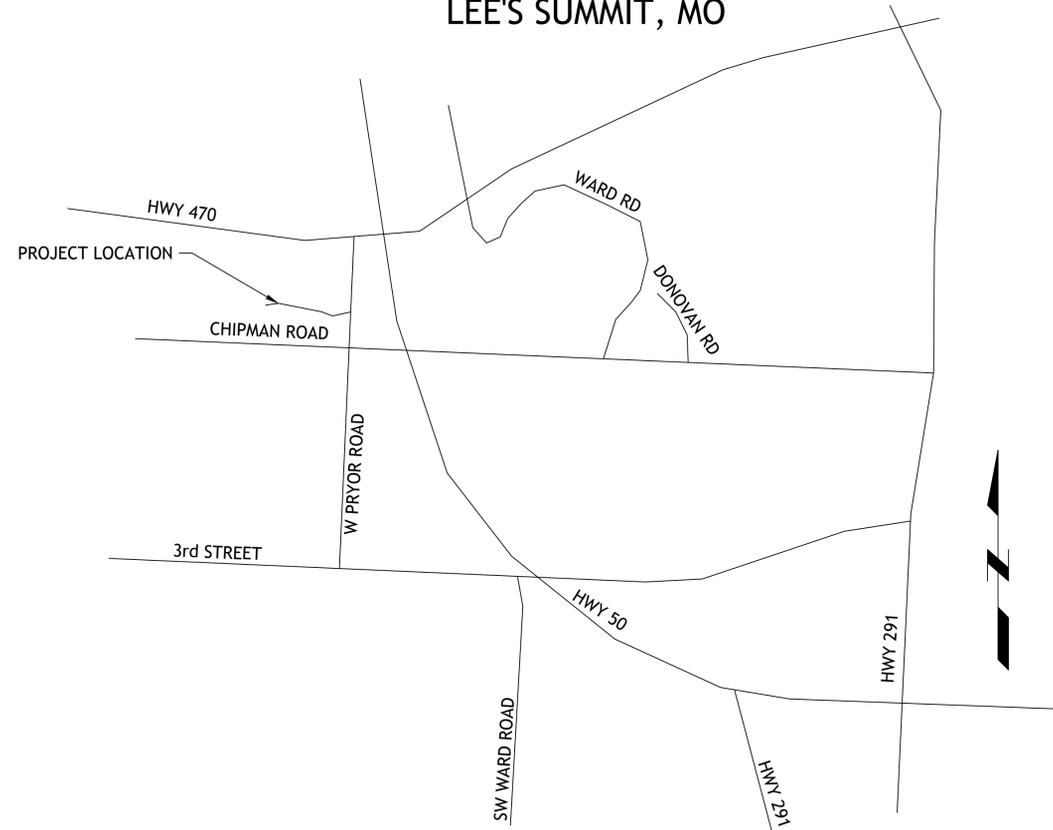


PUBLIC IMPROVEMENT PLANS FOR LOWENSTEIN DRIVE STREETS OF WEST PRYOR

LEE'S SUMMIT, MO



LOCATION MAP

INDEX OF SHEETS

C-1	COVER SHEET
C-2	EXISTING CONDITIONS
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C-12	STORM LINE F PLAN AND PROFILE
C-13	DRAINAGE PLAN
C-14	DETAILS
C-15	DETAILS

SM Engineering
SME
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Manhattan Kansas, 66503
smcivilengr@gmail.com
785.341.9747

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Revisions
8-17-21 CITY COMMENTS
9-10-21 CITY COMMENTS
9-28-21 CITY COMMENTS
1-10-22 STORM LINE E

STREETS OF W. PRYOR
LOWENSTIEN DR
LEE'S SUMMIT, MO.

sheet
C1.0
Civil
Site Improvement Plan
permit
7 JULY 2021

UTILITIES
Electric Service
Evergy
Nathan Michael
913-347-4310
Nathan.michael@evergy.com

Gas Service
Spire
Katie Darnell
816-969-2247
Katie.darnell@spireenergy.com

Water/Sanitary Sewer
Water Utilities Department
1200 SE Hamblen Road
Lee's Summit, Mo 64081
Jeff Thorn
816-969-1900
jeff.thorn@cityofls.net

Communication Service
AT&T Carrie Cilke
816-703-4386
cc3527@att.com

Time Warner Cable
Steve Baxter
913-643-1928
steve.baxter@charter.com

Comcast
Ryan Alkire
816-795-2218
ryan.alkire@cable.comcast.com

Google Fiber
Becky Davis
913-725-8745
rebeccadavis@google.com



UTILITY STATEMENT:

THE UNDERGROUND UTILITIES SHOWN HEREON ARE FROM FIELD SURVEY INFORMATION OF ONE-CALL LOCATED UTILITIES, FIELD SURVEY INFORMATION OF ABOVE GROUND OBSERVABLE EVIDENCE, AND/OR THE SCALING AND PLOTTING OF EXISTING UTILITY MAPS AND DRAWINGS AVAILABLE TO THE SURVEYOR AT THE TIME OF SURVEY. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. FURTHERMORE, THE SURVEYOR DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES BY EXCAVATION UNLESS OTHERWISE NOTED ON THIS SURVEY.

SAFETY NOTICE TO CONTRACTOR
IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICE, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

WARRANTY/DISCLAIMER

THE DESIGNS REPRESENTED IN THESE PLANS ARE IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING FOR THE DESIGN FUNCTIONS AND USES INTENDED BY THE OWNER AT THIS TIME. HOWEVER, NEITHER SM ENGINEERING NOR ITS PERSONNEL CAN OR DO WARRANTY THESE DESIGNS OR PLANS AS CONSTRUCTED, EXCEPT IN THE SPECIFIC CASES WHERE SM ENGINEERING PERSONNEL INSPECT AND CONTROL THE PHYSICAL CONSTRUCTION ON A CONTEMPORARY BASIS AT THE SITE.

CAUTION- NOTICE TO CONTRACTOR

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT LOCATIONS OF POSSIBLE CONFLICTS PRIOR TO ANY CONSTRUCTION.

ALL EXISTING TOPOGRAPHIC DATA AND INFRASTRUCTURE IMPROVEMENTS SHOWN BASED ON INFORMATION BY KAW VALLEY ENGINEERING

BENCHMARKS:

#1 CHISELED "SQUARE" ON TOP OF CURB POINT OF INTERSECTION OF WEST PARK PARKING LOT AT EAST DRIVE ENTRANCE
ELEVATION 985.05

#2 CHISELED "SQUARE" ON NORTHWEST CORNER AREA INLET, 25' EAST OF CURB LINE AND ON-LINE WITH SOUTH CURB OF LOWENSTEIN DRIVE AT 90° BEND IN ROAD
ELEVATION 971.06

FLOODPLAIN NOTE:

SUBJECT PROPERTY IS SHOWN TO BE LOCATED IN "OTHER AREAS ZONE X" ON THE FLOOD INSURANCE RATE MAP FOR JACKSON COUNTY, MISSOURI AND INCORPORATED AREAS. COMMUNITY PANEL NO. 29095C0416G, REVISED JANUARY 20, 2017. "OTHER AREAS ZONE X" IS DEFINED AS "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN". LOCATION DETERMINED BY A SCALED GRAPHICAL PLOT OF THE FLOOD INSURANCE RATE MAP.

NOTES

- ALL CONSTRUCTION SHALL FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813. WHERE DISCREPANCIES EXIST BETWEEN THESE PLANS AND THE DESIGN AND CONSTRUCTION MANUAL, THE MORE STRINGENT SHALL PREVAIL.
- THERE ARE NO GAS/OIL WELLS PER MDNR DATABASE OF OIL AND GAS PERMITS.
- THE CONTRACTOR SHALL CONTACT THE CITY DEVELOPMENT SERVICES ENGINEERING INSPECTION TO SCHEDULE A PRE-CONSTRUCTION MEETING WITH A FIELD ENGINEERING INSPECTOR PRIOR TO ANY LAND DISTURBANCE WORK AT 816-969-1200.

DEVELOPER

SWP III, LLC
C/O DRAKE DEVELOPMENT, LLC
7200 W 132nd ST, SUITE 150
OVERLAND PARK, KS 66213
913-662-2630

ENGINEER

SM ENGINEERING
SAM MALINOWSKY
5507 HIGH MEADOW CIRCLE
MANHATTAN KANSAS, 66503
SMCIVILENGR@GMAIL.COM
785.341.9747



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SAMUEL D. MALINOWSKY
PROFESSIONAL ENGINEER

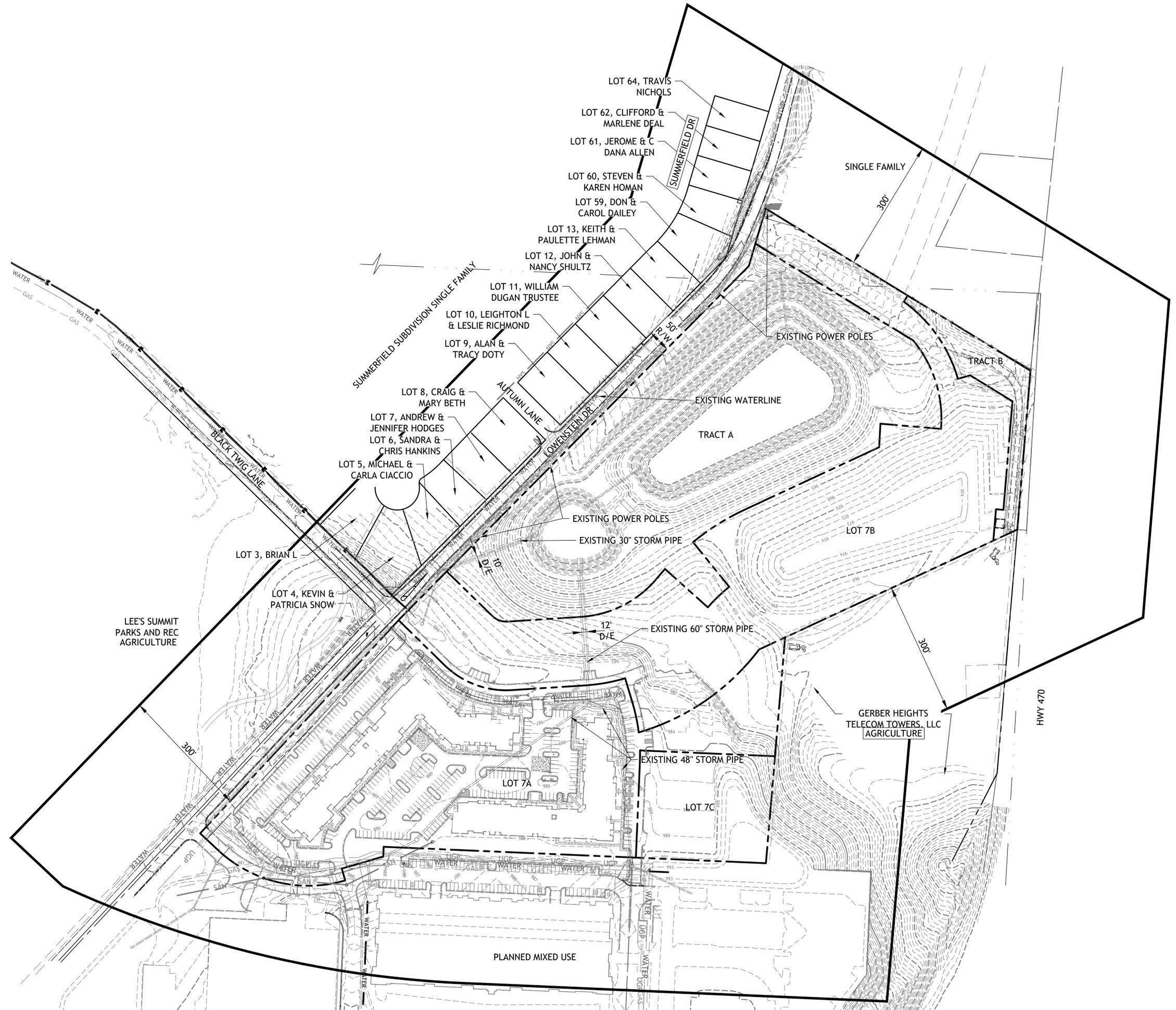
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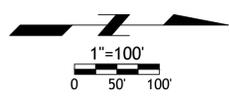
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 9-28-21 CITY COMMENTS
 12-7-21 STORM LINE E

STREETS OF W. PRYOR
 LOWENSTIEN DR
 LEES SUMMITT, MO.

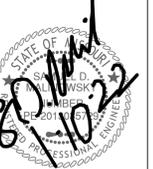
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 7 JULY 2021



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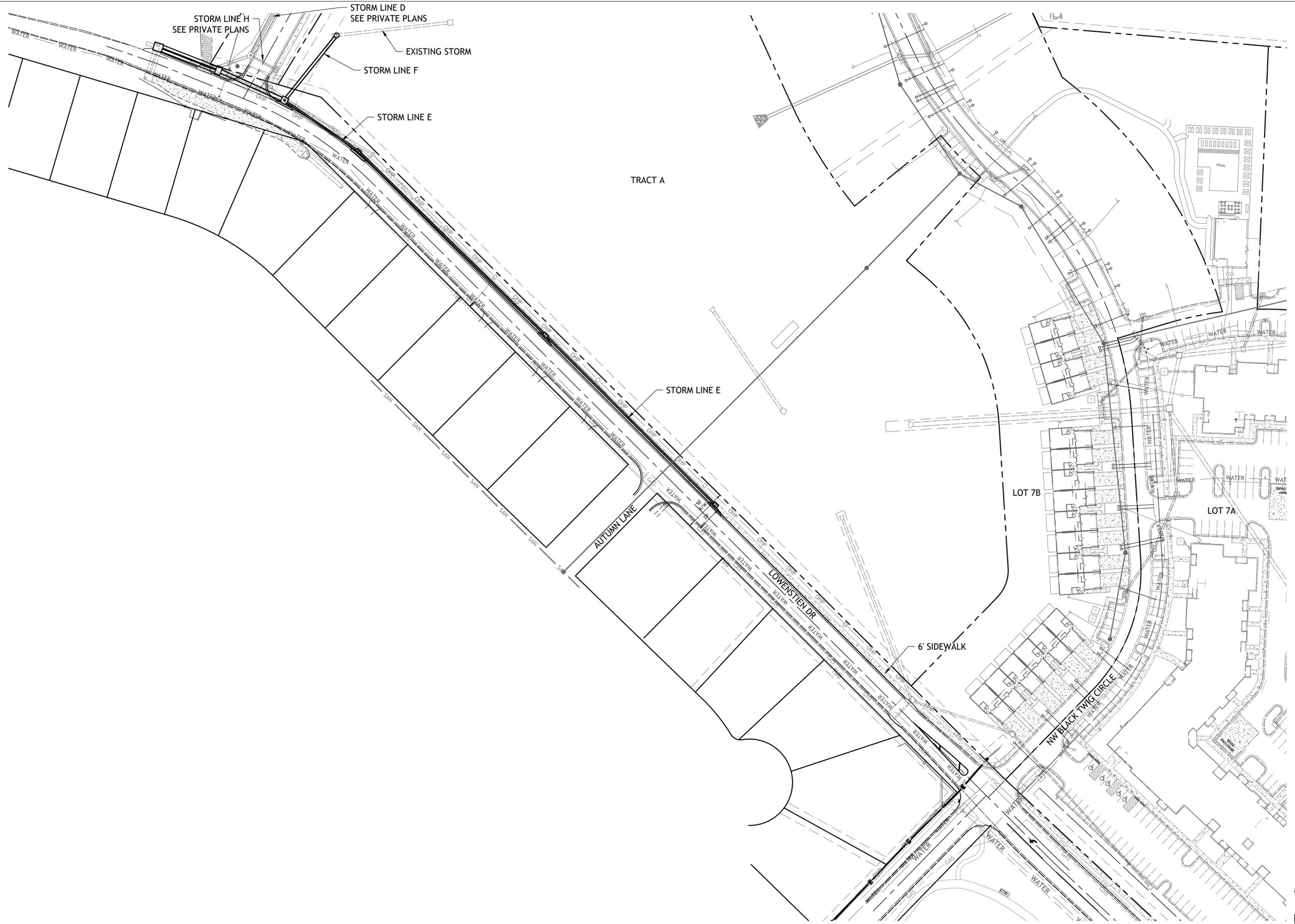
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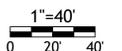
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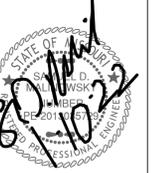
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7 JULY 2021



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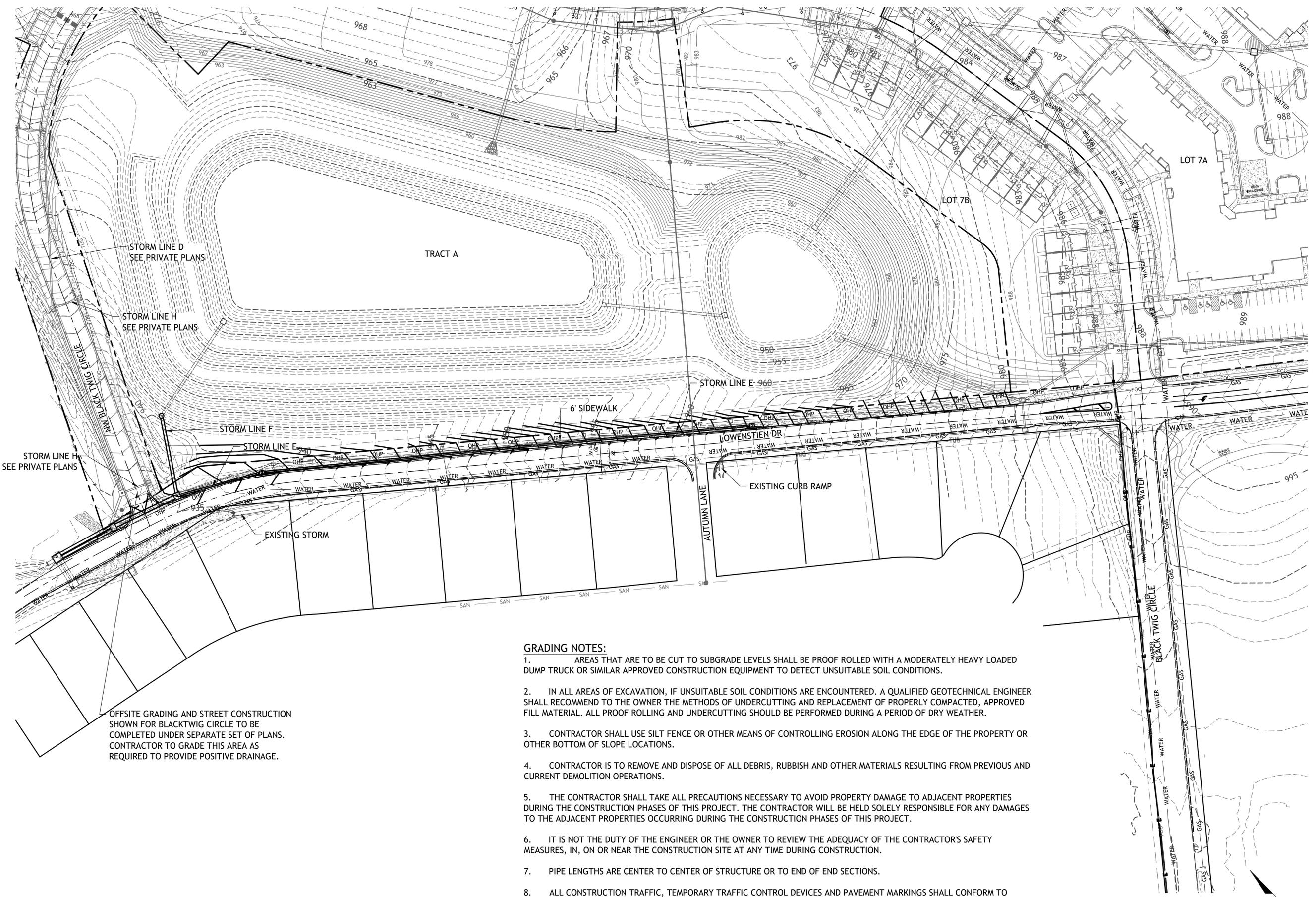


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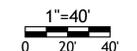


OFFSITE GRADING AND STREET CONSTRUCTION SHOWN FOR BLACKTWIG CIRCLE TO BE COMPLETED UNDER SEPARATE SET OF PLANS. CONTRACTOR TO GRADE THIS AREA AS REQUIRED TO PROVIDE POSITIVE DRAINAGE.

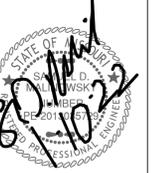
GRADING NOTES:

1. AREAS THAT ARE TO BE CUT TO SUBGRADE LEVELS SHALL BE PROOF ROLLED WITH A MODERATELY HEAVY LOADED DUMP TRUCK OR SIMILAR APPROVED CONSTRUCTION EQUIPMENT TO DETECT UNSUITABLE SOIL CONDITIONS.
2. IN ALL AREAS OF EXCAVATION, IF UNSUITABLE SOIL CONDITIONS ARE ENCOUNTERED, A QUALIFIED GEOTECHNICAL ENGINEER SHALL RECOMMEND TO THE OWNER THE METHODS OF UNDERCUTTING AND REPLACEMENT OF PROPERLY COMPACTED, APPROVED FILL MATERIAL. ALL PROOF ROLLING AND UNDERCUTTING SHOULD BE PERFORMED DURING A PERIOD OF DRY WEATHER.
3. CONTRACTOR SHALL USE SILT FENCE OR OTHER MEANS OF CONTROLLING EROSION ALONG THE EDGE OF THE PROPERTY OR OTHER BOTTOM OF SLOPE LOCATIONS.
4. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS.
5. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGES TO THE ADJACENT PROPERTIES OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT.
6. IT IS NOT THE DUTY OF THE ENGINEER OR THE OWNER TO REVIEW THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN, ON OR NEAR THE CONSTRUCTION SITE AT ANY TIME DURING CONSTRUCTION.
7. PIPE LENGTHS ARE CENTER TO CENTER OF STRUCTURE OR TO END OF END SECTIONS.
8. ALL CONSTRUCTION TRAFFIC, TEMPORARY TRAFFIC CONTROL DEVICES AND PAVEMENT MARKINGS SHALL CONFORM TO REQUIREMENTS OF THE LATEST MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

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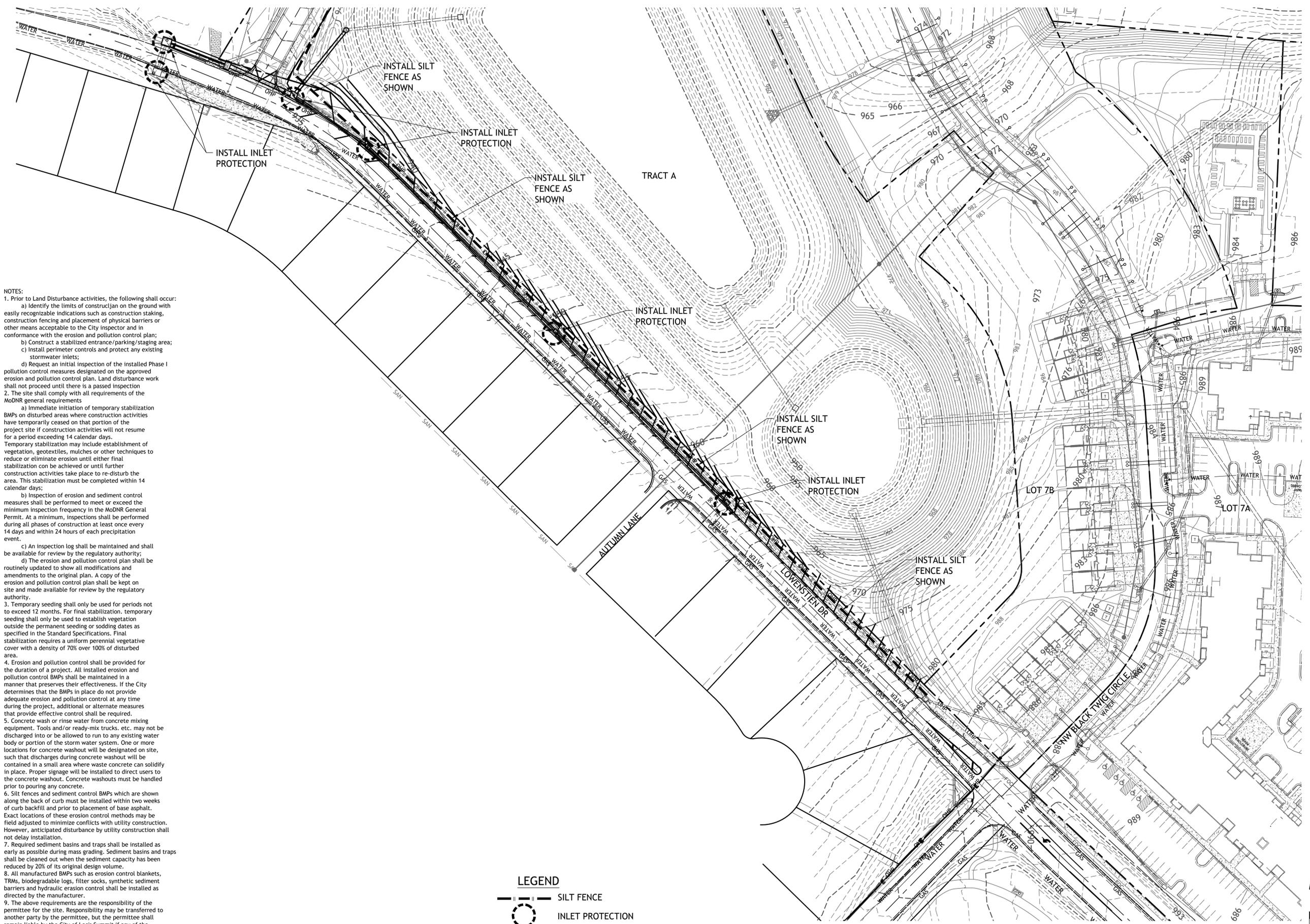


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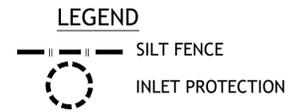


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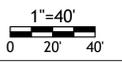
STREETS OF W. PRYOR
LOWENSTIEN DR
LEES SUMMITT, MO.



NOTES:
1. Prior to Land Disturbance activities, the following shall occur:
a) Identify the limits of construction on the ground with easily recognizable indications such as construction staking, construction fencing and placement of physical barriers or other means acceptable to the City Inspector and in conformance with the erosion and pollution control plan;
b) Construct a stabilized entrance/parking/staging area;
c) Install perimeter controls and protect any existing stormwater inlets;
d) Request an initial inspection of the installed Phase I pollution control measures designated on the approved erosion and pollution control plan. Land disturbance work shall not proceed until there is a passed inspection
2. The site shall comply with all requirements of the MoDNR general requirements
a) Immediate initiation of temporary stabilization BMPs on disturbed areas where construction activities have temporarily ceased on that portion of the project site if construction activities will not resume for a period exceeding 14 calendar days. Temporary stabilization may include establishment of vegetation, geotextiles, mulches or other techniques to reduce or eliminate erosion until either final stabilization can be achieved or until further construction activities take place to re-disturb the area. This stabilization must be completed within 14 calendar days;
b) Inspection of erosion and sediment control measures shall be performed to meet or exceed the minimum inspection frequency in the MoDNR General Permit. At a minimum, inspections shall be performed during all phases of construction at least once every 14 days and within 24 hours of each precipitation event.
c) An inspection log shall be maintained and shall be available for review by the regulatory authority;
d) The erosion and pollution control plan shall be routinely updated to show all modifications and amendments to the original plan. A copy of the erosion and pollution control plan shall be kept on site and made available for review by the regulatory authority.
3. Temporary seeding shall only be used for periods not to exceed 12 months. For final stabilization, temporary seeding shall only be used to establish vegetation outside the permanent seeding or sodding dates as specified in the Standard Specifications. Final stabilization requires a uniform perennial vegetative cover with a density of 70% over 100% of disturbed area.
4. Erosion and pollution control shall be provided for the duration of a project. All installed erosion and pollution control BMPs shall be maintained in a manner that preserves their effectiveness. If the City determines that the BMPs in place do not provide adequate erosion and pollution control at any time during the project, additional or alternate measures that provide effective control shall be required.
5. Concrete wash or rinse water from concrete mixing equipment, tools and/or ready-mix trucks, etc. may not be discharged into or be allowed to run to any existing water body or portion of the storm water system. One or more locations for concrete washout will be designated on site, such that discharges during concrete washout will be contained in a small area where waste concrete can solidify in place. Proper signage will be installed to direct users to the concrete washout. Concrete washouts must be handled prior to pouring any concrete.
6. Silt fences and sediment control BMPs which are shown along the back of curb must be installed within two weeks of curb backfill and prior to placement of base asphalt. Exact locations of these erosion control methods may be field adjusted to minimize conflicts with utility construction. However, anticipated disturbance by utility construction shall not delay installation.
7. Required sediment basins and traps shall be installed as early as possible during mass grading. Sediment basins and traps shall be cleaned out when the sediment capacity has been reduced by 20% of its original design volume.
8. All manufactured BMPs such as erosion control blankets, TRMs, biodegradable logs, filter socks, synthetic sediment barriers and hydraulic erosion control shall be installed as directed by the manufacturer.
9. The above requirements are the responsibility of the permittee for the site. Responsibility may be transferred to another party by the permittee, but the permittee shall remain liable by the City of Lee's Summit if any of the above conditions are not met.



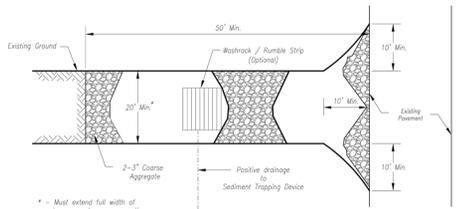
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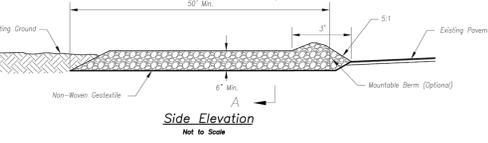
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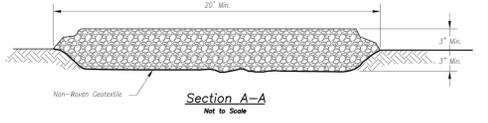
Revisions
8-17-21 CITY COMMENTS
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Plan View
Not to Scale



Side Elevation
Not to Scale



Section A-A
Not to Scale

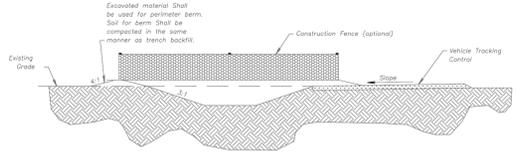
- Notes for Concrete Washout:**
- Concrete washout areas shall be installed prior to any concrete placement on site.
 - Concrete washout area shall include a flat subsurface pit sized relative to the amount of concrete to be placed on site. The slopes leading out of the subsurface pit shall be 3:1. The vehicle tracking pad shall be sloped towards the concrete washout area.
 - Vehicle tracking control is required of 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 one-piece impervious liner may be required along the bottom and sides of the subsurface 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, washed pieces of concrete and all other debris in the subsurface pit shall be transported from the job site in a water-tight container and disposed of properly.
 - Concrete washout areas shall remain in place until all concrete for the project is placed.
 - When concrete washout areas are removed, excavations shall be filled with suitable compacted backfill and topped, any disturbed areas associated with the installation, maintenance and/or removal of the concrete washout areas shall be stabilized.

- Notes for Construction Entrance:**
- Avoid locating on steep slopes, at curves on public roads, or directly in front of a building.
 - 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 3:1 V side slopes across the foundation approximately 15 feet from the edge of the public road to divert runoff from it.
 - Install pipe under the entrance if needed to maintain drainage ditches along public roads.
 - Place stone to dimensions and grade as shown on plans. Leave surface sloped for drainage.
 - Divert all surface runoff and drainage from the entrance to a sediment control device.
 - If conditions warrant, place geotextile fabric on the graded foundation to improve stability.

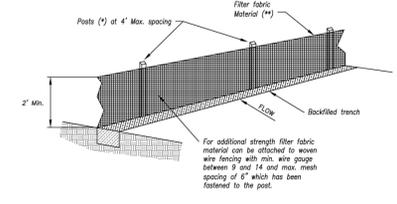
- Maintenance for Construction Entrance:**
- Reshape entrance as needed to maintain function and integrity of installation. Top dress with clean aggregate as needed.

CONSTRUCTION ENTRANCE



CONCRETE WASHOUT

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



- (*) POSTS
- MIN. LENGTH 4'
 - HARDWOOD 1 3/4" x 1 3/4"
 - MOL. SOUTHERN PINE 2 3/4" x 2 3/4"
 - STEEL 1.33 LB/FT

(**) - Geotextile Fabric shall meet the requirements of AASHTO M288

SILT FENCE DETAILS
Not to Scale

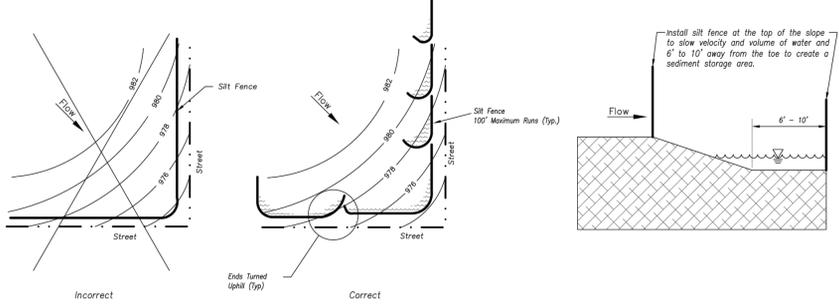
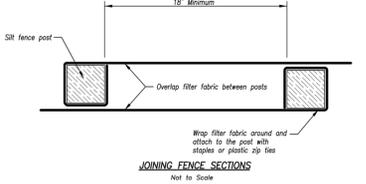


Figure A
SILT FENCE LAYOUT
Not to Scale

- Notes:**
- In order to contain water, the ends of the silt fence must be turned uphill (Figure A).
 - Long perimeter runs of silt fence must be 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 installation, where slicing machine cannot be reasonably used.

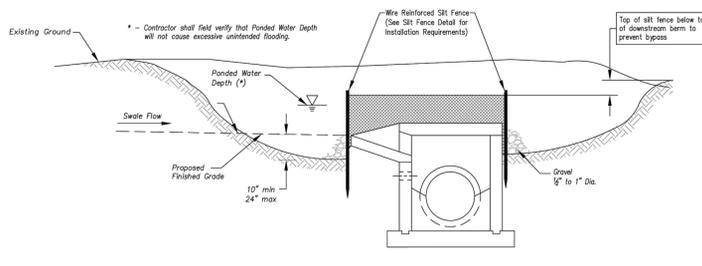
Maintenance:

- Remove and dispose of sediment deposits when the deposit approaches 1/3 the height of silt fence.
- Repair as necessary to maintain function and structure.

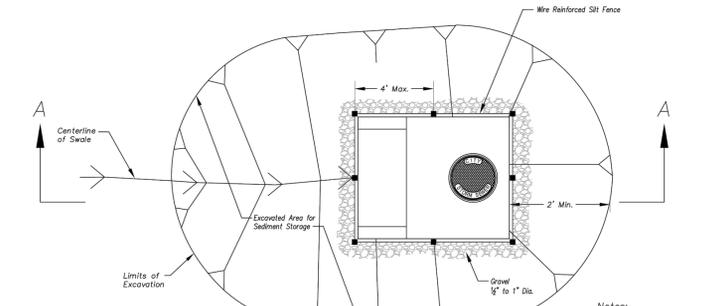


JOINING FENCE SECTIONS
Not to Scale

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

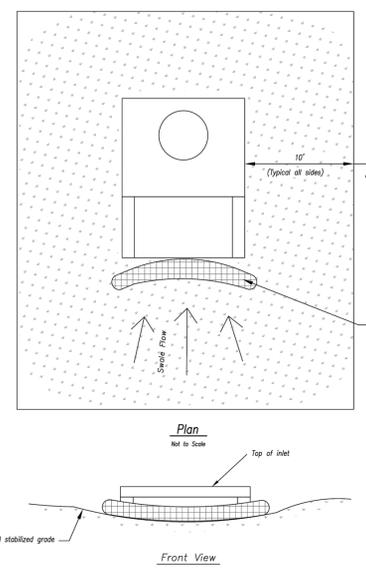


Section A-A
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EARLY STAGE AREA INLET
(All open boxes and inlets not at final grade)

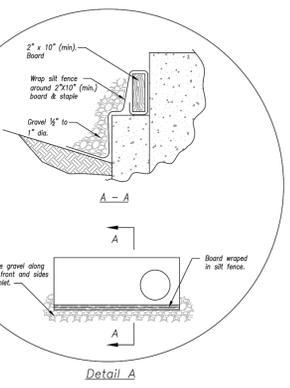
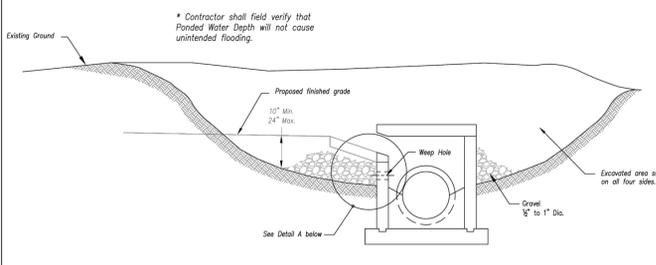
- Notes:**
- Early Stage Area Inlet Sediment Barrier to be installed immediately after inlet or junction box is constructed.
 - Silt fence shall remain in place until excavated area is removed and Late Stage Area Inlet is being installed.
 - Backfill excavated area ONLY after final grading of the site. Stabilization of the site is to immediately follow.
 - Wire reinforced silt fence may be used in place of silt fence attached to wood frame.



LATE STAGE AREA INLET
(Area inlets at final grade and existing inlets)

- 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.

AMERICAN PUBLIC WORKS ASSOCIATION
KANSAS CITY METRO CHAPTER
AREA INLET AND JUNCTION BOX PROTECTION
STANDARD DRAWING NUMBER ESC-07 ADOPTED: 10/24/2016



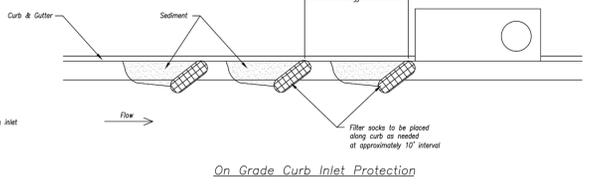
EARLY STAGE CURB INLET
(Open Box and Prior to Pouring Curb and Inlet Throat)

- 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). Stone weirs are not approved for curb inlet use.
 - Contractor to field verify ponding water shall not create a traffic hazard.

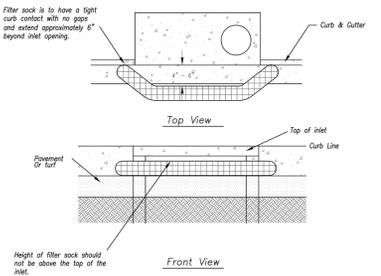
- Maintenance:**
- Remove deposited sediment from excavated storage areas when available storage has been reduced by 20%.
 - Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.
 - Repair or replace as necessary to maintain function and integrity of installation.

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



On Grade Curb Inlet Protection



Sump Inlet Sediment Filter

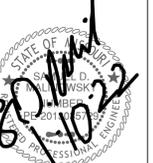
LATE STAGE CURB INLET
(After Pouring Curb and Inlet Throat)

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

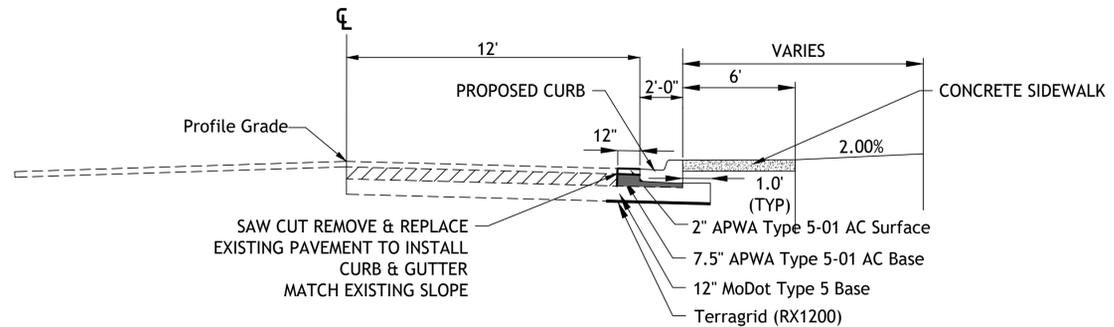
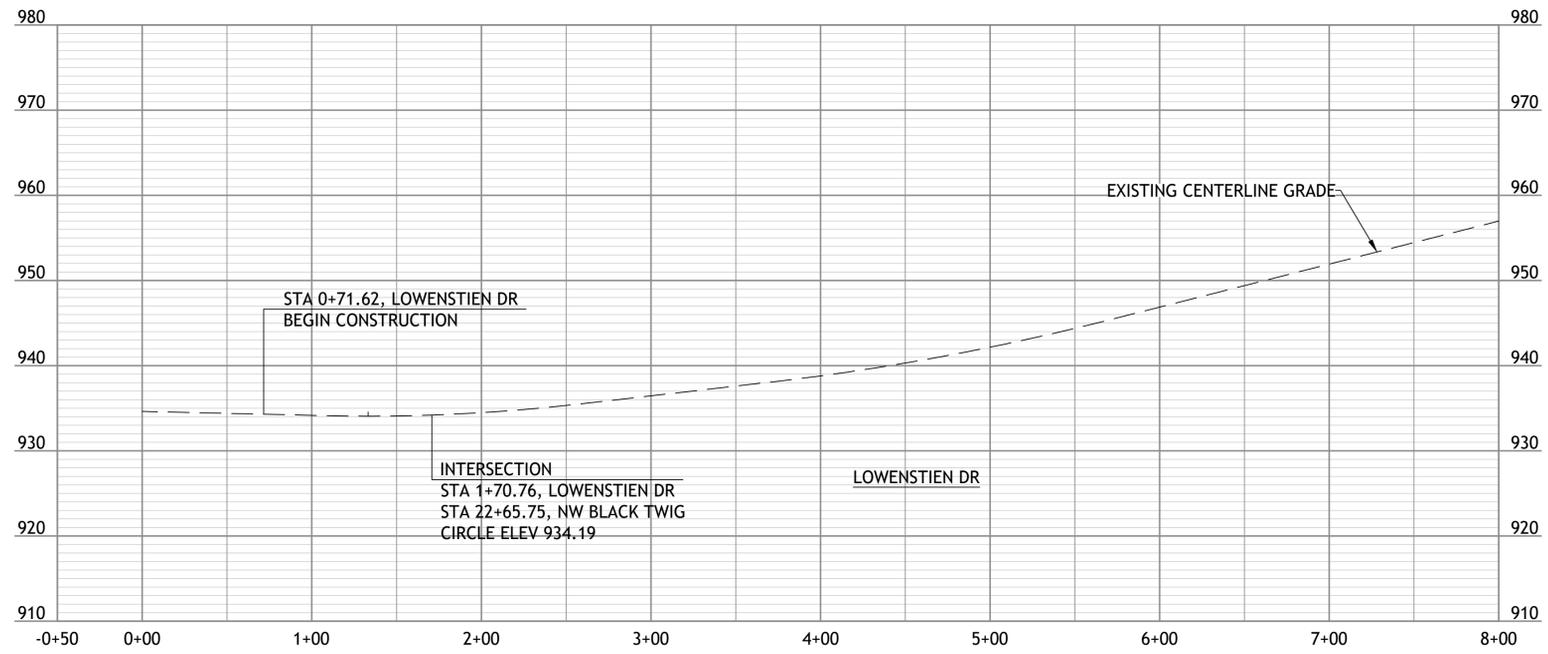
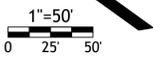
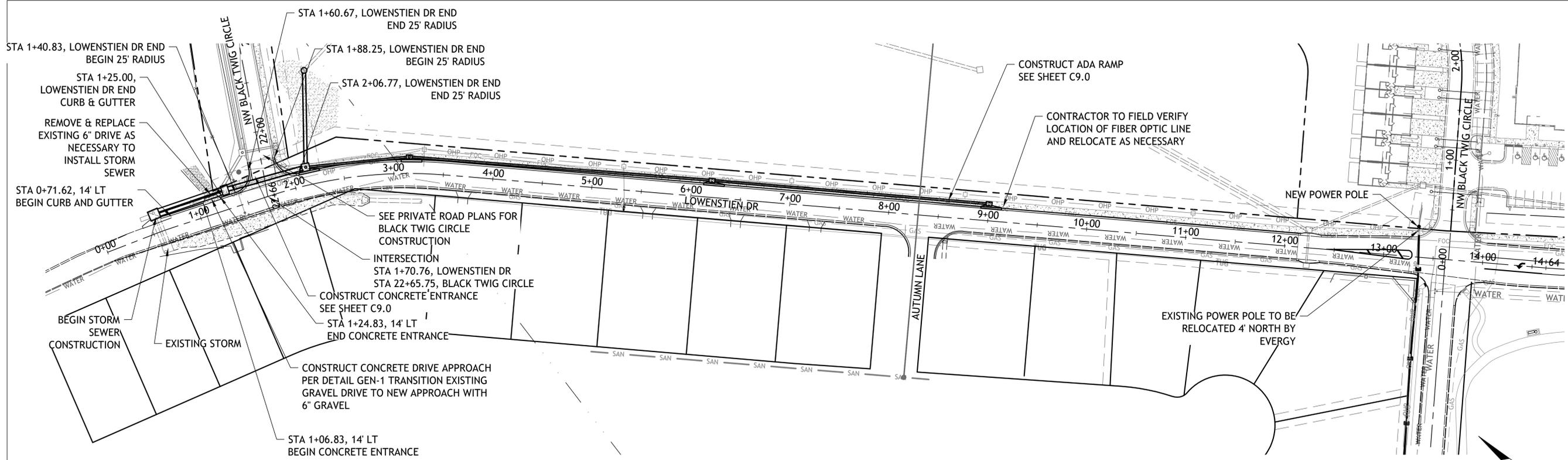
Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

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LOWENSTIEN DR
LEES SUMMIT, MO.

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Revisions
8-17-21 CITY COMMENTS
9-10-21 CITY COMMENTS
9-28-21 CITY COMMENTS
1-10-22 STORM LINE E



**LOWENSTIEN DRIVE
TYPICAL SECTION**
NTS

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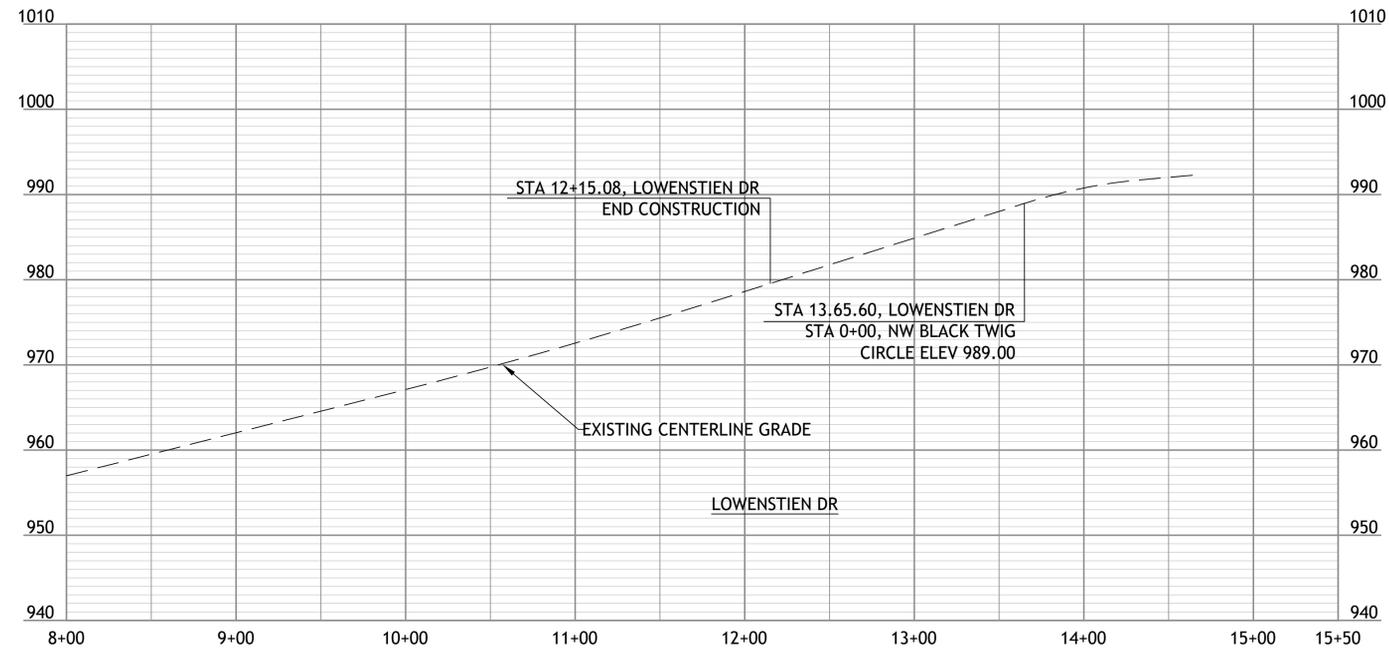
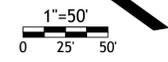
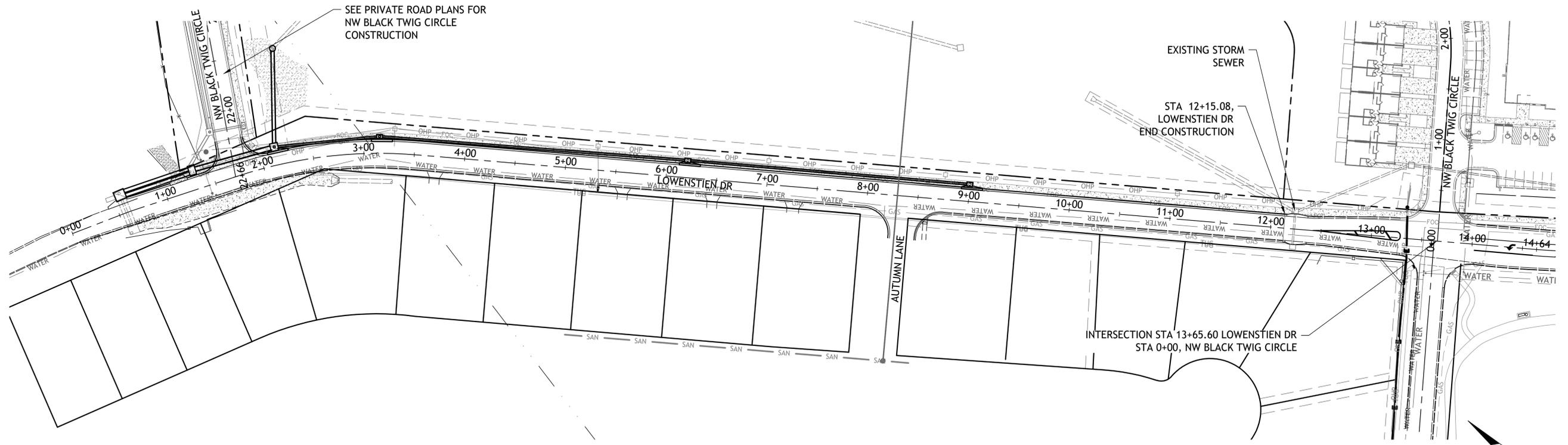
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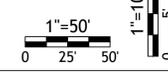


Revisions
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9-28-21 CITY COMMENTS
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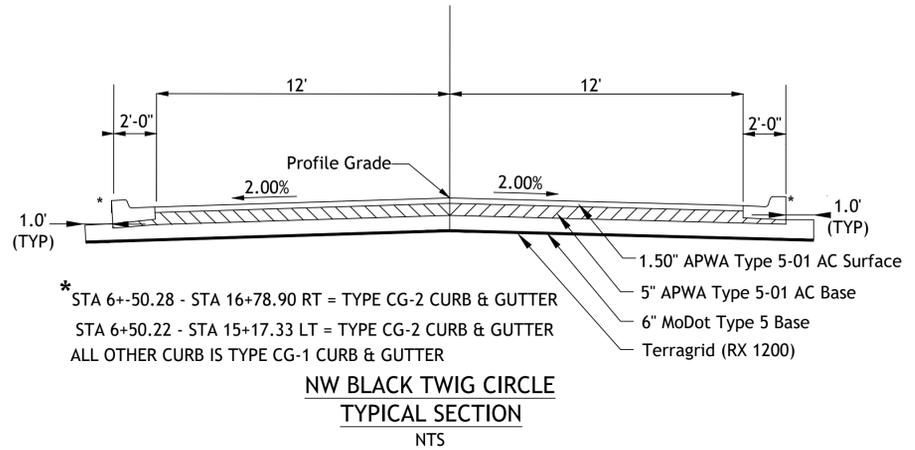
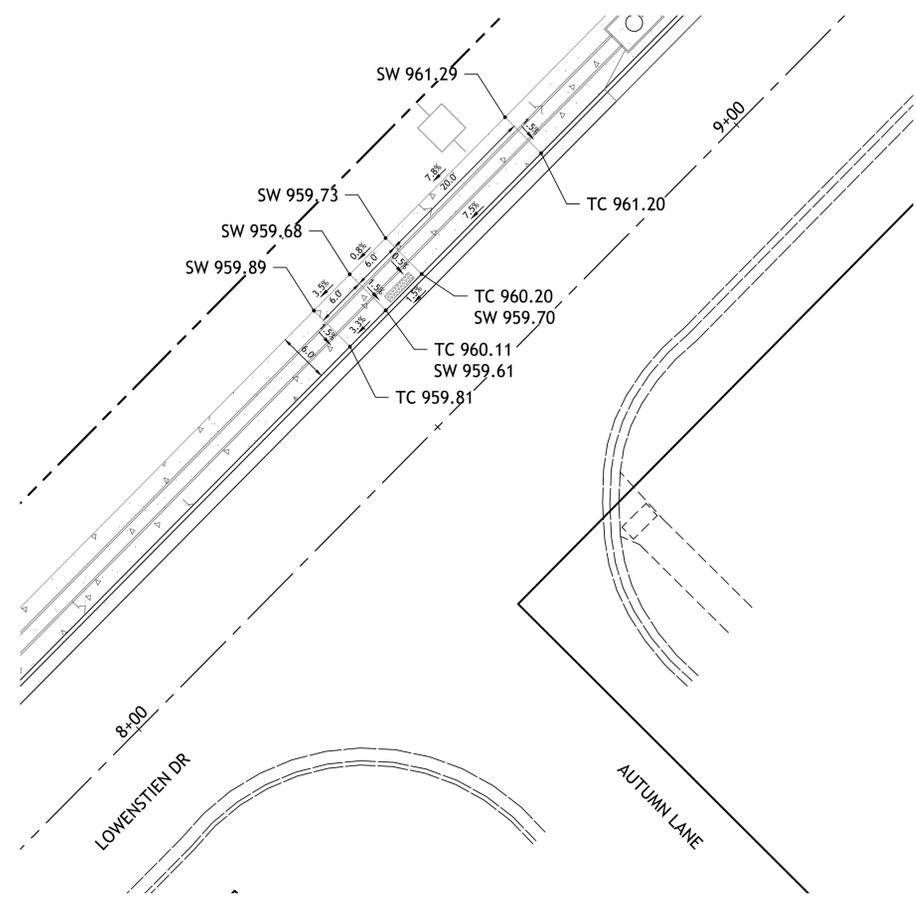
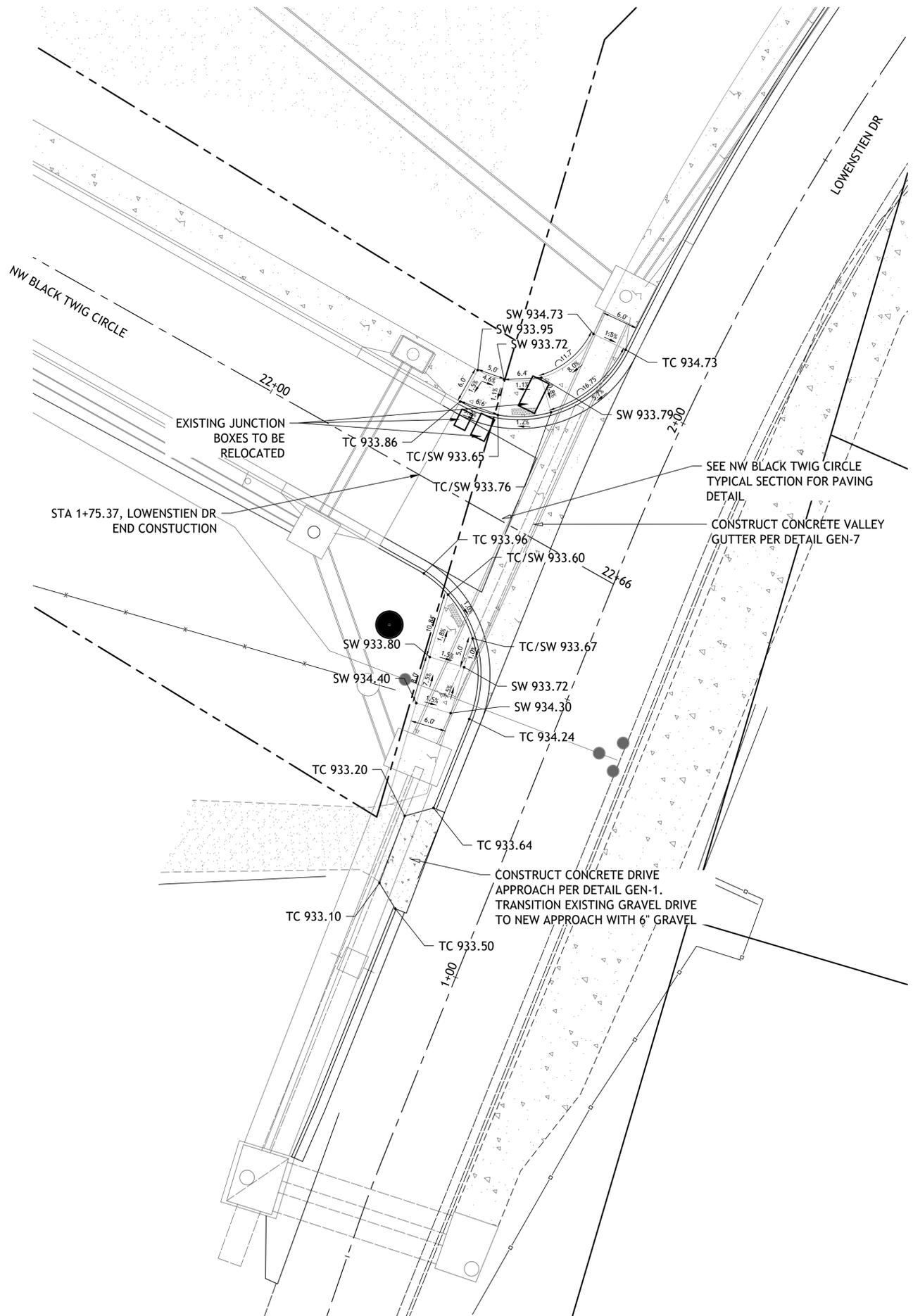


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1-10-22 STORM LINE E

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LEES SUMMITT, MO.

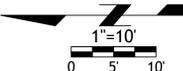


* STA 6+50.28 - STA 16+78.90 RT = TYPE CG-2 CURB & GUTTER
STA 6+50.22 - STA 15+17.33 LT = TYPE CG-2 CURB & GUTTER
ALL OTHER CURB IS TYPE CG-1 CURB & GUTTER

LEGEND

TC	TOP OF CURB ELEVATION
TE	TOP ELEVATION OF STRUCTURE
TP	TOP OF PAVEMENT ELEVATION
SW	TO OF SIDEWALK ELEVATION
R	RAMP
L	LANDING

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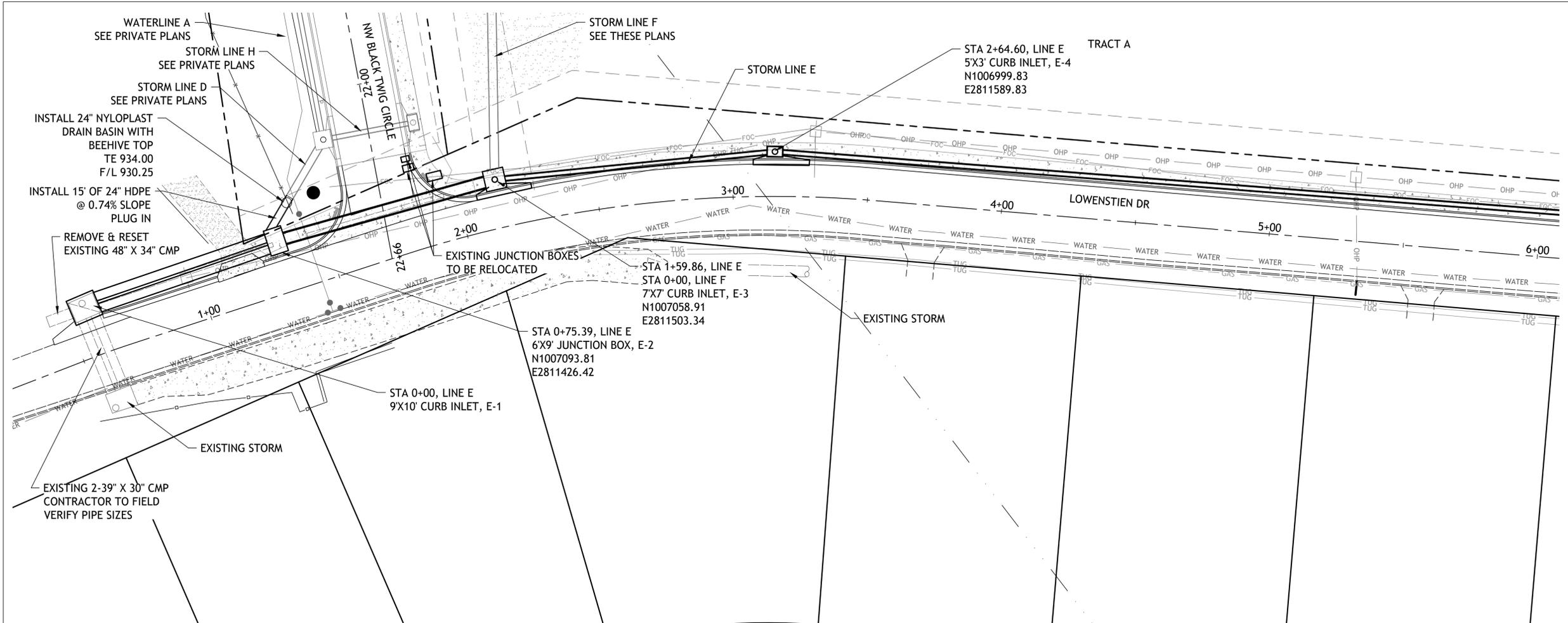


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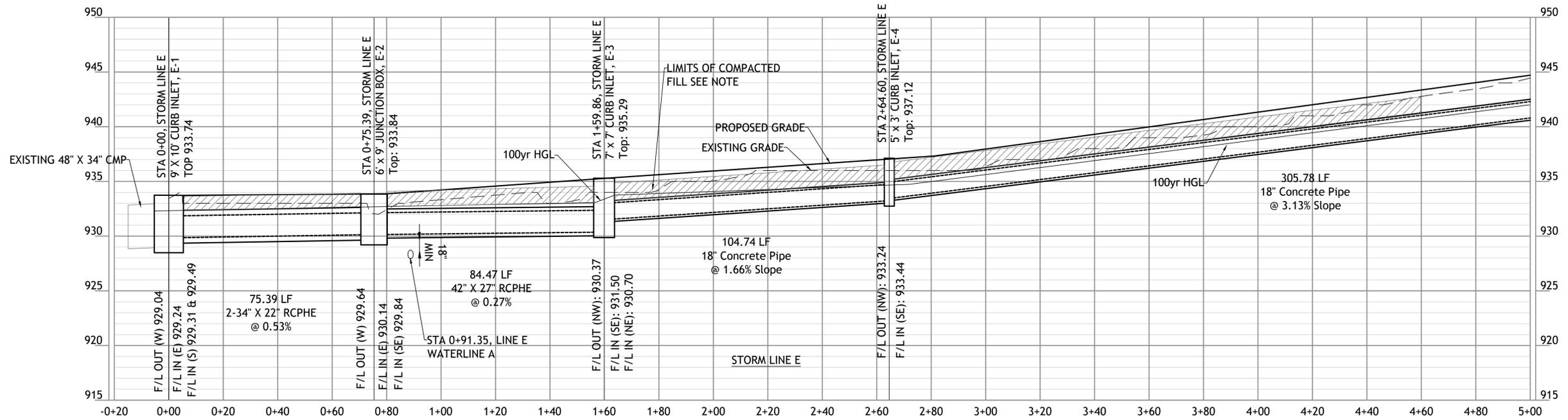
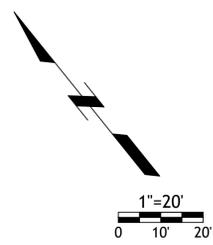


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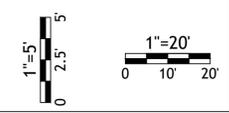
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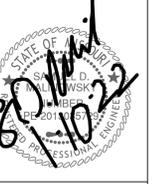
NOTE
1. COMPACTED FILL SHALL BE PLACED TO A MINIMUM OF 18" ABOVE THE TOP OF PIPE PRIOR TO INSTALLATION



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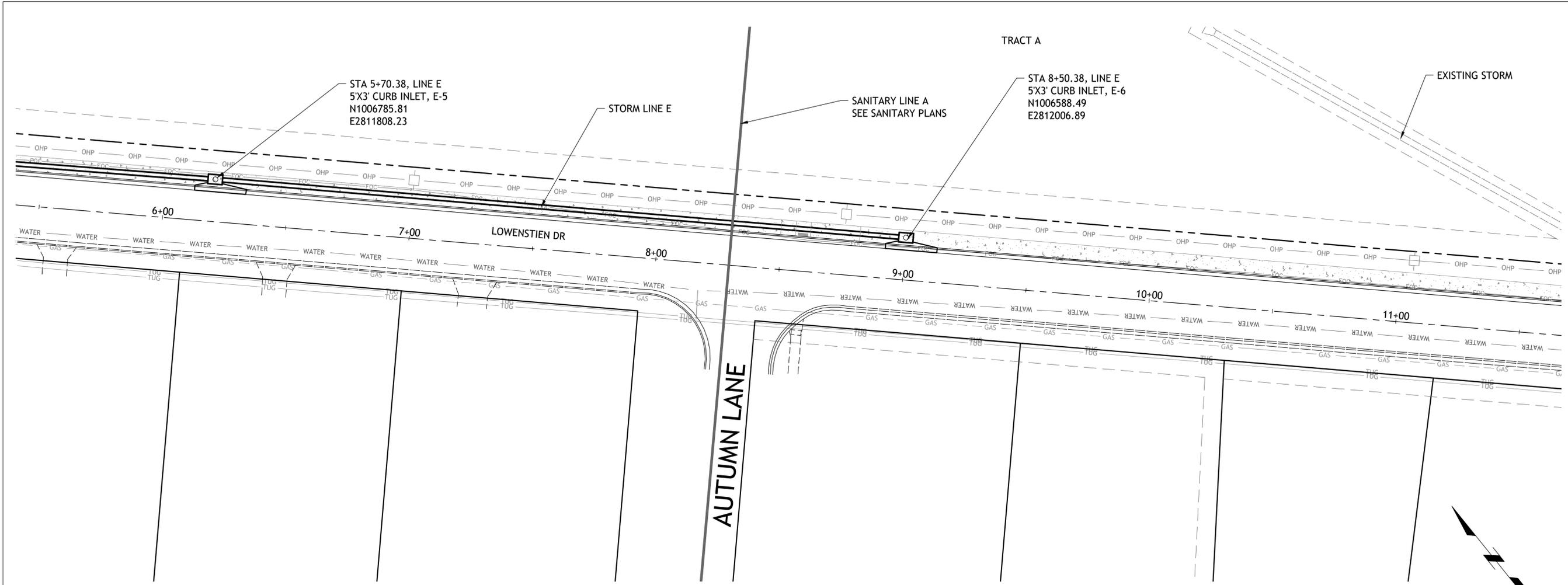


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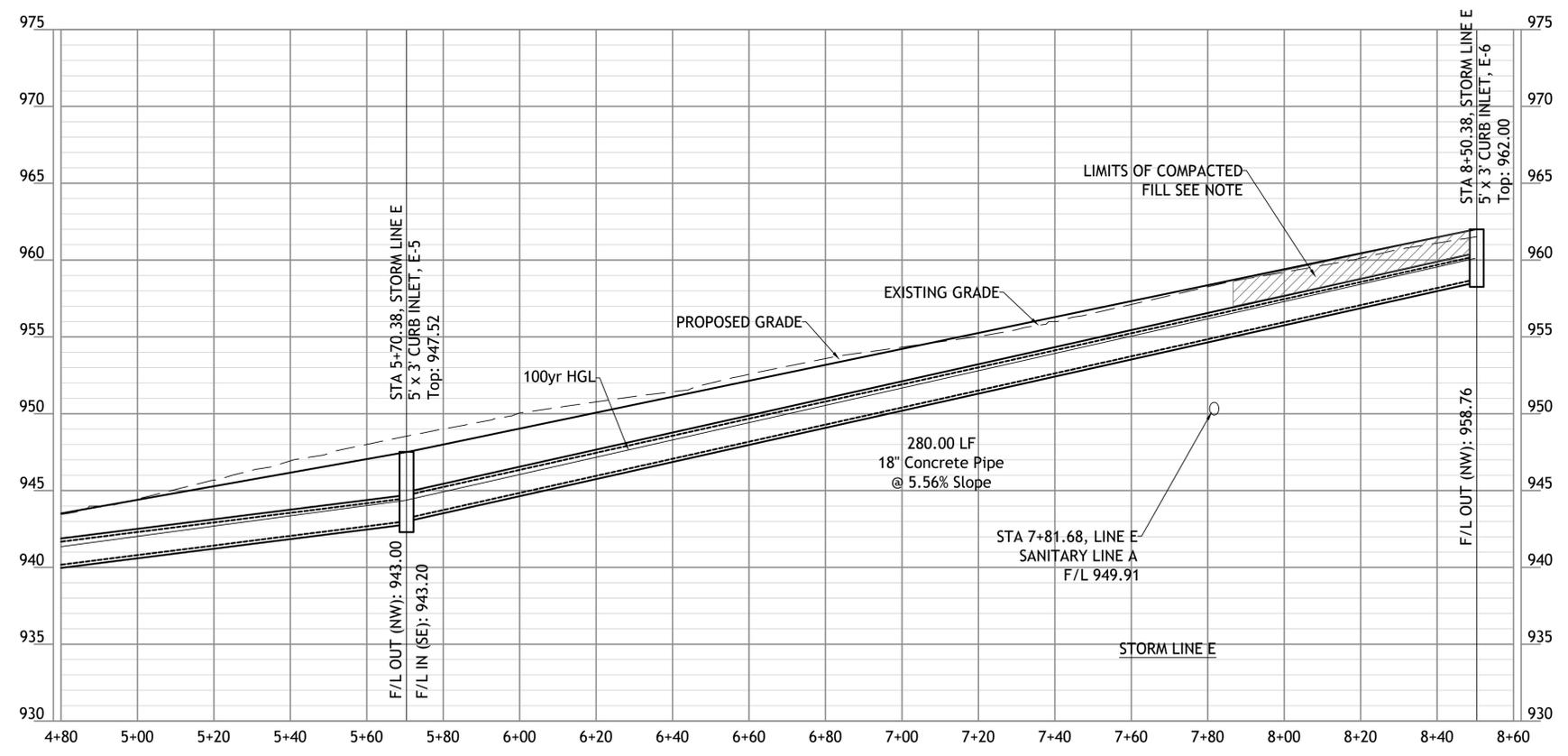
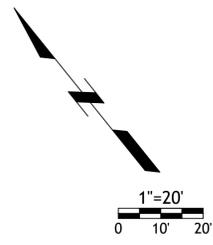


- Revisions
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 - 9-10-21 CITY COMMENTS
 - 9-28-21 CITY COMMENTS
 - 1-10-22 STORM LINE E

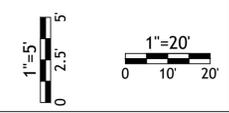
STREETS OF W. PRYOR
LOWENSTIEN DR
LEES SUMMITT, MO.



NOTE
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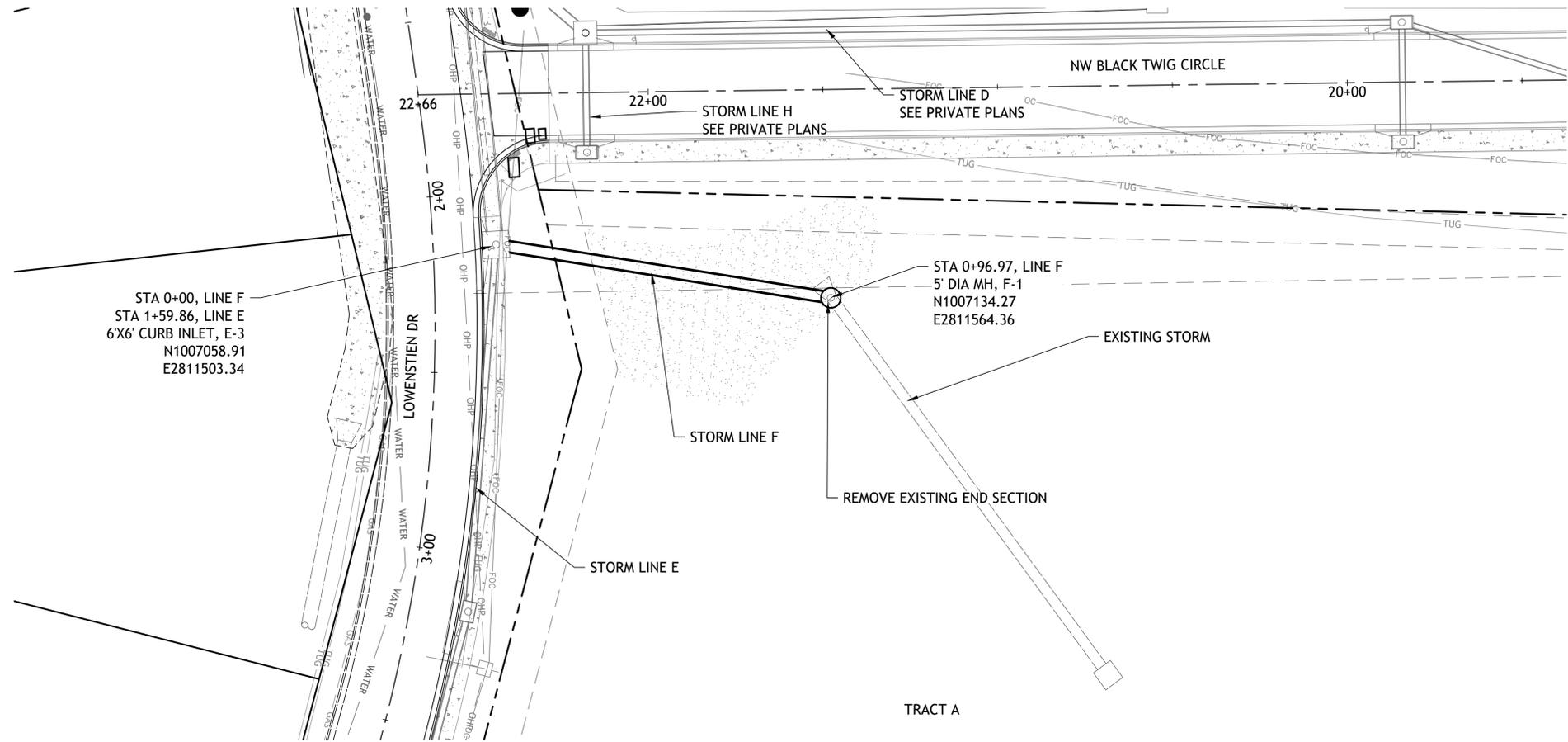
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Lee's Summit, Missouri
03242022



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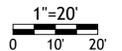


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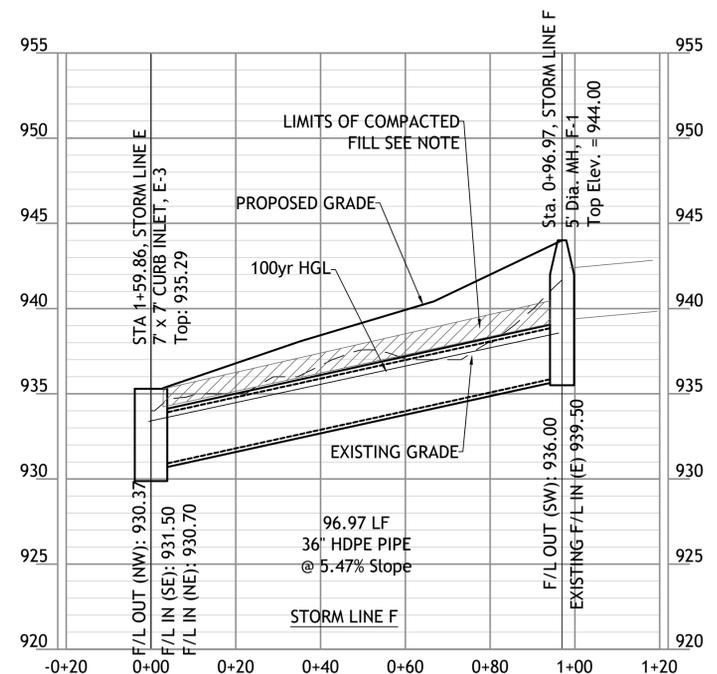


STA 0+00, LINE F
 STA 1+59.86, LINE E
 6'X6' CURB INLET, E-3
 N1007058.91
 E2811503.34

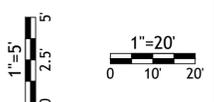
STA 0+96.97, LINE F
 5' DIA MH, F-1
 N1007134.27
 E2811564.36



NOTE
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 18" ABOVE THE TOP OF PIPE PRIOR TO INSTALLATION

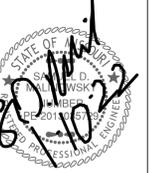


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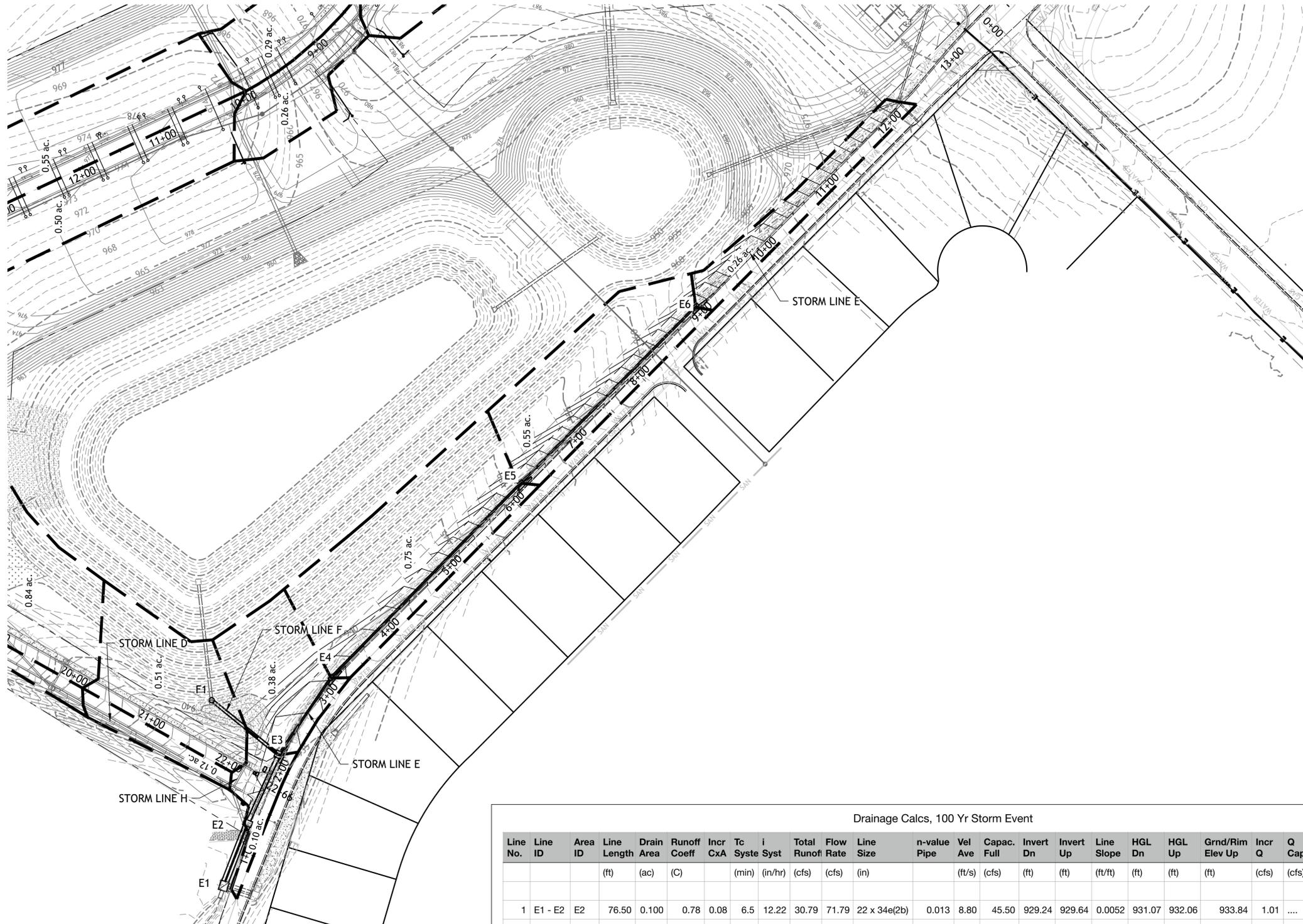


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 LOWENSTIEN DR
 LEES SUMMIT, MO.

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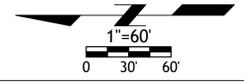
Revisions
8-17-21 CITY COMMENTS
9-10-21 CITY COMMENTS
9-28-21 CITY COMMENTS
1-10-22 STORM LINE E



Drainage Calcs, 100 Yr Storm Event

Line No.	Line ID	Area ID	Line Length (ft)	Drain Area (ac)	Runoff Coeff (C)	Incr CxA	Tc (min)	i (in/hr)	Total Runoff (cfs)	Flow Rate (cfs)	Line Size (in)	n-value	Vel Ave (ft/s)	Capac. Full (cfs)	Invert Dn (ft)	Invert Up (ft)	Line Slope (ft/ft)	HGL Dn (ft)	HGL Up (ft)	Grnd/Rim Elev Up (ft)	Incr Q (cfs)	Q Capt (cfs)	Q Bypass (cfs)	Gutter Spread (ft)
1	E1 - E2	E2	76.50	0.100	0.78	0.08	6.5	12.22	30.79	71.79	22 x 34e(2b)	0.013	8.80	45.50	929.24	929.64	0.0052	931.07	932.06	933.84	1.01
2	E2 - E3	E3	83.30	0.380	0.39	0.15	6.3	12.29	10.95	51.95	27 x 42e	0.013	8.40	43.81	929.84	930.37	0.0064	932.61	933.35	935.29	1.91	5.74	2.77	6.3
3	E3 - E4	E4	104.74	0.750	0.43	0.32	6.1	12.38	9.19	9.19	18	0.013	5.20	14.78	931.17	933.24	0.0198	934.20	935.00	937.33	4.16	1.73	5.60	7.34
4	E4 - E5	E5	305.78	0.550	0.47	0.26	5.5	12.64	5.30	5.30	18	0.013	3.97	18.79	933.44	943.23	0.032	935.44	944.10	947.87	3.33	1.36	3.17	7.35
5	E5 - E6	E6	280.00	0.260	0.62	0.16	5.0	12.90	2.08	2.08	18	0.013	2.42	24.79	943.20	958.80	0.0557	944.46	959.35	962.17	2.08	0.89	1.19	4.65
6	E3 - F1	F1	96.81	0.000	0.00	0.00	0.0	0.00	0.00	41.00	36	0.013	6.90	148.98	930.87	935.70	0.0499	934.14	937.74	944.00	41.00
7	E2 - D1	D1	39.00	2.720	0.57	1.55	5.0	12.90	19.99	19.99	24	0.013	6.36	20.10	930.14	930.45	0.0079	932.89	933.19	935.00	19.99	19.99	0.00

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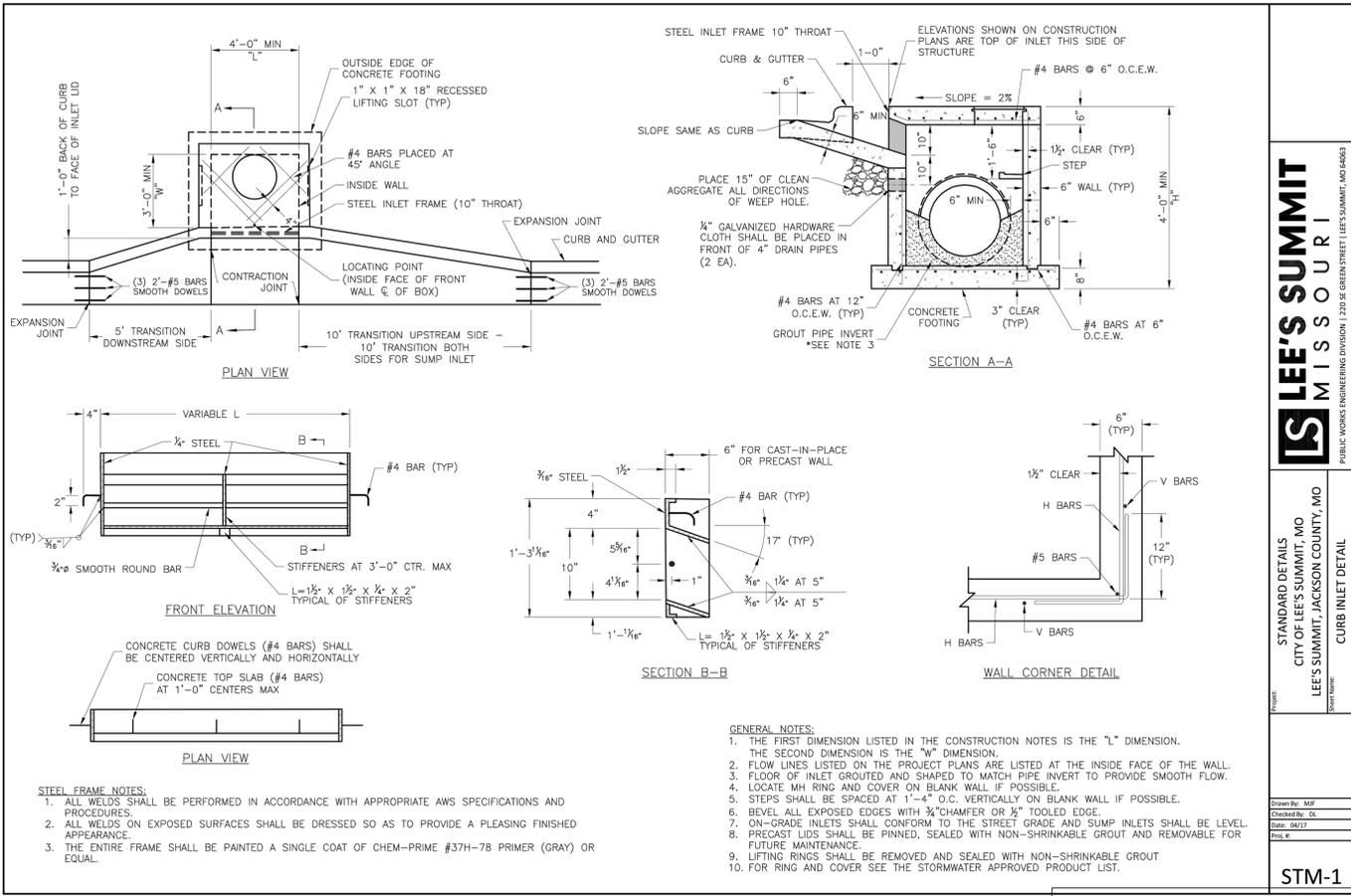


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LEES SUMMIT, MO.

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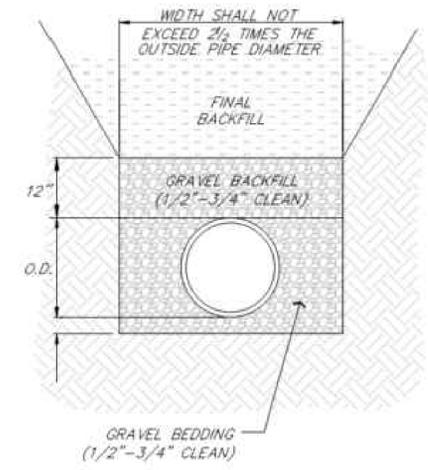


Revisions
8-17-21 CITY COMMENTS
9-10-21 CITY COMMENTS
9-28-21 CITY COMMENTS
12-7-21 STORM LINE E



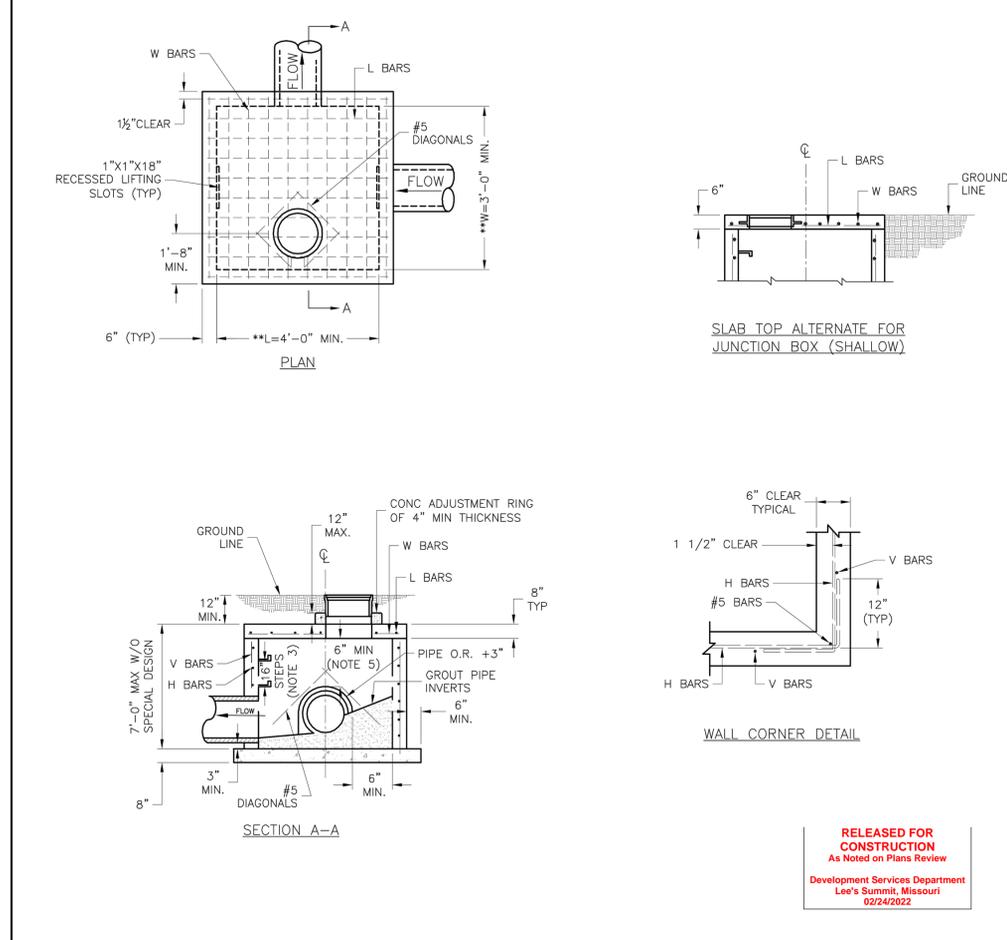
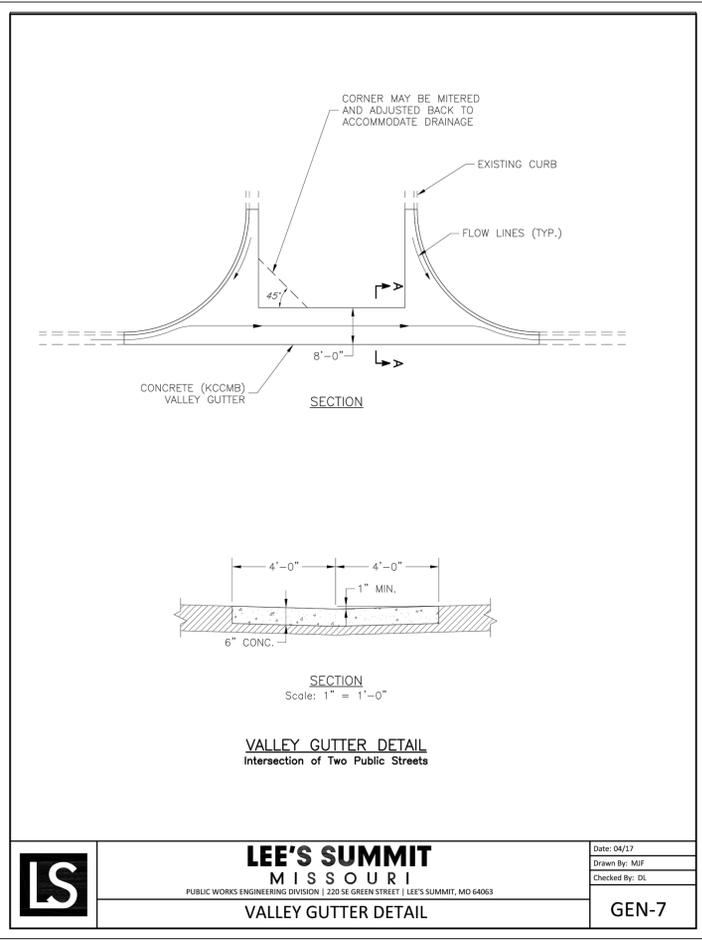
LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 1200 SE GREEN STREET | LEE'S SUMMIT, MO 64083
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
CURE INLET DETAIL
STM-1

BEDDING
1/2"-3/4" CLEAN AGGREGATE, HAND TAMPED OR MECHANICALLY COMPACTED IN MAX. 4" LIFTS
INITIAL BACKFILL
- UNDER PAVED AREAS OR WITHIN 4' HORIZONTAL OF PAVED AREAS
1/2"-3/4" CLEAN AGGREGATE, HAND TAMPED OR MECHANICALLY COMPACTED IN MAX. 4" LIFTS
- UNDER OPEN AREAS
1/2"-3/4" CLEAN AGGREGATE, HAND TAMPED OR MECHANICALLY COMPACTED IN MAX. 4" LIFTS
FINAL BACKFILL
- UNDER PAVED AREAS OR WITHIN 4' HORIZONTAL OF PAVED AREAS
ON-SITE OR IMPORTED MATERIAL FREE OF MUCK, FROZEN MATERIAL, EXCESS MOISTURE, ORGANICS, TOPSOIL, RUBBISH, CONSTRUCTION DEBRIS, ROCK OR BRICK LARGER THAN 8", COMPACTED TO 95% OF STANDARD DENSITY PER ASTM D-698
- UNDER OPEN AREAS
ON-SITE OR IMPORTED MATERIAL FREE OF MUCK, FROZEN MATERIAL, EXCESS MOISTURE, ORGANICS, TOPSOIL, RUBBISH, CONSTRUCTION DEBRIS, ROCK OR BRICK LARGER THAN 8", COMPACTED TO 90% OF STANDARD DENSITY PER ASTM D-698



PIPE DIAMETER	BEDDING DEPTH BELOW PIPE	
	IN SOIL	IN ROCK
24" AND LESS	6"	6"
27" THRU 60"	6"	9"

PIPE BEDDING DETAIL
NOT TO SCALE



NOTE:
FOR ALL JUNCTION BOXES EXCEEDING 7'-0" IN DEPTH, THE PRECAST BOX MANUFACTURER SHALL PROVIDE AN ENGINEERED DESIGN.

**INCREASE IN MULTIPLES OF 6" (7'-0") MAX WITHOUT SPECIAL DESIGN. (SEE PROJECT PLANS FOR DETAILS)

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PUBLIC WORKS ENGINEERING DIVISION | 1200 SE GREEN STREET | LEE'S SUMMIT, MO 64083
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
JUNCTION BOX DETAIL
STM-3

STREETS OF W. PRYOR LOWENSTIEN DR
LEE'S SUMMIT, MO.

sheet C14.0
Civil DETAILS
permit
7 JULY 2021

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9-28-21 CITY COMMENTS
12-7-21 STORM LINE E

GEN-4

LEGEND

- SIDEWALK RAMP
- TURNING SPACE
- DETECTABLE MARKING SURFACE
- TRANSITION

3-D VIEW TYPE A SIDEWALK/SHARED-USE RAMP
Not to Scale

3-D VIEW TYPE B SIDEWALK/SHARED-USE RAMP
Not to Scale

TYPE A SIDEWALK/SHARED-USE RAMP
Not to Scale

TYPE B SIDEWALK/SHARED-USE RAMP
Not to Scale

SECTION A-A
Not to Scale

SECTION B-B
Not to Scale

SECTION C-C
Not to Scale

SIDEWALK CURB DETAIL
Not to Scale

CONTRACTION JOINT
Not to Scale

ISOLATION JOINT
Not to Scale

CURB & GUTTER DETAIL AT RAMP
Not to Scale

STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
ADA RAMP RETROFIT DETAIL
GEN-3A

STRAIGHT CURB (TYPE C-1)

DOWELLED CURB (TYPE DC)

STRAIGHT BACK CURB & GUTTER (TYPE CG-1)

ROLL BACK CURB & GUTTER (TYPE CG-2)

STRAIGHT BACK DRY CURB & GUTTER (TYPE CG-1 DRY)

ROLL BACK DRY CURB & GUTTER (TYPE CG-2 DRY)

CURB & GUTTER DETAIL AT RAMP (ADA SLOPE REQUIREMENTS)

CURB REPLACEMENT DETAIL

GENERAL NOTES

- 3/4" ISOLATION JOINTS WITH 3 (2'-#5 BAR) SMOOTH DOWELS SHALL BE PLACED AT RADIUS POINTS AND AT 150" INTERVALS. THESE DOWEL BARS SHALL BE GREASED AND WRAPPED ON ONE END WITH EXPANSION TUBES.
- 3" DEEP CONTRACTION JOINTS SHALL BE INSTALLED AT APPROXIMATELY 10' INTERVALS. THESE JOINTS SHALL PASS ACROSS THE ENTIRE CURB SECTION.
- CONCRETE FILL SHALL HAVE UNIFORM AND SMOOTH FINISH.
- KCMBB 4K CONCRETE SHALL BE USED FOR ALL CURB.
- ASPHALTIC CONCRETE SURFACE COURSE SHALL CONFORM TO STANDARD SPECIFICATIONS SECTION 2205.2.
- CURBS FOR NEW STREETS SHALL BE BUILT ON ASPHALT OR AGGREGATE BASE AS SHOWN IN TYPICAL SECTION DETAIL.
- WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.

GEN-4

REFER TO THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR MANHOLE CASTINGS

FINISH GRADE

PROVIDE JOINT SEALANT BETWEEN ALL JOINTS AND WRAP EXTERIOR OF JOINTS IN ACCORDANCE WITH SECTION 3500

12" MAXIMUM ADJUSTING RINGS AS REQUIRED

4" MIN (SEE NOTE 2)

4" MIN IF < 24" PIPE
5" MIN IF > 24" PIPE

SPRING LINE

INTEGRAL CAST BASE

6" OF COMPACTED BEDDING AGGREGATE

COMPACTED OR UNDISTURBED EARTH

NOTES:

- PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478 EXCEPT AS MODIFIED BY THE SPECIFICATIONS.
- A WALL THICKNESS NOT LESS THAN ONE-TWELFTH (1/12) OF THE INSIDE DIAMETER OR 4", WHICHEVER IS GREATER, SHALL BE USED WHEN THE MANHOLE DEPTH IS LESS THAN 15'.
- WATERPROOFING SHALL BE REQUIRED ON THE OUTSIDE OF MANHOLES. THE WATERPROOFING SHALL CONSIST OF A TOTAL DRY FILM THICKNESS OF NOT LESS THAN 1.4 MILS OF BITUMINOUS COATING.
- ONLY ECCENTRIC MANHOLE CONES WILL BE ALLOWED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
- THE FILL CONCRETE FLOW CHANNEL FOR SIDE BRANCHES SHALL BE PLACED TO PROVIDE A SMOOTH TRANSITION INTO THE FLOW LINE.
- REFER TO THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR APPROVED MANHOLE GASKET MODELS.
- REFER TO THE APPROVED PRODUCTS LIST FOR APPROVED STEPS.

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

STANDARD PRECAST MANHOLE - SANITARY SEWER

Date: 02/13
Drawn By: JN
Checked By: DL
File: SAN-2
Rev: 1/14

DRIVEWAY WITH BUFFER
NOT TO SCALE

DRIVEWAY WITHOUT BUFFER
NOT TO SCALE

DRIVEWAY TYPICAL SECTION (NO SIDEWALK OR SHARED-USE PATH)
NOT TO SCALE

DRIVEWAY TYPICAL SECTION (SIDEWALK OR SHARED-USE PATH WITH BUFFER)
NOT TO SCALE

DRIVEWAY TYPICAL SECTION (SIDEWALK OR SHARED-USE PATH WITHOUT BUFFER)
NOT TO SCALE

GENERAL NOTES

- SUBGRADE SHALL BE STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
- ALL DRIVE APPROACHES SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG) FOR SLOPE REQUIREMENTS WHEN SIDEWALK IS REQUIRED (SEE ADA RAMP RETROFIT DETAIL GEN-3B, SIDEWALK/SHARED USE PATH RAMP AT DRIVEWAY DETAIL).
- JOINT AT BACK OF CURB LINE SHALL BE AN ISOLATION JOINT FOR RESIDENTIAL DRIVEWAYS.
- KCMBB 4K CONCRETE MIX IS REQUIRED FOR ALL CURBS.
- COMMERCIAL DRIVEWAYS, IN THE PUBLIC RIGHT OF WAY, SHALL BE KCMBB 4K CONCRETE MIX.
- RESIDENTIAL DRIVEWAYS, IN THE PUBLIC RIGHT OF WAY, KCMBB 4K CONCRETE MIX IS RECOMMENDED. OTHER CONCRETE MIXES NEEDS TO BE APPROVED BY CITY INSPECTOR.
- A JOINT MUST BE INSTALLED AT THE RIGHT OF WAY BOUNDARY FOR PROPERTY DELINEATION.
- WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.
- 3/4" FROM TOP OF CURB TO FLOWLINE AT DRIVEWAY (TYPE CG-1 CURB ONLY). MUST MAINTAIN ORIGINAL FLOWLINE OF CURB.
- SIDEWALK ADJOINING CURB SHALL BE 6" THICK, EXTENDING 3' FROM THE DRIVEWAY.
- THE MAXIMUM WIDTH OF A RESIDENTIAL DRIVEWAY IS 36 FEET WITHIN THE RIGHT OF WAY.

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
02/24/2022

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

STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
DRIVEWAY DETAIL
GEN-1

STREETS OF W. PRYOR
LOWENSTIEN DR
LEE'S SUMMIT, MO.