

LEGEND:

A/E- ACCESS EASEMENT

BC- BACK OF CURB

B/B- BACK TO BACK

BM- BENCHMARK

BL or B.L.- BUILDING LINE

CO- CLEANOUT

TJB- TELEPHONE JUNCTION BOX

C&G- CURB AND GUTTER

D/E- DRAINAGE EASEMENT

E/E- ELECTRICAL EASEMENT

EL- ELEVATION

FL- FLOW LINE

G/E- GAS LINE EASEMENT

HDPE- HIGH-DENSITY POLYETHYLENE

L/E- LANDSCAPE EASEMENT

MSFE- MINIMUM SERVICEABLE FLOOR ELEVATION

PVC- POLYVINYL CHLORIDE

P/L- PROPERTY LINE

PUB/E- PUBLIC EASEMENT

RCP- REINFORCED CONCRETE PIPE

ROW or R/W- RIGHT-OF-WAY

S/E- SANITARY SEWER EASEMENT

SL- SERVICE LINE

S/W- SIDEWALK

TE- TOP ELEVATION

U/E- UTILITY EASEMENT

WSE- WATER SURFACE ELEVATION

W/E- WATERLINE EASEMENT

ASPHALT PAVEMENT - EXISTING

ASPHALT PAVEMENT - PROPOSED

CONCRETE PAVEMENT - EXISTING

CONCRETE SIDEWALK - EXISTING

CONCRETE SIDEWALK - PROPOSED

CURB & GUTTER

CURB & GUTTER - EXISTING

TREELINE

EXISTING LOT AND R/W LINES

EXISTING PLAT LINES

P/L- PROPERTY LINES

ROW- RIGHT-OF-WAY

SANITARY SEWER MAIN

SANITARY SEWER MAIN - EXIST.

STO- STORM SEWER

STORM SEWER - EXISTING

CATV_x- CABLE TV - EXISTING

FOC_x- FIBER OPTIC CABLE - EXISTING

T_x- TELEPHONE LINE - EXIST.

E_x- ELECTRIC LINE - EXISTING

OHP_x- OVERHEAD POWER LINE - EXIST.

UG_x- UNDERGROUND ELECTRIC - EX.

G_x- GAS LINE - EXISTING

W_x- WATERLINE - EXISTING

LIGHT - EXISTING

EXISTING MANHOLE

CLEANOUT

EXISTING SANITARY MANHOLE

PROPOSED SANITARY MANHOLE

EXISTING AREA INLET

EXISTING CURB INLET

EXISTING GRATE INLET

EXISTING JUNCTION BOX

EXISTING STORM MANHOLE

CHIPMAN RD

NW1/4

NE1/4

SW1/4

SE1/4

8TH

12TH

11TH

1ST

3RD ST

5TH

VIEW HIGH DR

PROJECT LOCATION

1.99 MI.

MGRS BM JA-138

SECTION 3-47N-32W

LOCATION MAP

SCALE 1" = 2000'

UTILITY CONTACTS:

MISSOURI DEPARTMENT OF TRANSPORTATION (MODOT)

Steve Holloway

600 NE Colbern Road

Lee's Summit, MO 64086

(816) 607-2186

MISSOURI GAS ENERGY (MGE)

Brent Jones

3025 SE Clover Drive

Lee's Summit, MO 64082

(816) 399-9633

brent.jones@spireenergy.com

KANSAS CITY POWER & LIGHT COMPANY (KCP&L)

Ron Dejarrette

1300 SE Hamblin Road

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Office: (816) 347-4316

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ron.dejarrette@kcpl.com

CITY OF LEES SUMMIT PUBLIC WORKS

Dena Mezger

220 SE Green Street

Lee's Summit, MO 64063

(816) 969-1800

AT&T

Mark Manion or Marty Loper

500 E. 8th Street, Room 370

Kansas City, MO 64106

(816) 275-2341 or (816) 275-1550

COMCAST CABLE

John Meadows

4700 Little Blue Parkway

Independence, MO 64057

(816) 795-2257

PUBLIC WATER SUPPLY DISTRICT

Mark Schautler

220 SE Green Street

Lee's Summit, MO 64063

(816) 969-1900

GENERAL NOTES:

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

2. ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE ENGINEERING DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI.

3. LINEAL FOOT MEASUREMENTS SHOWN ON THE PLANS ARE HORIZONTAL MEASUREMENTS, NOT SLOPE MEASUREMENTS. ALL PAYMENTS SHALL BE MADE ON HORIZONTAL MEASUREMENTS.

4. NO GEOLOGICAL INVESTIGATION HAS BEEN PERFORMED ON THE SITE.

5. THE UTILITY LOCATIONS SHOWN ON THESE PLANS ARE TAKEN FROM UTILITY COMPANY RECORDS AND APPARENT FIELD LOCATIONS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.

6. THE CONTRACTOR SHALL ADHERE TO THE PROVISIONS OF THE SENATE BILL NUMBER 583, 78TH GENERAL ASSEMBLY OF THE STATE OF MISSOURI. THE BILL REQUIRES THAT ANY PERSON OR FIRM DOING EXCAVATION ON PUBLIC RIGHT OF WAY DO SO ONLY AFTER GIVING NOTICE TO, AND OBTAINING INFORMATION FROM, UTILITY COMPANIES. STATE LAW REQUIRES 48 HOURS ADVANCE NOTICE. THE CONTRACTOR MAY ALSO UTILIZE THE FOLLOWING TOLL FREE PHONE NUMBER PROVIDED BY "MISSOURI ONE CALL SYSTEM, INC.": 1-800-DIG-RITE. THIS PHONE NUMBER IS APPLICABLE ANYWHERE WITHIN THE STATE OF MISSOURI. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL NOTIFY ALL THOSE COMPANIES WHICH HAVE FACILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION TO BE PERFORMED.

7. PRIOR TO ORDERING PRECAST STRUCTURES, SHOP DRAWING SHALL BE SUBMITTED TO THE DESIGN ENGINEER FOR APPROVAL. AFTER APPROVAL OF THE SHOP DRAWINGS, A COPY OF THE APPROVED AND SIGNED SHOP DRAWINGS SHALL BE PROVIDED TO THE CITY INSPECTOR UPON REQUEST.

8. THE CONTRACTOR SHALL PROTECT ALL MAJOR TREES FROM DAMAGE. NO TREE SHALL BE REMOVED WITHOUT PERMISSION OF THE OWNER, UNLESS SHOWN OTHERWISE.

9. CLEARING AND GRUBBING OPERATIONS AND DISPOSAL OF ALL DEBRIS THEREFROM SHALL BE PERFORMED BY THE CONTRACTOR IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES.

10. ALL WASTE MATERIAL RESULTING FROM THE PROJECT SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR, OR AS DIRECTED BY THE OWNER.

11. ALL EXCAVATIONS SHALL BE UNCLASSIFIED. NO SEPARATE PAYMENT WILL BE MADE FOR ROCK EXCAVATION.

12. THE CONTRACTOR SHALL CONTROL THE EROSION AND SILTATION DURING ALL PHASED OF CONSTRUCTION, AND SHALL KEEP THE STREETS CLEAN OF MUD AND DEBRIS.

13. ALL MANHOLES, CATCH BASINS, UTILITY VALVES AND METER PITS TO BE ADJUSTED OR REBUILT TO GRADE AS REQUIRED.

14. THE CONTRACTOR SHALL CONTACT DEVELOPMENT SERVICES INSPECTIONS AT: 816-969-1800 TO OBTAIN A DEVELOPMENT SERVICES CONSTRUCTION PERMIT. A MINIMUM 48 HOUR NOTICE SHALL BE GIVEN PRIOR TO PERMIT ISSUANCE.

15. THE CONTRACTOR SHALL CONTACT THE CITY'S EROSION CONTROL SPECIALIST AT: 816-969-1800 PRIOR TO ANY LAND DISTURBANCE.

16. THE CONTRACTOR SHALL CONTACT THE RIGHT OF WAY INSPECTOR AT 816-969-1800 PRIOR TO ANY LAND DISTURBANCE ACTIVITIES WITHIN THE RIGHT OF WAY. THESE ACTIVITIES MAY REQUIRE A PERMIT.

17. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL TRAFFIC HANDLING MEASURES NECESSARY TO ENSURE THAT THE GENERAL PUBLIC IS PROTECTED AT ALL TIMES. TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD-LATEST EDITION).

EARTHWORK:

1. IT IS RECOMMENDED THAT A GEOTECHNICAL ENGINEER OBSERVE AND DOCUMENT ALL EARTHWORK ACTIVITIES.

2. CONTOURS HAVE BEEN SHOWN AT 1-FOOT OR 2-FOOT INTERVALS, AS INDICATED. GRADING SHALL CONSIST OF COMPLETING THE EARTHWORK REQUIRED TO BRING THE PHYSICAL GROUND ELEVATIONS OF THE EXISTING SITE TO THE FINISHED GRADE (OR SUB-GRADE) ELEVATIONS PROVIDED ON THE PLANS AS SPOT GRADES. CONTOURS OR OTHERS MEANS AS INDICATED ON THE PLANS.

3. THE EXISTING SITE TOPOGRAPHY DEPICTED ON THE PLANS BY CONTOURING HAS BEEN ESTABLISHED BY AERIAL PHOTOGRAPHY AND FIELD VERIFIED BY G.P.S. OBSERVATION NEAR APRIL 2018. THE CONTOUR ELEVATIONS PROVIDED MAY NOT BE EXACT GROUND ELEVATIONS, BUT RATHER INTERPRETATIONS OF SUCH. ACCURACY SHALL BE CONSIDERED TO BE SUCH THAT NOT MORE THAN 10 PERCENT OF SPOT ELEVATION CHECKS SHALL BE IN ERROR BY MORE THAN ONE-HALF THE CONTOUR INTERVAL PROVIDED, AS DEFINED BY THE NATIONAL MAP ACCURACY STANDARDS. ANY QUANTITIES PROVIDED FOR EARTHWORK VOLUMES ARE ESTABLISHED USING THIS TOPOGRAPHY CONTOUR ACCURACY, AND THEREFORE THE INHERENT ACCURACY OF ANY EARTHWORK QUANTITY IS ASSUMED FROM THE TOPOGRAPHY ACCURACY.

4. PROPOSED CONTOURS ARE TO APPROXIMATE FINISHED GRADE.

5. UNLESS OTHERWISE NOTED, PAYMENT FOR EARTHWORK SHALL INCLUDE BACKFILLING OF THE CURB AND GUTTER, SIDEWALK AND FURTHER MANIPULATION OF UTILITY TRENCH SPOILS. THE SITE SHALL BE LEFT IN A MOWABLE CONDITION AND POSITIVE DRAINAGE MAINTAINED THROUGHOUT.

6. UNLESS OTHERWISE NOTED, ALL EARTHWORK IS CONSIDERED UNCLASSIFIED. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR ROCK OR SHALE EXCAVATION, UNLESS SPECIFICALLY STATED OTHERWISE.

7. PRIOR TO EARTHWORK ACTIVITIES, PRE-DISTURBANCE EROSION AND SEDIMENT CONTROL DEVICES SHALL BE IN PLACE PER THE STORM WATER POLLUTION PREVENTION PLAN AND/OR THE EROSION AND SEDIMENT CONTROL PLAN PREPARED FOR THIS SITE.

8. ALL TOPSOIL SHALL BE STRIPPED FROM ALL AREAS TO BE GRADED AND STOCKPILED ADJACENT TO THE SITE AT AN AREA SPECIFIED BY THE PROJECT OWNER OR HIS APPOINTED REPRESENTATIVE. VEGETATION, TRASH, TREES, BRUSH, TREE ROOTS AND LIMBS, ROCK FRAGMENTS GREATER THEN 6-INCHES AND OTHER DELETERIOUS MATERIALS SHALL BE REMOVED AND PROPERLY DISPOSED OF OFFSITE OR AS DIRECTED BY THE OWNER OR HIS APPOINTED REPRESENTATIVE.

9. UNLESS OTHERWISE SPECIFIED IN THE GEOTECHNICAL REPORT, ALL FILLS SHALL BE PLACED IN MAXIMUM 6-INCH LIFTS AND COMPACTED TO 95-PERCENT OF MAXIMUM DENSITY AS DEFINED USING A STANDARD PROCTOR TEST (AASHTO T99/ASTM 698).

10. FILL MATERIALS SHALL BE PER GEOTECHNICAL REPORT AND SHALL NOT INCLUDE ORGANIC MATTER, DEBRIS OR TOPSOIL. ALL FILLS PLACED ON SLOPES GREATER THAN 6:1 SHALL BE BENCHMARKED.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REDISTRIBUTING THE TOPSOIL OVER PROPOSED TURF AND LANDSCAPED AREAS TO A MINIMUM DEPTH OF 6-INCHES BELOW FINAL GRADE.

12. ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE. UNLESS NOTED OTHERWISE THE FOLLOWING GRADES SHALL APPLY:

A. TURF AREAS – 2.5% MINIMUM, 4H:1V MAXIMUM

B. PAVED AREAS – 1.2% MINIMUM, 5% MAXIMUM

13. ALL DISTURBED AREAS SHALL BE FERTILIZED, SEEDED AND MULCHED IMMEDIATELY AFTER EARTHWORK ACTIVITIES HAVE CEASED. SEEDING SHALL BE PER THE EROSION AND SEDIMENT CONTROL PLAN AND/OR LANDSCAPE PLAN. IF NOT SPECIFIED SEEDING SHALL BE PER APWA SECTION 2400, LATEST EDITION. UNLESS OTHERWISE NOTED, SEEDING SHALL BE SUBSIDIARY TO THE CONTRACT PRICE FOR EARTHWORK AND GRADING ACTIVITIES.

14. ALL DISTURBED AREAS IN THE RIGHT-OF-WAY SHALL BE SODDED.

15. UNDERDRAINS ARE RECOMMENDED FOR ALL PAVED AREAS ADJACENT TO IRRIGATED TURF AND LANDSCAPED BEDS.

16. CONTRACTOR SHALL ADHERE TO THE REPORTING REQUIREMENTS OUTLINED IN THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED FOR THIS PROJECT. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE PROPERLY MAINTAINED AND KEPT CLEAN OF SILT AND DEBRIS AND IN GOOD WORKING ORDER. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AS REQUIRED.

UTILITIES:

1. EXISTING UTILITIES HAVE BEEN SHOWN TO THE GREATEST EXTENT POSSIBLE BASED UPON INFORMATION PROVIDED TO THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE RESPECTIVE UTILITY COMPANIES AND FIELD LOCATING UTILITIES PRIOR TO CONSTRUCTION AND IDENTIFYING ANY POTENTIAL CONFLICTS. ALL CONFLICTS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ANY REQUIRED UTILITY RELOCATIONS. UTILITIES DAMAGED THROUGH THE NEGLIGENCE OF THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

3. CONTRACTOR SHALL VERIFY FLOW-LINES AND STRUCTURE TOPS PRIOR TO CONSTRUCTION, AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES. PROVIDE SHOP DRAWINGS FOR ALL PRECAST AND MANUFACTURED UTILITY STRUCTURES FOR REVIEW BY THE ENGINEER PRIOR TO CONSTRUCTION OF THE STRUCTURES.

4. UTILITY SEPARATION: WATERLINES SHALL HAVE A MINIMUM OF 10 FEET HORIZONTAL AND 2 FEET VERTICAL SEPARATION FROM ALL SANITARY AND STORM SEWER LINES. IF MINIMUM SEPARATIONS CAN NOT BE OBTAINED, CONCRETE ENCASEMENT OF THE SANITARY OR STORM SEWER LINE SHALL BE REQUIRED 10 FEET IN EACH DIRECTION OF THE CONFLICT.

5. PAYMENT FOR TRENCHING, BACKFILLING, PIPE EMBEDMENT, FLOWABLE FILL, BACKFILL MATERIALS, CLEAN UP, SEEDING, SODDINGS AND ANY OTHER ITEMS NECESSARY FOR THE CONSTRUCTION OF THE UTILITY LINE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE UTILITY INSTALLATION.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING RESPECTIVE UTILITY COMPANIES 48-HOURS IN ADVANCE FOR THE INSPECTION OF ANY PROPOSED UTILITY MAIN EXTENSION OR SERVICE LINE OR SERVICE CONNECTION TO ANY EXISTING MAIN.

7. TRENCH SPOILS SHALL BE NEATLY PLACED ONSITE ADJACENT TO THE TRENCH, AND COMPACTED TO PREVENT SATURATION AND EXCESS SEDIMENT RUNOFF. UNSUITABLE MATERIALS, EXCESS ROCK AND SHALE, ASPHALT, CONCRETE, TREES, BRUSH ETC. SHALL BE PROPERLY DISPOSED OF OFFSITE. MATERIALS MAY BE WASTED ONSITE AT THE DIRECTION OF THE OWNER OR HIS APPOINTED REPRESENTATIVE.

STREET NOTES:

1. ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL. ALL APPLICABLE AASHTO STANDARDS HAVE BEEN MET.

2. ALL INSPECTION OF STREET CONSTRUCTION TO BE PERFORMED BY THE CITY OF LEE'S SUMMIT PUBLIC WORKS DEPARTMENT.

3. CURB RETURN RADII SHALL BE 25' AT BACK OF CURB UNLESS OTHERWISE NOTED.

4. SUBGRADE TO BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.

5. ASSUMED DESIGN SPEED = 25 MPH (COLLECTOR).

6. MINIMUM STOPPING SIGHT DISTANCE = 155 FEET.

7. MINIMUM K, SAG CURVE = 26 (14 WITH LIGHTING), CREST CURVE = 12.

8. GRADE INTERSECTIONS TO DRAIN AS SHOWN.

9. SSD = STOPPING SIGHT DISTANCE.

MISSOURI GEOGRAPHIC REFERENCE SYSTEM BENCH MARK:

BM JA-136, LOCATED AT INTERSECTION OF SW OLDHAM PARKWAY AND SW WARD ROAD, 61 FT SOUTH OF CL OF OLDHAM PARKWAY AND 28.9 FT EAST OF THE EAST EDGE OF WARD ROAD.

ELEV. 993.11'

PROJECT BENCH MARK:

SANITARY MANHOLE H2 AT NW CORNER OF LOT 1153 WINTERSET VALLEY 1ST PLAT, APPROX. 39' RT. OF CL OF NW PEALE BLVD.

ELEV. 935.45'

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Missouri State Certificates of Authority

#E2002003600-F #LAC2001005237 #LS200200859-F

WINTERSET VALLEY, 13TH PLAT

STREET, STORMWATER, MASTER DRAINAGE PLAN AND

EROSION AND SEDIMENT CONTROL

NW THOREAU DRIVE AND AUDUBON LANE

LEE'S SUMMIT, MISSOURI

REVISION

DESCRIPTION

REVISION DATE

REVISION BY:

DRAWN BY: KSC

CHECKED BY: MAB

DATE PREPARED: 2-15-19

PROJ. NUMBER: 18-230

COVER SHEET

SHEET

1

OF 21

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LEGEND	
	TEMPORARY STORAGE AREA FOR EXCESS MATERIAL
	TEMP. CONSTRUCTION ENTRANCE AND STAGING AREA
	CONCRETE WASHOUT AREA
	SILT FOAM DIKE - STAKED & INSTALL PER MFR'S RECOMMENDATIONS
	ROCK DITCH CHECK
	SILT FENCE (PRIOR TO LAND DISTURBANCE)
	SILT FENCE (DURING CONSTRUCTION)
	SILT SOCK / ROCK SOCK / SOCK WATTLE
	LIMITS OF DISTURBANCE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	GRAVEL FILTER FOR STORM SEWER STRUCTURES ONLY
	BMP PLAN REF. NO.

EROSION AND SEDIMENT CONTROL STAGING CHART				
PROJECT STAGE	BMP PLAN REF. NO.	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
A - PRIOR TO LAND DISTURBANCE	1	CONSTRUCTION ENTRANCE & STAGING AREA	D	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
	2 *	SILT FENCE 1 (PRIOR TO LAND DISTURBANCE)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	3	EXISTING INLET PROTECTION (GRAVEL CURB INLET SEDIMENT TRAP)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
B - MASS GRADING	4	SILT FENCE 2 (DURING CONSTRUCTION)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	5	FOAM SILT DIKE OR ROCK DITCH CHECK	E	PLACE WHERE INDICATED AS SOON AS SWALE IS ESTABLISHED, REPAIR OR REPLACE AS NECESSARY
C - UTILITY CONSTRUCTION	6	CONCRETE WASHOUT AREA	E	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
	7	INLET PROTECTION (SILT FENCE)	D/E	PLACE SILT FENCE AROUND ALL STORM SEWER STRUCTURES / YARD AREA STORM STRUCTURES TO HAVE SILT FENCE REMOVED ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
D - AFTER PAVING OPERATIONS	8	INLET PROTECTION (GRAVEL FILTER BAGS)	E	BOARDS SHALL BE PLACED IN FRONT OF INLET OPENING FROM THE TIME SILT FENCE IS REMOVED UNTIL SUCH TIME THAT THE CURB / THROAT IS POURED. PLACE GRAVEL FILTER BAGS AT THE OPENING OF ALL CURB INLETS IMMEDIATELY AFTER THE INLET THROATS ARE POURED
	9	SILT FENCE 2 (AFTER CURB CONSTRUCTION)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	10	SEEDING AND MULCHING	E	ALL DISTURBED AREAS AFTER 14 DAYS OF CONSTRUCTION INACTIVITY
E - UNTIL CLOSURE OF LAND DISTURBANCE PERMIT				ADDITIONAL SEDIMENT AND EROSION CONTROL MEASURES MAY BE REQUIRED ANY TIME CURRENT MEASURES ARE FOUND TO BE INEFFECTIVE.

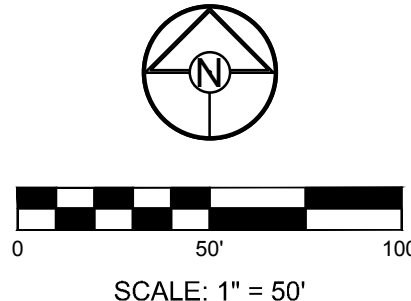
* NOTE:
MULCH BERMS ARE AN ACCEPTABLE ALTERNATIVE TO SILT FENCE REQUIRED PRIOR TO LAND DISTURBANCE AND ADJACENT TO WOODED/UNDEVELOPED AREAS.

DISTURBED AREA = 5.39 A.C.

SITE SPECIFIC NOTES:

- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
- THERE ARE NO WETLANDS, NATURAL OR ARTIFICIAL WATER STORAGE DETENTION AREAS IN THE PROJECT AREA.
- NO PART OF THE PROJECT LIES WITHIN THE 100 YEAR FLOOD PLAIN PER FEMA FLOOD INSURANCE RATE MAP NUMBER 29095C0412G DATED JANUARY 20, 2017.
- ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IMPLEMENTED ACCORDING TO THE BMP STAGING CHART.
- ADDITIONAL EROSION CONTROL MAY BE REQUIRED BY THE CITY ENGINEER AT ANY TIME EXISTING MEASURES ARE FOUND TO BE INEFFECTIVE OR PROBLEMATIC AREAS ARE NOTED IN THE FIELD.

- STABILIZATION OF DISTURBED AREAS MUST, AT A MINIMUM, BE INITIATED IMMEDIATELY WHENEVER ANY CLEARING, GRADING, EXCAVATING, OR OTHER SOIL DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE, OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. THE DISTURBED AREAS SHALL BE PROTECTED FROM EROSION BY STABILIZING THE AREA WITH MULCH OR OTHER SIMILARLY EFFECTIVE SOIL STABILIZING BMPs. INITIAL STABILIZATION ACTIVITIES MUST BE COMPLETED WITHIN 14 DAYS AFTER SOIL DISTURBING ACTIVITIES CEASE.
- ALL PERIMETER SILT FENCE, EARTH DIKES, SEDIMENT BASINS, AND ROCK CONSTRUCTION ENTRANCES WILL BE INSTALLED BEFORE GRADING OPERATIONS BEGIN.
- SILT FENCE AND EARTH DIKES THAT ARE PLACED BEFORE GRADING BEGINS WILL BE MAINTAINED BY THE GRADING CONTRACTOR.
- AREAS WITHIN PUBLIC RIGHT-OF-WAY SHALL BE SODDED IMMEDIATELY AFTER CONSTRUCTION IS COMPLETE.



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**WINTERSET VALLEY, 13TH PLAT
STREET, STORMWATER, MASTER DRAINAGE PLAN AND
EROSION AND SEDIMENT CONTROL
NW THOREAU DRIVE AND AUDUBON LANE
LEE'S SUMMIT, MISSOURI**

REVISION DATE	DESCRIPTION
1/15/19	1. INITIAL DESIGN
2/15/19	2. REVISED DESIGN
3/15/19	3. REVISED DESIGN
4/15/19	4. REVISED DESIGN
5/15/19	5. REVISED DESIGN
6/15/19	6. REVISED DESIGN
7/15/19	7. REVISED DESIGN
8/15/19	8. REVISED DESIGN

DRAWN BY:	KSC
CHECKED BY:	MAB
DATE PREPARED:	2-15-19
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LEGEND			
	TEMPORARY STORAGE AREA FOR EXCESS MATERIAL		SILT FENCE (PRIOR TO LAND DISTURBANCE)
	TEMP. CONSTRUCTION ENTRANCE AND STAGING AREA		SILT FENCE (DURING CONSTRUCTION)
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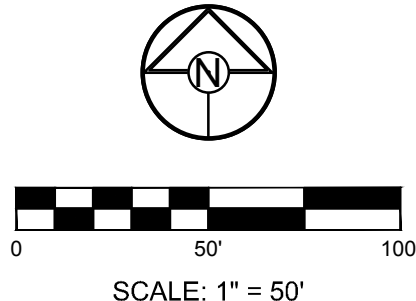
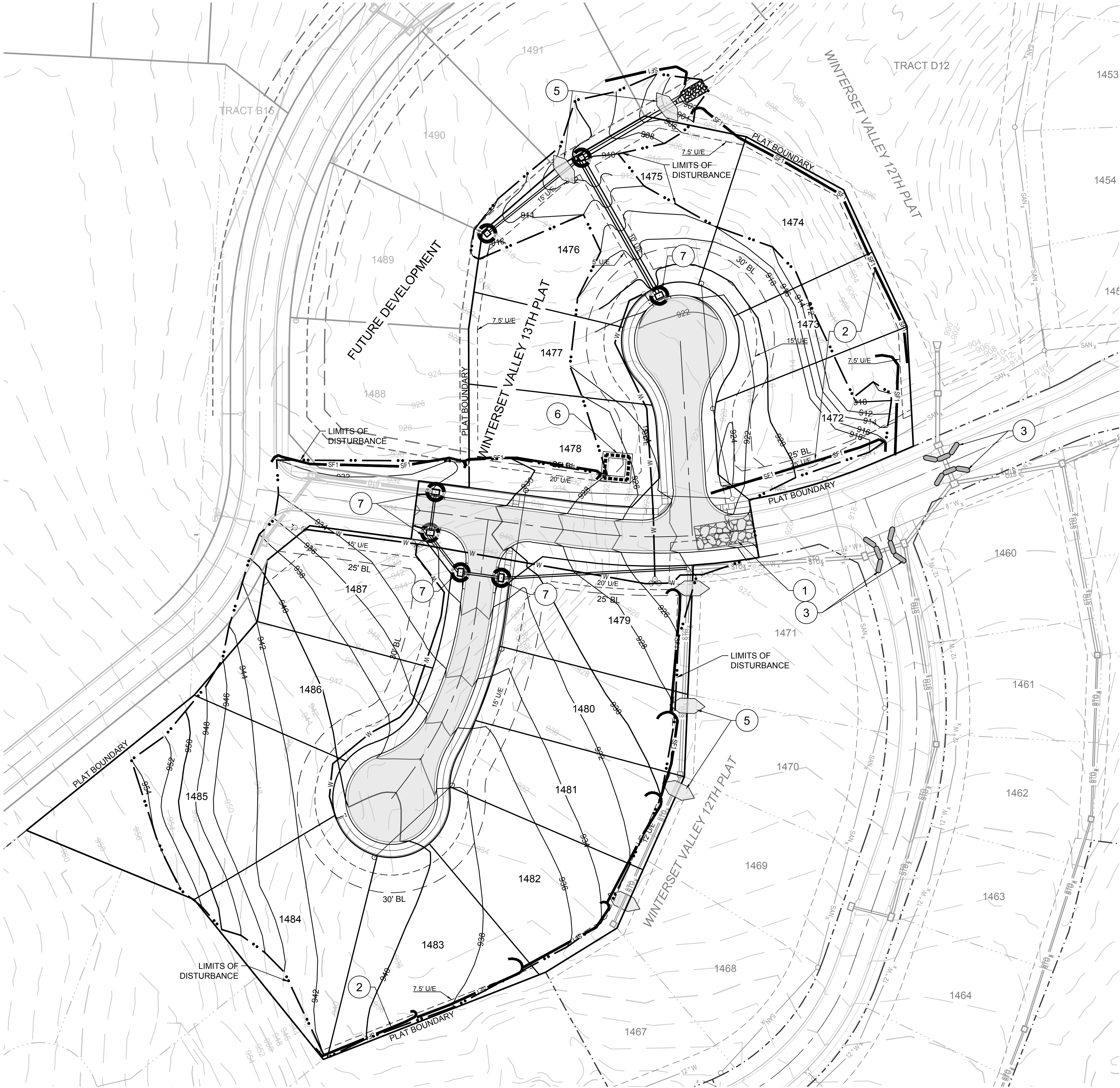
EROSION AND SEDIMENT CONTROL STAGING CHART				
PROJECT STAGE	BMP PLAN REF. NO	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
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	2	SILT FENCE 1 (PRIOR TO LAND DISTURBANCE)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	3	EXISTING INLET PROTECTION	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
B - MASS GRADING	4	SILT FENCE 2 (DURING CONSTRUCTION)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	5	FOAM SILT DIKE OR ROCK DITCH CHECK AND SEDIMENT TRAPS	E	PLACE WHERE INDICATED AS SOON AS SWALE IS ESTABLISHED, REPAIR OR REPLACE AS NECESSARY
C - UTILITY CONSTRUCTION	6	CONCRETE WASHOUT AREA	E	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
	7	INLET PROTECTION (SILT FENCE)	D/E	PLACE SILT FENCE AROUND ALL STORM SEWER STRUCTURES / YARD AREA STORM STRUCTURES TO HAVE SILT FENCE REMOVED ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED BOARDS SHALL BE PLACED IN FRONT OF INLET OPENING FROM THE TIME SILT FENCE IS REMOVED UNTIL SUCH TIME THAT THE CURB / THROAT IS POURED. PLACE GRAVEL FILTER BAGS AT THE OPENING OF ALL CURB INLETS IMMEDIATELY AFTER THE INLET THROATS ARE POURED
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	9	SILT FENCE 2 (AFTER CURB CONSTRUCTION)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	10	SEEDING AND MULCHING	E	ALL DISTURBED AREAS AFTER 14 DAYS OF CONSTRUCTION INACTIVITY
E - UNTIL CLOSURE OF LAND DISTURBANCE PERMIT				ADDITIONAL SEDIMENT AND EROSION CONTROL MEASURES MAY BE REQUIRED ANY TIME CURRENT MEASURES ARE FOUND TO BE INEFFECTIVE.

DISTURBED AREA = 5.39 A.C.

SITE SPECIFIC NOTES:

- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
- THERE ARE NO WETLANDS, NATURAL OR ARTIFICIAL WATER STORAGE DETENTION AREAS IN THE PROJECT AREA.
- NO PART OF THE PROJECT LIES WITHIN THE 100 YEAR FLOOD PLAIN PER FEMA FLOOD INSURANCE RATE MAP NUMBER 29095C0412G DATED JANUARY 20, 2017.
- ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IMPLEMENTED ACCORDING TO THE BMP STAGING CHART.
- ADDITIONAL EROSION CONTROL MAY BE REQUIRED BY THE CITY ENGINEER AT ANY TIME EXISTING MEASURES ARE FOUND TO BE INEFFECTIVE OR PROBLEMATIC AREAS ARE NOTED IN THE FIELD.

- STABILIZATION OF DISTURBED AREAS MUST, AT A MINIMUM, BE INITIATED IMMEDIATELY WHENEVER ANY CLEARING, GRADING, EXCAVATING, OR OTHER SOIL DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE, OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. THE DISTURBED AREAS SHALL BE PROTECTED FROM EROSION BY STABILIZING THE AREA WITH MULCH OR OTHER SIMILARLY EFFECTIVE SOIL STABILIZING BMPs. INITIAL STABILIZATION ACTIVITIES MUST BE COMPLETED WITHIN 14 DAYS AFTER SOIL DISTURBING ACTIVITIES CEASE.
- ALL PERIMETER SILT FENCE, EARTH DIKES, SEDIMENT BASINS, AND ROCK CONSTRUCTION ENTRANCES WILL BE INSTALLED BEFORE GRADING OPERATIONS BEGIN.
- SILT FENCE AND EARTH DIKES THAT ARE PLACED BEFORE GRADING BEGINS WILL BE MAINTAINED BY THE GRADING CONTRACTOR.
- AREAS WITHIN PUBLIC RIGHT-OF-WAY SHALL BE SODDED IMMEDIATELY AFTER CONSTRUCTION IS COMPLETE.



REVISION DATE	DESCRIPTION
1/15/19	1.0
2/15/19	2.0
3/15/19	3.0
4/15/19	4.0
5/15/19	5.0
6/15/19	6.0
7/15/19	7.0
8/15/19	8.0
9/15/19	9.0
10/15/19	10.0

ECP-CONSTRUCTION

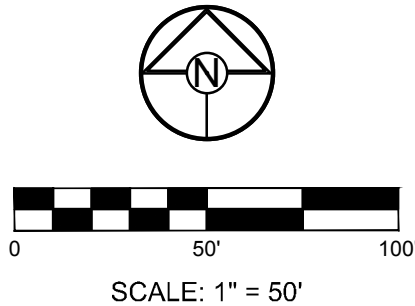
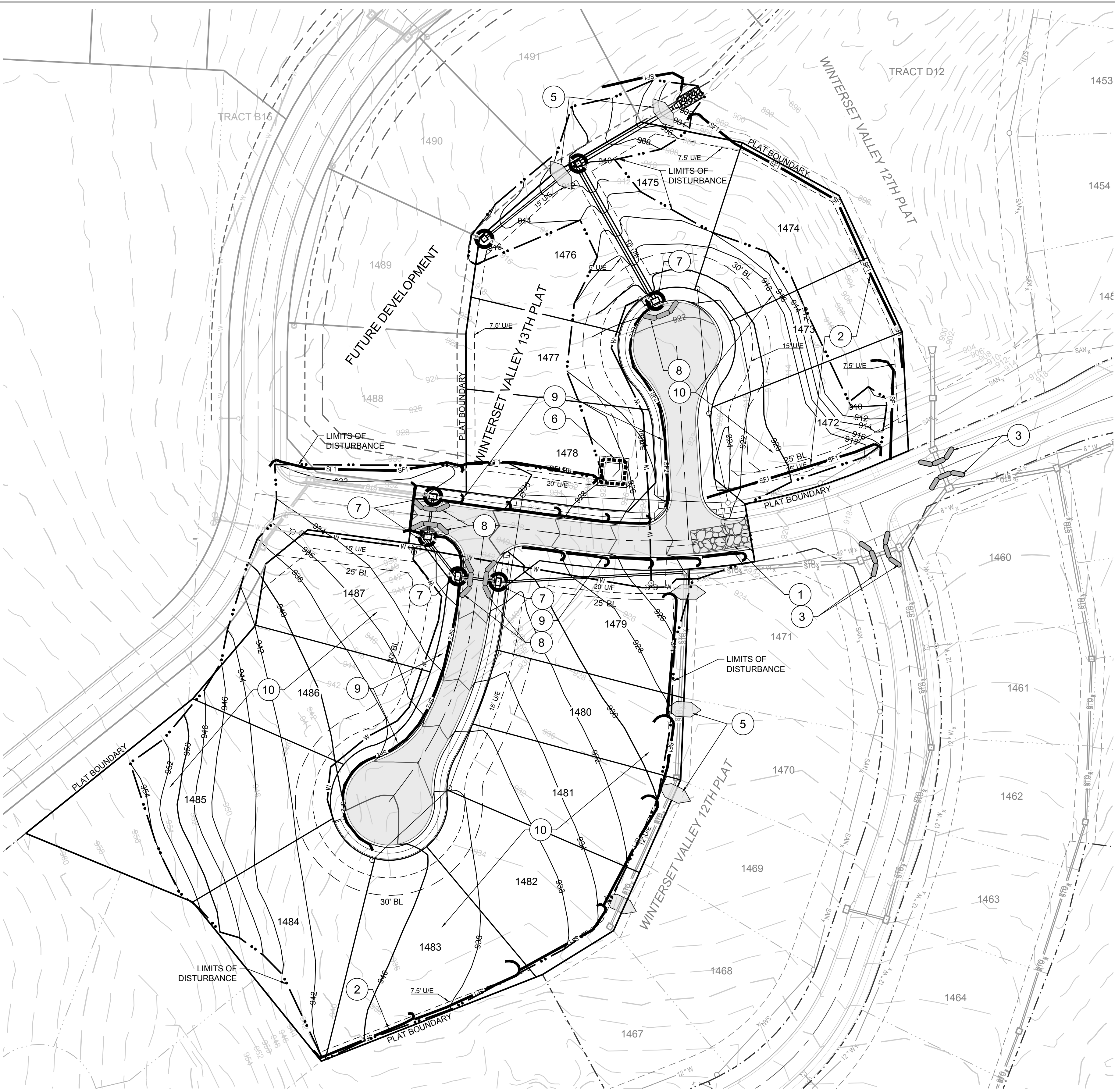
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PRE-CLEARING PHASE	EROSION AND SEDIMENT CONTROL STAGING CHART				
	PROJECT STAGE	BMP PLAN REF. NO	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
A - PRIOR TO LAND DISTURBANCE		1	CONSTRUCTION ENTRANCE & STAGING AREA	D	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
		2	SILT FENCE 1 (PRIOR TO LAND DISTURBANCE)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
		3	EXISTING INLET PROTECTION (GRAVEL CURB INLET SEDIMENT TRAP)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
B - MASS GRADING		4	SILT FENCE 2 (DURING CONSTRUCTION)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
		5	FOAM SILT DIKE OR ROCK DITCH CHECK	E	PLACE WHERE INDICATED AS SOON AS SWALE IS ESTABLISHED, REPAIR OR REPLACE AS NECESSARY
C - UTILITY CONSTRUCTION		6	CONCRETE WASHOUT AREA	E	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
		7	INLET PROTECTION (SILT FENCE)	D/E	PLACE SILT FENCE AROUND ALL STORM SEWER STRUCTURES / YARD AREA STORM STRUCTURES TO HAVE SILT FENCE REMOVED ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
D - AFTER PAVING OPERATIONS		8	INLET PROTECTION (GRAVEL FILTER BAGS)	E	BOARDS SHALL BE PLACED IN FRONT OF INLET OPENING FROM THE TIME SILT FENCE IS REMOVED UNTIL SUCH TIME THAT THE CURB / THROAT IS POURED. PLACE GRAVEL FILTER BAGS AT THE OPENING OF ALL CURB INLETS IMMEDIATELY AFTER THE INLET THROATS ARE POURED
		9	SILT FENCE 1 (AFTER CURB CONSTRUCTION)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
		10	SEEDING AND MULCHING	E	ALL DISTURBED AREAS AFTER 14 DAYS OF CONSTRUCTION INACTIVITY
E - UNTIL CLOSURE OF LAND DISTURBANCE PERMIT					ADDITIONAL SEDIMENT AND EROSION CONTROL MEASURES MAY BE REQUIRED ANY TIME CURRENT MEASURES ARE FOUND TO BE INEFFECTIVE.

DISTURBED AREA = 5.39 A.C.

SITE SPECIFIC NOTES:

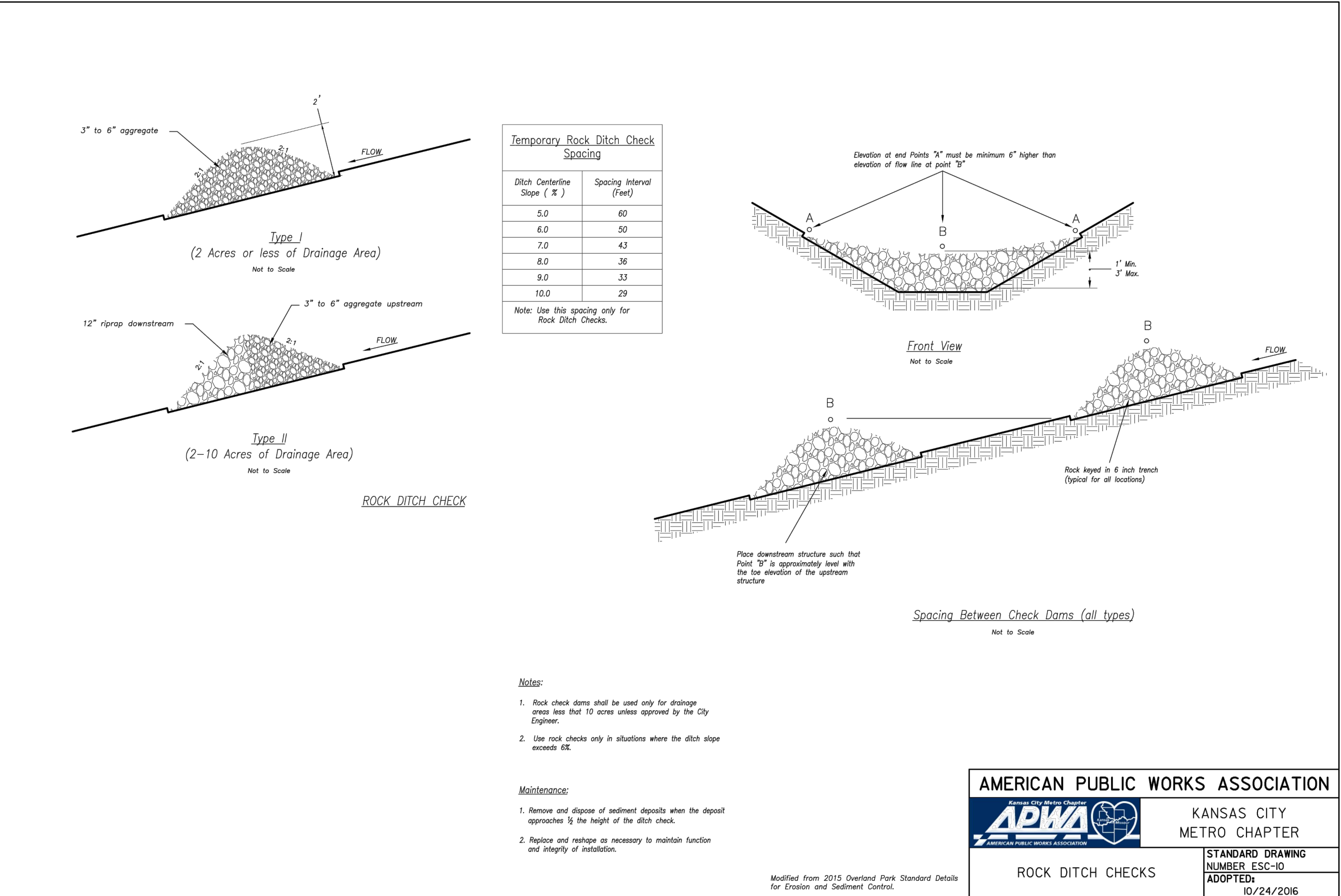
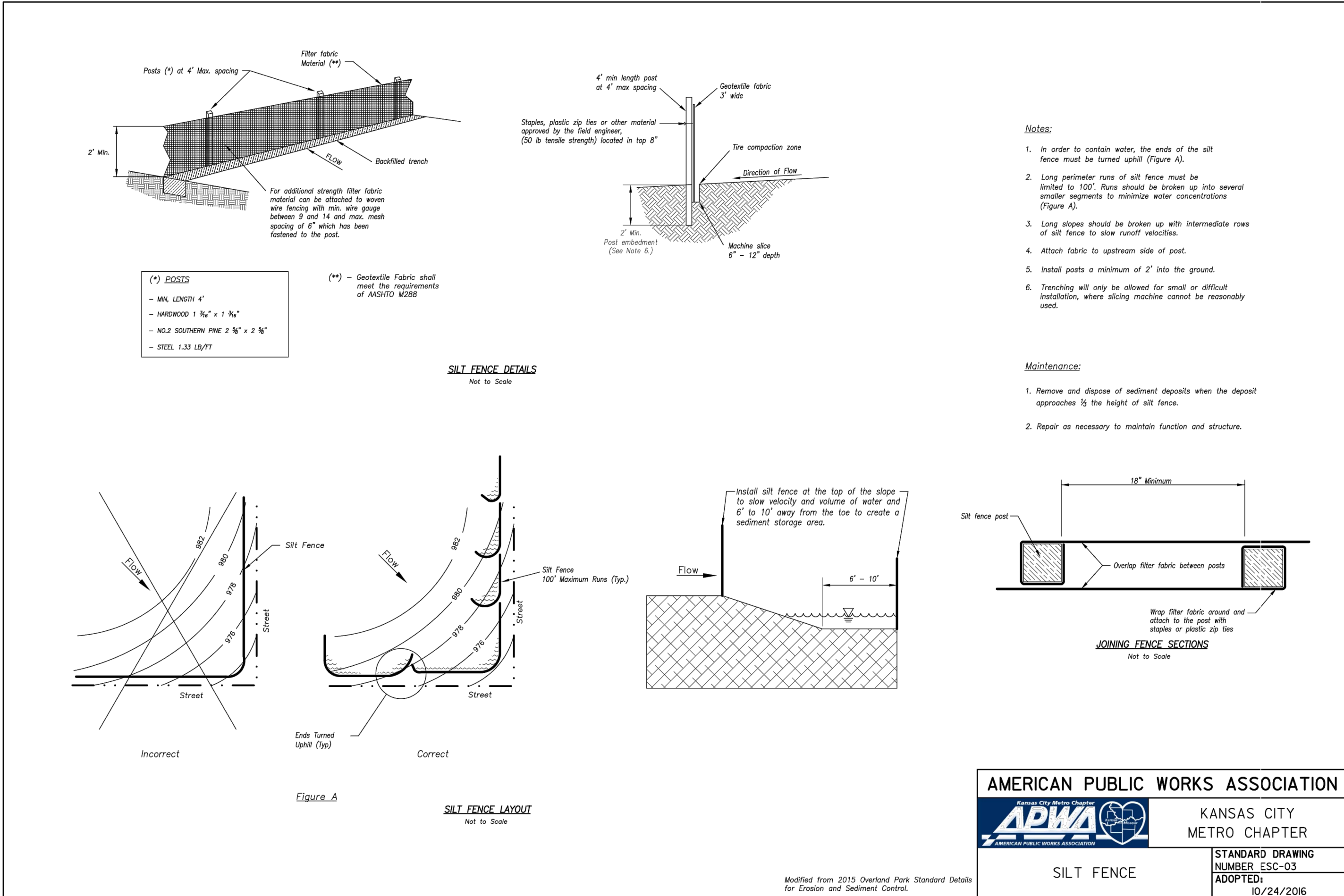
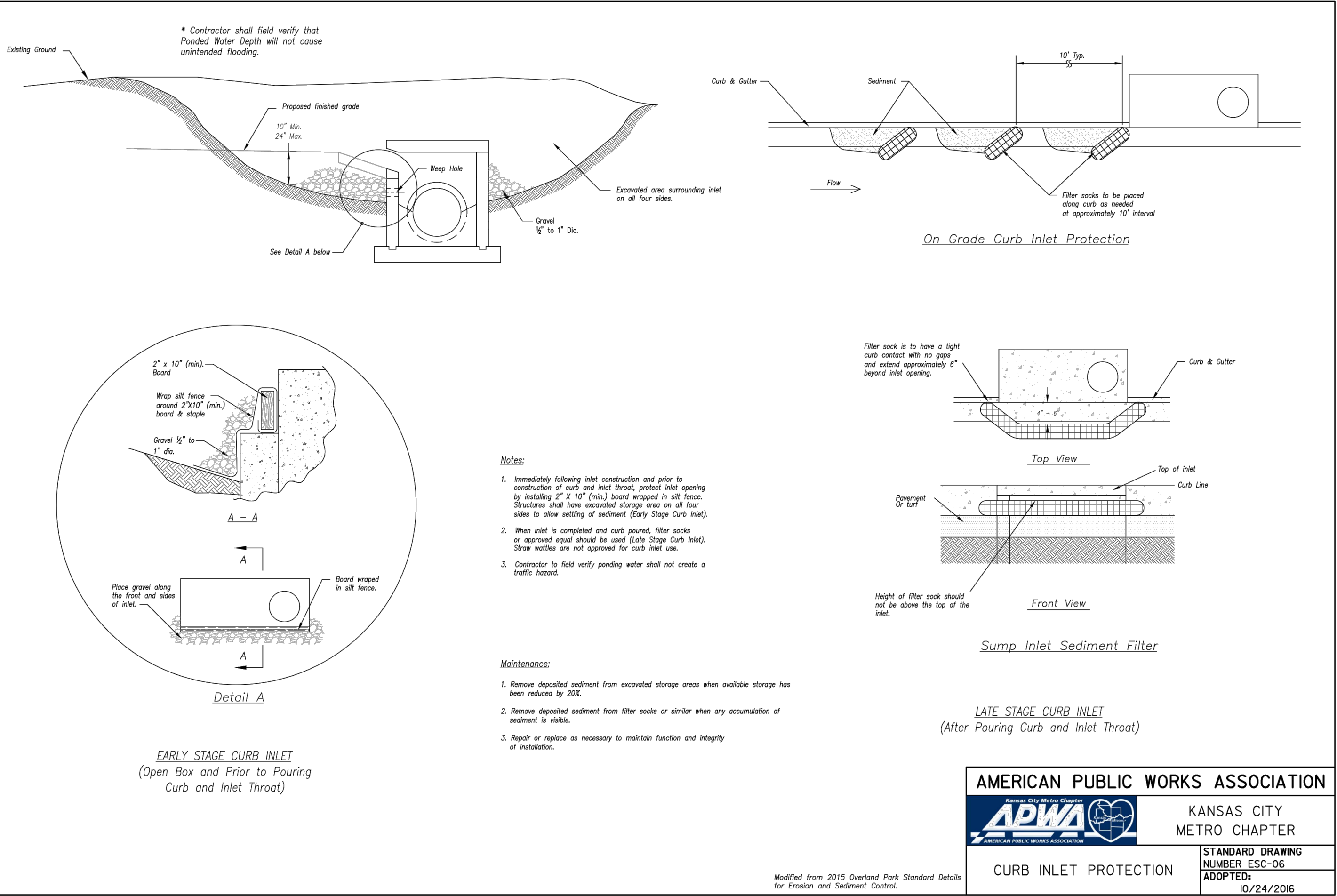
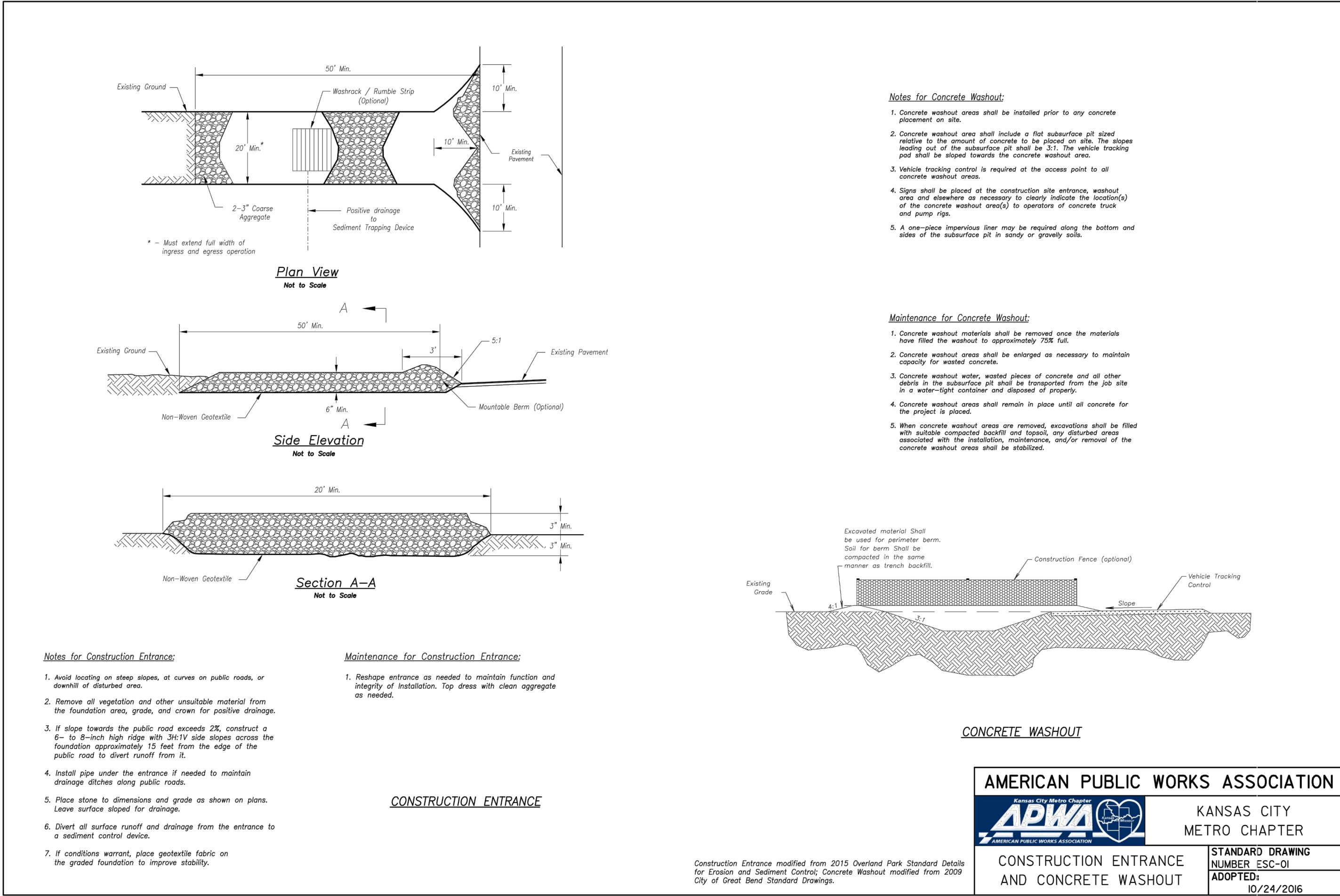
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
- THERE ARE NO WETLANDS, NATURAL OR ARTIFICIAL WATER STORAGE DETENTION AREAS IN THE PROJECT AREA.
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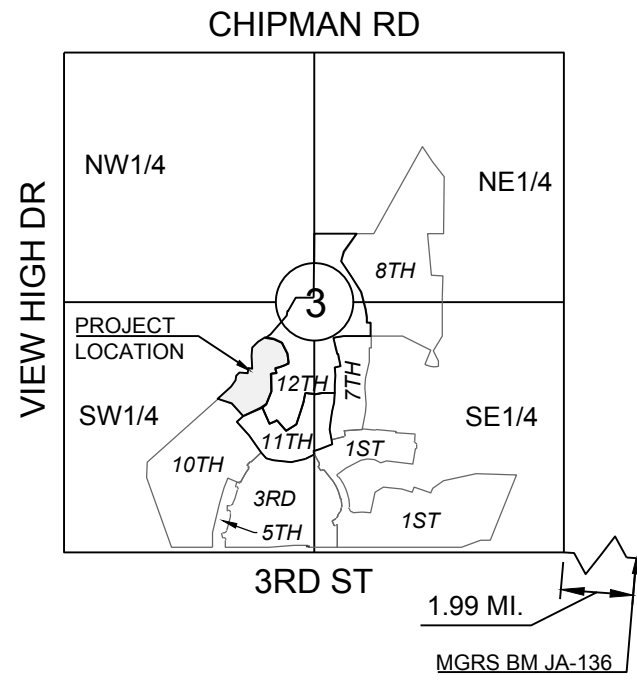
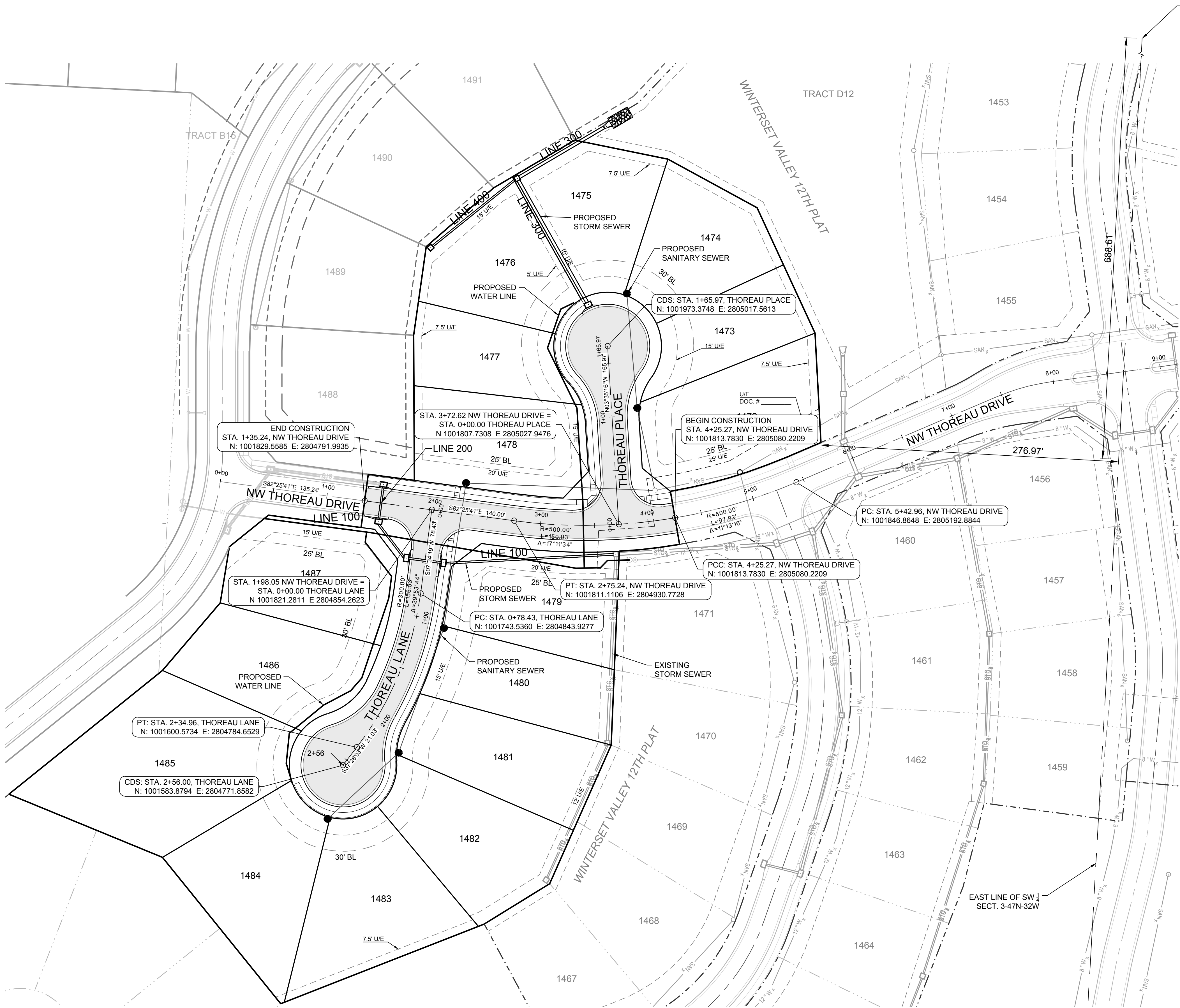
REVISION DATE	DESCRIPTION
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DRAWN BY:	KSC
CHECKED BY:	MAB
DATE PREPARED:	2-15-19
PROJ. NUMBER:	18-230

**FINAL
STABILIZATION
PLAN**



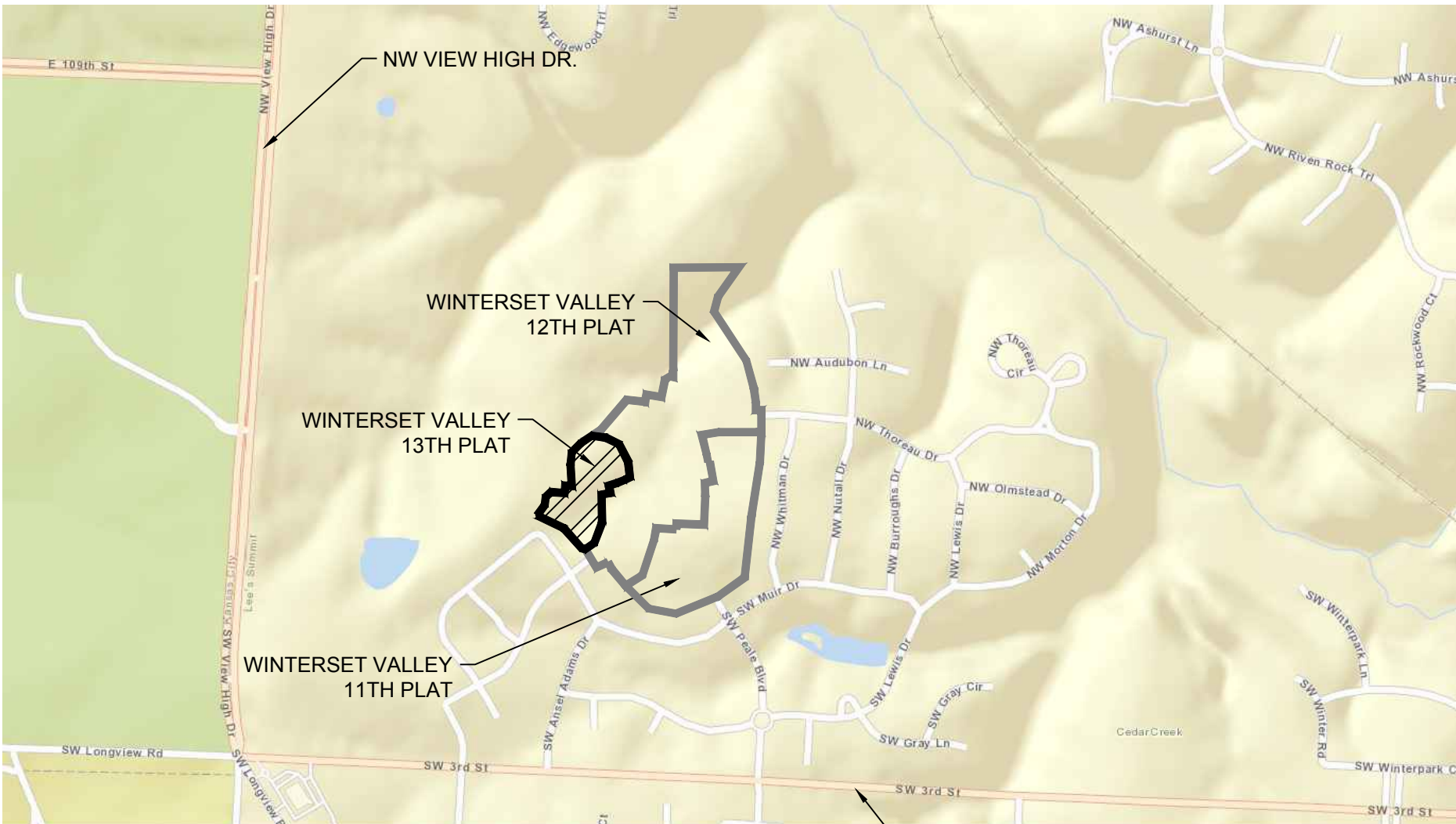
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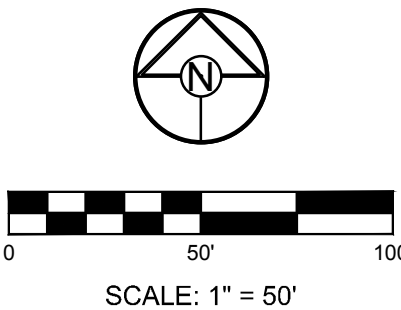
SECTION 3-47N-32W
LOCATION MAP
SCALE 1" = 2000'

MISSOURI GEOGRAPHIC REFERENCE SYSTEM BENCH MARK:
BM JA-136, LOCATED AT INTERSECTION OF SW OLDHAM PARKWAY AND SW WARD ROAD, 61 FT SOUTH OF CL OF OLDHAM PARKWAY AND 28.9 FT EAST OF THE EAST EDGE OF WARD ROAD.
ELEV. 993.11'

PROJECT BENCH MARK:
SANITARY MANHOLE H2 AT NW CORNER OF LOT 1153 WINTERSET VALLEY 1ST PLAT, APPROX. 39' RT. OF CL OF NW PEALE BLVD.
ELEV. 935.45'



SITE MAP
NOT TO SCALE



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CHECKED BY:	MAB
DATE PREPARED:	2-15-19
PROJ. NUMBER:	18-230

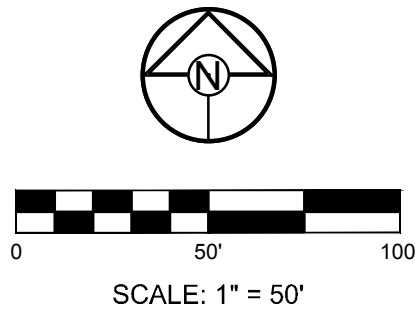
GENERAL LAYOUT

SHEET

7

OF 21

I:\PROJECTS\2018\2303\0 DWG Plans\6 0 SS18-230 MASTER DRAINAGE PLAN.dwg, 21/5/2019 12:08:23 PM, 1:1



NOTE:
THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATIONS.

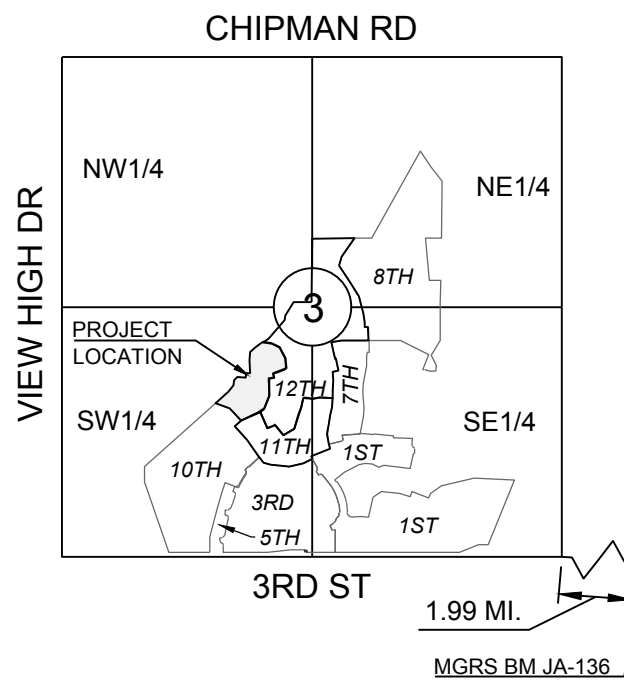
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MISSOURI GEOGRAPHIC REFERENCE SYSTEM BENCH MARK:

BM JA-136, LOCATED AT INTERSECTION OF SW OLDHAM PARKWAY AND SW WARD ROAD, 61 FT SOUTH OF CL OF OLDHAM PARKWAY AND 28.9 FT EAST OF THE EAST EDGE OF WARD ROAD.
ELEV. 993.11'

PROJECT BENCH MARK:

SANITARY MANHOLE H2 AT NW CORNER OF LOT 1153 WINTERSET VALLEY 1ST PLAT, APPROX. 39' RT. OF CL OF NW PEALE BLVD.
ELEV. 935.45'



SECTION 3-47N-32W
LOCATION MAP
SCALE 1" = 2000'

**WINTERSET VALLEY, 13TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
PLAN AND EROSION AND SEDIMENT CONTROL
NW THOREAU DRIVE AND AUDUBON LANE
LEE'S SUMMIT, MISSOURI**

REVISION DATE	DESCRIPTION
1/1	
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DRAWN BY:	KSC
CHECKED BY:	MAB
DATE PREPARED:	2-15-19
PROJ. NUMBER:	18-230

MASTER DRAINAGE PLAN - GRADING PLAN

SHEET

8
OF 21



SCHLAGEL & ASSOCIATES, P.A.
Engineers • Planners • Surveyors • Landscape Architects
14920 West 107th Street • Lenexa, Kansas 66215
(913) 492-5158 • Fax: (913) 492-8400
WWW.SCHLAGELASSOCIATES.COM
Missouri State Certificates of Authority
#E2002003600-F #LAC200100237 #LS200200859-F

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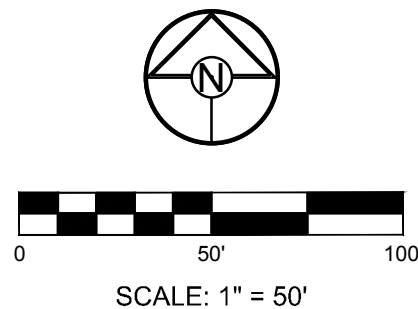


LOT TYPE TABLE		
LOT #	BASEMENT TYPE	MBOE
1472	WALKOUT	N/A
1473	WALKOUT	N/A
1474	WALKOUT	N/A
1475	WALKOUT	905.73
1476	WALKOUT	913.30
1477	DAYLIGHT	N/A
1478	STANDARD	N/A
1479	DAYLIGHT	926.11
1480	DAYLIGHT	927.88
1481	DAYLIGHT	931.08
1482	DAYLIGHT	N/A
1483	DAYLIGHT	N/A
1484	STANDARD	N/A
1485	STANDARD	N/A
1486	STANDARD	N/A
1487	STANDARD	N/A

- NOTE:**
1. DAYLIGHT BASED ON ADJACENT GRADE 4 FT BELOW TOP OF FOUNDATION WHILE MAINTAINING 2.5% (MIN) GRADE TO LOT CORNERS.
 2. WALKOUT BASED ON ADJACENT GRADE AT BASEMENT FLOOR ELEVATION WHILE MAINTAINING 2.5% (MIN) GRADE TO LOT CORNERS.

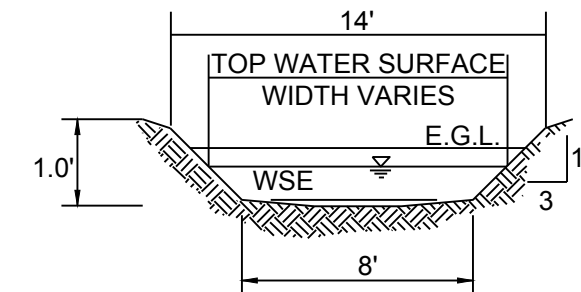
- NOTES:**
1. MBOE = MINIMUM BUILDING OPENING ELEVATION FOR HOUSES ADJACENT TO ENGINEERED OVERFLOW SWALES SHALL BE MINIMUM 2 FEET ABOVE THE 100 YR WATER SURFACE ELEVATION.
 2. EGL = ENERGY GRADE LINE (100 YR)
 3. WSE = WATER SURFACE ELEVATION (100 YR)
 4. ENGINEERED SWALES TO BE GRADED TO NORMAL DEPTH OF FLOW (WATER SURFACE ELEVATION) OR 1.0 FT, WHICHEVER IS GREATER. MINIMUM SLOPE OF ENGINEERED SWALES SHALL BE AS NOTED.
 5. MBOE'S ADJACENT TO SUMPED INLETS SHALL BE A MINIMUM OF 1' ABOVE TOP OF ADJACENT BERM

- 000.00 FG DENOTES FINISHED GRADE ELEVATION
- 000.0 EX DENOTES EXISTING GRADE ELEVATION



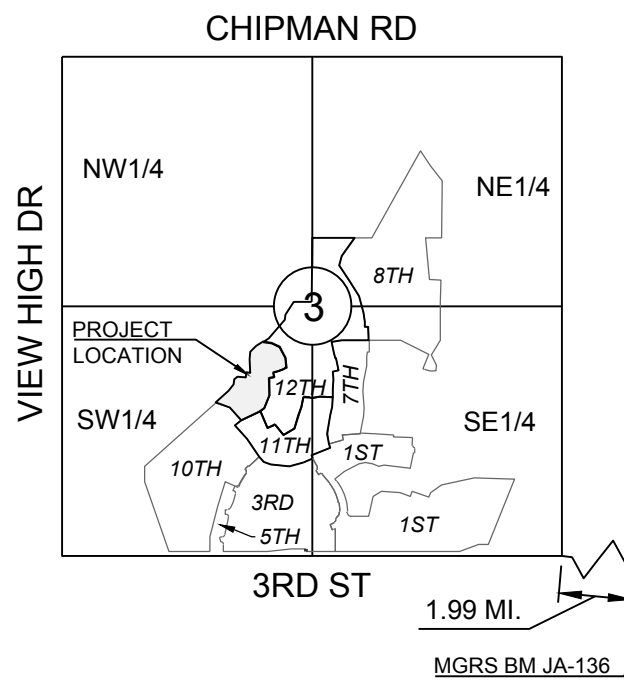
100 YEAR OVERFLOW SWALES												
SECTION	DRAINAGE AREA (AC.)	Q100 (CFS)	Q10 (CFS)	DESIGN OVERFLOW (CFS)	BED SLOPE (%)	BASE WIDTH (FT.)	SIDE SLOPE	TOP WATER SURFACE WIDTH (FT.)	NORMAL DEPTH (FT.)	VELOCITY (FPS)	VELOCITY HEAD (FT.)	EGL (FT.)
A-A	1.61	10.59	7.00	3.59	2.60	8	3:1	9.1	0.18	2.36	0.09	0.27
B-B	0.91	5.99	3.96	2.03	2.50	8	3:1	8.8	0.13	1.88	0.05	0.18
C-C	1.14	7.50	4.96	2.54	2.50	8	3:1	8.9	0.15	2.02	0.06	.21
D-D	0.51	3.62	2.39	1.23*	8.34	8	3:1	8.70	0.12	3.35	0.17	0.29
E-E	0.99	6.51	4.31	2.21	5.64	8	3:1	8.70	0.11	2.43	0.09	0.20
F-F	0.52	3.42	2.26	1.16	7.66	8	3:1	8.40	0.07	2.03	0.06	0.13

* SUMP INLET ASSUMED CLOGGED, QDESIGN=100YR



100 YR OVERFLOW SWALE SECTIONS
SECTION A-A, B-B, C-C, D-D, E-E, F-F
(SEE ADJACENT CHART)

RUNOFF CALCULATIONS:
 $Q = K \cdot C \cdot I \cdot A$
 $K_{10} = 1.0$ $K_{100} = 1.25$ $C = 0.51$ $I = \text{INTENSITY}$
DESIGN OVERFLOW = $Q_{\text{OVERFLOW}} = Q_{100} - Q_{10}$
MANNINGS "n" = .030 FOR SWALES



SECTION 3-47N-32W
LOCATION MAP
SCALE 1" = 2000'

MISSOURI GEOGRAPHIC REFERENCE SYSTEM BENCH MARK:

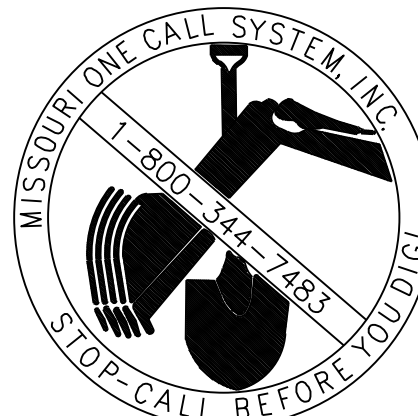
BM JA-136, LOCATED AT INTERSECTION OF SW OLDHAM PARKWAY AND SW WARD ROAD, 61 FT SOUTH OF CL OF OLDHAM PARKWAY AND 28.9 FT EAST OF THE EAST EDGE OF WARD ROAD.

ELEV. 993.11'

PROJECT BENCH MARK:

SANITARY MANHOLE H2 AT NW CORNER OF LOT 1153 WINTERSET VALLEY 1ST PLAT, APPROX. 39' RT. OF CL OF NW PEALE BLVD.

ELEV. 935.45'



REVISION DATE	DESCRIPTION
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DRAWN BY:	KSC
CHECKED BY:	MAB
DATE PREPARED:	2-15-19
PROJ. NUMBER:	18-230

MASTER DRAINAGE PLAN - SPOT ELEVATIONS

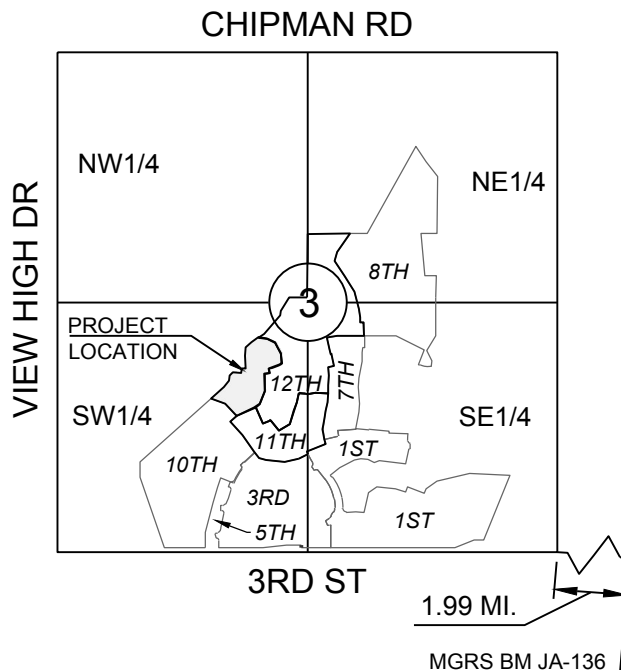
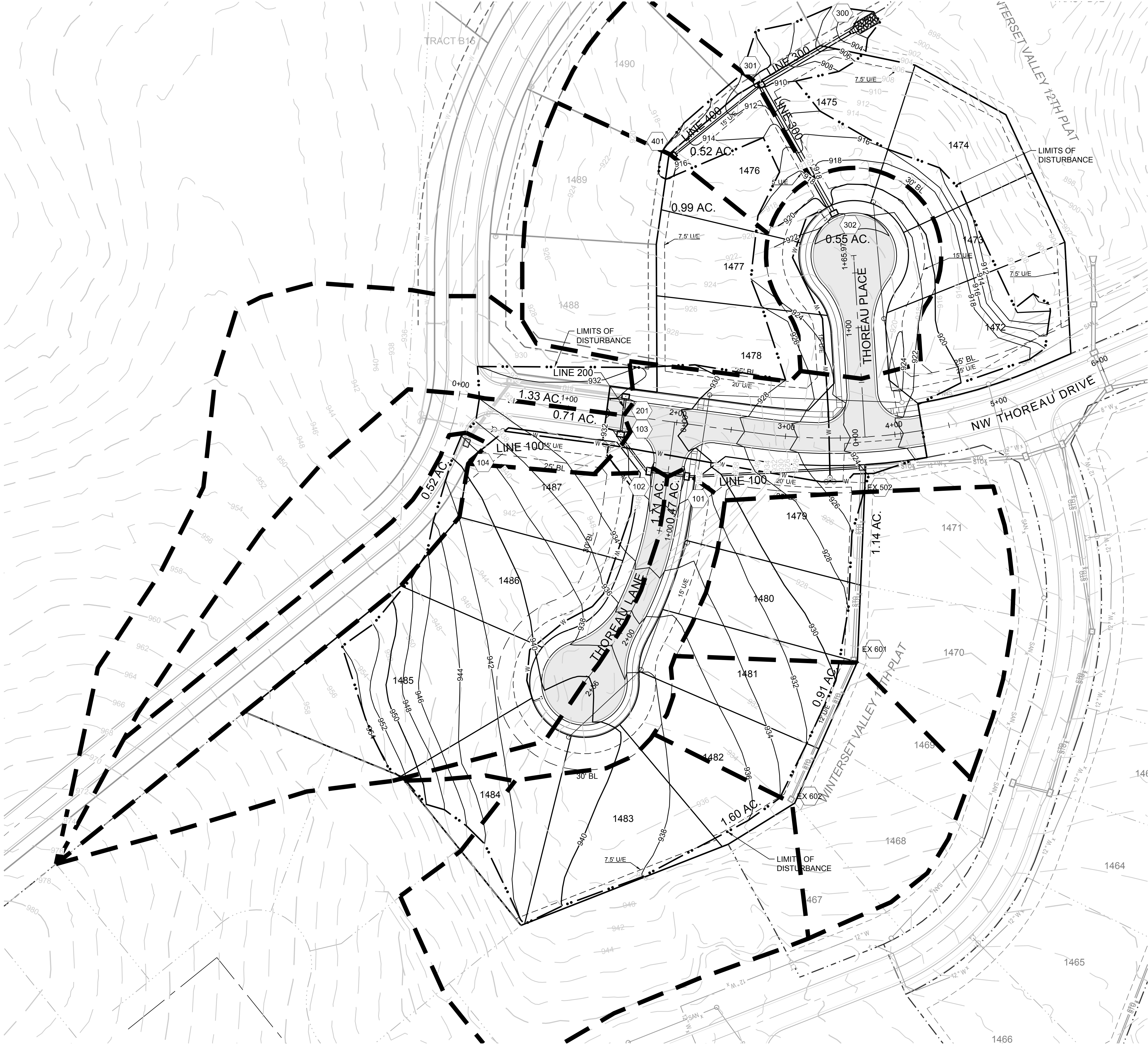
SHEET

10 YR STORM SEWER CALCULATIONS

Runoff Calculations											Pipe Properties																
Inlet #	Area (acres)	"C" Value	Cumul. Area (acres)	Cumul. Cx/A	To	Intensity	Runoff To Inlet	Cumul. Runoff	Pipe Cap.	Pipe Vel.	Up Piped Inlet 1	Up Piped Inlet 2	Up Area (acres)	Up Cx/A	Up Inlet	Down Inlet	Pipe Type	"n" Value	Pipe Size	Length	Slope %	Drop In Inlet	FL Up	FL Down	Inlet Top	HGL Elev.	
DS TAILWATER @ STR #EX 501																											FREE
101	0.47	0.51	4.74	2.42	5.4	7.25	1.74	17.51	20.80	11.77			0.00	0.00	101	EX 501	HDPE	0.012	18	160.03	3.34	0.50	923.85	918.50	931.32	926.11	
102	1.71	0.51	4.27	2.18	5.3	7.26	6.33	15.82	17.07	9.66			0.00	0.00	102	101	HDPE	0.012	18	35.00	2.25	0.50	925.13	924.35	931.32	927.41	
103	0.71	0.51	2.56	1.31	5.2	7.29	2.64	9.52	10.50	8.55	201		1.33	0.68	103	102	HDPE	0.012	15	42.40	2.25	0.50	926.59	925.63	931.88	928.66	
104	0.52	0.51	0.52	0.27	5.0	7.35	1.95	1.95	13.62	11.10			0.00	0.00	104	103	HDPE	0.012	15	140.65	3.79	N/A	932.42	927.09	938.11	933.08	
Drop in Inlet 103																											0.50
201	1.33	0.51	1.33	0.68	5.0	7.35	4.99	4.99	7.00	5.70			0.00	0.00	201	103	HDPE	0.012	15	35.00	1.00	N/A	927.44	927.09	931.88	928.97	
DS TAILWATER @ STR #909																											FREE
301	0.52	0.51	2.06	1.05	5.1	7.31	1.94	7.68	13.58	11.07	401		0.99	0.50	301	300	HDPE	0.012	15	93.29	3.77	0.50	905.50	901.99	909.98	906.95	
302	0.55	0.51	0.55	0.28	5.0	7.35	2.06	2.06	18.85	15.36			0.00	0.00	302	301	HDPE	0.012	15	134.61	7.26	N/A	915.77	906.00	921.51	916.45	
Drop in Inlet 301																											0.50
401	0.99	0.51	0.99	0.50	5.0	7.35	3.71	3.71	16.17	13.18			0.00	0.00	401	301	HDPE	0.012	15	102.91	5.34	N/A	911.50	906.00	915.79	912.44	

100 YR STORM SEWER CALCULATIONS

Runoff Calculations															Pipe Properties													
Inlet #	Area (acres)	"C" Value	Cumul. Area (acres)	Cumul. CxA	Tc	Intensity	Runoff To Inlet	Cumul. Runoff	Pipe Cap.	Pipe Vel.	Up Piped Inlet 1	Up Piped Inlet 2	Up Area (acres)	Up CxA	Up Inlet	Down Inlet	Pipe Type	"n" Value	Pipe Size	Length	Slope %	Drop In Inlet	FL Up	FL Down	Inlet Top	HGL Elev.		
LINE 100																												
101	0.47	0.51	4.74	2.42	5.4	10.18	3.05	30.75	20.80	11.77			0.00	0.00	101	EX501	HDPE	0.012	18	160.03	3.34	0.50	923.85	918.50	931.32	934.04	FREE	
102	1.71	0.51	4.27	2.18	5.3	10.20	11.12	27.77	17.07	9.66			0.00	0.00	102	101	HDPE	0.012	18	35.00	2.25	0.50	925.13	924.35	931.32	935.32		
103	0.71	0.51	2.56	1.31	5.2	10.24	4.63	16.70	10.50	8.55	201		1.33	0.68	103	102	HDPE	0.012	15	42.40	2.25	0.50	926.59	925.63	931.88	935.18		
104	0.52	0.51	0.52	0.27	5.0	10.32	3.42	3.42	13.62	11.10			0.00	0.00	104	103	HDPE	0.012	15	140.65	3.79	N/A	932.42	927.09	938.11	933.32		
LINE 200																												
201	1.33	0.51	1.33	0.68	5.0	10.32	8.75	8.75	7.00	5.70			0.00	0.00	201	103	HDPE	0.012	15	35.00	1.00	0.50	N/A	927.44	927.09	931.88	932.82	
LINE 300																												
301	0.52	0.51	2.06	1.05	5.1	10.26	3.40	13.48	13.58	11.07	401		0.99	0.50	301	300	HDPE	0.012	15	93.29	3.77	0.50	905.50	901.99	909.98	907.69	FREE	
302	0.55	0.51	0.55	0.28	5.0	10.32	3.62	3.62	18.85	15.36			0.00	0.00	302	301	HDPE	0.012	15	134.61	7.26	N/A	915.77	906.00	921.51	916.70		
LINE 400																												
401	0.99	0.51	0.99	0.50	5.0	10.32	6.51	6.51	16.17	13.18			0.00	0.00	401	301	HDPE	0.012	15	102.91	5.34	0.50	N/A	911.50	906.00	915.79	912.81	



SECTION 3-47N-32W
LOCATION MAP
SCALE 1" = 2000'



MISSOURI GEOGRAPHIC REFERENCE SYSTEM
BENCH MARK:

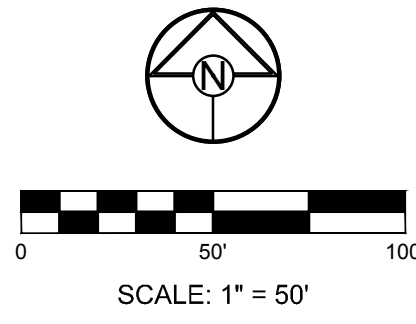
BM JA-136, LOCATED AT INTERSECTION OF SW OLDHAM PARKWAY AND SW WARD ROAD, 61 FT SOUTH OF CL OF OLDHAM PARKWAY AND 28.9 FT EAST OF THE EAST EDGE OF WARD ROAD.

ELEV. 993.11'

PROJECT BENCH MARK:

SANITARY MANHOLE H2 AT NW CORNER OF LOT 1153 WINTERSET VALLEY 1ST PLAT, APPROX. 39' RT. OF CL OF NW PEALE BLVD.

ELEV. 935.45'



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WINTERSET VALLEY, 13TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
PLAN AND EROSION AND SEDIMENT CONTROL
NW THOREAU DRIVE AND AUDUBON LANE
LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
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16/1/20	16.0
17/1/20	17.0
18/2/20	18.0

DRAWN BY:	KSC
CHECKED BY:	MAB
DATE PREPARED:	2-15-19
PROJ. NUMBER:	18-230

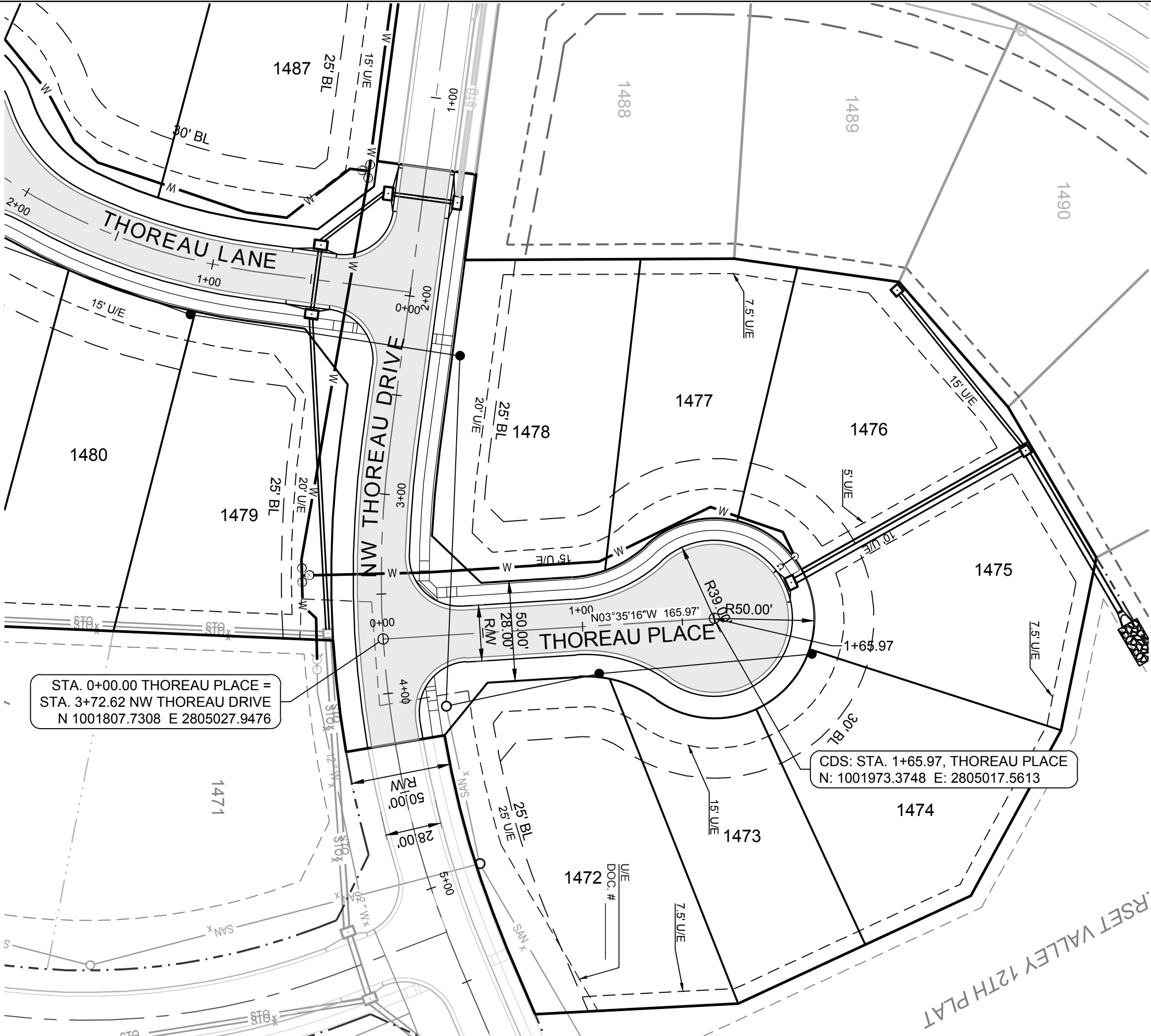
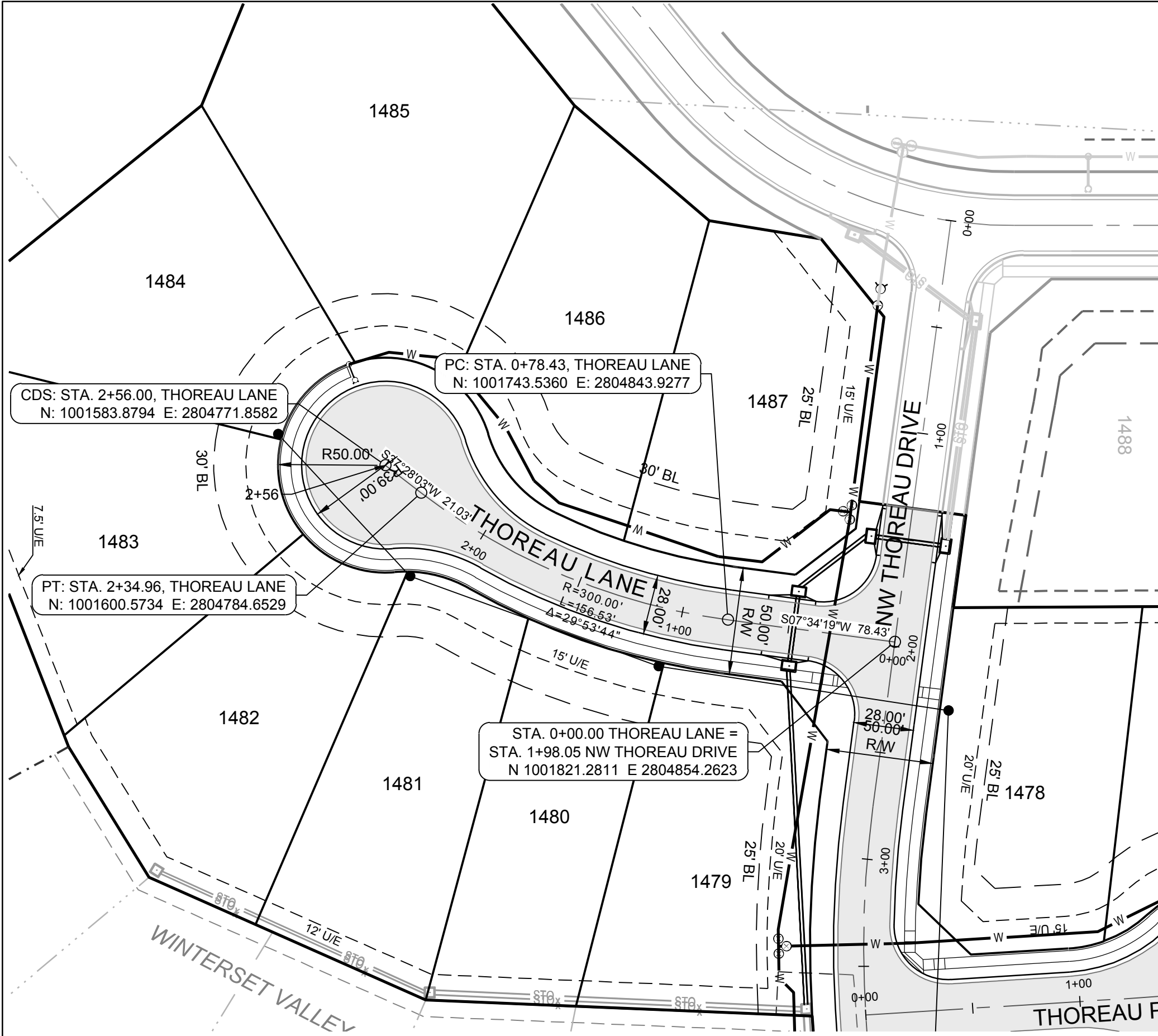
MASTER
DRAINAGE PLAN
- DRAINAGE MAP

SHEET

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OF 21

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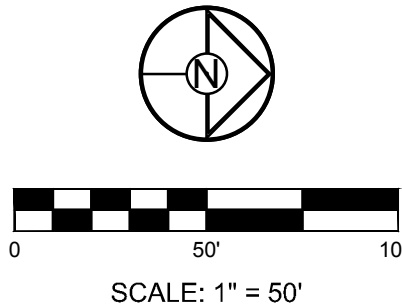
BM JA-136, LOCATED AT INTERSECTION OF SW OLDHAM PARKWAY AND SW WARD ROAD, 61 FT SOUTH OF CL OF OLDHAM PARKWAY AND 28.9 FT EAST OF THE EAST EDGE OF WARD ROAD.

ELEV. 993.11'

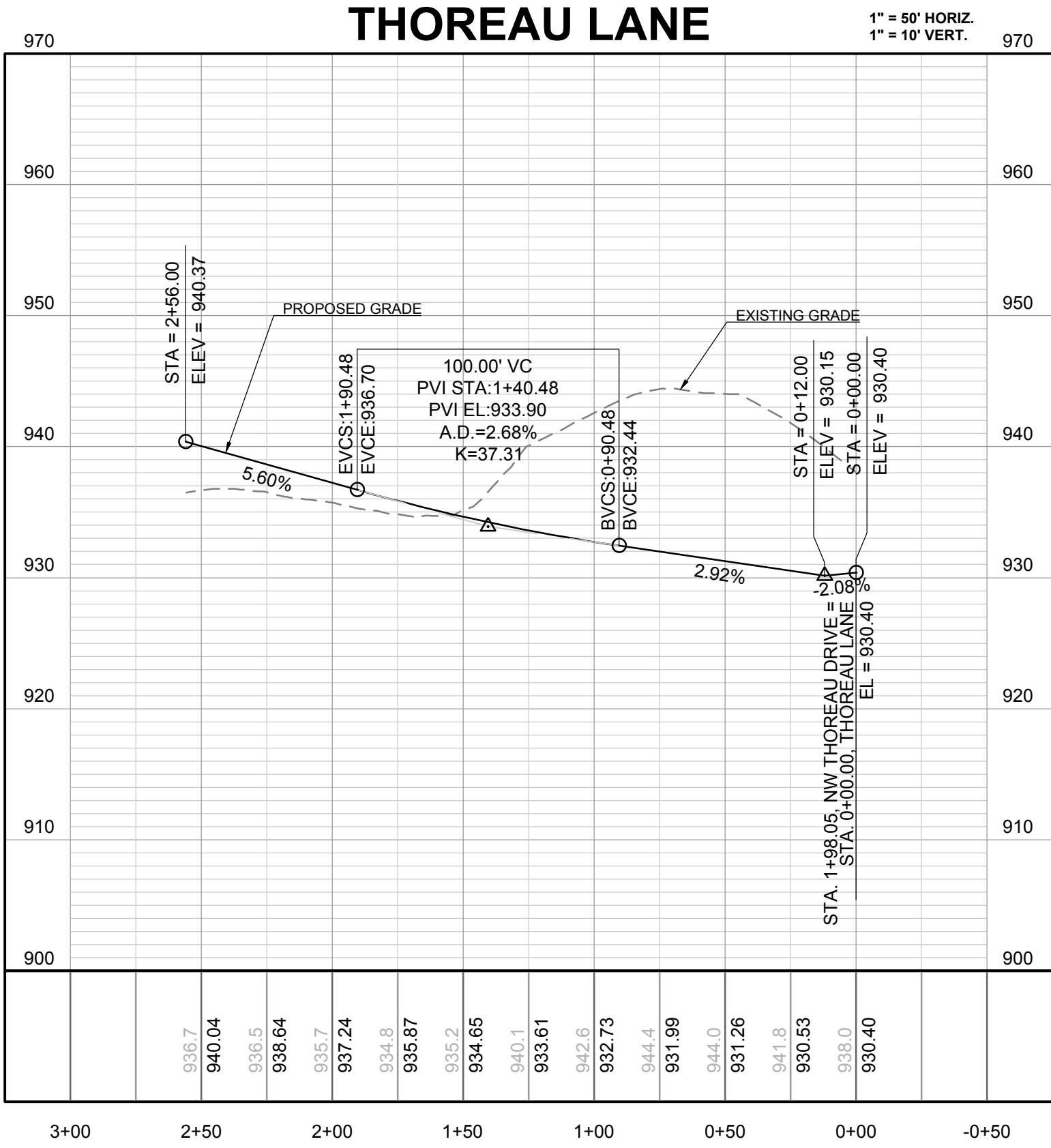
PROJECT BENCH MARK:

SANITARY MANHOLE H2 AT NW CORNER OF LOT 1153 WINTERSET VALLEY 1ST PLAT, APPROX. 39' RT. OF CL OF NW PEALE BLVD.

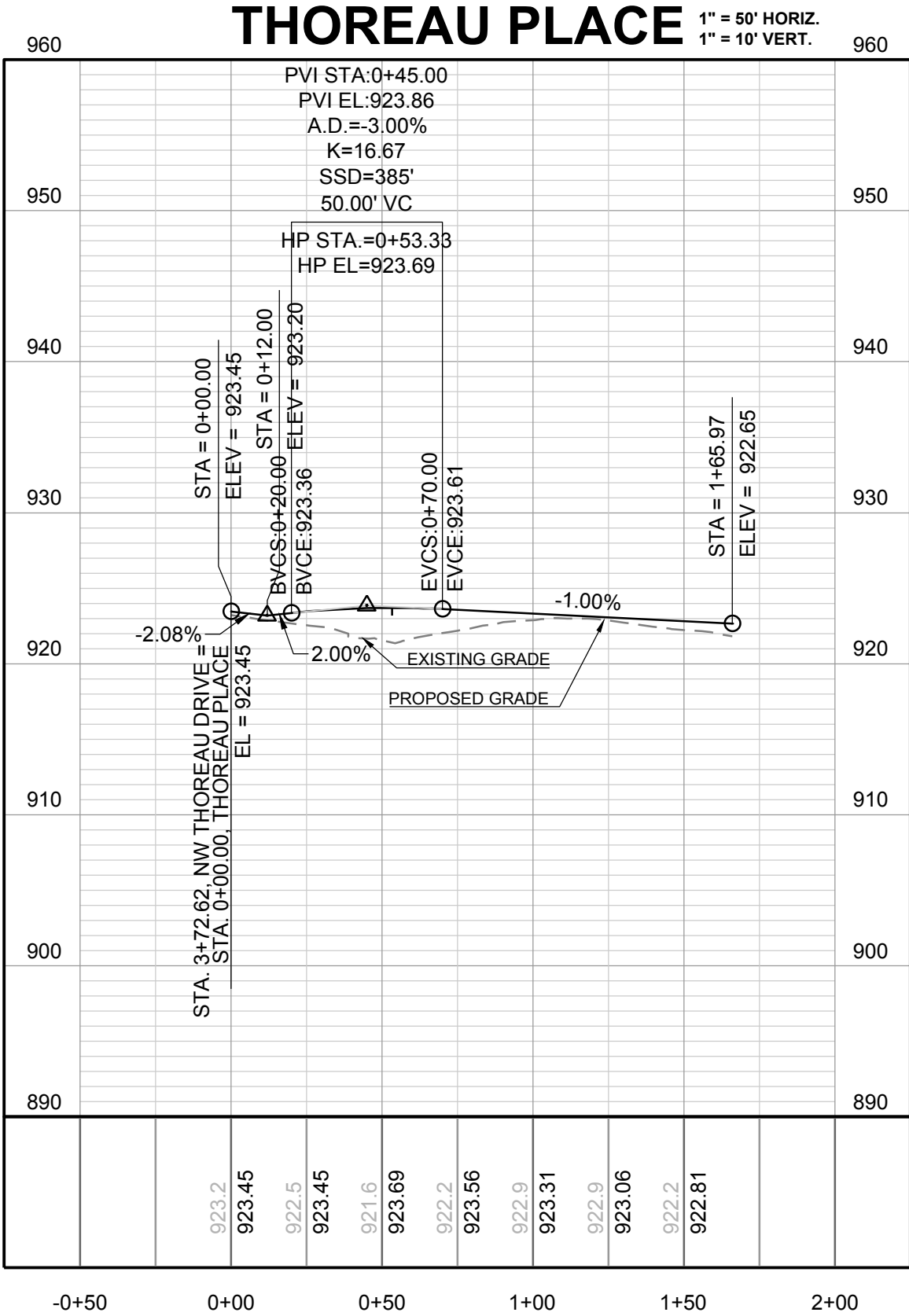
ELEV. 935.45'



THOREAU LANE



THOREAU PLACE



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WINTERSET VALLEY, 13TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
PLAN AND EROSION AND SEDIMENT CONTROL
NW THOREAU DRIVE AND AUDUBON LANE
LEE'S SUMMIT, MISSOURI

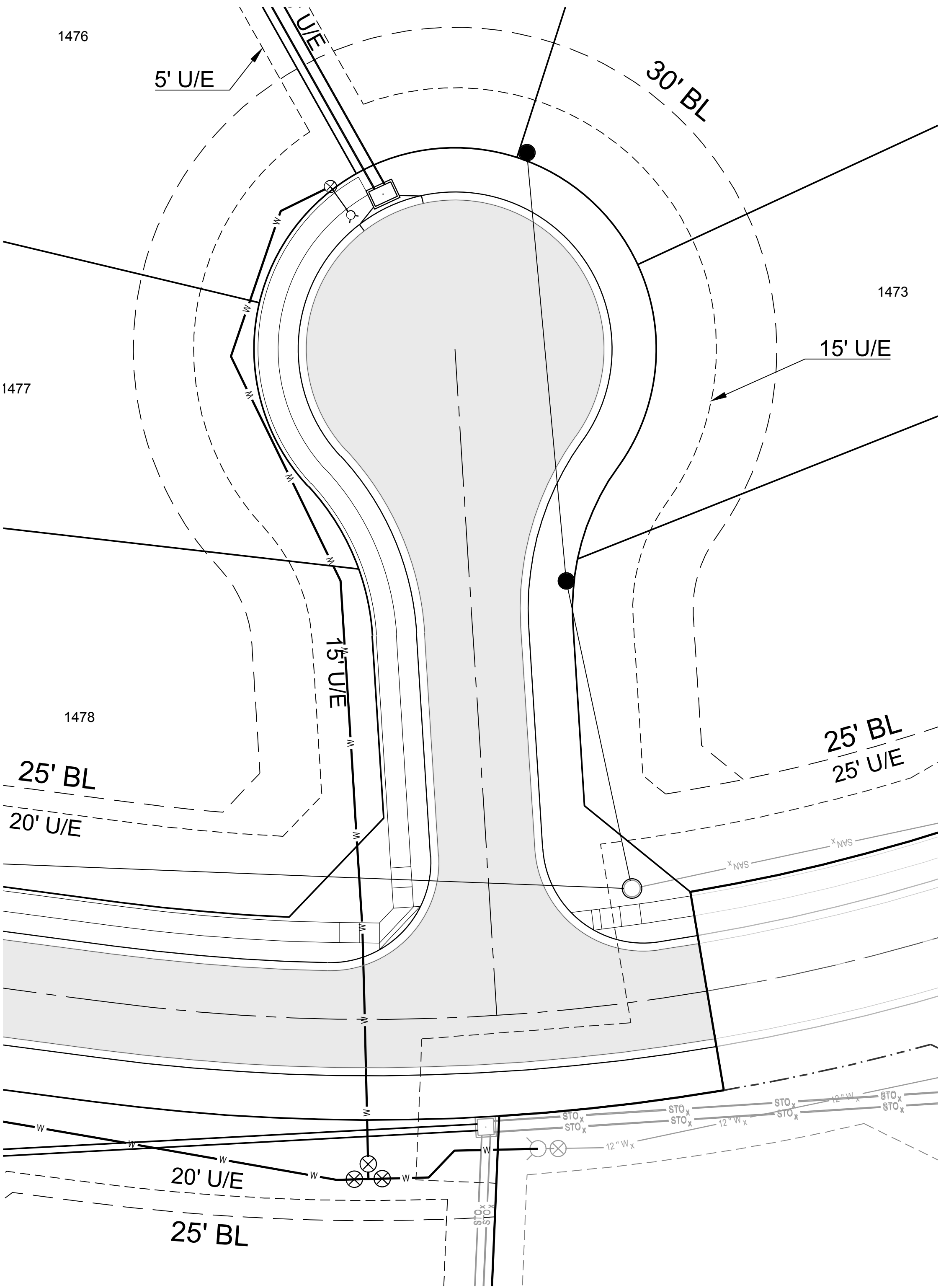
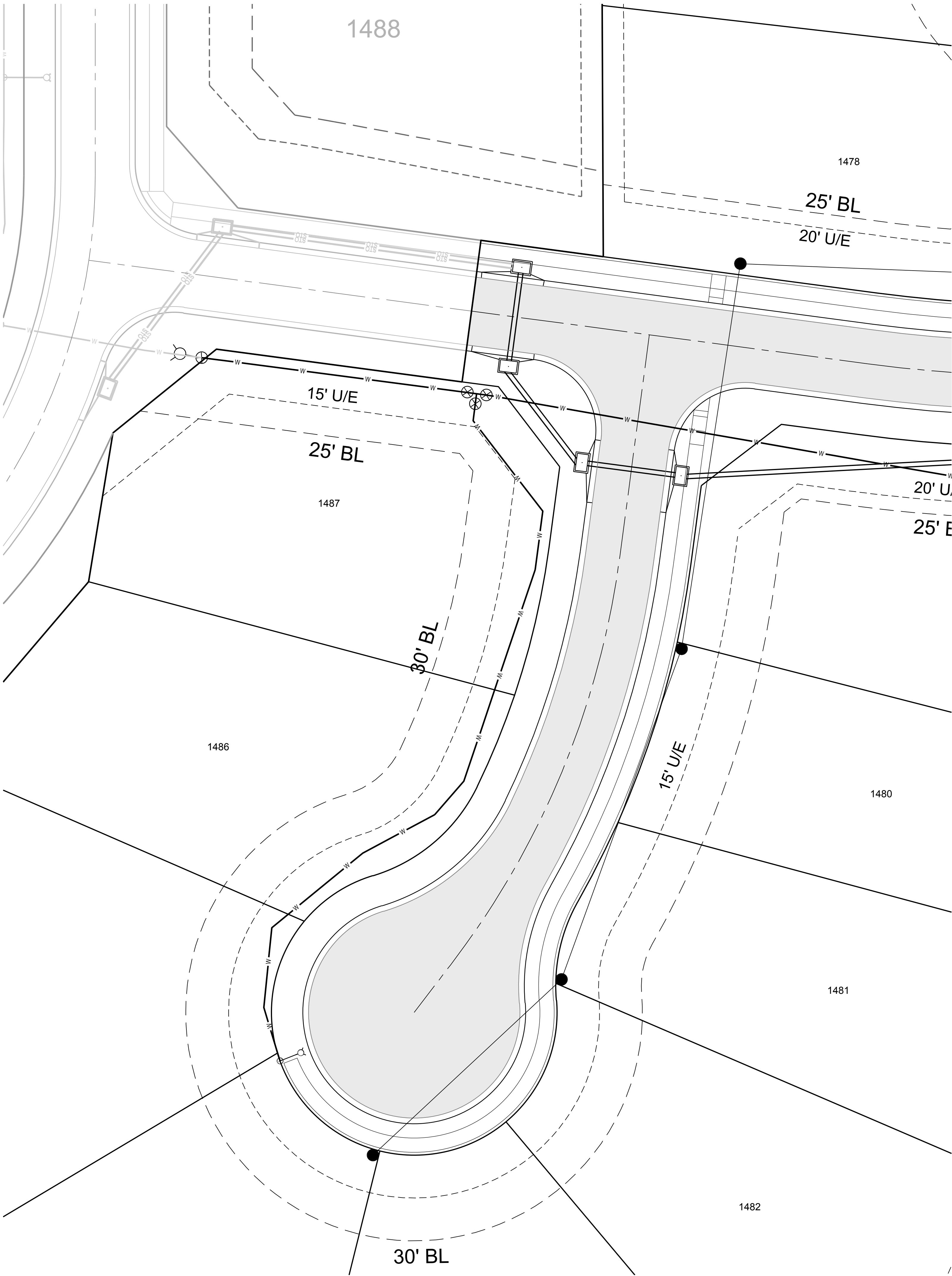
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5	2/15/19	REVISED
6	2/15/19	REVISED
7	2/15/19	REVISED
8	2/15/19	REVISED

THOREAU PLACE
AND THOREAU
LANE PLAN AND
PROFILE

SHEET

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OF 21

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NOTE: TO BE COMPLETED WITH 2ND SUBMITTAL



WINTERSET VALLEY, 13TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
PLAN AND EROSION AND SEDIMENT CONTROL
NW THOREAU DRIVE AND AUDUBON LANE
LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
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DRAWN BY:	KSC
CHECKED BY:	MAB
DATE PREPARED:	2-15-19
PROJ. NUMBER:	18-230

INTERSECTION
DETAILS

MISSOURI GEOGRAPHIC REFERENCE SYSTEM
BENCH MARK:

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ELEV. 993.11'

PROJECT BENCH MARK:

SANITARY MANHOLE H2 AT NW CORNER OF LOT 1153 WINTERSET VALLEY 1ST PLAT, APPROX. 39' RT. OF CL OF NW PEALE BLVD.

ELEV. 935.45'

Storm Sewer Construction Notes	
Structure	Notes
101	STA 1+60.03, LINE 100 INSTALL 6 X 4 CURB INLET N 1001771.8893 E 2804865.3506
102	STA 1+95.03, LINE 100 INSTALL 6 X 4 CURB INLET N 1001776.5013 E 2804830.6558
103	STA 2+37.43, LINE 100 INSTALL 6 X 4 CURB INLET N 1001810.1882 E 2804804.9060
104	STA 3+78.08, LINE 100 INSTALL 6 X 4 CURB INLET N 1001802.5014 E 2804664.4659
201	STA 0+35.00, LINE 200 INSTALL 6 X 4 CURB INLET N 1001844.8828 E 2804909.5179
300	STA 0+00.00, LINE 300 INSTALL 18 INCH HDPE END SECTION N 1002176.5397 E 2805014.0657
301	STA 0+93.28, LINE 300 INSTALL 4 X 4 AREA INLET WITH OPENING TO SOUTHEAST F.F.B. S30°27'54"E N 1002129.2388 E 2804933.6522
302	STA 2+27.91, LINE 300 INSTALL 6 X 4 CURB INLET N 1002011.9194 E 2804999.6569
401	STA 1+02.91, LINE 400 INSTALL 4 X 4 AREA INLET WITH OPENING TO SOUTHEAST F.F.B. S41°03'59"E N 1002064.8666 E 2804853.3638

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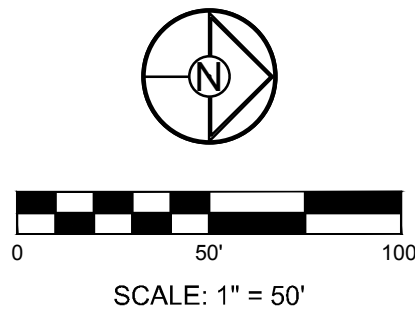
WINTERSET VALLEY, 13TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
PLAN AND EROSION AND SEDIMENT CONTROL
NW THOREAU DRIVE AND AUDUBON LANE
LEE'S SUMMIT, MISSOURI

DRAWN BY:	REVISION DATE	DESCRIPTION
KSC	1	
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MAB	3	
DATE PREPARED:	4	
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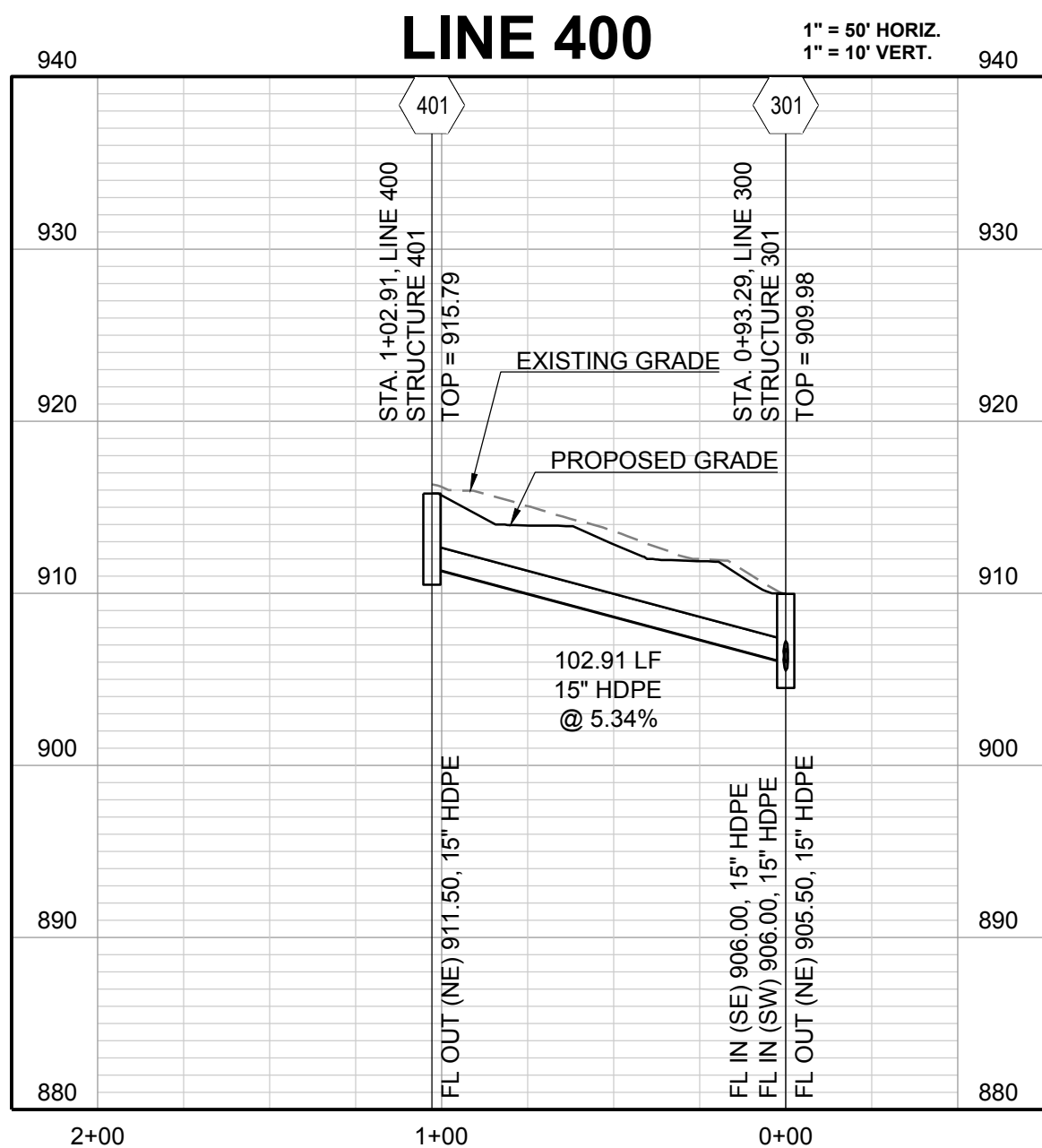
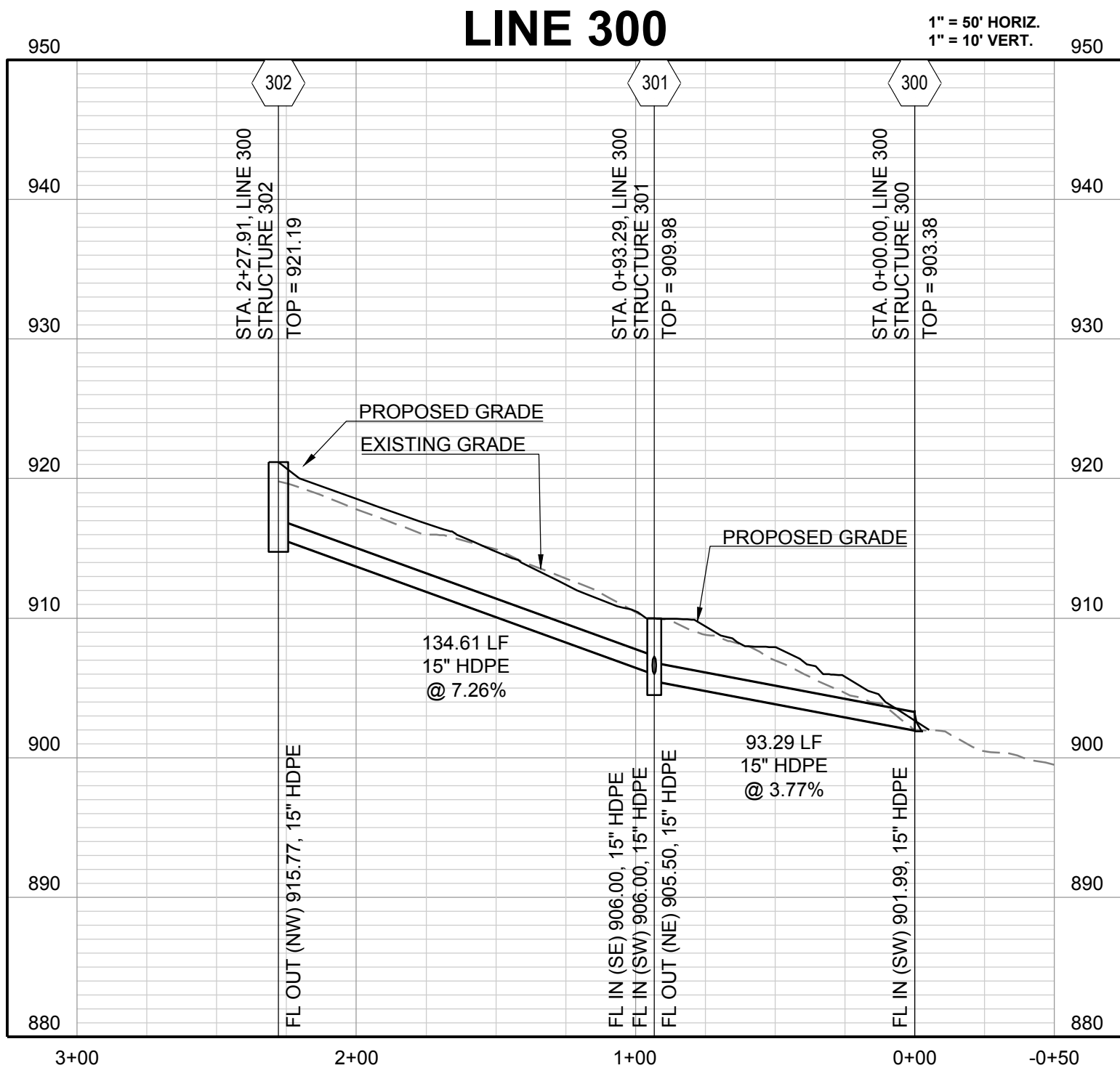
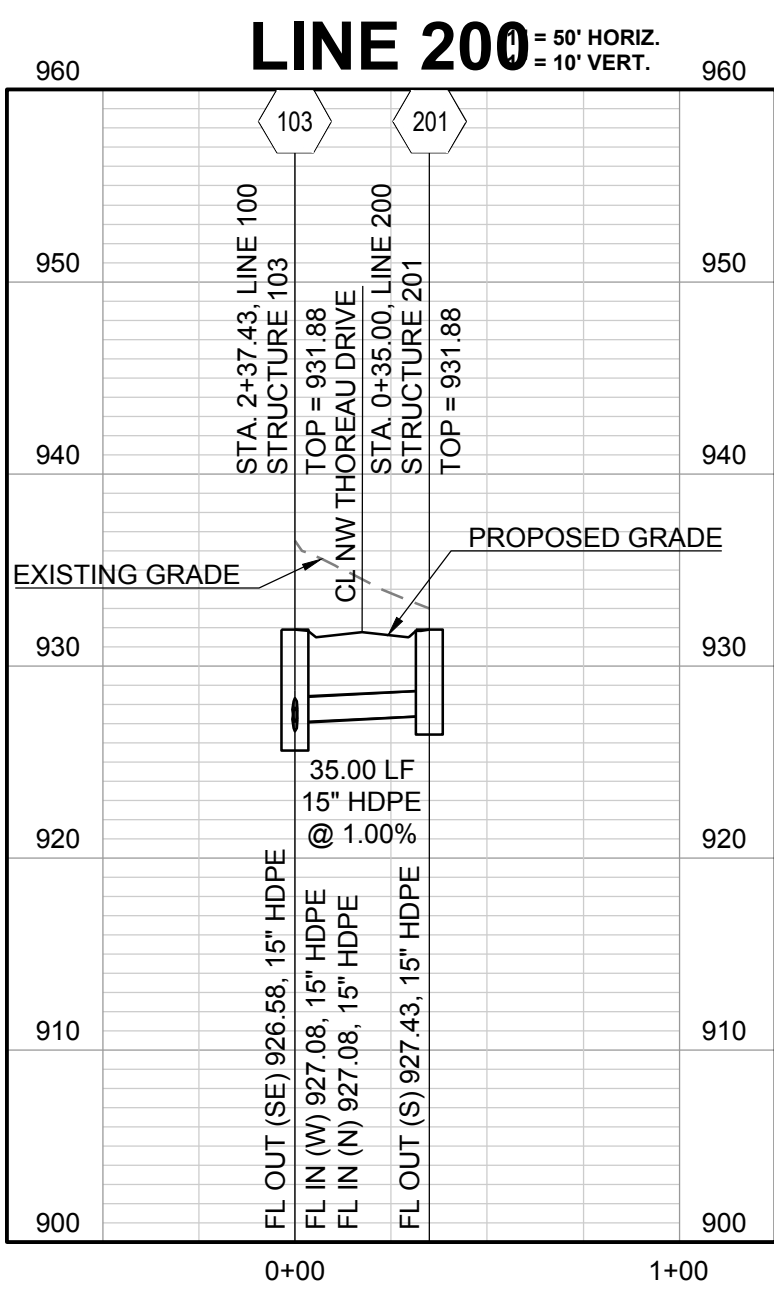
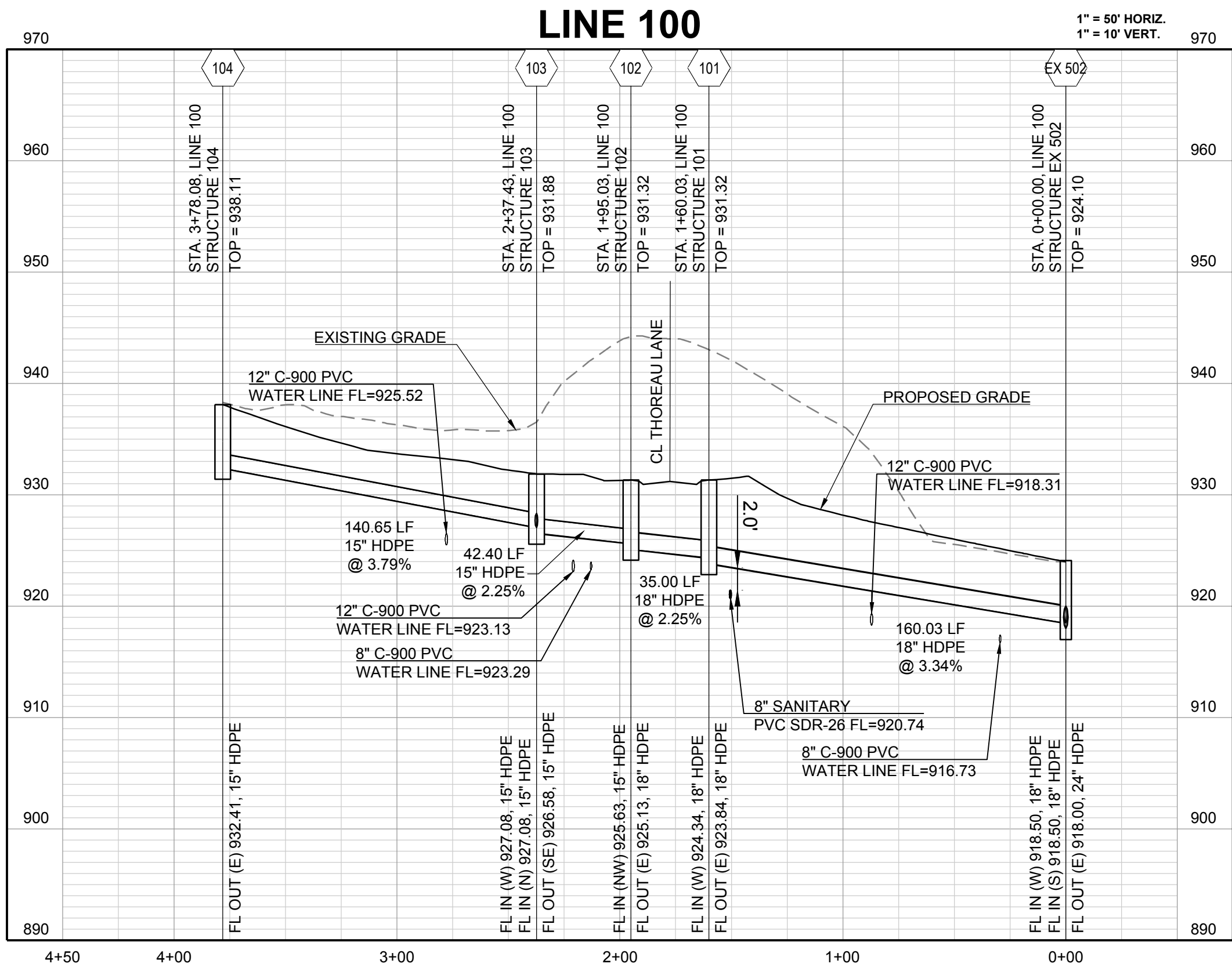
STORM PLAN

SHEET

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OF 21



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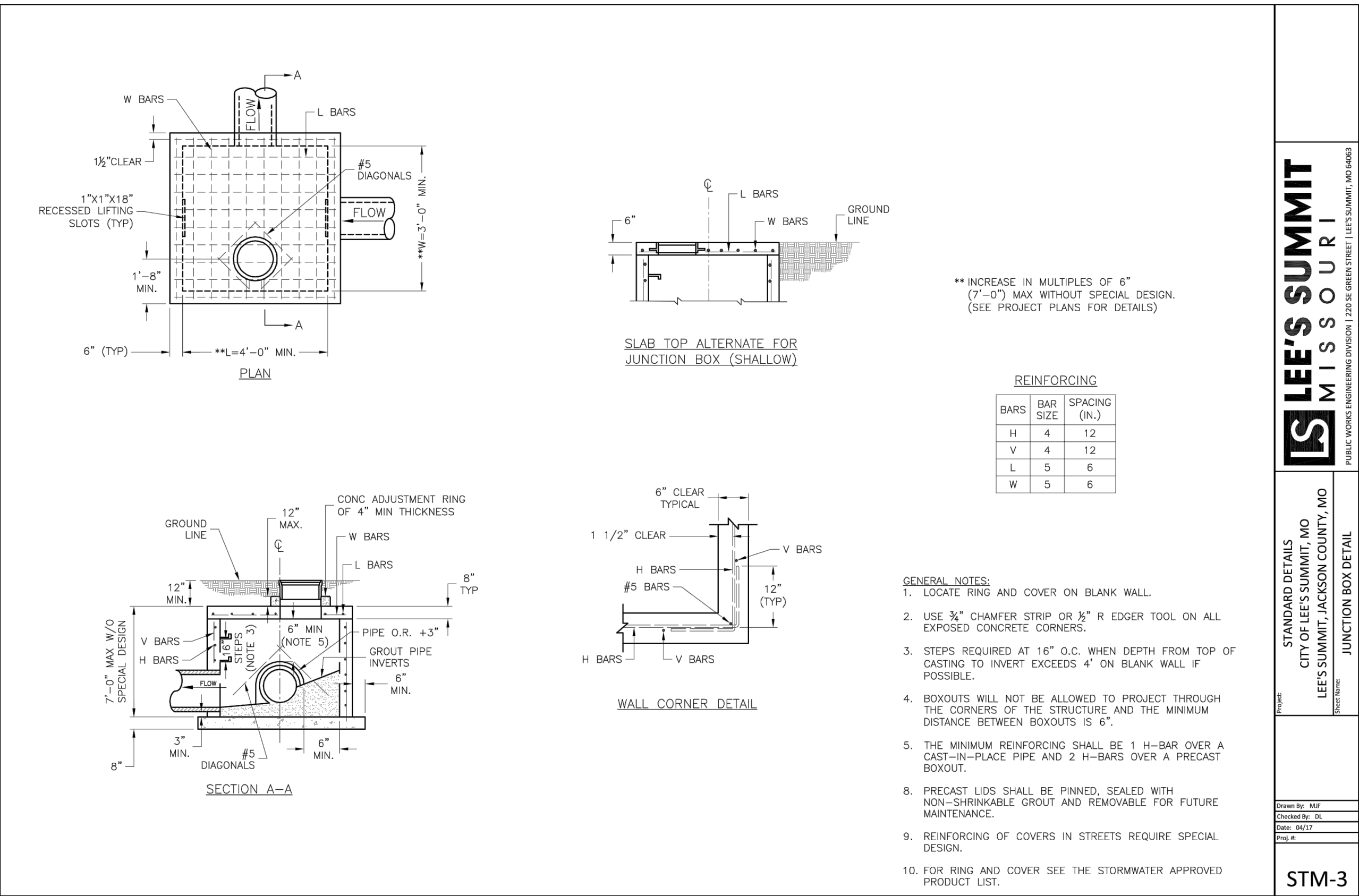


WINTERSET VALLEY, 13TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
PLAN AND EROSION AND SEDIMENT CONTROL
NW THOREAU DRIVE AND AUDUBON LANE
LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
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DRAWN BY:	KSC
CHECKED BY:	MAB
DATE PREPARED:	2-15-19
PROJ. NUMBER:	18-230



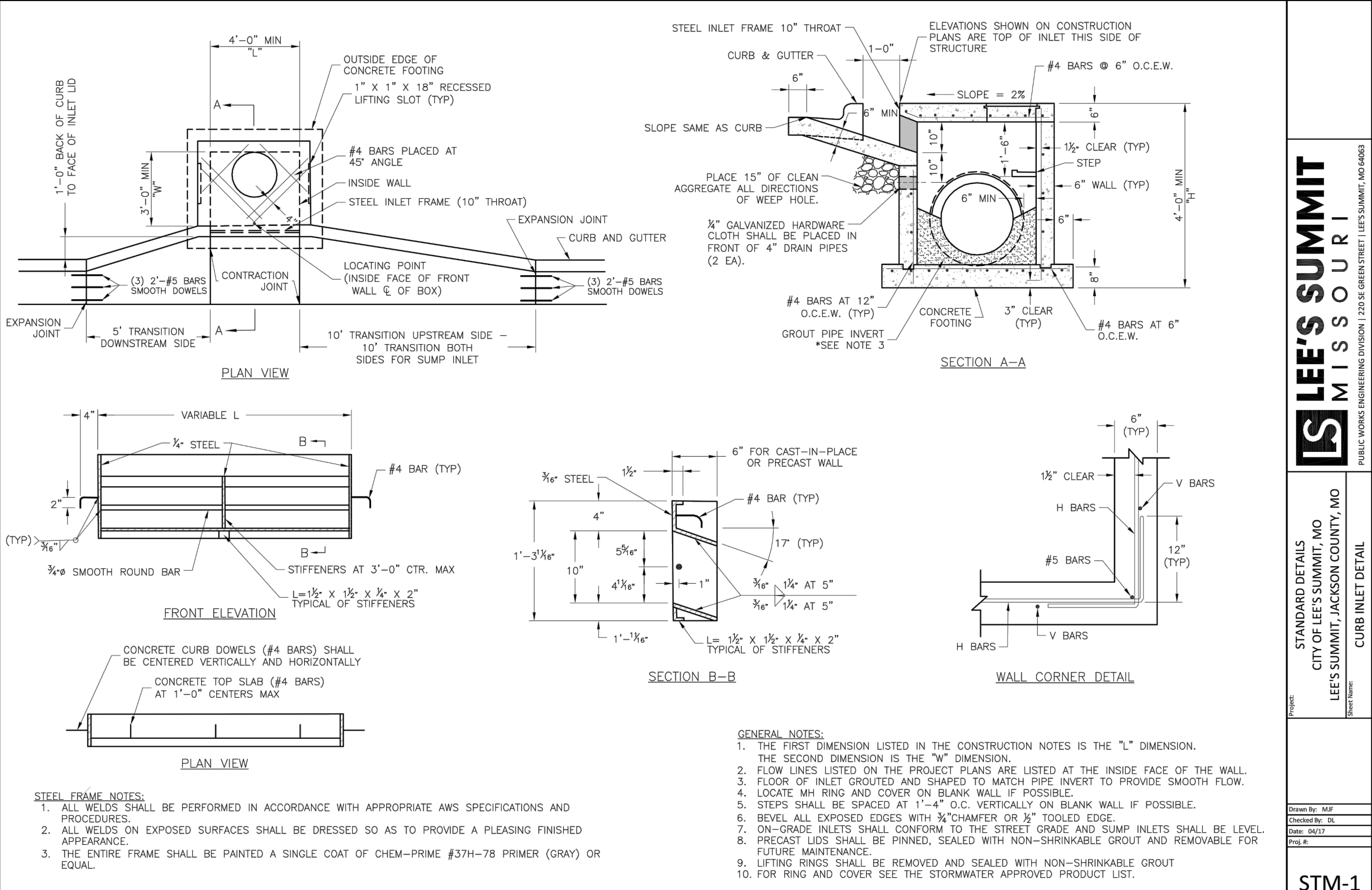


LEE'S SUMMIT MISSOURI

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

Drawn By: MAF
Checked By: DS
Date: 06/17
File #:

STM-3

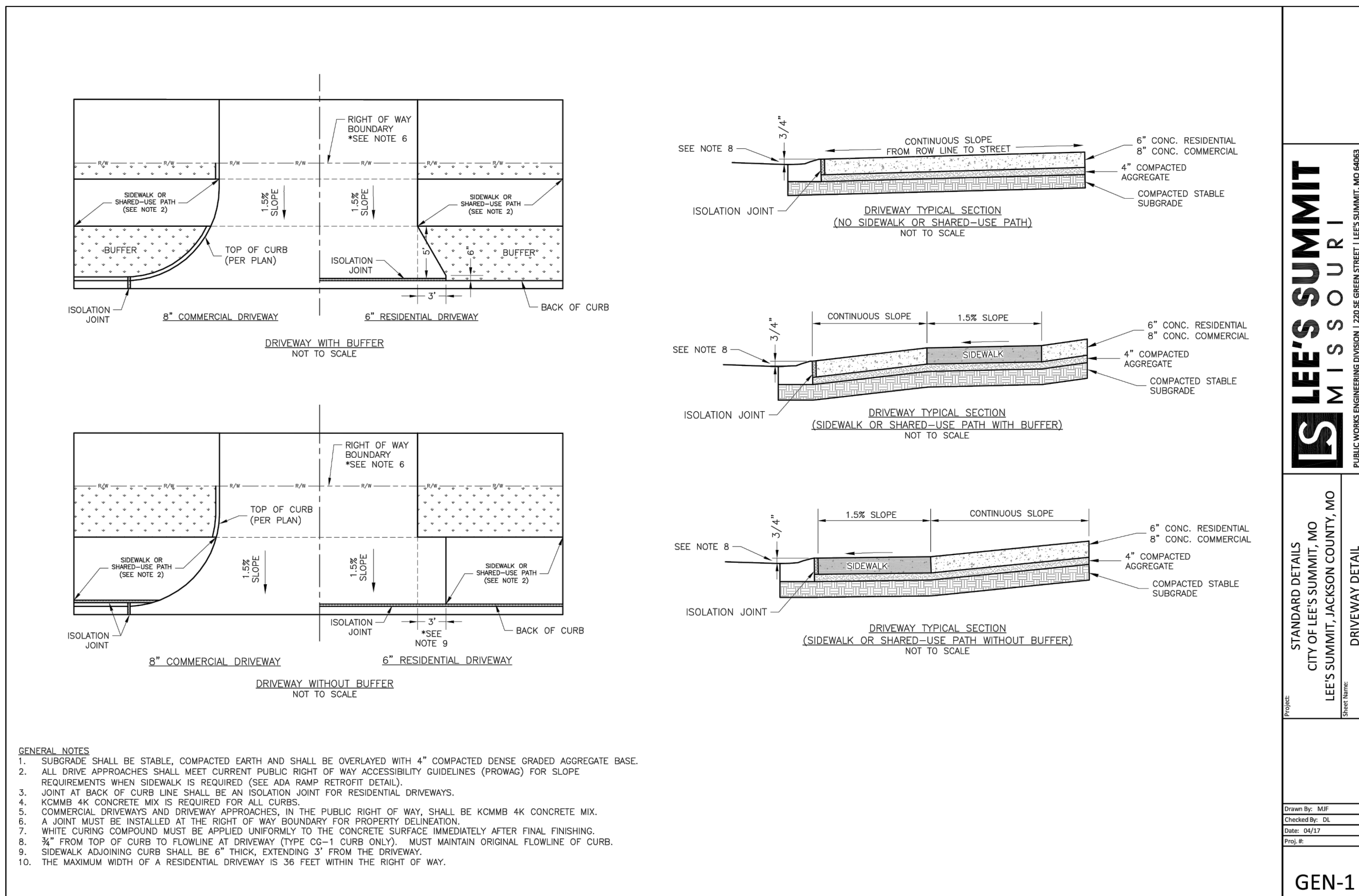


LEE'S SUMMIT MISSOURI

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

Drawn By: MAF
Checked By: DS
Date: 06/17
File #:

STM-1

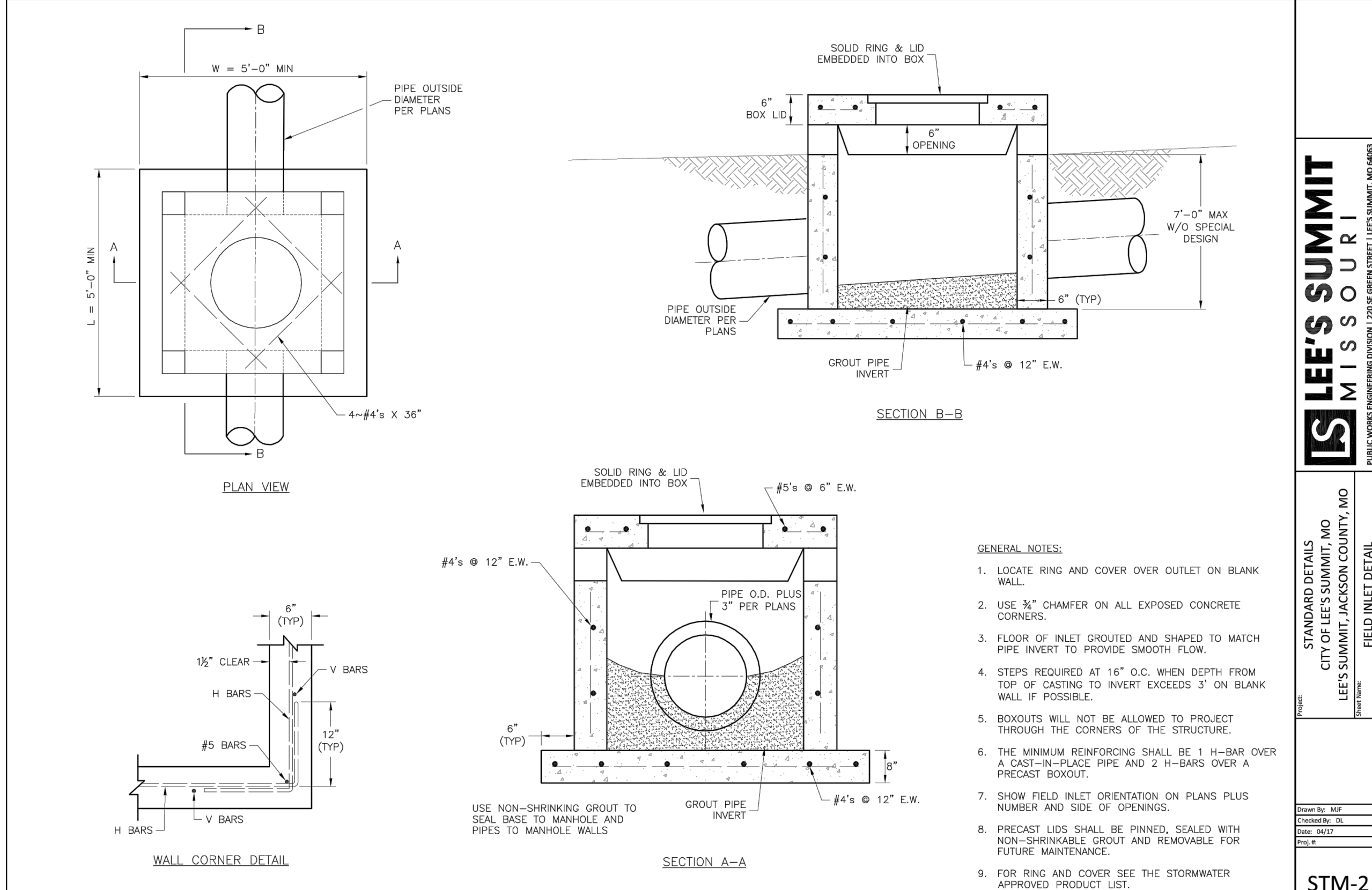


LEE'S SUMMIT MISSOURI

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

Drawn By: MAF
Checked By: DS
Date: 06/17
File #:

GEN-1



LEE'S SUMMIT MISSOURI

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

Drawn By: MAF
Checked By: DS
Date: 06/17
File #:

STM-2

WINTERSET VALLEY, 13TH PLAT
STREET, STORMWATER, MASTER DRAINAGE PLAN AND
EROSION AND SEDIMENT CONTROL
NW THOREAU DRIVE AND AUDUBON LANE
LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
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STREET AND
STORM DETAILS

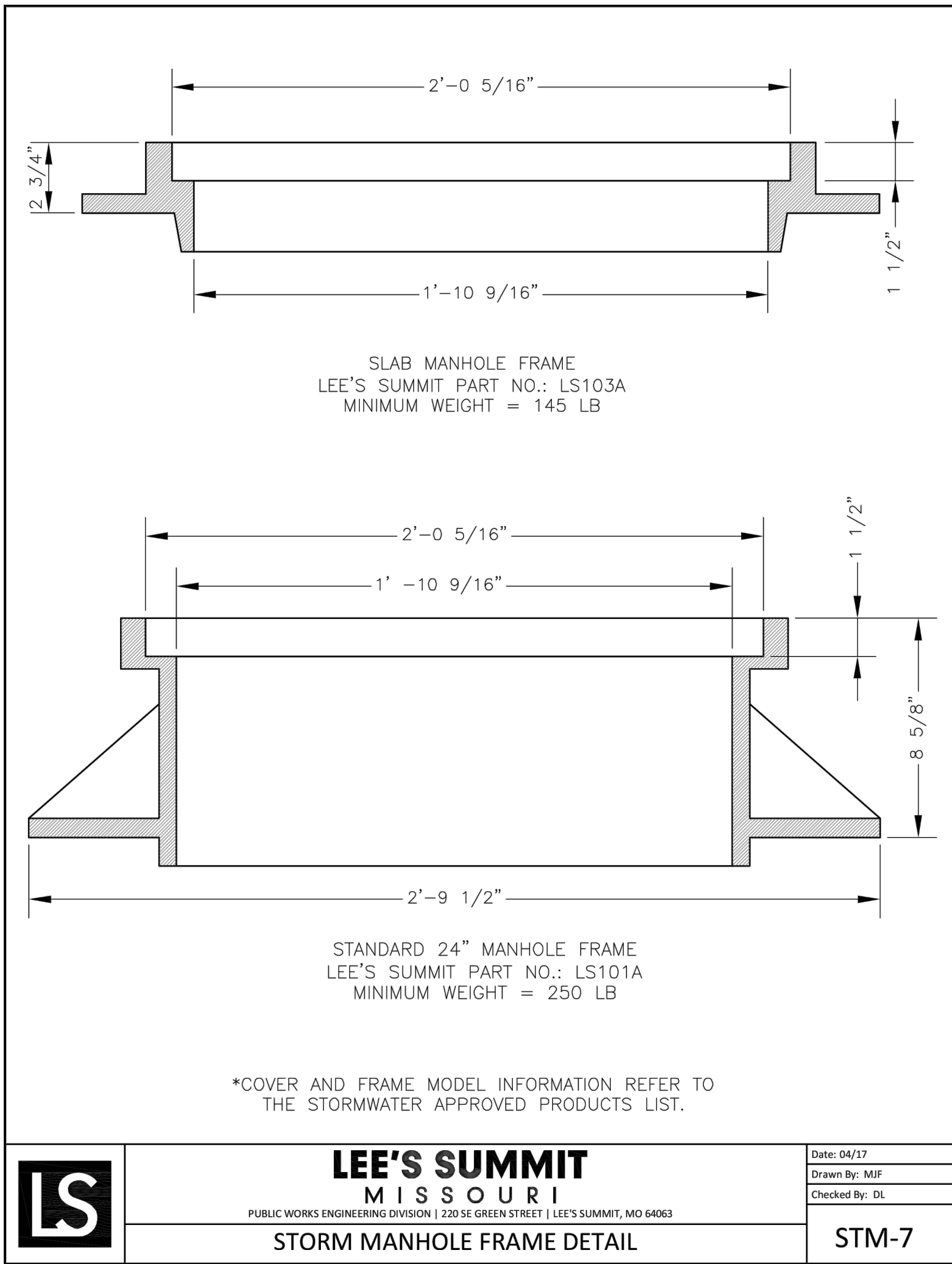
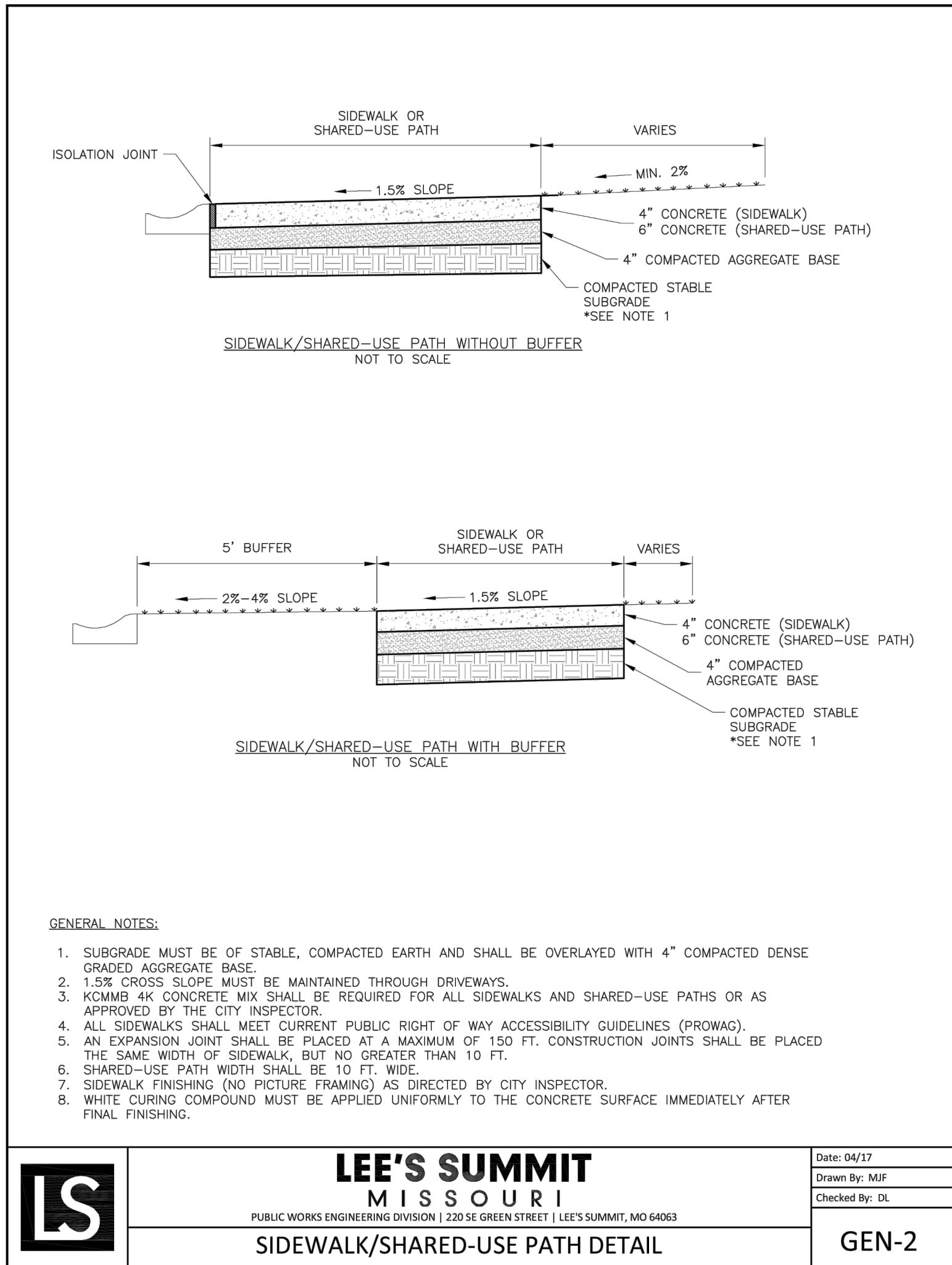
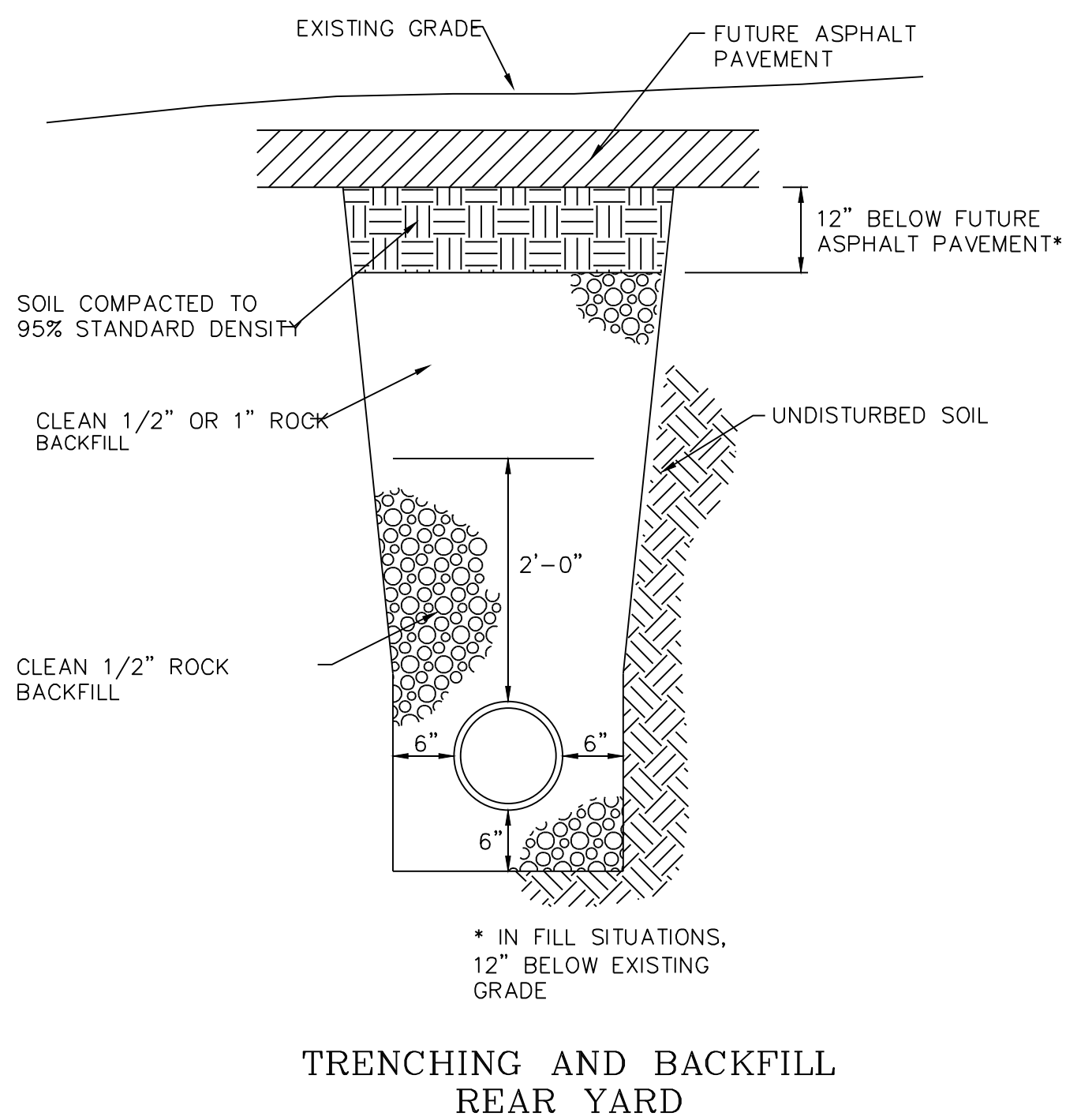
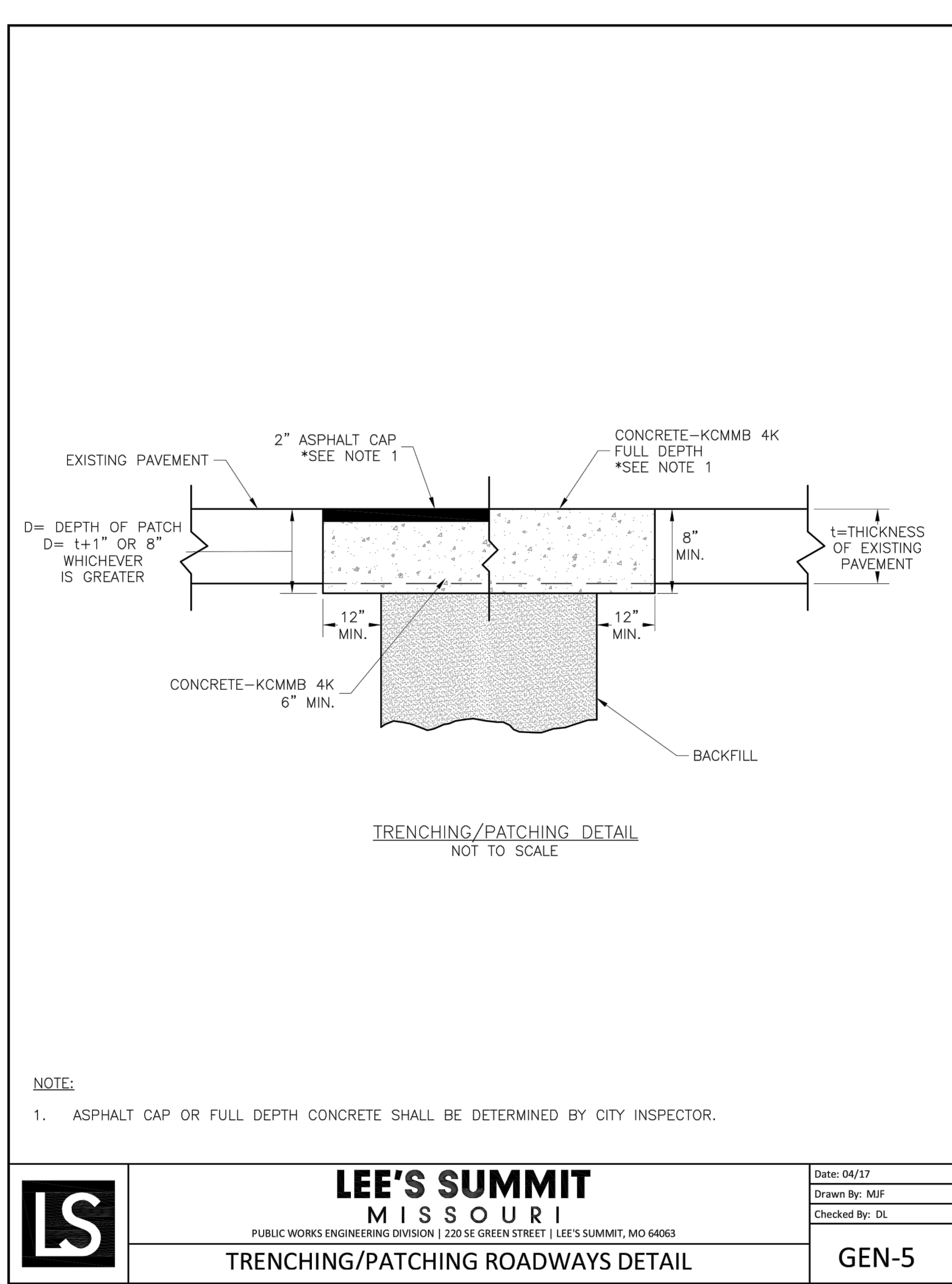
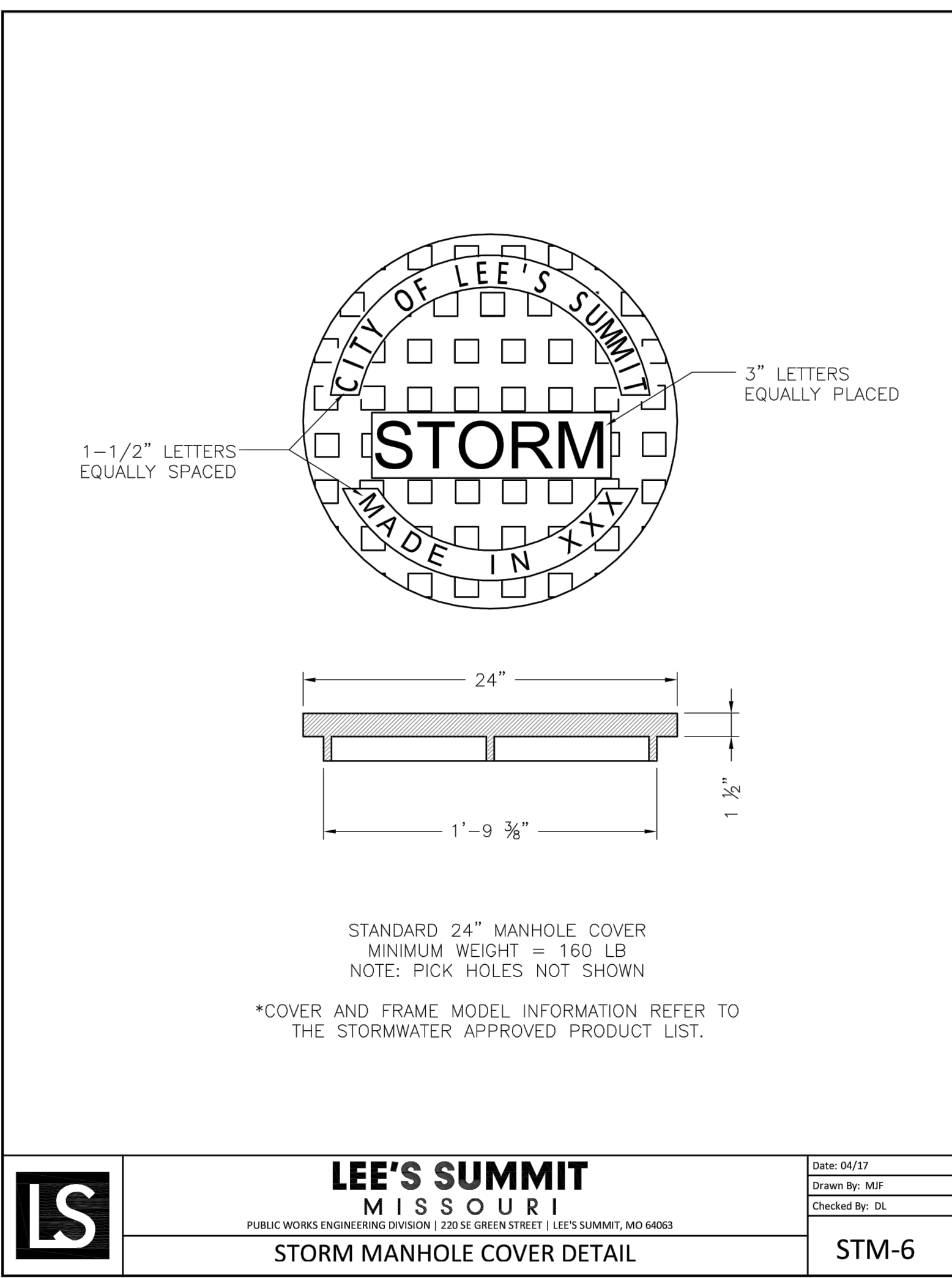
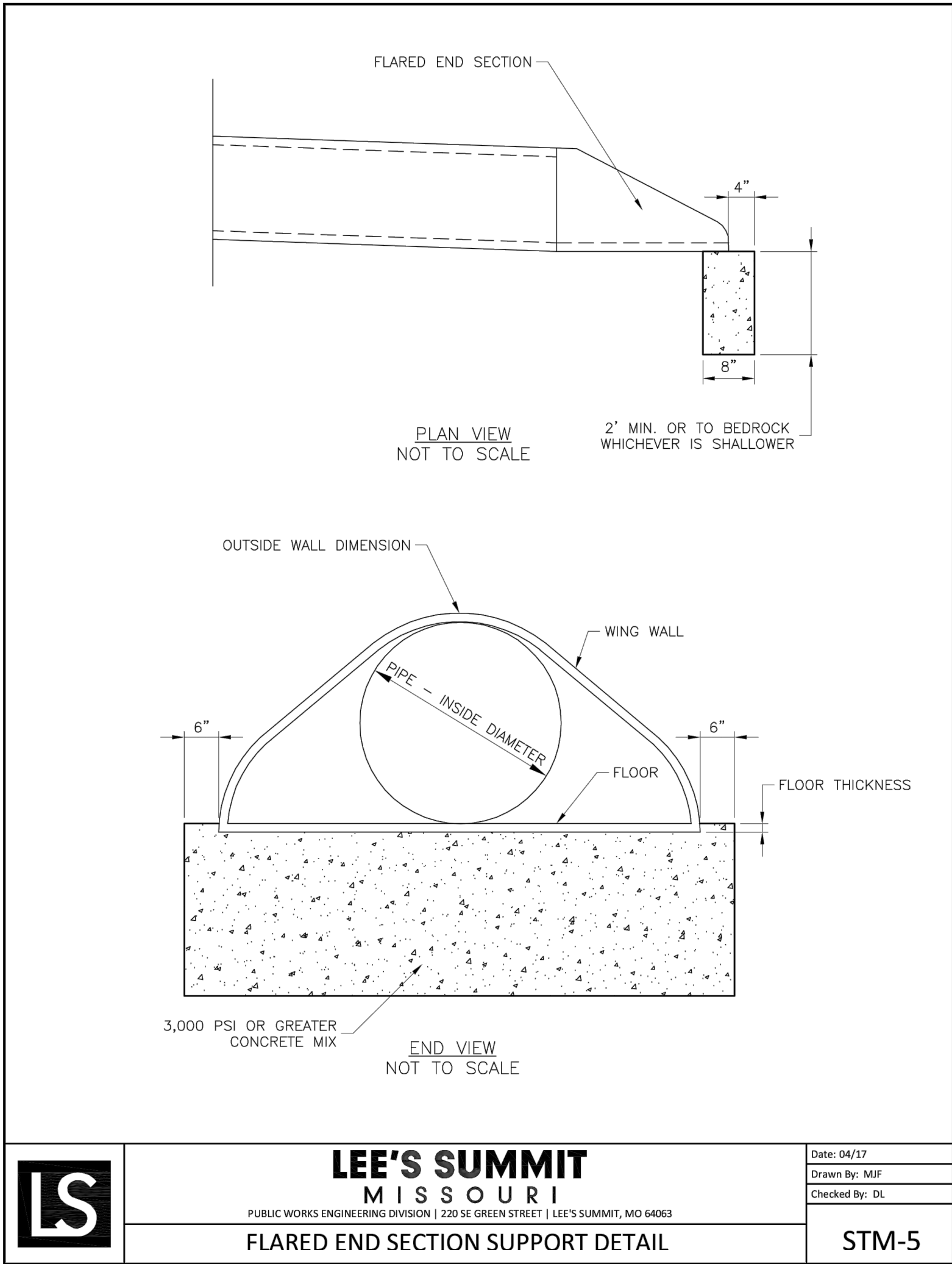
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OF 21



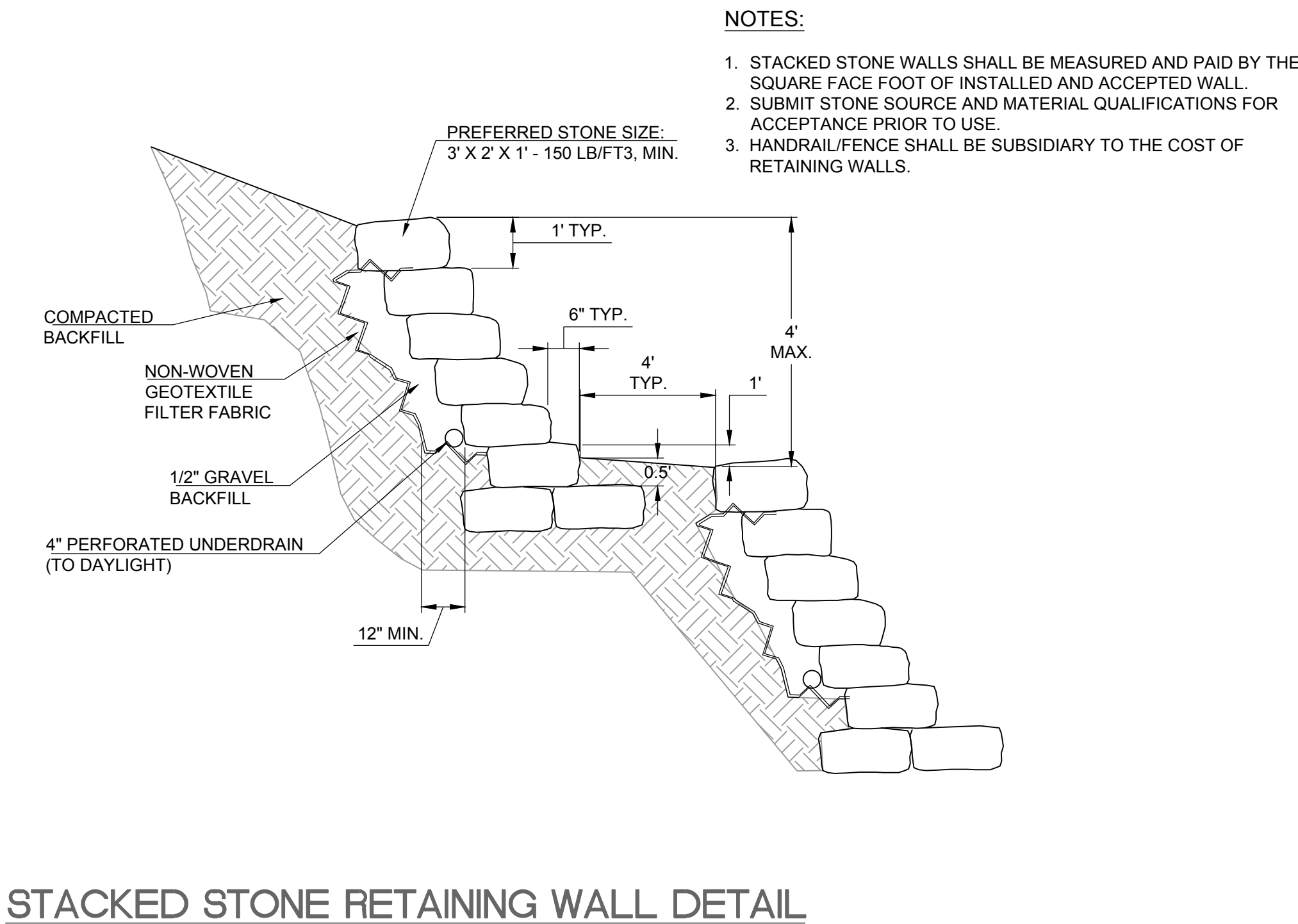
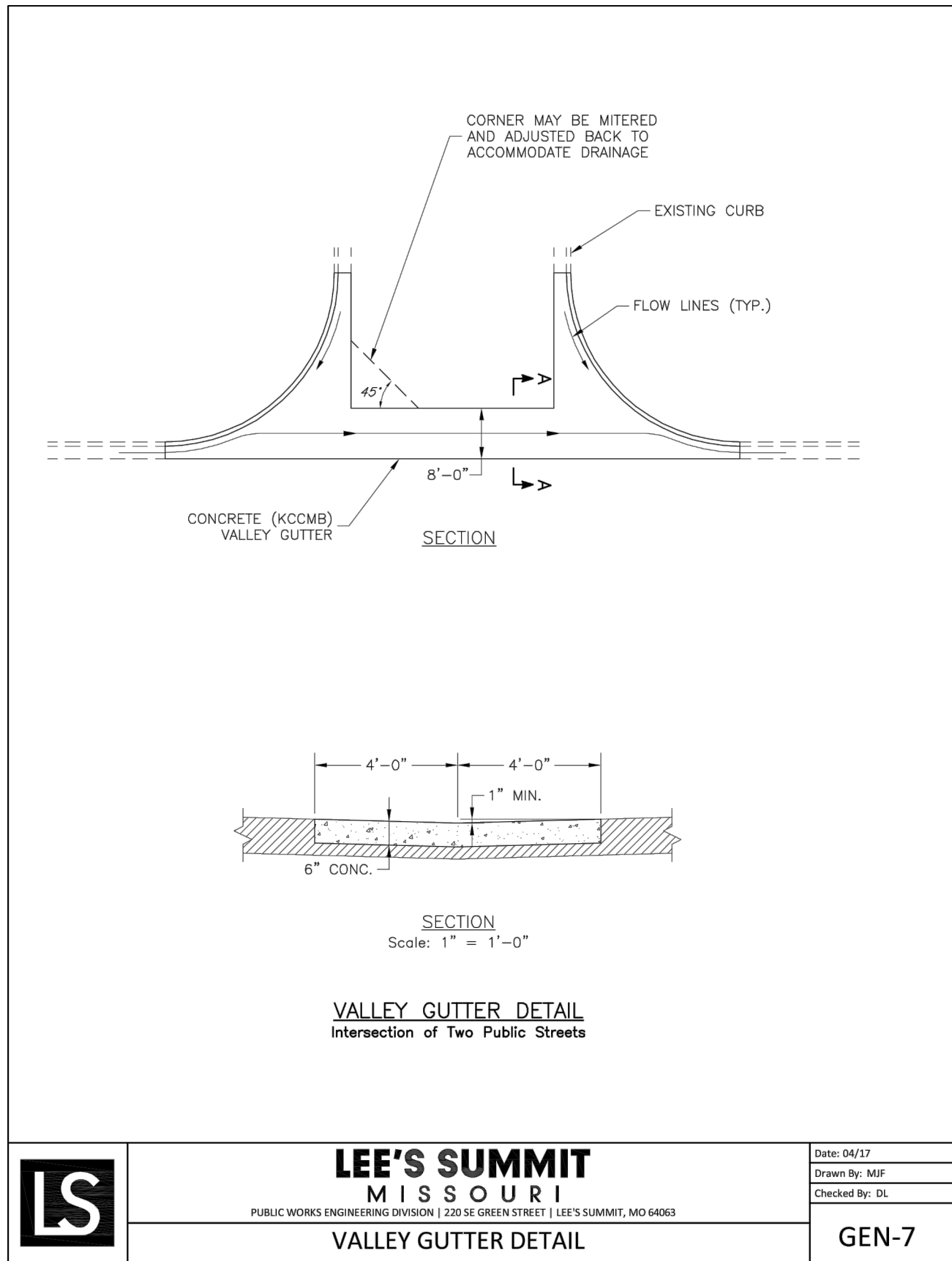
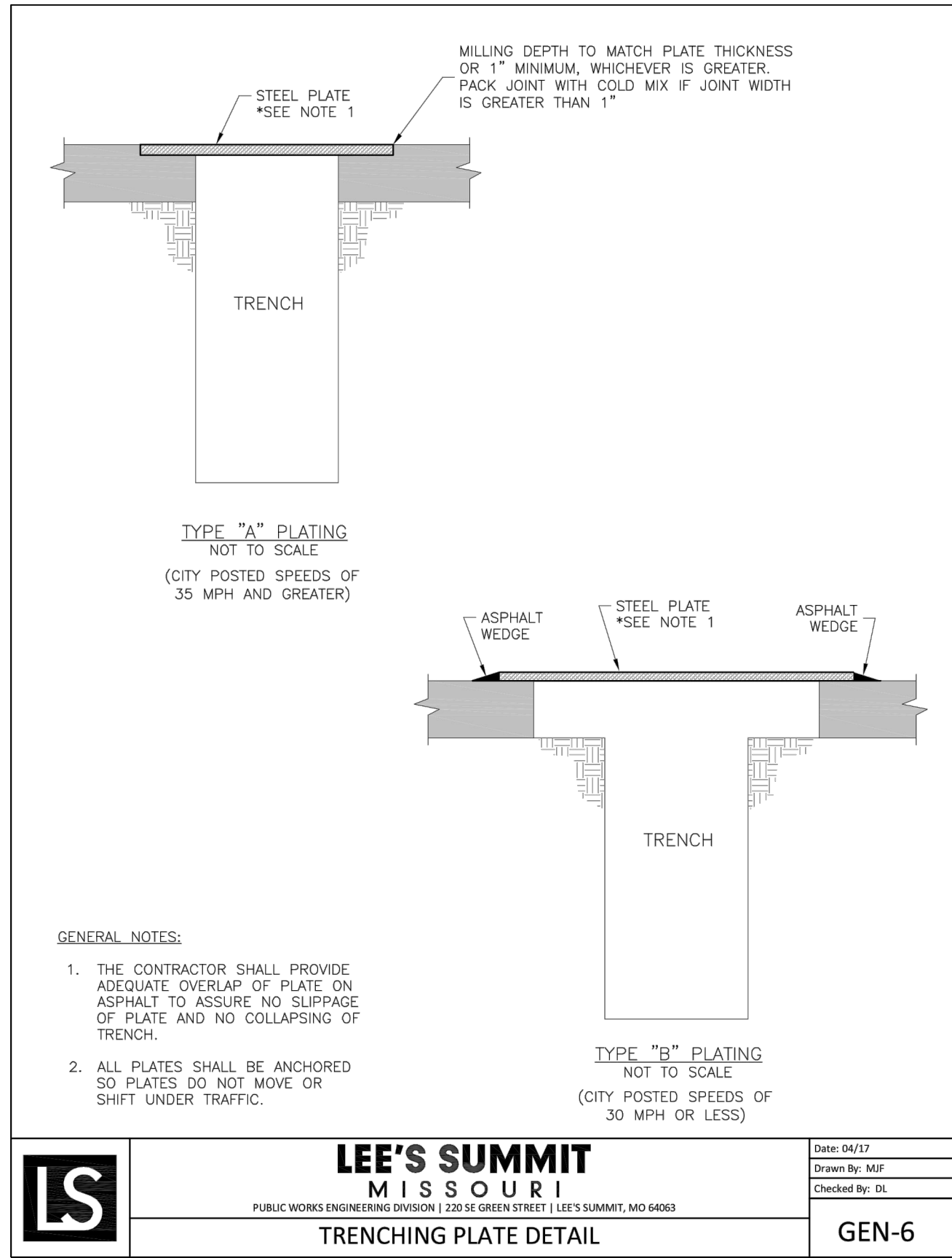
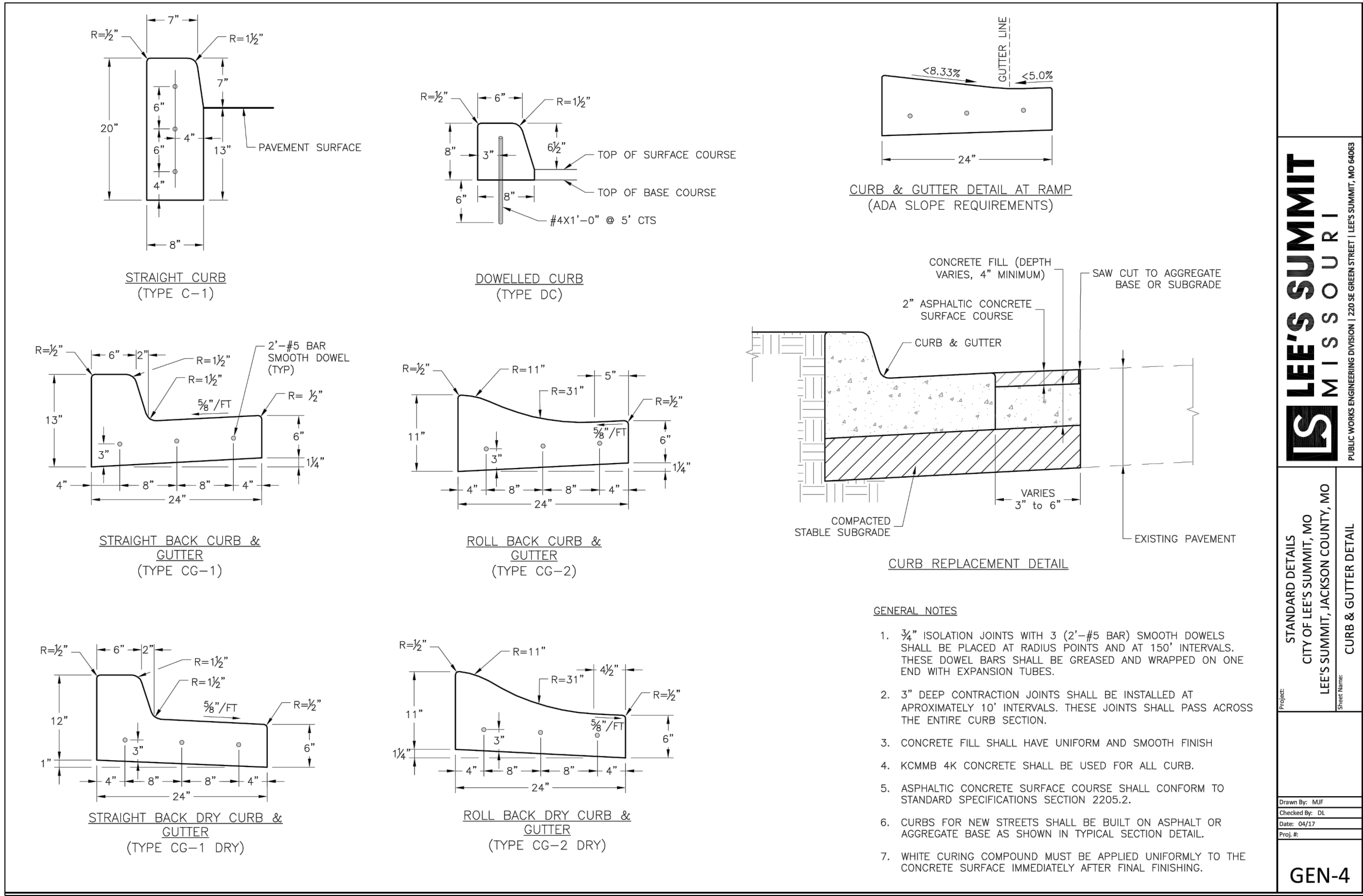
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REVISION	DATE	DESCRIPTION
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DRAWN BY:	KSC
CHECKED BY:	MAB
DATE PREPARED:	2-15-19
PROJ. NUMBER:	18-230

TABLE LS-2: MINIMUM ASPHALT PAVEMENT THICKNESSES

Street Classification	Pavement Option	AC Surface (in.)	AC Base (in.)	MoDOT Type 5 Base (in.)	Geogrid(1)	Chemical Subgrade Stabilization(2) (in.)
Residential Local/Access	A	2	4	6	--	6
	B	2	4	10	Geogrid	--
Residential Collector	A	2	5.5	6	--	9
	B	2	5.5	12	Geogrid	--
Commercial Industrial Local/Collector	A	2	7.5	6	--	9
	B	2	7.5	12	Geogrid	--

TABLE LS-3: MINIMUM PCC PAVEMENT THICKNESSES

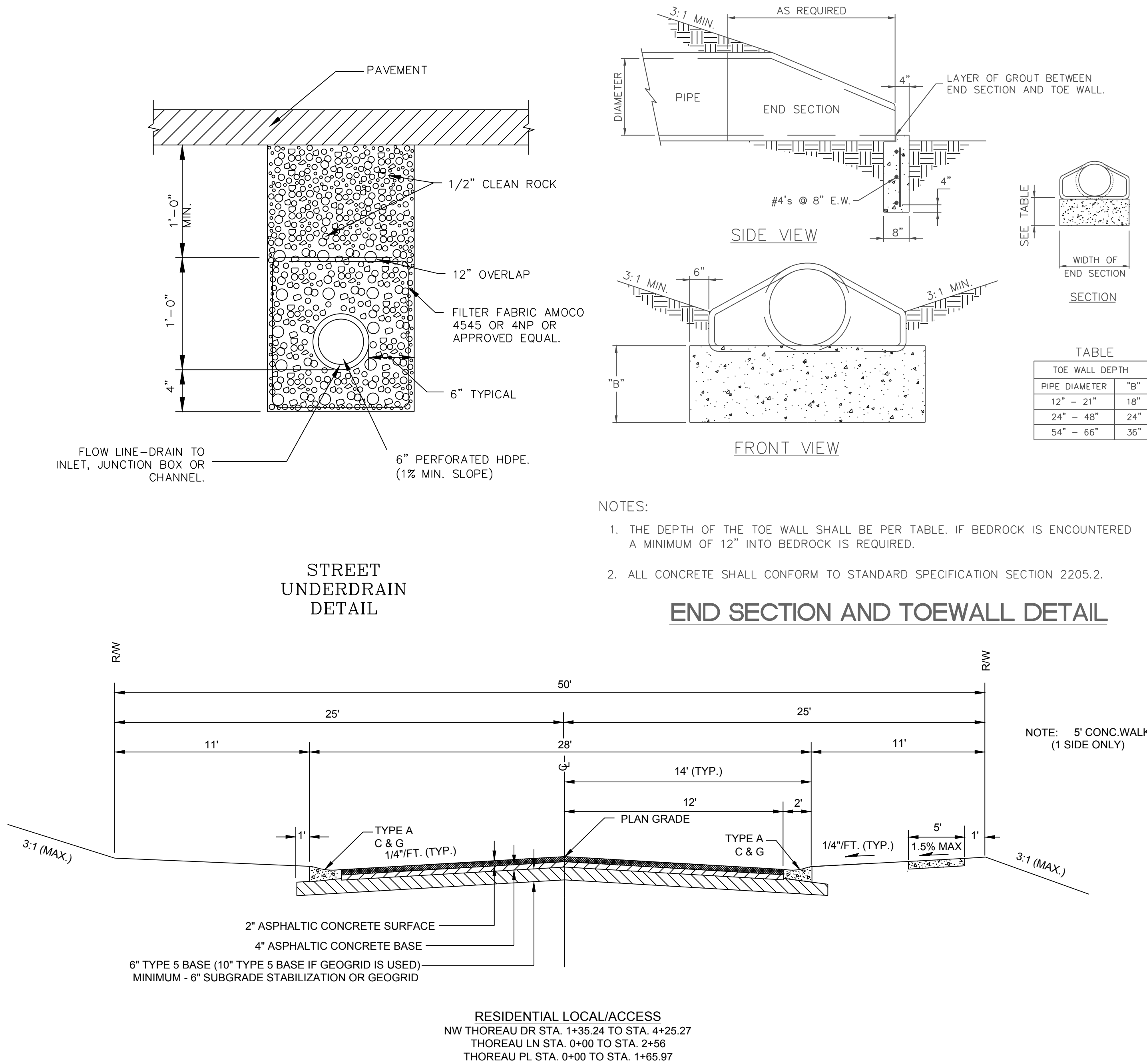
Street Classification	PCC (in.)	Aggregate Base (in.)	Subgrade Stabilization ⁽¹⁾ (in.)
Residential Local/Access	6	4	--
Residential Collector	6	4	6
Commercial Industrial Local/Collector	8	4	9

(1) Subgrade Stabilization and 4" aggregate base may be replaced by approved geogrid and 6" of aggregate base

LS5200

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October 2016



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EROSION AND SEDIMENT CONTROL
NW THOREAU DRIVE AND AUDUBON LANE
LEE'S SUMMIT, MISSOURI

MISSOURI GEOGRAPHIC REFERENCE SYSTEM
BENCH MARK:

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NW THOREAU DRIVE AND AUDUBON LANE
LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
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DRAWN BY: KSC	CHECKED BY: MAB	DATE PREPARED: 2-15-19	PROJ. NUMBER: 18-230
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SIGNING PLAN

SHEET

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OF 21

