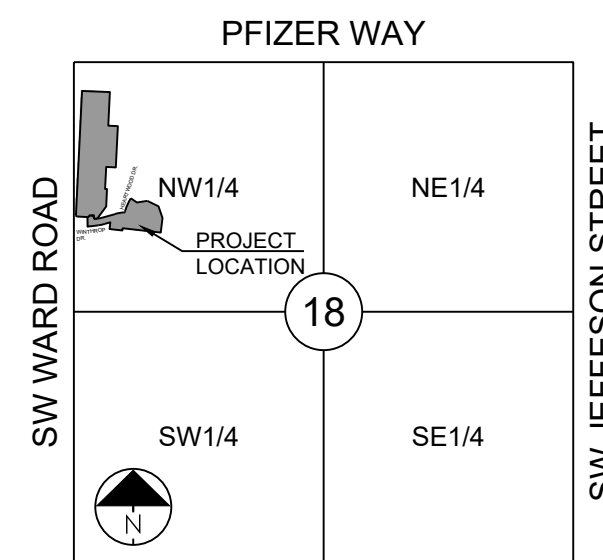


LEGEND:

A/E	- ACCESS EASEMENT
BC	- BACK OF CURB
B/B	- BACK TO BACK
BM	- BENCHMARK
BL or B.L.	- BUILDING LINE
CO	- CLEANOUT
TJB	- TELEPHONE JUNCTION BOX
C&G	- CURB AND GUTTER
D/E	- DRAINAGE EASEMENT
E/E	- ELECTRICAL EASEMENT
EL	- ELEVATION
FL	- FLOW LINE
G/E	- GAS LINE EASEMENT
HDPE	- HIGH-DENSITY POLYETHYLENE
L/E	- LANDSCAPE EASEMENT
MSFE	- MINIMUM SERVICEABLE FLOOR ELEVATION
PVC	- POLYVINYL CHLORIDE
P/L	- PROPERTY LINE
PUB/E	- PUBLIC EASEMENT
RCP	- REINFORCED CONCRETE PIPE
ROW or RW	- RIGHT-OF-WAY
S/E	- SANITARY SEWER EASEMENT
SL	- SERVICE LINE
SW	- SIDEWALK
TE	- TOP ELEVATION
U/E	- UTILITY EASEMENT
WSE	- WATER SURFACE ELEVATION
W/E	- WATERLINE EASEMENT
	ASPHALT PAVEMENT - EXISTING
	ASPHALT PAVEMENT - PROPOSED
	CONCRETE PAVEMENT - EXISTING
	CONCRETE PAVEMENT - PROPOSED
	CONCRETE SIDEWALK - EXISTING
	CONCRETE SIDEWALK - PROPOSED
	CURB & GUTTER
	CURB & GUTTER - EXISTING
	TREELINE
	EXISTING LOT AND R/W LINES
	EXISTING PLAT LINES
	PROPERTY LINES
	RIGHT-OF-WAY
	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
	OVERHEAD POWER LINE - EXIST.
	UNDERGROUND ELECTRIC - EX.
	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@kcp.com

CITY OF LEE'S 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

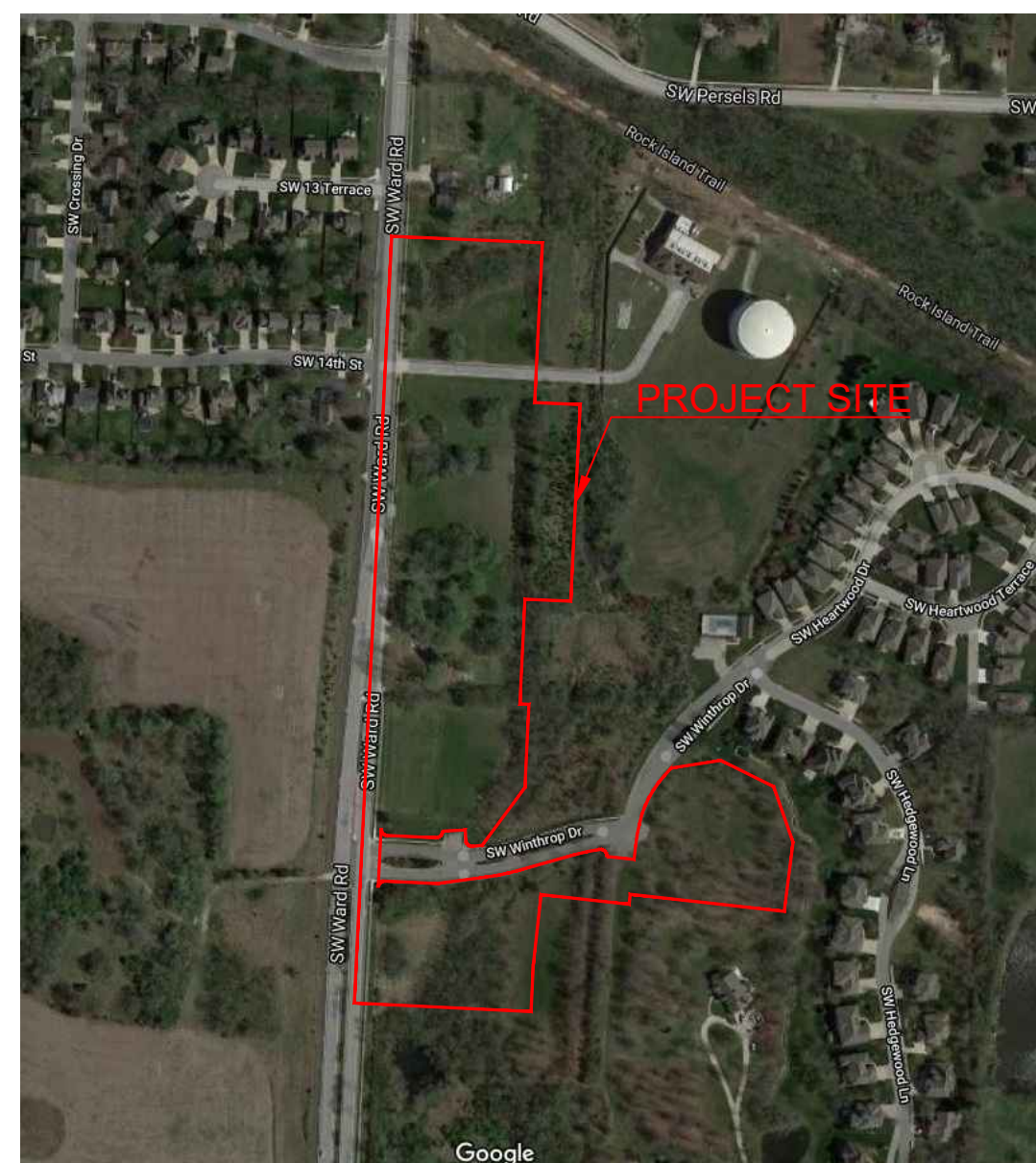
	ITEM	QUANTITY	UNITS
1	CLEANING, GRUBBING, AND DISPOSAL	1	L.S.
2	GRADING	1	L.S.
3	FLY ASH STABILIZATION (OR APPROVED EQUIVALENT)	4891	S.Y.
4	6" ASPHALT	4267	S.Y.
5	TYPE CG-2 CURB AND GUTTER	2810	L.F.
6	5' SIDEWALK	352	L.F.
7	SIDEWALK RAMPS	4	EA.
8	15" HDPE	1013	L.F.
9	18" HDPE	74	L.F.
10	24" HDPE	338	L.F.
11	30" HDPE	334	L.F.
12	30" RCP	84	L.F.
13	15" END SECTION	2	EA.
14	18" END SECTION	1	EA.
15	24" END SECTION	1	EA.
16	30" END SECTION	2	EA.
17	4'x4' GRATE INLET	6	EA.
18	6'x4' CURB INLET	11	EA.
19	4'x4' JUNCTION BOX	3	EA.
20	OUTLET STRUCTURES	3	EA.
21	RETAINING WALL (FRONT FACE WALL)	6865	S.F.
22	UNDERDRAIN	35	L.F.
23	SILT FENCE	5870	L.F.
24	CONSTRUCTION ENTRANCE	1	EA.
25	CONCRETE WASHOUT	1	EA.
26	EX. & PROP. CURB & INLET PROTECTION	33	EA.
27	SILT FOAM DIKE	7	EA.
28	EROSION CONTROL BLANKET	1800	S.F.
29	SEEDING & MULCHING	9	AC.
30	SEDIMENT BASIN	3	EA.
31	BONDS	1	L.S.
32	STOP SIGNS WITH STREET NAMES	3	EA.
33	OM-1 END OF ROAD MARKERS	3	EA.

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 PHASED 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.



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

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 GRADIENTS. HOWEVER, 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 MOVABLE 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 THAN 6-INCHES AND OTHER DELETERIOUS MATERIALS SHALL BE REMOVED AND PROPERLY DISPOSED OF OFF-SITE 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 OFF-SITE. MATERIALS MAY BE WASTED ONSITE AT THE DIRECTION OF THE OWNER OR HIS APPOINTED REPRESENTATIVE.

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-DSDLAW.COM



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ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS
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Missouri State Certificate of Authority
#E20200203607 #LAC201005237 #LS202008695F



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

REVISION DATE	DESCRIPTION
4-24-2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
09/29/2021	CITY COMMENTS

DRAWN BY:	DESCRIPTION
BAL	CITY COMMENTS
MAB	CITY COMMENTS
2-19-2020	CITY COMMENTS
18-017	

COVER

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

SHEET
1

I:\PROJECTS\2021\1818-07-13\0 Design\3.0 DWG Plans\6.0 SS\18-07 SS COVER.dwg, 6/28/2021 4:29:46 PM, 1:1

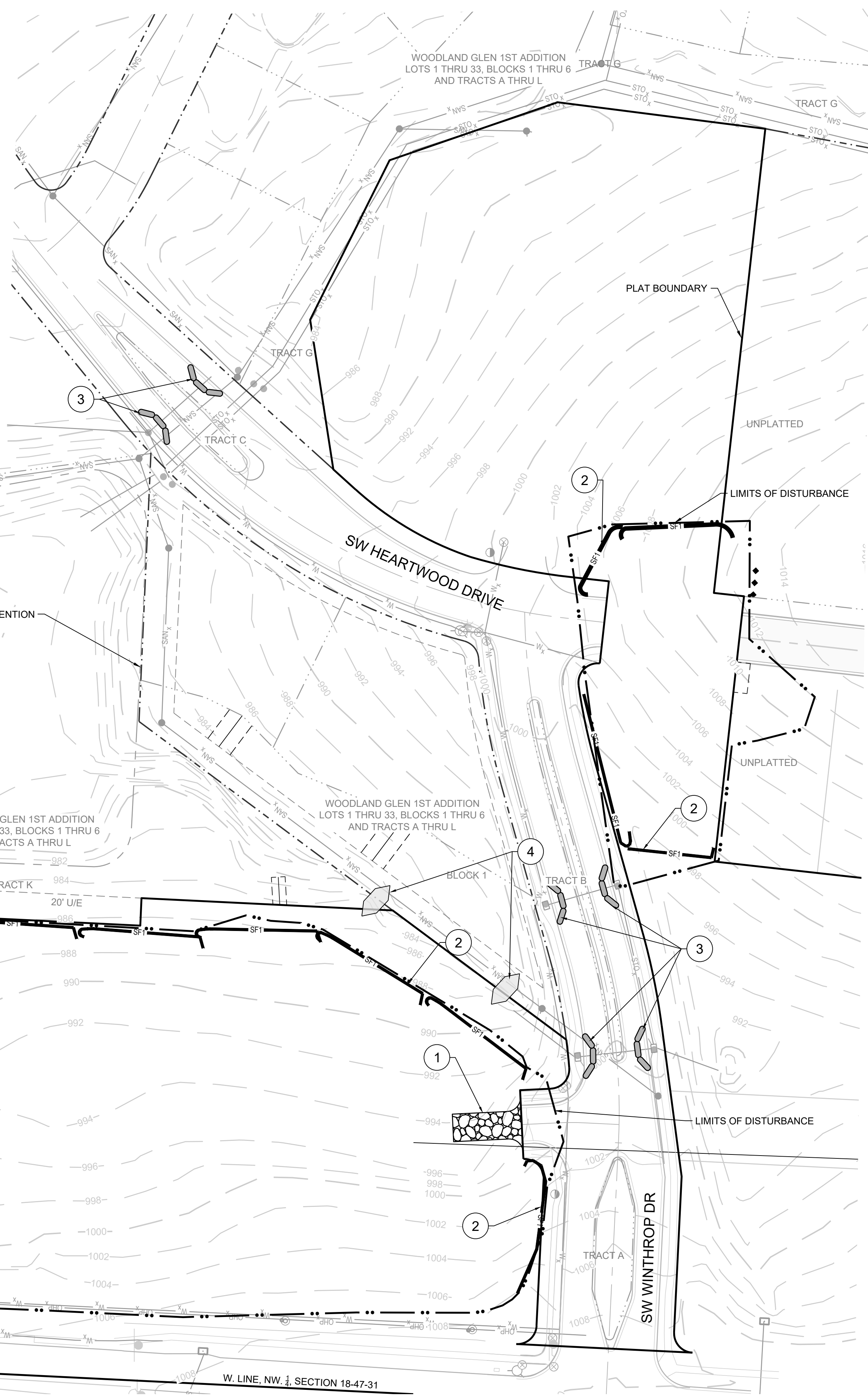
LEGEND	
	TEMPORARY STORAGE AREA FOR EXCESS MATERIAL
	TEMP. CONSTRUCTION ENTRANCE AND STAGING AREA
	CONCRETE WASHOUT AREA
	SILT FOAM DIKE OR STRAW WATTLE - STAKED & INSTALL PER MFR'S RECOMMENDATIONS
	ROCK DITCH CHECK
	STRAW WATTLE OR COIL LOG STAKED & INSTALL PER MFR'S RECOMMENDATIONS
	SILT FENCE (PRIOR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

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 BMP'S. 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 BASINS (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
E - UNTIL CLOSURE OF LAND DISTURBANCE PERMIT	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
	12	SEEDING AND MULCHING	E	ALL DISTURBED AREAS 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.



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STATE OF MISSOURI
 MARK ALLEN BREUER
 JMBR001
 PE-2003007268
 06.29.2021

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

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2-19-2020	PROJ. NUMBER
18-017	

PRE-CLEARING PLAN
 SHEET
2

I:\PROJECTS\2018\18-0173.0 Design\3.0 DWG Plans\6.0 SS\18-017 EROS CONT PLAN.dwg, 6/28/2021 4:30:54 PM, 11

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

DISTURBED AREA = 9.74 A.C.

SITE SPECIFIC NOTES:

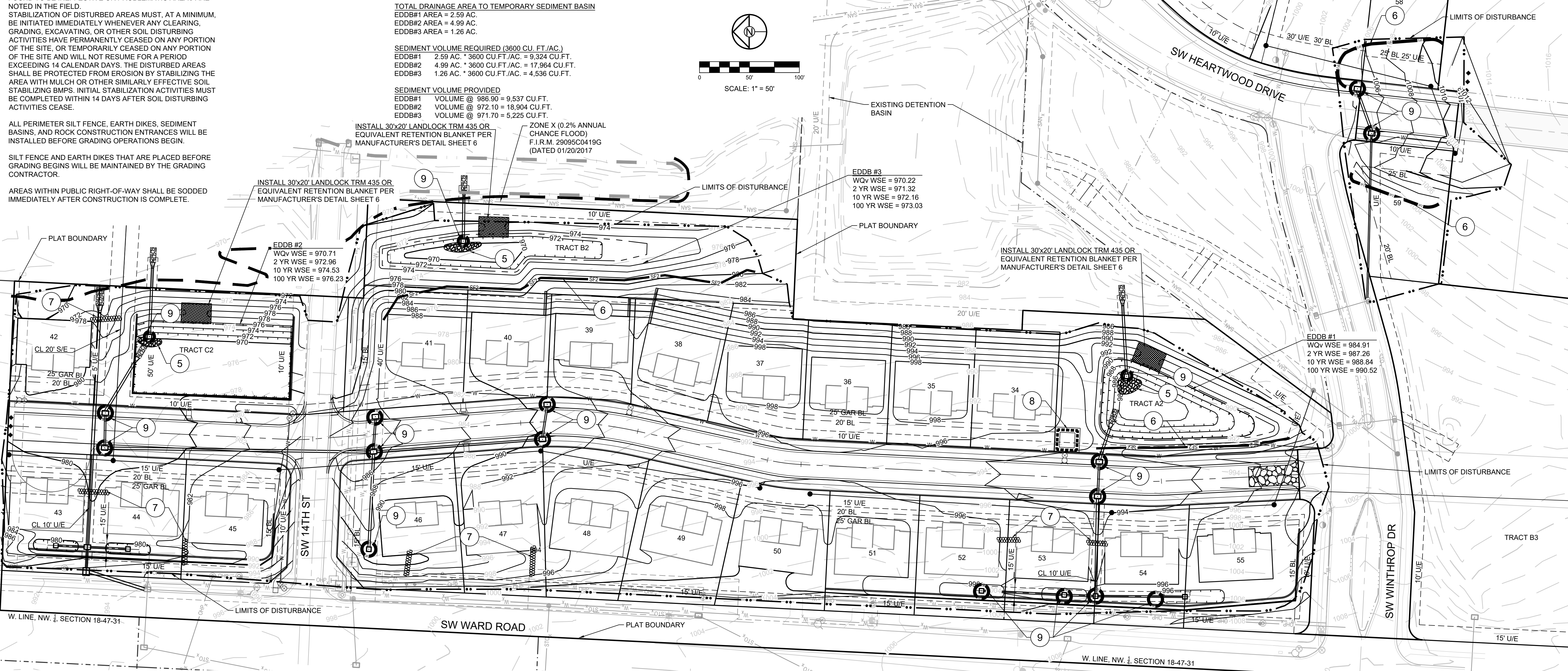
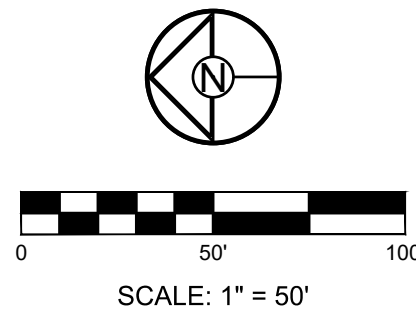
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- THERE ARE NO WETLANDS, NATURAL OR ARTIFICIAL WATER STORAGE DETENTION AREAS IN THE PROJECT AREA.
- NO PART OF THE PROJECT LIES WITHIN THE 100 YEAR FLOOD PLAIN PER FEMA FLOOD INSURANCE RATE MAP NUMBER 29095C0419G DATED JANUARY 20, 2017.
- ALL EROSION 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.
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- 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
	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
C - UTILITY CONSTRUCTION	8	CONCRETE WASHOUT AREA	E	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
	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
D - AFTER PAVING OPERATIONS	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
	12	SEEDING AND MULCHING	E	ALL DISTURBED AREAS AFTER PRIOR TO 14 DAYS OF CONSTRUCTION INACTIVITY
E - UNTIL CLOSURE OF LAND DISTURBANCE PERMIT	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.



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

REVISION DATE	DESCRIPTION
4-24-2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
09/29/2021	CITY COMMENTS
2-19-2020	

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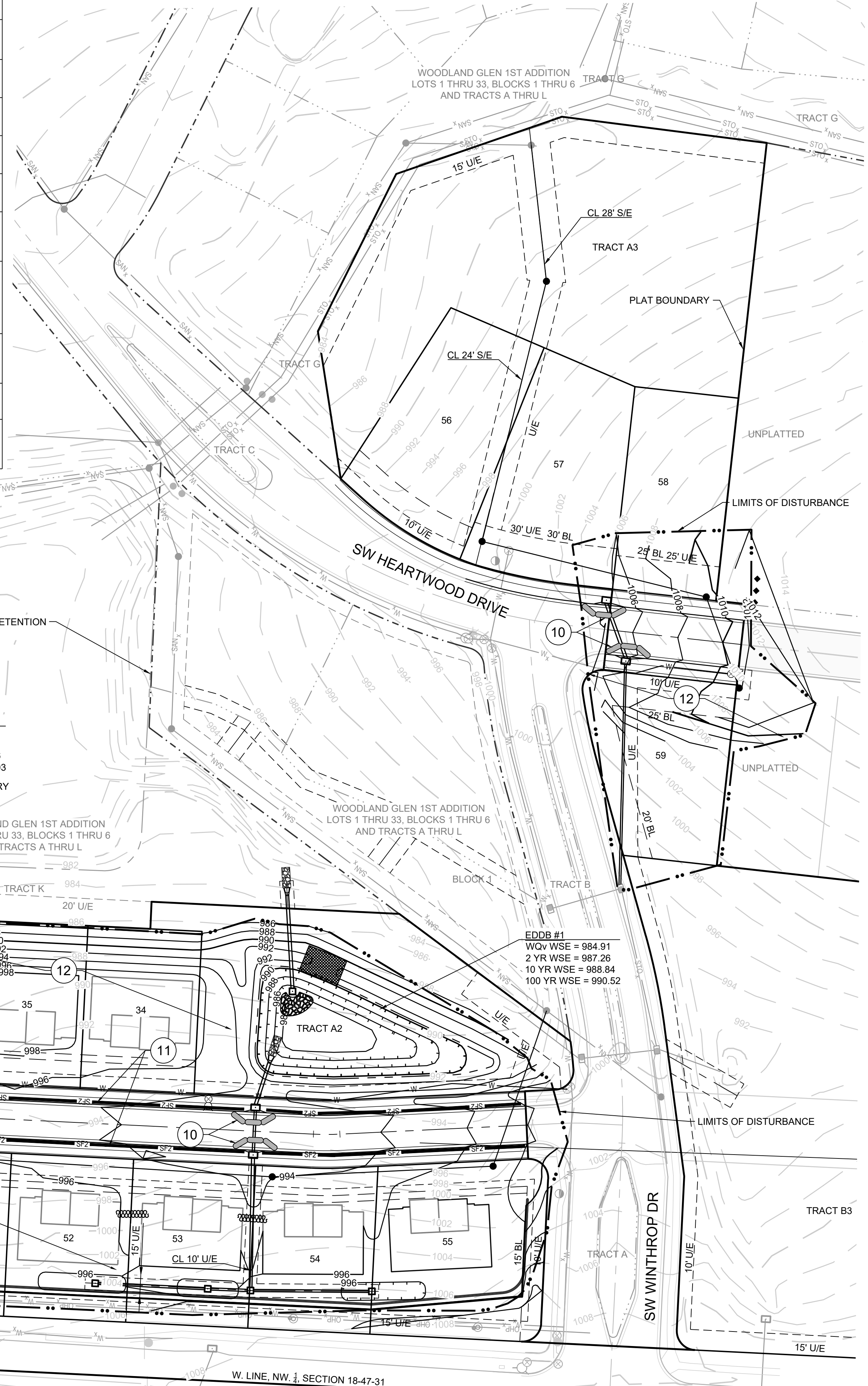
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05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
06/28/2021	CITY COMMENTS

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

ECP FINAL STABILIZATION

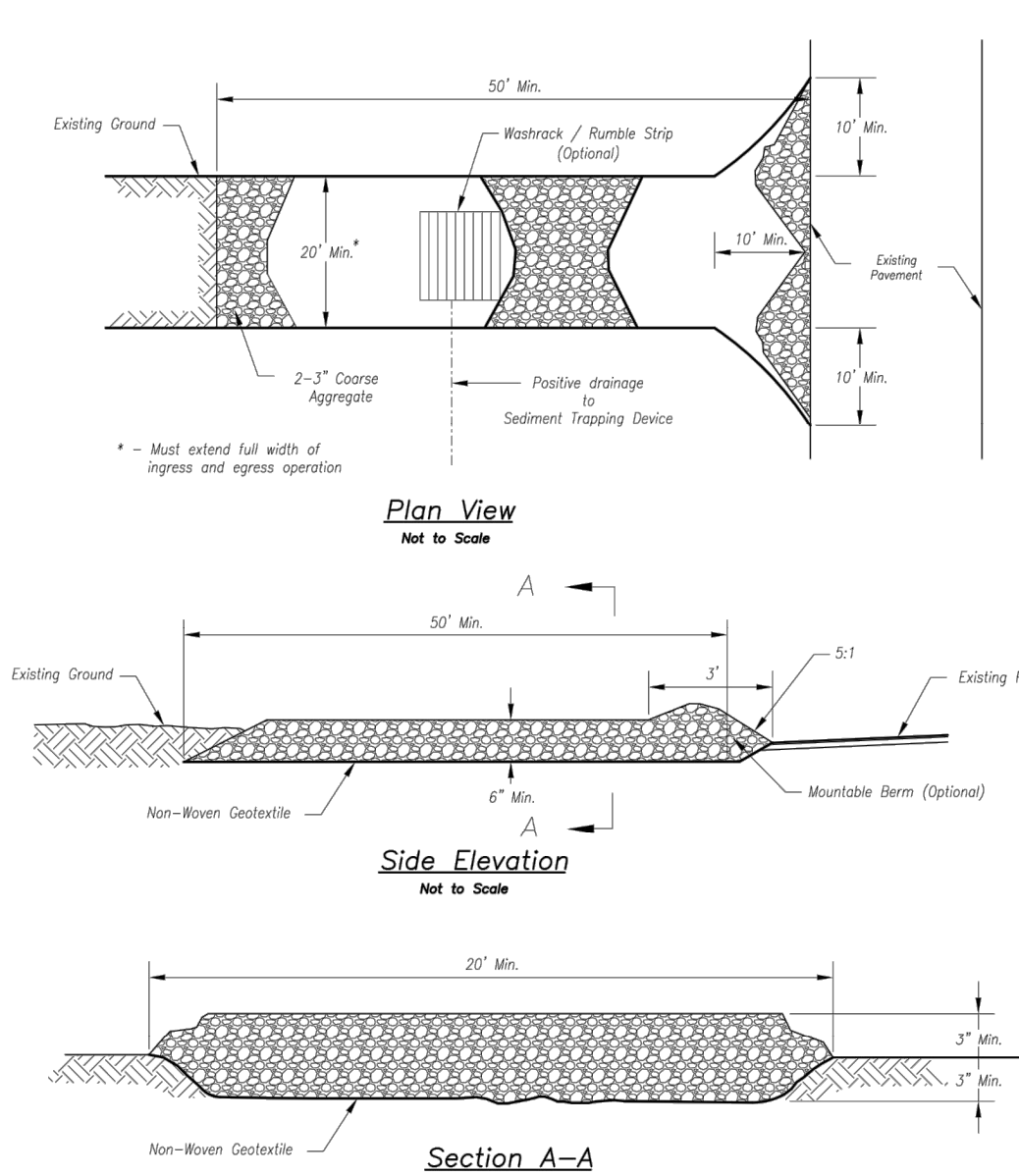
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REVISION DATE	DESCRIPTION
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06/29/2021	CITY COMMENTS
2-19-2020	CITY COMMENTS
18-017	

EROSION CONTROL DETAILS

SHEET



Plan View
Not to Scale

Side Elevation
Not to Scale

Section A-A
Not to Scale

Notes for Concrete Washout:

- Concrete washout areas shall be installed prior to any concrete placement on site.
- Concrete washout areas shall include a flat substrate pit sized relative to the amount of concrete to be placed on site. The slopes leading out of the substrate pit shall be 3:1. The vehicle tracking pit shall be sloped towards the concrete washout area.
- Vehicle tracking control is required at the access point to all concrete washout areas.
- Slope shall be placed at the construction site entrance, washout area and elsewhere as necessary to steady substrate the location(s) of the concrete washout area(s) to operators of concrete truck and pump rigs.
- A non-woven geotextile liner may be installed along the bottom and sides of the substrate pit in sandy or gravelly soils.

Maintenance for Concrete Washout:

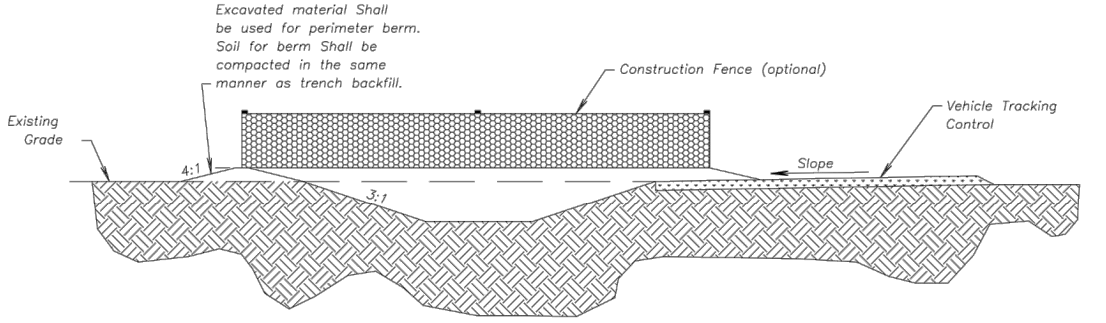
- Concrete washout materials shall be removed once the materials have filled the washout to approximately 75% full.
- Concrete washout areas shall be entered as necessary to maintain capacity for waste concrete.
- Concrete washout water, wetted pieces of concrete and all other debris in the substrate pit shall be transported from the job site in a water-tight container and disposed of properly.
- Concrete washout areas shall remain in place until all concrete for the project is placed.
- When concrete washout areas are removed, excavations shall be filled with suitable compacted backfill and topped, any disturbed areas associated with the installation, maintenance, and/or removal of the concrete washout areas shall be stabilized.

Notes for Construction Entrance:

- Avoid locating on steep slopes, at curves on public roads, or downhills of disturbed areas.
- Remove all vegetation and other unsuitable material from the foundation area, grade, and crown for positive drainage.
- If slope towards the public road exceeds 2%, construct a 6- to 8-inch high ridge with 3:1V side slopes across the foundation approximately 15 feet from the edge of the public road to divert runoff from it.
- Install pipe under the entrance if needed to maintain drainage ditches along public roads.
- Place stone to dimensions and grade as shown on plans. Leave surface sloped for drainage.
- Divert all surface runoff and drainage from the entrance to a sediment control device.
- If conditions warrant, place geotextile fabric on the graded foundation to improve stability.

Maintenance for Construction Entrance:

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



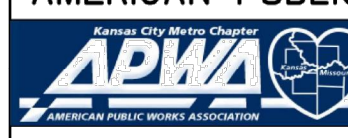
CONCRETE WASHOUT

Excavated material shall be used for perimeter berm. Soil for berm shall be compacted in the same manner as trench backfill.

CONSTRUCTION ENTRANCE

Construction Entrance modified from 2015 Overland Park Standard Details for Erosion and Sediment Control, Concrete Washout modified from 2009 City of Great Bend Standard Drawings.

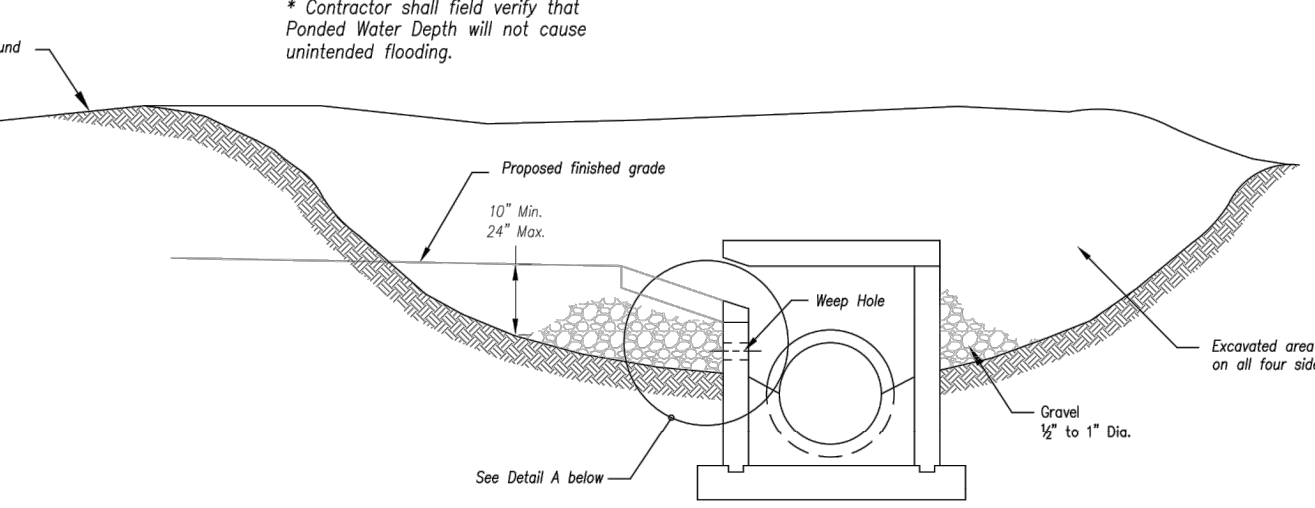
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KANSAS CITY METRO CHAPTER

CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT

STANDARD DRAWING NUMBER ESC-01 ADOPTED: 10/24/2016



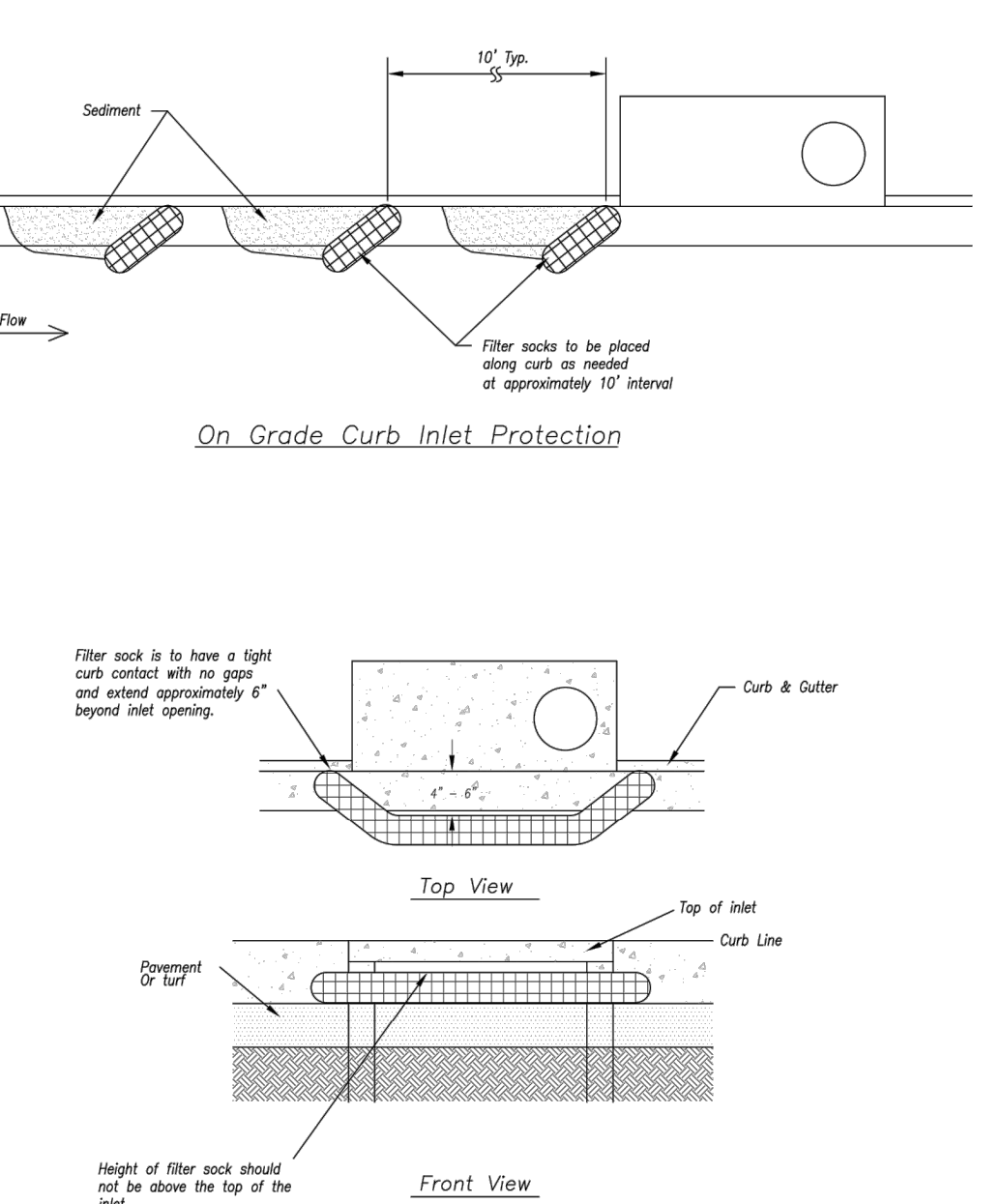
On Grade Curb Inlet Protection

Notes:

- Immediately following inlet construction and prior to construction of curb and inlet throat, protect inlet opening by installing 2" x 10" (min.) board wrapped in silt fence. Structures shall have excavated storage area on all four sides to allow settling of sediment (Early Stage Curb Inlet).
- When inlet is completed and curb around filter sock or approved equal should be used (Late Stage Curb Inlet). Show details are not approved for curb inlet.
- Contractor to field verify ponding water shall not create a traffic hazard.

Maintenance:

- Remove deposited sediment from excavated storage areas when available storage has been reduced by 20%.
- Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.
- Repair or replace as necessary to maintain function and integrity of installation.



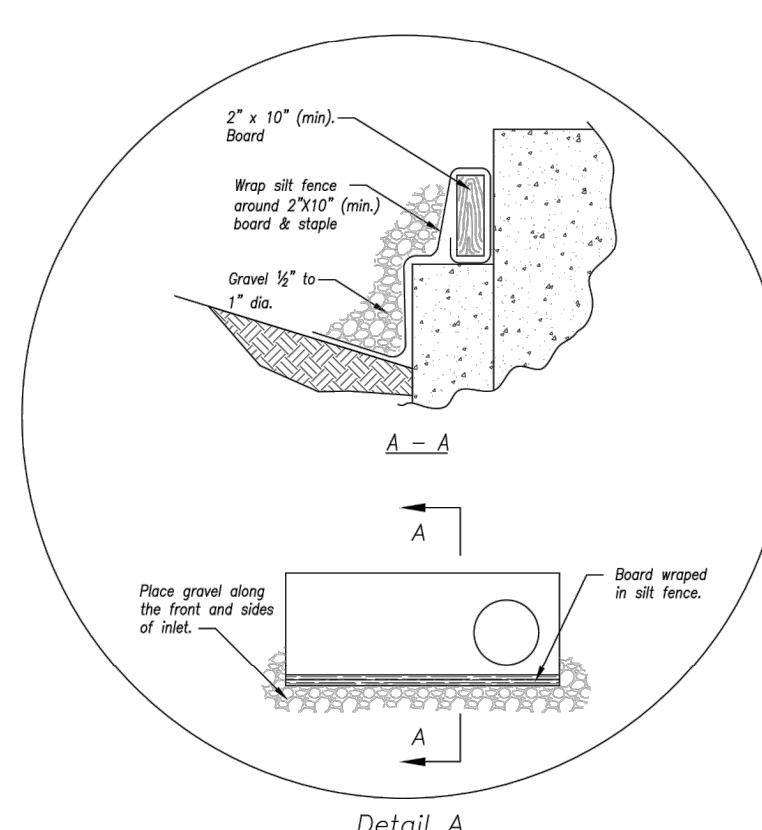
Sump Inlet Sediment Filter

Notes:

- Remove deposited sediment from excavated storage areas when available storage has been reduced by 20%.
- Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.
- Repair or replace as necessary to maintain function and integrity of installation.

Maintenance:

- Remove deposited sediment from excavated storage areas when available storage has been reduced by 20%.
- Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.
- Repair or replace as necessary to maintain function and integrity of installation.



Detail A

EARLY STAGE CURB INLET
(Open Box and Prior to Pouring Curb and Inlet Throat)


CONCRETE WASHOUT

Excavated material shall be used for perimeter berm. Soil for berm shall be compacted in the same manner as trench backfill.

CONSTRUCTION ENTRANCE

Construction Entrance modified from 2015 Overland Park Standard Details for Erosion and Sediment Control, Concrete Washout modified from 2009 City of Great Bend Standard Drawings.

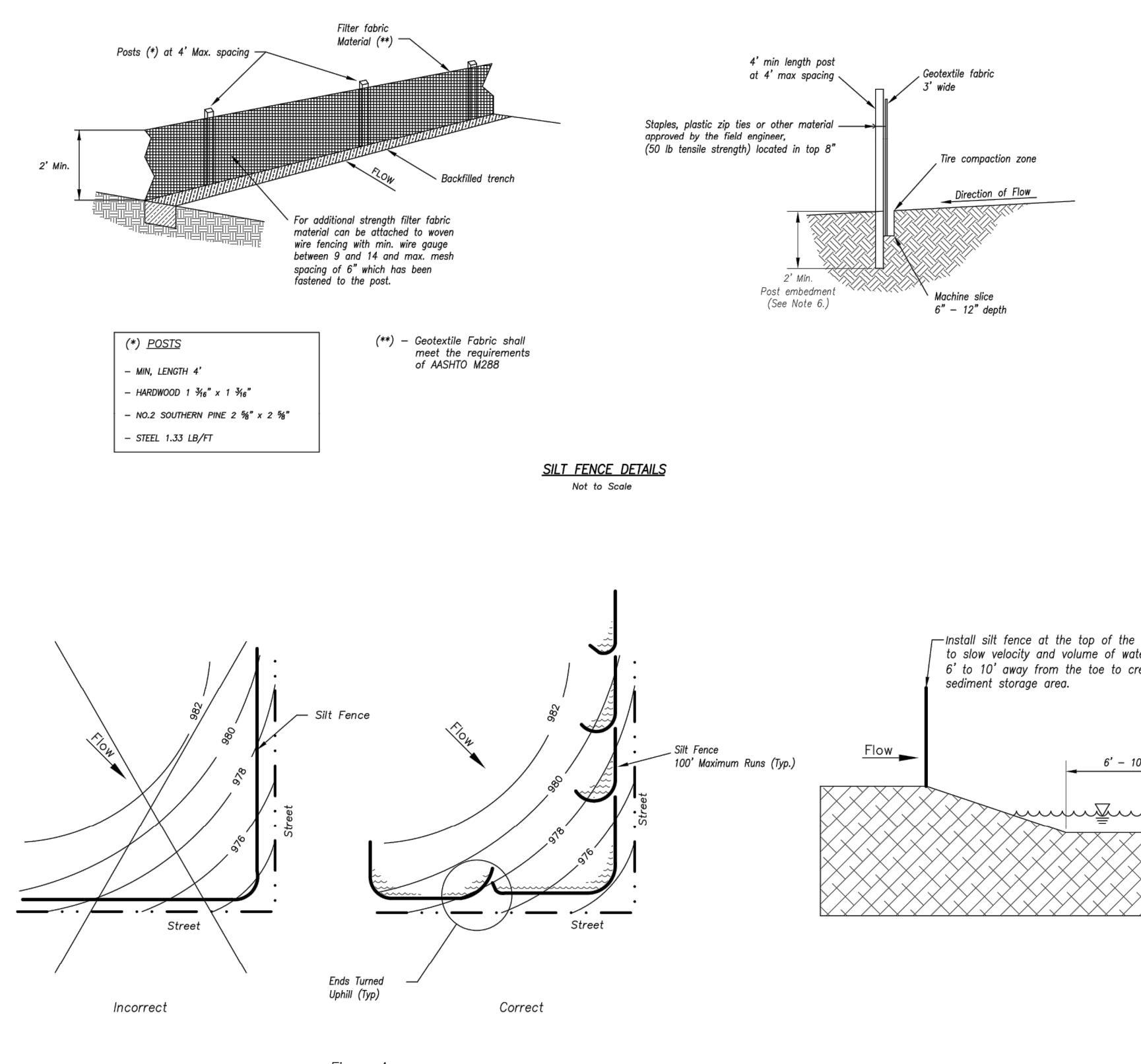
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KANSAS CITY METRO CHAPTER

CURB INLET PROTECTION

STANDARD DRAWING NUMBER ESC-06 ADOPTED: 10/24/2016



SILT FENCE DETAILS
Not to Scale

SILT FENCE LAYOUT
Not to Scale


Notes:

- In order to contain water, the ends of the silt fence must be turned uphill (Figure A).
- Long perimeter runs of silt fence must be broken up into several smaller segments to minimize water concentrations (Figure A).
- Long slopes should be broken up with intermediate rows of silt fence to slow runoff velocities.
- Attach fabric to upstream side of post.
- Install posts a minimum of 2' into the ground.
- Trenching will only be allowed for small or difficult installations, where staking machine cannot be reasonably used.

Maintenance:

- Remove and dispose of sediment deposits when the deposit approaches 1/2 the height of silt fence.
- Repair as necessary to maintain function and structure.

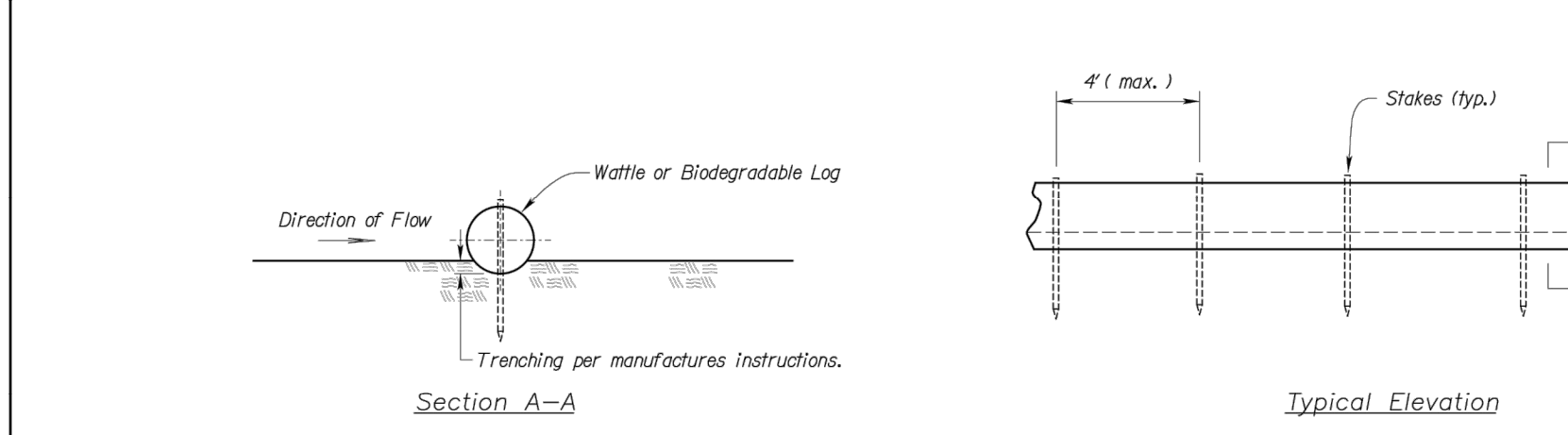
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KANSAS CITY METRO CHAPTER

SILT FENCE

STANDARD DRAWING NUMBER ESC-03 ADOPTED: 10/24/2016



Section A-A

Typical Elevation

Notes for Wattles and Biodegradable Log Slope Protection:

- The Slope barriers shall be placed along contour lines, with a short section turned up slope 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.
- Install wattles and biodegradable logs per manufacturer's instructions.
- 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".

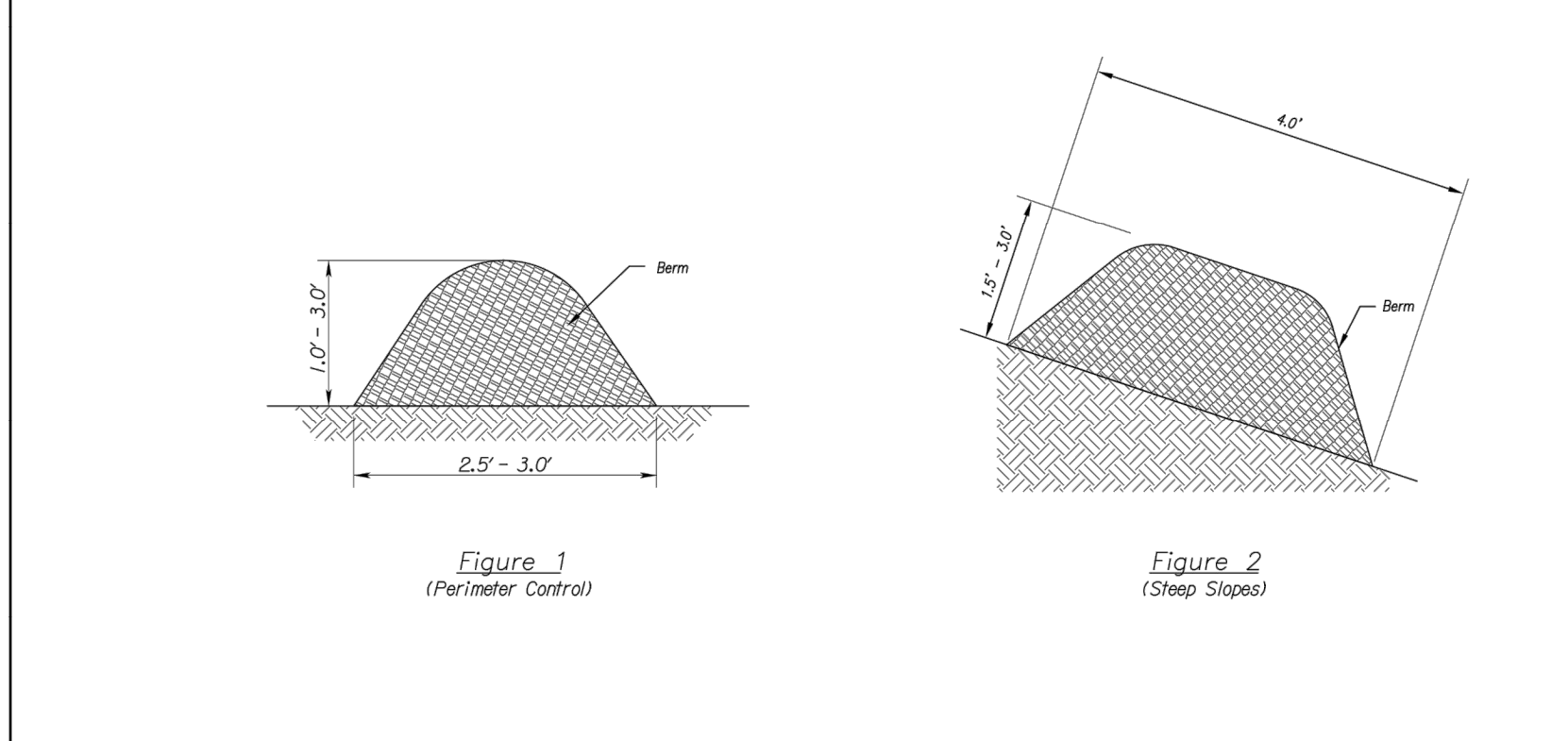


Figure 1
(Perimeter Control)

Figure 2
(Steep Slopes)

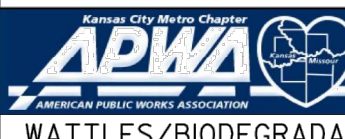
Notes for Mulch and Compost Filter Berms:

- The sediment control berm shall be placed uncompact in a window at locations shown on the plans or as directed by the engineer.
- 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.
- 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.
- Do not use compost or wood mulch berms in any runoff channels or concentrated flow areas.
- Wood mulch shall consist of free and shrub debris resulting from clearing and grubbing and shall be ground by the mechanical means such as a chipper, hammermill, tub grinder or other approved method. Mulch adding water with a maximum width of 2" and a maximum length of 10".

Maintenance for Mulch and Compost Filter Berms:

- Berm shall be reshaped and material added as necessary to maintain function and dimensions.
- Breaches in the berm shall be repaired promptly.

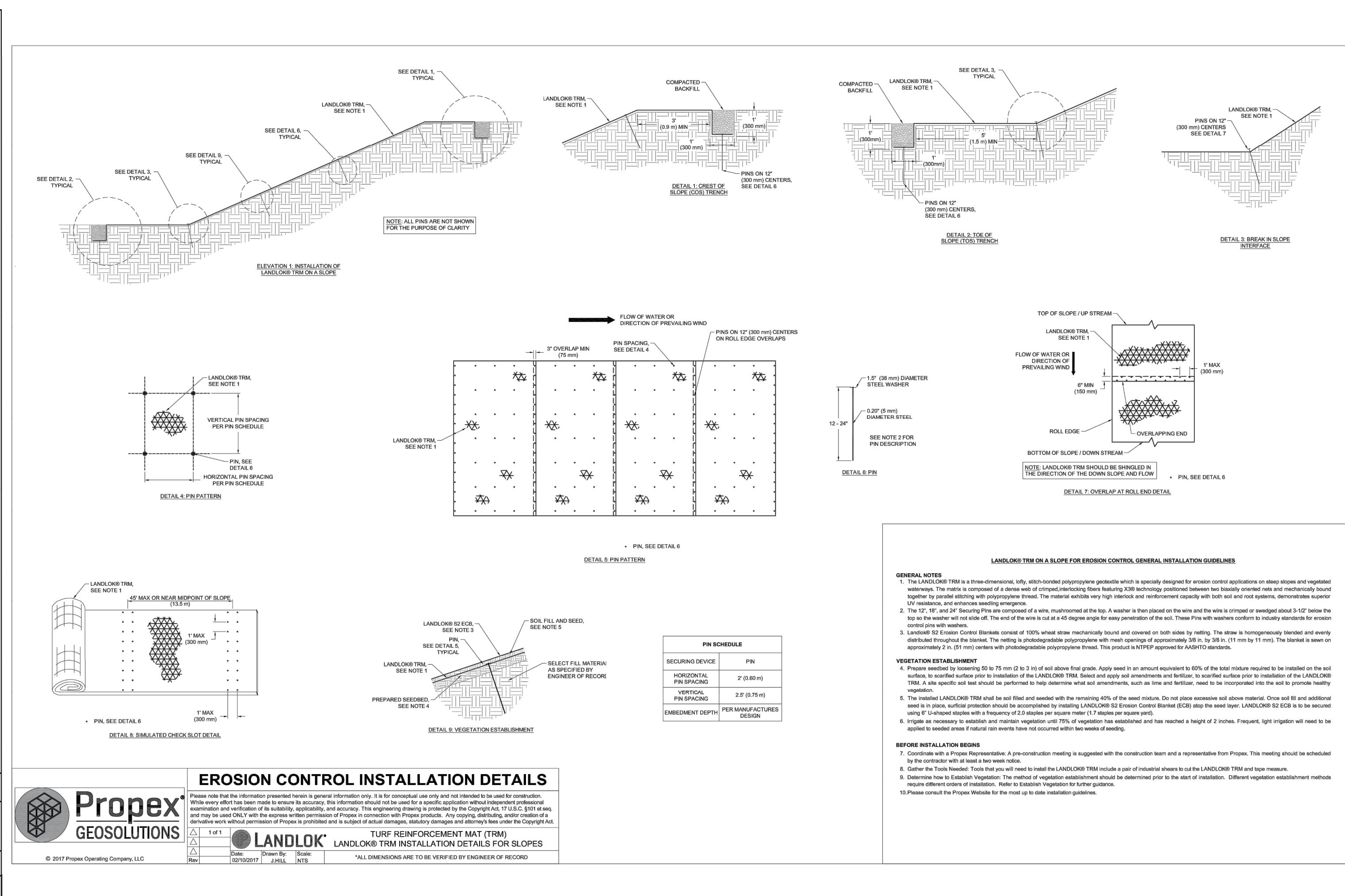
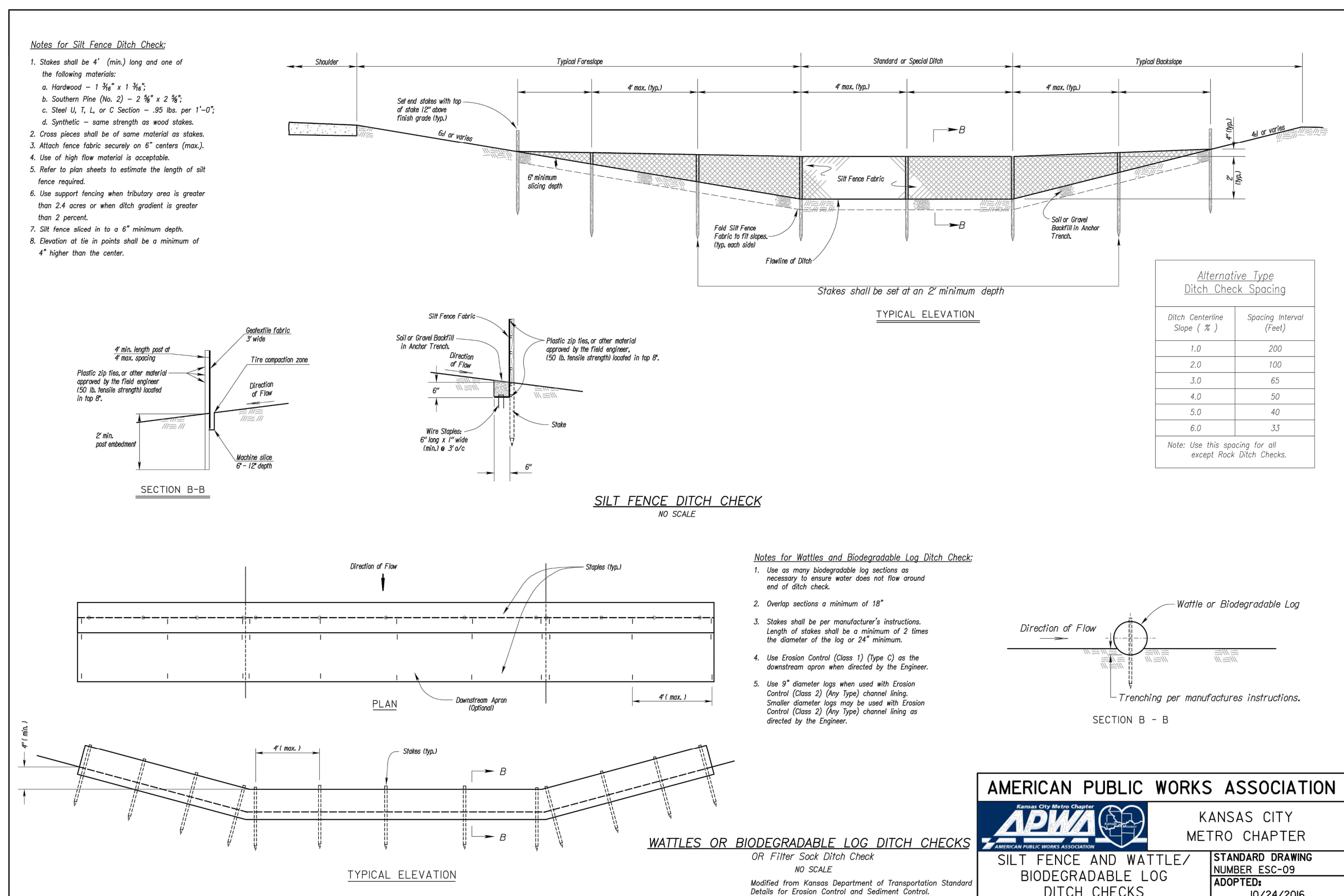
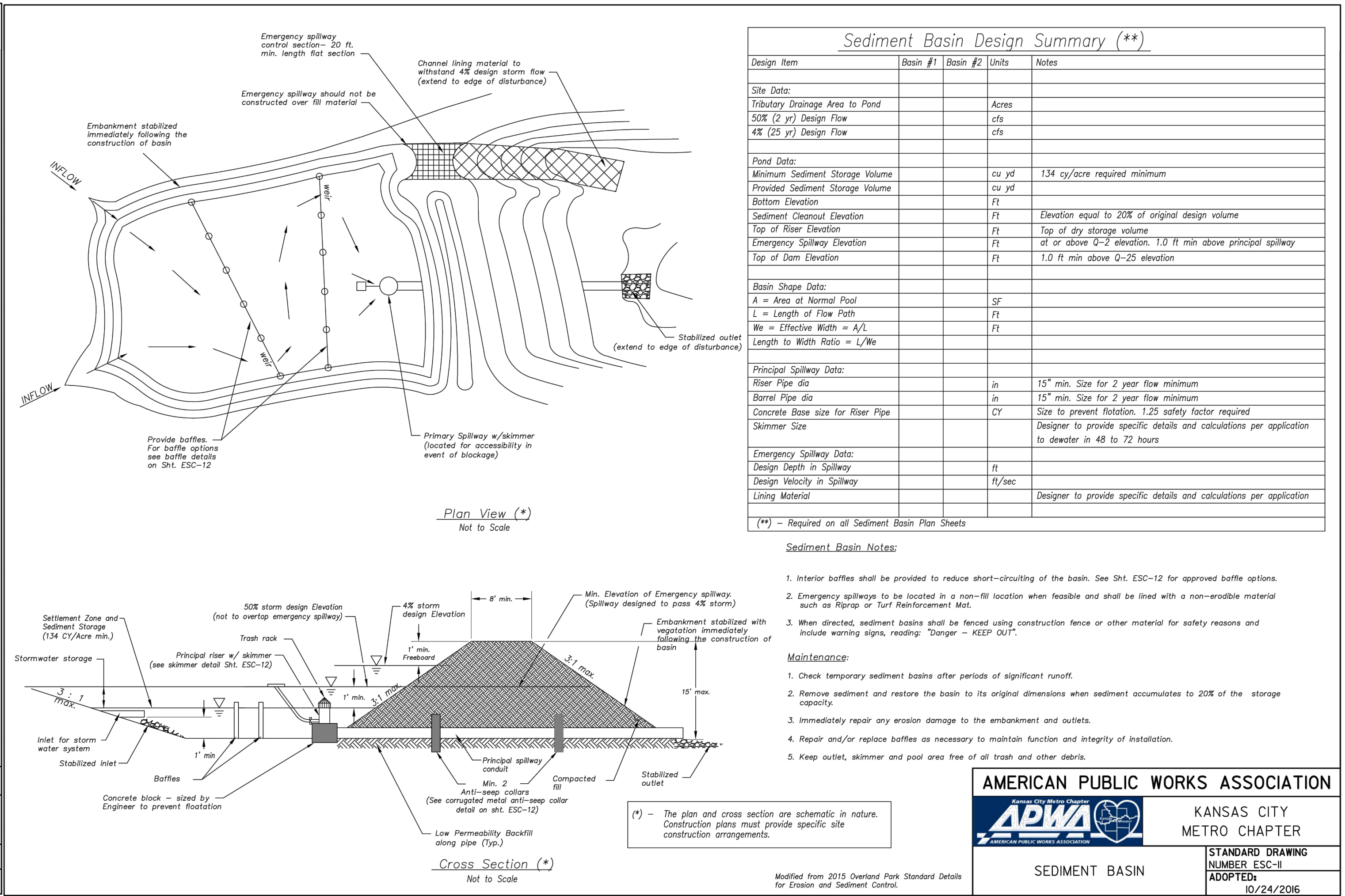
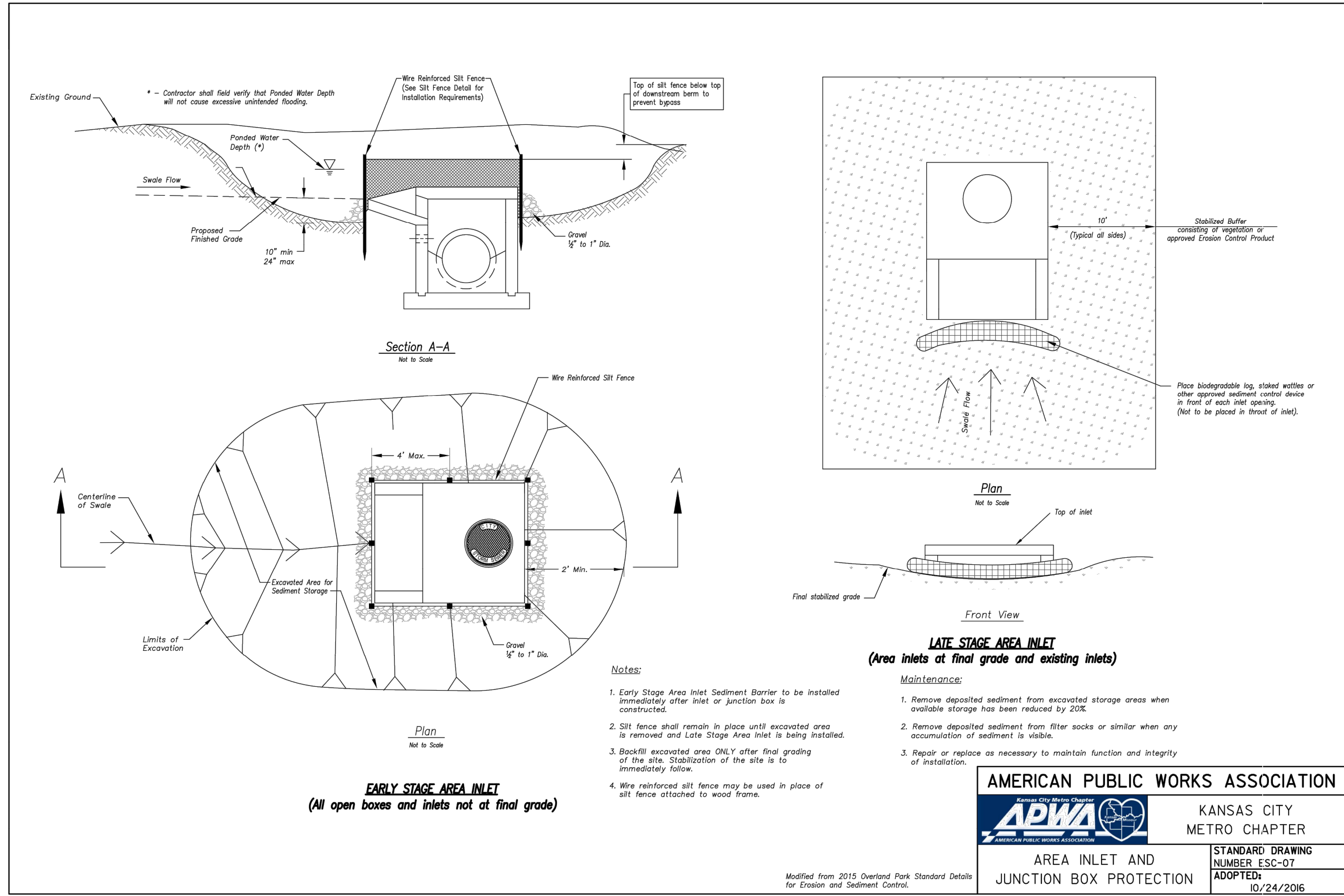
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KANSAS CITY METRO CHAPTER

WATTLES/BIODEGRADABLE LOG AND MULCH/COMPOST FILTER BERM

STANDARD DRAWING NUMBER ESC-04 ADOPTED: 10/24/2016



AMERICAN PUBLIC WORKS ASSOCIATION
KANSAS CITY METRO CHAPTER
STANDARD DRAWING NUMBER ESC-09
ADOPTED: 10/24/2016

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

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 Certificates of Authority #E200200360P #LAC201005237 #LS200200895F

PREPARED BY:
MARK ALLEN BREUER
REGISTERED PROFESSIONAL ENGINEER
NUMBER PE-2003607268
06.29.2021

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

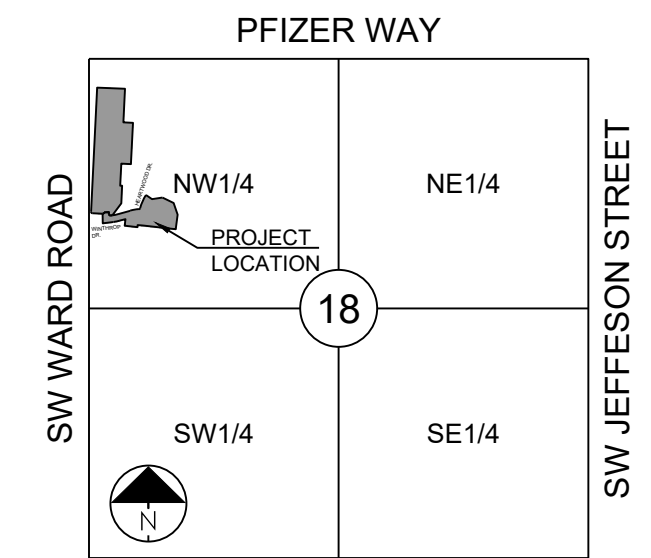
EROSION CONTROL DETAILS

SHEET 6

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

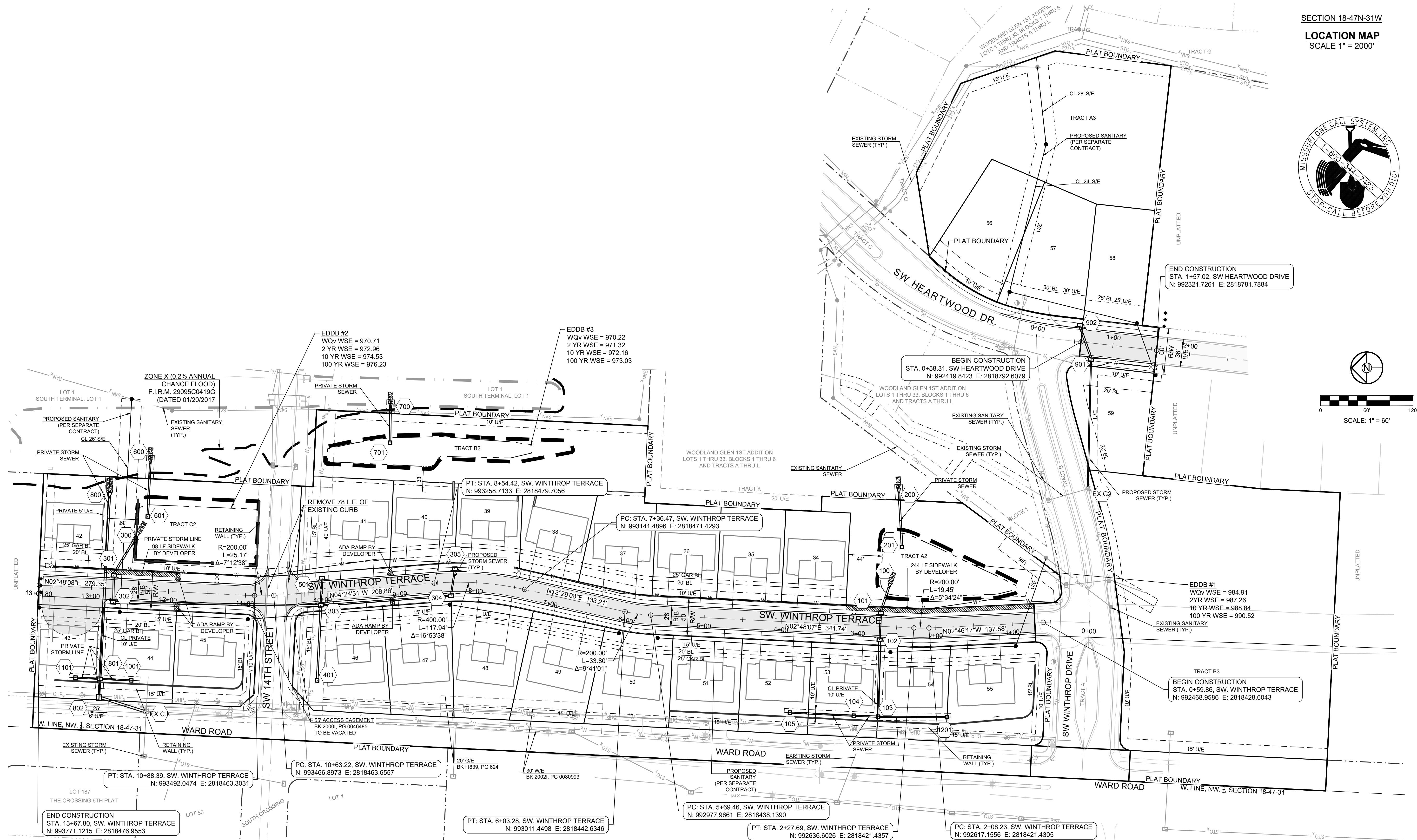


SECTION 18-47N-31W

LOCATION MAP
 SCALE 1" = 2000'



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



SCALE: 1" = 60'

REVISION DATE	DESCRIPTION
4-24-2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
09/28/2021	CITY COMMENTS

DRAWN BY:	DATE PREPARED:	PROJ. NUMBER:
BAL	2-19-2020	18-017

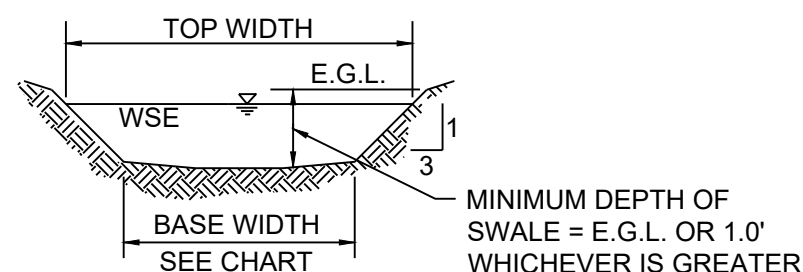
GENERAL LAYOUT
 SHEET

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NOTES:

- 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.
- SWALE SECTIONS EXTEND THE ENTIRE LENGTH BETWEEN UPSTREAM AND DOWNSTREAM STRUCTURES WITH THE EXCEPTION OF A TRANSITION AT EACH STRUCTURE.

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



100 YR OVERFLOW SWALE SECTIONS
SECTION 1-2

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

DETENTION STORAGE EDDB #1:
 100 YEAR, 24 HR. RAINFALL - MAXIMUM WSE = 990.54 (SEE FINAL STORMWATER MGMT. PLAN)

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

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

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

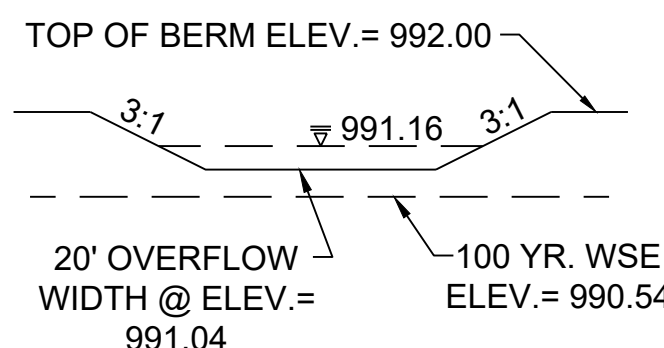
AUXILIARY SPILLWAY SET AT 0.5 FEET ABOVE MAX. WSE, SPILLWAY ELEV. = 976.40

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

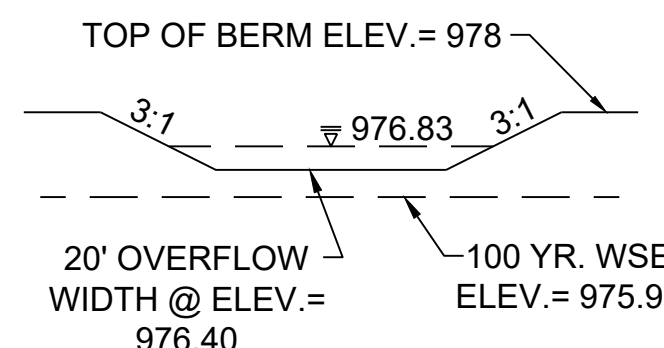
DETENTION STORAGE EDDB #3:
 100 YEAR, 24 HR. RAINFALL - MAXIMUM WSE = 972.96 (SEE FINAL STORMWATER MGMT. PLAN)

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

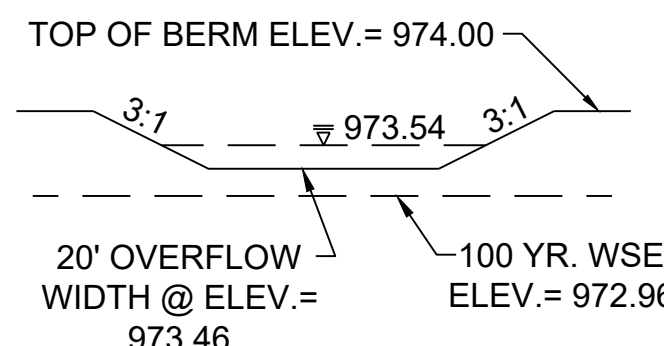
AUXILIARY SPILLWAY DESIGN:
 $Q(100)=1.43$ CFS, $Q=CLH^{(3/2)}$, $C=3.33$, $L=20$ FT., 1.43 CFS = $3.33 * 20FT. * (H^{(3/2)})$, $H=0.08$ FT.



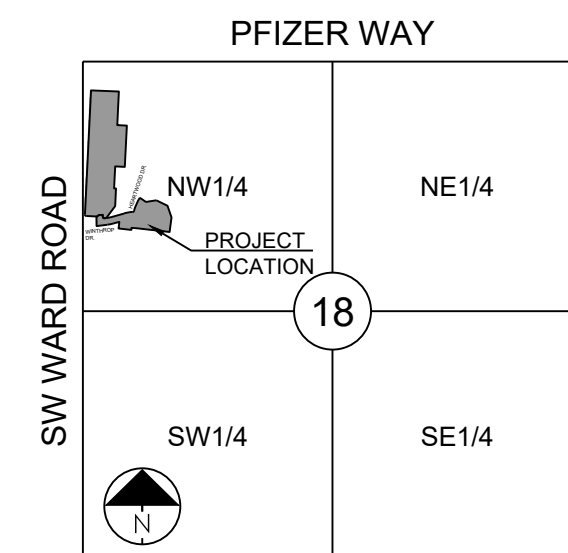
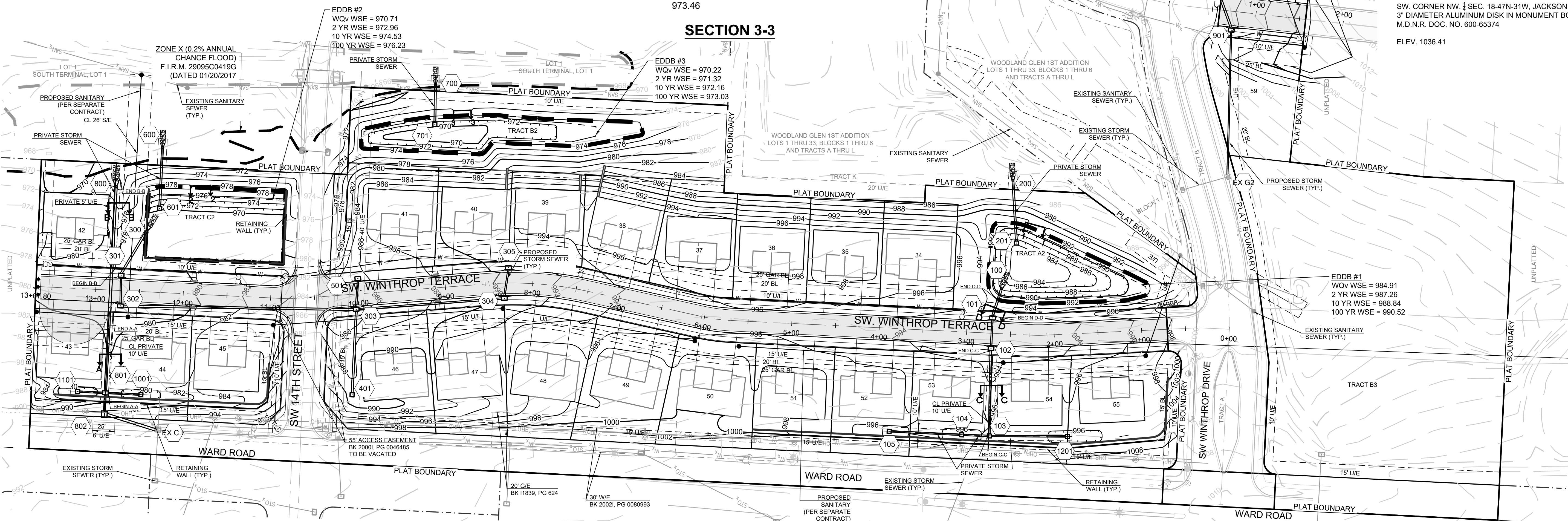
SECTION 1-1



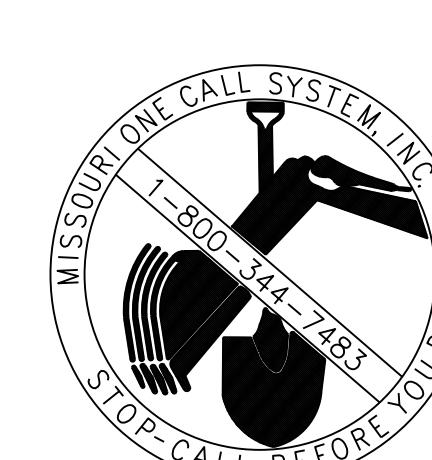
SECTION 2-2



SECTION 3-3



SECTION 18-47N-31W
LOCATION MAP
 SCALE 1" = 2000'



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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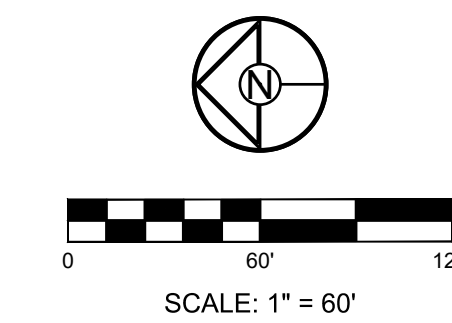
MISSOURI PROFESSIONAL ENGINEER
 MARK ALLEN BREUER
 MEMBER
 PE-200907268
 06.29.2021

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

REVISION DATE	DESCRIPTION
4-24-2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
09/29/2021	CITY COMMENTS

MASTER DRAINAGE PLAN
 GRADING PLAN

SHEET



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LOT TYPE TABLE		
LOT #	BASEMENT 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.

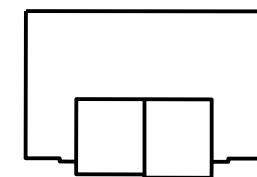
NOTES:

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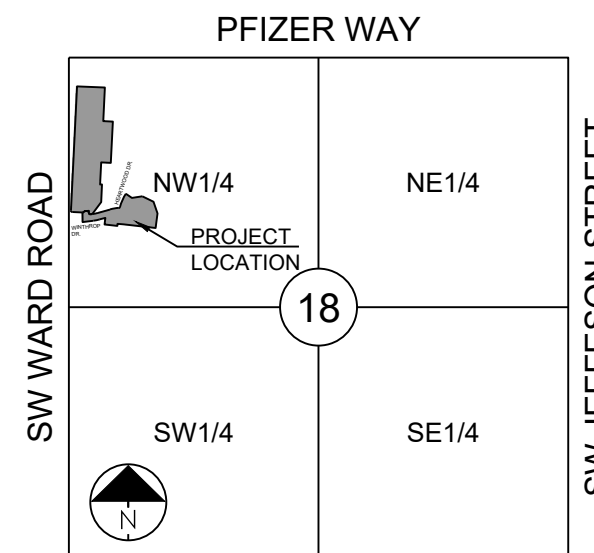
PROJECT BENCHMARK:

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

933.38 DENOTES FINISHED GRADE ELEVATION
 EX: 936.48 DENOTES EXISTING GRADE ELEVATION

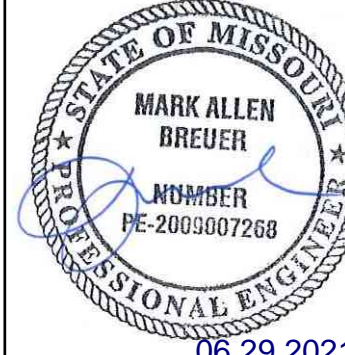


DENOTES CONCEPTUAL BUILDING FOOTPRINT

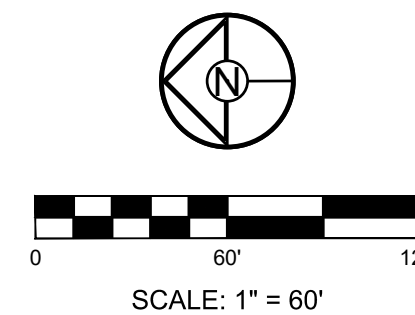


SECTION 18-47N-31W

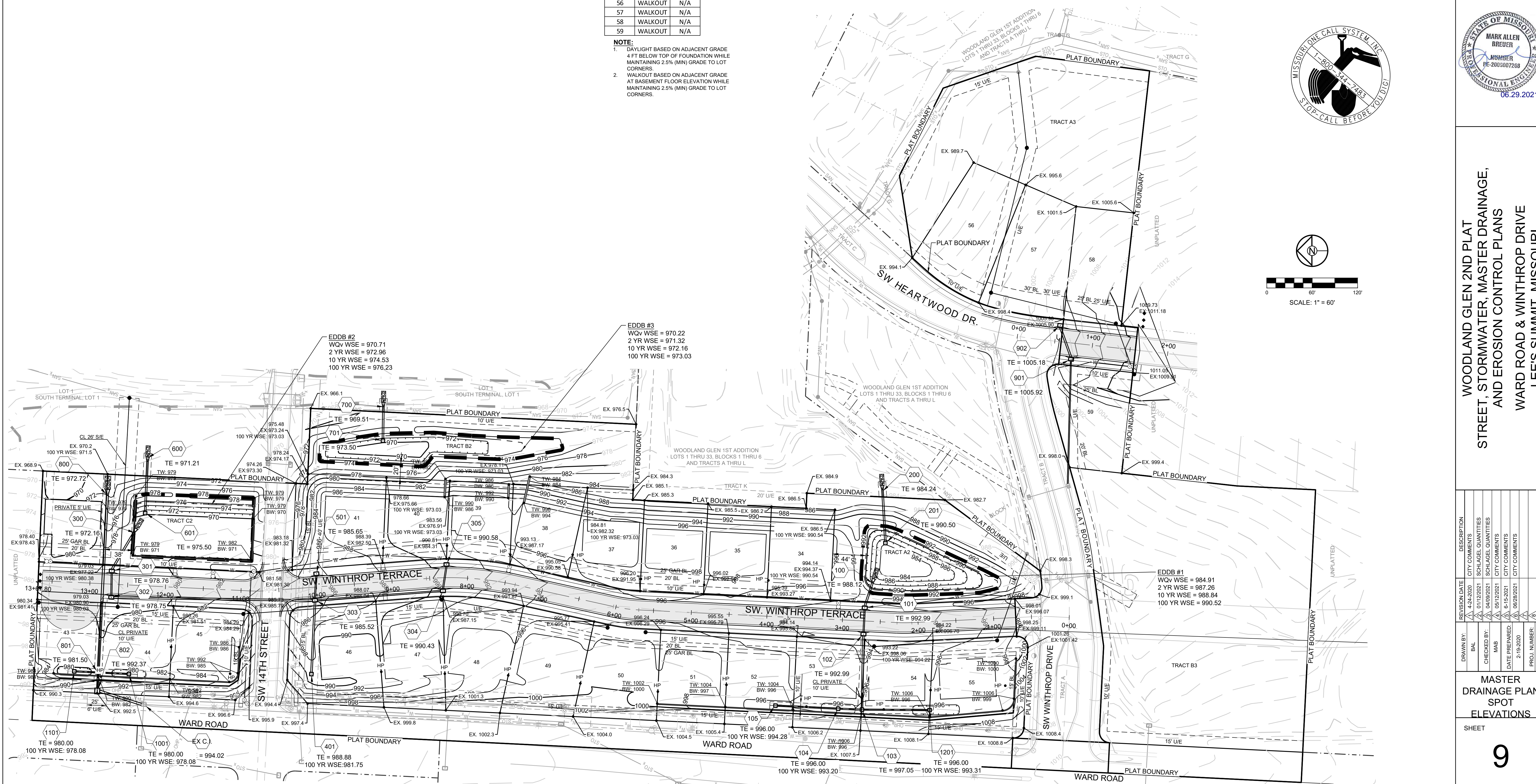
LOCATION MAP
 SCALE 1" = 2000'



06.29.2021



SCALE: 1" = 60'



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

REVISION DATE	DESCRIPTION
4-24-2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	MAB
6-15-2021	CITY COMMENTS
06/29/2021	CITY COMMENTS

MASTER DRAINAGE PLAN
 SPOT ELEVATIONS

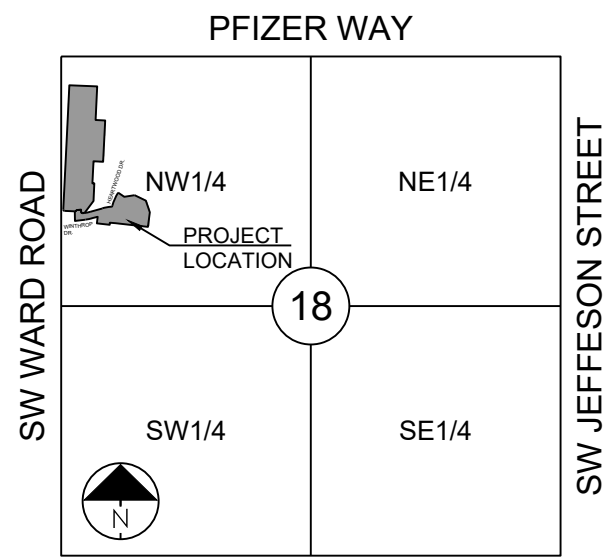
SHEET
9

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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

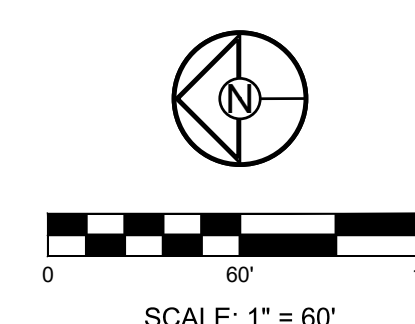
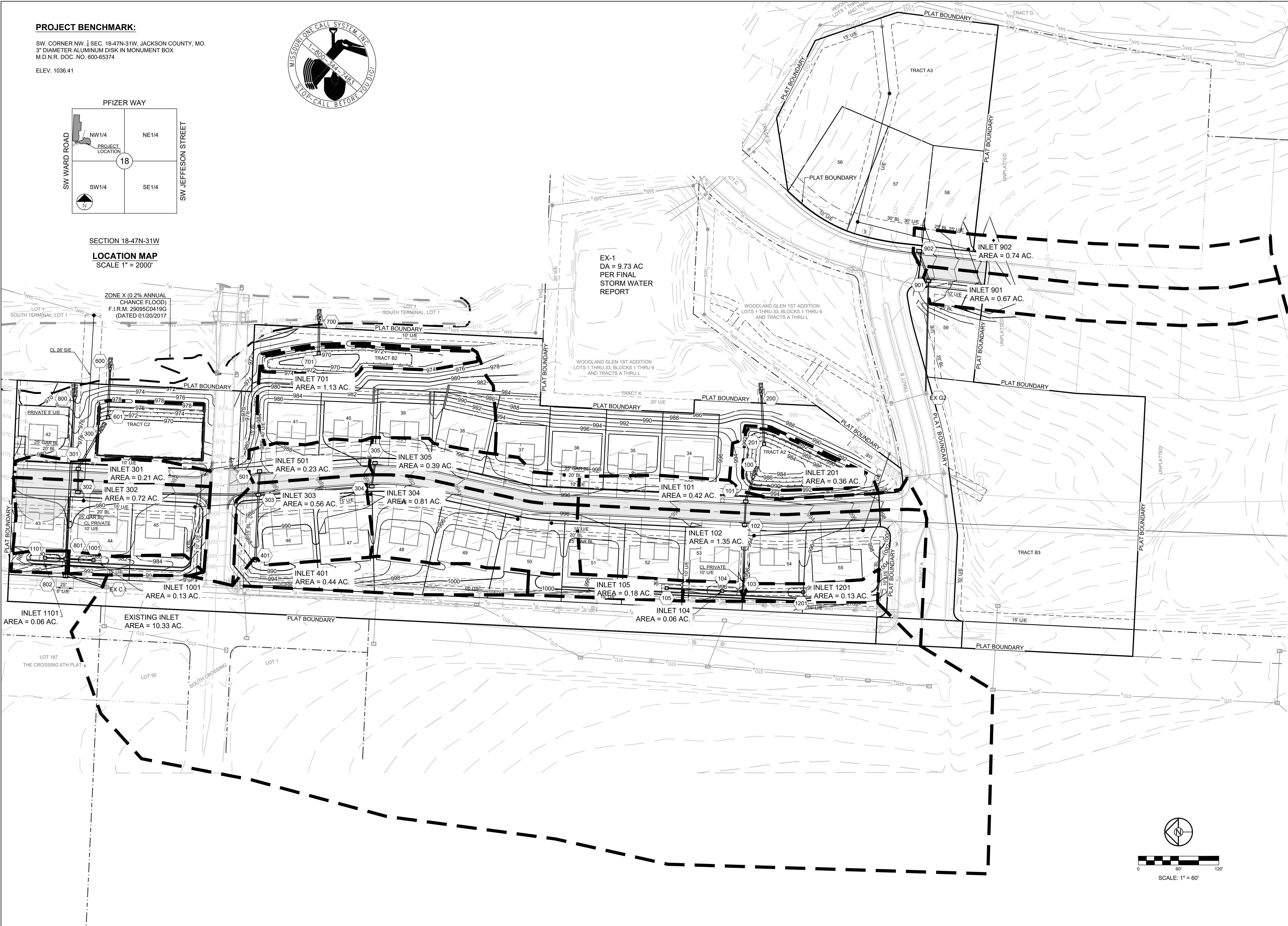
ELEV. 1036.41



SECTION 18-47N-31W

LOCATION MAP
SCALE 1" = 2000'

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



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Missouri State Certificates of Authority
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STATE OF MISSOURI
MARK ALLEN BREUER
MEMBER
PE-2009607268
06.29.2021

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

REVISION DATE	DESCRIPTION
4-24-2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
2-19-2020	CITY COMMENTS
18-017	

MASTER DRAINAGE PLAN
DRAINAGE AREAS

SHEET

10

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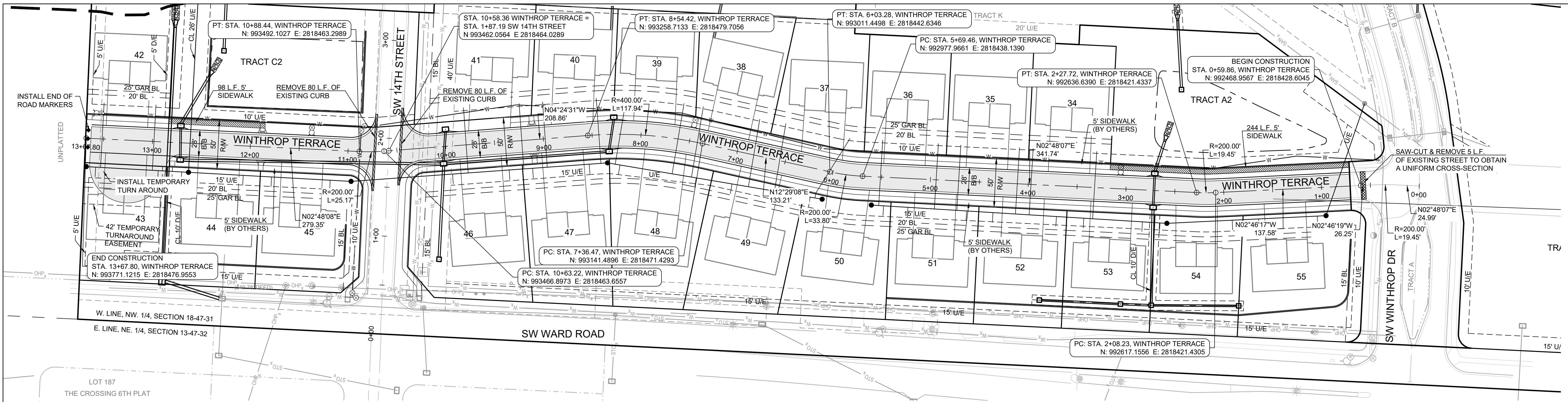
10 YR STORM SEWER DESIGN CALCULATIONS

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	Intensity	Runoff To Inlet	Cumul. Runoff	Pipe Cap.	Pipe Vel.	Up Piped Inlet 1	Up Piped Inlet 2	Up Area (acres)	Up CxA	Up Inlet	Down Inlet	Pipe Type	"n" Value	Pipe Size	Pipe Length	Slope %	Drop In Inlet	FL Up	FL Down	Inlet Top	HGL Elev.
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	992.99	989.10
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	992.99	989.16
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	999.50	992.34
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	992.57	992.24	998.00	993.11
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	994.14
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	990.50	984.66
*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	14.23	29.00	5.91			0.00	0.00	301	300	RCP	0.013	30	58.76	0.50	0.50	970.29	970.00	978.76	974.46
302	0.72	0.60	3.15	1.89	5.9	7.08	3.06	13.39	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	974.55
303	0.56	0.60	2.43	1.46	5.3	7.25	2.44	10.57	24.87	7.92	401	501	0.67	0.40	303	302	HDPE	0.012	24	269.14	1.03	4.00	974.24	971.47	985.52	975.85
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	984.62
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	985.82
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	15	97.58	4.75	N/A	982.88	978.24	988.88	983.54
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	15	35.31	4.00	N/A	979.65	978.24	985.65	980.12
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	975.50	970.94
*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	N/A	968.53	968.12	973.50	970.92
*SEE FINAL STORMWATER REPORT FOR DETAILED POND CALCULATIONS																										
LINE 800																										
801	0.00	0.60	10.52	6.31	5.1	7.33	0.00	46.25	96.13	13.60	1001	1101	0.19	0.11	801	800	HDPE	0.012	36	234.80	1.77	0.50	974.21	970.05	981.50	978.95
802	0.00	0.60	10.33	6.20	5.1	7.34	0.00	45.47	94.56	13.38			0.00	0.00	802	801	RCP	0.013	36	24.52	2.01	7.00	975.20	974.71	992.37	977.92
EX C.I.	10.33	0.60	10.33	6.20	5.0	7.35	45.57	45.57	96.33	19.62			0.00	0.00	EX C.I.	802	HDPE	0.012	30	63.86	4.70	0.50	985.20	982.20	994.02	988.19
LINE 900																										
901	0.67	0.60	1.41	0.85	5.1	7.33	2.95	6.20	11.28	9.20			0.00	0.00	901	EX G2	HDPE	0.012	15	167.35	2.60	0.50	998.14	993.79	1005.92	999.41
902	0.74	0.60	0.74	0.44	5.0	7.35	3.26	3.26	11.06	9.02			0.00	0.00	902	901	HDPE	0.012	15	47.05	2.50	N/A	999.82	998.64	1005.18	1000.70
LINE 1000																										
1001	0.13	0.60	0.13	0.08	5.0	7.35	0.57	0.57	11.27	6.37			0.00	0.00	1001	801	HDPE	0.012	18	40.71	0.98	N/A	976.10	975.71	980.00	976.95
LINE 1100																										
1101	0.06	0.60	0.06	0.04	5.0	7.35	0.26	0.26	11.38	6.44			0.00	0.00	1101	801	HDPE	0.012	18	31.59	1.00	N/A	976.02	975.71	980.00	976.95
LINE 1200																										
1201	0.13	0.60	0.13	0.08	5.0	7.35	0.57	0.57	7.00	5.70			0.00	0.00	1201	103	HDPE	0.012	15	59.97	1.00	N/A	992.84	992.24	998.00	993.27

* FLOW FROM CAPTURED FROM THESE LINE DRAIN THE THE EXISTING DETENTION BASIN. THE ADDED DRAINAGE DOES NOT EXCEED THE DESIGN OF THE EXISTING BASIN.

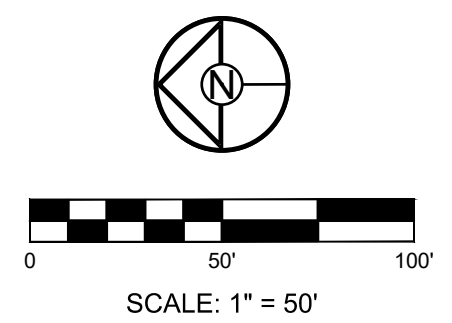
100 YR STORM SEWER DESIGN CALCULATIONS

Design Storm:		100																								
"K" Value:		1.25																								
"F" Factor:		1.00																								
Runoff Calculations										Pipe Properties																
Inlet #	Area (acres)	"C" Value	Cumul. Area (acres)	Cumul. CxA	Tc	Intensity	Runoff To Inlet	Cumul. Runoff	Pipe Cap.	Pipe Vel.	Up Piped Inlet 1	Up Piped Inlet 2	Up Area (acres)	Up CxA	Up Inlet	Down Inlet	Pipe Type	"n" Value	Pipe Size	Pipe Length	Slope %	Drop In Inlet	FL Up	FL Down	Inlet Top	HGL Elev.
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	992.99	990.90
102	1.35	0.60	1.72	1.03	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	991.13
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	992.56
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	993.20
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	994.28
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	990.50	984.80
*SEE FINAL STORMWATER REPORT FOR DETAILED POND CALCULATIONS																										
LINE 300																										
301	0.21	0.60	3.36	2.02	6.0	9.92	1.56	25.01	29.00	5.91			0.00	0.00	301	300	RCP	0.013	30	58.76	0.50	0.50	970.29	970.00	978.76	976.32
302	0.72	0.60	3.15	1.89	5.9	9.96	5.38	23.53	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	976.60
303	0.56	0.60	2.43	1.46	5.3	10.18	4.28	18.56	24.87	7.92	401	501	0.67	0.40	303	302	HDPE	0.012	24	269.14	1.03	4.00	974.24	971.47	985.52	978.42
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	169.67	3.08	0.50	983.47	978.24	990.43	985.10
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	986.05
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	982.88	978.24	988.88	983.78
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	979.65	978.24	985.65	980.28
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	600	HDPE	0.012	18	73.11	0.60	N/A	970.44	970.00	975.50	971.11
*SEE FINAL STORMWATER REPORT FOR DETAILED POND CALCULATIONS																										
LINE 700																										
701	1.13	0.60	1.13	0.68	5.0	10.32	8.75	8.75	6.64	5.41			0.00	0.00	701	603	HDPE	0.012	15	45.00	0.90	N/A	968.53	968.12	973.50	972.79
*SEE FINAL STORMWATER REPORT FOR DETAILED POND CALCULATIONS																										
LINE 800																										
801	0.00	0.60	10.52	6.31	5.1	10.29	0.00	81.17	96.13	13.60	1001	1101	0.19	0.11	801	800	HDPE	0.012	36	234.80	1.77	0.50	974.21	970.05	981.50	978.08
802	0.00	0.60	10.33	6.20	5.1	10.30	0.00	79.80	94.56	13.38																

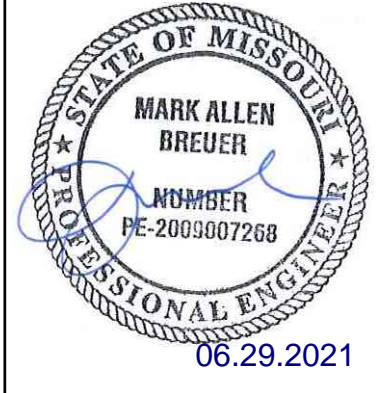
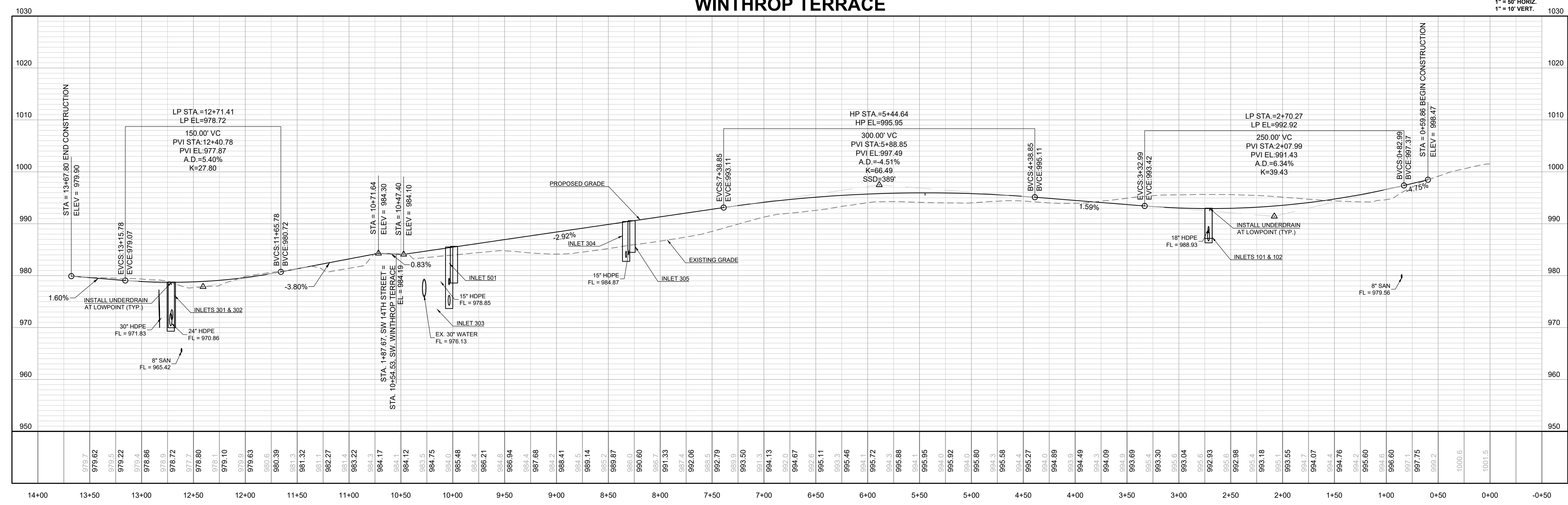


PROJECT BENCHMARK:

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



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

REVISION DATE	DESCRIPTION
4-24-2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
06/28/2021	CITY COMMENTS

WINTHROP
 TERRACE PLAN &
 PROFILE

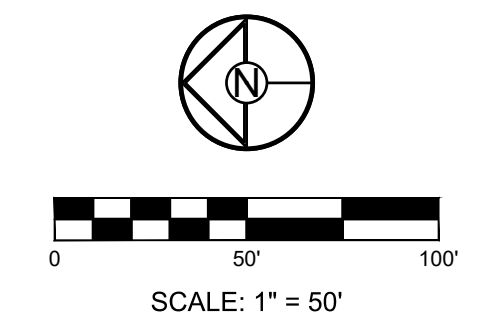
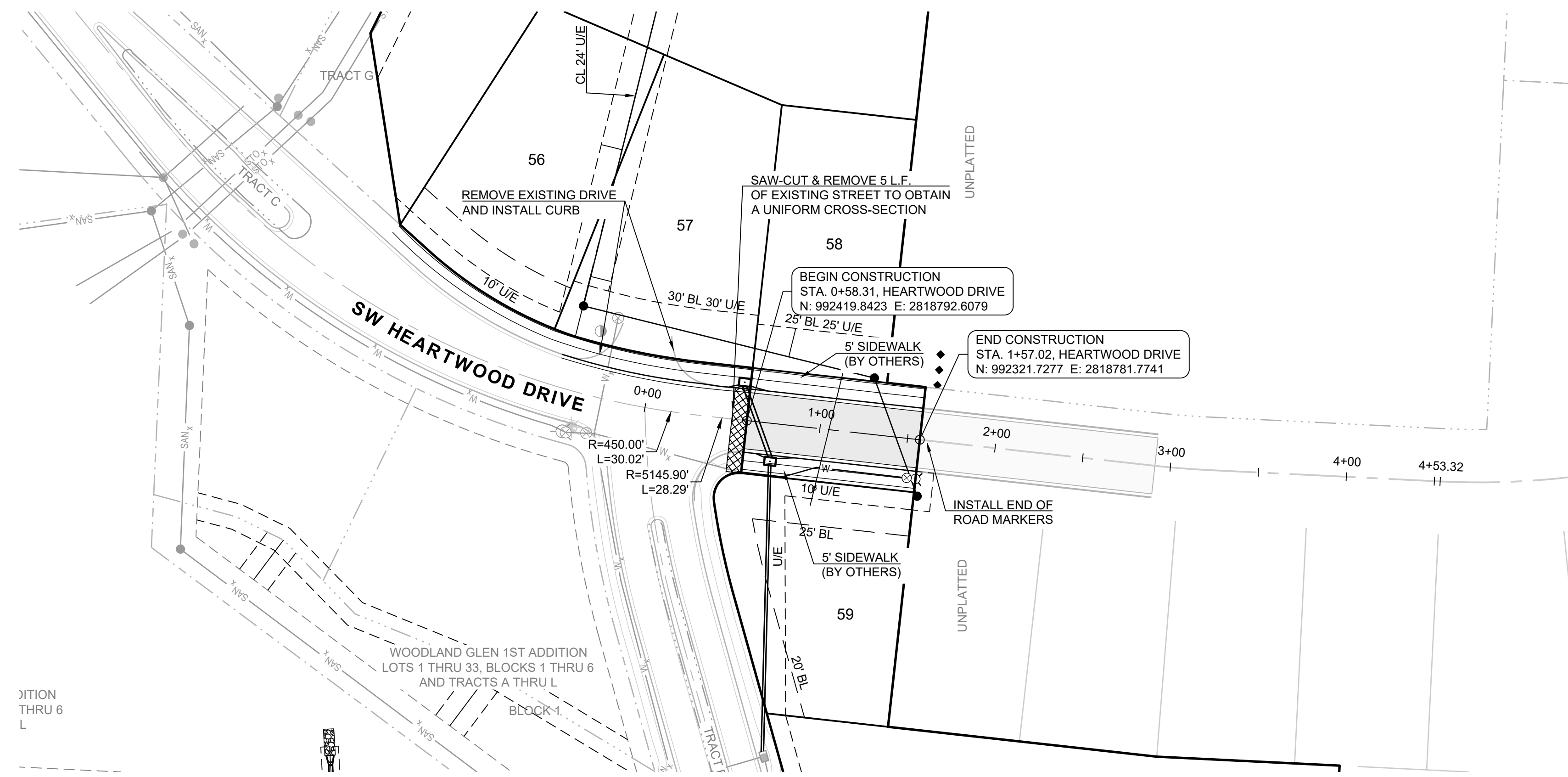
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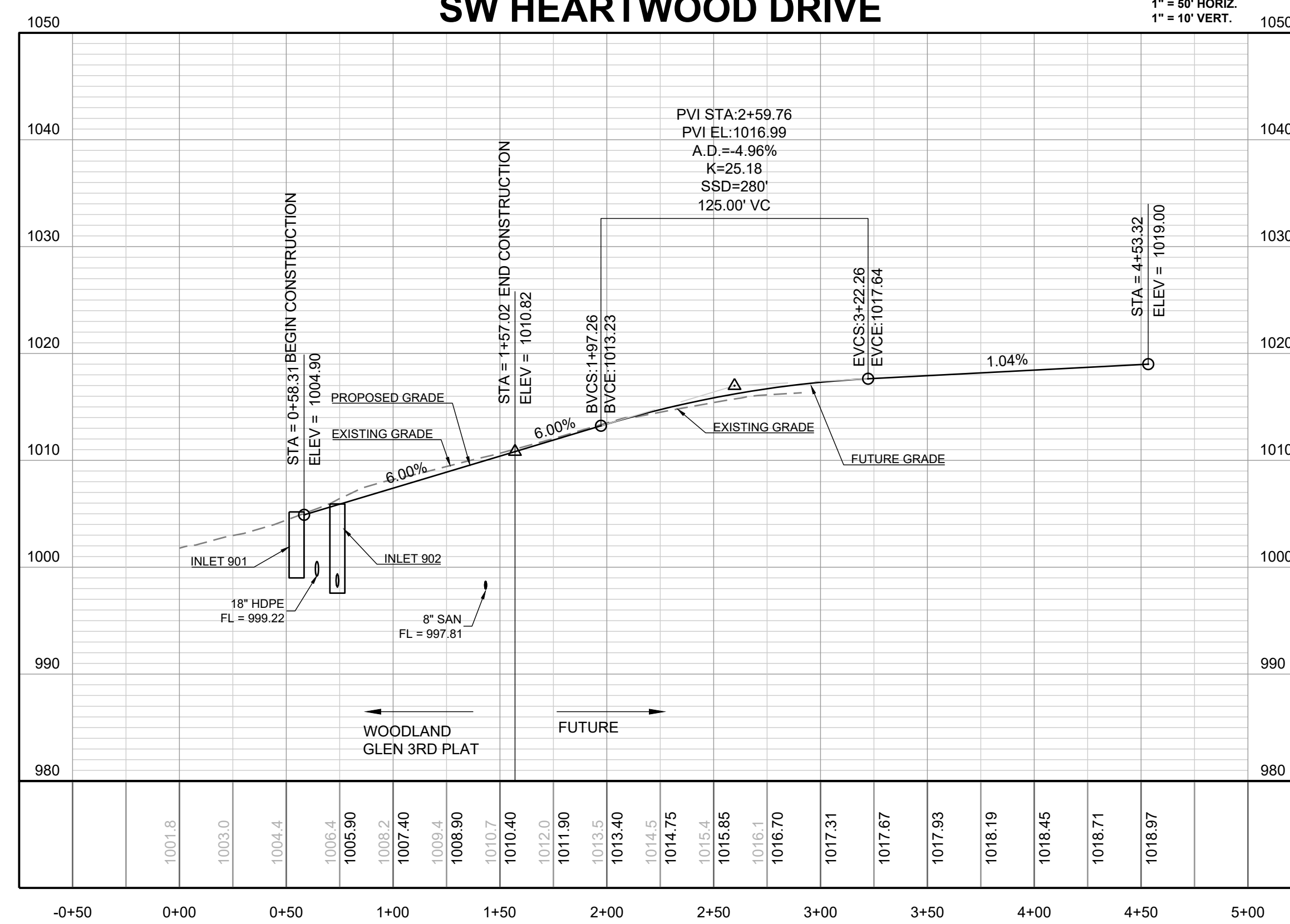
SW CORNER NW 1/4 SEC. 18-47N-31W, JACKSON COUNTY, MO.
 3" DIAMETER ALUMINUM DISK IN MONUMENT BOX
 M.D.N.R. DOC. NO. 600-65374

ELEV. 1036.41



SW HEARTWOOD DRIVE

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



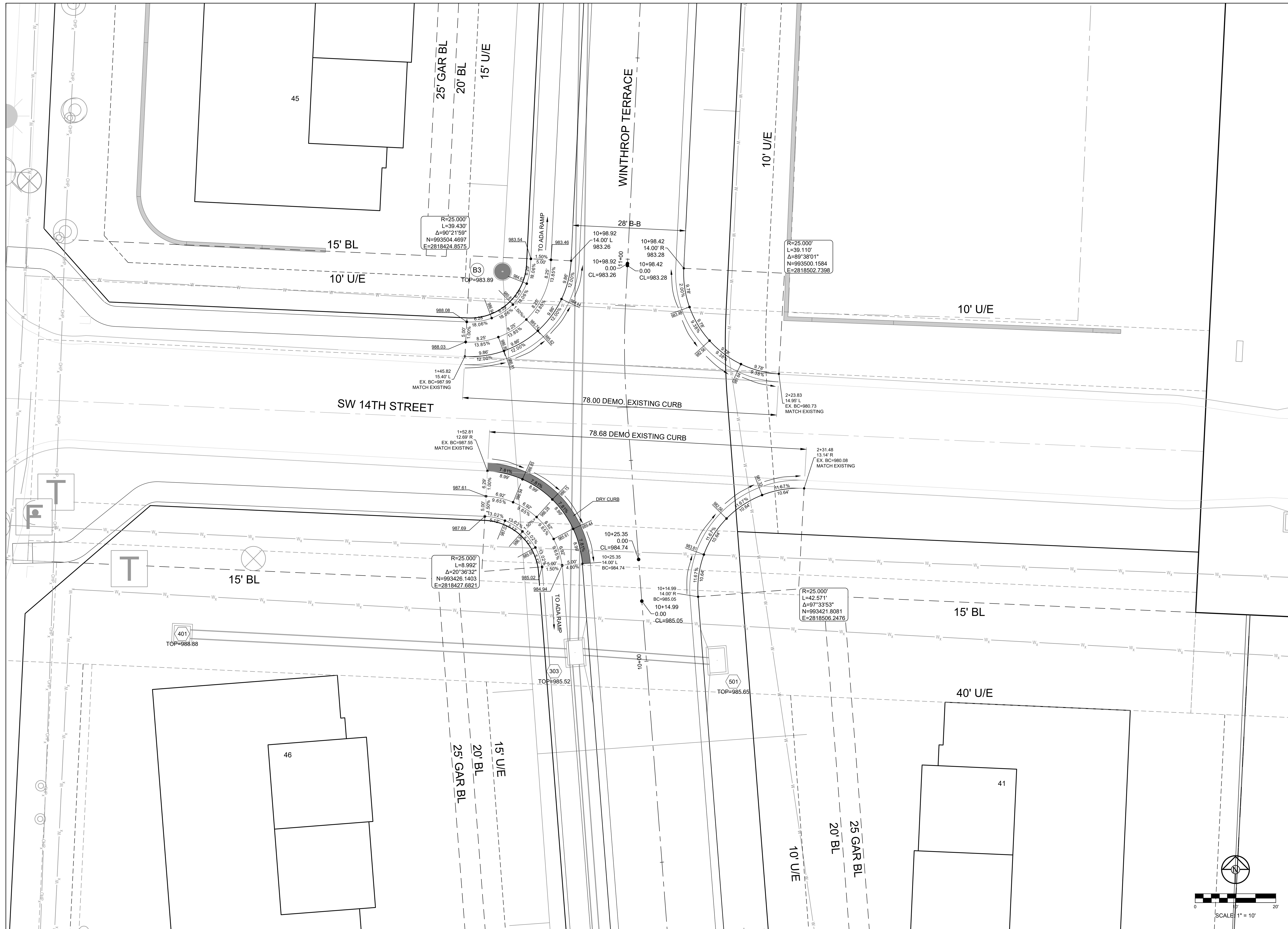
WOODLAND GLEN 2ND PLAT
 STREET, STORMWATER, MASTER DRAINAGE,
 AND EROSION CONTROL PLANS
 WARD ROAD & WINTHROP DRIVE
 LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
4-24-2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
09/28/2021	CITY COMMENTS
	CITY COMMENTS
	CITY COMMENTS
	CITY COMMENTS

HEARTWOOD DRIVE PLAN & PROFILE

SHEET

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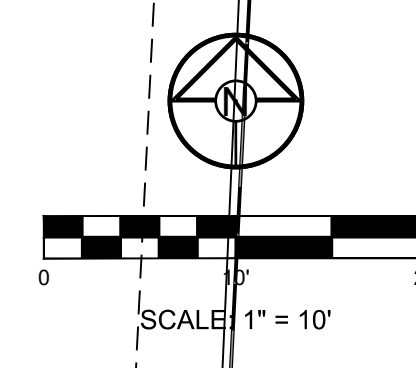


WOODLAND GLEN 2ND PLAT
 STREET, STORMWATER, MASTER DRAINAGE,
 AND EROSION CONTROL PLANS
 WARD ROAD & WINTHROP DRIVE
 LEE'S SUMMIT, MISSOURI

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05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
09/28/2021	CITY COMMENTS
2-19-2020	CITY COMMENTS
18-017	CITY COMMENTS

INTERSECTION
 DETAIL

SHEET
14



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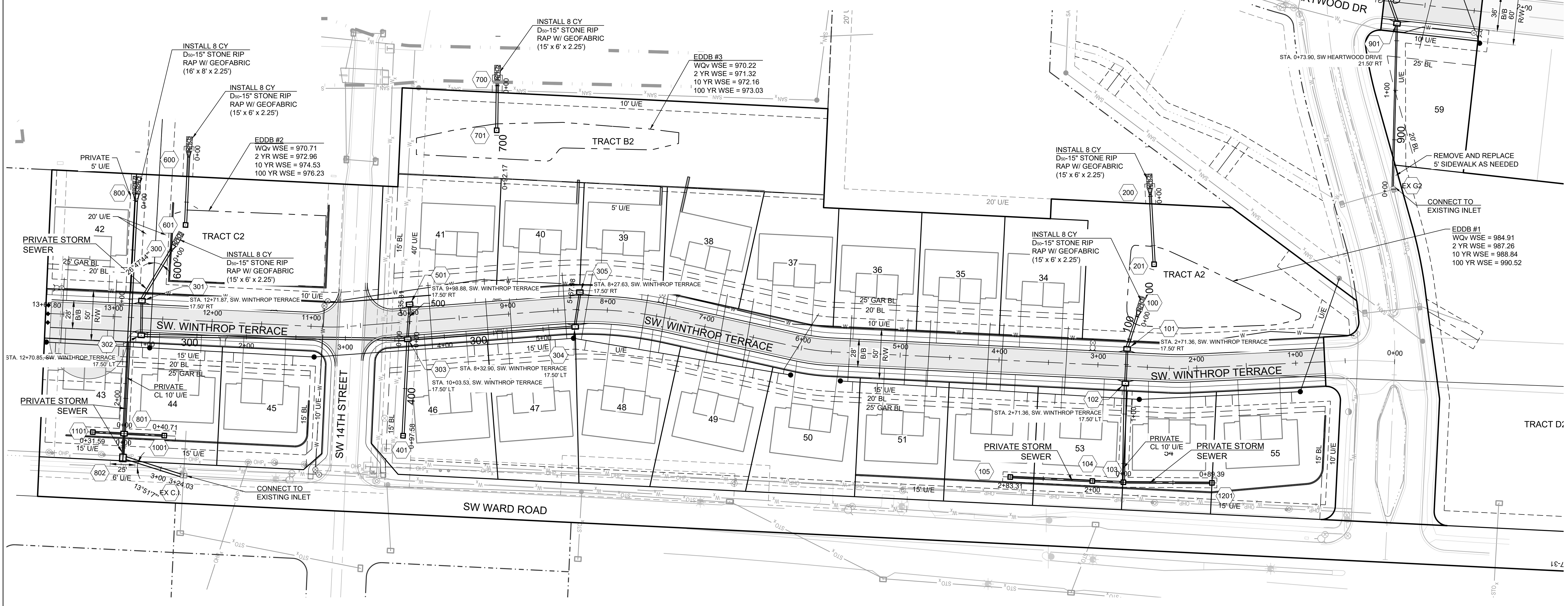
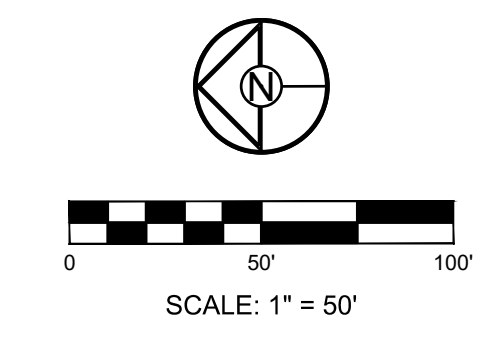
SW CORNER NW 1/4 SEC. 18-47N-31W, JACKSON COUNTY, MO.
 3" DIAMETER ALUMINUM DISK IN MONUMENT BOX
 M.D.N.R. DOC. NO. 600-65374
 ELEV. 1036.41

Structure	Notes
100	STA 0+00.00, 100 INSTALL 24" END SECTION N 992669.2728 E 2818473.6957
101	STA 0+34.17, 100 INSTALL 6 X 4 CURB INLET N 992679.3667 E 2818441.0459
102	STA 0+69.17, 100 INSTALL 6 X 4 CURB INLET N 992681.0777 E 2818406.0877
103	STA 1+68.90, 100 INSTALL 4 X 4 JUNCTION BOX F.F.B. 358°53'41" N 992683.0605 E 2818306.3812
104	STA 2+00.35, 100 INSTALL 4 X 4 AREA INLET (OPENINGS N.E.S.W) F.F.B. 0°00'00" N 992714.4882 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 992797.3500 E 2818311.6624
200	STA -0+00.04, 200 INSTALL 15" END SECTION N 992655.8760 E 2818595.2227

Structure	Notes
201	STA 0+68.76, 200 INSTALL OUTLET STRUCTURE F.F.B. 180°00'00" N 992652.0986 E 2818526.5222
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

Structure	Notes
401	STA 0+97.58, 400 INSTALL 4 X 4 AREA INLET (OPENINGS S.W) F.F.B. 357°17'49" N 993410.6806 E 2818353.3299
501	STA 0+35.31, 500 INSTALL 6 X 4 CURB INLET N 993404.0946 E 2818486.0494
600	STA -0+00.04, 600 INSTALL 18" END SECTION N 993627.2204 E 2818639.2364
601	STA 0+73.07, 600 INSTALL OUTLET STRUCTURE F.F.B. 357°23'29" N 993630.3926 E 2818566.1938
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°00'00" N 993316.1131 E 2818661.8180
800	STA 0+00.85, 800 INSTALL 38" END SECTION N 993680.3317 E 2818589.9535

Structure	Notes
801	STA 2+35.65, 800 INSTALL 6 X 4 JUNCTION BOX F.F.B. 87°17'49" N 993692.4917 E 2818355.4726
802	STA 2+60.17, 800 INSTALL 7 X 6 JUNCTION BOX N 993693.6905 E 2818330.9777
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



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

REVISION DATE	DESCRIPTION
4-24-2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
06/28/2021	CITY COMMENTS

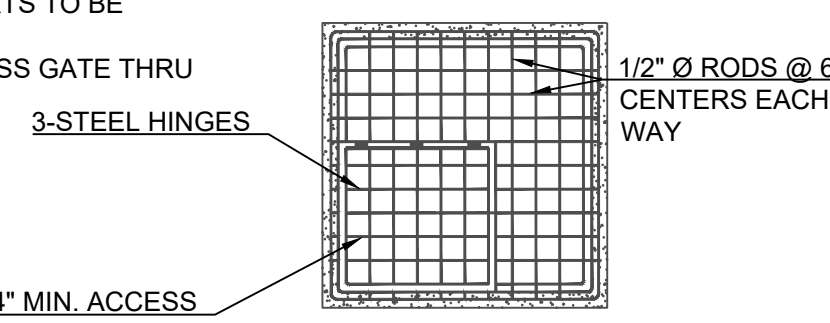
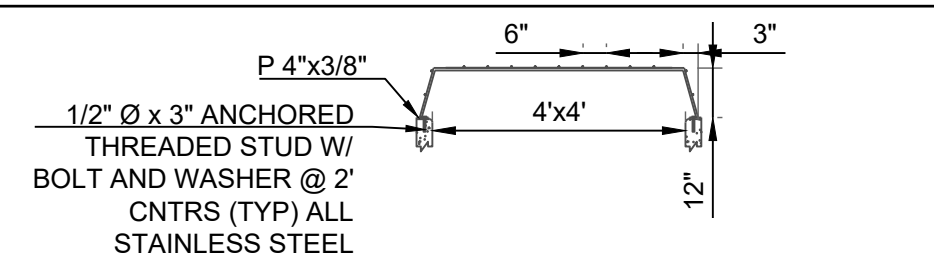
DRAWN BY: BAL
 CHECKED BY: MAB
 DATE PREPARED: 2-19-2020
 PROJ. NUMBER: 18-017

STORM PLAN

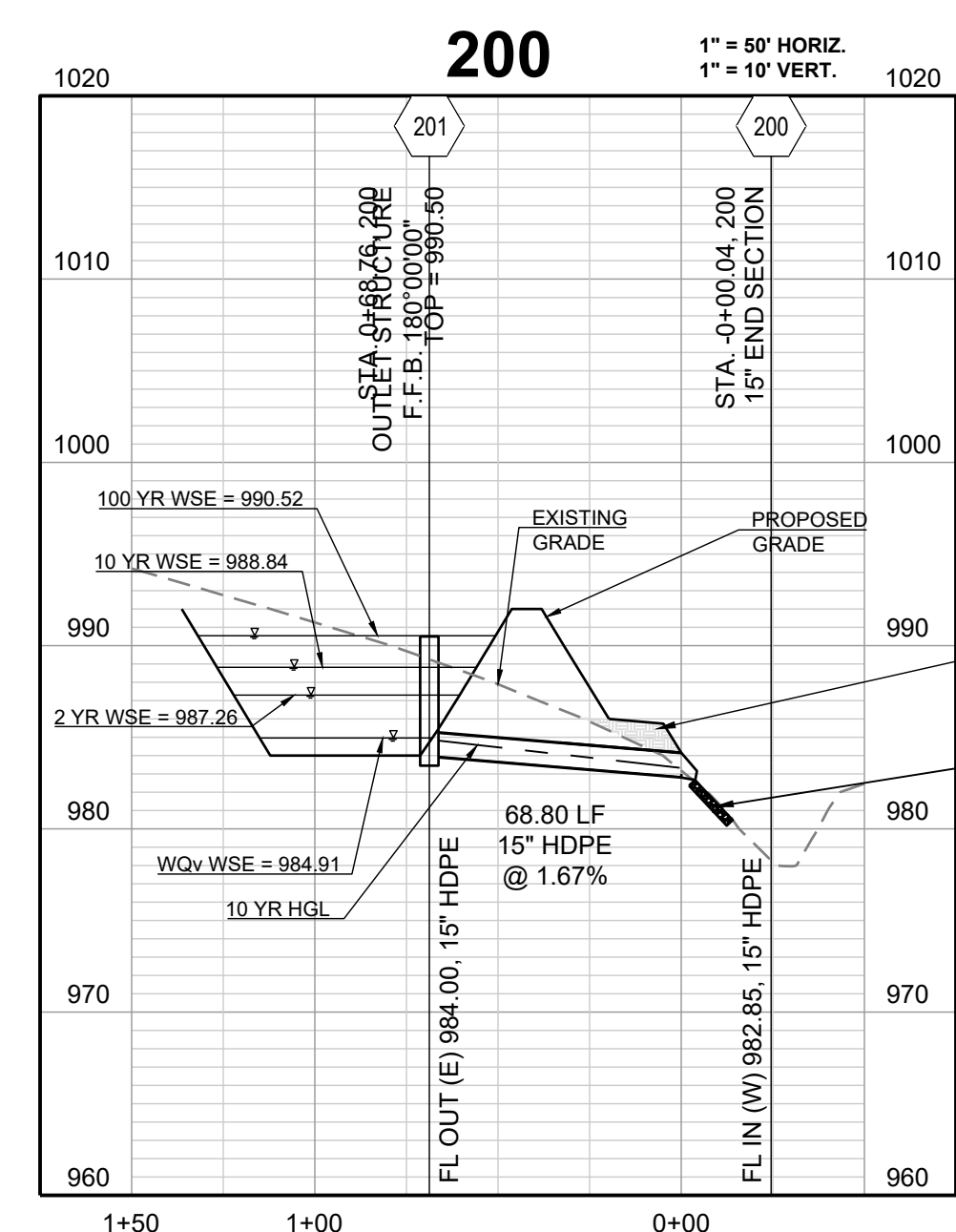
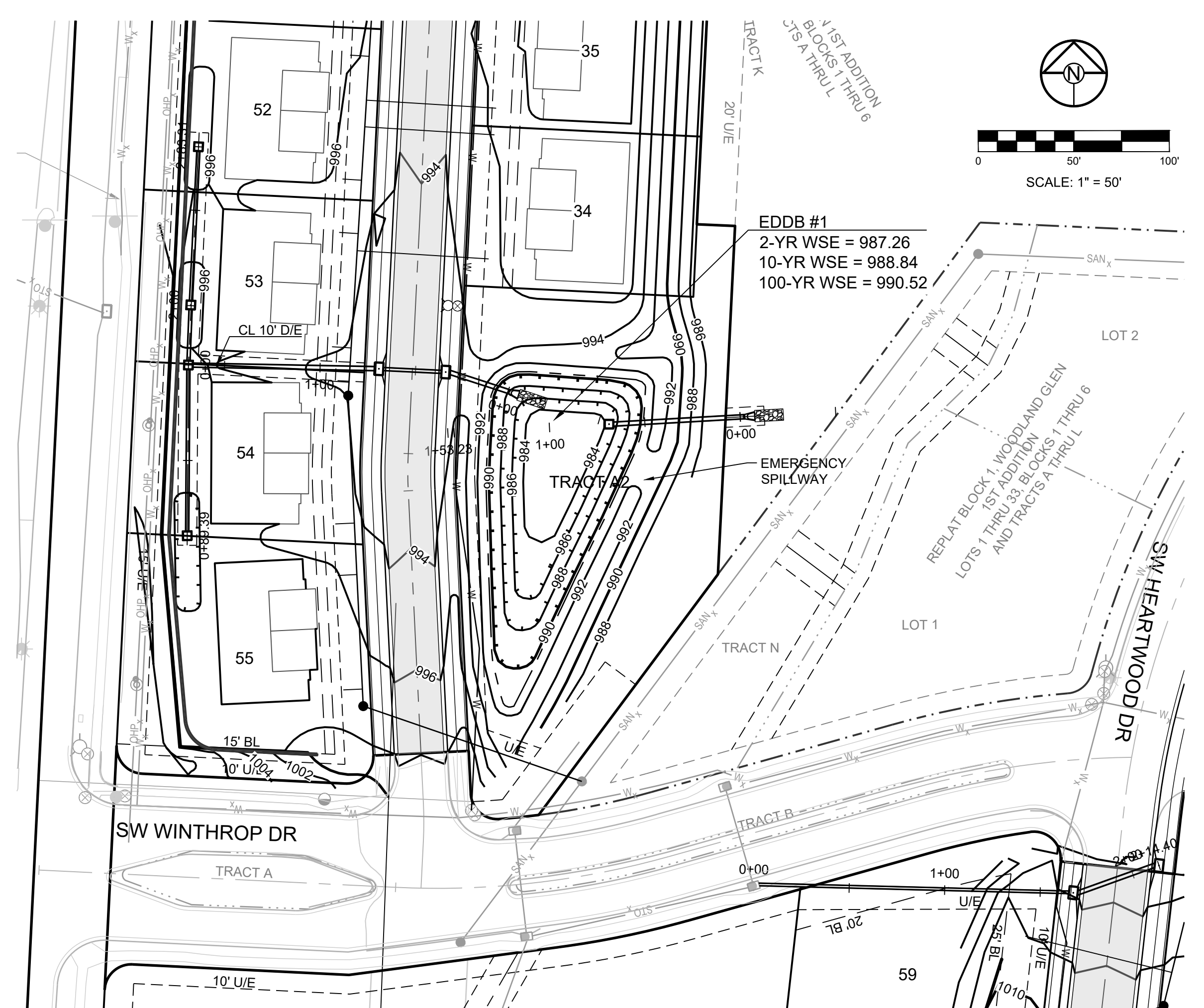
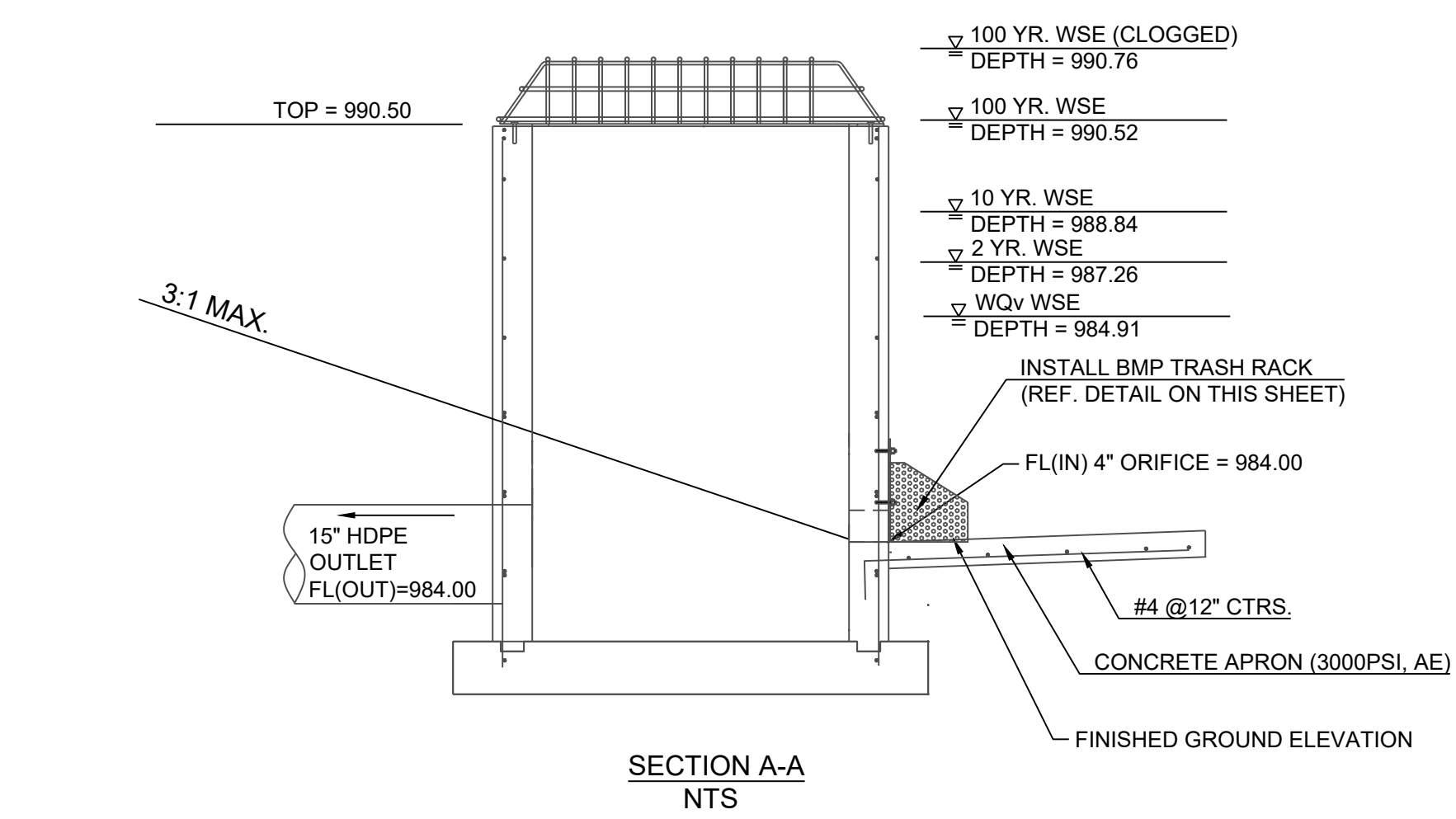
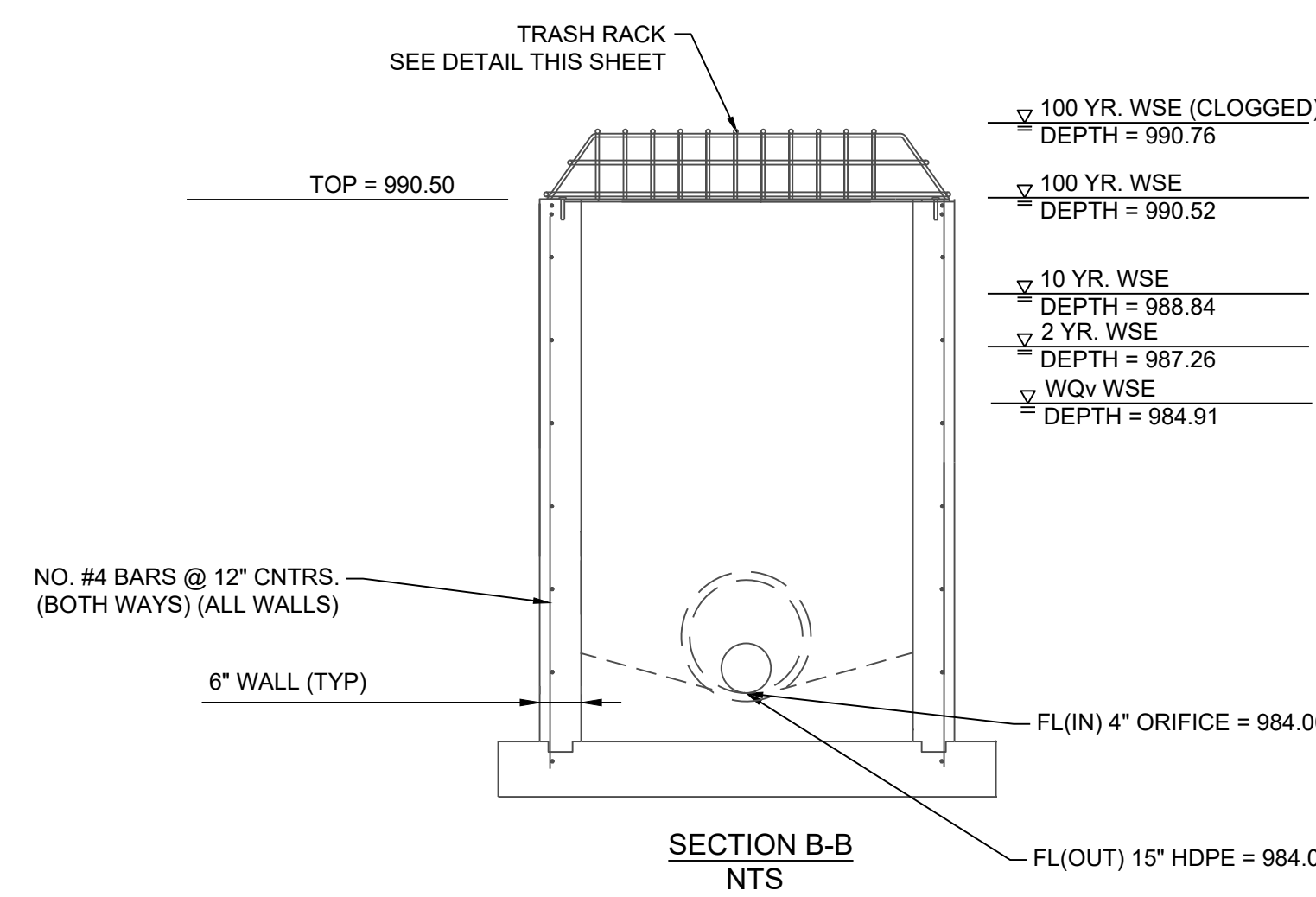
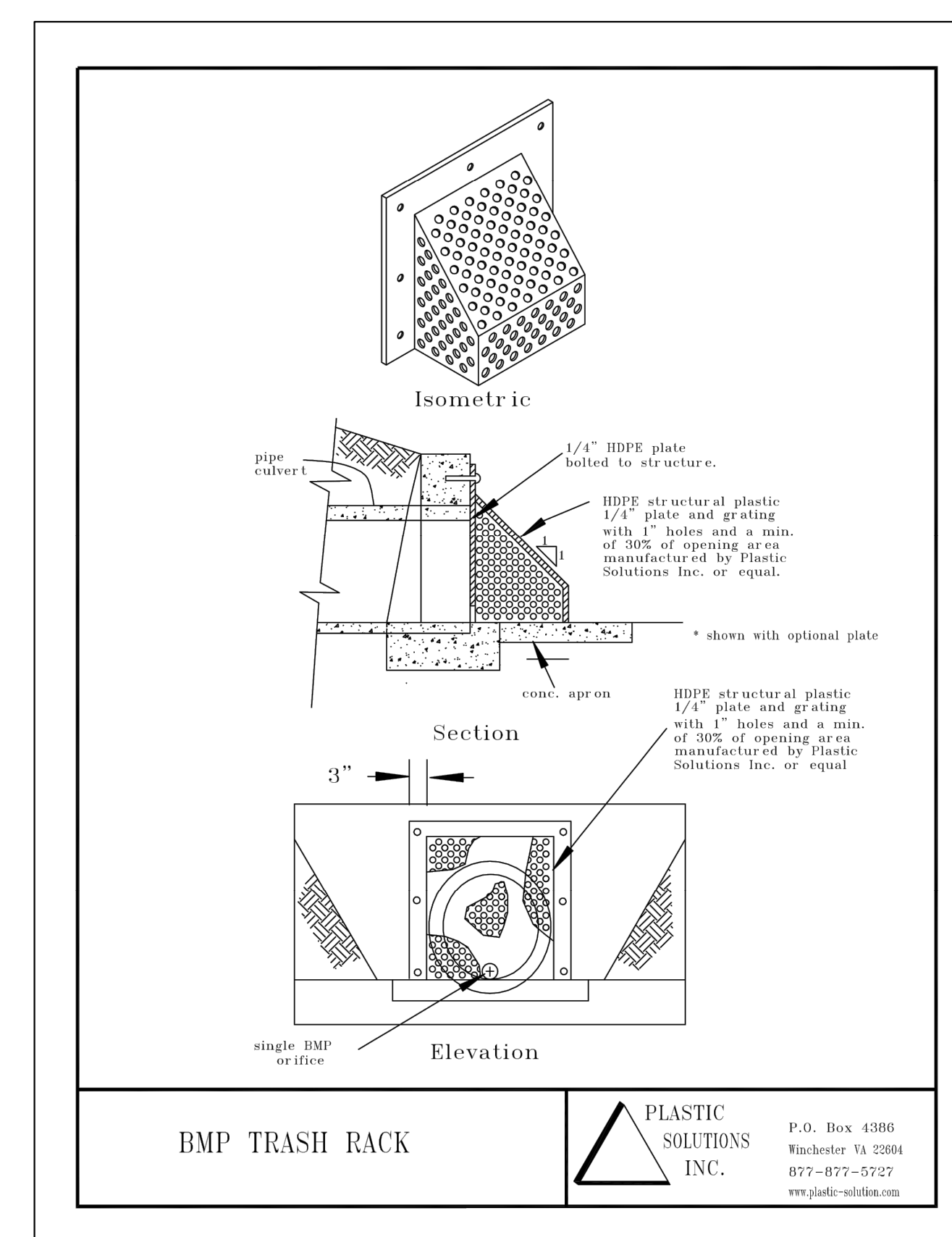
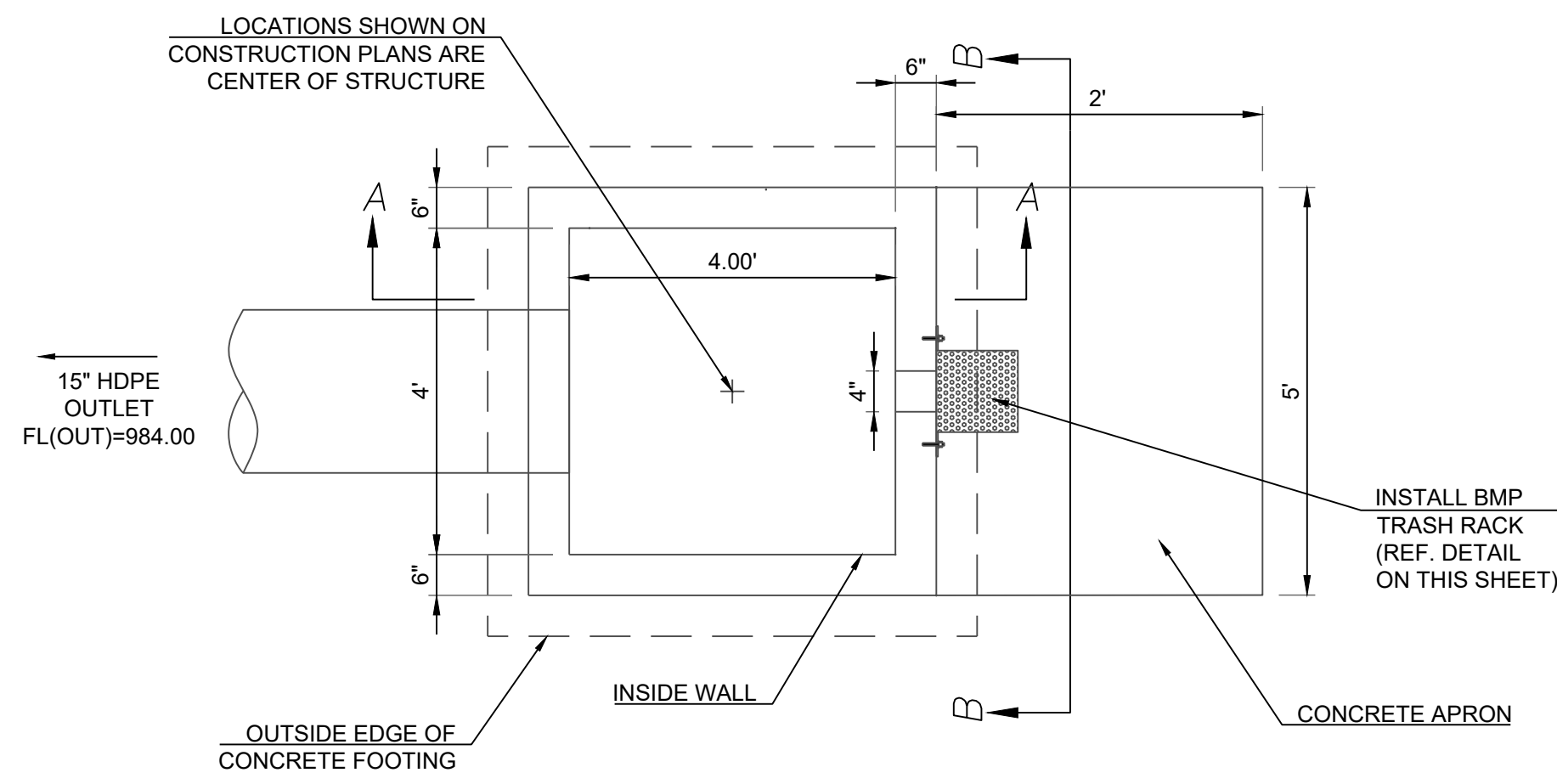
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- NOTES:
1. ALL METAL PARTS TO BE GALVANIZED
 2. PROVIDE ACCESS GATE THRU TRASH RACK



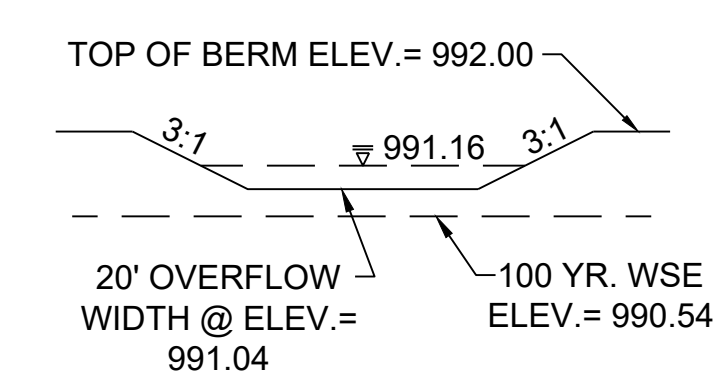
TRASH RACK DETAIL



DETENTION STORAGE EDDB #1:
100 YEAR, 24 HR. RAINFALL - MAXIMUM WSE = 990.52 (SEE FINAL STORMWATER MGMT. PLAN)

AUXILIARY SPILLWAY SET AT 0.5 FEET ABOVE MAX. WSE, SPILLWAY ELEV. = 991.02

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



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
14920 West 107th Street • Lenexa, Kansas 66215
(913) 492-5158 • Fax: (913) 492-8400
WWW.SCHLAGELASSOCIATES.COM
Missouri State Certificate of Authority
#E200203690F #LAC201005237 #S200200895F

PREPARED BY:
MARK ALLEN BREUER
PROFESSIONAL ENGINEER
NO. 000007268
06.29.2021

SCHLAGEL & ASSOCIATES, P.A.

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

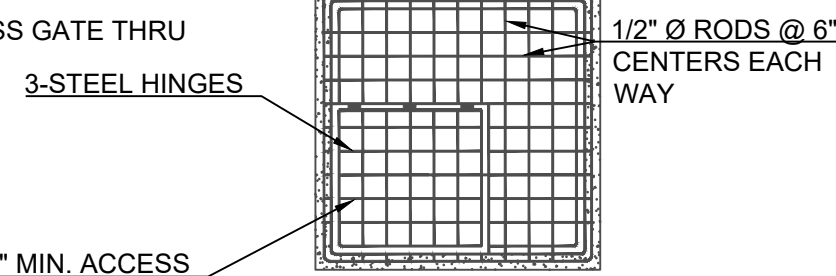
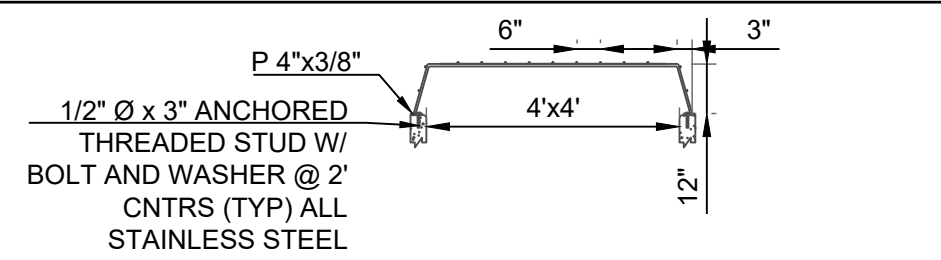
REVISION DATE	DESCRIPTION
4-24-2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
2-19-2020	PROJ. NUMBER:
18-017	

EDDB 15 OUTLET STRUCTURE

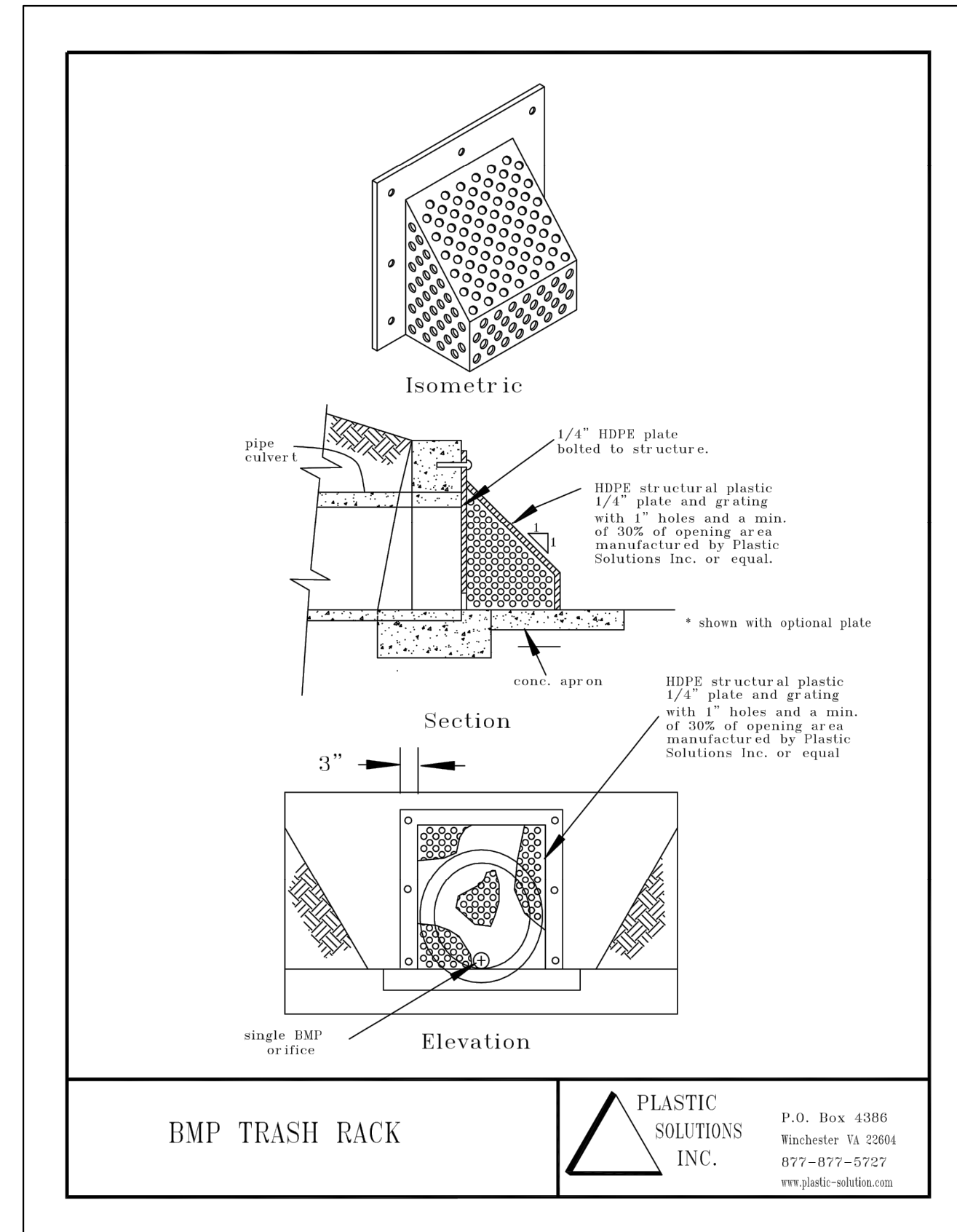
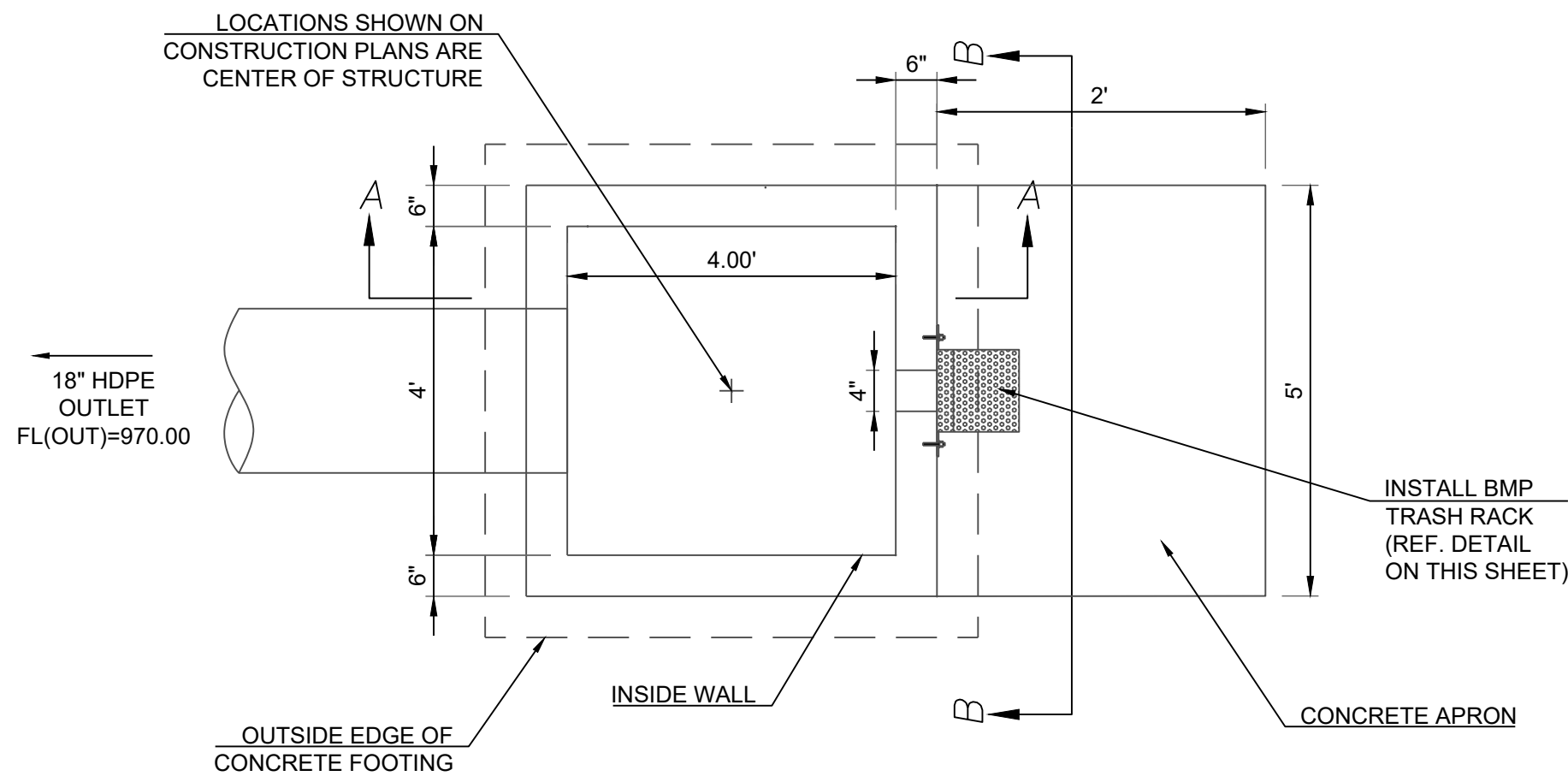
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- NOTES:
- ALL METAL PARTS TO BE GALVANIZED
 - PROVIDE ACCESS GATE THRU TRASH RACK

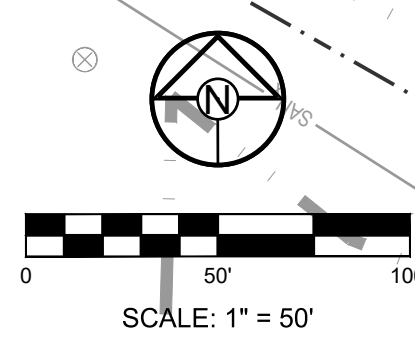


TRASH RACK DETAIL

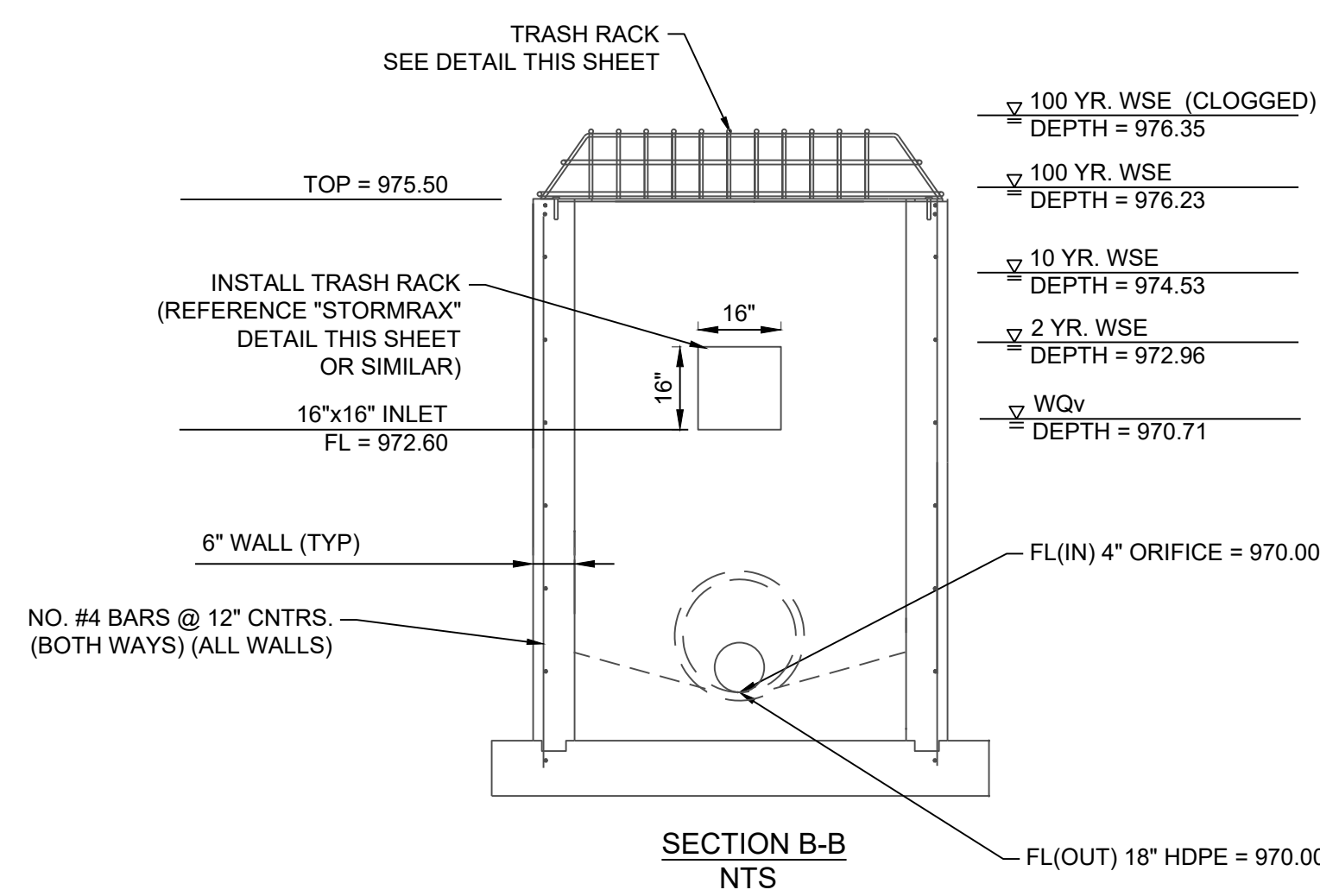


BMP TRASH RACK

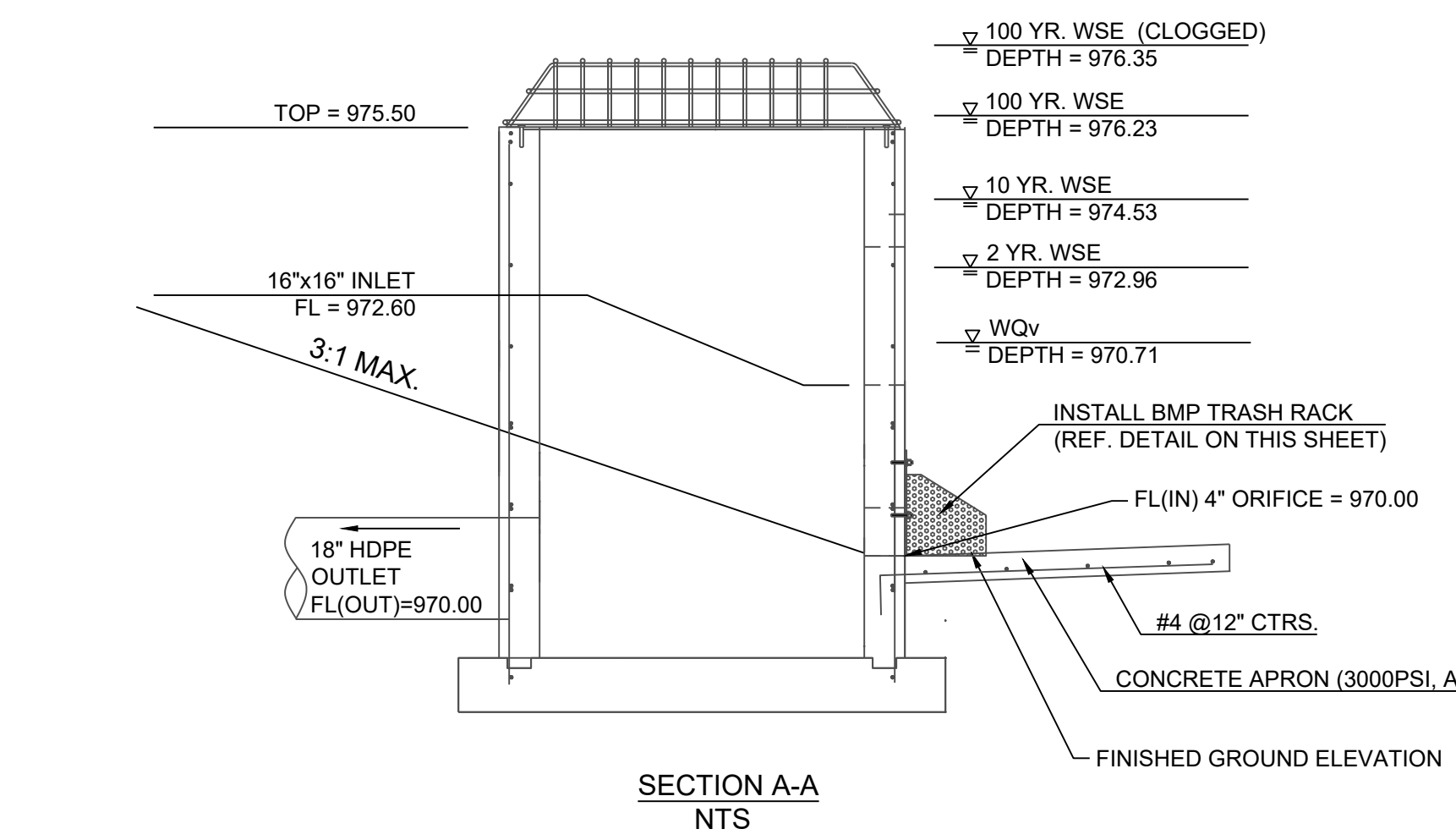
PLASTIC SOLUTIONS INC. P.O. Box 4386 Winchester VA 22604 877-877-5727 www.plastic-solutions.com



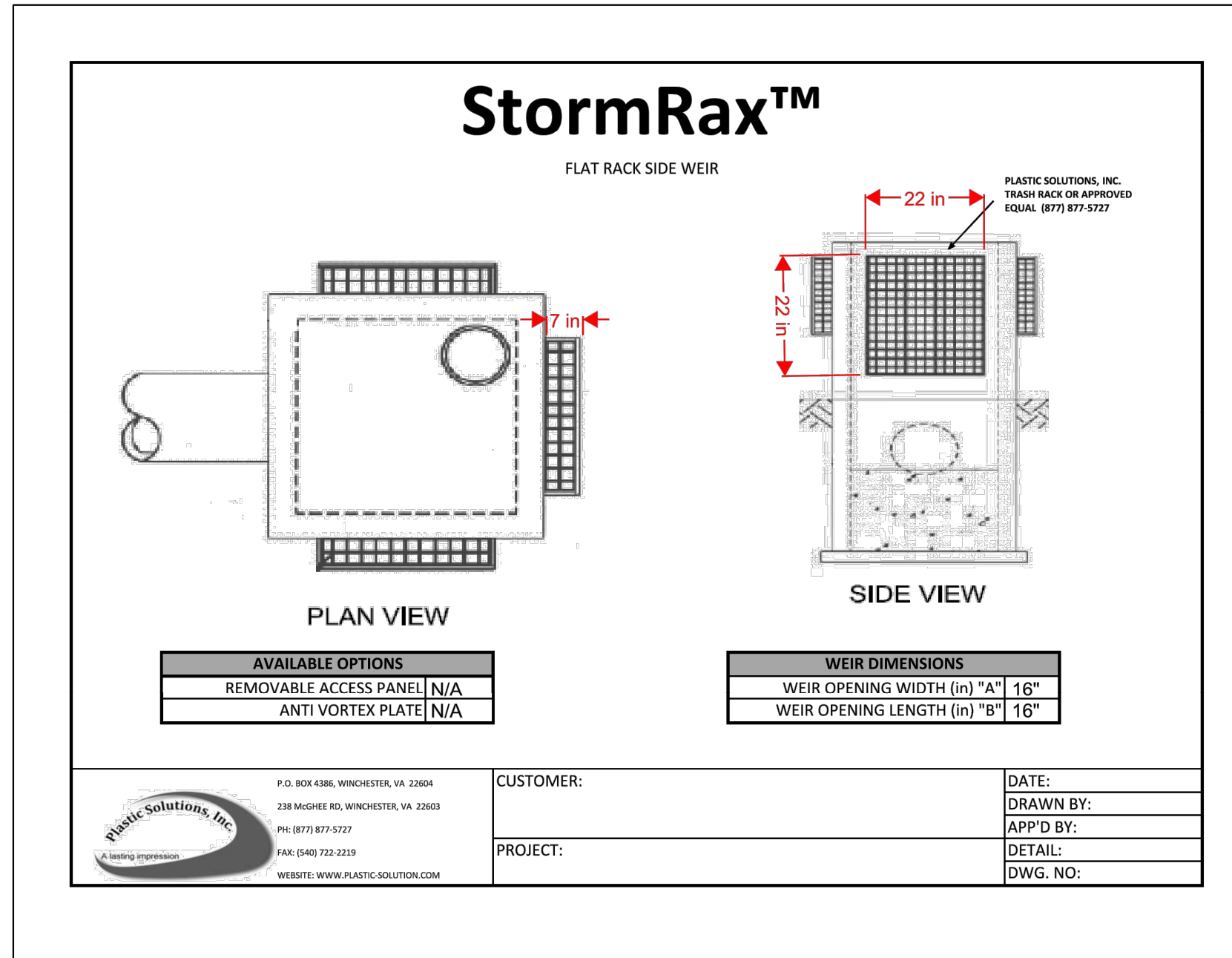
EDDB #2
2-YR WSE = 972.96
10-YR WSE = 974.53
100-YR WSE = 976.23



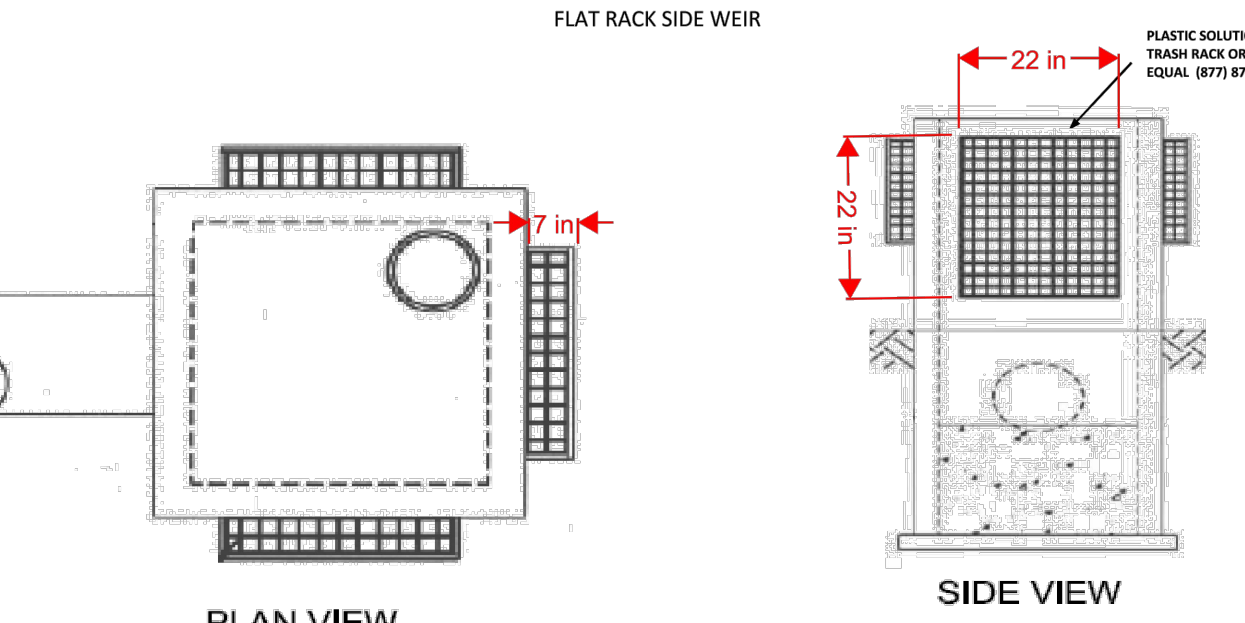
SECTION B-B NTS



SECTION A-A NTS

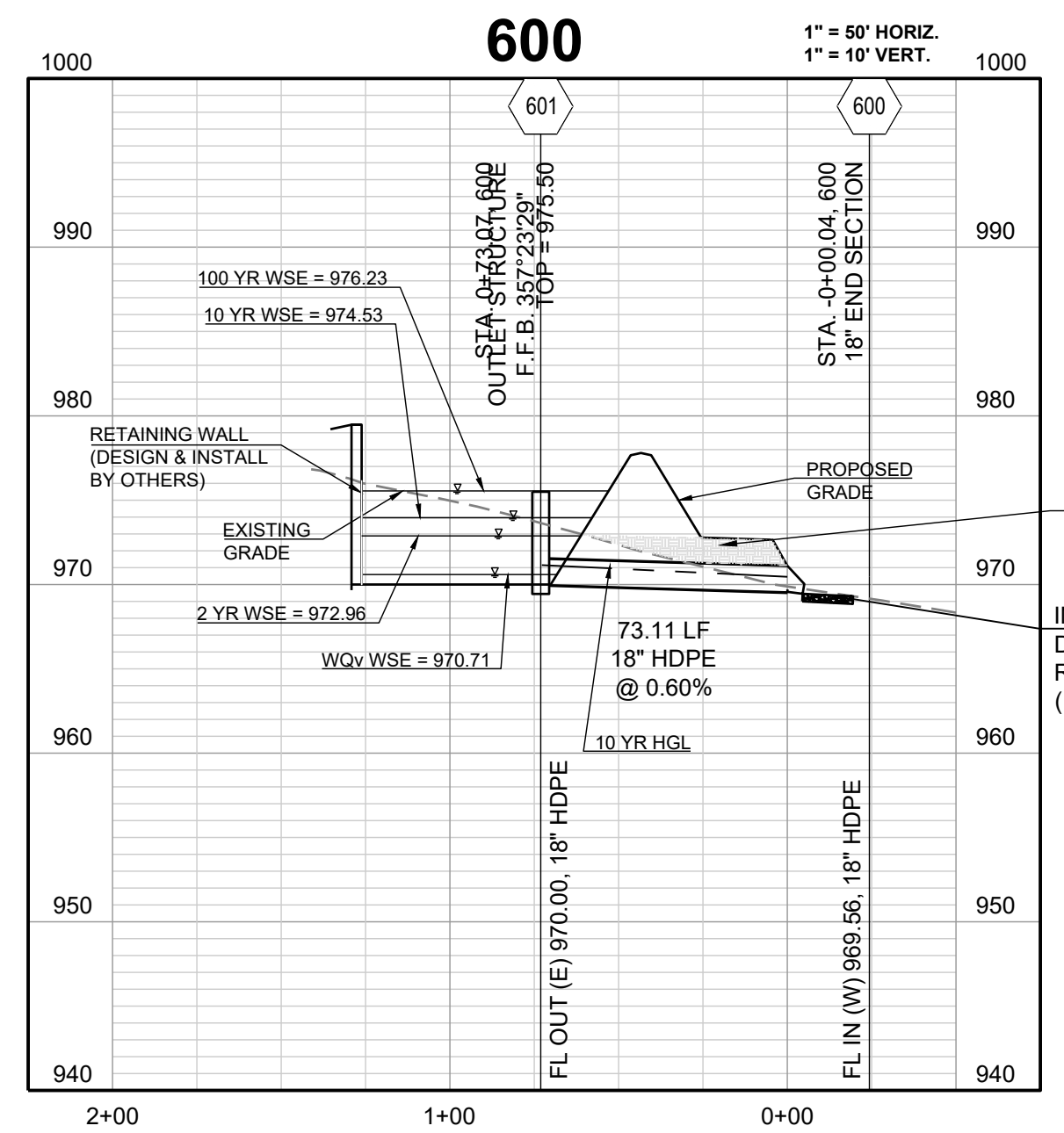


StormRax™



AVAILABLE OPTIONS	WEIR DIMENSIONS
REMOVABLE ACCESS PANEL N/A	WEIR OPENING WIDTH (in) "A" 16"
ANTI VORTEX PLATE N/A	WEIR OPENING LENGTH (in) "B" 16"

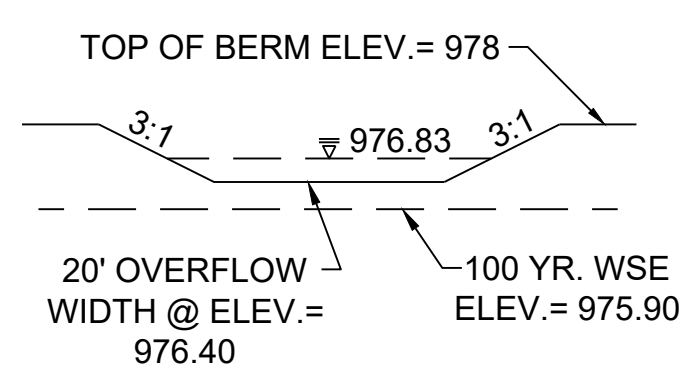
P.O. BOX 4386, WINCHESTER, VA 22604
226-440-8818
FAX: (540) 733-3238
WWW.PLASTIC-SOLUTIONS.COM



DETENTION STORAGE EDDB #2:
100 YEAR, 24 HR. RAINFALL - MAXIMUM WSE = 976.23 (SEE FINAL STORMWATER MGMT. PLAN)

AUXILIARY SPILLWAY SET AT 0.5 FEET ABOVE MAX. WSE, SPILLWAY ELEV. = 976.73

AUXILIARY SPILLWAY DESIGN:
Q(100)=18.47 CFS, Q=CLH*(3/2), C=3.33, L=20 FT., 18.47 CFS = 3.33 * 20FT. * (H*(3/2)), H=0.43 FT.

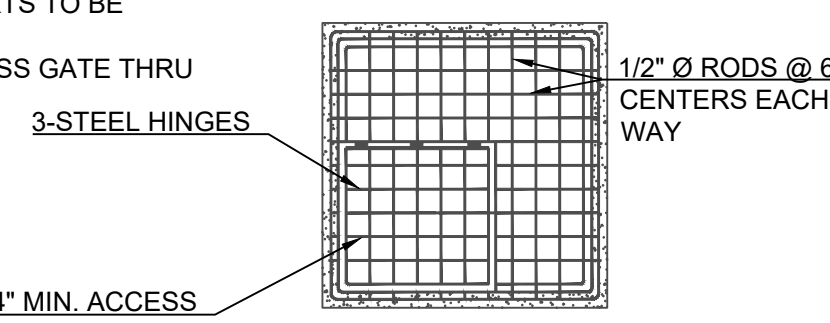
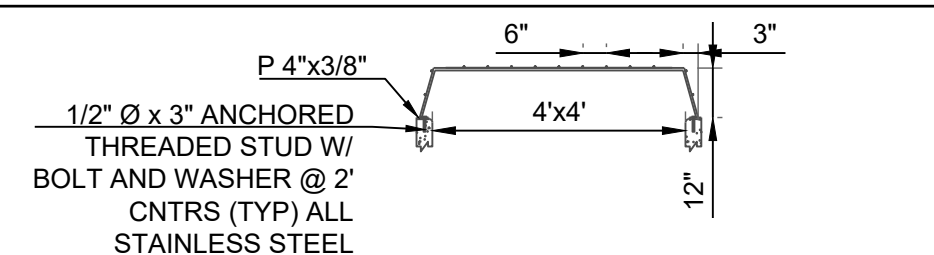


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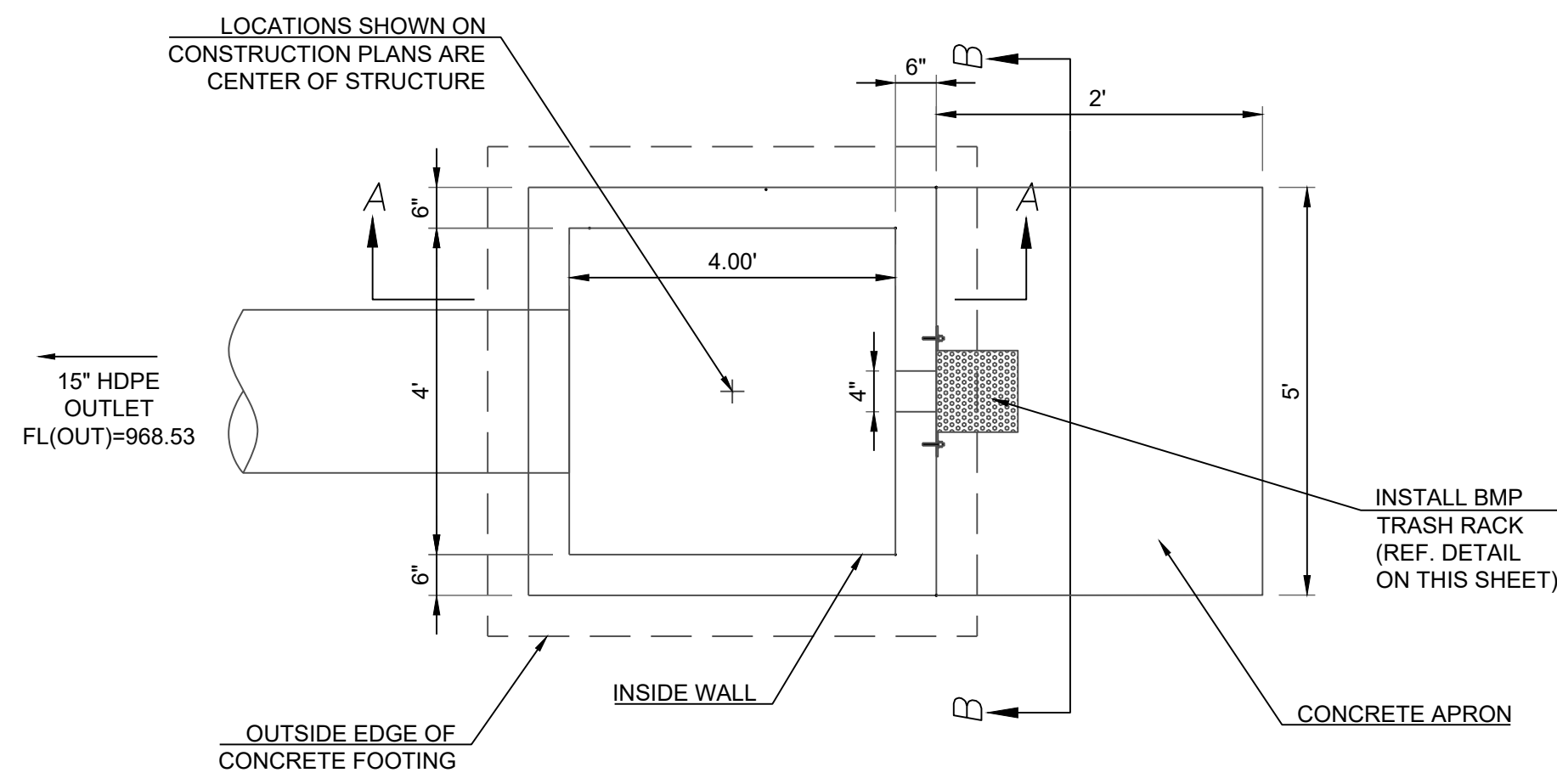
REVISION DATE	DESCRIPTION
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05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
2-19-2020	PROJ. NUMBER
18-017	

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- NOTES:
1. ALL METAL PARTS TO BE GALVANIZED
 2. PROVIDE ACCESS GATE THRU TRASH RACK

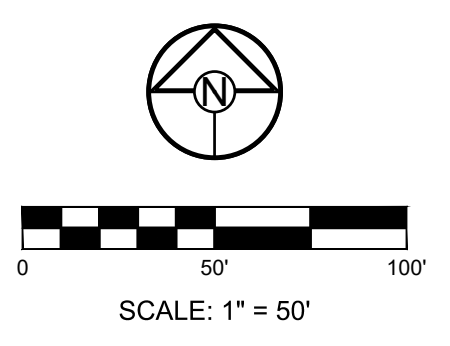
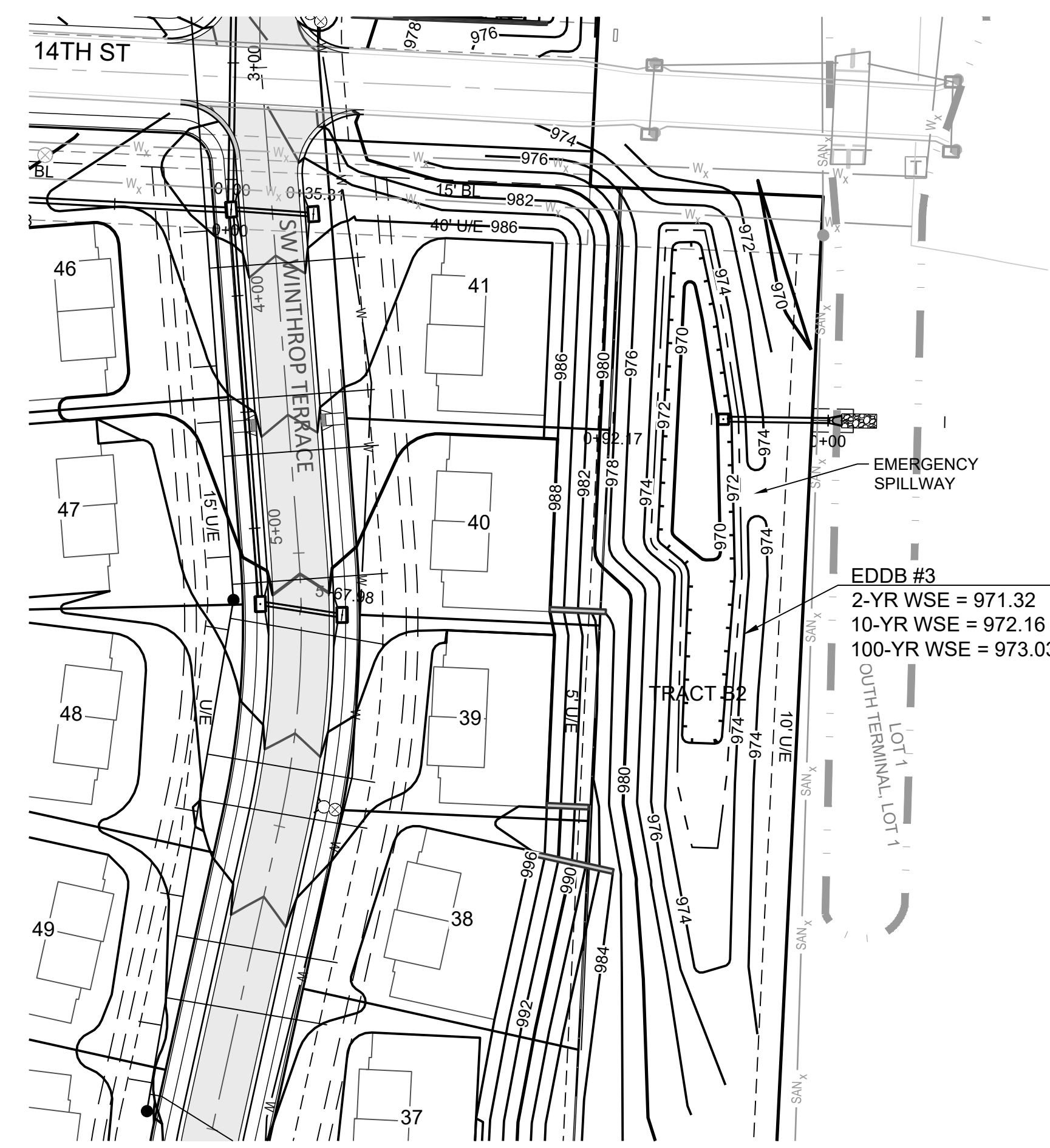


TRASH RACK DETAIL

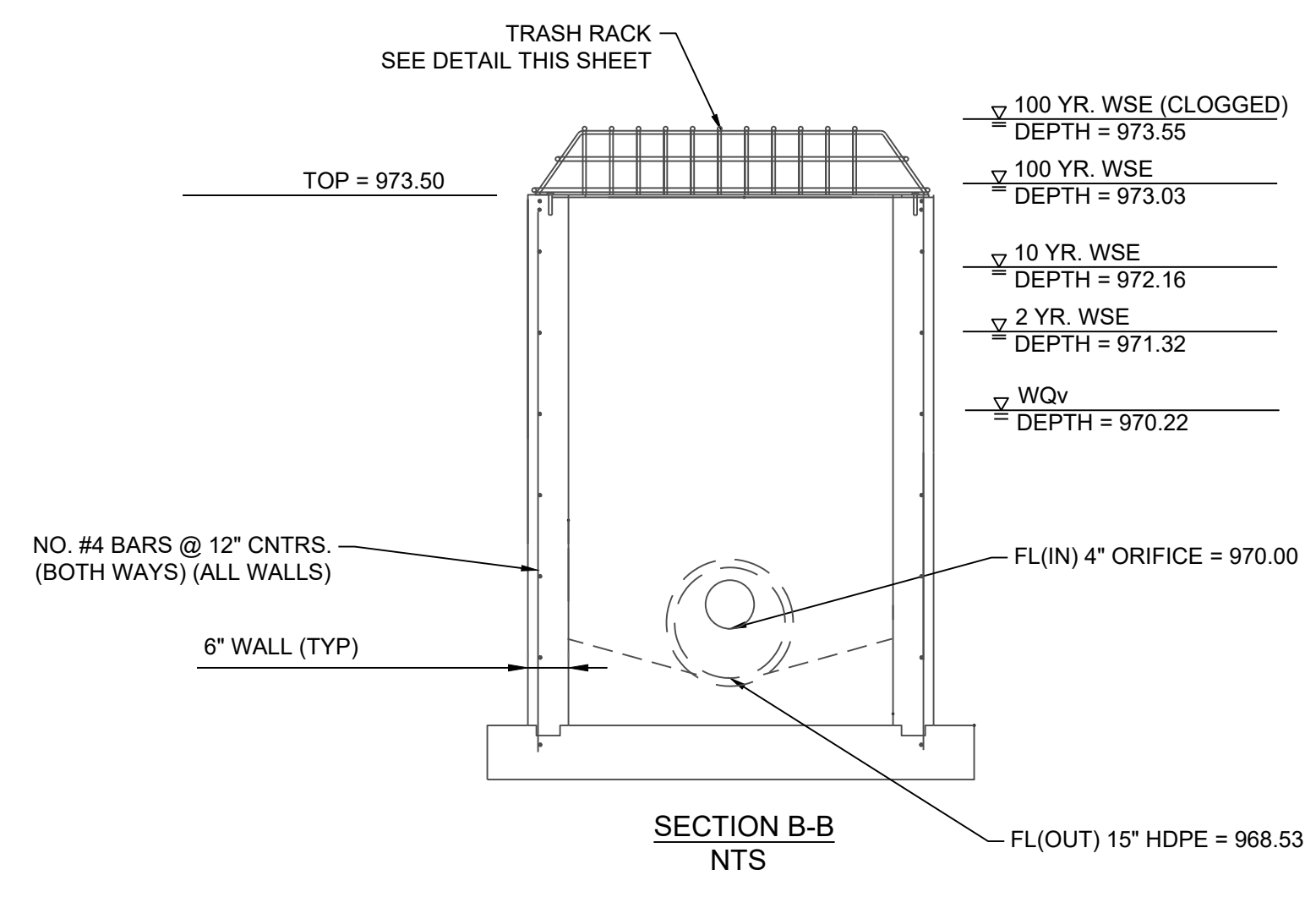


BMP TRASH RACK

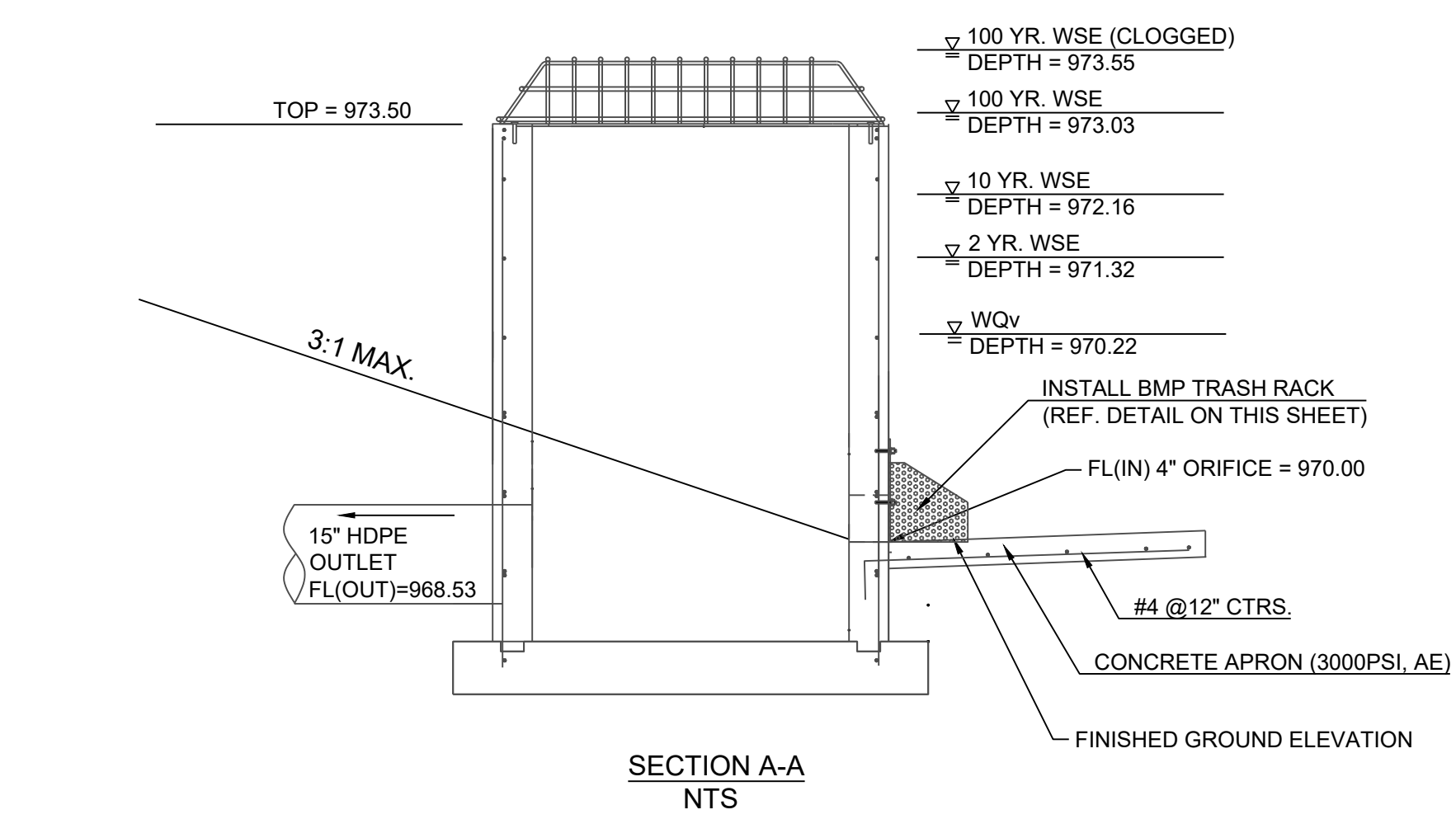
PLASTIC SOLUTIONS INC.
P.O. Box 4886
Winchester VA 23091
877-877-5727
www.plastic-solutions.com



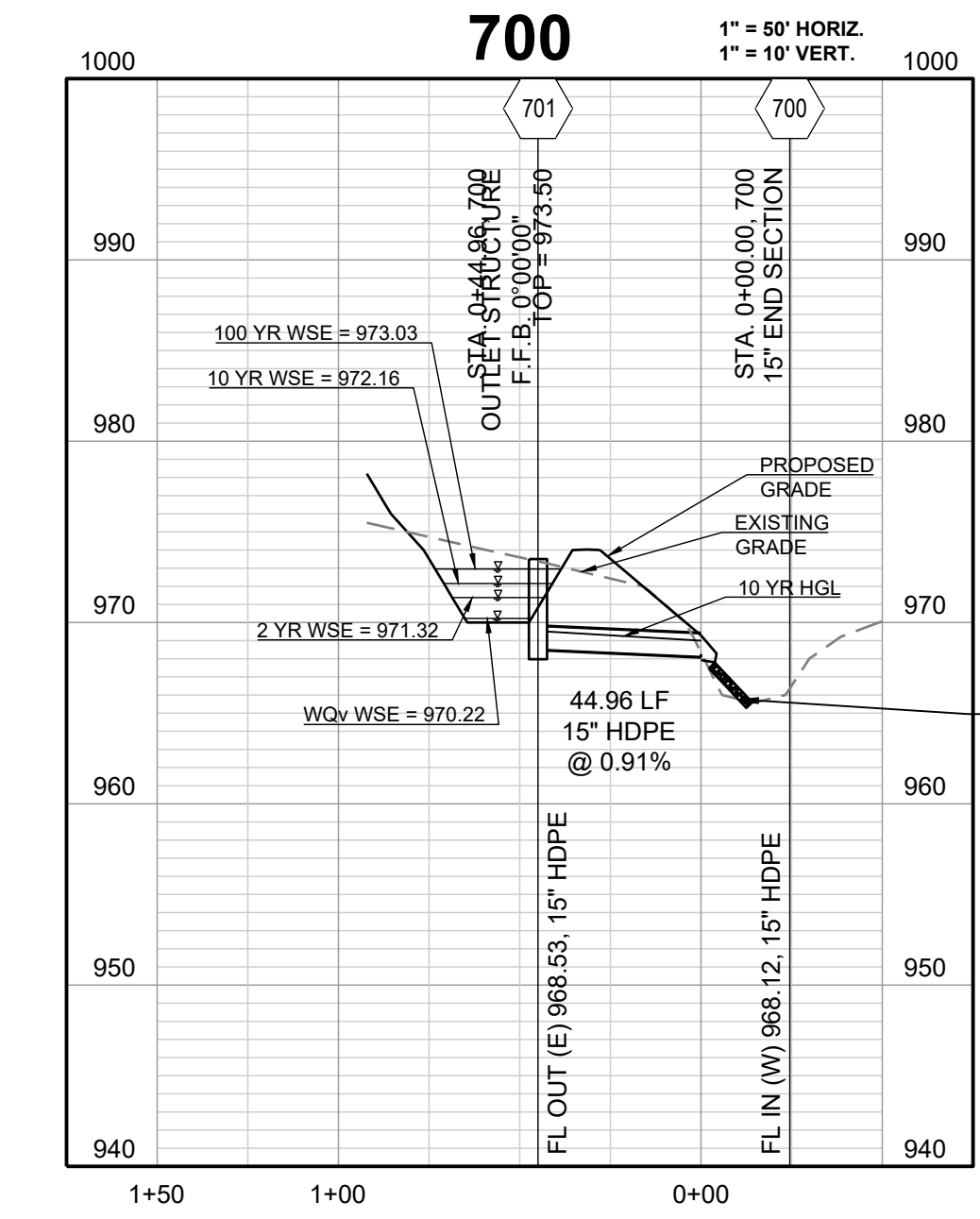
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2-YR WSE = 971.32
10-YR WSE = 972.16
100-YR WSE = 973.03



SECTION B-B NTS



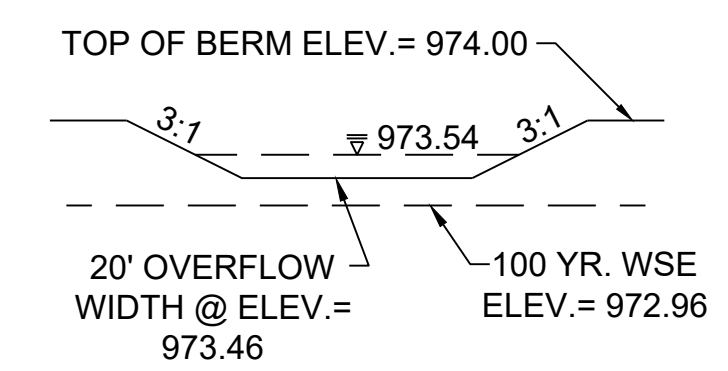
SECTION A-A NTS



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

AUXILIARY SPILLWAY SET AT 0.5 FEET ABOVE MAX. WSE, SPILLWAY ELEV. = 973.53

AUXILIARY SPILLWAY DESIGN:
Q(100)=1.43 CFS, Q=CLH^(3/2), C=3.33, L=20 FT., 1.43 CFS = 3.33 * 20FT. * (H^(3/2)), H=0.08 FT.



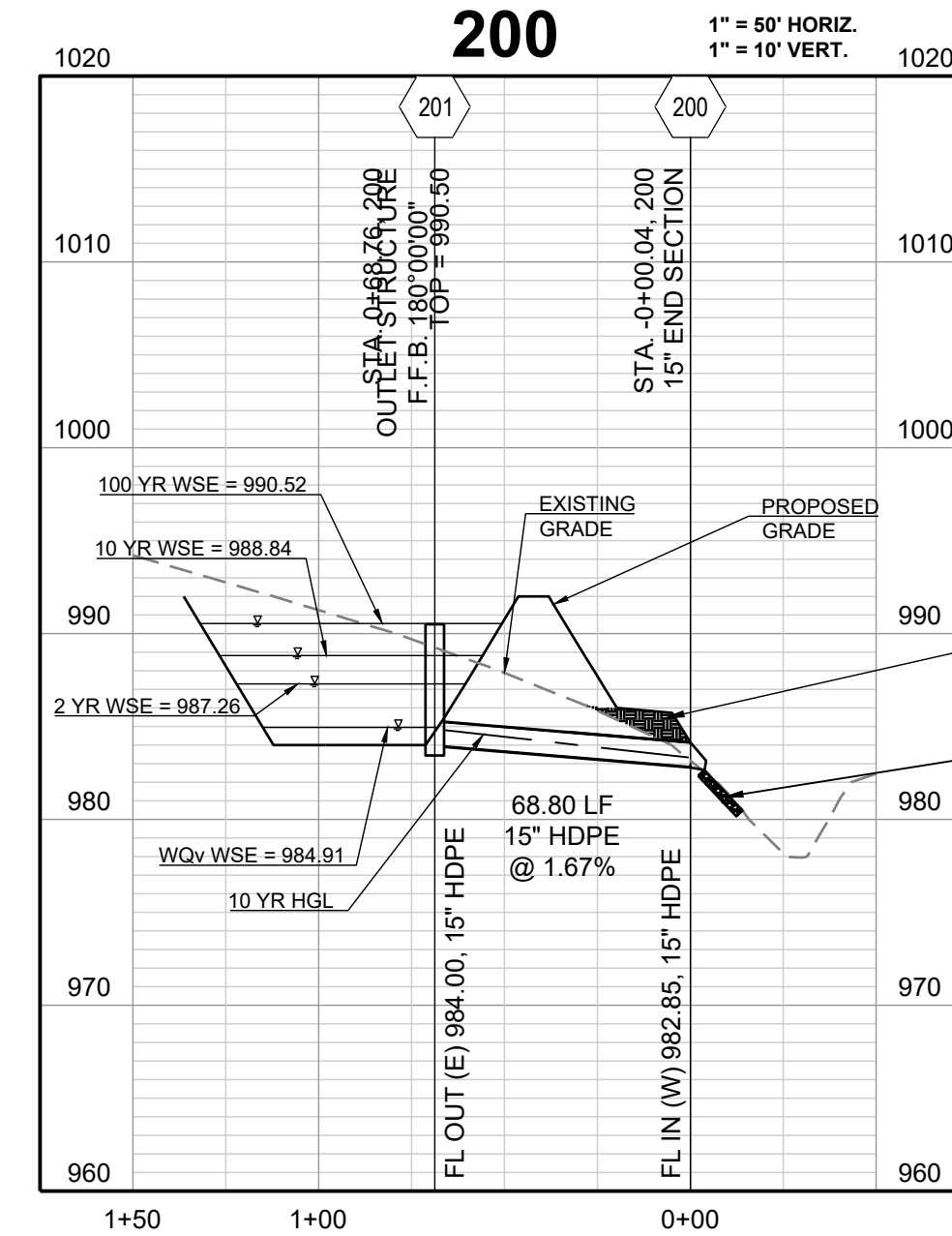
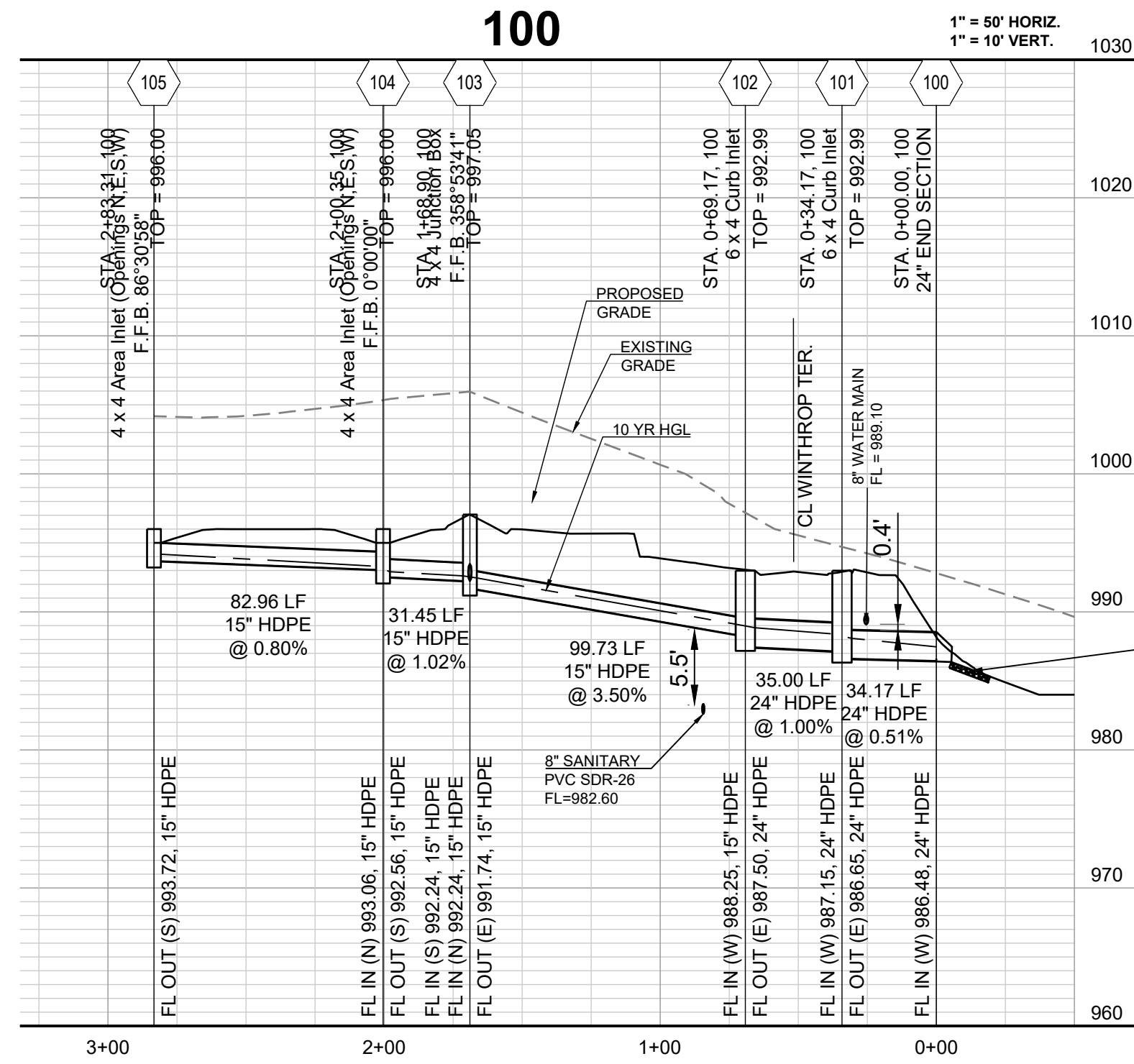
PROJECT BENCHMARK:
SW. CORNER NW 1/4 SEC. 18-47N-31W, JACKSON COUNTY, MO.
3" DIAMETER ALUMINUM DISK IN MONUMENT BOX
M.D.N.R. DOC. NO. 600-65374
ELEV. 1036.41

REVISION DATE	DESCRIPTION
4-24-2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
2-19-2020	CITY COMMENTS
18-017	PROJECT NUMBER

EDDB 3 OUTLET STRUCTURE

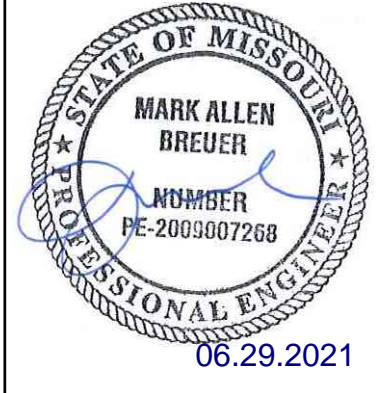
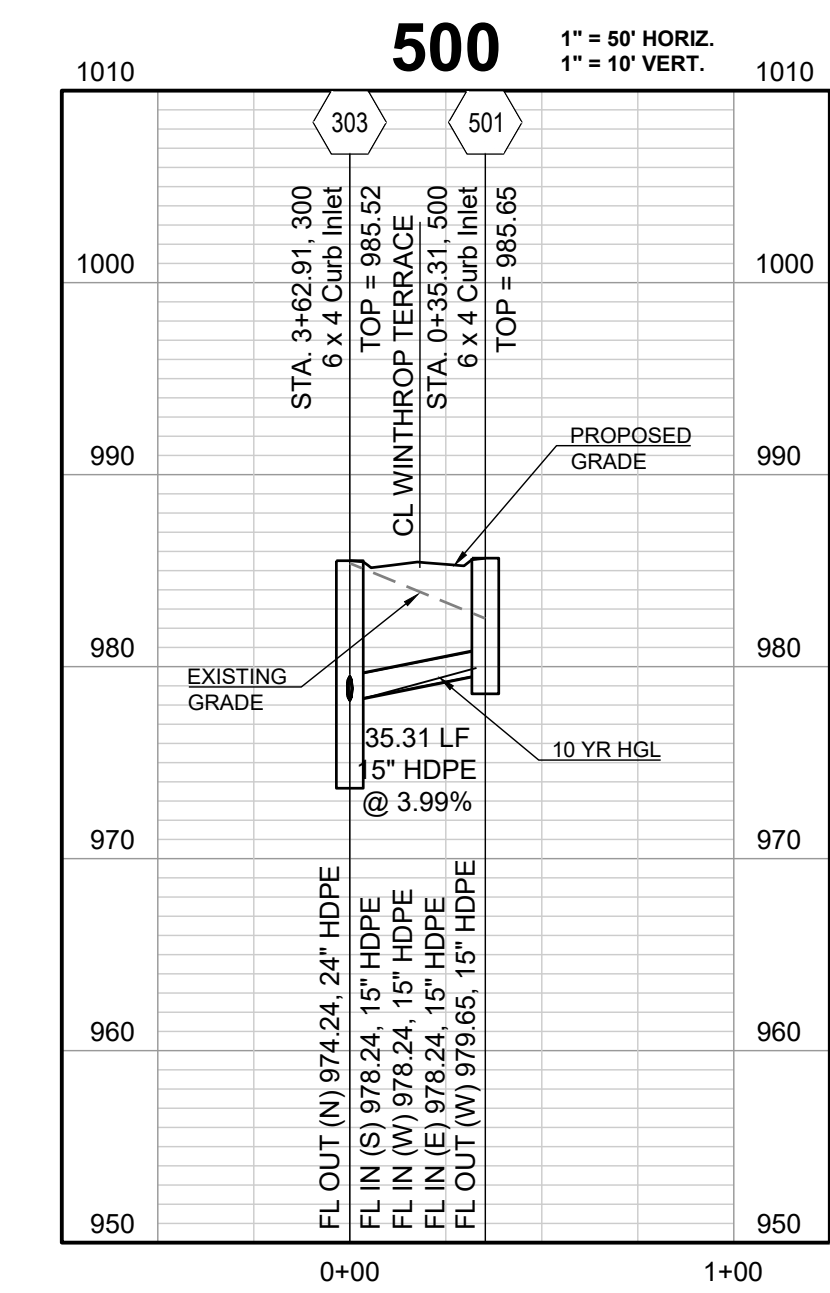
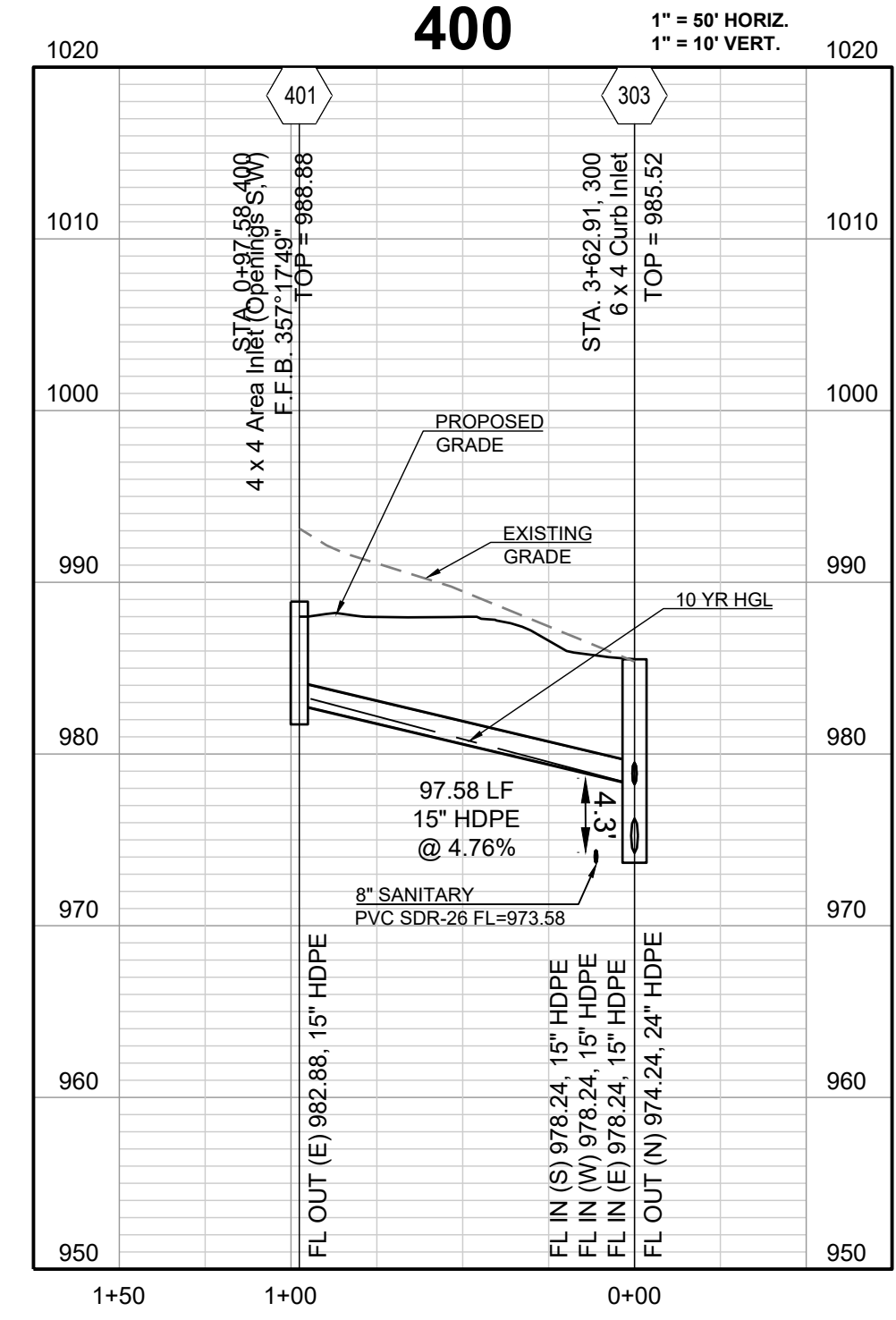
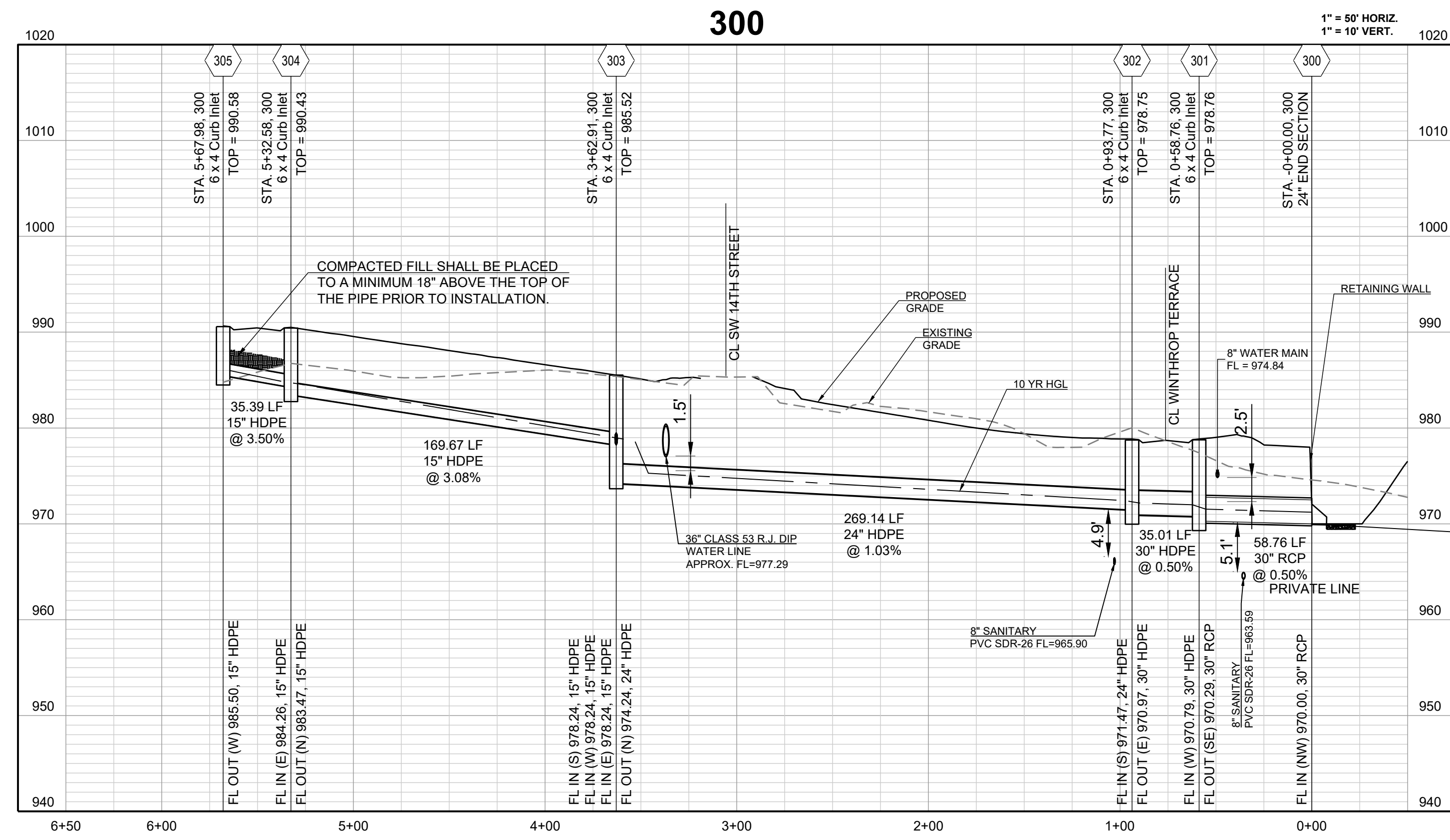
SHEET

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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')



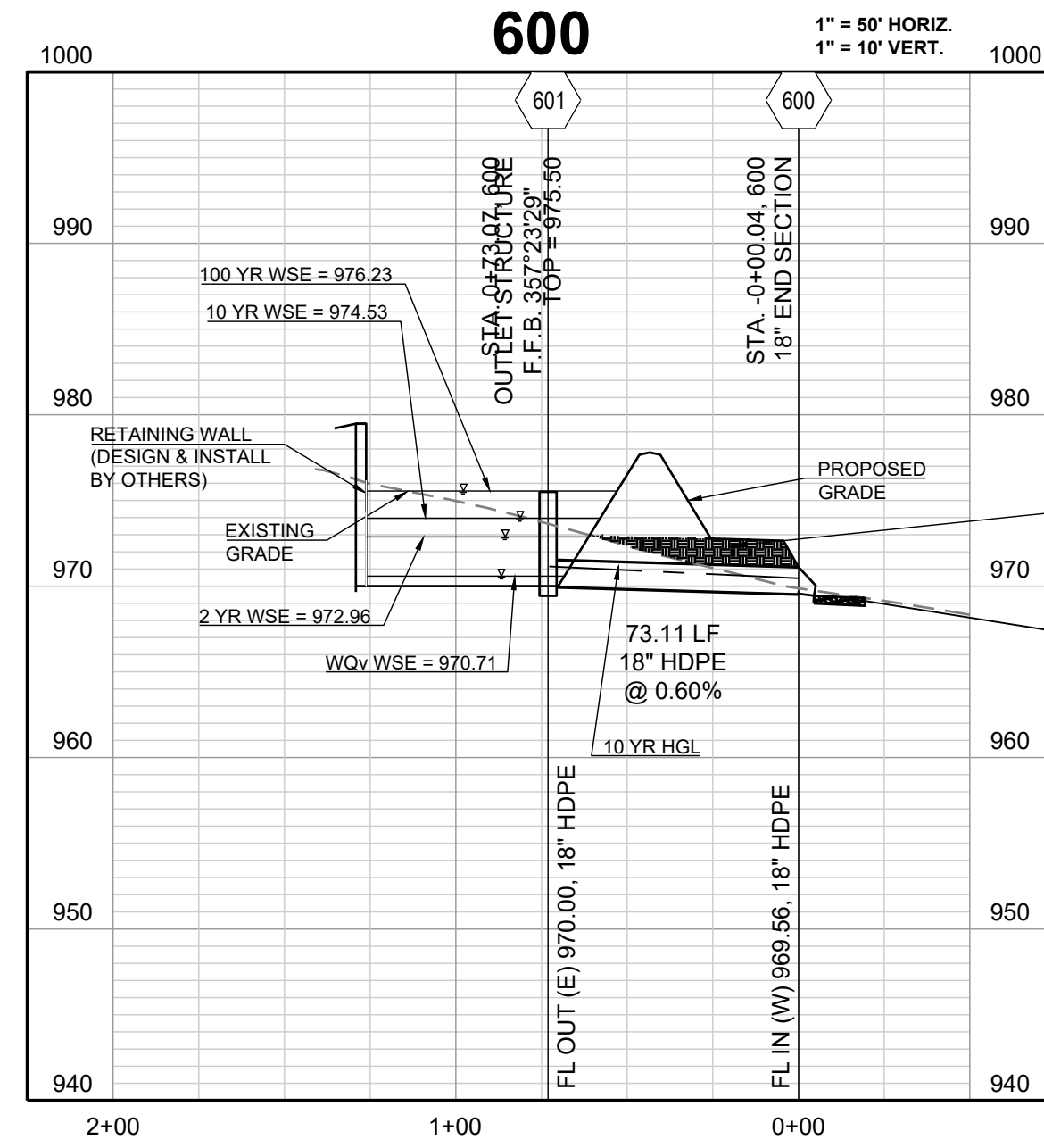
WOODLAND GLEN 2ND PLAT
 STREET, STORMWATER, MASTER DRAINAGE,
 AND EROSION CONTROL PLANS
 WARD ROAD & WINTHROP DRIVE
 LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
4-24-2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
2-19-2020	
18-017	

STORM PROFILE

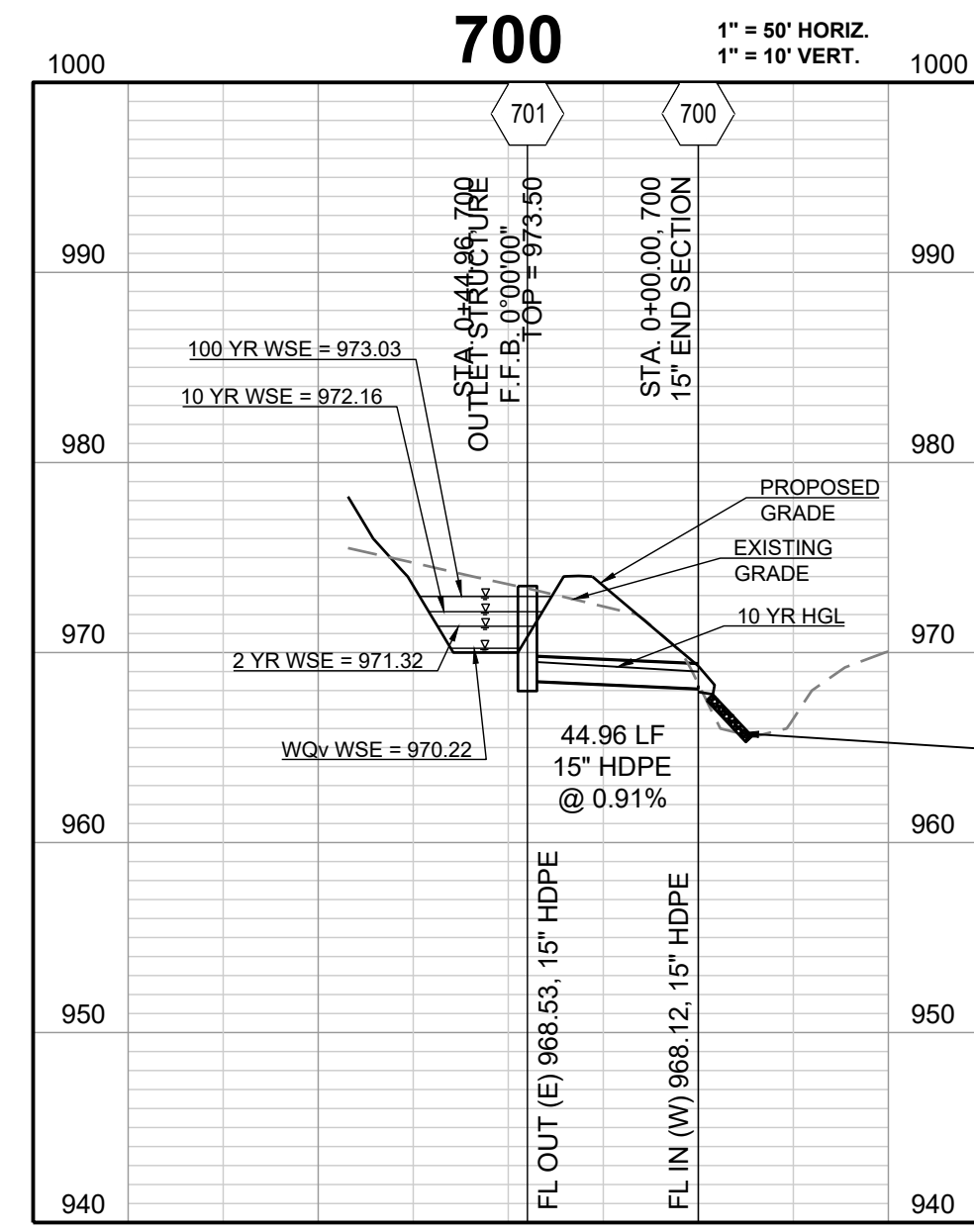
SHEET

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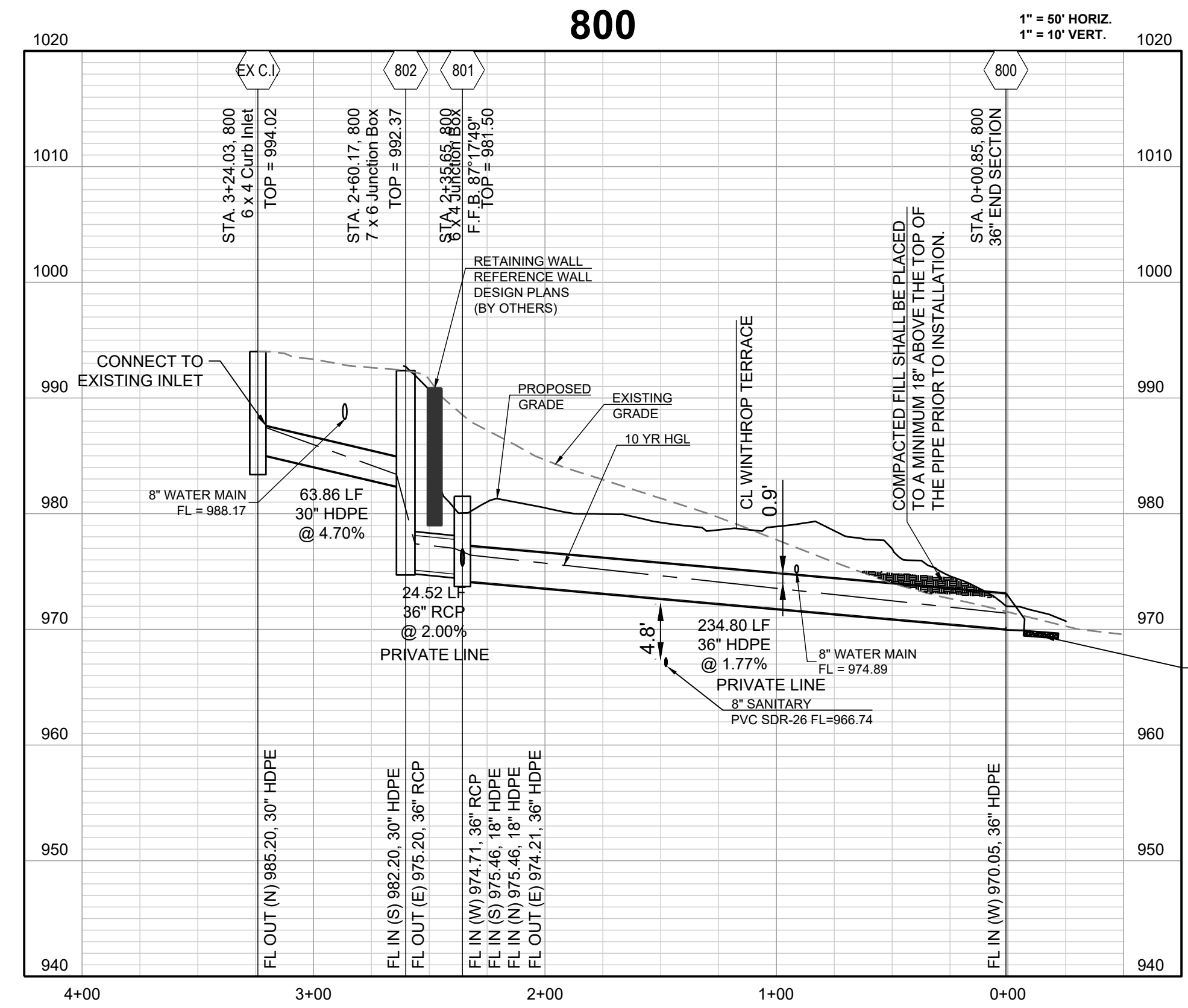


COMPACTED FILL SHALL BE PLACED TO A MINIMUM 18" ABOVE THE TOP OF THE PIPE PRIOR TO INSTALLATION.

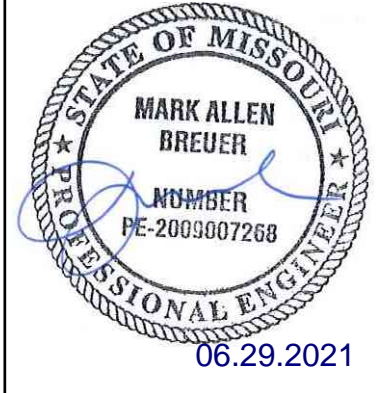
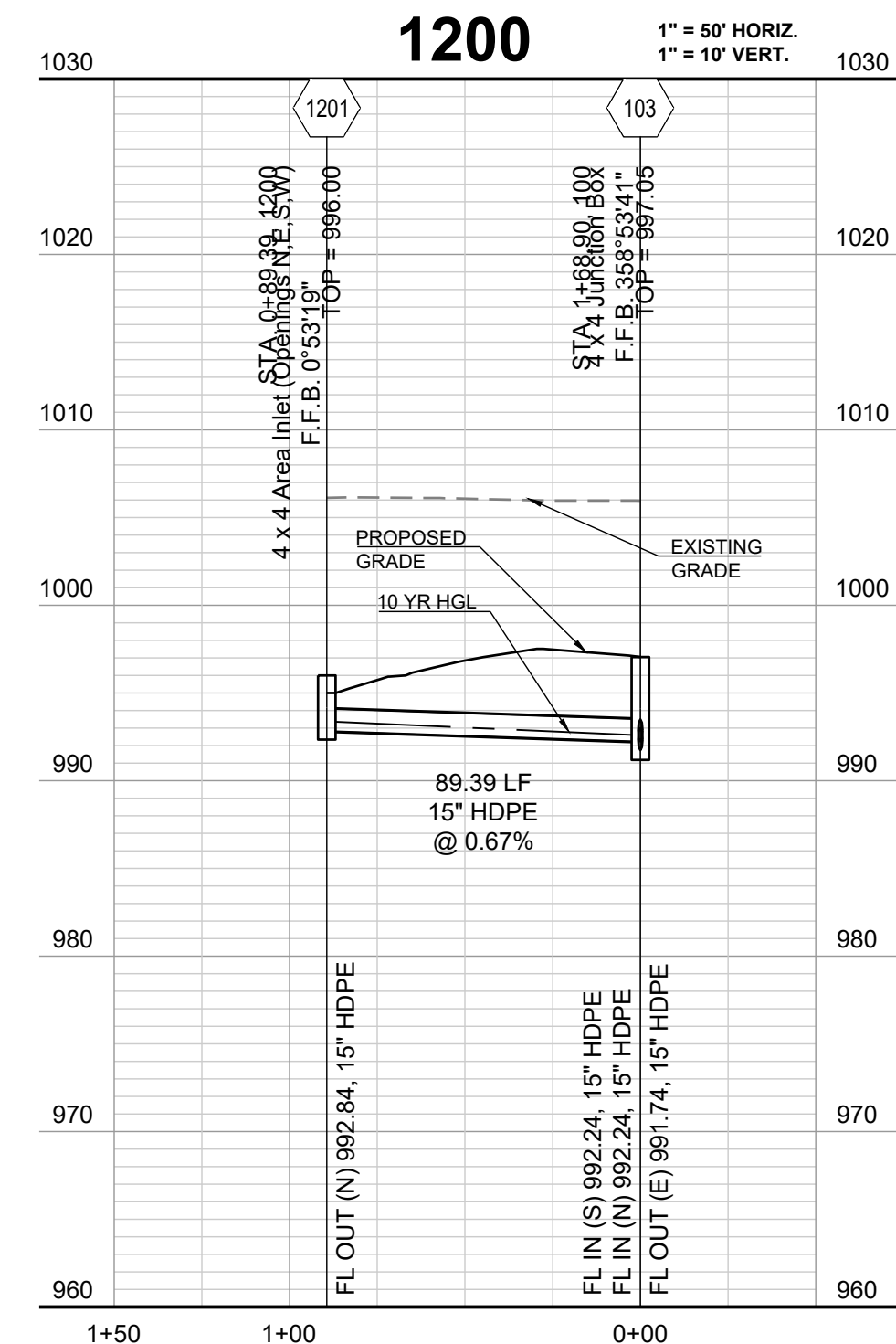
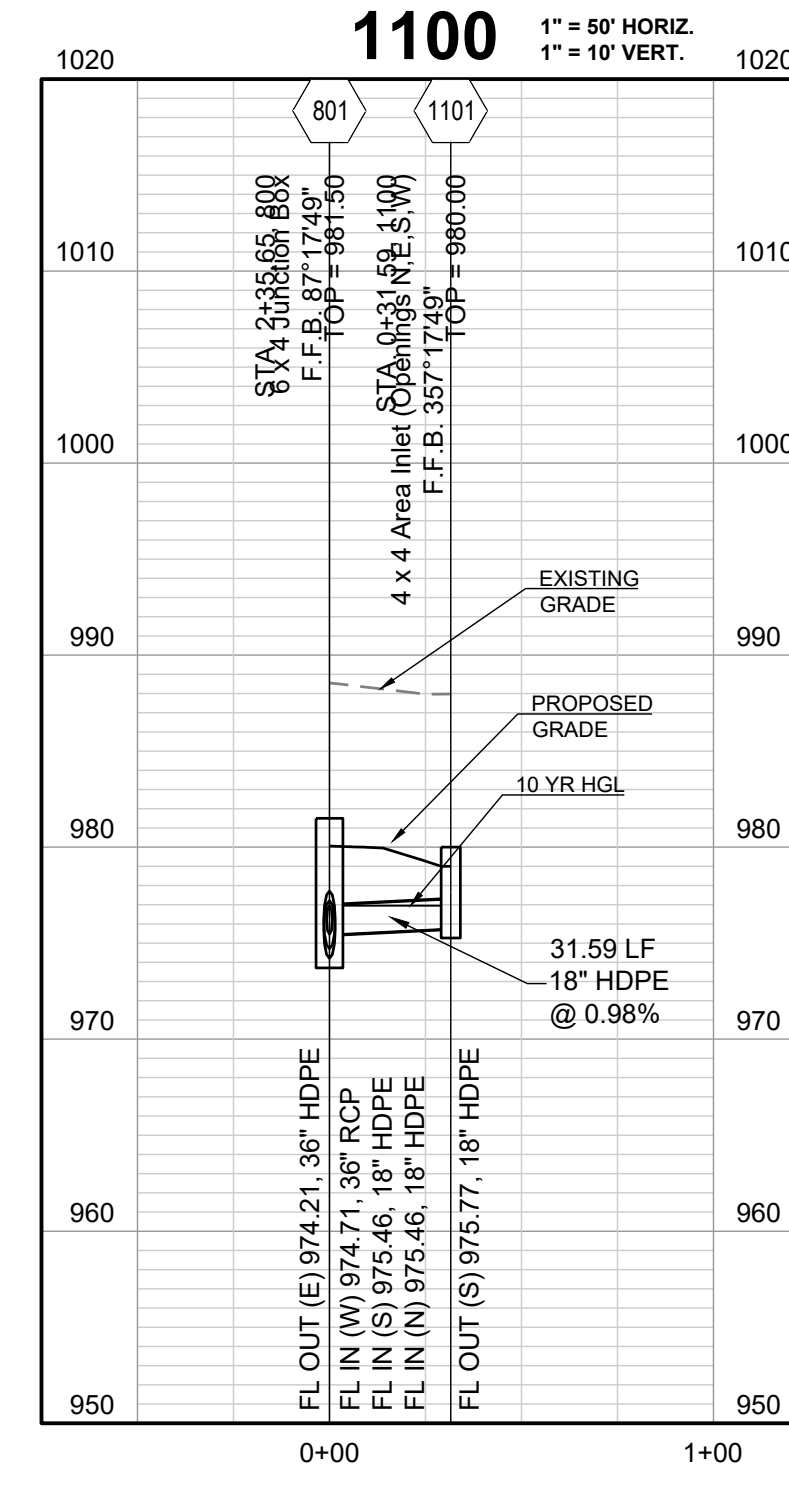
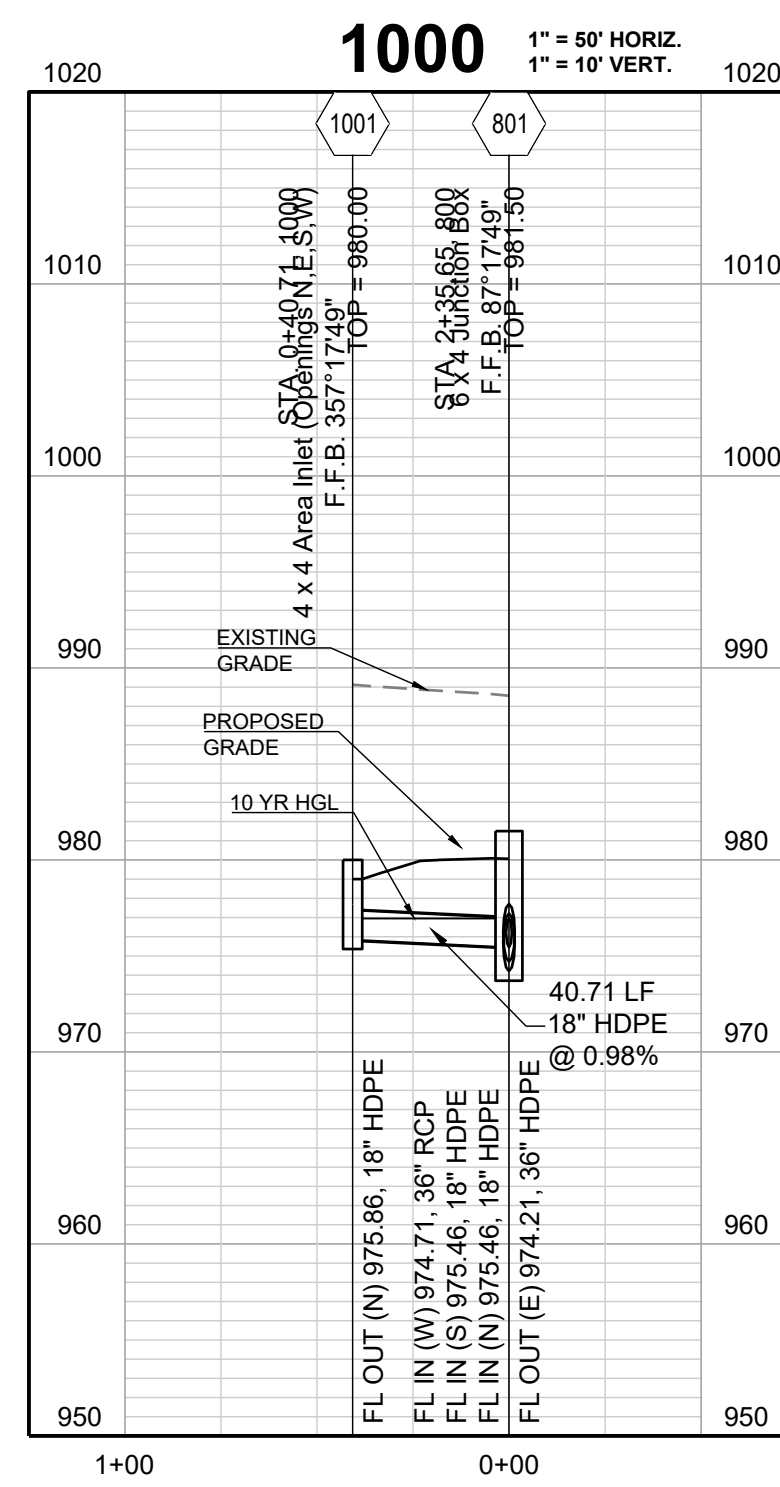
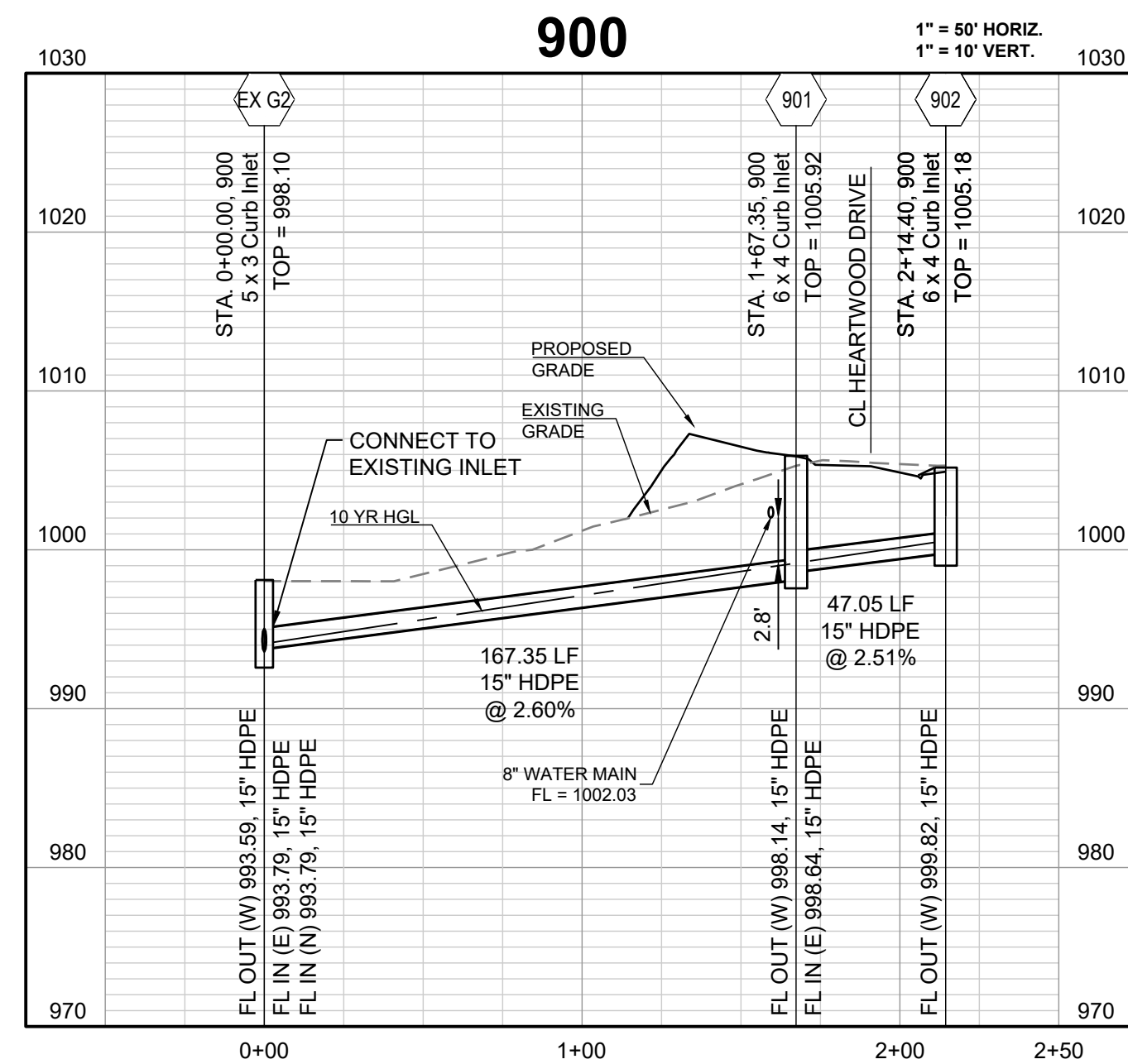
INSTALL 8 CY D₅₀-15" STONE RIP RAP W/ GEOFABRIC (15' x 6' x 2.25')



INSTALL 8 CY D₅₀-15" STONE RIP RAP W/ GEOFABRIC (15' x 6' x 2.25')



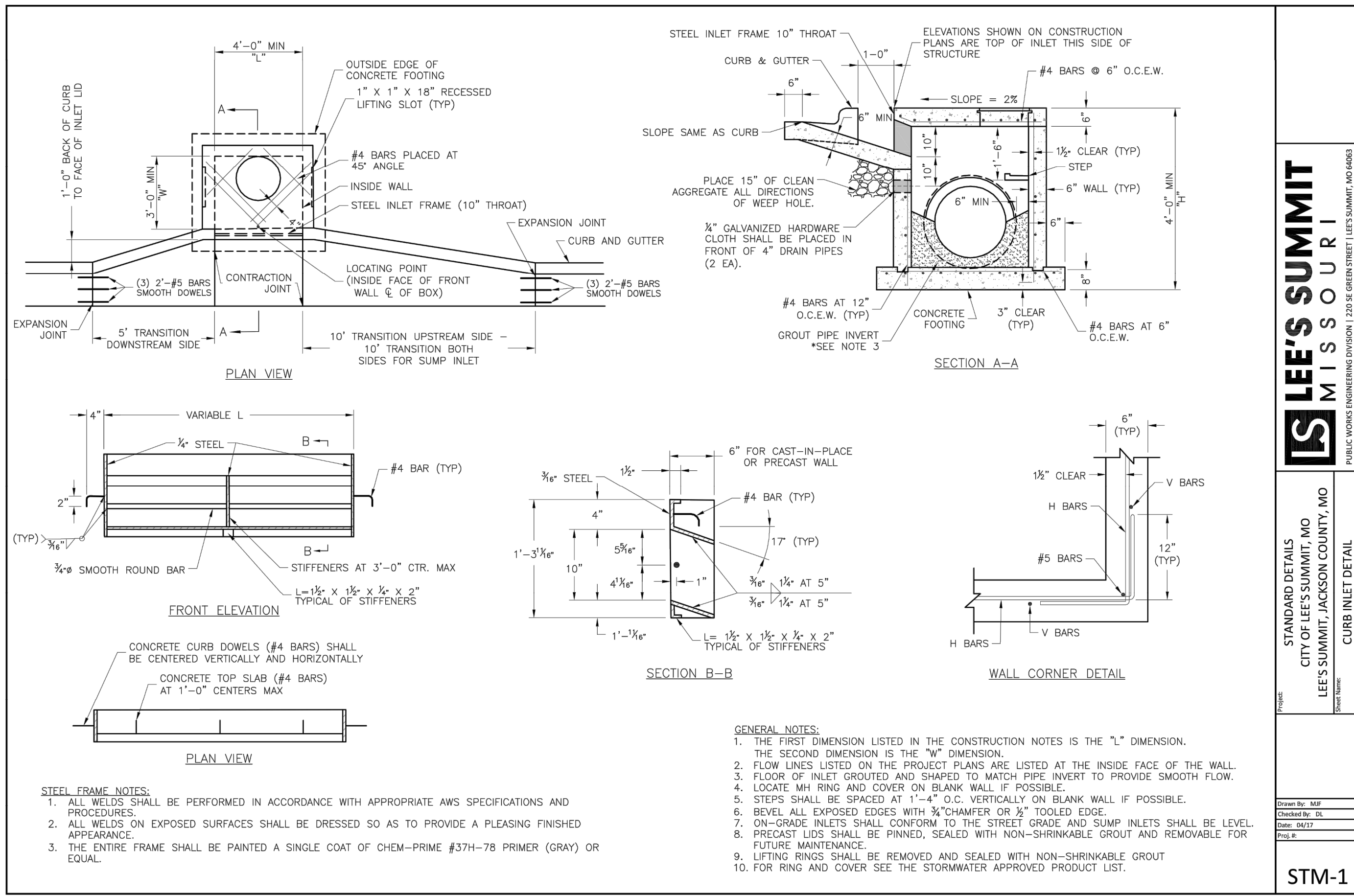
INSTALL 8 CY D₅₀-15" STONE RIP RAP W/ GEOFABRIC (16' x 8' x 2.25')



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

REVISION DATE	DESCRIPTION
4-24-2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
2-19-2020	
PROJ. NUMBER:	18-017

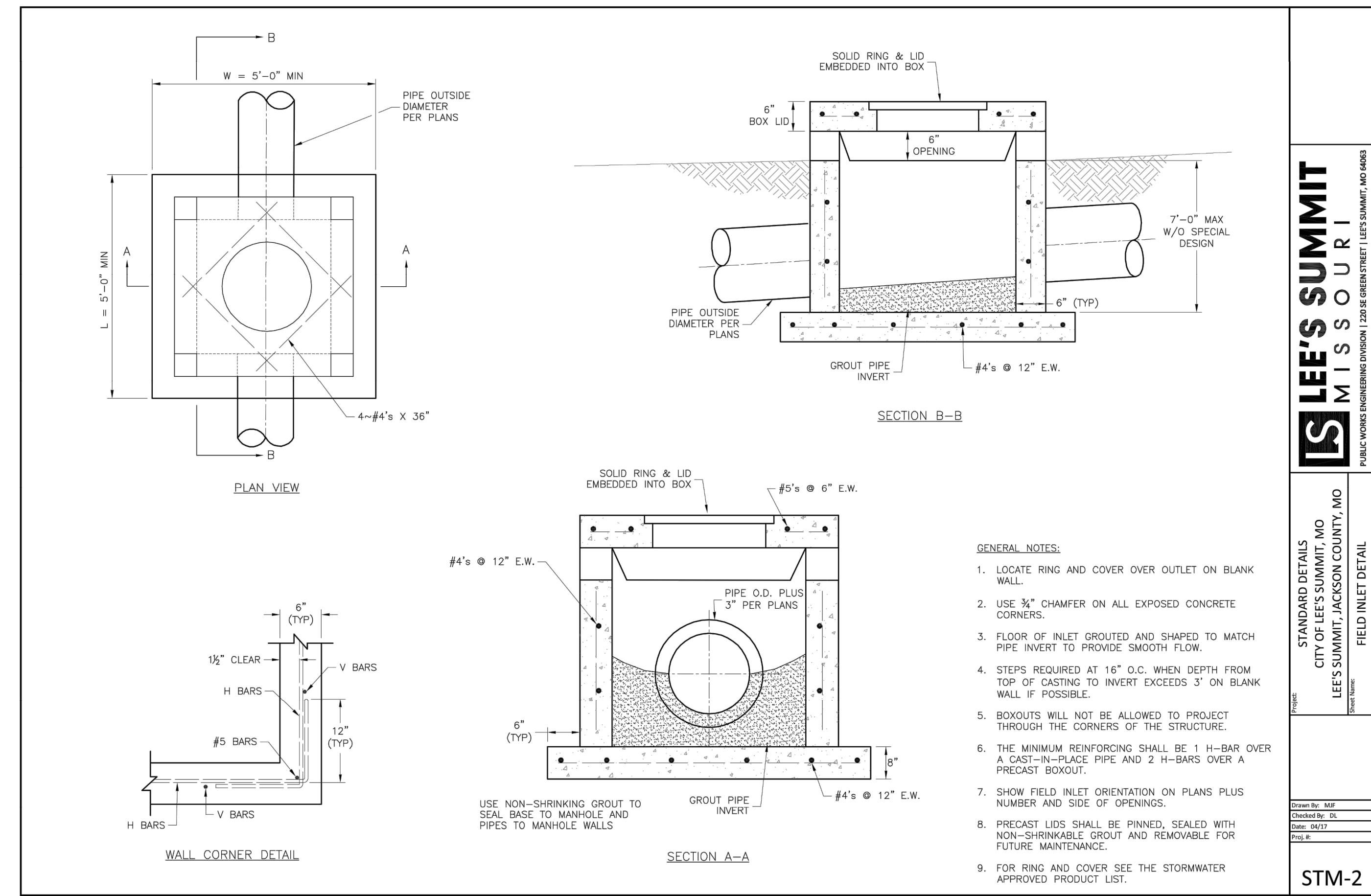
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LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 S. GREEN STREET | LEE'S SUMMIT, MO 64663

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

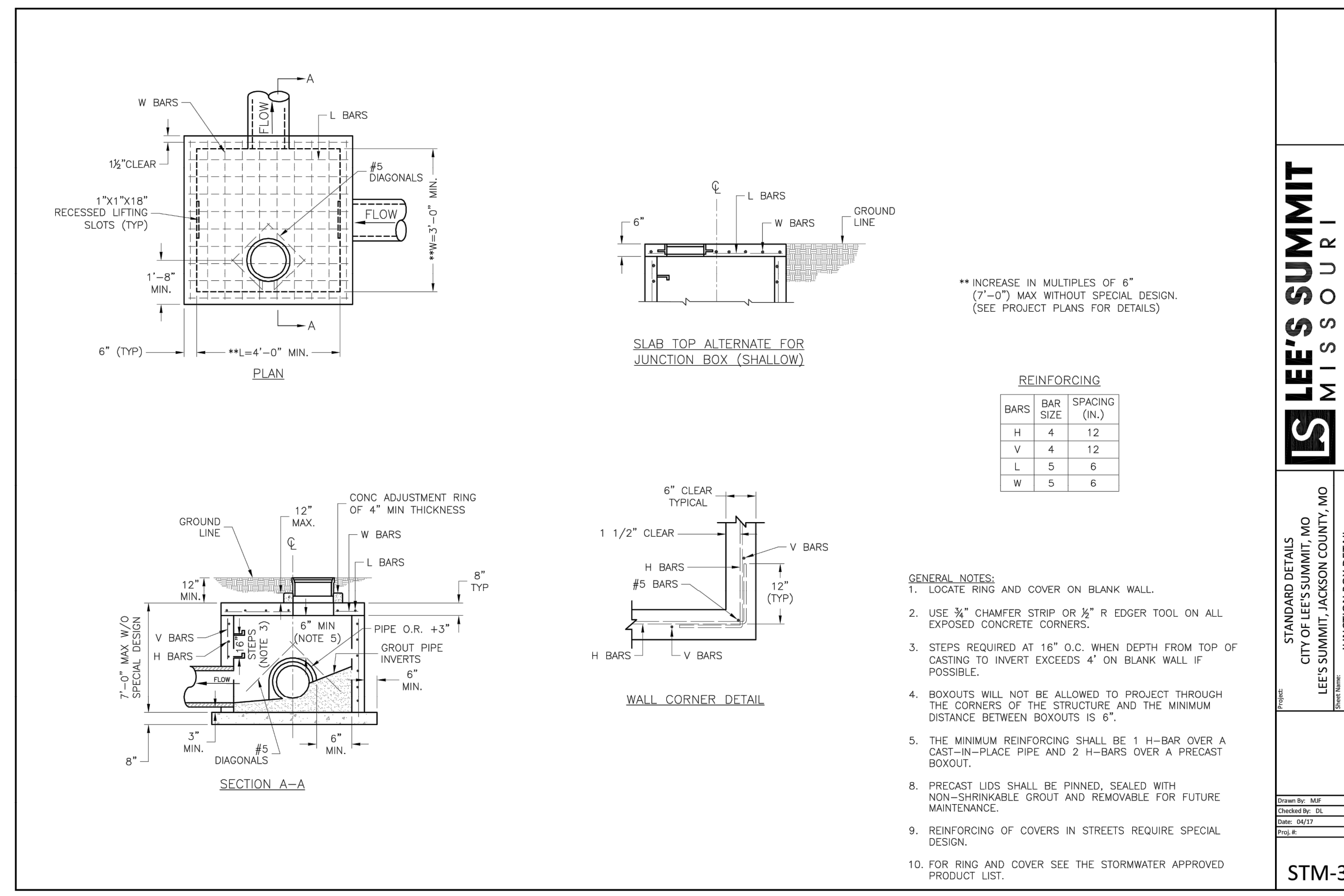
STM-1



LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 S. GREEN STREET | LEE'S SUMMIT, MO 64663

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

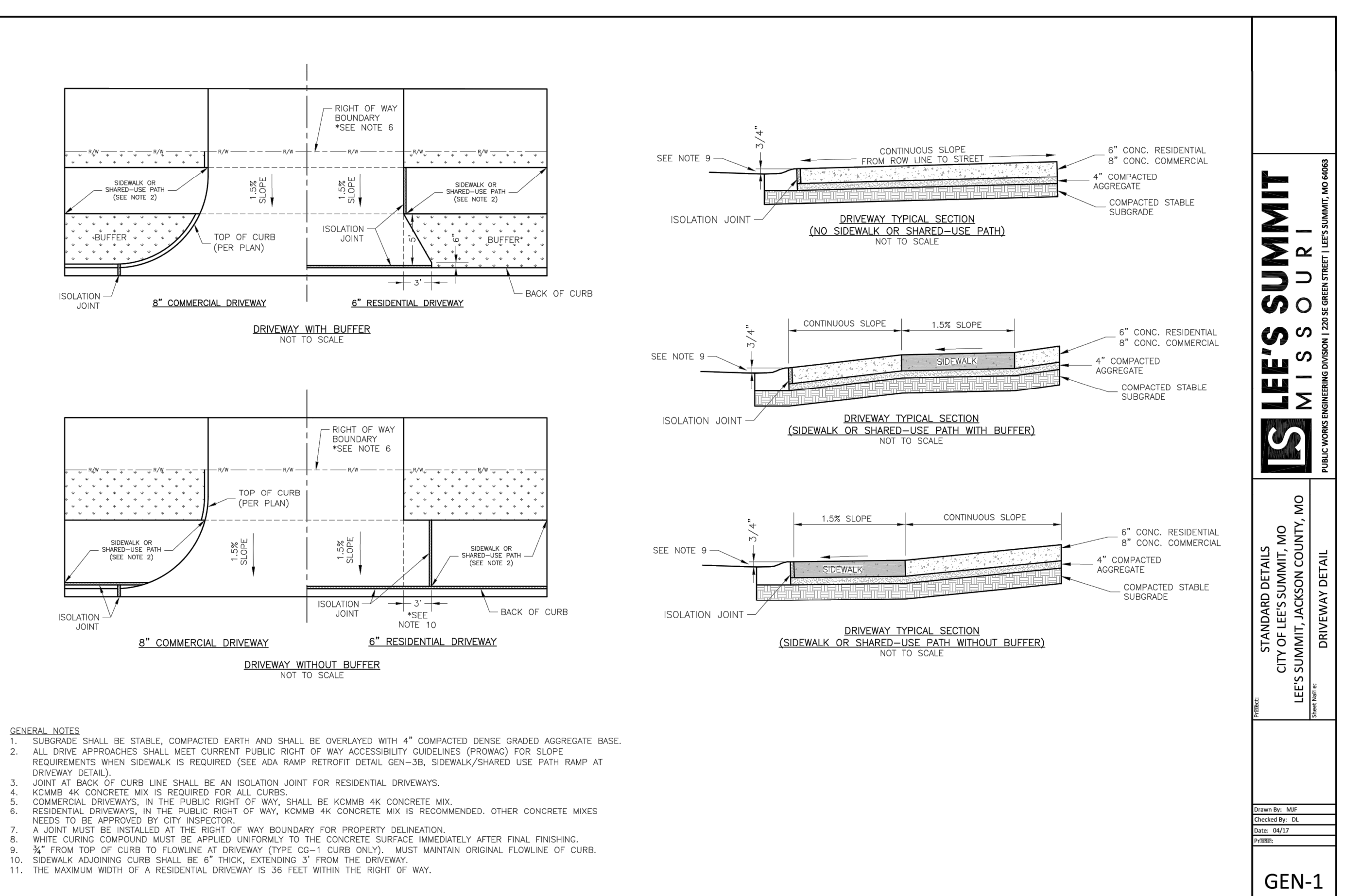
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LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 S. GREEN STREET | LEE'S SUMMIT, MO 64663

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

STM-3

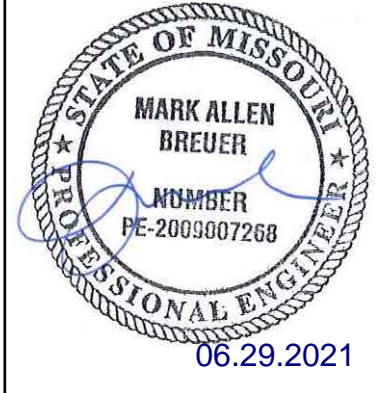


LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 S. GREEN STREET | LEE'S SUMMIT, MO 64663

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

GEN-1

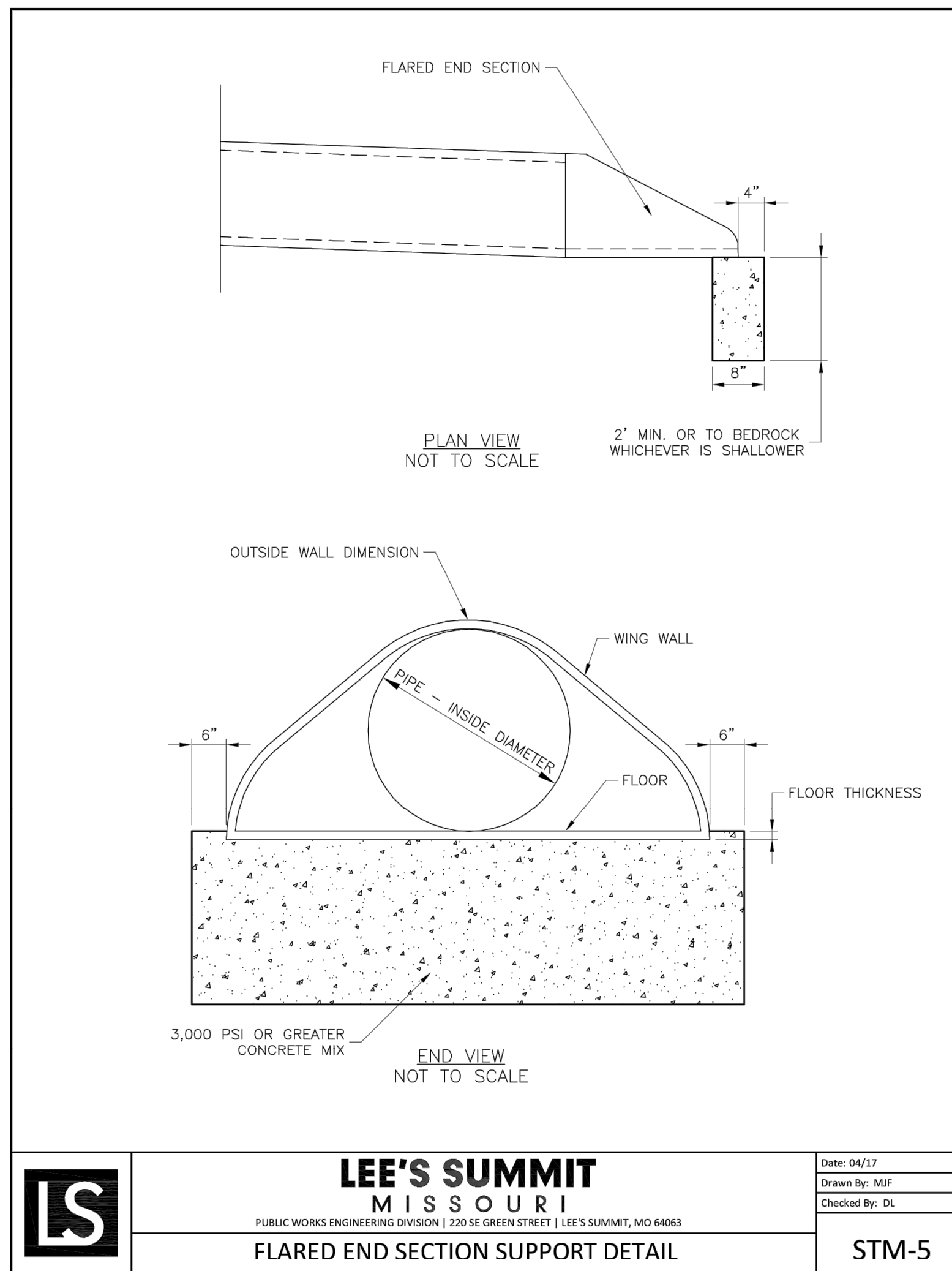
SCHLAGEL
ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS
14920 West 107th Street • Lenexa, Kansas 66215
(913) 492-5158 • Fax: (913) 492-8400
WWW.SCHLAGELASSOCIATES.COM
Missouri State Certificate of Authority
#E220020360F #LAC20100237 #LS20080869F



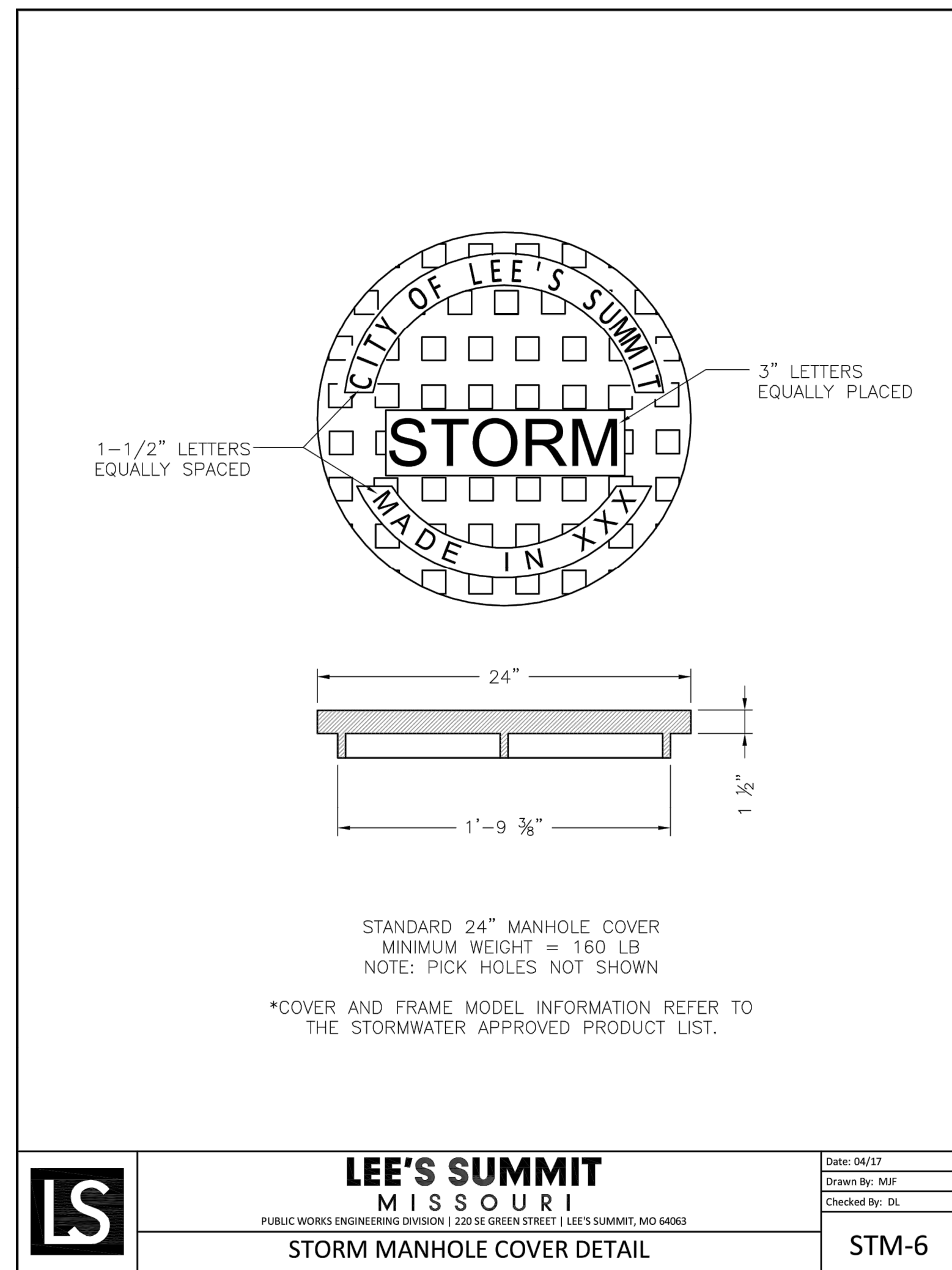
WOODLAND GLEN 2ND PLAT
STREET, STORMWATER, MASTER DRAINAGE,
AND EROSION CONTROL PLANS
WARD ROAD & WINTHROP DRIVE
LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
4-24-2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
09/29/2021	CITY COMMENTS

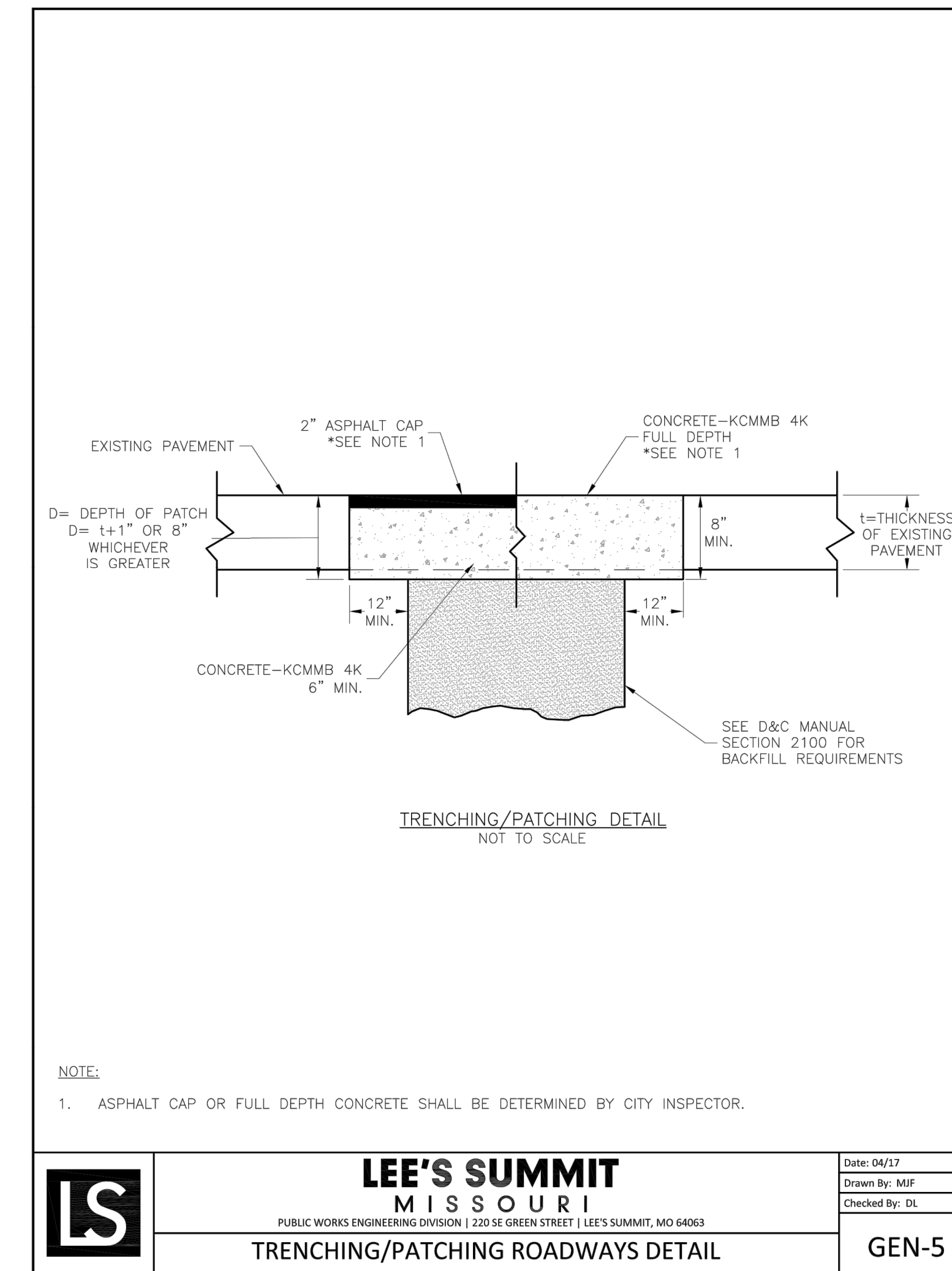
STREET AND STORM DETAILS
SHEET
22



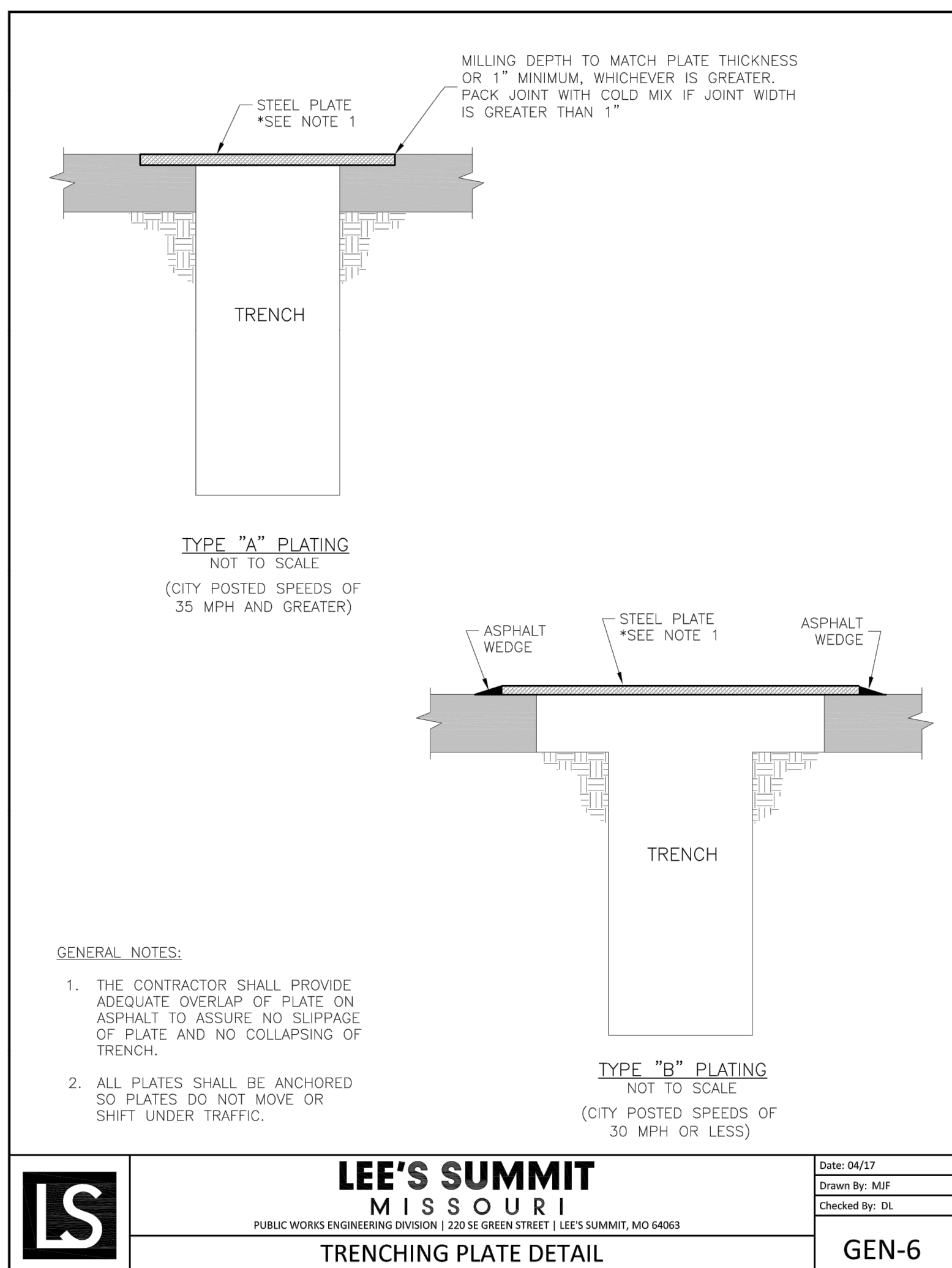
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	FLARED END SECTION SUPPORT DETAIL	STM-5



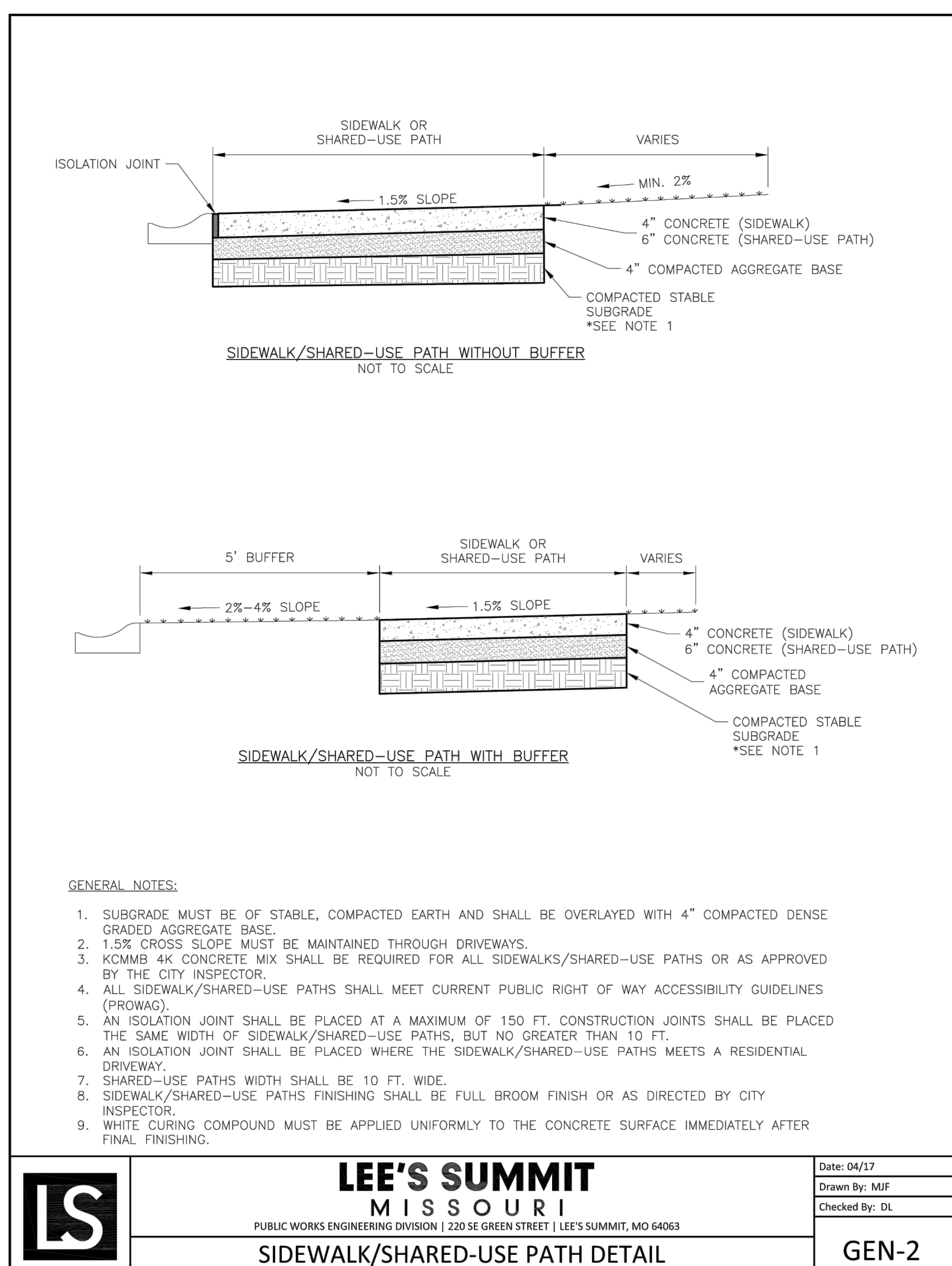
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	STORM MANHOLE COVER DETAIL	STM-6



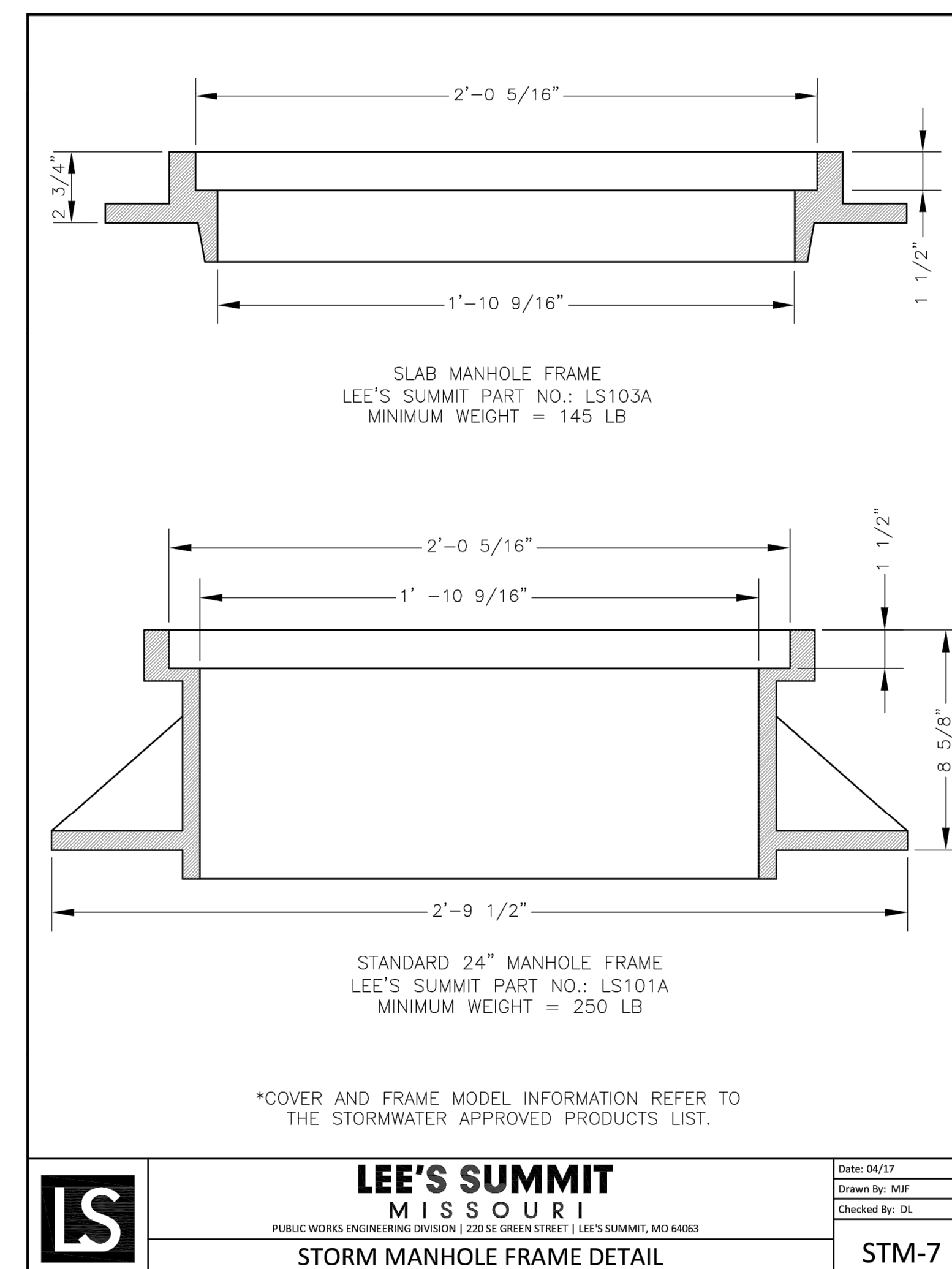
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	TRENCHING/PATCHING ROADWAYS DETAIL	GEN-5



LS	LEE'S SUMMIT MISSOURI PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063	Date: 04/17 Drawn By: MJF Checked By: DL
	TRENCHING PLATE DETAIL	GEN-6



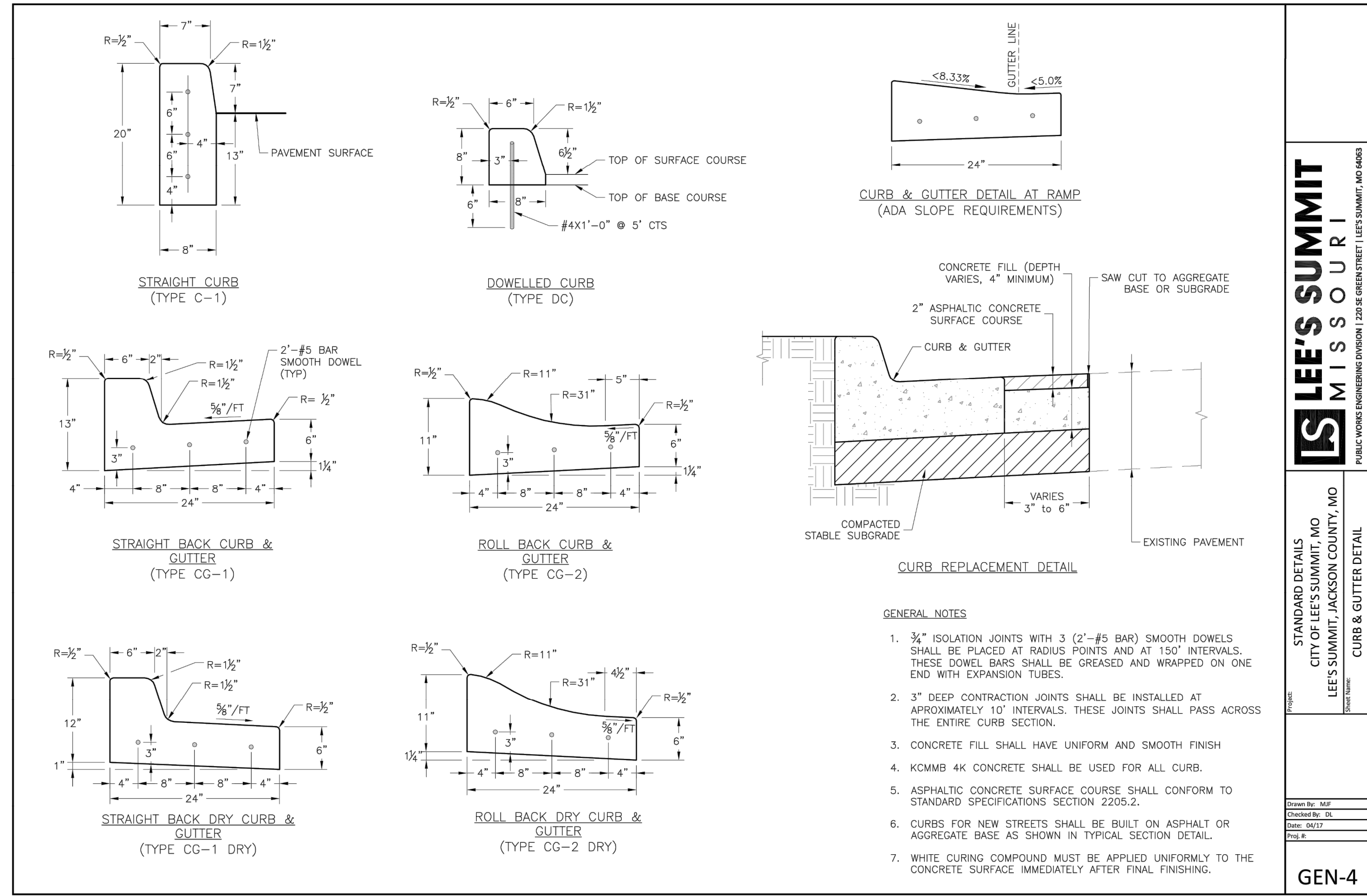
LS	LEE'S SUMMIT MISSOURI PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063	Date: 04/17 Drawn By: MJF Checked By: DL
	SIDEWALK/SHARED-USE PATH DETAIL	GEN-2



LS	LEE'S SUMMIT MISSOURI PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063	Date: 04/17 Drawn By: MJF Checked By: DL
	STORM MANHOLE FRAME DETAIL	STM-7

REVISION DATE	DESCRIPTION
4-24-2020	CITY COMMENTS
01/11/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
2-19-2020	CITY COMMENTS
18-017	

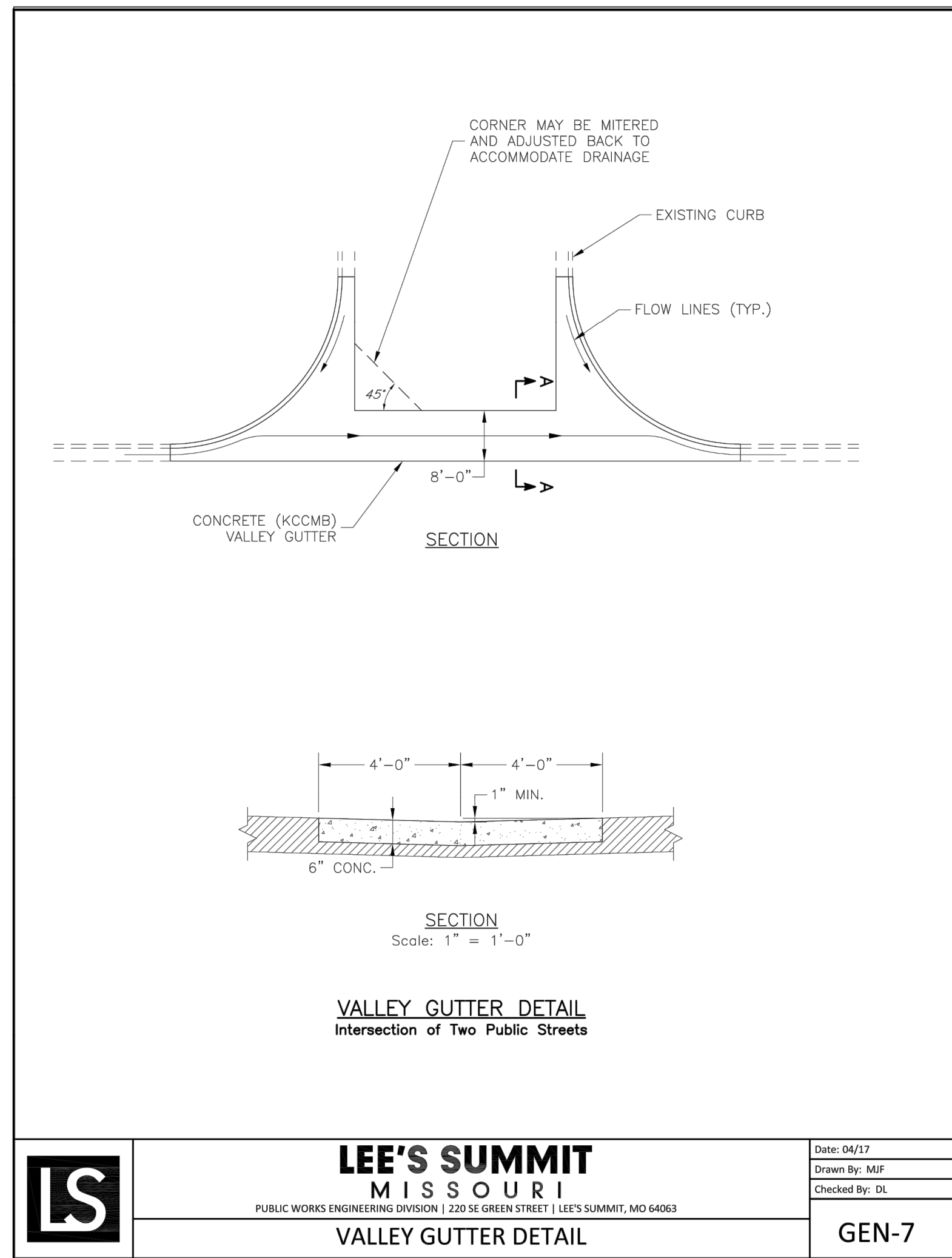
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LEE'S SUMMIT MISSOURI

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

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj #: GEN-4



LEE'S SUMMIT MISSOURI

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

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

GEN-7

TABLE LS-2: MINIMUM ASPHALT PAVEMENT THICKNESSES

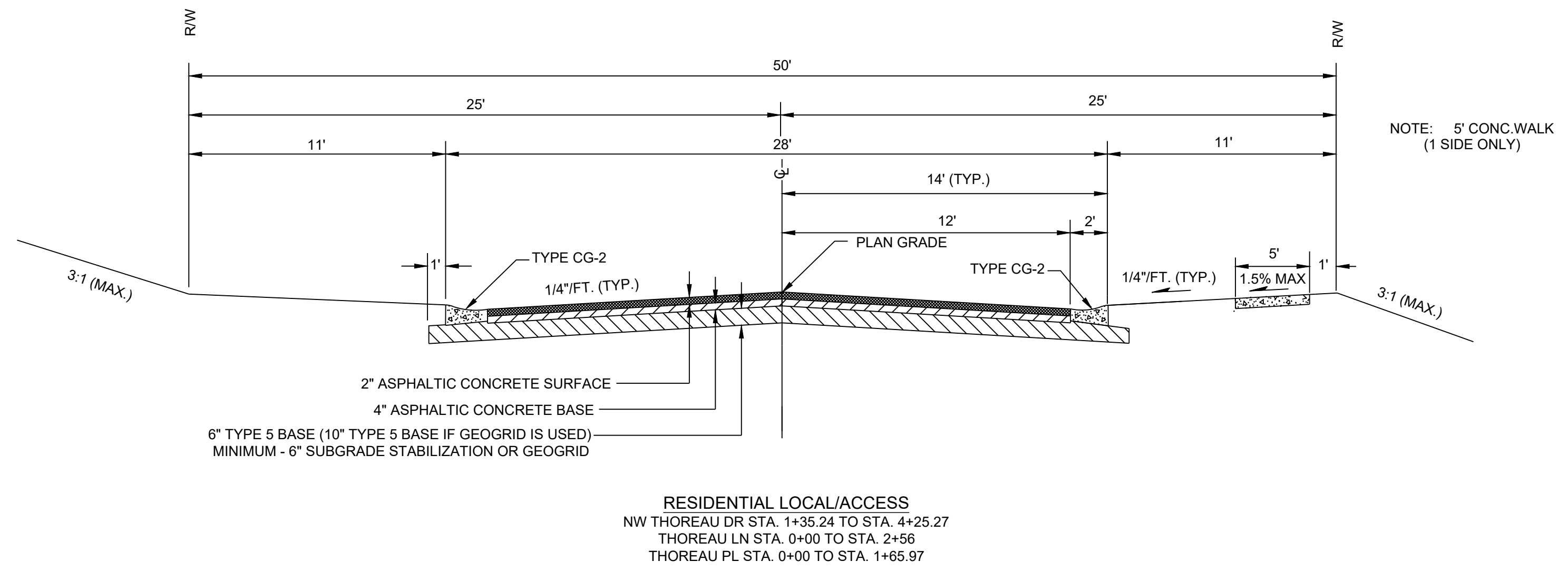
Street Classification	Pavement Option	AC Surface (in.)	AC Base (in.)	MoDOT Type 5 Base (in.)	Geogrid(1)	Chemical Subgrade Stabilization(2) (in.)
Residential Local/Access	A	2	4	6	--	6
	B	2	4	10	Geogrid	--
Residential Collector	A	2	5.5	6	--	9
	B	2	5.5	12	Geogrid	--
Commercial Industrial Local/Collector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

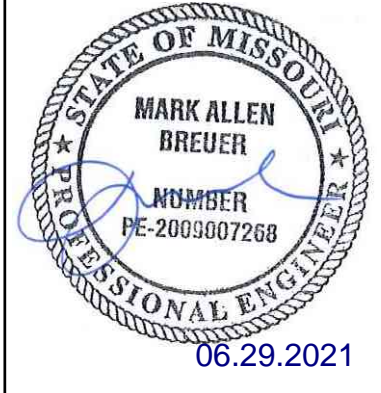
(1) Subgrade Stabilization and 4" aggregate base may be replaced by approved geogrid and 6" of aggregate base

LS5200 16 October 2016



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

REVISION DATE	DESCRIPTION
4-24-2020	CITY COMMENTS
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04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
09/28/2021	CITY COMMENTS
2-19-2020	CITY COMMENTS

DRAWN BY: DGF
CHECKED BY: DGF
DATE PREPARED: 2-19-2020
PROJ. NUMBER: 18-017

STREET AND STORM DETAILS

SHEET

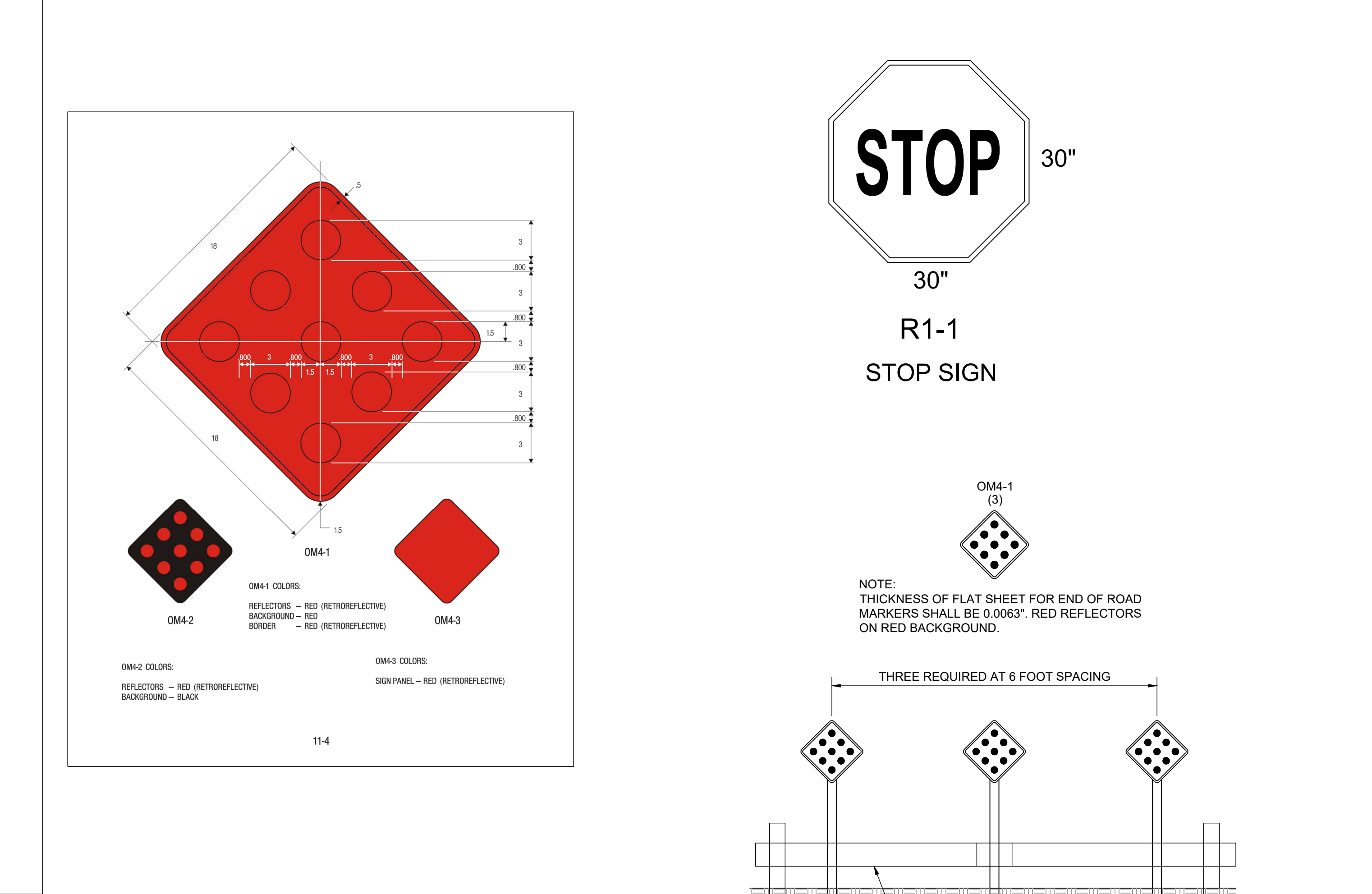
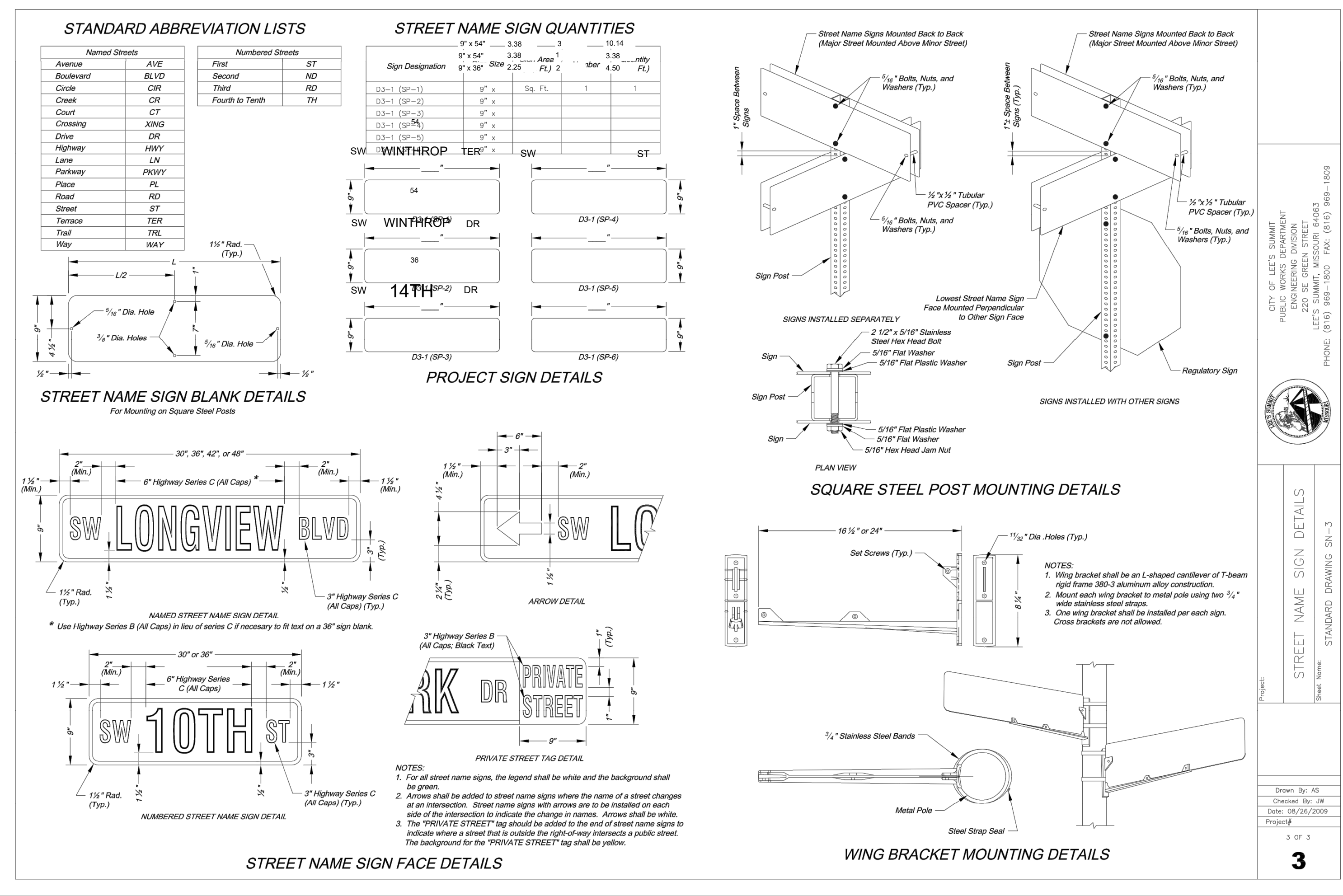
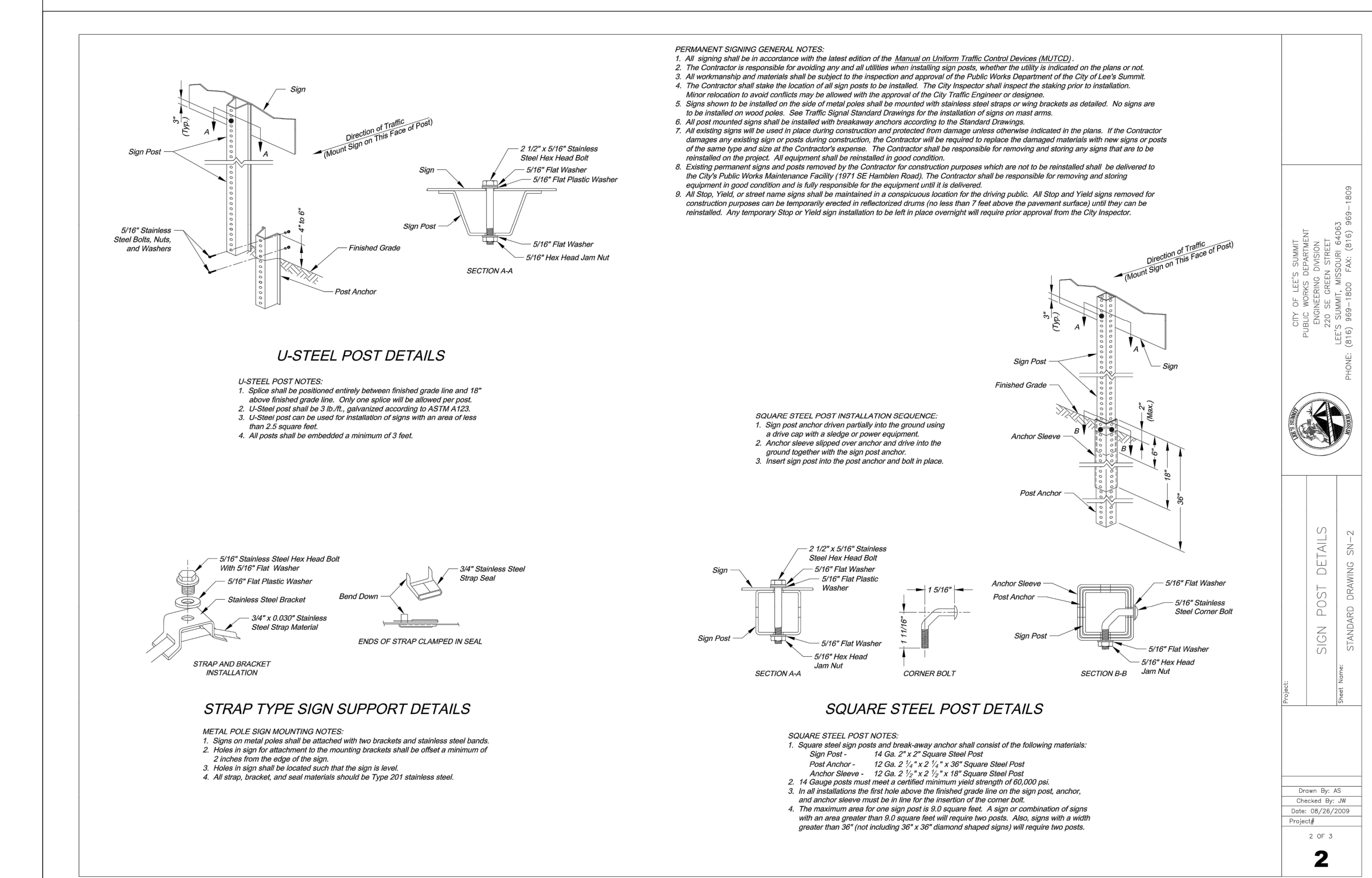
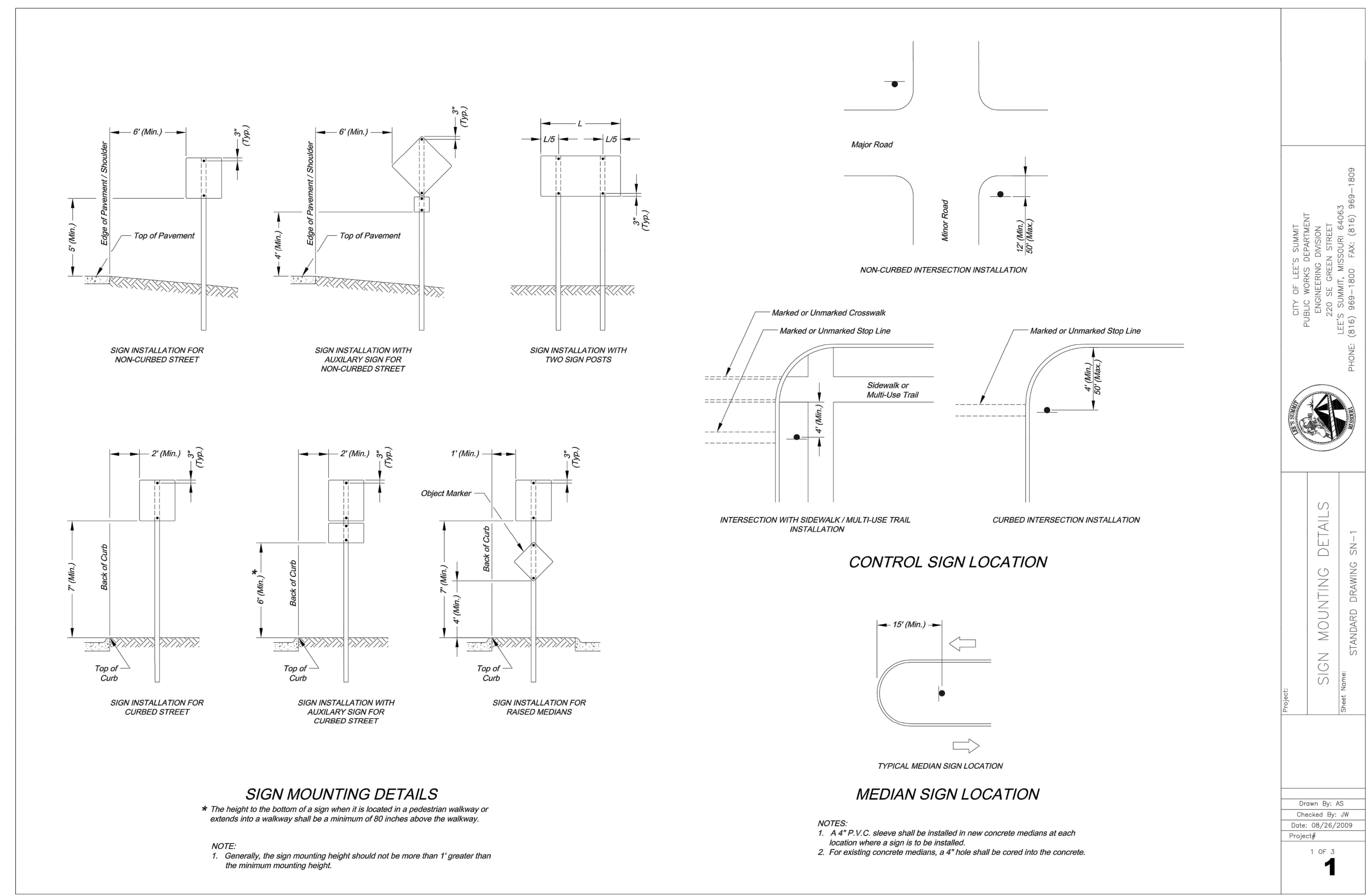
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REVISION DATE	DESCRIPTION
4-24-2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	CITY COMMENTS
05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
2-19-2020	PROJ. NUMBER:
18-417	

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 Missouri State Certificate of Authority #S2002008695F

PREPARED BY: **MARK ALLEN BREUER**
 PROFESSIONAL ENGINEER
 NUMBER DE-2000007268
 06.29.2021

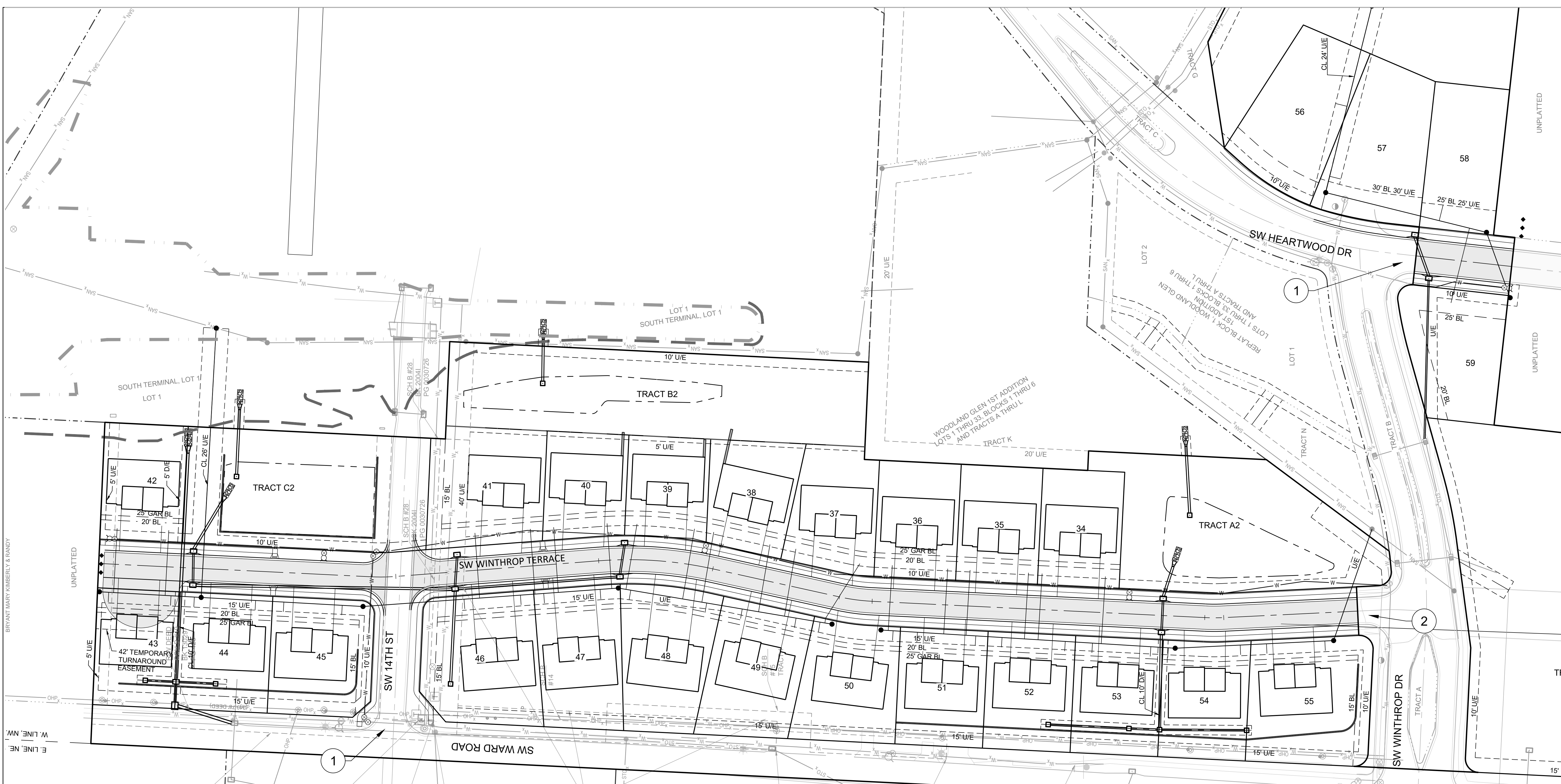
WOODLAND GLEN 2ND PLAT STREET, STORMWATER, MASTER DRAINAGE, AND EROSION CONTROL PLANS
 WARD ROAD & WINTHROP DRIVE
 LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
4-24-2020	CITY COMMENTS
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04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
2-19-2020	CITY COMMENTS
18-017	PROJECT NUMBER

SIGN DETAILS

SHEET **26**

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

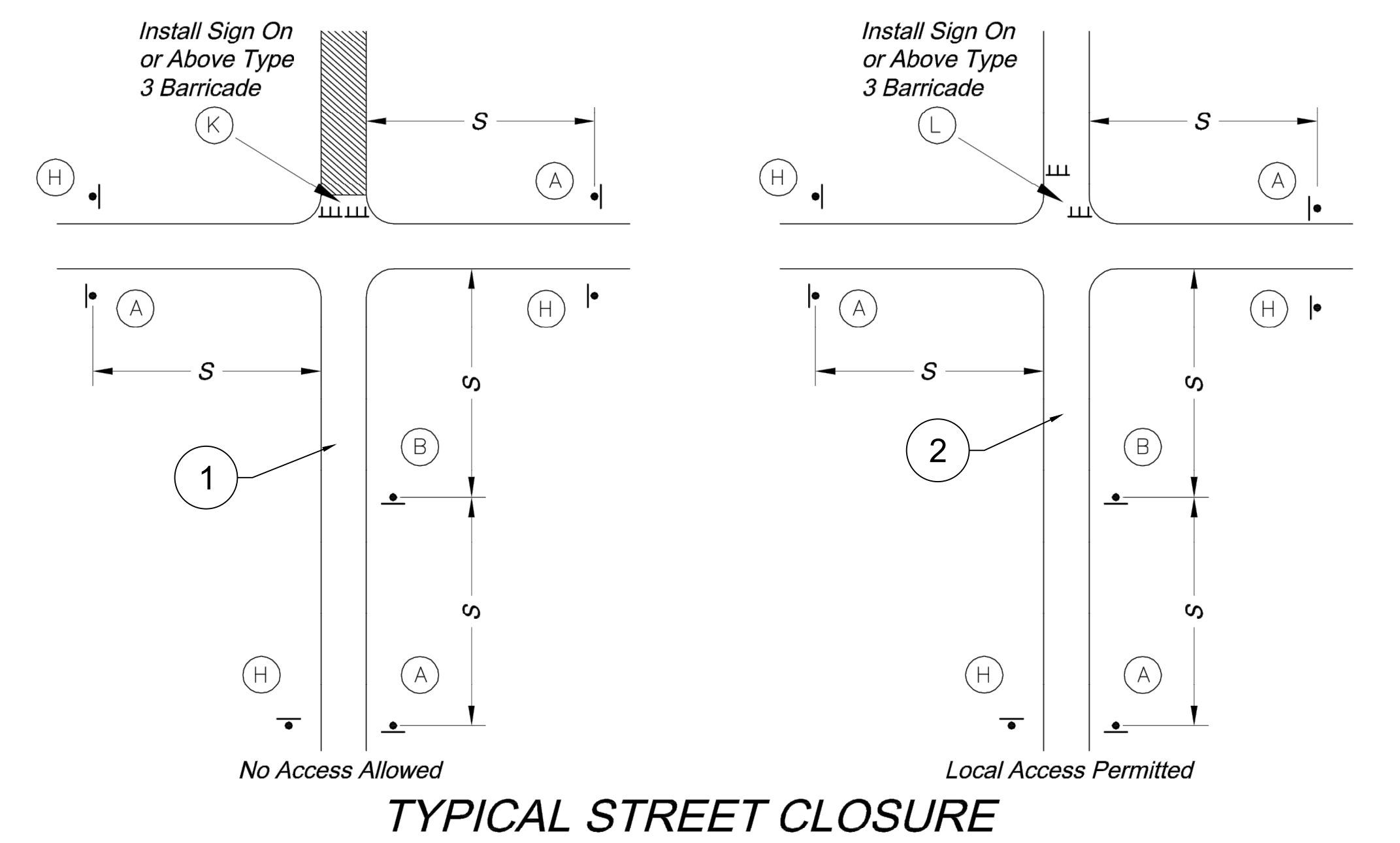


Sign Spacing "S"	
Speed Limit (mph)	Spacing (Feet)
25	100
30 - 35	250
≥ 40	350

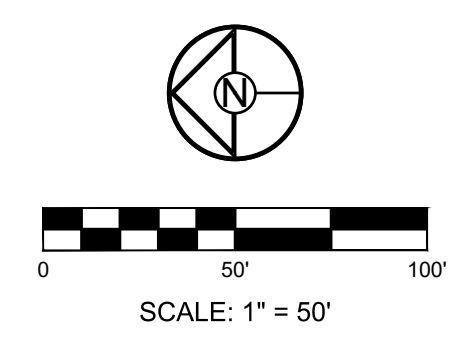
Taper Dimensions (Feet)				
Speed Limit (mph)	Minimum Taper Length "L", per Lane Width "W"			Minimum Number of Channelizers
	10	11	12	
25	105	115	125	6
30	150	165	180	7
35	205	225	245	8
40	270	295	320	9
45	450	495	540	13

Guidelines for Length of Longitudinal Buffer Space "B"	
Speed Limit (mph)	Length (Feet)
25	35
30	55
35	85
40	120
45	170

Maximum Channelizer Spacing		
Speed Limit (mph)	Within Taper (Feet)	Outside Taper (Feet)
25	25	50
30	30	60
35	35	70
40	40	80
45	45	90



NOTE:
 Reference the City of Lee's Summit "TRAFFIC CONTROL DETAILS" Standard Drawing TC-1 on Sheet 28 for sign types listed in the Typical Street Closure Diagrams.



REVISION DATE	DESCRIPTION
4-24-2020	CITY COMMENTS
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05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
2-19-2020	CITY COMMENTS

DRAWN BY:	DOF
CHECKED BY:	DOF
DATE PREPARED:	2-19-2020
PROJ. NUMBER:	18-017

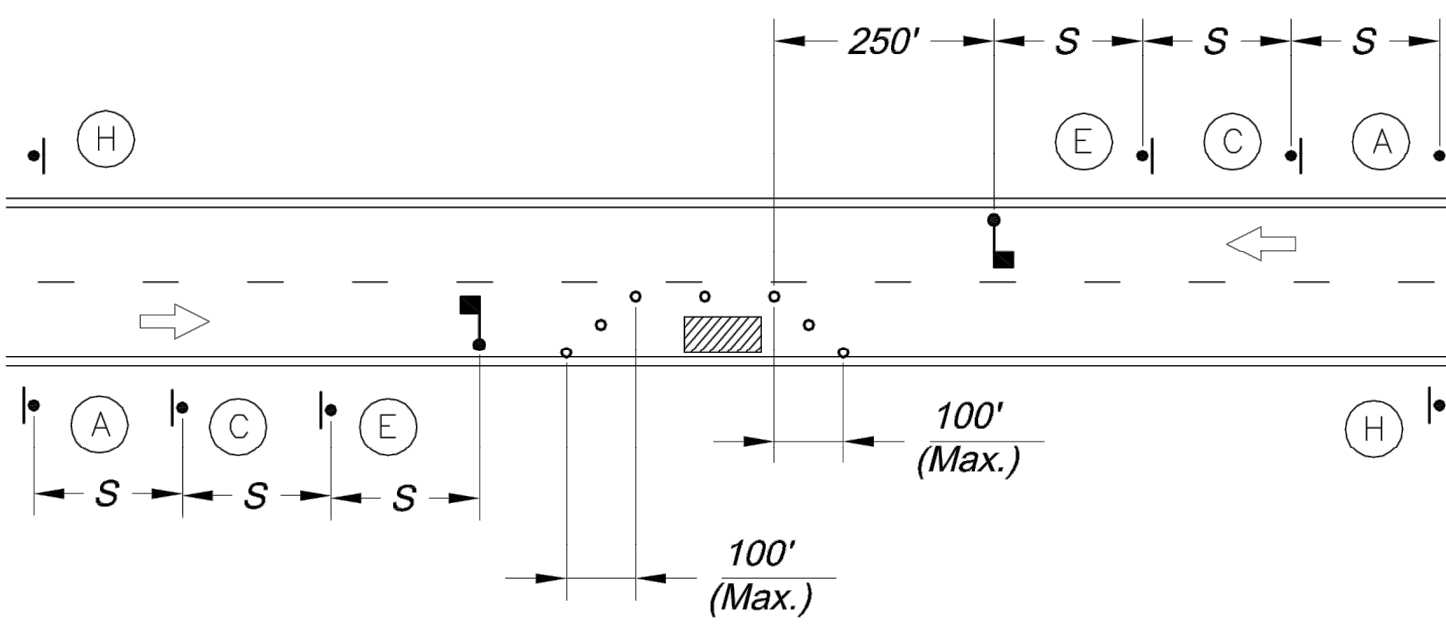
TRAFFIC CONTROL PLAN

SHEET

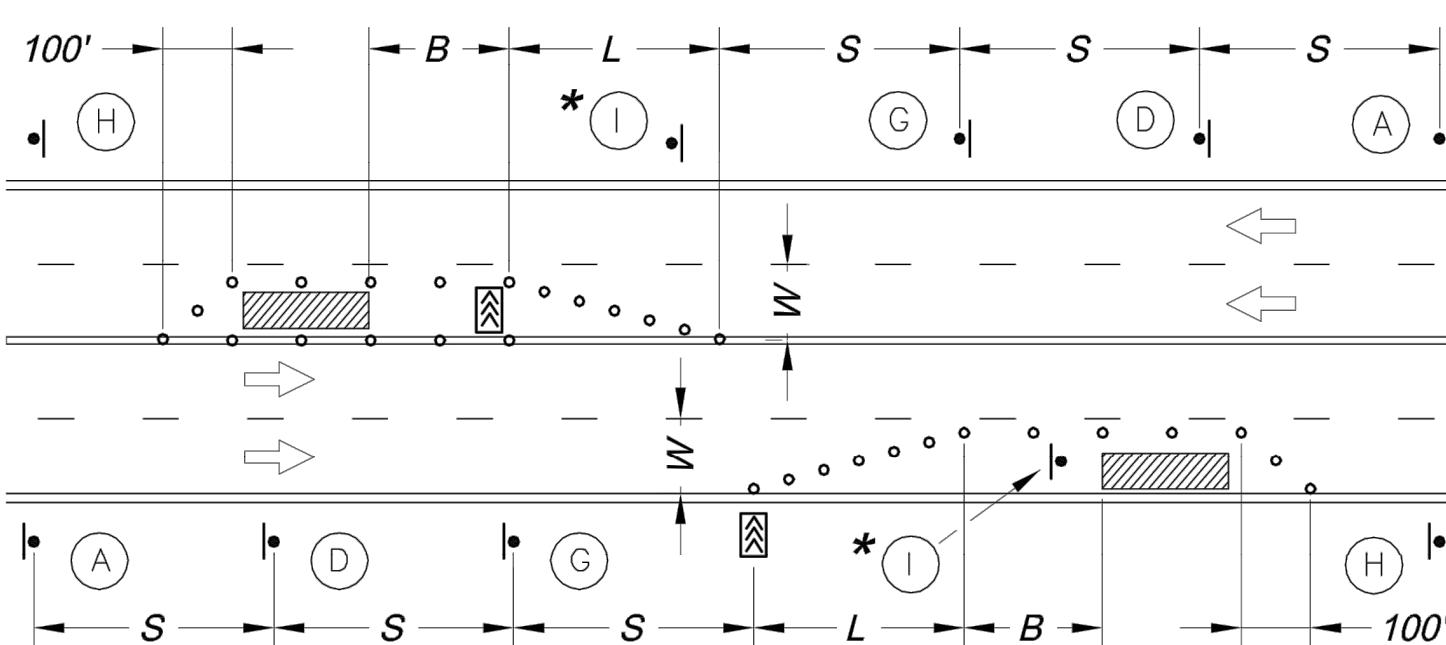
27

SYMBOL LEGEND

- Work Area
- Sign
- Barricade
- Direction of Travel
- Channelizer
- Arrow Panel
- Flagger

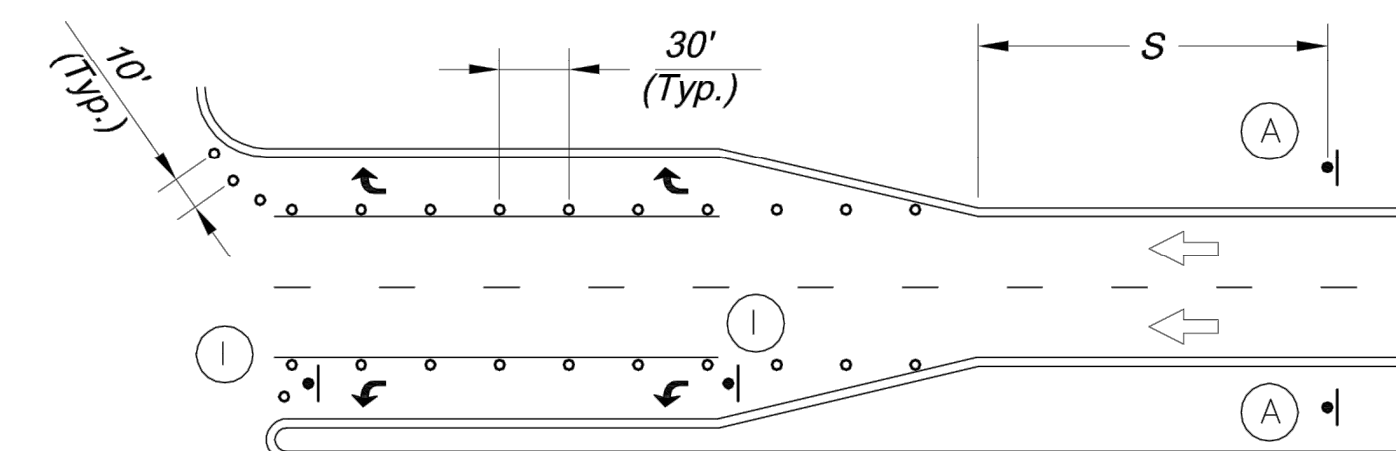


LANE CLOSURE - TWO LANE STREET



LANE CLOSURE - FOUR LANE STREET

* Install Signs Every 200 Feet Throughout the Closed Lane or As Needed



TURN LANE CLOSURE

Sign Spacing "S"	
Speed Limit (mph)	Spacing (Feet)
25	100
30 - 35	250
≥ 40	350

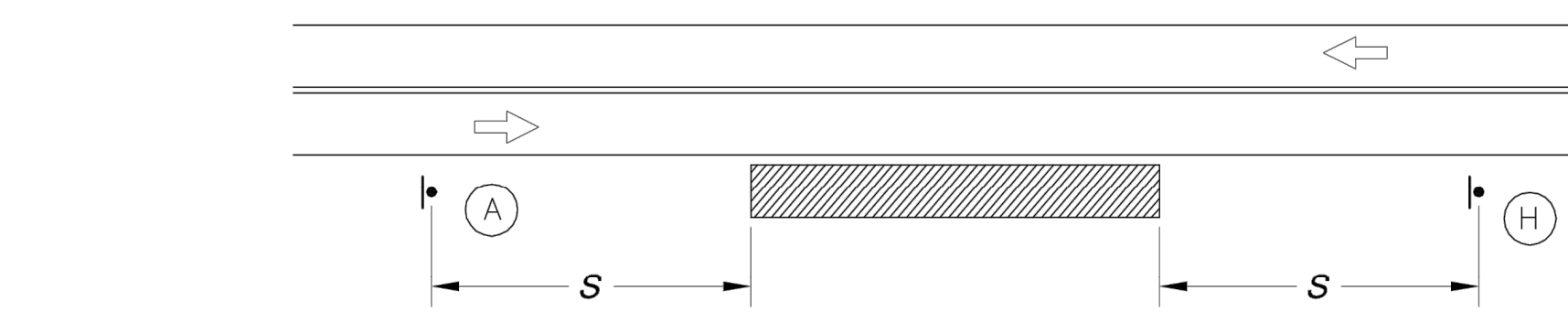
Speed Limit (mph)	Taper Dimensions (Feet)			Minimum Number of Channelizers
	Minimum Taper Length "L", per Lane Width "W"	11	12	
25	105	115	125	6
30	150	165	180	7
35	205	225	245	8
40	270	295	320	9
45	450	495	540	13

Guidelines for Length of Longitudinal Buffer Space "B"	
Speed Limit (mph)	Length (Feet)
25	35
30	55
35	85
40	120
45	170

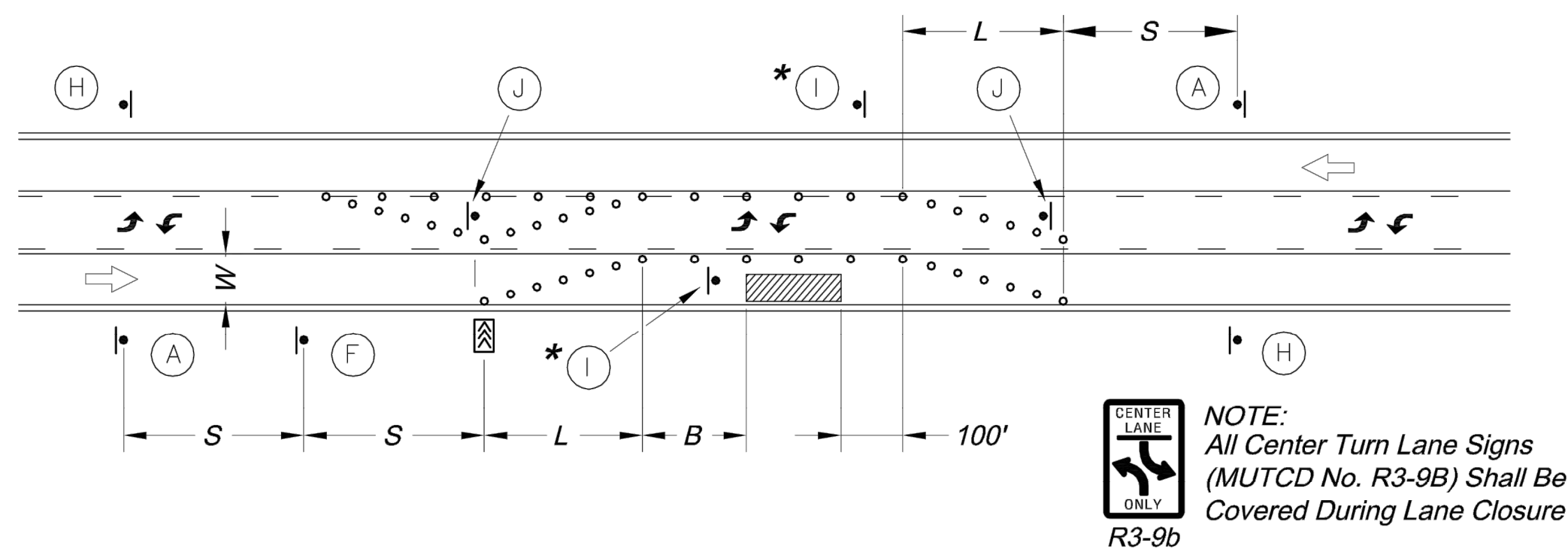
Maximum Channelizer Spacing		
Speed Limit (mph)	Within Taper (Feet)	Outside Taper (Feet)
25	25	50
30	30	60
35	35	70
40	40	80
45	45	90

SIGN LEGEND

- ROAD WORK AHEAD (A) W20-1 36" x 36"
- ROAD CLOSED AHEAD (B) W20-2 36" x 36"
- ONE LANE ROAD AHEAD (C) W20-4 36" x 36"
- RIGHT LANE CLOSED AHEAD (D) W20-5R 36" x 36"
- LEFT LANE CLOSED AHEAD (E) W20-7a 36" x 36"
- (F) W1-4L 36" x 36"
- END ROAD WORK (G) W4-2R 36" x 36"
- (H) G20-2 36" x 18"
- (I) R3-2 24" x 24"
- (J) R4-7a 24" x 30"
- (K) R11-2 48" x 30"
- (L) R11-4 60" x 30"

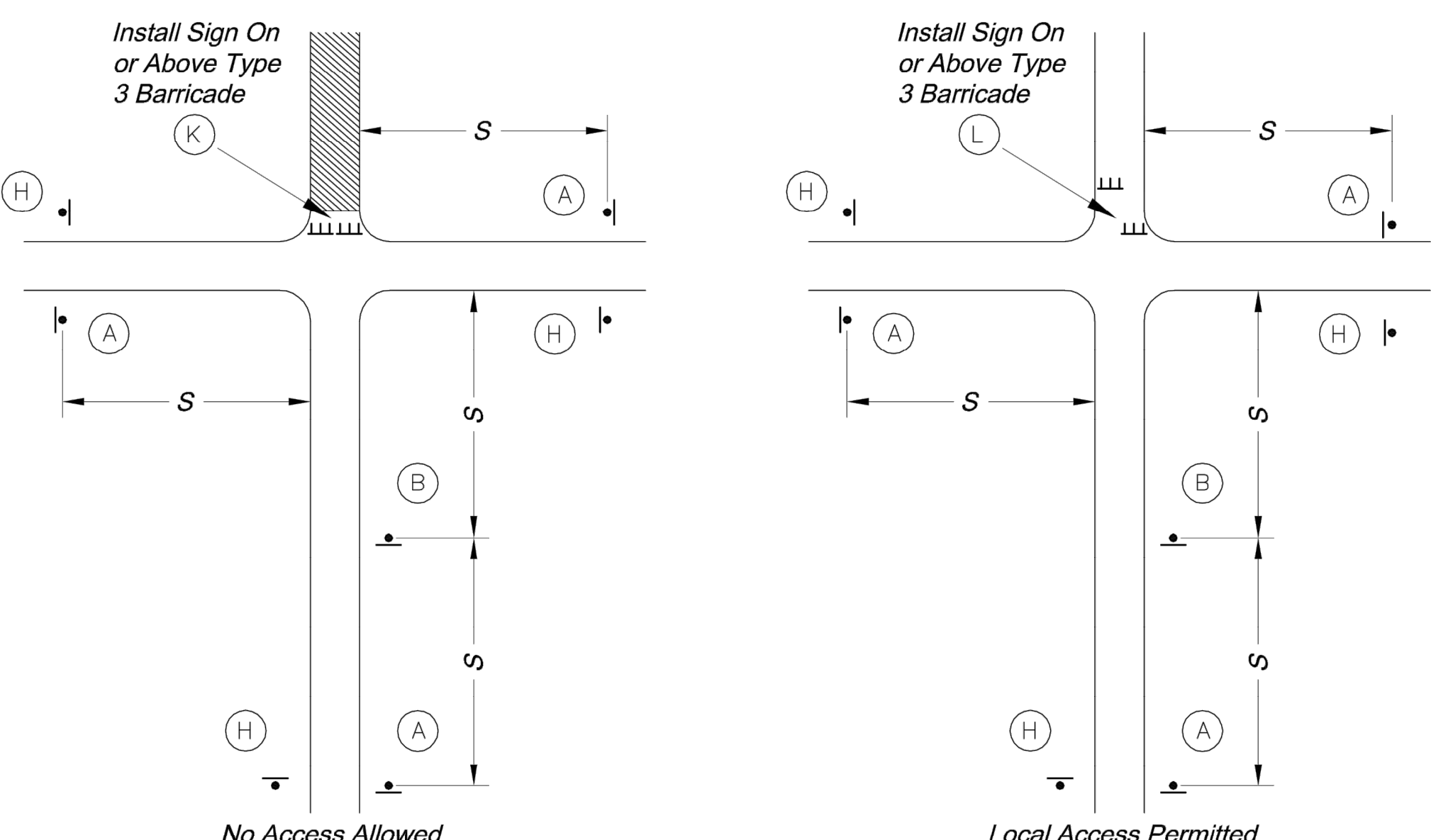


TYPICAL SIGNING FOR WORK ADJACENT TO THE STREET



LANE CLOSURE - THREE LANE STREET

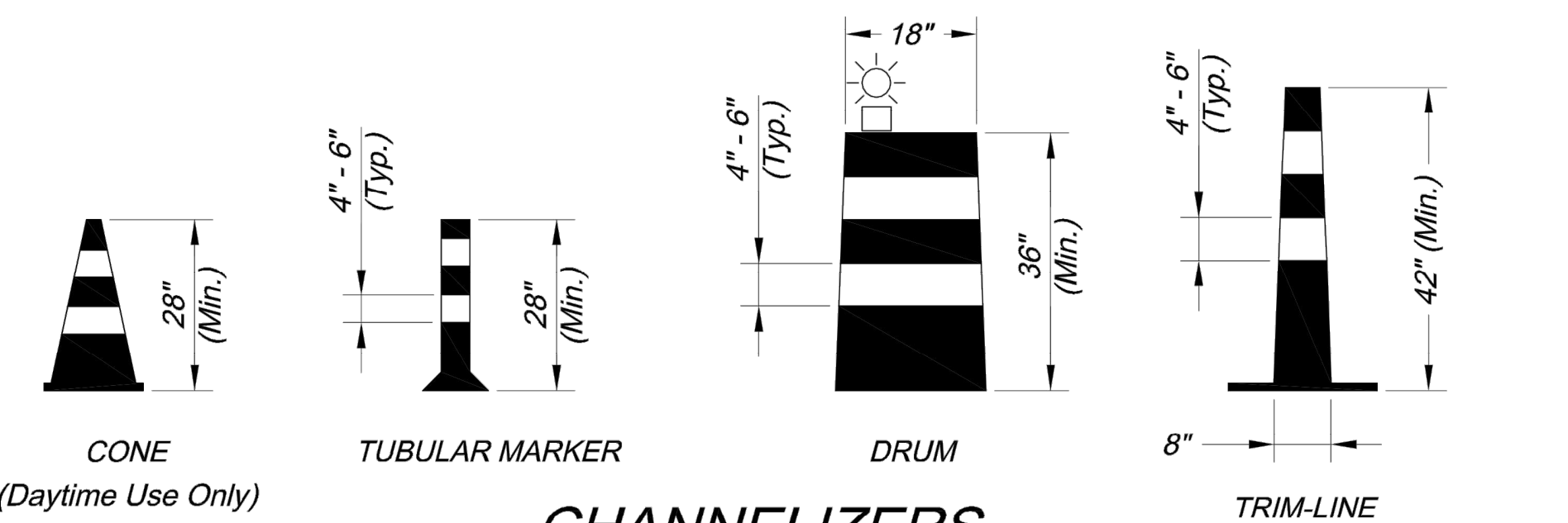
* Install Signs Every 200 Feet Throughout the Closed Lane or As Needed



TYPICAL STREET CLOSURE

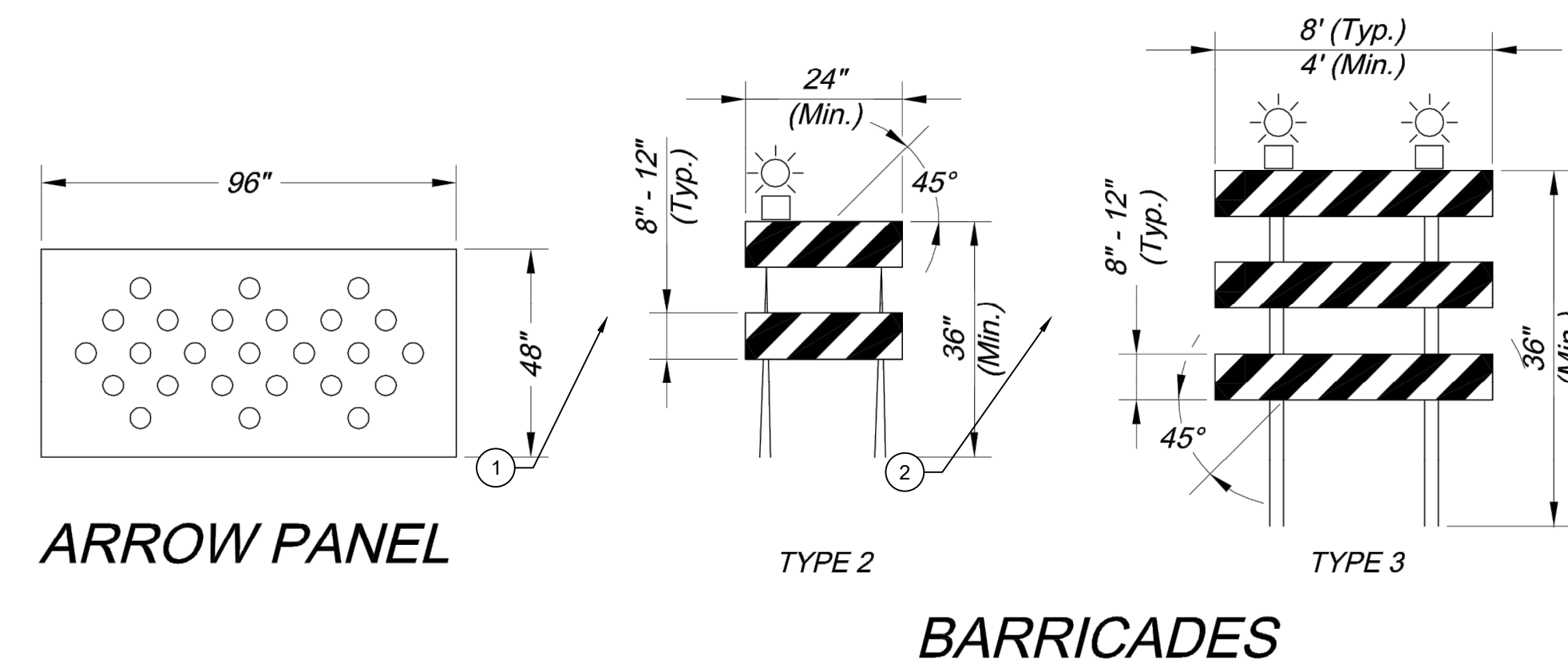
GENERAL NOTES:

- All signs, barricades, channelizers, markings and other traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
- All traffic control devices shall be standard in size, shape, color, and message, in good condition, and retro-reflectORIZED.
- Warning lights shall be used on barricades in place at night and on warning signs which alert drivers about a change in alignment, traffic control, lane closure, or road closure.
- Flaggers shall be used where indicated on the plans, where construction vehicles interact with normal traffic, or where construction activities impose a restriction on traffic, as directed by the City Traffic Engineer. Where flaggers are used, advance signing shall be erected as shown in the details or as specified in the MUTCD. Flaggers shall meet the requirements in the MUTCD in regard to character, training, attire, and behavior.
- Trim-lines are the City's preferred channelizing device. Cones may not be used at nighttime.
- Traffic control devices not in use or not applicable shall be either covered or removed from the work area.
- The Contractor shall use barricades, street plates, or fencing as needed to effectively shield pedestrian and vehicular traffic from exposed objects, excavations, and construction activities.
- Access shall be maintained to all driveways and side streets unless noted otherwise on the plans.
- No street shall be closed without the approval of the City Traffic Engineer. The Contractor shall notify the City Traffic Engineer at least 7 days in advance of any street closure. If a detour route around the closure is to be provided, all detour signing shall be as shown on a plan approved by the City Traffic Engineer.
- Construction vehicles parked along streets shall be located within the work area (traffic control) or where otherwise normally permitted. Construction materials, including traffic control and vehicles shall not restrict sight distance for vehicles exiting at streets or drives.
- Construction materials shall be kept off of sidewalks, consolidated in one location within City right-of-way, and removed daily unless otherwise approved by the Inspector. Dirt, mud, and other construction debris on streets and sidewalks shall be removed immediately.
- The Contractor shall not perform any work that will restrict vehicular traffic in any way between the hours of 7:00 a.m. and 9:00 a.m. or 4:00 p.m. and 6:00 p.m. Monday through Friday unless otherwise indicated in the specifications.
- All travel lanes should be at least 11 feet wide unless otherwise authorized by the City Traffic Engineer. A "Narrow Lanes" sign shall be installed in advance of a lane width reduction to less than 11 feet.
- All edge drop-offs of more than 2 inches and less than 4 inches should be protected by a wedge or barrier and all edge drop-offs greater than 4 inches shall have edge protection (see Traffic Control Specifications for edge treatment requirements).
- The "Workers" symbolic sign (MUTCD No. W21-1a) may be used instead of the "Road Work Ahead" sign for work with a duration of 12 hours or less. The "End Road Work" sign is not required to be installed after the "Workers" sign.
- No traffic signal shall be altered or modified in any way without a plan approved by the City Traffic Engineer.
- The Contractor shall be responsible for maintaining all traffic control devices on an around-the-clock basis, whether or not work is actively being pursued and any deficiencies noted shall be corrected immediately.
- The traffic control requirements shown on these plans are minimum requirements only and do not attempt to address in depth the variety of situations that may occur once construction has started. In no way do the requirements shown on these plans relieve the Contractor of his responsibility for selecting the proper traffic control devices and implementation procedures that will assure the safety of drivers, pedestrians, and workers at all times.
- Should the contractor fail to enforce the traffic control plan or fail to clean, replace or otherwise maintain the traffic control devices when directed to do so by the City Traffic Engineer or representative, the City may take one or more of the following actions:
 - Employ another agency to correct deficiencies in traffic control devices and deduct the cost from the Contractor's pay estimate.
 - Stop the work until deficiencies are corrected.
 - Suspend all pay estimates until deficiencies are corrected, or
 - Place the Contractor in default.



CHANNELIZERS

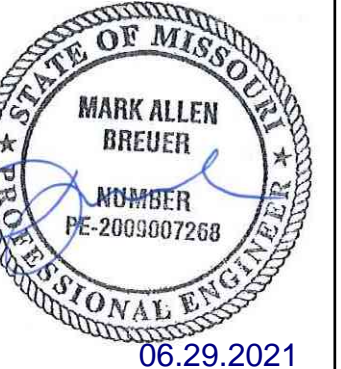
NOTE: White Bands On Barricades and Channelizers Shall Be Made From High Intensity Sheeting Material.



ARROW PANEL

BARRICADES

PREPARED BY:



06.29.2021

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
4-24-2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
6-15-2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
2-19-2020	CITY COMMENTS

TRAFFIC CONTROL DETAILS