

NAPA VALLEY - 4th PLAT

Street, Stormwater, Master Drainage Plan, and Erosion and Sediment Control

LOTS 147-165

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
- 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 MEETING THE REQUIREMENTS OF TABLE 2201.6-1

2 ~ RESIDENTIAL STREETS SHALL BE PER APWA STANDARD FOR 50' R/W TYPICAL SECTION TABLE LS-2 SECTION 5200 (RESIDENTIAL LOCAL STREET). RESIDENTIAL STREETS SHALL BE PER APWA STANDARD FOR 60' R/W TYPICAL SECTION TABLE LS-2 SECTION 5200 (RESIDENTIAL COLLECTOR).

3 ~ STORM SEWER PIPE SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) AS APPROVED BY CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.

4 ~ JUNCTION BOXES SHALL BE PER CITY OF LEE'S SUMMIT STANDARD DRAWING NO. JB-1. FIELD INLETS SHALL BE PER CITY OF LEE'S SUMMIT STANDARD DRAWING FI-1. TOEWALLS SHALL BE PER CITY OF LEE'S SUMMIT DRAWING NO. SD-35. STORM MANHOLES SHALL BE PER CITY OF LEE'S SUMMIT DETAIL SD-27. ROCK LINING AND RIP RAP SHALL BE PER CITY OF LEE'S SUMMIT.

WATER:

1 ~ THE CONTRACTOR SHALL NOTIFY THE CITY OF LEE'S SUMMIT WATER UTILITIES DEPARTMENT AT 816.969.1900 AT LEAST 48 HOURS PRIOR TO CONNECTING TO ANY EXISTING WATER MAIN.

2 ~ ALL WATER MAINS SHALL COMPLY WITH ANSI/AWWA C150/A21.50 AND C151/A21.51, AND CITY OF LEE'S SUMMIT STANDARDS.

3 ~ FIRE HYDRANTS SHALL BE OPTIC YELLOW WATEROUS "PACER" MODEL NO. WB-67-250 WITH NON-RISING STEM OR CITY ENGINEER APPROVED EQUAL. HYDRANTS SHALL HAVE A 5 1/4" VALVE WITH A 4 1/2" PUMPER NOZZLE AND 2 - 2 1/2" HOSE NOZZLES (LEFT HAND OPENING).

4 ~ GATE VALVES SHALL BE MUELLER NO. A 2380-5 HUB END "O" RING SEAL NON-RISING STEM. VALVES 12" OR LARGER SHALL BE BUTTERFLY VALVES MANUFACTURED BY THE HENRY PRATT COMPANY OR CITY ENGINEER APPROVED EQUAL. LEFT HAND OPENING. MINIMUM 200# TESTING AWWA.

5 ~ VALVE BOXES SHALL BE CLAY & BAILEY NO. P-108 OR CITY ENGINEER APPROVED EQUAL. ALL VALVE BOXES SHALL BE LOCATED OUT OF EXISTING OR PROPOSED PAVEMENT AREAS.

6 ~ ALL WATER MAINS SHALL BE CONSTRUCTED WITH A MINIMUM COVER OF 42 INCHES. STREET GRADING SHALL BE COMPLETED PRIOR TO BEGINNING CONSTRUCTION OF WATER MAINS.

7 ~ ALL BENDS, TEES AND FIRE HYDRANTS SHALL BE INSTALLED WITH SUITABLE CONCRETE THRUST BLOCKS POURED IN PLACE AGAINST UNDISTURBED EARTH AND PER CITY OF LEE'S SUMMIT AND APWA STANDARDS.

8 ~ THE MINIMUM SEPARATION BETWEEN THE PROPOSED WATER MAIN AND SANITARY OR STORM SEWERS IS AS FOLLOWS:

- A ~ SANITARY SEWERS: HORIZONTAL = 10 FEET - VERTICAL = 18 INCHES
- B ~ STORM SEWERS: HORIZONTAL = 5 FEET - VERTICAL = 18 INCHES

THESE SEPARATIONS SHALL PREVAIL OVER ANY DATA SHOWN IN THESE PLANS AND THE CONTRACTOR SHALL INSTALL BENDS OR OTHER FITTINGS AS NECESSARY TO ACHIEVE THE REQUIRED SEPARATIONS.

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 NOTIFY THE CITY OF LEE'S SUMMIT PUBLIC WORKS INSPECTION AT 816.969.1800 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.
- 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.

NOTE :

ALL CONSTRUCTION SHALL FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813. WHERE DISCREPANCIES EXIST BETWEEN THESE PLANS AND THE DESIGN AND CONSTRUCTION MANUAL, THE DESIGN AND CONSTRUCTION MANUAL SHALL PREVAIL.

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.

KCP&L ~ 288-1196

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 PUBLIC WORKS INSPECTIONS ~ 969-1800

CITY OF LEE'S SUMMIT WATER UTILITIES ~ 969-1900

MISSOURI ONE CALL (DIG RITE) ~ 1-800-344-7483

INDEX OF SHEETS:

- C.001 ~ COVER SHEET
- C.050 ~ ESC PHASE 1 - Pre Clearing Plan
- C.051 ~ ESC PHASE 2 - Inactive Area Stabilization Plan
- C.052 ~ ESC PHASE 3 - Final Restoration Plan
- C.053 ~ ESC DETAILS
- C.100 ~ SITE PLAN
- C.101 ~ STREET SIGNAGE PLAN
- 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 AND PROFILE
- C.300 ~ STORM SEWER GENERAL LAYOUT
- C.301 ~ STORM SEWER PLAN AND PROFILE
- C.302 ~ 10 YR & 100 YR STORM TABLES
- C.303 ~ STORM SEWER DETAILS
- C.600 ~ CONSTRUCTION DETAILS
- C.601 ~ CONSTRUCTION DETAILS
- C.602 ~ CONSTRUCTION DETAILS

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

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.

CITY OF LEE'S SUMMIT, MISSOURI

APPROVED: DATE: _____

BY: _____
CITY ENGINEER

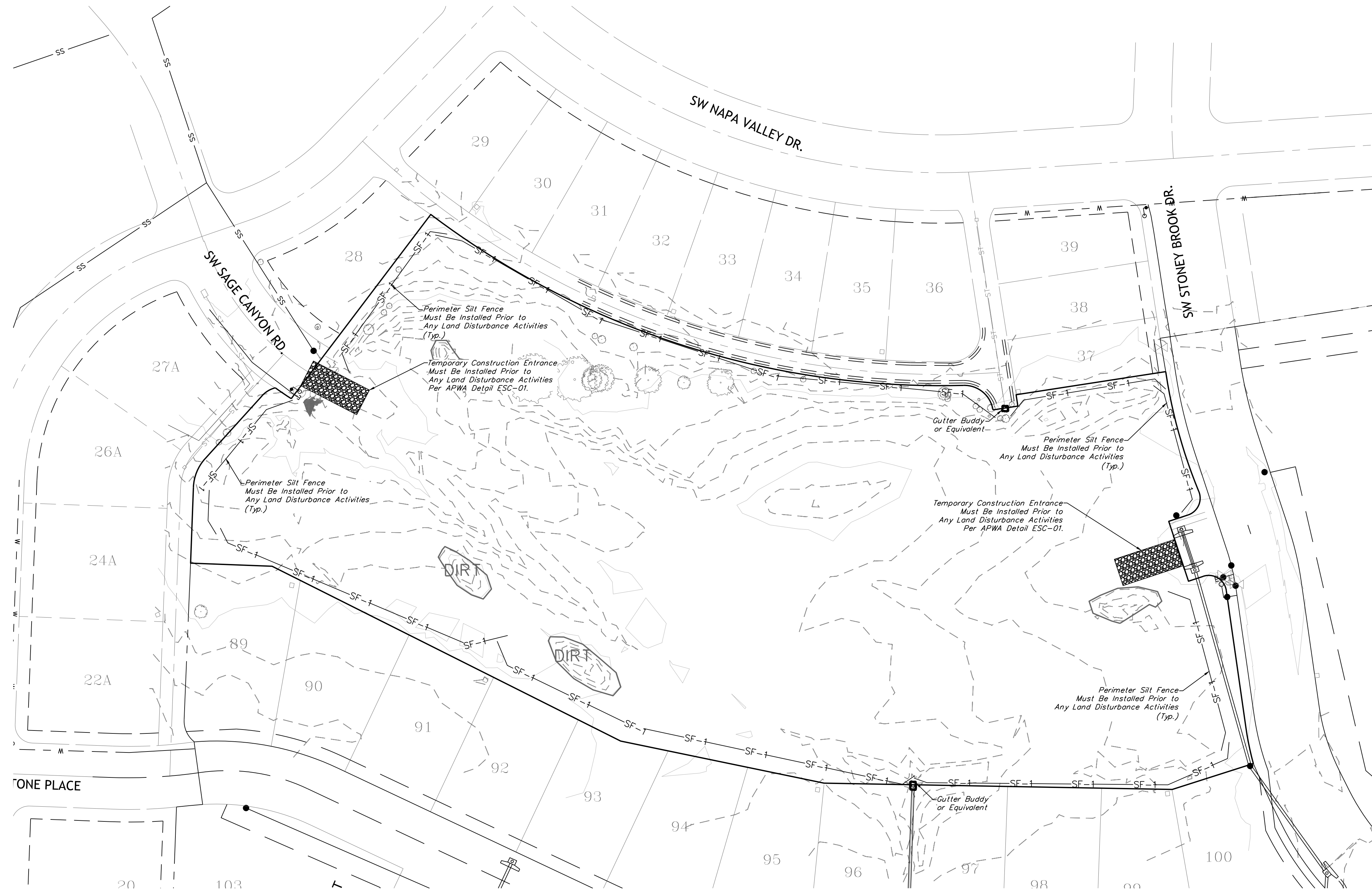
Cover Sheet

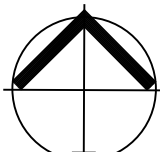
Street, Stormwater, Master Drainage Plan,
and Erosion and Sediment Control Plans
for:
Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

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

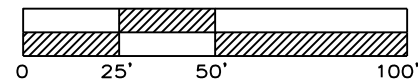
REVISIONS

REV. 8/02/18





North



0 25' 50' 100'

PRE CLEARING 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 —
- 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.

ENGINEERING

ENGINEERING & SURVEYING

SOLUTIONS

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

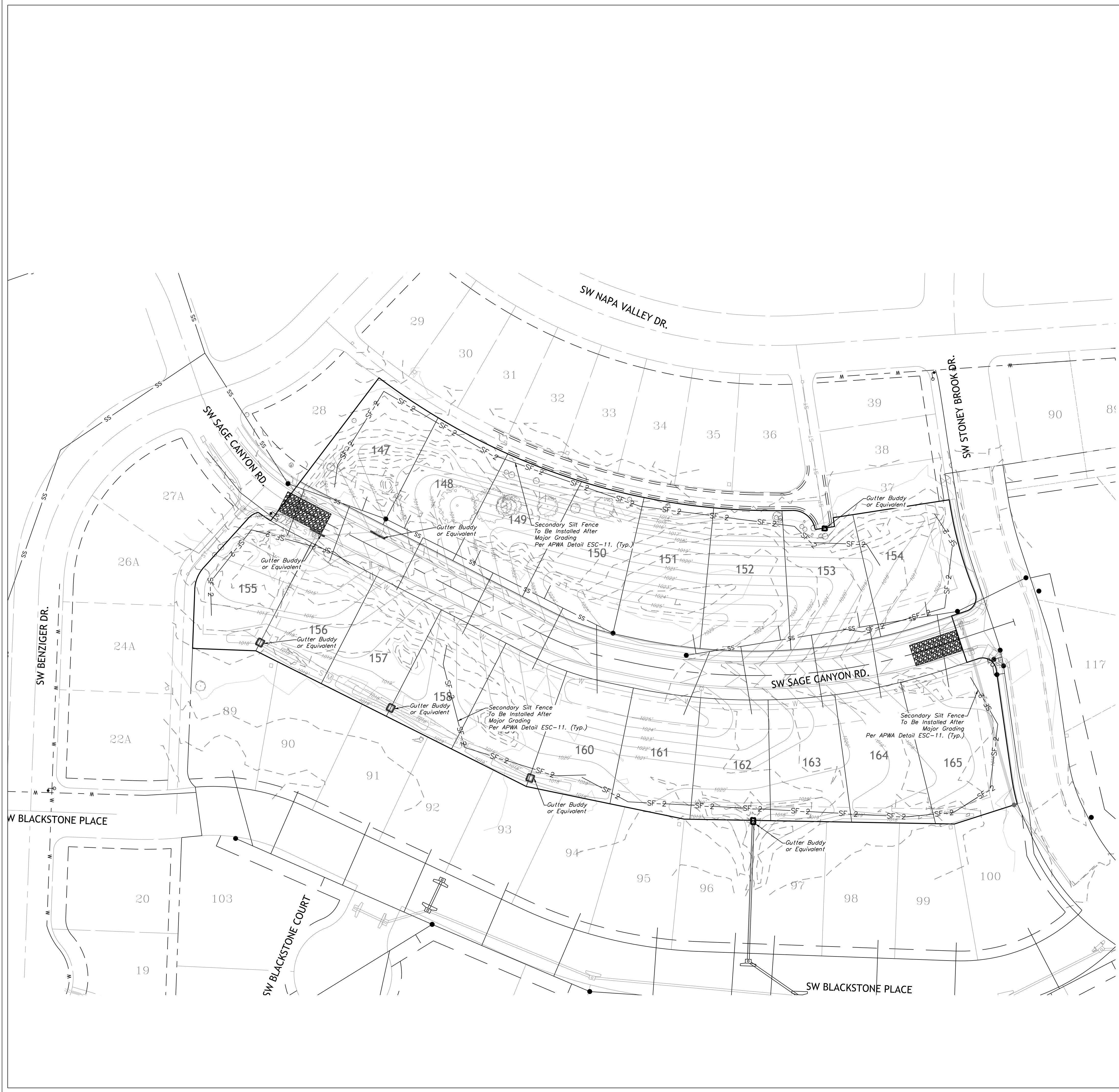
Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

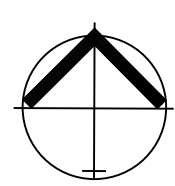
Project: NAPA VALLEY LS100
Issue Date: July 13, 2018

ESC PHASE 1 PLAN
Street, Stormwater, Master Drainage Plan,
and Erosion and Sediment Control Plans
for:
Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

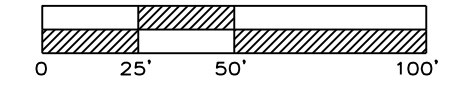
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OK PE 25226
NE PE E-14335

REVISIONS
REV. 8/02/18





North



0 25 50 100

INACTIVE AREA STABELIZATION PLAN

SCALE: 1" = 50'



LEGEND	
Phase 1 Silt Fence	SF-1
Phase 2 Silt Fence	SF-2
Proposed Storm Line	S
Existing Storm Line	X-STM
Inlet Protection	STM
Gutter Buddy or Equivalent	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 SEEDED WITH WHEAT/RYE AT A RATE OF 15 POUNDS PER 1000 SQUARE FEET. PERMANENT SEEDED 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 SEEDED AREAS 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 RESEDED.

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 PUBLIC 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

Updated Title in Title Block.



ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING
50 SE 30TH STREET
LEE'S SUMMIT, MO 64082
P: (816) 623-9888 F: (816) 623-9849

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 LSI/MO
Issue Date: July 13, 2018

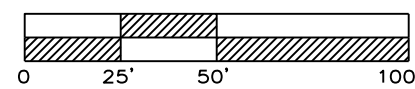
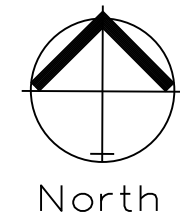
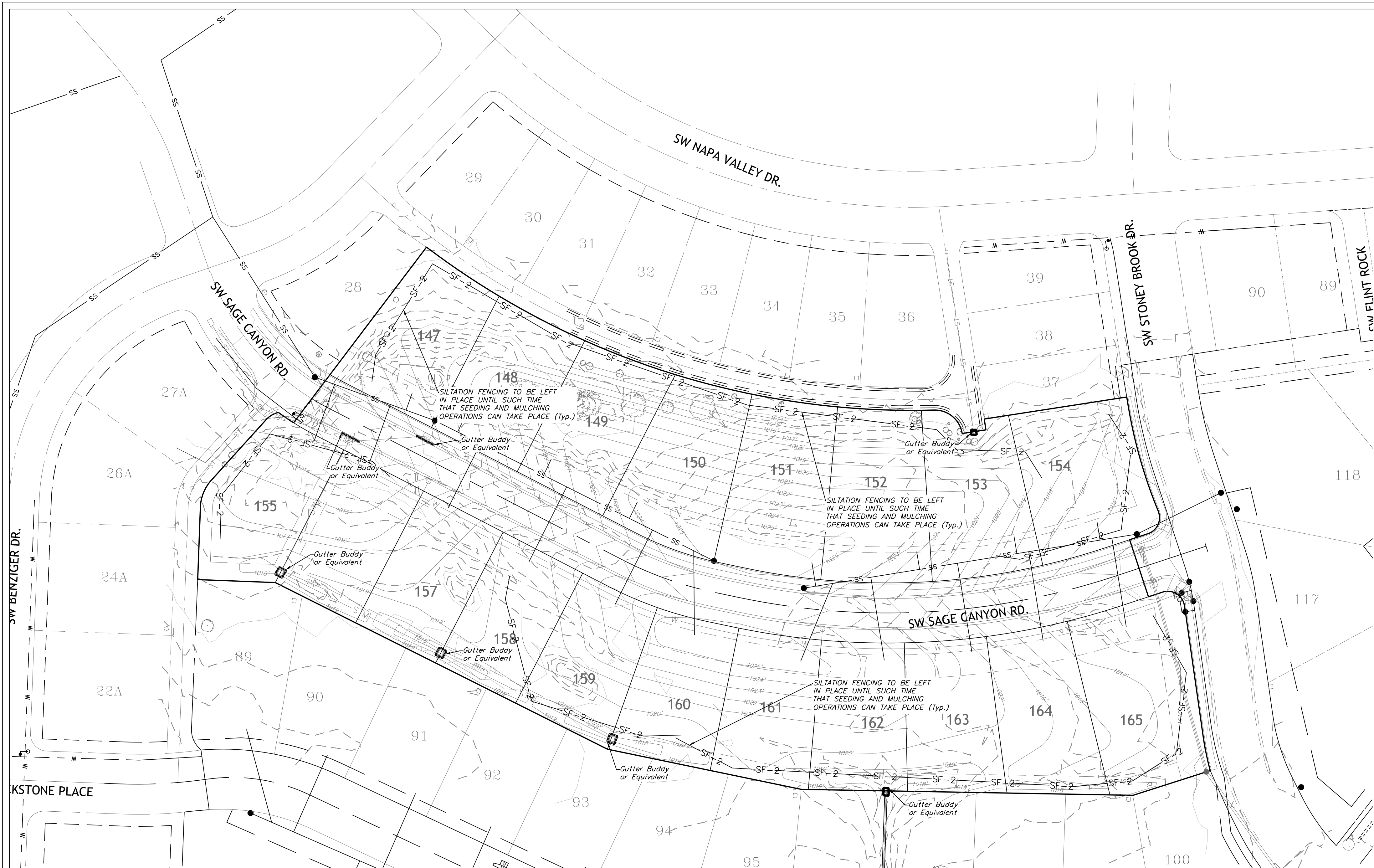
for:
Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

ESC PHASE 2 PLAN
Street, Stormwater, Master Drainage Plan,
and Erosion and Sediment Control Plans

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MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS
REV. 8/02/18

C. 051



FINAL RESTORATION PLAN

SCALE: 1" = 50'

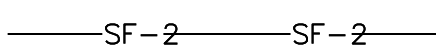
SILT FENCE PROTECTION
TO BE MAINTAINED BY CONTRACTOR

LEGEND

PHASE 1 SILT FENCE



PHASE 2 SILT FENCE



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.

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

NOTES:

- 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 14.050.B.2 All portions of the site not covered with 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

SEED AND 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 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



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

Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

Project:
NAPA VALLEY LS100

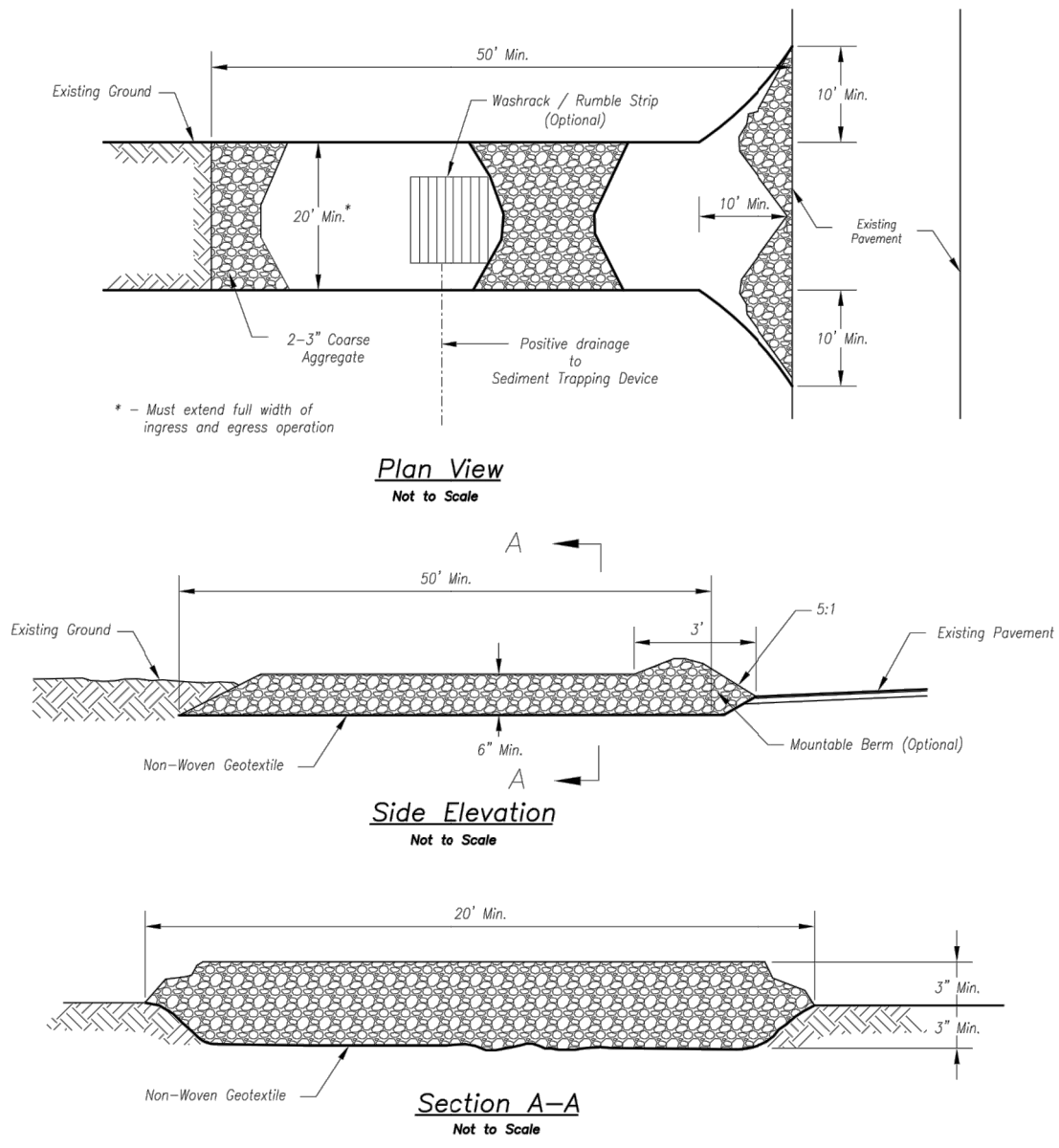
Issue Date:
July 13, 2018

ESC Phase 3 Plan
Street, Stormwater, Master Drainage Plan,
and Erosion and Sediment Control Plans
for:
Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht
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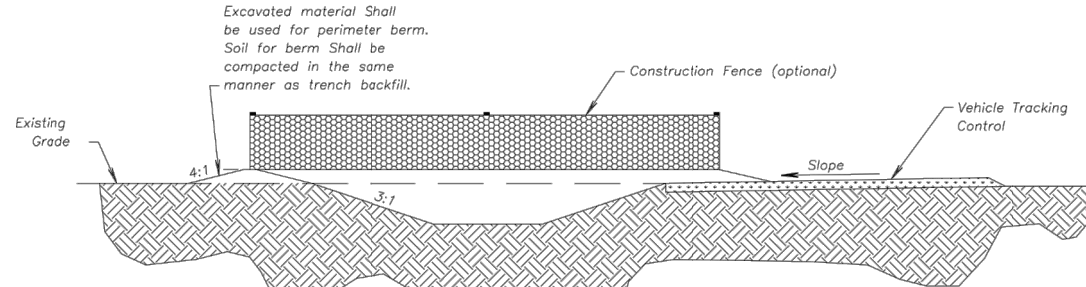
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- Notes for Concrete Washout:**
- Concrete washout areas shall be installed prior to any concrete placement on site.
 - Concrete washout areas shall include a flat subsurface pit sized relative to the amount of concrete to be placed on site. The slopes leading out of the subsurface pit shall be 2:1. The vehicle tracking post shall be sloped towards the concrete washout area.
 - Vehicle tracking control is required at the access point to all concrete washout areas.
 - 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.
 - 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:**
- Concrete washout materials shall be removed once the materials have filled the washout to approximately 75% full.
 - Concrete washout areas shall be enlarged as necessary to maintain capacity for washed concrete.
 - 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.
 - Concrete washout areas shall remain in place until all concrete for the project is placed.
 - When concrete washout areas are removed, excavations shall be filled with suitable compacted soil(s) and liquid(s), 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.

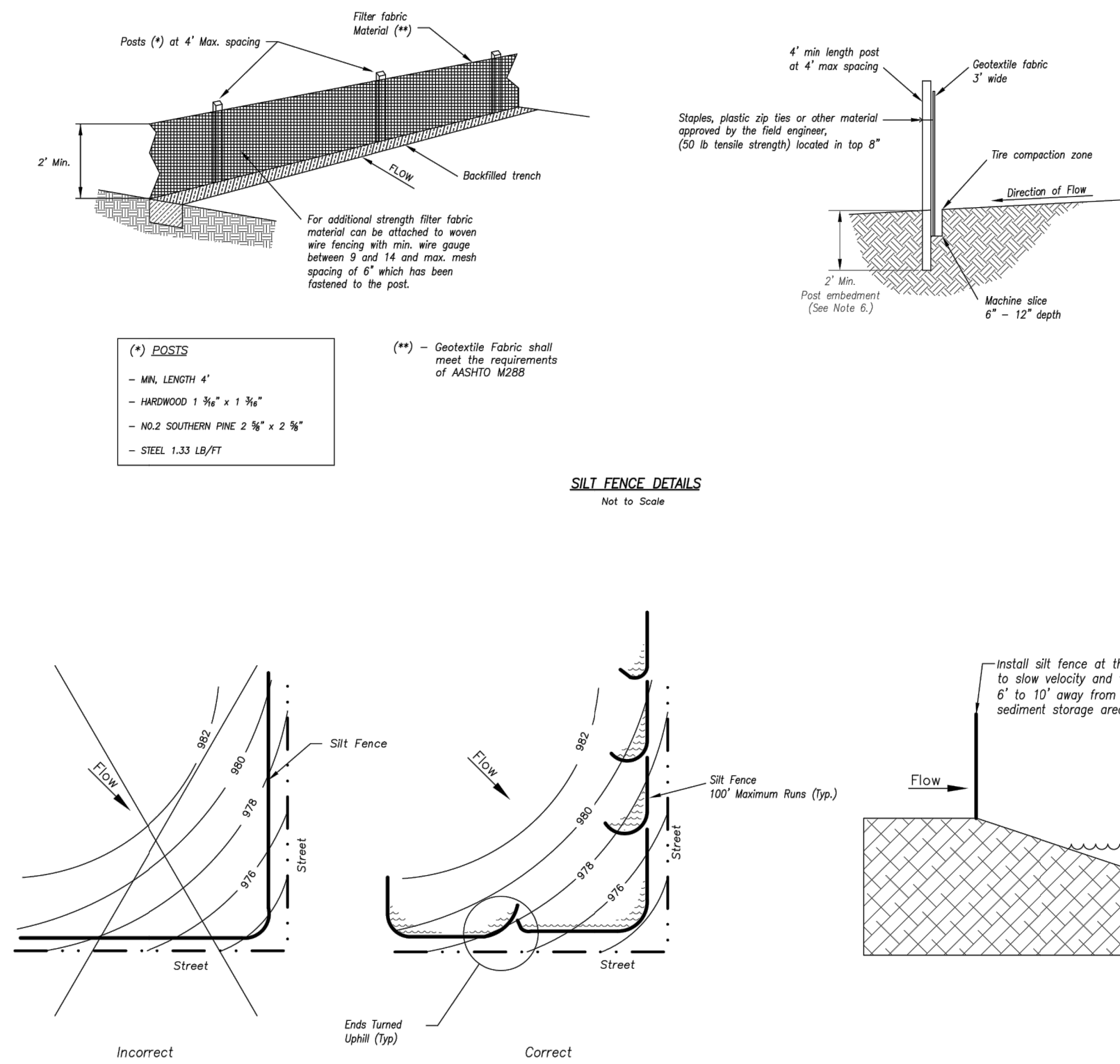
Notes for Construction Entrance:

- Avoid locating on steep slopes, at curves on public roads, or adjacent to distressed areas.
- Remove all vegetation and other unsuitable material from the foundation area, grade, and crown for positive drainage.
- If slope towards the public road exceeds 2%, construct a 6'- to 8'-inch high ridge with 24"V side slopes across the foundation approximately 15 feet from the edge of the public road to divert runoff from it.
- Install pipe under the entrance if needed to maintain drainage ditches along public roads.
- Place stone to dimensions and grade as shown on plans. Leave surface shaped for drainage.
- Divert all surface runoff and drainage from the entrance to a sediment control device.
- If conditions warrant, place geotextile fabric on the graded foundation to improve stability.

Maintenance for Construction Entrance:

- Reshape entrance as needed to maintain function and integrity of installation. Top dress with clean aggregate as needed.

CONSTRUCTION ENTRANCE

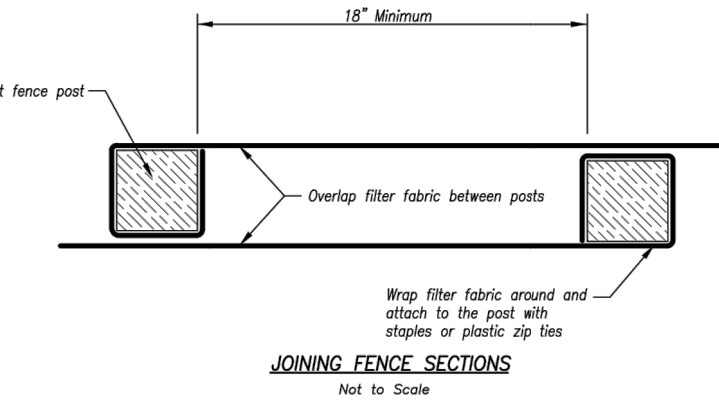


Notes:

- In order to contain water, the ends of the silt fence must be turned uphill (Figure A).
- 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).
- Long slopes should be broken up with intermediate rows of silt fence to slow runoff velocities.
- Attach fabric to upslope side of post.
- Install posts a minimum of 2' into the ground.
- Fencing will only be allowed for small or difficult installation, where silt fence cannot be reasonably used.

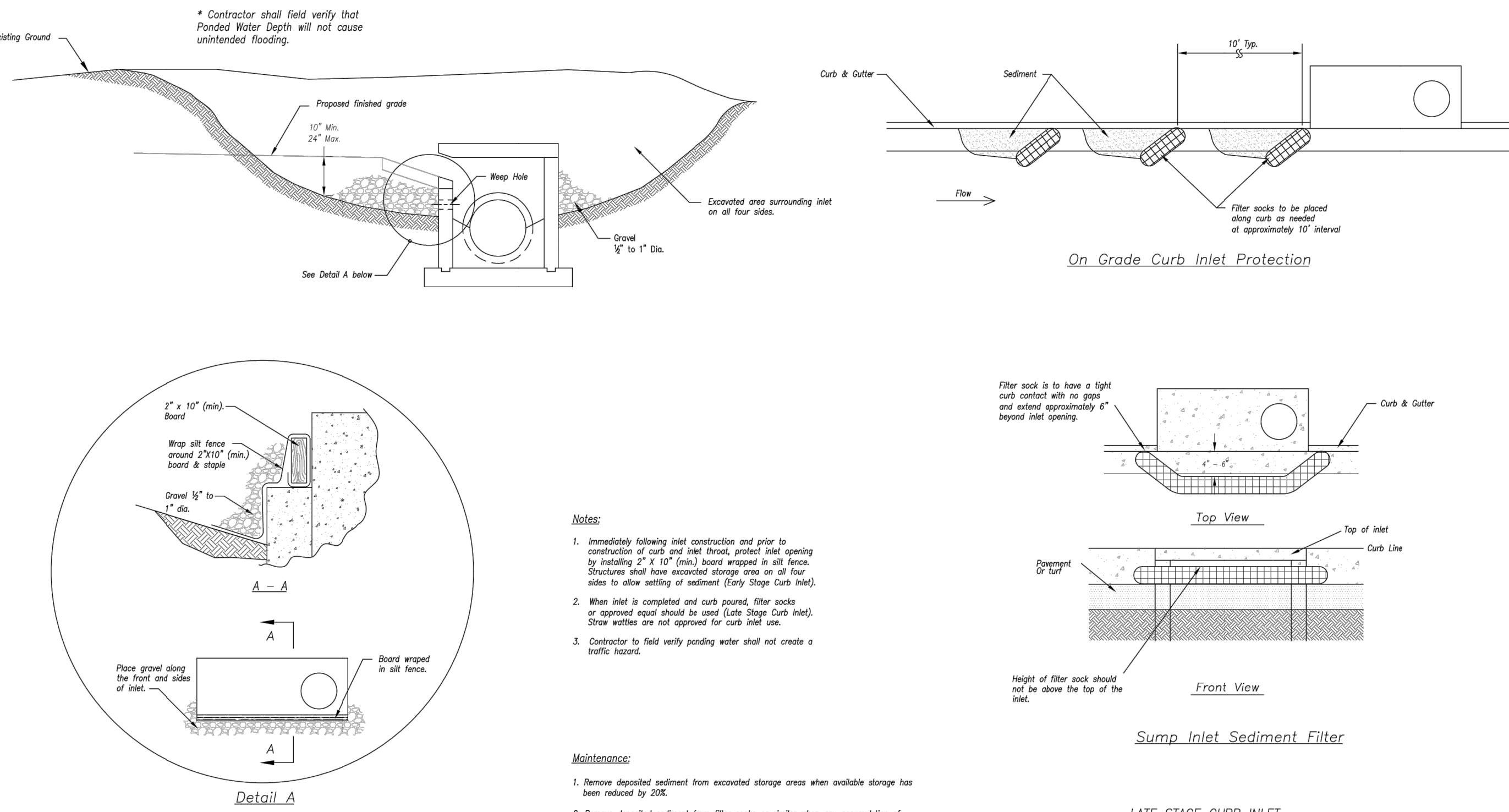
Maintenance:

- Remove and dispose of sediment deposits when the deposit approaches $\frac{1}{2}$ the height of silt fence.
- 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.



Notes:

- 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).
- 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.
- Contractor to field verify ponding water shall not create a traffic hazard.

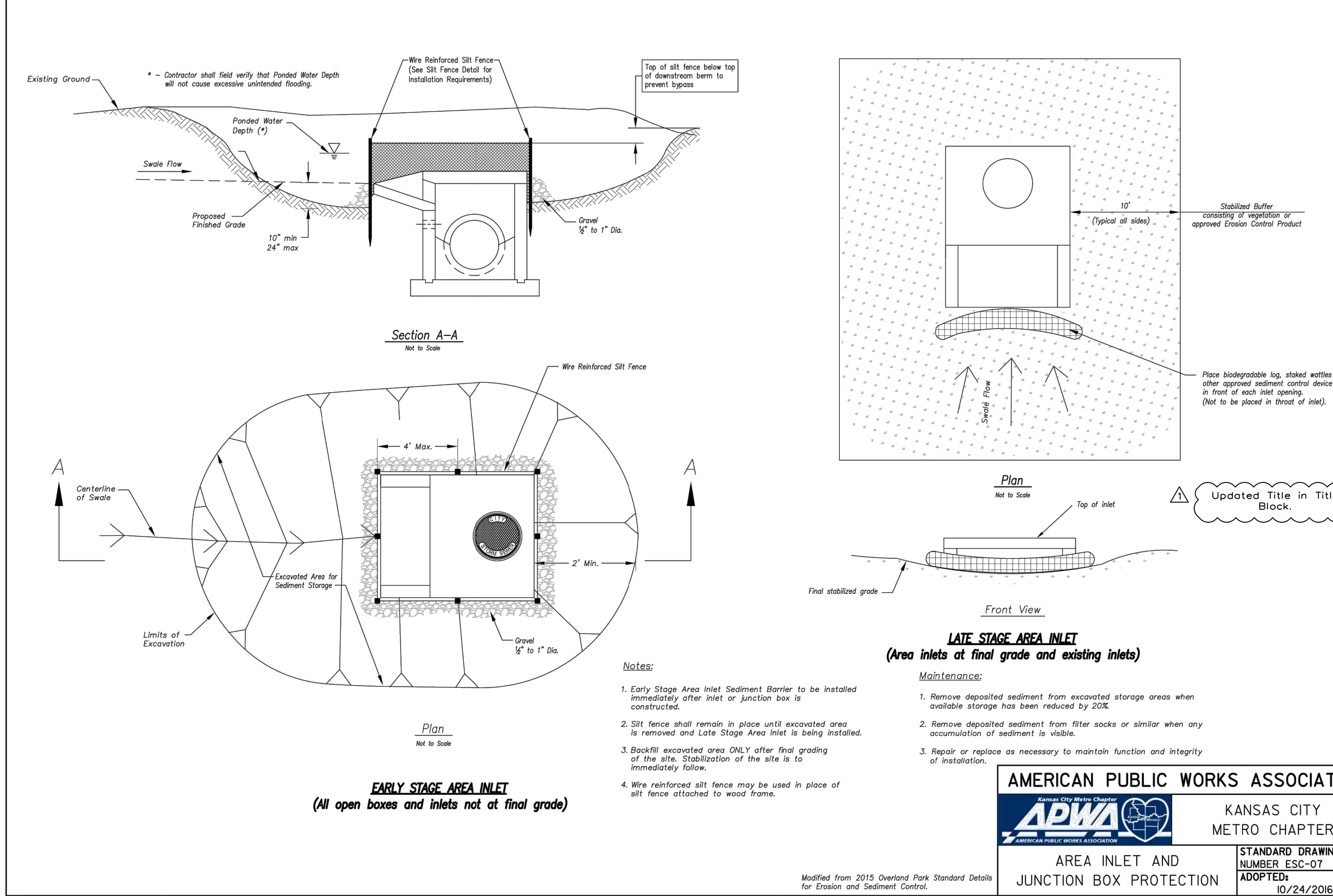
Maintenance:

- Remove deposited sediment from excavated storage areas when available storage has been reduced by 50%.
- Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.
- Repair or replace as necessary to maintain function and integrity of installation.

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.



Notes:

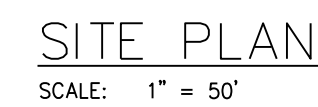
- Early Stage Area Inlet Sediment Barrier to be installed immediately after inlet or junction box is constructed.
- Silt fence shall remain in place until excavated area is removed and Late Stage Area Inlet is being installed.
- Backfill excavated area ONLY after final grading of the site. Stabilization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

Maintenance:

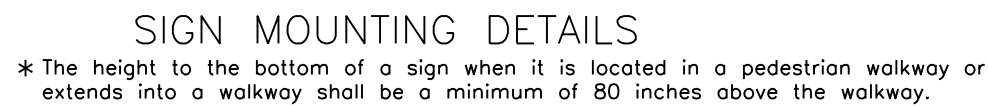
- Remove deposited sediment from excavated storage areas when available storage has been reduced by 50%.
- Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.
- Repair or replace as necessary to maintain function and integrity of installation.

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.

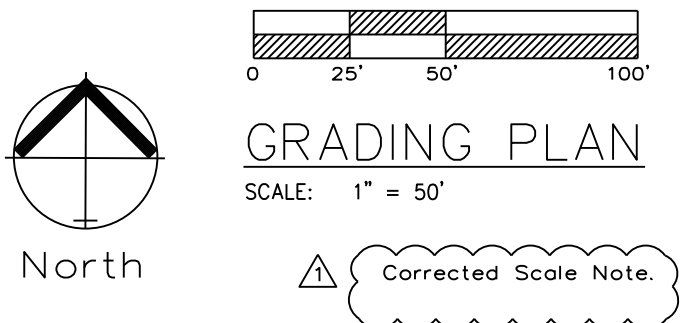


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Notes

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.



Updated Title in Title Block.

Master Drainage Plan 1 of 3:
Grading Plan

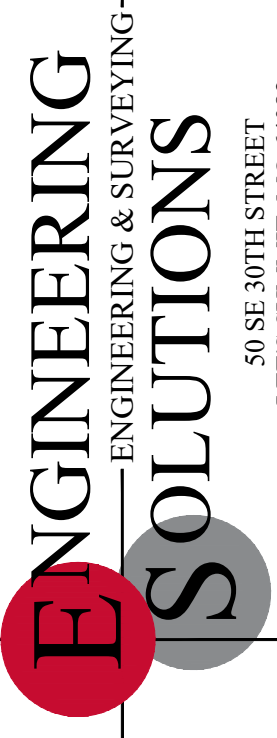
Street, Stormwater, Master Drainage Plan,
and Erosion and Sediment Control Plans
for:

Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

Project:
NAPA VALLEY LS MO
Issue Date:
July 13, 2018

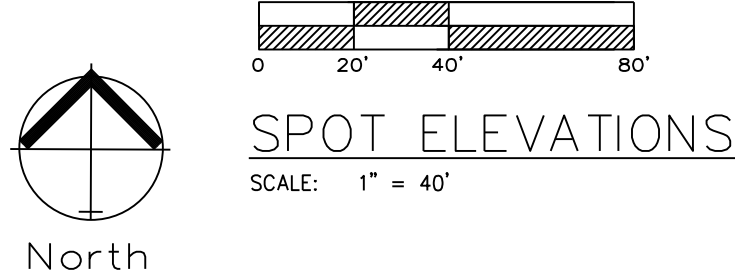
Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

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



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Lot Number	Basement Type
147	Daylight
148	Daylight
149	Walkout
150	Walkout
151	Walkout
152	Walkout
153	Daylight
154	Full
155	Full
156	Full
157	Full
158	Full
159	Full
160	Daylight
161	Daylight
162	Daylight
163	Daylight
164	Full
165	Full

Updated Title in Title Block.

Master Drainage Plan 2 of 3:
Spot Elevations

Street, Stormwater, Master Drainage Plan,
and Erosion and Sediment Control Plans
for:

Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

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NAPA VALLEY LSI MO
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Lee's Summit, Jackson County, Missouri

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APWA STORM DRAINAGE "TC" COMPUTATIONS FOR : Napa Valley 4th Plat																						
yellow areas are self computing overwrite if necessary					Surface types: SURFACE CODES "C" Values		Asph/ConcBus/Com		Dirt		Grass/Park		Lake		MultFam		SnglFam		Undev		Other	
TOTAL WATERSHED							A		B		D		G		L		M		S		U	
							0.90		0.87		0.60		0.30		0.90		0.66		0.51		0.51	
							Overwrite		Length - DnElev or Slope if necessary		SURFACE CODE		P=Paved U=Unpaved		Overwrite Slope or Elevations if necessary							
							OVERLAND FLOW - 100' MAX															
							SURFACE CODE		"C" VALUE		OVRLND LENGTH		UP ELEV		DN ELEV		SLOPE %					
AREA ID	TOTAL ACRES	WTRSHD LENGTH	UP ELEV	DN ELEV	SURFACE CODE	"C" VALUE	OVRLND LENGTH	UP ELEV	DN ELEV	SLOPE %	CHANNEL LENGTH	UP ELEV	DN ELEV	SLOPE %	VELOCITY F/S	Cal Overland Flow T(I)	Used Min 5 T(I)	Cal Channel One T(T)	Cal Channel Two T(T)	Total T@ 10	AREA ID	
1	0.41	395.8	1026.5	1014.9	S	0.51	100.0	1026.5	1024.5	2.0	P	295.8	1024.5	1014.9	3.25	3.7	8.5	8.5	1.3	0.0	9.8	1.0
2	0.37	395.8	1026.5	1014.5	S	0.51	100.0	1026.5	1024.5	2.0	P	295.8	1024.5	1014.5	3.38	3.7	8.4	8.4	1.3	0.0	9.7	2.0
3	0.85	409.6	1026.5	1012.8	S	0.51	100.0	1026.5	1024.5	2.0	P	309.6	1024.5	1012.8	3.76	3.9	8.4	8.4	1.3	0.0	9.7	3.0
4	0.44	353.6	1026.5	1014.9	S	0.51	100.0	1026.5	1024.5	2.0	P	253.6	1024.5	1014.9	3.79	4.0	8.5	8.5	1.1	0.0	9.5	4.0
5	0.06	80.0	1019.0	1017.0	S	0.51	80.0	1019.0	1017.0	2.5						7.0	7.0	0.0	0.0	7.0	5.0	
6	0.15	80.0	1019.0	1017.0	S	0.51	80.0	1019.0	1017.0	2.5						7.0	7.0	0.0	0.0	7.0	6.0	
7	0.85	120.0	1020.0	1017.0	S	0.51	100.0	1020.0	1017.5	2.5	P	20.0	1017.5	1017.0	2.50	3.2	7.8	7.8	0.1	0.0	7.9	7.0
8	0.39	100.0	1019.0	1016.5	S	0.51	100.0	1019.0	1016.5	2.5						7.8	7.8	0.0	0.0	7.8	8.0	
9	0.47	250.0	1023.0	1015.0	S	0.51	100.0	1023.0	1020.0	3.0	P	150.0	1020.0	1015.0	3.33	3.7	7.4	7.4	0.7	0.0	8.0	9.0

* Velocity = 16.1345 x SQRT(slope) [Unpaved] Velocity = 20.3282 x SQRT(slope) [Paved] Formula taken from "Urban Hydrology for Small Watersheds - Technical Release 55", Appendix F.

** T(I) = 1.8 x (1.1-C) x SQRT(overland length) / (slope)^1/3 Formula taken from American Public Works Association 5602.5.

*** T(T) = Channel Length / Velocity Formula taken from "Urban Hydrology for Small Watersheds - Technical Release 55", Eq. 3-1.

* Velocity = 16.1345 x SQRT(slope) [Unpaved] Velocity = 20.3282 x SQRT(slope) [Paved] Formula taken from "Urban Hydrology for Small Watersheds - Technical Release 55", Appendix F.
** T(I) = 1.8 x (1.1-C) x SQRT(overland length) / (slope)^1/3 Formula taken from American Public Works Association 5602.5.
*** T(T) = Channel Length / Velocity Formula taken from "Urban Hydrology for Small Watersheds - Technical Release 55", Eq. 3-1.



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Project:

NAPA VALLEY LSMO

Issue Date:

July 13, 2018

Master Drainage Map 3 of 3:

Drainage Area Map

Street, Stormwater, Master Drainage Plan,
and Erosion and Sediment Control Plans

for:

Napa Valley 4th Plat

Lee's Summit, Jackson County, Missouri

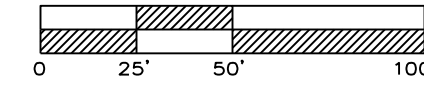
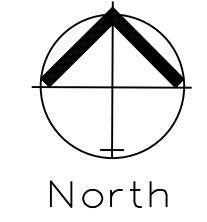
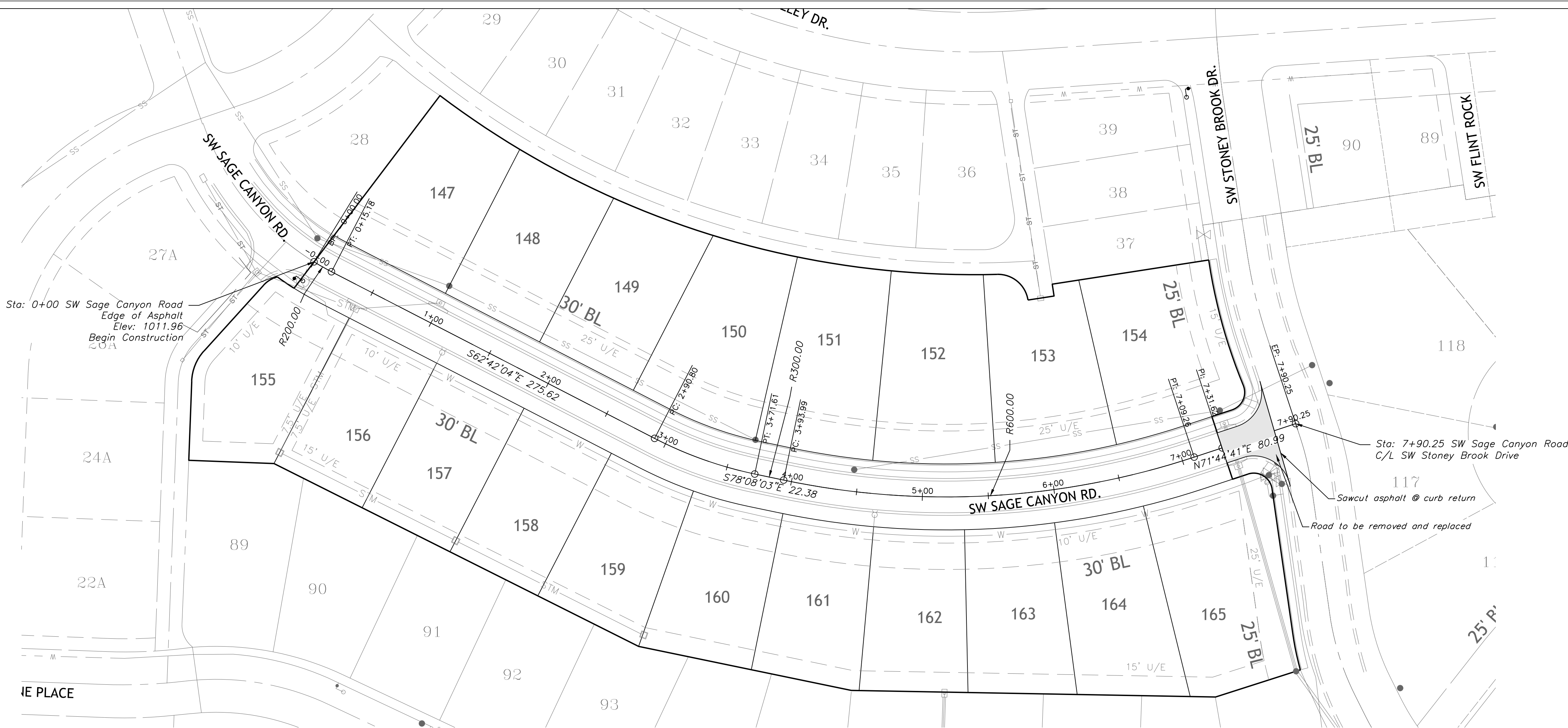
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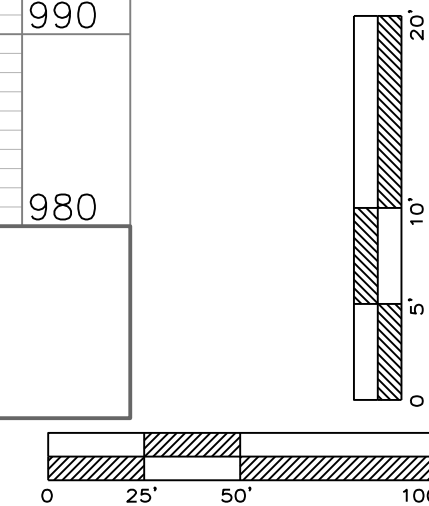
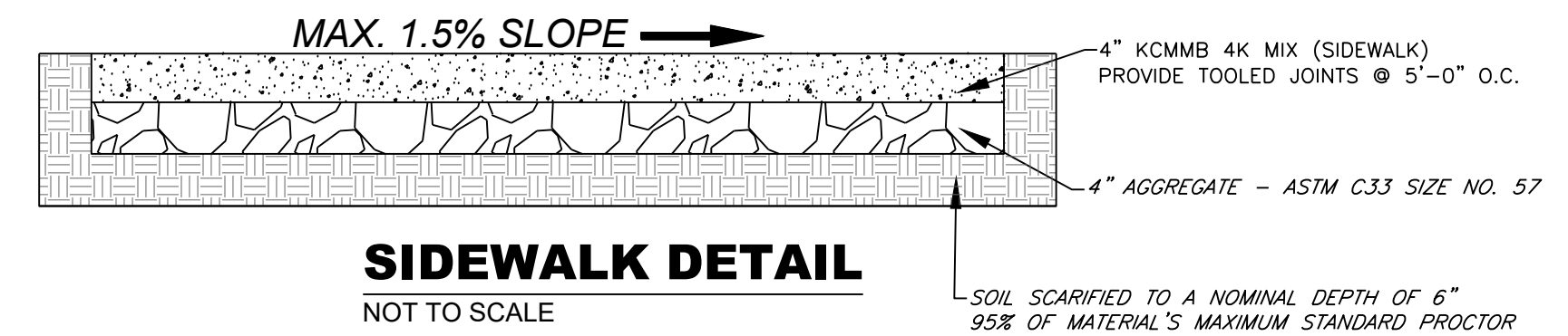
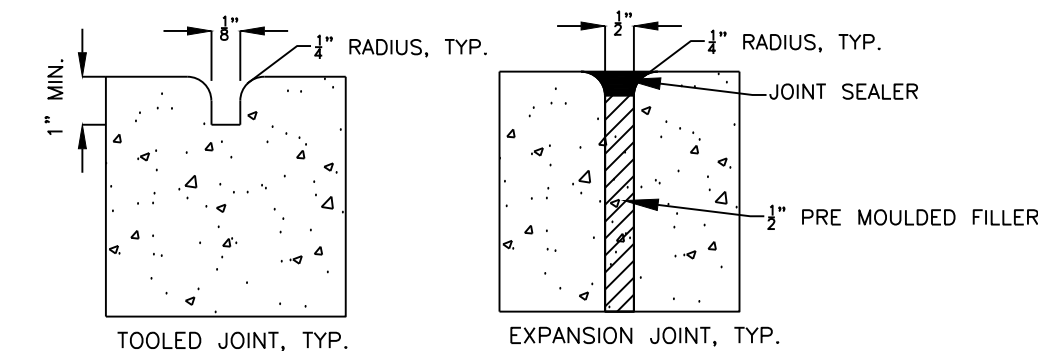
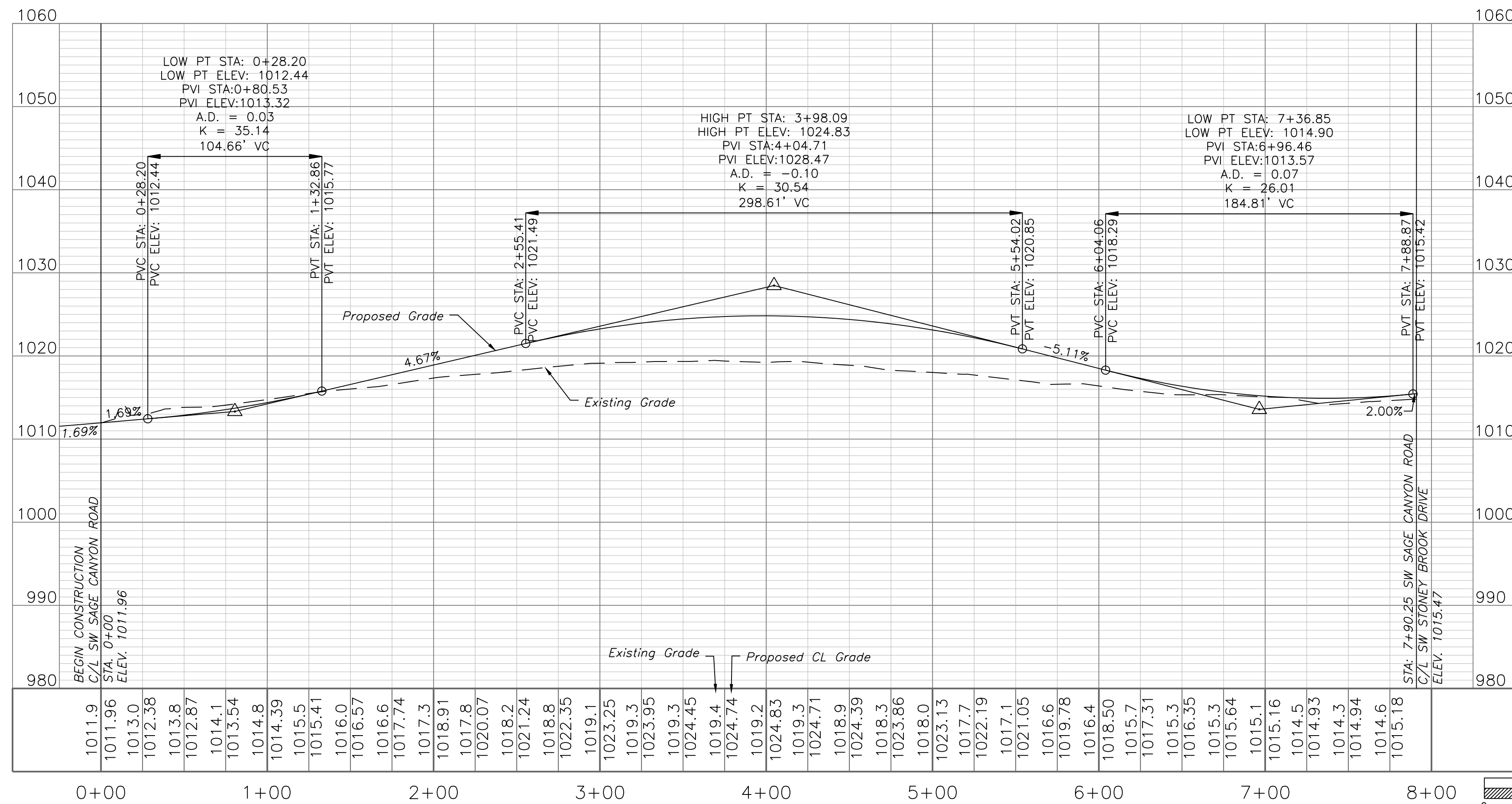
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STREET PLAN & PROFILE

SCALE: 1" = 50'

SW SAGE CANYON ROAD



Professional Registration
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Kansas
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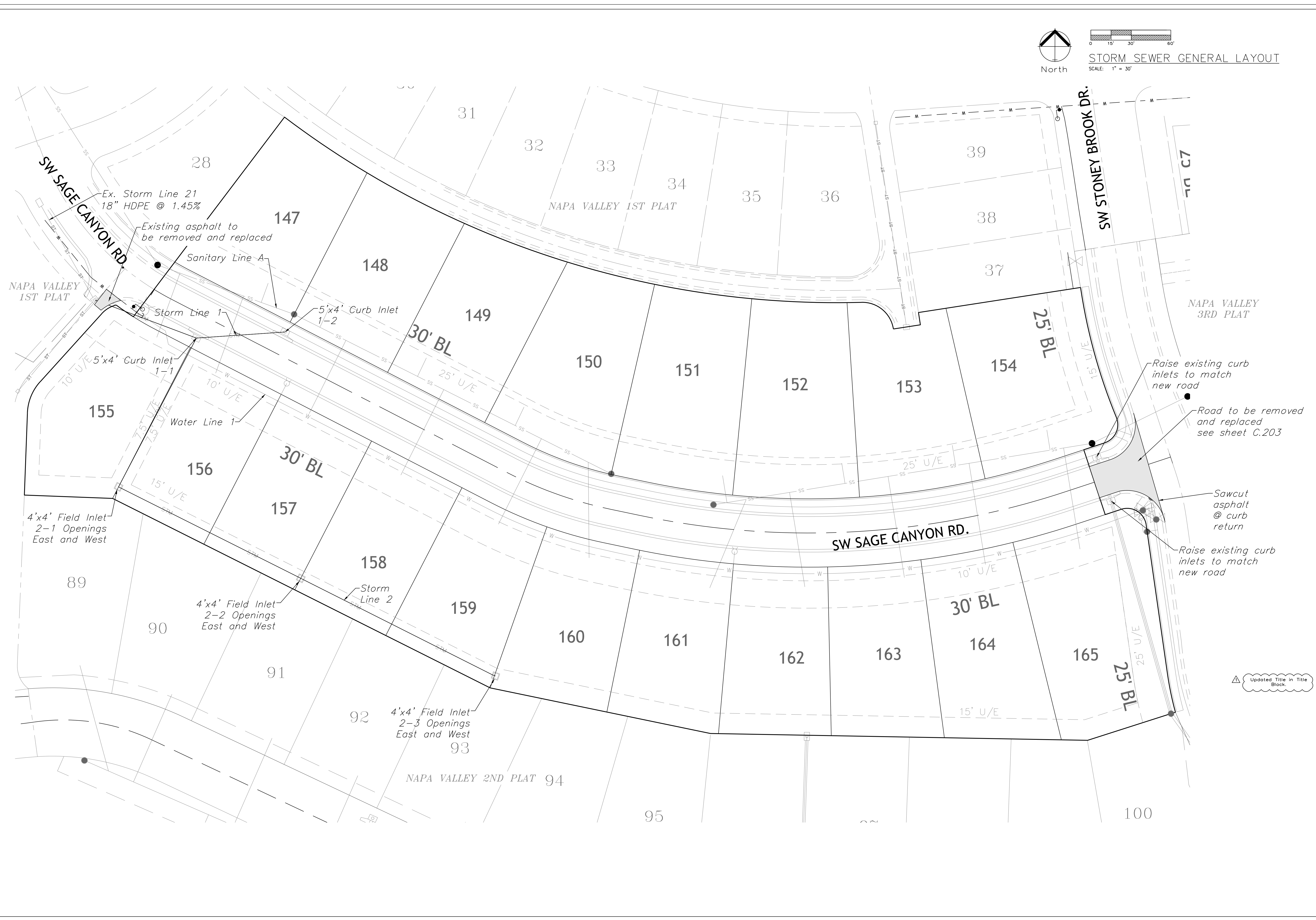
Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

Project:
NAPA VALLEY LSMO
Issue Date:
July 13, 2018

STREET PLAN & PROFILE
Street, Stormwater, Master Drainage Plan,
and Erosion and Sediment Control Plans
for:
Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht
MO PE 2006019708
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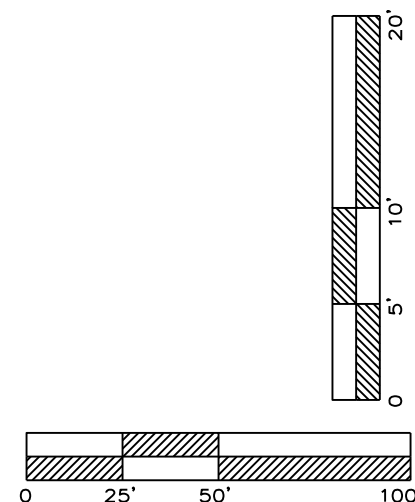
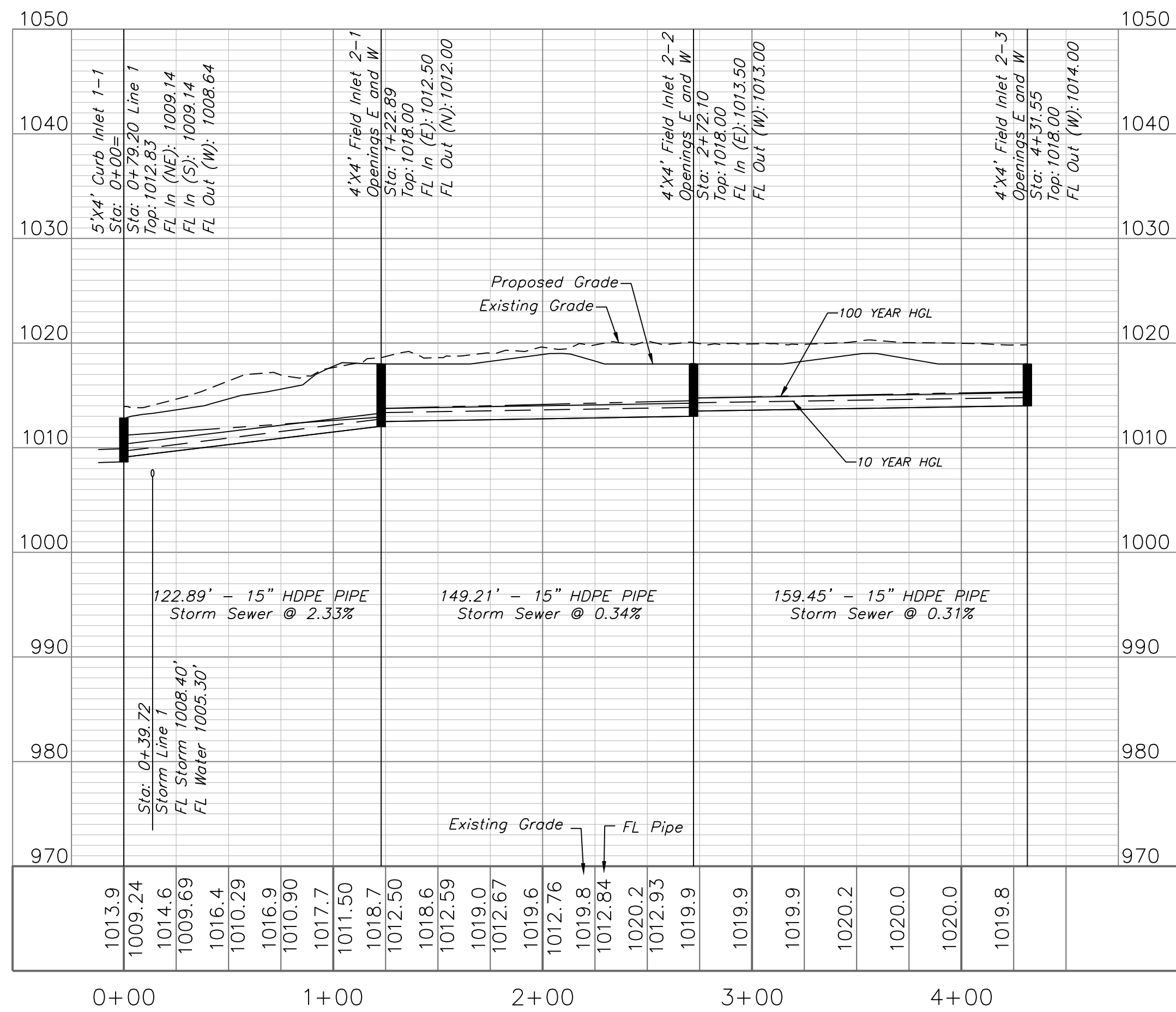
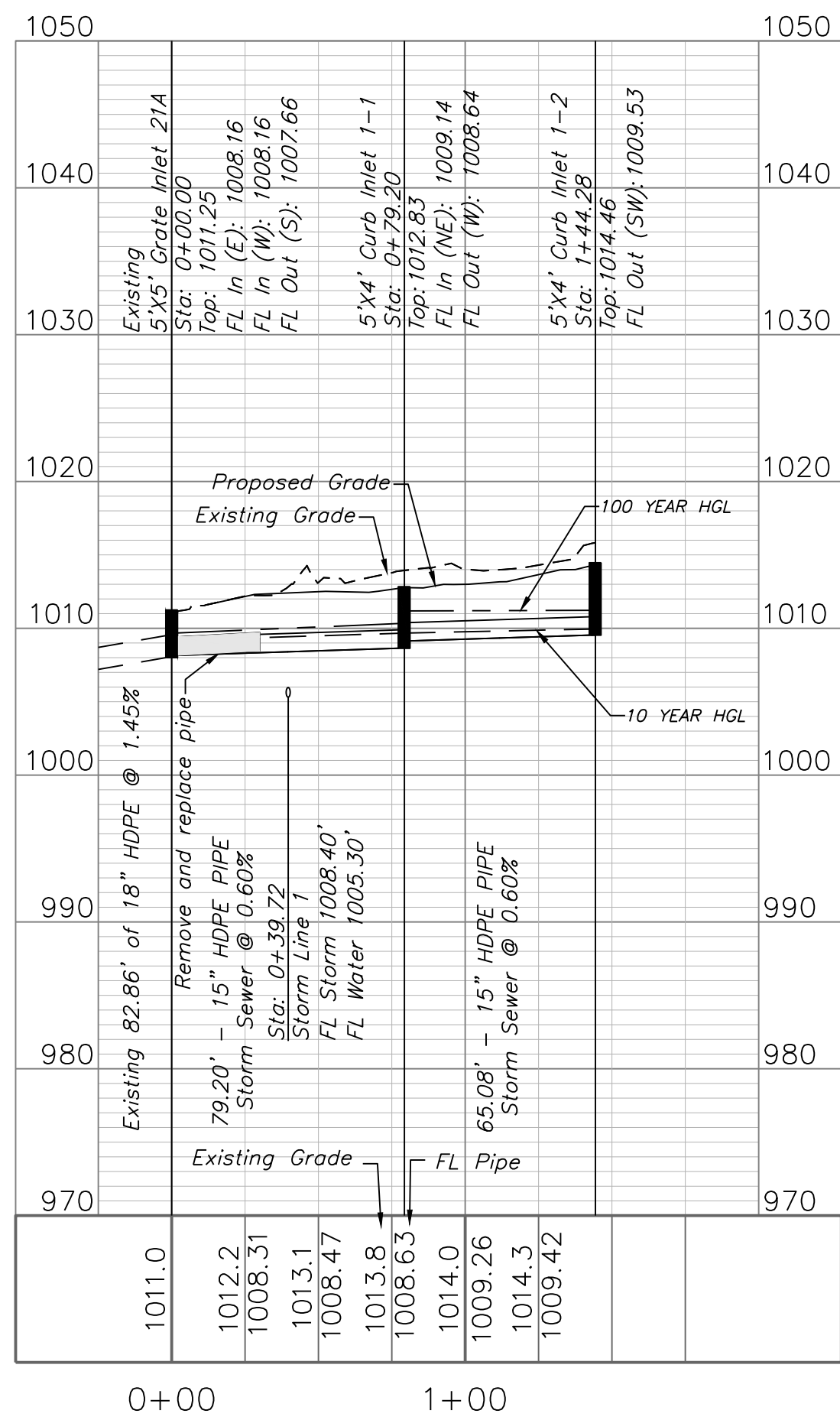
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STORM LINE 1

STORM LINE 2



10 Year Inlet																									
D.S. Line	U.S. Line	Area	InletTime	Int.	RunoffCoeff.	Q=CIA	Q Carry-over	QCaptured	QBypassed	JunctType	CurbHeight	CurbLength	GrateArea	GrateLength	GrateWidth	GutterSlope	GutterWidth	CrossSlope, Sw	CrossSlope, Sx	LocalDepr.	InletDepth	BypassDepth	BypassSpread	GutterDepth	GutterSpread
		(ac)	(min)	(in/hr)	(C)	(cfs)	(cfs)	(cfs)	(cfs)		(in)	(ft)	(sqft)	(ft)	(ft)	(ft/ft)	(ft)	(ft/ft)	(ft/ft)	(in)	(ft)	(ft)	(ft)	(ft)	(ft)
Ex 20G	Ex 21A	0.83	9	6.29	0.51	2.66	1.69	4.36	0	Grate Inlet	....	....	4	2	2	Sag	2	0.02	0.02	....	0.32	n/a	n/a	0.32	34.04
Ex 21A	1-1	0.85	9.7	6.15	0.51	2.67	0	0.98	1.69	Curb	10	5	....	....	....	0.01	2	0.05	0.02	0	0.24	0.21	7.49	0.24	9.1
1-1	1-2	0.37	9.7	6.15	0.51	1.16	0	0.62	0.54	Curb	10	5	....	....	....	0.01	2	0.05	0.02	0	0.19	0.15	4.31	0.19	6.31
1-1	2-1	0.06	7	6.74	0.51	0.21	0	0.21	0	Field Inlet	10	12	....	....	....	Sag	....	0.02	0.02	....	0.03	n/a	n/a	0.03	1.6
2-1	2-2	0.15	7	6.74	0.51	0.52	0	0.52	0	Field Inlet	10	12	....	....	....	Sag	....	0.02	0.02	....	0.06	n/a	n/a	0.06	2.95
2-2	2-3	0.85	7.9	6.53	0.51	2.83	0	2.83	0	Field Inlet	10	12	....	....	....	Sag	....	0.02	0.02	....	0.18	n/a	n/a	0.18	9.17
10 Year Pipe																									
D.S. Line	U.S. Line	LineLength	Incr.Area	TotalArea	RunoffCoeff.	IncrC x A	TotalC x A	InletTime	TimeConc	RnfalInt	TotalRunoff	AdnlFlow	TotalFlow	CapacFull	Veloc	PipeSize	PipeSlope	Inv ElevDn	Inv ElevUp	HGLDn	HGLUp	Grnd/RimDn	Grnd/RimUp		
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)		
Ex 20G	Ex 21A	82.86	0.83	3.11	0.51	0.42	1.59	9	10.3	6	9.56	0	9.56	13.69	7.36	18	1.45	1006.46	1007.66	1007.38	1008.85	1010.03	1011.25		
Ex 21A	1-1	79.2	0.85	2.28	0.51	0.43	1.16	9.7	10.1	6.1	7.06	0	7.06	8.86	5.52	18	0.61	1008.16	1008.64	1009.17	1009.67	1011.25	1012.83		
1-1	1-2	65.08	0.37	0.37	0.51	0.19	0.19	9.7	9.7	6.2	1.16	0	1.16	5.42	2.76	15	0.6	1009.14	1009.53	1009.67	1009.95	1012.83	1014.46		
1-1	2-1	122.89	0.06	1.06	0.51	0.03	0.54	7	9.3	6.2	3.36	0	3.36	10.67	5.64	15	2.33	1009.14	1012	1009.67	1012.74	1012.83	1018		
2-1	2-2	149.21	0.15	1	0.51	0.08	0.51	7	8.7	6.4	3.25	0	3.25	4.05	3.67	15	0.34	1012.5	1013	1013.35	1013.85	1018	1018		
2-2	2-3	159.45	0.85	0.85	0.51	0.43	0.43	7.9	7.9	6.5	2.83	0	2.83	3.92	3.48	15	0.31	1013.5	1014	1014.29	1014.79	1018	1018		
100 Year Inlet																									
D.S. Line	U.S. Line	Area	InletTime	Int.	RunoffCoeff.	Q=CIA	Q Carry-over	QCaptured	QBypassed	JunctType	CurbHeight	CurbLength	GrateArea	GrateLength	GrateWidth	GutterSlope	GutterWidth	CrossSlope, Sw	CrossSlope, Sx	LocalDepr.	InletDepth	BypassDepth	BypassSpread	GutterDepth	GutterSpread
		(ac)	(min)	(in/hr)	(C)	(cfs)	(cfs)	(cfs)	(cfs)		(in)	(ft)	(sqft)	(ft)	(ft)	(ft/ft)	(ft)	(ft/ft)	(ft/ft)	(in)	(ft)	(ft)	(ft)	(ft)	(ft)
Ex 20G	Ex 21A	0.83	9	9.52	0.51	4.03	2.82	6.85	0	Grate Inlet	....	....	4	2	2	Sag	2	0.02	0.02	....	0.43	n/a	n/a	0.43	45.31
Ex 21A	1-1	0.85	9.7	9.3	0.51	4.03	0	1.22	2.82	Curb	10	5	....	....	....	0.01	2	0.05	0.02	0	0.28	0.25	9.31	0.28	10.8
1-1	1-2	0.37	9.7	9.3	0.51	1.76	0	0.78	0.98	Curb	10	5	....	....	....	0.01	2	0.05	0.02	0	0.21	0.18	5.82	0.21	7.61
1-1	2-1	0.06	7	10.2	0.51	0.31	0	0.31	0	Field Inlet	10	12	....	....	....	Sag	....	0.02	0.02	....	0.04	n/a	n/a	0.04	2.11
2-1	2-2	0.15	7	10.2	0.51	0.78	0	0.78	0	Field Inlet	10	12	....	....	....	Sag	....	0.02	0.02	....	0.08	n/a	n/a	0.08	3.88
2-2	2-3	0.85	7.9	9.88	0.51	4.28	0	4.28	0	Field Inlet	10	12	....	....	....	Sag	....	0.02	0.02	....	0.24	n/a	n/a	0.24	12.09
100 Year Pipe																									
D.S. Line	U.S. Line	LineLength	Incr.Area	TotalArea	RunoffCoeff.	IncrC x A	TotalC x A	InletTime	TimeConc	RnfalInt	TotalRunoff	AdnlFlow	TotalFlow	CapacFull	Veloc	PipeSize	PipeSlope	Inv ElevDn	Inv ElevUp	HGLDn	HGLUp	Grnd/RimDn	Grnd/RimUp		
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)		
Ex 20G	Ex 21A	82.86	0.83	3.11	0.51	0.42	1.59	9	10.7	9	14.3	0	14.3	13.69	8.58	18	1.45	1006.46	1007.66	1007.76	1009.05	1010.03	1011.25		
Ex 21A	1-1	79.2	0.85	2.28	0.51	0.43	1.16	9.7	10.5	9.1	10.56	0	10.56	8.86	5.97	18	0.61	1008.16	1008.64	1009.66	1010.34	1011.25	1012.83		
1-1	1-2	65.08	0.37	0.37	0.51	0.19	0.19	9.7	9.7	9.3	1.76	0	1.76	5.42	1.43	15	0.6	1009.14	1009.53	1011.18	1011.22	1012.83	1014.46		
1-1	2-1	122.89	0.06	1.06	0.51	0.03	0.54	7	9.3	9.4	5.1	0	5.1	10.67	4.73	15	2.33	1009.14	1012	1011.18	1012.92	1012.83	1018		
2-1	2-2	149.21	0.15	1	0.51	0.08	0.51	7	8.7	9.6	4.91	0	4.91	4.05	4	15	0.34	1012.5	1013	1013.75	1014.49	1018	1018		
2-2	2-3	159.45	0.85	0.85	0.51	0.43	0.43	7.9	7.9	9.9	4.28	0	4.28	3.92	3.49	15	0.31	1013.5	1014	1014.75	1015.35	1018	1018		

Added storm tables.

10 YR & 100 YR STORM TABLES
Street, Stormwater, Master Drainage Plan,
and Erosion and Sediment Control Plans
for:
Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

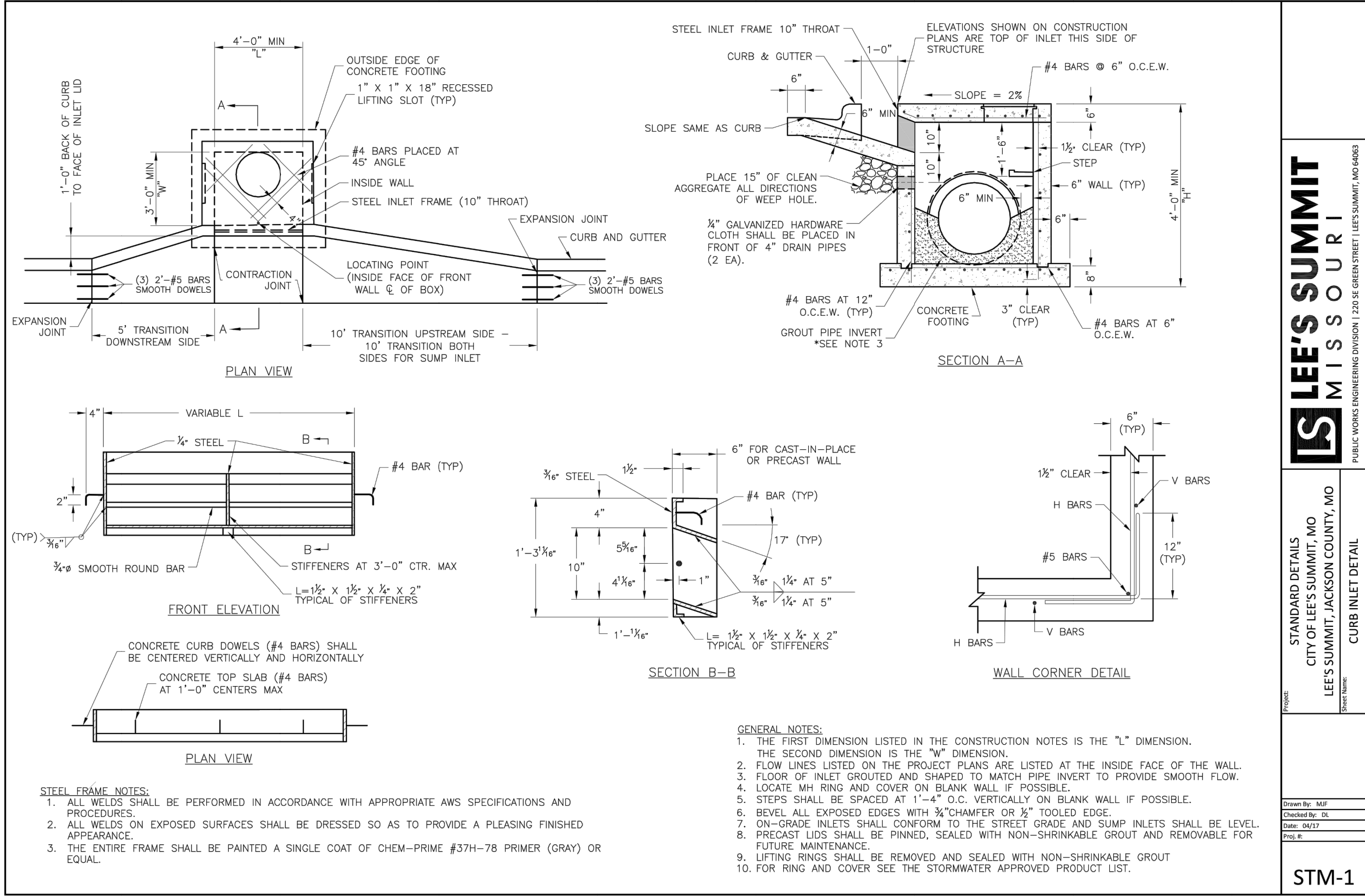
Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS
REV. 8/02/18

Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

Project:
NAPA VALLEY LSMO
Issue Date:
July 13, 2018

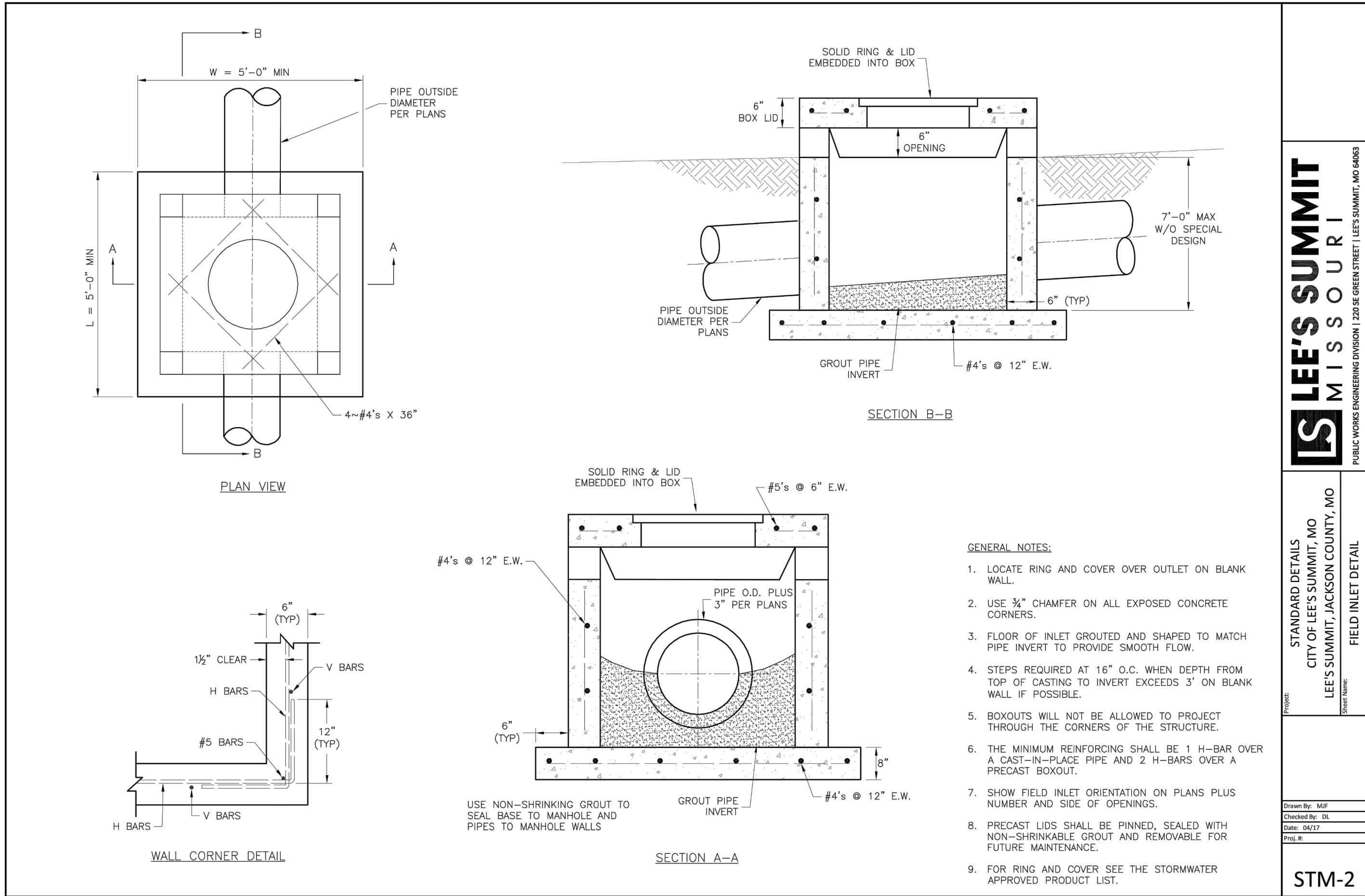
Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821



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

STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
Curb Inlet Detail

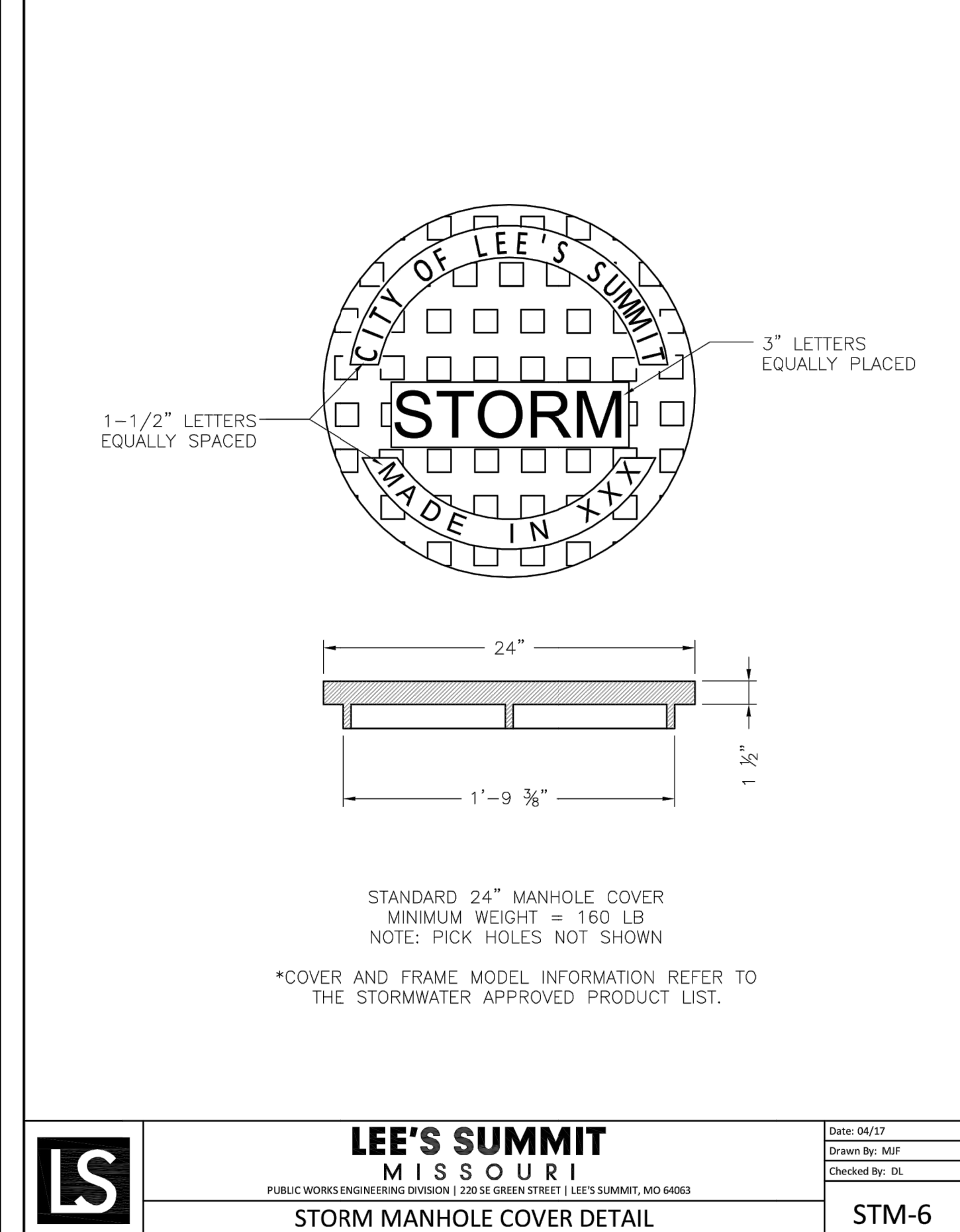
Drawn By: MJF
Checked By: DL
Date: 04/17
Title: STM-1
Project: STM-1



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

STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
Field Inlet Detail

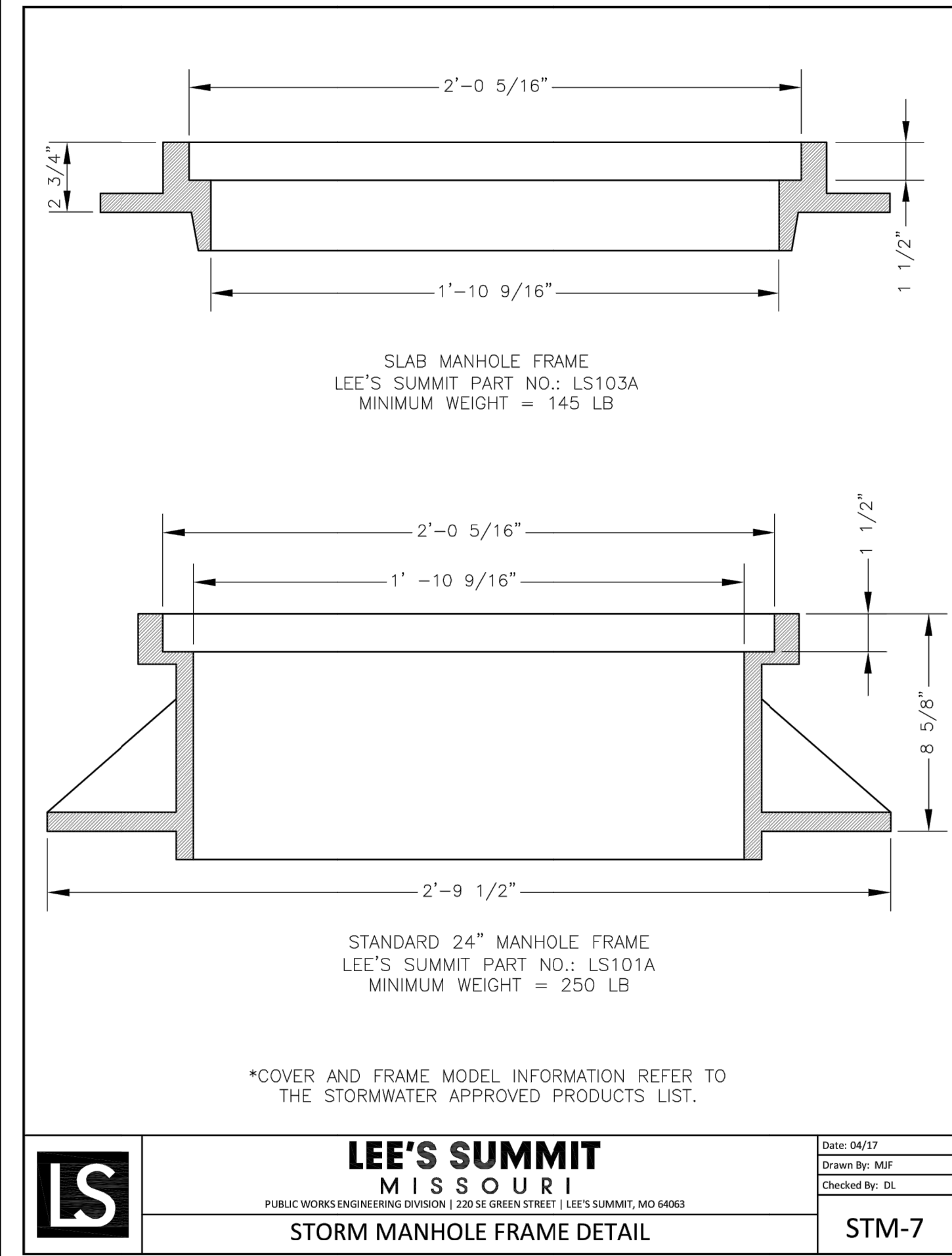
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Checked By: DL
Date: 04/17
Title: STM-2
Project: STM-2



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

STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
Storm Manhole Cover Detail

Drawn By: MJF
Checked By: DL
Date: 04/17
Title: STM-6
Project: STM-6



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

STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
Storm Manhole Frame Detail

Drawn By: MJF
Checked By: DL
Date: 04/17
Title: STM-7
Project: STM-7

GENERAL NOTE:
1 - ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.

NAPA VALLEY - 4th PLAT

SANITARY SEWER CONSTRUCTION PLANS

LOTS 147-165

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

CONSTRUCTION AND DESIGN NOTES:

SANITARY SEWERS:

1 ~ SANITARY SEWER PIPE SHALL BE POLY VINYL CHLORIDE (PVC), SDR-26, UNLESS NOTED OTHERWISE IN THESE PLANS.

2 ~ HOUSE SEWER LATERALS SHALL BE 4 INCH PVC, SDR-26. LATERALS SHALL BE CONSTRUCTED USING A TOP ORIENTED "WYE" AT THE SEWER STATION SHOWN IN THESE PLANS. LATERALS SHALL BE LAID AT A GRADE OF 2.0% FROM THE SEWER MAIN TO THE STREET RIGHT-OF-WAY LINE OR EASEMENT LINE AS REPRESENTED BY THE LATERAL LENGTH SHOWN IN THESE PLANS. THE ELEVATION SHOWN FOR THE END OF THE LATERAL IN THESE PLANS IS APPROXIMATE. THE ACTUAL ELEVATION SHALL BE DETERMINED BY THE FLOW LINE ELEVATION OF THE SEWER MAIN, THE FITTINGS AND GRADE OF THE SEWER LATERAL.

3 ~ THE CONTRACTOR SHALL MAINTAIN A LOG OF THE "AS BUILT" STATION AND LENGTH OF EACH HOUSE LATERAL AND SHALL PROVIDE ENGINEERING SOLUTIONS, L.L.C. WITH A COPY OF SAID LOG UPON COMPLETION OF SEWER CONSTRUCTION.

4 ~ ALL MANHOLES INSTALLED IN THE STREET RIGHT-OF-WAY SHALL BE FINISHED 1/2" PER FOOT ABOVE THE NEAREST ADJACENT BACK OF CURB.

5 ~ A STAKE SHALL BE PLACED AT THE END OF EACH WYE CONNECTION WITH THE END ELEVATION WRITTEN ON THE STAKE.

6 ~ FILL AREAS SHALL HAVE 3 FEET OF COMPACTED FILL IN PLACE PRIOR TO TRENCHING.

7 ~ A TRENCH CHECK CONSISTING OF FLOWABLE FILL. MUST BE INSTALLED ON EVERY PRIVATE LATERAL.(SEE SHEET C.403)

Added Trench Check
Detail Reference.

GENERAL NOTES:

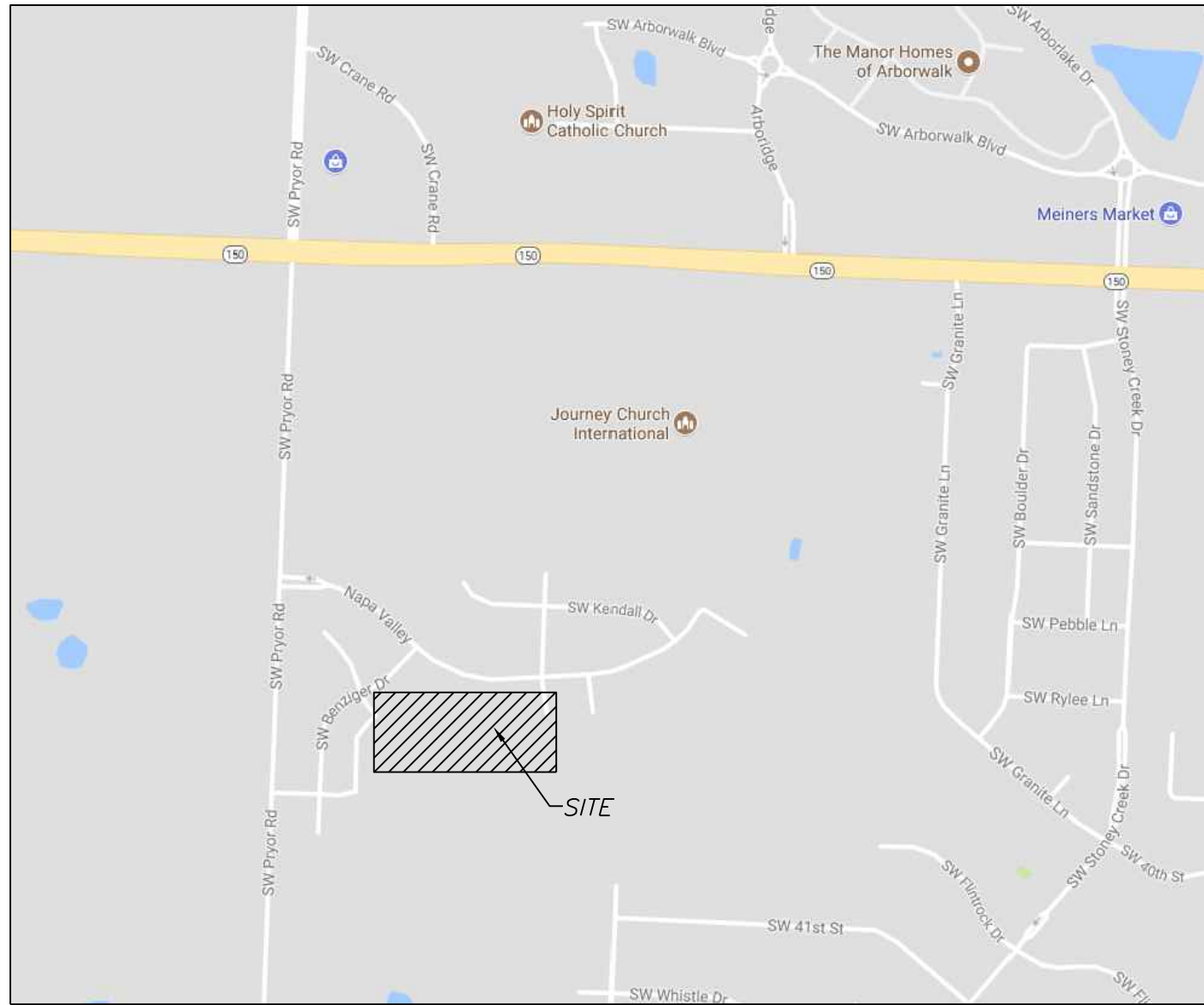
1 ~ ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.

2 ~ TRENCH CHECKS SHALL BE INSTALLED AT ALL SANITARY WYE LOCATIONS.(SEE SHEET C.403)

Added Trench Check
Detail Reference.

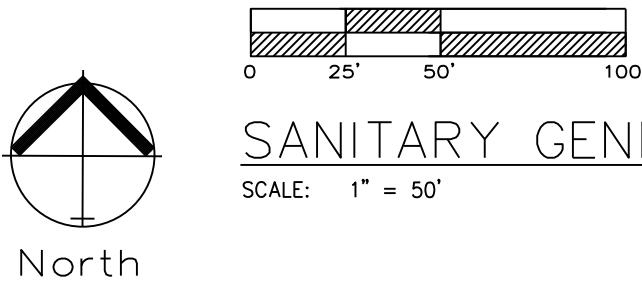
NOTE :

ALL CONSTRUCTION SHALL FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813. WHERE DISCREPANCIES EXIST BETWEEN THESE PLANS AND THE DESIGN AND CONSTRUCTION MANUAL, THE DESIGN AND CONSTRUCTION MANUAL SHALL PREVAIL.



GENERAL NOTE:
1 - ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
2 - TRENCH CHECKS SHALL BE INSTALL AT ALL SANITARY WYES LOCATION (SEE SHEET C.403)

Added Trench Check
Detail Reference.

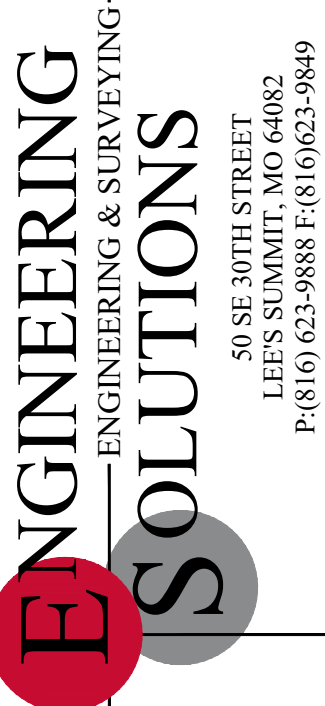


SANITARY GENERAL LAYOUT

SCALE: 1" = 50'



Updated title block to
refer to San. Sewer
Construction Plans.



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

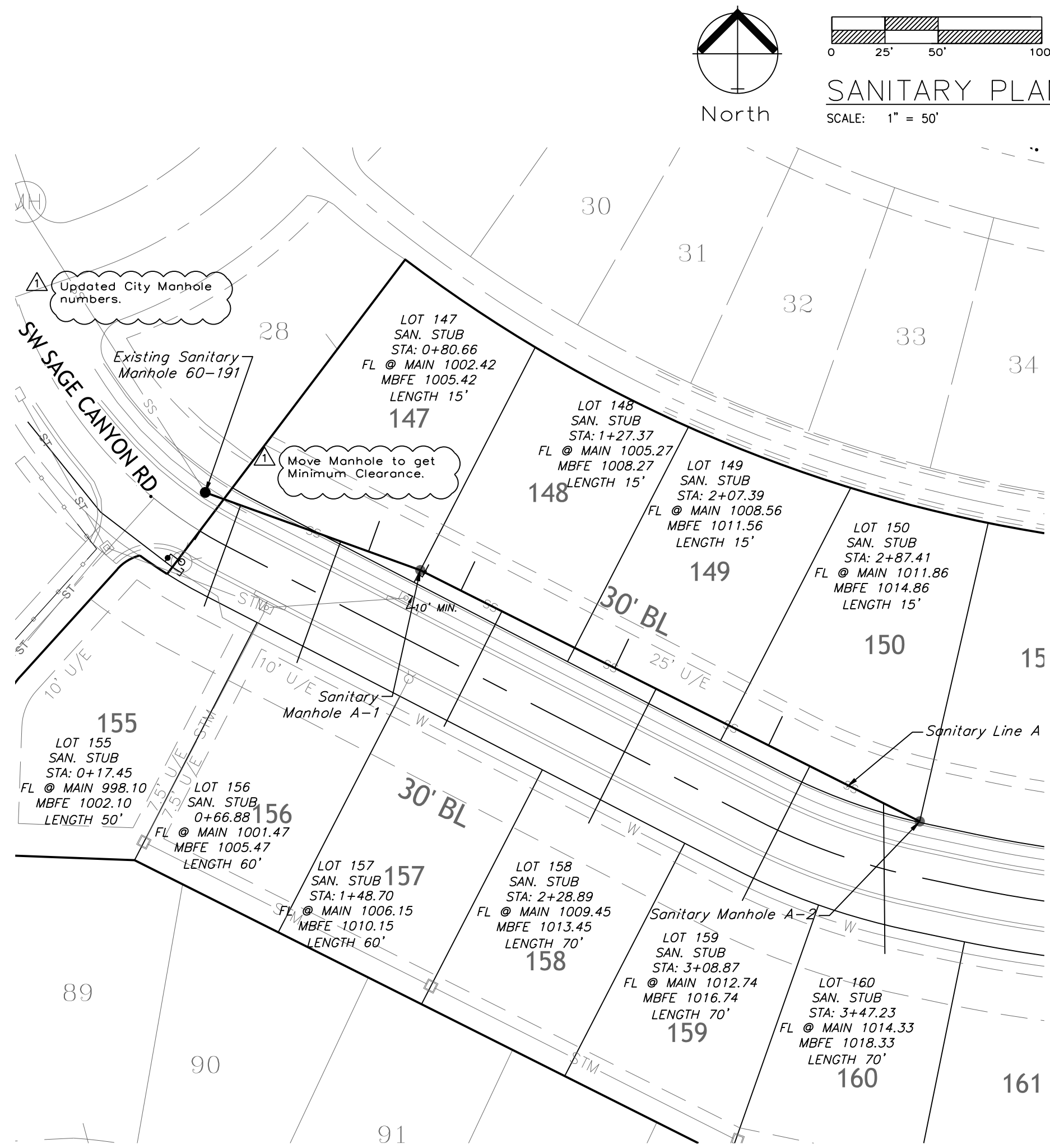
Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

Project:
NAPA VALLEY LS MO
Issue Date:
July 13, 2018

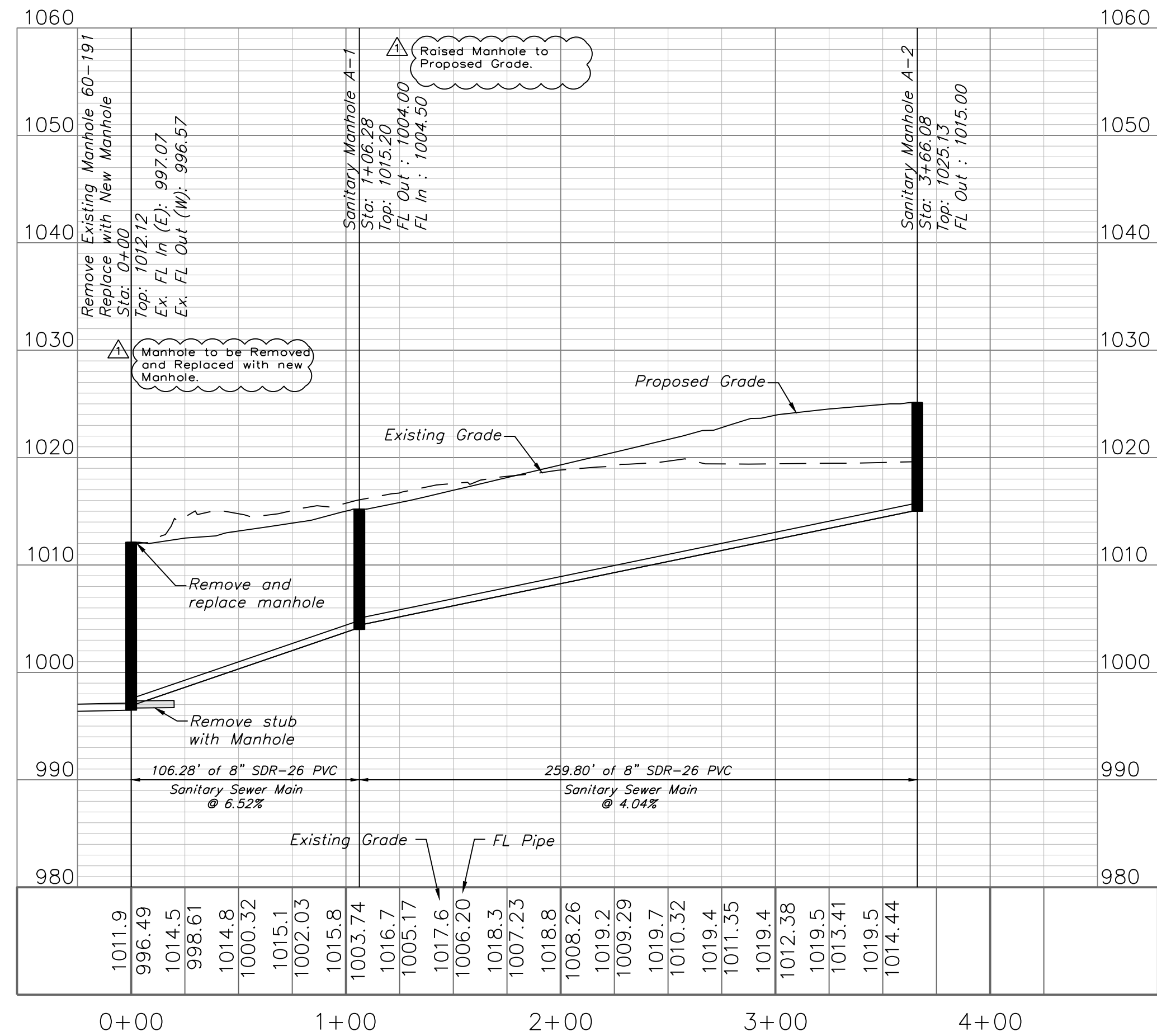
Sanitary Sewer General Layout
Sanitary Sewer Construction Plans for:
Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

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

REVISIONS
REV. 8/02/18



SANITARY LINE A



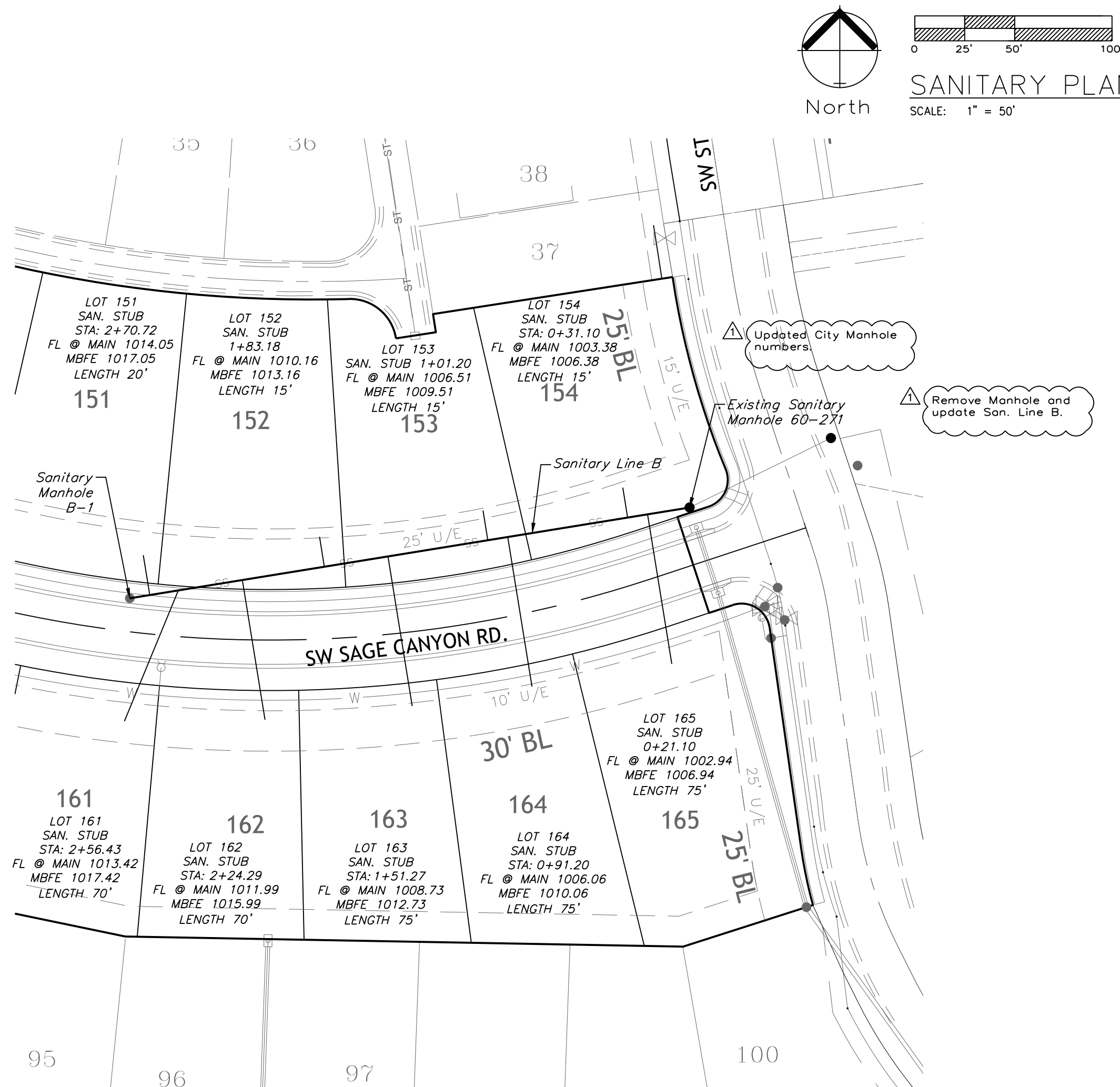
NOTES:

- SEWER MAIN PIPE SHALL BE SDR-26 PVC MINIMUM UNLESS OTHERWISE INDICATED.
- ALL SERVICE STUBS SHALL BE SDR-26 MINIMUM.
- CONTRACTOR SHALL FIELD VERIFY EXACT LENGTHS OF 4" RISERS AND SERVICE LINES.
- TRENCH CHECKS SHALL BE INSTALLED ON ALL SANITARY WYE LOCATIONS.(SEE SHEET C.403)

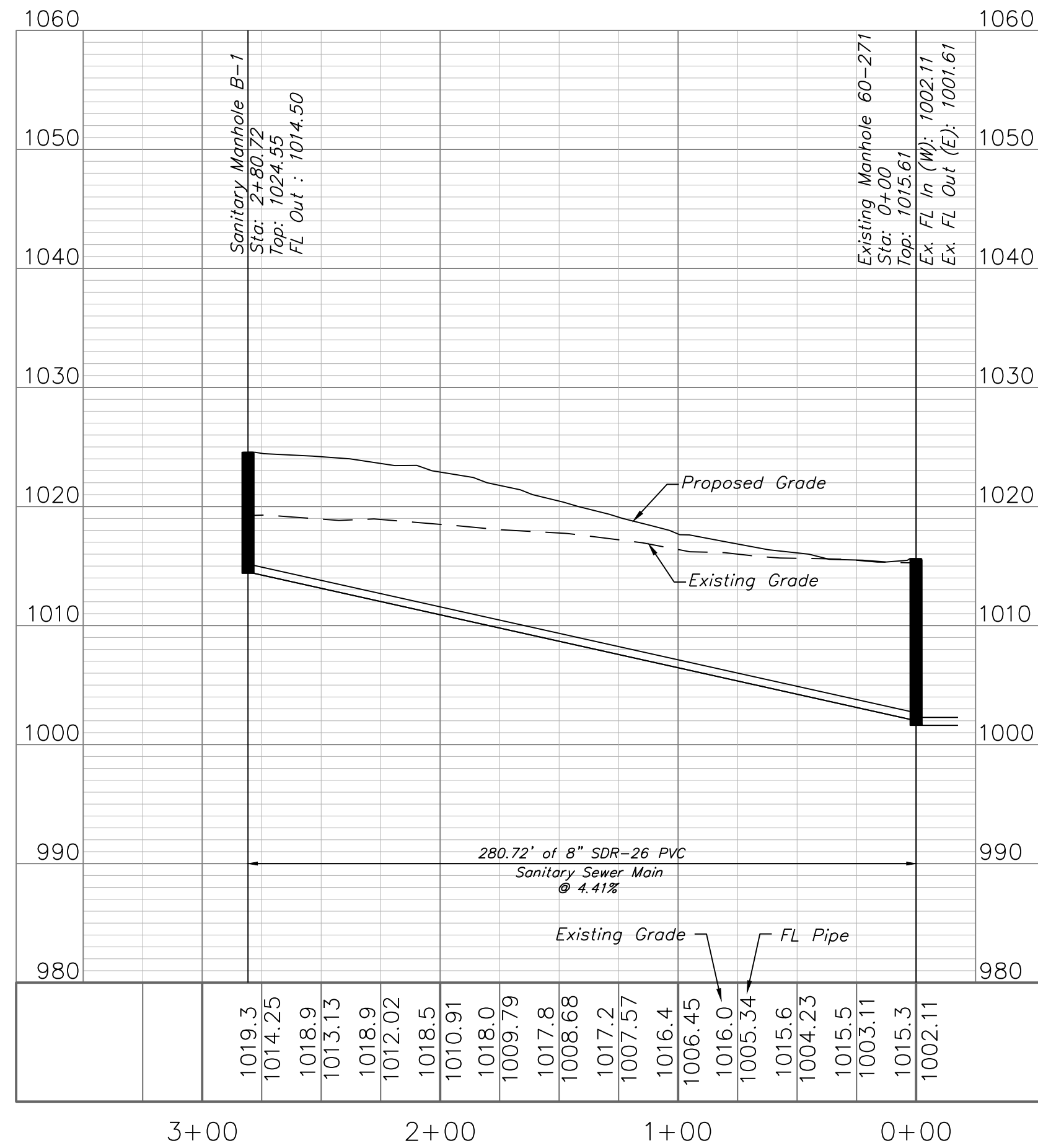
Added Trench Check Detail Reference.

GENERAL NOTE:

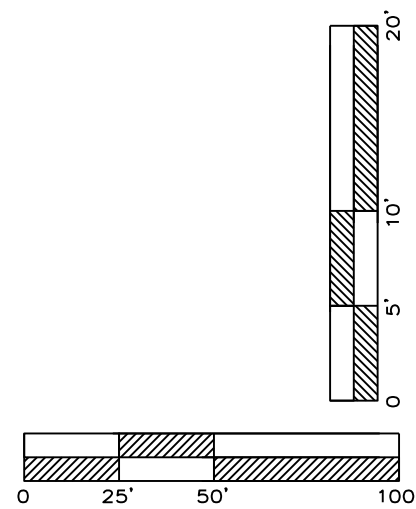
1 - ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.



SANITARY LINE B



Updated title block to refer to San. Sewer Construction Plans



ENGINEERING SOLUTIONS

ENGINEERING & SURVEYING

50 SE 30TH STREET
LEE'S SUMMIT, MO 64082
P: (816) 623-9888 F: (816) 623-9849

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 LS100

Issue Date:

July 13, 2018

Sanitary Plan and Profile

Sanitary Sewer Construction Plans for:

Napa Valley 4th Plat

Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht

MO PE 2006019708

KS PE 19071

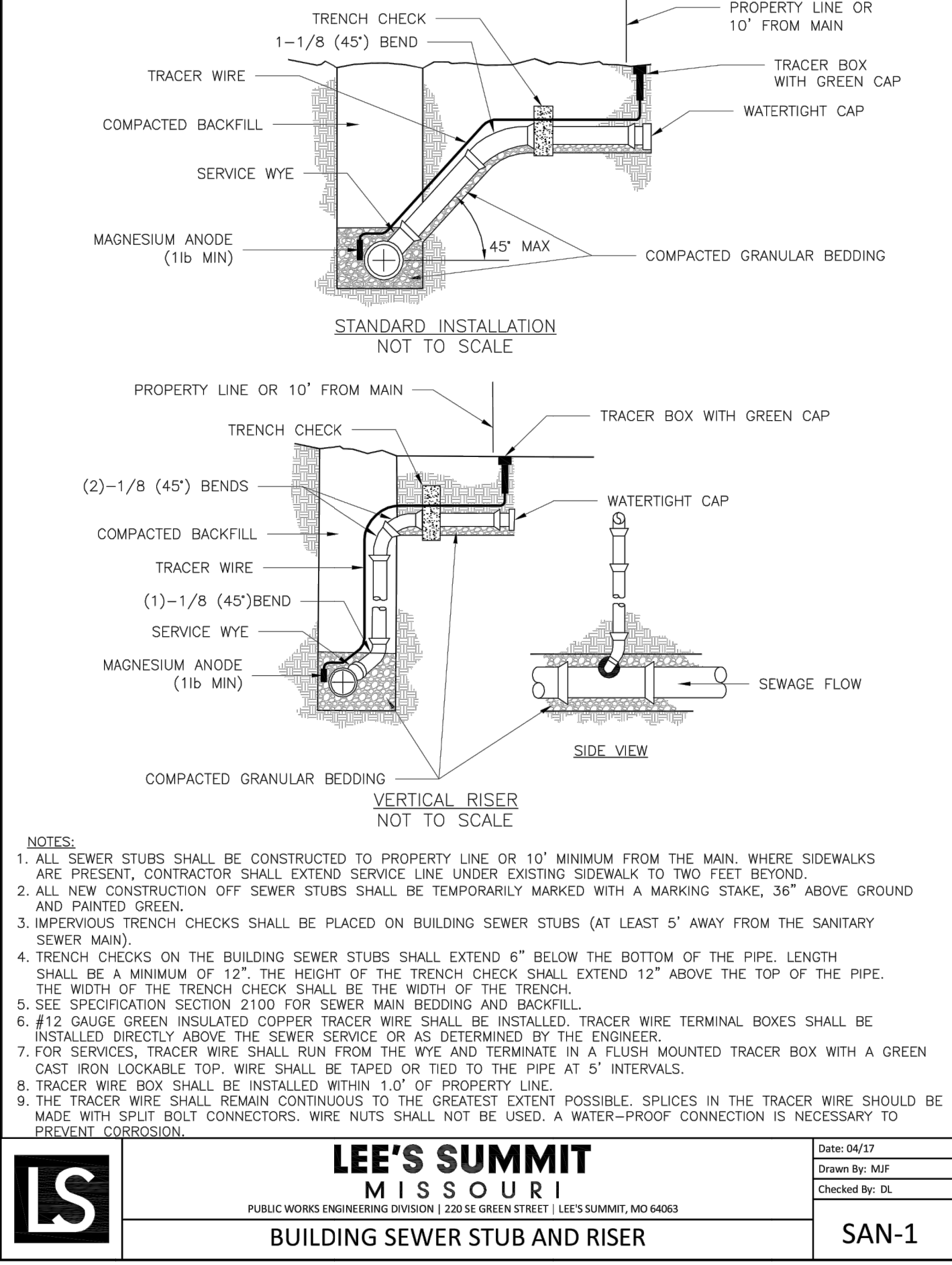
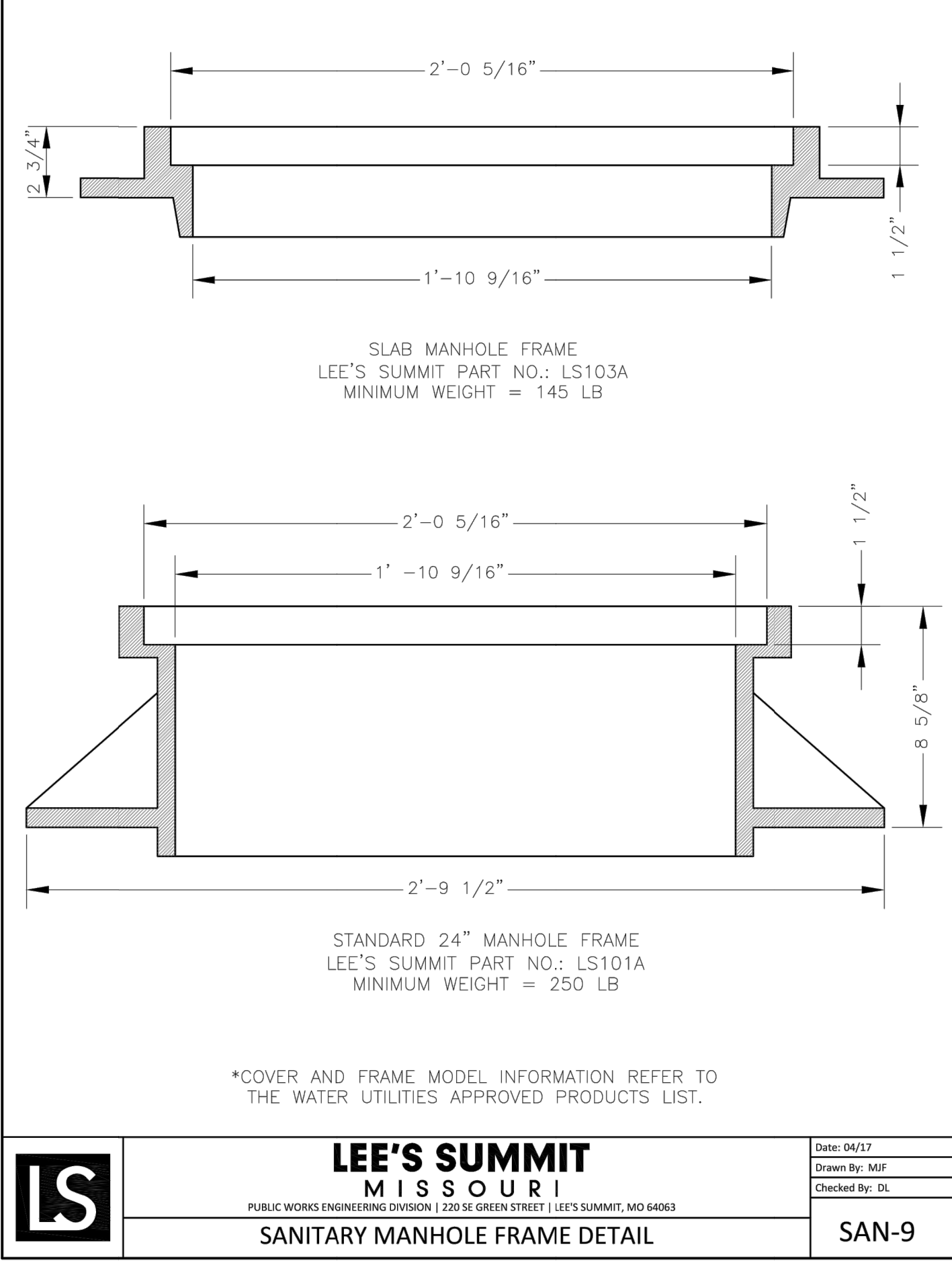
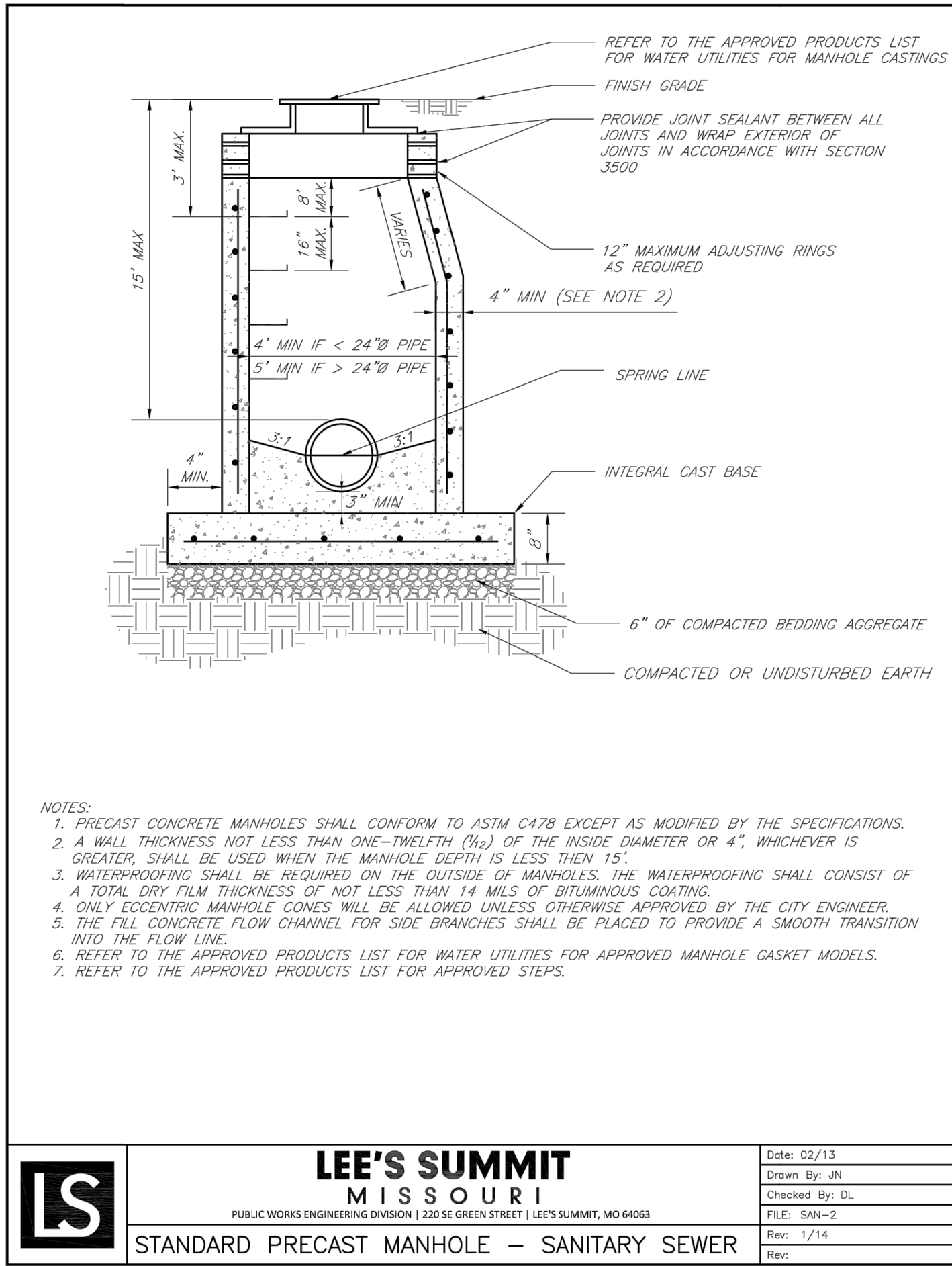
OK PE 25226

NE PE E-14335

REVISIONS

REV. 8/02/18

C.402

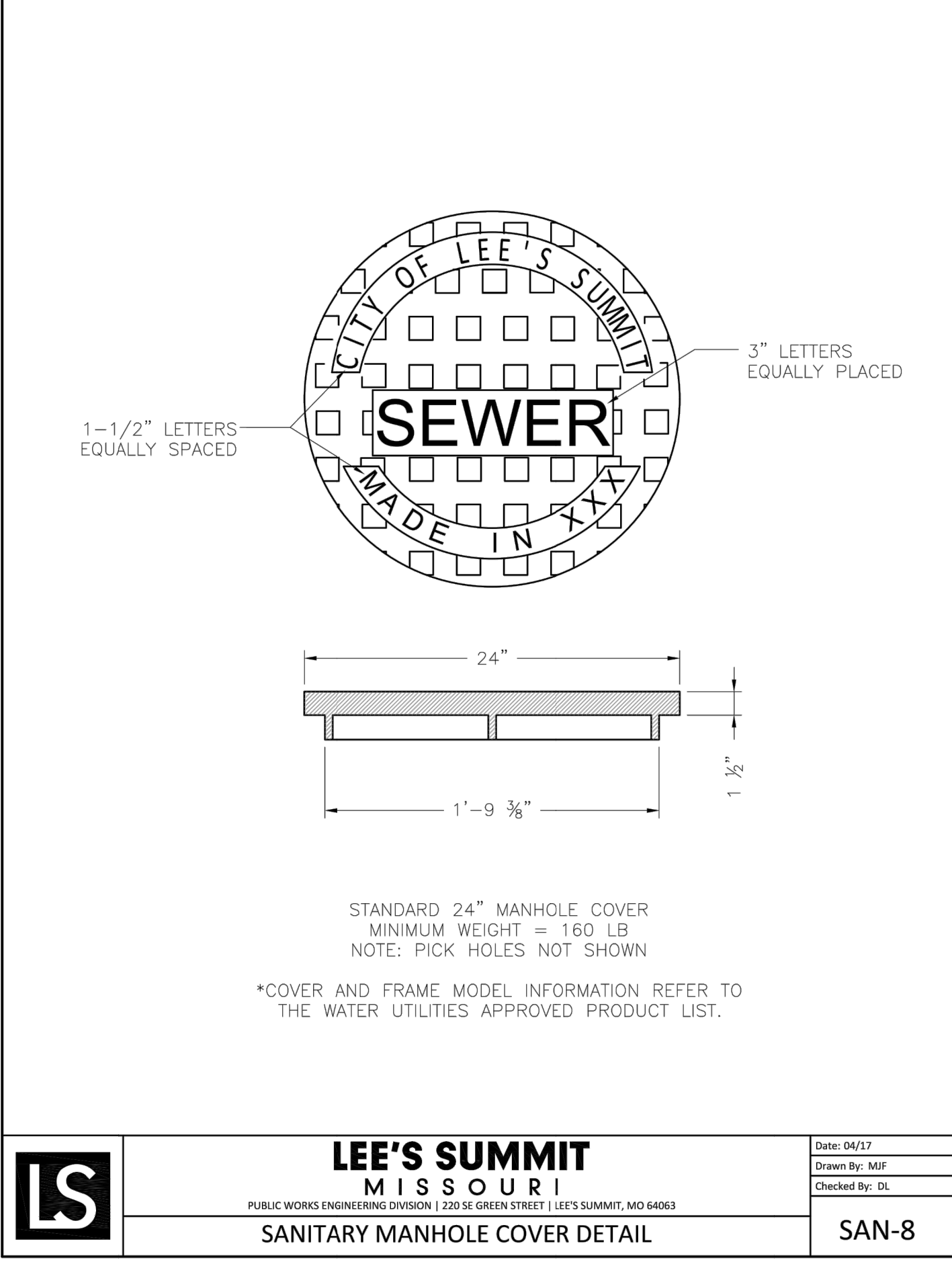
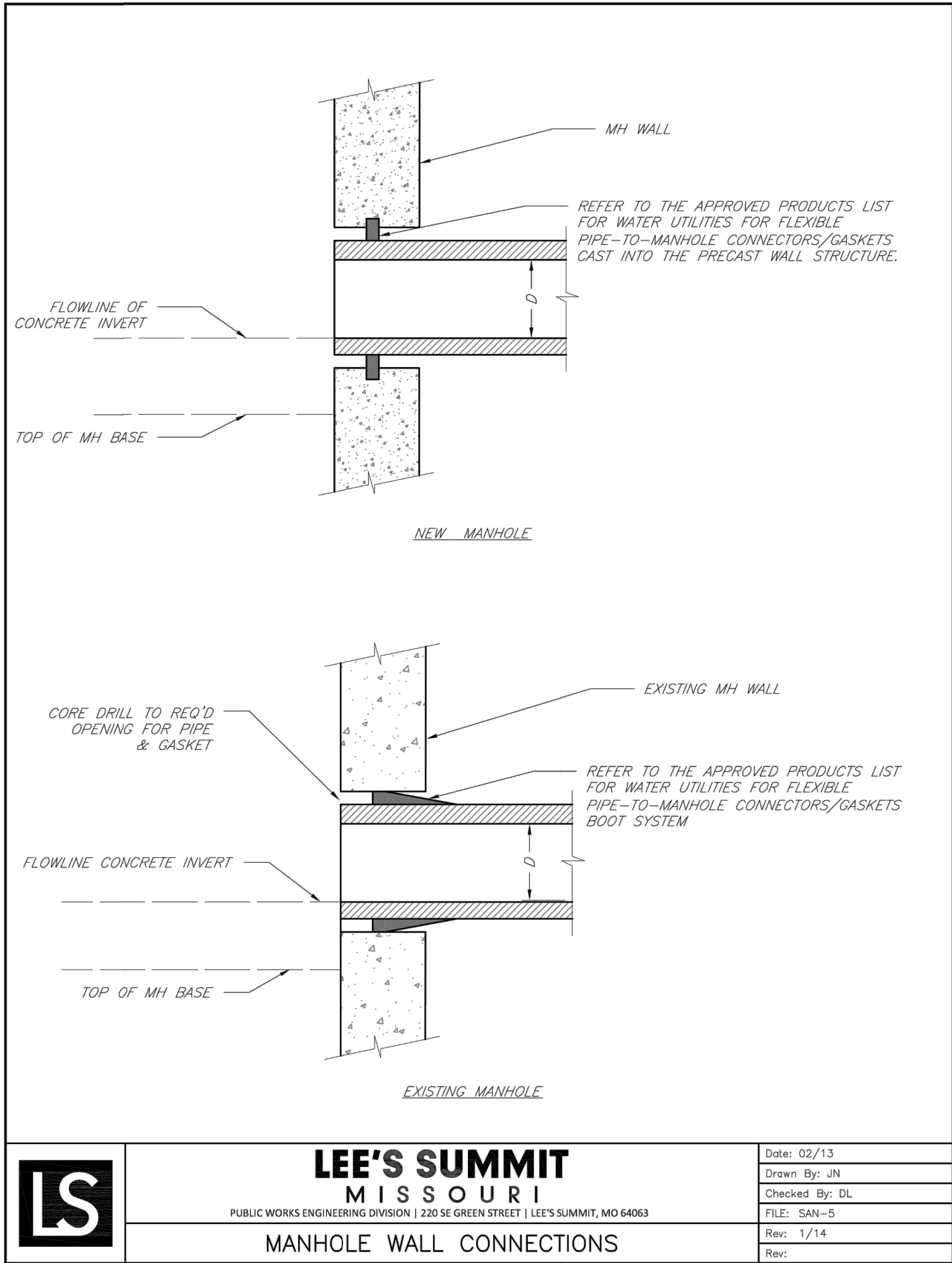


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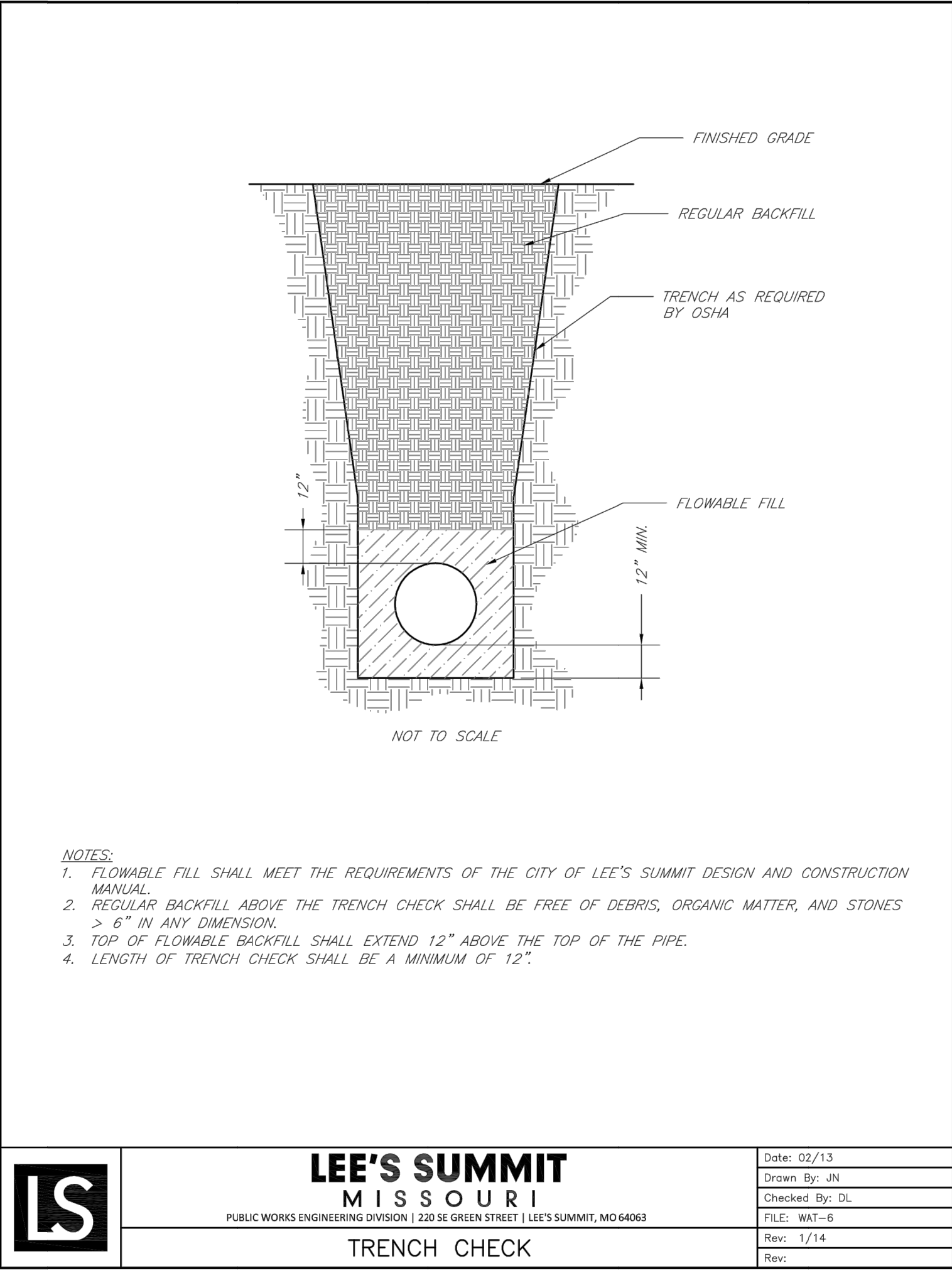
1 ~ ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.

2 ~ TRENCH CHECKS SHALL BE INSTALL AT ALL SANITARY WYES LOCATION (SEE DETAIL BELOW)

Added Trench Check Detail Reference.



Added missing details.



Updated title block to refer to San. Sewer Construction Plans.

Sanitary Details
Sanitary Sewer Construction Plans for:
Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

Project:
NAPA VALLEY LS100
Issue Date:
July 13, 2018

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

REVISIONS
REV. 8/02/18

NAPA VALLEY - 4th PLAT

WATER LINE CONSTRUCTION PLANS

LOTS 147-165

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

CONSTRUCTION AND DESIGN NOTES:

WATER:

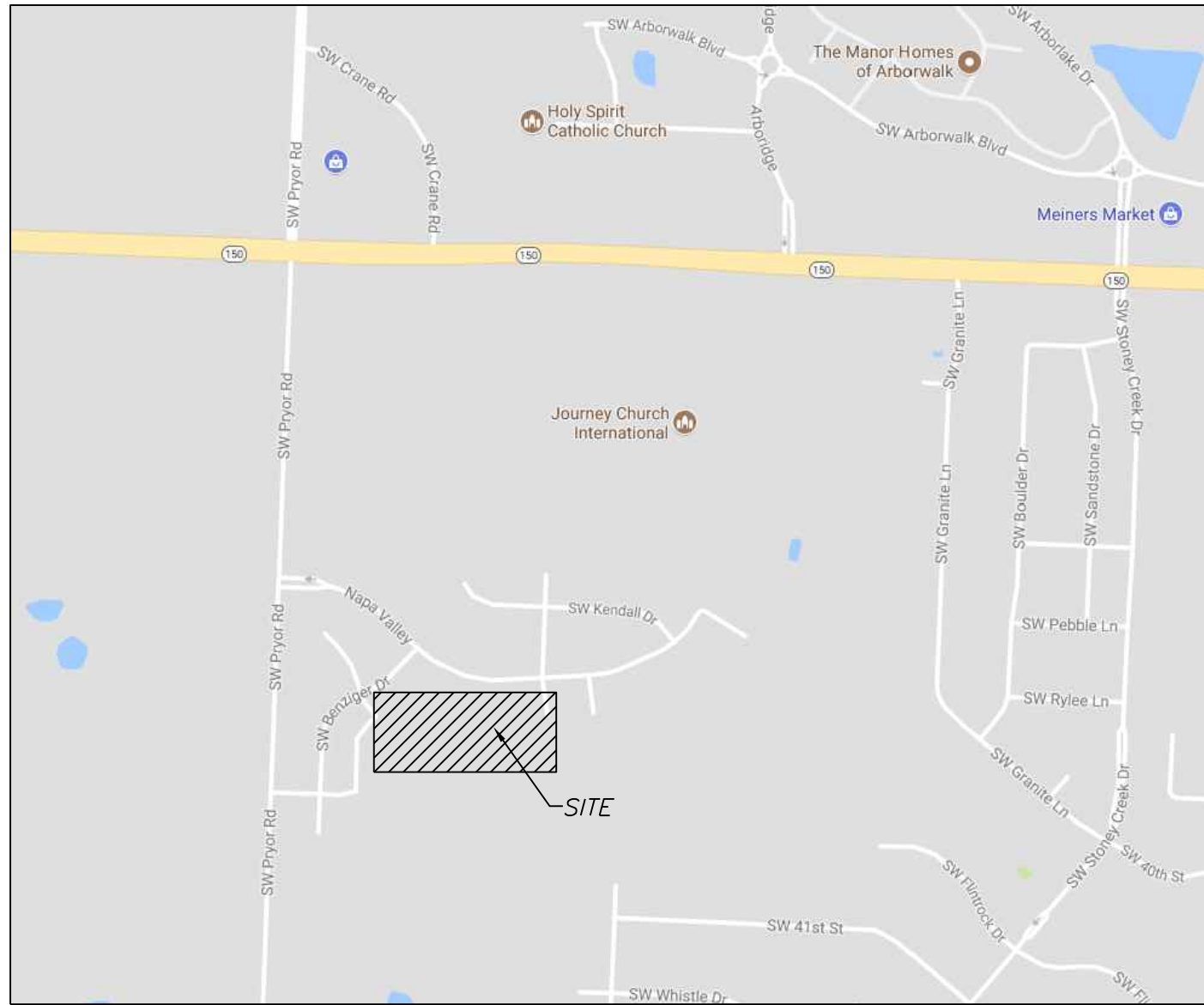
- 1 ~ THE CONTRACTOR SHALL NOTIFY THE CITY OF LEE'S SUMMIT WATER UTILITIES DEPARTMENT AT 816.969.1900 AT LEAST 48 HOURS PRIOR TO CONNECTING TO ANY EXISTING WATER MAIN.
- 2 ~ ALL WATER MAINS SHALL COMPLY WITH ANSI/AWWA C150/A21.50 AND C151/A21.51, AND CITY OF LEES SUMMIT STANDARDS.
- 3 ~ FIRE HYDRANTS SHALL BE OPTIC YELLOW WATEROUS "PACER" MODEL NO. WB-67-250 WITH NON-RISING STEM OR CITY ENGINEER APPROVED EQUAL. HYDRANTS SHALL HAVE A 5 1/4" VALVE WITH A 4 1/2" PUMPER NOZZLE AND 2 - 2 1/2" HOSE NOZZLES (LEFT HAND OPENING).
- 4 ~ GATE VALVES SHALL BE MUELLER NO. A 2380-5 HUB END "O" RING SEAL NON-RISING STEM. VALVES 12" OR LARGER SHALL BE BUTTERFLY VALVES MANUFACTURED BY THE HENRY PRATT COMPANY OR CITY ENGINEER APPROVED EQUAL. LEFT HAND OPENING. MINIMUM 200# TESTING AWWA.
- 5 ~ VALVE BOXES SHALL BE CLAY & BAILEY NO. P-108 OR CITY ENGINEER APPROVED EQUAL. ALL VALVE BOXES SHALL BE LOCATED OUT OF EXISTING OR PROPOSED PAVEMENT AREAS.
- 6 ~ ALL WATER MAINS SHALL BE CONSTRUCTED WITH A MINIMUM COVER OF 42 INCHES. STREET GRADING SHALL BE COMPLETED PRIOR TO BEGINNING CONSTRUCTION OF WATER MAINS.
- 7 ~ ALL BENDS, TEES AND FIRE HYDRANTS SHALL BE INSTALLED WITH SUITABLE CONCRETE THRUST BLOCKS POURED IN PLACE AGAINST UNDISTURBED EARTH AND PER CITY OF LEES SUMMIT AND APWA STANDARDS.
- 8 ~ THE MINIMUM SEPARATION BETWEEN THE PROPOSED WATER MAIN AND SANITARY OR STORM SEWERS IS AS FOLLOWS:
A ~ SANITARY SEWERS: HORIZONTAL = 10 FEET - VERTICAL = 18 INCHES
B ~ STORM SEWERS: HORIZONTAL = 5 FEET - VERTICAL = 18 INCHES
THESE SEPARATIONS SHALL PREVAIL OVER ANY DATA SHOWN IN THESE PLANS AND THE CONTRACTOR SHALL INSTALL BENDS OR OTHER FITTINGS AS NECESSARY TO ACHIEVE THE REQUIRED SEPARATIONS.

GENERAL NOTES:

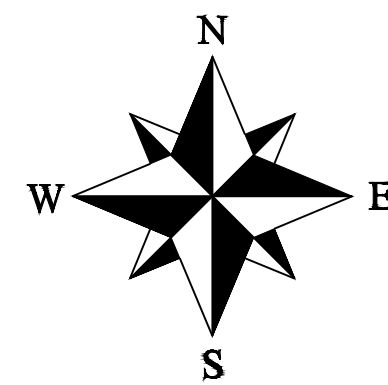
- 1 ~ ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
- 2 ~ ALL REQUIRED EASEMENTS WITHIN THE BOUNDARY OF THIS PROJECT SHALL BE PROVIDED FOR ON THE FINAL PLAT.
- 3 ~ ANY REQUIRED EASEMENT LOCATED OUTSIDE OF THE BOUNDARY OF THIS PROJECT SHALL BE PROVIDED FOR BY SEPARATE INSTRUMENT PRIOR TO ISSUANCE OF CONSTRUCTION PERMITS.
- 4 ~ THE CONTRACTOR SHALL NOTIFY THE CITY OF LEE'S SUMMIT PUBLIC WORKS INSPECTION AT 816.969.1800 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.
- 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.

NOTE :

ALL CONSTRUCTION SHALL FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813. WHERE DISCREPANCIES EXIST BETWEEN THESE PLANS AND THE DESIGN AND CONSTRUCTION MANUAL, THE DESIGN AND CONSTRUCTION MANUAL SHALL PREVAIL.



VICINITY MAP - NOT TO SCALE



INDEX OF SHEETS:

- C.500 ~ WATER LINE COVER SHEET
- C.501 ~ WATER LINE GENERAL LAYOUT
- C.502 ~ WATER LINE PLAN & PROFILE
- C.503 ~ WATER LINE DETAILS

LEGEND:

- BL - 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

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.

CITY OF LEE'S SUMMIT, MISSOURI

APPROVED: _____ DATE: _____

BY: _____
CITY ENGINEER

ENGINEERING
ENGINEERING & SURVEYING
SOLUTIONS

50 SE 30TH STREET
LEE'S SUMMIT, MO 64082
P: (816) 623-9888 F: (816) 623-9849

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

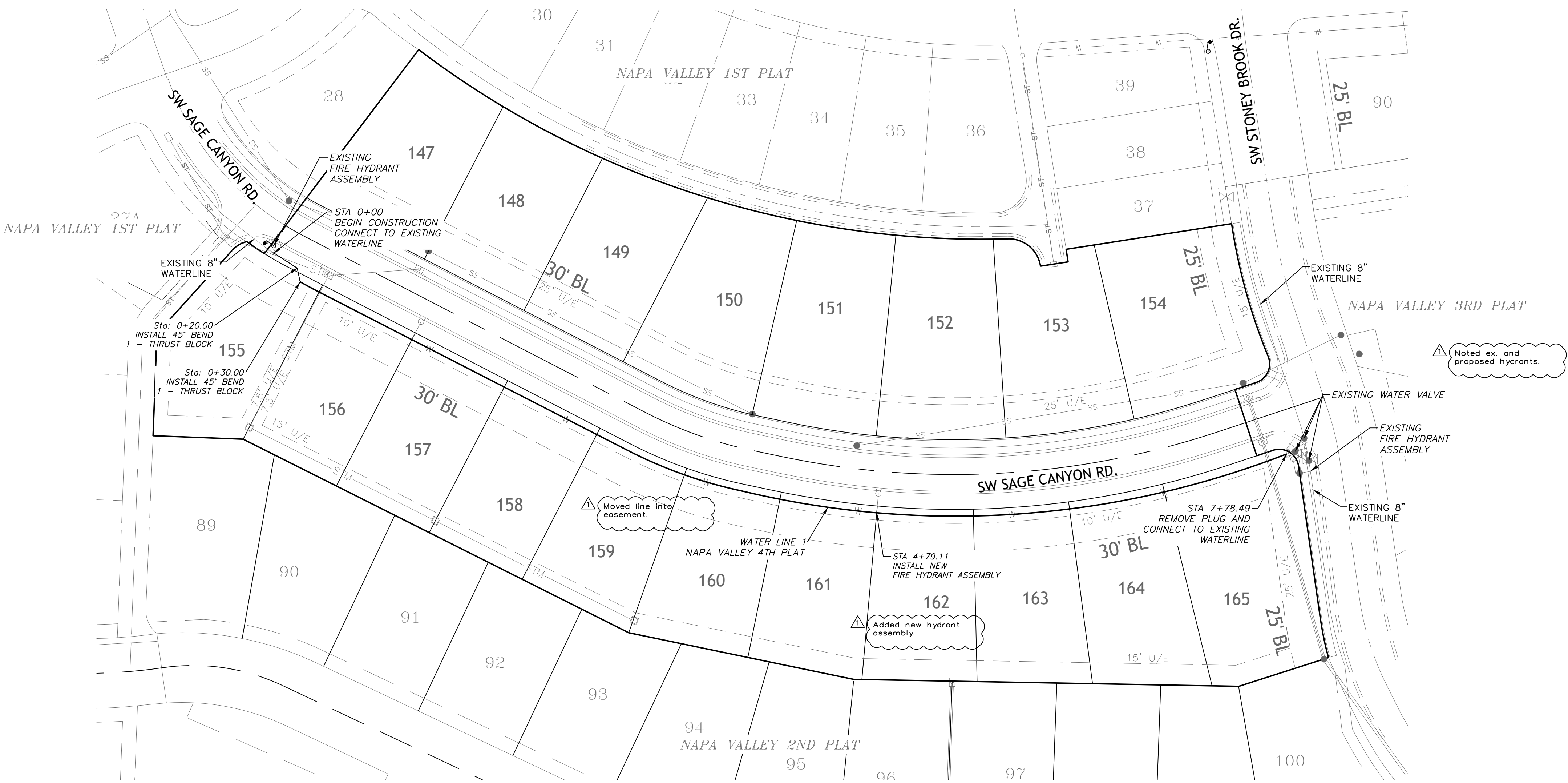
Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

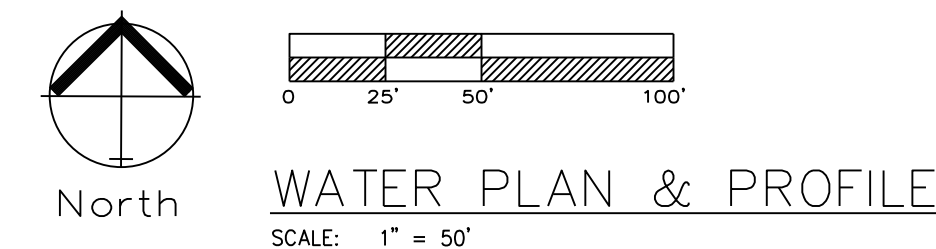
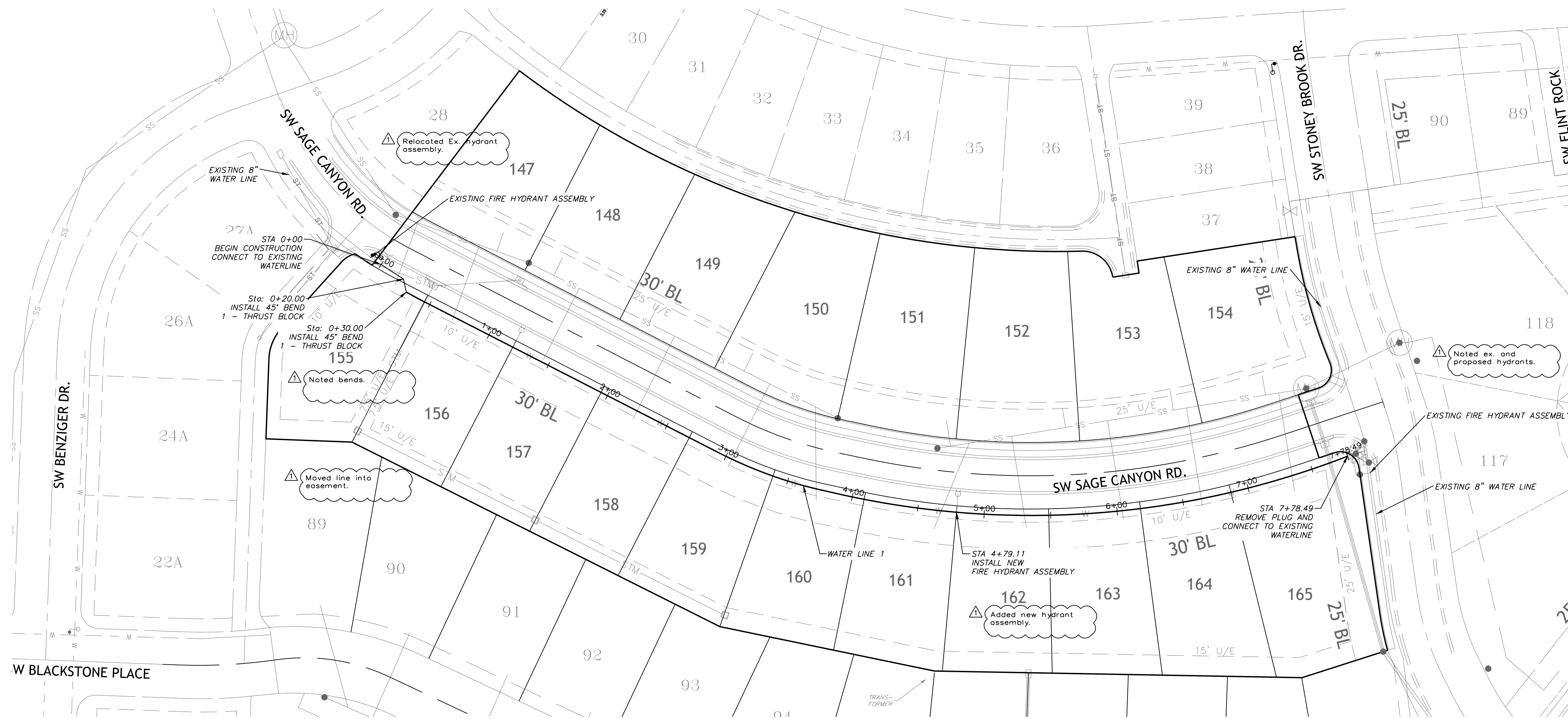
Project:
NAPA VALLEY LSMO
Issue Date:
July 13, 2018

COVER SHEET
Water Line Construction Plans for:
Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

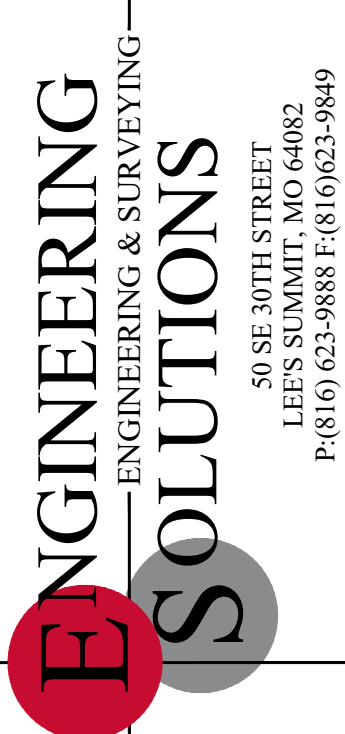
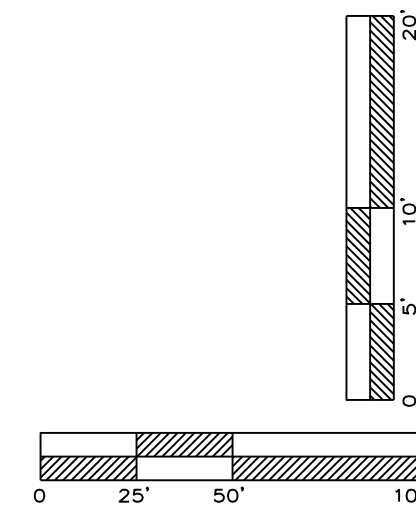
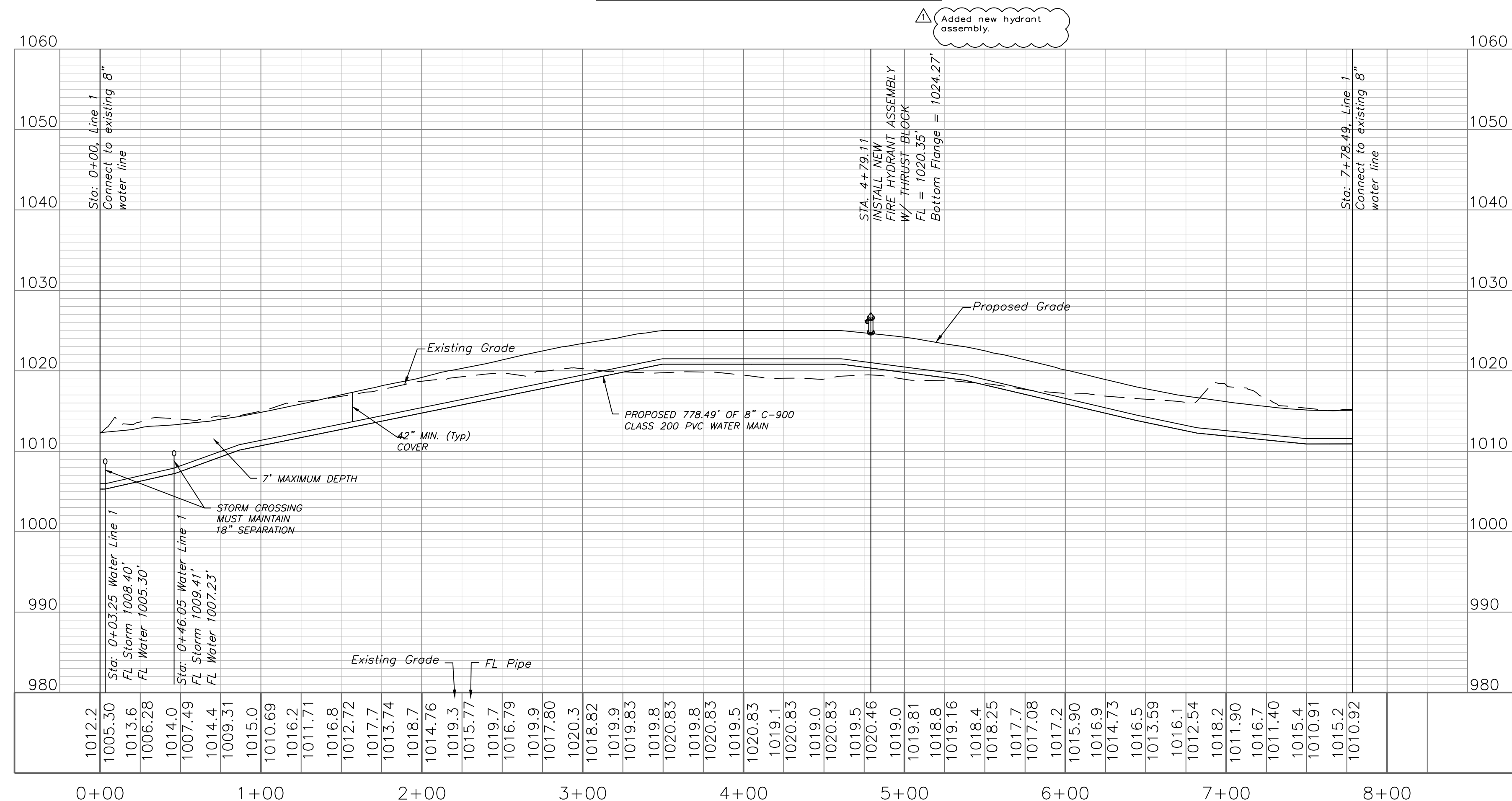
Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS
REV. 8/02/18





WATER LINE 1



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

Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

Project:
NAPA VALLEY L5MO
Issue Date:
July 13, 2018

WATER LINE PLAN & PROFILE
Water Line Construction Plans for:
Napa Valley 4th Plat
Lee's Summit, Jackson County, Missouri

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

REVISIONS	
REV. 8/02/18	

NOTES:

1. ALL BEAMS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
3. BEARING AREA MUST BE AGAINST UNDISTURBED SOIL.
4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.



NOTES:

1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
3. BEARING MUST BE AGAINST UNDISTURBED SOIL.
4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.

