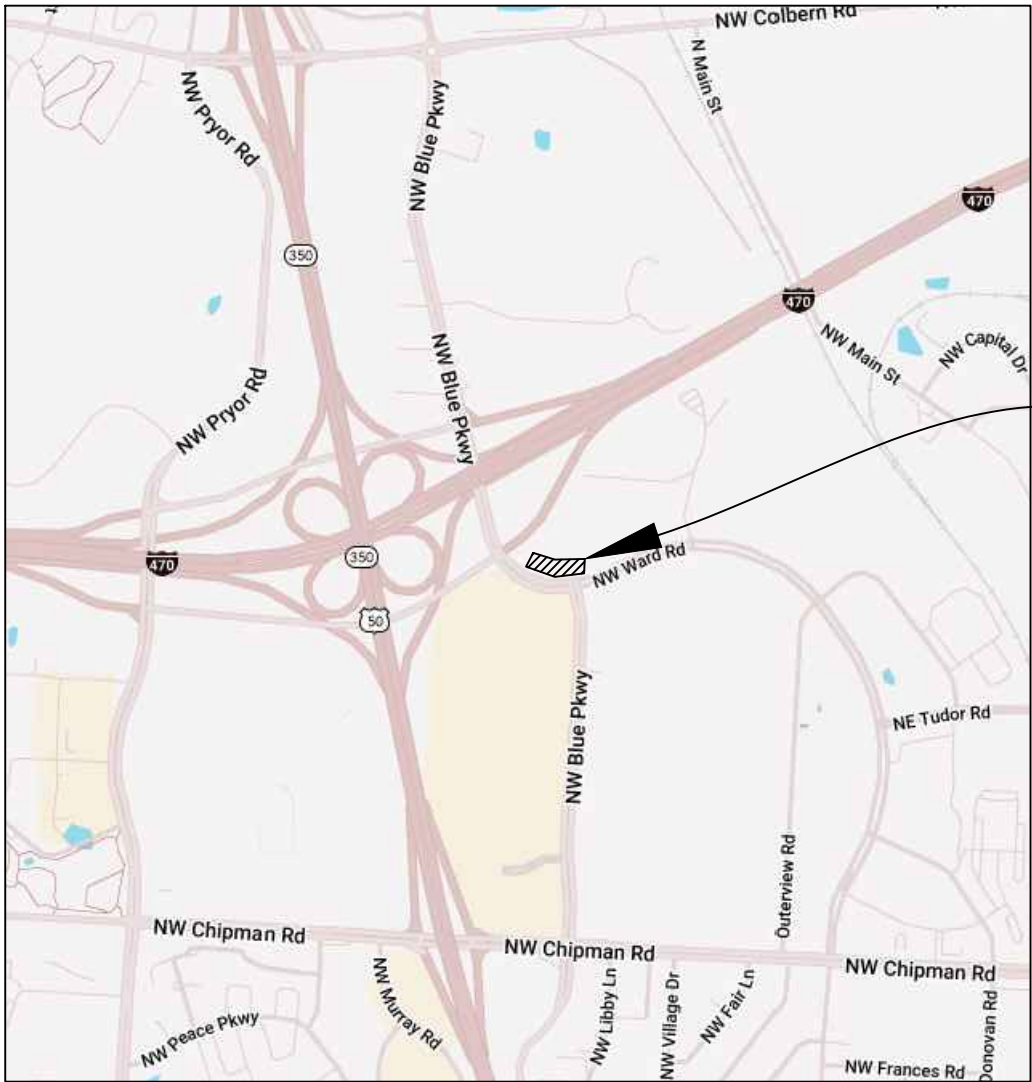




NOT TO SCALE

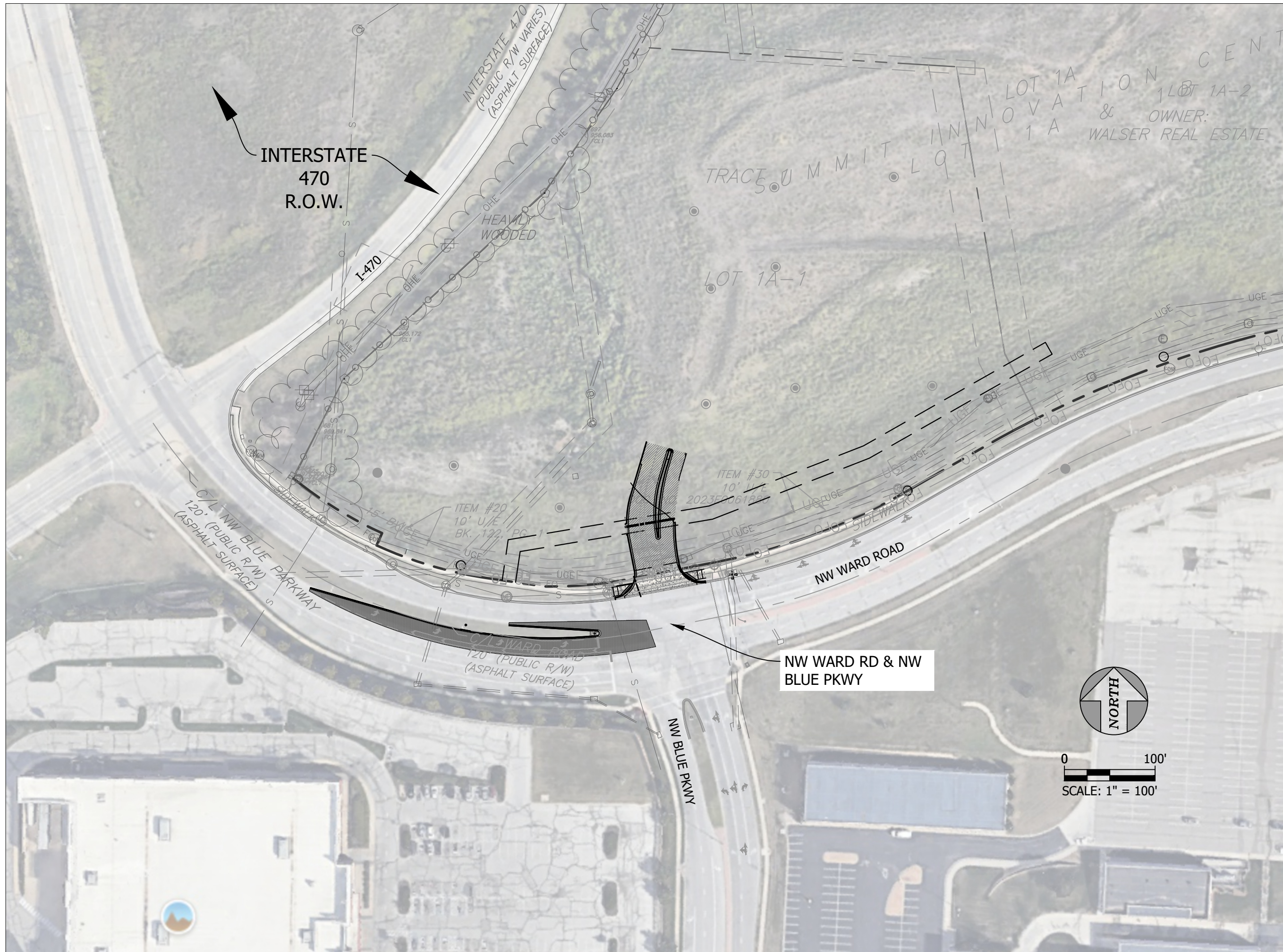


LOCATION MAP
NOT TO SCALE

PROJECT
LOCATION

NW WARD RD & NW BLUE PARKWAY

PUBLIC WORKS DEPARTMENT
CITY OF LEE'S SUMMIT, MISSOURI



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

Evergy
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: 913.625.5619

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



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



PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

NW WARD ROAD & NW BLUE PKWY
PUBLIC WORKS DEPARTMENT

PROJECT:
LEES SUMMIT, JACKSON COUNTY, MISSOURI

SHEET NAME:
COVER SHEET



DRAWN BY: ----
CHECKED BY: ----
DATE: 6/6/2025
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

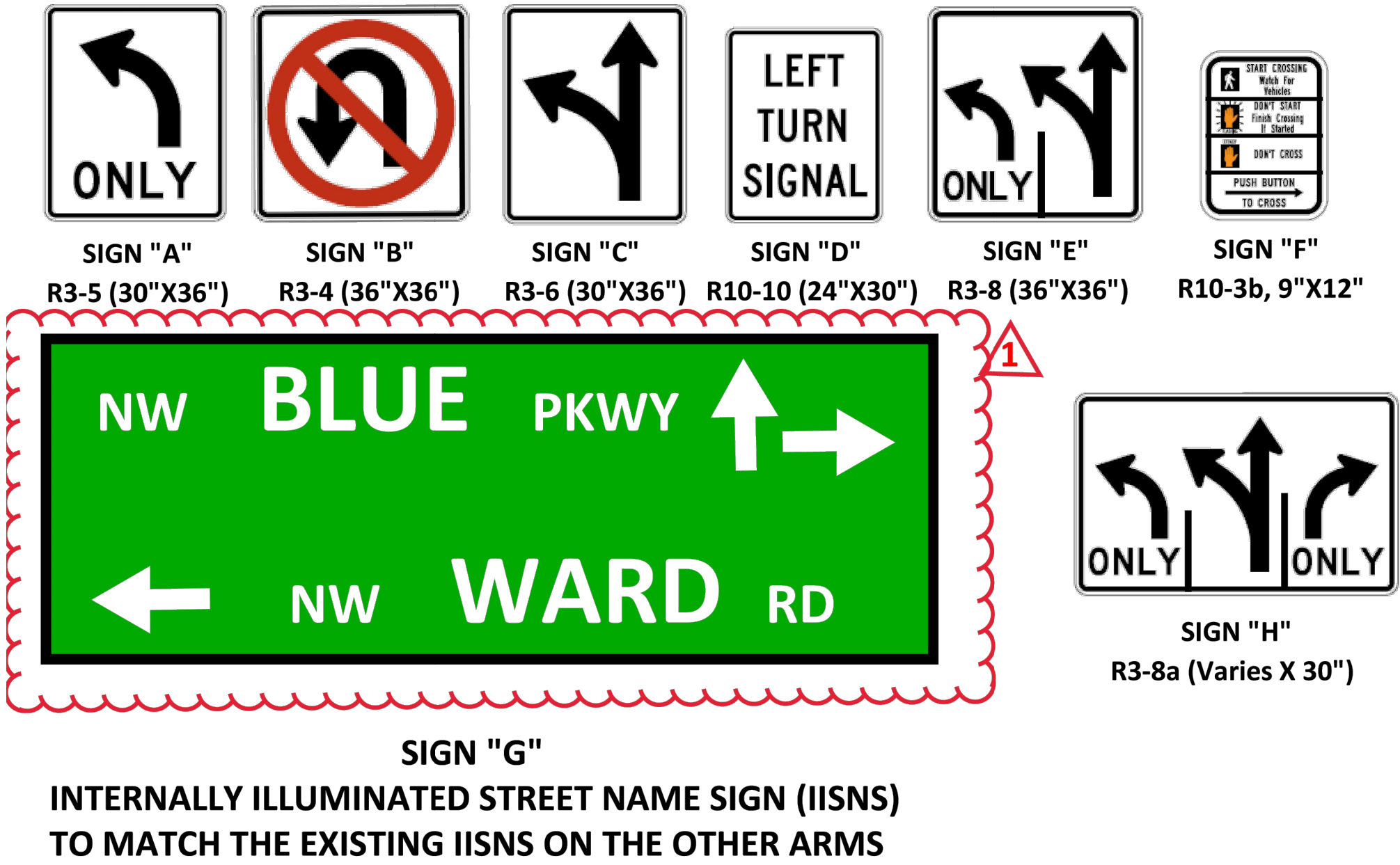
E. GEOGRID SHALL BE ON THE CITY OF LEE'S SUMMIT PUBLIC WORKS DEPARTMENT "PUBLIC WORKS APPROVED PRODUCT LIST", OR APPROVED SUBSTITUTE

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.



Revision 1 (06/03/2025)

LEGEND	
Overhead Telephone Line----	HT
Underground Telephone Line-----	UT
Overhead Cable-----	OHC
Underground Cable -----	UC
Overhead Electric Line----	HE
Underground Electric Line--	UE
Water Line-----	W
Gas Line-----	
Sanitary Sewer -----	SS
Storm Sewer-----	STM
Fiber Optic Line-----	FO
Right of Way Line -----	RW
Lot Line-----	
Chain link Fence-----	
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.

Lee's Summit Missouri

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

Lee's Summit Missouri

PROJECT: NW WARD ROAD & NW BLUE PKWY PUBLIC WORKS DEPARTMENT

PROJECT: LEES SUMMIT, JACKSON COUNTY, MISSOURI

SHEET NAME: GENERAL NOTES

UNITED engineering group

4501 NW Oakley Ave. Suite 232 | Topeka, KS 66618
Phone: 785.606.2806 | www.unitedeng.com

STEVEN E. LACASSE

Professional Engineer

PE-2019041236

6/6/25

DRAWN BY: -----

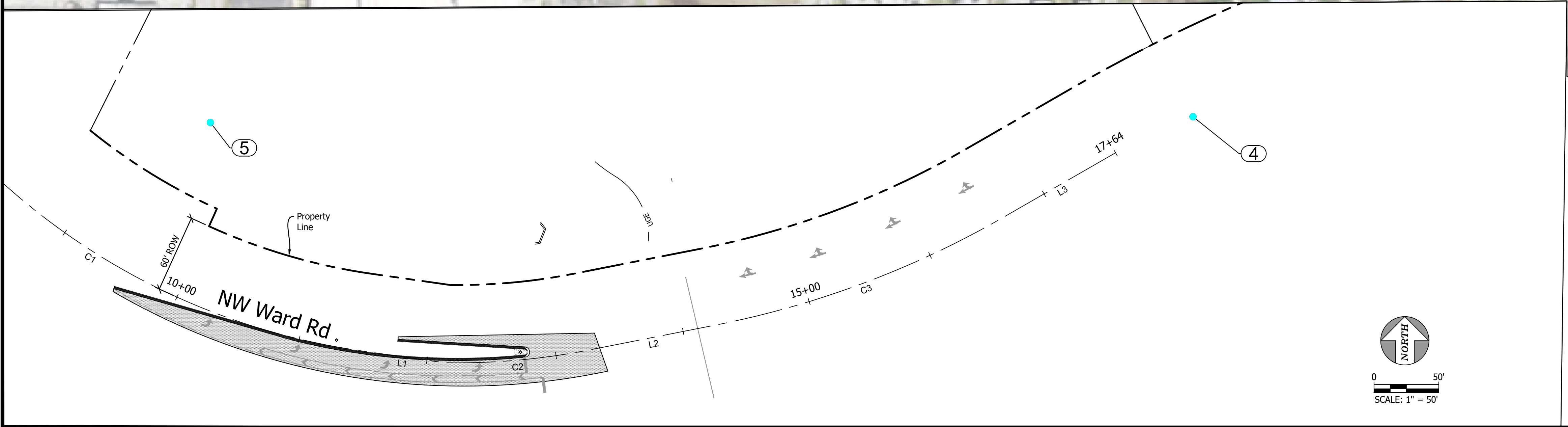
CHECKED BY: -----

DATE: 6/6/2025

PROJECT #PROJECT NUMBER

2

M:\53300 - Premier Automotive Management\53301 Victory Hyundai - Lee's Summit MO\CAD\Plans\Intersection\Intersection Plan - Overall.dwg 6/6/2025 10:34:04 AM petro



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

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

4501 NW Oakley Ave, Suite 232 | Topeka, KS 66618
Phone: 765.806.2806 | www.unitedeng.com

NW WARD ROAD & NW BLUE PKWY
PUBLIC WORKS DEPARTMENT

PROJECT:
LEES SUMMIT, JACKSON COUNTY, MISSOURI

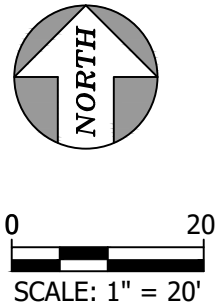
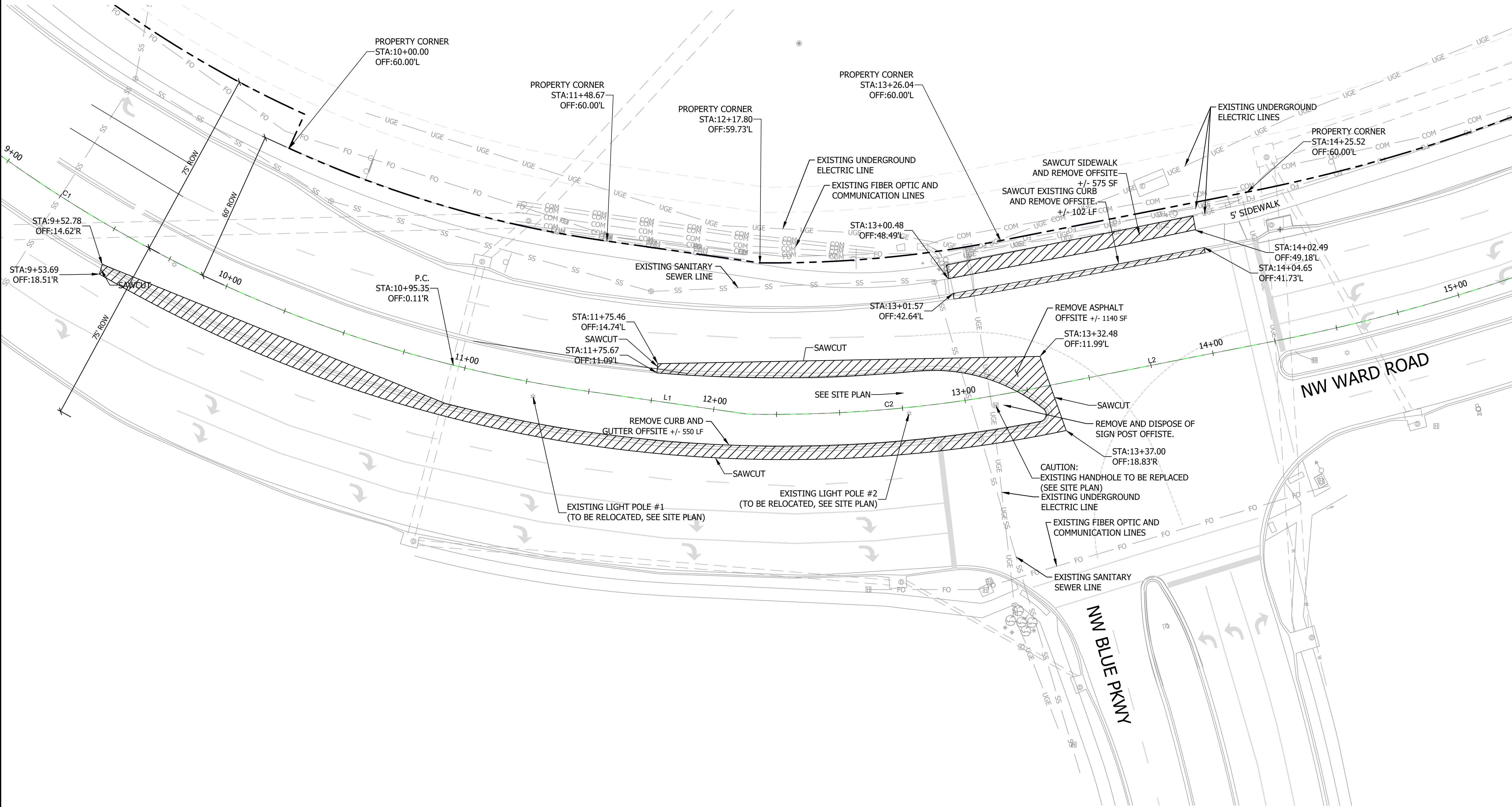
SHEET NAME:
PROJECT CONTROL PLAN

STEVEN E. LACASSE
Professional Engineer
PE-2019041236
6/6/25

DRAWN BY: ---
CHECKED BY: ---
DATE: 6/6/2025
PROJECT #PROJECT NUMBER

3

M:\53300 - Premier Automotive Management\53301 Victory Hyundai - Lee's Summit MO\CAD\Plans\Intersection\Intersection Plan - Existing Site-Demo Plan.dwg 6/6/2025 10:34:10 AM petro





LEE'S SUMMIT
MISSOURI

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



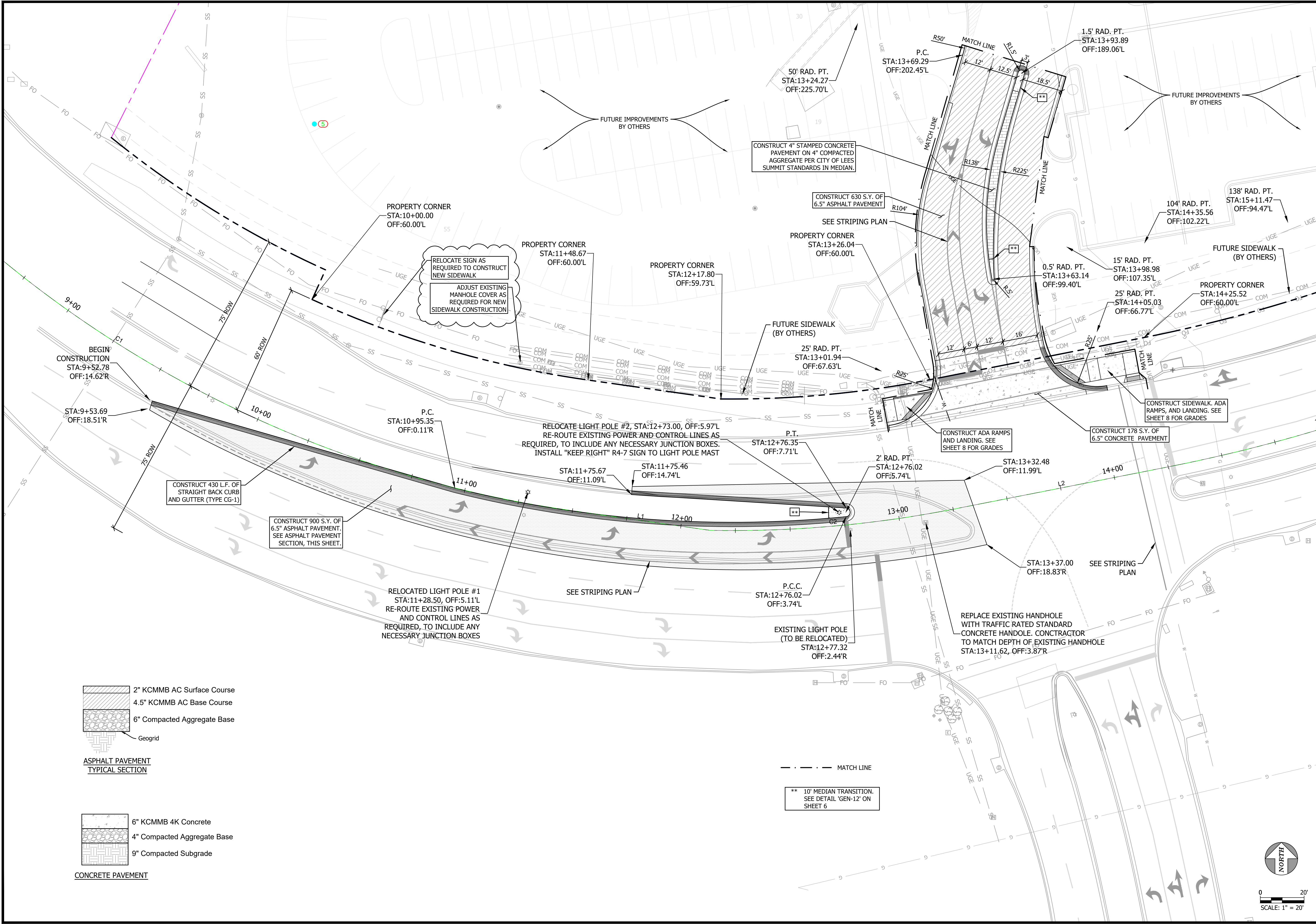
DRAWN BY: _____
CHECKED BY: _____
DATE: 6/6/2025
PROJECT #PROJECT NUMBER



united
engineering
group

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

4





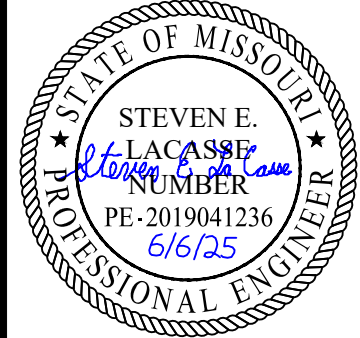
LEE'S SUMMIT
MISSOURI

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



united
engineering
group

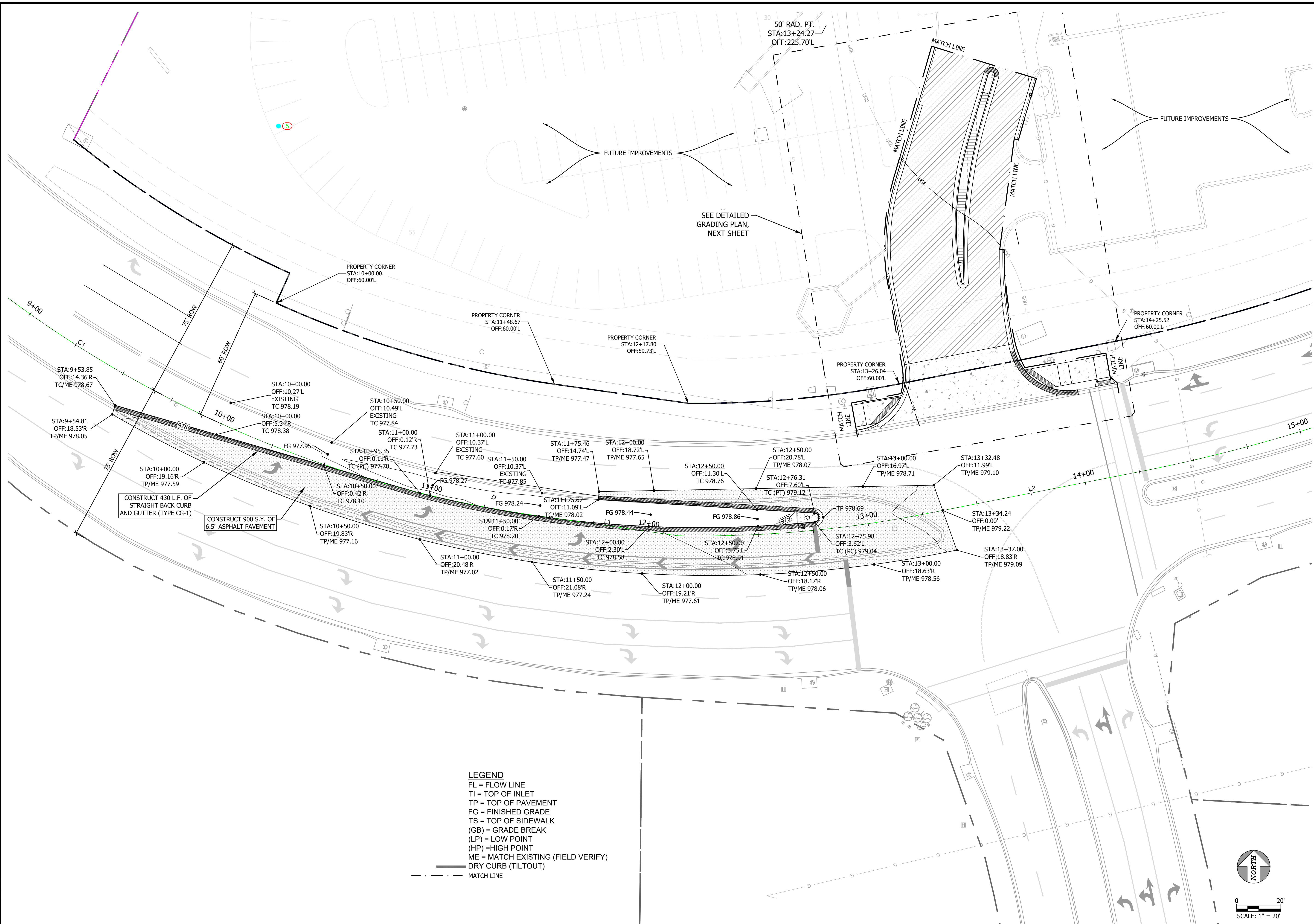
4501 NW Oakley Ave. Suite 232 | Topeka, KS 66618
Phone: 785.866.2806 | www.unitedeng.com



STEVEN E. LACASSE
Professional Engineer
No. 2019041236
6/6/25

DRAWN BY: _____
CHECKED BY: _____
DATE: 6/6/2025
PROJECT #PROJECT NUMBER

5



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

7

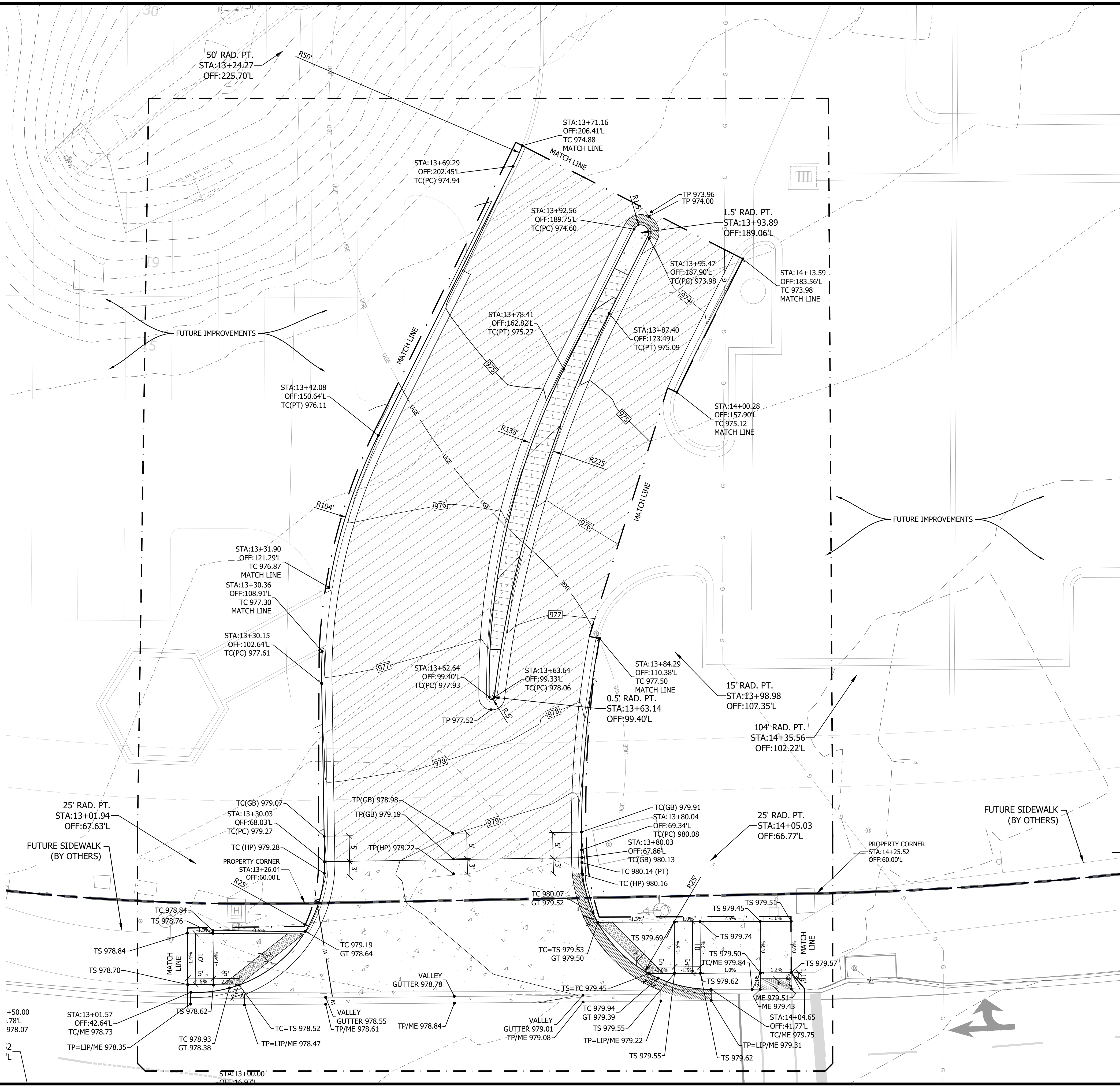
0 20'
SCALE: 1" = 20'

STATE OF MISSOURI
STEVEN E. LACASSE
Professional Engineer
PE-2019041236
6/6/25

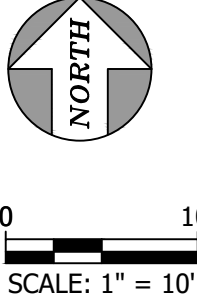
DRAWN BY: _____
CHECKED BY: _____
DATE: 6/6/2025
PROJECT #PROJECT NUMBER

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEES SUMMIT, MO 64063

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



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



LEE'S SUMMIT
MISSOURI

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

united engineering group

NW WARD ROAD & NW BLUE PKWY
PUBLIC WORKS DEPARTMENT

PROJECT:
LEES SUMMIT, JACKSON COUNTY, MISSOURI

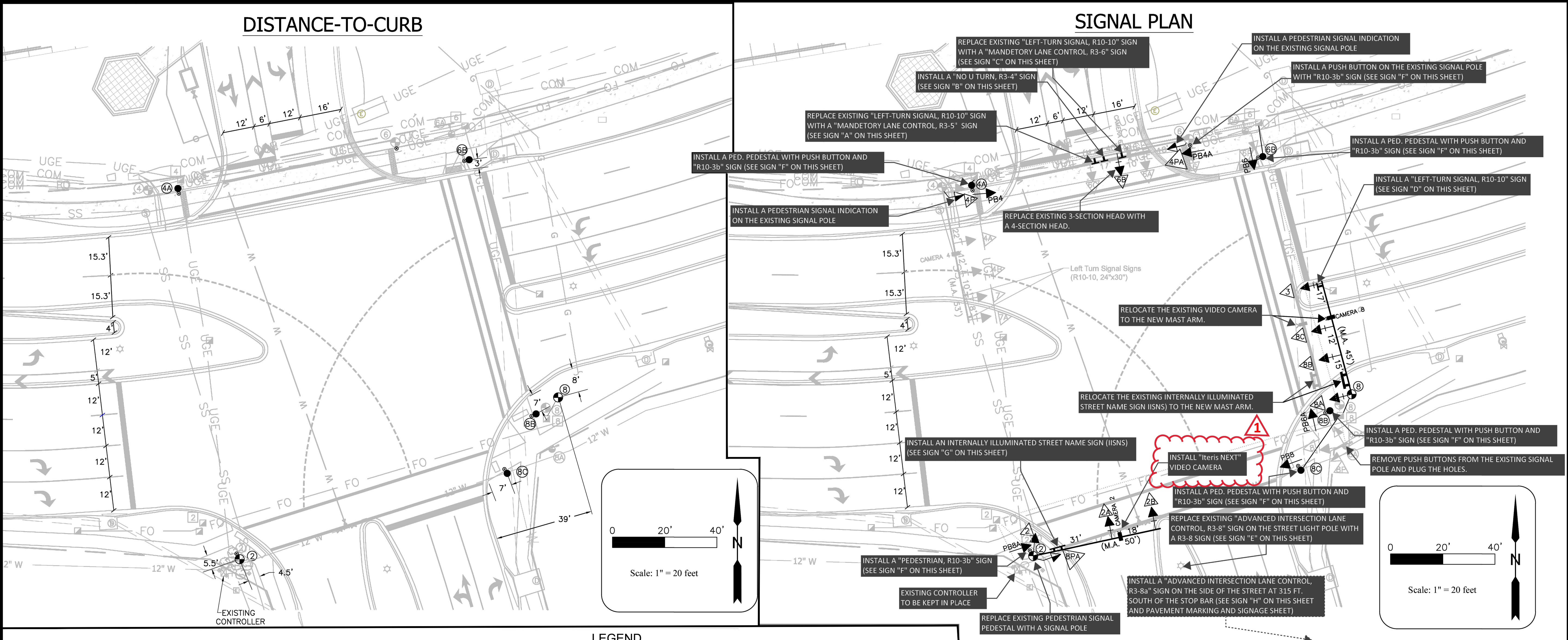
SHEET NAME:
GRADING DETAIL PLAN

STEVEN E. LACASSE
Professional Engineer
PE-2019041236
6/6/25

DRAWN BY: _____
CHECKED BY: _____
DATE: 6/6/2025
PROJECT #PROJECT NUMBER

8

M:\53300 - Premier Automotive Management\53301 Victory Hyundai - Lee's Summit MO\CAD\Plans\Intersection\Intersection Plan - Quad Plans.dwg 6/6/2025 10:34:47 AM petro



SIGN "A"

R3-5 (30"x36")

SIGN "B"

R3-4 (36"x36")

SIGN "C"

R3-6 (30"x36")

SIGN "D"

R10-10 (24"x30")

SIGN "E"

R3-8 (36"x36")

SIGN "F"

R10-3b, 9"x12"

SIGN "G"

INTERNALLY ILLUMINATED STREET NAME SIGN (IISNS)
TO MATCH THE EXISTING IISNS ON THE OTHER ARMS

SIGN "H"

R3-8a (Varies X 30")

Overhead Telephone Line	---○HT---	Overhead Cable	---UT---
Underground Telephone Line	---UT---	Overhead Cable	---OH---
Underground Cable	---UC---	Underground Electric Line	---OHE---
Overhead Electric Line	---OHE---	Underground Electric Line	---UE---
Water Line	---W---	Water Line	---W---
Gas Line	---	Sanitary Sewer	---SS---
Sanitary Sewer	---	Storm Sewer	---STM---
Storm Sewer	---	Fiber Optic Line	---FO---
Fiber Optic Line	---	Right of Way Line	---RW---
Right of Way Line	---	Lot Line	---
Lot Line	---	Chain link Fence	---
Chain link Fence	---	Control Point	---◇---
Control Point	---	Property Pin	---●---
Property Pin	---	Power Pole	---■---
Power Pole	---	Telephone Pole	---○---
Telephone Pole	---	Street Light	---◇---
Street Light	---	Guy Pole	---□---
Guy Pole	---	Existing Manhole	---□---
Existing Manhole	---	Sign	---
Sign	---	Fire Hydrant	---◇---
Fire Hydrant	---	Water Meter	---■---
Water Meter	---	Water Valve	---■---
Water Valve	---	Gas Valve	---■---
Gas Valve	---	Existing Storm Inlet	---◇---
Existing Storm Inlet	---	Existing Manhole	---□---
Existing Manhole	---	Sign	---
Sign	---	Tree	---◇---

MAST ARM POLE

SIGNAL PEDESTAL

CONTROLLER

JUNCTION/SERVICE BOX

TRAFFIC SIGNAL HEAD

TRAFFIC SIGNAL HEAD WITH BACK PLATE

PEDESTRIAN SIGNAL HEAD

PUSH BUTTON PEDESTAL

BORED CONDUIT

TRENCHED CONDUIT

INTERNALLY ILLUMINATED STREET NAME SIGN (IISNS)

SIGNAL FACE NUMBER

POLE/PEDESTAL NUMBER

JUNCTION/SERVICE BOX NUMBER

PUSH BUTTON NUMBER

LUMINAIRE

VEHICLE DETECTION CAMERA

PUSH BUTTON DETECTOR

OPTICOM DETECTOR

RADAR DETECTOR

POWER SUPPLY ASSEMBLY

POWER METER

GENERAL NOTES:

1. ALL WORKS SHALL BE COMPLETED IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF LEE'S SUMMIT, MISSOURI'S STANDARD TECHNICAL AND SIGNAL SPECIFICATIONS.

2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES, SIGNAL EQUIPMENT AND DRAINAGE STRUCTURES ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND STRUCTURES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES CAUSED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, SIGNAL EQUIPMENT AND OTHER STRUCTURES.

3. THE CONTRACTOR SHALL STAKE THE LOCATIONS OF ALL SIGNAL EQUIPMENT. STAKED LOCATIONS SHALL BE REVIEWED BY THE CITY INSPECTOR AND/OR THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF EQUIPMENT. ALL LOCATIONS INDICATED ON THE DRAWINGS ARE SUBJECT TO ADJUSTMENT TO CLEAR OBSTRUCTIONS AND TO MEET SITE CONDITIONS, IF ANY BY THE CITY INSPECTOR AND/OR THE ENGINEER. SIGNAL EQUIPMENT SHALL NOT BE LOCATED ON THE SIDEWALKS AND/OR SIDEWALK RAMPS.

4. THE CONTRACTOR, AT THEIR OWN COST, SHALL REPLACE ALL SIDEWALKS AND OTHER AREAS DISTURBED DURING CONSTRUCTION. ENTIRE PANELS BETWEEN JOINTS SHALL BE REPLACED AND THE EXISTING JOINT PATTERN SHALL BE REPRODUCED.

5. EXISTING SIGNALS SHALL REMAIN IN OPERATION UNTIL NEW SIGNALS ARE INSTALLED. THE CONTRACTOR SHALL MAINTAIN ALL SIGNAL EQUIPMENT AS WELL AS SIGNAL TIMING DURING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SUBMIT SIGNAL TIMING CHANGES NEEDED DURING CONSTRUCTION FOR APPROVAL OF THE CITY TRAFFIC ENGINEER IN AT LEAST 14 DAYS PRIOR TO THE DATE OF PROPOSED UPDATES.

6. ALL SIGNAL EQUIPMENT REMOVED SHALL BE DELIVERED TO THE CITY'S TRAFFIC OPERATION IN WORKING CONDITIONS. ANY EQUIPMENT DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. NO SEPARATE PAY ITEM.

7. A CITY OF LEE'S SUMMIT TRAFFIC OPERATION REPRESENTATIVE SHALL BE PRESENT DURING TURN-ON OF THE NEW SIGNAL EQUIPMENT. THE TURN-ON SHALL OCCUR DURING OFF PEAK HOURS.

8. ALL VEHICULAR SIGNAL HEADS SHALL BE CENTERED OVER THE LANES THEY ARE INTENDED FOR.

9. THE EXACT LOCATION OF THE VIDEO DETECTIONS ARE TO BE AT THE DIRECTION OF THE MANUFACTURER'S REPRESENTATIVE AND COORDINATED WITH THE CITY. CABLE, TERMINALS, FINE-TUNING, SYSTEM SET-UP, AND PROGRAMING WILL BE PERFORMED BY THE SUPPLIER WITH THE CONTRACTORS ASSISTANCE. DETECTION ZONES SHALL BE CENTERED IN THEIR RESPECTIVE LANES.

10. PEDESTRIAN PUSH BUTTONS SHALL BE AT/OR NEAR THE LANDING AREA WITH A MAXIMUM OF 2% LONGITUDINAL AND CROSS SLOPE.

11. OVERHEAD STREET NAME SIGN SHALL BE INTERNALLY ILLUMINATED TO MATCH THE STYLE OF THE EXISTING OVERHEAD STREET NAME SIGNS AND SHALL BE MOUNTED ON MAST ARM.

12. CONDUIT RUNS UNDER EXISTING PAVEMENT, SIDEWALK, AND DRIVEWAYS SHALL BE BORED.

13. ALL WIRING TO BE DONE BY THE CONTRACTOR. AN ADDITIONAL 5% CONTINGENCY IS COMPUTED FOR CUTTING AND PLACEMENT IN EACH SERVICE BOX AND SIGNAL HEAD.

Revision 1 (06/03/2025)

Topo Survey & Base Drawing By:

United Engineering Group
4501 NW Oakley Avenue, Suite 232
Topeka, KS 66618

Lane Configuration, Pavement Marking & Traffic Signal Design By:

Sunflower Design

MGineering Solutions

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

General Notes & Signal Plan

9

Lee's Summit Missouri logo

LEE'S SUMMIT MISSOURI

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

PROJECT:

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

DRAWN BY:

CHECKED BY:

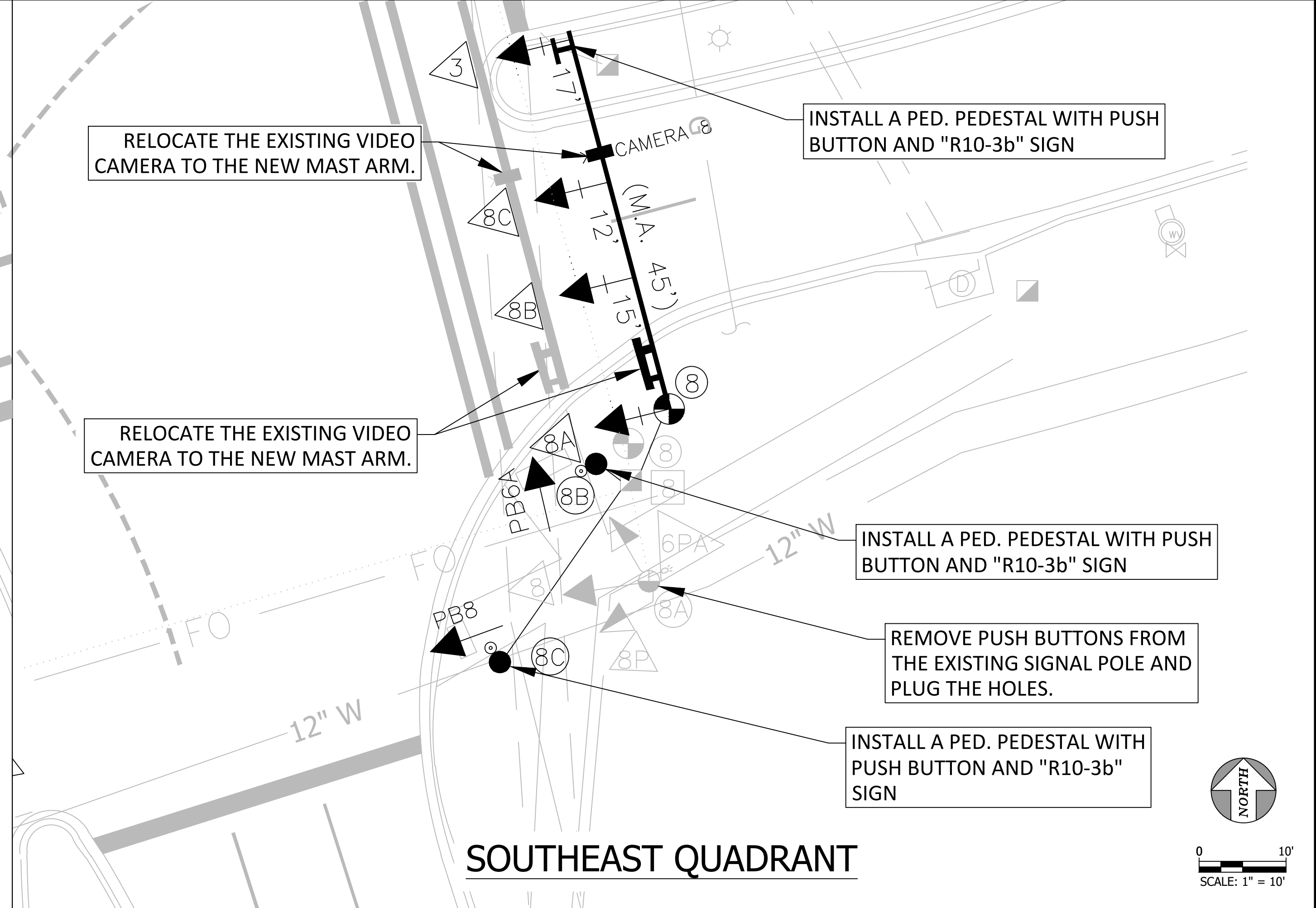
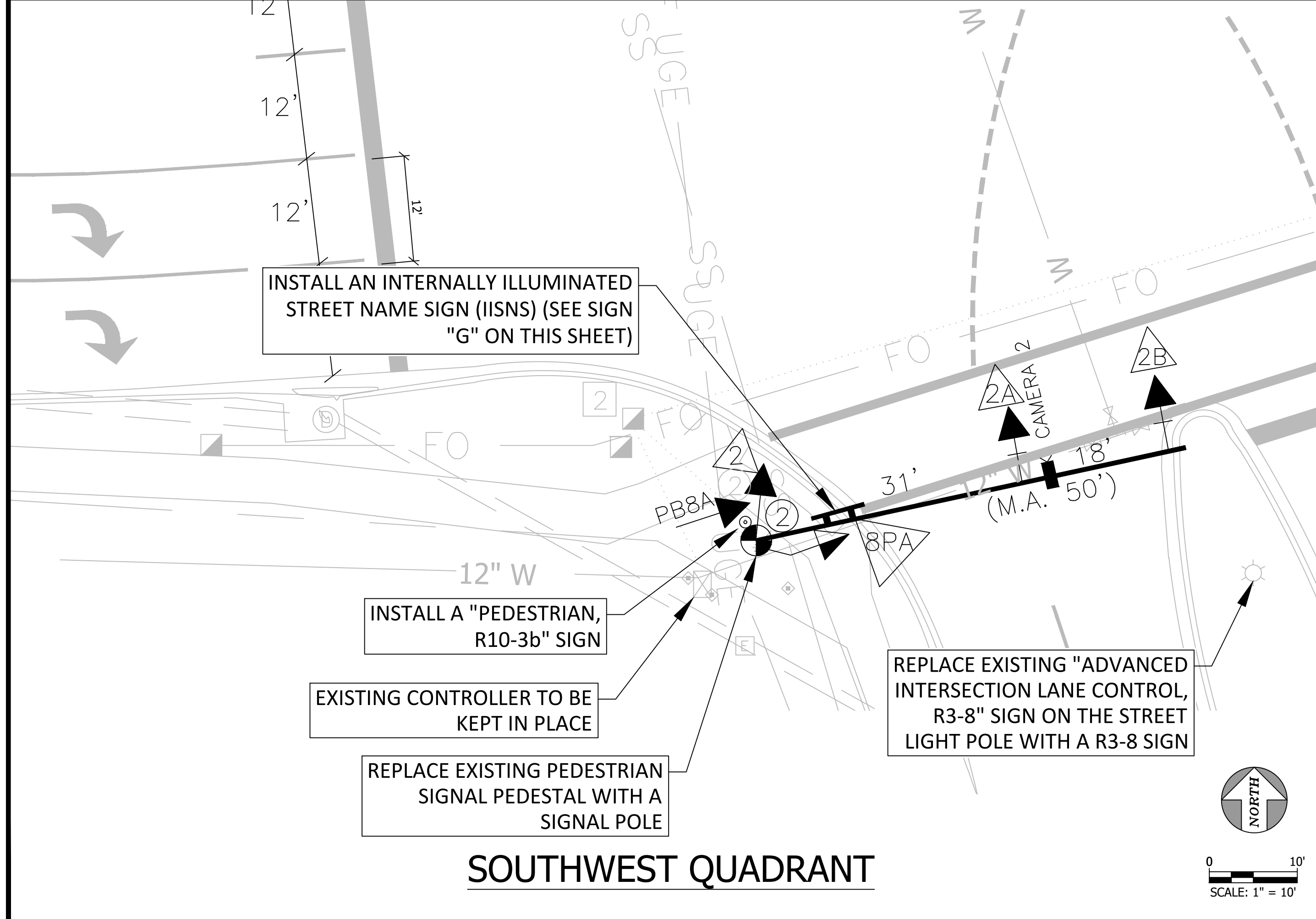
DATE: 6/6/2025

PROJECT #PROJECT NUMBER

united engineering group

ueg logo

4501 NW Oakley Ave. Suite 232 | Topeka, KS 66618
Phone: 785.866.2806 | www.unitedeng.com



M:\53300 - Premier Automotive Management\53301 Victory Hyundai - Lee's Summit MO\CAD\Plans\Intersection\Cover Sheet.dwg 6/6/2025 10:35:02 AM petro

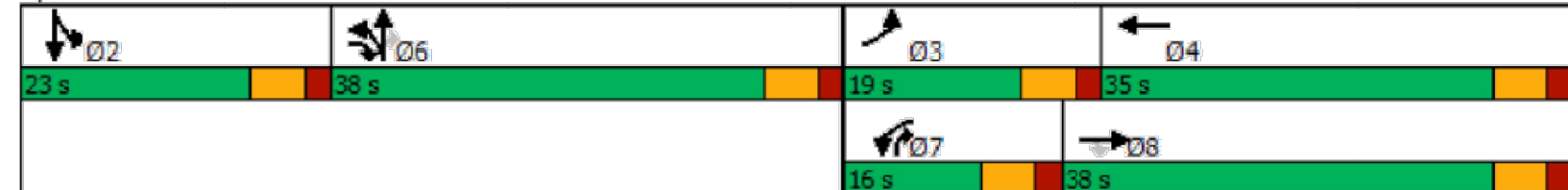
PROPOSED SIGNAL TIMING (OPTIMUM CYCLE LENGTH, PEAK HOURS, TYPICAL WEEKDAY)

NW Ward Rd. & Blue Pkwy

Future Traffic Volumes per TIS
Morning Peak Hour, Typical Weekday

Intersection Summary	
Area Type:	Other
Cycle Length:	115
Actuated Cycle Length:	99.6
Natural Cycle:	115
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.80
Intersection Signal Delay:	36.8
Intersection LOS:	D
Intersection Capacity Utilization:	42.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 3:



NW Ward Rd. & Blue Pkwy

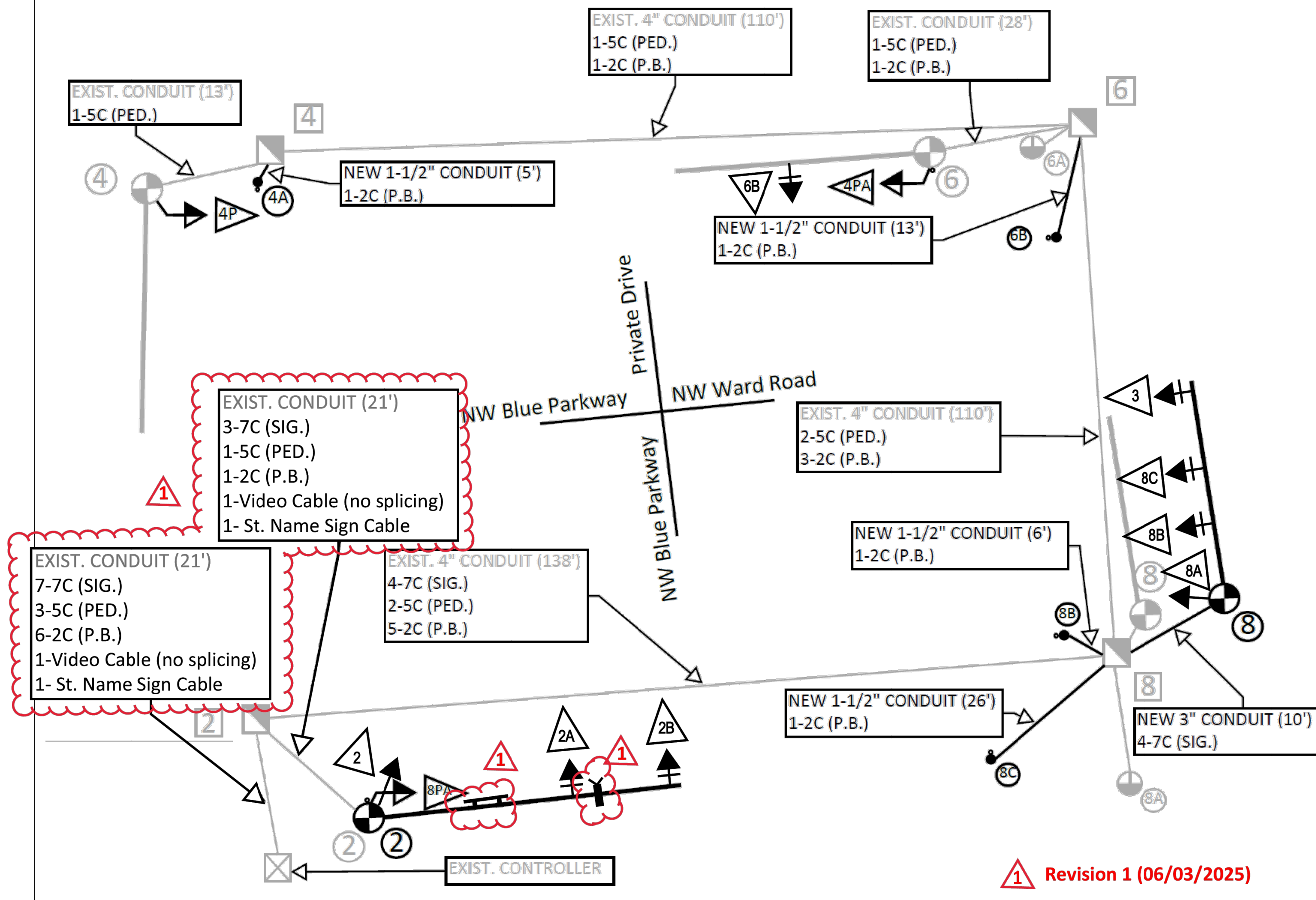
Future Traffic Volumes per TIS
Afternoon Peak Hour, Typical Weekday

Intersection Summary	
Area Type:	Other
Cycle Length:	115
Actuated Cycle Length:	110.8
Natural Cycle:	115
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.91
Intersection Signal Delay:	35.8
Intersection LOS:	D
Intersection Capacity Utilization:	56.2%
ICU Level of Service:	B
Analysis Period (min):	15

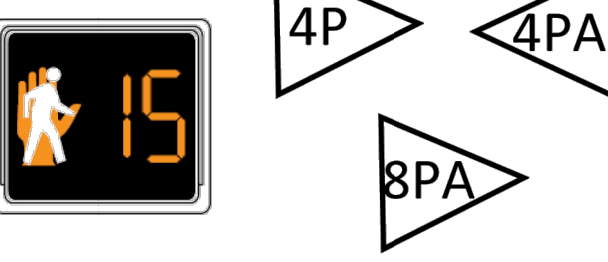
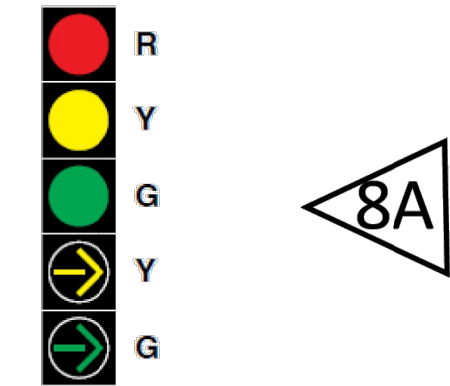
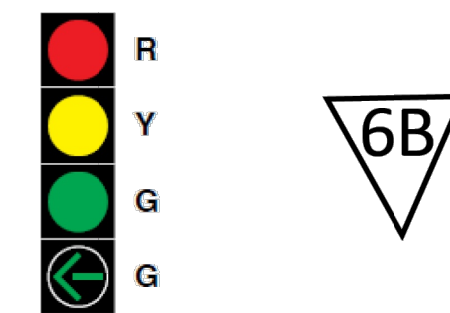
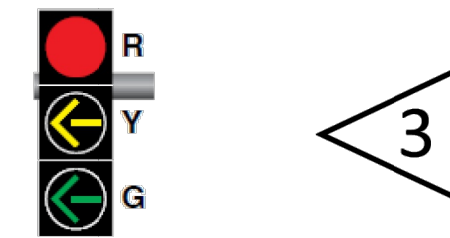
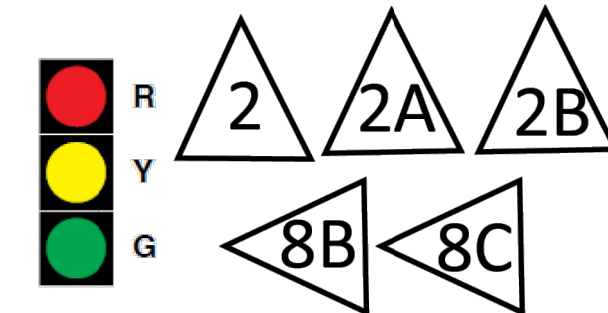
Splits and Phases: 3:



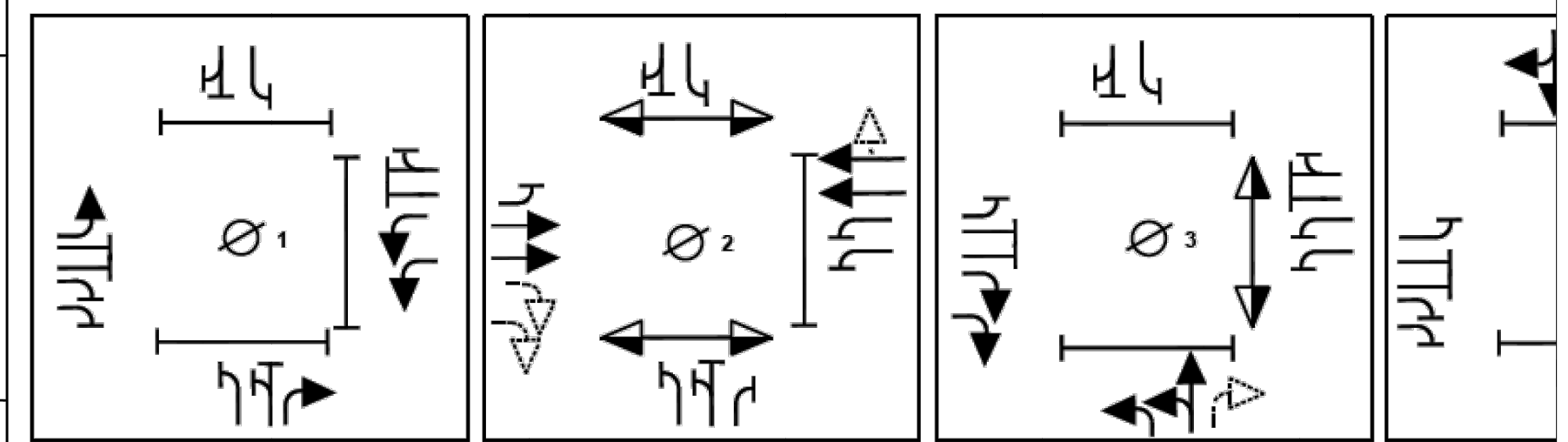
WIRING DIAGRAM (NOT TO SCALE)



SIGNAL FACE ARRANGEMENT



SIGNAL INTERVAL SEQUENCE



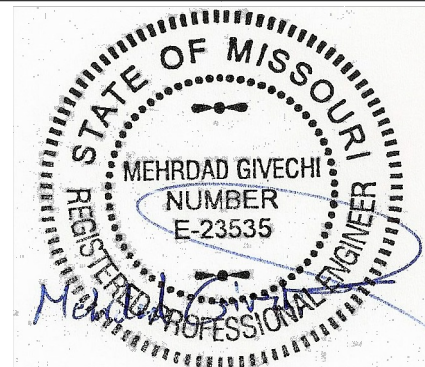
APPROACH	FACE NO.	Ø 1				Ø 2				Ø 3			
		INTERVAL NO.				INTERVAL NO.				INTERVAL NO.			
		1	2	3		1	2	3	4	1	2	3	4
WESTBOUND NW Ward Road	4	R	R	R	G	G	Y	R	R	R	R	R	R
	4A	R	R	R	G	G	Y	R	R	R	R	R	R
	4B	R	R	R	G	G	Y	R	R	R	R	R	R
	7	G _{LA}	Y _{LA}	R	R	R	R	R	R	R	R	R	R
	4P	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW
EASTBOUND NW Blue Parkway	8	R	R	R	G	G	Y	R	R	G _{RA}	G _{RA}	Y _{RA}	R
	8A	R	R	R	G	G	Y	R	R	G _{RA}	G _{RA}	Y _{RA}	R
	8B	R	R	R	G	G	Y	R	R	R	R	R	R
	8C	R	R	R	G	G	Y	R	R	R	R	R	R
	3	G _{LA}	Y _{LA}	R	R	R	R	R	R	R	R	R	R
NORTHBOUND NW Blue Parkway	6A	R	R	R	R	R	R	R	R	G	G	Y	R
	6B	R	R	R	R	R	R	R	R	G, G _{LA}	G, G _{LA}	Y	R
	6C	R	R	R	R	R	R	R	R	G	G	Y	R
	6P	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW
	6PA	DW	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	R
	2A	R	R	R	R	R	R	R	R	R	R	R	R
	2B	R	R	R	R	R	R	R	R	R	R	R	R
	4B	R	R	R	R	R	R	R	R	R	R	R	R

G_{RA} = GREEN RIGHT ARROW, Y_{RA} = YELLOW RIGHT ARROW, G_{LA} = GREEN LEFT ARROW, Y_{LA} = 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: 6/6/2025
PROJECT #PROJECT NUMBER

POSTS													
Post No.	PEDESTAL LENGTH (ft)			MAST ARM TYPE I II III						Luminaires			REMARKS
				Mast Arm Length (ft)	SIGNAL HEAD SPACING*			Arm Length (ft.)	400W 240V H.P.S. Type III	250W 240V H.P.S. Type III			
	OUT BOARD	1st IN BOARD	2nd IN BOARD										
	4	8	15		38	40	45				50		
(2)							1	49'	31'				Signal Pole (SWC)
(4A)	1												Ped. P.B. Pedestal (NWC)
(6B)	1												Ped. P.B. Pedestal (NEC)
(8)							1	44'	27'	15'			Signal Pole (SEC)
(8B)	1												Ped. P.B. Pedestal (SEC)
(8C)	1												Ped. P.B. Pedestal (SEC)
TOTALS	4						1 1						

*NOTE: Signal head spacing to be adjusted to site conditions and approved by the project inspector.

BASES AND PULL BOXES													
LOCATIONS	NO.	BASES							PULL BOXES			REMARKS	
	Post Pull Box	B8	B10	B13	* SPECIAL BASE	A	C	E336	E332	TYPE I	TYPE II		TYPE III
Signal Pole (SWC)	②			1									
Ped. P.B. Pedestal (NWC)	④A					1							
Ped. P.B. Pedestal (NEC)	⑥B					1							
Signal Pole (SEC)	⑧			1									
Ped. P.B. Pedestal (SEC)	⑧B					1							
Ped. P.B. Pedestal (SEC)	⑧C					1							

[illegible]

* RATE INCLUDED IN THE DETECTION SYSTEM

INTERNALLY ILLUMINATED STREET NAME SIGN

[illegible]

* SIDE MOUNTING BRACKET USING 3/4" STAINLESS STEEL STRAP (TYP.) SEE STANDARD DETAIL SHEET TS-1

**** MAST ARM MOUNTING BRACKET USING ASTRO-BRAC TERMINAL CAMPARTMENT BRACKET WITH CABLE ONLY. SEE STANDARD DETAIL SHEET TS-1**

CONDUIT										
From	To	Dist.	TRENCH				IN EXISTING TRENCH			
			1.5"	2"	3"	4"	1.5"	2"	3"	4"
2	2	21'			21'					
2	8	138'			EXISTING 4" CONDUIT					
8	8	10'			10'					
8B	8	6'	6'							
8C	8	26'	26'							
8	6	105'			EXISTING 4" CONDUIT					
6B	6	13'	13'							
6	4	110'			EXISTING 4" CONDUIT					
4A	4	5'	5'							
			</							

(p) Pushed Conduit (*) Side Of Power Pole

[illegible]

* 2-Wire system.

Video Camera shall be an Iteris NEXT per the city requirement.

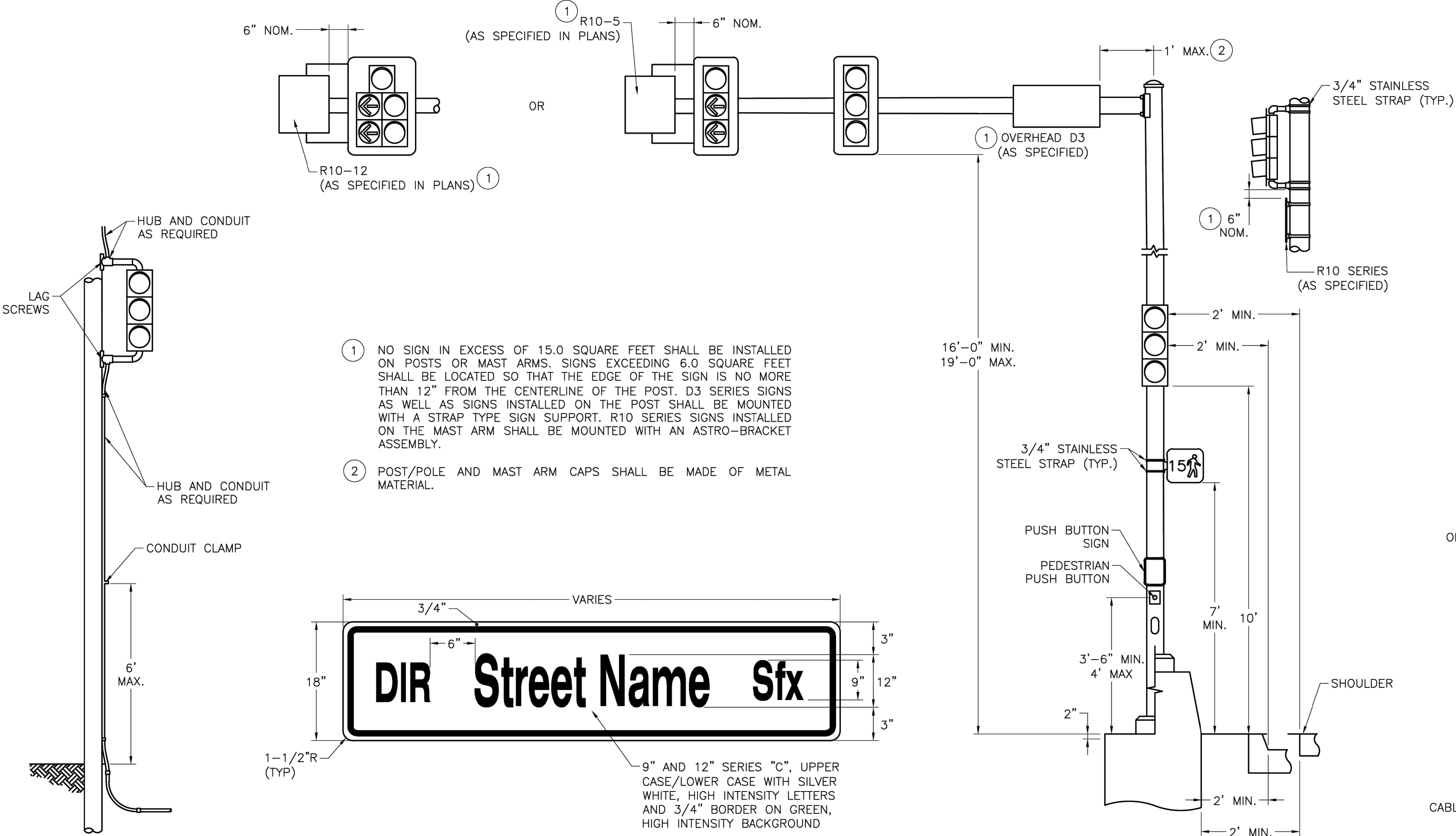
PRIORITY CONTROL SYSTEM		
ITEM	MODEL	QUANTITY

FIBER OPTIC INTERCONNECT	
ITEM	QUANTITY

SUMMARY OF SIGN QUANTITIES					
SIGN	MUTCD DESIG.	LEGEND	SIZE	QUANTITY	LOCATION
A	R3-5	LT ONLY ARROW	30"x36"	1	MAST ARM 6 (NEC)
B	R3-4	NO U-TURN	36"x36"	1	MAST ARM 6 (NEC)
C	R3-6	LEFT-TURN/THROUGH ARROW	30"x36"	1	MAST ARM 6 (NEC)
D	R10-10	LEFT-TURN SIGNAL	24"x30"	1	MAST ARM 8 (SEC)
E	R3-8	ADVANCE INTERSECTION LANE CONTROL	36"x36"	1	MEDIAN (SOUTH LEG)
F	R10-3b	PEDESTRIAN PUSH BUTTON	9"x12"	6	SIG. POLE 2, 4, 6 PED. PEDESTAL 6B, 8B, 8C
G	IISNS 	NW BLUE PKWY  ← NW WARD RD	Varies	1	MAST ARM 2 (SWC)
H	R3-8a	ADVANCE INTERSECTION LANE CONTROL	Varies x 30"	1	SIDE OF ROAD (SOUTH LEG)

1 Revision 1 (06/03/2025)

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	Summary of Quantities	13
---	---	---	--	---	------------------------------	-----------



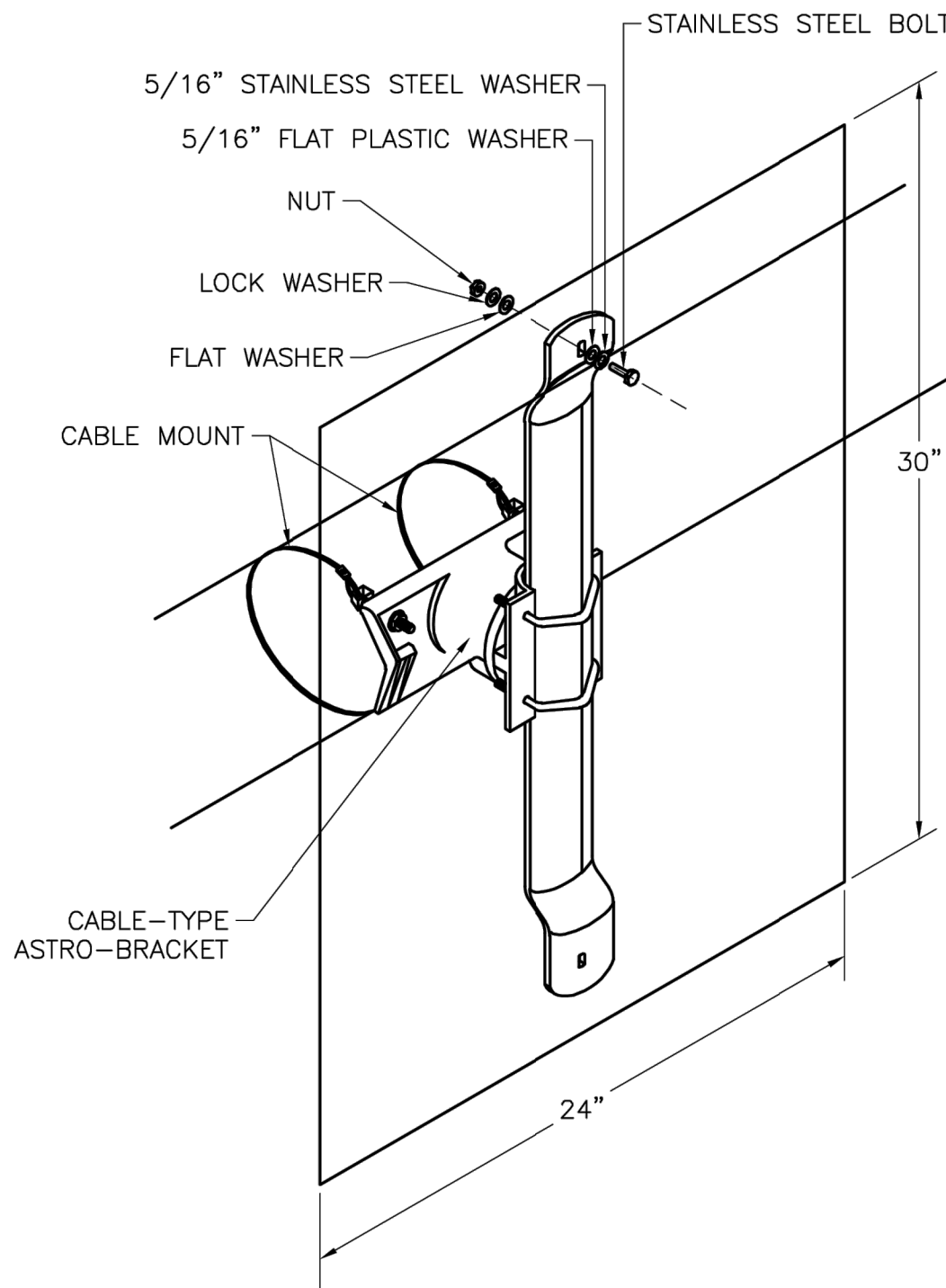
WOOD POLE MOUNTING

OVERHEAD D3 SIGN

MAST ARM POLE MOUNTING

SIGNAL HEAD MAST ARM MOUNTING DETAIL

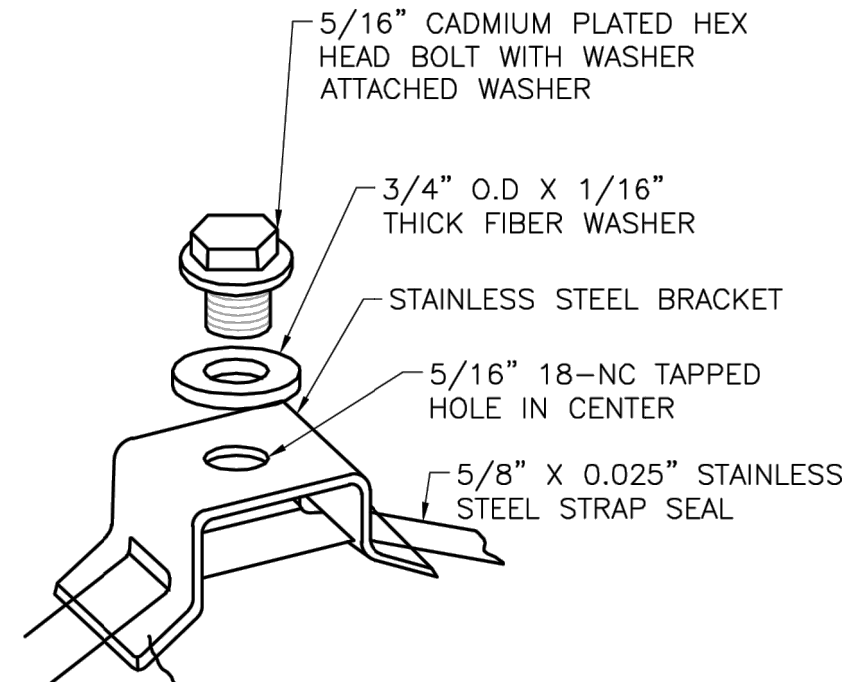
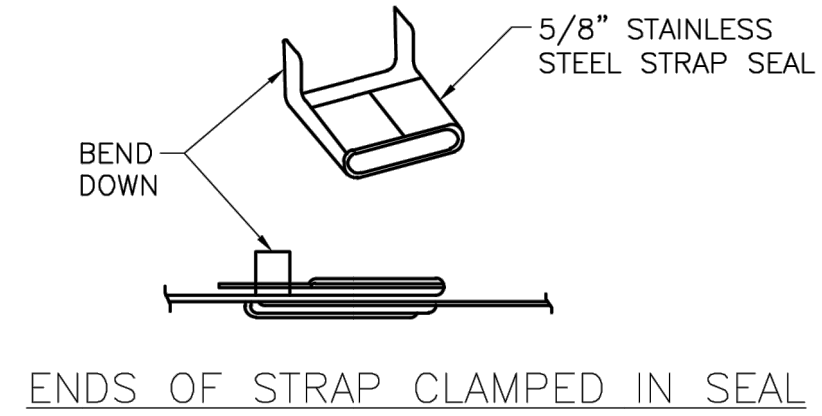
ASTRO-BRAC TERMINAL COMPARTMENT BRACKET ASSEMBLY. ONLY CABLE TYPE ASTRO-BRAC WILL BE ALLOWED, NO BANDS.



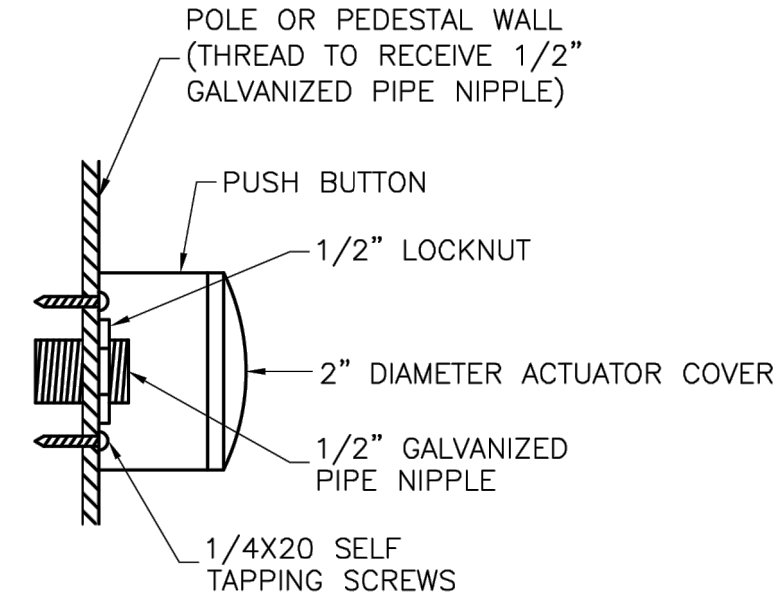
MAST ARM SIGN MOUNTING DETAIL

GENERAL NOTES:

- ALL POST WIRE OUTLETS SHALL BE DEBURRED AND EQUIPPED WITH BUSHINGS.
- BACKPLATES NOT SHOWN IN MOUNTING DIAGRAMS FOR CLARITY. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
- 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.
- LEADS FROM PEDESTRIAN SIGNAL LAMPS ARE CONNECTED TO THE SIGNAL HEAD TERMINAL COMPARTMENT.
- ALL SIGNALS SHALL BE MOUNTED VERTICALLY UNLESS OTHERWISE NOTED ON THE TRAFFIC SIGNAL PLANS.
- SPAN WIRE MOUNTED SIGNALS SHALL HAVE A DISCONNECT HANGER.
- SIGNAL HEADS ON MAST ARMS SHALL BE TILTED FORWARD FROM THE TOP 3 TO 7 DEGREES FROM VERTICAL.
- IF A SIGN EXCEEDS 42" IN LENGTH, TWO SUPPORTS ARE REQUIRED AND IF A SIGN EXCEEDS 96" IN LENGTH, THREE SUPPORTS ARE REQUIRED.
- MAST ARM MOUNTED SIGNALS SHALL HAVE A TERMINAL COMPARTMENT.
- SIDE-MOUNTED OPTICALLY LIMITING HEADS SHALL HAVE A MINIMUM POST CLEARANCE OF 5-1/2".
- SYMBOL FOR PEDESTRIAN LENSES SHALL HAVE A MINIMUM HEIGHT OF 11"
- 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.
- 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.
- SEE STANDARD DRAWING TS-3 FOR BASE DETAILS.



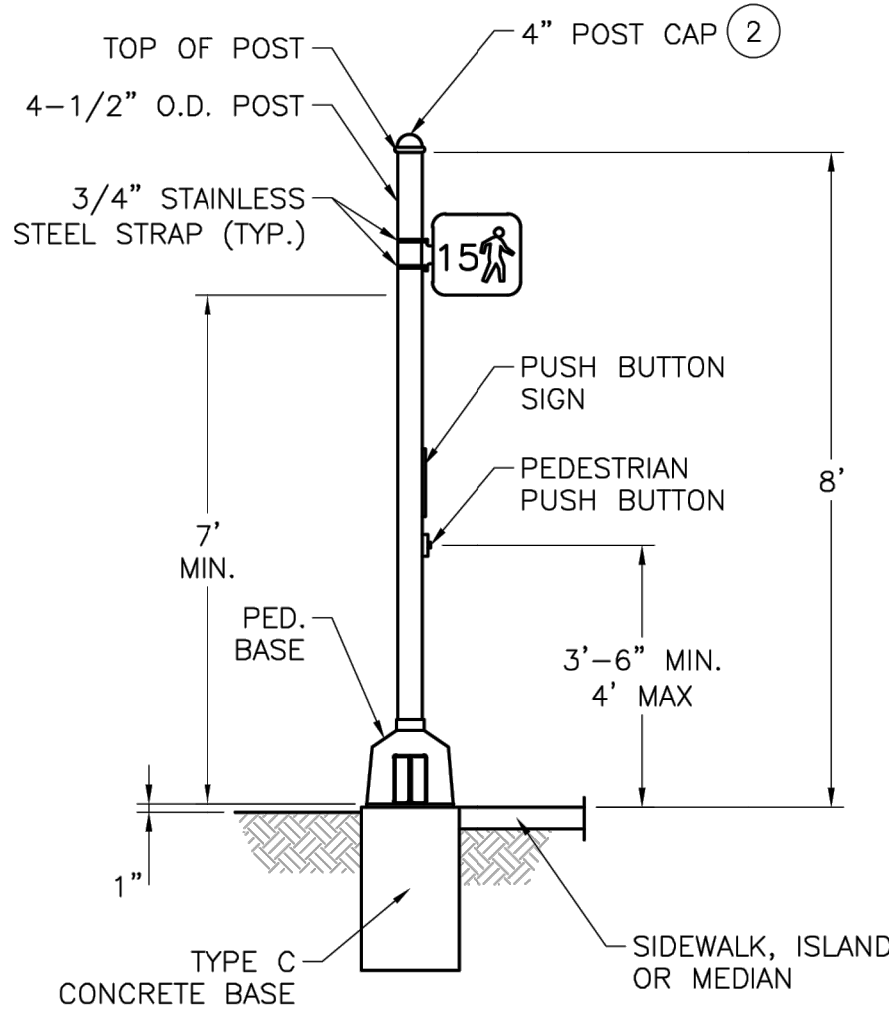
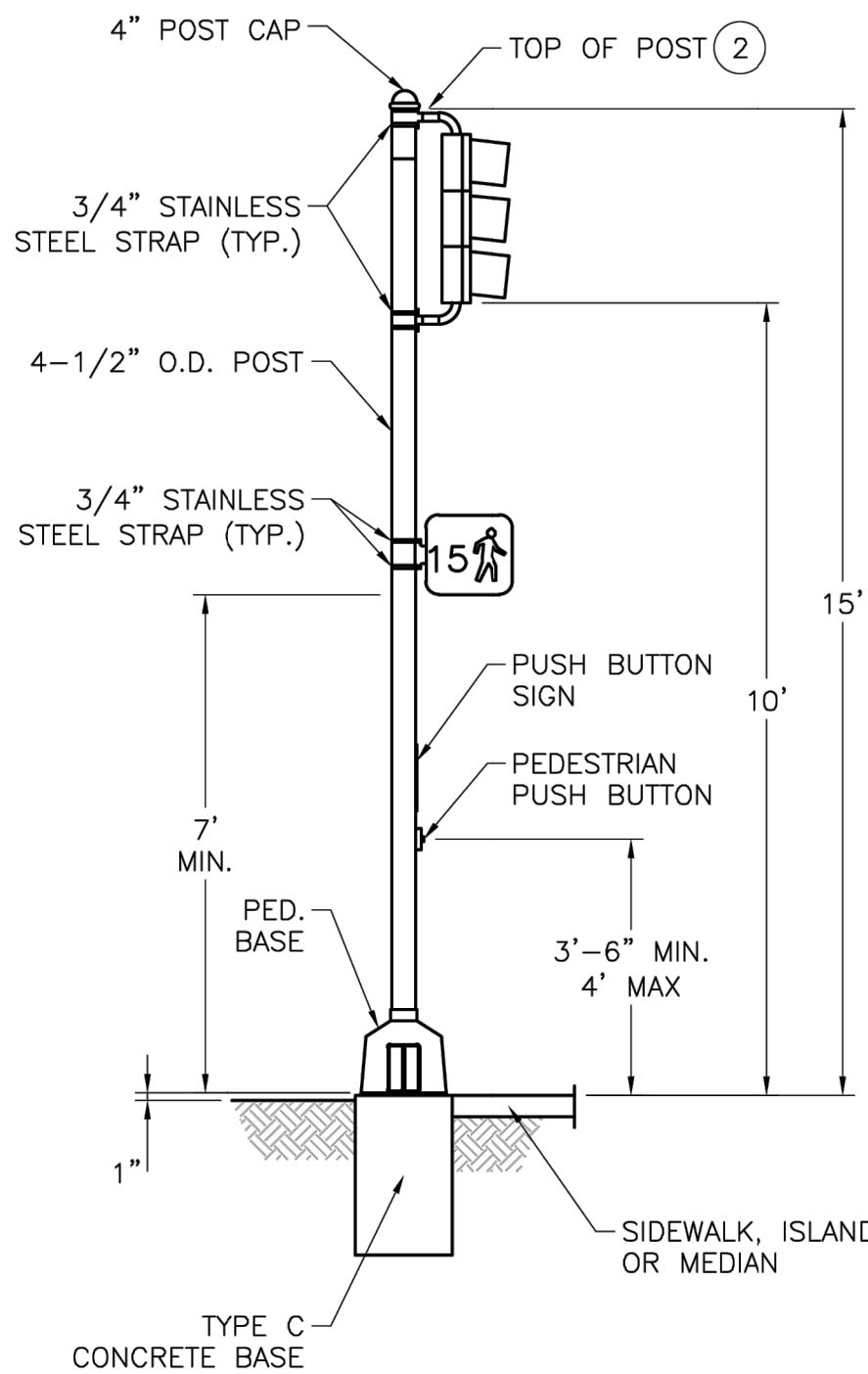
STRAP TYPE SIGN SUPPORT



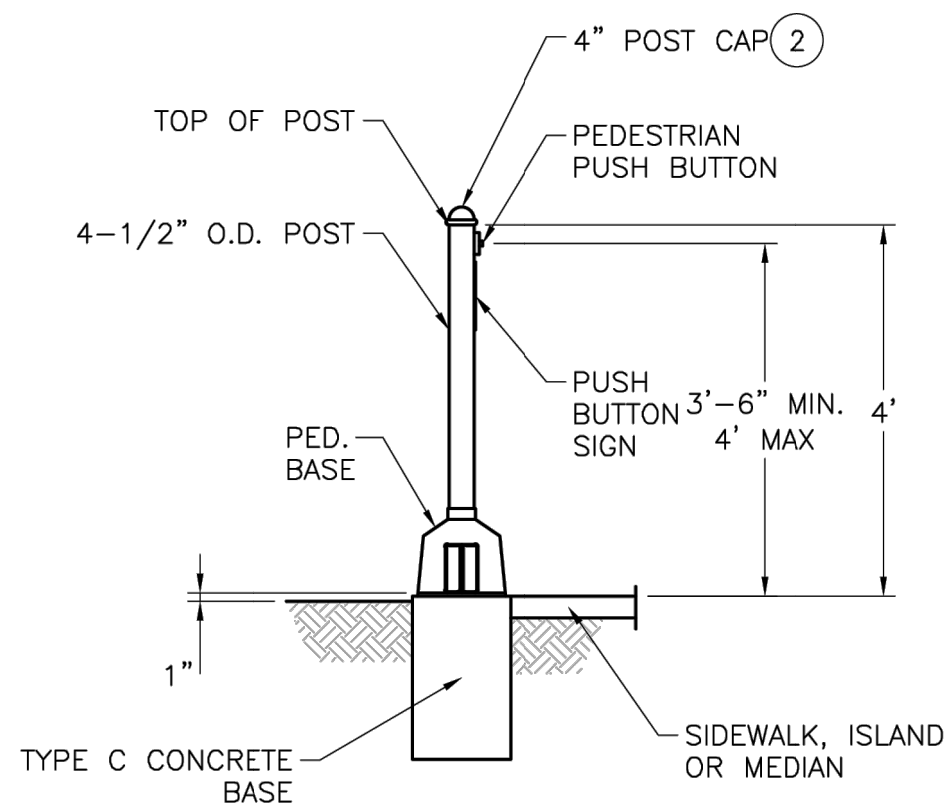
PUSH BUTTON NOTES:

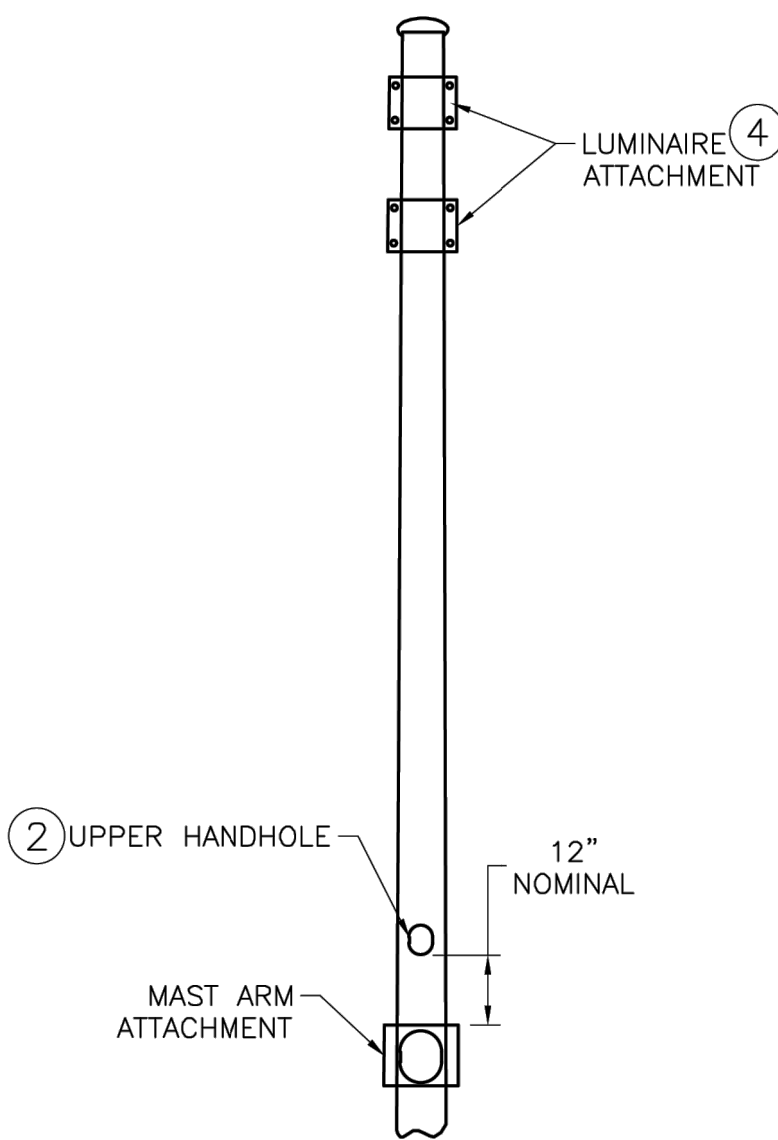
- PUSH BUTTONS SHALL INCLUDE TWO MOUNTING BRACKETS EACH AND BE OF THE TYPE AS NOTED IN THE PLANS.
- PUSH BUTTONS SHALL BE ADA APPROVED AND WEATHERPROOF, MOUNTED.

PUSH BUTTON MOUNT DETAIL

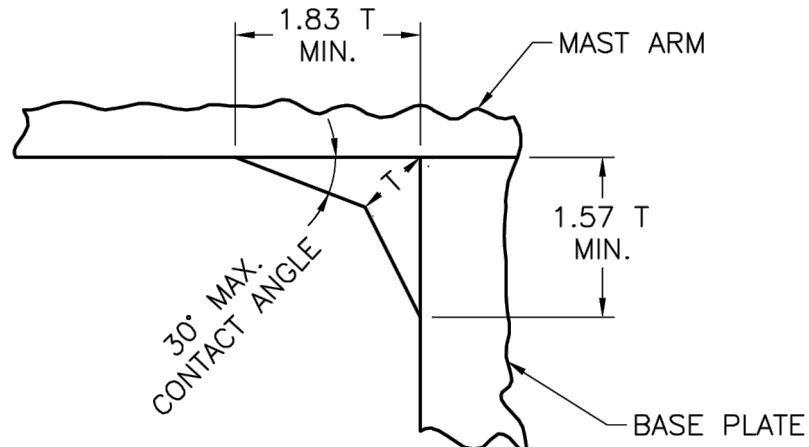


PEDESTAL POST MOUNTINGS

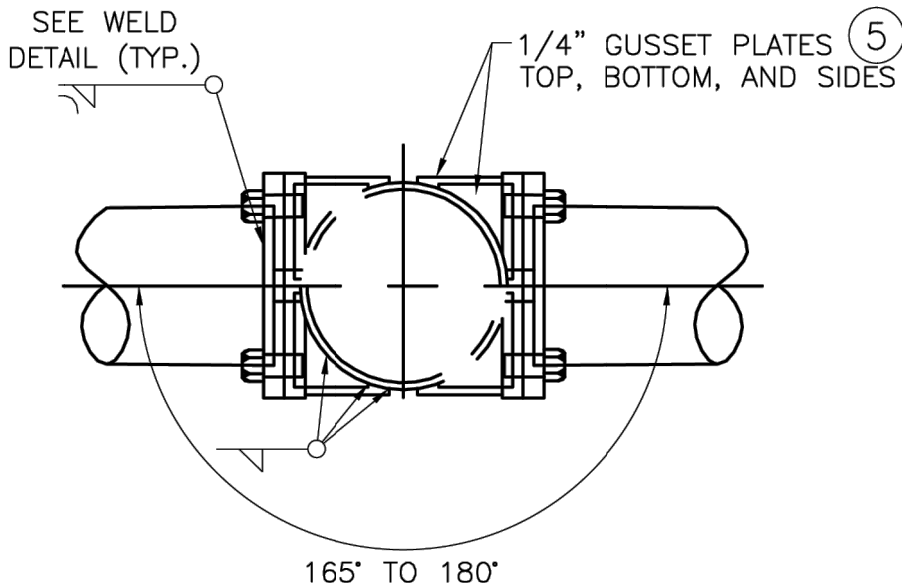
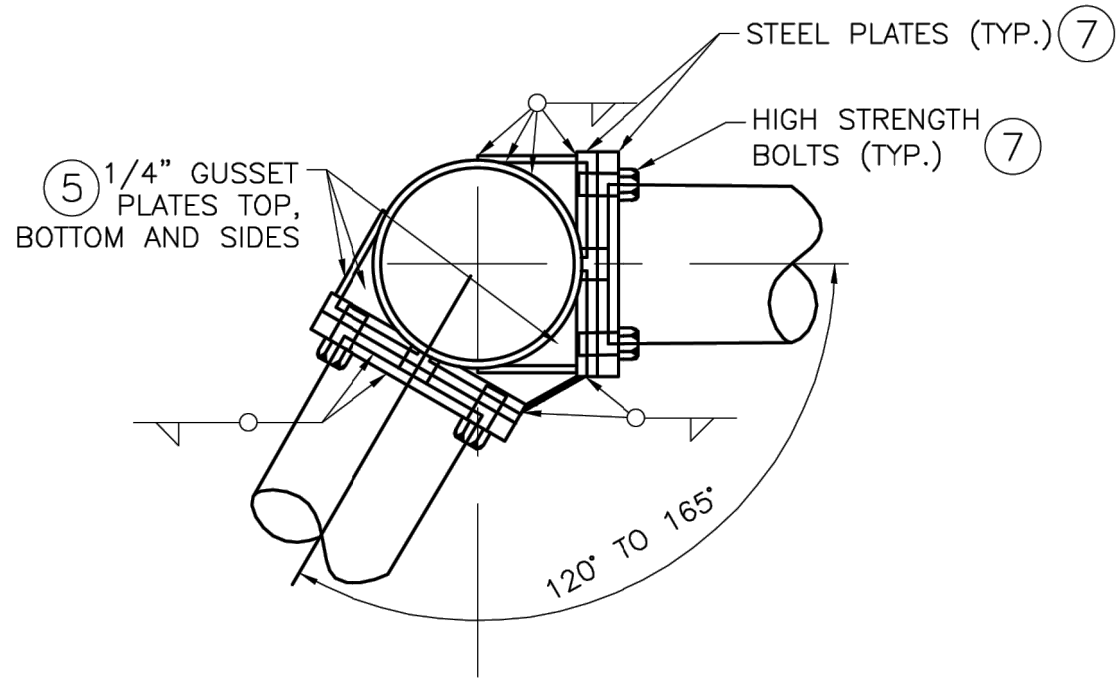
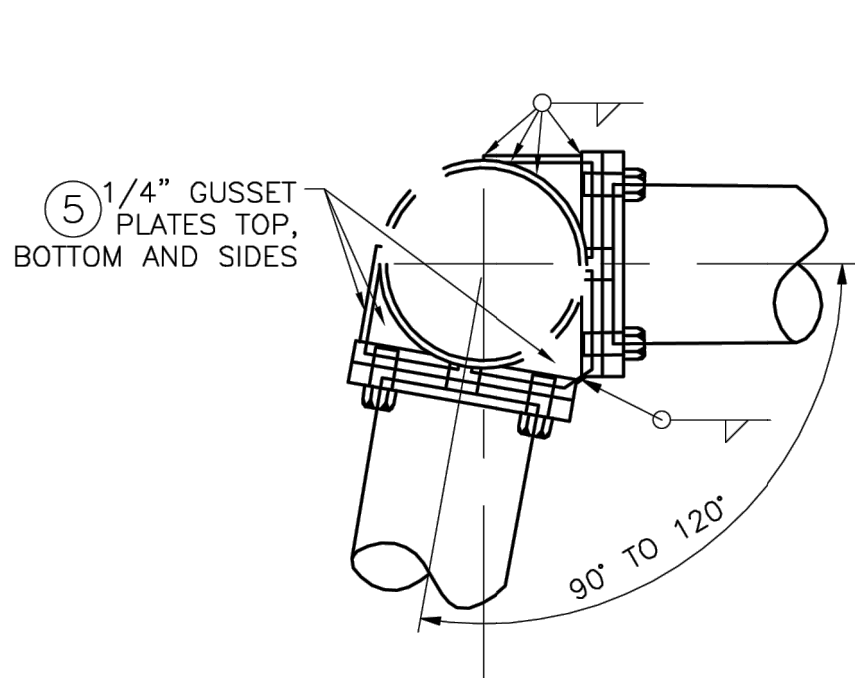




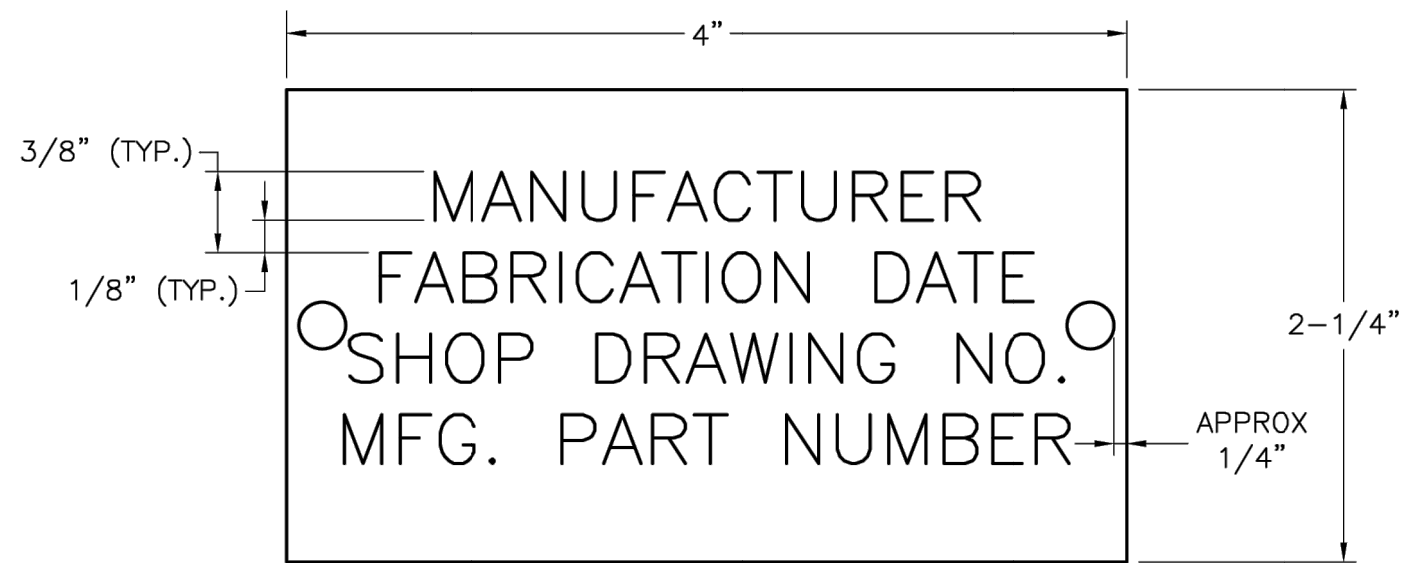
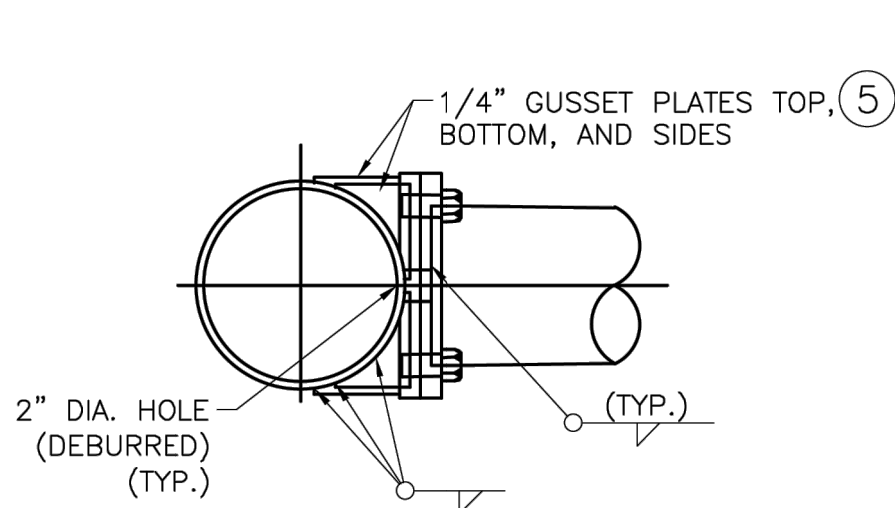
TYPE BL AND CL POSTS



WELD DETAIL



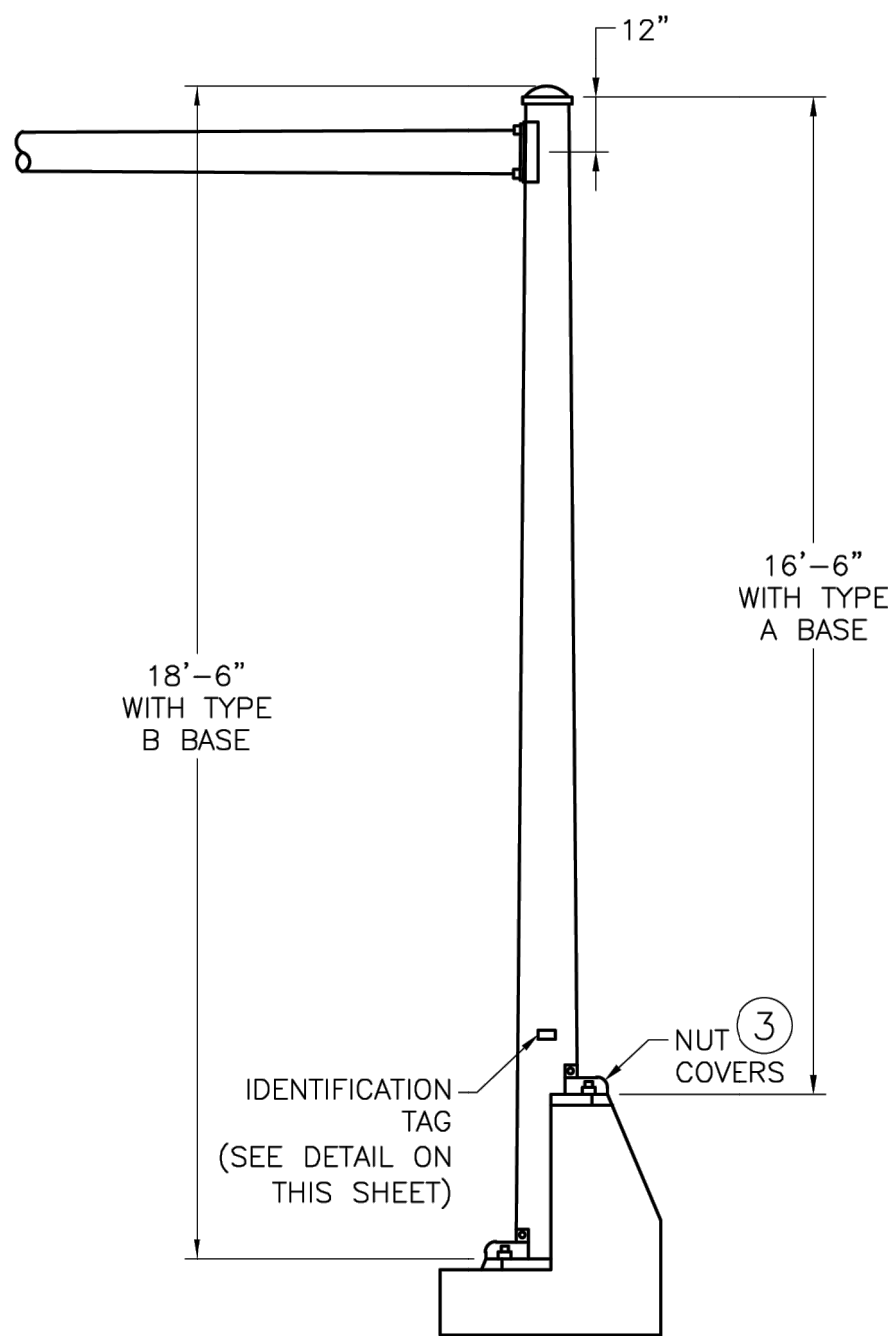
ARM ATTACHMENTS



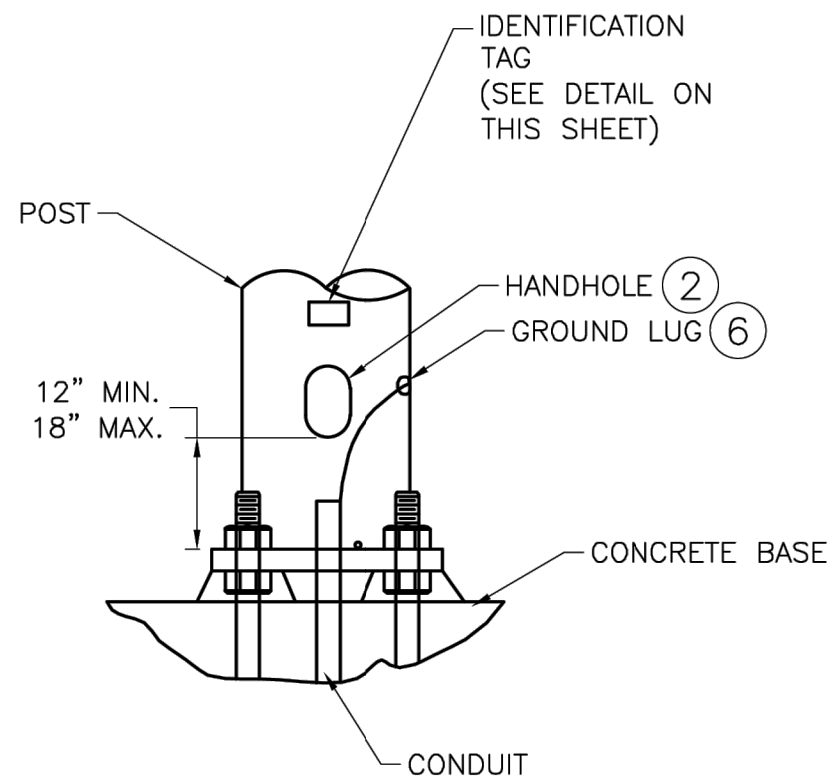
NOTE:

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.

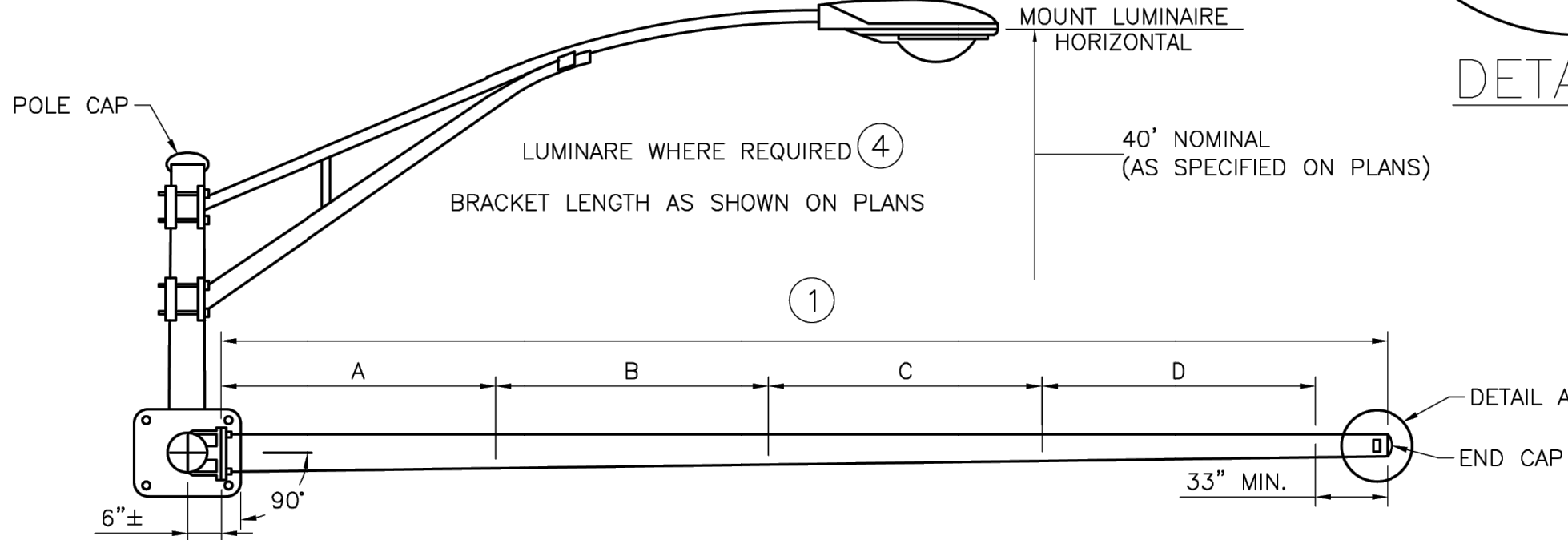
IDENTIFICATION TAG



POLE BASE WITH TYPE A AND B POST



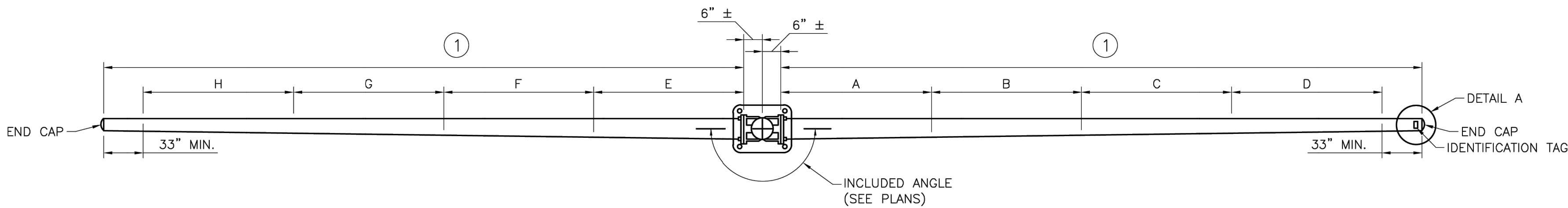
POLE BASE



NOTE:

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

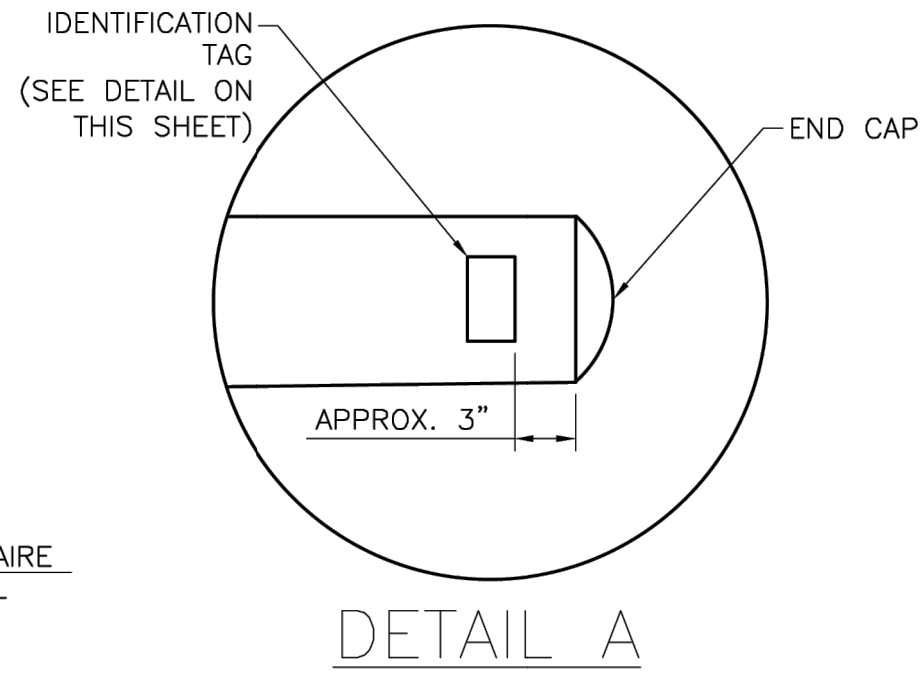
TYPE C AND TYPE CL (WITH LUMINAIRE)



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)



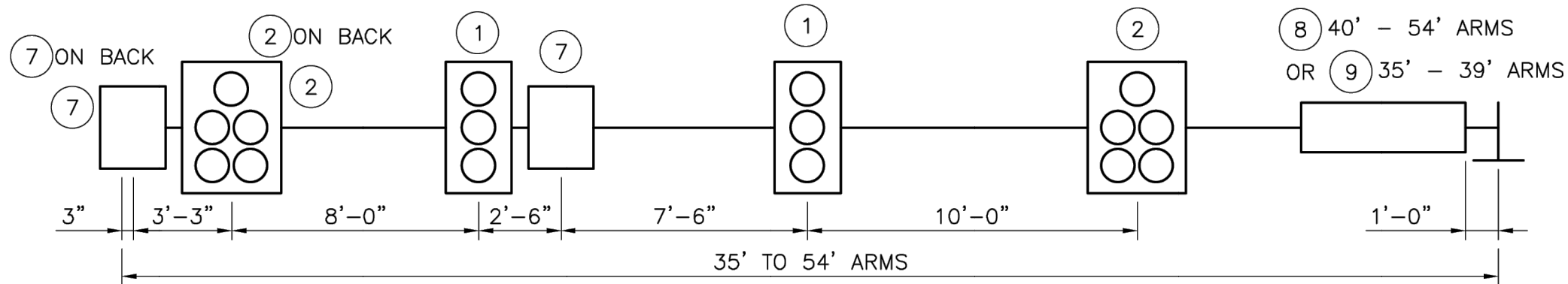
DETAIL A

- 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.

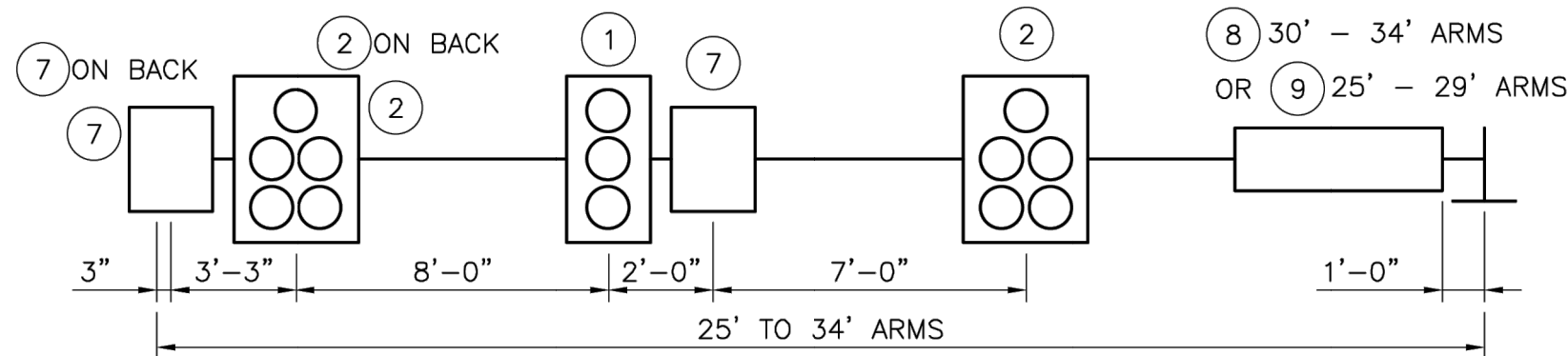
GENERAL NOTES:

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

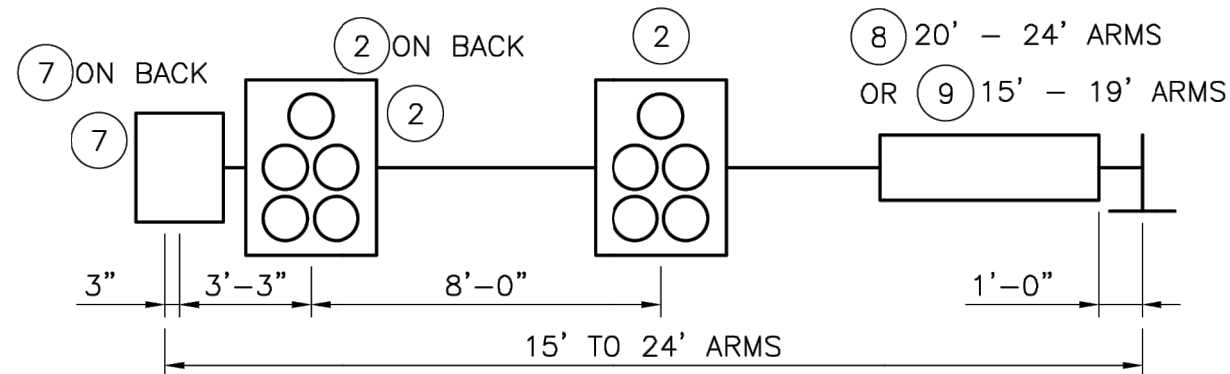
TO DETERMINE LEFT OR RIGHT ON TYPE B OR C SIGNAL POST, VIEWING POSITION SHALL BE FROM THE CENTER OF THE INTERSECTION BEING CONTROLLED AND FACING THE SIGNAL INVOLVED.



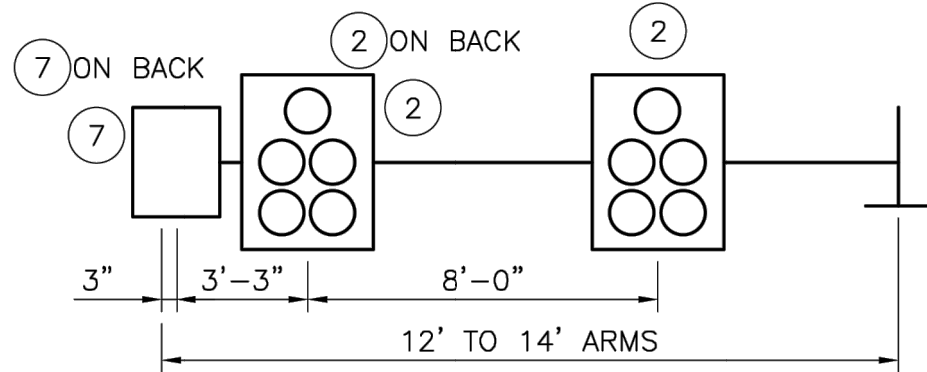
MAST ARM LOADING
(35' TO 54' ARMS)



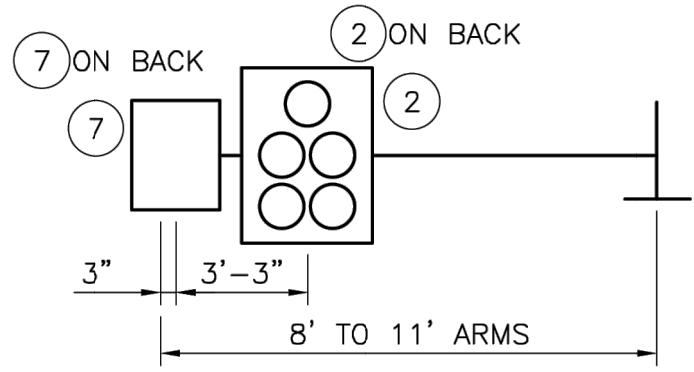
MAST ARM LOADING
(25' TO 34' ARMS)



MAST ARM LOADING
(15' TO 24' ARMS)



MAST ARM LOADING
(12' TO 14' ARMS)



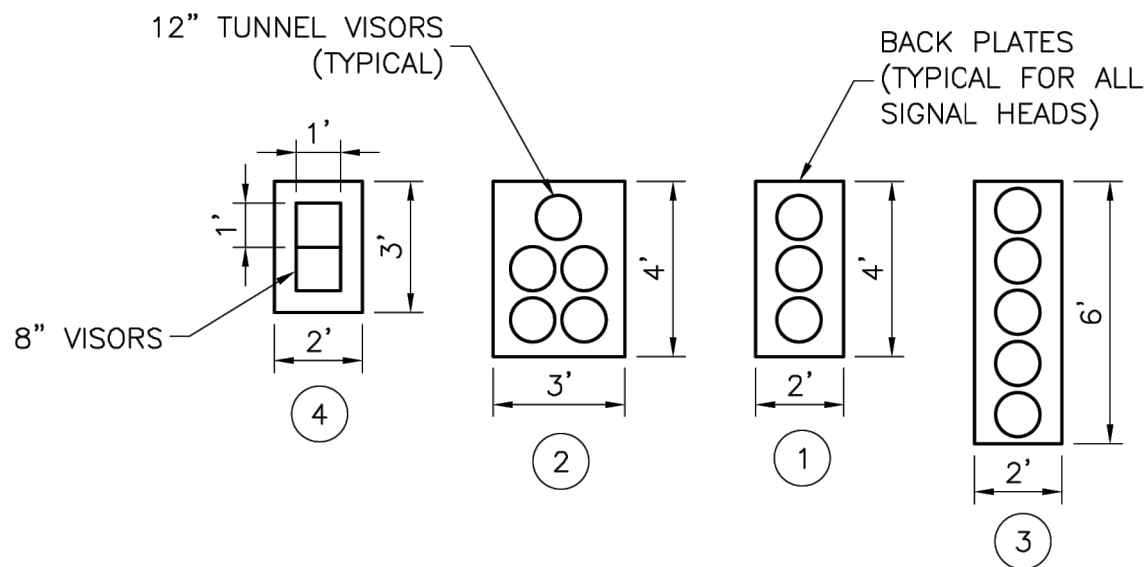
MAST ARM LOADING
(8' TO 11' ARMS)

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

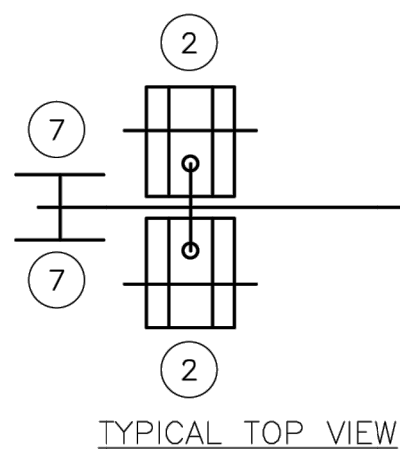
MINIMUM DESIGN LOADING FOR POST AND MAST ARM ATTACHMENTS

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

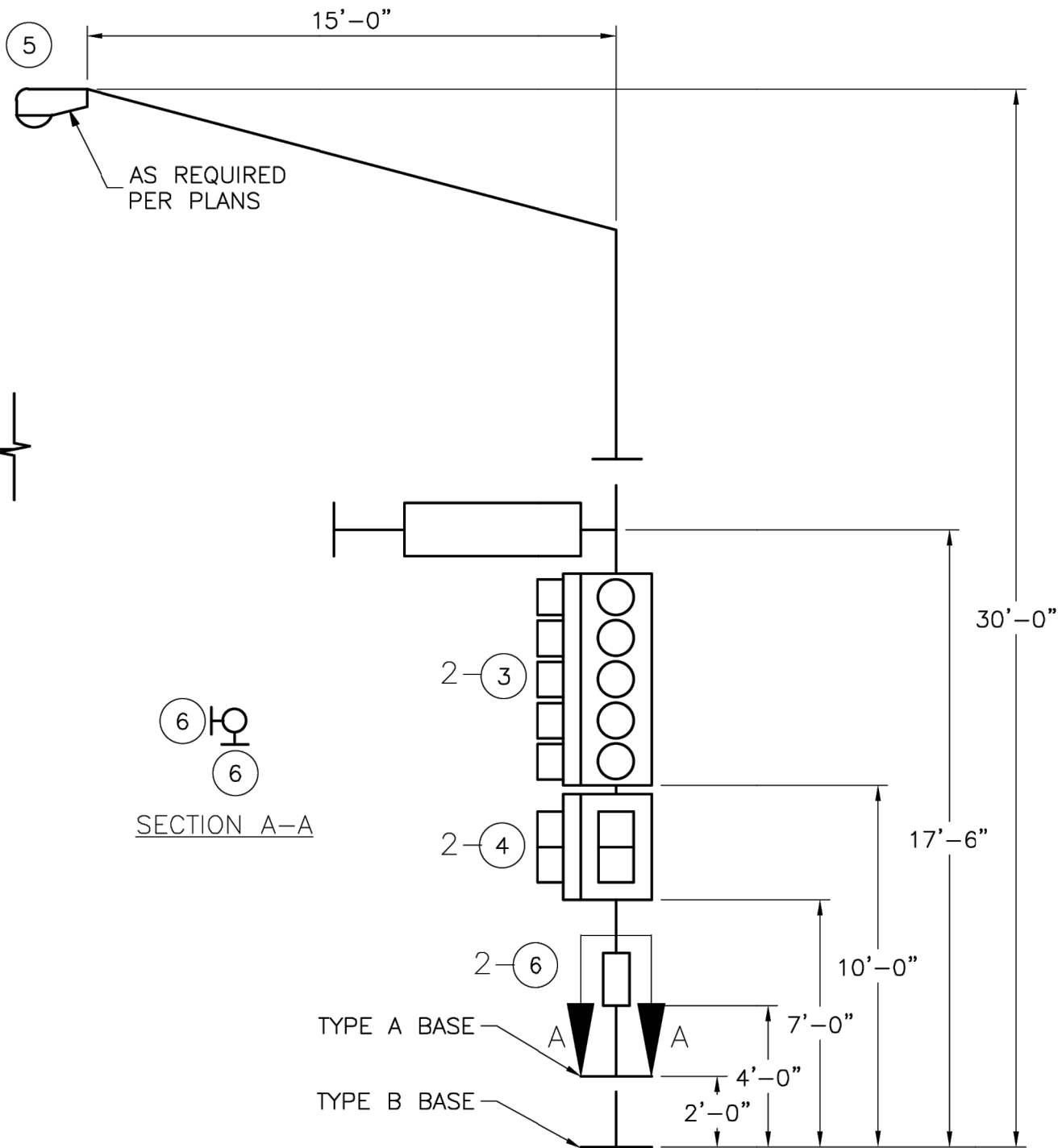
OL - OPTICALLY LIMITED
* MOUNTING HARDWARE INCLUDED



TRAFFIC SIGNAL HEAD TYPES



SECTION A-A



TYPICAL POST LOADING

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:

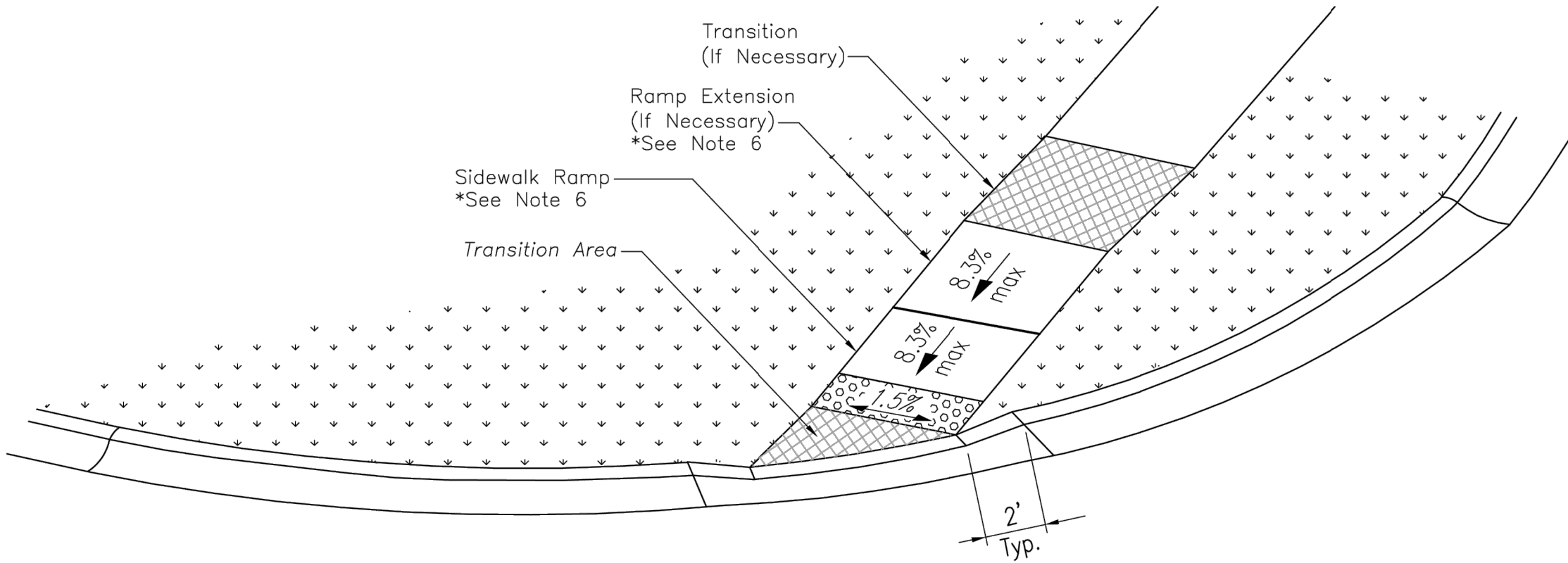
- ULTIMATE DESIGN WIND SPEED
- SERVICE DESIGN WIND SPEED
- FATIGUE CATEGORY I
- MEAN RECURRENCE INTERVAL 700 YEARS
- 50 YEAR DESIGN LIFE.
- SHALL NOT BE SPECIFICALLY DESIGNED FOR TRUCK INDUCED WIND GUSTS.
- SHALL BE SPECIFICALLY DESIGNED TO RESIST PERIODIC GALLOPING FORCES.

***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.

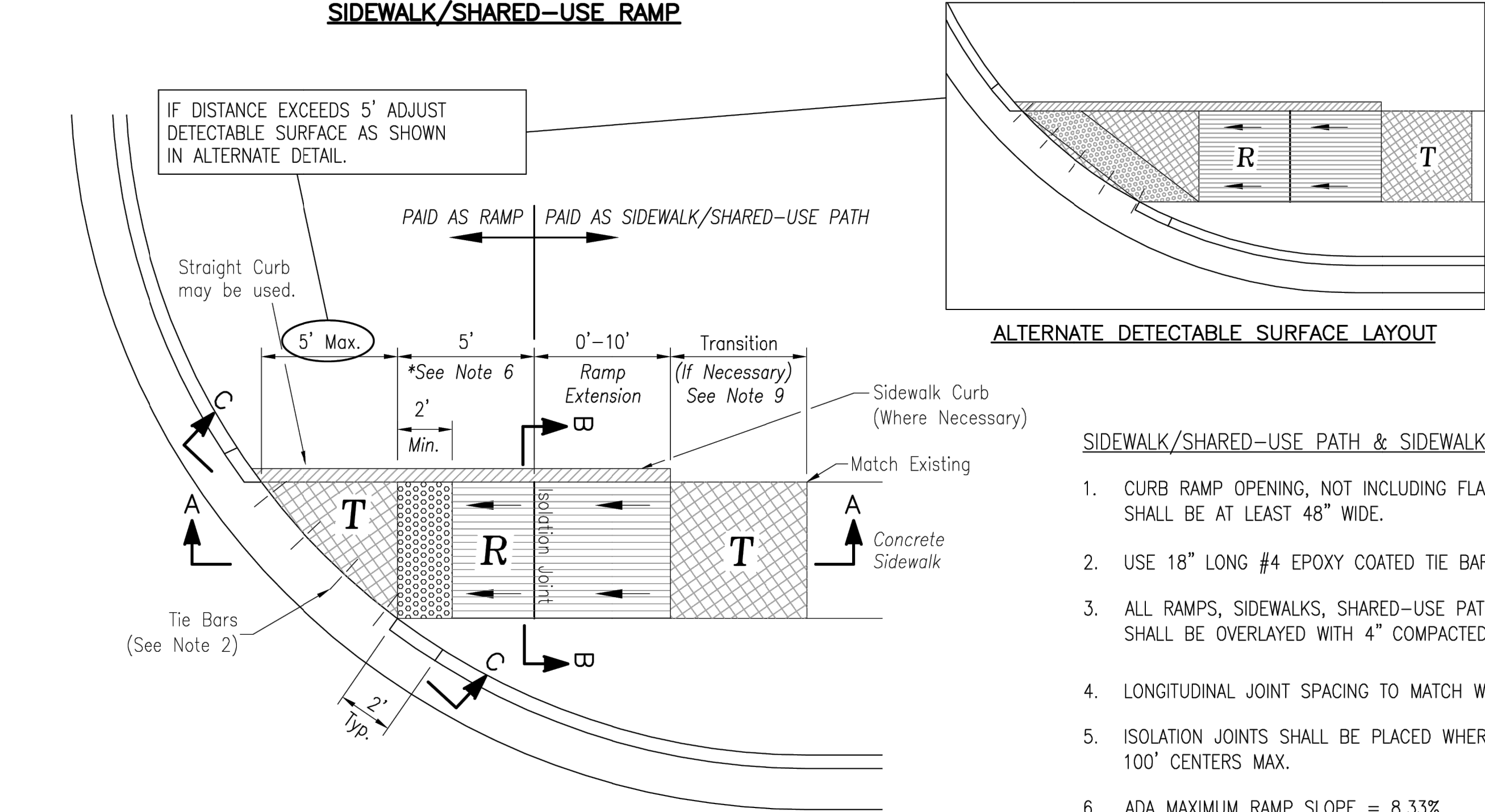
FOR TYPE B AND BL POSTS. ICE AND DEAD LOADING SHALL BE BASED ON THE COMBINED EFFECT OF DESIGN LOADING ON EACH ARM. WIND LOADING IS APPLIED AS DESCRIBED IN SECTION 1.2.5(B) OF THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS, 2015 OR LATEST VERSION.

GENERAL NOTES:

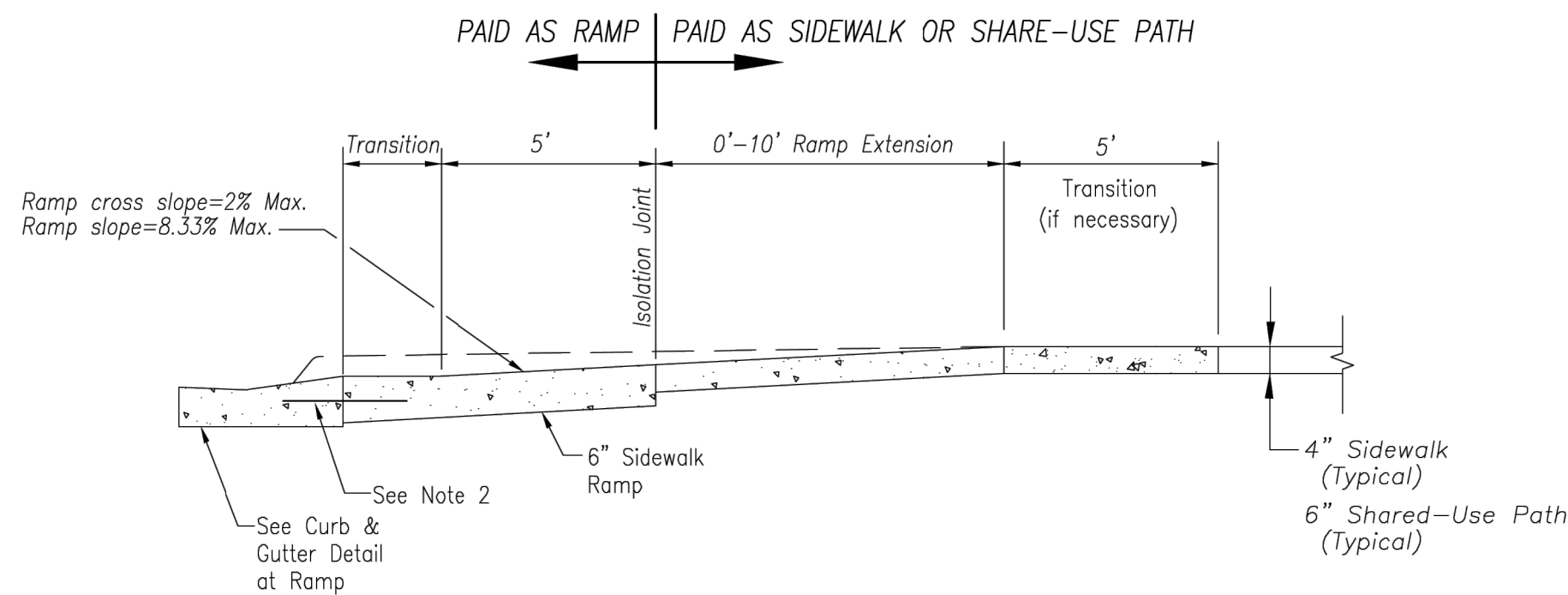
ATTACHMENT LOCATIONS ARE FOR STRUCTURAL DESIGN PURPOSES ONLY. ACTUAL LOCATIONS ARE SHOWN ON THE PLANS.



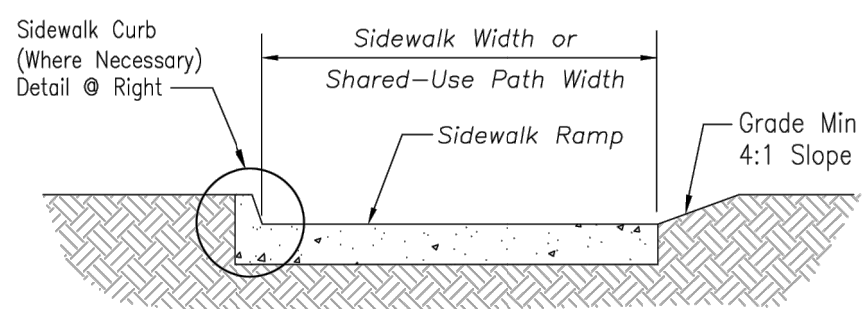
3-D VIEW TYPE A
SIDEWALK/SHARED-USE RAMP



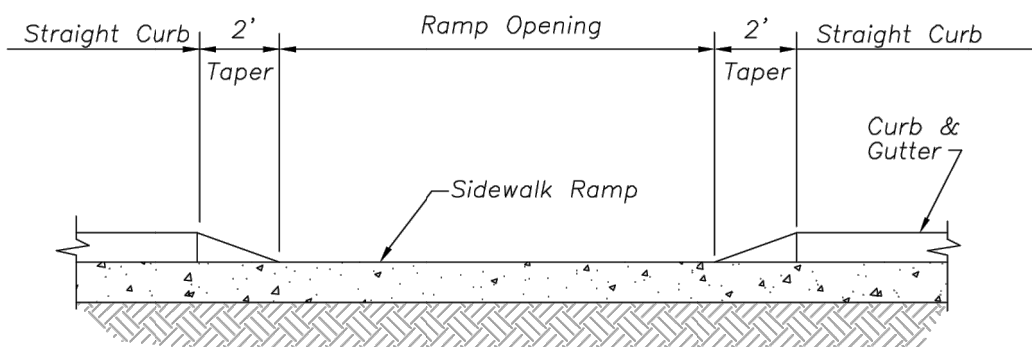
TYPE A SIDEWALK/SHARED-USE RAMP
Not to Scale



SECTION A-A

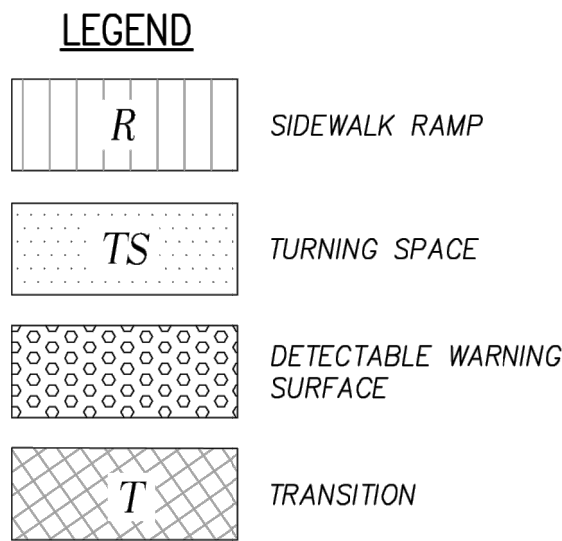


SECTION B-B



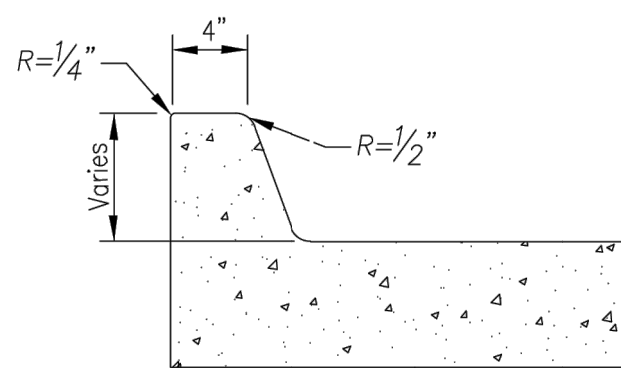
SECTION C-C

TYPE A & B SIDEWALK RAMP
Not to Scale

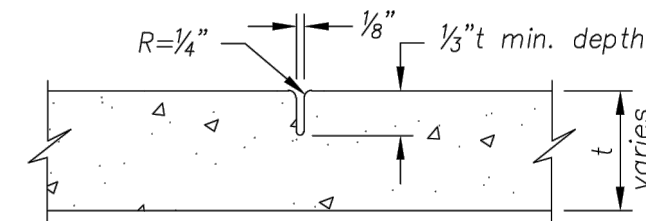


SIDEWALK/SHARED-USE PATH & SIDEWALK/SHARED-USE RAMP NOTES:

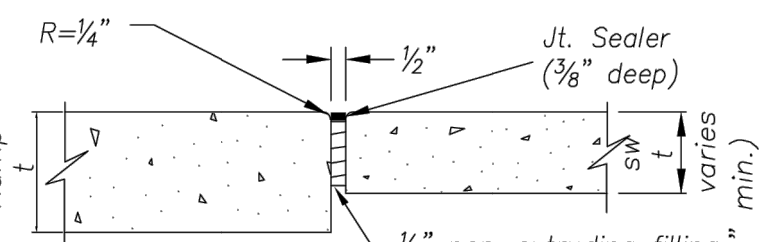
- CURB RAMP OPENING, NOT INCLUDING FLARES, SHALL MATCH EXISTING SIDEWALK WIDTH AND OPENING SHALL BE AT LEAST 48" WIDE.
- USE 18" LONG #4 EPOXY COATED TIE BARS @ 24" O.C. EMBED TIE BARS 9" IN EACH DIRECTION.
- ALL RAMPS, SIDEWALKS, SHARED-USE PATHS SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
- LONGITUDINAL JOINT SPACING TO MATCH WIDTH OF SIDEWALK.
- ISOLATION JOINTS SHALL BE PLACED WHERE WALK ABUTS DRIVEWAYS AND SIMILAR STRUCTURES, AND 100' CENTERS MAX.
- 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%, $\pm 0.5\%$.
- TURNING SPACES SHALL BE 1.5%, $\pm 0.5\%$, 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.
- FOR RETROFIT WORK, SLOPES TO BE DETERMINED IN FIELD BY CONTRACTOR AND APPROVED BY CITY INSPECTOR
- 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.
- ALL SIDEWALK AND RAMP CONSTRUCTION SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).



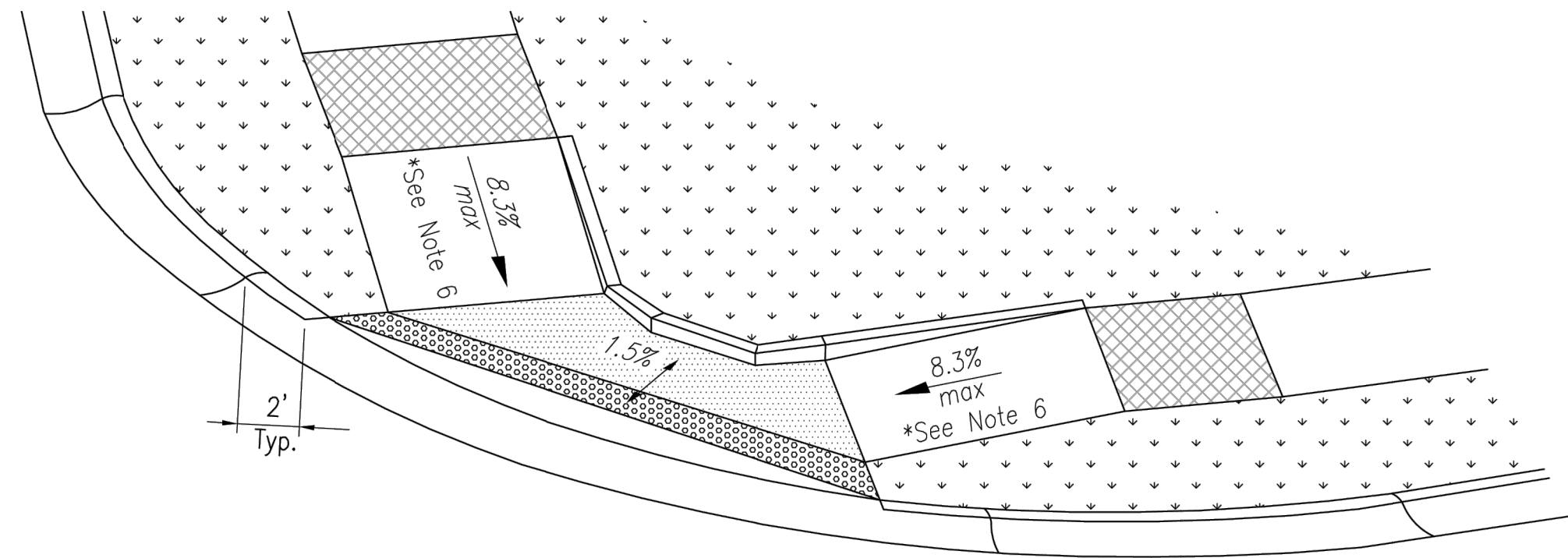
SIDEWALK CURB DETAIL
Not to Scale



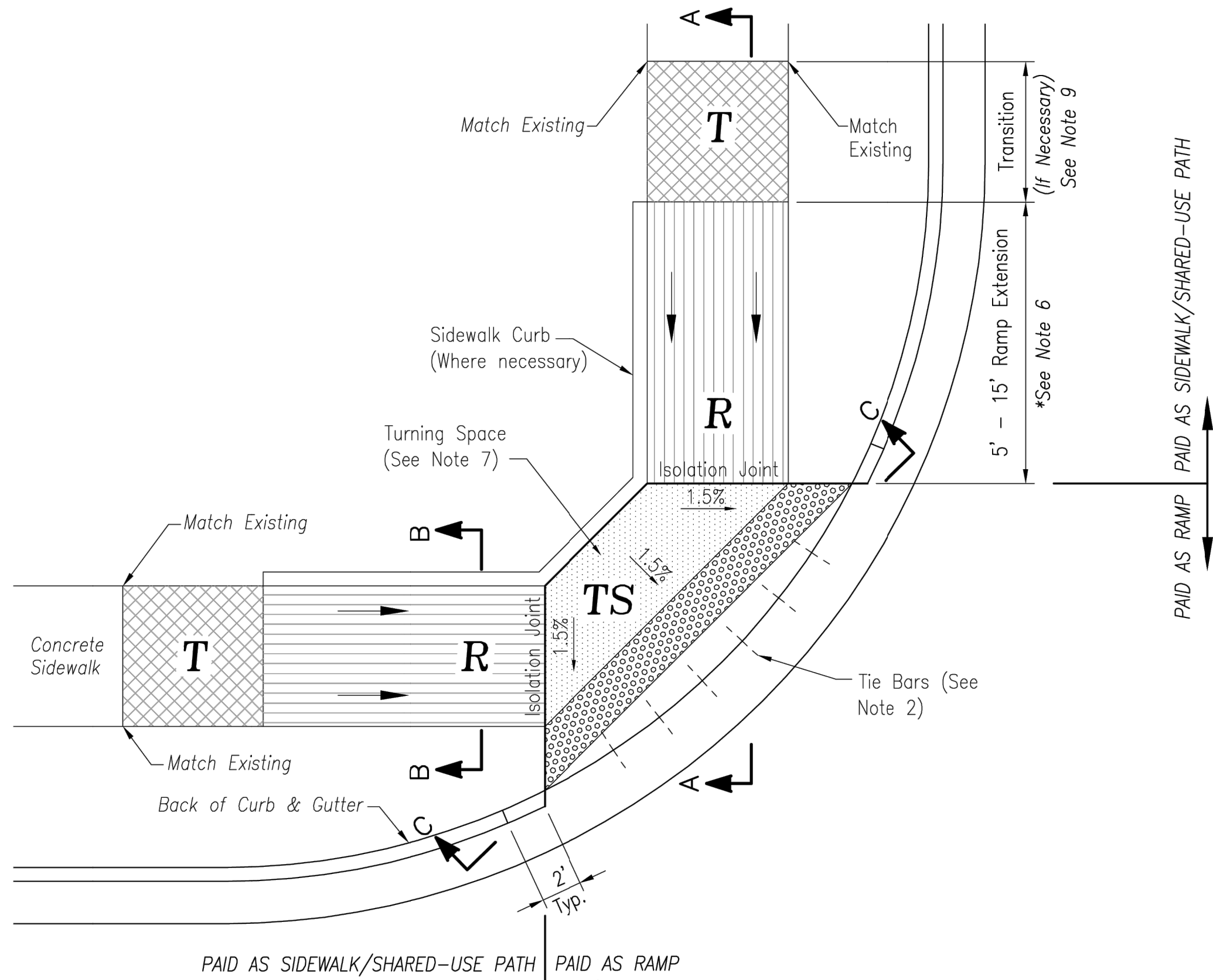
CONTRACTION JOINT



ISOLATION JOINT

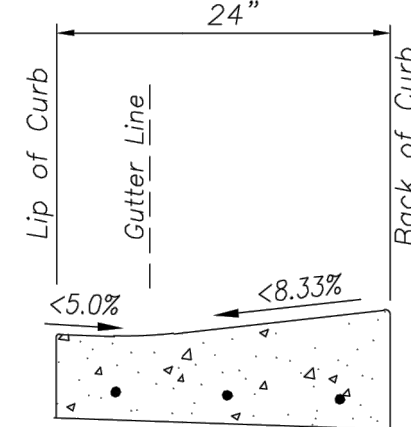


3-D VIEW TYPE B
SIDEWALK/SHARED-USE RAMP



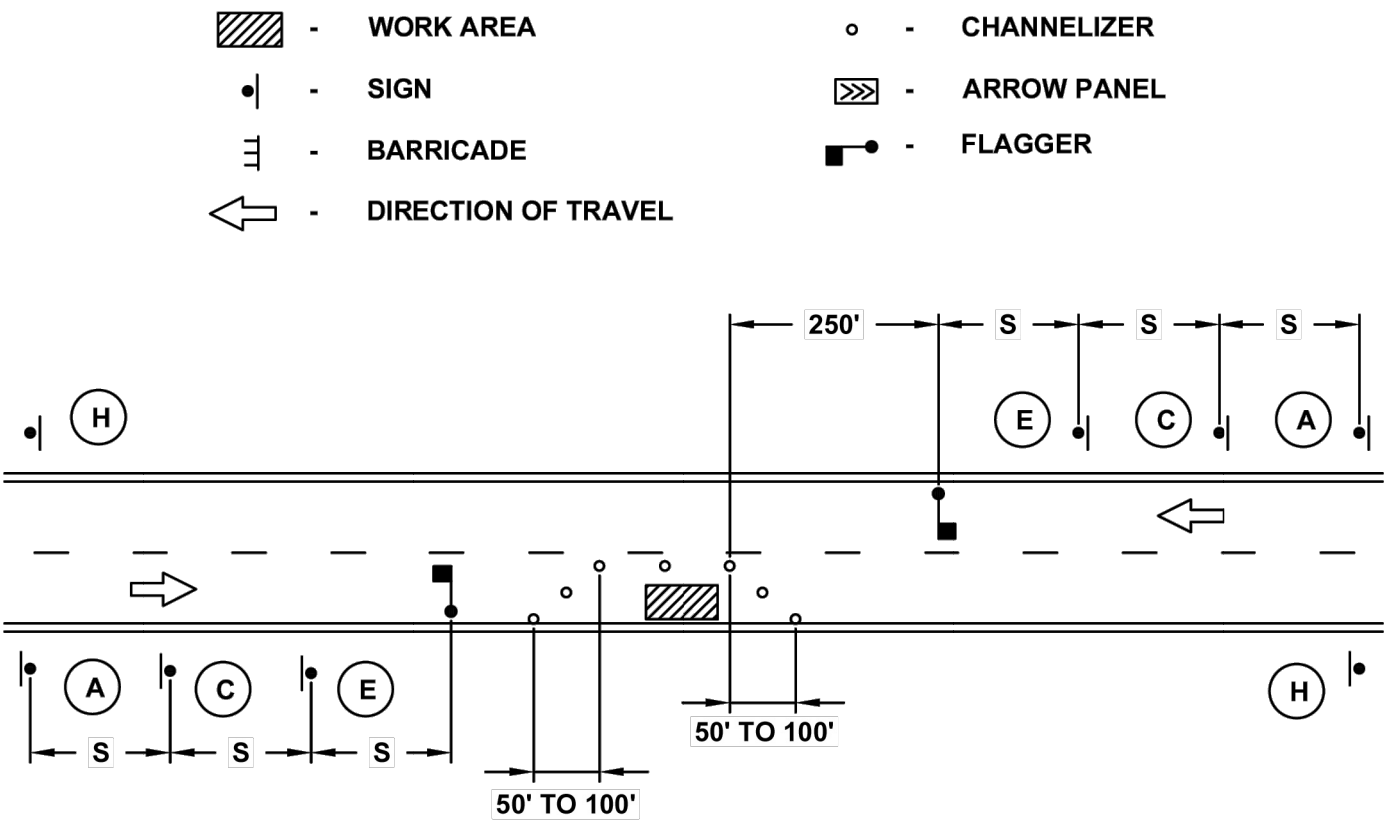
TYPE B SIDEWALK/SHARED-USE RAMP
Not to Scale

JOINT DETAILS
Not to Scale

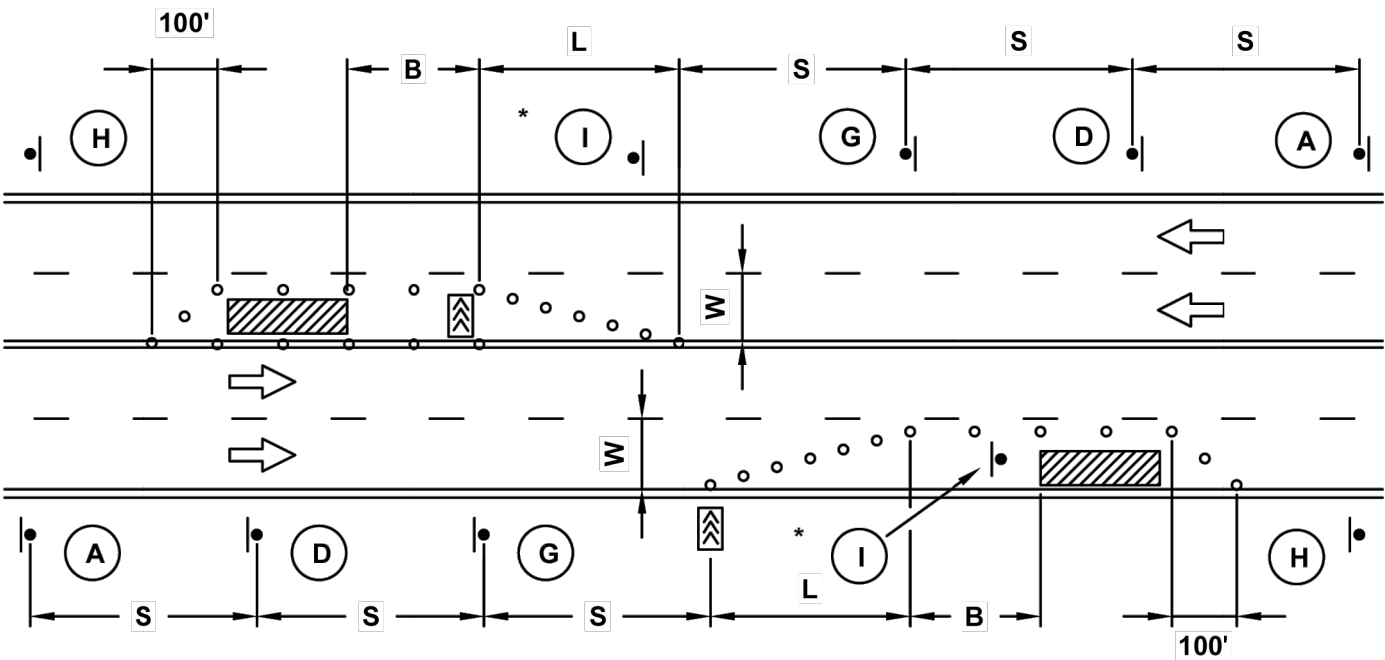


CURB & GUTTER DETAIL AT RAMP
Not to Scale

SYMBOL LEGEND

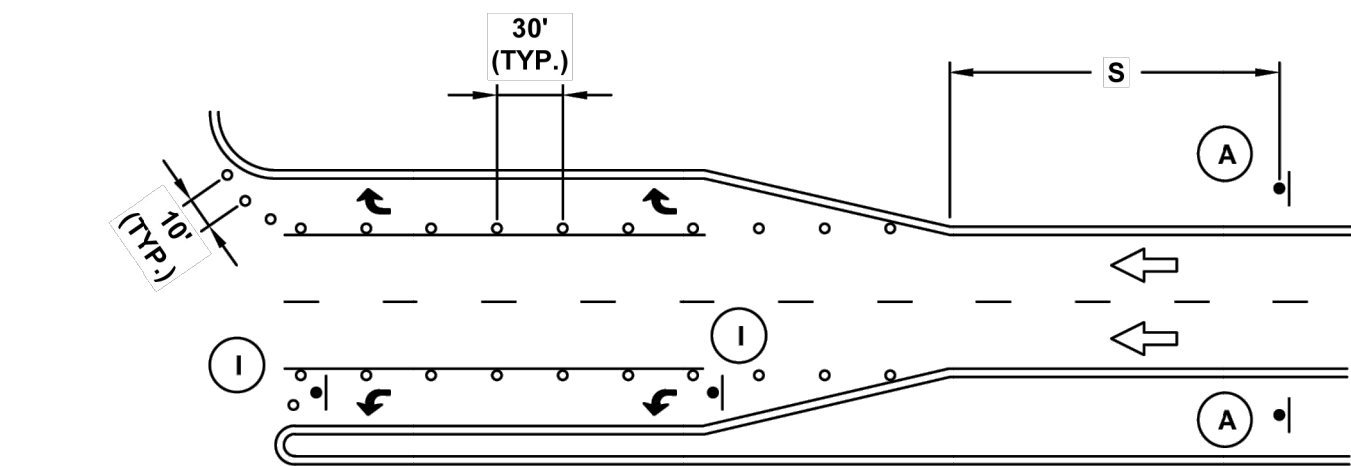


LANE CLOSURE - TWO LANE STREET

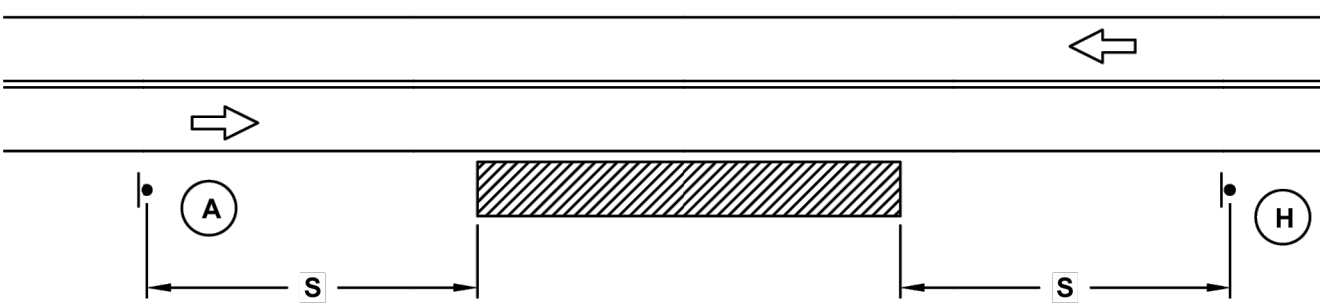


LANE CLOSURE - FOUR LANE STREET

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



TURN LANE CLOSURE



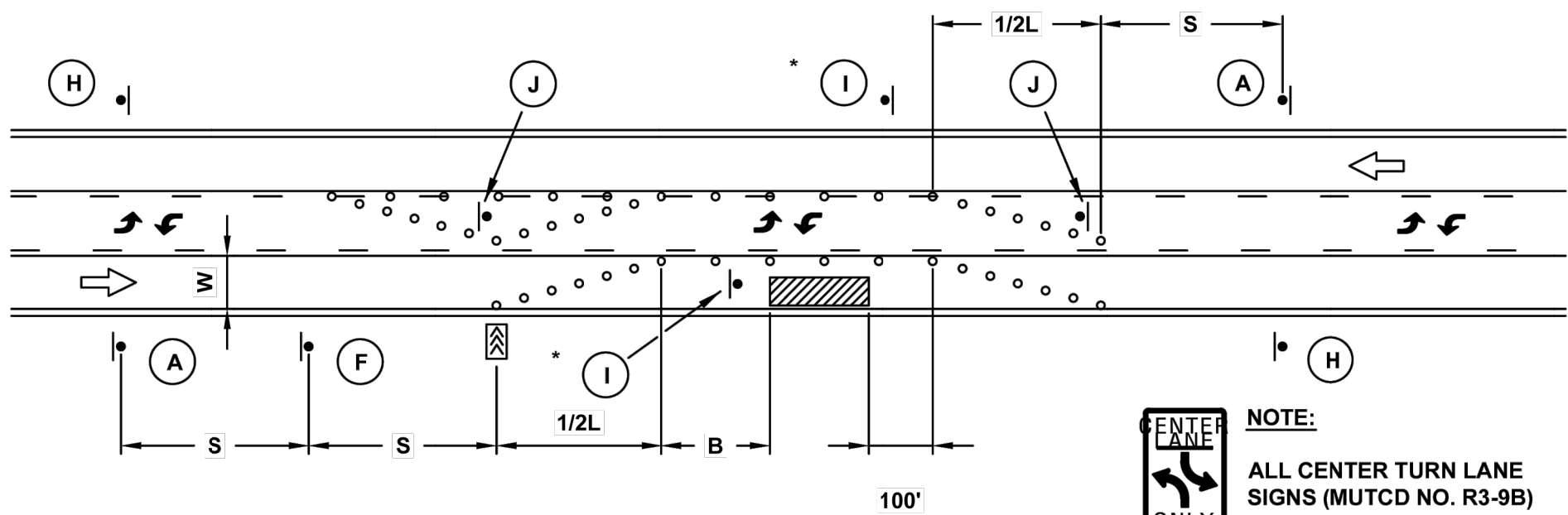
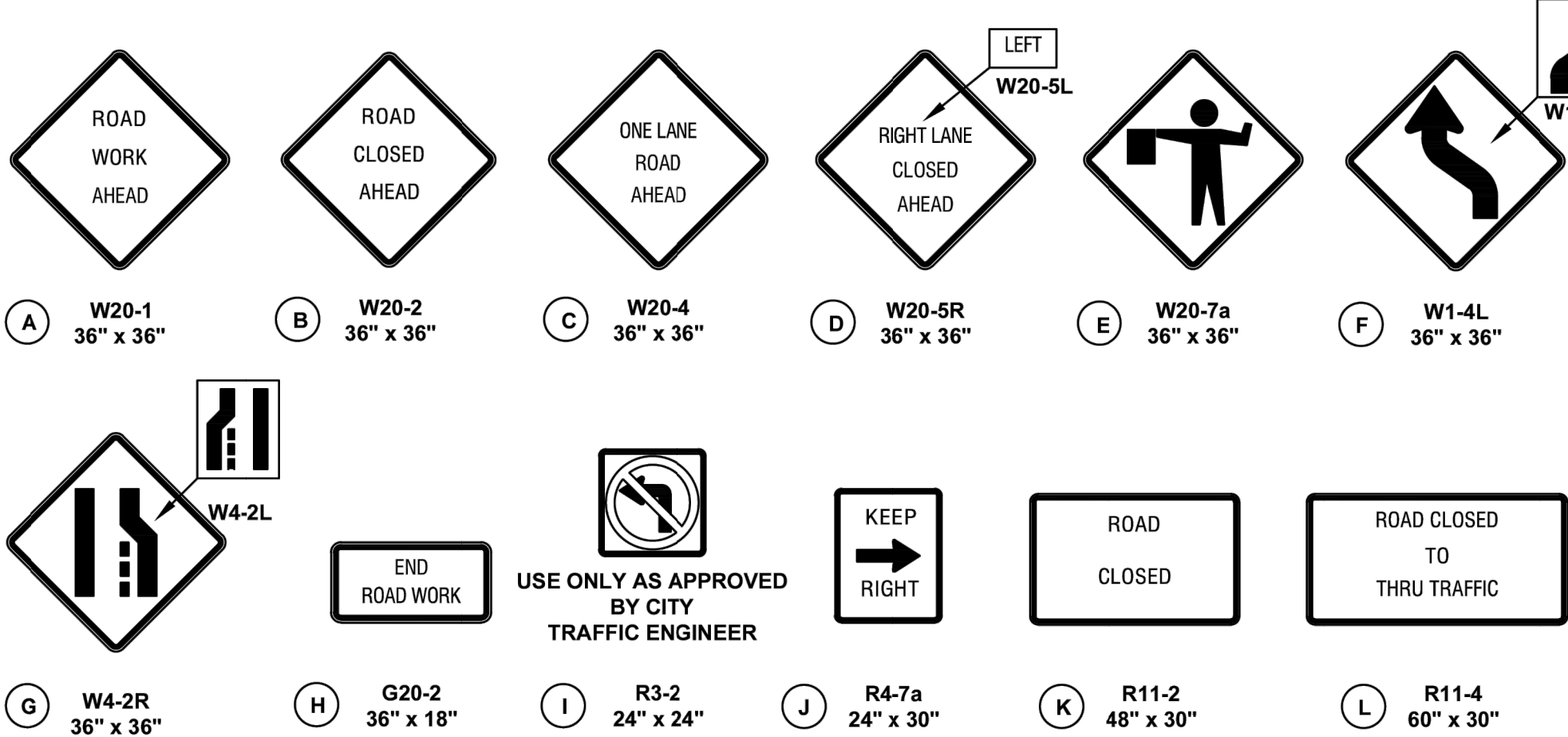
TYPICAL SIGNING FOR WORK ADJACENT TO THE STREET

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		

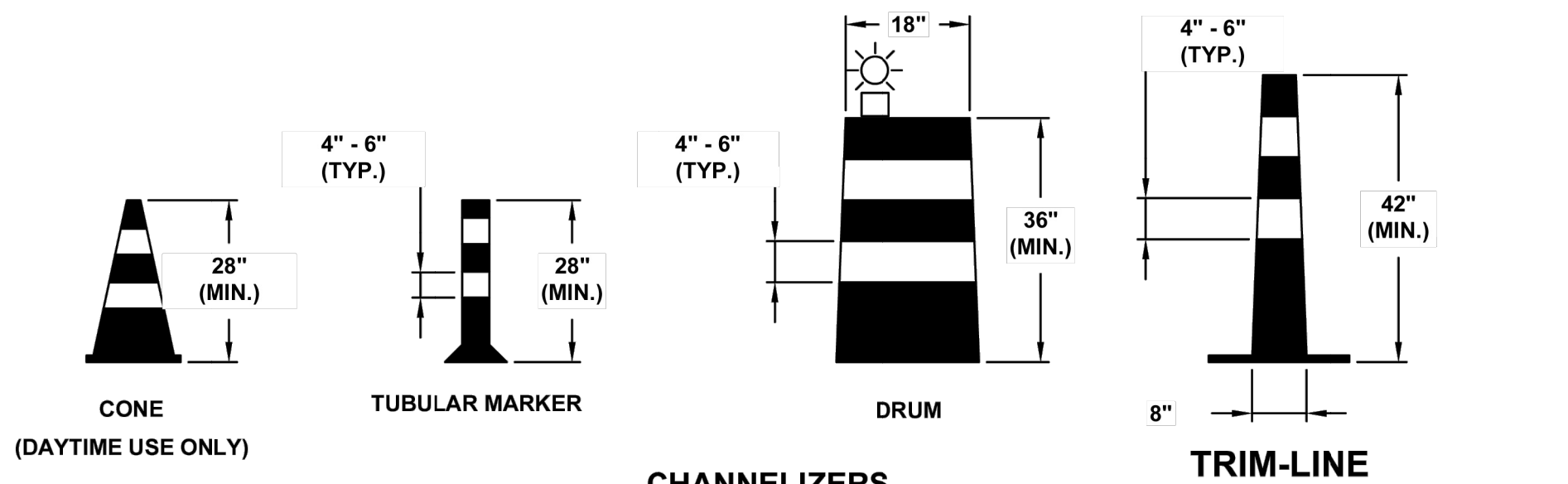
MINIMUM NUMBER OF CHANNELIZERS	
6	7
8	9
13	

SIGN LEGEND



LANE CLOSURE - THREE LANE STREET

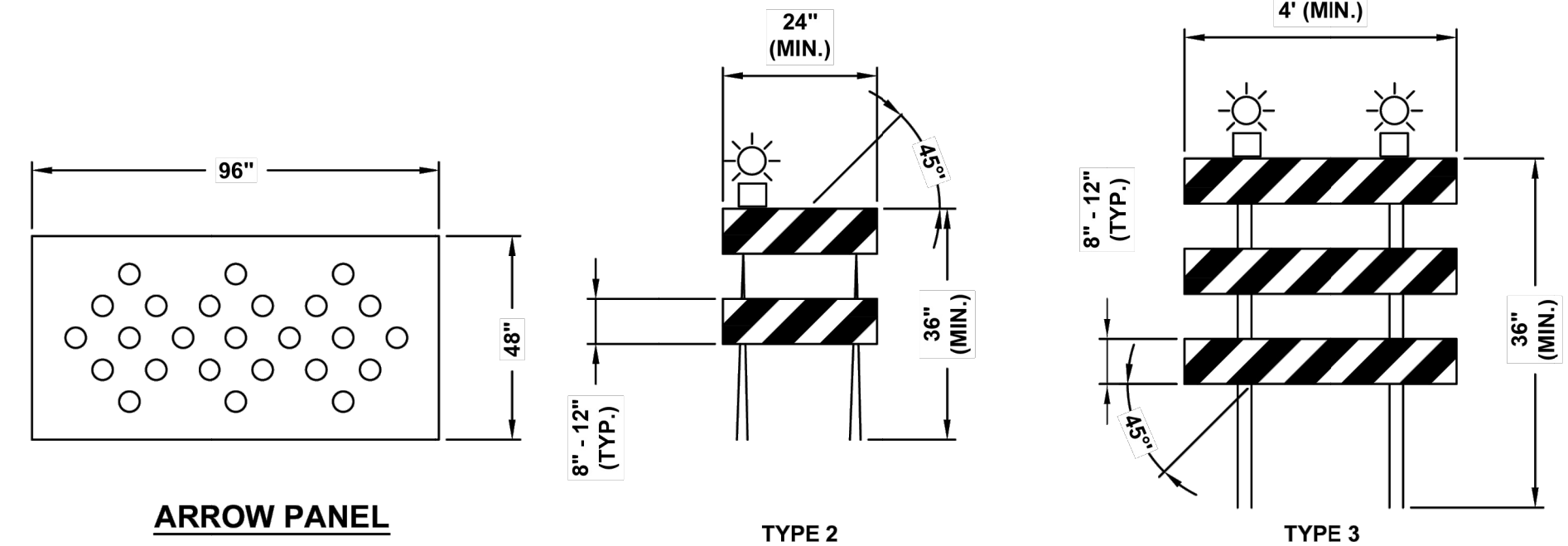
* INSTALL SIGNS EVERY 200 FEET THROUGHOUT THE CLOSED LANE OR AS NEEDED



CHANNELIZERS

TRIM-LINE

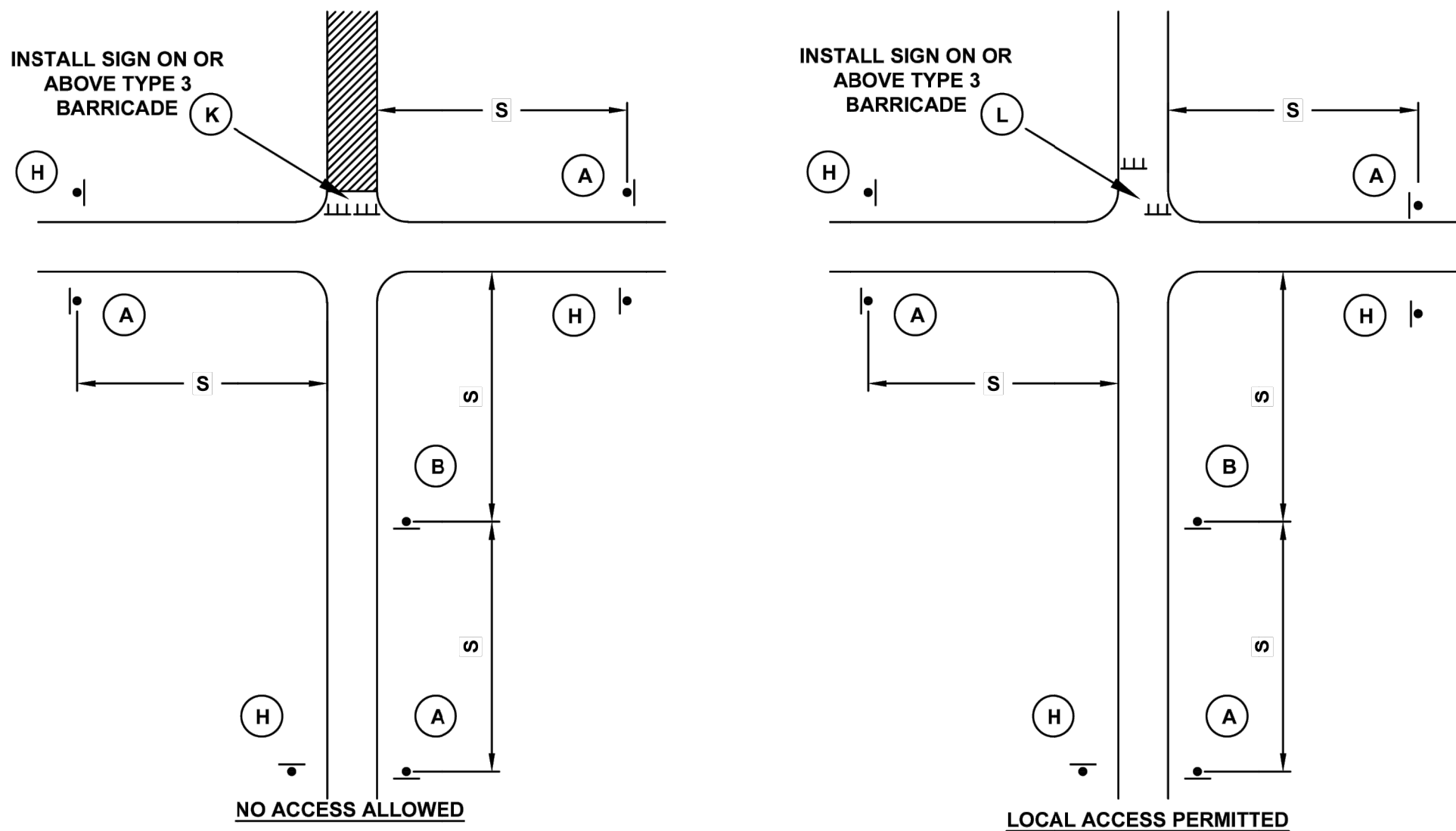
NOTE: WHITE BANDS ON BARRICADES AND CHANNELIZERS SHALL BE MADE FROM HIGH INTENSITY SHEETING MATERIAL.



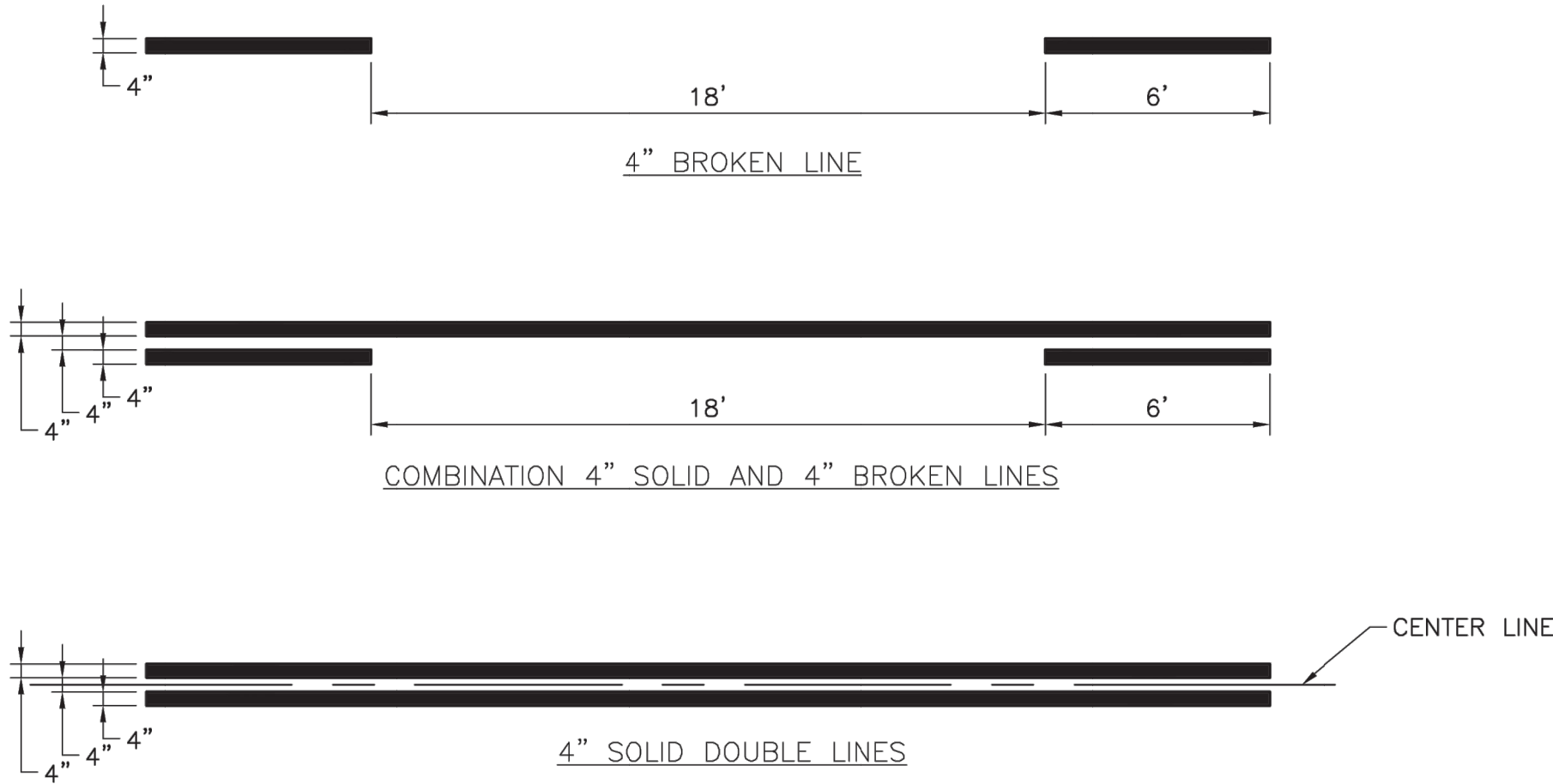
BARRICADES

GENERAL NOTES:

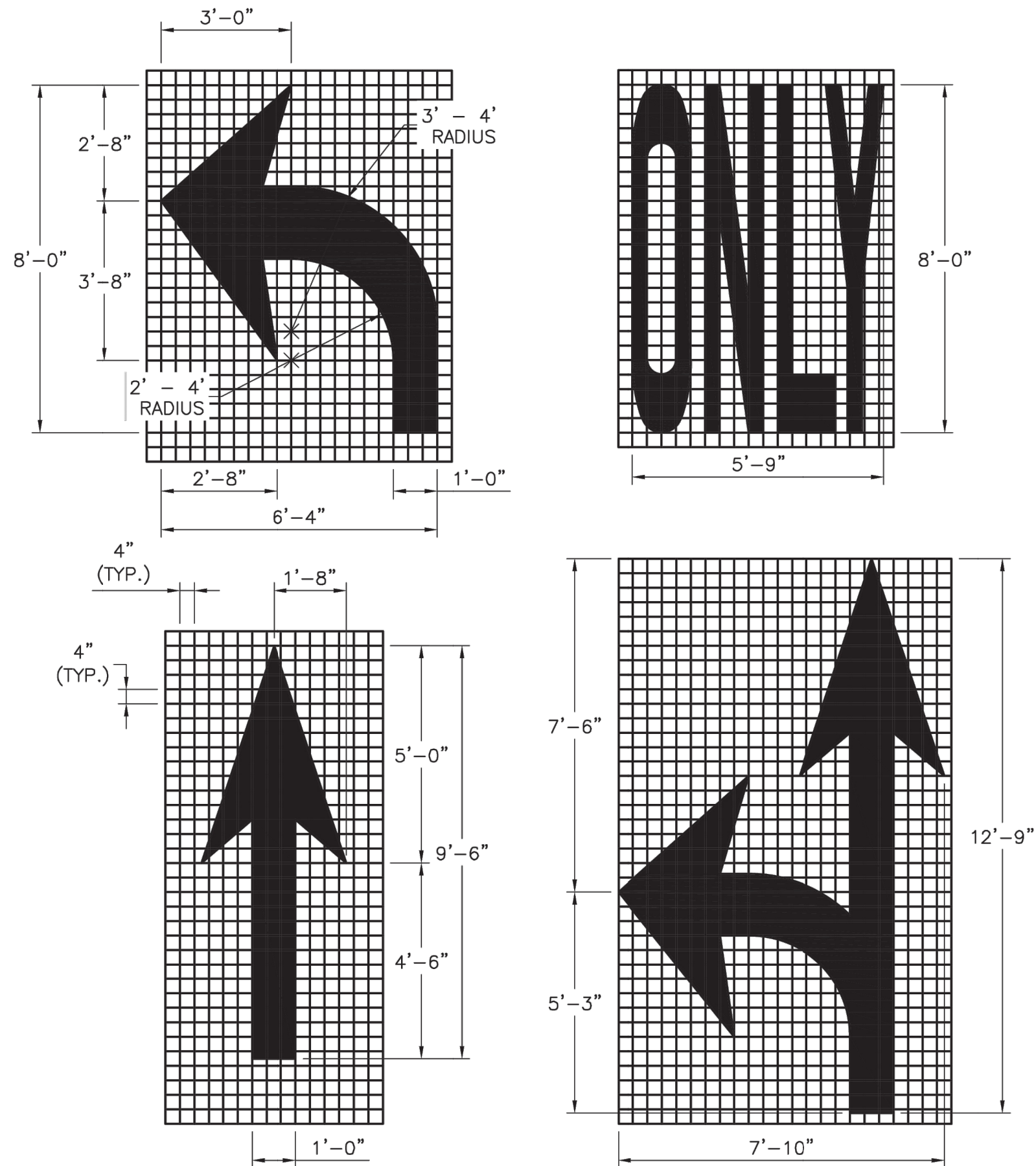
- ALL SIGNS, BARRICADES, CHANNELIZERS, MARKINGS AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- ALL TRAFFIC CONTROL DEVICES SHALL BE STANDARD IN SIZE, SHAPE, COLOR, AND MESSAGE, IN GOOD CONDITION, AND RETRO-REFLECTORIZED. 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.



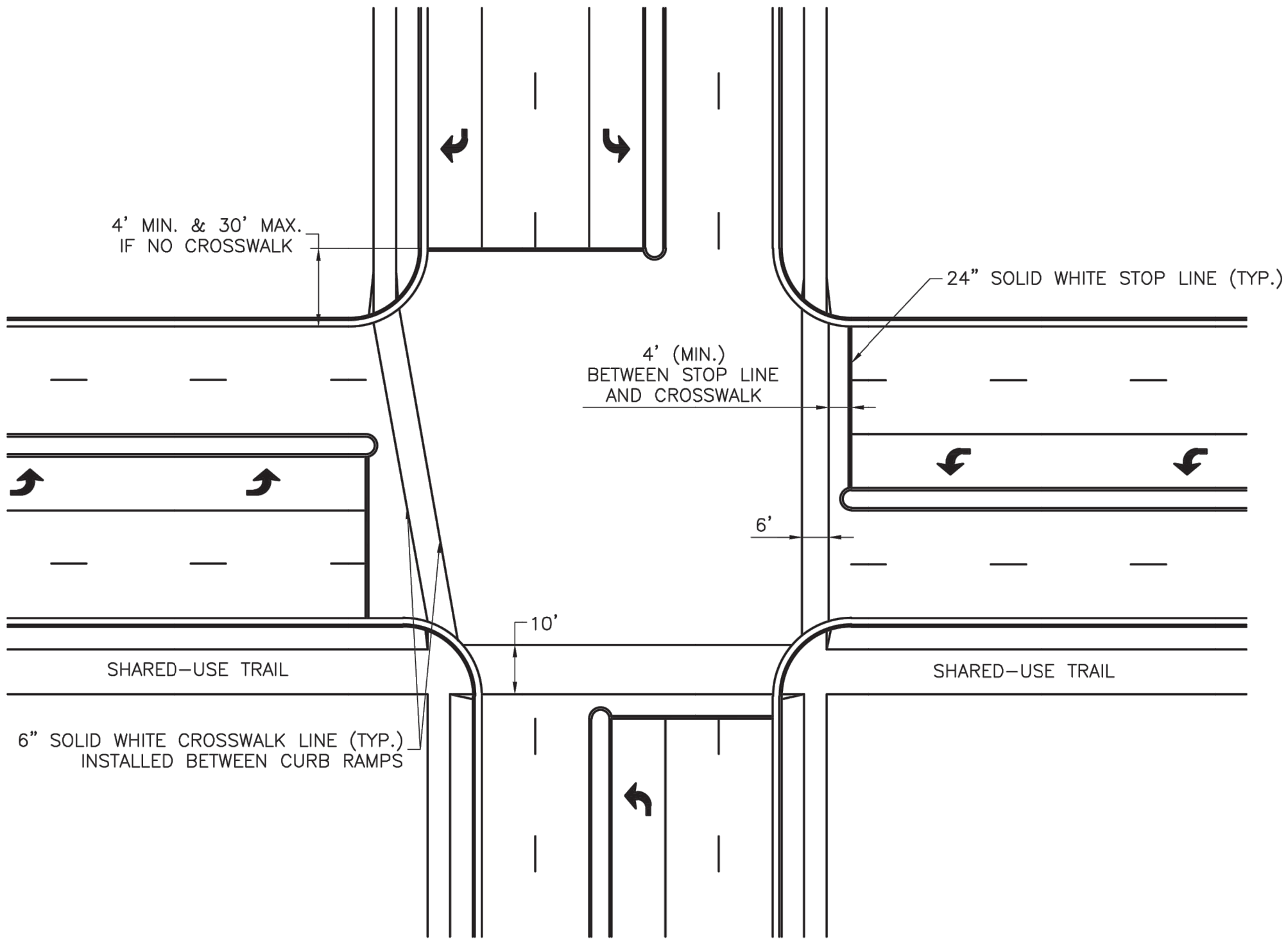
TYPICAL STREET CLOSURE



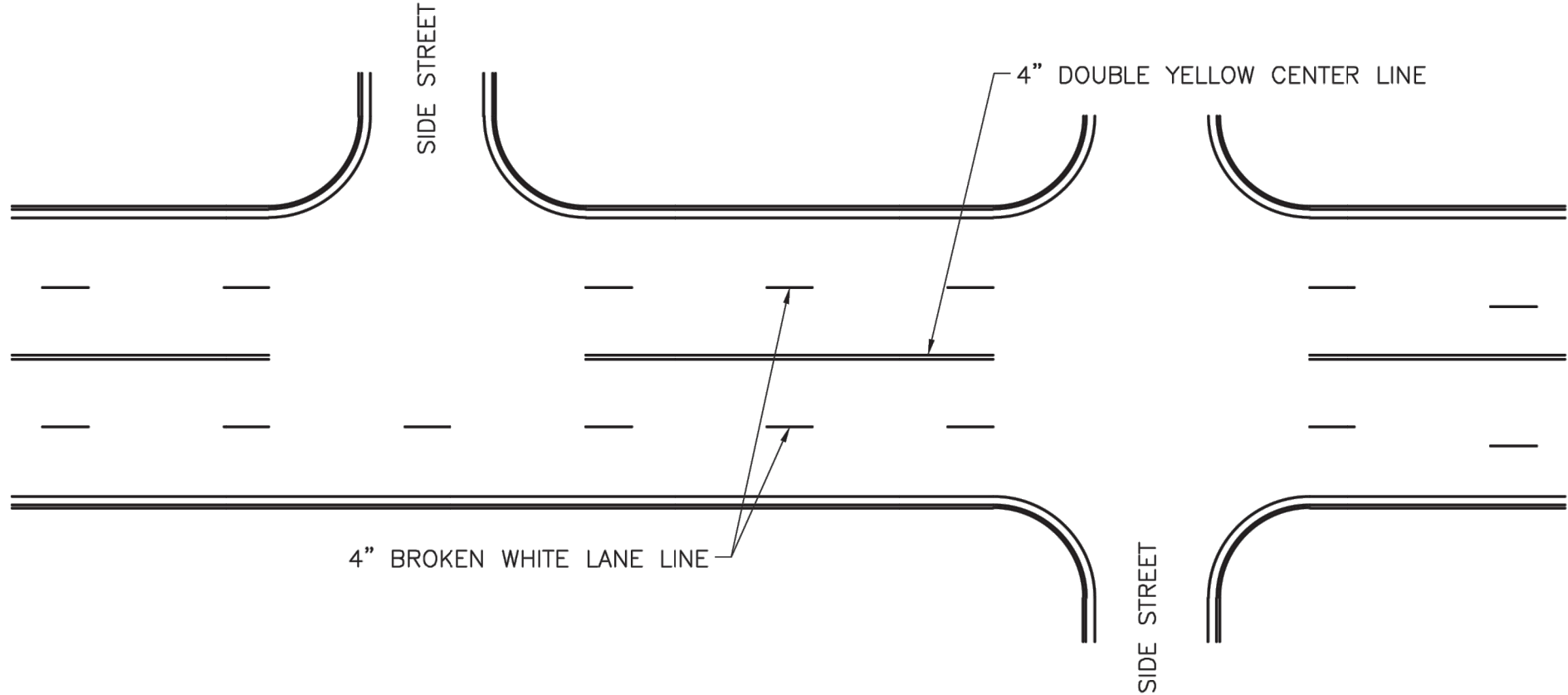
- NOTES:
- ALL EDGE LINE, CENTER LINE, AND LANE LINE PAVEMENT MARKINGS SHALL BE 4" WIDE UNLESS OTHERWISE NOTED.
 - EDGE LINES SHALL BE CONTINUOUS SOLID WHITE OR YELLOW LINES. RIGHT SIDE EDGE LINES SHALL BE SOLID WHITE. MEDIAN OR LEFT SIDE EDGE LINES ON DIVIDED ROADWAYS ARE TO BE SOLID YELLOW. EDGE LINES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



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

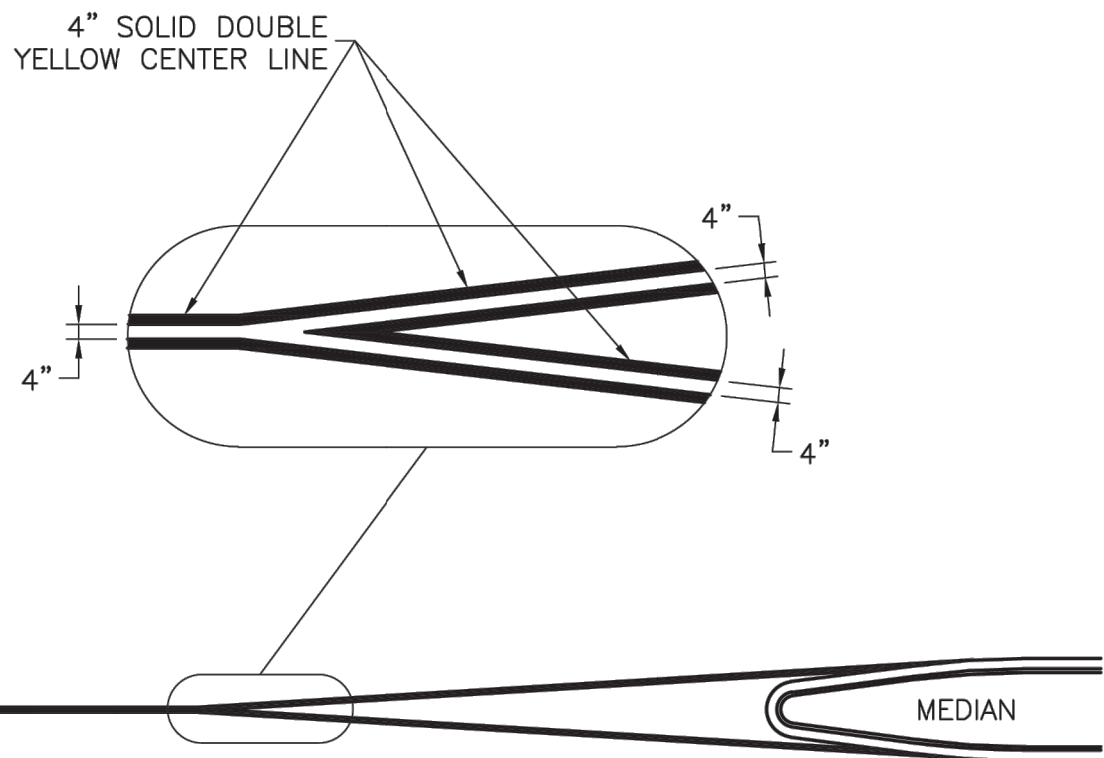
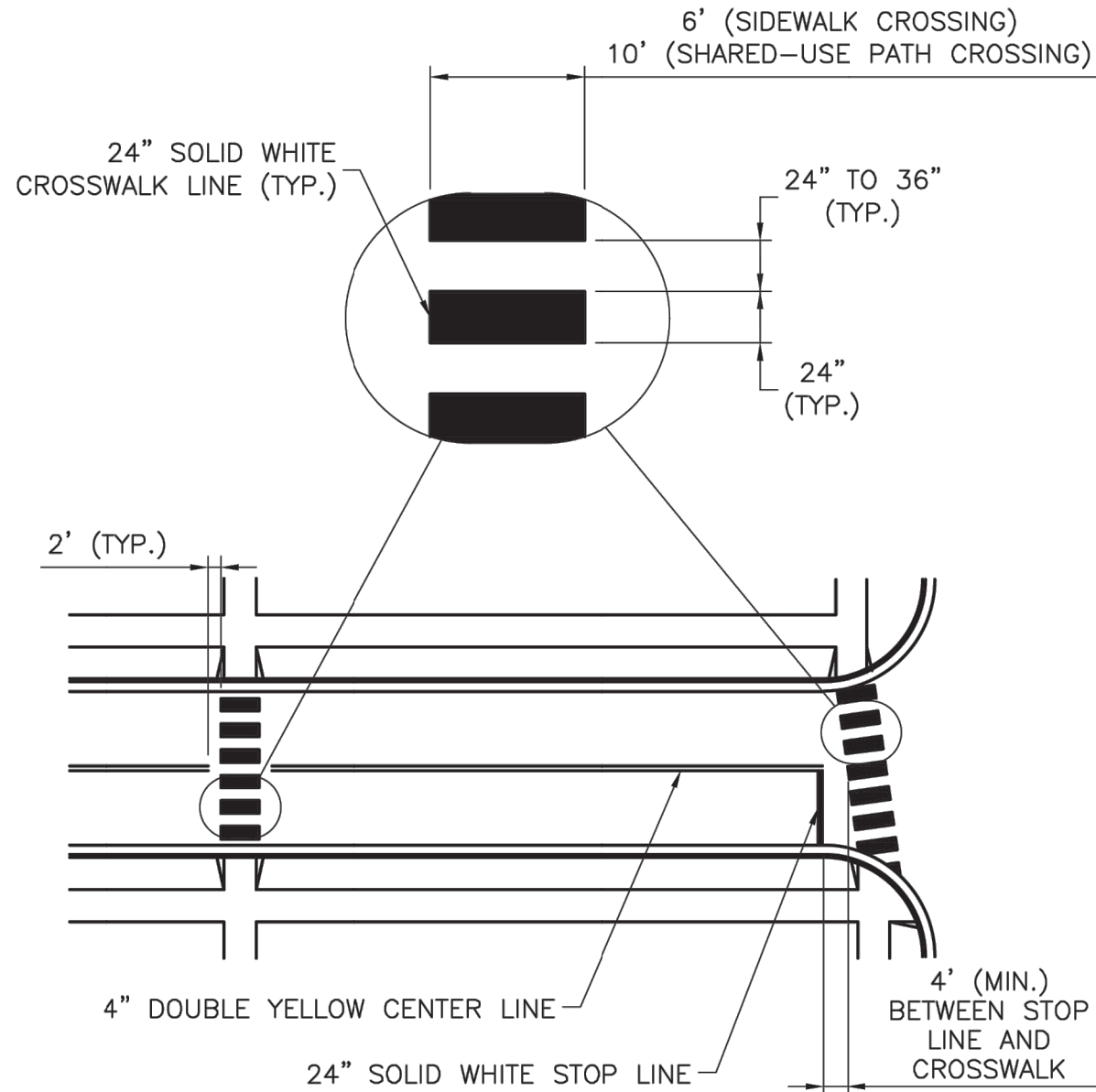


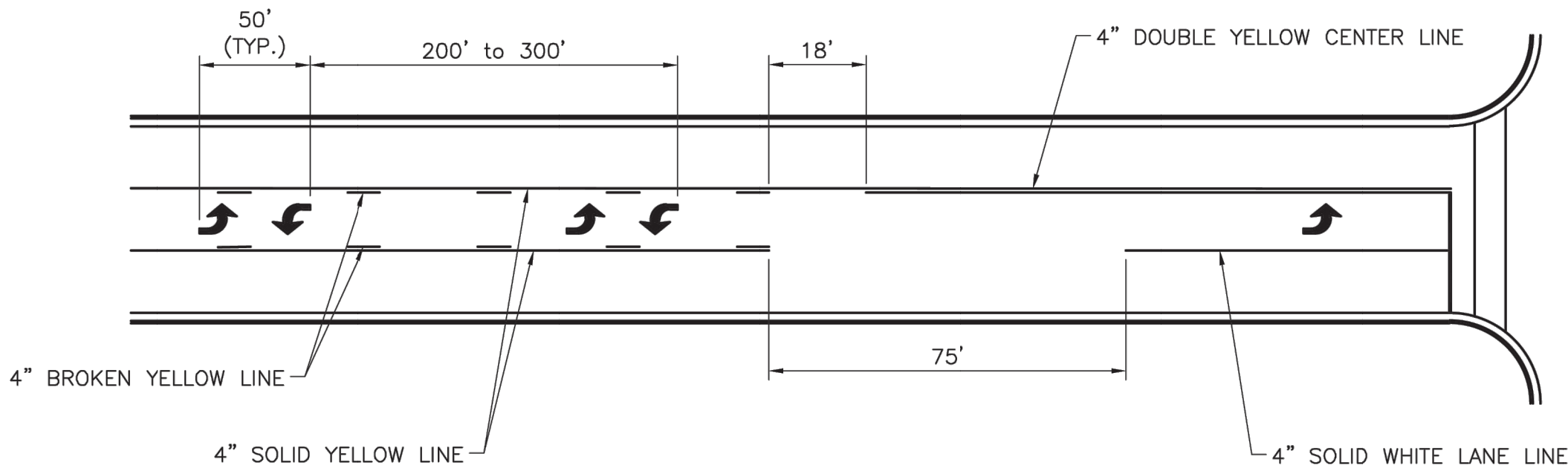
- NOTES:
- TRANSVERSE CROSSWALK LINES SHALL BE INSTALLED SUCH THAT THE DISTANCE BETWEEN LINES IS AT LEAST 6 FEET OR 10 FEET.
 - STOP LINES ARE REQUIRED AT SIGNALIZED INTERSECTIONS, ON MULTI-LANE STOP CONTROLLED APPROACHES, OR ADVANCE OF CROSSWALKS AT CONTROLLED INTERSECTIONS.



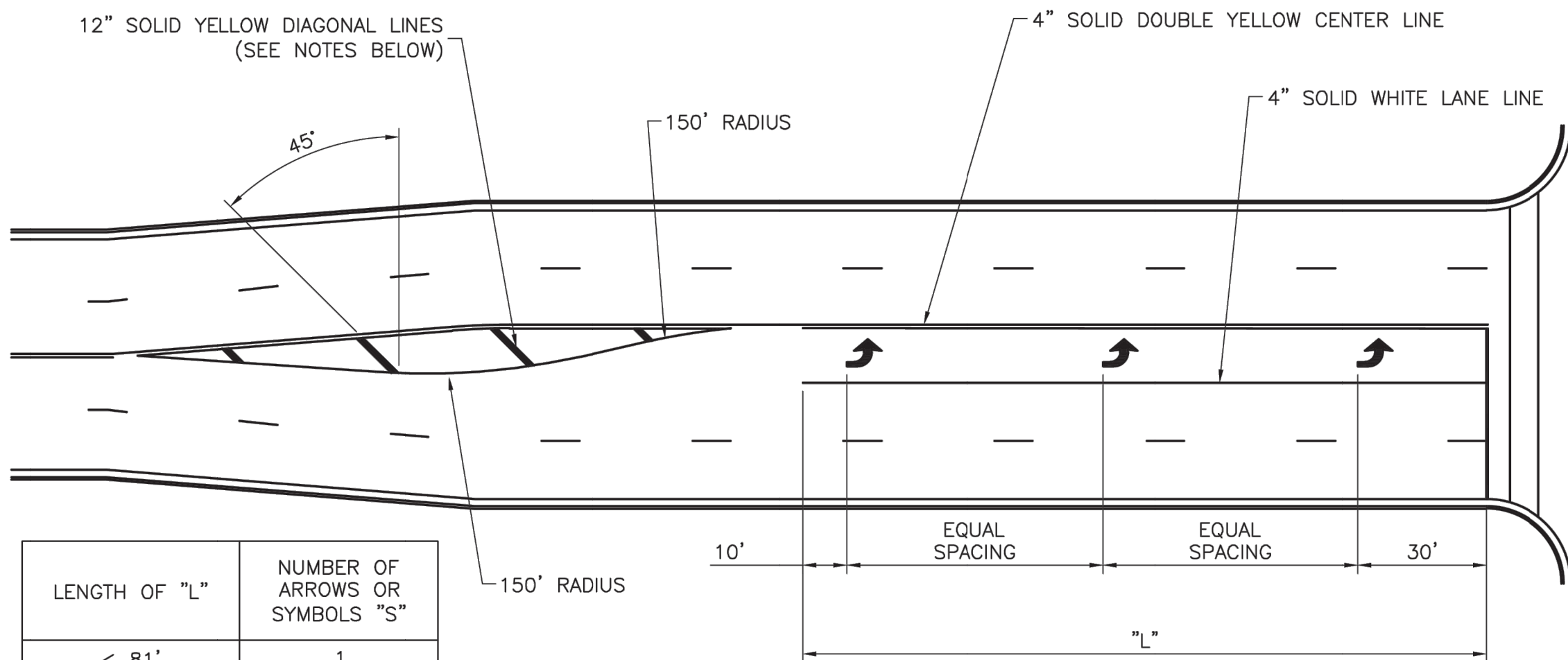
PAVEMENT MARKING GENERAL NOTES:

- ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- 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.
- PAVEMENT MARKINGS, EITHER TEMPORARY OR PERMANENT ARE REQUIRED AT ALL TIMES IF THE ROADWAY IS OPEN TO TRAFFIC.
- 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.
- 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.
- 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.
- EDGE LINES SHALL BE MARKED ON ALL NON-CURBED STREETS.





TYPICAL MARKINGS FOR TWO-WAY
LEFT-TURN LANE

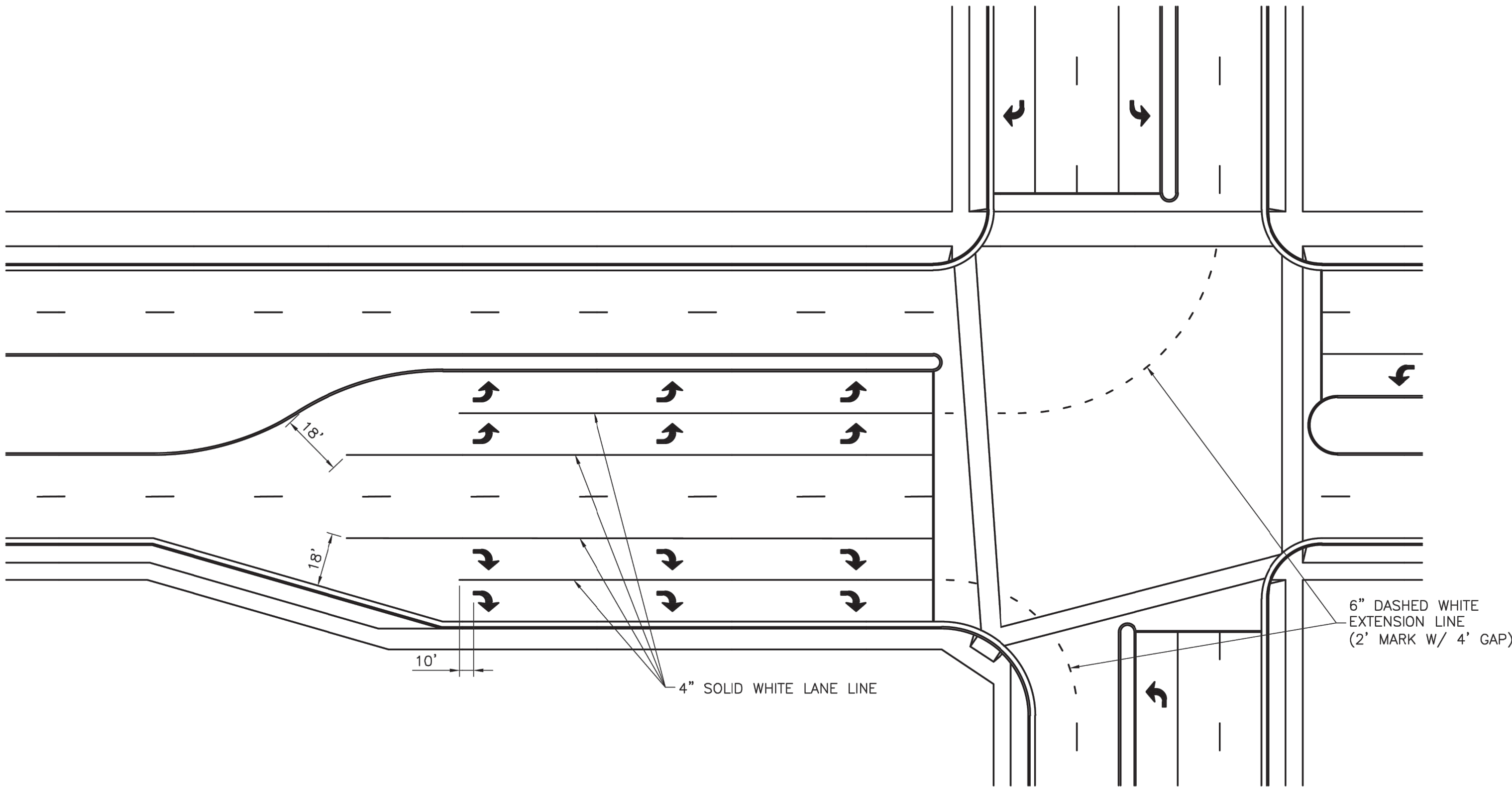


LENGTH OF "L"	NUMBER OF ARROWS OR SYMBOLS "S"
< 81'	1
81' - 120'	2
121' - 200'	3
201' - 280'	4
281' - 360'	5
361' - 440'	6

TYPICAL TURN LANE MARKINGS

NOTES:

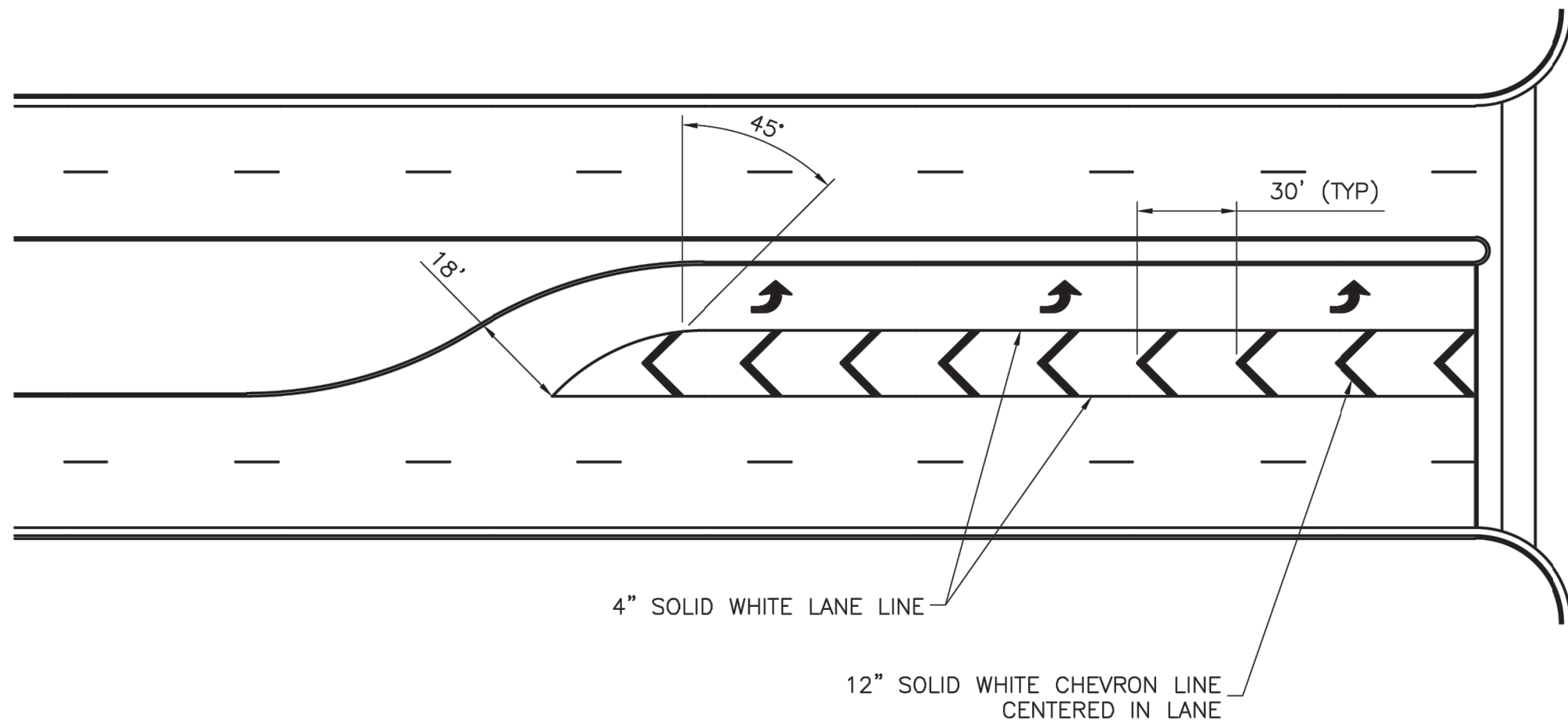
- DIAGONAL LINES ARE REQUIRED BETWEEN CENTERLINES IF THE WIDTH OF THE AREA BETWEEN THE CENTER LINES IS GREATER THAN 12' AND/OR THE LENGTH OF THE AREA BETWEEN CENTER LINES IS GREATER THAN 250'.
- DIAGONAL LINES SHOULD BE SPACED AT 5' INCREMENTS, EQUAL TO THE POSTED SPEED LIMIT.
- EQUAL SPACING IS CALCULATED AS $(L - 40) / (S - 1)$.
- 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 DUAL TURN LANE MARKINGS

NOTE:

- DASHED EXTENSION LINES SHALL NOT EXTEND THROUGH CROSSWALKS.



TYPICAL STRIPED OUT TURN LANE MARKINGS