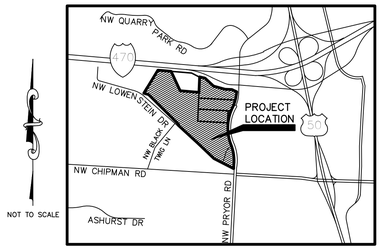
LAND DISTURBANCE PLANS
FOR
STREETS OF WEST PRYOR
LEE'S SUMMIT, MISSOURI

MARCH 2019

LEGEND

- SECTION CORNER, ORIGIN UNKNOWN UNLESS OTHERWISE NOTED
- MONUMENT FOUND, ORIGIN UNCERTAIN UNLESS OTHERWISE NOTED
- RIGHT-OF-WAY MARKER FOUND
- (D) DESCRIBED
- (M) MEASURED
- (C) CALCULATED
- (P) PLATTED
- STREET SIGN
- CANOPY SUPPORT
- UTILITY POLE
- LP UTILITY POLE W/ LIGHT
- UTILITY POLE W/TRANSFORMER
- LIGHT POLE
- DEADMAN ANCHOR
- (5) OU OVERHEAD UTILITY - # LINES
- AIR CONDITIONING UNIT
- ELECTRIC PEDESTAL
- ELECTRIC METER
- ELECTRIC TRANSFORMER
- BB BREAKER BOX
- E UNDERGROUND ELECTRIC LINE
- UTILITY MANHOLE
- CTV CABLE TV SIGN
- CABLE TV PEDESTAL
- GAS SIGN
- GAS METER
- G UNDERGROUND GAS LINE
- GTS GAS CATHODIC PROTECTION STATION
- W WATER LINE
- WATER LINE GATE VALVE
- WS WATER SPIGOT
- WATER METER
- WELL
- FIRE HYDRANT
- SV SPRINKLER VALVE
- SANITARY SEWER MANHOLE
- S SANITARY SEWER LINE
- CO SANITARY SEWER CLEANOUT
- STORM SEWER MANHOLE
- TELEPHONE SIGN
- TELEPHONE MANHOLE
- 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



LOCATION MAP
CITY OF LEE'S SUMMIT, MISSOURI

INDEX TO SHEETS	
C-1	TITLE SHEET
C-2	GENERAL LAYOUT SHEET
C-3	EXISTING CONDITIONS & DEMOLITION PLAN
C-4	EXISTING CONDITIONS & DEMOLITION PLAN
C-5	EXISTING CONDITIONS & DEMOLITION PLAN
C-6	EXISTING CONDITIONS & DEMOLITION PLAN
C-7	EXISTING CONDITIONS & DEMOLITION PLAN
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C-14	OVERALL GRADING PLAN
C-15	GRADING PLAN
C-16	GRADING PLAN
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C-21	GRADING PLAN
C-22A	EROSION CONTROL PLAN - INITIAL
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C-23A	EROSION CONTROL PLAN - FINAL
C-23B	EROSION CONTROL PLAN - FINAL
C-37	WEST DETENTION BASIN PLAN
C-38	WEST DETENTION BASIN PROFILE
C-44	EROSION CONTROL DETAIL SHEET
C-45	EROSION CONTROL DETAIL SHEET
C-46	EROSION CONTROL DETAIL SHEET
C-47	EROSION CONTROL DETAIL SHEET
C-48	EROSION CONTROL DETAIL SHEET
C-49	EROSION CONTROL DETAIL SHEET
C-50	EROSION CONTROL DETAIL SHEET
C-51	EROSION CONTROL DETAIL SHEET
C-52	EROSION CONTROL DETAIL SHEET
C-54	EROSION CONTROL DETAIL SHEET
C-55	EROSION CONTROL DETAIL SHEET
C-56	EROSION CONTROL DETAIL SHEET
C-57	EROSION CONTROL DETAIL SHEET

REV	DATE	DESCRIPTION	DSN	DWN	CHK
1	3-13-19	LAND DISTURBANCE	LDO	JT/BKR	LDO

LEON D. OSBOURN
ENGINEER
MO # 021726

KAW VALLEY ENGINEERING

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JUNCTION CITY, KANSAS 66441
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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.

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
3-22-19

LEON D. OSBOURN
PROFESSIONAL ENGINEER

CALL BEFORE YOU
DIG - DRILL - BLAST
1-800-344-7483
(TOLL FREE)

MISSOURI ONE CALL SYSTEM, INC.

ELECTRIC- SERVICE
KCP&L
NATHAN MICHAEL
(913) 347-4310
Nathan.Michael@kcpl.com

GAS SERVICE
SPIRE
KATIE DARNELL
(816) 969-2247
Katie.Darnell@spireenergy.com

WATER, SANITARY/STORM SEWER SERVICE
CITY OF LEE'S SUMMIT
KENT MONTER
(816) 969-1900
Kent.Monter@cityofls.net

COMMUNICATION SERVICE
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CARRIE CILKE
(816) 703-4386
cc3527@att.com

COMMUNICATION SERVICE
TIME WARNER CABLE
STEVE BAXTER
(913) 643-1928
Steve.Baxter@charter.com

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(913) 725-8745
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STREETS OF WEST PRYOR, LLC
7200 WEST 132ND STREET
OVERLAND PARK, KS 66213
CONTACT: MATT PENNINGTON
email: matt@drakekc.com

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

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

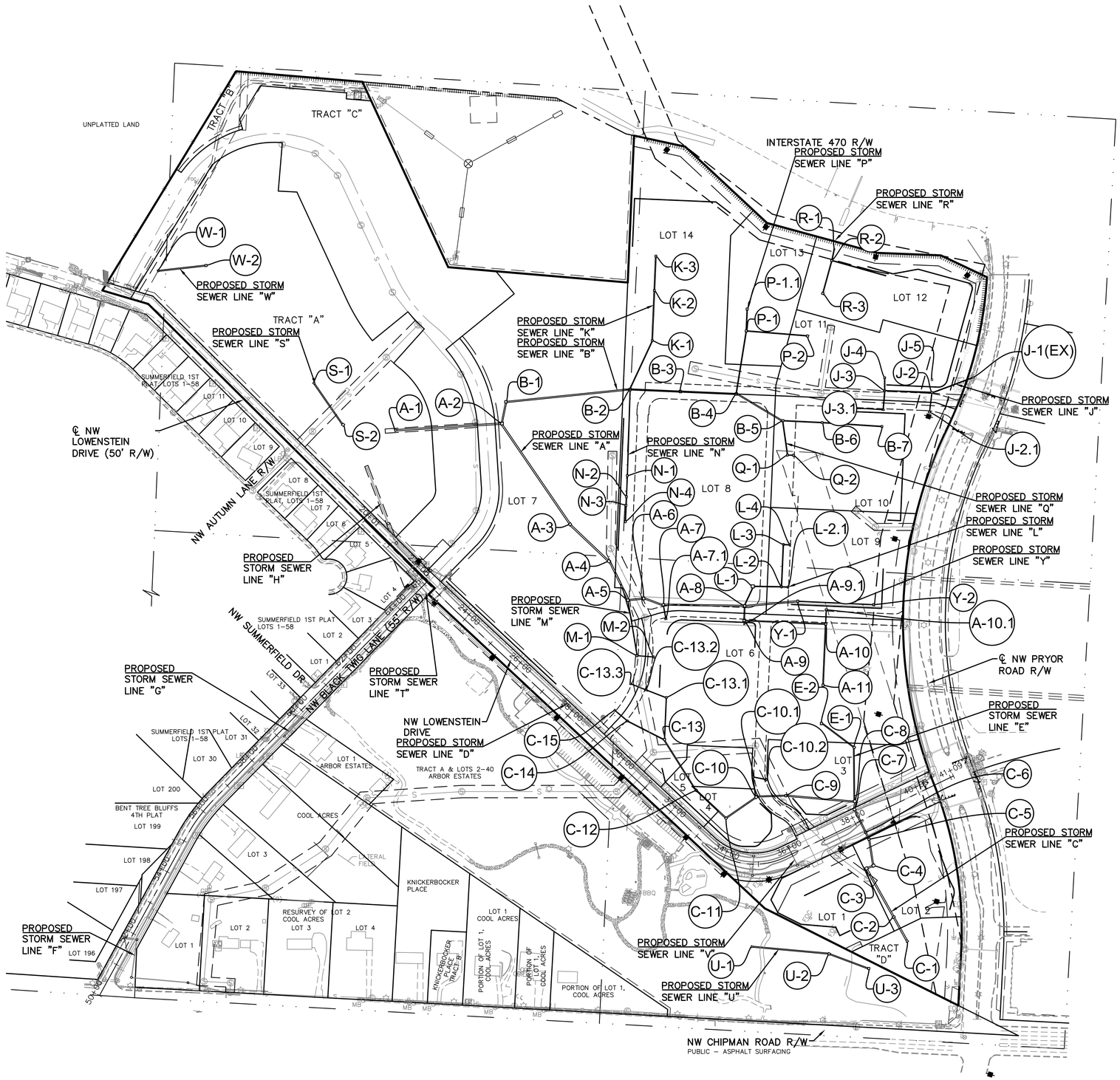
BENCHMARKS:
BM #1: CHISELED "SQUARE" ON TOP OF CURB POINT OF INTERSECTION OF WEST PARK PARKING LOT AT EAST DRIVE ENTRANCE. ELEV=985.05

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=971.06

STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

LAND DISTURBANCE PLAN
TITLE SHEET

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT
CFN	
7067-1LD_TS	
SHEET	REV
C-1	1



PUBLIC WATER AND SANITARY SEWER ARE BY SEPARATE PLANS

REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBORN NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
1-16-19

LEON D. OSBORN
ENGINEER
MO # 021726

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KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES IN MISSOURI BY STATE CERTIFICATE OF AUTHORITY # 2008042. EXPIRES 12/31/19

STREETS OF WEST PRYOR

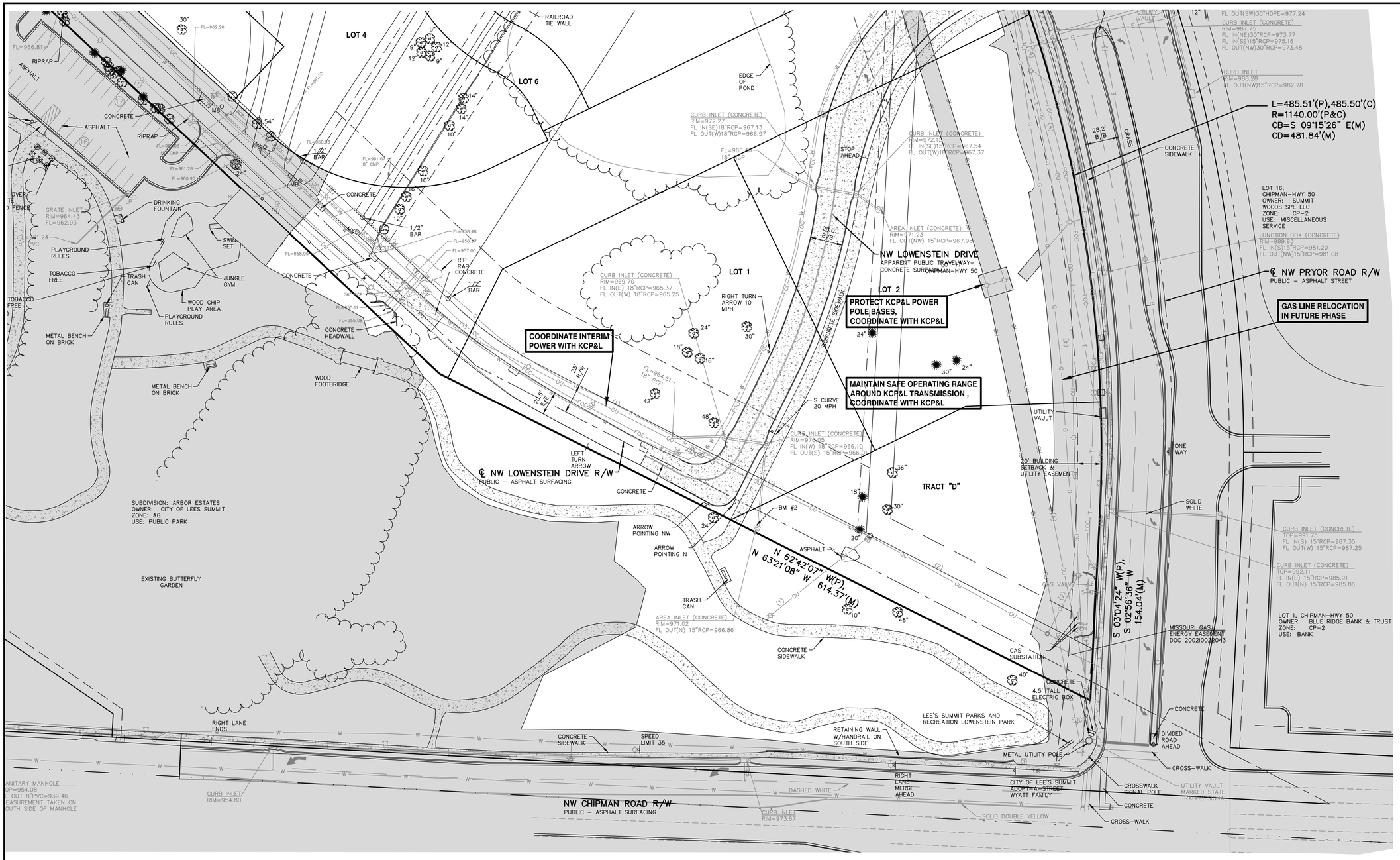
NWC NW PRYOR ROAD & NW LOWENSTEIN DRIVE

LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS

GENERAL LAYOUT SHEET

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT
CFN	
7067-1G_GLS	
SHEET	REV
C-2	0



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SAFETY NOTICE TO CONTRACTOR

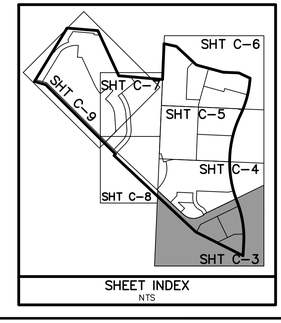
IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING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

GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY SITE CONDITIONS PRIOR TO BIDDING. CONTRACTOR SHALL REMOVE ALL BUILDINGS, UTILITIES, PAVEMENT, FOUNDATIONS, FENCES, CURBS AND ALL OTHER STRUCTURES FROM WITHIN PROPERTY LINES EXCEPT AS DESIGNATED "TO REMAIN" OR "TO BE REMOVED BY OTHERS", IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CITY OF LEE'S SUMMIT AND STATE REGULATIONS. SITE CONDITIONS SHOWN WERE AS OF MARCH 30, 2018.
2. ALL UTILITY PIPE LINES TO BE ABANDONED SHALL BE PLUGGED PER CITY AND STATE REGULATIONS.
3. DRIVES, PAVING AND OTHER STRUCTURES ON STREET OR HIGHWAY RIGHT–OF–WAY SHALL BE REMOVED AS NECESSARY TO CONSTRUCT IMPROVEMENTS SHOWN ON THESE PLANS. REMOVAL AND DISPOSAL SHALL BE IN CONFORMANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
4. ALL PAVING WITHIN PROPERTY TO BE REMOVED AND DISPOSED OF IN CONFORMANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
5. ALL EXISTING UTILITIES ETC. LOCATED WITHIN THE BOUNDARIES OF THE PROPOSED BUILDING SHALL BE COMPLETELY REMOVED TO 10 FEET OUTSIDE OF BUILDING LINE.
6. ALL HAZARDOUS ASBESTOS AND OTHER HAZARDOUS MATERIALS MUST BE IDENTIFIED AND REMOVED PRIOR TO ANY BUILDING DEMOLITION, IN STRICT CONFORMANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
7. CONTRACTOR SHALL VERIFY THAT ALL UTILITIES TO EXISTING STRUCTURES HAVE BEEN DISCONNECTED PRIOR TO COMMENCING DEMOLITION.
8. EXISTING POWER LINES AND APPURTENANCES TO BE RELOCATED BY KANSAS POWER & LIGHT.
9. TREE LINES AND INDIVIDUAL TREES SHOWN ARE BASED ON ORIGINAL SURVEY. INITIAL CLEARING AND GRUBBING HAS BEEN COMPLETED. CONTRACTOR SHALL REMOVE ANY ADDITIONAL TREES AND SHRUB IN AREAS INDICATED FOR GRADING AND DEMOLITION.
10. COORDINATE WITH KAW VALLEY ENGINEERING PRIOR TO REMOVAL OF SECTION MONUMENTS AND PROPERTY PINS. KAW VALLEY ENGINEERING WILL RESET NECESSARY MONUMENTS WITHIN THE DISTURBED AREAS FOLLOWING DEMOLITION. CARE SHALL BE TAKEN TO PRESERVE PROPERTY PINS ALONG THE OUTSIDE PERIMETER OF THE SITE.
11. CONTRACTOR SHALL OBTAIN DEMOLITION PERMITS FOR EACH INDIVIDUAL HOUSE WITHIN THE AREA SHOWN. ALL SERVICE LINE SHUT–OFFS, WELL PLUGGING, SEPTIC TANK REMOVALS AND OTHER UTILITY REMOVALS SHALL BE HANDLED IN ACCORDANCE WITH STATE AND CITY CODES.
12. KCPL TRANSMISSION MAIN SHALL REMAIN IN PLACE DURING DEMOLITION. FOLLOW ALL KCPL REQUIREMENTS CONCERNING WORK IN THEIR EASEMENT AND IN PROXIMITY TO THEIR LINES, INCLUDING PROTECTION OF POLES AND SAFE WORKING DISTANCES FROM LINES.

LEGEND

NOT A PART OF DEMOLITION ACTIVITIES



SHEET INDEX
NTS

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

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BM #1: CHISELED "SQUARE" ON TOP OF CURB POINT OF INTERSECTION OF WEST PARK PARKING LOT AT EAST DRIVE ENTRANCE. ELEV=985.05

BM #2: CHISELED "SQUARE" ON NORTHWEST CORNER AREA INLET, 25'± EAST OF CURB LINE AND ON–LINE WITH SOUTH CURB OF NW LOWENSTEIN DRIVE AT 90° BEND IN ROAD. ELEV=971.06

REV	DATE	DESCRIPTION
0	1–16–19	INITIAL ISSUE

DSN LDO | DWN JT | CHK LDO

STATE OF MISSOURI LEON D. OSBOURN NUMBER E-21726 REGISTERED PROFESSIONAL ENGINEER 1-2-19

LEON D. OSBOURN
ENGINEER
MO # 021726

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jo@kveng.com | www.kveng.com

KAW VALLEY ENGINEERING

KAW VALLEY ENGINEERING, INC. IS AUTHORIZED TO OFFER ENGINEERING SERVICES UNDER MISSOURI STATE CERTIFICATE OF AUTHORITY # 000542. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
EXISTING CONDITIONS & DEMOLITION PLAN

PROJ. NO.	A14_7067–1
DESIGNER	LDO
DRAWN BY	JT
CFN	7067–1G_DEMO
SHEET	C–3
REV	0

HOUSE REMOVAL

PROTECT KCP&L POWER POLE BASES, COORDINATE WITH KCP&L

MAINTAIN SAFE OPERATING RANGE AROUND KCP&L TRANSMISSION , COORDINATE WITH KCP&L

LOT 8

LOT 9

LOT 7

LOT 1
PRYOR ACRES

UTILITY EASEMENT I-940472, BOOK I1962, PAGE 1148 (ESMT NO. 2) 7.50'

100' ELECTRIC EASEMENT DOC. NO. I34200 BK I864, PG 244

JUNCTION BOX (CONCRETE) TOP=981.83 FL IN(SW) 36"RCP=965.03 FL OUT(SE) 36"RCP=964.

℄ NW PRYOR ROAD (120' R/W) PUBLIC – ASPHALT STREET

TRACT D CHIPMAN VIEW 50

ONE WAY

20' UTILITY EASEMENT

15' UTILITY EASEMENT DOC. NO. I940472 BK I1962, PG 1148

JUNCTION BOX (CONCRETE) TOP=984.36 FL IN(S)36"RCP=967.24 FL IN(E)15"RCP=967.46 FL OUT(N)36"RCP=967.11

CURB INLET (CONCRETE) TOP=984.11 FL OUT(W) 15"RCP=969.58

1/2" BAR FOUND 1.96' E & 0.89' S

3/8" BAR

60' R/W

SOLID WHITE LINE

SCALE: 1" = 40'

0 20 40 80

SMOOTH WIRE FENCE

SOUTH LINE LOT 1

1.5" ALUM CAP LS 78D MO

1/2" BAR

SHED

CONCRETE

WOOD DECK

CHAIN LINK FENCE

HOUSE

WOOD RETAINING WALL

WOOD DECK

CONCRETE SIDEWALK

RAILROAD TIE RETAINING WALL

30' RESIDENTIAL ROAD EASEMENT DB 1220, PG 56 RELEASED IN DOC 756725 BK 1481 PG 537 PER ITEM 10 LIPCAN SURVEY

5' FENCE

LOT 6

CONCRETE RETAINING WALL

CONCRETE RETAINING WALL W/STEPS

UNPLATTED LAND

HOUSE REMOVAL

HOUSE

WOOD DECK

100' ELECTRIC EASEMENT DOC. NO. I57841 BK 1489, PG 527

UTILITY VAULT ON CONC. PAD

10' UTILITY EASEMENT (PER CORLEW PLAT)

TRAFFIC SIGNAL VAULT

ELECTRIC BOX ON CONCRETE

STREET LIGHTING VAULT

JUNCTION BOX (CONCRETE) TOP=986.22 FL IN(SE)30"RCP=969.44 FL IN(E)30"RCP=969.33

JUNCTION BOX (CONCRETE) TOP=981.45 FL IN(E) 30"RCP=970.75 FL OUT(W) 30"RCP=970.75

PULL BOX FOR LIGHTING

PRIVATE DRIVE ASPHALT SURFACE

CONCRETE RAMP

STOP/ EXIT TO CHIPMAN LEFT ARROW

STOP BAR

CROSS-WALK

RAMP

PULL BOX FOR LIGHTING

UTILITY VAULT FOR AT&T

HANDICAP RAMP

CONCRETE

S CURVE 20 MPH

STOP

UTILITY VAULT

CONCRETE

UTILITY VAULT

WALL

NCRETE

UTILITY VAULT

TRASH CAN

CONCRETE

NW LOWENSTEIN DRIVE PUBLIC – ASPHALT SURFACING

ASPHALT DRIVE

CONCRETE DRIVE

GRAVEL DRIVE

RAILROAD TIE WALL

LOT 2 CORLEW'S ESTATE

LOT 1 CORLEW'S ESTATE

LOT 5

LOT 4

LOT 6

LOT 1

EDGE OF POND

RIPRAP

ASPHALT

CONCRETE

ACCESSIBLE RAMP

CONC

CANOPY OVER CONCRETE W/WOOD FENCE

GRATE INLET RIM=964.43 FL=962.93

DRINKING FOUNTAIN

PARK BENCH ON CONC & BRICK W/TRASH CAN

PLAYGROUND RULES

TOBACCO FREE

TRASH CAN

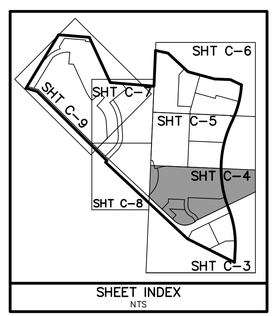
SWING SET

JUNGLE GYM

RIP RAP CONCRETE

CURB INLET (CONCRETE) RIM=972.27 FL IN(SE)18"RCP=967.13 FL OUT(W)18"RCP=966.97

CURB INLET (CONCRETE) RIM=969.70 FL IN(E) 18"RCP=965.37



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STATE OF MISSOURI
LEON D. OSBOURN
NUMBER
E-21726
REGISTERED PROFESSIONAL ENGINEER
1-2-19

LEON D. OSBOURN
ENGINEER
MO # 021726

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KAW VALLEY ENGINEERING, INC. IS AUTHORIZED TO OFFER ENGINEERING SERVICES IN MISSOURI. STATE CERTIFICATE OF AUTHORITY # 000642. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
EXISTING CONDITIONS & DEMOLITION PLAN

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT
CFN	
7067-1G_DEMO	
SHEET	REV
C-4	0

LOT 14

LOT 7

LOT 1
ERICKSON ACRES, 1ST PLAT

LOT 11

LOT 10

LOT 9

LOT 8

LOT 9

LOT 1
PRYOR ACRES

UNPLATTED LAND

7.5' UTILITY EASEMENT

E LINE OF THE W 1/2 OF SE 1/4, SEC 35 PER OLSON SURVEY AND ERICKSON ACRES 1ST PLAT

1/2" BAR W/KS LS 114 MO LC 366 CAP

7.5' UTILITY EASEMENT (PER PLAT)

2 STRAND BARBED WIRE

4 STRAND BARBED WIRE

ELECTRIC OVERHANG EASEMENT (NO WIDTH SPECIFIED) BK 985, PG 124

SMOOTH WIRE FENCE

1" OD PIPE

5 STRAND

100' MISSOURI PUBLIC SERVICE CO EASEMENT DOC NO 757841, BK 1484, PG 527

100' ELECTRIC EASEMENT DOC. NO. 134200 BK 1864, PG 244

SMOOTH WIRE FENCE

SOUTH LINE

1/2" BAR

48" 60"

PROTECT KCP&L POWER POLE BASES, COORDINATE WITH KCP&L

MAINTAIN SAFE OPERATING RANGE AROUND KCP&L TRANSMISSION , COORDINATE WITH KCP&L

L=1040.70'(P), 1040.64'(C)
R=1260.00'(P&C)
CB=S 02°12'10" W(M)
CD=1011.31'(M)

20' UTILITY EASEMENT (PER PLAT)
30' BUILDING LINE (PER PLAT)

20' UTILITY EASEMENT (PER PLAT)

20' PRIVATE ACCESS EASEMENT (PER PLAT)

UTILITY EASEMENT I-940472, BOOK 11962, PAGE 1148 (ESMT NO. 2)

7.50'

20' UTILITY

TRACT C
CHIPMAN-HWY 50

TRACT B-1, CHIPMAN-H
OWNER: SUMMIT WOOD
ZONE: CP-2
USE: COMMERCIAL IMPR

LOT 15, CHIPMAN-HWY 50
OWNER: SUMMIT WOODS SPE LLC
ZONE: CP-2
USE: MISCELLANEOUS SERVICE

℄ NW PRYOR ROAD
(120' R/W)
PUBLIC - ASPHALT STREET

℄ NW PRYOR ROAD
(120' R/W)
PUBLIC - ASPHALT STREET

PRIVATE DRIVE
(ASPHALT SURFACE)

TRAFFIC SIGNAL MANHOLE

TRAFFIC SIGNAL VAULT

CONCRETE

4.5' TALL ELECTRIC BOX

JUNCTION 470

EDGE OF LANDSCAPING

CHISELED "X" FOUND

CONCRETE PAD

DIVIDED ROADWAY AHEAD

RAMP

SUMMIT WOODS CROSSING

PAINTED DASHED WHITE LINE

PAINTED SOLID WHITE LINE

PAINTED SOLID YELLOW LINE

CROSSWALKS

POLE

RETAINING WALL

1/2" BAR OLSSON CAP

1/2" BAR W/OLSSON KSLC 114 MO LC 366 CAP

DASHED WHITE

SANITARY MANHOLE
TOP=972.71
FL IN(S) 8"PVC=964.75
FL OUT(E) 8"PVC=964.66

SANITARY MANHOLE
TOP=973.35
FL IN(S) 42"RCP=960.45
FL IN(E) 30"RCP=961.25
FL OUT(N) 42"RCP=960.40

SANITARY MANHOLE
TOP=975.91
FL IN(S) 8"PVC=966.22
FL OUT(N) 8"PVC=966.16

SANITARY MANHOLE
TOP=971.87
FL IN(W) 8"PVC=953.92
FL IN(E) 8"PVC=952.92
FL OUT(N) 12"PVC=951.32

SANITARY MANHOLE
TOP=978.45
FL IN(S) 8"PVC=970.73
FL OUT(N) 8"PVC=970.60

SANITARY MANHOLE
TOP=980.28
FL OUT(N) 8"PVC=972.78

CURB INLET (CONCRETE)
TOP=978.69
FL IN(S) 36"RCP=962.67
FL IN(E) 18"RCP=968.17
FL OUT(N) 42"RCP=962.17

CONC

JUNCTION BOX
TOP=971.21
FL IN(SW) 42"R
FL OUT(SE) 42

JUNCTION BOX (C
TOP=991.22
FL IN(W) 42"RCP=
FL OUT(E) 42"RCI

UTILITY VAULT FOR TRAFFIC SIGNAL

CURB INLET (CONCRETE)
TOP=973.14
FL IN(E)30"RCP=965.34
FL OUT(W)36"RCP=964.14

CURB INLET
RIM=976.60
FL IN(S)30"RCP=968.00
FL OUT(W)30"RCP=967.75

CURB INLET (CONCRETE)
TOP=976.12
FL IN(S) 42"RCP=961.50
FL OUT(N) 42"RCP=961.30

CURB INLET (CONCRETE)
TOP=978.55
FL IN(NE) 15"RCP=970.21
FL IN(SE) 15"RCP=969.70
FL OUT(W) 18"RCP=969.60

JUNCTION BOX (CONCRETE)
TOP=981.83
FL IN(SW) 36"RCP=965.03
FL OUT(SE) 36"RCP=964.

0 20 40 80
SCALE: 1" = 40'

SHT C-6
SHT C-7
SHT C-9
SHT C-5
SHT C-4
SHT C-8
SHT C-3

SHEET INDEX
NTS

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=985.05

BM #2: CHISELED "SQUARE" ON NORTHWEST CORNER AREA INLET, 25'± EAST OF CURB LINE AND ON-LINE WITH SOUTH CURB OF NW LOWENSTEIN DRIVE AT 90° BEND IN ROAD. ELEV=971.06

REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON OSBOURN NUMBER
1-2-19
E-21726
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
ENGINEER
MO # 021726

KAW VALLEY ENGINEERING
2319 N. JACKSON | P.O. BOX 1304
JUNCTION CITY, KANSAS 66441
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KAW VALLEY ENGINEERING, INC. IS AUTHORIZED TO OFFER ENGINEERING SERVICES IN MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
EXISTING CONDITIONS & DEMOLITION PLAN

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT
CFN	
7067-1G_DEMO	
SHEET	REV
C-5	0

PROTECT KCP&L POWER POLE BASES, COORDINATE WITH KCP&L

MAINTAIN SAFE OPERATING RANGE AROUND KCP&L TRANSMISSION , COORDINATE WITH KCP&L

UTILITY VAULT MARKED STATE TRAFFIC VAULT

RIPRAP

FL=931.78
36" RCP

5/8" BAR ALUM CAP STAMPED AFFINIS CORP MO CLS 2000175358

S 77°50'38" E 148.55'(M)

N 2°28'04" E(P)
N 02°27'18" E 417.29'(M)

BARBED WIRE FENCE

CONCRETE BLOCK & METAL DEBRIS PILE

20' SETBACK (PER PLAT)

EDGE OF POND

SMOOTH WIRE FENCE

1/2" BAR W/KS LS 114 MO LC 366 CAP

20' SETBACK (PER PLAT)

7.5' UTILITY EASEMENT

E LINE OF THE W 1/2 OF SE 1/4, SEC 35 PER OLSON SURVEY AND ERICKSON ACRES 1ST PLAT

S 46°58'04" E 317.20'(M)

OVERHEAD HIGHWAY SIGN "BLUE PARKWAY STRAIGHT, RIGHT LANES TURN RIGHT"

UTILITY VAULT MARKED STATE TRAFFIC VAULT

FL=952.12

36" RCP

FL=954.45

FOOD

INTERSTATE 470 R/W
(PUBLIC R/W VARIES)

BLUE PARKWAY STRAIGHT/ WRONG WAY

S 74°45'44" E 322.94'(M)

5' FENCE

S 87°42'21" E 182.05'(M)

S 64°40'25" E 144.66'(M)

LACK OF ABUTTERS RIGHTS DOC NO. 2007E0074065

LOT 18
CHIPMAN-HWY 50

LOT 12

LOT 13

LOT 14

LOT 1
ERICKSON ACRES, 1ST PLAT

LOT 11

3 STRAND BARBED WIRE

ELECTRIC OVERHANG EASEMENT (NO WIDTH SPECIFIED)
BK 985, PG 124

SANITARY MANHOLE
TOP=972.71
FL IN(S) 8"PVC=964.75
FL OUT(E) 8"PVC=964.66

TRAFFIC SIGNAL MANHOLE

TRAFFIC SIGNAL VAULT

20' UTILITY EASEMENT (PER PLAT)
30' BUILDING LINE (PER PLAT)

4.5' TALL ELECTRIC BOX

CONCRETE

UTILITY VAULT MARKED STATE TRAFFIC VAULT

FOOD

FL=961.74
15" RCP
CONC END SECTION NO LONGER ATTACHED

CURB INLET (CONCRETE)
TOP=967.67
FL IN(E) 15"RCP=962.89
FL OUT(NW) 15"RCP=962.32

CROSSWALK SIGNAL POLE

TRAFFIC SIGNAL MANHOLE

WEST I-470 LEFT 2 LANES

ELECTRIC BOX MARKED MODOT LIGHTING CONTROL

L=444.52'(C)
R=1140.00'(C)
CB=N 14°41'33" E(M)
CD=441.71'(M)

CONCRETE

CONCRETE SIDEWALK

LACK OF ABUTTERS RIGHTS DOC NO. 2007E0074065

3.5' DIA MANHOLE MARKED AT&T

20' SETBACK & UTILITY EASEMENT (PER PLAT)

CONCRETE SIDEWALK

SPEED LIMIT 35

CITY MAINTENANCE BEGINS
5/8" BAR FOUND

CONCRETE

℄ NW PRYOR ROAD
(120' R/W)
PUBLIC - ASPHALT STREET

DASHED WHITE

JUNCTION BOX (CON
TOP=971.21
FL IN(SW) 42"RCP=
FL OUT(SE) 42"RCP

JUNCTION BOX (CONCR
TOP=991.22
FL IN(W) 42"RCP=956.
FL OUT(E) 42"RCP=95

TRAFFIC SIGNAL VAULT

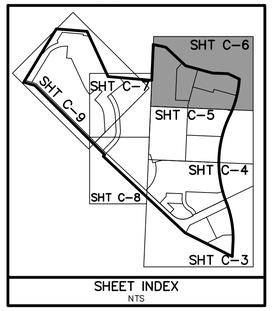
TRACT B-1, CHIPMAN-HWY
OWNER: SUMMIT WOODS SP

DIVID
ROAD
AHE

PAINTED DASH

SCALE: 1" = 40'
0 20 40 80

SHEET INDEX
NTS



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

BENCHMARKS:
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REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
1-2-19

LEON D. OSBOURN
ENGINEER
MO # 021726

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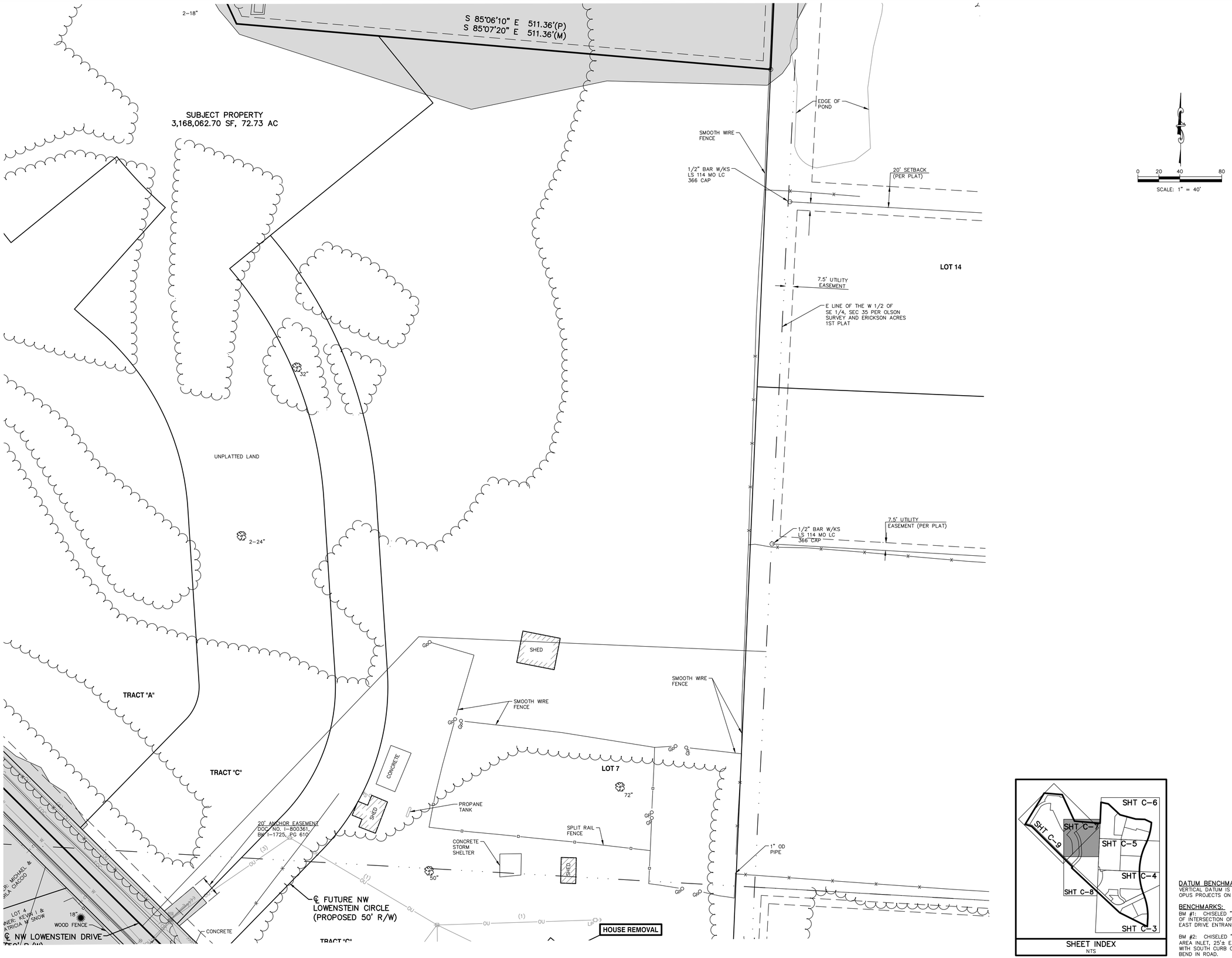
KAW VALLEY ENGINEERING, INC. IS AUTHORIZED TO OFFER ENGINEERING SERVICES IN MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
EXISTING CONDITIONS & DEMOLITION PLAN

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT
CFN	
7067-1G_DEMO	
SHEET	REV
C-6	0



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REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON OSBORN NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
12-6-19

LEON D. OSBORN
ENGINEER
MO # 021726

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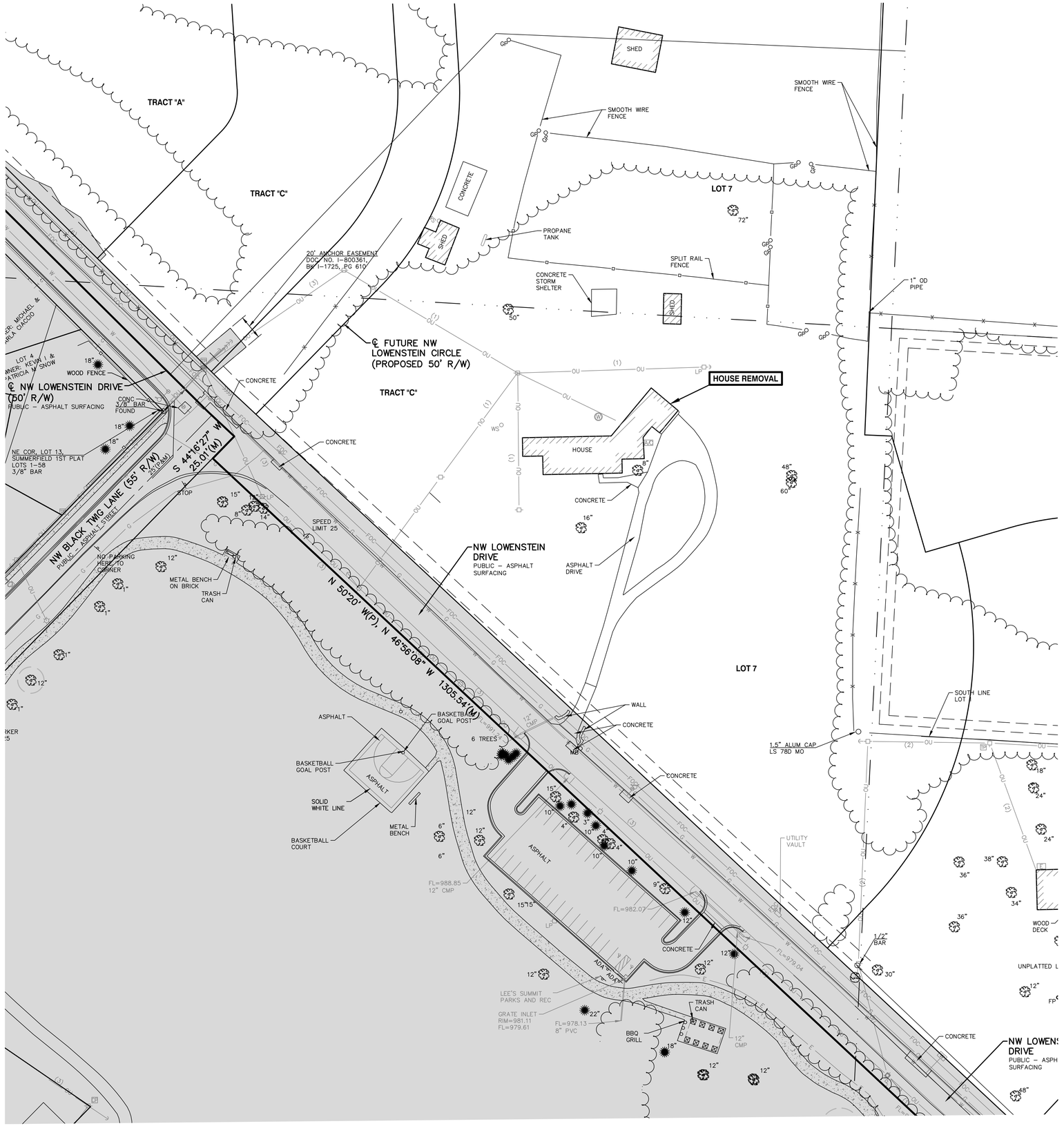
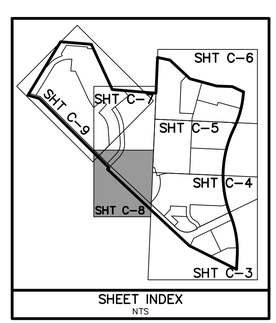
KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES IN MISSOURI. STATE CERTIFICATE OF AUTHORITY # 2008042. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
EXISTING CONDITIONS & DEMOLITION PLAN

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT
CFN	
7067-1G_DEMO	
SHEET	REV
C-7	0





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STATE OF MISSOURI
LEON D. OSBORN NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
1-6-19

LEON D. OSBORN
ENGINEER
MO # 021726

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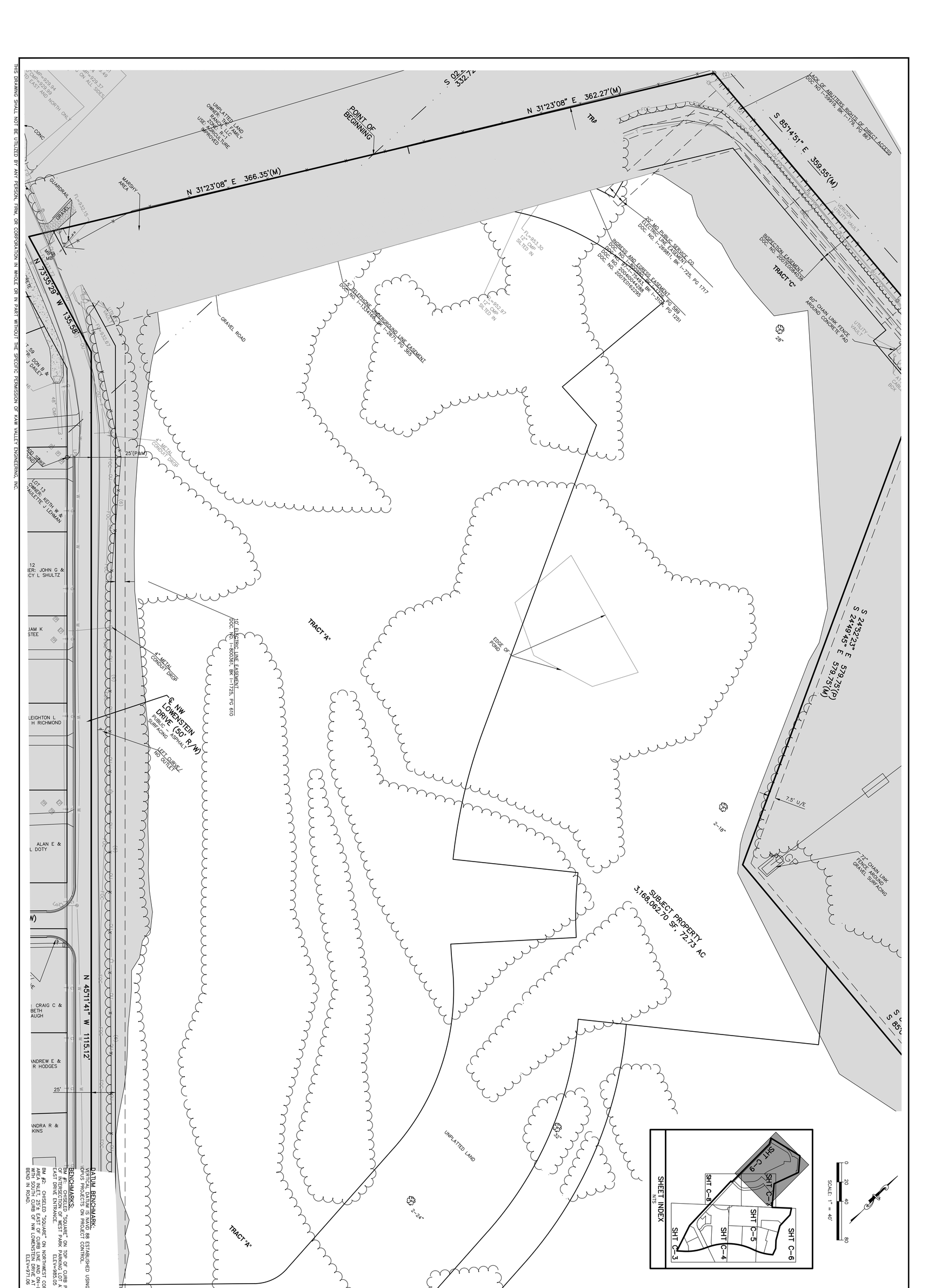
STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
EXISTING CONDITIONS & DEMOLITION PLAN

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT
CFN	7067-1C_DEMO
SHEET	C-8
REV	0



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STREETS OF WEST PRYOR

NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
EXISTING CONDITIONS & DEMOLITION PLAN

PROJ. NO. A14-7087-1
DESIGNER LDO
DRAWN BY JT
CKD'D JT
DATE 7-16-DRAFT

SHEET C-9
REV 0

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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

LEON D. OSBOURN
ENGINEER
MO # 021726

REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

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REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBURN
NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
1-8-19

LEON D. OSBURN
ENGINEER
MO # 021726

2319 N. JACKSON | P.O. BOX 1304
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KAW VALLEY ENGINEERING

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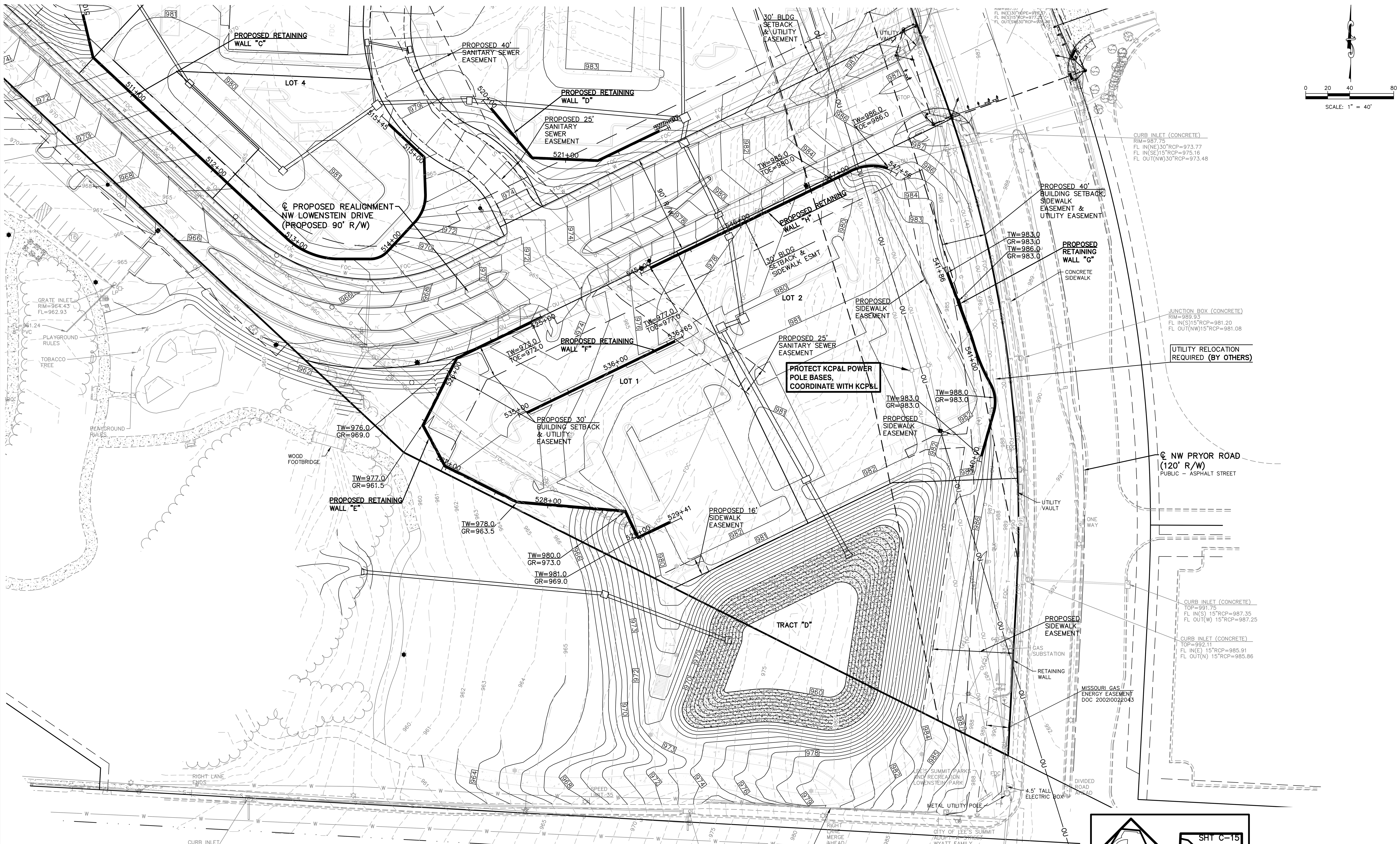
STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

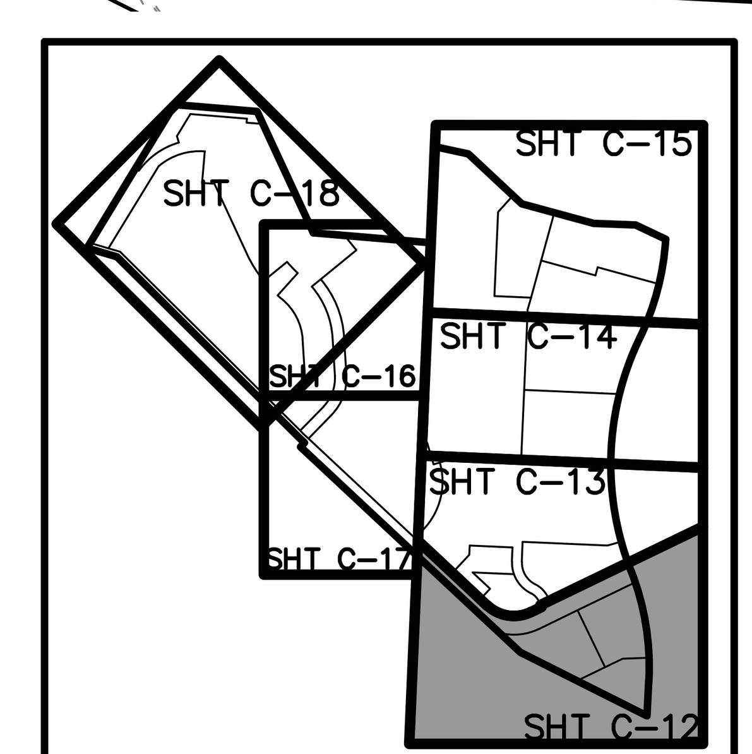
MASS GRADING PLANS
OVERALL GRADING PLAN

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT
CFN	
7067-1G_GP	
SHEET	REV
C-14	0



LEGEND (PROPOSED)

TW=983.6	TOP OF RETAINING WALL
GR=983.1	GROUND ELEVATION @ WALL
←	FLOW DIRECTION
955	FINISHED 1' CONTOUR INTERVALS, TOP OF PAVEMENT
(hatch)	ROCK RIPRAP (D_{50}=18")



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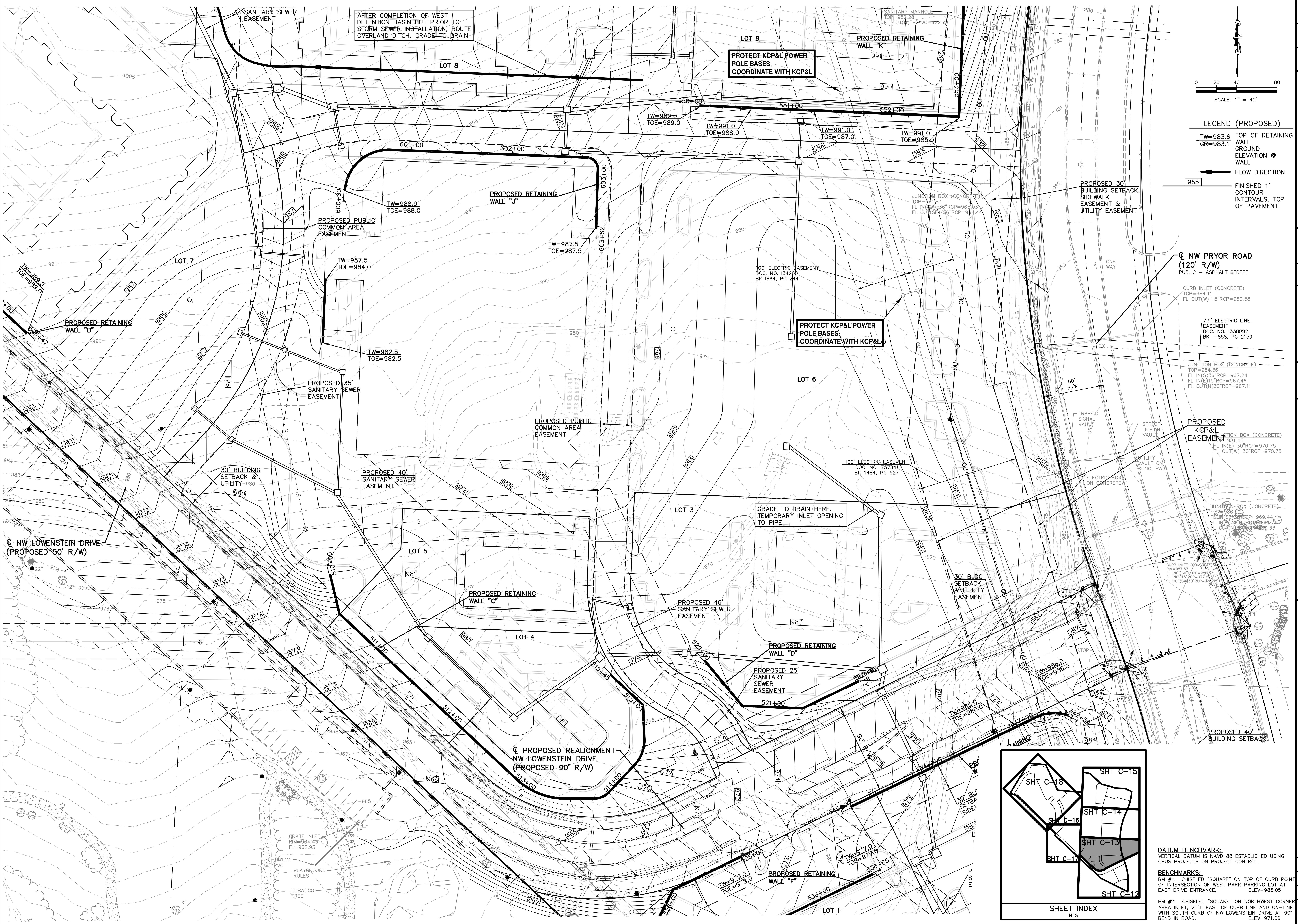
STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
GRADING PLAN

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT
CFN	7067-1G_GP
SHEET	C-15
REV	0



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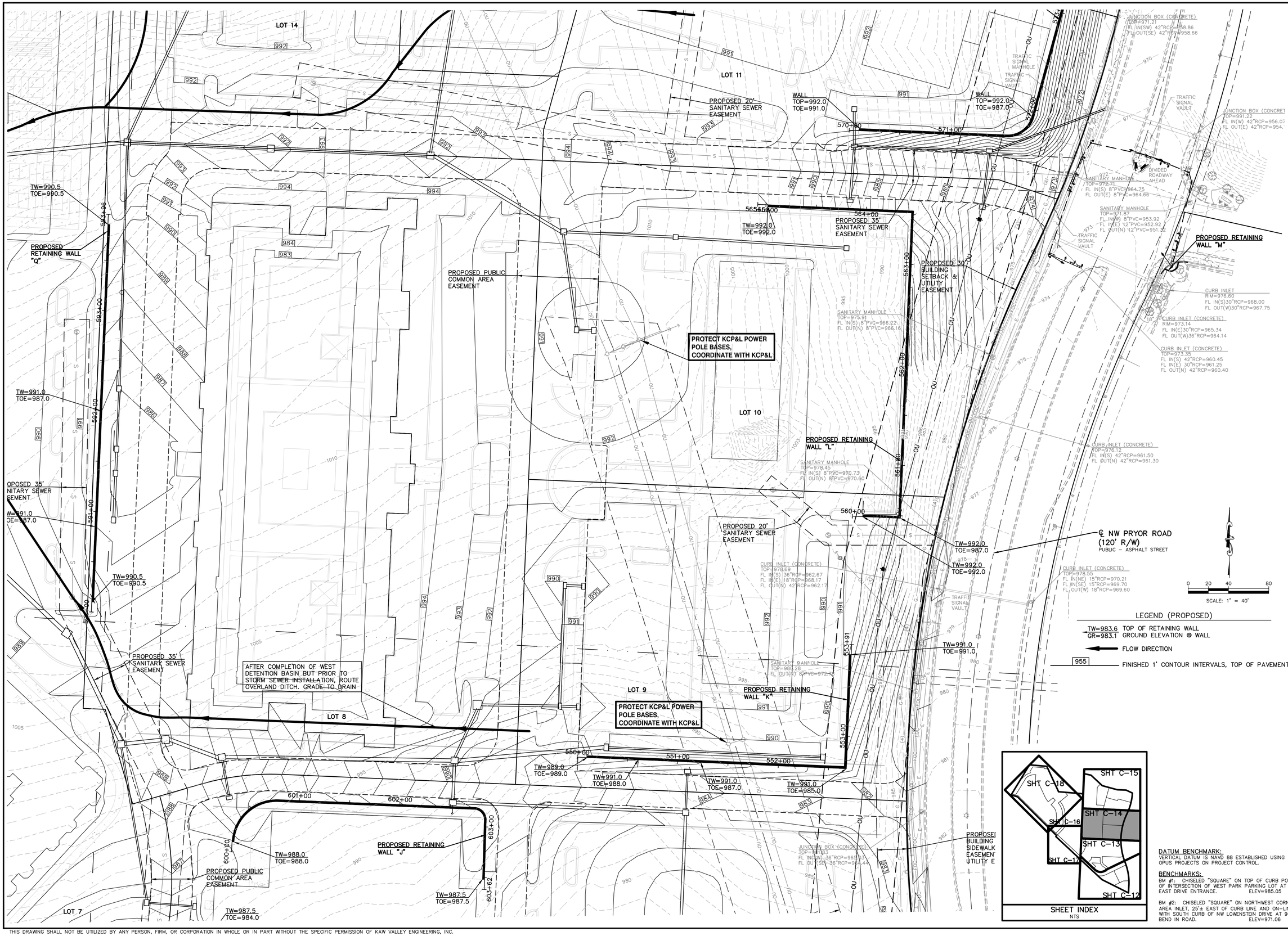
STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
GRADING PLAN

PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY JT
CFN 7067-1G_GP
SHEET C-16 | REV 0



LEGEND (PROPOSED)

TW=983.6 / GR=983.1 TOP OF RETAINING WALL / GROUND ELEVATION @ WALL

FLOW DIRECTION

955 FINISHED 1' CONTOUR INTERVALS, TOP OF PAVEMENT

SHEET INDEX
NTS

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STATE OF MISSOURI
LEON D. OSBOURN
NUMBER
1-2-19
E-21726
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
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MO # 021726

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LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
GRADING PLAN

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT
CFN	
7067-1G_GP	
SHEET	REV
C-17	0

LEGEND (PROPOSED)

TW=983.6 TOP OF RETAINING WALL
GR=983.1 GROUND ELEVATION @ WALL

FLOW DIRECTION

955 FINISHED 1' CONTOUR INTERVALS, TOP OF PAVEMENT

0 20 40 80
SCALE: 1" = 40'

SHEET INDEX
NTS

SHT C-15
SHT C-18
SHT C-14
SHT C-16
SHT C-13
SHT C-17
SHT C-12

PROTECT KCP&L POWER POLE BASES, COORDINATE WITH KCP&L

PROPOSED RETAINING WALL "P"
WALL
TOP=992.0
TOE=988.0

WALL
TOP=992.0
TOE=965.0

WALL
TOP=992.0
TOE=991.0

WALL
TOP=992.0
TOE=991.0

WALL
TOP=992.0
TOE=991.0

WALL
TOP=992.0
TOE=980.0

WALL
TOP=992.0
TOE=987.0

PROPOSED RETAINING WALL "N"

INTERSTATE 470 R/W
(PUBLIC R/W VARIES)

PROPOSED 30' BUILDING SETBACK & UTILITY EASEMENT

PROPOSED 20' SANITARY SEWER EASEMENT

LOT 11
LOT 12
LOT 13
LOT 14

582+00
583+00
584+00
584+42
580+00
577+90
577+00
576+00
575+00
574+00
573+00
572+00
571+00
570+80

UTILITY VAULT MARKED STATE TRAFFIC VAULT
RIPRAP
FL=951.78 36" RCP
OVERHEAD HIGHWAY SIGN "BLUE PARKWAY STRAIGHT, RIGHT LANES TURN RIGHT"
FL=952.12 36" RCP
FL=954.45 FOOD
BLUE PARKWAY STRAIGHT/ WRONG WAY
FL=961.74 15" RCP CONC END SECTION NO LONGER ATTACHED
5' FENCE
ELECTRIC BOX MARKED MODOT LIGHTING CONTROL
TRAFFIC SIGNAL MANHOLE
WEST I-470 LEFT 2 LANES
CURB INLET (CONCRETE) TOP=967.67 FL IN(E) 15"RCP=962.89 FL OUT(NW) 15"RCP=962.32
3.5' DIA MANHOLE MARKED AT&T
SPEED LIMIT 35
℄ NW PRYOR ROAD (120' R/W) PUBLIC - ASPHALT STREET
JUNCTION BOX (CONCRETE) TOP=971.21 FL IN(SW) 42"RCP=958.86 FL OUT(SE) 42"RCP=958.66
TRAFFIC SIGNAL MANHOLE
TRAFFIC SIGNAL VAULT
JUNCTION BOX (CONCRETE) TOP=991.22 FL IN(W) 42"RCP=956.07 FL OUT(E) 42"RCP=954.77
SANITARY MANHOLE TOP=972.21 FL IN(S) 8"PVC=964.75 FL OUT(E) 8"PVC=964.66
DIVIDE ROAD AHEA
TW=990.5 TOE=990.5

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=985.05

BM #2: CHISELED "SQUARE" ON NORTHWEST CORNER AREA INLET, 25'± EAST OF CURB LINE AND ON-LINE WITH SOUTH CURB OF NW LOWENSTEIN DRIVE AT 90° BEND IN ROAD. ELEV=971.06

REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON OSBORN NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
1-2-19

LEON D. OSBOURN
ENGINEER
MO # 021726

KAW VALLEY ENGINEERING
2319 N. JACKSON | P.O. BOX 1304
JUNCTION CITY, KANSAS 66441
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jd@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 ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
GRADING PLAN

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT
CFN	
7067-1G_GP	
SHEET	REV
C-18	0

0 20 40 80

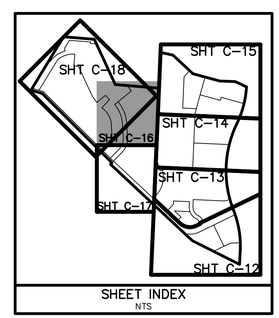
SCALE: 1" = 40'

LEGEND (PROPOSED)

TW=983.6 TOP OF RETAINING WALL
GR=983.1 GROUND ELEVATION @ WALL

FLOW DIRECTION

955 FINISHED 1' CONTOUR INTERVALS, TOP OF PAVEMENT



SHEET INDEX
NTS

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=985.05

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REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
1-2-19

LEON D. OSBOURN
ENGINEER
MO # 021726

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KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES IN KANSAS BY STATE CERTIFICATE OF AUTHORITY # 000542. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
GRADING PLAN

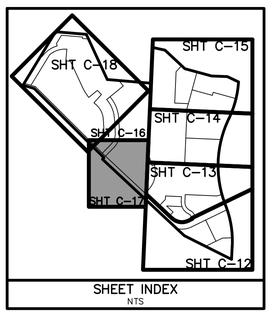
PROJ. NO.	A14_7067-1	
DESIGNER	LDO	DRAWN BY JT
CFN	7067-1G_GP	
SHEET	C-19	REV 0

0 20 40 80

SCALE: 1" = 40'

LEGEND (PROPOSED)

- TW=983.6 / GR=983.1 — TOP OF RETAINING WALL / GROUND ELEVATION @ WALL
- FLOW DIRECTION
- 955 — FINISHED 1' CONTOUR INTERVALS, TOP OF PAVEMENT



SHEET INDEX
NTS

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=985.05

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REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
1-2-19

LEON D. OSBOURN
ENGINEER
MO # 021726

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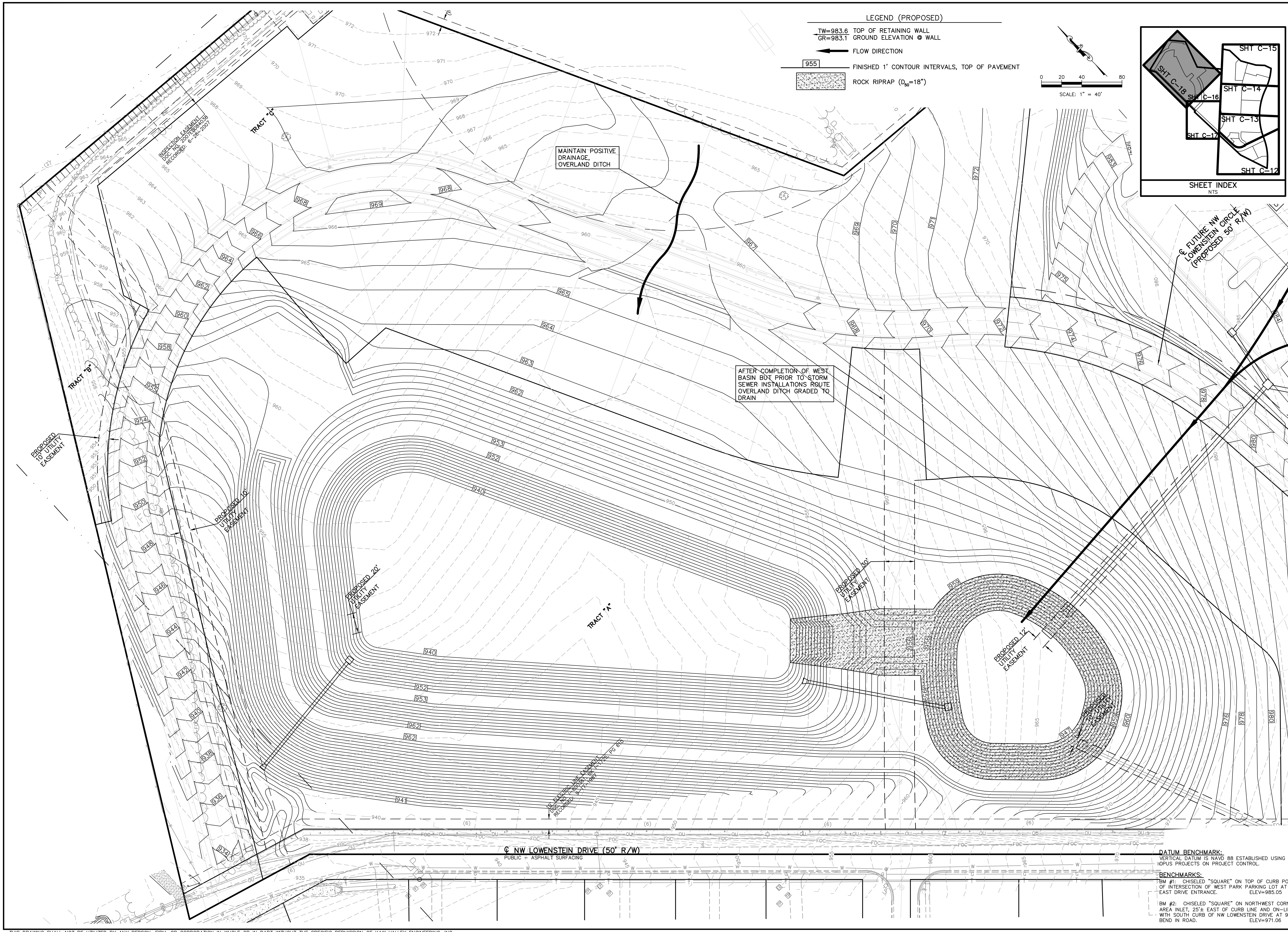
KAW VALLEY ENGINEERING, INC. IS AUTHORIZED TO OFFER ENGINEERING SERVICES IN MISSOURI. STATE CERTIFICATE OF AUTHORITY # 2008042. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
GRADING PLAN

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT
CFN	
7067-1G_GP	
SHEET	REV
C-20	0



DATUM BENCHMARK:
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REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI — LEON D. OSBOURN — NUMBER E-21726 — REGISTERED PROFESSIONAL ENGINEER — 1-6-19

LEON D. OSBOURN
ENGINEER
MO # 021726

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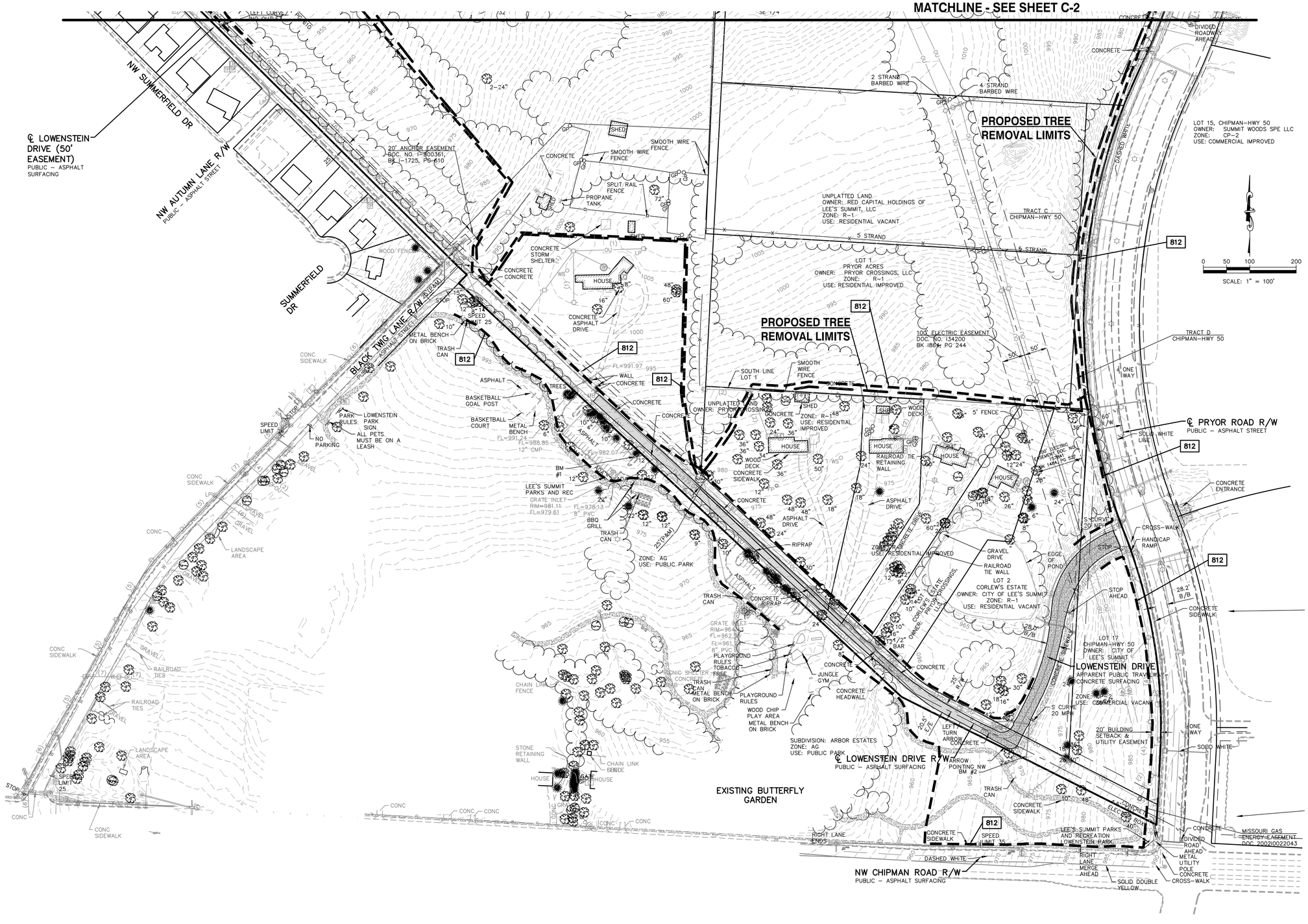
KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/19

STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
GRADING PLAN

PROJ. NO. A14_7067-1
DESIGNER LDO
DRAWN BY JT
CFN 7067-1G_GP
SHEET C-21
REV 0



EROSION & PROPOSED IMPROVEMENTS LEGEND:

- 985 — EXISTING GROUND CONTOUR (1' INTERVALS)
- SEDIMENTATION FENCE
- LOWENSTEIN ROAD CLOSURE

DATUM BENCHMARK:
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BENCHMARKS:
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REV	DATE	DESCRIPTION	DSN	DWN	CHK
1	3-13-19	LAND DISTURBANCE	LDO	JT/BKR	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
3/12/19

LEON D. OSBOURN
ENGINEER
MO # 021726

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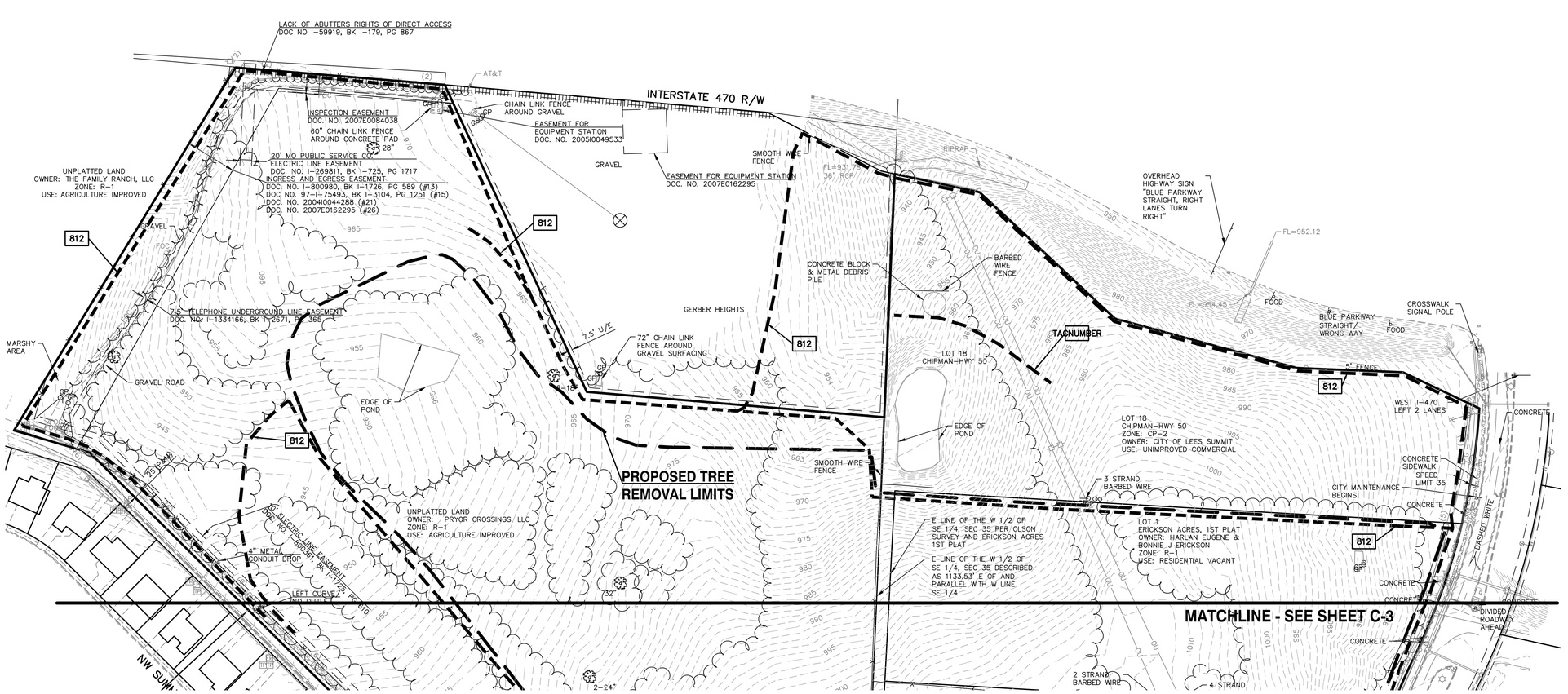
STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

LAND DISTURBANCE PLAN
EROSION CONTROL PLAN - INITIAL

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT
CFN	7067-1ECP_PHASE1
SHEET	C-22A
REV	1



LEGEND

- SECTION CORNER, ORIGIN UNKNOWN UNLESS OTHERWISE NOTED
- MONUMENT FOUND, ORIGIN UNCERTAIN UNLESS OTHERWISE NOTED
- (D) DESCRIBED
- (M) MEASURED
- (C) CALCULATED
- 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
- CTV 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
- WELL
- FIRE HYDRANT
- S SANITARY SEWER MANHOLE
- S SANITARY SEWER LINE
- STORM SEWER MANHOLE
- T TELEPHONE SIGN
- 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
- SHRUB
- STUMP
- TREE 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

DETAILS – SEE DETAIL SHEET NO. C-4 FOR THE FOLLOWING DETAILS

812 SILT FENCE (APWA STD DWG NO. ESC-03)

EROSION & PROPOSED IMPROVEMENTS LEGEND:

985 EXISTING GROUND CONTOUR (1' INTERVALS)

SEDIMENTATION FENCE

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

BENCHMARKS:
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NOTES:
1. PROPERTY LINE IS LIMITS OF TREE REMOVAL EXCEPT AS SHOWN.
2. THE CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE DRAWINGS PRIOR TO BEGINNING TREE REMOVAL OPERATIONS.
3. THE CONTRACTOR SHALL MAINTAIN ALL SILT CONTROL MEASURES DURING TREE REMOVAL.
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. SEDIMENT IS TO BE REMOVED FROM STORM WATER DRAINAGE SYSTEMS.
8. CONTRACTOR IS RESPONSIBLE FOR INSTALLING ANY ADDITIONAL EROSION CONTROL AS HE/SHE DEEMS NECESSARY.
9. 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.
10. TEMPORARY SEDIMENT FENCE/STRAW BALES TO REMAIN UNTIL ADEQUATE VEGETATION IS ESTABLISHED.
11. MUD AND DEBRIS SHALL BE CLEANED UP AT THE CONCLUSION OF EACH WORKING DAY, OR AFTER EACH RAINFALL IF SILT IS PRESENT.
12. INSPECTION, MAINTENANCE AND REPAIR OF EROSION CONTROL DEVICES SHALL BE ON GOING IN OPERABLE CONDITION AT ALL TIMES. ADDITIONAL MEASURES SHALL BE INSTALLED AS REQUIRED BY ACTUAL FIELD CONDITIONS AND/OR GOVERNING INSPECTION AGENCIES.
13. INSTALL CONSTRUCTION ENTRANCE AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING THE SITE AND AS SHOWN ON PLANS.
14. AT COMPLETION OF TREE REMOVAL 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.
15. TOPSOIL IS TO BE PLACED IN AREAS UNSUITABLE FOR VEGETATIVE GROWTH.
16. 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.
17. GOOD HOUSEKEEPING PRACTICES SHALL BE MAINTAINED ON SITE TO KEEP SOLID WASTE FROM ENTRY INTO WATERS.
18. 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.
19. RIGHT OF WAY TO BE STABILIZED AS REQUIRED BY APWA SECTION 2400.
20. EROSION CONTROL CAN BE PLACED IN PHASING AS TREE REMOVAL PROGRESSES.
21. IT IS ANTICIPATED THAT STUMP REMOVAL WILL BE COMPLETED DURING THE EARTHWORK PHASE.
22. CONTRACTOR TO USE BURN PIT AND SMOKE CURTAIN IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS

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.

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.

REV	DATE	DESCRIPTION	DSN	DWN	CHK
			LDO	JT/BKR	LDO
1	3-13-19	LAND DISTURBANCE	LDO		

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
3/14/19
REGISTERED PROFESSIONAL ENGINEER

LEON D. OSBOURN
ENGINEER
MO # 021726

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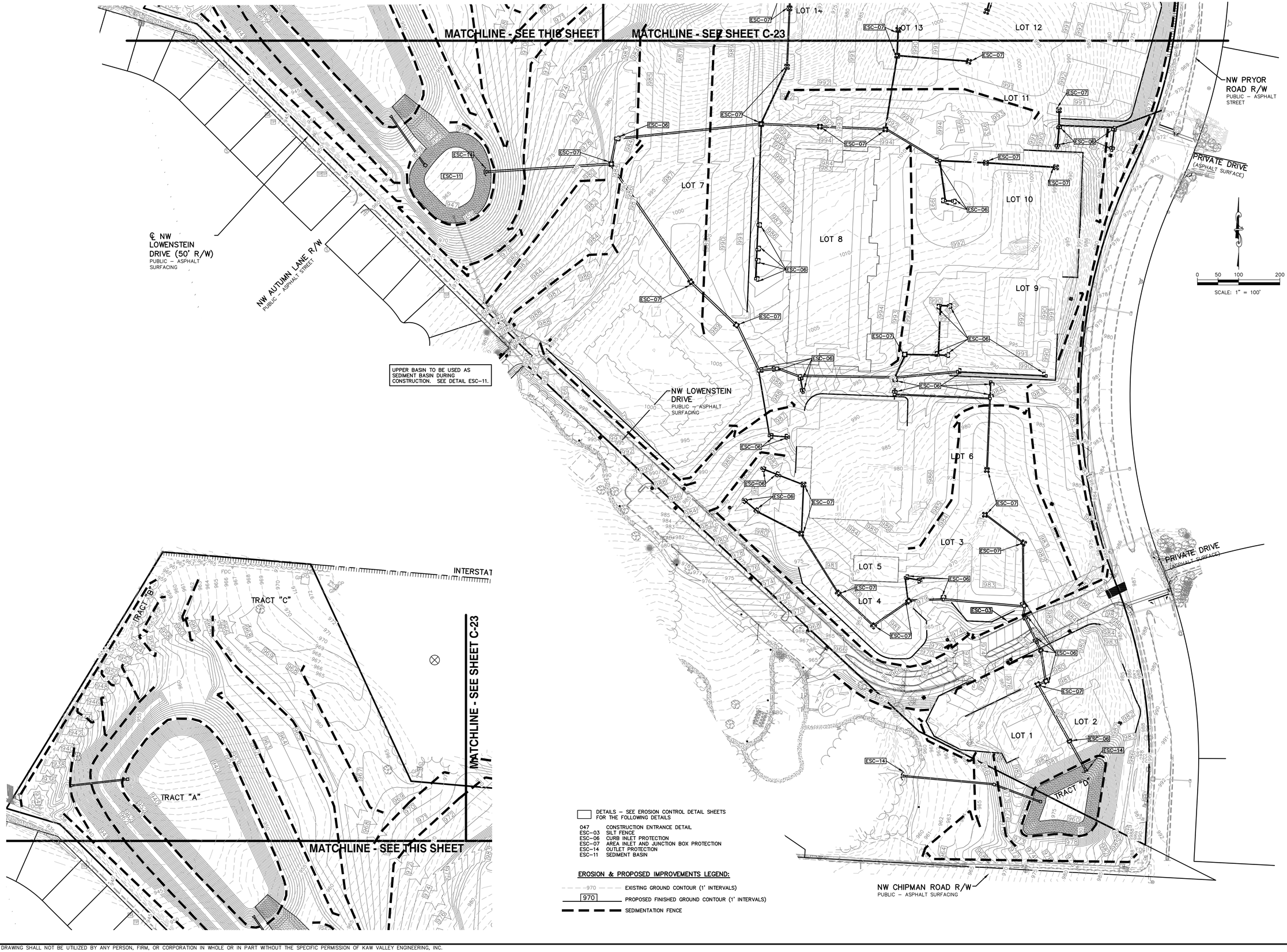
js@kveng.com | www.kveng.com

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 ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

LAND DISTURBANCE PLAN
EROSION CONTROL PLAN - INITIAL

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT
CFN	7067-1ECP_PHASE1
SHEET	C-22B
REV	1



REV	DATE	DESCRIPTION	DSN	DWN	CHK
1	3-13-19	LAND DISTURBANCE	LDO	JT/BKR	LDO
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
3-12-19

LEON D. OSBOURN
ENGINEER
MO # 021726

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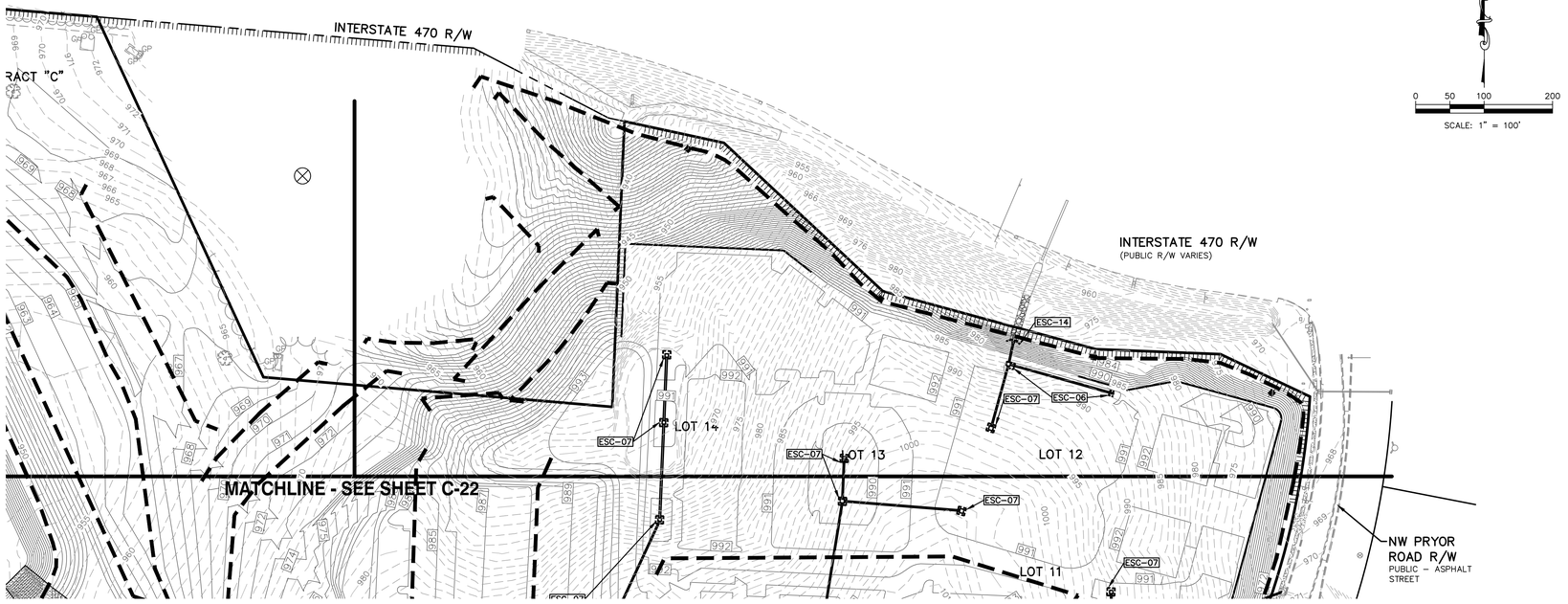
PH. (785) 762-5040 | FAX (785) 762-7744
jdk@kveng.com | www.kveng.com
KAW VALLEY ENGINEERING

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

STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

LAND DISTURBANCE PLAN
EROSION CONTROL PLAN - FINAL

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT
CFN	7067-1G_ECP
SHEET	C-23A
REV	0



0 50 100 200

SCALE: 1" = 100'

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.

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.

DETAILS – SEE EROSION CONTROL DETAIL SHEETS FOR THE FOLLOWING DETAILS

047	CONSTRUCTION ENTRANCE DETAIL
ESC-03	SILT FENCE
ESC-06	CURB INLET PROTECTION
ESC-07	AREA INLET AND JUNCTION BOX PROTECTION
ESC-14	OUTLET PROTECTION
ESC-11	SEDIMENT BASIN

EROSION & PROPOSED IMPROVEMENTS LEGEND:

970 EXISTING GROUND CONTOUR (1' INTERVALS)

970 PROPOSED FINISHED GROUND CONTOUR (1' INTERVALS)

SEDIMENTATION FENCE

REV	DATE	DESCRIPTION	DSN	DWN	CHK
1	3-13-19	LAND DISTURBANCE	LDO	JT/BKR	LDO
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
3-12-19

LEON D. OSBOURN
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KAW VALLEY ENGINEERING

STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

LAND DISTURBANCE PLAN
EROSION CONTROL PLAN - FINAL

PROJ. NO.	A14_7067-1
DESIGNER	LDO
DRAWN BY	JT
CFN	7067-1G_ECP
SHEET	C-23B
REV	0

LEGEND (PROPOSED)

TW=983.6 TOP OF RETAINING WALL
GR=983.1 GROUND ELEVATION @ WALL

FLOW DIRECTION

955 FINISHED 1' CONTOUR INTERVALS, TOP OF PAVEMENT

0 20 40 80
SCALE: 1" = 40'

TRACT "B"

℄ FUTURE NW LOWENSTEIN CIRCLE (PROPOSED 50' R/W)

℄ PROPOSED SECTION THRU EMBANKMENT AND POND (WEST BASIN)

TRACT "A"

℄ NW LOWENSTEIN DRIVE (50' R/W)
PUBLIC – ASPHALT SURFACING

NW AUTUMN LANE (50' R/W)
PUBLIC – ASPHALT STREET

POINT "A"

505+00 506+00 506+67 507+00 508+00 509+00 510+00 511+00 501+00 502+00 503+00 504+00

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=985.05

BM #2: CHISELED "SQUARE" ON NORTHWEST CORNER AREA INLET, 25'± EAST OF CURB LINE AND ON-LINE WITH SOUTH CURB OF NW LOWENSTEIN DRIVE AT 90° BEND IN ROAD. ELEV=971.06

REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

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LEON D. OSBOURN NUMBER E-21726
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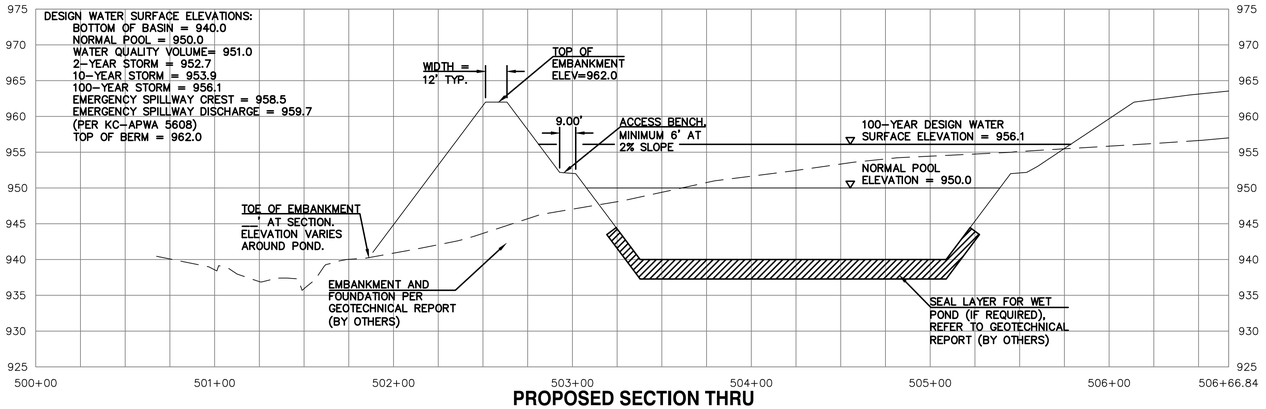
STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
WEST DETENTION BASIN PLAN

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT
CFN	
7067-1G_BASIN	
SHEET	REV
C-37	0



PROPOSED SECTION THRU
EMBANKMENT AND POND (WEST BASIN)

SCALE: 1" = 40'

SCALE: 1" = 10'

REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

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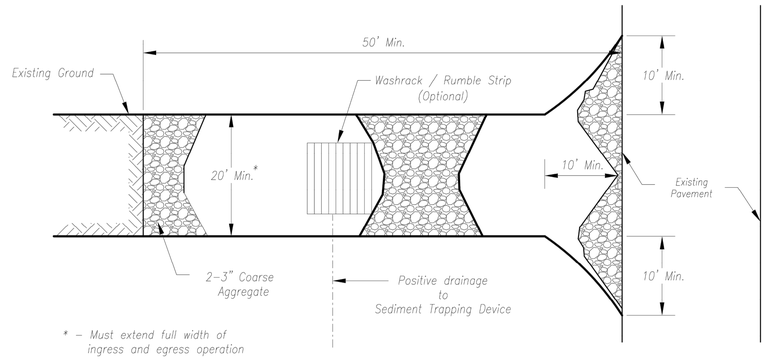
STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

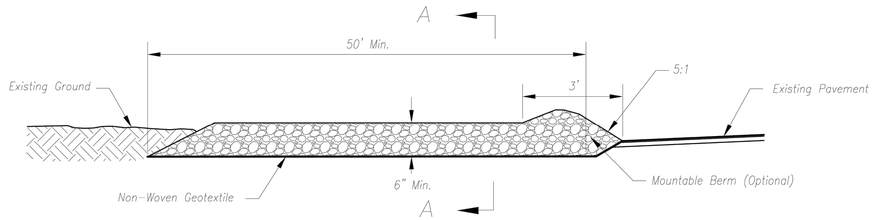
MASS GRADING PLANS
WEST DETENTION BASIN PROFILE

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT
CFN	
7067-1G_BASIN	
SHEET	REV
C-38	0



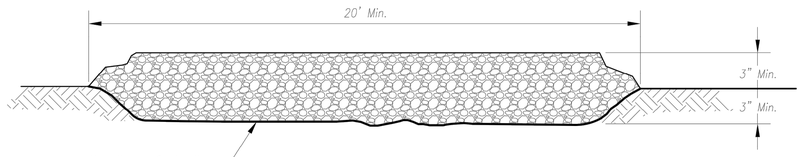
Plan View

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.*

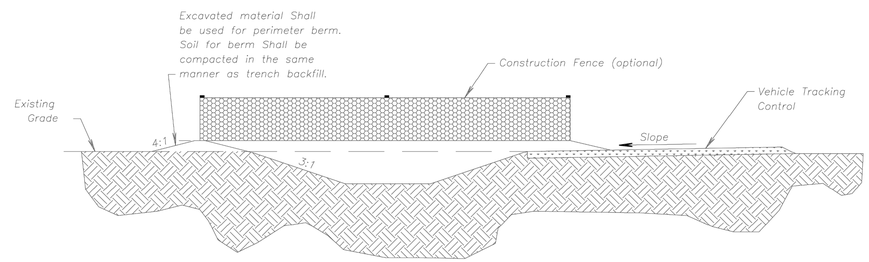
CONSTRUCTION ENTRANCE

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.

AMERICAN PUBLIC WORKS ASSOCIATION

Kansas City Metro Chapter APWA American Public Works Association

KANSAS CITY METRO CHAPTER

CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT

STANDARD DRAWING NUMBER ESC-01

ADOPTED: 10/24/2016

REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
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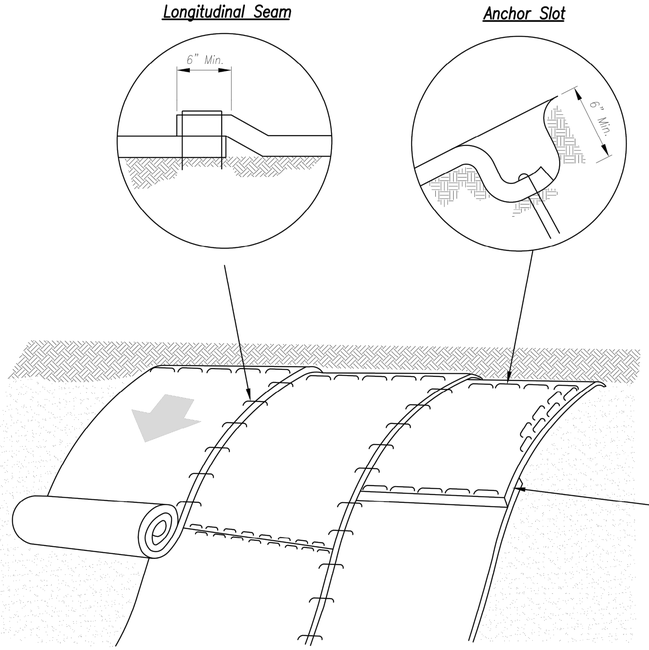
STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
EROSION CONTROL DETAIL SHEET

PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY JT
CFN 7067-1G_DET
SHEET C-44 | REV 0



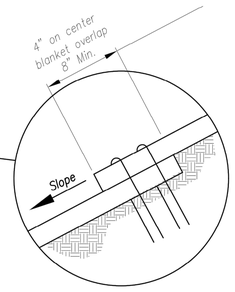
Installation on Slopes

General Notes:

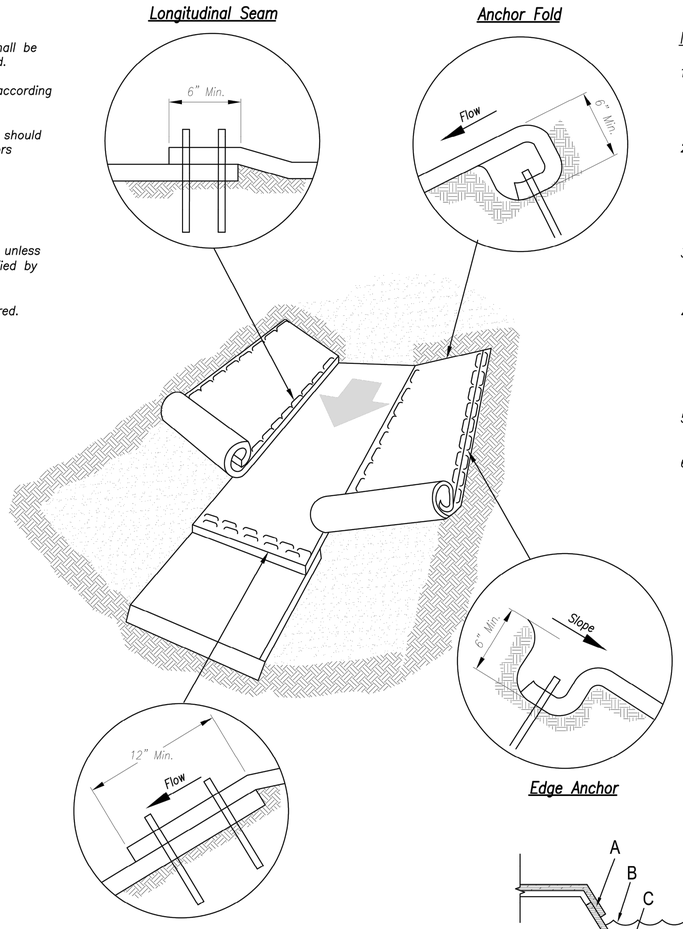
1. *APWA Specifications 2150 and Design Guidance 5100 shall be referenced to select type of blanket or mat to be used.*
2. *Typical anchors and pattern/spacing shall be installed according to the manufacturers instructions.*
3. *LONGITUDINAL SEAMS: The edges of the blanket or mat should overlap each other a minimum of 6 inches, with anchors catching the edges of both blankets.*

Maintenance:

1. *Torn or degraded product shall be repaired or replaced, unless such degradation is within the functional longevity specified by the manufacturer.*
2. *Edges or seams that are loose or frayed shall be secured.*



Splice Seam

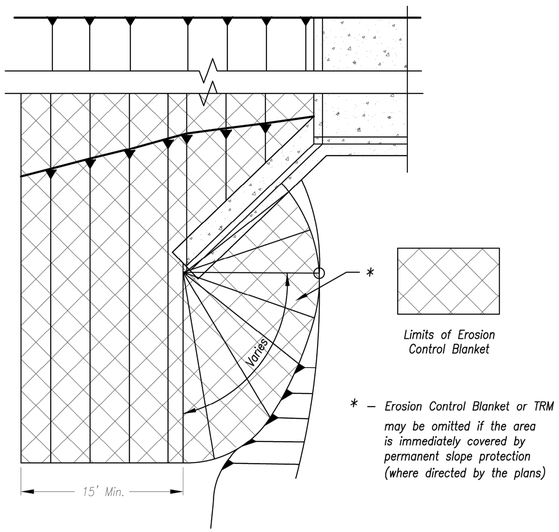


Splice Seam

Edge Anchor

Notes for Installation in Channels:

1. *Erosion Control Blankets and TRMs shall be laid in the direction of the flow, with the first course at the centerline of channel, where applicable. In order for the mat to be in contact with the soil, lay the mat loosely, avoiding stretching.*
2. *ANCHOR FOLD: The top of the mat should be folded under, buried and secured with wood or other approved anchors placed 6 inches apart. The top edge of the mat should be buried in a slot 6 inches wide x 6 inches deep, anchored in the bottom of the slot, backfilled, and the mat folded over the top as shown in detail.*
3. *SPLICE SEAM: When splices are necessary, overlap end a minimum of 12 inches in direction of water flow. Stagger splice seams.*
4. *CHECK SLOTS: Establish check slots transverse to slope every 30 feet. The slots should be 6 inches wide x 6 inches deep. The mat shall be cut to a length 12 inches beyond the slot. The top of the downstream mat shall be slotted in, secured and buried similar to the edge anchor fold. The upstream mat shall then cover the slot and be anchored as shown.*
5. *EDGE ANCHORS: Lay outside edge of mat into trench at top of the slope and anchor.*
6. *TERMINUS: The bottom edge of the mat shall be anchored.*

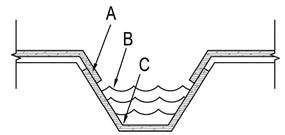


Partial Box Culvert Plan
Not to Scale

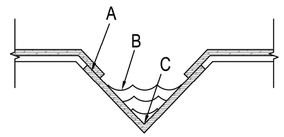
Installation Around Culvert Slope

Notes for Installation on Slopes:

1. *Erosion Control Blankets and TRMs shall be laid in the direction of the slope. In order for blanket to be in contact with the soil, lay blanket loosely, avoiding stretching.*
2. *ANCHOR SLOTS: The top of the blanket should be "slotted in" at the top of the slope and anchored in place with anchors 6 inches apart. The slots should be 6 inches wide x 6 inches deep with the blanket anchored in the bottom of the slot, then backfilled, tamped and seeded.*
3. *SPLICE SEAM: When splices are necessary, overlap end a minimum of 8 inches in direction of water flow. Stagger splice seams.*
4. *TERMINAL FOLD: The bottom edge of the blanket shall be turned under a minimum of 4 inches, then anchored in place with anchors 9 inches apart.*



Trapezoidal Channel



V Channel

Critical Points:

A – *Overlaps and seams;*

B – *Projected water line;*

C – *Channel bottom / side slope vertices;*

Installation in Channels

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

AMERICAN PUBLIC WORKS ASSOCIATION

Kansas City Metro Chapter APWA American Public Works Association

KANSAS CITY METRO CHAPTER

EROSION CONTROL BLANKETS AND TURF REINFORMENT MATS

STANDARD DRAWING NUMBER ESC-02

ADOPTED: 10/24/2016

REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
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1-6-19

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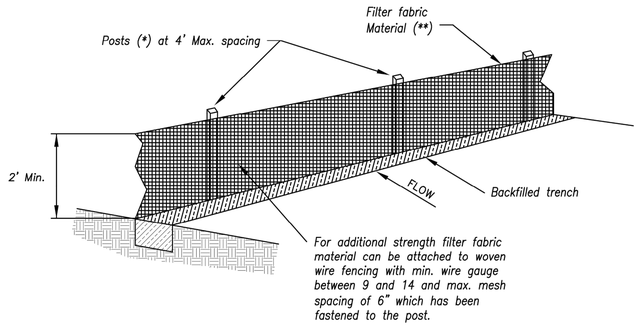
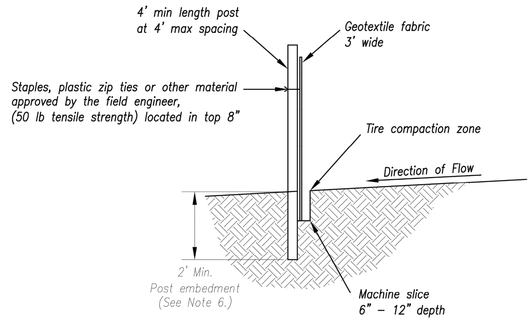
STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
EROSION CONTROL DETAIL SHEET

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT
CFN	
7067-1G_DET	
SHEET	REV
C-45	0





(*) POSTS

- MIN, LENGTH 4'
- HARDWOOD 1 3/16" x 1 3/16"
- NO.2 SOUTHERN PINE 2 5/8" x 2 5/8"
- STEEL 1.33 LB/FT

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

SILT FENCE DETAILS

Not to Scale

Notes:

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

Maintenance:

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

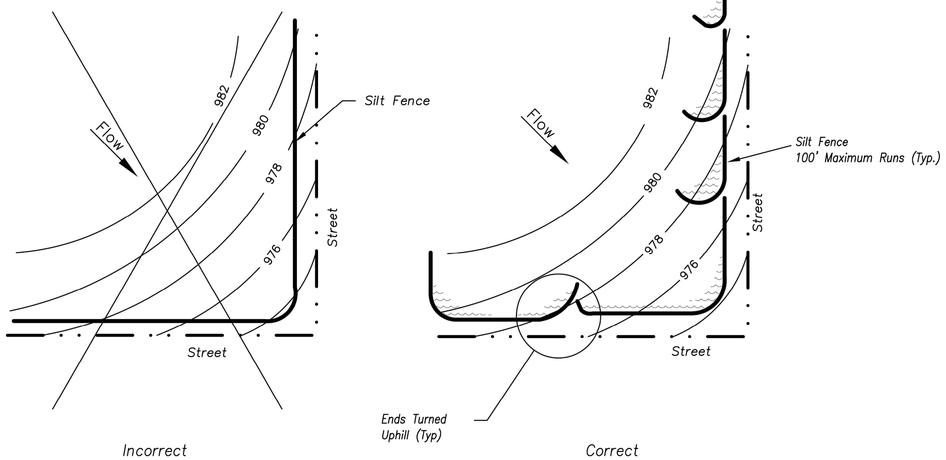
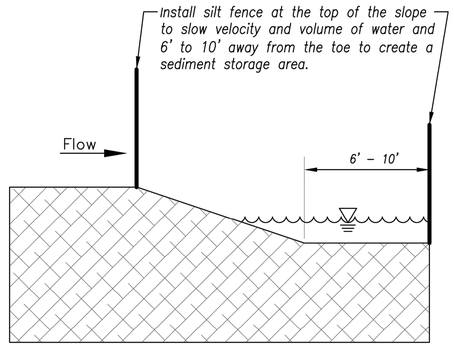
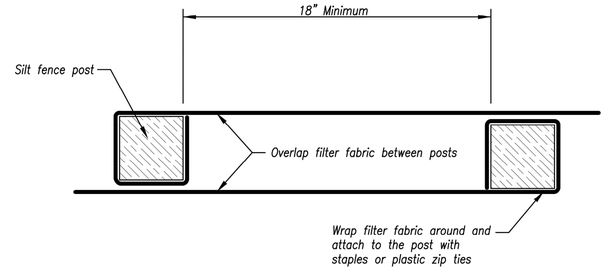


Figure A

SILT FENCE LAYOUT

Not to Scale





JOINING FENCE SECTIONS

Not to Scale

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

AMERICAN PUBLIC WORKS ASSOCIATION

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KANSAS CITY METRO CHAPTER

SILT FENCE

STANDARD DRAWING NUMBER ESC-03

ADOPTED: 10/24/2016

REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI LEON D. OSBURN NUMBER E-21726 REGISTERED PROFESSIONAL ENGINEER 1-2-19

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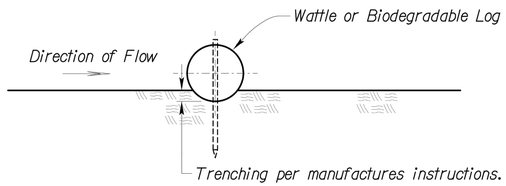
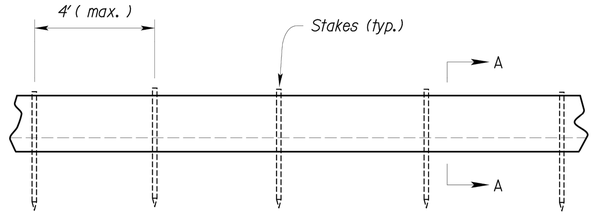
STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
EROSION CONTROL DETAIL SHEET

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT
CFN	
7067-1G_DET	
SHEET	REV
C-46	0



Section A–A



Typical Elevation

WATTLES AND BIODEGRADABLE LOG

Notes for Wattles and Biodegradable Log Slope Protection:

1. *The Slope barriers shall be placed along contour lines, with a short section turned upgrade at each end of the barrier. The maximum length of the slope barrier shall not exceed 250 feet, and the barrier ends need to be staggered.*
2. *Install wattles and biodegradable logs per manufacturer's instructions.*
3. *Spacing of stakes per manufacturer's instructions with 4' max. spacing. Length of stakes shall be a minimum of 2 times the diameter of the log with minimum of 24".*

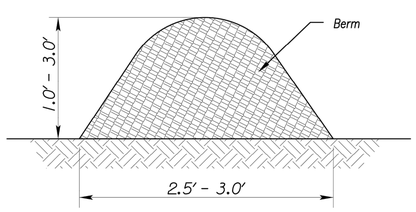


Figure 1
(Perimeter Control)

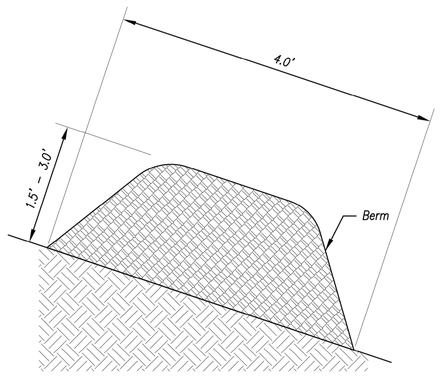


Figure 2
(Steep Slopes)

MULCH OR COMPOST FILTER BERMS

Notes for Mulch and Compost Filter Beam:

1. *The sediment control berm shall be placed uncompacted in a windrow at locations shown on the plans or as directed by the engineer.*
2. *Parallel to the base of the slope, or around the perimeter of other affected areas, construct a 1 to 3 foot high by 2.5 to 3 foot wide berm (see Figure 1). For maximum water treatment ability or for steep slopes, construct a 1.5 to 3 foot high trapezoidal berm that is a minimum of 4 feet wide at the base (see Figure 2). In extreme conditions, or where specified by the engineer, a second berm shall be constructed at the top of the slope. Engineer will specify berm requirements.*
3. *If berm is to be left as permanent or part of the natural landscape, the compost berm may be seeded during application for permanent vegetation.*
4. *Do not use compost or wood mulch berms in any runoff channels or concentrated flow areas.*
5. *Wood mulch shall consist of tree and shrub debris resulting from clearing and grubbing and shall be ground by the mechanical means such as a chipper, hammermill, tub grinder or other approved method. Mulch sizing varies with a maximum width of 2" and a maximum length of 10".*

Maintenance for Mulch and Compost Filter Beam;

1. *Berm shall be reshaped and material added as necessary to maintain function and dimensions.*
2. *Breaches in the berm shall be repaired promptly.*

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

AMERICAN PUBLIC WORKS ASSOCIATION

KANSAS CITY METRO CHAPTER

WATTLES/BIODEGRADABLE LOG AND MULCH/COMPOST FILTER BERM

STANDARD DRAWING NUMBER ESC-04

ADOPTED: 10/24/2016

REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
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REGISTERED PROFESSIONAL ENGINEER
1-16-19

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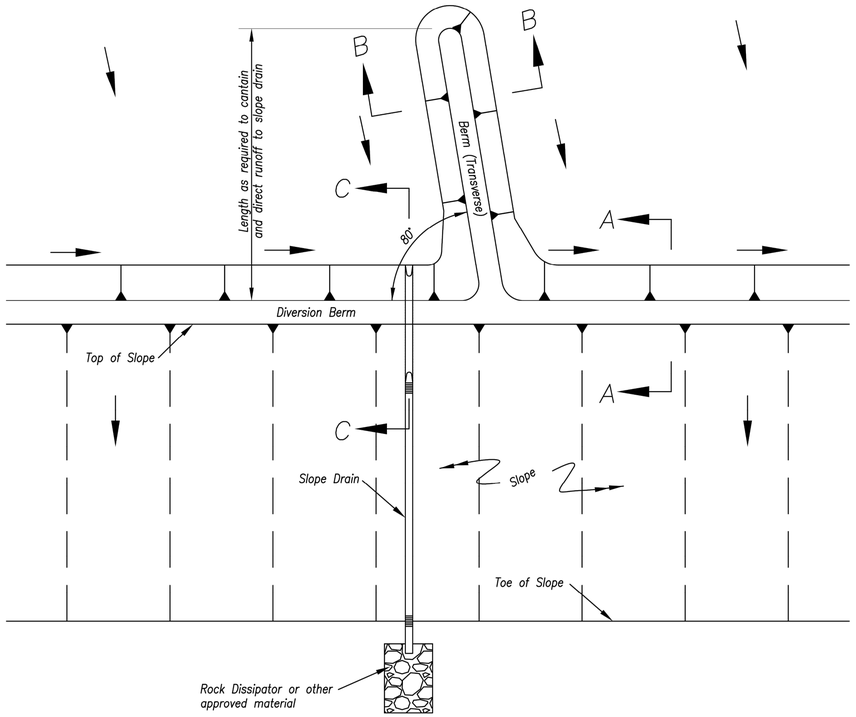
STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
EROSION CONTROL DETAIL SHEET

PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY JT
CFN 7067-1G_DET
SHEET C-47 | REV 0



TYPICAL PLAN VIEW OF DIVERSION BERM AND SLOPE DRAIN

Notes for Diversion Berm:

1. Slope drains are optional, but may be required by the engineer if the berm is at the top of a steep slope.
2. Diversion berms must be installed as a first step in the land–disturbing activity and must be functional prior to upslope land disturbance.
3. The berm should be adequately compacted to prevent failure.
4. Temporary or permanent seeding and mulch shall be applied to the berm immediately following its construction.
5. Place the berm so to minimize damages by construction operations and traffic.
6. The berm must discharge to a temporary sediment trap or stabilized area.
7. All trees, brush, stumps, obstructions and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of diversion.
8. The diversion shall be excavated or shaped to line, grade and cross–section as required to meet the criteria specified herein, free of irregularities which will impede flow.
9. Fills shall be compacted as needed to prevent unequal settlement that would cause damage in the completed diversion. Fill shall be composed of soil which is free from excessive organic debris, rocks or other objectionable materials.

Maintenance:

1. Berm shall be reshaped, compacted, and stabilized as necessary to maintain its function.
2. Breaches in the berm shall be repaired immediately.

Notes for Slope Drain:

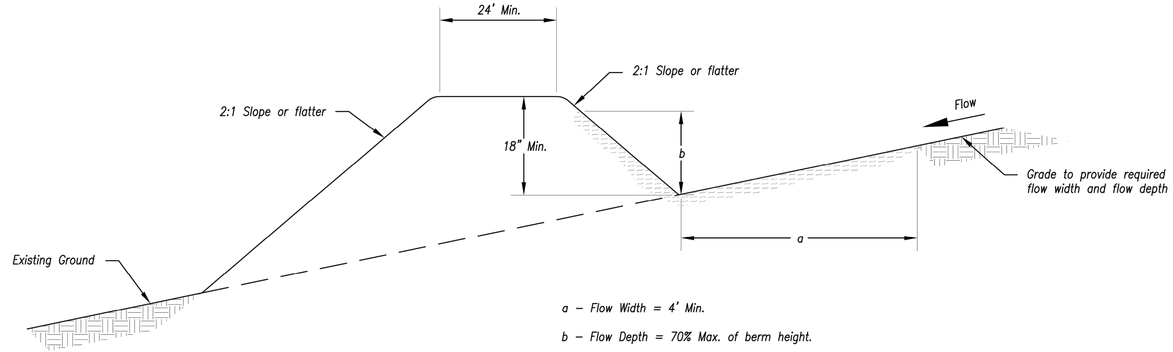
1. Slope Drain and Diversion Berm may be used on either project foreslopes or project backslopes.
2. Discharge of Slope Drains shall be into stabilized ditch or area, or into Sediment Basin.
3. Pipe shall be secured in place as approved by Engineer.

Maintenance:

1. Accumulation of any visible sediment at the inlet and outlet shall be removed promptly.
2. Outlet conditions shall be repaired if scour is observed. Leaking or damaged section of pipe shall be repaired immediately.
3. Barriers directing water to the inlet shall be monitored for continuity and effectiveness.

TYPICAL PROFILE OF DIVERSION BEAM

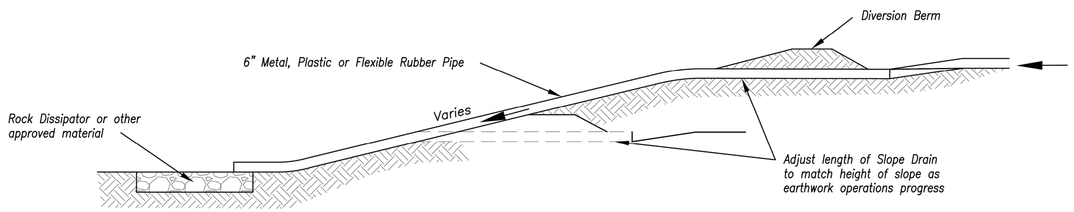
Not to Scale

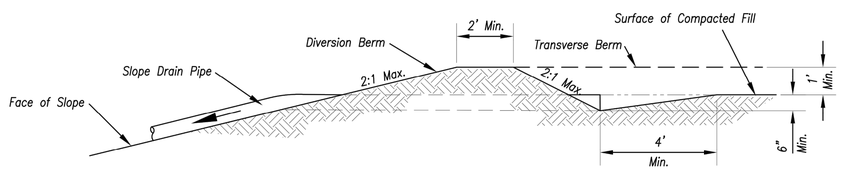


a – Flow Width = 4' Min.

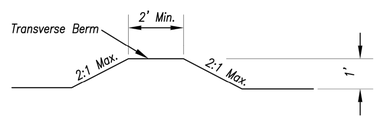
b – Flow Depth = 70% Max. of berm height.

TYPICAL PROFILE OF DIVERSION BERM





Section C–C



Section B–B

TYPICAL PROFILE OF DIVERSION BERM WITH SLOPE DRAIN

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

AMERICAN PUBLIC WORKS ASSOCIATION

Kansas City Metro Chapter APWA American Public Works Association

KANSAS CITY METRO CHAPTER

DIVERSION BERMS AND SLOPE DRAINS

STANDARD DRAWING NUMBER ESC-05

ADOPTED: 10/24/2016

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0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI LEON D. OSBOURN NUMBER E-21726 REGISTERED PROFESSIONAL ENGINEER 1-16-19

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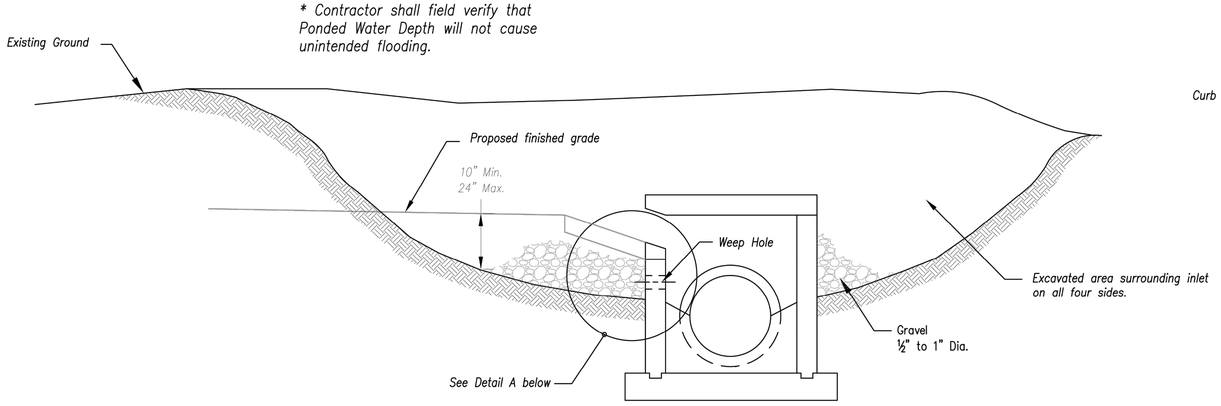
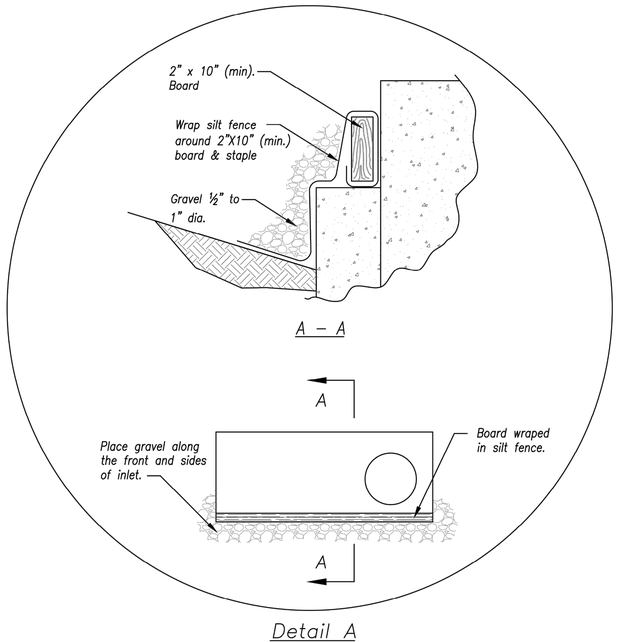
STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
EROSION CONTROL DETAIL SHEET

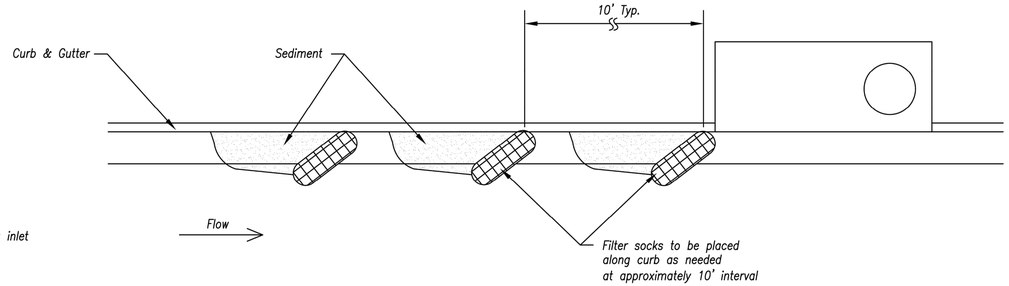
PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY JT
CFN 7067-1G_DET
SHEET C-48 | REV 0





Detail A

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



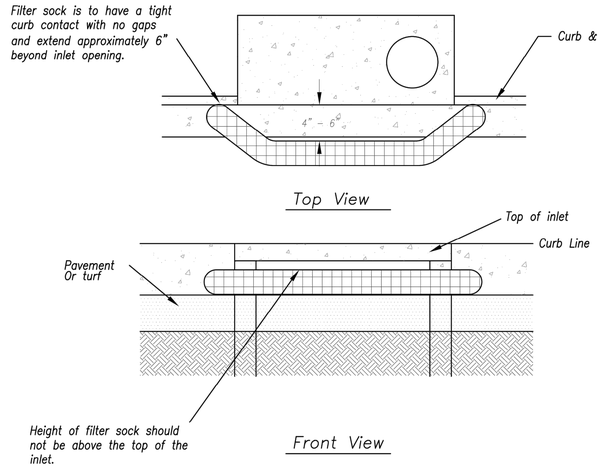
On Grade Curb Inlet Protection

Notes:

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

Maintenance:

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



Sump Inlet Sediment Filter

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

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

AMERICAN PUBLIC WORKS ASSOCIATION
Kansas City Metro Chapter APWA AMERICAN PUBLIC WORKS ASSOCIATION
KANSAS CITY METRO CHAPTER

CURB INLET PROTECTION

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

REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
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NUMBER E-21726
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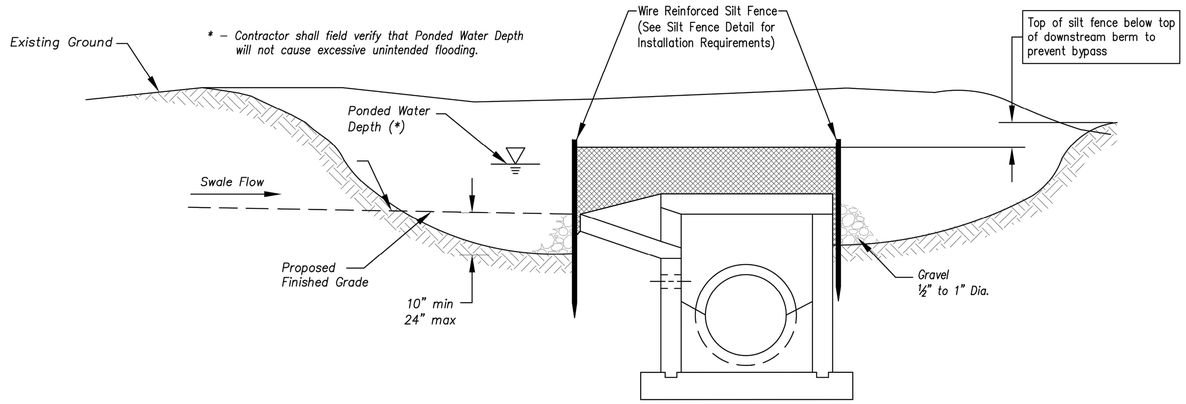
STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
EROSION CONTROL DETAIL SHEET

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT
CFN	
7067-1G_DET	
SHEET	REV
C-49	0



Section A–A

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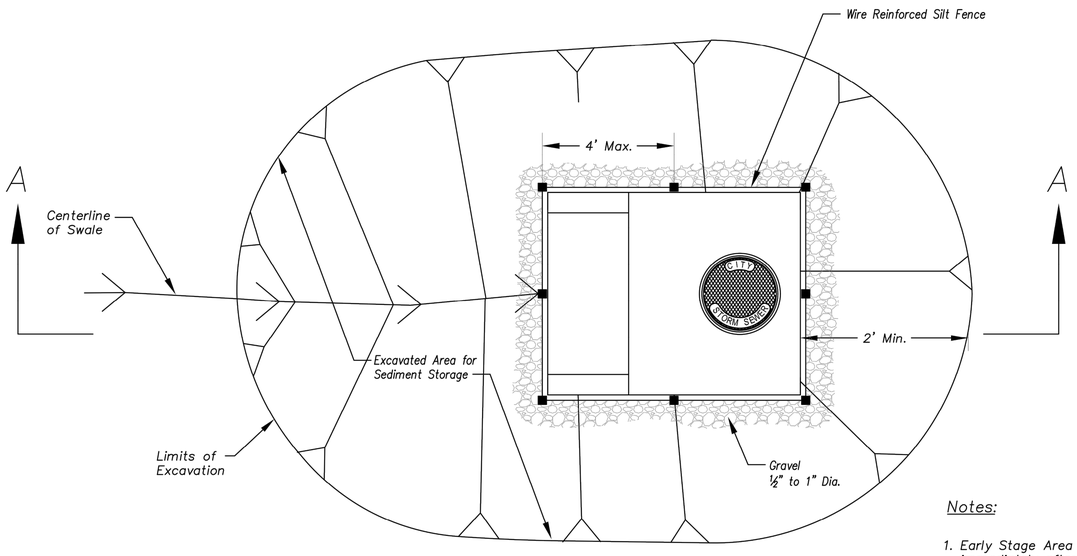
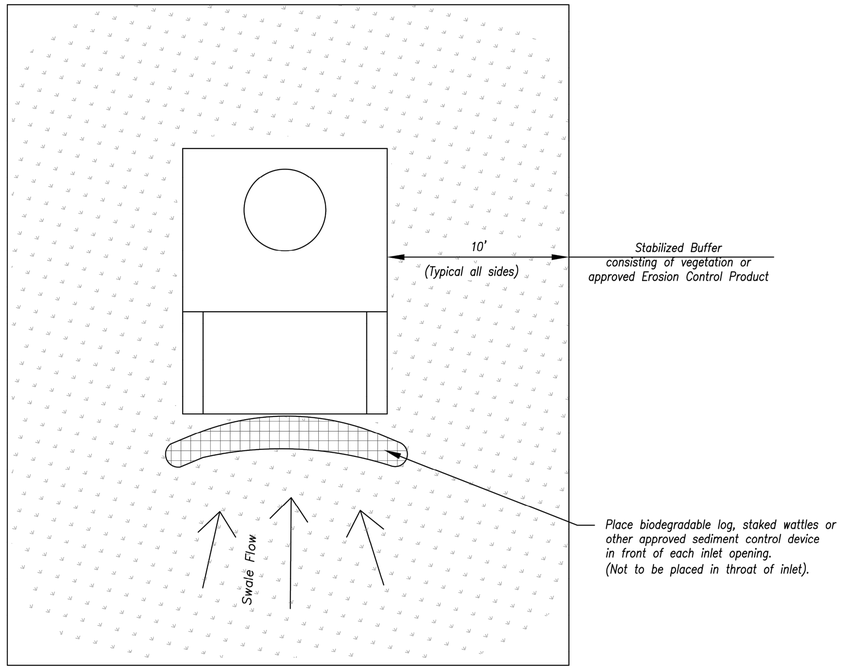


Plan

Not to Scale

EARLY STAGE AREA INLET

(All open boxes and inlets not at final grade)



Plan

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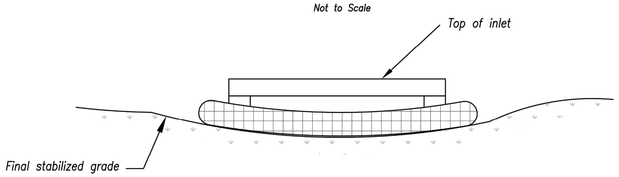

Front View

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 APWA AMERICAN PUBLIC WORKS ASSOCIATION

KANSAS CITY METRO CHAPTER

AREA INLET AND JUNCTION BOX PROTECTION

STANDARD DRAWING NUMBER ESC-07

ADOPTED: 10/24/2016

REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI LEON D. OSBORN NUMBER E-21726 REGISTERED PROFESSIONAL ENGINEER
1-2-19

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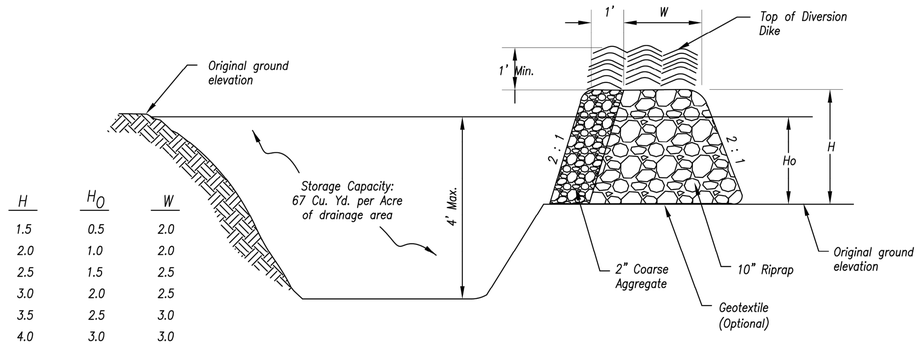
STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
EROSION CONTROL DETAIL SHEET

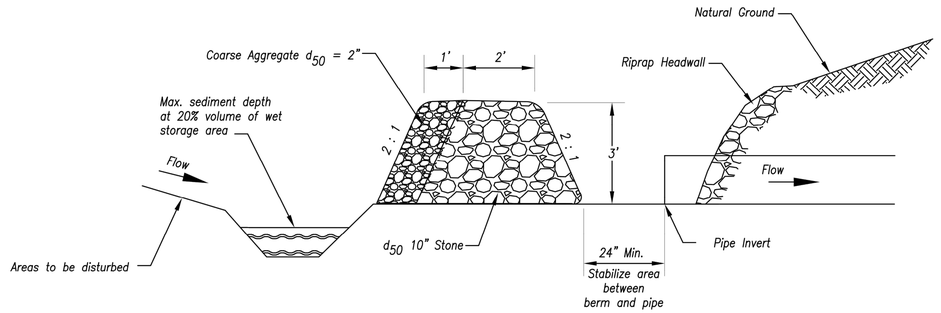
PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY JT
CFN 7067-1G_DET
SHEET C-50 | REV 0



H	H_0	W
1.5	0.5	2.0
2.0	1.0	2.0
2.5	1.5	2.5
3.0	2.0	2.5
3.5	2.5	3.0
4.0	3.0	3.0
4.5	3.5	4.0
5.0	4.0	4.5

(*) Cross Section of Outlet

Not to Scale



Section A–A

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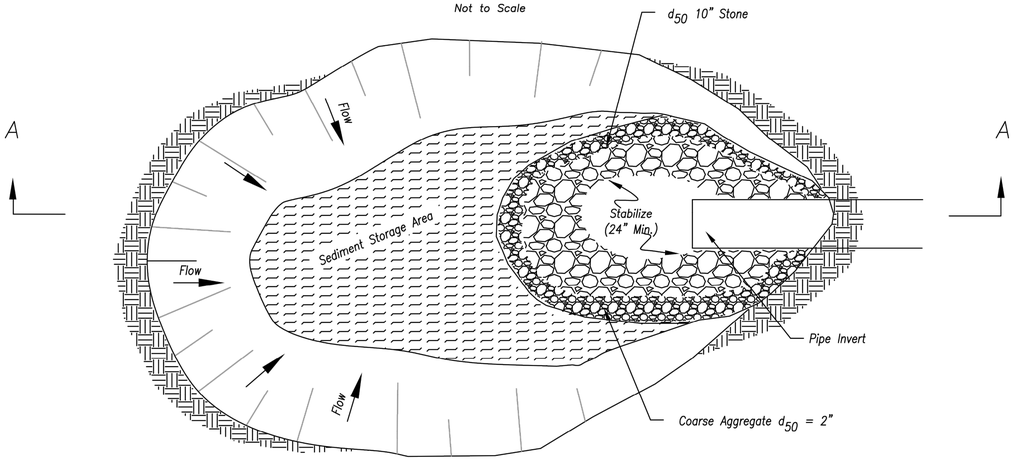
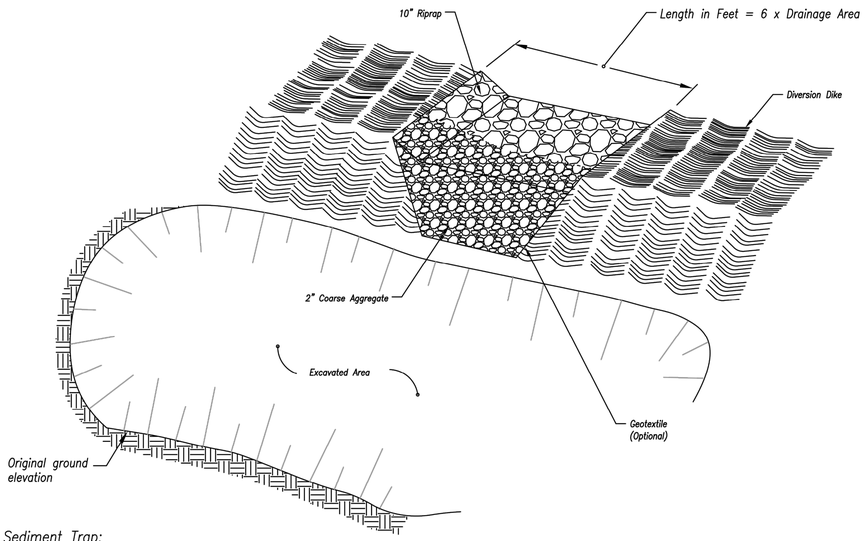


Plan View

Not to Scale



(*) Perspective View of Outlet

Not to Scale

(*) – The perspective view and cross section are schematic in nature. Construction plans must provide specific site construction arrangements.

Notes for Sediment Trap:

1. The area under the embankment shall be cleared, grubbed, and stripped of any vegetation and root mat.
2. Fill material for the embankment shall be free of roots or other woody vegetation, organic material, large stones, and other objectionable material. The embankment should be compacted in 6–inch layers by traversing with construction equipment.
3. The earthen embankment shall be stabilized immediately after installation.
4. Construction operations shall be carried out to minimize erosion and water pollution.
5. The structure shall be removed and the area stabilized when the upslope drainage area has been stabilized.
6. All cut and fill slopes shall be 2H : 1V or flatter, except for excavated, wet storage areas which may be at a maximum 1H : 1V grade.

Maintenance for Sediment Trap:

1. Check sediment traps after periods of significant runoff.
2. Remove sediment and restore the trap to its original dimensions when sediment accumulates to 20% of the storage capacity.
3. Immediately repair any erosion damage to the embankment and outlet.
4. Keep outlet and pool area free of all trash and other debris.

SEDIMENT TRAP

Notes for Sediment Trap at Culvert Opening:

1. The inlet protection device shall be constructed in a manner that will facilitate clean–out and disposal of trapped sediment and minimize interference with construction activities.
2. The inlet protection devices shall be constructed in such manner that any resultant ponding stormwater will not cause excessive inconvenience or damage to adjacent areas or structures.
3. Geometry of the design will be a horseshoe shape around the culvert inlet.
4. The toe of the riprap shall be no closer than 24" from the culvert opening to provide an acceptable emergency outlet for flows from larger storm events.
5. Storage requirements equivalent to that of temporary sediment trap.
6. 67 C.Y./Acre wet storage below base of stone.
7. 67 C.Y./Acre dry storage from base of stone to top of stone berm.

Maintenance for Sediment Trap at Culvert Opening:

1. Check sediment traps after periods of significant runoff.
2. Remove sediment and restore the trap to its original dimensions when sediment accumulates to 20% of the storage capacity.
3. Immediately repair any erosion damage to the embankment and outlet.
4. Keep outlet and pool area free of all trash and other debris.

SEDIMENT TRAP AT CULVERT OPENING

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

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Kansas City Metro Chapter APWA American Public Works Association

KANSAS CITY METRO CHAPTER

SEDIMENT TRAPS

STANDARD DRAWING NUMBER ESC-08

ADOPTED: 10/24/2016

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0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI – LEON OSBORN NUMBER E-21726 – REGISTERED PROFESSIONAL ENGINEER – 12-2-19

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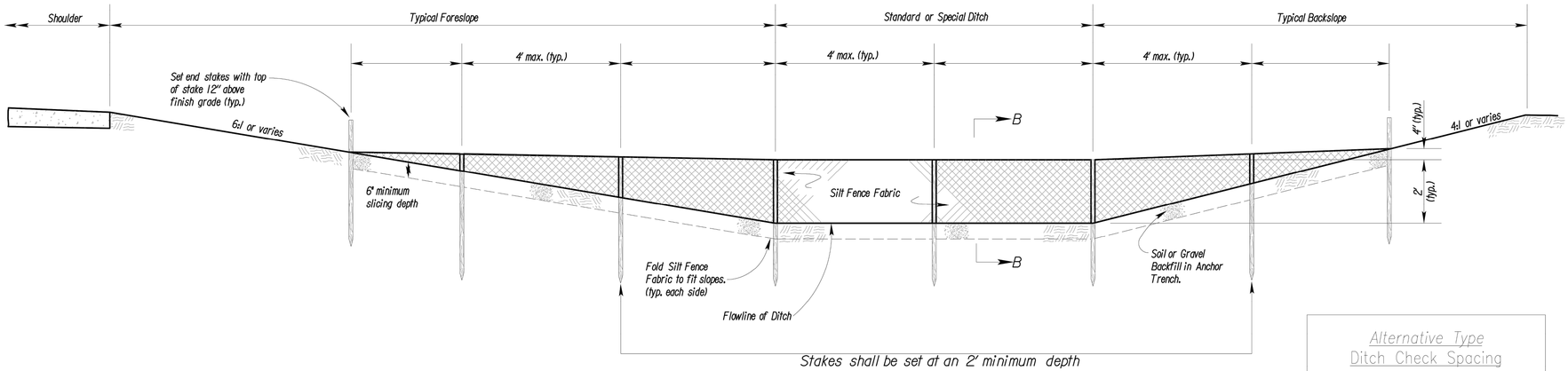
STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
EROSION CONTROL DETAIL SHEET

PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY JT
CFN 7067-1G_DET
SHEET C-51 | REV 0

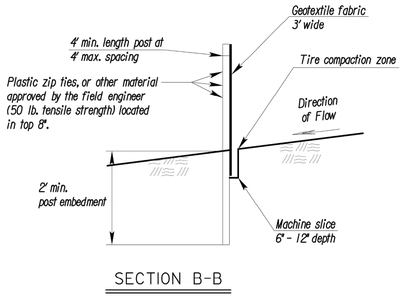
Notes for Silt Fence Ditch Check:

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

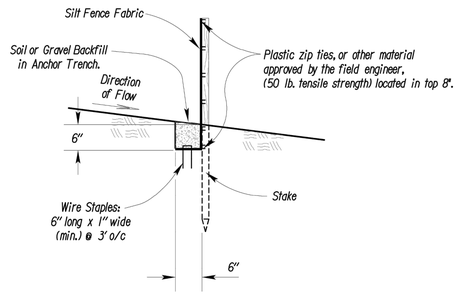


Stakes shall be set at an 2' minimum depth

TYPICAL ELEVATION



SECTION B-B



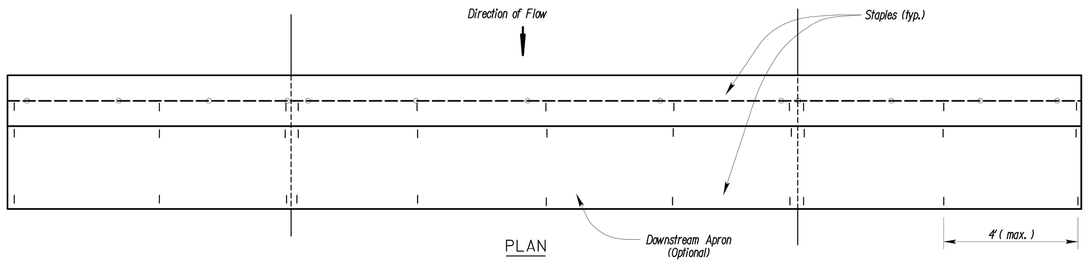
SILT FENCE DITCH CHECK

NO SCALE

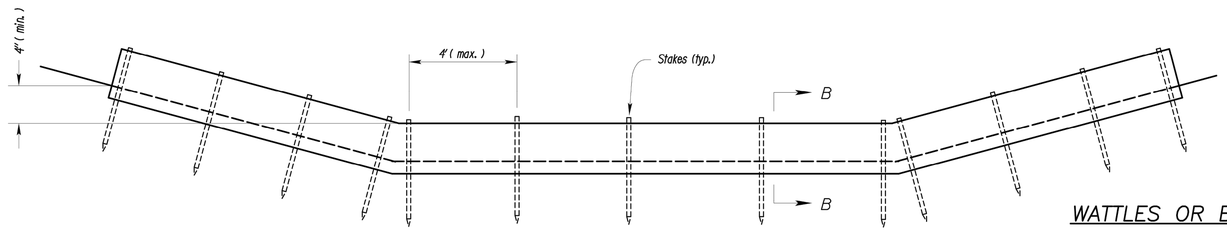
Alternative Type Ditch Check Spacing

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

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



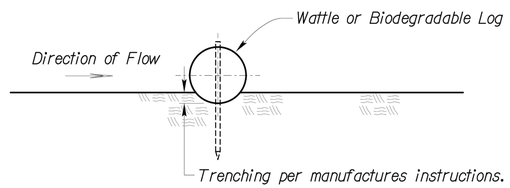
PLAN



TYPICAL ELEVATION

Notes for Wattles and Biodegradable Log Ditch Check:

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



SECTION B - B

WATTLES OR BIODEGRADABLE LOG DITCH CHECKS

OR Filter Sock Ditch Check

NO SCALE

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

REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
12-2-19

LEON D. OSBOURN
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STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

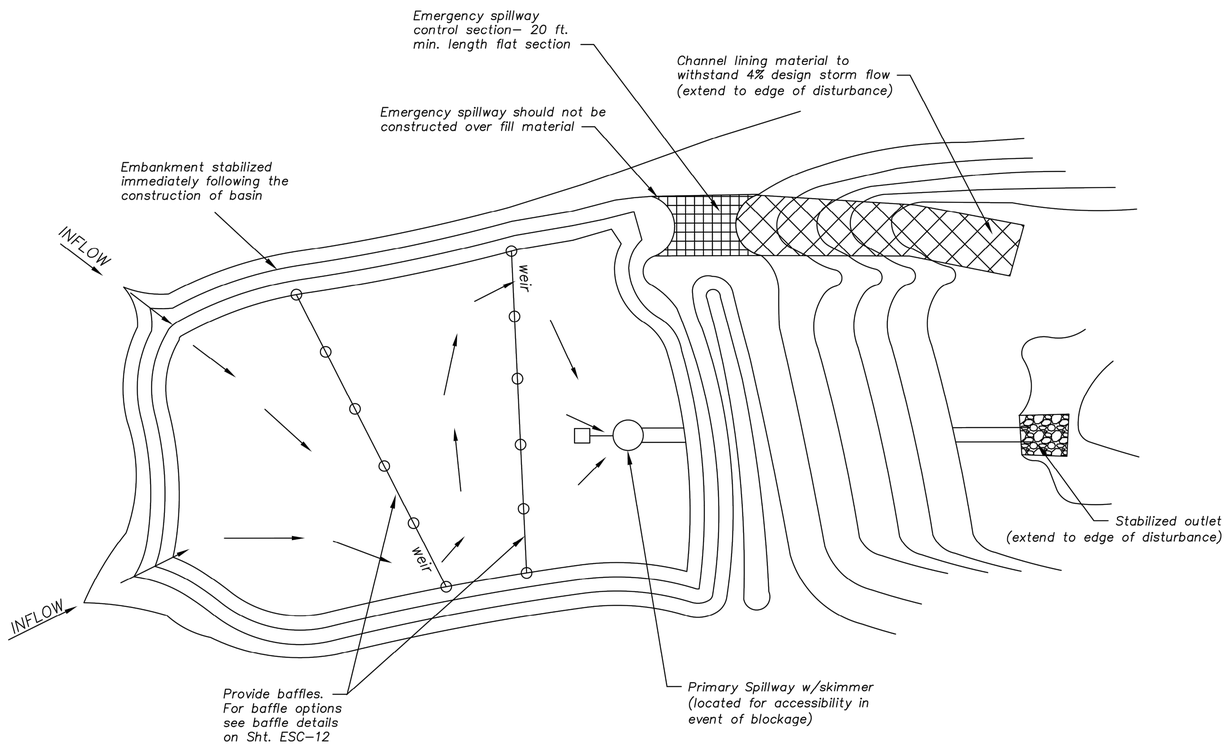
MASS GRADING PLANS
EROSION CONTROL DETAIL SHEET

AMERICAN PUBLIC WORKS ASSOCIATION
Kansas City Metro Chapter APWA
KANSAS CITY METRO CHAPTER

SILT FENCE AND WATTLE/ BIODEGRADABLE LOG DITCH CHECKS

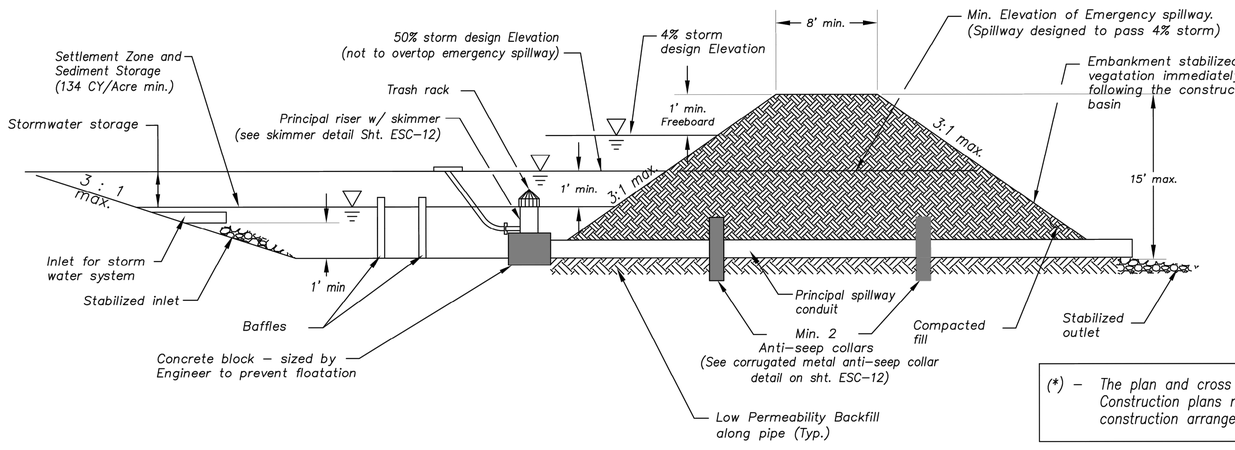
STANDARD DRAWING NUMBER ESC-09
ADOPTED: 10/24/2016

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT
CFN	
7067-1G_DET	
SHEET	REV
C-52	0



Plan View (*)

Not to Scale



Cross Section (*)

Not to Scale

(*) – The plan and cross section are schematic in nature. Construction plans must provide specific site construction arrangements.

Sediment Basin Design Summary (**)

Design Item	Basin #1	Basin #2	Units	Notes
Site Data:				
Tributary Drainage Area to Pond	34.5		Acres	34.5 acres draining to "Upper" basin
50% (2 yr) Design Flow	137.6		cfs	
4% (25 yr) Design Flow	266.4		cfs	
Pond Data:				
Minimum Sediment Storage Volume	4,623		cu yd	134 cy/acre required minimum
Provided Sediment Storage Volume	6,813		cu yd	
Bottom Elevation	947		Ft	
Sediment Cleanout Elevation	948.3		Ft	Elevation equal to 20% of original design volume
Top of Riser Elevation	955.5		Ft	Top of dry storage volume
Emergency Spillway Elevation	956.5		Ft	at or above Q–2 elevation. 1.0 ft min above principal spillway
Top of Dam Elevation	959.0		Ft	1.0 ft min above Q–25 elevation
Basin Shape Data:				
A = Area at Normal Pool	22,884		SF	
L = Length of Flow Path	152		Ft	
We = Effective Width = A/L	150		Ft	
Length to Width Ratio = L/We	1.01			
Principal Spillway Data:				
Riser Pipe dia	24"		in	15" min. Size for 2 year flow minimum
Barrel Pipe dia	24"		in	15" min. Size for 2 year flow minimum
Concrete Base size for Riser Pipe	N/A (concrete box)		CY	Size to prevent flotation. 1.25 safety factor required
Skimmer Size	1.5" Faircloth 1.2" Diameter Orifice			Designer to provide specific details and calculations per application to dewater in 48 to 72 hours
Emergency Spillway Data:				
Design Depth in Spillway	1.51		ft	
Design Velocity in Spillway	3.67		ft/sec	
Lining Material	18"-24" Rip-Rap			Designer to provide specific details and calculations per application

(**) – Required on all Sediment Basin Plan Sheets

Sediment Basin Notes:

1. Interior baffles shall be provided to reduce short–circuiting of the basin. See Sht. ESC–12 for approved baffle options.
2. Emergency spillways to be located in a non–fill location when feasible and shall be lined with a non–erodible material such as Riprap or Turf Reinforcement Mat.
3. When directed, sediment basins shall be fenced using construction fence or other material for safety reasons and include warning signs, reading: "Danger – KEEP OUT".

Maintenance:

1. Check temporary sediment basins after periods of significant runoff.
2. Remove sediment and restore the basin to its original dimensions when sediment accumulates to 20% of the storage capacity.
3. Immediately repair any erosion damage to the embankment and outlets.
4. Repair and/or replace baffles as necessary to maintain function and integrity of installation.
5. Keep outlet, skimmer and pool area free of all trash and other debris.

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

AMERICAN PUBLIC WORKS ASSOCIATION

Kansas City Metro Chapter APWA AMERICAN PUBLIC WORKS ASSOCIATION

KANSAS CITY METRO CHAPTER

SEDIMENT BASIN

STANDARD DRAWING NUMBER ESC-11

ADOPTED: 10/24/2016

REV	DATE	DESCRIPTION	DSN	DWN	CHK
0	1–16–19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
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REGISTERED PROFESSIONAL ENGINEER
1-2-19

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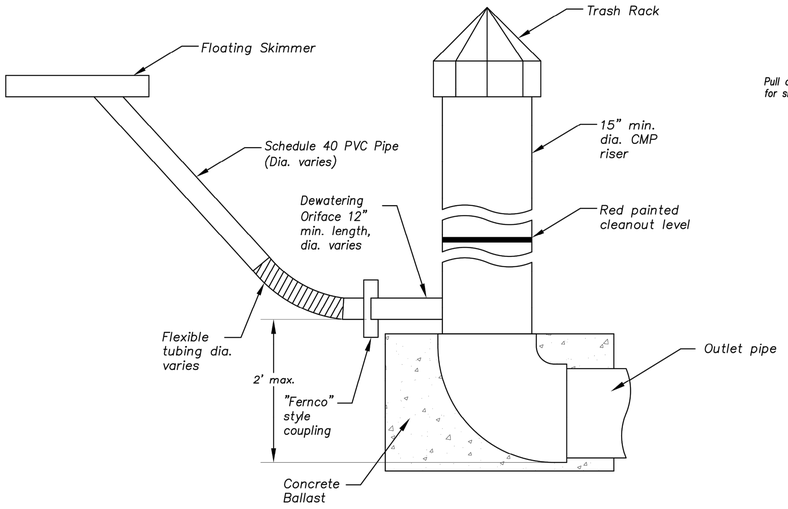
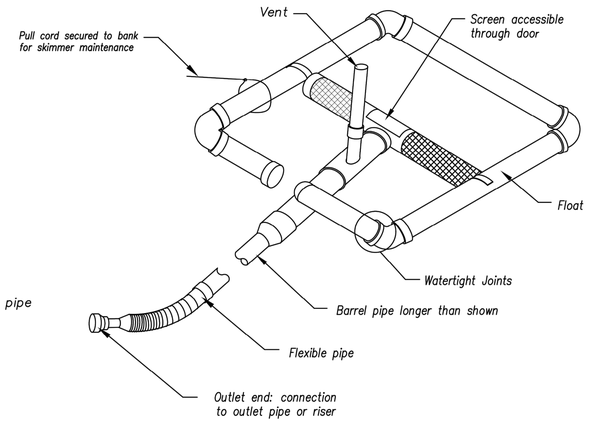
STREETS OF WEST PRYOR
NW/O NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
EROSION CONTROL DETAIL SHEET

PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY JT
CFN 7067-1G_DET
SHEET C–54 | REV 0

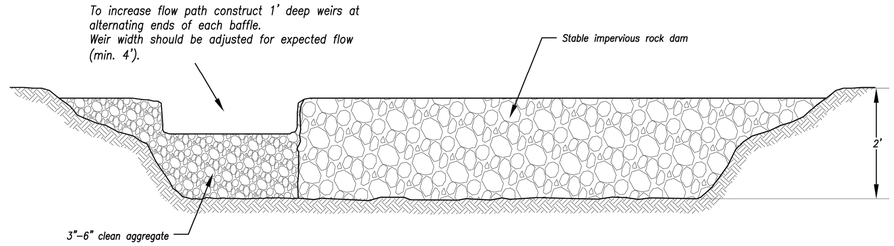


PRINCIPAL SPILLWAY DETAIL

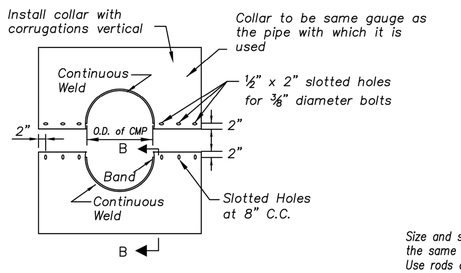


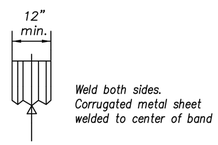
SKIMMER DETAIL (Typ.) *

* Designer to provide specific details per application (e.g. pipe sizes, screen sizes, perforation, etc.) as required.



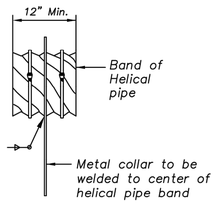
Option A – Rock with Weir



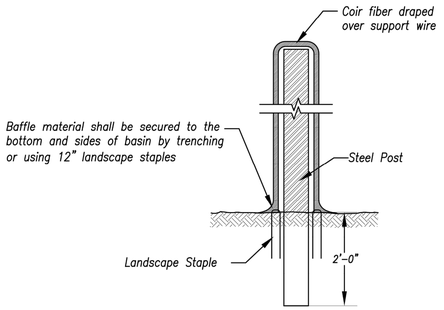


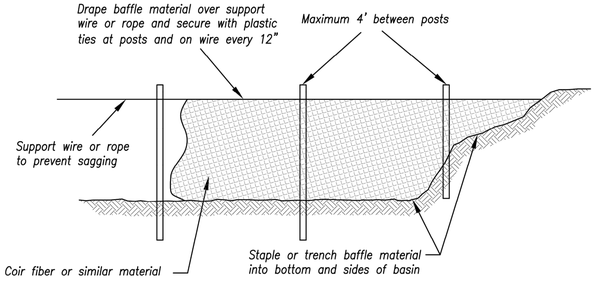
SECTION B–B

Size and spacing of slotted openings shall be the same as shown for CM collar. Use rods and lugs to clamp bands securely to pipe.

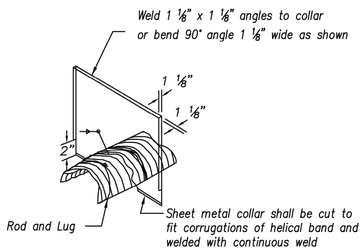


PARTIAL ELEVATION

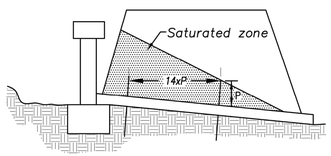




Option B – Coir Fiber Material



ISOMETRIC VIEW



ANTI–SEEPAGE COLLAR LOCATIONS

CORRUGATED METAL ANTI–SEEPAGE COLLAR DETAIL

Not to Scale

Anti–Seepage Collar Notes:

1. Connections between the anti–seepage collar and the barrel must be watertight.
2. P = projection distance. Sized as required to achieve at least a 10% increase in seepage length.
3. 14xP = Max. spacing between collars.
4. Collars shall generally be placed in the middle third of the embankment, and within the saturated zone.
5. All materials to be in accordance with construction material specifications.
6. When specified on the plans, coating of collars shall be in accordance with construction material specifications.
7. Unassembled collars shall be marked by painting or tagging to identify matching pairs.
8. The lap between the two half sections and between the pipe and connecting band shall be caulked with asphalt mastic at the time of installation.
9. Each collar shall be furnished with two (2) ½" diameter rods with standard tank lugs for connecting the collars to the pipe.
10. For bands and collars, modification of the details shown may be used providing equal water tightness is maintained and detailed drawings are Submitted and approved by the Engineer prior to delivery.
11. Two other types of anti–seep collars are:
    a. Corrugated metal, similar to above, except shop welded to a 4 ft. section of the pipe and connected to the pipe with connecting bands.
    b. Concrete, 6 inches thick, formed around the pipe with #3 rebar spaced 15".

BAFFLE DETAILS

Not to Scale

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

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0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

STATE OF MISSOURI
LEON D. OSBOURN
NUMBER E-21726
REGISTERED PROFESSIONAL ENGINEER
1-16-19

LEON D. OSBOURN
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STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DRIVE
LEE'S SUMMIT, MISSOURI

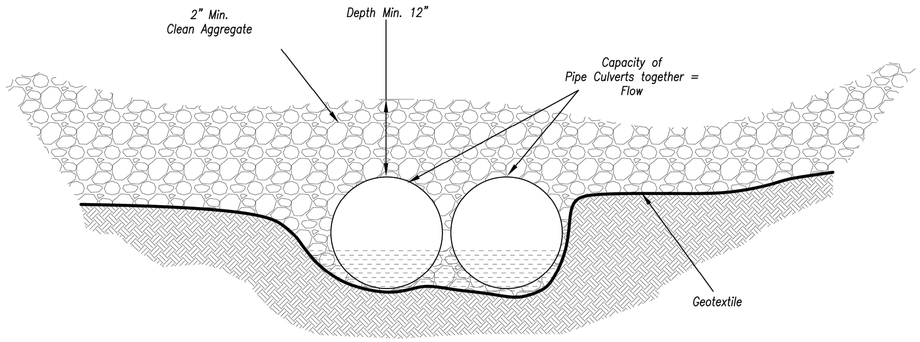
MASS GRADING PLANS
EROSION CONTROL DETAIL SHEET

AMERICAN PUBLIC WORKS ASSOCIATION
KANSAS CITY METRO CHAPTER

SEDIMENT BASIN - DETAILS

STANDARD DRAWING NUMBER ESC-12
ADOPTED: 10/24/2016

PROJ. NO. A14_7067-1
DESIGNER LDO | DRAWN BY JT
CFN 7067-1G_DET
SHEET C-55 | REV 0



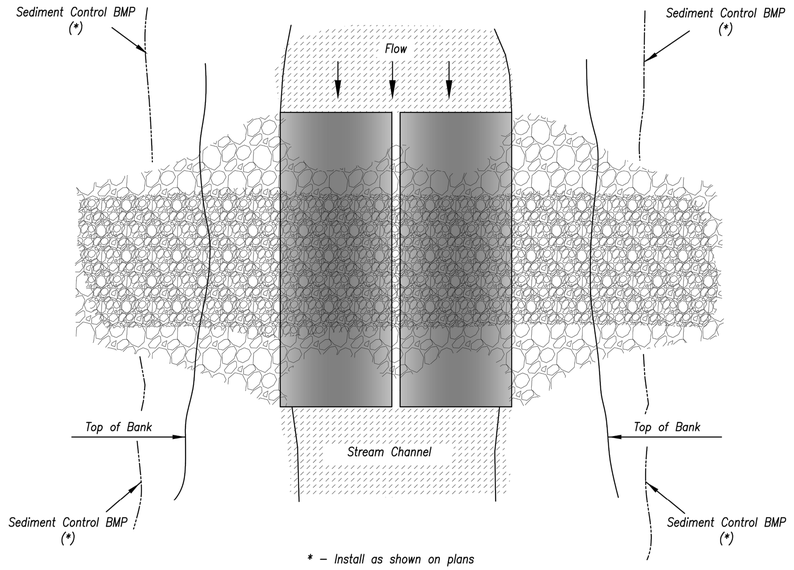
ELEVATION

Maintenance:

1. Repair stream bank erosion by stabilizing with erosion control BMPs such as erosion control blankets.
2. For in-stream degradation, armor the culvert outlet(s) with riprap to dissipate energy.
3. If sediment or debris is accumulating upstream of the crossing, remove as needed to maintain the functionality of the crossing.
4. If a temporary crossing is requiring excessive maintenance, replacement with a larger culvert or alternate design may be necessary.

Notes for Temporary Stream Crossing:

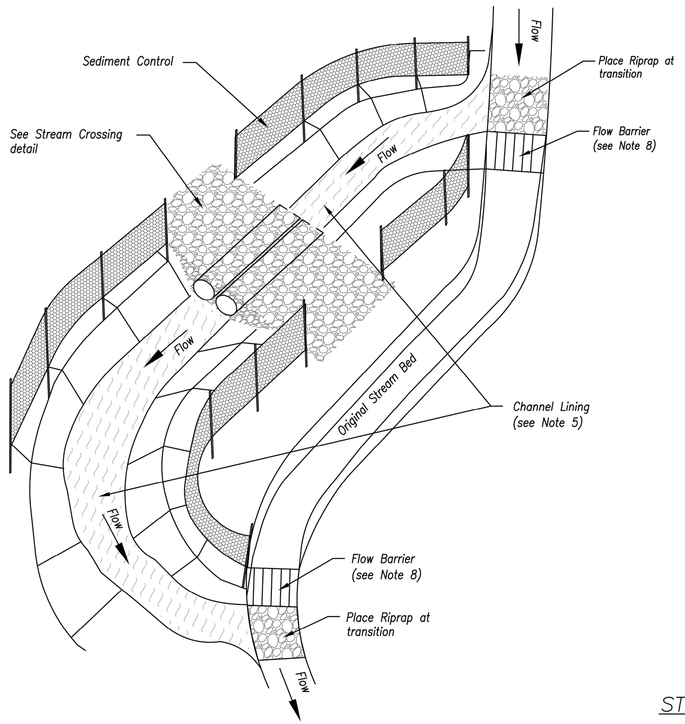
1. Clearing and excavation of the stream bed and banks shall be kept to a minimum.
2. Place one pipe, buried 6" into the stream bottom, at the lowest point of the channel to allow the passage of aquatic organisms. Additional pipes shall be placed along the remainder of the stream channel bottom such that ordinary high water (OHW) flows designated in the Contract Documents shall flow through the pipes without overtopping the crossing. (See Specification for more information).
3. Geotextile shall be placed on the streambed and streambanks prior to placement of the pipe culvert and aggregate. The geotextile shall cover the streambed and extend a minimum of 6 inches and a maximum of 1 foot beyond the end of culvert and bedding material. Filter cloth reduces settlement and improves crossing stability.
4. The culvert shall extend a minimum of 1 foot beyond the upstream and downstream toe of the aggregate placed around the culvert. In no case shall the culvert exceed 40 feet in length.
5. The culvert shall be covered with a minimum of 1 foot of aggregate. If multiple culverts are used, they shall be separated by at least 12" of compacted aggregate fill.
6. As soon as crossing no longer needed, all structures including culverts, bedding and geotextile materials shall be removed. Removal of the structure and clean-up of the area shall be accomplished without construction equipment working in the channel.
7. Upon removal of the structure, the stream and banks shall immediately be shaped to its original cross-section and properly stabilized. Take care to minimize the amount of sediment lost into the stream.



* – Install as shown on plans

PLAN VIEW

TEMPORARY STREAM CROSSING



Notes for Temporary Diversion Channel:

1. The diversion channel crossing must be operational before work is done in the stream. Construction will be performed in the dry.
2. Minimum width of bottom shall be 6 feet or equal to bottom width of existing streambed, whichever is less.
3. Maximum steepness of side slopes shall be 2H:1V. Depth and grade may be variable, dependent on site conditions, but shal be sufficient to ensure continuous flow of water in diversion.
4. Channel must be lined with riprap or turf reinforcement mat depending on the expected velocity and shear stress in the channel.
5. Stream diversion liners shall be secured at the upstream and downstream sides with non-erodible weights such as riprap. These weights shall allow normal flow of the stream. Soil shall not be mixed with stream diversion weights. Weights may also be needed along the diversion's length to secure liner.
6. Stream diversion liners shall be entrenched at the top of slopes along with a sediment control BMP.
7. Non-erodible materials such as riprap, Jersey barriers. sand bags, plywood, or sheet piling shall be used as flow barriers to divert the stream away from it's original channel and prevent or reduce water backup into the construction area.
8. Stream should be re-diverted only after backfilling and re-stabilization of original streambed and banks is completed.

STREAM DIVERSION CHANNEL

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

AMERICAN PUBLIC WORKS ASSOCIATION

KANSAS CITY METRO CHAPTER

STREAM CROSSINGS AND DIVERSION CHANNELS

STANDARD DRAWING NUMBER ESC-13

ADOPTED: 10/24/2016

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STATE OF MISSOURI
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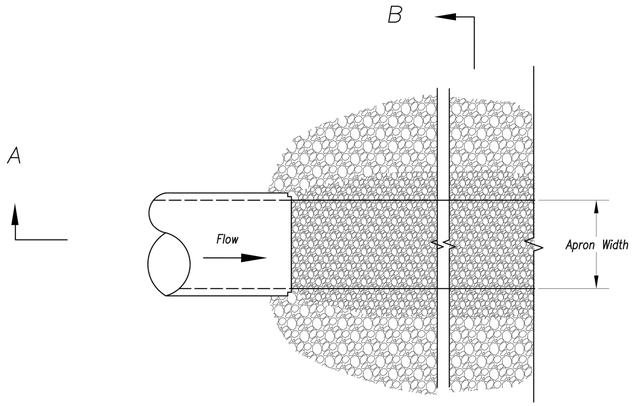
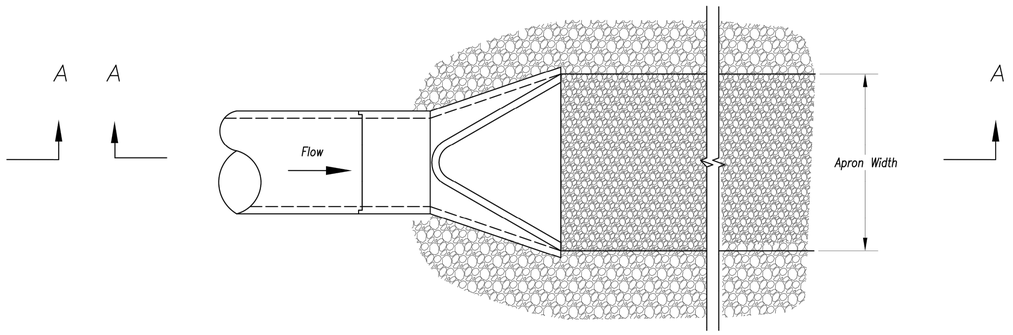
LEE'S SUMMIT, MISSOURI

MASS GRADING PLANS
EROSION CONTROL DETAIL SHEET

PROJ. NO.	
A14_7067-1	
DESIGNER	DRAWN BY
LDO	JT
CFN	
7067-1G_DET	
SHEET	REV
C-56	0



Plan View
Not to Scale



Plan View
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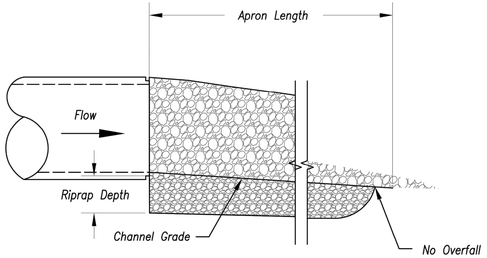

Section A–A
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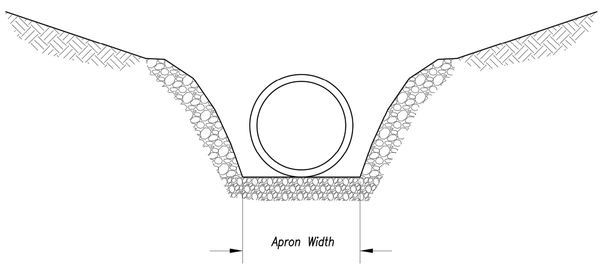
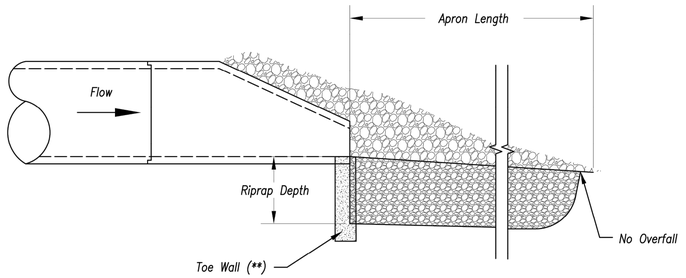


Section B–B
Not to Scale

OUTLET PROTECTION W/O END SECTION



Section A–A
Not to Scale

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.

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
0	1-16-19	INITIAL ISSUE	LDO	JT	LDO

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MASS GRADING PLANS
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DESIGNER LDO | DRAWN BY JT
CFN 7067-1G_DET
SHEET C-57 | REV 0