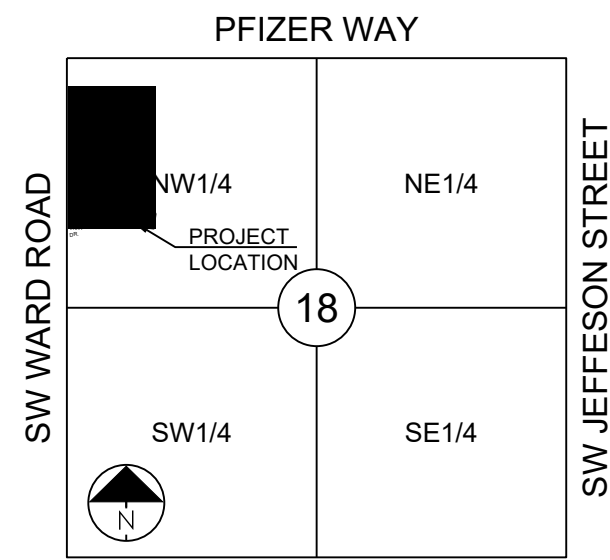


**LEGEND:**

- 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
  - ASPHALT SIDEWALK - EXISTING
  - CONCRETE SIDEWALK - EXISTING
  - CONCRETE SIDEWALK - PROPOSED
  - CURB & GUTTER
  - CURB & GUTTER - EXISTING
  - TREELINE
  - EXISTING LOT AND R/W LINES
  - EXISTING PLAT LINES
  - P/L - PROPERTY LINES
  - ROW - RIGHT-OF-WAY
  - SANITARY SEWER MAIN
  - SANITARY SEWER MAIN - EXIST.
  - STO - STORM SEWER
  - STORM SEWER - EXISTING
  - CATV - CABLE TV - EXISTING
  - FOC - FIBER OPTIC CABLE - EXISTING
  - T - TELEPHONE LINE - EXIST.
  - E - ELECTRIC LINE - EXISTING
  - OHP - OVERHEAD POWER LINE - EXIST.
  - UGE - UNDERGROUND ELECTRIC - EX.
  - G - GAS LINE - EXISTING
  - W - 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@kcpcl.com

**CITY OF LEES SUMMIT PUBLIC WORKS**

Dena Mezger  
220 SE Green Street  
Lee's Summit, MO 64063  
(816) 969-1800

**AT&T**

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

**COMCAST CABLE**

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

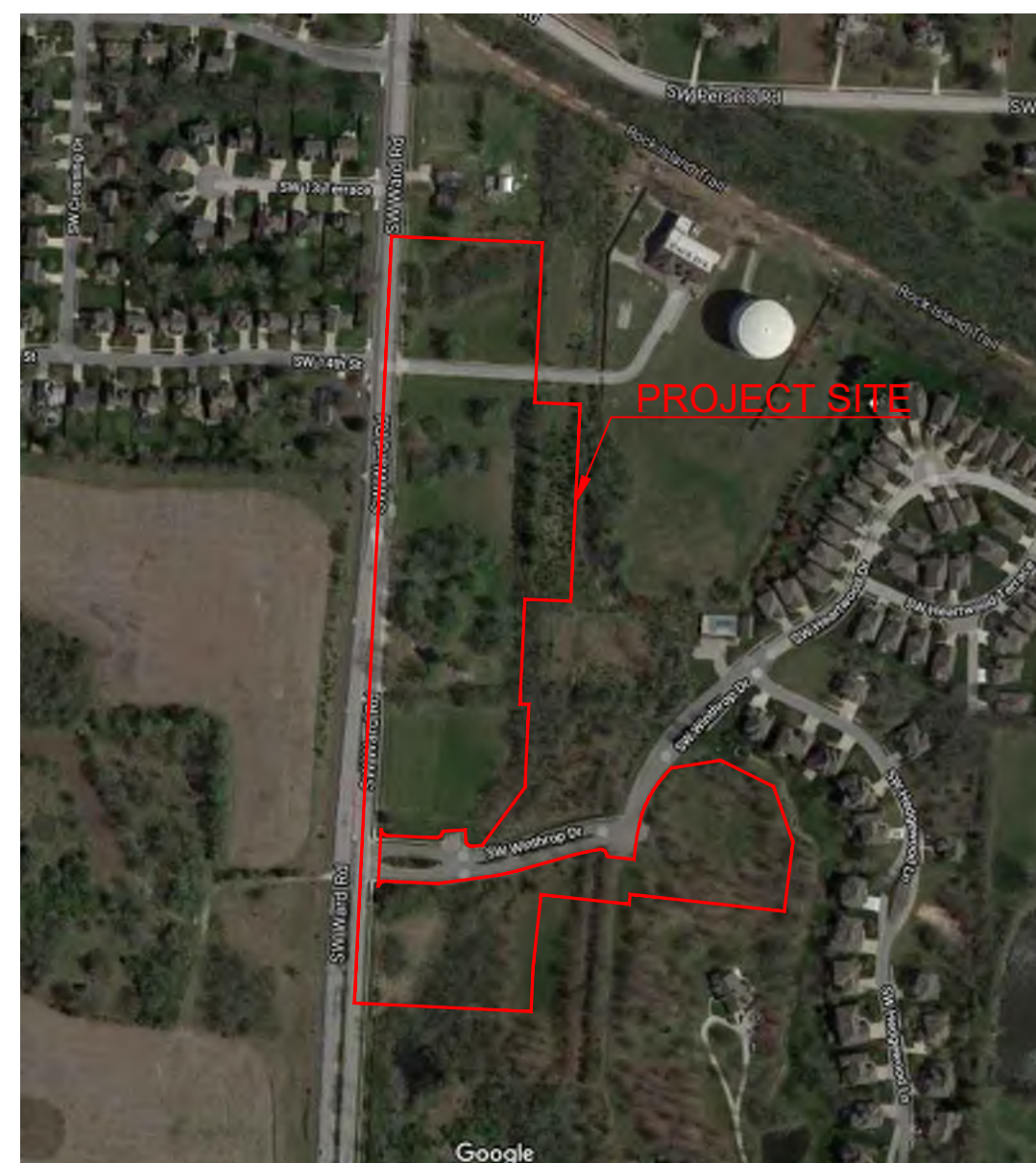
**PUBLIC WATER SUPPLY DISTRICT**

Mark Schaeffer  
220 SE Green Street  
Lee's Summit, MO 64063  
(816) 969-1900

**SUMMARY OF QUANTITIES**

ITEM	QUANTITY	UNITS
1	CLEANING, GRUBBING, AND DISPOSAL	1 L.S.
2	GRADING	1 L.S.
3	FLY ASH STABILIZATION (OR APPROVED EQUIVALENT)	4891 S.Y.
4	6" ASPHALT	4267 S.Y.
5	TYPE CG-2 CURB AND GUTTER	2810 L.F.
6	5' SIDEWALK	352 L.F.
7	SIDEWALK RAMPS	4 EA.
8	15" HDPE	970 L.F.
9	18" HDPE	415 L.F.
10	24" HDPE	70 L.F.
11	30" HDPE	97 L.F.
12	30" RCP	59 L.F.
13	36" HDPE	235 L.F.
14	36" RCP	25 L.F.
15	15' END SECTION	2 EA.
16	18' END SECTION	1 EA.
17	24' END SECTION	1 EA.
18	30' END SECTION	1 EA.
19	36' END SECTION	1 EA.
20	4x4" GRATE INLET	6 EA.
21	6x4" CURB INLET	11 EA.
22	4x4" JUNCTION BOX	4 EA.
23	OUTLET STRUCTURES	3 EA.
24	RETAINING WALL (FRONT FACE WALL)	6865 S.F.
25	UNDERDRAIN	35 L.F.
26	SILT FENCE	5870 L.F.
27	CONSTRUCTION ENTRANCE	1 EA.
28	CONCRETE WASHOUT	1 EA.
29	EX. & PROP. CURB & INLET PROTECTION	33 EA.
30	SILT FOAM DIKE	7 EA.
31	EROSION CONTROL BLANKET	1800 S.F.
32	SEEDING & MULCHING	9 AC.
33	SEDIMENT BASIN	3 EA.
34	BONDS	1 L.S.

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



VICINITY MAP  
N.T.S.

**GENERAL NOTES:**

- ALL CONSTRUCTION TO FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
- ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE ENGINEERING DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI.
- LINEAL FOOT MEASUREMENTS SHOWN ON THE PLANS ARE HORIZONTAL MEASUREMENTS, NOT SLOPE MEASUREMENTS. ALL PAYMENTS SHALL BE MADE ON HORIZONTAL MEASUREMENTS.
- NO GEOLOGICAL INVESTIGATION HAS BEEN PERFORMED ON THE SITE.
- THE UTILITY LOCATIONS SHOWN ON THESE PLANS ARE TAKEN FROM UTILITY COMPANY RECORDS AND APPARENT FIELD LOCATIONS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL ADHERE TO THE PROVISIONS OF THE SENATE BILL NUMBER 583, 78TH GENERAL ASSEMBLY OF THE STATE OF MISSOURI. THE BILL REQUIRES THAT ANY PERSON OR FIRM DOING EXCAVATION ON PUBLIC RIGHT OF WAY DO SO ONLY AFTER GIVING NOTICE TO, AND OBTAINING INFORMATION FROM, UTILITY COMPANIES. STATE LAW REQUIRES 48 HOURS ADVANCE NOTICE. THE CONTRACTOR MAY ALSO UTILIZE THE FOLLOWING TOLL FREE PHONE NUMBER PROVIDED BY "MISSOURI ONE CALL SYSTEM, INC." - 1-800-DIG-RITE. THIS PHONE NUMBER IS APPLICABLE ANYWHERE WITHIN THE STATE OF MISSOURI. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL NOTIFY ALL THOSE COMPANIES WHICH HAVE FACILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION TO BE PERFORMED.
- PRIOR TO ORDERING PRECAST STRUCTURES, SHOP DRAWING SHALL BE SUBMITTED TO THE DESIGN ENGINEER FOR APPROVAL. AFTER APPROVAL OF THE SHOP DRAWINGS, A COPY OF THE APPROVED AND SIGNED SHOP DRAWINGS SHALL BE PROVIDED TO THE CITY INSPECTOR UPON REQUEST.
- THE CONTRACTOR SHALL PROTECT ALL MAJOR TREES FROM DAMAGE. NO TREE SHALL BE REMOVED WITHOUT PERMISSION OF THE OWNER, UNLESS SHOWN OTHERWISE.
- CLEARING AND GRUBBING OPERATIONS AND DISPOSAL OF ALL DEBRIS THEREFROM SHALL BE PERFORMED BY THE CONTRACTOR IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES.
- ALL WASTE MATERIAL RESULTING FROM THE PROJECT SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR, OR AS DIRECTED BY THE OWNER.
- ALL EXCAVATIONS SHALL BE UNCLASSIFIED. NO SEPARATE PAYMENT WILL BE MADE FOR ROCK EXCAVATION.
- THE CONTRACTOR SHALL CONTROL THE EROSION AND SILTATION DURING ALL PHASES OF CONSTRUCTION, AND SHALL KEEP THE STREETS CLEAN OF MUD AND DEBRIS.
- ALL MANHOLES, CATCH BASINS, UTILITY VALVES AND METER PITS TO BE ADJUSTED OR REBUILT TO GRADE AS REQUIRED.
- THE CONTRACTOR SHALL CONTACT DEVELOPMENT SERVICES INSPECTOR AT: 816-969-1200 PRIOR TO OBTAIN A DEVELOPMENT SERVICES CONSTRUCTION PERMIT. A MINIMUM 48 HOUR NOTICE SHALL BE GIVEN PRIOR TO PERMIT ISSUANCE.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL TRAFFIC HANDLING MEASURES NECESSARY TO ENSURE THAT THE GENERAL PUBLIC IS PROTECTED AT ALL TIMES. TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD-LATEST EDITION).

**STREET NOTES:**

- ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL. ALL APPLICABLE AASHTO STANDARDS HAVE BEEN MET.
- ALL INSPECTION OF STREET CONSTRUCTION TO BE PERFORMED BY THE CITY OF LEE'S SUMMIT DEVELOPMENT SERVICES DEPARTMENT.
- CURB RETURN RADII SHALL BE 25' AT BACK OF CURB UNLESS OTHERWISE NOTED.
- SUBGRADE TO BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- ASSUMED DESIGN SPEED = 25 MPH (LOCAL).
- MINIMUM STOPPING SIGHT DISTANCE = 155 FEET.
- MINIMUM K, SAG CURVE = 26 (14 WITH LIGHTING), CREST CURVE = 12.
- GRADE INTERSECTIONS TO DRAIN AS SHOWN.
- SSD = STOPPING SIGHT DISTANCE.

**EARTHWORK:**

- IT IS RECOMMENDED THAT A GEOTECHNICAL ENGINEER OBSERVE AND DOCUMENT ALL EARTHWORK ACTIVITIES.
- CONTOURS HAVE BEEN SHOWN AT 1-FOOT OR 2-FOOT INTERVALS, AS INDICATED. GRADING SHALL CONSIST OF COMPLETING THE EARTHWORK REQUIRED TO BRING THE PHYSICAL GROUND ELEVATIONS OF THE EXISTING SITE TO THE FINISHED GRADE (OR SUB-GRADE) ELEVATIONS PROVIDED ON THE PLANS AS SPOT GRADES. CONTOURS OR OTHERS MEANS AS INDICATED ON THE PLANS.
- THE EXISTING SITE TOPOGRAPHY DEPICTED ON THE PLANS BY CONTOURING HAS BEEN ESTABLISHED BY AERIAL PHOTOGRAPHY AND FIELD VERIFIED BY G.P.S. OBSERVATION NEAR JULY 18TH, 2016. THE CONTOUR ELEVATIONS PROVIDED MAY NOT BE EXACT GROUND ELEVATIONS, BUT RATHER INTERPRETATIONS OF SUCH. ACCURACY SHALL BE CONSIDERED TO BE SUCH THAT NOT MORE THAN 10 PERCENT OF SPOT ELEVATION CHECKS SHALL BE IN ERROR BY MORE THAN ONE-HALF THE CONTOUR INTERVAL PROVIDED, AS DEFINED BY THE NATIONAL MAP ACCURACY STANDARDS. ANY QUANTITIES PROVIDED FOR EARTHWORK VOLUMES ARE ESTABLISHED USING THIS TOPOGRAPHY CONTOUR ACCURACY, AND THEREFORE THE INHERENT ACCURACY OF ANY EARTHWORK QUANTITY IS ASSUMED FROM THE TOPOGRAPHY ACCURACY. PROPOSED CONTOURS ARE TO APPROXIMATE FINISHED GRADE.
- UNLESS OTHERWISE NOTED, PAYMENT FOR EARTHWORK SHALL INCLUDE BACKFILLING OF THE CURB AND GUTTER, SIDEWALK AND FURTHER MANIPULATION OF UTILITY TRENCH SPOLS. THE SITE SHALL BE LEFT IN A MOWABLE CONDITION AND POSITIVE DRAINAGE MAINTAINED THROUGHOUT.
- UNLESS OTHERWISE NOTED, ALL EARTHWORK IS CONSIDERED UNCLASSIFIED. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR ROCK OR SHALE EXCAVATION, UNLESS SPECIFICALLY STATED OTHERWISE.
- PRIOR TO EARTHWORK ACTIVITIES, PRE-DISTURBANCE EROSION AND SEDIMENT CONTROL DEVICES SHALL BE IN PLACE PER THE STORM WATER POLLUTION PREVENTION PLAN AND/OR THE EROSION AND SEDIMENT CONTROL PLAN PREPARED FOR THIS SITE.
- ALL TOPSOIL SHALL BE STRIPPED FROM ALL AREAS TO BE GRADED AND STOCKPILED ADJACENT TO THE SITE AT AN AREA SPECIFIED BY THE PROJECT OWNER OR HIS APPOINTED REPRESENTATIVE. VEGETATION, TRASH, TREES, BRUSH, TREE ROOTS AND LIMBS, ROCK FRAGMENTS GREATER THAN 6-INCHES AND OTHER DELETERIOUS MATERIALS SHALL BE REMOVED AND PROPERLY DISPOSED OF OFFSITE OR AS DIRECTED BY THE OWNER OR HIS APPOINTED REPRESENTATIVE.
- UNLESS OTHERWISE SPECIFIED IN THE GEOTECHNICAL REPORT, ALL FILLS SHALL BE PLACED IN MAXIMUM 6-INCH LIFTS AND COMPACTED TO 95-PERCENT OF MAXIMUM DENSITY AS DEFINED USING A STANDARD PROCTOR TEST (AASHTO T99/ASTM 698).
- FILL MATERIALS SHALL BE PER GEOTECHNICAL REPORT AND SHALL NOT INCLUDE ORGANIC MATTER, DEBRIS OR TOPSOIL. ALL FILLS PLACED ON SLOPES GREATER THAN 6:1 SHALL BE BENCHED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REDISTRIBUTING THE TOPSOIL OVER PROPOSED TURF AND LANDSCAPED AREAS TO A MINIMUM DEPTH OF 6-INCHES BELOW FINAL GRADE.
- ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE. UNLESS NOTED OTHERWISE THE FOLLOWING GRADES SHALL APPLY:
  - TURF AREAS - 2.5% MINIMUM, 4H:1V MAXIMUM
  - PAVED AREAS - 1.2% MINIMUM, 5% MAXIMUM
- ALL DISTURBED AREAS SHALL BE FERTILIZED, SEEDING 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 SPOLS SHALL BE NEATLY PLACED ONSITE ADJACENT TO THE TRENCH, AND COMPACTED TO PREVENT SATURATION AND EXCESS SEDIMENT RUNOFF. UNSUITABLE MATERIALS, EXCESS ROCK AND SHALE, ASPHALT, CONCRETE, TREES, BRUSH ETC. SHALL BE PROPERLY DISPOSED OF OFFSITE. MATERIALS MAY BE WASTED ONSITE AT THE DIRECTION OF THE OWNER OR HIS APPOINTED REPRESENTATIVE.

Sheet 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

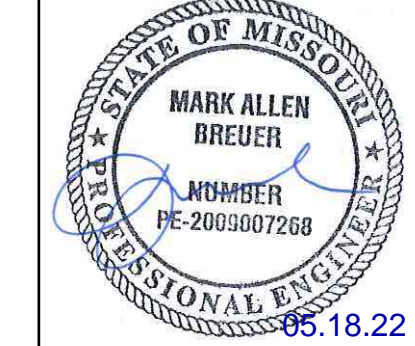


RELEASED FOR CONSTRUCTION  
As Noted on Plans Review  
Development Services Department  
Lee's Summit, Missouri  
05/24/2022

**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



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

REVISION DATE	DESCRIPTION
04/24/2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
05/15/2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
09/28/2021	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT
05/16/2022	CITY EMAIL COMMENTS

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

COVER

SHEET

1

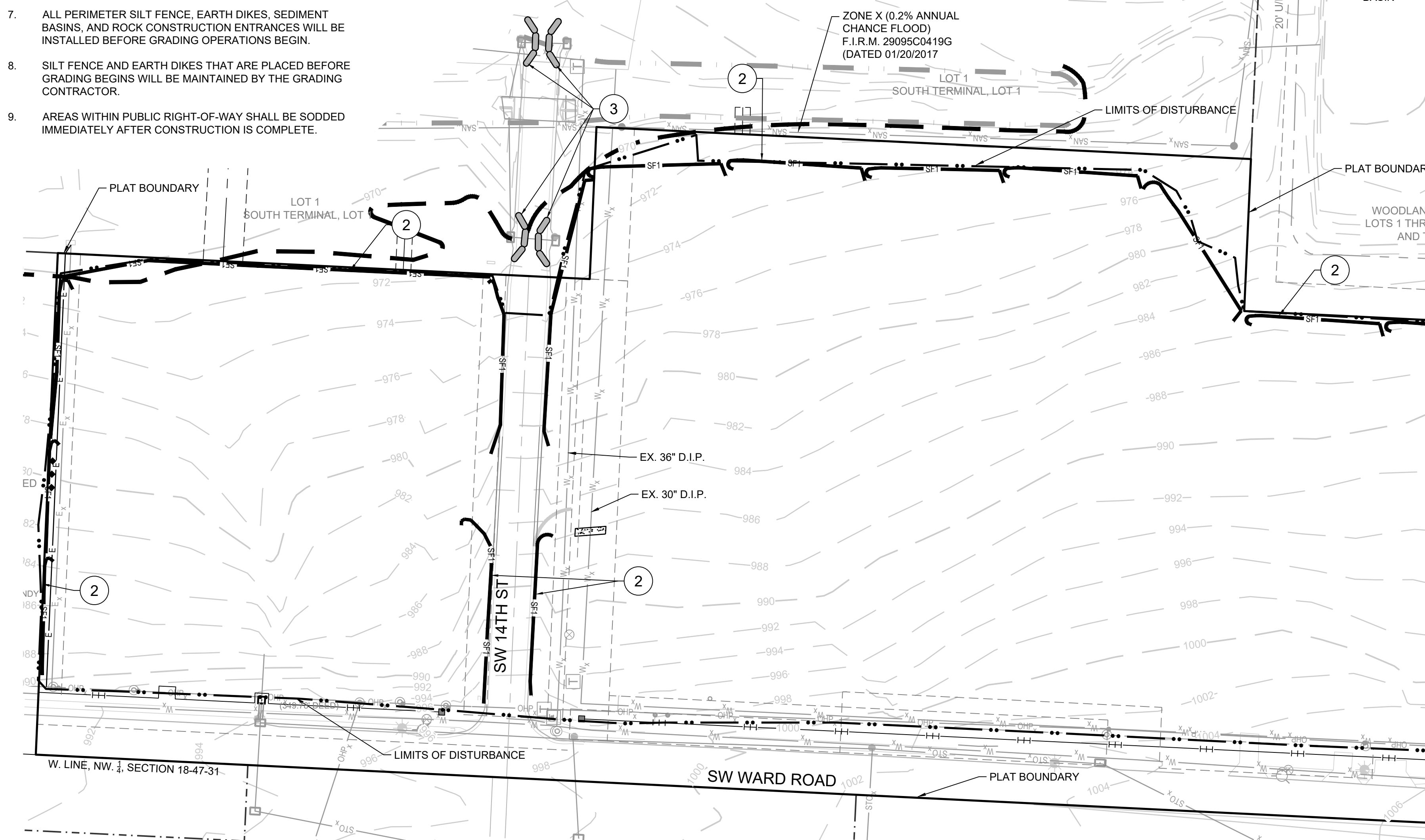
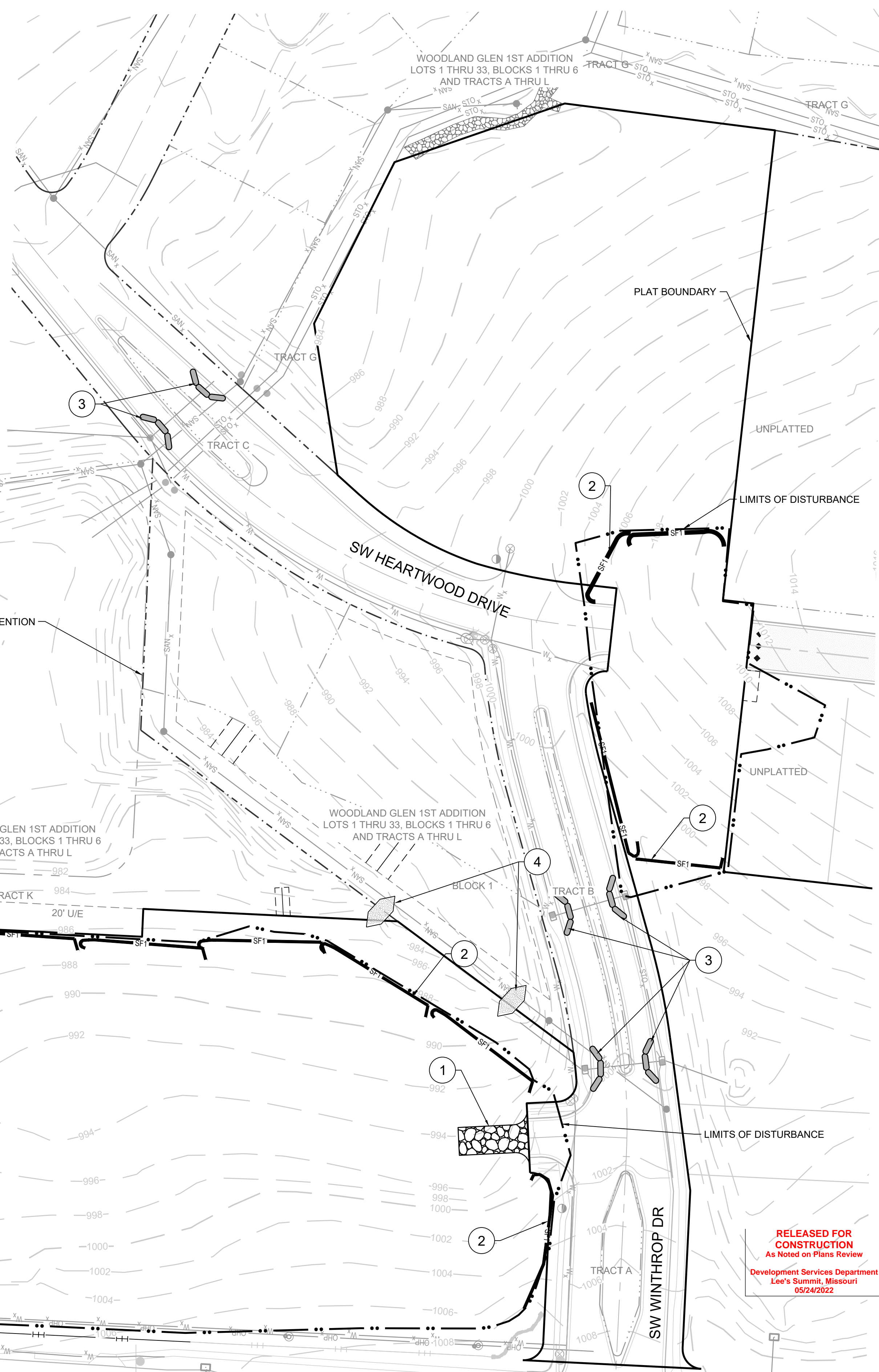
LEGEND	
	TEMPORARY STORAGE AREA FOR EXCESS MATERIAL
	TEMP. CONSTRUCTION ENTRANCE AND STAGING AREA
	CONCRETE WASHOUT AREA
	SILT FOAM DIKE OR STRAW WATTLE - STAKED & INSTALL PER MFR'S RECOMMENDATIONS
	ROCK DITCH CHECK
	STRAW WATTLE OR COIL LOG STAKED & INSTALL PER MFR'S RECOMMENDATIONS
	SILT FENCE (PRIOR 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
	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 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.



**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  
 #E200203690-F #LAC201005237 #LS20020869-F

STATE OF MISSOURI  
 MARK ALLEN BREUER  
 NUMBER  
 PE-2003607268  
 05.18.22

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

REVISION DATE	DESCRIPTION
04/24/2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
06/15/2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
09/28/2021	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT
05/16/2022	CITY EMAILED COMMENTS

PRE-CLEARING PLAN

SHEET  
**2**

RELEASED FOR CONSTRUCTION  
 As Noted on Plans Review  
 Development Services Department  
 Lee's Summit, Missouri  
 05/24/2022

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.

EROSION AND SEDIMENT CONTROL STAGING CHART				
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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.

**DISTURBED AREA = 9.74 A.C.**

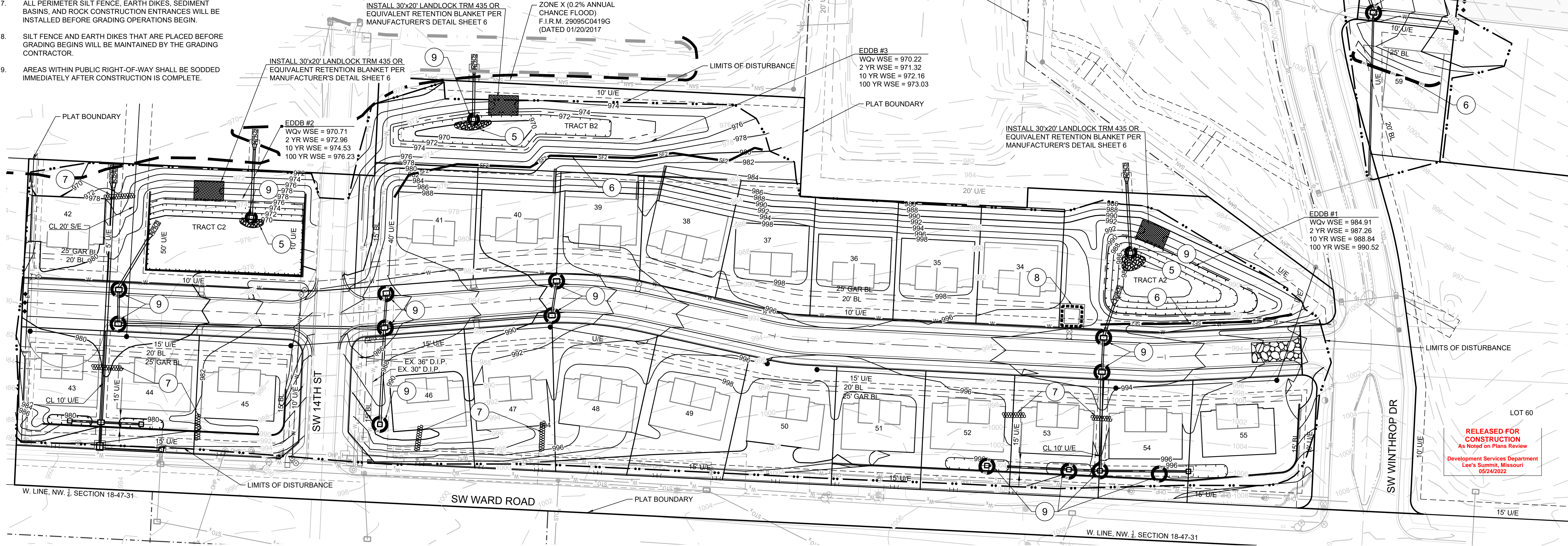
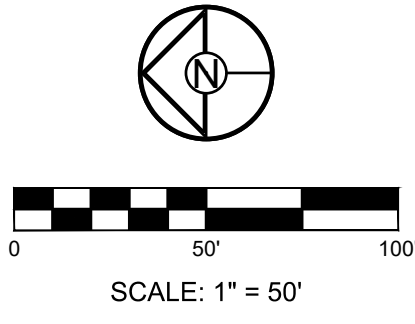
**SITE SPECIFIC NOTES:**

- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
- THERE ARE NO WETLANDS, NATURAL OR ARTIFICIAL WATER STORAGE DETENTION AREAS IN THE PROJECT AREA.
- NO PART OF THE PROJECT LIES WITHIN THE 100 YEAR FLOOD PLAIN PER FEMA FLOOD INSURANCE RATE MAP NUMBER 29095C0419G DATED JANUARY 20, 2017.
- ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IMPLEMENTED ACCORDING TO THE BMP STAGING CHART.
- ADDITIONAL EROSION CONTROL MAY BE REQUIRED BY THE CITY ENGINEER AT ANY TIME EXISTING MEASURES ARE FOUND TO BE INEFFECTIVE OR PROBLEMATIC AREAS ARE NOTED IN THE FIELD.
- STABILIZATION OF DISTURBED AREAS MUST, AT A MINIMUM, BE INITIATED IMMEDIATELY WHENEVER ANY CLEARING, GRADING, EXCAVATING, OR OTHER SOIL DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE, OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. THE DISTURBED AREAS SHALL BE PROTECTED FROM EROSION BY STABILIZING THE AREA WITH MULCH OR OTHER SIMILARLY EFFECTIVE SOIL STABILIZING BMPs. INITIAL STABILIZATION ACTIVITIES MUST BE COMPLETED WITHIN 14 DAYS AFTER SOIL DISTURBING ACTIVITIES CEASE.
- ALL PERIMETER SILT FENCE, EARTH DIKES, SEDIMENT BASINS, AND ROCK CONSTRUCTION ENTRANCES WILL BE INSTALLED BEFORE GRADING OPERATIONS BEGIN.
- SILT FENCE AND EARTH DIKES THAT ARE PLACED BEFORE GRADING BEGINS WILL BE MAINTAINED BY THE GRADING CONTRACTOR.
- AREAS WITHIN PUBLIC RIGHT-OF-WAY SHALL BE SODDED IMMEDIATELY AFTER CONSTRUCTION IS COMPLETE.

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.



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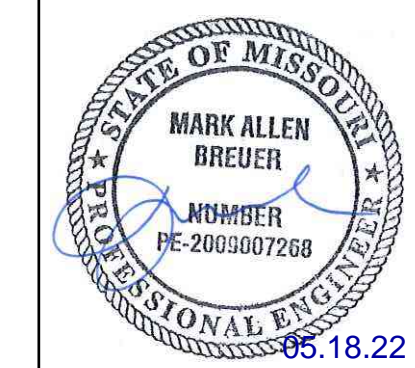
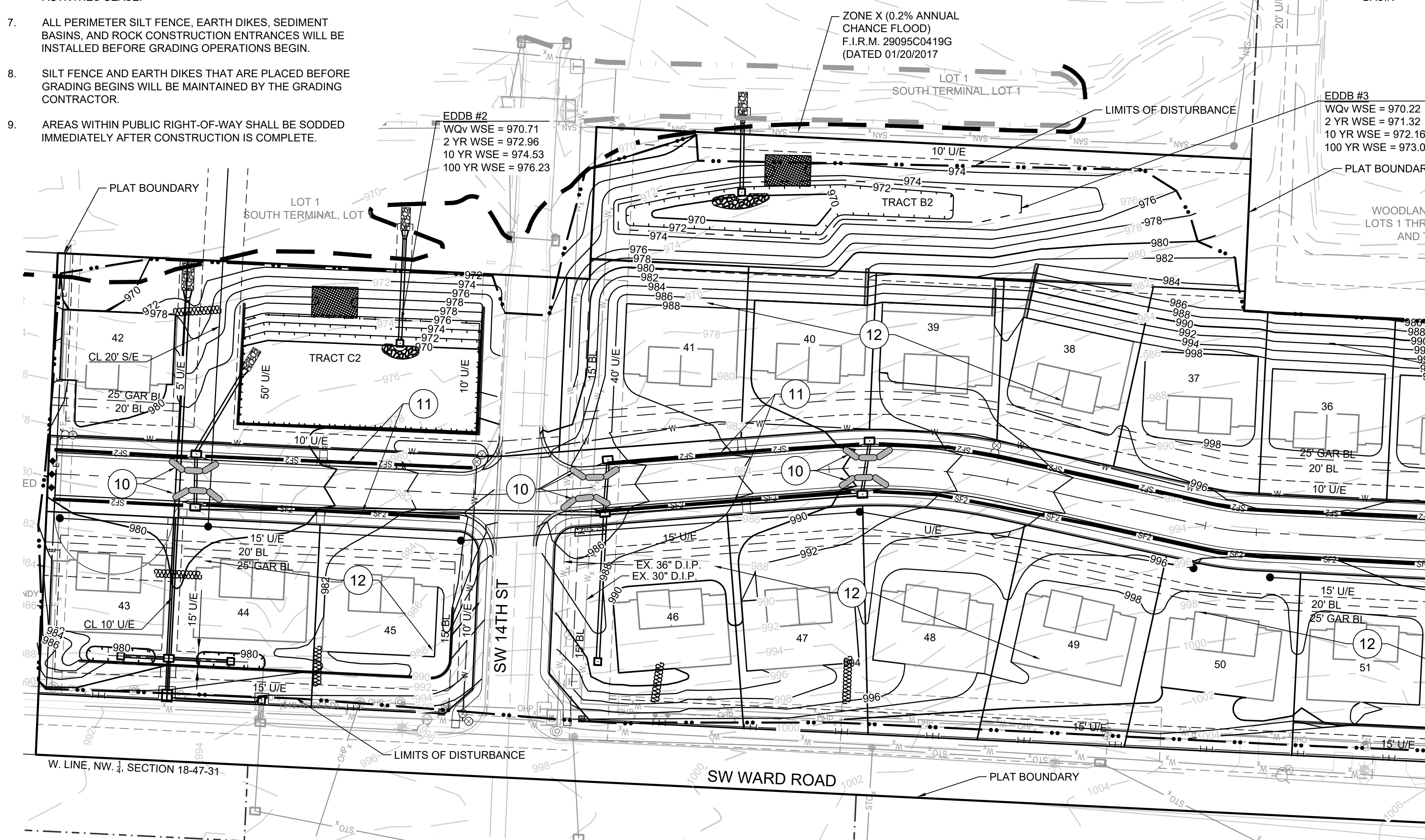
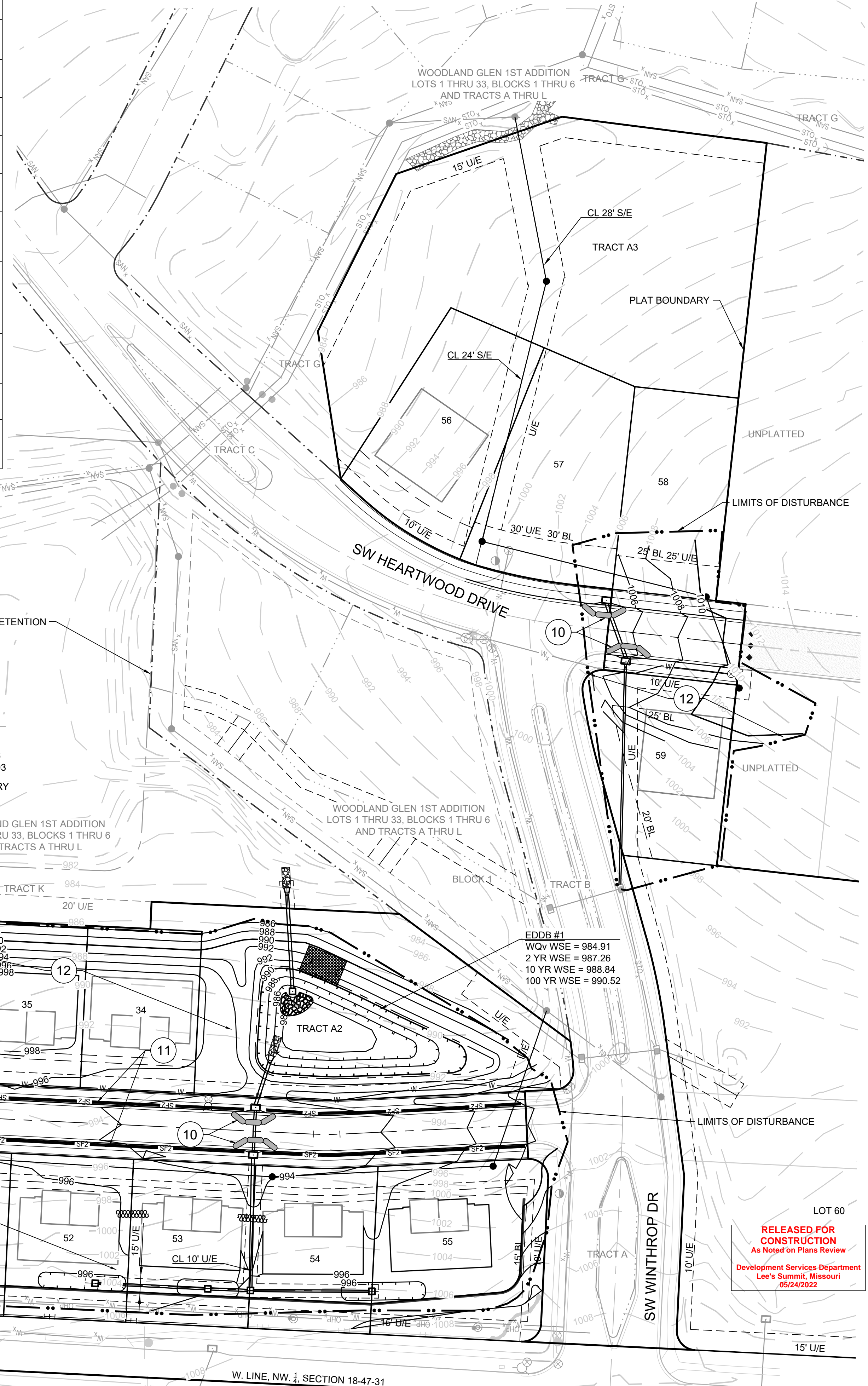
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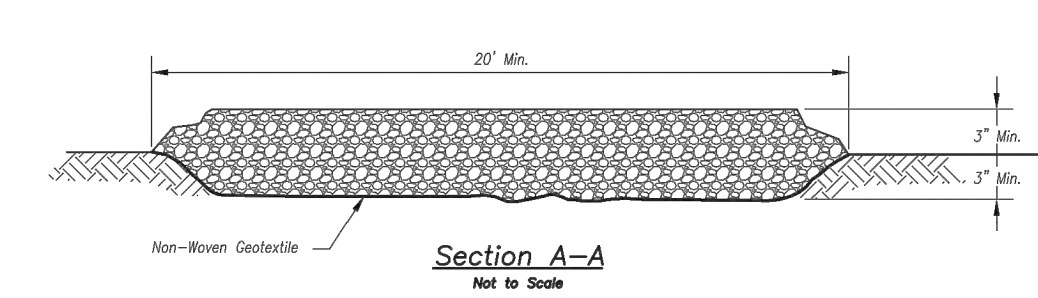
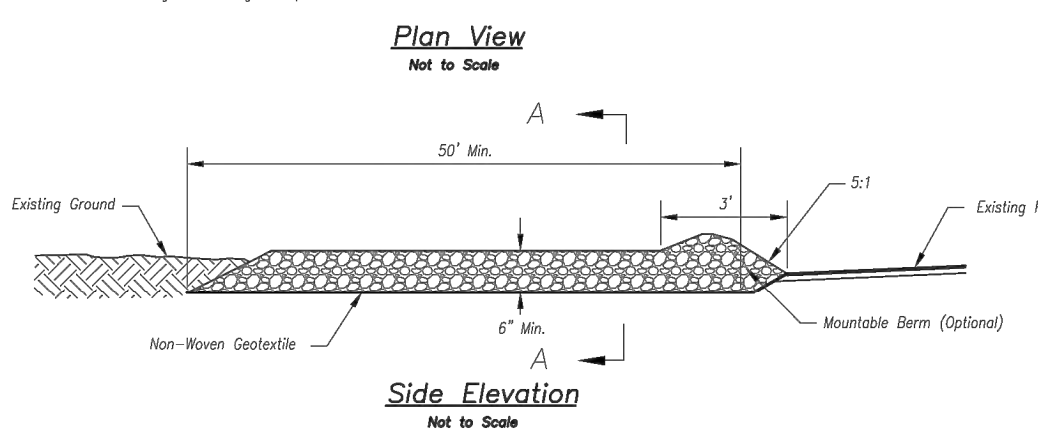
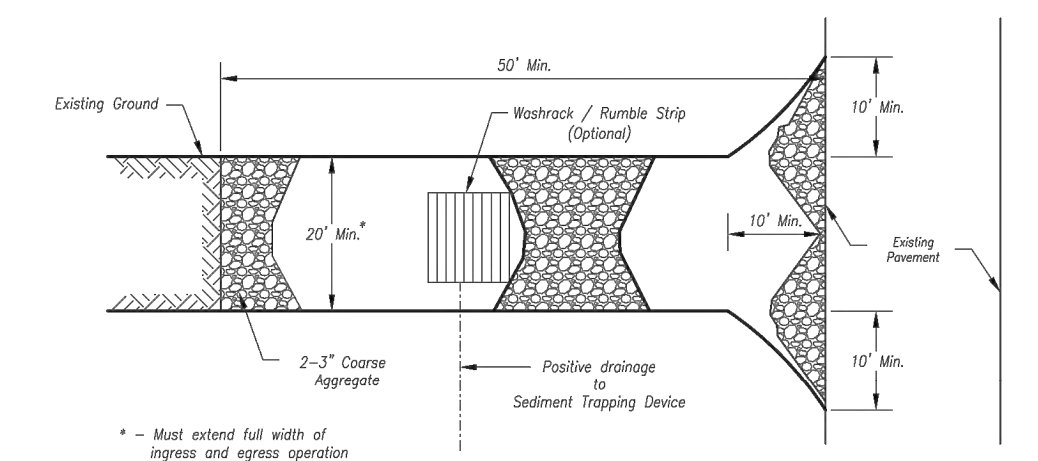
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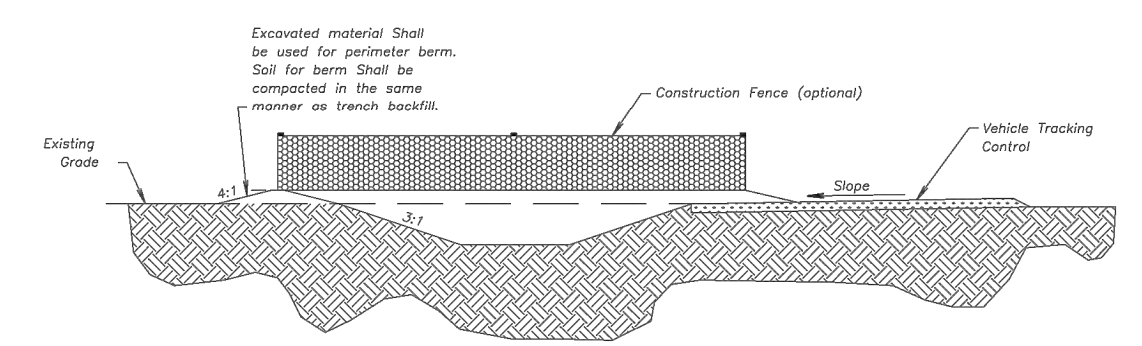
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- Notes for Concrete Washout:**
- Concrete washout areas shall be installed prior to any concrete placement on site.
  - Concrete washout areas shall include a flat substrate pit sized to the amount of concrete to be placed on site. The slopes leading 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.
  - Signs shall be placed at the construction site entrance, washout area and elsewhere as necessary to clearly indicate the location(s) of the concrete washout area(s) to operators of concrete truck and pump rigs.
  - A non-slip impervious liner may be required 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 enlarged as necessary to maintain capacity for washed 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 sealed-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.



**CONCRETE WASHOUT**

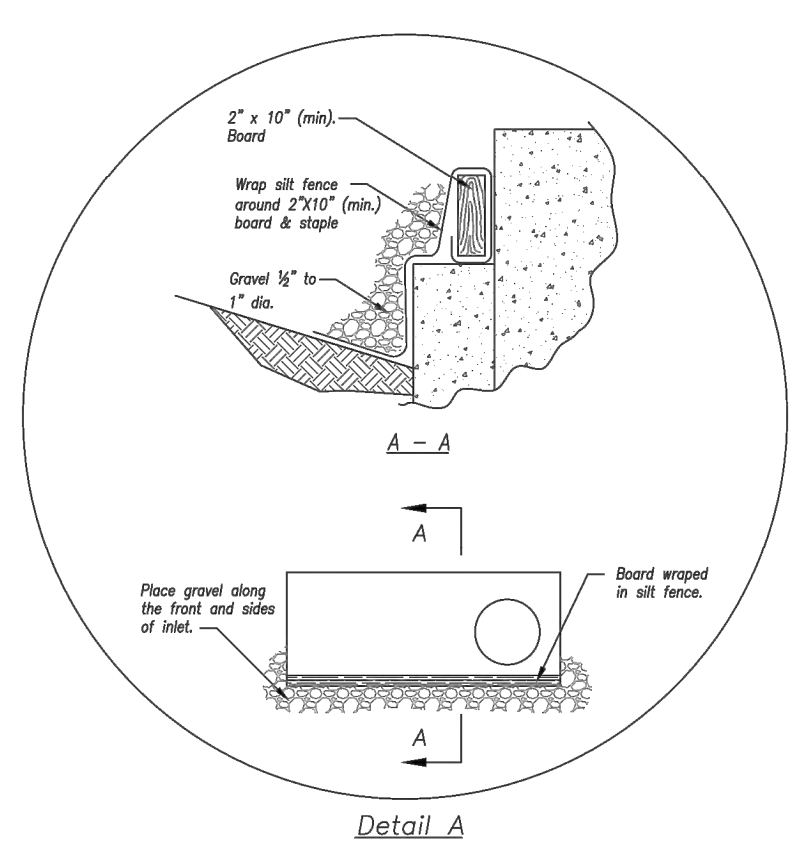
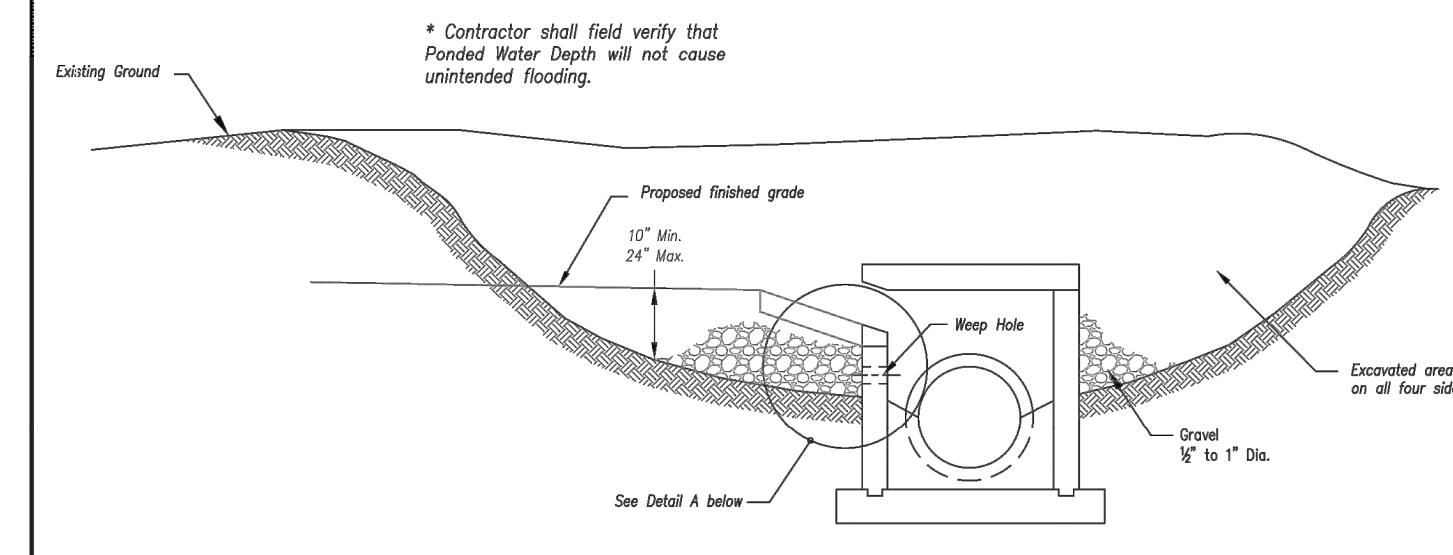
AMERICAN PUBLIC WORKS ASSOCIATION  
 KANSAS CITY METRO CHAPTER  
 CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT  
 STANDARD DRAWING NUMBER ESC-01 ADOPTED: 10/24/2016

- Notes for Construction Entrance:**
- Avoid locating an steep slopes, at curves on public roads, or down-drift of disturbed area.
  - 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 12 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.

**CONSTRUCTION ENTRANCE**

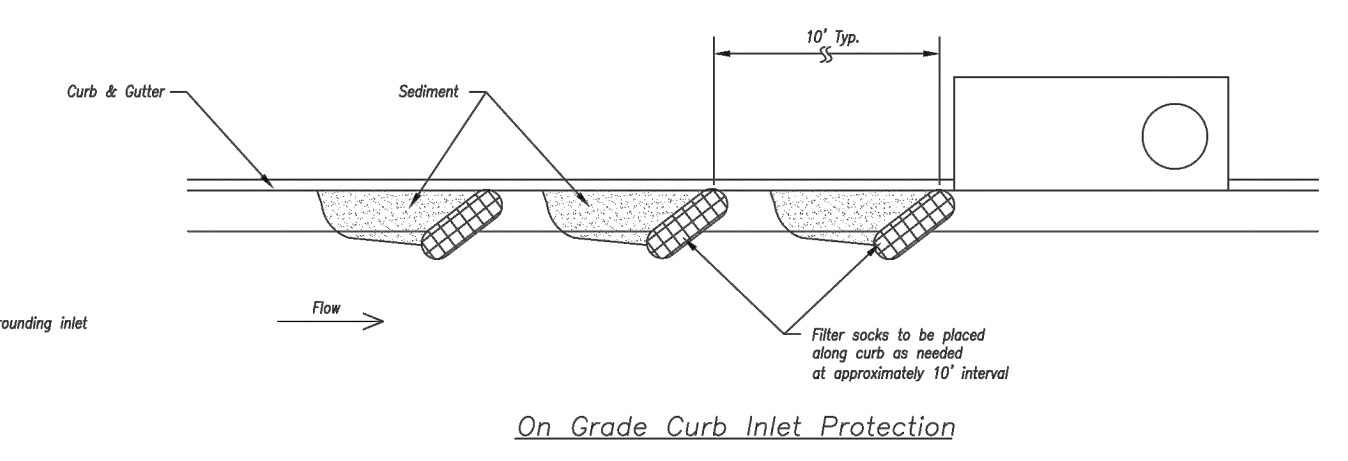
Construction Entrance modified from 2015 Overland Park Standard Details for Erosion and Sediment Control, Concrete Washout modified from 2009 City of Great Bend Standard Drawings.



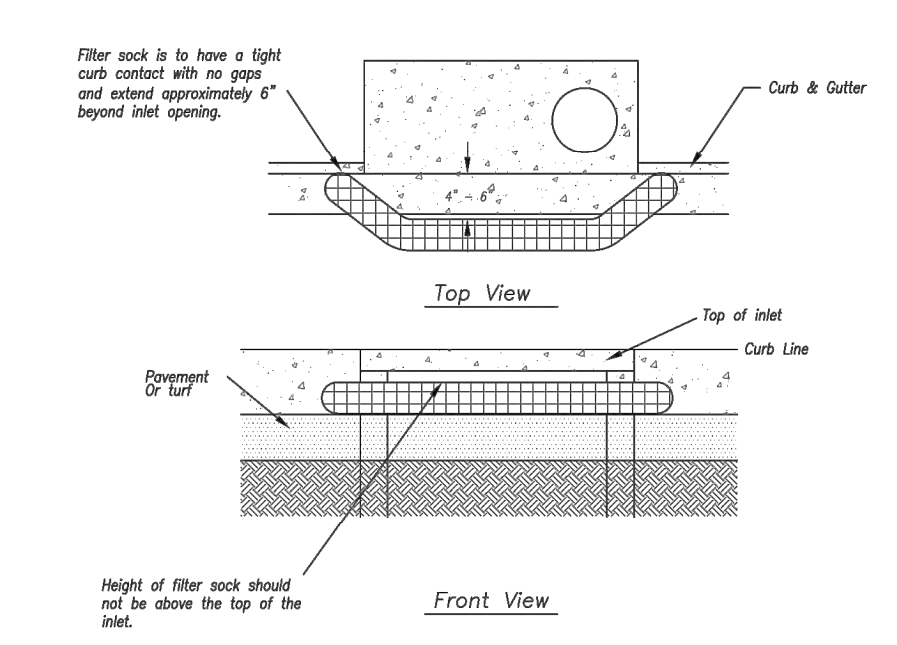
**EARLY STAGE CURB INLET**  
(Open Box and Prior to Pouring Curb and Inlet Throat)

- Notes:**
- Immediately following inlet construction and prior to construction of curb and inlet throat, protect inlet opening by installing 2" x 10" (min.) board wrapped in silt fence. Structures shall have excavated storage area on all four sides to allow settling of sediment (Early Stage Curb Inlet).
  - When inlet is completed and curb poured, filter socks or approved equal should be used (Late Stage Curb Inlet). 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.



**On Grade Curb Inlet Protection**

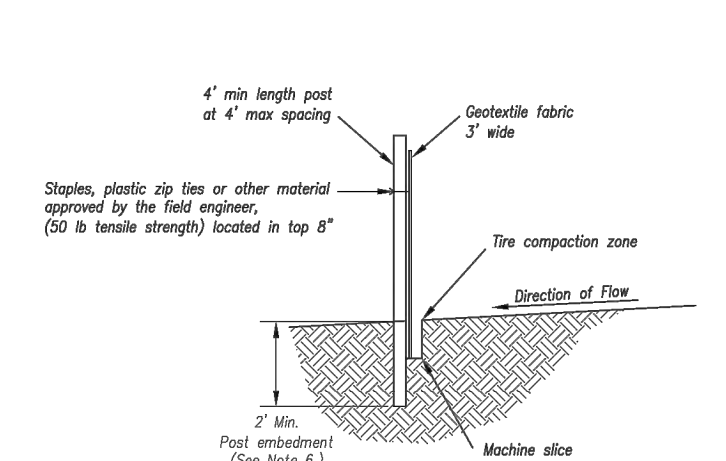
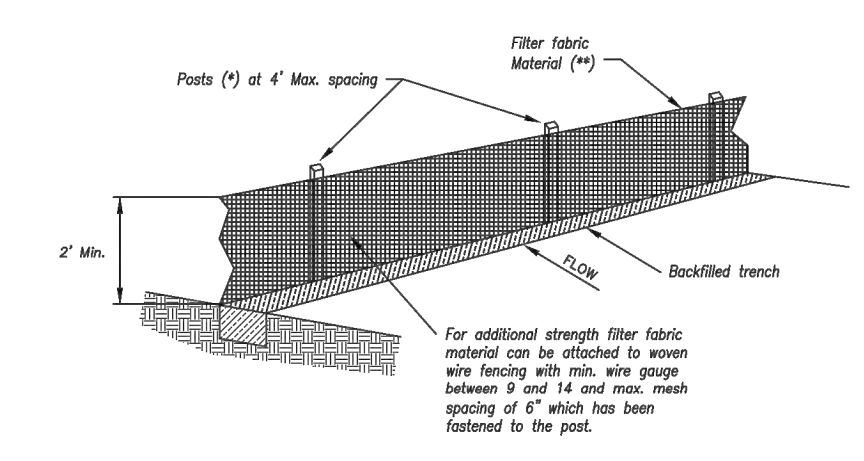


**Sump Inlet Sediment Filter**

**LATE STAGE CURB INLET**  
(After Pouring Curb and Inlet Throat)

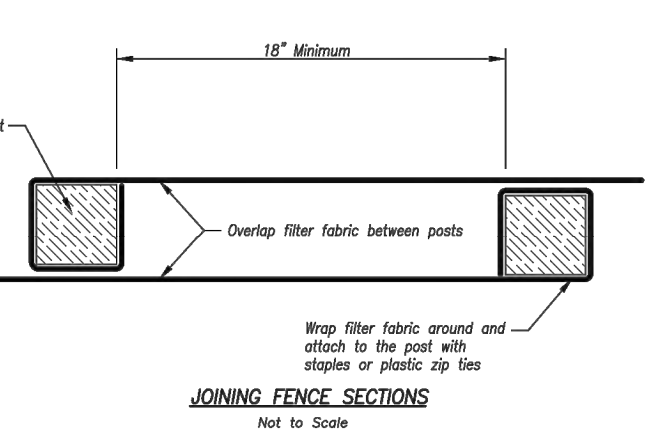
AMERICAN PUBLIC WORKS ASSOCIATION  
 KANSAS CITY METRO CHAPTER  
 CURB INLET PROTECTION  
 STANDARD DRAWING NUMBER ESC-06 ADOPTED: 10/24/2016

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



- Notes:**
- In order to contain water, the ends of the silt fence must be turned uphill (Figure A).
  - Long perimeter runs of silt fence must be limited to 100'. Runs should be broken up into several smaller segments to minimize water concentrations (Figure A).
  - Long slopes should be broken up with intermediate rows of silt fence to slow runoff velocities.
  - Attach fabric to 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.

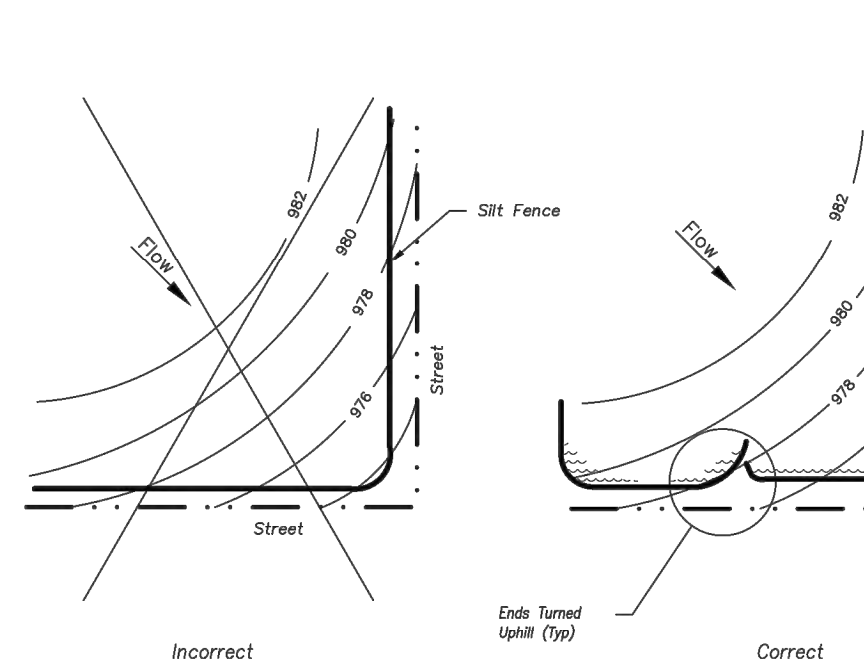


**JOINING FENCE SECTIONS**  
Not to Scale

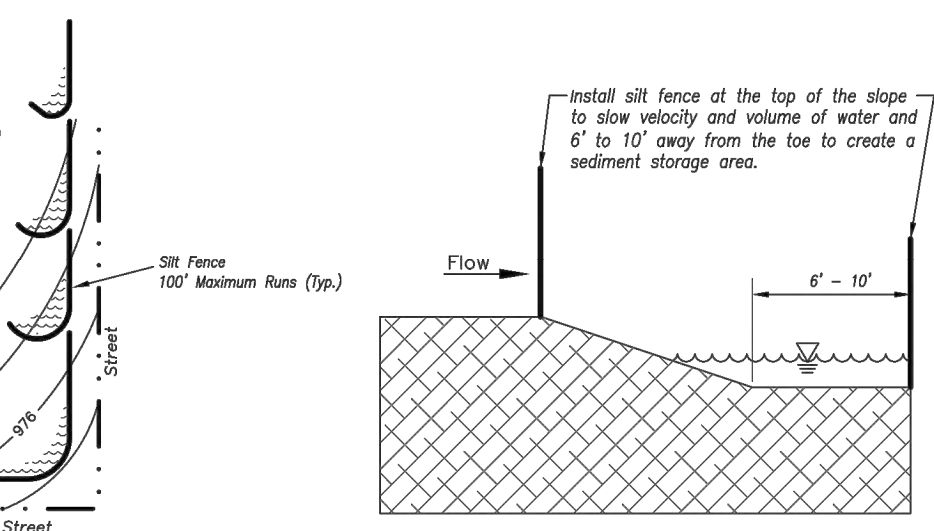
- (\*) POSTS**
- MIN. LENGTH 4'
  - WIDENESS 1 1/2" x 1 1/2"
  - NO.2 SOUTHERN PINE 2 1/4" x 2 1/4"
  - STEEL 1.33 LB/FT

- (\*\*) - Geotextile Fabric shall meet the requirements of ASTM D 4753**

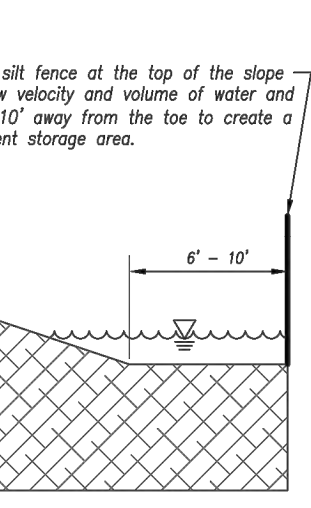
**SILT FENCE DETAILS**  
Not to Scale



**Figure A**



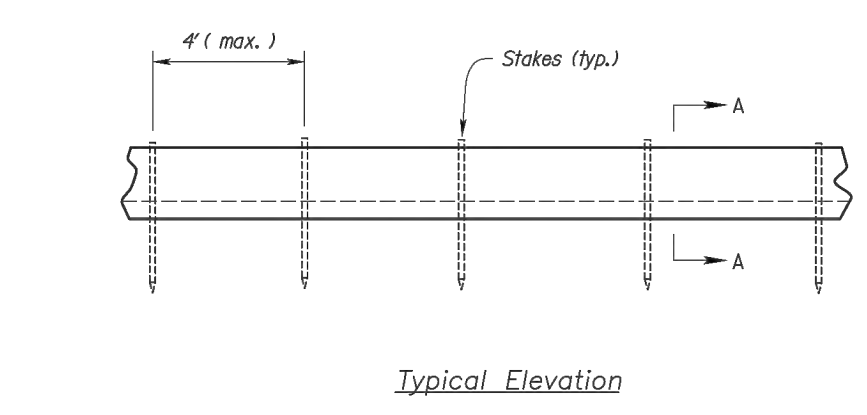
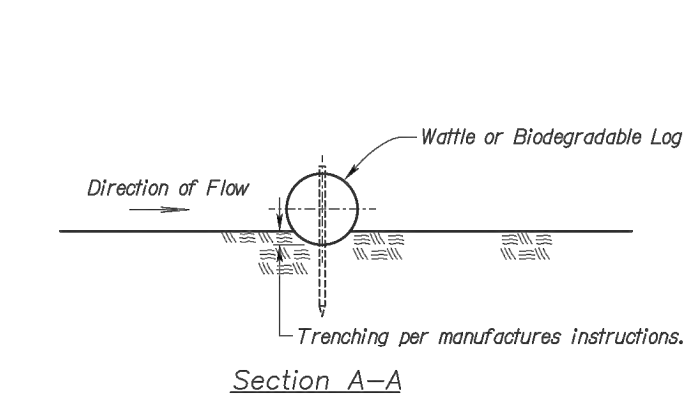
**SILT FENCE LAYOUT**  
Not to Scale



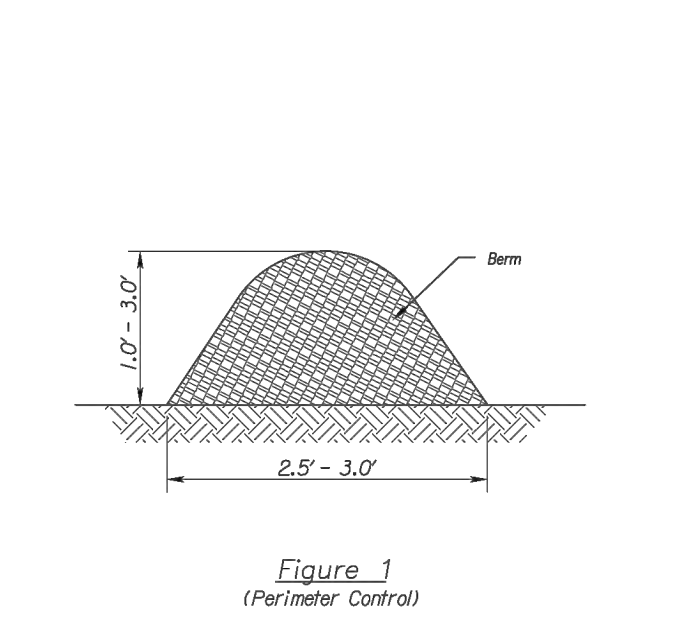
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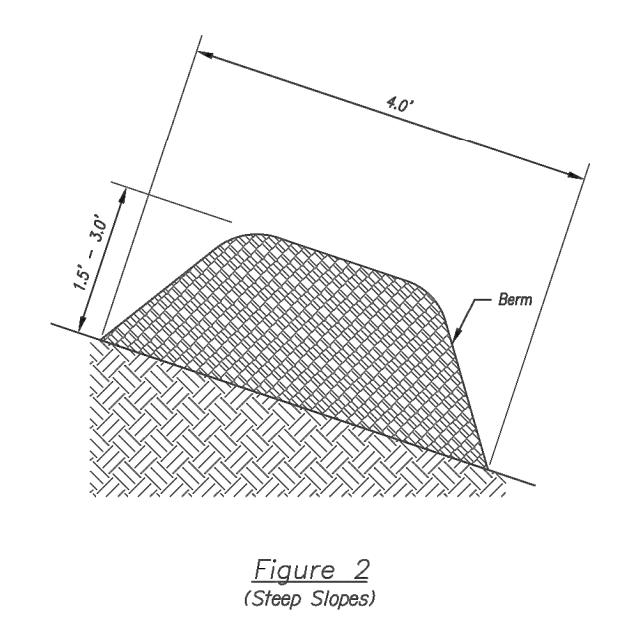
AMERICAN PUBLIC WORKS ASSOCIATION  
 KANSAS CITY METRO CHAPTER  
 SILT FENCE  
 STANDARD DRAWING NUMBER ESC-03 ADOPTED: 10/24/2016



**WATTLES AND BIODEGRADABLE LOG**



**Figure 1**  
(Perimeter Control)



**Figure 2**  
(Steep Slopes)

**MULCH OR COMPOST FILTER BERMS**

- 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".

- Notes for Mulch and Compost Filter Berm:**
- 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 tree 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 Berm:**
- Berm shall be reshaped and material added as necessary to maintain function and dimensions.
  - Breaches in the berm shall be repaired promptly.

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

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

RELEASED FOR CONSTRUCTION  
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 Development Services Department  
 Lee's Summit, Missouri  
 05/24/2022

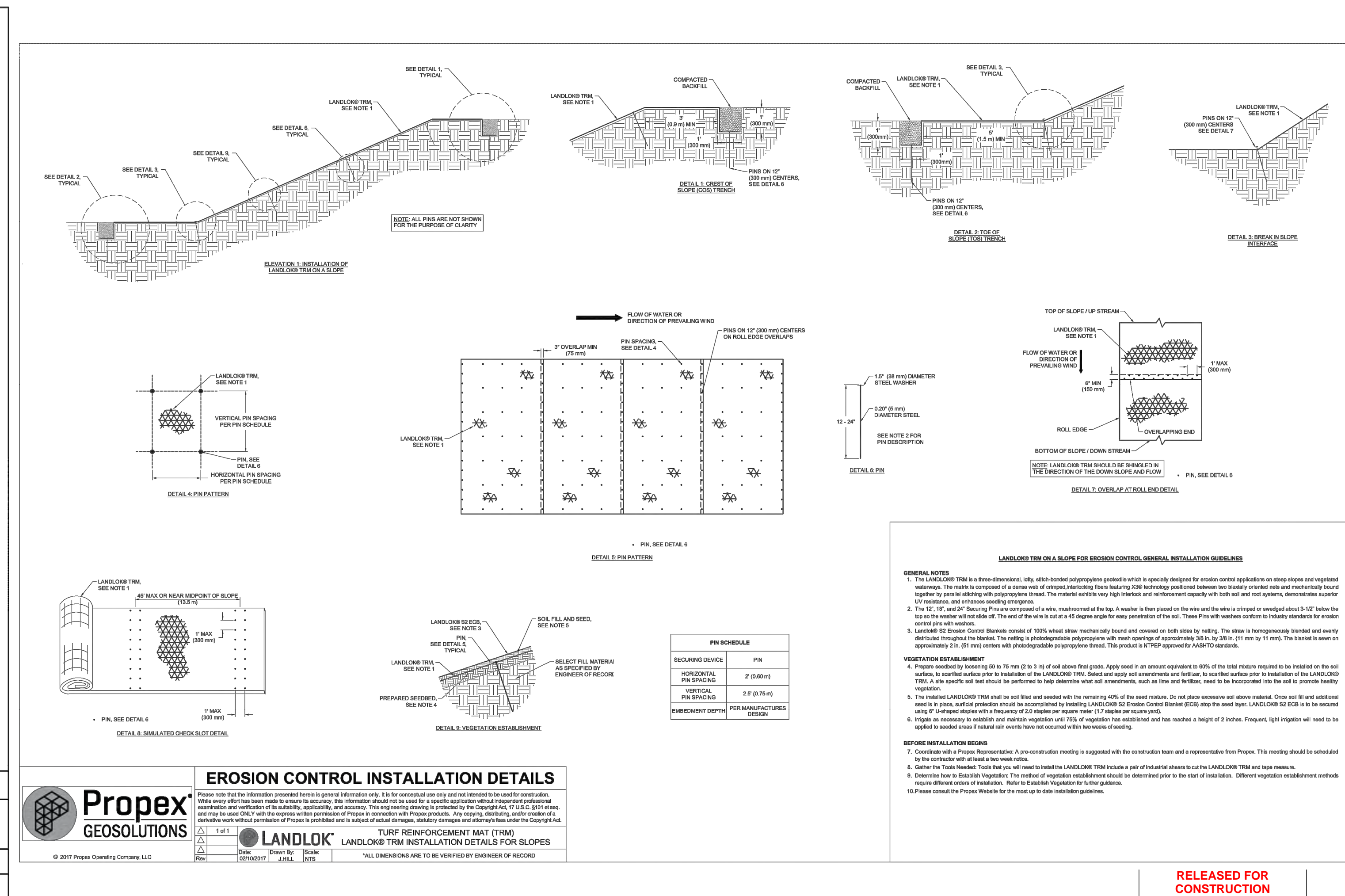
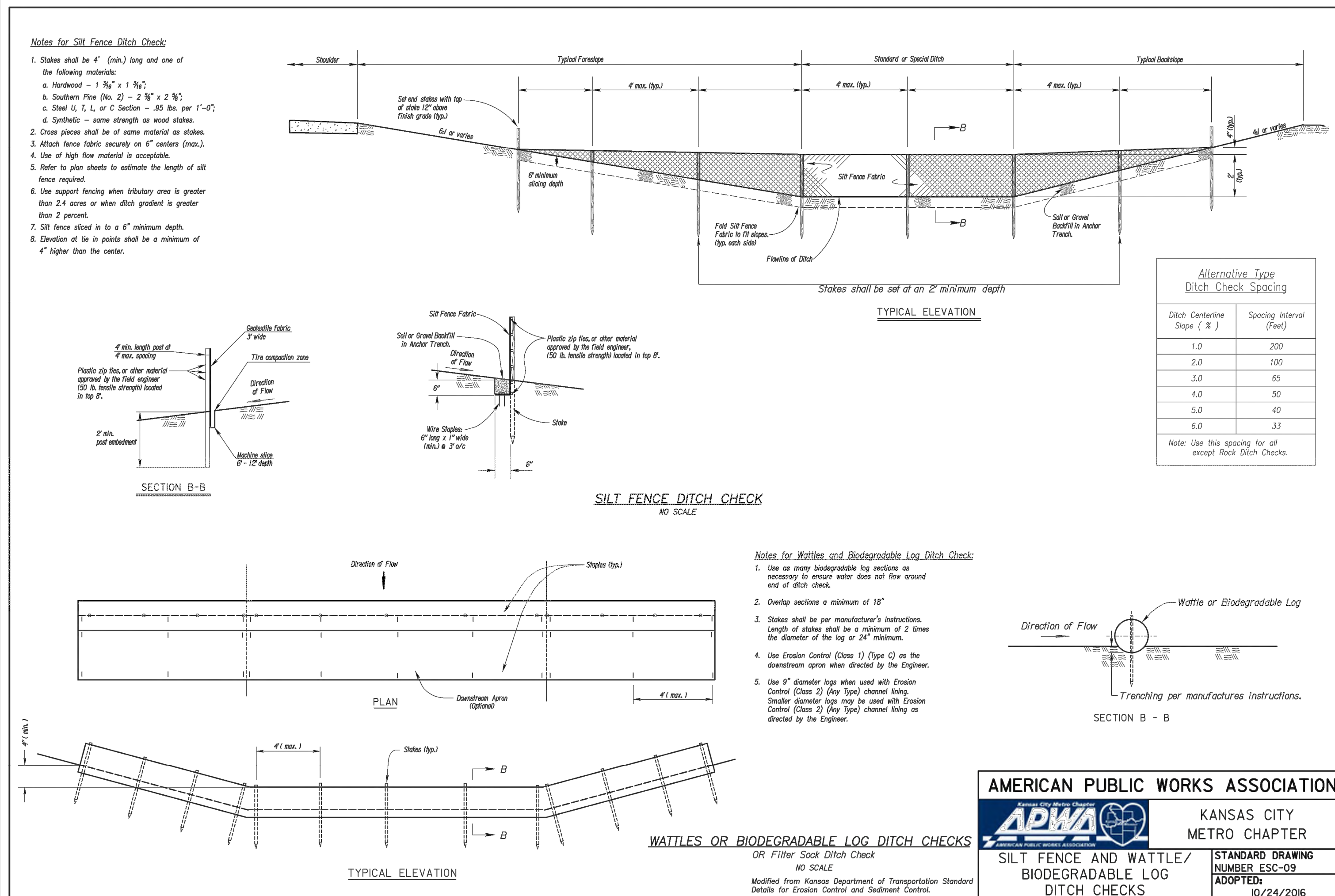
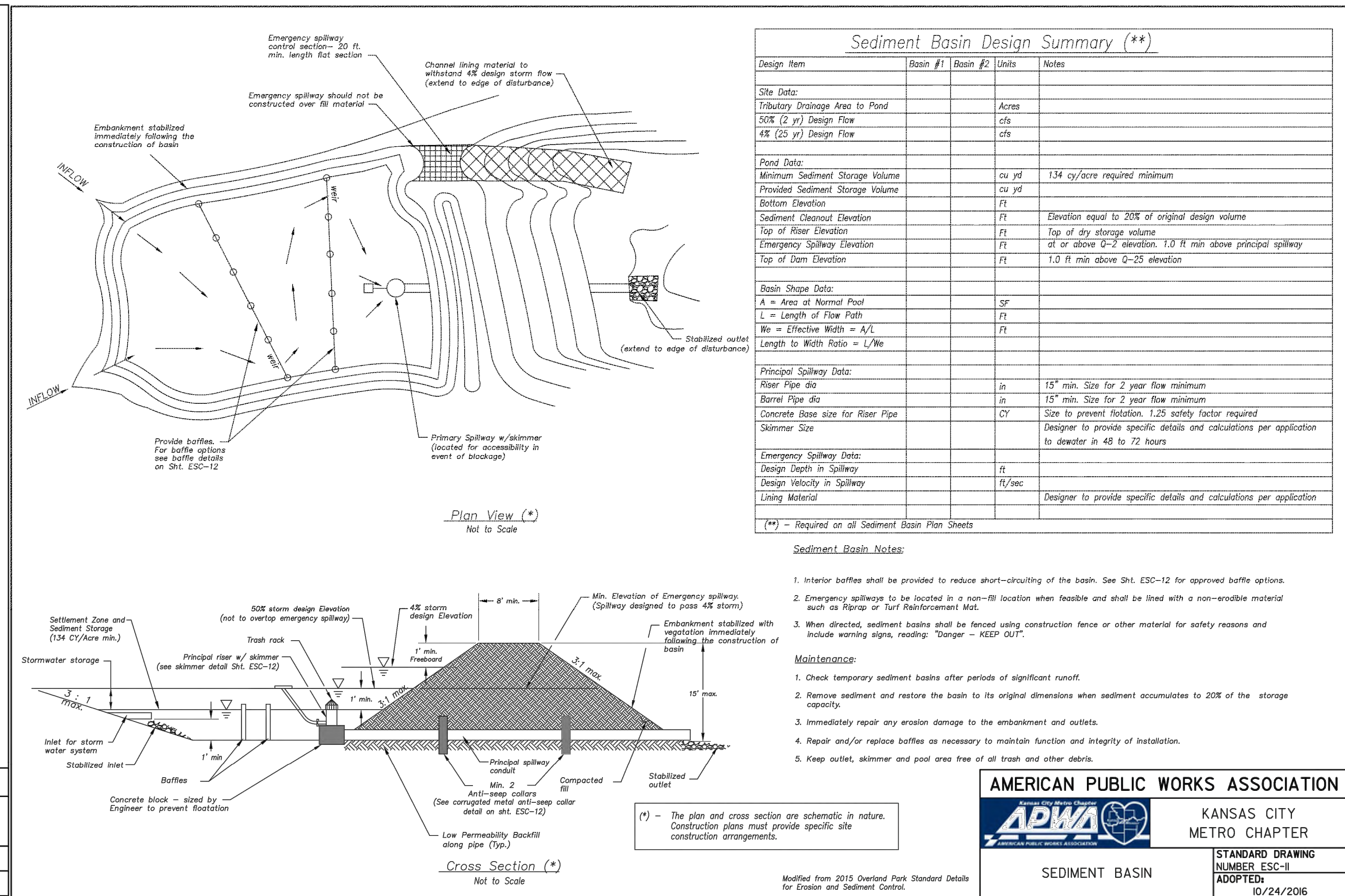
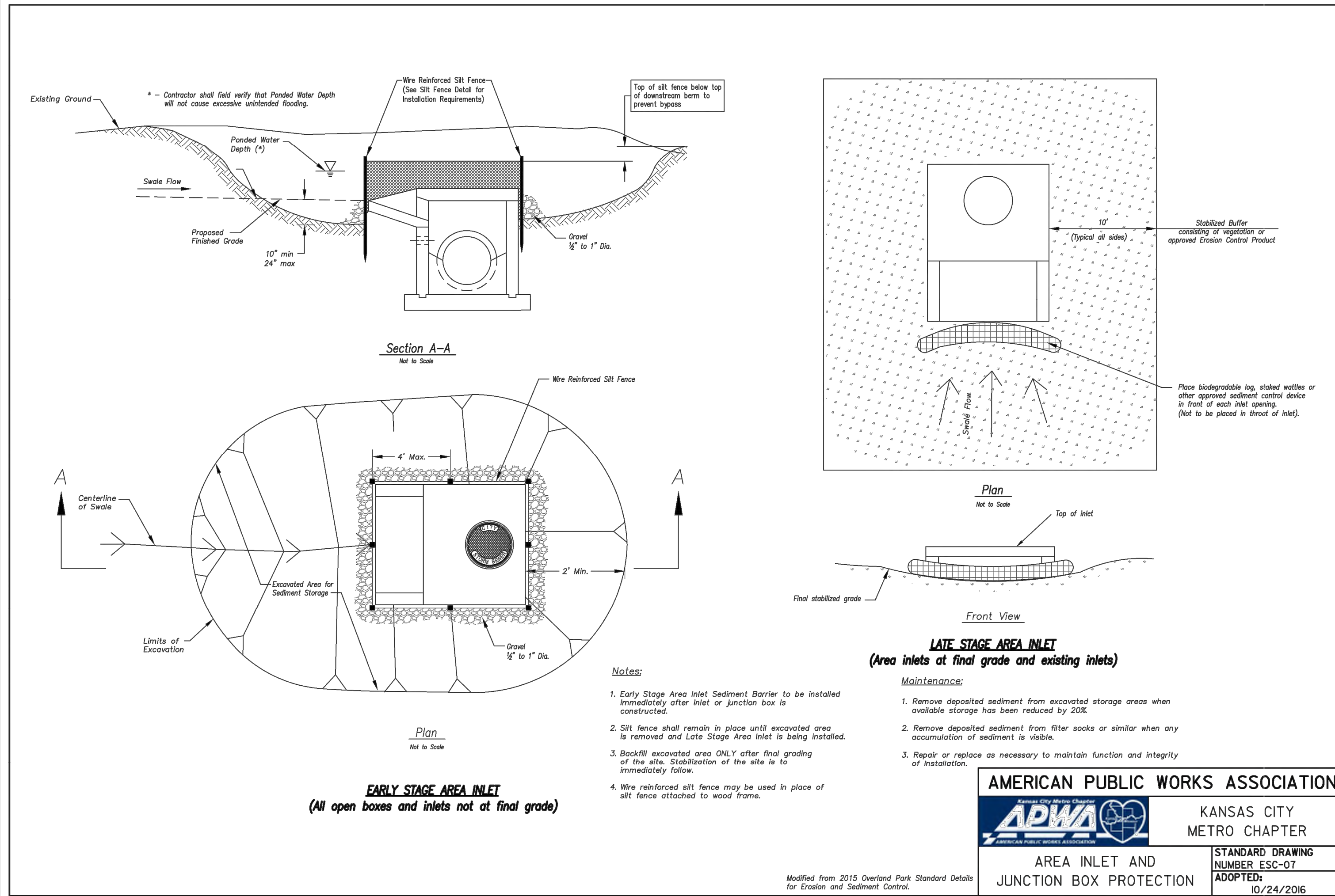
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 (913) 492-5159 • Fax: (913) 492-8400  
 WWW.SCHLAGELASSOCIATES.COM  
 Missouri State Certificate of Authority  
 #E200200360P-F #LAC2001005237 #S2002008859-F

PREPARED BY:  
  
 05.18.22  
 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
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01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
06/15/2021	CITY COMMENTS
09/28/2021	CITY COMMENTS
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT

EROSION CONTROL DETAILS  
 SHEET  
**5**



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Missouri State Certificate of Authority #E200200360P #LAC2001005237 #S200200859F

PREPARED BY:  
**MARK ALLEN BREUER**  
REGISTERED PROFESSIONAL ENGINEER  
NUMBER PE-2003607268  
05.18.22

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

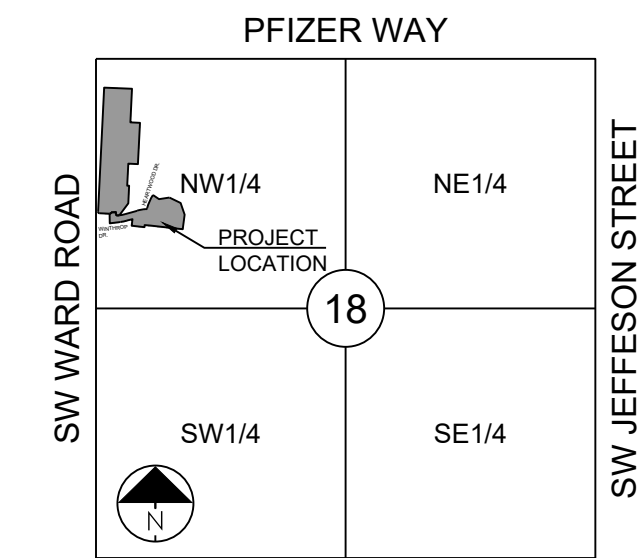
RELEASSED FOR CONSTRUCTION  
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05/24/2022  
Release Services Department  
Lee's Summit, Missouri

**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

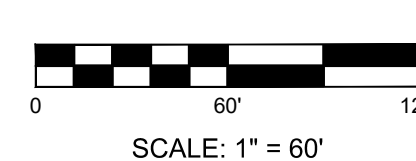
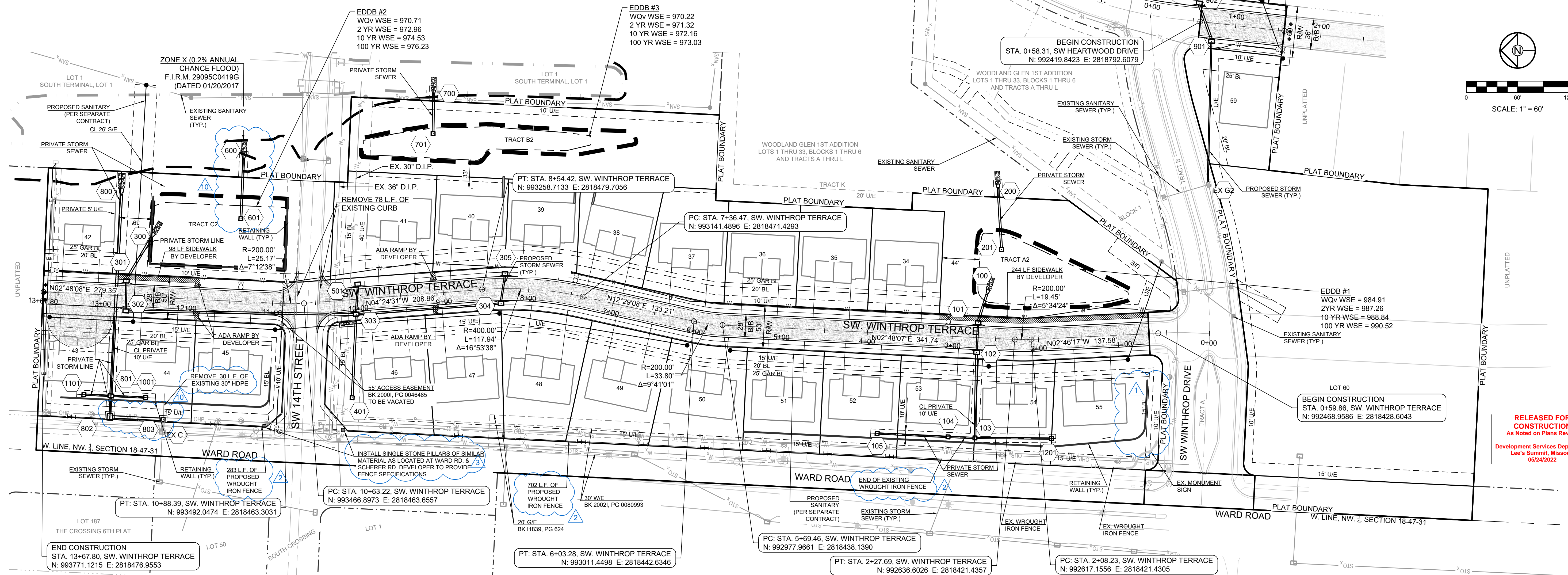
LOCATION MAP  
 SCALE 1" = 2000'



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 #E2002003607268 F #LAC2001005237 #LS2002008659F



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



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

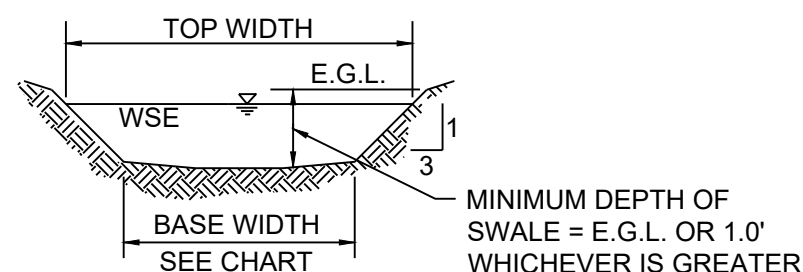
REVISION DATE	DESCRIPTION
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06/15/2021	CITY COMMENTS
09/28/2021	CITY COMMENTS
2-19-2020	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT
05/16/2022	CITY EMAILED COMMENTS

GENERAL LAYOUT  
 SHEET  
**7**

**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 =  $3.33 \cdot 20^{(3/2)} \cdot (H^{(3/2)})$ ,  $H=0.12$  FT.

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

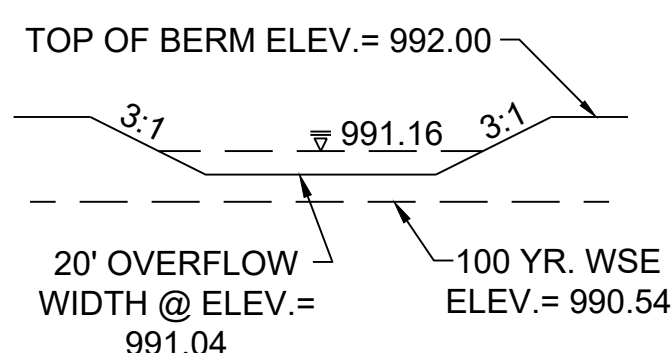
AUXILIARY SPILLWAY SET AT 0.5 FEET ABOVE MAX. WSE, SPILLWAY ELEV. = 976.40

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

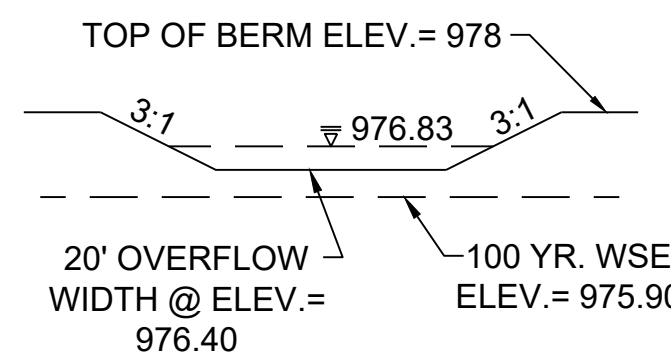
**DETENTION STORAGE EDDB #3:**  
 100 YEAR, 24 HR. RAINFALL - MAXIMUM WSE = 972.96 (SEE FINAL STORMWATER MGMT. PLAN)

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

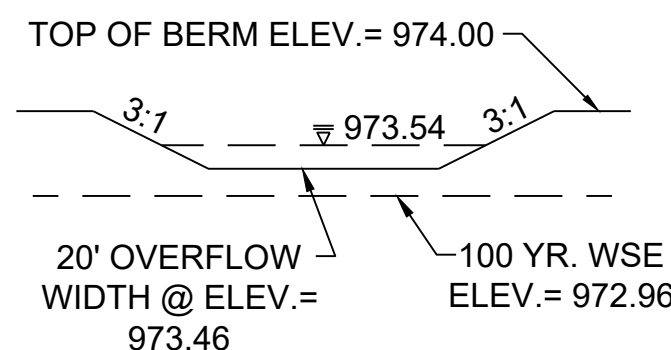
AUXILIARY SPILLWAY DESIGN:  
 $Q(100)=1.43$  CFS,  $Q=CLH^{(3/2)}$ ,  $C=3.33$ ,  $L=20$  FT.,  $1.43$  CFS =  $3.33 \cdot 20^{(3/2)} \cdot (H^{(3/2)})$ ,  $H=0.08$  FT.



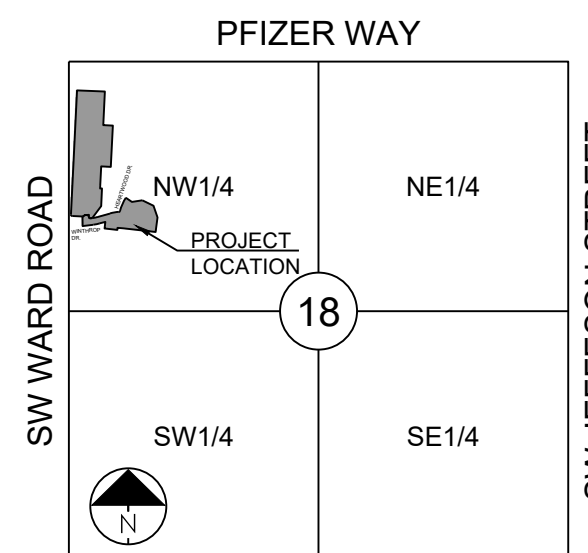
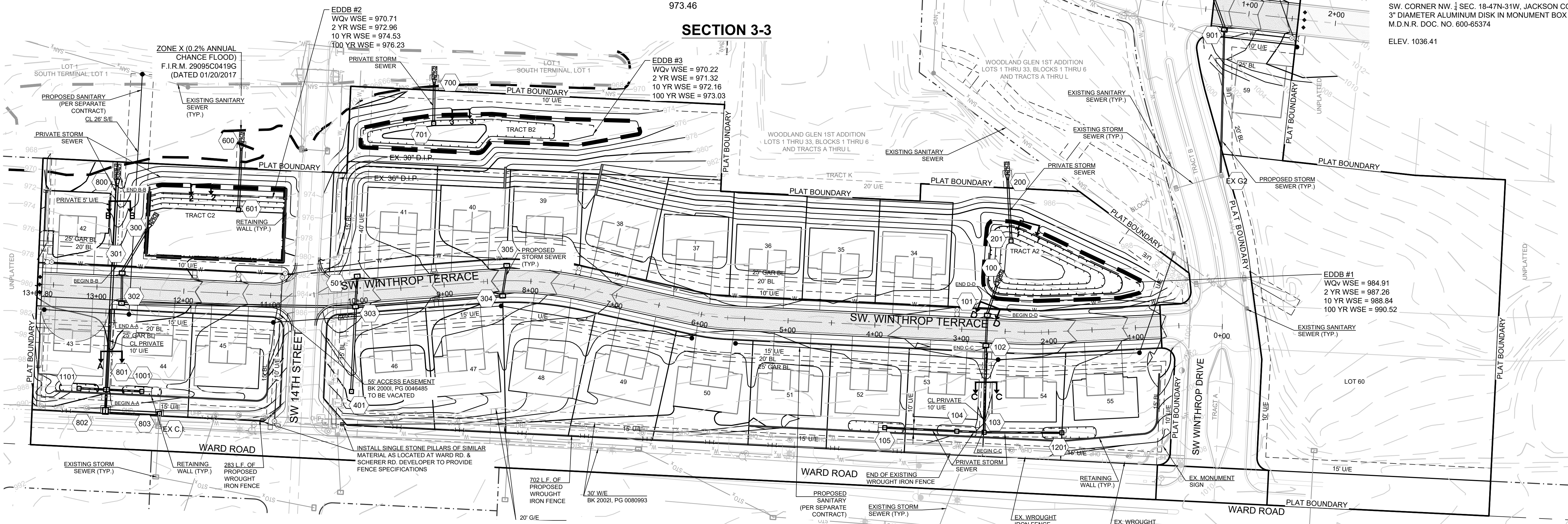
**SECTION 1-1**



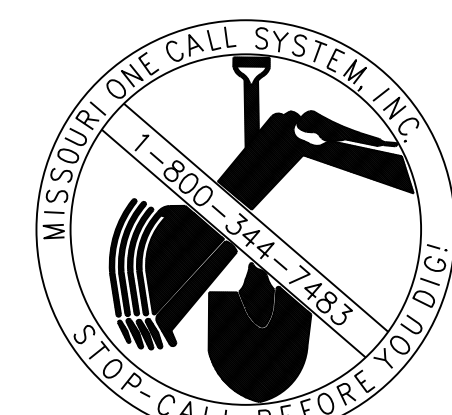
**SECTION 2-2**



**SECTION 3-3**



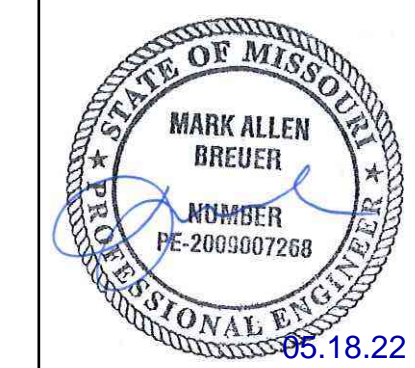
**SECTION 18-47N-31W**  
**LOCATION MAP**  
 SCALE 1" = 2000'



**PROJECT BENCHMARK:**

SW CORNER NW 1/4 SEC. 18-47N-31W, JACKSON COUNTY, MO.  
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 M.D.N.R. DOC. NO. 600-65374  
 ELEV. 1036.41

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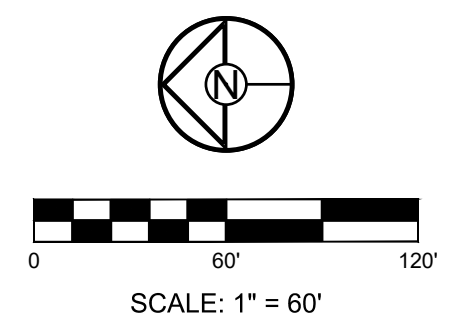
WOODLAND GLEN 2ND PLAT  
 STREET, STORMWATER, MASTER DRAINAGE,  
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 WARD ROAD & WINTHROP DRIVE  
 LEE'S SUMMIT, MISSOURI

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10/06/2021	SCHLAGEL UPDATE
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02/16/2022	CITY EMAIL COMMENTS

**MASTER DRAINAGE PLAN GRADING PLAN**

SHEET

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

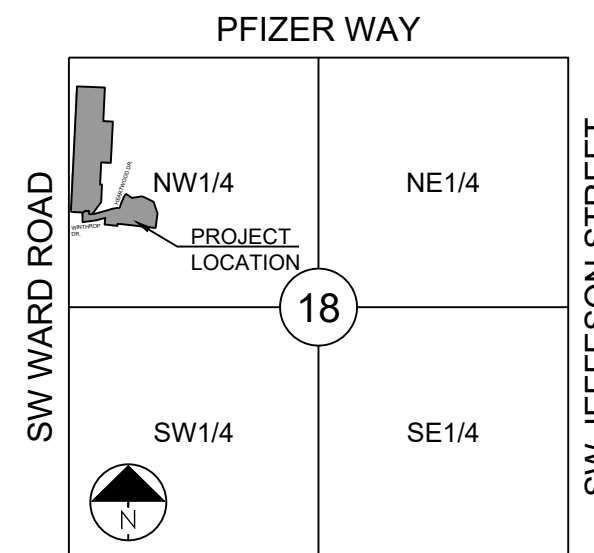
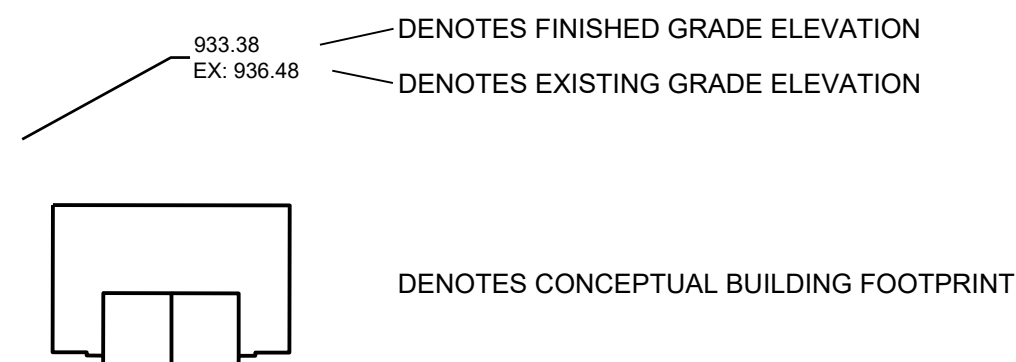
**NOTE:**  
 1. DAYLIGHT BASED ON ADJACENT GRADE 4 FT BELOW TOP OF FOUNDATION WHILE MAINTAINING 2.5% (MIN) GRADE TO LOT CORNERS.  
 2. WALKOUT BASED ON ADJACENT GRADE AT BASEMENT FLOOR ELEVATION WHILE MAINTAINING 2.5% (MIN) GRADE TO LOT CORNERS.

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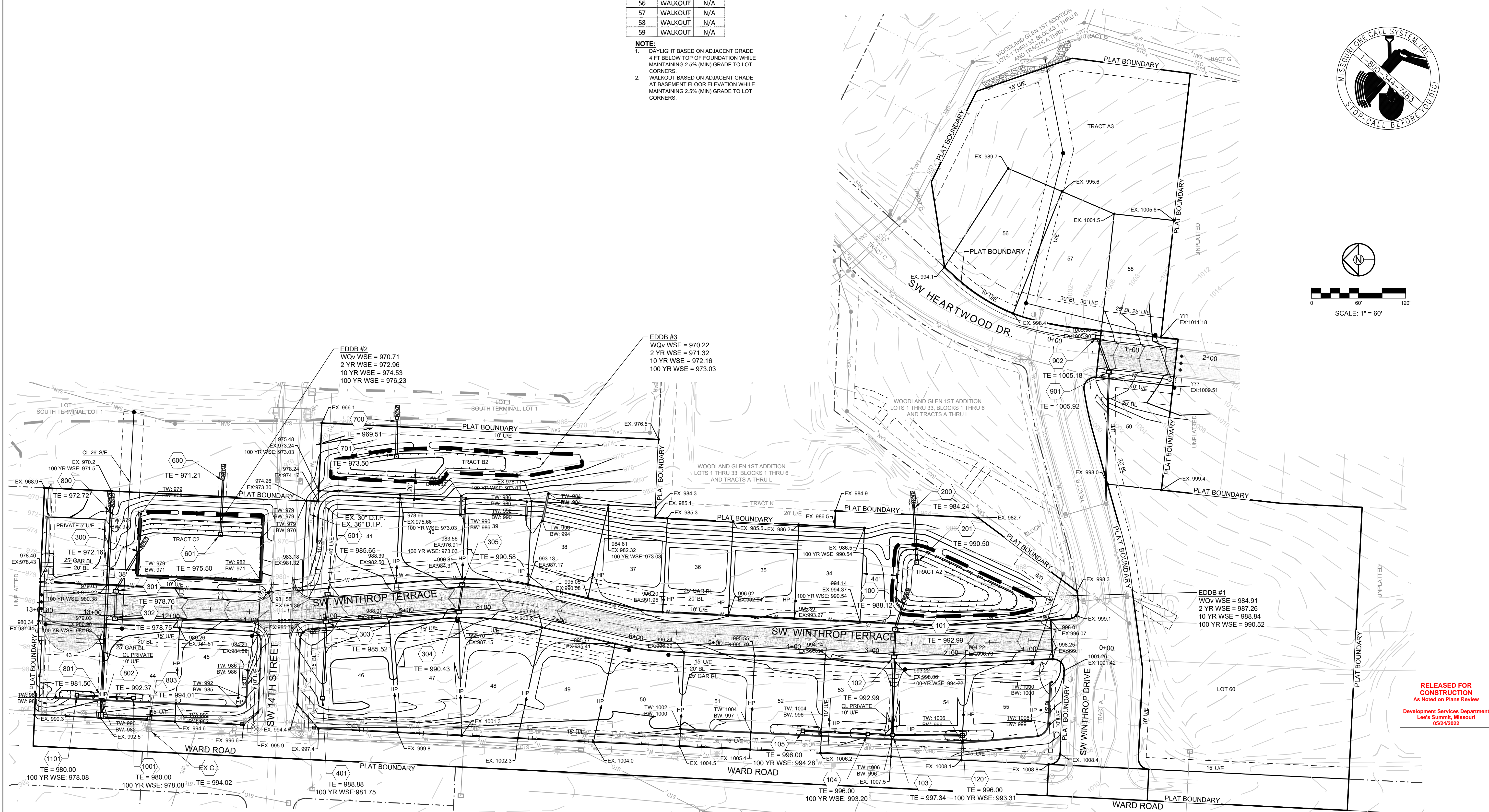
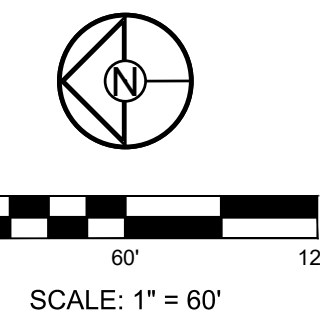
**PROJECT BENCHMARK:**

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SECTION 18-47N-31W

LOCATION MAP  
 SCALE 1" = 2000'



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 #E2002003690-F #LAC2001005237 #LS200200895-F

STATE OF MISSOURI  
 MARK ALLEN BREUER  
 PROFESSIONAL ENGINEER  
 NUMBER PE-2003007268  
 EXPIRES 08.18.22

WOODLAND GLEN 2ND PLAT  
 STREET, STORMWATER, MASTER DRAINAGE,  
 AND EROSION CONTROL PLANS  
 WARD ROAD & WINTHROP DRIVE  
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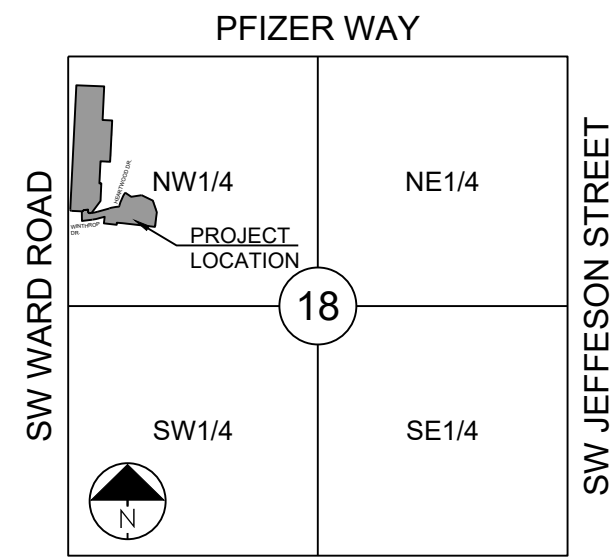
MASTER DRAINAGE PLAN  
 SPOT ELEVATIONS

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SECTION 18-47N-31W

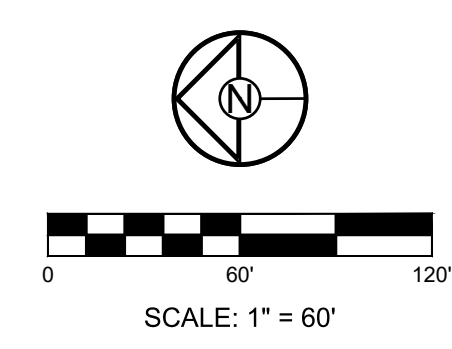
LOCATION MAP  
SCALE 1" = 2000'

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



EX-1  
DA = 9.73 AC  
PER FINAL  
STORM WATER  
REPORT

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MASTER  
DRAINAGE PLAN  
DRAINAGE  
AREAS

SHEET

10

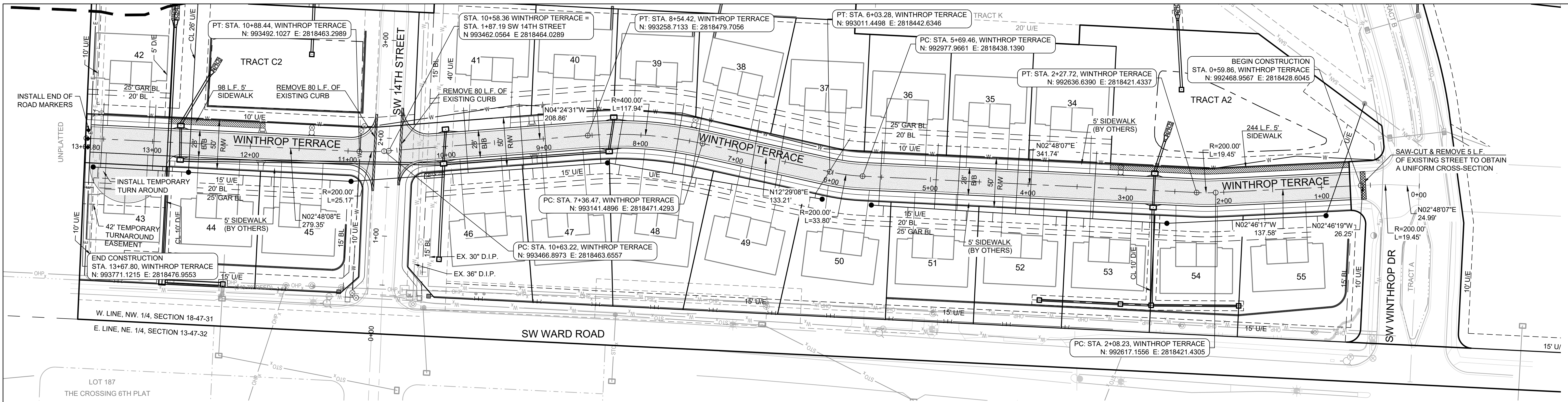
10 YR STORM SEWER DESIGN CALCULATIONS

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	To	Runoff Intensity	Cumul. Runoff	Pipe Cap.	Pipe Vel.	Up Piped Inlet 1	Up Piped Inlet 2	Up Area (acres)	Up CxA	Up Inlet	Down Inlet	Pipe Type	"n" Value	Pipe Size	Length	Slope %	Drop Inlet	FL Up	FL Down	Inlet Top
LINE 100	101	0.42	0.60	2.14	1.28	5.6	7.17	1.81	9.21	17.50	5.57	0.00	0.00	101	100	HDPE	0.012	24	34.17	0.51	0.50	986.65	986.48	992.99
	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
	103	0.00	0.60	0.37	0.22	5.4	7.24	0.00	1.61	13.09	10.67	0.13	0.08	103	102	HDPE	0.012	15	99.73	3.50	0.50	991.74	988.25	999.50
	104	0.06	0.60	0.24	0.14	5.3	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
	105	0.18	0.60	0.18	0.11	5.0	7.35	0.79	0.79	6.26	5.10	0.00	0.00	105	104	HDPE	0.012	15	82.96	0.80	N/A	993.73	993.07	998.00
LINE 200	201	0.36	0.60	0.36	0.22	5.0	7.35	1.59	1.59	9.04	7.37	0.00	0.00	201	200	HDPE	0.012	15	68.80	1.67	N/A	984.00	982.85	990.50
*SEE FINAL STORMWATER REPORT FOR DETAILED POND CALCULATIONS																								
LINE 300	301	0.21	0.60	3.36	2.02	6.0	7.06	0.89	14.24	29.00	5.91	0.00	0.00	301	300	RCP	0.013	30	58.76	0.50	0.50	970.29	970.00	978.76
	302	0.72	0.60	3.15	1.89	5.9	7.09	3.06	13.40	31.42	6.40	0.00	0.00	302	301	HDPE	0.012	30	35.01	0.50	0.50	970.97	970.79	978.75
	303	0.56	0.60	2.43	1.46	5.3	7.25	2.44	10.57	14.44	8.17	0.67	0.40	303	302	HDPE	0.012	18	269.14	1.61	2.44	975.80	971.47	985.52
	304	0.81	0.60	1.20	0.72	5.1	7.34	3.57	5.28	12.28	10.01	0.00	0.00	304	303	HDPE	0.012	15	169.67	3.08	0.50	983.47	978.24	990.43
	305	0.39	0.60	0.39	0.23	5.0	7.35	1.72	1.72	13.09	10.67	0.00	0.00	305	304	HDPE	0.012	15	35.39	3.50	N/A	985.21	983.97	990.58
LINE 400	401	0.44	0.60	0.44	0.26	5.0	7.35	1.94	1.94	15.25	12.43	0.00	0.00	401	303	HDPE	0.012	15	97.58	4.75	N/A	984.44	979.80	988.88
Drop in Inlet 303 4.00																								
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	981.21	979.80	985.65
Drop in Inlet 303 4.00																								
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
*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
*SEE FINAL STORMWATER REPORT FOR DETAILED POND CALCULATIONS																								
LINE 800	801	0.00	0.60	10.52	6.31	5.1	7.32	0.00	46.19	96.13	13.60	1001	1101	801	800	HDPE	0.012	36	234.80	1.77	0.50	974.21	970.05	981.50
	802	0.00	0.60	10.33	6.20	5.1	7.33	0.00	45.41	94.33	13.34	0.00	0.00	802	801	RCP	0.013	36	24.52	2.00	7.00	975.20	974.71	992.37
	803	0.00	0.60	10.33	6.20	5.0	7.35	0.00	45.54	72.61	14.79	0.00	0.00	803	802	HDPE	0.012	30	62.23	2.67	0.50	983.86	982.20	994.01
	EX C.1	10.33	0.60	10.33	6.20	5.0	7.35	45.57	45.57	78.61	16.02	0.00	0.00	EX C.1	803	HDPE	0.012	30	14.92	3.13	0.50	984.82	984.36	994.02
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
	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
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
Drop in Inlet 801 1.50																								
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
Drop in Inlet 801 1.50																								
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
Drop in Inlet 103 0.50																								

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

100 YR STORM SEWER DESIGN CALCULATIONS

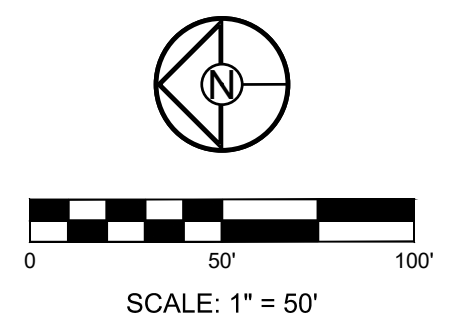
Design Storm:		100																						
"K" Value:		1.25																						
"F" Factor:		1.00																						
Runoff Calculations										Pipe Properties														
Inlet #	Area (acres)	"C" Value	Cumul. Area (acres)	Cumul. CxA	To	Runoff Intensity	Cumul. Runoff	Pipe Cap.	Pipe Vel.	Up Piped Inlet 1	Up Piped Inlet 2	Up Area (acres)	Up CxA	Up Inlet	Down Inlet	Pipe Type	"n" Value	Pipe Size	Length	Slope %	Drop Inlet	FL Up	FL Down	Inlet Top
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
	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
	103	0.00	0.60	0.37	0.22	5.4	10.17	0.00	2.82	13.09	10.67	0.13	0.08	103	102	HDPE	0.012	15	99.73	3.50	0.50	991.74	988.25	999.50
	104	0.06	0.60	0.24	0.14	5.3	10.21	0.46	1.84	7.07	5.76	0.00	0.00	104	103	HDPE	0.012	15	31.45	1.02	0.50	992.57	992.24	998.00
	105	0.18	0.60	0.18	0.11	5.0	10.32	1.39	1.39	6.26	5.10	0.00	0.00	105	104	HDPE	0.012	15	82.96	0.80	N/A	993.73	993.07	998.00
LINE 200	201	0.36	0.60	0.36	0.22	5.0	10.32	2.79	2.79	9.04	7.37	0.00	0.00	201	200	HDPE	0.012	15	68.80	1.67	N/A	984.00	982.85	990.50
*SEE FINAL STORMWATER REPORT FOR DETAILED POND CALCULATIONS																								
LINE 300	301	0.21	0.60	3.36	2.02	6.0	9.93	1.56	25.03	29.00	5.91	0.00	0.00	301	300	RCP	0.013	30	58.76	0.50	0.50	970.29	970.00	978.76
	302	0.72	0.60	3.15	1.89	5.9	9.97	5.38	23.55	31.42	6.40	0.00	0.00	302	301	HDPE	0.012	30	35.01	0.50	0.50	970.97	970.79	978.75
	303	0.56	0.60	2.43	1.46	5.3	10.18	4.28	18.56	14.44	8.17	0.67	0.40	303	302	HDPE	0.012	18	269.14	1.61	2.44	975.80	971.47	985.52
	304	0.81	0.60	1.20	0.72	5.1	10.30	6.26	9.27	12.28	10.01	0.00	0.00	304	303	HDPE	0.012	15	169.67	3.08	0.50	983.47	978.24	990.43
	305	0.39	0.60	0.39	0.23	5.0	10.32	3.02	3.02	13.09	10.67	0.00	0.00	305	304	HDPE	0.012	15	35.39	3.50	N/A	985.21	983.97	990.58
LINE 400	401	0.44	0.60	0.44	0.26	5.0	10.32	3.41	3.41	15.25	12.43	0.00	0.00	401	303	HDPE	0.012	15	97.58	4.75	N/A	984.44	979.80	988.88
Drop in Inlet 303 4.00																								
LINE 500	501	0.23	0.60	0.23	0.14	5.0	10.32	1.78	1.78	14.00	11.41	0.00	0.00	501	303	HDPE	0.012	15	35.31	4.00	N/A	981.21	979.80	985.65
Drop in Inlet 303 4.00																								
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
*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
*SEE FINAL STORMWATER REPORT FOR DETAILED POND CALCULATIONS																								
LINE 800	801	0.00	0.60	10.52	6.31	5.1	10.27	0.00	81.07	96.13	13.60	1001	1101	801	800	HDPE	0.012	36	234.80	1.77	0.50	974.21	970.05	981.50
	802	0.00	0.60	10.33	6.20	5.1	10.29	0.00	79.70	94.33	13.34	0.00	0.00	802	801	RCP	0.013	36	24.52	2.00	7.00	975.20	974.71	992.37
	803	0.00	0.60	10.33	6.20	5.0	10.32	0.00	79.92	72.61	14.79	0.00	0.00	803	802	HDPE	0.012	30	62.23	2.67	0.50	983.86	982.20	994.01
	EX C.1	10.33	0.60	10.33	6.20	5.0	10.32	79.97	79.97	78.61	16.02	0.00	0.00	EX C.1	803	HDPE	0.012	30	14.92	3.13				



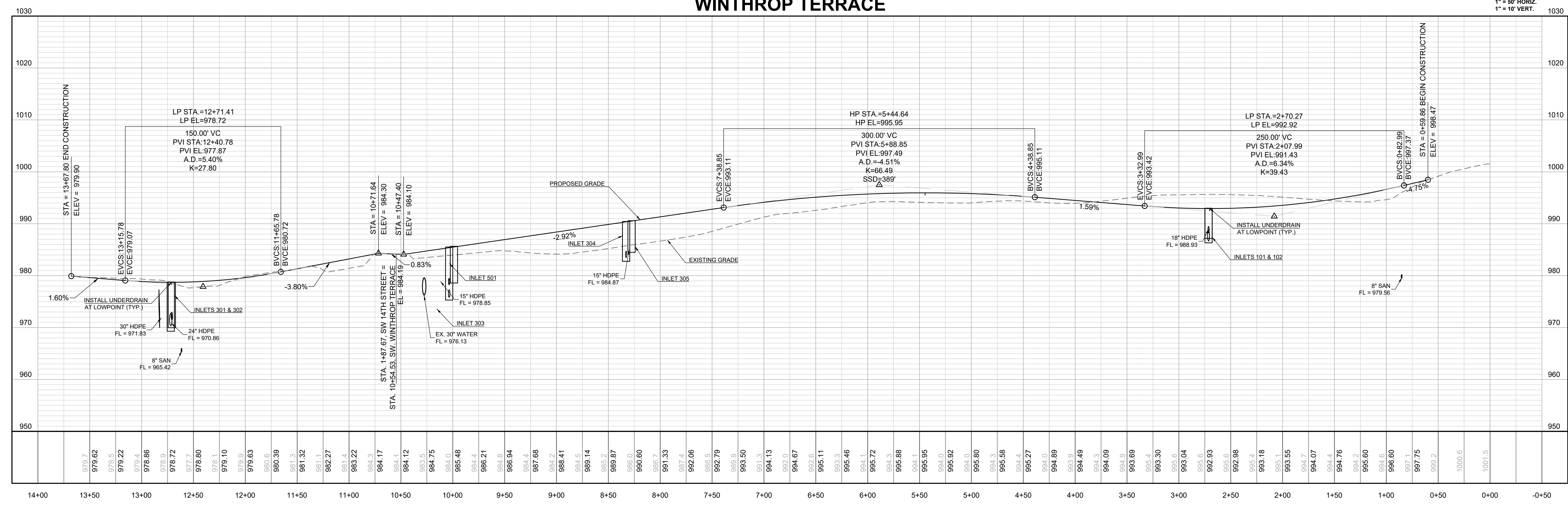
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Development Services Department  
Lee's Summit, Missouri  
05/24/2022

**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**

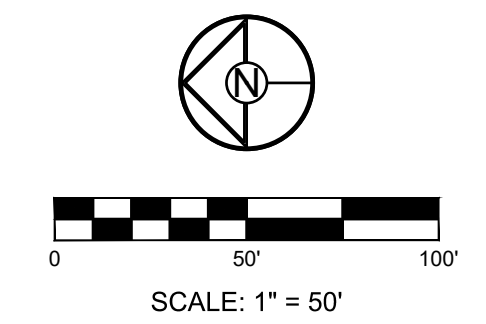
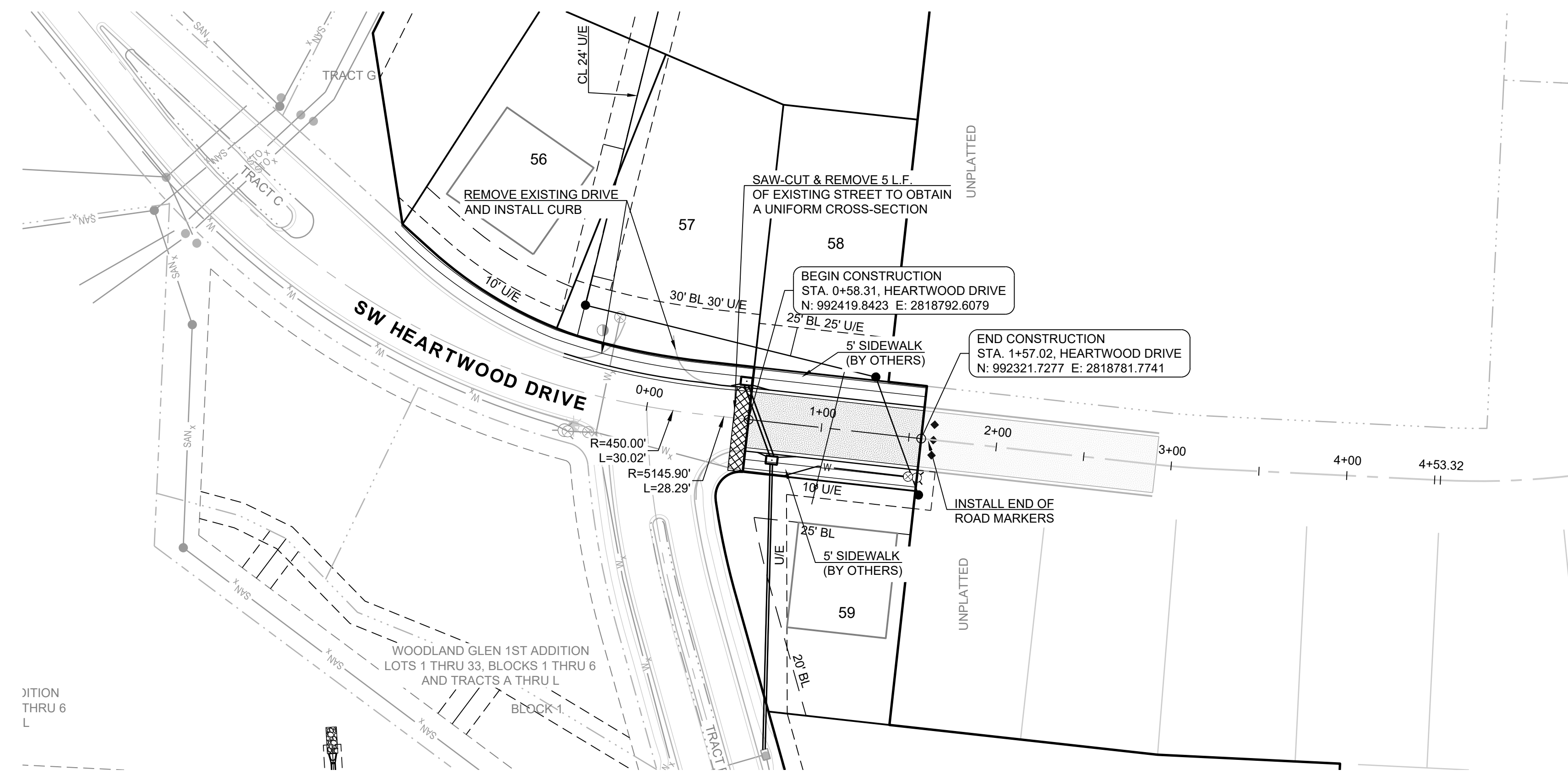


WOODLAND GLEN 2ND PLAT  
STREET, STORMWATER, MASTER DRAINAGE,  
AND EROSION CONTROL PLANS  
WARD ROAD & WINTHROP DRIVE  
LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
04/24/2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
06/15/2021	CITY COMMENTS
09/28/2021	CITY COMMENTS
09/28/2021	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT
05/16/2022	CITY EMAIL'D COMMENTS

WINTHROP TERRACE PLAN & PROFILE

SHEET



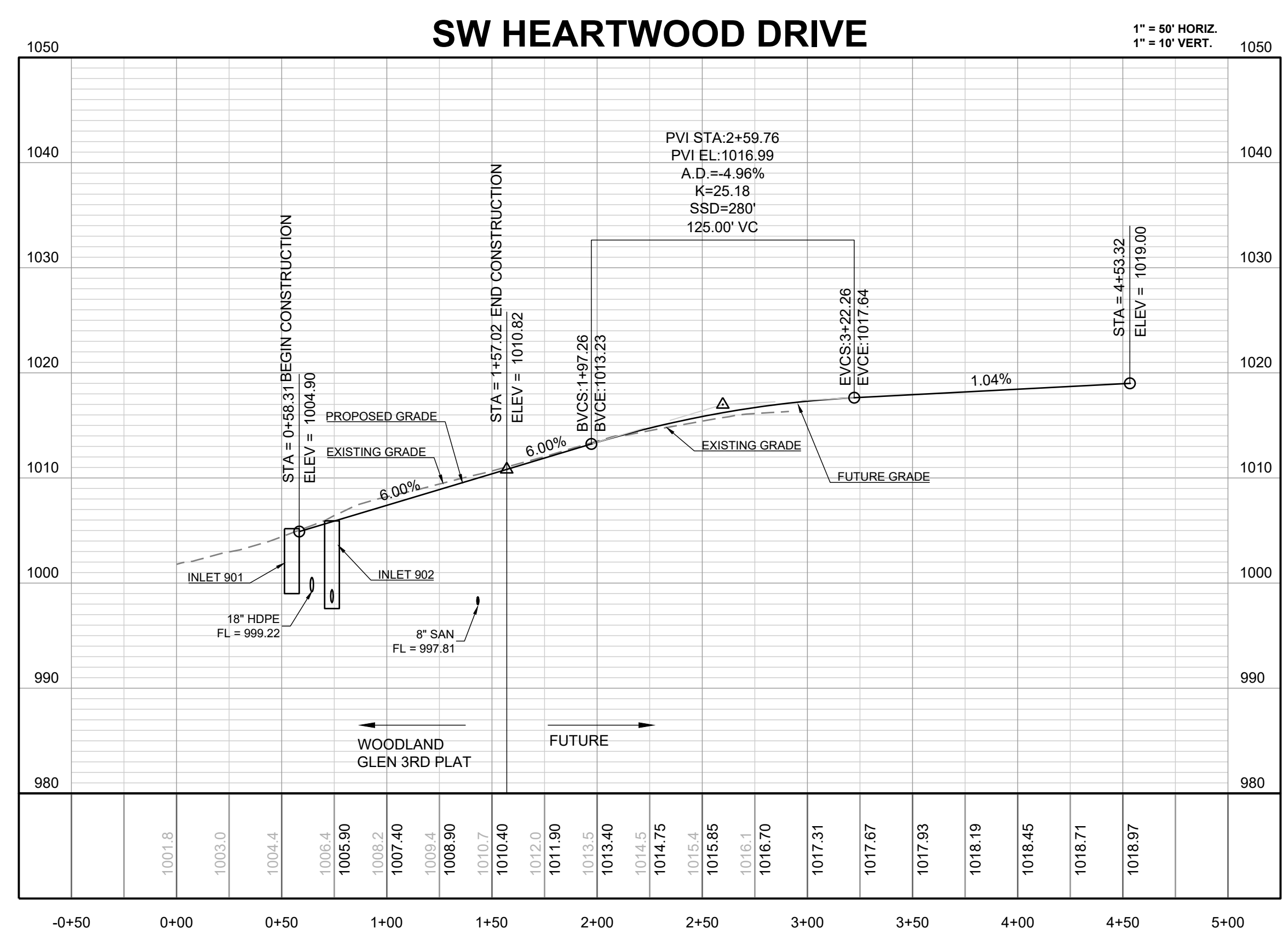
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**PROJECT BENCHMARK:**  
 SW CORNER NW 1/4 SEC. 18-47N-31W, JACKSON COUNTY, MO.  
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 M.D.N.R. DOC. NO. 600-65374  
 ELEV. 1036.41

**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 Certificates of Authority  
 #E2002003690-F #LAC2001005237 #LS200200869-F

STATE OF MISSOURI  
 MARK ALLEN BREUER  
 PROFESSIONAL ENGINEER  
 NUMBER  
 PE-2003607268  
 05.18.22

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

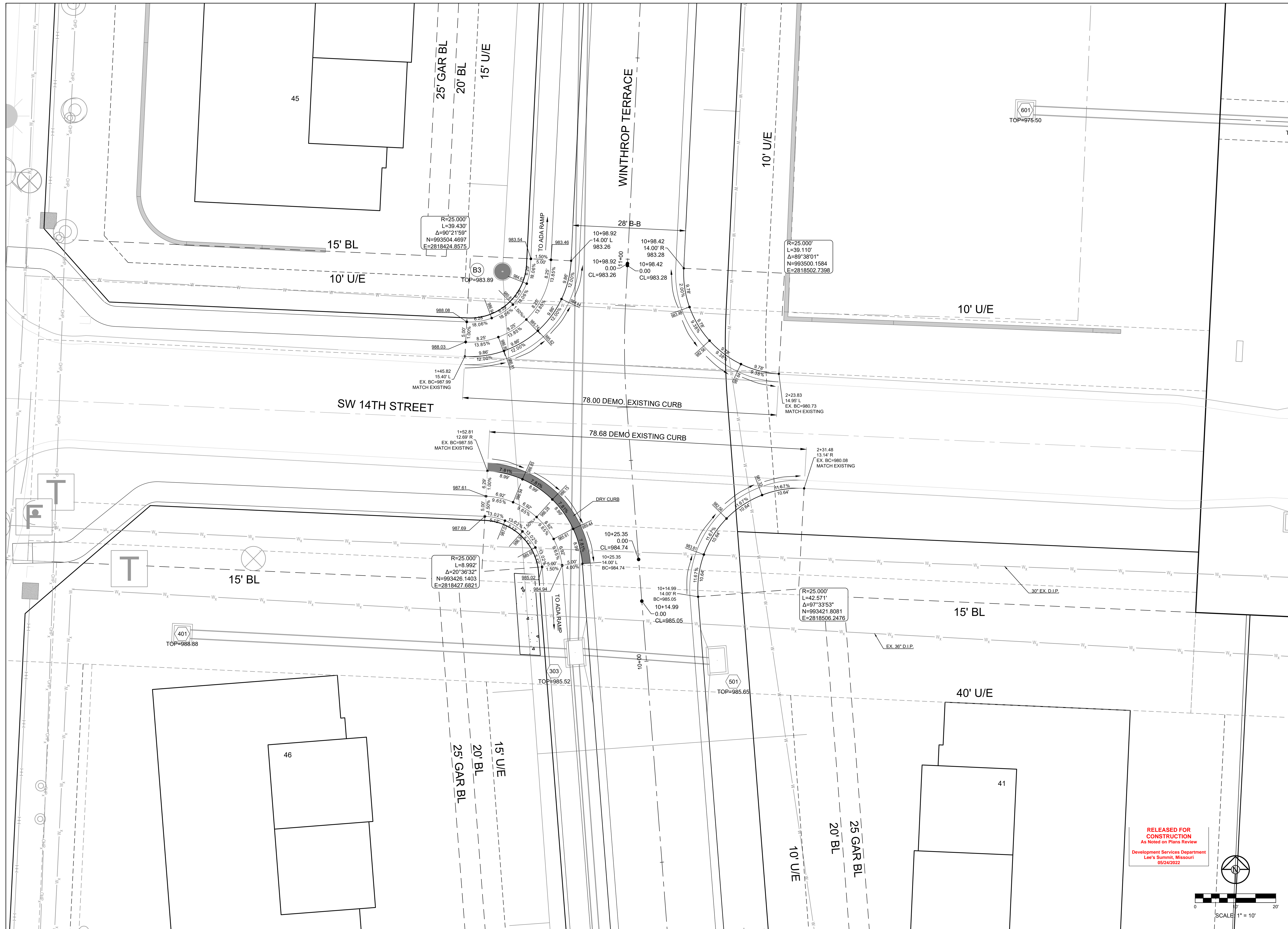


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01/20/2022	WATER LINE CONFLICT
05/16/2022	CITY EMAILED COMMENTS

HEARTWOOD  
 DRIVE PLAN &  
 PROFILE

SHEET  
**13**

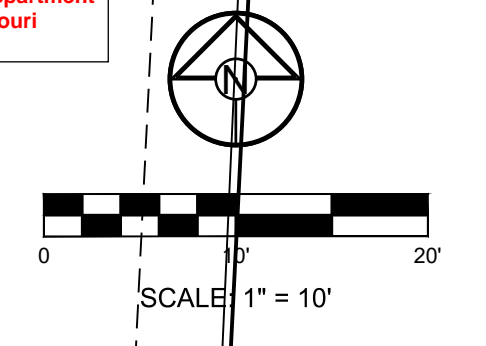


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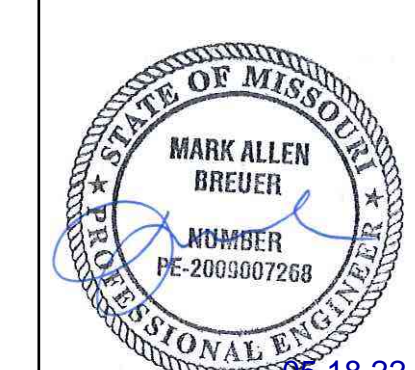
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Δ=97°33'53"  
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05/24/2022



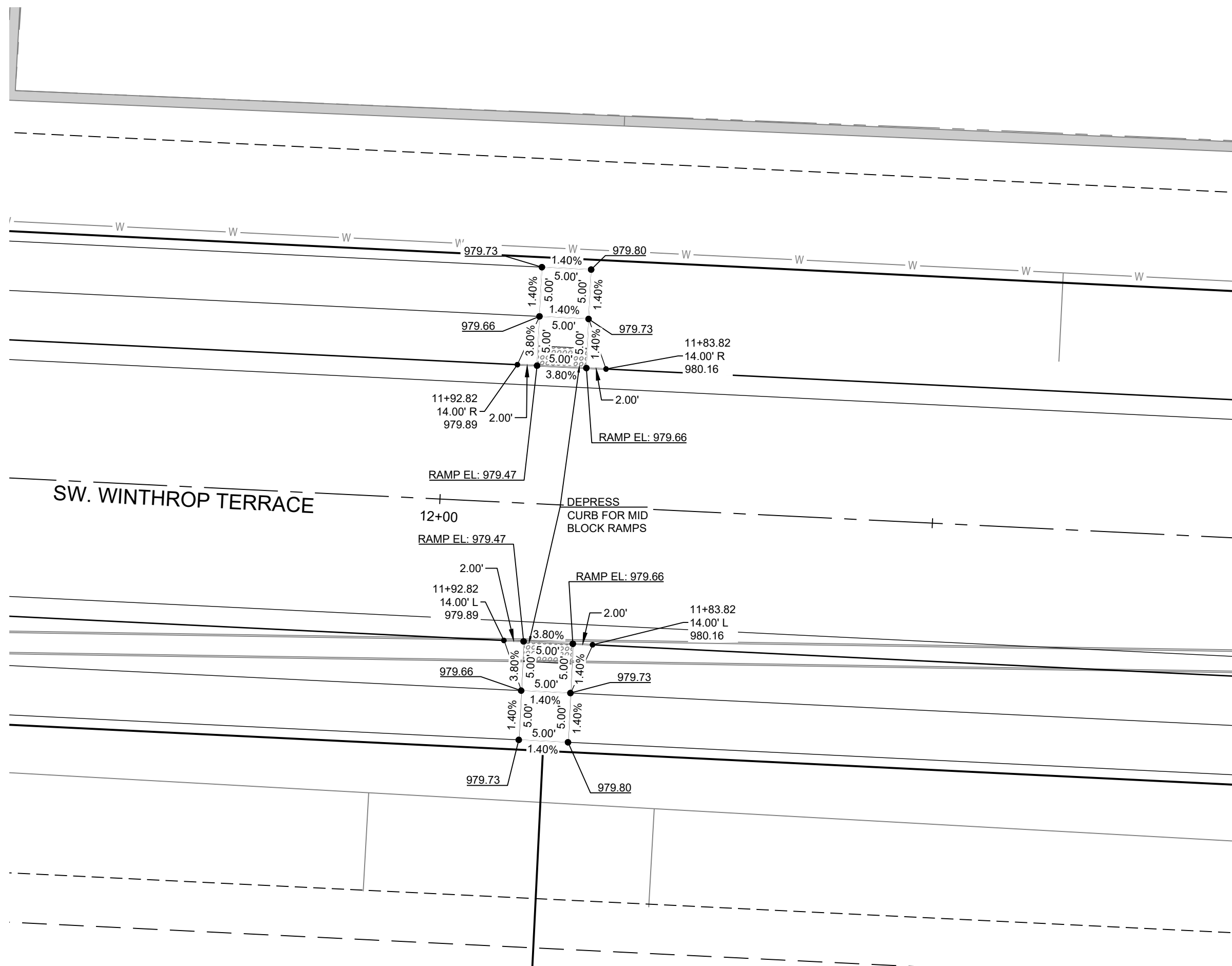
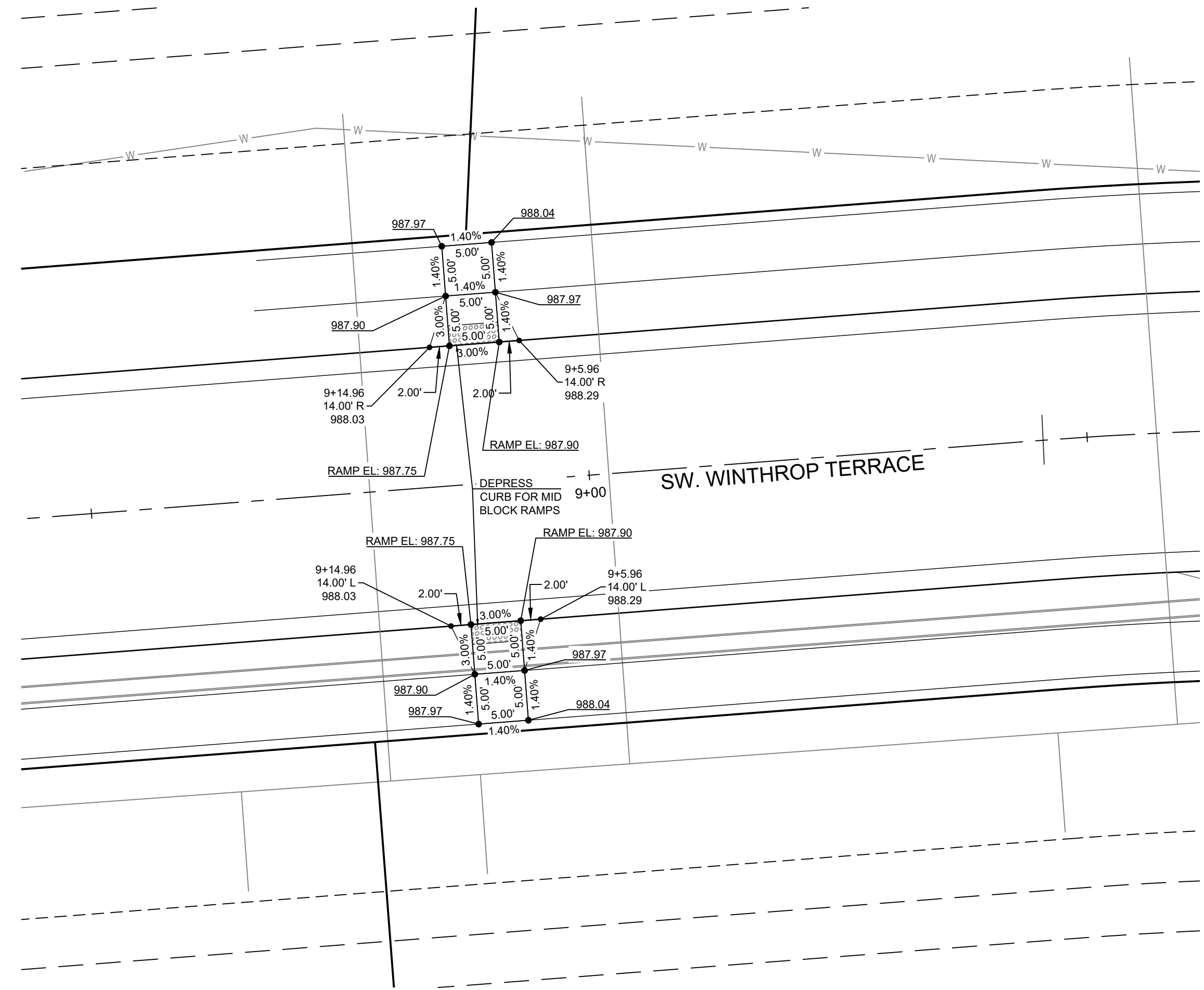
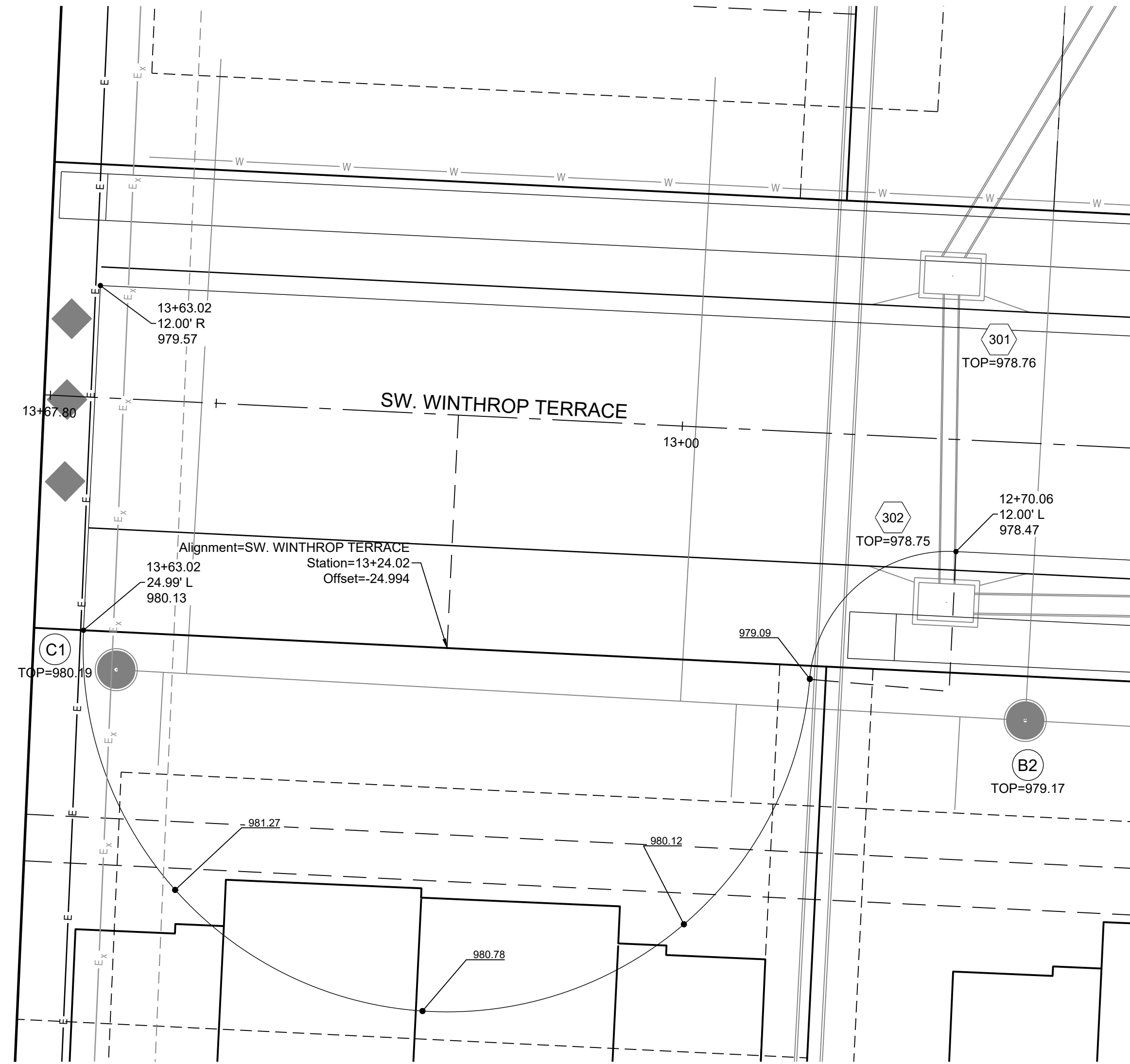
PREPARED BY:



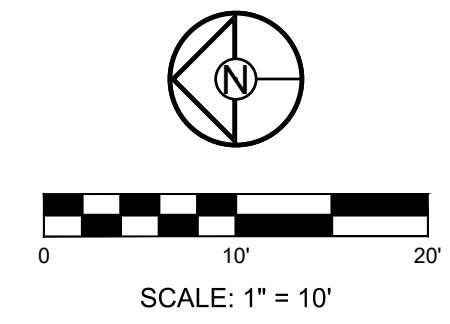
SCHLAGEL & ASSOCIATES, P.A.

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

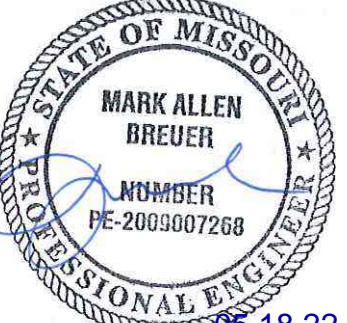
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PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

WOODLAND GLEN 2ND PLAT  
STREET, STORMWATER, MASTER DRAINAGE,  
AND EROSION CONTROL PLANS  
WARD ROAD & WINTHROP DRIVE  
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05/16/2022	WATER LINE CONFLICT
	CITY EMAILED COMMENTS

INTERSECTION  
DETAILS

SHEET  
**15**



05.18.22

**PROJECT BENCHMARK:**

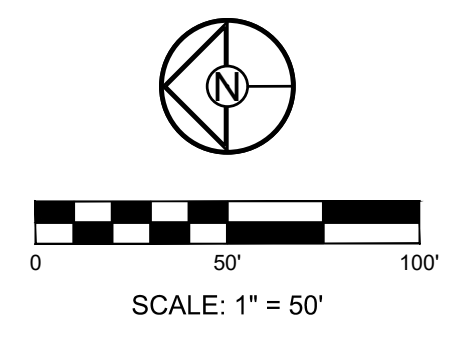
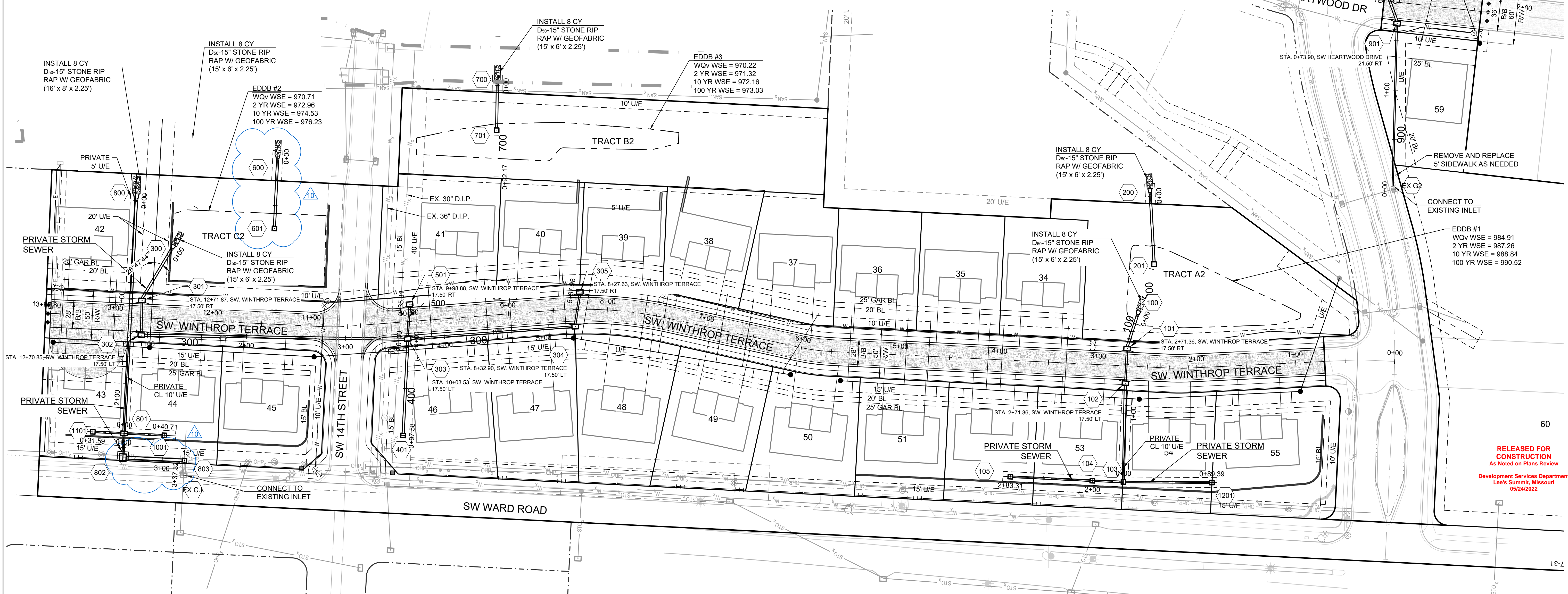
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 3" DIAMETER ALUMINUM DISK IN MONUMENT BOX  
 M.D.N.R. DOC. NO. 600-65374  
 ELEV. 1036.41

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

Structure	Notes
300	STA -0+00.00, 300 INSTALL 24" END SECTION N 993645.0883 E 2818540.6336
301	STA 0+58.76, 300 INSTALL 6 X 4 CURB INLET N 993674.4582 E 2818489.7451
302	STA 0+93.77, 300 INSTALL 6 X 4 CURB INLET N 993675.1476 E 2818454.7370
303	STA 3+62.91, 300 INSTALL 6 X 4 CURB INLET N 993406.0386 E 2818450.7956
304	STA 5+32.58, 300 INSTALL 6 X 4 CURB INLET N 993236.8248 E 2818463.2865
305	STA 5+67.98, 300 INSTALL 6 X 4 CURB INLET N 993232.1336 E 2818498.3682
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

Structure	Notes
600	STA 0+04.52, 600 INSTALL 18" END SECTION N 993537.5200 E 2818630.9786
601	STA 0+73.07, 600 INSTALL OUTLET STRUCTURE F.F.B. 357°23'29" N 993540.6400 E 2818562.4994
700	STA 0+00.00, 700 INSTALL 15" END SECTION N 993315.5193 E 2818706.7724
701	STA 0+44.96, 700 INSTALL OUTLET STRUCTURE F.F.B. 0°00'00" N 993316.1131 E 2818661.8180
800	STA 0+00.85, 800 INSTALL 36" END SECTION N 993680.3317 E 2818589.9535
801	STA 2+35.65, 800 INSTALL 6 X 4 JUNCTION BOX F.F.B. 87°17'49" N 993692.4917 E 2818355.4726
802	STA 2+60.17, 800 INSTALL 7 X 6 JUNCTION BOX N 993693.6805 E 2818330.9777
803	STA 3+22.40, 800 INSTALL 4 X 4 JUNCTION BOX N 993631.5331 E 2818328.0430

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



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 05/24/2022

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

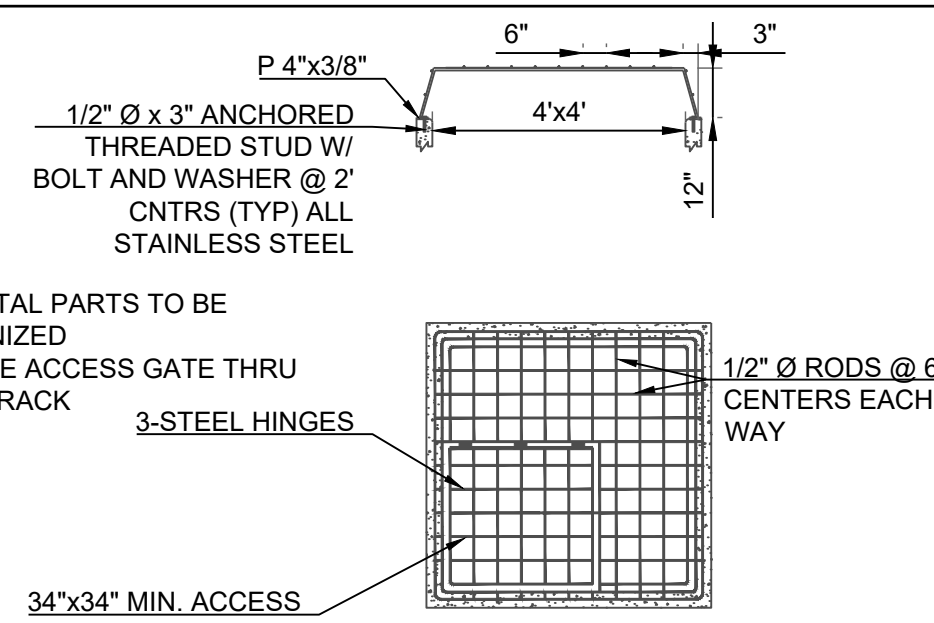
REVISION DATE	DESCRIPTION
04/24/2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
06/15/2021	CITY COMMENTS
09/28/2021	CITY COMMENTS
2-19-2020	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT
05/16/2022	CITY EMAIL'D COMMENTS

STORM PLAN

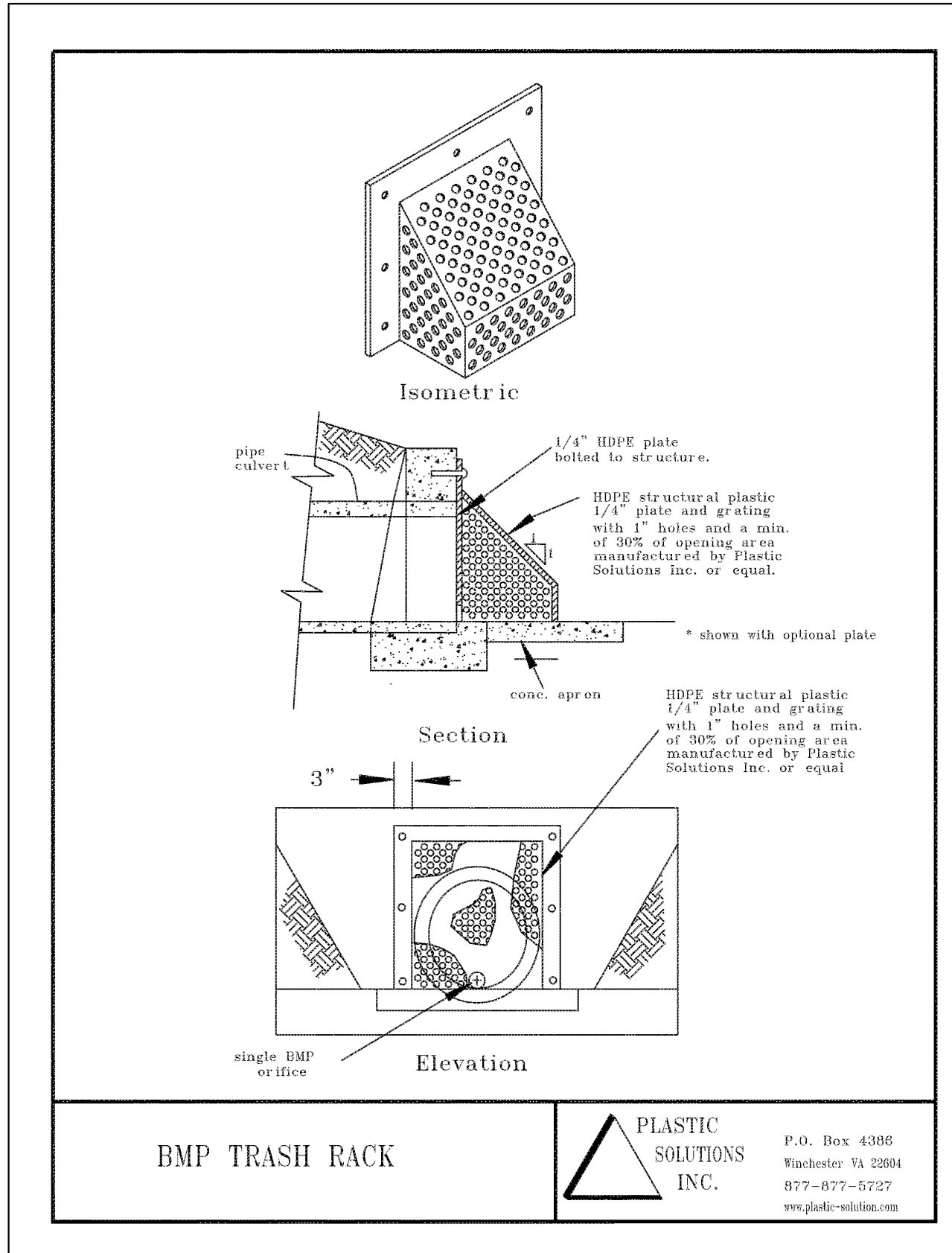
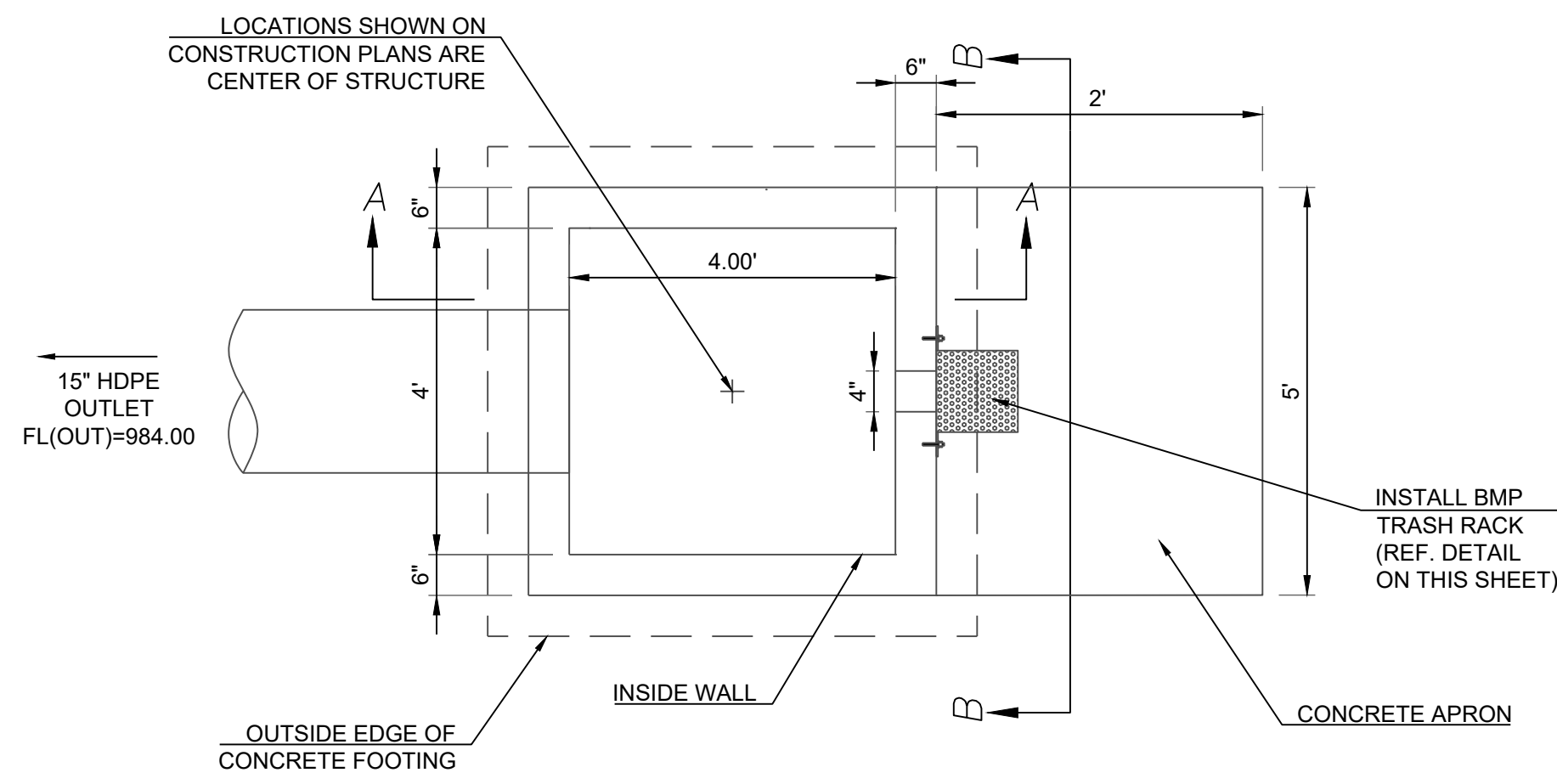
SHEET



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

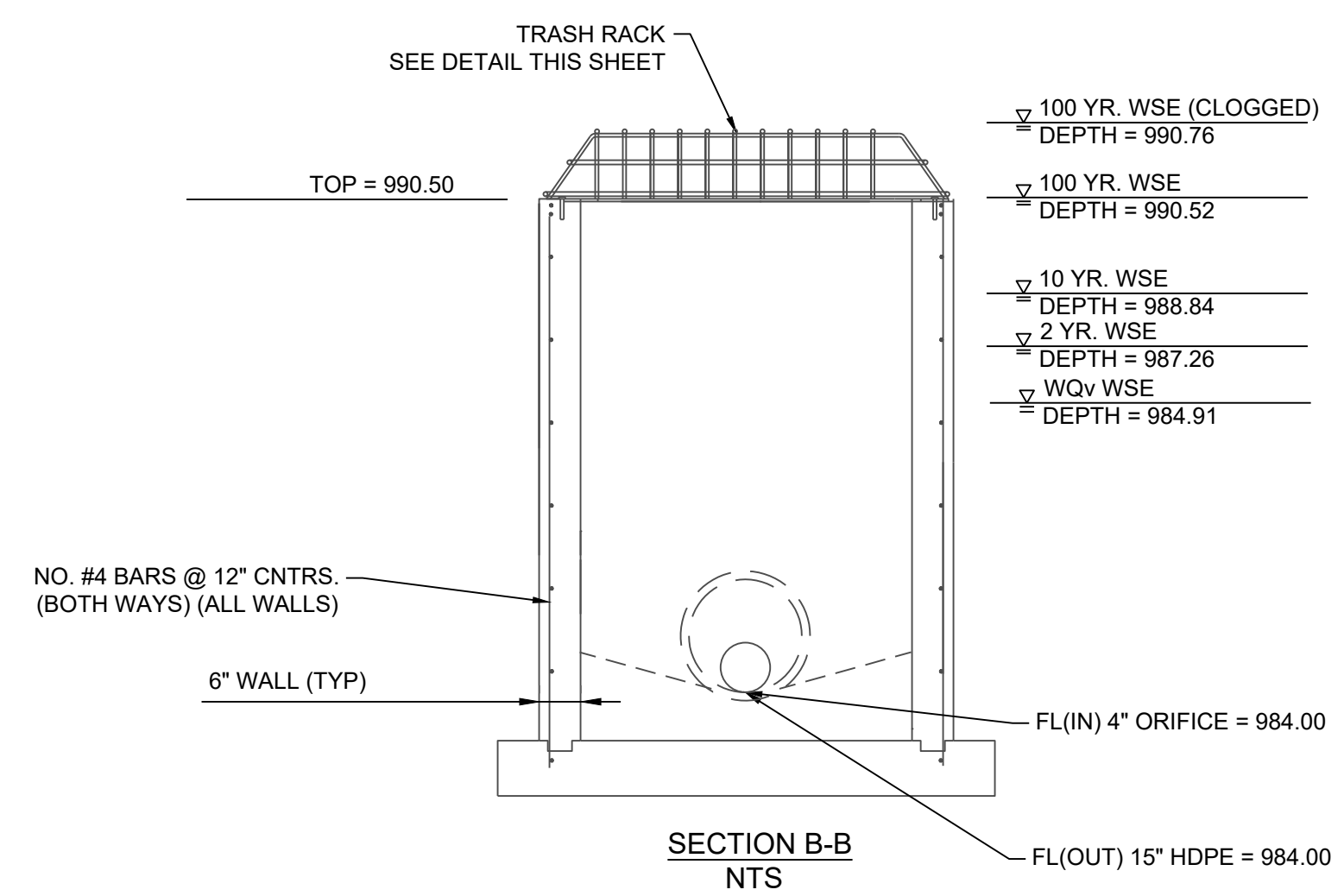
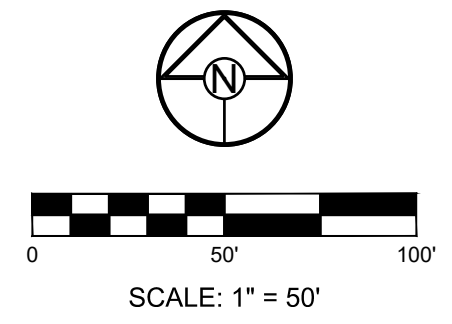
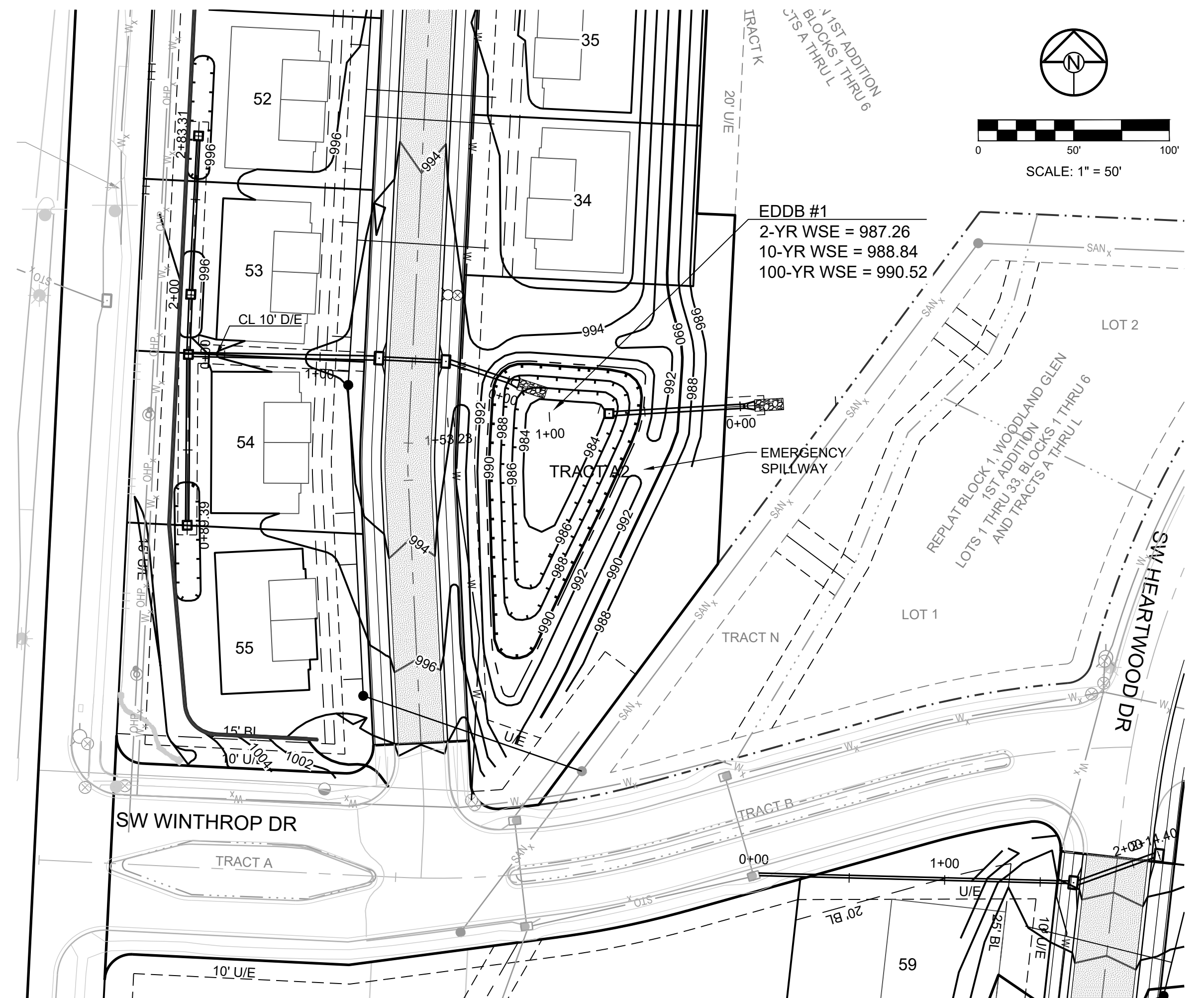


TRASH RACK DETAIL

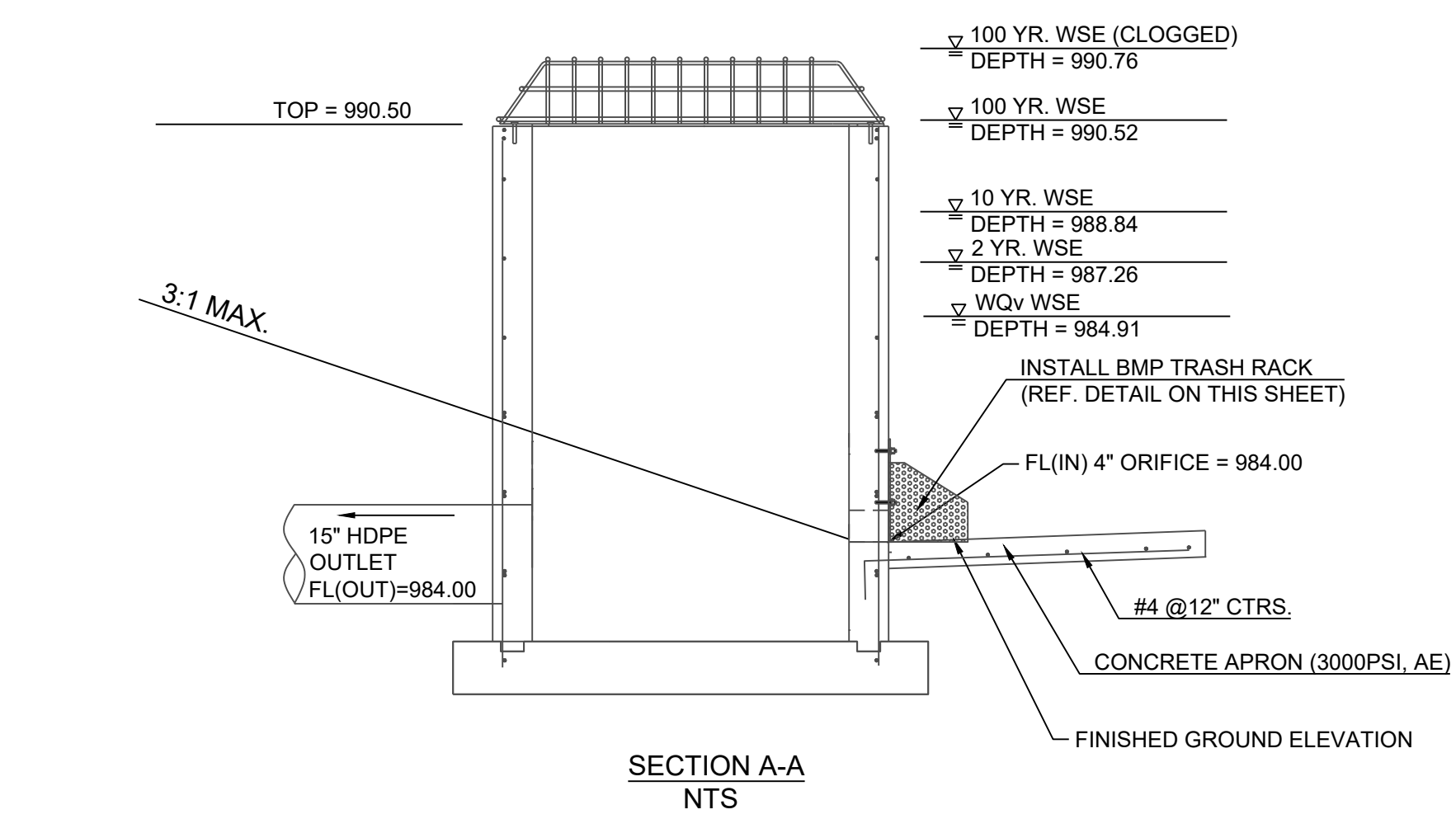


BMP TRASH RACK

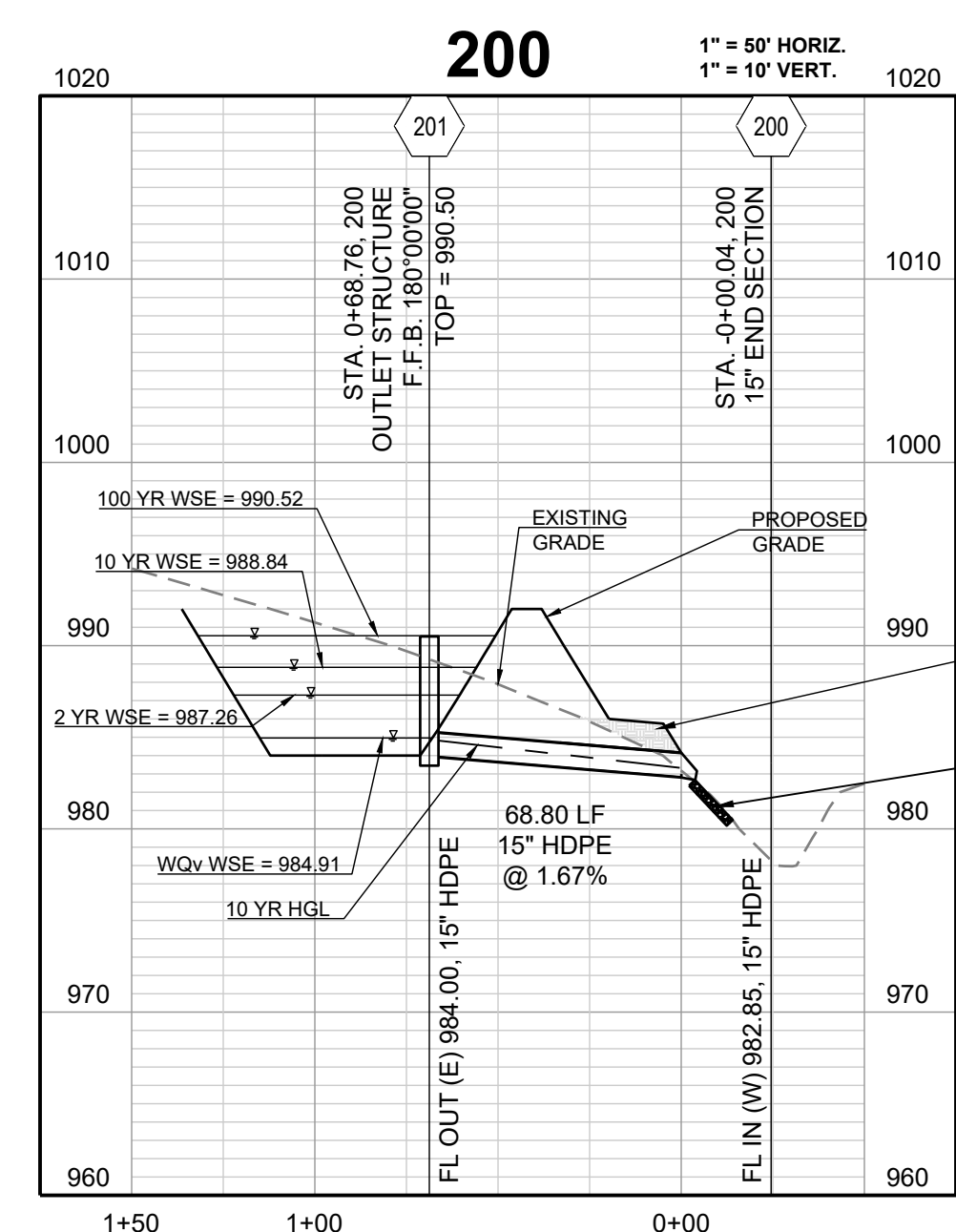
PLASTIC SOLUTIONS INC.  
 P.O. Box 4386  
 Winchester Va 22604  
 877-877-5727  
 www.plastic-solutions.com



SECTION B-B NTS



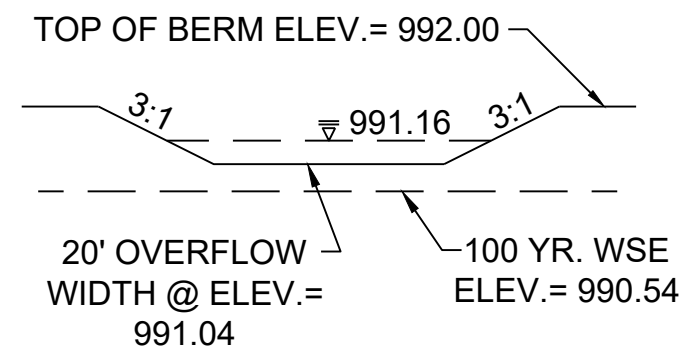
SECTION A-A NTS



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

RELEASED FOR CONSTRUCTION  
 As Noted on Plans Review  
 Development Services Department  
 Lee's Summit, Missouri  
 65242022

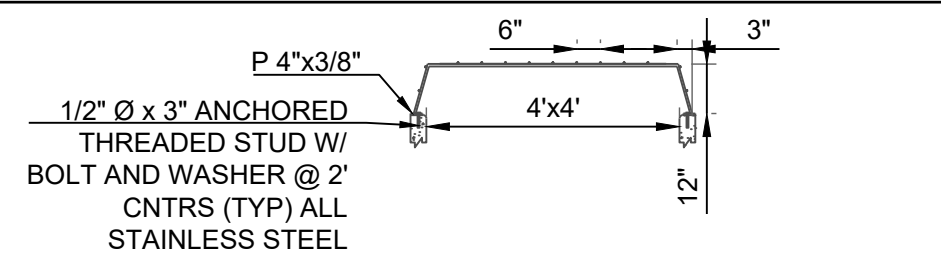


REVISION DATE	DESCRIPTION
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01/11/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
05/15/2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
09/28/2021	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT

EDDB 1 OUTLET STRUCTURE

SHEET

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

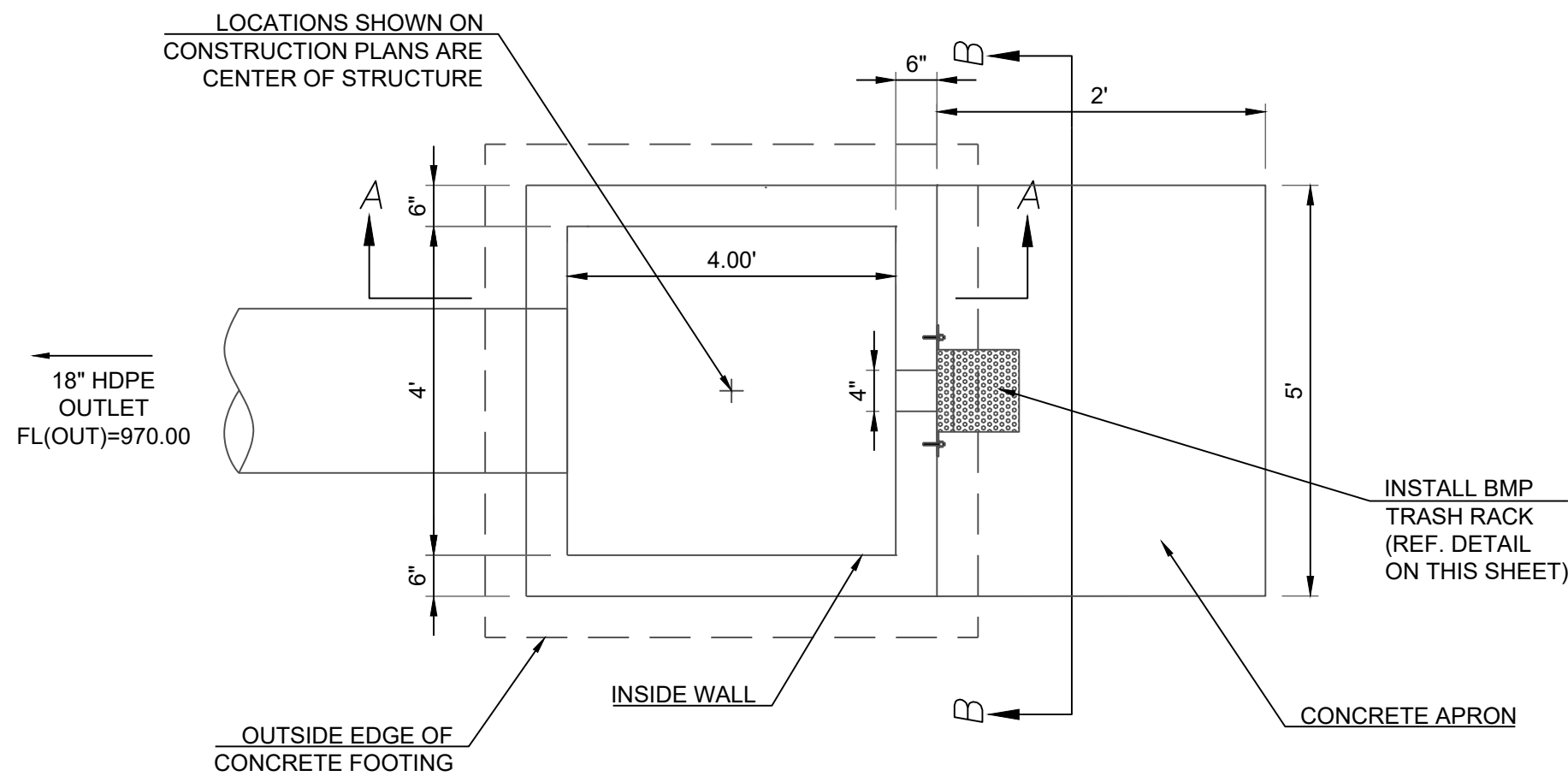


1/2" Ø x 3" ANCHORED THREADED STUD W/ BOLT AND WASHER @ 2" CNTRS (TYP) ALL STAINLESS STEEL



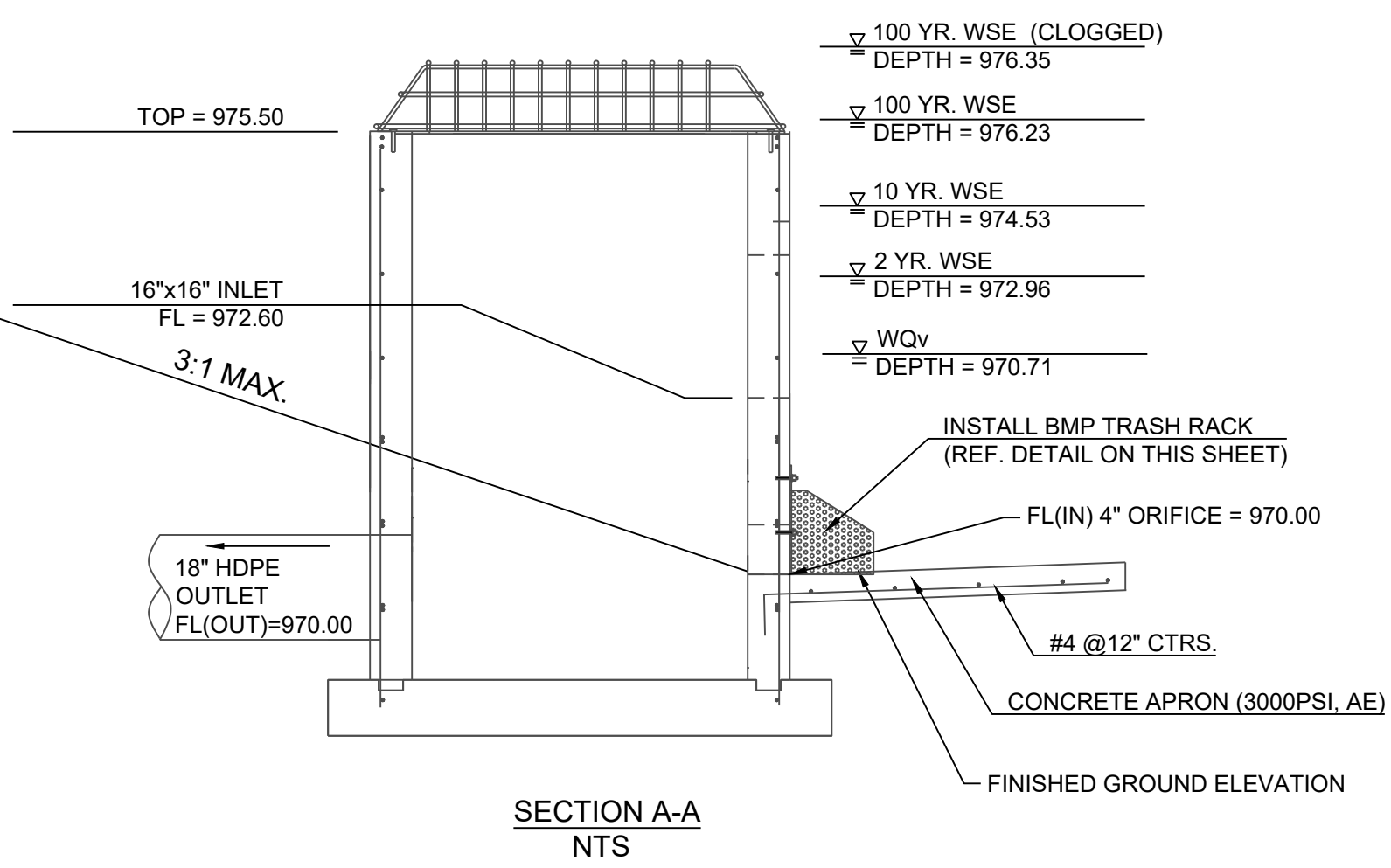
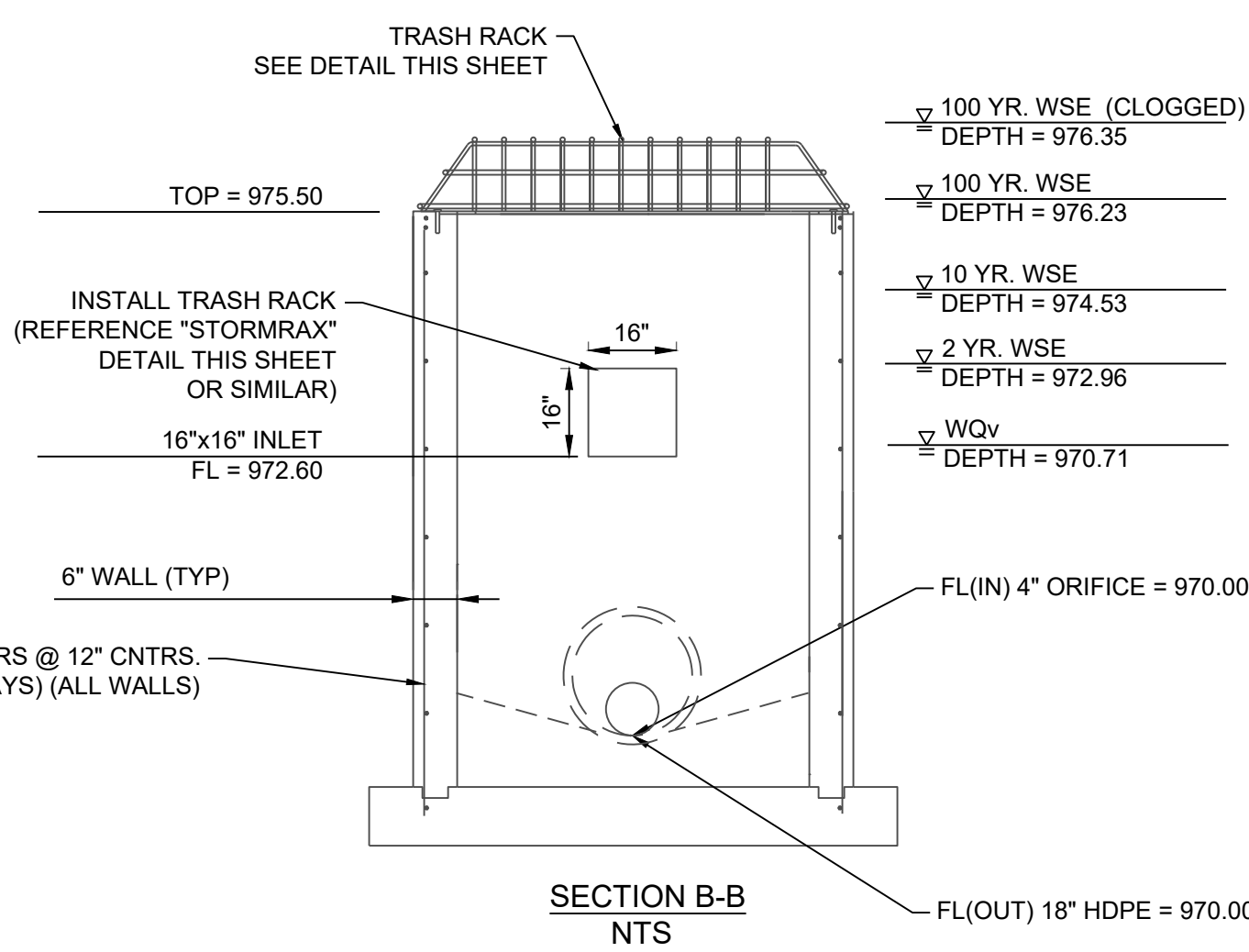
34"x34" MIN. ACCESS HATCH PROVIDE MEANS TO LOCK ACCESS HATCH

TRASH RACK DETAIL



**BMP TRASH RACK**

PLASTIC SOLUTIONS INC. P.O. Box 4386 Winchester, VA 22604 877-677-5727 www.plastic-solutions.com

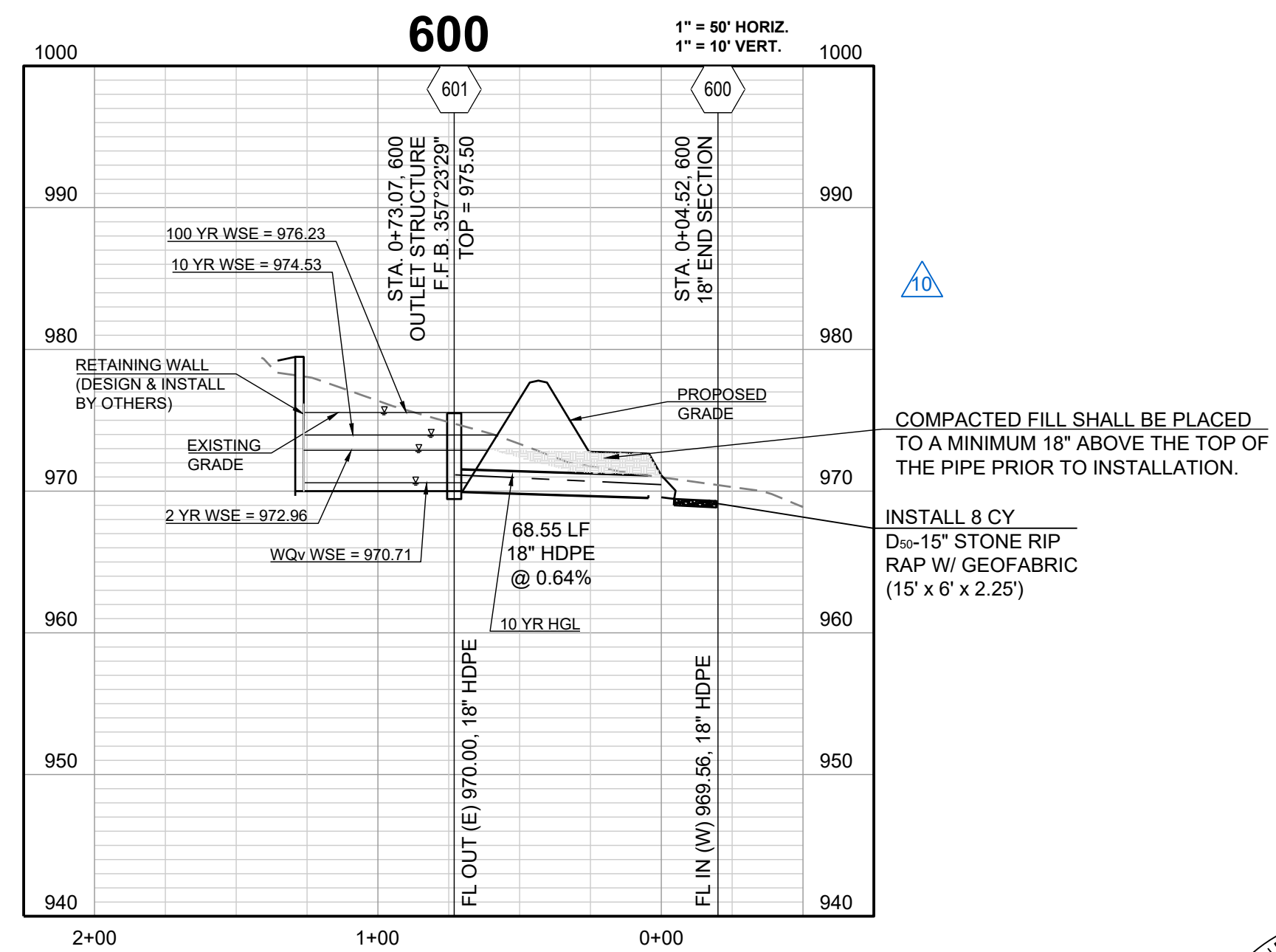


**StormRax™**

FLAT RACK SIDE WEIR

AVAILABLE OPTIONS: REMOVABLE ACCESS PANEL N/A, ANTI VORTEX PLATE N/A

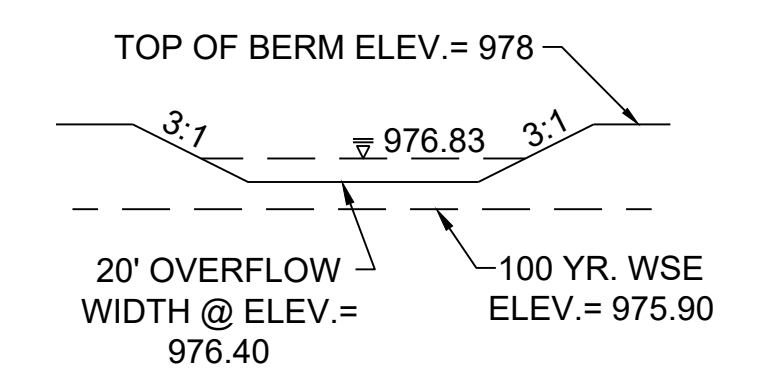
WEIR DIMENSIONS: WEIR OPENING WIDTH (in) "A" 16", WEIR OPENING LENGTH (in) "B" 16"



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<sup>3</sup>(3/2), C=3.33, L=20 FT., 18.47 CFS = 3.33 \* 20FT. \* (H<sup>3</sup>(3/2)), H=0.43 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

RELEASED FOR CONSTRUCTION  
As Noted on Plans Review  
Development Services Department  
Lee's Summit, Missouri  
05/24/2022



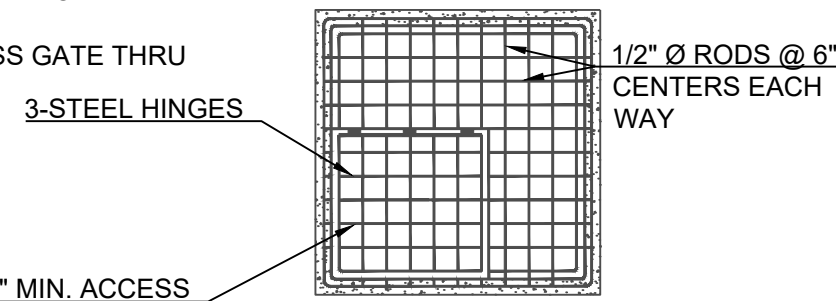
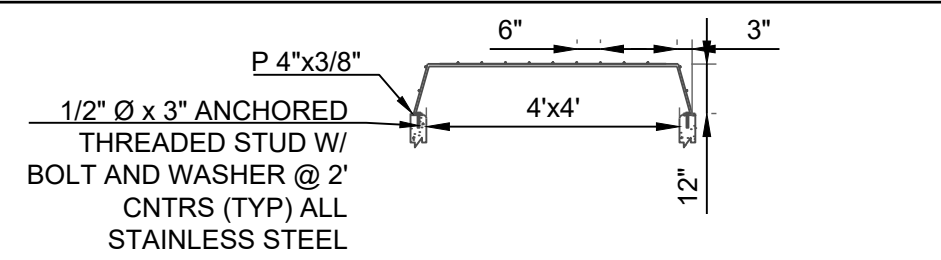
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04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
05/15/2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
09/28/2021	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT

EDDB 2 OUTLET STRUCTURE

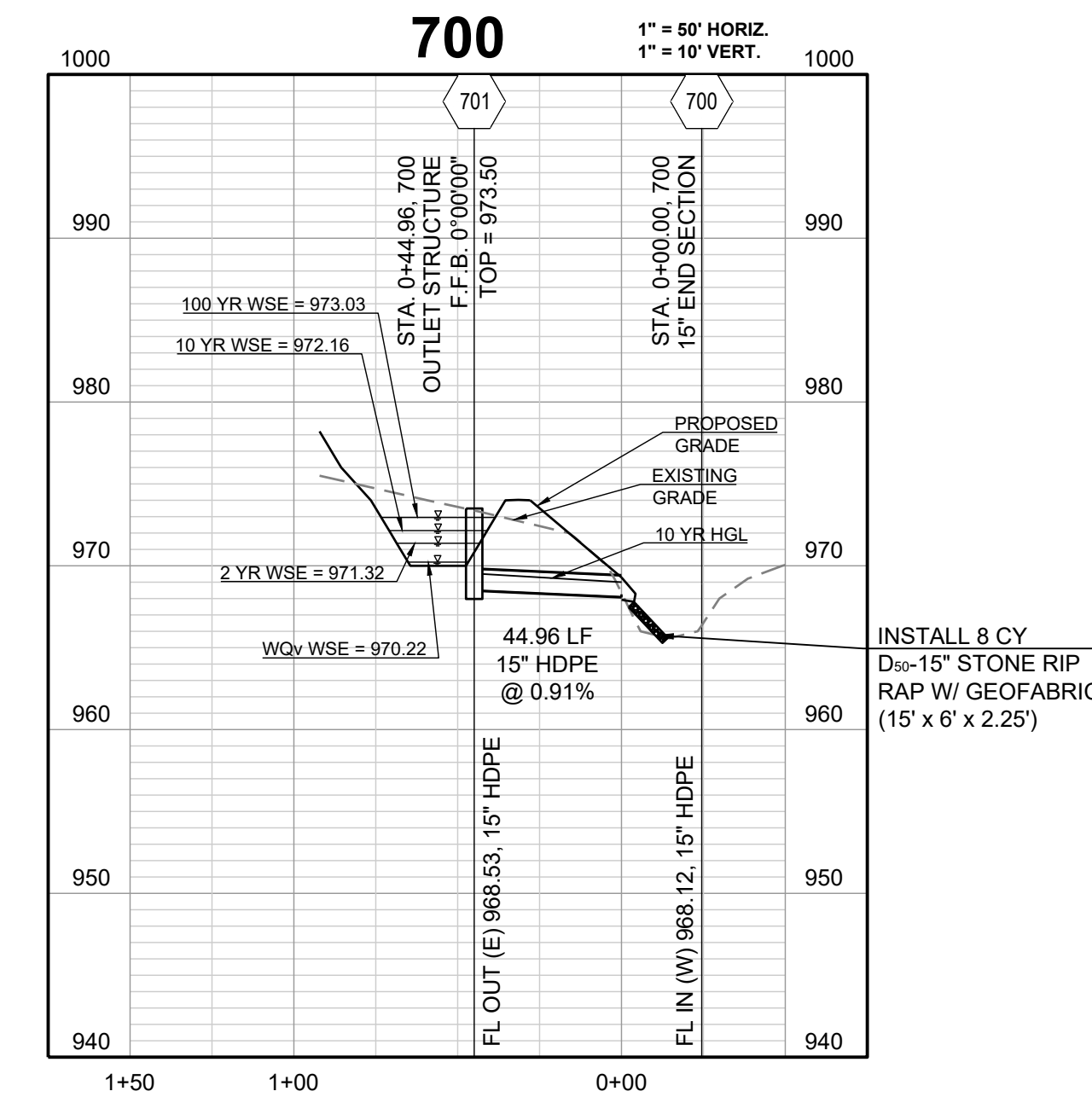
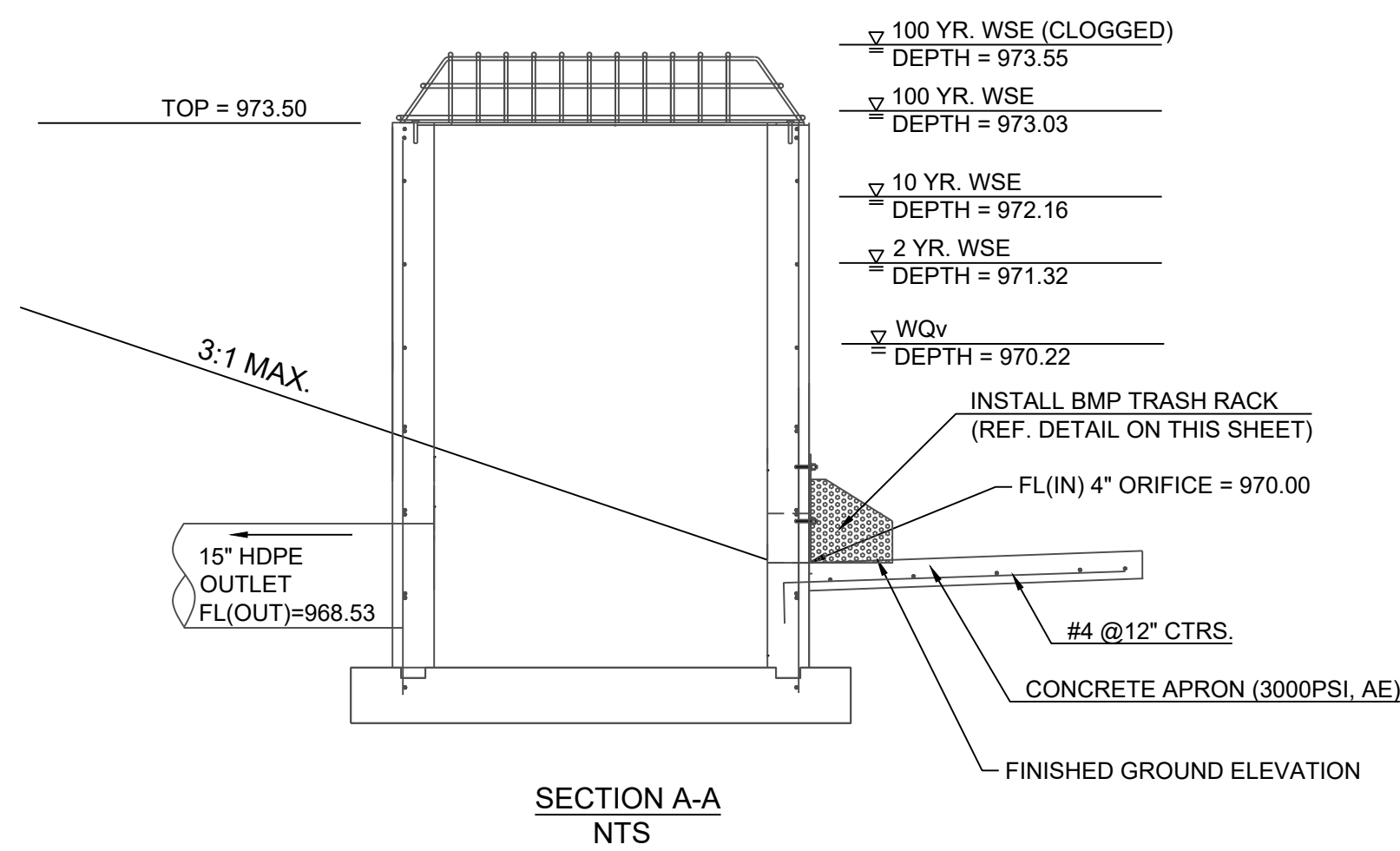
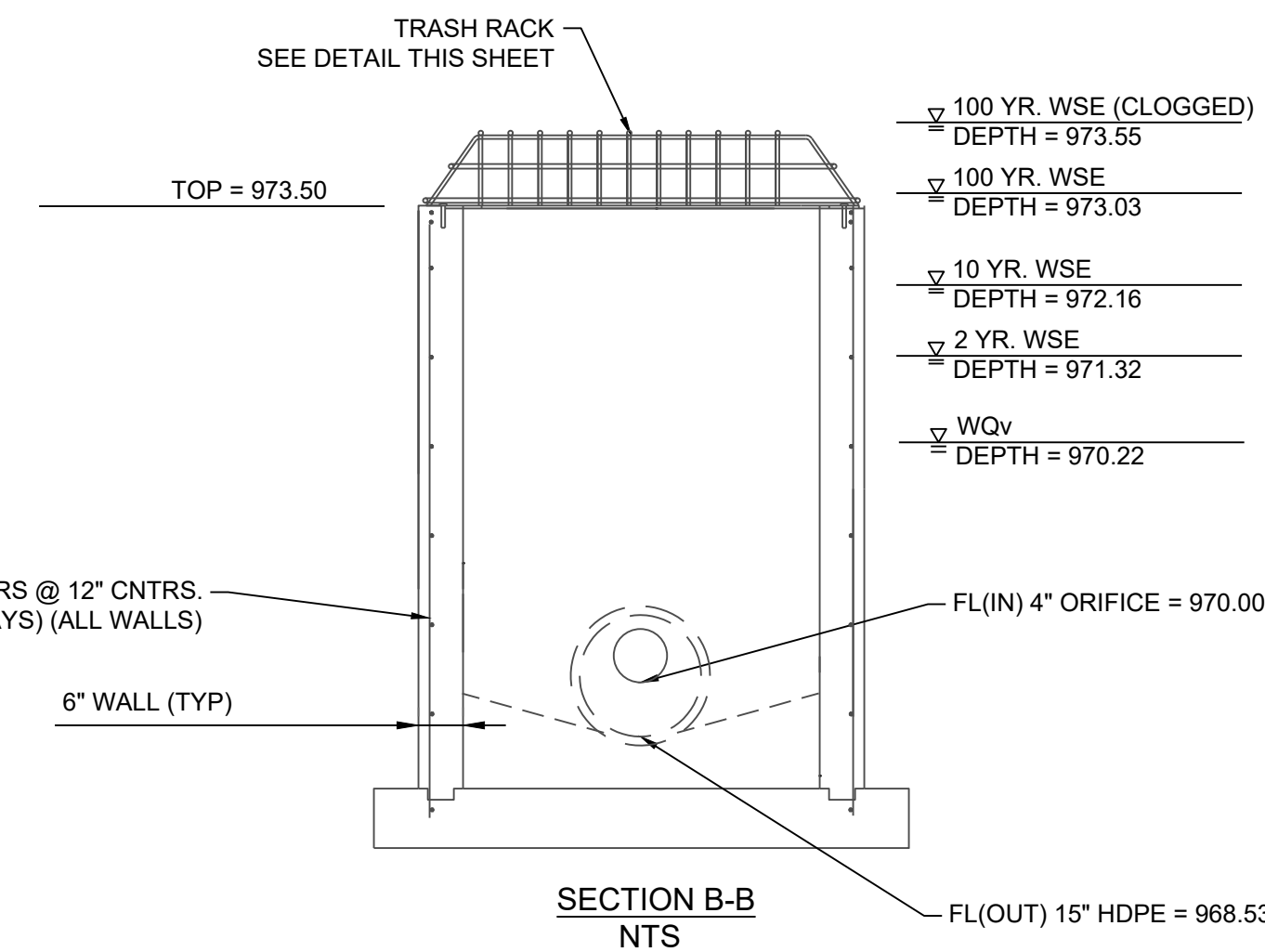
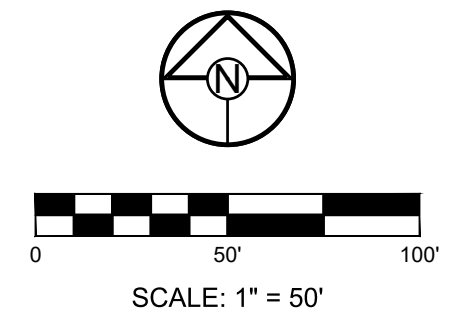
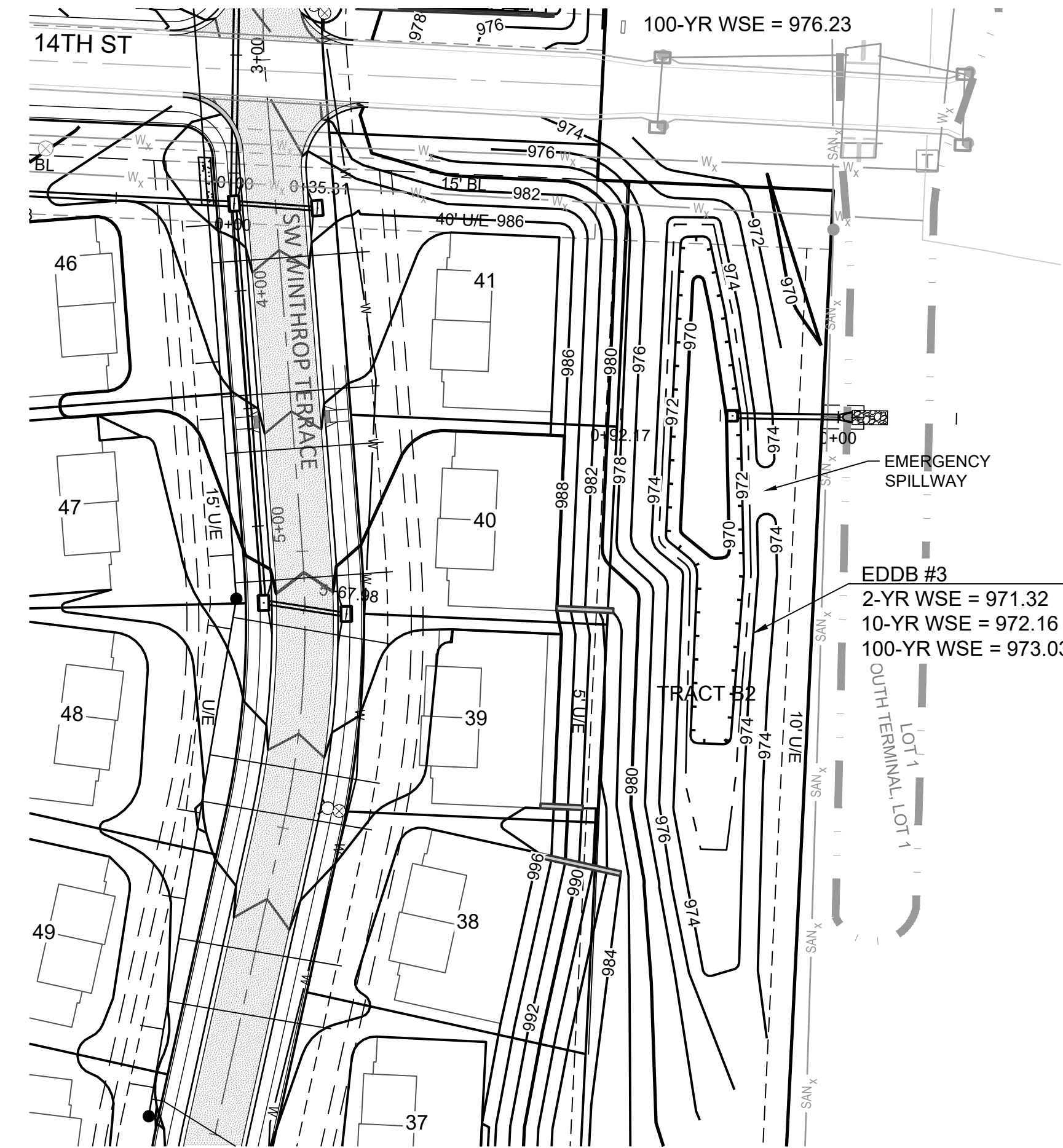
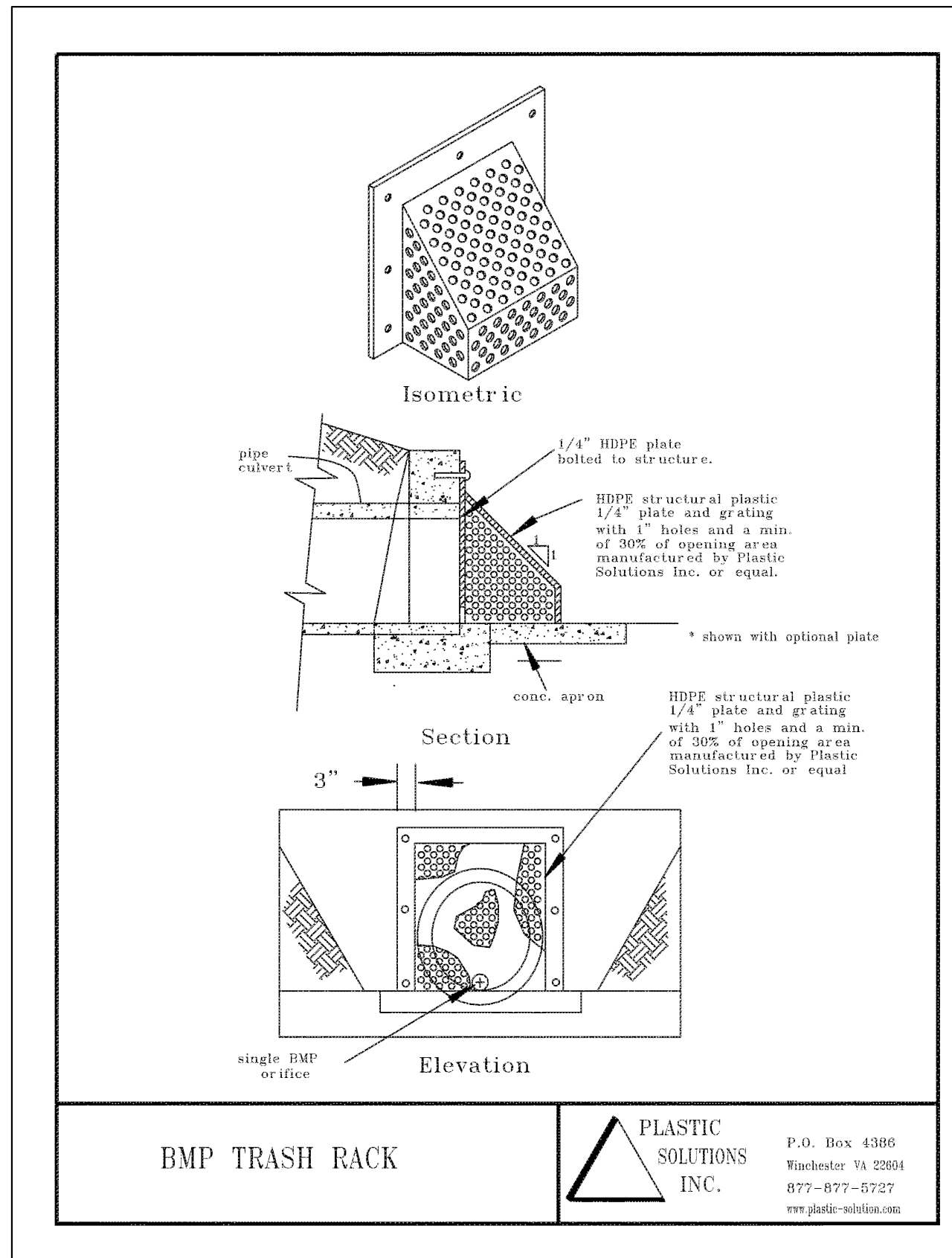
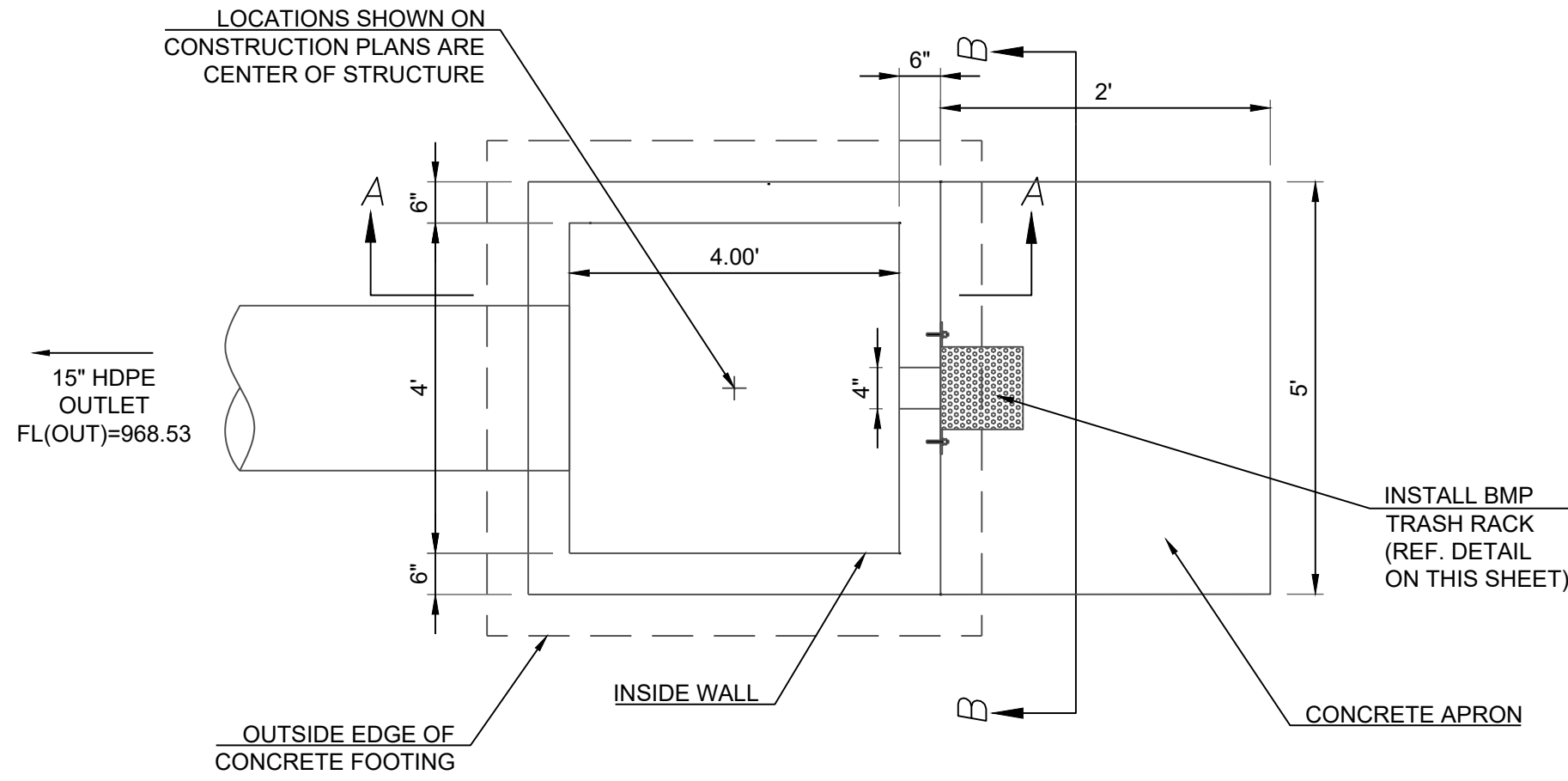
SHEET

**NOTES:**

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



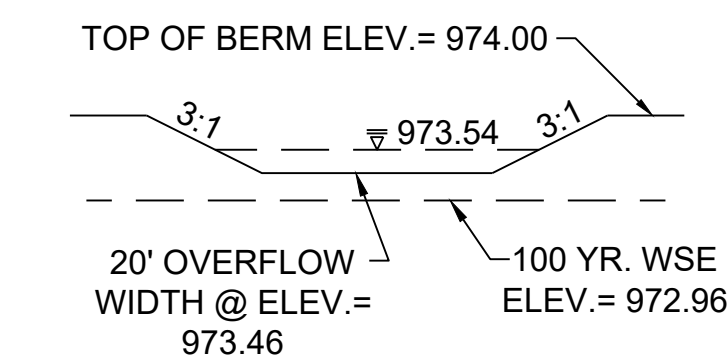
**TRASH RACK DETAIL**



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.

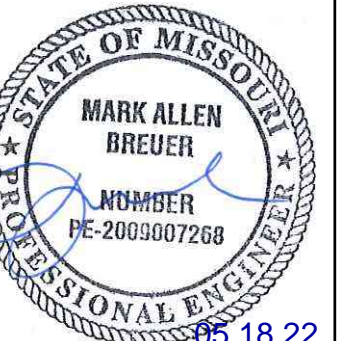


**PROJECT BENCHMARK:**

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3" DIAMETER ALUMINUM DISK IN MONUMENT BOX  
M.D.N.R. DOC. NO. 600-65374

ELEV. 1036.41

PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

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

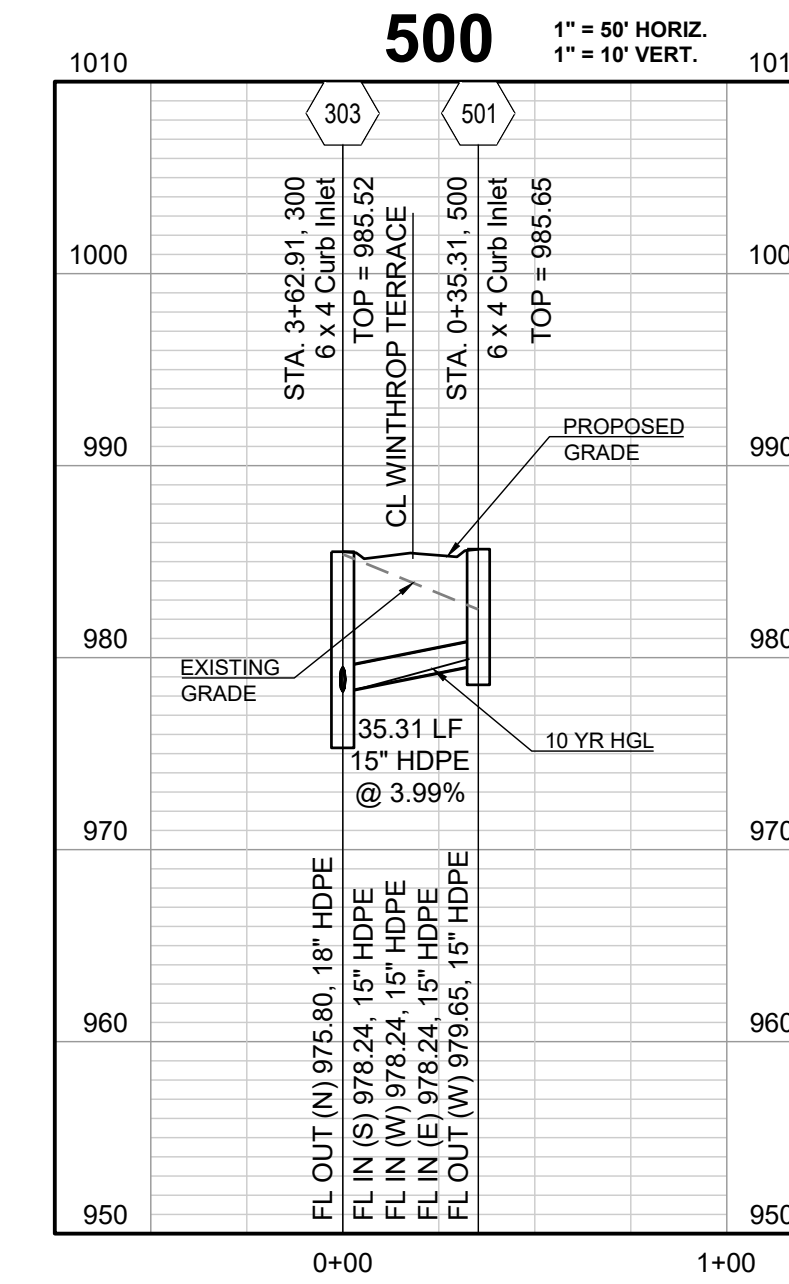
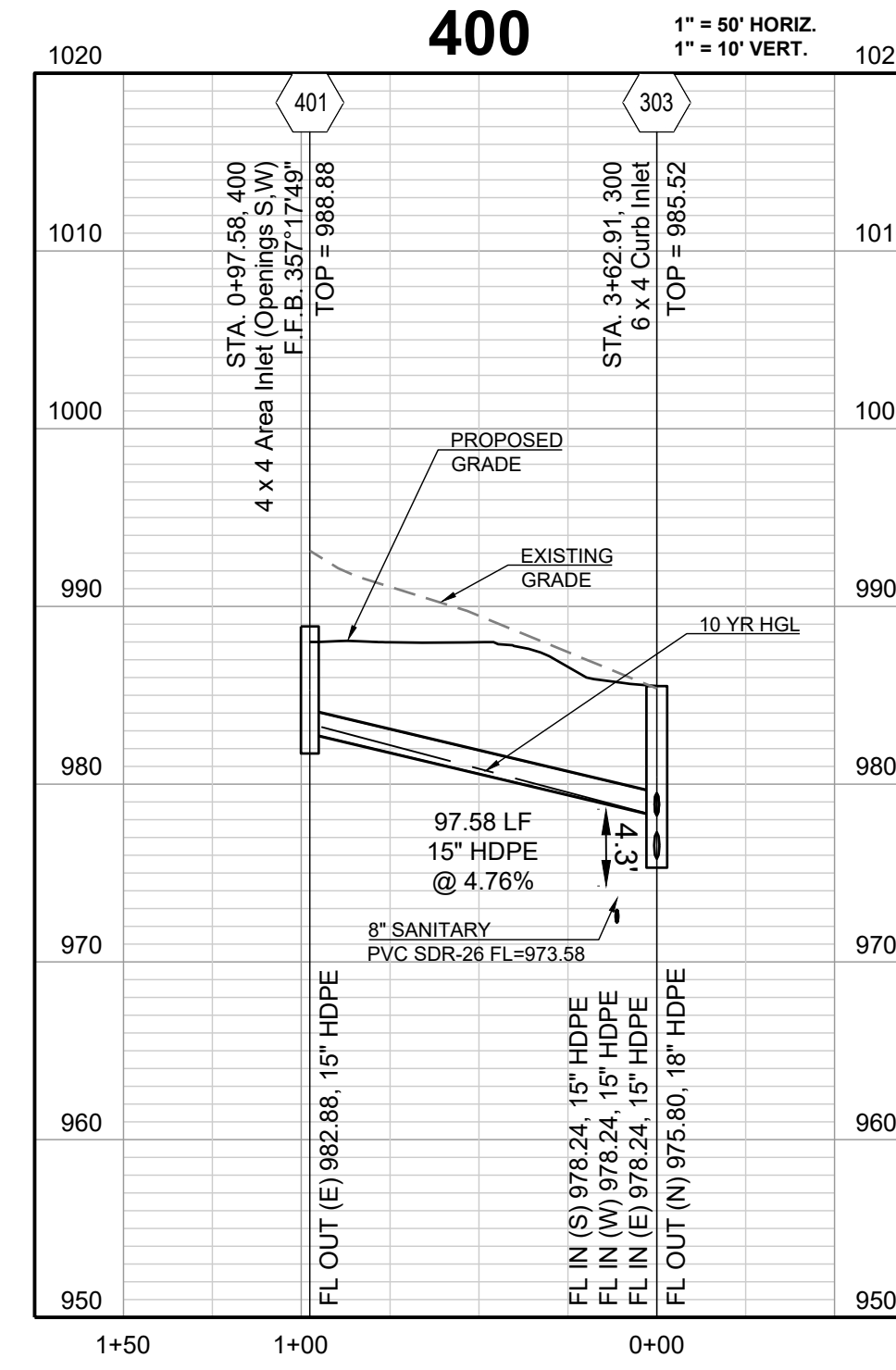
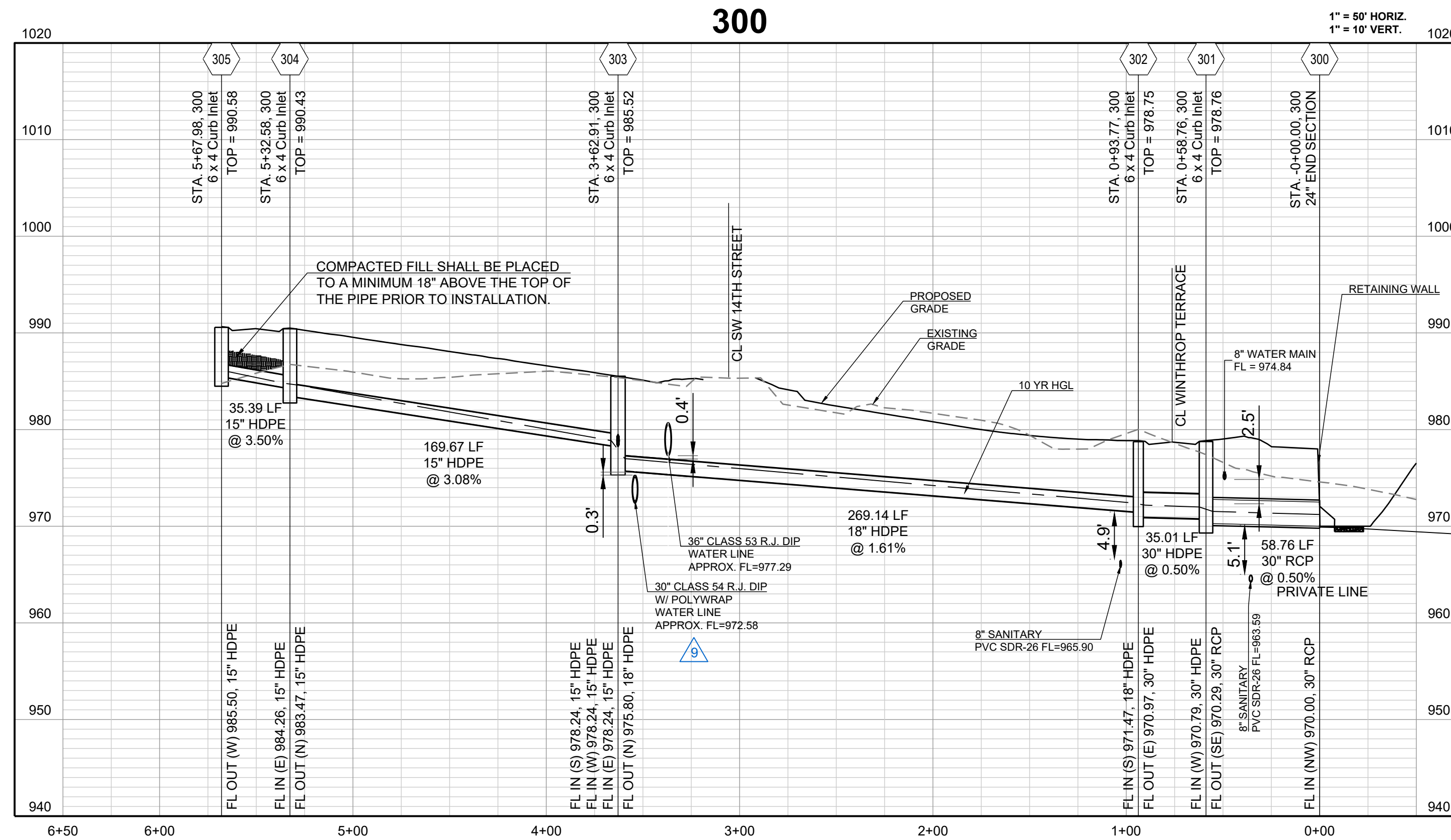
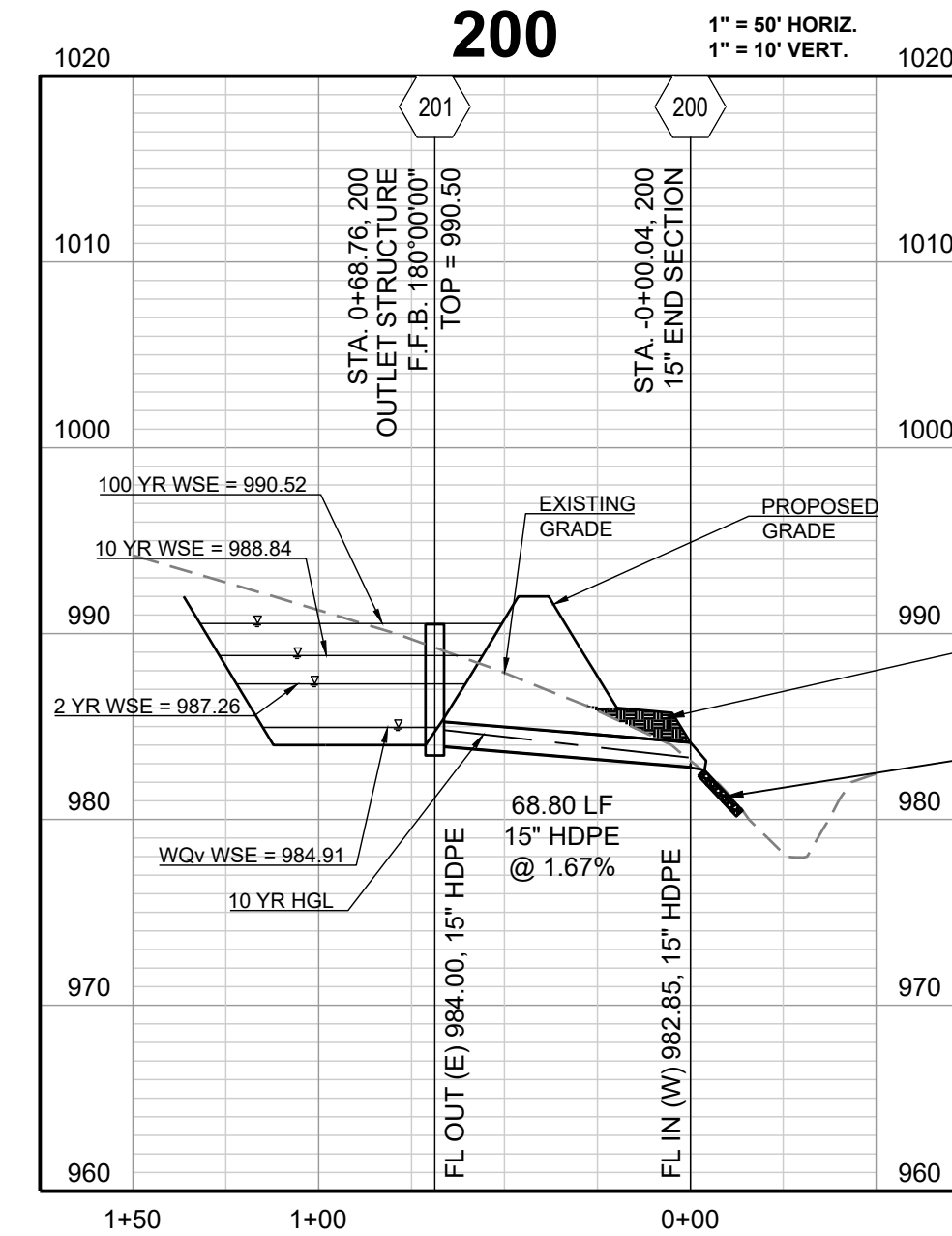
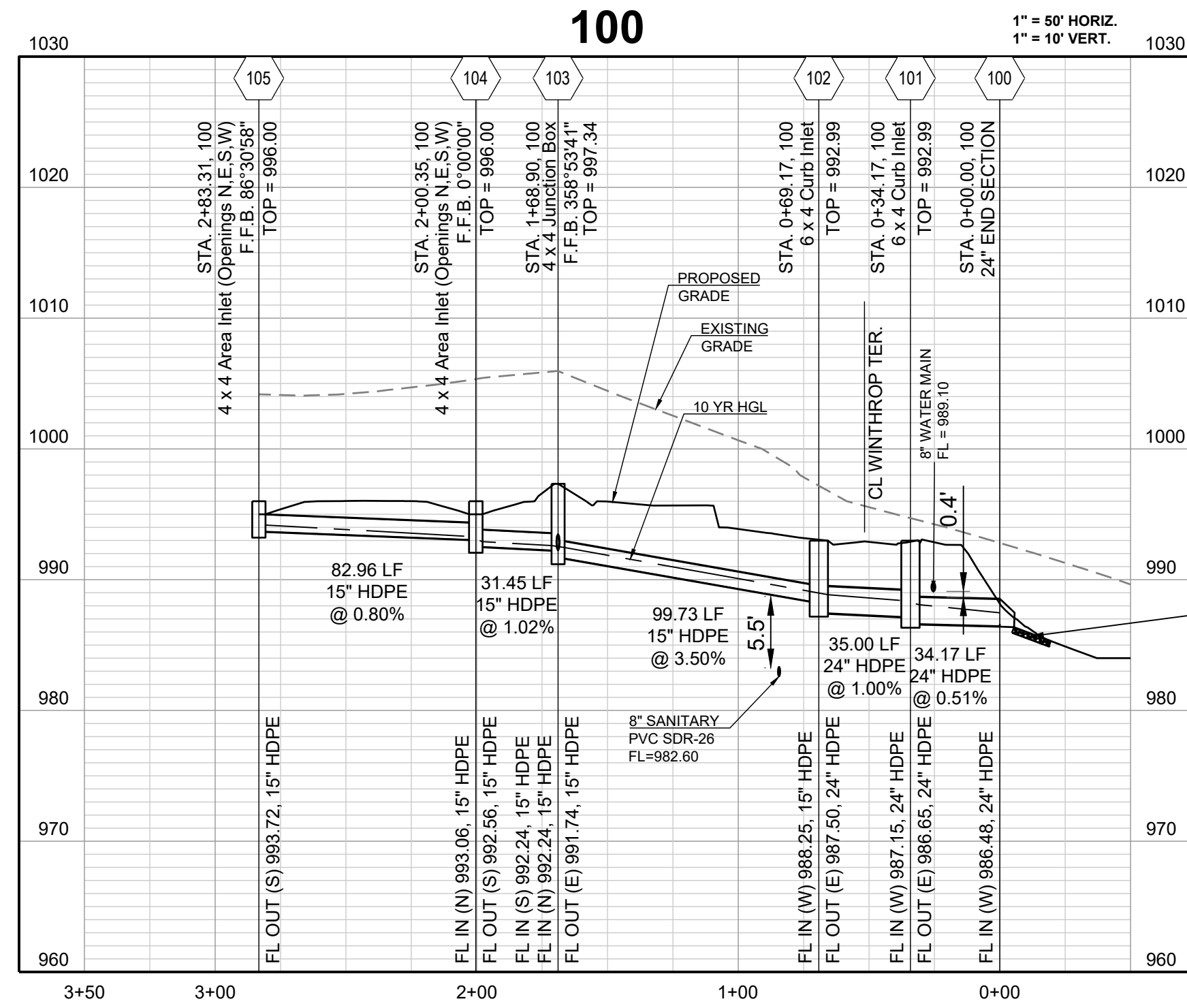
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01/20/2022	WATER LINE CONFLICT

EDDB 3 OUTLET  
STRUCTURE

SHEET



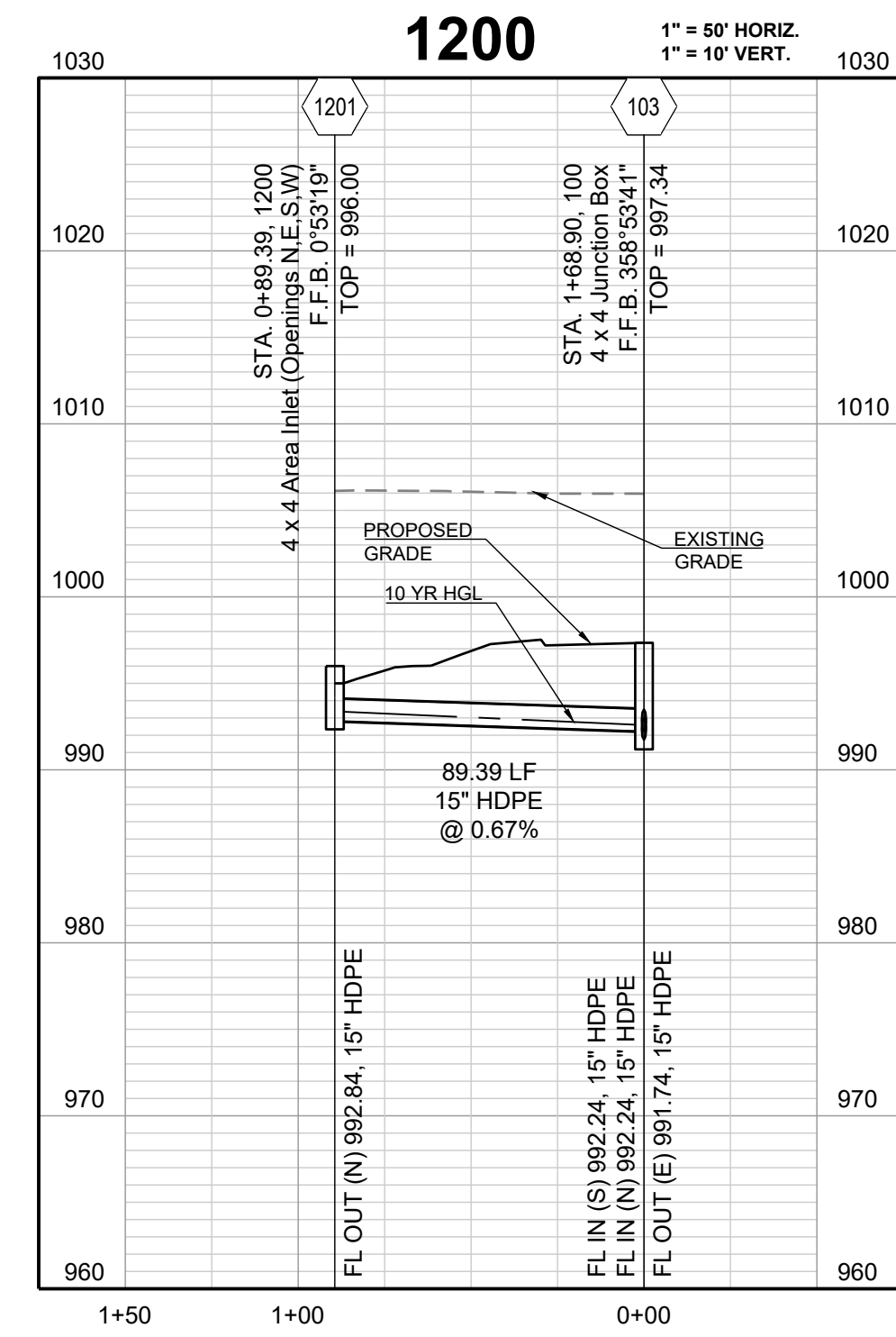
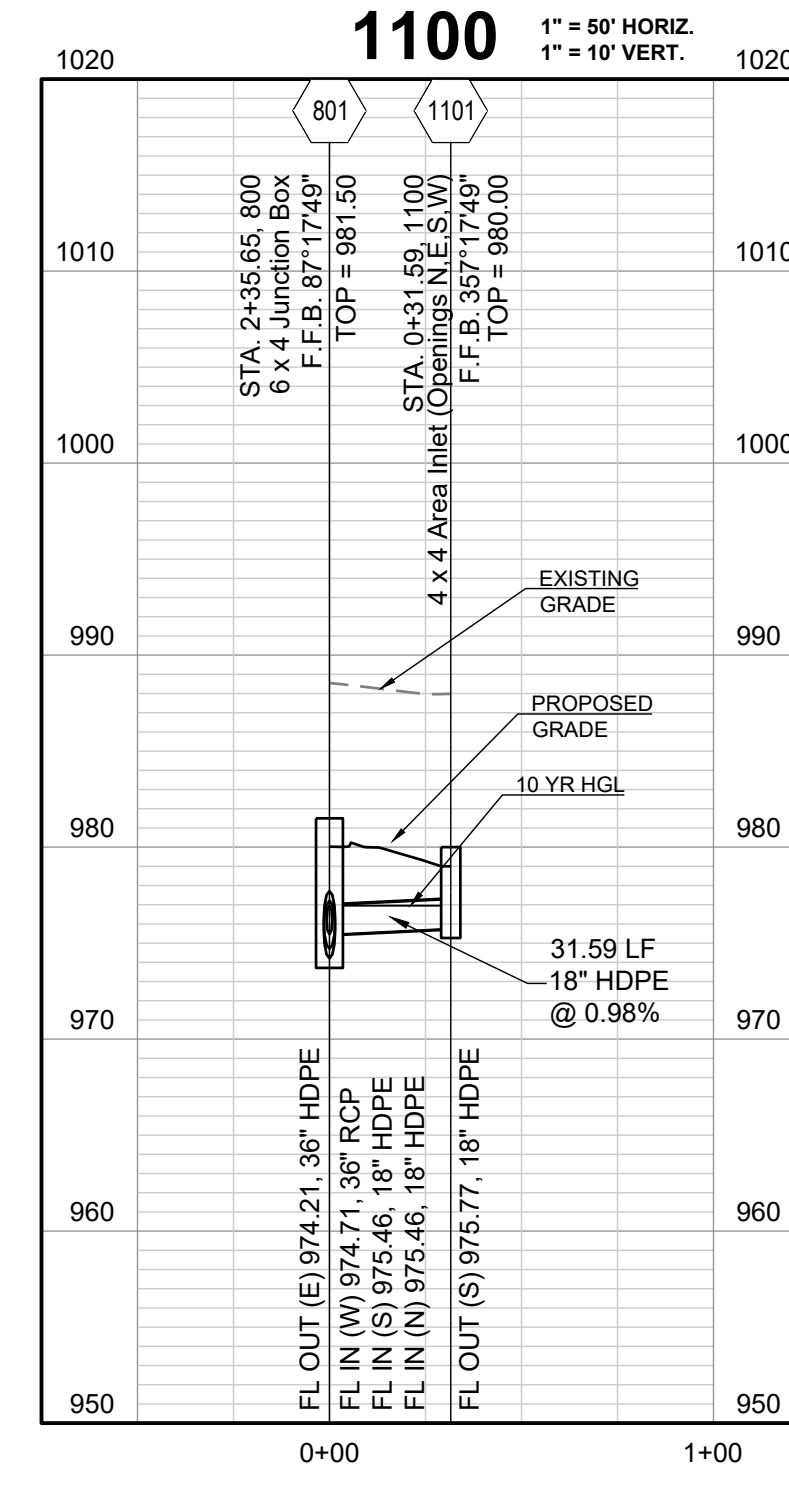
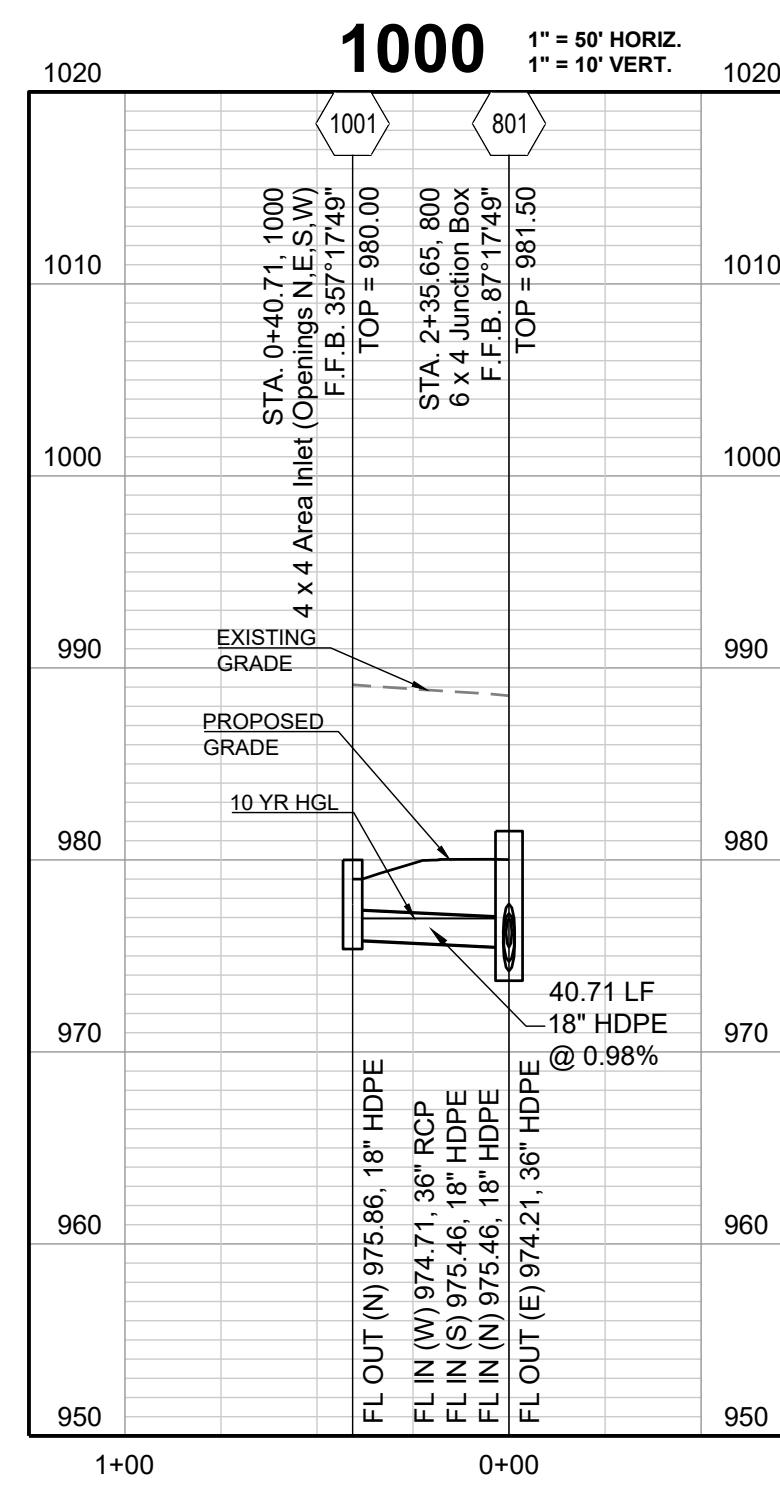
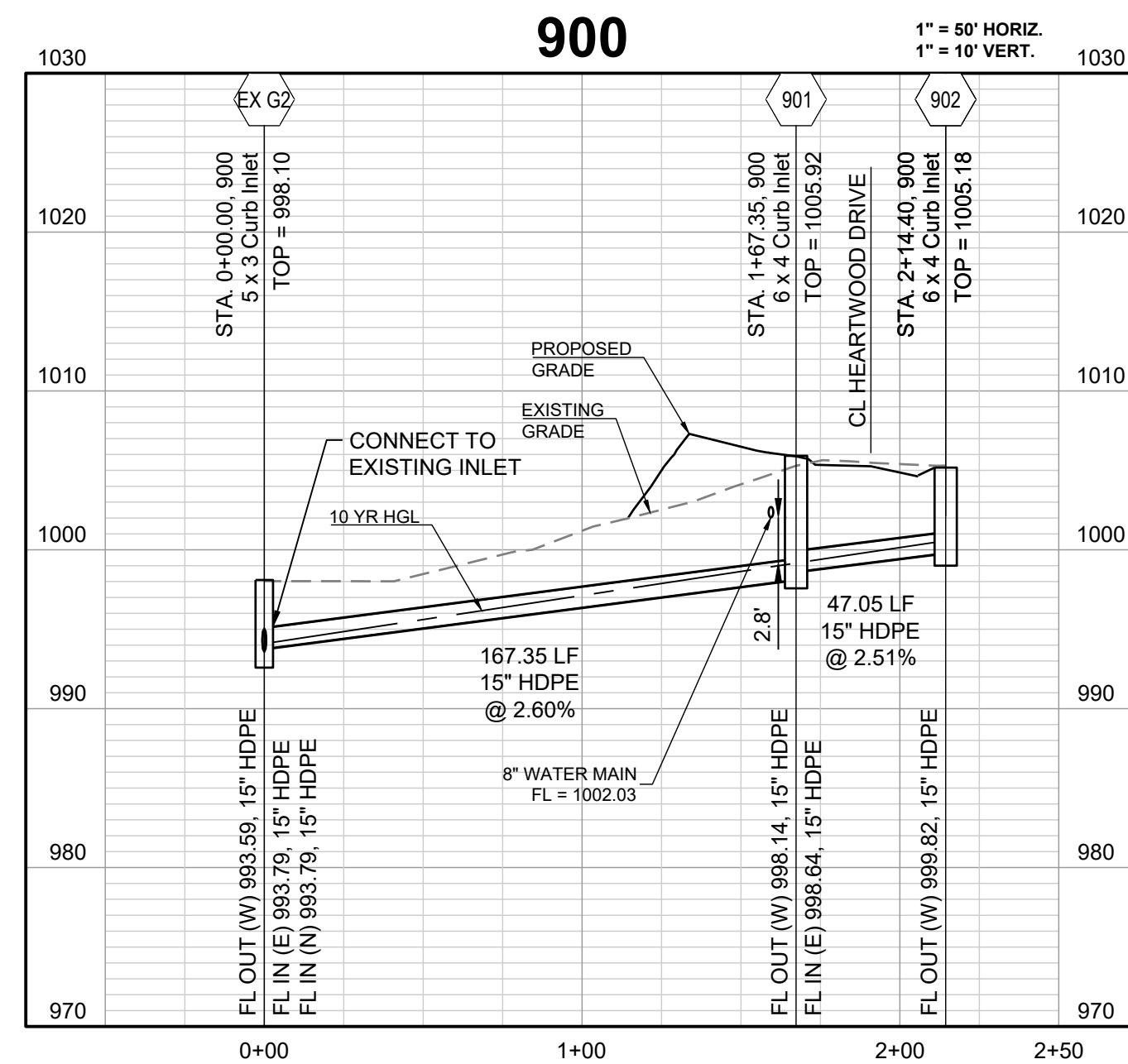
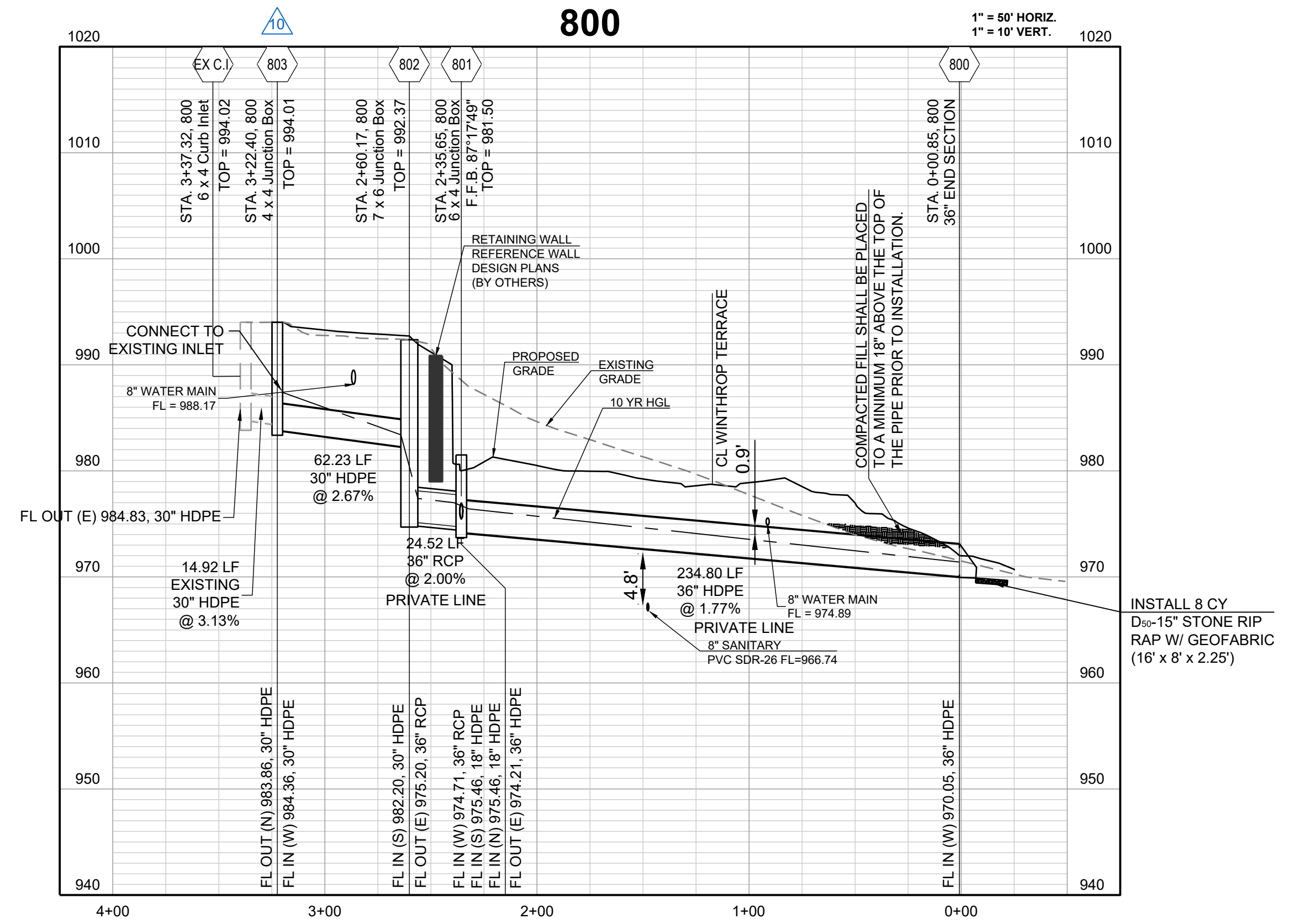
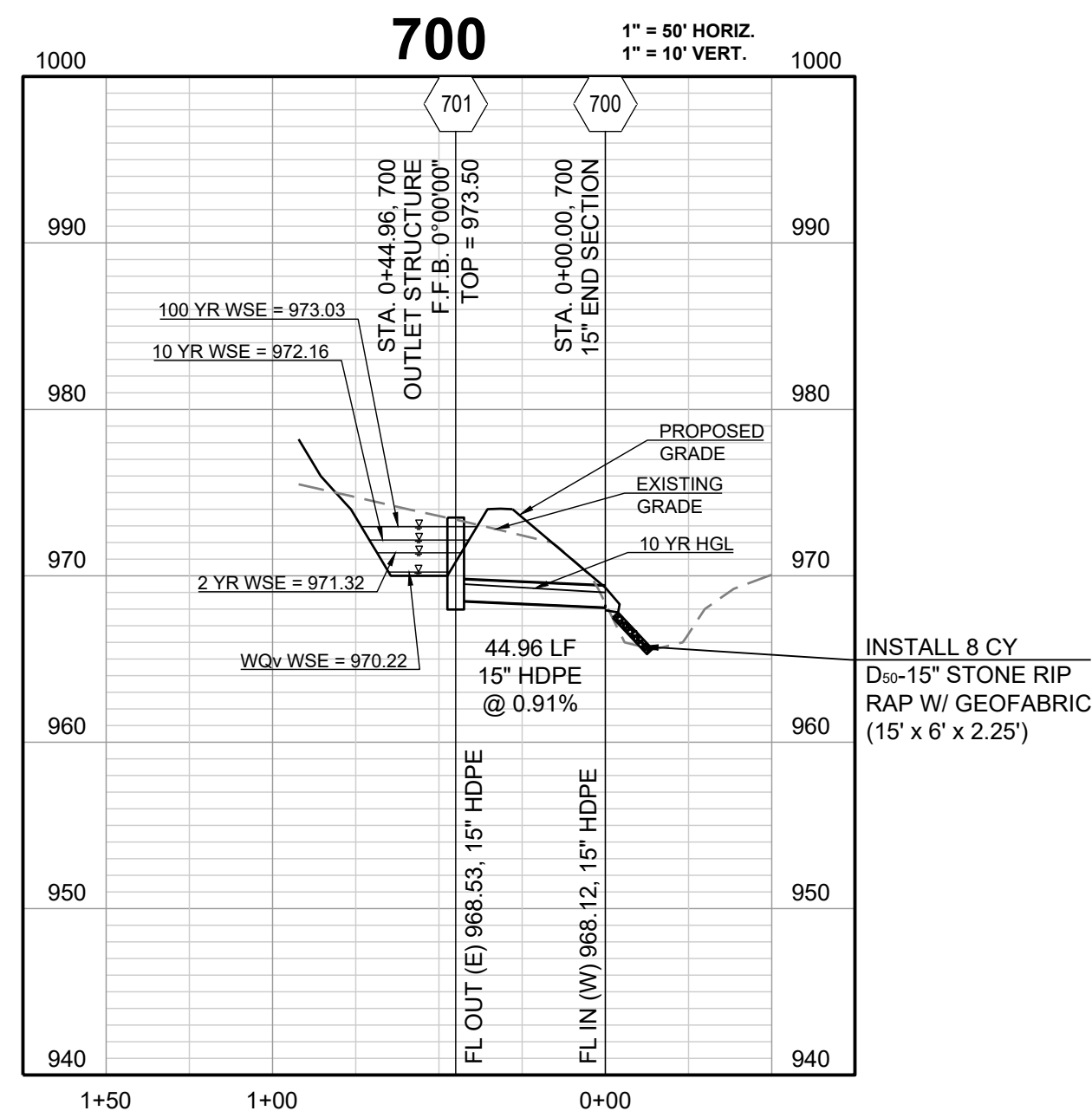
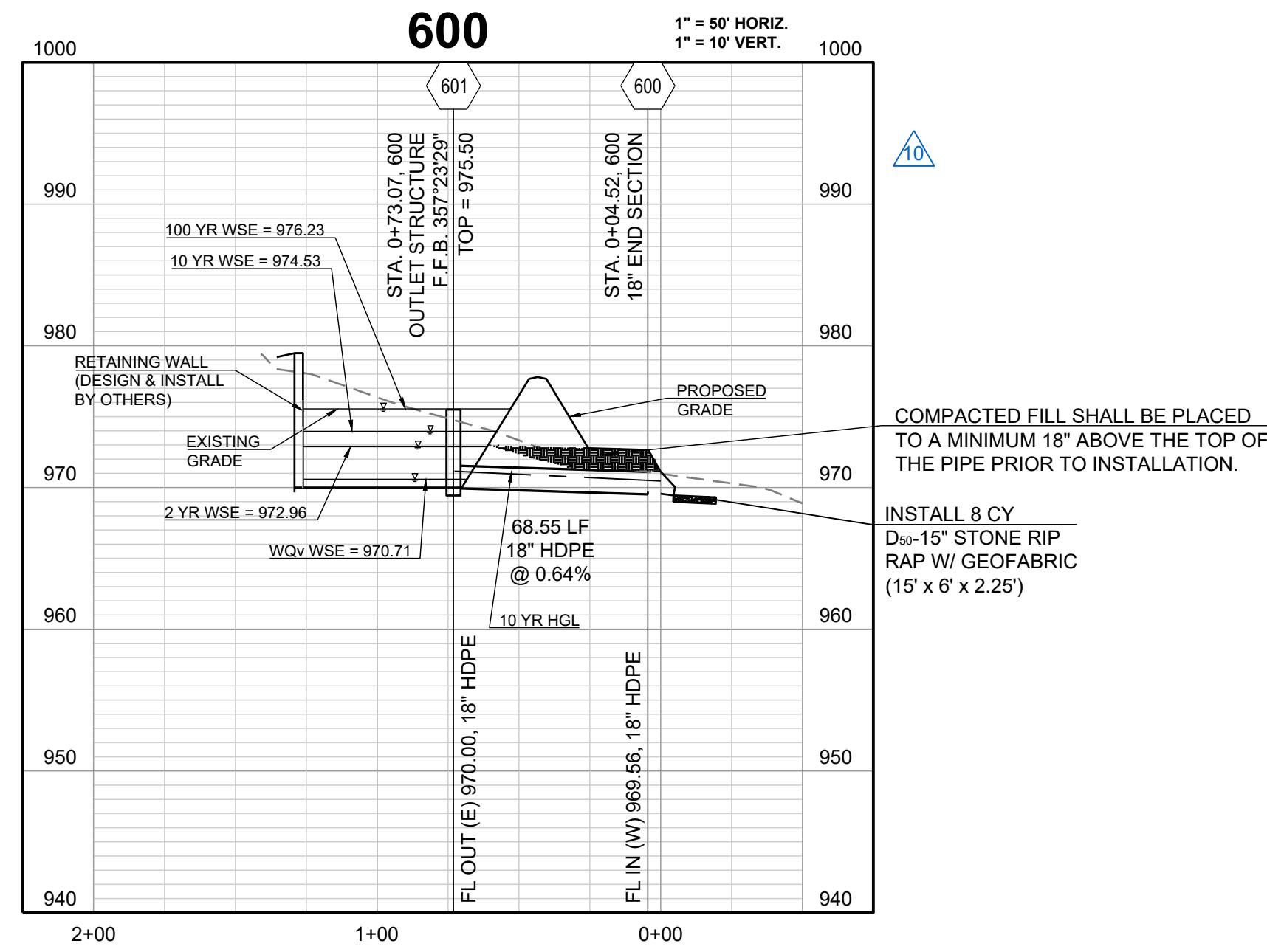
WOODLAND GLEN 2ND PLAT  
 STREET, STORMWATER, MASTER DRAINAGE,  
 AND EROSION CONTROL PLANS  
 WARD ROAD & WINTHROP DRIVE  
 LEE'S SUMMIT, MISSOURI

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01/20/2022	WATER LINE CONFLICT

STORM PROFILE

SHEET

RELEASED FOR  
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 Lee's Summit, Missouri  
 05/24/2022



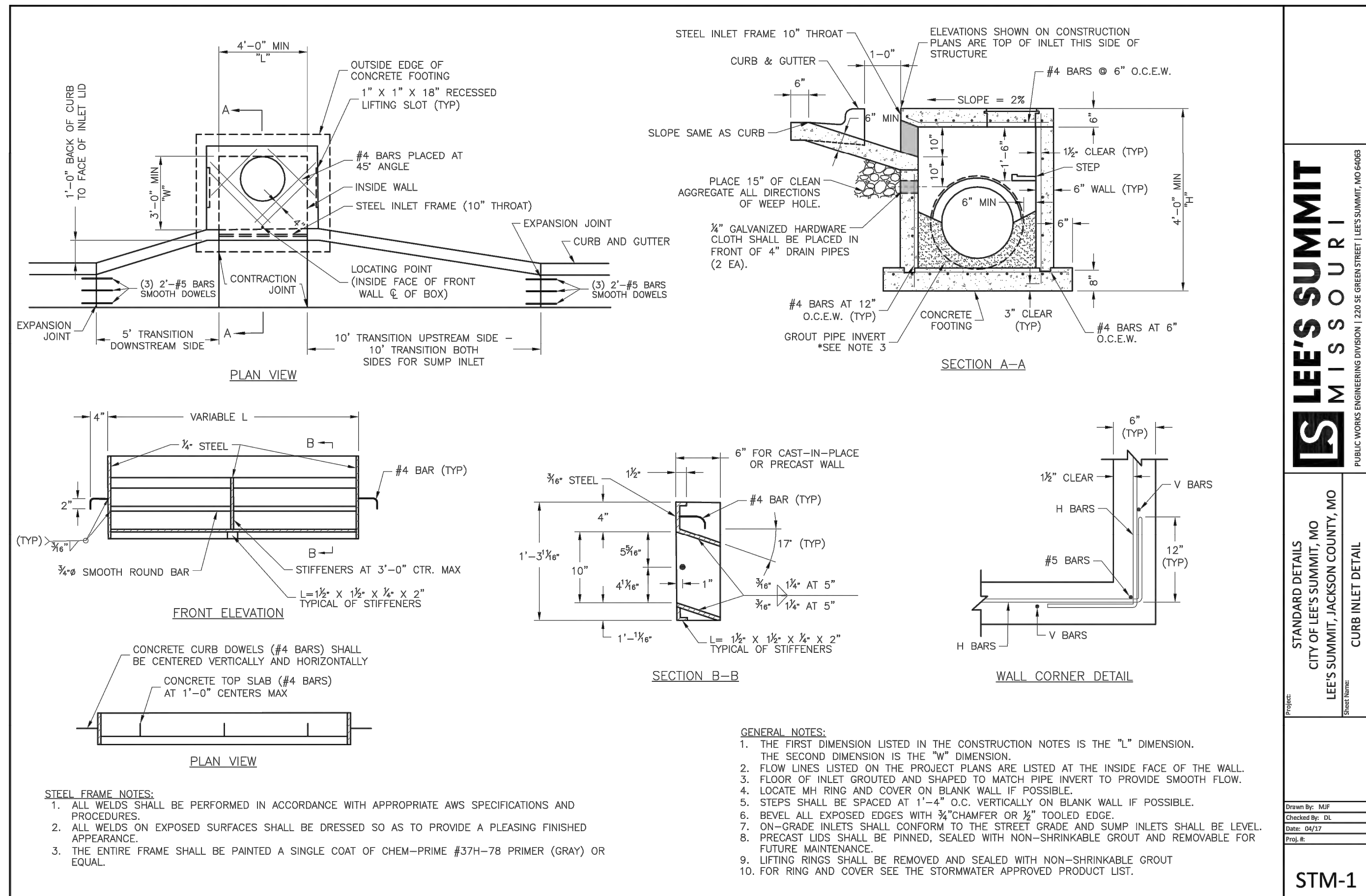
WOODLAND GLEN 2ND PLAT  
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09/28/2021	CITY COMMENTS
09/28/2021	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT

STORM PROF  
 CONT

SHEET

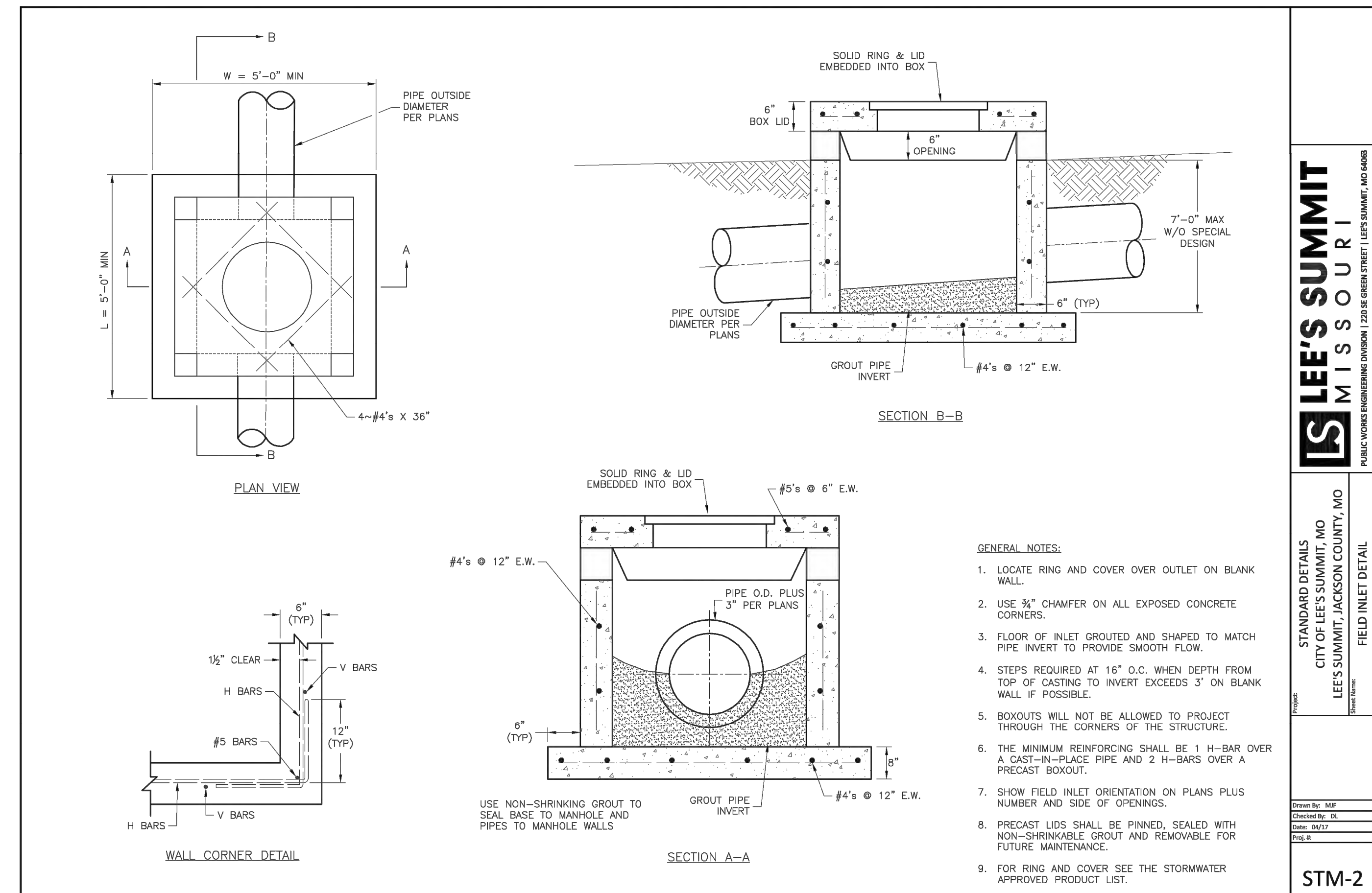
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 Lee's Summit, Missouri  
 05/24/2022



**LEE'S SUMMIT MISSOURI**  
PUBLIC WORKS ENGINEERING DIVISION | 1205 SE GREEN STREET | LEE'S SUMMIT, MO 64063

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

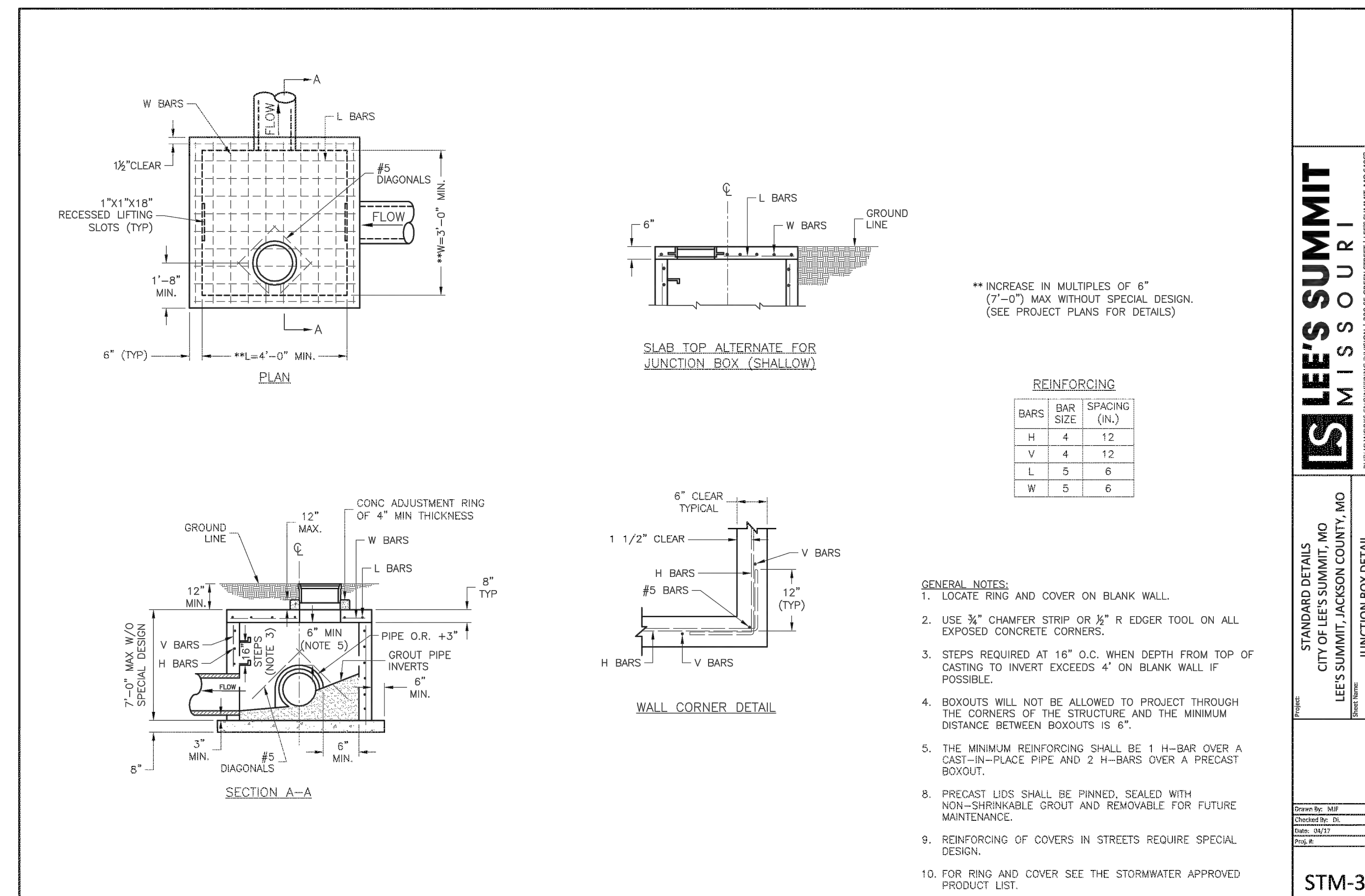
STM-1  
CURB INLET DETAIL



**LEE'S SUMMIT MISSOURI**  
PUBLIC WORKS ENGINEERING DIVISION | 1205 SE GREEN STREET | LEE'S SUMMIT, MO 64063

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

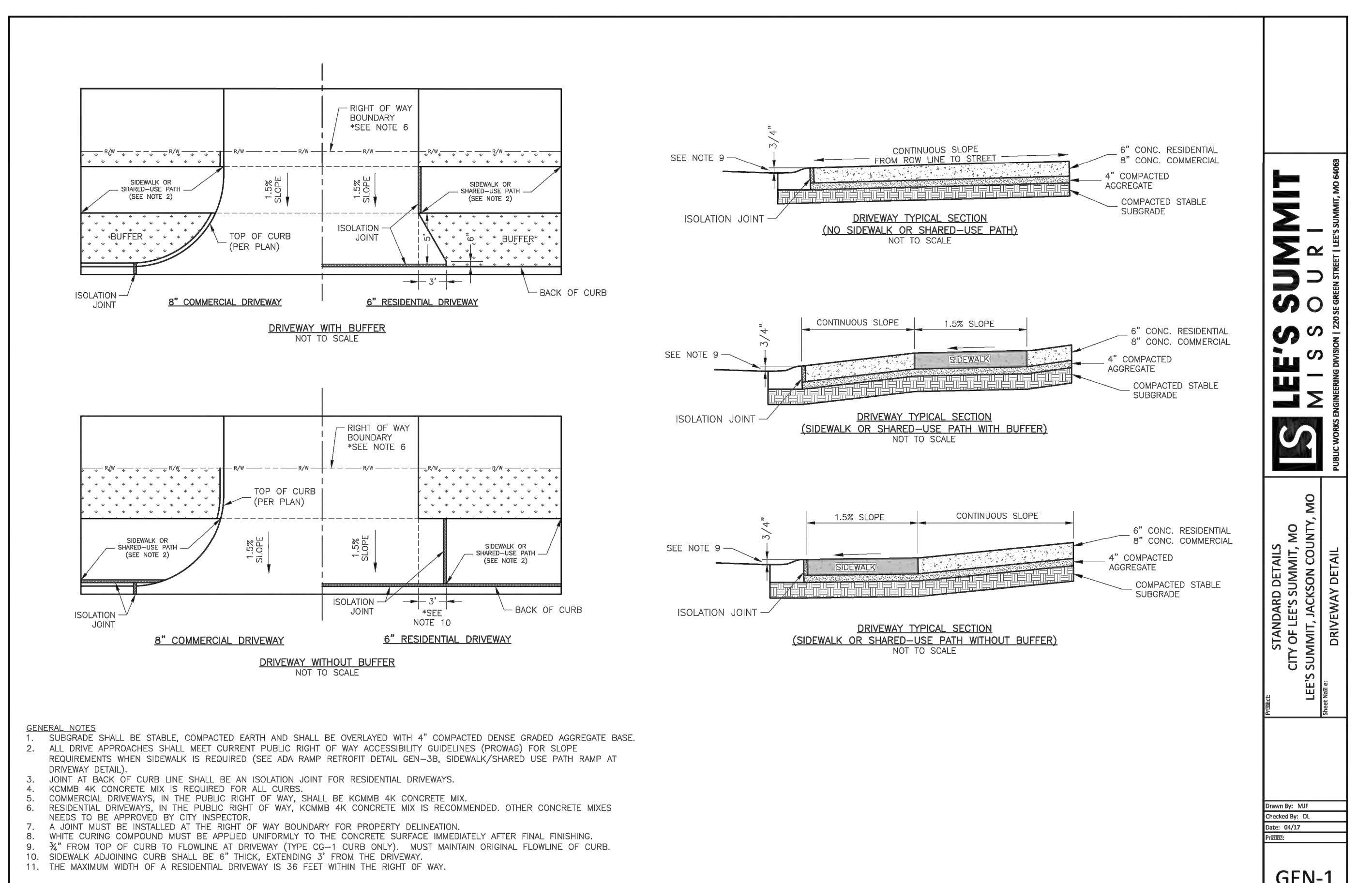
STM-2  
FIELD INLET DETAIL



**LEE'S SUMMIT MISSOURI**  
PUBLIC WORKS ENGINEERING DIVISION | 1205 SE GREEN STREET | LEE'S SUMMIT, MO 64063

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

STM-3  
JUNCTION BOX DETAIL



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05/24/2022

**LEE'S SUMMIT MISSOURI**  
PUBLIC WORKS ENGINEERING DIVISION | 1205 SE GREEN STREET | LEE'S SUMMIT, MO 64063

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

GEN-1  
DRIVEWAY DETAIL

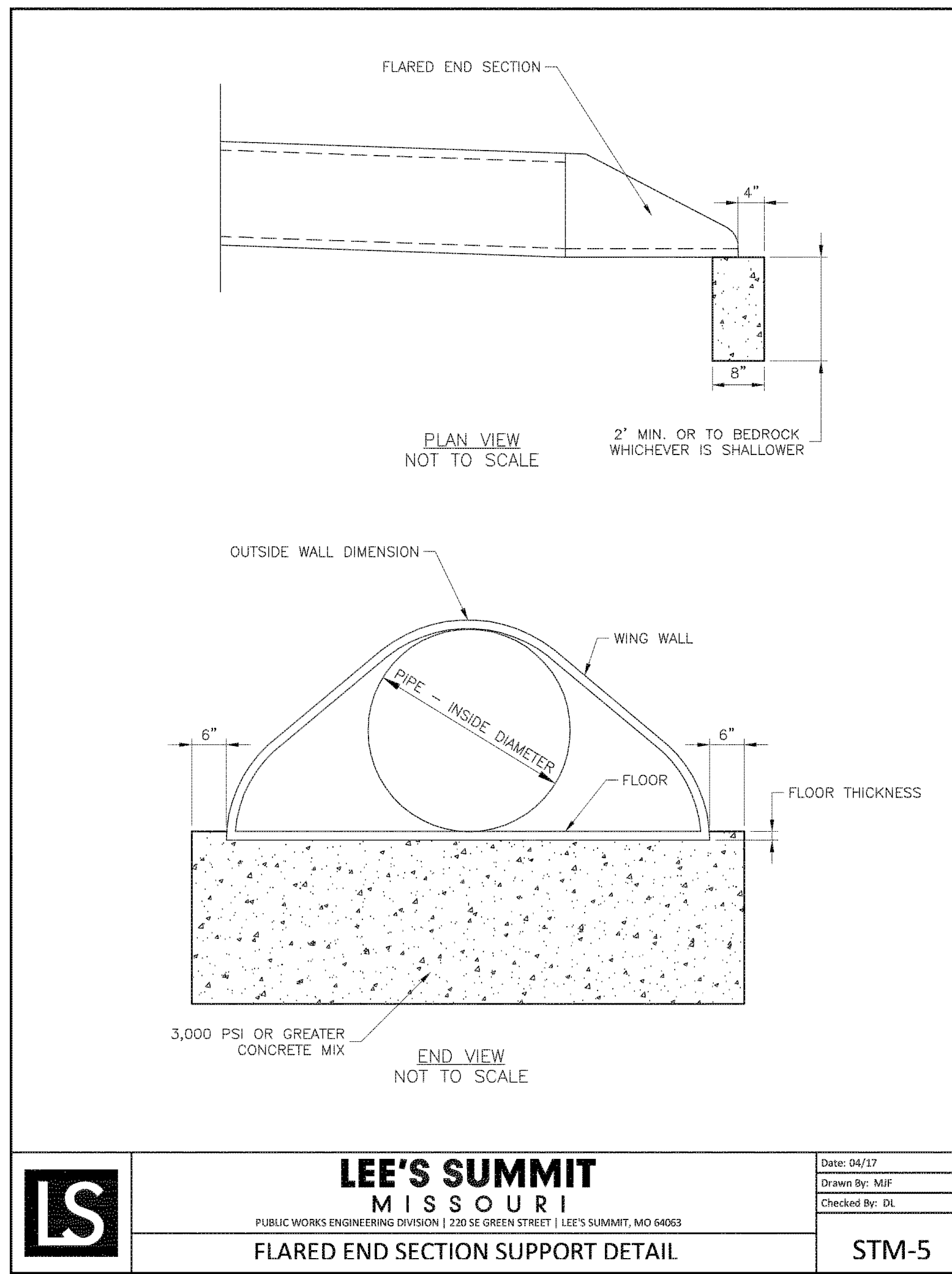
**SCHLAGEL**  
ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS  
14920 West 107th Street • Lenexa, Kansas 66215  
(913) 492-5158 • Fax: (913) 492-8400  
WWW.SCHLAGELASSOCIATES.COM  
Missouri State Certificate of Authority  
#E200200360P-F #LAC200100237 #LS200200869-F



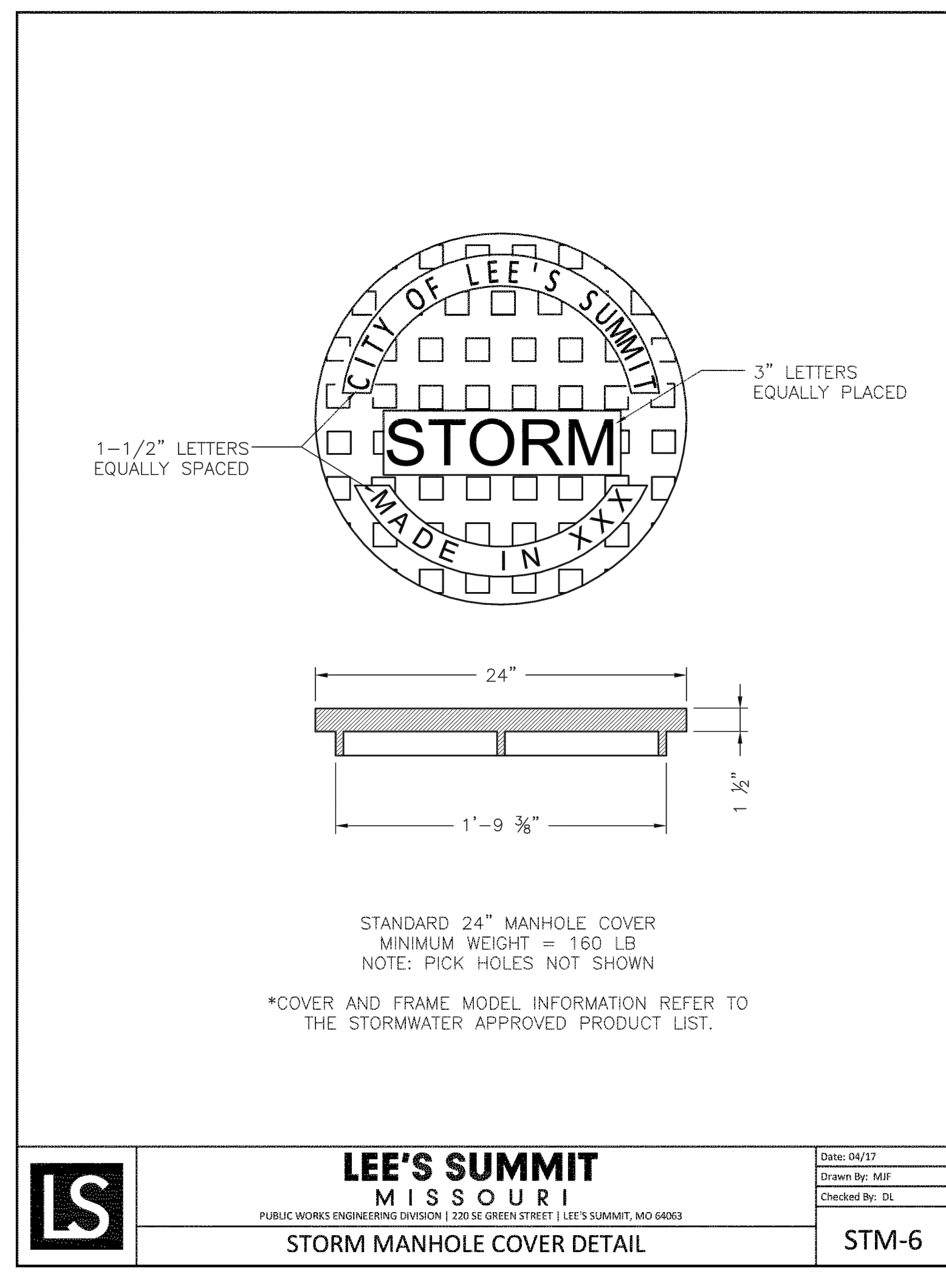
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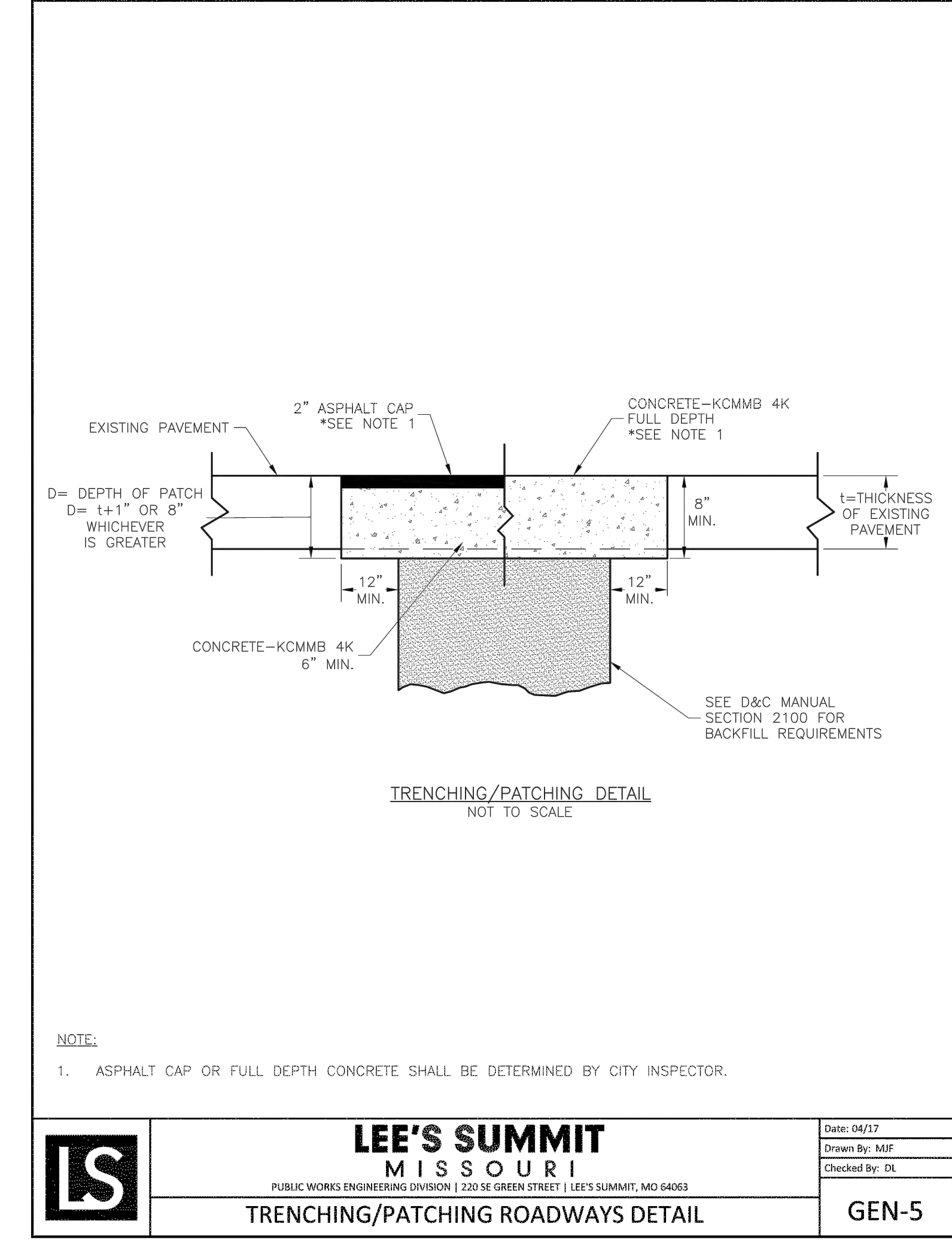
STREET AND STORM DETAILS  
SHEET  
22



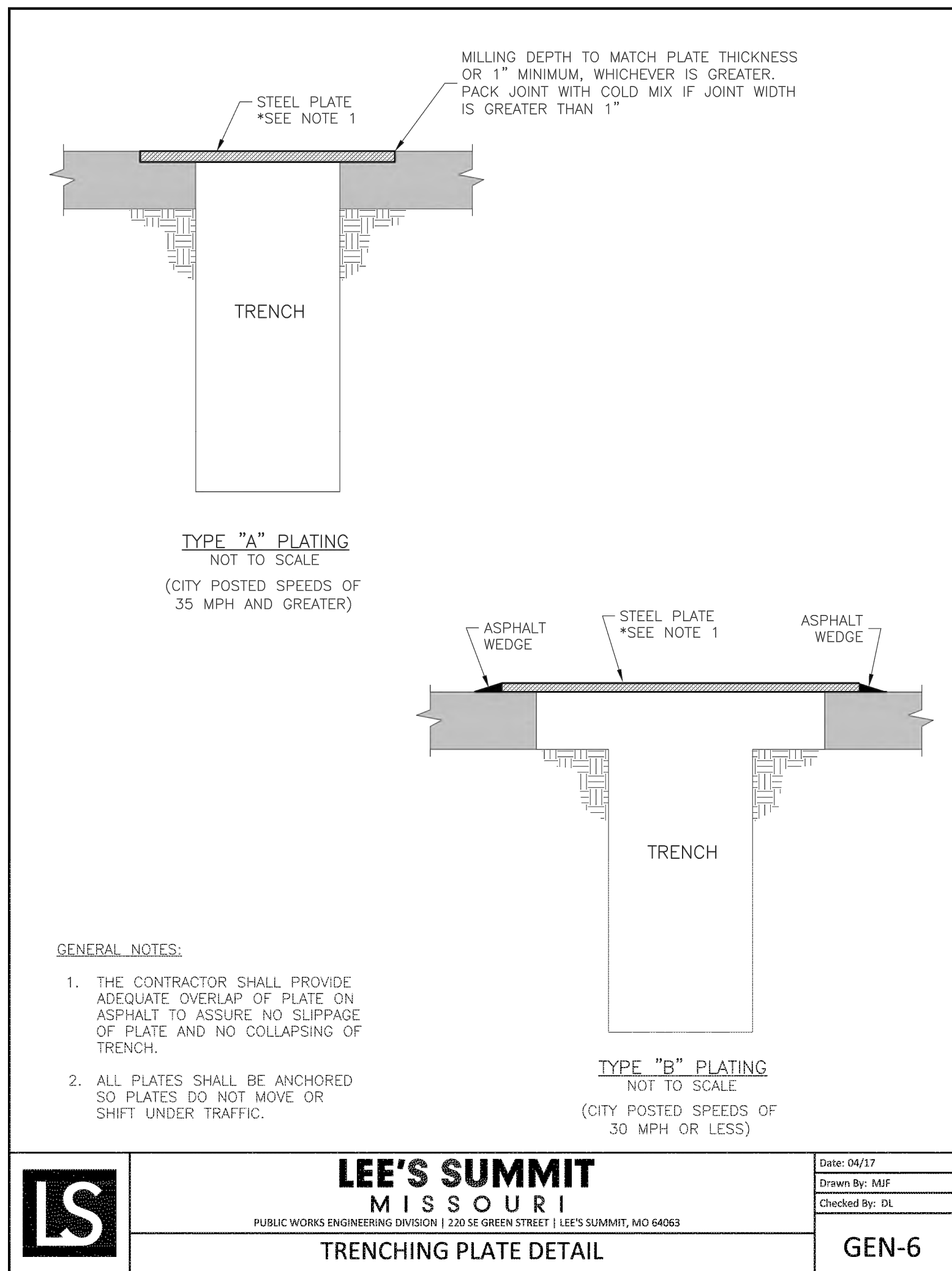
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		Drawn By: MIF Checked By: DL
<b>FLARED END SECTION SUPPORT DETAIL</b>		<b>STM-5</b>



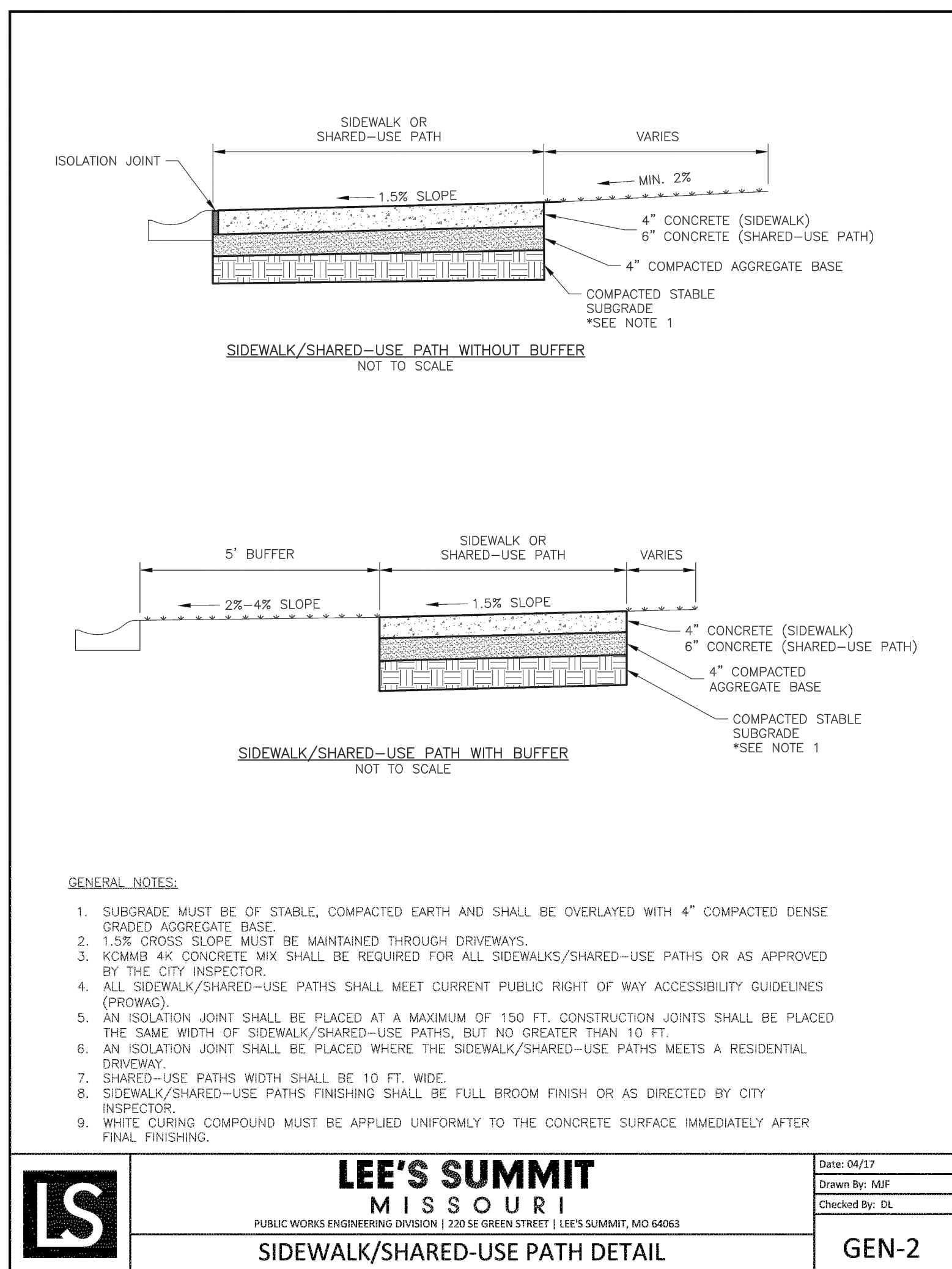
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		Drawn By: MIF Checked By: DL
<b>STORM MANHOLE COVER DETAIL</b>		<b>STM-6</b>



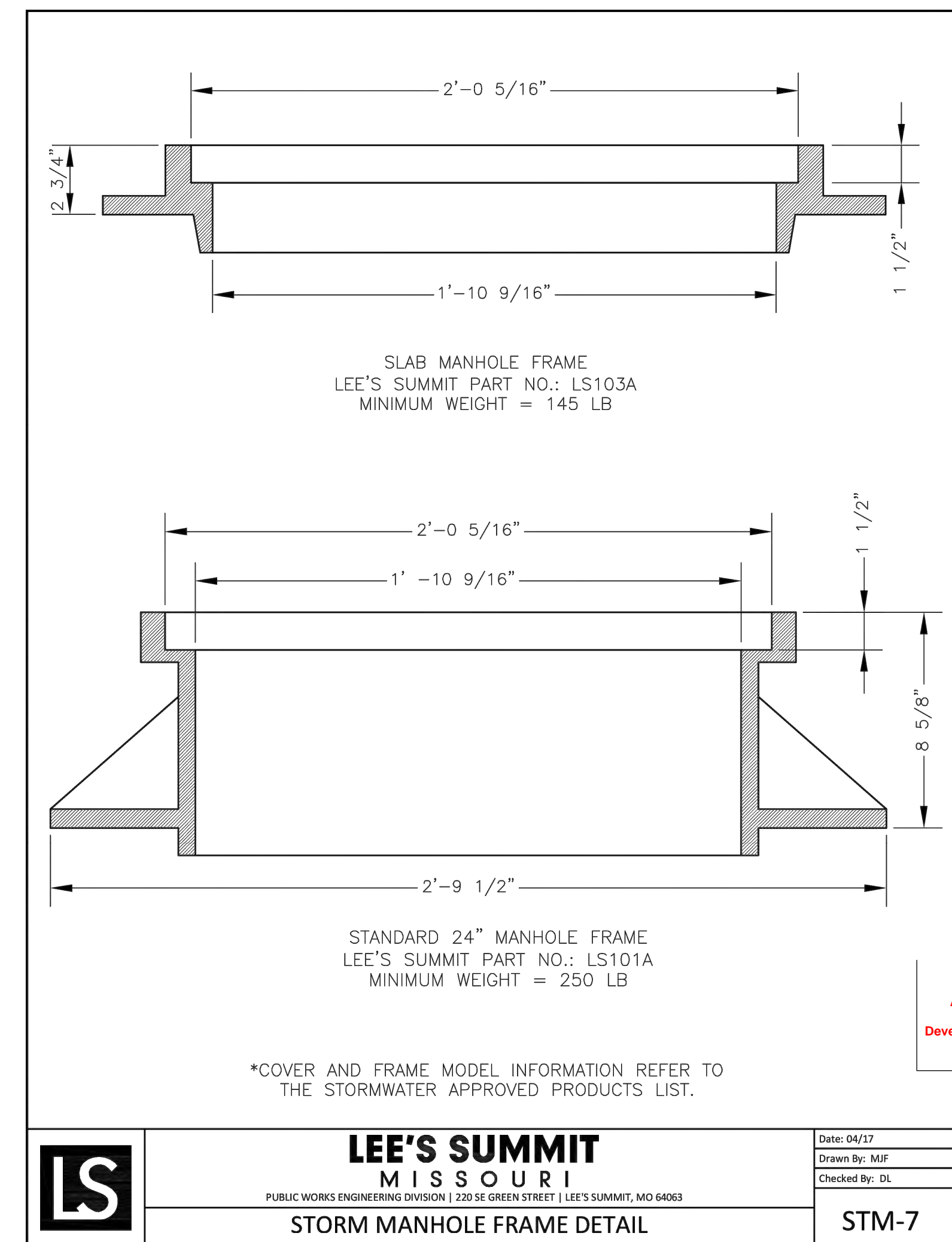
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		Drawn By: MIF Checked By: DL
<b>TRENCHING/PATCHING ROADWAYS DETAIL</b>		<b>GEN-5</b>



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



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



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



WOODLAND GLEN 2ND PLAT  
STREET, STORMWATER, MASTER DRAINAGE,  
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LEE'S SUMMIT, MISSOURI

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04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
06/15/2021	CITY COMMENTS
09/28/2021	CITY COMMENTS
2-19-2020	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT
05/16/2022	CITY EMAILED COMMENTS

**STREET AND STORM DETAILS**

RELEASED FOR CONSTRUCTION  
As Noted on Plans Review  
Development Services Department  
Lee's Summit, Missouri  
05/24/2022

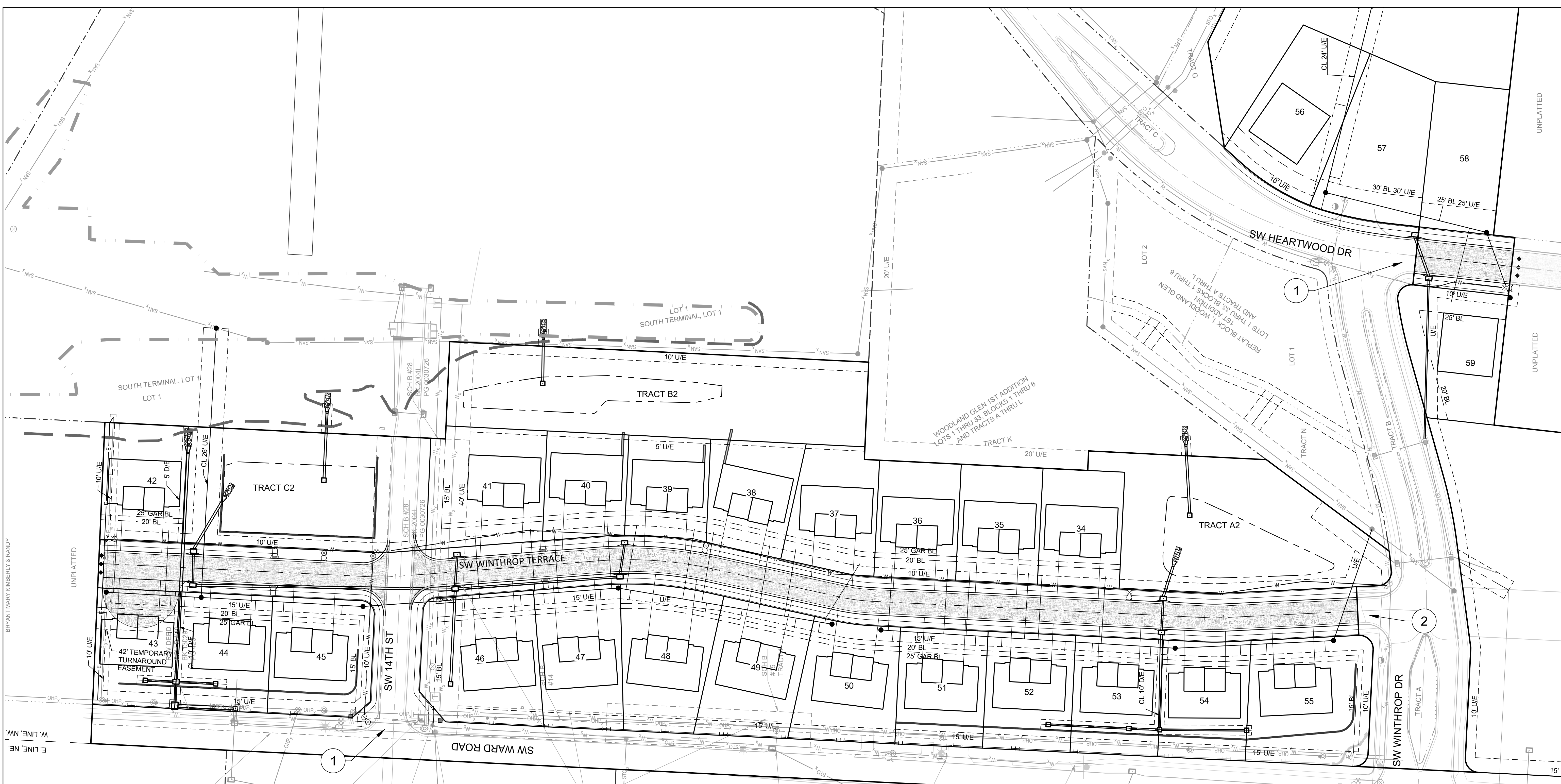








WOODLAND GLEN 2ND PLAT  
 STREET, STORMWATER, MASTER DRAINAGE,  
 AND EROSION CONTROL PLANS  
 WARD ROAD & WINTHROP DRIVE  
 LEE'S SUMMIT, MISSOURI



**Sign Spacing "S"**

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

**Taper Dimensions (Feet)**

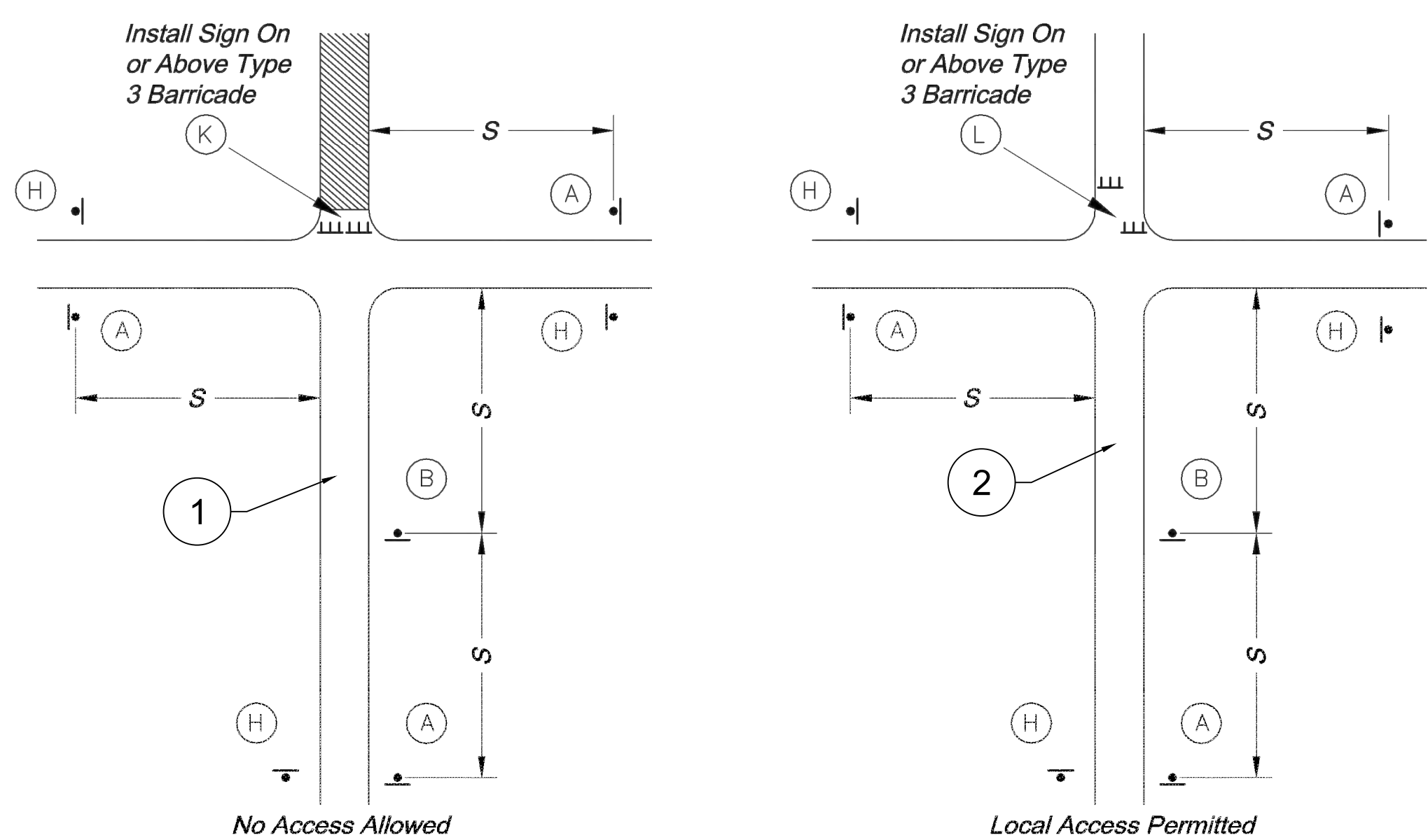
Speed Limit (mph)	Minimum Taper Length "L", per Lane Width "W"			Minimum Number of Channelizers
	10	11	12	
25	105	115	125	6
30	150	165	180	7
35	205	225	245	8
40	270	295	320	9
45	450	495	540	13

**Guidelines for Length of Longitudinal Buffer Space "B"**

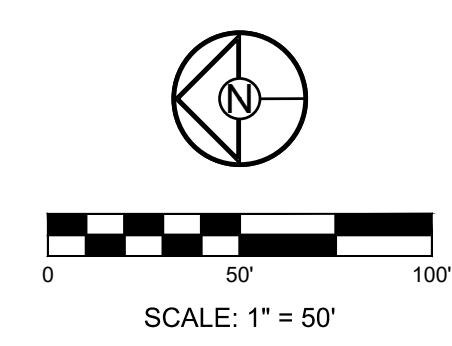
Speed Limit (mph)	Length (Feet)
25	35
30	55
35	85
40	120
45	170

**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.



RELEASED FOR  
 CONSTRUCTION  
 As Noted on Plans Review  
 Development Services Department  
 Lee's Summit, Missouri  
 05/24/2022

REVISION DATE	DESCRIPTION
04/24/2020	CITY COMMENTS
01/11/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
05/15/2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
09/28/2021	SCHLAGEL UPDATE
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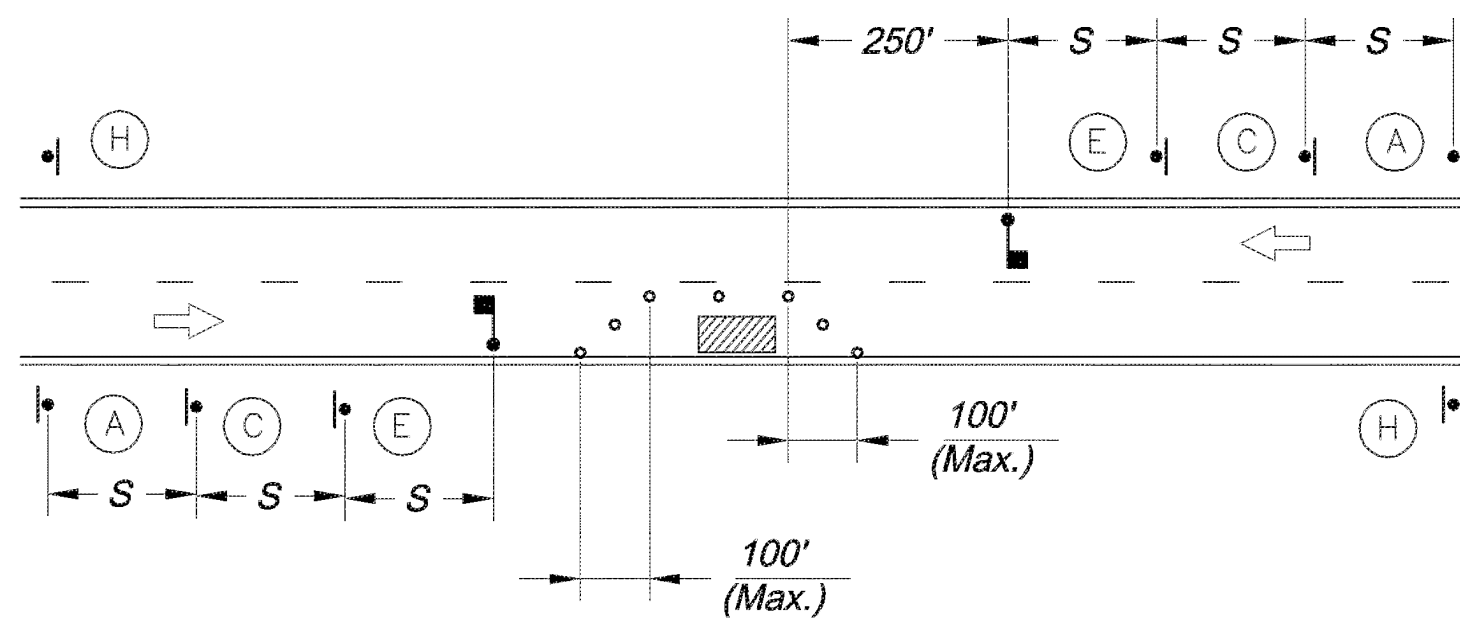
DRAWN BY: BAL  
 CHECKED BY: MAB  
 DATE PREPARED: 2-19-2020  
 PROJ. NUMBER: 18-017

TRAFFIC CONTROL PLAN

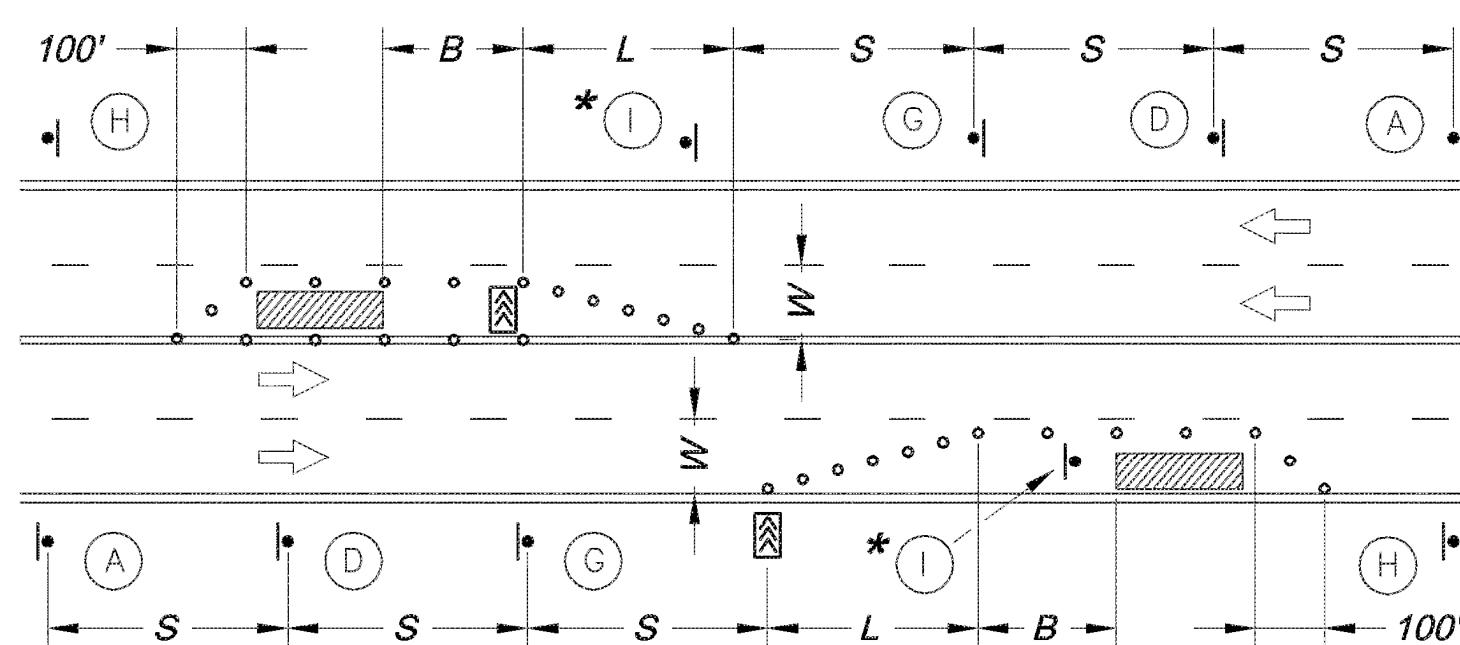
SHEET

### SYMBOL LEGEND

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

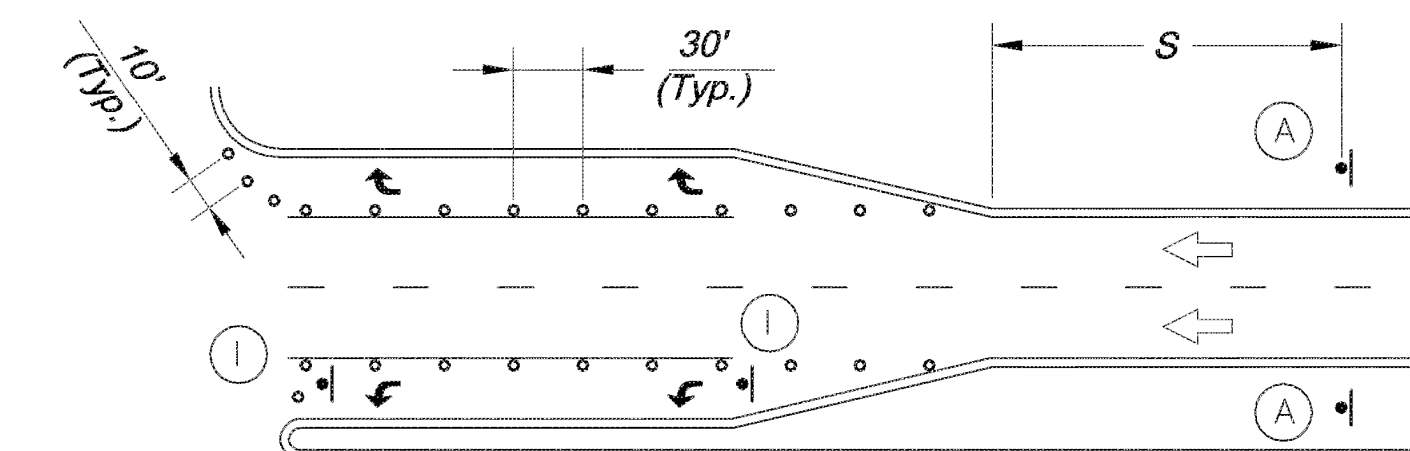


LANE CLOSURE - TWO LANE STREET



LANE CLOSURE - FOUR LANE STREET

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



TURN LANE CLOSURE

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

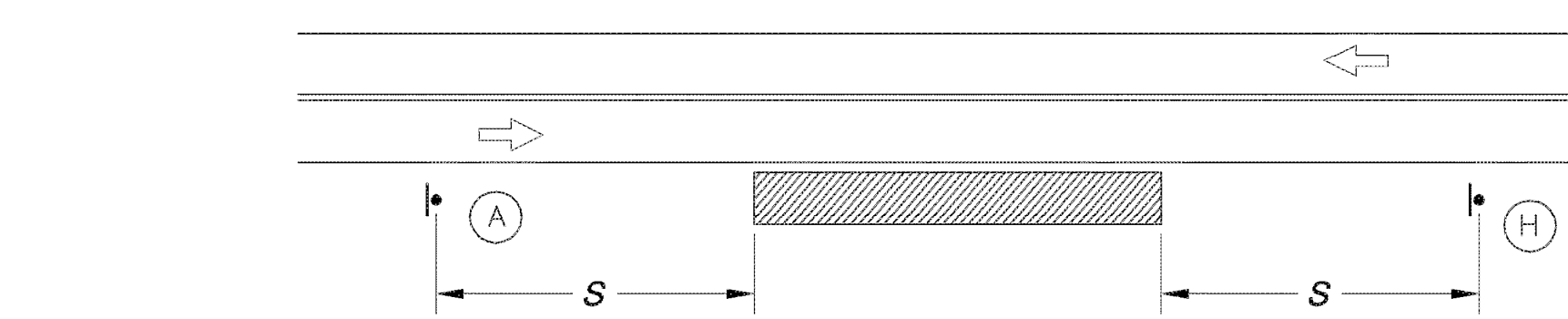
Speed Limit (mph)	Taper Dimensions (Feet)			Minimum Number of Channelizers
	Speed Limit (mph)	Minimum Taper Length "L", per Lane Width "W"	Minimum Number of Channelizers	
25	10	11	12	6
30	105	115	125	7
35	150	165	180	8
40	205	225	245	9
45	270	295	320	13

Speed Limit (mph)	Length (Feet)
25	35
30	55
35	85
40	120
45	170

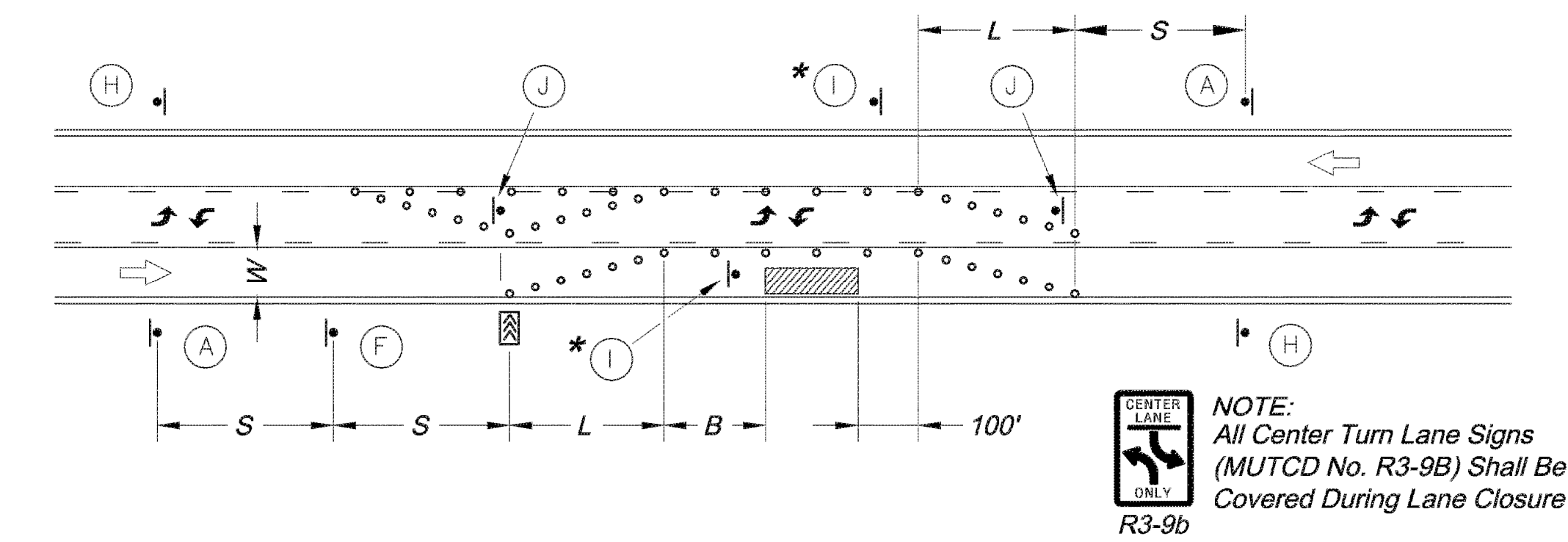
Speed Limit (mph)	Maximum Channelizer Spacing	
	Within Taper (Feet)	Outside Taper (Feet)
25	25	50
30	30	60
35	35	70
40	40	80
45	45	90

### SIGN LEGEND

- W20-1 36" x 36"
- W20-2 36" x 36"
- W20-4 36" x 36"
- W20-5R 36" x 36"
- W20-7a 36" x 36"
- W1-4L 36" x 36"
- W4-2R 36" x 36"
- G20-2 36" x 18"
- R3-2 24" x 24"
- R4-7a 24" x 30"
- R11-2 48" x 30"
- R11-4 60" x 30"

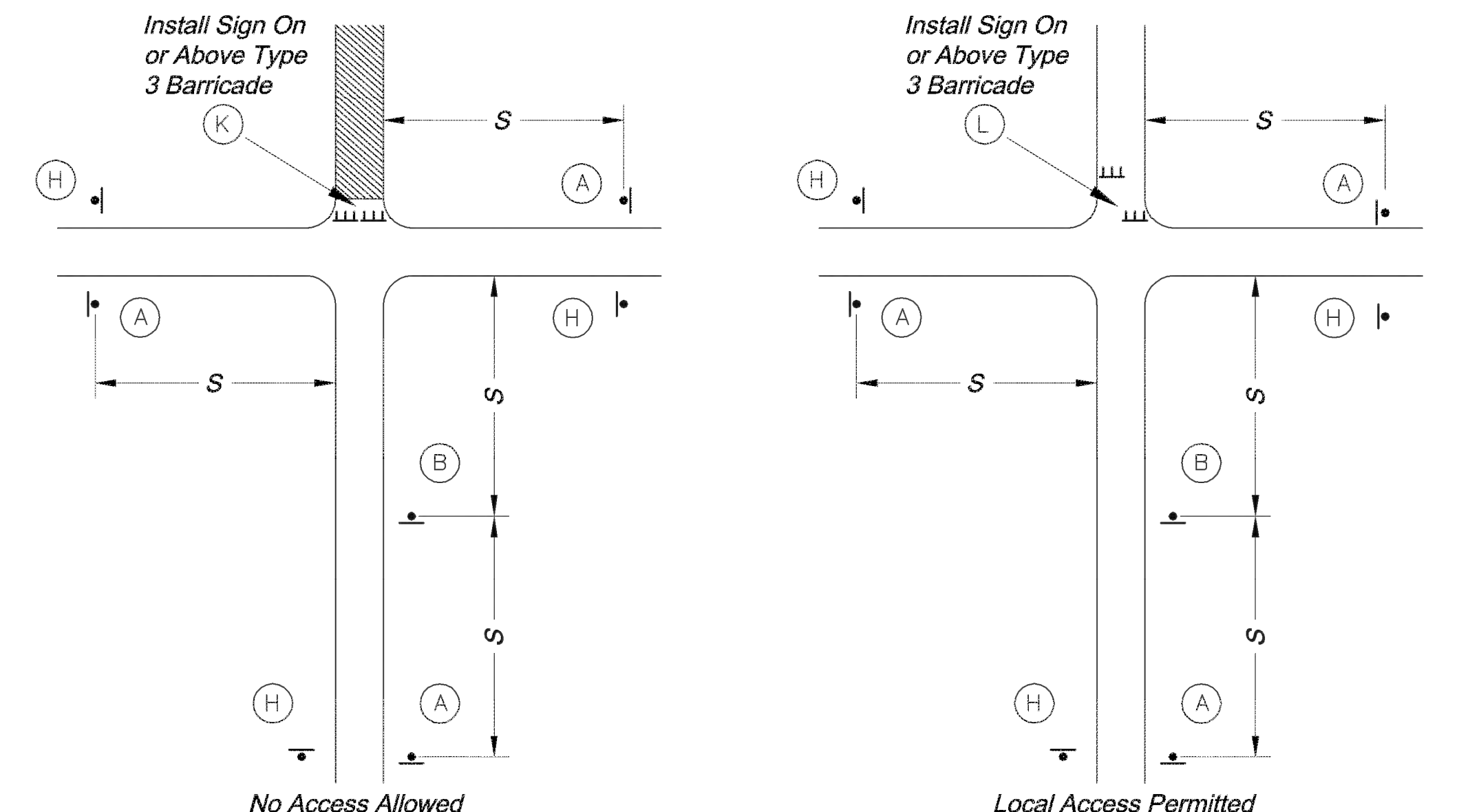


TYPICAL SIGNING FOR WORK ADJACENT TO THE STREET



LANE CLOSURE - THREE LANE STREET

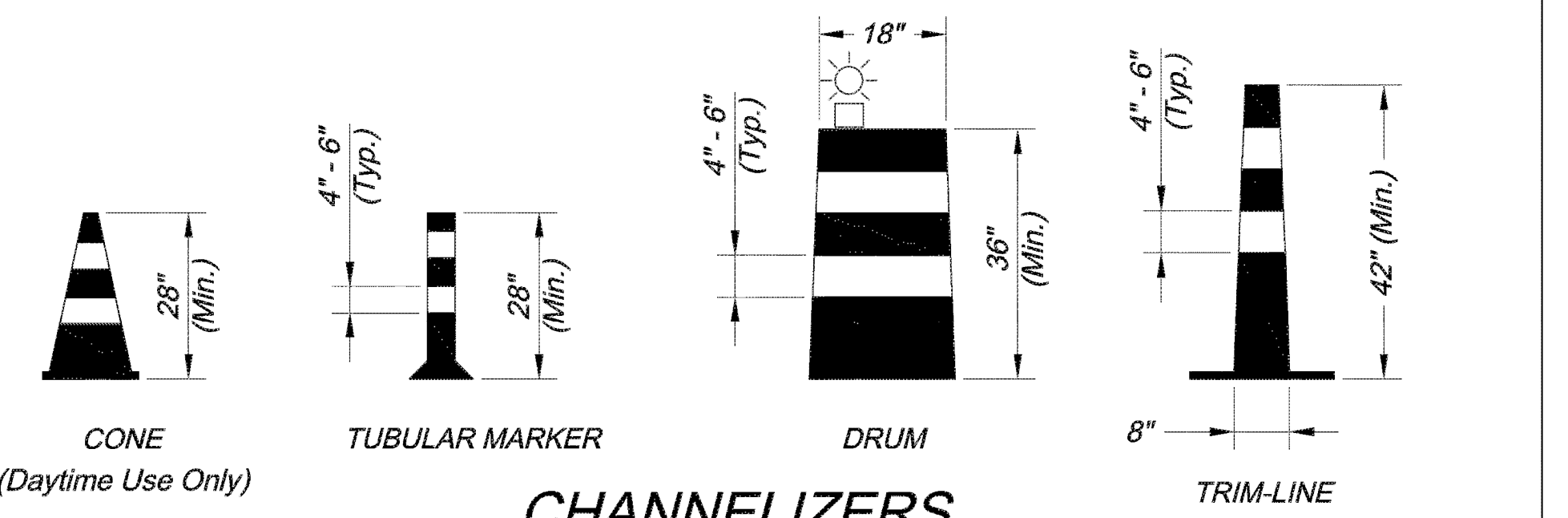
\* Install Signs Every 200 Feet Throughout the Closed Lane or As Needed



TYPICAL STREET CLOSURE

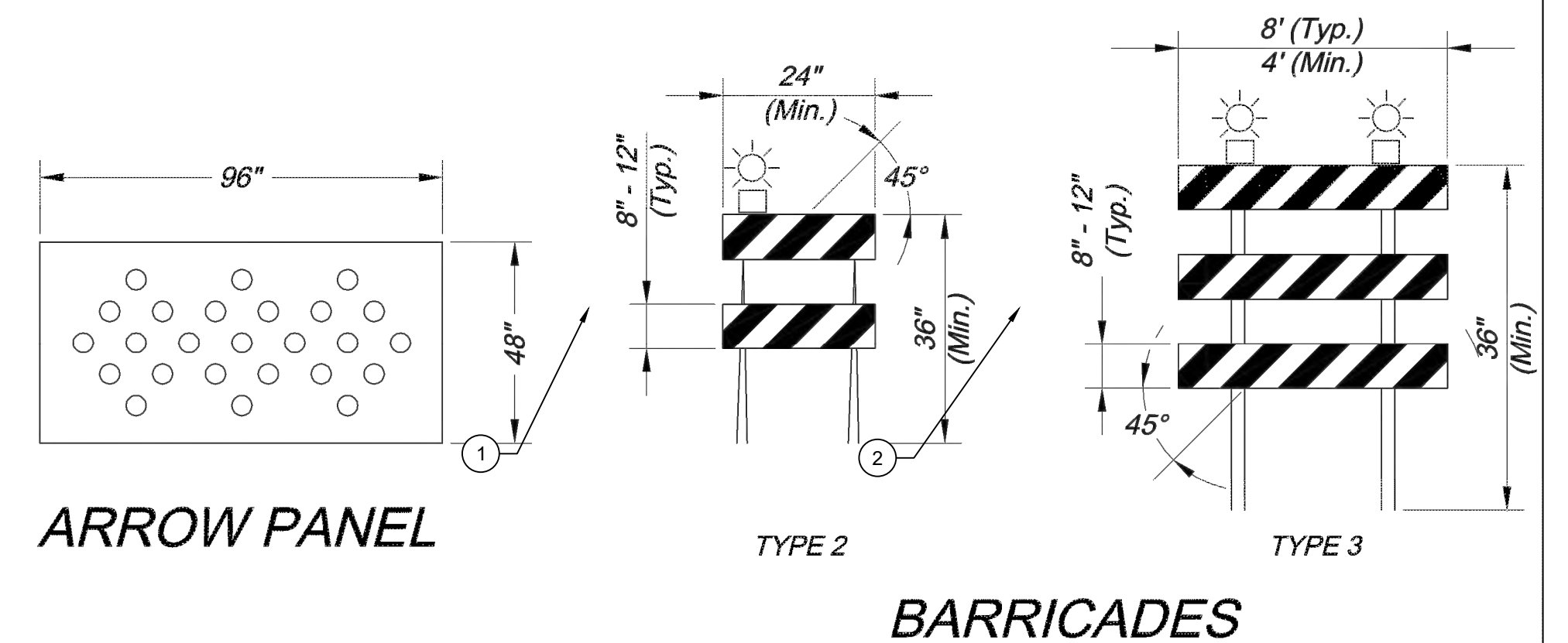
### GENERAL NOTES:

- 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:



SCHLAGEL & ASSOCIATES, P.A.

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

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TRAFFIC CONTROL DETAILS