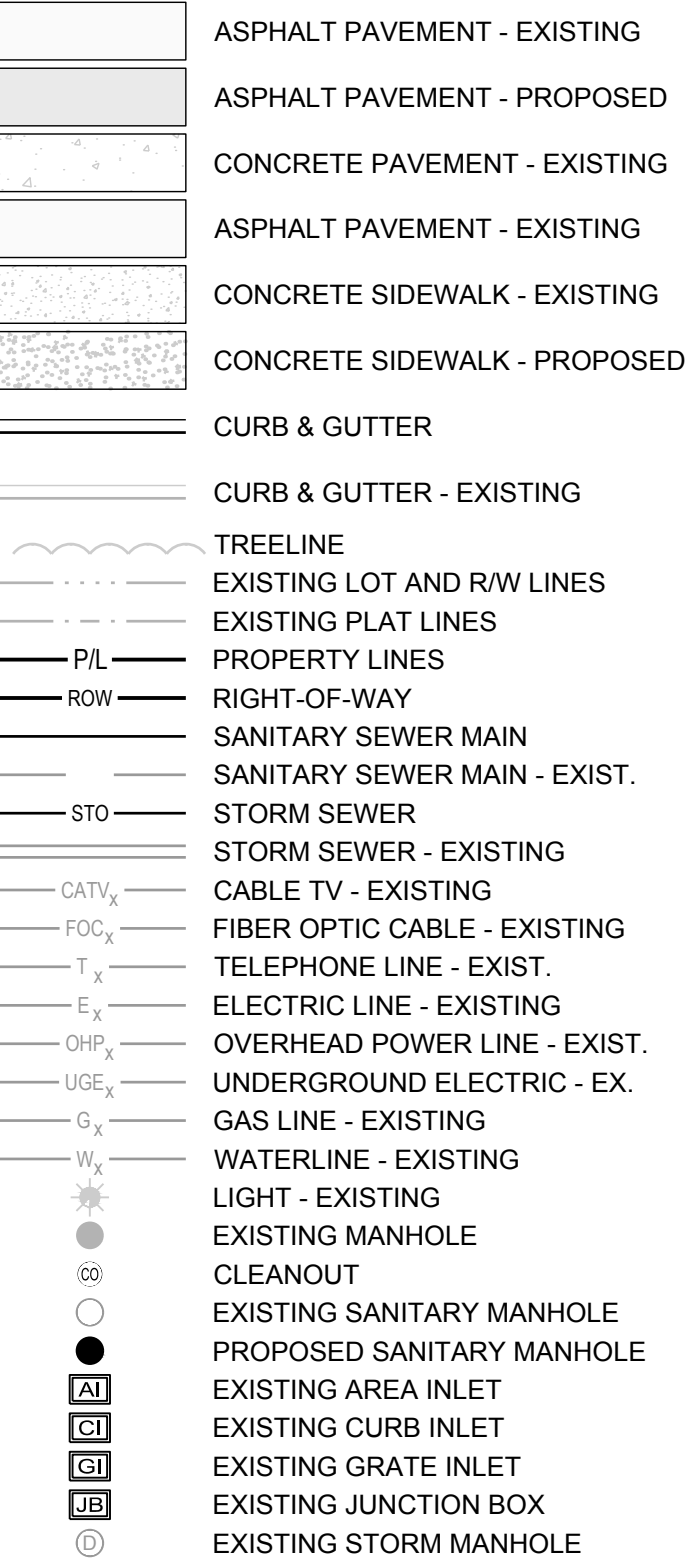
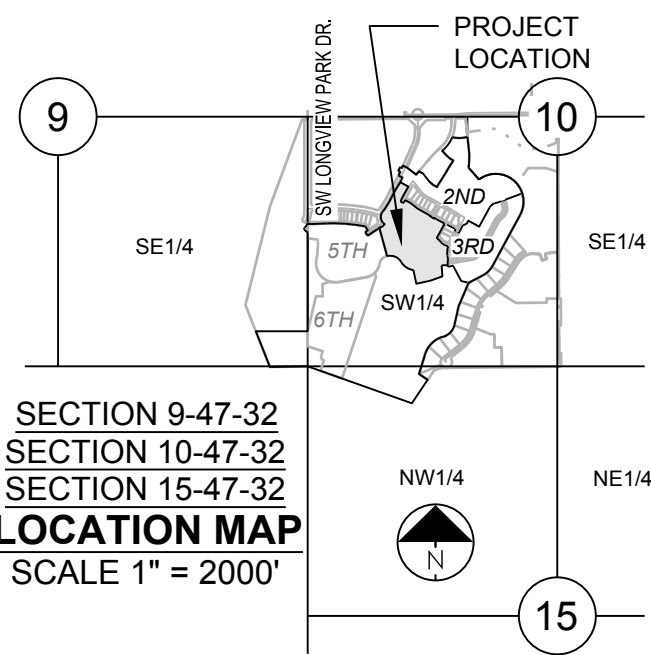


PERGOLA PARK 4TH PLAT

- 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
- RCP or RW - 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



	ITEM	QUANTITY	UNITS
1	CLEANING, GRUBBING, AND DISPOSAL	1	L.S.
2	GRADING	1	L.S.
3	SUBGRADE STABILIZATION (PUBLIC STREETS)	8603	S.Y.
4	6" AB-3 BACKFILL	1134	L.F.
5	6" ASPHALT	5374	S.Y.
6	6" CONCRETE	1036	S.Y.
7	TYPE CG-2	3892	L.F.
8	5' SIDEWALK	3537	L.F.
9	SIDEWALK RAMPS	18	EA.
10	15" HDPE	362	L.F.
11	18" HDPE	551	L.F.
12	24" HDPE	270	L.F.
13	30" HDPE	36	L.F.
14	36" RCP	73	L.F.
15	54" RCP	93	L.F.
16	66" RCP	521	L.F.
17	4' x 4' GRATE INLET	4	EA.
18	5' DIA. MANHOLE	1	EA.
19	6' x 6" CURB INLET	1	EA.
20	6' x 4' CURB INLET	12	EA.
21	6' x 8' CURB INLET	2	EA.
22	8' x 6" CURB INLET	1	EA.
23	6' x 10' CURB INLET	1	EA.
24	9' x 9' AREA INLET	1	EA.
25	36" RCP END SECTION	1	EA.
26	66" RCP END SECTION	1	EA.
27	UNDERDRAIN	70	L.F.
28	EROSION CONTROL	1	L.S.
29	SEEDING/MULCHING	1	L.S.
30	BONDS	1	L.S.
31	STOP SIGNS WITH STREET NAMES	5374	EA.
32	NO PARKING SIGNS	8	EA.
33	OM4-1 WND OF ROAD MARKERS	3	EA.



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

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

Ron DeJarnette
1300 SE Hamblin Road
Lee's Summit, MO 64081
Office: (816) 347-4316
Cell: (816) 810-5234
ron.dejarnette@kcpl.com

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

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

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

Mark Schautler
1200 SE Hamblen Road
Lee's Summit, MO 64081
(816) 969-1900



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 PLATY CLIMB SHALL BE MEASURED 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 AN INVESTIGATION ON PUBLIC RIGHT OF WAY DO SO ONLY AFTER GIVING NOTICE TO AND OBTAINING INFORMATION FROM UTILITY COMPANIES. THE 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 ENGINEER FOR HIS REVIEW AND 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).

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 movable 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-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 than 6-inches and other deleterious materials shall be removed and properly disposed of offsite or as directed by the owner or his appointed representative.
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.

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 negligence of the contractor or the contractor's subcontractors shall be repaired by the contractor.
3. Contractor shall verify low-volts 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, manholes, and sanitary sewer service laterals, as measured from edge to edge. If minimum separations cannot 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. Trenches shall be neatly finished to the trench bottom and sides. Trenches shall be backfilled with clean material and excess sediment runoff. Unsuitable materials, excess rock and shale, asphalt, concrete, tires, brush etc. shall be properly disposed of offsite. Materials may be waste 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 order the physical characteristics to determine the rock type and quantity. The contractor shall 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.

PREPARED AND SUBMITTED BY:

SCHLAGEL & ASSOCIATES, P.A.

CITY ENGINEER
APPROVED FOR ONE YEAR FROM THIS DATE

NAI HEARTLAND
RUSSELL PEARSON
4400 COLLEGE BLVD , SUITE 170
OVERLAND PARK, KS 66211
p 913-362-1000
f 913-273-0205
RUSSELL@NAI-HEARTLAND.COM

BM JA-148, IS A STAMPED KC METRO DISK SET IN CONCRETE LOCATED 2 MILES WEST OF THE INTERSECTION OF HIGHWAY 50 AND 3RD ST. IT IS 44 FT NORTH OF THE CENTER OF 3RD ST. AND 102.5 FT WEST OF THE CENTER OF THE EXIT FROM THE ADJACENT PARKING LOT.

ELEV. 935.18

CHISELED "SQUARE" ON STORM CURB INLET AT NORTHWEST
INTERSECTION OF SW. TOWER PARK DRIVE AND SW. LONGVIEW
BOULEVARD.

NORTHING: 998893.4148
EASTING: 2803318.5413
ELEV. 1004.09



SCHLAGEL & ASSOCIATES, P.A.
Engineers • Planners • Surveyors • Landscape Architects

PERGOLA PARK 4TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
PLAN & EROSION AND SEDIMENT CONTROL
- LEE'S SUMMIT, MISSOURI!

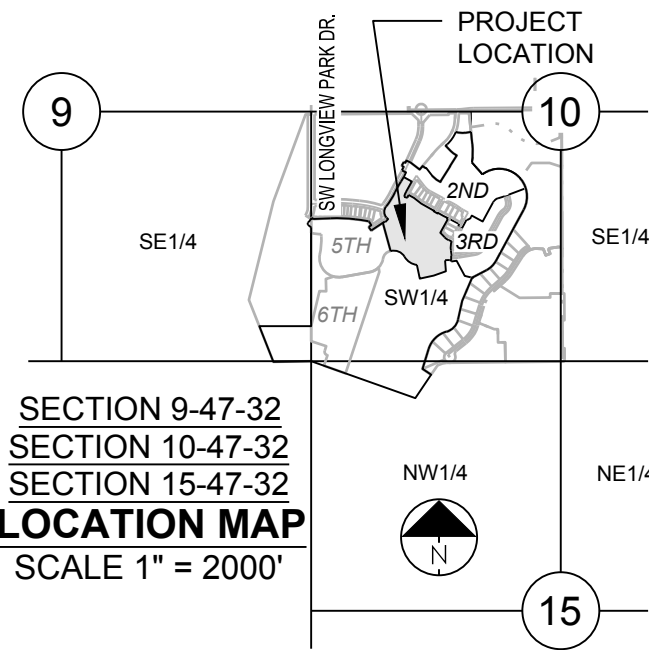
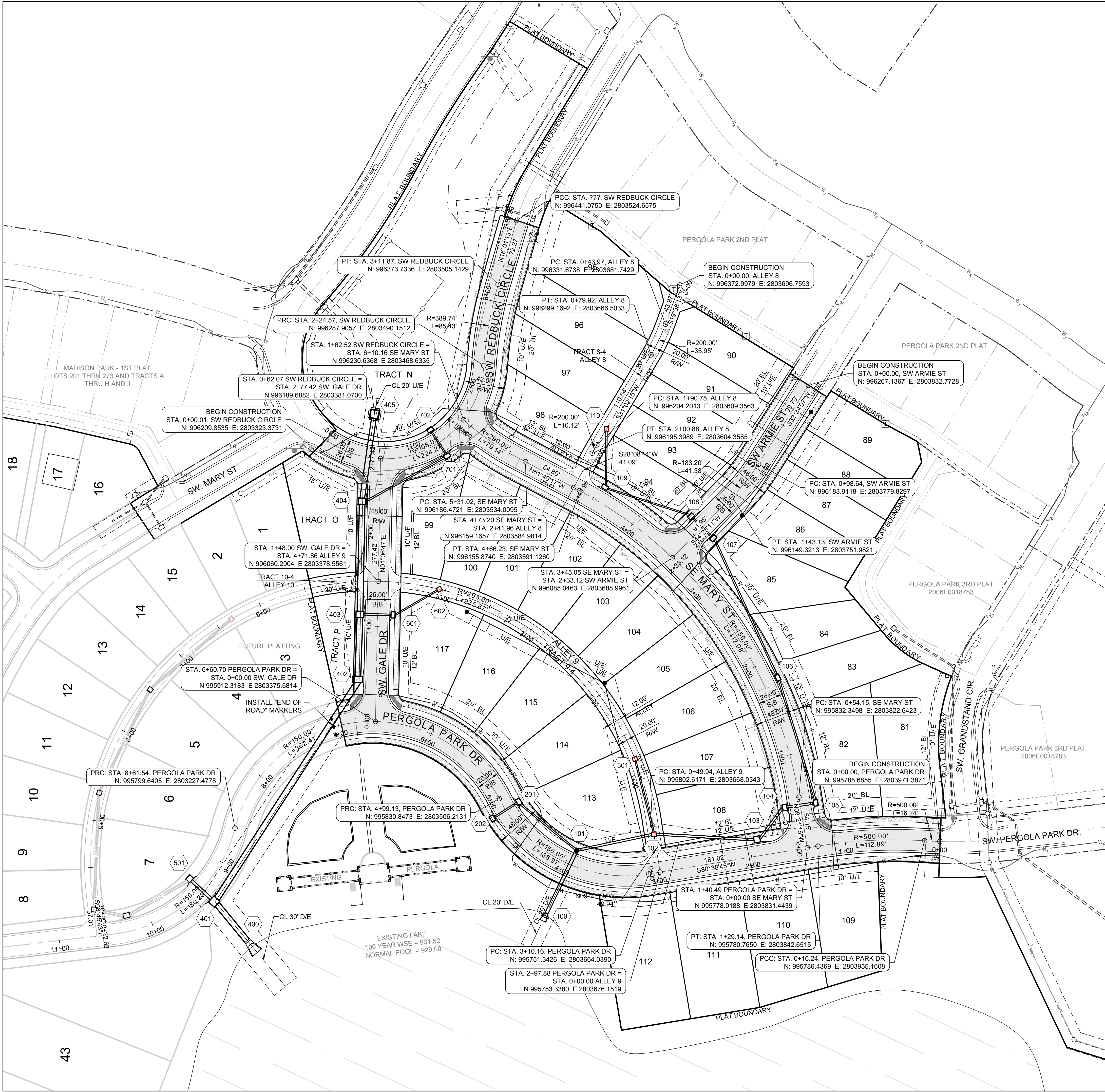
REVISION DATE	DESCRIPTION
1. 6-26-19	CITY COMMENTS
2. 7-30-19	CITY COMMENTS
3. 2-12-2020	AS-BUILTS
4.	
5.	
6.	
7.	
8.	7-30-19

COVER SHEET

SHEET

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OF 28

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MISSOURI GEOGRAPHIC REFERENCE SYSTEM BENCH MARK:

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NORTHING: 998893.4148
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CONFORMING TO CONSTRUCTION RECORDS.

BAL 02.12.2020
BY DATE

**PERGOLA PARK 4TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
PLAN & EROSION AND SEDIMENT CONTROL
- LEE'S SUMMIT, MISSOURI**

REVISION DATE	DESCRIPTION
6-26-19	CITY COMMENTS
7-30-19	CITY COMMENTS
2-12-2020	AS-BUILT

DRAWN BY:	BAL
CHECKED BY:	MAB
DATE PREPARED:	4-15-19
PROJ. NUMBER:	19-002

GENERAL LAYOUT

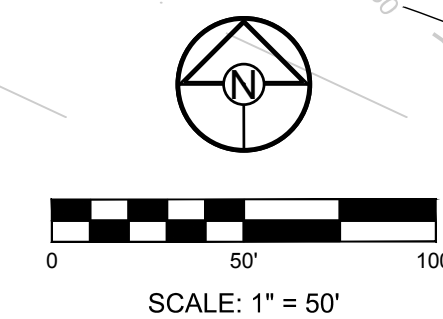
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2
OF 28



CONFORMING TO CONSTRUCTION
RECORDS.

BAL	02.25.2020
BY	DATE



NOTE:

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

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

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PROJECT BENCHMARK:

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DRAWN BY:		REVISION DATE	DESCRIPTION
BAL		1 6-26-19	CITY COMMENTS
CHECKED BY:		2 7-30-19	CITY COMMENTS
		3 2-12-2020	AS-BUILT
MAB		4	
DATE PREPARED:		5	
4-15-19		6	
PROJ. NUMBER:		8	
10,00?			

MASTER
DRAINAGE PLAN
- GRADING PLAN

SHEET

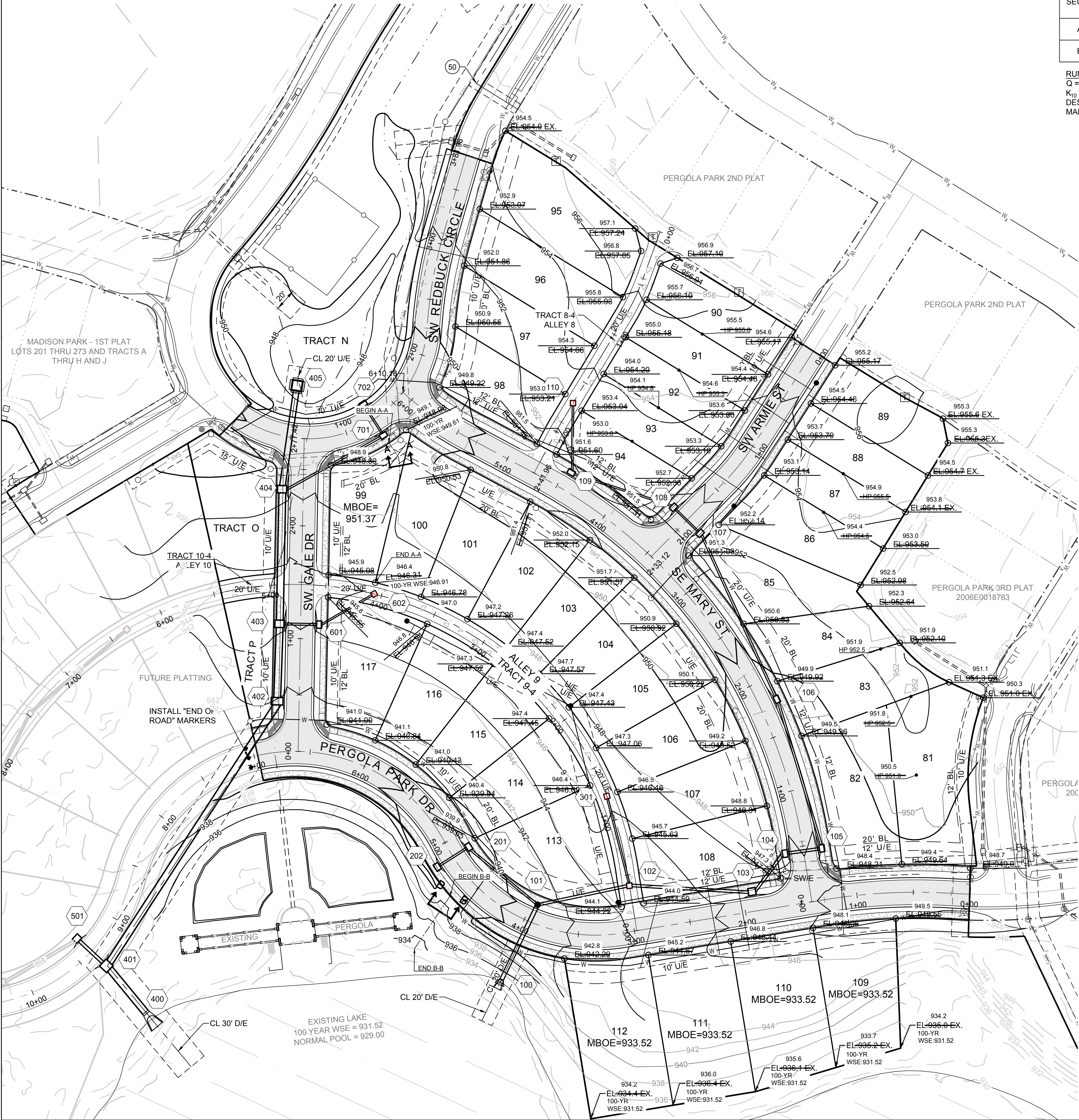
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OF 28



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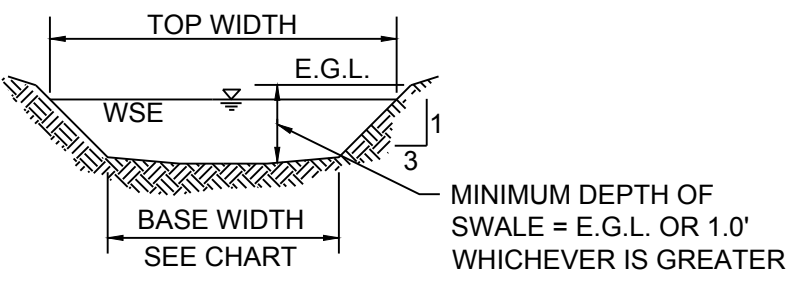
PERGOLA PARK 4TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
PLAN & EROSION AND SEDIMENT CONTROL
- LEE'S SUMMIT, MISSOURI

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NOTES:

1. MBOE = MINIMUM BUILDING OPENING ELEVATION FOR HOUSES ADJACENT TO ENGINEERED OVERFLOW SWALES SHALL BE MINIMUM 2 FEET ABOVE THE 100 YR WATER SURFACE ELEVATION.
2. EGL = ENERGY GRADE LINE (100 YR)
3. WSE = WATER SURFACE ELEVATION (100 YR)
4. ENGINEERED SWALES TO BE GRADED TO NORMAL DEPTH OF FLOW (WATER SURFACE ELEVATION) OR 1.0 FT, WHICHEVER IS GREATER. MINIMUM SLOPE OF ENGINEERED SWALES SHALL BE AS NOTED.
5. MBOE'S ADJACENT TO SUMPED INLETS SHALL BE A MINIMUM OF 1' ABOVE TOP OF ADJACENT BERM



100 YR OVERFLOW SWALE SECTIONS
SECTION 1-2

100 YEAR OVERFLOW SWALES												
SECTION	DRAINAGE AREA (AC.)	Q100 (CFS)	Q10 (CFS)	DESIGN OVERFLOW (CFS)	BED SLOPE (%)	BASE WIDTH (FT.)	SIDE SLOPE	TOP WIDTH (FT.)	NORMAL DEPTH (FT.)	VELOCITY (FPS)	VELOCITY HEAD (FT.)	EGL (FT.)
A-A	2.16	18.39	-	18.3900	2.13	5	3:1	8.68	0.61	4.39	0.30	0.91
B-B	6.93	59.00	-	59.0000	7.25	10	3:1	13.55	0.59	8.48	1.12	1.71

RUNOFF CALCULATIONS:

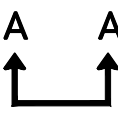
$Q = K \cdot C \cdot I \cdot A$
 $K_{10} = 1.0 \quad K_{100} = 1.25 \quad C = 0.51 \quad I = \text{INTENSITY}$
 $\text{DESIGN OVERFLOW} = Q_{\text{OVERFLOW}} = Q_{100} \cdot Q_{10}$
MANNINGS "n" = .030 FOR SWALES

LOT TYPE TABLE			
LOT #	BASEMENT TYPE	FRONT MBOE	BACK MBOE
81	STANDARD	950.00	950.00
82	STANDARD	950.00	950.00
83	STANDARD	950.50	952.50
84	STANDARD	951.20	952.90
85	STANDARD	951.90	953.10
86	STANDARD	953.70	953.60
87	STANDARD	954.30	954.40
88	STANDARD	955.10	955.10
89	STANDARD	955.80	955.90
90	STANDARD	955.30	957.50
91	STANDARD	955.00	956.30
92	STANDARD	954.20	955.60
93	STANDARD	953.90	954.60
94	STANDARD	953.30	954.00
95	STANDARD	955.10	957.70
96	STANDARD	953.50	956.40
97	STANDARD	952.60	954.90
98	STANDARD	951.50	953.60
99	STANDARD	951.37	948.91
100	STANDARD	951.40	948.91
101	STANDARD	952.00	947.60
102	STANDARD	952.60	948.00
103	STANDARD	952.60	948.30
104	STANDARD	952.30	948.30
105	STANDARD	951.50	948.00
106	STANDARD	950.70	947.90
107	STANDARD	950.50	946.90
108	STANDARD	949.50	946.10
109	WALKOUT	933.52	933.52
110	WALKOUT	933.52	933.52
111	WALKOUT	933.52	933.52
112	DAYLIGHT	933.52	933.52
113	STANDARD	947.00	947.00
114	STANDARD	941.00	948.00
115	STANDARD	941.60	948.00
116	STANDARD	941.70	947.90
117	STANDARD	941.70	947.40

NOTE:

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

DENOTES RETAINING WALL

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0 50' 100'
SCALE: 1" = 50'

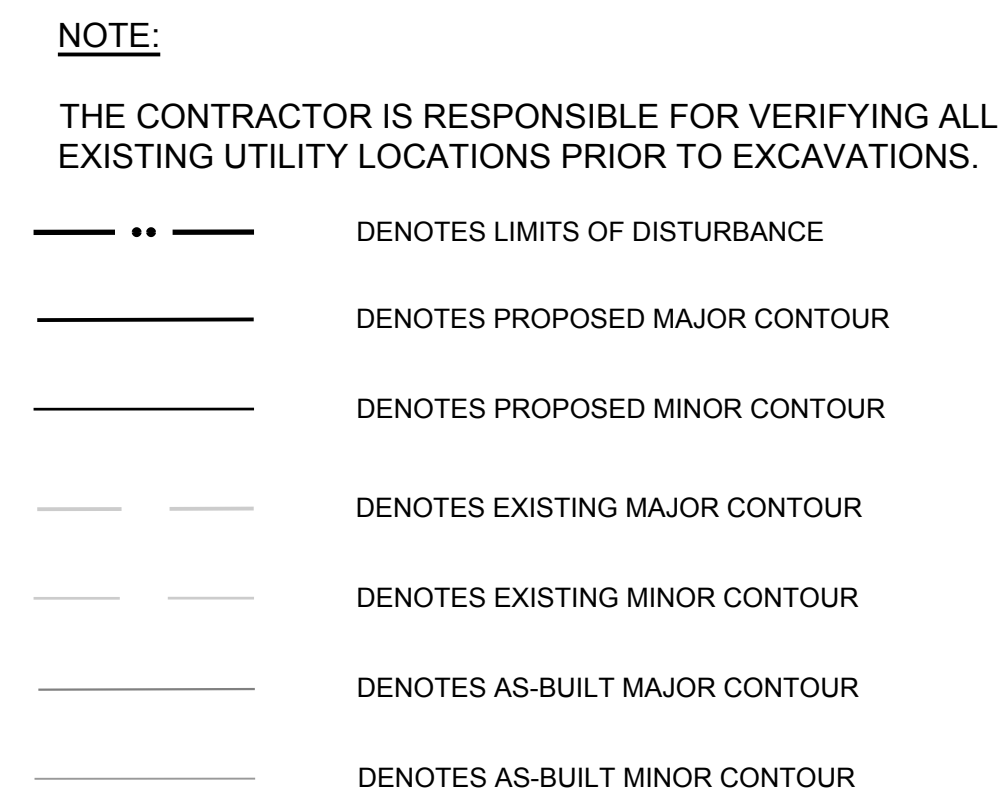
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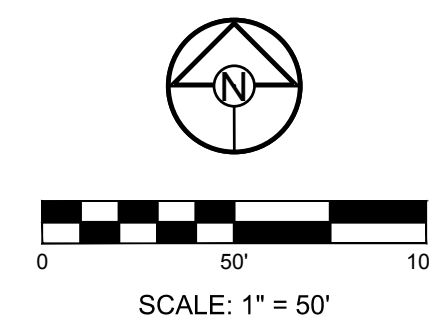
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STREET, STORMWATER, MASTER DRAINAGE
PLAN & EROSION AND SEDIMENT CONTROL
- LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
6-26-19	CITY COMMENTS
7-30-19	CITY COMMENTS
2-12-2020	AS-BUILTS
3-27-2020	AS-BUILTS

DRAWN BY:	BAL
CHECKED BY:	MAB
DATE PREPARED:	4-15-19
PROJ. NUMBER:	19-002



BAL	02.25.2020
BY	DATE



PERGOLA PARK 4TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
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DRAWN BY:		REVISION DATE	DESCRIPTION
BAL	1	6-26-19	CITY COMMENTS
	2	7-30-19	
CHECKED BY:	3	2-12-2020	AS BUILTS
MAB	4		
	5		
DATE PREPARED:	6		
4-15-19	7		
PROJ. NUMBER:	8		
19-002	9		

MASTER
DRAINAGE PLAN
- DRAINAGE MAP

SHEET

5

OF 28

GUTTER SPREAD AND INLET CAPACITY CALCULATIONS - PERGOLA PARK 4TH PLAT

DESIGN STORM 10
"K" FACTOR 1.00

CURB TYPE "A" = LAZY BACK
CURB TYPE "B" = HIGH BACK

RUNOFF CALCULATIONS

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 1																						
102	0.66	0.22	5	7.35	1.07	301				0.22	1.29	1.56	2.08	A	4	3.2	1.11	0.18	1.56	2.08	0.14	7.27
103	0.66	0.21	5	7.35	1.02	104				0.09	1.10	2.18	2.08	A	6	4.8	0.98	0.12	2.18	2.08	0.12	6.50
104	0.66	0.28	5	7.35	1.36					0.00	1.36	1.10	2.08	A	6	4.8	1.27	0.09	1.10	2.08	0.15	7.87
105	0.66	0.43	5	7.35	2.09	106				0.22	2.30	1.10	2.08	A	6	4.8	1.98	0.33	1.10	2.08	0.19	9.49
106	0.66	0.39	5	7.35	1.89	107				0.19	2.08	1.10	2.08	A	6	4.8	1.86	0.22	1.10	2.08	0.18	9.15
107	0.66	0.31	5	7.35	1.50					0.00	1.50	1.71	2.08	A	6	4.8	1.31	0.19	1.71	2.08	0.15	7.55
108	0.66	0.36	5	7.35	1.75					0.00	1.75	1.71	2.08	A	6	4.8	1.49	0.26	1.71	2.08	0.16	7.96
109	0.66	0.18	5	7.35	0.87	108				0.26	1.13	4.00	2.08	A	6	4.8	0.97	0.16	4.00	2.08	0.11	5.90
110	0.66	0.21	5	7.35	1.02					0.00	1.02	4.00	2.08	A	4	3.2	0.81	0.20	4.00	2.08	0.11	5.69
LINE 2																						
201	0.66	1.22	5	7.35	5.92	102	103	601		0.84	6.76	SUMP	2.08	A	6	4.8	16.80	0.00	SUMP	2.08	< 0.21	< 10.50
202	0.66	0.32	5	7.35	1.55					0.00	1.55	SUMP	2.08	A	6	4.8	16.80	0.00	SUMP	2.08	< 0.21	< 10.50
LINE 3																						
301	0.66	0.32	5	7.35	1.55					0.00	1.55	1.56	2.08	A	4	3.2	1.33	0.22	1.56	2.08	0.15	7.76
LINE 4																						
401	0.66	0.34	5	7.35	1.65					0.00	1.65	SUMP	2.08	A	8	6.4	17.92	0.00	SUMP	2.08	< 0.21	< 10.50
402	0.66	0.04	5	7.35	0.19	403				0.02	0.21	3.24	2.08	A	6	4.8	0.20	0.00	3.24	2.08	0.06	3.48
403	0.66	0.07	5	7.35	0.34	404				0.01	0.35	3.24	2.08	A	6	4.8	0.33	0.02	3.24	2.08	0.08	4.12
404	0.66	0.06	5	7.35	0.29					0.00	0.29	3.24	2.08	A	6	4.8	0.28	0.01	3.24	2.08	0.07	3.88
LINE 5																						
501	0.66	1.08	5	7.35	5.24	402	FUT 502			0.19	5.42	SUMP	2.08	A	6	4.8	13.44	0.00	SUMP	2.08	< 0.21	< 10.50
FUT 502	0.66	0.10	5	7.35	0.49	FUT 503				0.87	1.36	2.12	2.08	A	6	4.8	1.18	0.18	2.12	2.08	0.14	7.01
FUT 503	0.66	0.49	5	7.35	2.38	FUT 504				0.73	3.11	1.49	2.08	A	4	3.2	2.24	0.87	1.49	2.08	0.20	10.00
FUT 504	0.66	0.45	5	7.35	2.18	FUT 505				0.63	2.81	1.49	2.08	A	4	3.2	2.08	0.73	1.49	2.08	0.19	9.65
FUT 505	0.66	0.46	5	7.35	2.23	FUT 506				0.35	2.58	1.49	2.08	A	4	3.2	1.95	0.63	1.49	2.08	0.18	9.36
FUT 506	0.66	0.42	5	7.35	2.04					0.00	2.04	1.12	2.08	A	4	3.2	1.69	0.35	1.12	2.08	0.18	9.05
LINE 6																						
601	0.66	0.36	5	7.35	1.75	602				0.48	2.23	3.24	2.08	A	6	4.8	1.70	0.53	3.24	2.08	0.15	7.75
602	0.66	0.54	5	7.35	2.62					0.00	2.62	1.12	2.08	A	4	3.2	2.14	0.48	1.12	2.08	0.20	9.90
LINE 7																						
701	0.66	1.14	5	7.35	5.53					0.00	5.53	SUMP	2.08	A	6	4.8	16.80	0.00	SUMP	2.08	< 0.21	< 10.50
702	0.66	0.27	5	7.35	1.31					0.00	1.31	SUMP	2.08	A	6	4.8	16.80	0.00	SUMP	2.08	< 0.21	< 10.50

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

STRUCTURE 405 INLET CAPACITY:

9' X 9' AREA INLET WITH OPENINGS ON ALL FOUR SIDES. TOP ELEVATION IS 948.00 AND MAX PONDING ELEVATION IS 949.50.

A = 38.50 AC.

Tc = 14.30

"C" VALUE = 0.66

100 YEAR DESIGN STORM

"K" = 1.25

INTENSITY (in/hr) = 7.51

h = 10"

H = 2.25'

L = 36'

Qactual = KCIA

Qcap = Co h L (2 g H)^{1/2} , WHERE Co = 0.67 AND g = 32.2 FT/S²

Qactual = (1.25)(0.66)(7.51)(38.50) = 238.54 cfs

Qcap = (0.67)(.83)(36)(2*32.2*2.25)^{1/2} = 241.98 cfs

80% Qcap = 192.79 cfs

SINCE 80%Qcap < Qactual

TRASH RACK IS UTILIZED TO MAKE UP FOR MISSING FLOW

Qtrash = CA(2gH)^{1/2}

C = 0.6

A = 81'

G = 32.2 (ft/s)

H = 1.50'

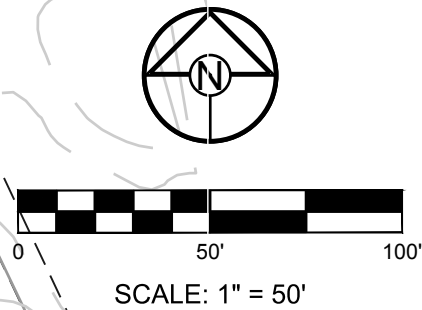
Qtrash = (0.6)(81)(2*32.2*1.50)^{1/2} = 477.67 cfs

80%Qtrash = 382.13 cfs

80%Qtrash + 80% Qcap = 382.13 + 192.79 = 574.92 cfs > Qactual

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	HGL Elev.	
LINE 100																									DS TAILWATER @ STR #100		929.00
101	0.00	0.66	4.45	2.94	7.1	6.76	0.00	19.87	69.95	9.90	201		1.54	1.02	101	100	RCP	0.013	36	73.29	1.10	4.00	929.31	928.50	940.87	931.01	
102	0.22	0.66	2.91	1.92	7.0	6.79	0.99	13.04	47.77	15.21	301		0.32	0.21	102	101	HDPE	0.012	24	83.24	3.80	0.50	936.47	933.31	944.57	938.05	
103	0.21	0.66	2.37	1.56	6.7	6.86	0.95	10.73	20.50	6.53			0.00	0.00	103	102	HDPE	0.012	24	108.82	0.70	0.50	937.73	936.97	946.89	939.15	
104	0.28	0.66	2.16	1.43	6.6	6.89	1.27	9.82	23.25	7.40			0.00	0.00	104	103	HDPE	0.012	24	44.75	0.90	0.50	938.63	938.23	948.15	939.98	
105	0.43	0.66	1.88	1.24	6.5	6.92	1.96	8.58	18.18	5.79			0.00	0.00	105	104	HDPE	0.012	24	33.01	0.55	0.50	939.32	939.13	948.14	940.57	
106	0.39	0.66	1.45	0.96	6.2	7.00	1.80	6.70	12.97	7.34			0.00	0.00	106	105	HDPE	0.012	18	138.15	1.30	0.50	941.61	939.82	949.55	942.83	
107	0.31	0.66	1.06	0.70	5.7	7.14	1.46	5.00	9.86	5.58			0.00	0.00	107	106	HDPE	0.012	18	162.07	0.75	0.50	943.33	942.11	951.64	944.36	
108	0.36	0.66	0.75	0.50	5.6	7.17	1.70	3.55	7.00	5.70			0.00	0.00	108	107	HDPE	0.012	15	33.00	1.00	0.50	944.16	943.83	951.64	945.03	
109	0.18	0.66	0.39	0.26	5.2	7.28	0.87	1.87	5.19	4.23			0.00	0.00	109	108	HDPE	0.012	15	95.94	0.55	2.50	945.18	944.66	951.79	946.03	
110	0.21	0.66	0.21	0.14	5.0	7.35	1.02	1.02	5.42	4.42			0.00	0.00	110	109	HDPE	0.012	15	61.51	0.60	N/A	948.05	947.68	952.89	948.52	
LINE 200																											
201	1.22	0.66	1.54	1.02	5.1	7.32	5.90	7.44	14.39	8.15			0.00	0.00	201					Drop in Inlet 101		1.50					
202	0.32	0.66	0.32	0.21	5.0	7.35	1.55	1.55	9.86	5.58			0.00	0.00	202	201	HDPE	0.012	18	79.83	1.60	0.50	932.08	930.81	939.38	933.38	
																				18	33.00	0.75	N/A	932.83	932.58	939.38	933.40
LINE 300																											
301	0.32	0.66	0.32	0.21	5.0	7.35	1.55	1.55	13.64	11.12			0.00	0.00	301	102	HDPE	0.012	15	81.86	3.80	N/A	940.33	937.22	946.25	940.92	
LINE 400																											
401	0.34	0.66	44.32	29.25	15.1	5.16	1.16	150.90	270.74	11.40	501		3.00	1.98	401	400	RCP	0.013	66	53.87	0.65	0.50	928.13	927.78	936.98	929.00	
402	0.04	0.66	40.98	27.05	14.7	5.22	0.14	141.30	260.12	10.95			0.00	0.00	402	401	RCP	0.013	66	279.37	0.60	0.50	930.31	928.63	941.80	936.04	
403	0.07	0.66	40.94	27.02	14.6	5.24	0.24	141.61	260.12	10.95	601		0.90	0.59	403	402	RCP	0.013	66	68.66	0.60	0.50	931.22	930.81	944.19	935.23	
404	0.06	0.66	39.97	26.38	14.4	5.27	0.21	139.04	240.94	10.48			1.41	0.93	404	403	RCP	0.013	66	119.40	0.55	1.00	932.38	931.72	948.34	936.34	
405	38.50	0.66	38.50	25.41	14.3	5.29	134.34	134.34	240.84	15.14			0.00	0.00	405	404	RCP	0.013	54	92.89	1.50	N/A	934.77	933.38	948.00	939.02	
LINE 500																											
501	1.08	0.66	3.00	1.98	6.3	6.96	4.96	13.78	34.42	7.01			0.00	0.00	501	401	HDPE	0.012	30	35.50	0.60	0.50	931.34	931.13	936.98	932.84	
FUT 502	0.10	0.66	1.92	1.27	6.2	7.00	0.46	8.88	25.70	8.18			0.00	0.00	FUT 502	501	HDPE	0.012	24	76.93	1.10	0.50	932.69	931.84	938.01	933.97	
FUT 503	0.49	0.66	1.82	1.20	6.1	7.02	2.27	8.44	25.70	8.18			0.00	0.00	FUT 503	FUT 502	HDPE	0.012	24	35.15	1.10	0.50	933.58	933.19	938.71	934.82	
FUT 504	0.45	0.66	1.33	0.88	5.8	7.11	2.11	6.24	12.47	7.05			0.00	0.00	FUT 504	FUT 503	HDPE	0.012	18	123.35	1.20	0.50	935.56	934.08	940.55	936.73	
FUT 505	0.46	0.66	0.88	0.58	5.4	7.23	2.20	4.20	8.44	4.78			0.00	0.00	FUT 505	FUT 504	HDPE	0.012	18	121.28	0.55	0.50	936.72	936.06	942.25	937.67	
FUT 506	0.42	0.66	0.42	0.28	5.0	7.35	2.04	2.04	8.44	4.78			0.00	0.00	FUT 506	FUT 505	HDPE	0.012	18	113.83	0.55	N/A	937.85	937.22	943.60	938.49	
LINE 600																											
601	0.36	0.66	0.90	0.59	5.1	7.32	1.74	4.35	19.71	11.15			0.00	0.00	601	403	HDPE	0.012	18	36.00	3.00	0.50	936.30	935.22	944.19	937.32	
602	0.54	0.66	0.54	0.36	5.0	7.35	2.62	2.62	12.12	9.88			0.00	0.00	602	601	HDPE	0.012	15	55.86	3.00	N/A	938.47	936.80	946.28	939.25	
LINE 700																											
701	1.14	0.66	1.41	0.93	5.1	7.31	5.50	6.81	12.97	7.34			0.00	0.00	701	404	HDPE	0.012	18	102.48	1.30	0.50	941.71	940.38	949.02	942.94	
702	0.27	0.66	0.27	0.18	5.0	7.35	1.31	1.31	5.19	4.23			0.00	0.00	702	701	HDPE	0.012	15	33.00	0.55	N/A	942.39	942.21	949.02	942.94	



DISTURBED AREA = 9.01 A.C.

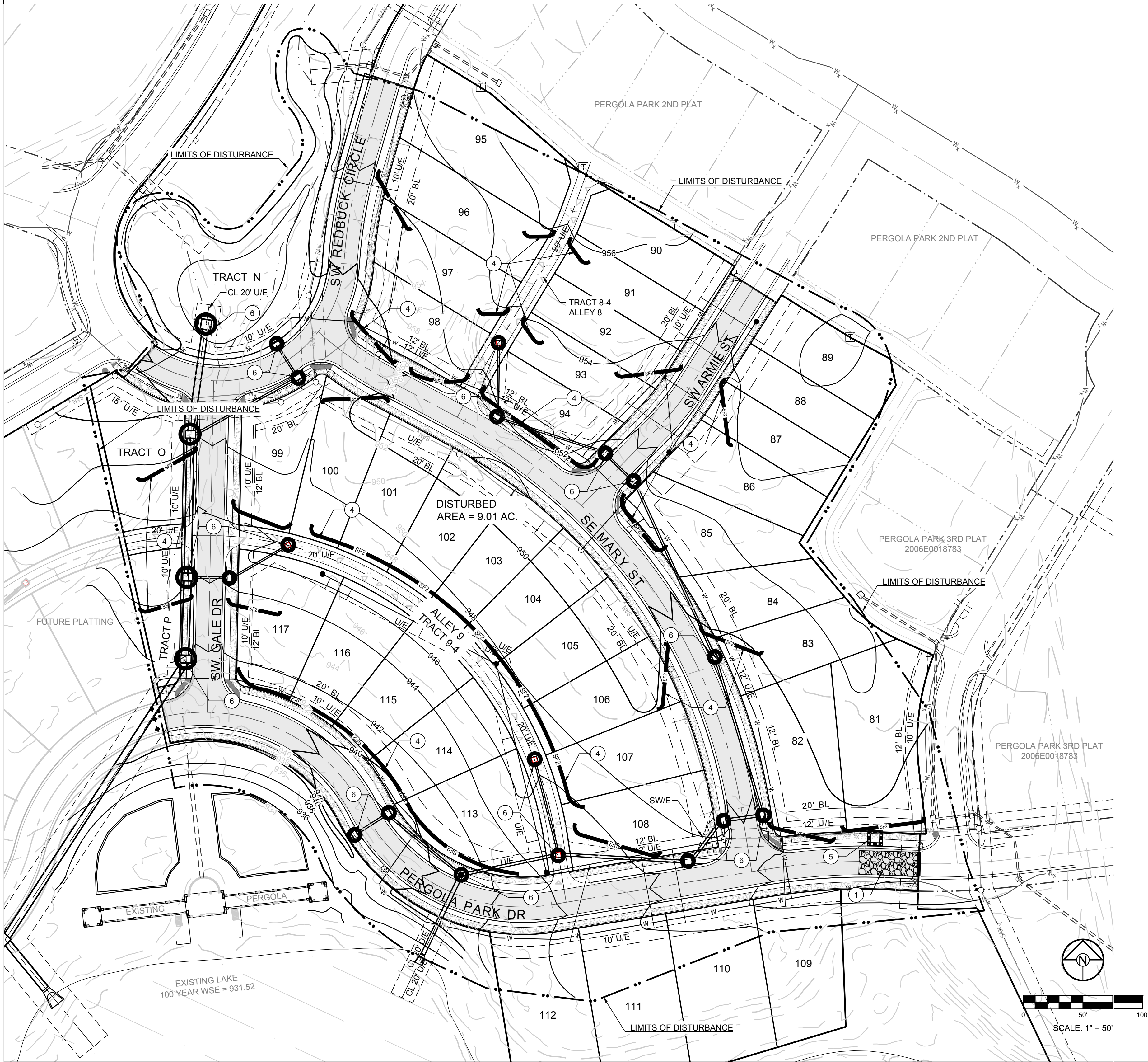
SITE SPECIFIC NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
2. THERE ARE NO WETLANDS, NATURAL OR ARTIFICIAL WATER STORAGE DETENTION AREAS IN THE PROJECT AREA.
3. NO PART OF THE PROJECT LIES WITHIN THE 100 YEAR FLOOD PLAIN PER FEMA FLOOD INSURANCE RATE MAP NUMBER 29095C04145 DATED JANUARY 20TH, 2017.
4. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IMPLEMENTED ACCORDING TO THE BMP STAGING CHART.
5. ADDITIONAL EROSION CONTROL MAY BE REQUIRED BY THE CITY ENGINEER AT ANY TIME EXISTING MEASURES ARE FOUND TO BE INEFFECTIVE OR PROBLEMATIC AREAS ARE NOTED IN THE FIELD.
6. STABILIZATION OF DISTURBED AREAS MUST, AT A MINIMUM, BE INITIATED IMMEDIATELY WHENEVER ANY CLEARING, GRADING, EXCAVATING, OR OTHER SOIL DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE, OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. THE DISTURBED AREAS SHALL BE PROTECTED FROM EROSION BY STABILIZING THE AREA WITH MULCH OR OTHER SIMILARLY EFFECTIVE SOIL STABILIZING BMP'S. INITIAL STABILIZATION ACTIVITIES MUST BE COMPLETED WITHIN 14 DAYS AFTER SOIL DISTURBING ACTIVITIES CEASE.
7. ALL PERIMETER SILT FENCE, EARTH DIKES, SEDIMENT BASINS, AND ROCK CONSTRUCTION ENTRANCES WILL BE INSTALLED BEFORE GRADING OPERATIONS BEGIN.
8. SILT FENCE AND EARTH DIKES THAT ARE PLACED BEFORE GRADING BEGINS WILL BE MAINTAINED BY THE GRADING CONTRACTOR.
9. AREAS WITHIN PUBLIC RIGHT-OF-WAY SHALL BE SODDED IMMEDIATELY AFTER CONSTRUCTION IS COMPLETE.

CONFORMING TO CONSTRUCTION
RECORDS.

BAL	02.12.2020
BY	DATE

I:\PROJECTS\2019\19-0023\0 DWG Plans\6 0 SS\19-002-SS-EROS.dwg, 3/27/2020, 2:29:01 PM, 1:1



LEGEND	
	TEMP. CONSTRUCTION ENTRANCE AND STAGING AREA
	CONCRETE WASHOUT AREA
	SILT FOAM DIKE - STAKED & INSTALL PER MFR'S RECOMMENDATIONS
	BMP PLAN REF. NO.
	SILT FENCE FOR INLET PROTECTION PRIOR TO STRUCTURE TOP
	SUPER SEDIMENT SILT FENCE (PRIOR TO LAND DISTURBANCE)
	SILT FENCE (PRIOR TO LAND DISTURBANCE)
	SILT FENCE (DURING CONSTRUCTION)
	LIMITS OF DISTURBANCE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	GRAVEL FILTER FOR STORM SEWER STRUCTURES ONLY

DISTURBED AREA = 9.01 A.C.

SITE SPECIFIC NOTES:

- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
- THERE ARE NO WETLANDS, NATURAL OR ARTIFICIAL WATER STORAGE DETENTION AREAS IN THE PROJECT AREA.
- NO PART OF THE PROJECT LIES WITHIN THE 100 YEAR FLOOD PLAIN PER FEMA FLOOD INSURANCE RATE MAP NUMBER 29095C0414G DATED JANUARY 20TH, 2017.
- ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IMPLEMENTED ACCORDING TO THE BMP STAGING CHART.
- ADDITIONAL EROSION CONTROL MAY BE REQUIRED BY THE CITY ENGINEER AT ANY TIME EXISTING MEASURES ARE FOUND TO BE INEFFECTIVE OR PROBLEMATIC AREAS ARE NOTED IN THE FIELD.
- STABILIZATION OF DISTURBED AREAS MUST, AT A MINIMUM, BE INITIATED IMMEDIATELY WHENEVER ANY CLEARING, GRADING, EXCAVATING, OR OTHER SOIL DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE, OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. THE DISTURBED AREAS SHALL BE PROTECTED FROM EROSION BY STABILIZING THE AREA WITH MULCH OR OTHER SIMILARLY EFFECTIVE SOIL STABILIZING BMPs. INITIAL STABILIZATION ACTIVITIES MUST BE COMPLETED WITHIN 14 DAYS AFTER SOIL DISTURBING ACTIVITIES CEASE.
- ALL PERIMETER SILT FENCE, EARTH DIKES, SEDIMENT BASINS, AND ROCK CONSTRUCTION ENTRANCES WILL BE INSTALLED BEFORE GRADING OPERATIONS BEGIN.
- SILT FENCE AND EARTH DIKES THAT ARE PLACED BEFORE GRADING BEGINS WILL BE MAINTAINED BY THE GRADING CONTRACTOR.
- AREAS WITHIN PUBLIC RIGHT-OF-WAY SHALL BE SODDED IMMEDIATELY AFTER CONSTRUCTION IS COMPLETE.

EROSION AND SEDIMENT CONTROL STAGING CHART				
PROJECT STAGE	BMP PLAN REF. NO	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
A - PRIOR TO LAND DISTURBANCE	1	CONSTRUCTION ENTRANCE & STAGING AREA	D	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
	2	SUPER SEDIMENT FENCE	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	3	SILT FENCE (PRIOR TO LAND DISTURBANCE)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
B - MASS GRADING	4	SILT FENCE (DURING CONSTRUCTION)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	5	CONCRETE WASHOUT AREA	E	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
C - UTILITY CONSTRUCTION	6	INLET PROTECTION (SILT FENCE)	D/E	PLACE SILT FENCE AROUND ALL STORM SEWER STRUCTURES / YARD AREA STORM STRUCTURES TO HAVE SILT FENCE REMOVED ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	7	INLET PROTECTION (GRAVEL FILTER BAGS)	E	BOARDS SHALL BE PLACED IN FRONT OF INLET OPENING FROM THE TIME SILT FENCE IS REMOVED UNTIL SUCH TIME THAT THE CURB / THROAT IS POURED. PLACE GRAVEL FILTER BAGS AT THE OPENING OF ALL CURB INLETS IMMEDIATELY AFTER THE INLET THROATS ARE POURED
D - AFTER PAVING OPERATIONS	8	SILT FENCE (AFTER CURB CONSTRUCTION)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	9	SEEDING AND MULCHING	E	ALL DISTURBED AREAS AFTER 14 DAYS OF CONSTRUCTION INACTIVITY
E - UNTIL CLOSURE OF LAND DISTURBANCE PERMIT				ADDITIONAL SEDIMENT AND EROSION CONTROL MEASURES MAY BE REQUIRED ANY TIME CURRENT MEASURES ARE FOUND TO BE INEFFECTIVE.

CONFORMING TO CONSTRUCTION RECORDS.

BAL 02.12.2020
BY DATE

PERGOLA PARK 4TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
PLAN & EROSION AND SEDIMENT CONTROL
- LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
6-26-19	CITY COMMENTS
7-30-19	CITY COMMENTS
2-12-2020	AS-BUILT
4-15-19	DATE PREPARED
19-002	PROJ. NUMBER

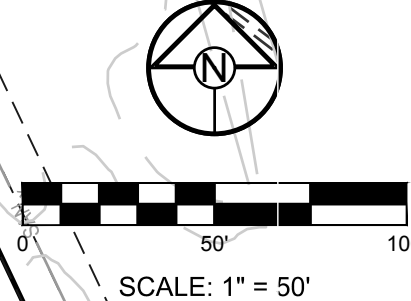
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EROSION CONTROL PLAN

SHEET

8

OF 28



DISTURBED AREA = 9.01 A.C.

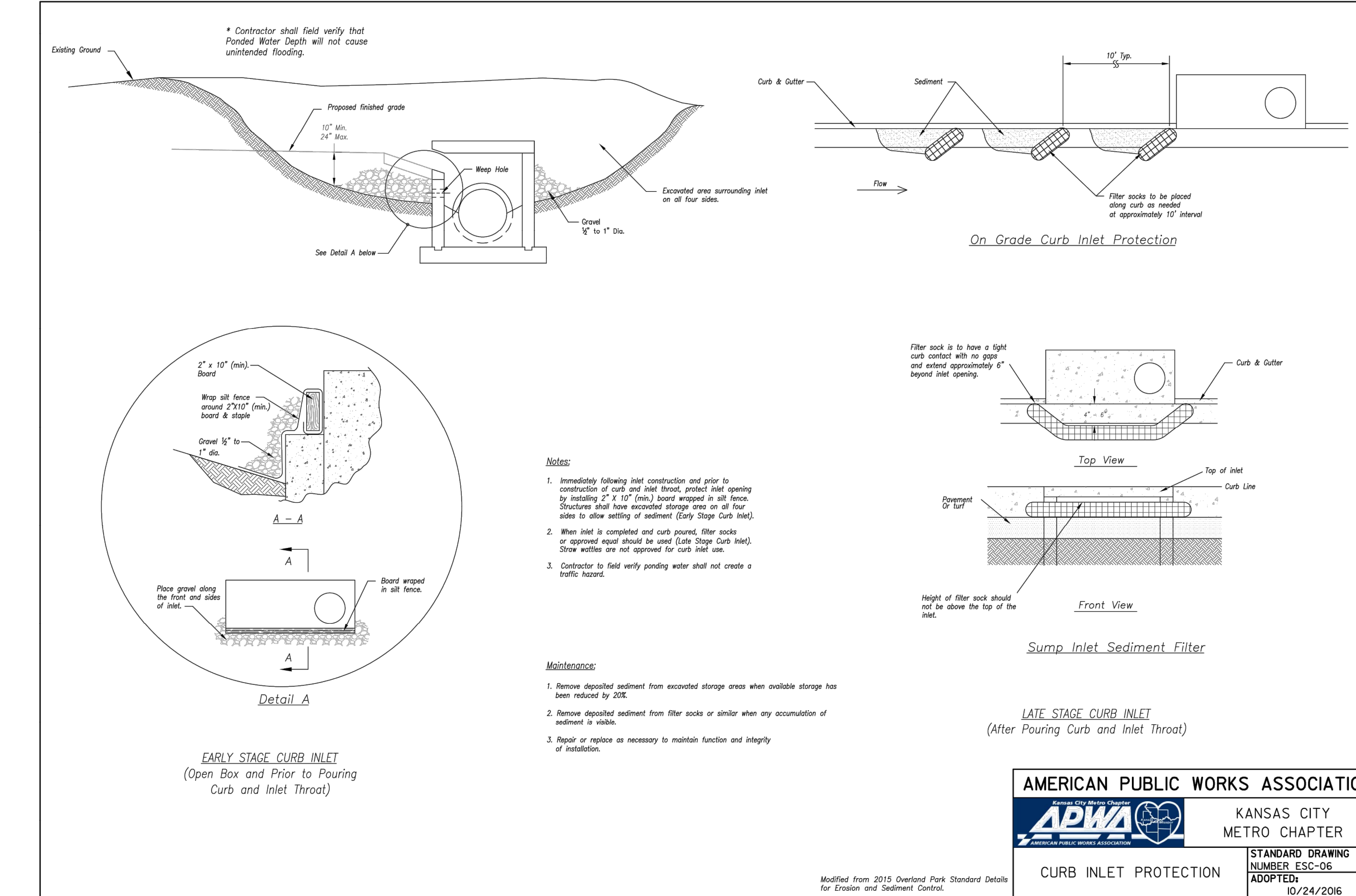
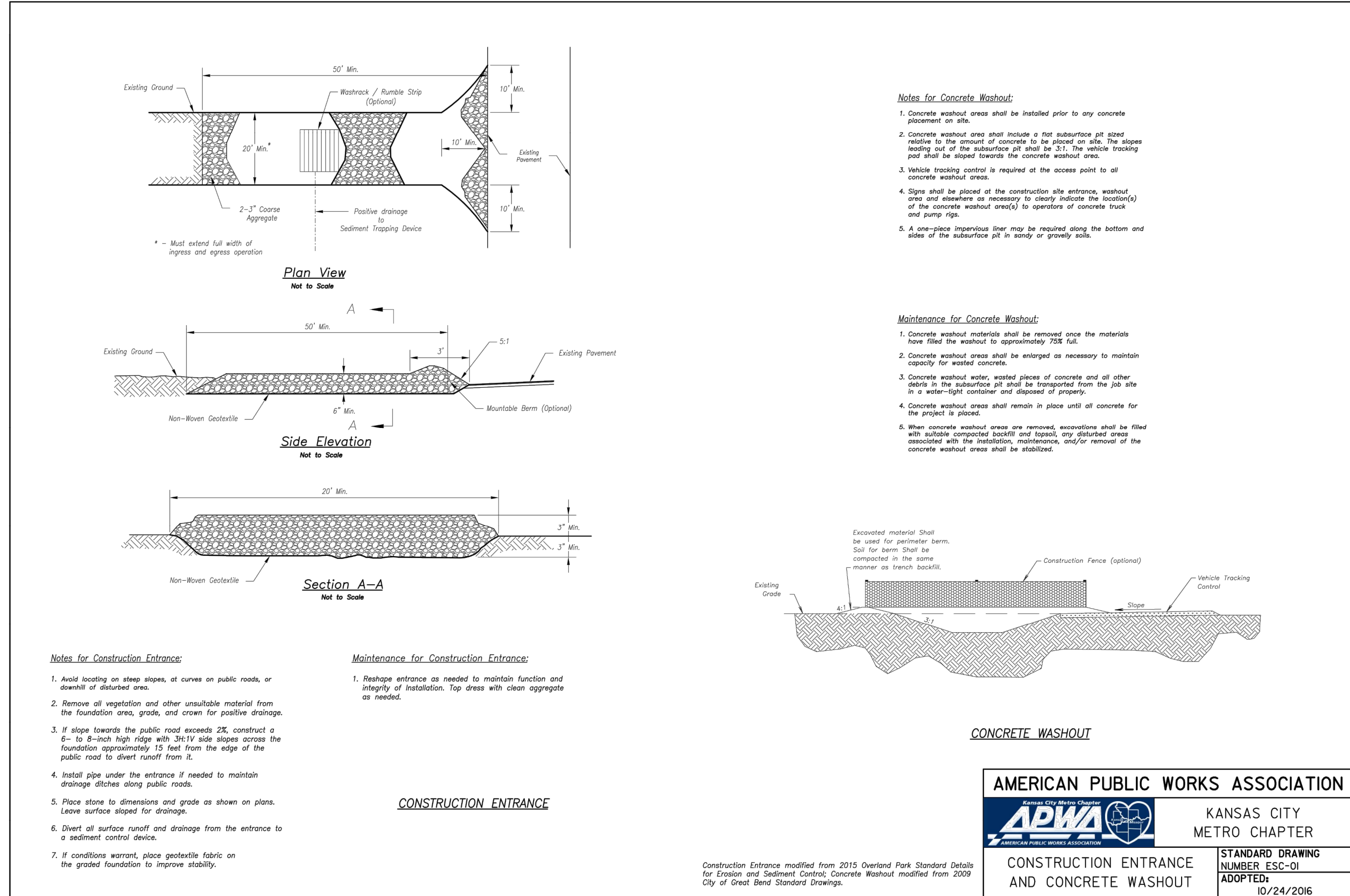
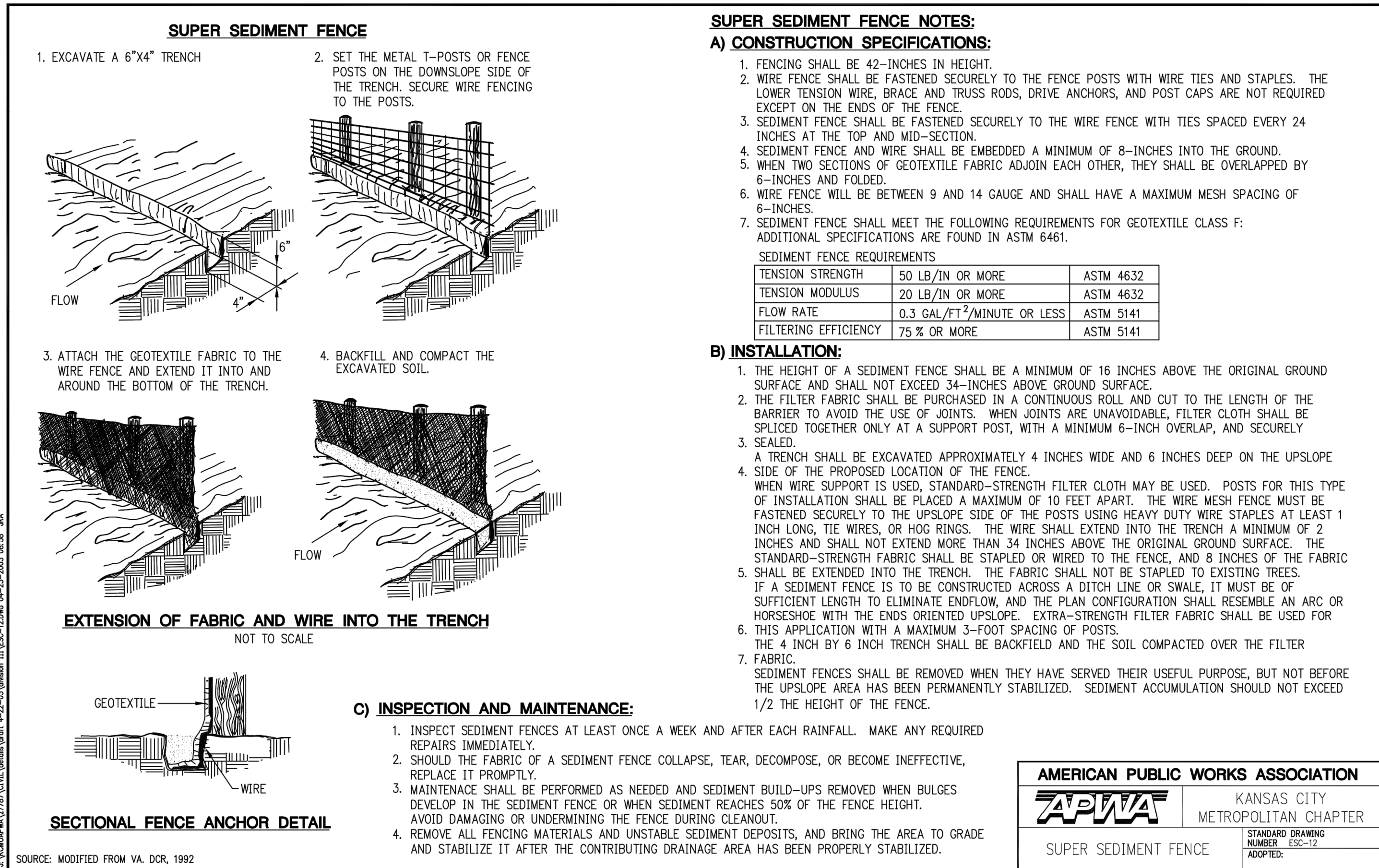
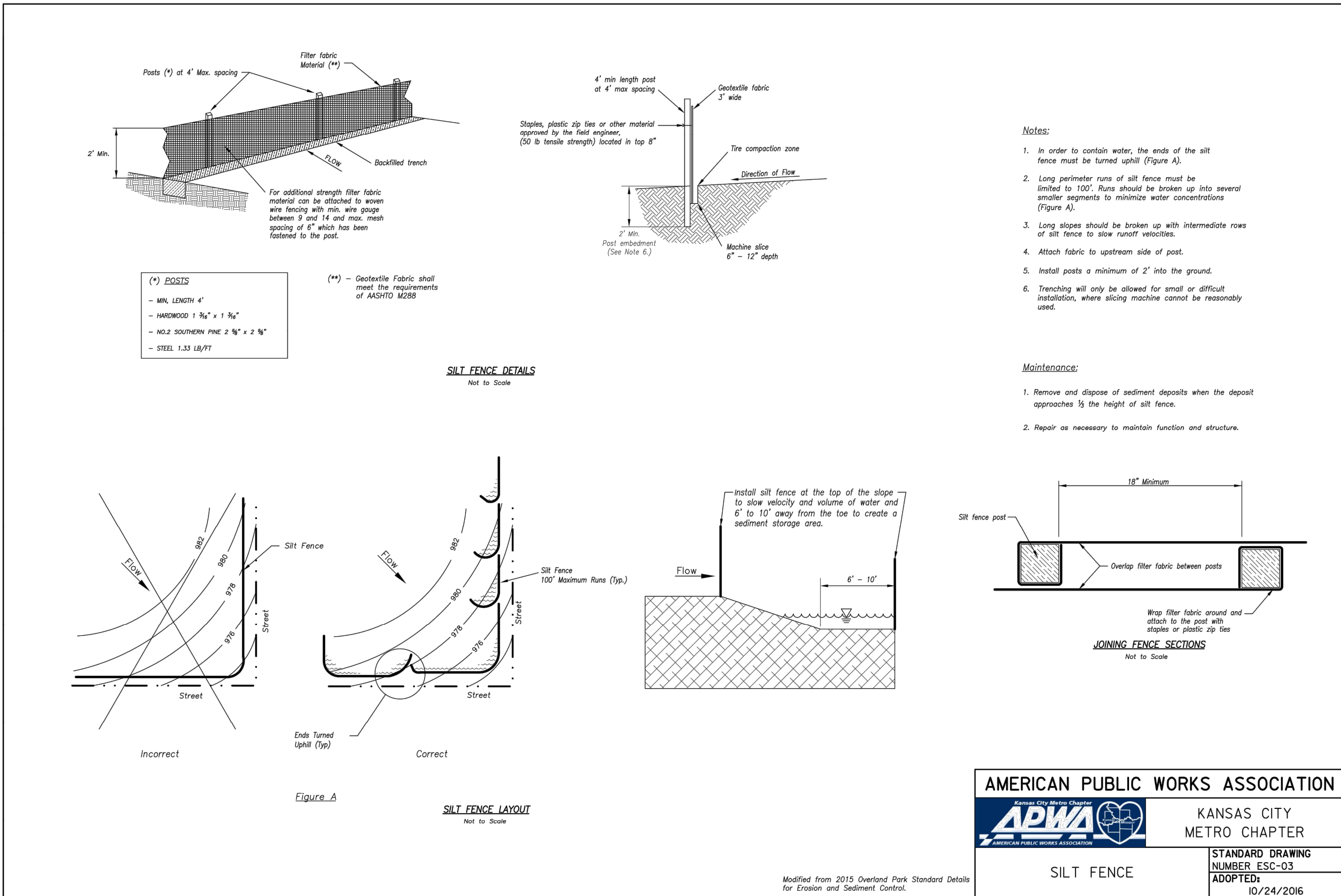
SITE SPECIFIC NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
2. THERE ARE NO WETLANDS, NATURAL OR ARTIFICIAL WATER STORAGE DETENTION AREAS IN THE PROJECT AREA.
3. NO PART OF THE PROJECT LIES WITHIN THE 100 YEAR FLOOD PLAIN PER FEMA FLOOD INSURANCE RATE MAP NUMBER 29095C0414G DATED JANUARY 20TH, 2017.
4. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IMPLEMENTED ACCORDING TO THE BMP STAGING CHART.
5. ADDITIONAL EROSION CONTROL MAY BE REQUIRED BY THE CITY ENGINEER AT ANY TIME EXISTING MEASURES ARE FOUND TO BE INEFFECTIVE OR PROBLEMATIC AREAS ARE NOTED IN THE FIELD.
6. STABILIZATION OF DISTURBED AREAS MUST, AT A MINIMUM, BE INITIATED IMMEDIATELY WHENEVER ANY CLEARING, GRADING, EXCAVATING, OR OTHER SOIL DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE, OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. THE DISTURBED AREAS SHALL BE PROTECTED FROM EROSION BY STABILIZING THE AREA WITH MULCH OR OTHER SIMILARLY EFFECTIVE SOIL STABILIZING BMPs. INITIAL STABILIZATION ACTIVITIES MUST BE COMPLETED WITHIN 14 DAYS AFTER SOIL DISTURBING ACTIVITIES CEASE.
7. ALL PERIMETER SILT FENCE, EARTH DIKES, SEDIMENT BASINS, AND ROCK CONSTRUCTION ENTRANCES WILL BE INSTALLED BEFORE GRADING OPERATIONS BEGIN.
8. SILT FENCE AND EARTH DIKES THAT ARE PLACED BEFORE GRADING BEGINS WILL BE MAINTAINED BY THE GRADING CONTRACTOR.
9. AREAS WITHIN PUBLIC RIGHT-OF-WAY SHALL BE SODDED IMMEDIATELY AFTER CONSTRUCTION IS COMPLETE.

FINAL STABILIZATION	CONSTRUCTION PHASE	PRE-CLEARING PHASE
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BAL	02.12.2020
BY	DATE

POST
CONSTRUCTION
EROSION
CONTROL



CONFORMING TO CONSTRUCTION RECORDS.

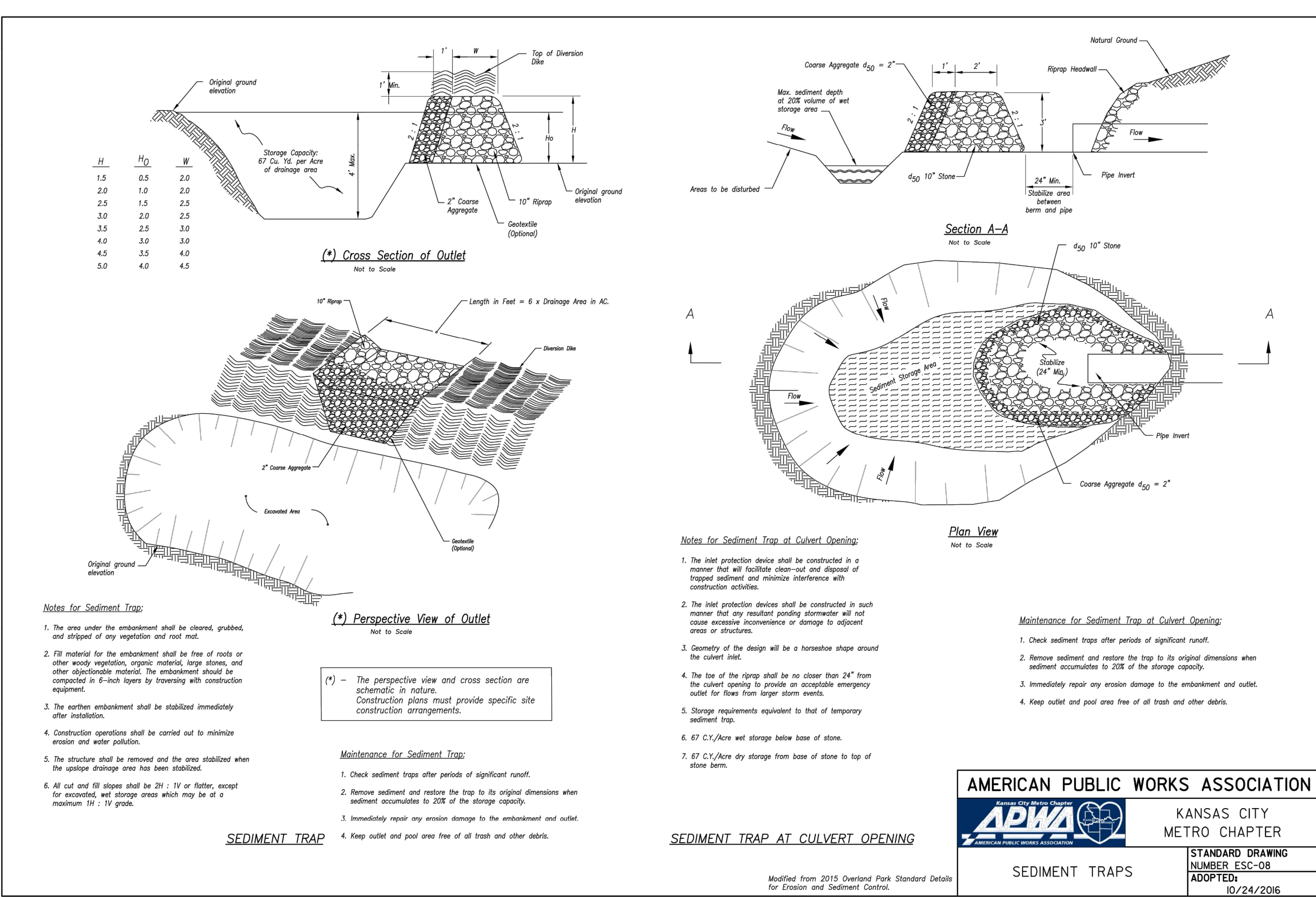
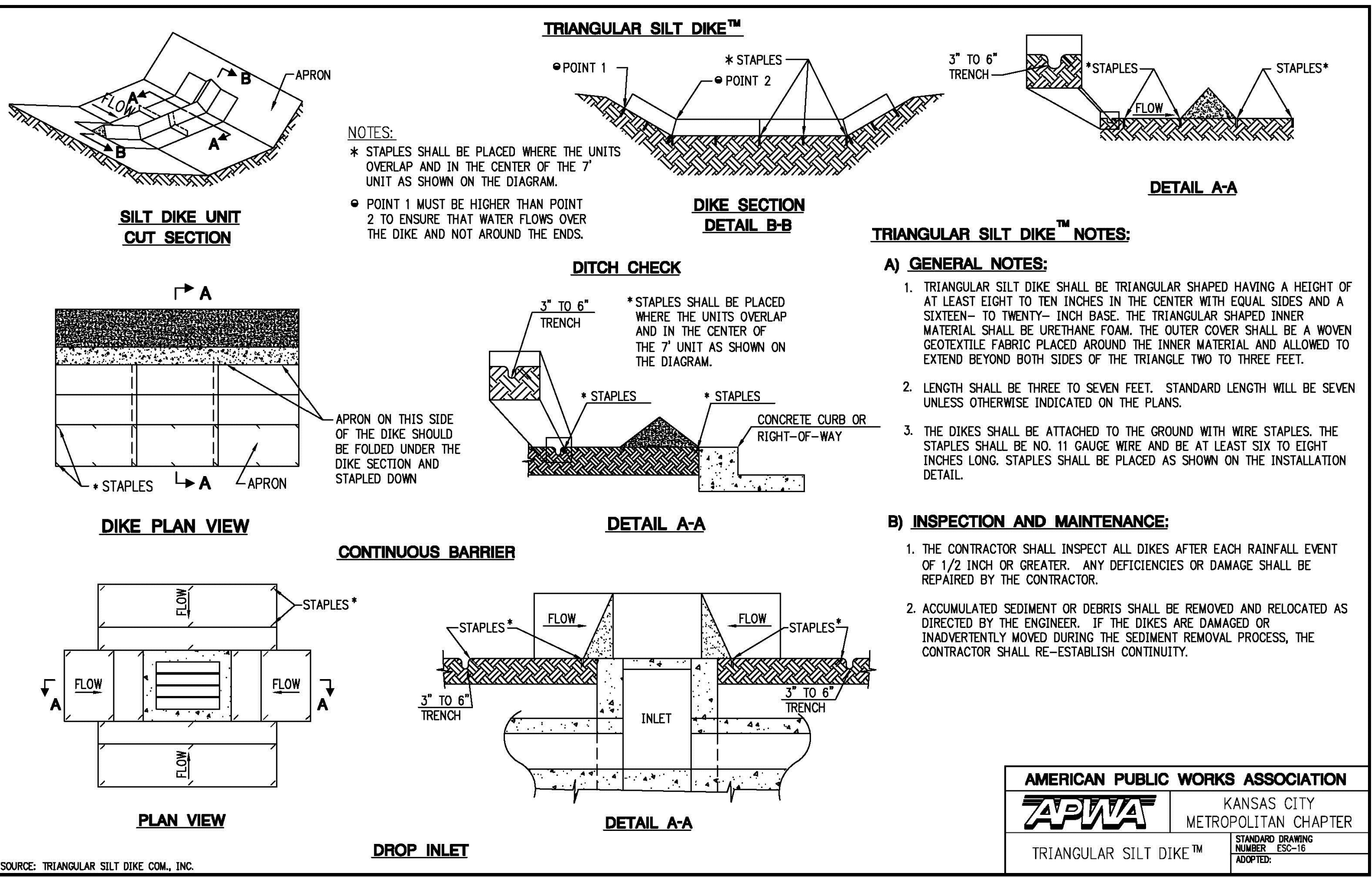
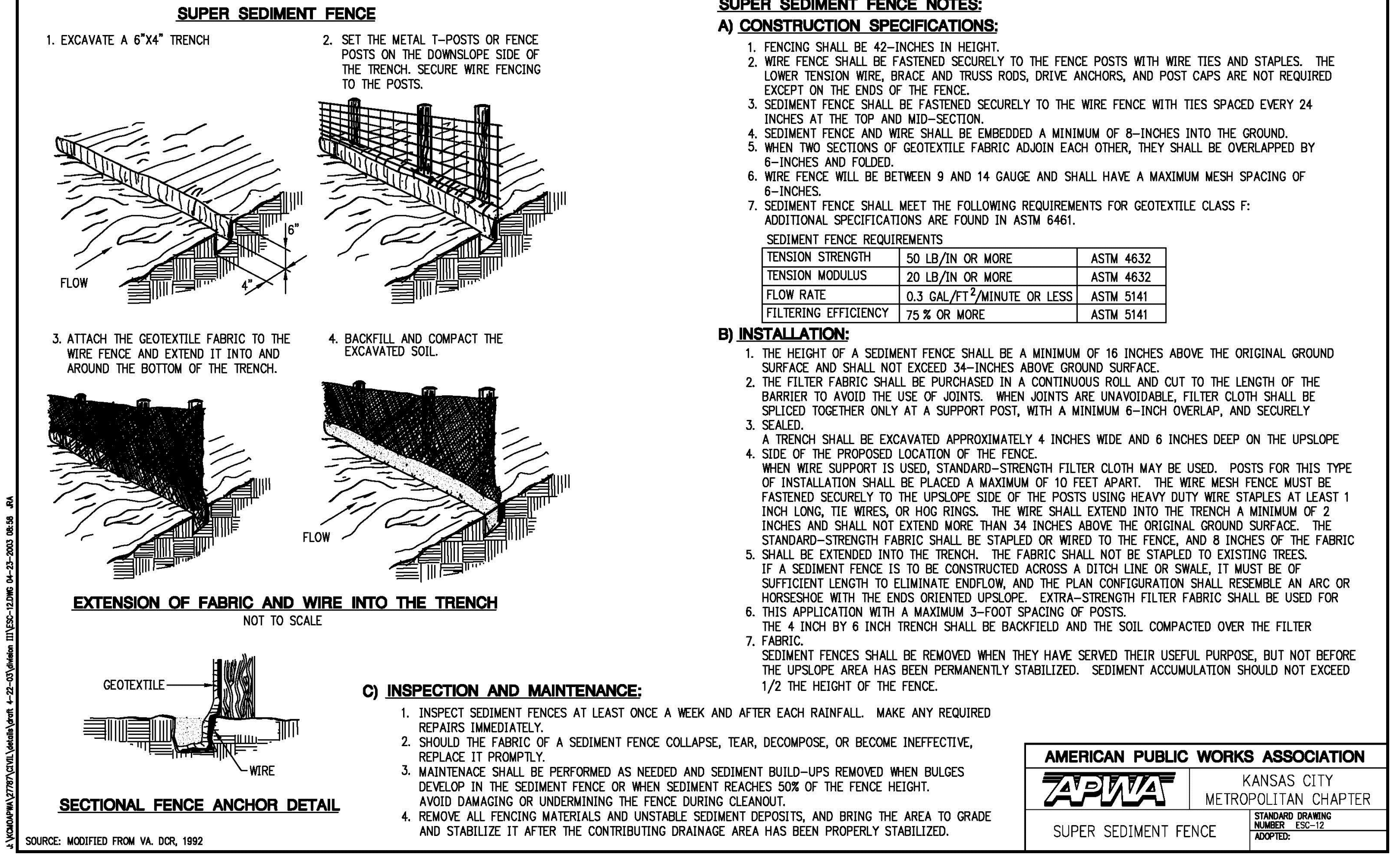
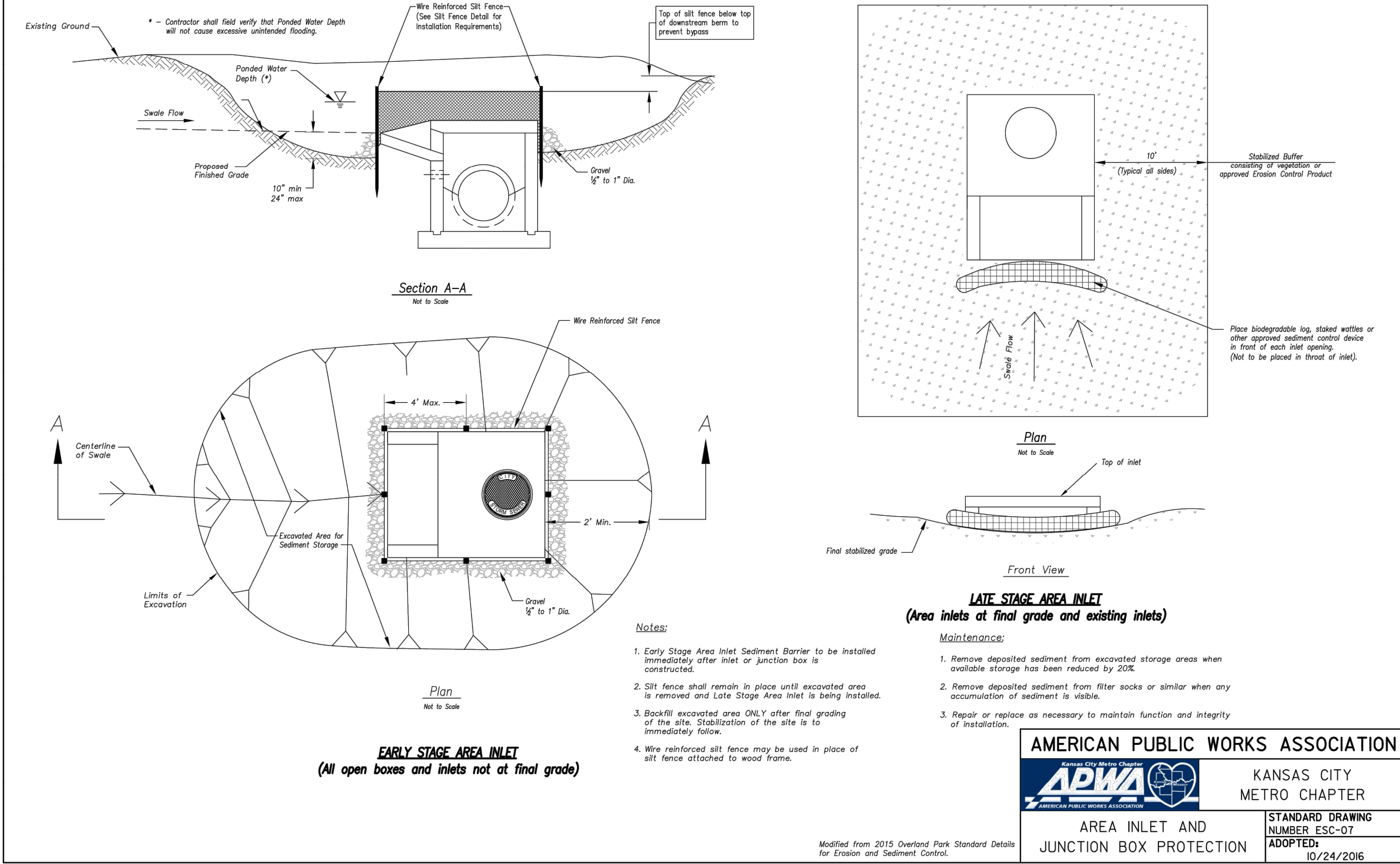
BAL 02.12.2020
BY DATE

PERGOLA PARK 4TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
PLAN & EROSION AND SEDIMENT CONTROL
- LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
6-26-19	CITY COMMENTS
7-30-19	CITY COMMENTS
2-12-2020	AS-BUILTS
4-15-19	DATE PREPARED
19-002	PROJ. NUMBER

SHEET
10
OF 28

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#E2002003600-F #LAC2001005237 #LS2002008659-F



NOTE:

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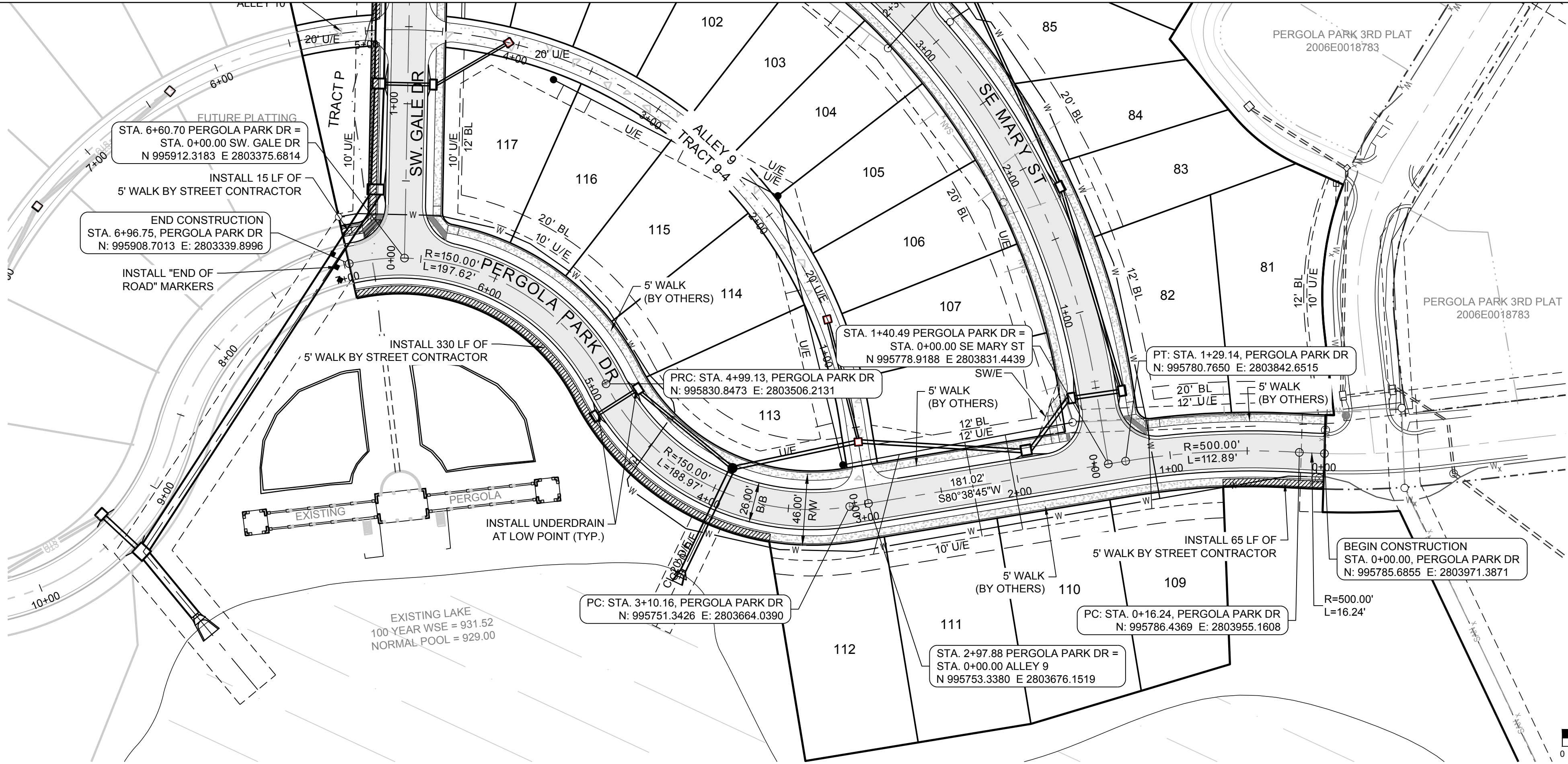
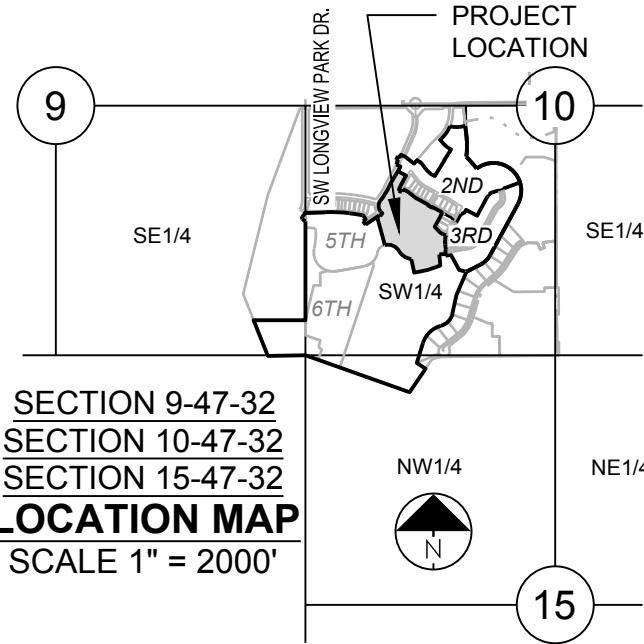
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BM JA-148, IS A STAMPED KC METRO DISK SET IN CONCRETE LOCATED 2 MILES WEST OF THE INTERSECTION OF HIGHWAY 50 AND 3RD ST. IT IS 44 FT NORTH OF THE CENTER OF 3RD ST. AND 102.5 FT WEST OF THE CENTER OF THE EXIT FROM THE ADJACENT PARKING LOT.

PROJECT BENCHMARK:

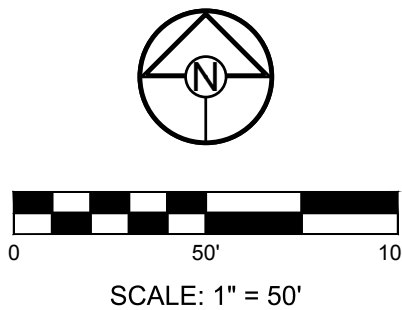
CHISELED "SQUARE" ON STORM CURB INLET AT NORTHWEST INTERSECTION OF SW. TOWER PARK DRIVE AND SW. LONGVIEW BOULEVARD.

NORTHING: 998893.4148
EASTING: 2803318.5413
ELEV. 1004.09

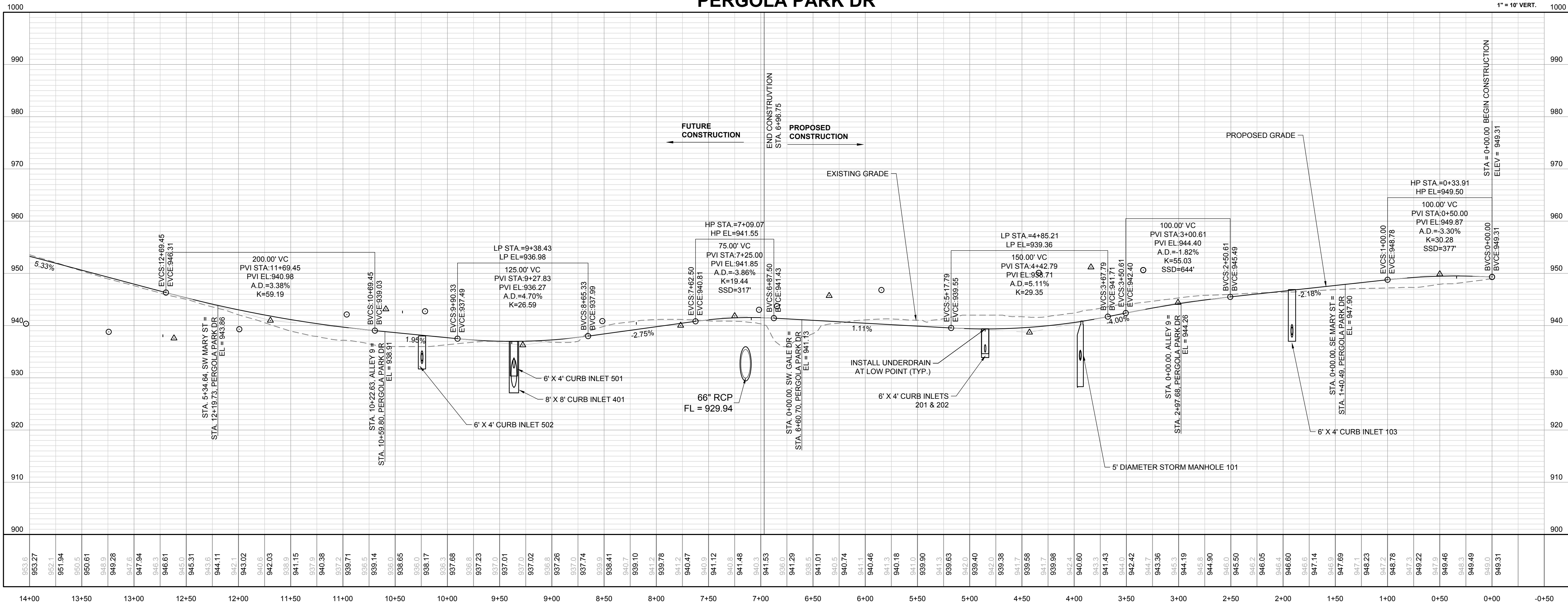


CONFORMING TO CONSTRUCTION RECORDS.

BAL 02.12.2020
BY DATE



PERGOLA PARK DR



PERGOLA PARK 4TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
PLAN & EROSION AND SEDIMENT CONTROL
- LEE'S SUMMIT, MISSOURI

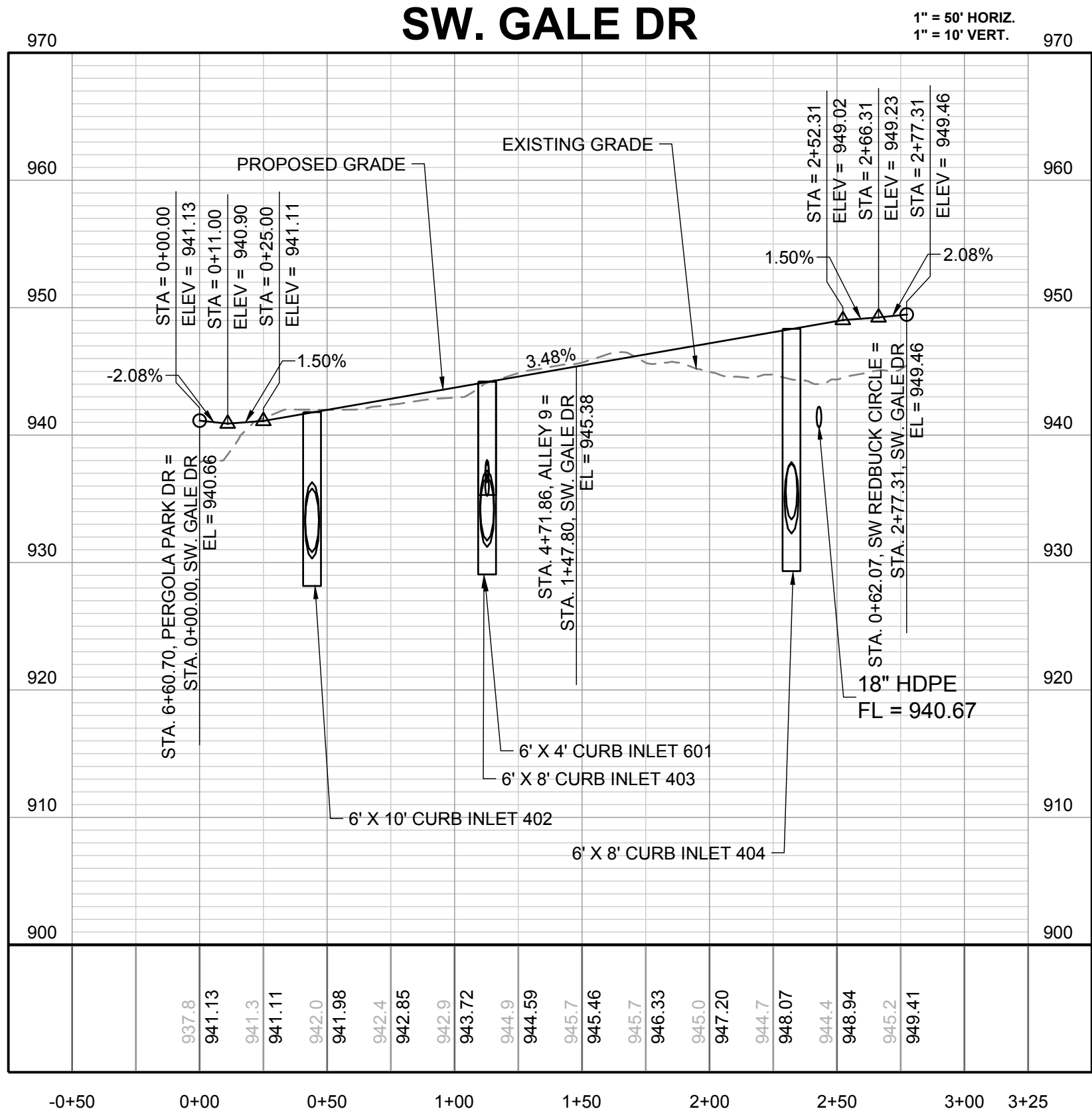
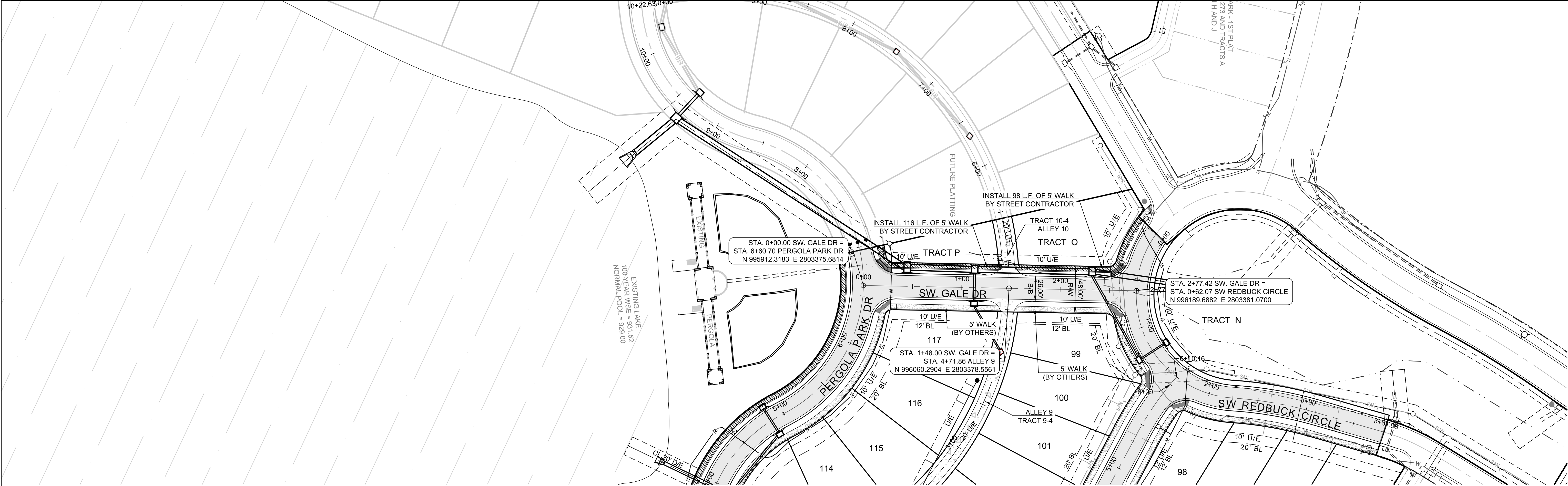
REVISION DATE	DESCRIPTION
6-26-19	CITY COMMENTS
7-30-19	CITY COMMENTS
2-12-2020	AS-BUILT

DRAWN BY:	BAL
CHECKED BY:	MAB
DATE PREPARED:	4-15-19
PROJ. NUMBER:	19-002

PERGOLA PARK DR

SHEET

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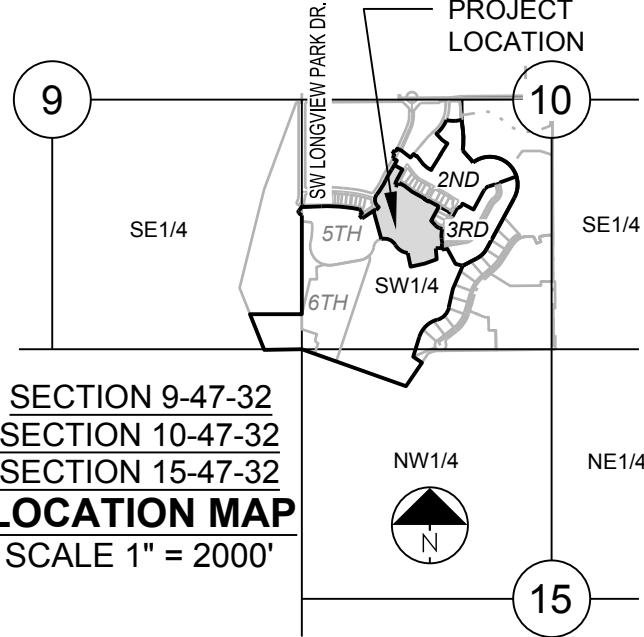


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CONFORMING TO CONSTRUCTION RECORDS.
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PERGOLA PARK 4TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
PLAN & EROSION AND SEDIMENT CONTROL
- LEE'S SUMMIT, MISSOURI

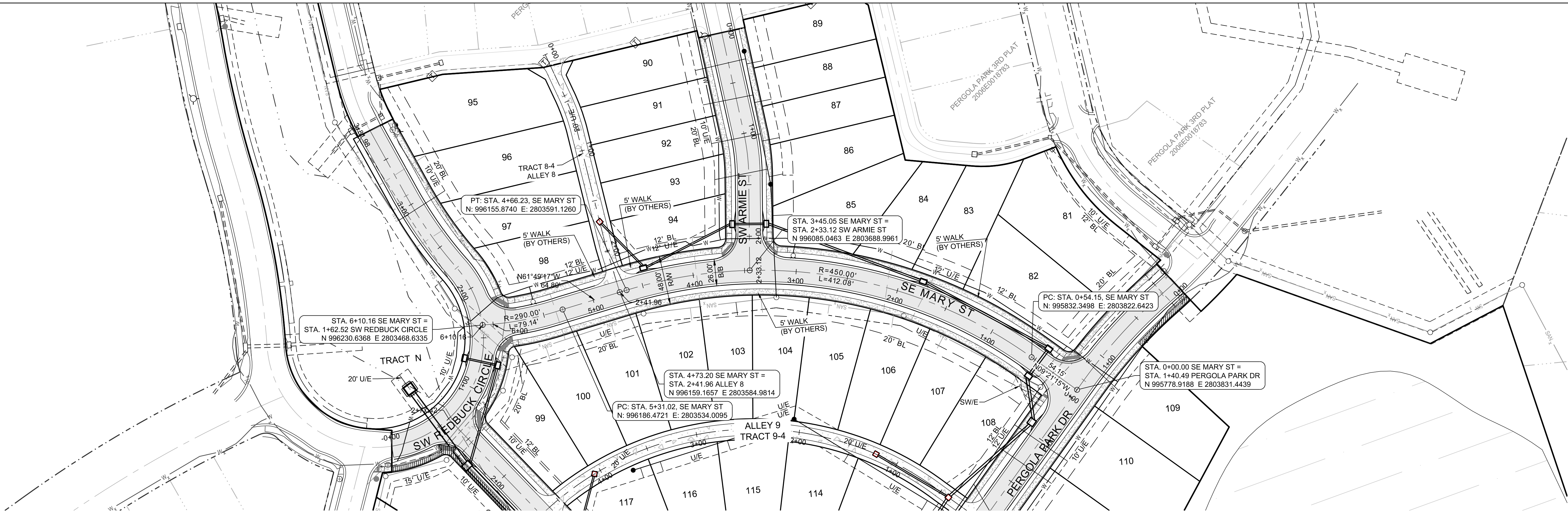
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6-26-19	CITY COMMENTS
7-30-19	CITY COMMENTS
2-12-2020	AS-BUILT

DRAWN BY:	DESCRIPTION
BAL	CITY COMMENTS
CHECKED BY:	CITY COMMENTS
MAB	AS-BUILT
DATE PREPARED:	
4-15-19	
PROJ. NUMBER:	
19-002	

GALE DR.

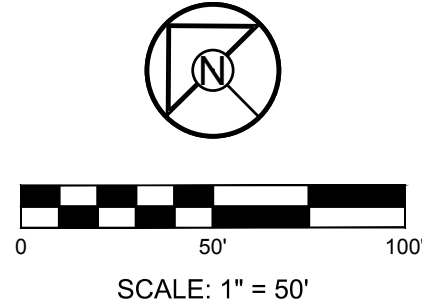
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OF 28

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CONFORMING TO CONSTRUCTION
RECORDS.

BAL 02.12.2020
BY DATE

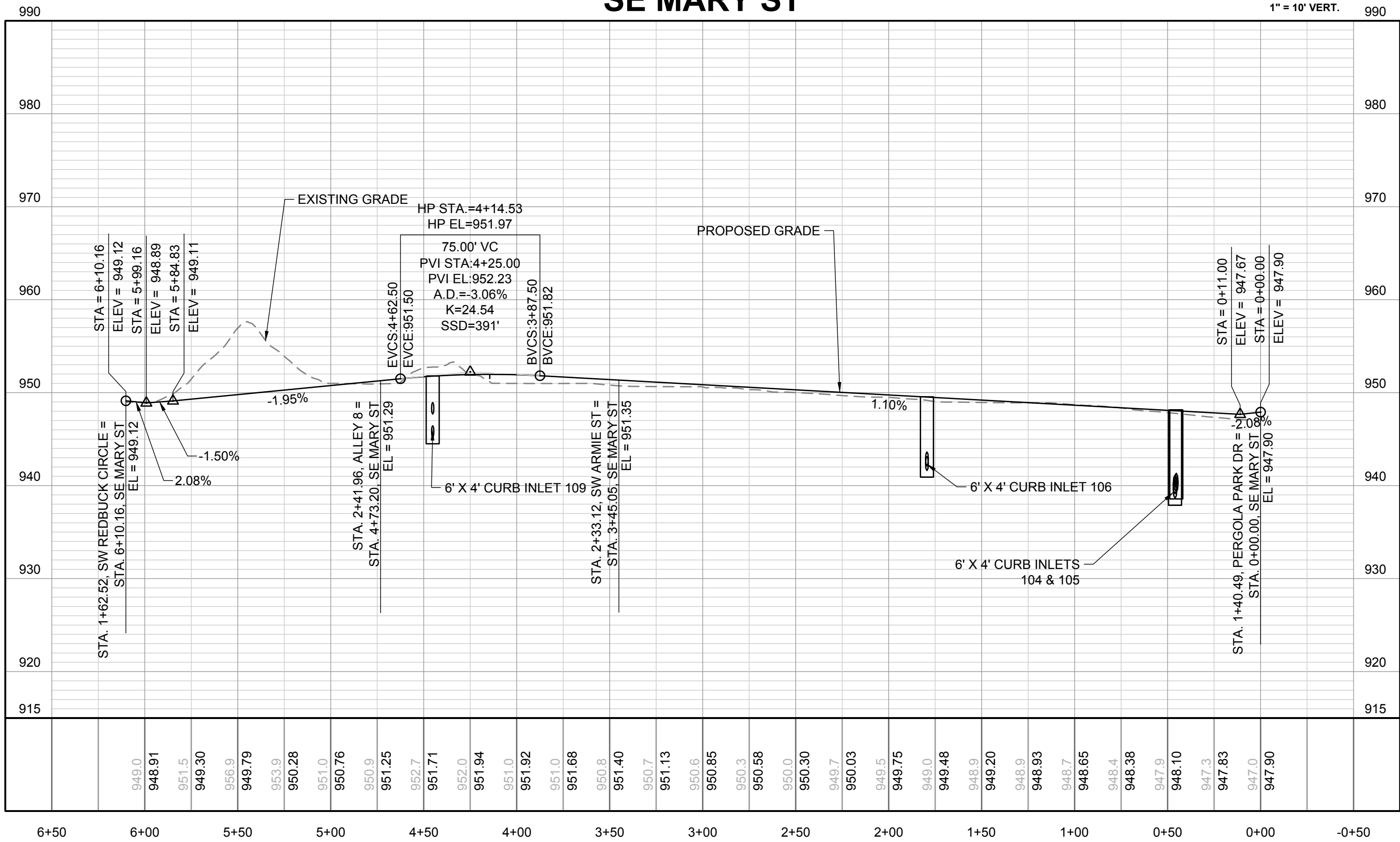


NOTE:

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SE MARY ST

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



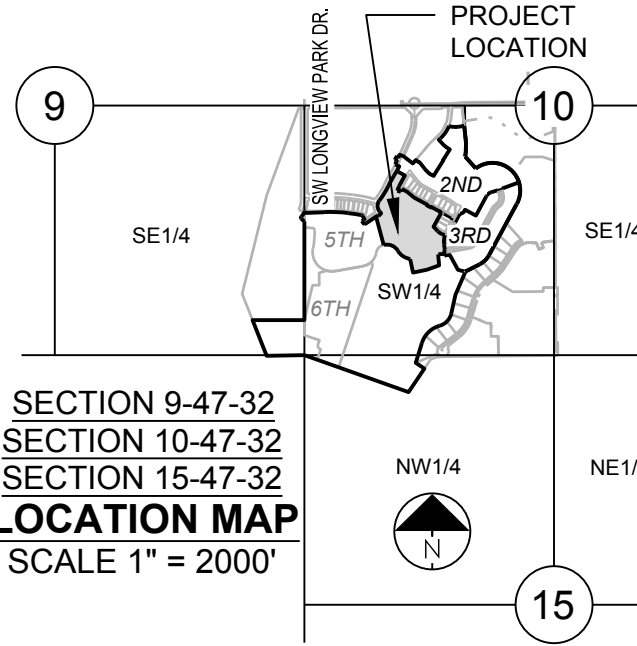
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PROJECT BENCHMARK:

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INTERSECTION OF SW. TOWER PARK DRIVE AND SW. LONGVIEW
BOULEVARD.

NORTHING: 998893.4148
EASTING: 2803318.5413
ELEV. 1004.09



PERGOLA PARK 4TH PLAT STREET, STORMWATER, MASTER DRAINAGE PLAN & EROSION AND SEDIMENT CONTROL - LEE'S SUMMIT, MISSOURI

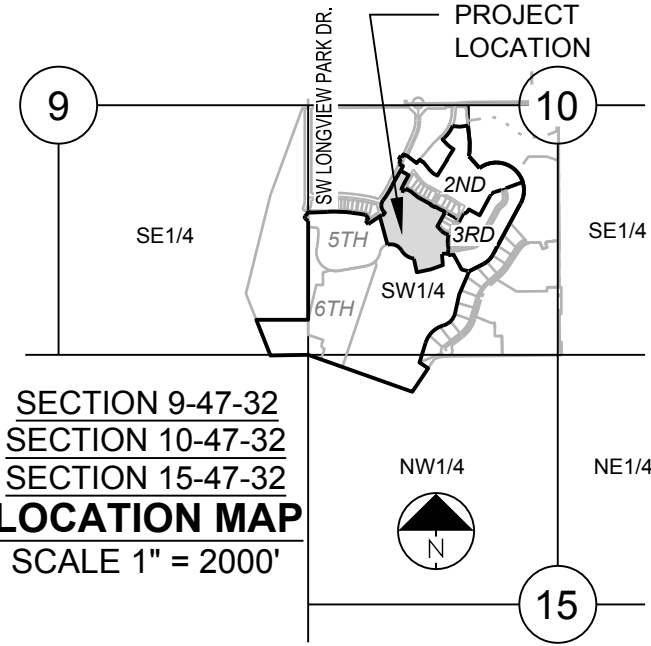
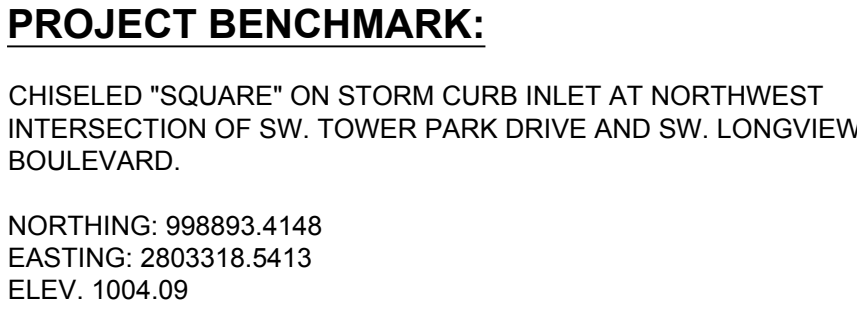
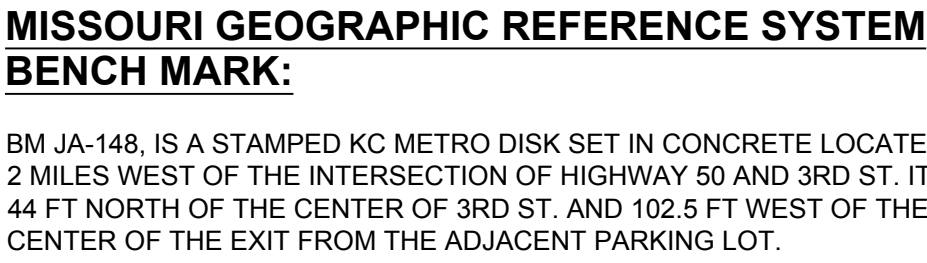
REVISION DATE	DESCRIPTION
6-26-19	CITY COMMENTS
7-30-19	CITY COMMENTS
2-12-2020	AS-BUILT

DRAWN BY:	BAL
CHECKED BY:	MAB
DATE PREPARED:	4-15-19
PROJ. NUMBER:	19-002

SE MARY ST

SHEET

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OF 28



CONFORMING TO CONSTRUCTION
RECORDS.

BAL	02.12.2020
BY	DATE



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PERGOLA PARK 4TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
PLAN & EROSION AND SEDIMENT CONTROL
- LEE'S SUMMIT, MISSOURI

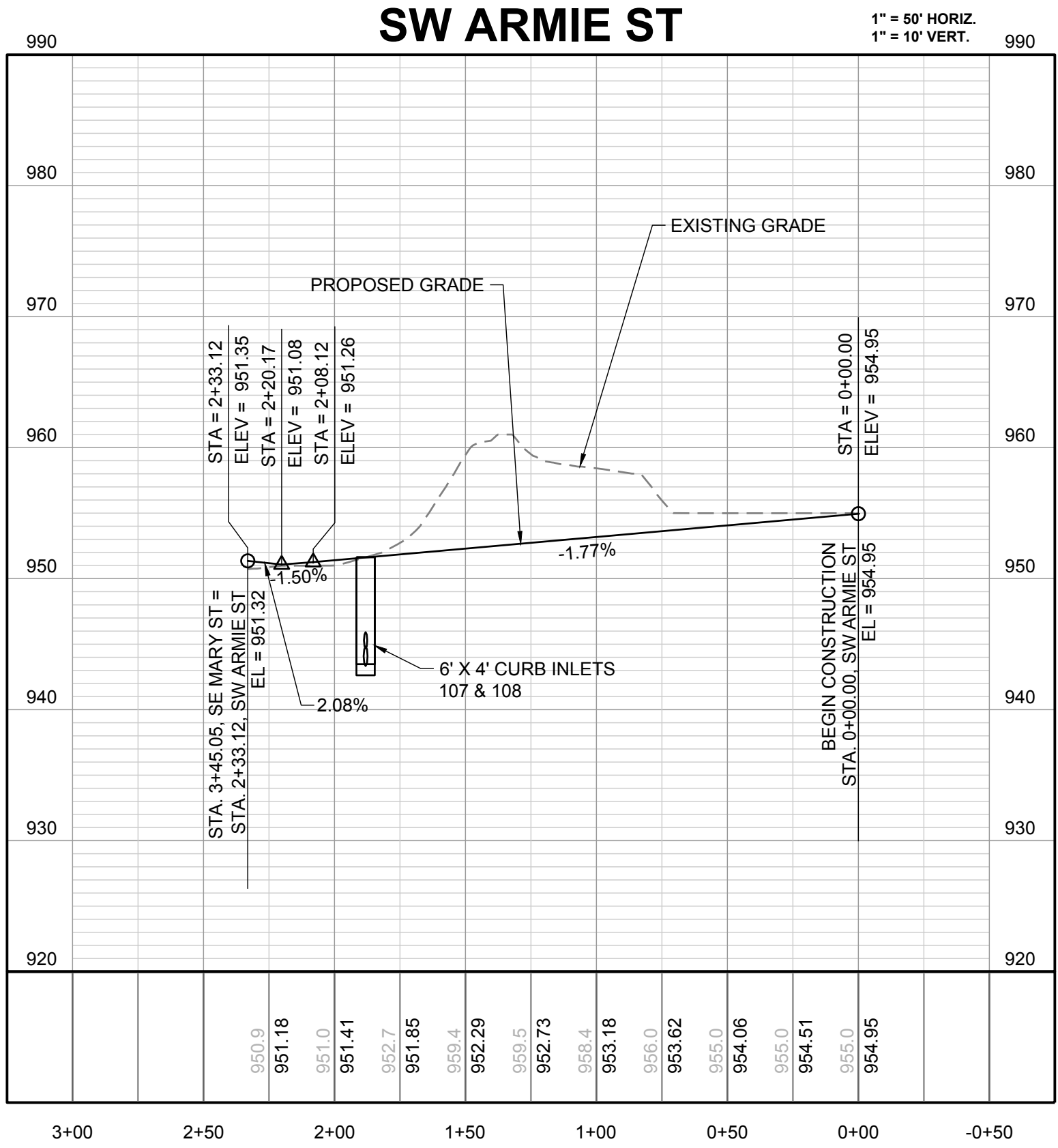
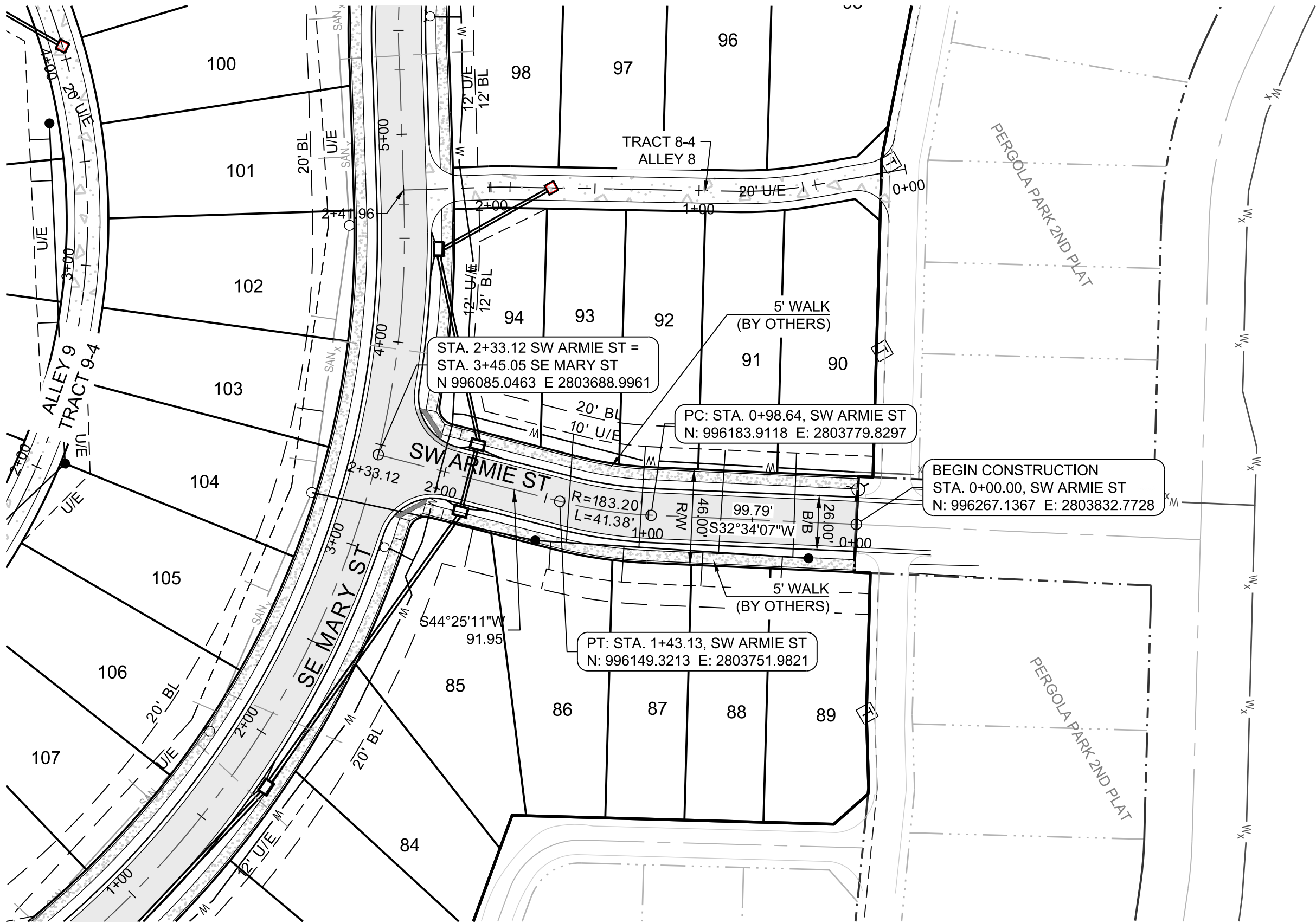
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PROJ. NUMBER:		9 19-002	

SW REDBUCK CR

SHEET

16

OF 28

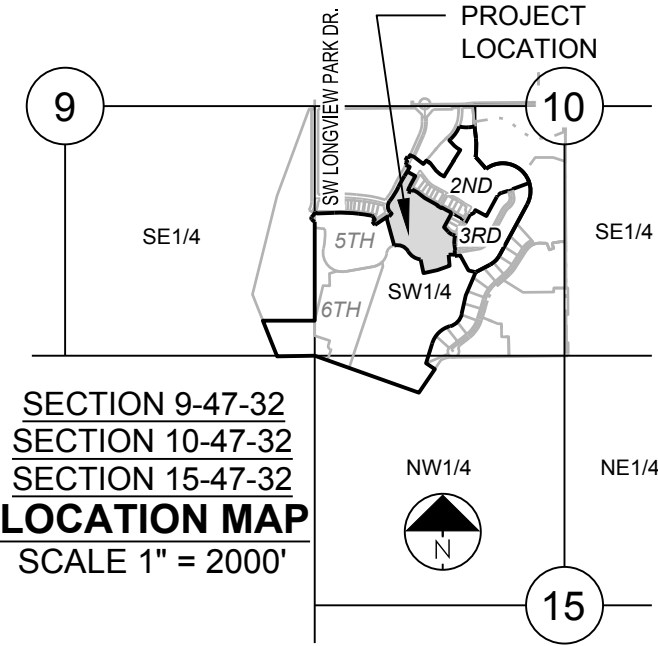


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NORTHING: 998893.4148
EASTING: 2803318.5413
ELEV: 1004.09



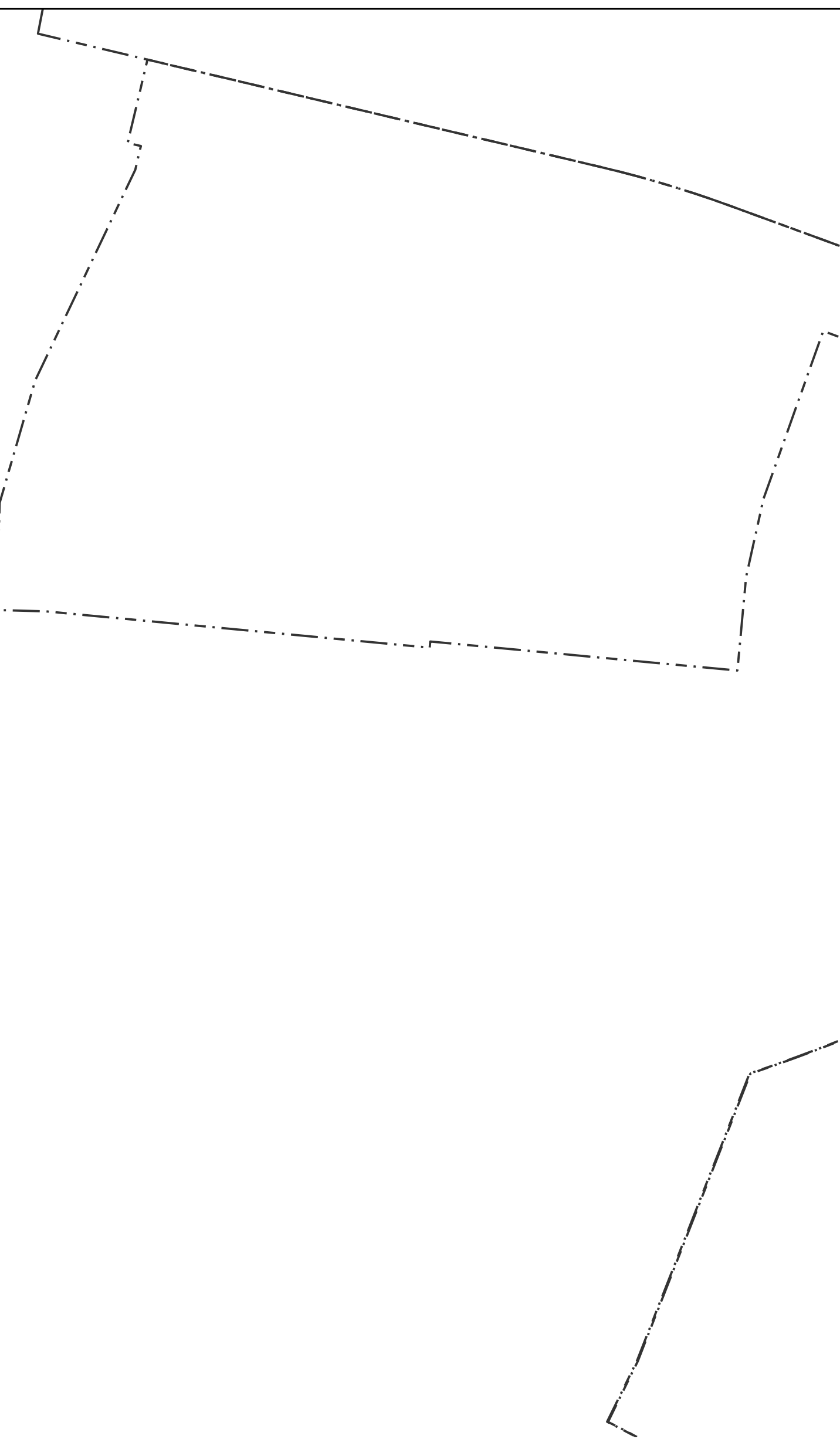
CONFORMING TO CONSTRUCTION RECORDS.

BAL 02.12.2020
BY DATE

**PERGOLA PARK 4TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
PLAN & EROSION AND SEDIMENT CONTROL
- LEE'S SUMMIT, MISSOURI**

REVISION DATE	DESCRIPTION
6-26-19	CITY COMMENTS
7-30-19	CITY COMMENTS
2-12-2020	AS-BUILT

SW.ARMIE ST



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BY	DATE



PERGOLA PARK 4TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
PLAN & EROSION AND SEDIMENT CONTROL
- LEE'S SUMMIT, MISSOURI

DRAWN BY:		REVISION	DATE	DESCRIPTION
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		2	7-30-19	CITY COMMENTS
CHECKED BY:		3	2-12-2020	AS-BUILT
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4-15-19		6		
		7		
PROJ. NUMBER:		8		
18-002		9		

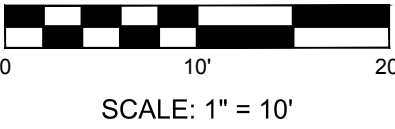
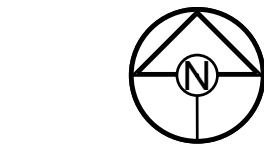
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SHEET

CONFORMING TO CONSTRUCTION RECORDS.

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BY

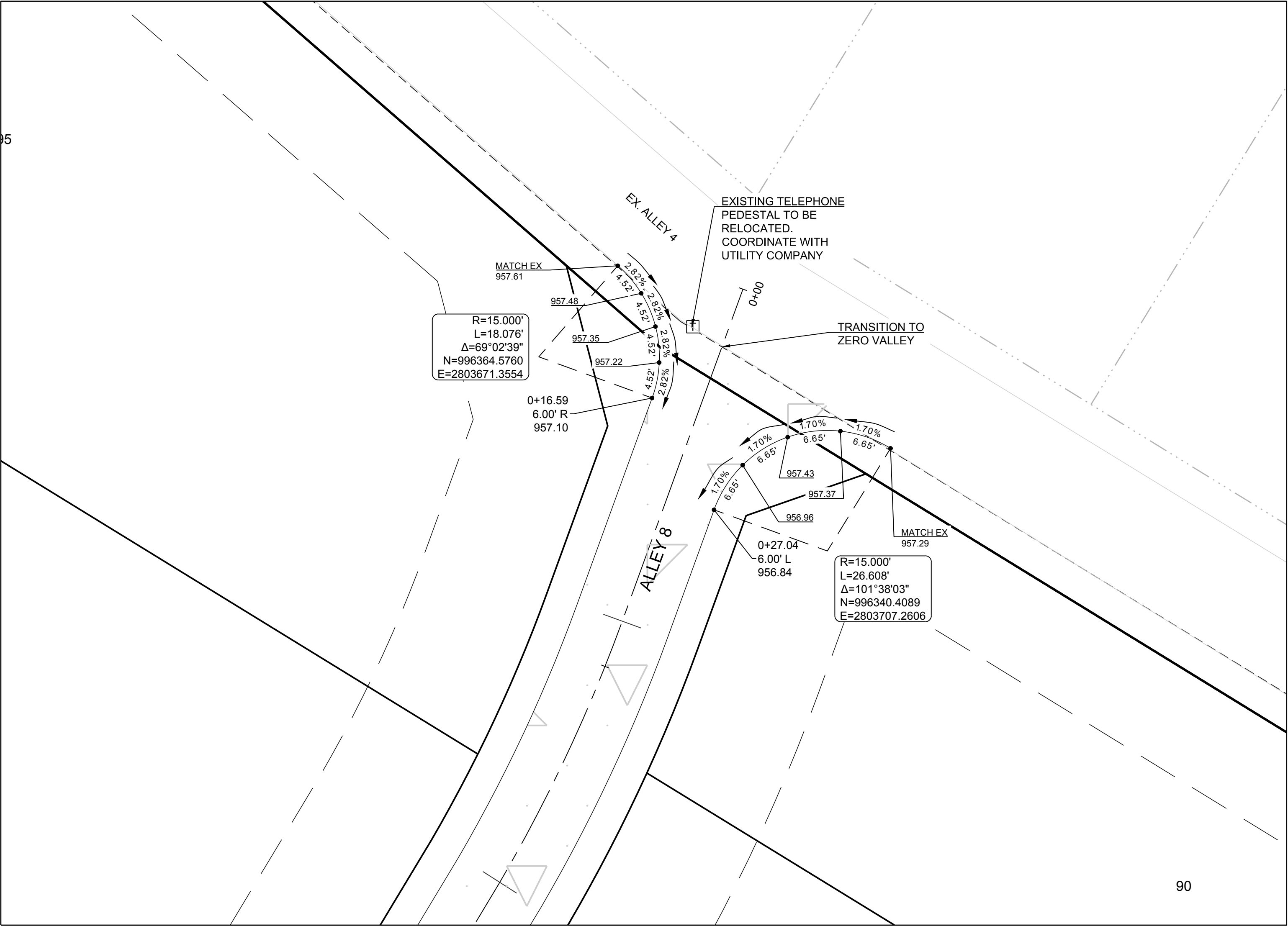
02.12.2020
DATE



INTERSECTION
DETAILS

SHEET

21
OF 28



PERGOLA PARK 4TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
PLAN & EROSION AND SEDIMENT CONTROL
- LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
1. 6-26-19	CITY COMMENTS
2. 7-30-19	CITY COMMENTS
3. 2-12-2020	AS-BUILT
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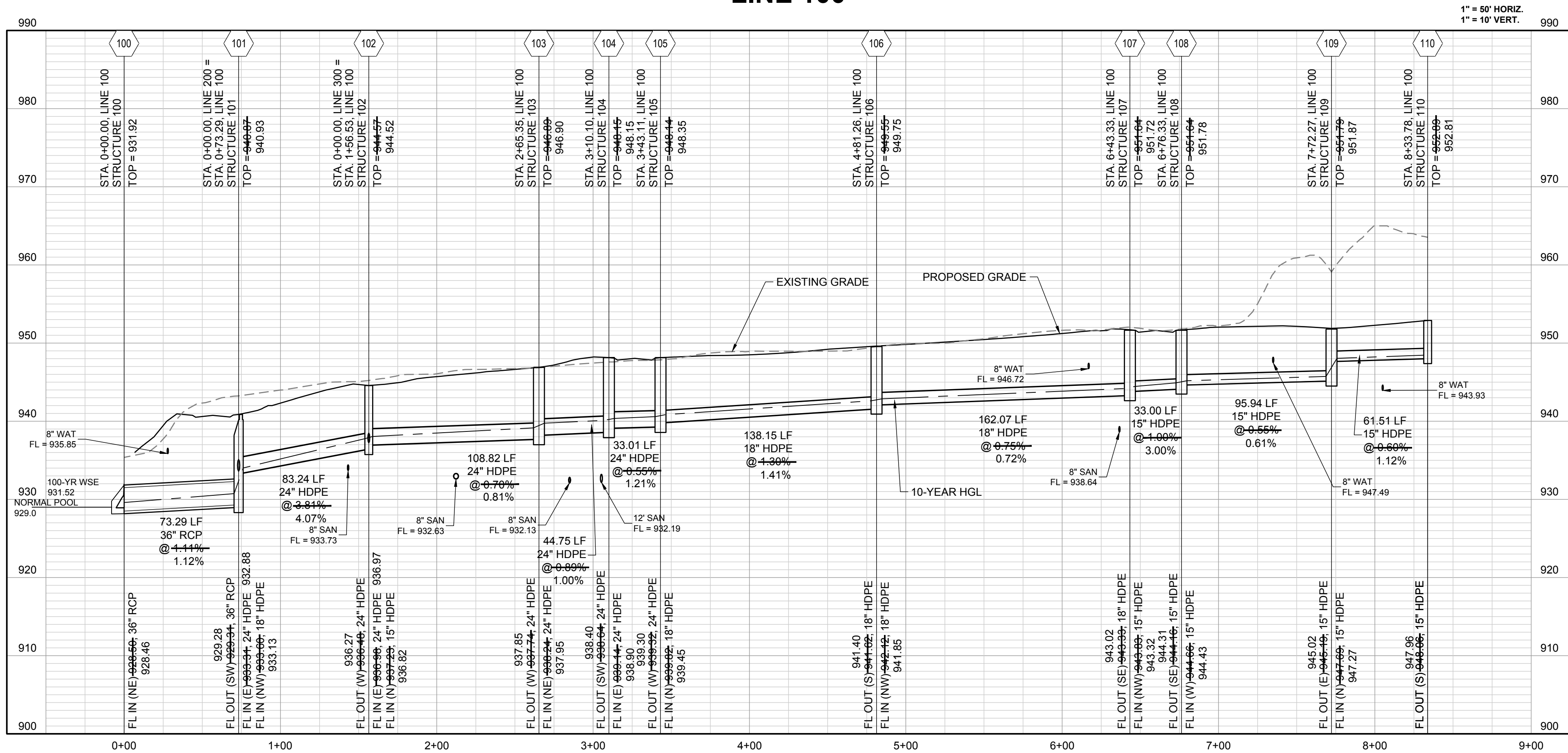
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DATE PREPARED: 4-12-19	CITY COMMENTS
PROJ. NUMBER: 19-002	CITY COMMENTS



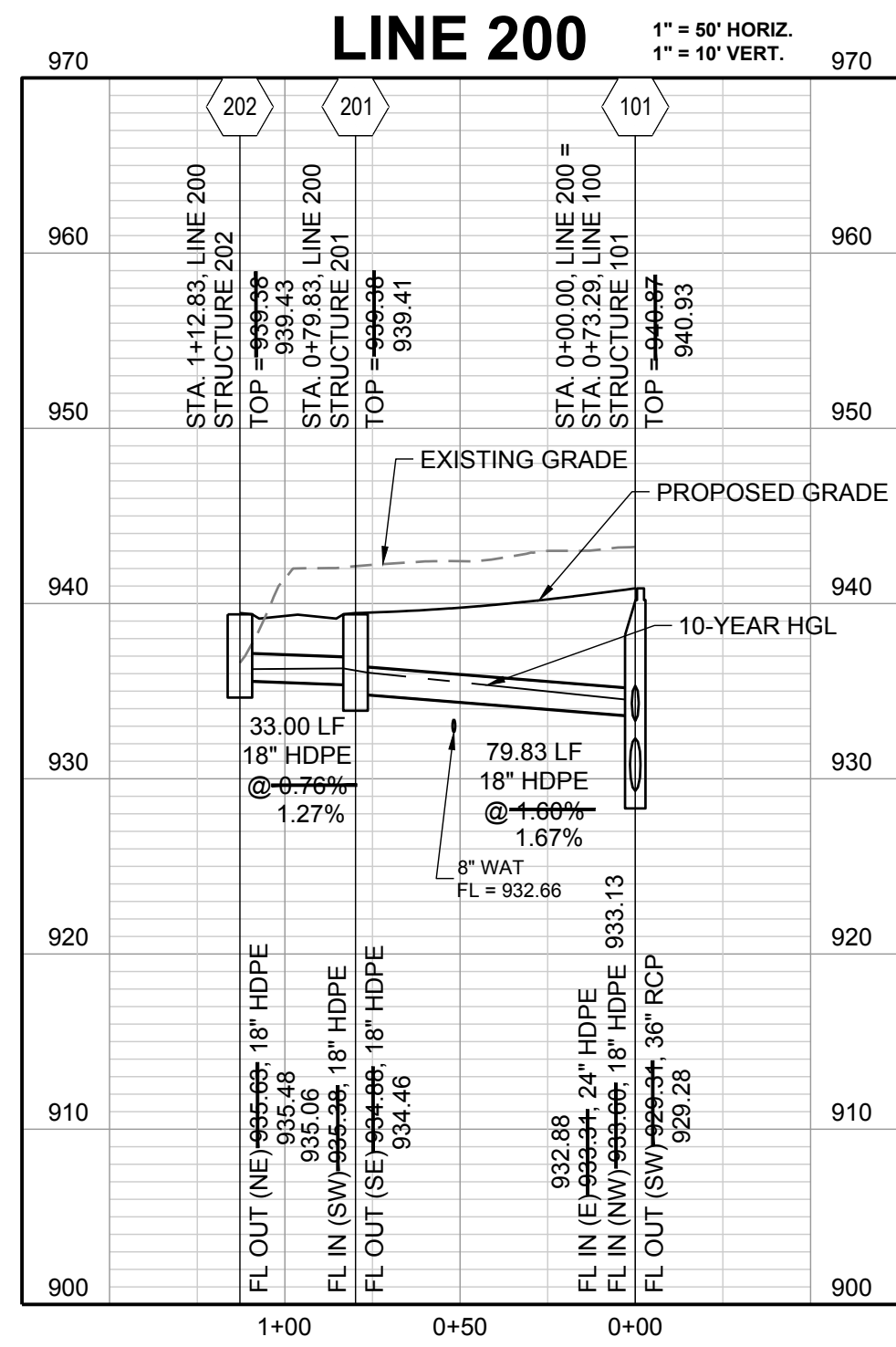
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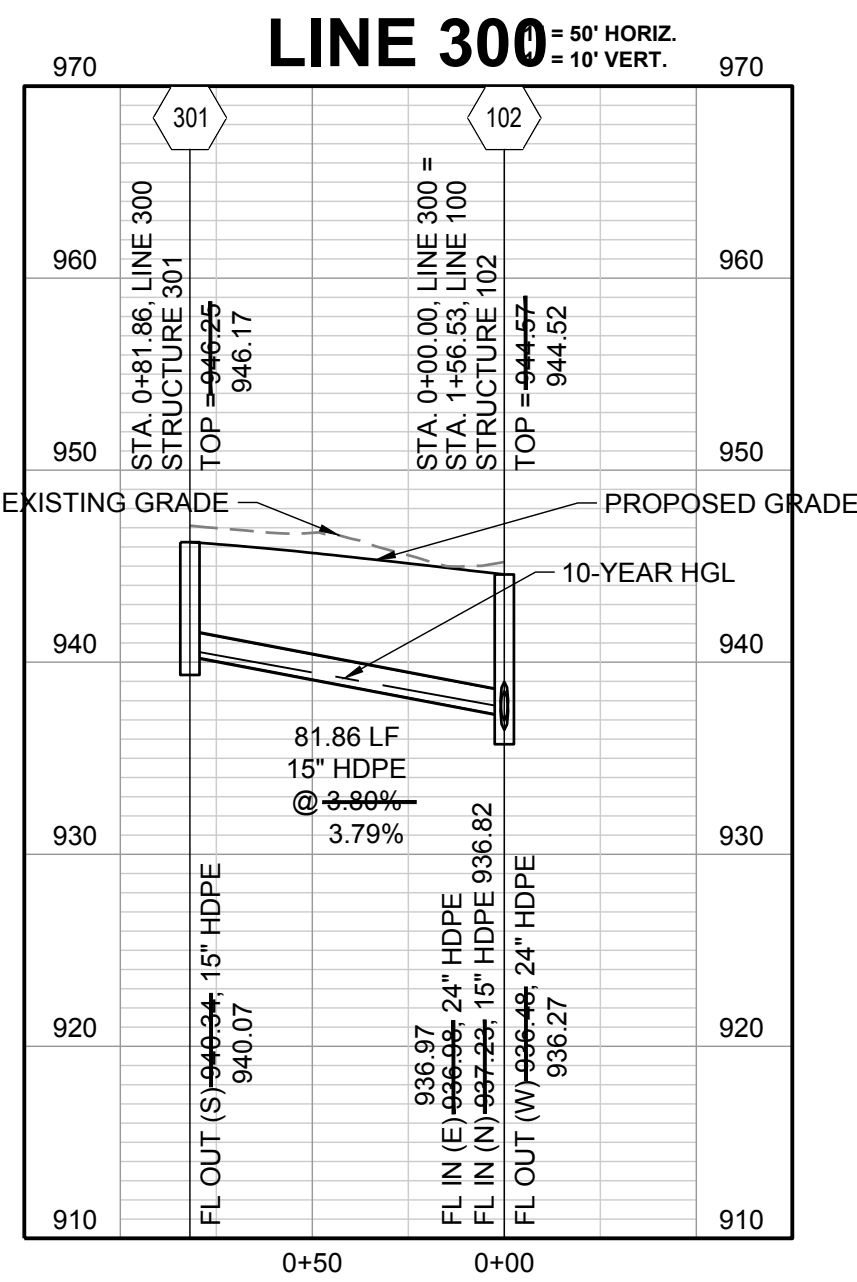
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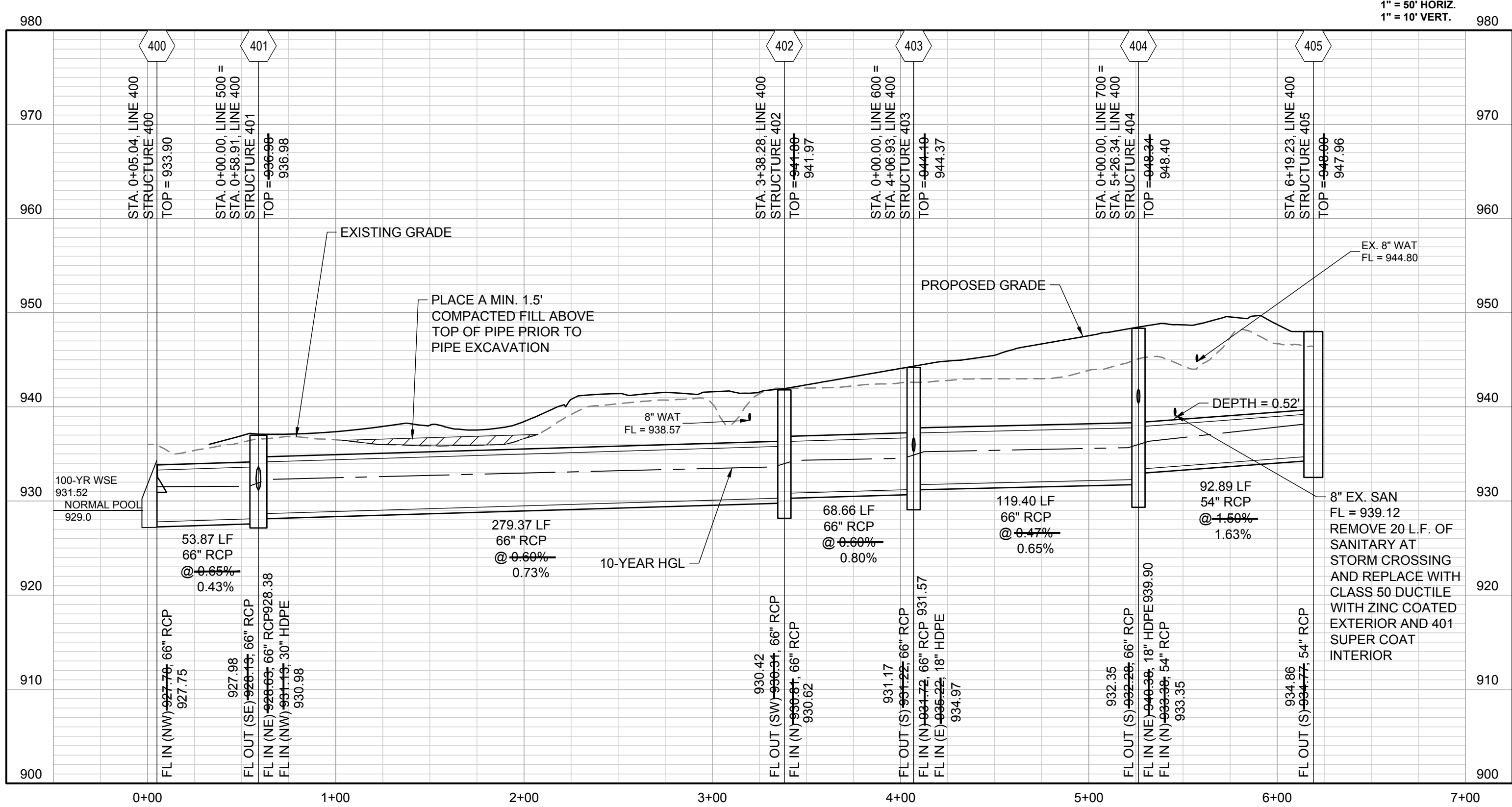
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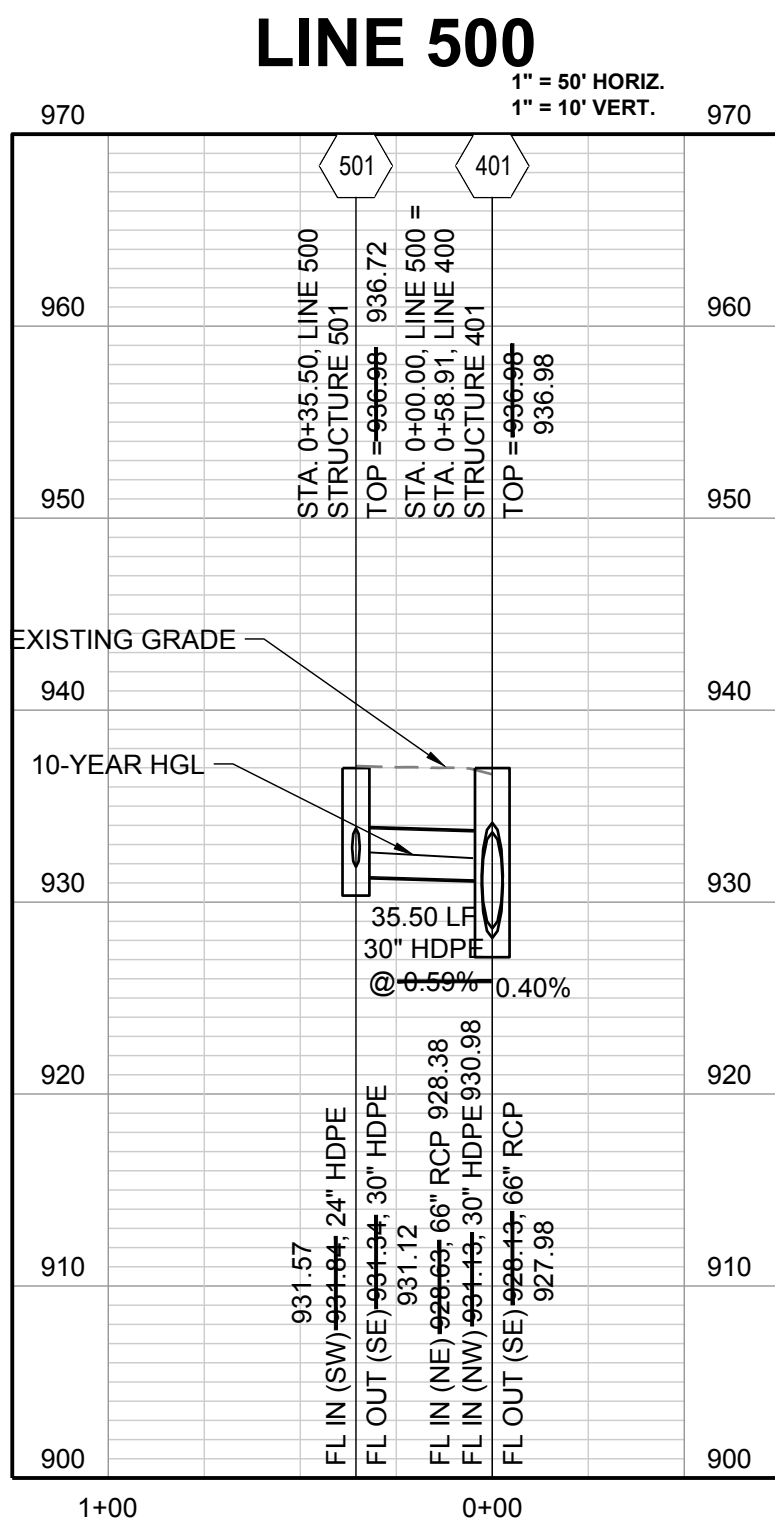
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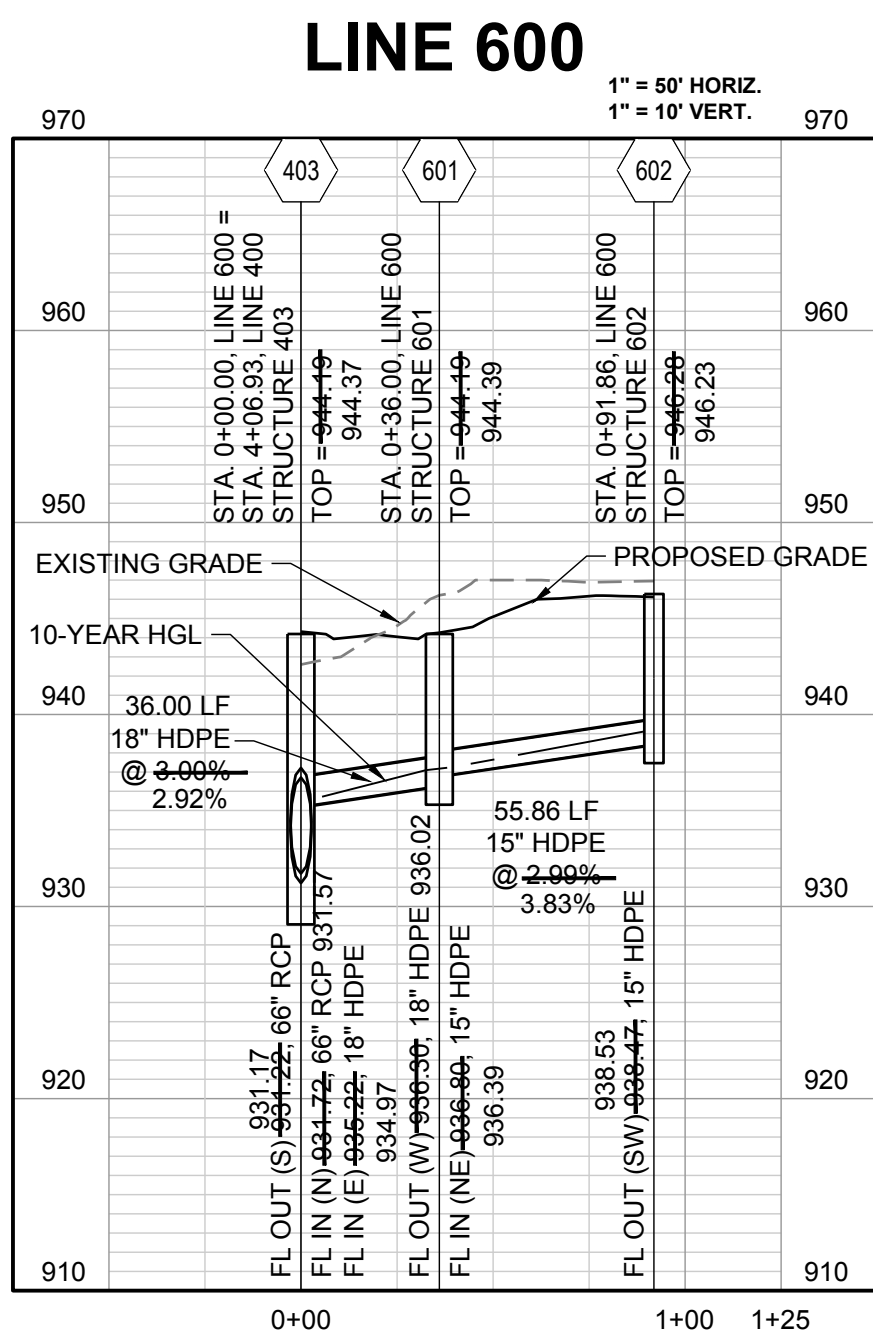
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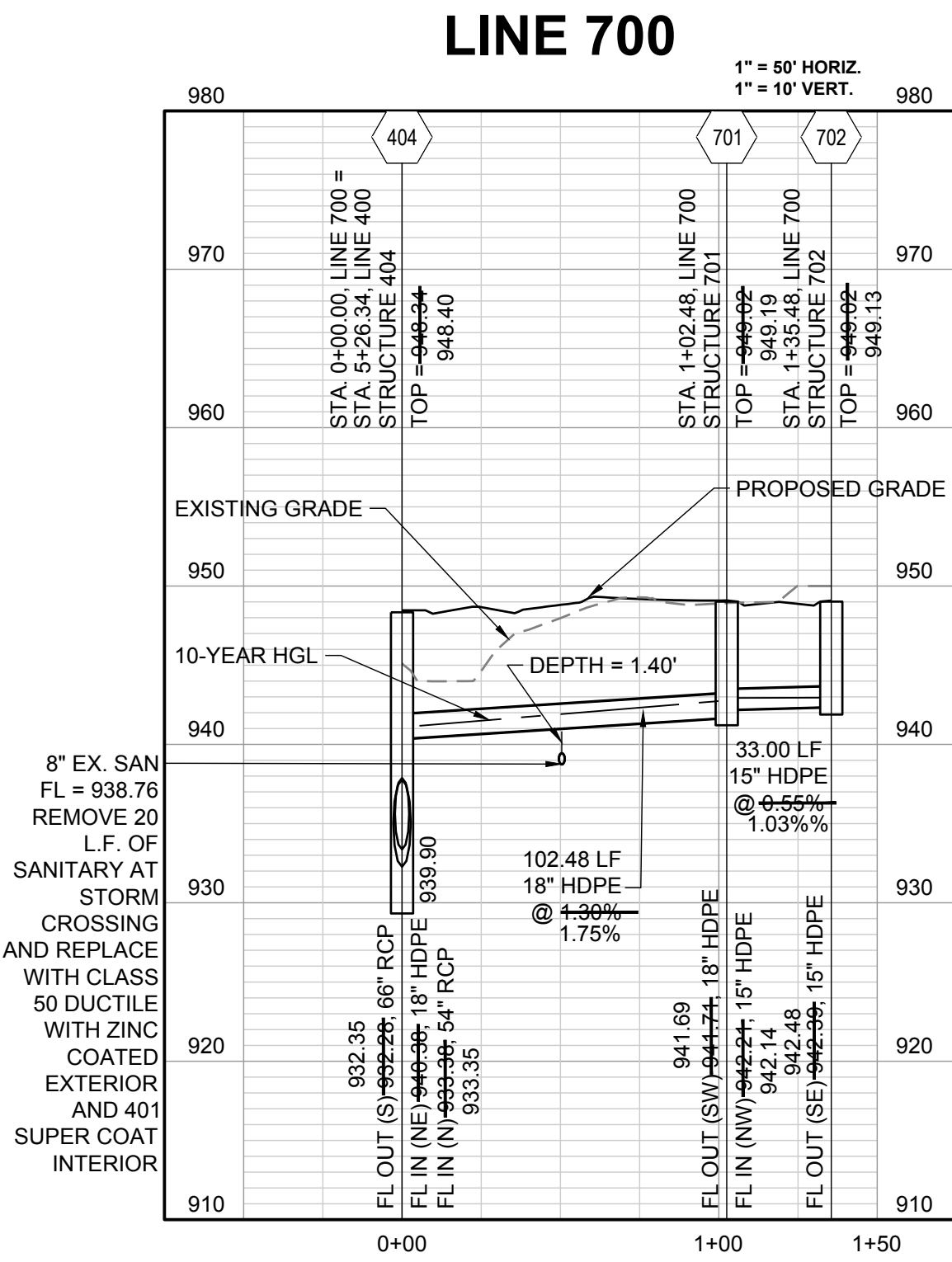
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LINE 600



LINE 700



CONFORMING TO CONSTRUCTION RECORDS.

BAL 02.12.2020
BY DATE

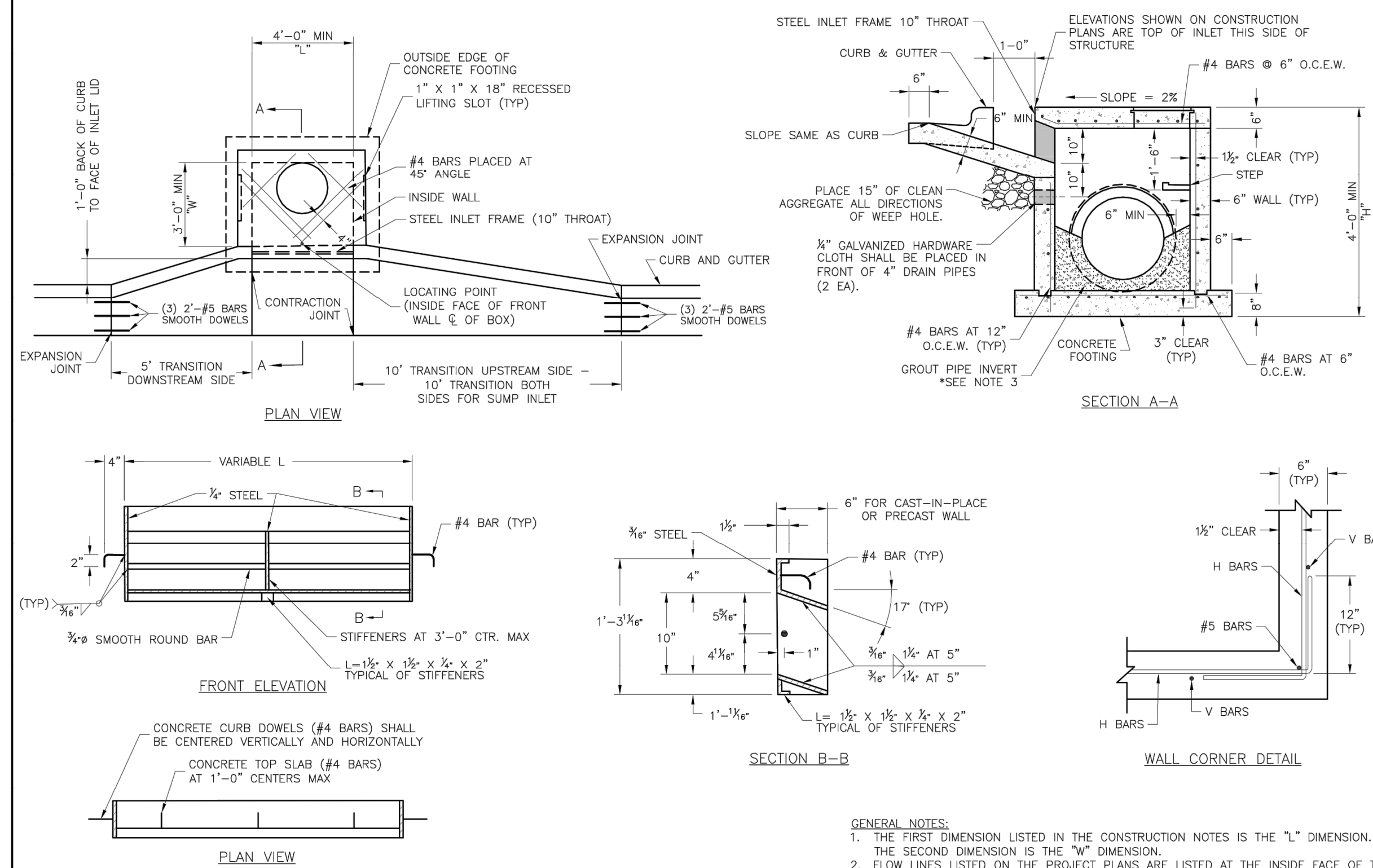
REVISION DATE	DESCRIPTION
6-26-19	CITY COMMENTS
7-30-19	CITY COMMENTS
2-12-2020	AS-BUILT

DRAWN BY:	CHECKED BY:	DATE PREPARED:	PROJ. NUMBER:
BAL	MAB	4-15-19	19-002

STORM PROFILES

SHEET

23
OF 28



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

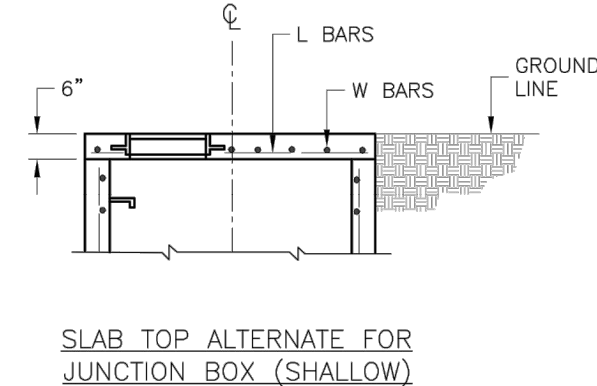
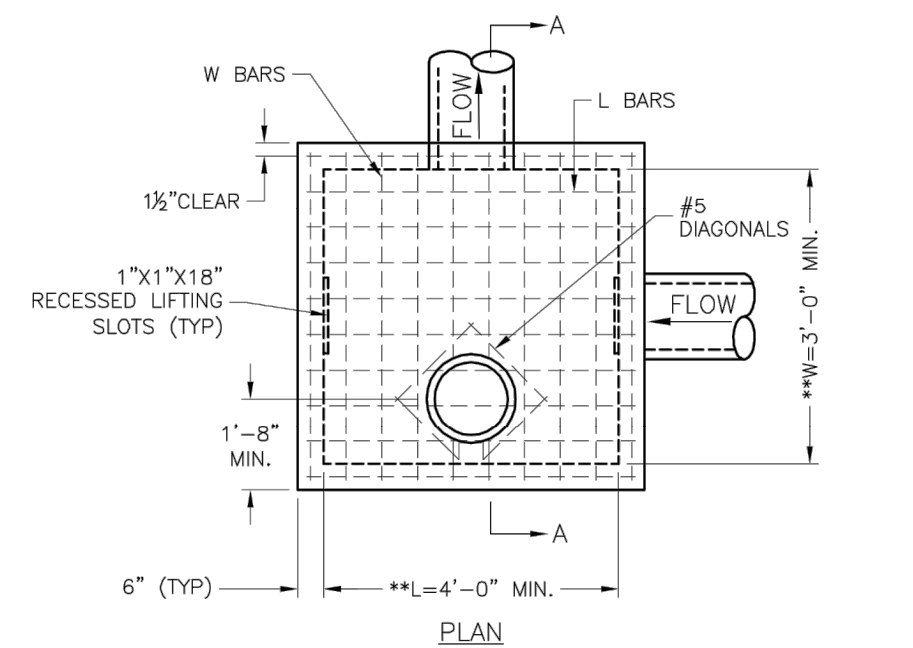
1. THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION.
THE SECOND DIMENSION IS THE "W" DIMENSION.
2. FLOW LINES LISTED ON THE PROJECT PLANS ARE LISTED AT THE INSIDE FACE OF THE WALL.
3. FLOOR OF INLET GROUDED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
4. LOCATE AND MARK THE CENTER OF THE INLET.
5. STEPS SHALL BE SPACED AT 1'-4" O.C. VERTICALLY ON BLANK WALL IF POSSIBLE.
6. BEVEL ALL EXPOSED EDGES WITH $\frac{3}{8}$ " CHAMFER OR $\frac{1}{2}$ " TOOLED EDGE.
7. ON-GRATE 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.

LS LEE'S SUMMIT MISSOURI

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

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

STM-1



REINFORCING

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

GENERAL NOTES

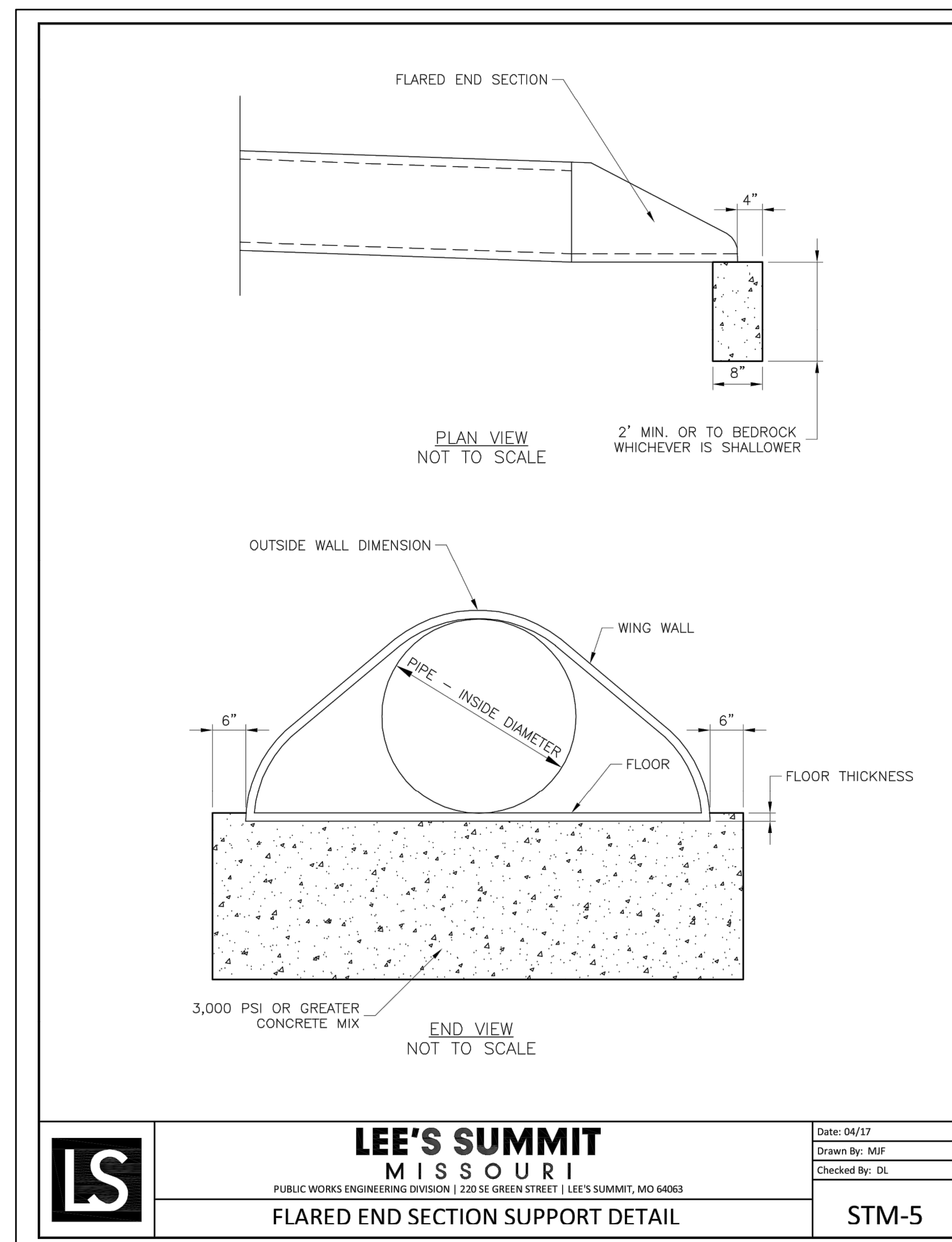
1. LOCATE RING AND COVER ON BLANK WALL.
2. USE 3/4" CHAMFER STRIP OR 3/8" R EDGER TOOL ON ALL EDGES TO FORM CONCRETE CORNERS.
3. STEPS REQUIRED AT 16" O.C. WHEN DEPTH FROM TOP OF CURB TO INVERT EXCEEDS 4" ON BLANK WALL IF POSSIBLE.
4. BOXOUTS WILL NOT BE ALLOWED TO PROJECT THROUGH THE CORNERS OF THE 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.
6. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON-SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
7. REINFORCING OF COVERS IN STREETS REQUIRE SPECIAL DESIGN.
10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

LS **LEE'S SUMMIT**
MISSOURI

STANDARD DETAILS
Y OF LEE'S SUMMIT, MO
MIT, JACKSON COUNTY, MO
UNCTION BOX DETAIL

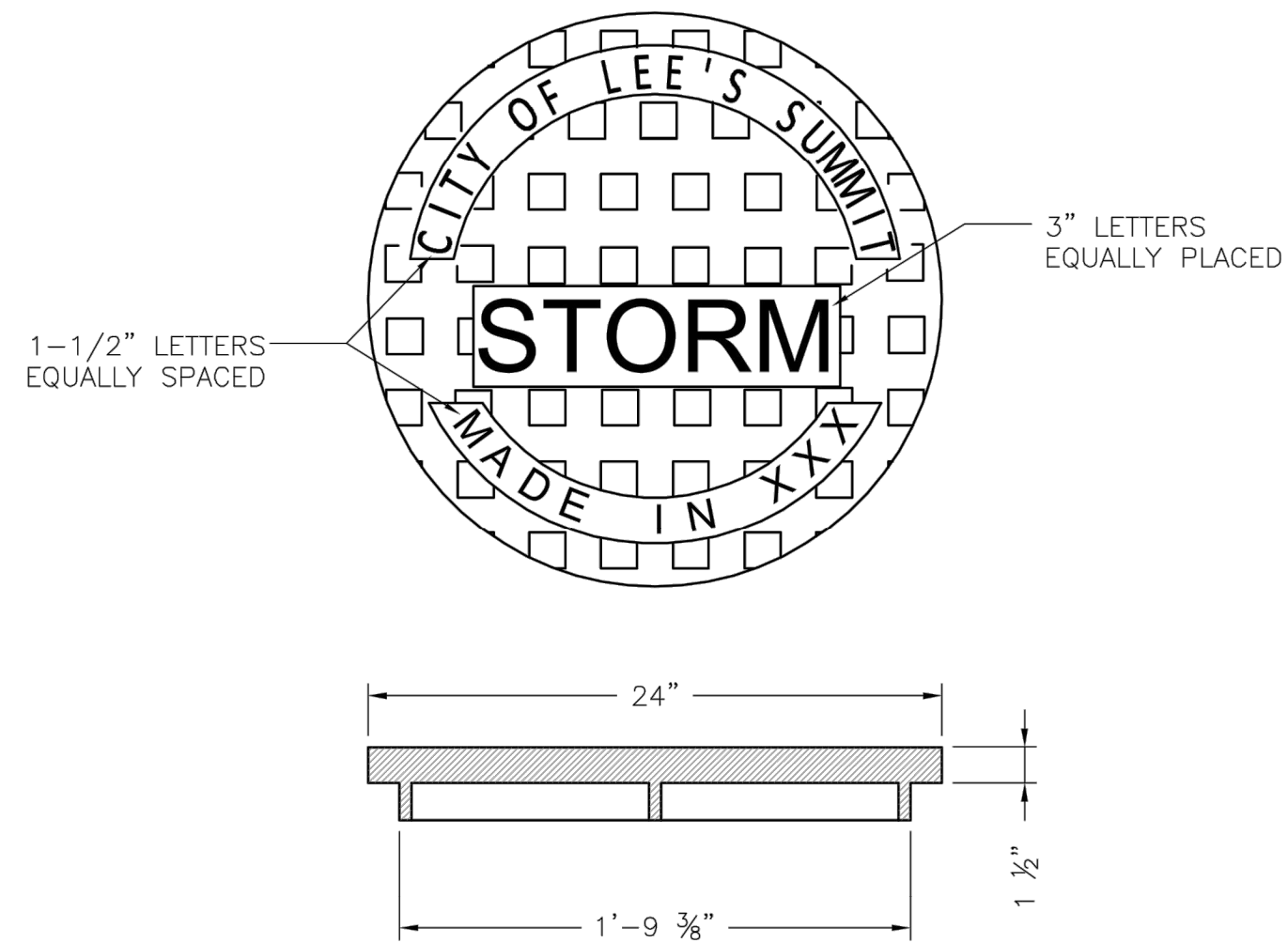
Drawn By: M/J
Checked By: DL
Date: 04/17
Proj. #:

STM-3



CONFORMING TO CONSTRUCTION
RECORDS.

BAL	02.12.2020
BY	DATE



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.

LS

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

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

PERGOLA PARK 4TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
PLAN & EROSION AND SEDIMENT CONTROL
- LEE'S SUMMIT, MISSOURI



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Missouri State Certificates of Authority
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REVISION DATE	DESCRIPTION
1. 6-26-19	CITY COMMENTS
2. 7-30-19	CITY COMMENTS
3. 2-12-2020	AS-BUILT
4.	
5.	
6.	
7.	
8.	

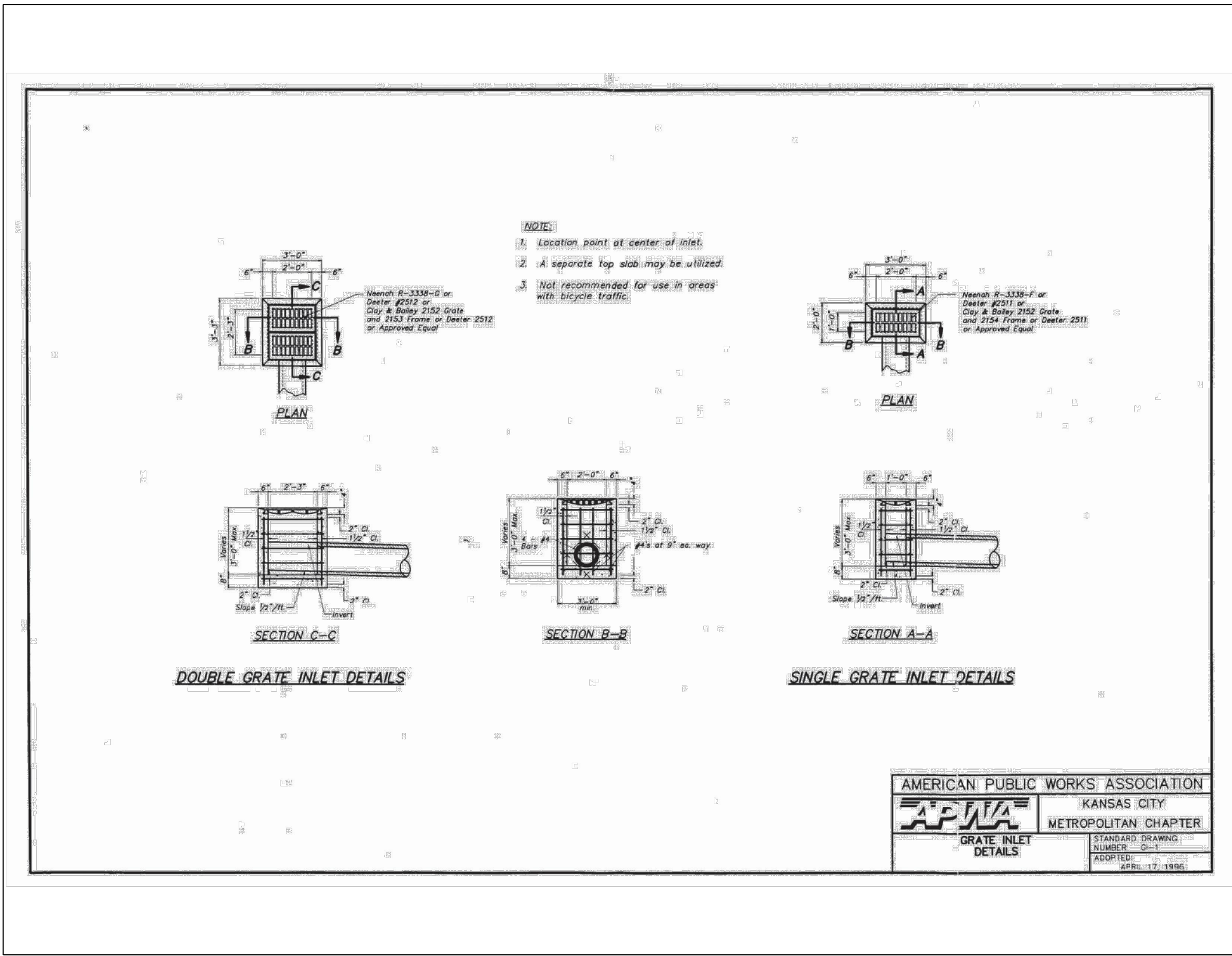
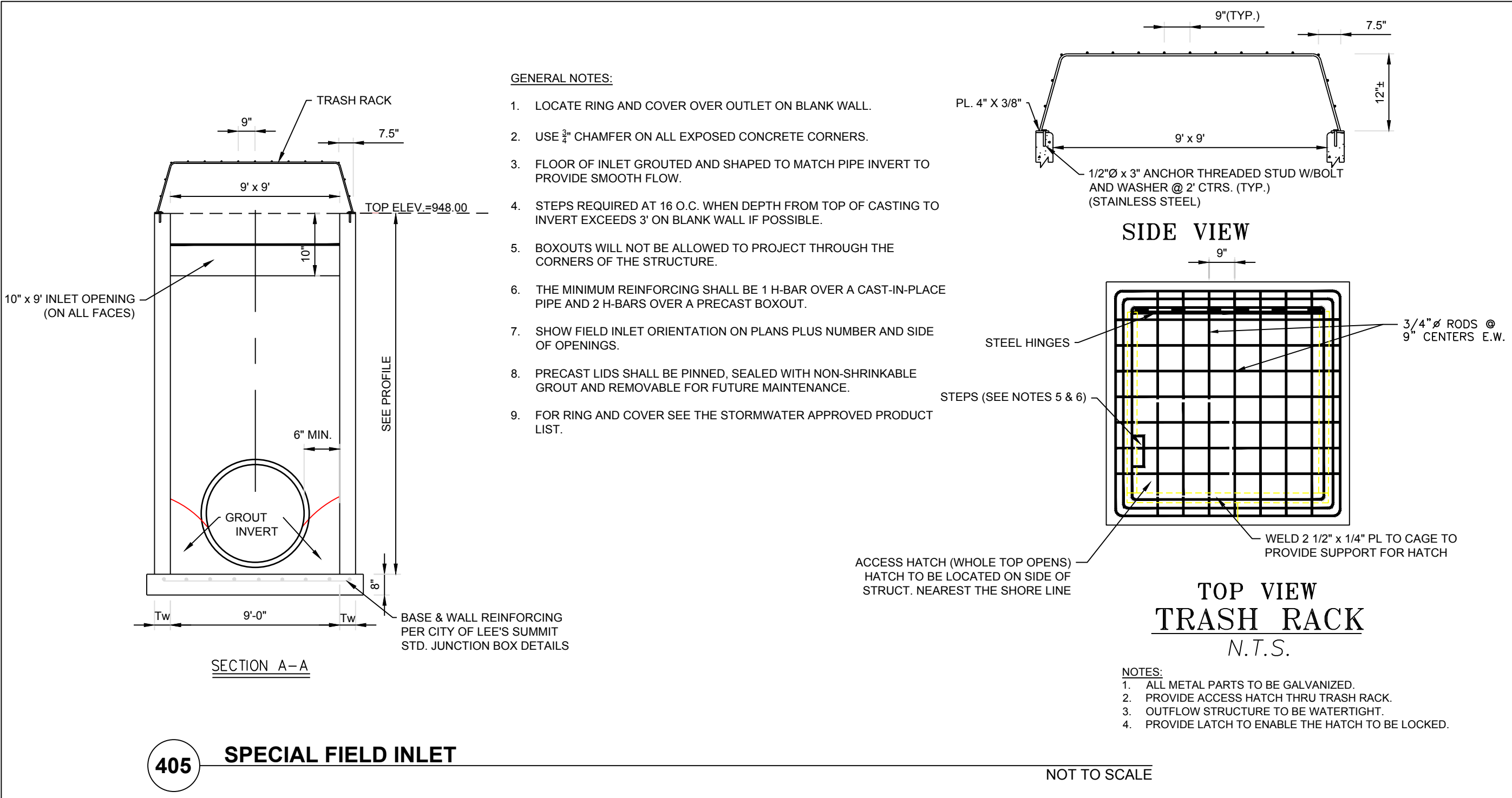
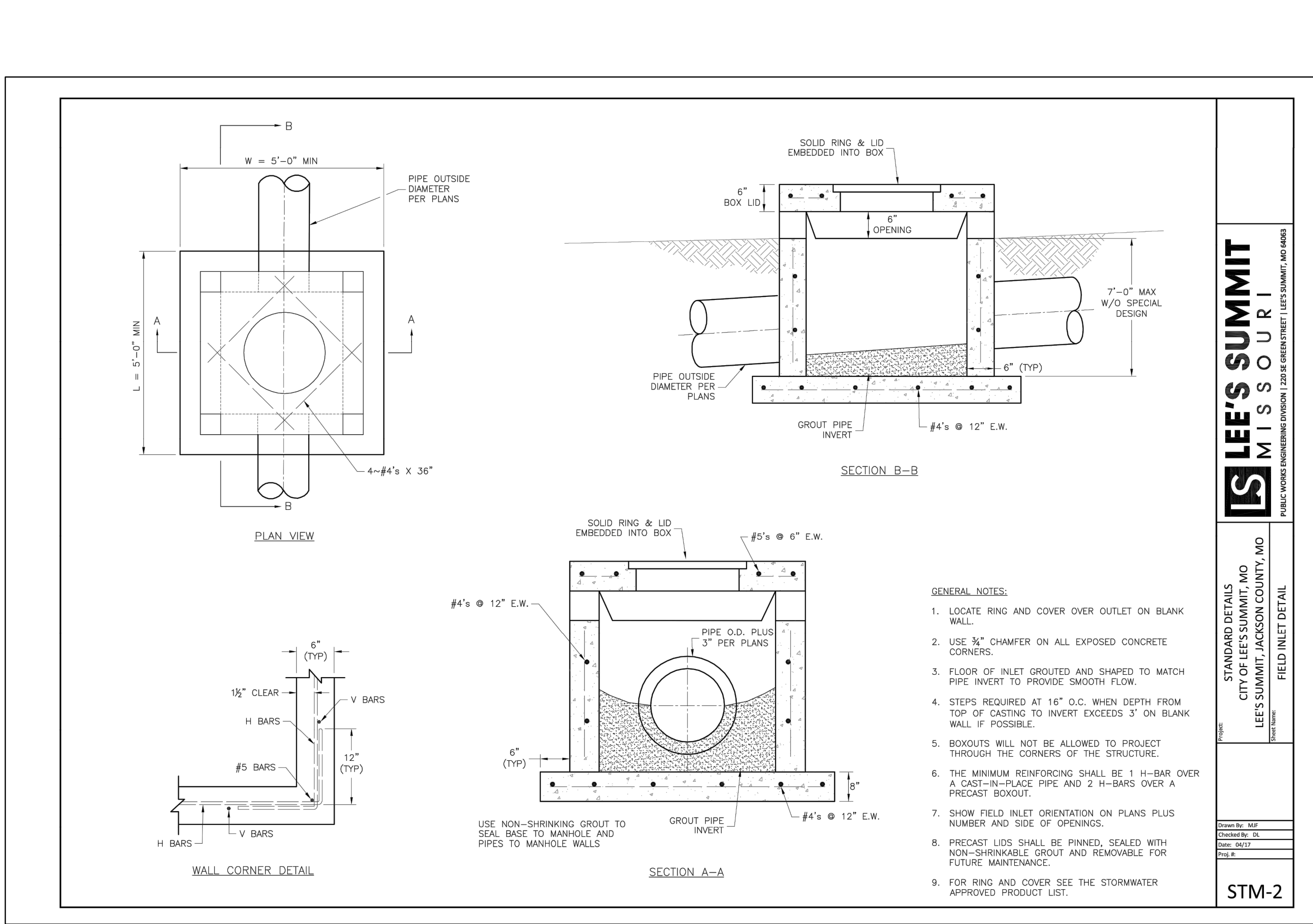
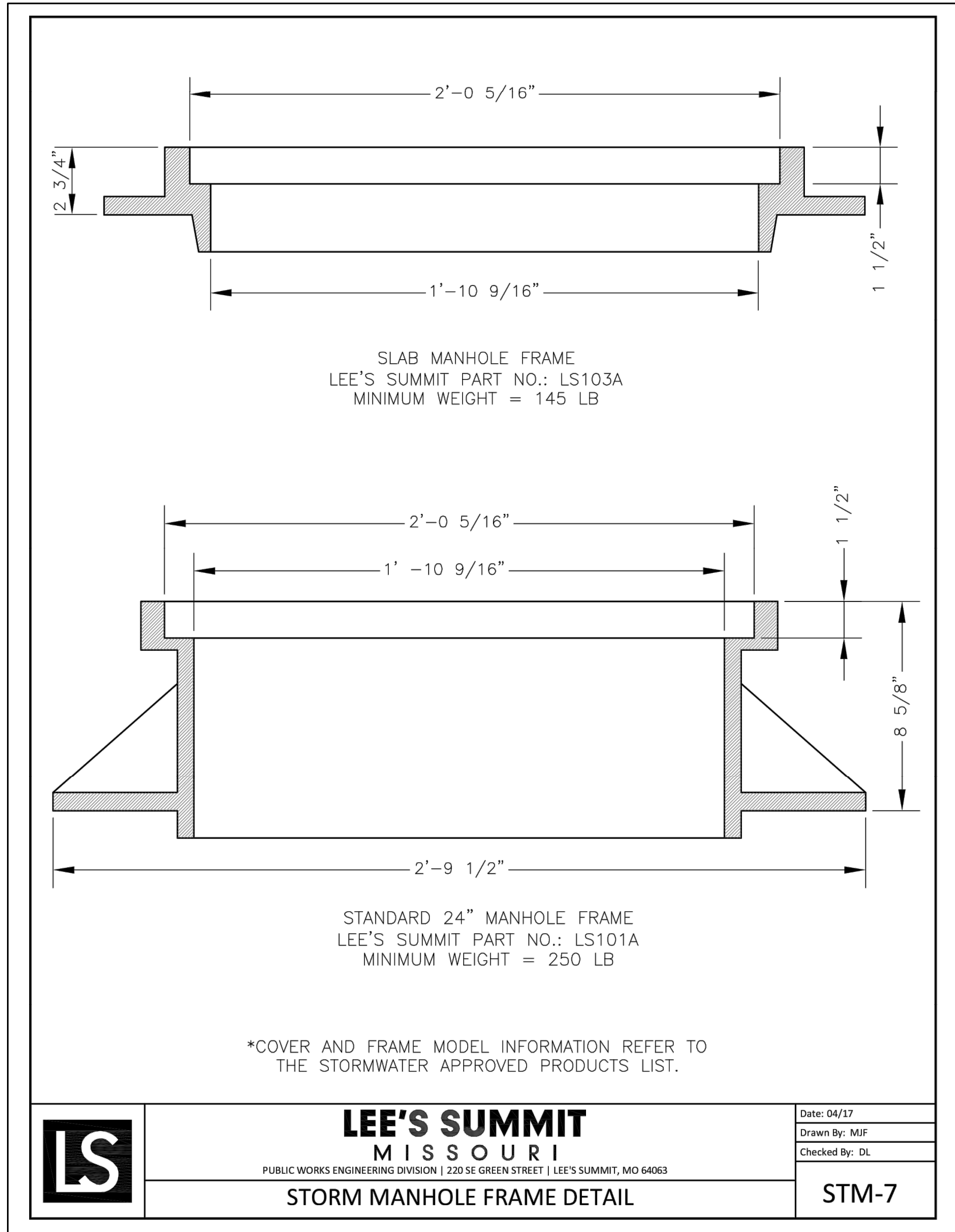
DETAIL SHEET

SHEET

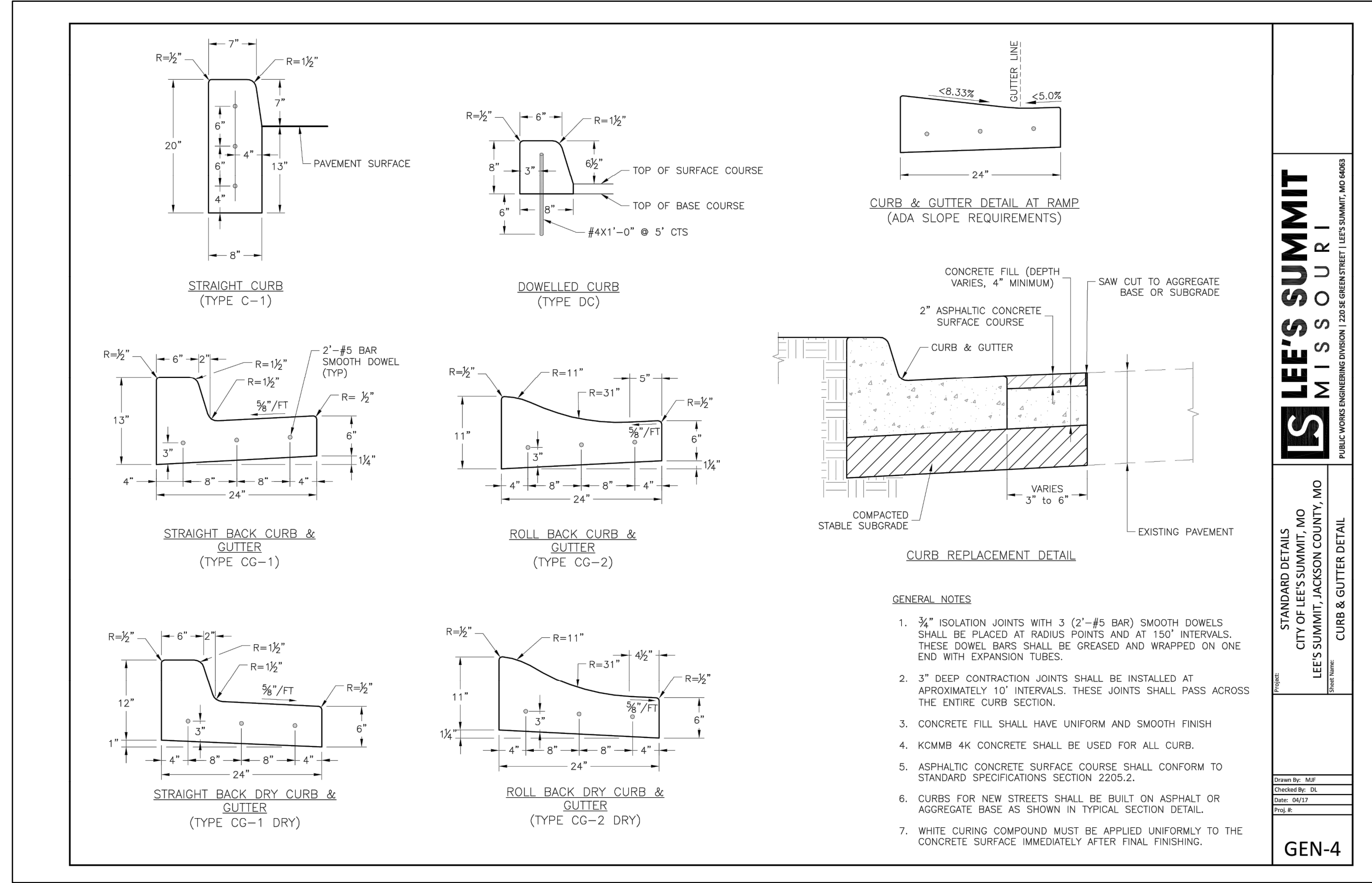
24

OF 28

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REVISION DATE	DESCRIPTION
6-26-19	1. CITY COMMENTS
7-30-19	2. CITY COMMENTS
2-12-2020	3. AS-BUILTS
4-15-19	4. DATE PREPARED
19-002	5. PROJ. NUMBER



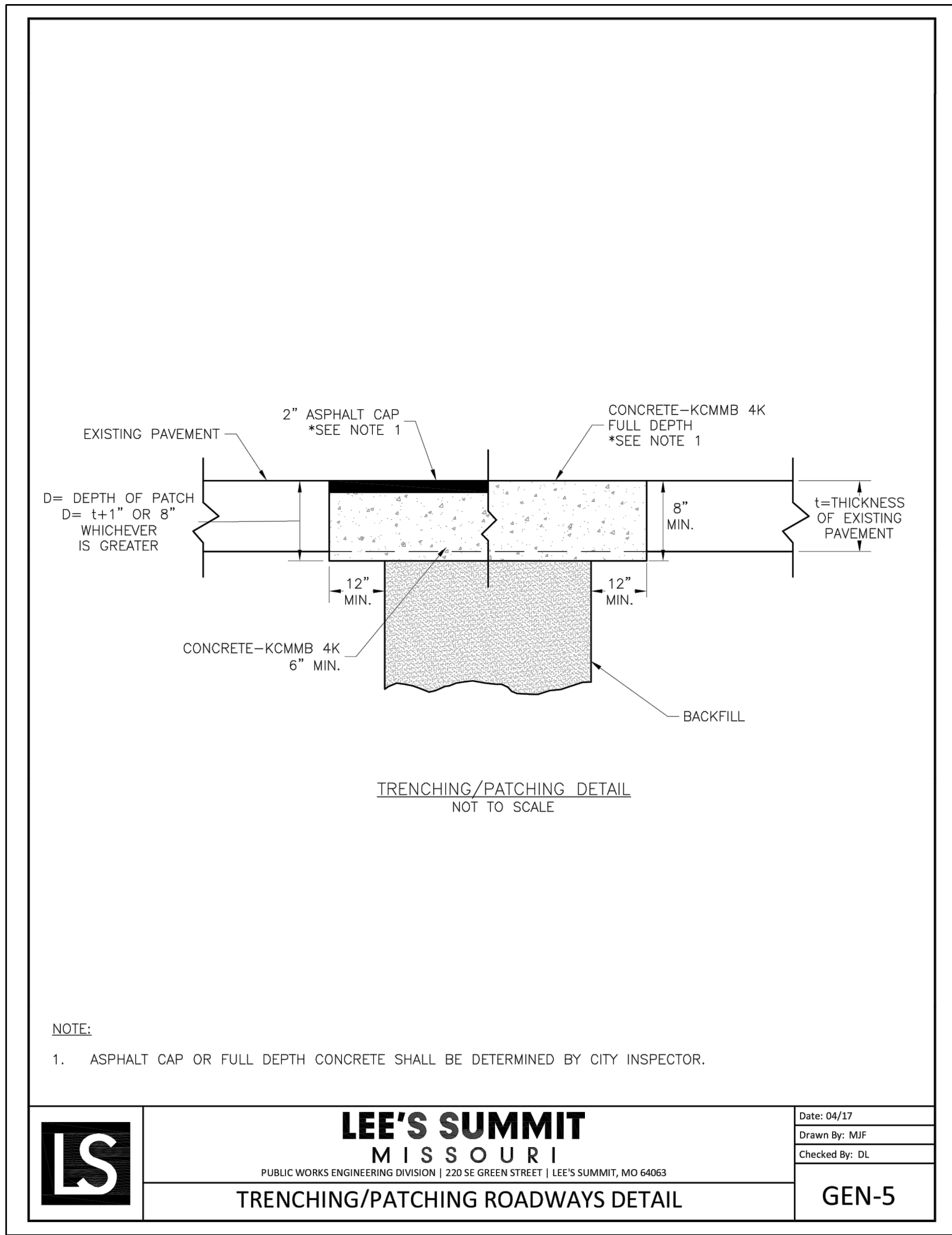
LEE'S SUMMIT
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STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
CURB & GUTTER DETAIL

Drawn By: MJF
Checked By: DL
Date: 06/17
Proj #: 19-002

GEN-4

CONFORMING TO CONSTRUCTION RECORDS.
BAL 02.12.2020
BY DATE



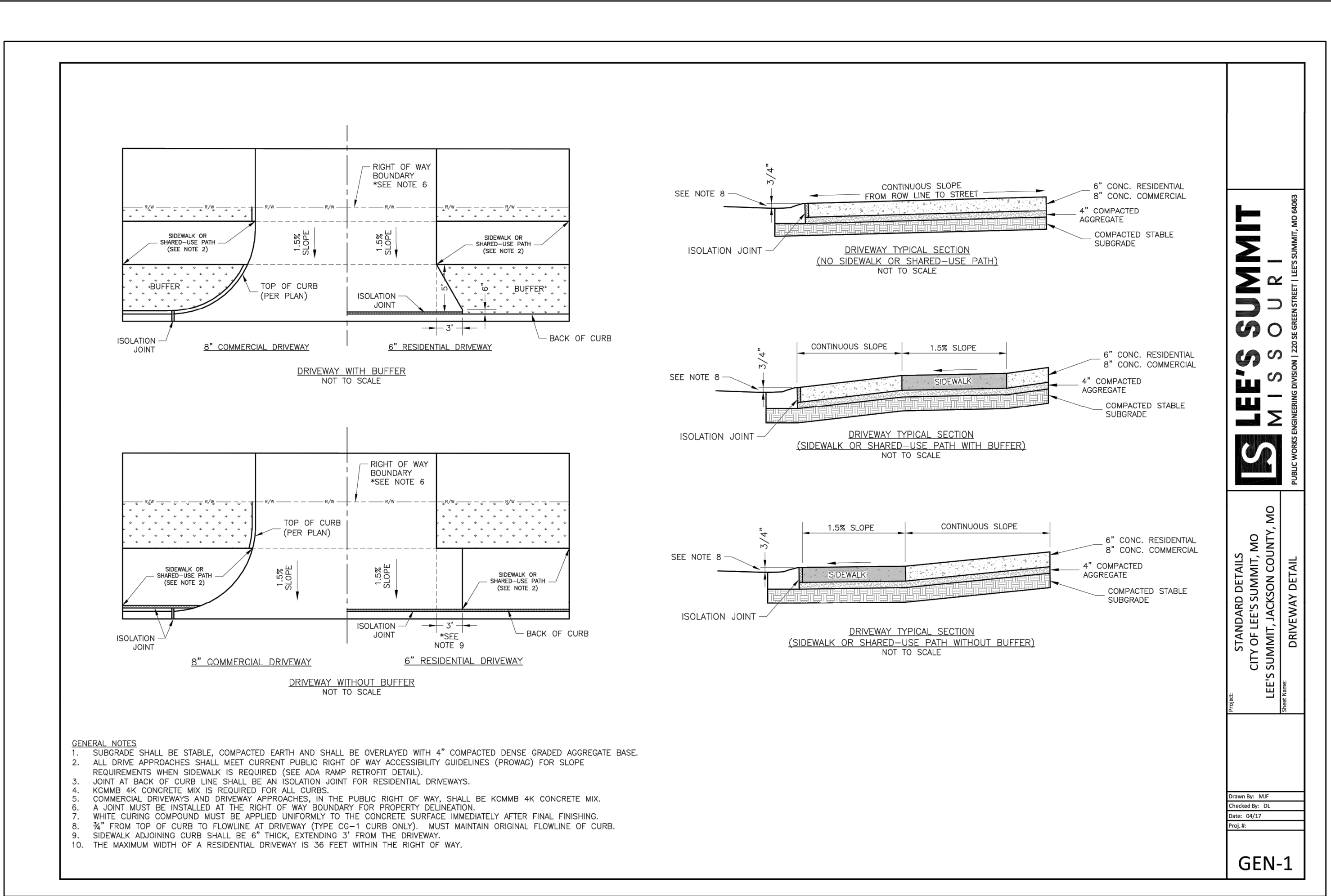
LEE'S SUMMIT
MISSOURI

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

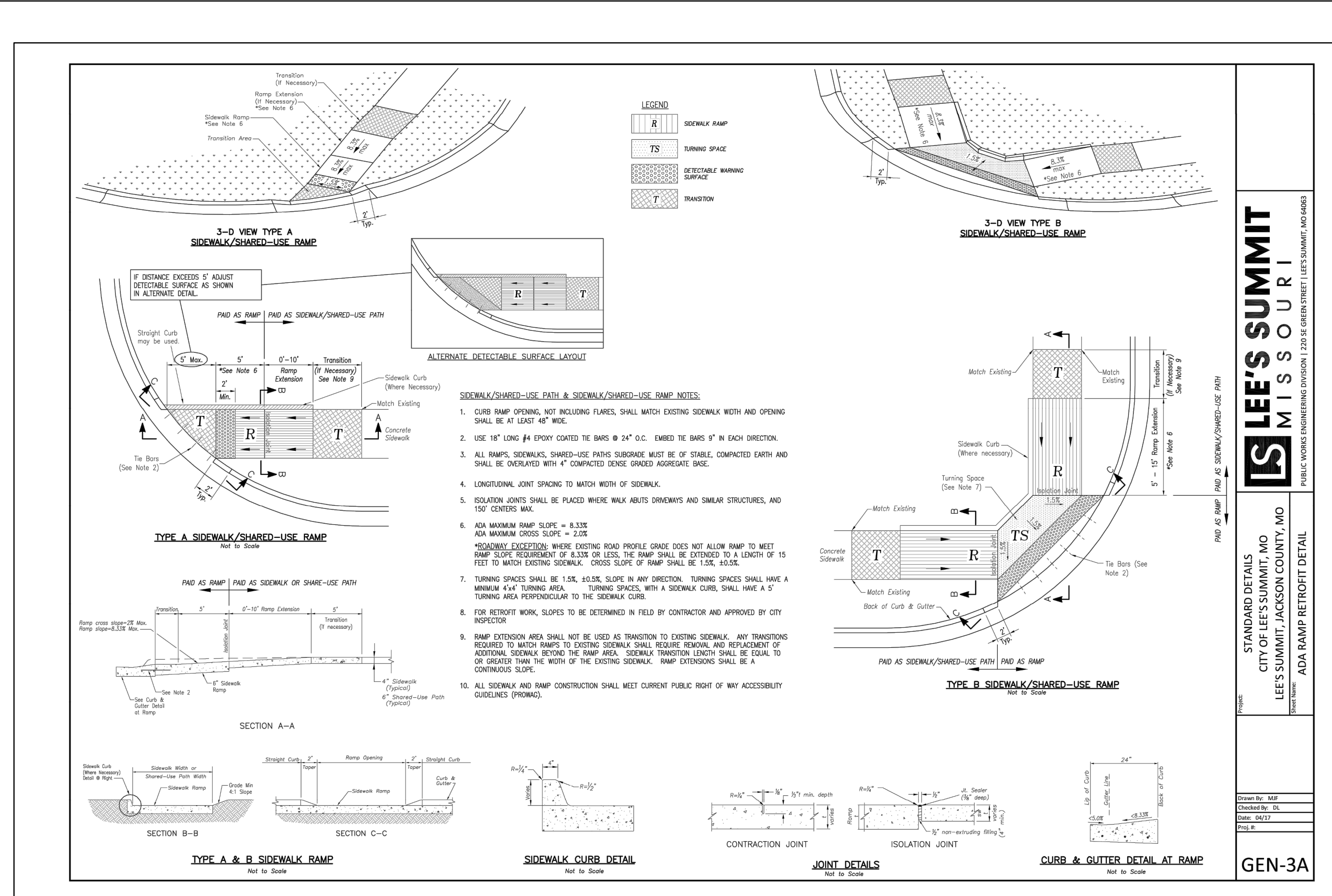


LEE'S SUMMIT
MISSOURI

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

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj #: 19-002

GEN-1



LEE'S SUMMIT
MISSOURI

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

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj #: 19-002

GEN-3A

PERGOLA PARK 4TH PLAT
STREET, STORMWATER, MASTER DRAINAGE
PLAN & EROSION AND SEDIMENT CONTROL
- LEE'S SUMMIT, MISSOURI

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REVISION DATE	DESCRIPTION
6-26-19	CITY COMMENTS
7-30-19	CITY COMMENTS
2-12-2020	AS-BUILT

DRAWN BY: BAL	CITY COMMENTS
CHECKED BY: MAB	AS-BUILT
DATE PREPARED: 4-15-19	
PROJ. NUMBER: 19-002	

DETAIL SHEET

SHEET

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OF 28

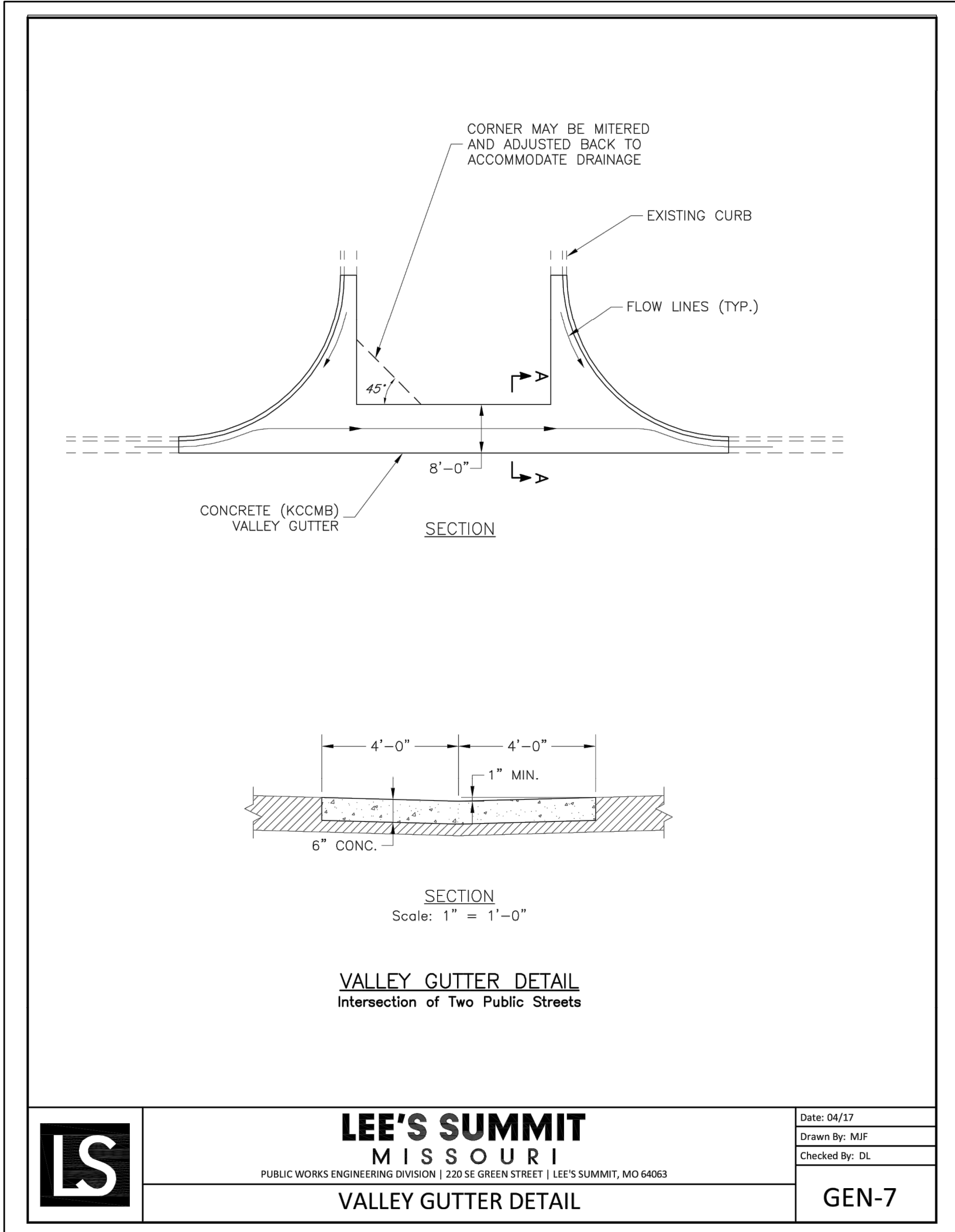


TABLE LS-2: MINIMUM ASPHALT PAVEMENT THICKNESSES

Street Classification	Pavement Option	AC Surface (in.)	AC Base (in.)	MoDOT Type 5 Base (in.)	Geogrid(1)	Chemical Subgrade Stabilization(2) (in.)
Residential Local/Access	A	2	4	6	--	6
	B	2	4	10	Geogrid	--
Residential Collector	A	2	5.5	6	--	9
	B	2	5.5	12	Geogrid	--
Commercial Industrial Local/Collector	A	2	7.5	6	--	9
	B	2	7.5	12	Geogrid	--

TABLE LS-3: MINIMUM PCC PAVEMENT THICKNESSES

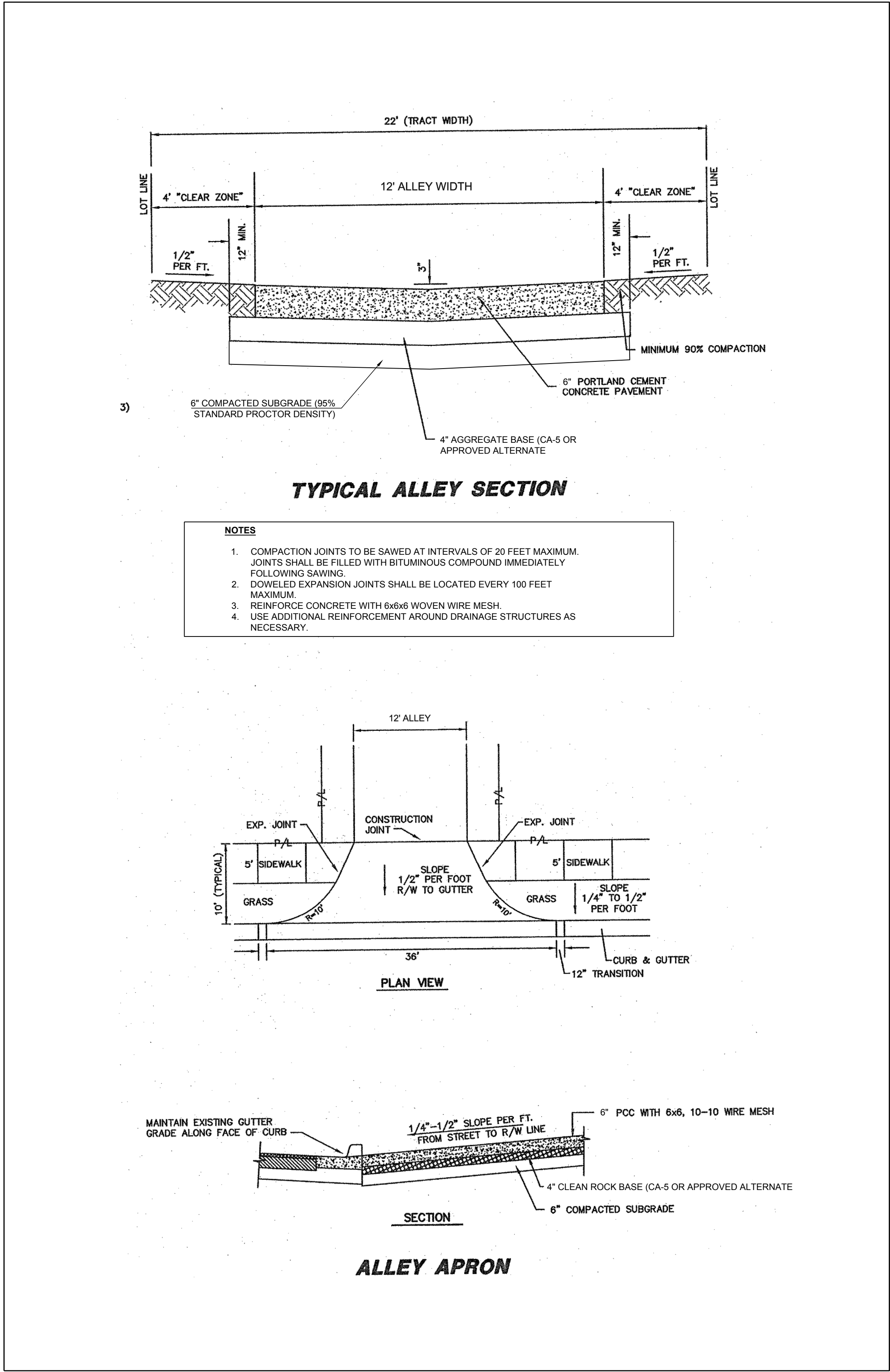
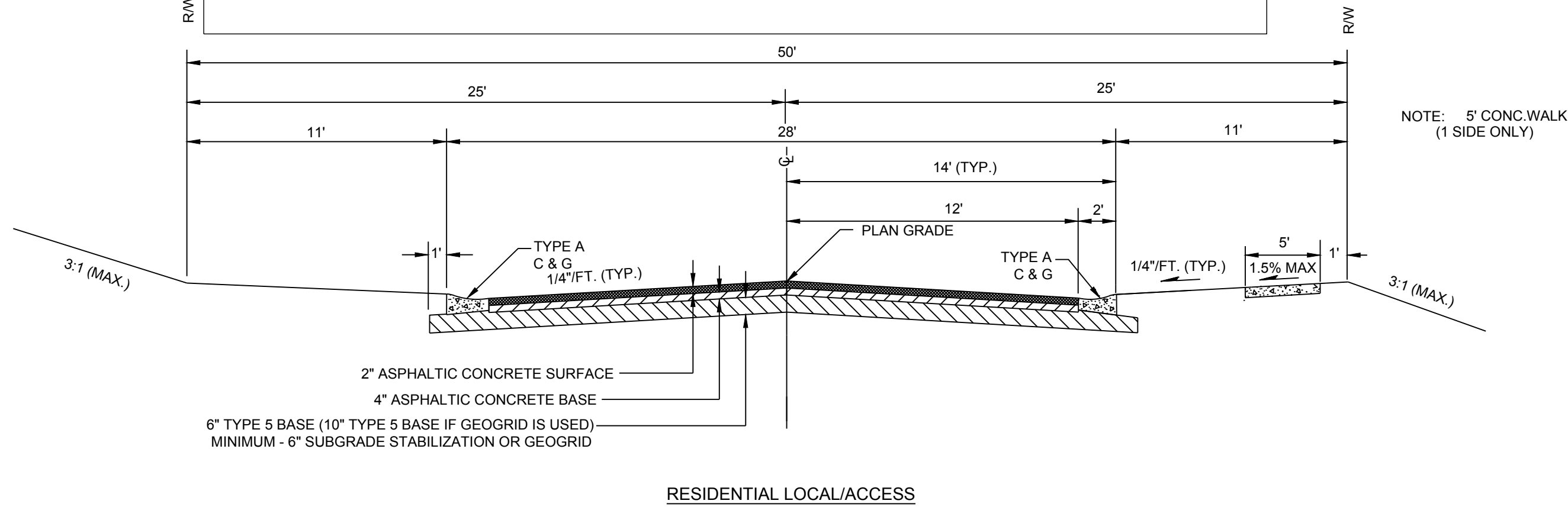
Street Classification	PCC (in.)	Aggregate Base (in.)	Subgrade Stabilization ⁽¹⁾ (in.)
Residential Local/Access	6	4	--
Residential Collector	6	4	6
Commercial Industrial Local/Collector	8	4	9

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

LS5200

16

October 2016

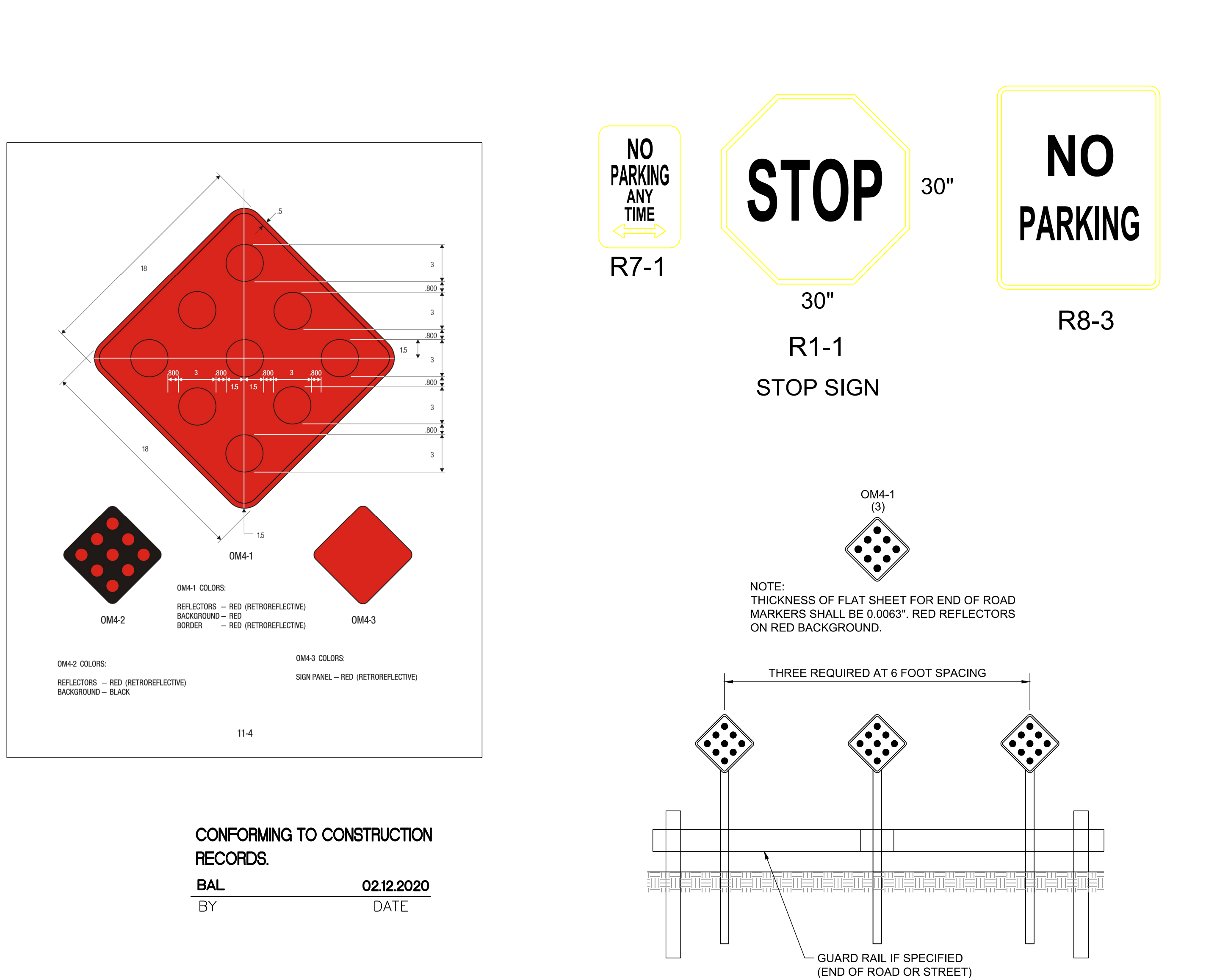
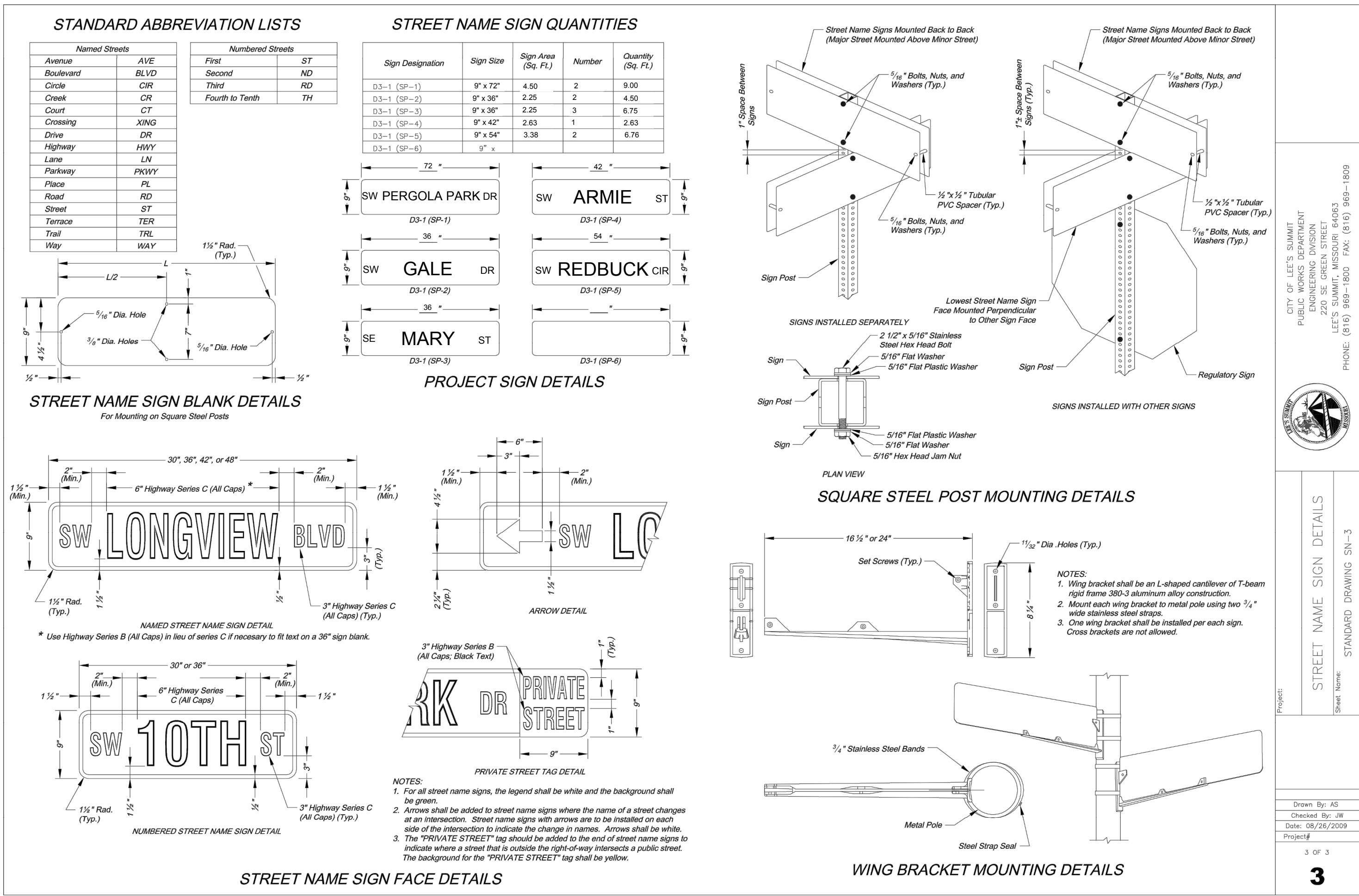
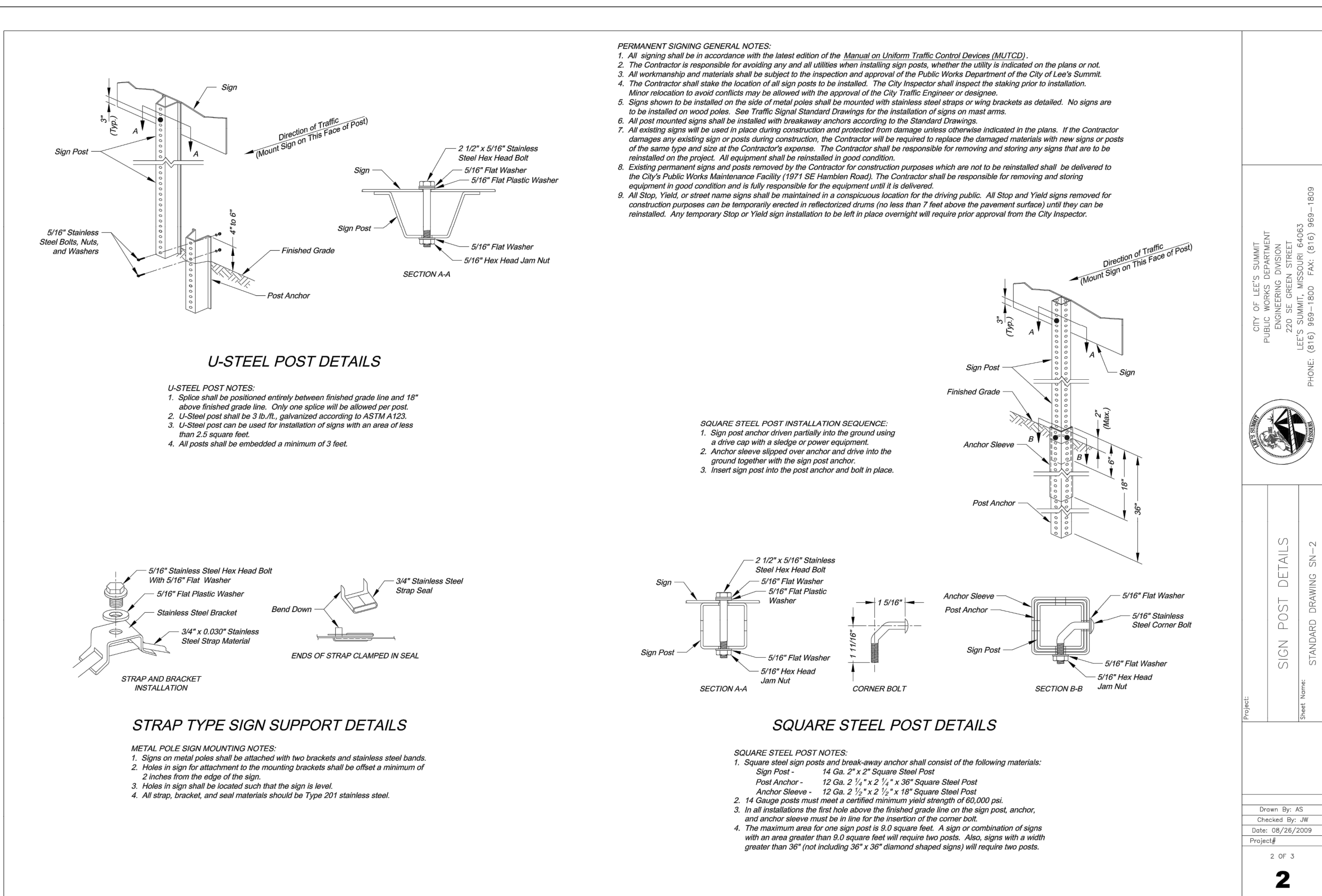
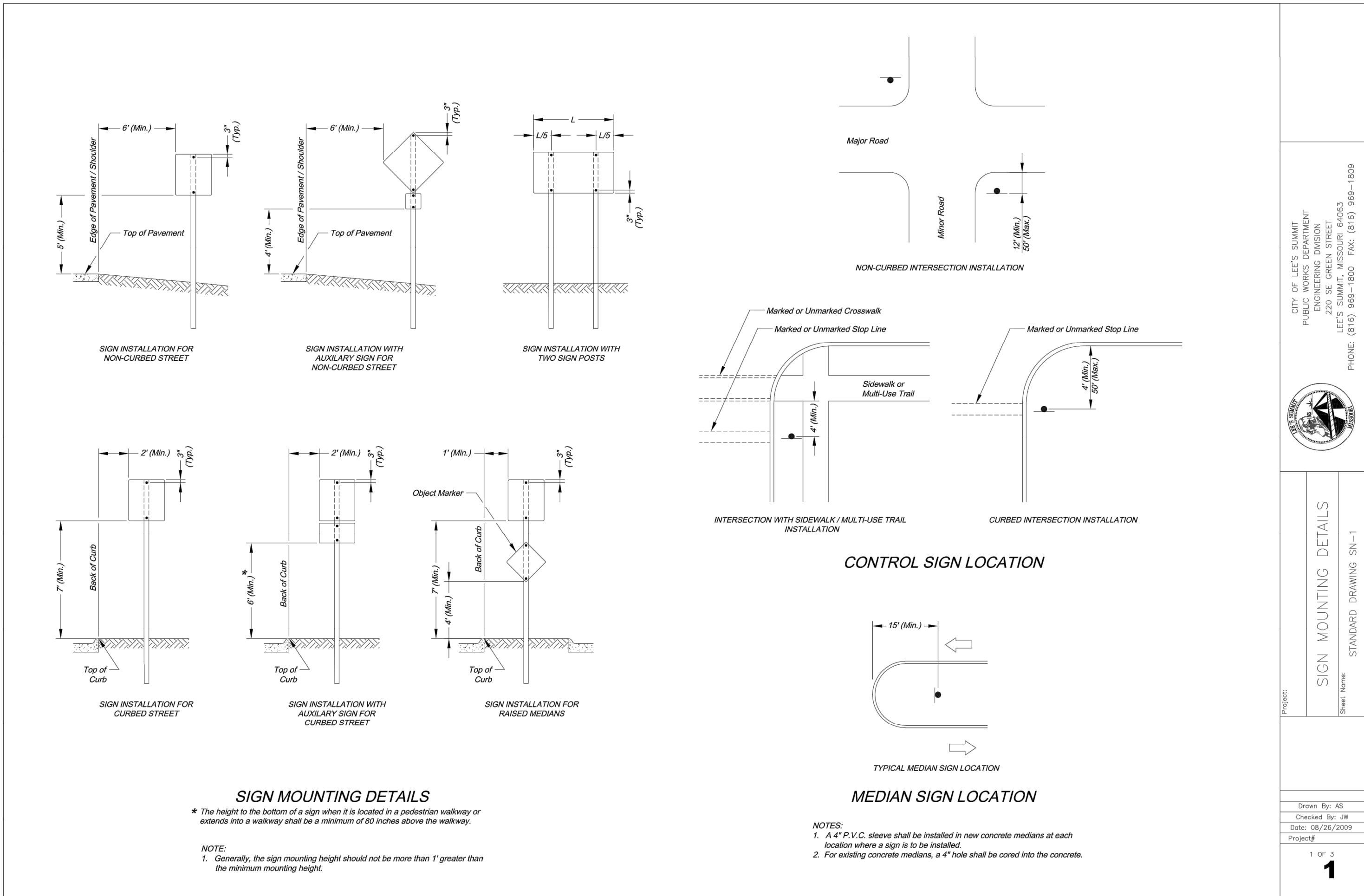


CONFORMING TO CONSTRUCTION RECORDS.

BAL 02.12.2020
BY DATE

REVISION DATE	DESCRIPTION
6-26-19	CITY COMMENTS
7-30-19	CITY COMMENTS
2-12-2020	AS-BUILT
4-15-19	DATE PREPARED
19-002	PROJ. NUMBER

DETAIL SHEET



REVISION DATE	DESCRIPTION
6-26-19	CITY COMMENTS
7-30-19	CITY COMMENTS
2-12-2020	AS-BUILT
4-15-19	MAG
19-002	DATE PREPARED

DRAWN BY:	CHECKED BY:	DATE PREPARED:	PROJ. NUMBER:
BAL	MAG	4-15-19	19-002