

NAPA VALLEY - 5th PLAT
Street, Stormwater, Master Drainage Plan, and Erosion and Sediment Control
LOTS 166-196

PART OF THE NW 1/4 SECTION 36. TOWNSHIP 47 N, RANGE 32 W
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

CONSTRUCTION AND DESIGN NOTES:

STREET & STORM SEWERS:

1 ~ STREET PAVEMENT SHALL CONSIST OF TYPE CG-2 CURBS WITH PAVEMENT PER TABLE LS-2 OF THE LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL

RESIDENTIAL LOCAL STREET SEE BELOW FOR TYPICAL SECTION.
OPTION 1) 4" TYPE 5 ASPHALT BASE AND 2" TYPE 5 OR 6 ASPHALT SURFACE OVER A 6" MoDOT TYPE 5 BASE AND A SUBGRADE MIXTURE OF 6" FLY ASH
STABILIZED SUBGRADE IN ACCORDANCE WITH THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.
OPTION 2) 4" TYPE 5 ASPHALT BASE AND 2" TYPE 5 OR 6 ASPHALT SURFACE OVER 10" MoDOT TYPE 5 BASE OVERTOP A BIAXIAL GEOGRID PER THE CITY'S APPROVED PRODUCT LIST.
2 ~ STORM SEWER PIPE SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) AS APPROVED BY CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.

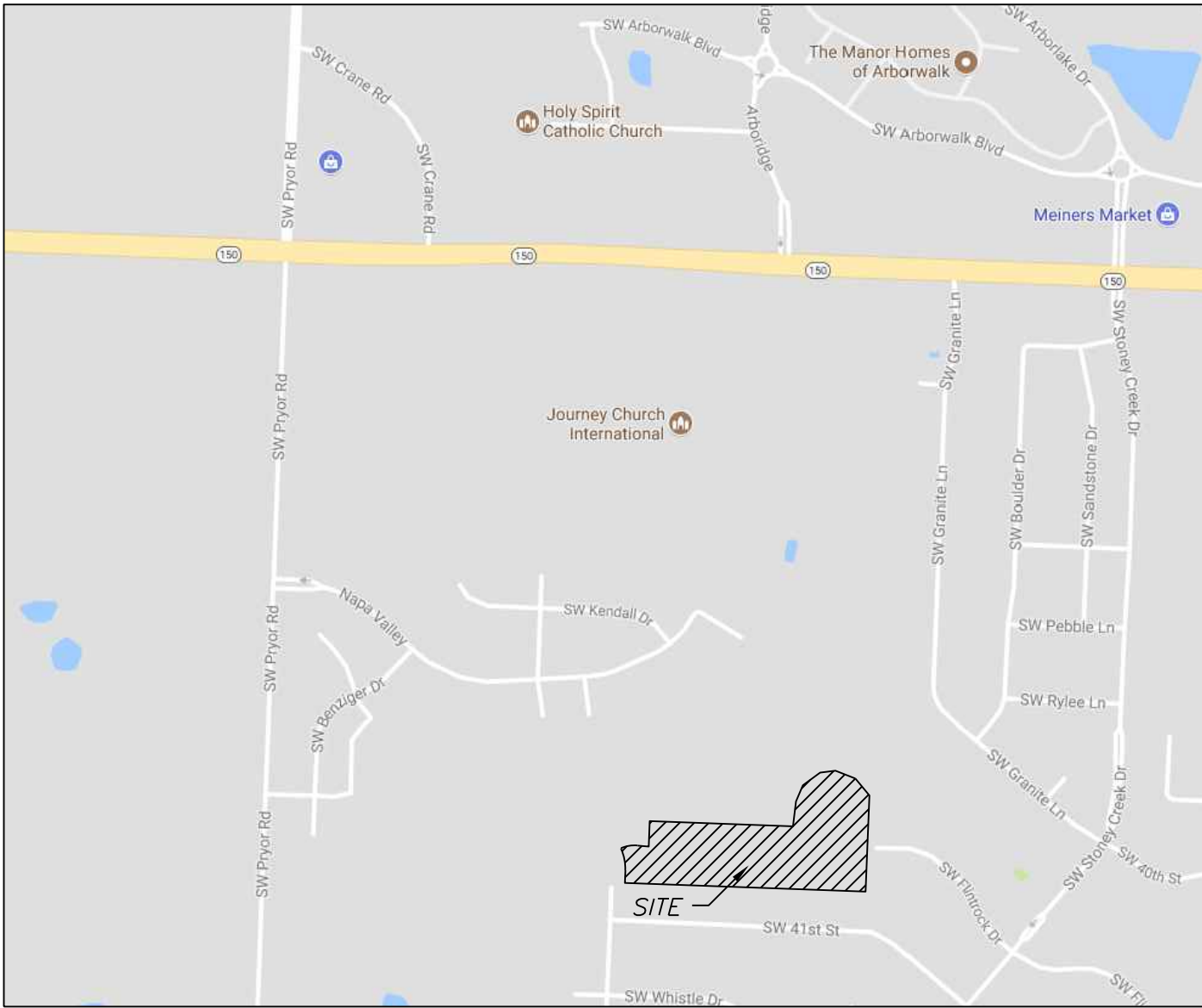
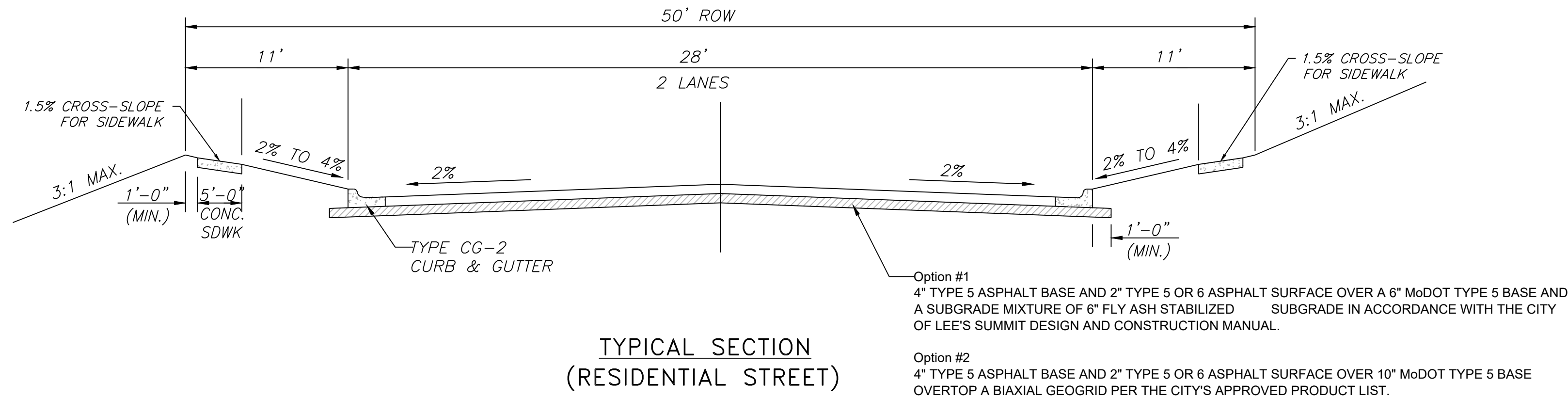
3 ~ JUNCTION BOXES SHALL BE PER CITY OF LEE'S SUMMIT STANDARD DRAWING NO. STM-3. FIELD INLETS SHALL BE PER CITY OF LEE'S SUMMIT STANDARD DRAWING STM-2. TOEWALLS SHALL BE PER CITY OF LEE'S SUMMIT DRAWING NO. STM-5. JUNCTION BOXES SHALL BE PER CITY OF LEE'S SUMMIT STM-3. ROCK LINING AND RIP RAP SHALL BE PER CITY OF LEE'S SUMMIT.

GENERAL NOTES:

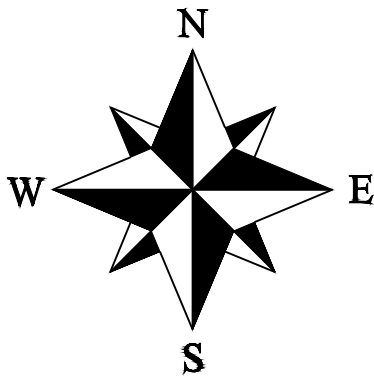
1 ~ ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
2 ~ ALL REQUIRED EASEMENTS WITHIN THE BOUNDARY OF THIS PROJECT SHALL BE PROVIDED FOR ON THE FINAL PLAT.
3 ~ ANY REQUIRED EASEMENT LOCATED OUTSIDE OF THE BOUNDARY OF THIS PROJECT SHALL BE PROVIDED FOR BY SEPARATE INSTRUMENT PRIOR TO ISSUANCE OF CONSTRUCTION PERMITS.
4 ~ THE CONTRACTOR SHALL CONTACT THE CITY'S DEVELOPMENT SERVICES ENGINEERING INSPECTION TO SCHEDULE A PRE-CONSTRUCTION MEETING WITH A FIELD ENGINEERING INSPECTOR PRIOR TO ANY LAND DISTURBANCE WORK AT (816) 969-1200.
5 ~ THE CONTRACTOR SHALL NOTIFY ENGINEERING SOLUTIONS AT 816.623.9888 OF ANY CONFLICT WITH THE IMPROVEMENTS PROPOSED BY THESE PLANS AND SITE CONDITIONS.
6 ~ THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND OBTAIN THE APPROPRIATE BLASTING PERMITS FOR A REQUIRED BLASTING. IF BLASTING IS ALLOWED, ALL BLASTING SHALL CONFORM TO STATE REGULATIONS AND LOCAL ORDINANCES.

OIL - GAS WELLS
ACCORDING TO EDWARD ALTON MAY JR'S ENVIRONMENTAL IMPACT STUDY OF ABANDONED OIL AND GAS WELLS IN LEE'S SUMMIT, MISSOURI IN 1995, THERE ARE NOT OIL AND GAS WELLS WITHIN 185 FEET OF THE PROPERTY AS SURVEYED HEREON.

FLOOD INFORMATION:
THE SUBJECT PROPERTY SURVEYED LIES WITHIN A FLOOD ZONE DESIGNATED ZONE (X), AREAS LOCATED OUTSIDE THE 100 YEAR FLOOD PLAIN, PER F.E.M.A. MAP, COMMUNITY PANEL NO. 29095C0412G EFFECTIVE DATE: JANUARY 20, 2017.



SITE LOCATION MAP
NOT TO SCALE



INDEX OF SHEETS:

- C.001 ~ STREET & STORM COVER SHEET
- C.100 ~ SITE PLAN
- C.101 ~ STREET SIGNAGE
- C.200 ~ MASTER DRAINAGE PLAN SHEET 1 OF 3 GRADING PLAN - SWPPP
- C.201 ~ MASTER DRAINAGE PLAN SHEET 2 OF 3 SPOT ELEVATIONS
- C.202 ~ MASTER DRAINAGE PLAN SHEET 3 OF 3 DRAINAGE AREA MAP
- C.203 ~ STREET PLAN & PROFILE
- C.204 ~ STREET PLAN & PROFILE
- C.205 ~ SIDEWALK AND INTERSECTION PLAN
- C.300 ~ STORM SEWER GENERAL LAYOUT
- C.301 ~ STORM SEWER PLAN & PROFILE
- C.302 ~ STORM SEWER PLAN & PROFILE
- C.303 ~ STORM SEWER TABLES 10 AND 100 YEAR
- C.600 ~ CONSTRUCTION DETAILS
- C.601 ~ CONSTRUCTION DETAILS

UTILITY COMPANIES:

THE FOLLOWING LIST OF UTILITY COMPANIES IS PROVIDED FOR INFORMATION ONLY. WE DO NOT OFFER ANY GUARANTEE OR WARRANTY THAT THIS LIST IS COMPLETE OR ACCURATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES THAT MAY BE AFFECTED BY THE PROPOSED CONSTRUCTION AND VERIFYING THE ACTUAL LOCATION OF EACH UTILITY LINE. THE CONTRACTOR SHALL NOTIFY ENGINEERING SOLUTIONS AT 816.623.9888 OF ANY CONFLICT WITH PROPOSED IMPROVEMENTS.
EVERGY ~ 298-1196
MISSOURI GAS ENERGY ~ 756-5261
SOUTHWESTERN BELL TELEPHONE ~ 761-5011
COMCAST CABLE ~ 795-1100
WILLIAMS PIPELINE ~ 422-6300
CITY OF LEE'S SUMMIT PUBLIC WORKS ~ 969-1800
CITY OF LEE'S SUMMIT DEVELOPMENT ENGINEERING INSPECTION AT 816.969.1200
CITY OF LEE'S SUMMIT WATER UTILITIES ~ 969-1900
MISSOURI ONE CALL (DIG RITE) ~ 1-800-344-7483

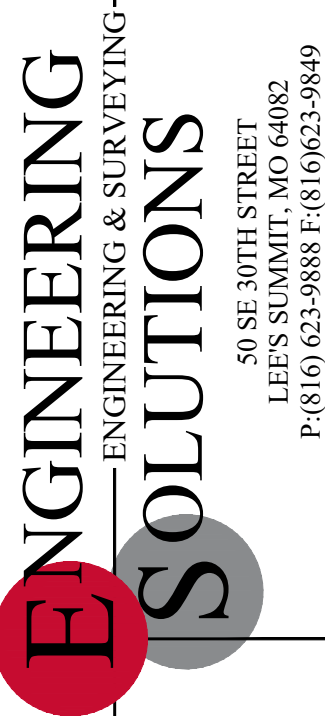
- LEGEND:
- B/L - BUILDING SET-BACK
 - C/A - COMMON AREA
 - D/E - DRAINAGE EASEMENT
 - FND. - FOUND
 - L/E - LANDSCAPE EASEMENT
 - L.N.A. - LIMITS OF NO ACCESS
 - R/W - RIGHT OF WAY
 - SAN - SANITARY SEWER LINE
 - S/W - SIDEWALK
 - U/E - UTILITY EASEMENT
 - W - WATER LINE
 - ST - STORM SEWER LINE

Summary of Quantities:

ITEM AND DESCRIPTION	UNIT	ESTIMATED QUANTITY
ASPHALT PAVING	S.Y.	4,062.00
CURBING	FT	2,810.00
5' SIDEWALK	S.F.	6,895.00
MoDOT Type 5 Base	S.Y.	4,997.00
GEOGRID	S.Y.	4,997.00
ADA SIDEWALK RAMP	UNIT	4
STREET SIGNAGE	UNIT	2
CLEARING, GRADING & GRUBBING	LS	1
SILT FENCE	FT	8,500.00
INLET PROTECTION	UNIT	12.00
SEEDING / MULCHING/ FERTILIZING	AC	9.65
CONST. ENTRANCE	UNIT	1.00
STORM		
15" HDPE END SECTION / TOE WALL	LS	2.00
24" HDPE END SECTION / TOE WALL	LS	1.00
24" HDPE	FT	323.02
18" HDPE	FT	161.68
15" HDPE	FT	626.39
4' x 4' STORM FIELD INLET	EA	3.00
5' x 4' STORM CURB INLET	EA	7.00

ENGINEER'S CERTIFICATION:

I HEREBY CERTIFY THAT THIS PROJECT HAS BEEN DESIGNED AND THESE PLANS PREPARED IN ACCORDANCE WITH THE CURRENT DESIGN CRITERIA OF THE CITY OF LEE'S SUMMIT, MISSOURI AND THE STATE OF MISSOURI. I FURTHER CERTIFY THAT THESE PLANS WERE DESIGNED IN ACCORDANCE TO AASHTO STANDARDS.

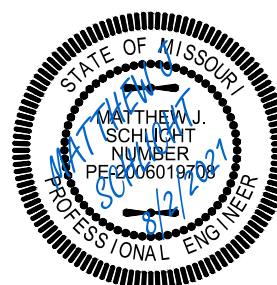


Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1685
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri

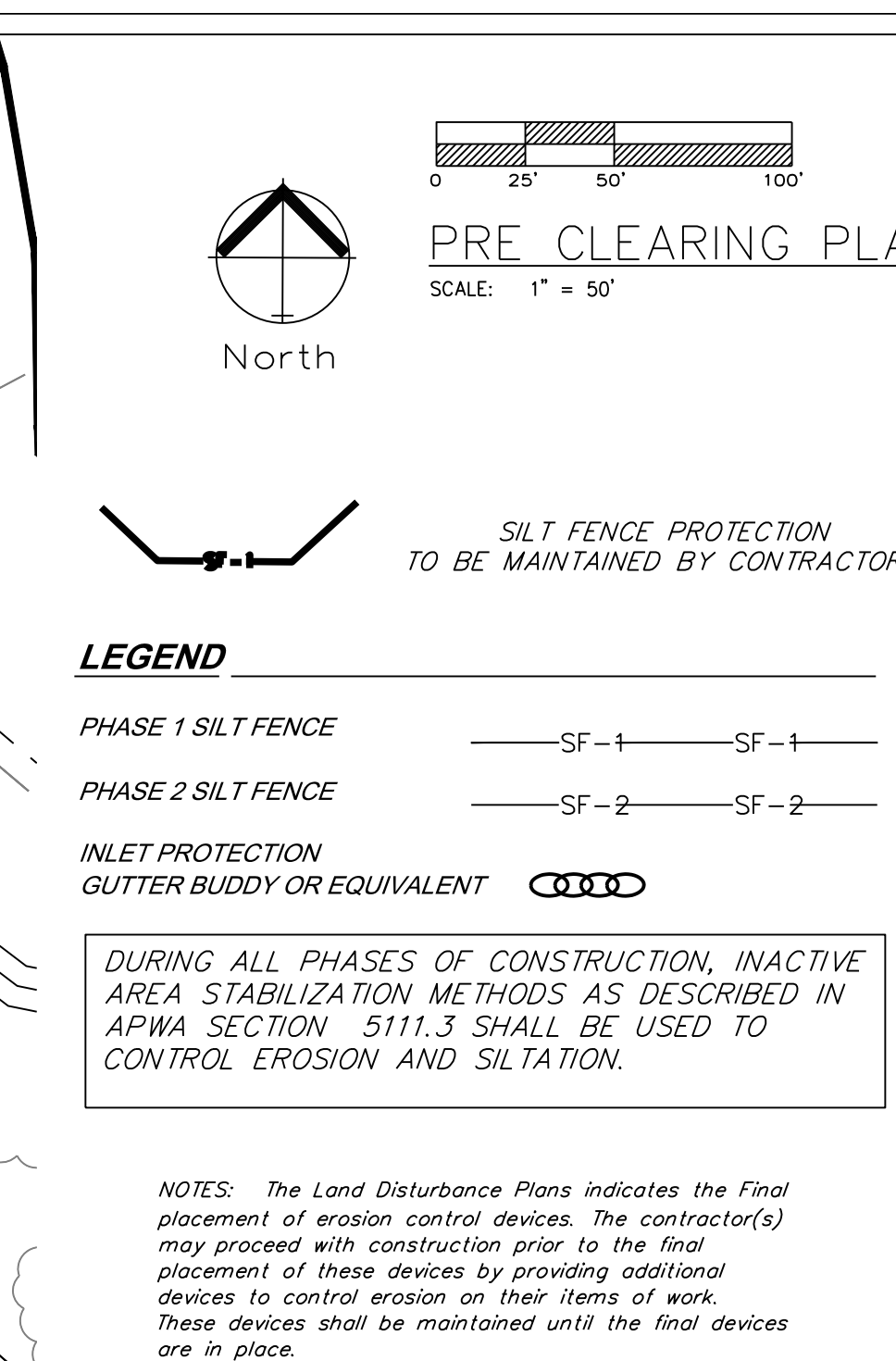
Project: NAPA VALLEY LS100
Issue Date: August 2, 2021

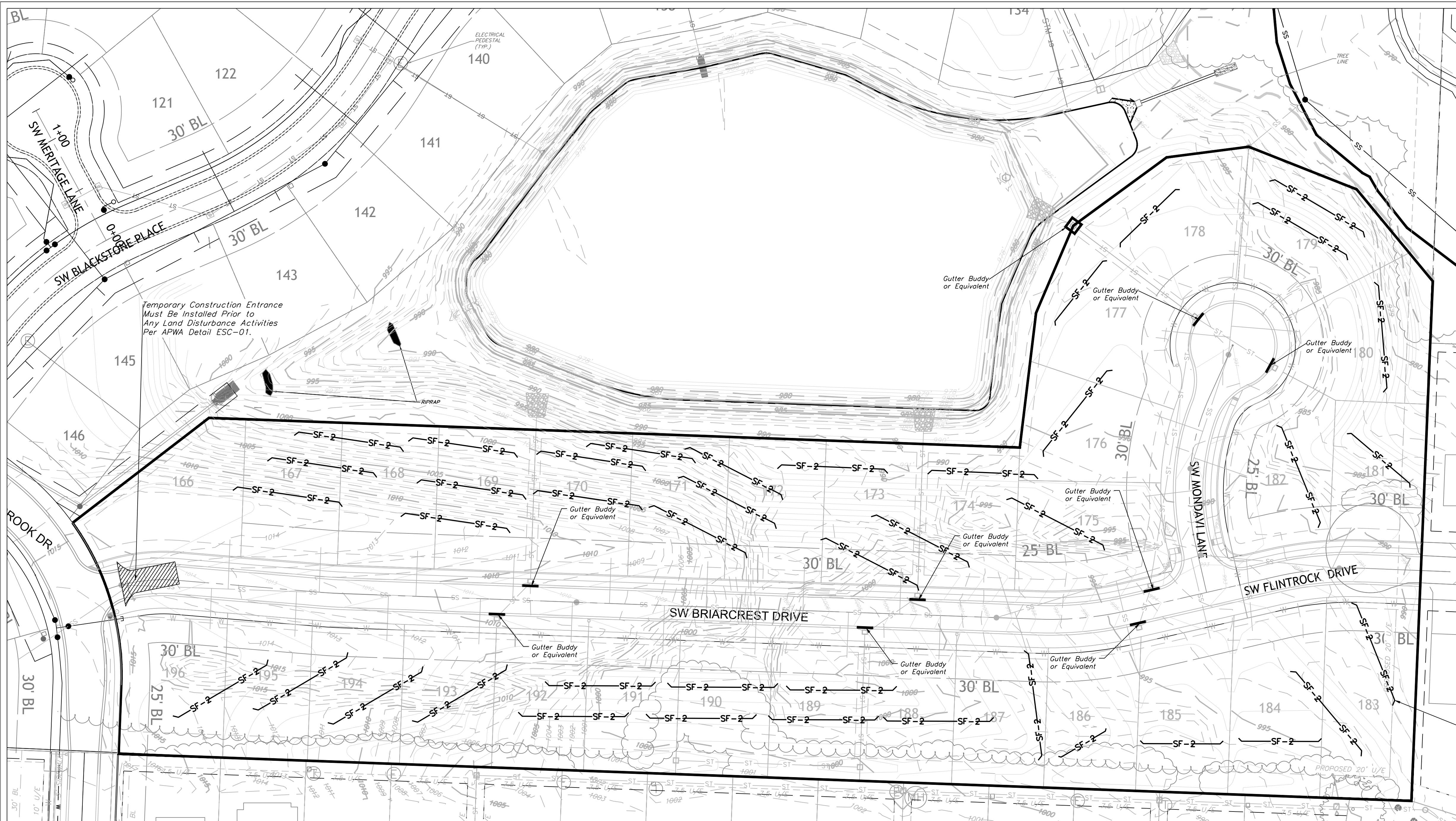
Cover Sheet
Street, Stormwater, Master Drainage Plan, and Erosion and Sediment Control Plans or: Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri



Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS





INACTIVE AREA STABELIZATION PLAN

SCALE: 1" = 50'

SILT FENCE PROTECTION TO BE MAINTAINED BY CONTRACTOR

LEGEND

- Phase 1 Silt Fence — SF-1 — SF-1 —
Phase 2 Silt Fence — SF-2 — SF-2 —
Proposed Storm Line — S — S — S —
Existing Storm Line — X-STM- - - - -
Inlet Protection
Gutter Buddy or Equivalent

DURING ALL PHASES OF CONSTRUCTION, INACTIVE AREA STABILIZATION METHODS AS DESCRIBED IN APWA SECTION 5111.3 SHALL BE USED TO CONTROL EROSION AND SILTATION.

NOTES: The Land Disturbance Plans indicates the Final placement of erosion control devices. The contractor(s) may proceed with 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.

MAINTENANCE:

TO MAINTAIN THE EROSION AND SEDIMENT CONTROLS, THE FOLLOWING PROCEDURES WILL BE PERFORMED:
SEDIMENT CAPTURE DEVICES: SEDIMENT WILL BE REMOVED FROM THE UPSTREAM OR UPSLOPE SIDE OF THE FILTER FABRIC FENCES, WHEN THE DEPTH OF ACCUMULATED SEDIMENT REACHES ABOUT ONE-THIRD THE HEIGHT OF THE STRUCTURE.
STORM SEWER INLETS: ANY SEDIMENT IN THE STORM SEWER INLETS WILL BE REMOVED AND DISPOSED OF PROPERLY.
TEMPORARY CONTROLS: ALL TEMPORARY CONTROLS WILL BE REMOVED AFTER THE DISTURBED AREAS HAVE BEEN STABILIZED.

INSPECTION PROCEDURES:

INSPECTIONS WILL BE DONE BY THE RESPONSIBLE PERSON(S) AT LEAST ONCE EVERY WEEK AND WITHIN 24 HOURS EACH STORM EVENT PRODUCING ANY AMOUNT OF RAINFALL. AREAS THAT HAVE BEEN RESEEDED WILL BE INSPECTED REGULARLY AFTER SEED GERMINATION TO ENSURE COMPLETE COVERAGE OF EXPOSED AREAS. DISTURBED AREAS THAT HAVE NOT BEEN FINALLY STABILIZED SHALL HAVE ALL POLLUTION CONTROL MEASURES INSPECTED FOR PROPER INSTALLATION, OPERATION AND MAINTENANCE. LOCATIONS WHERE STORM WATER LEAVES THE SITE SHALL BE INSPECTED FOR EVIDENCE OF EROSION OR SEDIMENT DEPOSITION. ANY DEFICIENCIES SHALL BE NOTED IN A REPORT OF THE INSPECTION AND CORRECTED WITHIN SEVEN CALENDAR DAYS OF THE INSPECTION. THE PERMITTEE SHALL PROMPTLY NOTIFY THE SITE CONTRACTORS RESPONSIBLE FOR OPERATION AND MAINTENANCE OF POLLUTION CONTROL DEVICES OF DEFICIENCIES.

IF THE EXISTING GROUND COVER IS NATURAL GRASS, DISTURBED AREAS SHALL BE TEMPORARILY SEEDDED WITH WHEAT/RYE AT A RATE OF 1.5 POUNDS PER 1000 SQUARE FEET. PERMANENT SEEDING SHALL CONSIST OF 90% IN THREE EQUAL PARTS OF THIN BLADE, TURF-TYPE, TALL FESCUE AND 10% BLUEGRASS SEED AT A RATE OF 10 POUNDS PER 1000 SQUARE FEET. BOTH TEMPORARY AND PERMANENT SEEDS SHALL BE MULCHED AND WATERED TO MAINTAIN THE PROPER MOISTURE LEVEL OF THE SOIL TO ESTABLISH GRASS. NEW GRASS SHALL BE WATERED AND MAINTAINED UNTIL IT REACHES A HEIGHT OF 3 INCHES. ANY BARE AREAS SHALL BE RESEEDED.

ALL EROSION CONTROL DEVICES SHALL BE REMOVED BY GENERAL CONTRACTOR AFTER SITE STABILIZATION IS COMPLETE AND APPROVED BY ENGINEER.

THE DEVELOPER WILL DESIGNATE A QUALIFIED PERSON OR PERSONS TO PERFORM THE FOLLOWING INSPECTIONS:
STABILIZATION MEASURES: DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION WILL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM. AFTER A PORTION OF THE SITE IS FINALLY STABILIZED, INSPECTIONS WILL BE CONDUCTED AT LEAST ONCE EVERY MONTH THROUGHOUT THE LIFE OF THE PROJECT. CONTRACTOR CAN CONTACT ENGINEERING SOLUTIONS FOR COPIES OF THE INSPECTION FORM TO BE USED FOR STABILIZATION MEASURES.

STRUCTURAL CONTROLS: FILTER FABRIC FENCES AND ALL OTHER EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN WILL BE INSPECTED REGULARLY FOR PROPER POSITIONING, ANCHORING, AND EFFECTIVENESS IN TRAPPING SEDIMENTS. SEDIMENT WILL BE REMOVED FROM THE UPSTREAM OR UPSLOPE SIDE OF THE FILTER FABRIC. CONTRACTOR CAN CONTACT ENGINEERING SOLUTIONS FOR COPIES OF THE INSPECTION FORM TO BE USED FOR STABILIZATION MEASURES.

DISCHARGE POINTS: DISCHARGE POINTS OR LOCATIONS WILL BE INSPECTED TO DETERMINE WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT AMOUNTS OF POLLUTANTS FROM ENTERING RECEIVING WATERS.

CONSTRUCTION ENTRANCE: LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE WILL BE INSPECTED FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING.

A LOG OF EACH INSPECTION SHALL BE KEPT. THE INSPECTION REPORT IS TO INCLUDE THE FOLLOWING MINIMUM INFORMATION: INSPECTOR'S NAME, DATE OF INSPECTION, OBSERVATIONS RELATIVE TO THE EFFECTIVENESS OF THE POLLUTION CONTROL DEVICES, ACTIONS TAKEN OR NECESSARY TO CORRECT DEFICIENCIES, AND LISTING OF AREAS WHERE LAND DISTURBANCE OPERATIONS HAVE PERMANENTLY OR TEMPORARILY STOPPED. THE INSPECTION REPORT SHALL BE SIGNED BY THE PERMITTEE OR BY THE PERSON PERFORMING THE INSPECTION IF DULY AUTHORIZED TO DO SO.

EROSION CONTROL DESCRIPTION:

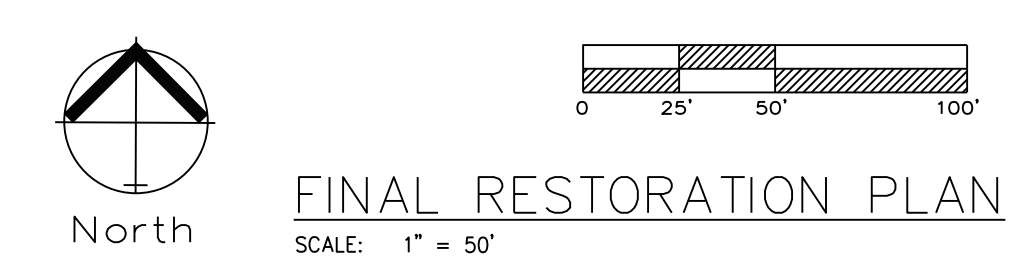
- 1.) SILT FENCE SHALL BE PLACED AT THE PERIMETER OF THE GRADING AND AT INTERMEDIATE AREAS THROUGHOUT THE SITE AS SHOWN ON THE PLAN. INLET SEDIMENT TRAPS SHALL BE PLACED SURROUNDING ALL STORM INLETS
- 2.) INSTALL TEMPORARY CONSTRUCTION ENTRANCE AS SHOWN ON PLAN

EROSION CONTROL PROCEDURE:

- 1.) SILT FENCE AND TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED AT THE PERIMETER OF THE GRADED AREAS PRIOR TO BEGINNING OF CLEARING OR DEMOLITION OPERATIONS. THE CONTRACTOR SHALL INSTALL SILT FENCE AS SHOWN ON PLANS AS GRADING PROGRESSES

TEMPORARY CONSTRUCTION ENTRANCE NOTES:

- A.) INSTALLATION
 - 1.) AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC STREETS. IF POSSIBLE, LOCATE WHERE PERMANENT ROADS WILL EVENTUALLY BE CONSTRUCTED
 - 2.) REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE AND CROWN FOR POSITIVE DRAINAGE
 - 3.) IF SLOPE TOWARDS THE PUBIC ROAD EXCEED 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 AWAY FROM IT.
 - 4.) INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES ALONG PUBLIC ROADS
 - 5.) PLACE STONE TO DIMENSIONS AND GRADES AS SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPED FOR DRAINAGE
 - 6.) DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE
 - 7.) IF WET CONDITIONS ARE ANTICIPATED PLACE GEOTEXTILE FABRIC ON THE GRADED FOUNDATION TO IMPROVE STABILITY
- B.) TROUBLESHOOTING
 - 1.) CONSULT WITH A QUALIFIED DESIGN PROFESSIONAL IF ANY OF THE FOLLOWING OCCUR:
 - INADEQUATE RUNOFF CONTROLS TO THE EXTENT THAT SEDIMENT WASHES ONTO PUBLIC ROADS
 - INSTALL DIVERSIONS OR OTHER RUNOFF CONTROL MEASURES
 - SMALL STONE, THIN PAD, OR ABSENCE OF GEOTEXTILE FABRIC RESULTS IN RUTS AND MUDDY CONDITIONS AS STONE IS PRESSED INTO SOIL - INCREASE STONE SIZE OR PAD THICKNESS OR ADD GEOTEXTILE FABRIC
 - PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC - EXTEND PAD BEYOND THE MINIMUM 50 FOOT LENGTH AS NECESSARY
- C.) INSPECTION AND MAINTENANCE
 - 1.) INSPECT STONE PAD AND SEDIMENT DISPOSAL AREA WEEKLY AND AFTER ANY RAIN EVENT
 - 2.) RESHAPE PAD AS NEEDED FOR PROPER DRAINAGE AND RUNOFF CONTROL
 - 3.) TOP DRESS WITH CLEAN 2 AND 3 INCH STONE AS NEEDED
 - 4.) IMMEDIATELY REMOVE MUD OR SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADWAY. REPAIR ANY BROKEN ROAD PAVEMENT IMMEDIATELY
 - 5.) REMOVE ALL TEMPORARY ROAD MATERIALS FROM AREAS WHERE PERMANENT VEGETATION WILL BE ESTABLISHED



INLET PROTECTION
GUTTER BUDDY OR EQUIVALENT 

ONCE SITE IS 90% VEGETATED ALL ESC DEVICES SHALL BE REMOVED
AND ANY DISTURBED AREAS SHALL BE RESTORED

- 1) The Land Disturbance Plans indicates the Final placement of erosion control devices. The contractor(s) may proceed with 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) Per Unified Ordinance Section 14.090.02.2. All portions of the site not covered by paving or buildings shall be landscaped. Open areas not covered with other materials shall be covered with sod. Ground cover shall be utilized on all slopes in excess of 3:1 slope.

ONCE SITE IS 90% VEGETATED ALL ESC
DEVICES SHALL BE REMOVED AND ANY
DISTURBED AREAS SHALL BE RESTORED

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 seeds shall not exceed one percent by weight of mix

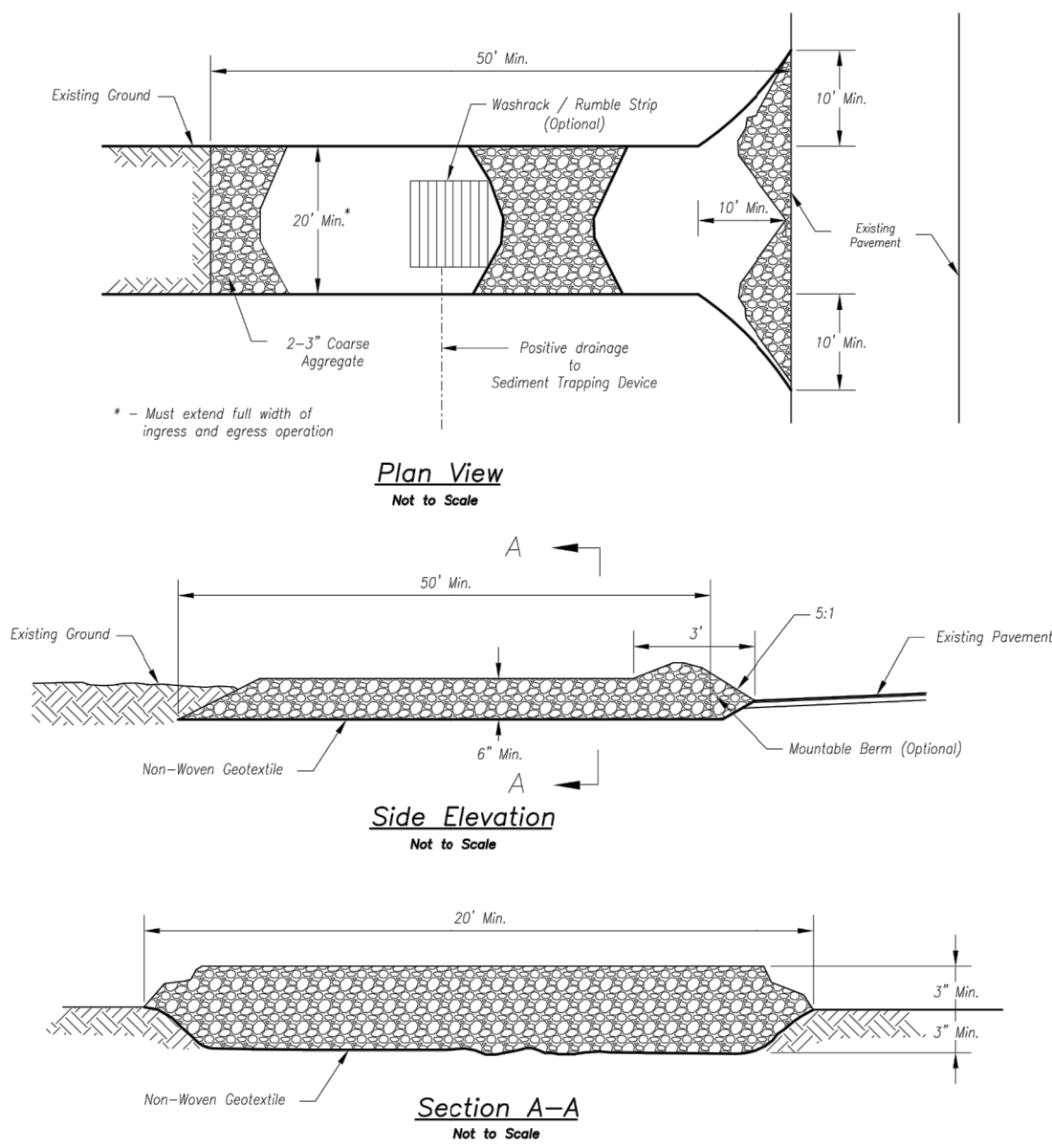
Seed and Fertilizer Rate:

Mix I - Rye Grass / Blue Grass	----- 100 lbs. per Acre	
Mix II - Tall Fescue / Blue Grass	----- 195 lbs. per Acre	
Lime	-----2000 lbs per Acre	(50 lbs. per 1000 sq. ft.)
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

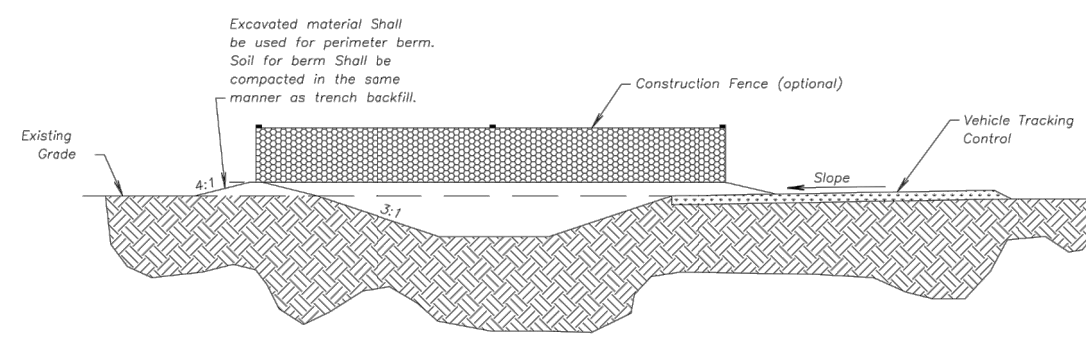


Notes for Concrete Washout:

1. Concrete washout areas shall be installed prior to any concrete placement on site.
2. Concrete washout areas 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 2:1. 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 trucks and other 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:

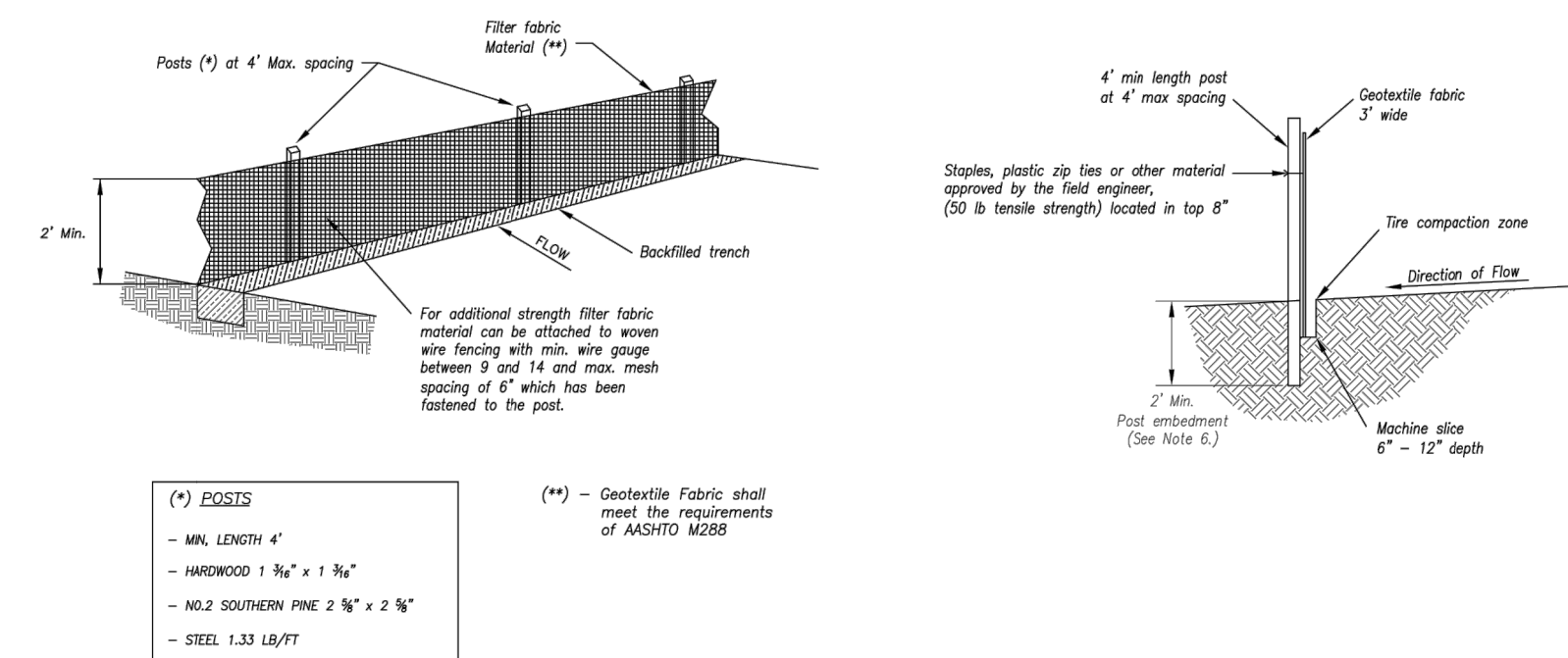
1. Concrete washout materials shall be removed once the materials have filled the washout to approximately 75% full.
2. Concrete washout areas shall be enlarged as necessary to maintain capacity for washed concrete.
3. Concrete washout water, wasted pieces of concrete and all other debris in the subsurface 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 topped, any disturbed areas associated with the installation, maintenance, and/or removal of the concrete washout areas shall be stabilized.



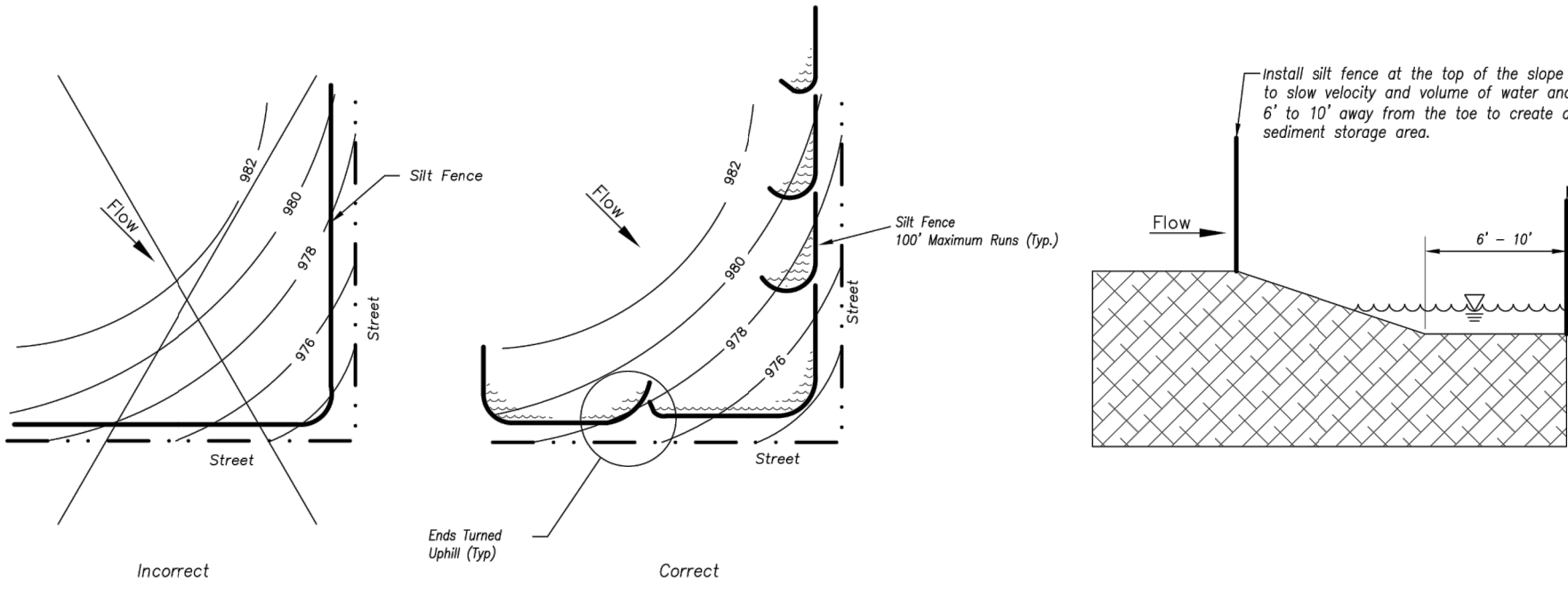
CONCRETE WASHOUT

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

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.



SILT FENCE DETAILS



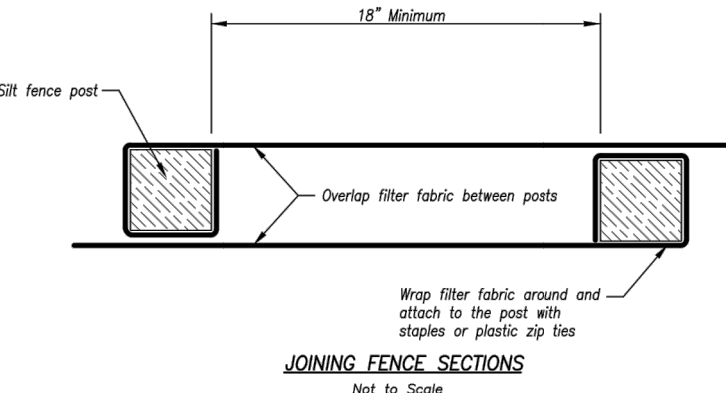
SILT FENCE LAYOUT

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 staking machine cannot be reasonably used.

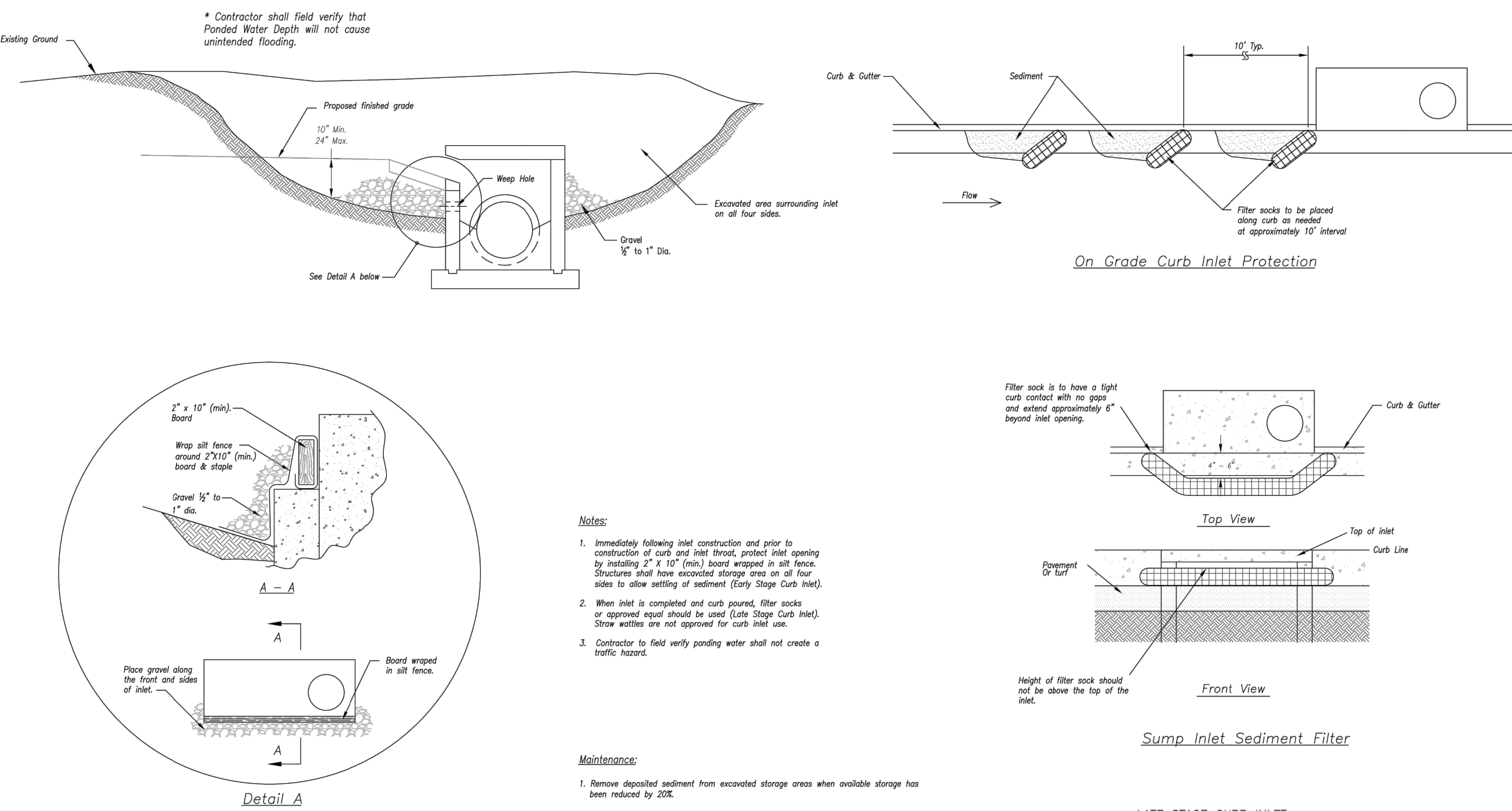
Maintenance:

1. Remove and dispose of sediment deposits when the deposit approaches $\frac{1}{2}$ the height of silt fence.
2. Repair as necessary to maintain function and structure.

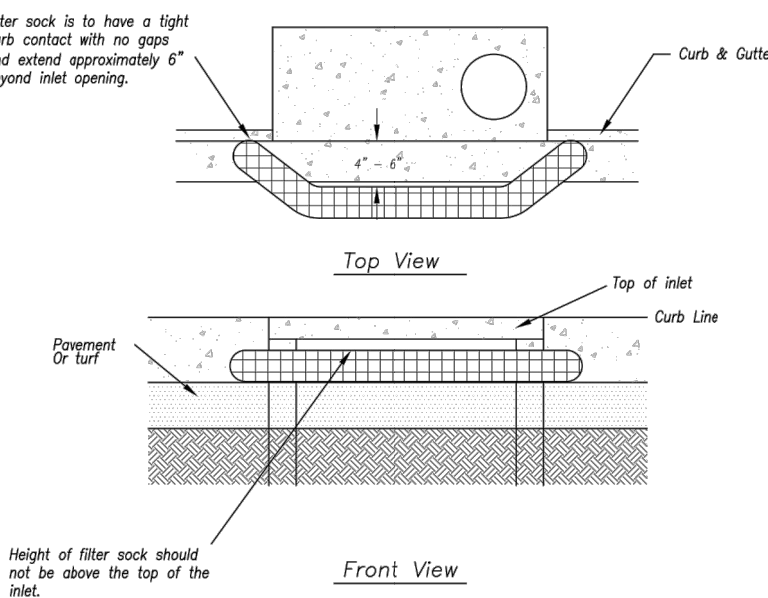


AMERICAN PUBLIC WORKS ASSOCIATION	
	KANSAS CITY METRO CHAPTER
SILT FENCE	STANDARD DRAWING NUMBER ESC-03 ADOPTED: 10/24/2016

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



On Grade Curb Inlet Protection

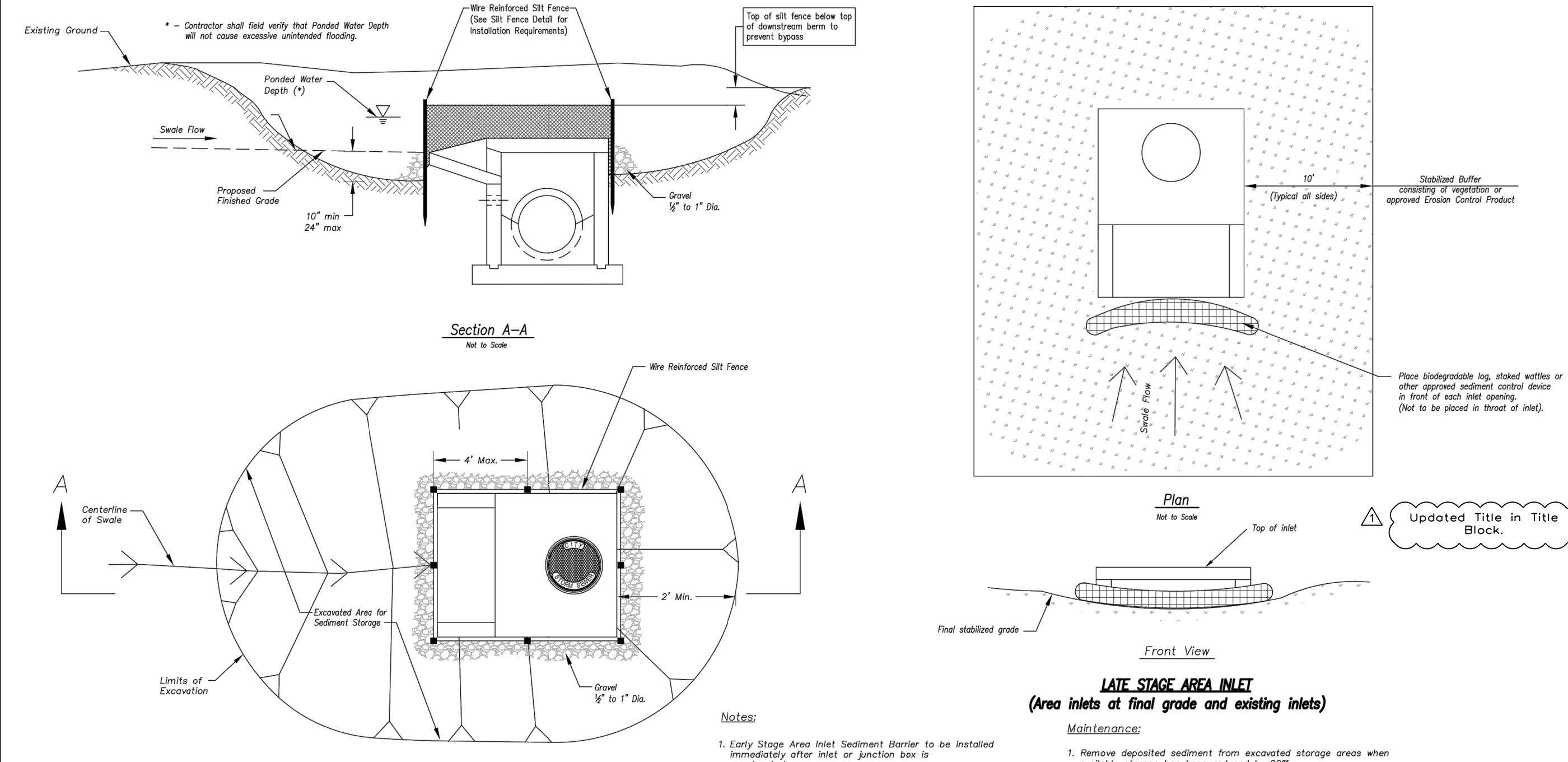


Sump Inlet Sediment Filter

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

AMERICAN PUBLIC WORKS ASSOCIATION	
	KANSAS CITY METRO CHAPTER
CURB INLET PROTECTION	STANDARD DRAWING NUMBER ESC-06 ADOPTED: 10/24/2016

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



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.

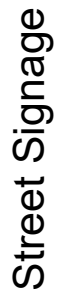
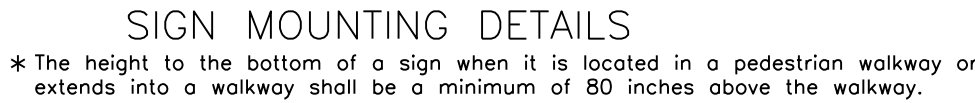
Maintenance:

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.

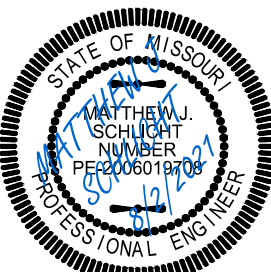
AMERICAN PUBLIC WORKS ASSOCIATION	
	KANSAS CITY METRO CHAPTER
AREA INLET AND JUNCTION BOX PROTECTION	STANDARD DRAWING NUMBER ESC-07 ADOPTED: 10/24/2016

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

REVISIONS



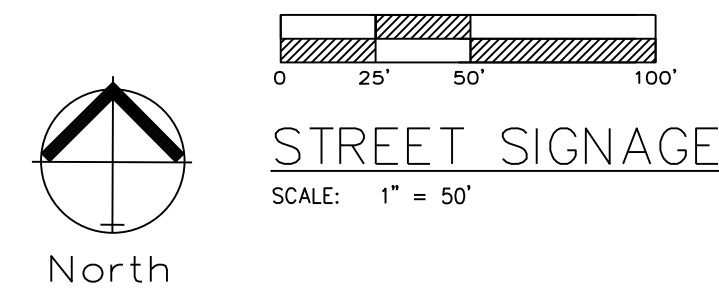
Street, Stormwater, Master Drainage Plan,
and Erosion and Sediment Control Plans or:
Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri



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ENGINEERING
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SOLUTIONS

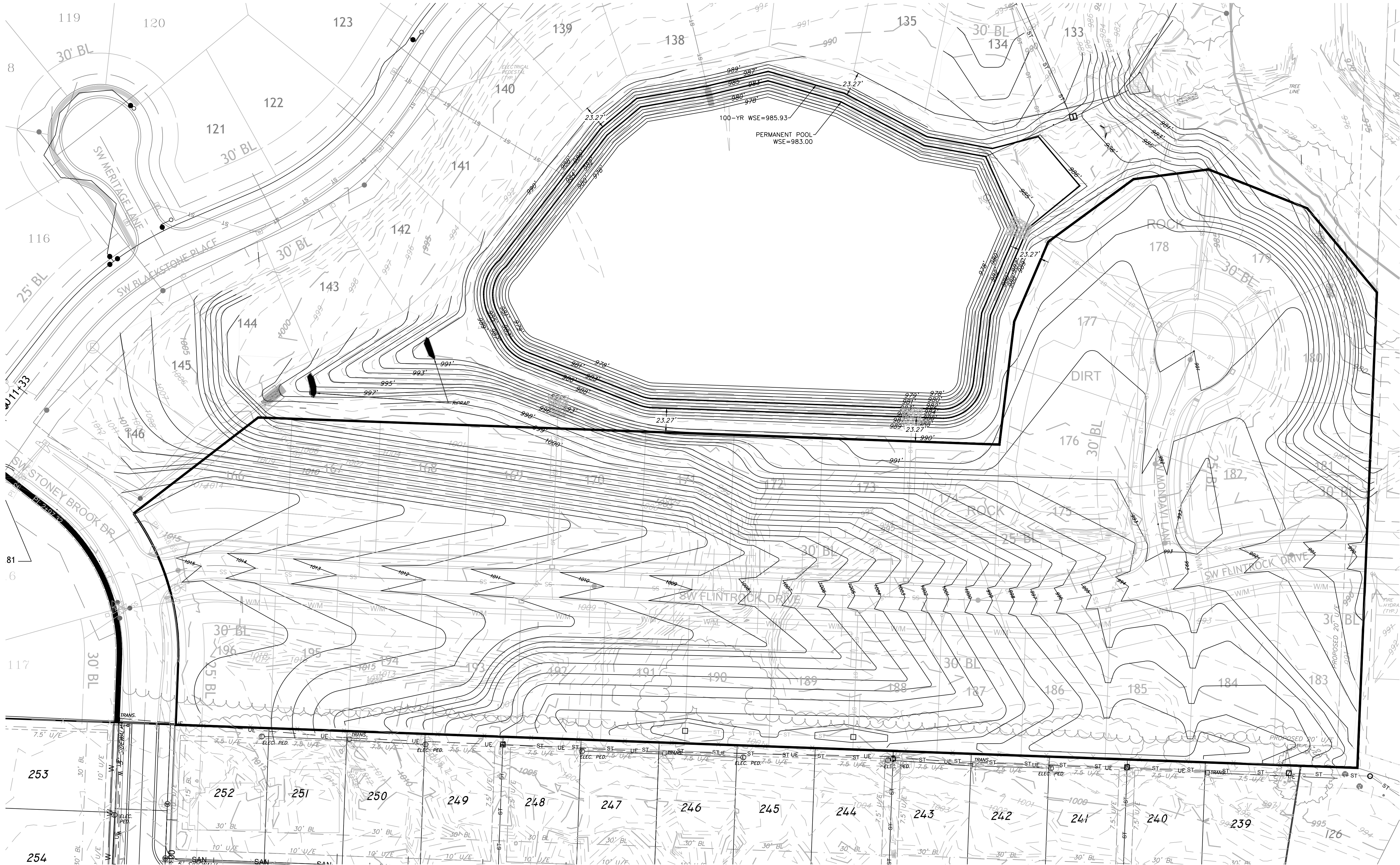
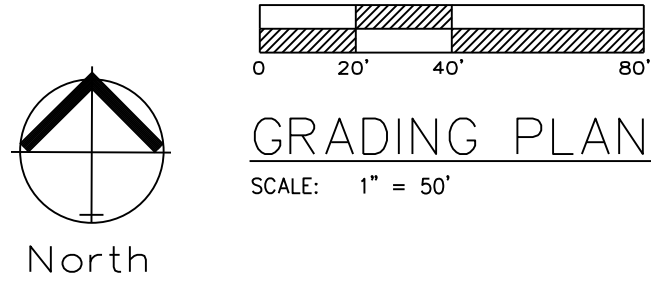
50 SE 30TH STREET
LEE'S SUMMIT, MO 64082

Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri

Notes

1. Contractor is responsible for verifying all existing utility locations prior to excavation.
2. There are no known natural or artificial water storage detention areas, or wetlands in the area designated for construction.
3. No part of the project lies within the 100 year flood plain.
4. All erosion and sediment control measures need to be implemented prior to construction.
5. Additional erosion control may be required by the City Engineer, Design Engineer or Owner, at any time problematic areas are noted in the field or existing measures are found to be ineffective.
6. Soil Stabilization of disturbed areas shall be completed within 14 days of construction inactivity.
7. Contractor responsible for all density testing of roadway subgrade and granular base.

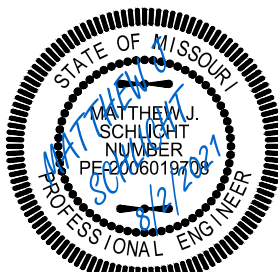


Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1685
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

Project:
NAPA VALLEY, L.S.M.O.
Issue Date:
August 2, 2021

Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri

Master Drainage Plan 1 of 3:
Grading Plan
Street, Stormwater, Master Drainage Plan,
and Erosion and Sediment Control Plans or:
Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri



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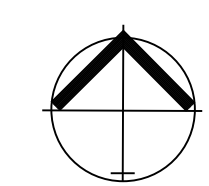
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171	N/A	N/A
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187	N/A	N/A
188	N/A	N/A
189	N/A	N/A
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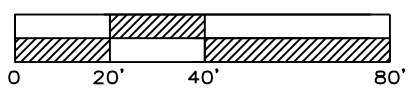
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172	N/A	N/A
173	N/A	N/A
174	N/A	N/A
175	N/A	N/A
176	N/A	N/A
177	N/A	N/A
178	N/A	N/A
179	N/A	N/A
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192	N/A	N/A
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North

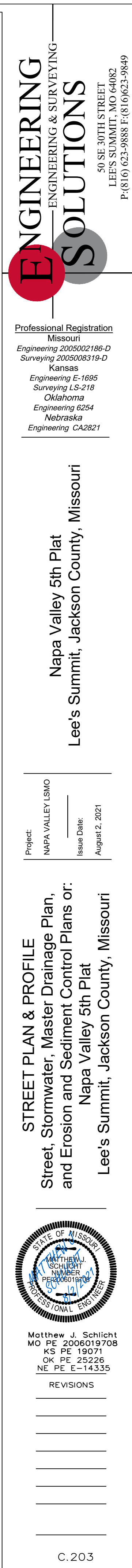


0 20 40

DRAINAGE AREA MAP

SCALE: 1" = 40'

APWA STORM DRAINAGE "TC" COMPUTATIONS FOR : NAPA VALLEY 5TH PLAT																							
yellow areas are self computing overwrite if necessary					Surface types: SURFACE CODES "C" Values		Asph/Conc	Bus/Com	Dirt	Grass/Park	Lake	MultFam	SnglFam	Undev	Other	TC COMPUTATION							
						A	B	D	G	L	M	S	U	Z									
						0.90	0.87	0.60	0.30	0.90	0.66	0.51	0.3										
						Override if necessary	Length - DnElev or Slope if necessary	SURFACE CODE P or U		P=Paved U=Unpaved	Override Slope or Elevations if necessary												
TOTAL WATERSHED					OVERLAND FLOW - 100' MAX		CHANNEL FLOW - FIRST REACH																
AREA	TOTAL	WTRSH	UP	DN	SURFACE	"C"	OVRLND	UP	DN	SLOPE	CHANNEL	UP	DN	SLOPE	VELOCITY	Cal	Used	Cal	Cal	Total	AREA		
ID	ACRES	LENGTH	ELEV	ELEV	CODE	VALUE	LENGTH	ELEV	ELEV	%	LENGTH	ELEV	ELEV	%	F/S	Flow T(I)	Min 5 Max 15 T(I)	Channel One T(T)	Channel Two T(T)	Tot 10	ID		
1	0.54	359.00	1015.00	1010.50	S	0.51	59.0	1015.0	1013.70	2.2	P	300.0	1013.7	1010.5	1.07	2.1	6.3	6.3	2.4	0.0	8.7	1	
2	0.57	384.00	1016.00	1010.20	S	0.51	49.0	1016.0	1015.00	2.0	P	335.0	1015.0	1010.2	1.43	2.4	5.9	5.9	2.3	0.0	8.2	2	
3	0.32	333.00	1010.50	1005.00	S	0.51	26.0	1010.5	1009.80	2.7	P	307.0	1009.8	1005.0	1.56	2.5	3.9	3.9	2.0	0.0	7.8	3	
4	0.35	369.00	1012.20	1003.00	S	0.51	47.0	1012.2	1011.00	2.6	P	322.0	1011.0	1003.0	2.48	3.2	5.3	5.3	1.7	0.0	7.0	4	
5	0.32	258.00	1007.20	994.50	S	0.51	41.0	1007.2	1004.00	7.8	P	217.0	1004.0	994.5	4.38	4.3	3.4	3.0	0.9	0.0	5.9	5	
6	0.24	221.00	1005.00	994.00	S	0.51	36.0	1005.0	1003.00	5.6	P	185.0	1003.0	994.0	4.86	4.5	3.6	3.0	0.7	0.0	5.7	6	
7	0.78	236.00	995.00	991.00	S	0.51	49.0	995.0	992.50	5.1	P	187.0	992.5	991.0	0.80	1.8	4.3	5.0	1.7	0.0	6.7	7	
8	2.26	508.00	1016.00	999.00	S	0.51	100.0	1016.0	1014.00	2.0	U	408.0	1014.0	999.0	3.68	3.1	8.4	8.4	2.2	0.0	10.6	8	
9	0.46	133.00	1008.50	999.00	S	0.51	100.0	1008.5	1000.00	8.5	U	33.0	1000.0	999.0	3.03	2.8	5.2	5.2	0.2	0.0	5.4	9	

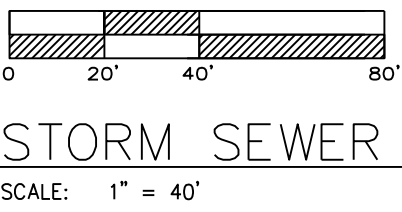
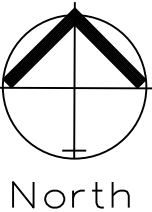
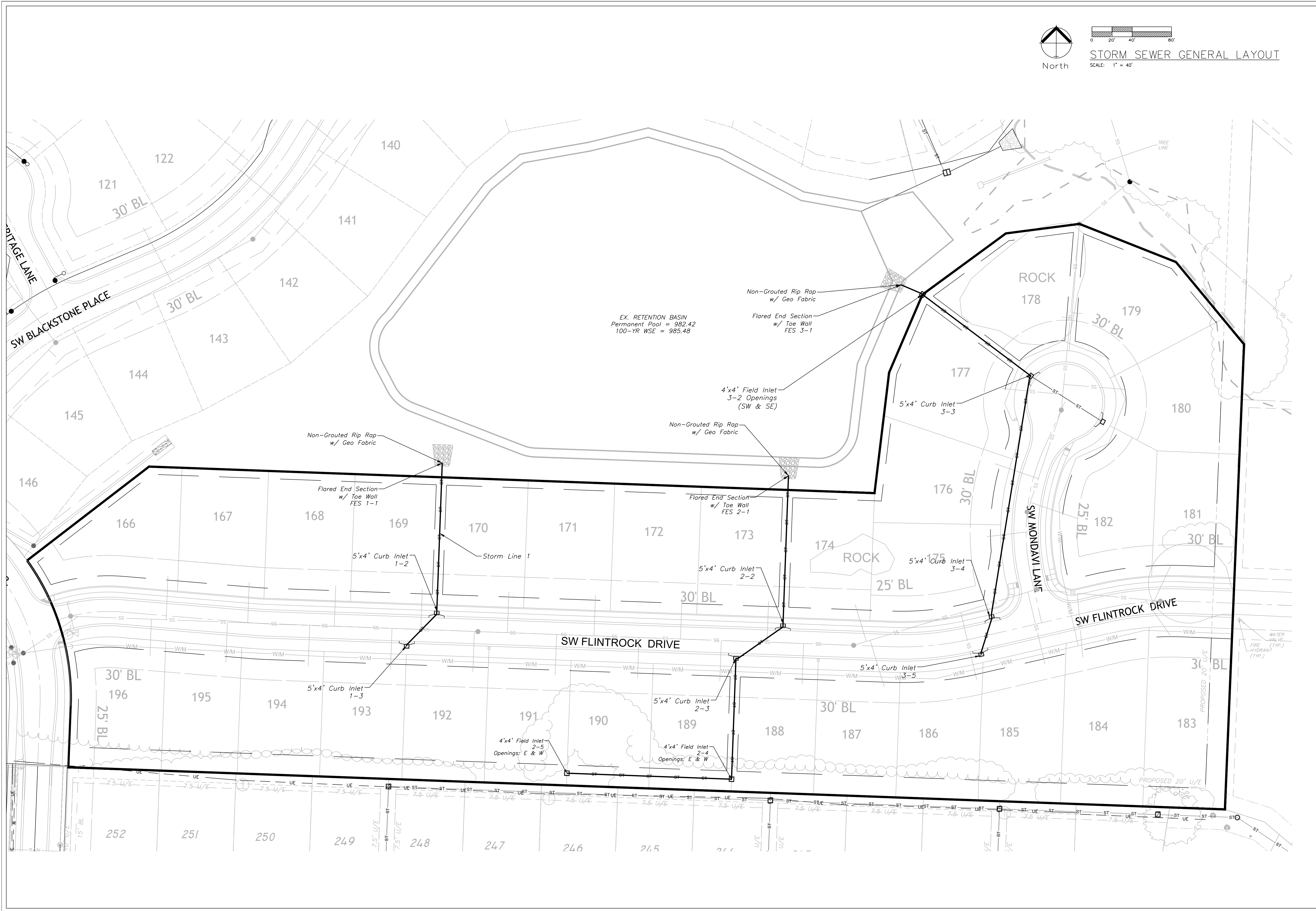


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STORM SEWER GENERAL LAYOUT

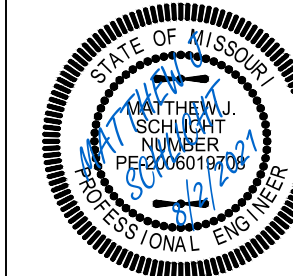


Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

Project: Napa Valley 5th Plat
Issue Date: August 2, 2021
Storm Sewer General Layout
Street, Stormwater, Master Drainage Plan,
and Erosion and Sediment Control Plans for:
Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri

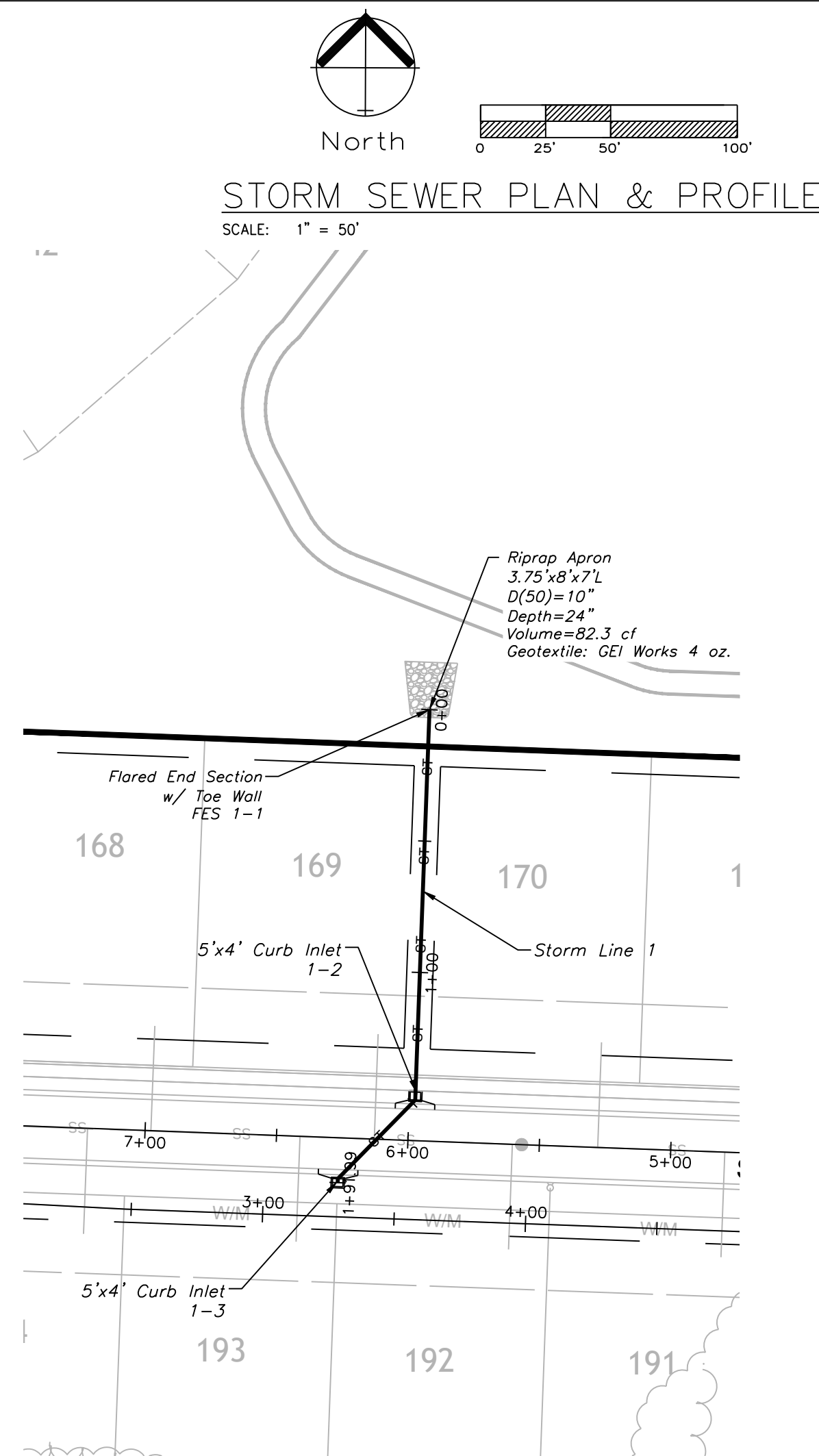
Project: NAPA VALLEY LS100
Issue Date: August 2, 2021

Storm Sewer General Layout
Street, Stormwater, Master Drainage Plan,
and Erosion and Sediment Control Plans for:
Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri

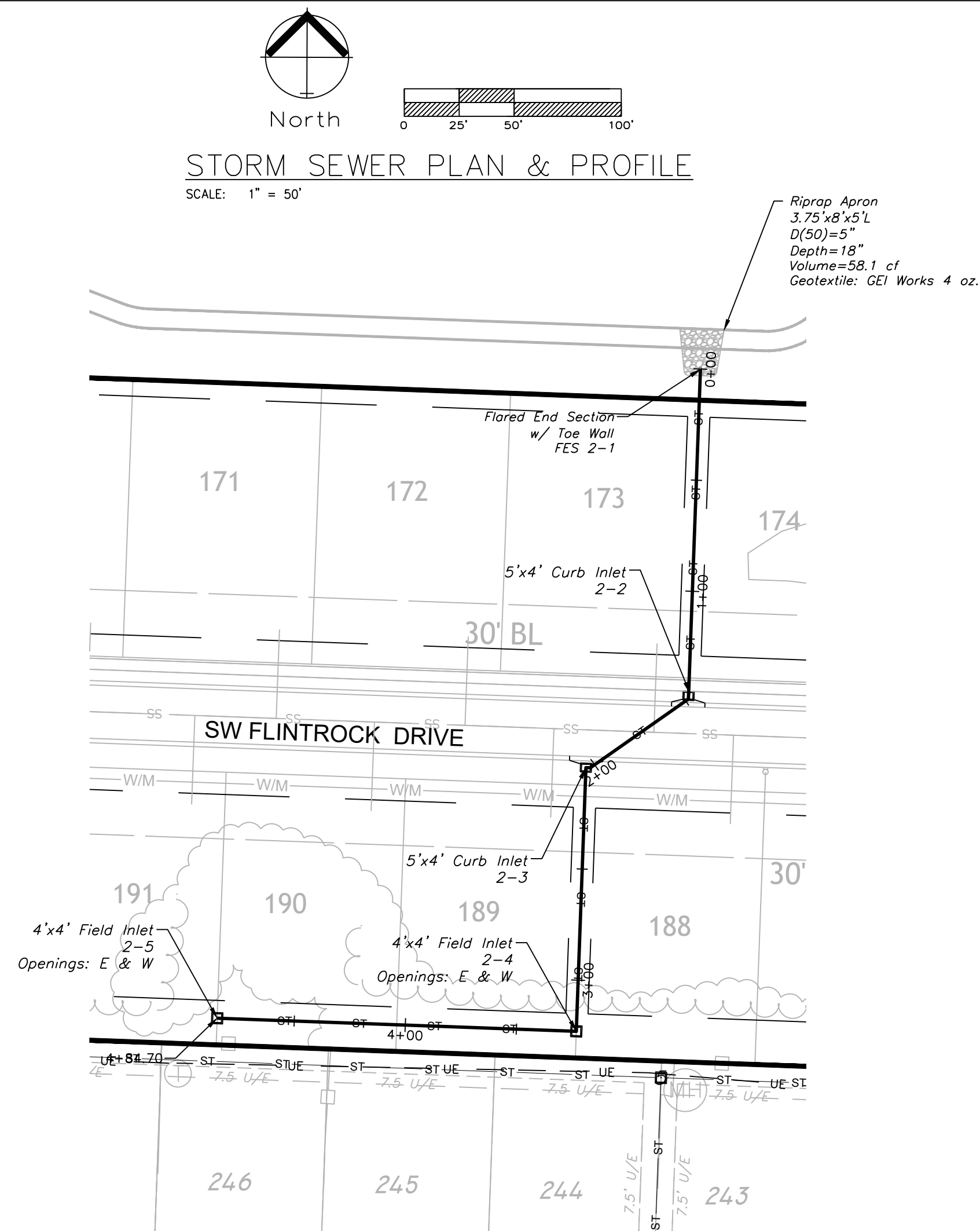


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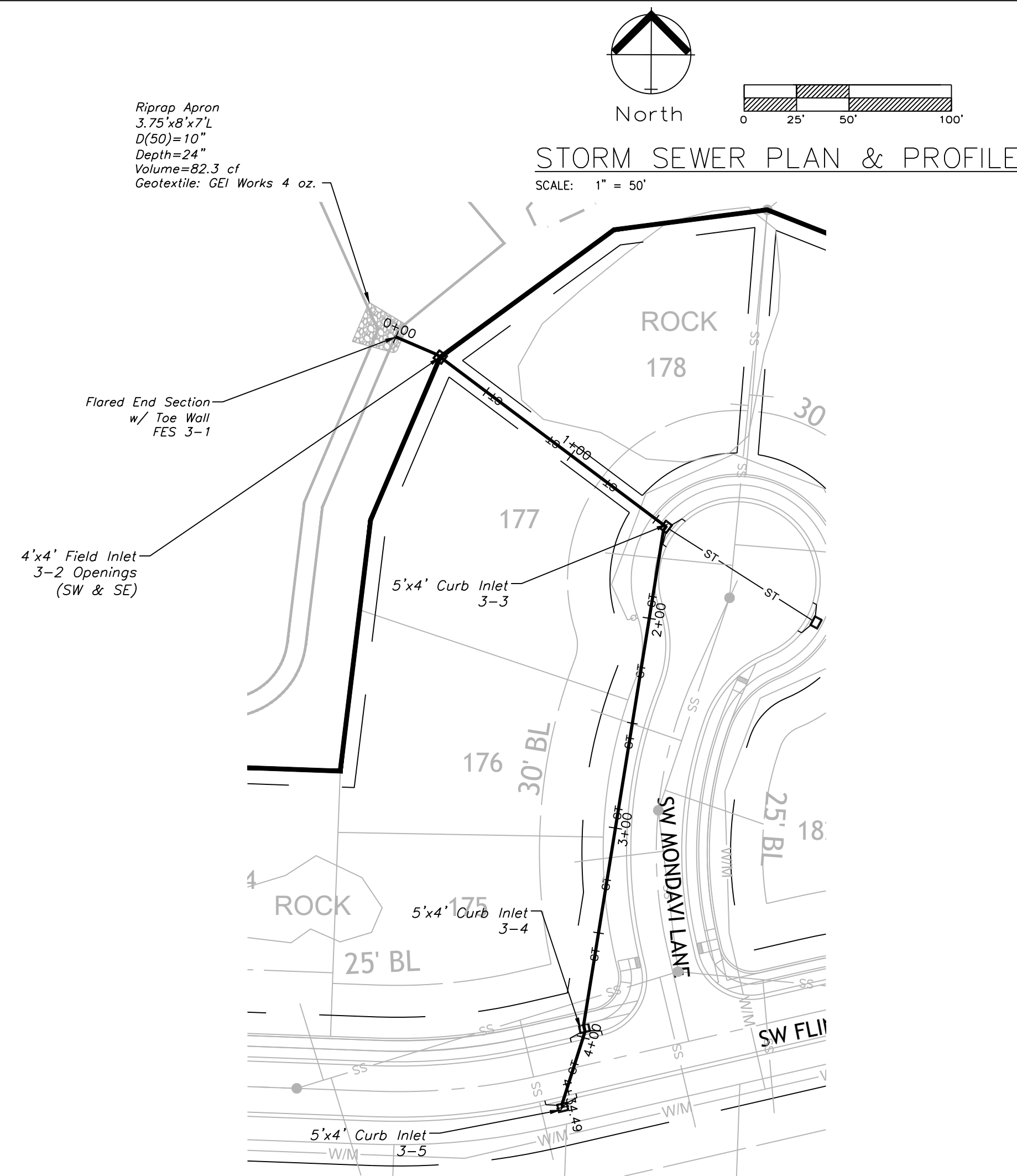
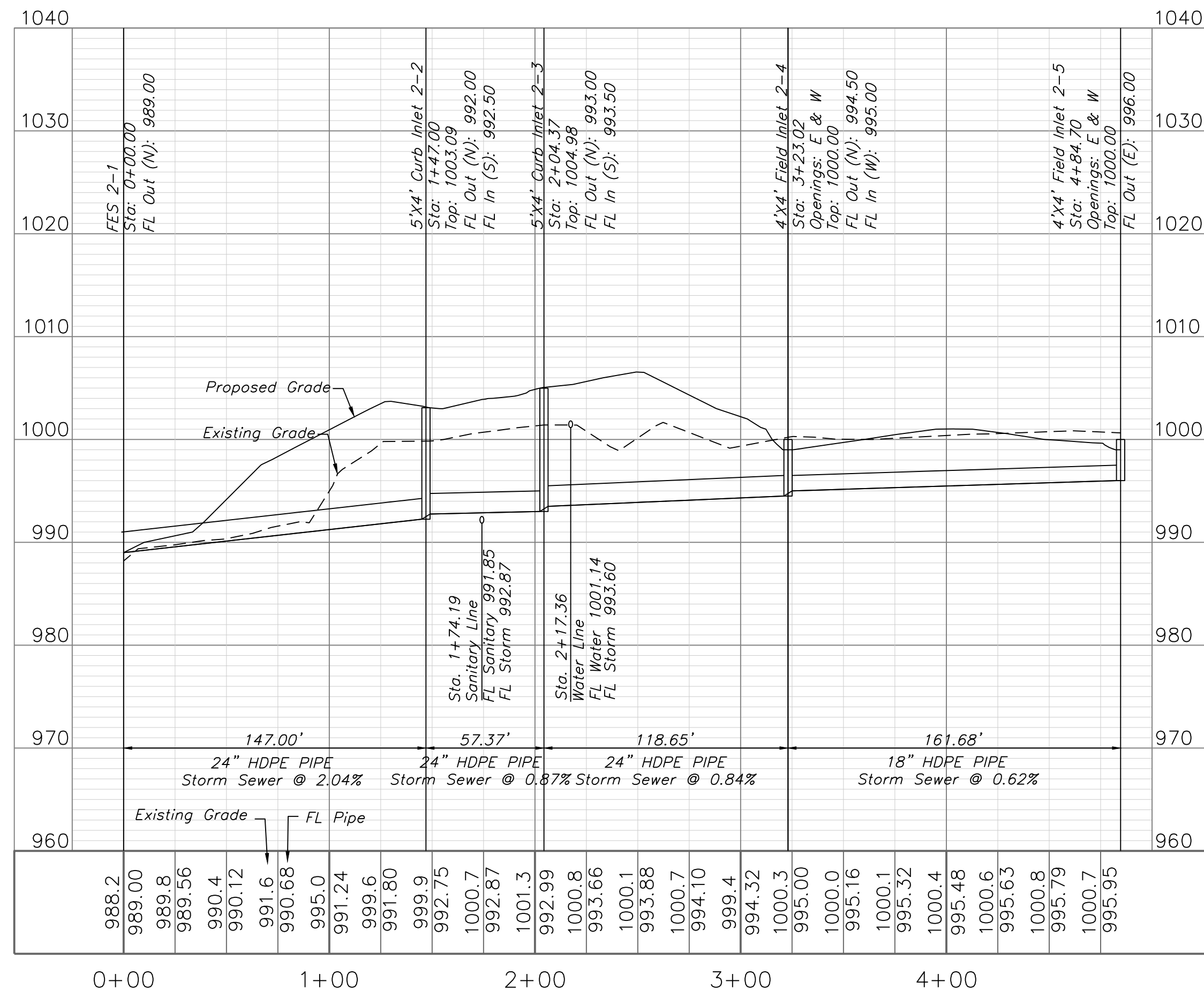
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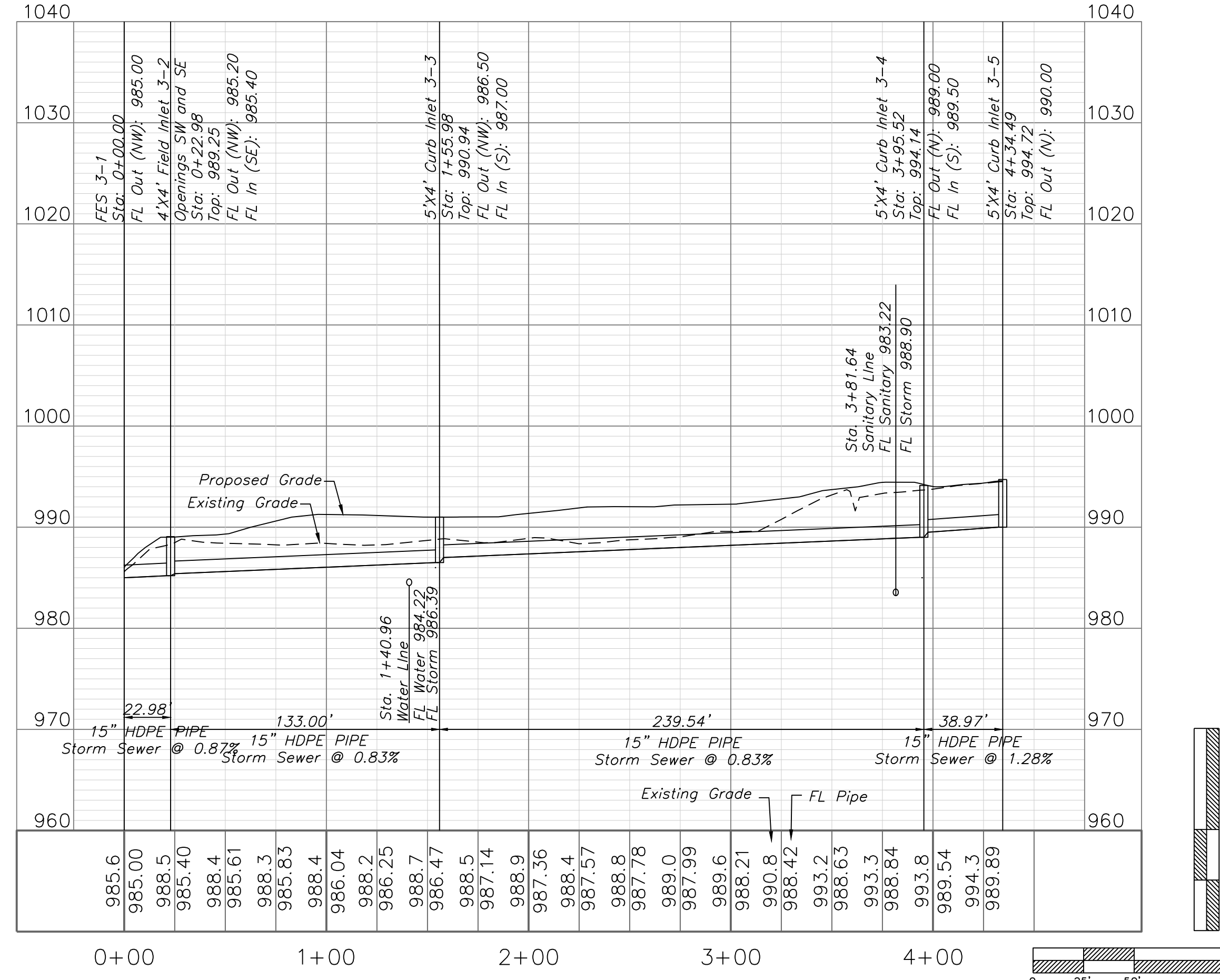
STORM LINE 1



STORM LINE 2



STORM LINE 3

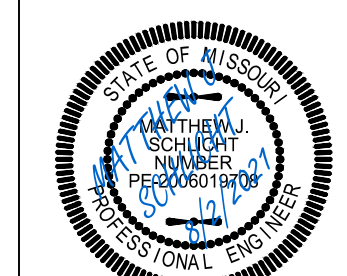


Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1685
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

Project:
NAPA VALLEY LISMO
Issue Date:
August 2, 2021

Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri

Storm Sewer Plan and Profile
Street, Stormwater, Master Drainage Plan,
and Erosion and Sediment Control Plans or:
Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri



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KS PE 19071
OK PE 25226
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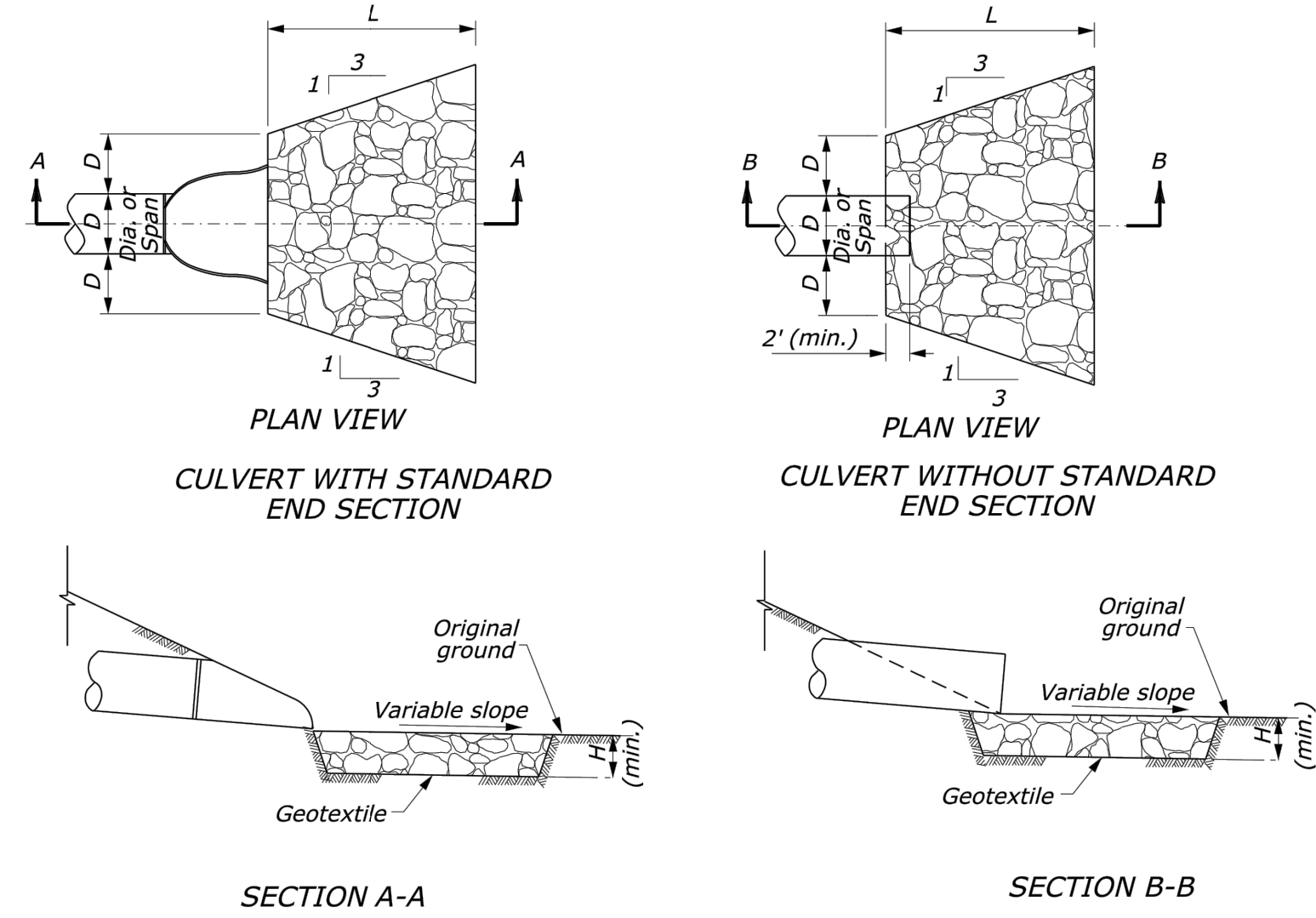
10-YR STRUCTURE																						
D.S. Str.	Str. No.	Area (ac)	InletTime (min)	Int. (in/hr)	RunoffCoeff. (C)	Q =CIA (cfs)	Q Carry-over (cfs)	QCaptured (cfs)	QBypassed (cfs)	JunctType	CurbHeight (in)	CurbLength (ft)	GutterSlope (ft/ft)	GutterWidth (ft)	CrossSlope, Sw (ft/ft)	CrossSlope, Sx (ft/ft)	InletDepth (ft)	BypassDepth (ft)	BypassSpread (ft)	GutterDepth (ft)	GutterSpread (ft)	Bypass Str.
1-1	1-2	0.57	8.2	6.5	0.51	1.89	0	0.78	1.11	Curb	10	5	0.012	2	0.05	0.02	0.21	0.18	5.93	0.21	7.55	2-2
1-2	1-3	0.54	8.7	6.39	0.51	1.76	0	0.75	1.01	Curb	10	5	0.012	2	0.05	0.02	0.21	0.17	5.67	0.21	7.32	2-3
2-1	2-2	0.35	7	6.79	0.51	1.21	1.11	0.63	1.69	Curb	10	5	0.048	2	0.05	0.02	0.18	0.16	5.19	0.18	6.05	3-4
2-2	2-3	0.32	7	6.79	0.51	1.11	1.01	0.6	1.52	Curb	10	5	0.048	2	0.05	0.02	0.18	0.16	4.9	0.18	5.79	3-5
2-3	2-4	0.46	5.4	7.23	0.51	1.7	0	1.7	0	Dp-Curb	6	8	Sag		0.02	0.02	0.17	n/a	n/a	0.17	8.54	Sag
2-4	2-5	2.26	10.6	6	0.51	6.92	0	6.92	0	Dp-Curb	6	8	Sag		0.02	0.02	0.44	n/a	n/a	0.44	21.8	Sag
3-1	3-2	0	0	0	0	0	1.69	1.69	0	Dp-Curb	6	5	Sag		0.02	0.02	0.23	n/a	n/a	0.23	11.67	Sag
3-2	3-3	0.78	6.7	6.87	0.51	2.73	1.91	4.64	0	Curb	10	5	Sag	2	0.05	0.02	0.44	n/a	n/a	0.44	19.01	Sag
3-3	3-4	0.24	5.7	7.14	0.51	0.87	0	0.49	0.39	Curb	10	5	0.014	2	0.05	0.02	0.16	0.12	3.15	0.16	5.07	3-3
3-4	3-5	0.32	5.9	7.08	0.51	1.16	0	0.57	0.58	Curb	10	5	0.014	2	0.05	0.02	0.18	0.14	4.07	0.18	5.82	Offsite

		10-YR PIPE																				
D.S. Str.	U.S. Str.	LineLength (ft)	Incr.Area (ac)	TotalArea (ac)	RunoffCoeff. (C)	IncrC x A (cfs)	TotalC x A (cfs)	InletTime (min)	TimeConc (min)	RnfallInt (in/hr)	TotalRunoff (cfs)	TotalFlow (cfs)	CapacFull (cfs)	Veloc (ft/s)	PipeSize (in)	PipeSlope (%)	Inv ElevDn (ft)	Inv ElevUp (ft)	HGLDn (ft)	HGLUp (ft)	Grnd/RimDn (ft)	Grnd/RimUp (ft)
1-1	1-2	147	0.57	1.11	0.51	0.29	0.57	8.2	8.9	6.4	3.6	3.6	21.9	8.87	15	6.8	996	1006	996.34	1006.77	0	1010.69
1-2	1-3	44.9	0.54	0.54	0.51	0.28	0.28	8.7	8.7	6.4	1.76	1.76	8.86	4.6	15	1.11	1006.5	1007	1006.88	1007.53	1010.69	1011.02
2-1	2-2	147	0.35	3.39	0.51	0.18	1.73	7	11.5	5.8	10.08	10.08	42	8.23	24	2.04	989	992	989.67	993.14	0	1003.09
2-2	2-3	57.37	0.32	3.04	0.51	0.16	1.55	7	11.4	5.9	9.08	9.08	27.45	6.56	24	0.87	992.5	993	993.29	994.07	1003.09	1004.98
2-3	2-4	118.65	0.46	2.72	0.51	0.23	1.39	5.4	11.1	5.9	8.2	8.2	26.99	6.32	24	0.84	993.5	994.5	994.26	995.52	1004.98	1000
2-4	2-5	161.68	2.26	2.26	0.51	1.15	1.15	10.6	10.6	6	6.92	6.92	10.74	5.94	18	0.62	995	996	995.88	997.02	1000	1000
3-1	3-2	22.98	0	1.34	0	0	0.68	0	7.4	6.7	4.58	4.58	7.83	5.84	15	0.87	985	985.2	985.69	986.07	0	989.25
3-2	3-3	133	0.78	1.34	0.51	0.4	0.68	6.7	7	6.8	4.64	4.64	7.63	4.5	15	0.83	985.4	986.5	986.1	987.37	989.25	991
3-3	3-4	239.54	0.24	0.56	0.51	0.12	0.29	5.7	6.1	7	2.01	2.01	7.67	4.5	15	0.83	987	989	987.44	989.56	991	994.14
3-4	3-5	50	0.32	0.32	0.51	0.16	0.16	5.9	5.9	7.1	1.16	1.16	8.39	3.98	15	1	989.5	990	989.81	990.42	994.14	994.72

100-YR STRUCTURE																						
D.S. Str.	Str. No.	Area (ac)	InletTime (min)	Int. (in/hr)	RunoffCoeff. (C)	Q =CIA (cfs)	Q Carry-over (cfs)	QCaptured (cfs)	QBypassed (cfs)	JunctType	CurbHeight (in)	CurbLength (ft)	GutterSlope (ft/ft)	GutterWidth (ft)	CrossSlope, Sw (ft/ft)	CrossSlope, Sx (ft/ft)	InletDepth (ft)	BypassDepth (ft)	BypassSpread (ft)	GutterDepth (ft)	GutterSpread (ft)	Bypass Str.
1-1	1-2	0.57	8.2	11.53	0.51	3.35	0	1.06	2.29	Curb	10	5	0.012	2	0.05	0.02	0.25	0.22	8.22	0.25	9.64	2-2
1-2	1-3	0.54	8.7	11.34	0.51	3.12	0	1.02	2.11	Curb	10	5	0.012	2	0.05	0.02	0.25	0.22	7.92	0.25	9.36	2-3
2-1	2-2	0.35	7	12	0.51	2.14	2.29	0.88	3.56	Curb	10	5	0.048	2	0.05	0.02	0.22	0.21	7.35	0.22	8.1	3-4
2-2	2-3	0.32	7	12	0.51	1.96	2.11	0.84	3.22	Curb	10	5	0.048	2	0.05	0.02	0.22	0.2	7.03	0.22	7.79	3-5
2-3	2-4	0.46	5.4	12.71	0.51	2.98	0	2.98	0	Dp-Curb	6	8	Sag		0.02	0.02	0.25	n/a	n/a	0.25	12.44	Sag
2-4	2-5	2.26	10.6	10.69	0.51	12.33	0	12.33	0	Dp-Curb	6	8	Sag		0.02	0.02	0.64	n/a	n/a	0.64	32.06	Sag
3-1	3-2	0	0	0	0	0	3.56	3.56	0	Dp-Curb	6	5	Sag		0.02	0.02	0.38	n/a	n/a	0.38	19.14	Sag
3-2	3-3	0.78	6.7	12.13	0.51	4.82	4.09	8.91	0	Curb	10	5	Sag	2	0.05	0.02	0.65	n/a	n/a	0.65	29.38	Sag
3-3	3-4	0.24	5.7	12.57	0.51	1.54	0	0.67	0.87	Curb	10	5	0.014	2	0.05	0.02	0.19	0.16	5.05	0.19	6.65	3-3
3-4	3-5	0.32	5.9	12.48	0.51	2.04	0	0.78	1.25	Curb	10	5	0.014	2	0.05	0.02	0.21	0.18	6.05	0.21	7.54	Offsite

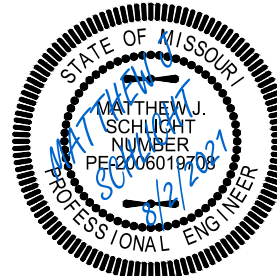
100-YR PIPE																						
D.S. Str.	U.S. Str.	LineLength (ft)	Incr.Area (ac)	TotalArea (ac)	RunoffCoeff. (C)	IncrC x A (cfs)	TotalC x A (cfs)	InletTime (min)	TimeConc (min)	RnfallInt (in/hr)	TotalRunoff (cfs)	TotalFlow (cfs)	CapacFull (cfs)	Veloc (ft/s)	PipeSize (in)	PipeSlope (%)	Inv ElevDn (ft)	Inv ElevUp (ft)	HGLDn (ft)	HGLUp (ft)	Grnd/RimDn (ft)	Grnd/RimUp (ft)
1-1	1-2	147	0.57	1.11	0.51	0.29	0.57	8.2	8.8	11.3	6.39	6.39	21.9	10.72	15	6.8	996	1006	996.46	1007.02	0	1010.69
1-2	1-3	44.9	0.54	0.54	0.51	0.28	0.28	8.7	8.7	11.3	3.12	3.12	8.86	5.41	15	1.11	1006.5	1007	1007.02	1007.71	1010.69	1011.02
2-1	2-2	147	0.35	3.39	0.51	0.18	1.73	7	11.4	10.5	18.08	18.08	42	8.39	24	2.04	989	992	990.14	993.53	0	1003.09
2-2	2-3	57.37	0.32	3.04	0.51	0.16	1.55	7	11.2	10.5	16.27	16.27	27.45	7.88	24	0.87	992.5	993	993.61	994.45	1003.09	1004.98
2-3	2-4	118.65	0.46	2.72	0.51	0.23	1.39	5.4	11	10.6	14.67	14.67	26.99	7.56	24	0.84	993.5	994.5	994.55	995.88	1004.98	1000
2-4	2-5	161.68	2.26	2.26	0.51	1.15	1.15	10.6	10.6	10.7	12.33	12.33	10.74	6.98	18	0.62	995	996	996.5	997.82	1000	1000
3-1	3-2	22.98	0	1.34	0	0	0.68	0	7.5	11.8	8.07	8.07	7.83	7.11	15	0.87	985	985.2	986.06	986.32	0	989.25
3-2	3-3	133	0.78	1.34	0.51	0.4	0.68	6.7	7.2	11.9	8.16	8.16	7.63	6.81	15	0.83	985.4	986.5	986.53	987.74	989.25	991
3-3	3-4	239.54	0.24	0.56	0.51	0.12	0.29	5.7	6.1	12.4	3.54	3.54	7.67	3.71	15	0.83	987	989	988.67	989.76	991	994.14
3-4	3-5	50	0.32	0.32	0.51	0.16	0.16	5.9	5.9	12.5	2.04	2.04	8.39	4.69	15	1	989.5	990	989.92	990.57	994.14	994.72

STANDARD RIPRAP APRON DETAIL



- NOTES:
1. ALL RIPRAP APRONS SHALL CONFORM TO THE STANDARD CONFIGURATION SHOWN IN THE STANDARD DETAIL ABOVE UNLESS OTHERWISE NOTED. PLAN VIEW DIMENSIONS SHOWN SHALL BE MET OR EXCEEDED INCLUDING AREAS OF LONGITUDINAL AND/OR TRANSVERSE SLOPE.
 2. DIMENSIONS FOR EACH RIPRAP APRON AND ASSOCIATED RIPRAP ARE DETAILED IN THE PLAN SET.
 3. GEOTEXTILE SHALL BE "GEI WORKS 4 OUNCE" NON-WOVEN FILTER FABRIC DESIGNED FOR FILTRATION, STABILIZATION AND SEPARATION WRAPPED CONTINUOUSLY ALONG THE SIDEWALLS AND BOTTOM OF THE PREPARED AREA OR SLOPE.
 - WATER FLOW = 120 GPM/SF
 - GRAB STRENGTH (MIN) = 400 N
 - PUNCTURE STRENGTH (MIN) = 178 N
 - TRAPEZOIDAL TEAR (MIN) = 133 N
 - ELONGATION (MIN) = 15%

10 YR & 100 YR STORM TABLES
Street, Stormwater, Master Drainage Plan,
and Erosion and Sediment Control Plans or:
Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri



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NE PE E-14335

REVISIONS

