ASPHALT PAVEMENT - PROPOSED (816) 607-2186 CONCRETE PAVEMENT - EXISTING MISSOURI GAS ENERGY (MGE) Brent Jones **ASPHALT PAVEMENT - EXISTING** 3025 SE Clover Drive Lee's Summit, MO 64082 CONCRETE SIDEWALK - EXISTING (816) 399-9633

CONCRETE SIDEWALK - PROPOSED

CURB & GUTTER - EXISTING

EXISTING PLAT LINES

CABLE TV - EXISTING

—— UGE, —— UNDERGROUND ELECTRIC - EX.

LIGHT - EXISTING

CLEANOUT

EXISTING MANHOLE

EXISTING AREA INLET

EXISTING CURB INLET

EXISTING GRATE INLET

EXISTING JUNCTION BOX

EXISTING STORM MANHOLE

WATERLINE - EXISTING

GAS LINE - EXISTING

FIBER OPTIC CABLE - EXISTING

EXISTING SANITARY MANHOLE

PROPOSED SANITARY MANHOLE

CURB & GUTTER

TREELINE

KANSAS CITY POWER & LIGHT COMPANY (KCP&L) Ron Dejarnette 1300 SE Hamblin Road Lee's Summit, MO 6408 Office: (816) 347-4316 Cell: (816) 810-5234 ron.dejarnette@kcpl.com

brent.jones@spireenergy.com

Lee's Summit, MO 64086

CITY OF LEES SUMMIT PUBLIC WORKS Dena Mezger 220 SE Green Street Lee's Summit, MO 64063 (816) 969-1800

Mark Manion or Marty Loper 500 E. 8th Street, Room 370 Kansas City, MO 64106 (816) 275-2341 or (816) 275-1550

John Meadows 4700 Little Blue Parkway Independence, MO 64057 (816) 795-2257

PUBLIC WATER SUPPLY DISTRICT Mark Schaufler 220 SE Green Street Lee's Summit, MO 64063 (816) 969-1900

SUMMARY OF QUANTITIES QUANTITY UNITS ITEM 1 GRADING 2 SEEDING AND SODDING LS 1,535 3 TYPE "CG-2" CURB AND GUTTER LF 4 TYPE "CG-1" CURB AND GUTTER 151 LF 5 SAWCUT EXISTING PAVEMENT LF 2,732 6 2" SURFACE COURSE - TYPE 3 SY 7 4" BASE COURSE - TYPE 1 2,732 SY 8 10" BASE COURSE - MODOT TYPE 5 (WITH GEOGRID) (OPTION B) 3,210 9 6" BASE COURSE - MODOT TYPE 5 (6" CHEMICAL STABILIZATION) (OPTION A) 3,210 SY 10 TYPE I SIDEWALK RAME EA 11 TYPE II SIDEWALK RAMP EA 12 TYPE III SIDEWALK RAMP (MID-BLOCK RAMP) EA 13 | 15" HDPE 14 18" HDPE LF 15 24" HDPE LF 16 42" HDPE 238 LF 17 18" HDPE END SECTION W/ TOEWALL EA EA 18 24" HDPE END SECTION W/ TOEWALL 19 42" HDPE END SECTION W/ TOEWALL EA 20 STD. 6'X4' CURB INLET EA 6 21 STD. 6'X6' CURB INLET EA 22 STD. 4'X4' AREA INLET 2 EA 23 6'X6' DETENTION STRUCTURE EA 24 SCOUR BASIN/PLUNGE POOL 25 D₅₀-15" STONE RIP-RAP W/ FILTER FABRIC 13 CY 26 EROSION CONTROL DEVICES LS 27 AB-3 FOR STREET CROSSING 62 SY 28 SIGNAGE & PAVEMENT MARKING LS 29 CITY PERMIT FEE LS 30 LAND DISTURBANCE CITY FEE

STREET, STORMWATER, MASTER DRAINAGE PLAN AND EROSION AND SEDIMENT CONTROL

WINTERSET VALLEY, 13TH PLAT

IN THE CITY OF LEE'S SUMMIT JACKSON COUNTY, MISSOURI

GENERAL NOTES:

- ALL CONSTRUCTION TO FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
- ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE ENGINEERING DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI.
- LINEAL FOOT MEASUREMENTS SHOWN ON THE PLANS ARE HORIZONTAL MEASUREMENTS, NOT SLOPE MEASUREMENTS. ALL PAYMENTS SHALL BE MADE ON HORIZONTAL MEASUREMENTS
- NO GEOLOGICAL INVESTIGATION HAS BEEN PERFORMED ON THE SITE THE UTILITY LOCATIONS SHOWN ON THESE PLANS ARE TAKEN FROM UTILITY COMPANY RECORDS AND

- BY THE CONTRACTOR IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES.
- ALL WASTE MATERIAL RESULTING FROM THE PROJECT SHALL BE DISPOSED OF OFF-SITE BY THE
- ALL MANHOLES, CATCH BASINS, UTILITY VALVES AND METER PITS TO BE ADJUSTED OR REBUILT TO GRADE

- 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)

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.
- CURB RETURN RADII SHALL BE 25' AT BACK OF CURB UNLESS OTHERWISE NOTED.
- SUBGRADE TO BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- ASSUMED DESIGN SPEED = 25 MPH (COLLECTOR). MINIMUM STOPPING SIGHT DISTANCE = 155 FEET.
- MINIMUM K, SAG CURVE = 26 (14 WITH LIGHTING), CREST CURVE = 12.
- GRADE INTERSECTIONS TO DRAIN AS SHOWN. SSD = STOPPING SIGHT DISTANCE.

EARTHWORK:

- IT IS RECOMMENDED THAT A GEOTECHNICAL ENGINEER OBSERVE AND DOCUMENT ALL EARTHWORK
- 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 SPO

- LANDSCAPED AREAS TO A MINIMUM DEPTH OF 6-INCHES BELOW FINAL GRADE
- 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 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. ALL DISTURBED AREAS IN THE RIGHT-OF-WAY SHALL BE SODDED.
- UNDERDRAINS ARE RECOMMENDED FOR ALL PAVED AREAS ADJACENT TO IRRIGATED TURF AND
- 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:

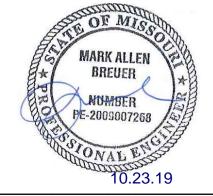
- EXISTING UTILITIES HAVE BEEN SHOWN TO THE GREATEST EXTENT POSSIBLE BASED UPON INFORMATION PROVIDED TO THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE RESPECTIVE UTILITY COMPANIES AND FIELD LOCATING UTILITIES PRIOR TO CONSTRUCTION AND IDENTIFYING ANY POTENTIAL CONFLICTS. ALL CONFLICTS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
- 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 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
- 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, A CONTINUOUS CASING PIPE MUST BE USED ON THE WATER LINE AND EXTEND NO LESS THAN 10 FEET IN EACH DIRECTION FROM THE CROSSING OF THE SANITARY OR STORM SEWER LINE IN CONFLICT.

PAYMENT FOR TRENCHING, BACKFILLING, PIPE EMBEDMENT, FLOWABLE FILL, BACKFILL MATERIALS, CLEAN

- UP, SEEDING, SODDING AND ANY OTHER ITEMS NECESSARY FOR THE CONSTRUCTION OF THE UTILITY LINE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE UTILITY INSTALLATION. 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. 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.

Sheet Number	Sheet Title
1	COVER SHEET
2	PRE-CLEARING PLAN
3	ECP-CONSTRUCTION
4	FINAL STABILIZATION PLAN
5	EROSION CONTROL DETAILS
6	EROSION CONTROL DETAILS
7	GENERAL LAYOUT
8	MASTER DRAINAGE PLAN - GRADING PLAN
9	MASTER DRAINAGE PLAN - SPOT ELEVATIONS
10	MASTER DRAINAGE PLAN - DRAINAGE MAP
11	MASTER DRAINAGE PLAN-DRAINAGE MAP CONT'D
12	NW THOREAU DRIVE PLAN AND PROFILE
13	NW THOREAU PLACE AND NW THOREAU LANE PLAN AND PROF
14	INTERSECTION DETAILS
15	INTERSECTION DETAILS
16	STORM PLAN
17	STORM PROFILES
18	DETENTION BASIN
19	STREET AND STORM DETAILS
20	STREET AND STORM DETAILS
21	STREET AND STORM DETAILS
22	STREET AND STORM DETAILS
23	SIGNING PLAN
24	STREET SIGN DETAILS

PREPARED AND SUBMITTED BY



SCHLAGEL & ASSOCIATES, P.A.

APPROVED BY

CITY ENGINEER APPROVED FOR ONE YEAR FROM THIS DATE

DATE

OWNER/DEVELOPER:

GALE COMMUNITIES, INC. DAVID GALE 400 SW LONGVIEW BLVD, STE 109 LEE'S SUMMIT, MO 64081 p 816.645.2336 (CELL) 816.761.9292 (OFFICE)

DGALE@GALECOMMUNITIES.COM



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'

COVER SHEET

QUANTITIES PULLED FOR STREET OPTION A & B FROM CITY OF LEE'S SUMMIT DESIGN CRITERIA, SECTION 5200, TABLE LS-2: MINIMUM ASPHALT PAVEMENT THICKNESSES. EITHER IS ALLOWED AT CONTRACTORS OPTION (SEE TABLE ON DETAIL SHEET 22.)

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		EROSIC	ON AND SEDIMENT CONT	ROL ST	AGING CHART
	PROJECT STAGE	BMP PLAN REF. NO	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
		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
	A - PRIOR TO LAND DISTURBANCE	3*	EXISTING INLET PROTECTION	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
		3a	FOAM SILT DIKE OR ROCK DITCH CHECK AND SEDIMENT TRAPS	E	PLACE WHERE INDICATED AT EXISTING SWALES AND DRAINAGE COURSES
196E	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
	B - IVIAGG GRADING	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
0416		6	CONCRETE WASHOUT AREA	E	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
3	C - UTILITY CONSTRUCTION	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
PHASE		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
PHASE	D - AFTER PAVING OPERATIONS	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
Ē		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

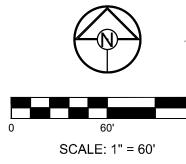
TO WOODED/UNDEVELOPED AREAS.

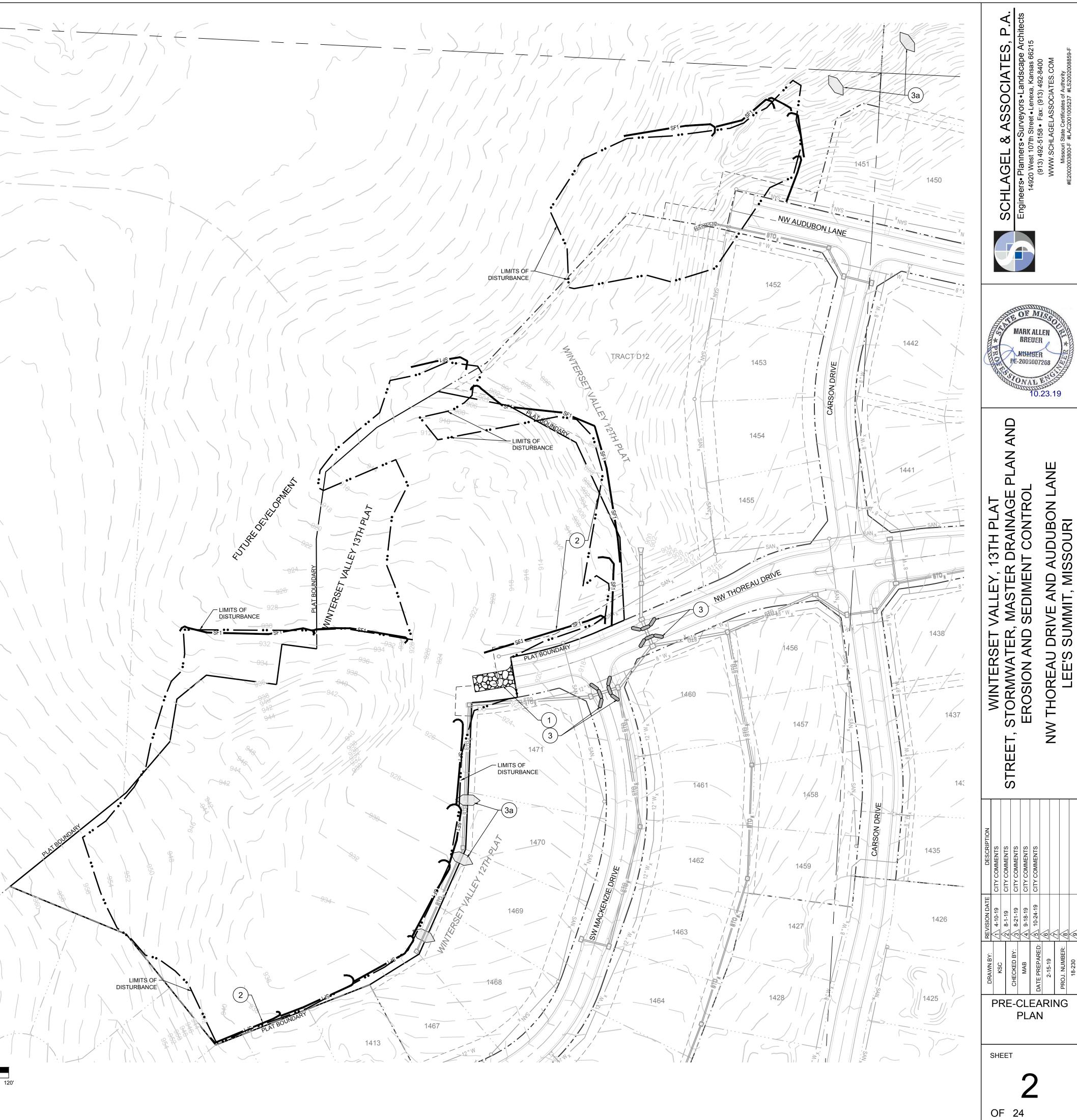
DISTURBED AREA = 6.77 A.C.

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- 7. ALL PERIMETER SILT FENCE, EARTH DIKES, SEDIMENT BASINS, AND ROCK CONSTRUCTION ENTRANCES WILL BE INSTALLED BEFORE GRADING OPERATIONS BEGIN.
- 8. SILT FENCE AND EARTH DIKES THAT ARE PLACED BEFORE GRADING BEGINS WILL BE MAINTAINED BY THE GRADING CONTRACTOR.
- 9. AREAS WITHIN PUBLIC RIGHT-OF-WAY SHALL BE SODDED IMMEDIATELY AFTER CONSTRUCTION IS COMPLETE.







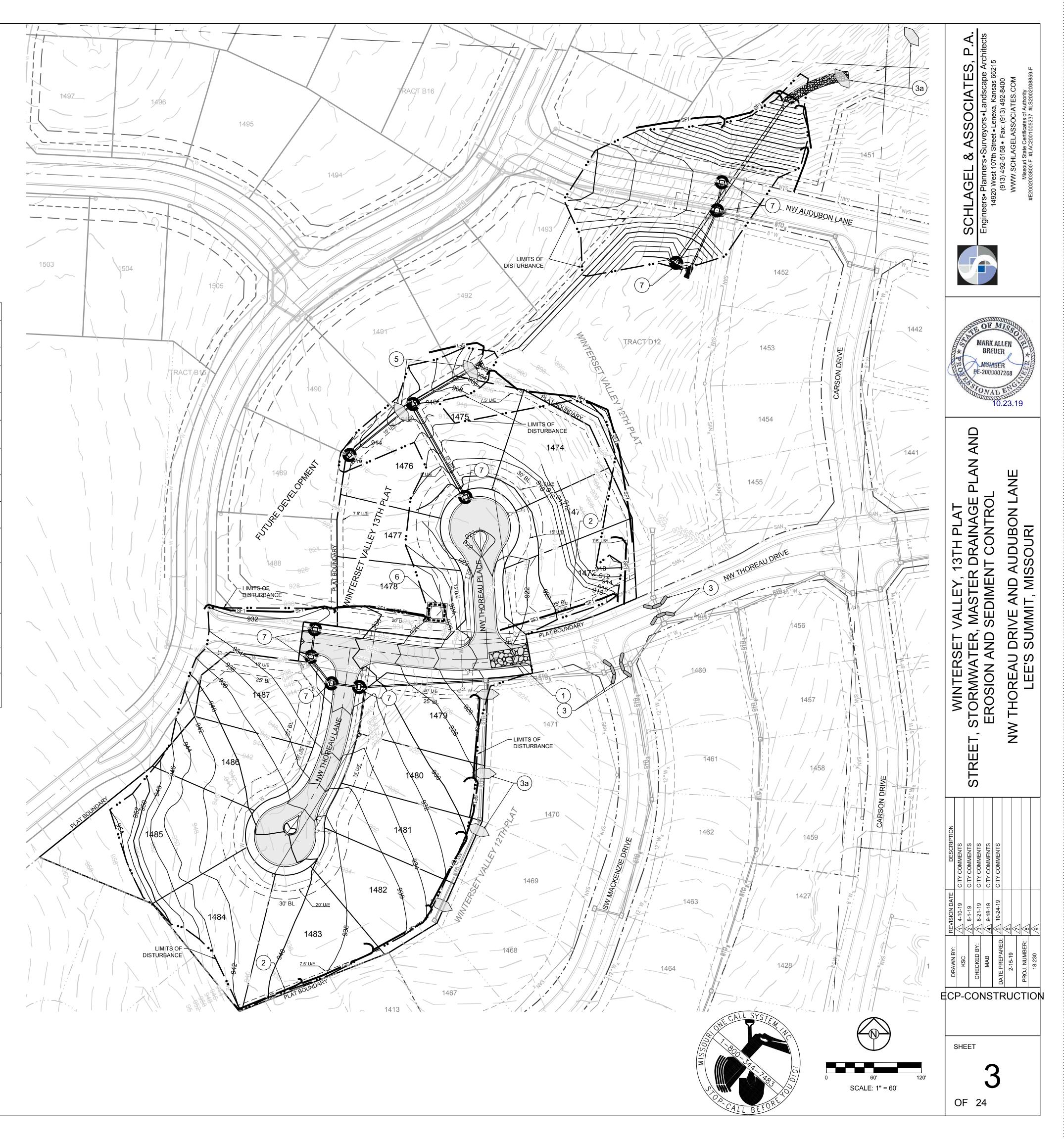
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		LNOSIC	ON AND SEDIMENT CONT	T	HOING CHART
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PHASE PHASE	B - MASS GRADING	4	SILT FENCE 2 (DURING CONSTRUCTION)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	B - IVIASS GRADING	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
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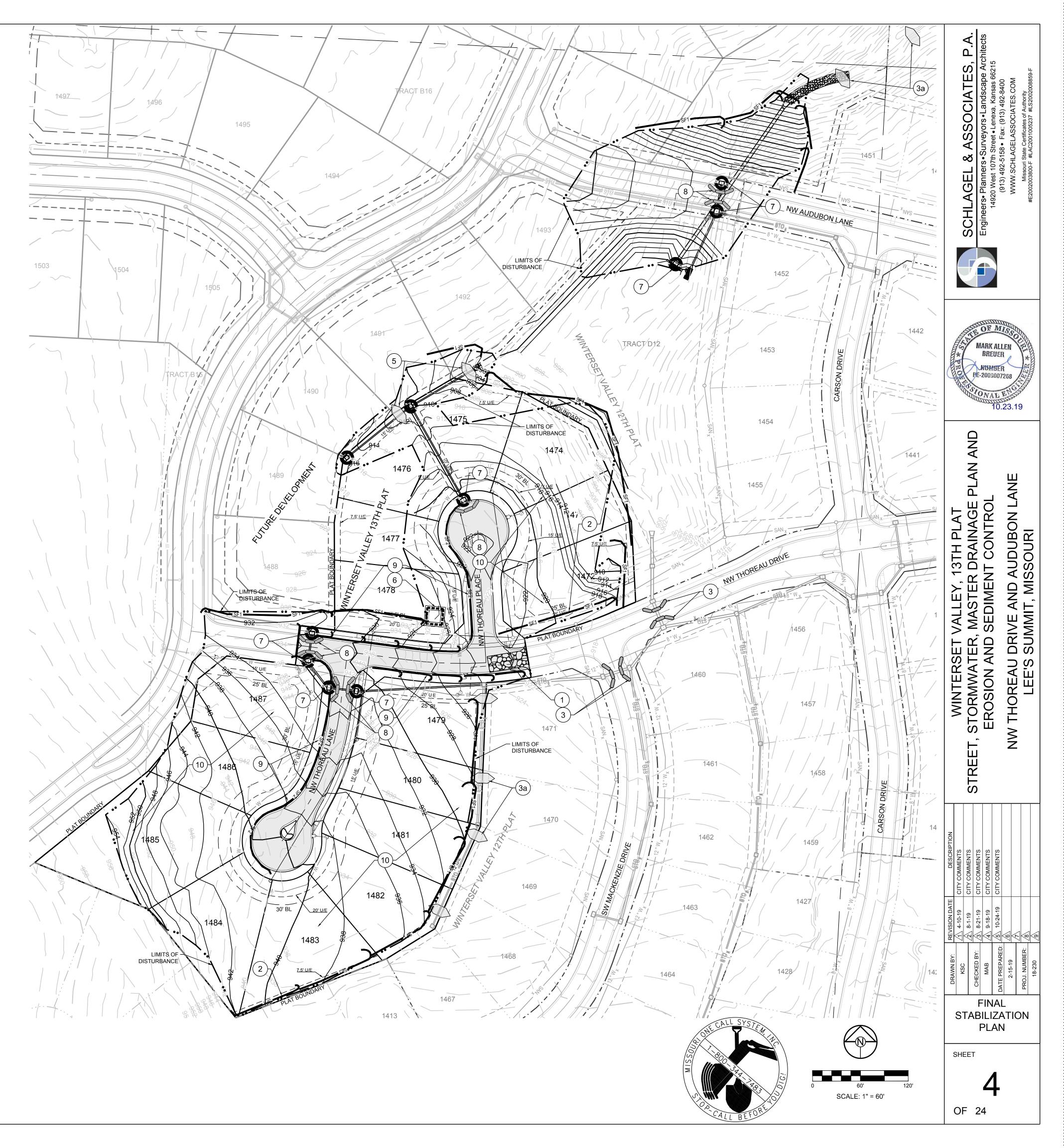
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R - MASS GRADING	4	SILT FENCE 2 (DURING CONSTRUCTION)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREA HAVE SUFFICIENT GROUND COVER ESTABLISHED
B - MAGG GRADING	5	FOAM SILT DIKE OR ROCK DITCH CHECK AND SEDIMENT TRAPS	E	PLACE WHERE INDICATED AS SOON AS SWALE IS ESTABLISHED, REPAIR OR REPLACE AS NECESSARY
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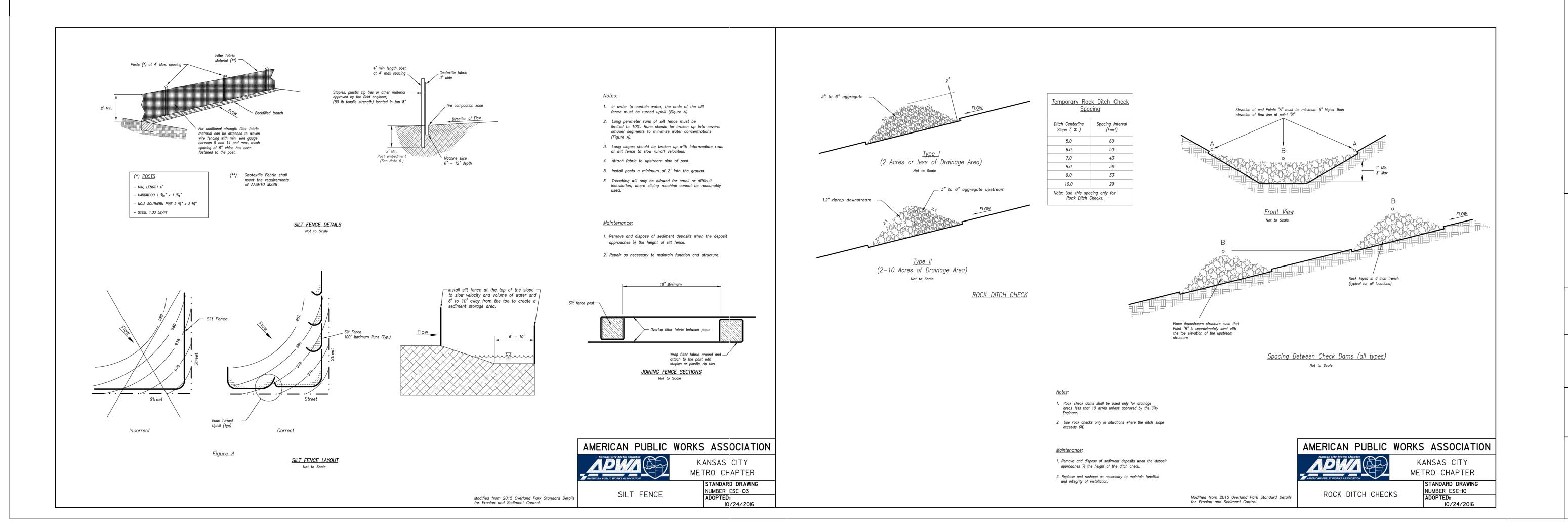
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- 2. THERE ARE NO WETLANDS, NATURAL OR ARTIFICIAL WATER STORAGE DETENTION AREAS IN THE PROJECT AREA.
- 3. NO PART OF THE PROJECT LIES WITHIN THE 100 YEAR FLOOD PLAIN PER FEMA FLOOD INSURANCE RATE MAP NUMBER 29095C0412G DATED JANUARY 20, 2017.
- 4. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IMPLEMENTED ACCORDING TO THE BMP STAGING CHART.
- 5. 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.
- 6. 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.
- 7. ALL PERIMETER SILT FENCE, EARTH DIKES, SEDIMENT BASINS, AND ROCK CONSTRUCTION ENTRANCES WILL BE INSTALLED BEFORE GRADING OPERATIONS BEGIN.
- 8. SILT FENCE AND EARTH DIKES THAT ARE PLACED BEFORE GRADING BEGINS WILL BE MAINTAINED BY THE GRADING CONTRACTOR.
- 9. AREAS WITHIN PUBLIC RIGHT-OF-WAY SHALL BE SODDED IMMEDIATELY AFTER CONSTRUCTION IS COMPLETE.

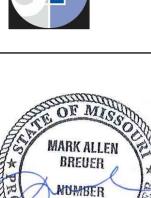


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SCHLAGEL & ASSOCIATE Engineers• Planners•Surveyors•Landscape 14920 West 107th Street • Lenexa, Kansas 663 (913) 492-5158 • Fax: (913) 492-8400 www.SCHLAGELASSOCIATES.COM

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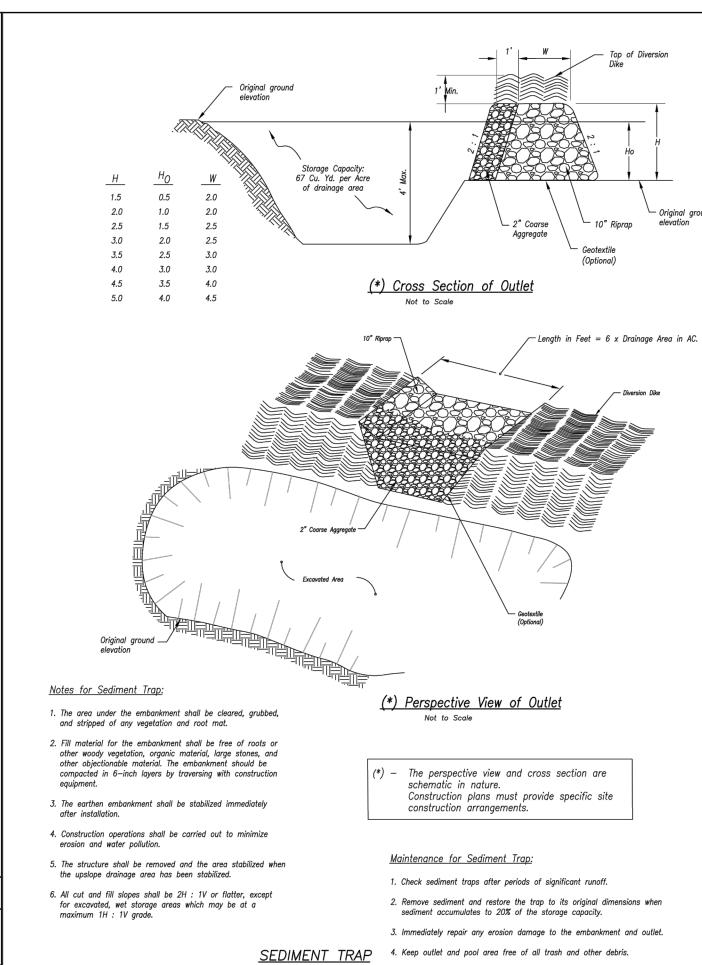
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WINTERSET VALLEY, 13TH PLAT
EET, STORMWATER, MASTER DRAINAGE
AND EROSION AND SEDIMENT CONTROL
'THOREAU DRIVE AND AUDUBON LANE
LEE'S SUMMIT, MISSOURI

CHECKED NAB NAB DATE PREP. 2-15-19

CONTROL DETAILS

SHEET



STANDARD DRAWING

NUMBER ESC-07

METROPOLITAN CHAPTER

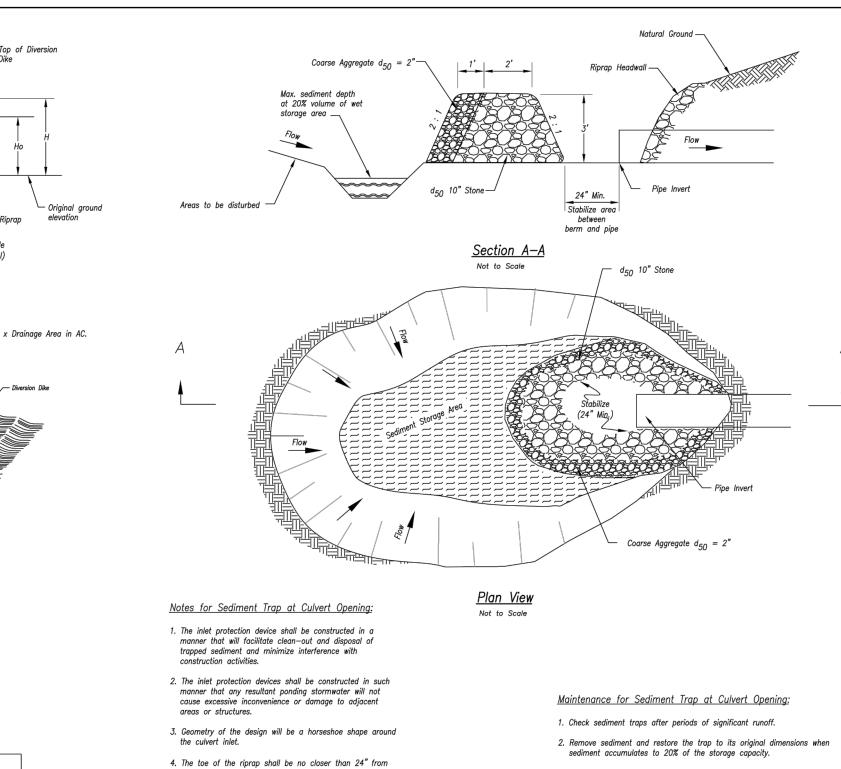
TRIANGULAR SILT DIKE™

AREA INLET AND

JUNCTION BOX PROTECTION

Modified from 2015 Overland Park Standard Details

for Erosion and Sediment Control.



- the culvert opening to provide an acceptable emergency outlet for flows from larger storm events. 5. Storage requirements equivalent to that of temporary
- sediment trap. 6. 67 C.Y./Acre wet storage below base of stone.
- 7. 67 C.Y./Acre dry storage from base of stone to top of

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

AMERICAN PUBLIC WORKS ASSOCIATION KANSAS CITY

3. Immediately repair any erosion damage to the embankment and outlet.

4. Keep outlet and pool area free of all trash and other debris.

METRO CHAPTER

SEDIMENT TRAPS

STANDARD DRAWING NUMBER ESC-08

MARK ALLEN BREUER

MOMBER

RAINAGE

ASTER DF DIMENT (

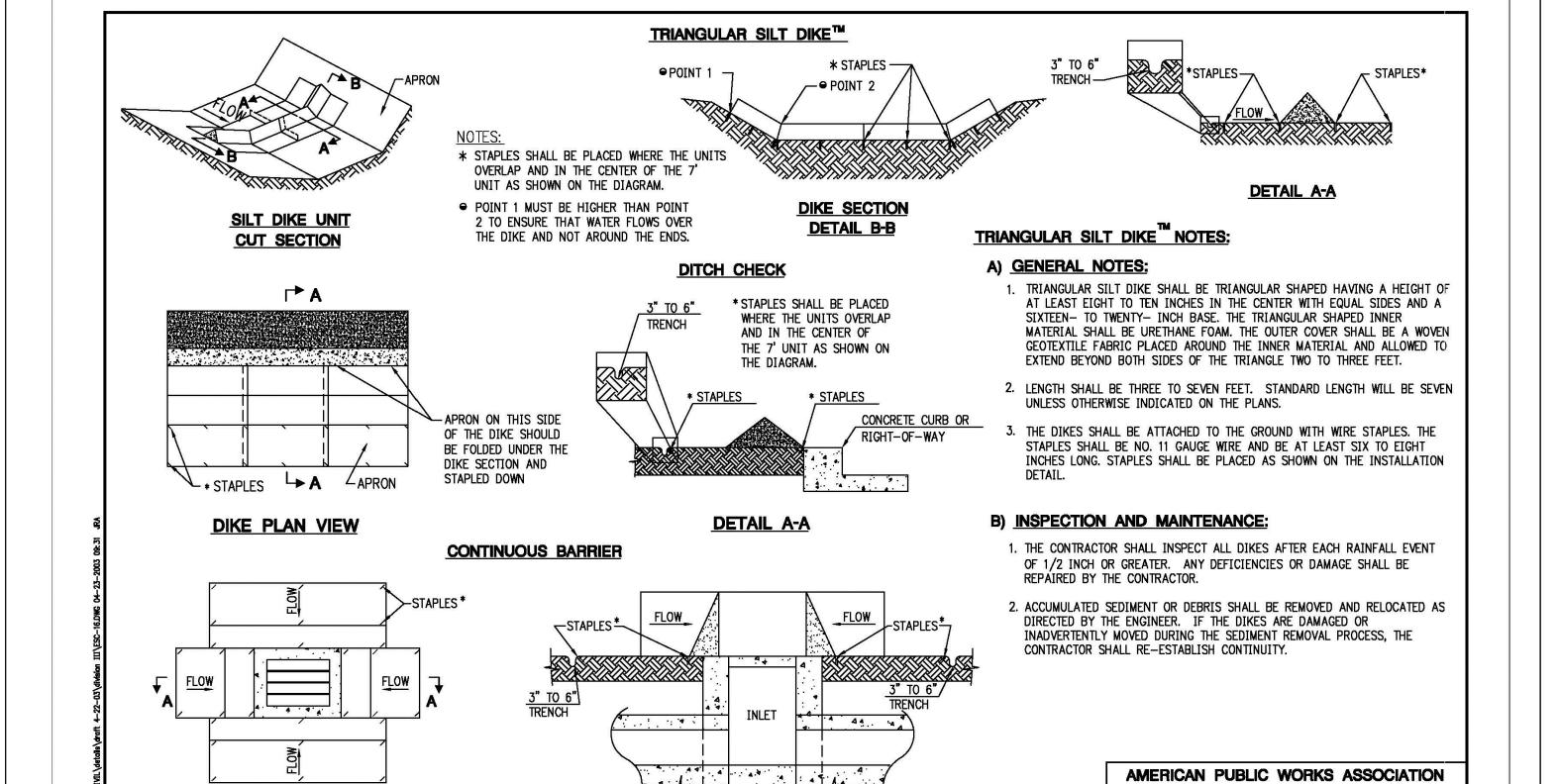
WINTERSET VALLEY EET, STORMWATER, N I AND EROSION AND S

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DRIVE AN SUMMIT,

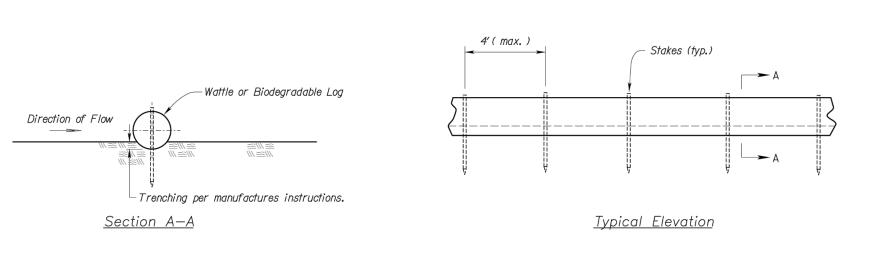
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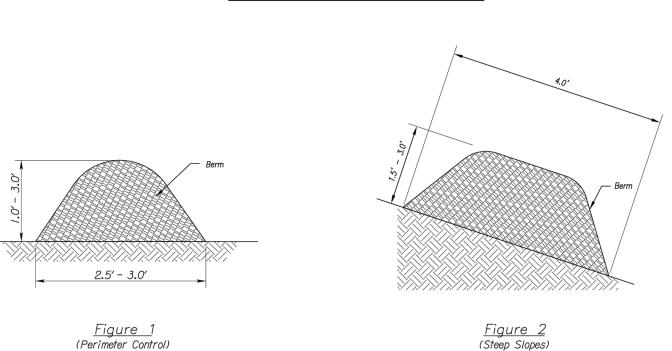


DETAIL A-A

DROP INLET



WATTLES AND BIODEGRADABLE LOG



MULCH OR COMPOST FILTER BERMS

Notes for Wattles and Biodegradable Log Slope

- 1. The Slope barriers shall be placed along contour lines, with a short section turned upgrade at each end of the barrier. The maximum length of the slope barrier shall not exceed 250 feet, and the barrier ends need to be staggered.
- 2. Install wattles and biodegradable logs per manufacturer's instructions. 3. Spacing of stakes per manufacturer's instructions with 4' max. spacing.

Length of stakes shall be a minimum of 2 times the diameter of the log with minimum of 24".

<u>Notes for Mulch and Compost Filter Beam:</u>

1. The sediment control berm shall be placed uncompacted in a windrow at locations shown on the plans or as

directed by the engineer. 2. Parallel to the base of the slope, or around the perimeter of other affected areas, construct a 1 to 3 foot high by 2.5 to 3 foot wide berm (see Figure 1). For maximum water treatment ability or for steep slopes, construct a 1.5 to 3 foot high trapezoidal berm that is a minimum of 4 feet wide at the base (see Figure 2). In extreme conditions, or where specified by the engineer, a second berm shall be constructed at the top of the slope. Engineer will specify berm requirements.

3. If berm is to be left as permanent or part of the natural landscape, the compost berm may be seeded during application for permanent vegetation.

4. Do not use compost or wood mulch berms in any

5. Wood mulch shall consist of tree and shrub debris resulting from clearing and grubbing and shall be ground tub grinder or other approved method. Mulch sizing varies with a maximum width of 2" and a maximum length of 10".

Maintenance for Mulch and Compost Filter Beam:

1. Berm shall be reshaped and material added as necessary to maintain function and dimensions.

2. Breaches in the berm shall be repaired promptly.

AMERICAN PUBLIC WORKS ASSOCIATION KANSAS CITY METRO CHAPTER STANDARD DRAWING WATTLES/BIODEGRADABLE LOG

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

AND MULCH/COMPOST FILTER BERM | "

PLAN VIEW

SOURCE: TRIANGULAR SILT DIKE COM., INC.

SHEET

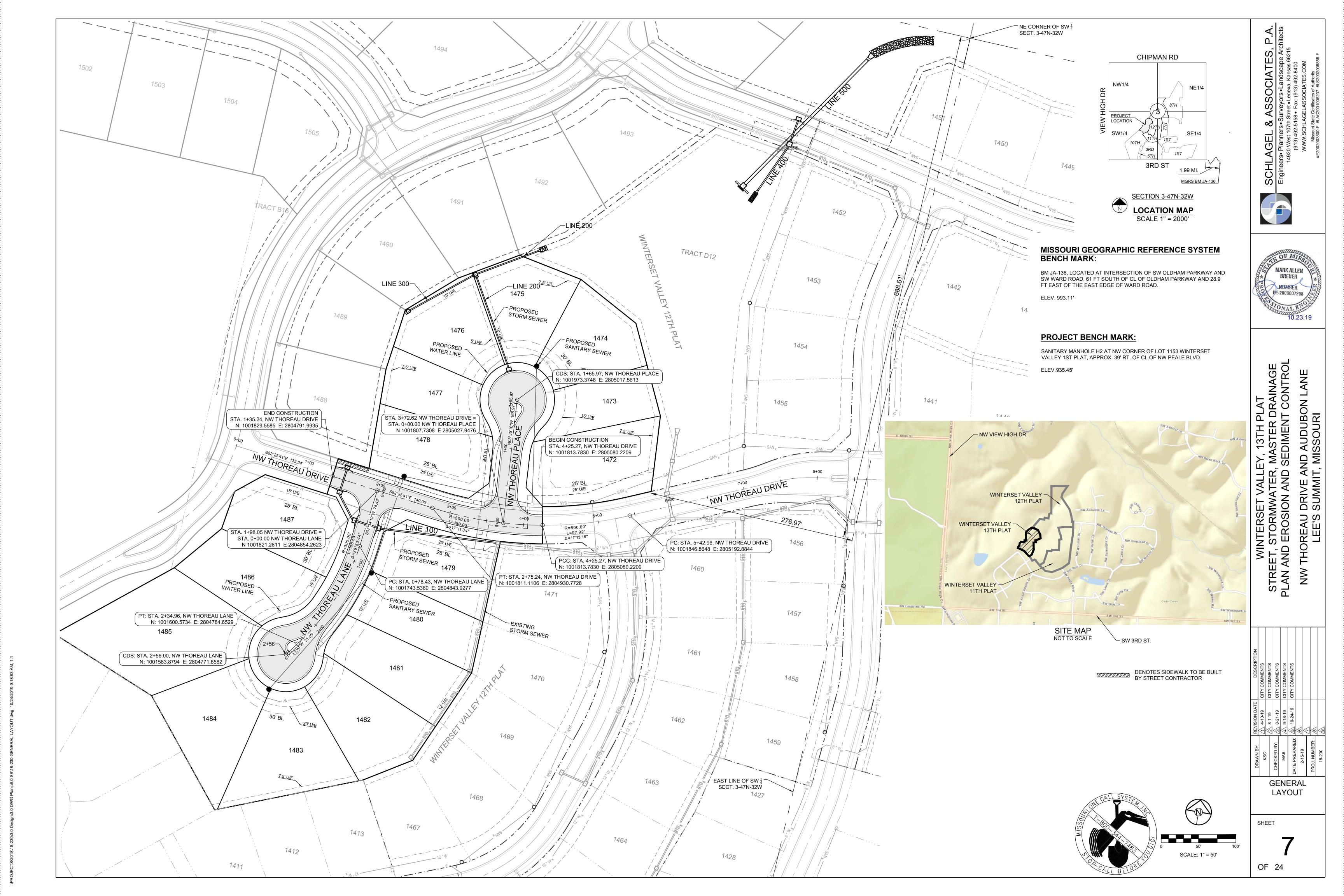
NUMBER ESC-04

OF 24

EROSION

CONTROL

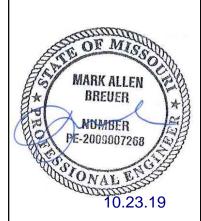
DETAILS





CHIPMAN RD MGRS BM JA-136

LOCATION MAP SCALE 1" = 2000'



ND AUDUBON LANE MISSOURI

NW THOREAU DRIVE AN LEE'S SUMMIT,

WINTERSET VALLEY STREET, STORMWATER, N PLAN AND EROSION AND S

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

DENOTES LIMITS OF DISTURBANCE DENOTES PROPOSED MAJOR CONTOUR DENOTES PROPOSED MINOR CONTOUR DENOTES EXISTING MAJOR CONTOUR DENOTES EXISTING MINOR CONTOUR

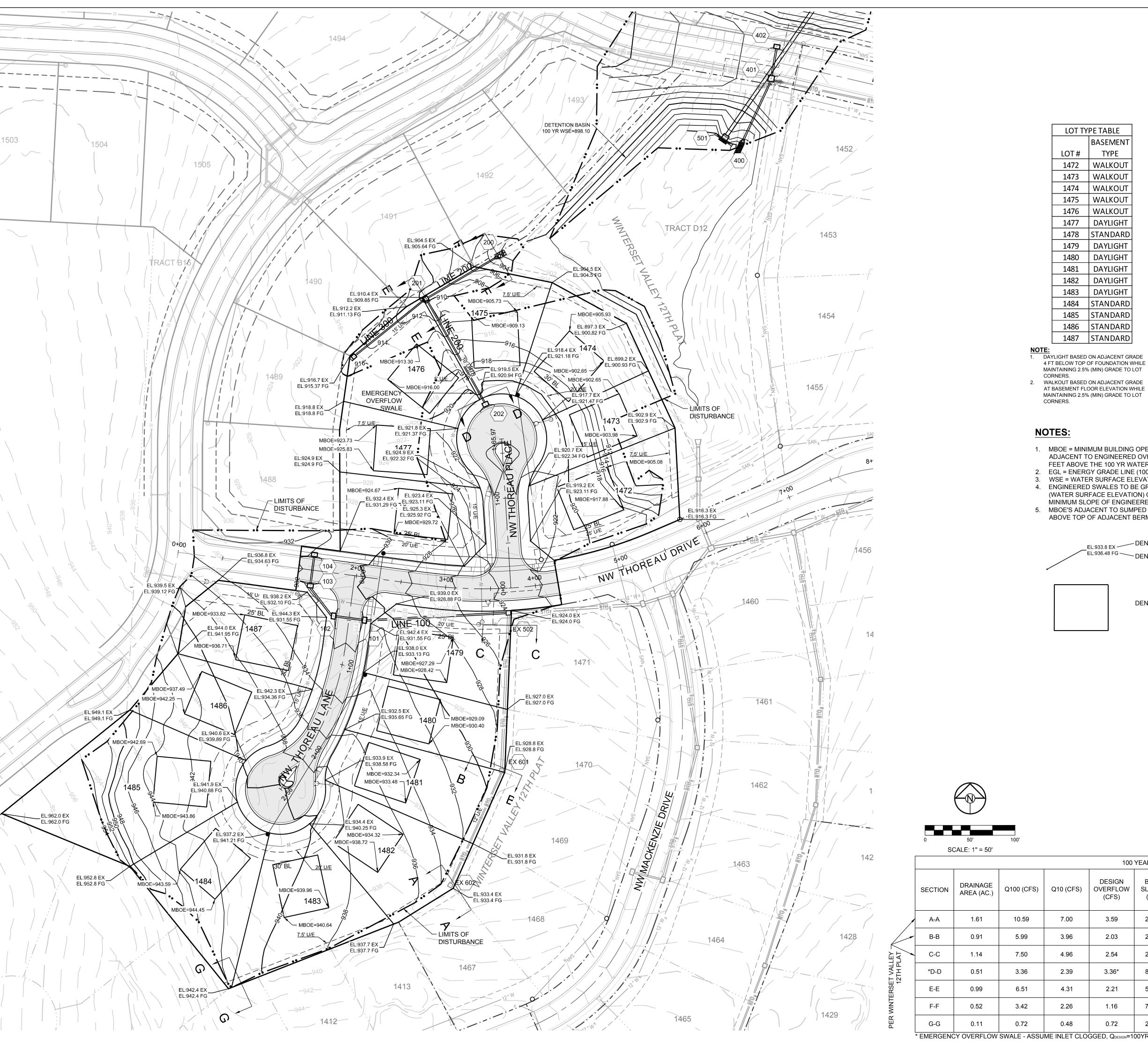
MISSOURI GEOGRAPHIC REFERENCE SYSTEM

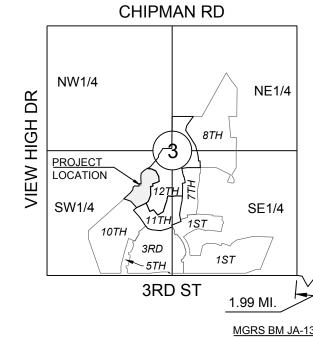
BM JA-136, LOCATED AT INTERSECTION OF SW OLDHAM PARKWAY AND SW WARD ROAD, 61 FT SOUTH OF CL OF OLDHAM PARKWAY AND 28.9 FT EAST OF THE EAST EDGE OF WARD ROAD.

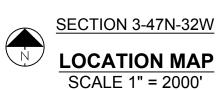
SANITARY MANHOLE H2 AT NW CORNER OF LOT 1153 WINTERSET VALLEY 1ST PLAT, APPROX. 39' RT. OF CL OF NW PEALE BLVD.

> MASTER DRAINAGE PLAN - GRADING PLAN

SHEET







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.

2. WALKOUT BASED ON ADJACENT GRADE AT BASEMENT FLOOR ELEVATION WHILE MAINTAINING 2.5% (MIN) GRADE TO LOT

LOT TYPE TABLE

1472 | WALKOUT

1473 | WALKOUT

1474 | WALKOUT 1475 | WALKOUT 1476 | WALKOUT

1477 DAYLIGHT

1478 STANDARD

1479 DAYLIGHT

1480 DAYLIGHT

1481 DAYLIGHT

1482 DAYLIGHT

1483 DAYLIGHT

1484 STANDARD

1485 STANDARD

1486 STANDARD

1487 | STANDARD

DAYLIGHT BASED ON ADJACENT GRADE 4 FT BELOW TOP OF FOUNDATION WHILE

MAINTAINING 2.5% (MIN) GRADE TO LOT

LOT#

BASEMENT

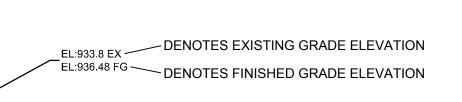
TYPE

ELEV.935.45'

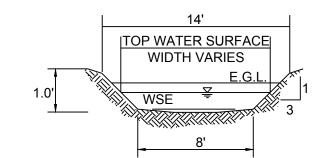
NOTES:

CORNERS.

- 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.
- EGL = ENERGY GRADE LINE (100 YR)
- WSE = WATER SURFACE ELEVATION (100 YR) 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.
- MBOE'S ADJACENT TO SUMPED INLETS SHALL BE A MINIMUM OF 1' ABOVE TOP OF ADJACENT BERM



DENOTES CONCEPTUAL BUILDING FOOTPRINT



100 YR OVERFLOW SWALE SECTIONS SECTION A-A, B-B, C-C, D-D, E-E, F-F

(SEE ADJACENT CHART)

RUNOFF CALCULATIONS:

0.07

8.4

3:1

1.25

0.02

0.09

Q = K * C * I * A $K_{10} = 1.0$ $K_{100} = 1.25$ C = 0.51 I = INTENSITYDESIGN OVERFLOW=Q_{OVERFLOW} = Q₁₀₀ - Q₁₀ MANNINGS "n" = .030 FOR SWALES



	50	JALE: 1" = 50"											
					100	YEAR OVE	RFLOW SWA	ALES					
	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.)
1	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	0.21
	D-D	0.51	3.36	2.39	3.36	8.34	8	3:1	8.7	0.12	3.35	0.17	0.29
	E-E	0.99	6.51	4.31	2.21	5.64	8	3:1	8.7	0.11	2.43	0.09	0.20
	F-F	0.52	3.42	2.26	1.16	7.66	8	3:1	8.4	0.07	2.03	0.06	0.13
ı													

MGRS BM JA-136



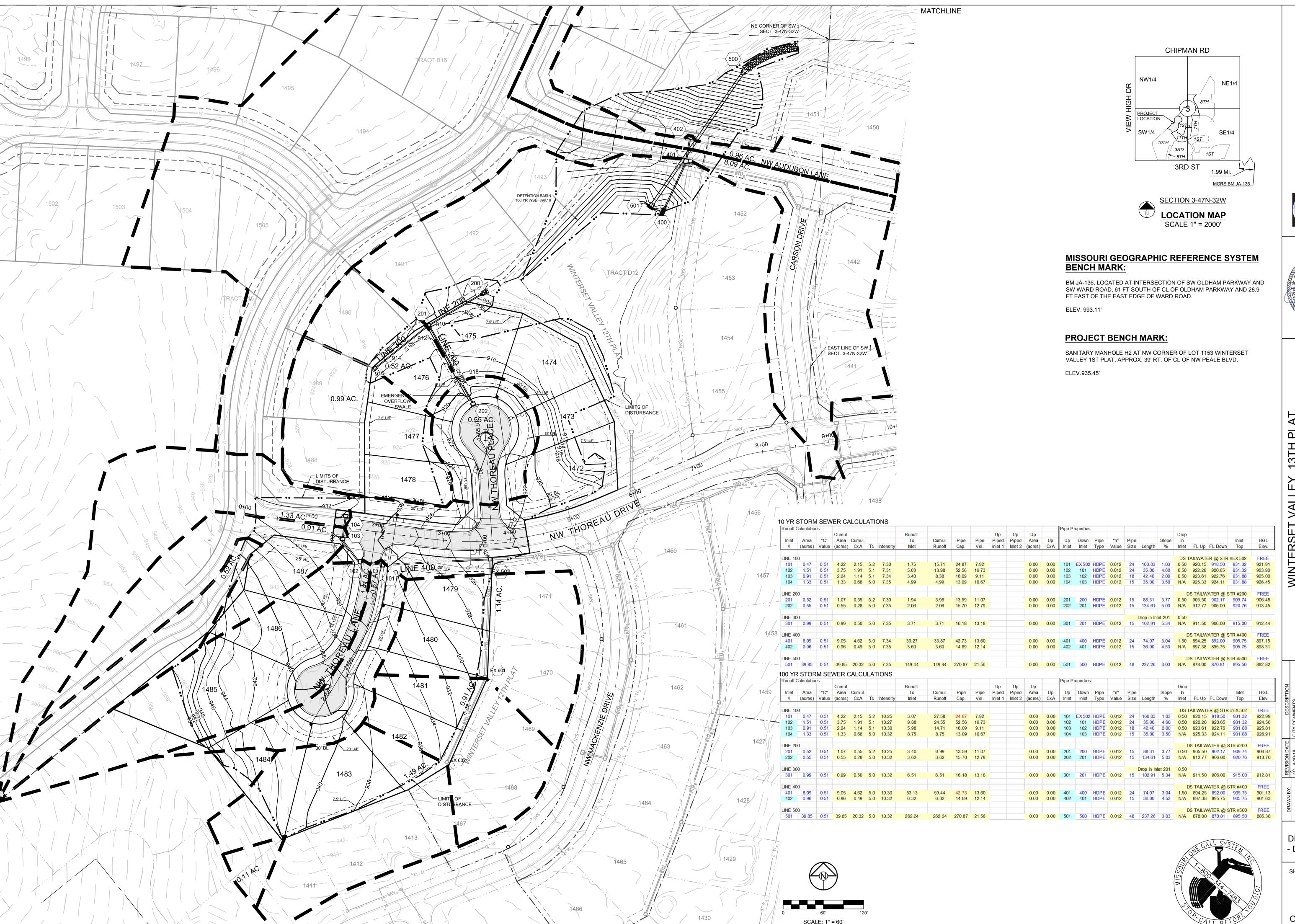


LAT DRAINAGE CONTROL

WINTERSET VALLE STREET, STORMWATER, PLAN AND EROSION AND NW THOREAU DRIVE AN LEE'S SUMMIT,

MASTER DRAINAGE PLAN - SPOT **ELEVATIONS**

SHEET



MARK ALLEN BREUER MUMBER

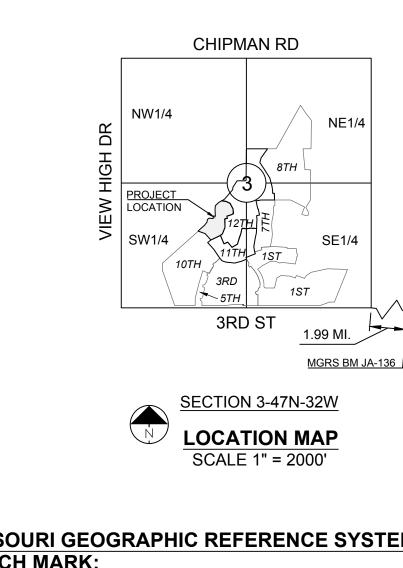
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DRIVE AI SUMMIT, WINTERSET V. STREET, STORMWAT LAN AND EROSION A

MASTER

DRAINAGE PLAN DRAINAGE MAP

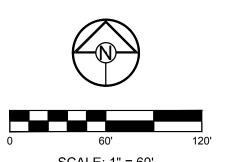
SHEET

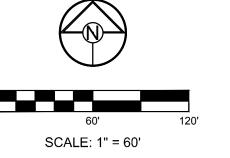


BM JA-136, LOCATED AT INTERSECTION OF SW OLDHAM PARKWAY AND SW WARD ROAD, 61 FT SOUTH OF CL OF OLDHAM PARKWAY AND 28.9 FT EAST OF THE EAST EDGE OF WARD ROAD.

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.





WINTERSET VALLE STREET, STORMWATER, PLAN AND EROSION AND

NW THOREAU DRIVE AN LEE'S SUMMIT,

MARK ALLEN
BREUER

MUMBER PE-2009007268

MASTER DRAINAGE PLAN-DRAINAGE MAP CONT'D

SHEET



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'

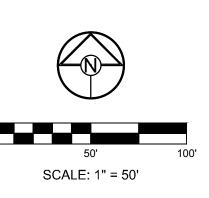
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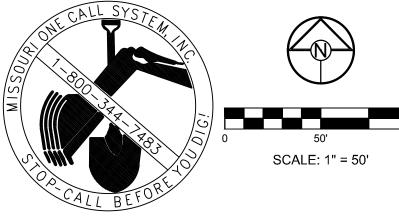
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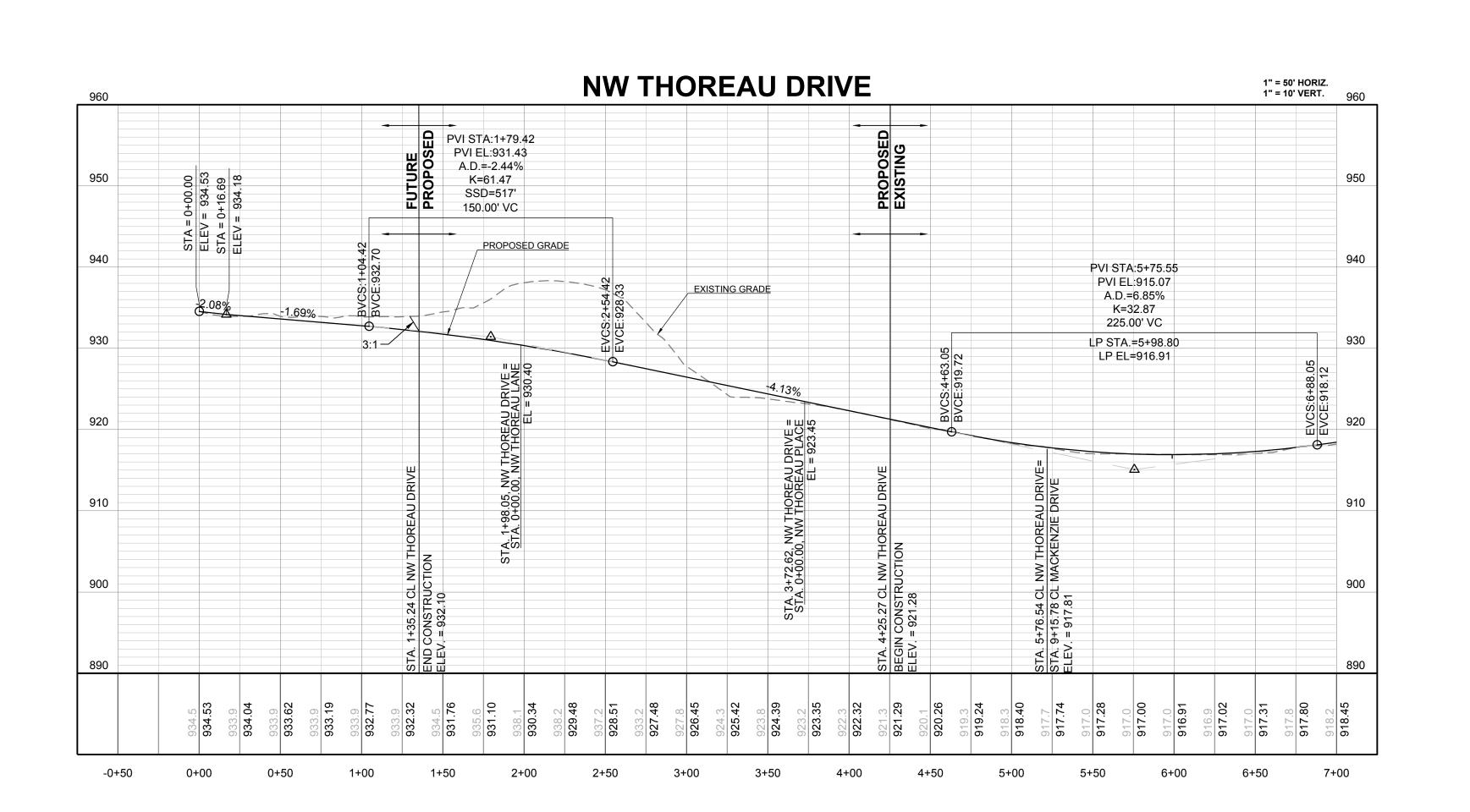
ELEV.935.45'

DENOTES SIDEWALK TO BE BUILT BY STREET CONTRACTOR

MARK ALLEN PE-2009007268







U/E DOC. # 1472

BEGIN CONSTRUCTION

STA. 4+25.27, NW THOREAU DRIVE N: 1001813.7830 E: 2805080.2209

PC: STA. 4+25.27, NW THOREAU DRIVE N: 1001813.7830 E: 2805080.2209

1460

- SAW CUT ±5 LF

5' SIDEWALK -(BY STREET CONTRACTOR)

NW THOREAU DRIVE

END CONSTRUCTION

STA. 1+98.05 NW THOREAU DRIVE = STA. 0+00.00 NW THOREAU LANE N 1001821.2811 E 2804854.2623

STA. 1+35.24, NW THOREAU DRIVE

N: 1001829.5585 E: 2804791.9935

STA. 3+72.62 NW THOREAU DRIVE =

STA. 0+00.00 NW THOREAU PLACE

N 1001807.7308 E 2805027.9476

(BY OTHERS)

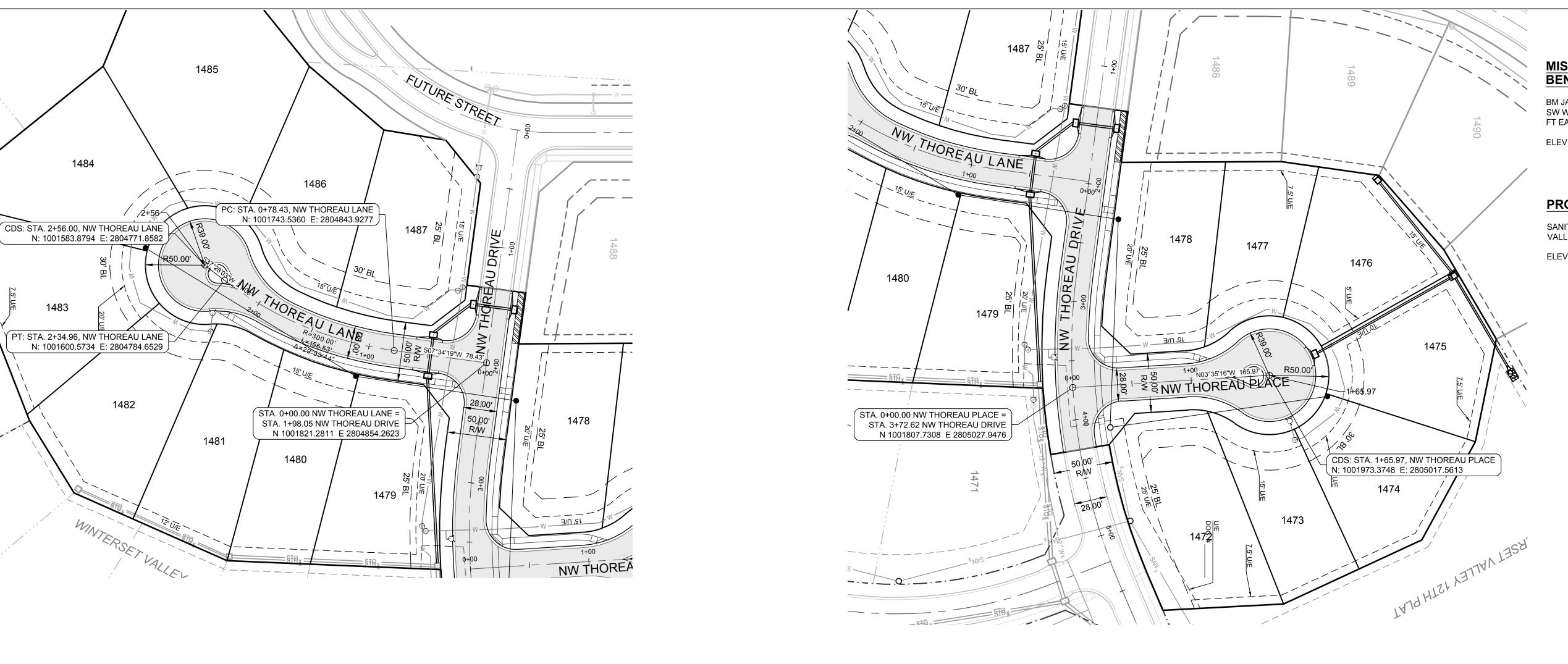
-,5' SIDEWALK (BY OTHERS) 50.00' R/W

PT: STA. 2+75.24, NW THOREAU DRIVE N: 1001811.1106 E: 2804930.7728

)RAINAGE CONTROL ND AUDUBON I , MISSOURI WINTERSET VALLE STREET, STORMWATER, PLAN AND EROSION AND NW THOREAU DRIVE AN LEE'S SUMMIT,

NW THOREAU DRIVE PLAN AND **PROFILE**

SHEET



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.

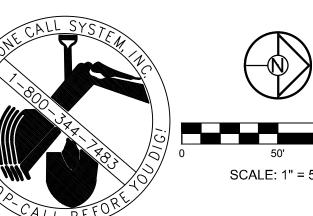
ELEV. 993.11'

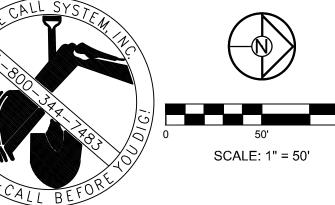
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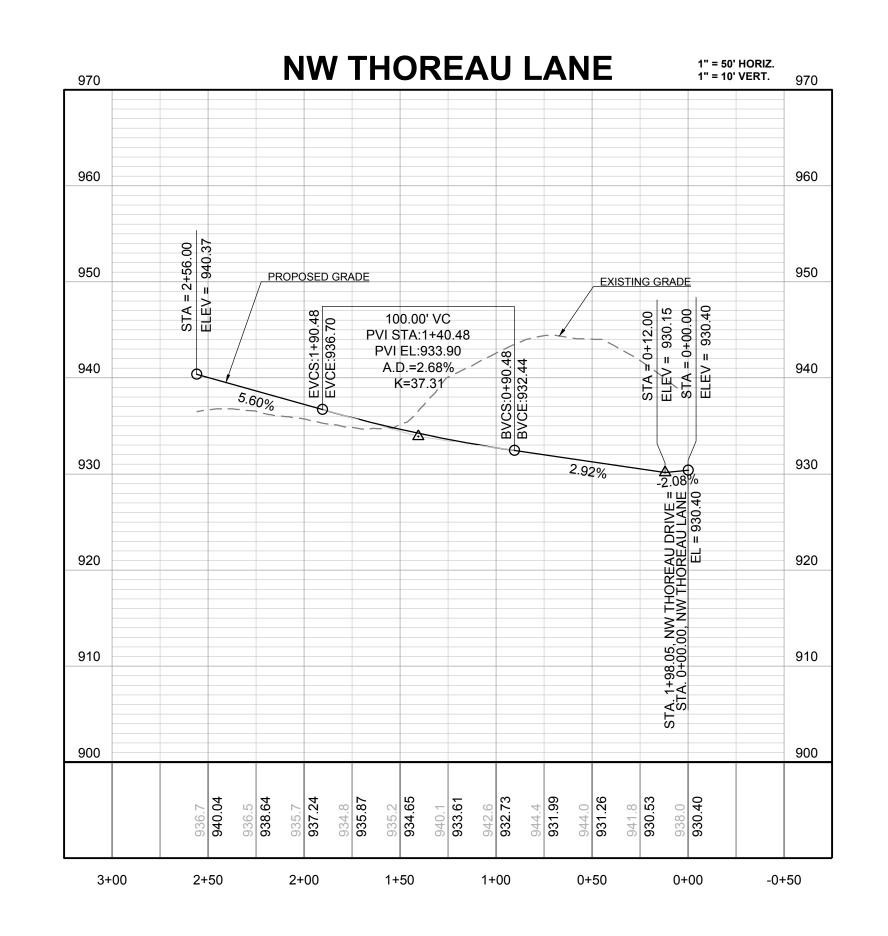
SANITARY MANHOLE H2 AT NW CORNER OF LOT 1153 WINTERSET VALLEY 1ST PLAT, APPROX. 39' RT. OF CL OF NW PEALE BLVD.

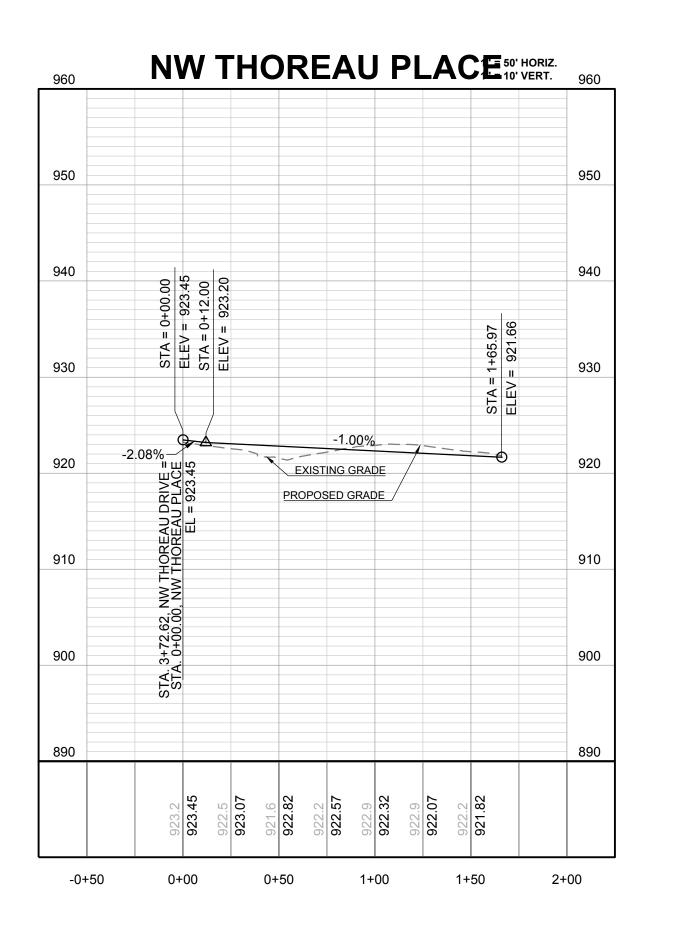
ELEV.935.45'

DENOTES SIDEWALK TO BE BUILT BY STREET CONTRACTOR





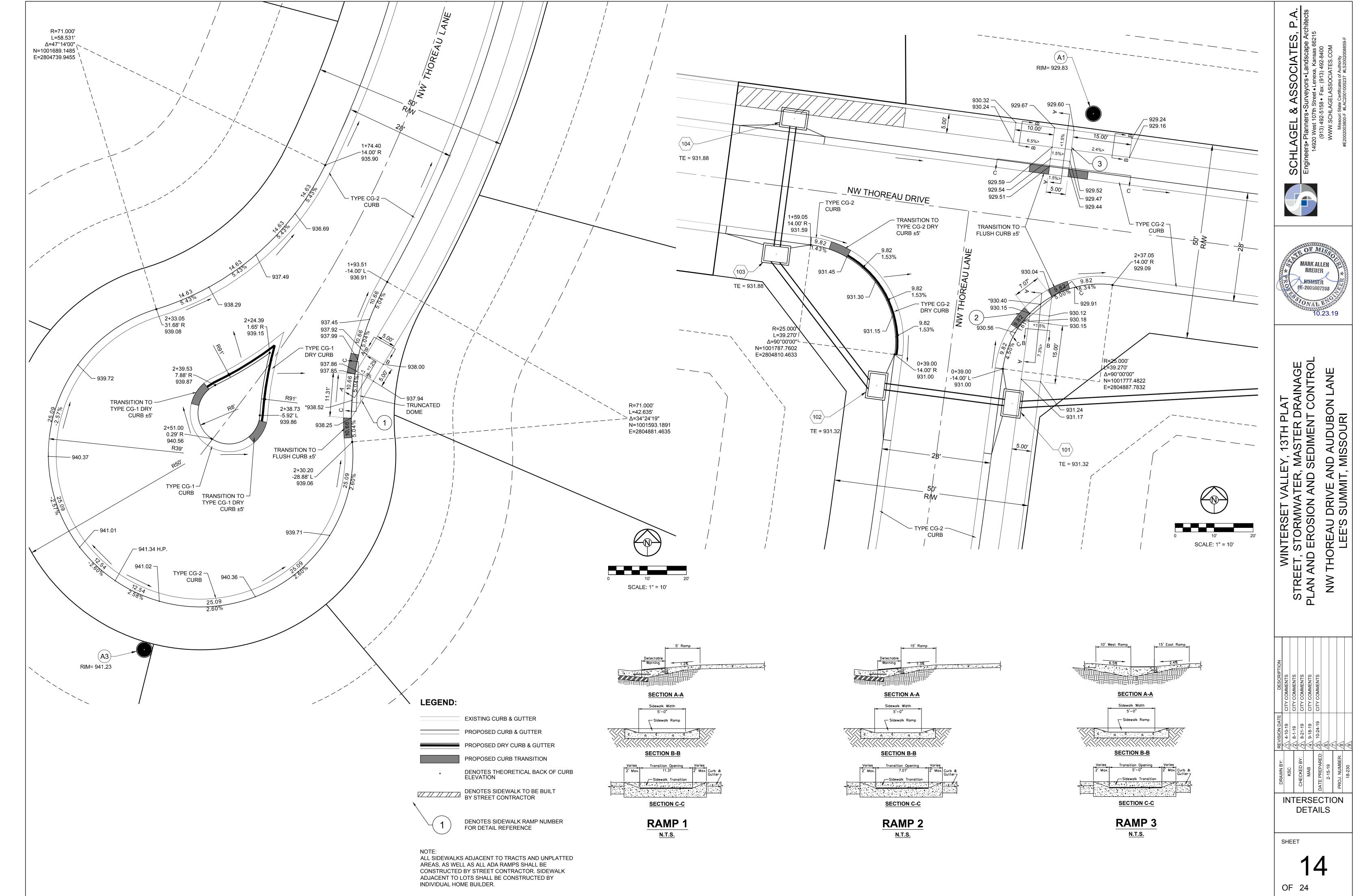


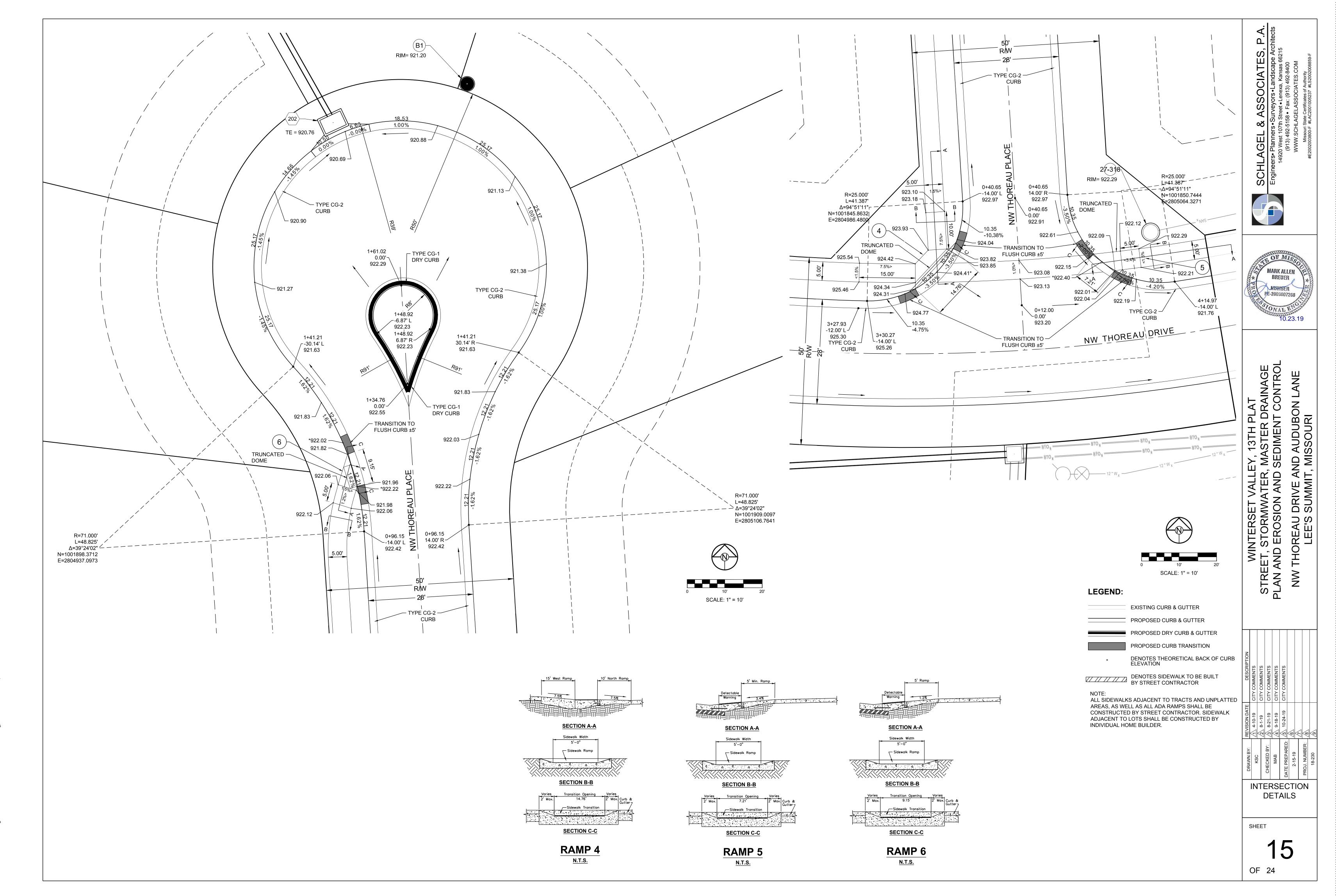


WINTERSET VALLE STREET, STORMWATER, PLAN AND EROSION AND NW THOREAU DRIVE AN LEE'S SUMMIT,

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MAB	9-18-19	CITY COMMENTS
PRFPARFD:	<u> </u>	CITY COMMENTS
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18-230		
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NW THOREAU PLACE AND NW THOREAU LANE PLAN AND SHEEPROFILE





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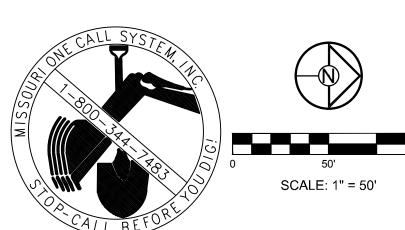
ELEV. 993.11'

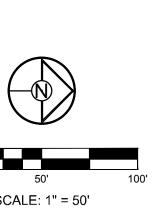
PROJECT BENCH MARK:

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 2+72.43, LINE 100 INSTALL 6 X 4 CURB INLET N 1001844.8828 E 2804809.5179
200	STA -0+00.04, LINE 200 INSTALL 18 INCH HDPE END SECTION W/ TOEWALL AND 5 CY STONE RIP RAP N 1002174.0148 E 2805009.7732
201	STA 0+88.27, LINE 200 INSTALL 4 X 4 AREA INLET WITH OPENING TO SOUTHEAST F.F.B. S30°27'54"E N 1002129.2388 E 2804933.6522
202	STA 2+22.88, LINE 200 INSTALL 6 X 4 CURB INLET N 1002011.9194 E 2804999.6569
301	STA 1+02.91, LINE 300 INSTALL 4 X 4 AREA INLET WITH OPENING TO SOUTHEAST F.F.B. S41°03'59"E N 1002064.8666 E 2804853.3638
400	STA 0+00.00, LINE 400 INSTALL 42" HDPE END SECTION W/ TOEWALL AND 8 CY STONE RIP RAP N 1002306.4992 E 2805286.6945
401	STA 0+74.07, LINE 400 INSTALL 6 X 6 CURB INLET N 1002373.9490 E 2805317.2915
402	STA 1+10.07, LINE 400 INSTALL 6 X 4 CURB INLET N 1002409.3973 E 2805323.5696
500	STA -0+00.04, LINE 500 INSTALL 48" HDPE END SECTION W/ TOEWALL AND SCOUR BASIN N 1002503.0403 E 2805400.4139
501	STA 2+36.72, LINE 500 INSTALL 6 X 6 DETENTION STRUCTURE W/ OPENING TO SOUTHW F.F.B. S55°25'42"E N 1002308.1861 E 2805265.9260





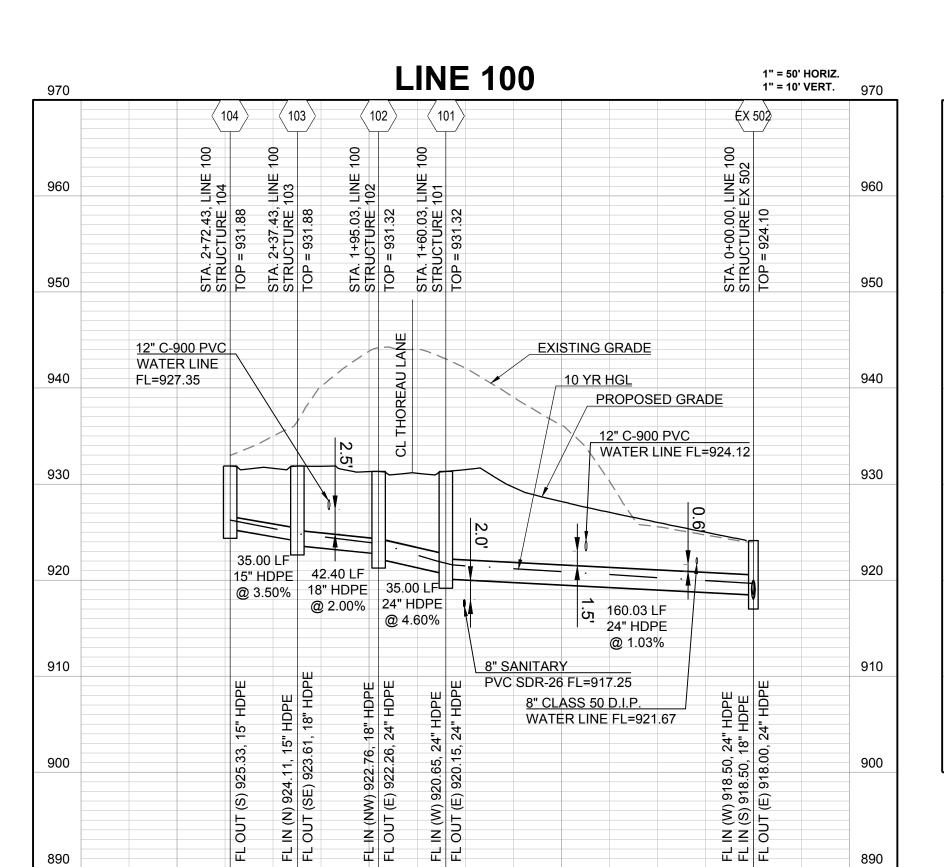
STORM PLAN

SHEET

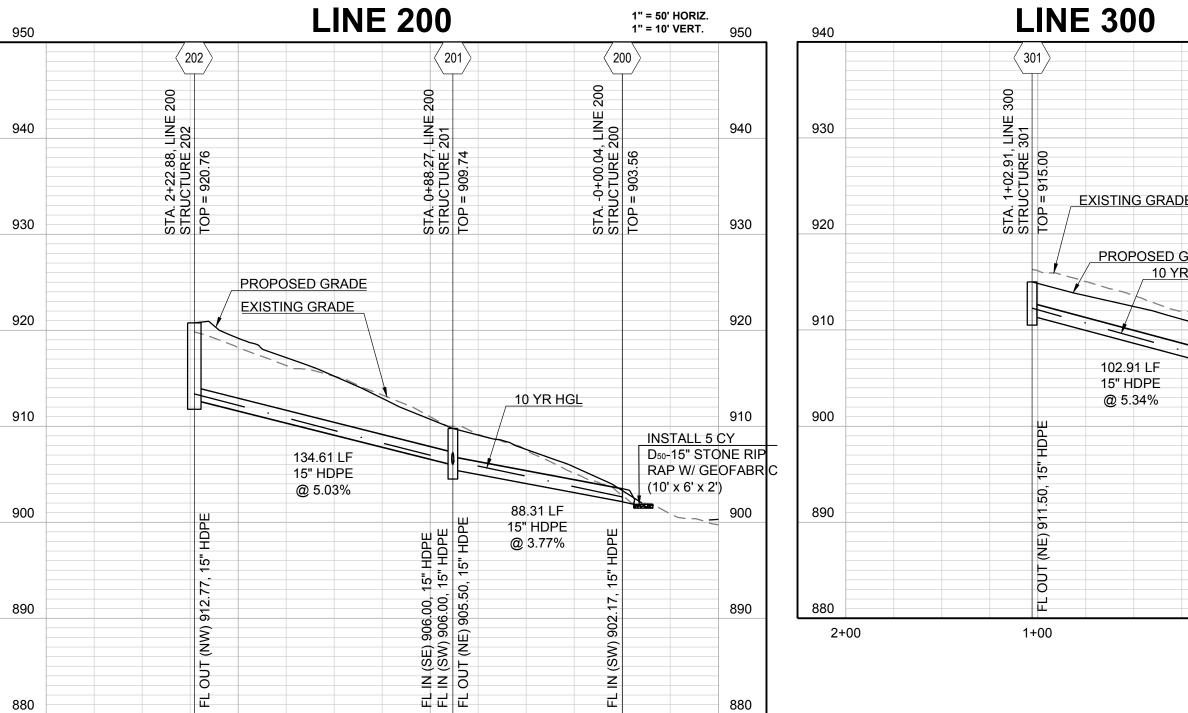
16 OF 24

WINTERSET VALLE STREET, STORMWATER, PLAN AND EROSION AND

NW THOREAU DRIVE AN LEE'S SUMMIT,

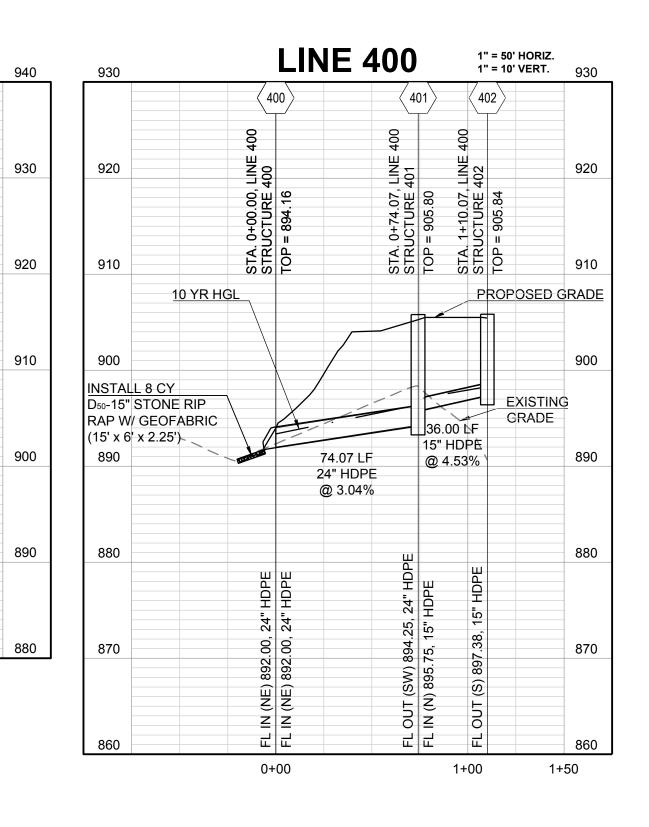


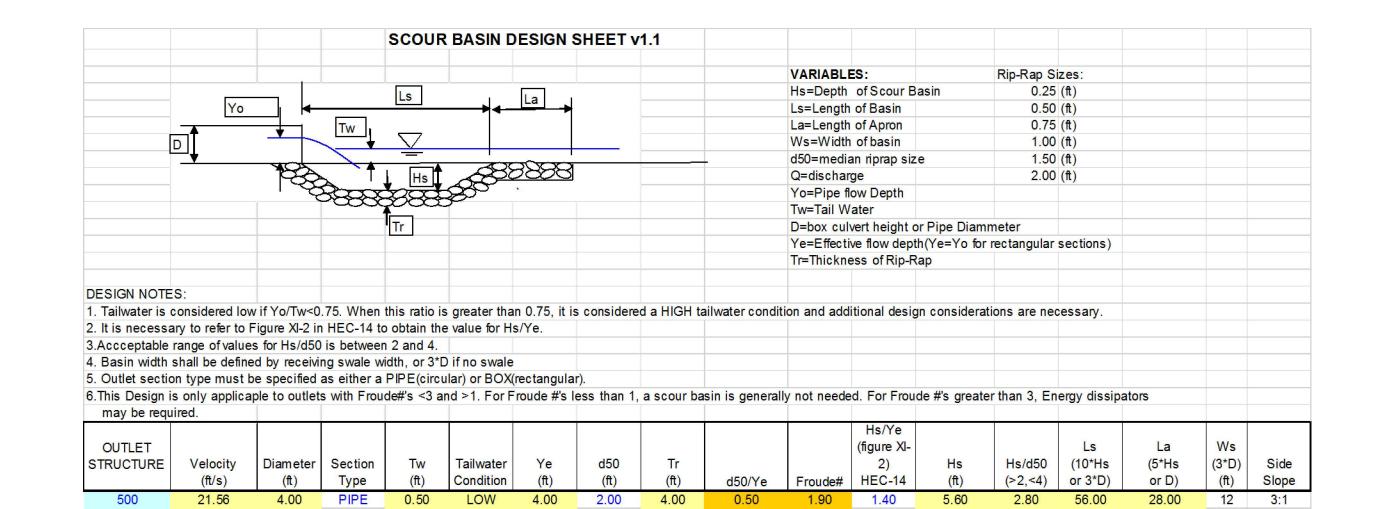
3+50



2+00

1+00

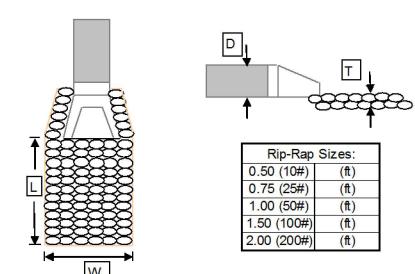




OUTLET RIP-RAP DESIGN WORKSHEET v1.0

FL IN (SE) 9 FL IN (SW) FL OUT (NE

1" = 50' HORIZ. 1" = 10' VERT.



DESIGN NOTES:	
1. Rip-Rap width calculated to be either D+4',3*D, or top width of channel, whichever is greater	

2. Rip-Rap length calculated to be 1/(2*tan(e))*(A/Yt-3), where e=20°,A=flow area, and Yt=normal depth

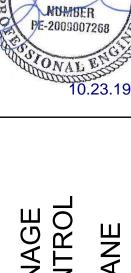
3. D50 calculated using (1/2)(1.384*V²/(s-1)*2g (Eqn.10, pg.32, HEC-11), where V=Outlet Velocity,

s=Specific Gravity of Stone=2.65, and g=32.2

4.Critical Shear Stresses provided by A.P.W.A. 5600 5.Rip-Rap thickness equals 2*D50 for 12" and smaller rip-rap, and 1.5*D50 for larger than 12"

Outlet/Channel Properties Ri							tip-Rap Dimensions									
Outlet Structure	Pipe Size (ft)	Downstream Channel/Swale Section	V Pipe (ft/s)	V Swale (ft/s)	Average Shear Stress (lb/ft^2)	W Calculated (ft)	W USED (ft)	L Calculated (ft)	L (min.) 3*D (ft)	L (max.) 10*D (ft)	L USED (ft)	D50 Calculated (in)	Size (Wt.) USED (d50,in)	Critical Shear Stress (lb/ft^2)	T (ft)	
200	1.25	N/A	11.07	N/A	N/A	5.25	6	n/a	3.75	12.50	10	0.80	1.00 (50#)	4.00	2.00	
400	2.00	N/A	14.04	N/A	N/A	6.00	6	n/a	6.00	20.00	15	1.28	1.50 (100#)	5.16	2.25	





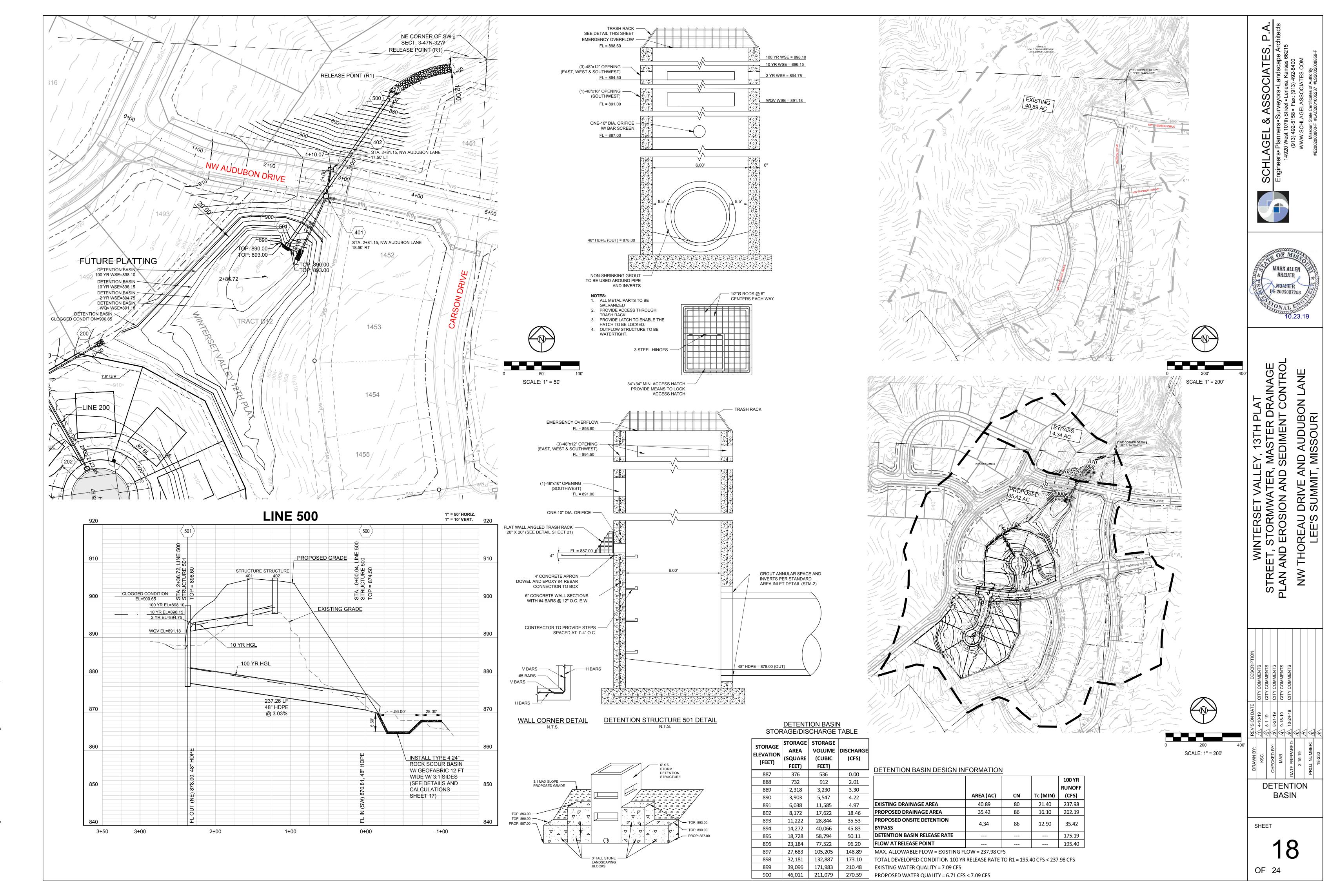
MARK ALLEN BREUER

LEY, 13TH PLAT 8, MASTER DRAINAGE 9) SEDIMENT CONTROL ND AUDUBON LANE MISSOURI DRIVE AN SUMMIT, WINTERSET VALLE STREET, STORMWATER, PLAN AND EROSION AND NW THOREAU [LEE'S {

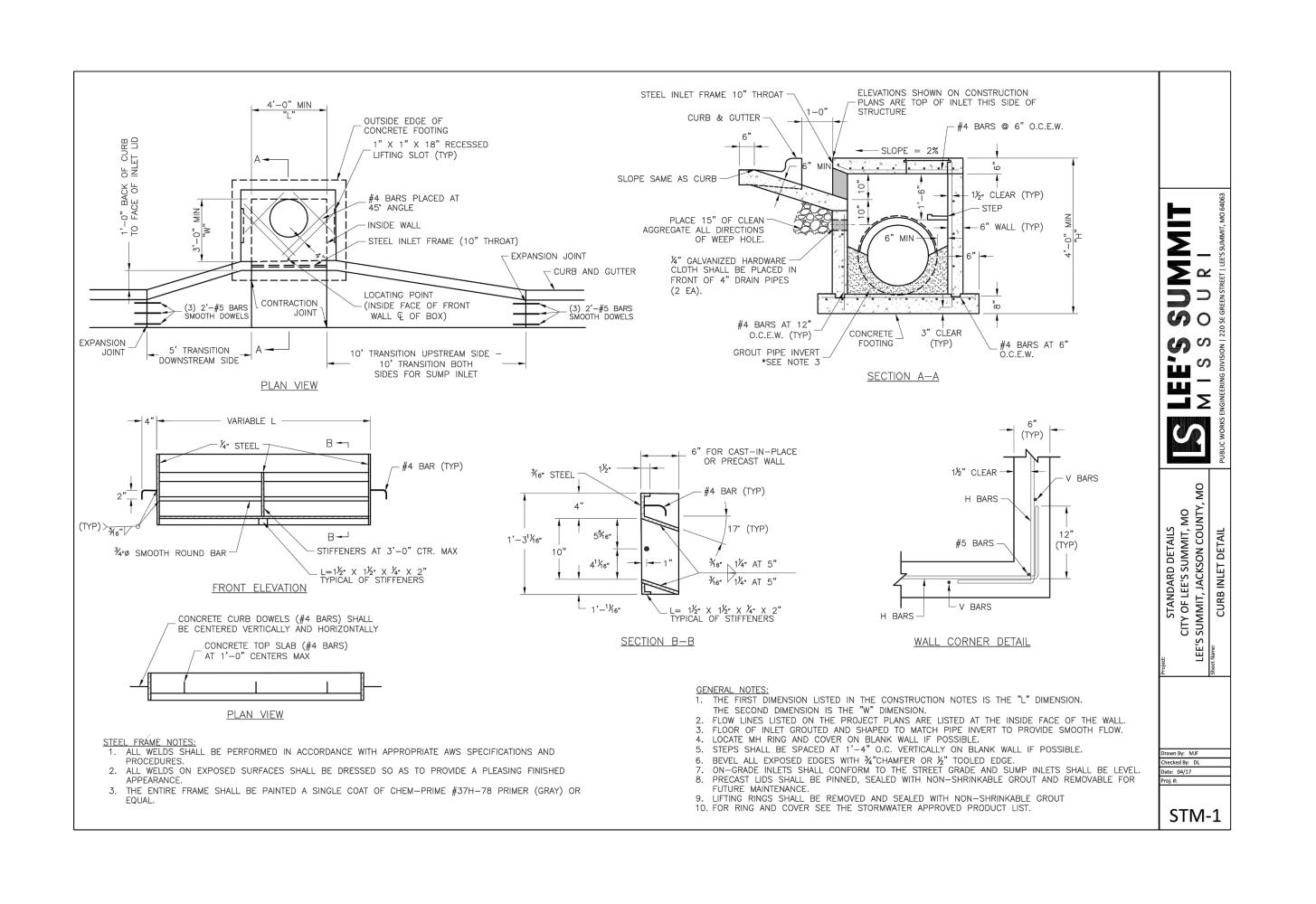
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DRAWN BY:	NSC.	2021		CHECKED BY:	MAB	DATE PREPARED:	2.15.10	61-01-2	PROJ. NUMBER:	18-230

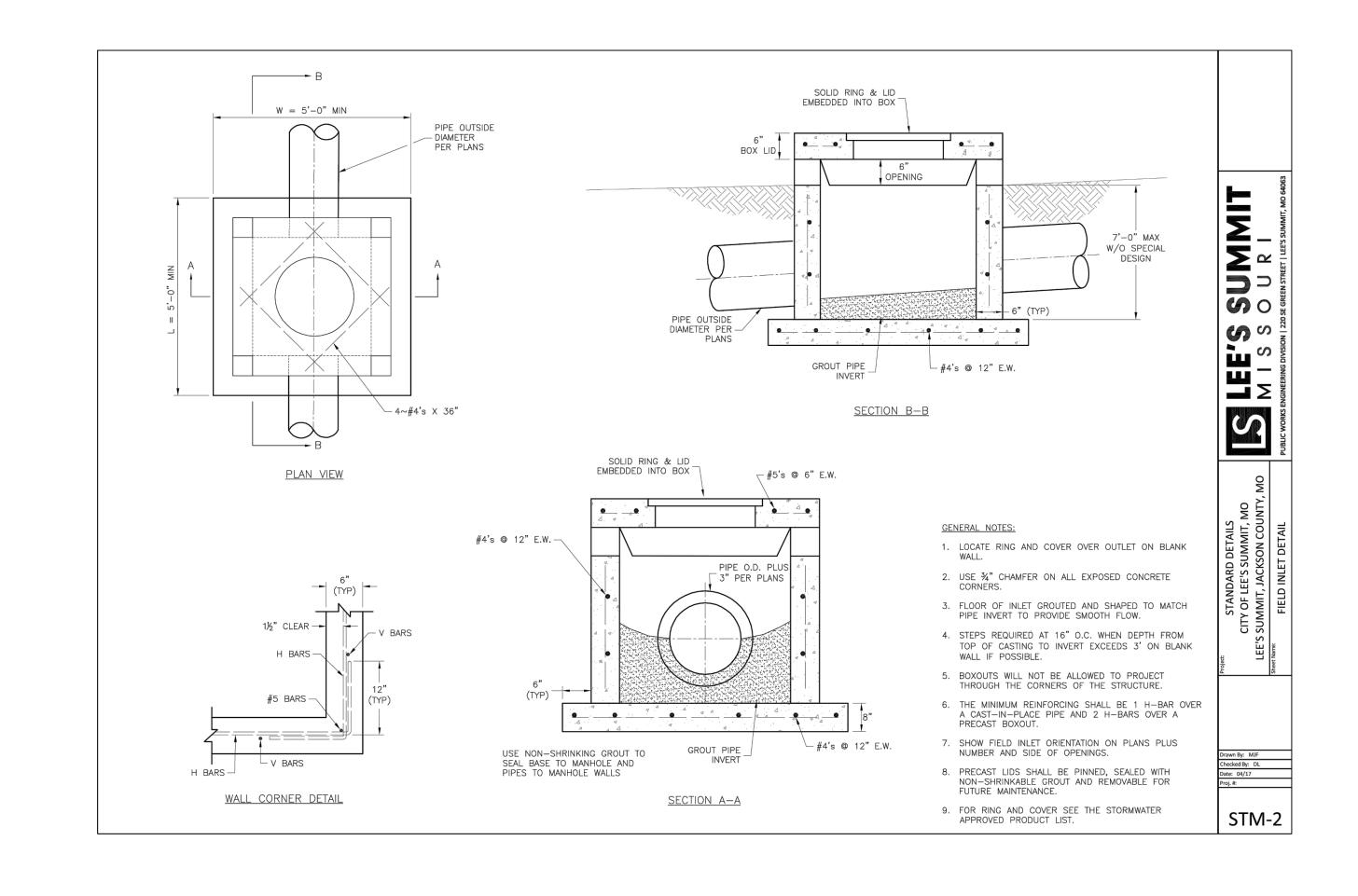
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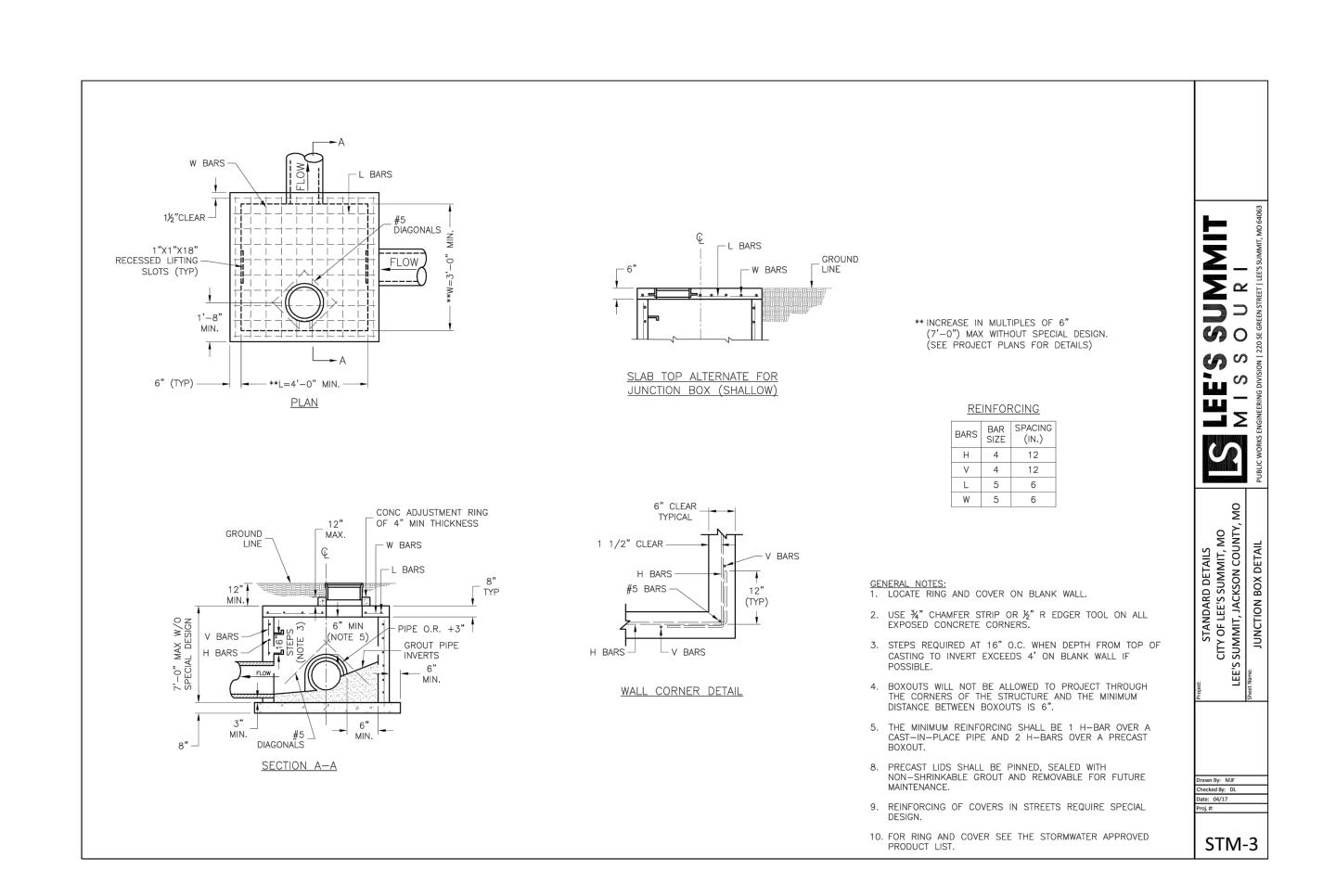
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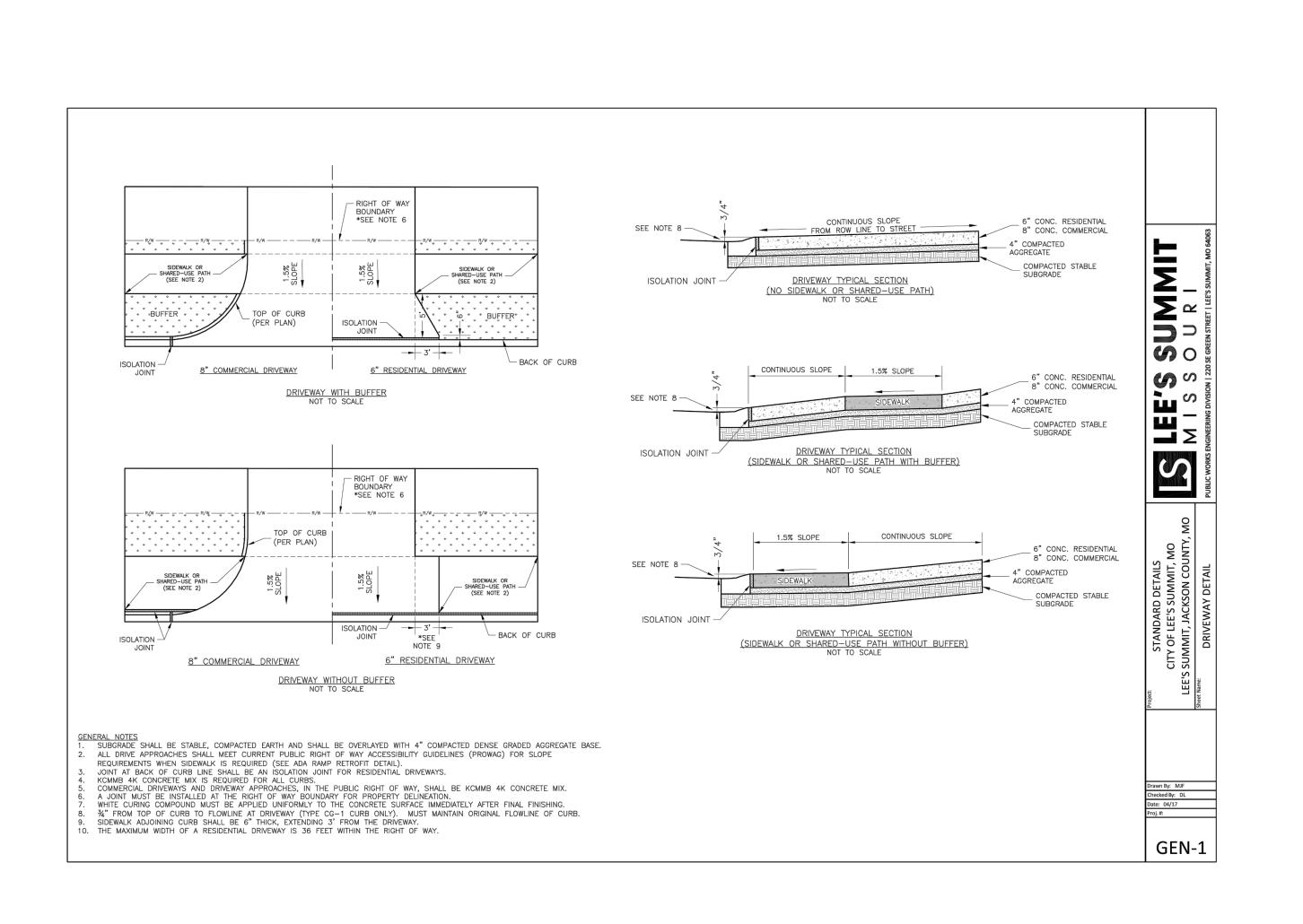


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MARK ALLEN BREUER

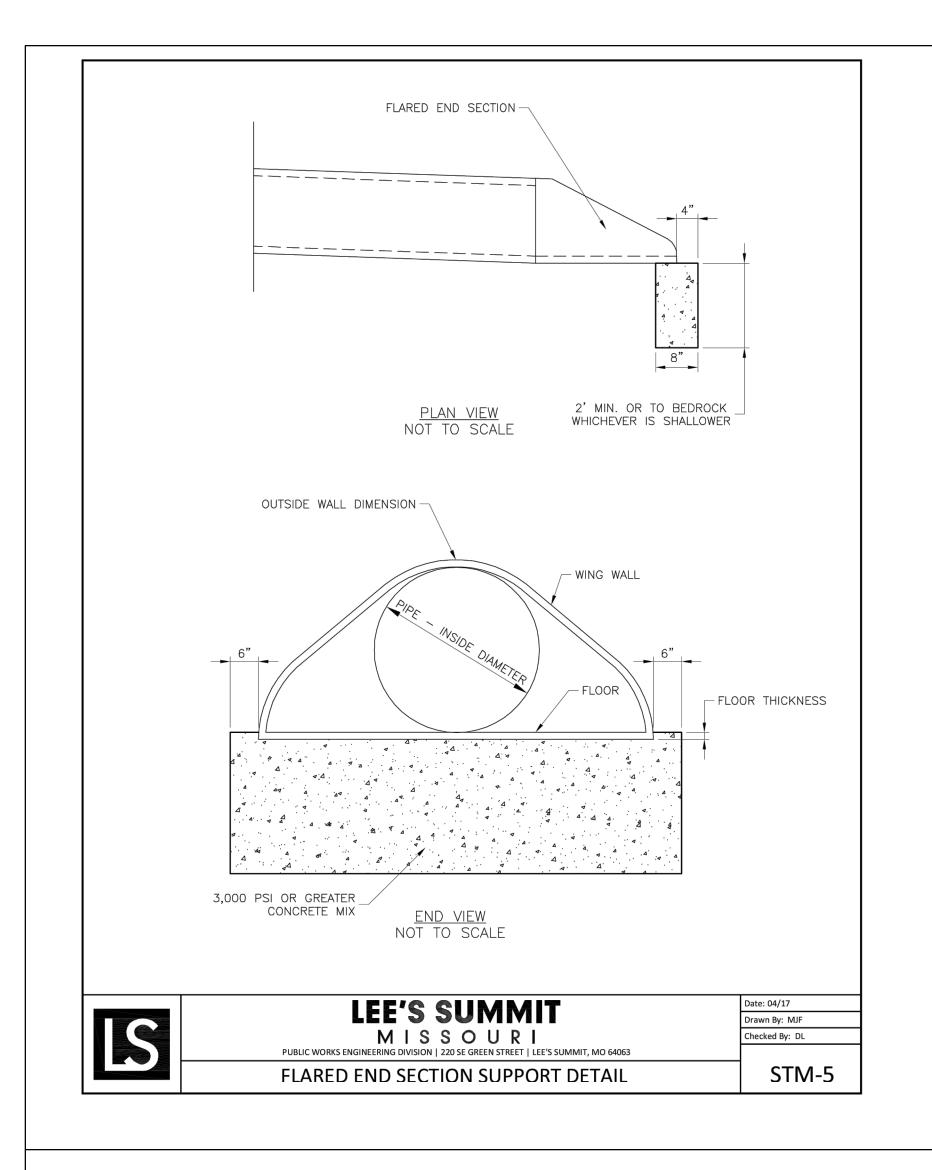
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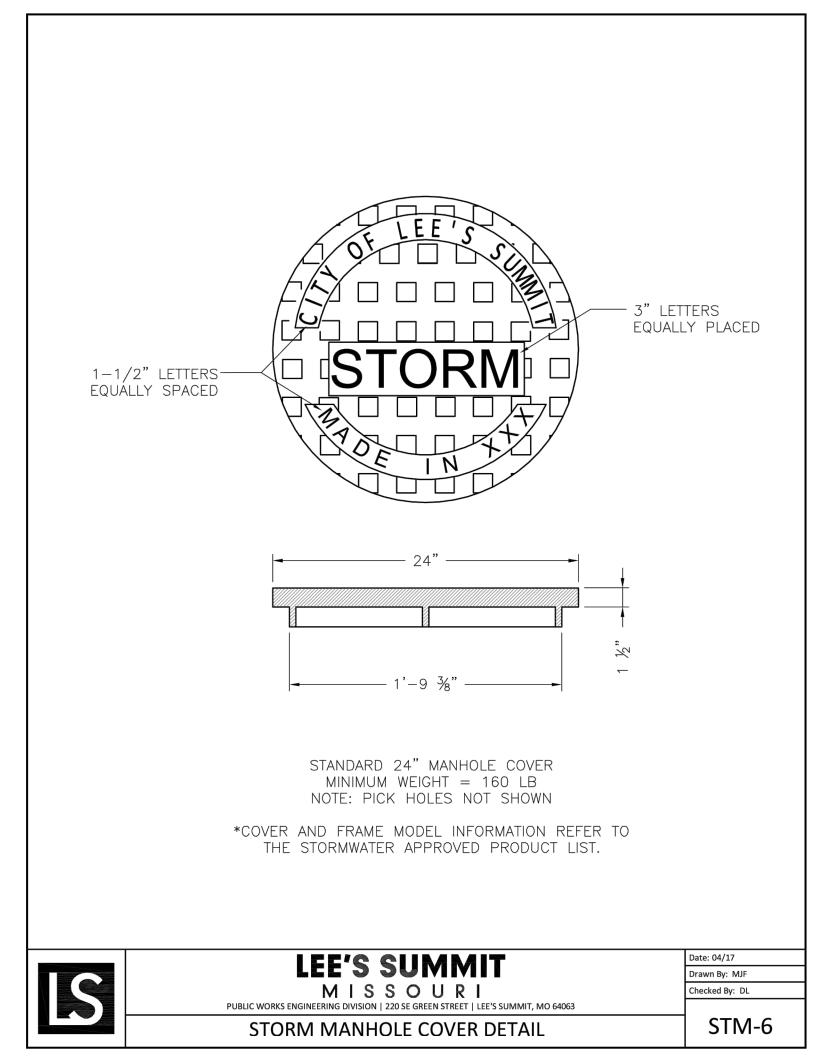
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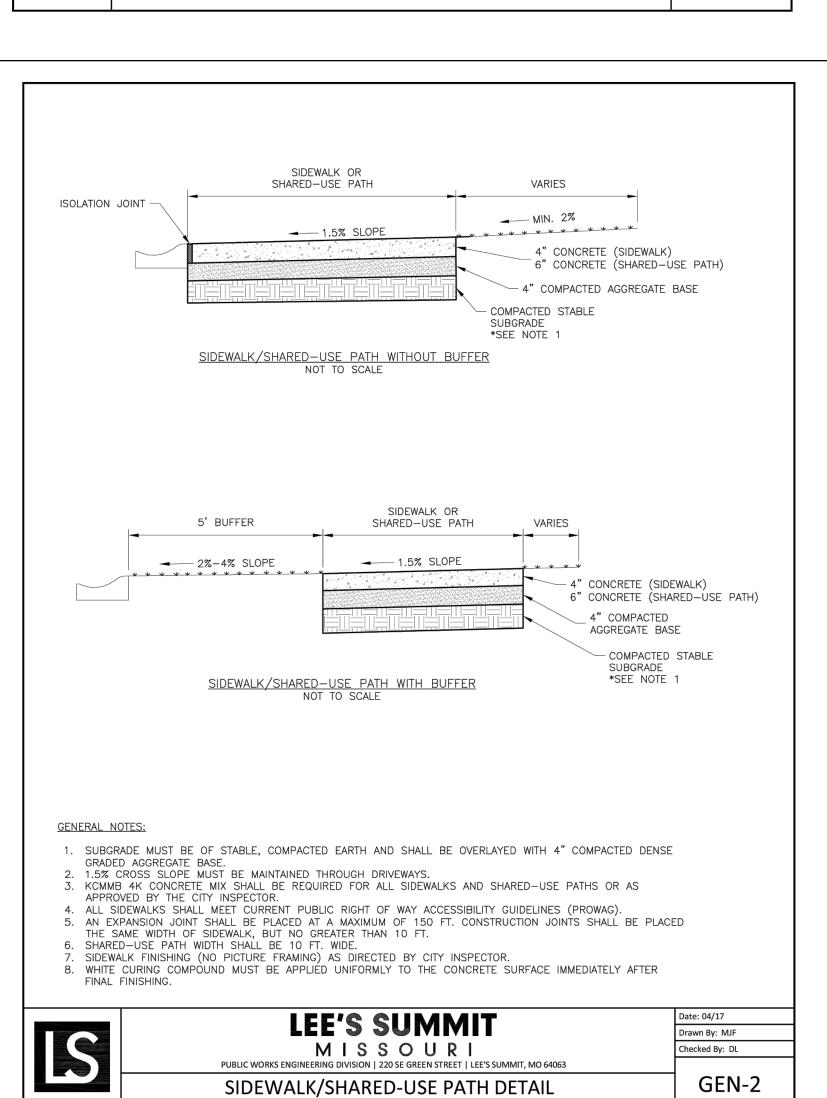
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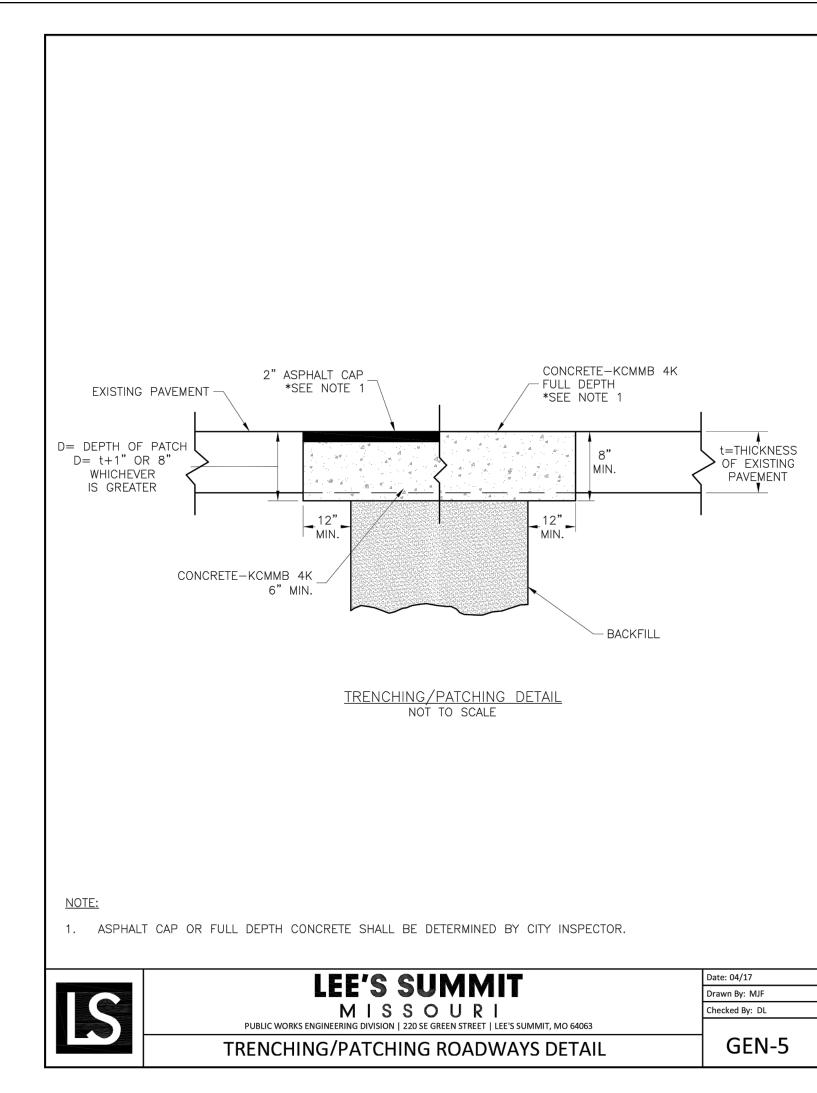
STREET AND STORM DETAILS

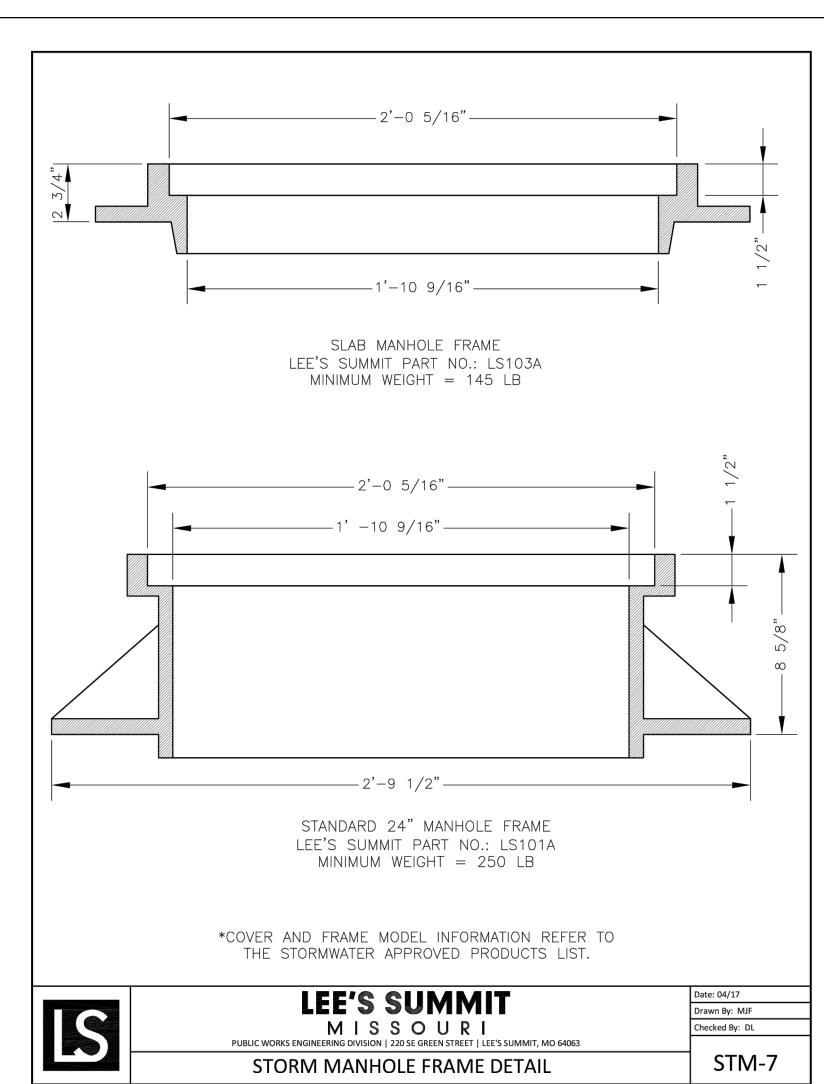
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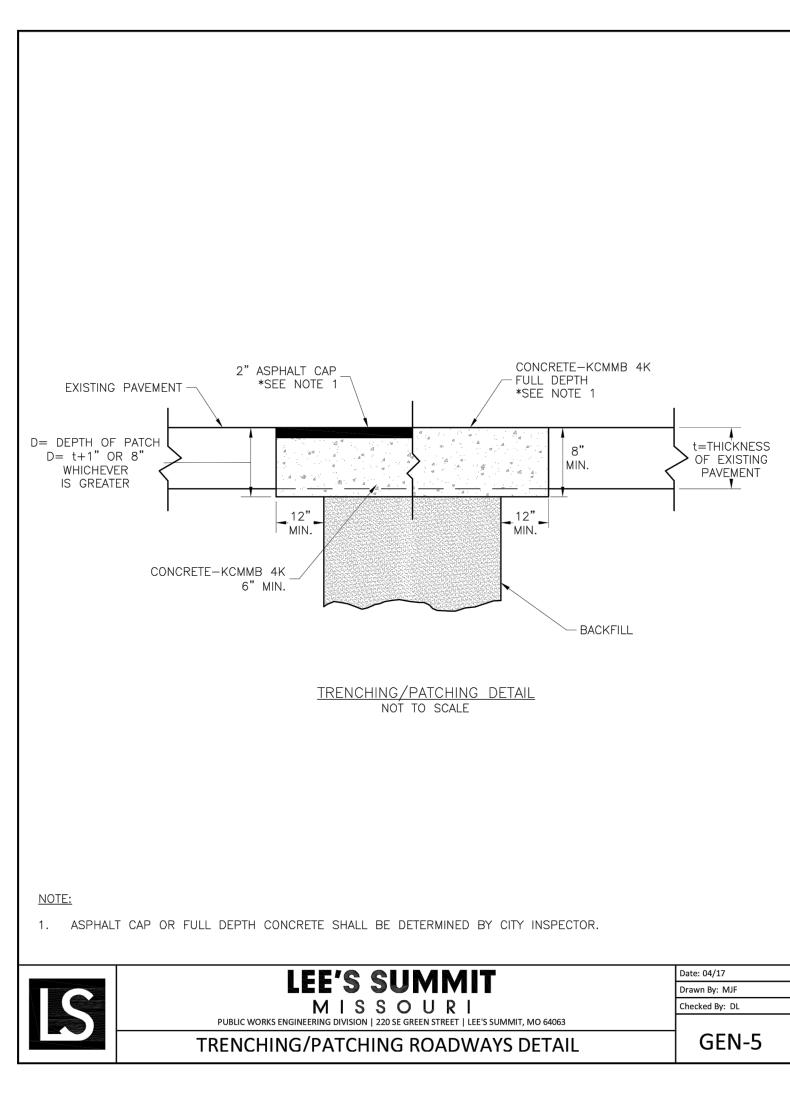


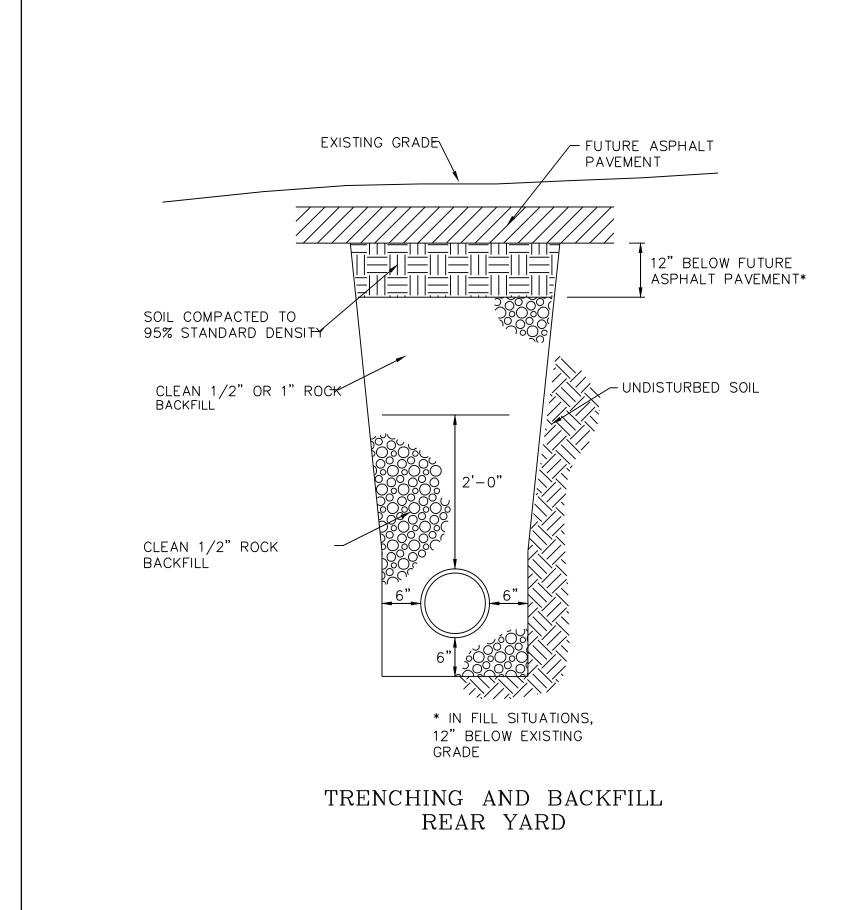


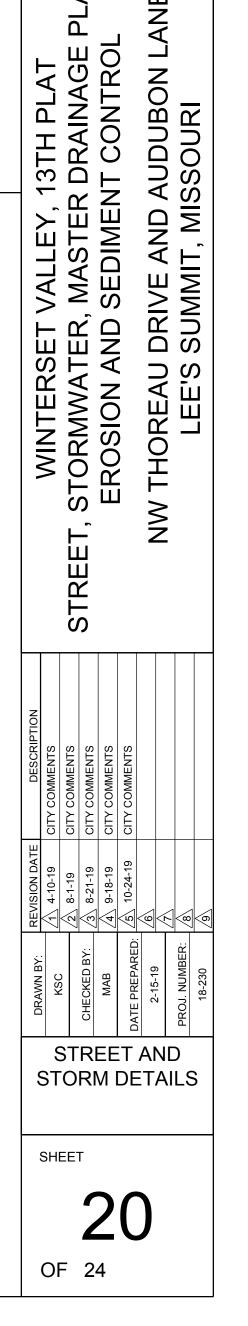








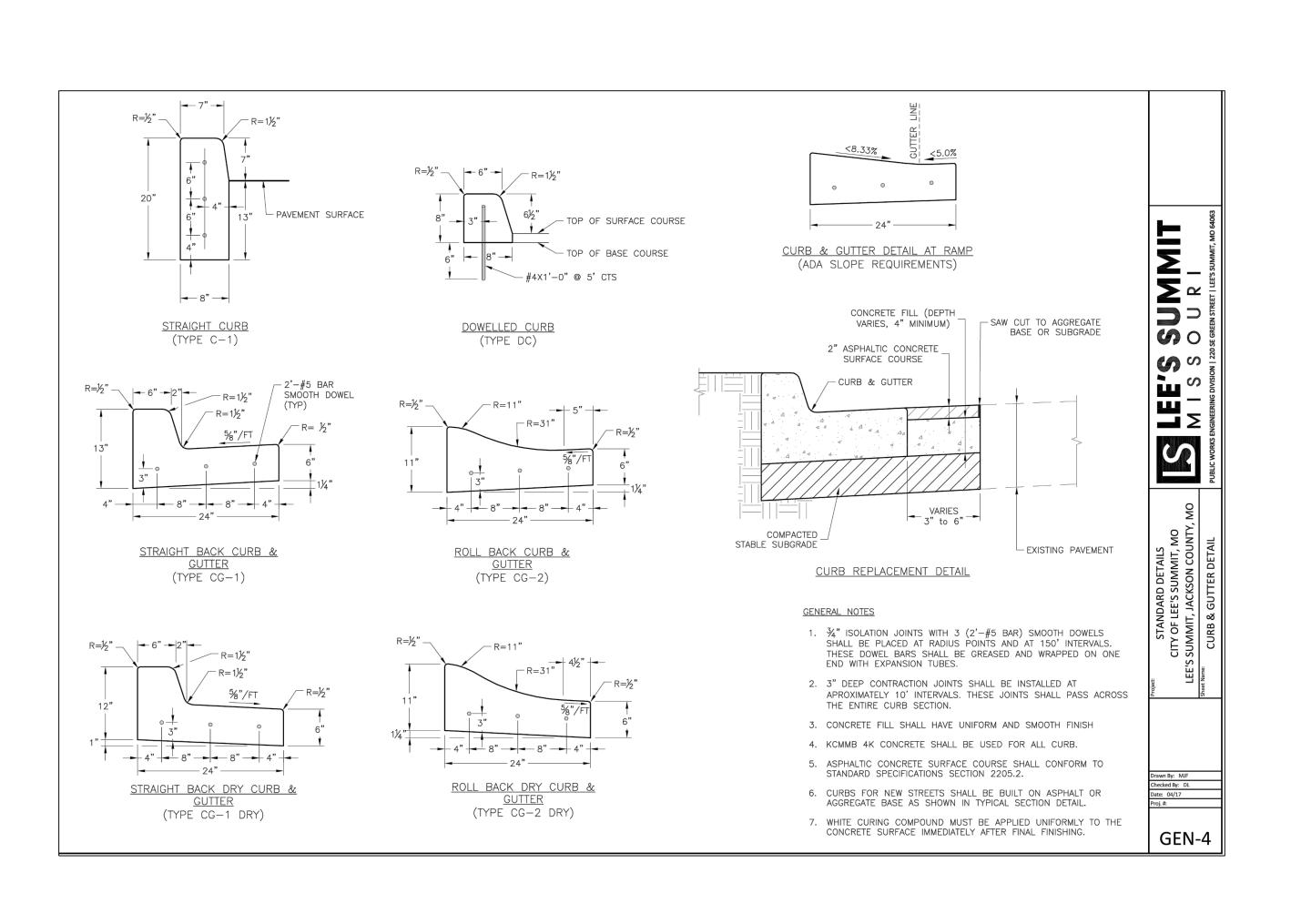


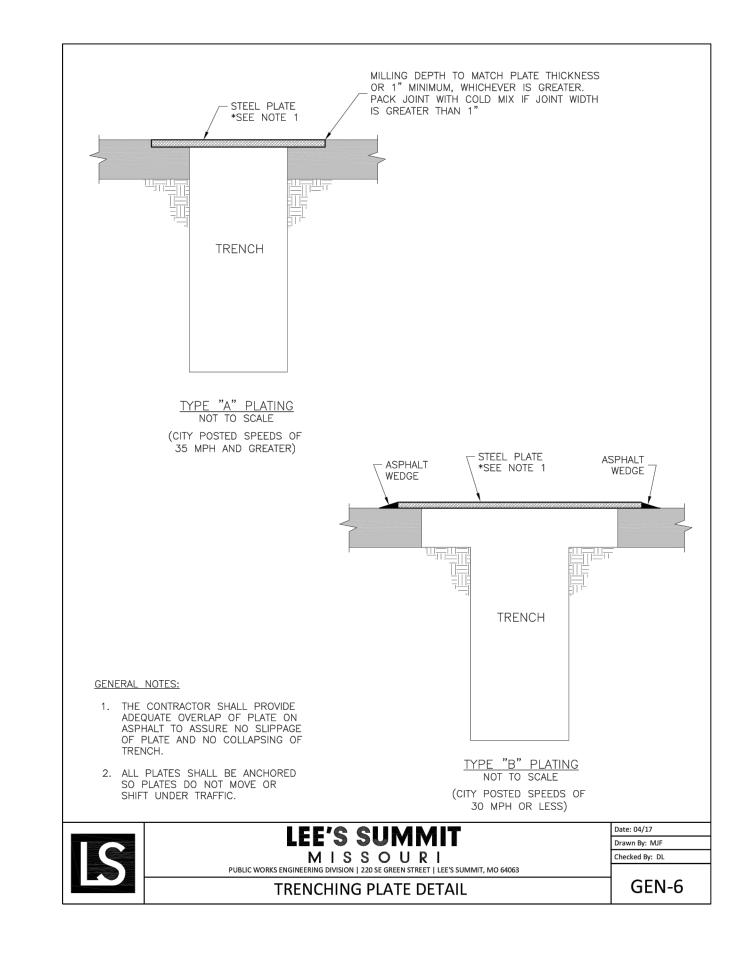


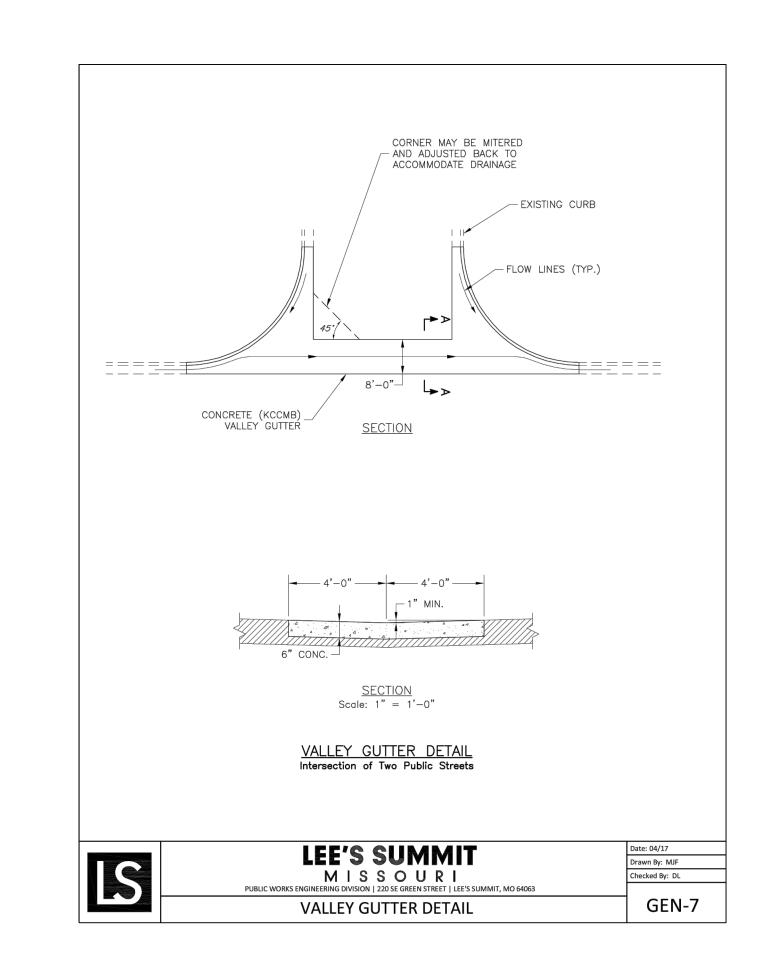
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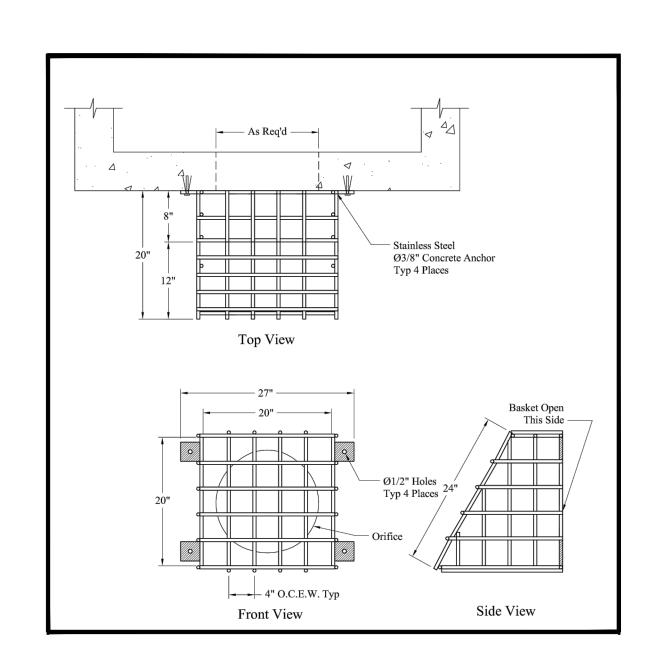
MARK ALLEN

BREUER









FLAT WALL TRASH RACK ANGLED 20" X 20"

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

MARK ALLEN

BREUER

MUMBER

PE-2009007268

 WN BY:
 REVISION DATE
 DESCRIPTION

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 1 4-10-19
 CITY COMMENTS

 KED BY:
 2 8-1-19
 CITY COMMENTS

 REPARED:
 4 9-18-19
 CITY COMMENTS

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 CITY COMMENTS

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STREET AND STORM DETAILS

SHEET

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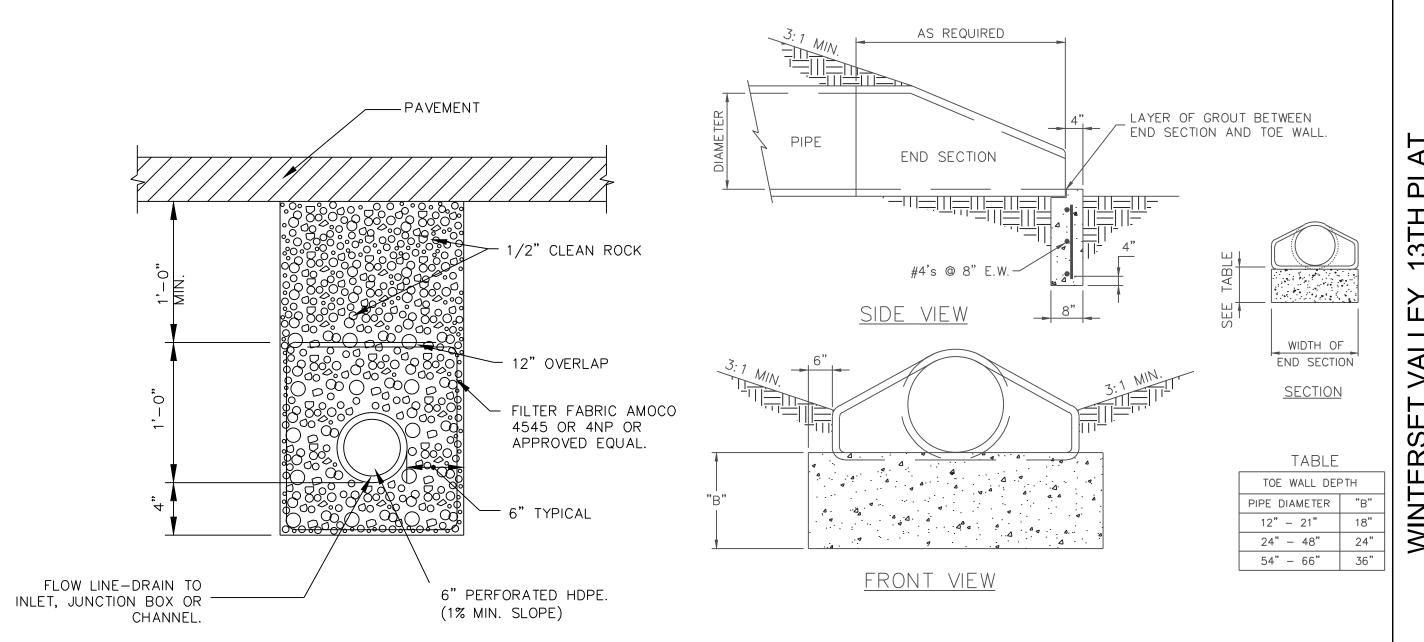
Street Classification	Pavement Option	AC Surface (in.)	AC Base (in.)	MoDOT Type 5 Base (in.)	Geogrid(1)	Chemical Subgrade Stabilization(2 (in.)
Residential Local/Access	A	2	4	6		6
	В	2	4	10	Geogrid	
Residential Collector	A	2	5.5	6		9
	В	2	5.5	12	Geogrid	
Commercial Industrial	A	2	7.5	6		9
Local/Collector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



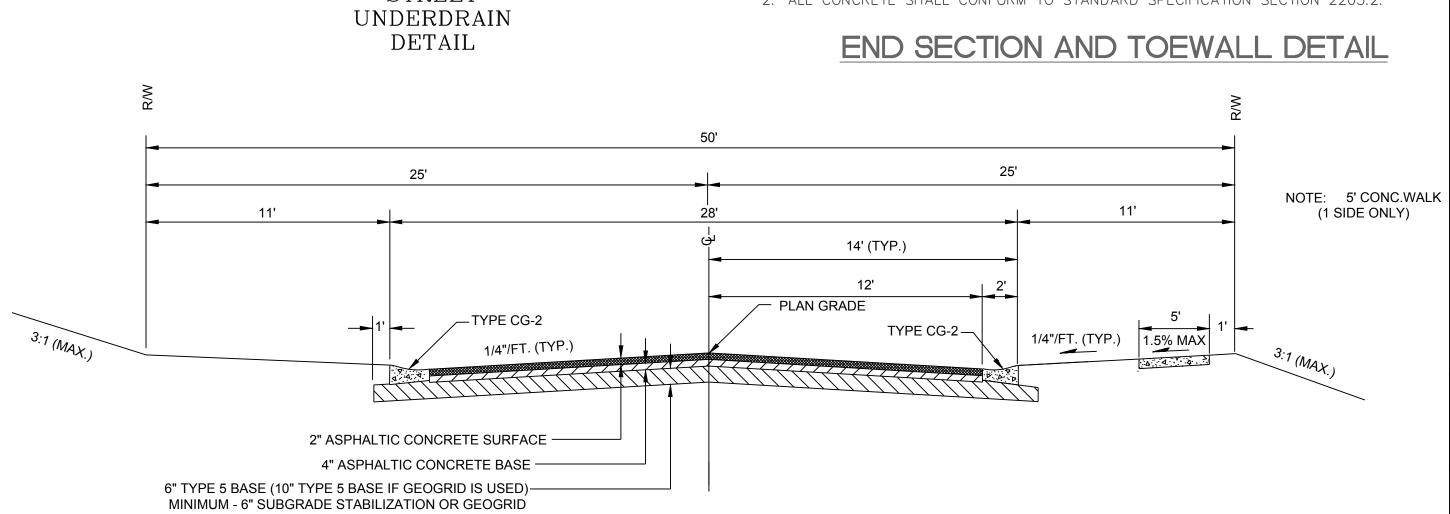
NOTES:

STREET

THE DEPTH OF THE TOE WALL SHALL BE PER TABLE. IF BEDROCK IS ENCOUNTERED A MINIMUM OF 12" INTO BEDROCK IS REQUIRED.

2. ALL CONCRETE SHALL CONFORM TO STANDARD SPECIFICATION SECTION 2205.2.

END SECTION AND TOEWALL DETAIL



RESIDENTIAL LOCAL/ACCESS

NW THOREAU DR STA. 1+35.24 TO STA. 4+25.27

THOREAU LN STA. 0+00 TO STA. 2+56

THOREAU PL STA. 0+00 TO STA. 1+65.97

STREET AND

DRIVE AN SUMMIT,

STORM DETAILS

SHEET

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:

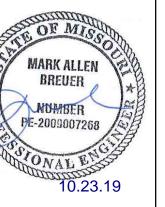
SANITARY MANHOLE H2 AT NW CORNER OF LOT 1153 WINTERSET VALLEY 1ST PLAT, APPROX. 39' RT. OF CL OF NW PEALE BLVD.

ELEV.935.45'

P.A.

ASSOCIATES,





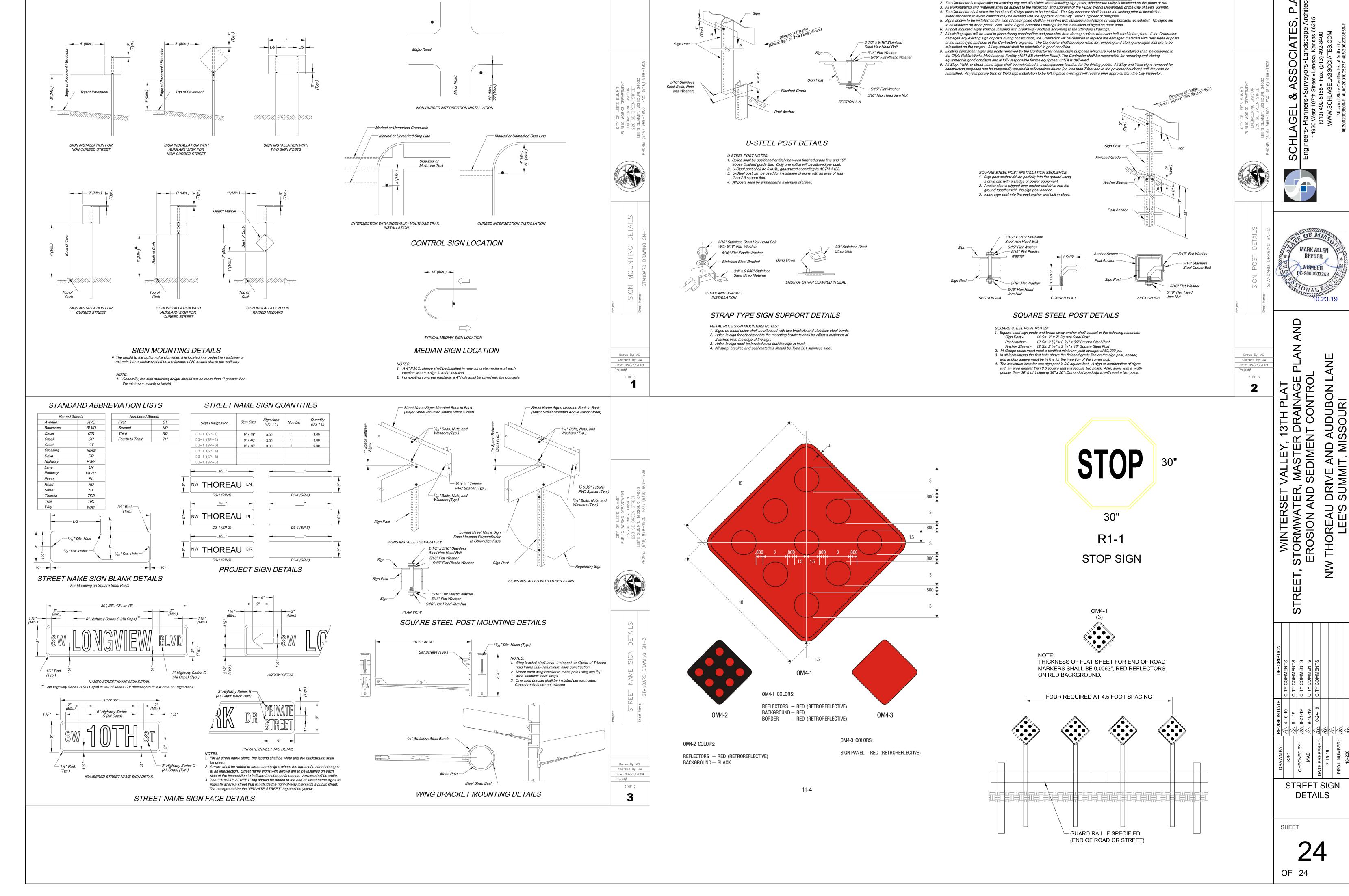
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SIGNING PLAN

SHEET OF 24





PERMANENT SIGNING GENERAL NOTES:

1. All signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).