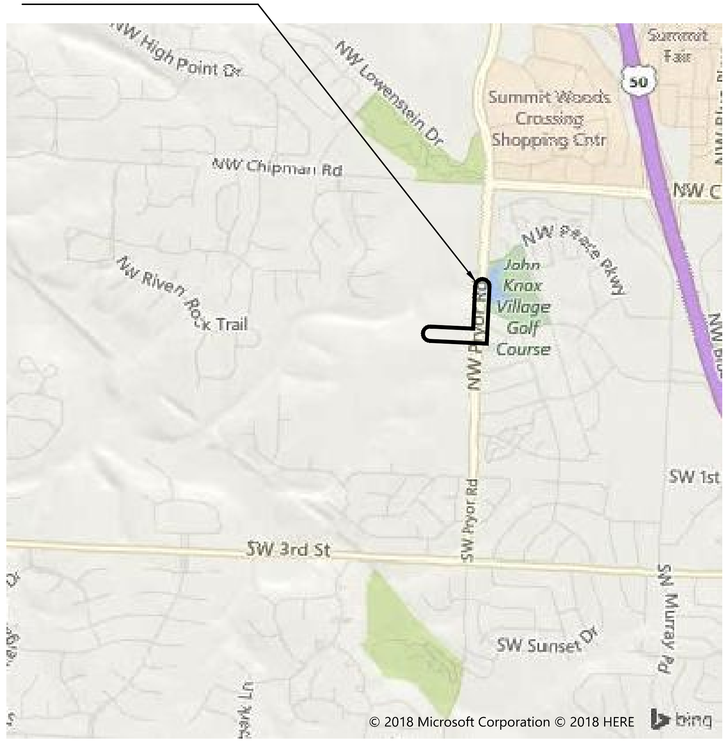
WOODSIDE RIDGE
FIRST PLAT
PRYOR ROAD & O'BRIEN ROAD INTERSECTION IMPROVEMENTS

SECTION 2, TOWNSHIP 47 N, RANGE 32 W
IN LEE'S SUMMIT, JACKSON COUNTY, MO

PROJECT TEAM & UTILITY CONTACT LIST	
OWNER / DEVELOPER CLAYTON PROPERTIES GROUP, LLC, DBA SUMMIT HOMES 120 SE 30TH STREET LEE'S SUMMIT, MO 64082 CONTACT: DAVID PRICE PHONE: 816.246.6700 FAX: 816.246.2662	UTILITY SERVICE NUMBERS NAME: LEE'S SUMMIT DEVELOPMENT SERVICES PHONE: 816-969-1200 NAME: LEE'S SUMMIT WATER & SERVICES DEPARTMENT PHONE: 816-969-1940 NAME: SPIRE (MGE) PHONE: 314-342-0500 NAME: AT&T PHONE: 800-286-8313 NAME: KCP&L PHONE: 816-471-5275 NAME: SPECTRUM (TWC) PHONE: 877-772-2253 NAME: GOOGLE FIBER PHONE: 877-454-6959
ENGINEER OLSSON 1301 BURLINGTON, SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: JAMES P. GALLAGHER, P.E. PHONE: 816.361.1177	
SURVEYOR OLSSON 1301 BURLINGTON, SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: JASON ROUDEBUSH, PLS PHONE: 816.361.1177	
GEOTECHNICAL ENGINEER OLSSON 1700 E 123RD STREET OLATHE, KS 66061 CONTACT: CHRISTY WILSON PHONE: 816.748.2545	

PROJECT LOCATION



LOCATION MAP

N.T.S.

INDEX OF SHEETS

LEGEND

CTL	SURVEY CONTROL POINT	TB	TRAFFIC SIGNAL BOX
	SURVEY BENCHMARK	TM	TRAFFIC SIGNAL MANHOLE
TBM	SURVEY TEMPORARY BEMCHMARK		TRAFFIC SIGNAL POLE W/ ARM
GM	GAS METER		TRAFFIC SIGNAL POLE
GAR	GAS RISER	TC	TRAFFIC SIGNAL CONTROL BOX
	GAS MANHOLE	TS	TRAFFIC SIGNAL PEDESTAL
GR	GAS REGULATOR		ELECTRIC MANHOLE
TVP	TELEVISION PEDESTAL	EM	ELECTRIC METER
	FIBER BOX	ER	ELECTRIC RISER
	FIBER PEDESTAL	E	ELECTRIC BOX
	CABLE BOX		ELECTRIC CABINET
CV	CABLE VAULT		ELECTRIC JUNCTION BOX
TP	TELEPHONE PEDESTAL	SPH	SPRINKLER HEAD
	STORM MANHOLE	SCV	SPRINKLER CONTROL VALVE
	STORM GRATE		WATER METER PIT
	SANITARY MANHOLE		FIRE HYDRANT
YL	YARD LIGHT	WM	WATER METER
LTP	LIGHT POLE	WV	WATER VALVE
	POWER POLE	FP	FLAG POLE
LPPP	POWER POLE W/ LIGHT		SIGN
	GUY WIRE		BOLLARD
BU	STUMP		WOOD POST
	BUSH		STEEL POST
	EVERGREEN TREE	COL	COLUMN
	DECIDUOUS TREE		BORE HOLE

	SECTION LINE
	PROPERTY LINE
	CENTER LINE
	PROPOSED ROW LINE
	EXISTING ROW LINE
	UTILITY EASEMENT
1371	EXISTING CONTOUR
1371	EXISTING CONTOUR
1371	PROPOSED MINOR CONTOUR
1371	PROPOSED MAJOR CONTOUR
TEL	EXISTING TELEPHONE LINE
SS	EXISTING SANITARY LINE
	EXISTING STORM LINE
G	EXISTING GAS LINE
W	EXISTING WATER LINE
x x x x	EXISTING CHAIN LINK FENCE
OHE	EXISTING OVERHEAD ELECTRIC
P	EXISTING PIPE LINE
	GRADING LIMITS
	TEMPORARY CONSTRUCTION EASEMENT
x x x x	PROPOSED CHAIN LINK FENCE
	PROPOSED WOOD PRIVACY FENCE
	EXISTING TREELINE

	ASPHALT
	2-INCH MILL & OVERLAY
	CONCRETE

ABBREVIATION TABLE

M.G.	MATCH GRADE
P	PAVEMENT
TC	TOP OF CURB
EP	EDGE OF PAVEMENT
R/W	RIGHT-OF-WAY
TCE	TEMPORARY CONSTRUCTION EASEMENT
PROP.	PROPOSED
EXIST.	EXISTING
TYP.	TYPICAL
(R)	REMOVAL
CONST.	CONSTRUCT
TBM	TEMPORARY BENCMARK
C.P.	CONTROL POINT
BC	BACK OF CURB

DESIGN DESIGNATION

	O'BRIEN ROAD	PRYOR ROAD
DESIGN SPEED =	30 MPH (25 MPH POSTED)	40 MPH (35 MPH POSTED)
ROAD CLASSIFICATION =	COMMERCIAL LOCAL	MAJOR ARTERIAL

REVIEWED BY:

CITY OF LEE'S SUMMIT — DATE

OLSSON HAS BEEN RETAINED TO PROVIDE AS-BUILT DRAWINGS FOR THIS PROJECT.

JAMES P. GALLAGHER, P.E.
CIVIL ENGINEER
MO# 2018010499 — 5/1/2019 DATE

☐ NOT FOR CONSTRUCTION

☒ REVIEWED FOR CONSTRUCTION

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STATE OF MISSOURI
JAMES PATRICK GALLAGHER
NUMBER PE-2010010499
5/1/2019
PROFESSIONAL ENGINEER

REVISIONS

NO. REV	DATE	REVISIONS DESCRIPTION	BY

TITLE SHEET

PRYOR ROAD & O'BRIEN ROAD INTERSECTION IMPROVEMENTS
LEE'S SUMMIT, MO
2019

drawn by: JPG
checked by: JJW
designed by: JPG
QA/QC by: RBC
project no.: A18:1140
date: 2019.03.12

SHEET 1

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\RDBR\GENERAL\T_TTL_1140A.dwg
DATE: May 01, 2019 8:14am
USER: jgallagher

O'BRIEN ROAD

ID #	STATION RANGE	START COORD.	END COORD.	PI STATION	PI START COORD.	PI END COORD.	LINE/CHORD LENGTH (FT)	LINE/CHORD BEARING	RADIUS (FT)
C1	PC 28+52.77 PT 29+42.23	PC N: 1002548.59 E: 2812813.86	PT N: 1002526.34 E: 2812899.75	28+98.26	N: 1002527.70 E: 2812854.27	N: 1002527.70 E: 2812854.27	88.72	S75°28'27"E	200.00
L1	29+42.23 32+90.11	N: 1002526.34 E: 2812899.75	N: 1002515.95 E: 2813247.47				347.88	S88°17'21"E	
C2	PC 32+90.11 PT 33+75.03	PC N: 1002515.95 E: 2813247.47	PT N: 1002519.97 E: 2813332.21	33+32.65	N: 1002514.68 E: 2813289.99	N: 1002514.68 E: 2813289.99	84.84	N87°17'16"E	550.00
C3	PC 33+75.03 PT 34+69.86	PC N: 1002519.97 E: 2813332.21	PT N: 1002523.59 E: 2813426.85	34+22.56	N: 1002525.87 E: 2813379.37	N: 1002525.87 E: 2813379.37	94.71	N87°48'13"E	550.00
L2	34+69.86 35+25.50	N: 1002523.59 E: 2813426.85	N: 1002520.93 E: 2813482.42				55.64	S87°15'26"E	
C4	PC 35+25.50 PT 36+53.65	PC N: 1002520.93 E: 2813482.42	PT N: 1002525.74 E: 2813610.33	35+89.73	N: 1002517.86 E: 2813546.58	N: 1002517.86 E: 2813546.58	128.00	N87°50'52"E	750.00

PRYOR ROAD

ID #	STATION RANGE	START COORD.	END COORD.	PI STATION	PI START COORD.	PI END COORD.	LINE/CHORD LENGTH (FT)	LINE/CHORD BEARING	RADIUS (FT)
L3	50+00 60+00	N: 1002230.71 E: 2813440.79	N: 1003228.88 E: 2813501.22				1000.00	N3°27'53"E	

DRIVE STA. 31+60.72

ID #	STATION RANGE	START COORD.	END COORD.	PI STATION	PI START COORD.	PI END COORD.	LINE/CHORD LENGTH (FT)	LINE/CHORD BEARING	RADIUS (FT)
L4	5+00 6+00	N: 1002519.81 E: 2813118.13	N: 1002619.76 E: 2813121.12				100.00	N1°42'32"E	

SPECIAL DITCH - LEFT

ID #	STATION RANGE	START COORD.	END COORD.	PI STATION	PI START COORD.	PI END COORD.	LINE/CHORD LENGTH (FT)	LINE/CHORD BEARING	RADIUS (FT)
L5	10+00 10+03.44	N: 1002593.63 E: 2812925.05	N: 1002590.63 E: 2812926.74				3.44	S29°26'25"E	
C5	PC 10+03.44 PT 10+54.79	PC N: 1002590.63 E: 2812926.74	PT N: 1002565.23 E: 2812968.80	10+31.64	N: 1002566.07 E: 2812940.61	N: 1002566.07 E: 2812940.61	49.13	S58°51'56"E	50.00
L6	10+54.79 10+95.57	N: 1002565.23 E: 2812968.80	N: 1002564.02 E: 2813009.55				40.77	S88°17'28"E	

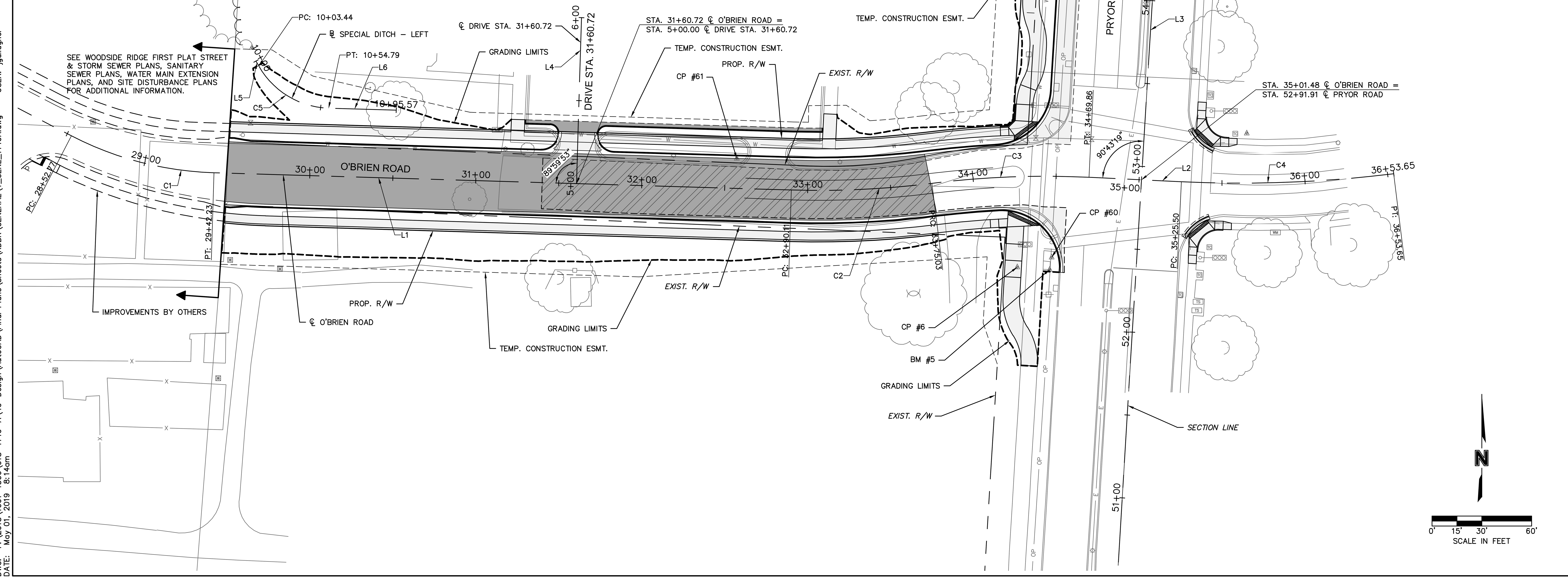
SURVEYOR NOTES:
COORDINATES SHOWN HEREON ARE BASED ON THE MISSOURI STATE PLANE COORDINATE SYSTEM, NAD 83, NAVD 88, WEST ZONE BASED UPON GPS OVSERVATIONS USING MODOT VRS GPS NETWORK.

BENCHMARK #5
CHISELED SQUARE ON SOUTHEAST CORNER OF A CONCRETE PAD FOR A TRAFFIC SIGNAL BOX AT THE SOUTHWEST CORNER OF PRYOR ROAD AND O'BRIEN ROAD.
N=1002468.03
E=2813403.10
ELEV.=979.24

CONTROL POINT #6
SET 3/8" IBCAP ON THE SOUTHWEST CORNER OF PRYOR ROAD AND O'BRIEN ROAD.
N=1002469.50
E=2813383.64
ELEV.=979.56

CONTROL POINT #60
SET 60D NAIL APPROXIMATELY 5 FEET WEST OF THE PRYOR ROAD BACK OF CURB APPROXIMATELY 30 FEET SOUTH OF THE SOUTHERLY O'BRIEN ROAD BACK OF CURB.
N=1002475.39
E=2813404.33
ELEV.=979.23

CONTROL POINT #61
SET 60D NAIL APPROXIMATELY 3 FEET NORTH OF NORTHERLY O'BRIEN ROAD BACK OF CURB APPROXIMATELY 198 FEET WEST OF PRYOR ROAD BACK OF CURB.
N=1002534.95
E=2813214.64
ELEV.=974.40



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STATE OF MISSOURI
JAMES PATRICK GALLAGHER
NUMBER PE-2018010496
5/1/2019
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

GENERAL LAYOUT, ALIGNMENT DATA, & SURVEY CONTROL

PRYOR ROAD & O'BRIEN ROAD INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by:	JPG
checked by:	JJW
designed by:	JPG
QA/QC by:	RBC
project no.:	A18-1140
date:	2019.05.01

SHEET
2

GENERAL NOTES

1) PRELIMINARY INFORMATION:

a) CONSULT PARAGRAPH 6.12 OF THE EJCDC GENERAL CONDITIONS (C–700) FOR A COMPLETE LIST OF RECORD DOCUMENTS THAT THE CONTRACTOR SHALL MAINTAIN ON SITE.

b) PERMITS REQUIRED FOR THE WORK CAN BE FOUND IN SECTION 1010 OF THE GENERAL REQUIREMENTS (DIVISION 1).

c) CONSTRUCTION OF THE WORK SHOWN OR IMPLIED BY THIS SET OF DRAWINGS SHALL NOT BE INITIATED UNLESS ALL PRELIMINARY CONTRACT OBLIGATIONS ARE MET, AND THE OWNER IS NOTIFIED OF THE INTENT TO START THE WORK. SEE SECTION 1020 OF DIVISION 1.

d) ALL WORK SHALL BE CONFINED WITHIN THE CONSTRUCTION LIMITS OR AS OTHERWISE DIRECTED BY THE ENGINEER.

e) ANY WORK PERFORMED PRIOR TO ENGINEER'S REVIEW AND APPROVAL OF THE PERTINENT SUBMITTAL WILL BE AT THE SOLE EXPENSE AND RESPONSIBILITY OF CONTRACTOR. SUBMITTAL PROCEDURES AND REQUIREMENTS CAN BE FOUND IN PARAGRAPH 6.17 OF C–700 AND SECTIONS 1115 AND 1116 OF DIVISION 1.

f) OWNER IS DEFINED AS THE CITY OF LEE'S SUMMIT.

g) DEVELOPER IS DEFINED AS SUMMIT HOMES.

2) COORDINATION AND NOTIFICATIONS:

a) ANY TIME REFERENCES LISTED IN PARAGRAPH 2 ARE TYPICAL TIMELINES. CONSULT SECTION 1105 OF DIVISION 1 FOR PROJECT SPECIFIC TIMELINES, COORDINATION AND NOTIFICATION PROCESSES.

b) PRIOR TO ANY STREET CLOSURES, APPROPRIATE NOTIFICATIONS WILL BE DISTRIBUTED. THE CLOSURES OF ARTERIAL AND COLLECTOR STREETS WILL TYPICALLY CAUSE THE OWNER TO GENERATE A PRESS RELEASE AND DETOUR MAP. THIS IS TYPICALLY 14 CALENDAR DAYS.

c) THE REMOVAL OF TREES, SHEDS, FENCING OR OTHER ITEMS ON PRIVATE PROPERTY ARE NOT AUTHORIZED ON THIS PROJECT UNLESS OTHERWISE NOTED IN PLANS. CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY IF ANY SUCH WORK IS PROPOSED. THE OWNER REQUIRES AT LEAST 14 CALENDAR DAYS TO NOTIFY PROPERTY OWNER RESIDENT, IN ORDER TO GIVE THEM OPPORTUNITY TO SALVAGE THESE ITEMS.

d) PRIOR TO DRIVEWAY DEMOLITION AND RECONSTRUCTION, CONTRACTOR SHALL NOTIFY AND COORDINATE WITH THE PROPERTY OWNER OR RESIDENT. THIS IS TYPICALLY 2 WORKING DAYS.

e) PRIOR TO SHUTTING DOWN A WATER MAIN, CONTRACTOR SHALL NOTIFY AND COORDINATE WITH THE PROPERTY OWNER OR RESIDENT. THIS IS TYPICALLY 2 WORKING DAYS.

f) CONTRACTOR SHALL NOT BE ALLOWED TO WORK WEEKENDS OR HOLIDAYS WITHOUT REQUESTING PRIOR APPROVAL FROM OWNER THREE WORKING DAYS IN ADVANCE.

g) 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 WITH THE OWNER ONE WEEK IN ADVANCE.

3) SURVEY:

a) IN ACCORDANCE WITH PARAGRAPH 4.05 OF C–700, OWNER OR ENGINEER SHALL PROVIDE ENGINEERING SURVEYS TO ESTABLISH REFERENCE POINTS FOR CONSTRUCTION WHICH IN THEIR JUDGMENT ARE NECESSARY TO ENABLE CONTRACTOR TO PERFORM THE WORK. CONTRACTOR IS RESPONSIBLE FOR LAYING OUT THE WORK AND SHALL SET THOSE STAKES NECESSARY TO CONSTRUCT THIS PROJECT. NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK, UNLESS LISTED IN THE BID TAB.

b) IN ACCORDANCE WITH PARAGRAPH 4.05 OF C–700, 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 AND WAS COMPILED USING INFORMATION PROVIDED BY THE FACILITY OWNER. CONSULT PARAGRAPH 4.04 OF C–700 FOR FURTHER INFORMATION.

b) 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 SEWER:

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 WITHIN 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. NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK, UNLESS LISTED IN THE BID TAB.

c) CONTRACTOR SHALL PROVIDE BYPASS PUMPING OF SEWAGE FLOWS AROUND EACH SEGMENT OF PIPE THAT IS TO BE REPLACED OR REFURBISHED. CONTRACTOR SHALL HAVE ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY TO COMPLETE WORK ON THE PIPE SEGMENT PRIOR TO ISOLATING THE SEWER SEGMENT AND BEGINNING BYPASS PUMPING OPERATIONS. NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK, UNLESS LISTED IN THE BID TAB.

6) ENVIRONMENTAL & SAFETY:

a) CONTRACTOR SHALL USE ADEQUATE DUST CONTROL MEASURES DURING ALL PHASES OF THE WORK. CONSULT SECTION 1145 IN DIVISION 1.

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. GRADING ADJACENT TO PAVEMENTS SHALL BE LEFT THREE INCHES BELOW THE TOP OF PAVEMENT UNTIL IMMEDIATELY BEFORE SOD OR SEED IS PLACED. 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) UNLESS WAIVED IN SECTION 1010, CONTRACTOR SHALL MAINTAIN THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) ON SITE IN ACCORDANCE WITH DNR REGULATIONS.

d) PROPERTY MAINTENANCE INFORMATION CAN BE FOUND IN SECTION 1145 OF DIVISION 1.

7) GRADING, REMOVALS & DAMAGED ITEMS:

a) INFORMATION ON SALVAGED MATERIAL CAN BE FOUND IN SECTION 1150 OF DIVISION 1.

b) NO BURNING IS ALLOWED ON THE SITE.

c) 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 REPLACED WITH NEW MATERIALS, AND ALL MATERIALS ARE SUBJECT TO OWNER'S APPROVAL. NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK, UNLESS LISTED IN THE BID TAB.

d) ALL FENCE REPLACEMENT SHOULD BE RELOCATED TO THE PROPERTY LINES, UNLESS THE EXISTING FENCE WAS LOCATED INSIDE OF THE PROPERTY LINES. FENCE INSIDE OF PROPERTY LINES SHOULD BE PLACED IN ITS ORIGINAL LOCATION. GATES AND FENCE CORNERS SHALL BE RE–ESTABLISHED AT THE ORIGINAL LOCATIONS, UNLESS INDICATED BY THE DRAWINGS. REMOVALS SHALL BE AS SHOWN ON THE DRAWINGS OR AS APPROVED BY OWNER. REMOVALS NOT APPROVED BY OWNER WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

e) ROOF DRAINS, UNDER DRAINS, SEPTIC LINES 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 PLACED NO CLOSER THAN FIVE FEET TO ANY ADJOINING PROPERTY LINE INCLUDING THE RIGHT–OF–WAY LINE (SECTION 16–413 OF THE CODE OF ORDINANCES). 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. IF NO UNIT PRICE IS IN THE BID, THEN PAYMENT WILL BE NEGOTIATED PER THE CONTRACT DOCUMENTS.

f) MATERIALS THAT MAY BE CLASSIFIED AS UNSUITABLE OR REQUIRE UNDERGRADING SHALL BE DETERMINED BY THE OWNER OR THE FIELD ENGINEER. CONTRACTOR SHALL NOT MAKE THIS DETERMINATION.

8) TRAFFIC:

a) UNLESS DIRECTED IN THE CONTRACT DOCUMENTS OR DRAWINGS, CONTRACTOR SHALL MAINTAIN TRAFFIC AND PEDESTRIAN ACCESS AT ALL TIMES.

b) 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.

ADDITIONAL GENERAL NOTES:

1) ALL TREES TO BE GRUBBED ARE MARKED THUS "X". SPARE ALL TREES THAT ARE MARKED DND (DO NOT DISTURB) OR ANY TREES NOT MARKED AT ALL. EXCEPTIONALLY GOOD TREES SHALL BE SPARED BY ADJUSTING BACKSLOPE LINES DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. ALL TREES WITHIN THE CONSTRUCTION LIMITS TO BE SAVED SHALL HAVE HEIR TRUNKS AND ROOT ZONE PHYSICALLY PROTECTED PRIOR TO CONSTRUCTION OPERATIONS BY METHODS APPROVED BY THE ENGINEER.

2) THE CONTRACTOR SHALL POTHOLE ALL UTILITY CROSSINGS PRIOR TO CONSTRUCTION OF ANY PORTION OF THE STORM SEWER, UNDERDRAINS, CONDUIT, AND ANY OTHER SUBSURFACE ELEMENTS OF THE PROJECT. THIS SURVEY INFORMATION SHALL BE FORWARDED TO THE ENGINEER FOR REVIEW. THE CONTRACTOR SHALL NOT BEGIN CONSTRUCTION ON ANY SUBSURFACE ELEMENT ON THE PROJECT WITHOUT THE APPROVAL OF THE ENGINEER. THIS ITEM SHALL BE SUBSIDIARY TO OTHER BID ITEMS.

SUMMARY OF QUANTITIES

	ITEM DESCRIPTION	QUANTITY	UNIT
1	Clearing and Grubbing	3	Each
2	Demolition and Removal	1	LS
3	Unclassified Excavation	2264	CY
4	Silt Fence	390	LF
5	Silt Fence Ditch Check	21	LF
6	Inlet Protection	12	Each
7	Construction Entrance	118	SY
8	Fly Ash	95	Ton
9	Manipulation	1700	SY
10	Aggregate Base (Type 5) (4")	969	SY
11	Aggregate Base (Type 5) (6")	1700	SY
12	Asphaltic Concrete Surface Type 5 (2")	1695	SY
13	Asphaltic Concrete Surface Type 5 (6")	53	SY
14	Asphaltic Concrete Base Type 5 (7.5")	881	SY
15	Asphaltic Milling (2")	784	SY
16	Portland Cement Concrete Base (8")	30	SY
17	Portland Cement Concrete Pavement (10")	305	SY
18	Curb & Gutter (Type CG-1)	1252	LF
19	Concrete Sidewalk (4")	5031	SF
20	Concrete Sidewalk (6")	2904	SF
21	Concrete Sidewalk (8")	124	SF
22	Sidewalk Ramps with Detectable Warning Surface	4	Each
23	Driveways (8")	127	SF
24	Asphaltic Curb	164	LF
25	Topsoil	210	CY
26	Seeding	0	Acre
27	Sodding	813	SY
28	Temporary Seeding	0	Acre
29	Traffic Signal Modification	1	LS
30	Pavement Marking & Signing	1	LS
31	Traffic Control	1	LS

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STATE OF MISSOURI – JAMES PATRICK GALLAGHER – NUMBER PE-2018010499 – 5/1/2019 – PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

GENERAL NOTES & SUMMARY OF QUANTITIES

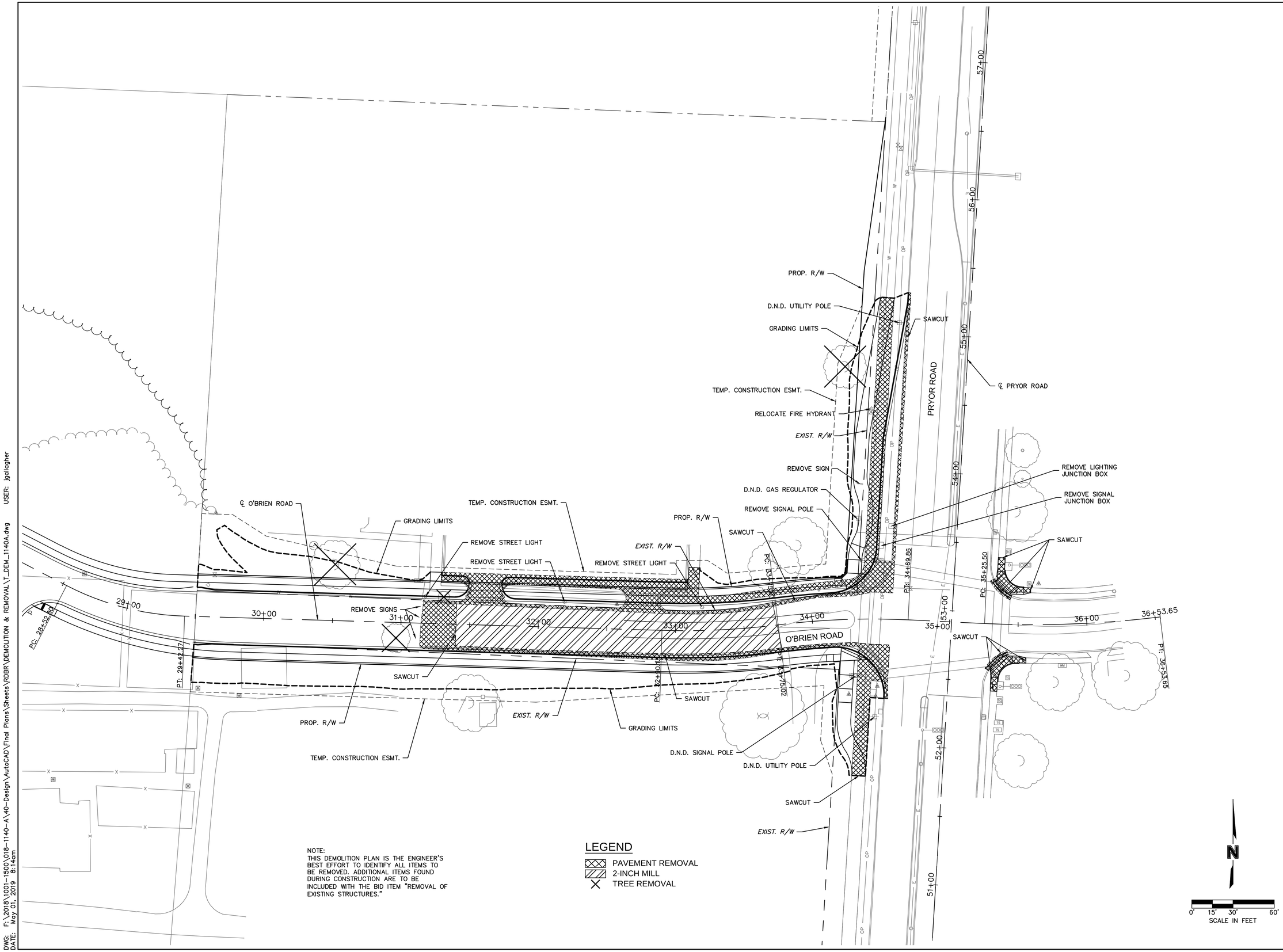
PRYOR ROAD & O'BRIEN ROAD INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by: JPG
checked by: JJW
designed by: JPG
QA/QC by: RBC
project no.: A18-1140
date: 2019.05.01

SHEET 3



NOTE:
THIS DEMOLITION PLAN IS THE ENGINEER'S BEST EFFORT TO IDENTIFY ALL ITEMS TO BE REMOVED. ADDITIONAL ITEMS FOUND DURING CONSTRUCTION ARE TO BE INCLUDED WITH THE BID ITEM "REMOVAL OF EXISTING STRUCTURES."

LEGEND

- PAVEMENT REMOVAL
- 2-INCH MILL
- TREE REMOVAL

0' 15' 30' 60'
SCALE IN FEET

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STATE OF MISSOURI
JAMES PATRICK GALLAGHER
NUMBER PE-2010010469
5/1/2019
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY
		REVISIONS	

DEMOLITION PLAN

PRYOR ROAD & O'BRIEN ROAD
INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by: JPG
checked by: JJW
designed by: JPG
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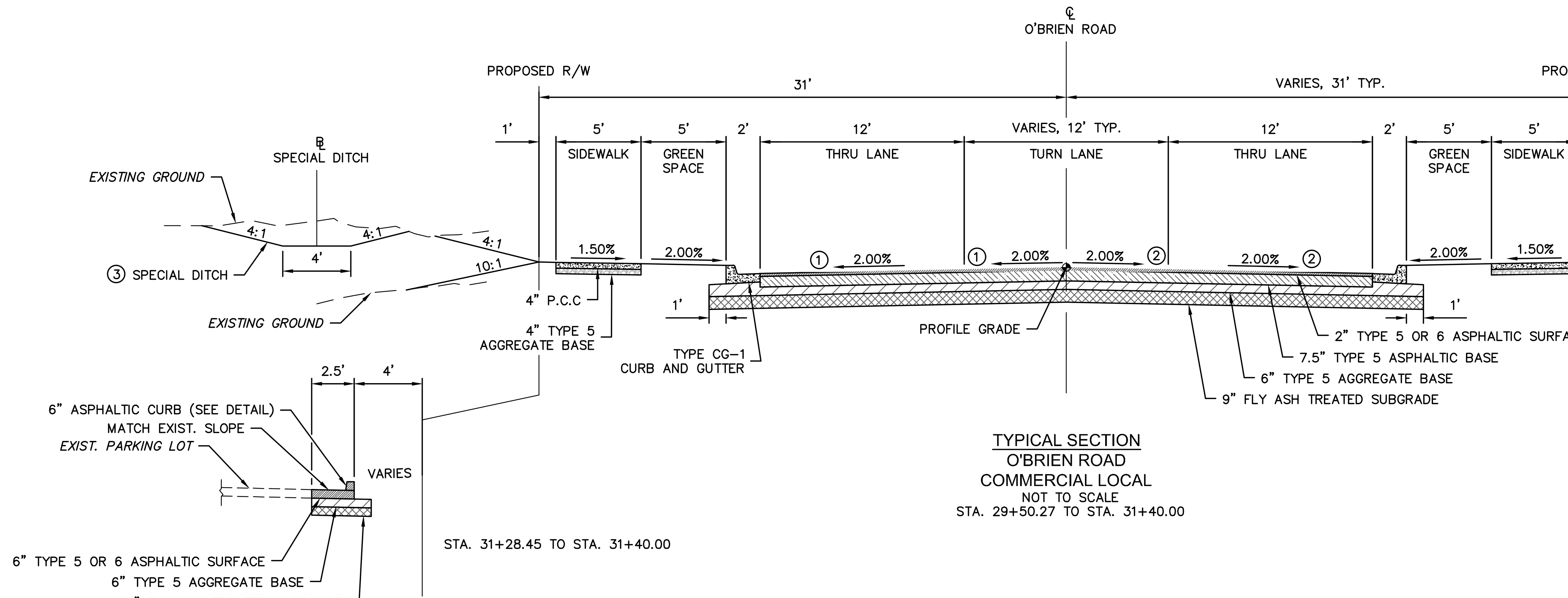
date: 2019.03.12

SHEET
4



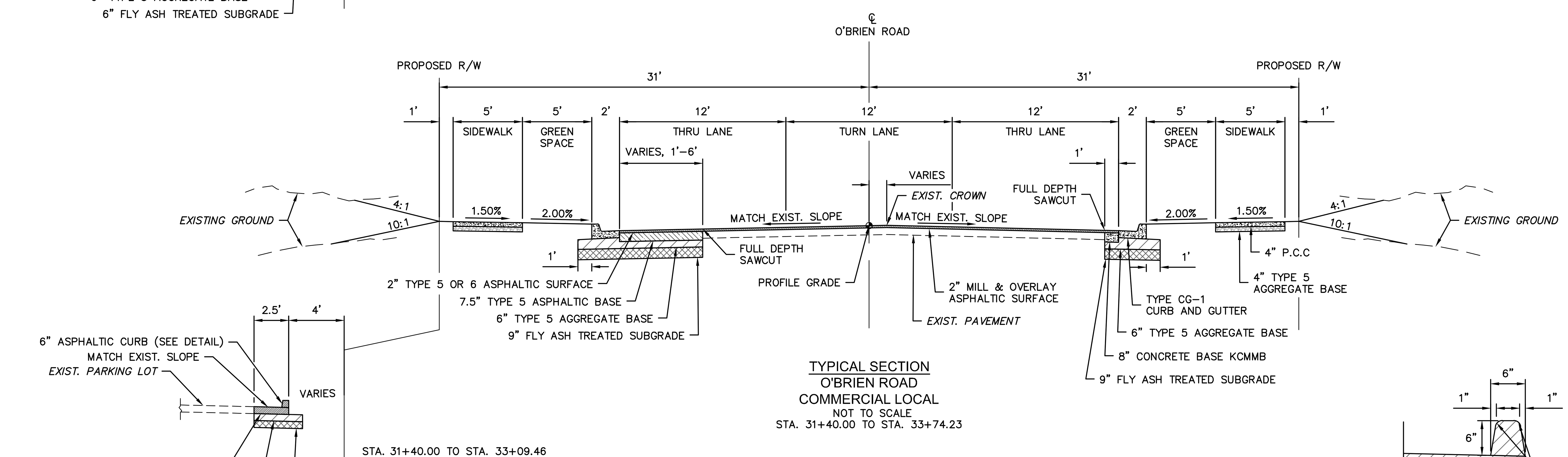
TYPICAL SECTION
O'BRIEN ROAD
COMMERCIAL LOCAL
NOT TO SCALE
STA. 29+50.27 TO STA. 31+40.00

NOTES:

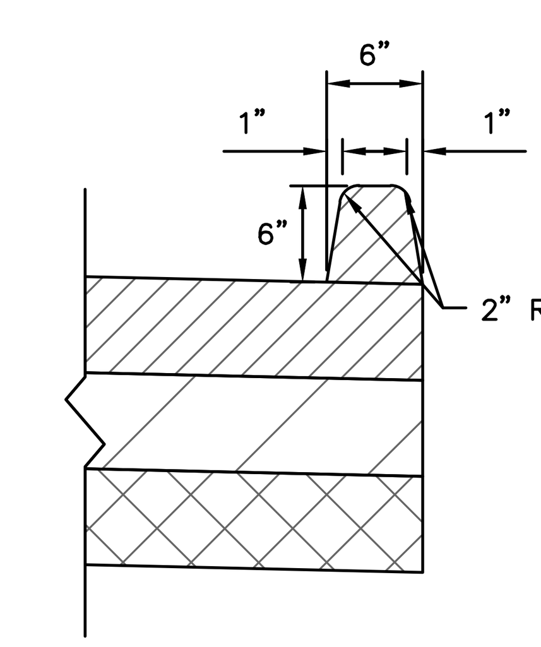
① SLOPE VARIES FROM −2.00% TO −1.21% FROM STA. 31+15.00 TO STA. 31+40.00, RESPECTIVELY.

② SLOPE VARIES FROM −2.00% TO −1.11% FROM STA. 31+15.00 TO STA. 31+40.00, RESPECTIVELY.

③ SPECIAL DITCH FROM STA. 29+67.08 TO STA. 30+50.87 SEE CROSS SECTIONS FOR ADDITIONAL INFORMATION



TYPICAL SECTION
O'BRIEN ROAD
COMMERCIAL LOCAL
NOT TO SCALE
STA. 31+40.00 TO STA. 33+74.23



ASPHALTIC CURB DETAIL

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STATE OF MISSOURI
JAMES PATRICK GALLAGHER
NUMBER PE-2018010490
5/1/2019
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

TYPICAL SECTIONS

PRYOR ROAD & O'BRIEN ROAD INTERSECTION IMPROVEMENTS

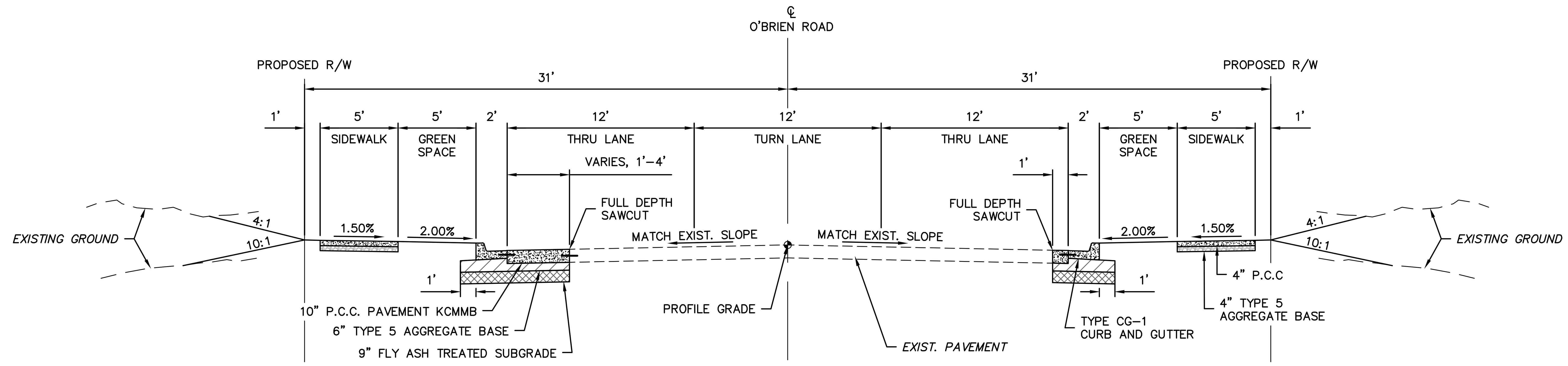
LEE'S SUMMIT, MO

2019

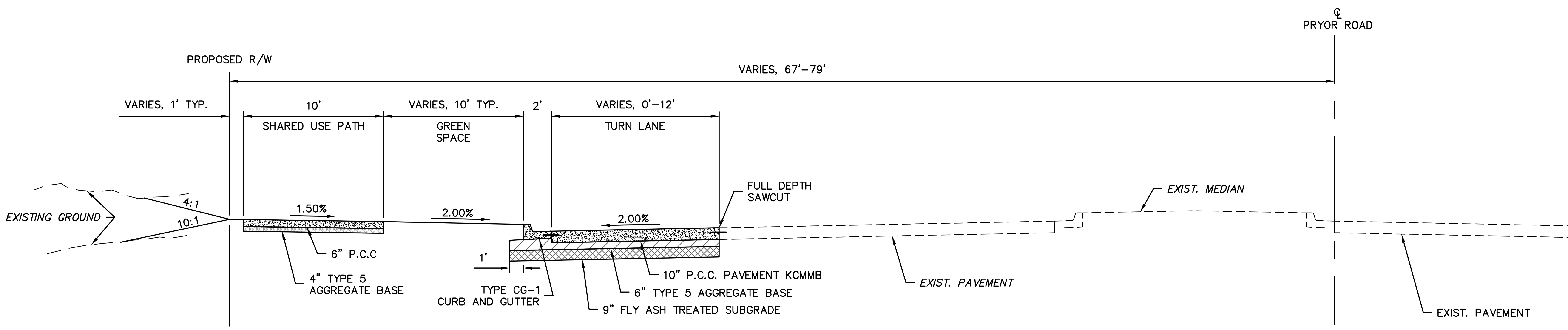
drawn by: JPG
checked by: JJW
designed by: JPG
QA/QC by: RBC
project no.: A18-1140
date: 2019.05.01

SHEET
5

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\RDBR\GENERAL\T_TYP_1140A.dwg USER: jgallagher
DATE: May 01, 2019 8:14am



TYPICAL SECTION
O'BRIEN ROAD
COMMERCIAL LOCAL
NOT TO SCALE
STA. 33+74.23 TO 34+59.02



TYPICAL SECTION
PRYOR ROAD
ARTERIAL ROADWAY SECTION
NOT TO SCALE
STA. 53+42.68 TO 55+29.43

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STATE OF MISSOURI — JAMES PATRICK GALLAGHER — NUMBER PE-2018010490 — PROFESSIONAL ENGINEER — 5/1/2019

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

TYPICAL SECTIONS

PRYOR ROAD & O'BRIEN ROAD INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by: JPG
checked by: JJW
designed by: JPG
QA/QC by: RBC
project no.: A18-1140
date: 2019.05.01

SHEET 6

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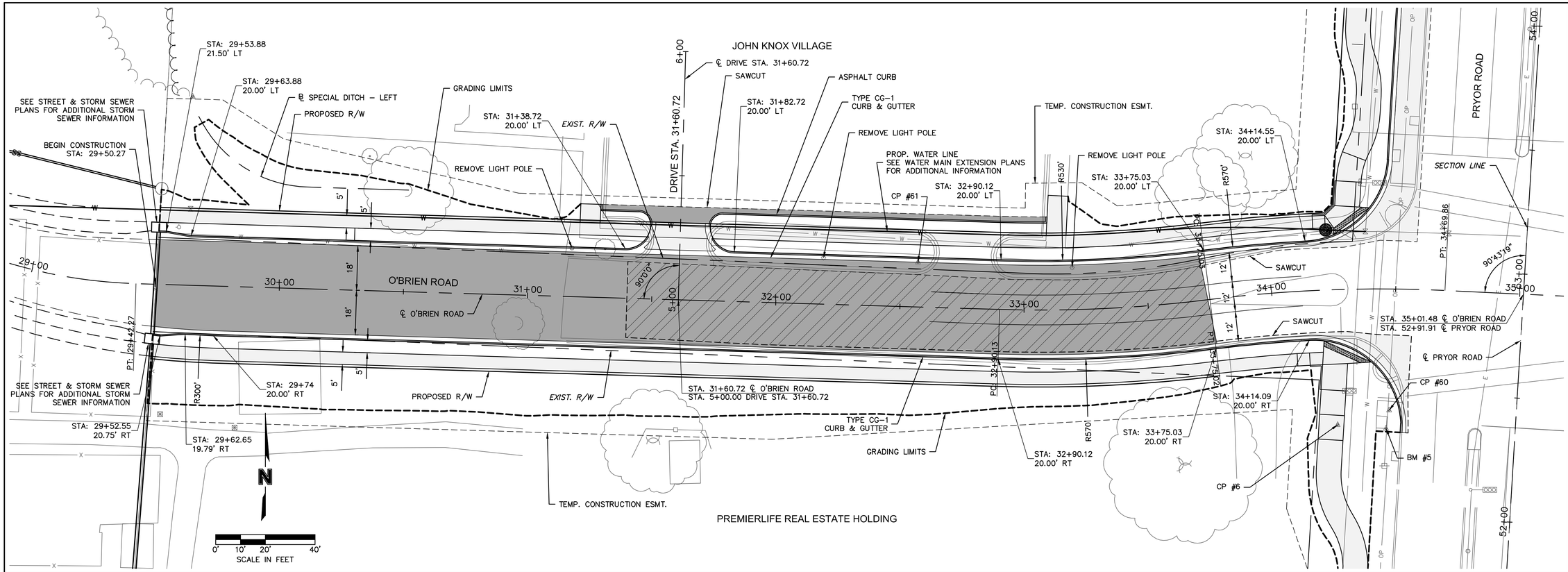
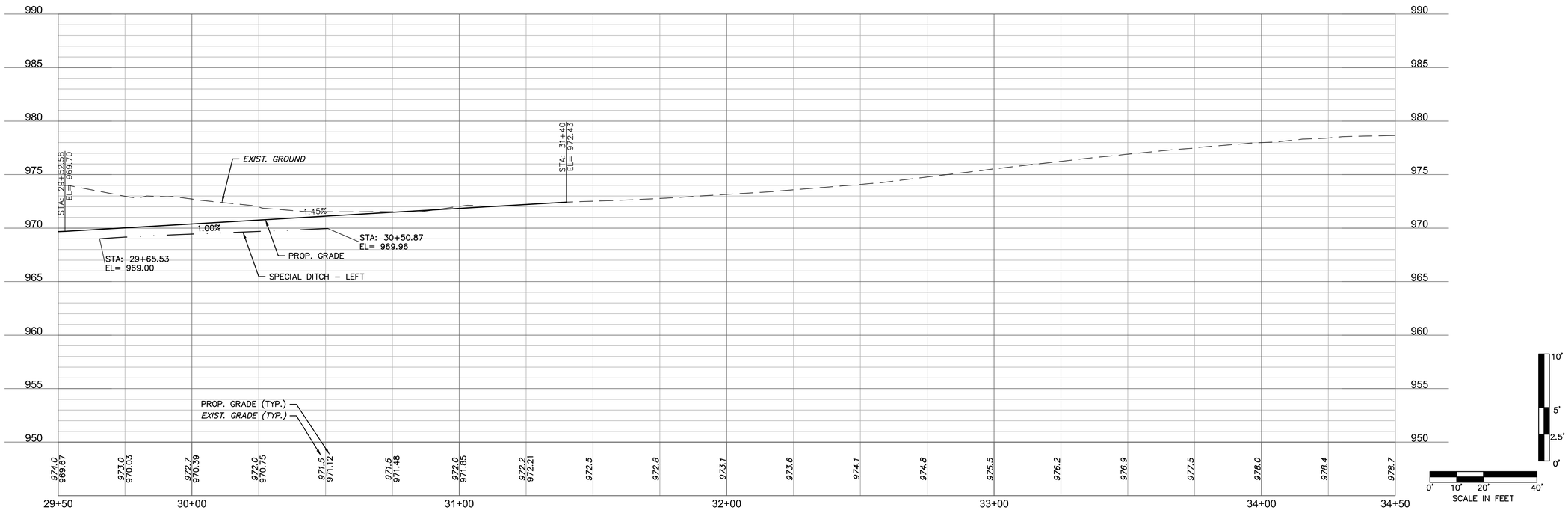


O'BRIEN ROAD (29+50 - 34+50)



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STATE OF MISSOURI
JAMES PATRICK GALLAGHER
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5/1/2019
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REVISIONS

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PLAN & PROFILE
O'BRIEN ROAD

PRYOR ROAD & O'BRIEN ROAD
INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by: JPG
checked by: JJW
designed by: JPG
QA/QC by: RBC
project no.: A18:1140
date: 2019.05.01

SHEET
7

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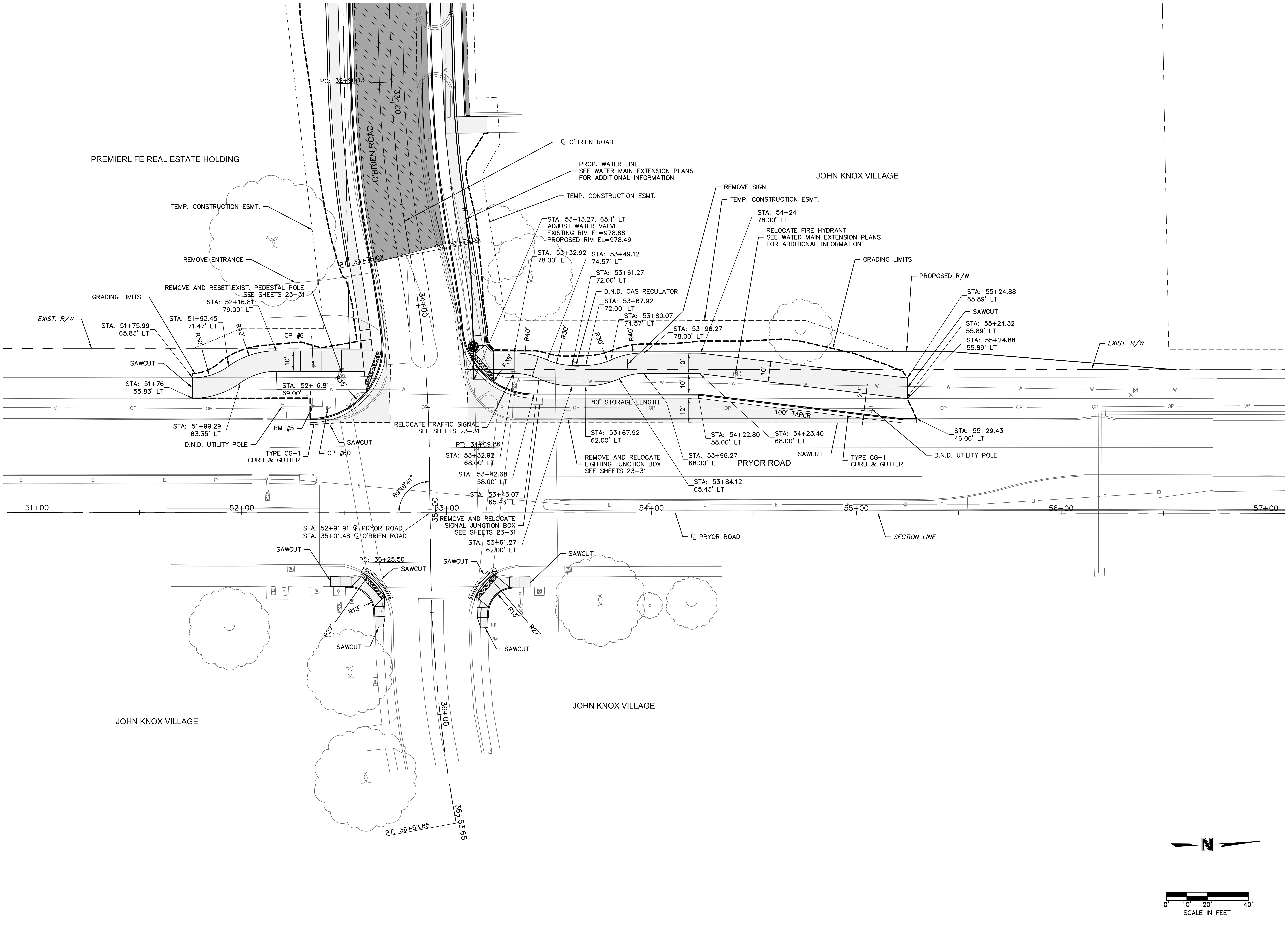

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STATE OF MISSOURI
JAMES PATRICK GALLAGHER
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5/1/2019

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REVISIONS

PLAN
O'BRIEN ROAD

PRYOR ROAD & O'BRIEN ROAD
INTERSECTION IMPROVEMENTS
LEE'S SUMMIT, MO

2019

drawn by: JPG
checked by: JJW
designed by: JPG
QA/QC by: RBC
project no.: A18-1140
date: 2019.05.01

SHEET
8

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\RDBR\PLAN & PROFILE\T_RPP2_1140A.dwg
USER: jgallagher
DATE: May 01, 2019 8:16am

O'BRIEN ROAD STA: 34+14.55, 55.00' LT
PRYOR ROAD STA: 53+42.68, 93.00' LT
R=37.00'
Δ=083°31'01"
L=53.93'

EL= 978.29
STA: 53+42.68, 56.00' LT

2.00%

STA: 34+14.55, 18.00' LT
EL= 978.13

EL= 978.37

EL= 978.44

EL= 978.34

PRYOR ROAD

54+00

℄ PRYOR ROAD

PT: 34+69.86

90°43'19"

STA. 35+01.48 ℄ O'BRIEN ROAD =
STA. 52+91.91 ℄ PRYOR ROAD

53+00

35+00

O'BRIEN ROAD

PC: 33+75.03

1.02%

34+00

℄ O'BRIEN ROAD

33+00

PC: 32+90.13

PT: 33+75.03

1.36%

PC: 35+25.50

STA: 34+14.09, 18.00' RT
EL= 978.05

EL= 978.19

EL= 978.27

EL= 978.54

EL= 978.54
STA: 52+33.34, 44.00' LT

2.79%

O'BRIEN ROAD STA: 34+14.09, 55.00' RT
PRYOR ROAD STA: 52+33.34, 81.00' LT
R=37.00'
Δ=096°31'55"
L=62.34'

52+00

N

0' 5' 10' 20'
SCALE IN FEET

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INTERSECTION LAYOUT

PRYOR ROAD & O'BRIEN ROAD
INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by: JPG
checked by: JJW
designed by: JPG
QA/QC by: RBC
project no.: A18:1140
date: 2019.05.01

SHEET
9

USER: jgallagher
DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\RDBR\INTERSECTION LAYOUT\T_INT_1140A.dwg
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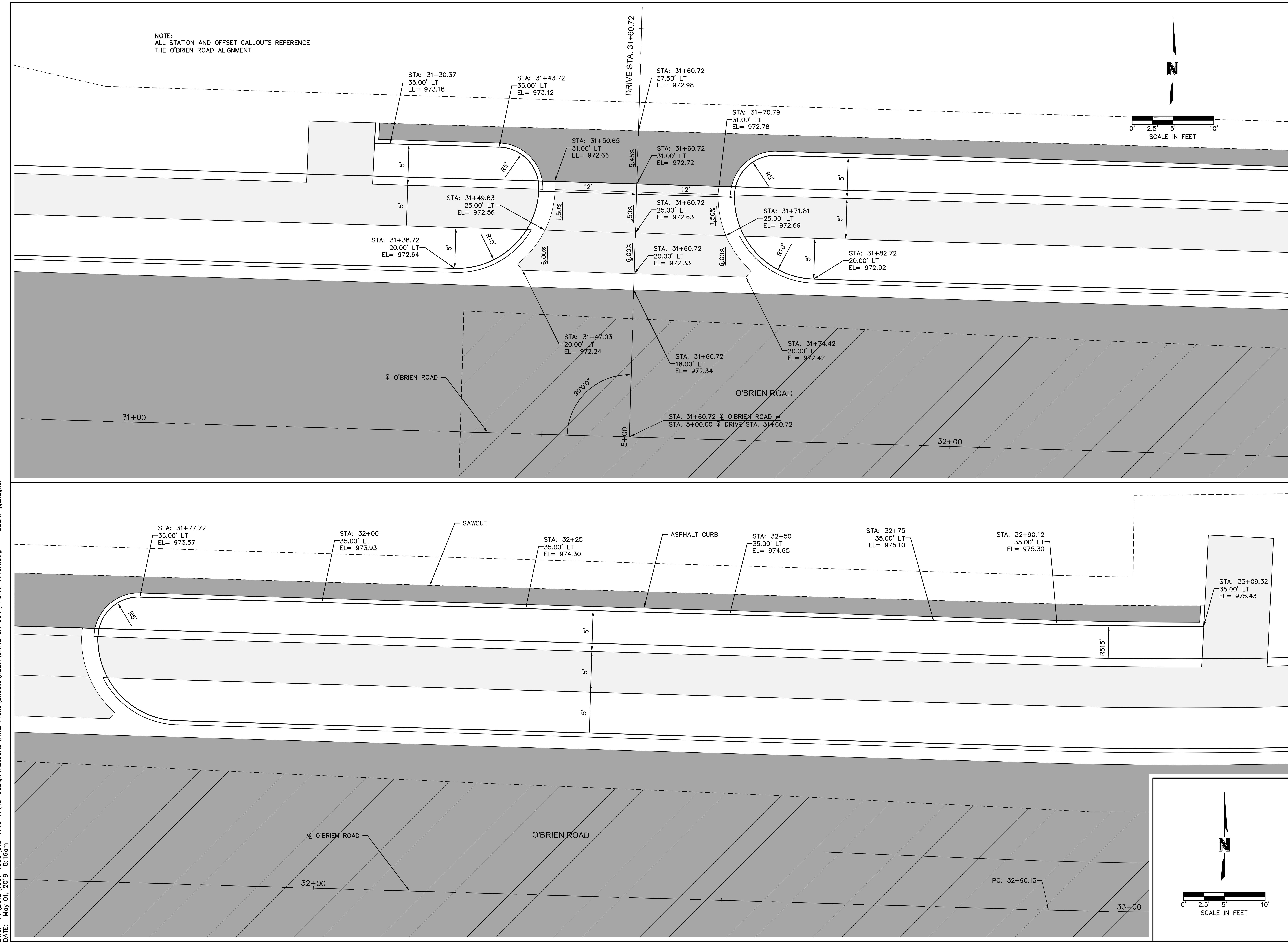

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DATE: May 01, 2019 8:16am

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5/1/2019
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

DRIVE LAYOUT

PRYOR ROAD & O'BRIEN ROAD
INTERSECTION IMPROVEMENTS
LEE'S SUMMIT, MO

2019

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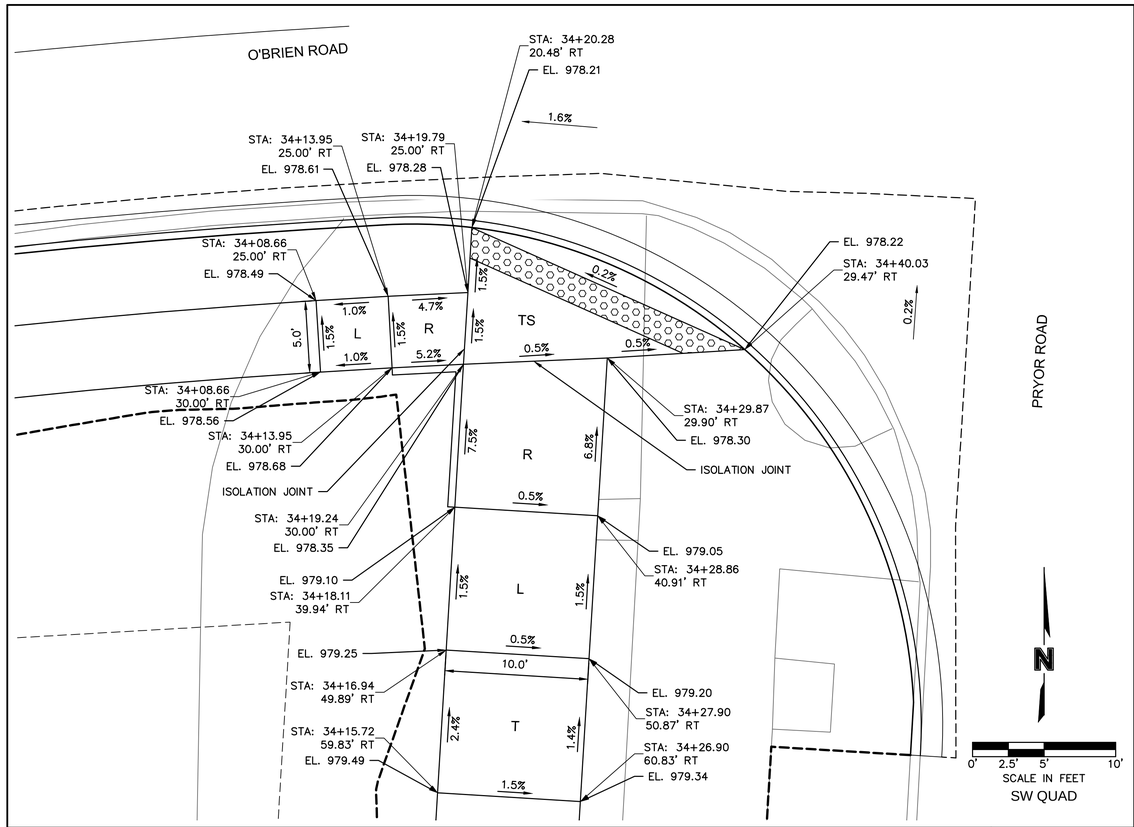
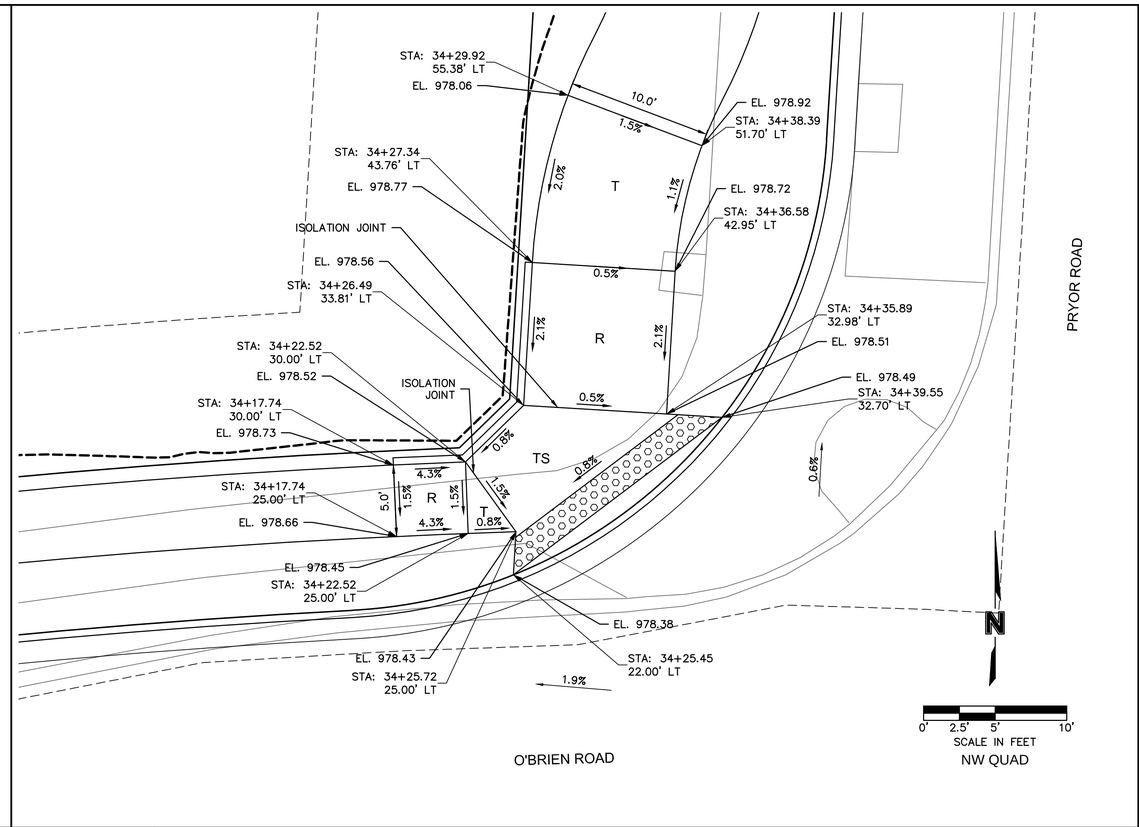
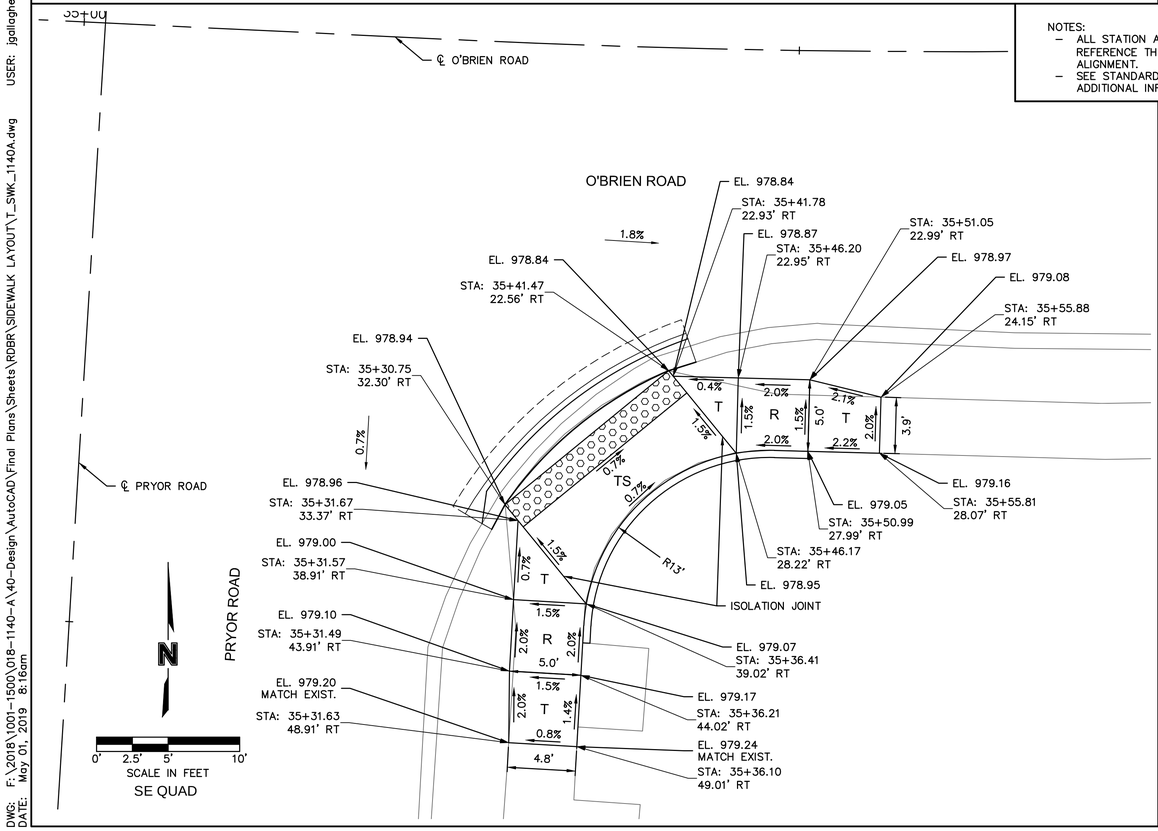
designed by: JPG
QA/QC by: RBC
project no.: A18-1140
date: 2019.03.12

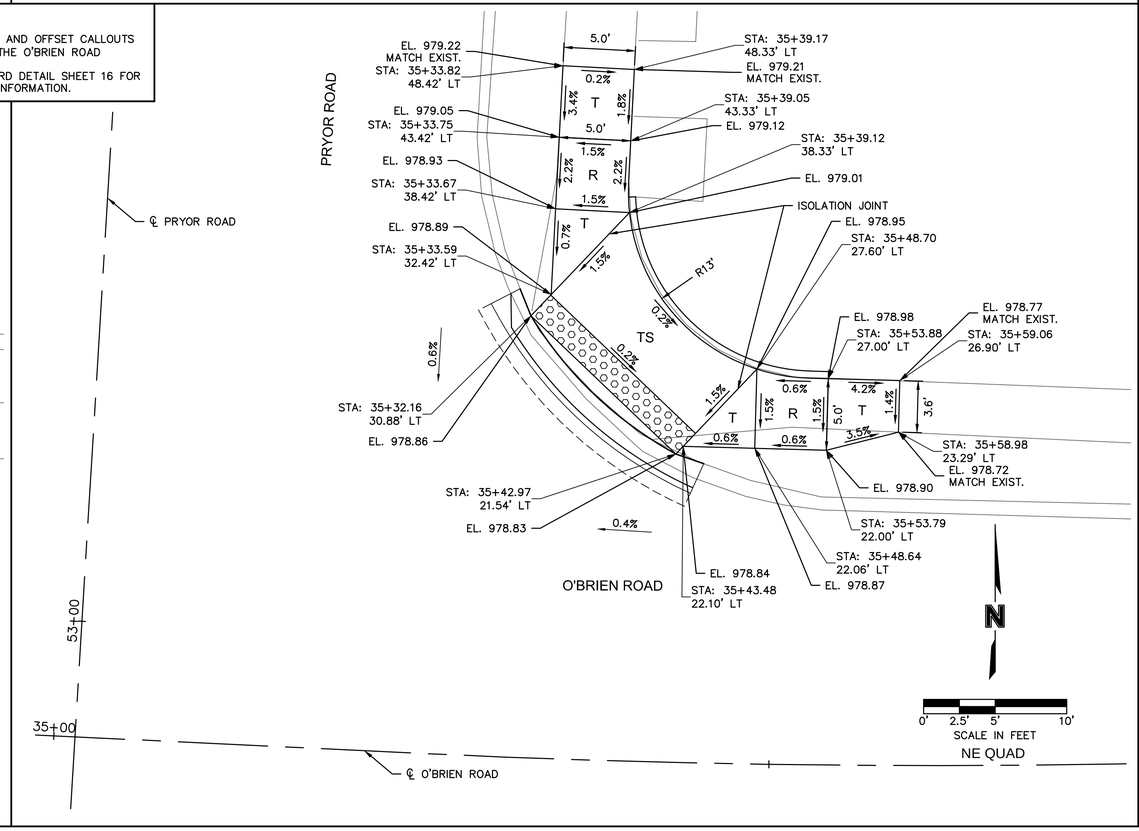
SHEET
10





NOTES:
- ALL STATION AND OFFSET CALLOUTS REFERENCE THE O'BRIEN ROAD ALIGNMENT.
- SEE STANDARD DETAIL SHEET 16 FOR ADDITIONAL INFORMATION.





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5/1/2019
PROFESSIONAL ENGINEER

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REVISIONS

SIDEWALK RAMP LAYOUTS

PRYOR ROAD & O'BRIEN ROAD
INTERSECTION IMPROVEMENTS

2019

LEE'S SUMMIT, MO

drawn by: JPG
checked by: JJW
designed by: JPG
QA/QC by: RBC
project no.: A18-1140
date: 2019.05.01

SHEET
11

USER: jgallagher
DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\RDBR\SIDEWALK LAYOUT\T_SWK_1140A.dwg
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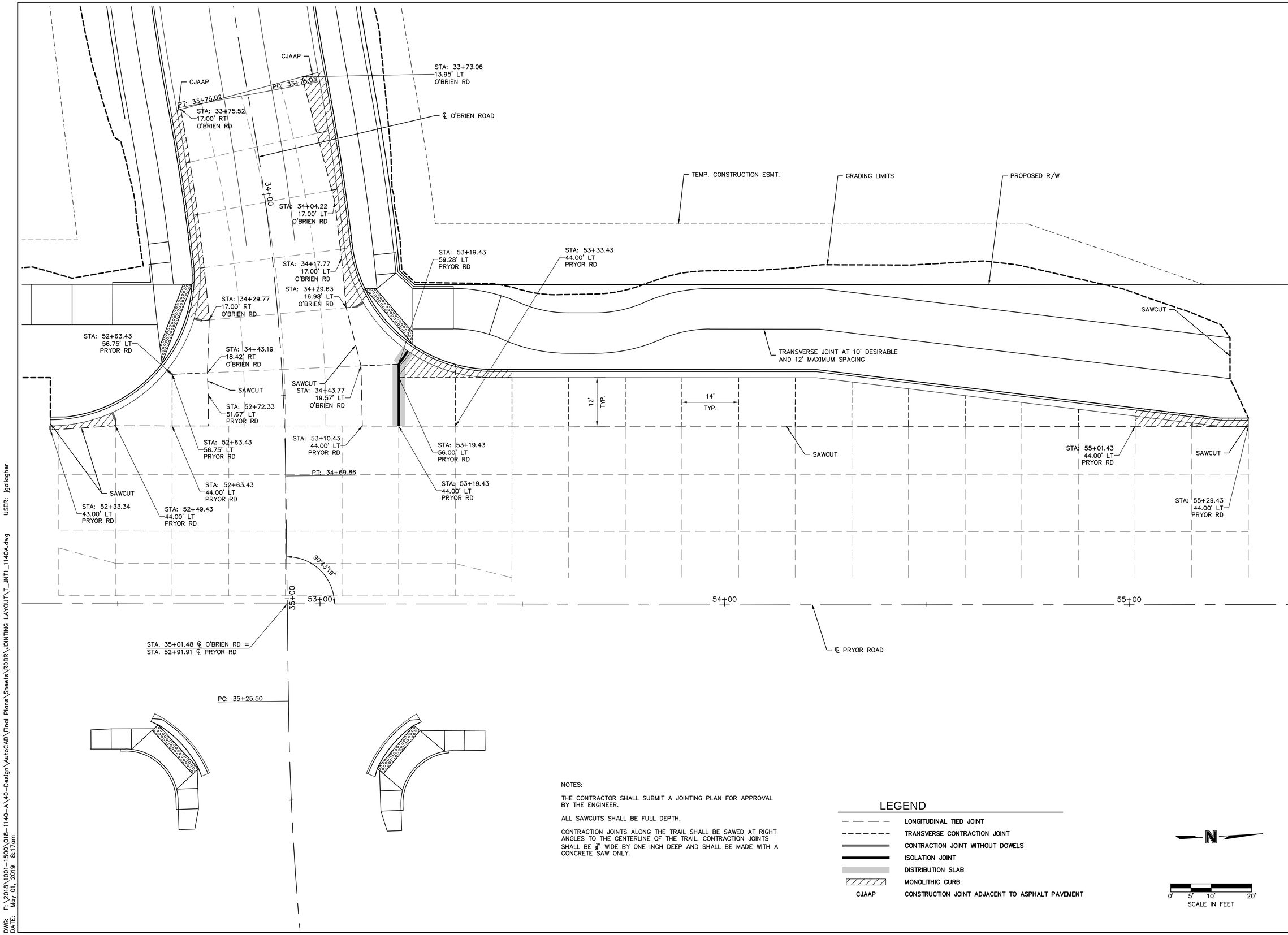

NOTES:

THE CONTRACTOR SHALL SUBMIT A JOINTING PLAN FOR APPROVAL BY THE ENGINEER.

ALL SAWCUTS SHALL BE FULL DEPTH.

CONTRACTION JOINTS ALONG THE TRAIL SHALL BE SAWED AT RIGHT ANGLES TO THE CENTERLINE OF THE TRAIL. CONTRACTION JOINTS SHALL BE $\frac{1}{8}$" WIDE BY ONE INCH DEEP AND SHALL BE MADE WITH A CONCRETE SAW ONLY.

LEGEND

- LONGITUDINAL TIED JOINT
- TRANSVERSE CONTRACTION JOINT
- CONTRACTION JOINT WITHOUT DOWELS
- ISOLATION JOINT
- DISTRIBUTION SLAB
- MONOLITHIC CURB
- CJAAP — CONSTRUCTION JOINT ADJACENT TO ASPHALT PAVEMENT

N

0' 5' 10' 20'
SCALE IN FEET

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STATE OF MISSOURI
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5/1/2019
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REVISIONS

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CONCRETE JOINTING LAYOUT

PRYOR ROAD & O'BRIEN ROAD
INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

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checked by: JJW
designed by: JPG
QA/QC by: RBC
project no.: A18:1140
date: 2019.05.01

SHEET
12

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\RDBR\JOINTING LAYOUT\T_JNT1_1140A.dwg
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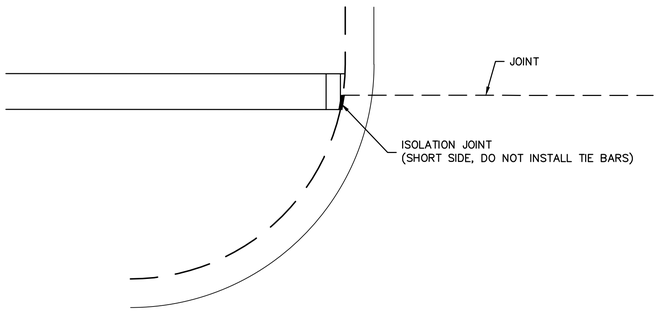
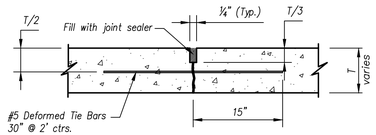
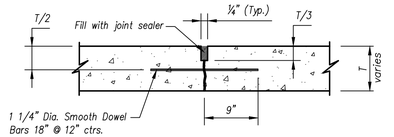
USER: jgallagher



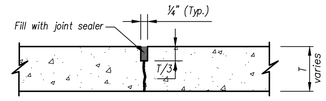
CONCRETE JOINT ADJACENT
TO SIDEWALK RAMP
*APPLIES TO ALL LOCATIONS THAT A
JOINT INTERSECTS WITH A SIDEWALK RAMP



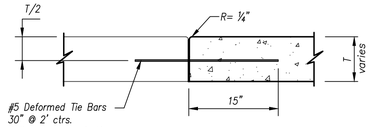
Logitudinal Tied Joint



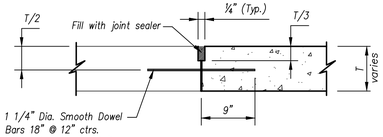
Transverse Contraction Joint



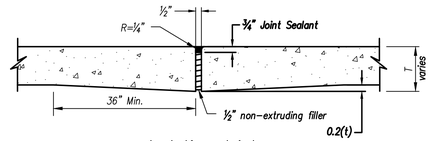
Contraction Joint Without Dowels



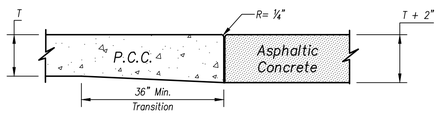
Longitudinal Construction Joint



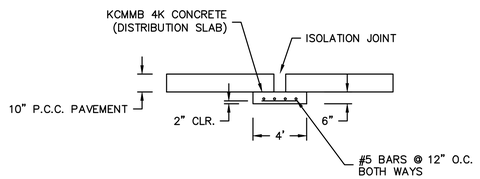
Transverse Construction Joint



Isolation Joint



Construction Joint Adjacent to Asphalt Pavement



DISTRIBUTION SLAB DETAIL

Joint Details

Note: Tie bars shall not be less than 12" from end of Dowel Bars.

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JAMES PATRICK GALLAGHER
NUMBER PE-2010010469
5/1/2019
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

CONCRETE JOINTING DETAILS

PRYOR ROAD & O'BRIEN ROAD
INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by: JPG
checked by: JJW
designed by: JPG
QA/QC by: RBC
project no.: A18-1140
date: 2019.05.01

SHEET
13

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\RDBR\JOINTING LAYOUT\T_JNT1_1140A.dwg USER: jgallagher
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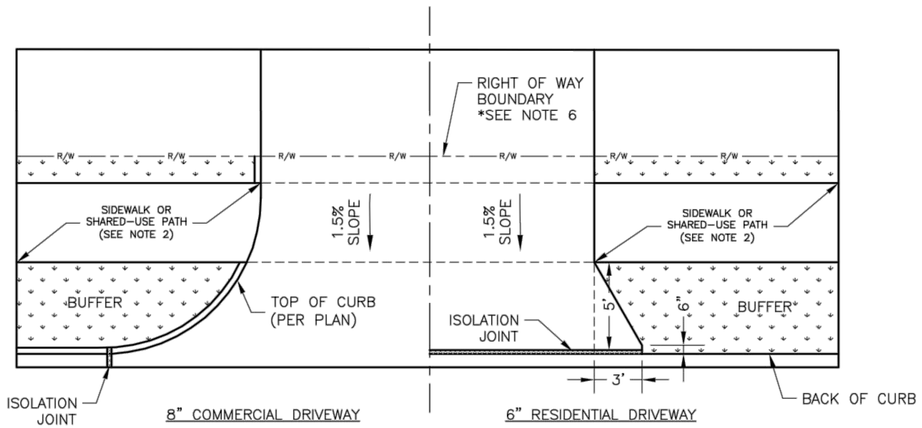
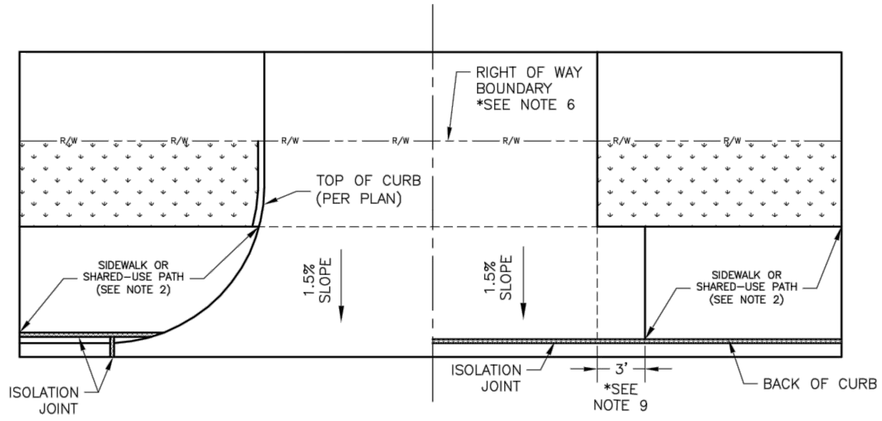
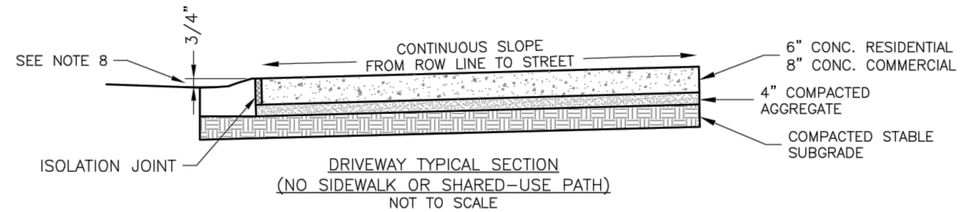


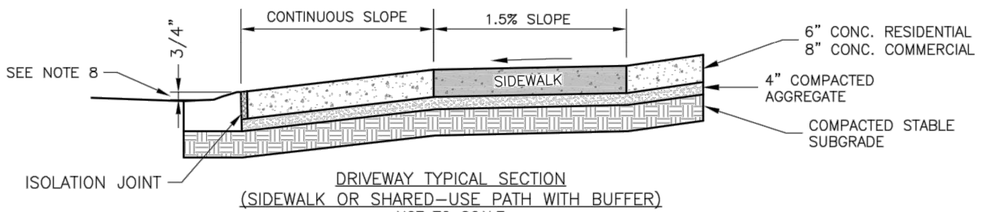
DRIVEWAY WITH BUFFER
NOT TO SCALE



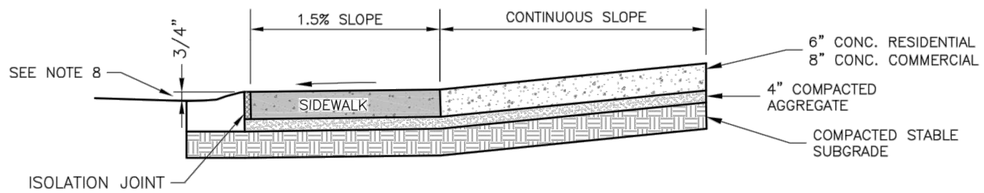
DRIVEWAY WITHOUT BUFFER
NOT TO SCALE



DRIVEWAY TYPICAL SECTION
(NO SIDEWALK OR SHARED–USE PATH)
NOT TO SCALE



DRIVEWAY TYPICAL SECTION
(SIDEWALK OR SHARED–USE PATH WITH BUFFER)
NOT TO SCALE



DRIVEWAY TYPICAL SECTION
(SIDEWALK OR SHARED–USE PATH WITHOUT BUFFER)
NOT TO SCALE

GENERAL NOTES

1. SUBGRADE SHALL BE STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
2. ALL DRIVE APPROACHES SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG) FOR SLOPE REQUIREMENTS WHEN SIDEWALK IS REQUIRED (SEE ADA RAMP RETROFIT DETAIL).
3. JOINT AT BACK OF CURB LINE SHALL BE AN ISOLATION JOINT FOR RESIDENTIAL DRIVEWAYS.
4. KCMMB 4K CONCRETE MIX IS REQUIRED FOR ALL CURBS.
5. COMMERCIAL DRIVEWAYS AND DRIVEWAY APPROACHES, IN THE PUBLIC RIGHT OF WAY, SHALL BE KCMMB 4K CONCRETE MIX.
6. A JOINT MUST BE INSTALLED AT THE RIGHT OF WAY BOUNDARY FOR PROPERTY DELINEATION.
7. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.
8. ¾" FROM TOP OF CURB TO FLOWLINE AT DRIVEWAY (TYPE CG–1 CURB ONLY). MUST MAINTAIN ORIGINAL FLOWLINE OF CURB.
9. SIDEWALK ADJOINING CURB SHALL BE 6" THICK, EXTENDING 3' FROM THE DRIVEWAY.
10. THE MAXIMUM WIDTH OF A RESIDENTIAL DRIVEWAY IS 36 FEET WITHIN THE RIGHT OF WAY.

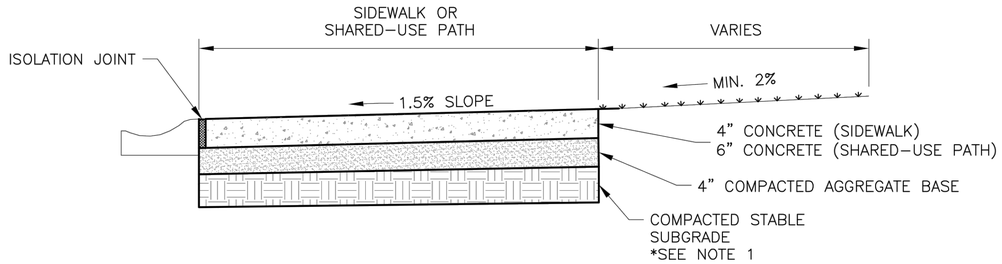
LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Project:
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

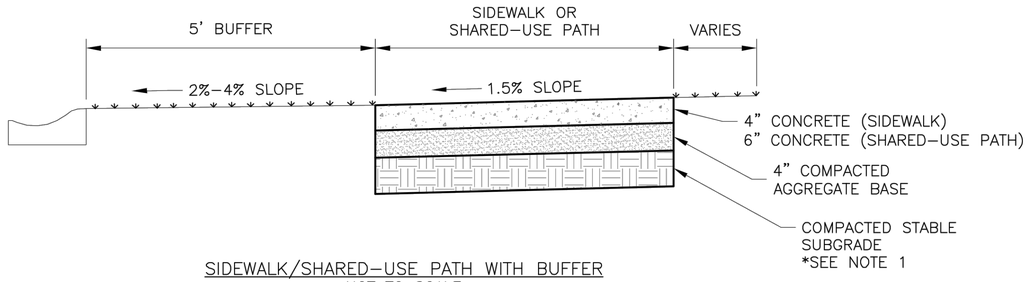
Sheet Name:
DRIVEWAY DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #:

SHEET
14
GEN-1



SIDEWALK/SHARED–USE PATH WITHOUT BUFFER
NOT TO SCALE



SIDEWALK/SHARED–USE PATH WITH BUFFER
NOT TO SCALE

GENERAL NOTES:

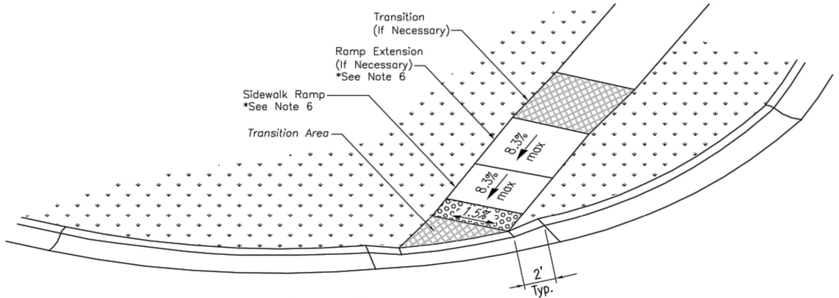
1. SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
2. 1.5% CROSS SLOPE MUST BE MAINTAINED THROUGH DRIVEWAYS.
3. KCMMB 4K CONCRETE MIX SHALL BE REQUIRED FOR ALL SIDEWALKS AND SHARED–USE PATHS OR AS APPROVED BY THE CITY INSPECTOR.
4. ALL SIDEWALKS SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
5. AN EXPANSION JOINT SHALL BE PLACED AT A MAXIMUM OF 150 FT. CONSTRUCTION JOINTS SHALL BE PLACED THE SAME WIDTH OF SIDEWALK, BUT NO GREATER THAN 10 FT.
6. SHARED–USE PATH WIDTH SHALL BE 10 FT. WIDE.
7. SIDEWALK FINISHING (NO PICTURE FRAMING) AS DIRECTED BY CITY INSPECTOR.
8. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.

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

SIDEWALK/SHARED-USE PATH DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

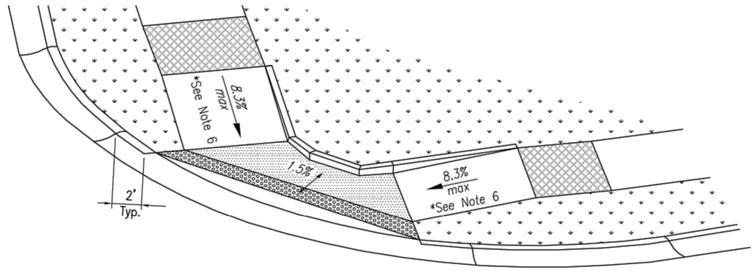
GEN-2



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

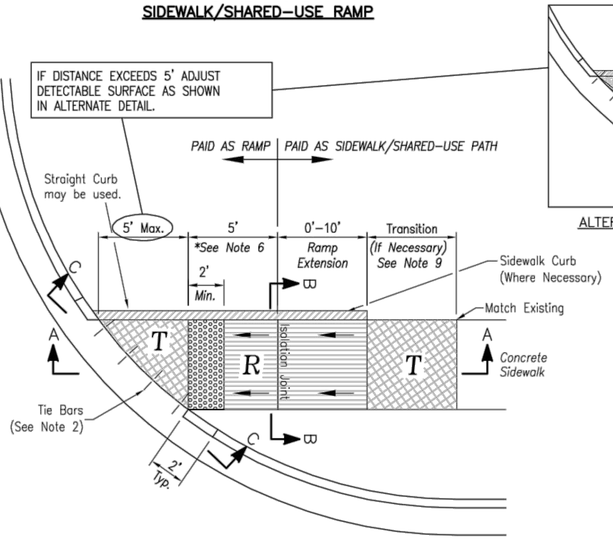
LEGEND

R	SIDEWALK RAMP
TS	TURNING SPACE
	DETECTABLE WARNING SURFACE
T	TRANSITION

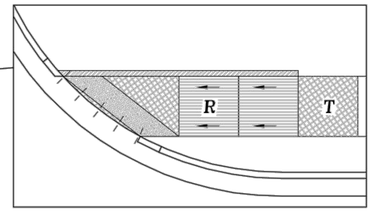


3-D VIEW TYPE B
SIDEWALK/SHARED-USE RAMP

FOR INFORMATION ONLY
SEE SHEET 11 FOR ADDITIONAL INFORMATION REGARDING WIDTH AND SLOPE FOR EACH SIDEWALK RAMP.



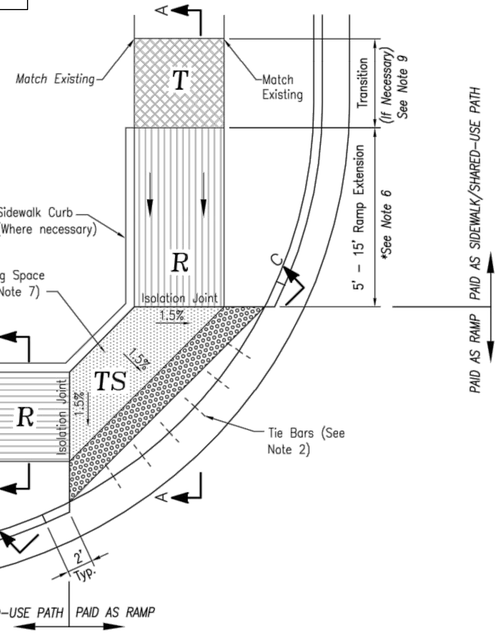
TYPE A SIDEWALK/SHARED-USE RAMP
Not to Scale



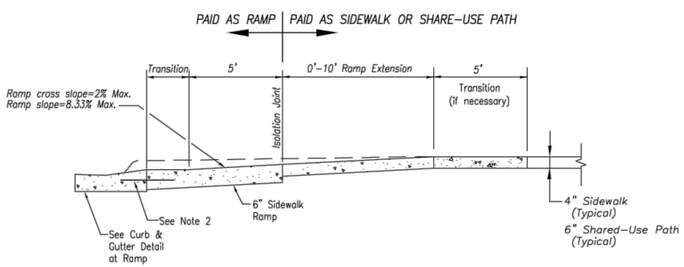
ALTERNATE DETECTABLE SURFACE LAYOUT

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

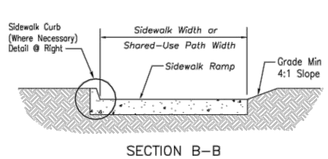
1. CURB RAMP OPENING, NOT INCLUDING FLARES, SHALL MATCH EXISTING SIDEWALK WIDTH AND OPENING SHALL BE AT LEAST 48" WIDE.
2. USE 18" LONG #4 EPOXY COATED TIE BARS @ 24" O.C. EMBED TIE BARS 9" IN EACH DIRECTION.
3. ALL RAMPS, SIDEWALKS, SHARED-USE PATHS SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
4. LONGITUDINAL JOINT SPACING TO MATCH WIDTH OF SIDEWALK.
5. ISOLATION JOINTS SHALL BE PLACED WHERE WALK ABUTS DRIVEWAYS AND SIMILAR STRUCTURES, AND 150' CENTERS MAX.
6. ADA MAXIMUM RAMP SLOPE = 8.33%
   ADA MAXIMUM CROSS SLOPE = 2.0%
   *ROADWAY EXCEPTION: WHERE EXISTING ROAD PROFILE GRADE DOES NOT ALLOW RAMP TO MEET RAMP SLOPE REQUIREMENT OF 8.33% OR LESS, THE RAMP SHALL BE EXTENDED TO A LENGTH OF 15 FEET TO MATCH EXISTING SIDEWALK. CROSS SLOPE OF RAMP SHALL BE 1.5%, ±0.5%.
7. TURNING SPACES SHALL BE 1.5%, ±0.5%, SLOPE IN ANY DIRECTION. TURNING SPACES SHALL HAVE A MINIMUM 4'x4' TURNING AREA. TURNING SPACES, WITH A SIDEWALK CURB, SHALL HAVE A 5' TURNING AREA PERPENDICULAR TO THE SIDEWALK CURB.
8. FOR RETROFIT WORK, SLOPES TO BE DETERMINED IN FIELD BY CONTRACTOR AND APPROVED BY CITY INSPECTOR
9. RAMP EXTENSION AREA SHALL NOT BE USED AS TRANSITION TO EXISTING SIDEWALK. ANY TRANSITIONS REQUIRED TO MATCH RAMPS TO EXISTING SIDEWALK SHALL REQUIRE REMOVAL AND REPLACEMENT OF ADDITIONAL SIDEWALK BEYOND THE RAMP AREA. SIDEWALK TRANSITION LENGTH SHALL BE EQUAL TO OR GREATER THAN THE WIDTH OF THE EXISTING SIDEWALK. RAMP EXTENSIONS SHALL BE A CONTINUOUS SLOPE.
10. ALL SIDEWALK AND RAMP CONSTRUCTION SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).



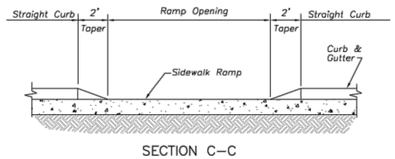
TYPE B SIDEWALK/SHARED-USE RAMP
Not to Scale



SECTION A-A

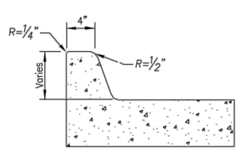


SECTION B-B

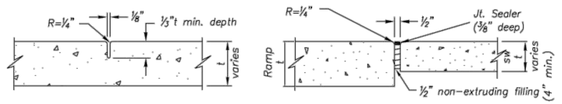


SECTION C-C

TYPE A & B SIDEWALK RAMP
Not to Scale



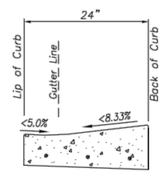
SIDEWALK CURB DETAIL
Not to Scale



CONTRACTION JOINT

ISOLATION JOINT

JOINT DETAILS
Not to Scale



CURB & GUTTER DETAIL AT RAMP
Not to Scale

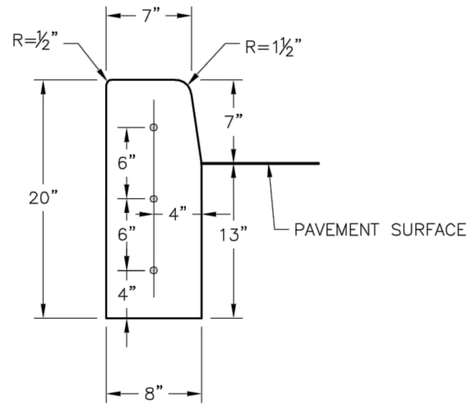
LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Project: STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

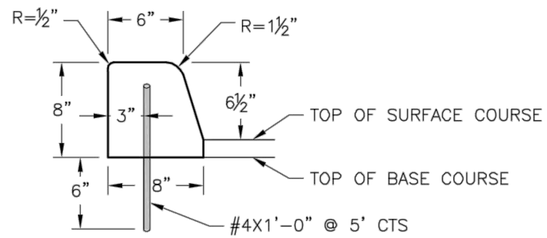
Sheet Name: ADA RAMP RETROFIT DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #:

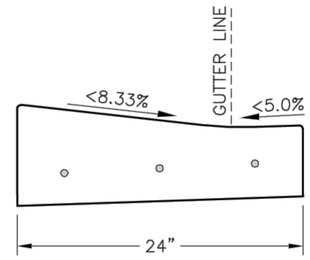
SHEET
16
GEN-3A



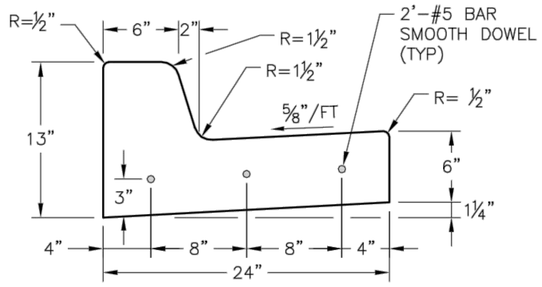
STRAIGHT CURB
(TYPE C–1)



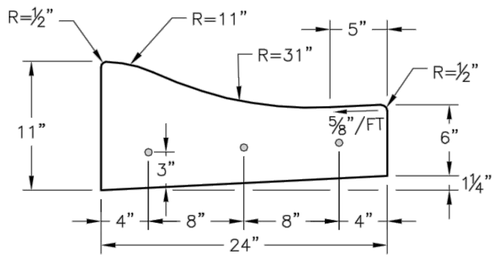
DOWELLED CURB
(TYPE DC)



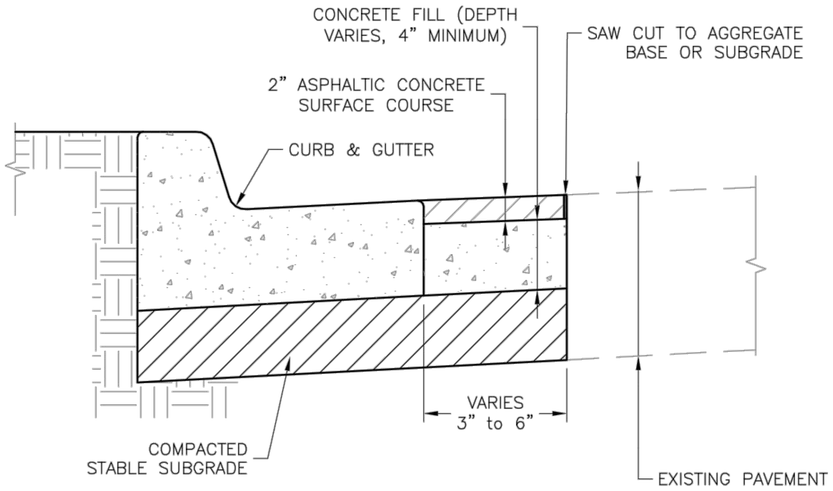
CURB & GUTTER DETAIL AT RAMP
(ADA SLOPE REQUIREMENTS)



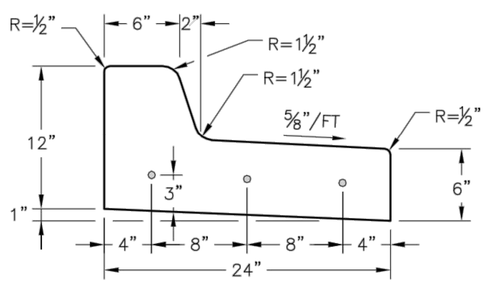
STRAIGHT BACK CURB &
GUTTER
(TYPE CG–1)



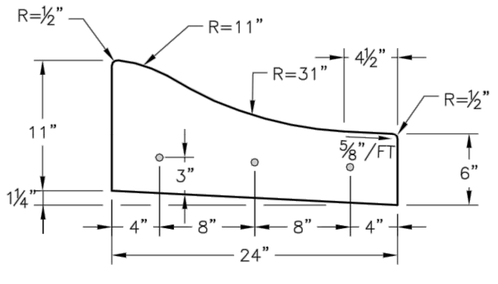
ROLL BACK CURB &
GUTTER
(TYPE CG–2)



CURB REPLACEMENT DETAIL



STRAIGHT BACK DRY CURB &
GUTTER
(TYPE CG–1 DRY)



ROLL BACK DRY CURB &
GUTTER
(TYPE CG–2 DRY)

GENERAL NOTES

1. ¾" ISOLATION JOINTS WITH 3 (2'–#5 BAR) SMOOTH DOWELS SHALL BE PLACED AT RADIUS POINTS AND AT 150' INTERVALS. THESE DOWEL BARS SHALL BE GREASED AND WRAPPED ON ONE END WITH EXPANSION TUBES.
2. 3" DEEP CONTRACTION JOINTS SHALL BE INSTALLED AT APROXIMATELY 10' INTERVALS. THESE JOINTS SHALL PASS ACROSS THE ENTIRE CURB SECTION.
3. CONCRETE FILL SHALL HAVE UNIFORM AND SMOOTH FINISH
4. KCMMB 4K CONCRETE SHALL BE USED FOR ALL CURB.
5. ASPHALTIC CONCRETE SURFACE COURSE SHALL CONFORM TO STANDARD SPECIFICATIONS SECTION 2205.2.
6. CURBS FOR NEW STREETS SHALL BE BUILT ON ASPHALT OR AGGREGATE BASE AS SHOWN IN TYPICAL SECTION DETAIL.
7. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.

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

Project: STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

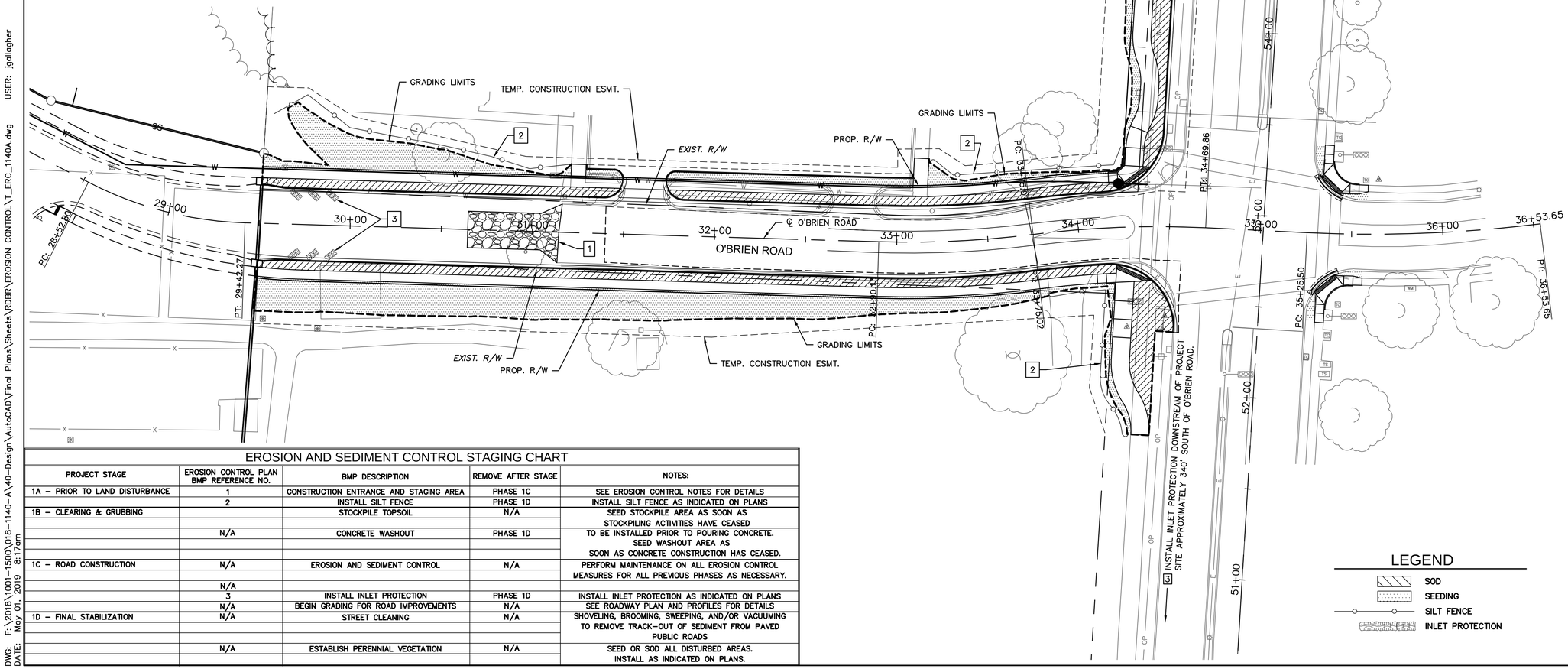
Sheet Name: CURB & GUTTER DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #:

SHEET
17
GEN-4

EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL EROSION & SEDIMENT CONTROL MEASURES AND PRACTICES THROUGHOUT THE PROJECT INCLUDING ANY AND ALL FINES ASSOCIATED WITH EROSION CONTROL VIOLATIONS.
2. EROSION CONTROL IS THE CONTRACTOR'S RESPONSIBILITY. THIS PLAN SHOULD BE USED AS A GUIDE AND REPRESENTS THE MINIMUM EROSION CONTROL DEVICES REQUIRED.
3. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION.
4. CONTRACTOR IS RESPONSIBLE FOR INSPECTING AND REPAIRING ALL EROSION AND SEDIMENT CONTROL DEVICES AFTER EACH RAINFALL EVENT.
5. THE CONTRACTOR SHALL PROVIDE ANY FURTHER EROSION CONTROL MEASURES IN ADDITION TO THOSE LISTED TO ENSURE THAT SILT WILL NOT LEAVE THE PROJECT CONFINES.
6. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING THE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER COMPLETION OF CONSTRUCTION AND ONLY WHEN AREAS HAVE BEEN STABILIZED WITH A HEALTHY STAND OF PERMANENT VEGETATION.
7. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SILT FROM SITE IF NOT REUSABLE ON-SITE AND ASSURING PLAN ALIGNMENT AND GRADE IN ALL DITCHES AT COMPLETION OF CONSTRUCTION.
8. THE CONTRACTOR SHALL ENSURE THAT ALL DRAINAGE STRUCTURES, FLUMES, PIPES, ETC. ARE CLEANED OUT AND WORKING PROPERLY AT TIME OF ACCEPTANCE.
9. THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY STABILIZATION AS REQUIRED.
10. THE CONTRACTOR SHALL PROVIDE A TEMPORARY CONSTRUCTION ENTRANCE/EXIT FOR VEHICULAR TRAFFIC AT LOCATION SHOWN.
11. ALL EROSION CONTROL DEVICES SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE STANDARD SPECIFICATIONS AND DESIGN CRITERIA OF THE ENGINEERING DIVISION, DEPARTMENT OF PUBLIC WORKS, CITY OF SPRINGFIELD, MISSOURI.
12. REFERENCE DETAILS THIS SHEET FOR TYPICAL EROSION CONTROL DEVICE INSTALLATION.
13. THE CONTRACTOR WILL BE REQUIRED TO CLEAN THE STREETS OF DEPOSITED MUD AS FREQUENTLY AS NEEDED AS DETERMINED BY THE ENGINEER TO KEEP THEM USABLE AND TO CONTROL DUST.
14. PRIOR TO GRADING ACTIVITIES, CONTRACTOR MUST HAVE TEMPORARY BMP'S INSPECTED BY THE CITY.
15. AREAS STRIPPED OF VEGETATION THAT ARE LEFT EXPOSED FOR MORE THAN 14 DAYS SHALL BE TEMPORARILY SEEDED OR MULCHED TO PREVENT EROSION. IF MULCHED, CONTRACTOR SHALL CRIMP THE MULCH INTO THE EXPOSED GROUND.
16. THE CONTRACTOR SHALL PROTECT ALL STORM SEWER STRUCTURES WITH COMPOST FILTER SOCK IN LIEU OF GRAVEL FILTER BAGS UNTIL GRASS IS ESTABLISHED.
17. ALL DISTURBED AREAS NOT RECEIVING OTHER PERMANENT STABILIZATION SUCH AS PAVEMENT, ROOFS, SOD, ETC., SHALL BE SODDED OR SEEDED AND MULCHED, ACCORDING TO THE STANDARD SPECIFICATIONS AND DESIGN CRITERIA OF THE ENGINEERING DIVISION, DEPARTMENT OF PUBLIC WORKS, CITY OF LEE'S SUMMIT, MISSOURI.
18. CONTRACTOR IS RESPONSIBLE FOR PHASED INSTALLATION OF EROSION CONTROL BMP'S IN ORDER TO PREVENT SEDIMENT FROM BREACHING THE LIMITS OF DISTURBANCE.



EROSION AND SEDIMENT CONTROL STAGING CHART

PROJECT STAGE	EROSION CONTROL PLAN BMP REFERENCE NO.	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
1A – PRIOR TO LAND DISTURBANCE	1	CONSTRUCTION ENTRANCE AND STAGING AREA	PHASE 1C	SEE EROSION CONTROL NOTES FOR DETAILS
	2	INSTALL SILT FENCE	PHASE 1D	INSTALL SILT FENCE AS INDICATED ON PLANS
1B – CLEARING & GRUBBING		STOCKPILE TOPSOIL	N/A	SEED STOCKPILE AREA AS SOON AS STOCKPILING ACTIVITIES HAVE CEASED
	N/A	CONCRETE WASHOUT	PHASE 1D	TO BE INSTALLED PRIOR TO POURING CONCRETE. SEED WASHOUT AREA AS SOON AS CONCRETE CONSTRUCTION HAS CEASED.
1C – ROAD CONSTRUCTION	N/A	EROSION AND SEDIMENT CONTROL	N/A	PERFORM MAINTENANCE ON ALL EROSION CONTROL MEASURES FOR ALL PREVIOUS PHASES AS NECESSARY.
	N/A			
	3	INSTALL INLET PROTECTION	PHASE 1D	INSTALL INLET PROTECTION AS INDICATED ON PLANS
	N/A	BEGIN GRADING FOR ROAD IMPROVEMENTS	N/A	SEE ROADWAY PLAN AND PROFILES FOR DETAILS
1D – FINAL STABILIZATION	N/A	STREET CLEANING	N/A	SHOVELING, BROOMING, SWEEPING, AND/OR VACUUMING TO REMOVE TRACK-OUT OF SEDIMENT FROM PAVED PUBLIC ROADS
	N/A	ESTABLISH PERENNIAL VEGETATION	N/A	SEED OR SOD ALL DISTURBED AREAS. INSTALL AS INDICATED ON PLANS.

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3101 BROADWAY, SUITE 500
NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
JAMES PATRICK GALLAGHER
NUMBER PE-2010010449
5/11/2019
PROFESSIONAL ENGINEER

REVISIONS

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

EROSION CONTROL PLAN

PRYOR ROAD & O'BRIEN ROAD INTERSECTION IMPROVEMENTS

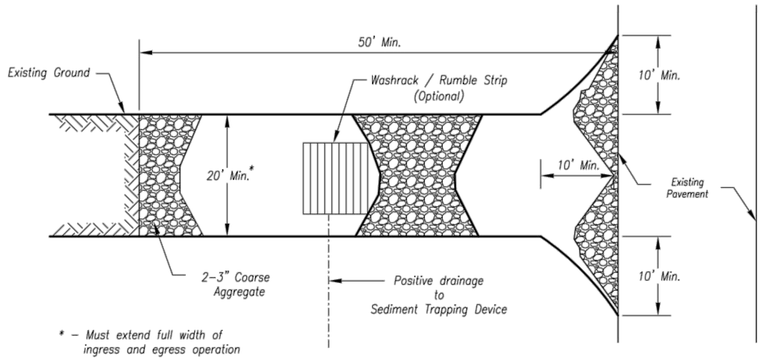
LEE'S SUMMIT, MO

2019

drawn by: JPG
checked by: JJW
designed by: JPG
QA/QC by: RBC
project no.: A18:1140
date: 2019.03.12

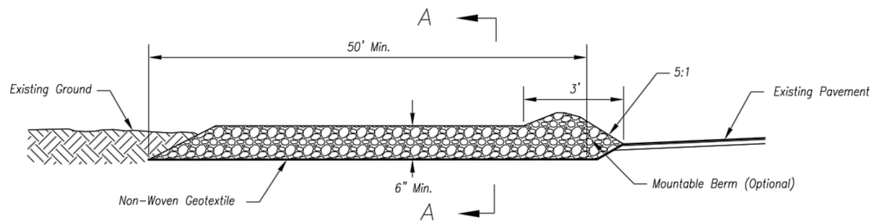
SHEET 18

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\RDBR\EROSION CONTROL\T_ERC_1140A.dwg
DATE: May 01, 2019 8:17am
USER: jgallagher



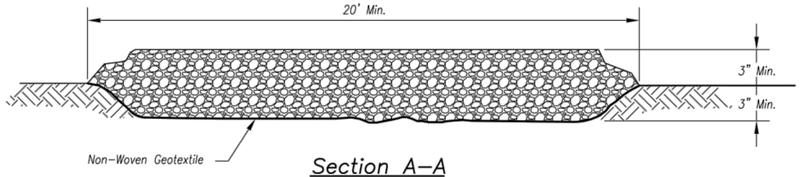
Plan View

Not to Scale



Side Elevation

Not to Scale



Section A-A

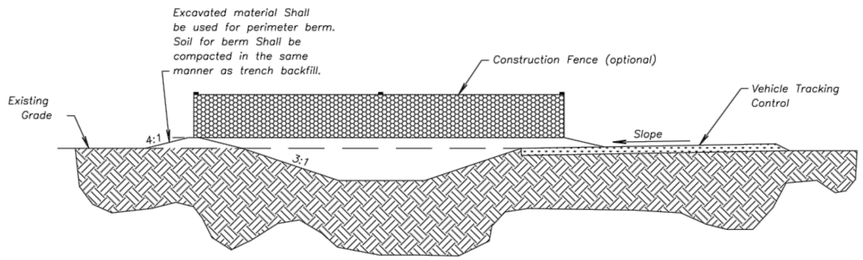
Not to Scale

Notes for Concrete Washout:

1. Concrete washout areas shall be installed prior to any concrete placement on site.
2. Concrete washout area shall include a flat subsurface pit sized relative to the amount of concrete to be placed on site. The slopes leading out of the subsurface pit shall be 3:1. The vehicle tracking pad shall be sloped towards the concrete washout area.
3. Vehicle tracking control is required at the access point to all concrete washout areas.
4. Signs shall be placed at the construction site entrance, washout area and elsewhere as necessary to clearly indicate the location(s) of the concrete washout area(s) to operators of concrete truck and pump rigs.
5. A one-piece impervious liner may be required along the bottom and sides of the subsurface pit in sandy or gravelly soils.

Maintenance for Concrete Washout:

1. Concrete washout materials shall be removed once the materials have filled the washout to approximately 75% full.
2. Concrete washout areas shall be enlarged as necessary to maintain capacity for wasted concrete.
3. Concrete washout water, wasted pieces of concrete and all other debris in the subsurface pit shall be transported from the job site in a water-tight container and disposed of properly.
4. Concrete washout areas shall remain in place until all concrete for the project is placed.
5. When concrete washout areas are removed, excavations shall be filled with suitable compacted backfill and topsoil, any disturbed areas associated with the installation, maintenance, and/or removal of the concrete washout areas shall be stabilized.



CONCRETE WASHOUT

Notes for Construction Entrance:

1. Avoid locating on steep slopes, at curves on public roads, or downhill of disturbed area.
2. Remove all vegetation and other unsuitable material from the foundation area, grade, and crown for positive drainage.
3. If slope towards the public road exceeds 2%, construct a 6- to 8-inch high ridge with 3H:1V side slopes across the foundation approximately 15 feet from the edge of the public road to divert runoff from it.
4. Install pipe under the entrance if needed to maintain drainage ditches along public roads.
5. Place stone to dimensions and grade as shown on plans. Leave surface sloped for drainage.
6. Divert all surface runoff and drainage from the entrance to a sediment control device.
7. If conditions warrant, place geotextile fabric on the graded foundation to improve stability.

Maintenance for Construction Entrance:

1. Reshape entrance as needed to maintain function and integrity of Installation. Top dress with clean aggregate as needed.

CONSTRUCTION ENTRANCE

Construction Entrance modified from 2015 Overland Park Standard Details for Erosion and Sediment Control; Concrete Washout modified from 2009 City of Great Bend Standard Drawings.

AMERICAN PUBLIC WORKS ASSOCIATION

Kansas City Metro Chapter APWA AMERICAN PUBLIC WORKS ASSOCIATION

KANSAS CITY METRO CHAPTER

CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT

STANDARD DRAWING NUMBER ESC-01

ADOPTED: 10/24/2016

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NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
JAMES PATRICK GALLAGHER
NUMBER PE-2010010496
5/1/2019
PROFESSIONAL ENGINEER

REVISIONS

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

EROSION CONTROL DETAILS

PRYOR ROAD & O'BRIEN ROAD INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by: JPG
checked by: JJW
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QA/QC by: RBC
project no.: A18:1140
date: 2019.03.12

SHEET 19

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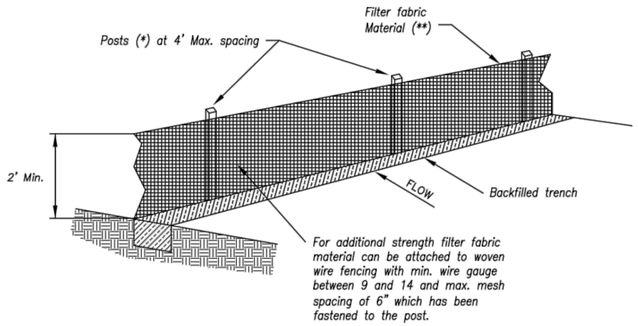
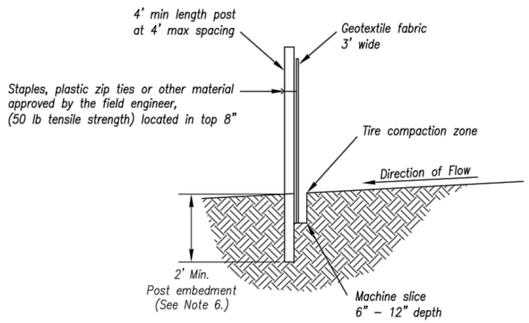
DATE: May 01, 2019 8:18am





(*) POSTS
– MIN, LENGTH 4'
– HARDWOOD 1 3/16" x 1 3/16"
– NO.2 SOUTHERN PINE 2 5/8" x 2 5/8"
– STEEL 1.33 LB/FT

(**) – Geotextile Fabric shall meet the requirements of AASHTO M288

SILT FENCE DETAILS

Not to Scale

Notes:

1. In order to contain water, the ends of the silt fence must be turned uphill (Figure A).
2. Long perimeter runs of silt fence must be limited to 100'. Runs should be broken up into several smaller segments to minimize water concentrations (Figure A).
3. Long slopes should be broken up with intermediate rows of silt fence to slow runoff velocities.
4. Attach fabric to upstream side of post.
5. Install posts a minimum of 2' into the ground.
6. Trenching will only be allowed for small or difficult installation, where slicing machine cannot be reasonably used.

Maintenance:

1. Remove and dispose of sediment deposits when the deposit approaches ⅓ the height of silt fence.
2. Repair as necessary to maintain function and structure.

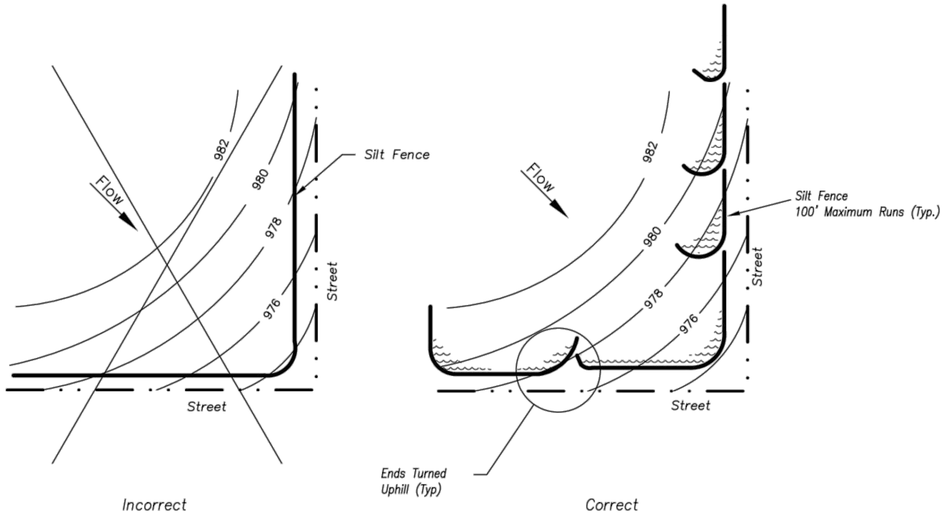
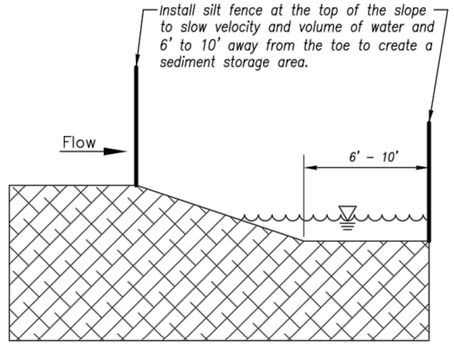
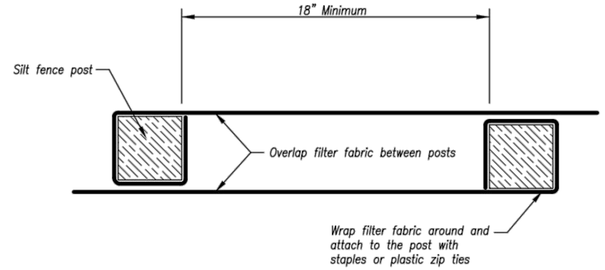


Figure A

SILT FENCE LAYOUT

Not to Scale





JOINING FENCE SECTIONS

Not to Scale

Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

AMERICAN PUBLIC WORKS ASSOCIATION

Kansas City Metro Chapter APWA American Public Works Association

KANSAS CITY METRO CHAPTER

SILT FENCE

STANDARD DRAWING NUMBER ESC-03

ADOPTED: 10/24/2016

olsson
MO Certificate of Authority # 001592
1301 Burlington, Suite 100
NORTH KANSAS CITY, MO 64116
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STATE OF MISSOURI
JAMES PATRICK GALLAGHER
NUMBER PE-2010010496
5/17/2019
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

EROSION CONTROL DETAILS

PRYOR ROAD & O'BRIEN ROAD INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by: JPG
checked by: JJW
designed by: JPG
QA/QC by: RBC
project no.: A18:1140
date: 2019.03.12

SHEET 20

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\RDBR\EROSION CONTROL\T_ERC_1140A.dwg USER: jgallagher
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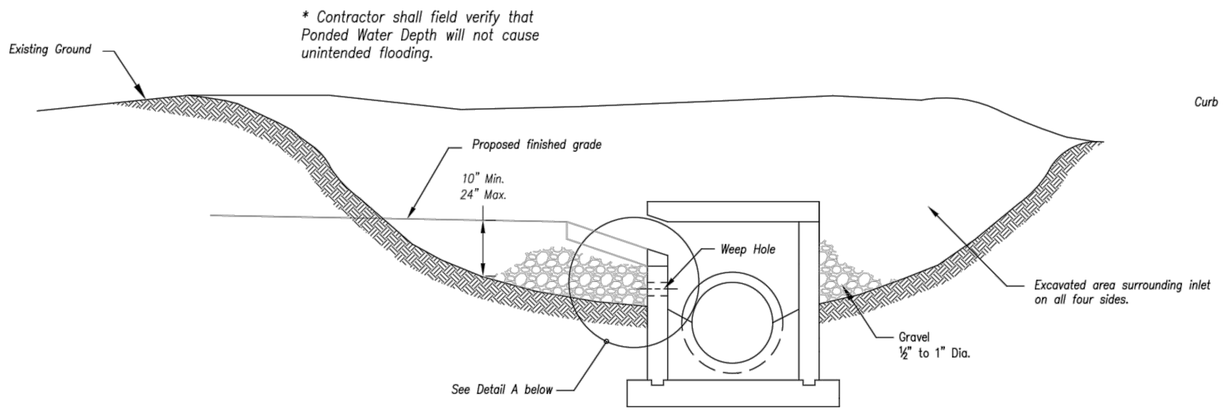
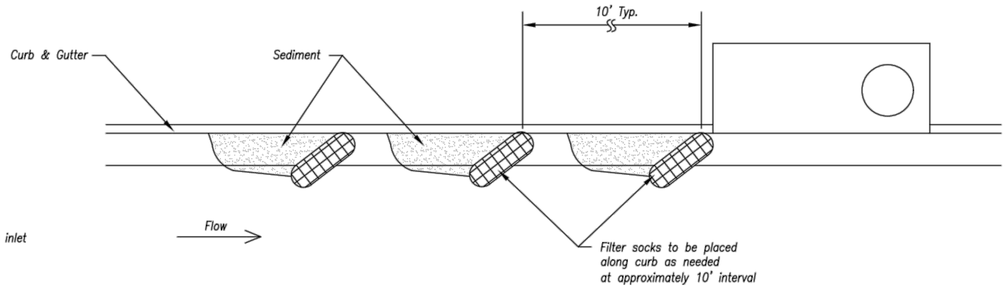
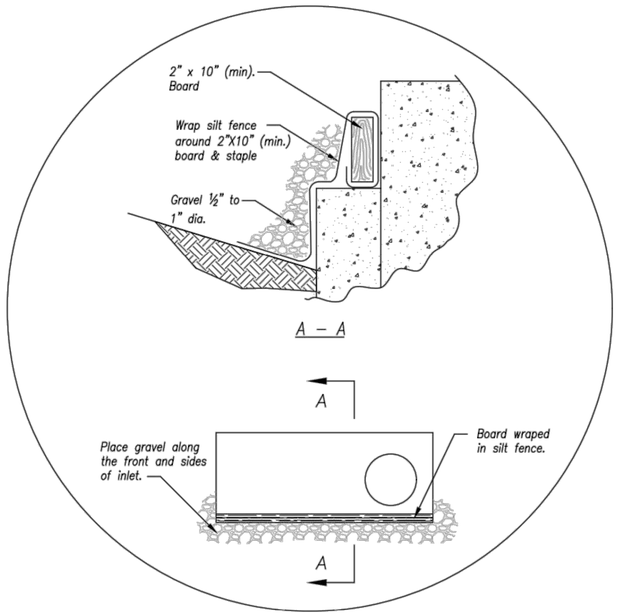




On Grade Curb Inlet Protection



Detail A

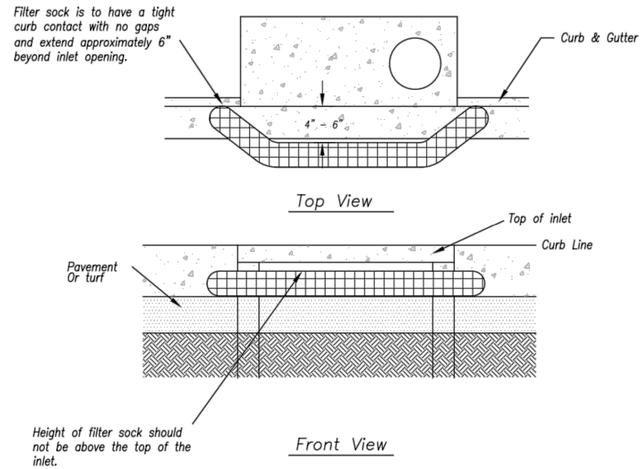
EARLY STAGE CURB INLET
(Open Box and Prior to Pouring Curb and Inlet Throat)

Notes:

1. Immediately following inlet construction and prior to construction of curb and inlet throat, protect inlet opening by installing 2" X 10" (min.) board wrapped in silt fence. Structures shall have excavated storage area on all four sides to allow settling of sediment (Early Stage Curb Inlet).
2. When inlet is completed and curb poured, filter socks or approved equal should be used (Late Stage Curb Inlet). Straw wattles are not approved for curb inlet use.
3. Contractor to field verify ponding water shall not create a traffic hazard.

Maintenance:

1. Remove deposited sediment from excavated storage areas when available storage has been reduced by 20%.
2. Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.
3. Repair or replace as necessary to maintain function and integrity of installation.



Sump Inlet Sediment Filter

LATE STAGE CURB INLET
(After Pouring Curb and Inlet Throat)

Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

AMERICAN PUBLIC WORKS ASSOCIATION
KANSAS CITY METRO CHAPTER

CURB INLET PROTECTION

STANDARD DRAWING NUMBER ESC-06
ADOPTED: 10/24/2016

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STATE OF MISSOURI
JAMES PATRICK GALLAGHER
NUMBER PE-2010010496
5/17/2019
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

EROSION CONTROL DETAILS

PRYOR ROAD & O'BRIEN ROAD INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

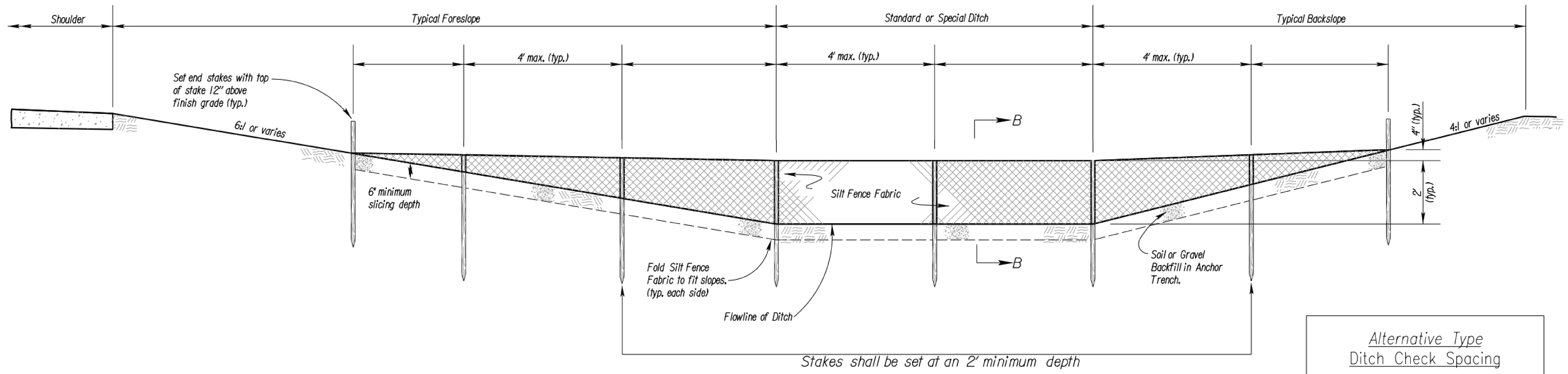
drawn by: JPG
checked by: JJW
designed by: JPG
QA/QC by: RBC
project no.: A18:1140
date: 2019.03.12

SHEET 21

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\RDBR\EROSION CONTROL\T_ERC_1140A.dwg USER: jgallagher
DATE: May 01, 2019 8:18am

Notes for Silt Fence Ditch Check:

1. Stakes shall be 4' (min.) long and one of the following materials:
   a. Hardwood – 1 3/16" x 1 3/16";
   b. Southern Pine (No. 2) – 2 5/8" x 2 5/8";
   c. Steel U, T, L, or C Section – .95 lbs. per 1'-0";
   d. Synthetic – same strength as wood stakes.
2. Cross pieces shall be of same material as stakes.
3. Attach fence fabric securely on 6" centers (max.).
4. Use of high flow material is acceptable.
5. Refer to plan sheets to estimate the length of silt fence required.
6. Use support fencing when tributary area is greater than 2.4 acres or when ditch gradient is greater than 2 percent.
7. Silt fence sliced in to a 6" minimum depth.
8. Elevation at tie in points shall be a minimum of 4" higher than the center.

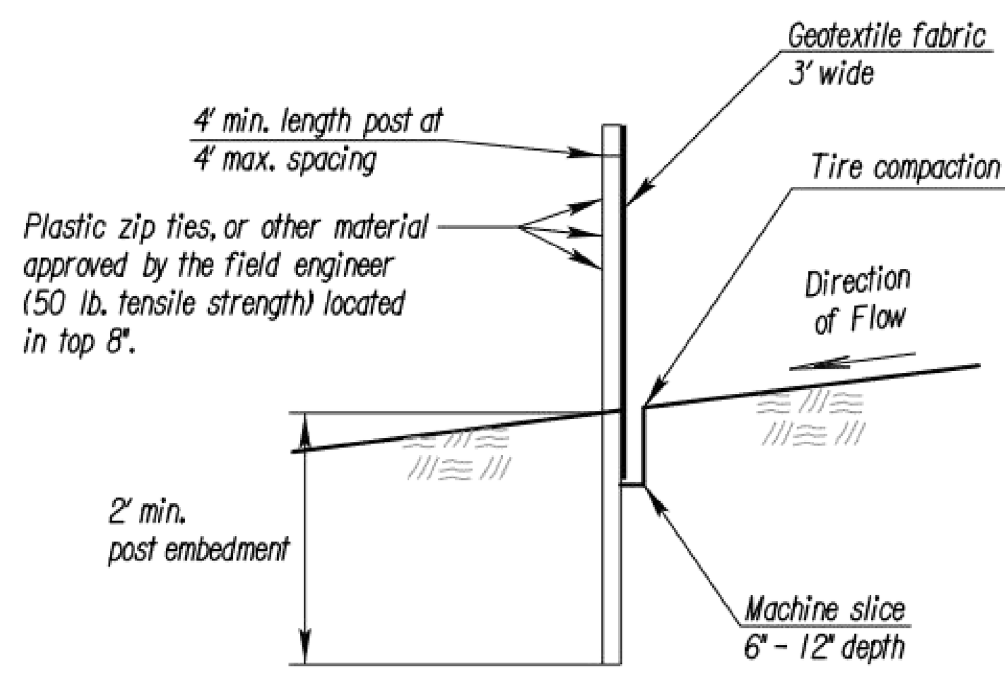


TYPICAL ELEVATION

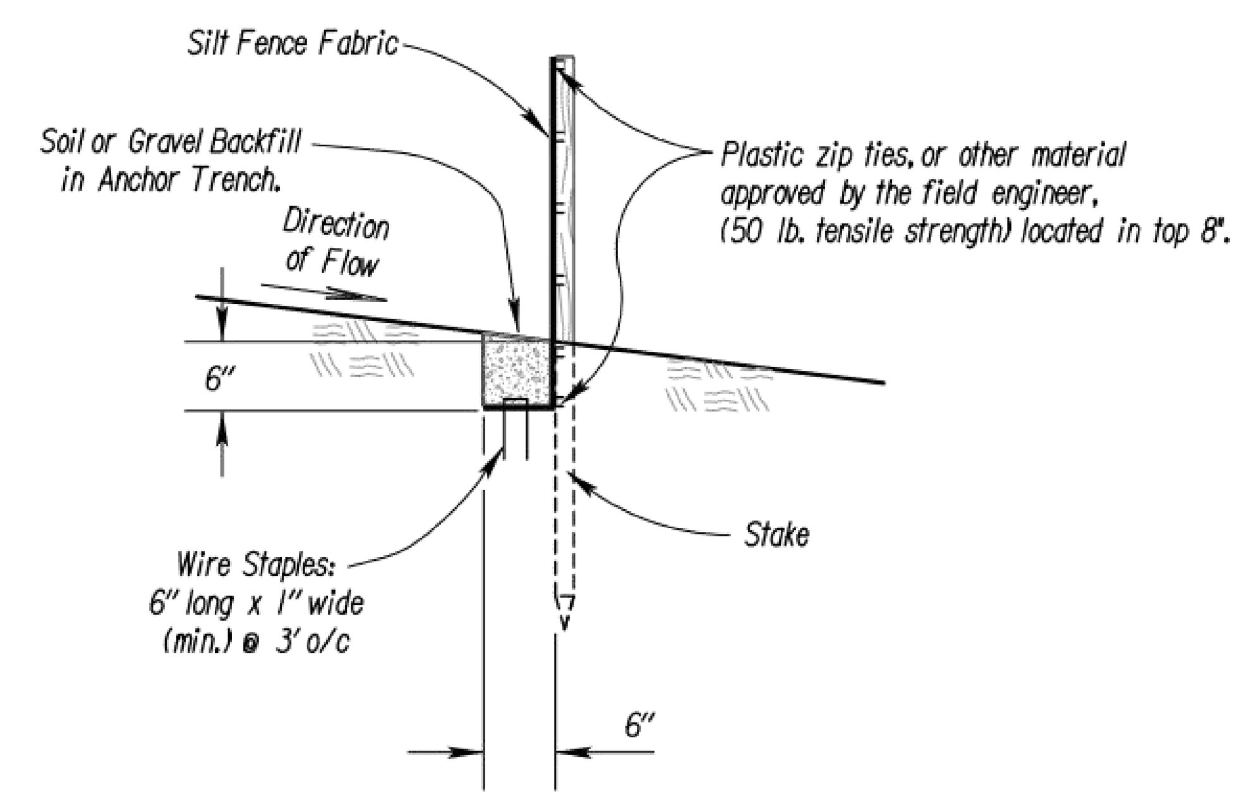
Ditch Centerline Slope (%)	Spacing Interval (Feet)
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	33

Alternative Type Ditch Check Spacing

Note: Use this spacing for all except Rock Ditch Checks.

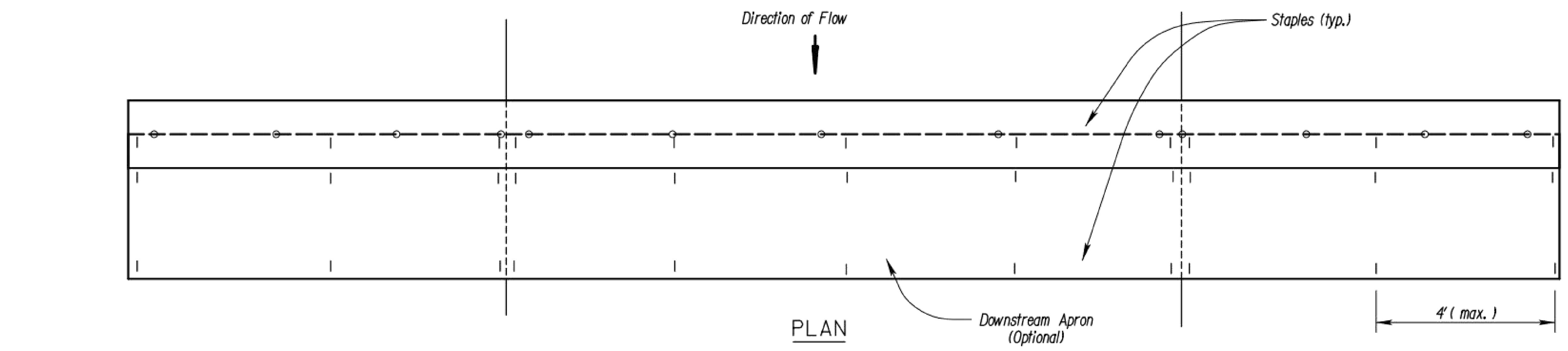


SECTION B-B



SILT FENCE DITCH CHECK

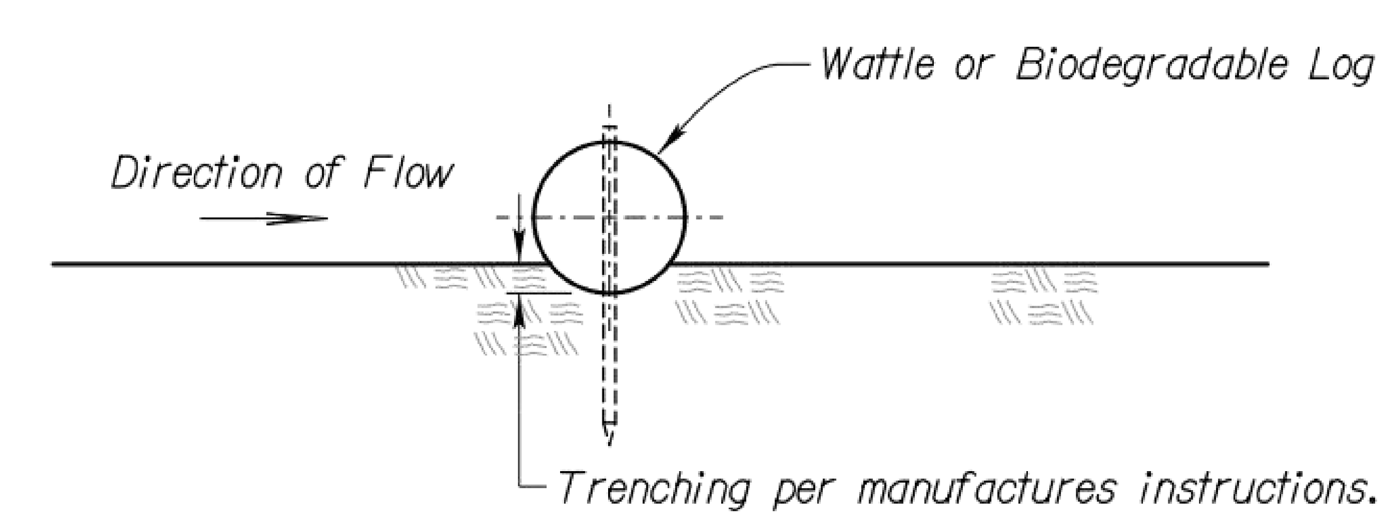
NO SCALE



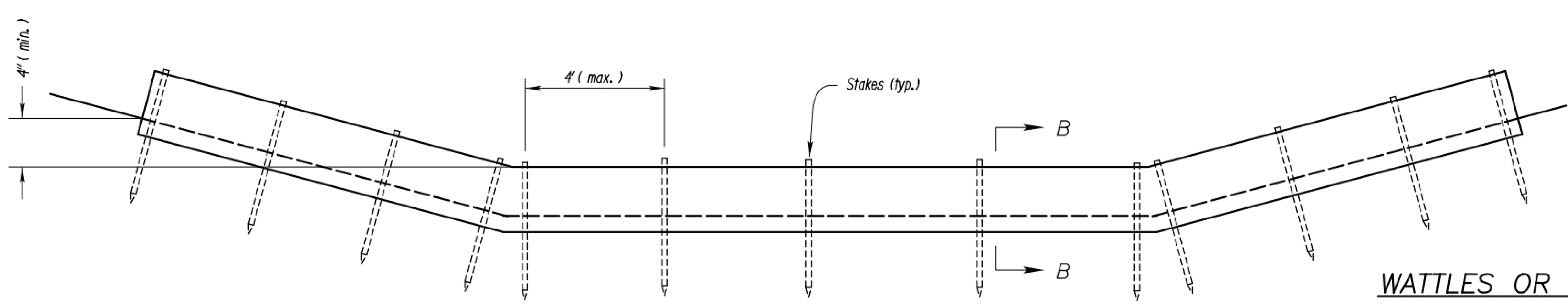
PLAN

Notes for Wattles and Biodegradable Log Ditch Check:

1. Use as many biodegradable log sections as necessary to ensure water does not flow around end of ditch check.
2. Overlap sections a minimum of 18"
3. Stakes shall be per manufacturer's instructions. Length of stakes shall be a minimum of 2 times the diameter of the log or 24" minimum.
4. Use Erosion Control (Class 1) (Type C) as the downstream apron when directed by the Engineer.
5. Use 9" diameter logs when used with Erosion Control (Class 2) (Any Type) channel lining. Smaller diameter logs may be used with Erosion Control (Class 2) (Any Type) channel lining as directed by the Engineer.



SECTION B - B



TYPICAL ELEVATION

WATTLES OR BIODEGRADABLE LOG DITCH CHECKS

OR Filter Sock Ditch Check

NO SCALE

Modified from Kansas Department of Transportation Standard Details for Erosion Control and Sediment Control.

AMERICAN PUBLIC WORKS ASSOCIATION

KANSAS CITY METRO CHAPTER

SILT FENCE AND WATTLE/ BIODEGRADABLE LOG DITCH CHECKS

STANDARD DRAWING NUMBER ESC-09

ADOPTED: 10/24/2016

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STATE OF MISSOURI JAMES PATRICK GALLAGHER NUMBER PE-2018010490 5/1/2019 PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

EROSION CONTROL DETAILS

PRYOR ROAD & O'BRIEN ROAD INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by: JPG
checked by: JJW
designed by: JPG
QA/QC by: RBC
project no.: A18-1140
date: 2019.03.12

SHEET
22

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DATE: May 01, 2019 8:18am

GENERAL NOTES:

1.The contractor shall have one (1) signed copy of the plans (approved by the City of Lee's Summit) and one (1) copy of the appropriate Design and Construction Standards and Specification at the job site at all times.

2. Construction of the improvements shown or implied by this set of drawings shall not be initiated or any part thereof undertaken until the Director of Public works or his agent is notified of such intent, and all required and properly executed bonds and contract agreements are received and approved by the City.

3. The Construction covered by these plans shall conform to all applicable standards and specifications of the Public Works Department of the City of Lee's Summit, Missouri, in current use. Specifically, but not exclusive to: Traffic Signal Specification: Section 2900.
Traffic Signal Standard Drawings: TS-1 through TS-10.

4. All workmanship and materials shall be subject to the inspection and approval of the Public Works Department of the City of Lee's Summit, Missouri.

5. Right-Of-Way limits should be cross checked by the Contractor and approved by the field inspector before undertaking any excavations at the site.

6.The contractor shall stake the location of all pole bases, pull boxes, and controller cabinet base, then provide the City one week notice prior to the start of construction, and subsequent construction activities, for inspection and approval. The contractor shall provide a work schedule, contact names, and phone numbers.

7. All locations indicated in drawings, including conduit runs are subject to adjustment to clear obstructions and to meet site conditions, if any, by the City.

8. Existence and location of any underground or overhead facilities shown on these drawings or reference to any soil conditions, if made, are approximate only. It is the Contractor's responsibility to verify all site conditions and to locate all utilities, including depth, before starting construction so that any adjustments to design can be made prior to pole ordering or fabrication. In addition, the Contractor shall avoid disruption of services provided by the utilities and shall insure that proper clearances (overhead and underground) are maintained for the duration of construction. The Contractor shall be fully responsible for any and all damages caused by failure to exactly locate and preserve all utilities.

9. The contractor shall coordinate with the City Traffic Engineer for any necessary changes to the traffic signals resulting from existing utilities or other construction issues.

10. Any equipment damaged during construction shall be replaced at the Contractor's expense.

11. Signal equipment shall not form an obstruction to the movement of pedestrian and wheelchair traffic and shall be ADA accessible. Where sidewalks are present, a minimum clear width of 48 inches shall be available for pedestrian and wheelchair movement. Pull boxes shall not be installed on wheelchair ramps.

12. Conduits to be placed outside of paved areas shall be trenched in place. If the project includes roadway improvements, the conduit shall be trenched after the roadway rough grade is established and prior to any final roadway paving, curb & gutter, median or sidewalk sections are placed. All compaction and backfill shall meet City of Lee's Summit requirements. At the option of the contractor, conduits may be bored outside paved areas, but there will be no adjustment to the unit prices for conduit installation and any change in cost would be the contractor's responsibility. Any conduit bore outside paved areas shall be done after roadway improvements are complete. Conduits to be placed within the limits of pavement shall be bored unless otherwise authorized by the City Traffic Engineer. If the project includes roadway improvements, the conduit shall be bored prior to any final roadway paving. Potholing for utilities on road bores after final paving will not be allowed.

13. The traffic signal controller, cabinet and related equipment, as specified for this project, shall be delivered to the City for testing prior to installation. All signal timings will be provided by the City Traffic Engineer. The Contractor shall coordinate material delivery and pick-up with the Public Works Operations Department (969-1870) at least 48 hours prior to transportation. A minimum of 2 weeks shall be permitted for testing between delivery and pick-up. The Contractor assumes all damage liability and should inspect all materials before and after transportation of equipment.

14. The Contractor shall coordinate all electrical power requirements and connection activities with the Utility Company, including location of the meter, circuitry and connection requirements, and powering up the complete system. The Contractor shall order the meter and pay electrical bills until Final Acceptance, at which time the Contractor shall coordinate with the City for transferring the electrical billing services to the City.

15. All disturbed surfaces shall be made good to match existing at the Contractor expense.

16. Contractor shall maintain at all times access for Emergency Vehicles and residents along the entire project .

17. Substantial completion of the traffic signals shall be defined as all components of the traffic signal operated fully and satisfactorily with red, yellow, and green cycles. Substantial completion shall allow for testing of the signals, including a flash period, prior to signals operating with cycles. Substantial completion shall also include the completion of all interconnect, sidewalk, curb ramp and removal work.

18. Final acceptance of traffic signals shall be defined as final written approval and acceptance by the City, including completion or correction of all punch list items and the traffic signals fully operational for a time period of fifteen (15) days, without any problem, as noted in the specifications. As-built plans shall be submitted prior to final acceptance by the City.

PROJECT SPECIFIC NOTES:

1. Existing signal poles and appurtenances shall be removed and become the property of the City unless otherwise noted in the plans.

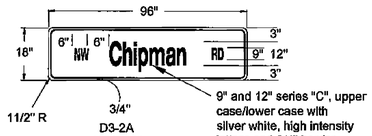
2. Signal operation shall be maintained throughout construction. During construction existing signal cables may be spliced and extended to new heads on the new mast arm as necessary, coordinate with the City. Once all new equipment is operational temporary splices are to be removed with all existing equipment.

3. The traffic signal shall remain fully operational with exception of the hourly period for relocation of poles/equipment as described on the the traffic control plans.

4. All signal installation and relocation work must be completed prior to construction of roadway improvements due to the removals of existing signal boxes and foundations associated with roadway improvements.

5. Prior to any signal pole or post relocation, all new foundations or bases, conduits, pull boxes, and cabling/wiring shall be installed for an expedient relocation process that minimizes separation and reconnection time (or downtime of signal operations).

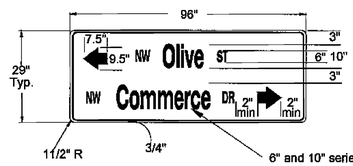
STREET NAME SIGN DETAIL



D3-2A
18" X 96"

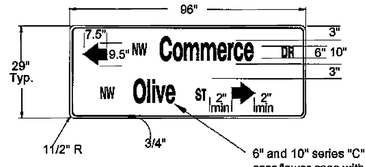
9" and 12" series "C", upper case/lower case with silver white, high intensity letters and 3/4" border on green, high intensity backround

DUAL STREET NAME SIGN DETAILS



D3-2B
28" X 96"

6" and 10" series "C", upper case/lower case with silver white, high intensity letters and 3/4" border on green, high intensity backround



D3-2C
28" X 96"

6" and 10" series "C", upper case/lower case with silver white, high intensity letters and 3/4" border on green, high intensity backround

TYPICAL REGULATORY SIGN DETAIL

SIGN R10-12
24" X 30"

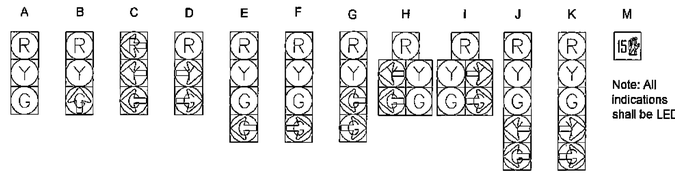
SIGN R10-10L
24" X 30"

SIGN R10-3E
9" X 15"

Note: Sign R10-3E shall be provided for each push button.

LEGEND

- Optically Limiting Traffic Signal Head
- Traffic Signal Head
- Traffic Signal Head With Backplate
- Pedestrian Signal Head
- Stop Line
- Lane Use
- Mast Arm Pole
- Signal Pedestal
- Traffic Controller Cabinet
- Pull Box
- Span Wire Signal Head
- Power Supply (Disconnect)
- Suggested Vehicle Detection Zone
- Induction Loop Detector
- Push Button Detector
- Opticom Detector
- Magnatomer Detector
- Power Supply (Source)
- Conduit
- 71 — Signal Face Number
- 7 — Post Number
- 71 — Detector Number
- 7 — Pull Box Number
- PB24 — Push Button Number
- Cobra Head Luminaire
- Vehicular Detection Camera



Note: All indications shall be LED.

UTILITY CONTACT NUMBERS

KCP&L
1300 SE Hamblen Road
Lee's Summit, MO 64081
Heath Lenahan
(816) 347-4317

AT&T TELEPHONE
215 North Spring Street
Independence, MO 64050
Marty Loper
(816) 275-1550

Missouri Department of Transportation (MoDOT)
600 NE Colbern Road
Lee's Summit, MO 64086
Cedrick Owens
(816) 607-2178

Verizon
7411 NE 160th Terrace
Smithville, MO 64089
Scott Billings
(816) 729-7866

Century Link
5454 W. 110th Street, 9th Floor
Overland Park, KS 66211
Brian Cornish
(913) 484-4526

Lee's Summit Water Utilities
220 SE Green Street
Lee's Summit, MO 64063
Wes Owen
(816) 969-1940

Time Warner Cable
8221 W 119th Street
Overland Park, KS 66213
Troy Prewitt
(816) 508-7287

Missouri Gas Energy
3025 Clover Drive
Lee's Summit, MO 64082
Becca Orr
(816) 969-2230

Lee's Summit Public Works
1971 SE Hamblen Road
Lee's Summit, MO 64081
Scott Koch
(816) 969-1879

LS R-7 School District
301 NE Tudor Road
Lee's Summit, MO 64086
Kinzie Doll
(816) 986-1050

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STATE OF MISSOURI
JEREMY SCOTT SPRETZ
NUMBER PE-2017023856
PROFESSIONAL ENGINEER
4/19/19

REVISIONS

NO REV	DATE	REVISIONS DESCRIPTION	BY

SIGNAL MODIFICATION PLAN
GENERAL NOTES

PRYOR ROAD & O'BRIEN ROAD
INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by: JRC
checked by: JSS
designed by: JSS
QA/QC by: TAF
project no.: A18-1140
date: 2019.03.12

SHEET
23

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\TFTC\SIGNAL PLAN\F_TRS_81140.dwg USER: jpudlowski
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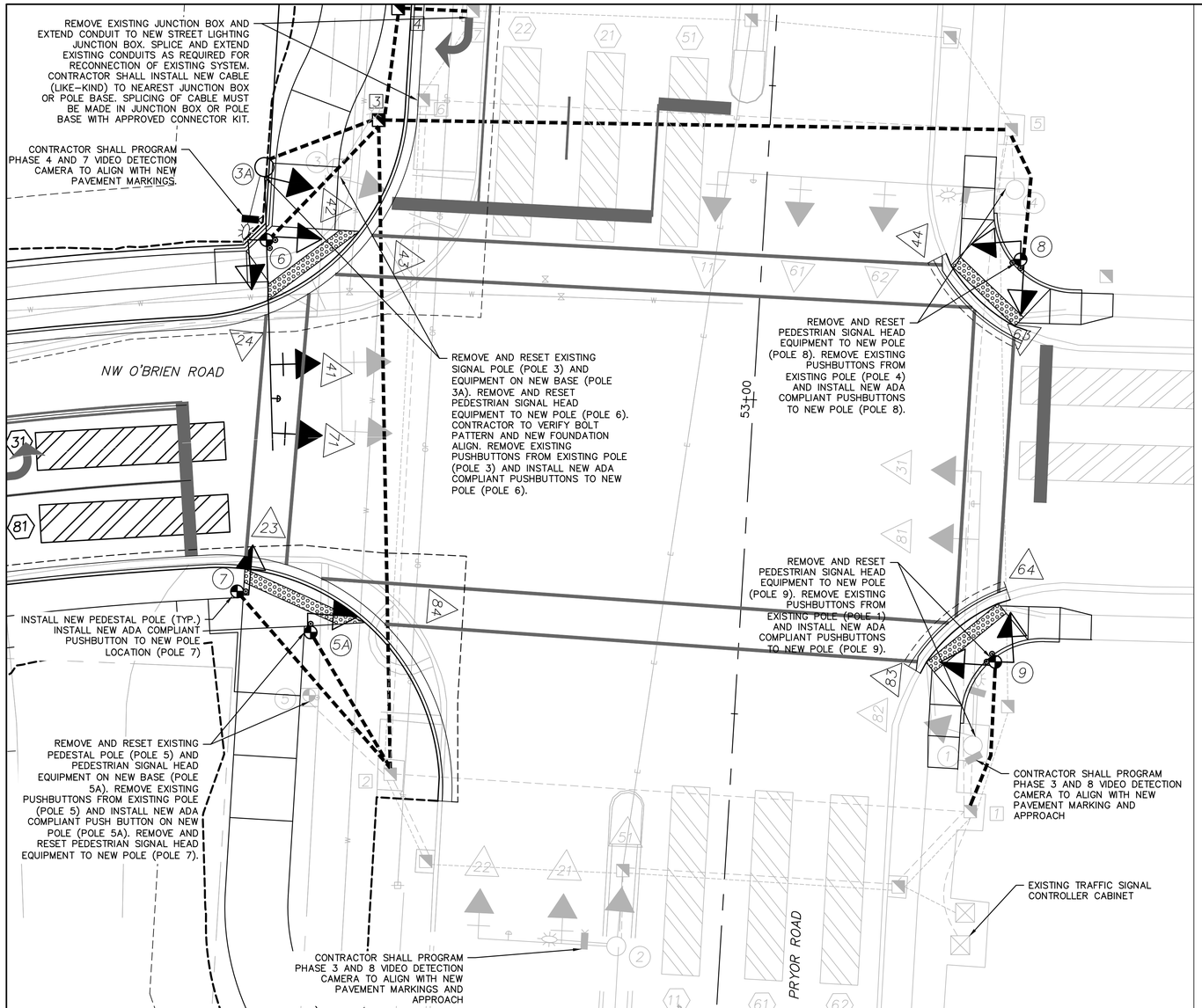


GENERAL NOTES:

1. Existing underground (U/G), overhead (OH) utilities and drainage structures have been plotted from available information and therefore, their locations must be considered approximate only. It is the responsibility of the individual Contractors to exactly locate each utility before actual construction.

2. All construction methods and traffic signal equipment shall conform to the latest edition of the City of Lee's Summit Standard Specifications and Approved Products List.

3. Contractor shall stake the location of all traffic signal poles, conduit, controllers, service boxes and junction boxes to be installed. The Project Engineer shall inspect the staking prior to any excavation and/or construction. Minor relocation of equipment to avoid conflicts may be allowed with the approval of the Project Engineer.

4. All existing curb and gutter, sidewalk, pavement, drainage structures, or ground damaged during the traffic signal construction shall be replaced to match existing. This work will be considered SUBSIDIARY to the "Traffic Signal Installation" bid item.

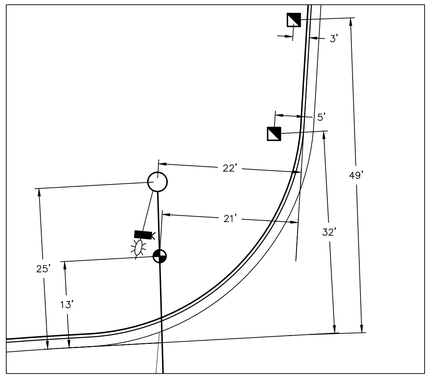
5. Contractor shall coordinate signal turn-on with the City of Lee's Summit.

6. Contractor shall plug holes in existing pole from removal of existing equipment.

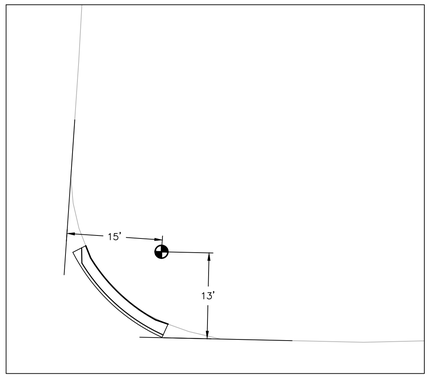
N

0' 5' 10' 20'
SCALE IN FEET

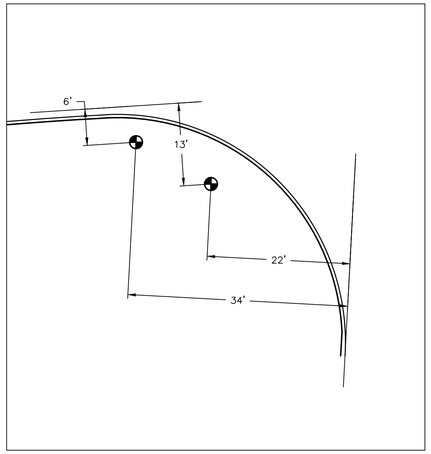
SIGNAL PLAN



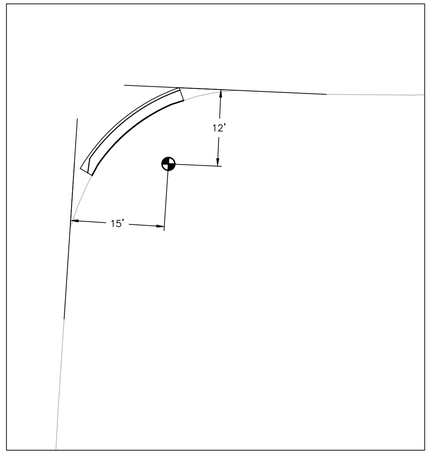
NW CORNER



NE CORNER



SW CORNER



SE CORNER

N

NOT TO SCALE

NEW EQUIPMENT TO CURB DISTANCES

POLE, PULL BOX, AND CONTROLLER LOCATION

	STATION	O/S
3	53+40.77	62.1' LT.
4	53+58.67	60.1' LT.
3A	53+32.20	79.8' LT.
6	53+20.66	78.7' LT.
5A	52+58.84	68.0' LT.
7	52+64.64	80.0' LT.
8	53+24.80	41.0' RT.
9	52+60.74	40.8' RT.

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STATE OF MISSOURI
JEREMY SCOTT STRETZ
NUMBER PE-2017023856
4/19/19
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SIGNAL MODIFICATION PLAN
PRYOR RROD & NW O'BRIEN ROAD

PRYOR ROAD & O'BRIEN ROAD
INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by: JRC
checked by: JSS
designed by: JSS
QA/QC by: TAF
project no.: A18-1140
date: 2019.03.12

SHEET
24

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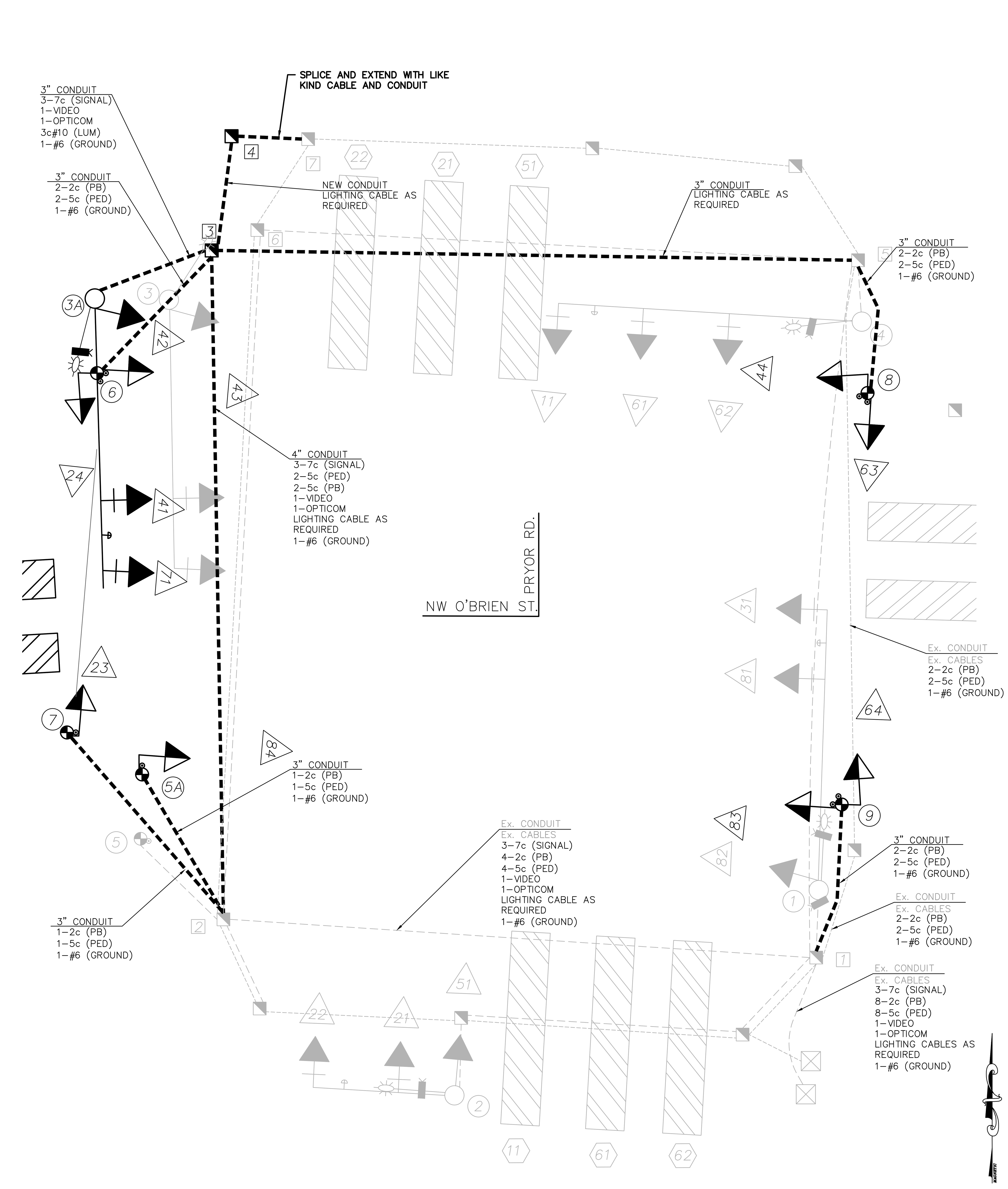
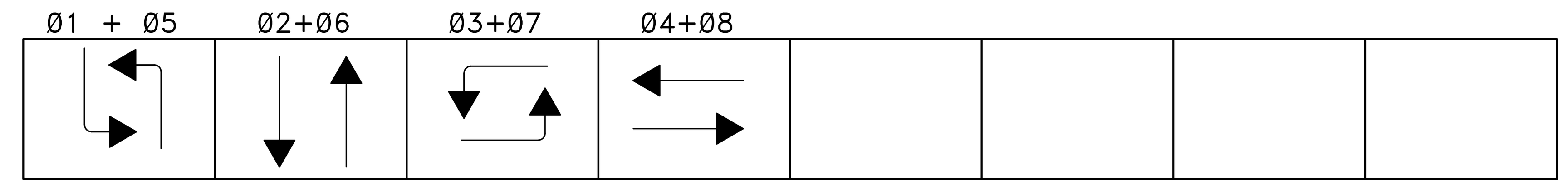
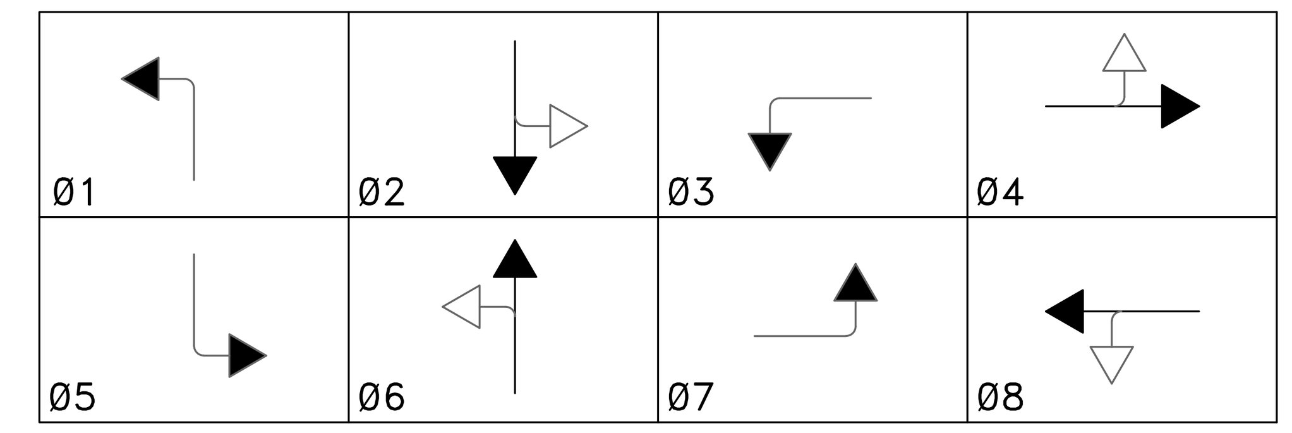
DATE: Apr 24, 2019 11:16am
USER: jpudlowski

WIRING DIAGRAM



SEQUENCE





PHASE DIAGRAM

Wiring and Phasing General Notes

1. The outboard signal head (furthest on the mast arm from the pole) for each phase shall each be served by one 7c#12 cable extending from the head back to the controller. Each of the remaining same phase vehicle signal heads located on the mast arm shall be connected to like phase signal heads via a 7c#12 cable connected within the signal head terminal box. A maximum of three vehicle heads may be joined together, any additional signal heads would require a separate cable extending from the head back to the controller. All vehicular signal heads located on the pole shall each be served by one 7c#12 cable extending from the head back to the controller. No cable splices are allowed, including at the base of the pole and inside pull boxes.

2. A continuous 1c #6 AWG bare solid copper ground wire shall be provided in addition to ground rods. All grounding and ground rods shall be tied together using 1c #6 AWG bare solid copper wire to bond the system.

3. Luminaire, bracket arm, and internal conduit and wiring to be installed with signal.

4. All existing cabling that is no longer in use shall be removed from existing conduit system when new cabling is installed

5. All Street Lighting cabling (LIGHTING CABLE) is shown based on best available survey information. Contractor shall field verify conduit/cable routing and replace with like-kind cable to adjacent pull box or pole base. Splice existing cable with new cable to re-connect existing circuitry with approved connectors kits.

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STATE OF MISSOURI — JEREMY SCOTT STRETZ — NUMBER PE-2017023856 — PROFESSIONAL ENGINEER — 4/24/19

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SIGNAL MODIFICATION PLAN
PRYOR RROD & NW O'BRIEN ROAD

PRYOR ROAD & O'BRIEN ROAD
INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by:	JRC
checked by:	JSS
designed by:	JSS
QA/QC by:	TAF
project no.:	A18-1140
date:	2019.03.12

SHEET
25

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DATE: Apr 24, 2019 11:16am

POSTS

Post No.	PEDESTAL POLE HEIGHT (feet) 4'	8'	15'	MAST ARM LENGTH (feet)				SIGNAL HEAD SPACING* A / E	B / F	C / G	D / H	LUMINAIRES Arm Length	Bracket Type	Mounting Height	150W 240V H.P.S. Type III	250W 240V H.P.S. Type III	REMARKS
3/3A				EXISTING (35')				EXISTING									REMOVE AND RESET
5A	EXISTING																REMOVE AND RESET
6		1															
7		1															
8		1															
9		1															
TOTALS		4															

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

SIGNAL HEADS

NO. Post	Face	Opt. limited	Louvers	INDICATIONS 12" LED'S R	Y	G	Y←	G←	G↑	Y→	G→	Walk	Flash Don't Walk	W/DW	Countdown Indications	VISORS Type Tun.	Cut Away	SECTIONS Mounting 1 P	S	2 P	S	3 P	M	S	4 P	M	S	5 P	M	S
1	31																													
1	81																													
1	82																													
9	64																													
9	83																													
2	51																													
2	21																													
2	22																													
5A	84																													
7	23																													
3A	71																													
3A	41																													
3A	42																													
6	24																													
6	43																													
4	11																													
4	61																													
4	62																													
8	44																													
8	63																													
TOTALS																														

REUSE EXISTING

P – Pole Mounted Signal Head
M – Mast Arm Mounted Signal Head
S – Span Wire Mounted Signal Head

All indications shall be LED.

NOTE :

THE TRAFFIC SIGNAL SYSTEM SHALL BE COMPLETE AND THE CONTRACTOR SHALL FURNISH AND INSTALL ALL EQUIPMENT AND MATERIALS NECESSARY FOR THE SATISFACTORY OPERATION OF ELECTRICAL APPARATUS AND FOR COMPLETE OPERATION OF THE TRAFFIC SIGNAL SYSTEM WHETHER SPECIFICALLY MENTIONED OR NOT.

THE TRAFFIC SIGNAL SYSTEM SHALL BE BID AS LUMP SUM UNDER THE TRAFFIC SIGNAL MODIFICATION BID ITEM.

BASES AND PULL BOXES

NO. Post	Pull Box	BASES B8	B10	B13	C	EV	E		Conc. (C.Y.)	PULL BOXES CLASS 1	CLASS 2	CLASS 3
3A				1					3.84			
	3										1	
	4									1		
5A					1				0.44			
6					1				0.44			
7					1				0.44			
8					1				0.44			
9					1				0.44			
CONTR.												
TOTALS				1	5				6.04	1	1	

CONTROLLER AND EQUIPMENT

	TOTALS
CABINET, PAD AND ACCESSORIES: Type P TS1 Cabinet	
VIDEO: Iteris Vantage Edge 2	
OPTICOM: NTCIP	
CONTROLLER: Type 3608 M 52 EAGLE EPAC complete per plans, including software	
MASTER CONTROLLER: Type MARC 360 complete per plans, including software	
Type 2 Power Supply w/Photocell (Utility Enclosure Pedestal)	
Ground Rods	6
BATTERY BACK–UP:	
017–201–21 FXM1100 Novus Control Unit	
017–183–24 MBP Manual Bypass	
012–306–21 Alpha Guard, battery maintainer	
180–GXL–4 Batteries	
740–628–27 Battery Harness	
033–078–25 BSM Battery Side Mount Cabinet	
Interconnect Panel	
Video Encoder	
Remove and Reset Existing Wireless Subscriber Unit	

SIGNS

SIGN	LEGEND	NO.	AREA (s.f.)	TOTAL (s.f.)
TOTALS				

*Included with APS Push button assembly

CABLE

FROM	TO	GROUND #6	POWER/LIGHTING 3c–2	3c–8	MATCH EX.	CONTROL Type 20–1 2c–12	5c–12	7c–12	LEAD–IN CABLE 4c–14	INTERCONNECT COMM. CABLE 3 pr #16	EMERGENCY PRE–EMPTION CABLE m–138	VIDEO CABLE 3c#16	Coax.	REMARKS
☒	⑨					134	142							
☒	5A					167	171							
☒	⑦					180	184							
☒	5A							902			306	312	312	
☒	⑥					554	562							
☒	⑧					388	380							
SYSTEM		585			486									
TOTALS*		615			511	1,486	1,520	948			322	328	328	

* Includes 5% for waste

CONDUIT

FROM	TO	Dist.	BORED 4"	TRENCHED 3/4"	2"	2 1/2"	3"	4"	IN EXISTING TRENCH 3"	4"
1	9	25					27			
2	3	104						102		
2	5A	25					27			
2	⑦	38					40			
3	5	104					102			
3	5A	20					22			
3	⑥	25					27			
3	4	18					18			
4	7	12					14			
5	⑧	20					22			
TOTALS							299	102		

*DETECTORS

DET. NO.	PHASE	PUSH BUTTON	OPTICOM NTCIP	VIDEO CAMERAS	LOOP (6X6)	LOOP (SIZE)
PB23	2	1				
PB24	2	1				
PB43	4	1				
PB44	4	1				
PB63	6	1				
PB64	6	1				
PB83	8	1				
PB84	8	1				
TOTALS		8				

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STATE OF MISSOURI
JEREMY SCOTT SPRETZ
NUMBER PE-2017023856
PROFESSIONAL ENGINEER
4/19/19

REVISIONS

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

SIGNAL MODIFICATION PLAN
PRYOR RROD & NW O'BRIEN ROAD

PRYOR ROAD & O'BRIEN ROAD
INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by: JRC
checked by: JSS
designed by: JSS
QA/QC by: TAF
project no.: A18-1140
date: 2019.03.12

SHEET 26

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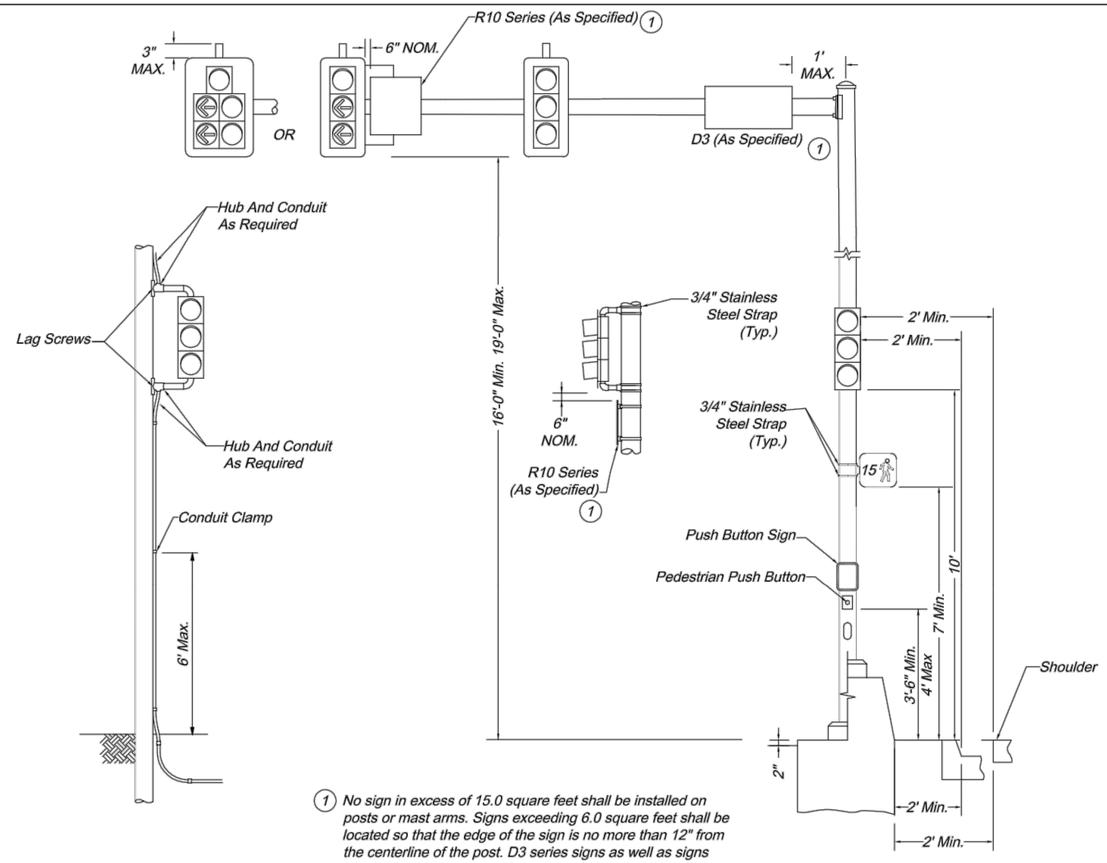
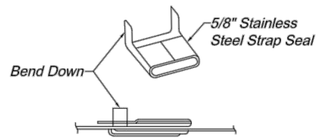


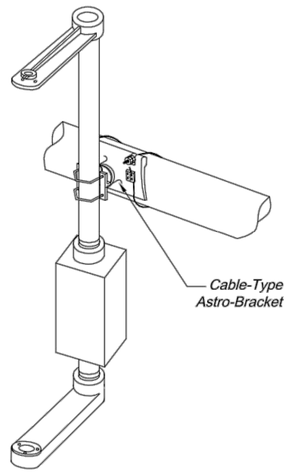
WOOD POLE MOUNTING

MAST ARM POLE MOUNTING

(1) No sign in excess of 15.0 square feet shall be installed on posts or mast arms. Signs exceeding 6.0 square feet shall be located so that the edge of the sign is no more than 12" from the centerline of the post. D3 series signs as well as signs installed on the post shall be mounted with a strap type sign support. R10 series signs installed on the mast arm shall be mounted with an Astro-Bracket assembly.

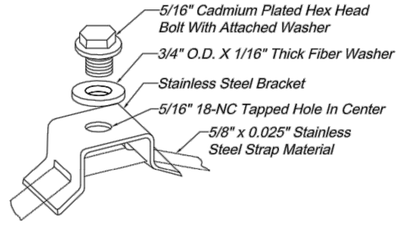


ENDS OF STRAP CLAMPED IN SEAL

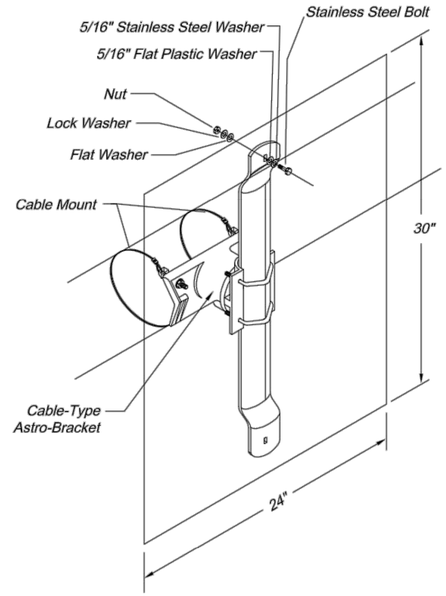


SIGNAL HEAD MAST ARM MOUNTING DETAIL

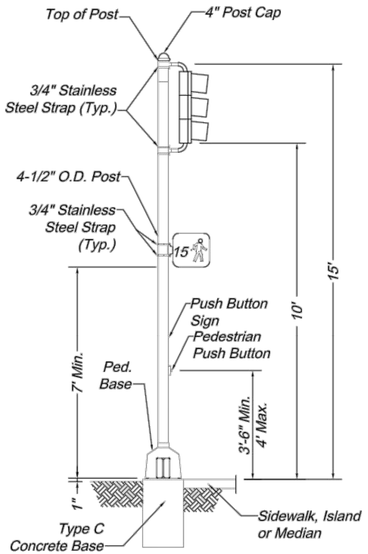
Astro-Brac Terminal Compartment Bracket Assembly
Note: Only cable type Astro-Brac will be allowed, no bands.

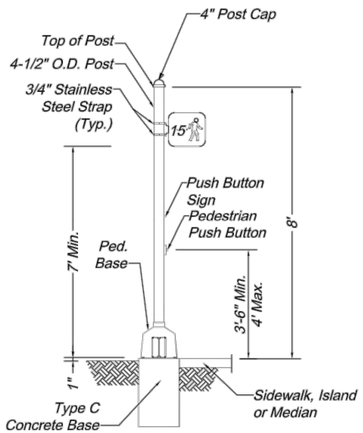


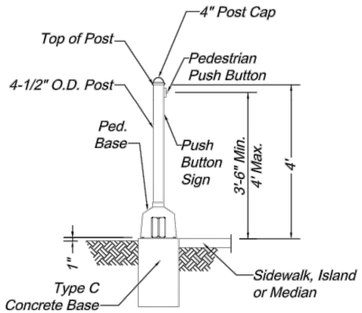
STRAP TYPE SIGN SUPPORT



MAST ARM SIGN MOUNTING DETAIL







PEDESTAL POST MOUNTINGS

General Notes:

All post wire outlets shall be deburred and equipped with bushings.

Backplates not shown in mounting diagrams for clarity.

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.

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.

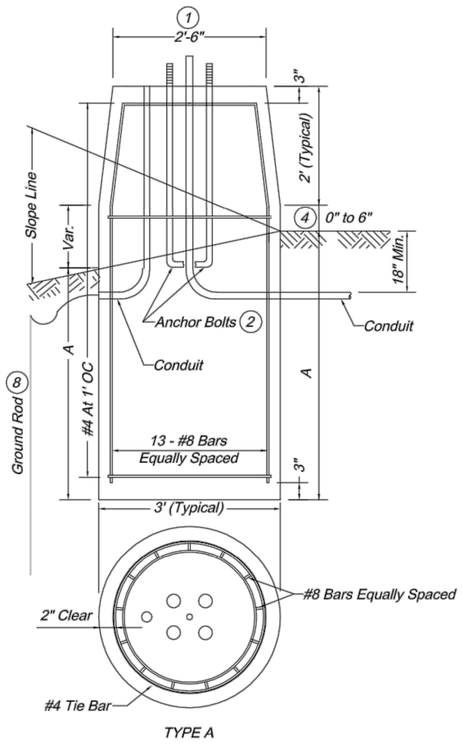
See standard drawing TS-3 for base details.

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

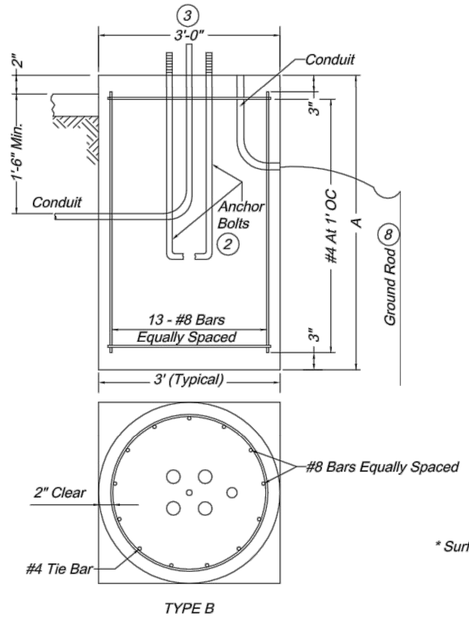
SIGNAL HEAD MOUNTING DETAILS

STANDARD DRAWING TS-1

Drawn By: AS
Checked By: MP
Date: 09/25/2009
Project#

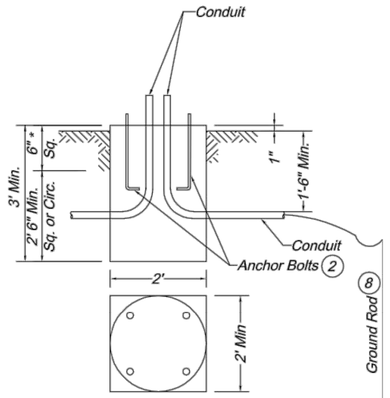


TYPE A



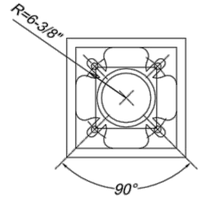
TYPE B

POST BASES

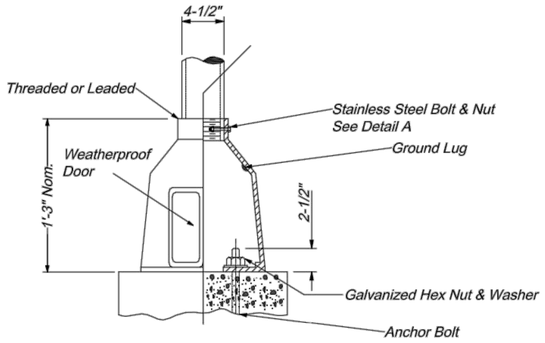


TYPE C

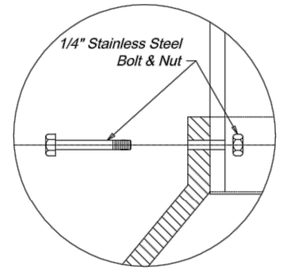
* Surface of Type C base to be constructed square for a depth of 6".



BOLT CIRCLE

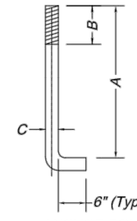


SQUARE
BOLT CIRCLE



DETAIL A

CAST BASE

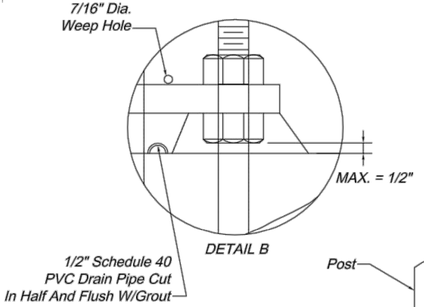


ANCHOR BOLT

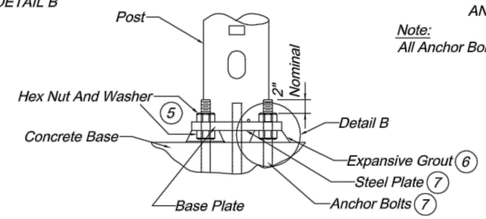
Bolt Length	Vert Ht. A	Thread Len. B	Dia. C
Inches	Inches	Inches	Inches
19	17	1.50	0.625
57	51	7.00	1.250
79	73	7.50	1.500
94	88	8.00	1.750
121	115	8.50	2.000
120	114	9.00	2.250
146	140	9.50	2.500

ANCHOR BOLT

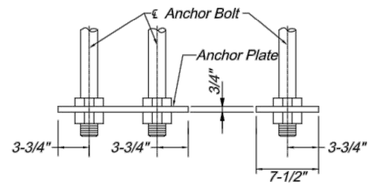
Note:
All Anchor Bolts Shall Be Fully Galvanized.



DETAIL B

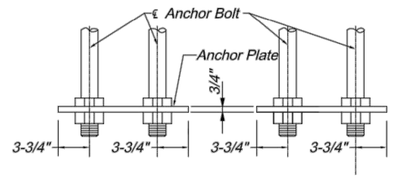


STEEL PLATE AND ANCHOR BASE



SIDE VIEW END VIEW

Hex Nut or 5/16" Fillet
Weld All Around Both Sides
TWO BOLTS PER PLATE



SIDE VIEW END VIEW

Hex Nut or 5/16" Fillet
Weld All Around Both Sides
FOUR BOLTS PER PLATE

OPTIONAL STEEL PLATE FOR ANCHOR BOLTS

POST BASES		
Post Type	Arm Length (Ft.)	Base Type
B, BL, C & CL	8 - 14	A-8 or B-8
B, BL, C & CL	15 - 34	A-10 or B-10
B, BL, C & CL	35 - 54	A-13 or B-13

Arm length determined by length of longest arm for Type B & BL signal posts.

Base Type A or B determined by location of post base.

Special Design Requirements:

Signal structures which will exceed the dimension limits shown on Standard Drawing TS-5 shall have its Post Base designed by a professional engineer and approved by the City Engineer (or designee). A set of drawings including specifications and design computations shall be submitted for record and reference. The submitted drawings and calculations shall be signed and sealed by a professional engineer in accordance with the laws relating to architects and professional engineers (Chapter 327, RSMO) and shall include a title block or summary sheet which lists and certifies that the foundation will meet the design criteria.

STEEL & CONCRETE REQUIREMENTS FOR POST BASES				
Bases		#8 Steel Bar		Conc. C.Y.
Type	A (10)	Length	Weight Lbs (11)	
A-8	8'-0"	9'-6"	399	2.53
A-10	10'-0"	11'-6"	481	3.06
A-13	13'-0"	14'-6"	604	3.84
B-8	8'-0"	7'-6"	317	2.09
B-10	10'-0"	9'-6"	400	2.62
B-13	13'-0"	12'-6"	523	3.40
C*				0.44

(10) Soil depth, no rock
(11) Include #4 tie bar

* Surface of Type C base to be constructed square for a minimal depth of 6".

BASE EMBEDMENT IN SOLID ROCK			
Solid Rock Encounter Point	Required Embedment For Base Type		
	A-8 B-8	A-10 B-10	A-13 B-13
At Surface	4'-6"	4'-9"	5'-9"
At One-Fourth Normal Depth	3'-6"	4'-0"	5'-0"
At One-Half Normal Depth	3'-0"	3'-3"	3'-3"
At Three-Fourths Normal Depth	1'-3"	1'-3"	1'-0"

1. *Required embedment depths can be interpolated between encounter points for other solid rock encounter depths.*
2. *Normal lengths for anchor bolts and reinforcing steel will be required.*
3. *Core drill holes for anchor bolts and reinforcing steel in solid rock shall be provided. Core drill holes shall be twice the diameter of the anchor bolt and reinforcing steel diameter and to within 3 inches of the normal base depth.*
4. *If soil, shale, gravel, fractured rock, or voids are encountered during core drilling, the rock shall be removed to the point of encounter.*
5. *Anchor bolts and reinforcing steel shall be grouted in the core drill holes with non-shrink grout having a minimum strength of 9,000 pounds in 24 hours.*
6. *Straight anchor bolts of the length shown in the anchor bolt table under the column "bolt length"are adequate for use in grouted core drilled holes. No heat induced alteration or bending of anchor bolts will be permitted.*

(1) *If bolt circle is 22 inches or greater, use Type B base. If Type B base is used anywhere, all Type B, BL, C, and CL posts shall have Type B base. Base plate shall stay within the top of the post base diameter.*

(2) *Anchor bolt dimensions are shown on the manufacturer's approved drawings.*

(3) *Maximum bolt circle diameter is 26". Base plate shall stay within the top of the post base diameter.*

(4) *0" to 6" variation in base height is for obtaining 16'-0" clearance. 0.13" C.Y. concrete and 3 lbs. reinforcing steel per 6".*

(5) *Posts shall be furnished with individual nut covers.*

(6) *Expansive grout shall be used between the post base plate and concrete base.*

(7) *Plate and bolt sizes shall be shown on fabricators shop drawings and shall be subject to approval.*

(8) *3/4" x 8' minimum ground rod. If subsurface conditions exist which prohibit the placement of the ground rod in vertical position, the rod may be driven at an oblique angle not to exceed 45 degrees from vertical or buried in a trench at least 30 in. deep. Connection to ground rod shall be clamp type as detailed on standard drawing TS-2.*

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ENGINEERING DIVISION
220 SE GREEN STREET
LEE'S SUMMIT, MISSOURI 64063
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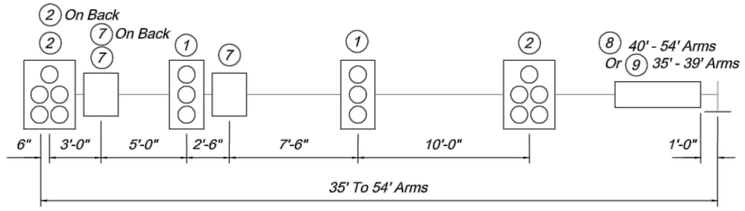
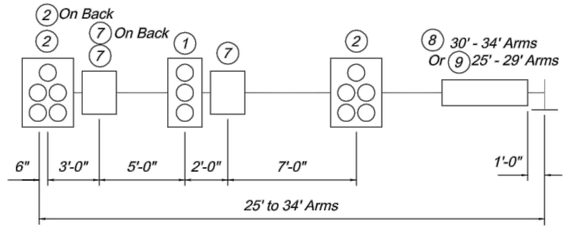
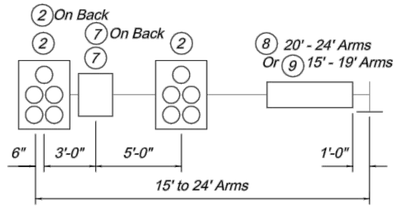
POST BASE DETAILS

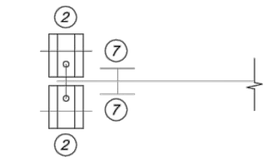
STANDARD DRAWING TS-3

Drawn By: AS
Checked By: MP
Date: 09/25/2009
Project#

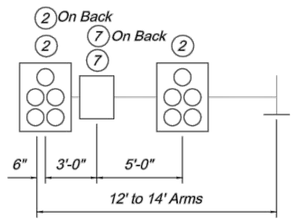


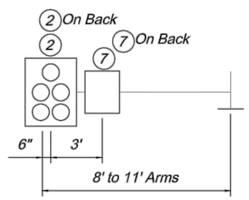




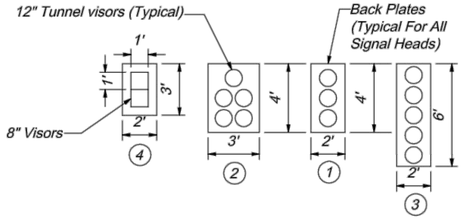


TYPICAL TOP VIEW





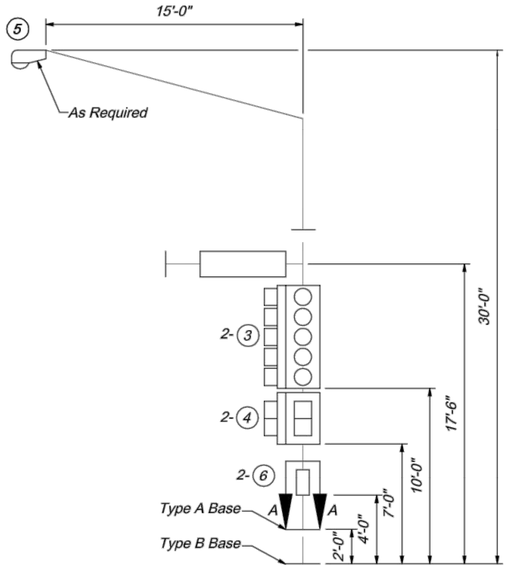
MAST ARM LOADING



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	24" X 30" Sign	27.0	5.0	N/A
8	120" X 18" Sign	25.0	15.0	N/A
9	96" X 16" Sign 96" X 18" 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

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, Luminaries and Traffic Signals, 1994 or latest revision with these exceptions.

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, 2001, 4th Edition, including any interim with the criteria noted below:*

- *Minimum Basic Wind Speed 90 MPH at 30 Feet Above Ground*
- *Fatigue Category I*
- *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,1994 or latest version.

General Notes:

Attachment locations are for structural design purposes only. Actual locations are shown on the plans.

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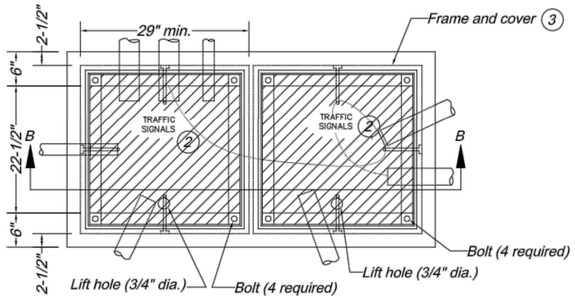
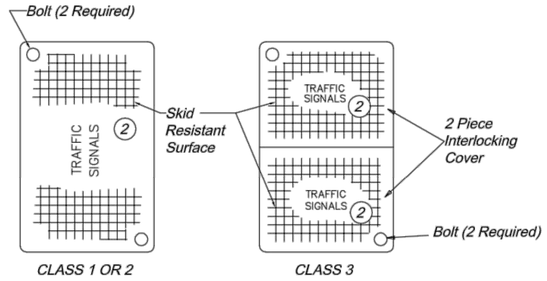
TUBULAR STEEL POST
DESIGN LOADING REQUIREMENTS

STANDARD DRAWING TS-5

Drawn By: AS
Checked By: MP
Date: 09/25/2009
Project#

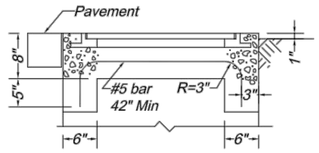
MINIMUM DESIGN LOADING FOR POST AND MAST ARM ATTACHMENTS

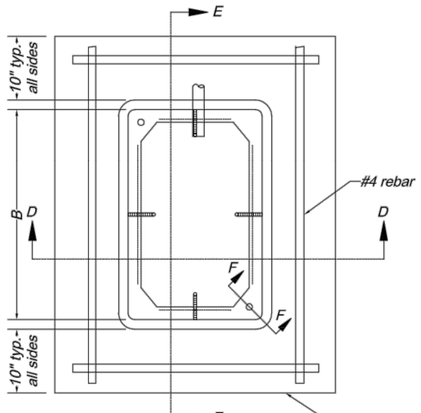


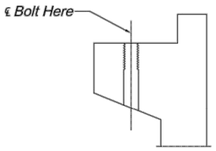


PREFORMED PULL BOX COVER

Number of Entering Conductors	Class	Preformed Pull Box Minimum Dimensions		
		A	B	C
< 23	1	17"	30"	20"
23 - 68	2	24"	36"	24"
> 68	3	30"	48"	24"

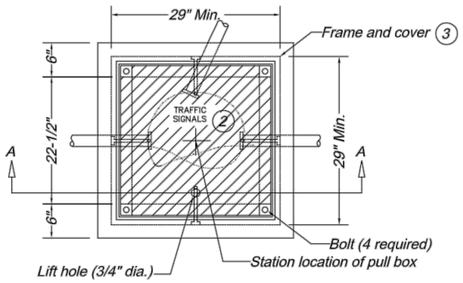


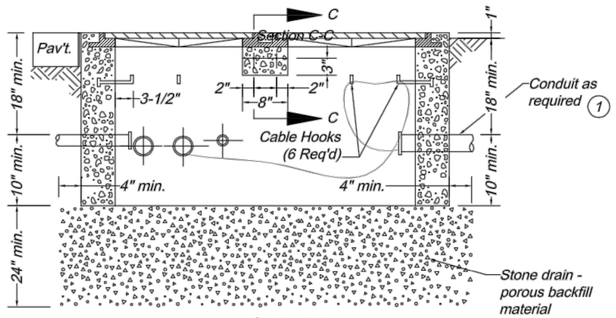




SECTION F-F

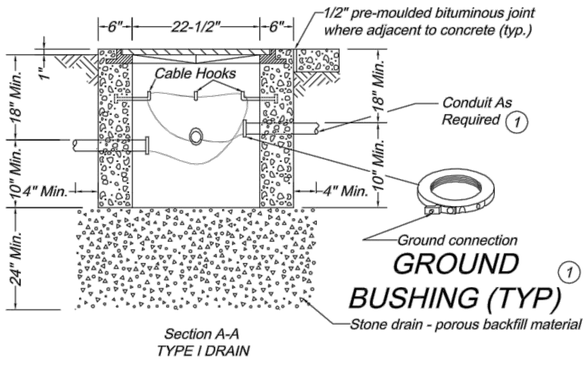
TYPICAL BOLT CLEANOUT



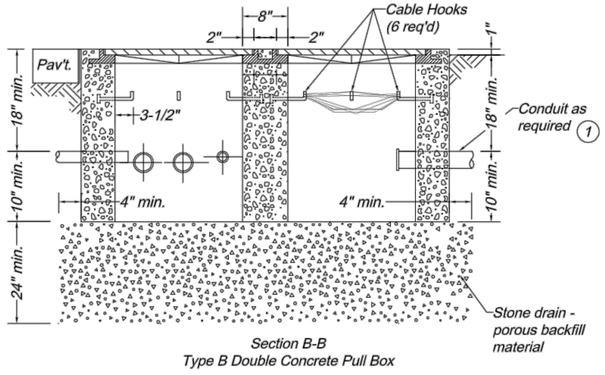


Section B-B
Type A Double Concrete Pull Box

SINGLE CONCRETE PULL BOX

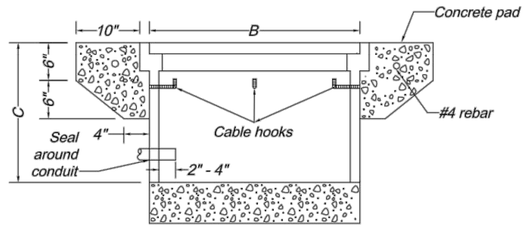


Section A-A
TYPE I DRAIN



Section B-B
Type B Double Concrete Pull Box

DOUBLE CONCRETE PULL BOX



Section D-D

Section E-E

PREFORMED PULL BOX

(1) All metal conduits shall be electrically bonded by a ground bushing and #6 AWG bare copper wire. For PVC , all ground wires shall be connected.

(2) Signal pull boxes shall be embossed "Traffic Signals."

(3) Pull box frames and covers shall be cast iron and the following minimum dimensions:

Frame Size:	29" x 29"
Opening Size:	22 1/2" x 22 1/2"
Frame Height:	4-1/4"
Frame Weight:	120 lbs.
Cover Size:	22-5/8" x 22-5/8"
Cover Thickness:	3/4"
Cover Weight:	140 lbs.

General Notes:

All dimensions shown are nominal.

Bolt cleanout detail shall be approved by the City Traffic Engineer.

All concrete shall be 3,000 PSI minimum, and shall be subsidiary to the pull box.

Pavement and subgrade shall be as shown on plans.

Stone drain material shall be 1/2" - 3/4" clean rock.

Lift opening required on all covers.

Preformed box walls may be either flared or vertical.

If an extension is used with a preformed box, the lip of the extension may be interior or exterior. The extension shall be compatible and from the same manufacturer.

If preformed pull boxes are specified, the contractor may use the standard concrete pull box in lieu of the Class 1 or 2 preformed pull box or the double concrete pull box, Type A, in lieu of the Class 3 preformed pull boxes.

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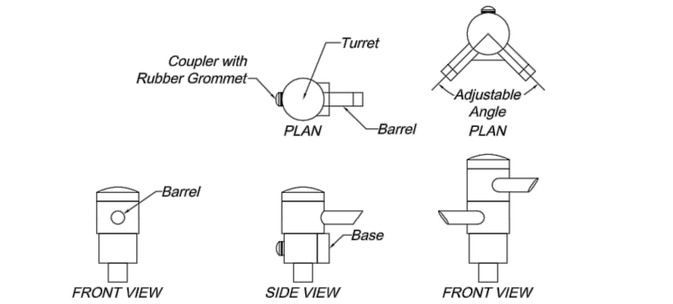
PULL BOX DETAILS

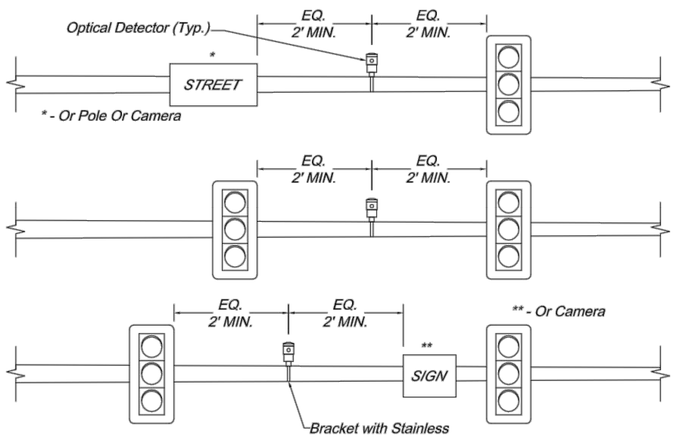
STANDARD DRAWING TS-6

Drawn By: AS
Checked By: MP
Date: 09/25/2009
Project#



SINGLE BARREL ONE CHANNEL

DOUBLE BARREL ONE OR TWO CHANNEL



WHEN MULTIPLE DETECTOR UNITS ARE MOUNTED ON THE SAME MAST ARM, THEY SHALL BE SPACED APPROXIMATELY 12 INCHES APART.

Emergency Vehicle Detection Notes:

1. The detector cable shall be continuous from the optical detector to the traffic signal controller. No splices shall be allowed.

2. The contractor shall label the optical detector cable in all pull boxes by channels as indicated on the plans. This shall be accomplished with aluminum tags attached to the cable with aluminum wire. No direct payment shall be made for this work.

3. Opticom shall be mounted inside the controller cabinet. Unless otherwise indicated on the plans, the placement of the optical detectors shall be centered between the signal heads and/or signal head and sign located on the mast arms. Further information on optical detector placement is shown in the details. The final placement of the optical detector may be adjusted for line of sight requirements.

4. The equipment manufacturer shall be responsible for providing onsite technical assistance to the contractor in final placement of the optical detectors, as well as in all the aspects of the system installation.

5. Preemption sequences and timings shall be developed by the equipment supplier. Timings shall be marked up on the timing sheets from the specific model of controller at each intersection and submitted for review by the City prior to implementation by the supplier. Pre-emption sequences shall use an all red interval or other methods to prevent the occurrence of "Yellow Traps" at intersections with protected/permitted left-turn phasing.

6. Preempts are to be assigned as follows unless otherwise indicated in the plans:

Direction	Preempt No.	Channel
Northbound	1	A
Southbound	2	B
Eastbound	3	C
Westbound	4	D

7. The Contractor shall install the equipment consistent with the equipment manufacturer's recommended installation procedures and interface diagrams in a neat and workmanlike manner. Emergency Vehicle Detection System shall be provided and installed by the contractor and shall consist of all detectors, processors, mounting brackets, etc for a fully operational system.

OPTICAL DETECTOR

Video Detection Notes:

1. The video detection system shall consist of video camera(s), video detection processor (VDP), cables, brackets, and all other materials necessary for a fully functional system.

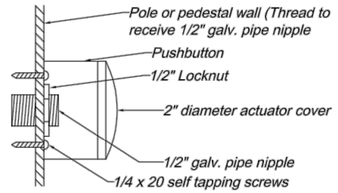
2. The video detection system shall include software that detects vehicles in multiple lanes of each direction using only one video camera. Detection Zones (DZ) shall be defined using only a video menu and a pointing device to define and place zones on a video image. Up to 24 DZ per camera shall be available.

3. The actual number and location of DZ shall be determined in the field by the City Traffic Engineer. The City reserves the right to have additional zones programmed or modify those shown based on the field programming period completed prior to turning on the signal.

4. Video cameras are to be mounted as shown on the traffic signal plans. If the camera is mounted on a Type BL or CL pole, the camera shall be mounted directly to the luminaire bracket arm. If the camera is mounted on a Type B or C pole, the camera shall be mounted on the mast arm using a 6-foot riser.

5. Video camera placement, adjustment, setup and initial programming shall be at the direction of the manufacturers representative. The manufacturers representative shall assist with identifying optical camera locations, system setup, programming, and turn-on.

VIDEO DETECTION

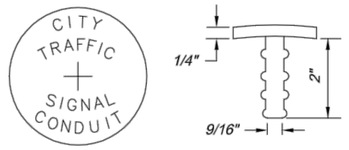


Push Button Notes:

1. Push buttons shall include 2 mounting brackets each and be of the type as noted in the plans.

2. Push buttons shall be ADA approved and weatherproof, mounted in accordance with standard drawing TS-1.

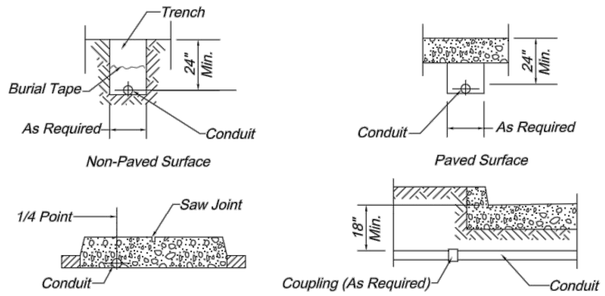
PUSH BUTTON MOUNT DETAIL



CONDUIT MARKER

Conduit Marker Notes:

1. Wherever a conduit passes beneath a curbed street, aluminum conduit markers shall be installed in the curb immediately over the conduit location. Conduit markers shall be furnished by the contractor as detailed and shall be installed in the top of the curb by drilling the curb and epoxying the conduit marker in place. Conduit markers shall be flush with the curb. Conduit markers shall be subsidiary to conduit.

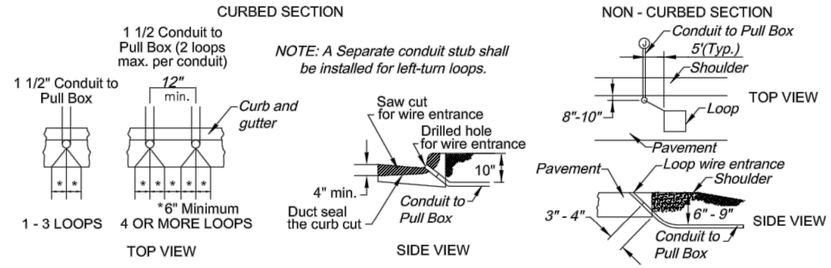


Conduit Location Notes:

1. Conduit shall be installed to drain, and if metallic all ends shall be threaded and capped.

2. The Contractor shall notify the City of Lee's Summit, Department of Public Works Traffic Division at (816) 969-1807 for inspection of the conduit installation. At least 24 hours notice shall be provided. The conduit shall not be covered unless inspected and approved by the Engineer or his authorized representative, so as to ensure proper depth, correct conduit material and proper conduit end treatment as described above.

CONDUIT LOCATIONS



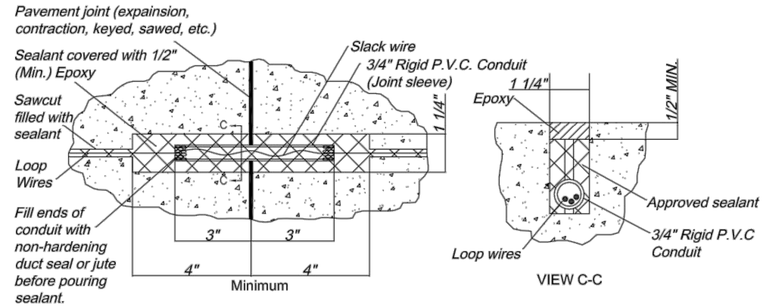
Loop Wire Entrance Notes:

1. Saw cut in the curb and gutter section and conduit entrance to be sealed with a pliable, non-hardening duct sealant prior to application of loop sealant. No loop sealant shall be applied in the curb and gutter section or at conduit entrance.

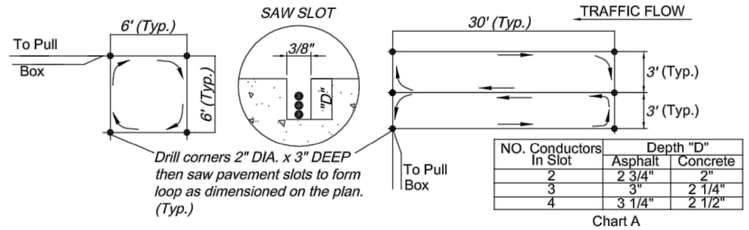
2. Grout around conduit inserted into curb or pavement section.

3. Each loop shall have a separate lead-in-saw cut to the loop wire entrance in the curb or at the edge of pavement.

LOOP WIRE ENTRANCE DETAIL



JOINT CROSSING DETAIL



NO. Conductors In Slot	Depth "D" Asphalt	Depth "D" Concrete
2	2 3/4"	2"
3	3"	2 1/4"
4	3 1/4"	2 1/2"

Chart A

TYPICAL TRANSVERSE LOOP (3 TURNS)

TYPICAL QUADRAPOLE LOOP (2-4-2 TURNS)

Loop Detection Notes:

1. Quadrapole loop to be one continuous wire placed in two turns. All loops to be wound in same direction, with start and end clearly marked at pull box.

2. Transverse loop to be one continuous wire placed in three turns. All loops to be wound in same direction, with start and end clearly marked at pull box.

3. Slot in pavement for loops to be cut $\frac{3}{8}$" wide at minimum depth "D" as indicated in Chart A. Slot in pavement for lead shall be $\frac{1}{2}$" wide at minimum depth "D". Fill slots with an approved asphalt sealer (asphalt pavement) or an approved elastic epoxy sealant (concrete pavement) to within $\frac{1}{8}$" of pavement surface.

4. Other than soldered type splice or splice made with wire nuts at their junciton, feeder cable and loop wire shall be of continuous run with no splices. All connections to be watertight with approved splice kits. Watertight connections shall extend to and encompass each outer jacket of the detector feeder and loop wire cables.

5. All leads for individual loops to be kept separate and loop wire between the loop and the feeder cable connection shall be twisted three turns per foot.

6. All loops shall be wet cut with equipment approved by the City Traffic Engineer.

7. Where loops are to be installed on projects involving either asphalt pavement construction or milling and overlay of an existing asphalt pavement, loops shall be installed in the base course prior to placement of the asphalt surface course.

8. If existing loops are to be abandoned and new loop installed, abandoned loop wires shall be removed or cut completely through along all slots parallel to vehicle flow.

9. Loops shall be #14 AWG stranded wire in pvc duct made up of 2 non-twisted turns in single slot or as recommended by manufacturer of the detector amplifier. Loop shall be placed in sawed slots in a figure eight manner with device which will not damage the wire insulation. Lead-in cable shall be 2-1c #14 AWG twisted.

LOOP DETECTION

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

CONDUIT & DETECTION DETAILS

STANDARD DRAWING TS-7

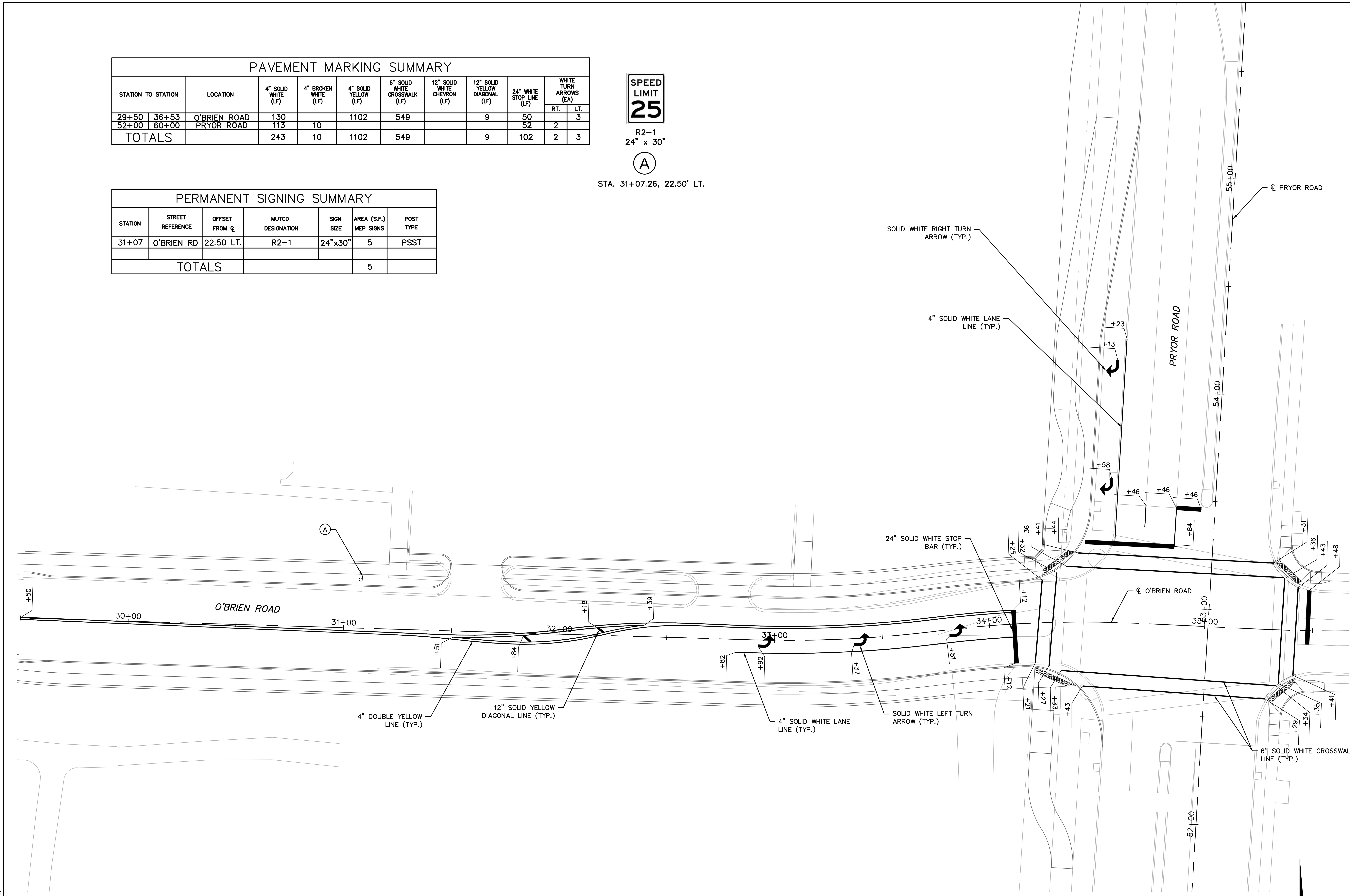
Drawn By: AS
Checked By: MP
Date: 09/25/2009
Project#

PAVEMENT MARKING SUMMARY

STATION TO STATION		LOCATION	4" SOLID WHITE (LF)	4" BROKEN WHITE (LF)	4" SOLID YELLOW (LF)	6" SOLID WHITE CROSSWALK (LF)	12" SOLID WHITE CHEVRON (LF)	12" SOLID YELLOW DIAGONAL (LF)	24" WHITE STOP LINE (LF)	WHITE TURN ARROWS (EA) RT.	WHITE TURN ARROWS (EA) LT.
29+50	36+53	O'BRIEN ROAD	130		1102	549		9	50		3
52+00	60+00	PRYOR ROAD	113	10					52	2	
TOTALS			243	10	1102	549		9	102	2	3

PERMANENT SIGNING SUMMARY

STATION	STREET REFERENCE	OFFSET FROM ℄	MUTCD DESIGNATION	SIGN SIZE	AREA (S.F.) MEP SIGNS	POST TYPE
31+07	O'BRIEN RD	22.50 LT.	R2-1	24"x30"	5	PSST
TOTALS					5	



GENERAL NOTES:

1. ALL NEW PAVEMENT MARKINGS SHALL BE THERMOPLASTIC OR PRE-FORMED THERMOPLASTIC.
2. OBLITERATE ALL EXISTING PAVEMENT MARKINGS IN CONFLICT WITH NEW MARKINGS.
3. ALL PAVEMENT MARKING SHALL MEET THE CITY OF LEE'S SUMMIT STANDARD SPECIFICATIONS, SECTION 3000.

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\TFTC\PAVEMENT MARKING & SIGNING\F_PVMT MRKNG_B1140.dwg USER: jgallagher
DATE: Mar 12, 2019 4:13pm

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NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI — JEREMY SCOTT STREET — NUMBER PE-2017023856 — PROFESSIONAL ENGINEER — 3/13/19

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

PAVEMENT MARKING PLAN
PRYOR RROD & NW O'BRIEN ROAD

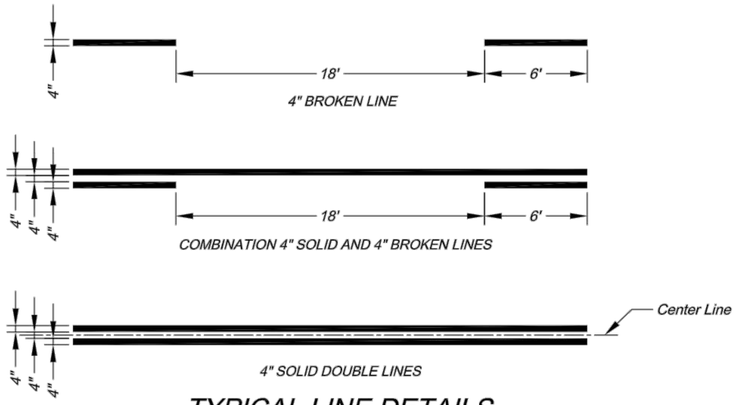
PRYOR ROAD & O'BRIEN ROAD INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

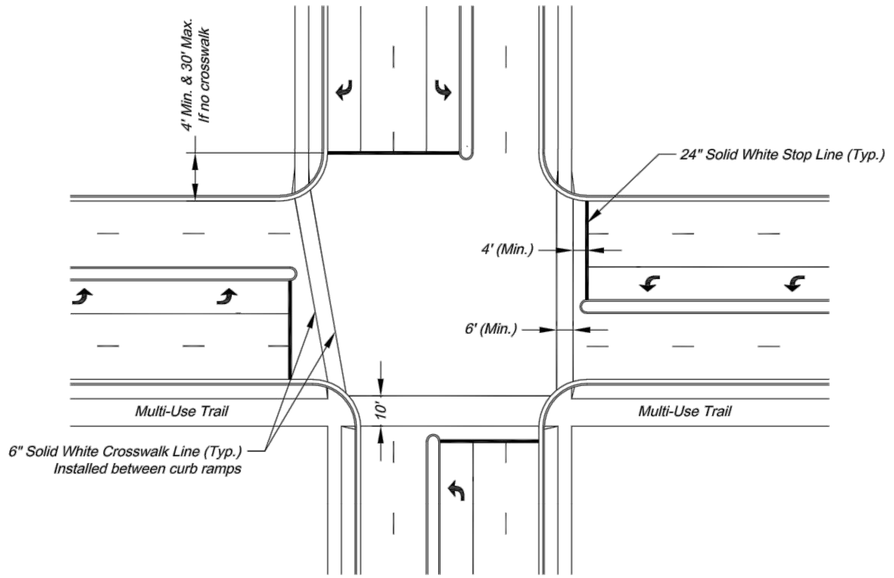
drawn by: JRC
checked by: JSS
designed by: JSS
QA/QC by: TAF
project no.: A18-1140
date: 2019.03.12

SHEET 32



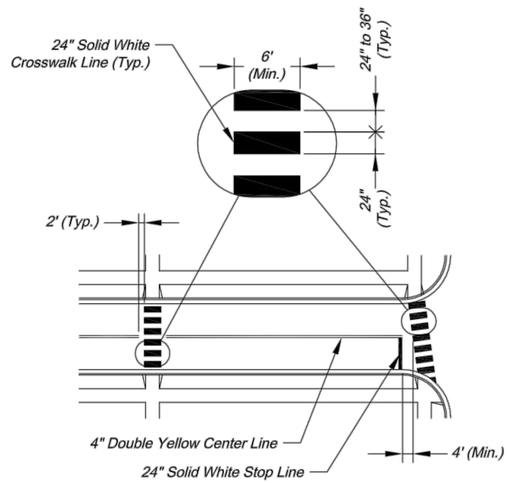
TYPICAL LINE DETAILS

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

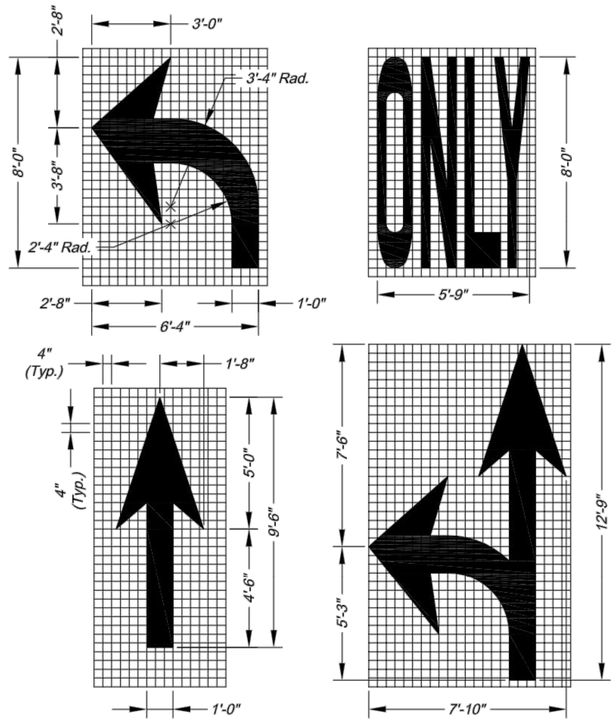


TYPICAL INTERSECTION MARKINGS

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.

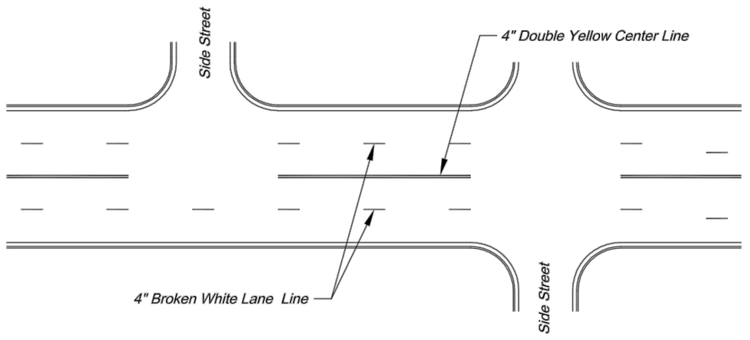


TYPICAL MIDBLOCK OR SCHOOL CROSS WALK

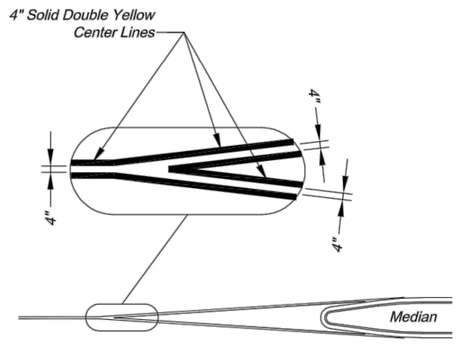


ARROW AND SYMBOL DETAILS

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
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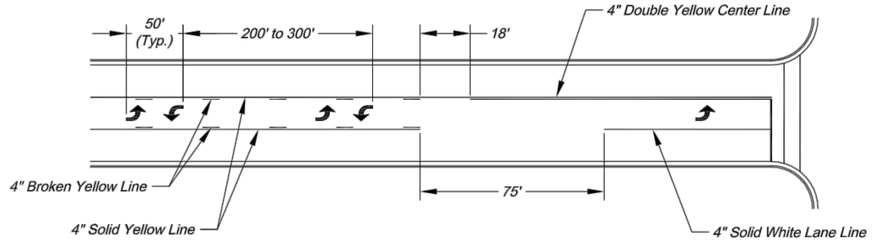
Project:

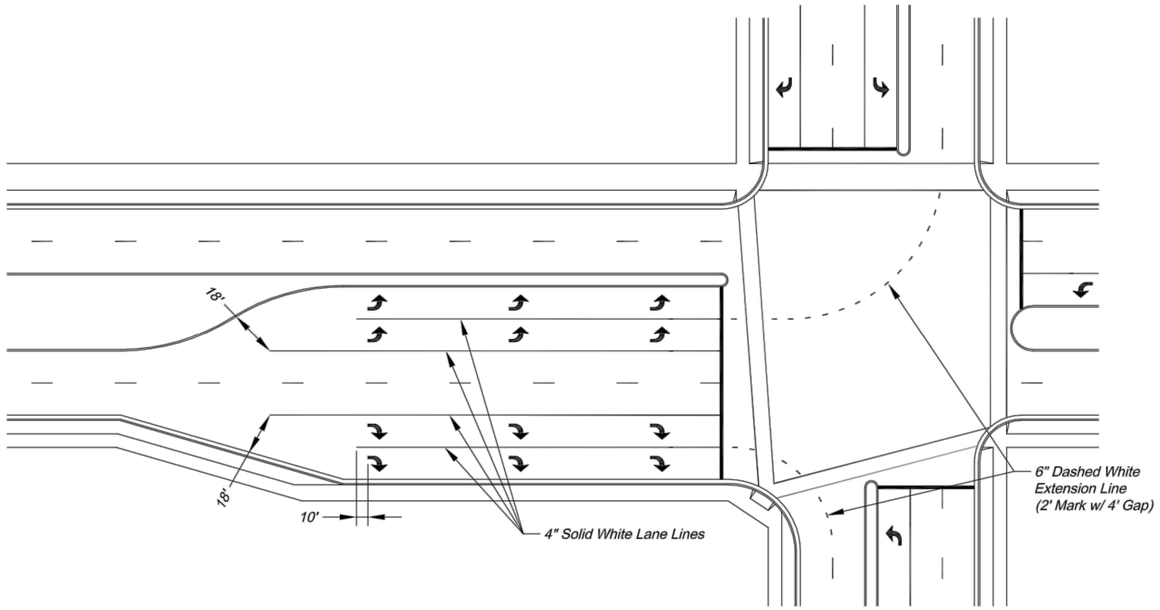
ROADWAY MARKING DETAILS

Sheet Name: STANDARD DRAWING PM-1

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

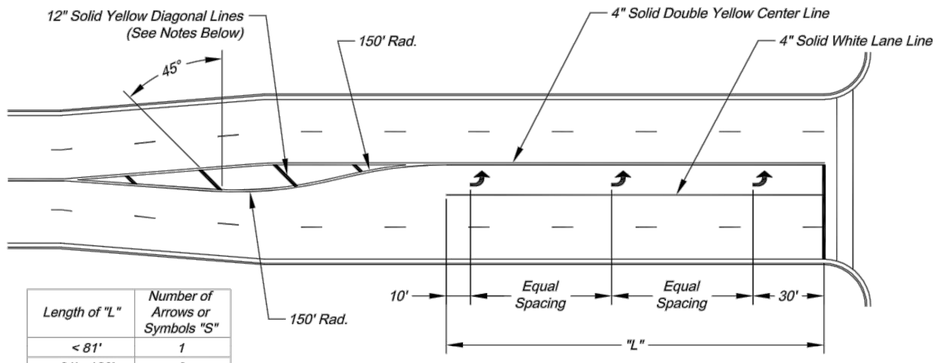


TYPICAL MARKINGS FOR TWO-WAY LEFT-TURN LANE



TYPICAL DUAL TURN LANE MARKINGS

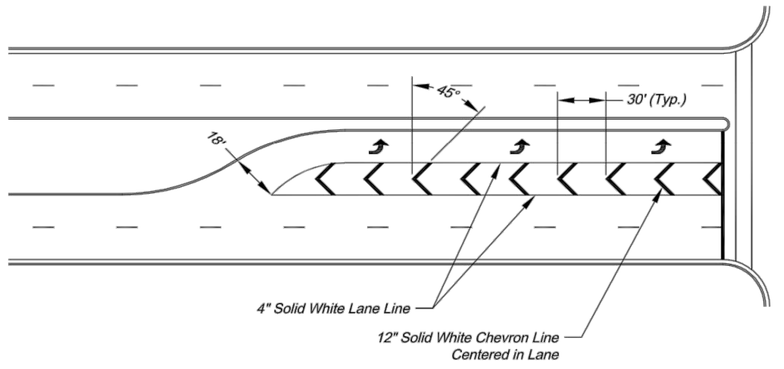
NOTE:
1. Dashed extension lines shall not extend through crosswalks.



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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Project:

INTERSECTION MARKING DETAILS

Sheet Name: STANDARD DRAWING PM-2

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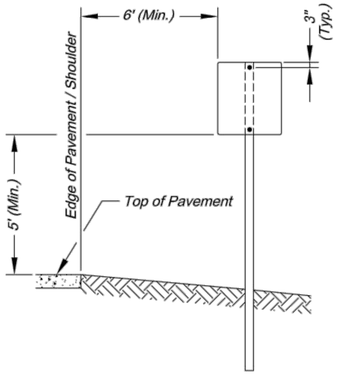
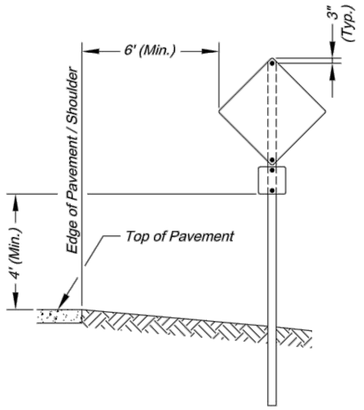
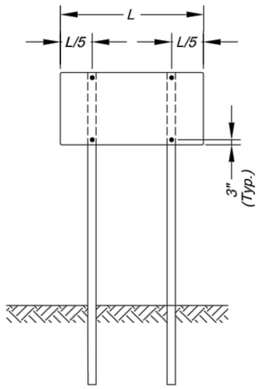


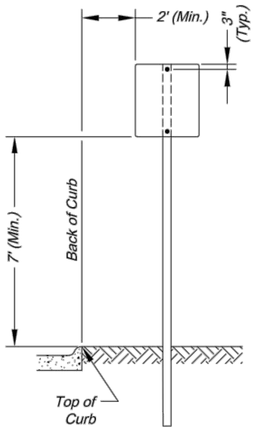
SIGN INSTALLATION FOR NON-CURBED STREET



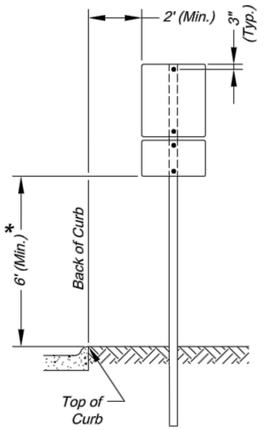
SIGN INSTALLATION WITH AUXILARY SIGN FOR NON-CURBED STREET



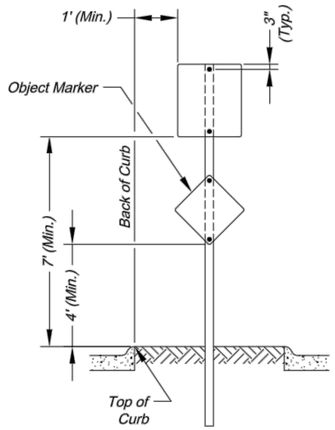
SIGN INSTALLATION WITH TWO SIGN POSTS



SIGN INSTALLATION FOR CURBED STREET



SIGN INSTALLATION WITH AUXILARY SIGN FOR CURBED STREET

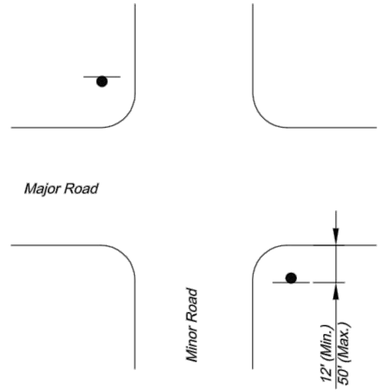


SIGN INSTALLATION FOR RAISED MEDIANS

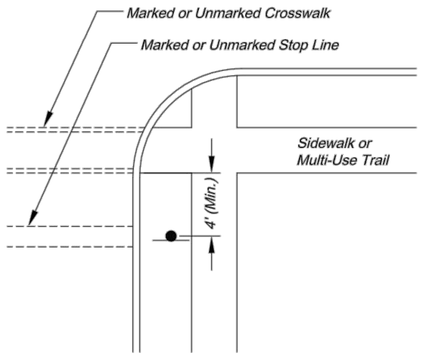
SIGN MOUNTING DETAILS

* 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.

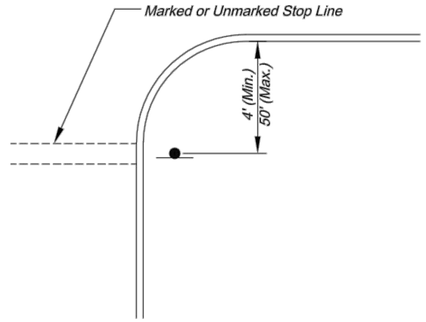
NOTE:
1. Generally, the sign mounting height should not be more than 1' greater than the minimum mounting height.



NON-CURBED INTERSECTION INSTALLATION

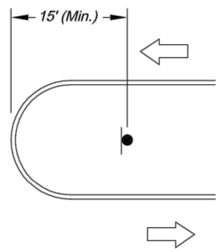


INTERSECTION WITH SIDEWALK / MULTI-USE TRAIL INSTALLATION



CURBED INTERSECTION INSTALLATION

CONTROL SIGN LOCATION



TYPICAL MEDIAN SIGN LOCATION

MEDIAN SIGN LOCATION

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

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Project:

SIGN MOUNTING DETAILS

Sheet Name: STANDARD DRAWING SN-1

Drawn By: AS
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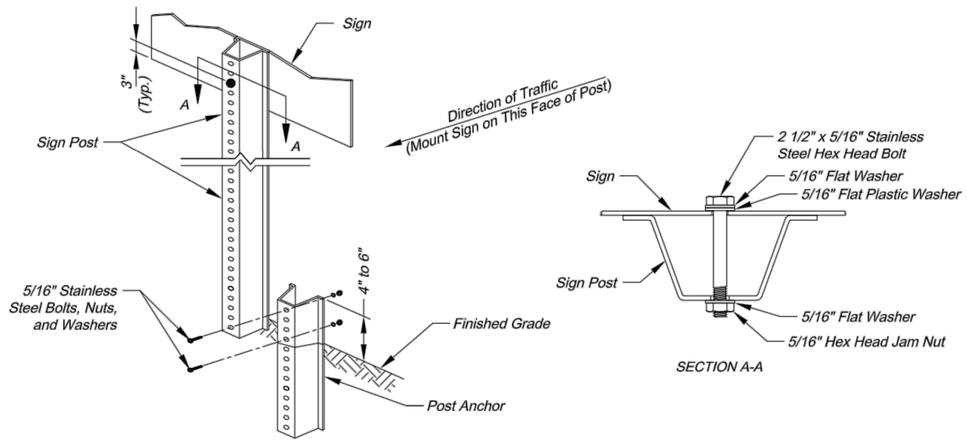


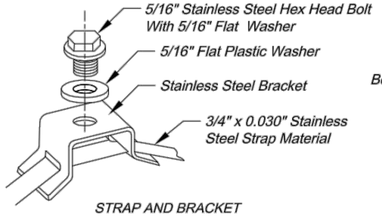
U-STEEL POST DETAILS

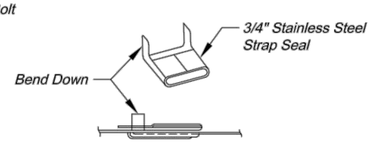
U-STEEL POST NOTES:

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.*

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.*





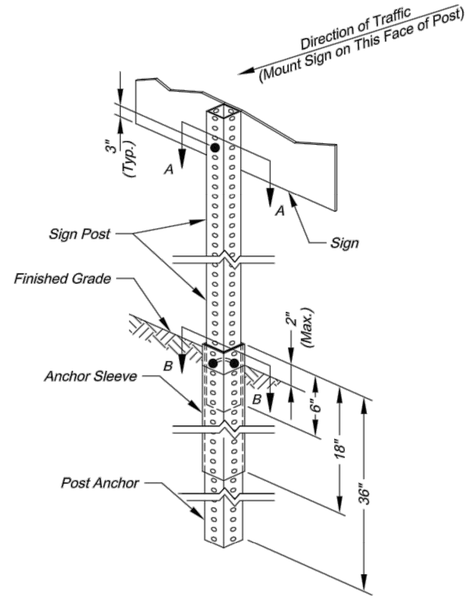
STRAP TYPE SIGN SUPPORT DETAILS

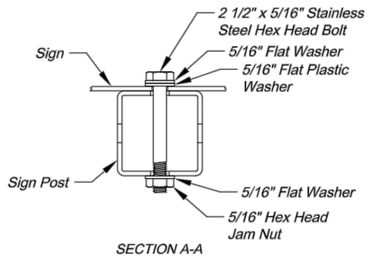
METAL POLE SIGN MOUNTING NOTES:

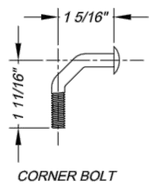
1. *Signs on metal poles shall be attached with two brackets and stainless steel bands.*
2. *Holes in sign for attachment to the mounting brackets shall be offset a minimum of 2 inches from the edge of the sign.*
3. *Holes in sign shall be located such that the sign is level.*
4. *All strap, bracket,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

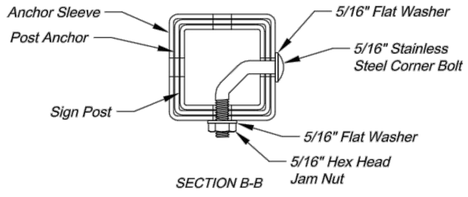
SQUARE STEEL POST INSTALLATION SEQUENCE:

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 ¼" x 2 ¼" x 36" Square Steel Post*
   - *Anchor Sleeve - 12 Ga. 2 ½" x 2 ½" 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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Project:

SIGN POST DETAILS

Sheet Name: STANDARD DRAWING SN-2

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

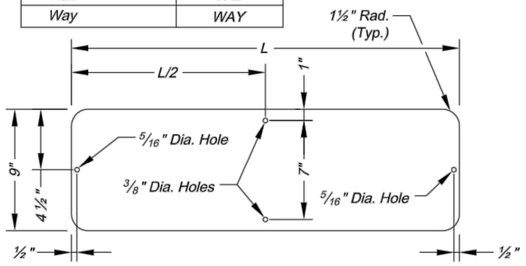
STANDARD ABBREVIATION LISTS

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

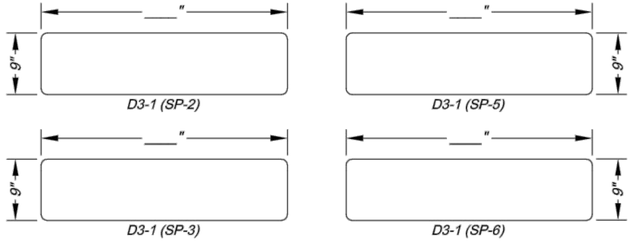
STREET NAME SIGN QUANTITIES

Sign Designation	Sign Size	Sign Area (Sq. Ft.)	Number	Quantity (Sq. Ft.)
D3-1 (SP-1)	9" x	Sq. Ft.	1	1
D3-1 (SP-2)	9" x			
D3-1 (SP-3)	9" x			
D3-1 (SP-4)	9" x			
D3-1 (SP-5)	9" x			
D3-1 (SP-6)	9" x			

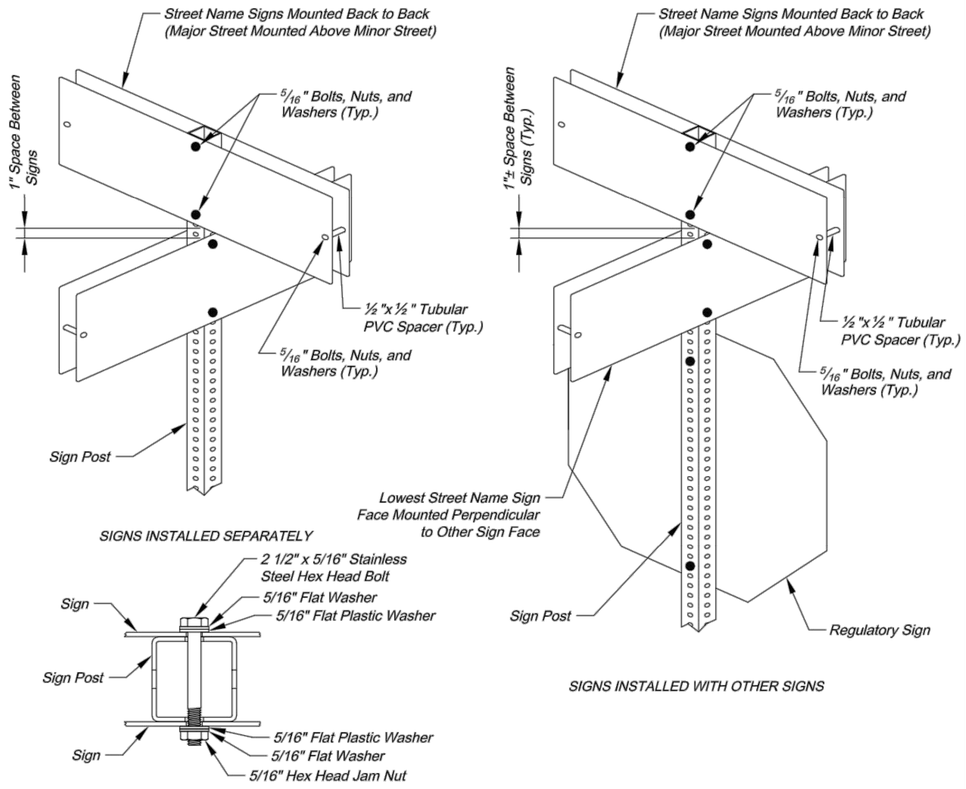


STREET NAME SIGN BLANK DETAILS

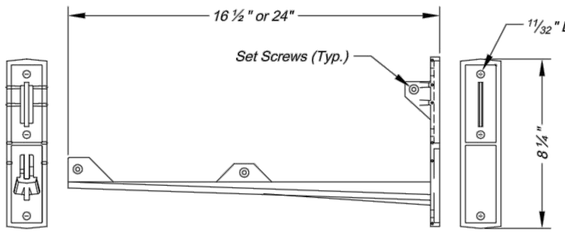
For Mounting on Square Steel Posts



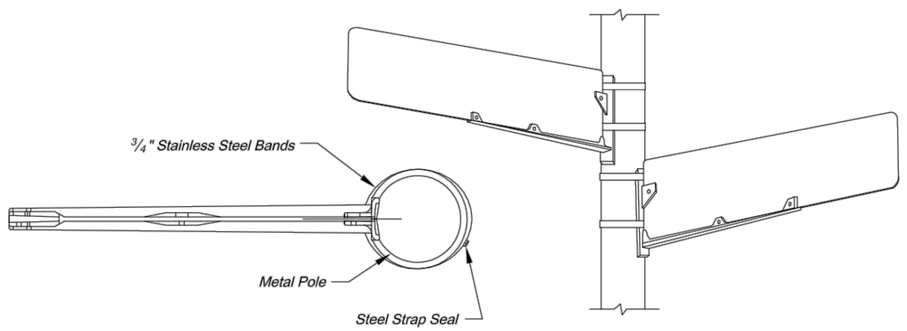
PROJECT SIGN DETAILS



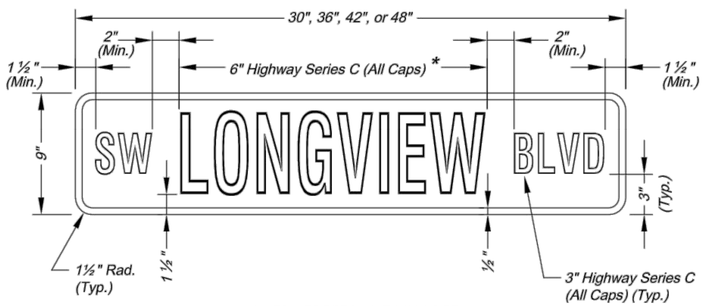
SQUARE STEEL POST MOUNTING DETAILS



NOTES:
1. Wing bracket shall be an L-shaped cantilever of T-beam rigid frame 380-3 aluminum alloy construction.
2. Mount each wing bracket to metal pole using two ¾" wide stainless steel straps.
3. One wing bracket shall be installed per each sign. Cross brackets are not allowed.

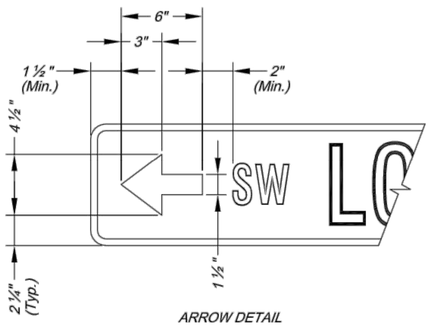


WING BRACKET MOUNTING DETAILS

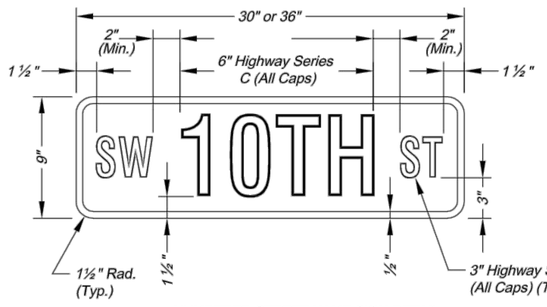


NAMED STREET NAME SIGN DETAIL

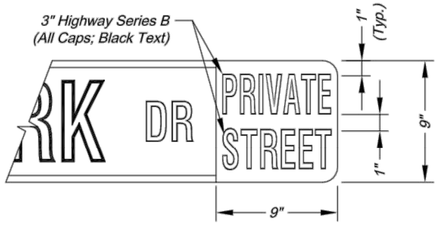
* Use Highway Series B (All Caps) in lieu of series C if necesary to fit text on a 36" sign blank.



ARROW DETAIL



NUMBERED STREET NAME SIGN DETAIL



PRIVATE STREET TAG DETAIL

NOTES:
1. For all street name signs, the legend shall be white and the background shall be green.
2. 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.
3. 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

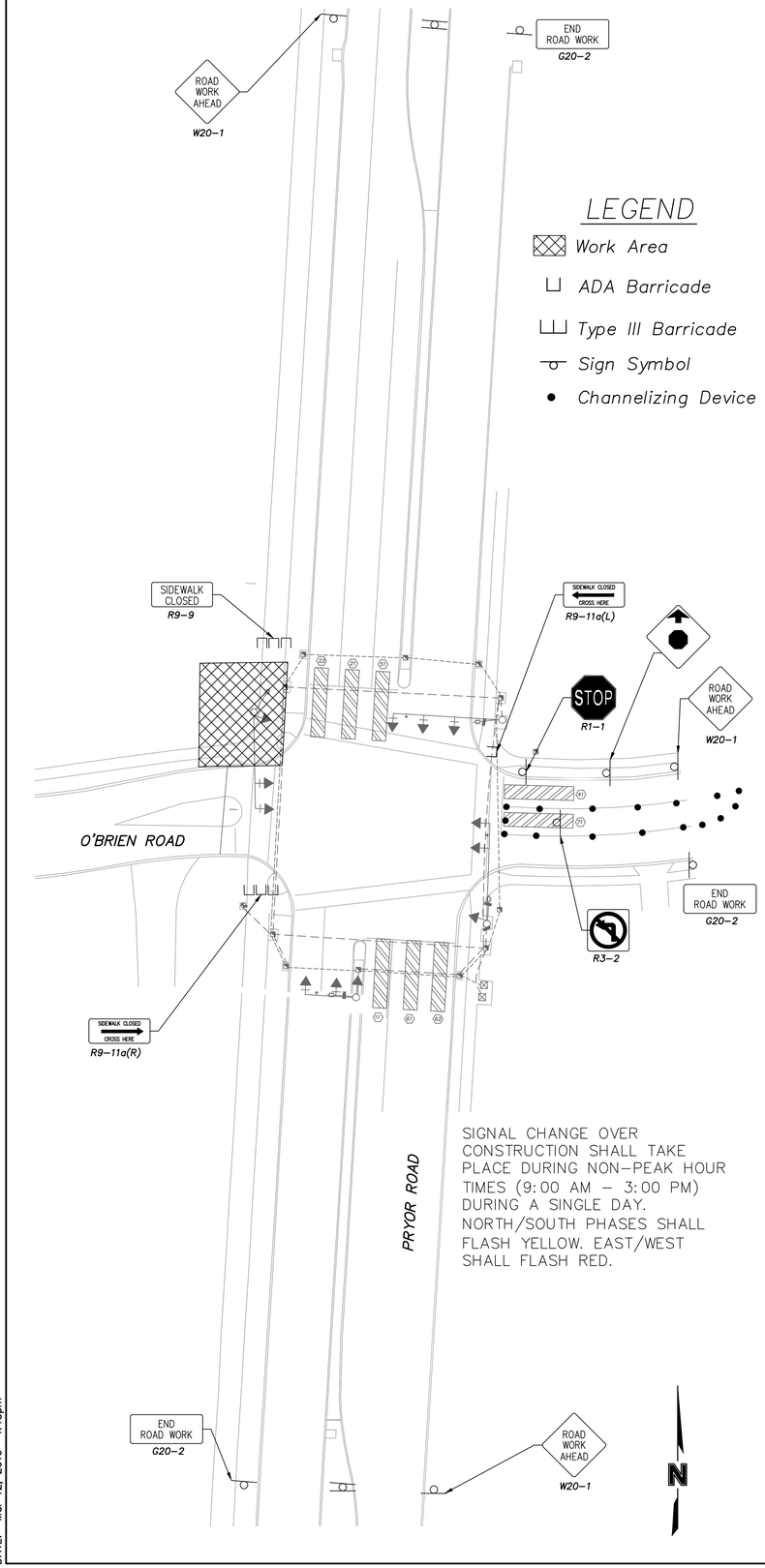
CITY OF LEE'S SUMMIT
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
220 SE GREEN STREET
LEE'S SUMMIT, MISSOURI 64063
PHONE: (816) 969-1800 FAX: (816) 969-1809

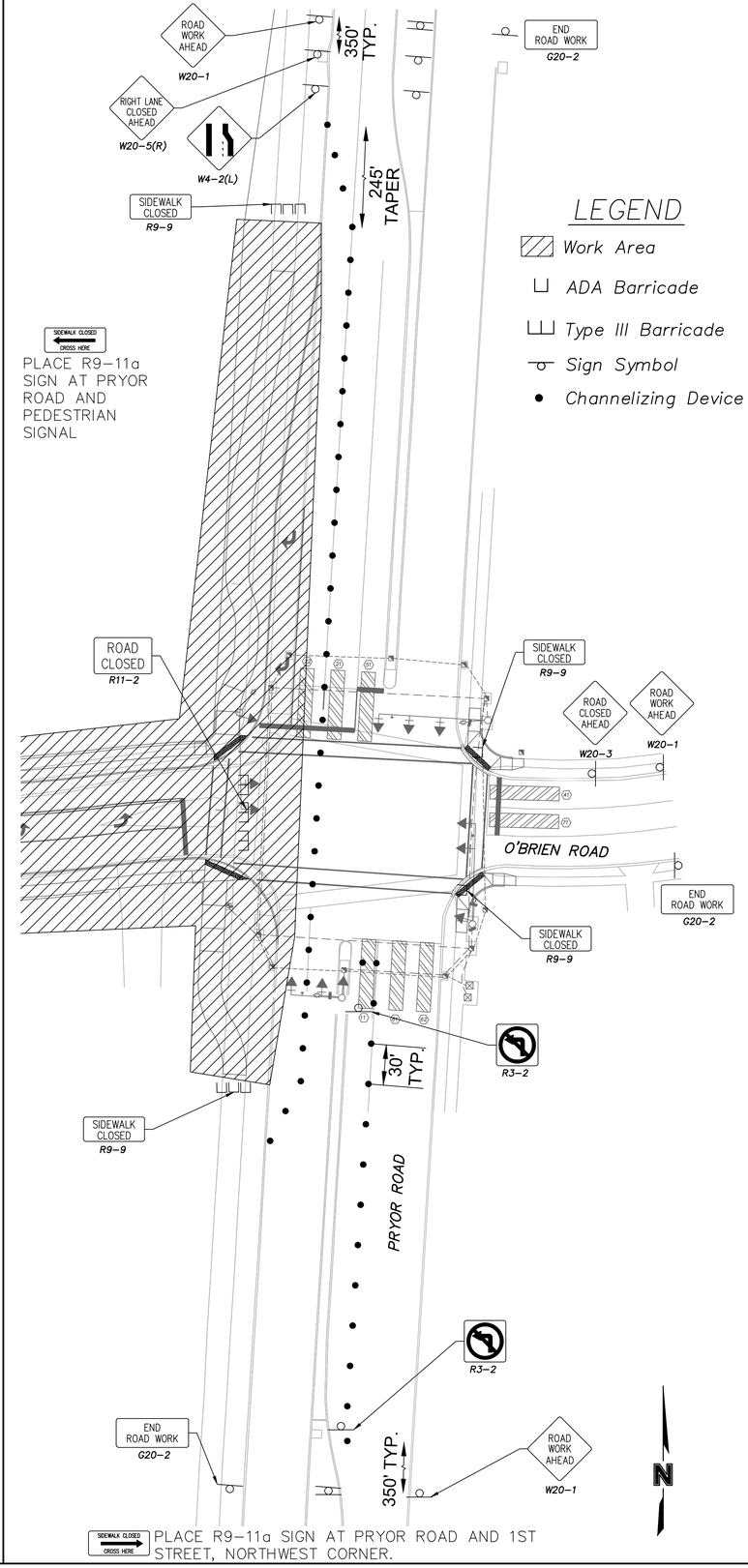
Project:

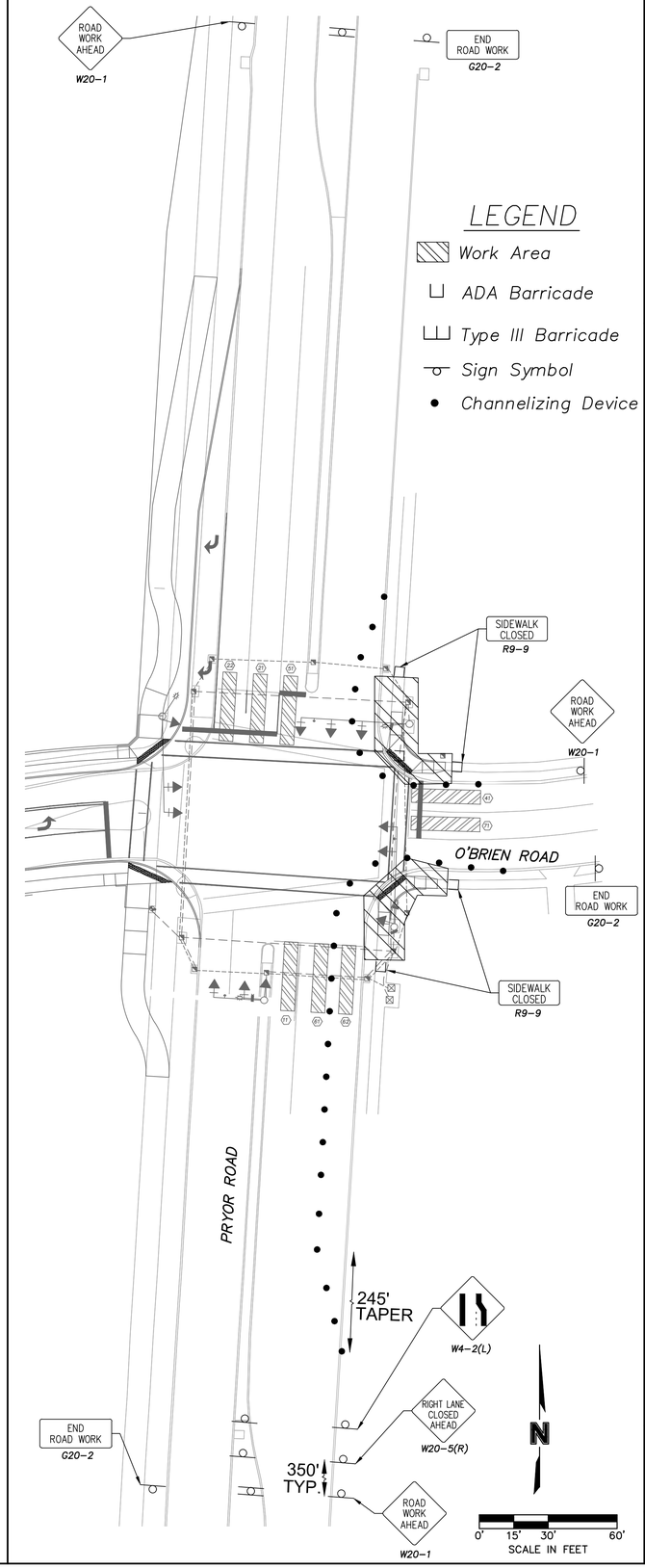
STREET NAME SIGN DETAILS

Sheet Name: STANDARD DRAWING SN-3

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







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NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
JEREMY SCOTT STREET
NUMBER PE-2017023856
PROFESSIONAL ENGINEER
5/13/19

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

TRAFFIC CONTROL PLAN
PRYOR ROAD & NW O'BRIEN ROAD

PRYOR ROAD & O'BRIEN ROAD
INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by: JRC
checked by: JSS
designed by: JSS
QA/QC by: TAF
project no.: A18:1140
date: 2019.03.12

SHEET
38

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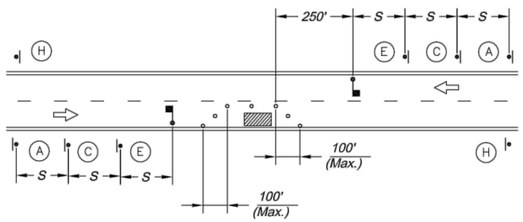
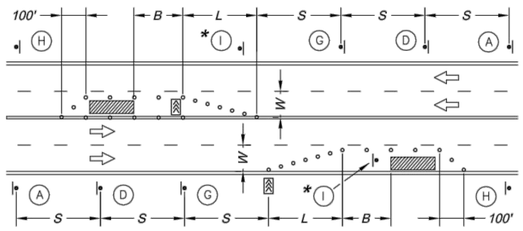
DATE: Mar 12, 2019 4:15pm

SYMBOL LEGEND

- Work Area
- Sign
- Barricade
- Direction of Travel
- Channelizer
- Arrow Panel
- Flagger

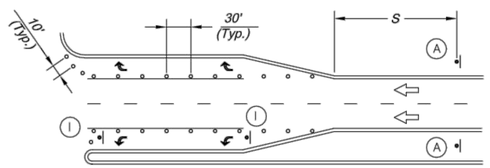


LANE CLOSURE - TWO LANE STREET



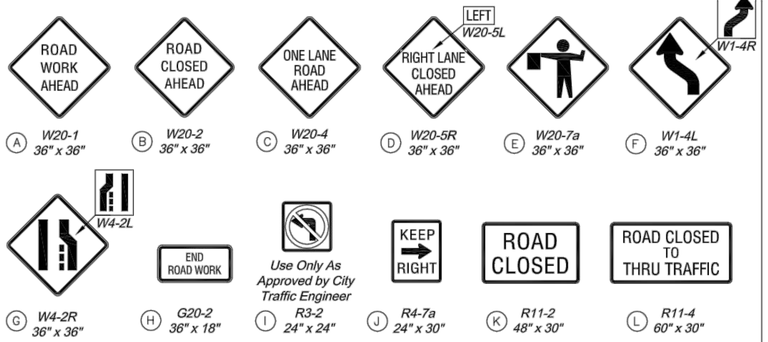
LANE CLOSURE - FOUR LANE STREET

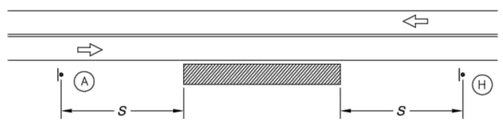
* Install Signs Every 200 Feet Throughout the Closed Lane or As Needed



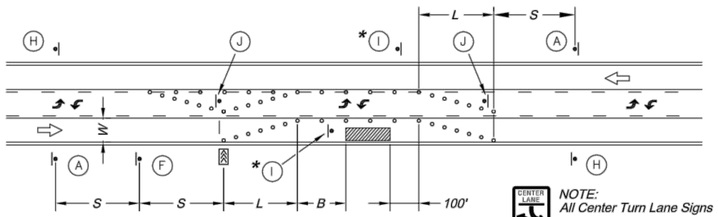
TURN LANE CLOSURE

SIGN LEGEND





TYPICAL SIGNING FOR WORK ADJACENT TO THE STREET



NOTE: All Center Turn Lane Signs (MUTCD No. R3-9B) Shall Be Covered During Lane Closure

LANE CLOSURE - THREE LANE STREET

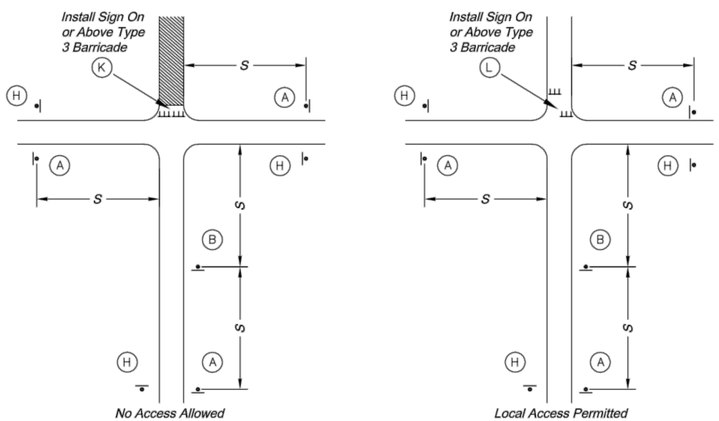
* Install Signs Every 200 Feet Throughout the Closed Lane or As Needed

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

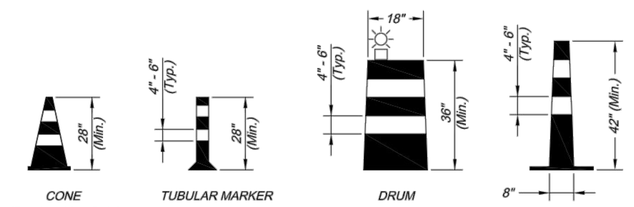
Maximum Channelizer Spacing		
Speed Limit (mph)	Within Taper (Feet)	Outside Taper (Feet)
25	25	50
30	30	60
35	35	70
40	40	80
45	45	90



TYPICAL STREET CLOSURE

GENERAL NOTES:

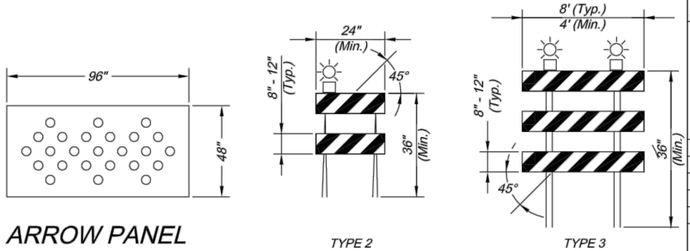
1. All signs, barricades, channelizers, markings and other traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2. All traffic control devices shall be standard in size, shape, color, and message, in good condition, and retro-reflectorized. All signs shall be securely mounted with height and lateral location as described in the MUTCD.
3. 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.
4. 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.
5. Trim-lines are the City's preferred channelizing device. Cones may not be used at nighttime.
6. Traffic control devices not in use or not applicable shall be either covered or removed from the work area.
7. 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.
8. Access shall be maintained to all driveways and side streets unless noted otherwise on the plans.
9. 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.
10. 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.
11. 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.
12. 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.
13. 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.
14. 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).
15. 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.
16. No traffic signal shall be altered or modified in any way without a plan approved by the City Traffic Engineer.
17. 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.
18. 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.
19. 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:
    - A) Employ another agency to correct deficiencies in traffic control devices and deduct the cost from the Contractor's pay estimate,
    - B) Stop the work until deficiencies are corrected,
    - C) Suspend all pay estimates until deficiencies are corrected, or
    - D) Place the Contractor in default.



CONE (Daytime Use Only) | TUBULAR MARKER | DRUM | TRIM-LINE

CHANNELIZERS

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



ARROW PANEL | TYPE 2 | TYPE 3

BARRICADES

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:

TRAFFIC CONTROL DETAILS

Sheet Name: STANDARD DRAWING TC-1

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

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STATE OF MISSOURI
JAMES PATRICK GALLAGHER
NUMBER PE-2010010469
5/17/2019
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

CROSS SECTIONS
O'BRIEN ROAD

PRYOR ROAD & O'BRIEN ROAD
INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by: JPG
checked by: JJW
designed by: JPG
QA/QC by: RBC
project no.: A18-1140
date: 2019.05.01

SHEET
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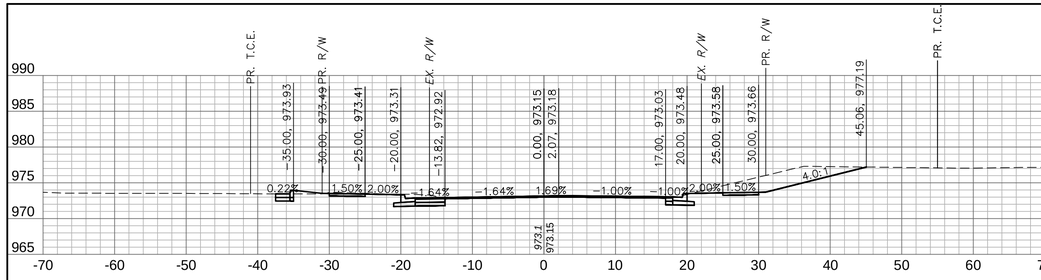

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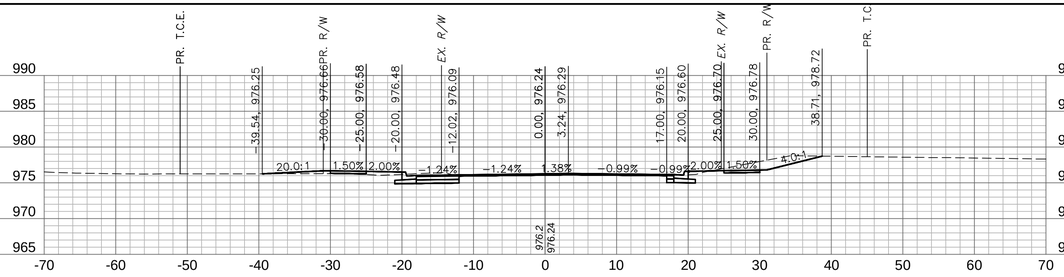

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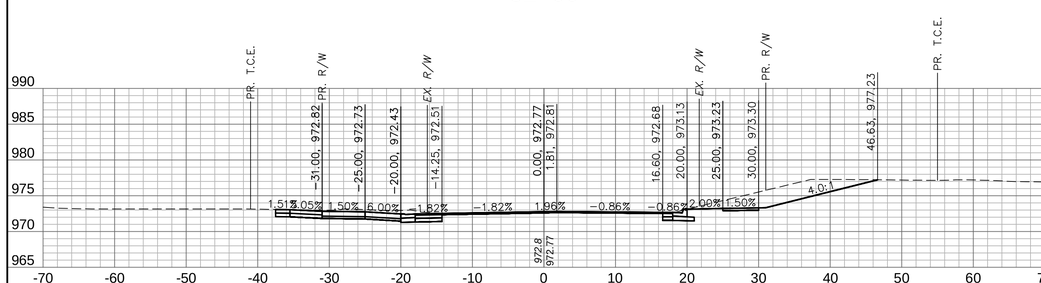

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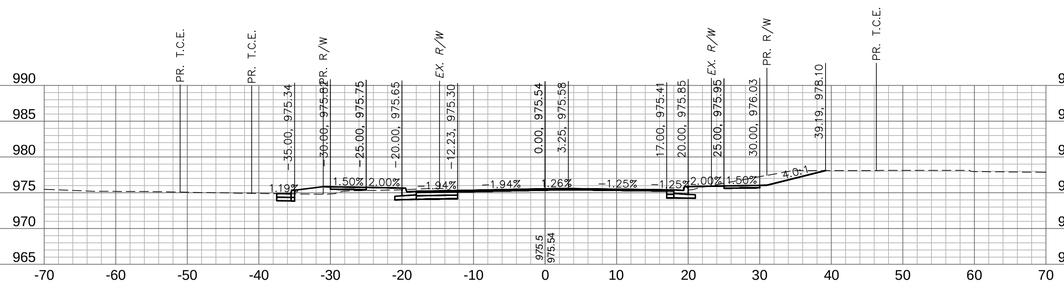

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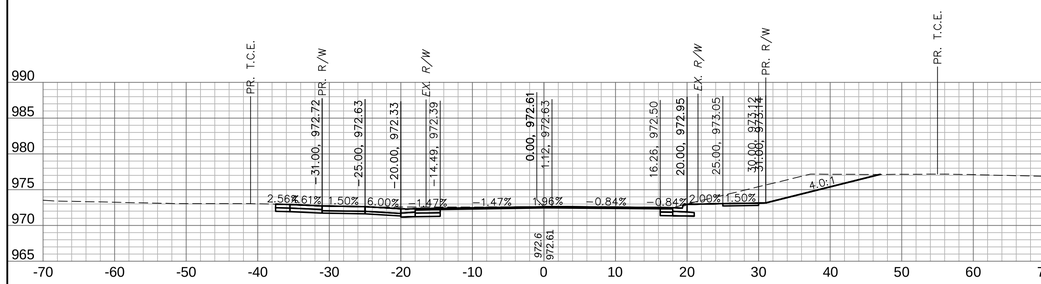

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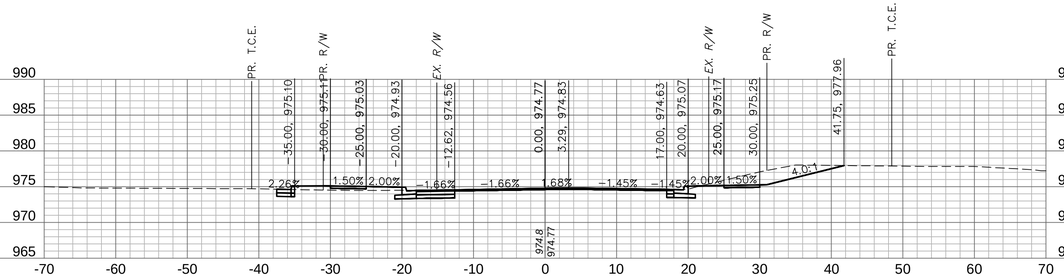

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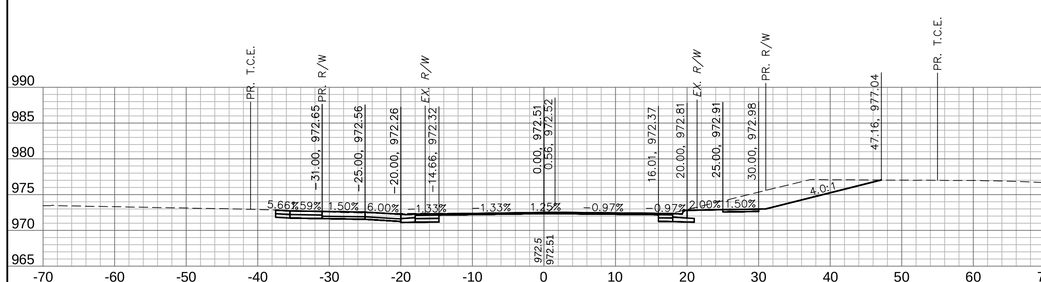

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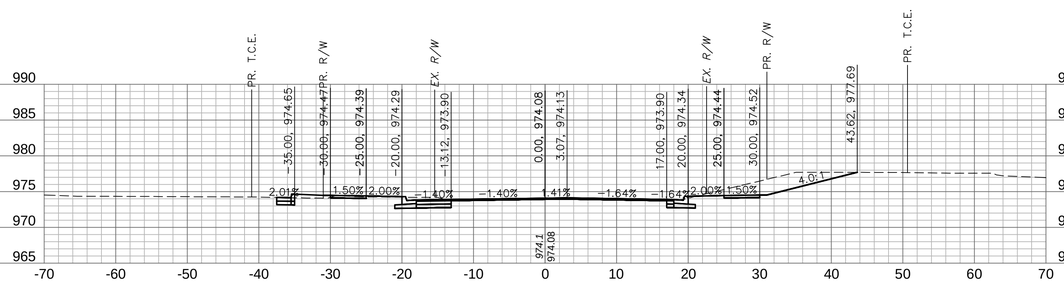

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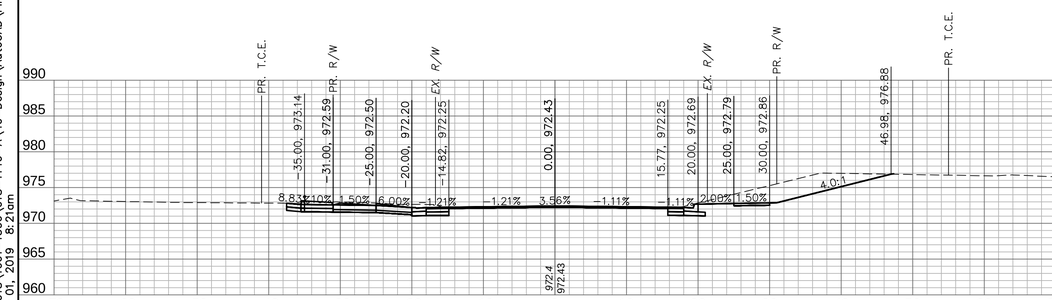

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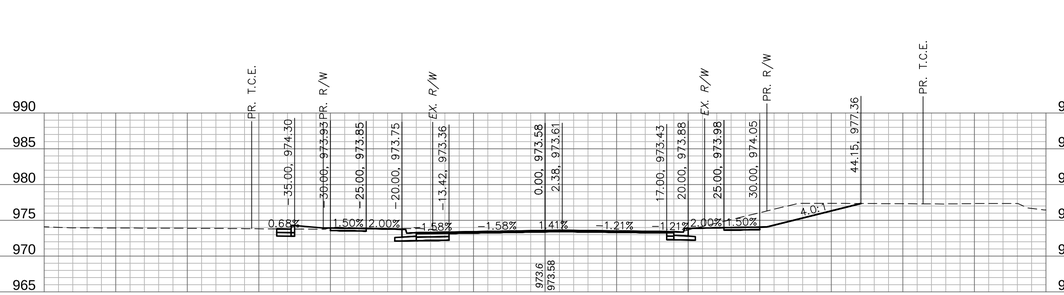

32+25

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STATE OF MISSOURI
JAMES PATRICK GALLAGHER
NUMBER PE-2010010496
5/1/2019
PROFESSIONAL ENGINEER

REVISIONS

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

CROSS SECTIONS
O'BRIEN ROAD

PRYOR ROAD & O'BRIEN ROAD
INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by: JPG
checked by: JJW
designed by: JPG
QA/QC by: RBC
project no.: A18:1140
date: 2019.05.01

SHEET
41

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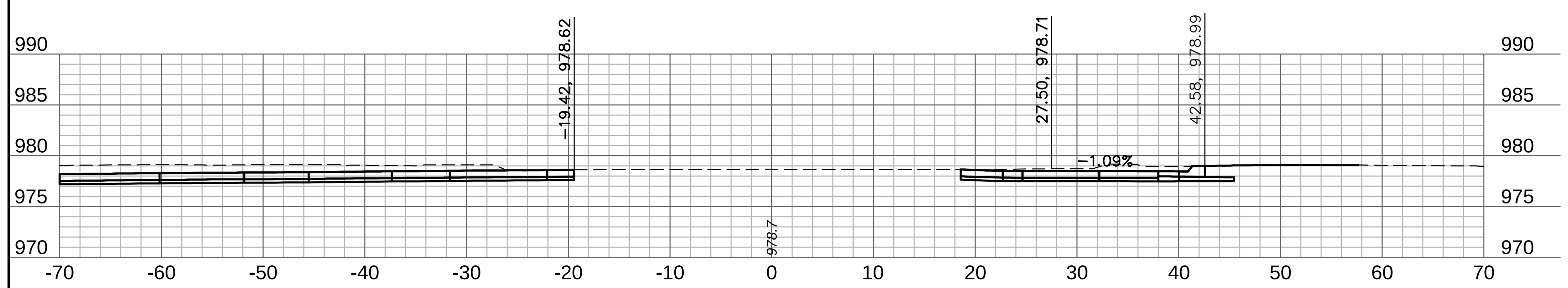

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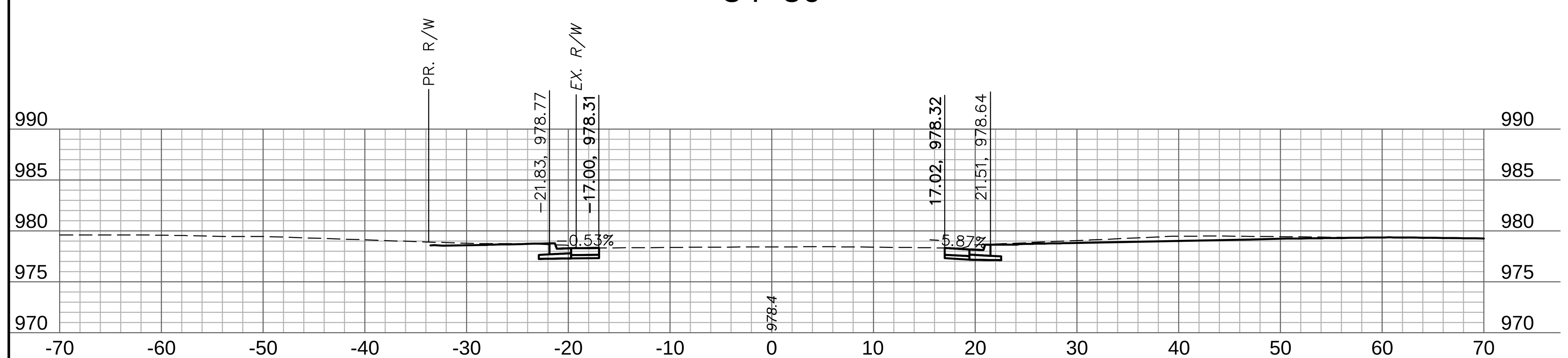

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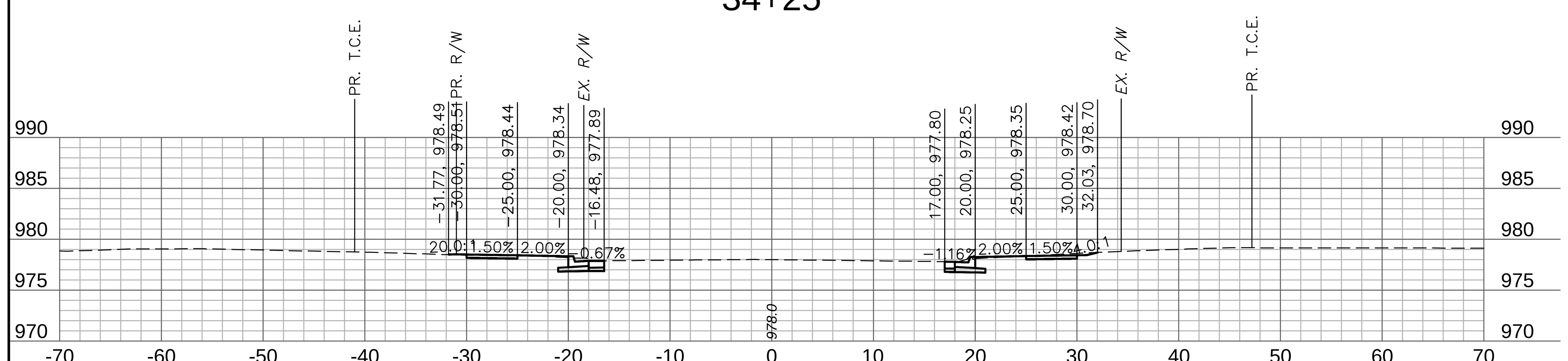

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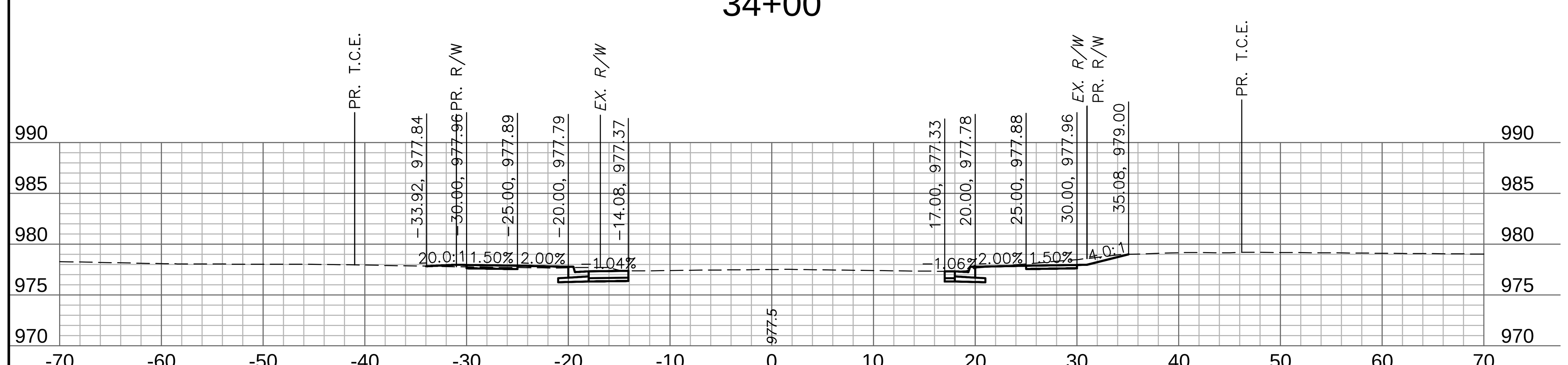

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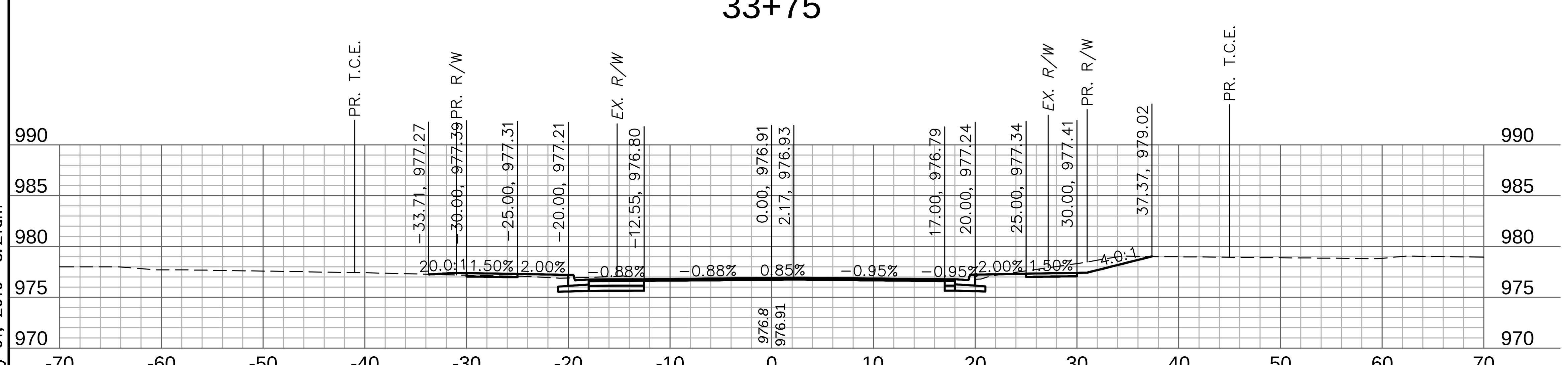

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USER: jgallagher
DATE: May 01, 2019 8:21am

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NORTH KANSAS CITY, MO 64116
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STATE OF MISSOURI
JAMES PATRICK GALLAGHER
NUMBER PE-2018010499
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

CROSS SECTIONS
O'BRIEN ROAD

PRYOR ROAD & O'BRIEN ROAD
INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by:	JPG
checked by:	JJW
designed by:	JPG
QA/QC by:	RBC
project no.:	A18-1140
date:	2019.05.01

SHEET
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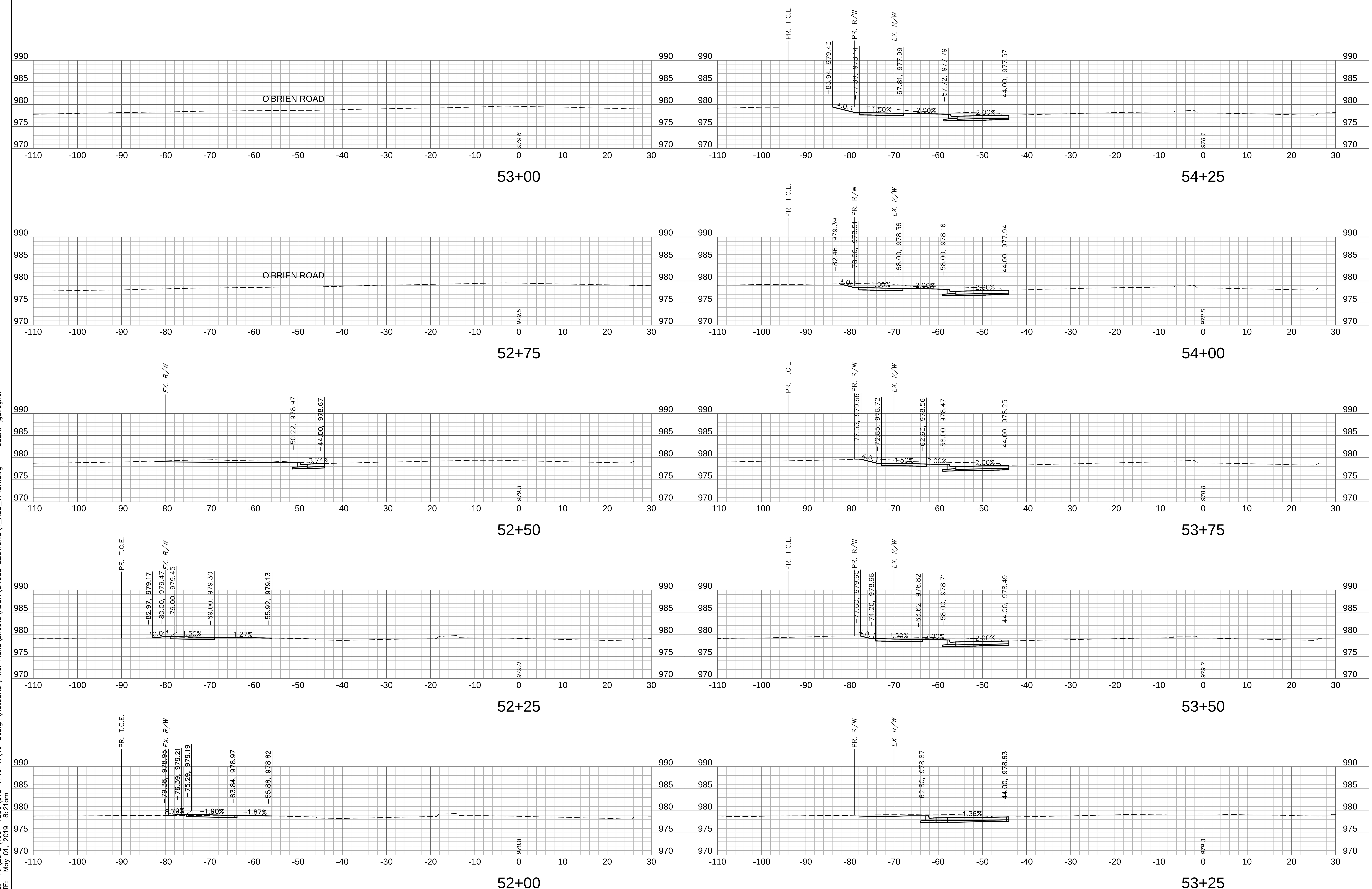

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STATE OF MISSOURI
JAMES PATRICK GALLAGHER
NUMBER PE-2018010498
PROFESSIONAL ENGINEER

REVISIONS

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

CROSS SECTIONS
PRYOR ROAD

PRYOR ROAD & O'BRIEN ROAD
INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by: JPG
checked by: JJW
designed by: JPG
QA/QC by: RBC
project no.: A18-1140
date: 2019.05.01

SHEET
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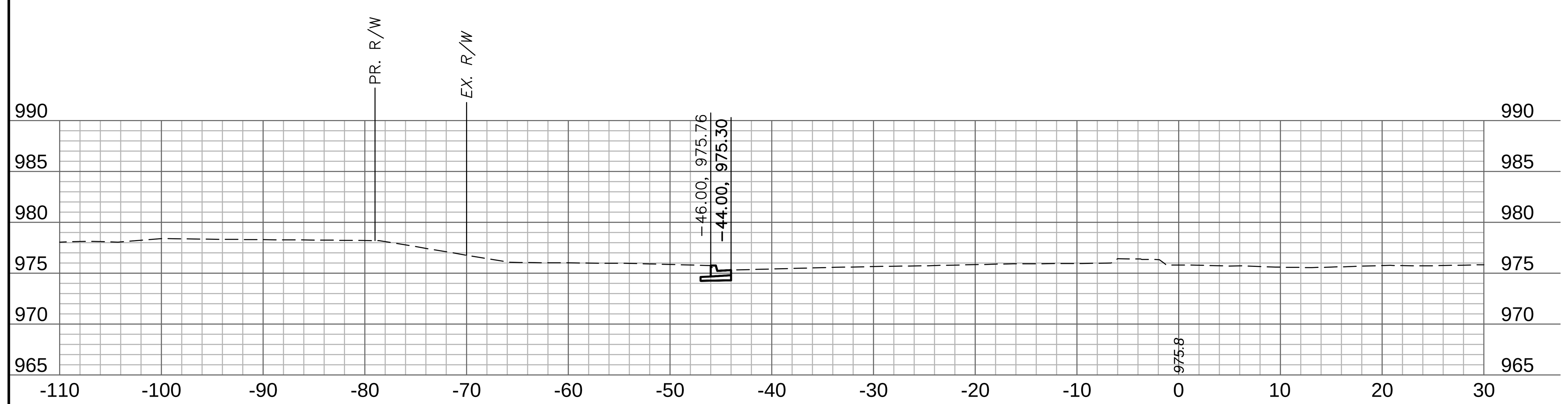

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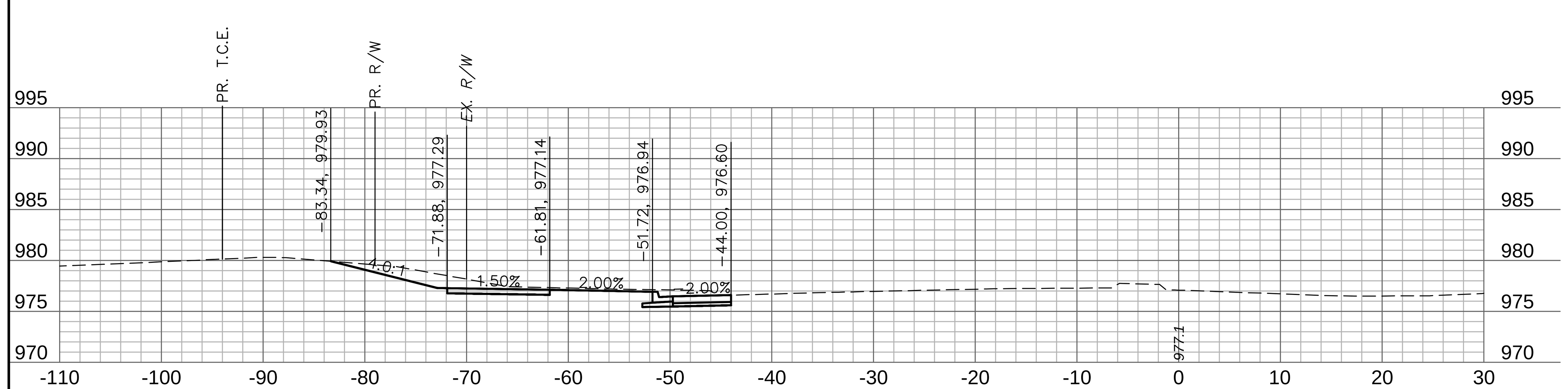

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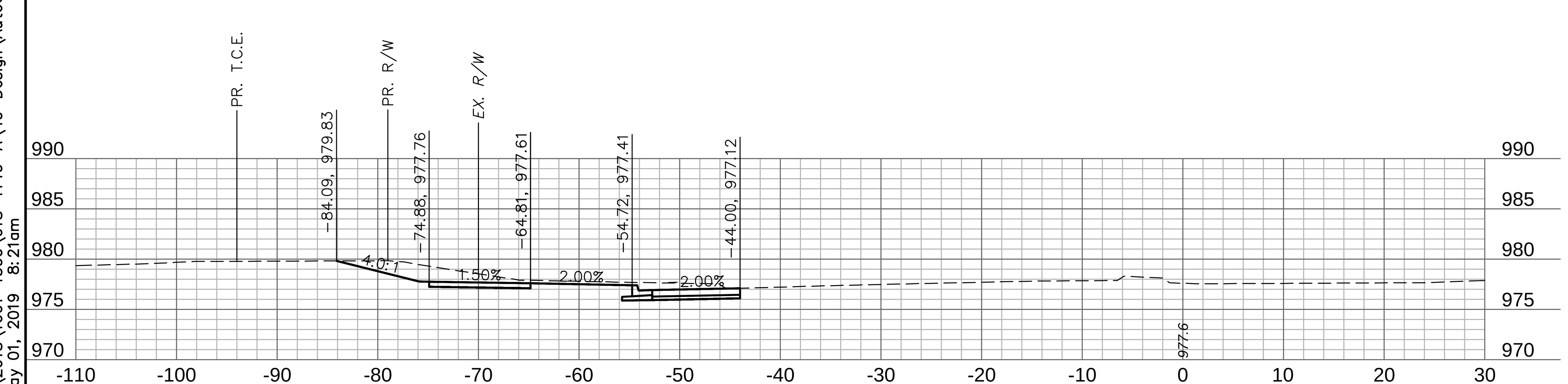

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USER: jgallagher

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1301 BURLINGTON, SUITE 100
NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
JAMES PATRICK GALLAGHER
NUMBER PE-2018010490
PROFESSIONAL ENGINEER
5/1/2019

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

CROSS SECTIONS
PRYOR ROAD

PRYOR ROAD & O'BRIEN ROAD INTERSECTION IMPROVEMENTS

LEE'S SUMMIT, MO

2019

drawn by: JPG
checked by: JJW
designed by: JPG
QA/QC by: RBC
project no.: A18-1140
date: 2019.05.01

SHEET
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