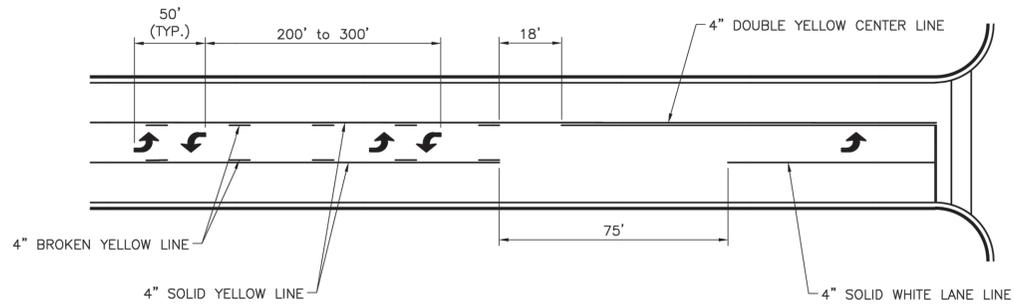
1. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. ALL WORDS AND SYMBOLS SHALL CONFORM TO THE LATEST EDITION OF STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS PRINTED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.
3. PAVEMENT MARKINGS, EITHER TEMPORARY OR PERMANENT ARE REQUIRED AT ALL TIMES IF THE ROADWAY IS OPEN TO TRAFFIC.
4. ALL PAVEMENT MARKINGS THAT CONFLICT WITH THE DESIRED MARKINGS SHALL BE COMPLETELY REMOVED. REMOVALS SHALL NOT LEAVE THE ROAD SURFACE SCARRED WITH AN IMAGE THAT MISLEADS TRAFFIC. ANY EXCESS DAMAGE OR SCARRING OF PAVEMENT SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
5. THE PROPOSED PERMANENT MARKINGS SHALL BE LAID OUT BY THE CONTRACTOR IN ADVANCE OF THE MARKING INSTALLATION. MARKINGS SHALL NOT BE APPLIED UNTIL THE LAYOUT HAS BEEN APPROVED BY THE CITY TRAFFIC ENGINEER.
6. CENTER LINES SHALL BE MARKED ON ALL UNDIVIDED ARTERIAL STREETS, AND ANY OTHER UNDIVIDED STREET WITH MORE THAN TWO LANES AND/OR A SPEED LIMIT OF 30 MPH OR MORE.
7. EDGE LINES SHALL BE MARKED ON ALL NON-CURBED STREETS.



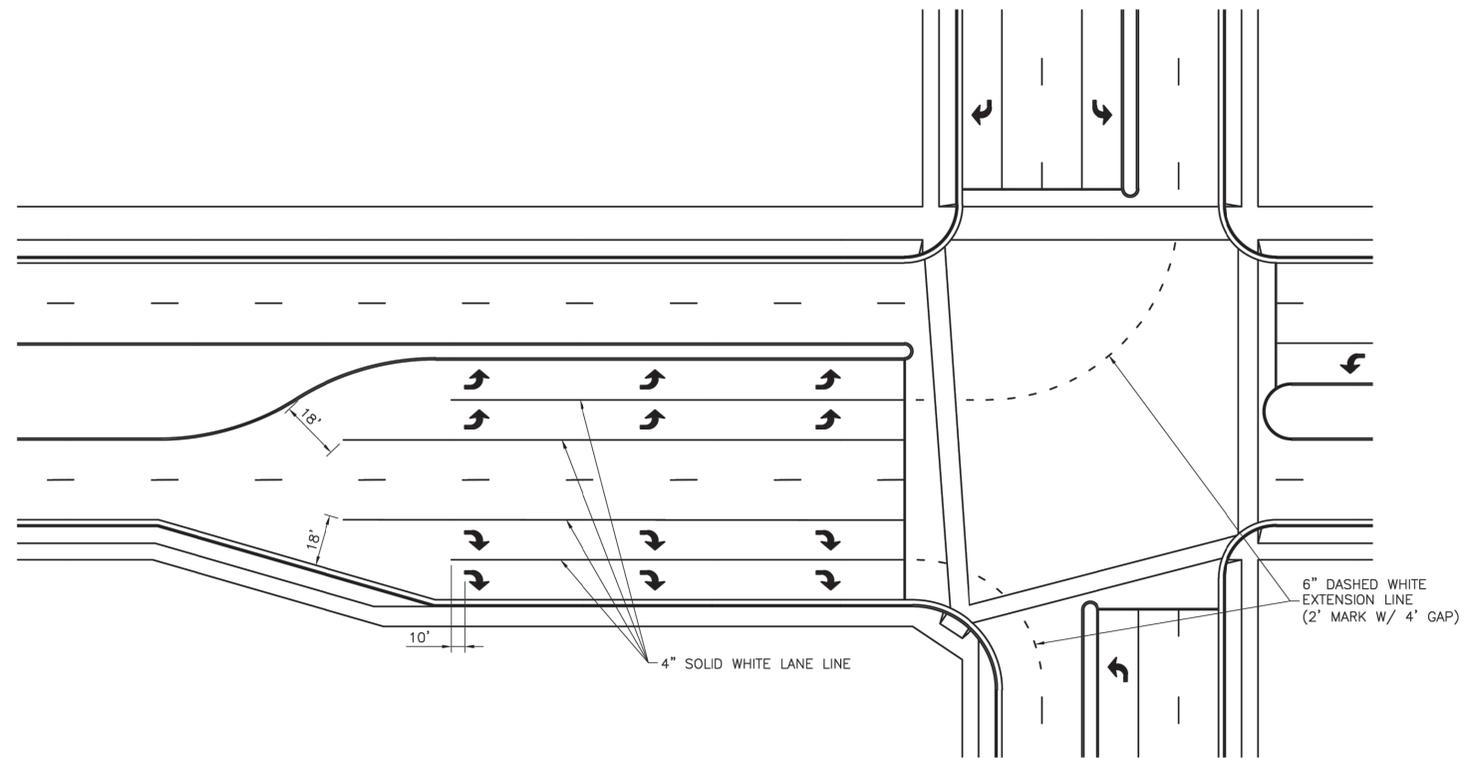
TYPICAL MID-BLOCK OR SCHOOL CROSS WALK



TYPICAL MEDIAN NOSE CENTER LINE DETAIL



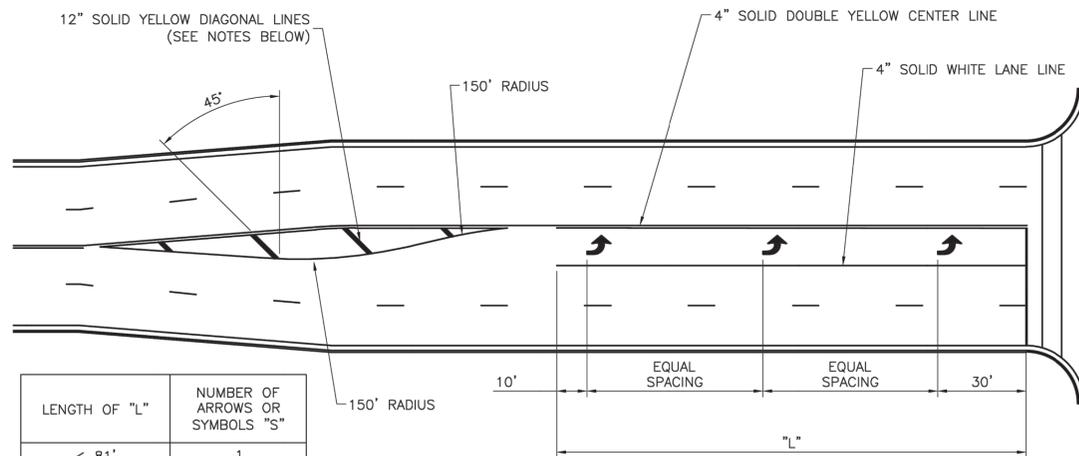
TYPICAL MARKINGS FOR TWO-WAY LEFT-TURN LANE



TYPICAL DUAL TURN LANE MARKINGS

NOTE:

1. DASHED EXTENSION LINES SHALL NOT EXTEND THROUGH CROSSWALKS.

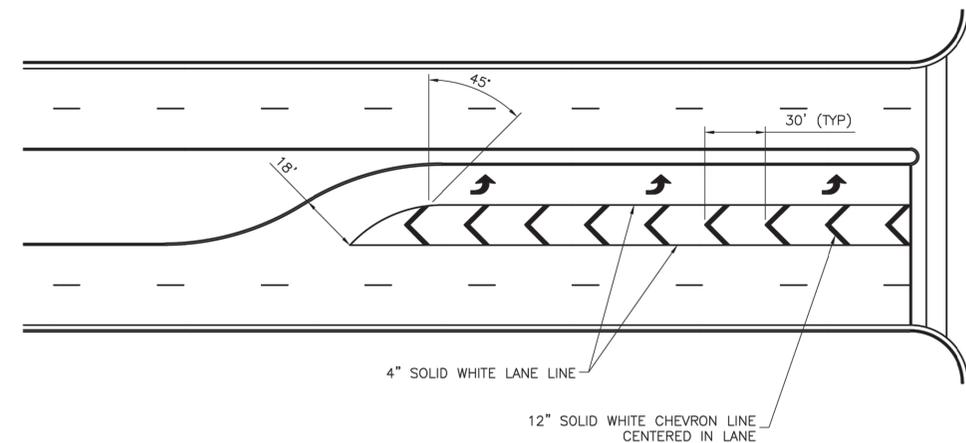


LENGTH OF "L"	NUMBER OF ARROWS OR SYMBOLS "S"
< 81'	1
81' - 120'	2
121' - 200'	3
201' - 280'	4
281' - 360'	5
361' - 440'	6

TYPICAL TURN LANE MARKINGS

NOTES:

1. DIAGONAL LINES ARE REQUIRED BETWEEN CENTERLINES IF THE WIDTH OF THE AREA BETWEEN THE CENTER LINES IS GREATER THAN 12' AND/OR THE LENGTH OF THE AREA BETWEEN CENTER LINES IS GREATER THAN 250'.
2. DIAGONAL LINES SHOULD BE SPACED AT 5' INCREMENTS, EQUAL TO THE POSTED SPEED LIMIT.
3. EQUAL SPACING IS CALCULATED AS  $(L - 40) / (S - 1)$ .
4. WHEN A THROUGH LANE OF TRAFFIC TERMINATES AS A MANDATORY TURN LANE, ARROW AND "ONLY" SYMBOLS SHOULD BE MARKED IN THE TURN LANE, IN ALTERNATING ORDER. THE FIRST AND LAST SYMBOLS SHOULD BE ARROWS.



TYPICAL STRIPED OUT TURN LANE MARKINGS