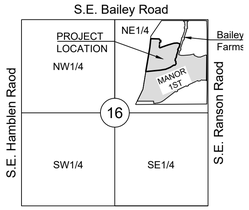
STREET, STORMWATER, AND MASTER DRAINAGE PLAN
FOR
CORNERSTONE AT BAILEY FARMS, FIRST PLAT
IN THE CITY OF LEE'S SUMMIT
JACKSON COUNTY, MISSOURI

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 R/W	-	RIGHT-OF-WAY
S/E	-	SANITARY SEWER EASEMENT
SL	-	SERVICE LINE
S/W	-	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 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
$CATV_X$ — CABLE TV - EXISTING
FOC_X — FIBER OPTIC CABLE - EXISTING
T_X — TELEPHONE LINE - EXIST.
E_X — ELECTRIC LINE - EXISTING
OHP_X — OVERHEAD POWER LINE - EXIST.
UGE_X — UNDERGROUND ELECTRIC - EX.
G_X — GAS LINE - EXISTING
W_X — WATERLINE - EXISTING
LIGHT - EXISTING
EXISTING MANHOLE
CLEANOUT
EXISTING SANITARY MANHOLE
PROPOSED SANITARY MANHOLE
AI — EXISTING AREA INLET
CI — EXISTING CURB INLET
GI — EXISTING GRATE INLET
JB — EXISTING JUNCTION BOX
EXISTING STORM MANHOLE



SECTION 16-47-31

LOCATION MAP
SCALE 1" = 2000'

BASIS OF BEARINGS:
MISSOURI COORDINATE SYSTEM 1983, WEST ZONE

UTILITY CONTACTS:

MISSOURI DEPARTMENT OF TRANSPORTATION (MODOT)
Steve Holloway
600 NE Colbern Road
Lee's Summit, MO 64086
(816) 607-2186

MISSOURI GAS ENERGY (MGE)
Brent Jones
3025 SE Clover Drive
Lee's Summit, MO 64082
(816) 399-9633
brent.jones@spireenergy.com

KANSAS CITY POWER & LIGHT COMPANY (KCP&L)
Ron Dejarnette
1300 SE Hamblin Road
Lee's Summit, MO 64081
Office: (816) 347-4316
Cell: (816) 810-5234
ron.dejarnette@kcpl.com

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

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

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

CITY OF LEE'S SUMMIT WATER UTILITIES
Mark Schaufler
1200 SE Hamblen Road
Lee's Summit, MO 64081
(816) 969-1900

GENERAL NOTES:

1. ALL CONSTRUCTION TO FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
2. ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE ENGINEERING DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI.
3. LINEAL FOOT MEASUREMENTS SHOWN ON THE PLANS ARE HORIZONTAL MEASUREMENTS, NOT SLOPE MEASUREMENTS. ALL PAYMENTS SHALL BE MADE ON HORIZONTAL MEASUREMENTS.
4. NO GEOLOGICAL INVESTIGATION HAS BEEN PERFORMED ON THE SITE.
5. 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.
6. 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.
7. 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.
8. THE CONTRACTOR SHALL PROTECT ALL MAJOR TREES FROM DAMAGE. NO TREE SHALL BE REMOVED WITHOUT PERMISSION OF THE OWNER, UNLESS SHOWN OTHERWISE.
9. 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.
10. ALL WASTE MATERIAL RESULTING FROM THE PROJECT SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR, OR AS DIRECTED BY THE OWNER.
11. ALL EXCAVATIONS SHALL BE UNCLASSIFIED. NO SEPARATE PAYMENT WILL BE MADE FOR ROCK EXCAVATION.
12. THE CONTRACTOR SHALL CONTROL THE EROSION AND SILTATION DURING ALL PHASED OF CONSTRUCTION, AND SHALL KEEP THE STREETS CLEAN OF MUD AND DEBRIS.
13. ALL MANHOLES, CATCH BASINS, UTILITY VALVES AND METER PITS TO BE ADJUSTED OR REBUILT TO GRADE AS REQUIRED.
14. THE CONTRACTOR SHALL CONTACT DEVELOPMENT SERVICES INSPECTIONS AT: 816-969-1200 TO OBTAIN A DEVELOPMENT SERVICES CONSTRUCTION PERMIT. A MINIMUM 48 HOUR NOTICE SHALL BE GIVEN PRIOR TO PERMIT ISSUANCE.
15. THE CONTRACTOR SHALL CONTACT THE RIGHT OF WAY INSPECTOR AT 816-969-1800 PRIOR TO ANY LAND DISTURBANCE ACTIVITIES WITHIN THE RIGHT OF WAY. THESE ACTIVITIES MAY REQUIRE A PERMIT.
16. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL TRAFFIC HANDLING MEASURES NECESSARY TO ENSURE THAT THE GENERAL PUBLIC IS PROTECTED AT ALL TIMES. TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD-LATEST EDITION).

STREET NOTES:

1. ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL. ALL APPLICABLE AASHTO STANDARDS HAVE BEEN MET.
2. ALL INSPECTION OF STREET CONSTRUCTION TO BE PERFORMED BY THE CITY OF LEE'S SUMMIT DEVELOPMENT ENGINEERING.
3. CURB RETURN RADII SHALL BE 25' AT BACK OF CURB UNLESS OTHERWISE NOTED.
4. SUBGRADE TO BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
5. ASSUMED DESIGN SPEED = 25 MPH (COLLECTOR).
6. MINIMUM STOPPING SIGHT DISTANCE = 155 FEET.
7. MINIMUM K, SAG CURVE = 26 (14 WITH LIGHTING), CREST CURVE = 12.
8. GRADE INTERSECTIONS TO DRAIN AS SHOWN.
9. SSD = STOPPING SIGHT DISTANCE.
10. ALL ADA SIDEWALK RAMPS SHALL BE CONSTRUCTED BY THE DEVELOPER WITH THE PUBLIC INFRASTRUCTURE.

EARTHWORK:

1. It is recommended that a Geotechnical Engineer observe and document all earthwork activities.
2. 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.
3. 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 2-20-19.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.
4. Proposed contours are to approximate finished grade.
5. Unless otherwise noted, payment for earthwork shall include backfilling of the curb and gutter, sidewalk and further manipulation of utility trench spoils. The site shall be left in a mowable condition and positive drainage maintained throughout.
6. Unless otherwise noted, all earthwork is considered Unclassified. No additional compensation will be provided for rock or shale excavation, unless specifically stated otherwise.
7. 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.
8. All topsoil shall be stripped from all areas to be graded and stockpiled adjacent to the site at an area specified by the project owner or his appointed representative. Vegetation, trash, trees, brush, tree roots and limbs, rock fragments greater then 6-inches and other deleterious materials shall be removed and properly disposed of offsite or as directed by the owner or his appointed representative.
9. 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).
10. 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.
11. 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.
12. All areas shall be graded for positive drainage. Unless noted otherwise the following grades shall apply:
    a. Turf Areas – 2.5% Minimum, 4H:1V Maximum
    b. Paved Areas – 1.2% Minimum, 5% Maximum
13. All disturbed areas shall be fertilized, seeded and mulched immediately after earthwork 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.
14. All disturbed areas in the right-of-way shall be sodded.
15. Underdrains are recommended for all paved areas adjacent to irrigated turf and landscaped beds.
16. 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:

1. 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.
2. 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.
3. 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.
4. Utility Separation: Waterlines shall have a minimum of 10 feet horizontal and 2 feet vertical separation from all sanitary sewer lines, manholes, and sanitary sewer service laterals, as measured from edge to edge. If minimum separations can not be obtained, concrete encasement of the sanitary line shall be required 10 feet in each direction of the conflict.
5. 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.
6. 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.
7. Trench spoils shall be neatly placed onsite adjacent to the trench, and compacted to prevent saturation and excess sediment runoff. Unsuitable materials, excess rock and shale, asphalt, concrete, trees, brush etc. shall be properly disposed of offsite. Materials may be wasted onsite at the direction of the Owner or his appointed representative.
8. All excavation is considered unclassified, unless noted otherwise. Unclassified excavation for utility trenching is subsidiary to the unit price provided for the pipe. Any quantity provided for rock excavation is estimated based on the best information provided to the Project Engineer. The Engineer has the authority to identify and define the physical characteristics to determine the classification. Unit price quantities for rock excavation will be paid at a trench width of the nominal pipe diameter of the installed main plus 18 inches. Contractor is required to dispose of excess rock from their trenches by disposing it in areas as specified by the Project Engineer.

SUMMARY OF QUANTITIES

	ITEM	QUANTITY	UNITS
1	CLEARING AND GRUBBING	1	LS
2	GRADING	1	LS
3	8" ASPHALT PAVEMENT - LOCAL-RESIDENTIAL STREET	5025	SY
4	FLY ASH OR COMPACTED AGGREGATE BASE	6150	SY
5	CURB AND GUTTER (INLET TRANSITIONS NOT INCLUDED) SUBSIDIARY TO CG-2 IS ALL CG-2 DRY NEEDED)	3024	LF
6	5' CONC. SIDEWALK	57	LF
7	TYPE A SIDEWALK RAMP	2	EA
8	TYPE M SIDEWALK RAMP	4	EA
9	6'X4' CURB INLET	12	EA
10	6'X5' CURB INLET	1	EA
11	6'X6' CURB INLET	2	EA
12	8'X4' CURB INLET	1	EA
13	4'X4' JUNCTION BOX	1	EA
14	4'X5' JUNCTION BOX	1	EA
15	5'X5' JUNCTION BOX	1	EA
16	4'X4' AREA INLET WITH ONE OPENING	1	EA
17	4'X4' AREA INLET WITH TWO OPENINGS	1	EA
18	WATER QUALITY STRUCTURE (STRUCTURE 3901) STRUCTURE TO INCLUDE, 8" PVC, RISER PIPE, CONCRETE BLOCK, TRASH RACK, ETC.	1	LS
19	FAIRCLOTH SKIMMER - INCLUDE SKIMMER, CONCRETE BLOCK, RISER PIPE, REMOVAL AND REPLACEMENT WITH PERMANENT STRUCTURE	1	LS
20	24" END SECTION WITH TOE WALL	1	EA
21	30" END SECTION WITH TOE WALL	2	EA
22	36" END SECTION WITH TOE WALL	1	EA
23	50# STONE RIPRAP WITH FILTER FABRIC	12	EA
24	100# STONE RIPRAP WITH FILTER FABRIC	12	CY
25	150# STONE RIPRAP WITH FILTER FABRIC	7	CY
26	15" HDPE	460	LF
27	18" HDPE	150	LF
28	24" HDPE	425	LF
29	30" HDPE	385	LF
30	36" HDPE	670	LF
31	TURF REINFORCEMENT MAT	412	SY
32	EROSION CONTROL	1	LS
33	END OF ROAD MARKERS (OM 4-1)	6	EA
34	SEEDING AND MULCHING ALL DISTURBED AREAS	1	LS
	THESE QUANTITIES ARE SUPPLIED FOT THE CONTRACTOR'S BENEFIT. CONTRACTOR SHALL VERIFY QUANTITIES AND DISCREPANCIES WHEN PLACING THEIR BID		

Sheet List Table	
Sheet Number	Sheet Title
1	COVER SHEET
2	GENERAL LAYOUT
3	MASTER DRAINAGE PLAN-GRADING PLAN
4	MASTER DRAINAGE PLAN - SWALE GRADING PLAN
5	SE CRONIN ST PLAN AND PROFILE
6	SE SILO ST PLAN AND PROFILE
7	SE WINDBREAK DR (WEST) AND ARBORETUM DR PLAN AND PROFILE
8	INTERSECTION DETAILS
9	MASTER DRAINAGE PLAN-DRAINAGE AREA MAP
10	MASTER DRAINAGE PLAN-DRAINAGE CALCULATIONS
11	STORM PLAN
12	STORM PROFILE 1
13	STORM PROFILE 2
14	DETENTION BASIN DESIGN
15	STREET DETAILS 1
16	STREET DETAILS 2
17	STORM DETAILS
18	STORM DETAILS 2
19	SIGNAGE PLAN
20	SIGN POST DETAILS
21	SIGN MOUNTING DETAILS
22	STREET NAME SIGN DETAILS
23	OM-4 SIGN DETAILS

APPROVED BY:

CITY ENGINEER — DATE
APPROVED FOR ONE YEAR FROM THIS DATE

OWNER/DEVELOPER:

CLAYTON PROPERTIES GROUP INC., DBA SUMMIT HOMES
BRADLEY KEMPF
120 SE 30TH STREET
LEE'S SUMMIT, MO 64082
p (816) 246-6700
BRADLEY@SUMMITHOMESKC.COM

MISSOURI ONE CALL SYSTEM, INC. 1-800-344-7483 STOP-CALL BEFORE YOU DIG!

MISSOURI ONE CALL SYSTEM

MISSOURI GEOGRAPHIC REFERENCE SYSTEM BENCHMARK:

BM JA-45, IS A KC METRO ALUMINUM GRS DISK SET IN CONCRETE AND ABOUT 3 INCHES BELOW THE PAVEMENT ON THE SHOULDER OF SE RANSON ROAD. IT IS STAMPED JA45, 1987.

ELEV. = 1046.25

SCHLAGEL
ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS
14920 W. 107th Street • Lenexa, KS 66215
(913) 492-5158 • Fax (913) 492-8400
WWW.SCHLAGELASSOCIATES.COM
Missouri State Certificates of Authority
#E2002003800-F #LA2001005237 #LS2002008859-F

PREPARED BY:

STATE OF MISSOURI — JAMES L. LONG — NUMBER PE-2010410995 — PROFESSIONAL ENGINEER
5/19/2022

SCHLAGEL & ASSOCIATES, P.A.

CORNERSTONE AT BAILEY FARMS, FIRST PLAT
STREET, STORMWATER, AND MASTER DRAINAGE PLAN
SE BAILEY ROAD AND SE RANSON ROAD
LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
02/03/2022	PER CITY COMMENTS DATED 01/10/2022
04/20/2022	PER CITY COMMENTS DATED 02/28/2022
05/19/2022	PER CITY COMMENTS DATED 05/13/2022

DRAWN BY:	JRJ
CHECKED BY:	JJL
DATE PREPARED:	12/20/2021
PROJ. NUMBER:	21-136

COVER SHEET

SHEET 1

BASIS OF BEARINGS:

MISSOURI STATE PLANE COORDINATE SYSTEM
(NAD) 1983, MISSOURI, WEST ZONE

NOTES:

ALL CONSTRUCTION ON THIS PROJECT SHALL CONFORM TO THE CITY OF LEES SUMMIT TECHNICAL SPECIFICATIONS.

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

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PREPARED BY:

STATE OF MISSOURI
JAMES L. LONG
NUMBER PE-2014010495
PROFESSIONAL ENGINEER

5/19/2022

SCHLAGEL & ASSOCIATES, P.A.

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4	
5	
6	
7	
8	

DRAWN BY: JRJ
CHECKED BY: JLL
DATE PREPARED: 12/20/21
PROJ. NUMBER: 21-136

GENERAL LAYOUT

SHEET 2

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BASIS OF BEARINGS:

MISSOURI STATE PLANE COORDINATE SYSTEM (NAD) 1983, MISSOURI, WEST ZONE

NOTES:

ALL CONSTRUCTION ON THIS PROJECT SHALL CONFORM TO THE CITY OF LEES SUMMIT TECHNICAL SPECIFICATIONS.

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

GRADING LEGEND:

— — — 1023 — — — EXISTING CONTOUR

——— 1023 ——— PROPOSED CONTOUR

NOTES:

1. MBOE = MINIMUM BUILDING OPENING ELEVATION FOR HOUSES ADJACENT TO ENGINEERED OVERFLOW SWALES SHALL BE MINIMUM 2 FEET ABOVE THE 100-YEAR WATER SURFACE ELEVATION.
2. EGL = ENERGY GRADE LINE (100-YEAR)
3. WSE = WATER SURFACE ELEVATION (100-YEAR)
4. 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.
5. MINIMUM BUILDING OPENING ELEVATIONS (MBOEs) ADJACENT TO SUMPED INLETS SHALL BE A MINIMUM OF 1' ABOVE TOP OF ADJACENT BERM

LOT TYPE TABLE		
LOT NUMBER	BASEMENT TYPE	MBOE
1	STANDARD	
2	DAYLIGHT	
3	DAYLIGHT	
4	DAYLIGHT	
5	WALKOUT	
6	WALKOUT	
7	WALKOUT	
8	WALKOUT	
9	DAYLIGHT	
10*	STANDARD	1012
11*	STANDARD	1014
12*	STANDARD	1014
13*	STANDARD	1015
14*	STANDARD	1015
15*	STANDARD	1012
16*	STANDARD	1012
17*	STANDARD	1012
18*	STANDARD	1012
19*	DAYLIGHT	1012
20	DAYLIGHT	
21*	DAYLIGHT	1014
22*	DAYLIGHT	1014
23	DAYLIGHT	
24	DAYLIGHT	
25*	STANDARD	1018
26*	STANDARD	1019
27	STANDARD	
28	STANDARD	
29	STANDARD	
30*	STANDARD	1019
31*	STANDARD	1018
32	STANDARD	
33	STANDARD	
34	STANDARD	
35	STANDARD	
36	STANDARD	
37	STANDARD	

* LOTS WHICH REQUIRE AN "AS-GRADED PLOT PLAN" BEFORE OCCUPANCY.

0 50' 100'

SCALE: 1" = 50'

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DRAWN BY: JRJ
CHECKED BY: JLL
DATE PREPARED: 12/20/021
PROJ. NUMBER: 21-136

MASTER DRAINAGE PLAN-GRADING PLAN

SHEET 3

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BASIS OF BEARINGS:

MISSOURI STATE PLANE COORDINATE SYSTEM
(NAD) 1983, MISSOURI, WEST ZONE

NOTES:

ALL CONSTRUCTION ON THIS PROJECT SHALL CONFORM TO THE CITY OF LEES SUMMIT TECHNICAL SPECIFICATIONS.

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

GRADING LEGEND:

- 1023 — EXISTING CONTOUR
- 1023 — PROPOSED CONTOUR
- DENOTES OVERFLOW SWALE
- EL:000.00 — DENOTES FINISHED GRADE ELEVATION
- EL:000.00 (EX.) — DENOTES EXISTING GRADE ELEVATION
- HP 000.00 — DENOTES LOT HIGH POINT ELEVATION

NOTES:

1. MBOE = MINIMUM BUILDING OPENING ELEVATION FOR HOUSES ADJACENT TO ENGINEERED OVERFLOW SWALES SHALL BE MINIMUM 2 FEET ABOVE THE 100-YEAR WATER SURFACE ELEVATION.
2. EGL = ENERGY GRADE LINE (100-YEAR)
3. WSE = WATER SURFACE ELEVATION (100-YEAR)
4. 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.
5. MINIMUM BUILDING OPENING ELEVATIONS (MBOEs) ADJACENT TO SUMPED INLETS SHALL BE A MINIMUM OF 1' ABOVE TOP OF ADJACENT BERM

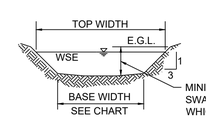
WEIR CALCULATIONS (Q = CLH^(3/2))

SECTION	DRAINAGE AREA (AC.)	Q100 (CFS)	Q10 (CFS)	DESIGN OVERFLOW (CFS)	WEIR ELEVATION	WEIR COEFFICIENT	LENGTH (FT.)	HEAD REQUIRED (FT.)	WSE
1-1	0.60	5.11	2.91	2.20	1016.30	3.33	10	0.16	1016.46

100 YEAR OVERFLOW SWALES

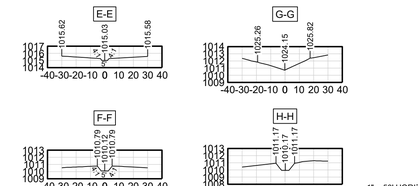
SECTION	DRAINAGE AREA (AC.)	Q100 (CFS)	Q10 (CFS)	DESIGN OVERFLOW (CFS)	BED SLOPE (%)	BASE WIDTH (FT.)	SIDE SLOPE	TOP WIDTH (FT.)	NORMAL DEPTH (FT.)	VELOCITY (FPS)	VELOCITY HEAD (FT.)	EGL (FT.)
E-E	0.76	6.47	3.69	2.78	2.2	5	4:1	4.00	0.50	2.78	0.12	0.62
F-F	3.21	27.33	15.57	11.76	2.0	5	4:1	8.84	0.48	3.54	0.19	0.67
G-G	3.56	30.31	17.27	13.04	2.4	0	4:1	6.96	0.87	4.31	0.29	1.16
H-H	8.77	74.67	42.54	32.12	5.3	5	4:1	10.04	0.63	6.78	0.71	1.34

RUNOFF CALCULATIONS:
$Q = K * C * I * A$
$K_{10} = 1.0$ $K_{100} = 1.25$ $C = 0.66$ I = INTENSITY
DESIGN OVERFLOW=$Q_{OVERFLOW} = Q_{100} - Q_{10}$
MANNINGS "n" = 0.030 FOR SWALES

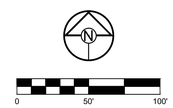


MINIMUM DEPTH OF SWALE = E.G.L. OR 1.0' WHICHEVER IS GREATER

100 YEAR OVERFLOW SWALE SECTIONS



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



SCALE: 1" = 50'

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PREPARED BY:

STATE OF MISSOURI
JAMES L. LONG
NUMBER PE-2014010495
PROFESSIONAL ENGINEER
5/19/2022

SCHLAGEL & ASSOCIATES, P.A.

CORNERSTONE AT BAILEY FARMS, FIRST PLAT
STREET, STORMWATER, AND MASTER DRAINAGE PLAN
SE BAILEY ROAD AND SE RANSON ROAD
LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
02/03/2022	PER CITY COMMENTS DATED 01/10/2022
04/20/2022	PER CITY COMMENTS DATED 02/28/2022
05/19/2022	PER CITY COMMENTS DATED 05/13/2022

DRAWN BY:	JRJ
CHECKED BY:	JLL
DATE PREPARED:	12/20/21
PROJ. NUMBER:	21-136

MASTER DRAINAGE PLAN - SWALE GRADING PLAN

SHEET 4

I:\PROJECTS\2021\21-136\3.0 Design\3.0 DWG Plans\6.0 SS\21-136-SS-GRAD.dwg, 5/19/2022 7:47:08 AM, 1:1

MISSOURI GEOGRAPHIC REFERENCE SYSTEM BENCHMARK:

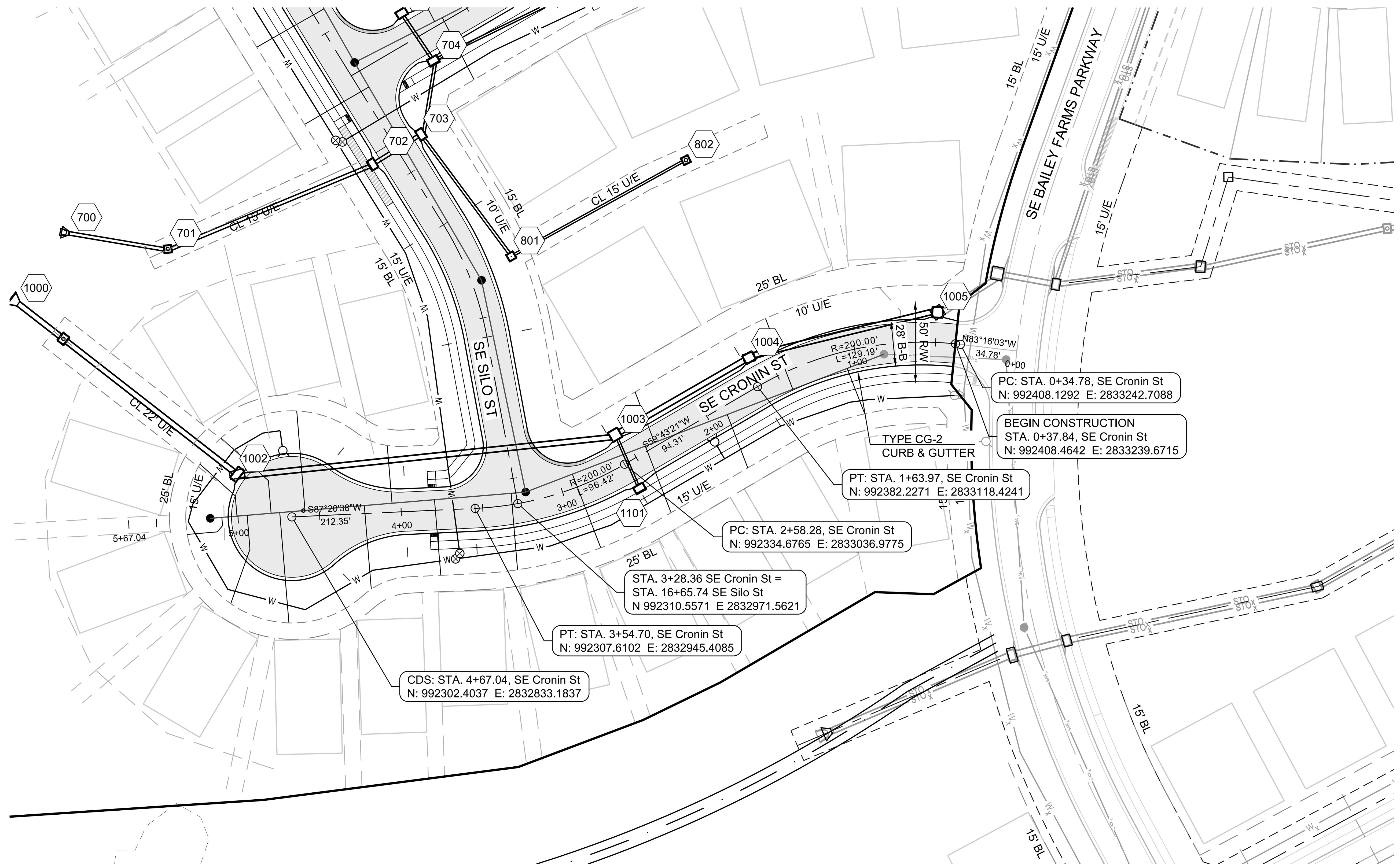
BM JA-45, IS A KC METRO ALUMINUM GRS DISK SET IN CONCRETE AND ABOUT 3 INCHES BELOW THE PAVEMENT ON THE SHOULDER OF SE RANSON ROAD. IT IS STAMPED JA45, 1987.

ELEV. = 1046.25

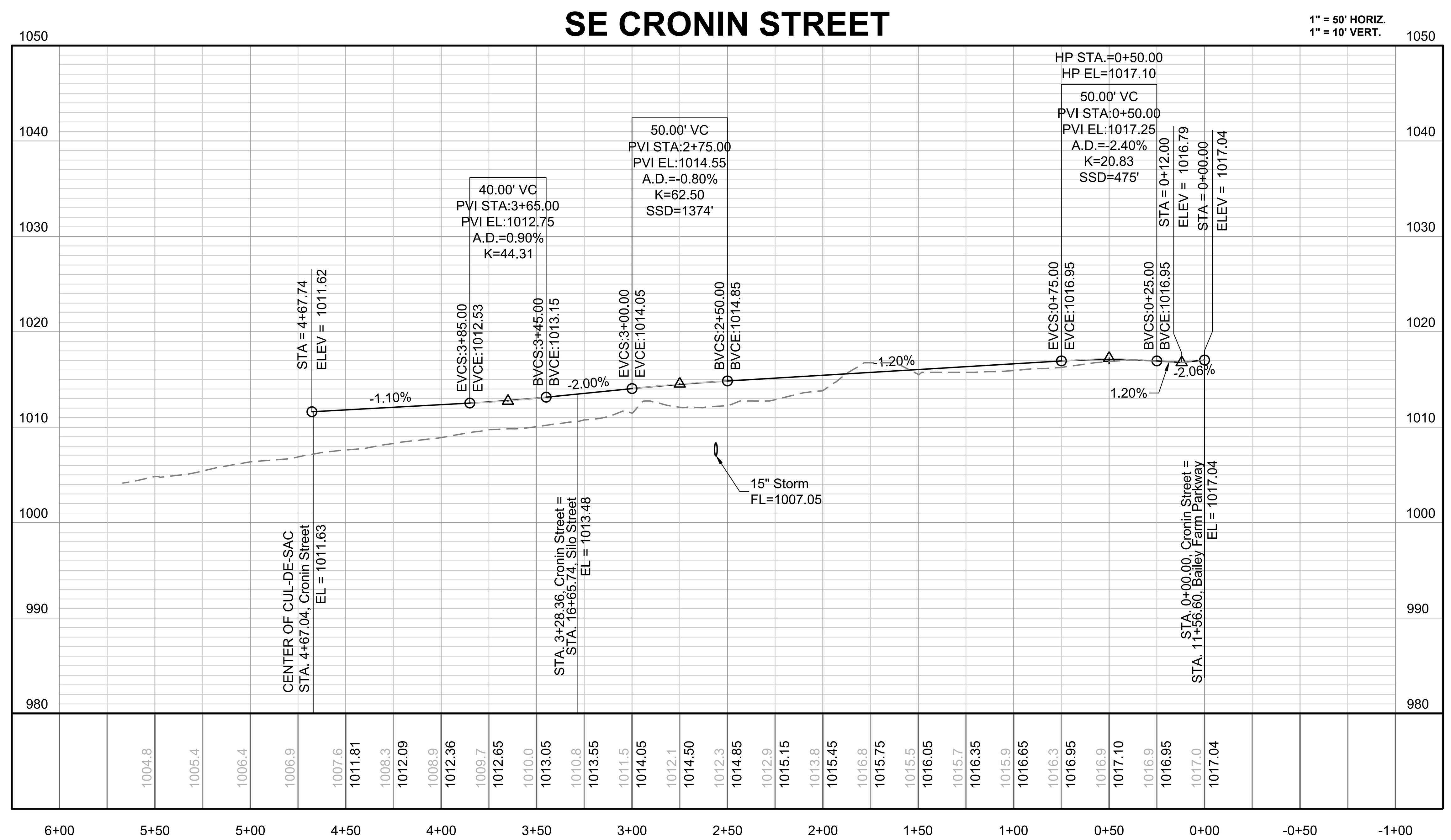
NOTES:

ALL CONSTRUCTION ON THIS PROJECT SHALL CONFORM TO THE CITY OF LEES SUMMIT TECHNICAL SPECIFICATIONS.

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



SE CRONIN STREET



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CHECKED BY: JLL
DATE PREPARED: 12/20/2021
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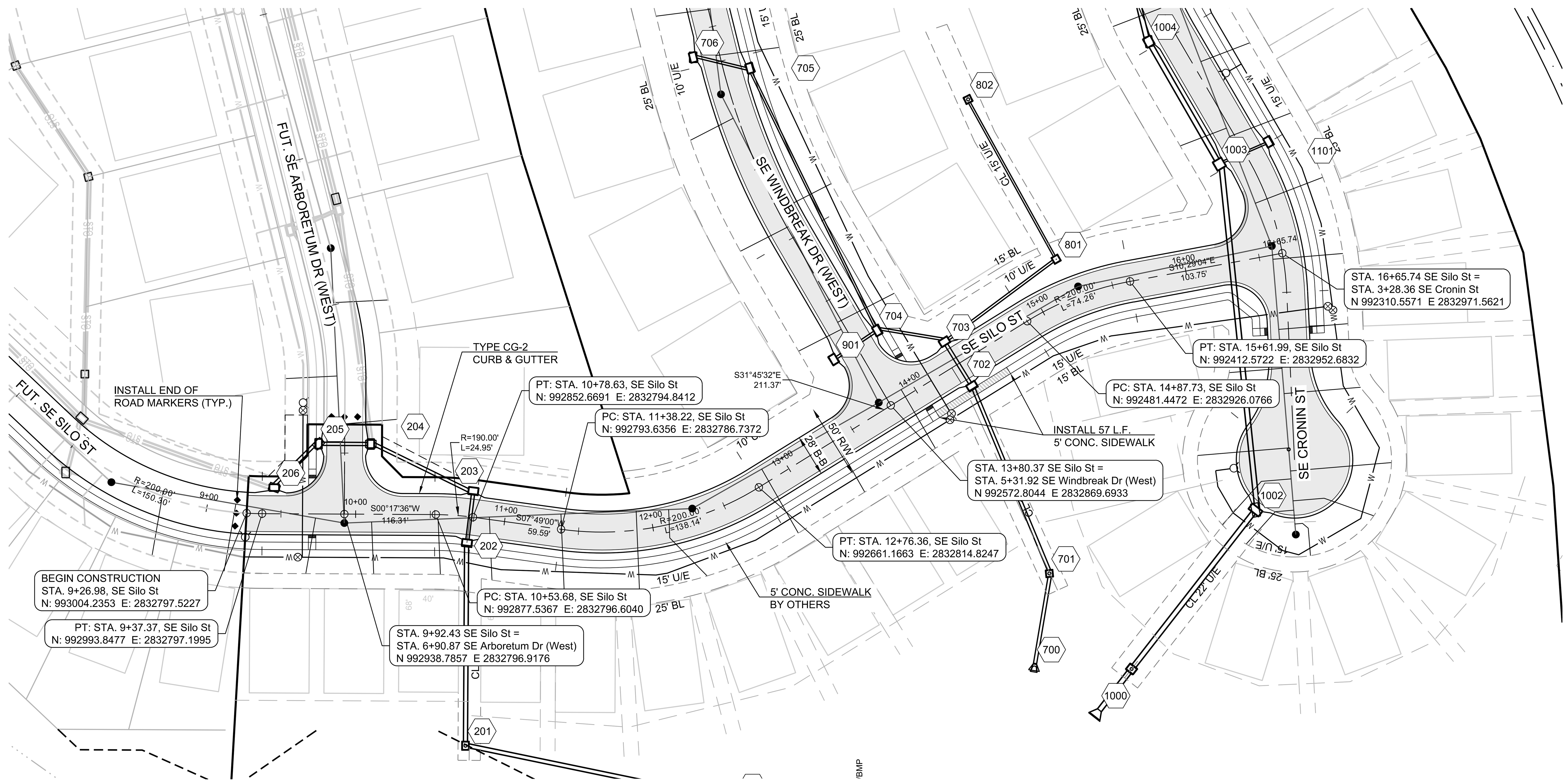
SE CRONIN ST PLAN AND PROFILE

SHEET 5

I:\PROJECTS\2021\21-136\3.0 Design\3.0 DWG Plans\6.0 SS\21-136-SS-PP.dwg, 5/19/2022 6:20:04 AM, 1:1



MISSOURI GEOGRAPHIC REFERENCE SYSTEM BENCHMARK:

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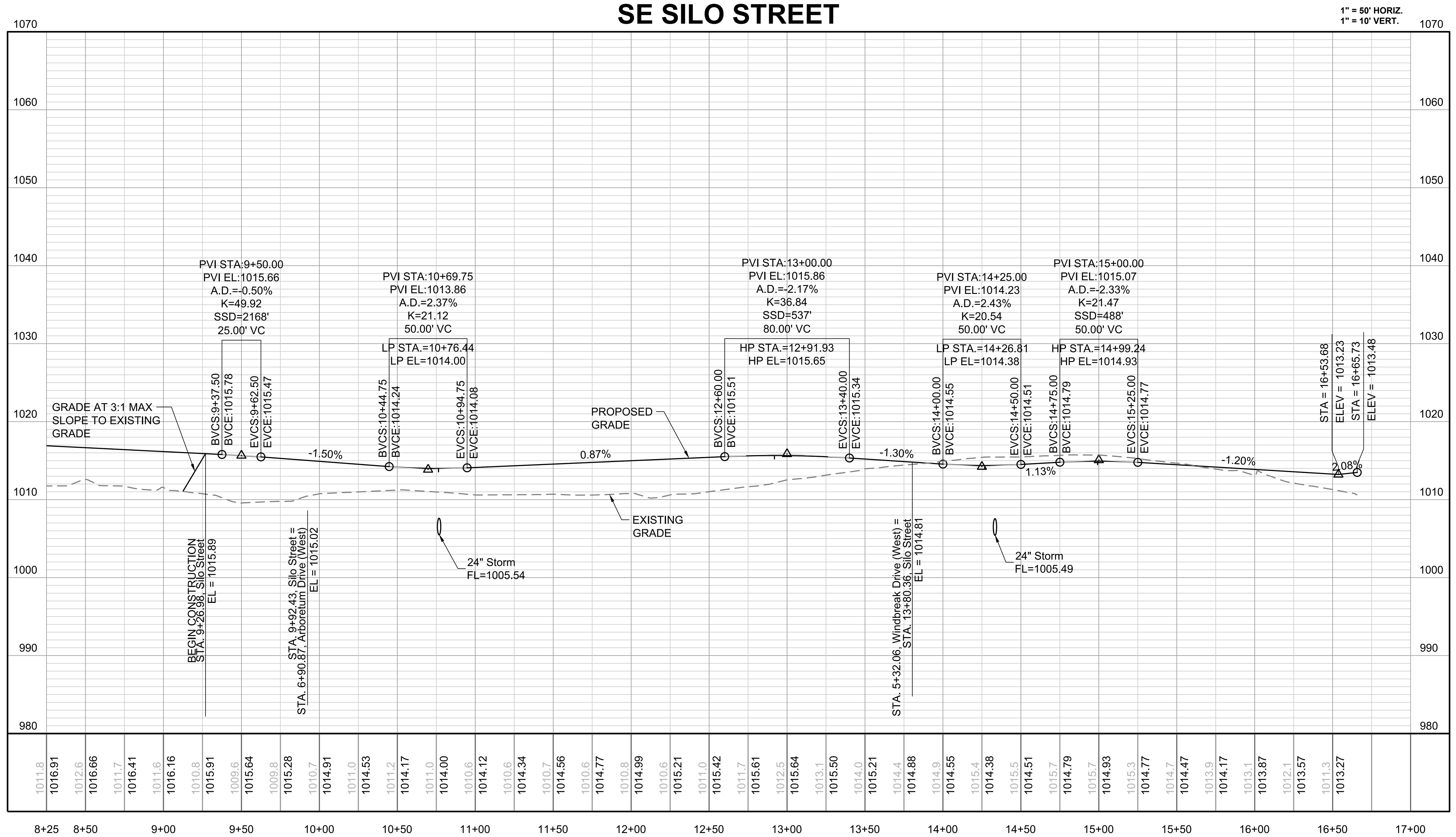
SE SILO STREET



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SE SILO ST PLAN AND PROFILE

SHEET 6

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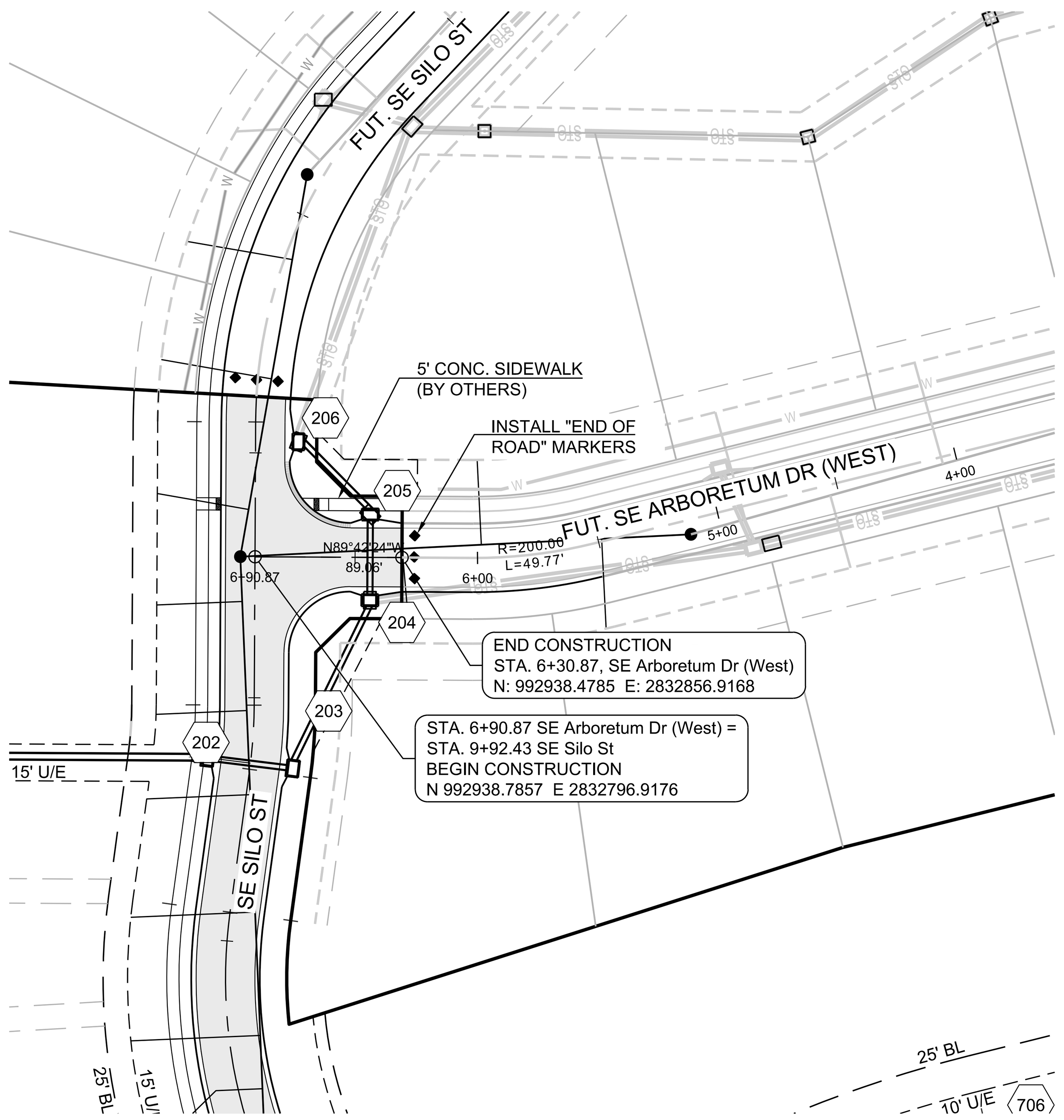
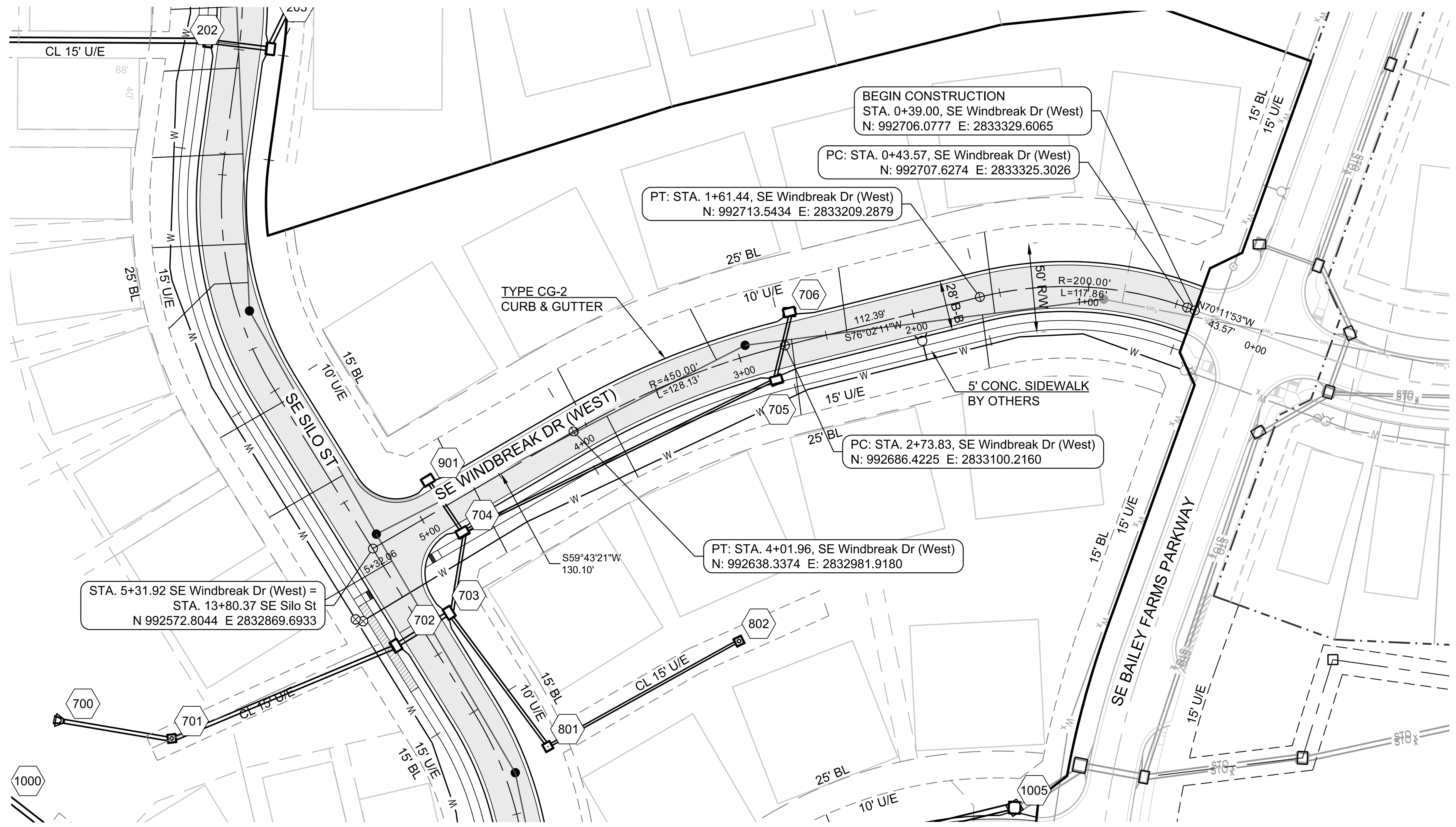
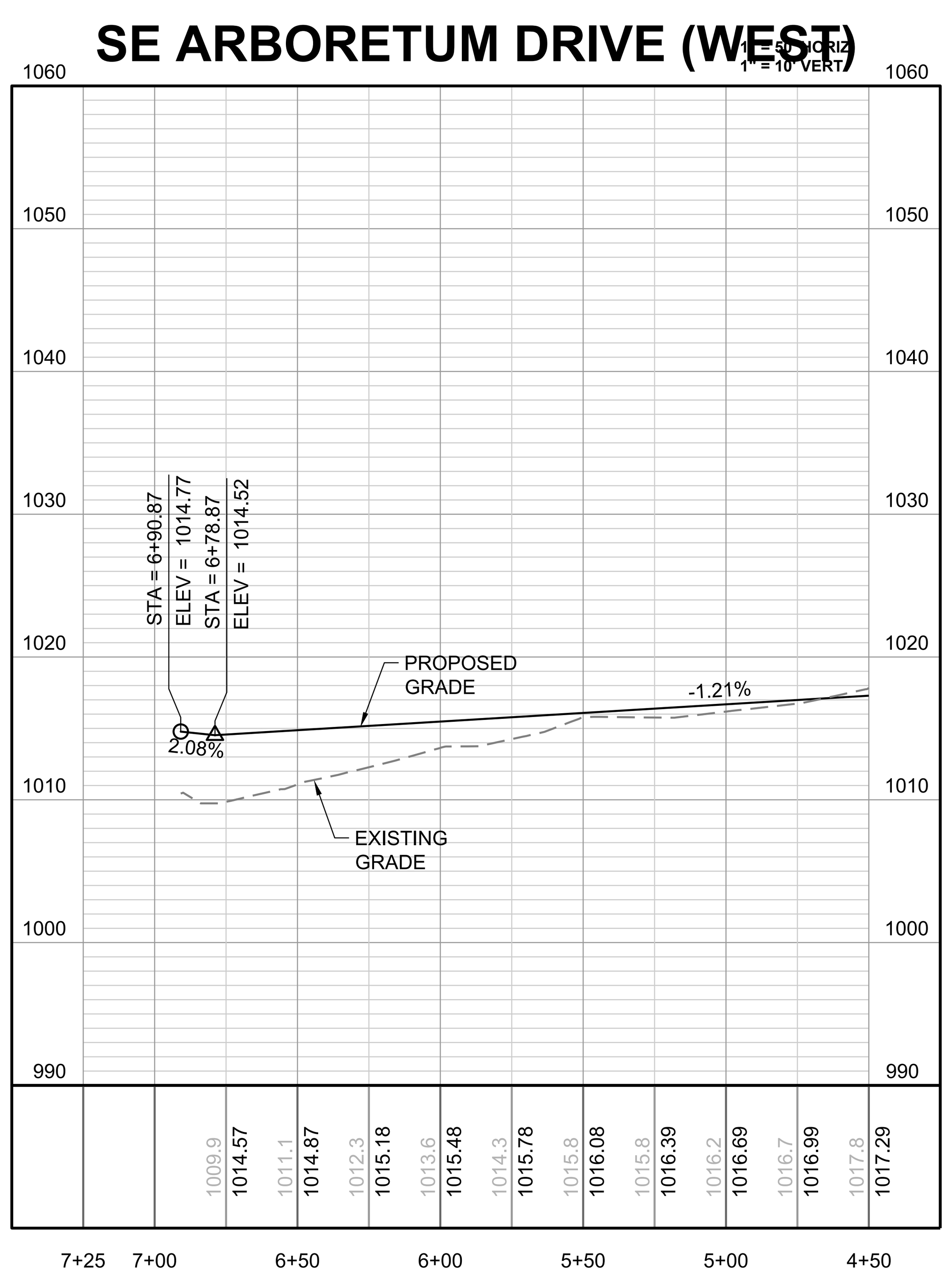
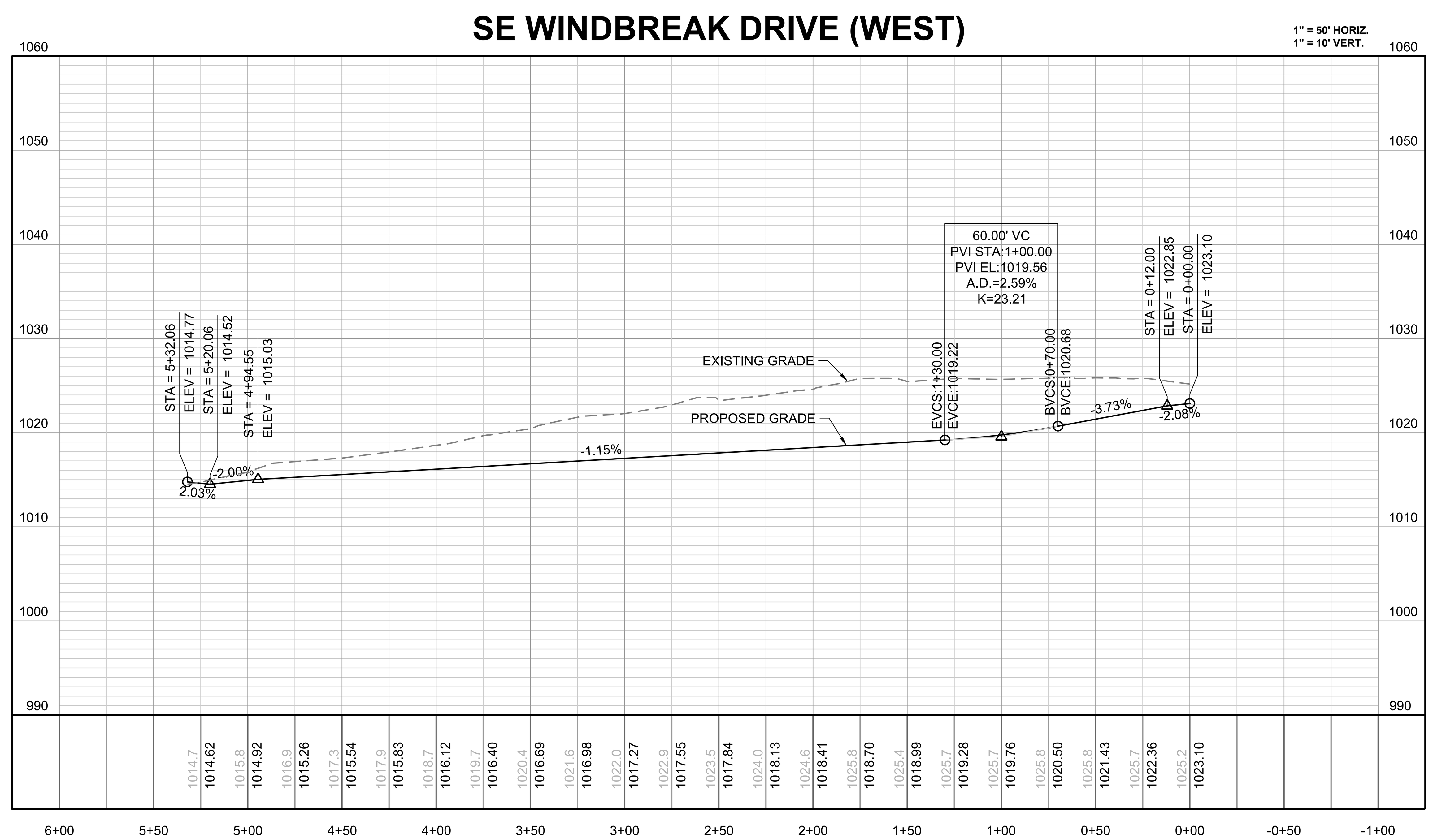




SCALE: 1" = 50'





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5/19/2022

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DRAWN BY: JRJ
CHECKED BY: JLL
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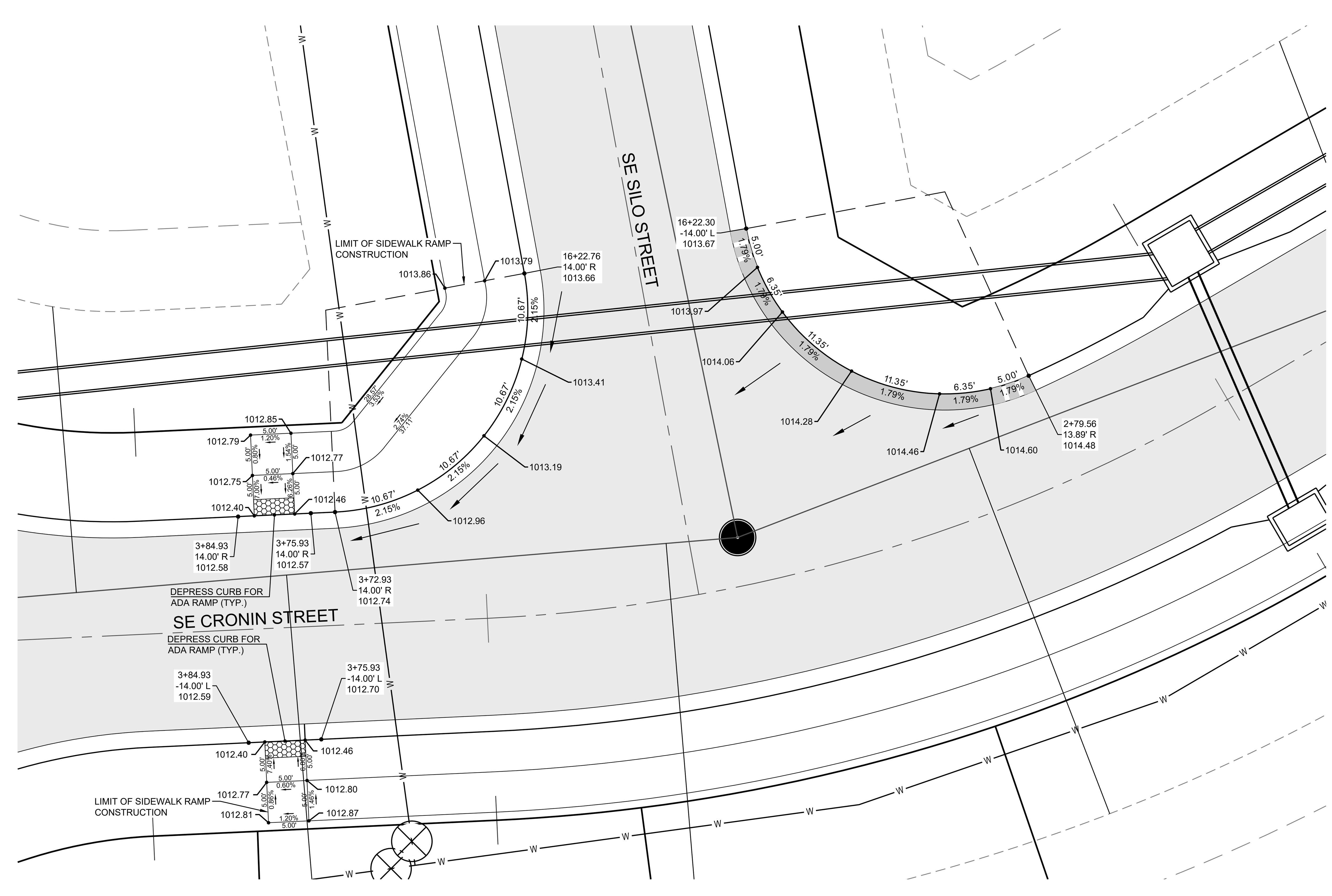
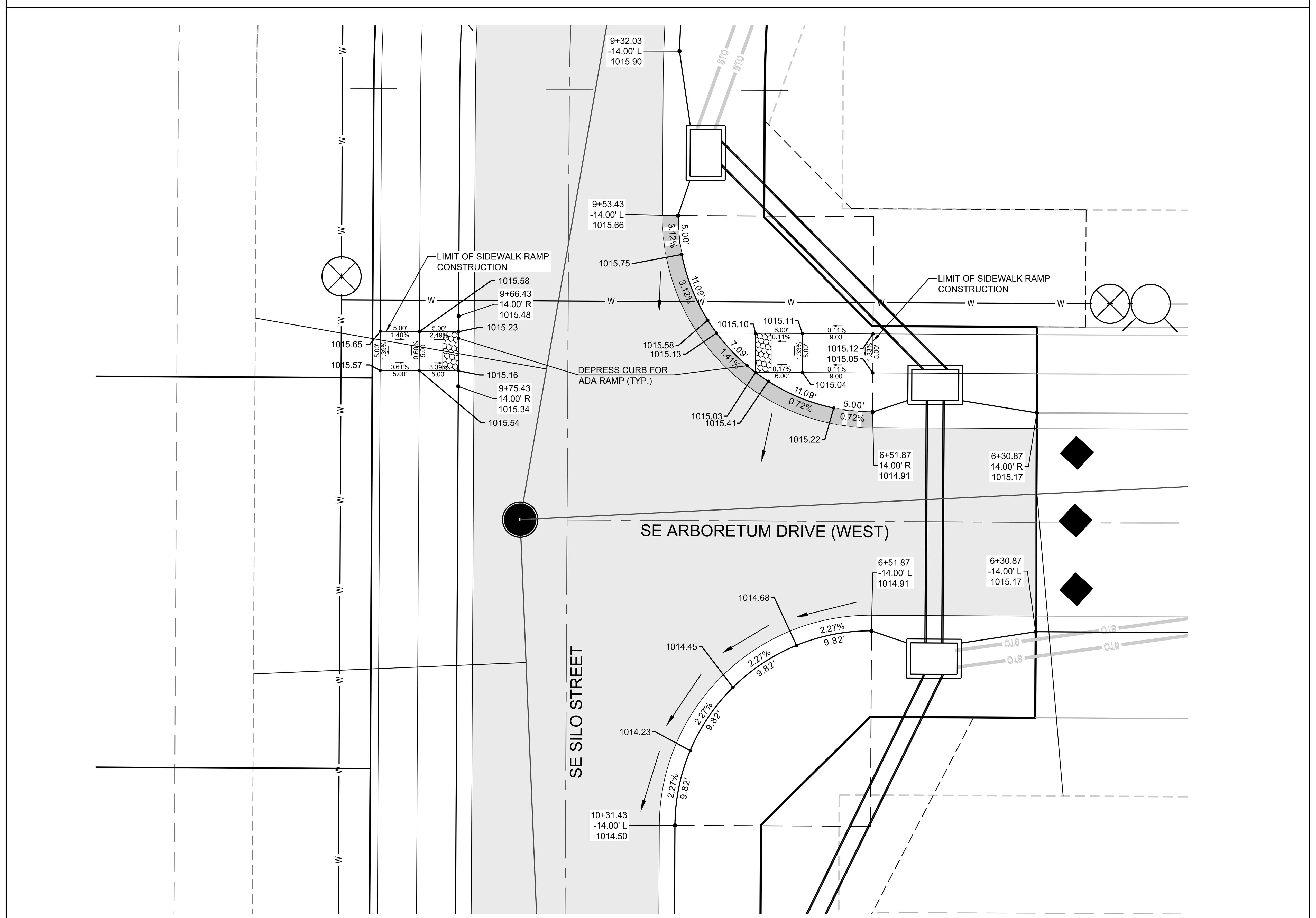
PROJ. NUMBER: 21-136

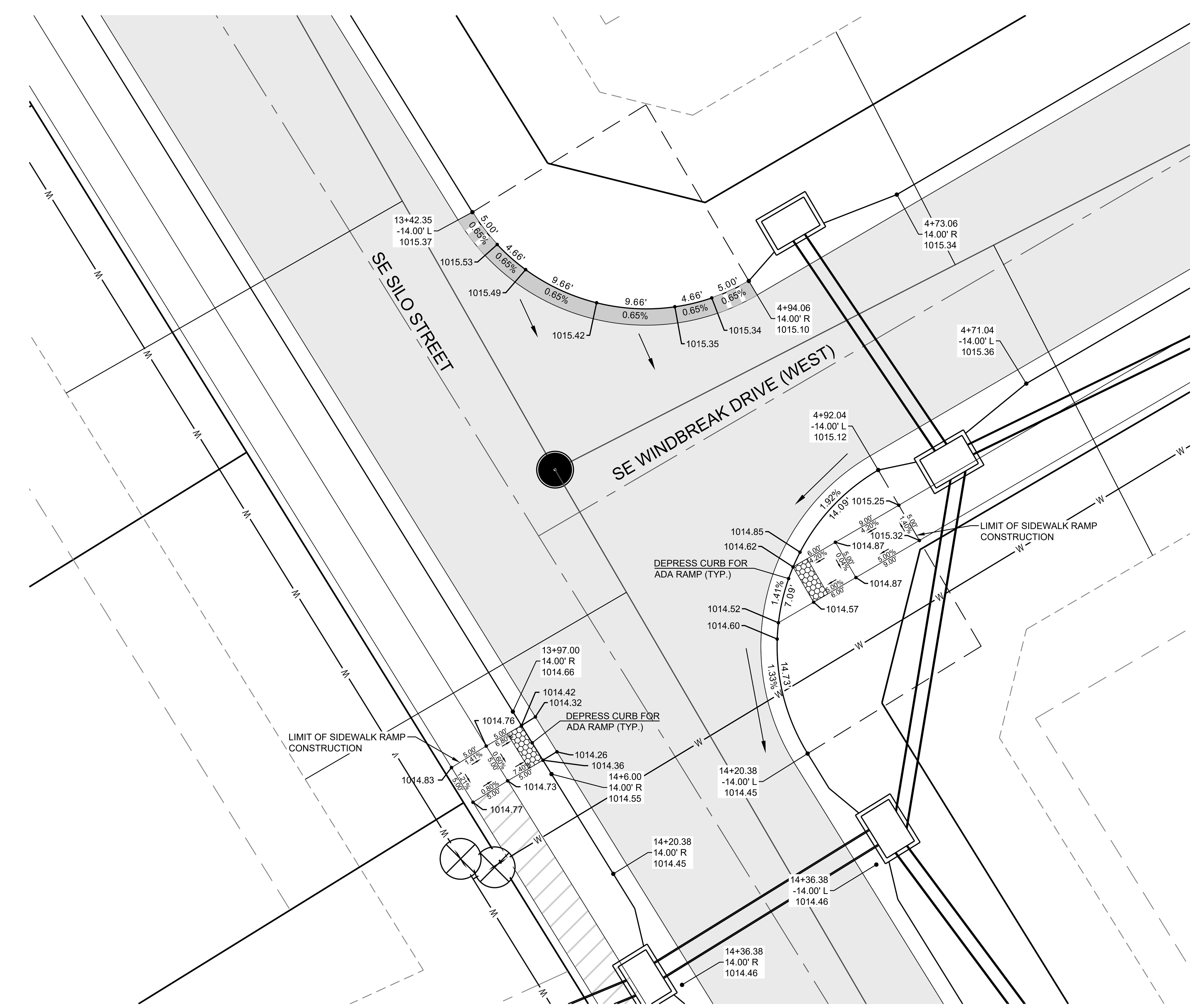
SE WINDBREAK DR (WEST) AND ARBORETUM DR PLAN AND PROFILE

SHEET 7

I:\PROJECTS\2021\21-136\3.0 Design\3.0 DWG Plans\8.0 SS\21-136-SS-PP.dwg, 5/19/2022 6:20:22 AM, 1:1







CURB LEGEND

- CURB & GUTTER - EXISTING
- TYPE "CG-2" CURB & GUTTER
- TYPE "CG-2" DRY CURB & GUTTER
- TRANSITION "CG-2" TO "CG-2 DRY"

0 10' 20'
SCALE: 1" = 10'

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4		
5		
6		
7		
8		
9		

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INTERSECTION DETAILS

SHEET
8

MISSOURI GEOGRAPHIC REFERENCE SYSTEM BENCHMARK:

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ELEV. = 1046.25

0 50' 100'

SCALE: 1" = 50'

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DRAWN BY:	CHECKED BY:	DATE PREPARED:	PROJ. NUMBER:
JRJ	JJL	12/20/021	21-136

MASTER DRAINAGE PLAN-DRAINAGE AREA MAP

SHEET 9

10-YEAR RUNOFF CALCULATIONS

Design Storm:	10
"K" Value:	1.00
"F" Factor:	1.00

Runoff Calculations															Pipe Properties										
Inlet #	Area (acres)	"C" Value	Cumul. Area (acres)	Cumul. CxA	Tc	Intensity	Runoff To Inlet	Cumul. Runoff	Pipe Cap.	Pipe Vel.	Up Piped Inlet 1	Up Piped Inlet 2	Up Area (acres)	Up CxA	Up Inlet	Down Inlet	Pipe Type	"n" Value	Pipe Size	Length	Slope %	Drop In Inlet	FL Up	FL Down	Inlet Top
LINE 200																							DS TAILWATER @ STR #200		
201	0.00	0.66	8.09	5.34	7.7	6.60	0.00	35.27	34.42	7.01			0.00	0.00	201	200	HDPE	0.012	30	184.94	0.60	0.20	1002.61	1001.50	1008.75
202	0.69	0.66	8.09	5.34	7.4	6.68	3.04	35.64	39.74	8.10			0.00	0.00	202	201	HDPE	0.012	30	135.90	0.80	1.50	1003.90	1002.81	1013.49
203	0.39	0.66	7.40	4.88	7.3	6.70	1.72	32.71	21.92	6.98			0.00	0.00	203	202	HDPE	0.012	24	35.04	0.80	0.50	1005.68	1005.40	1013.50
204	0.51	0.66	7.01	4.63	7.2	6.74	2.27	31.20	21.92	6.98	301		1.85	1.22	204	203	HDPE	0.012	24	75.49	0.80	0.50	1006.78	1006.18	1015.11
205	0.55	0.66	4.65	3.07	7.1	6.76	2.46	20.76	21.92	6.98			0.00	0.00	205	204	HDPE	0.012	24	35.00	0.80	0.50	1007.56	1007.28	1015.11
206	0.14	0.66	4.10	2.71	7.0	6.79	0.63	18.38	21.92	6.98			0.00	0.00	206	205	HDPE	0.012	24	41.74	0.80	0.20	1008.40	1008.06	1015.83
LINE 700																							DS TAILWATER @ STR #700		
701	0.00	0.66	1.98	1.31	5.7	7.14	0.00	9.33	21.92	6.98			0.00	0.00	701	700	HDPE	0.012	24	61.51	0.80	0.50	1000.13	999.64	1009.24
702	0.24	0.66	1.98	1.31	5.5	7.20	1.14	9.40	34.66	11.03			0.00	0.00	702	701	HDPE	0.012	24	135.04	2.00	0.30	1003.33	1000.63	1014.47
703	0.32	0.66	1.74	1.15	5.5	7.21	1.52	8.28	34.66	11.03	901		0.74	0.49	703	702	HDPE	0.012	24	35.00	2.00	0.40	1004.33	1003.63	1014.47
704	0.30	0.66	0.68	0.45	5.4	7.23	1.43	3.24	19.71	11.15			0.00	0.00	704	703	HDPE	0.012	18	41.96	3.00	0.40	1005.99	1004.73	1015.29
705	0.38	0.66	0.38	0.25	5.0	7.35	1.84	1.84	9.90	8.06			0.00	0.00	705	704	HDPE	0.012	15	195.23	2.00	0.40	1010.30	1006.39	1017.49
706	0.88	0.66	0.88	0.58	5.0	7.35	4.27	4.27	9.90	8.06			0.00	0.00	706	705	HDPE	0.012	15	38.73	2.00	N/A	1011.47	1010.70	1017.78
LINE 800																	Drop in Inlet 703					0.50			
801	0.41	0.66	1.12	0.74	5.3	7.28	1.97	5.38	16.09	9.11			0.00	0.00	801	703	HDPE	0.012	18	97.97	2.00	0.50	1006.79	1004.83	1014.92
802	0.71	0.66	0.71	0.47	5.0	7.35	3.45	3.45	9.90	8.06			0.00	0.00	802	801	HDPE	0.012	15	122.16	2.00	N/A	1009.74	1007.29	1015.80
LINE 900																	Drop in Inlet 704					0.50			
901	0.74	0.66	0.74	0.49	5.0	7.35	3.59	3.59	9.90	8.06			0.00	0.00	901	704	HDPE	0.012	15	35.06	2.00	N/A	1007.19	1006.49	1015.06
LINE 1000																							DS TAILWATER @ STR #1000		
1001	0.00	0.66	14.65	10.02	8.3	6.45	0.00	64.59	67.78	9.59			0.00	0.00	1001	1000	HDPE	0.012	36	35.00	0.88	0.30	999.49	999.18	1010.90
1002	1.18	0.66	14.65	10.02	8.1	6.50	0.00	65.12	72.26	10.22			0.00	0.00	1002	1001	HDPE	0.012	36	135.00	1.00	0.30	1001.14	999.79	1010.90
1003	0.11	0.66	14.65	10.02	7.7	6.60	5.14	66.16	64.63	9.14	1101		0.30	0.20	1003	1002	HDPE	0.012	36	232.81	0.80	0.40	1003.30	1001.44	1014.95
1004	0.15	0.66	13.17	9.04	7.5	6.65	0.48	60.10	64.63	9.14			0.00	0.00	1004	1003	HDPE	0.012	36	94.66	0.80	0.40	1004.46	1003.70	1016.07
1005	0.06	0.66	13.06	8.97	7.3	6.70	0.66	60.11	64.63	9.14			0.00	0.00	1005	1004	HDPE	0.012	36	118.84	0.80	0.40	1005.81	1004.86	1017.25
LINE 1100																	Drop in Inlet 1002					1.75			
1101	0.30	0.66	0.30	0.20	5.0	7.35	1.46	1.46	12.12	9.88			0.00	0.00	1101	1002	HDPE	0.012	15	36.19	3.00	N/A	1003.97	1002.89	1014.88

100-YEAR RUNOFF CALCULATIONS

Design Storm:	100
"K" Value:	1.25
"F" Factor:	1.00

Runoff Calculations															Pipe Properties										
Inlet #	Area (acres)	"C" Value	Cumul. Area (acres)	Cumul. CxA	Tc	Intensity	Runoff To Inlet	Cumul. Runoff	Pipe Cap.	Pipe Vel.	Up Piped Inlet 1	Up Piped Inlet 2	Up Area (acres)	Up CxA	Up Inlet	Down Inlet	Pipe Type	"n" Value	Pipe Size	Length	Slope %	Drop In Inlet	FL Up	FL Down	Inlet Top
LINE 200																							DS TAILWATER @ STR #200		
201	0.00	0.66	8.09	5.34	7.7	9.31	0.00	62.14	34.42	7.01			0.00	0.00	201	200	HDPE	0.012	30	184.94	0.60	0.20	1002.61	1001.50	1008.75
202	0.69	0.66	8.09	5.34	7.4	9.41	5.35	62.78	39.74	8.10			0.00	0.00	202	201	HDPE	0.012	30	135.90	0.80	1.50	1003.90	1002.81	1013.49
203	0.39	0.66	7.40	4.88	7.3	9.44	3.04	57.60	21.92	6.98			0.00	0.00	203	202	HDPE	0.012	24	35.04	0.80	0.50	1005.68	1005.40	1013.50
204	0.51	0.66	7.01	4.63	7.2	9.50	4.00	54.93	21.92	6.98	301		1.85	1.22	204	203	HDPE	0.012	24	75.49	0.80	0.50	1006.78	1006.18	1015.11
205	0.55	0.66	4.65	3.07	7.1	9.53	4.32	36.55	21.92	6.98			0.00	0.00	205	204	HDPE	0.012	24	35.00	0.80	0.50	1007.56	1007.28	1015.11
206	0.14	0.66	4.10	2.71	7.0	9.56	1.10	32.35	21.92	6.98			0.00	0.00	206	205	HDPE	0.012	24	41.74	0.80	0.20	1008.40	1008.06	1015.83
LINE 700																							DS TAILWATER @ STR #700		
701	0.00	0.66	1.98	1.31	5.7	10.03	0.00	16.38	21.92	6.98			0.00	0.00	701	700	HDPE	0.012	24	61.51	0.80	0.50	1000.13	999.64	1009.24
702	0.24	0.66	1.98	1.31	5.5	10.11	2.00	16.52	34.66	11.03			0.00	0.00	702	701	HDPE	0.012	24	135.04	2.00	0.30	1003.33	1000.63	1014.47
703	0.32	0.66	1.74	1.15	5.5	10.13	2.67	14.54	34.66	11.03	901		0.74	0.49	703	702	HDPE	0.012	24	35.00	2.00	0.40	1004.33	1003.63	1014.47
704	0.30	0.66	0.68	0.45	5.4	10.16	2.51	5.70	19.71	11.15			0.00	0.00	704	703	HDPE	0.012	18	41.96	3.00	0.40	1005.99	1004.73	1015.29
705	0.38	0.66	0.38	0.25	5.0	10.32	3.24	3.24	9.90	8.06			0.00	0.00	705	704	HDPE	0.012	15	195.23	2.00	0.40	1010.30	1006.39	1017.49
706	0.88	0.66	0.88	0.58	5.0	10.32	7.49	7.49	9.90	8.06			0.00	0.00	706	705	HDPE	0.012	15	38.73	2.00	N/A	1011.47	1010.70	1017.78
LINE 800																	Drop in Inlet 703					0.50			
801	0.41	0.66	1.12	0.74	5.3	10.22	3.46	9.44	16.09	9.11			0.00	0.00	801	703	HDPE	0.012	18	97.97	2.00	0.50	1006.79	1004.83	1014.92
802	0.71	0.66	0.71	0.47	5.0	10.32	6.05	6.05	9.90	8.06			0.00	0.00	802	801	HDPE	0.012	15	122.16	2.00	N/A	1009.74	1007.29	1015.80
LINE 900																	Drop in Inlet 704					0.50			
901	0.74	0.66	0.74	0.49	5.0	10.32	6.30	6.30	9.90	8.06			0.00	0.00	901	704	HDPE	0.012	15	35.06	2.00	N/A	1007.19	1006.49	1015.06
LINE 1000																							DS TAILWATER @ STR #1000		
1001	0.00	0.66	14.65	10.02	8.3	9.09	0.00	113.91	67.78	9.59			0.00	0.00	1001	1000	HDPE	0.012	36	35.00	0.88	0.30	999.49	999.18	1010.90
1002	1.18	0.66	14.65	10.02	8.1	9.17	0.00	114.81	72.26	10.22			0.00	0.00	1002	1001	HDPE	0.012	36	135.00	1.00	0.30	1001.14	999.79	1010.90
1003	0.11	0.66	14.65	10.02	7.7	9.31	9.06	116.58	64.63	9.14	1101		0.30	0.20	1003	1002	HDPE	0.012	36	232.81	0.80	0.40	1003.30	1001.44	1014.95
1004	0.15	0.66	13.17	9.04	7.5	9.37	0.85	105.88	64.63	9.14			0.00	0.00	1004	1003	HDPE	0.012	36	94.66	0.80	0.40	1004.46	1003.70	1016.07
1005	0.06	0.66	13.06	8.97	7.3	9.44	1.17	105.87	64.63	9.14			0.00	0.00	1005	1004	HDPE	0.012	36	118.84	0.80	0.40	1005.81	1004.86	1017.25
LINE 1100																	Drop in Inlet 1002					1.75			
1101	0.30	0.66	0.30	0.20	5.0	10.32	2.55	2.55	12.12	9.88			0.00	0.00	1101	1002	HDPE	0.012	15	36.19	3.00	N/A	1003.97	1002.89	1014.88

GUTTER SPREAD AND INLET CAPACITY CALCULATIONS

DESIGN STORM	10	CURB TYPE "A" = LAZY BACK	
"K" FACTOR	1.00	CURB TYPE "B" = HIGH BACK	

RUNOFF CALCULATIONS												INLET DESIGN							GUTTER DESIGN			
INLET #	COMPOSITE "C"	AREA	INLET Tc	INTENSITY	RUNOFF	UPSTREAM INLET	UPSTREAM INLET	UPSTREAM INLET	UPSTREAM INLET	BYPASS FROM UPSTREAM INLET	TOTAL RUNOFF	STREET GRADE	STREET CROSS SLOPE	CURB TYPE	INLET LENGTH	EFFECTIVE LENGTH 80% CAP	INLET INTERCEPTION	BYPASS TO DOWNSTREAM INLET	STREET GRADE	STREET CROSS SLOPE	DEPTH AT CURB	SPREAD OF FLOW
LINE 200																						
202	0.66	0.69	5	7.35	3.35	401				0.24	3.58	SUMP	2.08	A	6	4.8	13.44	0.00	SUMP	2.08	< 0.21	**< 10.50**
203	0.66	0.39	5	7.35	1.89	204	205	206		1.36	3.25	SUMP	2.08	A	6	4.8	13.44	0.00	SUMP	2.08	< 0.21	**< 10.50**
204	0.66	0.51	5	7.35	2.47	301				0.92	3.40	1.20	2.08	A	6	6	2.77	0.63	1.20	2.08	0.21	**10.73**
205	0.66	0.55	5	7.35	2.67	303				0.94	3.61	1.20	2.08	A	6	6	2.90	0.71	1.20	2.08	0.22	**10.96**
206	0.66	0.14	5	7.35	0.68	207				0.10	0.78	1.00	2.08	A	6	6	0.76	0.02	1.00	2.08	0.13	**6.60**
LINE 700																						
702	0.66	0.24	5	7.35	1.16					0.00	1.16	SUMP	2.08	A	6	4.8	13.44	0.00	SUMP	2.08	< 0.21	**< 10.50**
703	0.66	0.32	5	7.35	1.55	704	901			1.21	2.76	SUMP	2.08	A	6	4.8	13.44	0.00	SUMP	2.08	< 0.21	**< 10.50**
704	0.66	0.30	5	7.35	1.46	705				0.17	1.63	1.15	2.08	A	6	6	1.50	0.13	1.15	2.08	0.16	**8.33**
705	0.66	0.38	5	7.35	1.84					0.00	1.84	1.15	2.08	A	6	6	1.67	0.17	1.15	2.08	0.17	**8.70**
706	0.66	0.88	5	7.35	4.27					0.00	4.27	1.15	2.08	A	6	6	3.32	0.95	1.15	2.08	0.23	**11.73**
LINE 800																						
801	0.66	0.41	5	7.35	1.99					0.00	1.99	1.15	2.08	A	6	6	1.78	0.21	1.15	2.08	0.18	**8.93**
802	0.66	0.71	5	7.35	3.44					0.00	3.44	1.15	2.08	A	6	6	2.82	0.63	1.15	2.08	0.22	**10.86**
LINE 900																						
901	0.66	0.74	5	7.35	3.59	706				0.95	4.54	1.15	2.08	A	6	6	3.47	1.07	1.15	2.08	0.24	**12.00**
LINE 1000																						
1002	0.66	1.18	5	7.35	5.72	1003	1101			0.12	5.84	SUMP	2.08	A	6	6	16.80	0.00	SUMP	2.08	< 0.21	**< 10.50**
1003	0.66	0.11	5	7.35	0.53	1004				0.02	0.55	1.20	2.08	A	6	6	0.54	0.01	1.20	2.08	0.11	**5.67**
1004	0.66	0.15	5	7.35	0.73	1005				0.00	0.73	1.00	2.08	A	6	6	0.71	0.02	1.00	2.08	0.12	**6.45**
1005	0.66	0.06	5	7.35	0.29					0.00	0.29	2.00	2.08	A	6	6	0.29	0.00	2.00	2.08	0.08	**4.20**
LINE 1100																						
1101	0.66	0.30	5	7.35	1.46					0.00	1.46	1.20	2.08	A	6	6	1.35	0.11	1.20	2.08	0.15	**7.94**

NOTES:
1. CAPACITY OF INLETS ON GRADE DETERMINED USING ROUTINE OUTLINED ON PGS 56-95 TO 56-97, SECTION 5600 APWA
2. CAPACITY OF SUMP INLETS CALCULATED USING FIGURE 5604-21, SECTION 5600 APWA
3. MANNINGS "n" VALUE FOR COMBINED ASPHALT PAVEMENT AND CONCRETE CURB = 0.014

RIPRAP SIZING CALCULATIONS

Outlet/Channel Properties						Rip-Rap Dimensions									
Outlet Structure	Pipe Size (ft)	Downstream Channel/Swale Section	V Pipe (ft/s)	V Swale (ft/s)	Average Shear Stress (lb/ft^2)	W Calculated (ft)	*W USED (ft)*	L Calculated (ft)	L (min.) 3*D (ft)	L (max.) 10*D (ft)	*L USED (ft)*	D50 Calculated (ft)	*Size (Wt.) USED (d50,ft)*	Critical Shear Stress (lb/ft^2)	T (ft)
200	2.50	N/A	7.01	0.00	N/A	7.50	8	n/a	7.50	25.00	16	0.32	1.50 (100#)	5.16	2.25
700	2.00	N/A	6.98	0.00	N/A	6.00	6	n/a	6.00	20.00	14	0.32	1.00 (50#)	4.00	2.00
1000	3.00	N/A	9.59	0.00	N/A	9.00	9	n/a	9.00	30.00	18	0.60	1.50 (100#)	5.16	2.25
3900	2.50	N/A	15.69	0.00	N/A	7.50	8	n/a	7.50	25.00	16	1.60	2.00 (200#)	6.91	3.00

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PREPARED BY:

STATE OF MISSOURI · JAMES L. LONG · NUMBER PE-2014010495 · PROFESSIONAL ENGINEER

5/19/2022

SCHLAGEL & ASSOCIATES, P.A.

CORNERSTONE AT BAILEY FARMS, FIRST PLAT
STREET, STORMWATER, AND MASTER DRAINAGE PLAN
SE BAILEY ROAD AND SE RANSON ROAD
LEE'S SUMMIT, MISSOURI

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04/20/2022	PER CITY COMMENTS DATED 02/28/2022
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DRAWN BY:	CHECKED BY:	DATE PREPARED:	PROJ. NUMBER:
JRJ	JLL	12/20/2021	21-136

MASTER DRAINAGE PLAN-DRAINAGE CALCULATIONS

SHEET 10

Storm Sewer Construction Notes	
Structure	Notes
200	STA 0+00.00, LINE 200 INSTALL 30" HDPE FLARED END SECTION W/ TOEWALL AND 7 CU. YD (16'X8'X2.5') STONE RIP-RAP USING A MIN. 100# (D50=15") STONE. PLACE FILTER FABRIC PRIOR TO INSTALLATION OF RIP-RAP. N 992676.4508 E 2832604.7511
201	STA 1+84.94, LINE 200 INSTALL 5 X 4 JUNCTION BOX N 992857.6387 E 2832641.8233
202	STA 3+20.54, LINE 200 INSTALL 6 X 4 CURB INLET N 992856.6502 E 2832777.4172
203	STA 3+55.57, LINE 200 INSTALL 6 X 4 CURB INLET N 992852.4044 E 2832812.1893
204	STA 4+31.15, LINE 200 INSTALL 6 X 4 CURB INLET N 992921.0453 E 2832843.8274
205	STA 4+66.15, LINE 200 INSTALL 6 X 4 CURB INLET N 992956.0449 E 2832844.0066
206	STA 5+07.89, LINE 200 INSTALL 6 X 4 CURB INLET N 992985.7268 E 2832814.6582
700	STA -0+00.00, LINE 700 INSTALL 24" HDPE FLARED END SECTION W/ TOEWALL AND 5 CU. YD (14'X6'X1.5') STONE RIP-RAP USING A MIN. 50# (D50=12") STONE. PLACE FILTER FABRIC PRIOR TO INSTALLATION OF RIP-RAP. N 992476.2527 E 2832696.4116
701	STA 0+61.50, LINE 700 INSTALL 4 X 4 JUNCTION BOX N 992466.5519 E 2832757.1471
702	STA 1+97.26, LINE 700 INSTALL 6 X 4 CURB INLET N 992518.4477 E 2832882.5904
703	STA 2+32.26, LINE 700 INSTALL 6 X 4 CURB INLET N 992536.8697 E 2832912.3499
704	STA 2+77.85, LINE 700 INSTALL 6 X 4 CURB INLET N 992581.8404 E 2832919.8570
705	STA 4+73.08, LINE 700 INSTALL 6 X 4 CURB INLET N 992667.1149 E 2833095.4758
706	STA 5+11.81, LINE 700 INSTALL 6 X 4 CURB INLET N 992705.1565 E 2833102.7289
801	STA 0+92.98, LINE 800 INSTALL 4 X 4 AREA INLET OPEN TO EAST N 992462.0478 E 2832967.5530

Storm Sewer Construction Notes	
Structure	Notes
802	STA 2+15.14, LINE 800 INSTALL 4 X 4 AREA INLET OPEN TO EAST & WEST N 992521.0360 E 2833074.5302
901	STA 0+35.06, LINE 900 INSTALL 6 X 4 CURB INLET N 992611.0492 E 2832900.4685
1000	STA 0+00.00, LINE 1000 INSTALL 36" HDPE FLARED END SECTION W/ TOEWALL AND 12 CU. YD. (18'X9'X2') STONE RIP-RAP USING A MIN. 100# (D50=15") STONE. PLACE FILTER FABRIC PRIOR TO INSTALLATION OF RIP-RAP. N 992433.0590 E 2832665.5966
1001	STA 0+35.00, LINE 1000 INSTALL 5 X 5 JUNCTION BOX N 992411.5375 E 2832693.1978
1002	STA 1+70.00, LINE 1000 INSTALL 8 X 4 CURB INLET N 992328.5259 E 2832799.6593
1003	STA 4+02.81, LINE 1000 INSTALL 6 X 6 CURB INLET N 992352.7296 E 2833031.2069
1004	STA 4+97.47, LINE 1000 INSTALL 6 X 5 CURB INLET N 992399.9823 E 2833113.2254
1005	STA 6+16.30, LINE 1000 INSTALL 6 X 6 CURB INLET N 992427.8021 E 2833228.7610
1101	STA 0+36.19, LINE 1100 INSTALL 6 X 4 CURB INLET N 992319.7811 E 2833046.1733
3900	STA -0+00.00, LINE 3900 INSTALL 30" HDPE FLARED END SECTION W/ TOEWALL AND 7 CU. YD (16'X8'X2.5') STONE RIP-RAP USING A MIN. 200# (D50=24") STONE. PLACE FILTER FABRIC PRIOR TO INSTALLATION OF RIP-RAP. N 992087.6378 E 2832542.7072
3901	STA 0+89.50, LINE 3900 INSTALL 4 X 5 JUNCTION BOX N 992174.2309 E 2832565.3322

SCALE: 1" = 50'

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STATE OF MISSOURI
JAMES L. LONG
NUMBER PE-2014010495
PROFESSIONAL ENGINEER

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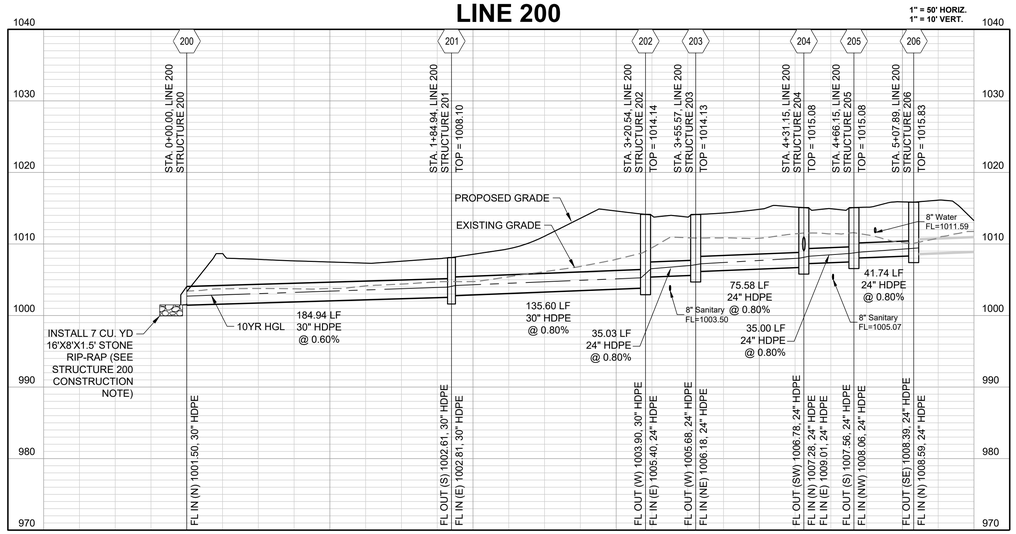
JRJ	JLL	12/20/021	21-136

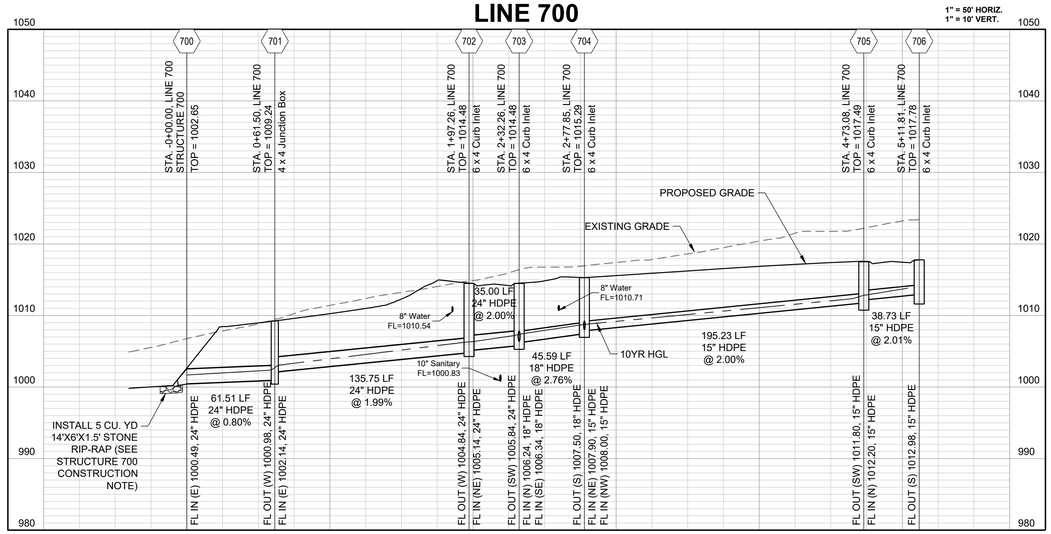
STORM PLAN

SHEET 11

LINE 200



LINE 700



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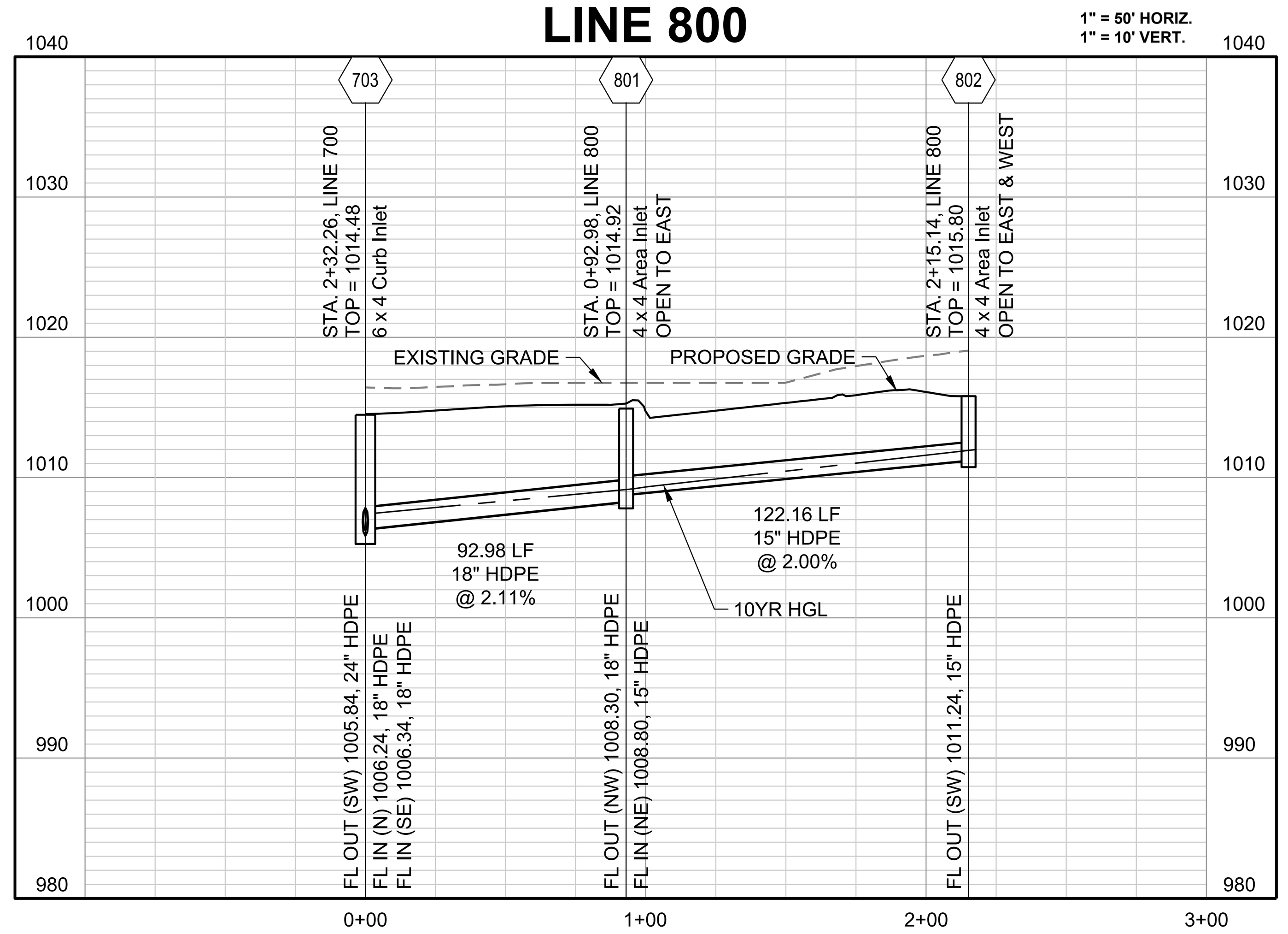
JRJ	JLL	12/20/2021	21-136

STORM PROFILE 1

SHEET 12

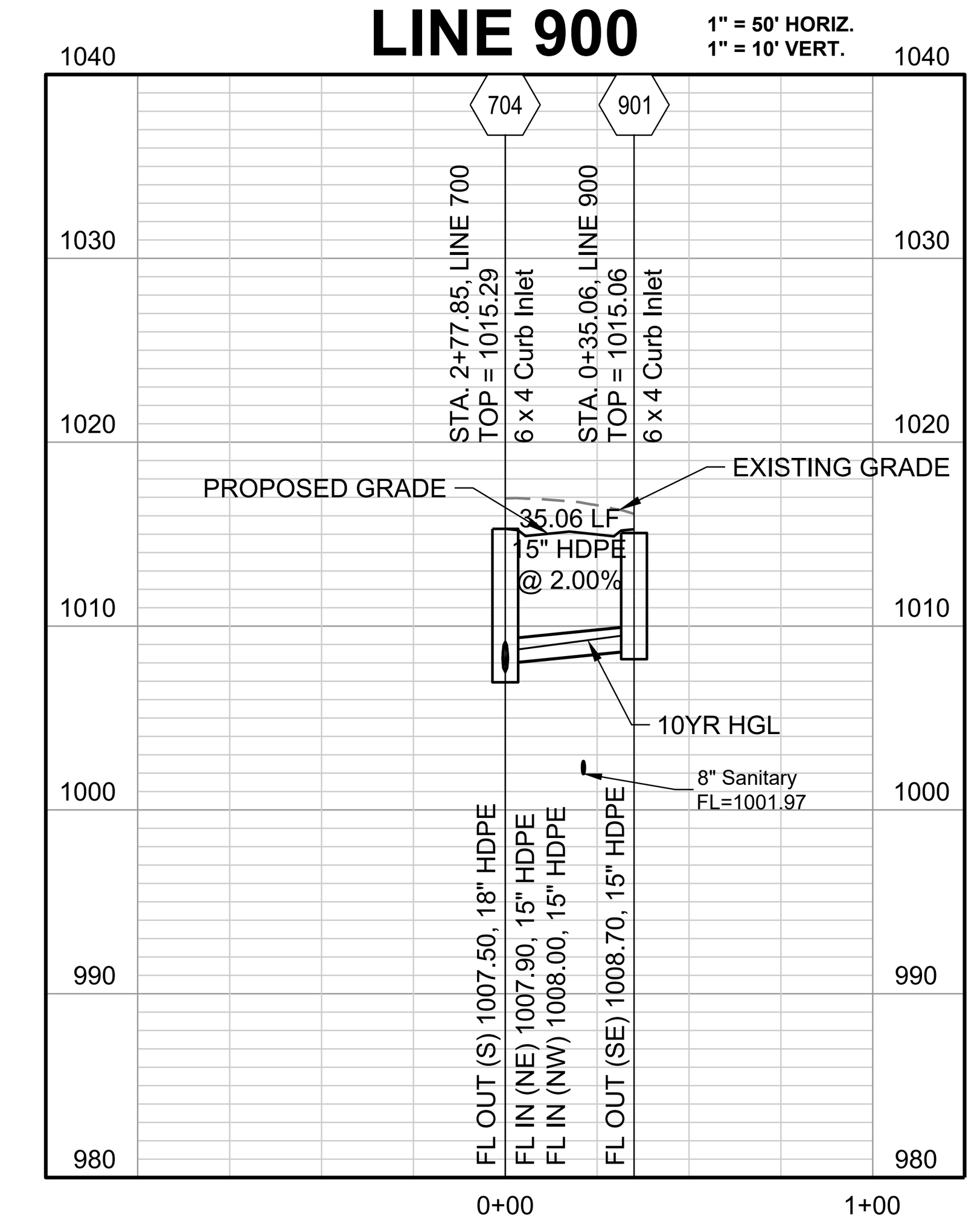
LINE 800

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



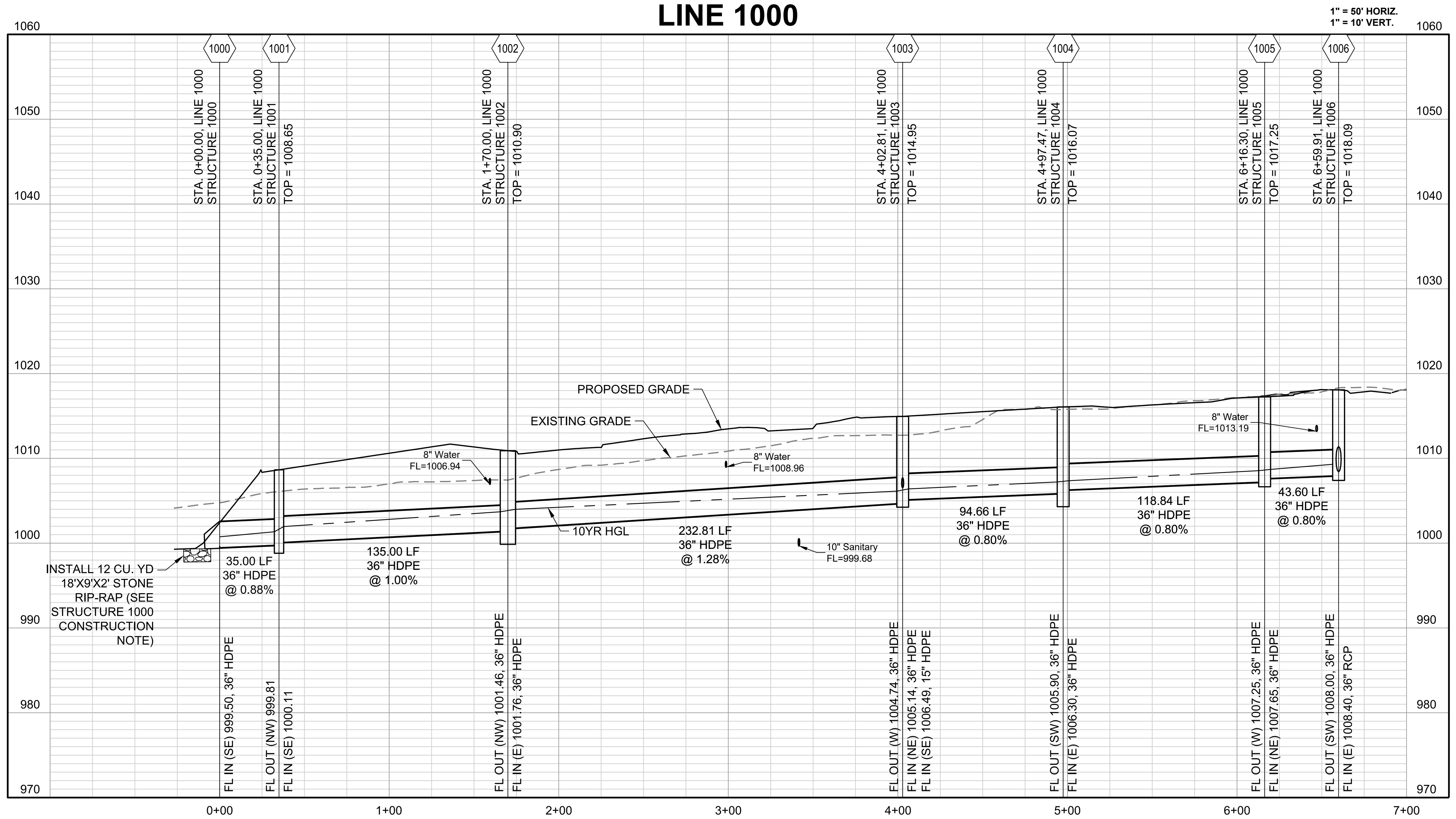
LINE 900

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



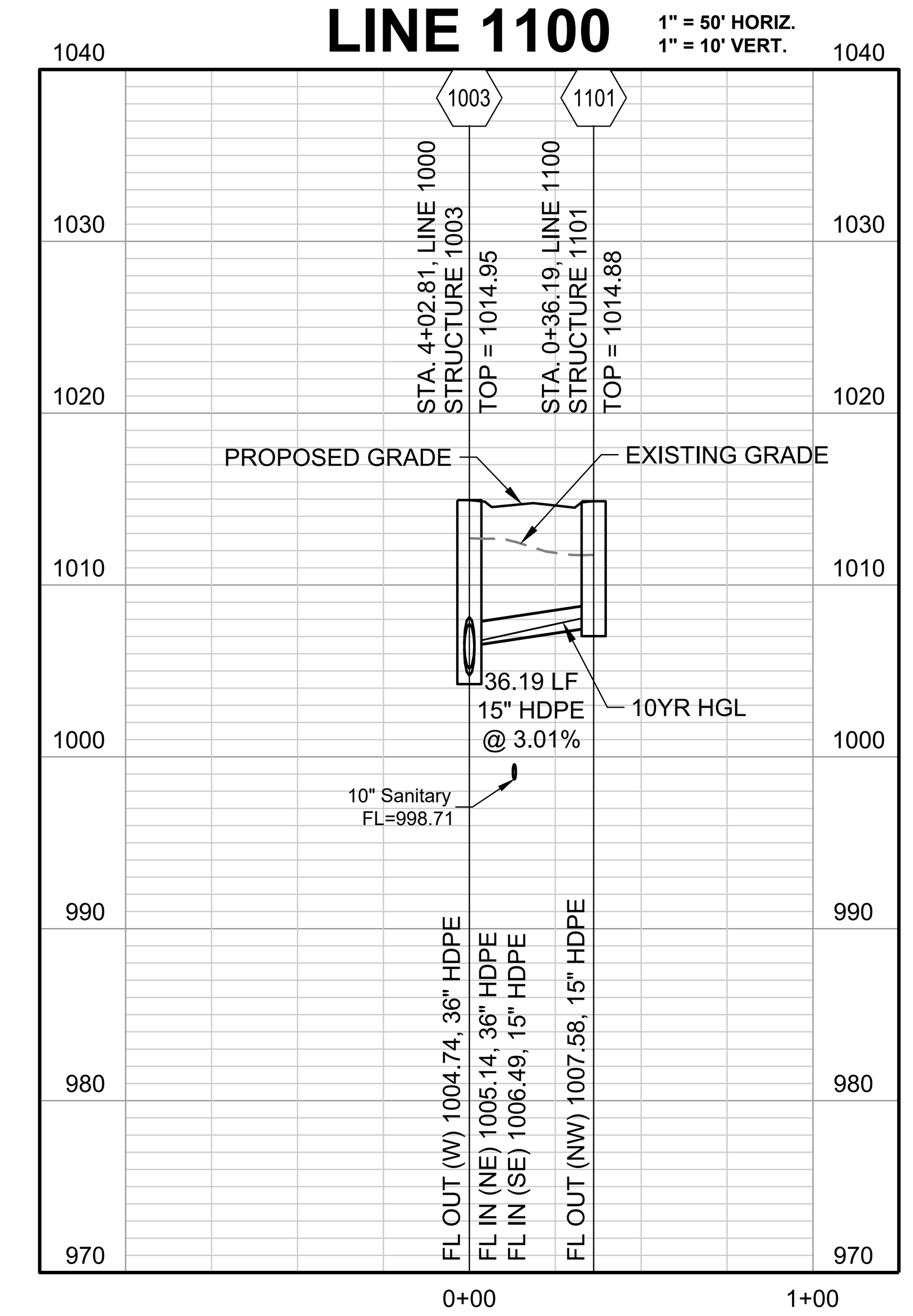
LINE 1000

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



LINE 1100

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



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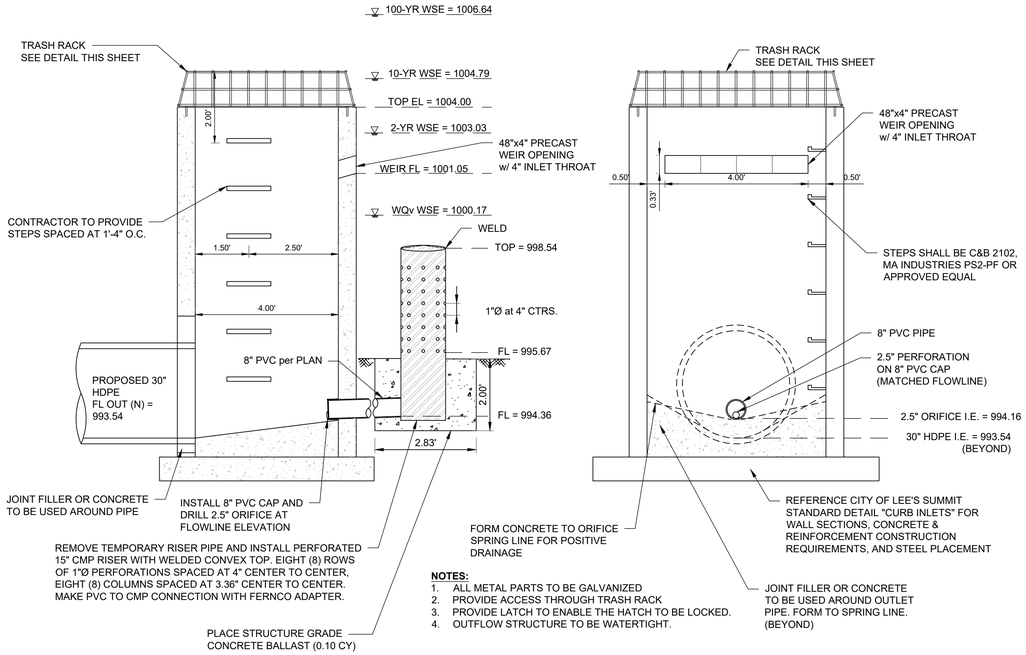
5		
6		
7		
8		
9		

DRAWN BY: JRJ
CHECKED BY: JLL
DATE PREPARED: 12/20/21
PROJ. NUMBER: 21-136

STORM PROFILE 2

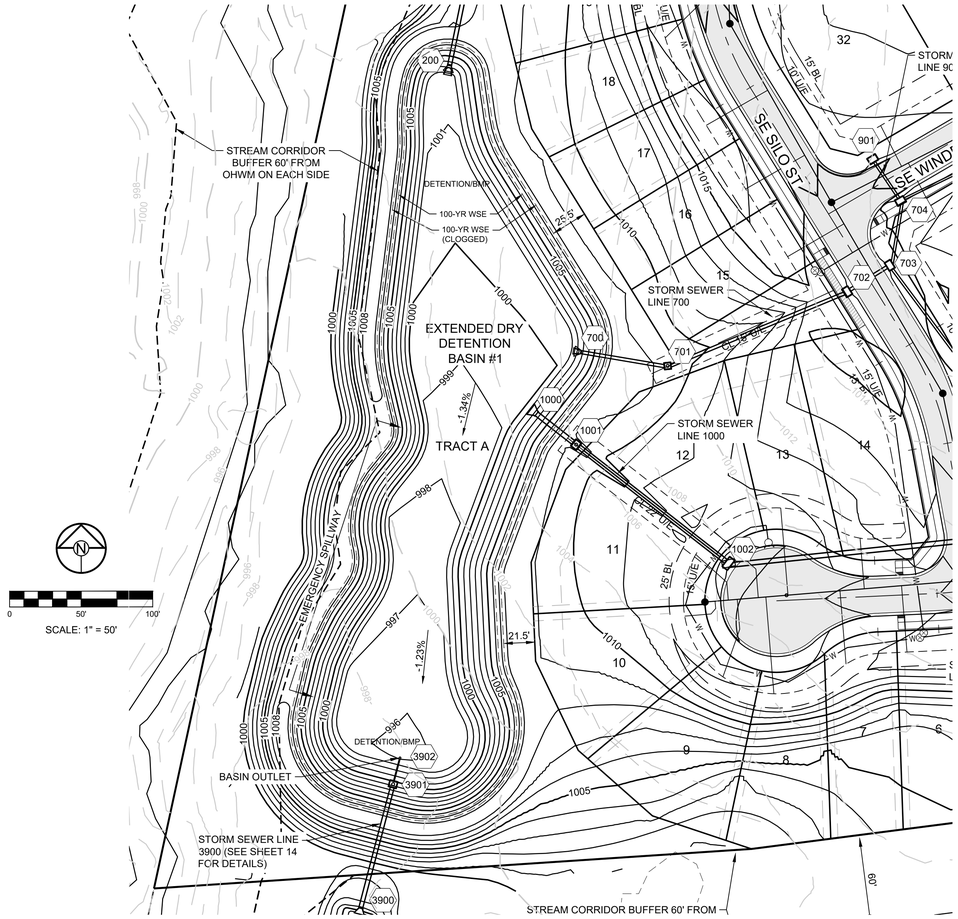
SHEET
13



NOTES:
1. ALL METAL PARTS TO BE GALVANIZED
2. PROVIDE ACCESS THROUGH TRASH RACK
3. PROVIDE LATCH TO ENABLE THE HATCH TO BE LOCKED.
4. OUTFLOW STRUCTURE TO BE WATERTIGHT.

WATER QUALITY STRUCTURE 3901

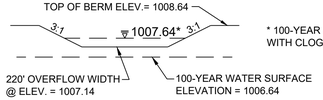
(NOT TO SCALE)



DETENTION STORAGE:

100 YEAR, 24 HR. RAINFALL - MAXIMUM WSE = (SEE FINAL STORMWATER MGMT. PLAN)	1006.64
EMERGENCY SPILLWAY FLOWLINE SET AT 0.5 FEET ABOVE MAX. WSE, SPILLWAY ELEV. =	1007.14
EMERGENCY SPILLWAY DESIGN: Q(100)= 260.19 CFS, Q=CLH^(3/2), C=3.33, L= 220 FT., 260.19 CFS = 3.33 * 220 FT. * (H^(3/2)), H= 0.5 FT.	
WATER SURFACE ELEVATION THROUGH SPILLWAY =	1007.64
+ ONE (1) FOOT OF FREEBOARD =	1008.64
SET BASIN TOP AT	1008.64

DETENTION BASIN STORAGE VOLUME	
DESIGN STORM	VOLUME (CUBIC FEET)
2-YEAR	164,409
10-YEAR	249,634
100-YEAR	352,702

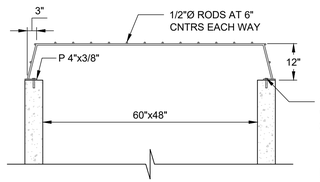


* 100-YEAR WATER SURFACE ELEVATION WITH CLOGGED OUTLET.

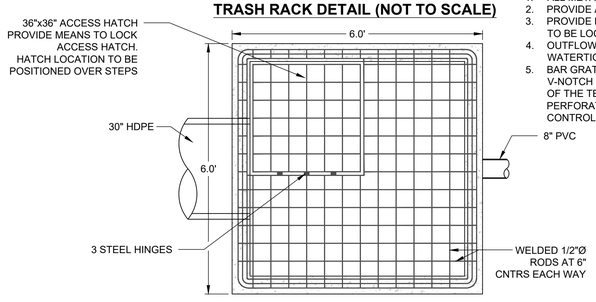
EMERGENCY SPILLWAY DESIGN

NOTE:

DETENTION / SEDIMENT BASIN SHALL BE CONSTRUCTED ALONG WITH ALL OTHER EROSION CONTROL AND SEDIMENT CONTROL DEVICES AND PRIOR TO ANY INFRASTRUCTURE BEING CONSTRUCTED.



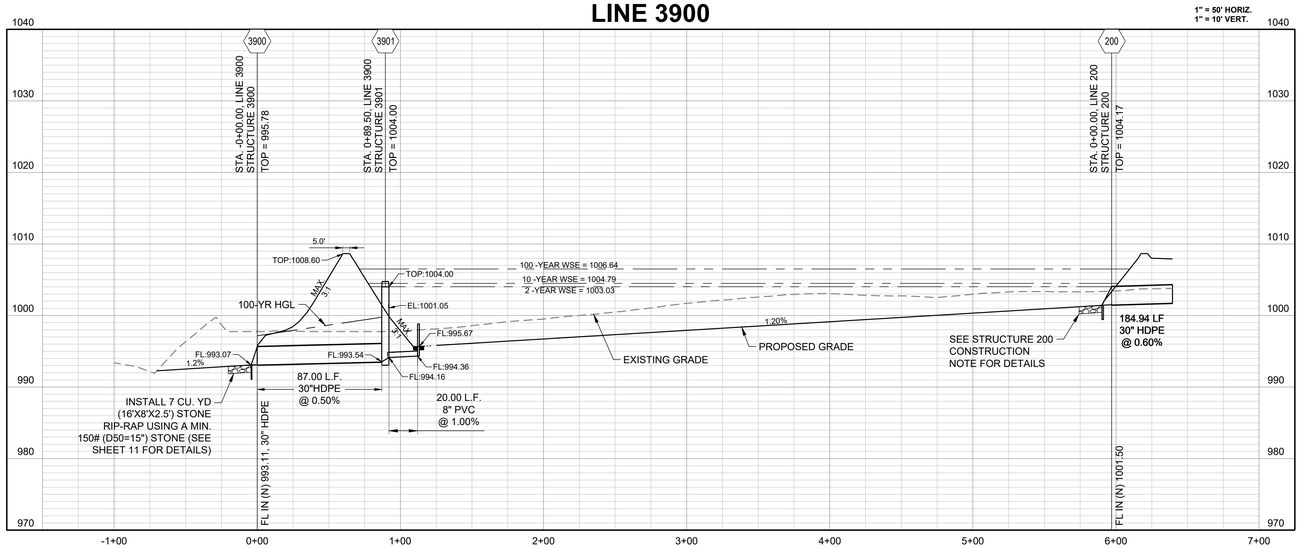
TRASH RACK DETAIL (NOT TO SCALE)



NOTES:
1. ALL METAL PARTS TO BE GALVANIZED.
2. PROVIDE ACCESS THROUGH TRASH RACK.
3. PROVIDE LATCH TO ENABLE THE HATCH TO BE LOCKED.
4. OUTFLOW STRUCTURE TO BE WATERTIGHT.
5. BAR GRATING TO BE INSTALLED OVER V-NOTCH CASTING AFTER THE REMOVAL OF THE TEMPORARY SEDIMENT PERFORATED STEEL PLATE. (RE: EROSION CONTROL PLAN)

LINE 3900

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



SCHLAGEL
ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS
14920 W. 107th Street • Lenexa, Kansas 66215
(913) 492-6400 • Fax (913) 492-0400
WWW.SCHLAGELASSOCIATES.COM
Missouri State Certificates of Authority
#E2000030800-F #LA2001005237 #LS2000208859-F

PREPARED BY:

STATE OF MISSOURI
JAMES L. LONG
NUMBER PE-2014010495
PROFESSIONAL ENGINEER

5/19/2022

SCHLAGEL & ASSOCIATES, P.A.

CORNERSTONE AT BAILEY FARMS, FIRST PLAT
STREET, STORMWATER, AND MASTER DRAINAGE PLAN
SE BAILEY ROAD AND SE RANSON ROAD
LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
02/03/2022	PER CITY COMMENTS DATED 01/10/2022
04/20/2022	PER CITY COMMENTS DATED 02/28/2022
05/19/2022	PER CITY COMMENTS DATED 05/13/2022

DRAWN BY:	JRJ
CHECKED BY:	JJL
DATE PREPARED:	12/20/2021
PROJ. NUMBER:	21-136

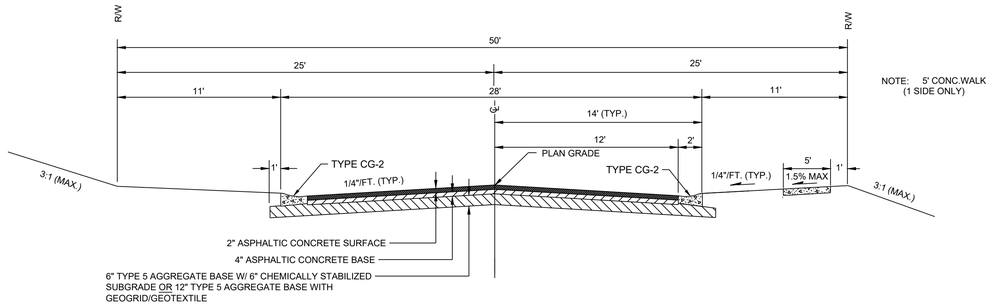
DETENTION BASIN DESIGN

SHEET 14

TABLE LS-2: MINIMUM ASPHALT PAVEMENT THICKNESSES

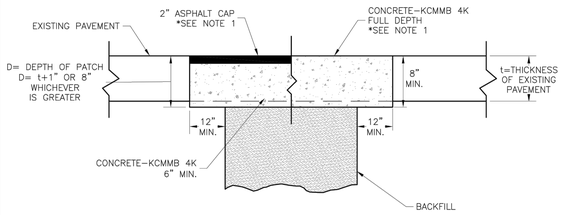
Street Classification	Pavement Option	AC Surface (in.)	AC Base (in.)	Aggregate Base (in.)	Chemical Subgrade Stabilization (in.)	Geogrid / Geotextile(1)
Residential Local/Access	A	2	4	6	6	--
	B	2	4	12	--	Geogrid / Geotextile
Residential Collector	A	2	5.5	6	9	--
	B	2	5.5	12	--	Geogrid / Geotextile
Commercial Industrial Local/Collector	A	2	7.5	6	9	--
	B	2	7.5	12	--	Geogrid / Geotextile

Notes:
(1) Geogrid shall be polypropylene material and Geotextile shall be woven, polypropylene as shown in the City's Approved Products List



RESIDENTIAL LOCAL/ACCESS

ASPHALT MIX:
Surface: 5-01
Base: 5-01



TRENCHING/PATCHING DETAIL
NOT TO SCALE

NOTE:

1. ASPHALT CAP OR FULL DEPTH CONCRETE SHALL BE DETERMINED BY CITY INSPECTOR.

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

TRENCHING/PATCHING ROADWAYS DETAIL

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

GEN-5

SCHLAGEL
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#E2000030800-F #LA2001005237 #LS2000088S9-F

PREPARED BY:

STATE OF MISSOURI
JAMES L. LONG
NUMBER PE-2014010495
PROFESSIONAL ENGINEER
5/19/2022

SCHLAGEL & ASSOCIATES, P.A.

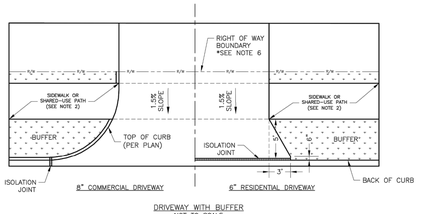
CORNERSTONE AT BAILEY FARMS, FIRST PLAT
STREET, STORMWATER, AND MASTER DRAINAGE PLAN
SE BAILEY ROAD AND SE RANSON ROAD
LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
1 02/03/2022	PER CITY COMMENTS DATED 01/10/2022
2 04/20/2022	PER CITY COMMENTS DATED 02/28/2022
3 05/19/2022	PER CITY COMMENTS DATED 05/13/2022
4	
5	
6	
7	
8	

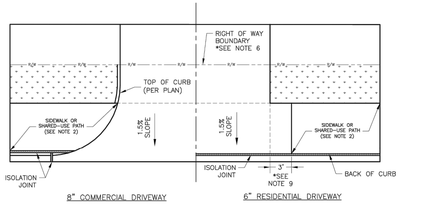
DRAWN BY: JRJ
CHECKED BY: JLL
DATE PREPARED: 12/20/021
PROJ NUMBER: 21-136

STREET DETAILS 1

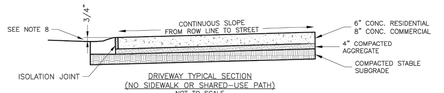
SHEET 15



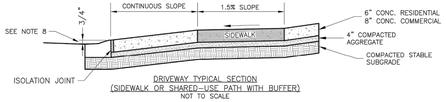
DRIVEWAY WITH BUFFER
NOT TO SCALE



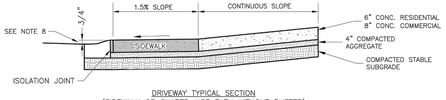
DRIVEWAY WITHOUT BUFFER
NOT TO SCALE



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
1. SUBGRADE SHALL BE STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
2. 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).
3. JOINT AT BACK OF CURB LINE SHALL BE AN ISOLATION JOINT FOR RESIDENTIAL DRIVEWAYS.
4. KCMMB 4K CONCRETE MIX IS REQUIRED FOR ALL CURBS.
5. COMMERCIAL DRIVEWAYS AND DRIVEWAY APPROACHES, IN THE PUBLIC RIGHT OF WAY, SHALL BE KCMMB 4K CONCRETE MIX.
6. A JOINT MUST BE INSTALLED AT THE RIGHT OF WAY BOUNDARY FOR PROPERTY DELINEATION.
7. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.
8. ¾" FROM TOP OF CURB TO FLOWLINE AT DRIVEWAY (TYPE CG-1 CURB ONLY). MUST MAINTAIN ORIGINAL FLOWLINE OF CURB.
9. SIDEWALK ADJOINING CURB SHALL BE 6" THICK, EXTENDING 3' FROM THE DRIVEWAY.
10. THE MAXIMUM WIDTH OF A RESIDENTIAL DRIVEWAY IS 36 FEET WITHIN THE RIGHT OF WAY.

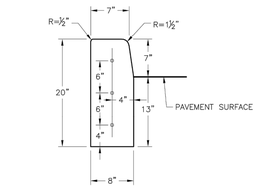
LS LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

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

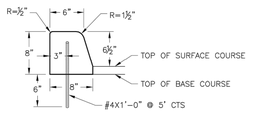
Project:
Sheet Name: DRIVEWAY DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #

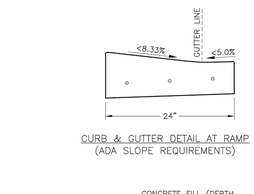
GEN-1



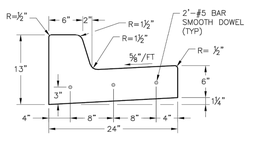
STRAIGHT CURB
(TYPE C-1)



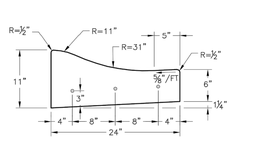
DOWELLED CURB
(TYPE DC)



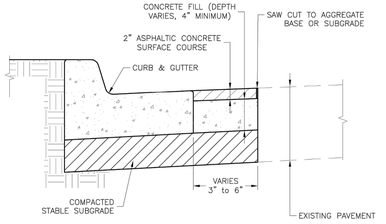
CURB & GUTTER DETAIL AT RAMP
(ADA SLOPE REQUIREMENTS)



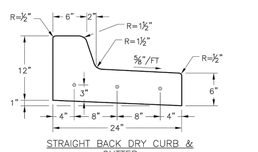
STRAIGHT BACK CURB & GUTTER
(TYPE CG-1)



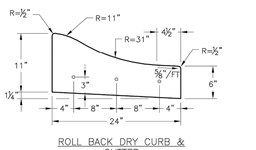
ROLL BACK CURB & GUTTER
(TYPE CG-2)



CURB REPLACEMENT DETAIL



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



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

GENERAL NOTES
1. ¾" 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.
2. 3" DEEP CONTRACTION JOINTS SHALL BE INSTALLED AT APPROXIMATELY 10' INTERVALS. THESE JOINTS SHALL PASS ACROSS THE ENTIRE CURB SECTION.
3. CONCRETE FILL SHALL HAVE UNIFORM AND SMOOTH FINISH
4. KCMMB 4K CONCRETE SHALL BE USED FOR ALL CURB.
5. ASPHALTIC CONCRETE SURFACE COURSE SHALL CONFORM TO STANDARD SPECIFICATIONS SECTION 2205.2.
6. CURBS FOR NEW STREETS SHALL BE BUILT ON ASPHALT OR AGGREGATE BASE AS SHOWN IN TYPICAL SECTION DETAIL.
7. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.

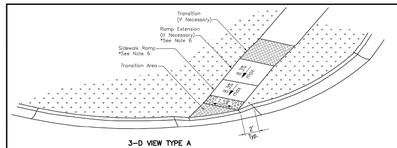
LS LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

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

Project:
Sheet Name: CURB & GUTTER DETAIL

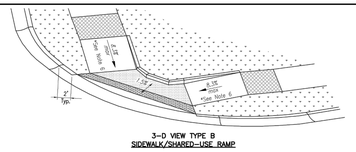
Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #

GEN-4

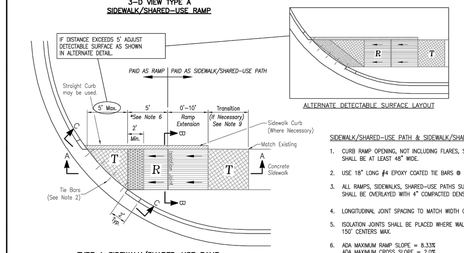


3-D VIEW TYPE A
SIDEWALK/SHARED-USE RAMP

LEGEND
R SIDEWALK RAMP
TS TURNING SPACE
DETECTABLE WARNING SURFACE
T TRANSITION

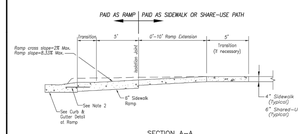


3-D VIEW TYPE B
SIDEWALK/SHARED-USE RAMP



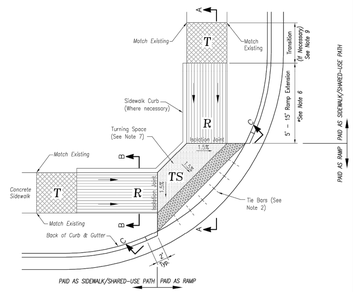
TYPE A SIDEWALK/SHARED-USE RAMP
Not to Scale

ALTERNATE DETECTABLE SURFACE LAYOUT

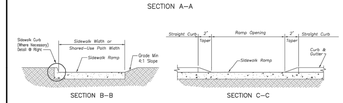


SECTION A-A

SIDEWALK/SHARED-USE PATH & SIDEWALK/SHARED-USE RAMP NOTES:
1. CURB RAMP OPENING, NOT INCLUDING FLARES, SHALL MATCH EXISTING SIDEWALK WIDTH AND OPENING SHALL BE AT LEAST 48" WIDE.
2. USE 18" LONG #4 EPOXY COATED TIE BARS @ 24" O.C. EMBED TIE BARS 9" IN EACH DIRECTION.
3. ALL RAMPS, SIDEWALKS, SHARED-USE PATHS SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
4. LONGITUDINAL JOINT SPACING TO MATCH WIDTH OF SIDEWALK.
5. ISOLATION JOINTS SHALL BE PLACED WHERE WALK ABUTS DRIVEWAYS AND SIMILAR STRUCTURES, AND 150' CENTERS MAX.
6. ADA MAXIMUM RAMP SLOPE = 8.33%
ADA MAXIMUM CROSS SLOPE = 2.0%
*ROADWAY EXCEPTION: WHERE EXISTING ROAD PROFILE GRADE DOES NOT ALLOW RAMP TO MEET RAMP SLOPE REQUIREMENT OF 8.33% OR LESS, THE RAMP SHALL BE EXTENDED TO A LENGTH OF 15 FEET TO MATCH EXISTING SIDEWALK. CROSS SLOPE OF RAMP SHALL BE 1.5%, ±0.5%.
7. TURNING SPACES SHALL BE 1.5%, ±0.5%, SLOPE IN ANY DIRECTION. TURNING SPACES SHALL HAVE A MINIMUM 4'x4' TURNING AREA. TURNING SPACES, WITH A SIDEWALK CURB, SHALL HAVE A 5' TURNING AREA PERPENDICULAR TO THE SIDEWALK CURB.
8. FOR RETROFIT WORK, SLOPES TO BE DETERMINED IN FIELD BY CONTRACTOR AND APPROVED BY CITY INSPECTOR
9. RAMP EXTENSION AREA SHALL NOT BE USED AS TRANSITION TO EXISTING SIDEWALK. ANY TRANSITIONS REQUIRED TO MATCH RAMPS TO EXISTING SIDEWALK SHALL REQUIRE REMOVAL AND REPLACEMENT OF ADDITIONAL SIDEWALK BEYOND THE RAMP AREA. SIDEWALK TRANSITION LENGTH SHALL BE EQUAL TO OR GREATER THAN THE WIDTH OF THE EXISTING SIDEWALK. RAMP EXTENSIONS SHALL BE A CONTINUOUS SLOPE.
10. ALL SIDEWALK AND RAMP CONSTRUCTION SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).

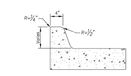


TYPE B SIDEWALK/SHARED-USE RAMP
Not to Scale

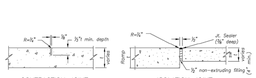


SECTION B-B
SECTION C-C

TYPE A & B SIDEWALK RAMP
Not to Scale

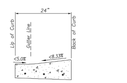


SIDEWALK CURB DETAIL
Not to Scale



CONTRACTION JOINT
ISOLATION JOINT

JOINT DETAILS
Not to Scale



CURB & GUTTER DETAIL AT RAMP
Not to Scale

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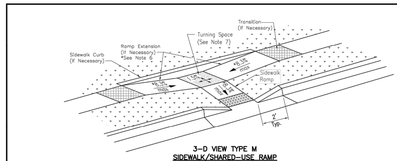
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

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

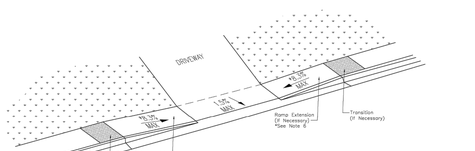
Project:
Sheet Name: ADA RAMP RETROFIT DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #

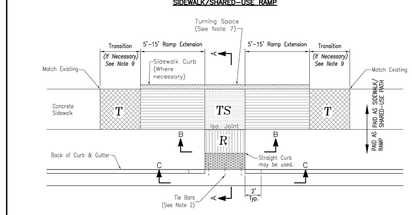
GEN-3A



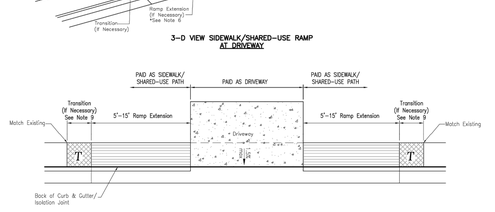
3-D VIEW TYPE M
SIDEWALK/SHARED-USE RAMP



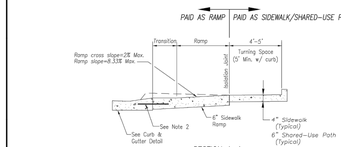
3-D VIEW SIDEWALK/SHARED-USE RAMP
AT DRIVEWAY



TYPE M SIDEWALK/SHARED-USE RAMP
Not to Scale



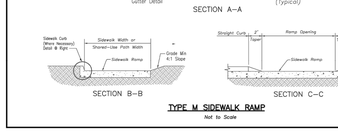
SIDEWALK/SHARED USE RAMP
AT DRIVEWAY WITH ADJOINING CURB



SECTION A-A

SIDEWALK/SHARED-USE PATH & SIDEWALK/SHARED-USE RAMP NOTES:
1. CURB RAMP OPENING, NOT INCLUDING FLARES, SHALL MATCH EXISTING SIDEWALK WIDTH AND OPENING SHALL BE AT LEAST 48" WIDE.
2. USE 18" LONG #4 EPOXY COATED TIE BARS @ 24" O.C. EMBED TIE BARS 9" IN EACH DIRECTION.
3. ALL RAMPS, SIDEWALKS, SHARED-USE PATHS SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
4. LONGITUDINAL JOINT SPACING TO MATCH WIDTH OF SIDEWALK.
5. ISOLATION JOINTS SHALL BE PLACED WHERE WALK ABUTS DRIVEWAYS AND SIMILAR STRUCTURES, AND 150' CENTERS MAX.
6. ADA MAXIMUM RAMP SLOPE = 8.33%
ADA MAXIMUM CROSS SLOPE = 2.0%
*ROADWAY EXCEPTION: WHERE EXISTING ROAD PROFILE GRADE DOES NOT ALLOW RAMP TO MEET RAMP SLOPE REQUIREMENT OF 8.33% OR LESS, THE RAMP SHALL BE EXTENDED TO A LENGTH OF 15 FEET TO MATCH EXISTING SIDEWALK. CROSS SLOPE OF RAMP SHALL BE 1.5%, ±0.5%.
7. TURNING SPACES SHALL BE 1.5%, ±0.5%, SLOPE IN ANY DIRECTION. TURNING SPACES SHALL HAVE A MINIMUM 4'x4' TURNING AREA. TURNING SPACES, WITH A SIDEWALK CURB, SHALL HAVE A 5' TURNING AREA PERPENDICULAR TO THE SIDEWALK CURB.
8. FOR RETROFIT WORK, SLOPES TO BE DETERMINED IN FIELD BY CONTRACTOR AND APPROVED BY CITY INSPECTOR
9. RAMP EXTENSION AREA SHALL NOT BE USED AS TRANSITION TO EXISTING SIDEWALK. ANY TRANSITIONS REQUIRED TO MATCH RAMPS TO EXISTING SIDEWALK SHALL REQUIRE REMOVAL AND REPLACEMENT OF ADDITIONAL SIDEWALK BEYOND THE RAMP AREA. SIDEWALK TRANSITION LENGTH SHALL BE EQUAL TO OR GREATER THAN THE WIDTH OF THE EXISTING SIDEWALK. RAMP EXTENSIONS SHALL BE A CONTINUOUS SLOPE.
10. ALL SIDEWALK AND RAMP CONSTRUCTION SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).

CURB & GUTTER DETAIL AT RAMP
Not to Scale



SECTION B-B
SECTION C-C

TYPE M SIDEWALK RAMP
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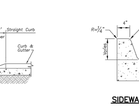

SIDEWALK CURB DETAIL
Not to Scale

LEGEND
R SIDEWALK RAMP
TS TURNING SPACE
DETECTABLE WARNING SURFACE
T TRANSITION

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Missouri State Certificate of Authority #E2002000800-F #LA2001005237 #LS2002000859-F

PREPARED BY:

STATE OF MISSOURI
JAMES L. LONG
NUMBER PE-2010010995
PROFESSIONAL ENGINEER
5/19/2022

SCHLAGEL & ASSOCIATES, P.A.

CORNERSTONE AT BAILEY FARMS, FIRST PLAT
STREET, STORMWATER, AND MASTER
DRAINAGE PLAN

SE BAILEY ROAD AND SE RANSON ROAD
LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
02/03/2022	PER CITY COMMENTS DATED 01/10/2022
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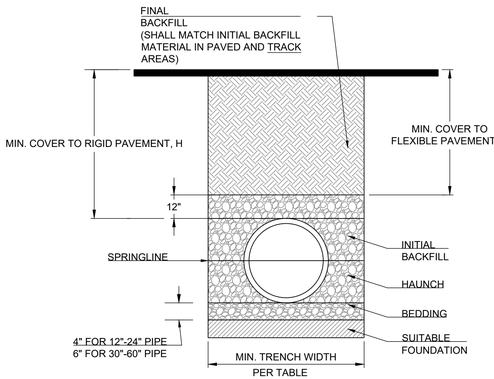
05/19/2022	PER CITY COMMENTS DATED 05/13/2022

DRAWN BY: JRJ
CHECKED BY: JLL
DATE PREPARED: 12/20/2021
PROJ. NUMBER: 21-136

STREET DETAILS 2

SHEET 16

I:\PROJECTS\2021\21-136\3.0 Design\3.0 DWG Plans\6.0 SS\21-136-SS-DET.dwg, 5/19/2022 6:24:34 AM, 1:1



RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

MINIMUM RECOMMENDED COVER BASED ON VECHICLE LOADING CONDITIONS

	SURFACE LIVE LOADING CONDITION	
PIPE DIAM.	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
54" - 60"	24"	60"

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION

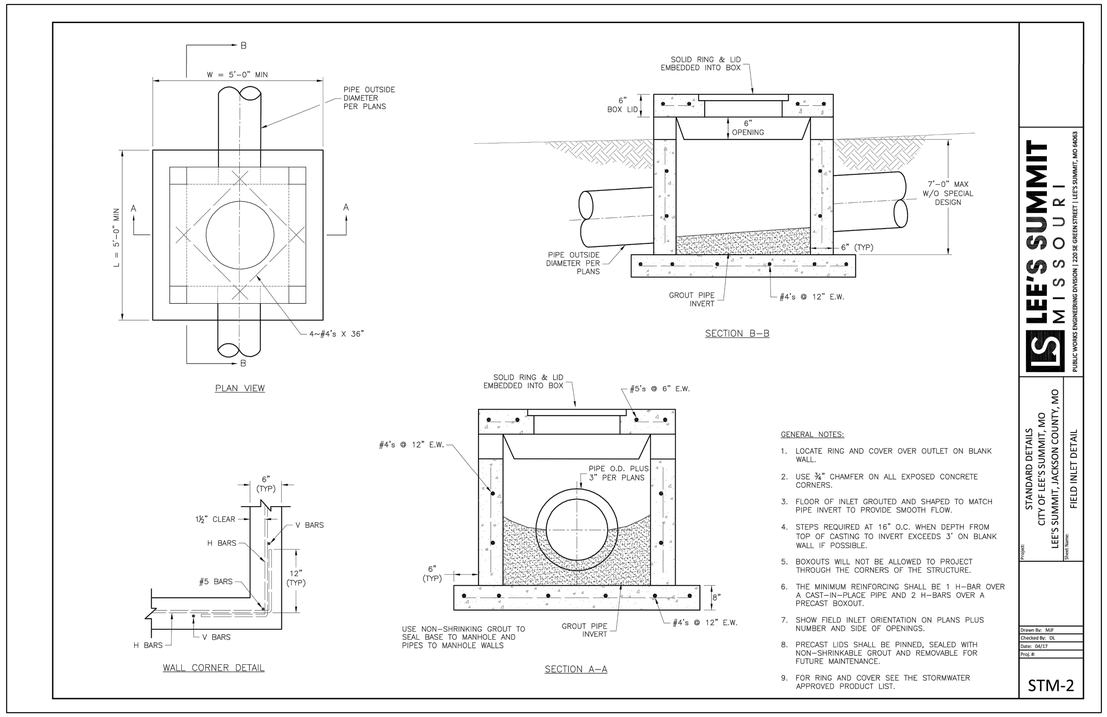
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).

5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.



GENERAL NOTES:

1. LOCATE RING AND COVER OVER OUTLET ON BLANK WALL.
2. USE ¾" CHAMFER ON ALL EXPOSED CONCRETE CORNERS.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
4. STEPS REQUIRED AT 16" O.C. WHEN DEPTH FROM TOP OF CASTING TO INVERT EXCEEDS 3' ON BLANK WALL IF POSSIBLE.
5. BOXOUTS WILL NOT BE ALLOWED TO PROJECT THROUGH THE CORNERS OF THE STRUCTURE.
6. THE MINIMUM REINFORCING SHALL BE 1 H-BAR OVER A CAST-IN-PLACE PIPE AND 2 H-BARS OVER A PRECAST BOXOUT.
7. SHOW FIELD INLET ORIENTATION ON PLANS PLUS NUMBER AND SIDE OF OPENINGS.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON-SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

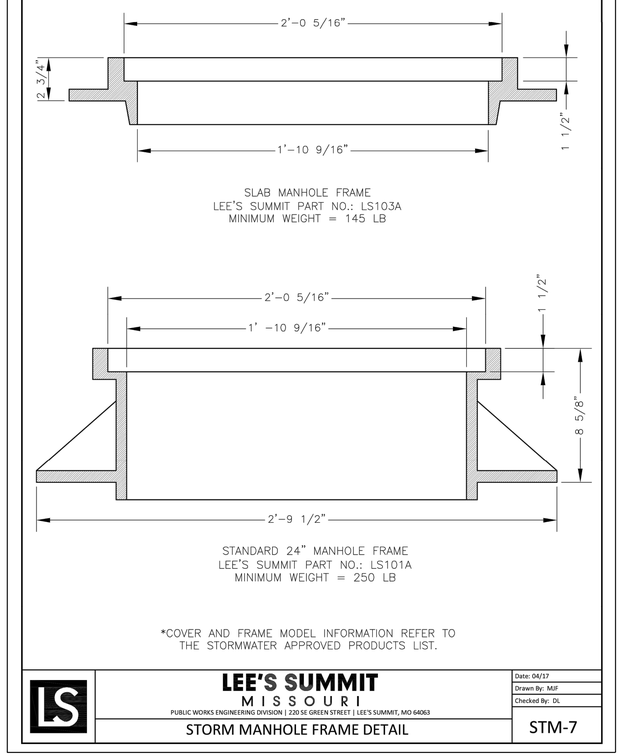
LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

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

Insert:
Insert Name: FIELD INLET DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #:

STM-2



*COVER AND FRAME MODEL INFORMATION REFER TO THE STORMWATER APPROVED PRODUCTS LIST.

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

STORM MANHOLE FRAME DETAIL

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

STM-7

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Missouri State Certificates of Authority
#E2000030800-F #LA2001005237 #LS2000208859-F

PREPARED BY:

STATE OF MISSOURI
JAMES L. LONG
NUMBER PE-2014010495
PROFESSIONAL ENGINEER
5/19/2022

SCHLAGEL & ASSOCIATES, P.A.

CORNERSTONE AT BAILEY FARMS, FIRST PLAT
STREET, STORMWATER, AND MASTER
DRAINAGE PLAN

SE BAILEY ROAD AND SE RANSON ROAD
LEE'S SUMMIT, MISSOURI

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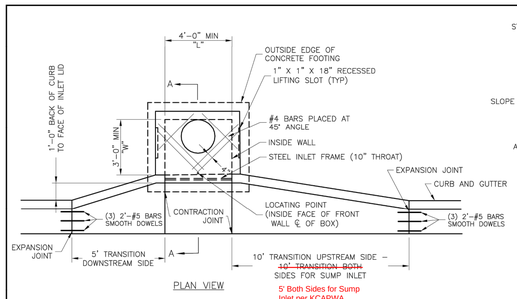
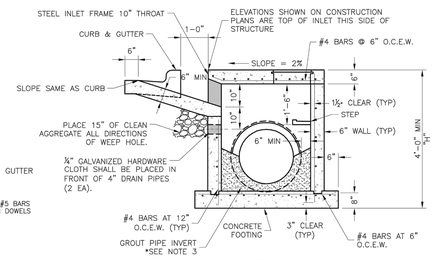
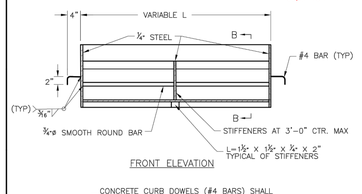
DRAWN BY:	CHECKED BY:	DATE PREPARED:	PROJ. NUMBER:
JRJ	JLL	12/20/21	21-136

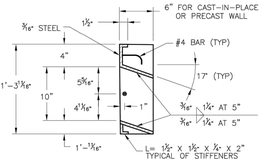
STORM DETAILS

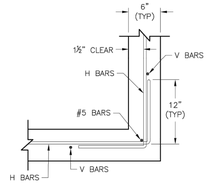
SHEET
17

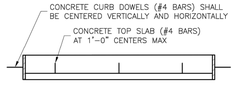












STEEL FRAME NOTES:
1. ALL WELDS SHALL BE PERFORMED IN ACCORDANCE WITH APPROPRIATE AWS SPECIFICATIONS AND PROCEDURES.
2. ALL WELDS ON EXPOSED SURFACES SHALL BE DRESSED SO AS TO PROVIDE A PLEASING FINISHED APPEARANCE.
3. THE ENTIRE FRAME SHALL BE PAINTED A SINGLE COAT OF CHEM–PRIME #37H–78 PRIMER (GRAY) OR EQUAL.

GENERAL NOTES:
1. THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION. THE SECOND DIMENSION IS THE "W" DIMENSION.
2. FLOW LINES LISTED ON THE PROJECT PLANS ARE LISTED AT THE INSIDE FACE OF THE WALL.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
4. LOCATE MH RING AND COVER ON BLANK WALL IF POSSIBLE.
5. STEPS SHALL BE SPACED AT 1'–4" O.C. VERTICALLY ON BLANK WALL IF POSSIBLE.
6. BEVEL ALL EXPOSED EDGES WITH ¾"CHAMFER OR ½" TOOLED EDGE.
7. ON–GRADE INLETS SHALL CONFORM TO THE STREET GRADE AND SUMP INLETS SHALL BE LEVEL.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON–SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. LIFTING RINGS SHALL BE REMOVED AND SEALED WITH NON–SHRINKABLE GROUT
10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

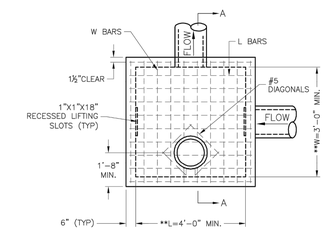
LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

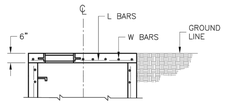
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
CURB INLET DETAIL

Project:
Sheet Name:

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #:

STM-1

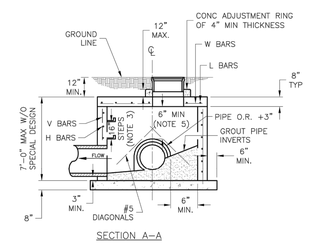


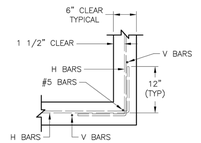


** INCREASE IN MULTIPLES OF 6" (7'–0") MAX WITHOUT SPECIAL DESIGN. (SEE PROJECT PLANS FOR DETAILS)

REINFORCING

BARS	BAR SIZE	SPACING (IN.)
H	4	12
V	4	12
L	5	6
W	5	6





GENERAL NOTES:
1. LOCATE RING AND COVER ON BLANK WALL.
2. USE ¾" CHAMFER STRIP OR ½" R EDGER TOOL ON ALL EXPOSED CONCRETE CORNERS.
3. STEPS REQUIRED AT 16" O.C. WHEN DEPTH FROM TOP OF CASTING TO INVERT EXCEEDS 4' ON BLANK WALL IF POSSIBLE.
4. BOXOUTS WILL NOT BE ALLOWED TO PROJECT THROUGH THE CORNERS OF THE STRUCTURE AND THE MINIMUM DISTANCE BETWEEN BOXOUTS IS 6".
5. THE MINIMUM REINFORCING SHALL BE 1 H–BAR OVER A CAST–IN–PLACE PIPE AND 2 H–BARS OVER A PRECAST BOXOUT.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON–SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. REINFORCING OF COVERS IN STREETS REQUIRE SPECIAL DESIGN.
10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

LEE'S SUMMIT MISSOURI
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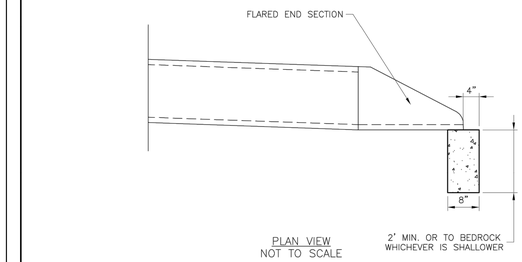
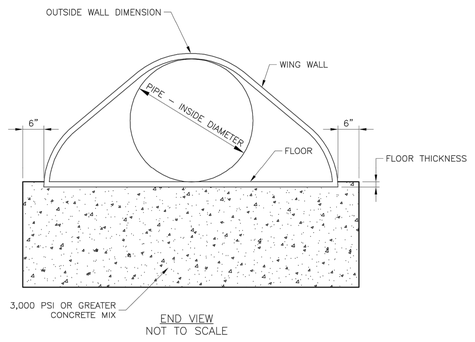
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
JUNCTION BOX DETAIL

Project:
Sheet Name:

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #:

STM-3





LEE'S SUMMIT MISSOURI
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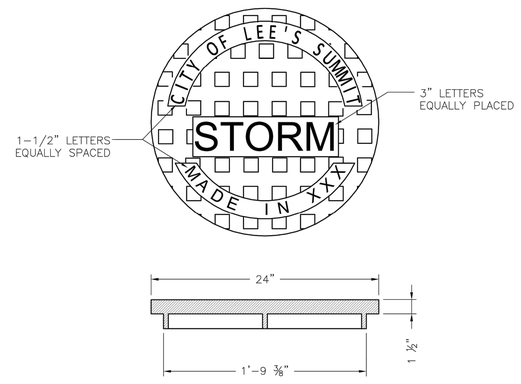
FLARED END SECTION SUPPORT DETAIL

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

STM-5



STANDARD 24" MANHOLE COVER
MINIMUM WEIGHT = 160 LB
NOTE: PICK HOLES NOT SHOWN

*COVER AND FRAME MODEL INFORMATION REFER TO THE STORMWATER APPROVED PRODUCT LIST.

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

STORM MANHOLE COVER DETAIL

Date: 04/17
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STM-6

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PREPARED BY:

STATE OF MISSOURI
JAMES L. LONG
NUMBER PE-2014010495
PROFESSIONAL ENGINEER
5/19/2022

SCHLAGEL & ASSOCIATES, P.A.

CORNERSTONE AT BAILEY FARMS, FIRST PLAT
STREET, STORMWATER, AND MASTER
DRAINAGE PLAN

SE BAILEY ROAD AND SE RANSON ROAD
LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
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2 04/20/2022	PER CITY COMMENTS DATED 02/28/2022
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DRAWN BY:	JRJ
CHECKED BY:	JLL
DATE PREPARED:	12/20/021
PROJ. NUMBER:	21-136

STORM DETAILS 2

SHEET 18

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PREPARED BY:

STATE OF MISSOURI
JAMES L. LONG
NUMBER PE-2014010495
PROFESSIONAL ENGINEER

5/19/2022

SCHLAGEL & ASSOCIATES, P.A.

CORNERSTONE AT BAILEY FARMS, FIRST PLAT
STREET, STORMWATER, AND MASTER DRAINAGE PLAN

SE BAILEY ROAD AND SE RANSON ROAD
LEE'S SUMMIT, MISSOURI

REVISION	DATE	DESCRIPTION
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3	05/19/2022	PER CITY COMMENTS DATED 05/13/2022
4		
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DRAWN BY: JRJ
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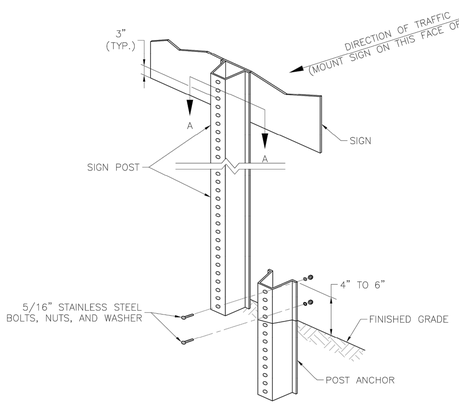
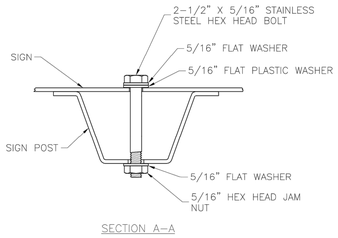
SIGNAGE PLAN

SHEET 19





SECTION A–A

U–STEEL POST DETAILS

NOTES:

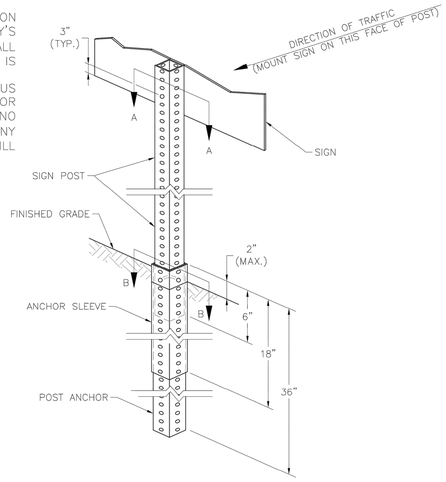
1. SPLICE SHALL BE POSITIONED ENTIRELY BETWEEN FINISHED GRADE LINE AND 18" ABOVE FINISHED GRADE LINE. ONLY ONE SPLICE WILL BE ALLOWED PER POST.
2. U–STEEL POST SHALL BE 3 LB./FT., GALVANIZED ACCORDING TO ASTM A123.
3. U–STEEL POST CAN BE USED FOR INSTALLATION OF SIGNS WITH AN AREA OF LESS THAN 2.5 SQUARE FEET.
4. ALL POSTS SHALL BE EMBEDDED A MINIMUM OF 3 FEET.

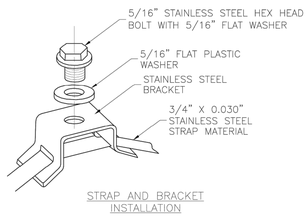
PERMANENT SIGNING GENERAL NOTES:

1. ALL SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. THE CONTRACTOR IS RESPONSIBLE FOR AVOIDING ANY AND ALL UTILITIES WHEN INSTALLING SIGN POSTS, WHETHER THE UTILITY IS INDICATED ON THE PLANS OR NOT.
3. ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE PUBLIC WORKS DEPARTMENT OF THE CITY OF LEE'S SUMMIT.
4. THE CONTRACTOR SHALL STAKE THE LOCATION OF ALL SIGN POSTS TO BE INSTALLED. THE CITY INSPECTOR SHALL INSPECT THE STAKING PRIOR TO INSTALLATION. MINOR RELOCATION TO AVOID CONFLICTS MAY BE ALLOWED WITH THE APPROVAL OF THE CITY TRAFFIC ENGINEER.
5. SIGNS SHOWN TO BE INSTALLED ON THE SIDE OF METAL POLES SHALL BE MOUNTED WITH STAINLESS STEEL STRAPS OR WING BRACKETS AS DETAILED. NO SIGNS ARE TO BE INSTALLED ON WOOD POLES. SEE TRAFFIC SIGNAL STANDARD DRAWINGS FOR THE INSTALLATION OF SIGNS ON MAST ARMS.
6. ALL POST MOUNTED SIGNS SHALL BE INSTALLED WITH BREAKAWAY ANCHORS ACCORDING TO THE STANDARD DRAWINGS.
7. ALL EXISTING SIGNS WILL BE USED IN PLACE DURING CONSTRUCTION AND PROTECTED FROM DAMAGE UNLESS OTHERWISE INDICATED IN THE PLANS. IF THE CONTRACTOR DAMAGES ANY EXISTING SIGN OR POSTS DURING CONSTRUCTION, THE CONTRACTOR WILL BE REQUIRED TO REPLACE THE DAMAGED MATERIALS WITH NEW SIGNS OR POSTS AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND STORING ANY SIGNS THAT ARE TO BE REINSTALLED ON THE PROJECT. ALL EQUIPMENT SHALL BE REINSTALLED IN GOOD CONDITION.
8. EXISTING PERMANENT SIGNS AND POSTS REMOVED BY THE CONTRACTOR FOR CONSTRUCTION PURPOSES WHICH ARE NOT TO BE REINSTALLED SHALL BE DELIVERED TO THE CITY'S PUBLIC WORKS MAINTENANCE FACILITY (1971 SE HAMBLEN ROAD). THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND STORING EQUIPMENT IN GOOD CONDITION AND IS FULLY RESPONSIBLE FOR THE EQUIPMENT UNTIL IT IS DELIVERED.
9. ALL STOP, YIELD, OR STREET NAME SIGNS SHALL BE MAINTAINED IN A CONSPICUOUS LOCATION FOR THE DRIVING PUBLIC. ALL STOP AND YIELD SIGNS REMOVED FOR CONSTRUCTION PURPOSES CAN BE TEMPORARILY ERECTED IN REFLECTORIZED DRUMS (NO LESS THAN 7 FEET ABOVE THE PAVEMENT SURFACE) UNTIL THEY CAN BE REINSTALLED. ANY TEMPORARY STOP OR YIELD SIGN INSTALLATION TO BE LEFT IN PLACE OVERNIGHT WILL REQUIRE PRIOR APPROVAL FROM THE CITY INSPECTOR.

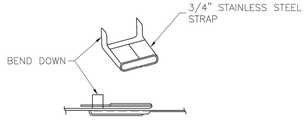
SQUARE STEEL POST INSTALLATION SEQUENCE:

1. SIGN POST ANCHOR DRIVEN PARTIALLY INTO THE GROUND USING A DRIVE CAP WITH A SLEDGE OR POWER EQUIPMENT.
2. ANCHOR SLEEVE SLIPPED OVER ANCHOR AND DRIVE INTO THE GROUND TOGETHER WITH THE SIGN POST ANCHOR.
3. INSERT SIGN POST INTO THE POST ANCHOR AND BOLT IN PLACE.





STRAP AND BRACKET INSTALLATION

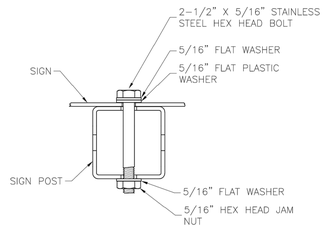


ENDS OF STRAP CLAMPED IN SEAL

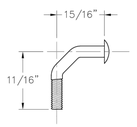
STRAP TYPE SIGN SUPPORT DETAILS

NOTES:

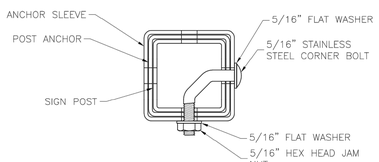
1. SIGNS ON METAL POLES SHALL BE ATTACHED WITH TWO BRACKETS AND STAINLESS STEEL BANDS.
2. HOLES IN SIGN FOR ATTACHMENT TO THE MOUNTING BRACKETS SHALL BE OFFSET A MINIMUM OF 2 INCHES FROM THE EDGE OF THE SIGN.
3. HOLES IN SIGN SHALL BE LOCATED SUCH THAT THE SIGN IS LEVEL.
4. ALL STRAP, BRACKET, AND SEAL MATERIALS SHOULD BE TYPE 201 STAINLESS STEEL.



SECTION A–A



CORNER BOLT



SECTION B–B

SQUARE STEEL POST DETAILS

NOTES:

1. SQUARE STEEL SIGN POSTS AND BREAK–AWAY ANCHOR SHALL CONSIST OF THE FOLLOWING MATERIALS:
   SIGN POST – 14 GA. 2" X 2" SQUARE STEEL POST
   POST ANCHOR – 12 GA. 2 ¼" X 2 ¼" X 36" SQUARE STEEL POST
   ANCHOR SLEEVE – 12 GA. 2 ½" X 2 ½" X 18" SQUARE STEEL POST
2. 14 GA. POSTS MUST MEET A CERTIFIED MINIMUM YIELD STRENGTH OF 60,000 PSI.
3. IN ALL INSTALLATIONS THE FIRST HOLE ABOVE THE FINISHED GRADE LINE ON THE SIGN POST, ANCHOR, AND ANCHOR SLEEVE MUST BE IN LINE FOR THE INSERTION OF THE CORNER BOLT.
4. THE MAXIMUM AREA FOR ONE SIGN POST IS 9.0 SQUARE FEET. A SIGN OR COMBINATION OF SIGNS WITH AN AREA GREATER THAN 9.0 SQUARE FEET WILL REQUIRE TWO POSTS. ALSO, SIGNS WITH A WIDTH GREATER THAN OR EQUAL TO 48" (NOT INCLUDING 36" X 36" DIAMOND SHAPED SIGNS) WILL REQUIRE TWO POSTS.

No. | DATE | DESCRIPTION

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

Project: SIGNING STANDARD DETAILS

Sheet Name: POSTS

Drawn By: BWC
Checked By: MKP
Date: 1/2020
Project# STD DETAILS

2 OF 3

SN-2

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PREPARED BY:

STATE OF MISSOURI
JAMES L. LONG
NUMBER PE-2014010495
PROFESSIONAL ENGINEER
5/19/2022

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SE BAILEY ROAD AND SE RANSON ROAD
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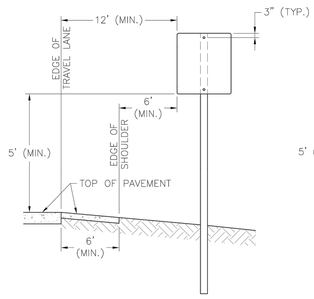
3 05/19/2022	PER CITY COMMENTS DATED 05/13/2022
4	
5	
6	
7	

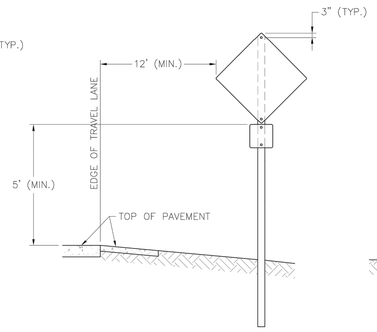
DRAWN BY: JRJ
CHECKED BY: JJL
DATE PREPARED: 12/20/21
PROJ. NUMBER: 21-136

SIGN POST DETAILS

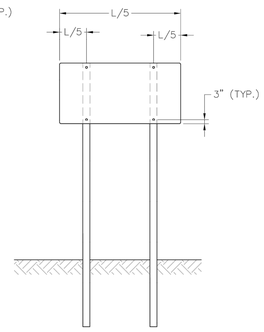
SHEET 20



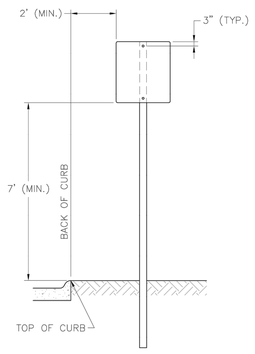
SIGN INSTALLATION FOR NON-CURBED STREET



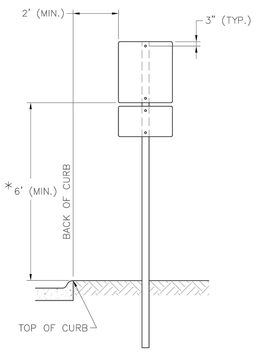
SIGN INSTALLATION WITH AUXILIARY SIGN FOR NON-CURBED STREET



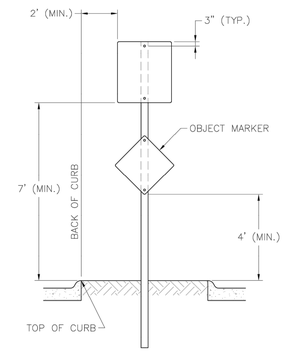
SIGN INSTALLATION WITH TWO SIGN POSTS



SIGN INSTALLATION FOR CURBED STREET



SIGN INSTALLATION WITH AUXILIARY SIGN FOR CURBED STREET

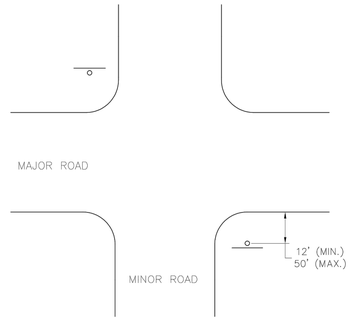


SIGN INSTALLATION FOR RAISED MEDIANS

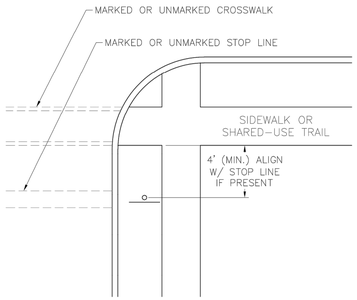
SIGN MOUNTING DETAILS

NOTES:

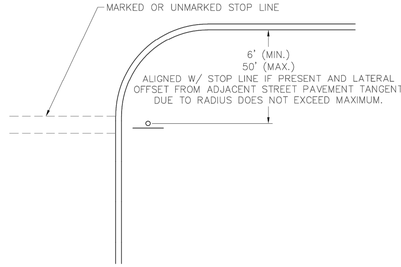
1. GENERALLY, THE SIGN MOUNTING HEIGHT SHOULD NOT BE MORE THAN 1' GREATER THAN THE MINIMUM MOUNTING HEIGHT.
2. *THE HEIGHT TO THE BOTTOM OF A SIGN WHEN IT IS LOCATED IN A PEDESTRIAN WALKWAY OR EXTENDS INTO A WALKWAY SHALL BE A MINIMUM OF 80 INCHES ABOVE THE WALKWAY.



NON-CURBED INTERSECTION INSTALLATION

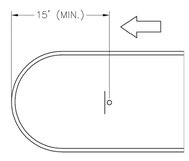


INTERSECTION WITH SIDEWALK/SHARED-USE TRAIL INSTALLATION



CURBED INTERSECTION INSTALLATION

CONTROL SIGN LOCATION



TYPICAL MEDIAN SIGN LOCATION

MEDIAN SIGN LOCATION

NOTES:

1. A 4" P.V.C. SLEEVE SHALL BE INSTALLED IN NEW CONCRETE MEDIANS AT EACH LOCATION WHERE A SIGN IS TO BE INSTALLED.
2. FOR EXISTING CONCRETE MEDIANS, A 4" HOLE SHALL BE CORED INTO THE CONCRETE.

No.	DATE	DESCRIPTION

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

Project: SIGNING STANDARD DETAILS

Sheet Name: SIGN MOUNTING DETAILS

Drawn By: BWC
Checked By: MKP
Date: 1/2020
Project# STD DETAILS

1 OF 3

SN-1

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DRAWN BY: JRJ
CHECKED BY: JLL
DATE PREPARED: 12/20/021
PROJ. NUMBER: 21-136

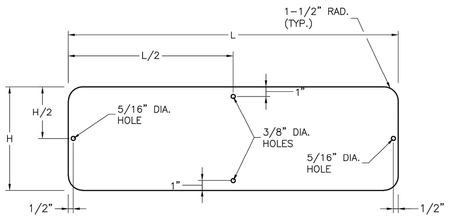
SIGN MOUNTING DETAILS

SHEET 21

STANDARD ABBREVIATION LISTS

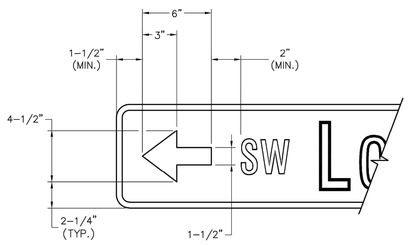
NAMED STREETS	
AVENUE	Ave
BOULEVARD	Blvd
CIRCLE	Cir
CREEK	Cr
COURT	Ct
CROSSING	Xing
DRIVE	Dr
HIGHWAY	Hwy
LANE	Ln
PARKWAY	Pkwy
PLACE	Pl
ROAD	Rd
STREET	St
TERRACE	Ter
TRAIL	Trl
WAY	Way

NUMBERED STREETS	
FIRST	ST
SECOND	ND
THIRD	RD
FOURTH TO TENTH	TH

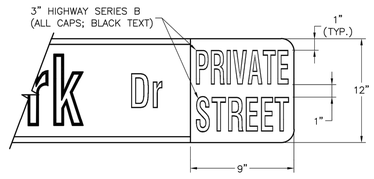


STREET NAME SIGN BLANK DETAILS

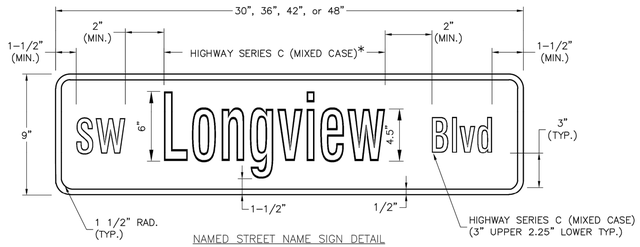
FOR MOUNTING ON SQUARE STEEL POSTS



ARROW DETAIL



PRIVATE STREET TAG DETAIL

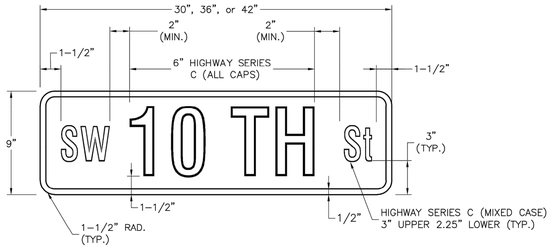


NAMED STREET NAME SIGN DETAIL

* USE HIGHWAY SERIES B (MIXED CASE) IN LIEU OF SERIES C IF NECESSARY TO FIT TEXT ON A 36" SIGN BLANK.

STREET NAME SIGN FACE DETAILS

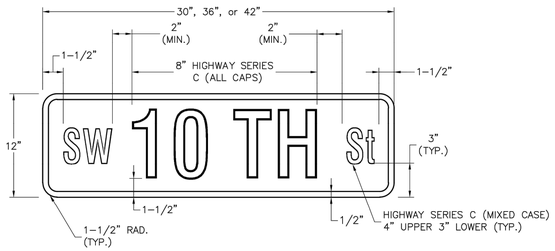
POST MOUNTED 2–LANE ALL SPEEDS AND MULTI–LANE UNDER 40 MPH



NUMBERED STREET NAME SIGN DETAIL

STREET NAME SIGN FACE DETAILS

POST MOUNTED 2–LANE ALL SPEEDS AND MULTI–LANE UNDER 40 MPH



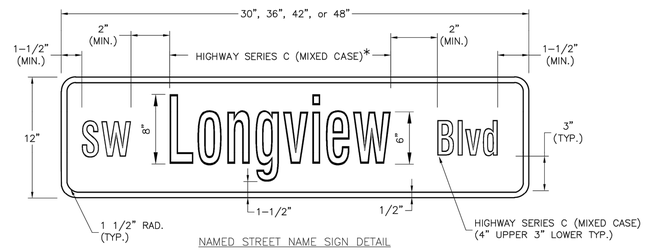
NUMBERED STREET NAME SIGN DETAIL

STREET NAME SIGN FACE DETAILS

POST MOUNTED MULTI–LANE GREATER THAN 40 MPH

NOTES:

1. FOR ALL STREET NAME SIGNS, THE LEGEND SHALL BE WHITE AND THE BACKGROUND SHALL BE GREEN.
2. ARROWS SHALL BE ADDED TO STREET NAME SIGNS WHERE THE NAME OF A STREET CHANGES AT AN INTERSECTION. STREET NAME SIGNS WITH ARROWS ARE TO BE INSTALLED ON EACH SIDE OF THE INTERSECTION TO INDICATE THE CHANGE IN NAMES. ARROWS SHALL BE WHITE.
3. THE "PRIVATE STREET" TAG SHOULD BE ADDED TO THE END OF STREET NAME SIGNS TO INDICATE WHERE A STREET THAT IS OUTSIDE THE RIGHT–OF–WAY INTERSECTS A PUBLIC STREET. THE BACKGROUND FOR THE "PRIVATE STREET" TAG SHALL BE YELLOW.
4. MULTI–LANE IS DEFINED AS HAVING 2 LANES OR MORE IN EACH DIRECTION, EXCLUDING TURN LANES.
5. OVERHEAD SIGN DETAILS MAY BE FOUND ON THE SIGNAL HEAD MOUNTING DETAIL.



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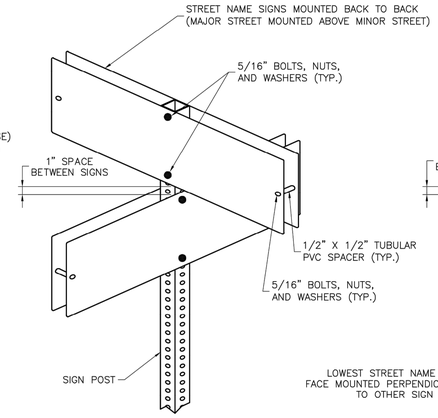
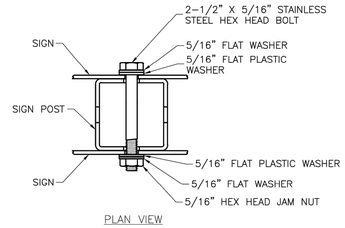
STREET NAME SIGN FACE DETAILS

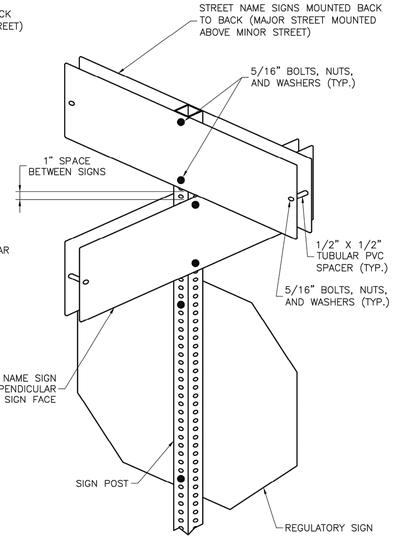
POST MOUNTED MULTI–LANE GREATER THAN 40 MPH



SIGNS INSTALLED SEPARATELY



PLAN VIEW



SIGNS INSTALLED WITH OTHER SIGNS

SQUARE STEEL POST MOUNTING DETAILS

66" SE Bailey Farms Pkwy	D3-1 (SP-1)	36" SE Cronin St	D3-1 (SP-5)
48" SE Arboretum Dr	D3-1 (SP-3)	30" SE Silo St	D3-1 (SP-6)
48" SE Windbreak Dr	D3-1 (SP-3)		

STREET NAME SIGN INVENTORY

No.	DATE	DESCRIPTION
1	##/##/##	CONSTRUCTION PLANS
0	##/##/##	

LEE'S SUMMIT MISSOURI

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

Project:

SIGNING STANDARD DETAILS

Sheet Name: STREET NAME SIGNS

Drawn By: BWC
Checked By: MKP
Date: 11/2019
Project# STD DETAILS

3 OF 3

SN-3

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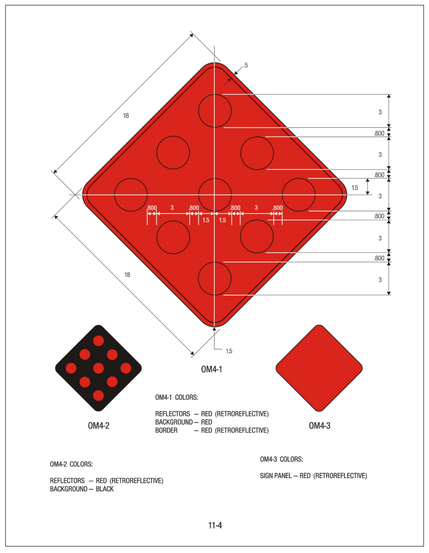
DRAWN BY: JRJ
CHECKED BY: JLL
DATE PREPARED: 12/20/2021
PROJ. NUMBER: 21-136

STREET NAME SIGN DETAILS

SHEET 22



OM4-1 COLORS:

REFLECTORS – RED (RETROREFLECTIVE)
BACKGROUND – RED
BORDER – RED (RETROREFLECTIVE)

OM4-2 COLORS:

REFLECTORS – RED (RETROREFLECTIVE)
BACKGROUND – BLACK

OM4-3 COLORS:

SIGN PANEL – RED (RETROREFLECTIVE)

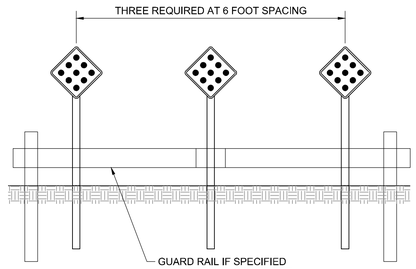
11-4

R1-1

STOP SIGN

OM4-1
(3)

NOTE:
THICKNESS OF FLAT SHEET FOR END OF ROAD MARKERS SHALL BE 0.0063". RED REFLECTORS ON RED BACKGROUND.



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OM-4 SIGN DETAILS

SHEET 23