CONSTRUCTION PLANS
FOR
NW LOWENSTEIN DRIVE & NW BLACK TWIG LANE IMPROVEMENTS
STREETS OF WEST PRYOR
LEE'S SUMMIT, MISSOURI

JULY 2019

RECORD DRAWINGS

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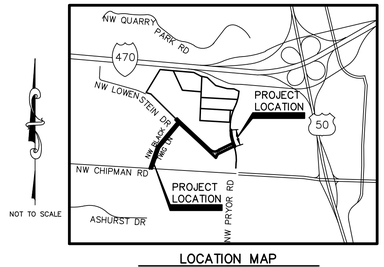
DIG – DRILL – BLAST
1–800–344–7483
(TOLL FREE)
MISSOURI ONE CALL SYSTEM, INC.

UTILITY STATEMENT:
THE UNDERGROUND UTILITIES SHOWN HEREON ARE FROM FIELD SURVEY INFORMATION OF ONE–CALL LOCATED UTILITIES, FIELD SURVEY INFORMATION OF ABOVE GROUND OBSERVABLE EVIDENCE, AND/OR THE SCALING AND PLOTTING OF EXISTING UTILITY MAPS AND DRAWINGS AVAILABLE TO THE SURVEYOR AT THE TIME OF SURVEY. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. FURTHERMORE, THE SURVEYOR DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES BY EXCAVATION UNLESS OTHERWISE NOTED ON THIS SURVEY.

CAUTION – NOTICE TO CONTRACTOR
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. **THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT LOCATIONS OF POSSIBLE CONFLICTS PRIOR TO ANY CONSTRUCTION.**

SAFETY NOTICE TO CONTRACTOR
IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

WARRANTY / DISCLAIMER
THE DESIGNS REPRESENTED IN THESE PLANS ARE IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING FOR THE DESIGN FUNCTIONS AND USES INTENDED BY THE OWNER AT THIS TIME. HOWEVER, NEITHER KAW VALLEY ENGINEERING, INC NOR ITS PERSONNEL CAN OR DO WARRANTY THESE DESIGNS OR PLANS AS CONSTRUCTED, EXCEPT IN THE SPECIFIC CASES WHERE KAW VALLEY ENGINEERING PERSONNEL INSPECT AND CONTROL THE PHYSICAL CONSTRUCTION ON A CONTEMPORARY BASIS AT THE SITE.



LOCATION MAP
CITY OF LEE'S SUMMIT, MISSOURI

	POSTED SPEED	DESIGN SPEED
NW LOWENSTEIN DRIVE	25	25
NW BLACK TWIG LANE	25	25

I HAVE REVIEWED THE AS–BUILT INFORMATION PROVIDED ON THESE RECORD DRAWINGS AND TAKE NO EXCEPTION TO THE INFORMATION PROVIDED ON JANUARY 13, 2021 BY EMERY SAPP AND SONS, INC.

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER
2-9-2021
E-21726
MISSOURI DIRECT PROFESSIONAL ENGINEER

LEON D. OSBOURN
PROFESSIONAL ENGINEER

APPROVED THIS _____ DAY OF _____, _____

_____
OWNER: MATT PENNINGTON

APPROVED THIS _____ DAY OF _____, _____

_____
CITY APPROVAL

OWNER:
STREETS OF WEST PRYOR, LLC
7200 WEST 132ND STREET
OVERLAND PARK, KS 66213
CONTACT: MATT PENNINGTON
email: matt@drakekc.com

PREPARED BY:
KAW VALLEY ENGINEERING, INC.
2319 N. JACKSON
JUNCTION CITY, KS 66441
785–762–5040
CONTACT: LEON D OSBOURN
EMAIL: ldo@kveng.com

DEVELOPER:
STREETS OF WEST PRYOR, LLC
7200 WEST 132ND STREET
OVERLAND PARK, KS 66213
AGENT: DAVID N. OLSON
email: doveolson@monarchprojectllc.com

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5 AS–BUILT

DATUM BENCHMARK:
VERTICAL DATUM IS NAVD 88 ESTABLISHED USING OPUS PROJECTS ON PROJECT CONTROL.

BENCHMARKS:
BM #1: CHISELED "SQUARE" ON TOP OF CURB POINT OF INTERSECTION OF WEST PARK PARKING LOT AT EAST DRIVE ENTRANCE. ELEV=984.97

BM #2: CHISELED "SQUARE" ON NORTHWEST CORNER AREA INLET, 25'± EAST OF CURB LINE AND ON–LINE WITH SOUTH CURB OF LOWENSTEIN DRIVE AT 90° BEND IN ROAD. ELEV=970.98

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2–9–21	AS–BUILT PLANS	LDO	JT	LDO
2	7–5–19	REVISED PER CITY COMMENTS	LDO	JT	LDO
1	5–16–19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01–11–19	INITIAL ISSUE	LDO	JT	LDO

LEON D. OSBOURN
ENGINEER
MO # 021726

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KAW VALLEY ENGINEERING

KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
TITLE SHEET

PROJ. NO. A14_7067–1
DESIGNER LDO | DRAWN BY JT/BKR
CFN 7067–1PI_TS
SHEET 1 | REV 5

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CONSTRUCTION NOTES:

1. EXCESS EXCAVATION SHALL BE DEPOSITED IN AREAS AS DIRECTED BY THE OWNER.

2. THE CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE EXISTING SURFACING ON STREETS NEEDED TO BE TRAVELED UPON BY EQUIPMENT DURING CONSTRUCTION, AND IF DAMAGED, HE SHALL REPLACE THE SURFACING AND REPAIR THE STREET TO THE ORIGINAL CONDITION. NO TYPE OF EARTH MOVING EQUIPMENT WILL BE PERMITTED TO HAUL ON OR OVER ANY EXISTING STREET.

3. THE CONTRACTOR SHALL TAKE CARE IN PROTECTING EXISTING TREES AND SHRUBS OUTSIDE OF THE PROPOSED CONSTRUCTION. CARE SHALL BE TAKEN NOT TO DISTURB LAWNS OR EXISTING STRUCTURES OUTSIDE OF THE CONSTRUCTION LIMITS.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF DUST AND DIRT RISING AND SCATTERING IN THE AIR DURING CONSTRUCTION AND SHALL PROVIDE WATER SPRINKLING OR OTHER SUITABLE METHODS OF CONTROL. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.

5. CONTRACTOR SHALL SEED ALL DISTURBED AREAS IN ACCORDANCE TO REQUIREMENTS OF TECHNICAL SPECIFICATIONS. BUILDING LOTS WILL NOT REQUIRE SEEDING BUT ALL SLOPES AND BACKFILL BEHIND CURBS SHALL BE SEEDED WITHIN RIGHT-OF-WAY LIMITS, AND ON SLOPES OF EMBANKMENTS. AREAS SHALL BE SEEDED WITHIN 28 DAYS OF FINISH GRADING OR AS DIRECTED BY OWNER.

6. JOINT SPACING FOR CONCRETE PAVEMENT SHALL BE MODIFIED TO MEET THE CONTRACTOR'S CONSTRUCTION EQUIPMENT AND METHODS OF POURING. CONTRACTOR TO DRILL AND INSERT EPOXY-COATED DOWEL BARS INTO CONSTRUCTION JOINTS AND HEADERS. CONTRACTOR TO SAW-CUT CLEAN VERTICAL EDGE AT JOINT LOCATION. SAWED CONTRACTION JOINTS SHALL BE REQUIRED ON MAXIMUM 12'-0" CENTERS.

7. CONTRACTOR SHALL SUBMIT A JOINTING PLAN AND RECEIVE APPROVAL FROM THE ENGINEER AND CITY PRIOR TO CONCRETE PAVING OPERATIONS.

8. ALL SANITARY SEWER, WATER MAINS AND STORM SEWER UNDER PAVEMENTS SHALL BE BACKFILLED WITH MODOT TYPE 5 AGGREGATE IN TRENCHES GREATER THAN 24" AND FLOWABLE IN TRENCHES LESS THAN 24".

9. CONTRACTOR SHALL INSTALL SILT FENCE TO PREVENT SEDIMENT FROM LEAVING CONSTRUCTION LIMITS. SILT FENCE IS REQUIRED AT BOTTOM OF SLOPE ON ALL EMBANKMENTS AND AT DISCHARGE POINTS OF STREETS, STORM SEWER INLETS AND PIPE END SECTIONS.

10. PIPE LENGTHS ARE CENTER TO CENTER OF STRUCTURE OR TO END OF END SECTIONS.

11. THE CONSTRUCTION AREA SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL AND ORGANIC MATTER FROM ALL AREAS TO BE OCCUPIED BY PAVING. TOPSOIL FOR REPLACEMENT ON SLOPES MAY BE STOCKPILED ON-SITE. EXCESS TOPSOIL MAY BE WASTED IN FILL SLOPES PROVIDED THAT NO TOPSOIL WILL BE WASTED WITHIN 10 FEET OF THE EDGE OF THE BUILDING OR PARKING AREA. BURNING OF TIMBER WILL NOT BE PERMITTED UNLESS APPROVAL IS OBTAINED FROM GOVERNING OFFICIALS. STRIPPING EXISTING TOPSOIL AND ORGANIC MATTER SHALL BE TO A MINIMUM DEPTH OF 6 INCHES.

12. CONTRACTOR SHALL COMPLETE ROUGH SITE AND STREET GRADING PRIOR TO INSTALLATION OF UTILITIES.

13. EROSION CONTROL SEDIMENT FENCE SHALL BE INSTALLED 1'-0" BEHIND CURB & GUTTER UPON COMPLETION OF BACKFILL OF CURB IN ALL AREAS WHERE SLOPES FROM LOT DRAIN TOWARDS CURB. UPON COMPLETION OF FINAL GRADING THE TOES OF ALL EMBANKMENTS IN EXCESS OF TWO FEET IN HEIGHT SHALL HAVE EROSION CONTROL SEDIMENT FENCE INSTALLED.

14. CUT AND FILL SECTIONS ARE TYPICAL ONLY. NEITHER ALTERNATE PAVEMENT TYPE IS SPECIFIED FOR EXCLUSIVE USE WITH CUT OR FILL SECTIONS. REFER TO SPECIFICATIONS FOR INFORMATION ON FLY ASH TREATED SUBGRADE, CRUSHED AGGREGATE BASE COURSE, AND PAVEMENT UNDERDRAINS.

15. WHERE CURB AND GUTTER IS MONOLITHIC WITH THE STREET, THE CURVE SHALL BE POURED AT THE SAME DEPTH AS THE STREET.

16. UNLESS SPECIFIED OTHERWISE, KCMMB 4K IS REQUIRED FOR ALL CONCRETE.

20. THE STANDARD SPECIFICATIONS AND DESIGN CRITERIA OF THE CITY OF LEE'S SUMMIT SHALL GOVERN THE CONSTRUCTION OF ALL PUBLIC IMPROVEMENTS FOR THIS PROJECT.

Summary of Quantities

Sanitary Sewer

Item No.	Item	Estimated Quantity	Unit
1	Connect to Existing Manhole	2	Ea.
2	8" Sewer Main	4,346	L.F.
3	Extra Depth Manhole (Less than 10')	9	Ea.
4	Extra Depth Manhole (10' to 15')	6	Ea.
5	Extra Depth Manhole (Greater than 15')	8	Ea.
6	General Conditions Profit and Misc.	1	Ea.

Storm Sewer

Item No.	Item	Estimated Quantity	Unit
1	Demo, Clearing and Grubbing	1	L.S.
2	Excavation	7,629	C.Y.
3	Embankment	7,629	C.Y.
4	Seeding	1	L.S.
5	5'x3' Curb Inlet	1	Ea.
6	5'X4' Curb Inlet	14	Ea.
7	5'x5' Curb Inlet	2	Ea.
8	6'x4' Curb Inlet	1	Ea.
9	4'x4'Junction Box	1	Ea.
10	Landscape drain	1	Ea.
11	18" RCP	461	L.F.
12	24" RCP	698	L.F.
13	30" RCP	374	L.F.
14	15" HDPE	180	L.F.
15	18" Corrugated HDPE	70	L.F.
16	15" HDPE End Section	1	Ea.
17	30" RCP End Section	2	Ea.
18	General Conditions Profit and Misc.	1	Ea.

Paving

Item No.	Item	Estimated Quantity	Unit
1	2' Curb & Gutter (CG-1)	6,796	L.F.
2	2" Asphaltic cement concrete surface	11,521	S.Y.
3	7.5" Asphaltic cement concrete base	11,521	S.Y.
4	6" MoDOT Type 5 Base	14,075	S.Y.
5	8" Concrete Entrance	1,855	S.Y.
6	4" Aggregate (Driveway)	137	S.Y.
7	Handicap Ramp	11	Ea.
8	8" Concrete Patch	15	S.Y.
9	Pavement Removal	1	L.S.
10	Concrete Sidewalk	1,830	S.Y.
11	Mulit-use trail	1,280	S.Y.
12	Wood Fence Replacement	78	L.F.
13	Modular Block Retaining Wall	128	L.F.
14	General Conditions Profit and Misc.	1	Ea.

Water Main

Item No.	Item	Estimated Quantity	Unit
1	Connect to Existing Water Main	4	Ea.
2	6" Fire Line Main	208	L.F.
3	6" Water Main	41	L.F.
4	8" Water Main	452	L.F.
5	12" Water Main	1,808	L.F.
6	1" Copper Water Service Line	164	L.F.
7	Fire Hydrant with 6" Valve	4	Ea.
8	Temporary Fire Hydrant with 8" Valve	4	Ea.
9	6" Gate Valve	1	Ea.
10	8" Gate Valve	4	Ea.
11	12" Gate Valve	2	Ea.
12	8" Butterfly Valve	1	Ea.
13	12" Butterfly Valve	3	Ea.
14	12"x8"x8" Tee	2	Ea.
15	12"x12"x8" Tee	2	Ea.
16	12"x12"x6" Tee	2	Ea.
17	Air Release Valve	1	Ea.
18	General Conditions Profit and Misc.	1	Ea.

LEGEND

- SECTION CORNER, ORIGIN UNKNOWN UNLESS OTHERWISE NOTED
- MONUMENT FOUND, ORIGIN UNCERTAIN UNLESS OTHERWISE NOTED
- (D) DESCRIBED
- (M) MEASURED
- (C) CALCULATED
- (P) PLATTED
- STREET SIGN
- UTILITY POLE
- LP UTILITY POLE W/ LIGHT
- UTILITY POLE W/TRANSFORMER
- LIGHT POLE
- DEADMAN ANCHOR
- (5) OU OVERHEAD UTILITY - # LINES
- AC AIR CONDITIONING UNIT
- ELECTRIC PEDESTAL
- E ELECTRIC METER
- E UNDERGROUND ELECTRIC LINE
- UTILITY MANHOLE
- CATV CABLE TV SIGN
- CABLE TV PEDESTAL
- GAS SIGN
- G GAS METER
- G UNDERGROUND GAS LINE
- GTS GAS CATHODIC PROTECTION STATION
- W WATER LINE
- WATER LINE GATE VALVE
- WS WATER SPIGOT
- W WATER METER
- W WELL
- FIRE HYDRANT
- S SANITARY SEWER MANHOLE
- S SANITARY SEWER LINE
- STORM SEWER MANHOLE
- TELEPHONE SIGN
- T TELEPHONE MANHOLE
- TP TELEPHONE PEDESTAL
- T UNDERGROUND TELEPHONE LINE
- SPLICE BOX
- FOC FIBER OPTIC CABLE SIGN
- FOC UNDERGROUND FIBER OPTIC CABLE
- TRAFFIC CONTROL POLE
- P PULL BOX
- FP FLAG POLE
- MB MAILBOX
- ADA HANDICAP SIGN
- HANDICAP PAINTED SYMBOL
- LEFT TURN ARROW
- STRAIGHT ARROW
- RIGHT TURN ARROW
- GP GATE POST
- FENCE POST
- WOOD FENCE
- CHAIN LINK FENCE
- BARBED WIRE FENCE
- 18" DECIDUOUS TREE W/SIZE & DRIP LINE
- 22" EVERGREEN TREE W/SIZE & DRIP LINE
- SAP SAPPLING TREE
- SHRUB
- STUMP
- TREE LINE
- SHRUB LINE
- 10 PARKING STALL COUNT
- 970 1' CONTOUR INTERVAL
- RESTRICTED ACCESS
- B/B BACK OF CURB TO BACK OF CURB
- E/E EDGE TO EDGE

5 AS-BUILT

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
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0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER
2-9-2021
E-21726
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
ENGINEER
MO # 021726

2319 N. JACKSON | P.O. BOX 1304
JUNCTION CITY, KANSAS 66441
PH. (785) 762-5060 | FAX (785) 762-7744
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KAW VALLEY ENGINEERING

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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
GENERAL NOTES

PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY JT/BKR
CFN 7067-1PI_GEN
SHEET 2 | REV 5

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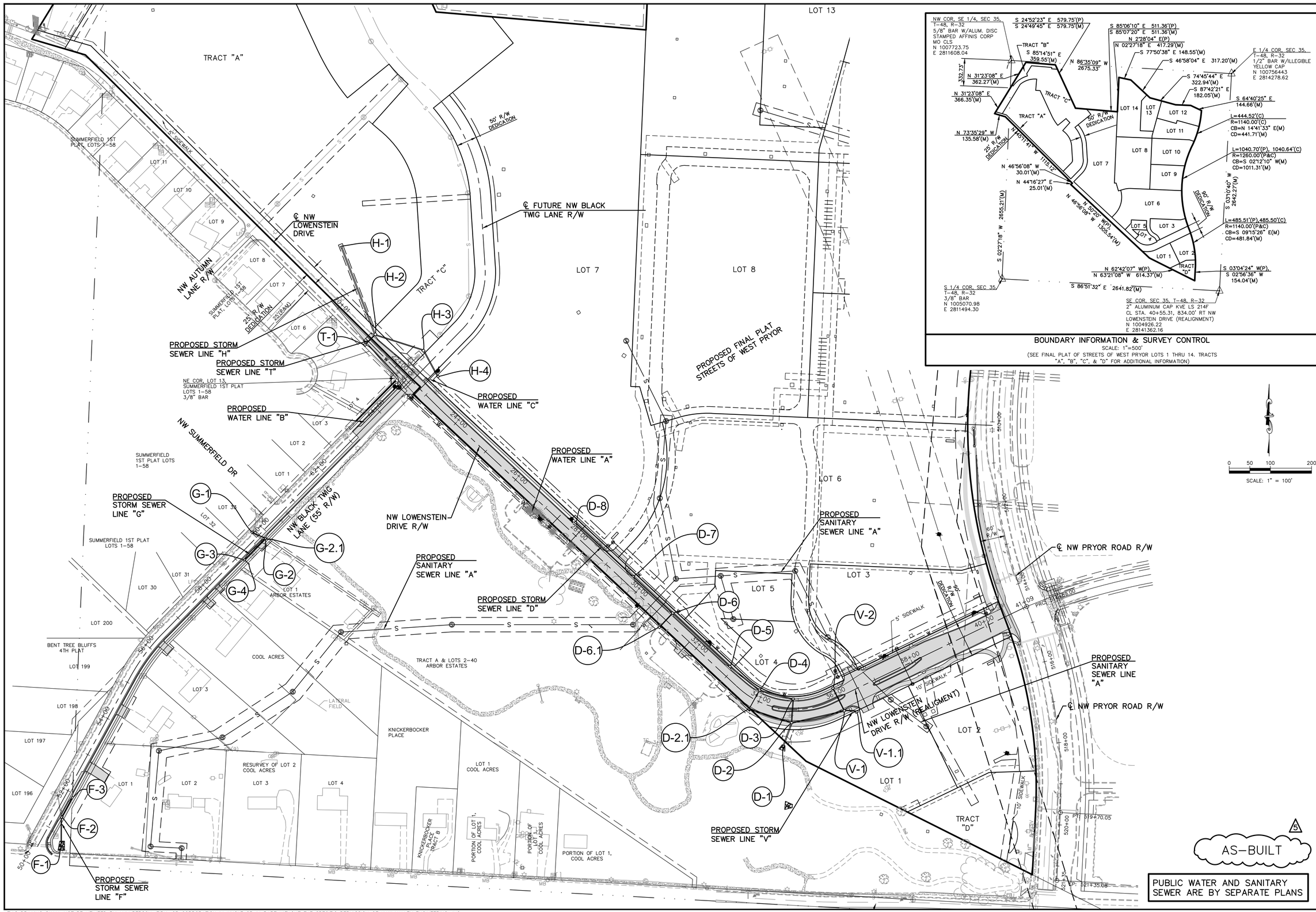

BOUNDARY INFORMATION & SURVEY CONTROL

SCALE: 1"=500'

(SEE FINAL PLAT OF STREETS OF WEST PRYOR LOTS 1 THRU 14, TRACTS "A", "B", "C", & "D" FOR ADDITIONAL INFORMATION)

REV	DATE	DESCRIPTION	DSN	DWN	CHK
			LDO	JT	LDO
				BKR	LDO
			LDO	JT	LDO
			LDO	JT	LDO
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1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
2-9-2021
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
ENGINEER
MO # 021726

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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
GENERAL LAYOUT SHEET

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT/BKR
CFN	7067-1PI_GLS
SHEET	3
REV	5

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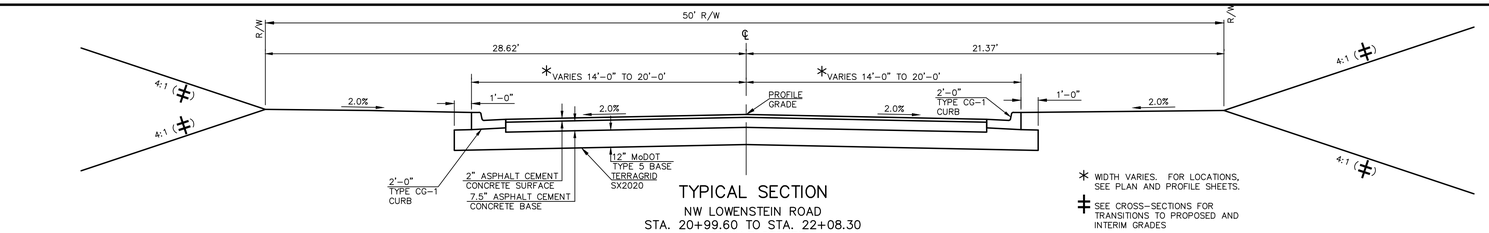
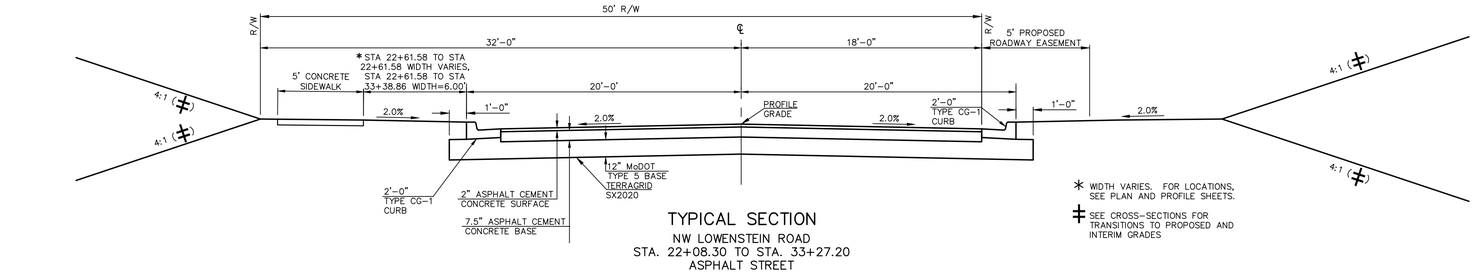


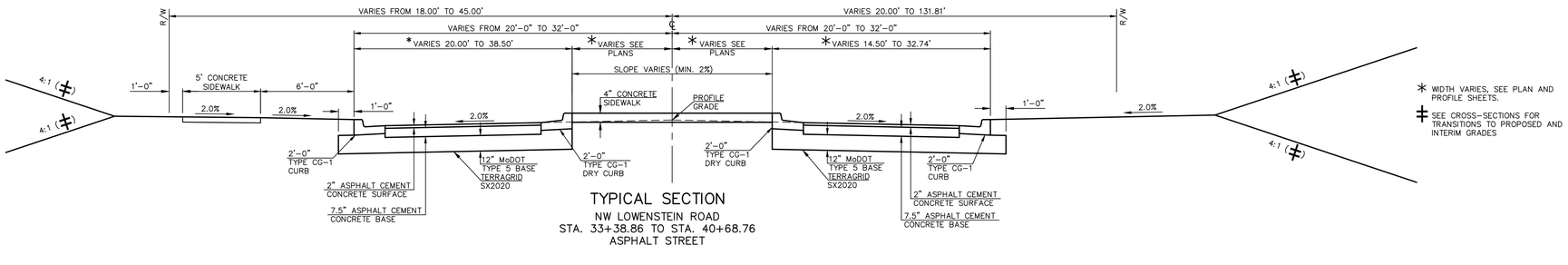
TYPICAL SECTION
NW LOWENSTEIN ROAD
STA. 20+99.60 TO STA. 22+08.30
ASPHALT STREET

* WIDTH VARIES. FOR LOCATIONS, SEE PLAN AND PROFILE SHEETS.
‡ SEE CROSS-SECTIONS FOR TRANSITIONS TO PROPOSED AND INTERIM GRADES



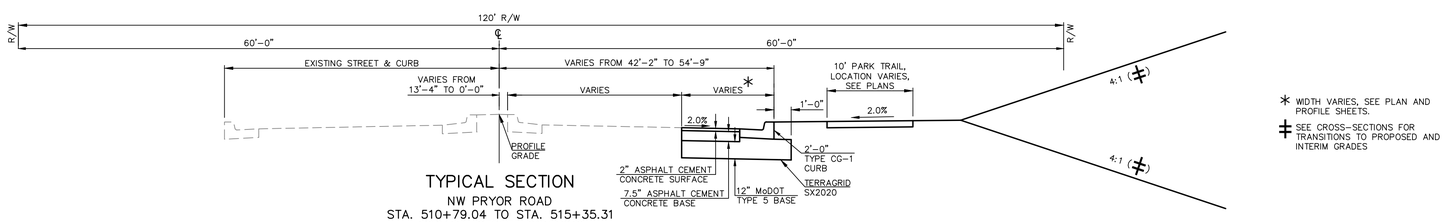
TYPICAL SECTION
NW LOWENSTEIN ROAD
STA. 22+08.30 TO STA. 33+27.20
ASPHALT STREET

* WIDTH VARIES. FOR LOCATIONS, SEE PLAN AND PROFILE SHEETS.
‡ SEE CROSS-SECTIONS FOR TRANSITIONS TO PROPOSED AND INTERIM GRADES



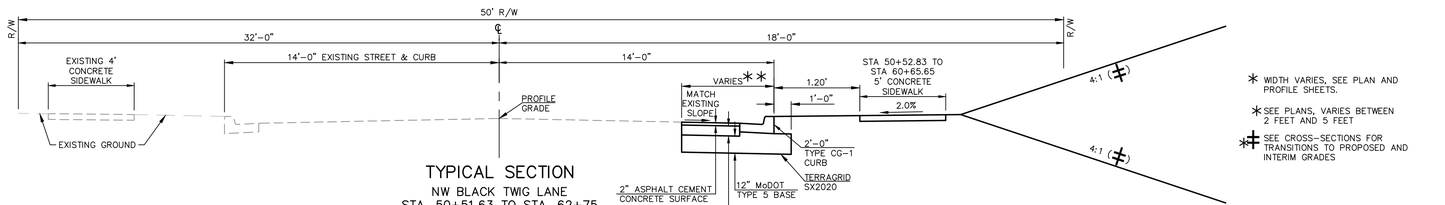
TYPICAL SECTION
NW LOWENSTEIN ROAD
STA. 33+38.86 TO STA. 40+68.76
ASPHALT STREET

* WIDTH VARIES, SEE PLAN AND PROFILE SHEETS.
‡ SEE CROSS-SECTIONS FOR TRANSITIONS TO PROPOSED AND INTERIM GRADES



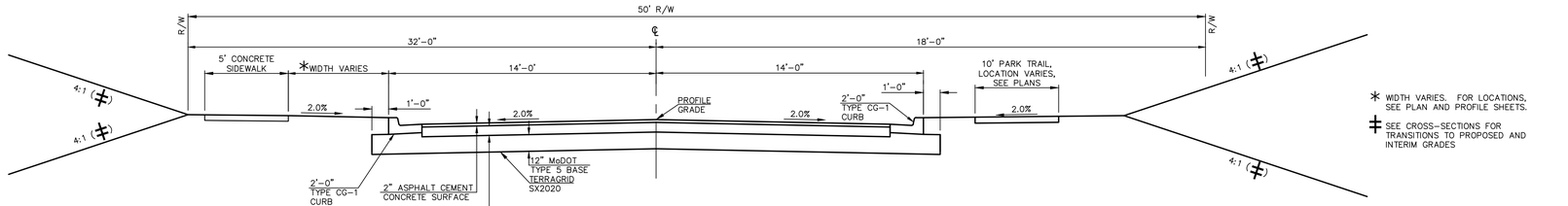
TYPICAL SECTION
NW PRYOR ROAD
STA. 510+79.04 TO STA. 515+35.31
ASPHALT STREET WIDENING

* WIDTH VARIES, SEE PLAN AND PROFILE SHEETS.
‡ SEE CROSS-SECTIONS FOR TRANSITIONS TO PROPOSED AND INTERIM GRADES



TYPICAL SECTION
NW BLACK TWIG LANE
STA. 50+51.63 TO STA. 62+75
ASPHALT STREET

* WIDTH VARIES, SEE PLAN AND PROFILE SHEETS.
*SEE PLANS, VARIES BETWEEN 2 FEET AND 5 FEET
*‡ SEE CROSS-SECTIONS FOR TRANSITIONS TO PROPOSED AND INTERIM GRADES



TYPICAL SECTION
NW BLACK TWIG LANE
STA. 62+75 TO STA. 64+96.32
ASPHALT STREET

* WIDTH VARIES. FOR LOCATIONS, SEE PLAN AND PROFILE SHEETS.
‡ SEE CROSS-SECTIONS FOR TRANSITIONS TO PROPOSED AND INTERIM GRADES

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
2	7-5-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON OSBOURN NUMBER E-21726
2-9-2021
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
ENGINEER
MO # 021726

KAW VALLEY ENGINEERING
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KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
TYPICAL SECTIONS

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT/BKR
CFN	
7067-1PI_TYP	
SHEET	REV
4	5

5 AS-BUILT

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TRACT "A"

EXISTING POWER POLE AND GUY ANCHORS TO REMAIN UNTIL FUTURE INTERSECTION CONSTRUCTION

CONTRACTOR TO COORDINATE ADJUSTMENT OF EXISTING UTILITIES AS NECESSARY

PROP. 30' UTILITY ESMT

20' ANCHOR EASEMENT DOC. NO. I-800361, BK I-1725, PG 610 9-17-87

FUTURE NW BLACK TWIG LANE

PROP. 10' BUILDING SETBACK & UTILITY ESMT

92+00

CL STA 22+48.75 NW LOWENSTEIN DRIVE=
CL STA 65+08.32 NW BLACK TWIG LANE
N 1006250.66
E 2812322.90

CL STA 22+52.07 NW LOWENSTEIN DRIVE=
CL STA 92+88.78 NW BLACK TWIG LANE
N 1006248.33
E 2812325.26

CONTRACTOR TO COORDINATE RELOCATION OF FIBER OPTIC LINE WITH UTILITY COMPANY

PROPOSED RETAINING WALL (SEE MASS GRADING PLANS)

CONSTRUCTION LIMITS

FUTURE BUILDING

STA 20+99.60
BEGIN STREET CONSTRUCTION
N 1006355.77
E 2812217.08

STA 21+09.55, 15.50' LT
CONSTRUCT 5'x5' CURB INLET
SEE CURB INLET DETAIL

10' ELECTRIC LINE EASEMENT DOC. NO. I-800361, BK I-1725, PG 610 RECORDED: 9-17-1987

PROPOSED 5' CONCRETE SIDEWALK

PROP. 20' BUILDING SETBACK

STA. 21+81.69
O/S 18.38' LT.

STA 22+73.39, 20.00' LT
INSTALL SIDEWALK RAMP

Δ=1°44'27"
R=980.00'

9.00'

LOT 7

Δ=4°37'13"
R=500.00'

STA. 22+21.97
O/S 20.00' LT.

STA. 23+42.89
O/S 20.00' LT.

PC: 23+50.48

PT: 23+65.68

STA. 23+73.27
O/S 20.00' LT.

PROP. UTILITY ESMT

21.69

N 45°11'41" W 152.47'

N 45°11'41" W 149.15'

50' R/W

14.00'

14.00'

22.78

93.32'

65+00

23+00

S 45°11'41" E 98.41'

CURVE #1

24+00

S 46°56'08" E 973.18'

25+00

26+00

27+00

PROPOSED 32' R/W

20.00'

PROPOSED 18' R/W

20.00'

℄ NW LOWENSTEIN DRIVE IMPROVEMENTS

Δ=4°04'57"
R=701.00'

STA. 23+42.95
O/S 20.47' RT.

STA 21+09.77, 15.50' RT
CONSTRUCT 5'x4' CURB INLET
SEE CURB INLET DETAIL

WOOD FENCE

PROP. TEMP. GRADING ESMT

STA 21+67.18, 15.06' RT TO
STA 21+77.19, 15.47' RT
BEGIN TRANSITION OF STANDARD CURB HEIGHT TO VARIABLE CURB HEIGHT. VARIABLE CURB HEIGHT TO END AT RAMP

REMOVE FIRE HYDRANT, VALVE AND WATER LINE TO LIMITS SHOWN ON WATER LINE PLANS

STA. 22+93.01
O/S 20.21' RT.

PROP. 5' ROADWAY ESMT

PROP. 15' UTILITY ESMT

STA. 22+88.97
O/S 20.04' RT.

CONSTRUCTION LIMITS

TRACT A & LOTS 2-40 ARBOR ESTATES

STA 26+73.09, 40.00' RT
CONSTRUCT ENTRANCE
W=28.0'
SEE DRIVEWAY WITH BUFFER DETAIL

CONTRACTOR TO COORDINATE ADJUSTMENT OF EXISTING UTILITIES AS NECESSARY

LOT 5
OWNER: MICHAEL & CARLA CIACCIO

STA: 21+77.19
OFF: 15.47'R
TC=985.78
FL=984.81

STA: 22+15.73
OFF: 17.05'R
TC=987.87
FL=986.90

RELOCATE FENCE, REPLACE 21.7 LF WOOD FENCE, MATCH EXISTING.

LOT 4
OWNER: KEVIN I & PATRICIA M SNOW

28' B/B

NW BLACK TWIG LANE (55' R/W)
PUBLIC - ASPHALT STREET

64+00

℄ CURVE DATA
CURVE #1
Δ=01°44'27"
R=500.00'
T=7.60'
L=15.19'
CB=S 46°03'54" E
CD=15.19'

ASPHALT

SCALE: 1" = 20'

SCALE: 1" = 5'

PUBLIC WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

AS-BUILT

550' VC
HIGH PT STA=24+75.42
HIGH PT ELEV=993.93
PVI STA=24+00.65
PVI ELEV=1000.84
K=50.67'
AD=-10.85%

EXISTING GROUND

-3.95%

FINISHED PROFILE GRADE

STA. 23+01.14
APPROX LOCATION
EXISTING GAS MAIN
DEPTH UNKNOWN

STA = 20+99.60
ELEV = 980.06

BVCS: 21+25.65
BVCE: 981.86

6.46%

6.90%

STA. 21+09.66
PROPOSED STORM SEWER LINE "T"
ELEV=975.58

STA. 22+22.11
APPROX LOCATION
EXISTING TELEPHONE LINE
DEPTH UNKNOWN

STA. 22+38.25
APPROX LOCATION
EXISTING 8" WATER LINE
DEPTH UNKNOWN

+52.07
NW BLACK TWIG LANE
℄
FUTURE NW BLACK TWIG LANE

STA. 22+80.07
PROPOSED WATER LINE "C"
ELEV=980.62

978.5
980.1 980.09
981.8 981.81
983.5 983.48
985.3 985.02
987.3 986.44
989.7 987.74
992.1 988.92
994.3 989.97
996.0 990.89
996.9 991.70
997.8 992.38
998.7 992.93
999.2 993.37
999.5 993.68
999.1 993.87
998.5 993.93
997.7 993.87
996.9 993.69
996.0 993.38
995.1 992.95
994.2 992.40
993.1 991.72
991.8 990.92

20+75 21+00 22+00 23+00 24+00 25+00 26+00 26+50

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5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
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3	7-25-19	REVISED PER CITY COMMENT	LDO	BKR	LDO
2	7-5-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
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KAW VALLEY ENGINEERING

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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
NW LOWENSTEIN DRIVE - PLAN & PROFILE

PROJ. NO.	A14_7067-1	
DESIGNER	LDO	DRAWN BY JT/BKR
CFN	7067-1PI_STPP	
SHEET	5	REV 5

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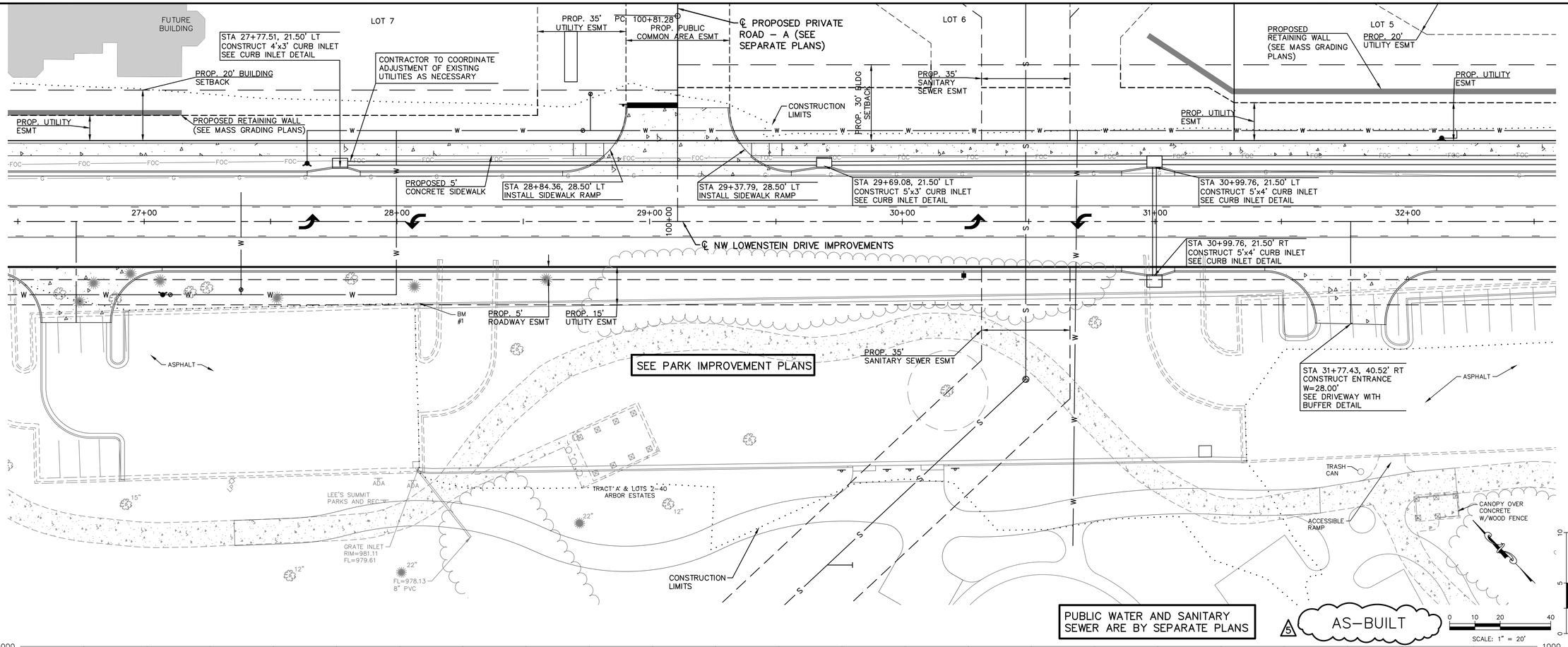

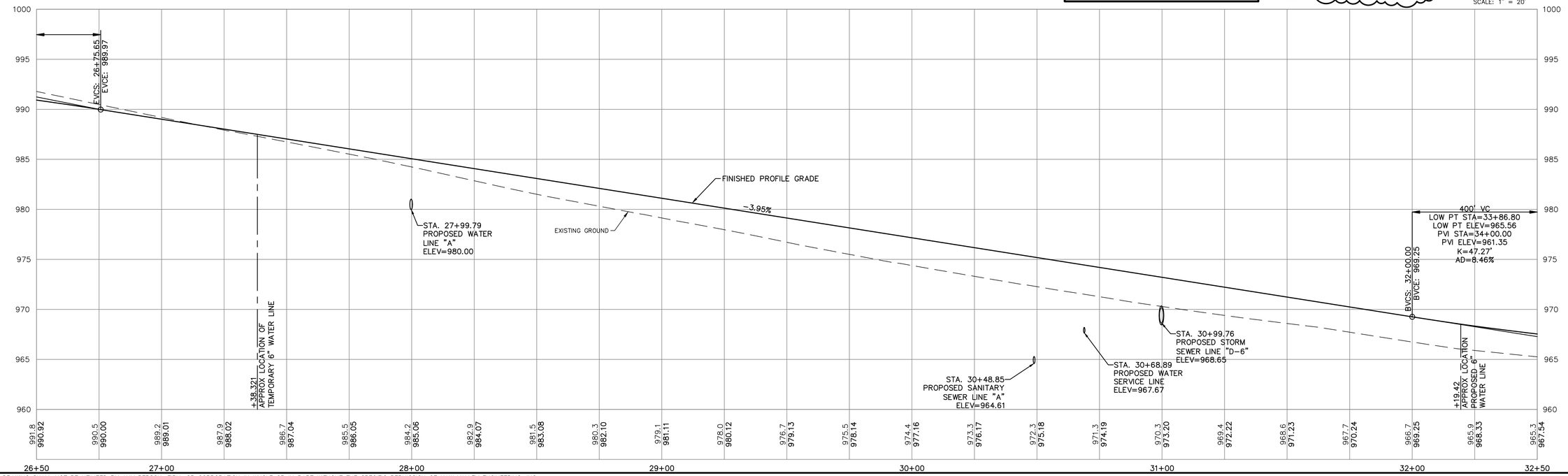

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
2	7-5-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
NW LOWENSTEIN DRIVE - PLAN & PROFILE

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT/BKR
CFN	
7067-1PI_STPP	
SHEET	REV
6	5

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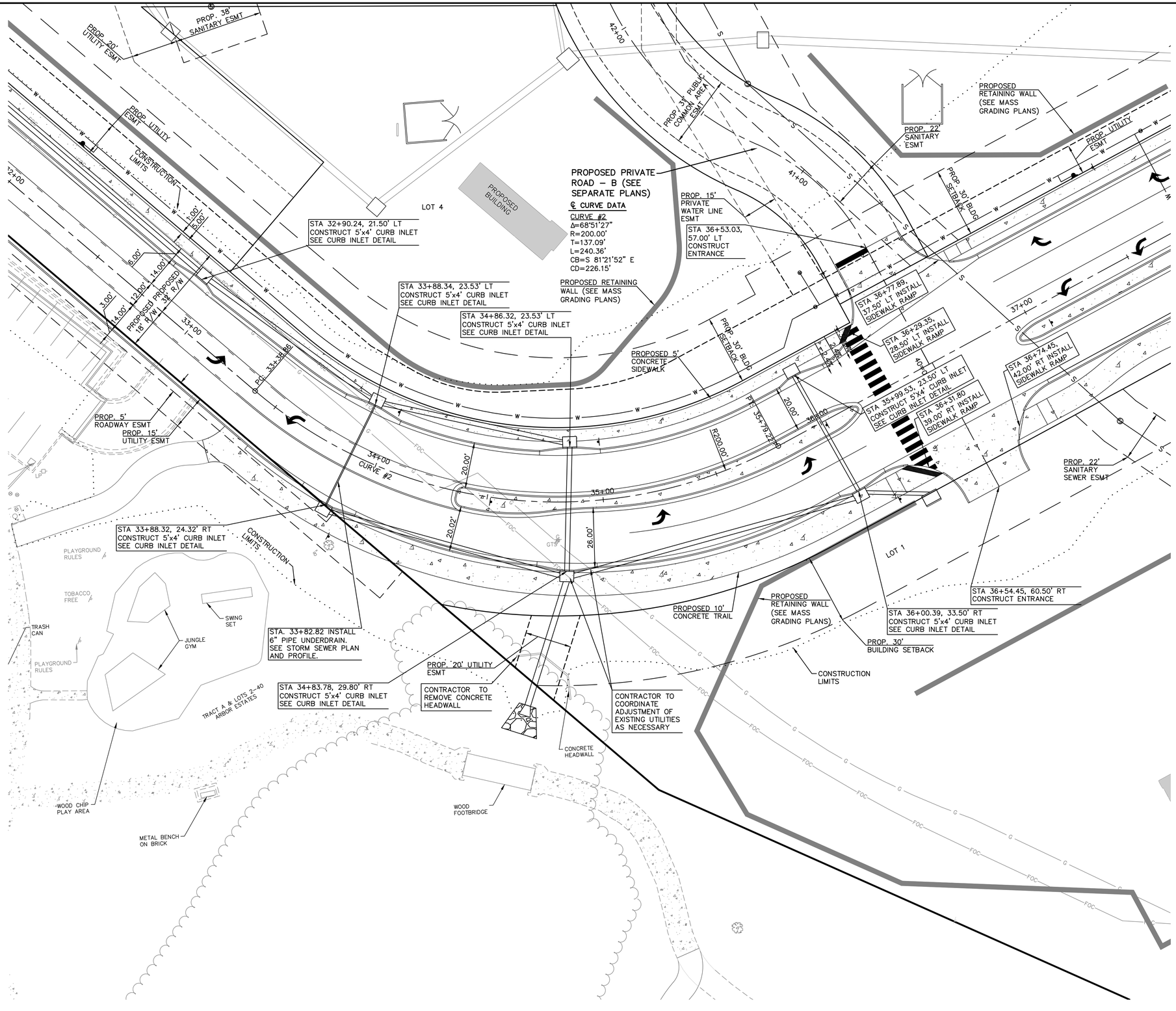

PUBLIC WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
3	7-25-19	REVISED PER CITY COMMENT	LDO	BKR	LDO
2	7-5-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
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2-9-2021
REGISTERED PROFESSIONAL ENGINEER

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MO # 021726

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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
NW LOWENSTEIN DRIVE - PLAN

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT/BKR
CFN	7067-1PI_STPP
SHEET	7
REV	5

5 AS-BUILT

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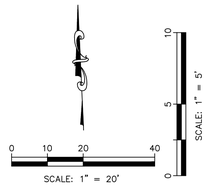
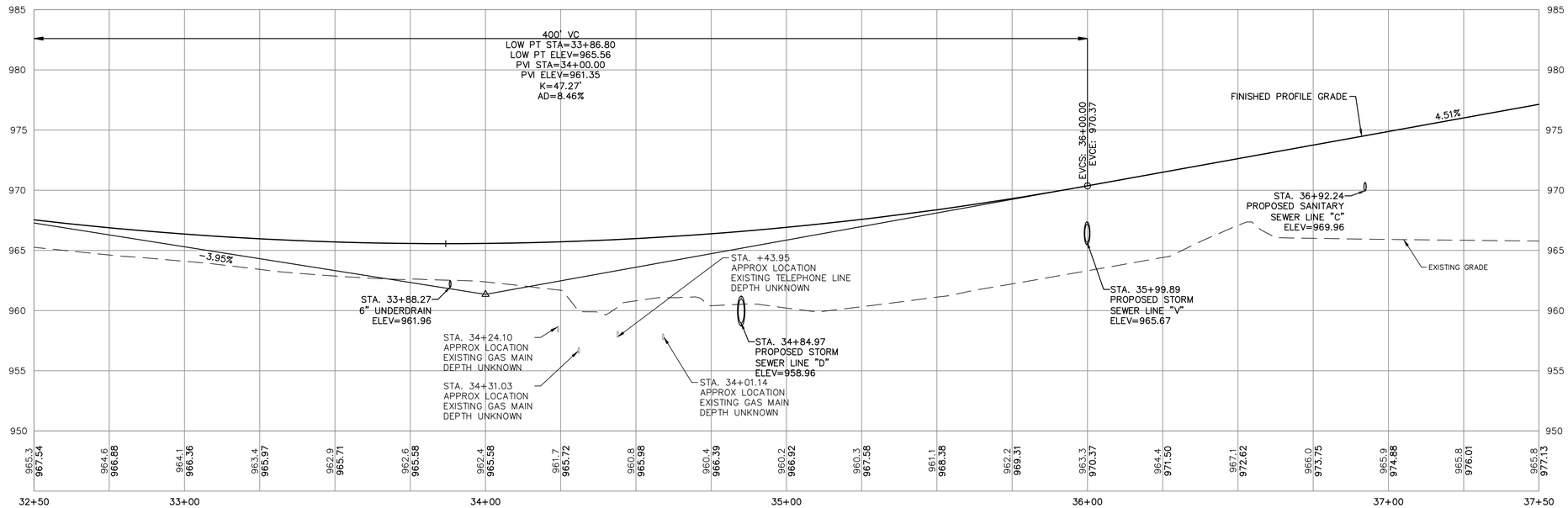


PUBLIC WATER AND SANITARY SEWER ARE BY SEPARATE PLANS



5
AS-BUILT

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

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NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
NW LOWENSTEIN DRIVE - PROFILE

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT/BKR
CFN	
7067-1PI_STPP	
SHEET	REV.
8	5

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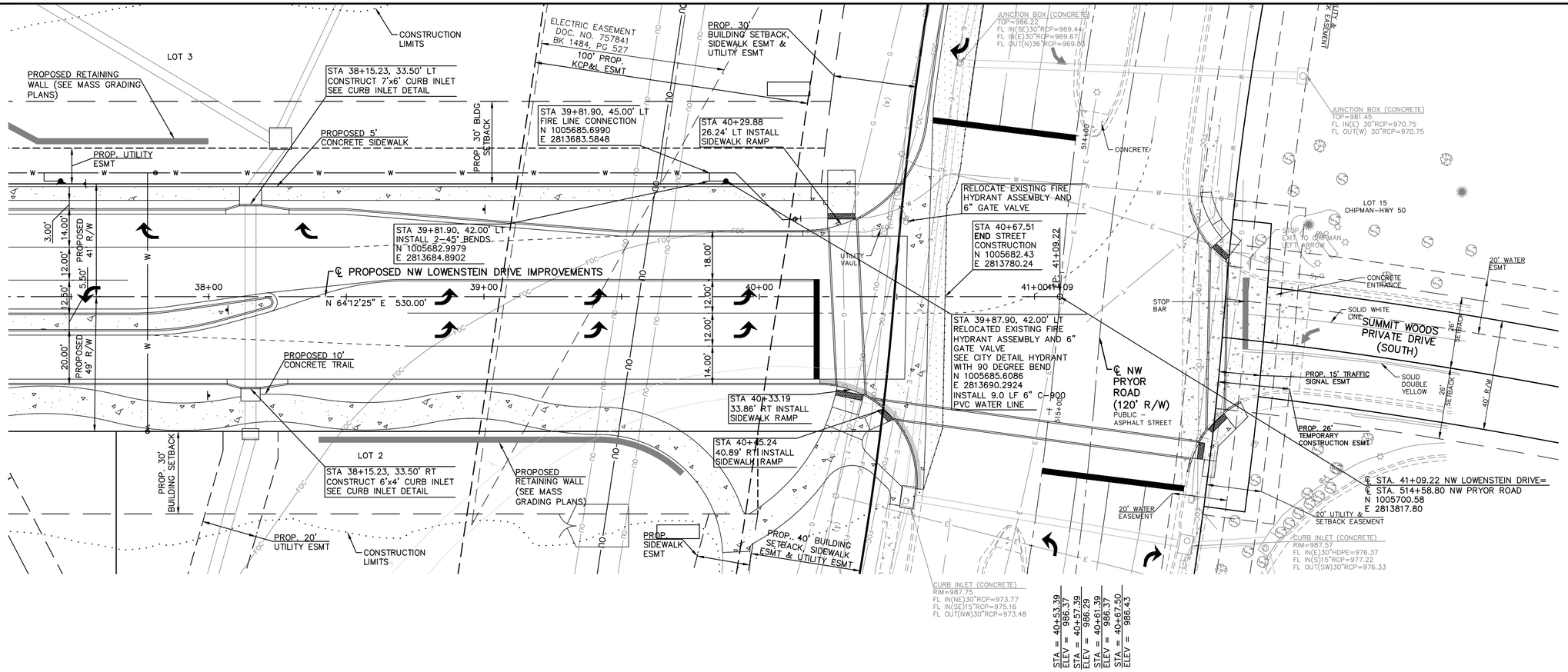

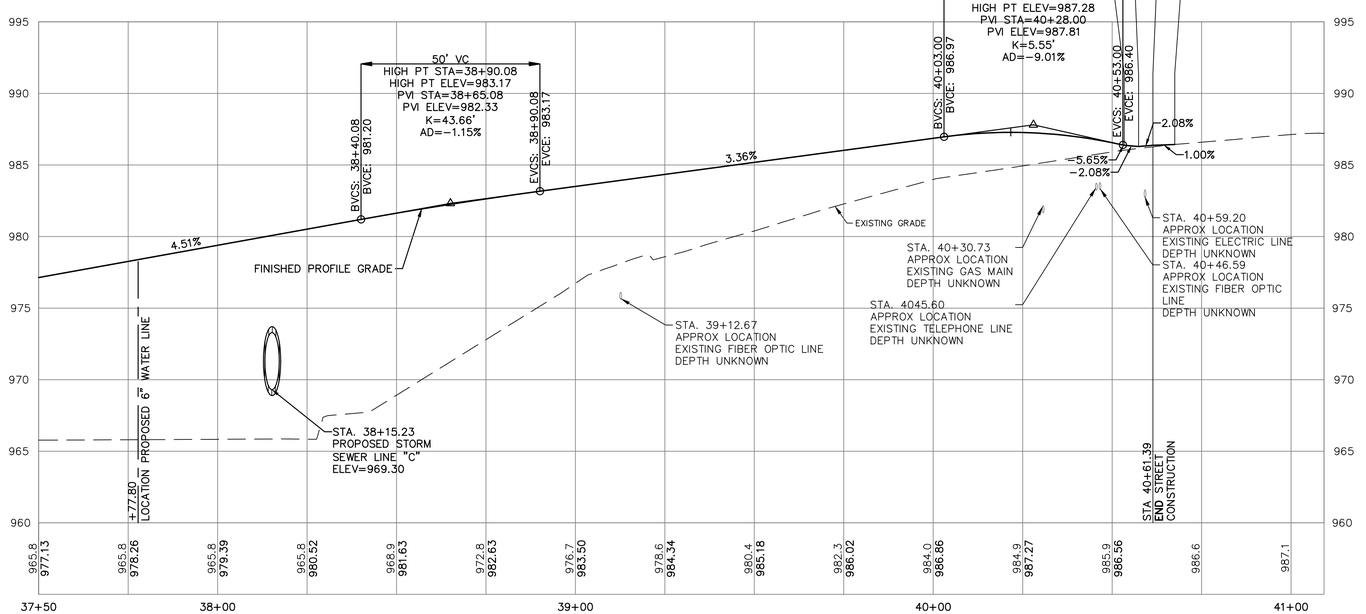

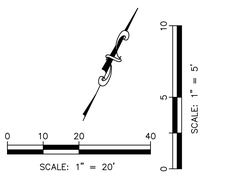

PUBLIC WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

5
AS-BUILT

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
4	9-10-19	REVISED PER FIELD CONDITIONS	LDO	JT	LDO
3	7-25-19	REVISED PER CITY COMMENT	LDO	BKR	LDO
2	7-5-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
NW LOWENSTEIN DRIVE - PLAN & PROFILE

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT/BKR
CFN	7067-1PI_STPP
SHEET	9
REV	5

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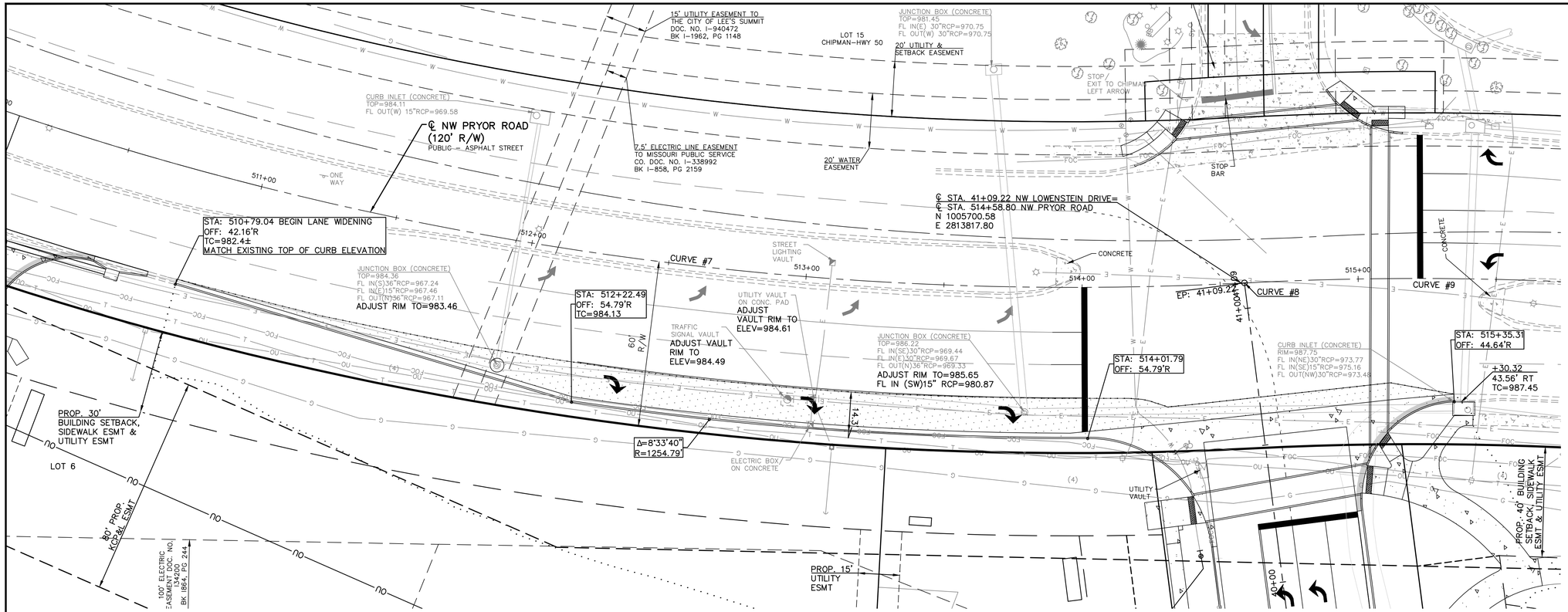
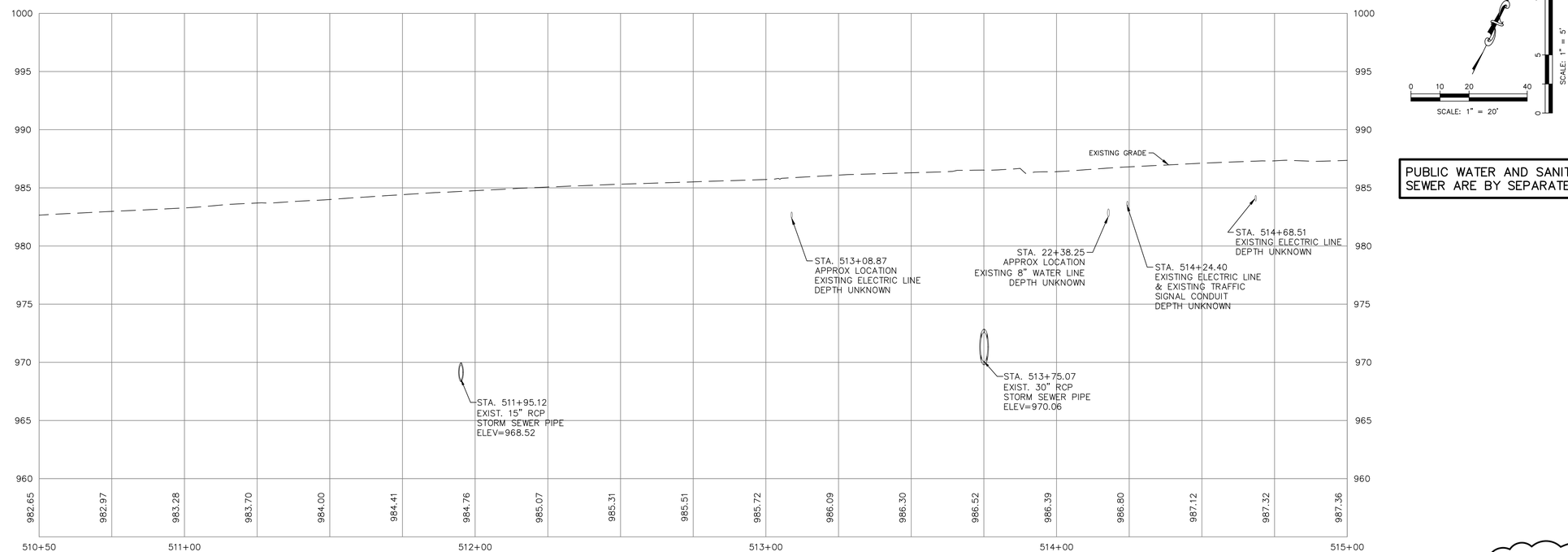


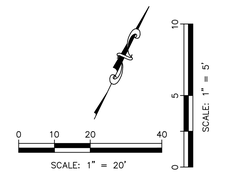
℄ CURVE DATA

CURVE #7
POC STA. 510+08.63
N 1006140.33 E 2813734.70
POC STA. 514+58.80 NW PRYOR ROAD = ℄ STA. 41+09.22 NW LOWENSTEIN DRIVE
N 1005700.58 E 2813817.80
Δ=21°29'39"
R=1200.00'
T=227.76'
L=450.17'
CB=S 10°42'05" E
CD=447.54'

CURVE #8
POC STA. 514+58.80 NW PRYOR ROAD = ℄ STA. 41+09.22 NW LOWENSTEIN DRIVE
N 1005700.58 E 2813817.80
PRC STA 514+59.00
N 1005700.40 E 2813817.87
Δ=00°00'34"
R=1200.00'
T=0.10'
L=0.20'
CB=S 21°27'11" E
CD=0.20'

CURVE #9
PRC STA. 514+59.00
N 1005700.40 E 2813817.87
PC STA. 519+70.05
N 1005199.81 E 2813899.46
Δ=24°24'04"
R=1200.00'
T=259.46'
L=511.05'
CB=S 09°15'26" E
CD=507.20'





PUBLIC WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

5
AS-BUILT

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LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
NW PRYOR RD WIDENING AT NW LOWENSTEIN DR

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT/BKR
CFN	7067-1PI_STPP
SHEET	10
REV	5

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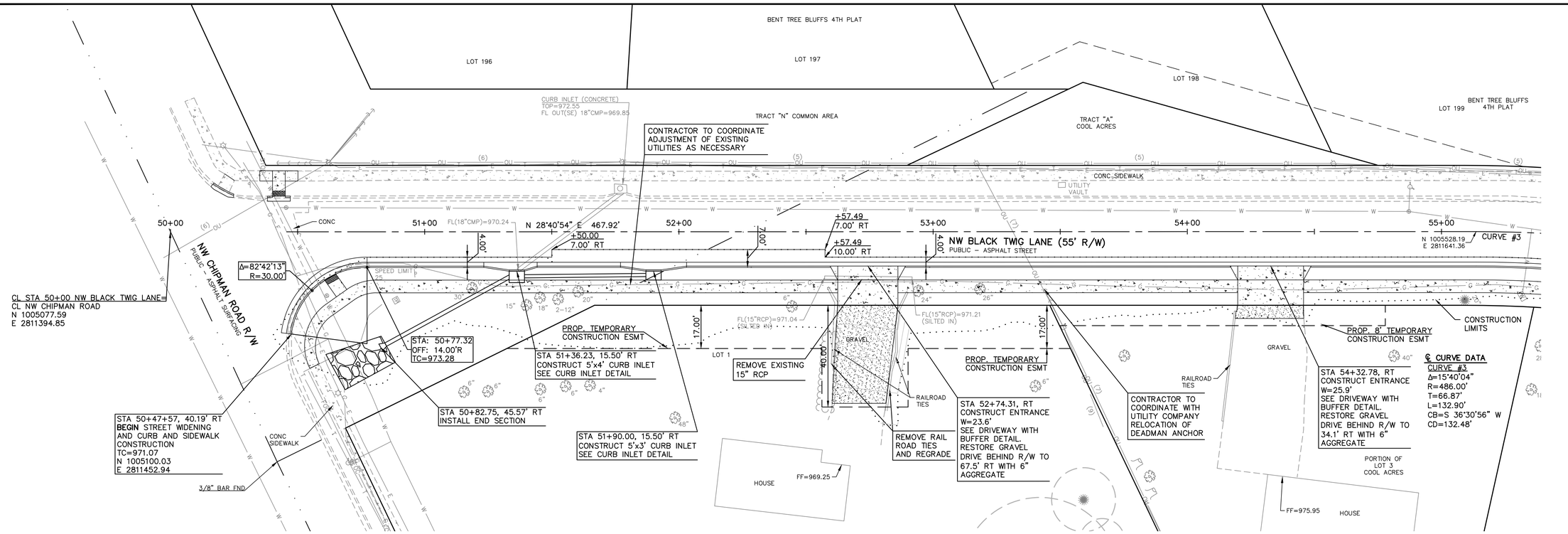

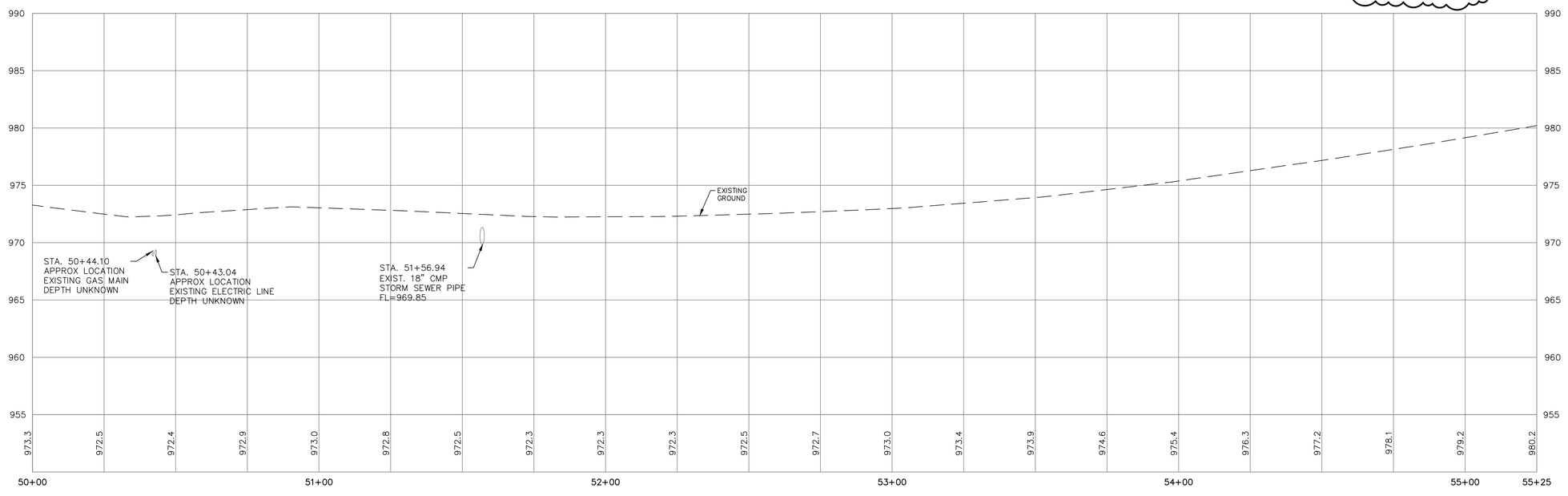

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
2-9-2021
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
ENGINEER
MO # 021726

2319 N. JACKSON | P.O. BOX 1304
JUNCTION CITY, KANSAS 66441
PH. (785) 762-5090 | FAX (785) 762-7744
jst@kveng.com | www.kveng.com
KAW VALLEY ENGINEERING
KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
NW BLACK TWIG LANE - PLAN & PROFILE

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT/BKR
CFN	7067-1PI_STPP
SHEET	11
REV	5

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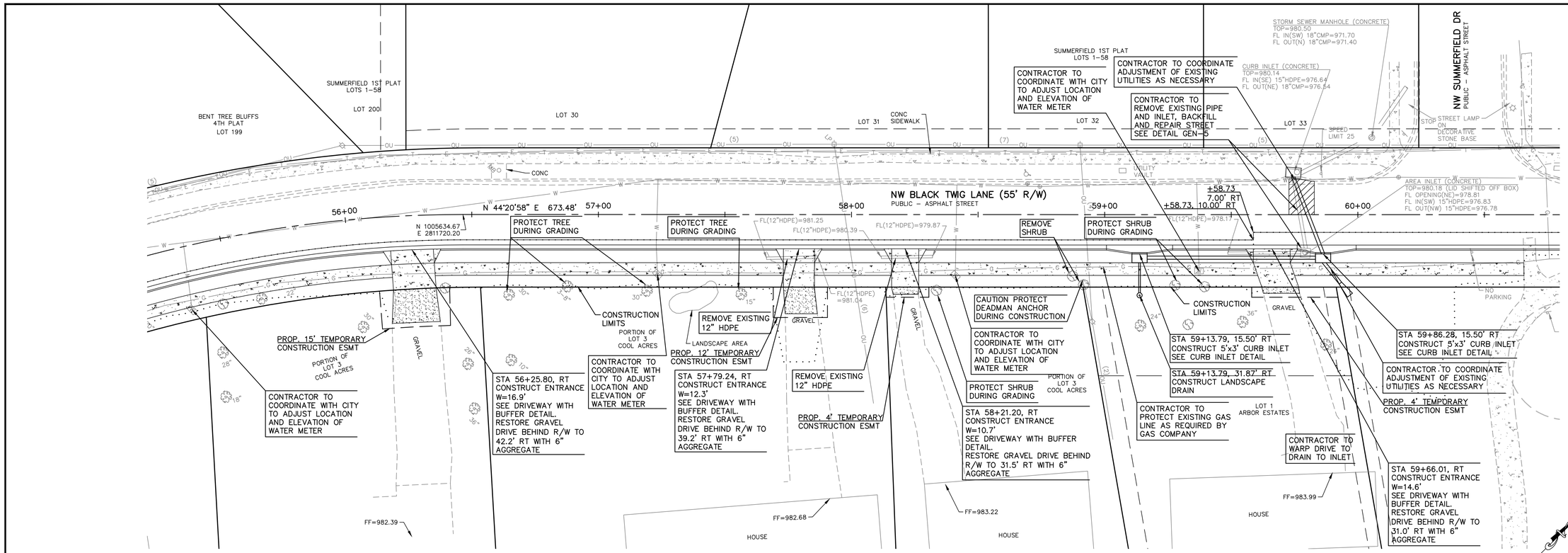
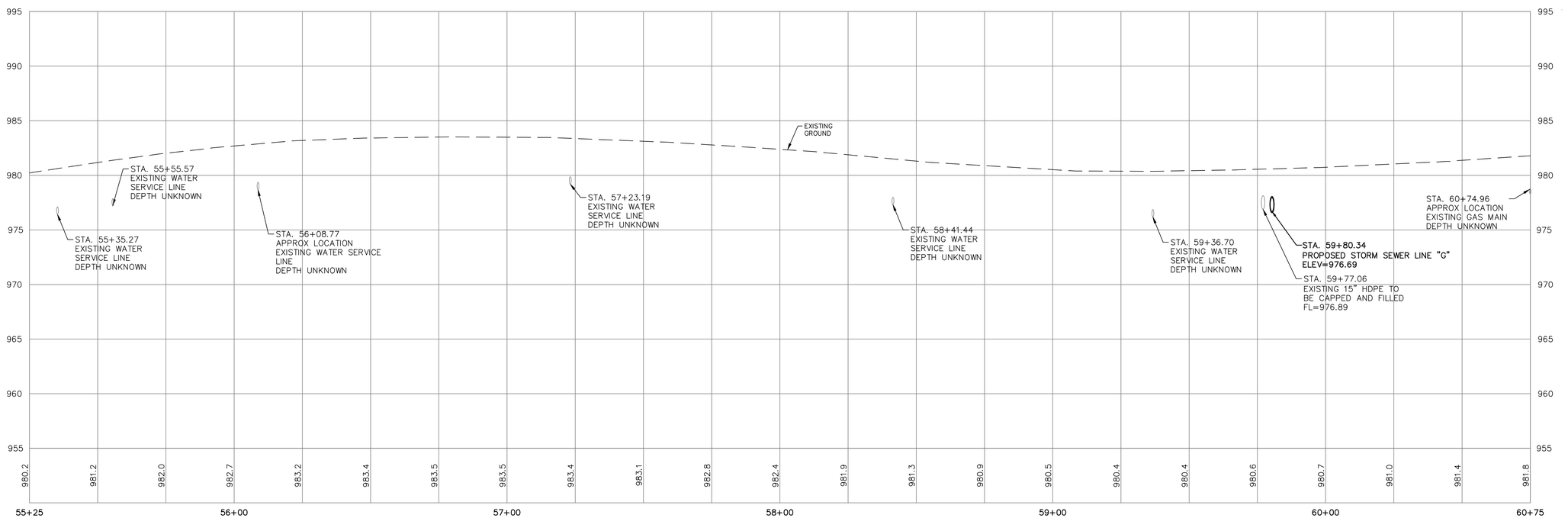


PUBLIC WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

AS-BUILT

SCALE: 1" = 20'

SCALE: 1" = 5'



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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
NW BLACK TWIG LANE - PLAN & PROFILE

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT/BKR
CFN	7067-1PI_STPP
SHEET	12
REV	5

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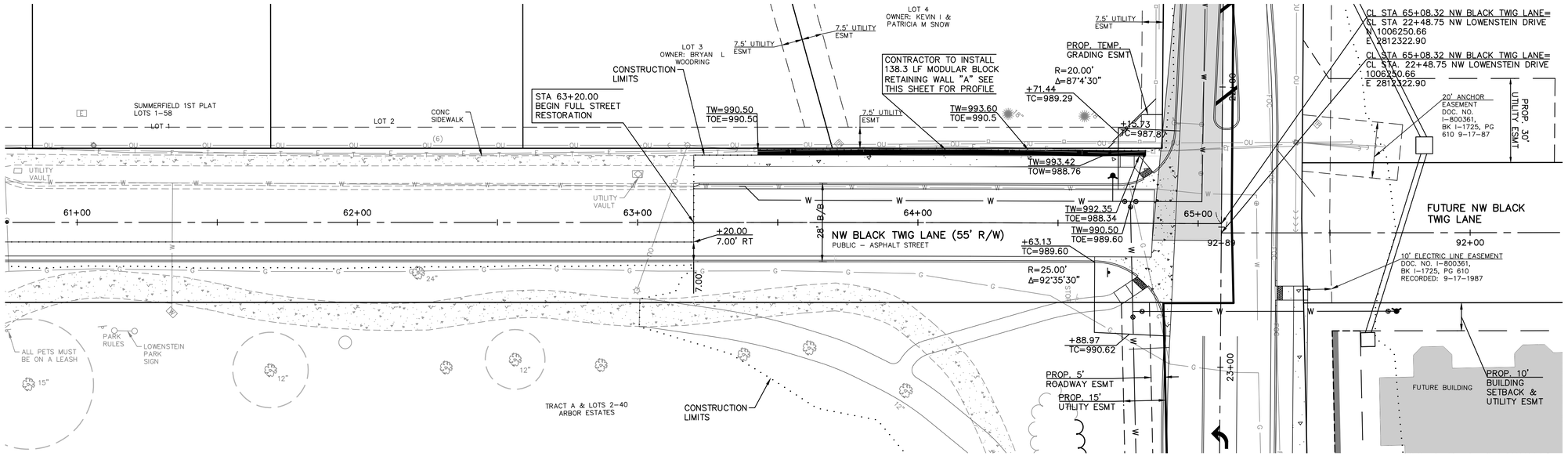
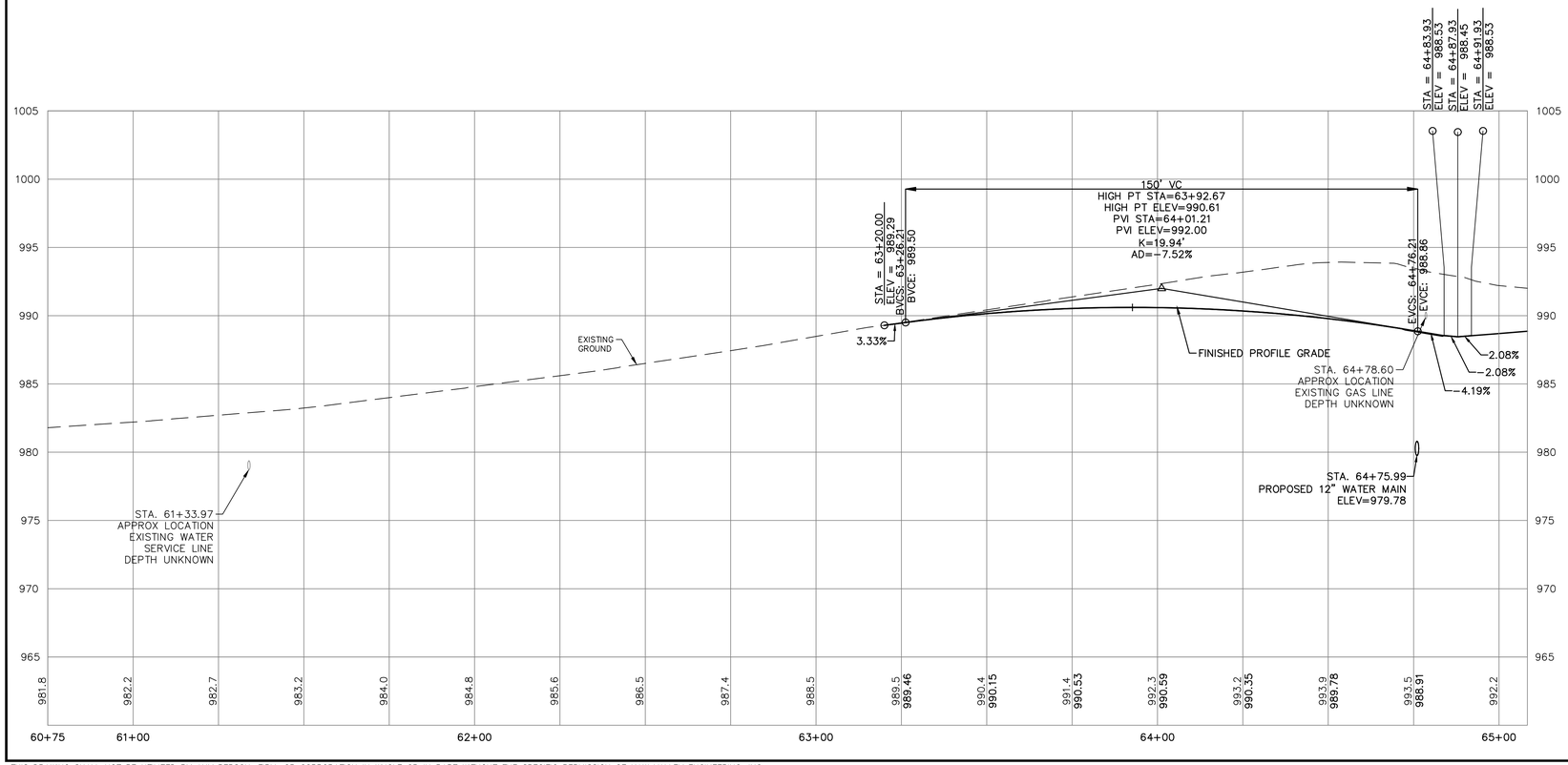
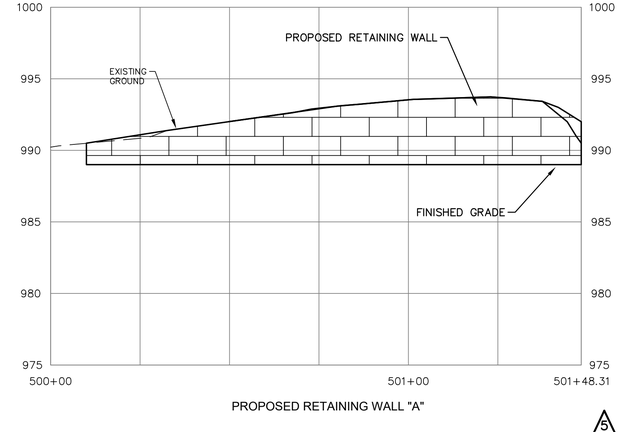


PUBLIC WATER AND SANITARY SEWER ARE BY SEPARATE PLANS





PROPOSED RETAINING WALL "A"

5

AS–BUILT

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2–9–21	AS–BUILT PLANS	LDO	JT	LDO
4	8–14–19	REVISED PER CITY COMMENTS	LDO	JT	JT
3	7–25–19	REVISED PER CITY COMMENT	LDO	BKR	LDO
2	7–5–19	REVISED PER CITY COMMENTS	LDO	JT	LDO
1	5–16–19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01–11–19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
NW BLACK TWIG LANE - PLAN & PROFILE

PROJ. NO. A14_7067–1
DESIGNER LDO | DRAWN BY JT/BKR
CFN 7067–1PI_STPP
SHEET 13 | REV 5

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PROPOSED 30' BLDG SETBACK, SIDEWALK & UTILITY EASEMENT

STA: 18+19.44
OFF: 54.79'L
TC=986.17

CONCRETE

NW PRYOR ROAD
(120' R/W)

STA: 18+04.24
OFF: 57.80'L
TC=986.51

LOT 3

10.00'

STA: 18+19.44
OFF: 99.79'L
R=45.0'
L=65.14'
Δ=82°55'59"
N: 1005722.08
E: 2813703.72

SAW CUT LINE (TYP)
MATCH EXISTING PAVEMENT
ELEVATIONS

STA: 40+22.91
OFF: 24.56'L
TC=987.36
G=986.81

STA: 40+15.86
OFF: 24.00'L
TC=987.29

STA: 17+91.20
OFF: 66.42'L
TC=986.86

STA: 40+36.67
OFF: 29.10'L
TC=987.09
G=986.54

PROPOSED 30' BLDG SETBACK & UTILITY EASEMENT

STA: 40+31.79
OFF: 26.91'L
EOP=986.10

UTILITY VAULT

11.00'

24.00'

PROPOSED 41' R/W

PROPOSED REALIGNMENT NW LOWENSTEIN DRIVE (PROPOSED 90' R/W)

40+00

STA: 40+36.04
OFF: 34.97'R
EOP=986.10

STA: 40+22.02
OFF: 32.00'R
TC=987.16

32.00'

PROPOSED 49' R/W

STA: 40+26.32
OFF: 32.28'R
TC=987.24
G=986.73

PROPOSED 30' BLDG SETBACK & SIDEWALK EASEMENT

STA: 40+39.60
OFF: 36.79'R
TC=987.41
G=986.90

PROPOSED 10' CONCRETE TRAIL

STA: 40+43.59
OFF: 39.51'R
TC=987.42
G=986.91

PROPOSED KCP&L EASEMENT

10.00'

30.00'

100.00'

40.00'

LOT 2

41+00

41+09

51+00

GOOGLE FIBER

PULL BOX FOR LIGHTING

R

L

PRIVATE DRIVE
(ASPHALT SURFACE)

SOLID WHITE LINE

SOLID DOUBLE YELLOW

CONCRETE ENTRANCE

PULL BOX FOR LIGHTING

L1

R1

UTILITY VAULT FOR AT&T

STA: 17+12.19
OFF: 57.08'L
TC=986.74

STA: 17+09.48
OFF: 54.37'L
TC=987.32
G=986.81

STA: 17+00.34
OFF: 48.29'L
TC=987.22

CONCRETE

UTILITY VAULT

STA: 16+85.93
OFF: 44.64'L
TC=987.6±
MATCH EXISTING TOP OF CURB ELEVATION

PROPOSED 40' BLDG SETBACK, SIDEWALK EASEMENT & UTILITY EASEMENT

NW LOWENSTEIN DRIVE AND NW PRYOR ROAD

PUBLIC WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

0 5 10 20
SCALE: 1" = 10'

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
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1	7-5-19	REVISED PER CITY COMMENT	LDO	JT	LDO
0	5-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
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STREETS OF WEST PRYOR

NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
GEOMETRIC LAYOUT - INTERSECTION AND SIDEWALK

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT/BKR
CFN	
7067-1PI_INT	
SHEET	REV
13A	5

5
AS-BUILT

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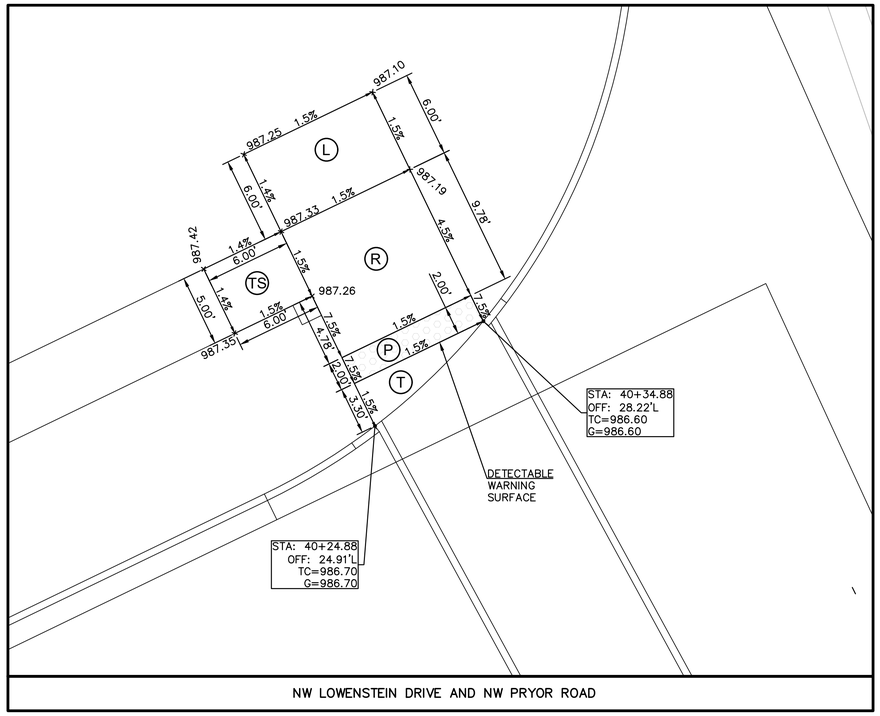

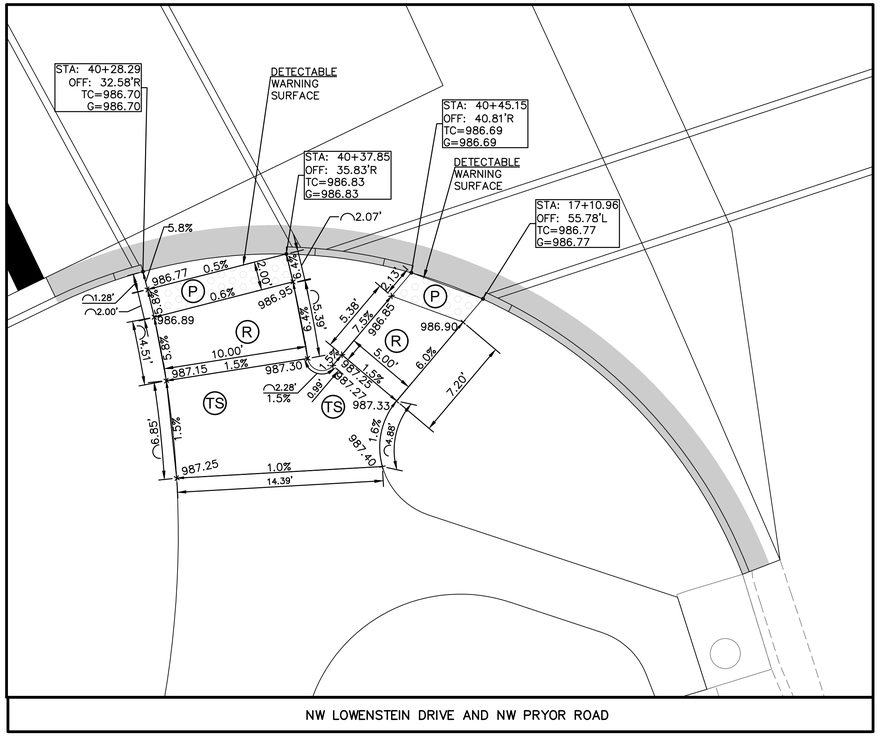

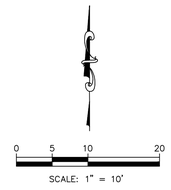

LEGEND

	DRY CURB
TC	TOP OF CURB ELEVATION
G	GUTTER ELEVATION
(R)	RAMP (7.5% RUNNING SLOPE, 1.5% MAXIMUM CROSS SLOPE)
(L)	LANDING (1.5% MAX IN ALL DIRECTIONS)
(TS)	TURNING SPACE (1.5% MAX IN ALL DIRECTIONS)
(P)	PAN
(T)	TRANSITION

CONSTRUCTION NOTES:

1. SIDEWALK RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH LEE'S SUMMIT STANDARD DETAIL GEN-3A. CONSTRUCTION SHALL COMPLY WITH GENERAL NOTES.

811 Know what's **below.** **Call** before you dig.

PUBLIC WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

AS-BUILT

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
1	7-25-19	REVISED PER CITY COMMENTS	LDO	BKR	LDO
0	7-5-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
2-9-2021
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
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MO # 021726

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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
ADA RAMPS

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT/BKR
CFN	7067-1PI_INT
SHEET	13A1
REV	5

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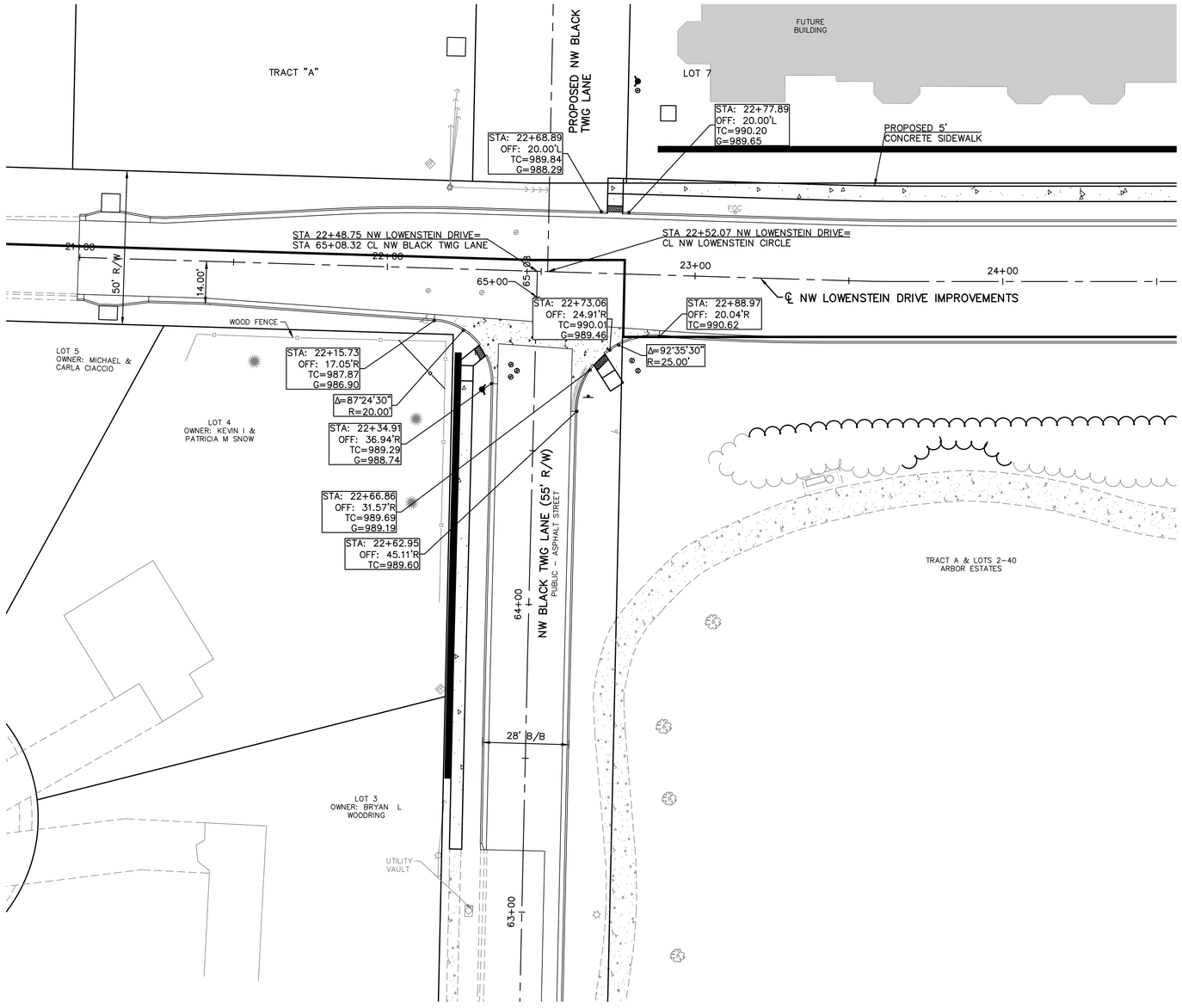

LEGEND

	DRY CURB
TC	TOP OF CURB ELEVATION
G	GUTTER ELEVATION
(R)	RAMP (7.5% RUNNING SLOPE, 1.5% MAXIMUM CROSS SLOPE)
(L)	LANDING (1.5% MAX IN ALL DIRECTIONS)
(TS)	TURNING SPACE (1.5% MAX IN ALL DIRECTIONS)
(P)	PAN
(T)	TRANSITION

811 Know what's below. Call before you dig.

0 10 20 40
SCALE: 1" = 20'

PUBLIC WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

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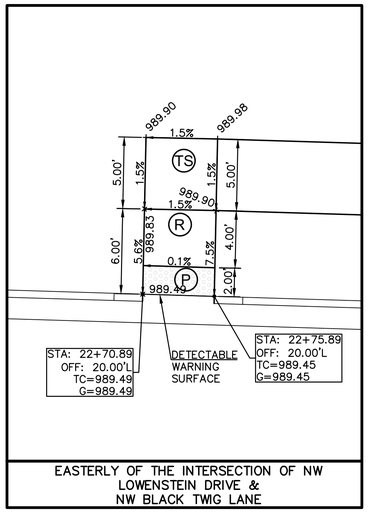
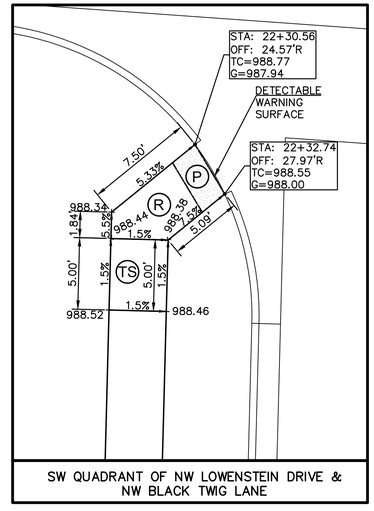
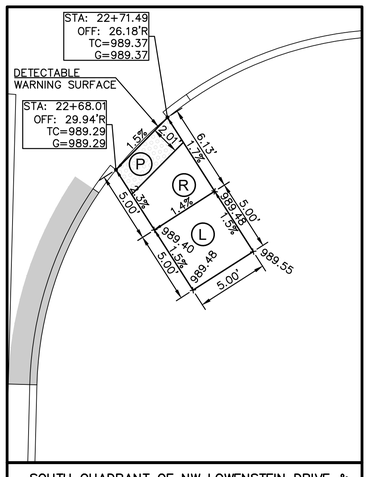


EASTERLY OF THE INTERSECTION OF NW LOWENSTEIN DRIVE & NW BLACK TWIG LANE



SW QUADRANT OF NW LOWENSTEIN DRIVE & NW BLACK TWIG LANE



SOUTH QUADRANT OF NW LOWENSTEIN DRIVE & NW BLACK TWIG LANE

AS-BUILT

5

REV	DATE	DESCRIPTION	DSN	DWN	CHK
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LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
GEOMETRIC LAYOUT - INTERSECTION, SIDEWALK AND ADA RAMPS

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT/BKR
CFN	7067-1PI_INT2
SHEET	13B
REV	5

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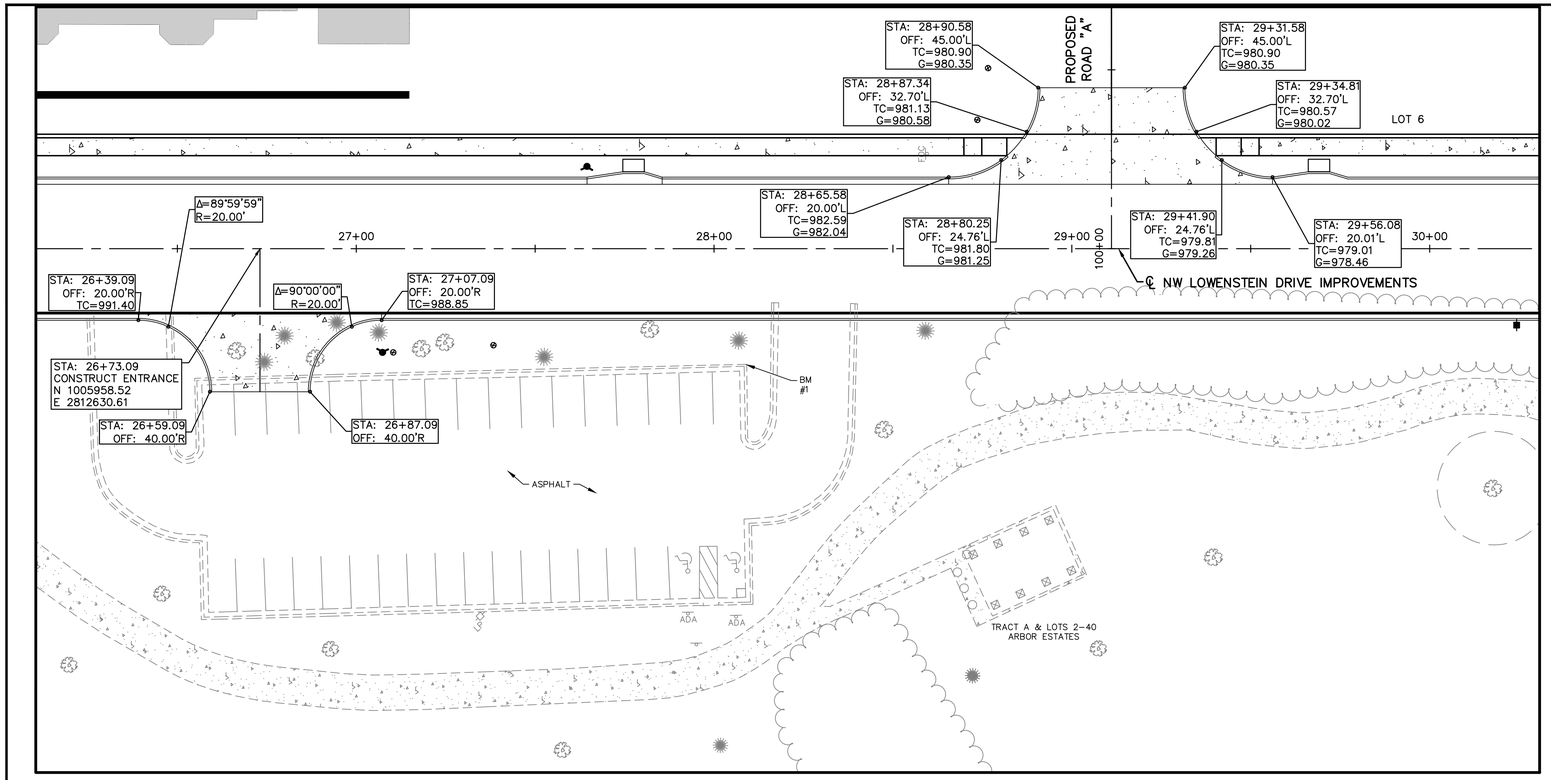
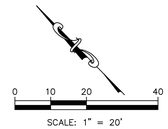
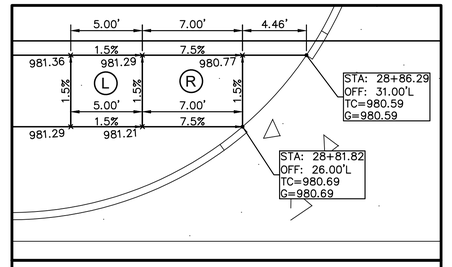
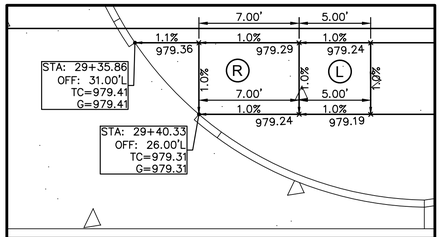


PUBLIC WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

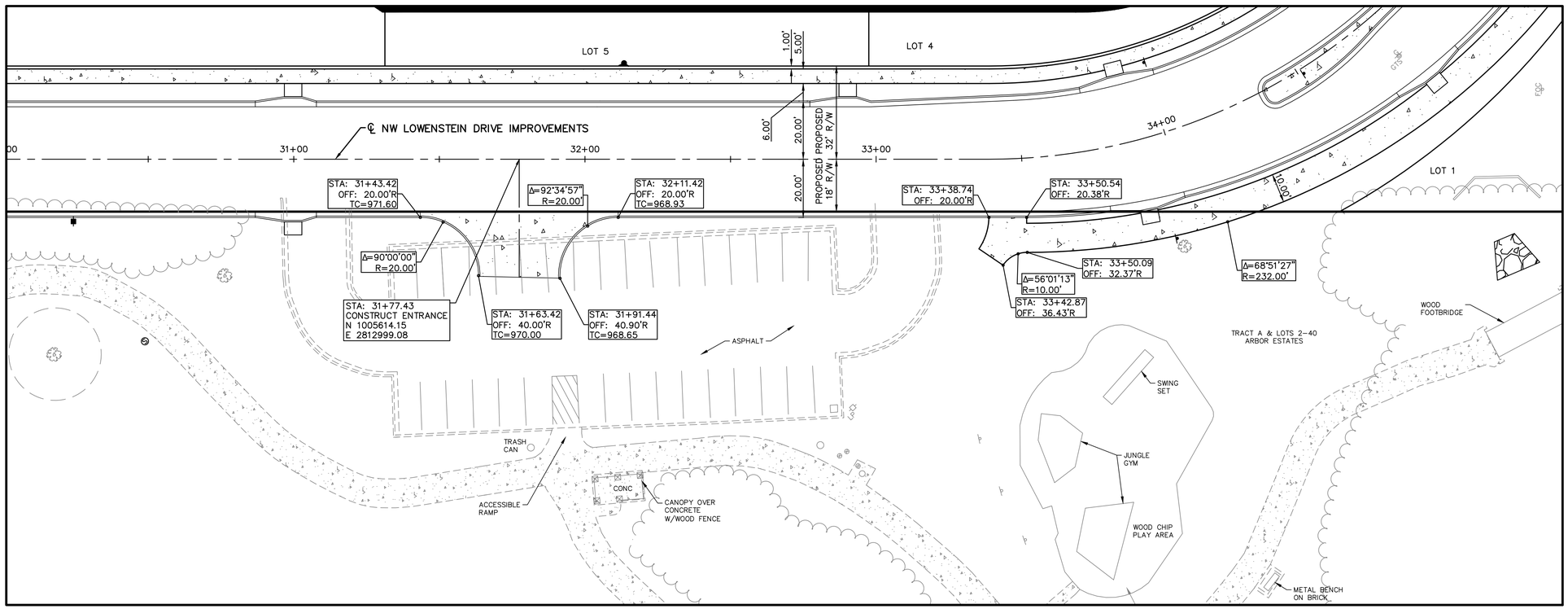




NORTH QUADRANT OF NW LOWENSTEIN DRIVE & PRIVATE ROAD "A"



SOUTH QUADRANT OF NW LOWENSTEIN DRIVE & PRIVATE ROAD "A"



AS-BUILT

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
3	10-4-19	PER IN HOUSE REVIEW	LDO	BKR	LDO
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2-9-2021

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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
GEOMETRIC LAYOUT - INTERSECTION AND SIDEWALK

PROJ. NO.	A14_7067-1
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DRAWN BY	JT/BKR
CFN	7067-1PI_INT2
SHEET	13C
REV	5

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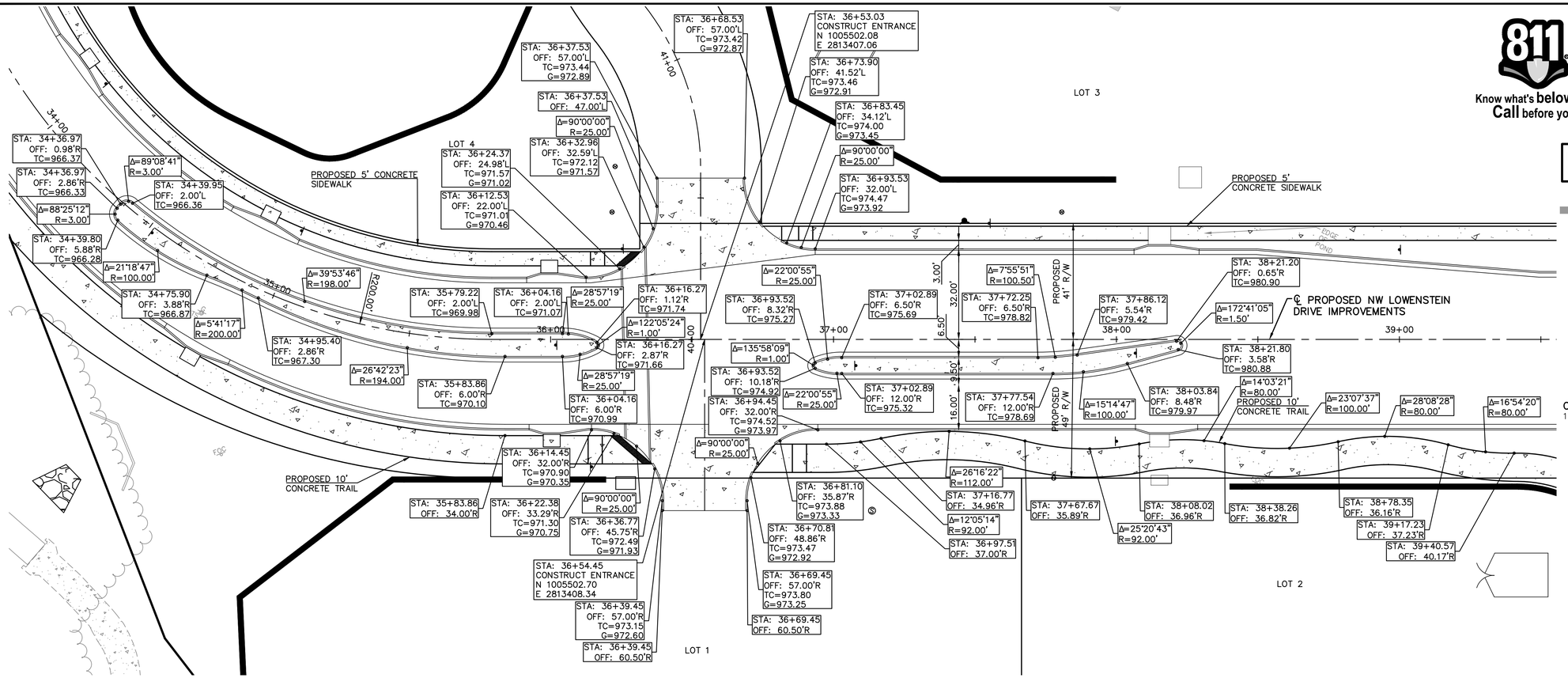


Know what's below. Call before you dig.

0 10 20 40
SCALE: 1" = 20'

PUBLIC WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

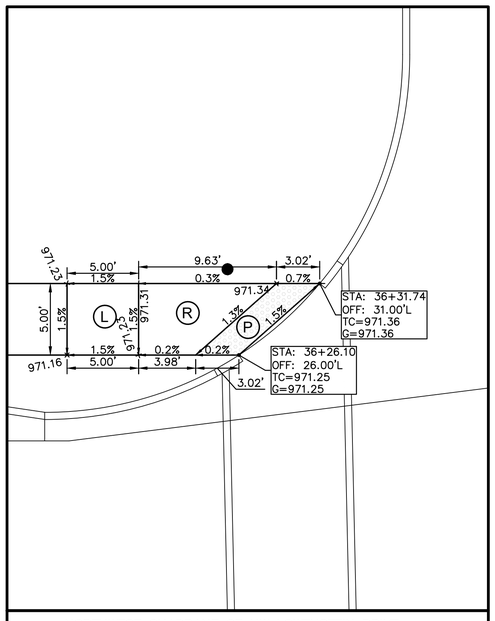
LEGEND

- DRY CURB
- TC TOP OF CURB ELEVATION
- G GUTTER ELEVATION
- (R) RAMP (7.5% RUNNING SLOPE, 1.5% MAXIMUM CROSS SLOPE)
- (L) LANDING (1.5% MAX IN ALL DIRECTIONS)
- (P) PAN
- (T) TRANSITION

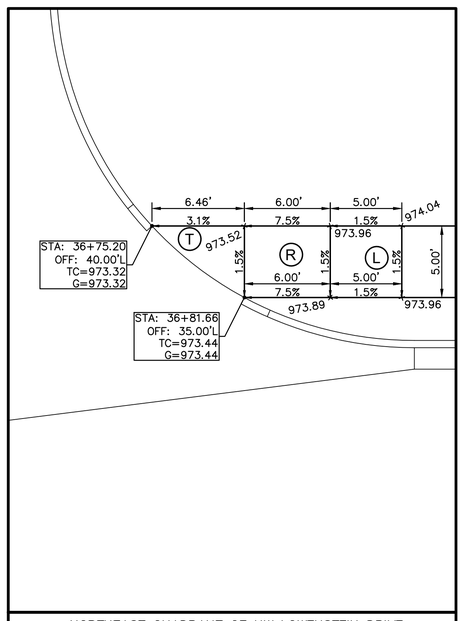
CONSTRUCTION NOTES:

1. SIDEWALK RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH LEE'S SUMMIT STANDARD DETAIL GEN-3A. CONSTRUCTION SHALL COMPLY WITH GENERAL NOTES.

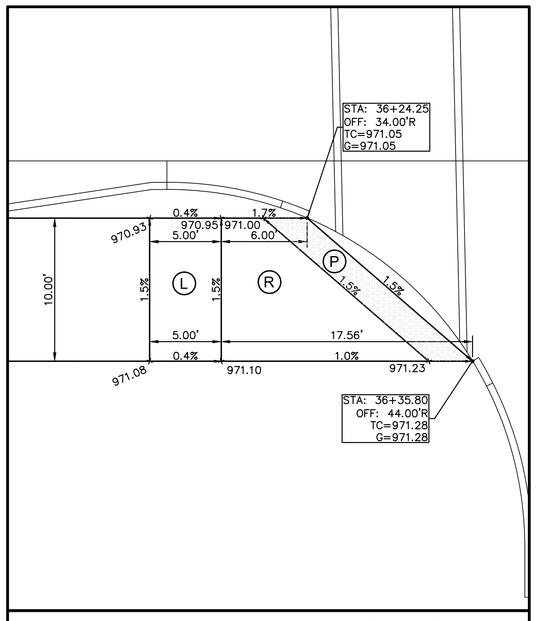
AS-BUILT



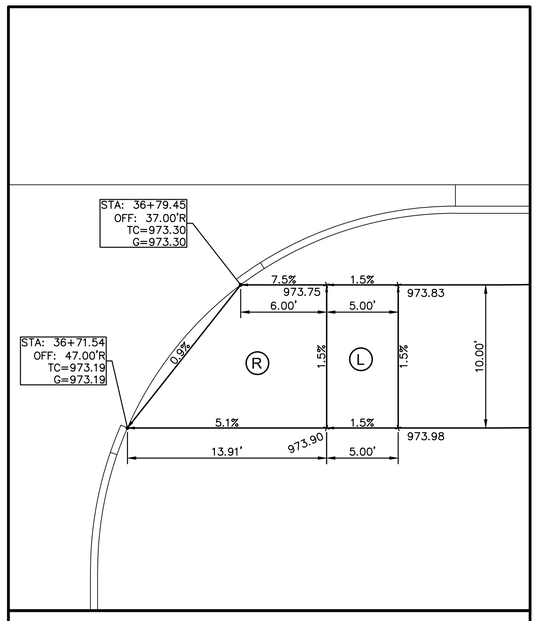
NORTHWEST QUADRANT OF NW LOWENSTEIN DRIVE & PRIVATE ROAD "B"



NORTHEAST QUADRANT OF NW LOWENSTEIN DRIVE & PRIVATE ROAD "B"



SOUTHWEST QUADRANT OF NW LOWENSTEIN DRIVE & PRIVATE ROAD "B"



SOUTHEAST QUADRANT OF NW LOWENSTEIN DRIVE & PRIVATE ROAD "B"

REV	DATE	DESCRIPTION	DSN	DWN	CHK
			LDO	JT	LDO
			LDO	BKR	LDO
			LDO	BKR	LDO
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
3	(DATE)	REVISED PER CITY COMMENTS	LDO	BKR	LDO
2	7-16-19	REVISED PER IN-HOUSE REVIEW	LDO	BKR	LDO
1	7-5-19	REVISED PER CITY COMMENTS	LDO	BKR	LDO
0	5-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER
2-9-2021
E-21726
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
ENGINEER
MO # 021726

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STREETS OF WEST PRYOR

NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS

GEOMETRIC LAYOUT - INTERSECTION, SIDEWALK AND ADA RAMPS

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT/BKR
CFN	7067-1PI_INT2
SHEET	13D
REV	5

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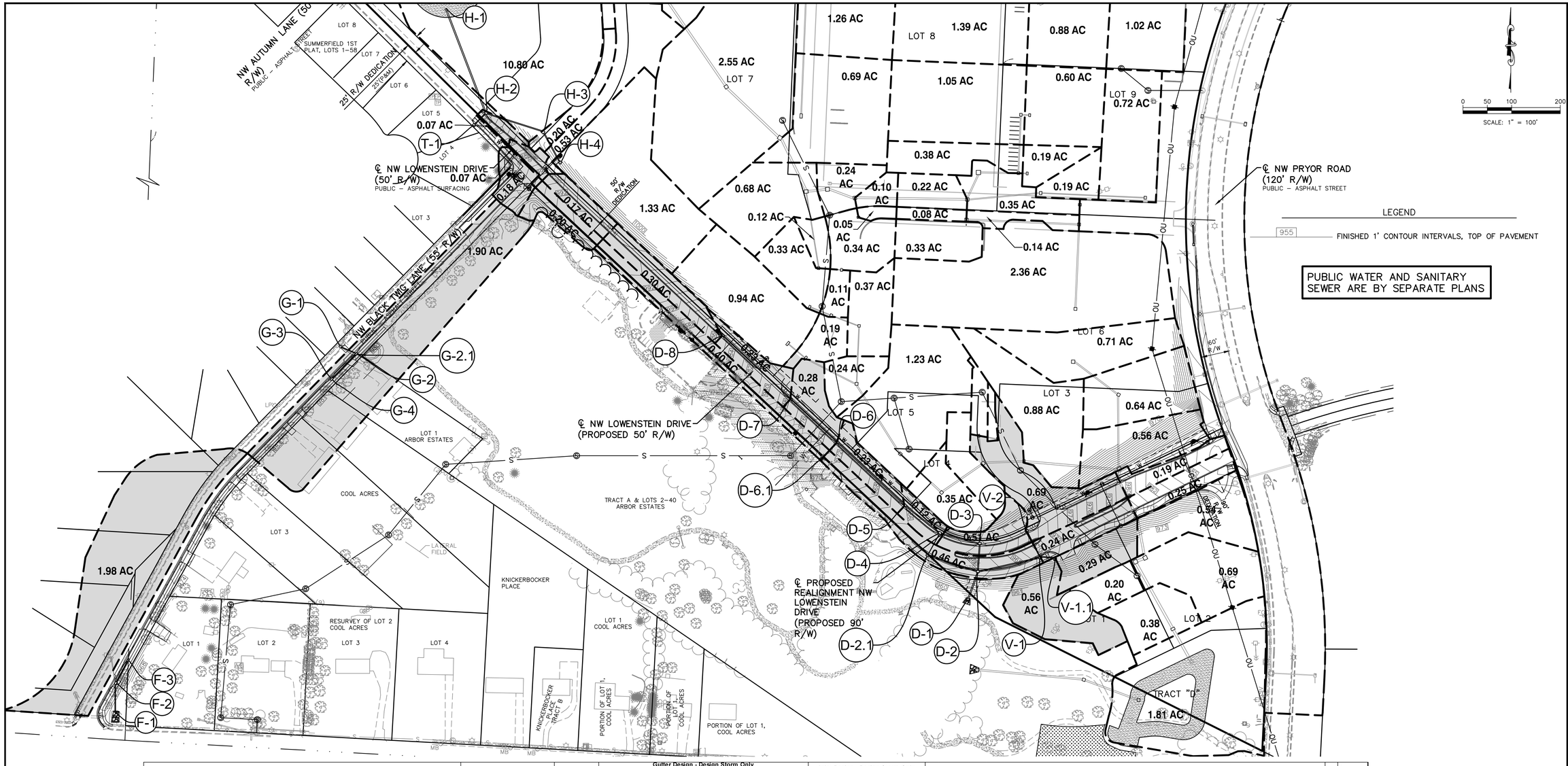

Overland Flow

KVE	Design Storm	Structure	Downstream Structure	Pipe	Tributary Area	Impervious Area (A)	Runoff coefficient ('C')	A x C	Antecedent Precipitation	A x C x K	Time of Concentration Tc	Rainfall Intensity (inch/hr)	Runoff (cfs)	Bypass Target	Upstream Bypass Flow Design Storm	Total Runoff (cfs)
	25-year	D8	D7	D8 - D7	0.30	0.30	0.90	0.27	1.1	0.30	5.0	8.5	2.5	D7	0.00	2.5
	100-year								1.25	0.34		10.3	3.5			3.5
	25-year	D7	D6	D7 - D6	0.23	0.23	0.90	0.21	1.1	0.23	5.0	8.5	1.9	D6	0.39	2.3
	100-year								1.25	0.26		10.3	2.7			3.1
	25-year	D6	D5	D6 - D5	0.30	0.30	0.90	0.27	1.1	0.30	5.0	8.5	2.5	D5	0.33	2.9
	100-year								1.25	0.34		10.3	3.5			3.8
	25-year	D5	D4	D5 - D4	0.23	0.23	0.90	0.21	1.1	0.23	5.0	8.5	1.9	D4	0.52	2.5
	100-year								1.25	0.26		10.3	2.7			3.2
	25-year	D4	D3	D4 - D3	0.12	0.12	0.90	0.11	1.1	0.12	5.0	8.5	1.0	---	0.22	1.2
	100-year								1.25	0.14		10.3	1.4			1.6
	25-year	D3	D2	D3 - D2	0.27	0.27	0.90	0.24	1.1	0.27	5.0	8.5	2.3	D4	0.26	2.5
	100-year								1.25	0.30		10.3	3.1			3.4
	25-year	D2	D1	D2 - D1	0.46	0.46	0.90	0.41	1.1	0.46	5.0	8.5	3.9	---	0.24	4.1
	100-year								1.25	0.50		10.3	5.3			5.6
	25-year	D6.1	D6	D6.1 - D6	0.40	0.40	0.90	0.36	1.1	0.40	5.0	8.5	3.4	D2	0.00	3.4
	100-year								1.25	0.45		10.3	4.6			4.6
	25-year	V2	V1	V2 - V1	0.69	0.69	0.90	0.62	1.1	0.68	5.0	8.5	5.8	D3	0.00	5.8
	100-year								1.25	0.78		10.3	8.0			8.0
	25-year	V1	D2	V1 - D2	0.23	0.23	0.90	0.21	1.1	0.23	5.0	8.5	1.9	D6	2.30	4.2
	100-year								1.25	0.26		10.3	2.7			5.0
	25-year	V1.1	V1	V1.1 - V1	0.85	0.85	0.90	0.77	1.1	0.84	5.0	8.5	7.2	---	0.00	7.2
	100-year								1.25	0.96		10.3	9.9			9.9
	25-year	H4	H3	H4 - H3	0.27	0.27	0.90	0.24	1.1	0.27	5.0	8.5	2.3	H3	0.00	2.3
	100-year								1.25	0.30		10.3	3.1			3.1
	25-year	H3	H2	H3 - H2	0.07	0.07	0.90	0.06	1.1	0.07	5.0	8.5	0.6	---	0.28	0.9
	100-year								1.25	0.08		10.3	0.8			1.1
	25-year	H2	H1	H2 - H1	0.00	0.00	0.00	0.00	1.1	0.00	5.0	8.5	0.0	---	0.03	0.0
	100-year								1.25	0.00		10.3	0.0			0.0
	25-year	T1	H2	T1 - H2	0.18	0.18	0.90	0.16	1.1	0.18	5.0	8.5	1.5	---	0.00	1.5
	100-year								1.25	0.20		10.3	2.1			2.1

System Flow

Total Area	Summation of Inlet A x C x K	System Tc	System Rainfall Intensity	System Discharge1
0.30	0.30	5.0	8.5	2.5
	0.64		10.3	3.5
0.53	0.52	5.4	8.4	4.4
	0.69		10.1	6.1
1.23	1.22	5.6	8.3	10.1
	1.36		10.1	13.9
1.46	1.45	5.9	8.2	11.9
	1.64		9.9	16.3
1.58	1.56	6.3	8.1	12.7
	1.78		9.8	17.5
1.85	1.83	6.5	8.0	14.7
	2.08		9.7	20.3
4.08	4.04	6.5	8.0	32.4
	4.07		9.7	39.5
0.40	0.40	5.0	8.5	3.4
	0.45		10.3	4.6
0.69	0.68	5.0	8.5	5.8
	0.78		10.3	8.0
1.77	1.75	5.2	8.5	14.8
	1.99		10.2	20.4
0.85	0.84	5.0	8.5	7.2
	0.96		10.3	9.9
0.27	0.27	5.0	8.5	2.3
	0.30		10.3	3.1
0.34	0.34	5.2	8.5	2.9
	0.38		10.3	3.9
0.52	0.51	5.4	8.4	4.3
	0.59		10.2	5.9
0.18	0.18	5.0	8.5	1.5
	0.20		10.3	2.1

Node

Node Condition
Setback Curb Inlet
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Junction Box before outlet to Upper West Detention Basin
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Setback Curb Inlet
Setback Curb Inlet

Gutter Design - Design Storm Only (Using Izzard's Equation - Sump Condition is calculated at Transition Point)

Curb Type (CDOT Type A or B)	Road Width (BOC-BOC)	Node Location (at Transition Inlet or Transition Points)	Percent Flow (Looking at Inlet from Centerline)	Longitudinal Slope %	Traverse Slope %	Depth (ft)	Spread (ft)	Flow (cfs)	Capacity (Sparas + 12)
CG-1	40	Upstream Transition	100%	4.00%	2.08%	0.15	6.12	2.5	9.50
CG-1	40	Upstream Transition	100%	4.00%	2.08%	0.15	5.90	2.3	9.5
CG-1	40	Upstream Transition	100%	4.00%	2.08%	0.16	6.47	2.9	9.5
CG-1	40	Upstream Transition	100%	2.00%	2.08%	0.17	7.08	2.5	6.7
CG-1	42	Sump	100%	2.00%	2.08%	0.13	5.13	1.2	6.7
CG-1	48	Upstream Transition	100%	2.00%	2.08%	0.17	7.19	2.5	6.7
CG-1	48	Upstream Transition	100%	2.00%	2.08%	0.21	8.91	4.1	6.7
CG-1	40	Upstream Transition	100%	4.00%	2.08%	0.17	6.99	3.4	9.5
CG-1	52	Upstream Transition	100%	4.50%	2.08%	0.20	8.68	5.8	10.08
CG-1	52	Upstream Transition	100%	4.00%	2.08%	0.18	7.75	4.2	9.5
CG-1	28	Upstream Transition	100%	3.50%	2.08%	0.15	6.01	2.3	8.9
CG-1	28	Upstream Transition	100%	6.90%	2.08%	0.09	3.12	0.9	12.5
CG-1	28	Upstream Transition	100%	3.50%	2.08%	0.13	4.96	1.5	8.9

Inlet Design - Design Storm Only (APWA Section 5600 - 2006)

Length	Q_o	Q_a	Maximum Capacity (APWA Charts)	Runoff to Inlet	Bypass Flow at Design
4	0.5	5	2.13	2.52	0.39
4	0.5	5	2.00	2.33	0.33
4	0.5	5	2.33	2.85	0.52
4	0.5	5	2.62	3.23	0.52
4	0.70711	7.07107	2.24	2.46	0.22
4	0.70711	7.07107	0.97	1.23	0.26
4	0.70711	7.07107	2.30	2.53	0.24
4	0.70711	7.07107	3.34	4.11	0.77
4	0.5	5	2.62	3.37	0.75
4	0.4714	4.71405	3.51	5.81	2.30
4	0.5	5	3.04	4.23	1.20
4	0.53452	5.34522	1.99	2.27	0.28
4	0.38069	3.80693	0.84	0.87	0.03
4	0.53452	5.34522	1.42	1.51	0.09

Pipe Design

Pipe Material	Pipe Shape	Pipe Size	Manning's Coefficient	Upstream Invert	Downstream Invert	Length	Pipe Slope	Design Flow	Full Flow Capacity	Design Velocity	Full Flow Velocity	Depth (in.)	Flow Time (sec)	Upstream Crown Elevations	Downstream Crown Elevations	Upstream Depth of Cover	Downstream Depth of Cover	HGL UP	HGL DOWN	Seperation Between HGL and Rim Elevation	Rim Elevation	Structure Design
RCP	Circular	18	0.013	981.10	974.60	191.6	3.39%	**2.5**	19.3	7.571	10.9	4.397	25.3	982.6	976.1	3.5	2.5	981.80	975.29	4.33	A11	986.13
RCP	Circular	18	0.013	974.40	968.40	130.7	4.59%	**4.4**	22.5	9.878	12.7	5.393	13.2	975.9	969.9	2.7	3.5	975.29	970.49	3.28	A10	978.57
RCP	Circular	24	0.013	967.90	961.50	190.5	3.36%	**10.1**	41.5	10.896	13.2	8.071	17.5	969.9	963.5	3.5	3.2	969.14	963.89	4.26	A10	973.40
RCP	Circular	24	0.013	961.30	961.00	92.0	0.33%	**11.9**	12.9	4.664	4.1	18.108	19.7	963.3	963.0	3.4	2.8	963.53	962.50	3.21	A10	966.74
RCP	Circular	24	0.013	960.80	960.10	85.6	0.82%	**12.7**	20.5	6.857	6.5	13.666	12.5	962.8	962.1	3.0	4.7	962.09	961.20	3.66	A10	965.75
RCP	Circular	24	0.013	959.90	957.80	55.4	3.79%	**14.7**	44.0	12.618	14.0	9.552	4.4	961.9	959.8	4.9	6.8	960.39	959.01	6.41	A10	966.80
RCP	Circular	30	0.013	957.30	955.75	62.7	2.47%	**32.4**	64.5	13.147	13.1	15.030	4.8	959.8	958.3	6.8		959.01	956.79	7.57	A10	966.58
RCP	Circular	18	0.013	969.40	968.90	47.0	1.06%	**3.4**	10.8	5.416	6.1	6.901	8.7	970.9	970.4	2.4	3.0	970.49	969.80	2.76	A10	973.25
RCP	Circular	18	0.013	965.80	965.50	61.0	0.49%	**5.8**	7.4	4.621	4.2	12.078	13.2	967.3	967.0	3.2	3.3	967.22	966.75	3.32	A11	970.54
RCP	Circular	24	0.013	965.92	958.30	131.1	5.81%	**14.8**	54.5	14.765	17.4	8.544	8.9	967.9	960.3	2.4	6.3	966.72	959.02	3.62	A10	970.34
RCP	Circular	18	0.013	966.20	965.50	30.4	2.30%	**7.2**	15.9	8.785	9.0	8.467	3.5	967.7	967.0	5.6	3.3	966.20	965.50	7.10	A10	973.30
RCP	Circular	24	0.013	984.60	981.90	72.2	3.74%	**2.3**	43.8	7.347	13.9	3.722	9.8	986.6	983.9	-0.4	-2.8	985.14	982.21	1.09	A10	986.23
RCP	Circular	30	0.013	981.40	975.40	123.2	4.87%	**2.9**	90.5	8.370	18.4	3.651	14.7	983.9	977.9	-2.8	-0.4	981.95	975.69	-0.89	A10	981.06
RCP	Circular	30	0.013	974.90	953.00	229.6	9.54%	**4.3**	126.7	11.989	25.8	3.789	19.2	977.4	955.5	0.1		975.50	954.15	1.96	A10	977.46
RCP	Circular	18	0.013	975.75	975.40	35.5	0.99%	**1.5**	10.4	4.210	5.9	4.642	8.4	977.3	976.9	3.7	9.3	976.10	975.68	4.82	A10	980.92

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
3	7-25-19	REVISED PER CITY COMMENT	LDO	BKR	LDO
2	7-5-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
2-9-2021

LEON D. OSBOURN
ENGINEER
MO # 021726

2319 N. JACKSON | P.O. BOX 1304
JUNCTION CITY, KANSAS 66441
PH. (785) 762-5105 | FAX (785) 762-7744
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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
DRAINAGE AREA MAP

PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY JT/BKR
CFN 7067-1PI_DAM
SHEET 14 | REV 5

5 AS-BUILT

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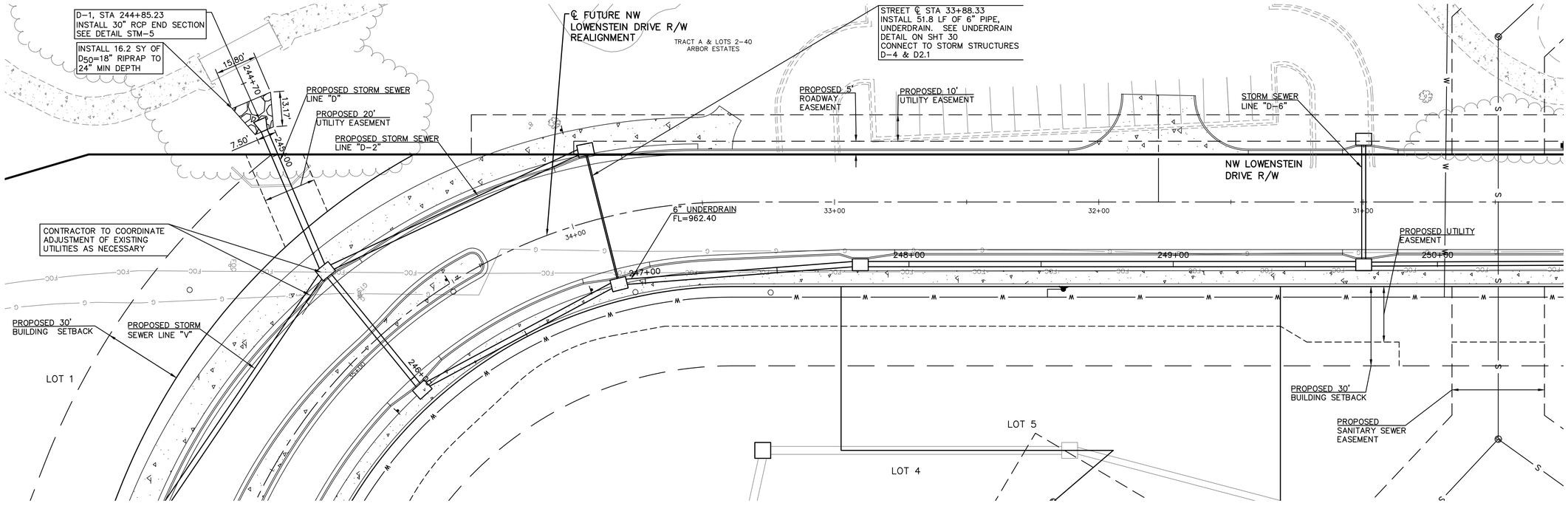
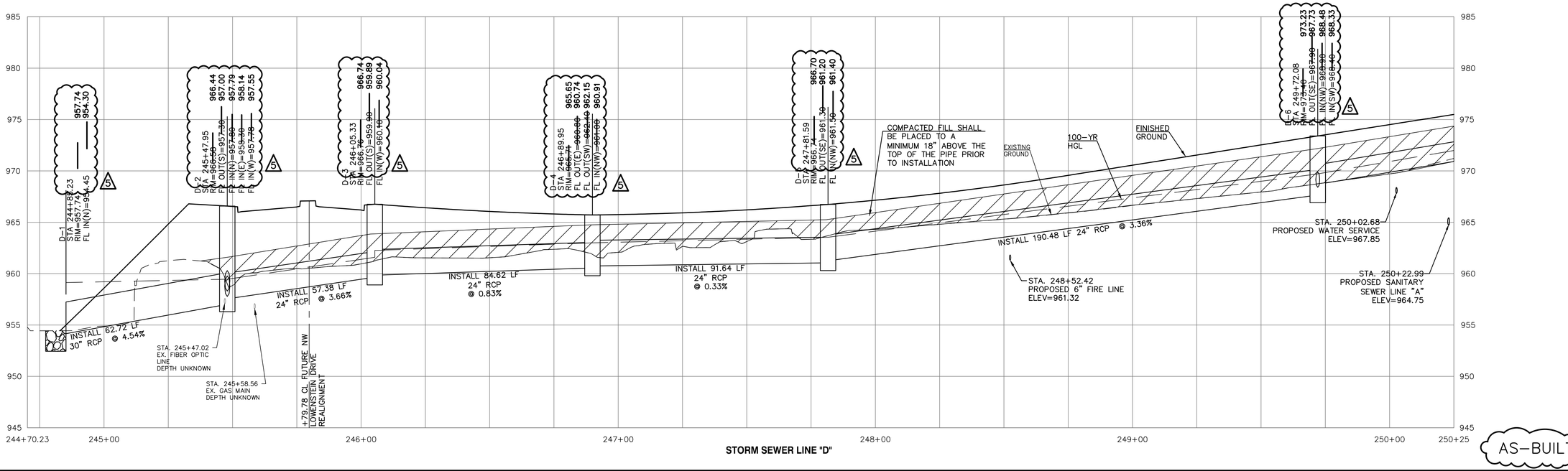


PUBLIC WATER AND SANITARY
SEWER ARE BY SEPARATE PLANS



STORM SEWER LINE "D"

AS-BUILT

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
3	7-25-19	REVISED PER CITY COMMENT	LDO	BKR	LDO
2	7-5-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
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0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
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2-9-2021

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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
STORM SEWER PLAN AND PROFILE - LINE D

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT/BKR
CFN	
7067-1PI_DPP	
SHEET	REV
15	5

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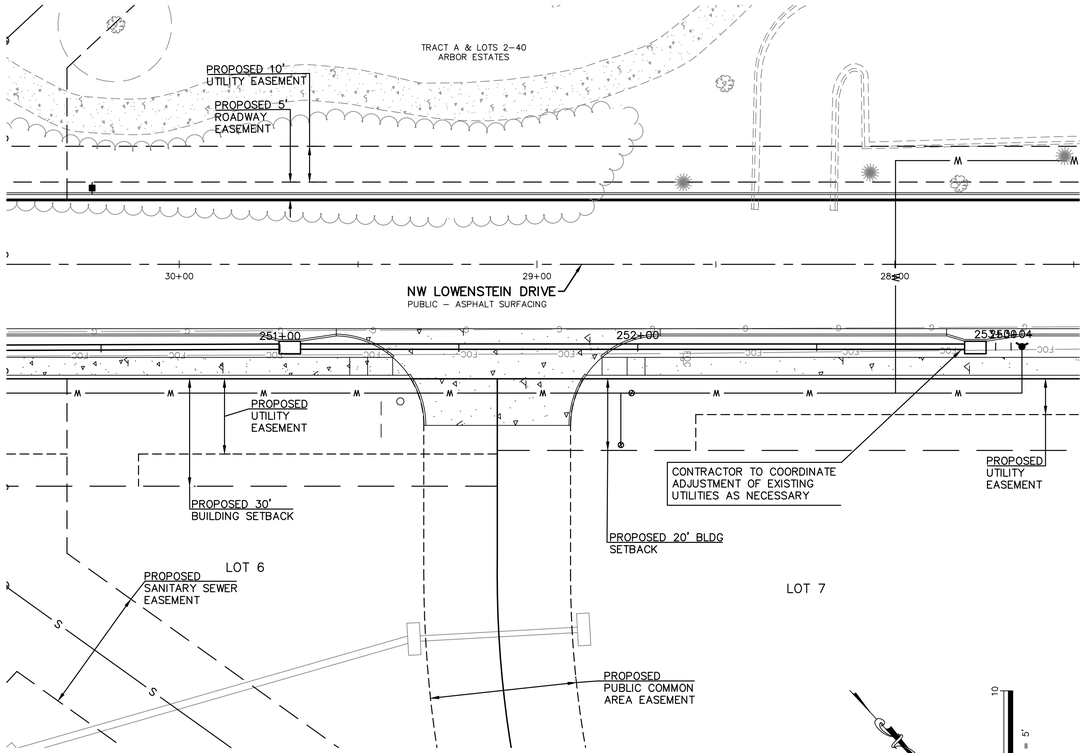
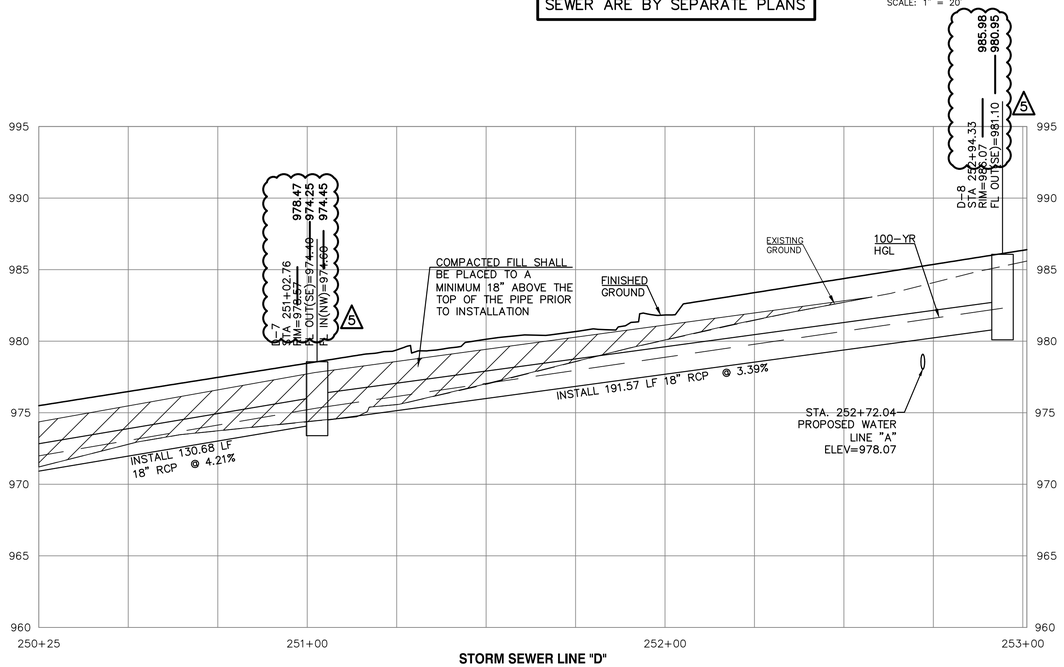
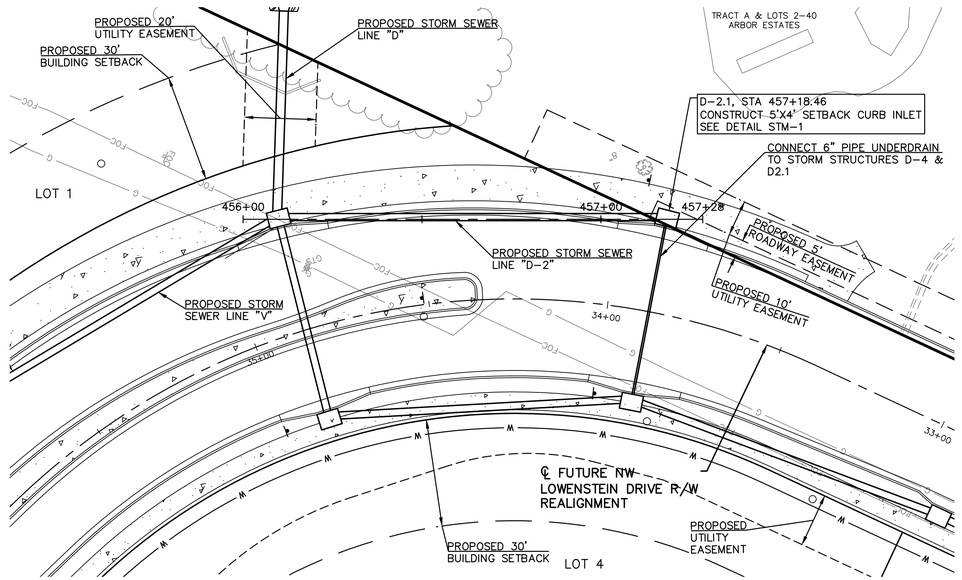
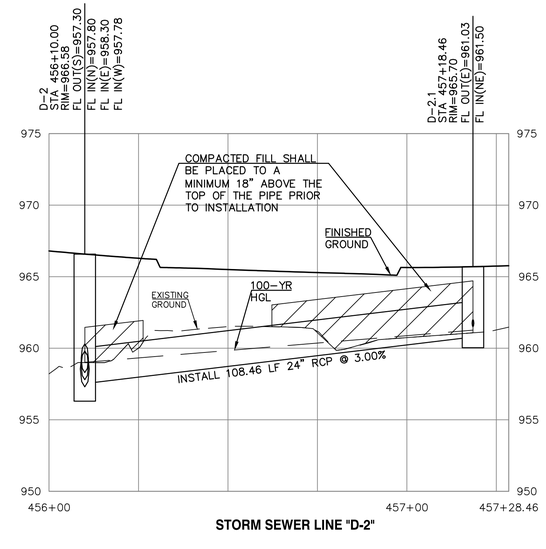


PUBLIC WATER AND SANITARY SEWER ARE BY SEPARATE PLANS



STORM SEWER LINE "D"





STORM SEWER LINE "D-2"

AS-BUILT

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
3	7-25-19	REVISED PER CITY COMMENT	LDO	BKR	LDO
2	7-5-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
2-9-2021
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
ENGINEER
MO # 021726

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jkaweng.com | www.kaweng.com

KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
STORM SEWER PLAN AND PROFILE - LINE D AND D2

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT/BKR
CFN	
7067-1PI_DPP	
SHEET	REV
16	5

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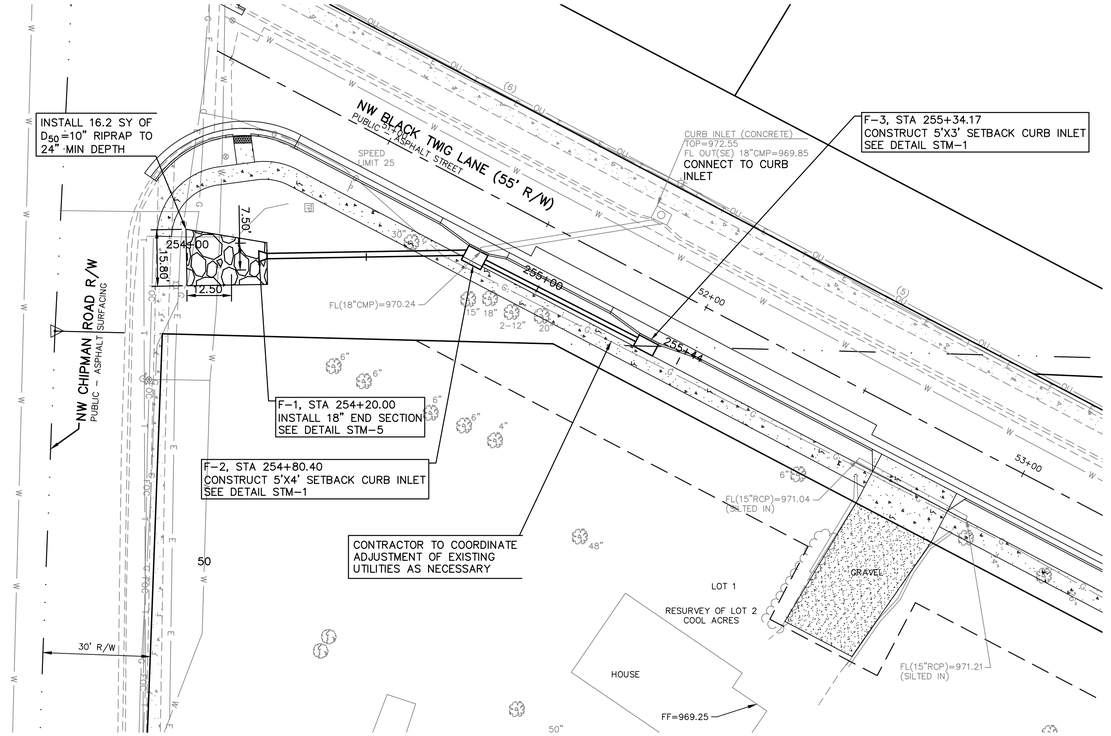
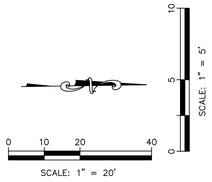
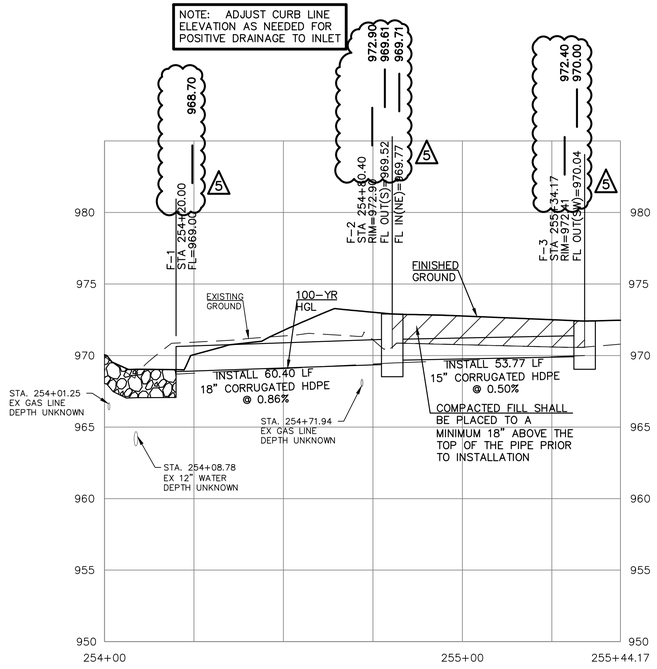




PUBLIC WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

NOTE: ADJUST CURB LINE ELEVATION AS NEEDED FOR POSITIVE DRAINAGE TO INLET



STORM SEWER LINE "F"

5 AS-BUILT

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
3	7-25-19	REVISED PER CITY COMMENT	LDO	BKR	LDO
2	7-5-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER
2-9-2021
E-21726
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
ENGINEER
MO # 021726

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KAW VALLEY ENGINEERING

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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
STORM SEWER PLAN AND PROFILE - LINE F

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT/BKR
CFN	
7067-1PI_DPP	
SHEET	REV
17	5

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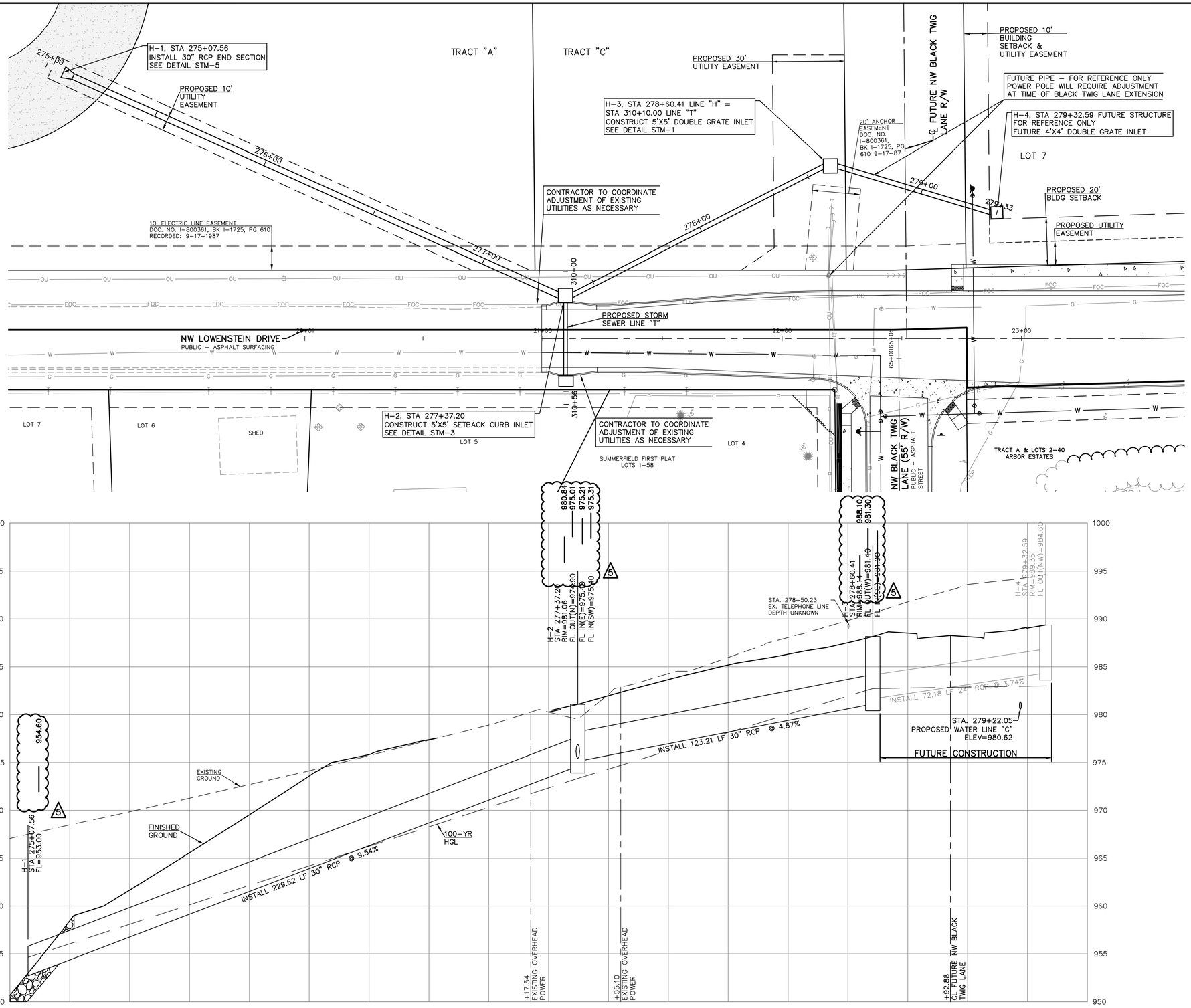

STORM SEWER LINE "H"

AS-BUILT

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
3	7-25-19	REVISED PER CITY COMMENT	LDO	BKR	LDO
2	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
1	01-11-19	INITIAL ISSUE	LDO	JT	LDO
0					

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
2-9-2021
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
ENGINEER
MO # 021726

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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
STORM SEWER PLAN AND PROFILE - LINE H

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT/BKR
CFN	
7067-1PI_DPP	
SHEET	REV
18	5

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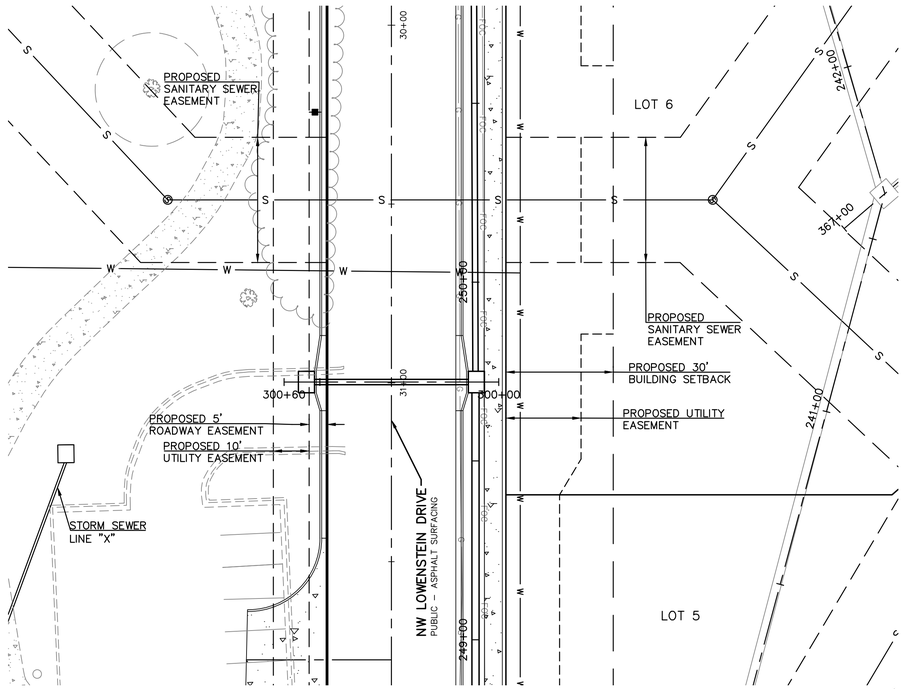
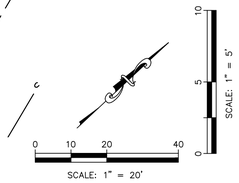
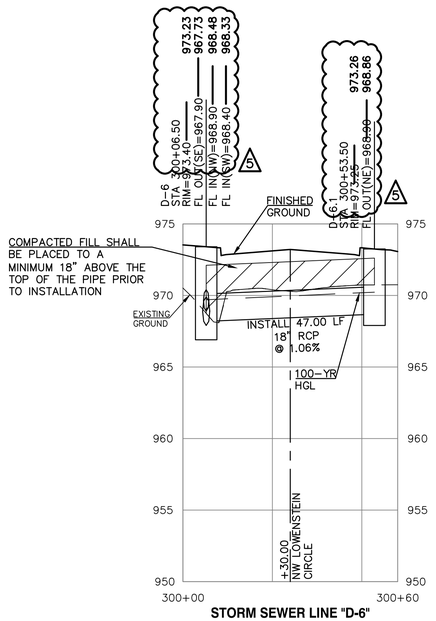
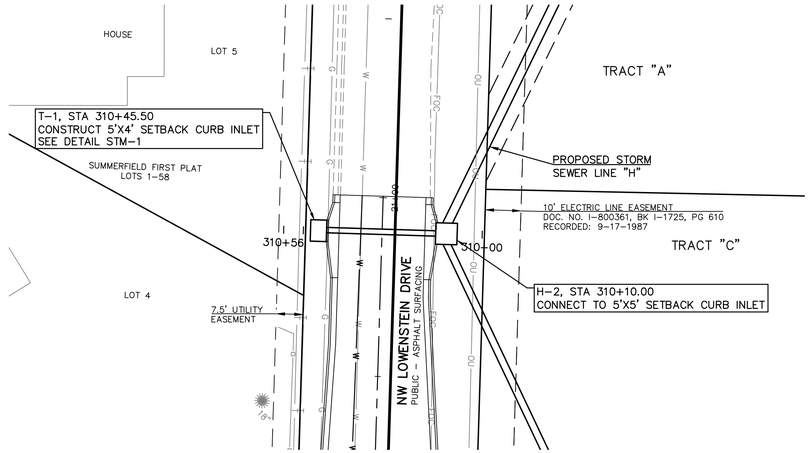


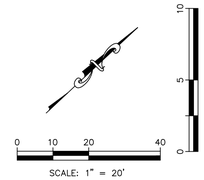


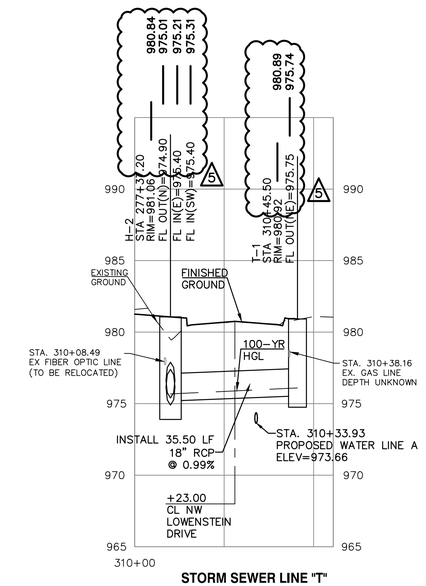
PUBLIC WATER AND SANITARY SEWER ARE BY SEPARATE PLANS



STORM SEWER LINE "D-6"







STORM SEWER LINE "T"

5 AS-BUILT

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
3	7-25-19	REVISED PER CITY COMMENT	LDO	BKR	LDO
2	7-5-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
2-9-2021
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
ENGINEER
MO # 021726

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jo@kveng.com | www.kveng.com

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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
STORM SEWER PLAN AND PROFILE - LINE D-6 AND T

PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY JT/BKR
CFN 7067-1PI_DPP
SHEET 19 | REV 5

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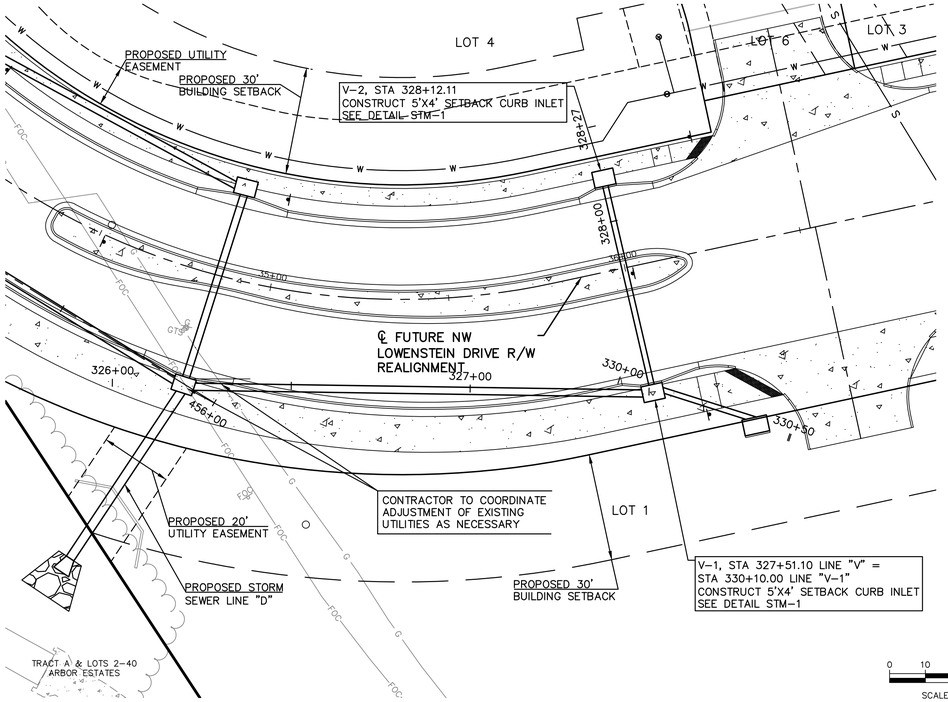
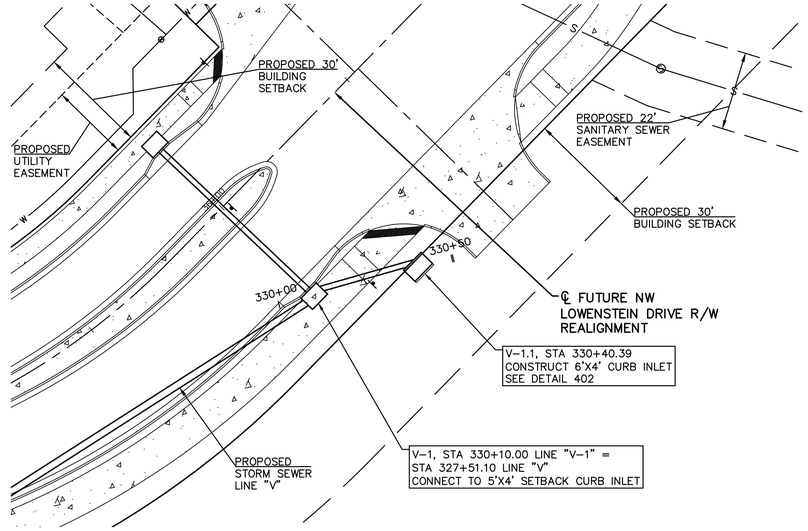
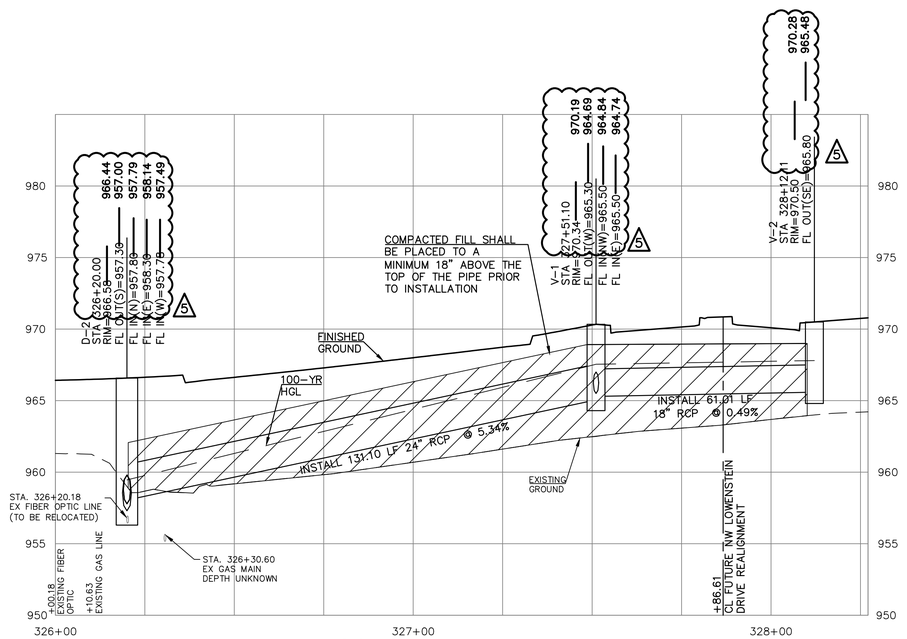
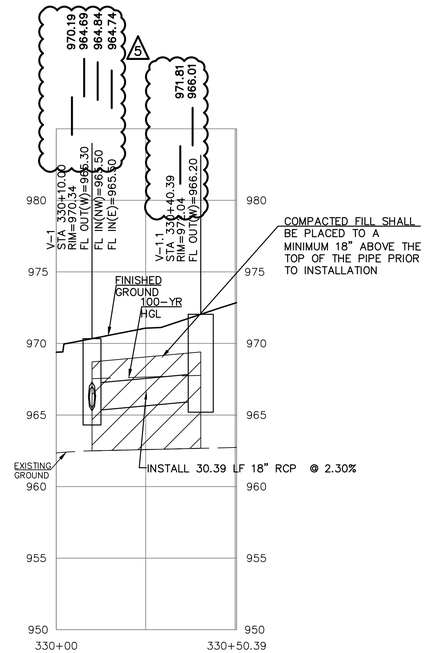






STORM SEWER LINE "V"



STORM SEWER LINE "V-1"

AS-BUILT

PUBLIC WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
3	7-25-19	REVISED PER CITY COMMENT	LDO	BKR	LDO
2	7-5-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
2-9-2021

LEON D. OSBOURN
ENGINEER
MO # 021726

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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
STORM SEWER PLAN AND PROFILE - LINE V AND V-1

PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY JT/BKR
CFN 7067-1PI_DPP
SHEET 20 | REV 5

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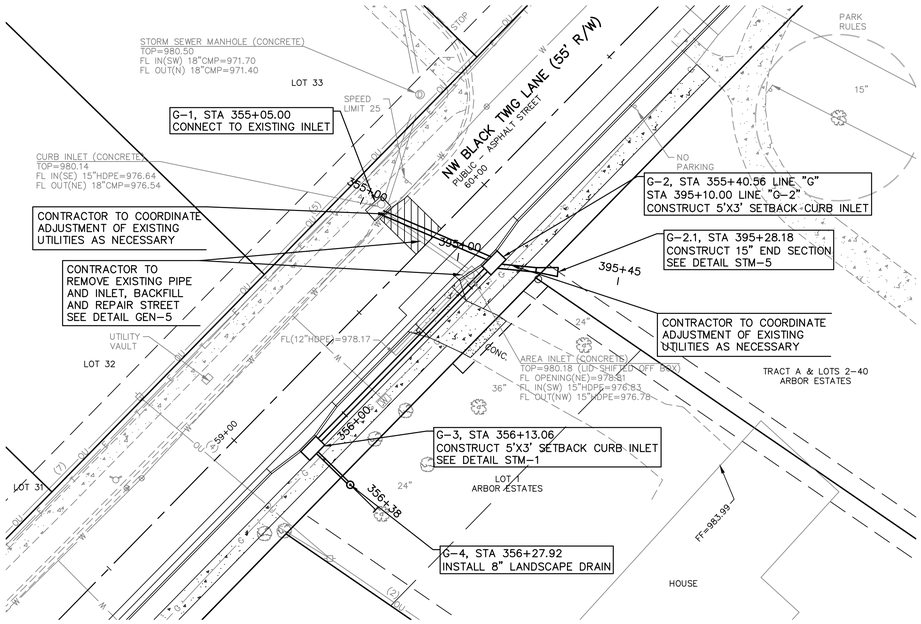
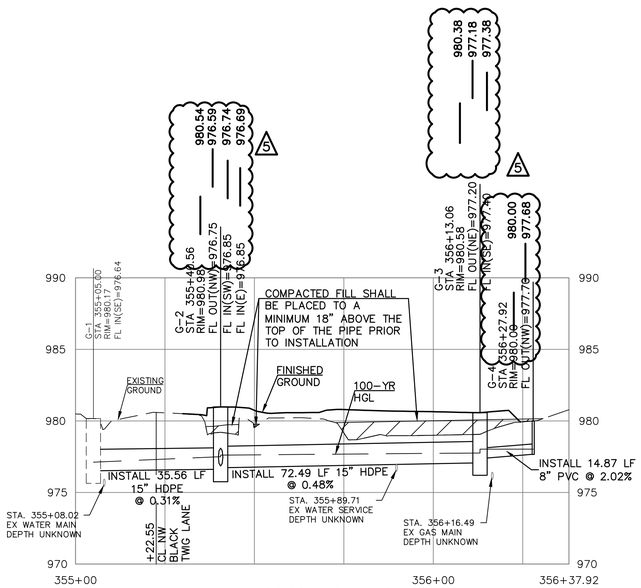


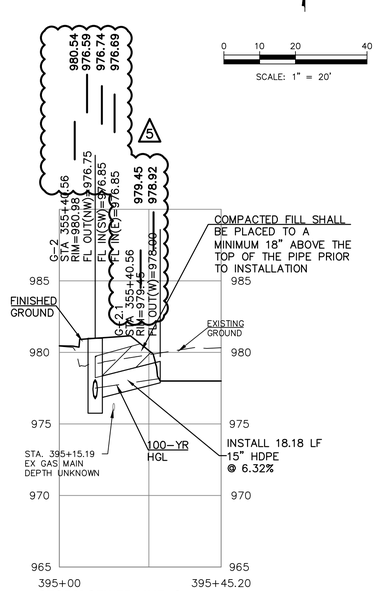
NOTE: ADJUST CURB LINE ELEVATION AS NEEDED FOR POSITIVE DRAINAGE TO EACH INLET

SCALE: 1" = 20'

SCALE: 1" = 5'



STORM SEWER LINE "G"



STORM SEWER LINE "G-2"

5 AS-BUILT

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
3	7-25-19	REVISED PER CITY COMMENT	LDO	BKR	LDO
2	7-5-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER
2-9-2021
E-21726
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
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MO # 021726

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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
STORM SEWER PLAN AND PROFILE - LINE G

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT/BKR
CFN	7067-1PI_DPP
SHEET	21
REV	5

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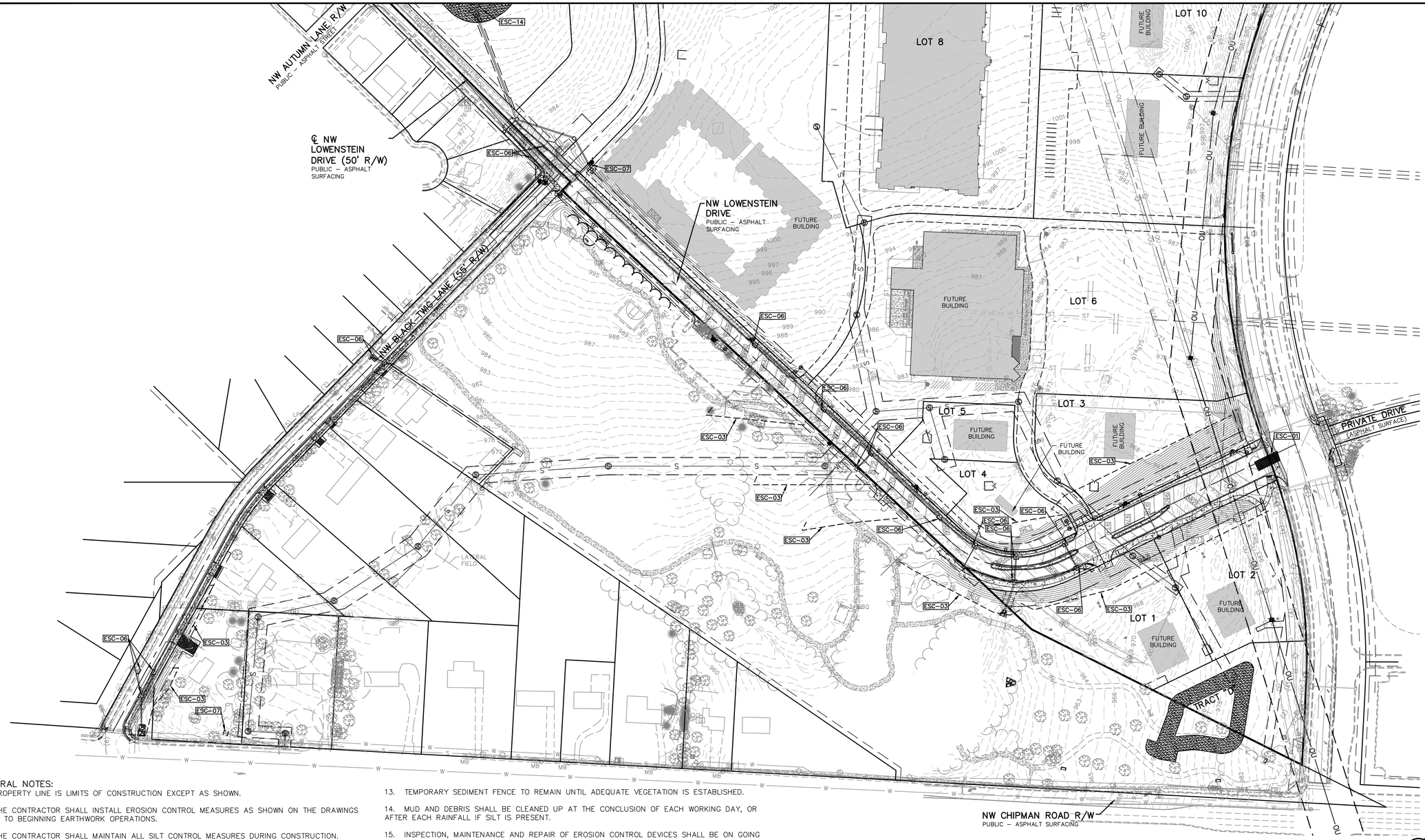

GENERAL NOTES:

1. PROPERTY LINE IS LIMITS OF CONSTRUCTION EXCEPT AS SHOWN.
2. THE CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE DRAWINGS PRIOR TO BEGINNING EARTHWORK OPERATIONS.
3. THE CONTRACTOR SHALL MAINTAIN ALL SILT CONTROL MEASURES DURING CONSTRUCTION.
4. ALL SILT SHALL REMAIN ON SITE AND SURROUNDING STREETS SHALL BE KEPT CLEAR OF ALL MUD AND DEBRIS.
5. A SEDIMENTATION BARRIER IS TO BE INSTALLED AS SHOWN.
6. ACCUMULATED SEDIMENT SHALL BE REMOVED AND THE SEDIMENTATION BARRIERS MAINTAINED AS NEEDED TO PREVENT SEDIMENTATION BYPASS OF THE BARRIER.
7. SLOPES ARE TO BE LEFT IN A ROUGH CONDITION DURING GRADING.
8. CURB INLET SEDIMENTATION BARRIERS ARE TO BE INSTALLED AROUND INLETS AND WEIRS WHERE SEDIMENTATION IS A CONCERN. INLET BARRIERS SHALL BE EITHER BLOCK AND GRAVEL, OR SECURED STRAW BALES, OR SILT FENCE.
9. SEDIMENT IS TO BE REMOVED FROM STORM WATER DRAINAGE SYSTEMS.
10. RIPRAP IS TO BE INSTALLED AT AREAS OF CONCENTRATED FLOW (I.E. CULVERT OUTLETS).
11. CONTRACTOR IS RESPONSIBLE FOR INSTALLING ANY ADDITIONAL EROSION CONTROL AS HE/SHE DEEMS NECESSARY.
12. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, TOOLS, EQUIPMENT AND LABOR AS NECESSARY TO INSTALL AND MAINTAIN ADEQUATE EROSION AND SILTATION CONTROLS REQUIRED TO PREVENT SOIL EROSION FROM LEAVING THE PROJECT SITE. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO ENSURE THAT METHODS UTILIZED ARE ADEQUATE AND COMPLY WITH REQUIREMENTS OF THE SPECIFICATIONS AND GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE WORK.
13. TEMPORARY SEDIMENT FENCE TO REMAIN UNTIL ADEQUATE VEGETATION IS ESTABLISHED.
14. MUD AND DEBRIS SHALL BE CLEANED UP AT THE CONCLUSION OF EACH WORKING DAY, OR AFTER EACH RAINFALL IF SILT IS PRESENT.
15. INSPECTION, MAINTENANCE AND REPAIR OF EROSION CONTROL DEVICES SHALL BE ON GOING THROUGHOUT THE LIFE OF BUILDING CONSTRUCTION TO KEEP THE DEVICES IN OPERABLE CONDITION AT ALL TIMES. ADDITIONAL MEASURES SHALL BE INSTALLED AS REQUIRED BY ACTUAL FIELD CONDITIONS AND/OR GOVERNING INSPECTION AGENCIES.
16. INSTALL CONSTRUCTION ENTRANCE AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING THE SITE AND AS SHOWN ON PLANS.
17. AT COMPLETION OF SITE GRADING AND OTHER RELATED CONSTRUCTION ACTIVITIES, ALL DISTURBED AREAS WITHIN THE PROJECT SITE SHALL BE SEEDED, SODDED, OR LANDSCAPED AS SHOWN ON THE LANDSCAPE PLAN WITHIN 14 DAYS.
18. TOPSOIL IS TO BE PLACED IN AREAS UNSUITABLE FOR VEGETATIVE GROWTH.
19. STRIP TOPSOIL PRIOR TO EXCAVATION, STOCKPILE AND SPREAD ONTO DISKED SUBGRADE (4" MIN) A THICKNESS OF 4 INCHES.
20. ROCK LINING (RIPRAP) SHALL BE DURABLE STONE CONTAINING A COMBINED TOTAL OF NOT MORE THAN 10 PERCENT OF EARTH, SAND, SHALE AND NON-DURABLE ROCK. AT LEAST 60 PERCENT OF THE MASS SHALL BE OF PIECES HAVING A MINIMUM WEIGHT OF 150 POUNDS OR MORE PER CUBIC FOOT.
21. THE CONTRACTOR SHALL HAVE THE RESPONSIBILITY FOR RESOLVING COMPLAINTS IN THE EVENT THAT COMPLAINTS OR DAMAGE CLAIMS ARE FILED DUE TO DAMAGES OCCURRING ADJACENT TO OR DOWNSTREAM FROM PROPERTY BY SEDIMENT RESULTING FROM EROSION ON THE PROJECT SITE.
22. GOOD HOUSEKEEPING PRACTICES SHALL BE MAINTAINED ON SITE TO KEEP SOLID WASTE FROM ENTRY INTO WATERS.

CONTRACTOR TO COORDINATE EROSION CONTROL WITH MASS GRADING CONSTRUCTION IN PHASES

23. ALL FUELING FACILITIES PRESENT ON SITE SHALL ADHERE TO APPLICABLE FEDERAL AND STATE REQUIREMENTS CONCERNING UNDERGROUND STORAGE, ABOVE GROUND STORAGE AND DISPENSERS, INCLUDING SPILL PREVENTION, CONTROL AND COUNTER MEASURES.
24. RIGHT OF WAY TO BE STABILIZED AS REQUIRED BY APWA SECTION 2400.
25. EROSION CONTROL IS TO BE PLACED IN PHASING AS CONSTRUCTION PROGRESSES.
26. MINIMAL WASHING OF CONCRETE EQUIPMENT ALLOWED, CHUTE ETC. CONCRETE WASHOUT OF THE DRUM IS NOT ALLOWED. ANY PIT/WASHOUT AREA NEEDS TO BE MAINTAINED IN A NON-DISCHARGING MANNER AND ANY WASTE RESIDUE WILL NEED TO BE CLEANED OUT AND REMOVED AT THE END OF PROJECT.
27. EROSION CONTROL SEDIMENT FENCE TO BE INSTALLED 1'-0" BEHIND CURB & GUTTER UPON COMPLETION OF BACKFILL OF CURB IN ALL AREAS WHERE SLOPES FROM LOT DRAIN TOWARDS CURB. UPON COMPLETION OF FINAL GRADING THE TOES OF ALL EMBANKMENTS IN EXCESS OF TWO FEET IN HEIGHT WILL HAVE EROSION CONTROL SEDIMENT FENCE INSTALLED.

5 AS-BUILT

PUBLIC WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

DETAILS – SEE EROSION CONTROL DETAIL SHEETS FOR THE FOLLOWING DETAILS

ESC-01 CONSTRUCTION ENTRANCE DETAIL
ESC-03 SILT FENCE
ESC-06 CURB INLET PROTECTION
ESC-07 AREA INLET AND JUNCTION BOX PROTECTION
ESC-14 OUTLET PROTECTION

EROSION & PROPOSED IMPROVEMENTS LEGEND:

970 EXISTING GROUND CONTOUR (1' INTERVALS)
970 PROPOSED FINISHED GROUND CONTOUR (1' INTERVALS)
SILT FENCE
INLET PROTECTION

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
2	7-5-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
2-9-2021

LEON D. OSBOURN
ENGINEER
MO # 021726

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JUNCTION CITY, KANSAS 66441
PH. (785) 762-5060 | FAX (785) 762-7744
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KAW VALLEY ENGINEERING

KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
EROSION CONTROL PLAN

PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY JT/BKR
CFN 7067-1PI_ECP
SHEET 22 | REV 5

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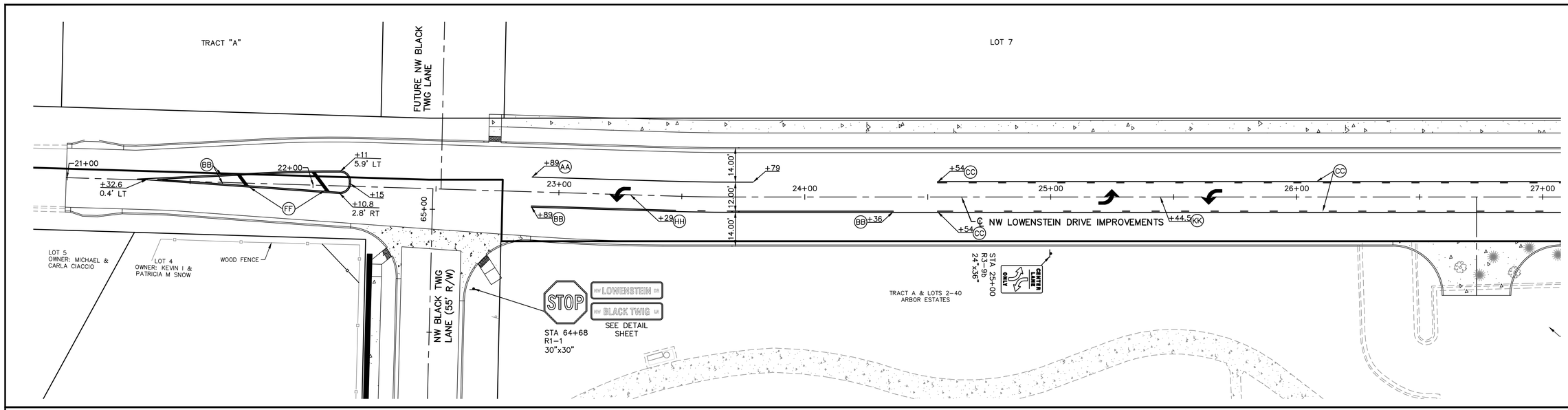

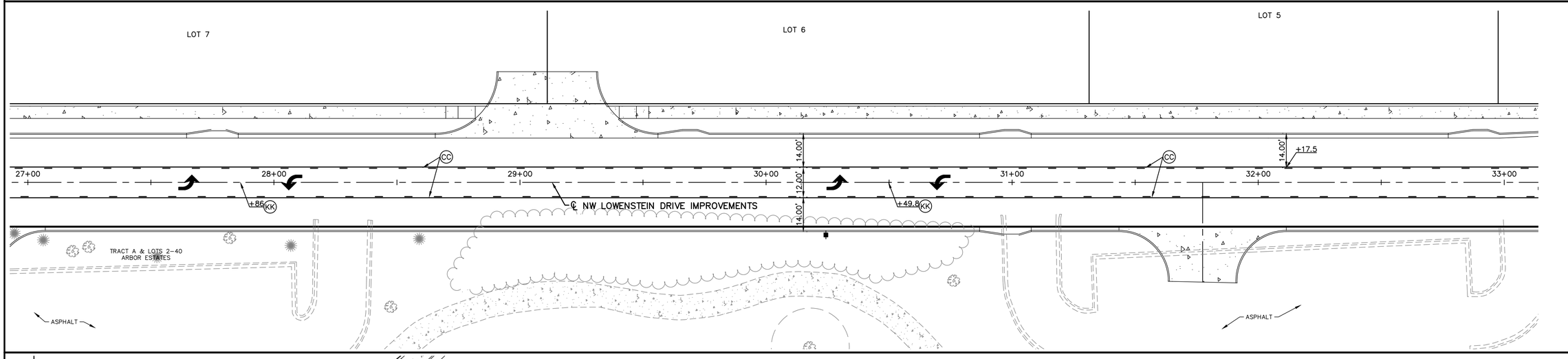

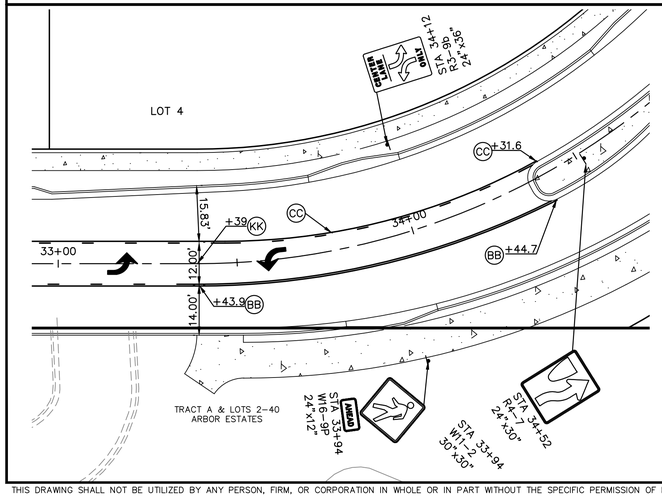

NOTE:
1. PAVEMENT MARKING SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH THE CURRENT CITY OF LEE'S SUMMIT PAVEMENT MARKING STANDARDS.

2. ALL DIMENSIONS REFERENCING DOUBLE YELLOW LINES REFERS TO THE CENTER OF THE SPACE BETWEEN THE TWO DOUBLE YELLOW LINES.

3. CONTRACTOR TO GRIND OFF CONFLICTING PAVEMENT MARKING.

LIST OF PAVEMENT MARKING	
MARK	ITEM
AA	4" SOLID WHITE LINE (HIGH BUILD PAINT)
BB	4" DOUBLE YELLOW LINE (HIGH BUILD PAINT)
CC	4" SOLID W/BROKEN YELLOW LINE (HIGH BUILD PAINT)
DD	6" DASHED WHITE EXTENSION LINE (THERMOPLASTIC)
EE	6" SOLID WHITE CROSS-WALK LINE (THERMOPLASTIC)
FF	12" SOLID YELLOW LINE (THERMOPLASTIC)
GG	24" STOP BAR (THERMOPLASTIC)
HH	TURN ARROW WHITE (LEFT) (THERMOPLASTIC)
JJ	TURN ARROW WHITE (RIGHT) (THERMOPLASTIC)
KK	TWO-WAY LEFT-TURN LANE ARROW (THERMOPLASTIC)

0 10 20 40
SCALE: 1" = 20'

5
AS-BUILT

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
4	8-14-19	REVISED PER CITY COMMENTS	LDO	JT	JT
3	7-25-19	REVISED PER CITY COMMENT	LDO	BKR	LDO
2	7-5-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
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0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
PAVEMENT MARKING & SIGNING PLANS

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT/BKR
CFN	7067-1PI_PMP
SHEET	23
REV	5

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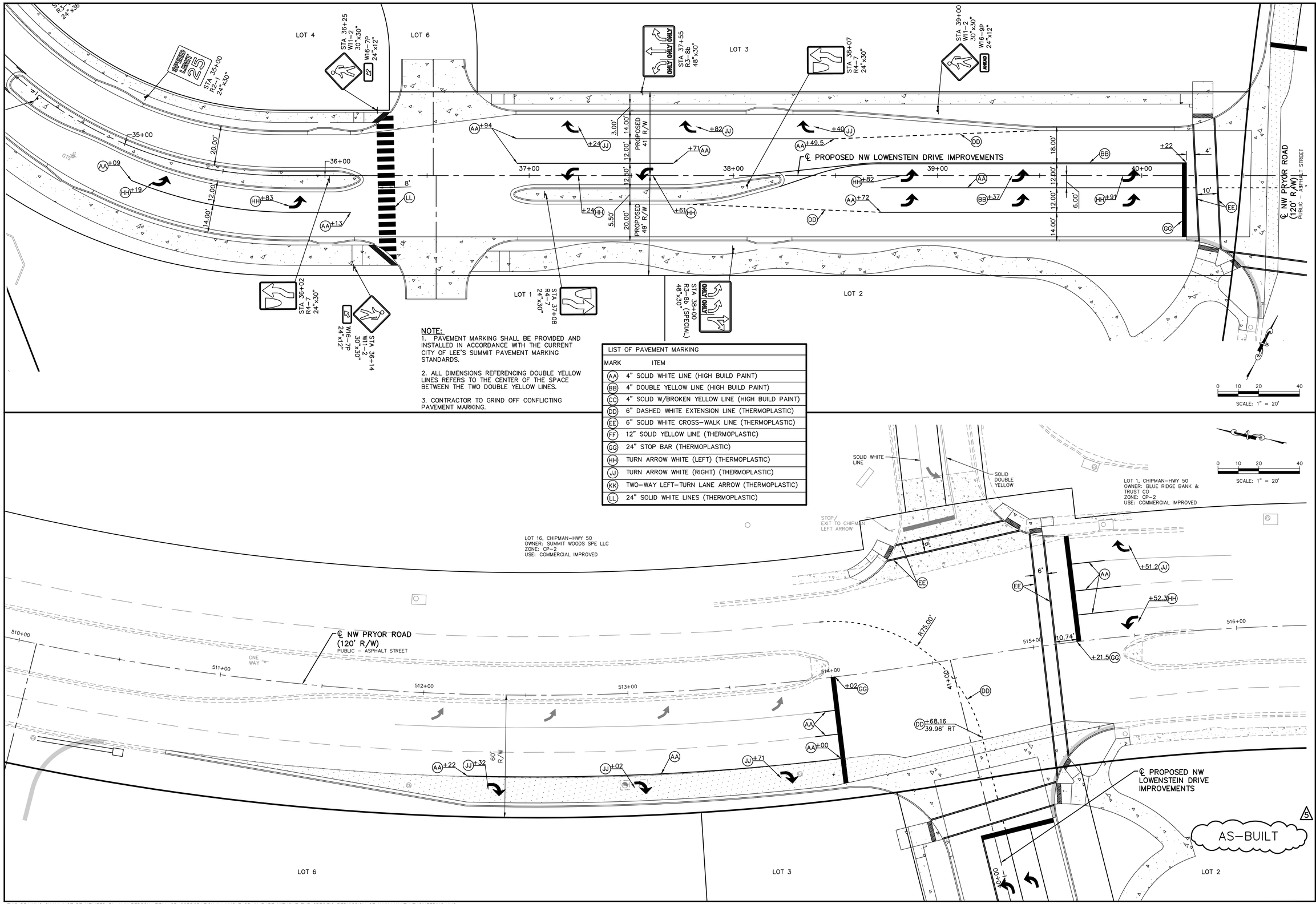

NOTE:

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3. CONTRACTOR TO GRIND OFF CONFLICTING PAVEMENT MARKING.

LIST OF PAVEMENT MARKING	
MARK	ITEM
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(DD)	6" DASHED WHITE EXTENSION LINE (THERMOPLASTIC)
(EE)	6" SOLID WHITE CROSS-WALK LINE (THERMOPLASTIC)
(FF)	12" SOLID YELLOW LINE (THERMOPLASTIC)
(GG)	24" STOP BAR (THERMOPLASTIC)
(HH)	TURN ARROW WHITE (LEFT) (THERMOPLASTIC)
(JJ)	TURN ARROW WHITE (RIGHT) (THERMOPLASTIC)
(KK)	TWO-WAY LEFT-TURN LANE ARROW (THERMOPLASTIC)
(LL)	24" SOLID WHITE LINES (THERMOPLASTIC)

REV	DATE	DESCRIPTION	DSN	DWN	CHK
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STREETS OF WEST PRYOR

NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
PAVEMENT MARKING & SIGNING PLANS

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT/BKR
CFN	7067-1PI_PMP
SHEET	24
REV	5

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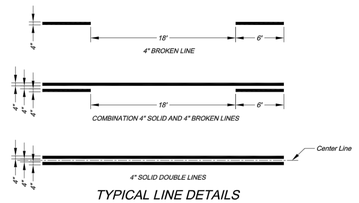
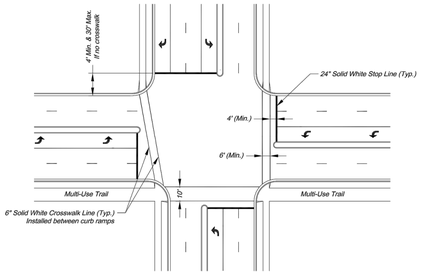


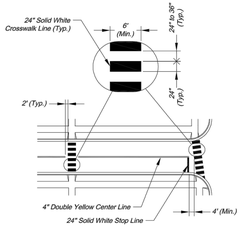
TYPICAL LINE DETAILS

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.

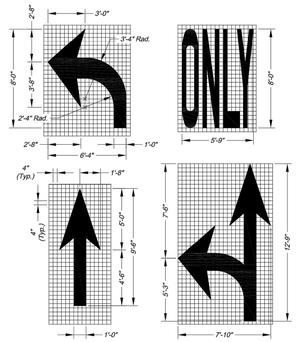


TYPICAL INTERSECTION MARKINGS

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.

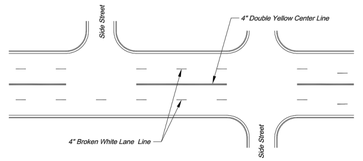


TYPICAL MIDBLOCK OR SCHOOL CROSS WALK

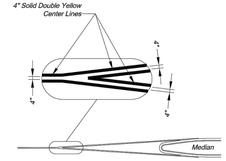


ARROW AND SYMBOL DETAILS

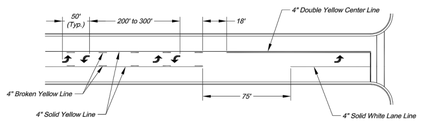
NOTES:
1. All arrow and symbol markings shall be white, and shall be centered in their respective traffic lanes.
2. Right-turn and combination right-turn/straight arrows are reverse of arrows shown.

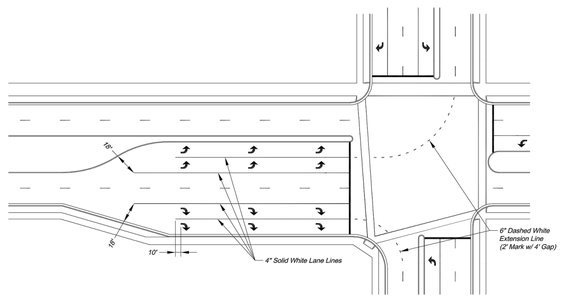


TYPICAL MARKINGS FOR FOUR-LANE UNDIVIDED ROADWAY



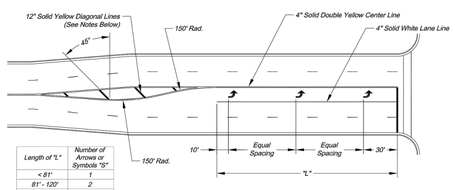
TYPICAL MEDIAN NOSE CENTER LINE DETAIL

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.

TYPICAL MARKINGS FOR TWO-WAY LEFT-TURN LANE



TYPICAL DUAL TURN LANE MARKINGS

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

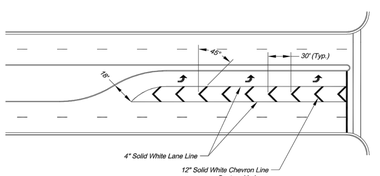


Length of "L"	Number of Arrows or Symbols "S"
< 81'	1
81' - 120'	2
121' - 200'	3
201' - 280'	4
281' - 360'	5
361' - 440'	6

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.

5
AS-BUILT



TYPICAL STRIPED OUT TURN LANE MARKINGS

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

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

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

STATE OF MISSOURI
LEON D OSBOURN
NUMBER
E-21726
REGISTERED PROFESSIONAL ENGINEER
2-9-2021

LEON D. OSBOURN
ENGINEER
MO # 021726

Drawn By: AS
Checked By: JW
Date: 09/09/2009
Project#
1 OF 2
1

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

Project: INTERSECTION MARKING DETAILS
Sheet Name: STANDARD DRAWING PM-2

STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
PAVEMENT MARKING DETAIL SHEET

PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY JT/BKR
CFN 7067-1PI_DET
SHEET 25 | REV 5

Drawn By: AS
Checked By: JW
Date: 09/09/2009
Project#
2 OF 2
2

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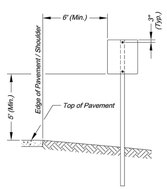
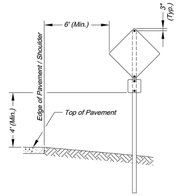
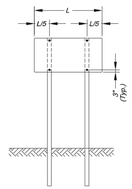


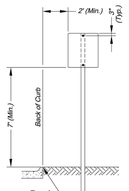
SIGN INSTALLATION FOR NON-CURBED STREET



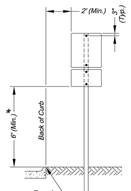
SIGN INSTALLATION WITH AUXILARY SIGN FOR NON-CURBED STREET



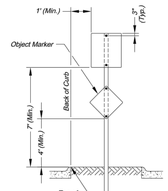
SIGN INSTALLATION WITH TWO SIGN POSTS



SIGN INSTALLATION FOR CURBED STREET



SIGN INSTALLATION WITH AUXILARY SIGN FOR CURBED STREET

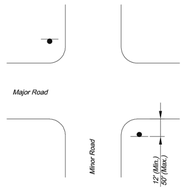


SIGN INSTALLATION FOR RAISED MEDIANS

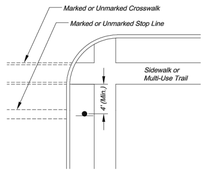
SIGN MOUNTING DETAILS

★ 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.

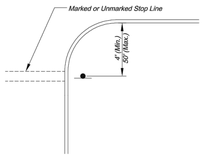
NOTE:
1. Generally, the sign mounting height should not be more than 1' greater than the minimum mounting height.



NON-CURBED INTERSECTION INSTALLATION

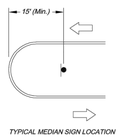


INTERSECTION WITH SIDEWALK / MULTI-USE TRAIL INSTALLATION



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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PHONE: (816) 969-1800 FAX: (816) 969-1809

Project:
Sheet Name: SIGN MOUNTING DETAILS
STANDARD DRAWING SN-1

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

1 OF 3

1

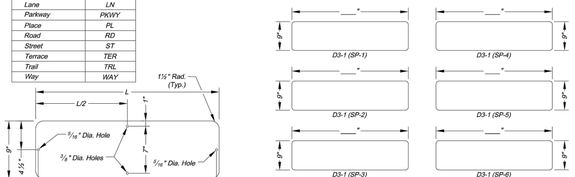
STANDARD ABBREVIATION LISTS

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

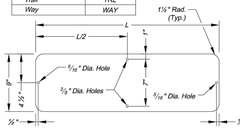
Numbered Streets	
First	ST
Second	ND
Third	RD
Fourth to Tenth	TH

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			

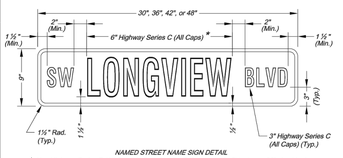


PROJECT SIGN DETAILS



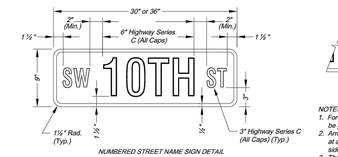
STREET NAME SIGN BLANK DETAILS

For Mounting on Square Steel Posts

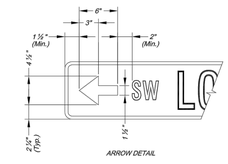


NAMED STREET NAME SIGN DETAIL

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



NUMBERED STREET NAME SIGN DETAIL

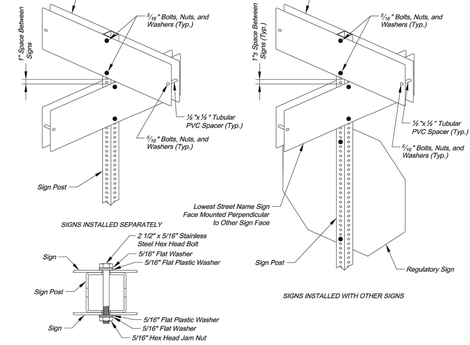


ARROW DETAIL

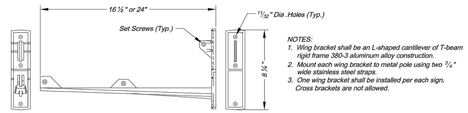
PRIVATE STREET TAG DETAIL

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.

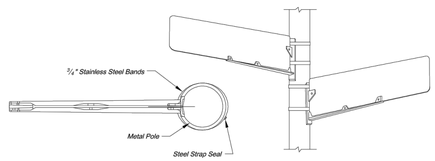
STREET NAME SIGN FACE DETAILS



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

CITY OF LEE'S SUMMIT
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
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LEE'S SUMMIT, MISSOURI 64063
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Project:
Sheet Name: STREET NAME SIGN DETAILS
STANDARD DRAWING SN-3

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

3 OF 3

3

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER
E-21726
REGISTERED PROFESSIONAL ENGINEER
2-9-2021

LEON D. OSBOURN
ENGINEER
MO # 021726

KAW VALLEY ENGINEERING
2319 N. JACKSON | P.O. BOX 1304
JUNCTION CITY, KANSAS 66441
PH. (785) 762-5000 FAX (785) 762-7744
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KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
SIGN AND TRAFFIC CONTROL DETAIL SHEET

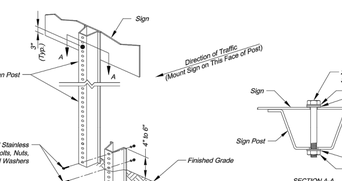
PROJ. NO. A14_7067-1

DESIGNER	DRAWN BY
LDO	JT/BKR

CFN 7067-1PI_DET

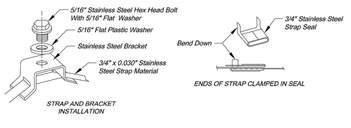
SHEET 26 | REV 5

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.



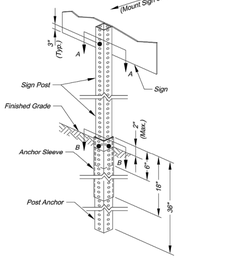
U-STEEL POST DETAILS

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

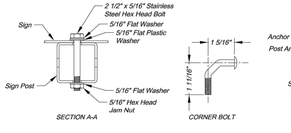


STRAP TYPE SIGN SUPPORT DETAILS

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



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 ½" x 2 ½" 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:
Sheet Name: SIGN POST DETAILS
STANDARD DRAWING SN-2

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

2 OF 3

2

SYMBOL LEGEND

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

SIGN LEGEND

GENERAL NOTES:

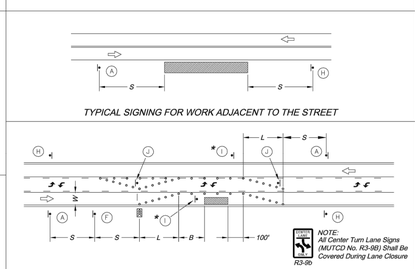
1. All signs, barricades, channelizers, markings and other traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2. All traffic control devices shall be standard in size, shape, color, and message, in good condition, and retro-reflectorized. 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 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.

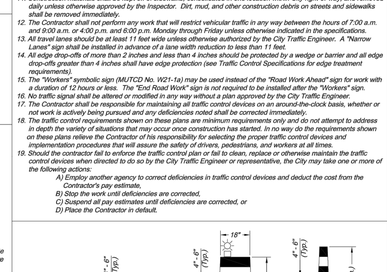
Sign Spacing "S"	
Speed Limit (mph)	Spacing (Feet)
25	100
30 - 35	250
2 40	350

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





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

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Project:
Sheet Name: TRAFFIC CONTROL DETAILS
STANDARD DRAWING TC-1

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

x OF x

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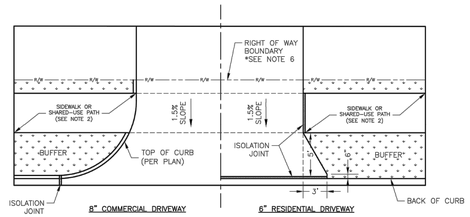
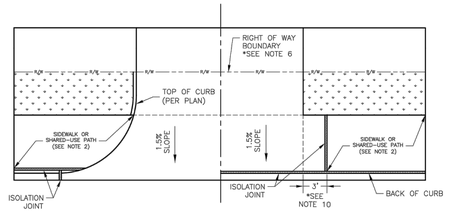
THIS DRAWING SHALL NOT BE UTILIZED BY ANY PERSON, FIRM, OR CORPORATION IN WHOLE OR IN PART WITHOUT THE SPECIFIC PERMISSION OF KAW VALLEY ENGINEERING, INC.



8" COMMERCIAL DRIVEWAY — 6" RESIDENTIAL DRIVEWAY

DRIVEWAY WITH BUFFER
NOT TO SCALE



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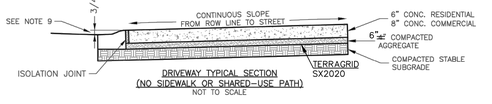
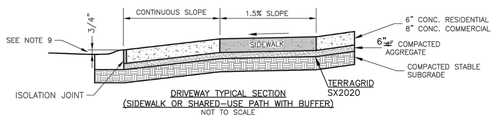
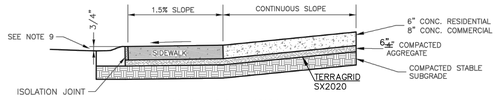


DRIVEWAY TYPICAL SECTION
(NO SIDEWALK OR SHARED-USE PATH)
NOT TO SCALE



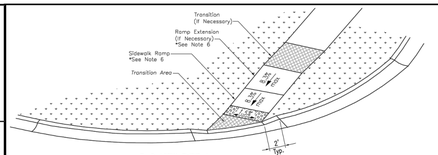
DRIVEWAY TYPICAL SECTION
(SIDEWALK OR SHARED-USE PATH WITH BUFFER)
NOT TO SCALE



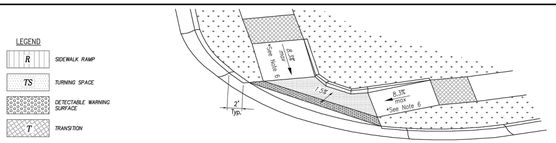
DRIVEWAY TYPICAL SECTION
(SIDEWALK OR SHARED-USE PATH WITHOUT BUFFER)
NOT TO SCALE

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 GEN–3B, SIDEWALK/SHARED USE PATH RAMP AT DRIVEWAY 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, IN THE PUBLIC RIGHT OF WAY, SHALL BE KCMMB 4K CONCRETE MIX.
6. RESIDENTIAL DRIVEWAYS, IN THE PUBLIC RIGHT OF WAY, KCMMB 4K CONCRETE MIX IS RECOMMENDED. OTHER CONCRETE MIXES NEEDS TO BE APPROVED BY CITY INSPECTOR.
7. A JOINT MUST BE INSTALLED AT THE RIGHT OF WAY BOUNDARY FOR PROPERTY DELINEATION.
8. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.
9. ¾" FROM TOP OF CURB TO FLOWLINE AT DRIVEWAY (TYPE CG–1 CURB ONLY). MUST MAINTAIN ORIGINAL FLOWLINE OF CURB.
10. SIDEWALK ADJOINING CURB SHALL BE 6" THICK, EXTENDING 3' FROM THE DRIVEWAY.
11. THE MAXIMUM WIDTH OF A RESIDENTIAL DRIVEWAY IS 36 FEET WITHIN THE RIGHT OF WAY.

GEN-1

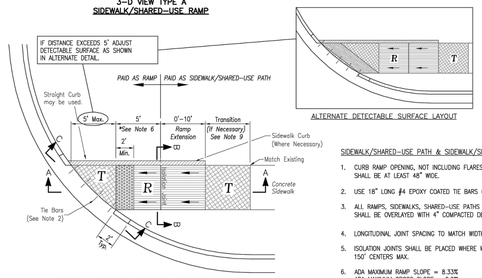


3–D VIEW TYPE A
SIDEWALK/SHARED–USE RAMP

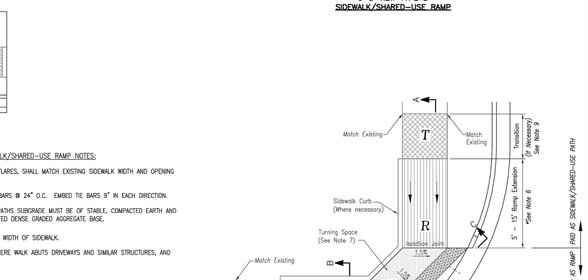


3–D VIEW TYPE B
SIDEWALK/SHARED–USE RAMP

LEGEND
- R — SIDEWALK RAMP
- TS — TURNING SPACE
- DETECTABLE WARNING SURFACE
- T — TRANSITION



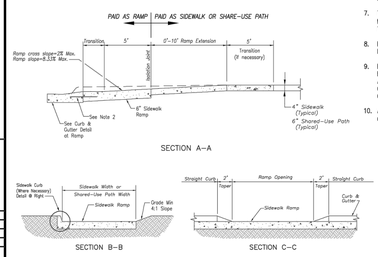
TYPE A SIDEWALK/SHARED–USE RAMP
Not to Scale



PAID AS SIDEWALK/SHARED–USE PATH | PAID AS RAMP

TYPE B SIDEWALK/SHARED–USE RAMP
Not to Scale

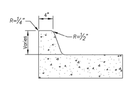
SIDEWALK/SHARED–USE PATH & SIDEWALK/SHARED–USE RAMP NOTES:
1. CURB RAMP OPENING, NOT INCLUDING FLARES, SHALL MATCH EXISTING SIDEWALK WIDTH AND OPENING SHALL BE AT LEAST 48" WIDE.
2. USE 18" LONG #4 EPOXY COATED TIE BARS @ 24" O.C. EMBED TIE BARS 9" IN EACH DIRECTION.
3. ALL RAMPS, SIDEWALKS, SHARED–USE PATHS SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
4. LONGITUDINAL JOINT SPACING TO MATCH WIDTH OF SIDEWALK.
5. ISOLATION JOINTS SHALL BE PLACED WHERE WALK ABUTS DRIVEWAYS AND SIMILAR STRUCTURES, AND 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).



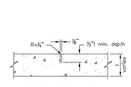
SECTION A–A

SECTION B–B — SECTION C–C

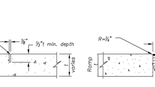
TYPE A & B SIDEWALK RAMP
Not to Scale



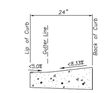
SIDEWALK CURB DETAIL
Not to Scale



CONTRACTION JOINT



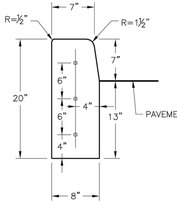
ISOLATION JOINT



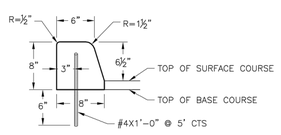
CURB & GUTTER DETAIL AT RAMP
Not to Scale

JOINT DETAILS
Not to Scale

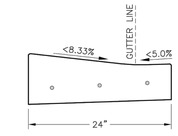
GEN-3A



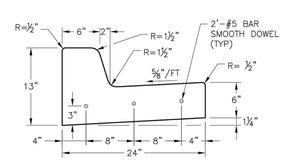
STRAIGHT CURB
(TYPE C–1)



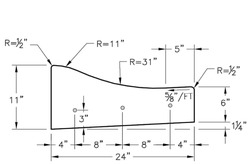
DOWELLED CURB
(TYPE DC)



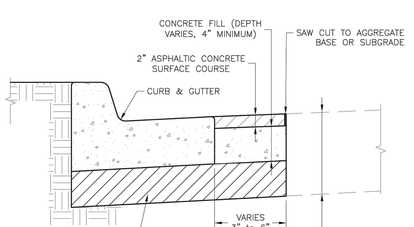
CURB & GUTTER DETAIL AT RAMP
(ADA SLOPE REQUIREMENTS)



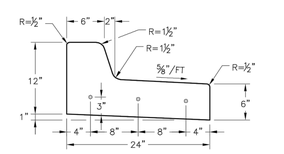
STRAIGHT BACK CURB & GUTTER
(TYPE CG–1)



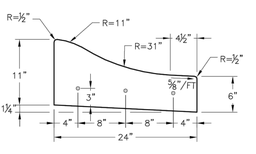
ROLL BACK CURB & GUTTER
(TYPE CG–2)



CURB REPLACEMENT DETAIL



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

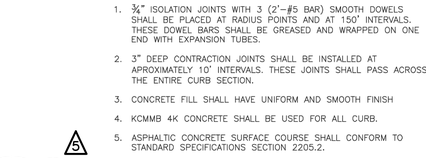


ROLL BACK DRY CURB & GUTTER
(TYPE CG–2 DRY)

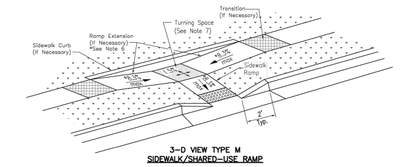
GENERAL NOTES
1. ¾" ISOLATION JOINTS WITH 3 (2'–#5 BAR) SMOOTH DOWELS SHALL BE PLACED AT RADIUS POINTS AND AT 150' INTERVALS. THESE DOWEL BARS SHALL BE GREASED AND WRAPPED ON ONE END WITH EXPANSION TUBES.
2. 3" DEEP CONTRACTION JOINTS SHALL BE INSTALLED AT APROXIMATELY 10' INTERVALS. THESE JOINTS SHALL 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.

5 AS–BUILT

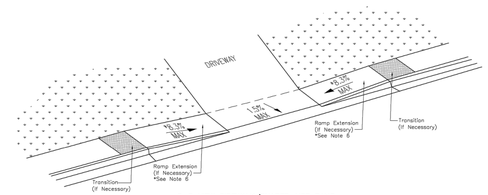
GEN-4



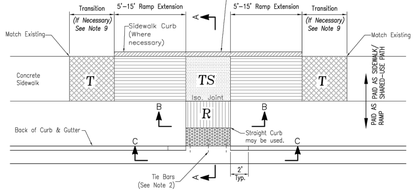
CURB REPLACEMENT DETAIL



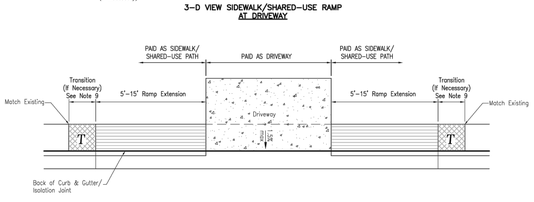
3–D VIEW TYPE M
SIDEWALK/SHARED–USE RAMP



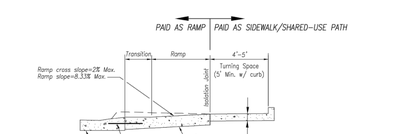
3–D VIEW SIDEWALK/SHARED–USE RAMP
AT DRIVEWAY



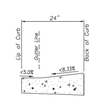
TYPE M SIDEWALK/SHARED–USE RAMP
Not to Scale



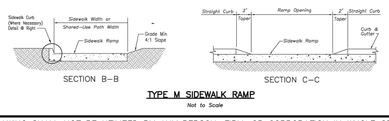
SIDEWALK/SHARED USE RAMP
AT DRIVEWAY WITH ADJOINING CURB



SECTION A–A

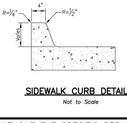


CURB & GUTTER DETAIL AT RAMP
Not to Scale



SECTION B–B — SECTION C–C

TYPE M SIDEWALK RAMP
Not to Scale



SIDEWALK CURB DETAIL
Not to Scale

LEGEND
- R — SIDEWALK RAMP
- TS — TURNING SPACE
- DETECTABLE WARNING SURFACE
- T — TRANSITION

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).

GEN-3B

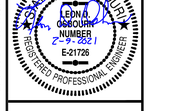
REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2–9–21	AS–BUILT PLANS	LDO	JT	LDO
2	7–5–19	REVISED PER CITY COMMENTS	LDO	JT	LDO
1	5–16–19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01–11–19	INITIAL ISSUE	LDO	JT	LDO

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. #

GEN-3A



LEON D. OSBOURN
ENGINEER
MO # 021726

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JUNCTION CITY, KANSAS 66441
PH. (785) 762-5040 | FAX (785) 762-7744
jo@kveng.com | www.kvengineering.com

KAW VALLEY ENGINEERING

KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842.
EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
STREET DETAIL SHEET

PROJ. NO. A14_7067–1
DESIGNER LDO | DRAWN BY JT/BKR
CFN 7067–1PI_DET
SHEET 27 | REV 5

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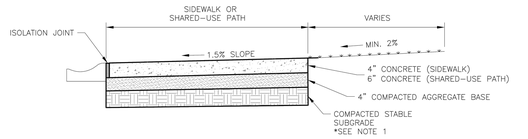
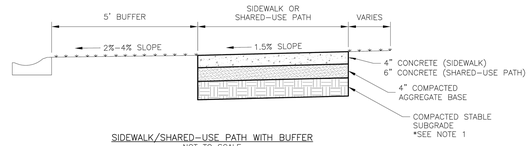


SIDEWALK/SHARED–USE PATH WITHOUT BUFFER
NOT TO SCALE



SIDEWALK/SHARED–USE PATH WITH BUFFER
NOT TO SCALE

GENERAL NOTES:

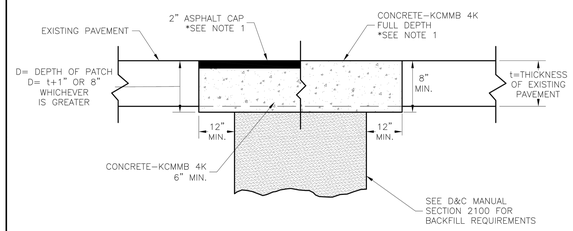
1. SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
2. 1.5% CROSS SLOPE MUST BE MAINTAINED THROUGH DRIVEWAYS.
3. KCMMB 4K CONCRETE MIX SHALL BE REQUIRED FOR ALL SIDEWALKS/SHARED–USE PATHS OR AS APPROVED BY THE CITY INSPECTOR.
4. ALL SIDEWALK/SHARED–USE PATHS SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
5. AN ISOLATION JOINT SHALL BE PLACED AT A MAXIMUM OF 150 FT. CONSTRUCTION JOINTS SHALL BE PLACED THE SAME WIDTH OF SIDEWALK/SHARED–USE PATHS, BUT NO GREATER THAN 10 FT.
6. AN ISOLATION JOINT SHALL BE PLACED WHERE THE SIDEWALK/SHARED–USE PATHS MEETS A RESIDENTIAL DRIVEWAY.
7. SHARED–USE PATHS WIDTH SHALL BE 10 FT. WIDE.
8. SIDEWALK/SHARED–USE PATHS FINISHING SHALL BE FULL BROOM FINISH OR AS DIRECTED BY CITY INSPECTOR.
9. 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



TRENCHING/PATCHING DETAIL
NOT TO SCALE

NOTE:

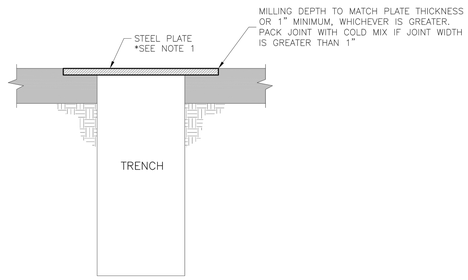
1. ASPHALT CAP OR FULL DEPTH CONCRETE SHALL BE DETERMINED BY CITY INSPECTOR.

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

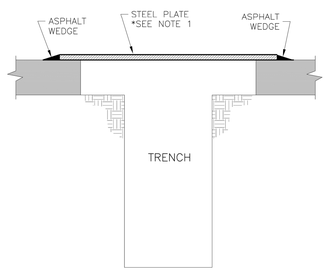
TRENCHING/PATCHING ROADWAYS DETAIL

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

GEN-5



TYPE "A" PLATING
NOT TO SCALE
(CITY POSTED SPEEDS OF 35 MPH AND GREATER)



TYPE "B" PLATING
NOT TO SCALE
(CITY POSTED SPEEDS OF 30 MPH OR LESS)

GENERAL NOTES:

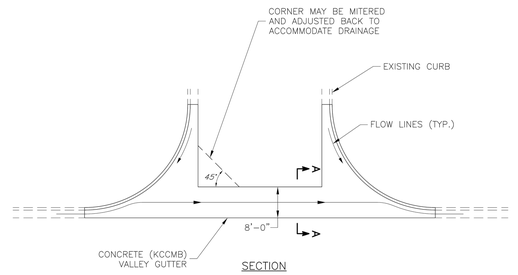
1. THE CONTRACTOR SHALL PROVIDE ADEQUATE OVERLAP OF PLATE ON ASPHALT TO ASSURE NO SLIPPAGE OF PLATE AND NO COLLAPSING OF TRENCH.
2. ALL PLATES SHALL BE ANCHORED SO PLATES DO NOT MOVE OR SHIFT UNDER TRAFFIC.

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

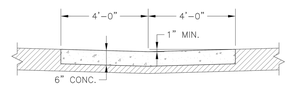
TRENCHING PLATE DETAIL

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

GEN-6



SECTION



SECTION
Scale: 1" = 1'–0"

VALLEY GUTTER DETAIL
Intersection of Two Public Streets

5
AS–BUILT

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

VALLEY GUTTER DETAIL

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

GEN-7

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER
E-21726
REGISTERED PROFESSIONAL ENGINEER
2-9-2021

LEON D. OSBOURN
ENGINEER
MO # 021726

2319 N. JACKSON | P.O. BOX 1304
JUNCTION CITY, KANSAS 66441
PH: (785) 762-5040 | FAX: (785) 762-7744
jlb@kaweng.com | www.kaweng.com
KAW VALLEY ENGINEERING

KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
STREET DETAIL SHEET

PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY JT/BKR
CFN 7067-1PI_DET
SHEET 28 | REV 5

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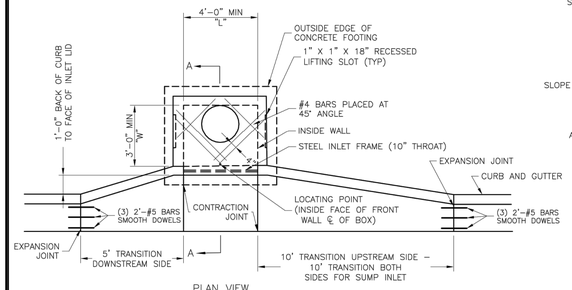
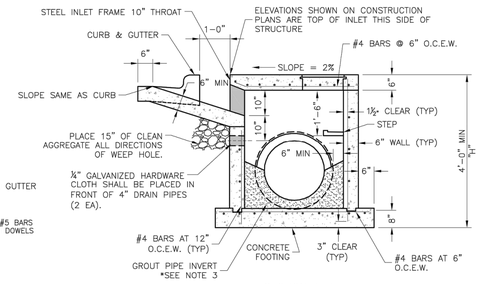
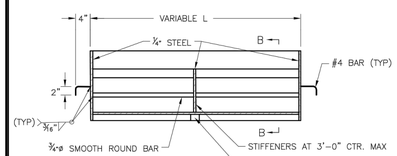


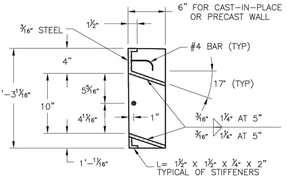
PLAN VIEW



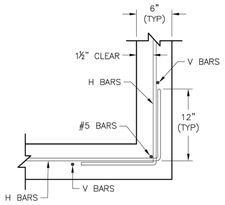
SECTION A–A



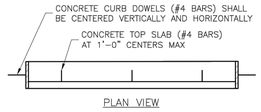
FRONT ELEVATION



SECTION B–B



WALL CORNER DETAIL



PLAN VIEW

STEEL FRAME NOTES:
1. ALL WELDS SHALL BE PERFORMED IN ACCORDANCE WITH APPROPRIATE AWS SPECIFICATIONS AND PROCEDURES.
2. ALL WELDS ON EXPOSED SURFACES SHALL BE DRESSED SO AS TO PROVIDE A PLEASING FINISHED APPEARANCE.
3. THE ENTIRE FRAME SHALL BE PAINTED A SINGLE COAT OF CHEM–PRIME #37H–78 PRIMER (GRAY) OR EQUAL.

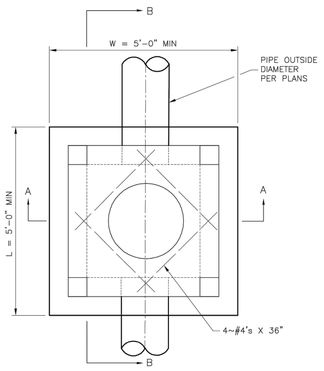
GENERAL NOTES:
1. THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION. THE SECOND DIMENSION IS THE "W" DIMENSION.
2. FLOW LINES LISTED ON THE PROJECT PLANS ARE LISTED AT THE INSIDE FACE OF THE WALL.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
4. LOCATE MH RING AND COVER ON BLANK WALL IF POSSIBLE.
5. STEPS SHALL BE SPACED AT 1'–4" O.C. VERTICALLY ON BLANK WALL IF POSSIBLE.
6. BEVEL ALL EXPOSED EDGES WITH ¾"CHAMFER OR ½" TOOLED EDGE.
7. ON–GRADE INLETS SHALL CONFORM TO THE STREET GRADE AND SUMP INLETS SHALL BE LEVEL.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON–SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. LIFTING RINGS SHALL BE REMOVED AND SEALED WITH NON–SHRINKABLE GROUT
10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

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

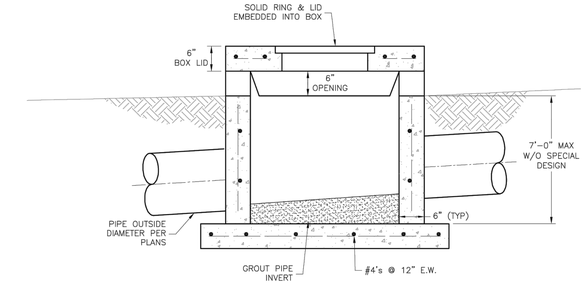
Project: STANDARD DETAILS CITY OF LEE'S SUMMIT, MO LEE'S SUMMIT, JACKSON COUNTY, MO
Sheet Name: CURB INLET DETAIL

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

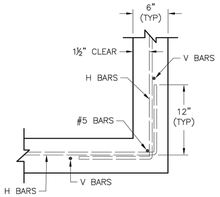
STM-1



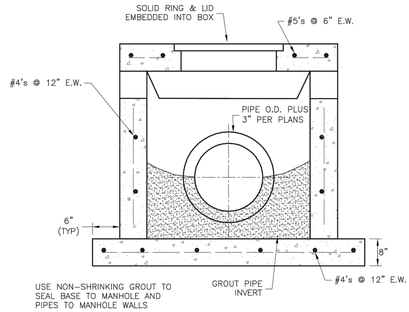
PLAN VIEW



SECTION B–B



WALL CORNER DETAIL



SECTION A–A

GENERAL NOTES:
1. LOCATE RING AND COVER OVER OUTLET ON BLANK WALL.
2. USE ¾" CHAMFER ON ALL EXPOSED CONCRETE CORNERS.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
4. STEPS REQUIRED AT 16" O.C. WHEN DEPTH FROM TOP OF CASTING TO INVERT EXCEEDS 3' ON BLANK WALL IF POSSIBLE.
5. BOXOUTS WILL NOT BE ALLOWED TO PROJECT THROUGH THE CORNERS OF THE STRUCTURE.
6. THE MINIMUM REINFORCING SHALL BE 1 H–BAR OVER A CAST–IN–PLACE PIPE AND 2 H–BARS OVER A PRECAST BOXOUT.
7. SHOW FIELD INLET ORIENTATION ON PLANS PLUS NUMBER AND SIDE OF OPENINGS.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON–SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

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: FIELD INLET DETAIL

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

STM-2

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2–9–21	AS–BUILT PLANS	LDO	JT	LDO
0	01–11–19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER
E-21726
REGISTERED PROFESSIONAL ENGINEER
2-9-2021

LEON D. OSBOURN
ENGINEER
MO # 021726

2319 N. JACKSON | P.O. BOX 1304
JUNCTION CITY, KANSAS 66441
PH: (785) 762-5040 | FAX: (785) 762-7744
jfo@kveng.com | www.kveng.com

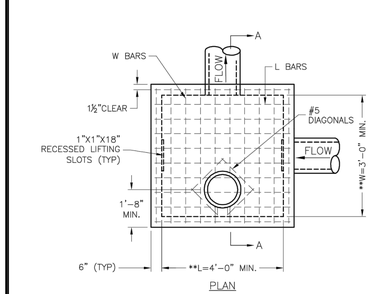
KAW VALLEY ENGINEERING

KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

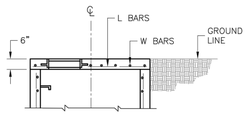
STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
STORM SEWER DETAIL SHEET

PROJ. NO. A14_7067–1
DESIGNER LDO | DRAWN BY JT/BKR
CFN 7067–1PI_DET
SHEET 29 | REV 5



PLAN

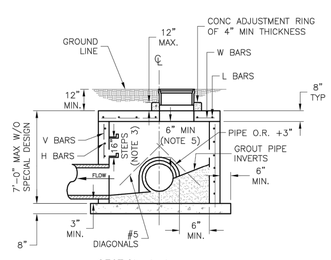


SLAB TOP ALTERNATE FOR JUNCTION BOX (SHALLOW)

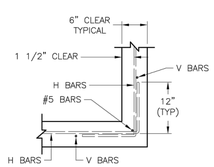
** INCREASE IN MULTIPLES OF 6" (7'–0") MAX WITHOUT SPECIAL DESIGN. (SEE PROJECT PLANS FOR DETAILS)

REINFORCING

BARS	BAR SIZE	SPACING (IN.)
H	4	12
V	4	12
L	5	6
W	5	6



SECTION A–A



WALL CORNER DETAIL

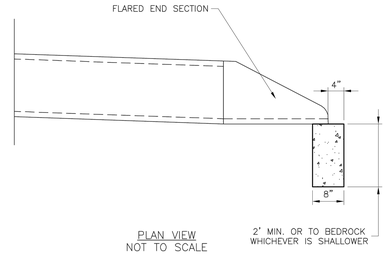
GENERAL NOTES:
1. LOCATE RING AND COVER ON BLANK WALL.
2. USE ¾" CHAMFER STRIP OR ½" R EDGER TOOL ON ALL EXPOSED CONCRETE CORNERS.
3. STEPS REQUIRED AT 16" O.C. WHEN DEPTH FROM TOP OF CASTING TO INVERT EXCEEDS 4' ON BLANK WALL IF POSSIBLE.
4. BOXOUTS WILL NOT BE ALLOWED TO PROJECT THROUGH THE CORNERS OF THE STRUCTURE AND THE MINIMUM DISTANCE BETWEEN BOXOUTS IS 6".
5. THE MINIMUM REINFORCING SHALL BE 1 H–BAR OVER A CAST–IN–PLACE PIPE AND 2 H–BARS OVER A PRECAST BOXOUT.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON–SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. REINFORCING OF COVERS IN STREETS REQUIRE SPECIAL DESIGN.
10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

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: JUNCTION BOX DETAIL

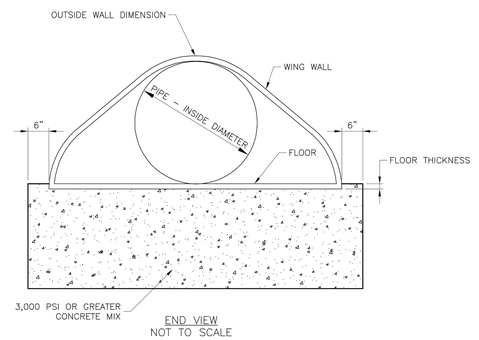
Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #:

STM-3



PLAN VIEW
NOT TO SCALE

2' MIN. OR TO BEDROCK WHICHEVER IS SHALLOWER



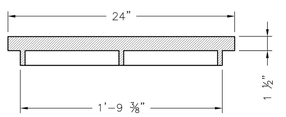
END VIEW
NOT TO SCALE

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

FLARED END SECTION SUPPORT DETAIL

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

STM-5



STANDARD 24" MANHOLE COVER
MINIMUM WEIGHT = 160 LB
NOTE: PICK HOLES NOT SHOWN

*COVER AND FRAME MODEL INFORMATION REFER TO THE STORMWATER APPROVED PRODUCT LIST.

5 AS–BUILT

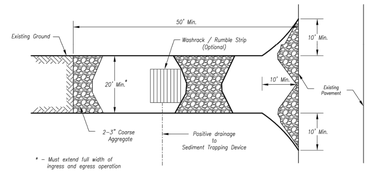
LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STORM MANHOLE COVER DETAIL

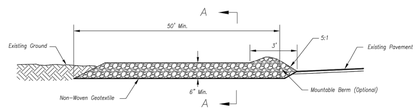
Date: 04/17
Drawn By: MJF
Checked By: DL

STM-6

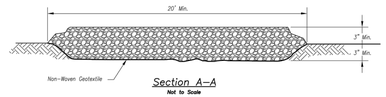
THIS DRAWING SHALL NOT BE UTILIZED BY ANY PERSON, FIRM, OR CORPORATION IN WHOLE OR IN PART WITHOUT THE SPECIFIC PERMISSION OF KAW VALLEY ENGINEERING, INC.



Plan View
Not to Scale



Side Elevation
Not to Scale



Section A-A
Not to Scale

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.

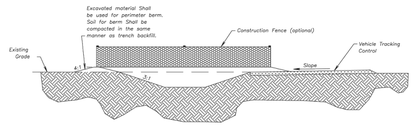
CONSTRUCTION ENTRANCE

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.

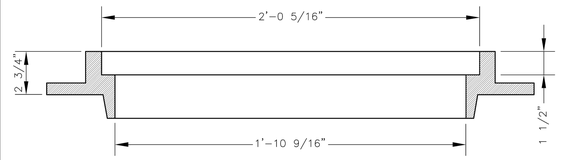
Maintenance for Concrete Washout:

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.

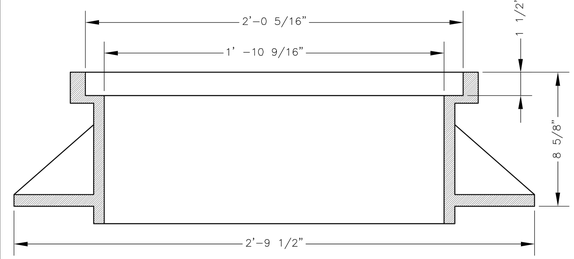


CONCRETE WASHOUT

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.

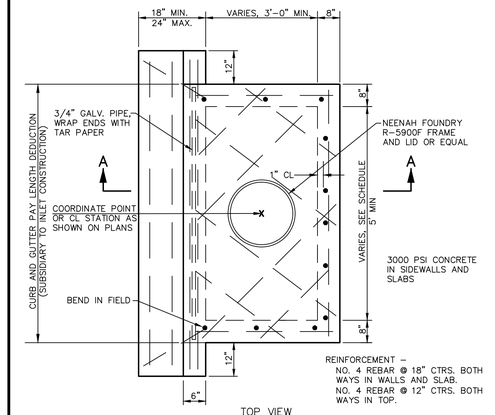


SLAB MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS103A
MINIMUM WEIGHT = 145 LB

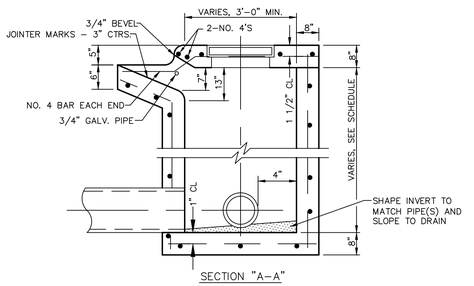


STANDARD 24" MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS101A
MINIMUM WEIGHT = 250 LB

*COVER AND FRAME MODEL INFORMATION REFER TO THE STORMWATER APPROVED PRODUCTS LIST.



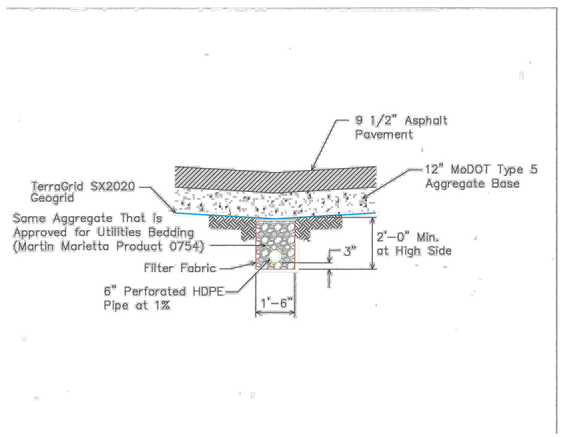
TOP VIEW

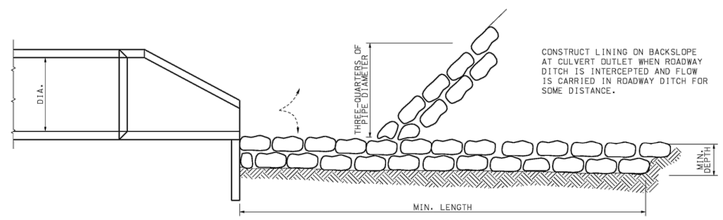


SECTION "A-A"

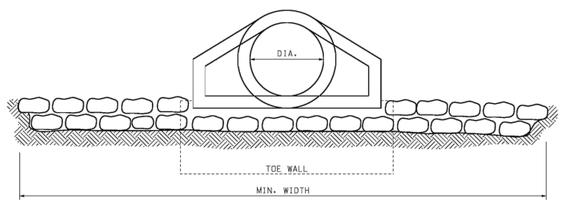
NOTES:
1. USE 3000 P.S.I. CONCRETE IN SIDE WALL AND SLAB.
2. PROVIDE 3/4" ROUNDED EDGE ON ALL EXPOSED CORNERS.
3. WHERE INLETS ARE SET IN CURVES, FORM FRONT WALL TO CONFORM TO CURVE.
4. PRE-CAST UNITS MAY BE SUBSTITUTED WITH THE ENGINEERS APPROVAL. SHOP DRAWINGS AND DESIGN CALCULATIONS MUST BE SUBMITTED.
5. THE TOP OF THE INLET SHALL BE SLOPED TO FIT STREET, SIDEWALK, OR FINISHED GROUND ELEVATIONS

CURB INLET 402

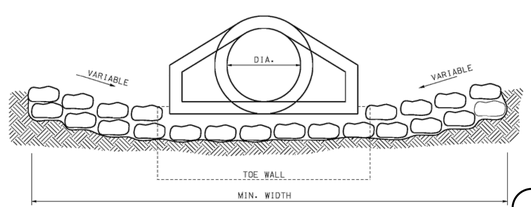




SIDE VIEW



END VIEW



END VIEW
(ALTERNATE METHOD)

ROCK LINING FOR CULVERT OUTLETS

CULVERT SIZE. DIA (IN.)	MINIMUN DEPTH AND WIDTH (FT.)	MINIMUM LENGHT (FT.)	ROCK LINING (CU.YD.)	EQUIVALENT PIPE ARCH CULVERT (APPROX.)	EQUIVALENT CONCRETE BOX CULVERT (APPROX.)
18	1 X 4	12	2		
24	1 X 6	14	3		2' X 1½'
30	1 X 7	16	4	B-5	2' X 2'
36	1.5 X 9	18	9	B-6	3' X 2'
42	2 X 10	20	15	B-7	3' X 3'
48	2 X 12	20	18	B-8	4' X 3'
54	2 X 13.5	22	22	B-9	4' X 4'
60	2 X 15	25	28	B-10	5' X 4'
66	2 X 18	25	33	B-11	5' X 5'
72	2 X 20	30	44	B-12	5' X 6'
84	2.5 X 25	35	81		6' X 6'
96	2.5 X 30	40	111		7' X 7'
108	3 X 32	40	142		8' X 8'

GENERAL NOTES:

THE DIMENSIONS SHOWN IN THE TABLE CAN BE APPLIED TO BOX OR ARCH CULVERTS OF EQUIVALENT WATERWAY AREA.

AS-BUILT

5

AMERICAN PUBLIC WORKS ASSOCIATION
KANSAS CITY METRO CHAPTER

CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT
STANDARD DRAWING NUMBER ESC-01
ADOPTED: 10/24/2016

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

STORM MANHOLE FRAME DETAIL
STM-7
Date: 04/17
Drawn By: MJF
Checked By: DL

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

ROCK LINING FOR CULVERT OUTLET

DATE EFFECTIVE: 10/01/1981
DATE PREPARED: 8/21/2009
609.70C
SHEET NO. 1 OF 1

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
2	7-5-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
2-9-2021
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
ENGINEER
MO # 021726

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KAW VALLEY ENGINEERING

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IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED

STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
STORM SEWER AND EROSION CONTROL DETAIL SHEET

PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY JT/BKR
CFN 7067-1PI_DET
SHEET 30 | REV 5

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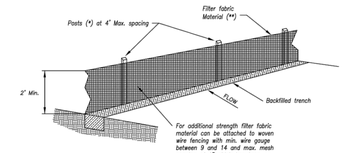
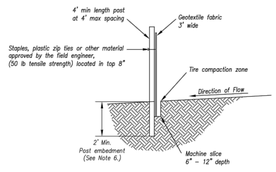




(*) POSTS
- MIN. LENGTH 4'
- HARDWOOD 1 ¾" x 1 ¾"
- NO.2 SOUTHERN PINE 2 ⅛" x 2 ⅛"
- STEEL 1.33 LB/FT

(**) – 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 ½ the height of silt fence.
2. Repair as necessary to maintain function and structure.

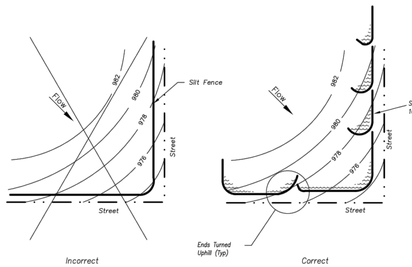
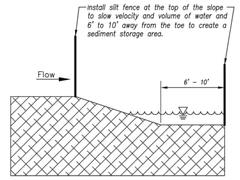
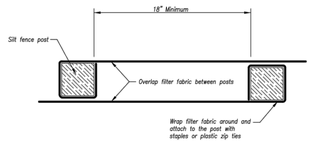


Figure A

SILT FENCE LAYOUT
Not to Scale

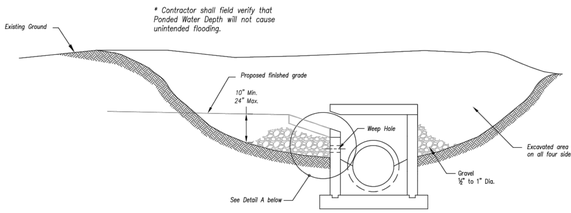


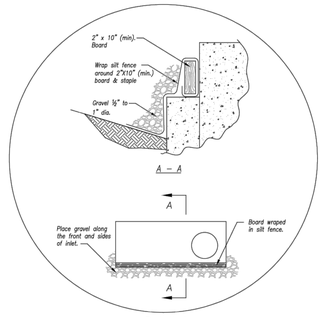


JOINING FENCE SECTIONS
Not to Scale

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

AMERICAN PUBLIC WORKS ASSOCIATION	KANSAS CITY METRO CHAPTER	
SILT FENCE	STANDARD DRAWING NUMBER ESC-03	ADOPTED: 10/24/2016





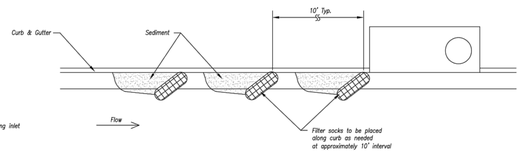
EARLY STAGE CURB INLET
(Open Box and Prior to Pouring Curb and Inlet Throat)

Notes:

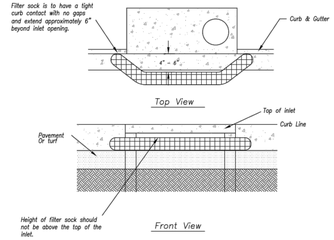
1. Immediately following inlet construction and prior to construction of curb and inlet throat, protect inlet opening by installing 2" X 10" (min.) board wrapped in silt fence. (Structures shall have excavated storage area on all four sides to allow settling of sediment (Early Stage Curb Inlet).
2. When 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.



On Grade Curb Inlet Protection

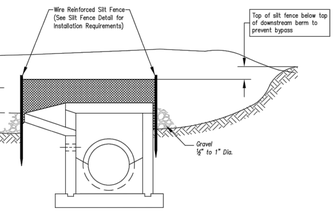


Sump Inlet Sediment Filter

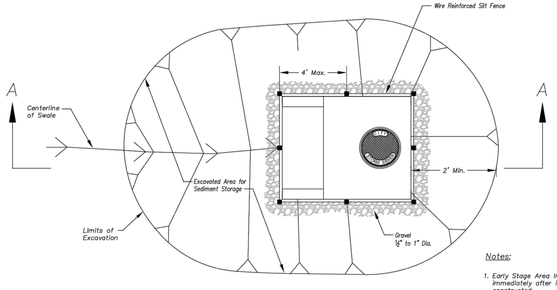
LATE STAGE CURB INLET
(After Pouring Curb and Inlet Throat)

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

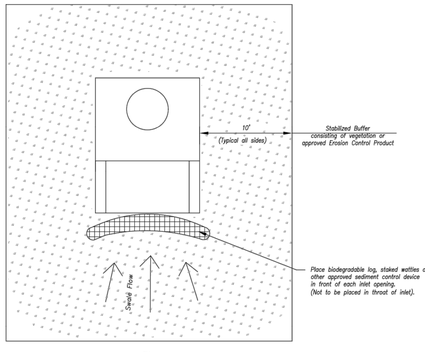


Section A–A
Not to Scale

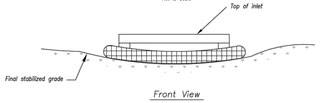


Plan
Not to Scale

EARLY STAGE AREA INLET
(All open boxes and inlets not at final grade)



Plan
Not to Scale



Front View

LATE STAGE AREA INLET
(Area inlets at final grade and existing inlets)

Notes:

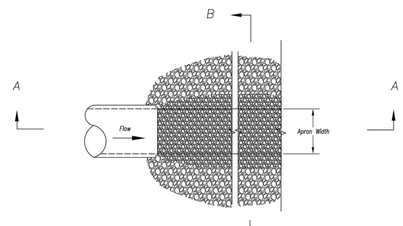
1. Early Stage Area Inlet Sediment Barrier to be installed immediately after inlet or junction box is constructed.
2. Silt fence shall remain in place until excavated area is removed and Late Stage Area Inlet is being installed.
3. Backfill excavated area ONLY after final grading of the site. Stabilization of the site is to immediately follow.
4. Wire reinforced silt fence may be used in place of silt fence attached to wood frame.

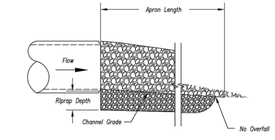
Maintenance:

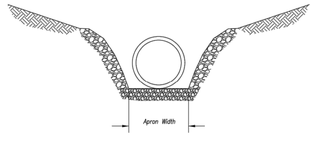
1. Remove deposited sediment from excavated storage areas when available storage has been reduced by 20%.
2. Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.
3. Repair or replace as necessary to maintain function and integrity of installation.

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

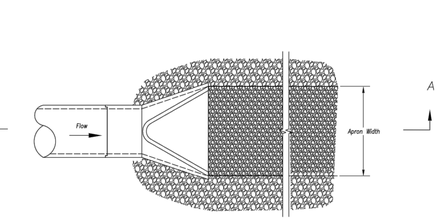
AMERICAN PUBLIC WORKS ASSOCIATION	KANSAS CITY METRO CHAPTER	
AREA INLET AND JUNCTION BOX PROTECTION	STANDARD DRAWING NUMBER ESC-07	ADOPTED: 10/24/2016

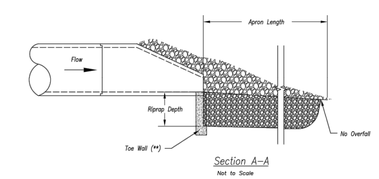






OUTLET PROTECTION W/O END SECTION





OUTLET PROTECTION WITH END SECTION

Notes:

1. Rock all sides steeper than 3:1.
2. Stabilize all disturbed areas downstream of outlet to the limits of disturbance.
3. Alternative outlet protection and slope stabilization measures may be used with approval by the Engineer.
4. Install riprap apron so that it is no higher than flowline of pipe.
5. Reference APWA Specification 2650 for rock type, size, and placement.

5 AS–BUILT

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

AMERICAN PUBLIC WORKS ASSOCIATION	KANSAS CITY METRO CHAPTER	
OUTLET PROTECTION	STANDARD DRAWING NUMBER ESC-14	ADOPTED: 10/24/2016

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER
E-21726
2-9-2021
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
ENGINEER
MO # 021726

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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
EROSION CONTROL DETAIL SHEET

PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY JT/BKR
CFN 7067-1PI_DET
SHEET 31 | REV 5

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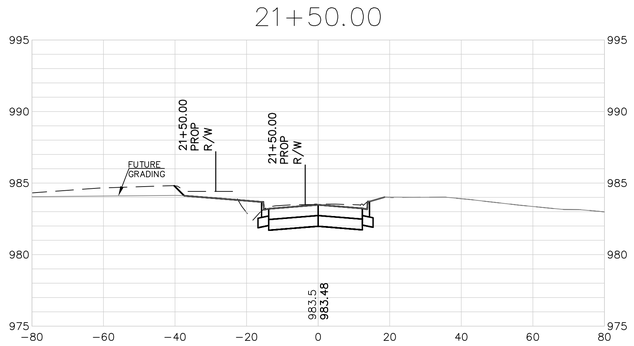

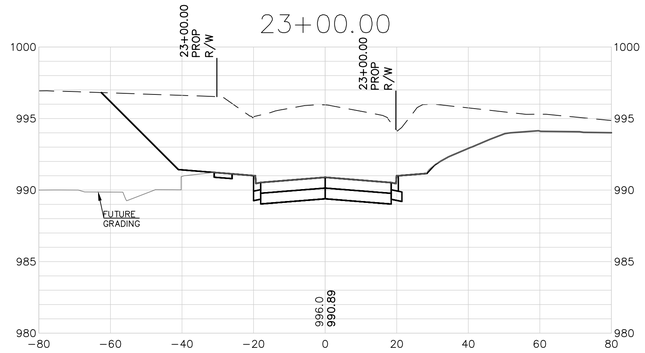

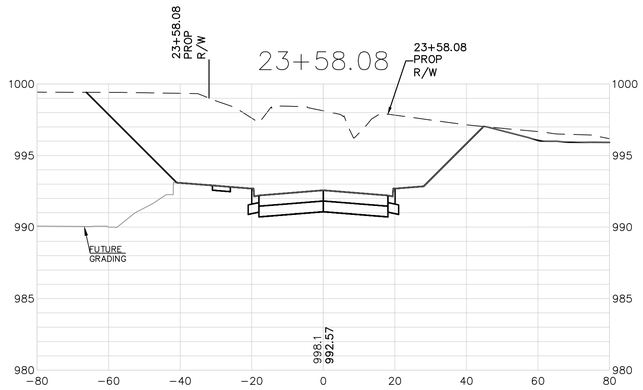

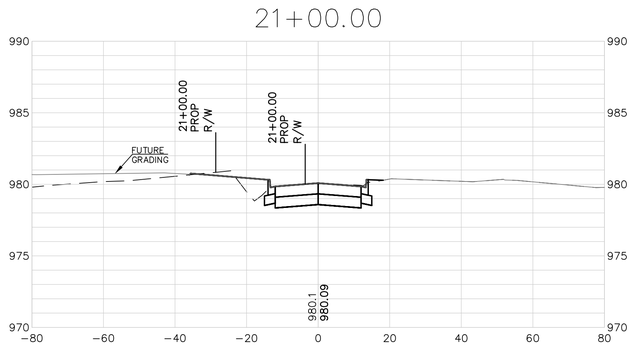

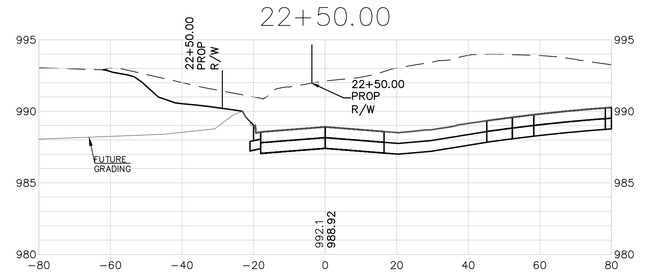

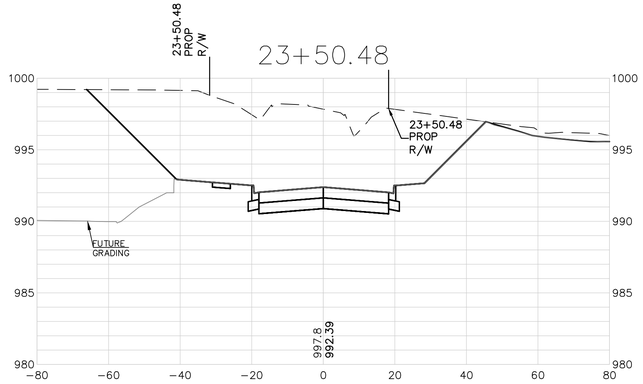

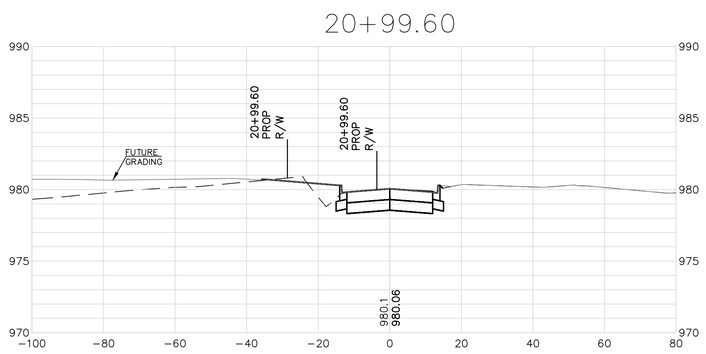

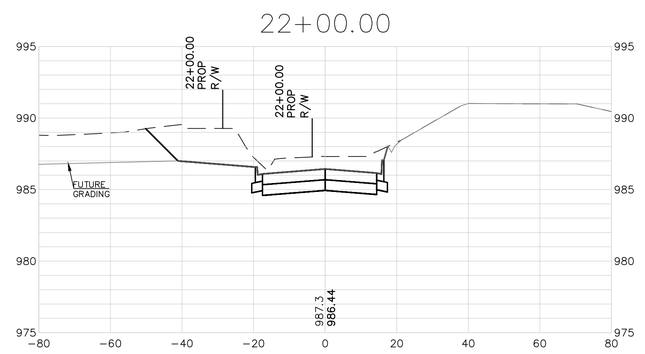

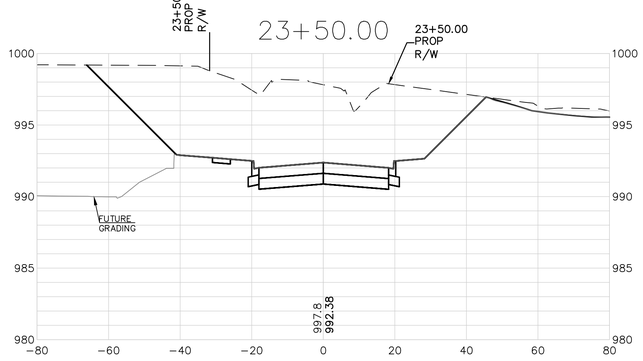

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
3	7-25-19	REVISED PER CITY COMMENT	LDO	BKR	LDO
2	7-5-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
NW LOWENSTEIN DRIVE - CROSS SECTIONS

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT/BKR
CFN	
7067-1PI_STPP	
SHEET	REV
32	5

5
AS-BUILT

SCALE:
1"=20' HORIZ.
1"=5' VERT.

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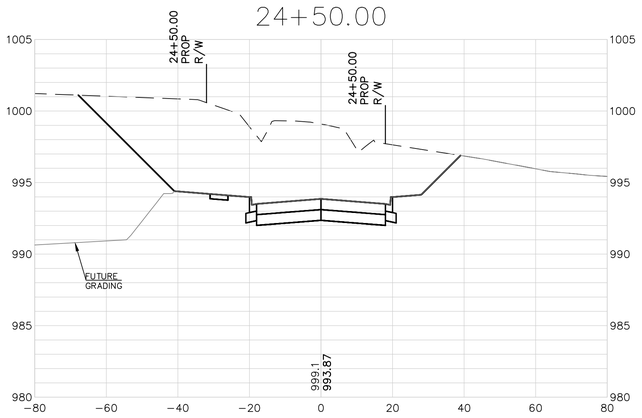

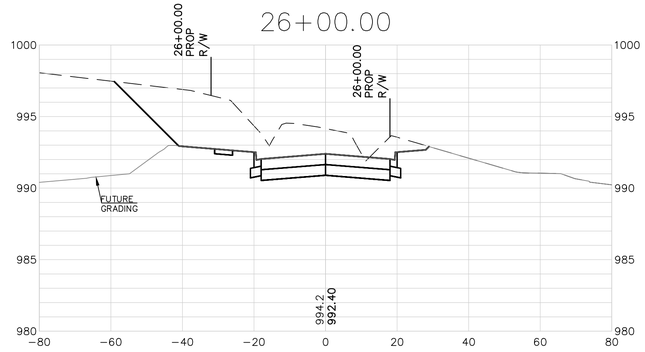

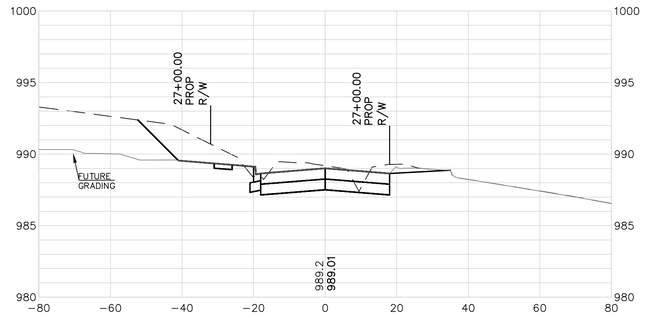

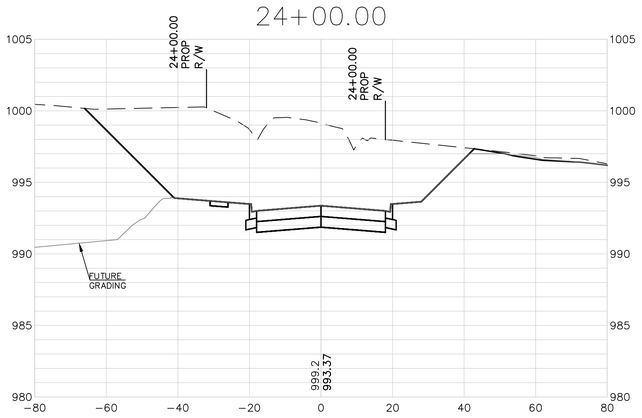

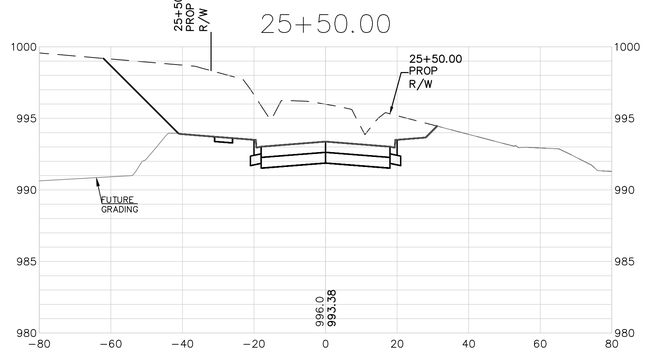

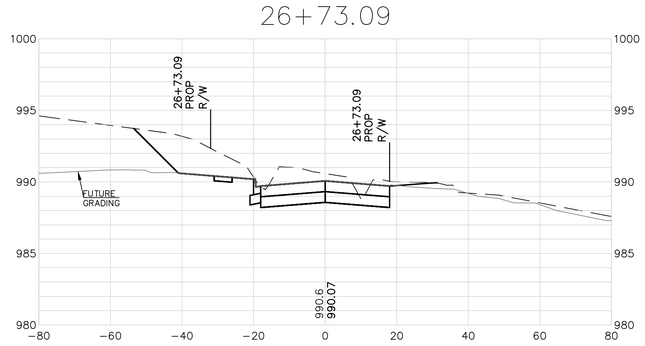

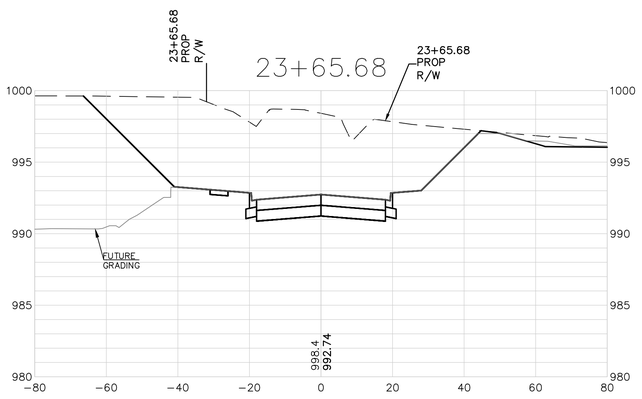

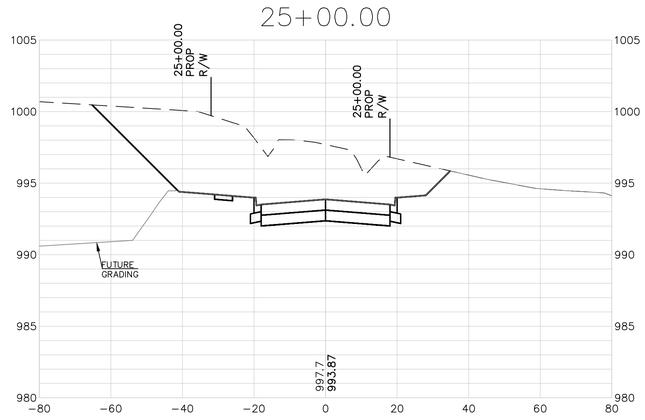

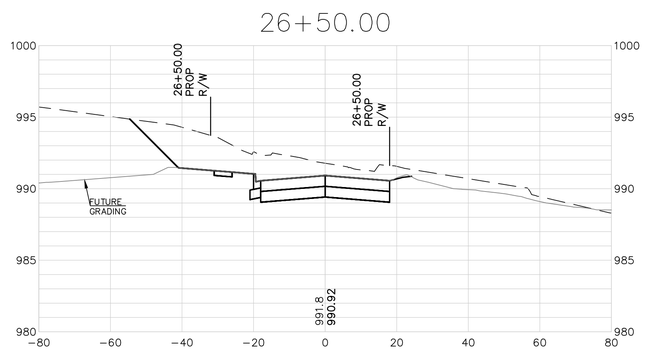

AS-BUILT

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REV	5

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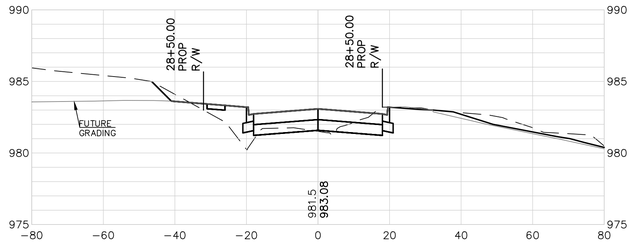
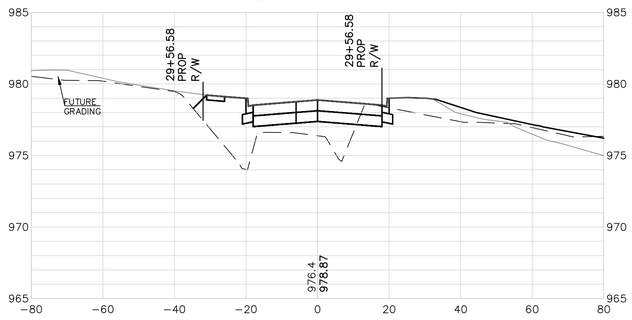
28+50.00



29+56.58



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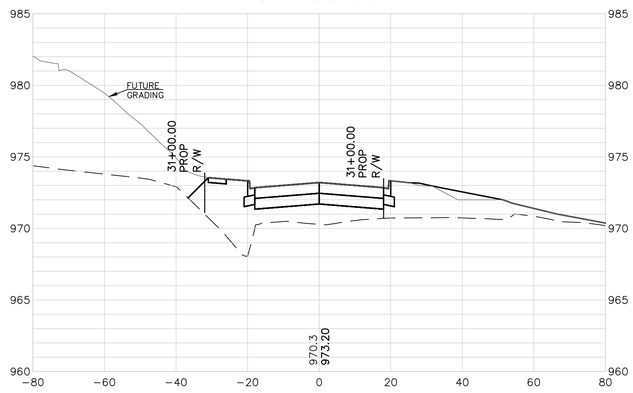

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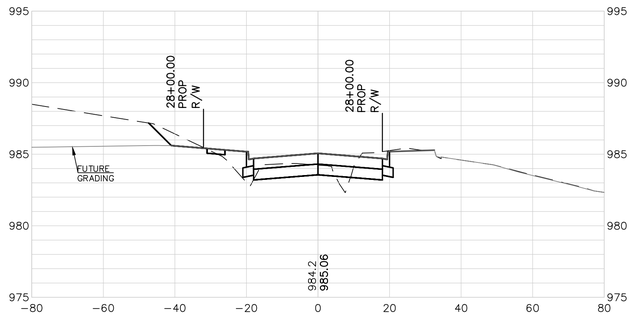
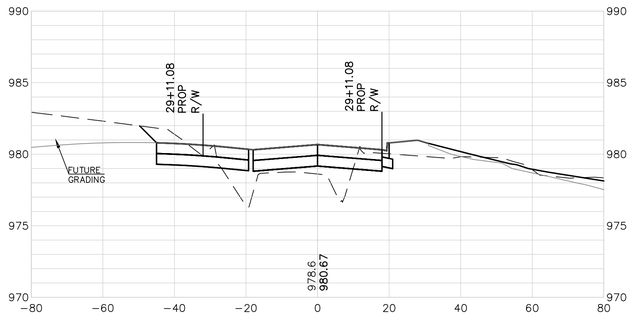


29+11.08



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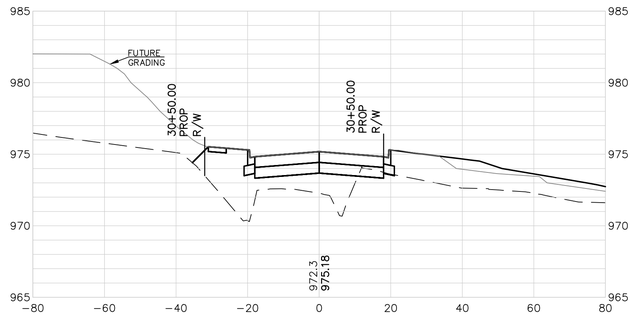
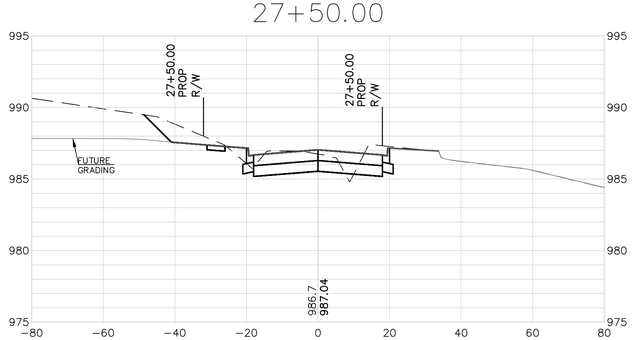


27+50.00



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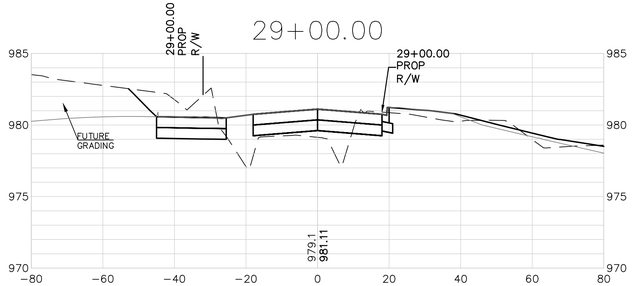

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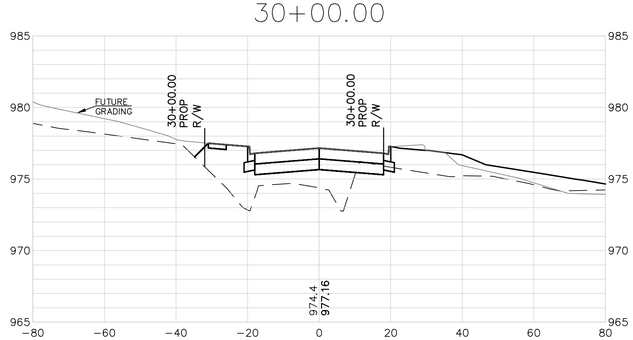

AS-BUILT

SCALE:
1"=20' HORIZ.
1"=5' VERT.

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
2-9-2021

LEON D. OSBOURN
ENGINEER
MO # 021726

2319 N. JACKSON | P.O. BOX 1304
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jlawrence@kvengr.com | www.kvengr.com
KAW VALLEY ENGINEERING

KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
NW LOWENSTEIN DRIVE - CROSS SECTIONS

PROJ. NO.	A14_7067-1	
DESIGNER	LDO	DRAWN BY JT/BKR
CFN	7067-1PI_STPP	
SHEET	34	REV 5

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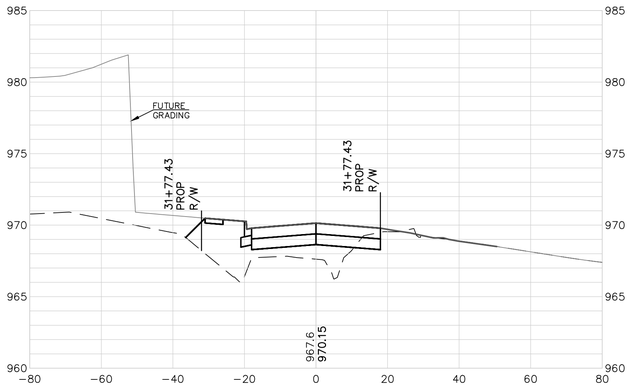
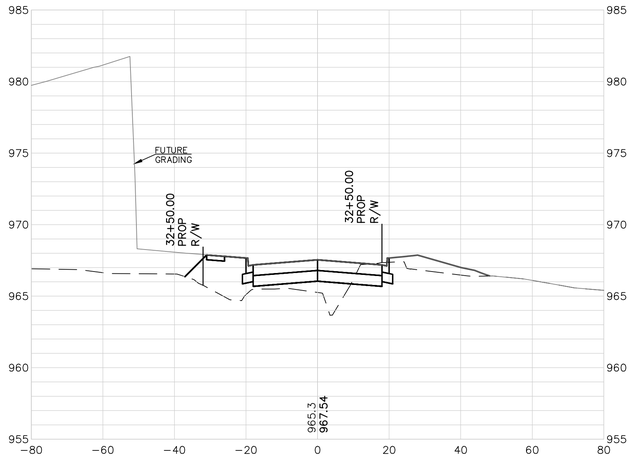
31+77.43

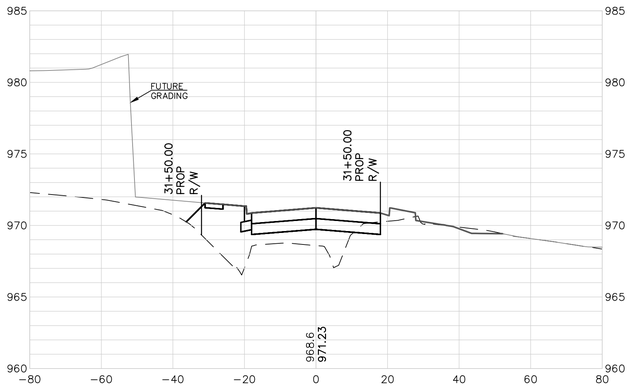


32+50.00

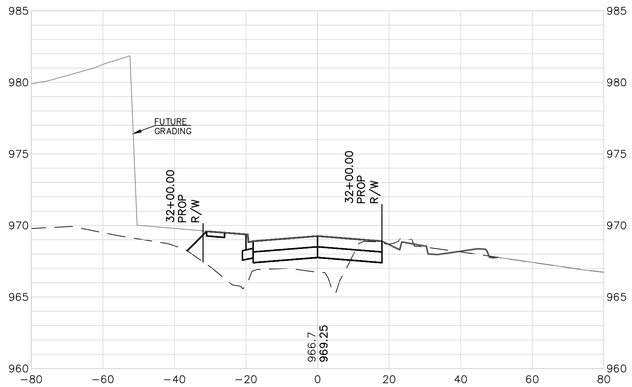


33+26.72

31+50.00



32+00.00



33+00.00

AS-BUILT

5

SCALE:
1"=20' HORIZ.
1"=5' VERT.

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
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REGISTERED PROFESSIONAL ENGINEER
2-9-2021

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jt@kveng.com | www.kveng.com
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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
NW LOWENSTEIN DRIVE - CROSS SECTIONS

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT/BKR
CFN	7067-1PI_STPP
SHEET	35
REV	5

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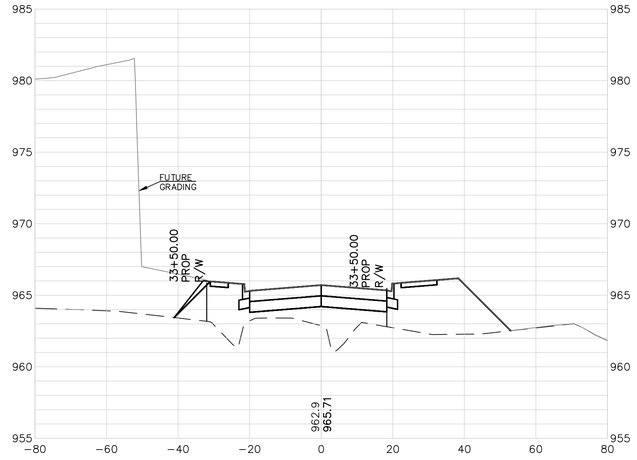
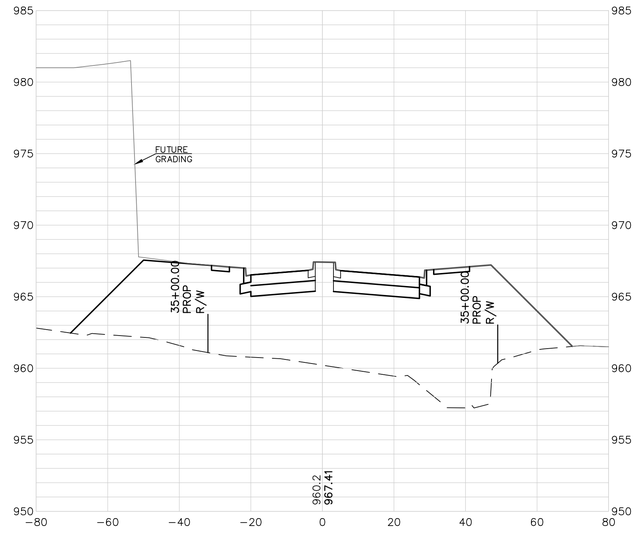
33+50.00

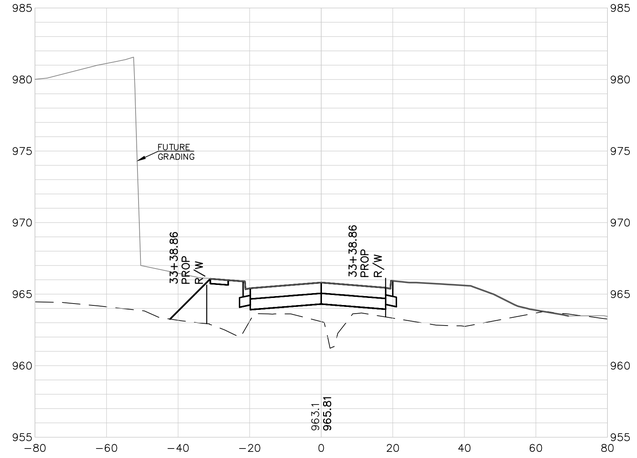


34+50.00

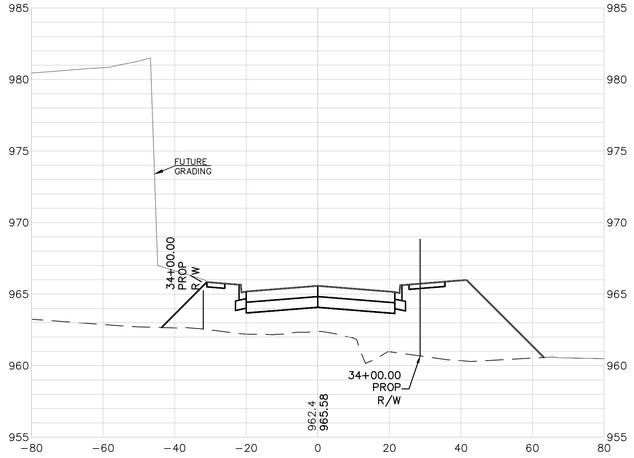
35+00.00



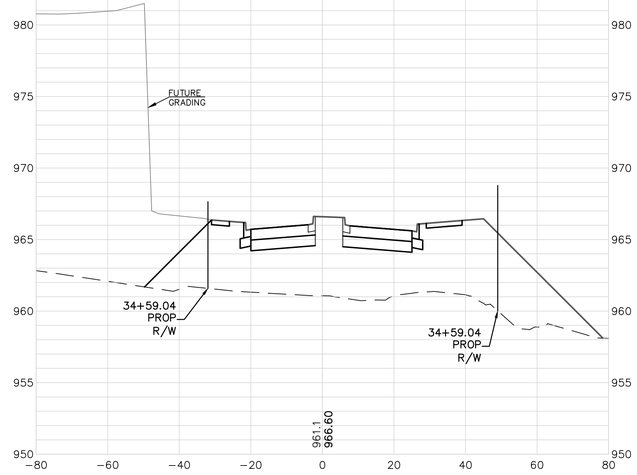
33+38.86



34+00.00



34+59.04



NOTE: FINISH GROUND ELEVATION REPORTED AT CENTERLINE IS TO TOP OF MEDIAN WHEN PRESENT. CONSULT THE VERTICAL PROFILE FOR PROFILE GRADE ELEVATIONS.

5 AS-BUILT

SCALE:
1"=20' HORIZ.
1"=5' VERT.

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER
E-21726
REGISTERED PROFESSIONAL ENGINEER
2-9-2021

LEON D. OSBOURN
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MO # 021726

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jlb@kveng.com | www.kveng.com
KAW VALLEY ENGINEERING

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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
NW LOWENSTEIN DRIVE - CROSS SECTIONS

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT/BKR
CFN	
7067-1PI_STPP	
SHEET	REV
36	5

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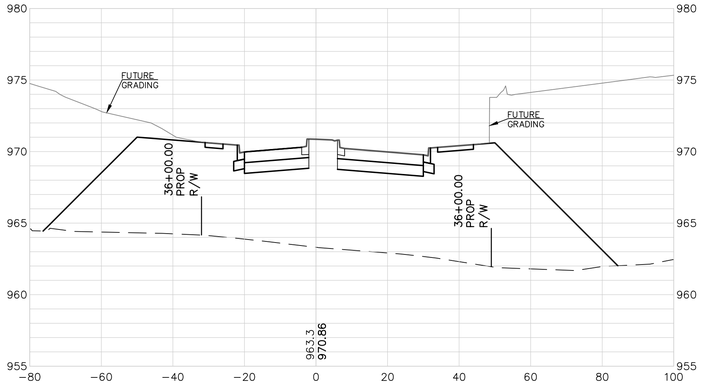
36+00.00



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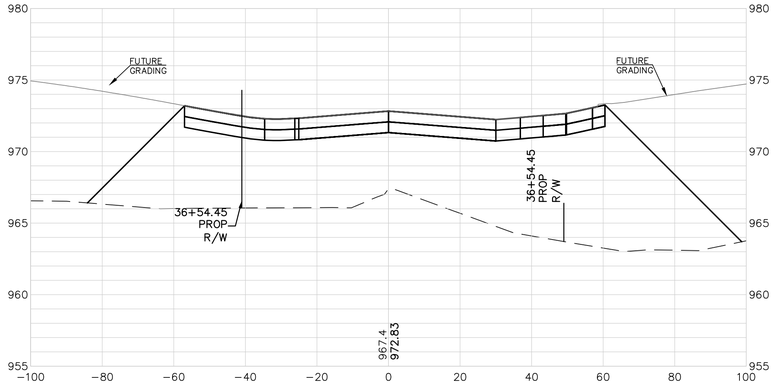
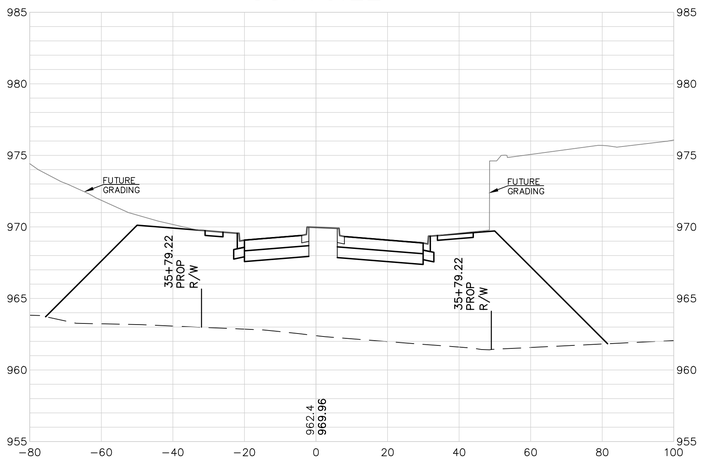
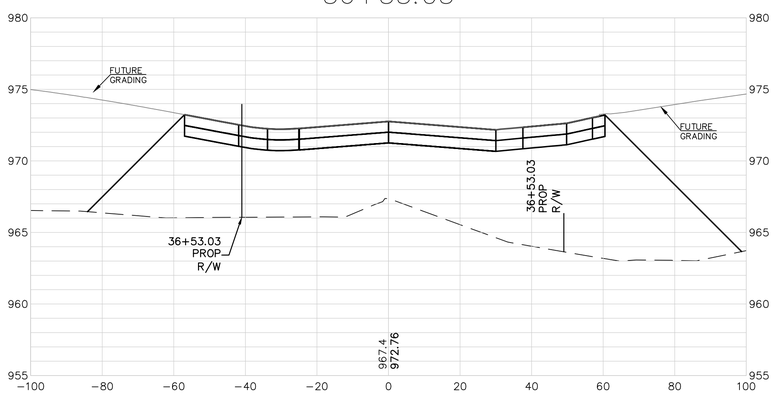


35+79.22

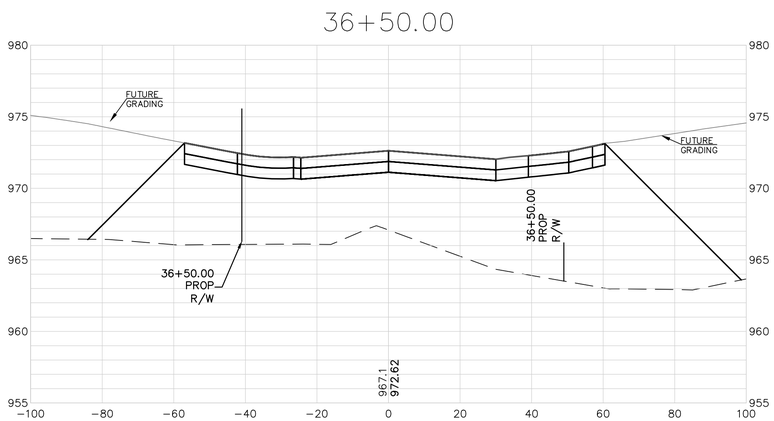


36+53.03



35+50.00

36+50.00



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5
AS-BUILT

SCALE:
1"=20' HORIZ.
1"=5' VERT.

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
2	7-25-19	REVISED PER CITY COMMENTS	LDO	BKR	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
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REGISTERED PROFESSIONAL ENGINEER
2-9-2021

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KAW VALLEY ENGINEERING

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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
NW LOWENSTEIN DRIVE - CROSS SECTIONS

PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY JT/BKR
CFN 7067-1PI_STPP
SHEET 37 | REV 5

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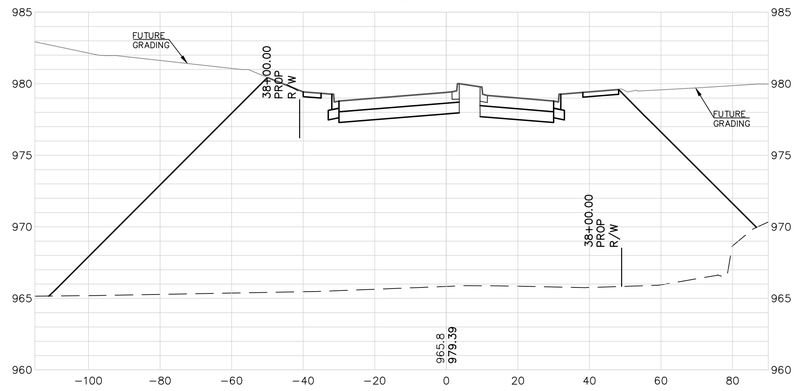
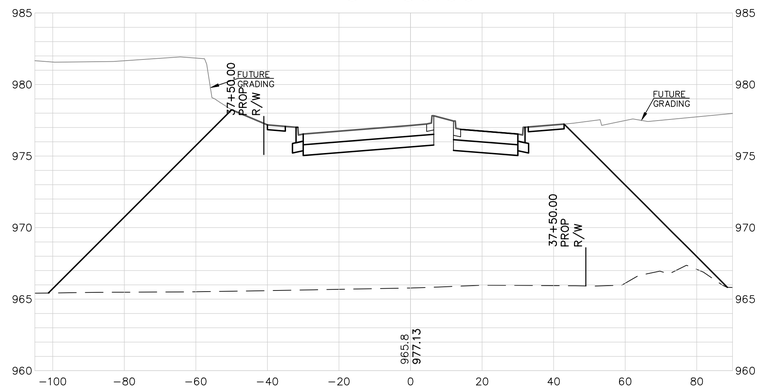
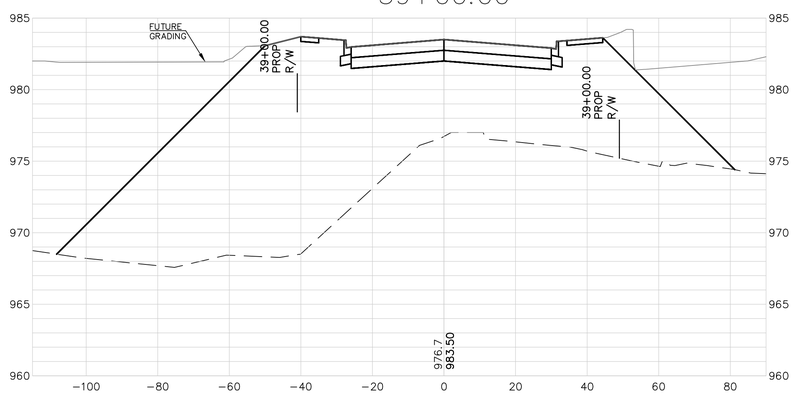
38+00.00



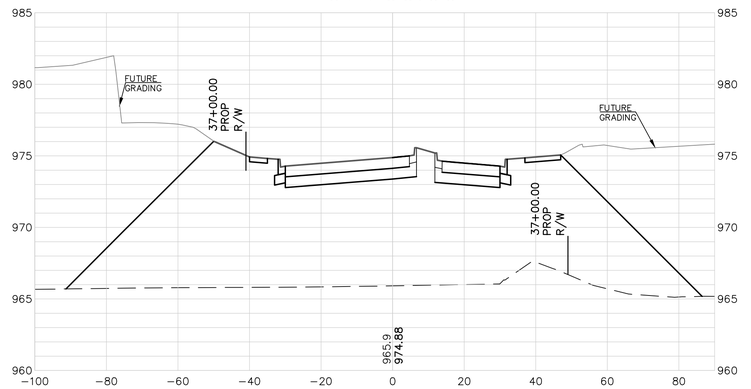
37+50.00



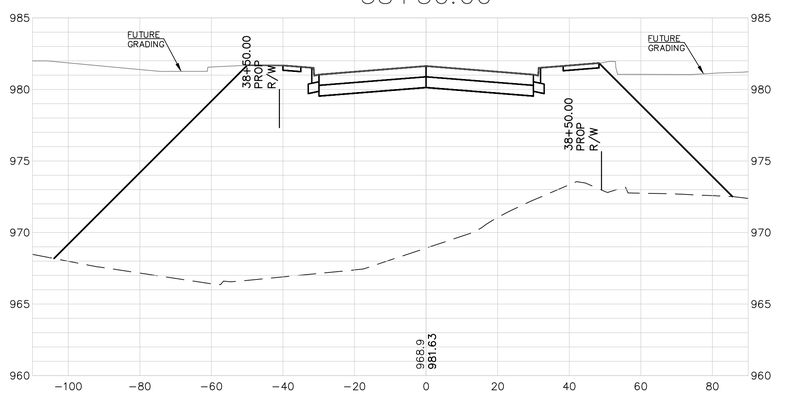
39+00.00



37+00.00



38+50.00



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5
AS-BUILT

SCALE:
1"=20' HORIZ.
1"=5' VERT.

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
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2-9-2021

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STREETS OF WEST PRYOR

NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS

NW LOWENSTEIN DRIVE - CROSS SECTIONS

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT/BKR
CFN	
7067-1PI_STPP	
SHEET	REV.
38	5

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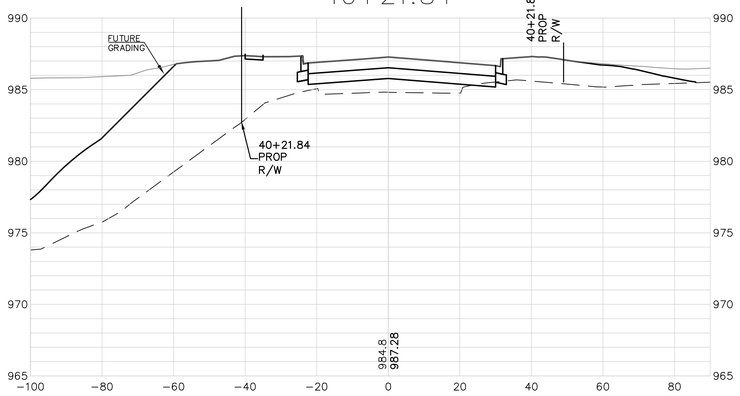
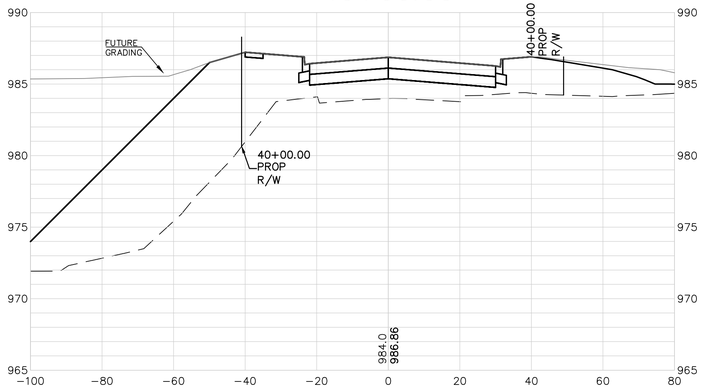
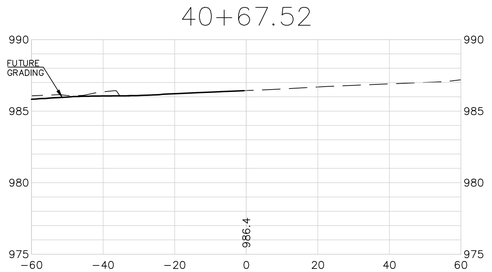
40+21.84



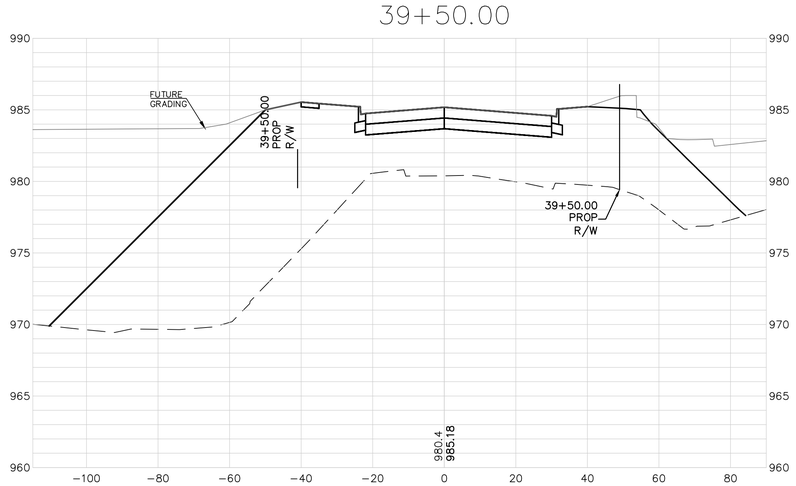
40+00.00



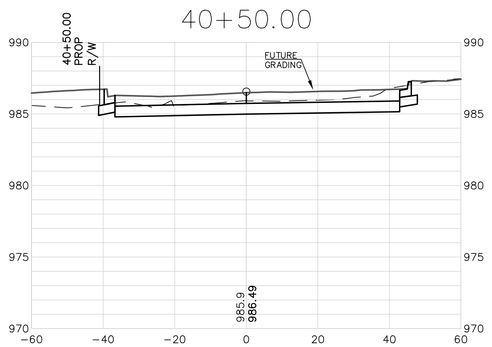
40+67.52



39+50.00



40+50.00



REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

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PUBLIC STREET PLANS
NW LOWENSTEIN DRIVE - CROSS SECTIONS

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A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT/BKR
CFN	
7067-1PI_STPP	
SHEET	REV
39	5

5 AS-BUILT

SCALE:
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1"=5' VERT.

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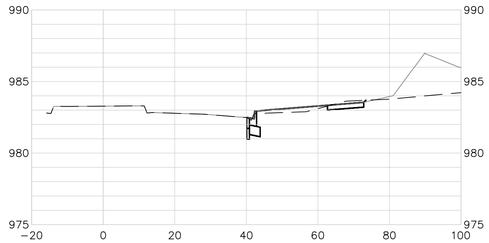
511+00.00



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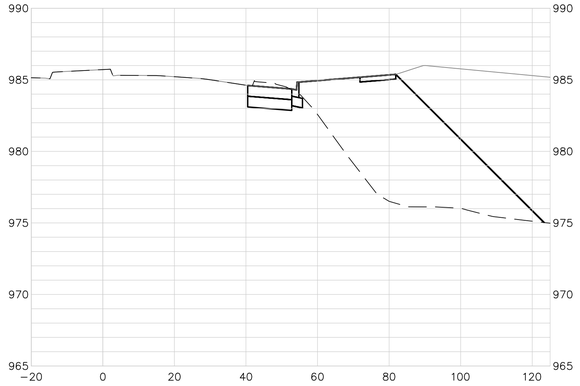

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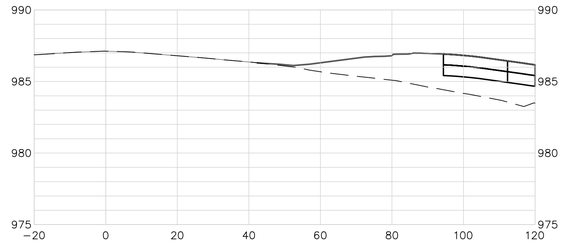

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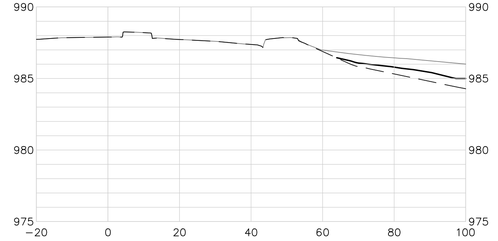

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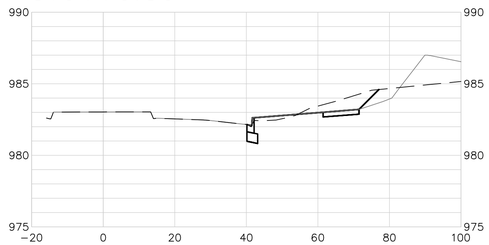

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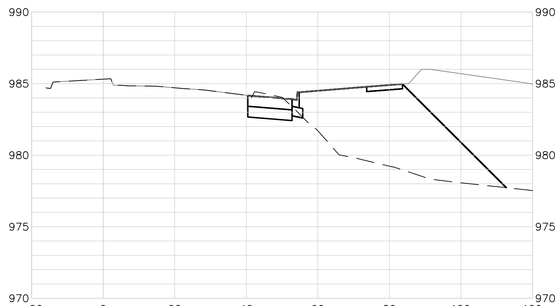

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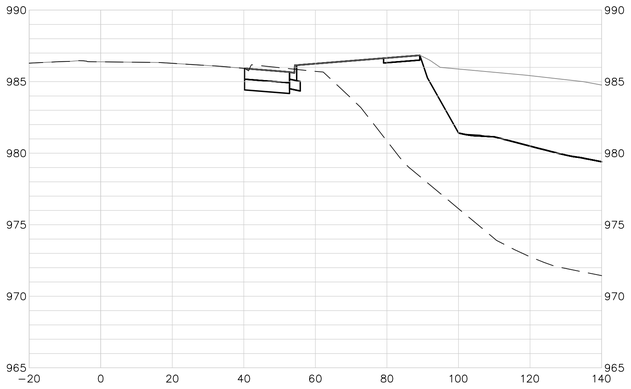

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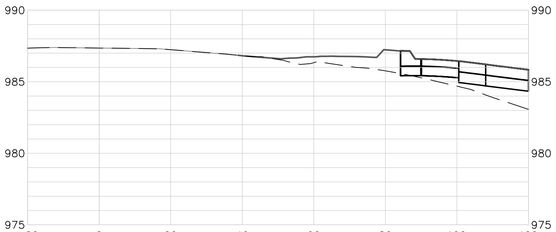

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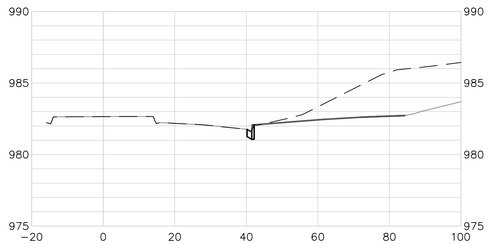

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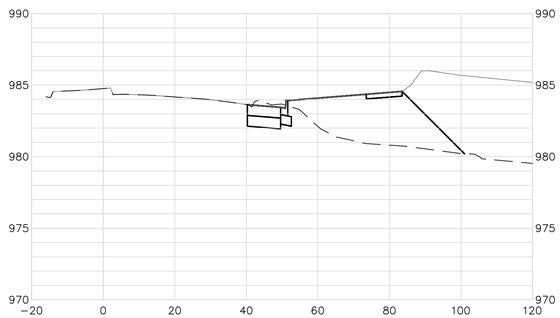

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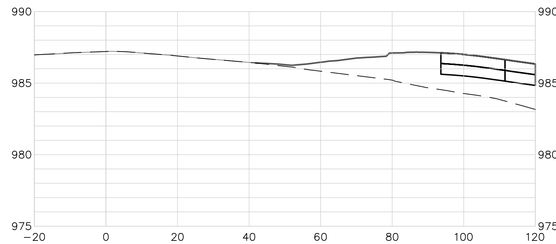
514+59.00



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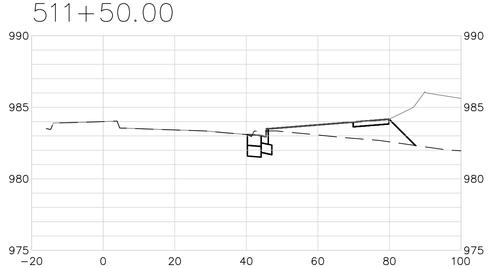

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
2	7-25-19	REVISED PER CITY COMMENTS	LDO	BKR	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER
E-21726
REGISTERED PROFESSIONAL ENGINEER
2-9-2021

LEON D. OSBOURN
ENGINEER
MO # 021726

KAW VALLEY ENGINEERING
2319 N. JACKSON | P.O. BOX 1304
JUNCTION CITY, KANSAS 66441
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jb@kveng.com | www.kveng.com

KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

STREETS OF WEST PRYOR

NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
NW PRYOR DR WIDENING - CROSS SECTIONS

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT/BKR
CFN	
7067-1PI_STPP	
SHEET	REV
40	5

5
AS-BUILT

SCALE:
1"=20' HORIZ.
1"=5' VERT.

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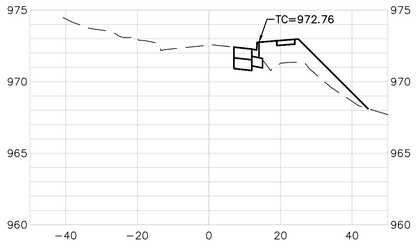
51+50.00



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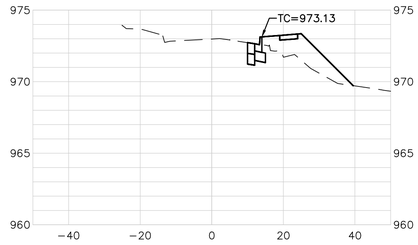

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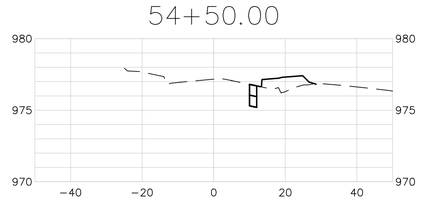

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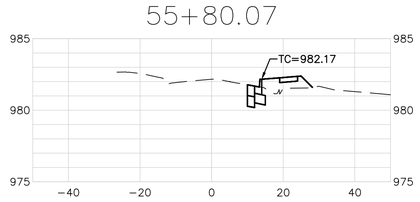

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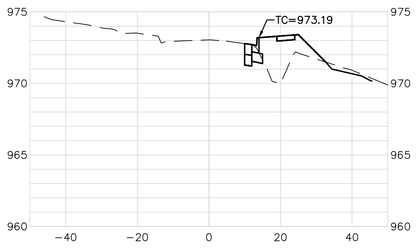

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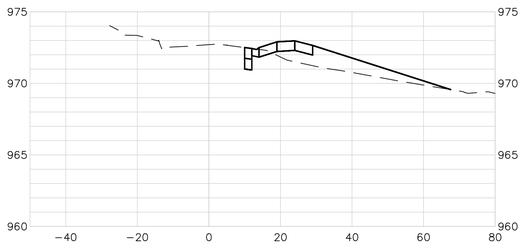

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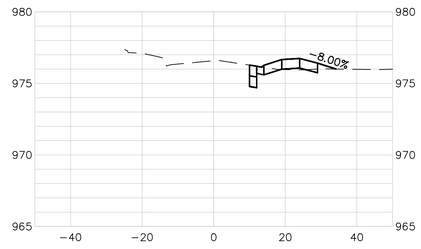

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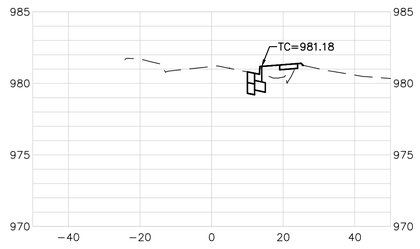

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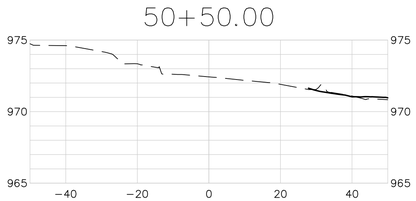

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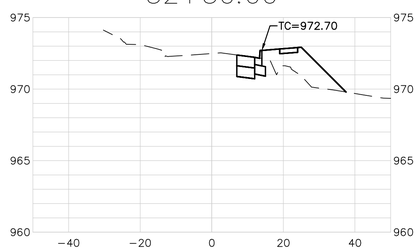

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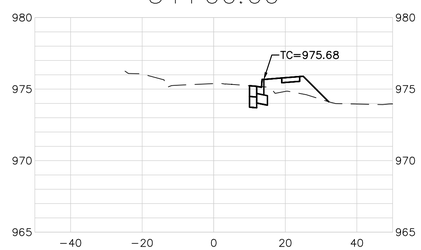

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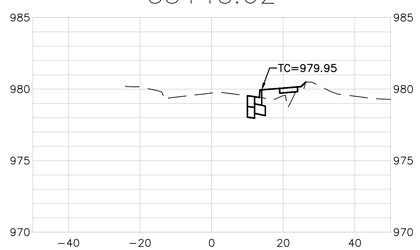

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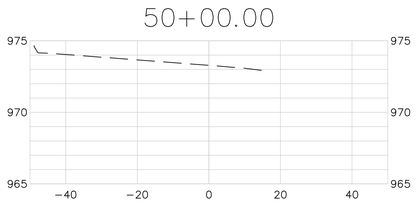

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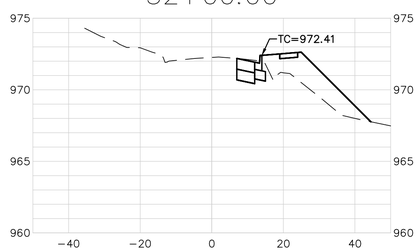

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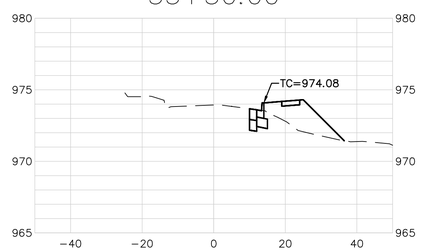

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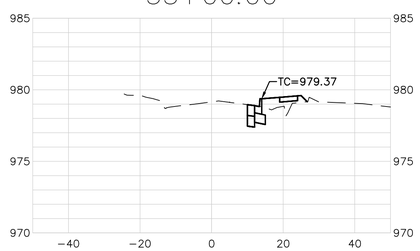

5 AS-BUILT

SCALE:
1"=20' HORIZ.
1"=5' VERT.

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER
E-21726
REGISTERED PROFESSIONAL ENGINEER
2-9-2021

LEON D. OSBOURN
ENGINEER
MO # 021726

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jlb@kveng.com | www.kveng.com
KAW VALLEY ENGINEERING

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STREETS OF WEST PRYOR
NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
NW BLACK TWIG LANE - CROSS SECTIONS

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT/BKR
CFN	
7067-1PI_STPP	
SHEET	REV
41	5

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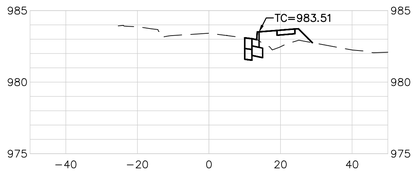

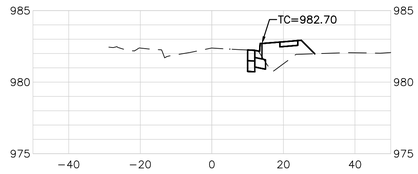

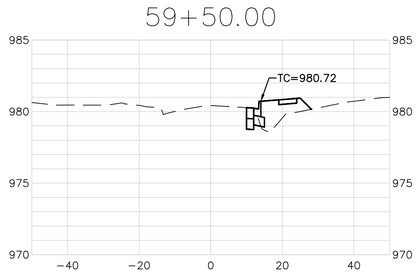

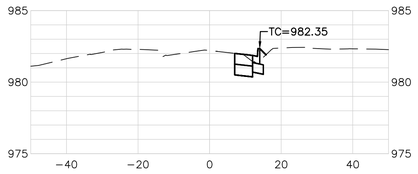

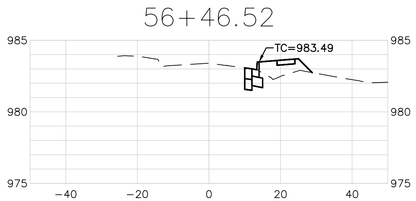

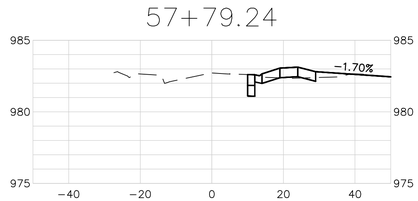

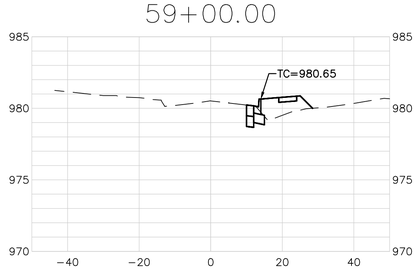

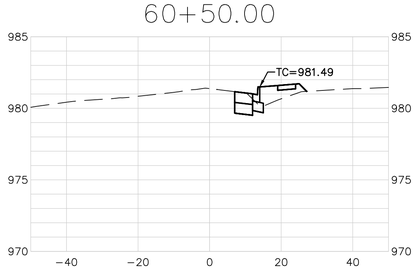

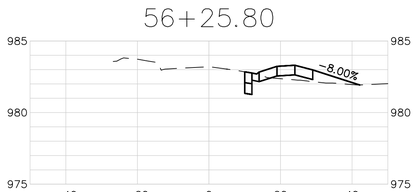

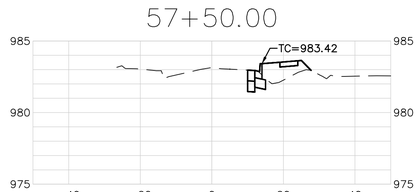

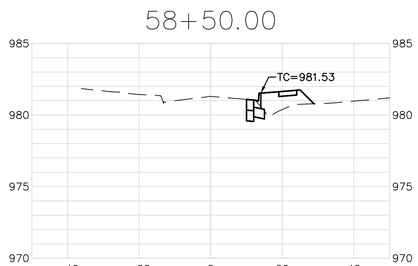

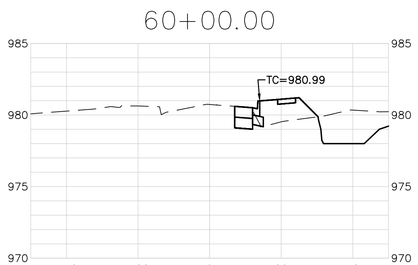

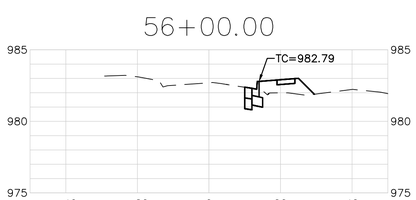

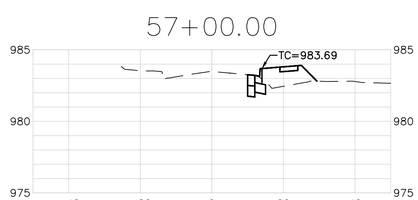

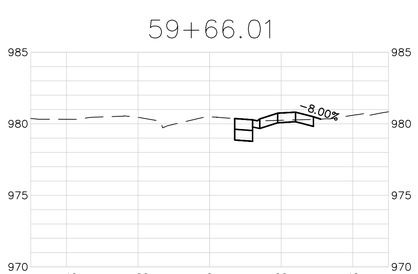

5

AS−BUILT

SCALE:
1"=20' HORIZ.
1"=5' VERT.

REV	DATE	DESCRIPTION	DSN	DWN	CHK
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STATE OF MISSOURI
LEON D. OSBOURN
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NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
NW BLACK TWIG LANE - CROSS SECTIONS

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT/BKR
CFN	7067-1PI_STPP
SHEET	42
REV	5

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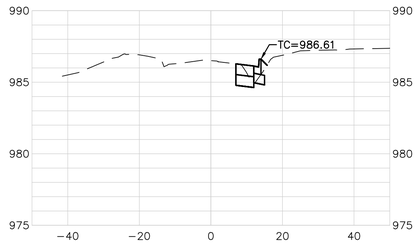

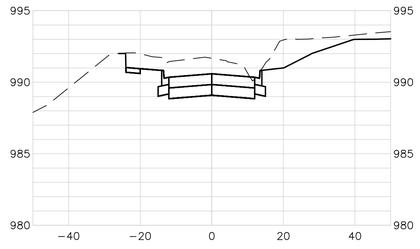

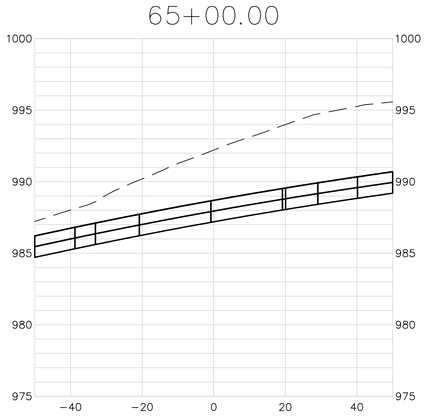

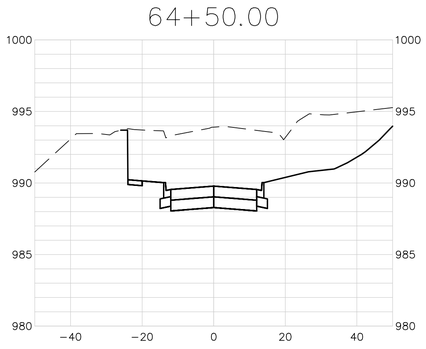

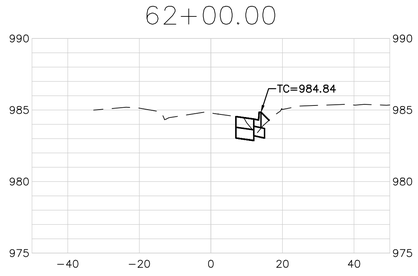

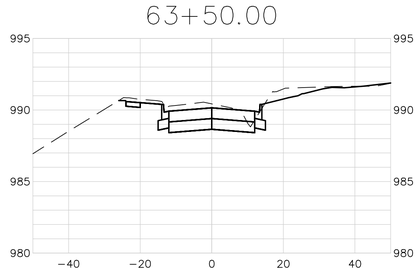

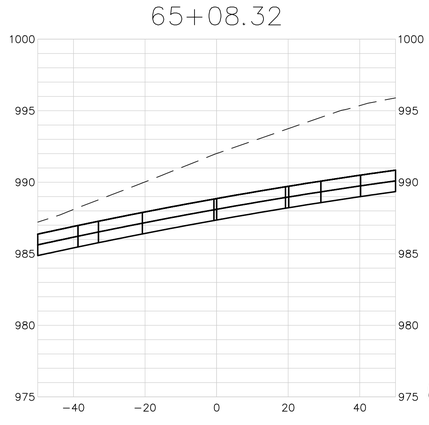

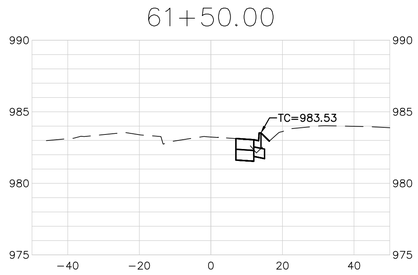

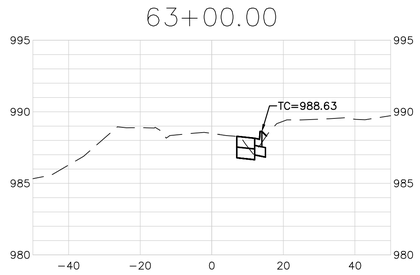

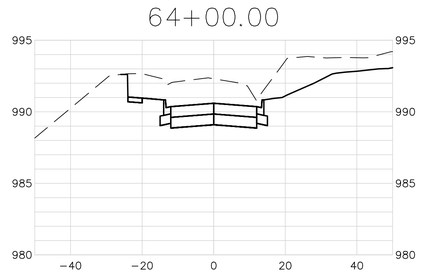

5

AS−BUILT

SCALE:
1"=20' HORIZ.
1"=5' VERT.

REV	DATE	DESCRIPTION	DSN	DWN	CHK
5	2-9-21	AS-BUILT PLANS	LDO	JT	LDO
1	5-16-19	REVISED PER CITY COMMENTS	LDO	JT	LDO
0	01-11-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER
E-21726
REGISTERED PROFESSIONAL ENGINEER
2-9-2021

LEON D. OSBOURN
ENGINEER
MO # 021726

2319 N. JACKSON | P.O. BOX 1304
JUNCTION CITY, KANSAS 66441
PH. (785) 762-5105 | FAX (785) 762-7744
jo@kveng.com | www.kveng.com

KAW VALLEY ENGINEERING

KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

STREETS OF WEST PRYOR

NWQ NW PRYOR RD & NW LOWENSTEIN DR
LEE'S SUMMIT, MISSOURI

PUBLIC STREET PLANS
NW BLACK TWIG LANE - CROSS SECTIONS

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT/BKR
CFN	7067-1PI_STPP
SHEET	43
REV	5

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