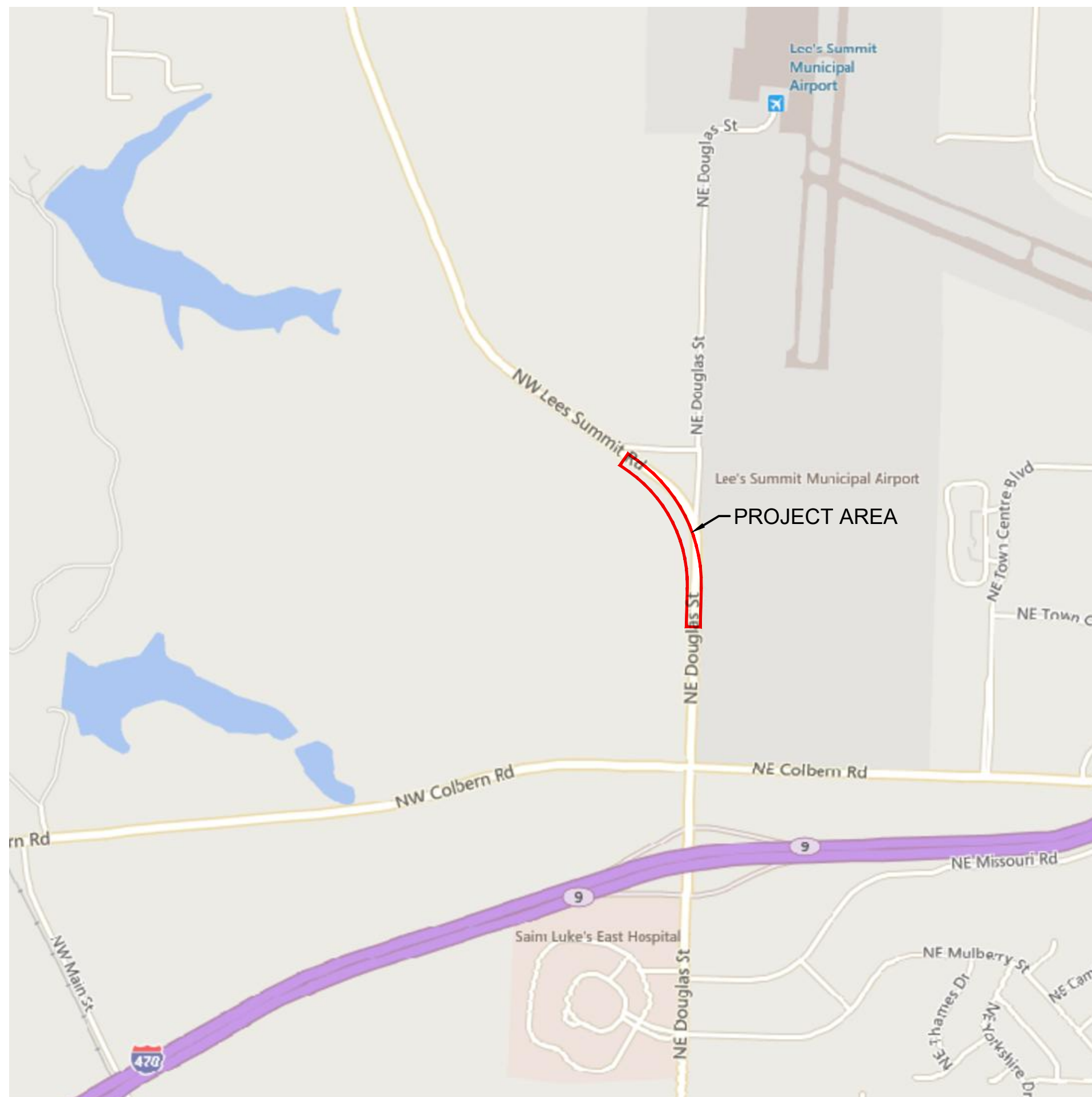


SECTION 30, TOWNSHIP 48N, RANGE 31W
IN LEE'S SUMMIT, JACKSON COUNTY, MO

PROJECT TEAM & UTILITY CONTACT LIST	
<u>OWNER / DEVELOPER</u> CENTRAL STATES CONSTRUCTION 4215 PHILIPS FARM RD. SUITE 109 COLUMBIA, MO 65201 CONTACT: BRIAN MAENNER PHONE: 573-449-9902 EMAIL: BPMAENNER@CENTRALSTATECONST.COM	<u>UTILITY SERVICE NUMBERS</u> NAME: LEE'S SUMMIT PUBLIC WORKS PHONE: 816-969-1800 NAME: LEE'S SUMMIT WATER & SERVICES DEPARTMENT PHONE: 816-969-1940
<u>ENGINEER</u> OLSSON 1301 BURLINGTON, SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: NICHOLAS HEISER PHONE: 816.361.1177 EMAIL: NHEISER@OLSSON.COM	NAME: SPIRE (MGE) PHONE: 314-342-0500 NAME: AT&T PHONE: 800-286-8313 NAME: EVERGY PHONE: 816-471-5275
<u>SURVEYOR</u> OLSSON 1301 BURLINGTON, SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: JASON ROUDEBUSH PHONE: 816.361.1177 EMAIL: JROUDEBUSH@OLSSON.COM	NAME: SPECTRUM (TWC) PHONE: 877-772-2253 NAME: GOOGLE FIBER PHONE: 877-454-6959



INDEX OF SHEETS	
Sheet Title	Sheet Number
TITLE SHEET	C1
GENERAL NOTES	C2
TYPICAL SECTIONS	C3
GENERAL LAYOUT	C4
SITE AND GRADING PLAN	C5
SITE AND GRADING PLAN	C6
SITE AND GRADING PLAN	C7
SPOT ELEVATION DETAILS	C8
SWALE PLAN	C9
SWALE PLAN	C10
SWALE PLAN	C11
STORM SEWER PLAN & PROFILE	C12
CURB CUT PLAN	C13
DETAIL SHEET	C14
DETAIL SHEET	C15
PAVEMENT MARKING PLAN SHEET	F1
PAVEMENT MARKING PLAN SHEET	F2
PAVEMENT MARKING & SIGNAGE QUANTITIES	F3
ROADWAY MARKING DETAILS	F4
INTERSECTION MARKING DETAILS	F5
TRAFFIC CONTROL DETAILS	F6
SIGN MOUNTING DETAILS	F7
SIGN POST DETAILS	F8
STREET NAME SIGN DETAILS	F9

REVIEWED BY:

CITY OF LEE'S SUMMIT

DATE _____

☒ NOT FOR CONSTRUCTION

☐ REVIEWED FOR CONSTRUCTION



PROPERTY DESCRIPTION:

AS PROVIDED BY STEWART TITLE GUARANTY COMPANY:
TRACT OF LAND IN THE NORTHEAST QUARTER OF SECTION 30 TOWNSHIP 48 NORTH, RANGE 31 WEST OF THE 5TH PRINCIPAL MERIDIAN IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI BEING BOUNDED AND DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHWEST CORNER OF SAID NORTHEAST QUARTER SECTION; THENCE SOUTH 01 DEGREES 37 MINUTES 50 SECONDS WEST, ON THE WEST LINE OF SAID QUARTER SECTION, 853.75 FEET TO A POINT ON THE SOUTHEAST LOT LINE OF LOT 1, LEE'S SUMMIT ROAD PUMP STATION, A SUBDIVISION RECORDED IN BOOK 1 51 AT PAGE 90 IN THE JACKSON COUNTY RECORDER OF DEEDS OFFICE; THENCE NORTH 50 DEGREES 41 MINUTES 15 SECONDS EAST, ON SAID SOUTHEAST LOT LINE, 59.22 FEET TO THE POINT OF BEGINNING OF THE TRACT OF LAND TO BE HEREIN DESCRIBED; THENCE CONTINUING NORTH 50 DEGREES 41 MINUTES 15 SECONDS EAST ALONG SAID LINE, 116.89 FEET; THENCE NORTH 50 DEGREES 49 MINUTES 51 SECONDS EAST, 792.38 FEET TO A POINT ON THE WESTERLY RIGHT-OF-WAY LINE OF NW LEE'S SUMMIT ROAD AS ESTABLISHED BY DOCUMENT NUMBER 2015E0017982 IN THE JACKSON COUNTY RECORDER OF DEEDS OFFICE; THENCE ON SAID WESTERLY RIGHT-OF-WAY LINE, SOUTH 54 DEGREES 34 MINUTES 12 SECONDS EAST, 95.69 FEET; THENCE SOUTHEASTERLY ALONG A CURVE TO THE RIGHT BEING TANGENT TO THE LAST DESCRIBED COURSE WITH A RADIUS OF 1,142.00 FEET, A CENTRAL ANGLE OF 56 DEGREES 01 MINUTES 43 SECONDS AND AN ARC DISTANCE OF 1,116.74 FEET; THENCE SOUTH 01 DEGREES 27 MINUTES 31 SECONDS WEST, 322.27 FEET; THENCE LEAVING SAID RIGHT-OF-WAY LINE, NORTH 88 DEGREES 32 MINUTES 29 SECONDS WEST, 375.74 FEET; THENCE NORTH 01 DEGREES 27 MINUTES 27 SECONDS EAST, 62.94 FEET; THENCE SOUTH 90 DEGREES 00 MINUTES 00 SECONDS WEST, 195.68 FEET; THENCE NORTH 45 DEGREES 00 MINUTES 00 SECONDS WEST, 889.18 FEET TO THE POINT OF BEGINNING, SUBJECT TO THAT PART, IF ANY, IN STREETS, ROADWAYS, HIGHWAYS OR OTHER PUBLIC RIGHT-OF-WAYS.

BENCHMARK

BMK 1
LOCATED NEAR SE CORNER OF COLBERN RD. & DOUGLAS ST. INTERSECTION.
N: 1012195.53
E: 282382.89
EL: 982.46

BMK 2
LOCATED ON LIGHTPOLE BASE AT NE CORNER OF LEE'S SUMMIT RD. & DOUGLAS ST INTERSECTION.
N: 1014699.72
E: 2823025.86
EL: 932.31

BMK 5
N: 1014159.31
E: 2822030.75
EL: 908.88


NICHOLAS D. HEISER, P.E.
CIVIL ENGINEER
MO#2015000555

06/11/2020
DATE

[illegible]

GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE PLANS IN THEIR POSSESSION ARE THE MOST CURRENT VERSION ISSUED, ARE FULLY COORDINATED WITH ALL SUBCONTRACTORS, AND PRESENT ON SITE AT ALL TIMES. CURRENT PLANS PREPARED BY OLSSON MAY BE OBTAINED AT THE DIRECTION OF OLSSON'S CLIENT. DIRECT REQUESTS TO OLSSON MAY REQUIRE ADDITIONAL AUTHORIZATIONS, AGREEMENTS, AND/OR FEES. PLEASE CONTACT THE ENGINEER FOR INFORMATION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEVIATIONS FROM THESE PLANS WITHOUT WRITTEN APPROVAL FROM ENGINEER, OWNER, AND DEVELOPER.
3. ALL WORK AND MATERIALS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE OWNER OR THE OWNER'S REPRESENTATIVE.
4. ALL ESTIMATES OF QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING QUANTITIES AND ITEMS OF WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO COMPLETE THE WORK SHOWN IN THE PLANS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS, PAYING ALL FEES, AND FOR OTHERWISE COMPLYING WITH ALL APPLICABLE REGULATIONS GOVERNING THE WORK.
7. THE CONTRACTOR SHALL NOT ENGAGE IN ACTIVITIES THAT MAY ENCROACH ON WATERS OF THE U.S., INCLUDING WETLANDS, UNTIL ANY NECESSARY PERMITS MAY BE OBTAINED. THE CONTRACTOR SHALL REVIEW AND COMPLY WITH ALL CONDITIONS DESCRIBED IN THE PERMIT.
8. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, THE SAFETY OF ALL PERSONS INCLUDING VISITORS AND THE GENERAL PUBLIC, AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY THROUGHOUT THE PROJECT AND NOT BE LIMITED BY WORKING HOURS. ANY CONSTRUCTION OBSERVATION BY THE ENGINEER OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES.
9. PRIOR TO COMMENCEMENT OF WORK THE CONTRACTOR SHALL NOTIFY AND COORDINATE WITH ALL UTILITY COMPANIES AND OBTAIN ANY RELEVANT INFORMATION. NOTIFY ENGINEER OF ANY DISCREPANCIES.
10. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL BOUNDARY CORNERS AND SECTION CORNERS. ANY BOUNDARY CORNER AND/OR SECTION CORNER DISTURBED OR DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE RESET BY A LAND SURVEYOR LICENSED IN THE STATE OF MISSOURI, AT THE CONTRACTOR'S EXPENSE.
11. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ADJACENT PROPERTIES AND SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE DURING CONSTRUCTION. THE CONTRACTOR IS ALSO RESPONSIBLE FOR REPAIRING ANY DAMAGE RESULTING FROM CONSTRUCTION ACTIVITIES.
12. PRIOR TO MOVING OFF THE JOB THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER TO PERFORM A FINAL WALK-THROUGH OF THE CONSTRUCTION SITE.

REFERENCES

1. ARCHITECTURAL AND STRUCTURAL ELEMENTS SHOWN IN THESE PLANS ARE FOR REFERENCE ONLY. CONTRACTORS AND SURVEYORS SHALL REFERENCE THEIR RESPECTIVE PLANS FOR DESIGN INFORMATION.
2. THE CONTRACTOR SHALL ADHERE TO THE SITE PREPARATION AND STRUCTURAL FILL RECOMMENDATIONS IN THE GEOTECHNICAL REPORT AS PROVIDED BY THE GEOTECHNICAL ENGINEER INCLUDING ALL CURRENT ADDENDUMS. THE STANDARDS AND SPECIFICATIONS OF LEE'S SUMMIT, MISSOURI SHALL ALSO APPLY AND TAKE PRECEDENCE WHEN STRICTER THAN THE GEOTECHNICAL REPORT OR WHEN NO GEOTECHNICAL REPORT IS GIVEN.
3. UNLESS EXPLICITLY DESCRIBED OTHERWISE WITHIN THESE PLANS THE FOLLOWING SHALL APPLY:
 - A. ALL CONSTRUCTION, INCLUDING THOSE LISTED BELOW, SHALL CONFORM TO THE LATEST CODES AND ORDINANCES OF LEE'S SUMMIT, MISSOURI.
 - B. ALL CONSTRUCTION IN MODOT RIGHT-OF-WAY SHALL CONFORM TO THE LATEST SPECIFICATIONS ADOPTED BY U.S. DEPARTMENT OF TRANSPORTATION AND MODOT.
 - C. ALL TRAFFIC CONTROL SIGNAGE SHALL CONFORM WITH THE CURRENT EDITION OF THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
 - D. ALL UTILITY EXTENSIONS AND CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE UTILITY COMPANIES..
 - E. ALL EXTERIOR PAVEMENT (PCC, ASPHALT, ETC.) SHALL BE IN CONFORMANCE WITH THE SPECIFICATIONS OF LEE'S SUMMIT, MISSOURI AND THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.
4. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE DELIVERY MANAGER AND COORDINATING ANY MAILBOXES THAT MAY BE DISTURBED. FAILURE TO DO SO MAY SUBJECT THE CONTRACTOR TO PROSECUTION BY THE FEDERAL GOVERNMENT.

EXISTING CONDITIONS

1. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS OF THE PROJECT AREA.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING THEIR OWN INVESTIGATIONS AND MAKING THEIR OWN ASSUMPTIONS REGARDING SITE SURFACE AND SUBSURFACE CONDITIONS. THIS INCLUDES THE LOCATION AND CONSISTENCY OF ANY EXISTING ROCK LAYERS UNDERLYING THE PROJECT SITE. CONTACT THE ENGINEER REGARDING ANY DISCREPANCIES THAT MAY AFFECT THE ABILITY TO CONSTRUCT FROM THESE PLANS AS DESIGNED.
3. EXISTING CONDITIONS WERE DETERMINED THROUGH A VARIETY OF METHODS THAT MAY INCLUDE SURVEY, AERIAL IMAGERY, AVAILABLE RECORDS, GIS DATA, ETC. SUBSURFACE CONDITIONS ARE APPROXIMATE AND MAY NOT INCLUDE ALL UTILITIES AND OTHER SITE IMPROVEMENTS PRESENT ON SITE. THE CONTRACTOR SHALL MAKE EXPLORATION EXCAVATIONS AND LOCATE EXISTING UNDERGROUND UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS WHEN CONFLICTS AND DISCREPANCIES ARE FOUND.

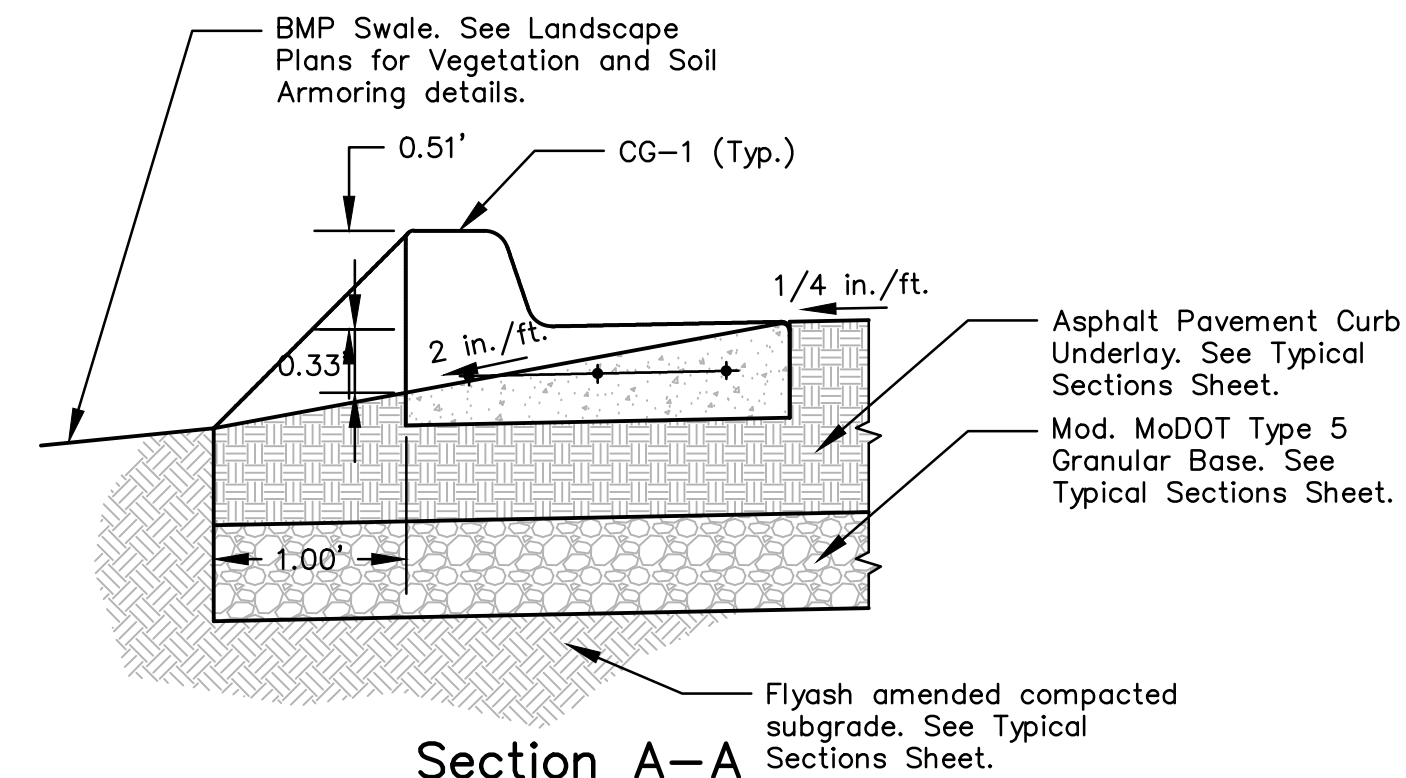
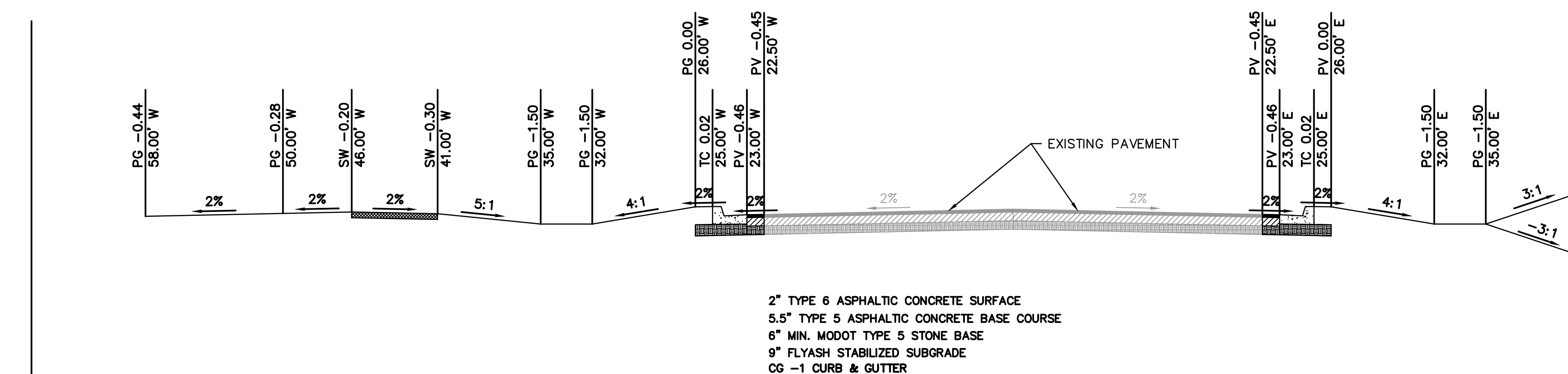
CONSTRUCTION

1. THE CONTRACTOR SHALL INSTALL TRAFFIC CONTROL WHILE WORKING IN THE PUBLIC RIGHT-OF-WAY AS SHOWN IN THESE PLANS. IF PLANS ARE NOT PROVIDED, CONTRACTOR SHALL COORDINATE AND PROVIDE CONTROLS TO THE SATISFACTION OF THE RIGHT-OF-WAY OWNER.
2. THE CONTRACTOR SHALL PROTECT ALL TREES OVER 3" CALIPER FROM DAMAGE. NO TREE SHALL BE REMOVED WITHOUT PERMISSION OF THE OWNER, UNLESS SHOWN OTHERWISE ON THESE PLANS.
3. IN ADDITION TO THE CONDITIONS OF THE GEOTECHNICAL REPORT AND AS A MINIMUM THE CONTRACTOR SHALL PERFORM THE GRADING AS FOLLOWS:
 - A. THE CONSTRUCTION AREA SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL. ALL ORGANIC MATTER FROM ALL AREAS TO BE OCCUPIED BY BUILDING AND PAVING, STRIPPING EXISTING TOPSOIL AND ORGANIC MATTER SHALL BE TO A MINIMUM DEPTH OF 6 INCHES. TOPSOIL FOR REPLACEMENT ON SLOPES MAY BE STOCKPILED ON SITE IN AREAS DESIGNATED BY THE OWNER. CONTRACTOR SHALL REMOVE EXCESS STRIPPINGS AND EXCESS EXCAVATION WITHIN 30 DAYS OF COMPLETION OF GRADING OPERATIONS.
 - B. AREAS TO RECEIVE FILL AND AREAS CUT TO SUBGRADE LEVEL SHALL BE SCARIFIED AND THE TOP 8-INCH DEPTH COMPACTED TO 95% STANDARD PROCTOR DENSITY. THE SUBGRADE SHALL BE PROOF ROLLED WITH A MODERATELY HEAVY LOADED DUMP TRUCK OR SIMILAR APPROVED CONSTRUCTION EQUIPMENT TO DETECT UNSUITABLE SOIL CONDITIONS. ANY UNSUITABLE AREAS SHALL BE UNDERCUT AND REPLACED WITH SUITABLE MATERIAL BEFORE ANY FILL MATERIAL CAN BE APPLIED.
 - C. FILL SHALL BE PLACED IN MAXIMUM OF 8 INCH LIFTS.
 - D. TOPSOIL SHALL BE PLACED TO A MINIMUM DEPTH OF 6 INCHES OVER ALL AREAS DISTURBED BY THE WORK. LARGE STONES, STICKS AND LUMPS SHALL BE REMOVED OR BROKEN UP, AND THE TOPSOIL SHALL BE LEVELED AND RAKED. ALL DISTURBED AREAS SHALL BE LANDSCAPED PER LANDSCAPE PLANS OR SHALL BE SEEDDED, FERTILIZED, MULCHED, WATERED AND MAINTAINED UNTIL HARDY GRASS GROWTH IS ESTABLISHED.
4. CONTRACTOR SHALL PROVIDE COMPACTION TEST RESULTS AS REQUIRED.
5. THE CONTRACTOR SHALL DISPOSE ALL WASTE MATERIAL RESULTING FROM THE PROJECT OFF-SITE AND IN STRICT CONFORMANCE WITH ALL LOCAL CODES AND ORDINANCES.
6. ALL MANHOLES, CATCH BASINS, UTILITY VALVES AND METER PITS ARE TO BE ADJUSTED OR REBUILT TO GRADE AS REQUIRED. NOT ALL ADJUSTMENTS ARE INDICATED IN THE PLANS.
7. THE CONTRACTOR SHALL STREET SWEEP OR OTHERWISE CLEAN ALL ACCESS ROUTES TO THE SITE AT CONCLUSION OF THE PROJECT.

SHOP DRAWINGS

- THE CONTRACTOR SHALL SUBMIT SHOP DRAWING A MINIMUM OF 7 DAYS PRIOR TO THE REQUESTED DATE OF APPROVAL. ENGINEER SHALL REVIEW SHOP DRAWINGS OR SAMPLES CONFORMANCE WITH THE DESIGN FOR THIS PROJECT AS DESCRIBED IN THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ERRORS OR OMISSIONS IN SHOP DRAWINGS. THE ENGINEER'S REVIEW SHALL NOT EXTEND TO MEANS OR METHODS OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY VARIATION FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS UNLESS CONTRACTOR HAS NOTIFIED ENGINEER OF EACH SUCH VARIATION AT THE TIME OF SUBMISSION, AND OBTAINED ENGINEER'S WRITTEN APPROVAL OF EACH SUCH VARIATION. PRIOR TO SUBMITTING EACH SHOP DRAWING OR SAMPLE, CONTRACTOR SHALL HAVE REVIEWED AND VERIFIED:
- A. ALL FIELD MEASUREMENTS, QUANTITIES, DIMENSIONS, SPECIFIED PERFORMANCE CRITERIA, INSTALLATION REQUIREMENTS, MATERIALS, CATALOG NUMBERS AND SIMILAR INFORMATION WITH RESPECT THERETO;
 - B. ALL MATERIALS WITH RESPECT TO INTENDED USE, FABRICATION, SHIPPING, HANDLING, STORAGE, ASSEMBLY AND INSTALLATION PERTAINING TO THE PERFORMANCE OF THE WORK;
 - C. ALL INFORMATION RELATIVE TO MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION AND SAFETY PRECAUTIONS AND PROGRAMS INCIDENT THERETO;
 - D. CONTRACTOR SHALL ALSO HAVE REVIEWED AND COORDINATED EACH SHOP DRAWING OR SAMPLE WITH OTHER SHOP DRAWINGS AND SAMPLES, AND WITH THE REQUIREMENTS OF THE WORK AND THE CONTRACT DOCUMENTS.
 - E. ALL SUBMITTED SHOP DRAWINGS SHALL BEAR A STAMP OR SPECIFIC WRITTEN INDICATION AND SIGNATURE THAT CONTRACTOR HAS FULLY COMPLETED THE ABOVE TASKS.
2. SHOP DRAWINGS AS DESCRIBED ABOVE ARE REQUIRED FOR, BUT NOT LIMITED TO, THE FOLLOWING:
- A. ALL STORM SEWER STRUCTURES TO BE INSTALLED WITH THIS PROJECT.
 - B. ALL SANITARY SEWER STRUCTURES TO BE INSTALLED WITH THIS PROJECT.
 - C. ALL SITE FENCING AND RAILING INCLUDING ANY GATES.
 - D. ALL LANDSCAPE AND RETAINING WALLS.
 - E. ANY ITEMS IN THESE PLANS THAT ALLOW FOR AN "APPROVED EQUAL" ALTERNATIVE.

GENERAL		LEGEND		SURVEY MARKERS	
	ACU		AIR CONDITIONING UNIT		BENCHMARK
	AST		ARROW STRAIGHT		CONTROL POINT
	ATL		ARROW TURN LEFT		FOUND MONUMENT
	ATR		ARROW TURN RIGHT		ROW MARKER
	BLB		BILLBOARD		SECTION CORNER
	BOV		BLOW OFF VALVE		SET MONUMENT
	BSH		BUSH	BOUNDARIES	
	COL		COLUMN		SECTION LINE
	CTR		CONIFEROUS TREE		EXISTING PROPERTY BOUNDARY
	DRN		DRAIN GRATE		PROPOSED PROPERTY BOUNDARY
	DTR		DECIDUOUS TREE		EXISTING LOT LINE
	FLP		FLAG POLE		PROPOSED LOT LINE
	GDP		GUARD POST		EXISTING RIGHT-OF-WAY
	GPL		GUY POLE		PROPOSED RIGHT-OF-WAY
	GTP		GREASE TRAP	UTILITIES	
	GUY		GUY WIRE		CABLE BOX
	HCP		ACCESSABLE PARKING MARKER		CABLE VAULT
	LST		LIFT STATION		TELEVISION PEDESTAL
	MLB		MAILBOX		TELEVISION RISER
	MP		MILE POST MARKER		EXISTING CABLE TV, OVERHEAD
	MWL		MONITORING WELL		EXISTING CABLE TV, UNDERGROUND
	PIV		POST INDICATOR VALVE		PROPOSED CABLE TV, OVERHEAD
	PPT		PROPANE TANK		PROPOSED CABLE TV, UNDERGROUND
	RAT		RADIO TOWER		FIBER OPTIC BOX
	SAD		SATELLITE		FIBER OPTIC MANHOLE
	SCV		SPRINKLER CONTROL VALVE		FIBER OPTIC PEDESTAL
	SGN		SIGN		FIBER OPTIC VAULT
	SLB		STREET LIGHT BOX		EXISTING FIBER OPTIC, OVERHEAD
	SLC		STREET LIGHT CABINET		EXISTING FIBER OPTIC, UNDERGROUND
	SPB		SPRINKLER BOX		PROPOSED FIBER OPTIC, OVERHEAD
	SPH		SPRINKLER HEAD		PROPOSED FIBER OPTIC, UNDERGROUND
	STP		STUMP		FIRE DEPT. CONNECTION
	SVL		SEWER VALVE		EXISTING FIRE PROTECTION SYSTEM LINE
	TCB		TRAFFIC CONTROL BOX		PROPOSED FIRE PROTECTION SYSTEM LINE
	TSA		TRAFFIC SIGNAL WITH MAST ARM		EXISTING FUEL LINE
	TSC		TRAFFIC SIGNAL CABINET		PROPOSED FUEL LINE
	TSMH		TRAFFIC SIGNAL MANHOLE		GAS RISER
	TSP		TRAFFIC SIGNAL POLE		GAS MANHOLE
			EXISTING TREELINE		GAS MARKER
			PROPOSED TREELINE		GAS METER
			EXISTING SIDEWALK		GAS REGULATOR
			PROPOSED SIDEWALK		GAS VALVE
			FUTURE SIDEWALK		EXISTING NATURAL GAS LINE
			EXISTING BUILDINGS		PROPOSED NATURAL GAS LINE
			PROPOSED BUILDINGS		TELEPHONE CABINET
			FUTURE BUILDINGS		TELEPHONE PEDESTAL
			EXISTING EDGE OF PAVEMENT		TELEPHONE RISER
			PROPOSED EDGE OF PAVEMENT		TELEPHONE VAULT
			FUTURE EDGE OF PAVEMENT		TELEPHONE MANHOLE
			EXISTING ROADWAY CENTER LINE		EXISTING TELEPHONE LINE, OVERHEAD
			PROPOSED ROADWAY CENTER LINE		EXISTING TELEPHONE LINE, UNDERGROUND
			FUTURE ROADWAY CENTER LINE		PROPOSED TELEPHONE LINE, OVERHEAD
			EXISTING CURB & GUTTER		PROPOSED TELEPHONE LINE, UNDERGROUND
			PROPOSED CURB & GUTTER		GROUND LIGHT
			FUTURE CURB & GUTTER		LIGHT POLE
	R		RADIUS		POWER POLE
	L		ARC DISTANCE		ELECTRIC TRANSFORMER
	D		DELTA / CENTRAL ANGLE		ELECTRIC BOX
EASEMENTS & SETBACKS					ELECTRIC CABINET
	A.E.		ACCESS EASEMENT		ELECTRIC RISER
	B.M.P.		BEST MANAGEMENT PRACTICE EASEMENT		ELECTRIC MANHOLE
	B.L.		BUILDING SETBACK		ELECTRIC METER
	C.T.V.E.		CABLE TV EASEMENT		ELECTRIC SECTIONALIZER
	C.E.		CONSERVATION EASEMENT		ELECTRIC VAULT
	C.G.E.		CONSTRUCTION GRADING EASEMENT		YARD LIGHT
	F.P.E.		FLOOD PLAIN EASEMENT		EXISTING POWER/ELECTRIC LINE, OVERHEAD
	F.O.E.		FIBER OPTIC EASEMENT		EXISTING POWER/ELECTRIC LINE, UNDERGROUND
	F.P.S.E.		FIRE PROTECTION SYSTEM EASEMENT		SEWER CLEANOUT
	F.L.E.		FUEL LINE EASEMENT		SEWER CLEANOUT
	L.S.E.		LANDSCAPE EASEMENT		SANITARY MANHOLE
	G.E.		NATURAL GAS EASEMENT		EXISTING SANITARY SEWER
	T.E.		TELEPHONE EASEMENT		PROPOSED SANITARY SEWER
	E.E.		POWER/ELECTRIC EASEMENT		FUTURE SANITARY SEWER
	P.S.		PARKING SETBACK		EXISTING STEAM LINE
	S.B.		STREAM BUFFER		PROPOSED STEAM LINE
	S.D.E.		SURFACE DRAINAGE EASEMENT		STORM SEWER MANHOLE
	SIGHT DIST. ESM.T.		SIGHT DISTANCE EASEMENT		FLARED END SECTION
	S.E.		SANITARY SEWER EASEMENT		ROOF DRAIN
	S.L.E.		STEAM LINE EASEMENT		EXISTING STORM SEWER
	D.E.		STORM DRAINAGE EASEMENT		PROPOSED STORM SEWER
	S.W.M.E.		STORM WATER MANAGEMENT EASEMENT		FIRE HYDRANT
	T.C.D.S.E.		TEMPORARY CUL-DE-SAC EASEMENT		WATER MANHOLE
	TEMP. ESM.T.		TEMPORARY EASEMENT		WATER MARKER
	TRAIL ESM.T.		TRAIL PATH EASEMENT		WATER METER
	U.E.		UTILITY EASEMENT		WATER VALVE
	W.E.		WATER EASEMENT		EXISTING WATER LINE
	F.Y.S.		FRONT YARD SETBACK		PROPOSED WATER LINE
	R.Y.S.		REAR YARD SETBACK		
	S.Y.S.		SIDE YARD SETBACK		
CONTOURS					
	-100-		EXISTING INDEX CONTOURS		
	-100-		EXISTING INTERMEDIATE CONTOURS		
	-100-		PROPOSED INDEX CONTOURS		
	-100-		PROPOSED INTERMEDIATE CONTOURS		



CURB CUT DETAIL
N.T.S.

TYPICAL SECTIONS

NW LEE'S SUMMIT ROAD &
NE DOUGLAS STREET

LEE'S SUMMIT, MO

		2020
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[illegible]

06/11/2020
NICHOLAS D. HEISER, P.E.
MO# 2015000555



OLSSON - CIVIL ENGINEERING
MO CERTIFICATE OF AUTHORITY
1301 BURLINGTON, SUITE 100
NORTH KANSAS CITY, MO 64116

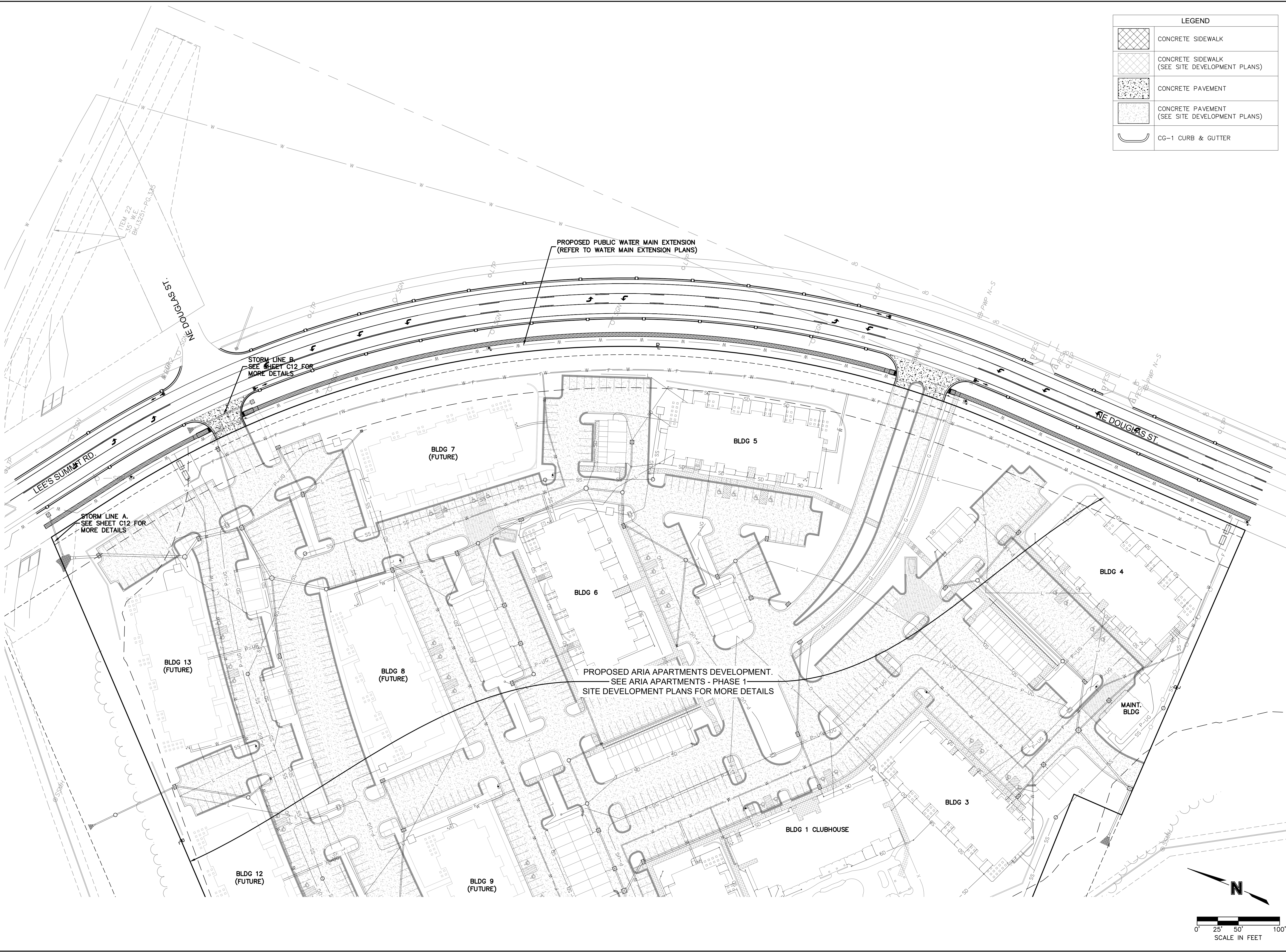
olsson

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NORTH KANSAS CITY, MO 64116
TEL 816 361 1177
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drawn by: M.J.D.
checked by: N.D.H.
designed by: M.J.D.
QA/QC by: N.D.H.
project no.: 019-0012-B
date: 2020.06.12

SHEET
C3

File: F:\2019\0001-0500\019-0012-B\40-Design\AutoCAD\Final Plans\Sheets\Public Street Improvements\C_GEN02_B190012.dwg ~ Layout: GENERAL LAYOUT ~ Last Saved By: gsmith ~ Plot Date: 2019.10.01 03:03 PM



LEGEND	
	CONCRETE SIDEWALK
	CONCRETE SIDEWALK (SEE SITE DEVELOPMENT PLANS)
	CONCRETE PAVEMENT
	CONCRETE PAVEMENT (SEE SITE DEVELOPMENT PLANS)
	CG-1 CURB & GUTTER

GENERAL LAYOUT
PUBLIC STREET IMPROVEMENT PLANS

drawn by: M.J.D.
checked by: N.D.H.
designed by: M.J.D.
QA/QC by: N.D.H.
project no.: 019-0012-B
date: 2020.06.12

NO. REV.

DATE

REVISIONS DESCRIPTION

BY

2020

LEE'S SUMMIT, MO

NW LEE'S SUMMIT ROAD &
NE DOUGLAS STREET

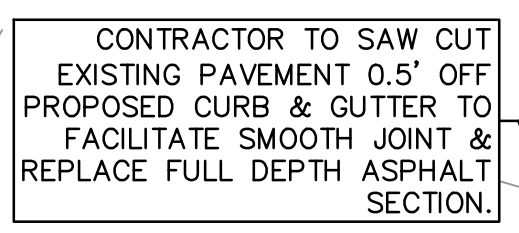
REVISIONS

olsson

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STATE OF MISSOURI
NICHOLAS D. HEISER
NUMBER
PE-2015000555
PROFESSIONAL ENGINEER

06/11/2020
NICHOLAS D. HEISER, P.E.
MO# 2015000555



MATCH LINE
SEE PREVIOUS SHEET

NE DOUGLAS ST.

CONTRACTOR TO SAW CUT
EXISTING PAVEMENT 0.5' OFF
PROPOSED CURB & GUTTER TO
FACILITATE SMOOTH JOINT &
REPLACE FULL DEPTH ASPHALT
SECTION.

SOUTH ENTRANCE CURB RAMPS
(SEE DETAIL ON SHEET C7)

PROPOSED ARIA APARTMENTS DEVELOPMENT.
SEE ARIA APARTMENTS - PHASE 1
SITE DEVELOPMENT PLANS FOR MORE DETAILS

NE DOUGLAS ST.

0' 10' 20' 40'
SCALE IN FEET

NW LEE'S SUMMIT ROAD & NE DOUGLAS STREET	2020
LEE'S SUMMIT, MO	

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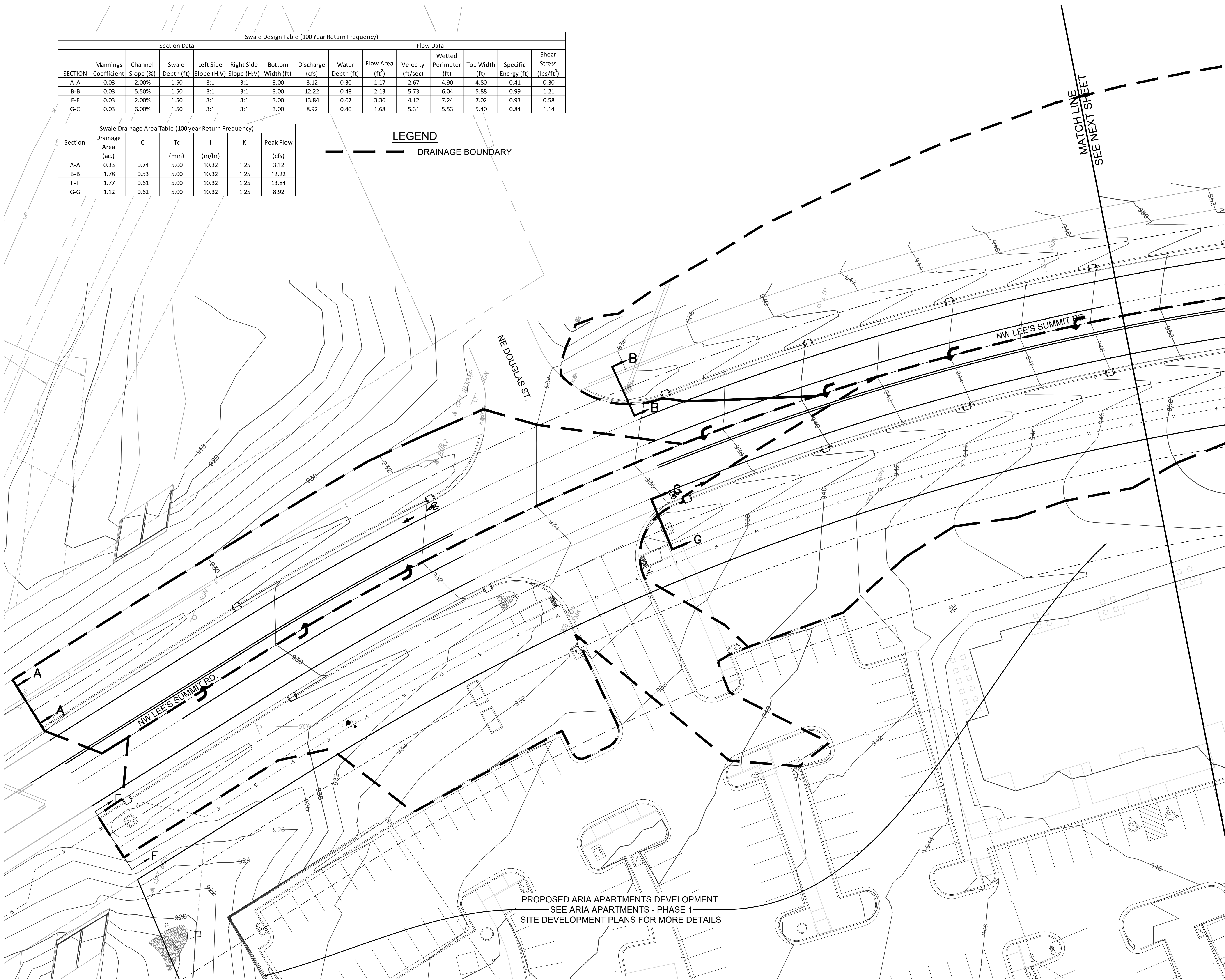
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MO CERTIFICATE OF AUTHORITY #001592
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TEL 816.361.1177
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Swale Design Table (100 Year Return Frequency)														
Section Data							Flow Data							
SECTION	Mannings Coefficient	Channel Slope (%)	Swale Depth (ft)	Left Side Slope (H:V)	Right Side Slope (H:V)	Bottom Width (ft)	Discharge (cfs)	Water Depth (ft)	Flow Area (ft ²)	Velocity (ft/sec)	Wetted Perimeter (ft)	Top Width (ft)	Specific Energy (ft)	Shear Stress (lbs/ft ²)
A-A	0.03	2.00%	1.50	3:1	3:1	3.00	3.12	0.30	1.17	2.67	4.90	4.80	0.41	0.30
B-B	0.03	5.50%	1.50	3:1	3:1	3.00	12.22	0.48	2.13	5.73	6.04	5.88	0.99	1.21
F-F	0.03	2.00%	1.50	3:1	3:1	3.00	13.84	0.67	3.36	4.12	7.24	7.02	0.93	0.58
G-G	0.03	6.00%	1.50	3:1	3:1	3.00	8.92	0.40	1.68	5.31	5.53	5.40	0.84	1.14

Swale Drainage Area Table (100 year Return Frequency)						
Section	Drainage Area (ac.)	C	Tc (min)	i (in/hr)	K	Peak Flow (cfs)
A-A	0.33	0.74	5.00	10.32	1.25	3.12
B-B	1.78	0.53	5.00	10.32	1.25	12.22
F-F	1.77	0.61	5.00	10.32	1.25	13.84
G-G	1.12	0.62	5.00	10.32	1.25	8.92

LEGEND
DRAINAGE BOUNDARY



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STATE OF MISSOURI
NICHOLAS D. HEISER
NUMBER PE-2015000555
06/11/2020
NICHOLAS D. HEISER, P.E.
MO# 2015000555

REVISIONS

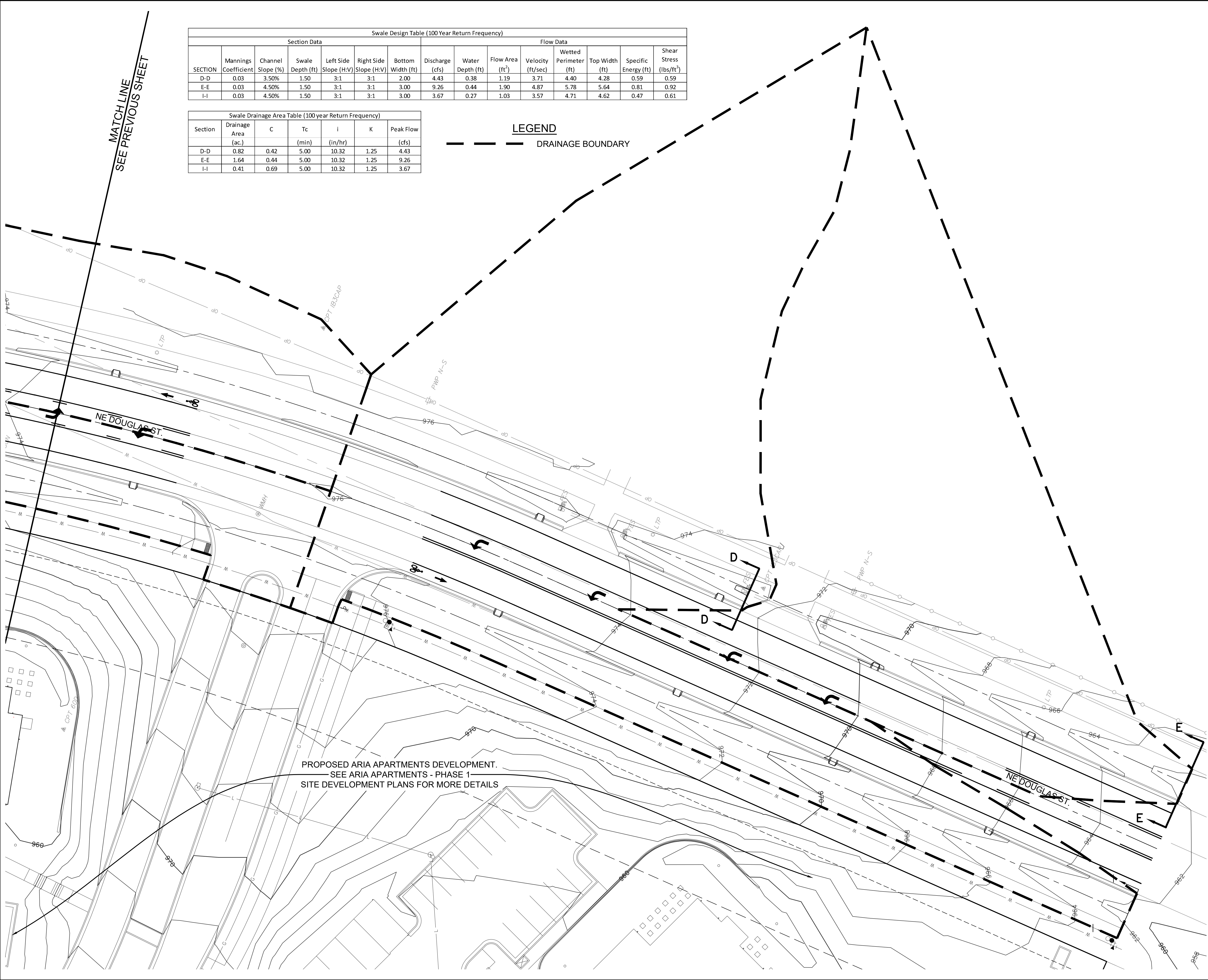
SWALE PLAN
PUBLIC STREET IMPROVEMENT PLANS
NW LEE'S SUMMIT ROAD &
NE DOUGLAS STREET
LEE'S SUMMIT, MO

2020

drawn by: M.J.D.
checked by: N.D.H.
designed by: M.J.D.
QA/QC by: N.D.H.
project no.: 019-0012-B
date: 2020.06.12

SHEET
C9

File: F:\2019\0001-0500\019-0012-B\40-Design\AutoCAD\Final Plans\Sheets\GNCV\Public Street Improvements\C_SWL01_B190012.dwg ~ Layout: SWALE PLAN (3) ~ Last Saved By: mdebol ~ Plot Date: 2019.10.01 03:03 PM

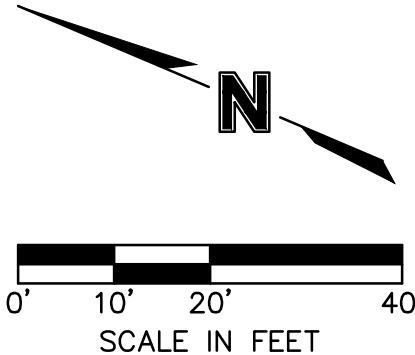


Swale Design Table (100 Year Return Frequency)															
Section Data							Flow Data								
SECTION	Mannings Coefficient	Channel Slope (%)	Swale Depth (ft)	Left Side Slope (H:V)	Right Side Slope (H:V)	Bottom Width (ft)	Discharge (cfs)	Water Depth (ft)	Flow Area (ft ²)	Velocity (ft/sec)	Wetted Perimeter (ft)	Top Width (ft)	Specific Energy (ft)	Shear Stress (lbs/ft ²)	
D-D	0.03	3.50%	1.50	3:1	3:1	2.00	4.43	0.38	1.19	3.71	4.40	4.28	0.59	0.59	
E-E	0.03	4.50%	1.50	3:1	3:1	3.00	9.26	0.44	1.90	4.87	5.78	5.64	0.81	0.92	
I-I	0.03	4.50%	1.50	3:1	3:1	3.00	3.67	0.27	1.03	3.57	4.71	4.62	0.47	0.61	

Swale Drainage Area Table (100 year Return Frequency)						
Section	Drainage Area (ac.)	C	Tc (min)	i (in/hr)	K	Peak Flow (cfs)
D-D	0.82	0.42	5.00	10.32	1.25	4.43
E-E	1.64	0.44	5.00	10.32	1.25	9.26
I-I	0.41	0.69	5.00	10.32	1.25	3.67

LEGEND

--- DRAINAGE BOUNDARY



SWALE PLAN

PUBLIC STREET IMPROVEMENT PLANS

NW LEE'S SUMMIT ROAD & NE DOUGLAS STREET

LEE'S SUMMIT, MO

2020

drawn by: M.J.D.

checked by: N.D.H.

designed by: M.J.D.

QA/QC by: N.D.H.

project no.: 019-0012-B

date: 2020.06.12

SHEET

C11

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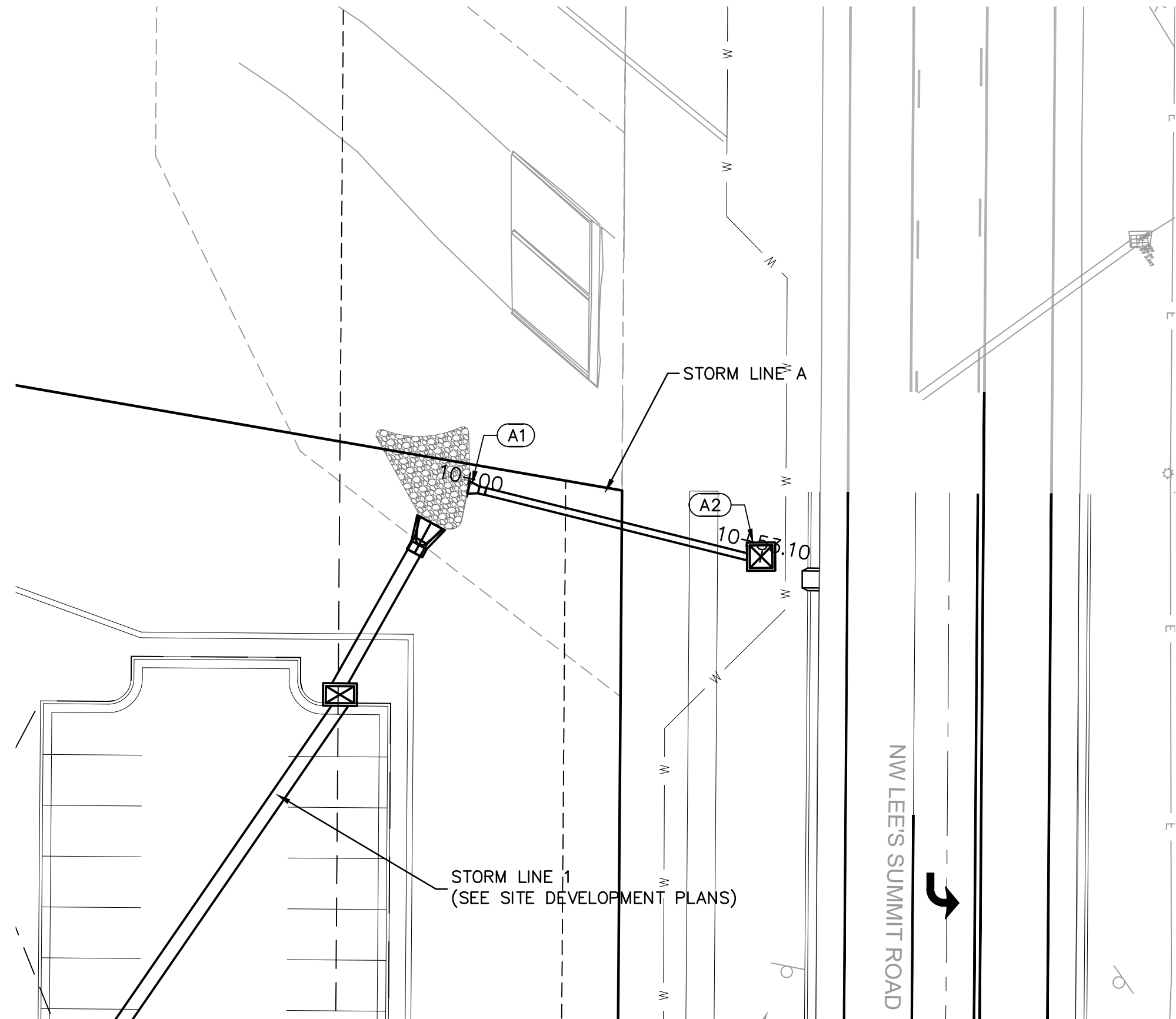
NICHOLAS D. HEISER

NUMBER PE-2015000555

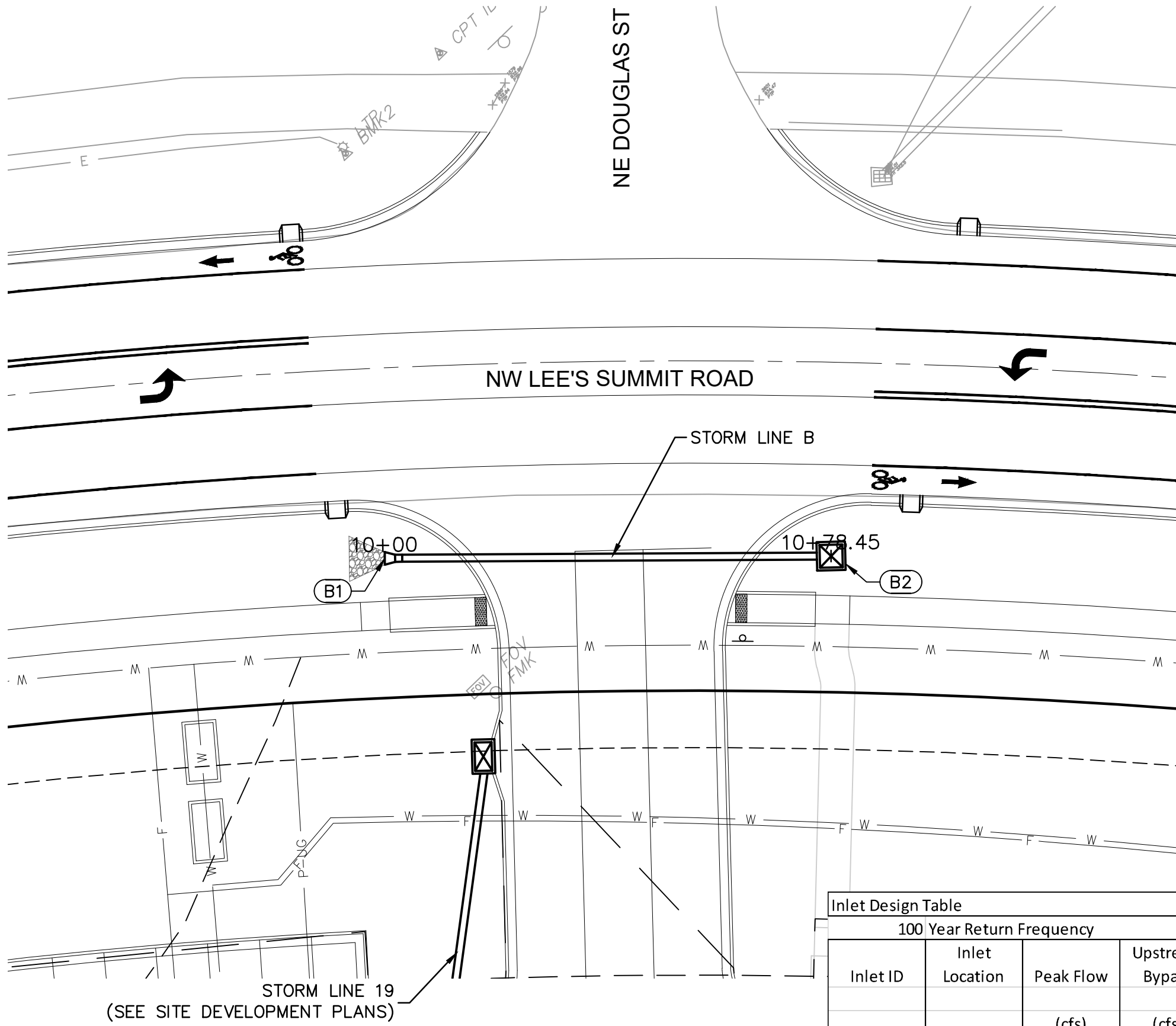
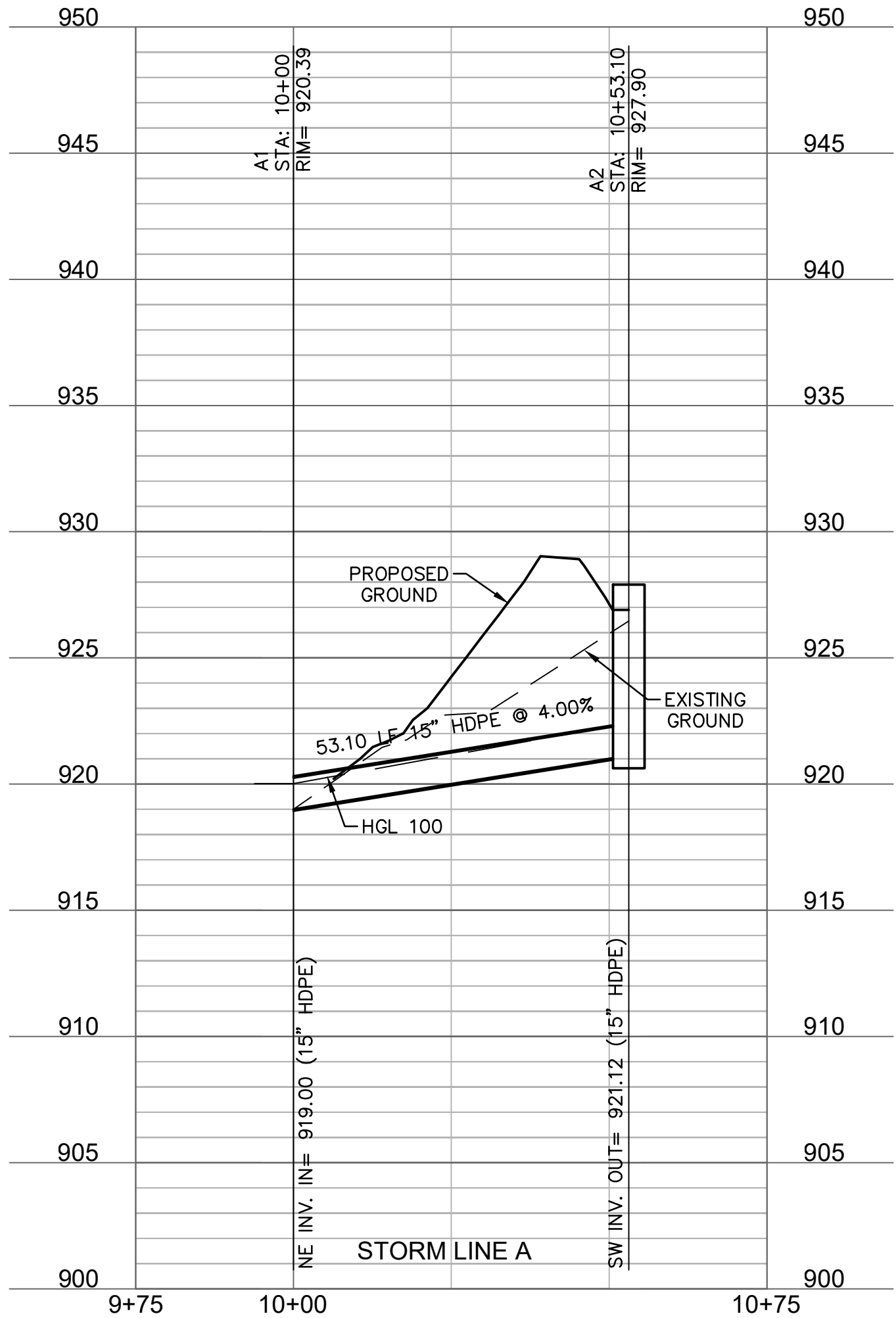
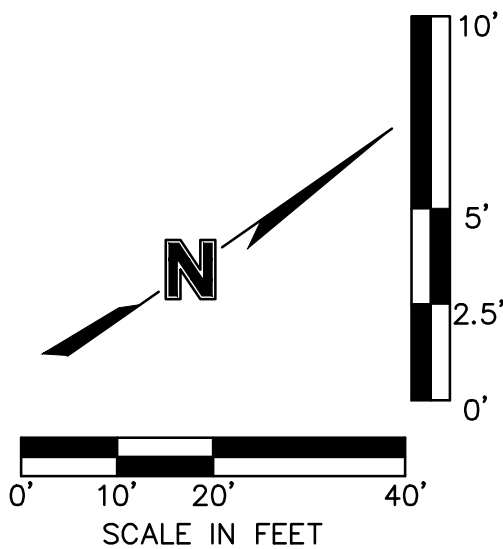
06/11/2020

NICHOLAS D. HEISER, P.E.
MO# 2015000555

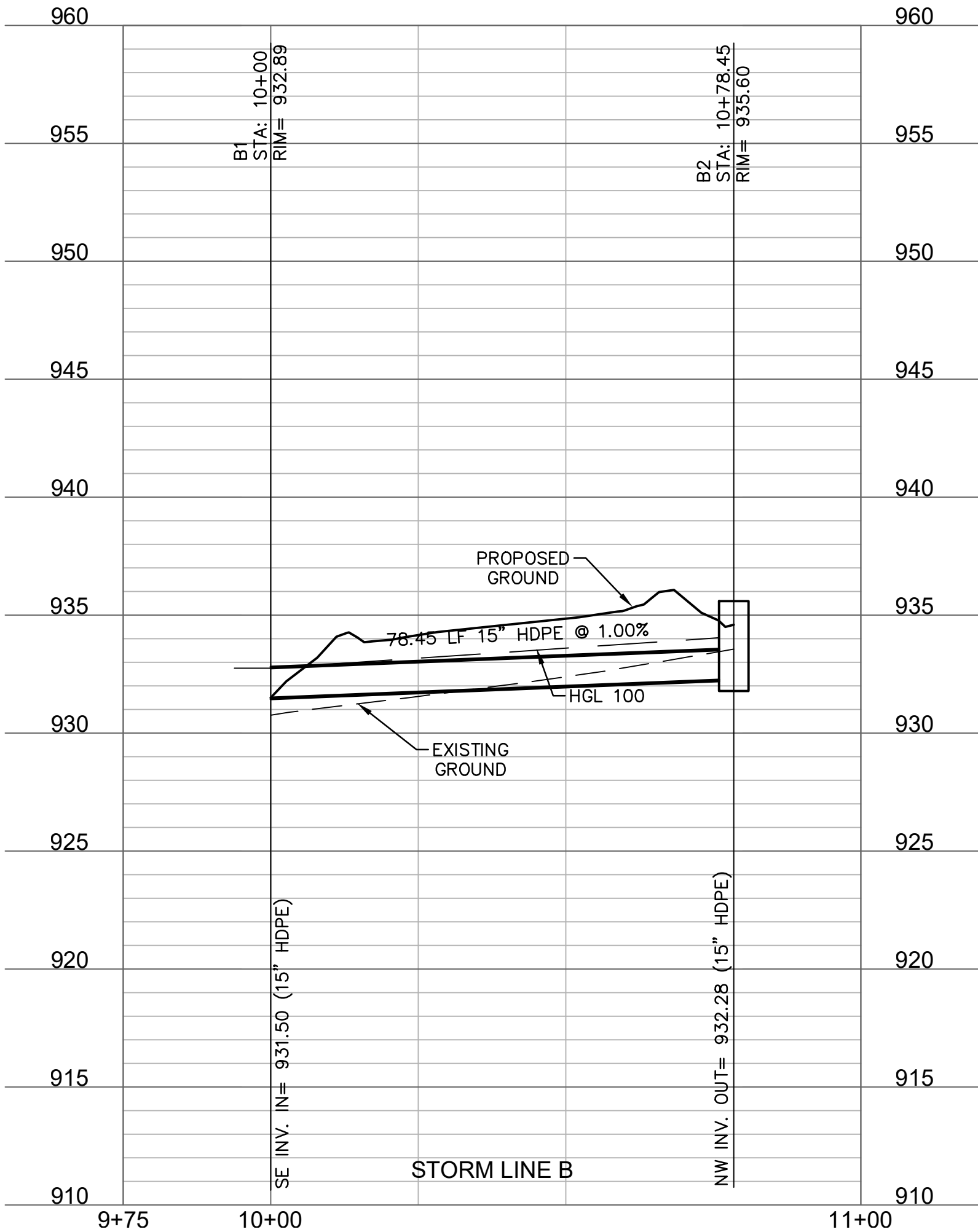
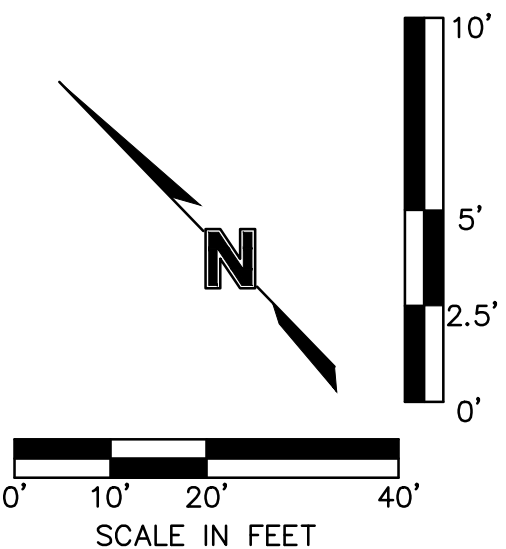
REVISIONS



STRUCTURES	
ID	DESCRIPTION
A1	10+00 STORM LINE A 15" FES N: 1014731.403; E: 2822779.545
A2	10+53.10 STORM LINE A 4' X 4' FIELD INLET N: 1014767.229; E: 2822818.735



STRUCTURES	
ID	DESCRIPTION
B1	10+00 STORM LINE B 15" FES N: 1014643.754; E: 2822981.341
B2	10+78.45 STORM LINE B 4' X 4' FIELD INLET N: 1014589.555; E: 2823038.061



Drainage Area Design Table						
100 Year Return Frequency						
Inlet ID	Drainage Area	C	Tc	i	K	Peak Flow
	(ac)		(min)	(in/hr)		(cfs)
A2	1.12	0.62	5.00	10.32	1.25	8.96
B2	1.77	0.61	5.00	10.32	1.25	13.93

Inlet Design Table												
100 Year Return Frequency												
Inlet ID	Inlet Location	Peak Flow	Upstream Bypass	Total Flow	Clogging Factor	Inlet Capacity	Sag Inlet Capacity (Note 1)	Captured Flow	Bypass Flow	Inlet Efficiency (Note 2)	Gutter Depth	Gutter Spread
		(cfs)	(cfs)	(cfs)		(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)
A2	SAG	8.96	0.00	8.96	0.80	39.60	31.68	8.96	0.00	100.00%	...	...
B2	SAG	13.93	0.00	13.93	0.80	39.60	31.68	13.93	0.00	100.00%	...	...
Notes:												
1. Inlet capacity at sag location has been reduced by a clogging factor of 0.80, reducing theoretical capacity to 80% capacity, as required per APWA Section 5600.												
Both theoretical capacity and reduced capacity are shown.												
2. Inlet efficiency shown in the tables is Captured Flow/Total Flow, denoting the actual percentage of flow captured after the capacity has been reduced to 80% of theoretical capacity.												

Storm Sewer Design Calculation Table												
100 Year Return Frequency												
Upstream Structure	Downstream Structure	Length (ft)	Upstream Invert (ft)	Downstream Invert (ft)	Slope (%)	Diameter (in)	Manning's n	Total Flow (cfs)	Velocity (ft/s)	Capacity (cfs)	Flow Depth (ft)	Upstream Struct. HGL (ft)
A2	A1	53.10	921.12	919.00	4.00	15	0.012	13.93	12.99	13.99	1.23	922.30
B2	B1	78.45	932.28	931.50	1.00	15	0.012	8.96	7.30	6.98	1.25	934.04

Riprap Calculations						
End Section	Q ₁₀₀ (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)
A1	13.93	1.25	4	14	7.5	2.57
B1	8.96	1.25	3	10	6.25	2.00

*Per Table 10.1 HEC 14-FHWA-Energy Dissipators Pg. 10-18

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06/11/2020
NICHOLAS D. HEISER, P.E.
MO# 2015000555

BY

NO. REV.

DATE

REVISIONS DESCRIPTION

STORM SEWER PLAN & PROFILE
PUBLIC STREET IMPROVEMENT PLANS

NW LEE'S SUMMIT ROAD &
NE DOUGLAS STREET

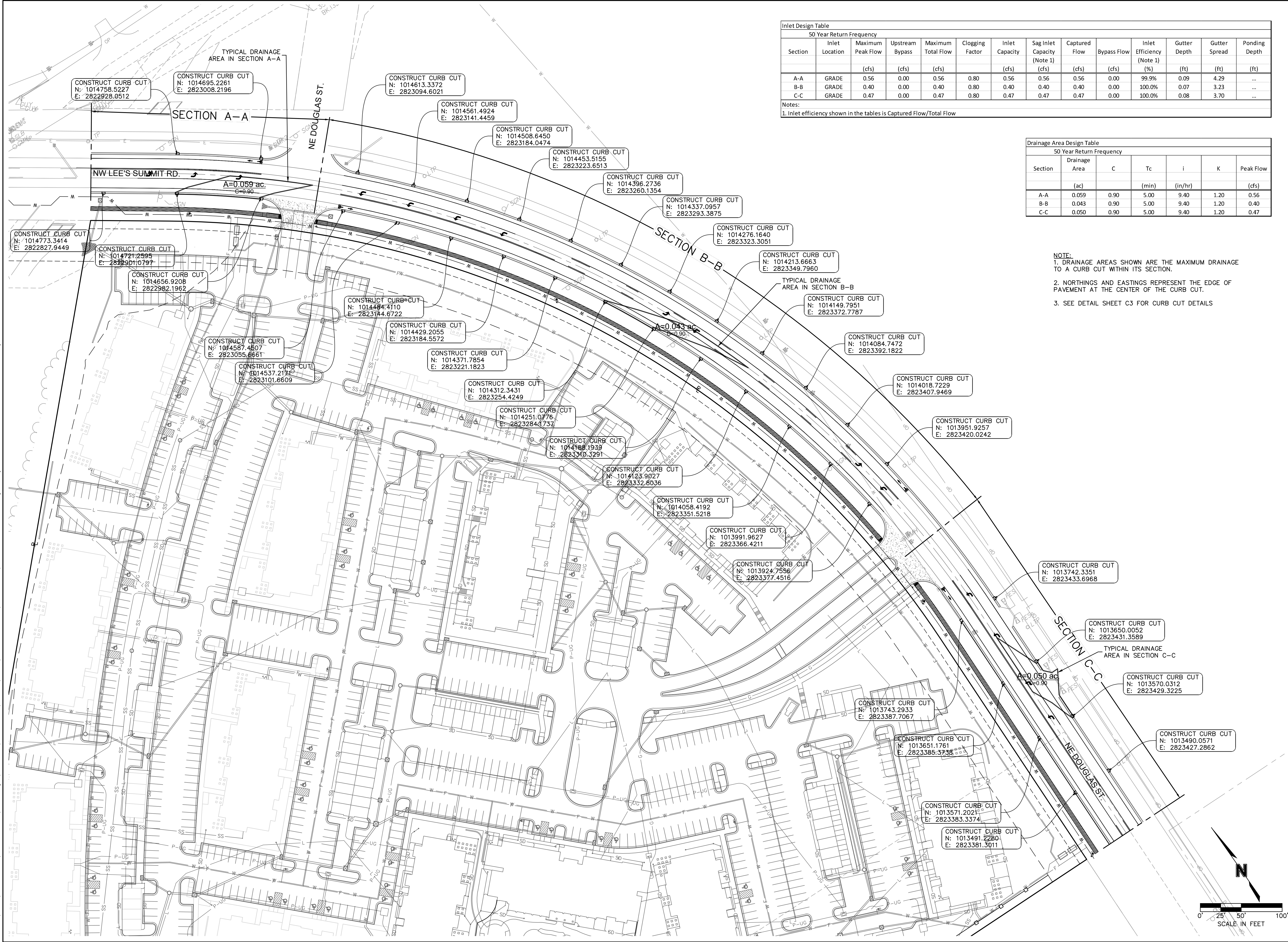
LEE'S SUMMIT, MO

drawn by: M.J.D.
checked by: M.J.D.
designed by: M.J.D.
QA/QC by: N.D.H.
project no.: 019-0012-B
date: 2020.06.12

SHEET
C12

2020
REVISIONS

File: F:\2019\0001-0500\019-0012-B\40-Design\AutoCAD\Final Plans\Sheets\GNCA\Public Street Improvements\CCP01_B190012.dwg ~ Plot Date: 2019.10.01 03:03 PM ~ Layout: CURB CUT PLAN ~ Last Saved By: mdebot ~



Inlet Design Table													
50 Year Return Frequency													
Section	Inlet Location	Maximum Peak Flow	Upstream Bypass	Maximum Total Flow	Clogging Factor	Inlet Capacity	Sag Inlet Capacity (Note 1)	Captured Flow	Bypass Flow	Inlet Efficiency (Note 1)	Gutter Depth	Gutter Spread	Ponding Depth
		(cfs)	(cfs)	(cfs)		(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)
A-A	GRADE	0.56	0.00	0.56	0.80	0.56	0.56	0.56	0.00	99.9%	0.09	4.29	...
B-B	GRADE	0.40	0.00	0.40	0.80	0.40	0.40	0.40	0.00	100.0%	0.07	3.23	...
C-C	GRADE	0.47	0.00	0.47	0.80	0.47	0.47	0.47	0.00	100.0%	0.08	3.70	...

Notes:

1. Inlet efficiency shown in the tables is Captured Flow/Total Flow

Drainage Area Design Table						
50 Year Return Frequency						
Section	Drainage Area	C	Tc	i	K	Peak Flow
	(ac)		(min)	(in/hr)		(cfs)
A-A	0.059	0.90	5.00	9.40	1.20	0.56
B-B	0.043	0.90	5.00	9.40	1.20	0.40
C-C	0.050	0.90	5.00	9.40	1.20	0.47

- NOTE:
1. DRAINAGE AREAS SHOWN ARE THE MAXIMUM DRAINAGE TO A CURB CUT WITHIN ITS SECTION.
2. NORTHINGS AND EASTINGS REPRESENT THE EDGE OF PAVEMENT AT THE CENTER OF THE CURB CUT.
3. SEE DETAIL SHEET C3 FOR CURB CUT DETAILS

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NICHOLAS D. HEISER
NUMBER
PE-2015000555
06/11/2020
NICHOLAS D. HEISER, P.E.
MO# 2015000555

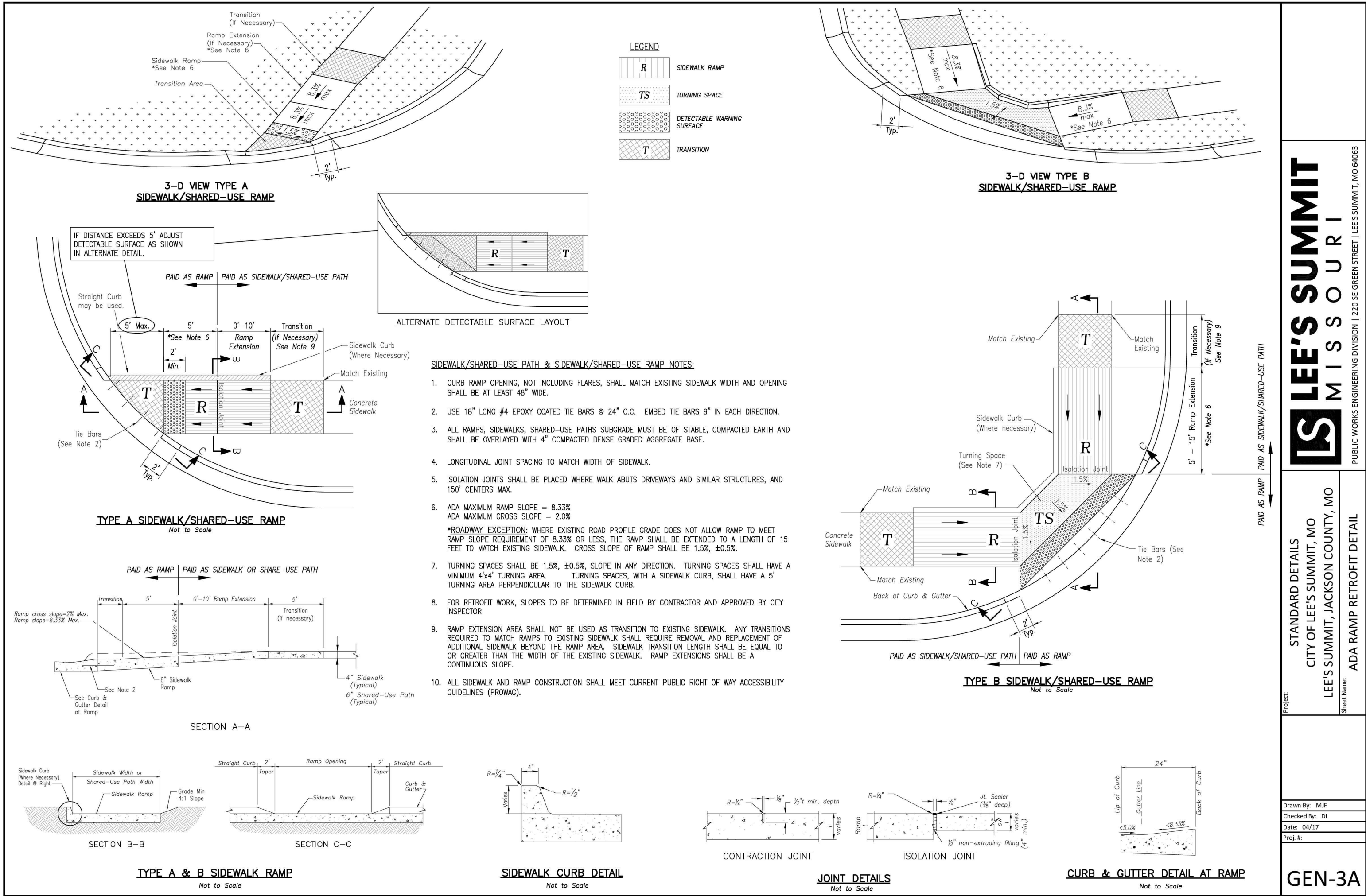
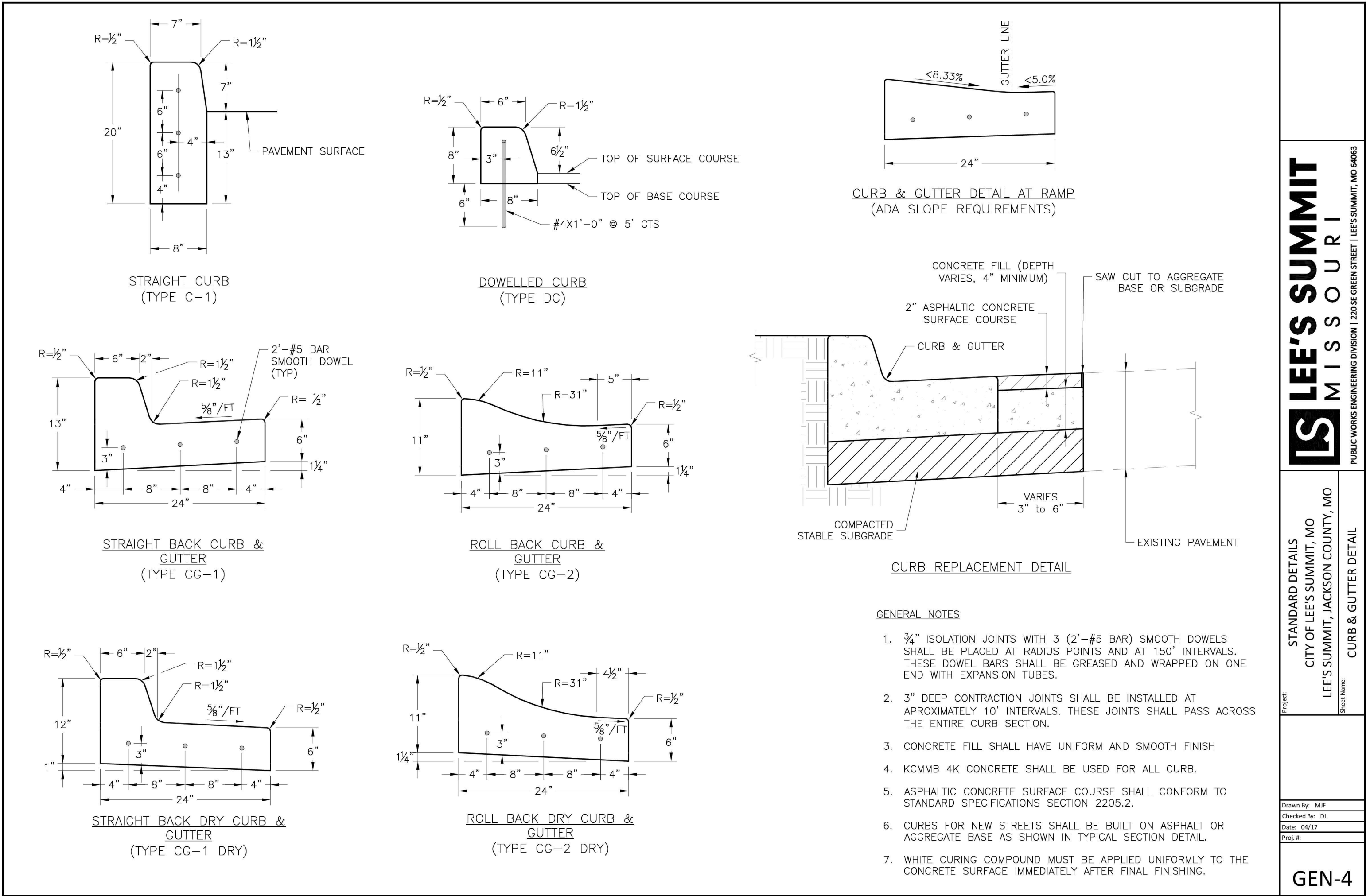
REVISIONS

2020

CURB CUT PLAN
PUBLIC STREET IMPROVEMENT PLANS
NW LEE'S SUMMIT ROAD &
NE DOUGLAS STREET
LEE'S SUMMIT, MO

drawn by: M.J.D.
checked by: N.D.H.
designed by: M.J.D.
QA/QC by: N.D.H.
project no.: 019-0012-B
date: 2020.06.12

SHEET
C13



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NICHOLAS D. HEISER, P.E.
NUMBER
PE-2015000555
06/11/2020
MO# 2015000555

BY

REVISIONS DESCRIPTION

NO. REV.

DATE

2020

DETAIL SHEET
PUBLIC STREET IMPROVEMENT PLANS
NW LEE'S SUMMIT ROAD &
NE DOUGLAS STREET
LEE'S SUMMIT, MO

drawn by: M.J.D.
checked by: N.D.H.
designed by: M.J.D.
QA/QC by: N.D.H.
project no.: 019-0012-B
date: 2020.06.12

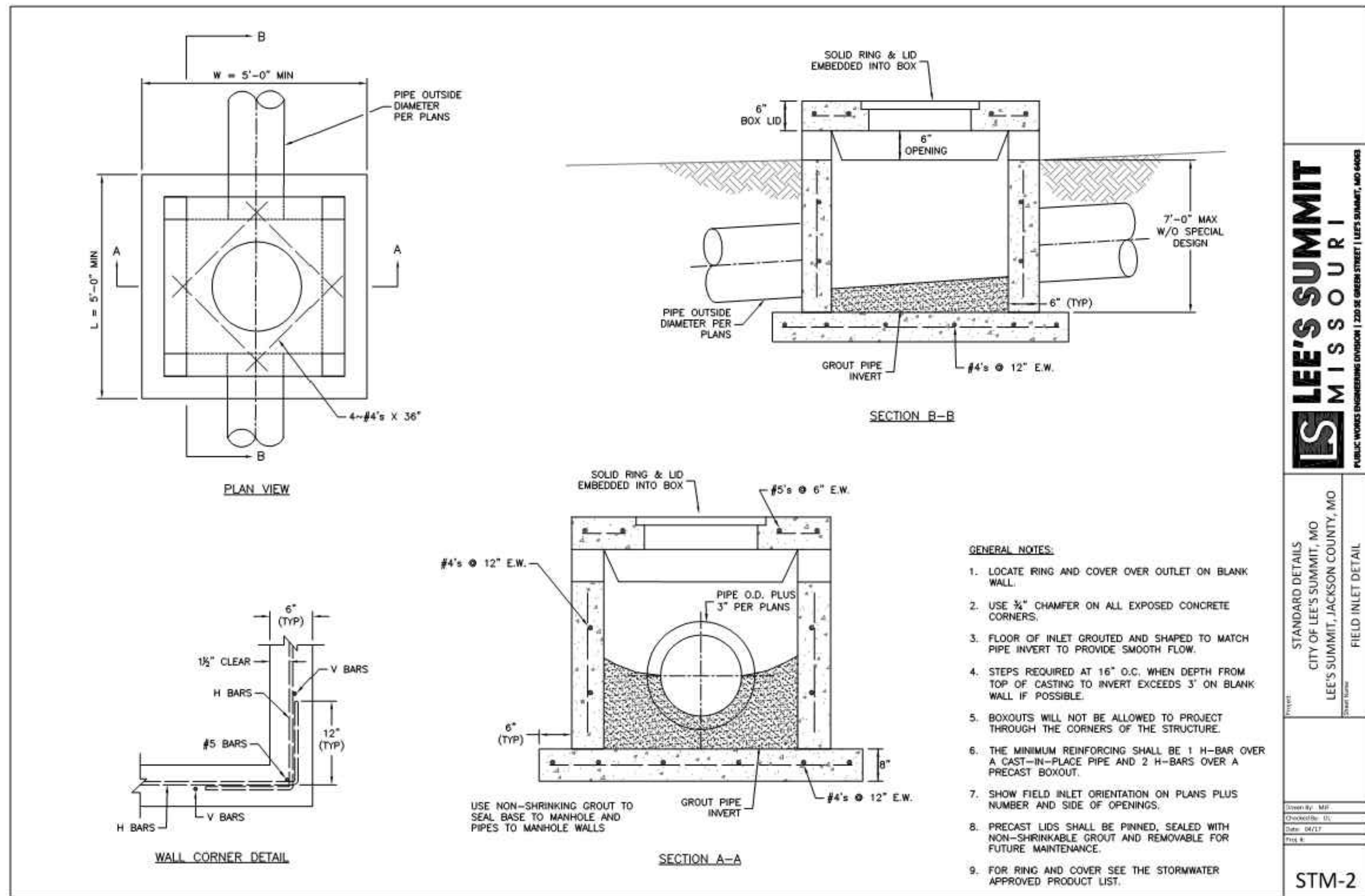
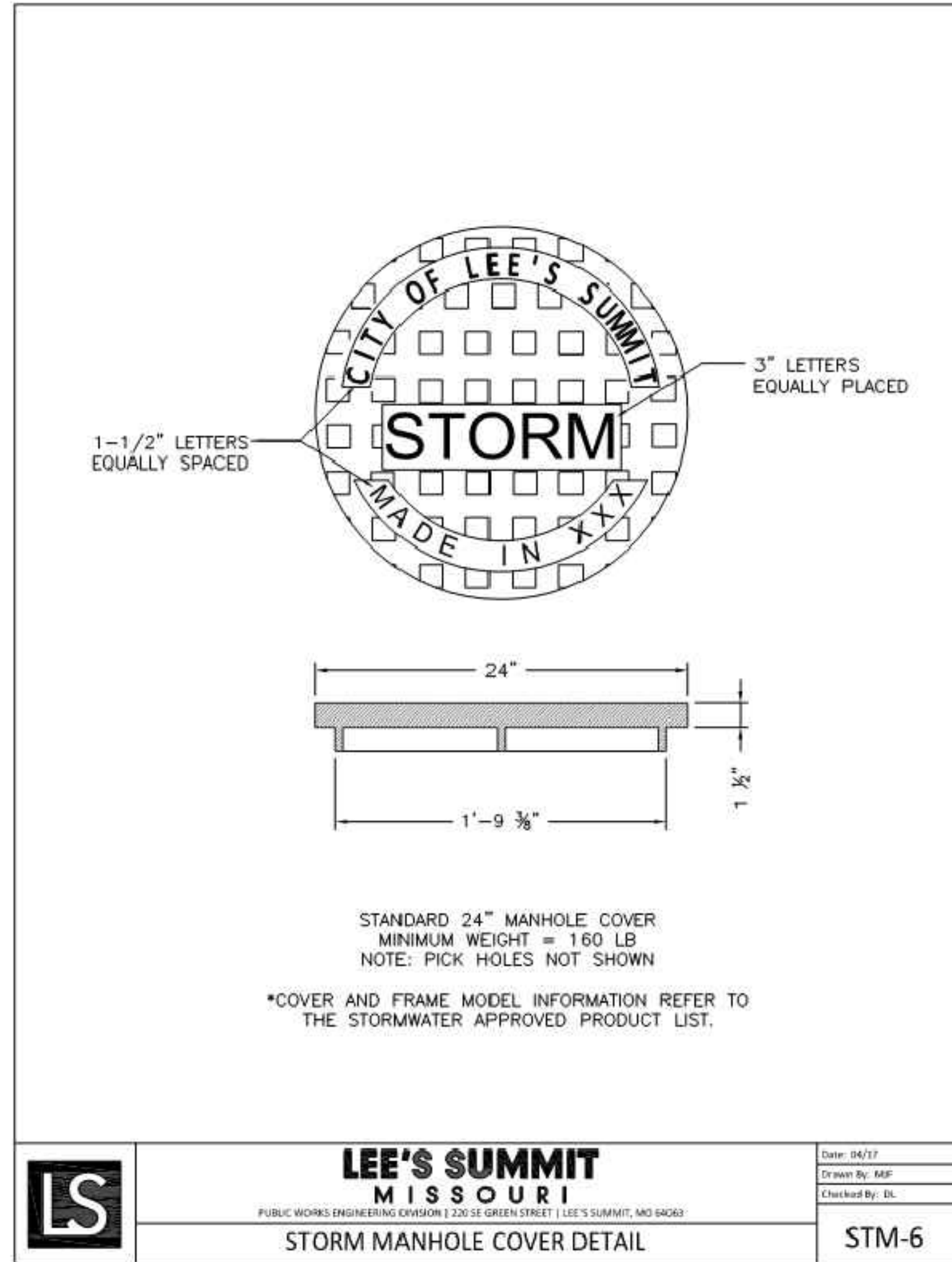
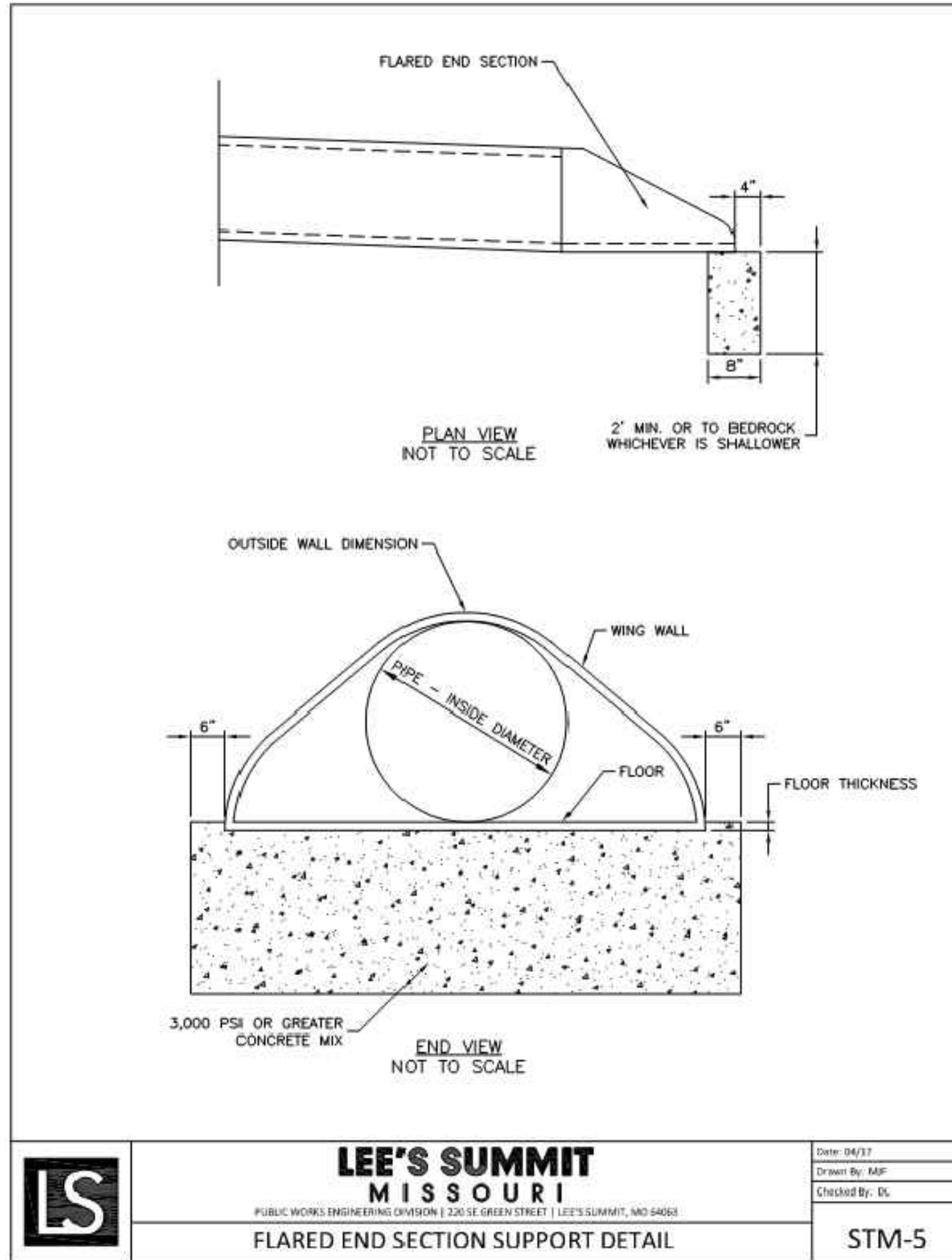
SHEET
C14

STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
CURB & GUTTER DETAIL

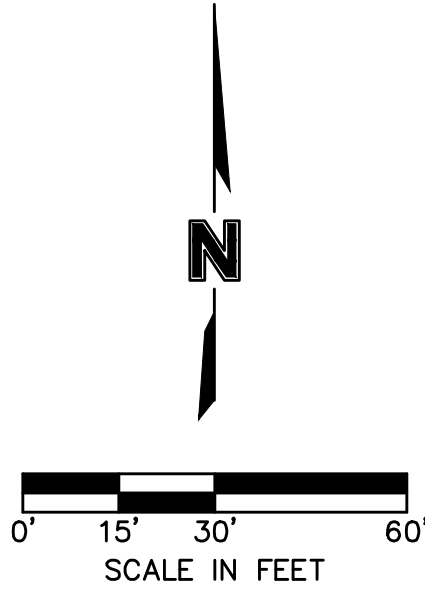
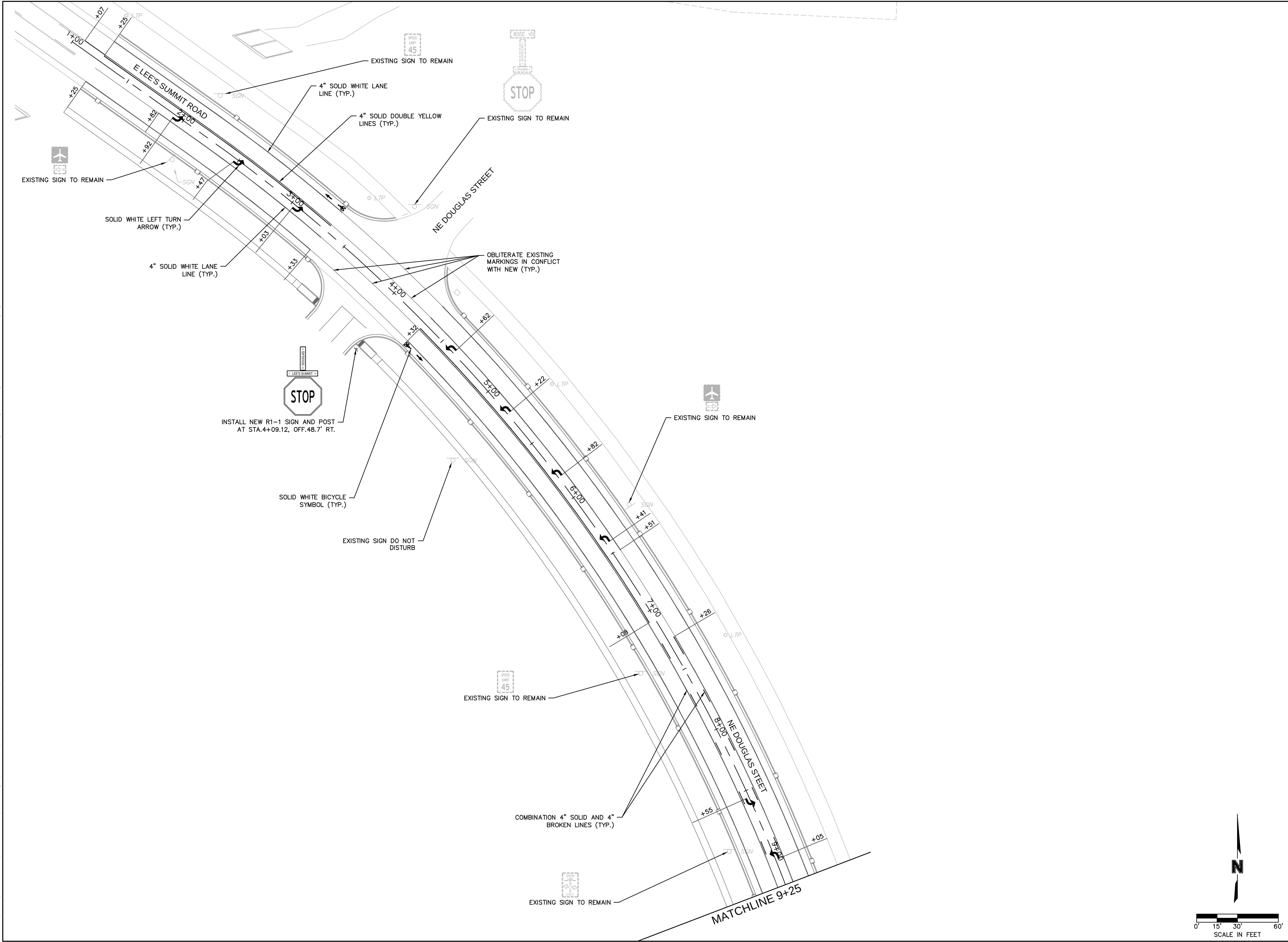
GEN-4

STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
ADA RAMP RETROFIT DETAIL

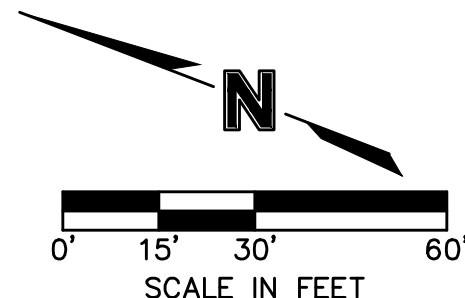
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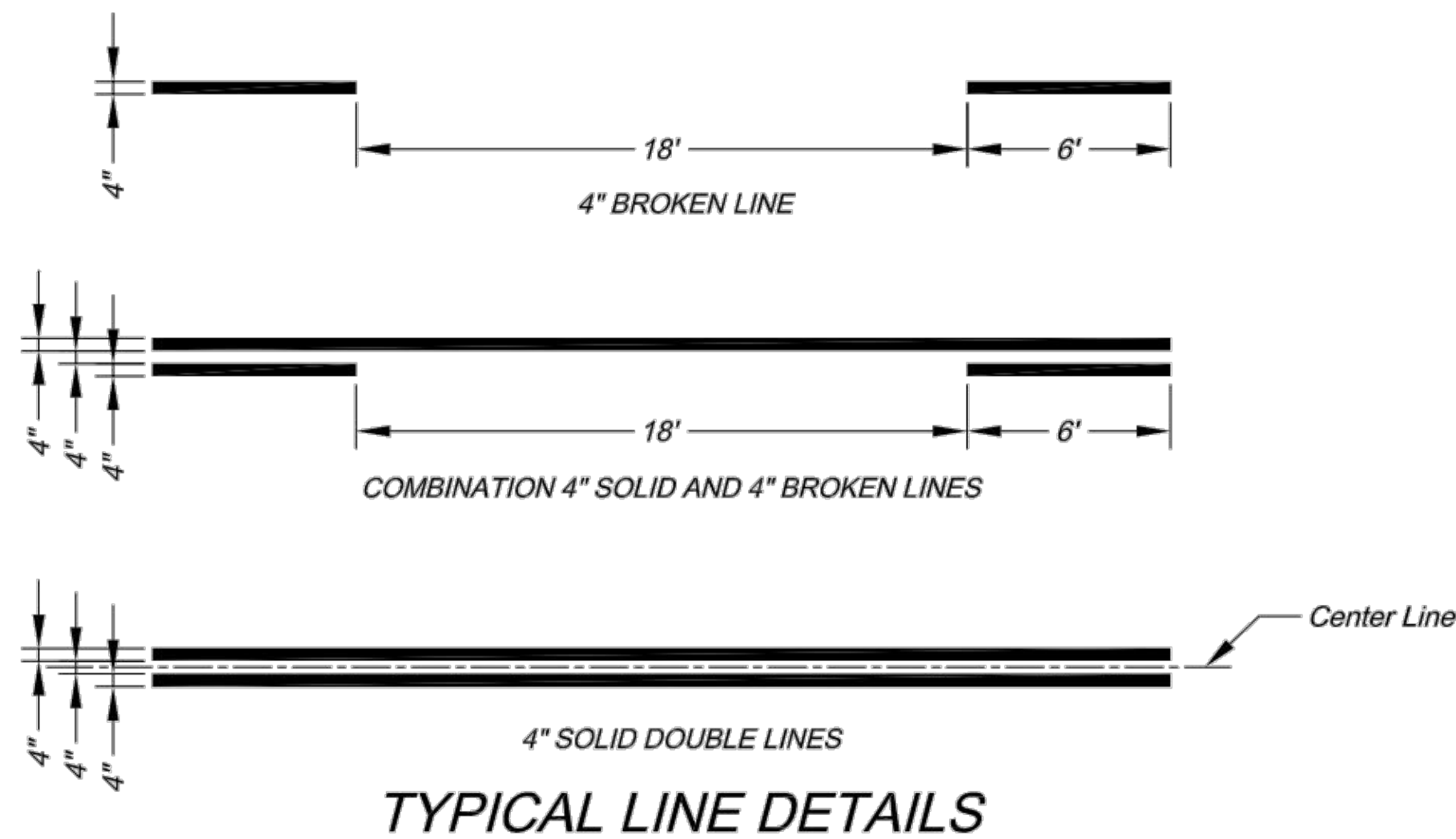
olsson OLSSON - CIVIL ENGINEERING 1301 E. 15TH AVENUE, SUITE 100 NORTH KANSAS CITY, MO 64116 TEL 816.861.1177 WWW.OLSSON.COM				
		JEREMY S. STRETZ MO# 2017023856		
BY	REVISIONS DESCRIPTION	DATE	NO. REV.	REVISIONS
PAVEMENT MARKING & SIGNING PLAN		ARIA APARTMENTS PHASE 1		2020
LEE'S SUMMIT, MO				
drawn by: _____ JRC checked by: _____ JSS designed by: _____ JSS QA/QC by: _____ JSS project no.: 019-0012-B date: 2020.06.12		SHEET F1		



PERMANENT SIGNING SUMMARY						
STATION	STREET REFERENCE	OFFSET FROM C/L	MUTCD DESIGNATION	SIGN SIZE	AREA (SF) MEP SIGNS	POST TYPE
4+09.12	E LEES SUMMIT ROAD	48.7' RIGHT	R1-1	30"x30"	5.18	SQUARE
			D3-1 (Lee's Summit Rd)	9"x48"	6.00	SHARED
			D3-1 (NE Douglas St)	9"x48"	6.00	SHARED
13+18.74	E LEES SUMMIT ROAD	49.3' RIGHT	R1-1	30"x30"	5.18	SQUARE
			D3-1 (NE Douglas St)	9"x48"	6.00	SHARED
TOTALS			28.36			2

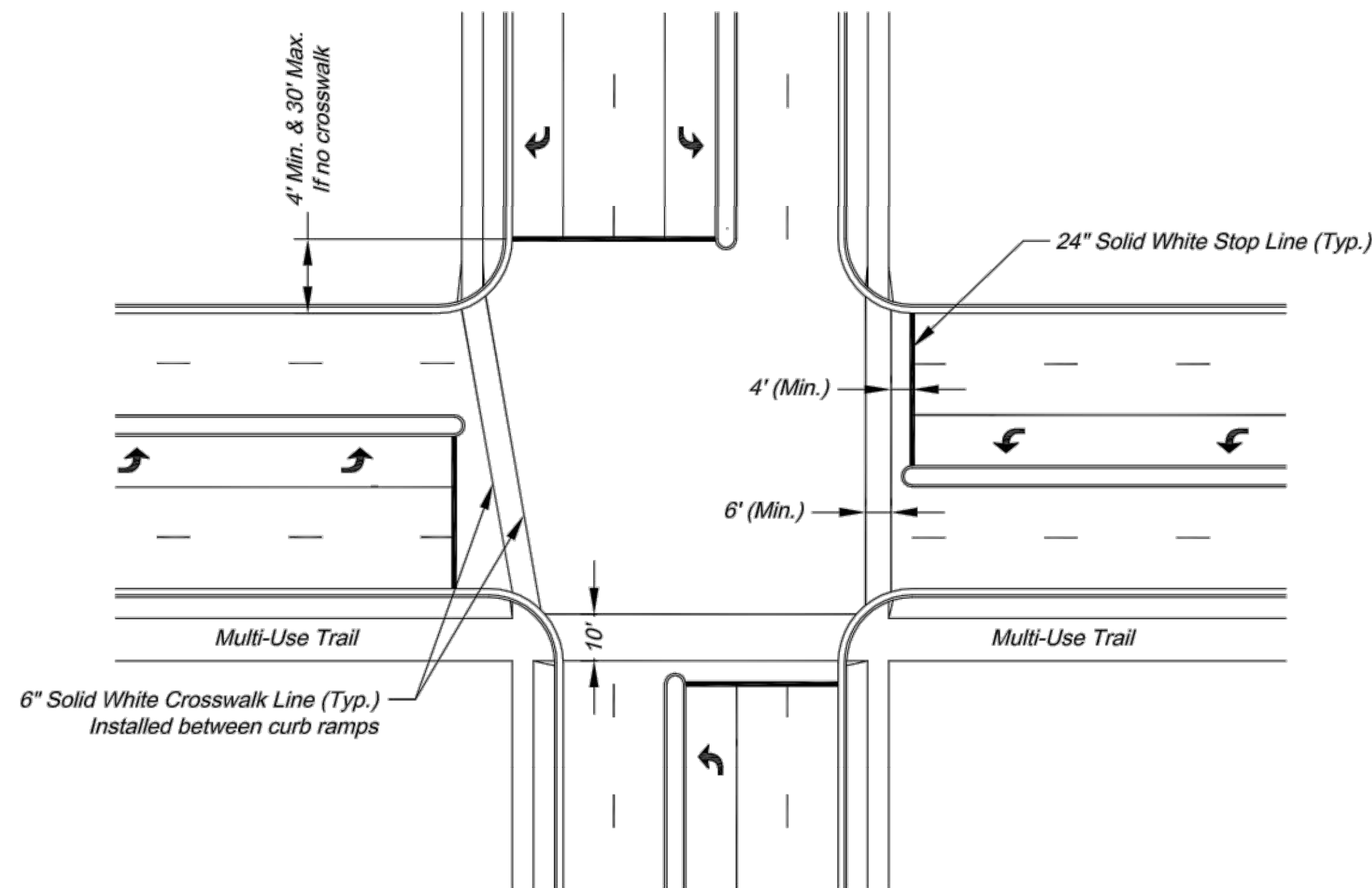
PAVEMENT MARKING SUMMARY									
STATION TO STATION		LOCATION	4" SOLID WHITE LANE LINES (LF)	4" SOLID YELLOW LANE LINE (LF)	4" BROKEN YELLOW LANE LINES (LF)	WHITE TURN ARROWS (EA)		Bicycle Lane Markings	
						RT	LT	Arrow	Helmeted Rider
1+07	3+33	E LEES SUMMIT ROAD	565	435			3	1	1
4+32	7+08	E LEES SUMMIT ROAD	770	550			4	1	1
7+08	9+25	E LEES SUMMIT ROAD	432	417	104		2		
9+25	12+23	E LEES SUMMIT ROAD	595	595	149		2	1	1
13+42	16+18	E LEES SUMMIT ROAD	772	553			4	1	1
16+18	17+16	E LEES SUMMIT ROAD	196	276	69				
TOTALS			3330	2826	322	0	15	4	4

drawn by: _____ JRC checked by: _____ JSS designed by: _____ JSS QA/QC by: _____ JSS project no.: 019-0012-B date: 2020.06.12 2020	
PAVEMENT MARKING & SIGNING QUANTITIES ARIA APARTMENTS PHASE 1	
LEE'S SUMMIT, MO 2020	
NO. REV. DATE	
REVISIONS DESCRIPTION	
BY	
JEREMY S. STRETZ MO# 2017023856 	
olsson OLSSON - CIVIL ENGINEERING 100 WEST 10TH AVENUE 130 E. PLUMBLING, SUITE 100 NORTH KANSAS CITY, MO 64116 TEL: 816.861.1177 www.olsson.com	
SHEET F3	



NOTES:

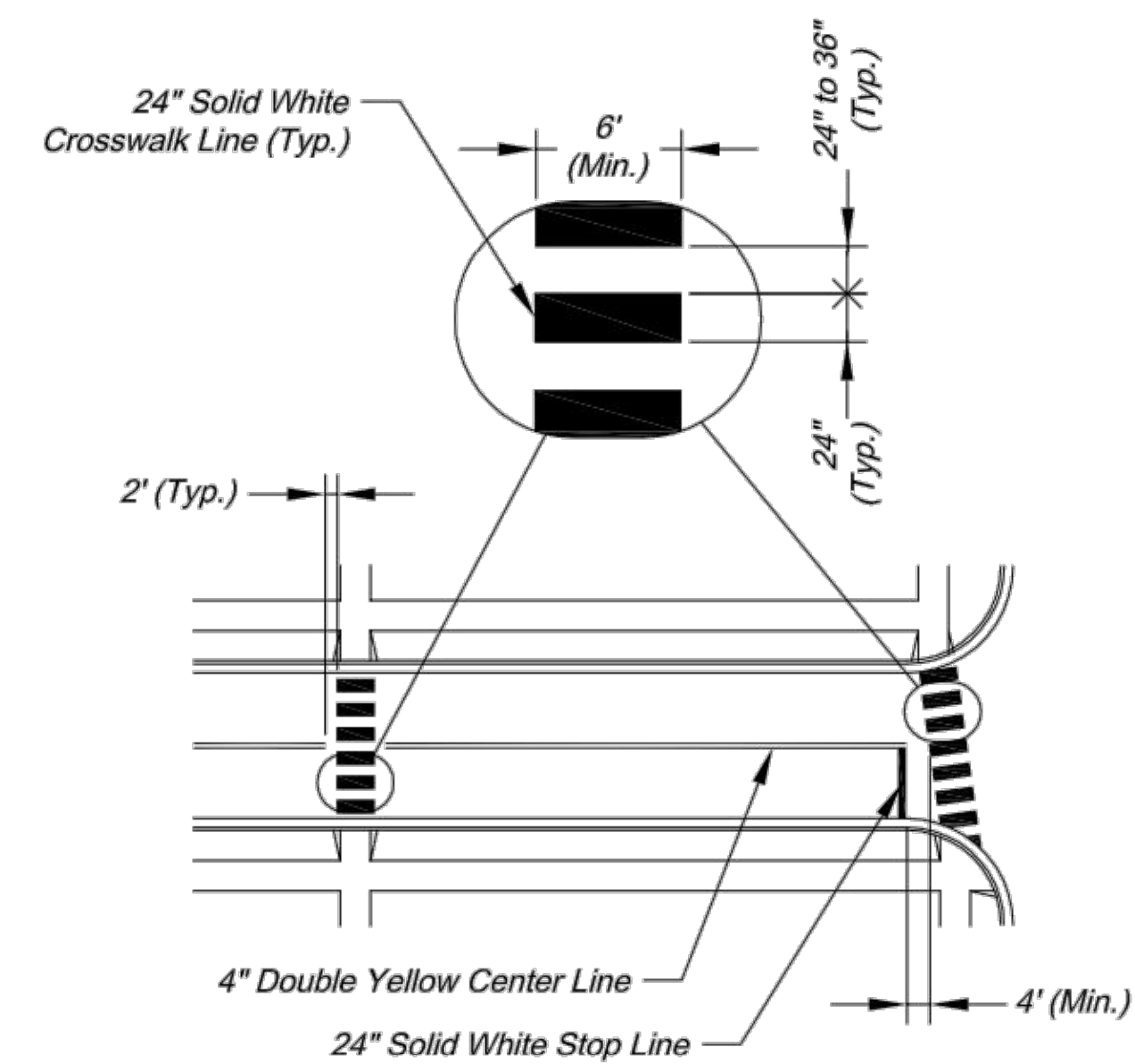
1. All edge line, center line, and lane line pavement markings shall be 4" wide unless otherwise noted.
2. Edge lines shall be continuous solid white or yellow lines. Right side edge lines shall be solid white. Median or left side edge lines on divided roadways are to be solid yellow. Edge lines and center lines shall be continuous across driveways.



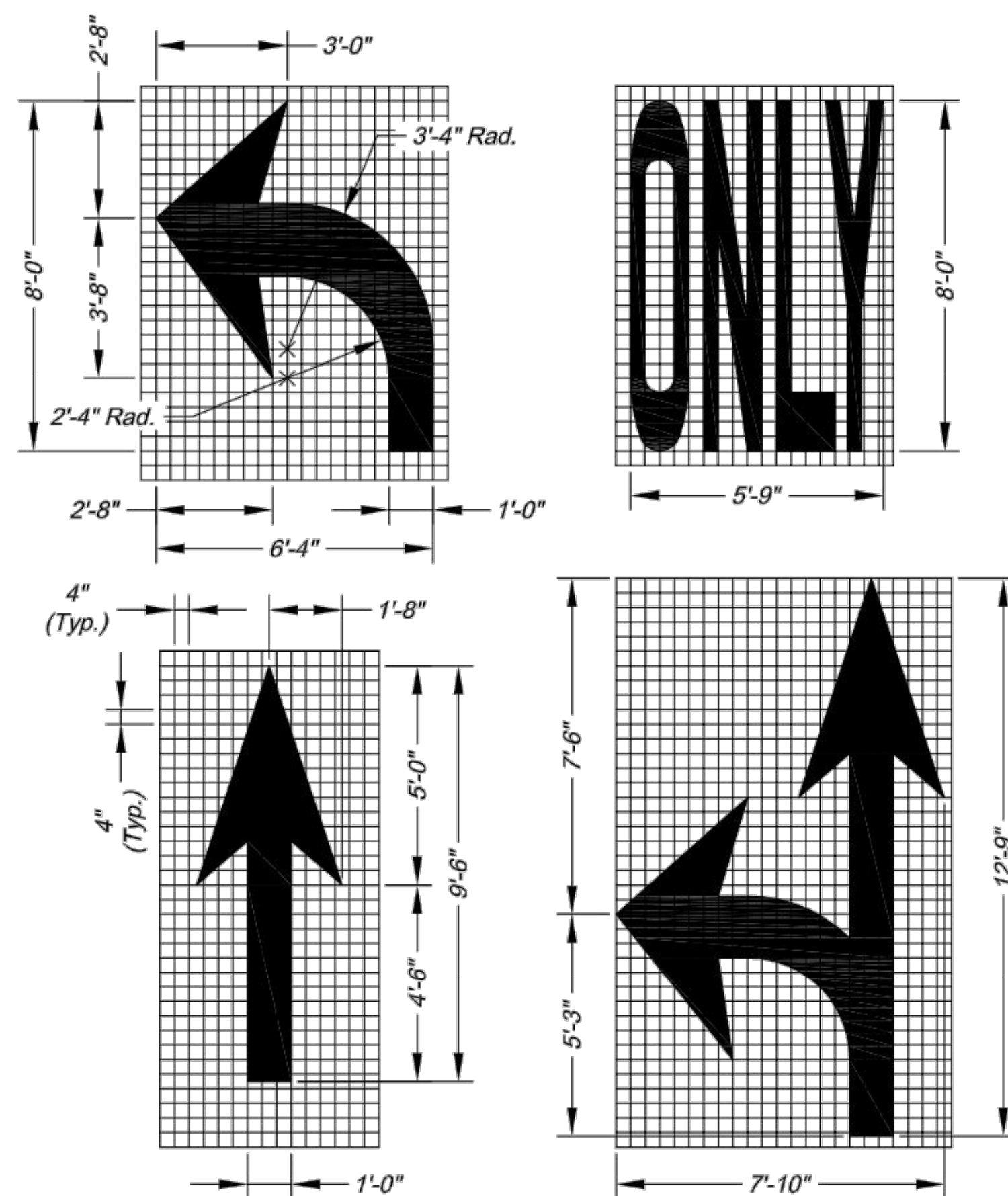
TYPICAL INTERSECTION MARKINGS

NOTES:

1. Transverse crosswalk lines shall be installed such that the distance between lines is at least 6 or 10 feet.
2. Stop lines are required at signalized intersections, on multi-lane stop controlled approaches, or in front of crosswalks at controlled intersections.



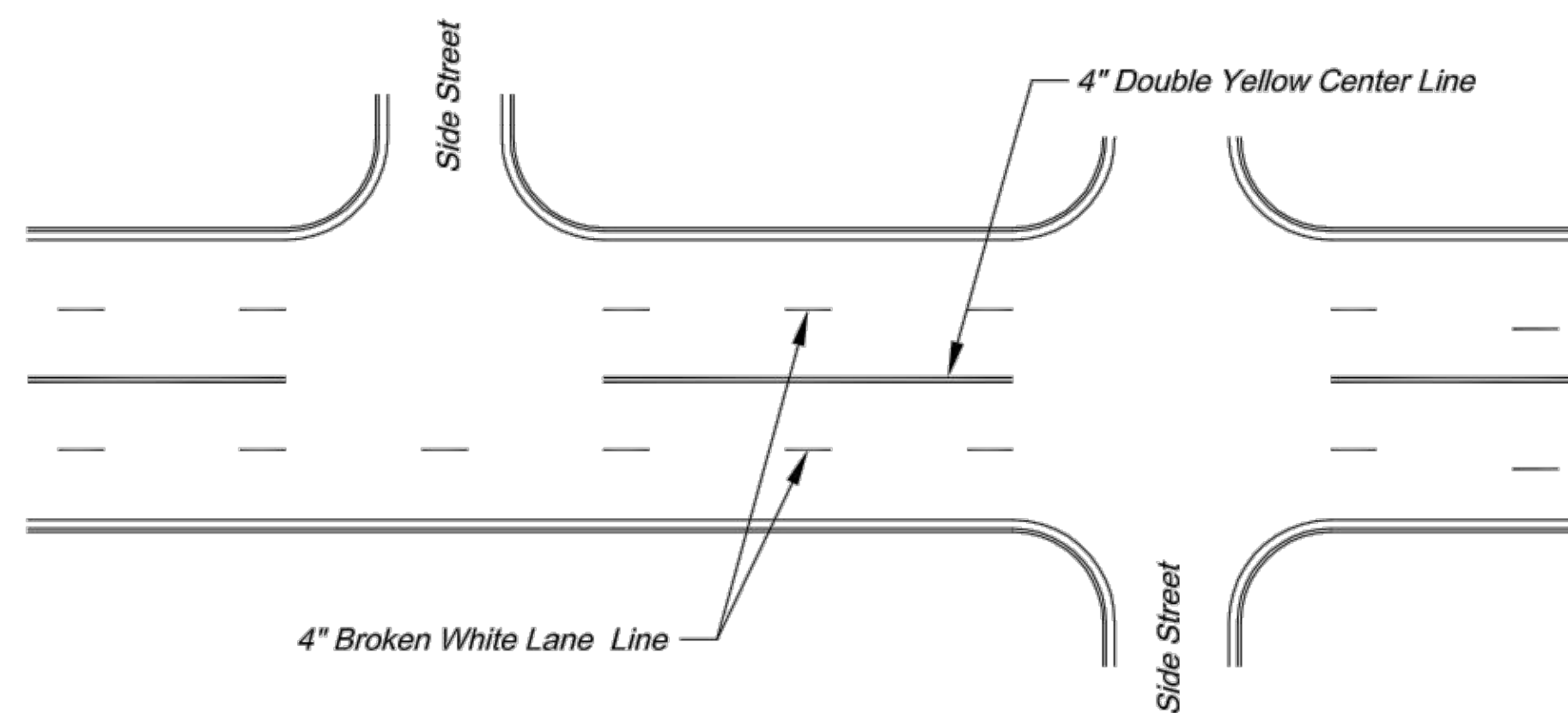
TYPICAL MIDBLOCK OR SCHOOL CROSS WALK



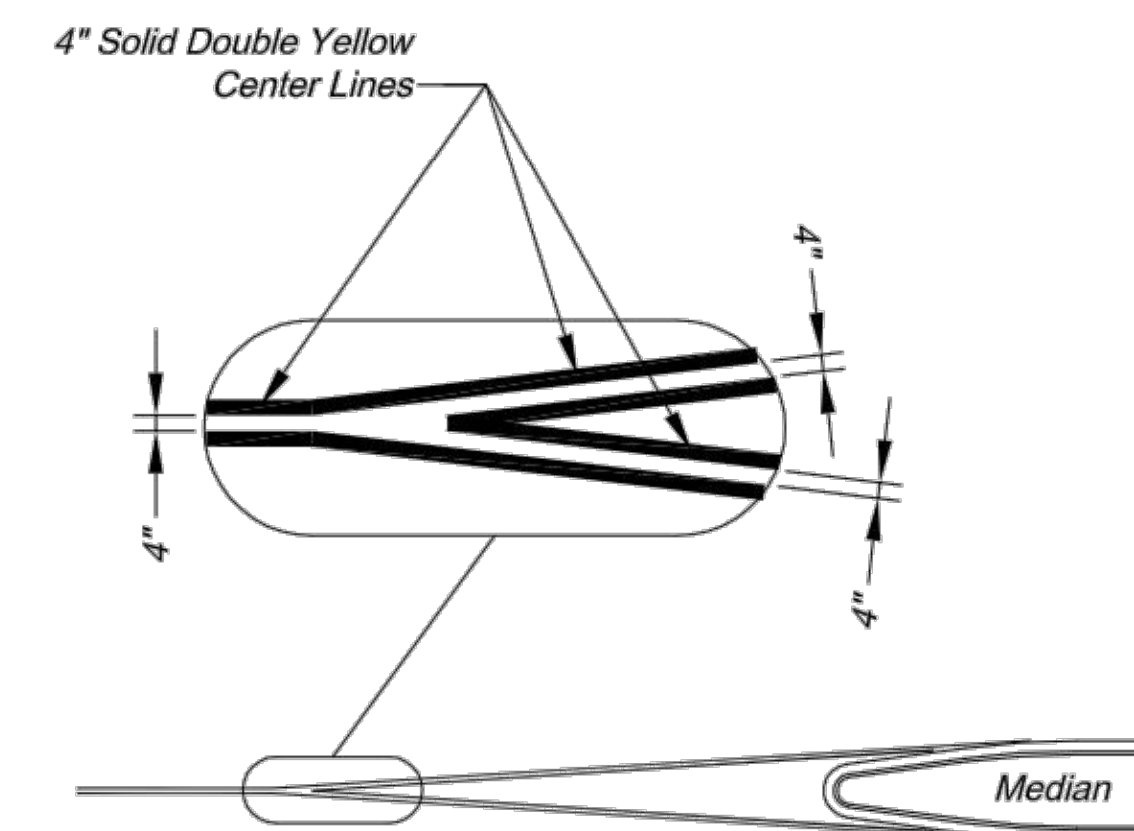
ARROW AND SYMBOL DETAILS

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 MARKINGS FOR FOUR-LANE UNDIVIDED ROADWAY



TYPICAL MEDIAN NOSE CENTER LINE DETAIL

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.

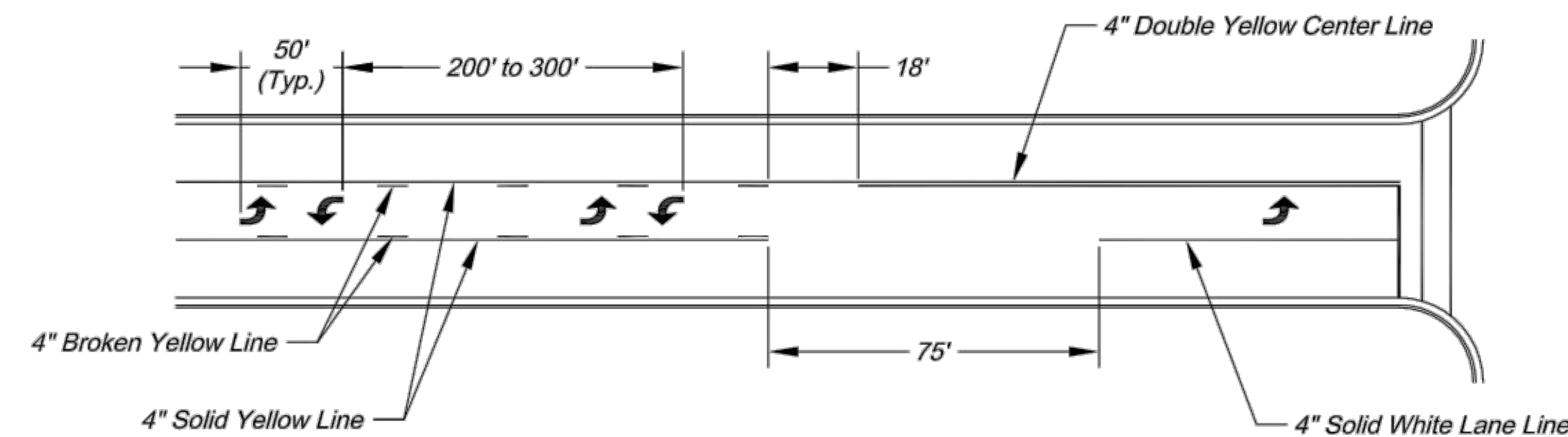
CITY OF LEE'S SUMMIT
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
220 SE GREEN STREET
LEE'S SUMMIT, MISSOURI 64063
PHONE: (816) 969-1800 FAX: (816) 969-1809



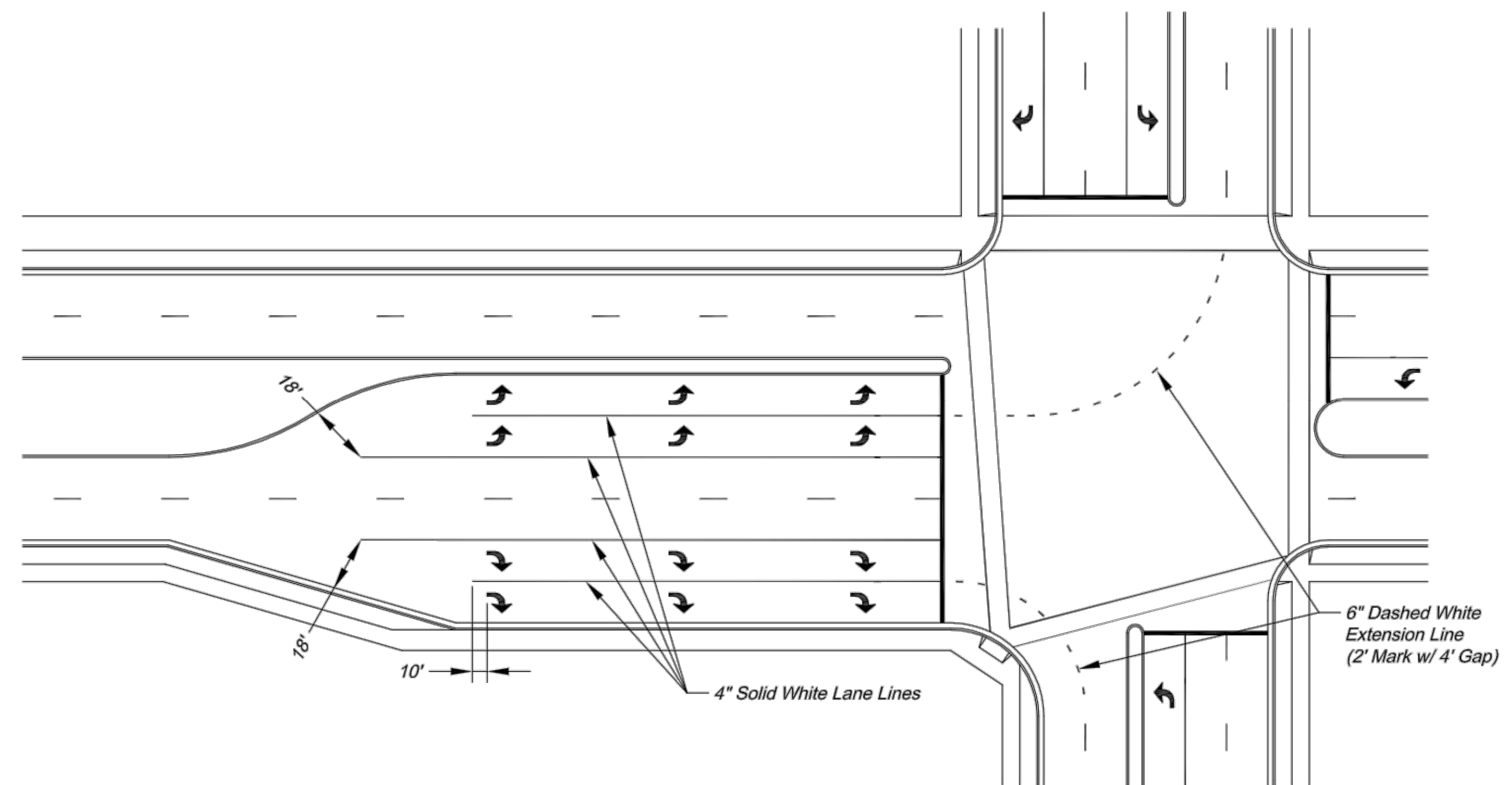
Project: ROADWAY MARKING DETAILS
Sheet Name: STANDARD DRAWING PM-1

Drawn By: AS
Checked By: JW
Date: 09/09/2009
Project#

SHEET
F4

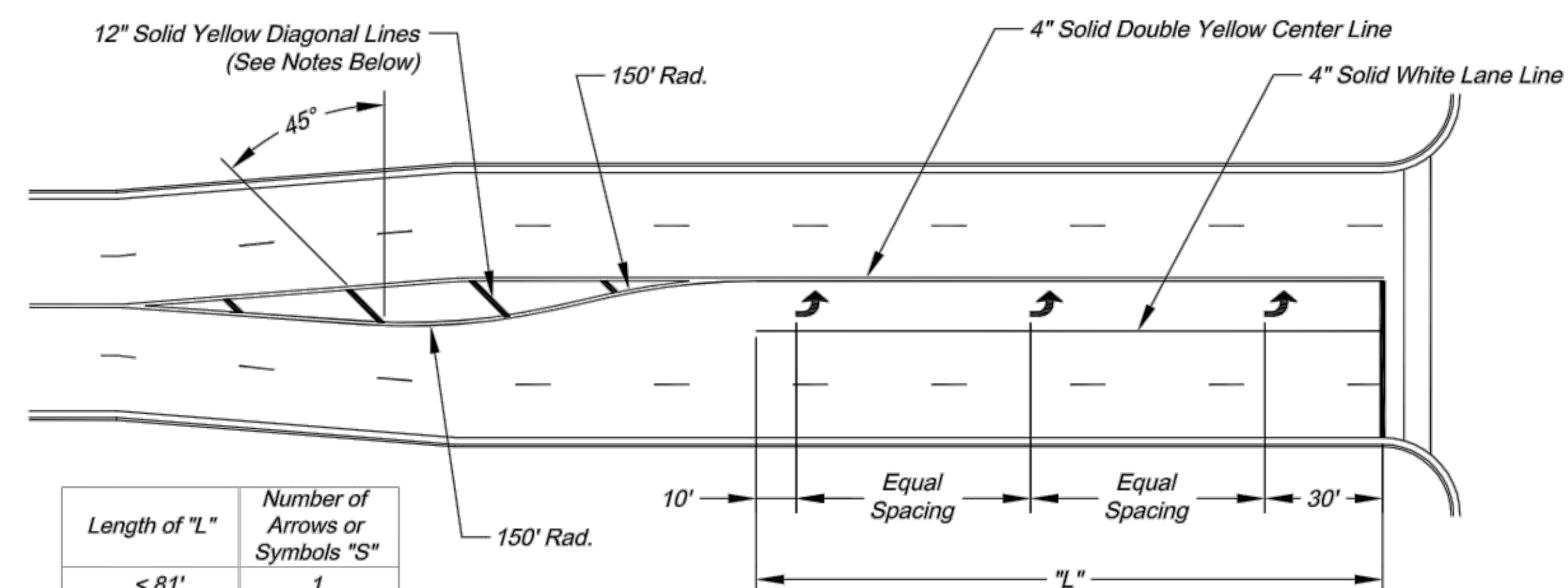


TYPICAL MARKINGS FOR TWO-WAY LEFT-TURN LANE



TYPICAL DUAL TURN LANE MARKINGS

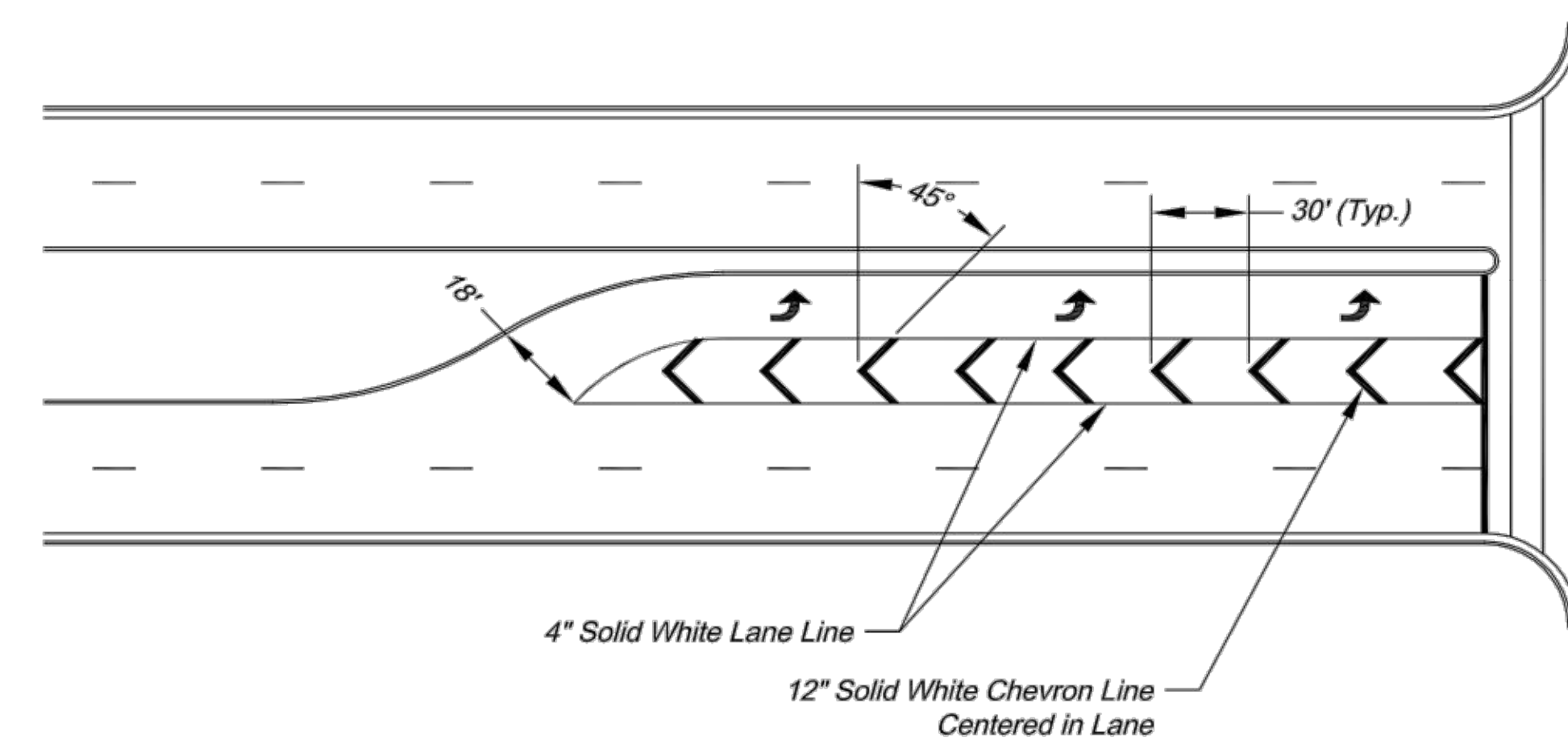
NOTE:
1. Dashed extension lines shall not extend through crosswalks.



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

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INTERSECTION MARKING DETAILS

STANDARD DRAWING PM-2

Project:

Sheet Name:

Drawn By: AS

Checked By: JW

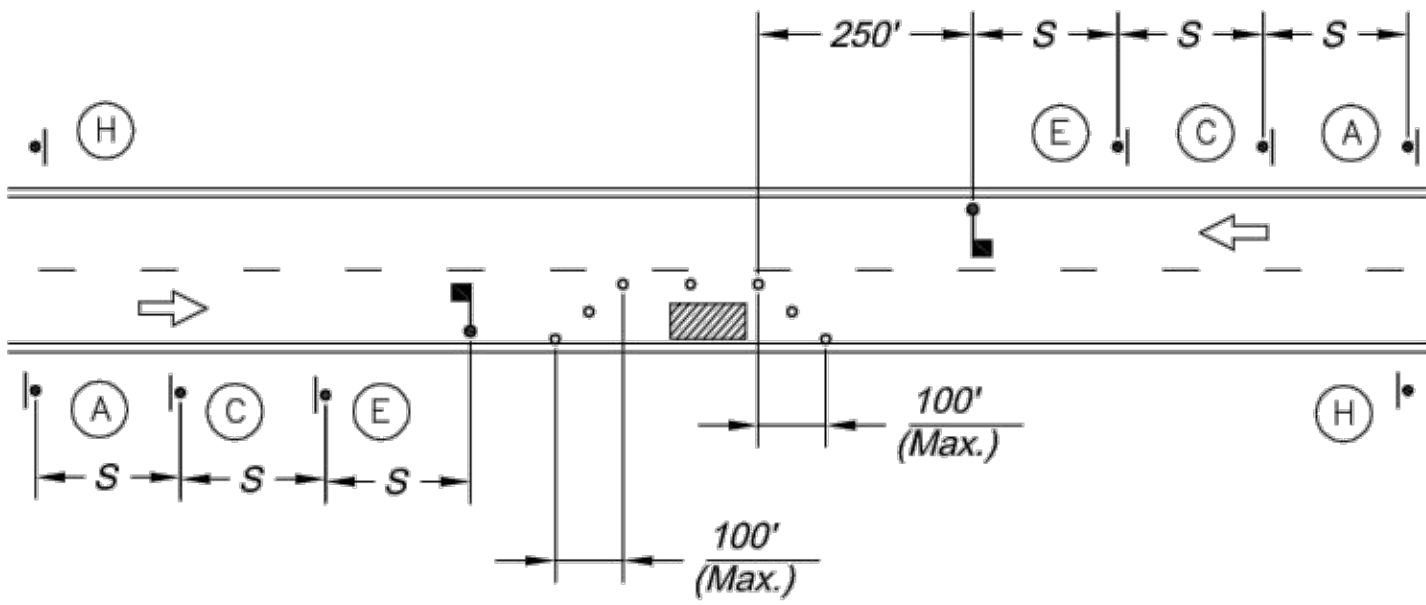
Date: 09/09/2009

Project#

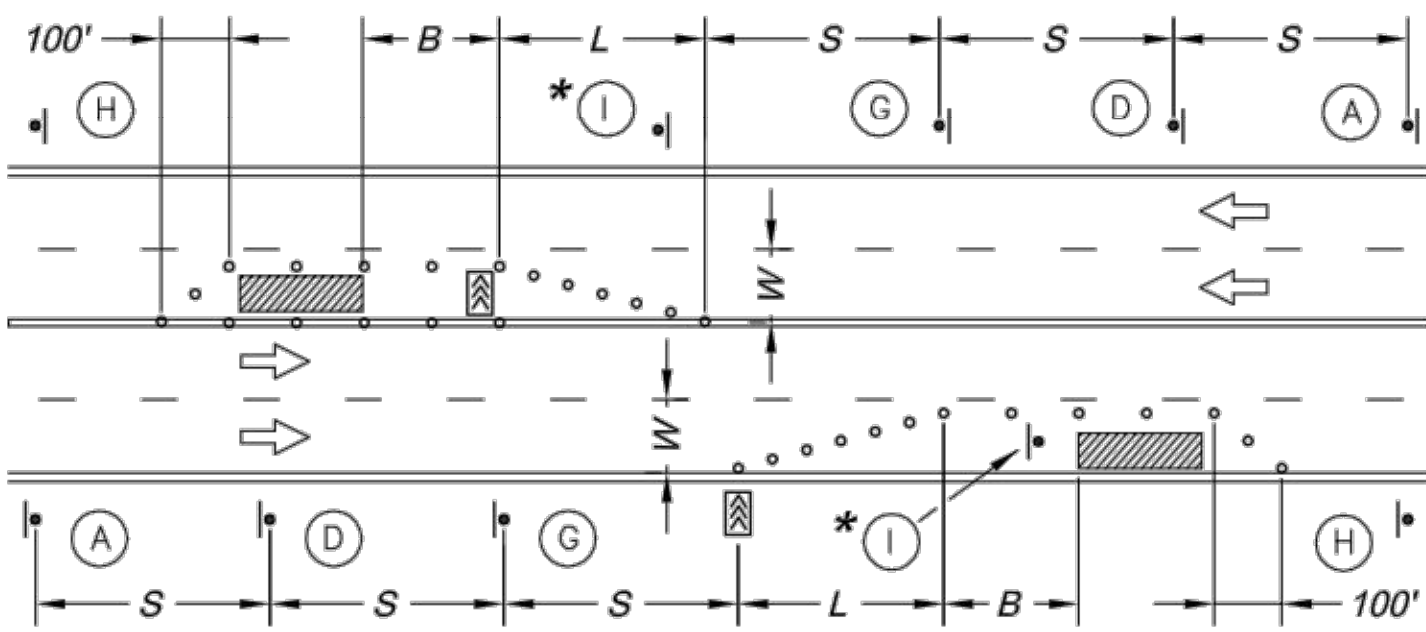
SHEET
F5

SYMBOL LEGEND

- ▨ - Work Area
• - Sign
▤ - Barricade
← - Direction of Travel
○ - Channelizer
▤ - Arrow Panel
■ - Flagger

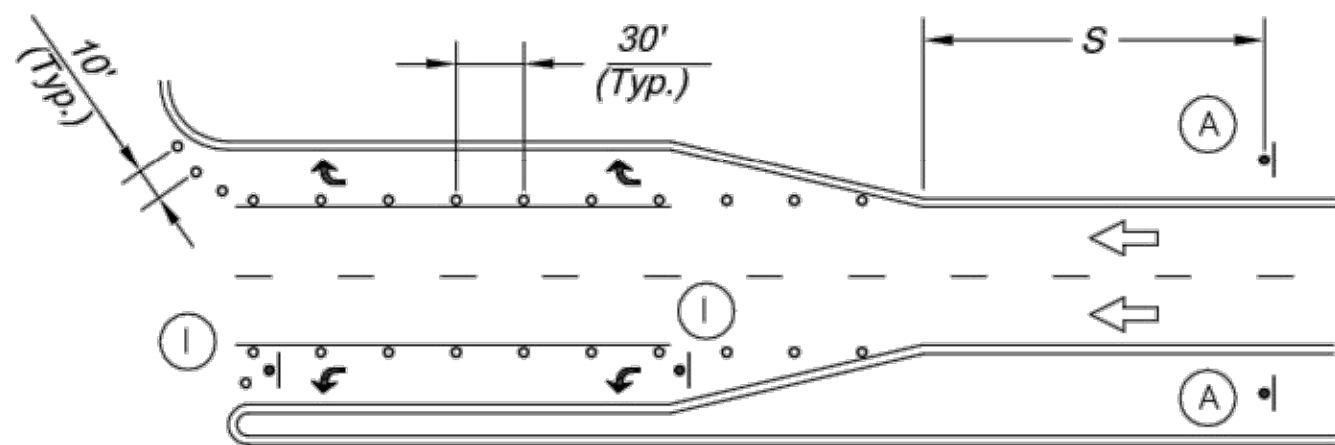


LANE CLOSURE - TWO LANE STREET



LANE CLOSURE - FOUR LANE STREET

* Install Signs Every 200 Feet Throughout the Closed Lane or As Needed



TURN LANE CLOSURE

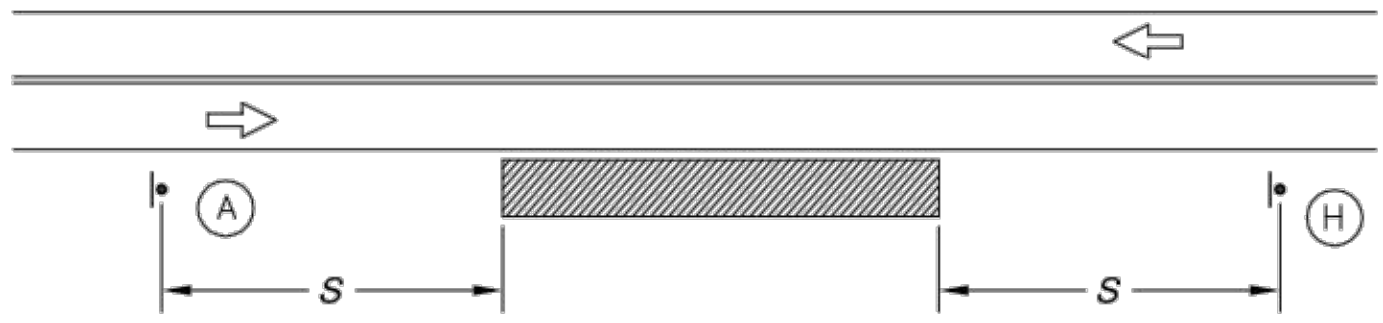
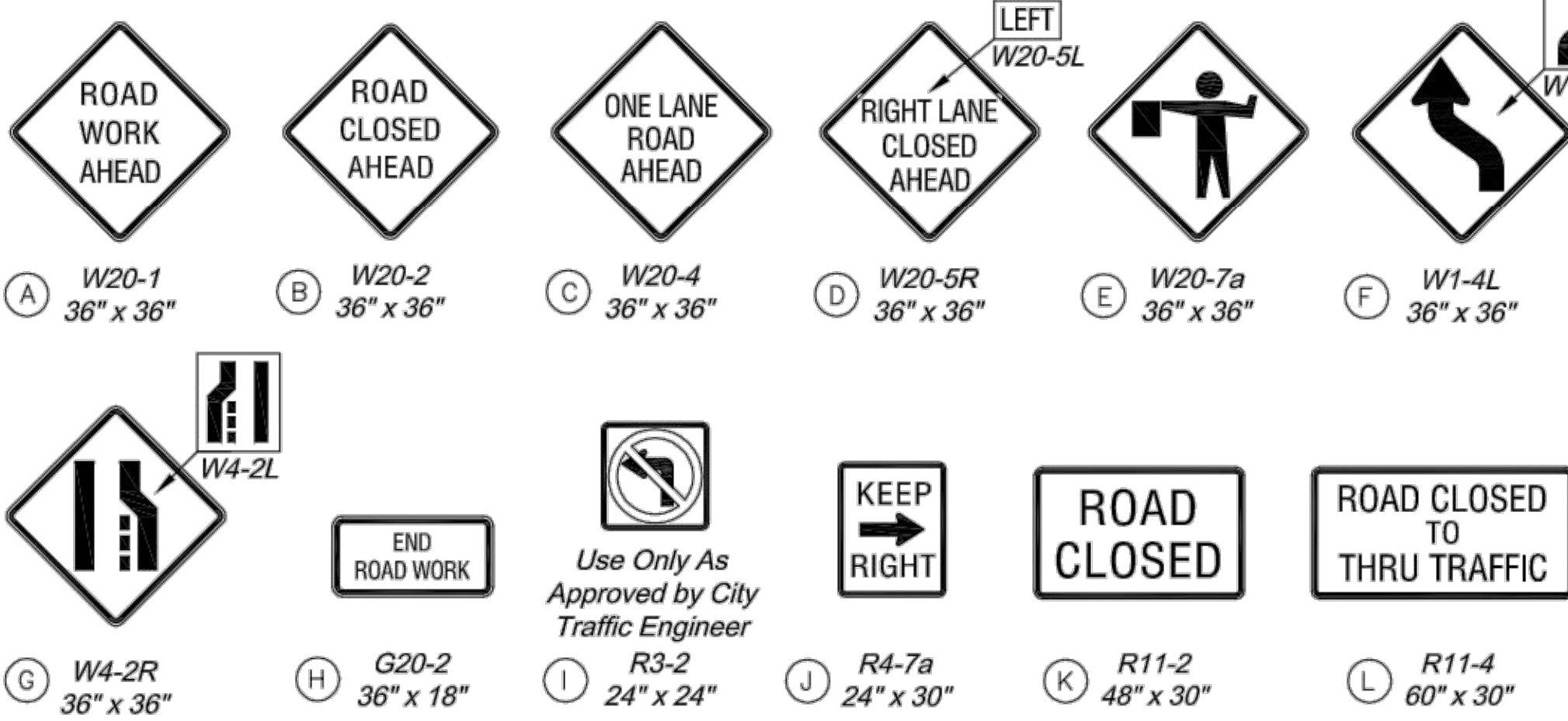
Sign Spacing "S"	
Speed Limit (mph)	Spacing (Feet)
25	100
30 - 35	250
≥ 40	350

Taper Dimensions (Feet)				
Speed Limit (mph)	Minimum Taper Length "L", per Lane Width "W"			Minimum Number of Channelizers
	10	11	12	
25	105	115	125	6
30	150	165	180	7
35	205	225	245	8
40	270	295	320	9
45	450	495	540	13

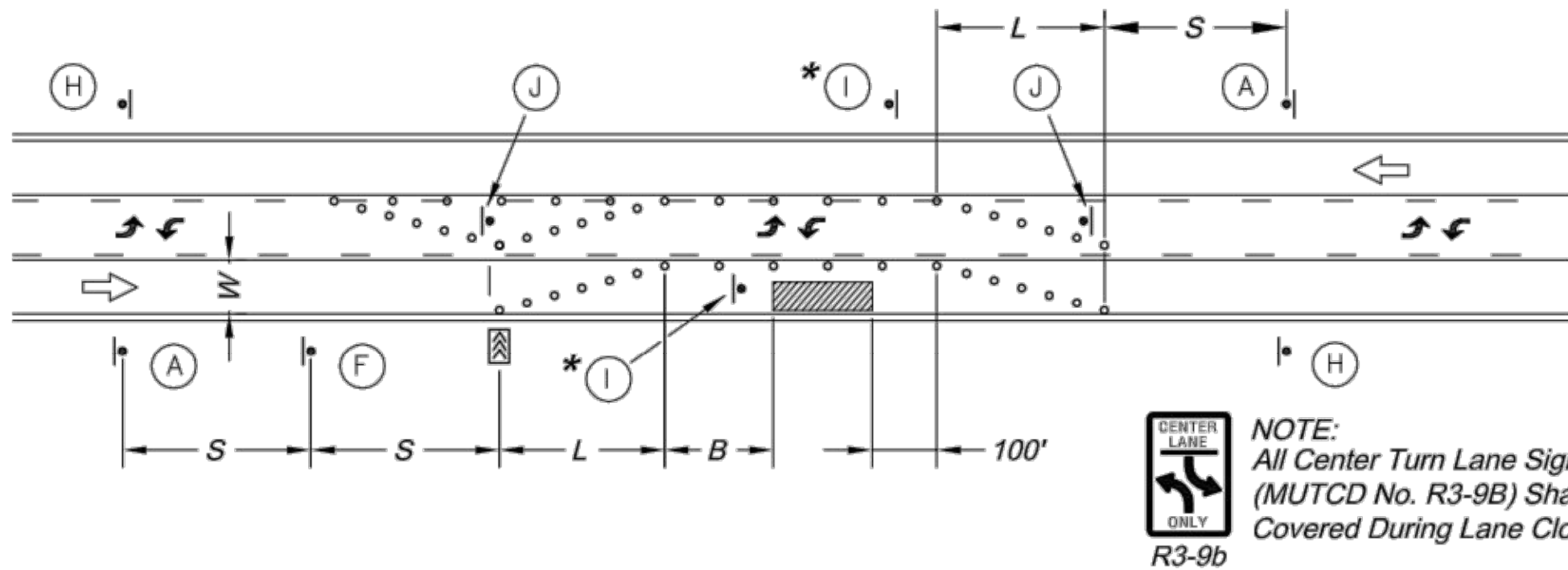
Guidelines for Length of Longitudinal Buffer Space "B"	
Speed Limit (mph)	Length (Feet)
25	35
30	55
35	85
40	120
45	170

Maximum Channelizer Spacing		
Speed Limit (mph)	Within Taper (Feet)	Outside Taper (Feet)
25	25	50
30	30	60
35	35	70
40	40	80
45	45	90

SIGN LEGEND

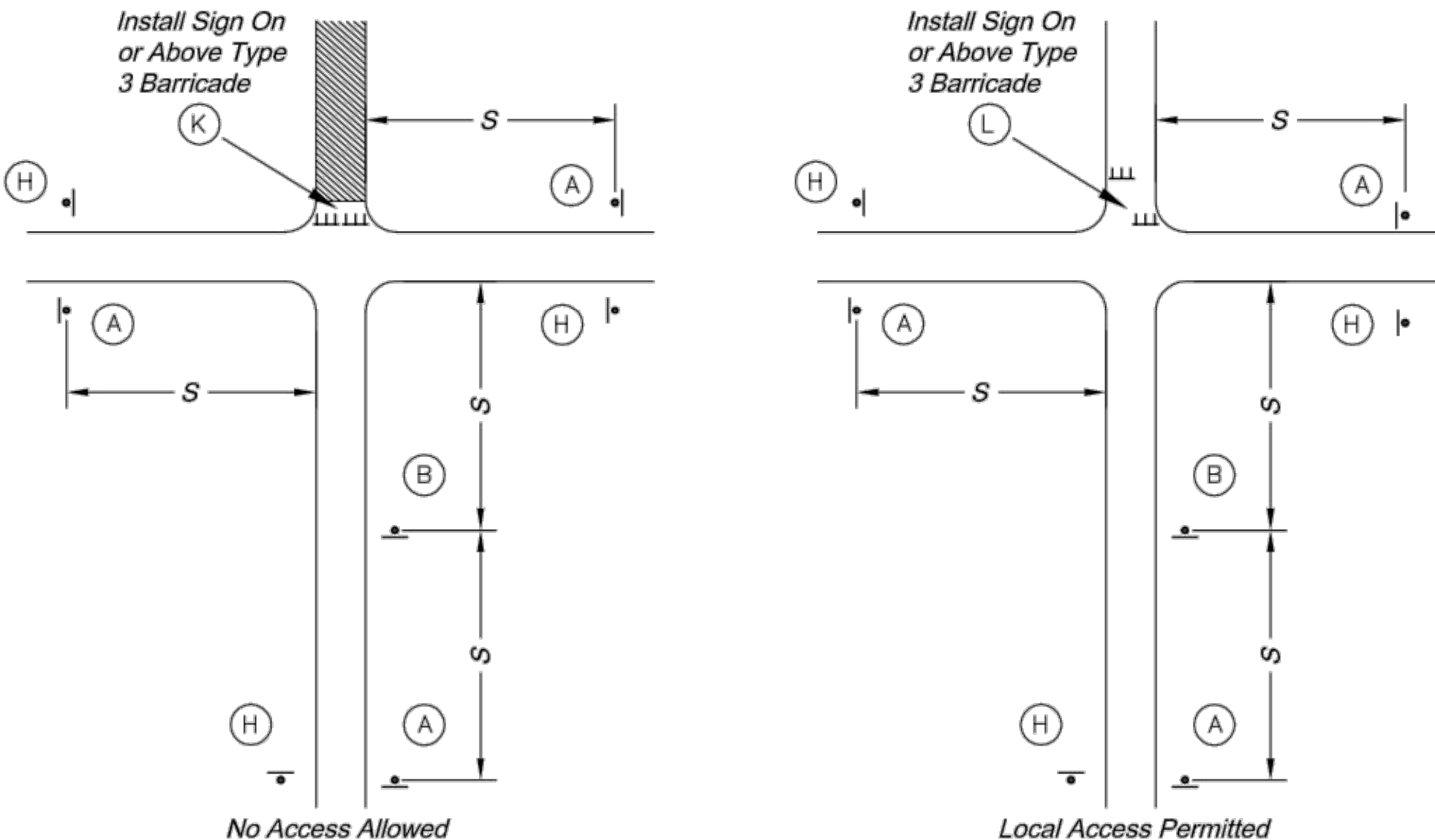


TYPICAL SIGNING FOR WORK ADJACENT TO THE STREET



LANE CLOSURE - THREE LANE STREET

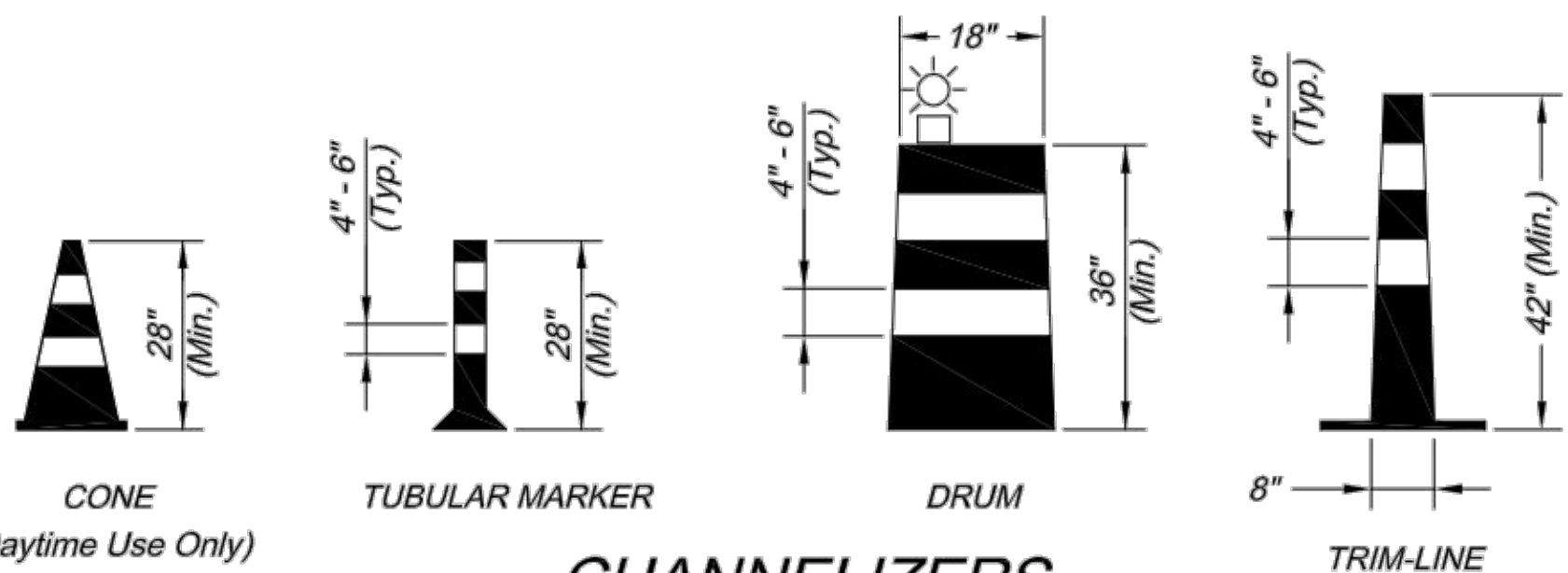
* Install Signs Every 200 Feet Throughout the Closed Lane or As Needed



TYPICAL STREET CLOSURE

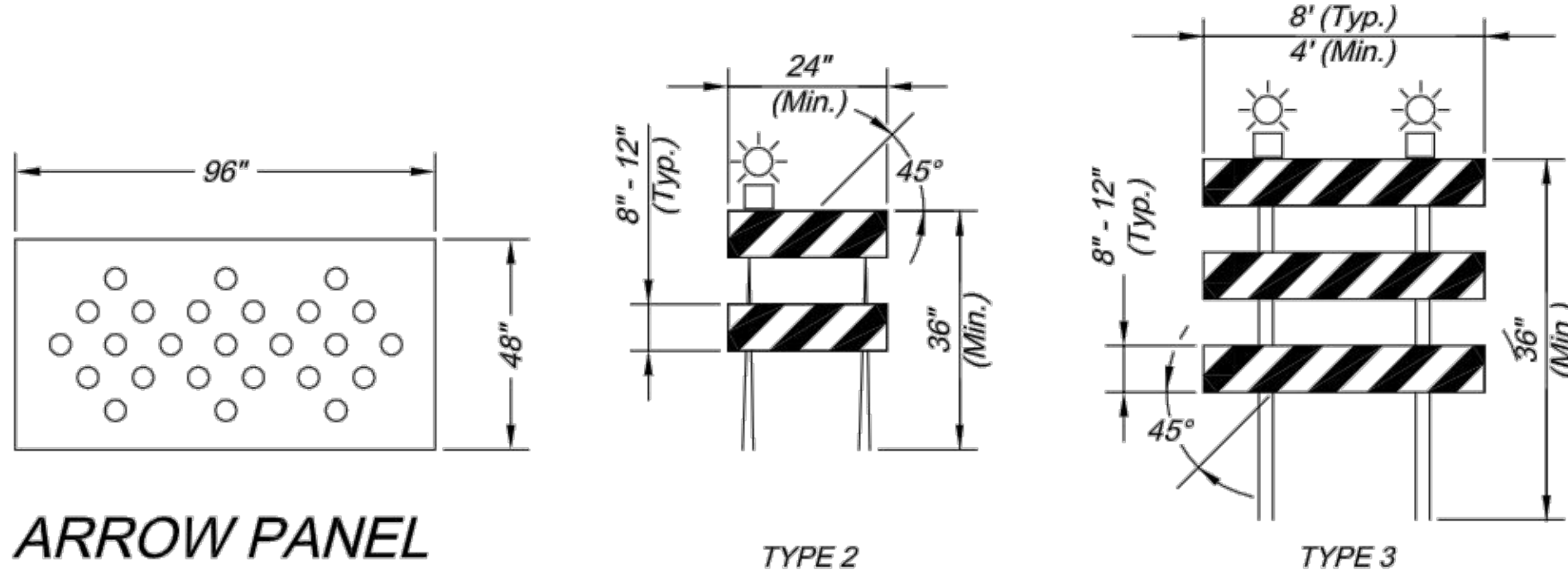
GENERAL NOTES:

- 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.



CHANNELIZERS

NOTE: White Bands On Barricades and Channelizers Shall Be Made From High Intensity Sheeting Material.



ARROW PANEL

BARRICADES

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TRAFFIC CONTROL DETAILS

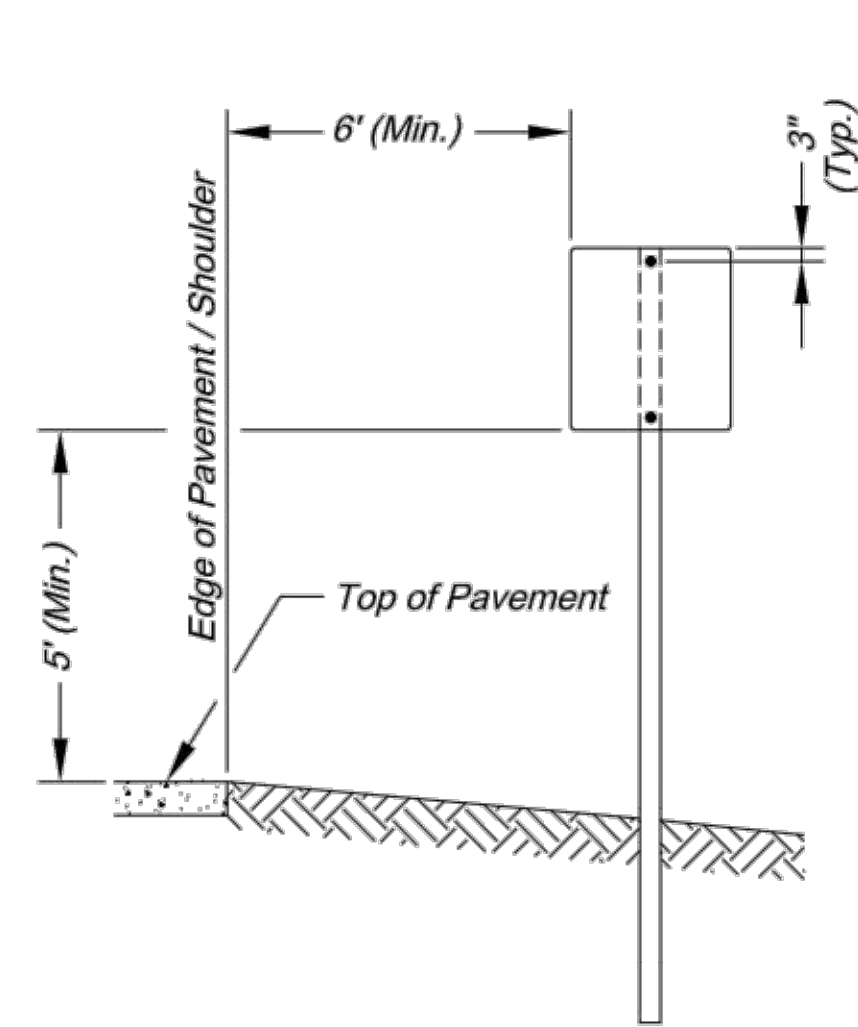
STANDARD DRAWING TC-1

Project:

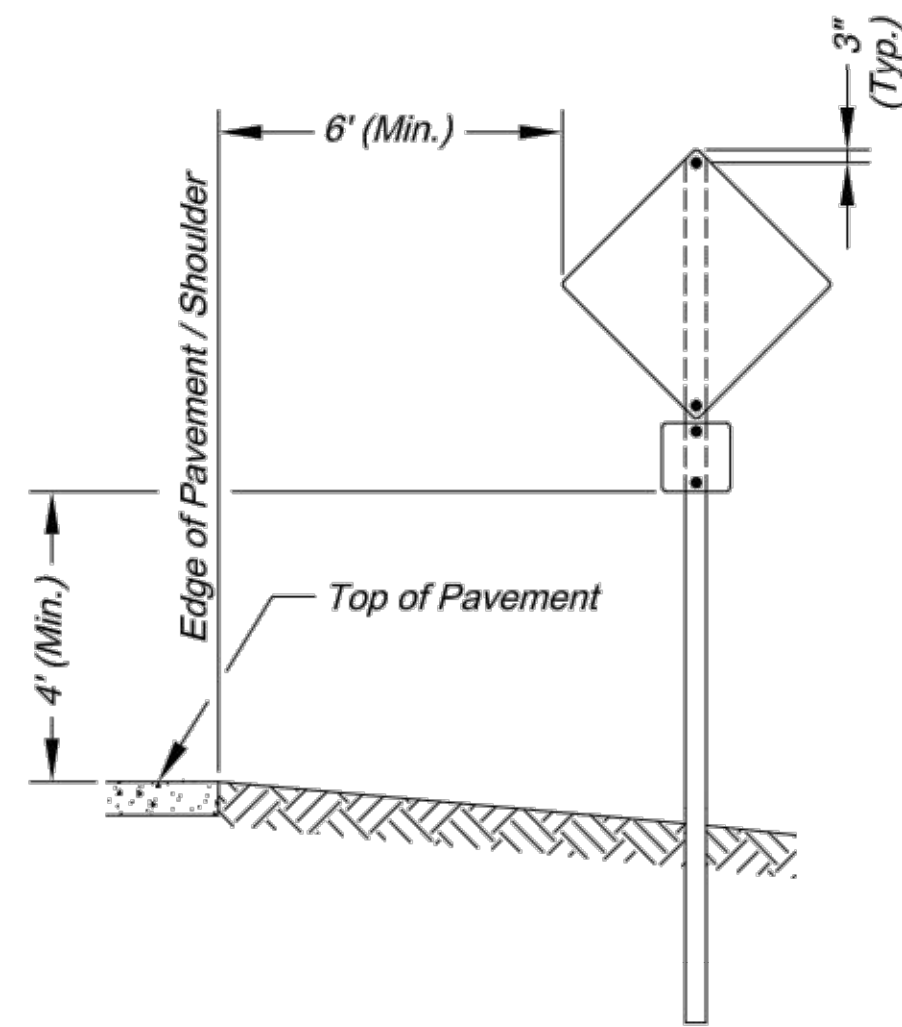
Sheet Name:

Drawn By: JJW
Checked By: MP
Date: 12-10-2008
Project No.: X

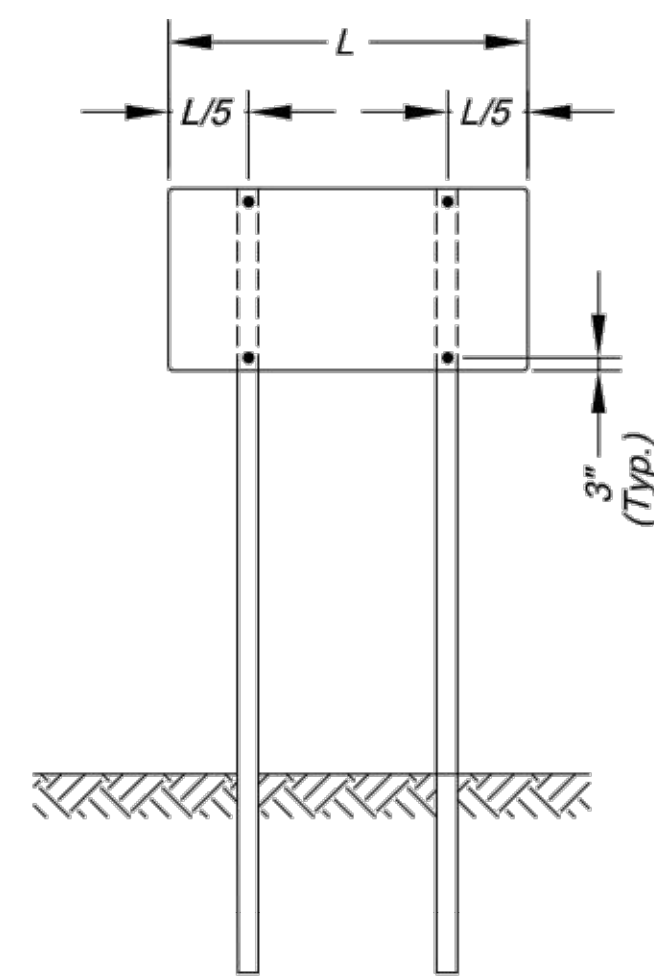
SHEET
F6



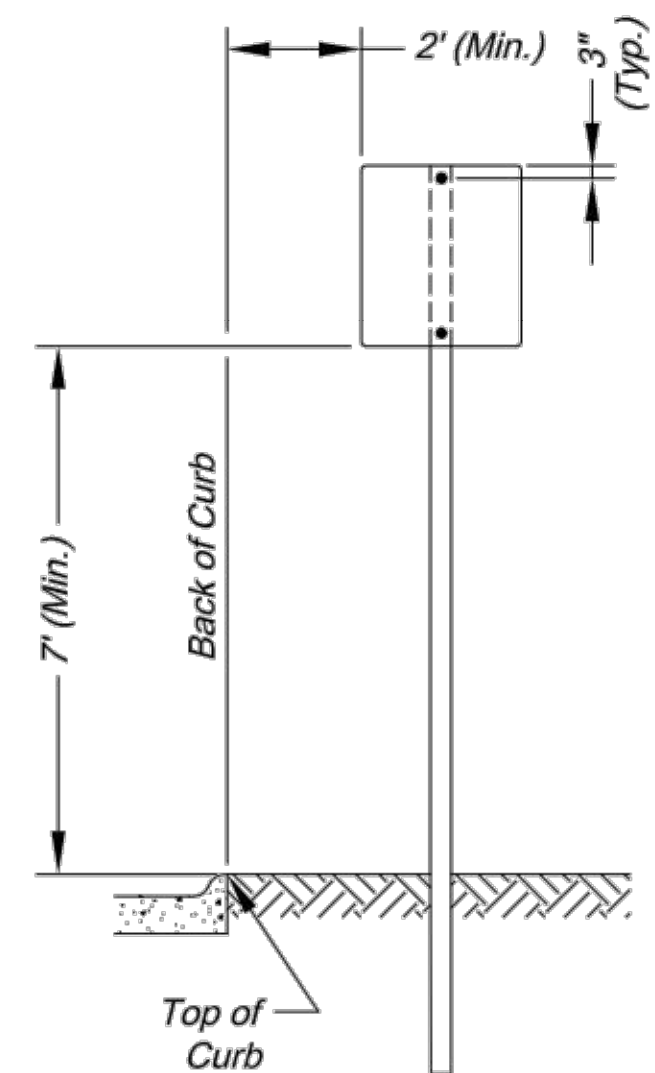
SIGN INSTALLATION FOR
NON-CURBED STREET



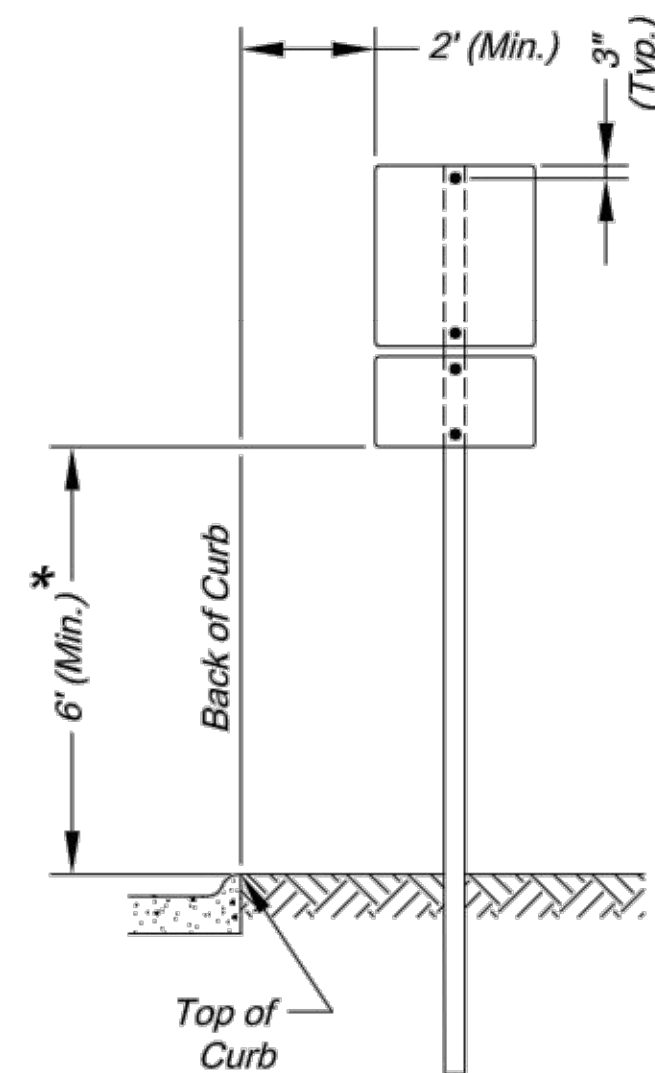
SIGN INSTALLATION WITH
AUXILARY SIGN FOR
NON-CURBED STREET



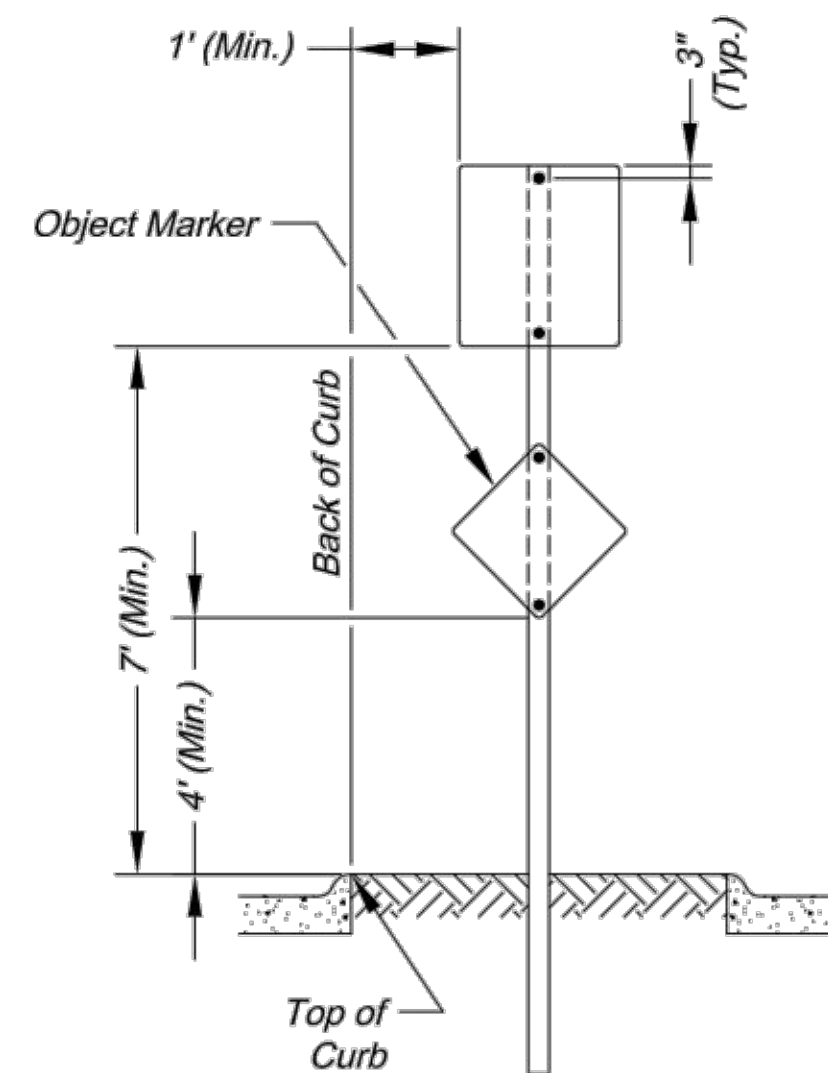
SIGN INSTALLATION WITH
TWO SIGN POSTS



SIGN INSTALLATION FOR
CURBED STREET



SIGN INSTALLATION WITH
AUXILARY SIGN FOR
CURBED STREET



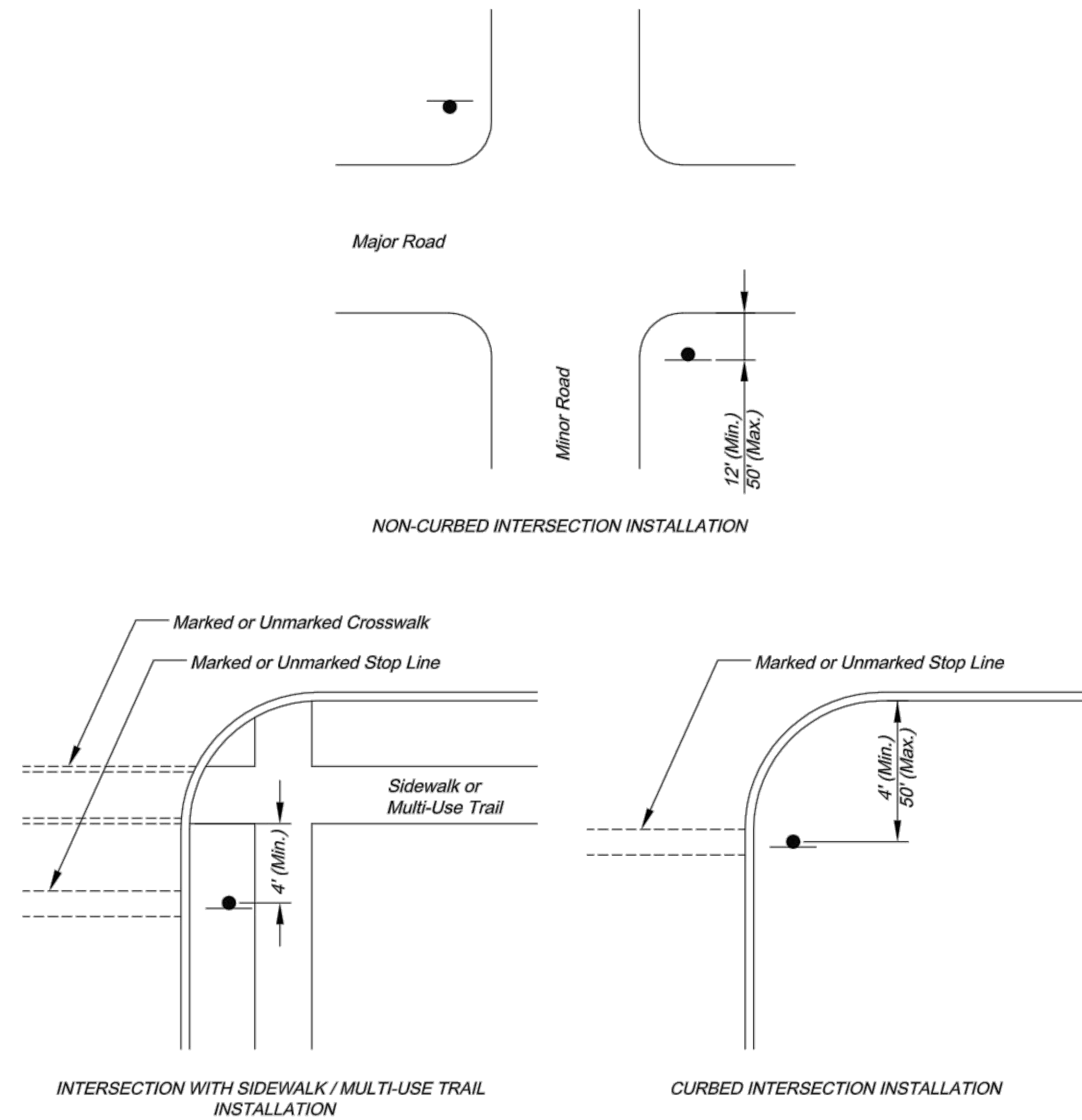
SIGN INSTALLATION FOR
RAISED MEDIANS

SIGN MOUNTING DETAILS

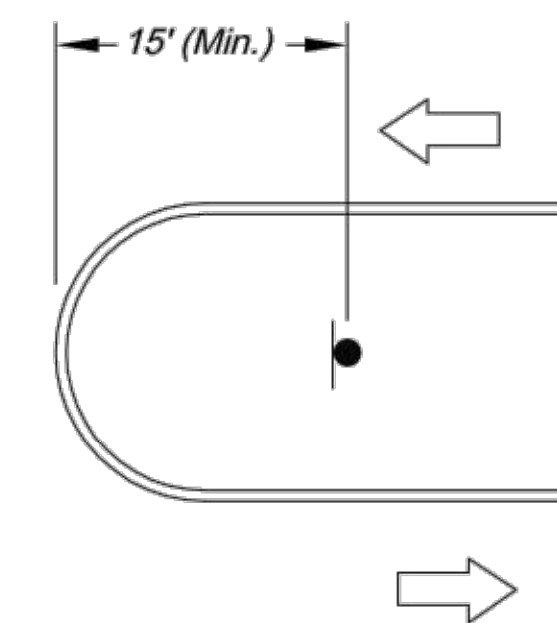
* The height to the bottom of a sign when it is located in a pedestrian walkway or extends into a walkway shall be a minimum of 80 inches above the walkway.

NOTE:

- Generally, the sign mounting height should not be more than 1' greater than the minimum mounting height.



CONTROL SIGN LOCATION

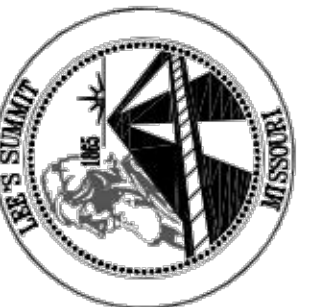


TYPICAL MEDIAN SIGN LOCATION

MEDIAN SIGN LOCATION

NOTES:

- A 4" P.V.C. sleeve shall be installed in new concrete medians at each location where a sign is to be installed.
- For existing concrete medians, a 4" hole shall be cored into the concrete.



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SIGN MOUNTING DETAILS

STANDARD DRAWING SN-1

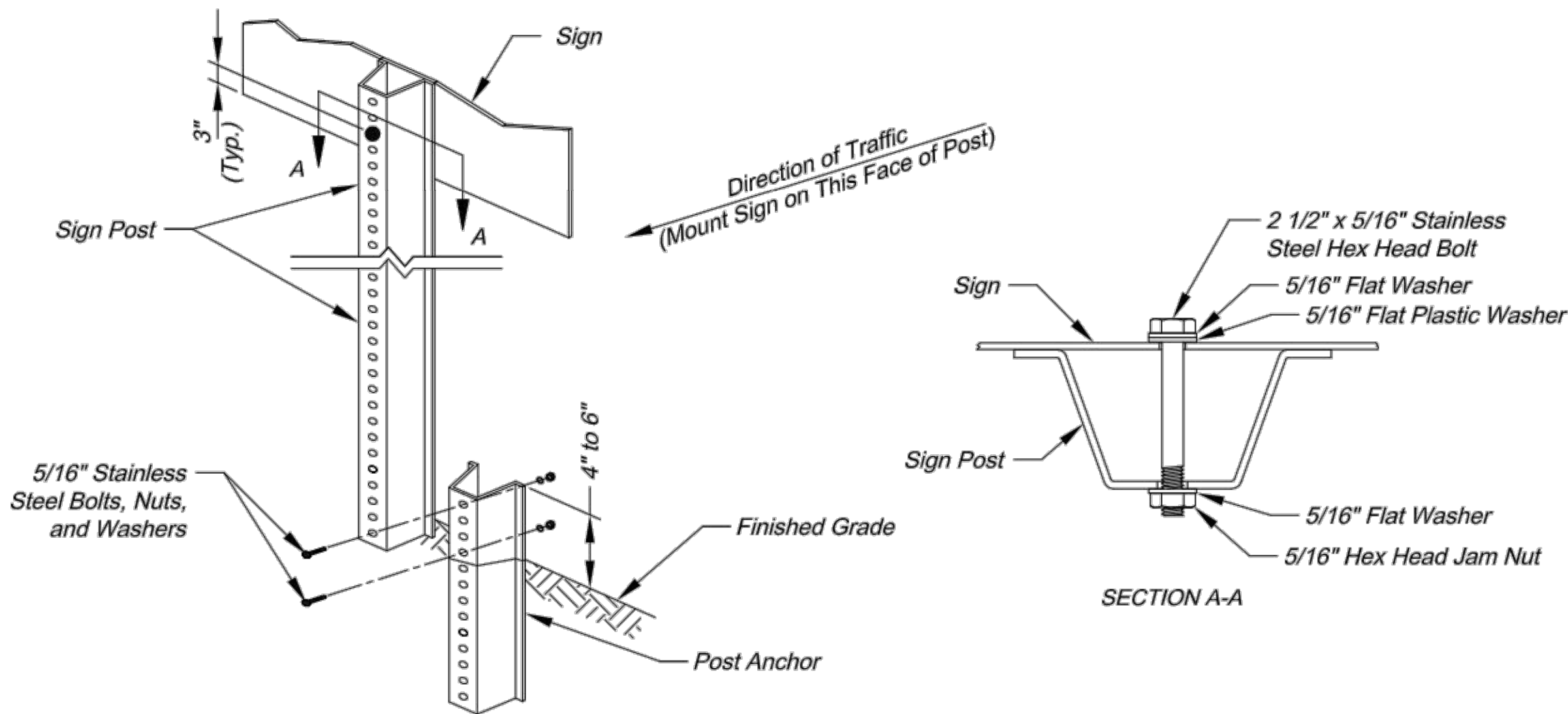
Project:

Sheet Name:

Drawn By: AS
Checked By: JW
Date: 08/26/2009
Project#

1 OF 3

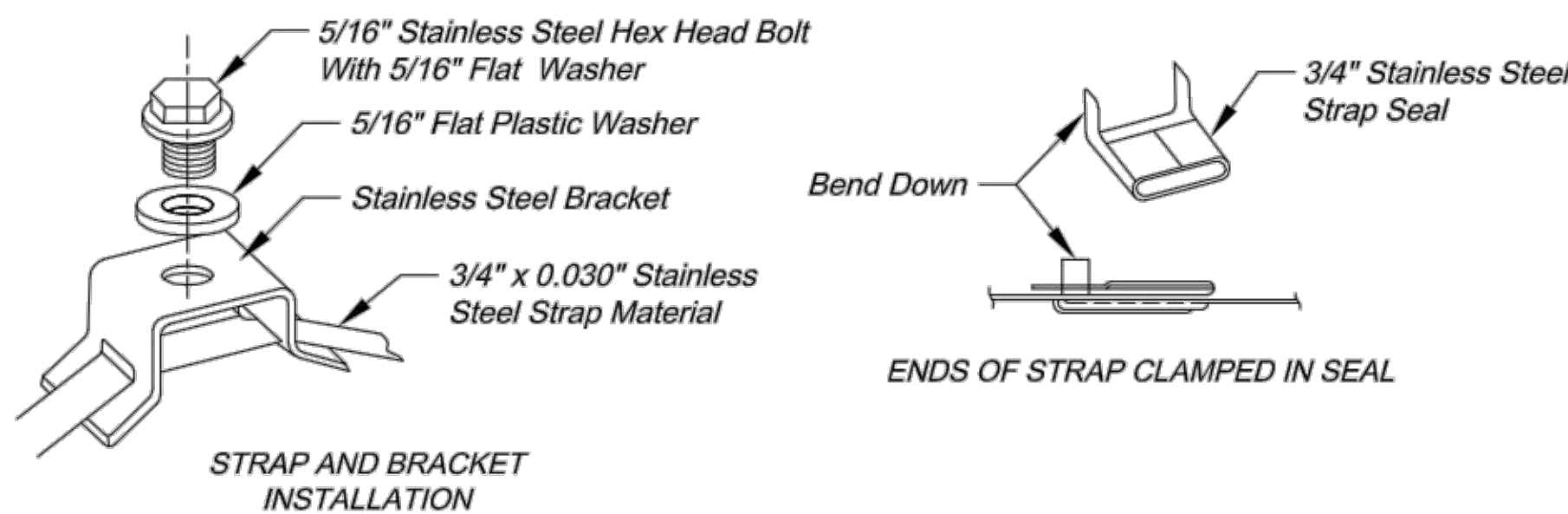
F7



U-STEEL POST DETAILS

U-STEEL POST NOTES:

1. Splice shall be positioned entirely between finished grade line and 18" above finished grade line. Only one splice will be allowed per post.
2. U-Steel post shall be 3 lb./ft., galvanized according to ASTM A123.
3. U-Steel post can be used for installation of signs with an area of less than 2.5 square feet.
4. All posts shall be embedded a minimum of 3 feet.



STRAP TYPE SIGN SUPPORT DETAILS

METAL POLE SIGN MOUNTING NOTES:

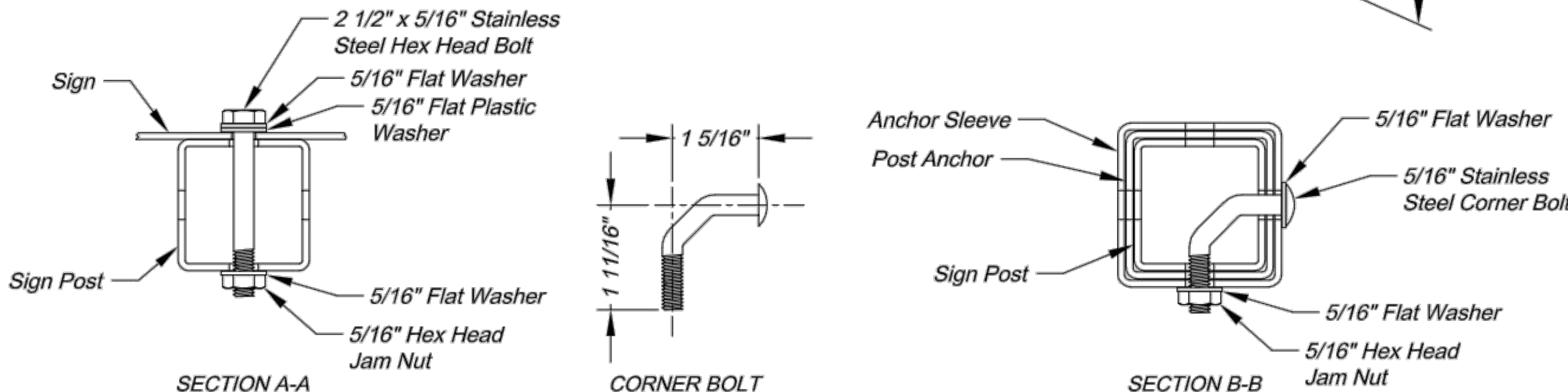
1. Signs on metal poles shall be attached with two brackets and stainless steel bands.
2. Holes in sign for attachment to the mounting brackets shall be offset a minimum of 2 inches from the edge of the sign.
3. Holes in sign shall be located such that the sign is level.
4. All strap, bracket, and seal materials should be Type 201 stainless steel.

PERMANENT SIGNING GENERAL NOTES:

1. All signing shall be in accordance with the latest edition of the *Manual on Uniform Traffic Control Devices (MUTCD)*.
2. The Contractor is responsible for avoiding any and all utilities when installing sign posts, whether the utility is indicated on the plans or not.
3. All workmanship and materials shall be subject to the inspection and approval of the Public Works Department of the City of Lee's Summit.
4. The Contractor shall stake the location of all sign posts to be installed. The City Inspector shall inspect the staking prior to installation. Minor relocation to avoid conflicts may be allowed with the approval of the City Traffic Engineer or designee.
5. Signs shown to be installed on the side of metal poles shall be mounted with stainless steel straps or wing brackets as detailed. No signs are to be installed on wood poles. See Traffic Signal Standard Drawings for the installation of signs on mast arms.
6. All post mounted signs shall be installed with breakaway anchors according to the Standard Drawings.
7. All existing signs will be used in place during construction and protected from damage unless otherwise indicated in the plans. If the Contractor damages any existing sign or posts during construction, the Contractor will be required to replace the damaged materials with new signs or posts of the same type and size at the Contractor's expense. The Contractor shall be responsible for removing and storing any signs that are to be reinstalled on the project. All equipment shall be reinstalled in good condition.
8. Existing permanent signs and posts removed by the Contractor for construction purposes which are not to be reinstalled shall be delivered to the City's Public Works Maintenance Facility (1971 SE Hamblen Road). The Contractor shall be responsible for removing and storing equipment in good condition and is fully responsible for the equipment until it is delivered.
9. All Stop, Yield, or street name signs shall be maintained in a conspicuous location for the driving public. All Stop and Yield signs removed for construction purposes can be temporarily erected in reflectorized drums (no less than 7 feet above the pavement surface) until they can be reinstalled. Any temporary Stop or Yield sign installation to be left in place overnight will require prior approval from the City Inspector.

SQUARE STEEL POST INSTALLATION SEQUENCE:

1. Sign post anchor driven partially into the ground using a drive cap with a sledge or power equipment.
2. Anchor sleeve slipped over anchor and drive into the ground together with the sign post anchor.
3. Insert sign post into the post anchor and bolt in place.

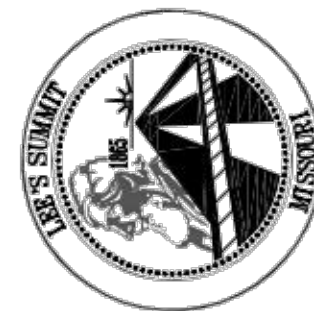


SQUARE STEEL POST DETAILS

SQUARE STEEL POST NOTES:

1. Square steel sign posts and break-away anchor shall consist of the following materials:
Sign Post - 14 Ga. 2" x 2" Square Steel Post
Post Anchor - 12 Ga. 2 1/4" x 2 1/4" x 36" Square Steel Post
Anchor Sleeve - 12 Ga. 2 1/2" x 2 1/2" x 18" Square Steel Post
2. 14 Gauge posts must meet a certified minimum yield strength of 60,000 psi.
3. In all installations the first hole above the finished grade line on the sign post, anchor, and anchor sleeve must be in line for the insertion of the corner bolt.
4. The maximum area for one sign post is 9.0 square feet. A sign or combination of signs with an area greater than 9.0 square feet will require two posts. Also, signs with a width greater than 36" (not including 36" x 36" diamond shaped signs) will require two posts.

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SIGN POST DETAILS

STANDARD DRAWING SN-2

Project:

Sheet Name:

Drawn By: AS
Checked By: JW
Date: 08/26/2009
Project#

2 OF 3

F8

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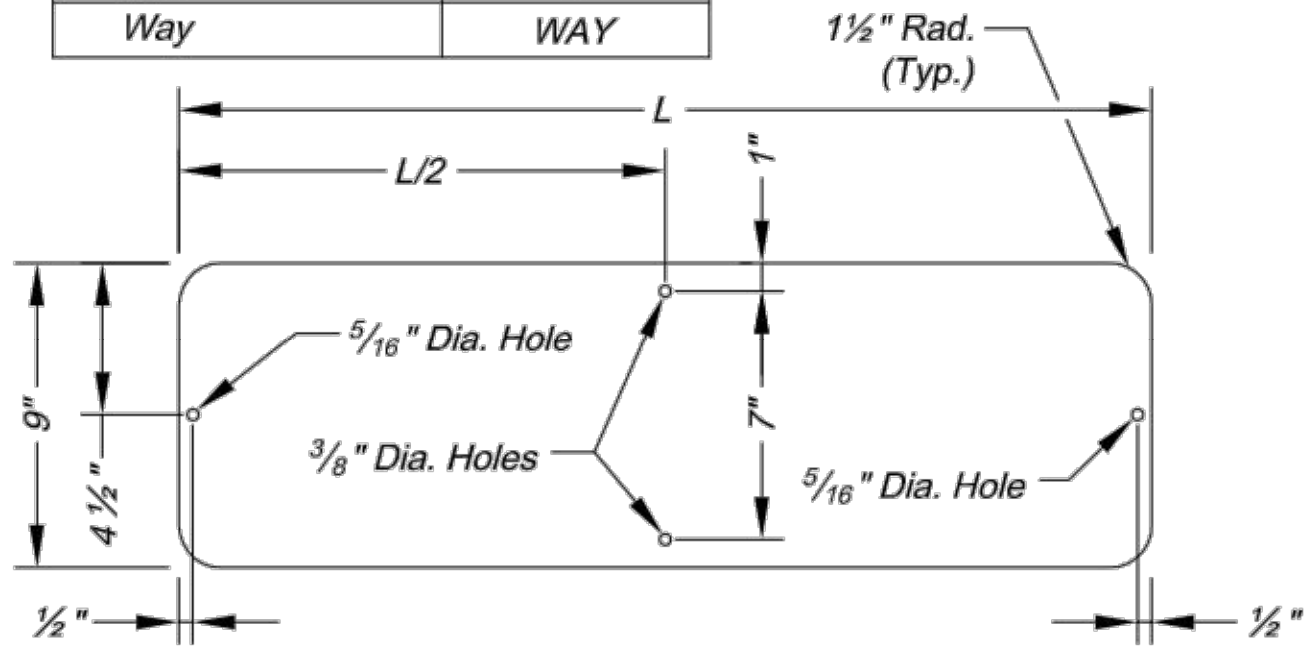
STANDARD ABBREVIATION LISTS

Named Streets	
Avenue	AVE
Boulevard	BLVD
Circle	CIR
Creek	CR
Court	CT
Crossing	XING
Drive	DR
Highway	HWY
Lane	LN
Parkway	PKWY
Place	PL
Road	RD
Street	ST
Terrace	TER
Trail	TRL
Way	WAY

Numbered Streets	
First	ST
Second	ND
Third	RD
Fourth to Tenth	TH

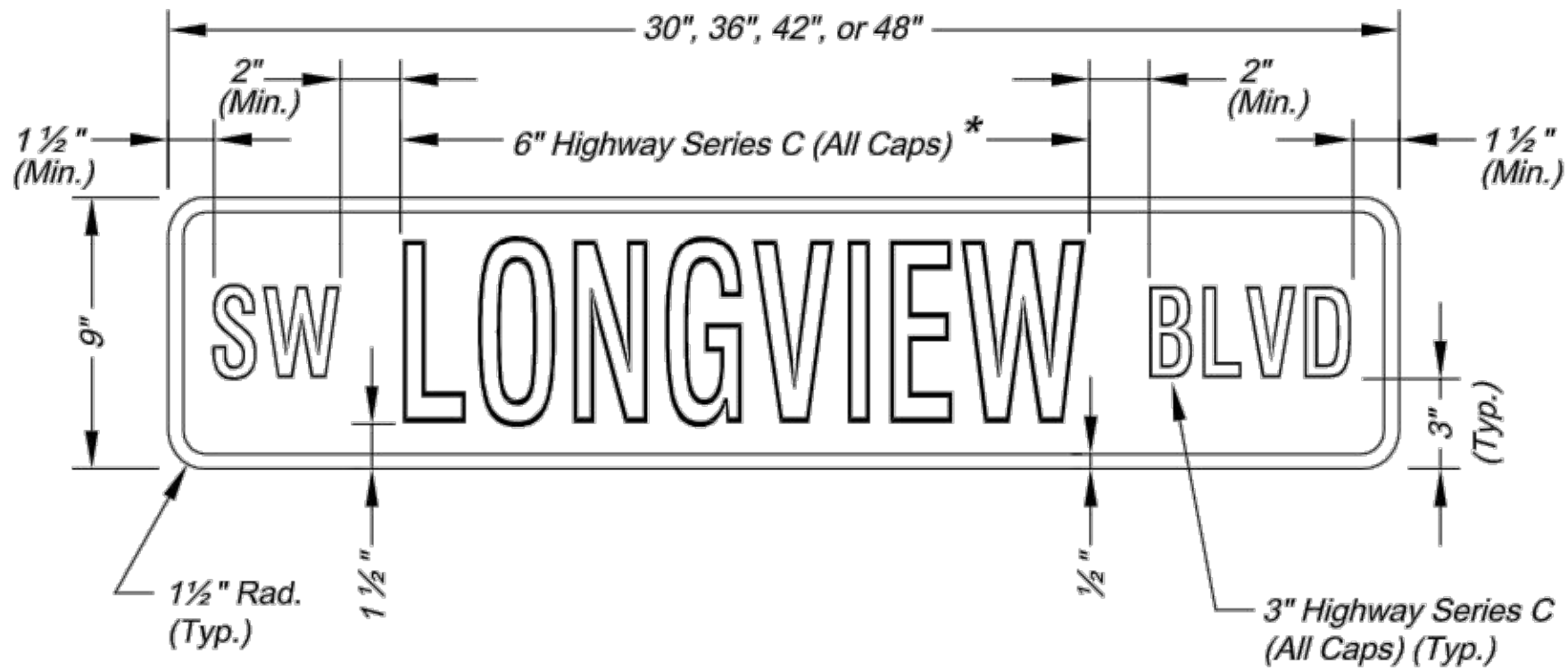
STREET NAME SIGN QUANTITIES

Sign Designation	Sign Size	Sign Area (Sq. Ft.)	Number	Quantity (Sq. Ft.)
D3-1 (SP-1) E LEES SUMMIT RD	9" x 48"	3.00	2	6.00
D3-1 (SP-2) NE DOUGLAS ST	9" x 48"	3.00	4	12.00



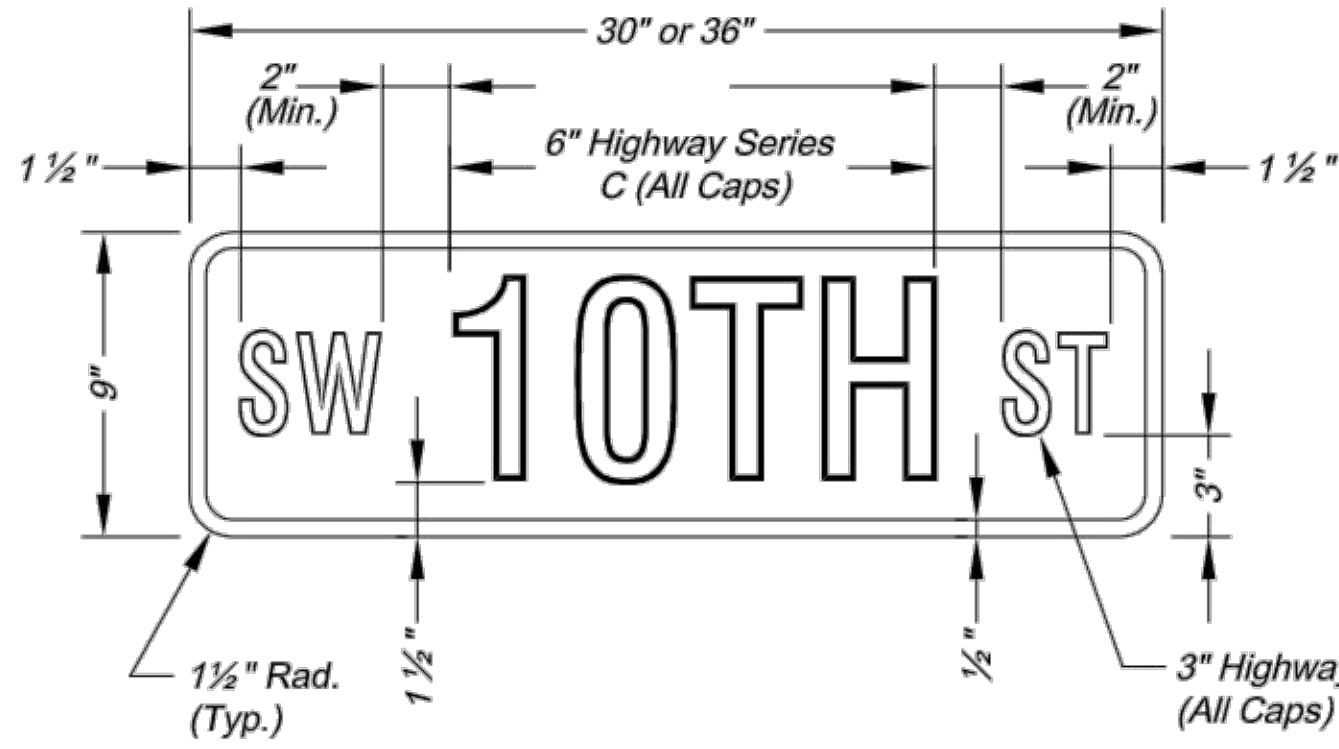
STREET NAME SIGN BLANK DETAILS

For Mounting on Square Steel Posts

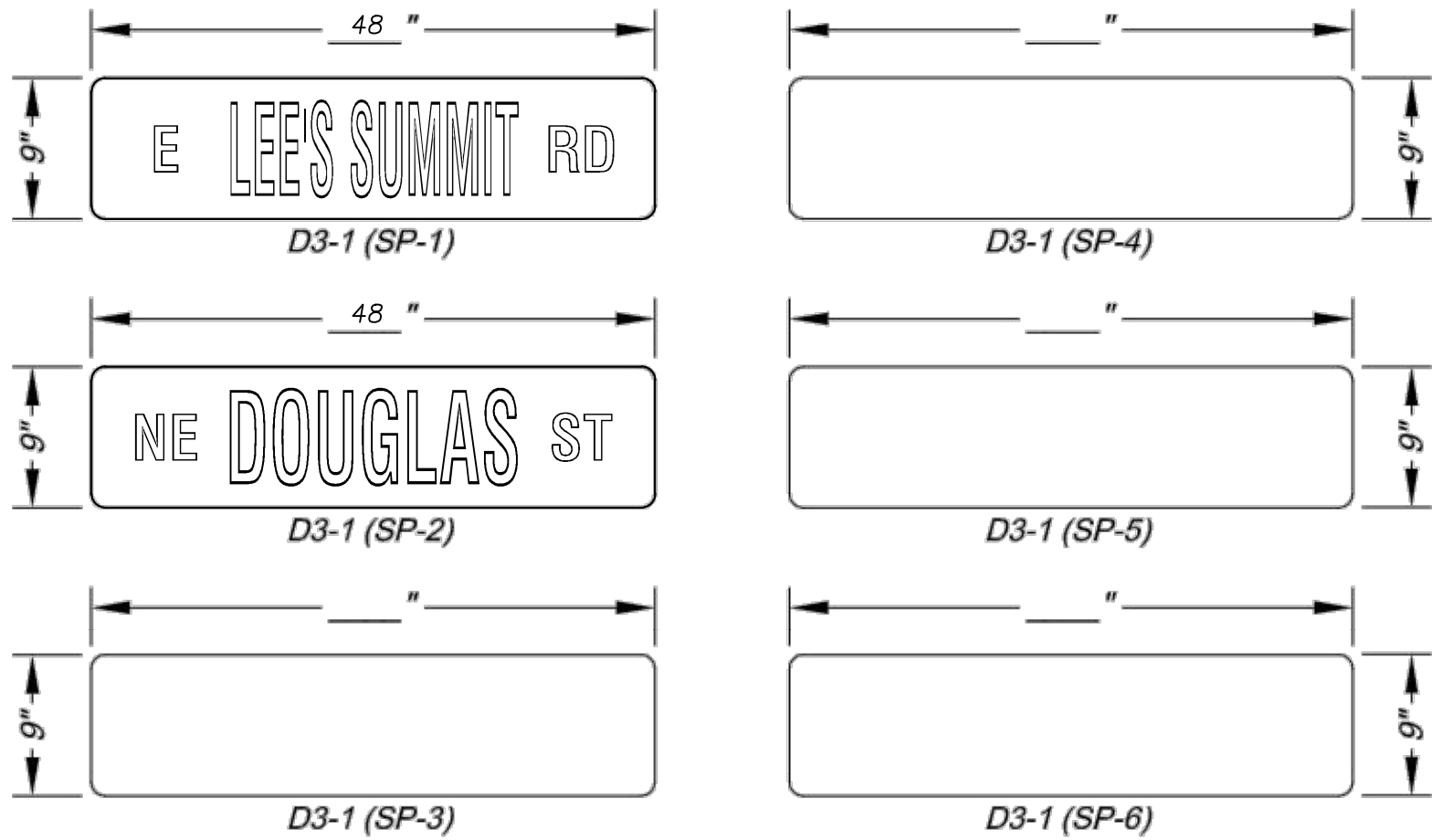


NAMED STREET NAME SIGN DETAIL

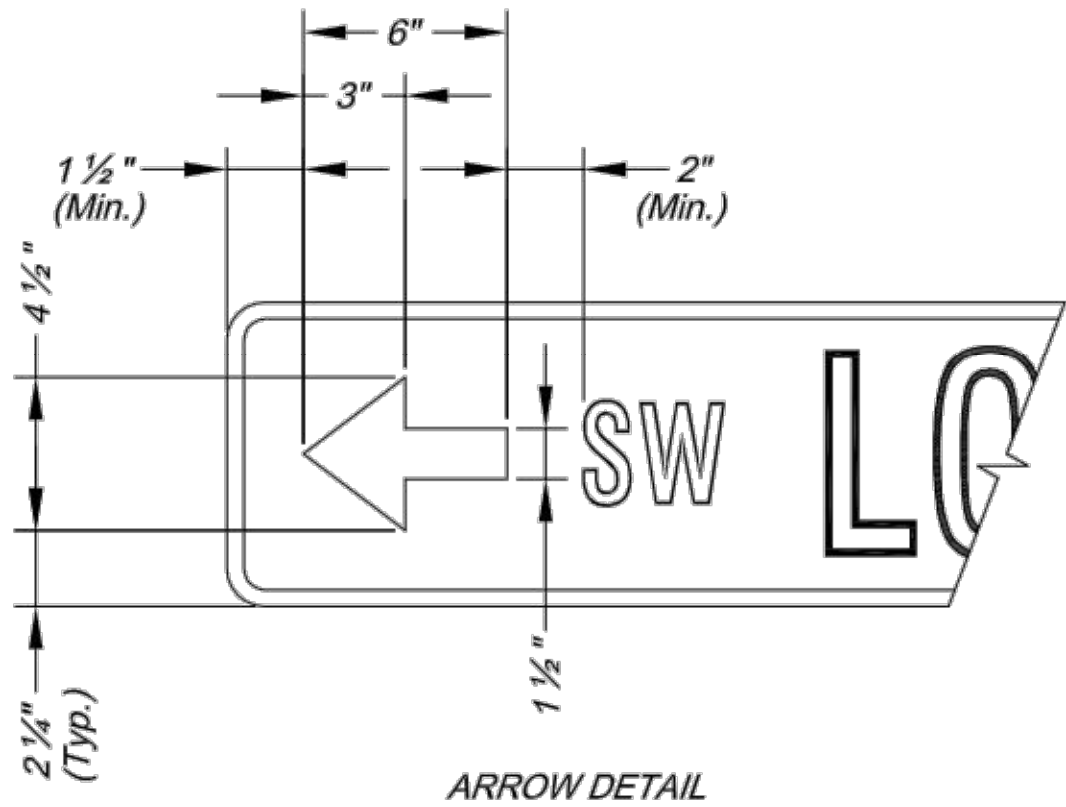
* Use Highway Series B (All Caps) in lieu of series C if necessary to fit text on a 36" sign blank.



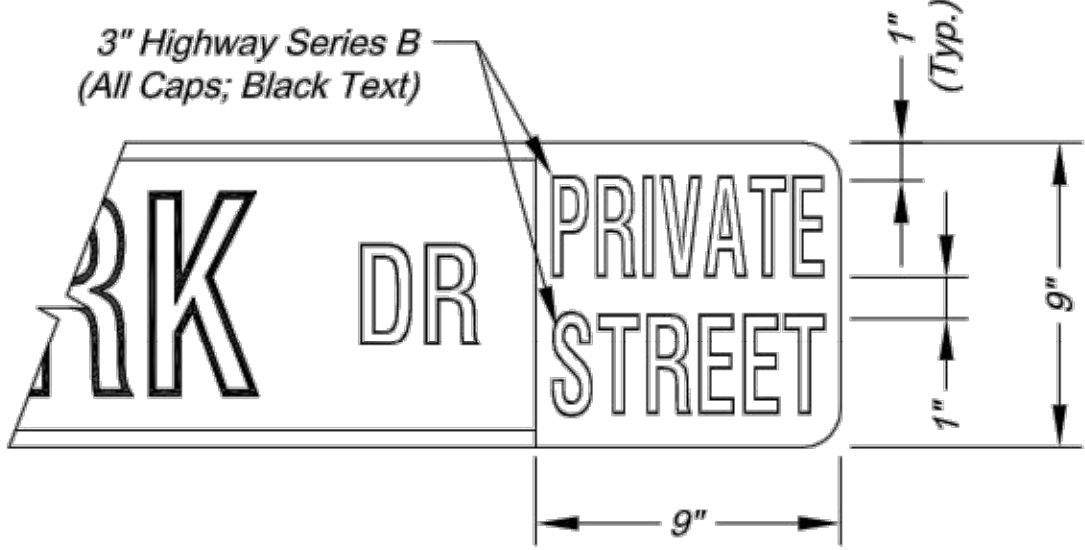
NUMBERED STREET NAME SIGN DETAIL



PROJECT SIGN DETAILS



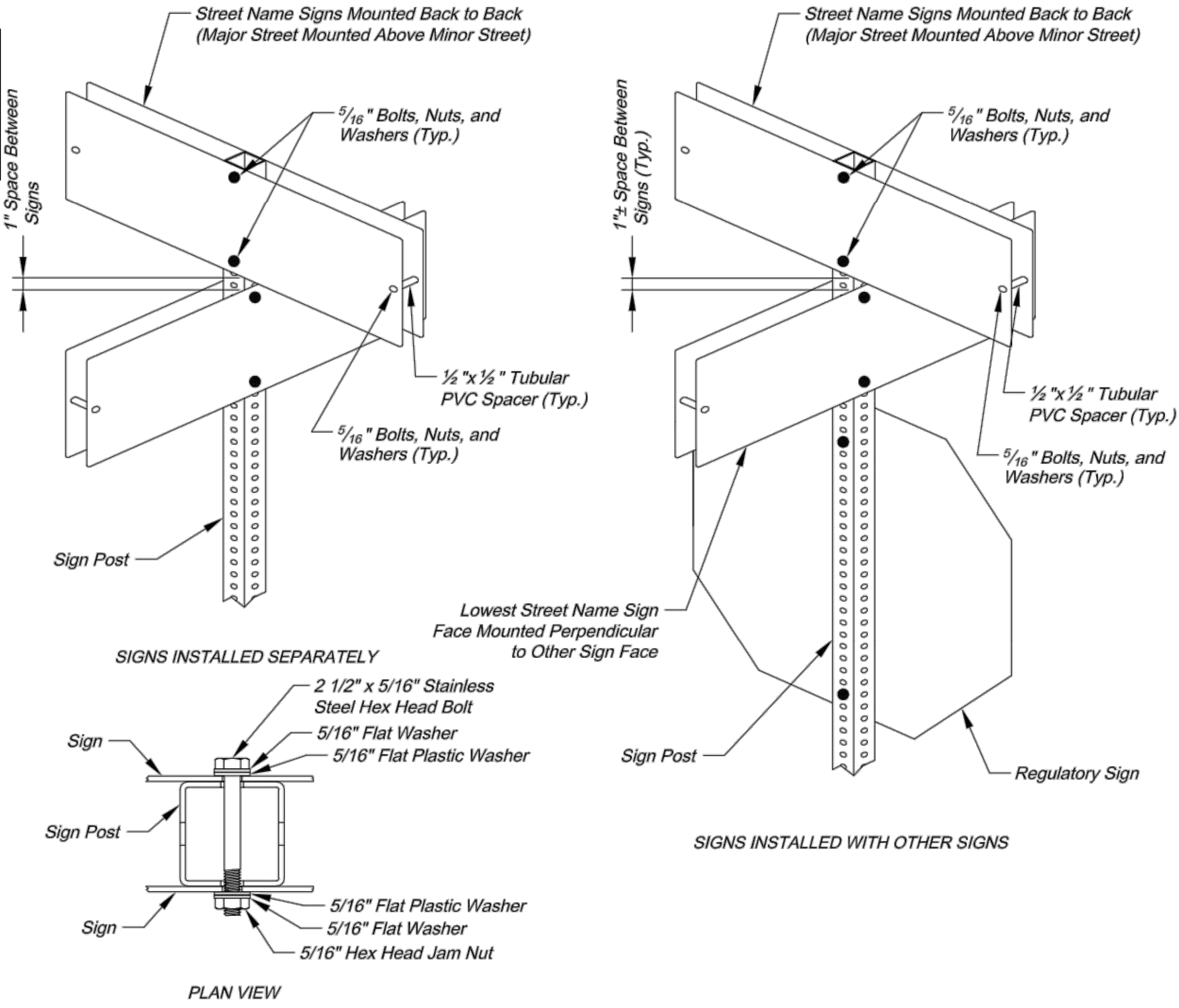
ARROW DETAIL



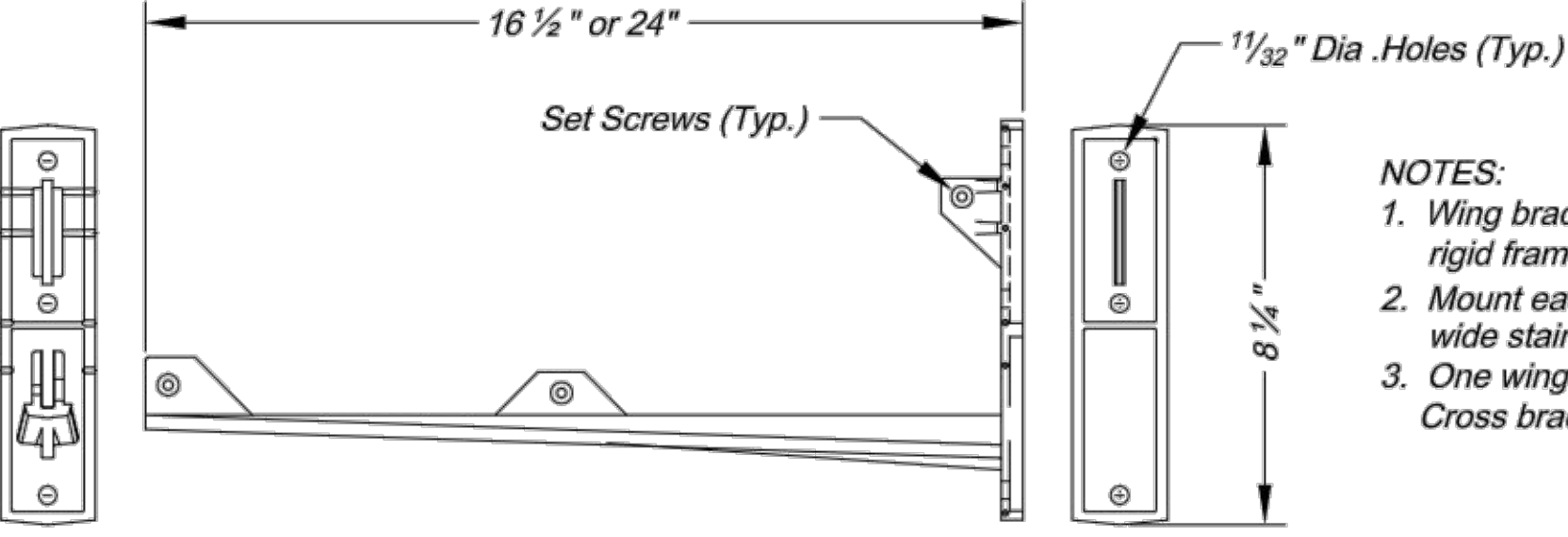
PRIVATE STREET TAG DETAIL

- NOTES:
- For all street name signs, the legend shall be white and the background shall be green.
 - Arrows shall be added to street name signs where the name of a street changes at an intersection. Street name signs with arrows are to be installed on each side of the intersection to indicate the change in names. Arrows shall be white.
 - The "PRIVATE STREET" tag should be added to the end of street name signs to indicate where a street that is outside the right-of-way intersects a public street. The background for the "PRIVATE STREET" tag shall be yellow.

STREET NAME SIGN FACE DETAILS



SQUARE STEEL POST MOUNTING DETAILS



WING BRACKET MOUNTING DETAILS

Project:

Sheet Name:

STREET NAME SIGN DETAILS

STANDARD DRAWING SN-3

Drawn By: AS

Checked By: JW

Date: 08/26/2009

Project#

3 OF 3

F9

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