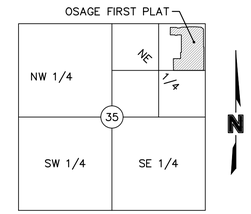
OSAGE
FIRST PLAT
GRADING & SITE DISTURBANCE PLANS

NE 1/4 SECTION 35, TOWNSHIP 47 N, RANGE 32 W.
IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

DISTURBED AREA: 21.29 ACRES



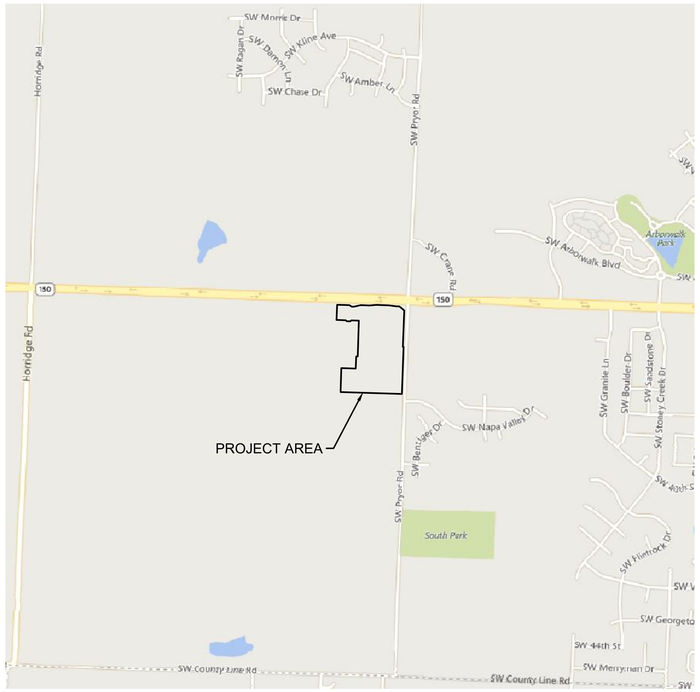
LOCATION MAP
SEC. 35, TWP. 47N., RGE. 32W.
(N.T.S.)

PROJECT TEAM & UTILITY CONTACT LIST	
OWNER / DEVELOPER CLAYTON PROPERTIES GROUP, INC. D.B.A. SUMMIT HOMES 120 SE 30TH STREET CONTACT: VINCENT WALKER LEE'S SUMMIT, MO 64082 PHONE: 816.246.6700 EMAIL: VINCENT@SUMMITHOMESKC.COM	UTILITY SERVICE NUMBERS NAME: LEE'S SUMMIT PUBLIC WORKS PHONE: 816-969-1800 NAME: LEE'S SUMMIT WATER & SERVICES DEPARTMENT PHONE: 816-969-1940 NAME: SPIRE (MGE) PHONE: 314-342-0500 NAME: AT&T PHONE: 800-286-8313 NAME: EVERGY PHONE: 816-471-5275 NAME: SPECTRUM (TWC) PHONE: 877-772-2253 NAME: GOOGLE FIBER PHONE: 877-454-6959
ENGINEER OLSSON 1301 BURLINGTON ST. SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: BROCK WORTHLEY PHONE: 816.361.1177 EMAIL: BWORTHLEY@OLSSON.COM	
SURVEYOR OLSSON 1301 BURLINGTON ST. SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: JASON ROUDEBUSH PHONE: 816.361.1177 EMAIL: JROUDEBUSH@OLSSON.COM	

☐ NOT FOR CONSTRUCTION

☒ REVIEWED FOR CONSTRUCTION

CALL BEFORE YOU DIG 1-800-DIG-RITE MISSOURI ONE CALL SYSTEM



PROPERTY DESCRIPTION:

A tract of land in the Northeast Quarter of the Northeast Quarter of Section 35, Township 47 North, Range 32 West of the 5th Principal Meridian, and including part of Lots 1, 2 and 3 SALVAGGIO'S RANCH, a subdivision of land, recorded as Instrument Number 11210418 in Book I53 at Page 73 in Jackson County Recorder of Deeds Office, all in Lee's Summit, Jackson County, Missouri being bounded and described by Jason S. Roudebush, P.L.S. 2002014092 as follows: Commencing at the Northeast corner of said Northeast Quarter; thence South 02°08'00" West, on the East line of said Northeast Quarter, 658.78 feet to the Southeast corner of the North half of the Northeast Quarter of said Northeast Quarter; thence North 88°08'29" West, on the South line of said North half, 50.00 feet to the Southeast corner of said Lot 3, said point also being on the existing Westerly right-of-way line of SW Pryor Road, as now established, and also being the Point of Beginning of the tract of land to be herein described; thence South 88°08'29" East, on said North line and said existing Westerly right-of-way line, 10.00 feet to the existing Westerly right-of-way line of said SW Pryor Road as established by Document 1963814460 in Book 1634 at Page 487 being on a line on that is 40.00 West of and parallel with the East line of said Northeast Quarter of said Northeast Quarter; thence South 02°08'00" West, on said existing Westerly right-of-way line and said parallel line, 658.80 feet to a point on the South line of the said Northeast Quarter of said Northeast Quarter; thence North 88°09'45" West, on said South line, 857.08 feet; thence leaving said South line, North 01°48'53" East, 335.30 feet; thence South 88°11'07" East, 202.50 feet; thence North 01°48'53" East, 170.00 feet; thence South 88°11'07" East, 21.62 feet; thence North 01°48'53" East, 500.00 feet; thence North 88°11'07" West, 106.00 feet; thence South 46°48'53" West, 19.80 feet; thence North 88°11'07" West, 50.00 feet; thence North 43°11'07" West, 19.80 feet; thence North 88°11'07" West, 127.17 feet to a point on the West line of the East half of the Northwest Quarter of said Northeast Quarter; thence North 02°09'46" East, on said West line, 212.32 feet to a point on the existing Southerly right-of-way line of Missouri State Highway No. 150, as established by Document Number 2009E0064160, being 80.00 feet right of Centerline Station 316+29.79 (Station 316+29.51 Deed); thence leaving said West line, South 88°11'07" East, along said existing Southerly right-of-way line, 170.21 feet to a point that is 80+00.00 right of Centerline Station 318+00.00 thence South 58°26'25" East, along said Southerly right of way line, 40.31 feet to a point that is 100.00 feet right of centerline Station 318+35.00; thence South 88°11'07" East, along said Southerly right of way line, 30.00 feet to a point that is 100.00 feet right of centerline Station 318+65.00; thence North 76°55'17" East, along said Southerly right of way line, 97.27 feet to a point on the Southerly right of way line of Missouri State Highway No. 150 as established by Document 2009E0006361, being 75.00 feet right of centerline Station 319+59.00; thence South 88°11'07" East, along said Southerly right of way line, 126.00 feet to a point that is 75.00 feet right of centerline Station 320+85.00; thence North 85°28'29" East, along said Southerly right of way line, 90.55 feet to a point that is 65.00 feet right of centerline Station 321+75.00; thence South 88°11'07" East, along said Southerly right of way line and along the Southerly right of way line of Missouri State Highway No. 150 as established by Document 2009E0006351, 175.00 feet to a point that is 65.00 feet right of centerline Station 323+50.00; thence South 82°44'41" East, along said Southerly right of way line, 105.48 feet to a point that is 75.00 feet right of centerline Station 324+55.00; thence South 88°11'07" East, along said Southerly right of way line, 45.00 feet to a point that is 75.00 feet right of centerline Station 325+00.00; thence South 49°40'27" East, along said Southerly right of way line, 88.33 feet to a point that is 130.00 feet right of centerline Station 325+69.12 (Station 325+69.30 Deed), said point also being on the East line of said Lot 2, SALVAGGIO'S RANCH and on the West right of way of said SW Pryor Road as now established; thence South 02°08'00" West, along said East lot line and said West right of way line, 509.17 feet to the Point of Beginning. Containing 917,234 square feet or 21.06 acres, more or less.

BENCHMARK

BENCHMARK NO. 1
CHISELED PLUS ON THE EAST FLANGED BOLT OF THE FIRE HYDRANT ON THE WEST SIDE OF SW PRYOR ROAD ON ADJOINING PROPERTY SOUTH OF THE SOUTHWEST CORNER OF SUBJECT PROPERTY.
ELEVATION = 1014.830

BENCHMARK NO. 2
RAILROAD SPIKE IN THE NORTH FACE OF POWER POLE LOCATED ON THE SOUTH SIDE MISSOURI STATE HIGHWAY 150 AT THE WEST SIDE OF THE DRIVEWAY TO 2025 MISSOURI STATE HIGHWAY 150, LEE'S SUMMIT, MO.
ELEVATION = 1031.313

Sheet List Table	
Sheet Number	Sheet Title
C401	TITLE SHEET
C402	GENERAL NOTES
C403	GENERAL LAYOUT
C404	GRADING PLAN
C405	SITE DISTURBANCE PHASE A
C406	SITE DISTURBANCE PHASE A - TRAP TABLES
C407	SITE DISTURBANCE PHASE A - BASIN TABLES
C408	SITE DISTURBANCE PHASE B
C409	SITE DISTURBANCE PHASE C
C410	SITE DISTURBANCE PHASE D
C411	DETAIL SHEET
C412	DETAIL SHEET
C413	DETAIL SHEET

NOTE:
1. FEMA FIRM MAP NUMBER 29095C0531G SHOWS THE ENTIRE SITE IS LOCATED WITHIN ZONE X, "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN."
2. NO OIL AND GAS WELLS OR UNDERMINED AREAS ARE PRESENT ON THE SITE.

REVIEWED BY:

CITY OF LEE'S SUMMIT — DATE

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

Brock Worthley — 4/24/2020
BROCK M. WORTHLEY, P.E. — DATE
CIVIL ENGINEER
MO# PE-2019000237

olsson
Olsson - Civil Engineering
Missouri Certificate of Authority #: 001592
1301 Burlington Street
North Kansas City, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER
PE-2019000237
PROFESSIONAL ENGINEER
4/24/2020

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION
1	4/17/2020	REVISED PER CITY COMMENTS
2	4/24/2020	REVISED PER CITY COMMENTS

TITLE SHEET
GRADING & SITE DISTURBANCE PLANS

OSAGE
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

drawn by: GS
checked by: SS
designed by: BMW
QA/QC by: JES
project no.: A19-2339
drawing no.: C_TTL01_A192339
date: 3/17/2020

SHEET
C401

DWG: F:\2019\2001-2500\019-2339-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\SITE DISTURBANCE\C_TTL01_A192339.dwg USER: bworthley
DATE: Apr 24, 2020 2:55pm XREFS: C_PTBLK_A192339 C_PBNDY_A192339

GENERAL NOTES:

1. THE INTENT OF THIS LAND DISTURBANCE PLAN IS TO ASSIST THE DEVELOPER IN HIS RESPONSIBILITY TO PROVIDE ALL MATERIALS, TOOLS, EQUIPMENT AND LABOR NECESSARY TO CONTROL EROSION, SILTATION AND DISCHARGES OF SOIL MATERIAL (SEDIMENT) INTO DOWNSTREAM SYSTEMS OR RECEIVING CHANNELS. THIS SHALL BE REQUIRED DURING ALL PHASES OF CONSTRUCTION AND UNTIL SUITABLE GROUND COVER IS ESTABLISHED FOR ALL DISTURBED AREAS. IF ANY METHOD OF CONTROL FAILS, THE DEVELOPER SHALL NOTIFY THE OWNER IMMEDIATELY, SO THAT THE OWNER OR HIS AGENT CAN REVIEW THE DEVELOPER'S PROPOSED METHOD OF REPAIR.

THIS PLAN INDICATES THE CRITICAL AREA(S) OF CONCERN AND THESE AREA(S) WILL BE CONTROLLED AS A MINIMUM. THE CONTROL MAY CONSIST OF TEMPORARY CONTROL MEASURES AS SHOWN ON THE PLANS OR ORDERED BY THE OWNER DURING THE LIFE OF THE CONTRACT TO CONTROL EROSION OR WATER POLLUTION, THROUGH THE USE OF BERMS, DIKES, DAMS, SEDIMENT BASINS, FIBER MATS, NETTING, STRAW BALES, GRAVEL, MULCHES, GRASSES, SLOPE DRAINS, DIVERSION SWALES OR OTHER EROSION CONTROL DEVICES OR METHODS. THE OWNER HAS THE AUTHORITY TO LIMIT THE SURFACE AREA OF ERODIBLE EARTH MATERIAL EXPOSED BY THE CONSTRUCTION OPERATIONS AND TO DIRECT THE DEVELOPER TO PROVIDE IMMEDIATE PERMANENT OR TEMPORARY POLLUTION CONTROL MEASURES TO PREVENT CONTAMINATION OF ADJACENT STREAMS OR OTHER WATER COURSES, LAKES, PONDS, OR OTHER AREAS OF WATER IMPOUNDMENT OR CONVEYANCES.

THE TEMPORARY POLLUTION CONTROL PROVISIONS CONTAINED HEREIN SHALL BE COORDINATED WITH ANY PERMANENT EROSION CONTROL FEATURES SPECIFIED ELSEWHERE IN THE CONTRACT TO THE EXTENT PRACTICAL TO ASSURE ECONOMICAL, EFFECTIVE AND CONTINUOUS EROSION CONTROL THROUGHOUT THE CONSTRUCTION AND POST CONSTRUCTION PERIOD.

2. THIS SEDIMENTATION CONTROL PLAN MAKES USE OF THE FOLLOWING APPLICATIONS:
___PRESERVATION OF EXISTING VEGETATION
_X_SEDIMENT BARRIERS
_X_SEDIMENT TRAPS
_X_INLET PROTECTION
___OUTLET PROTECTION
___SOIL RETAINING SYSTEMS
___SLOPE DRAINS
___SUBSURFACE DRAINS

PHYSICAL DESCRIPTION OF EACH SPECIFIC SEDIMENT CONTROL DEVICE TO BE UTILIZED IS CALLED OUT ON THE PLANS WITH INSTALLATION PROCEDURES, CONSTRUCTION SPECIFICATIONS AND MAINTENANCE ARRANGEMENT AS CALLED FOR ON THE DETAIL SHEET. IN ADDITION TO THE MEASURES SPECIFIED, THE FOLLOWING GENERAL PRACTICES SHALL BE ADHERED TO WHEN APPLICABLE.

A) CLEARING AND GRUBBING WITHIN 50' OF A DEFINED DRAINAGE COURSE SHOULD BE AVOIDED WHEN POSSIBLE. WHERE CHANGES TO A DEFINED DRAINAGE COURSE OCCUR, WORK SHOULD BE DELAYED UNTIL ALL MATERIALS AND EQUIPMENT NECESSARY TO PROTECT AND COMPLETE THE DRAINAGE CHANGE ARE ON SITE. CHANGES SHALL BE COMPLETED AS QUICKLY AS POSSIBLE ONCE THE WORK HAS BEEN INITIATED. THE AREA IMPACTED BY THE CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR PROTECTED FROM EROSION AS SOON AS POSSIBLE, AREAS WITHIN 50' OF A DEFINED DRAINAGE WAYS SHOULD BE RECONTOURED AS NEEDED OR OTHERWISE PROTECTED WITHIN FIVE (5) WORKING DAYS AFTER GRADING HAS CEASED.

B) WHERE SOIL DISTURBING ACTIVITIES CEASE IN AN AREA FOR MORE THAN 14 DAYS, THE DISTURBED AREAS SHALL BE PROTECTED FROM EROSION BY STABILIZING THE AREA WITH MULCH OR OTHER SIMILARLY EFFECTIVE EROSION CONTROL MEASURES. IF THE SLOPE OF THE AREA IS GREATER THAN 3:1 OR IF THE SLOPE IS GREATER THAN 3% AND GREATER THAN 150 FEET IN LENGTH, THEN THE DISTURBED AREAS SHALL BE PROTECTED FROM EROSION BY STABILIZING THE AREA WITH MULCH OR OTHER SIMILARLY EFFECTIVE EROSION CONTROL MEASURES IF ACTIVITIES CEASE FOR MORE THAN SEVEN (7) DAYS.

C) EXISTING VEGETATION SHALL BE PRESERVED TO THE EXTENT AND WHERE PRACTICAL. IN NO CASE SHALL DISTURBED AREAS REMAIN WITHOUT VEGETATIVE GROUND COVER FOR A PERIOD IN EXCESS OF 60 DAYS.

D) ADDITIONAL SITE MANAGEMENT PRACTICES WHICH SHALL BE ADHERED TO DURING THE CONSTRUCTION PROCESS SHALL INCLUDE:

SOLID AND HAZARDOUS WASTE MANAGEMENT INCLUDING PROVIDING TRASH CONTAINERS AND REGULAR SITE CLEAN UP FOR PROPER DISPOSAL OF SOLID WASTE SUCH AS BUILDING MATERIAL, PRODUCT/MATERIAL SHIPPING WASTE, FOOD CONTAINERS AND CUPS, AND PROVIDING CONTAINERS FOR THE PROPER DISPOSAL OF WASTE PAINTS SOLVENTS, AND CLEANING COMPOUNDS.

PROVISIONS OF PORTABLE TOILETS FOR PROPER DISPOSAL OF SANITARY SEWAGE.

STORAGE OF CONSTRUCTION MATERIALS AWAY FROM DRAINAGE COURSES AND LOW AREAS.

INSTALLATION OF CONTAINMENT BERMS AND USE OF DRIP PANS AT PETROLEUM PRODUCT AND LIQUID STORAGE TANKS AND CONTAINERS.

3. ALL DISTURBED AREAS SHALL BE SEEDED, FERTILIZED AND MULCHED, OR SODDED, IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS ADOPTED BY THE CITY OF LEE'S SUMMIT AND GOOD ENGINEERING PRACTICES. THIS SHALL BE COMPLETED WITHIN FOURTEEN (14) DAYS AFTER COMPLETING THE WORK, IN ANY AREA. IF THIS IS OUTSIDE OF THE SEEDING PERIOD, SILT BARRIERS OR OTHER SIMILARLY EFFECTIVE MEASURES SHALL BE PROVIDED UNTIL SUCH TIME THAT THE AREAS CAN BE SEEDED.

4. THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO ALL CURRENT STANDARDS AND SPECIFICATIONS ADOPTED BY THE CITY OF LEE'S SUMMIT. THE DEVELOPER WILL BE RESPONSIBLE FOR DETERMINING ALL ADDITIONAL STANDARDS, SPECIFICATIONS OR REQUIREMENTS WHICH ARE REQUIRED BY GOVERNING AGENCIES (INCLUDING LOCAL, STATE AND FEDERAL AUTHORITIES) HAVING JURISDICTION OVER THE WORK PROPOSED BY THESE CONSTRUCTION DRAWINGS.

5. ALL EROSION CONTROL MEASURES, TEMPORARY OR PERMANENT, REQUIRE MAINTENANCE TO PRESERVE THEIR EFFECTIVENESS. ALL EROSION CONTROL DEVICES SHALL BE INSPECTED IMMEDIATELY AFTER EACH HEAVY RAINSTORM AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHOULD BE MADE IMMEDIATELY. ALL COSTS ASSOCIATED WITH THE REPAIR WORK INCLUDING RELATED INCIDENTALS WILL BE THE DEVELOPER'S RESPONSIBILITY AND SHALL BE INCLUDED IN THE DEVELOPER'S BID FOR THE PROPOSED WORK.

6. ALL EROSION CONTROL MEASURES TO BE PER APWA KANSAS CITY METRO CHAPTER STANDARD DETAILS.

7. THE DEVELOPER MUST REMOVE AT HIS COST ANY BAD SUBSURFACE SOIL WHICH WOULD NOT BE ABLE TO SUPPORT ANY PROPOSED PUBLIC IMPROVEMENT. BACKFILL SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL SECTIONS 2100 AND 2201 ENTITLED "GRADING AND SITE PREPARATION" AND "SUBGRADE PREPARATION".

8. THE CONTRACTOR SHALL CONTACT THE CITY'S DEVELOPMENT SERVICES ENGINEERING INSPECTORS 48 HOURS PRIOR TO ANY LAND DISTURBANCE WORK AT (816) 969–1200

9. TREE CLEARING TO HAPPEN BETWEEN NOVEMBER 1 AND MARCH 31. TREES CLEARED BETWEEN APRIL 1 AND OCTOBER 31 MUST BE TREES GREATER THAN 1,000 FEET FROM FORESTED OR WOODED AREAS OR TREES LESS THAN 3 INCHES IN DIAMETER, AT BREAST HEIGHT, AND NOT MIXED WITH LARGER TREES. IF LARGER TREES NEED TO BE CLEARED, A SURVEY OF THE TREES MUST BE CONDUCTED TO MAKE SURE THERE ARE NO BAT ROOSTS IN THE TREES.
TREE CLEARING TO BE CONDUCTED BY CUTTING DOWN AND MULCHING OR BY PUSHING OVER AND MULCHING. TREES SHALL NOT BE BURNED DOWN.

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	AS-BUILT
	PRIVATE GRADING			
1	EXCAVATION	C.Y.	27,711	
2	EMBANKMENT	C.Y.	33,974	
	PUBLIC GRADING			
3	EXCAVATION	C.Y.	5,625	
4	EMBANKMENT	C.Y.	9,615	
	SITE DISTURBANCE			
5	CONSTRUCTION ENTRANCE	EA.	1	
6	CONCRETE WASHOUT	EA.	1	
7	CURB INLET PROTECTION	EA.	25	
8	AREA INLET PROTECTION	EA.	11	2
9	SILT FENCE	L.F.	2543	
10	DIVERSION BERM	L.F.	3347	
11	ROCK DITCH CHECK	EA.	3	
12	SEDIMENT TRAP	EA.	3	
13	SEDIMENT BASIN	EA.	1	
14	DISTURBED AREA	AC.	21.29	
15	TREE CLEARING	AC.	4.53	
16	PERMANENT SEEDING	AC.	18.01	

SUMMARY OF QUANTITIES AS INDICATED ABOVE AND ANY QUANTITIES AS SHOWN WITHIN THE PLANS HAVE BEEN PROVIDED FOR PERMITTING PURPOSES ONLY AND ARE NOT INTENDED FOR USE IN PREPARATION OF CONTRACT DOCUMENTS. QUANTITIES INTENDED FOR, BUT NOT LIMITED TO, THE PREPARATION OF PROPOSALS AND BID DOCUMENTS SHALL BE INDEPENDENTLY EVALUATED BY THE ESTIMATING PARTY BASED UPON THE CONTENTS OF THESE PLANS.

olsson
Olsson - Civil Engineering
Missouri Certificate of Authority # 001592
1301 Burlington Street
North Kansas City, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER
PE-2019000237
3/24/2020
PROFESSIONAL ENGINEER

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION
1	4/17/2020	NOTES AND QUANTITIES REVISED
2	4/24/2020	QUANTITIES REVISED

GENERAL NOTES
GRADING & SITE DISTURBANCE PLANS

OSAGE
FIRST PLAT

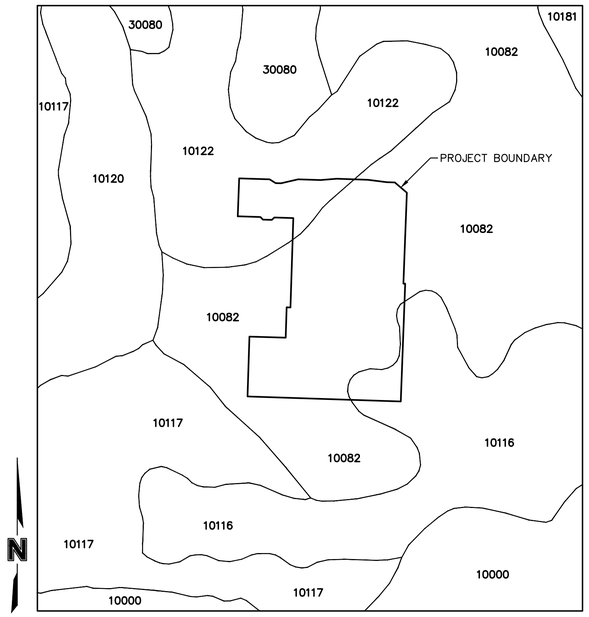
LEE'S SUMMIT, MISSOURI

2020

drawn by: GS
checked by: SS
designed by: BMW
QA/QC by: JES
project no.: A19-2339
drawing no.: C_TTL01_A192339
date: 3/17/2020

SHEET
C402

DWG: F:\2019\2001-2500\019-2339-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\SITE DISTURBANCE\C_TTL01_A192339.dwg USER: bworthley
DATE: Apr 24, 2020 2:55pm XREFS: C_PTBLK_A192339 C_PBNDY_A192339



SOILS MAP
N.T.S.

SOIL CLASSIFICATION BY NRCS WEB SOIL SURVEY			
MAP SYMBOL	SOIL TYPE	HYDROLOGIC SOIL GROUP	SLOPES
10000	ARISBURG SILT LOAM	C	1–5%
10082	ARISBURG–URBAN LAND COMPLEX	C	1–5%
10116	SAMPSEL SILTY CLAY LOAM	C/D	2–5%
10117	SAMPSEL SILTY CLAY LOAM	C/D	5–9%
10120	SHARPSBURG SILT LOAM	C	2–5%
10122	SHARPSBURG SILT LOAM	C	5–9%
10181	UDARENTS–URBAN LAND SAMPSEL COMPLEX	C	5–9%
30080	GREENTON SILTY CLAY LOAM	C/D	5–9%

DISTURBED AREA & PRESERVED VEGETATION

olsson
Olsson - Civil Engineering
Missouri Certificate of Authority #: 001592
1301 Burlington Street, Suite 100
North Kansas City, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER
PE-2019000237
4/24/2020
PROFESSIONAL ENGINEER

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION

GENERAL LAYOUT
GRADING & SITE DISTURBANCE PLANS

OSAGE
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

drawn by: GS
checked by: SS
designed by: BMW
QA/QC by: JES
project no.: A19-2339
drawing no.: C_GEN01_A192339
date: 3/17/2020

SHEET
C403

DWG: F:\2019\2001-2500\019-2339-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\SITE DISTURBANCE\C_GEN01_A192339.dwg USER: bworthley
DATE: Apr 24, 2020 2:56pm XREFS: C_PTBLK_A192339 C_PBASE_A192339 C_PBNDY_A192339 C_XBASE_A192339 C_PEROS_A192339

GENERAL NOTES:

1. CONTRACTOR SHALL ADHERE TO THE "DESIGN AND CONSTRUCTION MANUAL" SECTION 2100 AS ADOPTED BY THE CITY OF LEE'S SUMMIT (LATEST EDITION), FOR EXCAVATION AND EMBANKMENT WORK WITHIN THE PROPOSED RIGHT-OF-WAY.

2. AREAS OF CONSTRUCTION SHALL BE STRIPPED OF ALL VEGETATION, ORGANIC MATTER AND TOPSOIL TO A DEPTH AS RECOMMENDED BY GEOTECHNICAL ENGINEER AND OR TESTING AGENCY. SOILS REMOVED DURING SITE STRIPPING SHOULD BE EVALUATED TO DETERMINE IF PORTIONS OF THE TOPSOIL STRATUM MAY BE UTILIZED AS STRUCTURAL FILL WITHIN PAVEMENT AREAS. ANY MATERIAL NOT DEEMED AS SUITABLE FILL MATERIAL BY THE GEOTECHNICAL ENGINEER AND OR TESTING AGENCY SHALL BE REMOVED FROM THE JOB SITE BY THE CONTRACTOR AT HIS EXPENSE.

3. ALL EMBANKMENT OUTSIDE OF RIGHT-OF-WAY SHOULD BE PLACED IN CONTROLLED LIFTS HAVING A MAXIMUM LOOSE LIFT THICKNESS OF 8". EMBANKMENT SHOULD BE COMPACTED TO A MINIMUM OF 95% OF THE MATERIALS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 (STANDARD PROCTOR COMPACTION). MOISTURE CONTENT OF THE FILL AT THE TIME OF COMPACTION SHALL BE WITHIN A RANGE OF -0 TO +4 PERCENT OF OPTIMUM MOISTURE CONTENT.

LOT FILL INFORMATION

LOT NUMBER	MAX DEPTH OF FILL (OVER 2' PLACED)	EXISTING SLOPES > 5:1	PROPOSED SLOPES > 3:1
1	2.2		
2	3.3		
3	3.0	X	
4	3.3	X	
5	3.9		
6	3.2		
7	4.4		
8	3.8		
9	3.2		
10	3.4		
11	3.6	X	
12			
13			
14		X	
15		X	
16	2.5	X	
17	2.5		
18	4.0		
19	4.0		
20	3.6		
21	4.0		
22	5.3		
23	6.5		
24	7.3		
25	7.0		
26	4.3		
27	4.8		
28	5.0		
29	4.9		
30	4.0		
31	3.7		
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			

X Indicates condition applies to lot

N

0' 30' 60' 120'
SCALE IN FEET

LEGEND

-100-	EXISTING INDEX CONTOURS
-100-	EXISTING INTERMEDIATE CONTOURS
-100-	PROPOSED INDEX CONTOURS
-100-	PROPOSED INTERMEDIATE CONTOURS

EARTHWORK QUANTITIES

LOCATION	CUT (C.Y.)	FILL (C.Y.)
STREET	5,625	9,615
SITE	27,711	33,974
TOTAL	33,336	43,589

EARTHWORK QUANTITIES NOTES:

1. EARTHWORK QUANTITIES BASED ON FINISHED GRADE SURFACE AND DO NOT INCLUDE ADJUSTMENTS FOR TOPSOIL AND SHRINKAGE.

2. EARTHWORK QUANTITIES DO NOT TAKE INTO CONSIDERATION EXCAVATION, REMOVAL AND DISPOSAL OF MATERIAL DEEMED UNSUITABLE BY A GEOTECHNICAL ENGINEER. THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR EXCAVATION, REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL AND FOR REPLACING IT WITH SUITABLE MATERIAL.

DWG: F:\2019\2001-2500\019-2339-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\SITE DISTURBANCE\C_GRD01_A192339.dwg USER: bworthley
DATE: Apr 24, 2020 2:57pm XREFS: C_PTBLK_A192339 C_PBASE_A192339 C_PBNDY_A192339 C_XBASE_A192339

olsson
Olsson - Civil Engineering
Missouri Certificate of Authority #: 001592
1301 Burlington Street
North Kansas City, MO 64116
TEL 816.361.1177 www.olsson.com

STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER
PE-2019000237
4/24/2020
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION
1	4/17/2020	GRADING REVISED

REVISIONS

GRADING PLAN
GRADING & SITE DISTURBANCE PLANS

OSAGE
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

drawn by:	GS
checked by:	SS
designed by:	BMW
QA/QC by:	JES
project no.:	A19-2339
drawing no.:	C_GRD01_A192339
date:	3/17/2020

SHEET
C404

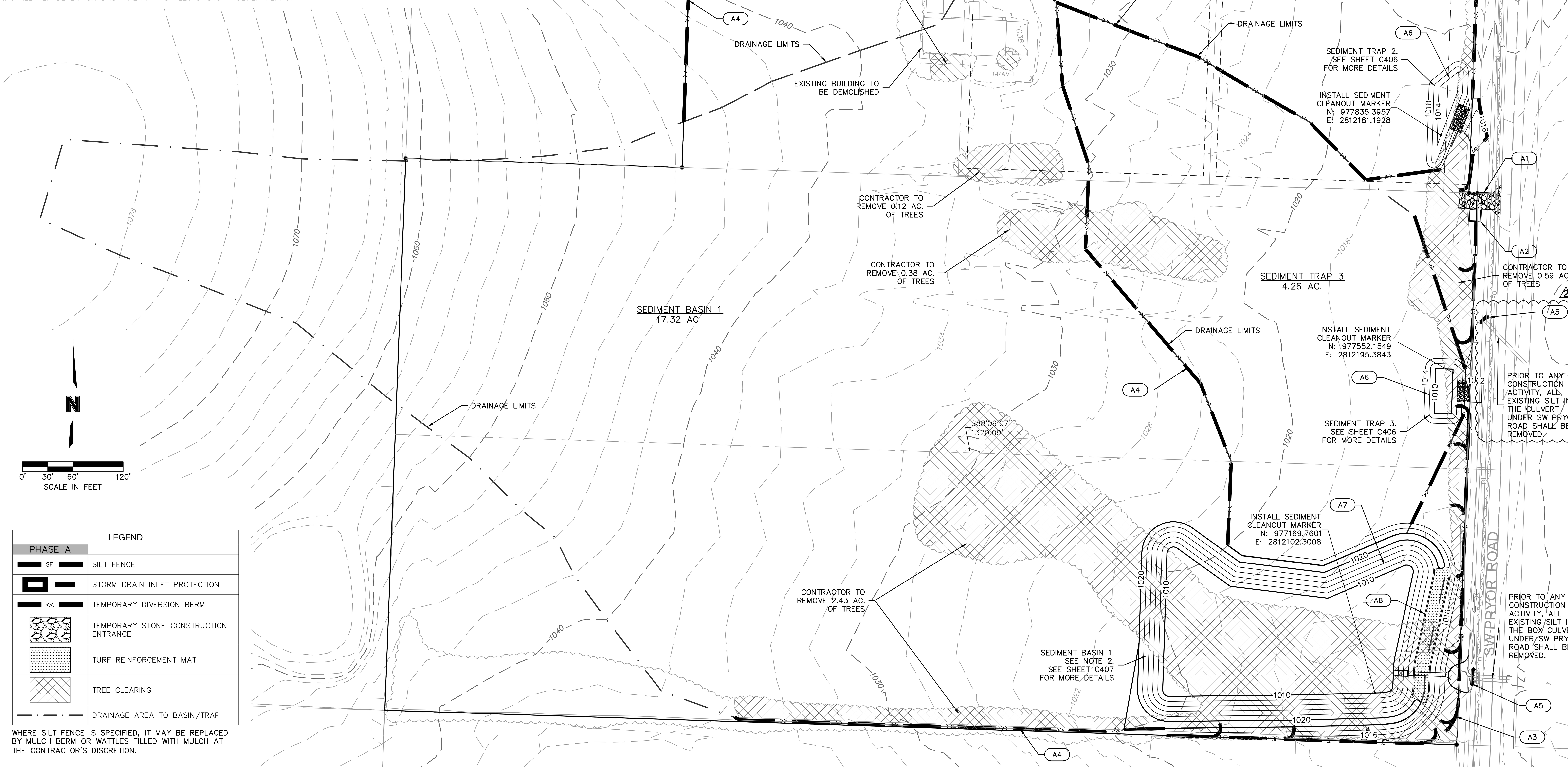
EROSION CONTROL STAGING CHART

PROJECT STAGE	EROSION CONTROL BMP REFERENCE NO.	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
A – PRE–MASS GRADING	A1	CONSTRUCTION ENTRANCE	C	INSTALL PER APWA DETAIL ESC–01
	A2	CONCRETE WASHOUT	C	INSTALL PER APWA DETAIL ESC–01
	A3	SILT FENCE	C	INSTALL PER APWA DETAIL ESC–03
	A4	DIVERSION BERM	C	INSTALL PER APWA DETAIL ESC–05
	A5	AREA INLET PROTECTION	C	INSTALL PER APWA DETAIL ESC–07
	A6	SEDIMENT TRAP	C	INSTALL PER APWA DETAIL ESC–08
	A7	SEDIMENT BASIN	C	INSTALL PER APWA DETAIL ESC–11&12
	A8	TURF REINFORCEMENT MAT	C	INSTALL NORTH AMERICAN GREEN VMAX SC250 OR APPROVED EQUAL
B – INTERIM	B1	SILT FENCE	C	INSTALL PER APWA DETAIL ESC–03
	B2	CURB INLET PROTECTION	C	INSTALL PER APWA DETAIL ESC–06
	B3	AREA INLET PROTECTION	C	INSTALL PER APWA DETAIL ESC–07
	B4	ROCK DITCH CHECK	C	INSTALL PER APWA DETAIL ESC–10
UPON REMOVAL CONTRACTOR TO OVER–EXCAVATE SEDIMENT TRAPS, FULLY REMOVING ALL SILT, AND FILLING IN CONTROLLED LIFTS TO PREVENT VOIDS OR EXCESSIVE SETTLING THAT COULD IMPACT BUILDING FOUNDATIONS.				
C – DISTURBED AREA STABILIZATION	C1	SEED, SOD AND STABILIZE ALL DISTURBED AREAS AND INSTALL ALL PLANTINGS PER SHEET C409		SEE SHEET C409 FOR DETAILS ON SOD AND PLANTINGS; SEED ALL OTHER DISTURBED AREAS
D – FINAL STABILIZATION	D1	SEED, SOD AND STABILIZE ALL DISTURBED AREAS BY REMOVAL OF SEDIMENT TRAPS		SEE SHEET C410 FOR DETAILS ON SOD AND PLANTINGS; SEED ALL OTHER DISTURBED AREAS

NOTE:

1. THE SITE DISTURBANCE PLANS INDICATES THE FINAL PLACEMENT OF EROSION CONTROL DEVICES. THE CONTRACTOR(S) MAY PROCEED WITH THE CONSTRUCTION PRIOR TO THE FINAL PLACEMENT OF THESE DEVICES BY PROVIDING ADDITIONAL DEVICES TO CONTROL EROSION ON THEIR ITEMS OF WORK. THESE DEVICES SHALL BE MAINTAINED UNTIL THE FINAL DEVICES ARE IN PLACE.

2. SEDIMENT BASIN TO BECOME PERMANENT DETENTION BASIN. THE OUTLET STRUCTURE SHOULD BE INSTALLED AT TIME OF SEDIMENT BASIN INSTALLATION TO BE UTILIZED AS SEDIMENT BASIN OUTLET. ONCE STRUCTURE IS TO BE CONVERTED TO FINAL CONFIGURATION, INSTALL PER DETENTION BASIN PLAN IN STREET & STORM SEWER PLANS.



LEGEND	
PHASE A	
SF	SILT FENCE
	STORM DRAIN INLET PROTECTION
<<	TEMPORARY DIVERSION BERM
	TEMPORARY STONE CONSTRUCTION ENTRANCE
	TURF REINFORCEMENT MAT
	TREE CLEARING
	DRAINAGE AREA TO BASIN/TRAP

WHERE SILT FENCE IS SPECIFIED, IT MAY BE REPLACED BY MULCH BERM OR WATTLES FILLED WITH MULCH AT THE CONTRACTOR'S DISCRETION.

DWG: F:\2019\2001-2500\019-2339-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\SITE DISTURBANCE\C_ERC01_A192339.dwg USER: bworthley
DATE: Apr 24, 2020 2:57pm XREFS: C_PTBLK_A192339 C_XBASE_A192339 C_PEROS_A192339 C_DBASE_A192339

olsson
Olsson - Civil Engineering
Missouri Certificate of Authority #: 001592
1301 Burlington Street
North Kansas City, MO 64116
TEL 816.361.1177 www.olsson.com

STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER PE-2019000237
4/24/2020
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION
1	4/17/2020	SILT FENCE, INLET PROTECTION AND NOTES ADDED
		SEDIMENT BASIN DETAILS NOTE CORRECTED
2	4/24/2020	INLET PROTECTION ADDED

REVISIONS

2020

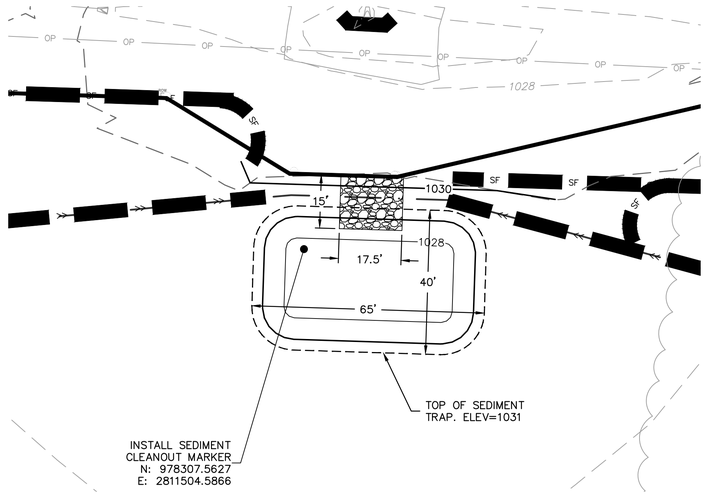
SITE DISTURBANCE PHASE A
GRADING & SITE DISTURBANCE PLANS

OSAGE
FIRST PLAT

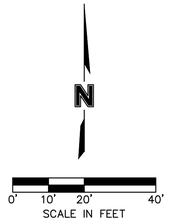
LEE'S SUMMIT, MISSOURI

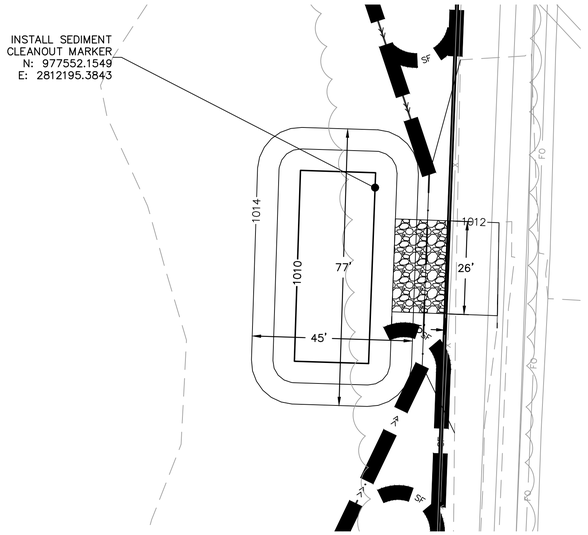
drawn by:	GS
checked by:	SS
designed by:	BMW
QA/QC by:	JES
project no.:	A19-2339
drawing no.:	C_ERC01_A192339
date:	3/17/2020

SHEET
C405

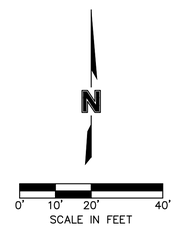


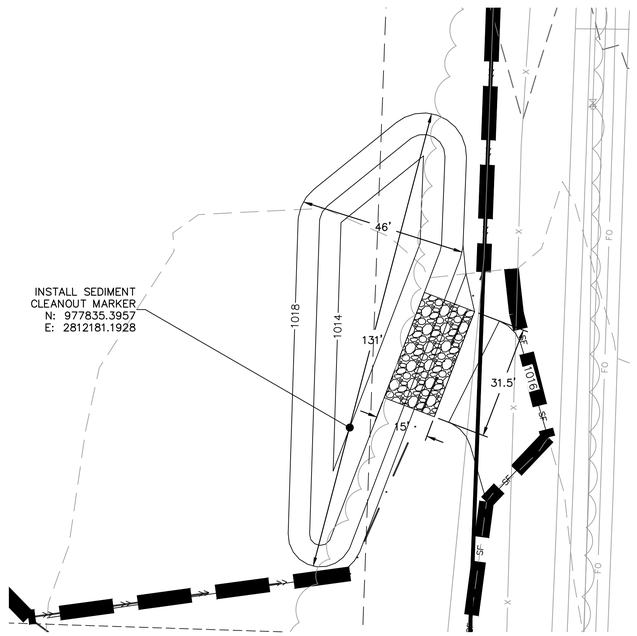
SEDIMENT TRAP 1 DESIGN SUMMARY		
DESIGN ITEM	VALUE	UNIT
TRIBUTARY AREA	2.88	AC
MIN. STORAGE VOL.	5206	CU FT
PROVIDED STORAGE VOL.	6049	CU FT
SEDIMENT CLEANOUT EL.	1028.15	FT
TOP OF TRAP	1031.00	FT
BOTTOM OF TRAP	1027.00	FT
HEIGHT OF DAM	2.00	FT
SPILLWAY LENGTH	17.27	FT
SPILLWAY WIDTH	17.50	FT



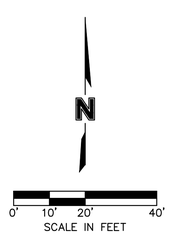


SEDIMENT TRAP 3 DESIGN SUMMARY		
DESIGN ITEM	VALUE	UNIT
TRIBUTARY AREA	4.26	AC
MIN. STORAGE VOL.	7700	CU FT
PROVIDED STORAGE VOL.	8639	CU FT
SEDIMENT CLEANOUT EL.	1011.10	FT
TOP OF TRAP	1014.00	FT
BOTTOM OF TRAP	1010.00	FT
HEIGHT OF DAM	2.00	FT
SPILLWAY LENGTH	25.54	FT
SPILLWAY WIDTH	26.00	FT





SEDIMENT TRAP 2 DESIGN SUMMARY		
DESIGN ITEM	VALUE	UNIT
TRIBUTARY AREA	5.18	AC
MIN. STORAGE VOL.	9376	CU FT
PROVIDED STORAGE VOL.	9931	CU FT
SEDIMENT CLEANOUT EL.	1015.24	FT
TOP OF TRAP	1018.00	FT
BOTTOM OF TRAP	1014.00	FT
HEIGHT OF DAM	2.00	FT
SPILLWAY LENGTH	31.10	FT
SPILLWAY WIDTH	31.50	FT



olsson
Olsson - Civil Engineering
Missouri Certificate of Authority #: 001592
1301 Burlington Street
North Kansas City, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER
PE-2019000237
4/24/2020
PROFESSIONAL ENGINEER

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION

SITE DISTURBANCE PHASE A - TRAP TABLES
GRADING & SITE DISTURBANCE PLANS

OSAGE
FIRST PLAT

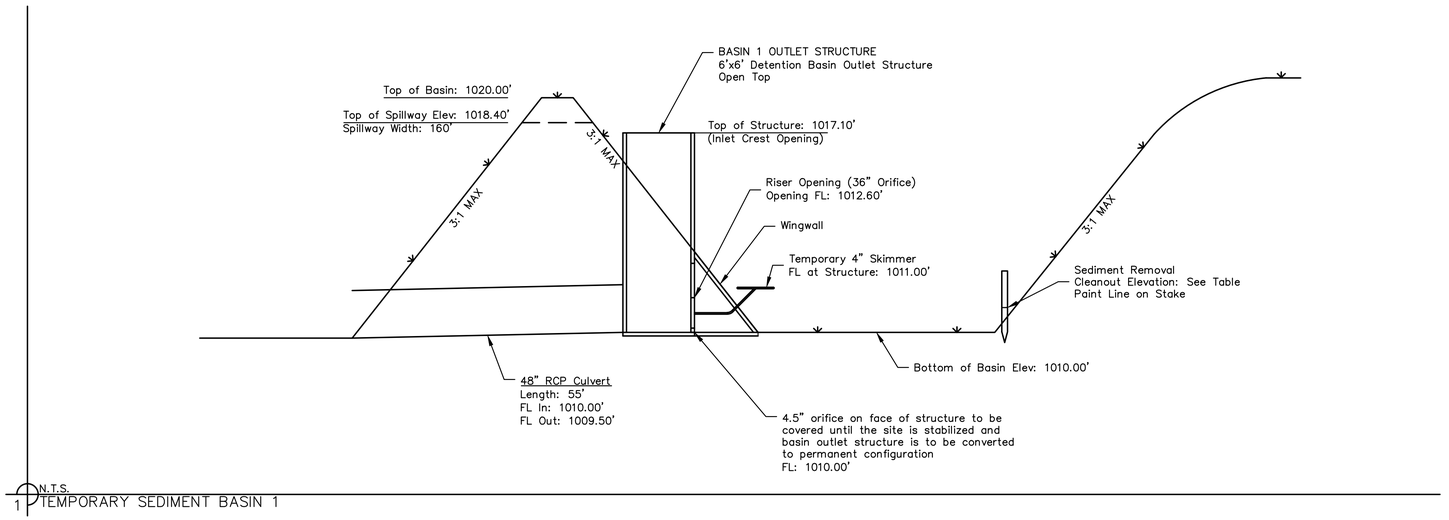
LEE'S SUMMIT, MISSOURI

2020

drawn by: GS
checked by: SS
designed by: BMW
QA/QC by: JES
project no.: A19-2339
drawing no.: C_ERC01_A192339
date: 3/17/2020

SHEET
C406

DWG: F:\2019\2001-2500\019-2339-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\SITE DISTURBANCE\C_ERC01_A192339.dwg USER: bworthley
DATE: Apr 24, 2020 2:57pm XREFS: C_PTBLK_A192339 C_XBASE_A192339 C_PEROS_A192339 C_DBASE_A192339



N.T.S.

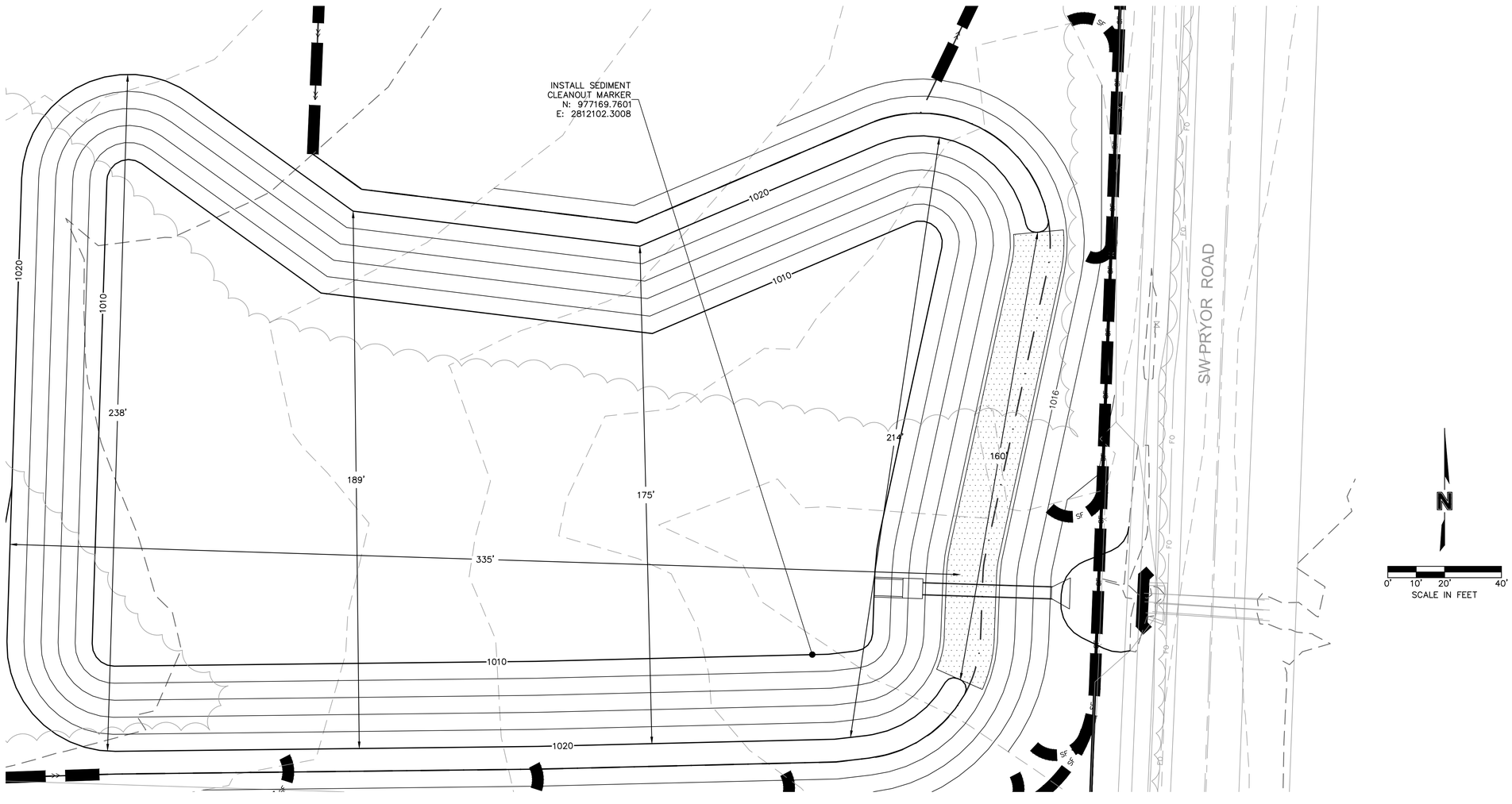
1 TEMPORARY SEDIMENT BASIN 1

SEDIMENT BASIN 1 - PHASE A DESIGN SUMMARY

Design Item	Quantity	Units
Site Data		
Tributary Drainage Area To Pond	17.32	Acres
50% (2 Year) Design Flow	47.78	cfs
10% (10 Year) Design Flow	64.95	cfs
4% (25 Year) Design Flow	82.88	cfs
1% (100 Year) Design Flow	113.98	cfs
Pond Data		
Minimum Sediment Storage Volume	2321	cu yd
Provided Sediment Storage Volume	11062	cu yd
Bottom Elevation	1010.00	ft
Sediment Cleanout Elevation	1010.78	ft
Top of Riser Elevation	1012.60	ft
Emergency Spillway Elevation	1018.40	ft
Top of Dam Elevation	1020.00	ft
Basin Shape Data		
A = Area at Normal Pool	45577	sq ft
L = Length of Flow Path	330	ft
WE = Effective Width = A/L	138	ft
Principal Spillway Data		
Riser Pipe DIA	6'x6' Inlet Box	
Barrel Pipe DIA.	48	in
Skimmer Size	4	in
Emergency Spillway Data		
Design Depth in Spillway	0.00	ft
Design Velocity in Spillway	0	ft/sec
Lining Material	TRM	
Spillway Width	160	ft
Water Surface Elevations		
2-year	1012.53	ft
10-year	1012.97	ft
25-year	1013.33	ft
100-year	1014.00	ft

SEDIMENT BASIN 1 - PHASE B DESIGN SUMMARY

Design Item	Quantity	Units
Site Data		
Tributary Drainage Area To Pond	25.78	Acres
50% (2 Year) Design Flow	71.11	cfs
10% (10 Year) Design Flow	96.66	cfs
4% (25 Year) Design Flow	123.34	cfs
1% (100 Year) Design Flow	169.63	cfs
Pond Data		
Minimum Sediment Storage Volume	3455	cu yd
Provided Sediment Storage Volume	11062	cu yd
Bottom Elevation	1010.00	ft
Sediment Cleanout Elevation	1011.04	ft
Top of Riser Elevation	1012.60	ft
Emergency Spillway Elevation	1018.40	ft
Top of Dam Elevation	1020.00	ft
Basin Shape Data		
A = Area at Normal Pool	45577	sq ft
L = Length of Flow Path	330	ft
WE = Effective Width = A/L	138	ft
Principal Spillway Data		
Riser Pipe DIA	6'x6' Inlet Box	
Barrel Pipe DIA.	48	in
Skimmer Size	4	in
Emergency Spillway Data		
Design Depth in Spillway	0.00	ft
Design Velocity in Spillway	0	ft/sec
Lining Material	TRM	
Spillway Width	160	ft
Water Surface Elevations		
2-year	1012.83	ft
10-year	1013.84	ft
25-year	1014.43	ft
100-year	1015.59	ft



olsson
Olsson - Civil Engineering
Missouri Certificate of Authority #: 001592
1301 Burlington Street
North Kansas City, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER
PE-2019000237
4/24/2020
PROFESSIONAL ENGINEER

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION

SITE DISTURBANCE PHASE A - BASIN TABLES
GRADING & SITE DISTURBANCE PLANS

OSAGE
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

drawn by:	GS
checked by:	BS
designed by:	BMW
QA/QC by:	JES
project no.:	A19-2339
drawing no.:	C_ERC01_A192339
date:	3/17/2020

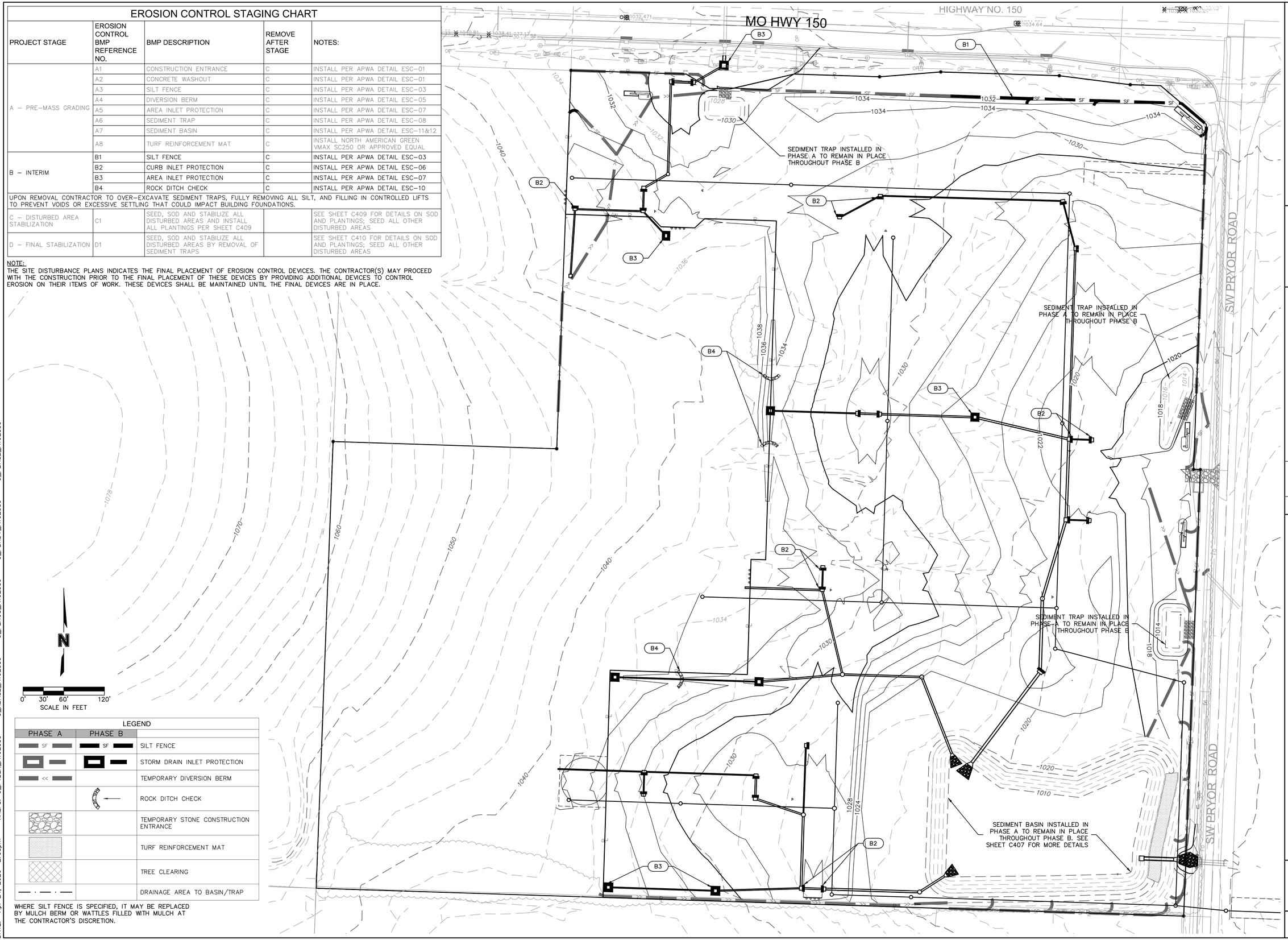
SHEET
C407

DWG: F:\2019\2001-2500\019-2339-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\SITE DISTURBANCE\C_ERC01_A192339.dwg USER: bworthley
DATE: Apr 24, 2020 2:57pm XREFS: C_PTBLK_A192339 C_XBASE_A192339 C_PEROS_A192339 C_DBASE_A192339

EROSION CONTROL STAGING CHART

PROJECT STAGE	EROSION CONTROL BMP REFERENCE NO.	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
A – PRE–MASS GRADING	A1	CONSTRUCTION ENTRANCE	C	INSTALL PER APWA DETAIL ESC–01
	A2	CONCRETE WASHOUT	C	INSTALL PER APWA DETAIL ESC–01
	A3	SILT FENCE	C	INSTALL PER APWA DETAIL ESC–03
	A4	DIVERSION BERM	C	INSTALL PER APWA DETAIL ESC–05
	A5	AREA INLET PROTECTION	C	INSTALL PER APWA DETAIL ESC–07
	A6	SEDIMENT TRAP	C	INSTALL PER APWA DETAIL ESC–08
	A7	SEDIMENT BASIN	C	INSTALL PER APWA DETAIL ESC–11&12
	A8	TURF REINFORCEMENT MAT	C	INSTALL NORTH AMERICAN GREEN VMAX SC250 OR APPROVED EQUAL
B – INTERIM	B1	SILT FENCE	C	INSTALL PER APWA DETAIL ESC–03
	B2	CURB INLET PROTECTION	C	INSTALL PER APWA DETAIL ESC–06
	B3	AREA INLET PROTECTION	C	INSTALL PER APWA DETAIL ESC–07
	B4	ROCK DITCH CHECK	C	INSTALL PER APWA DETAIL ESC–10
UPON REMOVAL CONTRACTOR TO OVER–EXCAVATE SEDIMENT TRAPS, FULLY REMOVING ALL SILT, AND FILLING IN CONTROLLED LIFTS TO PREVENT VOIDS OR EXCESSIVE SETTLING THAT COULD IMPACT BUILDING FOUNDATIONS.				
C – DISTURBED AREA STABILIZATION	C1	SEED, SOD AND STABILIZE ALL DISTURBED AREAS AND INSTALL ALL PLANTINGS PER SHEET C409		SEE SHEET C409 FOR DETAILS ON SOD AND PLANTINGS; SEED ALL OTHER DISTURBED AREAS
D – FINAL STABILIZATION	D1	SEED, SOD AND STABILIZE ALL DISTURBED AREAS BY REMOVAL OF SEDIMENT TRAPS		SEE SHEET C410 FOR DETAILS ON SOD AND PLANTINGS; SEED ALL OTHER DISTURBED AREAS

NOTE:
THE SITE DISTURBANCE PLANS INDICATES THE FINAL PLACEMENT OF EROSION CONTROL DEVICES. THE CONTRACTOR(S) MAY PROCEED WITH THE CONSTRUCTION PRIOR TO THE FINAL PLACEMENT OF THESE DEVICES BY PROVIDING ADDITIONAL DEVICES TO CONTROL EROSION ON THEIR ITEMS OF WORK. THESE DEVICES SHALL BE MAINTAINED UNTIL THE FINAL DEVICES ARE IN PLACE.



LEGEND

PHASE A	PHASE B	
SF	SF	SILT FENCE
		STORM DRAIN INLET PROTECTION
<<		TEMPORARY DIVERSION BERM
		ROCK DITCH CHECK
		TEMPORARY STONE CONSTRUCTION ENTRANCE
		TURF REINFORCEMENT MAT
		TREE CLEARING
		DRAINAGE AREA TO BASIN/TRAP

WHERE SILT FENCE IS SPECIFIED, IT MAY BE REPLACED BY MULCH BERM OR WATTLES FILLED WITH MULCH AT THE CONTRACTOR'S DISCRETION.

olsson
Olsson - Civil Engineering
Missouri Certificate of Authority #: 001592
1301 Burlington Street, Suite 100
North Kansas City, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER
PE-2019000237
4/24/2020
PROFESSIONAL ENGINEER

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION
1	4/17/2020	SEDIMENT BASIN DETAILS NOTE CORRECTED

SITE DISTURBANCE PHASE B
GRADING & SITE DISTURBANCE PLANS

OSAGE
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

drawn by:	GS
checked by:	SS
designed by:	BMW
QA/QC by:	JES
project no.:	A19-2339
drawing no.:	C_ERC02_A192339
date:	3/17/2020

SHEET
C408

DWG: F:\2019\2001-2500\019-2339-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\SITE DISTURBANCE\C_ERC02_A192339.dwg USER: bworthley
DATE: Apr 24, 2020 2:58pm XREFS: C_PTBLK_A192339 C_XBASE_A192339 C_PEROS_A192339 C_PBNDY_A192339 C_PBASE_A192339

EROSION CONTROL STAGING CHART

PROJECT STAGE	EROSION CONTROL BMP REFERENCE NO.	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
A – PRE–MASS GRADING	A1	CONSTRUCTION ENTRANCE	C	INSTALL PER APWA DETAIL ESC–01
	A2	CONCRETE WASHOUT	C	INSTALL PER APWA DETAIL ESC–01
	A3	SILT FENCE	C	INSTALL PER APWA DETAIL ESC–03
	A4	DIVERSION BERM	C	INSTALL PER APWA DETAIL ESC–05
	A5	AREA INLET PROTECTION	C	INSTALL PER APWA DETAIL ESC–07
	A6	SEDIMENT TRAP	C	INSTALL PER APWA DETAIL ESC–08
	A7	SEDIMENT BASIN	C	INSTALL PER APWA DETAIL ESC–11&12
	A8	TURF REINFORCEMENT MAT	C	INSTALL NORTH AMERICAN GREEN VMAX SC250 OR APPROVED EQUAL
B – INTERIM	B1	SILT FENCE	C	INSTALL PER APWA DETAIL ESC–03
	B2	CURB INLET PROTECTION	C	INSTALL PER APWA DETAIL ESC–06
	B3	AREA INLET PROTECTION	C	INSTALL PER APWA DETAIL ESC–07
	B4	ROCK DITCH CHECKS	C	INSTALL PER APWA DETAIL ESC–10
UPON REMOVAL CONTRACTOR TO OVER–EXCAVATE SEDIMENT TRAPS, FULLY REMOVING ALL SILT, AND FILLING IN CONTROLLED LIFTS TO PREVENT VOIDS OR EXCESSIVE SETTLING THAT COULD IMPACT BUILDING FOUNDATIONS.				
C – DISTURBED AREA STABILIZATION	C1	SEED, SOD AND STABILIZE ALL DISTURBED AREAS AND INSTALL ALL PLANTINGS PER SHEET C409		SEE SHEET C409 FOR DETAILS ON SOD AND PLANTINGS; SEED ALL OTHER DISTURBED AREAS
D – FINAL STABILIZATION	D1	SEED, SOD AND STABILIZE ALL DISTURBED AREAS BY REMOVAL OF SEDIMENT TRAPS		SEE SHEET C410 FOR DETAILS ON SOD AND PLANTINGS; SEED ALL OTHER DISTURBED AREAS

NOTE:
THE SITE DISTURBANCE PLANS INDICATES THE FINAL PLACEMENT OF EROSION CONTROL DEVICES. THE CONTRACTOR(S) MAY PROCEED WITH THE CONSTRUCTION PRIOR TO THE FINAL PLACEMENT OF THESE DEVICES BY PROVIDING ADDITIONAL DEVICES TO CONTROL EROSION ON THEIR ITEMS OF WORK. THESE DEVICES SHALL BE MAINTAINED UNTIL THE FINAL DEVICES ARE IN PLACE.

GENERAL NOTES:
SEED & MULCH NOTES:
SEEDING SHALL BE DONE BEFORE THE PROPOSED SEEDBED BECOMES ERODED, CRUSTED OVER,OR DRIED OUT AND SHALL NOT BE DONE WHEN THE GROUND IS FROZEN, OR COVERED WITH SNOW. THE SEED SHALL COMPLY WITH THE REQUIREMENTS OF THE MISSOURI SEED LAW AND THE FEDERAL SEED ACT. ALSO, IT SHALL CONTAIN NO SEED OF ANY PLANT ON THE FEDERAL NOXIOUS WEED LIST. OTHER WEED SEED SHALL NOT EXCEED ONE PERCENT BY WEIGHT OF MIX.

SEED & FERTILIZER RATE:
MIX I – RYE GRASS / BLUE GRASS -----100 LBS. PER. ACRE
MIX II – TALL FESCUE / BLUE GRASS ----195 LBS. PER ACRE
FERTILIZER ----------800 TO 1200 LBS. PER ACRE (25 LBS. PER 1000 SQ. FT.)

DURING THE DATES DECEMBER 15TH THROUGH MAY 31 ALL LIME, FERTILIZER, SEED, AND MULCH SHALL BE APPLIED TO FINISHED SLOPES OF DISTURBED AREAS. DURING THE MONTHS OF JUNE, JULY, OCTOBER, AND NOVEMBER 1ST THROUGH DECEMBER 15TH, LIME, FERTILIZER, SEED, AND MULCH SHALL BE APPLIED AT THE FOLLOWING RATES:
LIME – 100 % OF SPECIFIED QUANTITY
FERTILIZER – 75 % OF THE SPECIFIED QUANTITY
SEED – 50 % OF THE SPECIFIED QUANTITY
MULCH – 100 % OF THE SPECIFIED QUANTITY
MULCH SHALL BE VEGETATIVE TYPE, CEREAL STRAW FROM STALKS OF OATS, RYE, OR BARLEY, OR APPROVED EQUAL. THE STRAW SHALL BE FREE OF PROHIBITED WEED SEED AND RELATIVELY FREE OF ALL OTHER NOXIOUS AND UNDESIRABLE SEED. MULCH SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE, (70 TO 90 LBS. PER 1000 SQ. FT.). MULCH SHALL BE EMBEDDED BY A MULCH ANCHORING TOOL OR DISK TYPE ROLLER HAVING FLAT SERRATED DISKS SPACED NOT MORE THAN 10 INCHES APART AND CLEANING SCRAPERS SHALL BE PROVIDED.

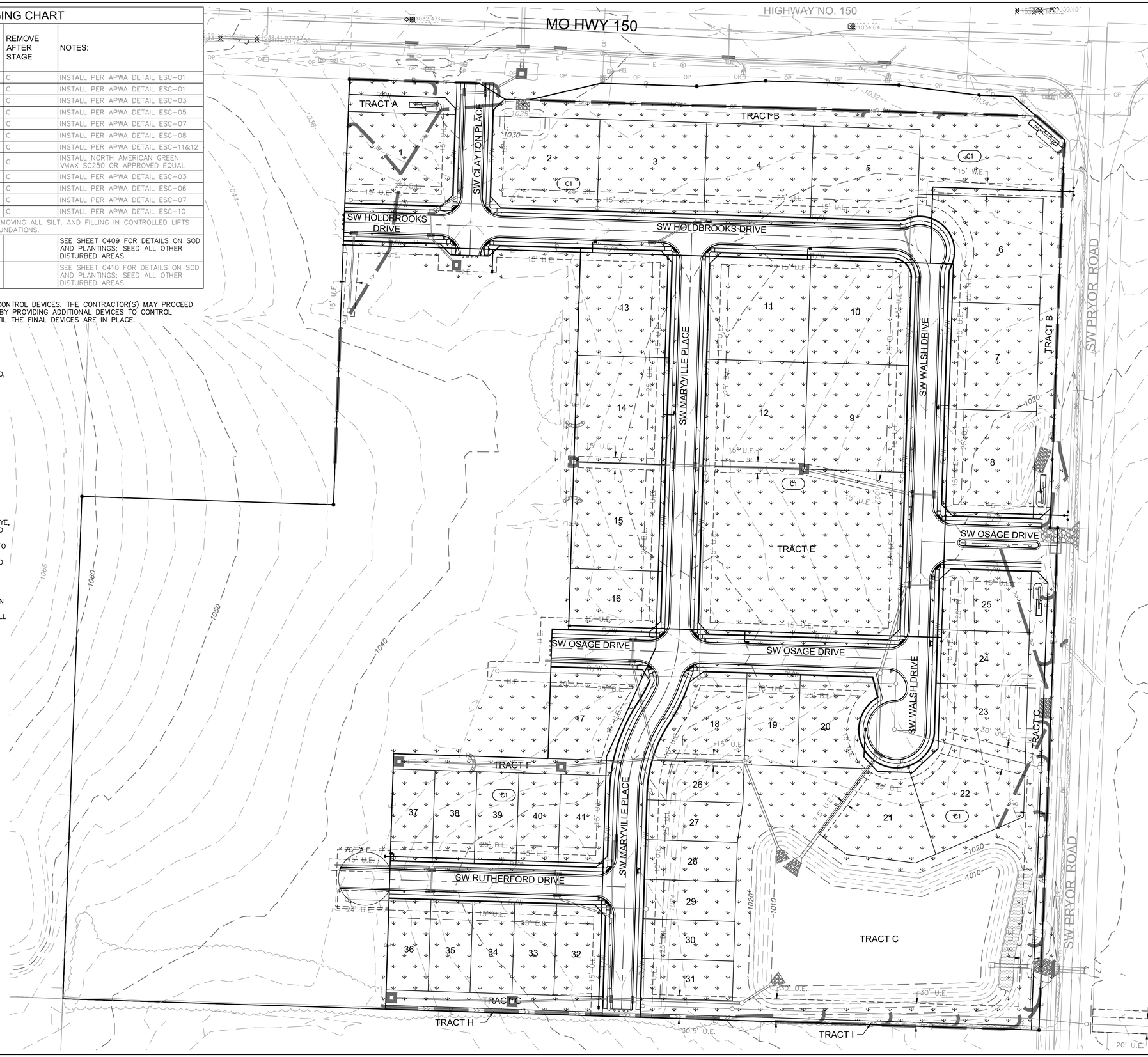
THE SITE DISTURBANCE PLANS INDICATES THE FINAL PLACEMENT OF EROSION CONTROL DEVICES. THE CONTRACTOR(S) MAY PROCEED WITH THE CONSTRUCTION PRIOR TO THE FINAL PLACEMENT OF THESE DEVICES BY PROVIDING ADDITIONAL DEVICES TO CONTROL EROSION ON THEIR ITEMS OF WORK. THESE DEVICES SHALL BE MAINTAINED UNTIL THE FINAL DEVICES ARE IN PLACE.

N

0' 30' 60' 120'
SCALE IN FEET

LEGEND		
PHASE A & B	PHASE C	
SF		SILT FENCE
		STORM DRAIN INLET PROTECTION
<<		TEMPORARY DIVERSION BERM
		ROCK DITCH CHECK
		TEMPORARY STONE CONSTRUCTION ENTRANCE
		TURF REINFORCEMENT MAT
		TREE CLEARING
		DRAINAGE AREA TO BASIN/TRAP
		TURF GRASS SEEDING

WHERE SILT FENCE IS SPECIFIED, IT MAY BE REPLACED BY MULCH BERM OR WATTLES FILLED WITH MULCH AT THE CONTRACTOR'S DISCRETION.



olsson
Olsson - Civil Engineering
Kansas City Metropolitan Area Authority # 001592
1301 Burlington Street, Suite 100
North Kansas City, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER PE-2019000237
4/24/2020
PROFESSIONAL ENGINEER

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION

SITE DISTURBANCE PHASE C
GRADING & SITE DISTURBANCE PLANS

OSAGE
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

drawn by: GS
checked by: SS
designed by: BMW
QA/QC by: JES
project no.: A19-2339
drawing no.: C_ERC03_A192339
date: 3/17/2020

SHEET
C409

DWG: F:\2019\2001-2500\019-2339-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\SITE DISTURBANCE\C_ERC03_A192339.dwg USER: bworthley
DATE: Apr 24, 2020 2:59pm XREFS: C_PTBLK_A192339 C_XBASE_A192339 C_PEROS_A192339 C_PBNDY_A192339 C_PBASE_A192339

EROSION CONTROL STAGING CHART

PROJECT STAGE	EROSION CONTROL BMP REFERENCE NO.	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
A – PRE–MASS GRADING	A1	CONSTRUCTION ENTRANCE	C	INSTALL PER APWA DETAIL ESC–01
	A2	CONCRETE WASHOUT	C	INSTALL PER APWA DETAIL ESC–01
	A3	SILT FENCE	C	INSTALL PER APWA DETAIL ESC–03
	A4	DIVERSION BERM	C	INSTALL PER APWA DETAIL ESC–05
	A5	AREA INLET PROTECTION	C	INSTALL PER APWA DETAIL ESC–07
	A6	SEDIMENT TRAP	C	INSTALL PER APWA DETAIL ESC–08
	A7	SEDIMENT BASIN	C	INSTALL PER APWA DETAIL ESC–11&12
	A8	TURF REINFORCEMENT MAT	C	INSTALL NORTH AMERICAN GREEN VMAX SC250 OR APPROVED EQUAL
B – INTERIM	B1	SILT FENCE	C	INSTALL PER APWA DETAIL ESC–03
	B2	CURB INLET PROTECTION	C	INSTALL PER APWA DETAIL ESC–06
	B3	AREA INLET PROTECTION	C	INSTALL PER APWA DETAIL ESC–07
	B4	ROCK DITCH CHECK	C	INSTALL PER APWA DETAIL ESC–10
UPON REMOVAL CONTRACTOR TO OVER–EXCAVATE SEDIMENT TRAPS, FULLY REMOVING ALL SILT, AND FILLING IN CONTROLLED LIFTS TO PREVENT VOIDS OR EXCESSIVE SETTLING THAT COULD IMPACT BUILDING FOUNDATIONS.				
C – DISTURBED AREA STABILIZATION	C1	SEED, SOD AND STABILIZE ALL DISTURBED AREAS AND INSTALL ALL PLANTINGS PER SHEET C409		SEE SHEET C409 FOR DETAILS ON SOD AND PLANTINGS; SEED ALL OTHER DISTURBED AREAS
D – FINAL STABILIZATION	D1	SEED, SOD AND STABILIZE ALL DISTURBED AREAS BY REMOVAL OF SEDIMENT TRAPS		SEE SHEET C410 FOR DETAILS ON SOD AND PLANTINGS; SEED ALL OTHER DISTURBED AREAS

NOTE:
THE SITE DISTURBANCE PLANS INDICATES THE FINAL PLACEMENT OF EROSION CONTROL DEVICES. THE CONTRACTOR(S) MAY PROCEED WITH THE CONSTRUCTION PRIOR TO THE FINAL PLACEMENT OF THESE DEVICES BY PROVIDING ADDITIONAL DEVICES TO CONTROL EROSION ON THEIR ITEMS OF WORK. THESE DEVICES SHALL BE MAINTAINED UNTIL THE FINAL DEVICES ARE IN PLACE.

GENERAL NOTES:
SEED & MULCH NOTES:
SEEDING SHALL BE DONE BEFORE THE PROPOSED SEEDBED BECOMES ERODED, CRUSTED OVER,OR DRIED OUT AND SHALL NOT BE DONE WHEN THE GROUND IS FROZEN, OR COVERED WITH SNOW. THE SEED SHALL COMPLY WITH THE REQUIREMENTS OF THE MISSOURI SEED LAW AND THE FEDERAL SEED ACT. ALSO, IT SHALL CONTAIN NO SEED OF ANY PLANT ON THE FEDERAL NOXIOUS WEED LIST. OTHER WEED SEED SHALL NOT EXCEED ONE PERCENT BY WEIGHT OF MIX.

SEED & FERTILIZER RATE:
MIX I – RYE GRASS / BLUE GRASS -----100 LBS. PER. ACRE
MIX II – TALL FESCUE / BLUE GRASS ----195 LBS. PER ACRE
FERTILIZER ----------800 TO 1200 LBS. PER ACRE (25 LBS. PER 1000 SQ. FT.)

DURING THE DATES DECEMBER 15TH THROUGH MAY 31 ALL LIME, FERTILIZER, SEED, AND MULCH SHALL BE APPLIED TO FINISHED SLOPES OF DISTURBED AREAS. DURING THE MONTHS OF JUNE, JULY, OCTOBER, AND NOVEMBER 1ST THROUGH DECEMBER 15TH, LIME, FERTILIZER, SEED, AND MULCH SHALL BE APPLIED AT THE FOLLOWING RATES:
LIME – 100 % OF SPECIFIED QUANTITY
FERTILIZER – 75 % OF THE SPECIFIED QUANTITY
SEED – 50 % OF THE SPECIFIED QUANTITY
MULCH – 100 % OF THE SPECIFIED QUANTITY
MULCH SHALL BE VEGETATIVE TYPE, CEREAL STRAW FROM STALKS OF OATS, RYE, OR BARLEY, OR APPROVED EQUAL. THE STRAW SHALL BE FREE OF PROHIBITED WEED SEED AND RELATIVELY FREE OF ALL OTHER NOXIOUS AND UNDESIRABLE SEED. MULCH SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE, (70 TO 90 LBS. PER 1000 SQ. FT.). MULCH SHALL BE EMBEDDED BY A MULCH ANCHORING TOOL OR DISK TYPE ROLLER HAVING FLAT SERRATED DISKS SPACED NOT MORE THAN 10 INCHES APART AND CLEANING SCRAPERS SHALL BE PROVIDED.

THE SITE DISTURBANCE PLANS INDICATES THE FINAL PLACEMENT OF EROSION CONTROL DEVICES. THE CONTRACTOR(S) MAY PROCEED WITH THE CONSTRUCTION PRIOR TO THE FINAL PLACEMENT OF THESE DEVICES BY PROVIDING ADDITIONAL DEVICES TO CONTROL EROSION ON THEIR ITEMS OF WORK. THESE DEVICES SHALL BE MAINTAINED UNTIL THE FINAL DEVICES ARE IN PLACE.

N

0' 30' 60' 120'
SCALE IN FEET

LEGEND		
PHASE A,B&C	PHASE D	
SF		SILT FENCE
		STORM DRAIN INLET PROTECTION
<<		TEMPORARY DIVERSION BERM
		ROCK DITCH CHECK
		TEMPORARY STONE CONSTRUCTION ENTRANCE
		TURF REINFORCEMENT MAT
		TREE CLEARING
		DRAINAGE AREA TO BASIN/TRAP
		TURF GRASS SEEDING

WHERE SILT FENCE IS SPECIFIED, IT MAY BE REPLACED BY MULCH BERM OR WATTLES FILLED WITH MULCH AT THE CONTRACTOR'S DISCRETION.

ONCE DISTURBED AREAS HAVE BEEN STABILIZED, CONTRACTOR TO REMOVE SILT FROM SEDIMENT BASIN, REMOVE SKIMMER AND CONVERT DETENTION BASIN OUTLET STRUCTURE TO ITS FINAL CONFIGURATION.

olsson
Olsson - Civil Engineering
Certificate of Authority # 001592
1301 Burlington Street
North Kansas City, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER
PE-2019000237
4/24/2020
PROFESSIONAL ENGINEER

REVISIONS

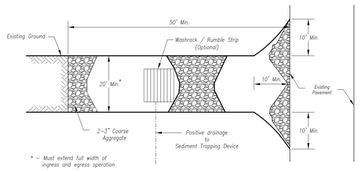
REV. NO.	DATE	REVISIONS DESCRIPTION
1	4/17/2020	EROSION CONTROL MEASURES REMOVED FROM THIS PHASE

SITE DISTURBANCE PHASE D
GRADING & SITE DISTURBANCE PLANS
OSAGE
FIRST PLAT
LEE'S SUMMIT, MISSOURI
2020

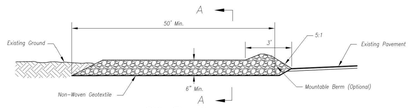
drawn by: GS
checked by: SS
designed by: BMW
QA/QC by: JES
project no.: A19-2339
drawing no.: C_ERC04_A192339
date: 3/17/2020

SHEET
C410

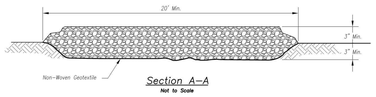
DWG: F:\2019\2001-2500\019-2339-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\SITE DISTURBANCE\C_ERC04_A192339.dwg USER: bworthley
DATE: Apr 24, 2020 3:00pm
XREFS: C_PTBLK_A192339 C_XBASE_A192339 C_PEROS_A192339 C_PBNDY_A192339 C_PBASE_A192339 T_PBASE_A192339



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.

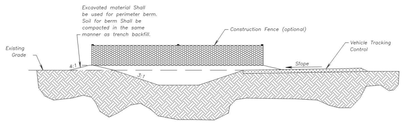
CONSTRUCTION ENTRANCE

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:

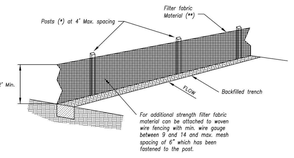
1. Concrete washout materials shall be removed once the materials have filled the washout to approximately 75% full.
2. Concrete washout areas shall be enlarged as necessary to maintain capacity for wasted concrete.
3. Concrete washout water, wasted pieces of concrete and all other debris in the subsurface 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

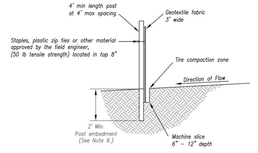
Construction Entrance modified from 2015 Overland Park Standard Details for Erosion and Sediment Control, Concrete Washout modified from 2009 City of Great Bend Standard Drawings.

AMERICAN PUBLIC WORKS ASSOCIATION	KANSAS CITY METRO CHAPTER
CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT	STANDARD DRAWING NUMBER ESC-01 ADOPTED: 10/24/2016



(*) POSTS
- MIN. LENGTH 4'
- HARDWOOD 1 ¼" x 1 ¼"
- NO.2 SOUTHERN PINE 2 ⅜" x 2 ⅜"
- STEEL 1.33 LB/FT

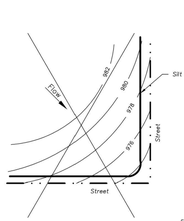
(**) – Geotextile Fabric shall meet the requirements of AASHTO M288



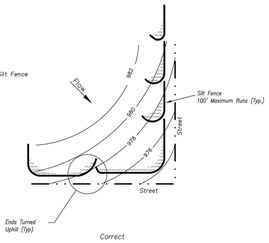
Notes:

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 installations, where slicing machine cannot be reasonably used.

SILT FENCE DETAILS
Not to Scale

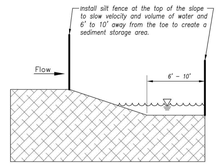


Incorrect



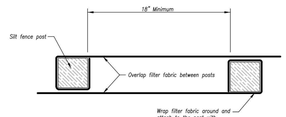
Correct

Figure A



Maintenance:

1. Remove and dispose of sediment deposits when the deposit approaches ½ the height of silt fence.
2. Repair as necessary to maintain function and structure.

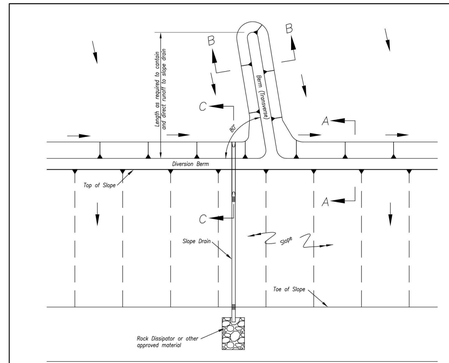


JOINING FENCE SECTIONS
Not to Scale

SILT FENCE LAYOUT
Not to Scale

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

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



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.

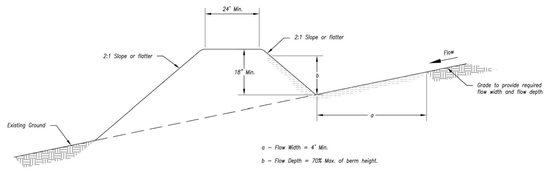
Notes for Slope Drain:

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:

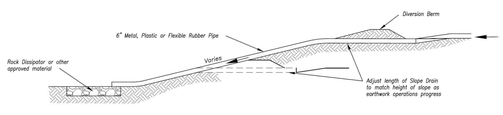
1. Accumulation of any visible sediment at the inlet and outlet shall be removed promptly.
2. Outlet conditions shall be repaired if scour is observed. Leaking or damaged section of pipe shall be repaired immediately.
3. Barriers directing water to the inlet shall be monitored for continuity and effectiveness.

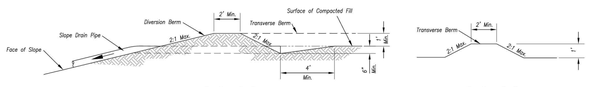
TYPICAL PROFILE OF DIVERSION BEAM
Not to Scale



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
DIVERSION BERMS AND SLOPE DRAINS	STANDARD DRAWING NUMBER ESC-05 ADOPTED: 10/24/2016

olsson
Olsson - Civil Engineering
Kansas Certificate of Authority #: 001592
1301 Burlington Street, Suite 100
North Kansas City, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER PE-2019000237
A
12/21/2020
PROFESSIONAL ENGINEER

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION

DETAIL SHEET
GRADING & SITE DISTURBANCE PLANS

OSAGE
FIRST PLAT

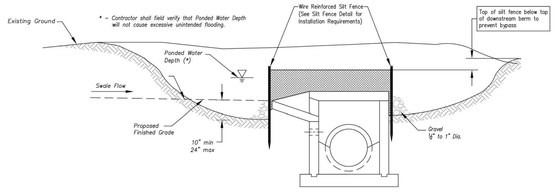
2020

LEE'S SUMMIT, MISSOURI

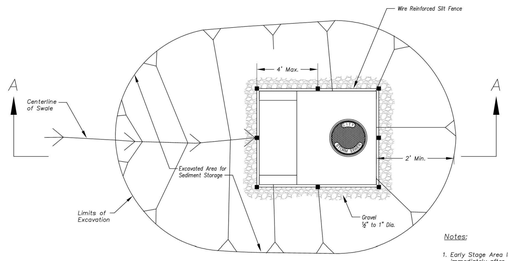
drawn by: GS
checked by: SS
designed by: BMW
QA/QC by: JES
project no.: A19-2339
drawing no.: C_DTL01_A192339
date: 3/17/2020

SHEET
C411

DWG: F:\2019\2001-2500\019-2339-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\SITE DISTURBANCE\C_DTL01_A192339.dwg USER: bworthley
DATE: Apr 24, 2020 3:00pm XREFS: C_PTBLK_A192339



Section A–A
Not to Scale

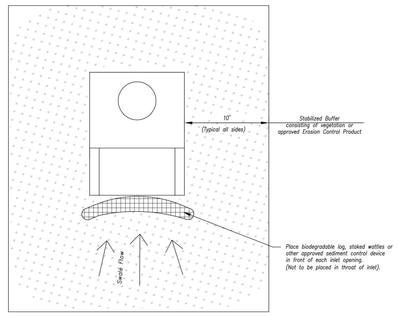


Plan
Not to Scale

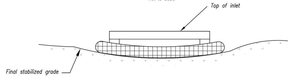
EARLY STAGE AREA INLET
(All open boxes and inlets not at final grade)

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.



Plan
Not to Scale



Front View

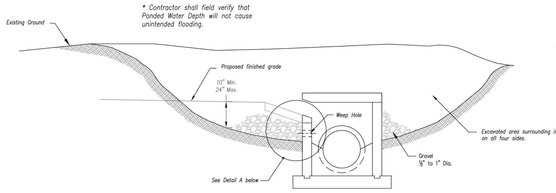
LATE STAGE AREA INLET
(Area inlets at final grade and existing inlets)

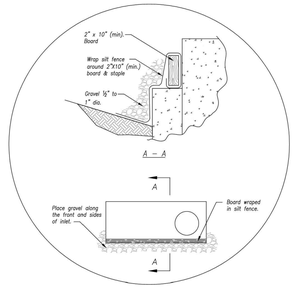
Maintenance:

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





Detail A

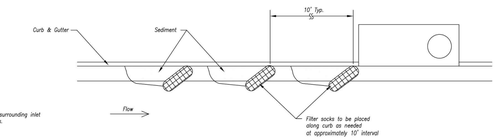
EARLY STAGE CURB INLET
(Open Box and Prior to Pouring Curb and Inlet Throat)

Notes:

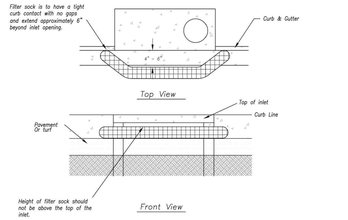
1. Immediately following inlet construction and prior to construction of curb and inlet throat, protect inlet opening by installing 2" X 10" (min.) board wrapped in silt fence. Structures shall have excavated storage area on all four sides to allow settling of sediment (Early Stage Curb Inlet).
2. When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

Maintenance:

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



On Grade Curb Inlet Protection

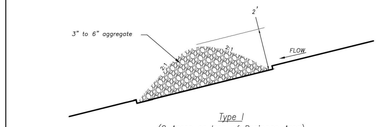


Sump Inlet Sediment Filter

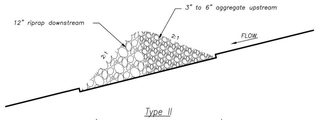
LATE STAGE CURB INLET
(After Pouring Curb and Inlet Throat)

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

AMERICAN PUBLIC WORKS ASSOCIATION	
Kansas City Metro Chapter APWA American Public Works Association	KANSAS CITY METRO CHAPTER
CURB INLET PROTECTION	STANDARD DRAWING NUMBER ESC-06
	ADOPTED: 10/24/2016



Type I
(2 Acres or less of Drainage Area)
Not to Scale



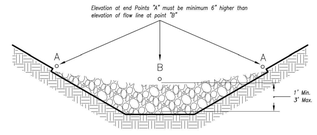
Type II
(2–10 Acres of Drainage Area)
Not to Scale

ROCK DITCH CHECK

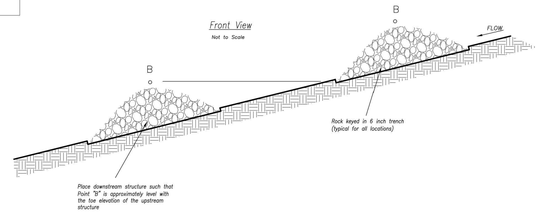
Temporary Rock Ditch Check Spacing

Ditch Centerline Slope (%)	Spacing Interval (Feet)
5.0	60
6.0	50
7.0	43
8.0	38
9.0	33
10.0	29

Note: Use this spacing only for Rock Ditch Checks.



Front View
Not to Scale



Spacing Between Check Dams (all types)
Not to Scale

Notes:

1. Rock check dams shall be used only for drainage areas less that 10 acres unless approved by the City Engineer.
2. Use rock checks only in situations where the ditch slope exceeds 6%.

Maintenance:

1. Remove and dispose of sediment deposits when the deposit approaches ½ the height of the ditch check.
2. Replace and reshape 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
ROCK DITCH CHECKS	STANDARD DRAWING NUMBER ESC-10
	ADOPTED: 10/24/2016

olsson
Olsson - Civil Engineering
Land Development Consultants
1301 Burlington Street, Suite 100
North Kansas City, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER PE-2019000237
4/24/2020
PROFESSIONAL ENGINEER

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION

DETAIL SHEET
GRADING & SITE DISTURBANCE PLANS

OSAGE
FIRST PLAT

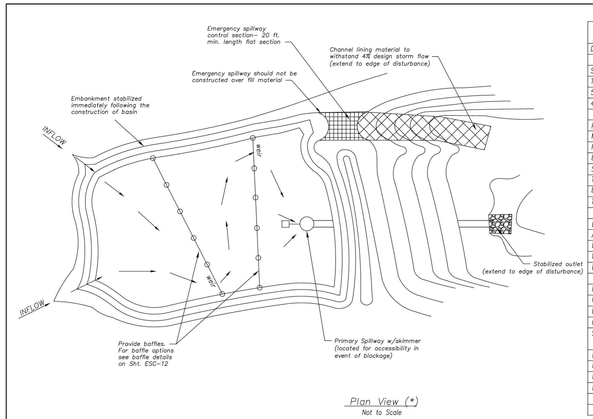
LEE'S SUMMIT, MISSOURI

2020

drawn by: GS
checked by: SS
designed by: BMW
QA/QC by: JES
project no.: A19-2339
drawing no.: C_DTL01_A192339
date: 3/17/2020

SHEET
C412

DWG: F:\2019\2001-2500\019-2339-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\SITE DISTURBANCE\C_DTL01_A192339.dwg USER: bworthley
DATE: Apr 24, 2020 3:00pm XREFS: C_PTBLK_A192339

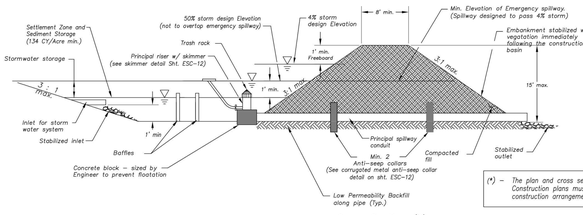


Plan View (*)
Not to Scale

Sediment Basin Design Summary (**)

Design Item	Basin #1	Basin #2	Units	Notes
Site Data:				
Tributary Drainage Area to Pond			Acres	
50% (2 yr) Design Flow			cfs	
4% (25 yr) Design Flow			cfs	
Pond Data:				
Minimum Sediment Storage Volume			cu yd	134 cy/acre required minimum
Provided Sediment Storage Volume			cu yd	
Bottom Elevation			Ft	
Sediment Cleanout Elevation			Ft	Elevation equal to 20% of original design volume
Top of Riser Elevation			Ft	Top of dry storage volume
Emergency Spillway Elevation			Ft	at or above Q–2 elevation. 1.0 ft min above principal spillway
Top of Dam Elevation			Ft	1.0 ft min above Q–25 elevation
Basin Shape Data:				
A = Area at Normal Pool			SF	
L = Length of Flow Path			Ft	
We = Effective Width = A/L			Ft	
Length to Width Ratio = L/We				
Principal Spillway Data:				
Riser Pipe dia			in	15" min. Size for 2 year flow minimum
Barrel Pipe dia			in	15" min. Size for 2 year flow minimum
Concrete Base size for Riser Pipe			CY	Size to prevent flotation. 1.25 safety factor required
Skimmer Size				Designer to provide specific details and calculations per application to dewater in 48 to 72 hours
Emergency Spillway Data:				
Design Depth in Spillway			ft	
Design Velocity in Spillway			ft/sec	
Lining Material				Designer to provide specific details and calculations per application

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



Cross Section (*)
Not to Scale

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

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

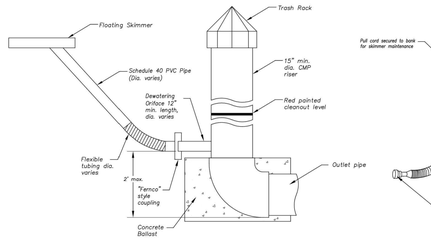
Sediment Basin Notes:

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".

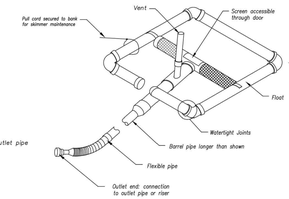
Maintenance:

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.

AMERICAN PUBLIC WORKS ASSOCIATION
Kansas City Metro Chapter
KANSAS CITY METRO CHAPTER
SEDIMENT BASIN
STANDARD DRAWING NUMBER ESC–11
ADOPTED: 10/24/2016

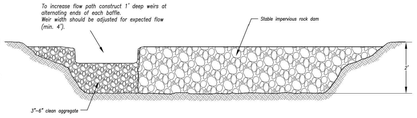


PRINCIPAL SPILLWAY DETAIL

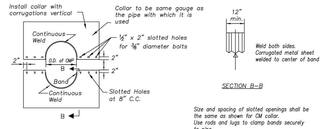


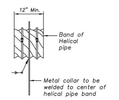
SKIMMER DETAIL (Typ.) *

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

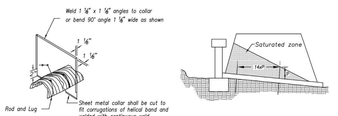


Option A – Rock with Weir





PARTIAL ELEVATION



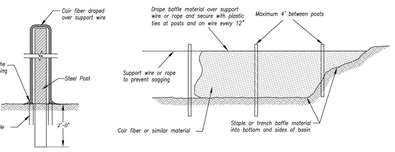
ISOMETRIC VIEW

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. 14eP = 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) ⅝" 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".

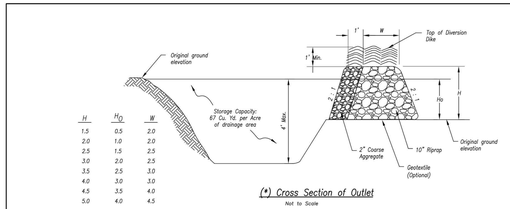


Option B – Coir Fiber Material

BAFFLE DETAILS
Not to Scale

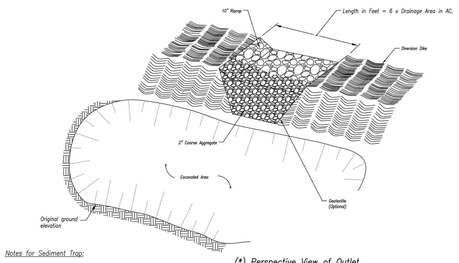
Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

AMERICAN PUBLIC WORKS ASSOCIATION
Kansas City Metro Chapter
KANSAS CITY METRO CHAPTER
SEDIMENT BASIN – DETAILS
STANDARD DRAWING NUMBER ESC–12
ADOPTED: 10/24/2016



H	Ho	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



(*) 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.

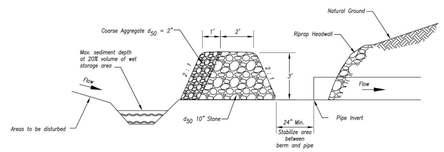
Notes for Sediment Trap:

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.

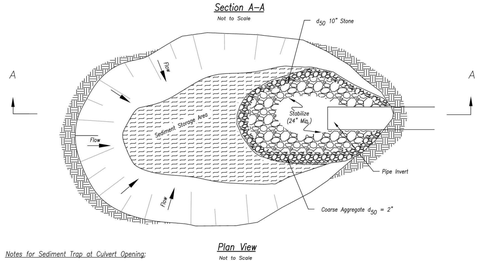
Maintenance for Sediment Trap:

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



Section A–A
Not to Scale



Plan View
Not to Scale

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 CY/Acre wet storage below base of stone.
7. 67 CY/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

AMERICAN PUBLIC WORKS ASSOCIATION
Kansas City Metro Chapter
KANSAS CITY METRO CHAPTER
SEDIMENT TRAPS
STANDARD DRAWING NUMBER ESC–08
ADOPTED: 10/24/2016

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

olsson
Olsson - Civil Engineering
Missouri Certificate of Authority #: 001592
1301 Burlington Street, Suite 100
North Kansas City, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER PE–2019000237
4/24/2020
PROFESSIONAL ENGINEER

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION

DETAIL SHEET
GRADING & SITE DISTURBANCE PLANS

OSAGE
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

drawn by: GS
checked by: SS
designed by: BMW
QA/QC by: JES
project no.: A19-2339
drawing no.: C_DTL01_A192339
date: 3/17/2020

SHEET
C413

DWG: F:\2019\2001–2500\019–2339–A\40–Design\AutoCAD\Final Plans\Sheets\GNCV\SITE DISTURBANCE\C_DTL01_A192339.dwg USER: bworthley
DATE: Apr 24, 2020 3:00pm XREFS: C_PTBLK_A192339