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LEGEND:

A/E

BC

B/B

BM

BL or B.L.

CO

TJB

C&G

D/E

E/E

EL

FL

G/E

HDPE

L/E

MSFE

PVC

P/L

PUB/E

RCP

ROW or R/W

S/E

SL

S/W

TE

U/E

WSE

W/E

- ACCESS EASEMENT

- BACK OF CURB

- BACK TO BACK

- BENCHMARK

- BUILDING LINE

- CLEANOUT

- TELEPHONE JUNCTION BOX

- CURB AND GUTTER

- DRAINAGE EASEMENT

- ELECTRICAL EASEMENT

- ELEVATION

- FLOW LINE

- GAS LINE EASEMENT

- HIGH-DENSITY POLYETHYLENE

- LANDSCAPE EASEMENT

- MINIMUM SERVICEABLE FLOOR ELEVATION

- POLYVINYL CHLORIDE

- PROPERTY LINE

- PUBLIC EASEMENT

- REINFORCED CONCRETE PIPE

- RIGHT-OF-WAY

- SANITARY SEWER EASEMENT

- SERVICE LINE

- SIDEWALK

- TOP ELEVATION

- UTILITY EASEMENT

- WATER SURFACE ELEVATION

- 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

SANITARY SEWER MAIN

SANITARY SEWER MAIN - EXIST.

STORM SEWER

STORM SEWER - EXISTING

CABLE TV - EXISTING

FIBER OPTIC CABLE - EXISTING

TELEPHONE LINE - EXIST.

ELECTRIC LINE - EXISTING

OHP_x

UNDERGROUND ELECTRIC - EX.

G_x

GAS LINE - EXISTING

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

SECTION 18-47N-31W

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 DeJarnette

1300 SE Hamblin Road

Lee's Summit, MO 64081

Office: (816) 347-4316

Cell: (816) 810-5234

ron.dejarnette@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 Schaffer

220 SE Green Street

Lee's Summit, MO 64063

(816) 969-1900

SUMMARY OF QUANTITIES

	ITEM	QUANTITY	UNITS
1	CLEANING, GRUBBING, AND DISPOSAL	1	L.S.
2	GRADING	1	L.S.
3	FLY ASH STABILIZATION (OR APPROVED EQUIVALENT)	4891	S.Y.
4	6" ASPHALT	4267	S.Y.
5	TYPE CG-2 CURB AND GUTTER	2810	L.F.
6	5' SIDEWALK	352	L.F.
7	SIDEWALK RAMPS	4	EA.
8	15" HDPE	970	L.F.
9	18" HDPE	415	L.F.
10	24" HDPE	70	L.F.
11	30" HDPE	97	L.F.
12	30" RCP	59	L.F.
13	36" HDPE	235	L.F.
14	36" RCP	25	L.F.
15	15' END SECTION	2	EA.
16	18' END SECTION	1	EA.
17	24' END SECTION	1	EA.
18	30' END SECTION	1	EA.
19	36' END SECTION	1	EA.
20	4'x4' GRATE INLET	6	EA.
21	6'x4' CURB INLET	11	EA.
22	4'x4' JUNCTION BOX	4	EA.
23	OUTLET STRUCTURES	3	EA.
24	RETAINING WALL (FRONT FACE WALL)	7491	S.F.
25	UNDERDRAIN	35	L.F.
26	SILT FENCE	5870	L.F.
27	CONSTRUCTION ENTRANCE	1	EA.
28	CONCRETE WASHOUT	1	EA.
29	EX. & PROP. CURB & INLET PROTECTION	33	EA.
30	SILT FOAM DIKE	7	EA.
31	EROSION CONTROL BLANKET	1800	S.F.
32	SEEDING & MULCHING	9	AC.
33	SEDIMENT BASIN	3	EA.
34	BONDS	1	L.S.

VICINITY MAP

N.T.S.

STREET, STORMWATER, MASTER DRAINAGE, AND EROSION CONTROL PLANS

FOR WOODLAND GLEN 2ND 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 APPARENT FIELD LOCATIONS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
- 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.
- 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.
- THE CONTRACTOR SHALL PROTECT ALL MAJOR TREES FROM DAMAGE. NO TREE SHALL BE REMOVED WITHOUT PERMISSION OF THE OWNER, UNLESS SHOWN OTHERWISE.
- 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.
- ALL WASTE MATERIAL RESULTING FROM THE PROJECT SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR, OR AS DIRECTED BY THE OWNER.
- ALL EXCAVATIONS SHALL BE UNCLASSIFIED. NO SEPARATE PAYMENT WILL BE MADE FOR ROCK EXCAVATION.
- THE CONTRACTOR SHALL CONTROL THE EROSION AND SILTATION DURING ALL PHASES OF CONSTRUCTION, AND SHALL KEEP THE STREETS CLEAN OF MUD AND DEBRIS.
- ALL MANHOLES, CATCH BASINS, UTILITY VALVES AND METER PITS TO BE ADJUSTED OR REBUILT TO GRADE AS REQUIRED.
- THE CONTRACTOR SHALL CONTACT DEVELOPMENT SERVICES INSPECTOR AT: 816-969-1200 PRIOR TO OBTAIN A DEVELOPMENT SERVICES CONSTRUCTION PERMIT. A MINIMUM 48 HOUR NOTICE SHALL BE GIVEN PRIOR TO PERMIT ISSUANCE.
- 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:

- 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.
- ALL INSPECTION OF STREET CONSTRUCTION TO BE PERFORMED BY THE CITY OF LEE'S SUMMIT DEVELOPMENT SERVICES 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 (LOCAL).
- 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.

35	STOP SIGNS WITH STREET NAMES	3	EA.
36	OM4-1 END OF ROAD MARKERS	3	EA.

EARTHWORK:

- IT IS RECOMMENDED THAT A GEOTECHNICAL ENGINEER OBSERVE AND DOCUMENT ALL EARTHWORK ACTIVITIES.
- 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.
- 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 JULY 18TH, 2016. 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.
- PROPOSED CONTOURS ARE TO APPROXIMATE FINISHED GRADE.
- 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.
- UNLESS OTHERWISE NOTED, ALL EARTHWORK IS CONSIDERED UNCLASSIFIED. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR ROCK OR SHALE EXCAVATION, UNLESS SPECIFICALLY STATED OTHERWISE.
- 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.
- 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.
- 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).
- 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 BENCHED.
- 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.
- ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE. UNLESS NOTED OTHERWISE THE FOLLOWING GRADES SHALL APPLY:
 - TURF AREAS - 2.5% MINIMUM, 4H:1V MAXIMUM
 - PAVED AREAS - 1.2% MINIMUM, 5% MAXIMUM
- 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.
- ALL DISTURBED AREAS IN THE RIGHT-OF-WAY SHALL BE SODDED.
- UNDERDRAINS ARE RECOMMENDED FOR ALL PAVED AREAS ADJACENT TO IRRIGATED TURF AND LANDSCAPED BEDS.
- 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'S EXPENSE.
- 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.
- UTILITY SEPARATION: WATERLINES SHALL HAVE A MINIMUM OF 10 FEET HORIZONTAL AND 2 FEET VERTICAL SEPARATION FROM ALL STORM SEWER LINES. IF MINIMUM SEPARATIONS CAN NOT BE OBTAINED, CONCRETE ENCASEMENT OF THE STORM SEWER LINE SHALL BE REQUIRED 10 FEET IN EACH DIRECTION OF THE 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.

RECORD DRAWING

The information provided on this drawing conforms to construction records; it is not intended for construction, implementation or recording purposes; and it is solely based on information obtained by Schlager and Associates.

"100.00 100.10", "1.00% 1.15% slope", or "8-inch HDPE PVC pipe" are all typical examples of revisions that indicate that design data has been replaced with "as-built" information. All other data is as designed and has not been field verified.

Date: 1/10/2023
Certified by: RPM
Title: Design Engineer
Firm: Schlager and Associates, P.A.

Sheet List Table	
Sheet Number	Sheet Title
1	COVER
2	PRE-CLEARING PLAN
3	ECP CONSTRUCTION
4	ECP FINAL STABILIZATION
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 AREAS
11	MASTER DRAINAGE PLAN DRAINAGE CALCS
12	WINTHROP TERRACE PLAN & PROFILE
13	HEARTWOOD DRIVE PLAN & PROFILE
14	INTERSECTION DETAIL
15	INTERSECTION DETAILS
16	STORM PLAN
17	EDDB 1 OUTLET STRUCTURE
18	EDDB 2 OUTLET STRUCTURE
19	EDDB 3 OUTLET STRUCTURE
20	STORM PROFILE
21	STORM PROF CONT
22	STREET AND STORM DETAILS
23	STREET AND STORM DETAILS
24	STREET AND STORM DETAILS
25	SIGNING PLAN
26	SIGN DETAILS
27	TRAFFIC CONTROL PLAN
28	TRAFFIC CONTROL DETAILS

APPROVED BY:

CITY ENGINEER _____ DATE _____
APPROVED FOR ONE YEAR FROM THIS DATE

OWNER/DEVELOPER:

ABP FUNDING, LLC
JOHN DUGGAN
9101 W. 110TH STREET, SUITE 200
OVERLAND PARK, KANSAS 66210
p 913-208-2283
e JDUGGAN@KC-DSLAW.COM

Sue Pyles
Date: 2023.01.30
06:51:53-0600'

Record Drawing

PROJECT BENCHMARK:

SW. CORNER NW. 1/4 SEC. 18-47N-31W, JACKSON COUNTY, MO.
3" DIAMETER ALUMINUM DISK IN MONUMENT BOX
M.D.N.R. DOC. NO. 600-65374
ELEV. 1036.41

SCHLAGEL

ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS

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#E2002003600-F #LAC201005237 #LS200200859-F

WOODLAND GLEN 2ND PLAT
STREET, STORMWATER, MASTER DRAINAGE,
AND EROSION CONTROL PLANS
WARD ROAD & WINTHROP DRIVE
LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
1/10/2023	AS-BUILT REVISIONS
1/11/2023	AS-BUILT
08/22/2022	CITY WALL MODIFICATION
08/16/2022	CITY EMAILED COMMENTS

DRAWN BY:	DESCRIPTION
BAL	CITY COMMENTS
CHECKED BY:	SCHLAGEL QUANTITIES
MAB	SCHLAGEL QUANTITIES
DATE PREPARED:	CITY COMMENTS
2-19-2020	CITY COMMENTS
PROJ. NUMBER:	SCHLAGEL UPDATE
18-017	CITY COMMENTS
	WATER LINE CONFLICT

SHEET
1

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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

STRAW WATTLE OR COIL LOG STAKED & INSTALL PER MFR'S RECOMMENDATIONS

SF1

SILT FENCE (PRIOR TO LAND DISTURBANCE)

SF2

SILT FENCE (DURING CONSTRUCTION)

SILT SOCK / ROCK SOCK / SOCK WATTLE

..

LIMITS OF DISTURBANCE

965

EXISTING CONTOURS

965

PROPOSED CONTOURS

GRAVEL FILTER FOR STORM SEWER STRUCTURES ONLY

1

BMP PLAN REF. NO.

DISTURBED AREA = 9.74 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 29095C0419G 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.

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	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	4	FOAM SILT DIKE OR ROCK DITCH CHECK	E	PLACE WHERE INDICATED AT EXISTING SWALES AND DRAINAGE COURSES
B - MASS GRADING	5	SEDIMENT BASIN (REF. DETAIL ON SHEET 6)	E	TO BE INSTALLED PRIOR TO DISTURBING ENTIRE SITE.
	6	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
C - UTILITY CONSTRUCTION	7	FOAM SILT DIKE OR STRAW WATTLE/COIL LOG CHECK	E	PLACE WHERE INDICATED AS SOON AS SWALE IS ESTABLISHED, REPAIR OR REPLACE AS NECESSARY
	8	CONCRETE WASHOUT AREA	E	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
D - AFTER PAVING OPERATIONS	9	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
	10	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
	11	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
E - UNTIL CLOSURE OF LAND DISTURBANCE PERMIT	12	SEEDING AND MULCHING	E	ALL DISTURBED AREAS AFTER PRIOR TO 14 DAYS OF CONSTRUCTION INACTIVITY
	13			ADDITIONAL SEDIMENT AND EROSION CONTROL MEASURES MAY BE REQUIRED ANY TIME CURRENT MEASURES ARE FOUND TO BE INEFFECTIVE.

TOTAL DRAINAGE AREA TO TEMPORARY SEDIMENT BASIN
EDDB#1 AREA = 2.59 AC.
EDDB#2 AREA = 4.99 AC.
EDDB#3 AREA = 1.26 AC.

SEDIMENT VOLUME REQUIRED (3600 CU. FT./AC.)
EDDB#1 2.59 AC. * 3600 CU.FT./AC. = 9,324 CU.FT.
EDDB#2 4.99 AC. * 3600 CU.FT./AC. = 17,964 CU.FT.
EDDB#3 1.26 AC. * 3600 CU.FT./AC. = 4,536 CU.FT.

SEDIMENT VOLUME PROVIDED
EDDB#1 VOLUME @ 986.90 = 9,537 CU.FT.
EDDB#2 VOLUME @ 972.10 = 18,904 CU.FT.
EDDB#3 VOLUME @ 971.70 = 5,225 CU.FT.

RECORD DRAWING

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Date: 1/10/2023
Certified by: RPM
Title: Design Engineer
Firm: Schlager and Associates, P.A.

SCHLAGEL

ENGINEERS

PLANNERS

SURVEYORS

LANDSCAPE ARCHITECTS

14920 West 107th Street • Lenexa, Kansas 66215
(913) 492-5158 • Fax: (913) 492-8400
WWW.SCHLAGELASSOCIATES.COM
Missouri State Certificate of Authority
#E2002003600F #LAC201003237 #LS200200859F

WOODLAND GLEN 2ND PLAT
STREET, STORMWATER, MASTER DRAINAGE,
AND EROSION CONTROL PLANS
WARD ROAD & WINTHROP DRIVE
LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
11/02/2023	AS-BUILT REVISIONS
04/24/2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
06/15/2021	CITY COMMENTS
02/28/2021	CITY COMMENTS
2-19-2020	SCHLAGEL UPDATE
10/05/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT

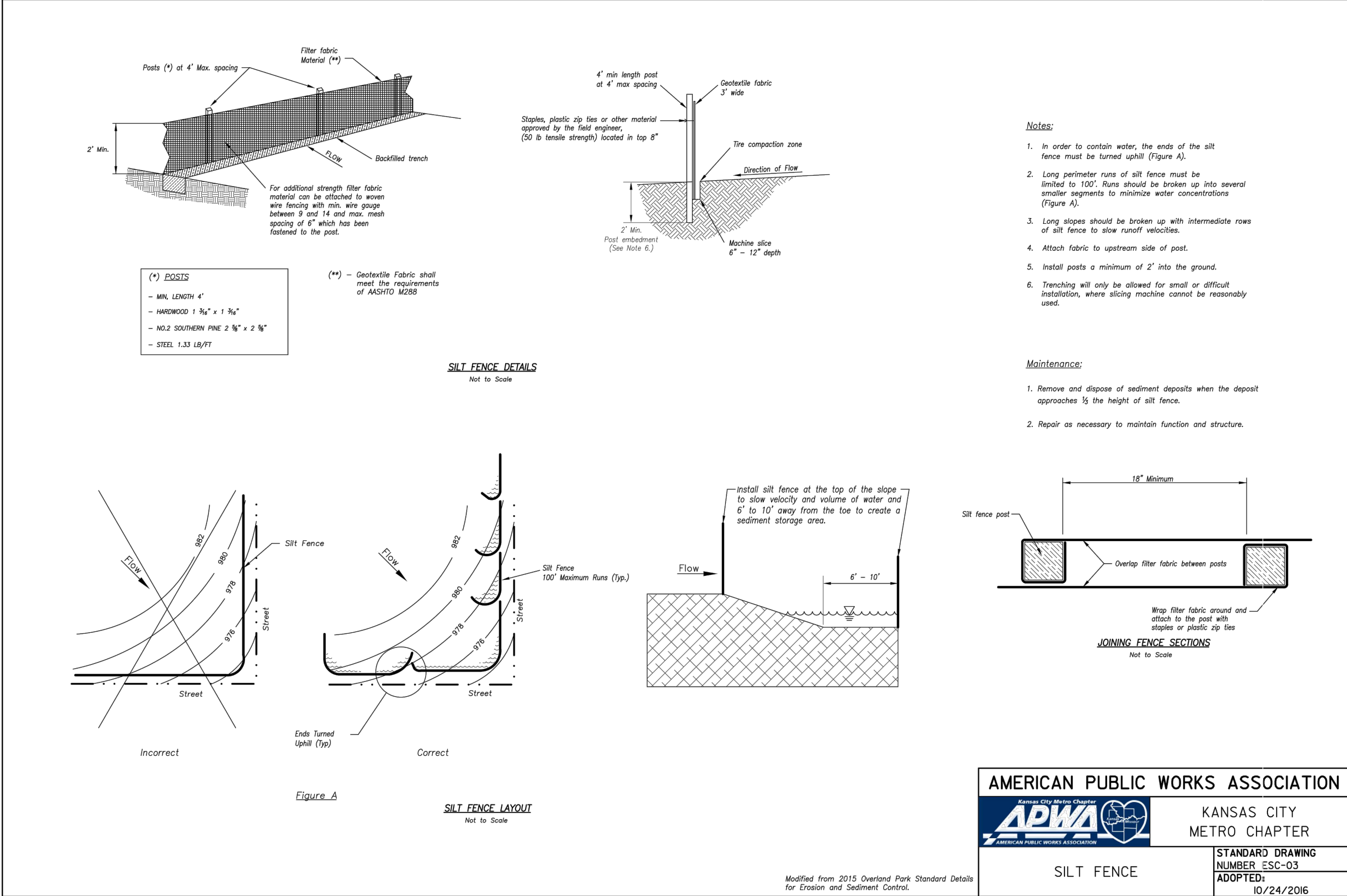
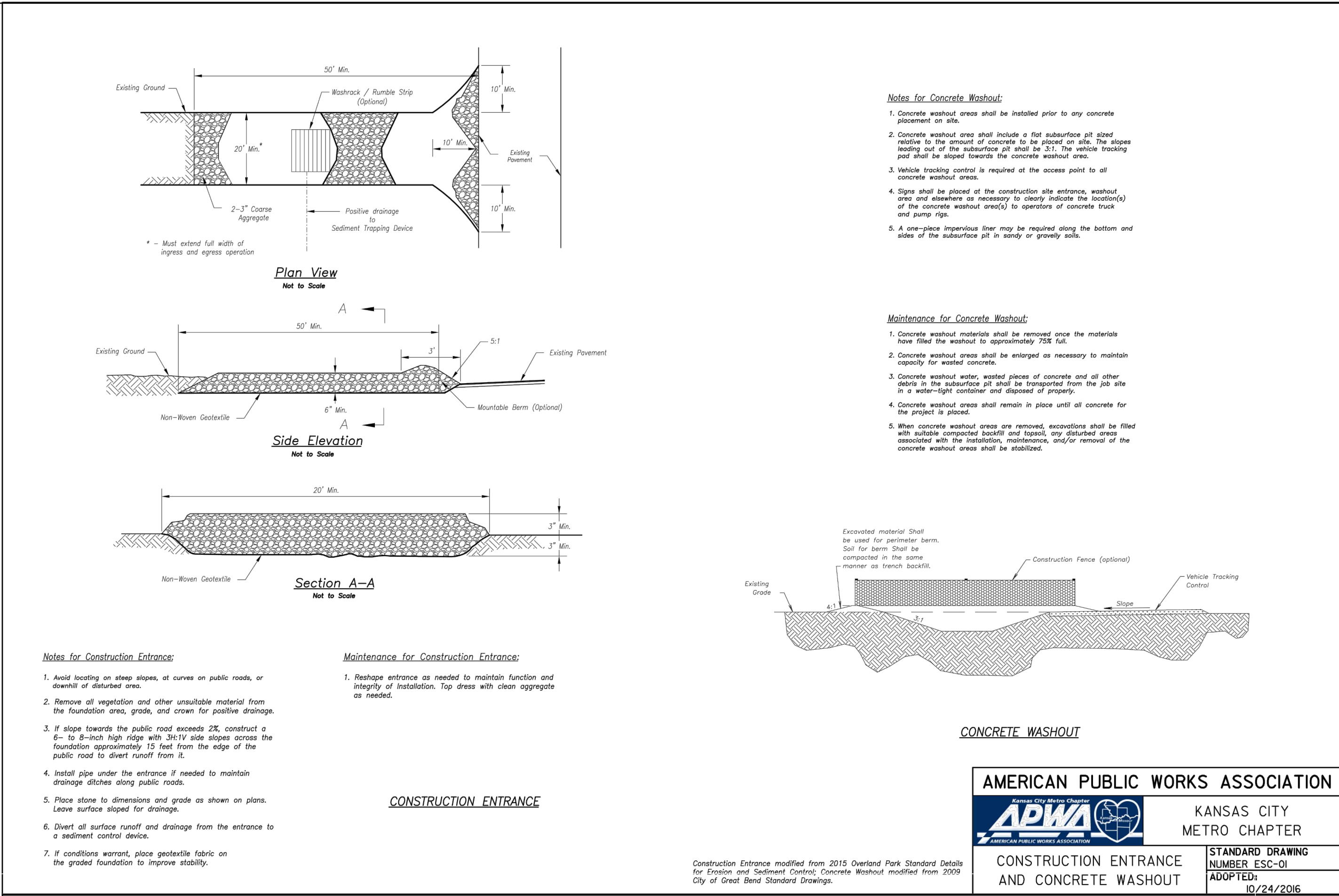
DRAWN BY: BAL	CITY COMMENTS
CHECKED BY: MAB	SCHLAGEL QUANTITIES
DATE PREPARED: 2-19-2020	CITY COMMENTS
PROJ. NUMBER: 18-017	WATER LINE CONFLICT

ECP
CONSTRUCTION

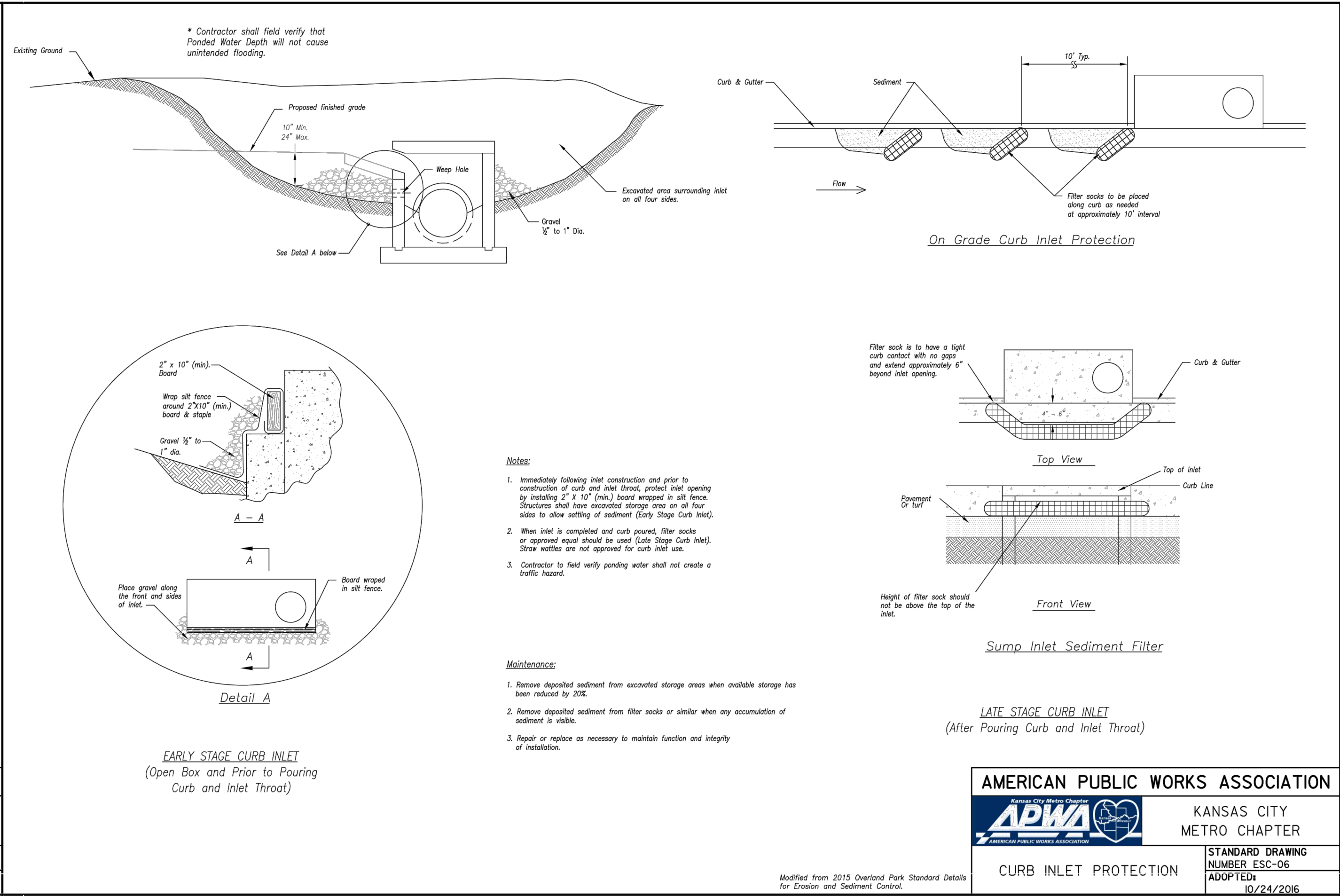
SHEET

Record Drawing

3



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



AMERICAN PUBLIC WORKS ASSOCIATION	
	KANSAS CITY METRO CHAPTER
WATTLES/BIODEGRADABLE LOG AND MULCH/COMPOST FILTER BERM	STANDARD DRAWING NUMBER ESC-04 ADOPTED: 10/24/2016

RECORD DRAWING

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Date: 1/10/2023
Certified by: RPM
Title: Design Engineer
Firm: Schlager and Associates, P.A.

Record Drawing

PREPARED BY:

SCHLAGEL & ASSOCIATES, P.A.

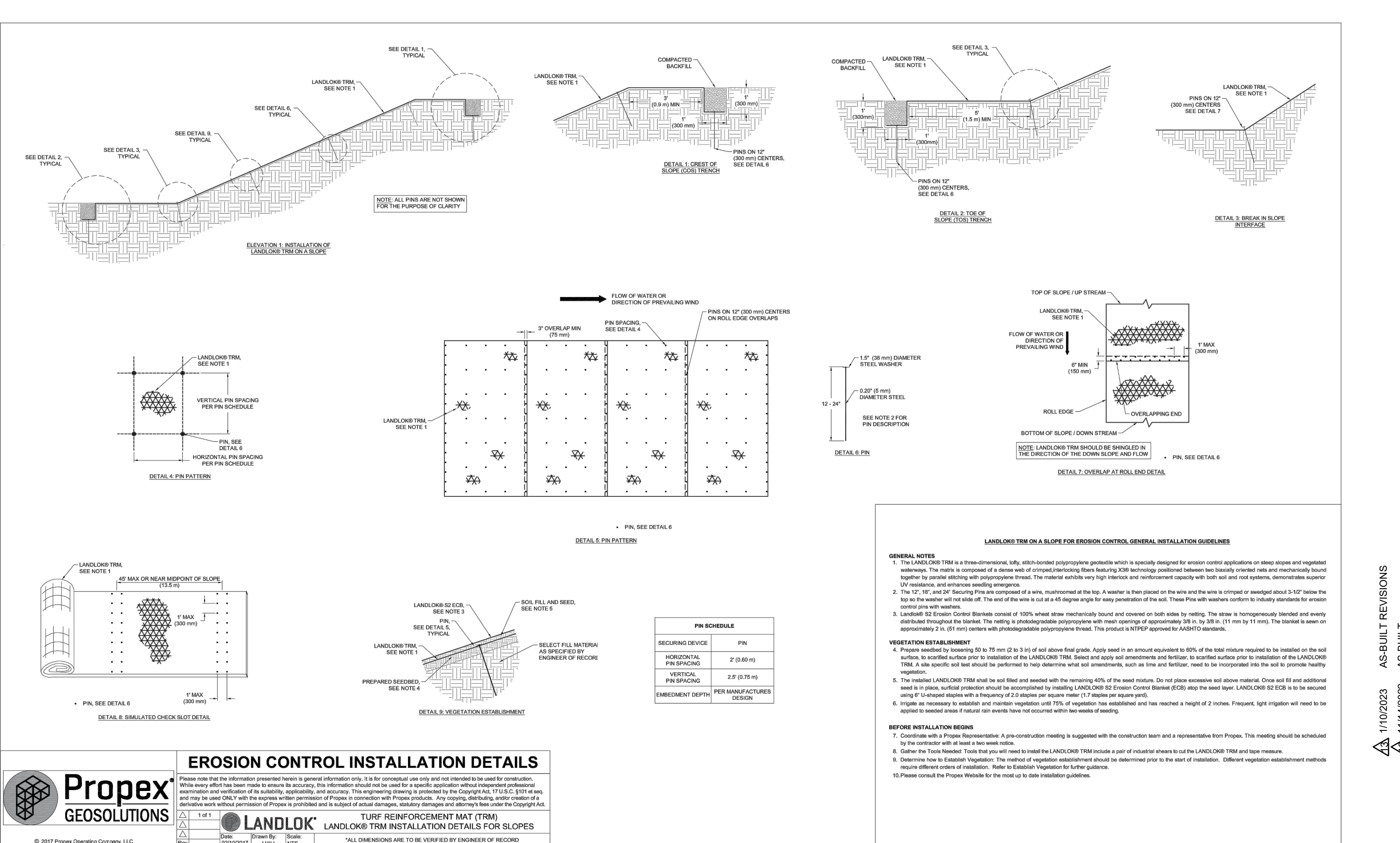
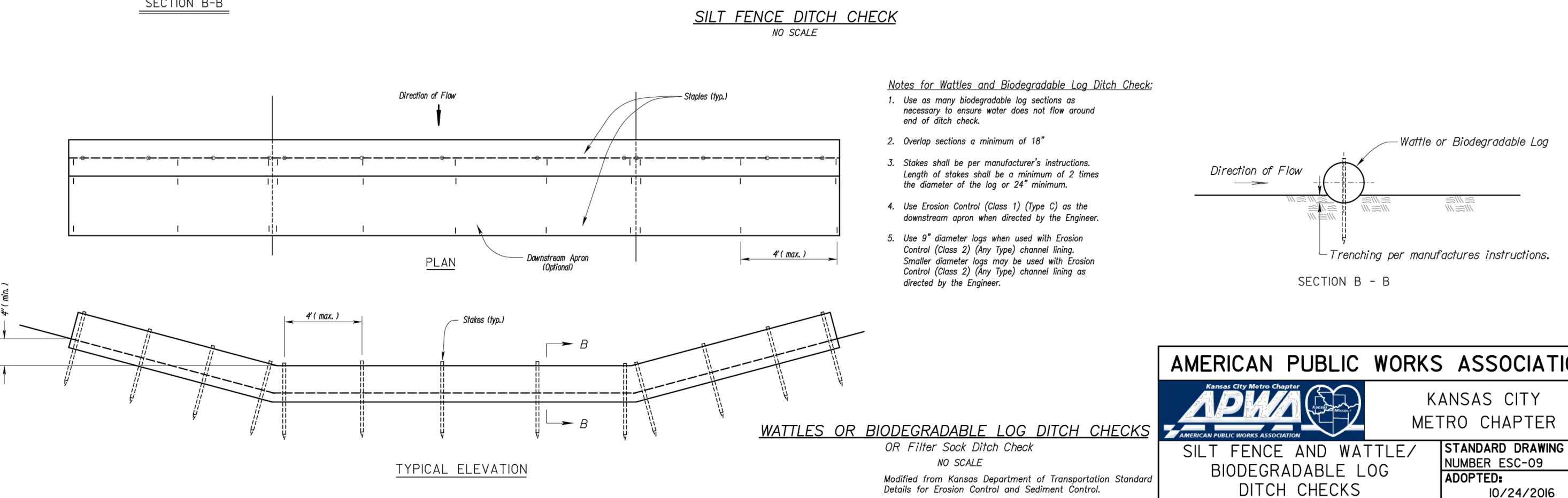
WOODLAND GLEN 2ND PLAT
STREET, STORMWATER, MASTER DRAINAGE,
AND EROSION CONTROL PLANS
WARD ROAD & WINTHROP DRIVE
LEE'S SUMMIT, MISSOURI

AS-BUILT REVISIONS	
REVISION DATE	DESCRIPTION
11/10/2023	AS-BUILT
11/14/2022	CITY WALL MODIFICATION
08/22/2022	CITY EMAIL COMMENTS
08/16/2022	
04/24/2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
06/15/2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
2-19-2020	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT

EROSION
CONTROL
DETAILS

SHEET

5



Date: 1/10/2023
 Certified by: RPM
 Title: Design Engineer
 Firm: Schlager and Associates, P.A.

6

RECORD DRAWING

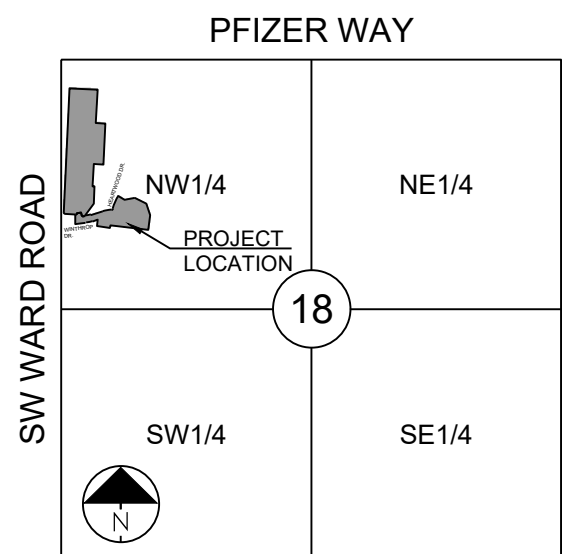
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Certified by: RPM
Title: Design Engineer
Firm: Schlager and Associates, P.A.

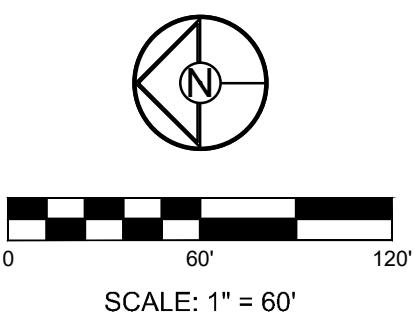
PROJECT BENCHMARK:

SW. CORNER NW 1/4 SEC. 18-47N-31W, JACKSON COUNTY, MO.
3" DIAMETER ALUMINUM DISK IN MONUMENT BOX
M.D.N.R. DOC. NO. 600-65374
ELEV. 1036.41

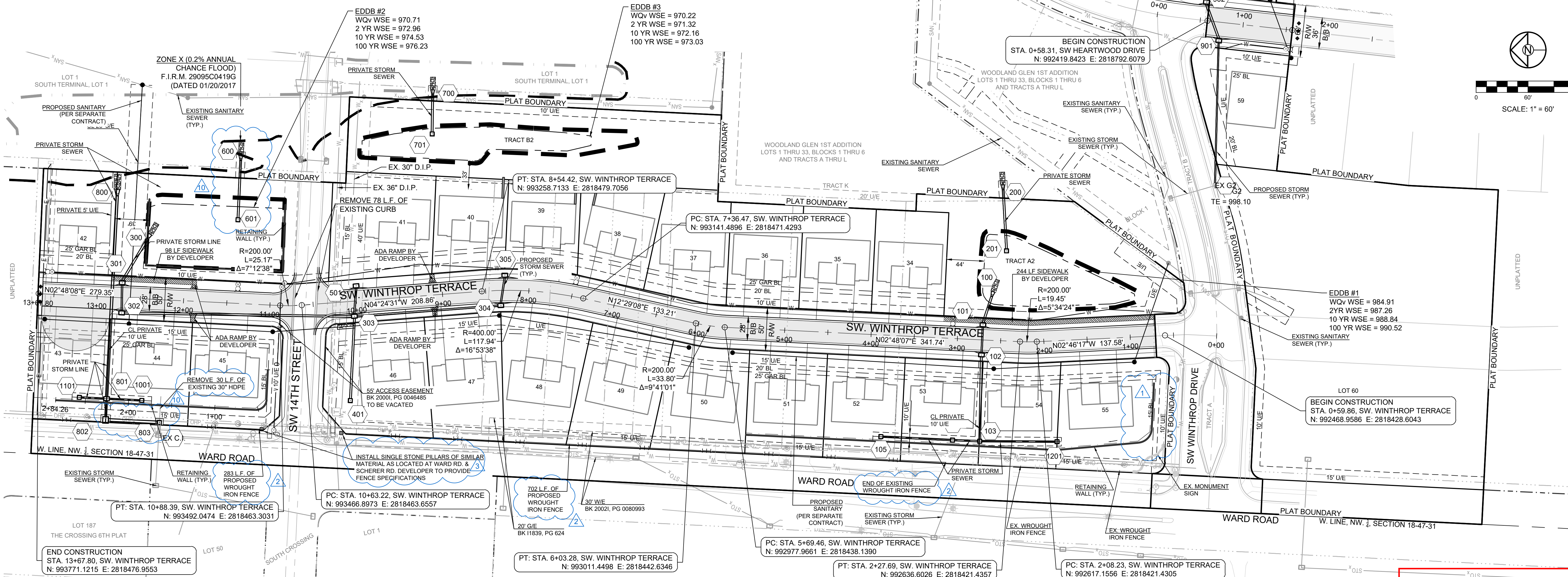


SECTION 18-47N-31W

LOCATION MAP
SCALE 1" = 2000'



- 1 WALL UPDATED AND REQUIRED ADDITIONAL GOGRID IN THIS AREA. RESULTING IN THE WALL MOVING NORTH ROUGHLY 2 FEET.
- 2 PROPOSED WROUGHT IRON FENCE CALLED OUT TO MATCH AND CONTINUE WITH THE EXISTING WROUGHT IRON FENCE IN THIS AREA.
- 3 ADDED STONE PILLARS AND DETAIL TO THE END OF THE WROUGHT IRON FENCE AS REQUESTED BY THE CITY. DEVELOPER TO PROVIDE WROUGHT FENCE SPECIFICATIONS FROM SUPPLIER.
- 4 MOVED THE LOCATION OF STORM LINE 600. ADDED A 4"x4" JUNCTION BOX (803) TO STORM LINE 800



WOODLAND GLEN 2ND PLAT
STREET, STORMWATER, MASTER DRAINAGE,
AND EROSION CONTROL PLANS
WARD ROAD & WINTHROP DRIVE
LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
1/10/2023	AS-BUILT REVISIONS
1/11/2023	AS-BUILT
08/22/2022	CITY WALL MODIFICATION
08/16/2022	CITY EMAILED COMMENTS

GENERAL LAYOUT

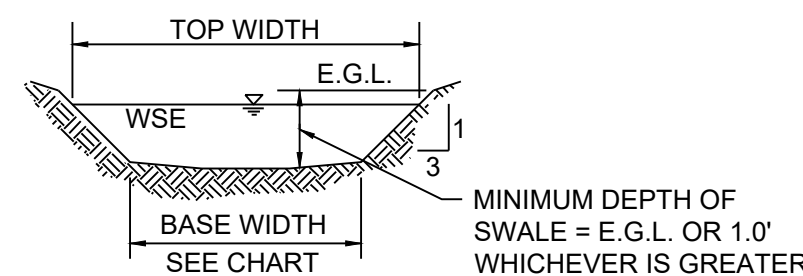
SHEET

Record Drawing

7

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 0.5% FOR SWALES SHALL BE AS NOTED.
5. MBOE'S ADJACENT TO SUMPED INLETS SHALL BE A MINIMUM OF 1' ABOVE TOP OF ADJACENT BERM.
6. SWALE SECTIONS EXTEND THE ENTIRE LENGTH BETWEEN UPSTREAM AND DOWNSTREAM STRUCTURES WITH THE EXCEPTION OF A TRANSITION AT EACH STRUCTURE.

A A
↑ ↑
DENOTES OVERFLOW SWALE



100 YR OVERFLOW SWALE SECTIONS

100 YEAR OVERFLOW SWALES												
SECTION	DRAINAGE AREA (AC.)	Q100 (CFS)	Q10 (CFS)	DESIGN OVERFLOW (CFS)	BED SLOPE (%)	BASE WIDTH (FT.)	SIDE SLOPE	TOP WIDTH (FT.)	NORMAL DEPTH (FT.)	VELOCITY (FPS)	VELOCITY HEAD (FT.)	EGL (FT.)
A-A	0.32	2.11	-	2.11	2.52	5	3:1	6.02	0.17	2.26	0.08	0.25
B-B	3.54	23.29	-	23.29	7.93	5	3:1	7.91	0.49	7.44	0.86	1.35
C-C	0.93	6.12	-	6.12	6.50	5	3:1	6.44	0.24	4.46	0.31	0.55
D-D	2.65	17.44	-	17.44	5.93	5	3:1	7.69	0.45	6.13	0.58	1.03

AUXILIARY SPILLWAY SET AT 0.5 FEET ABOVE MAX. WSE, SPILLWAY ELEV. = 991.04
990.7

AUXILIARY SPILLWAY DESIGN:
 $Q(100) = 2.74 \text{ CFS}$, $Q = CLH^{3/2}$, $C = 3.33$, $L = 20 \text{ FT.}$, $2.74 \text{ CFS} = 3.33 * 20 \text{ FT.} * (H^{3/2})$, $H = 0.12 \text{ FT.}$
1.291.290.07

DETENTION STORAGE EDDB #2:
100 YEAR, 24 HR. RAINFALL - MAXIMUM WSE = ~~975.90~~ (SEE FINAL STORMWATER MGMT. PLAN)
976.2

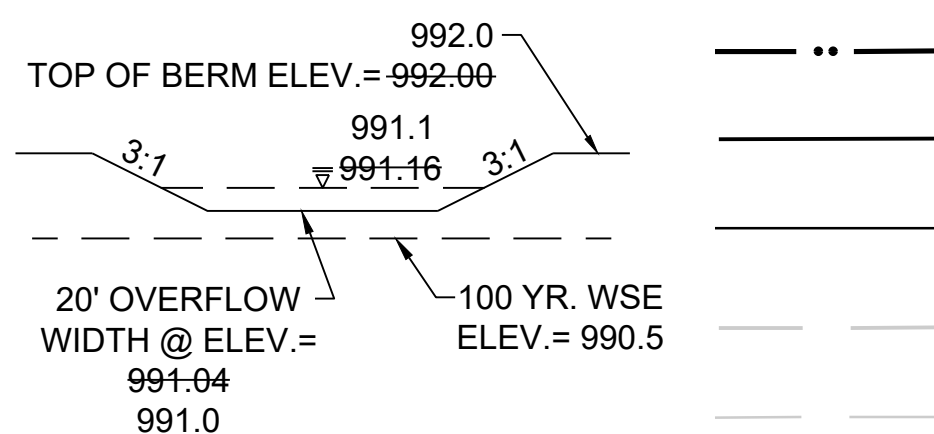
AUXILIARY SPILLWAY SET AT 0.5 FEET ABOVE MAX. WSE, SPILLWAY ELEV. = 976.40
976.7

AUXILIARY SPILLWAY DESIGN:
 $Q(100)=18.47 \text{ CFS}$, $Q=CLH^{3/2}$, $C=3.33$, $L=20 \text{ FT.}$, $\frac{18.47 \text{ CFS}}{19.09} = 3.33 * 20 \text{ FT.} * (H^{3/2})$, $H=0.43 \text{ FT.}$
19.0919.090.43

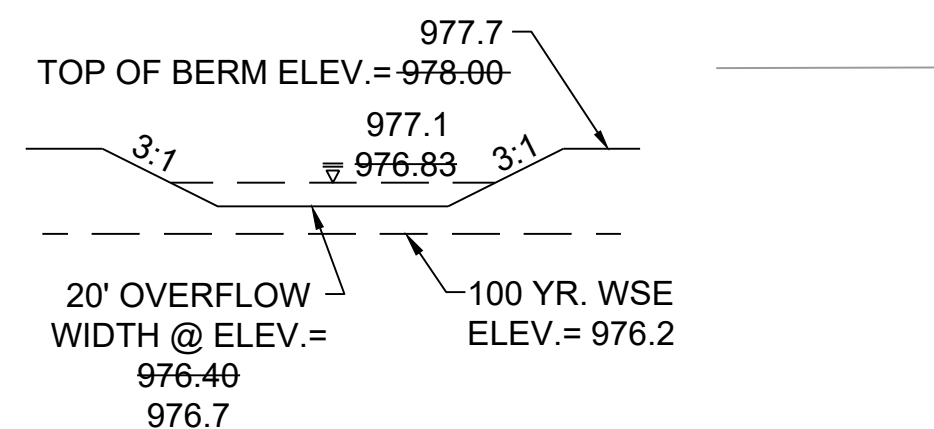
DETENTION STORAGE EDDB #3:
100 YEAR, 24 HR. RAINFALL - MAXIMUM WSE = 972.96 (SEE FINAL STORMWATER MGMT. PLAN)
973.03

AUXILIARY SPILLWAY SET AT 0.5 FEET ABOVE MAX. WSE, SPILLWAY ELEV. = 973.46
973.9

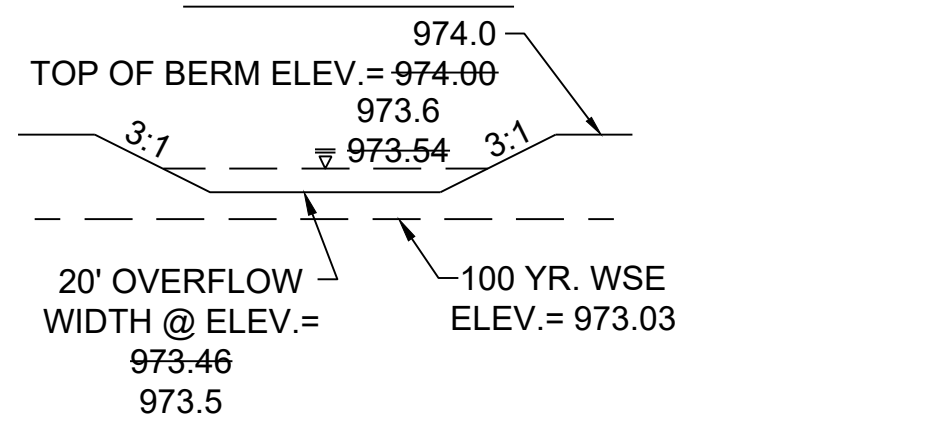
AUXILIARY SPILLWAY DESIGN:
 $Q(100)=1.43$ CFS, $Q=CLH^{3/2}$, $C=3.33$, $L=20$ FT., 1.43 CFS = $3.33 * 20\text{FT.} * (H^{3/2})$, $H=0.08$ FT.
 0.71 0.71 0.05



SECTION 1-1



SECTION 2-2



SECTION 3-3

DENOTES LIMITS OF DISTURBANCE

DENOTES PROPOSED MAJOR CONTOUR

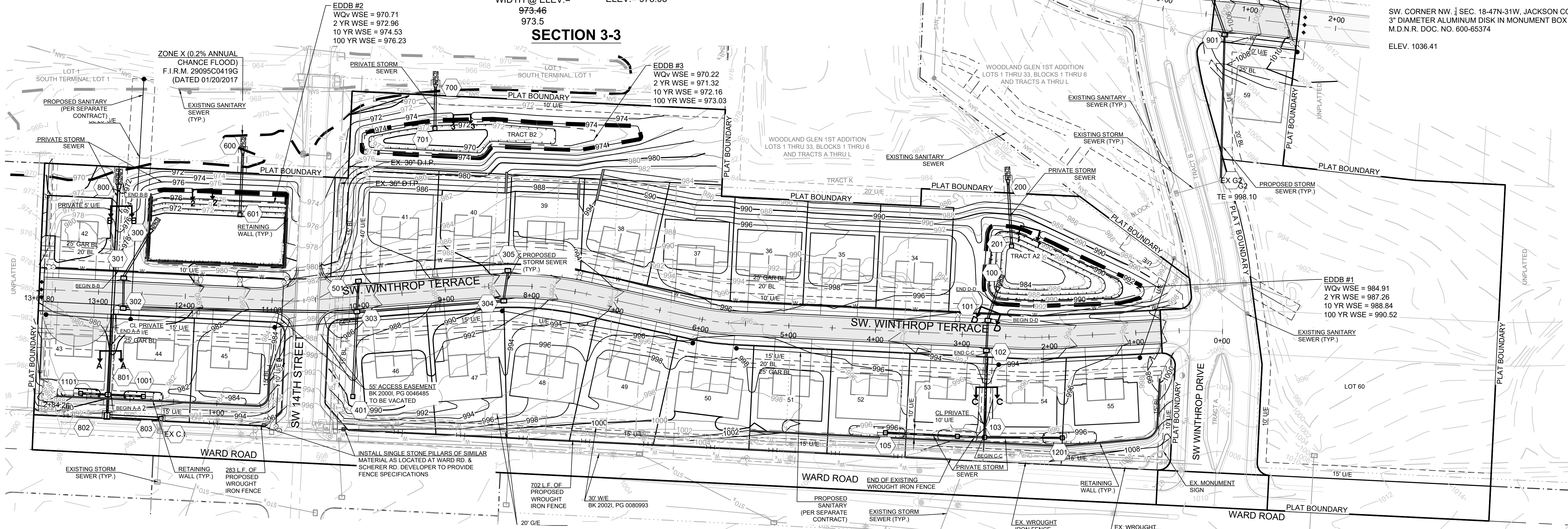
DENOTES PROPOSED MINOR CONTOUR

DENOTES EXISTING MAJOR CONTOUR

DENOTES EXISTING MINOR CONTOUR

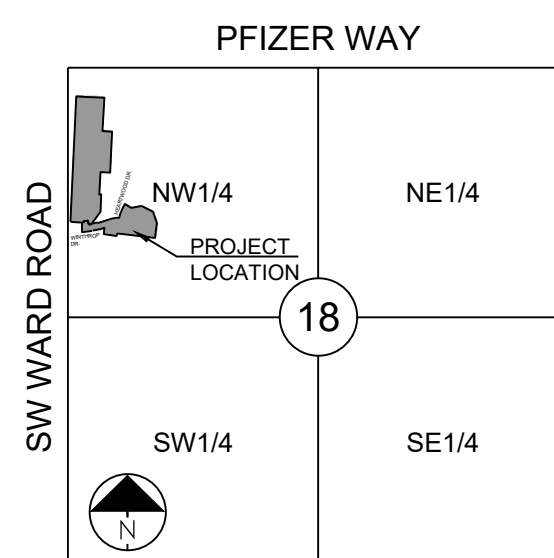
DENOTES AS-BUILT MAJOR CONTOUR

DENOTES AS-BUILT MINOR CONTOUR



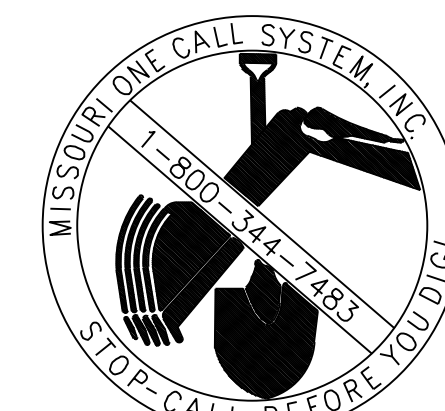
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Firm: Schlager and Associates, P.A.



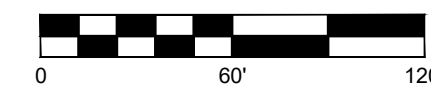
SECTION 18-47N-31W

LOCATION MAP
SCALE 1" = 2000'



SW. CORNER NW. $\frac{1}{4}$ SEC. 18-47N-31W, JACKSON COUNTY, MO.
3" DIAMETER ALUMINUM DISK IN MONUMENT BOX
M.D.N.R. DOC. NO. 600-65374

ELEV. 1036.41



Record Drawing

WOODLAND GLEN 2ND PLAT
STREET, STORMWATER, MASTER DRAINAGE,
AND EROSION CONTROL PLANS
WARD ROAD & WINTHROP DRIVE
LEE'S SUMMIT, MISSOURI

REVISION	REVISION DATE	DESCRIPTION
1	04/24/2020	CITY COMMENTS
2	01/12/2021	SCHLAGEL QUANTITIES
3	04/09/2021	SCHLAGEL QUANTITIES
4	05/12/2021	CITY COMMENTS
5	06/15/2021	CITY COMMENTS
6	06/29/2021	CITY COMMENTS
7	09/25/2021	SCHLAGEL UPDATE
8	10/06/2021	CITY COMMENTS
9	09/09/2022	MAINTENANCE COMMENTS

MASTER
DRAINAGE PLAN
GRADING PLAN

SHEET

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Date: 1/10/2023
Certified by: RPM
Title: Design Engineer
Firm: Schlager and Associates, P.A.

LOT TYPE TABLE		
LOT #	TYPE	MBOE
34	WALKOUT	992.5
35	WALKOUT	N/A
36	WALKOUT	N/A
37	WALKOUT	975.0
38	WALKOUT	975.0
39	WALKOUT	975.0
40	WALKOUT	975.0
41	WALKOUT	975.0
42	WALKOUT	971.5
43	STANDARD	981.0
44	STANDARD	981.0
45	STANDARD	N/A
46	STANDARD	982.8
47	STANDARD	N/A
48	STANDARD	N/A
49	STANDARD	N/A
50	STANDARD	N/A
51	STANDARD	N/A
52	STANDARD	996.0
53	STANDARD	996.0
54	STANDARD	996.0
55	STANDARD	996.0
56	WALKOUT	N/A
57	WALKOUT	N/A
58	WALKOUT	N/A
59	WALKOUT	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:

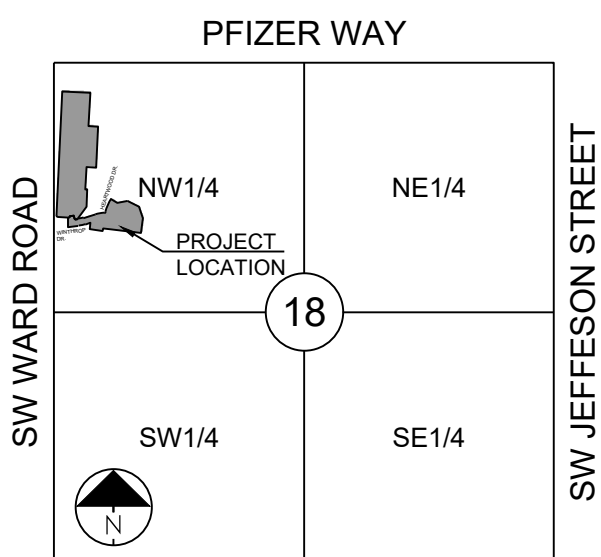
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- EGL = ENERGY GRADE LINE (100 YR)
- WSE = WATER SURFACE ELEVATION (100 YR)
- ENGINEERED SWALES TO BE GRADED TO NORMAL DEPTH OF FLOW (WATER SURFACE ELEVATION) OR 1.0 FT, WHICHEVER IS GREATER. MINIMUM SLOPE OF ENGINEERED SWALES SHALL BE AS NOTED.
- MBOE'S ADJACENT TO SUMPED INLETS SHALL BE A MINIMUM OF 1' ABOVE TOP OF ADJACENT BERM

PROJECT BENCHMARK:

SW. CORNER NW ¼ SEC. 18-47N-31W, JACKSON COUNTY, MO.
3" DIAMETER ALUMINUM DISK IN MONUMENT BOX
M.D.N.R. DOC. NO. 600-65374

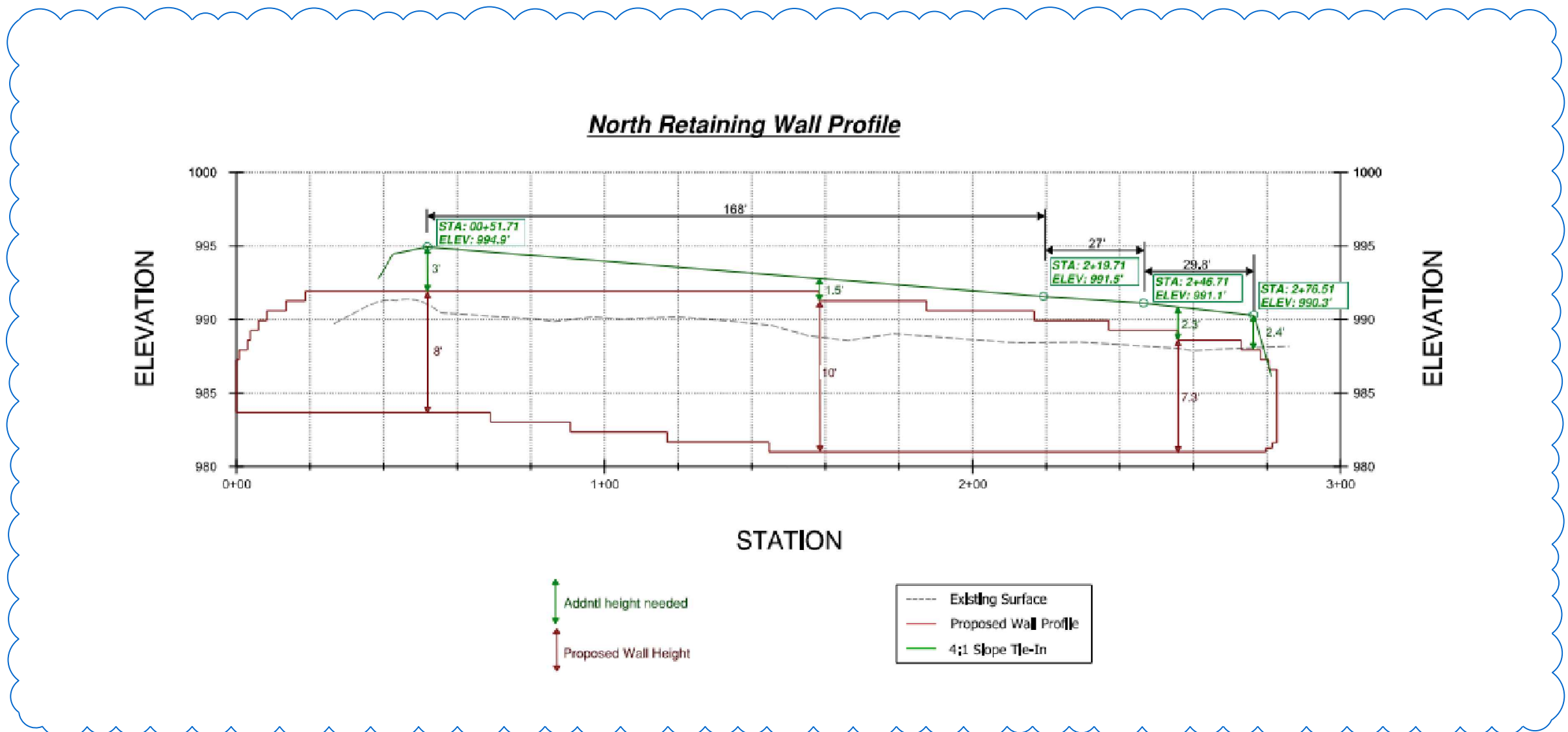
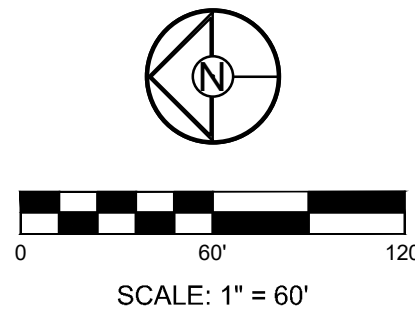
ELEV. 1036.41

- ** --- DENOTES LIMITS OF DISTURBANCE
- DENOTES PROPOSED MAJOR CONTOUR
- DENOTES PROPOSED MINOR CONTOUR
- DENOTES EXISTING MAJOR CONTOUR
- DENOTES EXISTING MINOR CONTOUR
- DENOTES AS-BUILT MAJOR CONTOUR
- DENOTES AS-BUILT MINOR CONTOUR

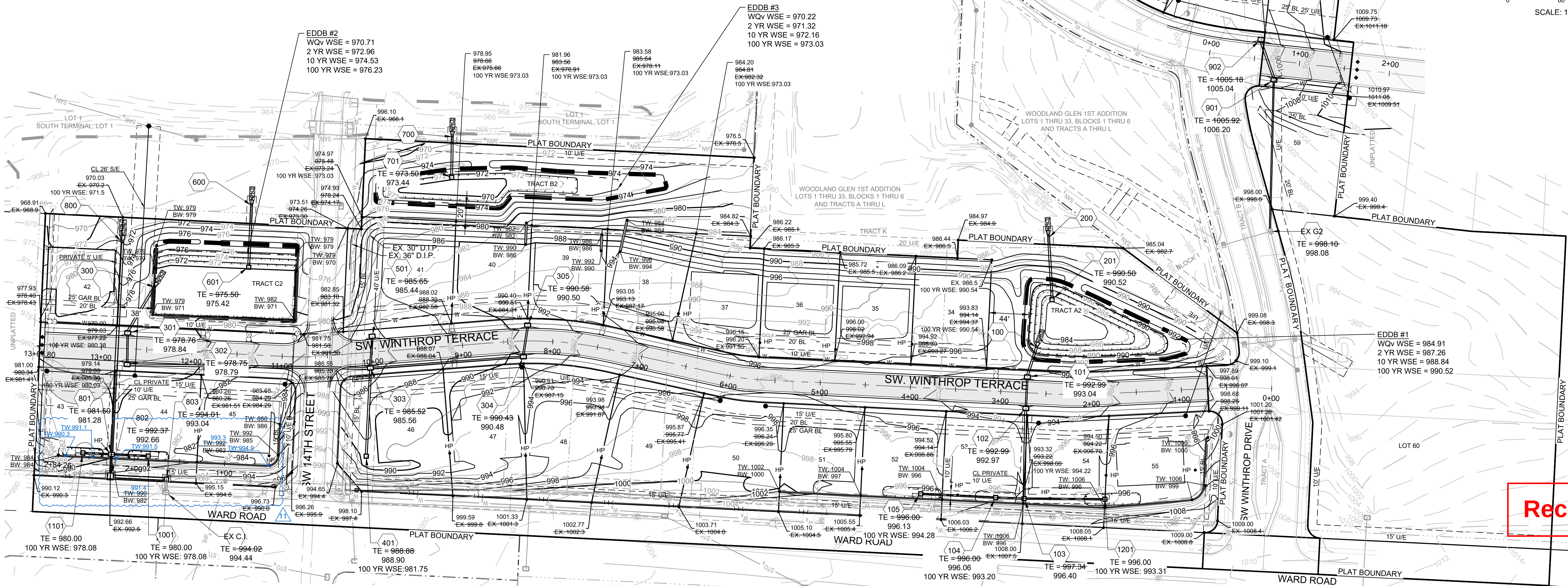


SECTION 18-47N-31W

LOCATION MAP
SCALE 1" = 2000'



RAISING THE NORTHWEST WALL PER THE CITY'S REQUEST.



WOODLAND GLEN 2ND PLAT
STREET, STORMWATER, MASTER DRAINAGE,
AND EROSION CONTROL PLANS
WARD ROAD & WINTHROP DRIVE
LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
11/02/2023	AS-BUILT REVISIONS
11/14/2022	AS-BUILT
08/22/2022	CITY WALL MODIFICATION
05/16/2022	CITY EMAIL COMMENTS
DRAWN BY:	CITY COMMENTS
BAL	04/24/2020
CHECKED BY:	SCHLAGEL QUANTITIES
MAB	04/09/2021
DATE PREPARED:	CITY COMMENTS
2-19-2020	05/12/2021
PROJ. NUMBER:	CITY COMMENTS
18-017	02/28/2021
	SCHLAGEL UPDATE
	01/20/2022
	WATER LINE CONFLICT
	18-017
MASTER DRAINAGE PLAN SPOT ELEVATIONS	
SHEET	

PROJECT BENCHMARK:

SW. CORNER NW. 1/4 SEC. 18-47N-31W, JACKSON COUNTY, MO.
3" DIAMETER ALUMINUM DISK IN MONUMENT BOX
M.D.N.R. DOC. NO. 600-65374

ELEV. 1036.41

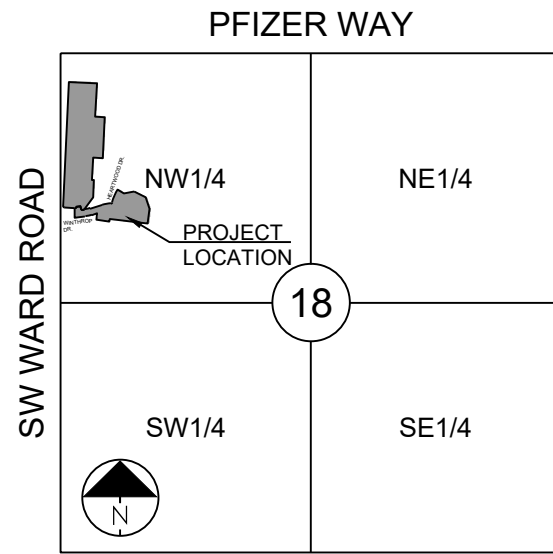


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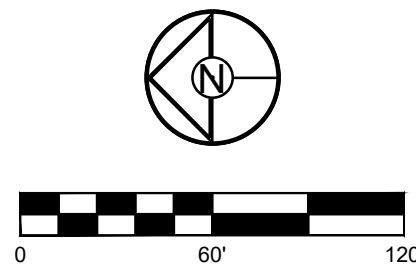
Date: 1/10/2023
Certified by: RPM
Title: Design Engineer
Firm: Schlager and Associates, P.A.



SECTION 18-47N-31W

LOCATION MAP
SCALE 1" = 200'

ZONE X (0.2% ANNUAL CHANCE FLOOD)
F.I.R.M. 29095C0419G
(DATED 01/20/2017)



Record Drawing

REVISION DATE	DESCRIPTION
11/02/2023	AS-BUILT REVISIONS
11/14/2022	AS-BUILT
08/22/2022	CITY WALL MODIFICATION
08/16/2022	CITY EMAILED COMMENTS
04/24/2020	CITY COMMENTS
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05/12/2021	CITY COMMENTS
06/15/2021	CITY COMMENTS
09/28/2021	CITY COMMENTS
2-19-2020	CITY COMMENTS
10/05/2021	SCHLAGEL UPDATE
18-017	WATER LINE CONFLICT

Design Storm:		10																											
"K" Value:		1.00																											
"F" Factor:		1.00																											
Runoff Calculations										Pipe Properties																			
Inlet #	Area (acres)	"C" Value	Cumul. Area (acres)	Cumul. CxA	Tc	Runoff Intensity	Runoff 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	Pipe Length	Slope %	Drop In Inlet	FL Up	FL Down	Inlet Top				
LINE 100																													
101	0.42	0.60	2.14	1.28	5.6	7.17	1.81	9.21	17.50	5.57			0.00	0.00	101	100 HDPE	0.012	24	34.17	0.51	0.50	986.65	986.48	DS TAILWA					
102	1.35	0.60	1.72	1.03	5.5	7.20	5.83	7.43	24.51	7.80			0.00	0.00	102	101 HDPE	0.012	24	35.00	1.00	0.75	987.50	987.15	982.99					
103	0.00	0.60	0.37	0.22	5.4	7.24	0.00	1.61	13.09	10.67	1201		0.13	0.08	103	102 HDPE	0.012	15	99.73	3.50	0.50	991.74	988.25	996.50					
104	0.06	0.60	0.24	0.14	5.3	7.27	0.26	1.05	7.07	5.76			0.00	0.00	104	103 HDPE	0.012	15	31.45	1.02	0.50	982.57	982.24	986.00					
105	0.18	0.60	0.18	0.11	5.0	7.35	0.79	0.79	6.26	5.10			0.00	0.00	105	104 HDPE	0.012	15	82.96	0.80	N/A	993.73	993.07	998.00					
LINE 200																													
201	0.36	0.60	0.36	0.22	5.0	7.35	1.59	1.59	9.04	7.37			0.00	0.00	201	200 HDPE	0.012	15	68.80	1.67	N/A	984.00	982.85	DS TAILWA					
"SEE FINAL STORMWATER REPORT FOR DETAILED POND CALCULATIONS"																													
LINE 300																													
301	0.21	0.60	3.36	2.02	6.0	7.06	0.89	14.24	29.00	5.91			0.00	0.00	301	300 RCP	0.013	30	58.76	0.50	0.50	970.29	970.00	DS TAILWA					
302	0.72	0.60	3.15	1.89	5.9	7.09	3.06	13.40	31.42	6.40			0.00	0.00	302	301 HDPE	0.012	30	35.01	0.50	0.50	970.97	970.79	978.75					
303	0.56	0.60	2.43	1.46	5.3	7.25	2.44	10.57	14.44	8.17	401	501	0.67	0.40	303	302 HDPE	0.012	18	269.14	1.61	2.44	975.80	971.47	985.52					
304	0.81	0.60	1.20	0.72	5.1	7.34	3.57	5.28	12.28	10.01			0.00	0.00	304	303 HDPE	0.012	15	169.67	3.08	0.50	983.47	978.24	990.43					
305	0.39	0.60	0.39	0.23	5.0	7.35	1.72	1.72	13.09	10.67			0.00	0.00	305	304 HDPE	0.012	15	35.39	3.50	N/A	985.21	983.97	990.58					
LINE 400																													
401	0.44	0.60	0.44	0.26	5.0	7.35	1.94	1.94	15.25	12.43			0.00	0.00	401	303 HDPE	0.012		Drop in Inlet 303		4.00	984.44	979.80	988.88					
																				15	97.58	4.75	N/A						
LINE 500																													
501	0.23	0.60	0.23	0.14	5.0	7.35	1.01	1.01	14.00	11.41			0.00	0.00	501	303 HDPE	0.012		Drop in Inlet 303		4.00	981.21	979.80	985.65					
																				15	35.31	4.00	N/A						
LINE 600																													
601	0.29	0.60	0.29	0.17	5.0	7.35	1.28	1.28	8.81	4.99			0.00	0.00	601	600 HDPE	0.012	18	73.11	0.60	N/A	970.44	970.00	DS TAILWA					
"SEE FINAL STORMWATER REPORT FOR DETAILED POND CALCULATIONS"																													
LINE 700																													
701	1.13	0.60	1.13	0.68	5.0	7.35	4.99	4.99	6.64	5.41			0.00	0.00	701	603 HDPE	0.012	15	45.00	0.90									

Design Storm:		100																							
"K" Value:		1.25																							
"F" Factor:		1.00																							
Runoff Calculations													Pipe Properties												
#	Area (acres)	C ⁿ	Cumul. Area (acres)	Cumul. CxA	Tc	Runoff To		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"	Pipe Size	Length	Slope %	Drop in Inlet	FL Up	FL Down	Inlet Top
						Intensity	Inlet																		
LINE 100																									
101	0.42	0.60	2.14	1.28	5.6	10.08		3.18	16.18	17.50	5.57			0.00	0.00	101	100 HDPE	0.012	24	34.17	0.51	0.50	986.65	986.48	DS TAILWA
102	1.35	0.60	1.72	10.3	5.5	10.11	10.24	13.04	24.51	7.80			0.00	0.00	102	101 HDPE	0.012	24	35.00	1.00	0.75	987.50	987.15	992.99	
103	0.00	0.60	0.37	0.22	5.4	10.17	0.00	2.82	13.09	10.67		1201	0.13	0.08	103	102 HDPE	0.012	15	99.73	3.50	0.50	991.74	988.25	999.50	
104	0.06	0.60	0.24	0.14	5.3	10.21	0.46	1.84	7.07	5.76			0.00	0.00	104	103 HDPE	0.012	15	31.45	1.02	0.50	992.57	992.24	998.00	
105	0.18	0.60	0.18	0.11	5.0	10.32	1.39	1.39	6.26	5.10			0.00	0.00	105	104 HDPE	0.012	15	82.96	0.80	N/A	993.73	993.07	998.00	
LINE 200																									
201	0.36	0.60	0.36	0.22	5.0	10.32	2.79	2.79	9.04	7.37			0.00	0.00	201	200 HDPE	0.012	15	68.80	1.67	N/A	984.00	982.85	DS TAILWA	
*SEE FINAL STORMWATER REPORT FOR DETAILED POND CALCULATIONS																									
LINE 300																									
301	0.21	0.60	3.36	2.02	6.0	9.93	1.56	25.03	29.00	5.91			0.00	0.00	301	300 RCP	0.013	30	58.76	0.50	0.50	970.29	970.00	DS TAILWA	
302	0.72	0.60	3.15	1.89	5.9	9.97	5.38	23.55	31.42	6.40			0.00	0.00	302	301 HDPE	0.012	30	35.01	0.50	0.50	970.97	970.79	978.75	
303	0.56	0.60	2.43	1.46	5.3	10.18	4.28	18.56	14.44	8.17		401	0.67	0.40	303	302 HDPE	0.012	18	269.14	1.61	2.44	975.80	971.47	985.52	
304	0.81	0.60	1.20	0.72	5.1	10.30	6.26	9.27	12.28	10.01			0.00	0.00	304	303 HDPE	0.012	15	169.87	3.08	0.50	983.47	978.24	990.43	
305	0.39	0.60	0.39	0.23	5.0	10.32	3.02	3.02	13.09	10.67			0.00	0.00	305	304 HDPE	0.012	15	35.39	3.50	N/A	985.21	983.97	990.58	
LINE 400																									
401	0.44	0.60	0.44	0.26	5.0	10.32	3.41	3.41	15.25	12.43			0.00	0.00	401	303 HDPE	0.012	15	97.58	4.75	N/A	984.44	979.80	988.88	
LINE 500																									
501	0.23	0.60	0.23	0.14	5.0	10.32	1.78	1.78	14.00	11.41			0.00	0.00	501	303 HDPE	0.012	15	35.31	4.00	N/A	981.21	979.80	985.65	
LINE 600																									
601	0.29	0.60	0.29	0.17	5.0	10.32	2.25	2.25	8.81	4.99			0.00	0.00	601										

DESIGN STORM "K" FACTOR	10 1.00								CURB TYPE "A" = LAZY BACK CURB TYPE "B" = HIGH BACK																	
RUNOFF CALCULATIONS																INLET DESIGN							GUTTER DESIGN			
INLET #	COMPOSITE "C"	AREA	INLET Tc	INTENSITY	RUNOFF	UPSTREAM INLET	UPSTREAM INLET	UPSTREAM INLET	UPSTREAM INLET	BYPASS FROM UPSTREAM INLET	TOTAL RUNOFF	STREET GRADE	STREET CROSS SLOPE	CURB TYPE	INLET LENGTH	EFFECTIVE LENGTH 80% CAP	INLET INTERCEPTION	BYPASS TO DOWNSTREAM INLET	STREET GRADE	STREET CROSS SLOPE	DEPTH AT CURB	SPREAD OF FLOW				
LINE 100																										
101	0.60	0.42	8.1	7.35	1.85					0.00	1.85	SUMP	2.08	A	6	4.8	16.80	0.00	SUMP	2.08	< 0.21	< 10.50				
102	0.60	1.35	7.5	7.35	5.95					0.00	5.95	SUMP	2.08	A	6	4.8	16.80	0.00	SUMP	2.08	< 0.21	< 10.50				
103	0.60	0.00	7.4	7.35	0.00					0.00	0.00	N/A	N/A	A	8	6.4	N/A	N/A	N/A	N/A	N/A	N/A				
104	0.60	0.06	7.3	7.35	0.26					0.00	0.26	SUMP	2.08	A	16	12.8	44.80	0.00	SUMP	2.08	< 0.21	< 10.50				
105	0.60	0.18	6.5	7.35	0.79					0.00	0.79	SUMP	2.08	A	16	12.8	44.80	0.00	SUMP	2.08	< 0.21	< 10.50				
LINE 300																										
301	0.60	0.21	5.1	7.35	0.93					0.00	0.93	SUMP	2.08	A	6	4.8	16.80	0.00	SUMP	2.08	< 0.21	< 10.50				
302	0.60	0.72	5.0	7.35	3.18					0.00	3.18	SUMP	2.08	A	6	4.8	16.80	0.00	SUMP	2.08	< 0.21	< 10.50				
303	0.60	0.56	5.1	7.35	2.47					0.00	2.47	2.92	2.08	A	6	4.8	1.86	0.61	2.92	2.08	0.16	8.18				
304	0.60	0.81	5.0	7.35	3.87					0.00	3.87	2.92	2.08	A	6	4.8	2.38	1.19	2.92	2.08	0.18	9.32				
305	0.60	0.39	5.0	7.35	1.72					0.00	1.72	2.92	2.08	A	6	4.8	1.42	0.30	2.92	2.08	0.14	7.21				
LINE 400																										
401	0.60	0.44	5.0	7.35	1.94					0.00	1.94	SUMP	2.08	A	8	6.4	22.40	0.00	SUMP	2.08	< 0.21	< 10.50				
LINE 500																										
501	0.60	0.23	5.0	7.35	1.01					0.00	1.01	2.92	2.08	A	6	4.8	0.91	0.10	2.92	2.08	0.11	6.00				
LINE 800																										
801	0.60	0.00	5.1	7.35	0.00					0.00	0.00	N/A	N/A	A	6	4.8	N/A	N/A	N/A	N/A	N/A	N/A				
802	0.60	0.00	5.0	7.35	0.00					0.00	0.00	N/A	N/A	A	6	4.8	N/A	N/A	N/A	N/A	N/A	N/A				
EX. C.I.	0.60	1.33	5.1	7.35	5.87					0.00	5.87	2.67	2.08	B	8	6.4	4.67	1.20	2.67	2.08	0.22	11.30				
LINE 900																										
901	0.60	0.67	5.1	7.35	2.95					0.00	2.95	6.00	2.08	A	6	4.8	1.71	1.25	6.00	2.08	0.15	7.68				
902	0.60	0.74	5.0	7.35	3.26					0.00	3.26	6.00	2.08	A	6	4.8	1.79	1.47	6.00	2.08	0.15	7.95				
LINE 1000																										
1001	0.60	0.13	5.0	7.35	0.57					0.00	0.57	SUMP	2.08	A	16	12.8	44.80	0.00	SUMP	2.08	< 0.21	< 10.50				
LINE 1100																										
1101	0.60	0.06	5.0	7.35	0.26					0.00	0.26	SUMP	2.08	A	16	12.8	44.80	0.00	SUMP	2.08	< 0.21	< 10.50				
LINE 1200																										
1201	0.60	0.13	5.0	7.35	0.57					0.00	0.57	SUMP	2.08	A	16	12.8	44.80	0.00								

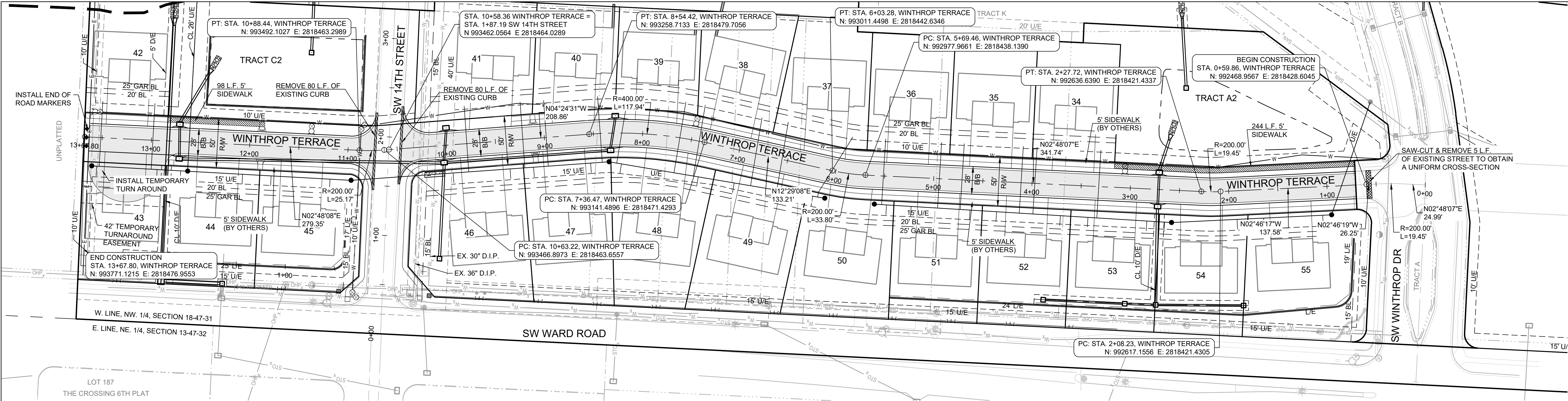
The information provided on this drawing conforms to construction records; it is not intended for construction, implementation or recording purposes; and it is solely based on information obtained by Schlager and Associates.

Date: 1/10/2023
 Certified by: RPM
 Title: Design Engineer
 Firm: Schlagel and Associates, P.A.

11

MASTER
DRAINAGE PLAN
DRAINAGE
CALCS

I:\PROJECTS\2018\18-0173.0 Design\3.0 DWG Plans\6.0 SS\18-017 STREET PP.dwg, WINTHROP TERR PP. 1/10/2023 3:28:37 PM, 1:1



RECORD DRAWING

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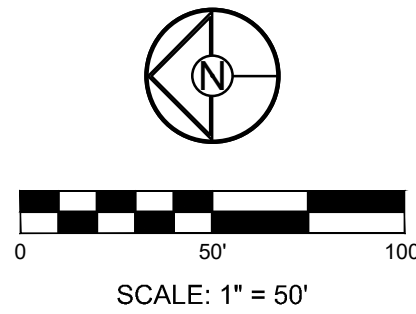
“100.00 100.10”, “1.00% 1.15% slope”, or “8-inch HDPE PVC pipe” are all typical examples of revisions that indicate that design data has been replaced with “as-built” information. All other data is as designed and has not been field verified.

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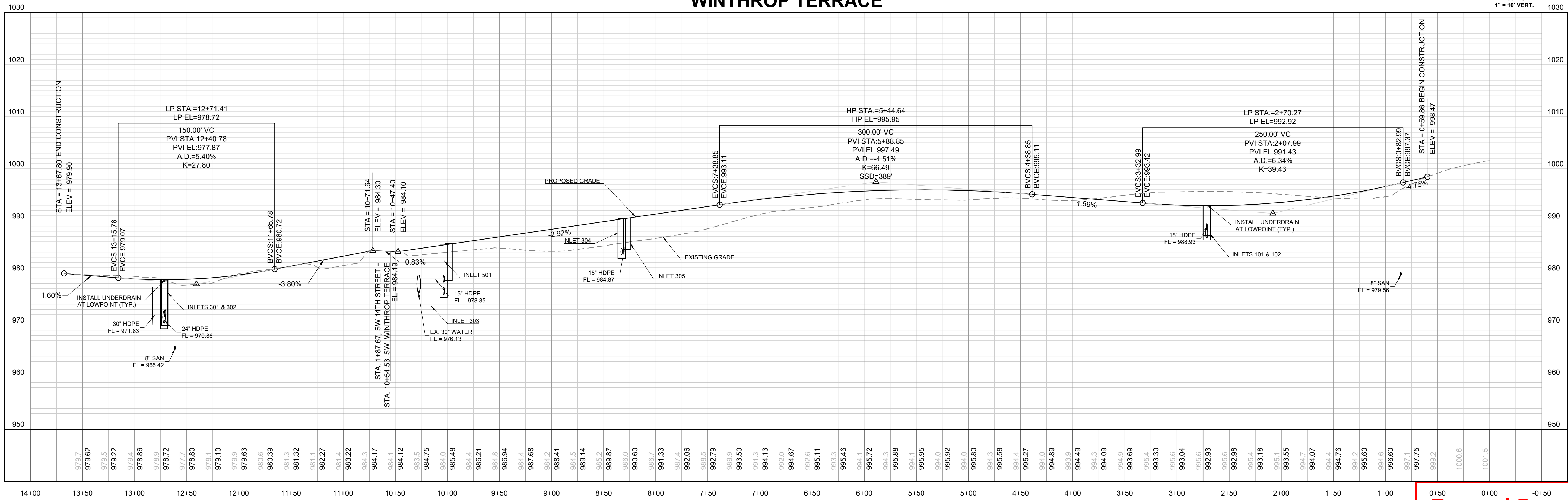
PROJECT BENCHMARK:

SW. CORNER NW 1/4 SEC. 18-47N-31W, JACKSON COUNTY, MO.
3" DIAMETER ALUMINUM DISK IN MONUMENT BOX
M.D.N.R. DOC. NO. 600-65374

ELEV. 1036.41



WINTHROP TERRACE



Record Drawing

REVISION DATE	AS-BUILT REVISIONS	DESCRIPTION
1/10/2023	AS-BUILT	1.00% 100.10, 1.00% 1.15% slope, or 8-inch HDPE PVC pipe
1/14/2022	AS-BUILT	1.00% 100.10, 1.00% 1.15% slope, or 8-inch HDPE PVC pipe
08/22/2022	CITY WALL MODIFICATION	1.00% 100.10, 1.00% 1.15% slope, or 8-inch HDPE PVC pipe
08/16/2022	CITY EMAIL COMMENTS	1.00% 100.10, 1.00% 1.15% slope, or 8-inch HDPE PVC pipe

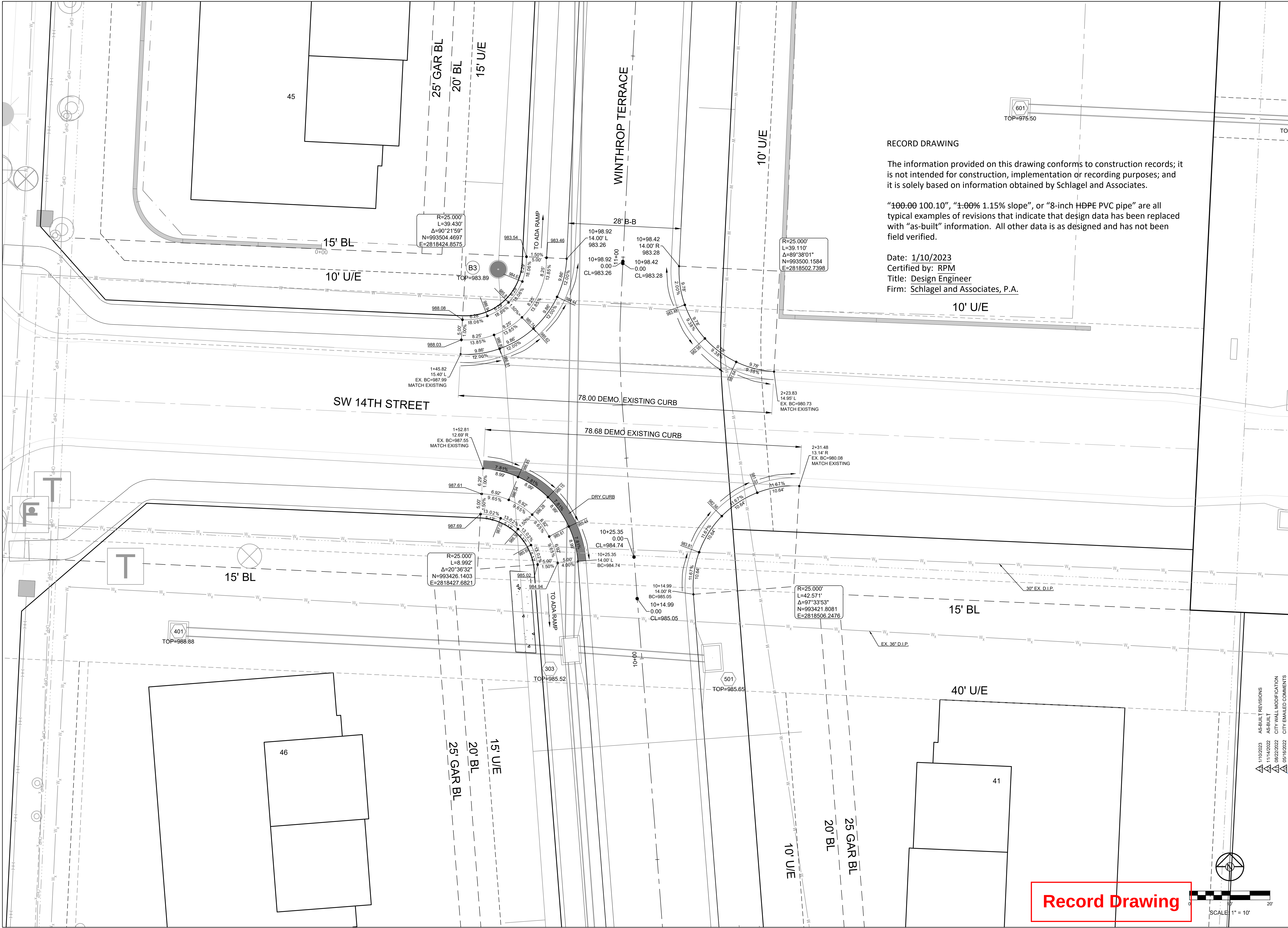
DRAWN BY:	DESCRIPTION
BAL	CITY COMMENTS
CHECKED BY:	SCHLAGEL QUANTITIES
MAB	CITY COMMENTS
DATE PREPARED:	CITY COMMENTS
2-19-2020	CITY COMMENTS
PROJ. NUMBER:	SCHLAGEL UPDATE
18-017	CITY COMMENTS
	WATER LINE CONFLICT

WINTHROP TERRACE PLAN & PROFILE

SHEET

WOODLAND GLEN 2ND PLAT
STREET, STORMWATER, MASTER DRAINAGE,
AND EROSION CONTROL PLANS
WARD ROAD & WINTHROP DRIVE
LEE'S SUMMIT, MISSOURI

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RECORD DRAWING

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Date: 1/10/2023
Certified by: RPM
Title: Design Engineer
Firm: Schlager and Associates, P.A.

SCHLAGEL

ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS

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PREPARED BY:

SCHLAGEL & ASSOCIATES, P.A.

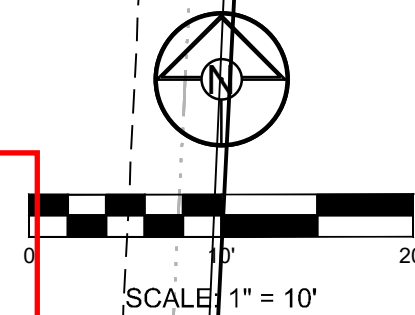
WOODLAND GLEN 2ND PLAT
STREET, STORMWATER, MASTER DRAINAGE,
AND EROSION CONTROL PLANS
WARD ROAD & WINTHROP DRIVE
LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
1/10/2023	AS-BUILT REVISIONS
11/14/2022	AS-BUILT
08/22/2022	CITY WALL MODIFICATION
08/16/2022	CITY EMAILED COMMENTS
04/24/2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
06/15/2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
2-19-2020	CITY COMMENTS
10/06/2021	SCHLAGEL UPDATE
18-017	WATER LINE CONFLICT

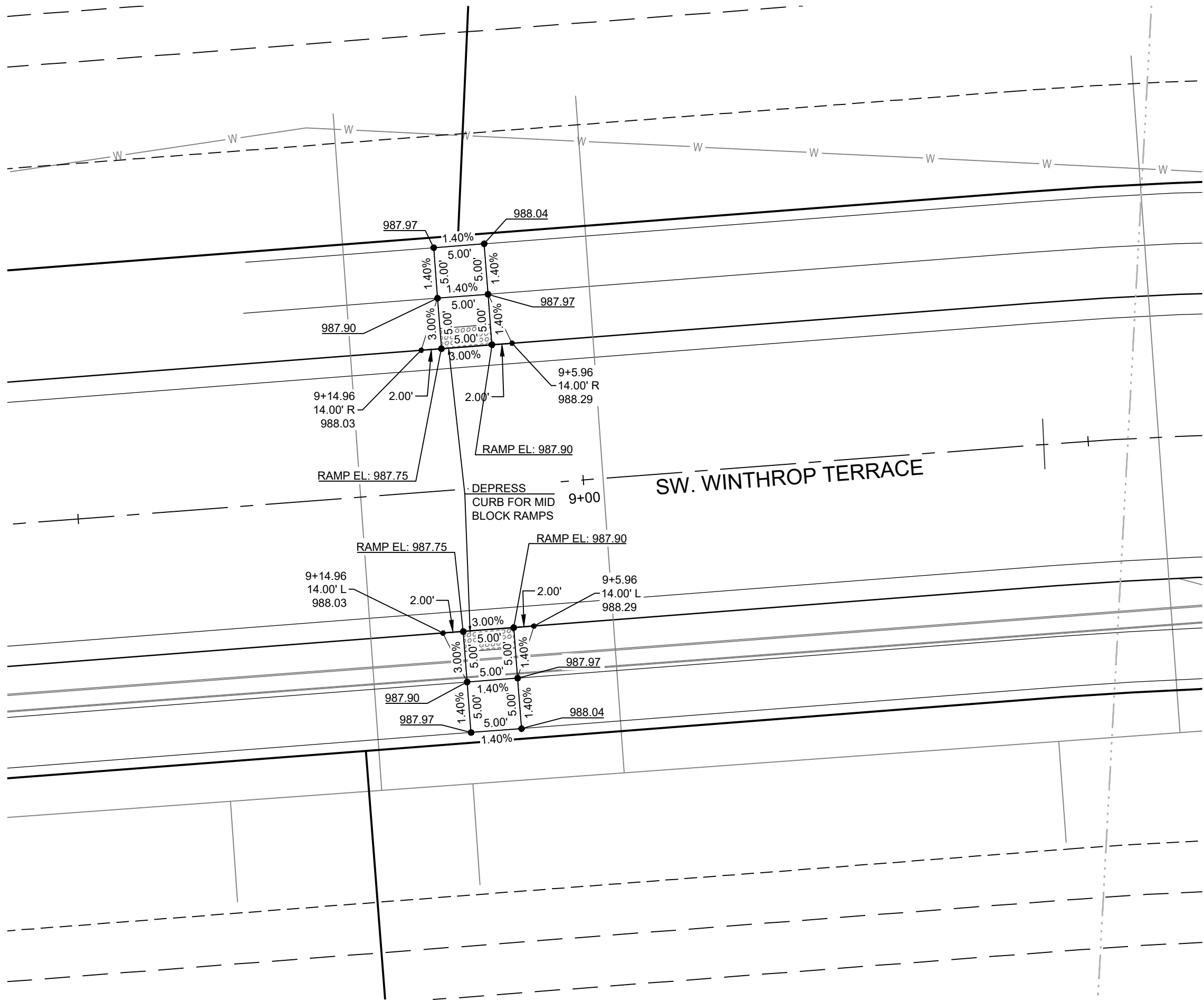
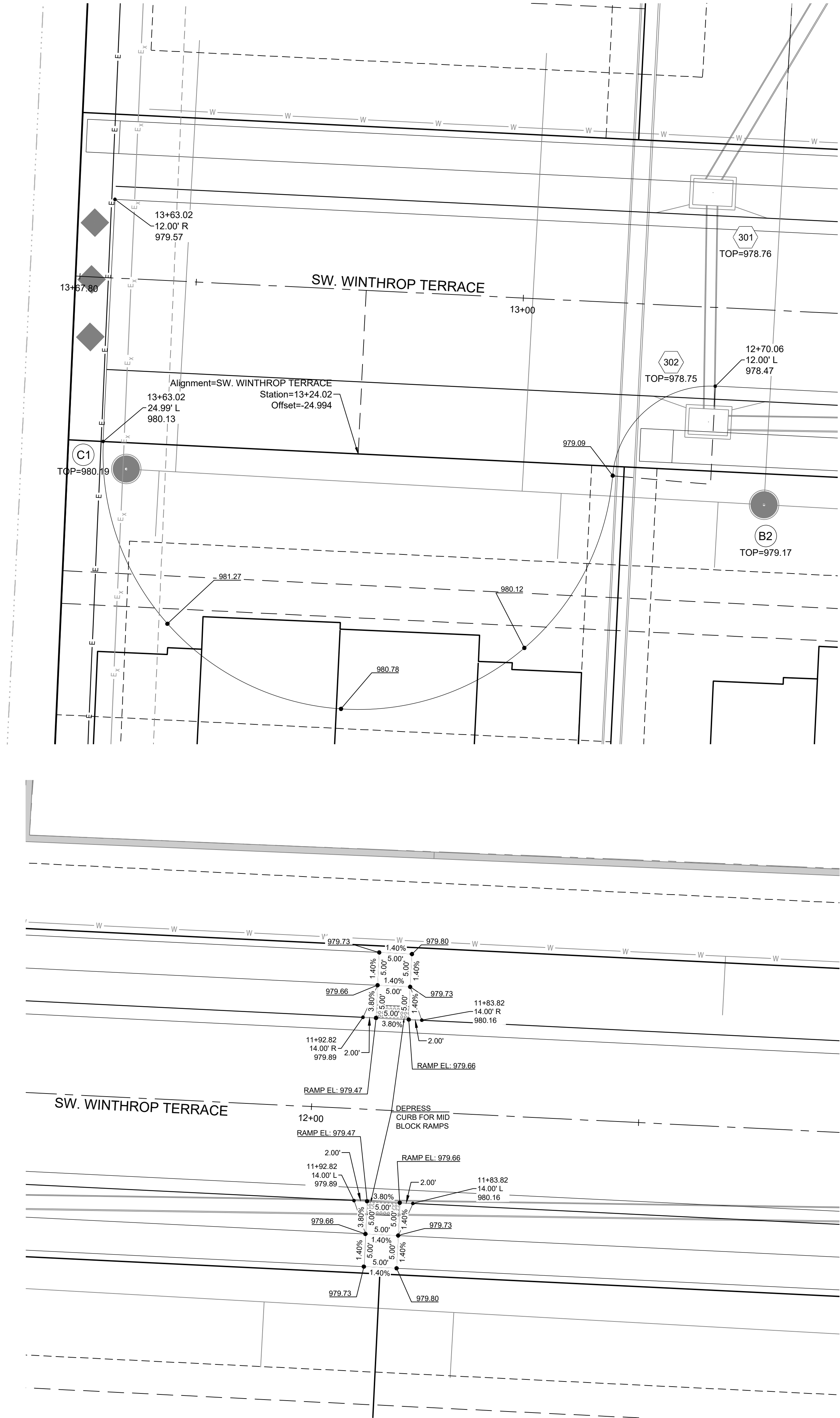
INTERSECTION
DETAIL

SHEET

Record Drawing



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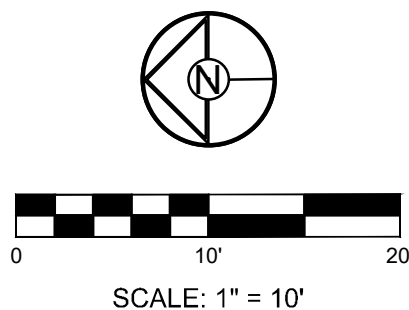
RECORD DRAWING

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Date: 1/10/2023
Certified by: RPM
Title: Design Engineer
Firm: Schlager and Associates, P.A.

Record Drawing



REVISION DATE	DESCRIPTION
1/10/2023	AS-BUILT REVISIONS
11/14/2022	AS-BUILT
08/22/2022	CITY WALL MODIFICATION
07/16/2022	CITY EMAILED COMMENTS

SCHLAGEL

ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS

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Missouri State Certificates of Authority
#E2002003600F #LAC200100237 #LS200200859-F

PREPARED BY:

SCHLAGEL & ASSOCIATES, P.A.

WOODLAND GLEN 2ND PLAT
STREET, STORMWATER, MASTER DRAINAGE,
AND EROSION CONTROL PLANS
WARD ROAD & WINTHROP DRIVE
LEE'S SUMMIT, MISSOURI

INTERSECTION
DETAILS

SHEET

15

Storm Sewer Construction Notes	
Structure	Notes
100	STA 0+00.00, 100 INSTALL 24" END SECTION N 952669.2728 E 2818473.6957
101	STA 0+34.17, 100 INSTALL 6 X 4 CURB INLET N 952679.3667 E 2818441.0459
102	STA 0+69.17, 100 INSTALL 6 X 4 CURB INLET N 952681.0777 E 2818406.0877
103	STA 1+68.90, 100 INSTALL 4 X 4 JUNCTION BOX F.F.B. 358°53'41" N 952683.0605 E 2818306.3812
104	STA 2+00.35, 100 INSTALL 4 X 4 AREA INLET (OPENINGS N,E,S,W F.F.B. 0°0'00" N 952714.4882 E 2818307.6069
105	STA 2+83.31, 100 INSTALL 4 X 4 AREA INLET (OPENINGS N,E,S,W F.F.B. 86°30'58" N 952979.3500 E 2818311.6624
200	STA -0+00.04, 200 INSTALL 15" END SECTION N 952655.8760 E 2818595.2227
201	STA 0+68.76, 200 INSTALL OUTLET STRUCTURE F.F.B. 180°00'00" N 952652.0986 E 2818526.5222

Storm Sewer Construction Notes	
Structure	Notes
300	STA -0+00.00, 300 INSTALL 24" END SECTION N 993645.0883 E 2818540.6336
301	STA 0+58.76, 300 INSTALL 6 X 4 CURB INLET N 993674.4582 E 2818489.7451
302	STA 0+93.77, 300 INSTALL 6 X 4 CURB INLET N 993675.1476 E 2818454.7370
303	STA 3+62.91, 300 INSTALL 6 X 4 CURB INLET N 993406.0386 E 2818450.7956
304	STA 5+32.58, 300 INSTALL 6 X 4 CURB INLET N 993236.8248 E 2818463.2865
305	STA 5+67.98, 300 INSTALL 6 X 4 CURB INLET N 993232.1336 E 2818498.3682
	STA 0+97.58, 400 INSTALL 4 X 4 AREA INLET (OPENINGS S.W. F.F. 357.7749) N 993410.6806 E 2818353.3299
501	STA 0+35.31, 500 INSTALL 6 X 4 CURB INLET N 993404.0946 E 2818486.0494

Storm Sewer Construction Notes	
Structure	Notes
600	STA 0+04.52, 600 INSTALL 18" END SECTION N 993537.5200 E 2818630.9786
601	STA 0+73.07, 600 INSTALL OUTLET STRUCTURE F.F.B. 357'2329" N 993540.6400 E 2818562.4994
700	STA 0+00.00, 700 INSTALL 15" END SECTION N 993315.5193 E 2818706.7724
701	STA 0+44.96, 700 INSTALL OUTLET STRUCTURE F.F.B. 0'0000" N 993316.1131 E 2818661.8180
800	STA 0+00.85, 800 INSTALL 36" END SECTION N 993680.3317 E 2818589.9535
801	STA 2+35.65, 800 INSTALL 6 X 4 JUNCTION BOX F.F.B. 87'1749" N 993692.4917 E 2818355.4726
802	STA 2+60.17, 800 INSTALL 7 X 6 JUNCTION BOX N 993693.6905 E 2818328.9777
803	STA 3+22.40, 800 INSTALL 4 X 4 JUNCTION BOX N 993631.5331 E 2818328.0430

Storm Sewer Construction Notes	
Structure	Notes
901	STA 1+67.35, 900 INSTALL 6 X 4 CURB INLET N 992406.7121 E 2818769.5220
902	STA 2+14.40, 900 INSTALL 6 X 4 CURB INLET N 992420.9665 E 2818814.3651
1001	STA 0+40.71, 1000 INSTALL 4 X 4 AREA INLET (OPENINGS N,E,S,W F.F.B. 357°17'49" N 993651.8261 E 2818353.4824
1101	STA 0+31.59, 1100 INSTALL 4 X 4 AREA INLET (OPENINGS N,E,S,W F.F.B. 357°17'49" N 993724.0390 E 2818357.0166
1201	STA 0+89.39, 1200 INSTALL 4 X 4 AREA INLET (OPENINGS N,E,S,W F.F.B. 0°53'19" N 992593.6700 E 2818305.7533

PROJECT BENCHMARK:

SW. CORNER NW. $\frac{1}{4}$ SEC. 18-47N-31W, JACKSON COUNTY, MO.
3" DIAMETER ALUMINUM DISK IN MONUMENT BOX
M.D.N.R. DOC. NO. 600-65374

ELEV. 1036.41

RECORD DRAWING

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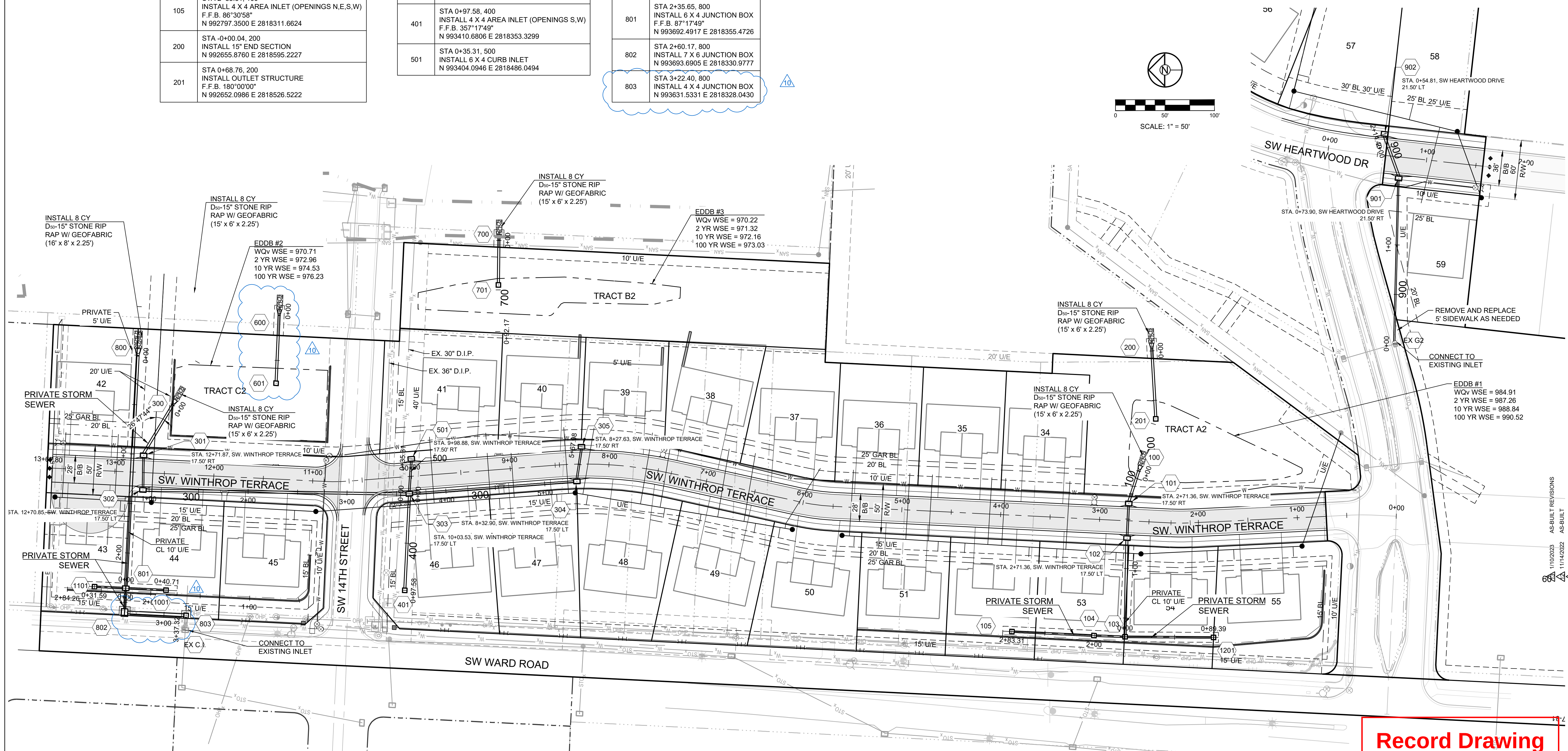
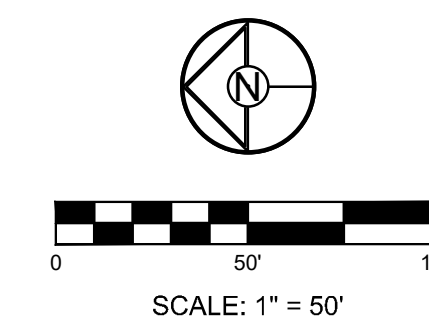
“100-00 100.10”, “1-00% 1.15% slope”, or “8-inch HDPE PVC pipe” are all typical examples of revisions that indicate that design data has been replaced with “as-built” information. All other data is as designed and has not been field verified.

Date: 1/10/2023

Certified by: RPM

Title: Design Engineer

Firm: Schlager and Associates, P.A.



Record Drawing

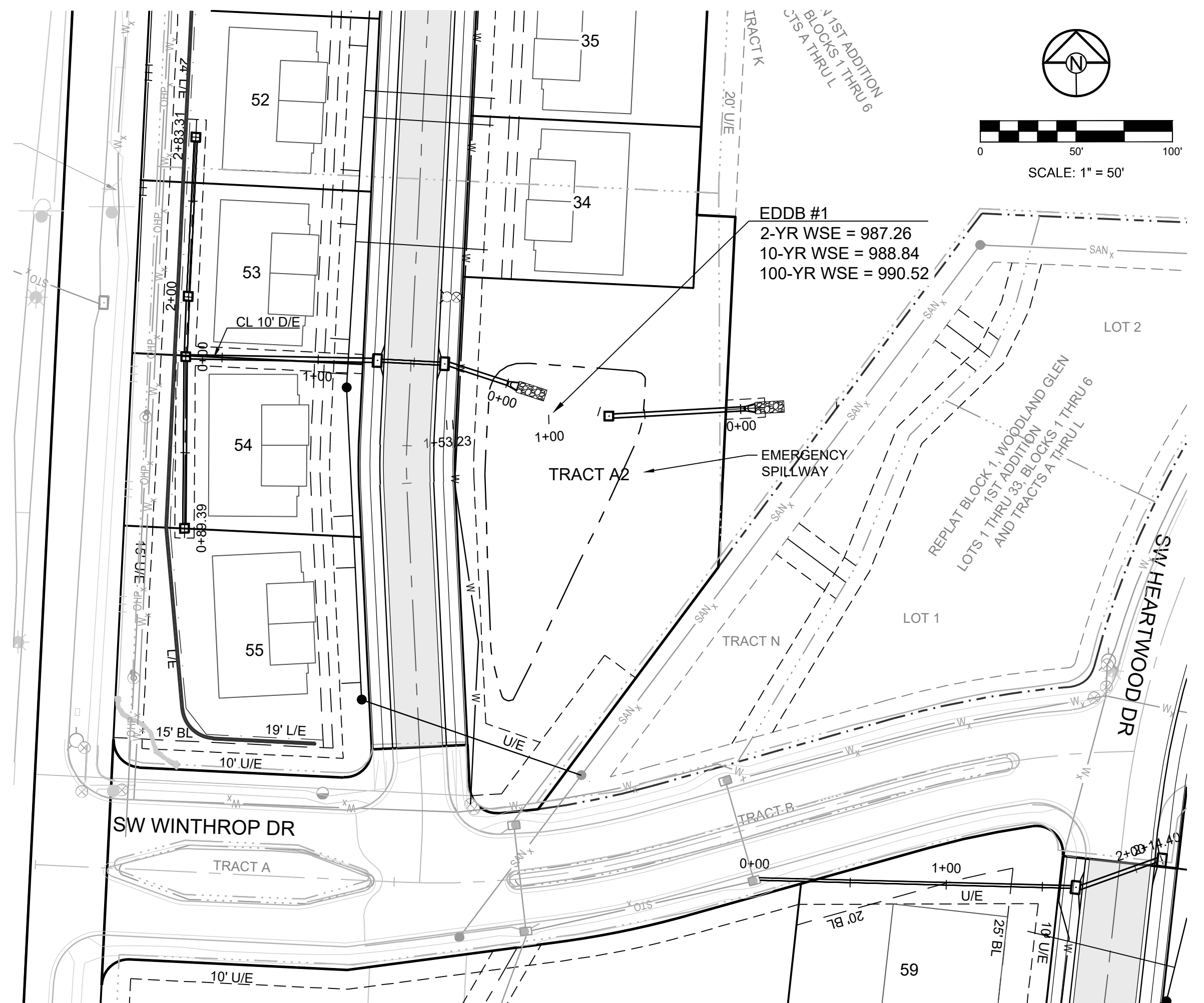
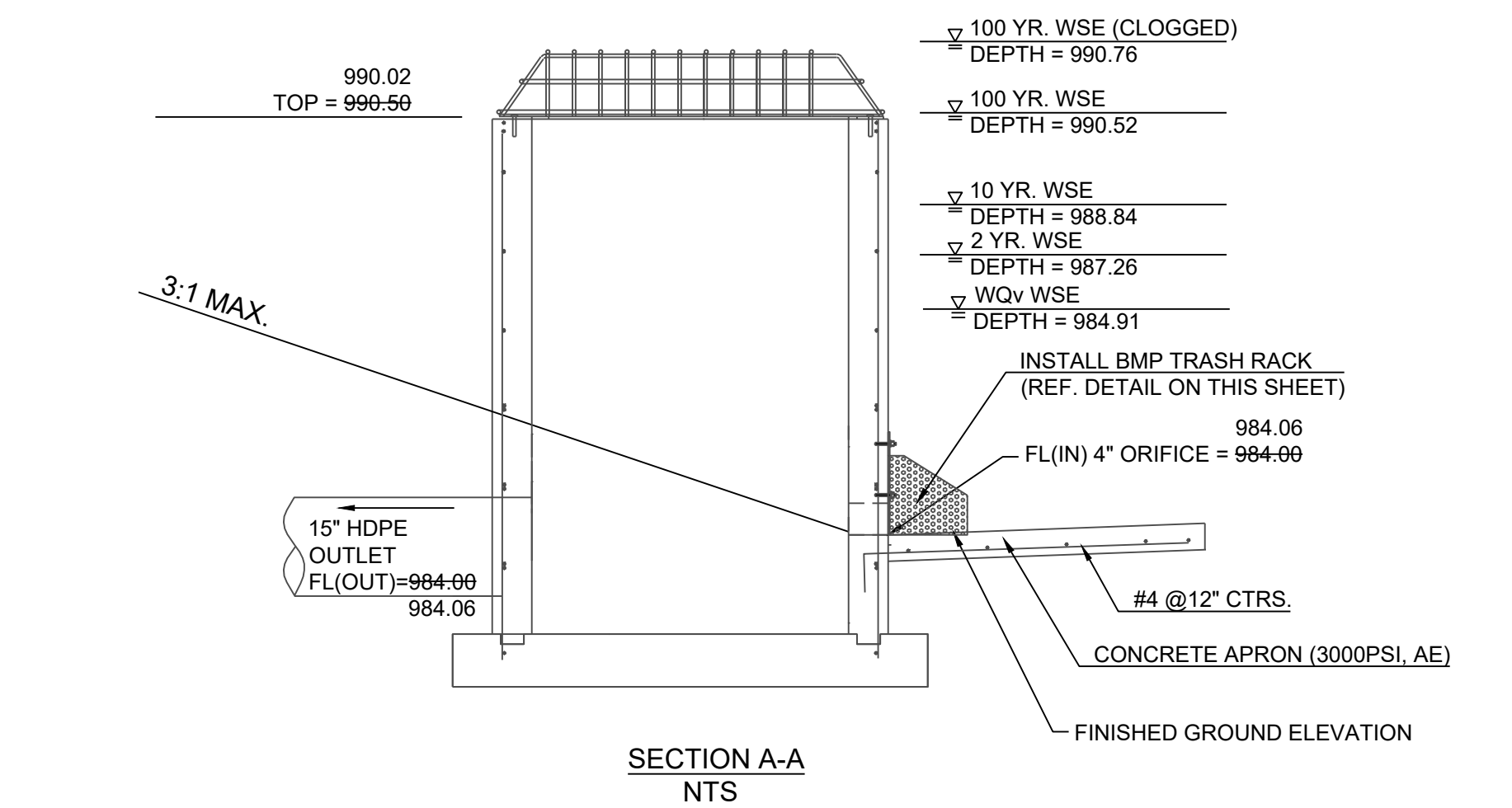
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WOODLAND GLEN 2ND PLAZA
STREET, STORMWATER, MASTER DRAINAGE,
AND EROSION CONTROL PLANS
WARD ROAD & WINTHROP DRIVE
LEE'S SUMMIT, MISSOURI

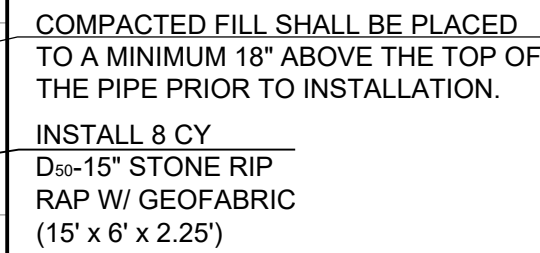
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CHECKED BY	01/12/2021	2	CITY COMMENTS
MAB	04/09/2021	3	SCHLAGEL QUANTITIES
	05/12/2021	4	CITY COMMENTS
DATE PREPARED	06/15/2021	5	CITY COMMENTS
2-19-2020	06/28/2021	6	CITY COMMENTS
PROJ. NUMBER:	08/29/2021	7	SCHLAGEL UPDATE
	10/06/2021	8	CITY COMMENTS
18-01	11/20/2022	9	WATER LINE CONFLICT

SHEET

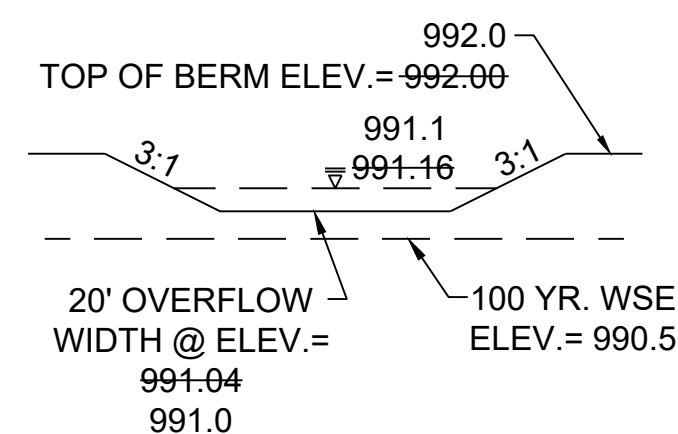
16



REQUIRED = 1,246 C.Y.
PROPOSED = 1,787 C.Y.
AS-BUILT = 1,668 C.Y.



AUXILIARY SPILLWAY DESIGN:
 $Q(100)=2.71 \text{ CFS}$, $Q=CLH^{3/2}$, $C=3.33$, $L=20 \text{ FT.}$, $2.71 \text{ CFS} = 3.33 * 20 \text{ FT.} * (H^{3/2})$, $H=0.12 \text{ FT.}$



ELEV. 1036.41

Record Drawing

EDDB 1 OUTLET STRUCTURE

SHEET

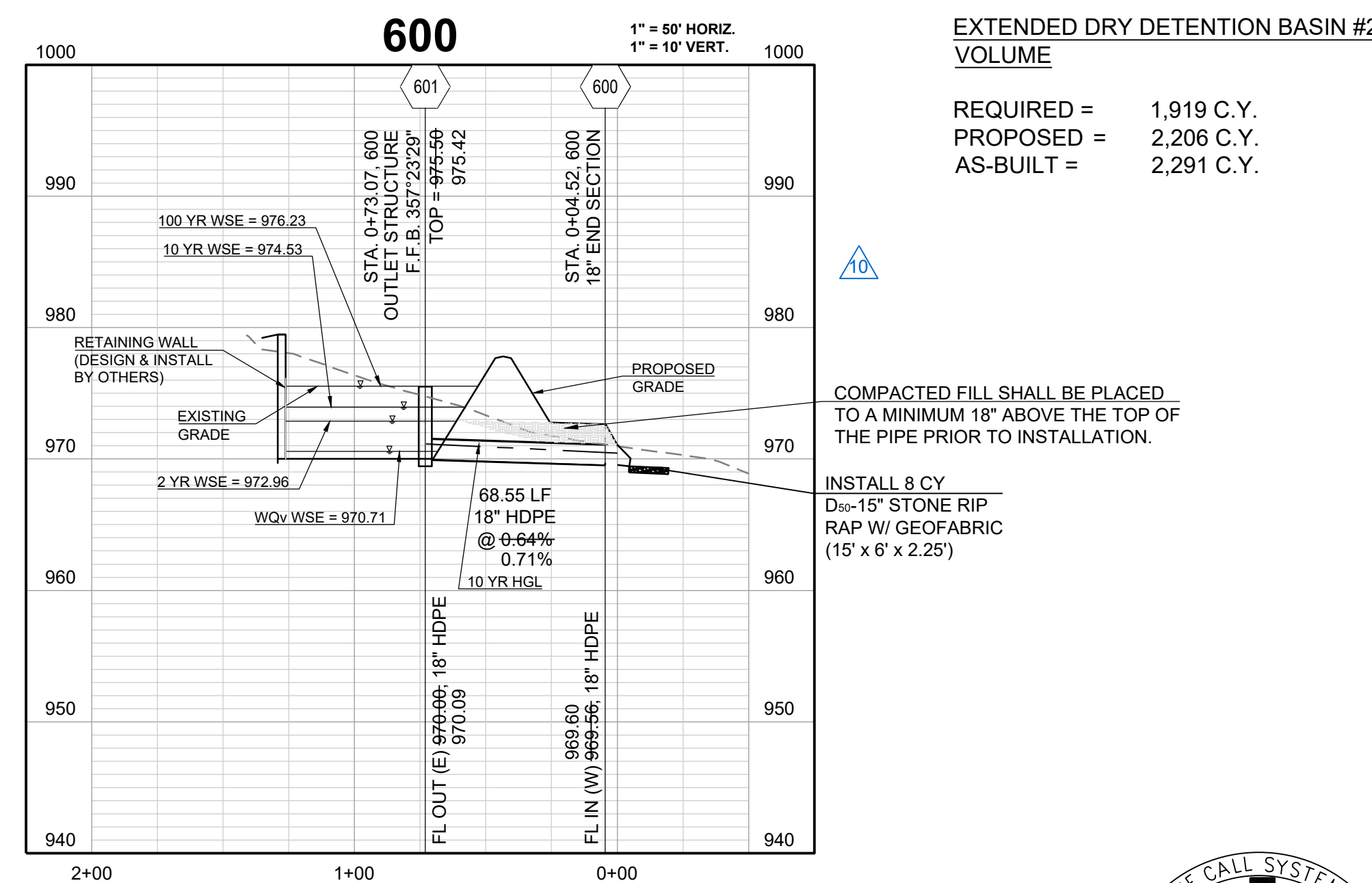
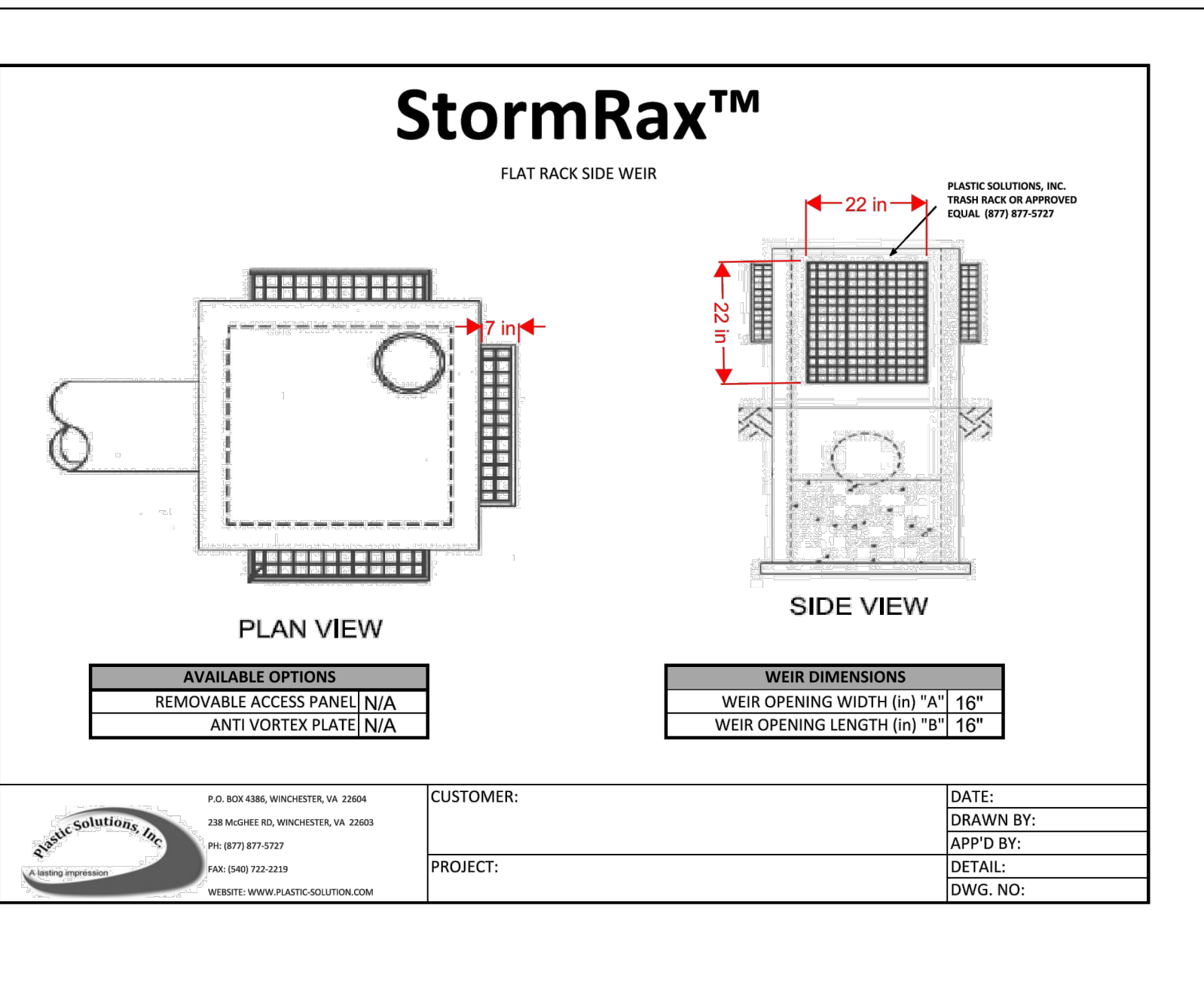
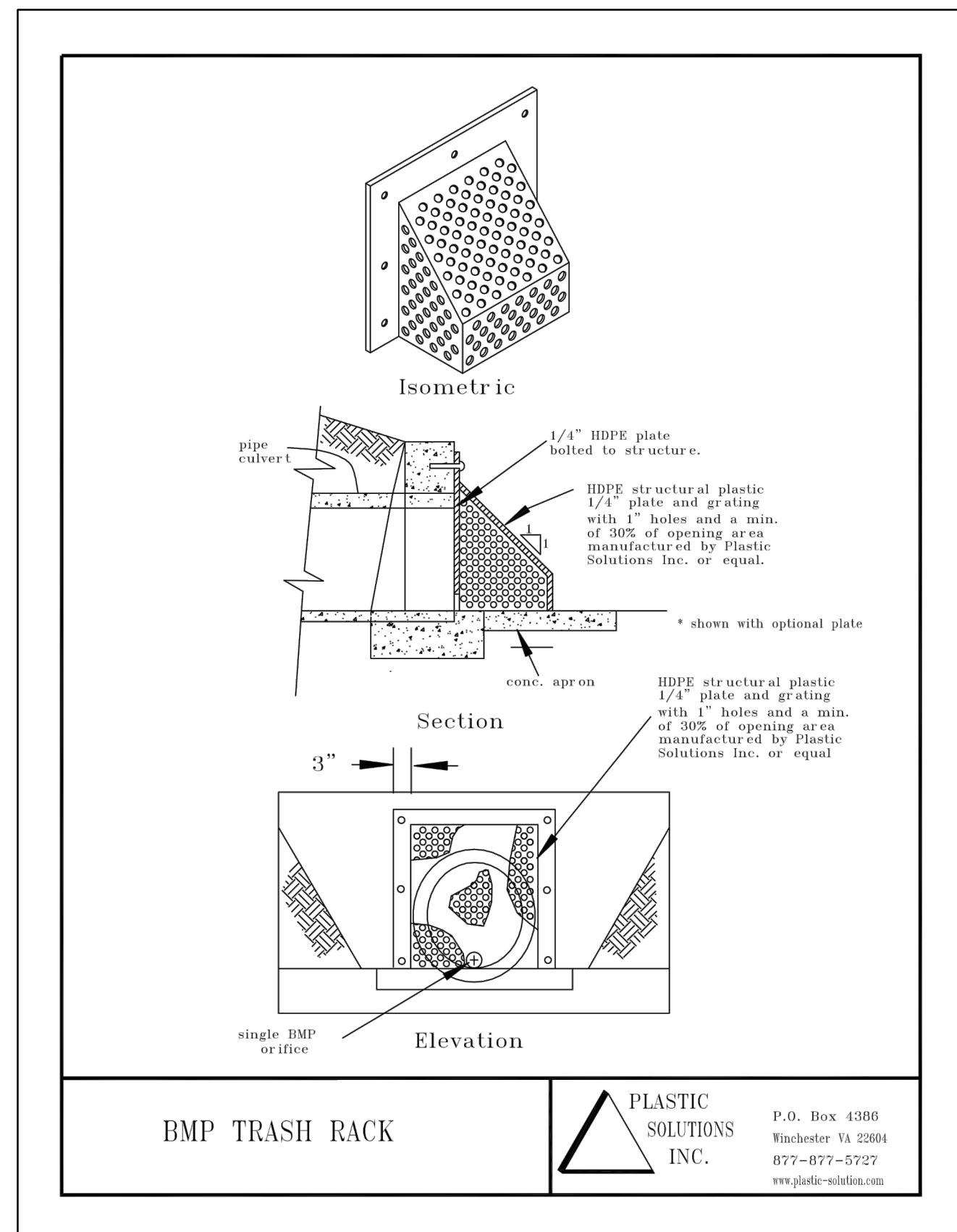
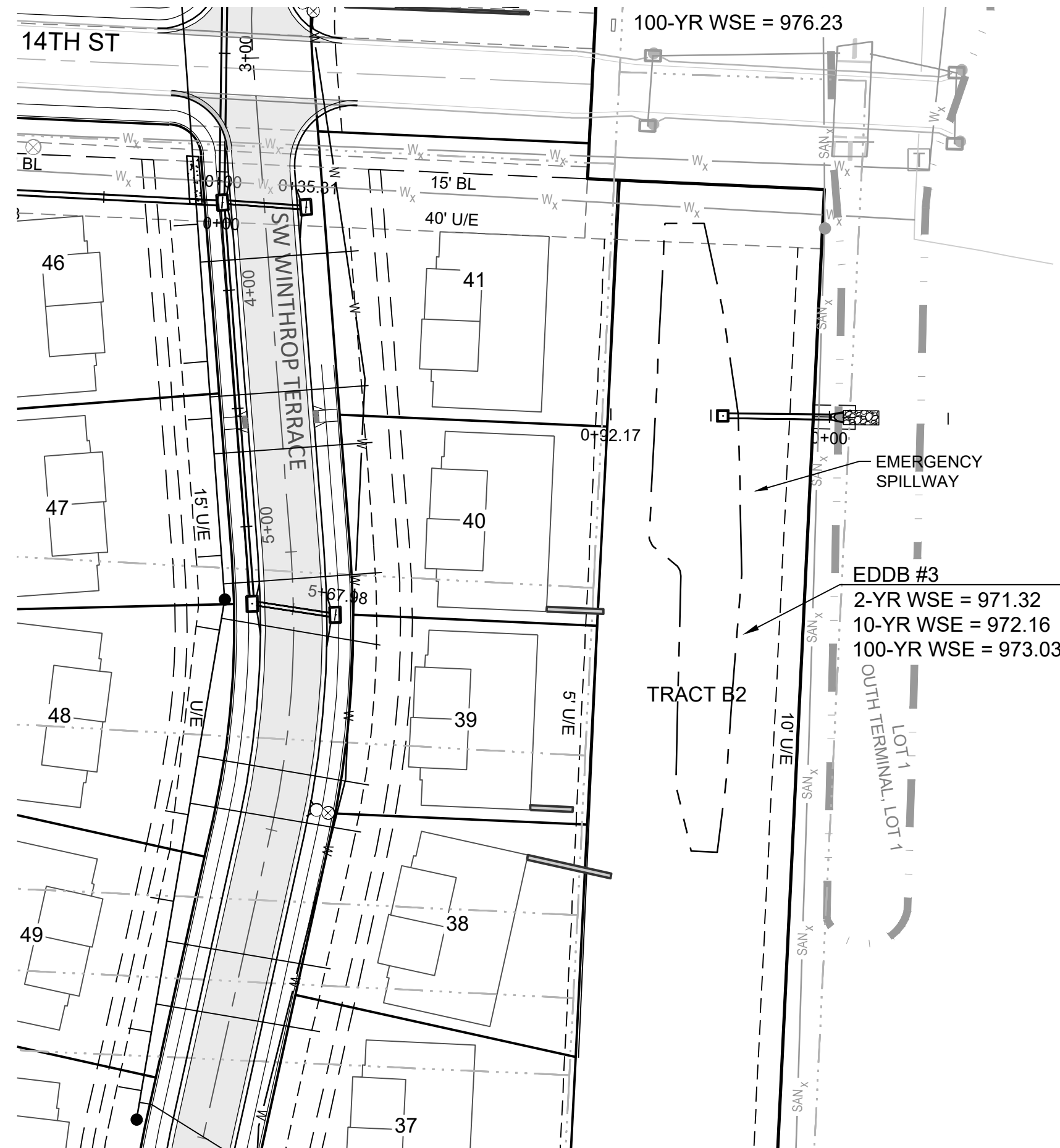
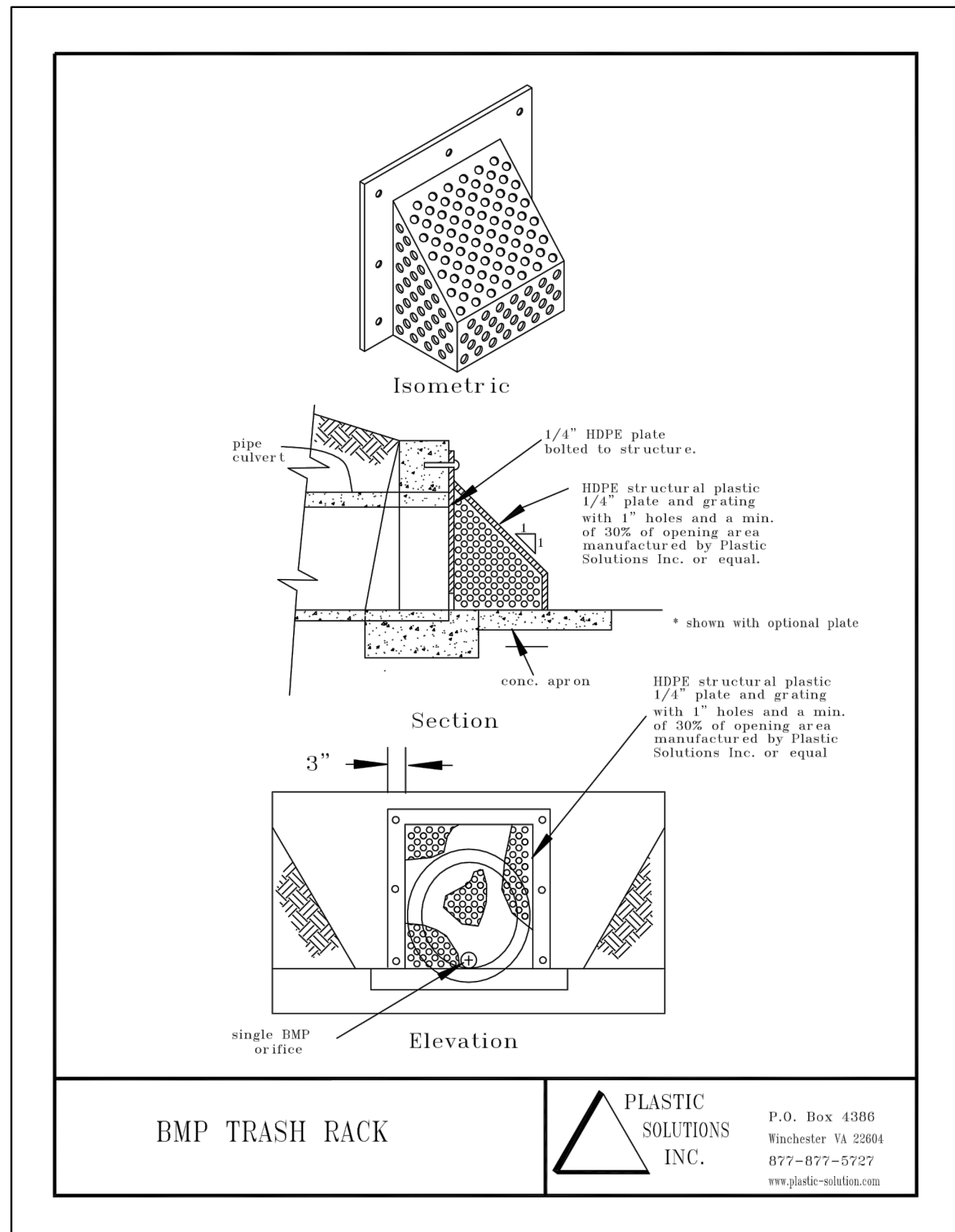
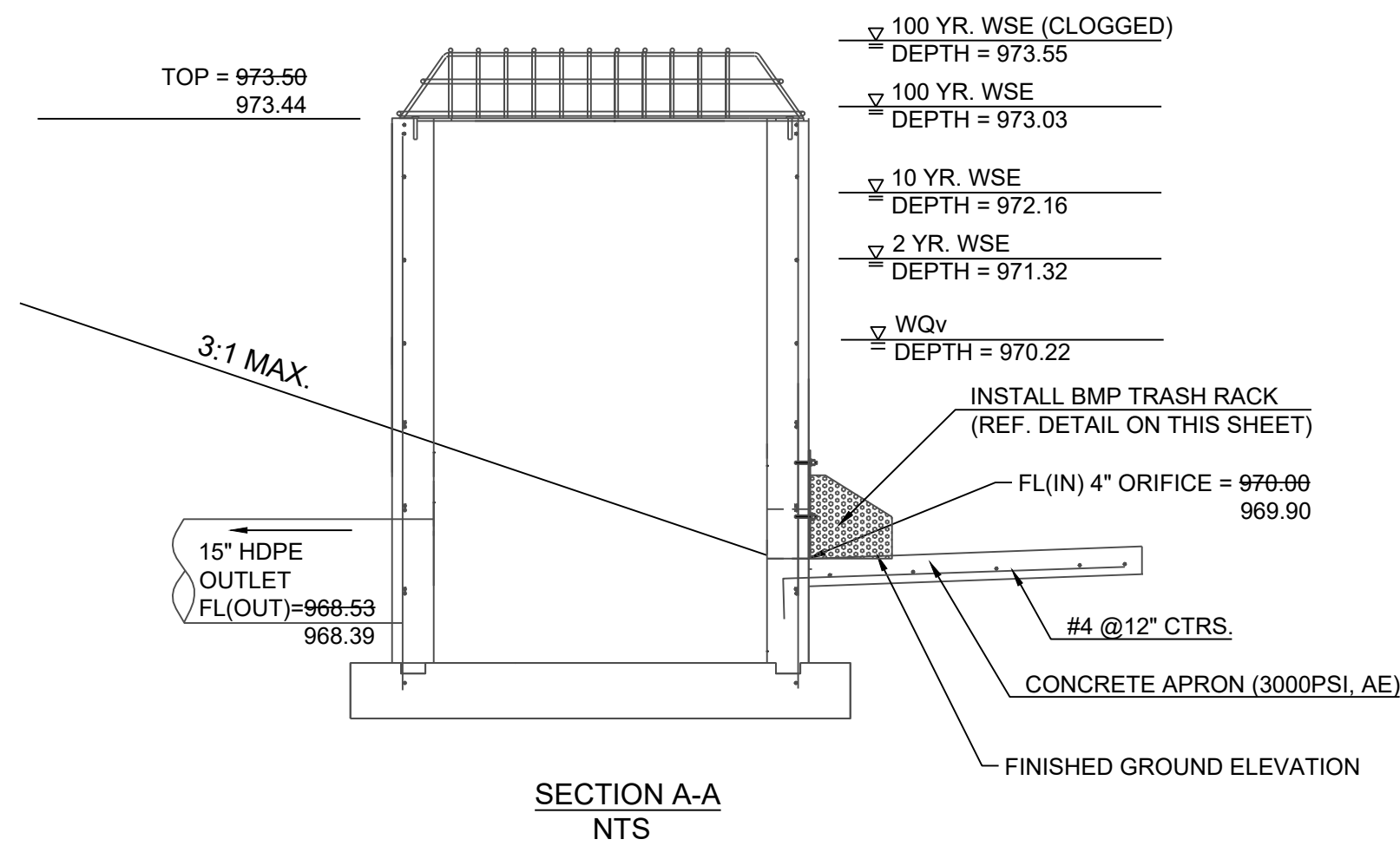
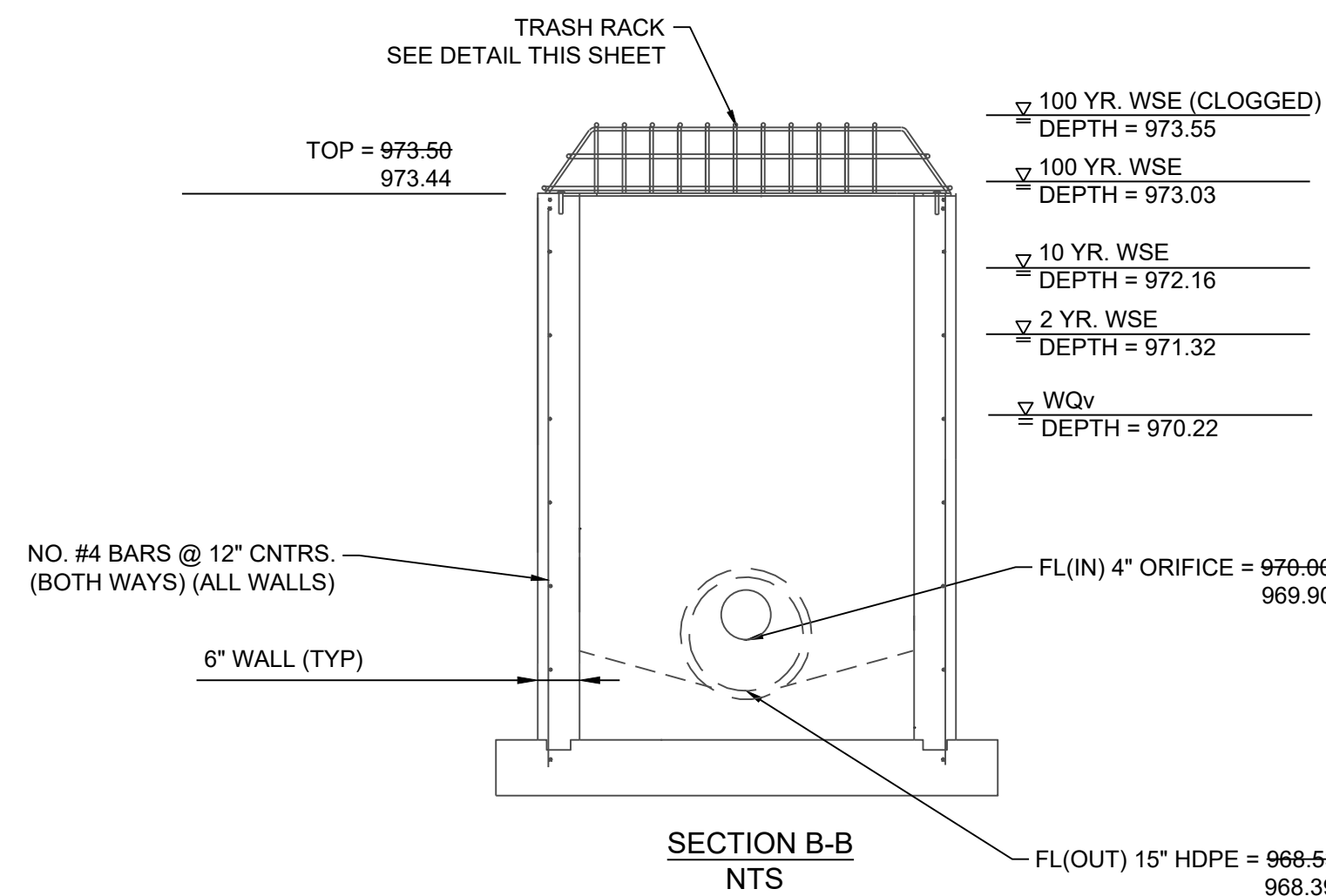
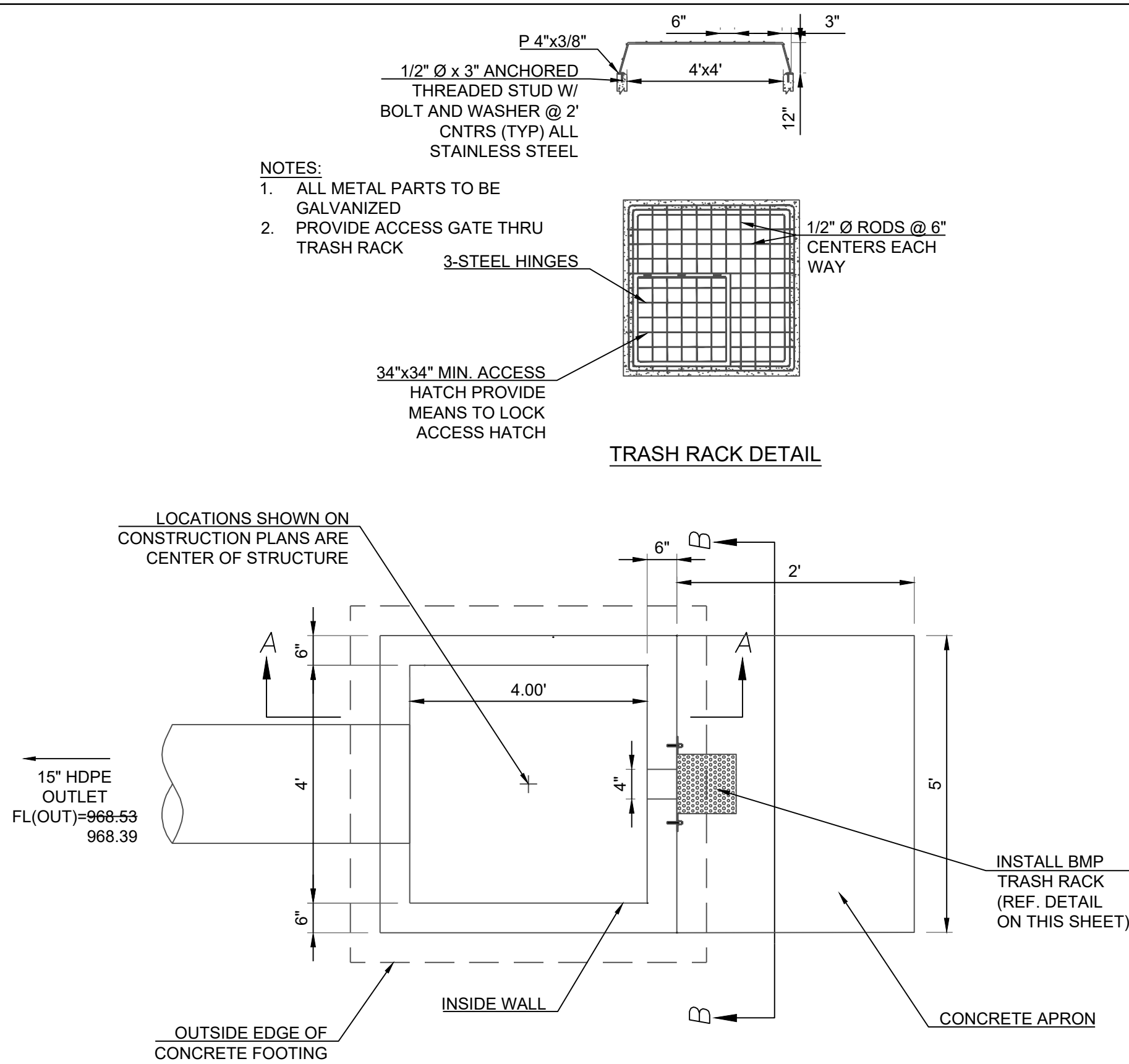


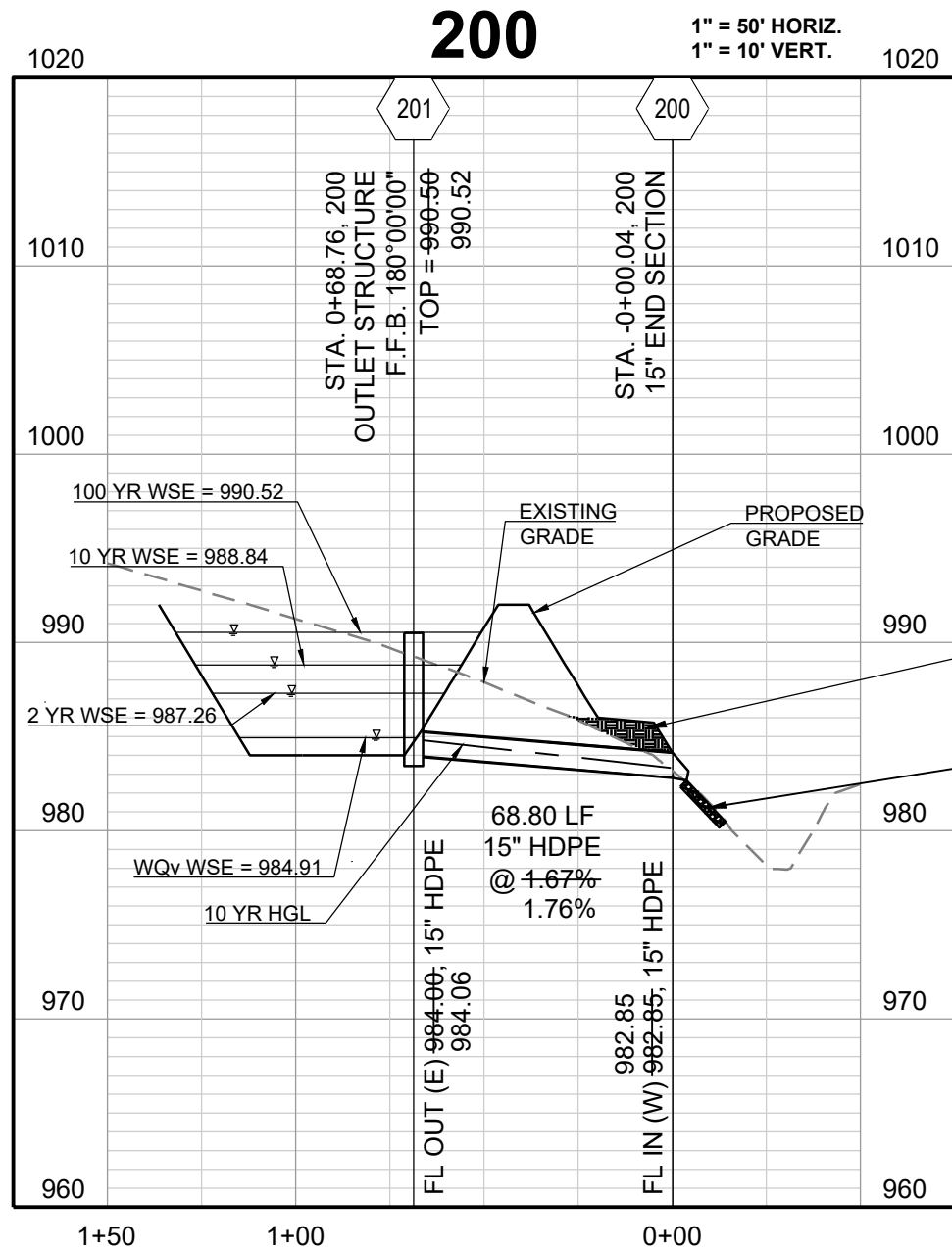
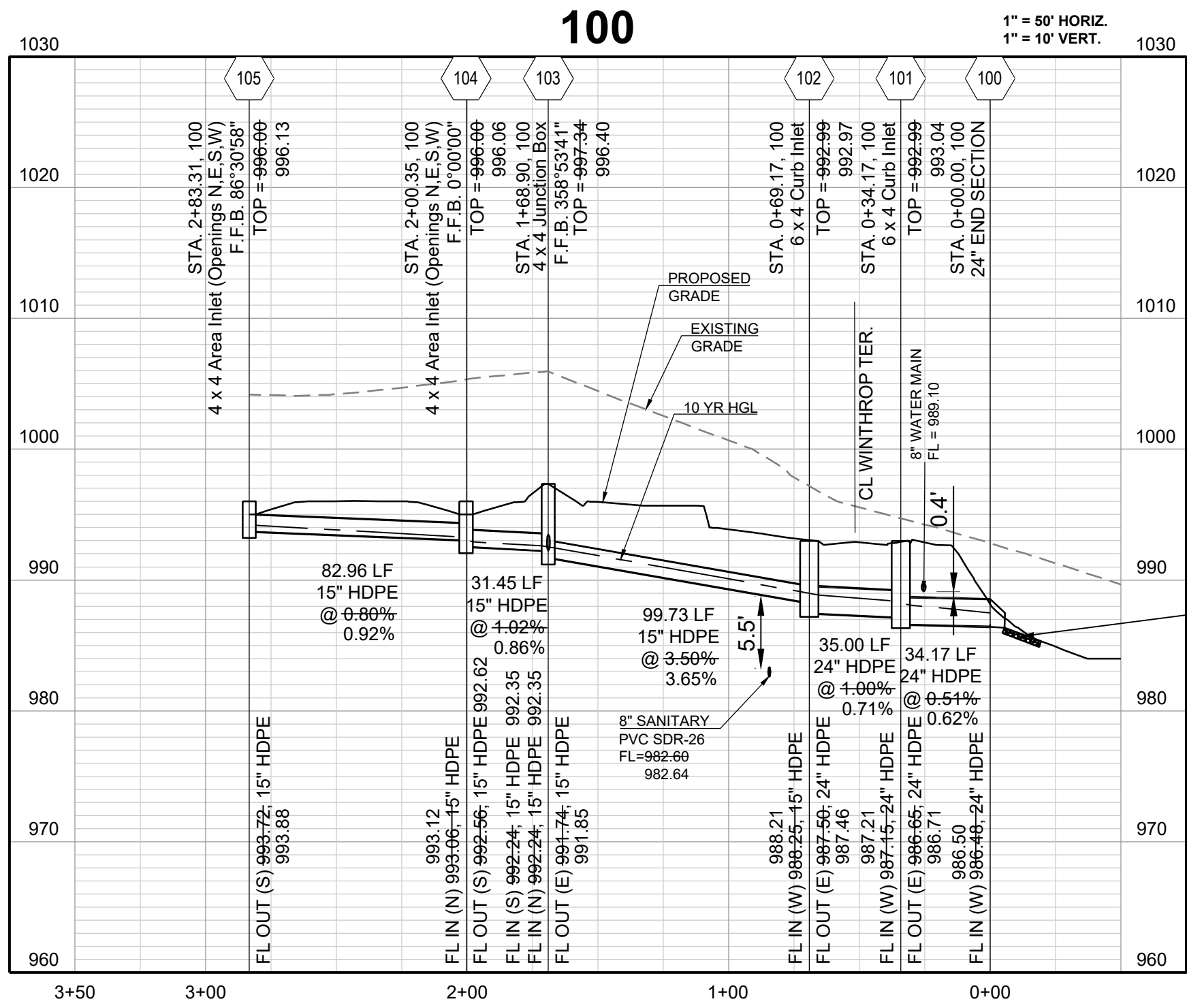
Diagram illustrating the cross-section of a berm and overflow area. The diagram shows a trapezoidal berm with a top width of 3:1 on both sides. The top of the berm is at elevation 977.7. The berm is 20' wide at elevation 976.40. The 100-year water surface elevation (WSE) is at 976.2. The berm is 100' wide at elevation 976.2. The berm is 100' wide at elevation 976.2. The berm is 100' wide at elevation 976.2.

ELEV. 1036.41

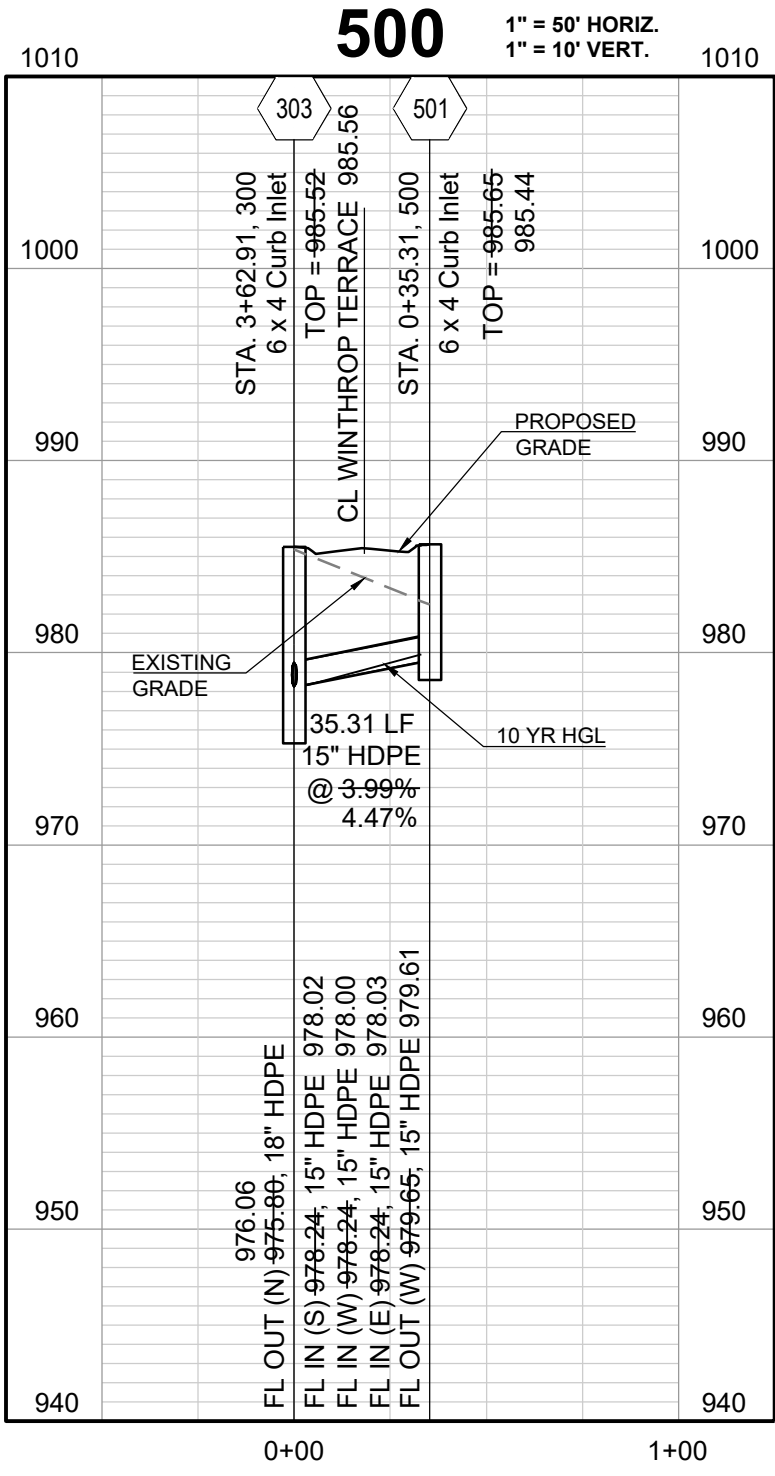
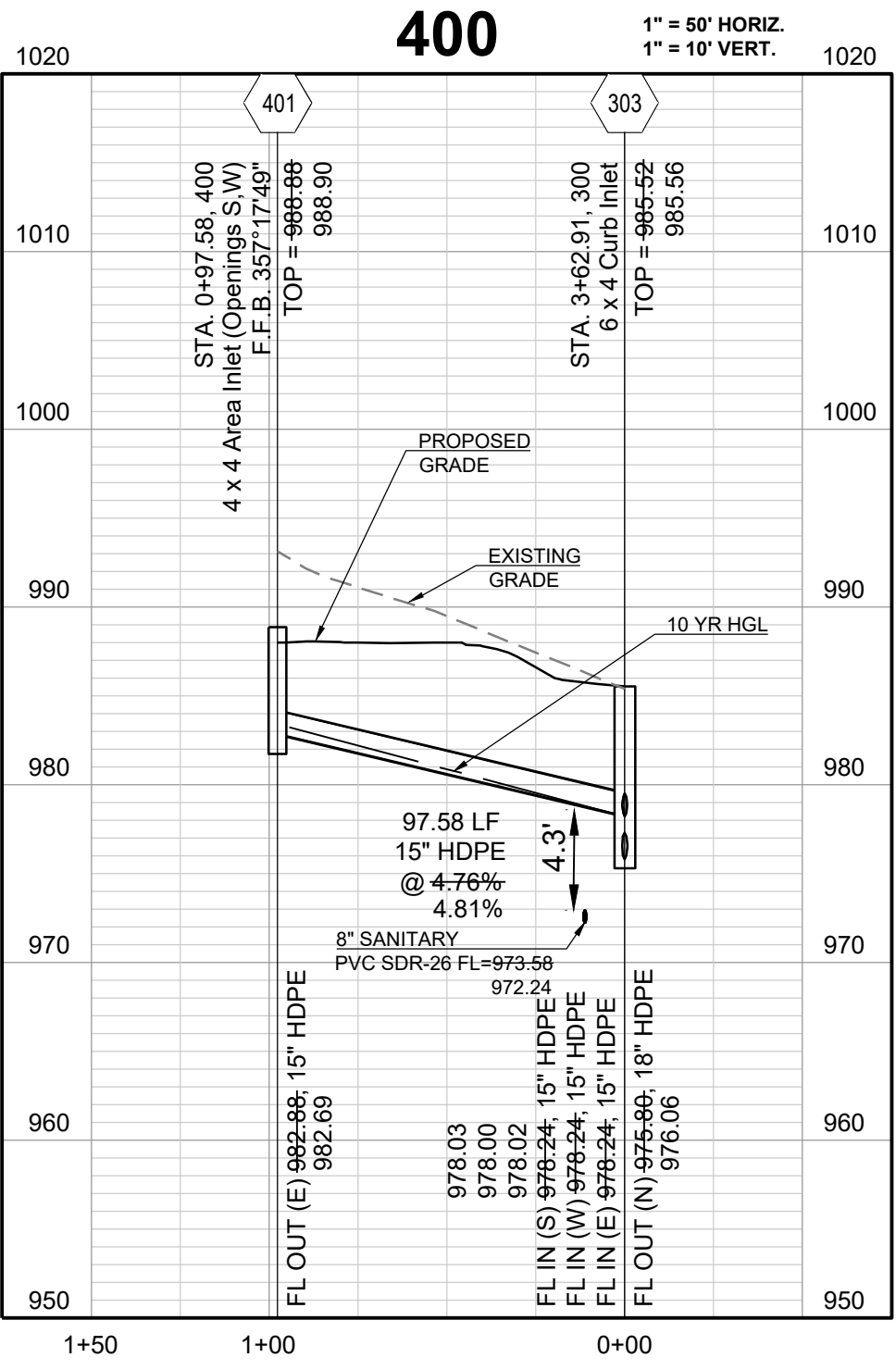
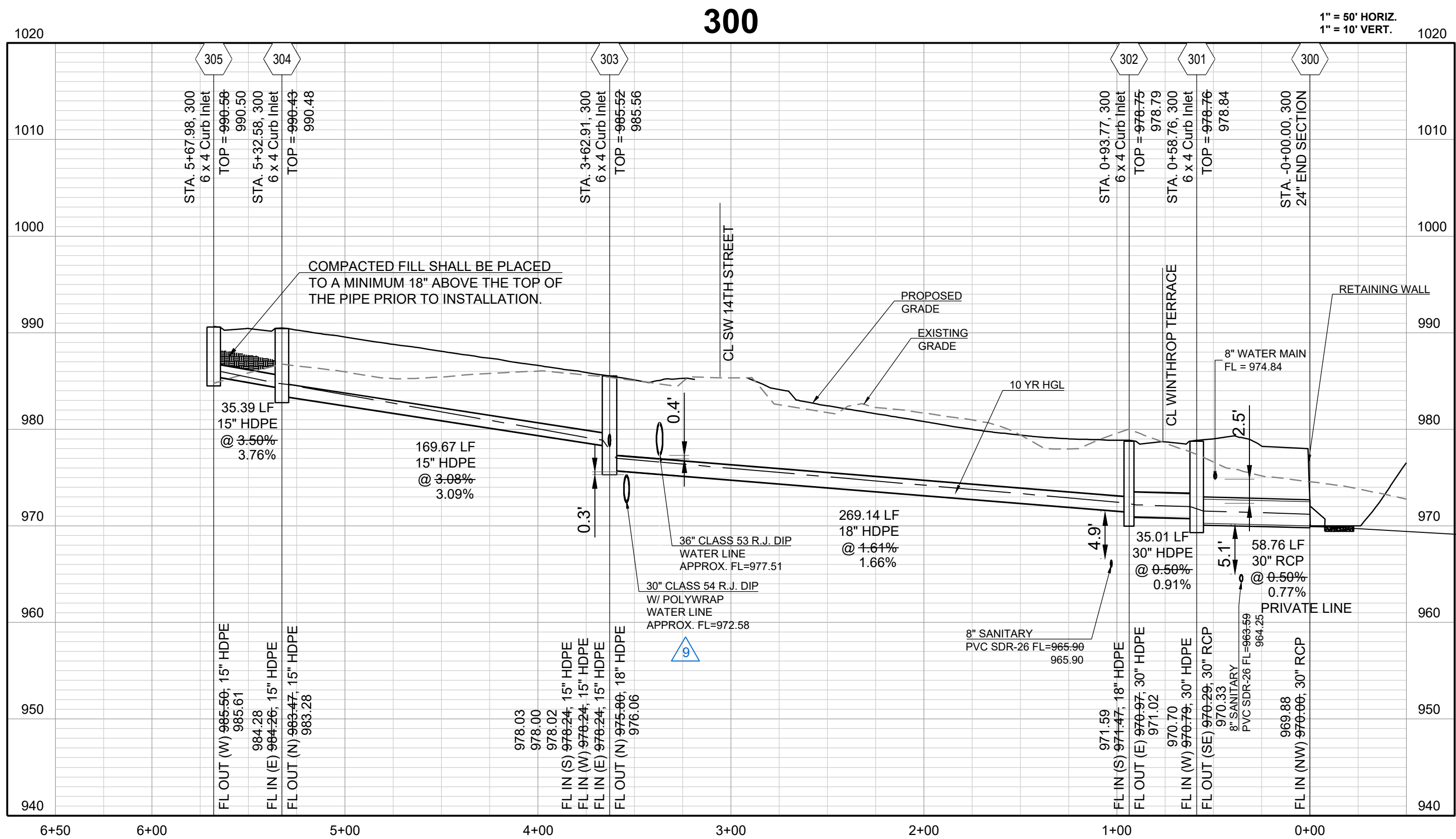
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COMPACTED FILL SHALL BE PLACED TO A MINIMUM 18" ABOVE THE TOP OF THE PIPE PRIOR TO INSTALLATION.
INSTALL 8 CY D₃₀-15" STONE RIP RAP W/ GEOFABRIC (15' x 6' x 2.25')



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Date: 1/10/2023
Certified by: RPM
Title: Design Engineer
Firm: Schlager and Associates, P.A.

Record Drawing

WOODLAND GLEN 2ND PLAT
STREET, STORMWATER, MASTER DRAINAGE,
AND EROSION CONTROL PLANS
WARD ROAD & WINTHROP DRIVE
LEE'S SUMMIT, MISSOURI

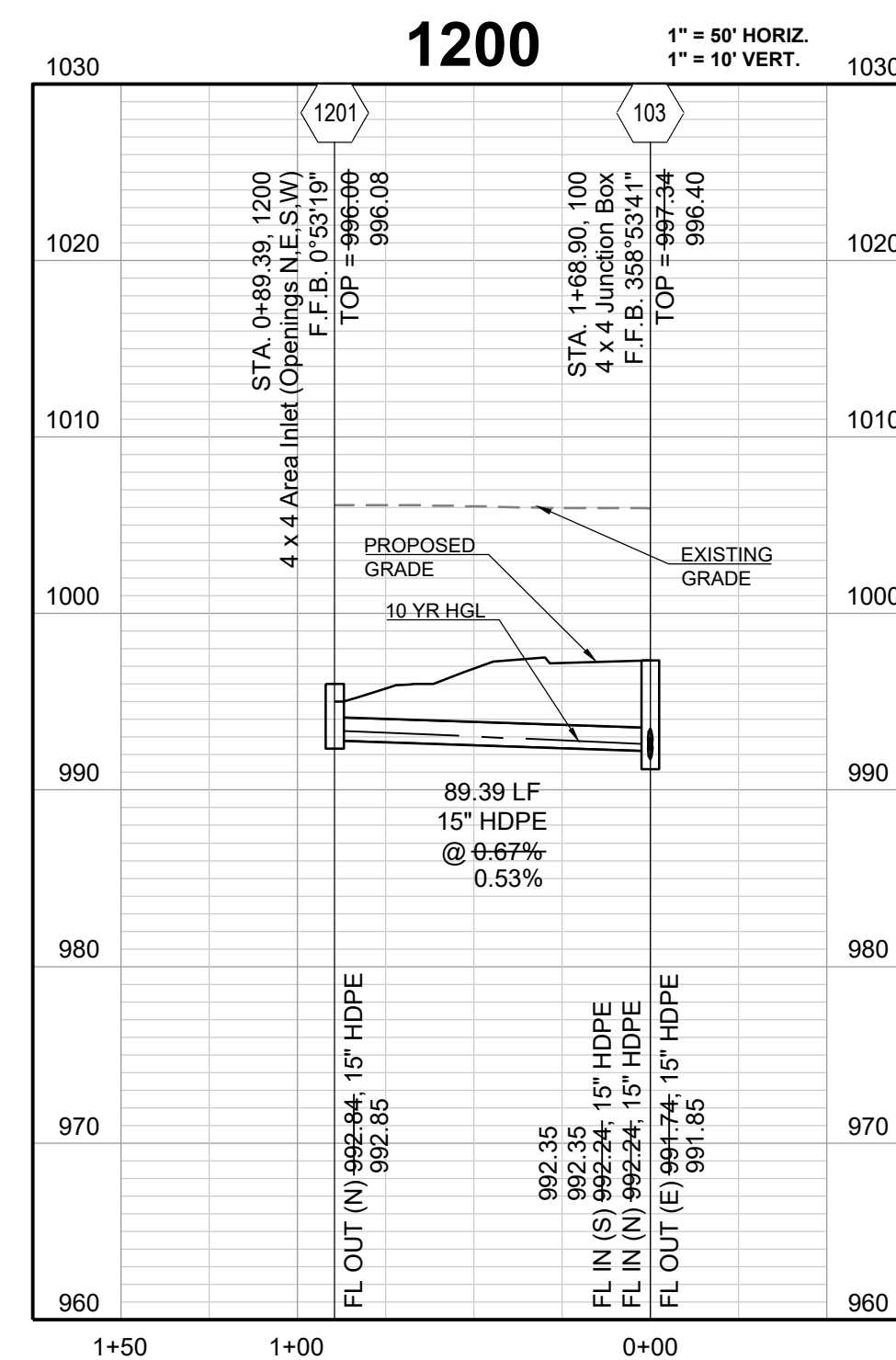
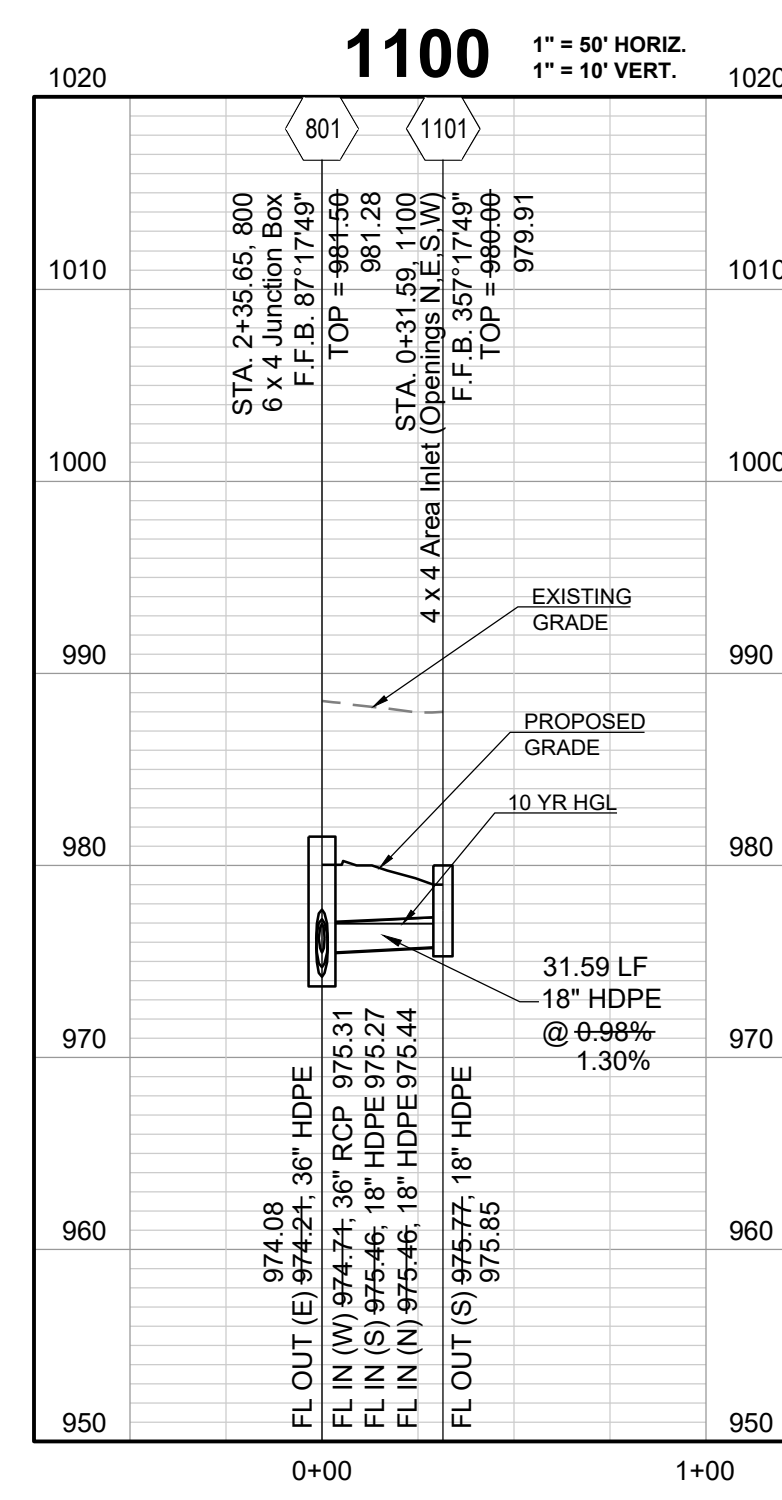
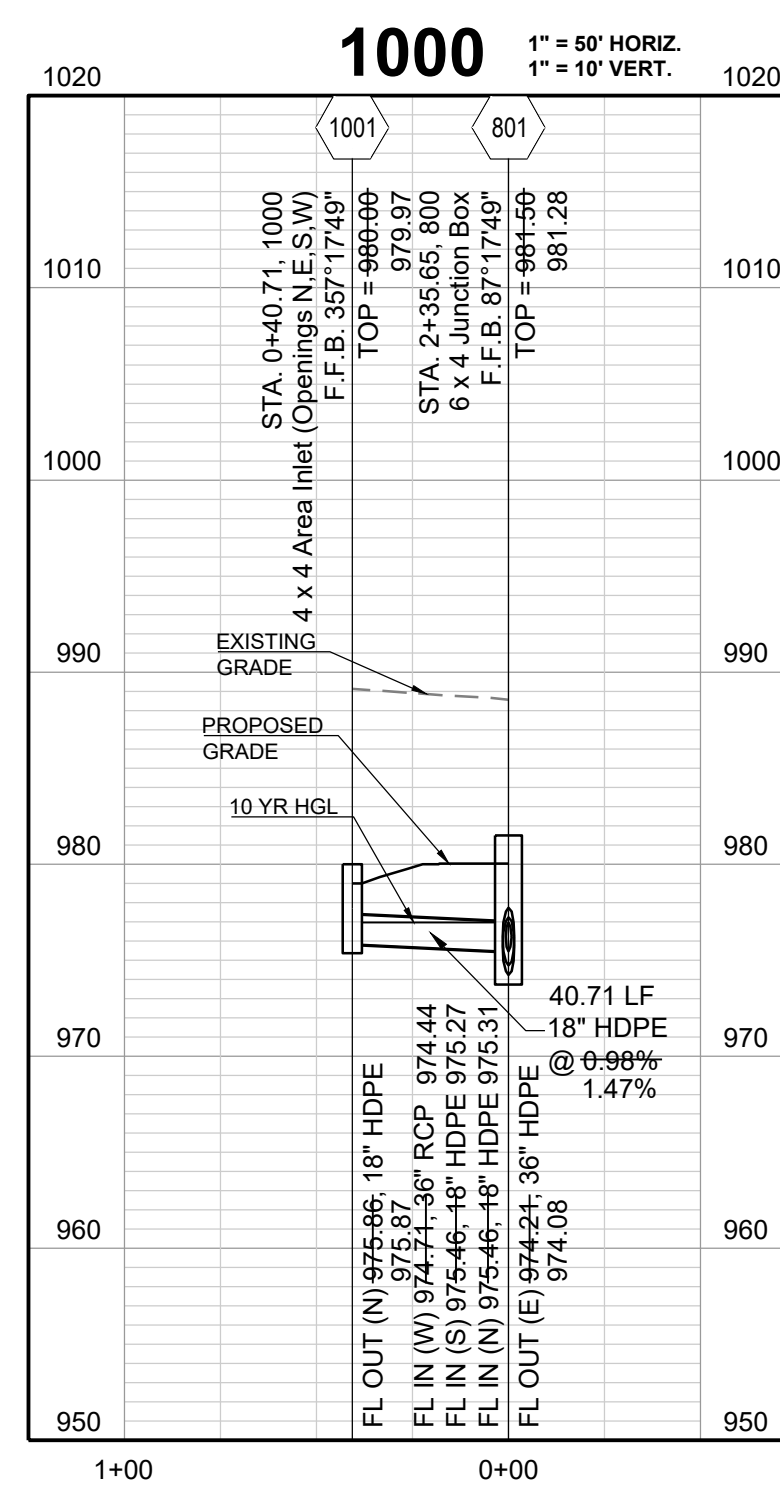
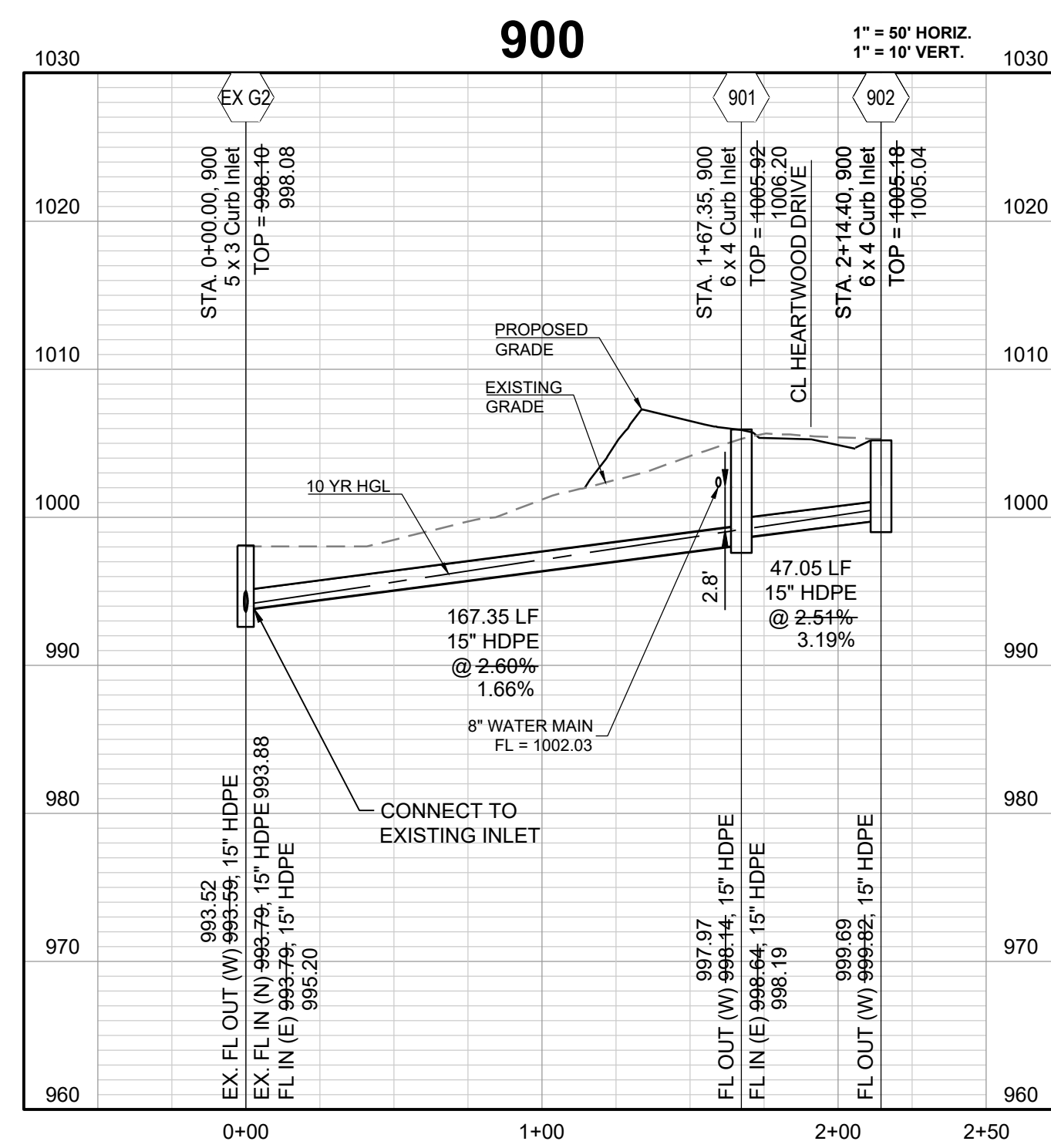
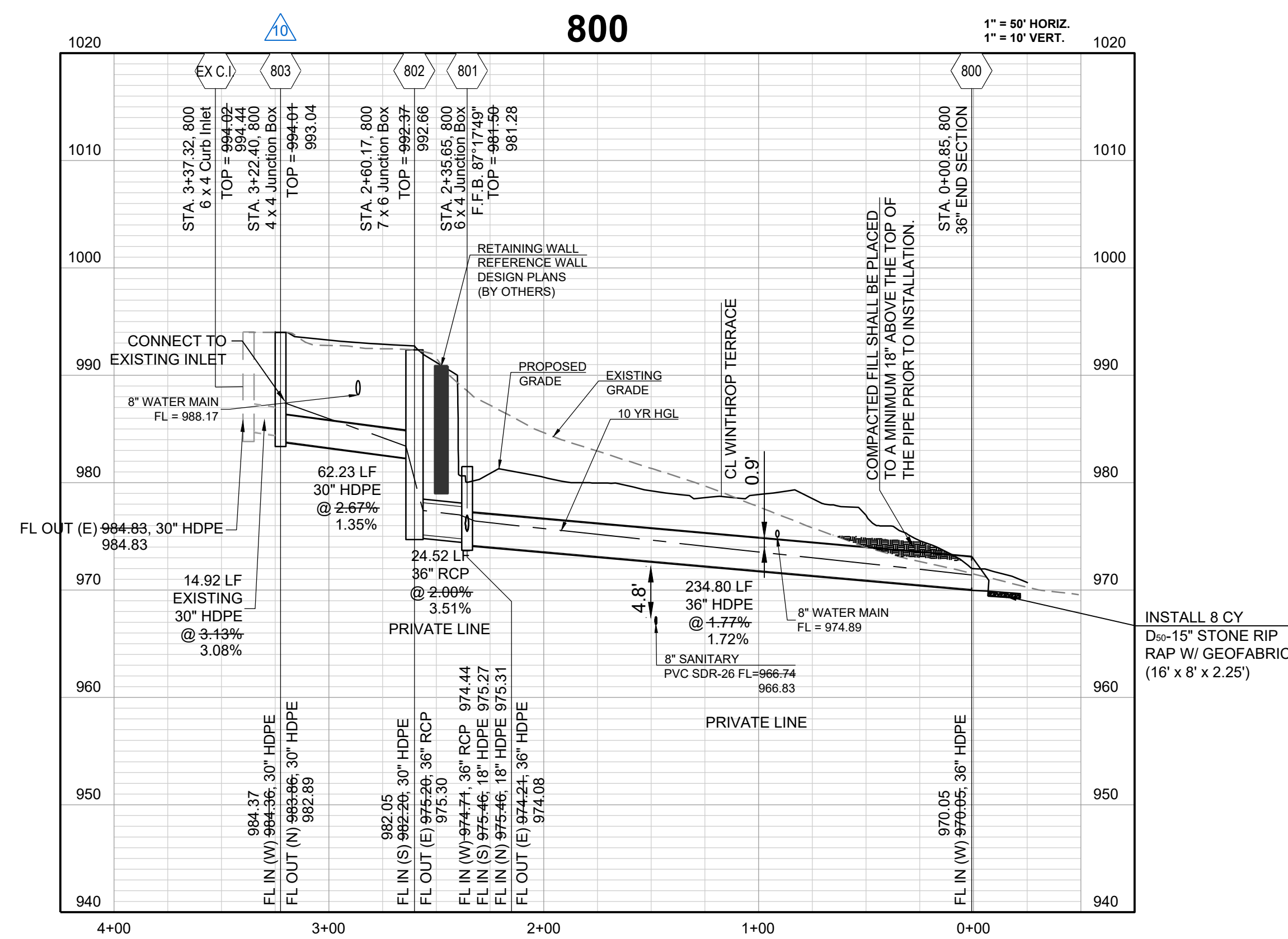
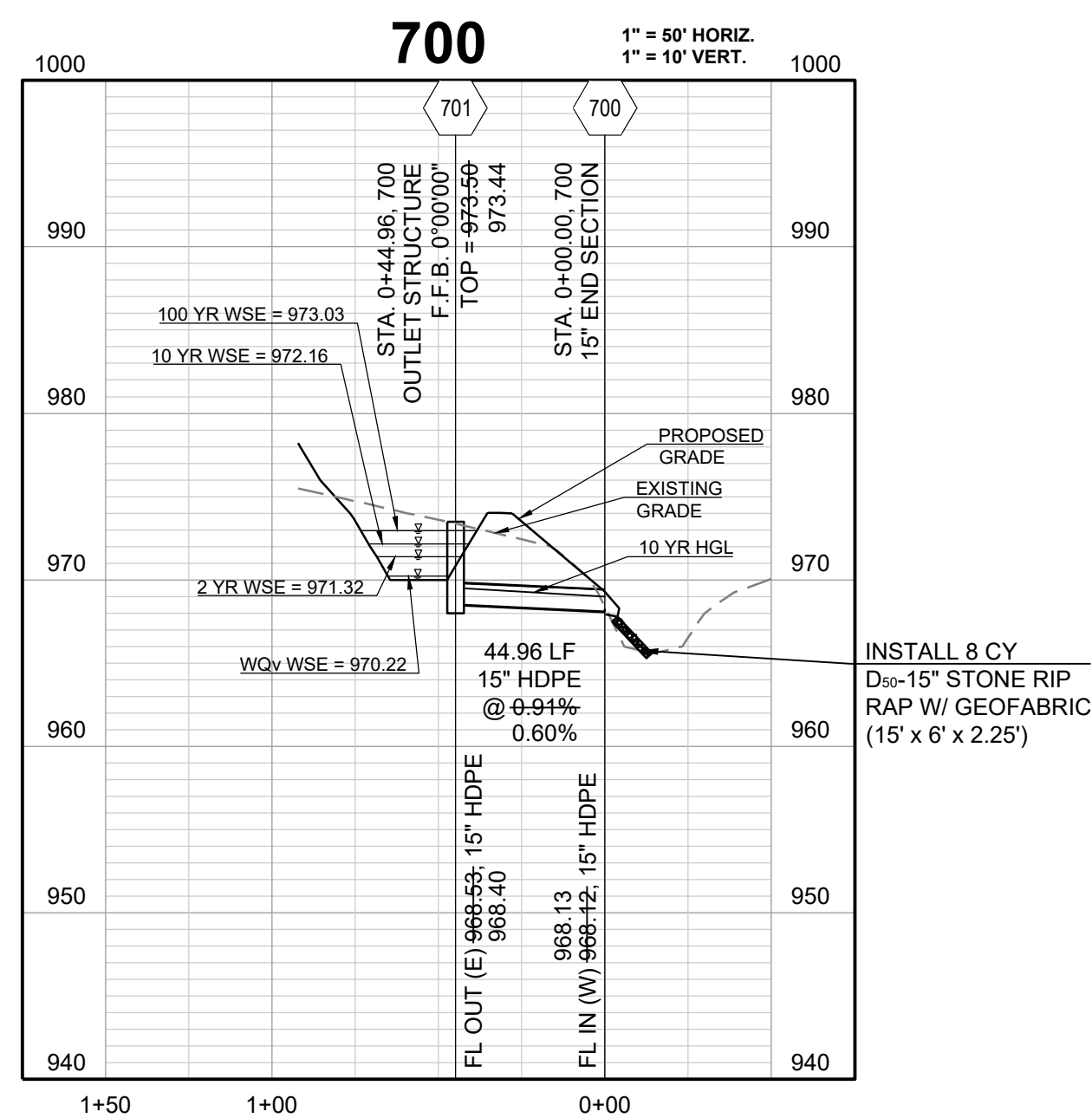
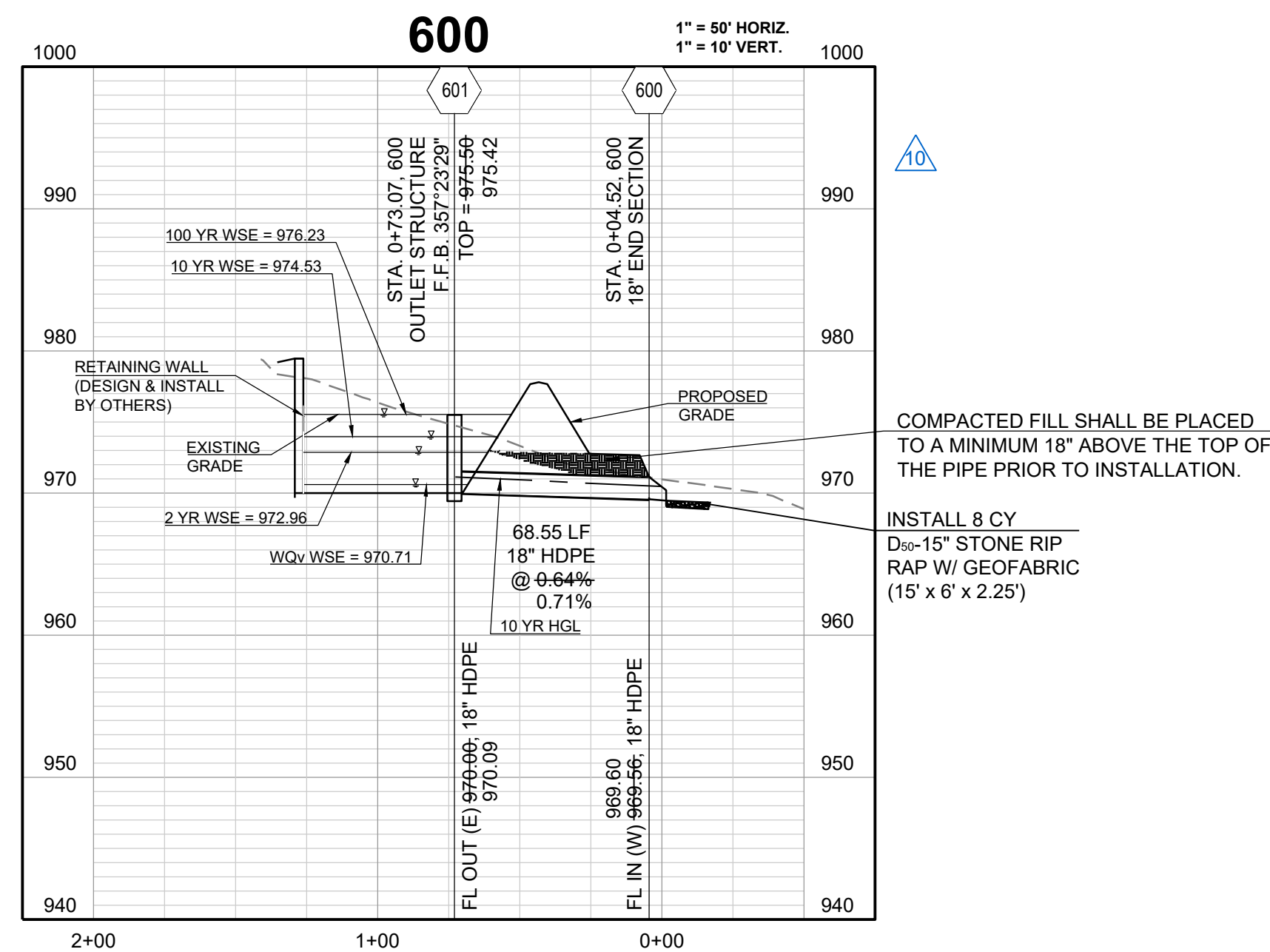
REVISION DATE	DESCRIPTION
1/10/2023	AS-BUILT REVISIONS
11/14/2022	AS-BUILT
08/22/2022	CITY WALL MODIFICATION
05/16/2022	CITY EMAILED COMMENTS

DRAWN BY:	DESCRIPTION
BAL	CITY COMMENTS
CHECKED BY:	SCHLAGEL QUANTITIES
MAB	SCHLAGEL QUANTITIES
DATE PREPARED:	CITY COMMENTS
2-19-2020	CITY COMMENTS
PROJ. NUMBER:	SCHLAGEL UPDATE
18-017	WATER LINE CONFLICT

STORM PROFILE

SHEET

20



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Date: 1/10/2023
 Certified by: RPM
 Title: Design Engineer
 Firm: Schlagel and Associates, P.A.

Record Drawing

21

WOODLAND GLEN 2ND PLAT
STREET, STORMWATER, MASTER DRAINAGE,
AND EROSION CONTROL PLANS
WARD ROAD & WINTHROP DRIVE
LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
11/02/2023	AS-BUILT REVISIONS
11/02/2023	AS-BUILT
08/22/2022	CITY WALL MODIFICATION
05/16/2022	CITY EMAILED COMMENTS

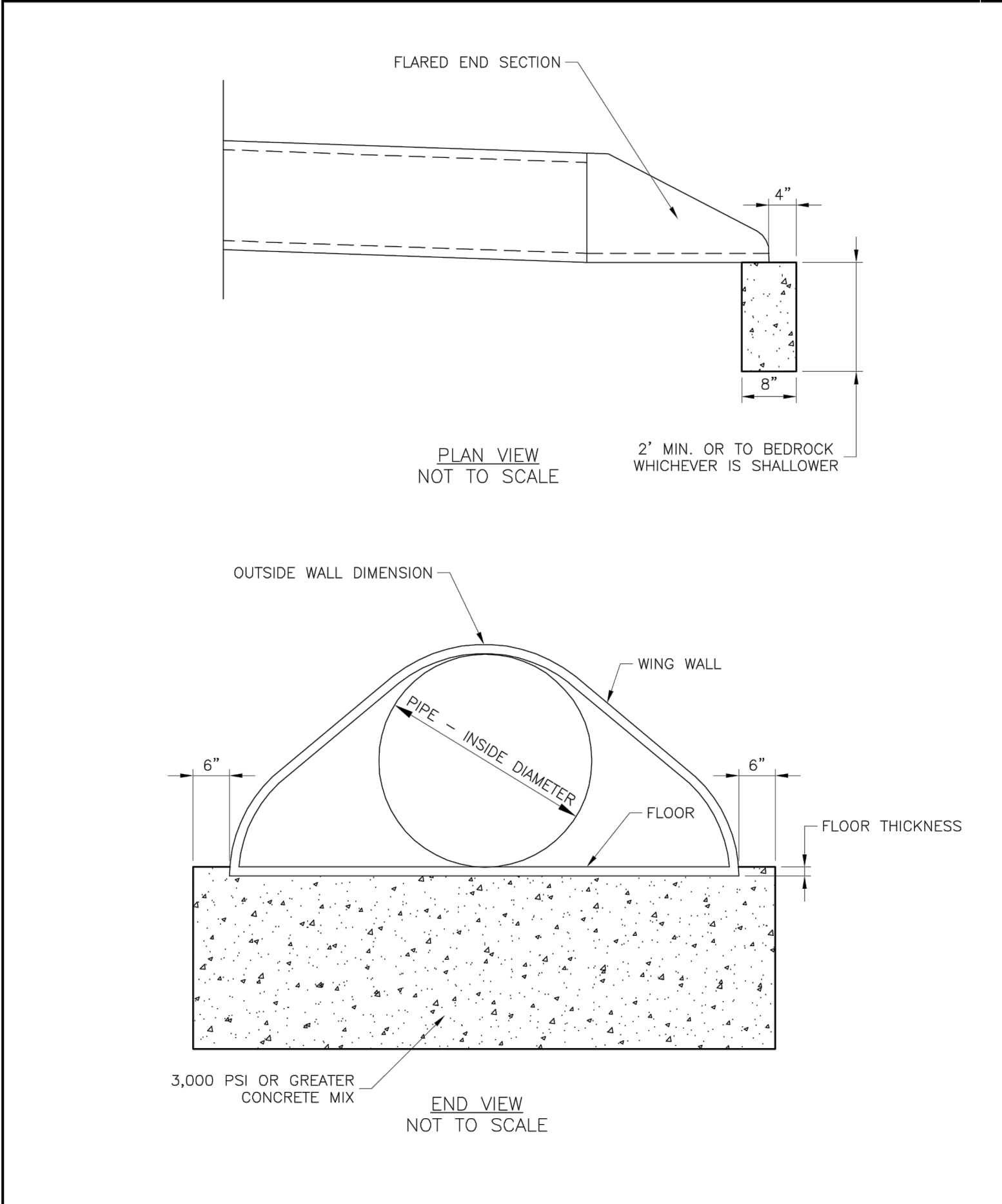
REVISION DATE	DESCRIPTION
04/24/2020	CITY COMMENTS
01/17/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/15/2021	CITY COMMENTS
06/15/2021	CITY COMMENTS
09/28/2021	CITY COMMENTS
09/28/2021	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CORRECT

DRAWN BY:	BAL
CHECKED BY:	MAB
DATE PREPARED:	2-19-2020
DRAWING NUMBER:	18-017

STORM PROF
CONT

SHEET

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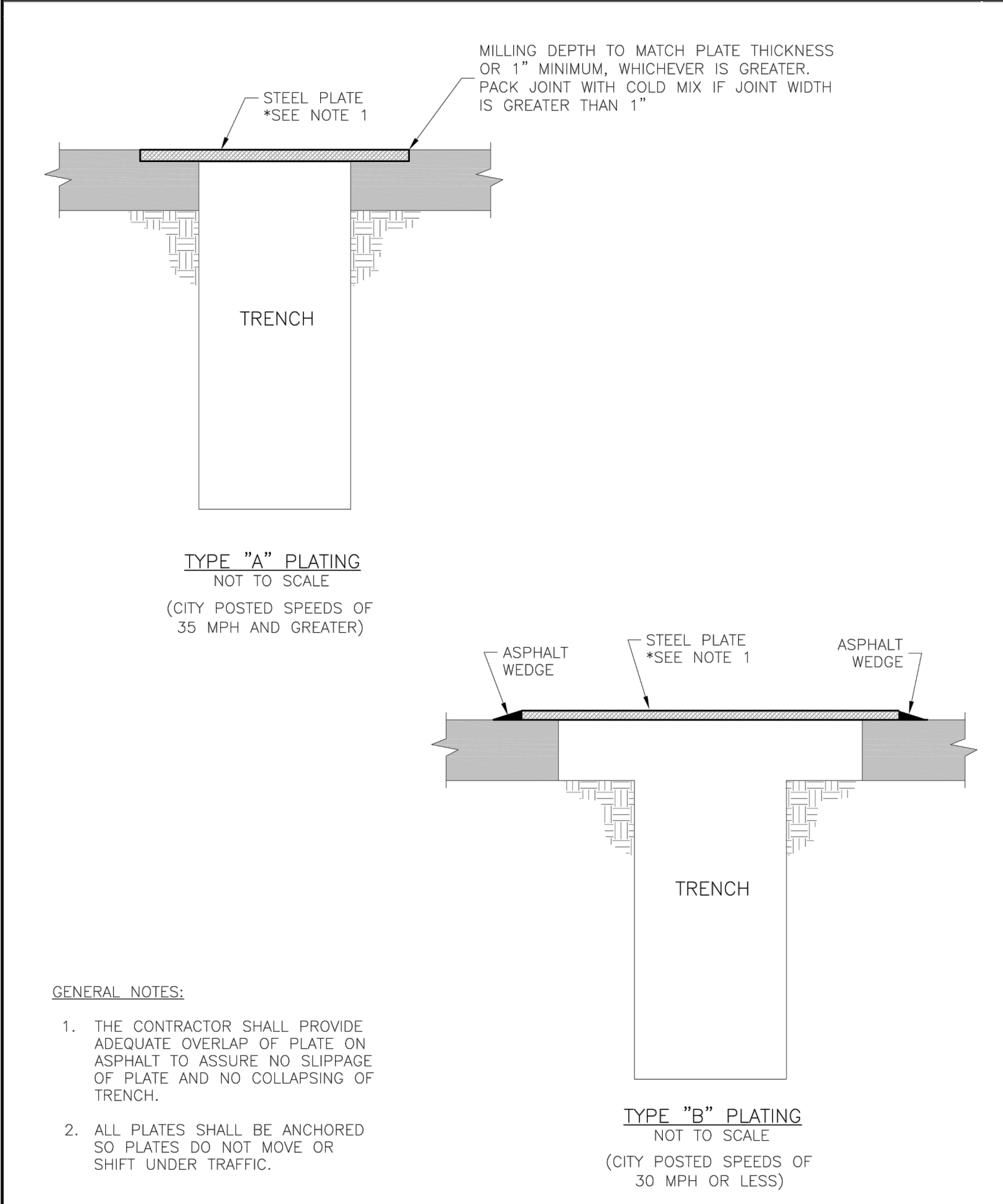
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LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

FLARED END SECTION SUPPORT DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

STM-5



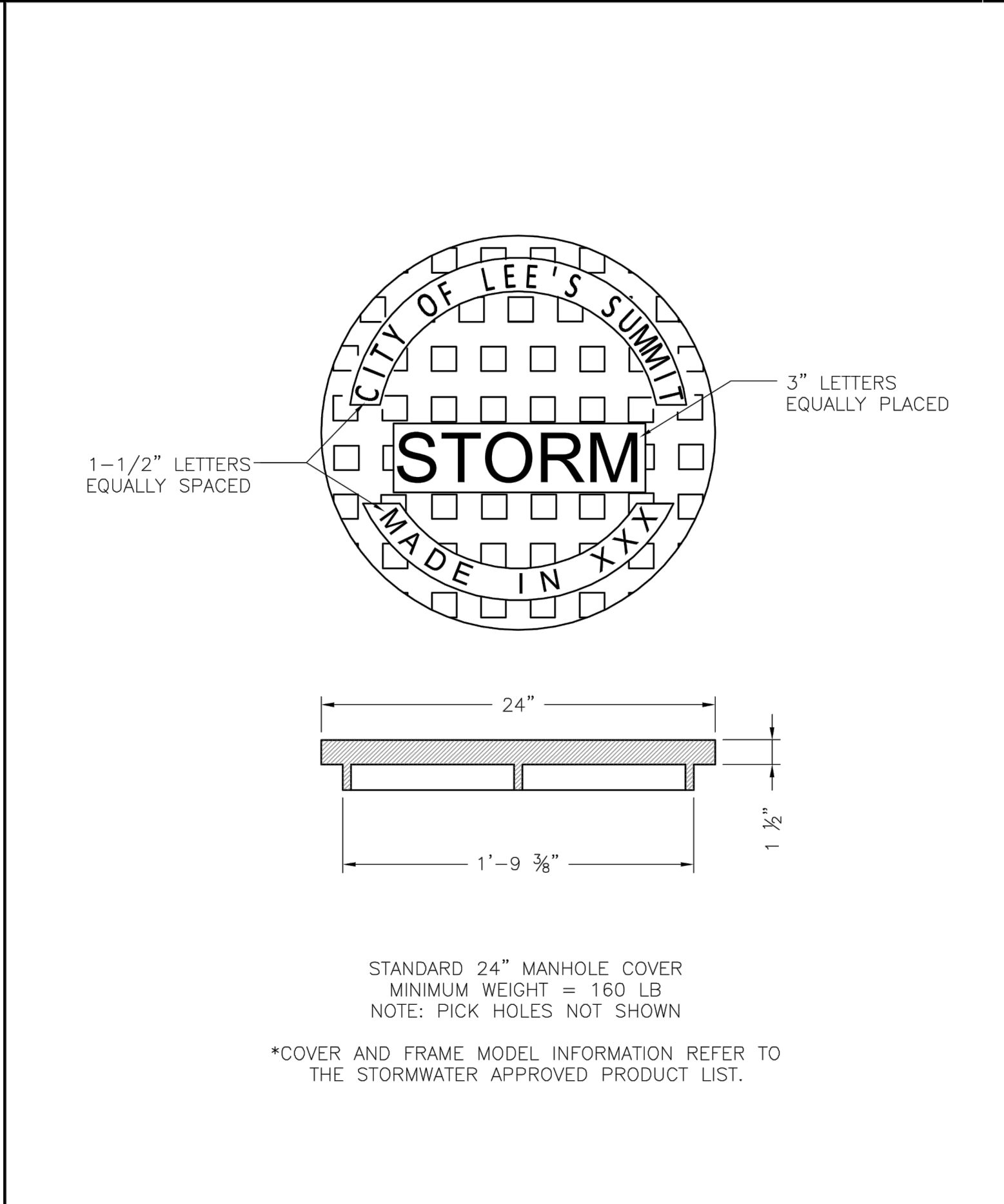
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LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

TRENCHING PLATE DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

GEN-6



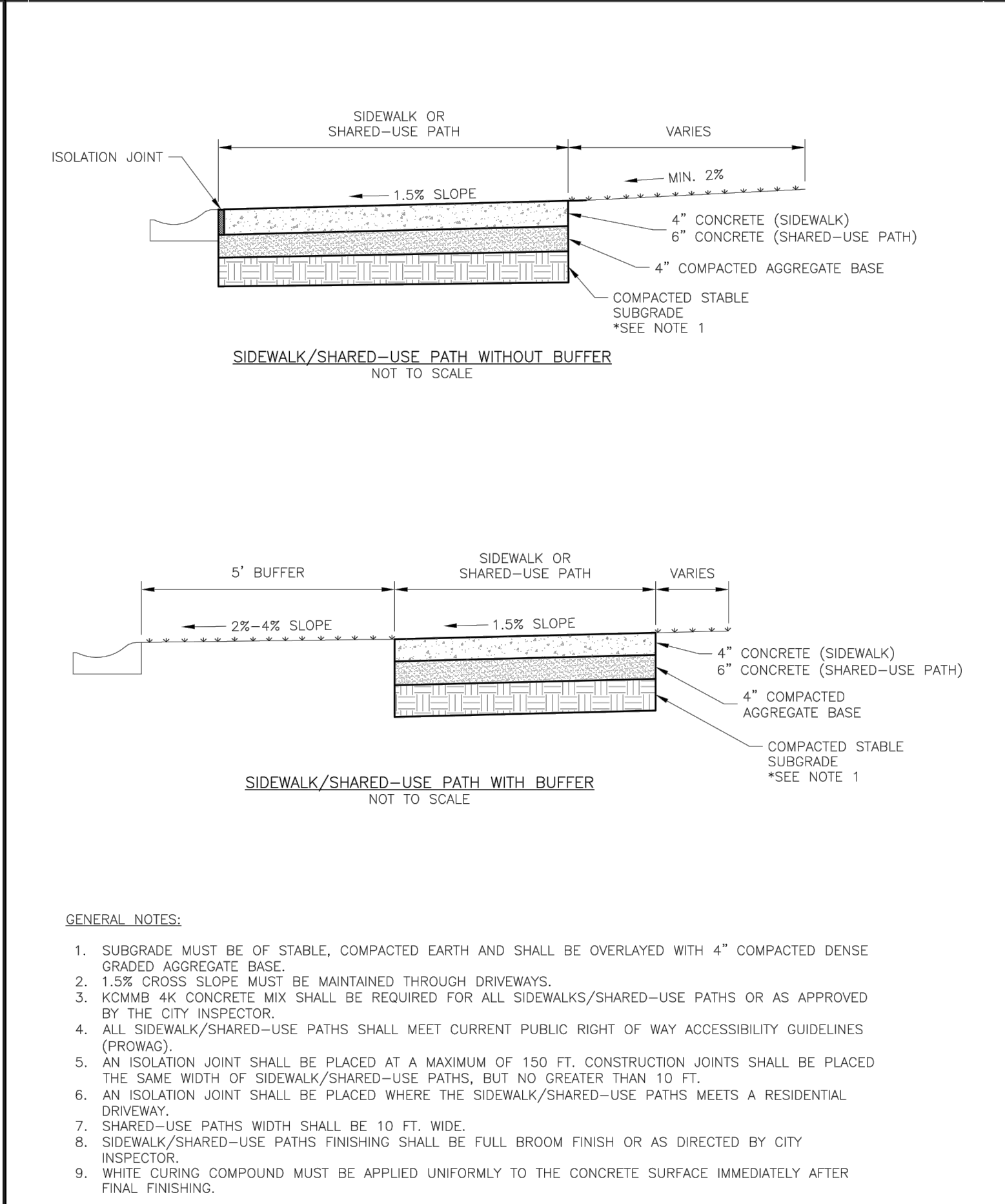
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LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STORM MANHOLE COVER DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

STM-6



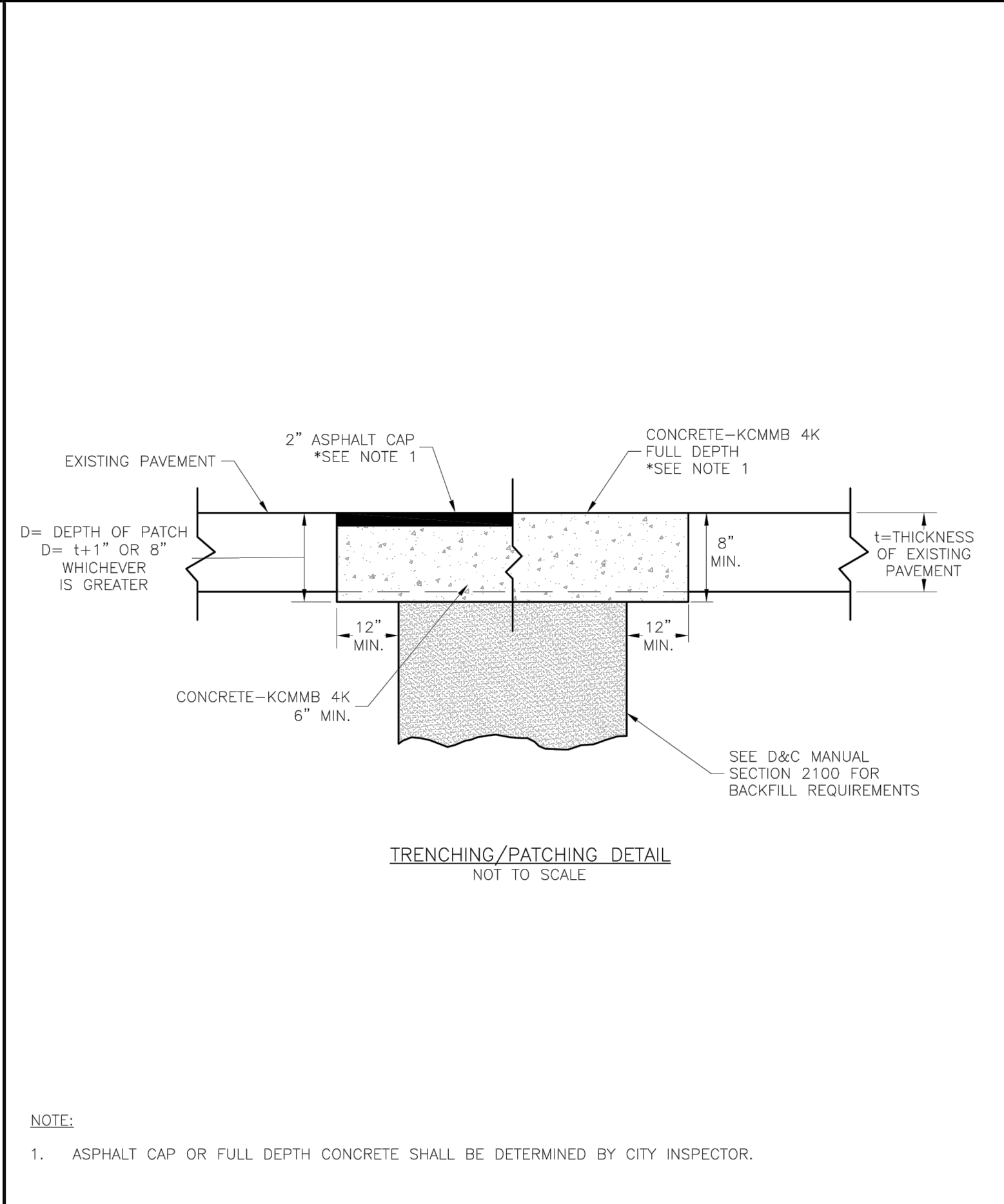
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LEE'S SUMMIT
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PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

SIDEWALK/SHARED-USE PATH DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

GEN-2



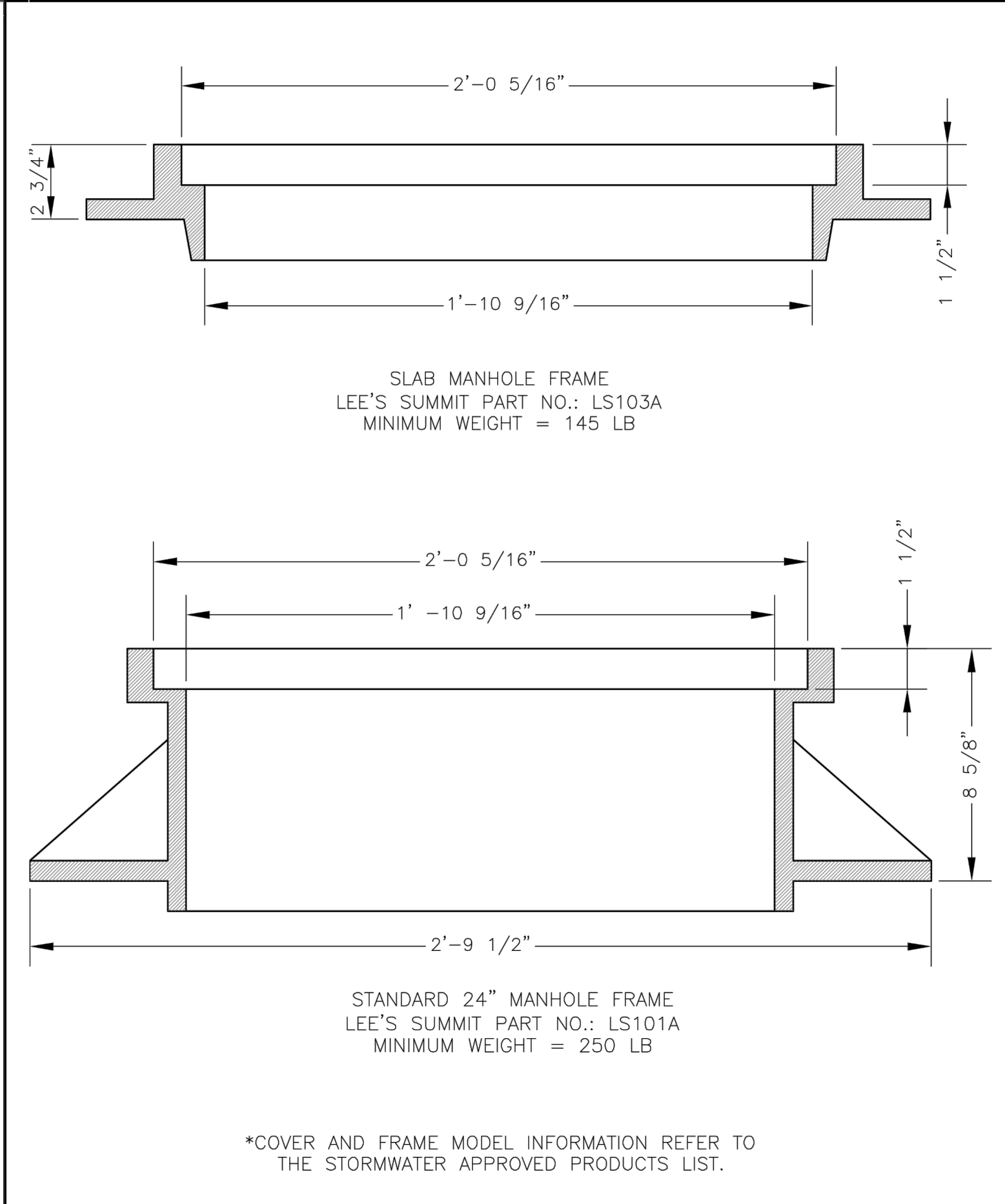
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MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

TRENCHING/PATCHING ROADWAYS DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

GEN-5



LS

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

STORM MANHOLE FRAME DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

STM-7

RECORD DRAWING

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Certified by: RPM
Title: Design Engineer
Firm: Schlager and Associates, P.A.

Record Drawing

REVISION DATE	DESCRIPTION
1/10/2023	AS-BUILT REVISIONS
11/14/2022	AS-BUILT
08/22/2022	CITY WALL MODIFICATION
07/16/2022	CITY EMAILED COMMENTS
04/24/2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
06/15/2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
2-19-2020	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT

STREET AND
STORM DETAILS

SHEET

23

SCHLAGEL

ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS

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WOODLAND GLEN 2ND PLAT
STREET, STORMWATER, MASTER DRAINAGE,
AND EROSION CONTROL PLANS
WARD ROAD & WINTHROP DRIVE
LEE'S SUMMIT, MISSOURI

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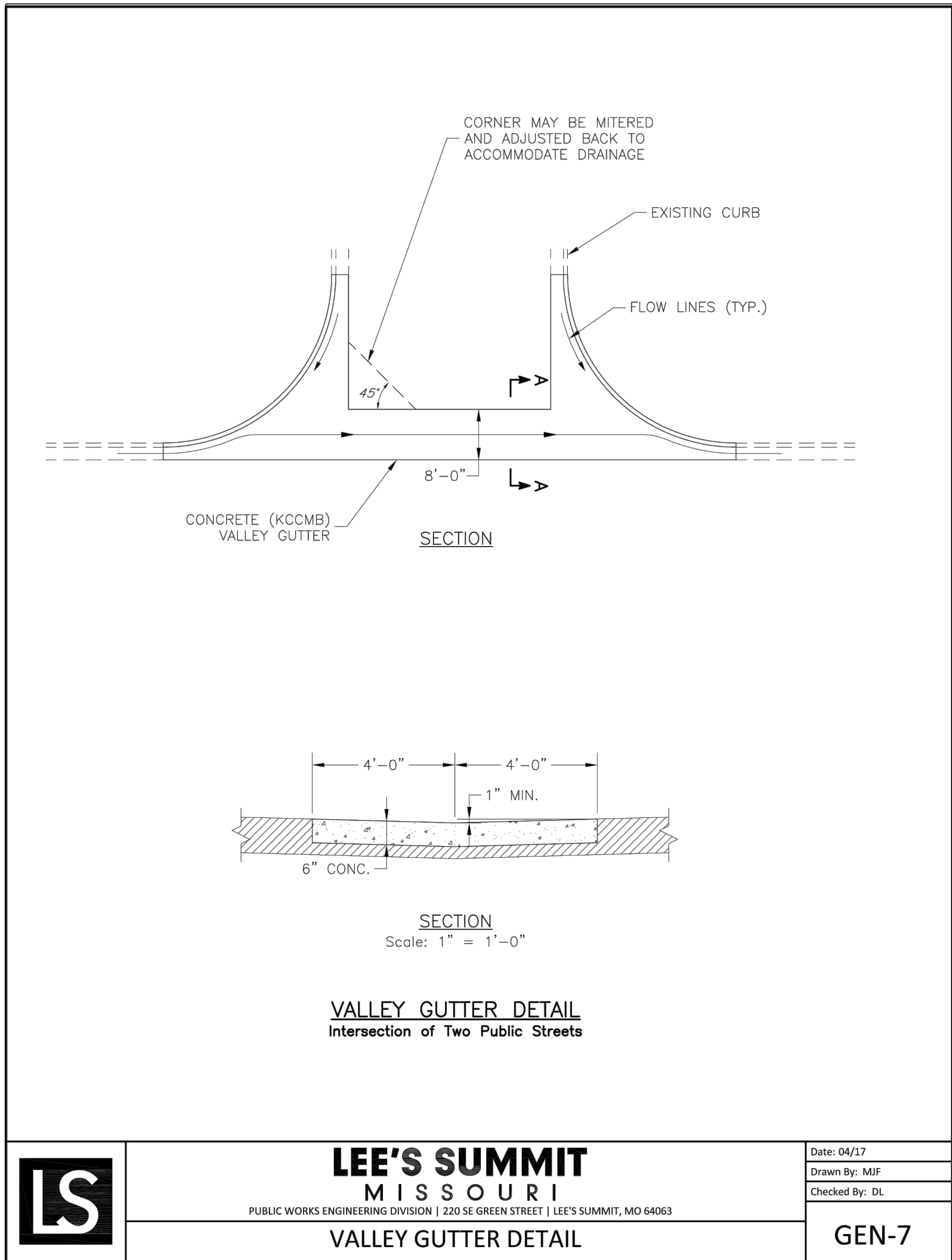
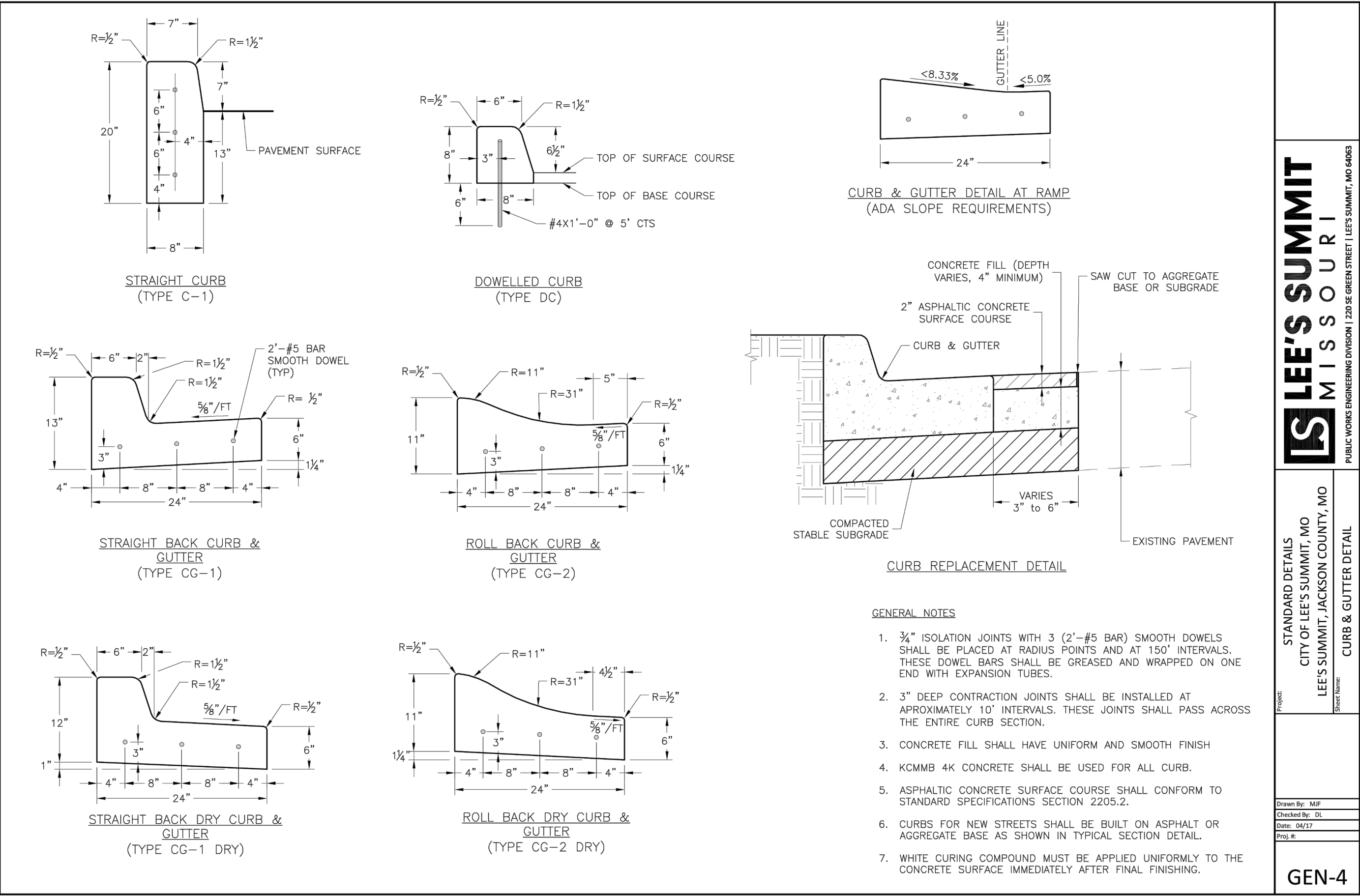
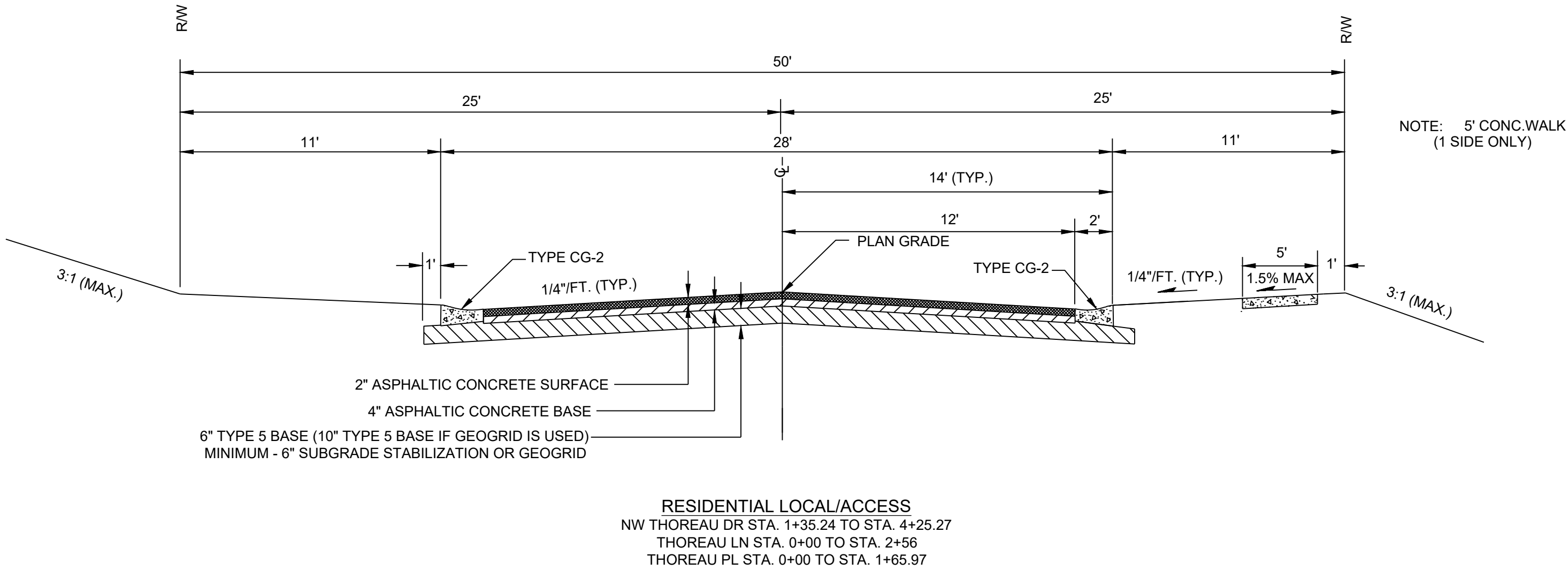


TABLE LS-2: MINIMUM ASPHALT PAVEMENT THICKNESSES						
Street Classification	Pavement Option	AC Surface (in.)	AC Base (in.)	MoDOT Type 5 Base (in.)	Geogrid(1)	Chemical Subgrade Stabilization(2) (in.)
Residential Local/Access	A	2	4	6	--	6
	B	2	4	10	Geogrid	--
Residential Collector	A	2	5.5	6	--	9
	B	2	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 16 October 2016



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Title: Design Engineer
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Record Drawing

REVISION	DATE	DESCRIPTION
1	11/02/2023	AS-BUILT REVISIONS
2	11/14/2022	AS-BUILT
3	08/22/2022	CITY WALL MODIFICATION
4	08/16/2022	CITY EMAILED COMMENTS
5	04/24/2021	CITY COMMENTS
6	01/12/2021	SCHLAGEL QUANTITIES
7	04/09/2021	SCHLAGEL QUANTITIES
8	04/12/2021	CITY COMMENTS
9	04/15/2021	CITY COMMENTS
10	06/15/2021	CITY COMMENTS
11	09/28/2021	CITY COMMENTS
12	09/28/2021	SCHLAGEL UPDATE
13	10/06/2021	CITY COMMENTS
14	01/20/2022	WATER LINE CONFLICT

WOODLAND GLEN 2ND PLAT
STREET, STORMWATER, MASTER DRAINAGE,
AND EROSION CONTROL PLANS
WARD ROAD & WINTHROP DRIVE
LEE'S SUMMIT, MISSOURI

STREET AND
STORM DETAILS

SHEET

24

WOODLAND GLEN 2ND PLAT
STREET, STORMWATER, MASTER DRAINAGE,
AND EROSION CONTROL PLANS
WARD ROAD & WINTHROP DRIVE
LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
1. 04/24/2020	CITY COMMENTS
2. 01/12/2021	SCHLAGE QUANTITIES
3. 04/09/2021	SCHLAGE QUANTITIES
4. 05/12/2021	CITY COMMENTS
5. 06/15/2021	CITY COMMENTS
6. 06/28/2021	CITY COMMENTS
7. 09/28/2021	SCHLAGE UPDATE
8. 10/06/2021	CITY COMMENTS
9. 01/20/2022	WATER LINE CORRECT

SIGNING PLAN

SHEET

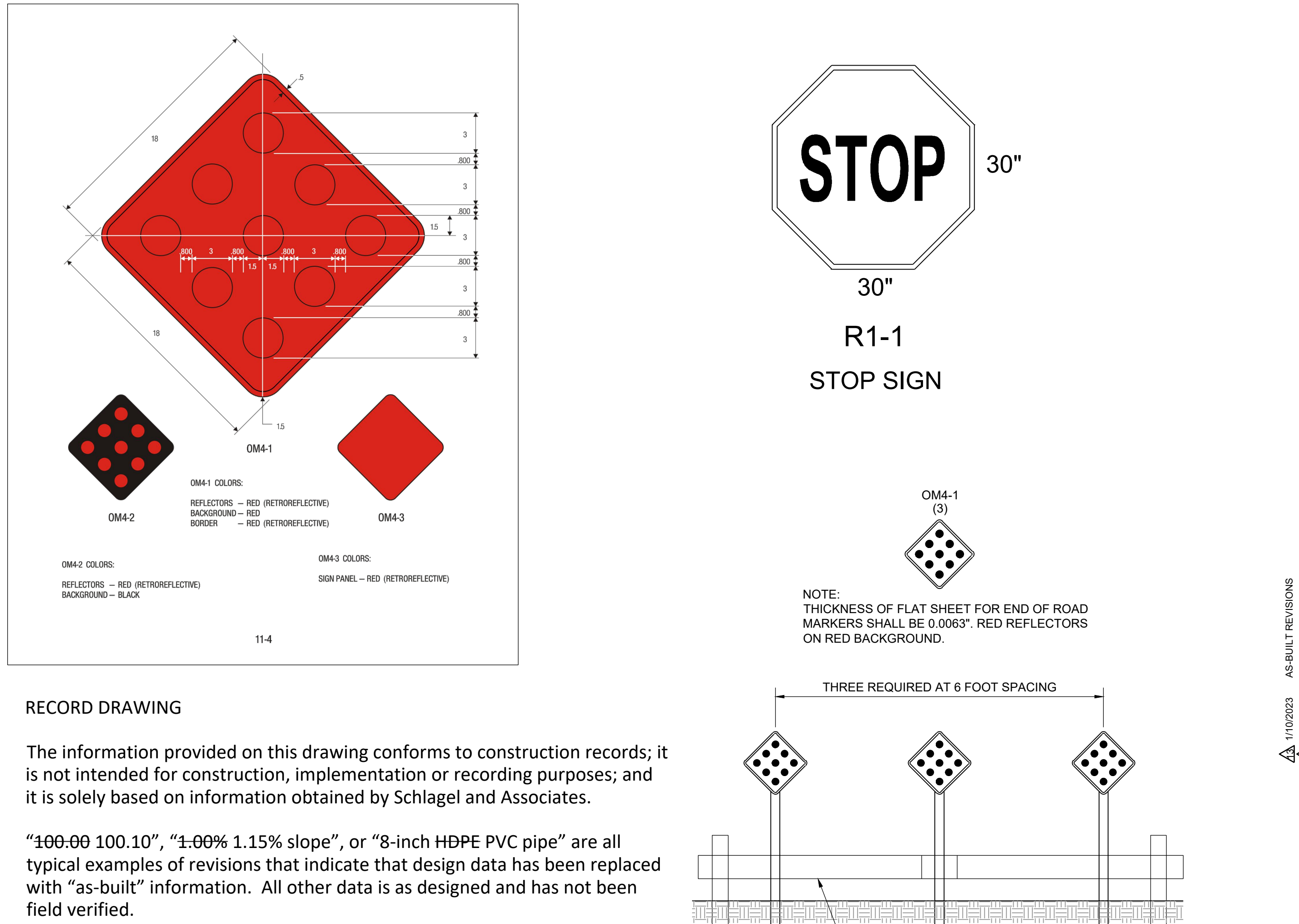
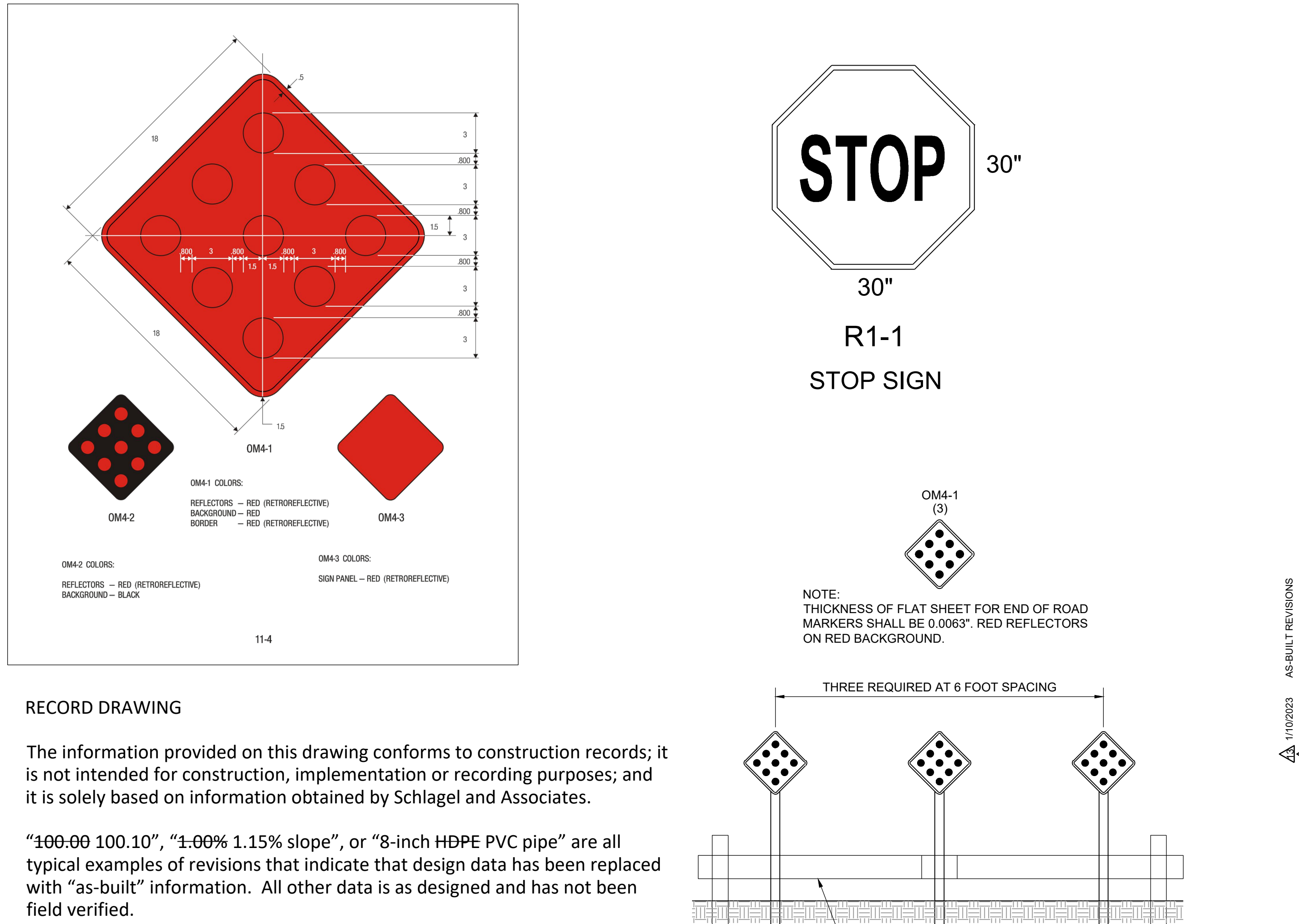
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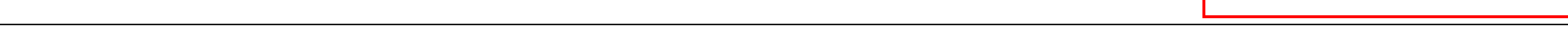
Record Drawing

Date: 1/10/2023
 Certified by: RPM
 Title: Design Engineer
 Firm: Schlagel and Associates, P.A.

SHEET

	
PUBLIC WORKS ENGINEERING DIVISION • 1201 S. GREEN STREET • LEE'S SUMMIT, MO 64080	
PROJECT:	SIGNING STANDARD DETAILS
Drawn By: BNC Checked By: MKT Date: 11/20/19 Project# STD DETAILS	STREET NAME: SIGNS
3 of 3	
SN-3	

[illegible]



SHEET
27

Record Drawing

27



Sign Spacing "S"		Taper Dimensions (Feet)				
Speed Limit (mph)	Spacing (Feet)	Speed Limit (mph)	Minimum Taper Length "L", per Lane Width "W"			Minimum Number of Channelizers
			10	11	12	
25	100	25	105	115	125	6
30 - 35	250	30	150	165	180	7
≥ 40	350	35	205	225	245	8
		40	270	295	320	9
		45	450	495	540	13

Guidelines for Length of Longitudinal Buffer Space "B"		Maximum Channelizer Spacing		
Speed Limit (mph)	Length (Feet)	Speed Limit (mph)	Within Taper (Feet)	Outside Taper (Feet)
25	35	25	25	50
30	55	30	30	60
35	85	35	35	70
40	120	40	40	80
45	170	45	45	90

Date: 1/10/2023
 Certified by: RPM
 Title: Design Engineer
 Firm: Schlagel and Associates, P.A.

