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USER: bkinnich T_PAS_0200103 C_PBLK_0200103

LAND DISTURBANCE PLANS FOR
LEE'S SUMMIT MIDDLE SCHOOL #4
SOUTH SIDE SE BAILEY ROAD AND COUNTRY LANE
NE 1/4 OF SECTION 16, TOWNSHIP 47 NORTH, RANGE 31 WEST
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

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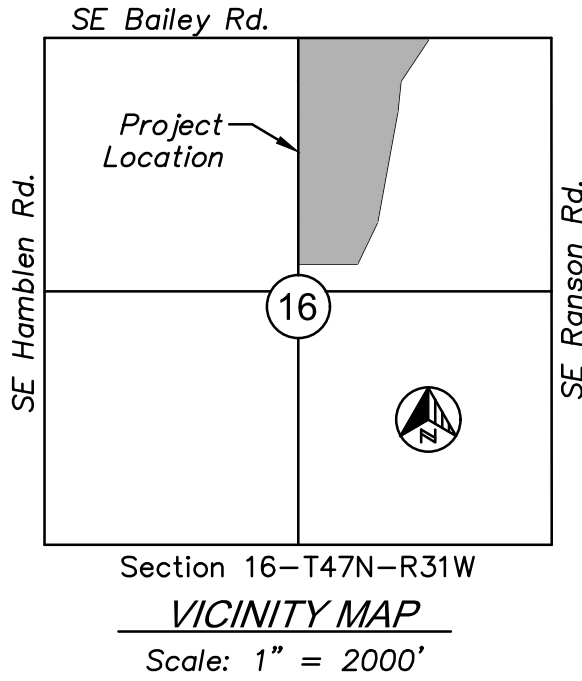
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LEGAL DESCRIPTION:

All that part of Northeast Quarter of Section 16, Township 47 North, Range 31 West, in the City of Lee's Summit, Jackson County, Missouri, as described by Timothy Blair Wiswell, Missouri Professional Licensed Surveyor, PLS-2009000067, and being more particularly described as follows:

COMMENCING at the Northwest corner of the Northeast Quarter, of said Section 16-T47N-R31W; thence South 02 degrees 20 minutes 19 seconds West, along the West line of said Northeast Quarter, a distance of 20.00 feet, to a point on the South Right-of-Way line of Bailey Road as now established, said point also being the Northeast corner of Lot 164 of Newberry Second Plat, Lots 1-65, 163 and 164, a subdivision in the City of Lee's Summit, Jackson County, Missouri; thence South 88 degrees 07 minutes 48 seconds East, on the South Right-of-Way line of said Bailey Road, a distance of 1,350.00 feet, to a point; thence South 35 degrees 20 minutes 58 seconds West, departing the South Right-of-Way line of said Bailey Road, a distance of 517.08 feet, to a point; thence South 07 degrees 56 minutes 53 seconds West, a distance of 320.18 feet, to a point; thence South 12 degrees 12 minutes 42 seconds West, a distance of 1,168.07 feet, to a point; thence South 27 degrees 41 minutes 50 seconds West, a distance of 480.35 feet; to a point on a line that is 300.00 feet North of and parallel to the South line of said Northeast Quarter; thence North 88 degrees 04 minutes 43 seconds West, on said parallel line, a distance of 630.96 feet, to a point on the West line of said Northeast Quarter, said point also being on the East line of Newberry Fourth Plat, a subdivision in the City of Lee's Summit, Jackson County, Missouri; thence North 02 degrees 20 minutes 19 seconds East, on the West line of said Northeast Quarter, and on the East line of said Newberry Fourth Plat, and on the East line of Newberry Third Plat, a subdivision in the City of Lee's Summit, Jackson County, Missouri, and on the East line of said Newberry Second Plat, Lots 1-65, 163 and 164, a distance of 2,330.63 feet, to the POINT OF BEGINNING, containing 2,250,248 square feet or 51.6586 acres, more or less.

DEVELOPMENT TEAM CONTACT INFORMATION	
OWNER/DEVELOPER	
KYLE GORRELL DIRECTOR, LEE'S SUMMIT SCHOOL DISTRICT	502 SE TRANSPORT DRIVE LEE'S SUMMIT, MO 64081 816.986-2420
CIVIL ENGINEER	
TERRY PARSONS OLSSON	7301 W. 133RD STREET SUITE 200 OVERLAND PARK, KS 66213 PH: 913.381.1170 FAX: 913.381.1174 tparsons@olsson.com



drawn by: _____ RLK
checked by: _____ TP
approved by: _____ TP
QA/QC by: _____ ENG
project no.: 020-0103
drawing no.: C_GEN01_0200103
date: 06.10.20

SHEET
1 of 14

COVER SHEET
LAND DISTURBANCE PLANS
LEE'S SUMMIT MIDDLE SCHOOL #4
SE BAILEY ROAD AND SE COUNTRY LANE
LEE'S SUMMIT, MISSOURI

REV. NO. DATE REVISIONS DESCRIPTION
1 08.14.2020 REVISED PER CITY COMMENTS

BY

REVISIONS

2020

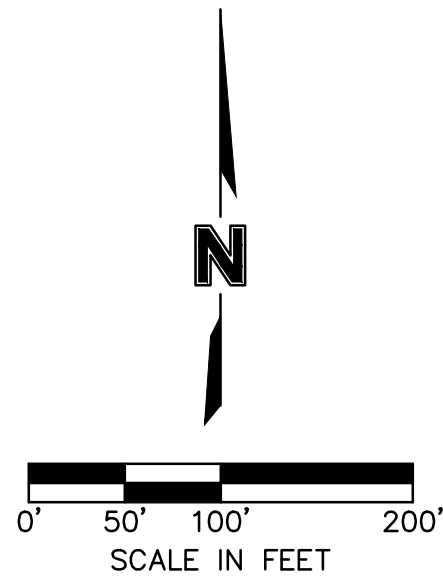
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Overland Park, KS 66213-4755
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-----	PROPERTY LINE
---995---	EXISTING MAJOR CONTOUR
---995---	EXISTING MINOR CONTOUR
---998---	PROPOSED MAJOR CONTOUR
---998---	PROPOSED MINOR CONTOUR

NO SITE CLEARING, GRADING, OR ANY LAND DISTURBANCE ACTIVITIES ARE ALLOWED IN THE LIMITS OF STREAM BUFFER PROTECTION. THE STREAM PROTECTION ZONE SHALL BE CLEARLY MARKED PRIOR TO ANY CONSTRUCTION.

THE GRADING SHOWN FOR THIS SITE IS BASED ON A APPROXIMATION OF THE FINAL DESIGN. THE CONTRACTOR SHALL ENSURE THAT THE SITE DRAINS PROPERLY TO THE EROSION CONTROL MEASURES SHOWN. ITEMS SUCH AS ROAD CROWNS AND DITCHES CAN BE MODIFIED TO ACHIEVE SUCCESSFUL DRAINAGE.

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GRADING PLAN
LAND DISTURBANCE PLANS

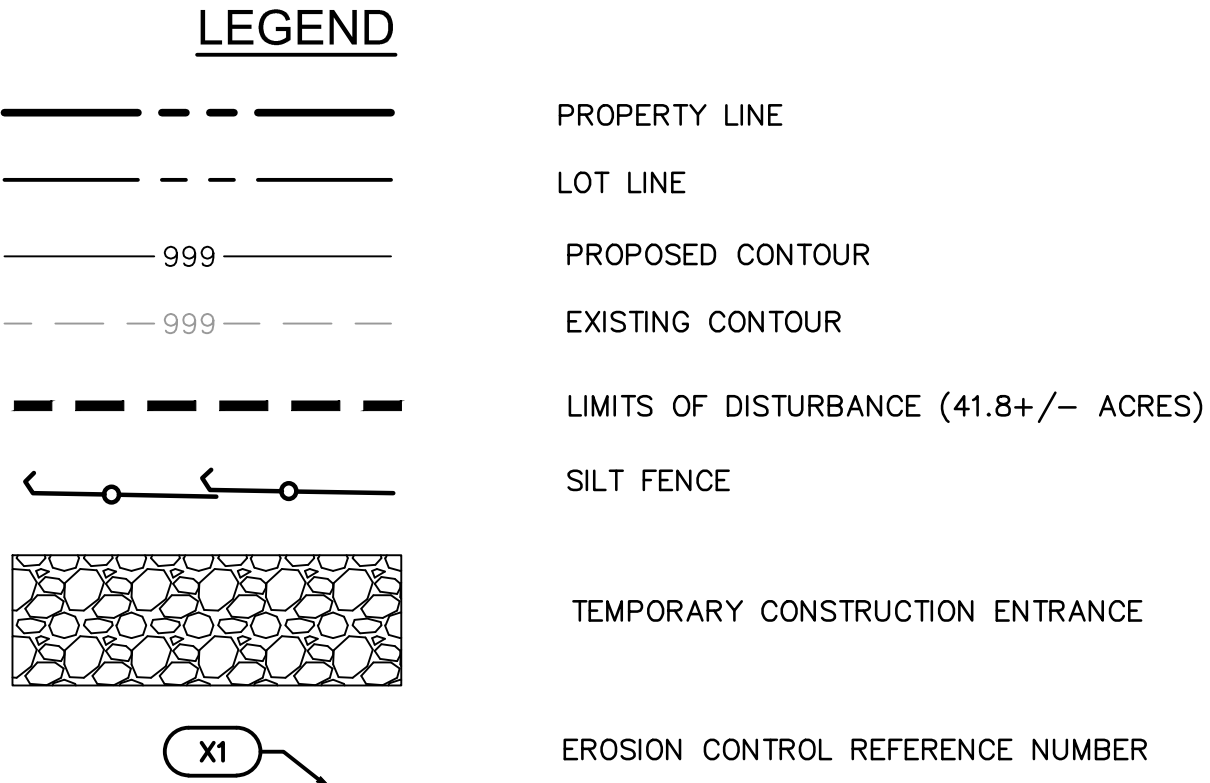
LEE'S SUMMIT MIDDLE SCHOOL #4
SE BAILEY ROAD AND SE COUNTRY LANE

R/

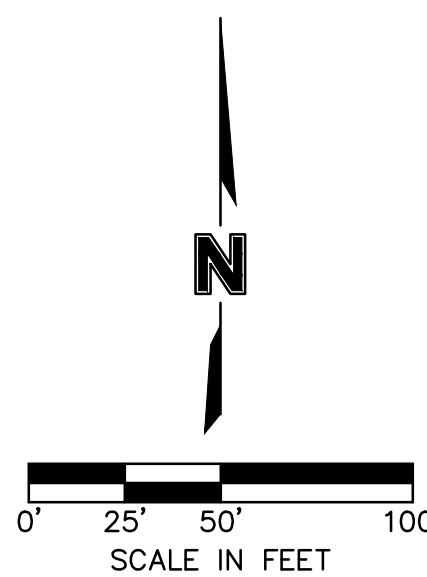
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checked by: _____ TP
approved by: _____ TP
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project no.: _____ 020-0103
drawing no.: C GRD01 0200103
date: _____ 06.10.20

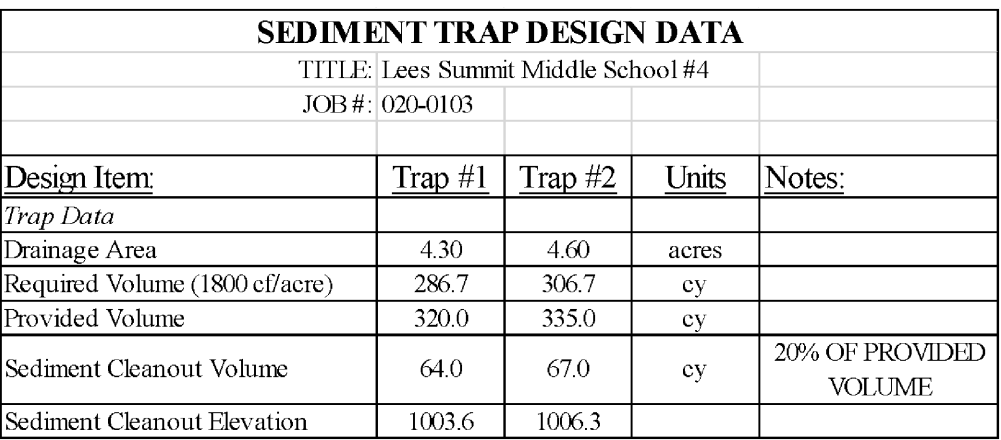
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3 of 14

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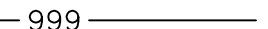
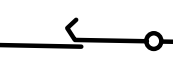
PROJECT STAGE	EROSION CONTROL BMP REFERENCE NO.	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
A – PRE DISTURBANCE	A1	CONSTRUCTION ENTRANCE	C	INSTALL AS INDICATED ON PLANS (IF SITE DISRUPTION LASTS LONGER THAN 14 DAYS)
	A2	SLOPE PROTECTION (SILT FENCE)	C	INSTALL AS INDICATED ON PLANS
	A3	TREE LINE PROTECTION (CONSTRUCTION FENCE)	D	INSTALL AS INDICATED ON PLANS
	A4	SWPPP SIGN	D	INSTALL AS INDICATED ON PLANS
B – MASS GRADING	B1	SLOPE PROTECTION (SILT FENCE)	D	INSTALL AS INDICATED ON PLANS
	B2	DIVERSION BERM		INSTALL AS INDICATED ON PLANS
	B3	SILTATION BASIN		INSTALL AS INDICATED ON PLANS
	B4	TEMPORARY SEDIMENT TRAP		INSTALL AS INDICATED ON PLANS
	B5	EROSION CONTROL BLANKET	N/A	INSTALL AS INDICATED ON PLANS
C – FINAL STABILIZATION	C1	REPLACE TOP SOIL, SEED MULCH	N/A	ESTABLISH PERENNIAL VEGETATION WITH A 70% DENSITY OVER 100% OF DISTURBED AREA.



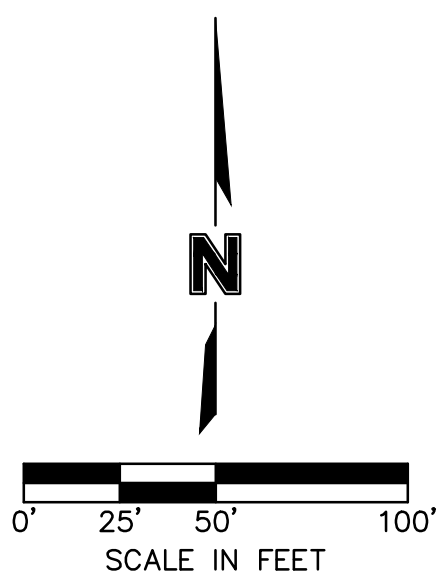


Berm #1	
Drainage Area To Berm:	7.2 Acres
Flow Rate:	14.16 cfs
Slope of Berm:	
Water Surface Depth:	2.00'
Required Depth of Berm:	17.1 in
Provided Depth of Berm:	18 in
Berm #2	
Drainage Area To Berm:	8.7 Acres
Flow Rate:	17.11 cfs
Slope of Berm:	
Water Surface Depth:	2.50'
Required Depth of Berm:	14.52 in
Provided Depth of Berm:	24 in
Berm #3	
Drainage Area To Berm:	2.6 Acres
Flow Rate:	5.11 cfs
Slope of Berm:	
Water Surface Depth:	1.50'
Required Depth of Berm:	8.4 in
Provided Depth of Berm:	11.2 in
Provided Depth of Berm:	15 in
Berm #4	
Drainage Area To Berm:	4.5 Acres
Flow Rate:	8.85 cfs
Slope of Berm:	
Water Surface Depth:	1.30'
Required Depth of Berm:	11.7 in
Provided Depth of Berm:	15.6 in
Provided Depth of Berm:	18 in

LEGEND

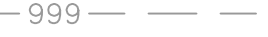
	PROPERTY LINE
	LOT LINE
	PROPOSED CONTOUR
	EXISTING CONTOUR
	LIMITS OF DISTURBANCE (41.8+/- ACRES)
	SILT FENCE
	TEMPORARY CONSTRUCTION ENTRANCE
	EROSION CONTROL REFERENCE NUMBER
	DIVERSION BERM

EROSION CONTROL STAGING CHART				
PROJECT STAGE	EROSION CONTROL BMP REFERENCE NO.	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
A – PRE DISTURBANCE	A1	CONSTRUCTION ENTRANCE	C	INSTALL AS INDICATED ON PLANS (IF SITE DISRUPTION LASTS LONGER THAN 14 DAYS)
	A2	SLOPE PROTECTION (SILT FENCE)	C	INSTALL AS INDICATED ON PLANS
	A3	TREE LINE PROTECTION (CONSTRUCTION FENCE)	D	INSTALL AS INDICATED ON PLANS
	A4	SWPPP SIGN	D	INSTALL AS INDICATED ON PLANS
B – MASS GRADING	B1	SLOPE PROTECTION (SILT FENCE)	D	INSTALL AS INDICATED ON PLANS
	B2	DIVERSION BERM		INSTALL AS INDICATED ON PLANS
	B3	SILTATION BASIN		INSTALL AS INDICATED ON PLANS
	B4	TEMPORARY SEDIMENT TRAP		INSTALL AS INDICATED ON PLANS
	B5	EROSION CONTROL BLANKET	N/A	INSTALL AS INDICATED ON PLANS
C – FINAL STABILIZATION	C1	REPLACE TOP SOIL, SEED MULCH	N/A	ESTABLISH PERENNIAL VEGETATION WITH A 70% DENSITY OVER 100% OF DISTURBED AREA.

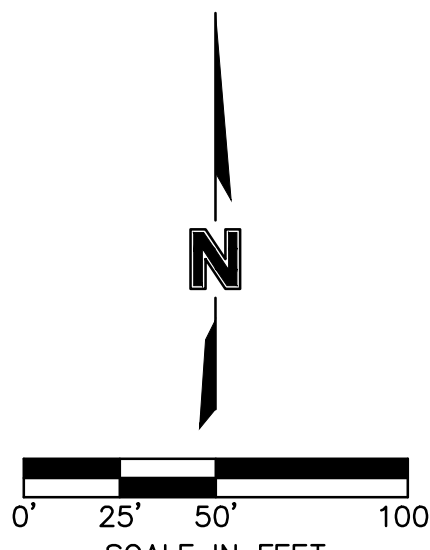




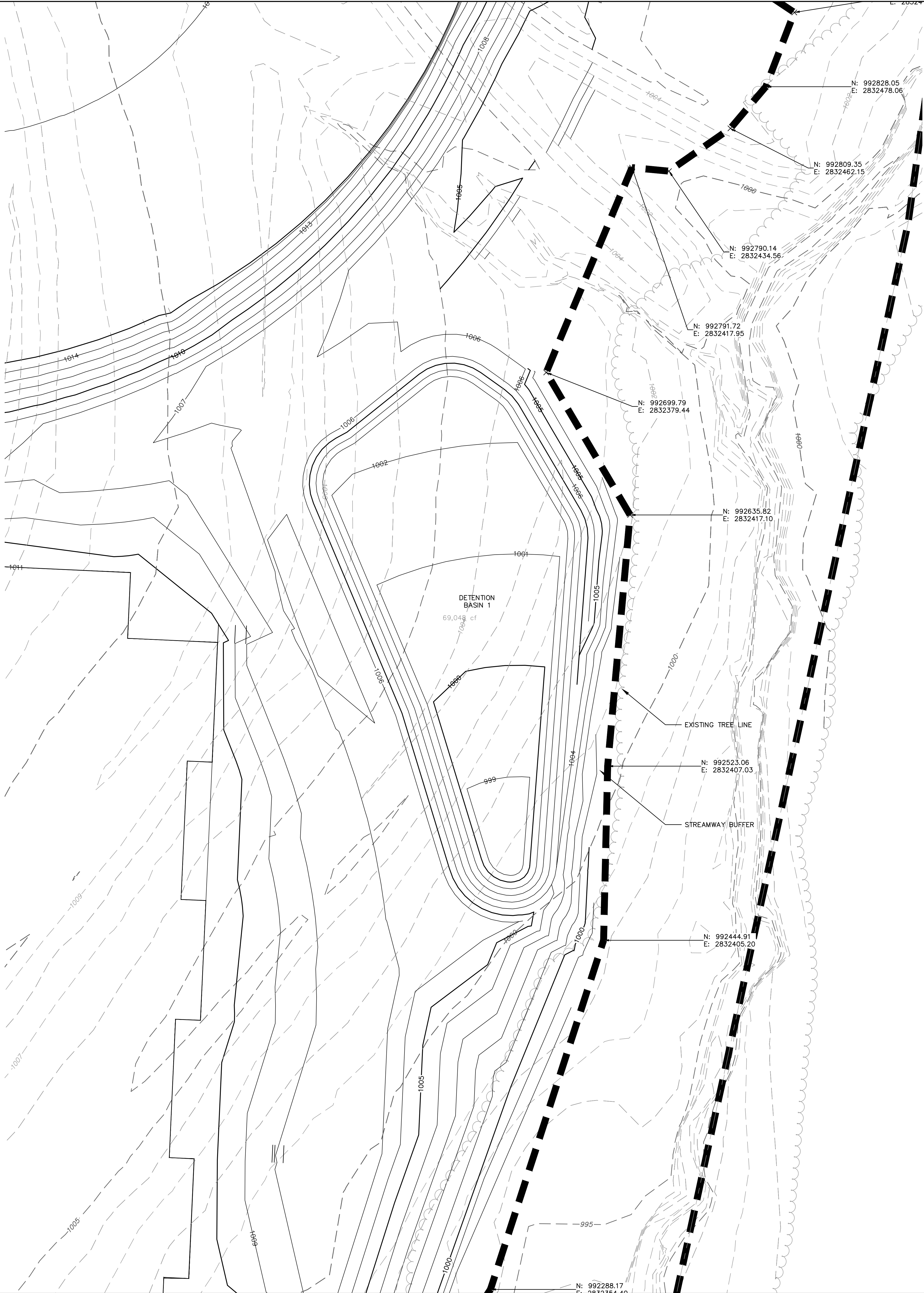
SEDIMENT BASIN & TRAP DESIGN DATA SUMMARY				
TITLE: Lees Summit Middle School #4				
JOB #: 020-0103				
Design Item	Basin 2	Units	Notes:	
Site Data:				
Infiltrary Drainage Area to Pond:	14.60	Acres		
Disturbed Tributary Drainage Area to Pond:	14.60	Acres		
80% (2 yr) Design Flow:	37.50	cfs		
4% (25 yr) Design Flow:	68.51	cfs		
Pond Data:				
Minimum Sediment Storage Volume:	1957	cu. yd.	134 cy/acre minimum	
Provided Sediment Storage Volume:	3423	cu. yd.	134 cy/acre minimum	
Bottom Elevation:	992.00	Ft.		
Sediment Cleanout Elevation:	994.84	Ft.	Elevation Equal to 50% of Original Design Volume.	
Top of Riser Elevation:	996.50	Ft.	Top of Dry Storage Volume.	
Emergency Spillway Elevation:	999.00	Ft.	at or Above Q-2 elev. 1.0 ft min above principal spillway	
Top of Dam Elevation:	1002.00	Ft.	1.0 ft min above Q-25 elev.	
Basin Shape Data:				
A = Area at Normal Pool	41000.00	SF		
L = Length of Flow Path	240.00	Ft.		
W = Effective Width = A/L	171.00	ft		
Length to Width Ratio = L/W	1.40		If Length to Width Ratio is less than 2, baffles are required	
Principal Spillway Data:				
Riser Pipe Diameter:	48.00	in	15-inch min. Size for 2 year flow minimum	
Jarrell Pipe Diameter:	30	in	15-inch min. Size for 2 year flow minimum	
Concrete Base size for Riser Pipe	11.69	cu. yd.	Size to Prevent Rotation. 1.25 safety factor required.	
			Design to provide specific details and calculations per application to dewater in 48 to 72 hours	
Skimmer Size:	4.00	in		
Emergency Spillway Data:				
Design Width of Spillway:	180.00	Ft.		
Design Depth in Spillway:	0.26	Ft.	Use $Q_{25} = C_b M^{1/3} / (3/2)$ where $C_b = 2.63$, b is the Width of Spillway	
Design Velocity in Spillway:	1.38	Ft/sec		
Lining Material:	LANDFILL	N/A		
	450 TRM			

<u>LEGEND</u>	
	PROPERTY LINE
	LOT LINE
	PROPOSED CONTOUR
	EXISTING CONTOUR
	GRAVEL FILTER BAGS
	SILT FENCE
	LIMITS OF DISTURBANCE (41.8+/- ACRES)
	TEMPORARY CONSTRUCTION ENTRANCE
	EROSION CONTROL REFERENCE NUMBER

EROSION CONTROL STAGING CHART				
PROJECT STAGE	EROSION CONTROL BMP REFERENCE NO.	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
A – PRE DISTURBANCE	A1	CONSTRUCTION ENTRANCE	C	INSTALL AS INDICATED ON PLANS (IF SITE DISRUPTION LASTS LONGER THAN 14 DAYS)
	A2	SLOPE PROTECTION (SILT FENCE)	C	INSTALL AS INDICATED ON PLANS
	A3	TREE LINE PROTECTION (CONSTRUCTION FENCE)	D	INSTALL AS INDICATED ON PLANS
	A4	SWPPP SIGN	D	INSTALL AS INDICATED ON PLANS
B – MASS GRADING	B1	SLOPE PROTECTION (SILT FENCE)	D	INSTALL AS INDICATED ON PLANS
	B2	DIVERSION BERM		INSTALL AS INDICATED ON PLANS
	B3	SILTATION BASIN		INSTALL AS INDICATED ON PLANS
	B4	TEMPORARY SEDIMENT TRAP		INSTALL AS INDICATED ON PLANS
	B5	EROSION CONTROL BLANKET	N/A	INSTALL AS INDICATED ON PLANS
C – FINAL STABILIZATION	C1	REPLACE TOP SOIL, SEED MULCH	N/A	ESTABLISH PERENNIAL VEGETATION WITH A 70% DENSITY OVER 100% OF DISTURBED AREA.

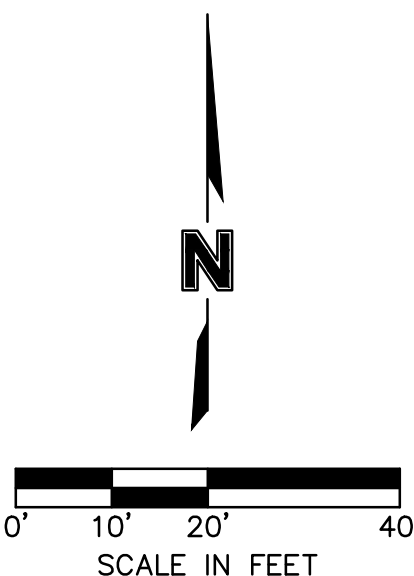


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- LEGEND**
- PROPERTY LINE
 - 995 EXISTING MAJOR CONTOUR
 - 995 EXISTING MINOR CONTOUR
 - 998 PROPOSED MAJOR CONTOUR
 - 998 PROPOSED MINOR CONTOUR

SEDIMENT BASIN & TRAP DESIGN DATA SUMMARY			
TITLE: Lee's Summit Middle School #4			
JOB #: 020-0103			
Design Item	Basin 1	Units	Notes
<i>Site Data:</i>			
Tributary Drainage Area to Pond:	12.30	Acres	
Disturbed Tributary Drainage Area to Pond:	12.30	Acres	
50% (2 yr) Design Flow:	29.95	cfs	
4% (25 yr) Design Flow:	51.95	cfs	
<i>Pond Data:</i>			
Maximum Sediment Storage Volume:	1649	cu. yd.	134 cy/acre minimum
Provided Sediment Storage Volume:	2360	cu. yd.	134 cy/acre minimum
Bottom Elevation:	992.00	ft.	
Sediment Cleanout Elevation:	994.84	ft.	Elevation Equal to 50% of Original Design Volume
Top of Riser Elevation:	996.96	ft.	Top of Dry Storage Volume
Emergency Spillway Elevation:	999.00	ft.	1 ft. or Above Q ₂₅ elev. 1.0 ft. min. above principal spillway
Top of Dam Elevation:	1002.00	ft.	1.0 ft. min. above Q ₂₅ elev.
<i>Basin Shape Data:</i>			
A = Area at Normal Pool	18000.00	SF	
L = Length of Flow Path	185.00	ft.	
We = Effective Width = A/L	171.00	ft.	
Length to Width Ratio = L/We	1.42		If Length to Width Ratio is less than 2, baffles are required
<i>Principal Spillway Data:</i>			
Riser Pipe Diameter:	48.00	in.	15-inch min. Size for 2 year flow minimum
Barrell Pipe Diameter:	36	in.	15-inch min. Size for 2 year flow minimum
Concrete Base size for Riser Pipe	6.97	cu. yd.	Size to Prevent Floation. 1.25 safety factor required.
Skimmer Size:	4.00	in.	application to dewater in 48 to 72 hours
<i>Emergency Spillway Data:</i>			
Design Width of Spillway:	100.00	ft.	
Design Depth in Spillway:	0.26	ft.	Use $Q_{25} = C_b B^2 (1/32)$ where $C_b = 2.63$, b is the Width of Spillway
Design Velocity in Spillway:	1.56	ft/sec	
Lining Material:	LANDLOK 450 TRM	N/A	



SILTATION BASIN 1 GRADING DETAIL
LAND DISTURBANCE PLANS
LEE'S SUMMIT MIDDLE SCHOOL #4
SE BAILEY ROAD AND SE COUNTRY LANE
LEE'S SUMMIT, MISSOURI

drawn by: RLK
checked by: TP
approved by: TP
GNAC by: ENG
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SHEET
10 of 14

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REVISED PER CITY COMMENTS

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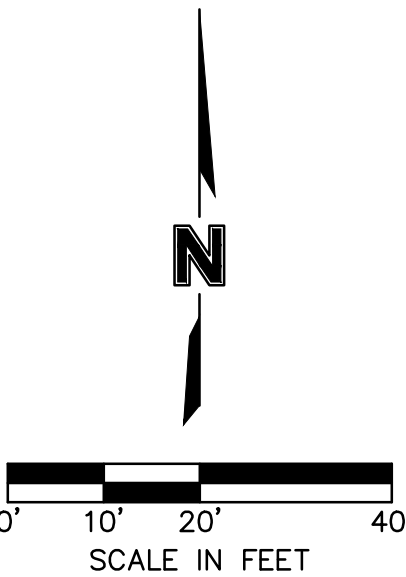
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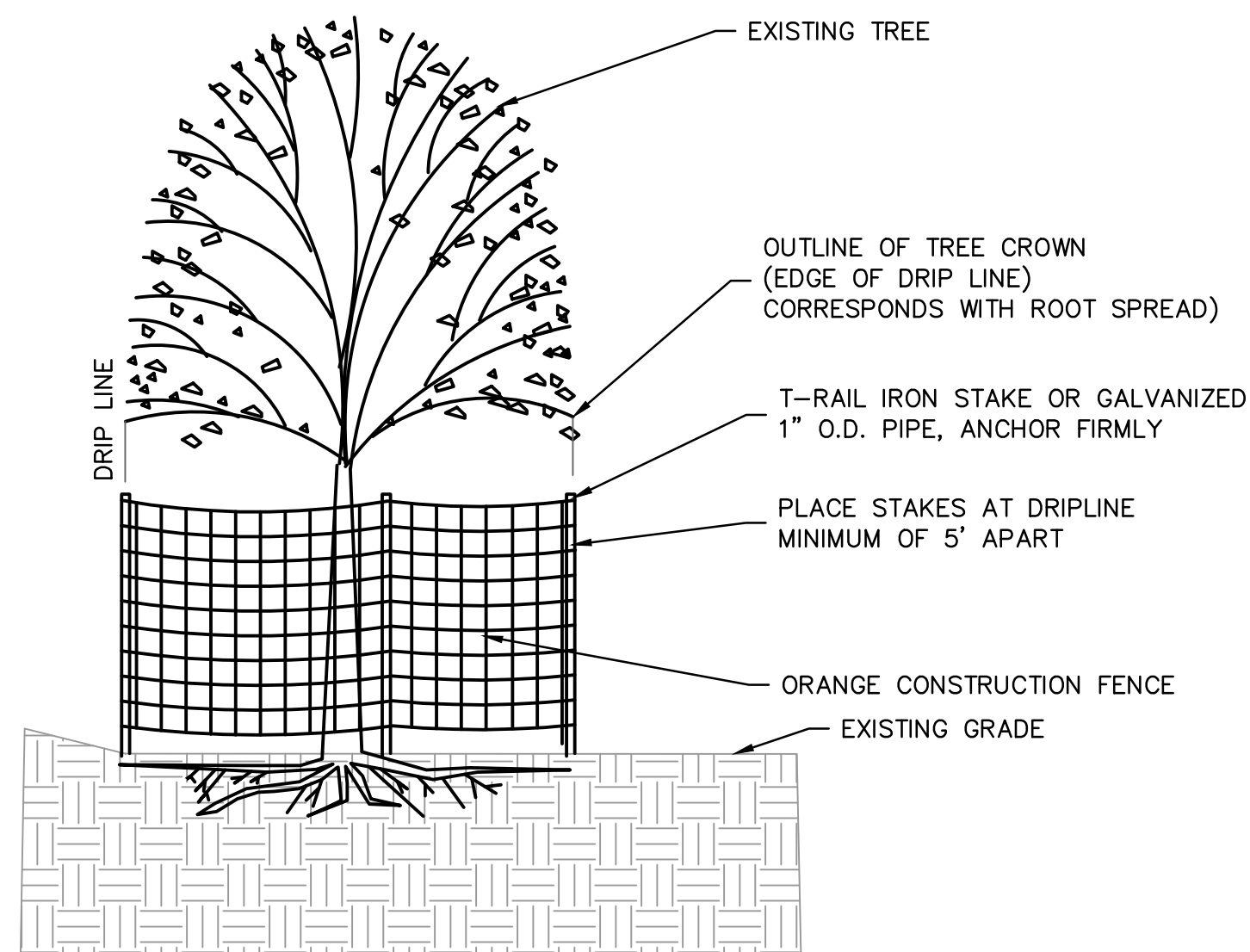
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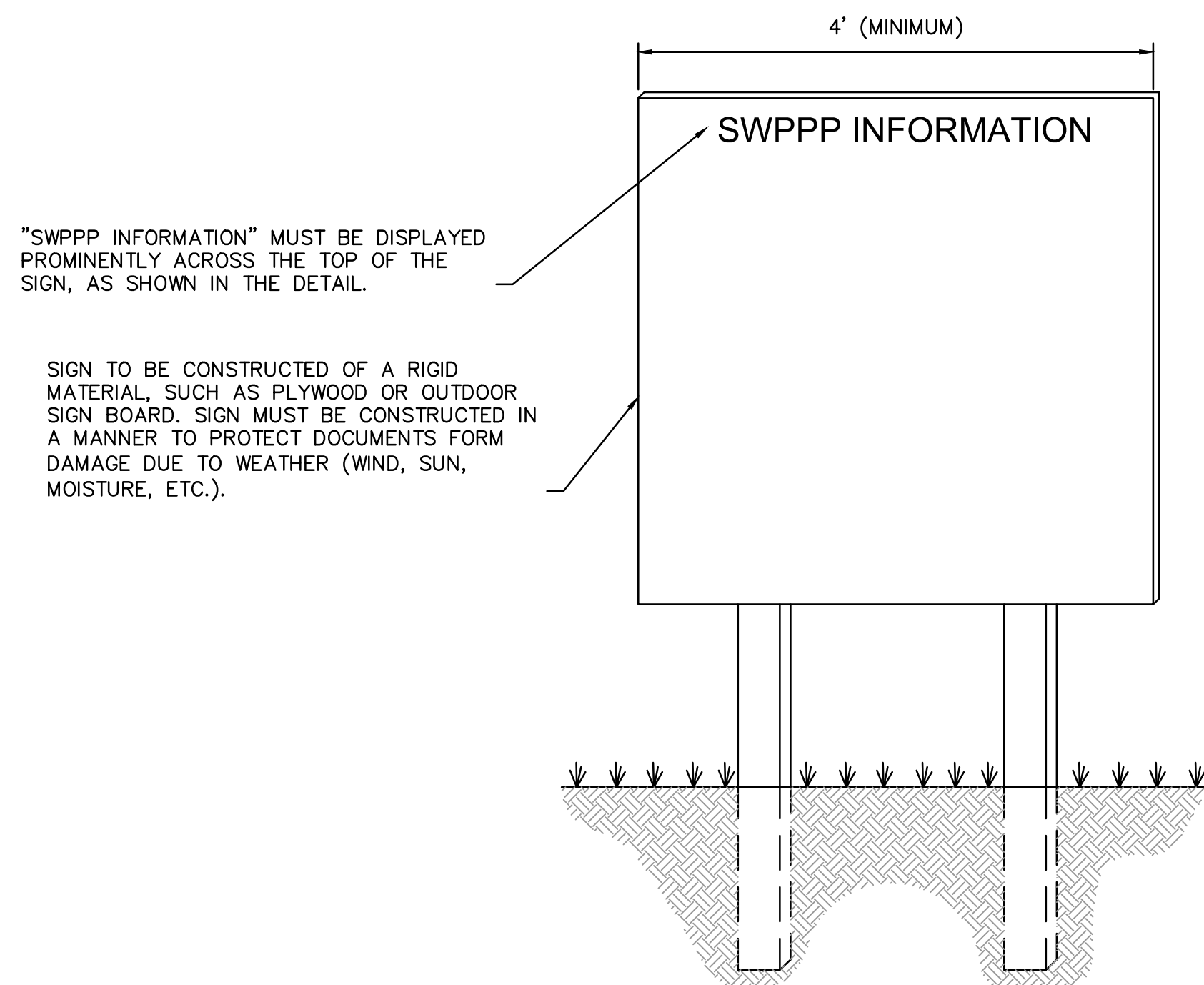
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drawn by: RLK
checked by: TP
approved by: TP
QA/QC by: ENG
project no.: 020-0103
drawing no.: C GRD01 0200103
date: 06.10.20





TREE PROTECTION DETAIL
NOT TO SCALE



NOTE:

1. THE SWPPP INFORMATION SIGN MUST BE LOCATED NEAR THE ENTRANCE OF SITE, SUCH THAT IT IS ACCESSIBLE AND VIEWABLE BY THE GENERAL PUBLIC, BUT NOT OBSTRUCTING VIEW AS TO CAUSE A SAFETY HAZARD.
2. ALL POSTED DOCUMENTS REQUIRED BY THE DEPARTMENT OF NATURAL RESOURCES MUST BE MAINTAINED IN A CLEARLY READABLE CONDITION ALL TIME THROUGHOUT CONSTRUCTION AND UNTIL THE NOTICE-OF-TERMINATION (NOT) IS FILED FOR THE PERMIT.
3. CONTRACTOR SHALL POST OTHER STORMWATER AND/OR EROSION CONTROL RELATED PERMITS ON THE SIGN AS REQUIRED BY THE GOVERNING AGENCY.
4. SIGN SHALL BE LOCATED OUTSIDE PUBLIC RIGHT-OF-WAY AND EASEMENTS UNLESS APPROVED BY THE GOVERNING AGENCY.
5. CONTRACTOR IS RESPONSIBLE FOR ENSURING STABILITY OF THE SWPPP INFORMATION SIGN.

SWPPP INFORMATION SIGN

NOT TO SCALE

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